T850 Series

Base Station Equipment

Service Manual

Issue 101

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M850-00-101

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About This Manual

Scope

This manual contains general, technical and servicing information on T850 25W, 50W and 100W base stations which comprise the following equipment:

25W base station	T855 receiver T856 25W transmitter
50W base station	T855 receiver T857 exciter T858 50W power amplifier
100W base station	T855 receiver T857 exciter T859 100W power amplifier

Format

We have published this manual in a ring binder so that "revision packages" containing additional information pertaining to new issues of PCBs can be added as required.

Revision Packages

Revision packages will normally be published to coincide with the release of information on a new PCB, and may also contain additions or corrections pertaining to other parts of the manual.

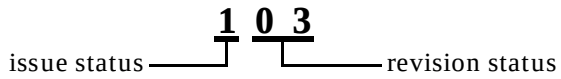
If you return the registration form at the front of this manual, you will be notified when revision packages containing new PCB information and/or text are available. You may then order as many packages as you require from your local Tait Company. Revision packages are supplied ready-punched for inclusion in your manual.

Revision Control

Each page in this manual has a date of issue. This is to comply with various Quality Standards, but will also serve to identify which pages have been updated and when. Each page and its publication date is listed in the "List of Effective Pages", and a new list containing any new/revised pages and their publication dates will be sent with each revision package.

Any portion of text that has been changed is marked by a vertical line (as shown at left) in the outer margin of the page. Where the removal of an entire paragraph means there is no text left to mark, an arrow (as shown at left) will appear in the outer margin. The number beside the arrow will indicate how many paragraphs have been deleted.

The manual issue and revision status are indicated by the last three digits of the manual IPN. These digits start at 100 and will increment through 101, 102, 103, etc., as revision packages are published, e.g:



Thus, Issue 103 indicates the third revision to issue 1 and means that three packages should have been added to the manual. The issue digit will only change if there is a major product revision, or if the number of revision packages to be included means that the manual becomes difficult to use, at which point a new issue manual will be published in a new ring binder.

PCB Information PCB information is provided for all current issue PCBs, as well as all previous issue PCBs manufactured in production quantities, and is grouped according to PCB. Thus, you will find the parts list, grid reference index (if necessary), PCB layouts and circuit diagram(s) for each individual PCB grouped together.

Errors If you find an error in this manual, or have a suggestion on how it might be improved, please do not hesitate to contact the Technical Writer, Tait Radio Infrastructure Division, Tait Electronics Ltd, P.O. Box 1645, Christchurch, New Zealand.

Technical Information

Any enquiries regarding this manual or the equipment it describes should be addressed in the first instance to your nearest approved Tait Dealer or Service Centre. Further technical assistance may be obtained from the Customer Support Group, Radio Infrastructure Division, Tait Electronics Ltd, Christchurch, New Zealand.

Updating Equipment And Manuals

In the interests of improving performance, reliability or servicing, Tait Electronics Ltd reserve the right to update their equipment and/or manuals without prior notice.

Copyright

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Service Manuals should be ordered from your nearest Tait Branch or approved Dealer. When ordering, quote the Tait Internal Part Number (IPN) and, where applicable, the version.

Date Of Issue

IPN M850-00-101 T850 Series Service Manual
Issue 101 published November 1996

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This manual is divided into eight parts as listed below, with each part being further sub-divided into sections. There is a detailed table of contents at the start of each part and / or section.

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2.12	30/11/96 (blank)
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3.13	30/11/96
3.14	30/11/96 (blank)

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6.4.33	30 / 11 / 96 (fold-out)
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6.4.35	30 / 11 / 96 (fold-out)
6.4.36	30 / 11 / 96 (fold-out)
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2.10	30/11/96	6.2.7	30/11/96
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3.1	30/11/96	6.2.11	30/11/96
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5.10	30/11/96	6.3.1	30/11/96
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5.13	30/11/96	6.3.4	30/11/96
5.14	30/11/96 (blank)	6.3.5	30/11/96
		6.3.6	30/11/96
6.1.1	30/11/96	6.3.7	30/11/96
6.1.2	30/11/96 (blank)	6.3.8	30/11/96 (blank)
6.1.3	30/11/96	6.3.9	30/11/96
6.1.4	30/11/96	6.3.10	30/11/96
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6.3.24	30 / 11 / 96 (blank)	1.3	30 / 11 / 96
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6.3.26	30 / 11 / 96	1.5	30 / 11 / 96
6.3.27	30 / 11 / 96 (fold-out)	1.6	30 / 11 / 96
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6.3.30	30 / 11 / 96 (fold-out) (blank)	2.2	30 / 11 / 96 (blank)
6.3.31	30 / 11 / 96 (fold-out)	2.3	30 / 11 / 96
6.3.32	30 / 11 / 96 (fold-out)	2.4	30 / 11 / 96
6.3.33	30 / 11 / 96 (fold-out)	2.5	30 / 11 / 96
6.3.34	30 / 11 / 96 (fold-out)	2.6	30 / 11 / 96
6.3.35	30 / 11 / 96	2.7	30 / 11 / 96
6.3.36	30 / 11 / 96	2.8	30 / 11 / 96 (blank)
6.3.37	30 / 11 / 96		
6.3.38	30 / 11 / 96 (blank)	3.1	30 / 11 / 96
6.3.39	30 / 11 / 96	3.2	30 / 11 / 96 (blank)
6.3.40	30 / 11 / 96 (blank)	3.3	30 / 11 / 96
6.3.41	30 / 11 / 96	3.4	30 / 11 / 96
6.3.42	30 / 11 / 96	3.5	30 / 11 / 96
6.3.43	30 / 11 / 96 (fold-out)	3.6	30 / 11 / 96
6.3.44	30 / 11 / 96 (fold-out)	3.7	30 / 11 / 96
6.3.45	30 / 11 / 96 (fold-out)	3.8	30 / 11 / 96
6.3.46	30 / 11 / 96 (fold-out) (blank)	3.9	30 / 11 / 96
6.3.47	30 / 11 / 96 (fold-out)	3.10	30 / 11 / 96 (blank)
6.3.48	30 / 11 / 96 (fold-out)		
6.3.49	30 / 11 / 96 (fold-out)	4.1	30 / 11 / 96
6.3.50	30 / 11 / 96 (fold-out)	4.2	30 / 11 / 96 (blank)
6.3.51	30 / 11 / 96	4.3	30 / 11 / 96
6.3.52	30 / 11 / 96	4.4	30 / 11 / 96
6.3.53	30 / 11 / 96	4.5	30 / 11 / 96 (fold-out)
6.3.54	30 / 11 / 96 (blank)	4.6	30 / 11 / 96 (fold-out) (blank)
6.3.55	30 / 11 / 96	4.7	30 / 11 / 96
6.3.56	30 / 11 / 96 (blank)	4.8	30 / 11 / 96
6.3.57	30 / 11 / 96	4.9	30 / 11 / 96
6.3.58	30 / 11 / 96	4.10	30 / 11 / 96
6.3.59	30 / 11 / 96 (fold-out)	4.11	30 / 11 / 96
6.3.60	30 / 11 / 96 (fold-out)	4.12	30 / 11 / 96
6.3.61	30 / 11 / 96 (fold-out)		
6.3.62	30 / 11 / 96 (fold-out) (blank)	5.1.1	30 / 11 / 96
6.3.63	30 / 11 / 96 (fold-out)	5.1.2	30 / 11 / 96 (blank)
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5.2.6	30/11/96
5.2.7	30/11/96
5.2.8	30/11/96 (blank)
5.2.9	30/11/96 (fold-out)
5.2.10	30/11/96 (fold-out)
5.2.11	30/11/96 (fold-out)
5.2.12	30/11/96 (fold-out)
5.3.1	30/11/96
5.3.2	30/11/96 (blank)
5.3.3	30/11/96
5.3.4	30/11/96
5.3.5	30/11/96
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5.3.8	30/11/96
5.3.9	30/11/96
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2.2	30/11/96
2.3	30/11/96
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3.5	30/11/96 (fold-out)
3.6	30/11/96 (fold-out) (blank)
3.7	30/11/96
3.8	30/11/96 (blank)
3.9	30/11/96
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3.12	30/11/96 (fold-out) (blank)
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1.2	30/11/96
1.3	30/11/96
1.4	30/11/96 (blank)
2.1	30/11/96
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2.3	30/11/96
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1.2	30/11/96
2.1	30/11/96
2.2	30/11/96
3.1	30/11/96
3.2	30/11/96 (blank)
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Part A Introduction To Servicing

This part of the manual is divided into the sections listed below. These sections provide some general and advisory information on servicing procedures, a brief history of T800 programming software, and a list of Technical Instructions pertaining to T850 Series equipment.

1 General

If further information is required about T850 Series equipment or this Manual, it may be obtained from Tait Electronics Ltd or accredited agents. When requesting this information, please quote the product type number (e.g. T855-10) and serial number. In the case of the Service Manual quote the Tait Internal Part Number (IPN), e.g. M850-00-101, and for circuit diagrams quote the 'Title', 'IPN' and 'Issue'.

1.1 Caution: CMOS Devices

This equipment contains CMOS Devices which are susceptible to damage from static charges. Care when handling these devices is essential. For correct handling procedures refer to the manufacturers' data books, e.g. Philips data books covering CMOS devices, or Motorola CMOS data books, etc.

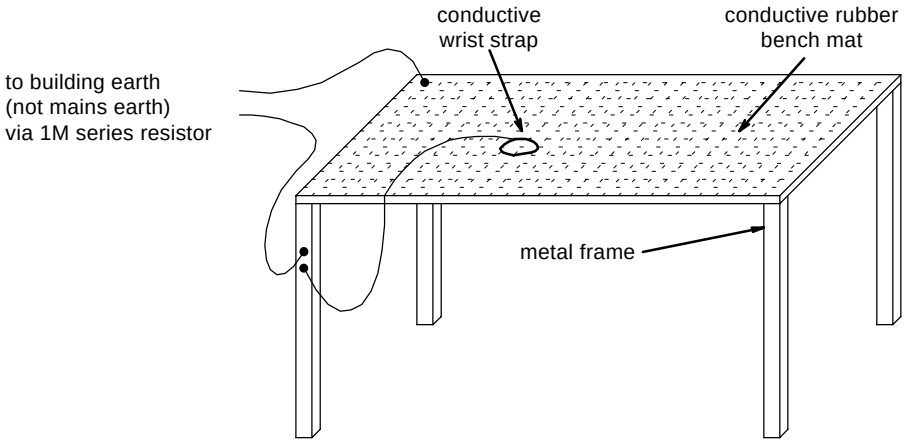


Figure 1.1 Typical Anti-static Bench Set-up

An anti-static bench kit (refer to Figure 1.1) is available from Tait Electronics Ltd under the usual consumable goods ordering system. The kit is held in stock under IPN 937-00000-34 and contains:

- 1 conductive rubber bench mat
- 1 earth lead to connect the mat to ground (c/w 1M series resistor)
- 1 wrist strap
- information leaflet.

1.2 Caution: Aerial Load

The equipment has been designed to operate safely under a wide range of aerial loading conditions. However, it is strongly recommended that the transmitter should not be operated in the absence of a suitable load. Failure to observe this warning may result in damage to the transmitter power output stage.

1.3 Caution: Beryllium Oxide & Power Transistors

The RF power transistors in current use all contain some beryllium oxide. This substance, while perfectly harmless in its normal solid form, can become a severe health hazard when it has been reduced to dust. For this reason the RF power transistors should not be broken open, mutilated, filed, machined, or physically damaged in any way that can produce dust particles.

2 Mechanical

2.1 Pozidriv Recess Head Screws

Pozidriv recess head screws are the preferred standard on all Tait manufactured equipment. The very real advantages of this type of screw will not be realised unless the correct screwdrivers are used by servicing personnel.

2.2 Disassembly/Reassembly

2.2.1 Receivers/Exciters

To carry out alignment or change option links it is necessary to remove only the top cover, i.e. the one adjacent to the front panel handle and on the opposite side to the main D-range connector.

Removal of the bottom cover is necessary to:

- access SMD components
- change solder blob links
- fit test leads to circuit block access points.

2.2.2 Power Amplifiers

We recommend that the power output and alarm level setting procedures be carried out with the cover shield on.

2.3 Cover Screw Torques

Receivers / Exciters	.. 12lb-in. / 1.36Nm
Power Amplifiers	.. 8lb-in. / 0.9Nm

3 Component Replacement

3.1 Leaded Components

Whenever components are removed from or fitted to the PCB, care must be taken to avoid damage to the track. The two satisfactory methods of removing components from PTH PCBs are detailed below.

Note: The first method requires the use of a desoldering station, e.g. Philips SBC 314 or Pace MBT-100E.

3.1.1 Desoldering Iron Method

Place the tip over the lead and, as the solder starts to melt, move the tip in a circular motion.

Start the suction and continue the movement until 3 or 4 circles have been completed.

Remove the tip while continuing suction to ensure that all solder is removed from the joint, then stop the suction.

Before pulling the lead out, ensure it is not stuck to the plating.

If the lead is still not free, resolder the joint and try again.

Note: The desoldering iron does not usually have enough heat to desolder leads from the ground plane. Additional heat may be applied by holding a soldering iron on the tip of the desoldering iron (this may require some additional help).

3.1.2 Component Cutting Method

Cut the leads on the component side of the PCB.

Heat the solder joint ***sufficiently*** to allow ***easy*** removal of the lead by drawing it out from the component side: do ***not*** use undue force.

Fill the hole with solder and then clear with solderwick.

3.2 Surface Mount Devices

Caution: **Surface mount devices (SMD's) require special storage, handling, removal and replacement techniques. This equipment should be serviced only by an approved Tait Dealer or Service Centre equipped with the necessary facilities. Repairs attempted with incorrect equipment or by untrained personnel may result in permanent damage. If in doubt, contact Tait Electronics Ltd or your nearest Tait Branch or Subsidiary.**

4 To Replace PA Transistors

Caution: **Failure to comply with the following procedure can result in failure of the device due to poor heatsinking, or worse, can endanger the health of the assembler if the beryllium oxide die carrier is smashed during assembly.**

Note: Although ***exact*** spacing between transistors and capacitors is not critical in the T858/859 PA, we recommend that, before attempting to remove a transistor, you note the location of these and any other components that will also need to be removed. Replacing each component in its original location will assist in maintaining the performance of the PA.

Desolder the tabs by heating with a soldering iron and lifting away from the PCB with a screwdriver or thin stainless steel spike. Unscrew the transistor stud nut and remove the device.

Trim the tabs of the replacement transistor so that the device sits neatly on the PCB lands provided.

Lightly tin the underside of the transistor tabs.

Apply a small amount of heatsink compound (Dow-Corning 340 or equivalent) to the transistor mounting surface. Sufficient compound should be used to ensure a thin even film over the entire mounting surface.

Place the transistor on the PCB in the correct orientation and ensure the tabs are flush to the surface. Lightly solder one tab to the PCB. Torque down the retaining nut to the correct torque (8lb-in./0.9Nm).

Caution: **Do not solder all the tabs before torquing down otherwise the device may be broken.**

Solder all transistor tabs to the PCB.

5 To Remove The T858/859 PA PCB From The Heatsink

Most components are soldered topside only, but in some cases access to the underside of the PCB is necessary.

Remove the D-range connector.

T859 Only: Disconnect the power feed to the fan.

Remove the PCB retaining screws (2 are hidden beneath the harmonic filter shield):

T858	Qty 14
T859	Qty 11

Remove the transistor stud nuts and mounting screws.

Remove the mounting screws for the TO-220 devices:

T858 / 859	Q16, R89, R90 and R91
T859	R92, R93 and R94.

Remove the retaining screws for the wireline couplers (L19 and L39).

Remove the output 50 ohm coaxial connector by unscrewing it from the heatsink casting and unsoldering it from the PCB.

Disconnect the input 50 ohm coaxial cable by unplugging it at the PCB.

Disconnect the battery positive and negative feed wires from the PCB.

Disconnect the alarm and metering wires from the PCB.

Lift the PCB gently from the heatsink to gain access to the underside of the PCB.

Caution: **Do not operate the PA with the PCB detached as the heatsink is used for earthing and for the dissipation of heat generated within the transistors.**

To replace the PCB, reverse the order of removal, taking care that the wiring is correctly routed and is not subjected to 'pinching'.

6 To Remove Cased Mica Capacitors

Cased mica capacitors can be removed by heating the top with a heavy-duty soldering iron and gently lifting the capacitor off the PCB with a solder-resistant spike or equivalent.

7 To Fit The Optional T800-55 High Sensitivity Preamplifier to the T855

The high sensitivity preamplifier option PCB fits onto the main PCB. It is a single stage broad band low noise preamplifier offering a 3dB improvement in sensitivity with a minimum degradation of other parameters.

Refer to the diagram below. The preamplifier fits on the bottom side of the PCB under the helical filter FL300.

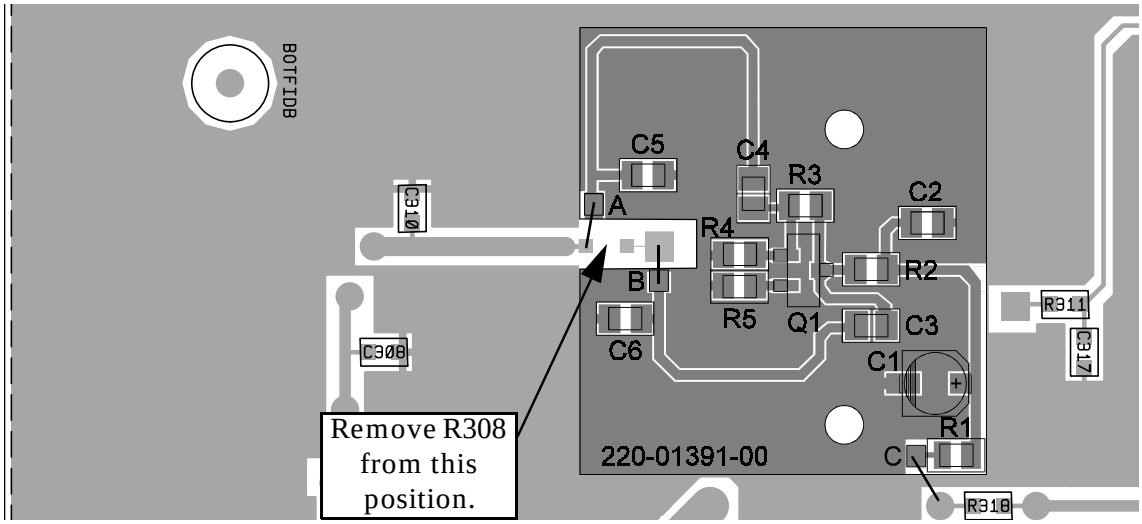


Figure 7.1 Location of T800-55 Preamplifier on T855 Receiver

To fit the preamplifier proceed as follows:

Remove the bottom cover from the receiver

Remove the zero ohm resistor R308

Remove the two screws that secure the helical filter, FL300, to the PCB

Fit the T800-55 to the bottom side of the main PCB, under the helical filter FL300 ensuring that the slot in the T800-55 fits around the pads of the removed R308.

Secure with the helical mounting screws which must be tightened to 6lb-in/ 0.66Nm as they provide the earth connection for the RF amp and the helical housing. Check that the RF amp fits comfortably and does not short out on L307.

With link wire connect the input pad of R308 to the input pad (A) of the preamplifier.

Connect the pad of R308 that is closest to the helical filter to the output pad (B) of the preamplifier.

Connect the junction of L307 and R318 to the +9v supply (C) of the preamplifier.

Refit the bottom cover to the receiver.

The alignment procedure of the receiver remains unchanged (refer to Section B3.6 or Section B3.7).

8 Software History

23/11/89	BASEPROG Version 1
23/08/90	PGM800 Version 2
11/06/91	PGM800 Version 2.01
03/10/95	PGM800 Version 2.21
28/06/96	PGM800Win Version 1.0

8.1 BASEPROG V1/PGM800 V2

T800 programming software was originally developed as BASEPROG V1 and released as PGM800 V2.

8.2 PGM800 V2.01

The major changes introduced with V2.01 are as follows:

- Full support for different display adaptors.
- Programming of CTCSS frequency data (optional) for individual channels.
- Full cursor control in edit mode.
- User selectable output file format (hex or binary).
- Support for wider range of T800 equipment.
- DOS shell facility implemented.
- CTCSS defeat possible when CTCSS tone is not selected.
- Channel numbering changed from 0-127 to 1-128.
- An "X" included on the printout to indicate that there are 8 switches on the DIP switch and the state of the MSB is dependent on the size of the EPROM used.

Note: The data files produced by BASEPROG V1.0 are still compatible with PGM800 V2.01.

8.3 PGM800 V2.21

PGM800 V2.21 is an updated and expanded version of the earlier PGM800 V2.01 software.

PGM800 V2.21 includes many new and improved features over PGM800 V2.01. There are a number of changes to the user interface to make data entry and editing significantly easier.

Major changes are outlined below:

- Includes several new radio models which are not programmable with PGM800 V2.01.
- Default file names with 'dash' are saved with 'dash' instead of 'underscore'.
- Default file extension in Save File page is BIN instead of HEX.
- Out of range frequencies will result in warning messages, but will still be accepted as valid entries.
- Channel numbers are selectable between 0-127 and 1-128.
- Automatic insertion feature to input frequencies.

Note: The datafiles produced by BASEPROG V1.0 and PGM800 V2.01 are still compatible with PGM800 V2.21.

8.4 PGM800Win V1.0

PGM800Win V1.0 is different in concept from DOS versions of PGM800 in that it is Windows[1] driven. It includes many new and improved features over DOS versions of PGM800.

Major changes are outlined below:

- The Windows environment makes data entry and editing significantly easier.
- Includes several new radio models which are not programmable with DOS versions of PGM800.
- Out of range frequencies will result in warning messages and will not be accepted for entry into the standard library module. User defined modules can be created, allowing variation from the standard library module.
- Channel numbers default to 0-127 to match the EPROM memory locations, however the user can change this setting so that the channel numbers run from 1-128 to suit his / her particular needs.

1. Windows is a registered trademark of Microsoft Corporation.

Note: The datafiles produced by BASEPROG V1.0 and all DOS versions of PGM800 are still compatible with PGM800Win V1.0.

9 Technical Instructions

From time to time Technical Instructions (TIs) are issued by the Radio Infrastructure Engineering Division of Tait Electronics. These TIs may be used to update equipment or information, or to meet specific operational requirements.

Printed below is a list of TIs applicable to T800 and T850 Series equipment. You may wish to file a copy of each TI in this Section for your own reference.

TI No.	Title	Date
346D	T800-02 CTCSS encoder / decoder	07 / 11 / 94
356D	T800-07 multichannel memory PCB	22 / 03 / 94
358	T807 / 808 remote sensing of output voltage	10 / 06 / 91
365	T807 / 808 improved earthing for noise interference suppression	29 / 07 / 91
373A	T800-30 / 35 DFSK modulator PCB	16 / 11 / 94
403	T800 group delay	07 / 11 / 94
416B	T800 Series VCO trimmer replacement	06 / 09 / 94
418	T800 Selcall: T800 Sigtec S1530 installation	03 / 11 / 95
422	T800 Series: Rx de-sensing by auxiliary boards	23 / 08 / 95
431	T800 Series: Pre-tinning of power transistor tabs	23 / 04 / 96

Part B T855 Receiver

This part of the manual is divided into six sections, as listed below. There is a detailed table of contents at the start of each section.

Section	Title
1	General Information
2	Circuit Operation
3	Initial Tuning & Adjustment
4	Functional Testing
5	Fault Finding
6	PCB Information

1 T855 General Information

This section provides a brief description of the T855 receiver, along with detailed specifications and a list of types available.

The following topics are covered in this section.

1.1 Introduction

The T855 is a high performance FM base station receiver designed for single or multichannel operation in the 400 to 530MHz frequency range.

The receiver is a dual conversion superhet with a synthesised local oscillator. The first IF is 45MHz, allowing exceptionally high spurious signal rejection to be achieved in the receiver front end. The second IF section (455kHz) combines amplitude limiting, detection and audio pre-amplification within a single integrated circuit. It also drives carrier and noise level detectors for signal strength indication and gating the audio output.

The audio section output can be adjusted to deliver >+10dBm to a 600 ohm balanced output, and 1W to a local monitor speaker. A flat or de-emphasised audio response is link selectable.

The synthesiser frequency is programmed via an EPROM which is attached to a separate plug-in memory board. A DIP switch on the memory PCB allows fast single channel selection from a multichannel programmed EPROM, but for true multichannel capability the EPROM must be addressed separately via an additional D-range plug at the rear of the set.

All components except those on the VCO and memory boards are mounted on a single PCB. This is secured to a die-cast chassis which is divided into compartments to individually shield each section of circuitry. Access to both sides of the main PCB is obtained by removing each of the two chassis lids. There is provision within the chassis to mount small option PCBs.

The front panel controls include gate sensitivity, line level, monitor volume and a mute disable switch. This switch disables the mute (squelch) signal to the monitor amplifier as an aid to servicing.

1.2 Specifications

1.2.1 Introduction

The performance figures given are minimum figures, unless otherwise indicated, for equipment tuned with the maximum switching band and operating at standard room temperature (+22°C to +28°C).

Where applicable, the test methods used to obtain the following performance figures are those described in the EIA specification. However, there are several parameters for which performance according to the CEPT specification is given.

Details of test methods and the conditions which apply for Type Approval testing in all countries can be obtained from Tait Electronics Ltd.

1.2.2 General

Frequency Range	.. 400-530MHz
Type	.. dual conversion superheterodyne
Frequency Increment	.. 6.25 or 12.5kHz
Switching Range	.. 5MHz
Number Of Channels:	
Standard	.. 1
Optional .	.. 8
Internally Selectable	.. 128
Supply Voltage:	
Operating Voltage	.. 10.8 to 16V DC
Standard Test Voltage	.. 13.8V DC
Polarity	.. negative earth only
Polarity Protection	.. crowbar diode
Supply Current:	
Standby	.. 300mA
Full Audio	.. 700mA
Input Impedance	.. 50 ohms
Operating Temperature Range	.. -30°C to +60°C
Frequency Stability:	
Standard Version	.. ±2.5ppm, -30°C to +60°C
High Stability Version	.. ±2ppm, -10°C to +60°C
Very High Stability Option	.. ±1ppm, 0°C to +60°C

Received Signal Strength Indicator(RSSI) (optional)	..	-115dBm to -70dBm, 0 to 5V at 10dB/V

Dimensions:

Height	..	191mm
Width	..	60mm
Length	..	322mm

Weight	..	2.2kg

1.2.3 RF Section

IF Amplifiers:

Frequencies	..	45MHz and 455kHz
Bandwidths-		
Narrow Band (NB)	..	7.5kHz
Wide Band (WB)	..	15kHz
Ultra-Wide Band (UWB)	..	30kHz

Sensitivity:

Single Channel (NB & WB)	..	-117dBm
Single Channel(UWB)	..	-114dBm
Bandspread (12dB Sinad) (NB & WB)	..	-115dBm
Bandspread (12dB Sinad) (UWB)	..	-112dBm

Signal+Noise To Noise Ratio:

RF Level -107dBm	..	30dB
RF Level -83dBm (NB)	..	50dB CEPT (typical)
RF Level -57dBm (WB)	..	55dB EIA (typical)

Selectivity:

Narrow Band (±12.5kHz)	..	85dB CEPT (typical)
Wide Band (±25kHz)	..	90dB

Offset Selectivity (Canada only)	..	20dB
Spurious Response Attenuation	..	100dB

Intermodulation Response Attenuation:

Narrow Band	..	80dB CEPT (typical)
Wide Band	..	85dB EIA

Blocking	..	100dB
Co-channel Rejection	..	6dB
Amplitude Characteristic	..	3dB

Spurious Emissions:

Conducted	.. -90dBm to 4GHz
Radiated	.. -57dBm to 1GHz -47dBm to 4GHz

1.2.4 Audio Section

Outputs Available	.. line and monitor
Frequency Response	.. flat or de-emphasised (link selectable)

Flat Response (15kHz IF BW):

Bandwidth	.. 67 to 3400Hz
Response	.. within +1, -2dB of output level at 1kHz

De-emphasised Response:

CTCSS Band-

Bandwidth	.. 67 to 260Hz
Response	.. within +1, -2dB of output level at 100Hz

Speech Band-

Bandwidth	.. 300 to 3400Hz
Response	.. within +1, -3dB of a 6dB/octave de-emphasis characteristic (ref. 1kHz)

Line Output:

Power	.. adjustable to >+10dBm
Load Impedance	.. 600 ohms
Distortion- (@ -70dBm signal level, links set to de-emphasis)	
WB and NB	.. ≤2%
(@ -70dBm signal level, links set to flat)	
WB	.. ≤2%
NB	.. ≤4%

Monitor Output:

Power	.. 1W
Speaker Impedance	.. 3.5 ohms
Distortion- (@ -70dBm signal level, links set to de-emphasis)	.. ≤3%

Mute Operation (Gate)

Systems Available	.. noise mute and RSSI mute

Noise Mute:

Operating Range	.. 6-20dB sinad
Hysteresis	.. 1.5 to 6dB
Threshold	.. adjustable to -105dBm
Opening Time	.. 20ms
Closing Time	.. 50ms

RSSI Mute (Optional):

Operating Range	.. -115 to -70dBm
Hysteresis	.. 2 to 10dB
Opening Time	.. 5ms
Closing Time	.. 50ms

1.3 Product Codes

Frequency Range (MHz)		400-440					
IF Bandwidth (kHz)		7.5		12	15		30
TCXO	±2.5ppm -30°C to +60°C			●	●		●
	±2ppm -10°C to +60°C	●					
	±1ppm 0°C to +60°C		●			●	
Receiver Type: T855-		15	17	13	10	12	14

Frequency Range (MHz)		440-480					
IF Bandwidth (kHz)		7.5		12	15		30
TCXO	±2.5ppm -30°C to +60°C			●	●		●
	±2ppm -10°C to +60°C	●					
	±1ppm 0°C to +60°C		●			●	
Receiver Type: T855-		25	27	23	20	22	24

Frequency Range (MHz)		480-530				
IF Bandwidth (kHz)		7.5		15		30
TCXO	±2.5ppm -30°C to +60°C			●		●
	±2ppm -10°C to +60°C	●				
	±1ppm 0°C to +60°C		●		●	
Receiver Type: T855-		35	37	30	32	34

2 T855 Circuit Operation

This section provides a basic description of the circuit operation of the T855 receiver.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

2.1 Introduction

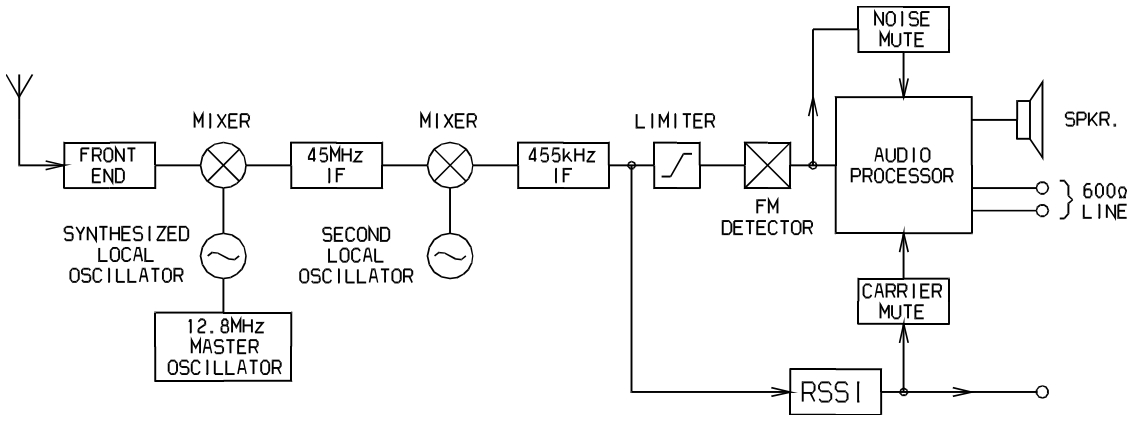


Figure 2.1 T855 High Level Block Diagram

The T855 receiver consists of a number of distinct stages:

- front end
- mixer
- synthesised local oscillator
- IF
- audio processor
- mute (squelch)
- regulator circuits
- received signal strength indicator (RSSI).

These stages are clearly identifiable in Figure 2.1. Refer to the circuit diagrams in Section 6 for further detail.

2.2 Receiver Front End

(Refer to the receiver and audio processor circuit diagrams in Section 6.)

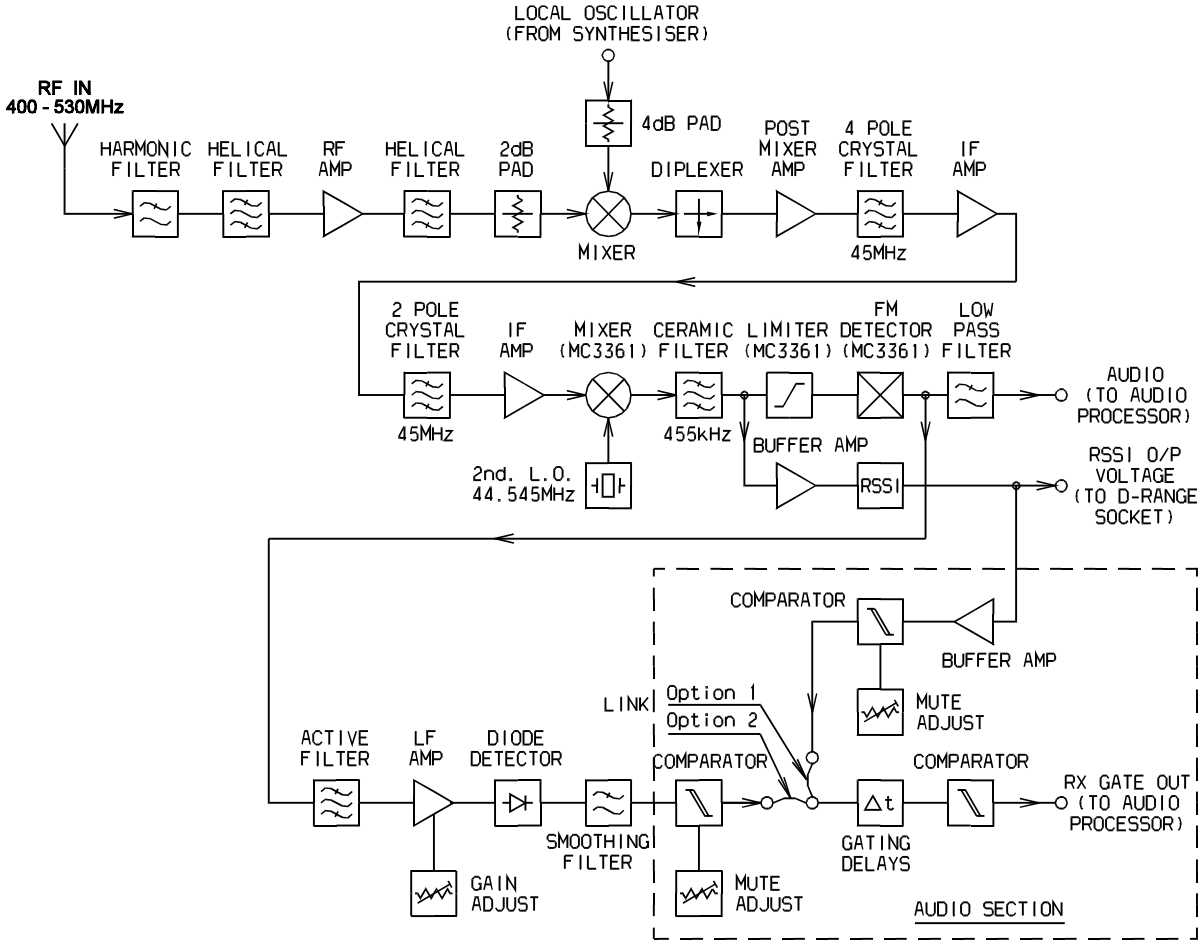


Figure 2.2 T855 Front End, IF and Mute Block Diagram

The incoming signal from the N-type antenna socket is fed through a 9-pole, low pass filter with a cut frequency of approximately 600MHz. This low loss filter (typically less than 0.5dB over 400-530MHz) provides excellent immunity to interference from high frequency signals.

The signal is then further filtered, using a high performance helical resonator doublet (FL300) which provides exceptional image rejection, before being amplified by approximately 8dB (Q303). The signal is then passed through a further helical filter doublet (FL301) before being presented to the mixer via a 2dB attenuator pad.

Each sub-block within the front end has been designed with 50 ohm terminations for ease of testing and fault finding. The overall gain from the antenna socket to the mixer input is approximately 2dB.

2.3 Mixer

(Refer to the receiver circuit diagram in Section 6 and Figure 2.2.)

IC301 is a high level mixer requiring a local oscillator (LO) drive level of +17dBm (nominal). The voltage controlled oscillator (VCO) generates a level of +20dBm (typical) and this is fed to the mixer via a 4dB attenuator pad. A diplexer terminates the IF port of the mixer in a good 50 ohms, thus preventing unnecessary intermodulation distortion.

2.4 IF Circuitry

(Refer to the receiver circuit diagram in Section 6 and Figure 2.2.)

Losses in the mixer are made up for in a tuned, common gate, post mixer amplifier (Q305). Several stages of amplification and filtering are employed in the IF circuitry. The first crystal filter is a 4-pole device (&XF300) which is matched into 50 ohms on both its input and output ports. This stage is followed by a common base amplifier (Q302) whose output is matched into a 2-pole crystal filter (&XF301). The signal is then amplified using a high gain MOSFET amplifier (Q304) before being mixed down to 455kHz with the second local oscillator (44.545MHz).

The 455kHz signal is filtered using a 6-pole ceramic filter (&XF302) before being limited and detected. Q306 provides a buffered 455kHz output for use with the optional RF level detector (RSSI).

The second IF mixer, limiter and detector is in a 16-pin IC (IC300). Quadrature detection is employed, using L316, and the recovered audio on pin 9 of IC300 is typically 1V p-p for 60% system deviation.

2.5 Noise Mute (Squelch)

(Refer to the receiver circuit diagram in Section 6 and Figure 2.2.)

The noise mute operates on the detected noise outside the audio bandwidth. The operational amplifier in IC300 is used as an active band pass filter centred on 70kHz to filter out audio components. The noise spectrum is then further amplified in a variable gain, two-stage amplifier (Q300 & Q301) with additional filtering. The noise is then rectified (D300) and filtered to produce a DC voltage proportional to the noise amplitude. The lowest average DC voltage corresponds to a high RF signal strength and the highest DC voltage corresponds to no signal at the RF input.

The rectified noise voltage is compared with a threshold voltage set up on RV100, the front panel mute potentiometer. Hysteresis is introduced by the feedback resistor (R106) to prevent the received message from being chopped when the average noise voltage is close to the threshold. R111 and R110 determine the mute opening and closing times. The mute control signal at pin 7 of IC100 is used to disable the speaker and line audio outputs. The speaker output can be separately enabled for test purposes by operating the front panel mute disable switch, SW100.

The mute control line is available on pad 101 (Rx gate out) for control of external circuitry. A high (9V) on pad 101 indicates that the audio is disabled and a low (0V) indicates that a signal above the mute threshold level is being received.

The audio can also be disabled using the "Rx-disable" inputs, pads 100 or 113, having connected the "Rx-disable" link between pins 1 & 2 of PL100. An adjustable time delay (RV101) is provided on these lines. In order to disable the audio, either pad must be pulled to 0V.

The red front panel LED (D102) indicates the status of the mute circuit. When a signal above the mute threshold is received, the LED is illuminated. An undedicated relay is provided (RL100) for transmitter keying or other functions and this can be operated from the mute line by linking PL102.

2.6 Carrier Mute

(Refer to the receiver circuit diagram in Section 6 and Figure 2.2.)

A high level carrier mute facility is also available when the RSSI option PCB is fitted. The RSSI (refer to Section 2.10) provides a DC voltage proportional to the signal strength. This voltage is compared with a preset level, set up on RV104, and may be linked into the mute timing circuit using PL104. PL104 selects either the noise mute or the carrier mute. From this point both mute circuits operate in the same manner, using common circuitry.

2.7 Audio Processor

(Refer to the audio processor circuit diagram in Section 6.)

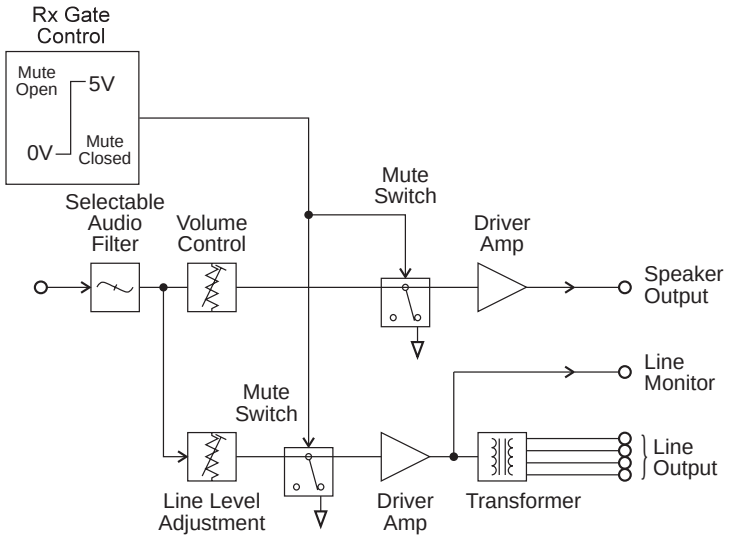


Figure 2.3 T855 Audio Processor Block Diagram

The recovered audio on pin 9 of IC300 is processed in a third order elliptic active filter to give the required response. Linking (PL101 & PL103) is available to give either a flat or de-emphasised audio response, with de-emphasis giving a 6dB / octave roll off. The output of IC101 is split to provide separate paths for the speaker and line outputs.

The speaker volume is set using the front panel volume knob (RV103) and the line level is set using the recessed potentiometer (RV102). The signals are passed to audio drive amplifiers IC102 and IC103. Under muted conditions the inputs of these amplifiers are shunted to ground via transistors Q105 and Q106 respectively.

The audio output of IC102 has a DC component which is removed by C122, and this then drives a speaker directly. The output of IC103 is fed into a line transformer to provide a balanced 2-wire or 4-wire, 600 ohm output.

2.8 Power Supply And Regulator

(Refer to the regulator circuit diagram in Section 6.)

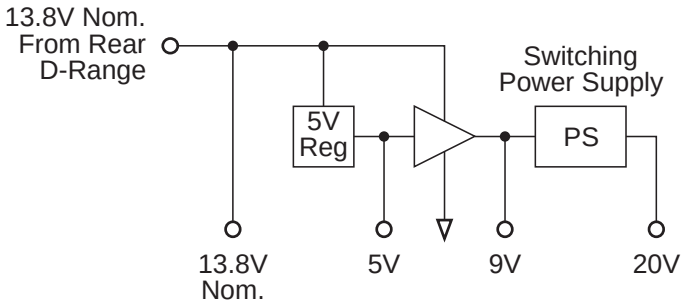


Figure 2.4 T855 Power Supply And Regulator Block Diagram

The T855 is designed to operate off a 10.8-16V DC supply (13.8V nominal). A 5.3V regulator (IC202) runs directly off the 13.8V rail, driving much of the synthesiser circuitry. This is used as the reference for a DC amplifier (IC201, Q200 & Q201) which provides a medium current capability 9V supply. A switching power supply, based on Q202 and Q203, runs off the 9V supply and provides a low current capability +20V supply. This is used to drive the synthesiser loop filter (IC4), giving a VCO control voltage of up to 20V. The 13.8V supply drives both output audio amplifiers without additional regulation.

2.9 Synthesised Local Oscillator

(Refer to the synthesiser circuit diagram in Section 6 and the VCO circuit diagram in Part E.)

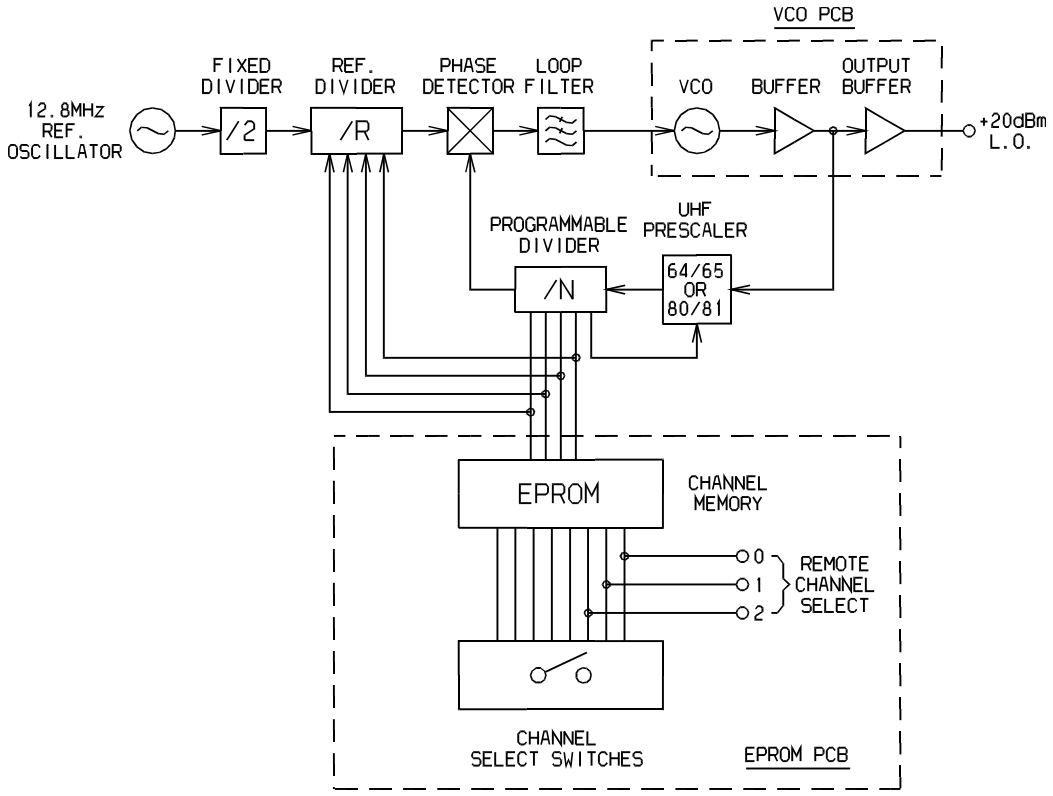


Figure 2.5 T855 Synthesiser Block Diagram

The synthesiser employs a phase-locked loop (PLL) to lock a VCO to a given reference frequency.

A reference oscillator at 12.8MHz (=IC2) is buffered, divided by two and then divided down to 12.5kHz or 6.25kHz within the synthesiser IC (IC3). A buffered output of the VCO is fed to a programmable divider, comprising a UHF prescaler (&IC1) and a divider internal to IC3. These two signals are applied to the phase detectors in IC3. A digital phase detector PDB (IC3 pin 2) provides rapid coarse tuning of the VCO until the phase error is within the range of the high gain sample and hold detector PDA (IC3 pin 1). The phase detector outputs are passed through an active loop filter (IC4a) which produces a DC voltage between 0 and 20V to tune the VCO. This VCO control line is further filtered to attenuate noise and spurs. As the control line voltage increases, the VCO frequency also increases.

The division ratio of the programmable divider is stored within EPROM memory (IC1). Up to 128 frequencies can be stored within the memory and are addressable using the internal DIP switches. Three of the address lines are also available for external frequency control via an extra D-range connector at the rear of the chassis. A change of state of any of these three lines (CH SEL 0-2) commences a programming cycle during which the frequency data in the EPROM is down-loaded to a divider within IC3. 32 bits of data are loaded in eight 4-bit words.

The VCO transistor (Q1) operates in common source and uses a transmission line resonator (TL1). The transmission line is used in a two port configuration with varicaps

positioned at one end. The VCO control voltage from the loop filter (IC4a) is applied to the varicaps (D1 & D2) to facilitate tuning. The VCO output is coupled into a cascode amplifier stage (Q2, Q3) which gives a +10dBm (nominal) output. This output is used to drive the divider buffer for the UHF prescaler which is either a divide by 64/65 for 25kHz channel increments or divide by 80/81 for 12.5kHz channel increments. Further amplification in Q5 brings the output drive level to +20dBm to drive the mixer.

The VCO frequency spans from either 355-395MHz, 395-435MHz or 435-475MHz according to version. The VCO is tuned to 45MHz below the desired receive frequency to produce a 45MHz IF signal on the output of the mixer.

2.10 Received Signal Strength Indicator (RSSI)

(Refer to the receiver circuit diagram in Section 6.)

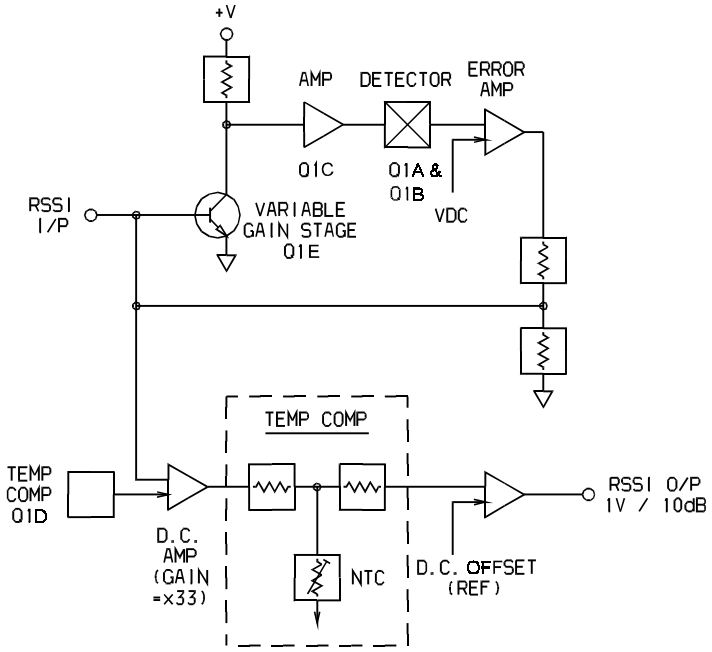


Figure 2.6 T855 RSSI Block Diagram

The RSSI option PCB plugs directly into the main PCB (support circuitry being fitted as standard). It is fitted to the T855 whenever receiver signal strength monitoring is required, e.g. trunking or voting. Its function is to provide a DC voltage proportional to the signal level at the receiver input.

The variable gain stage (Q1A) is a common emitter amplifier with its emitter grounded and the AGC control loop voltage applied to its base. Since the AGC loop will maintain a constant signal level at the collector, the gain of Q1 must be proportional to the incoming 455kHz signal level. The gain of Q1 is linearly proportional to its collector current which itself is exponentially related to the base-emitter voltage. Thus there is a logarithmic relationship between the base-emitter voltage and the gain. The circuit therefore produces a feedback voltage, and an output voltage, logarithmically related to the RF input signal.

The AGC loop is followed by a DC amplifier which provides level shifting, temperature

compensation and gain to give a nominal 1V/10dB at the RSSI output. RV301 on the main PCB is used to set the RSSI voltage to a fixed value at a given RF input signal strength.

2.11 High Sensitivity Preamplifier

(Refer to the preamplifier circuit diagram in Section 6. Refer to fitting instructions in Section A7)

The high sensitivity preamplifier option PCB fits onto the main PCB. It is a single stage broad band low noise preamplifier offering a 3dB improvement in sensitivity with a minimum degradation of other parameters. All performance figures still meet the ETS 300 086:1991 specifications for base stations.

The amplifier fits inside the receiver between the aerial input filter and the first helical filter. Power is derived from the regulated +9v supply.

A table of typical results is given below.

Amplifier Performance	Unmodified T855	T855 With Preamp Fitted	T855 With Modified Preamp Fitted (See Note)
De-emphasised Sensitivity	-117dBm @ 12dB Sinad	-119dBm @ 12dB Sinad	-121dBm @ 12dB Sinad
Flat Audio Sensitivity (CCITT Weighted)	-107 dBm @ 20dB Sinad	-110dBm @ 20dB Sinad	-113dBm @ 20dB Sinad
De-emphasised Selectivity	85dB	83dB	81dB
De-emphasised Intermodulation	80dB	76dB	72dB

Note: A modified preamplifier is one which has been fitted with a 100P 0805 chip capacitor across the 10ohm emitter resistor R5 in order to increase the gain.

3 T855 Initial Tuning & Adjustment

The following section describes the full tuning and adjustment procedure and provides information on:

- channel programming
- channel selection
- selecting required audio links
- synthesiser alignment
- receiver front end and IF alignment
- noise mute adjustment
- setting line output level
- setting monitor output level
- setting up the RSSI
- carrier level mute adjustment.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

3.1 Channel Programming

Up to 128 channel frequencies can be stored in the EPROM memory (IC1). Each channel can be addressed using the bank of 8 switches (SW1). The most significant bit of this switch is set according to the type of EPROM fitted:

ON = 27C16
OFF = 27C64

Up to 8 channels may be addressed externally when the optional extra rear D-range connector is fitted.

Programming is accomplished by using an IBM[1] PC, a PROM programmer and the PGM800 software package. For a full description of the programming procedure, refer to the T800 Programming Software User's Manual.

3.2 DIP Switch Codes For Channel Addresses

The PGM800 software used to programme the EPROM will present the user with a DIP switch code for each channel address (refer to Section 3.12). For example, channel 125 will be assigned a switch code of X0000011 (1-128 channel numbering), in which case the switches should be set as shown in Figure 3.1, i.e. **0**0000011.

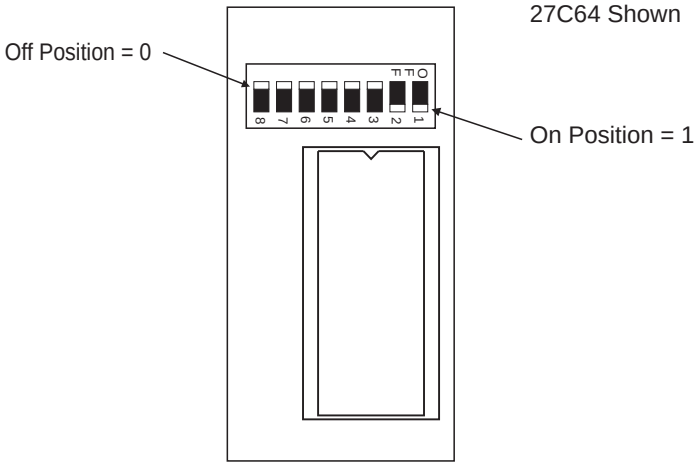


Figure 3.1 Channel DIP Switch Setting

Note 1: For remote multichannel applications using the T800-07 multichannel memory PCB, the DIP switch is not used and should have the first 3 least significant bits (1-3) in the ***off*** position. The next 4 bits (4-7) should be ***on***, while the most significant bit (8) is selected according to the EPROM used (refer to Section 3.1). This will allow the existing CHSEL lines to be used to select up to 8 channels. It is possible to address blocks of 8 channels throughout the 128 channel EPROM capacity by switching bits 4 to 7 on the DIP switch.

Note 2: Alternatively, all 128 channels may be remotely addressed on the T800-07, but bits 1-7 of the DIP switch should be in the ***off*** position. In this case it will be necessary to drill a hole to route the 7 channel select lines from the synthesiser compartment to the D-range connector. Later models have an access slot between these two compartments.

1. IBM is a registered trademark of International Business Machines.

3.3 Audio Processor Links

3.3.1 General

The links available for various circuit block options are listed by function as follows:

Plug	Link	Function
PL100	1 - 2 2 - 3	Rx disable link not connected
PL101	1 - 2 2 - 3	flat response de-emphasised response
PL102	1 - 2 2 - 3	relay link not connected
PL103	1 - 2 2 - 3	de-emphasised response flat response
PL104	1 - 2 2 - 3	noise mute carrier mute
PL105*	1 - 2 2 - 3 or 3 - 4 4 - 5	bypass high pass filter 300Hz high pass filter in circuit audio input via audio 2 or 3
PL106	1 - 2 2 - 3	audio input via audio 2 pad audio input via audio 3 pad

*Refer to Section 3.3.2 for further details.

The required options should be selected before alignment of the receiver is attempted.

3.3.2 Audio Processor Linking Details For CTCSS

The audio processor links must be appropriately connected for the CTCSS option used, as shown in the table below.

CTCSS Option	PL105	PL106
standard, no CTCSS	2 - 3	2 - 3
CTCSS tone + speech to line output	1 - 2	2 - 3
internal CTCSS	4 - 5	2 - 3
external CTCSS	4 - 5	1 - 2

The conditions stated in the above table are defined as follows:

- standard, no CTCSS
  - CTCSS or other sub-audio signalling used
  - audio bandwidth 300Hz to 3kHz
  - hum & noise -55dB
- CTCSS tone + speech to line output
  - tone and speech transmitted down 600 ohm line
  - audio bandwidth 10Hz to 3kHz
  - hum & noise -45dB
  - decoding performed in exciter / transmitter
- internal CTCSS
  - decoding performed in receiver by T800-02 or similar
  - re-encoded tone output via "audio 2", speech sent down 600 ohm line
- external CTCSS
  - decoding performed through the receiver (but externally) by T310-05 or similar
  - speech injected back into receiver via "audio 2" and sent down 600 ohm line

3.4 Test Equipment Set-up

Set up the test equipment as shown below:

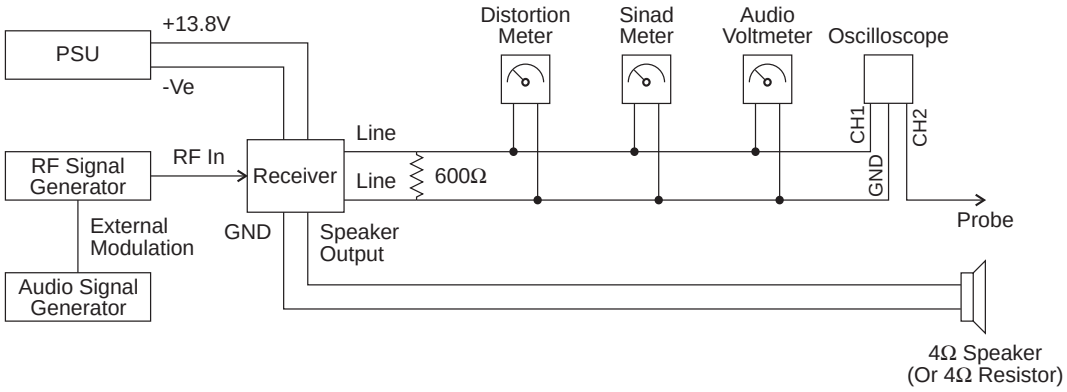


Figure 3.2 Test Equipment Set-up

3.5 Synthesiser Alignment

- Ensure that the EPROM (IC1) has been programmed with the required frequencies using PGM800 software.

- **Single Channel** Select a channel on the EPROM PCB DIP switch.

  Multichannel Select the middle channel via the EPROM PCB DIP switch.

  If there is no channel near the middle of the required switching range, it may be necessary to programme an additional channel specifically for alignment purposes.

- Connect a high impedance voltmeter to the long lead of L1 in the VCO (this measures the synthesiser loop voltage).

- **Single Channel** Tune VCO trimmer C6 for a synthesiser loop voltage of 10V.

  Multichannel Tune VCO trimmer C6 for a synthesiser loop voltage of 10V on the middle channel.

  All channels should lie within the upper and lower limits of 16V and 3V respectively.

  Do not attempt to programme channels with a greater frequency separation than the specified switching range of 5MHz.

- The TCXO (=IC2) output frequency should be trimmed when the IF is tuned - refer to Section 3.6.

3.6 Alignment Of Receiver Front End And IF

Note 1: In this and following sections deviation settings are given first for wide band sets, followed by settings in brackets for narrow band [ ] and ultra-wide band( ) sets.

Note 2: Refer to Section 3.8 for the alignment procedure for ultra-wide band receivers.

Align the synthesiser as instructed in Section 3.5. For multichannel operation the receiver should be aligned on a frequency in the middle of the required band.

Inject a strong on-channel RF signal with 3kHz deviation [1.5kHz] at 1kHz into the antenna socket and adjust the helicals (FL300 & FL301) to give best sinad.

Continually decrease the RF level to maintain 12dB sinad.

Roughly tune IF coils L313, L301, L304, L306, L308, L309, L314 and L316 for best sinad.

While maintaining a low level unmodulated RF input to the receiver, loosely couple into the first IF an additional high level signal at 45MHz - a beat note will be heard.

Trim the synthesiser TCXO (=IC2) for zero beat.

While maintaining the low level RF input to the receiver, loosely couple into the second IF an additional high level signal at 455kHz - a beat note will be heard.

Tune L314 for zero beat.

Readjust the front end helicals (FL300 & FL301) to give best sinad.

Change the RF signal level to -75dBm and modulate with 3kHz deviation [1.5kHz] at 1kHz.

Connect an oscilloscope probe to SK300/3 (RSSI 455kHz input and connect plugs PL101 and PL103 to give a flat audio response (refer to Section 3.3).

Readjust IF coils L313, L301, L304, L306, L308 and L309 to give a maximum amplitude response on the oscilloscope with minimal amplitude modulation.

Further adjust these coils along with L316 for minimum audio distortion, ensuring that the 455kHz level (on the oscilloscope) does not fall significantly.

Check that the distortion reading is less than 2% [2%] (links set to de-emphasised) or 2% [4%] (links set to flat).

Reconnect plugs PL101 and PL103 to give a de-emphasised audio response (if required) and reduce the RF level until 12dB sinad is reached. The receiver sensitivity should be better than -117dBm (de-emphasised), assuming that the audio levels are not being overdriven (refer to Section 3.9).

3.7 Alignment Of Ultra-Wide Band Receivers (30kHz IF BW)

The 30kHz IF requires a different alignment procedure to achieve minimum distortion.

Inject a strong on-channel RF signal with 4kHz deviation at 1kHz into the antenna socket and adjust helicals FL300 and FL301 to give best sinad.

Continually decrease the RF level to maintain 12dB sinad.

Roughly tune IF coils L313, L301, L304, L306, L308, L309, L314 and L316 for best sinad.

While maintaining a low level unmodulated RF input to the receiver, loosely couple into the first IF an additional high level signal at 45MHz - a beat note will be heard.

Trim the synthesiser TCXO (=IC2) for zero beat.

While maintaining a low level RF input to the receiver, loosely couple into the second IF an additional high level signal at 455kHz - a beat note will be heard.

Tune L314 for zero beat.

Readjust the front end helicals (FL300 & FL301) to give best sinad.

Apply an on-channel RF signal modulated at 10Hz with 30kHz deviation at an amplitude of -80dBm.

With the oscilloscope switched to "X-Y" connect the modulating 10Hz audio signal to the "X" input and apply the 455kHz RSSI input (SK300/3) via a suitable RF probe to the "Y" input; also connect an audio voltmeter to SK300/3 with a suitable RF probe.

Note: The "X" input should be DC coupled.

The oscilloscope will display the amplitude response of the IF filters.

Readjust IF coils L313, L301, L304, L306, L308 & L309 to give a maximum amplitude rounded top trace on the oscilloscope, then fine adjust to give a maximum voltage on the audio voltmeter, ensuring that the shape of the IF trace remains rounded and without excessive ripple.

Restore the equipment to the standard test set-up.

Change the modulating signal to give 4kHz deviation at 1kHz at an RF level of -60dBm.

Set the audio links to give a flat response.

Adjust L316 for minimum audio distortion.

Vary the modulating frequency between 300Hz and 8kHz. The audio distortion should be better than 3%.

3.8 Noise Mute Adjustment

Connect pins 1 & 2 of PL104 to enable the noise mute.

Align the receiver as instructed in Section 3.5 and Section 3.6 or Section 3.7.

Set the RF level to -105dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Set RV100 (gate sensitivity) fully anticlockwise.

Adjust RV300 to close the mute (if necessary turn off the RF signal and then turn it on again).

Rotate RV300 anticlockwise until the mute just opens.

Once the mute has been set up as described above, RV100 (gate sensitivity) on the front panel may be adjusted for the required opening sinad.

3.9 Audio Processor

3.9.1 Line Amplifier Output

Apply an on-channel signal from the RF generator at a level of -70dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Adjust the front panel line level pot. (RV102) to give an output of +10dBm on the 600 ohm line.

Check for any clipping or distortion on the oscilloscope.

Set the line level to the required output level.

3.9.2 Monitor Amplifier Output (Speaker Output)

Adjust the front panel monitor volume control (RV103) to give an output of 2V rms (5.6V peak to peak) into a 3.5 ohm resistive load.

Check for any clipping or distortion on the oscilloscope.

Switch to a 3.5 ohm speaker load and adjust RV103 to the required level.

3.10 T800-04 RSSI

The RSSI is an optional PCB giving signal strength monitoring and high level mute facilities to the basic receiver

Ensure the T800-04 PCB is fitted in the main board sockets (SK300 & SK301).

Align the receiver as instructed in Section 3.5 and Section 3.6 or Section 3.7.

Apply an on-channel signal from the RF generator at a level of -110dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Adjust RV301 to give 2.0V RSSI output on pin 5 on the rear D-range connector when measured with a high impedance DMM.

3.11 Carrier Level Mute

Connect pins 2 and 3 of PL104 to enable the carrier mute and disable the noise mute.

Apply an on-channel signal from the RF generator at the required mute opening level with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Adjust the carrier mute pot. (RV104) to close the mute (if necessary, momentarily turn off the RF), then slowly adjust it until the mute just opens. The mute should now open at this preset level.

3.12 PGM800 DIP Switch Codes

PGM800 channel numbers can range from 0-127 or 1-128, depending on which version you are using:

Version	Channel Numbers
V2 and earlier	0-127
V2.01	1-128
V2.21 and later PGM800Win	0-127 or 1-128

The following sections provide DIP switch code lists for both numbering systems.

3.12.1 DIP Switch Codes For Channel Numbers 0-127

0 = off 1 = on

Channel	DIP Code	Channel	DIP Code	Channel	DIP Code
0	X1111111	45	X1010010	90	X0100101
1	X1111110	46	X1010001	91	X0100100
2	X1111101	47	X1010000	92	X0100011
3	X1111100	48	X1001111	93	X0100010
4	X1111011	49	X1001110	94	X0100001
5	X1111010	50	X1001101	95	X0100000
6	X1111001	51	X1001100	96	X0011111
7	X1111000	52	X1001011	97	X0011110
8	X1110111	53	X1001010	98	X0011101
9	X1110110	54	X1001001	99	X0011100
10	X1110101	55	X1001000	100	X0011011
11	X1110100	56	X1000111	101	X0011010
12	X1110011	57	X1000110	102	X0011001
13	X1110010	58	X1000101	103	X0011000
14	X1110001	59	X1000100	104	X0010111
15	X1110000	60	X1000011	105	X0010110
16	X1101111	61	X1000010	106	X0010101
17	X1101110	62	X1000001	107	X0010100
18	X1101101	63	X1000000	108	X0010011
19	X1101100	64	X0111111	109	X0010010
20	X1101011	65	X0111110	110	X0010001
21	X1101010	66	X0111101	111	X0010000
22	X1101001	67	X0111100	112	X0001111
23	X1101000	68	X0111011	113	X0001110
24	X1100111	69	X0111010	114	X0001101
25	X1100110	70	X0111001	115	X0001100
26	X1100101	71	X0111000	116	X0001011
27	X1100100	72	X0110111	117	X0001010
28	X1100011	73	X0110110	118	X0001001
29	X1100010	74	X0110101	119	X0001000
30	X1100001	75	X0110100	120	X0000111
31	X1100000	76	X0110011	121	X0000110
32	X1011111	77	X0110010	122	X0000101
33	X1011110	78	X0110001	123	X0000100
34	X1011101	79	X0110000	124	X0000011
35	X1011100	80	X0101111	125	X0000010
36	X1011011	81	X0101110	126	X0000001
37	X1011010	82	X0101101	127	X0000000
38	X1011001	83	X0101100		
39	X1011000	84	X0101011		
40	X1010111	85	X0101010		
41	X1010110	86	X0101001		
42	X1010101	87	X0101000		
43	X1010100	88	X0100111		
44	X1010011	89	X0100110		

3.12.2 DIP Switch Codes For Channel Numbers 1-128

0 = off 1 = on

Channel	DIP Code	Channel	DIP Code	Channel	DIP Code
1	X1111111	46	X1010010	91	X0100101
2	X1111110	47	X1010001	92	X0100100
3	X1111101	48	X1010000	93	X0100011
4	X1111100	49	X1001111	94	X0100010
5	X1111011	50	X1001110	95	X0100001
6	X1111010	51	X1001101	96	X0100000
7	X1111001	52	X1001100	97	X0011111
8	X1111000	53	X1001011	98	X0011110
9	X1110111	54	X1001010	99	X0011101
10	X1110110	55	X1001001	100	X0011100
11	X1110101	56	X1001000	101	X0011011
12	X1110100	57	X1000111	102	X0011010
13	X1110011	58	X1000110	103	X0011001
14	X1110010	59	X1000101	104	X0011000
15	X1110001	60	X1000100	105	X0010111
16	X1110000	61	X1000011	106	X0010110
17	X1101111	62	X1000010	107	X0010101
18	X1101110	63	X1000001	108	X0010100
19	X1101101	64	X1000000	109	X0010011
20	X1101100	65	X0111111	110	X0010010
21	X1101011	66	X0111110	111	X0010001
22	X1101010	67	X0111101	112	X0010000
23	X1101001	68	X0111100	113	X0001111
24	X1101000	69	X0111011	114	X0001110
25	X1100111	70	X0111010	115	X0001101
26	X1100110	71	X0111001	116	X0001100
27	X1100101	72	X0111000	117	X0001011
28	X1100100	73	X0110111	118	X0001010
29	X1100011	74	X0110110	119	X0001001
30	X1100010	75	X0110101	120	X0001000
31	X1100001	76	X0110100	121	X0000111
32	X1100000	77	X0110011	122	X0000110
33	X1011111	78	X0110010	123	X0000101
34	X1011110	79	X0110001	124	X0000100
35	X1011101	80	X0110000	125	X0000011
36	X1011100	81	X0101111	126	X0000010
37	X1011011	82	X0101110	127	X0000001
38	X1011010	83	X0101101	128	X0000000
39	X1011001	84	X0101100		
40	X1011000	85	X0101011		
41	X1010111	86	X0101010		
42	X1010110	87	X0101001		
43	X1010101	88	X0101000		
44	X1010100	89	X0100111		
45	X1010011	90	X0100110		

4 T855 Functional Testing

The following test procedures will confirm that the T855 has been tuned and adjusted correctly and is fully operational.

Note: In this and following sections deviation settings are given first for wide band sets, followed by settings in brackets for narrow band [ ] and ultra-wide band ( ) sets.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

4.1 Current Consumption

Connect the T855 to a 13.8V power supply.

Rotate the front panel mute pot. anticlockwise until the mute LED is extinguished.

Turn the front panel "Monitor Mute" switch to the ***on*** position.

Check that the current in the 13.8V power cable is less than 300mA.

Rotate the mute pot. clockwise until the mute LED is lit.

Rotate the line level adjuster and the volume control to give maximum outputs.

Check that the current is less than 700mA.

4.2 Sensitivity

Apply an on-channel signal from the RF generator with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Adjust the RF level to give 12dB audio sinad.

Check that the sensitivity is better than -117dBm (UWB -114dBm).

4.3 Switching Band (Multichannel Only)

Apply an on-channel signal from the RF generator at various frequencies within the 5MHz front end bandwidth, corresponding to pre-programmed channels.

Measure the sensitivity at each frequency as described in Section 4.2.

Ensure that the sensitivity is better than -115dBm (UWB -112dBm) across the whole band.

4.4 Audio Distortion

The level of distortion measured at the line output gives a good indication of the accuracy of the IF alignment.

Apply an accurate on-channel signal from the RF generator at a level of -70dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Adjust the front panel line level control (RV102) to give +10dBm into 600 ohms.

Check that the distortion is approximately 1% THD.

Note: For a de-emphasised response, the distortion should always be better than 2%.

Adjust the front panel monitor volume control (RV103) to give 2V rms into a 4 ohm resistive load.

Check that the distortion at the monitor output is better than 3% THD.

4.5 Ultimate Signal-To-Noise Ratio

Apply a signal from the RF generator at a level of -57dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Select de-emphasis on the links provided in the audio processor (refer to Section 3.3), and link pins 2 & 3 of PL105 to include the 300Hz filter.

Adjust RV102 (line level) to provide +10dBm output.

Switch off the modulation, checking that the residual noise is lower than -45dBm at the line output (this corresponds to S/N of 55dB and is in accordance with EIA measurement conditions).

Note: The measurement can be made without the 300Hz high pass filter but will give a result which is 10dB worse.

4.6 De-emphasised Audio Frequency Response

Set RV102 (line level) to provide 0dBm output at 1kHz modulating frequency.

Sweep the modulating frequency, checking that the response closely follows that shown in Figure 4.1 - the limits should not be exceeded.

Note: The curve is shown for wide band sets with the 300Hz high pass filter linked out (refer to Section 3.3.1). The narrow band response is similar, but rolls off earlier at 2.5kHz.

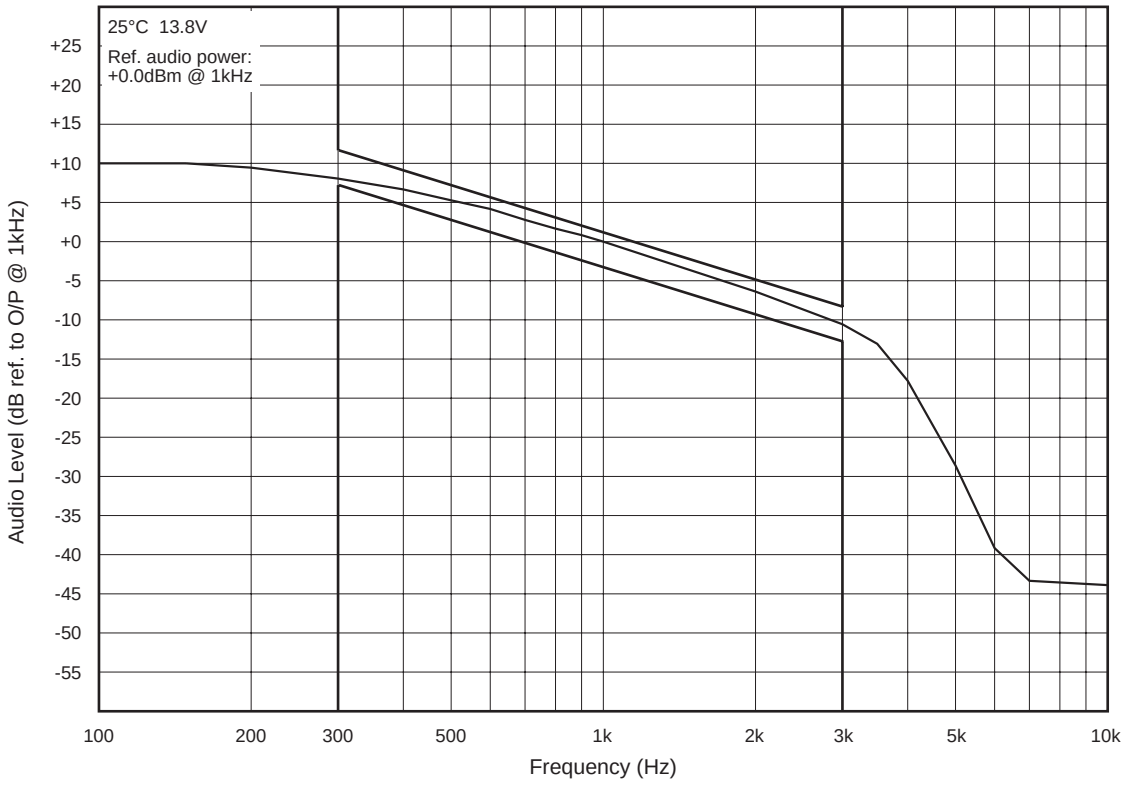


Figure 4.1 De-emphasised Audio Frequency Response

4.7 Noise Mute (If Linked In)

Rotate the front panel mute pot. (RV100) fully anticlockwise.

Apply an on-channel signal from the RF generator at a level of -110dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Increase the RF level in 1dB steps, checking that the mute opens for an RF input level of approximately -105dBm.

Turn the RF off and check that the mute closes.

Rotate the mute pot. clockwise and check that the mute opens.

Reset the mute pot. to give the required opening sinad.

4.8 RSSI (If Fitted)

Apply an on-channel signal from the RF generator at a level of -110dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Using a high impedance DMM, check that the RSSI output voltage on pin 5 of the rear D-range connector is 2V (nominal).

Vary the RF level in 5dB steps and check that the RSSI output voltage changes at a rate of approximately 0.5V/5dB over the range of -115dBm to -70dBm (refer to Figure 4.2 for RSSI voltage vs signal strength).

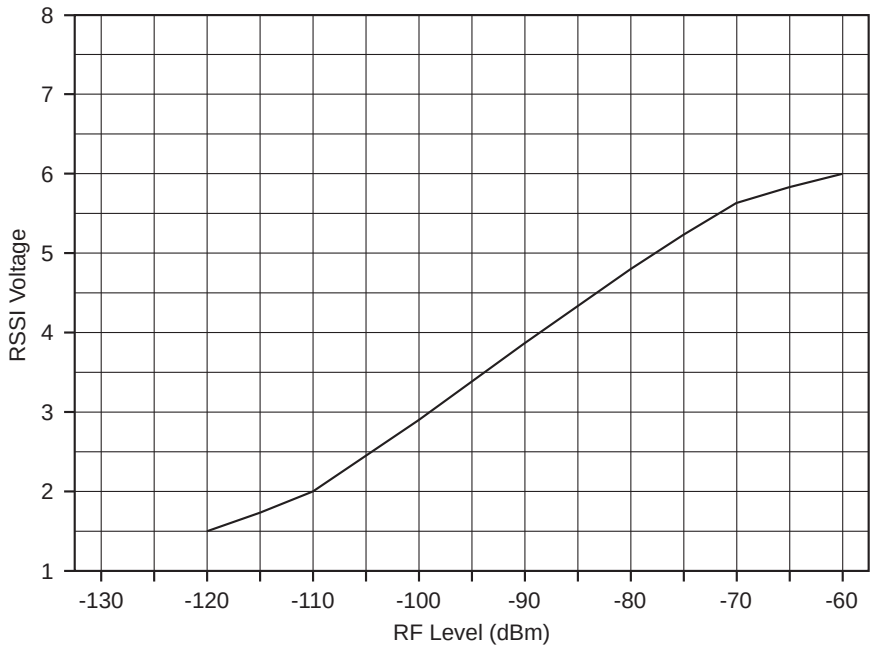


Figure 4.2 RSSI Voltage vs Signal Strength

4.9 Carrier Level Mute (RSSI Fitted & Carrier Mute Linked In)

Apply an on-channel signal from the RF generator at a level of -120dBm with 3kHz deviation [1.5kHz] (4kHz) at 1kHz.

Increase the RF level in 2dB steps and check that the mute opens at an RF level which corresponds with the preset level on RV104 (i.e. between -115dBm and -70dBm).

5 T855 Fault Finding

The following test procedures and fault finding flow charts may be used to help locate a hardware problem, however they are by no means a complete fault finding procedure. If the fault still exists after having progressed through them in a logical manner, contact your nearest authorised Tait Dealer or Service Centre. Further assistance may be obtained from the Customer Support Group, Radio Infrastructure Division, Tait Electronics Ltd, Christchurch, New Zealand.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

5.1 Visual Checks

Remove the covers from the T855 and inspect the PCB for damaged or broken components, paying particular attention to the surface mounted devices (SMDs).

Check for defective solder joints. If repair or replacement is considered necessary, refer to Section 3 of Part A.

5.2 Component Checks

If a transistor is suspected of faulty operation, an indication of its performance can be assessed by measuring the forward and reverse resistance of the junctions. First make sure that the transistor is not shunted by some circuit resistance (unless the device is completely desoldered). A 20k ohm/V or better multimeter should be used for taking the measurements, using only the medium or low resistance ranges.

The collector current drawn by multi-junction transistors is a further guide to their performance.

If an IC is suspect, the most reliable check is to measure the DC operating voltages. Due to the catastrophic nature of most IC failures, the pin voltages will usually be markedly different from the recommended values in the presence of a fault. The recommended values can be obtained from either the circuit diagram or the component data catalogue.

5.3 DC Checks

5.3.1 Power Rails

Refer to the test points & options diagrams for test point locations, and to the regulator fault finding chart (Section 5.5.1) for fault diagnosis.

Check the 9V (TP2) and 13.8V (TP1) power supply test points in the audio compartment with a DMM.

Check the 20V regulator output at the test point (TP3) in the regulator compartment.

Check the 5V regulator output at the test point (TP4) in the regulator compartment and on pin 4 of IC300.

5.3.2 VCO Locking

Using a DMM, monitor the VCO control voltage on the long lead of L1 (located adjacent to the electrolytic capacitor on the VCO PCB).

If the synthesiser is locked and the VCO aligned, the voltage at this point should be between 3 and 16V.

If the VCO is not locked, refer to the synthesiser fault finding chart (Section 5.5.2).

5.3.3 Mute Operation

The front panel LED will show the status of the mute circuitry. It will be lit when a signal is received above the threshold level. It should always be possible to open the mute gate by rotating the mute potentiometer fully clockwise, or by enabling the monitor with the front panel switch.

If the mute fails to operate correctly, refer to the mute fault finding chart (Section 5.5.3).

5.4 RF Checks

5.4.1 VCO Frequency

Check that the VCO is phase locked (refer to Section 5.3.2).

Connect a frequency counter (level +20dBm) to the VCO input to the mixer (IC301).

Monitor the local oscillator frequency and check that it is 45MHz ***below*** the required receive frequency.

Refer to the synthesiser fault finding chart (Section 5.5.2) for further information.

5.4.2 RF Sensitivity

Ensure that the VCO is on the correct frequency and the receiver correctly aligned.

Check that the sensitivity into the front end is -118dBm (UWB -115 dBm) (typical)

If the sensitivity is poor, the fault can be traced by measuring the sensitivity into successive circuit blocks. Prepare a test cable by connecting a 1nF capacitor to the end of a length of coax cable as shown in Figure 5.1.

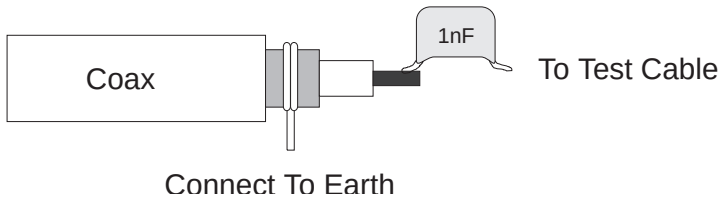


Figure 5.1 RF Test Cable

Note: Before using the test cable, ensure the coax braid is connected to an earth point on the PCB.

Using the RF test cable, apply a modulated 45MHz signal to the test points in the IF section, or an on-channel RF signal to the front end test points.

Check that the sensitivity at each test point is within 2dB of the levels shown on the circuit diagram (NB & WB only).

Poor sensitivity indicates a fault in one of the circuit blocks following the test point.

Note: Poor sensitivity into the mixer (TP8) can be caused by lack of drive level from the VCO (the drive level should be >+17dBm).

Refer to the receiver fault finding charts (Section 5.5.5) for further information.

5.4.3 TCXO Stability

While maintaining a low level unmodulated RF input to the receiver, loosely couple into the first IF an additional high level signal at 45MHz - a constant low frequency beat note should be heard.

Tap the TCXO with a finger and replace it if the beat note permanently changes.

5.4.4 IF Distortion

If after careful IF alignment (Section 3.6) the audio distortion is still high the IF should be swept to investigate the bandpass response.

Apply an on channel RF signal modulated at 10Hz with 12kHz [6kHz] (25kHz) deviation at an amplitude of -80dBm.

Connect the modulating 10Hz audio signal to the "X" input of an oscilloscope and apply the 455kHz RSSI input (SK300/3) via a suitable RF probe to the "Y" input.

Note: The X input should be DC coupled.

Check that the swept response has a rounded top and no sharp non-linearities (refer to Figure 5.2).

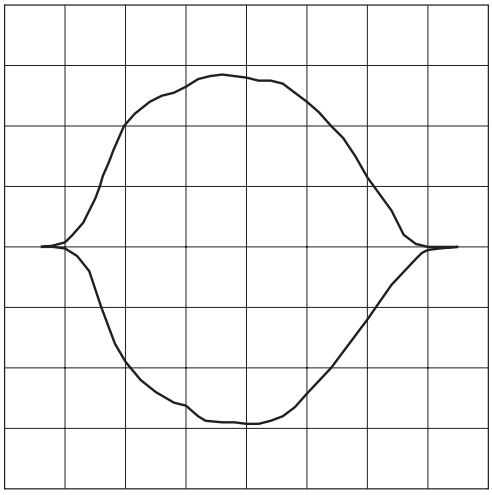


Figure 5.2 IF Swept Response

Increase the RF level to -50dBm; the trace will now show the shape of the 455kHz ceramic filter (&XF302).

Check that the response has no sharp non-linearities.

If sharp non-linearities do occur, replace the filter and sweep to confirm a satisfactory solution (refer to Figure 5.3).

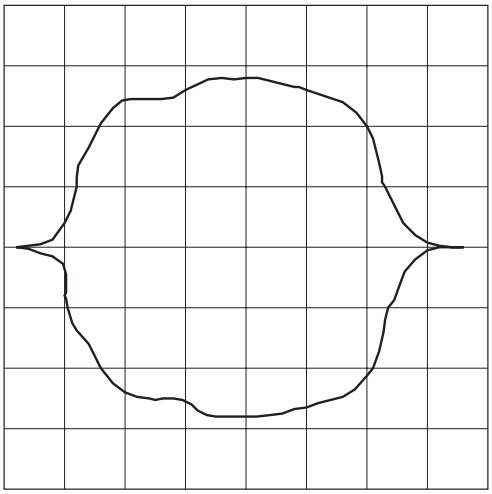


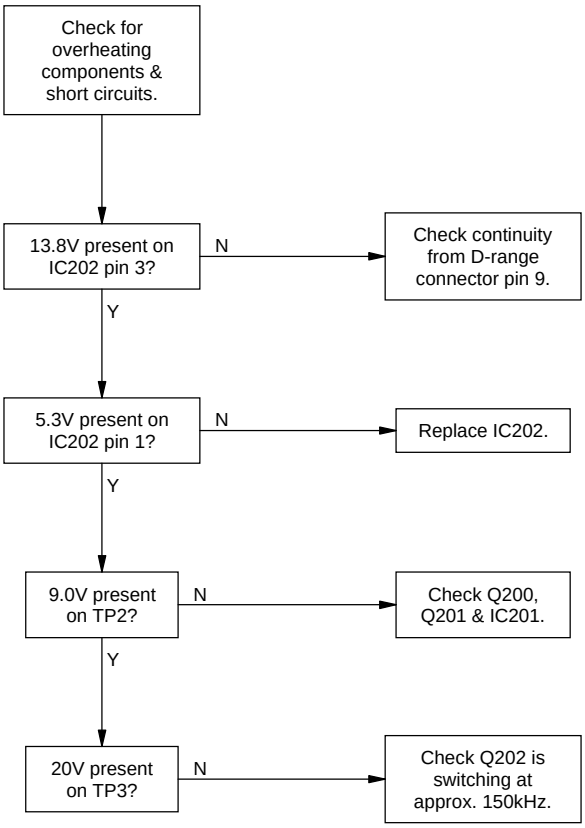
Figure 5.3 Ceramic Filter Swept Response

5.5 Fault Finding Charts

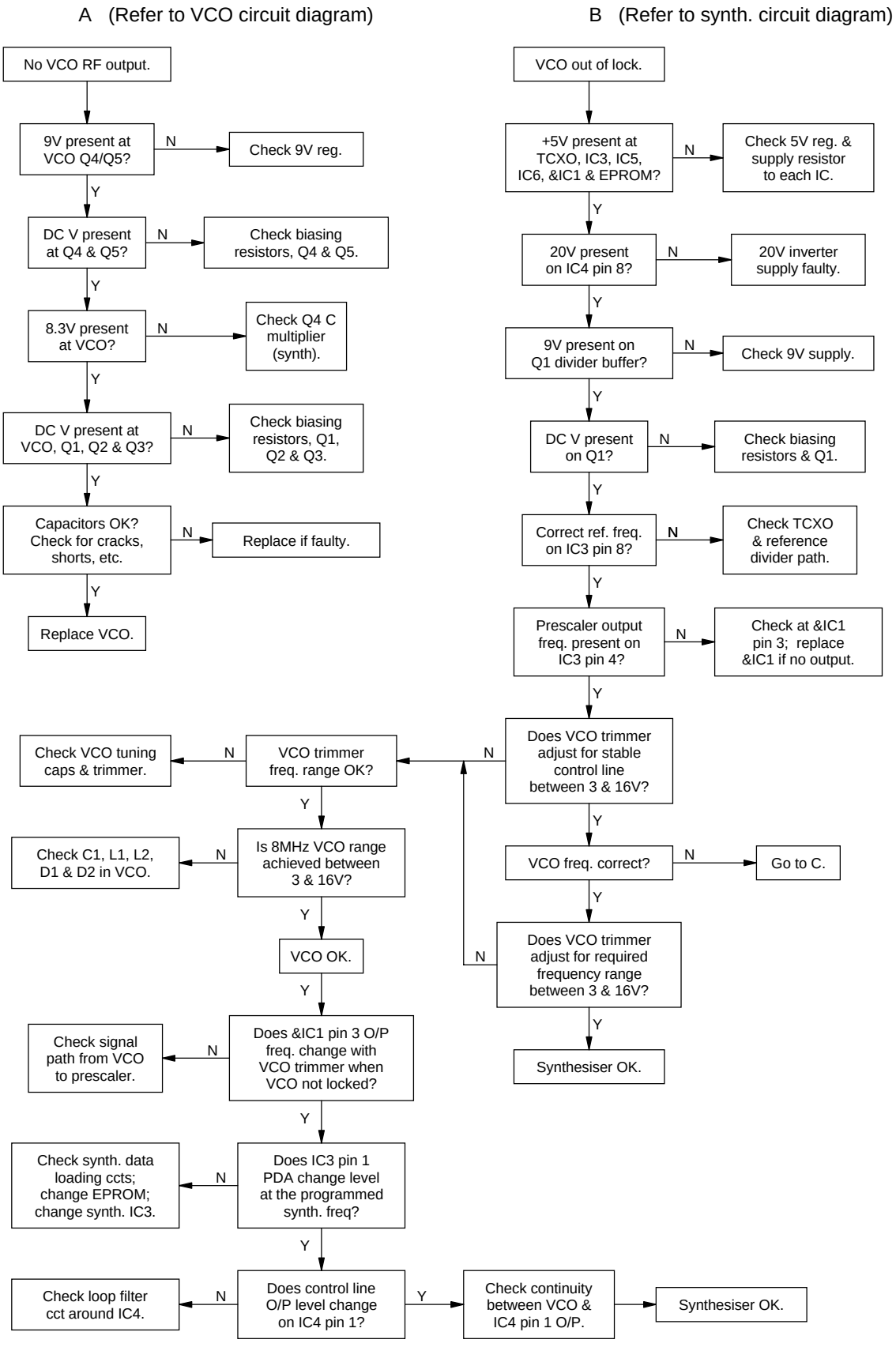
Note: The standard test point designations as used in this section are as follows:

TP1	13.8V
TP2	9V
TP3	20V
TP4	5V
TP5	Tx reg.
TP12	lock detect

5.5.1 Regulator

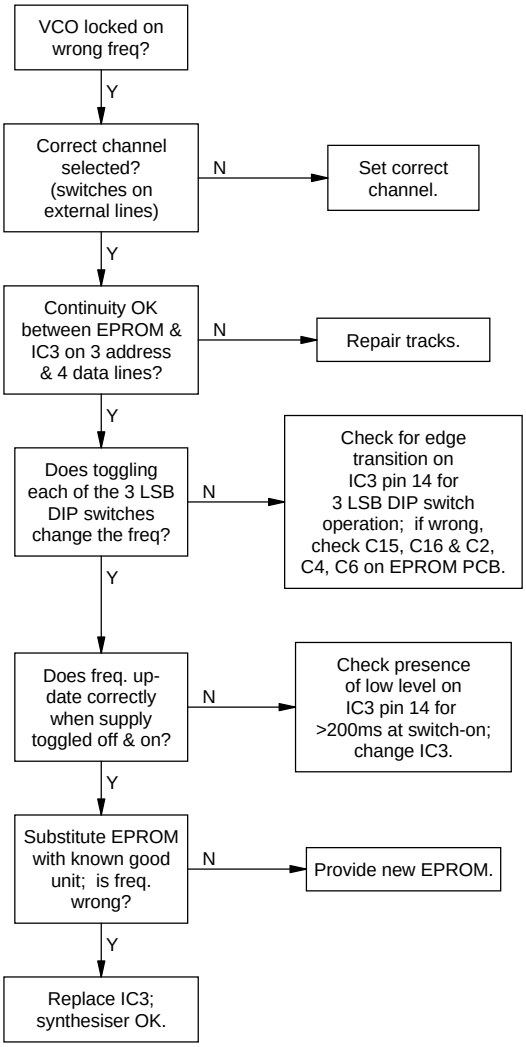


5.5.2 Synthesiser

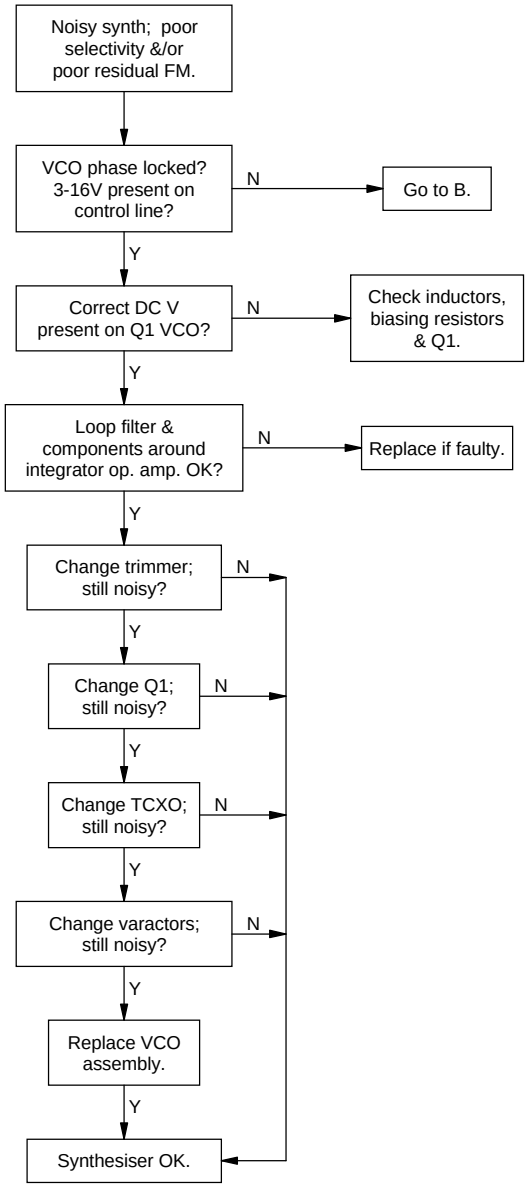


Continued on next page.

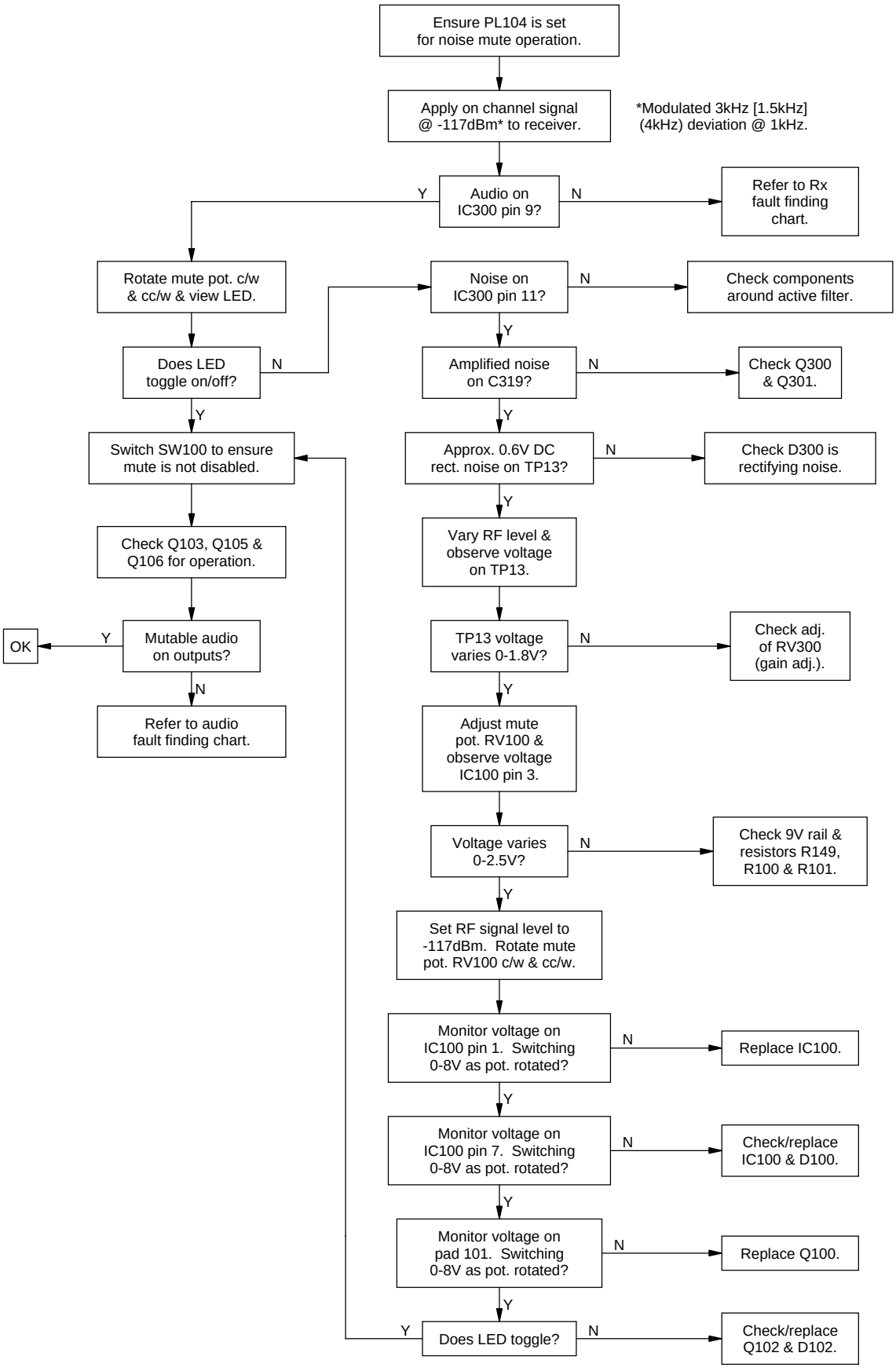
C (Refer to synth. circuit diagram)



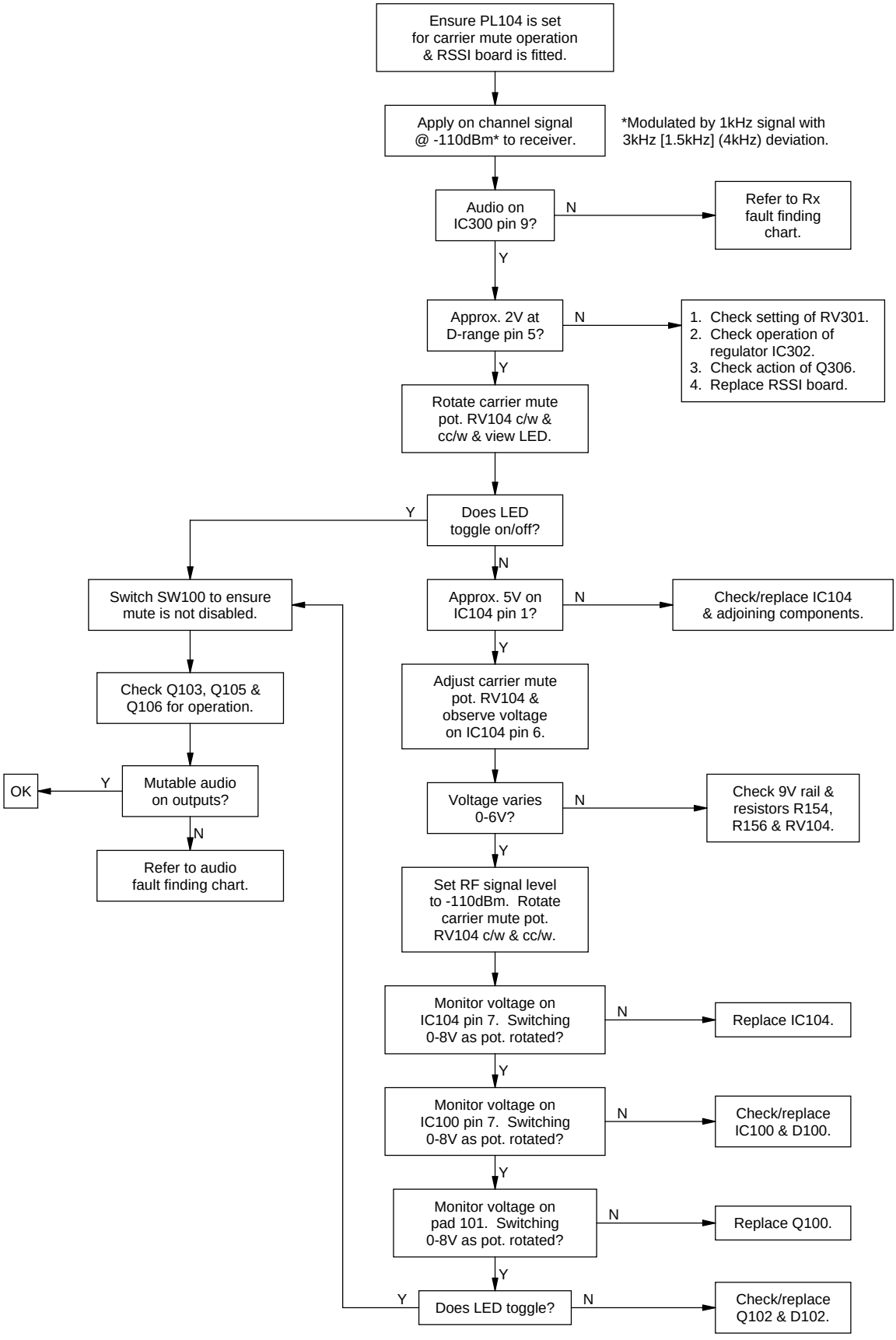
D (Refer to synth. & VCO circuit diagrams)



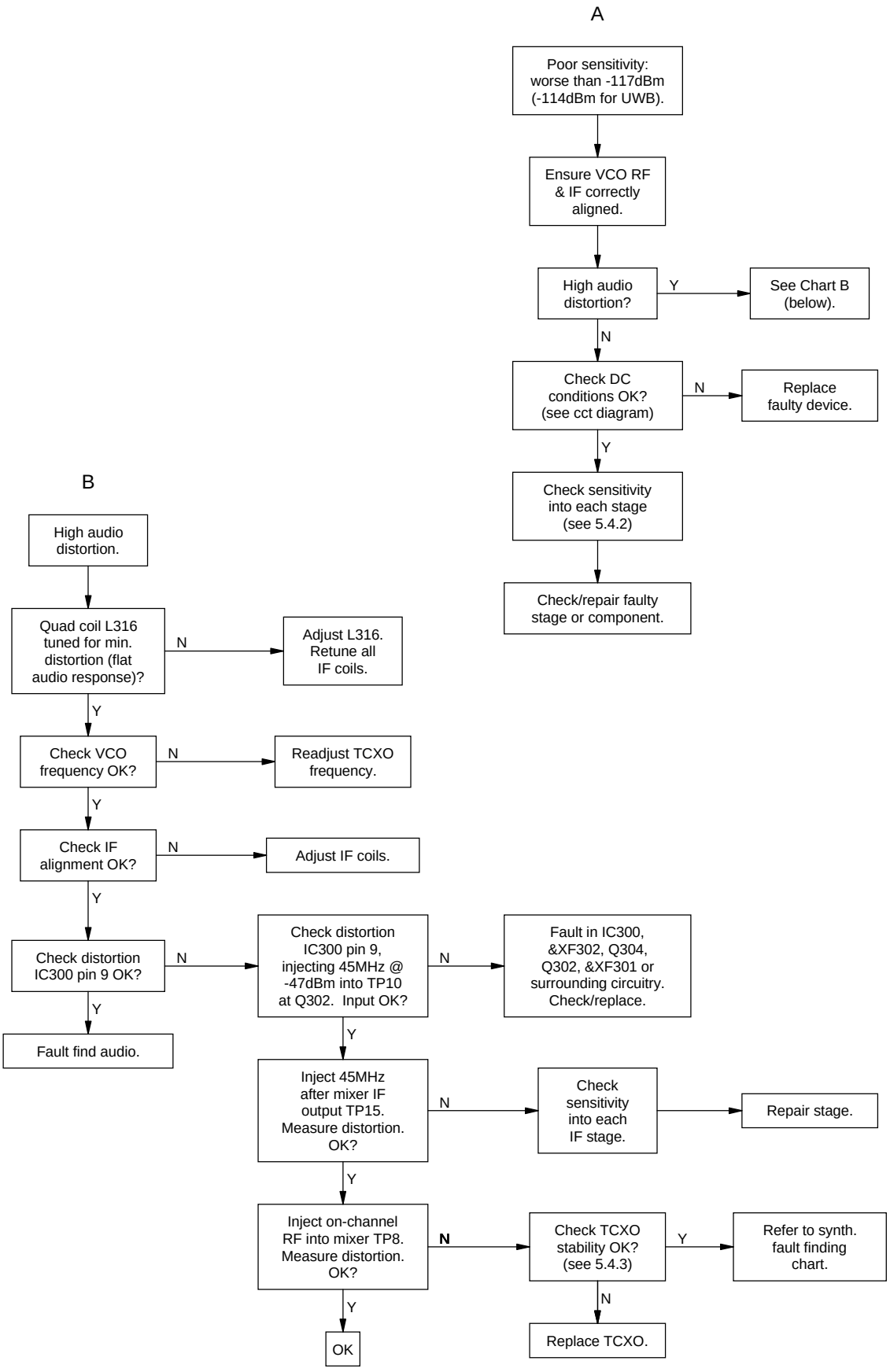
5.5.3 Noise Mute



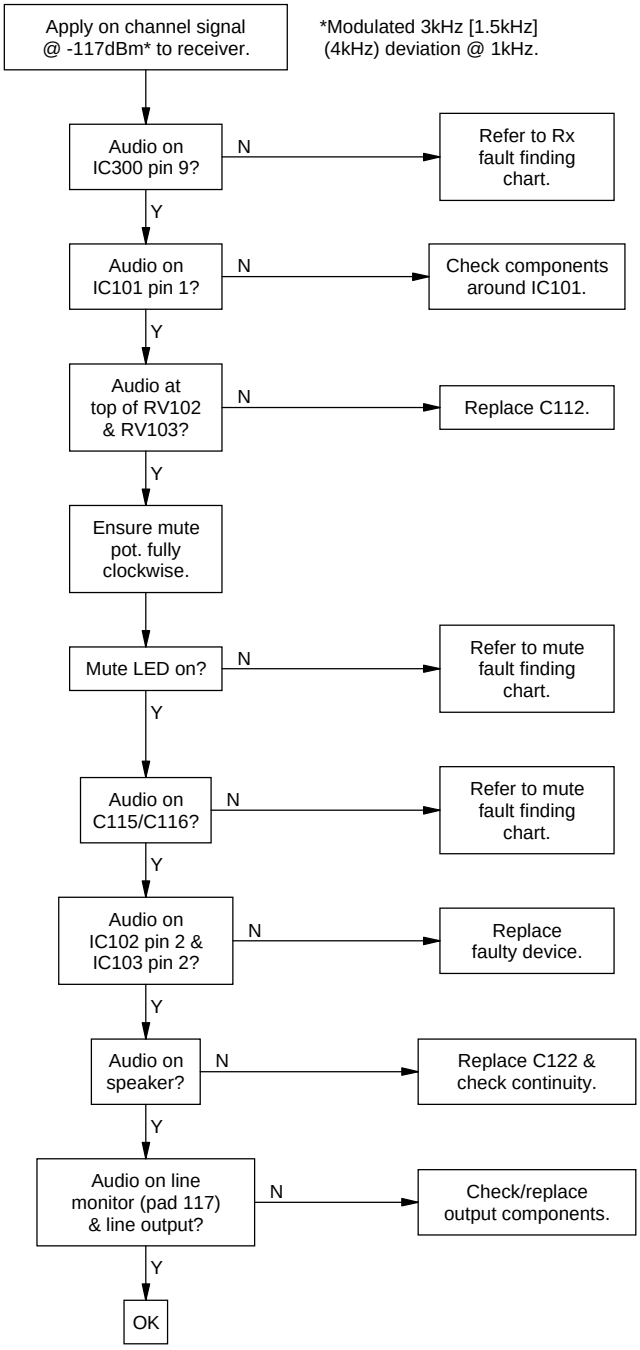
5.5.4 Carrier Mute



5.5.5 Receiver



5.5.6 Audio



6 T855 PCB Information

This section provides parts lists, a grid reference index, PCB layouts, test points and options drawings and circuit diagrams for the T855 receiver.

This section contains the following information.

6.1 Introduction

PCB Identification

All PCBs are identified by a unique 10 digit “internal part number” (IPN), e.g. 220-12345-00, which is screen printed onto the PCB (usually on the top side). The last 2 digits of this number define the issue status, which starts at 00 and increments through 01, 02, 03, etc. as the PCB is updated. Some issue PCBs never reach full production status and are therefore not included in this manual. A letter following the 10 digit IPN has no relevance in identifying the PCB for service purposes.

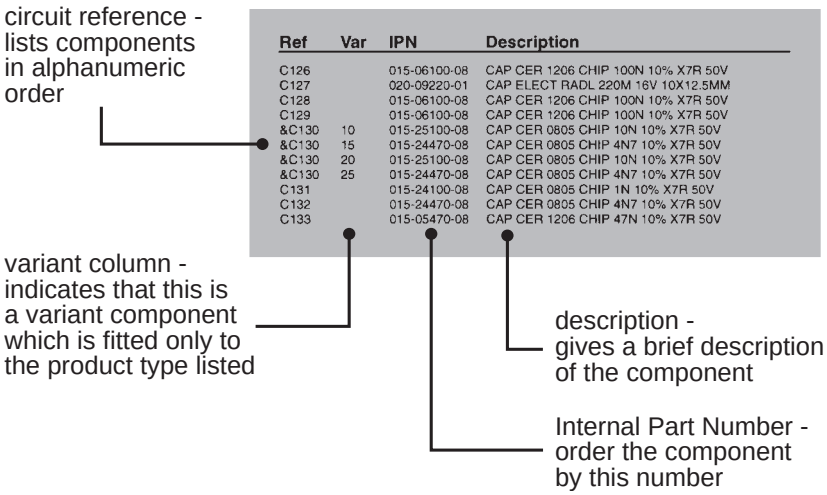
Note: It is important that you identify which issue PCB you are working on so that you can refer to the appropriate set of PCB information.

Parts Lists

The 10 digit numbers (000-00000-00) in this Parts List are “internal part numbers” (IPNs). Your spare parts orders can be handled more efficiently if you quote the IPN and provide a brief description of the part.

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns, as shown below:



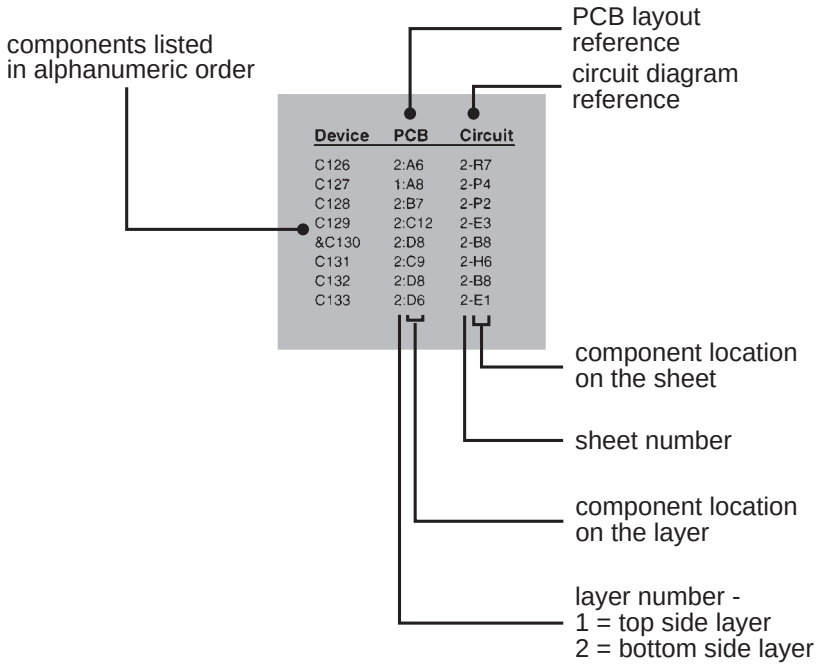
The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Variant Components

A variant component is one that has the same circuit reference but different value or specification in different product types. Variant components are indicated by a character prefix such as “&”, “#” or “=”.

Grid Reference Index

To assist in locating components and labelled pads on the PCB layouts and circuit diagrams, a component grid reference index has been provided. This index lists the components and pads in alphanumeric order, along with the appropriate alphanumeric grid references, as shown below:



Using CAD Circuit Diagrams

Reading a CAD circuit diagram is similar to reading a road map, in that both have an alphanumeric border. The circuit diagrams in this manual use letters to represent the horizontal axis, and numbers for the vertical axis. These circuit diagram “grid references” are useful in following a circuit that is spread over two or more sheets.

When a line representing part of the circuitry is discontinued, a reference will be given at the end of the line to indicate where the rest of the circuitry is located. The first digit refers to the sheet number and the last two characters refer to the location on that sheet of the continuation of the circuit (e.g. 1-D4).

If more than one line is represented (indicated by a double thickness line), a dot with a reference label will follow the route each individual line represents.

6.2 T800-04 RSSI PCB

This section contains the following information.

T800-04 Parts List (IPN 220-01138-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

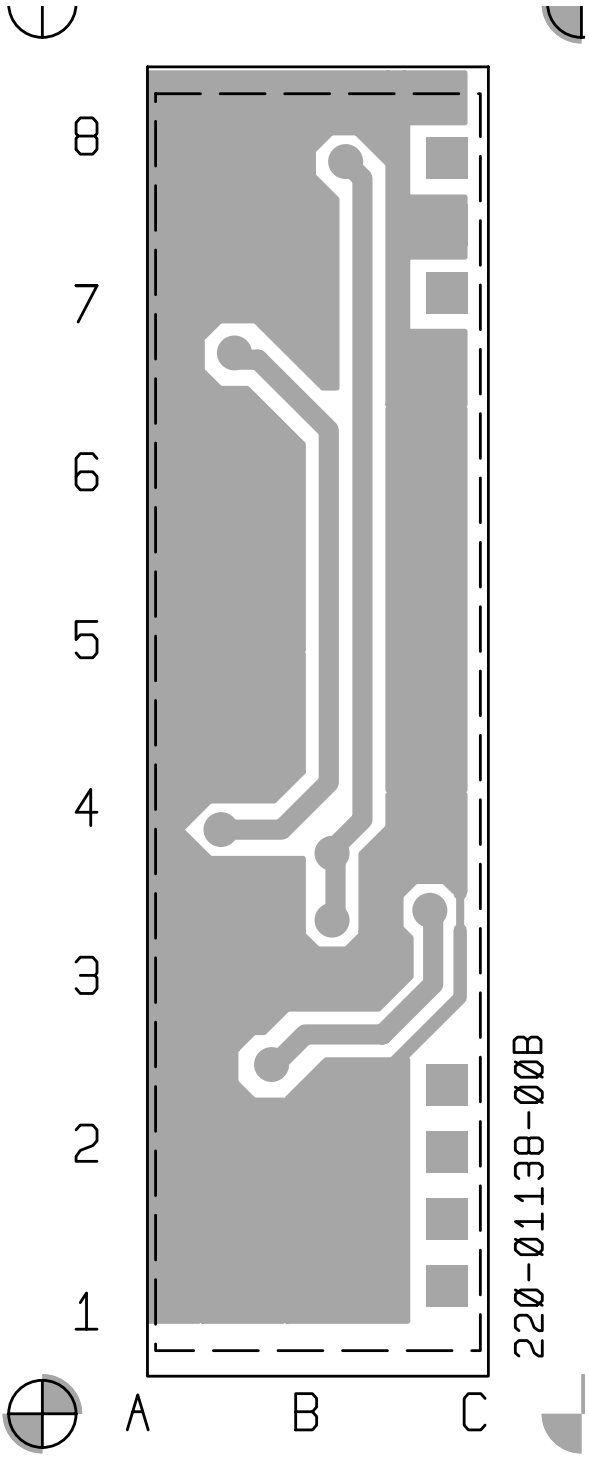
Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

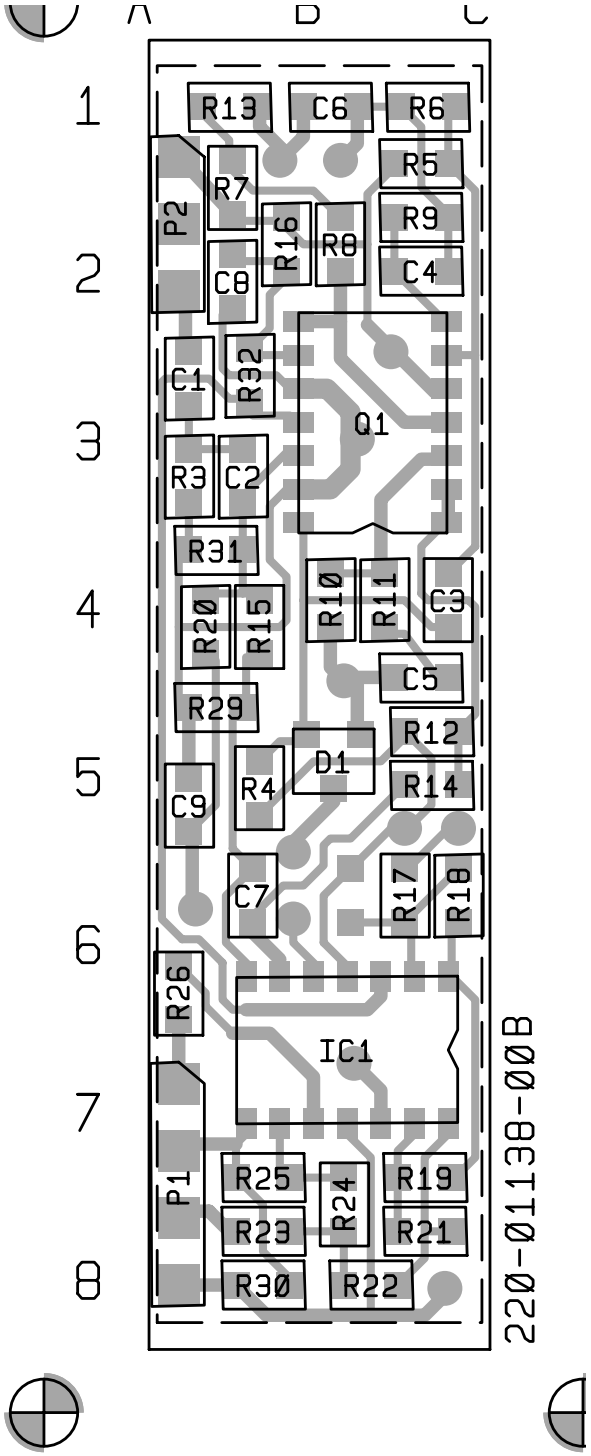
Parts List Amendments

There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C2		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C3		015-23330-08	CAP CER 0805 CHIP 330P 10% X7R 50V
C4		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C5		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C6		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C7		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C8		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C9		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
D1		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SOT23
IC1		002-10003-24	(S) IC SMD 324 QUAD OP AMP SO14
Q1		002-10033-46	(S) IC SMD MC3346D XSTR ARRAY SO14
R3		036-14100-00	RES M/F 0805 CHIP 1K 5%
R4		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R5		036-15560-00	RES M/F 0805 CHIP 56K 5%
R6		036-15390-00	RES M/F 0805 CHIP 39K 5%
R7		036-15100-00	RES M/F 0805 CHIP 10K 5%
R8		036-13680-00	RES M/F 0805 CHIP 680E 5%
R9		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R10		036-16220-00	RES M/F 0805 CHIP 220K 5%
R11		036-13470-00	RES M/F 0805 CHIP 470E 5%
R12		036-16330-00	RES M/F 0805 CHIP 330K 5%
R13		036-16100-00	RES M/F 0805 CHIP 100K 5%
R14		036-16180-00	RES M/F 0805 CHIP 180K 5%
R15		036-15220-00	RES M/F 0805 CHIP 22K 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R17		036-15330-00	RES M/F 0805 CHIP 33K 5%
R18		036-14100-00	RES M/F 0805 CHIP 1K 5%
R19		036-15100-00	RES M/F 0805 CHIP 10K 5%
R20		036-15100-00	RES M/F 0805 CHIP 10K 5%
R21		036-16330-00	RES M/F 0805 CHIP 330K 5%
R22		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R23		036-15100-00	RES M/F 0805 CHIP 10K 5%
R24		036-16150-00	RES M/F 0805 CHIP 150K 5%
R25		036-16180-00	RES M/F 0805 CHIP 180K 5%
R26		036-15820-00	RES M/F 0805 CHIP 82K 5%
R29		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R30		036-15100-00	RES M/F 0805 CHIP 10K 5%
R31		036-15220-00	RES M/F 0805 CHIP 22K 5%
R32		036-14470-00	RES M/F 0805 CHIP 4K7 5%
		220-01138-00	PCB T700 RSSI
		356-00010-52	PIN EDGE MTG 0.8MM PCB WAKO



T800-04 RSSI PCB (IPN 220-01138-00) - Bottom Side



T800-04 RSSI PCB (IPN 220-01138-00) - Top Side

6.3 T800-55 High Sensitivity Preamplifier PCB

This section contains the following information.

T838 Parts List (IPN 220-01100-03)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

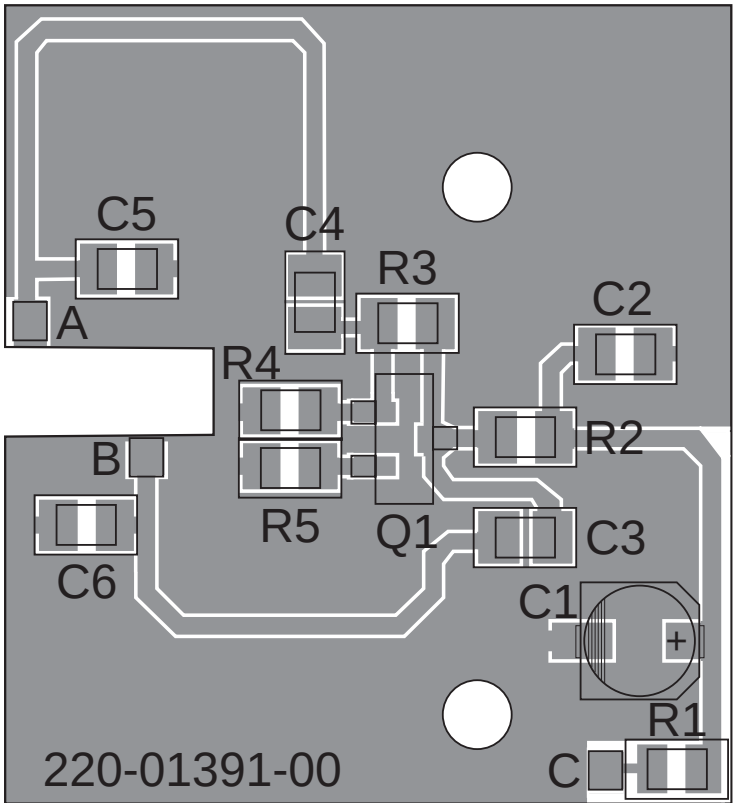
Those with a circuit reference are grouped by component type in numerical order. Each component entry comprises three or four columns: the circuit reference, variant number (if applicable), IPN and description. A number in the variant column indicates that this component is fitted only to that variant.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

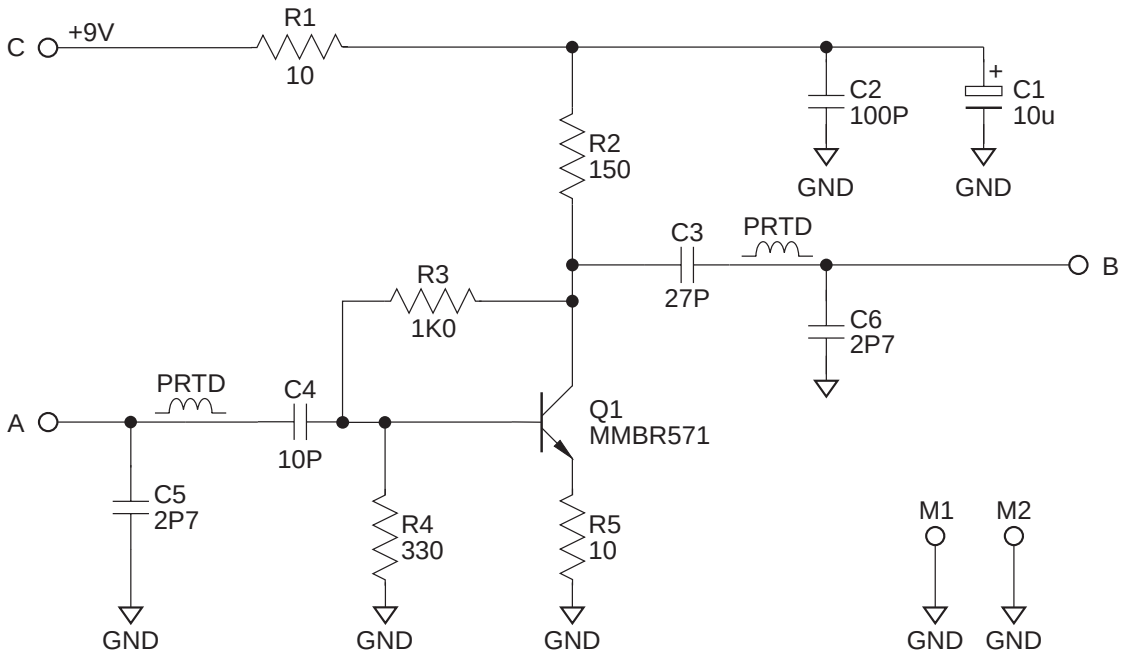
Parts List Amendments

To be decided.

Ref	Var	IPN	Description
C1		016-08100-01	CAP ELECT 6*4MM CHIP 10M 20% 16V
C2		015-23100-01	CAP CER 0805 CHIP 100P 5% NPO 50V
C3		015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C4		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C5		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C6		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-13150-00	RES M/F 0805 CHIP 150E 5%
R3		036-14100-00	RES M/F 0805 CHIP 1K 5%
R4		036-13330-00	RES M/F 0805 CHIP 330E 5%
R5		036-12100-00	RES M/F 0805 CHIP 10E 5%
		220-01391-00	PCB T800-55 HIGH SENSITIVITY PREAMPLIFIER



T800-55 PCB Layout



T800-55 Circuit Diagram

6.4 T855 Receiver PCB

This section contains the following information.

T855 Parts List (IPN 220-01139-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

R334	Changed from 10e (036-12100-00) to 22e. Oscillator drive reduced to prevent sig. freq. breakthrough (89/06-318).
R336 & R337	Changed from 470e (036-13470-00) to 220e. Oscillator drive reduced to prevent sig. freq. b/through (89/06-318).
L316	Changed from Coil Tait No 631 (050-00016-31) to Coil Tait No 655 (89/08-455A).
L100	100uh choke added in series with 13.8V bus to Audio Processor to eliminate spikes on 13.8V bus (89/11-658).
C369 & C370	100n added. To meet -55dB EIA hum and noise (90/01-029).
C371	10u added. To meet -55dB EIA hum and noise (90/01-029).
Q307	BCW60/BC848 added. To meet -55dB EIA hum and noise (90/01-029).
R374	15K added. To meet -55dB EIA hum and noise (90/01-029).
R375	3K9 added. To meet -55dB EIA hum and noise (90/01-029).
R376	470e added. To meet -55dB EIA hum and noise (90/01-029).

Ref	Var	IPN	Description
C1		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C2		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C3		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C4		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C7		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C8		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C9		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C13		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C14		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C15		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C16		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C17		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C19		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C20		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C21		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C22		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C23		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C24		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C25		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C26		025-08100-02	CAP TANT BEAD 10M 10% 16V
C27		025-08100-02	CAP TANT BEAD 10M 10% 16V
C28		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C30		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C31		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C32		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C33		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C34		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C35		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C36		025-08100-02	CAP TANT BEAD 10M 10% 16V
C100		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
&C101	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C101	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C102		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
&C103	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C103	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C104	NB	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
&C104	WB	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C105		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C106	NB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C106	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C107		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C111		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C112		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C113		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C114		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C116		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C117		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C118		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C119		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C120		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C122		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/
C123		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C124		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C125		020-09220-01	CAP ELECT RADL 220M 16V 10X12.5MM
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C127		020-09220-01	CAP ELECT RADL 220M 16V 10X12.5MM
C128		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C129		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C130	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C130	WB	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C131	NB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C131	WB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C132	NB	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C132	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C133		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C134		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C135		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C136		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C137		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C138		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C200		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C201		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C202		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C203		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C204		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/
C205		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C206		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C207		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C210		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C211		025-08100-02	CAP TANT BEAD 10M 10% 16V
C212		025-07330-01	CAP TANT BEAD 3M3 35V
C213		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C214		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C215		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C218		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C219		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C220		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C221		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C222		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C300	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C300	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C301		015-22390-01	CAP CER 0805 CHIP 39P 5% NPO 50V

Ref	Var	IPN	Description
C302		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C303		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C304		015-22390-01	CAP CER 0805 CHIP 39P 5% NPO 50V
C305		015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C306		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C307		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C308		015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C310		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C311		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C312		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C313		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C314		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C315	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C315	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C316		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C317		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C318		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C319		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C320		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C322		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C323		015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C324		015-23100-01	CAP CER 0805 CHIP 100P 5% NPO 50V
&C325	NB	015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
&C325	WB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C326		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C327		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C328		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C330		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C332	NB	015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
&C332	WB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C333		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C335		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C336		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C337		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C338		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C339		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C340		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C341		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C342		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C343		025-08100-02	CAP TANT BEAD 10M 10% 16V
C344		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C345		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C346		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C347		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C350		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C351		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C352		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C353		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C354		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C355		025-08100-02	CAP TANT BEAD 10M 10% 16V
C356		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C357		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C359		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C360		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C361	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C361	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C362		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C363		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C364		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C365		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C366	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C366	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C367	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C367	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C368		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C369		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C370		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C371		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
D1		001-10000-70	(S) DIODE SMD BAV70 DUAL SWITCH SOT-23 C
D2		001-10000-70	(S) DIODE SMD BAV70 DUAL SWITCH SOT-23 C
D100		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INL
D101		001-10000-56	(S) DIODE SMD BAW56 DUAL SWITCH SOT-23 C
D102		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D103		001-10000-70	(S) DIODE SMD BAV70 DUAL SWITCH SOT-23 C
D104		001-10000-70	(S) DIODE SMD BAV70 DUAL SWITCH SOT-23 C
D105		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
D106		001-00011-70	(S) DIODE 1N4001 1A/50V
D107		001-00011-70	(S) DIODE 1N4001 1A/50V
D108		001-00011-70	(S) DIODE 1N4001 1A/50V
D200		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INL
D201		001-00011-60	(S) DIODE SR2607 6A/30V
D203		001-10000-70	(S) DIODE SMD BAV70 DUAL SWITCH SOT-23 C
D300		001-10000-56	(S) DIODE SMD BAW56 DUAL SWITCH SOT-23 C
FL300	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
FL300	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
FL300	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
FL300	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
FL300	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
FL300	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
FL301	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
FL301	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
FL301	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
FL301	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
FL301	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
FL301	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC

Ref	Var	IPN	Description
&IC1	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
&IC1	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
=IC2	2.5pp	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30 TO +70C NDK NS
=IC2	2pp	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10 TO +60C NDK TI
=IC2	1pp	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
IC3		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC4		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC5		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC6		002-74000-74	(S) IC 74HC74 DUAL D F/F
IC100		002-00012-40	(S) IC 358P DUAL OP AMP
IC101		002-00012-40	(S) IC 358P DUAL OP AMP
IC102		002-00014-05	(S) IC TDA7231 1.6W AF PWR
IC103		002-00014-05	(S) IC TDA7231 1.6W AF PWR
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00012-40	(S) IC 358P DUAL OP AMP
IC202		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC300		002-00014-72	(S) IC MC3361 LO PWR FM IF
IC301		002-00022-01	(S) MIXER DOUBLE BLNCD TAK-1WH MIXER 2-7
IC302		002-00014-58	(S) IC 78L05 5V 100MA REG TO-92
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L100		056-00021-02	IND FXD 100UH AXIAL
L300		052-08125-25	COIL A/W 2.5T/2.5MM HOR 0.8MM WIRE
L301		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L302		052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
L303		052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
L304		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L305		052-08125-25	COIL A/W 2.5T/2.5MM HOR 0.8MM WIRE
L306		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L307		056-00021-04	IND FXD 330NH AXIAL
L308		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L309		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L310		056-00021-04	IND FXD 330NH AXIAL
L311		050-00016-21	COIL TAIT NO 621 FXD 10.7MHZ 7MM CAN
L312		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L313		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L314		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L316		050-00016-55	COIL TAIT NO 655 455KHZ QUAD COIL 7MM CA
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-48	HEADER 36 WAY 1 ROW PCB MTG
PL2		240-00020-48	HEADER 36 WAY 1 ROW PCB MTG
PL3		240-00020-58	HEADER 5 WAY 1 ROW PCB MTG
PL4		240-00020-58	HEADER 5 WAY 1 ROW PCB MTG
PL5		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL101		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL102		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL103		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL104		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL105		240-00020-58	HEADER 5 WAY 1 ROW PCB MTG
PL106		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO P
Q3		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q4		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q100		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q101		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 A
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 A
Q103		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 A
Q104		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO P
Q105		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q106		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q107		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q108		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q200		000-00011-30	(S) XSTR BC557B PNP AF SML SIG TO92
Q201		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q202		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO P
Q203		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 A
Q300		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q301		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q302		000-10008-92	(S) XSTR SMD BFS17 NPN SOT-23 UHF SMALL
Q303		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO P
Q304		000-10009-91	(S) XSTR SMD BF991 DGMOSFET
Q305		000-00020-18	(S) XSTR BF247A JFET TO-92 VHF SMALL SIG
Q306		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
Q307		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 A
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-17100-00	RES M/F 0805 CHIP 1M 5%
R3		036-14100-00	RES M/F 0805 CHIP 1K 5%
R4		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R6		036-13120-00	RES M/F 0805 CHIP 120E 5%
R7		036-13100-00	RES M/F 0805 CHIP 100E 5%
R8		036-17100-00	RES M/F 0805 CHIP 1M 5%
R9		036-12180-00	RES M/F 0805 CHIP 18E 5%
R10		036-17100-00	RES M/F 0805 CHIP 1M 5%
R11		036-12680-00	RES M/F 0805 CHIP 68E 5%
R12		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-17100-00	RES M/F 0805 CHIP 1M 5%
R14		036-12100-00	RES M/F 0805 CHIP 10E 5%
R15		036-17100-00	RES M/F 0805 CHIP 1M 5%
R16		036-12220-00	RES M/F 0805 CHIP 22E 5%
R20		036-12220-00	RES M/F 0805 CHIP 22E 5%
R21		036-15120-00	RES M/F 0805 CHIP 12K 5%

Ref	Var	IPN	Description
R22		036-15100-00	RES M/F 0805 CHIP 10K 5%
R23		036-16470-00	RES M/F 0805 CHIP 470K 5%
R24		036-13100-00	RES M/F 0805 CHIP 100E 5%
R25		036-14100-00	RES M/F 0805 CHIP 1K 5%
R26		036-17100-00	RES M/F 0805 CHIP 1M 5%
R27		036-17100-00	RES M/F 0805 CHIP 1M 5%
R28		036-15100-00	RES M/F 0805 CHIP 10K 5%
R29		036-16100-00	RES M/F 0805 CHIP 100K 5%
R30		036-15100-00	RES M/F 0805 CHIP 10K 5%
R31		036-15100-00	RES M/F 0805 CHIP 10K 5%
R32		036-16470-00	RES M/F 0805 CHIP 470K 5%
R33		036-16470-00	RES M/F 0805 CHIP 470K 5%
R34		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R35		036-12220-00	RES M/F 0805 CHIP 22E 5%
R36		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R37		036-14100-00	RES M/F 0805 CHIP 1K 5%
R38		036-15150-00	RES M/F 0805 CHIP 15K 5%
R39		036-16100-00	RES M/F 0805 CHIP 100K 5%
R40		036-12220-00	RES M/F 0805 CHIP 22E 5%
R41		036-12100-00	RES M/F 0805 CHIP 10E 5%
R42		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-15270-00	RES M/F 0805 CHIP 27K 5%
RL100		237-00010-22	RELAY 12V DPDT 8PIN DIL PCB MTG FUJITSU
RV100		040-05100-21	POT 10K LIN VERT PCB MTG 15MM SLOT SHAFT
R101		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV101		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R102		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV102		040-05100-21	POT 10K LIN VERT PCB MTG 15MM SLOT SHAFT
R103		036-15220-00	RES M/F 0805 CHIP 22K 5%
RV103		040-05100-22	POT 10K LOG DUAL PCB MTG 6MM OD SHAFT
R104		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV104		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R105		036-16220-00	RES M/F 0805 CHIP 220K 5%
R106		036-16390-00	RES M/F 0805 CHIP 390K 5%
&R107	NB	036-15180-00	RES M/F 0805 CHIP 18K 5%
&R107	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R108		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R109	NB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R109	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
R110		036-16100-00	RES M/F 0805 CHIP 100K 5%
R111		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R112	NB	036-15390-00	RES M/F 0805 CHIP 39K 5%
&R112	WB	036-15390-00	RES M/F 0805 CHIP 39K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R114		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R115		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R116		036-13100-00	RES M/F 0805 CHIP 100E 5%
R117		036-15470-00	RES M/F 0805 CHIP 47K 5%
R119		036-15100-00	RES M/F 0805 CHIP 10K 5%
R120		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R121		036-14100-00	RES M/F 0805 CHIP 1K 5%
&R122	NB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R122	WB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
R123		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R124		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R125		036-14100-00	RES M/F 0805 CHIP 1K 5%
&R126	NB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R126	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R127	NB	036-16100-00	RES M/F 0805 CHIP 100K 5%
&R127	WB	036-16100-00	RES M/F 0805 CHIP 100K 5%
R128		036-13560-00	RES M/F 0805 CHIP 560E 5%
R129		036-14100-00	RES M/F 0805 CHIP 1K 5%
R130		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R131		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R132		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R133		036-14120-00	RES M/F 0805 CHIP 1K2 5%
R134		036-15390-00	RES M/F 0805 CHIP 39K 5%
R135		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R136		036-15470-00	RES M/F 0805 CHIP 47K 5%
R137		036-15470-00	RES M/F 0805 CHIP 47K 5%
R138		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R139		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R140		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R141		036-15470-00	RES M/F 0805 CHIP 47K 5%
R142		036-15470-00	RES M/F 0805 CHIP 47K 5%
R143		036-15470-00	RES M/F 0805 CHIP 47K 5%
R144		036-11470-00	RES M/F 0805 CHIP 4E7 10%
R145		036-11470-00	RES M/F 0805 CHIP 4E7 10%
R146		036-14100-00	RES M/F 0805 CHIP 1K 5%
R147		036-13150-00	RES M/F 0805 CHIP 150E 5%
R148		036-14100-00	RES M/F 0805 CHIP 1K 5%
R149		036-13100-00	RES M/F 0805 CHIP 100E 5%
R150		036-14100-00	RES M/F 0805 CHIP 1K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	NB	036-14330-00	RES M/F 0805 CHIP 3K3 5%
&R152	WB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
R153		036-15100-00	RES M/F 0805 CHIP 10K 5%
R154		036-13100-00	RES M/F 0805 CHIP 100E 5%
R155		036-15120-00	RES M/F 0805 CHIP 12K 5%
R156		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R157		036-16220-00	RES M/F 0805 CHIP 220K 5%
R158		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R160		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R161		036-16100-00	RES M/F 0805 CHIP 100K 5%
R200		036-12220-00	RES M/F 0805 CHIP 22E 5%
R201		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R203		036-14100-00	RES M/F 0805 CHIP 1K 5%
R204		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R205		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R206		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R207		036-15100-00	RES M/F 0805 CHIP 10K 5%
R208		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R209		036-13100-00	RES M/F 0805 CHIP 100E 5%
R212		036-12100-00	RES M/F 0805 CHIP 10E 5%
R213		036-15150-00	RES M/F 0805 CHIP 15K 5%
R214		036-16100-00	RES M/F 0805 CHIP 100K 5%
R215		036-15560-00	RES M/F 0805 CHIP 56K 5%
R216		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R217		036-13470-00	RES M/F 0805 CHIP 470E 5%
R300		036-15180-00	RES M/F 0805 CHIP 18K 5%
RV300		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R301		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV301		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R302		036-16390-00	RES M/F 0805 CHIP 390K 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R305.		036-15150-00	RES M/F 0805 CHIP 15K 5%
R306		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R307		036-14100-00	RES M/F 0805 CHIP 1K 5%
R308		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R309		036-16100-00	RES M/F 0805 CHIP 100K 5%
R310		036-15220-00	RES M/F 0805 CHIP 22K 5%
R311		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R313		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R314		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R315		036-13330-00	RES M/F 0805 CHIP 330E 5%
R316		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R317		036-14100-00	RES M/F 0805 CHIP 1K 5%
R318		036-12100-00	RES M/F 0805 CHIP 10E 5%
R319		036-14100-00	RES M/F 0805 CHIP 1K 5%
R320		036-13150-00	RES M/F 0805 CHIP 150E 5%
R321		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-12470-00	RES M/F 0805 CHIP 47E 5%
R323		036-15100-00	RES M/F 0805 CHIP 10K 5%
R324		036-16100-00	RES M/F 0805 CHIP 100K 5%
R325		036-15100-00	RES M/F 0805 CHIP 10K 5%
R326		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R327		036-15470-00	RES M/F 0805 CHIP 47K 5%
R328		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R329		036-15470-00	RES M/F 0805 CHIP 47K 5%
R330		036-13470-00	RES M/F 0805 CHIP 470E 5%
R332		036-12100-00	RES M/F 0805 CHIP 10E 5%
R333		036-13470-00	RES M/F 0805 CHIP 470E 5%
R334		036-12220-00	RES M/F 0805 CHIP 22E 5%
R335		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R336		036-13220-00	RES M/F 0805 CHIP 220E 5%
R337		036-13220-00	RES M/F 0805 CHIP 220E 5%
R338		036-12470-00	RES M/F 0805 CHIP 47E 5%
R339		036-15100-00	RES M/F 0805 CHIP 10K 5%
R340		036-15100-00	RES M/F 0805 CHIP 10K 5%
R341		036-15220-00	RES M/F 0805 CHIP 22K 5%
R342		036-15120-00	RES M/F 0805 CHIP 12K 5%
R343		045-05100-01	RES NTC 10K 20% 5MM DISC
R344		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R345		036-13330-00	RES M/F 0805 CHIP 330E 5%
R346		036-15100-00	RES M/F 0805 CHIP 10K 5%
R347		036-14100-00	RES M/F 0805 CHIP 1K 5%
R348		036-12470-00	RES M/F 0805 CHIP 47E 5%
R349		036-12390-00	RES M/F 0805 CHIP 39E 5%
R350		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R352		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R353		036-14100-00	RES M/F 0805 CHIP 1K 5%
R354		036-15100-00	RES M/F 0805 CHIP 10K 5%
R355		036-13390-00	RES M/F 0805 CHIP 390E 5%
R356		036-12100-00	RES M/F 0805 CHIP 10E 5%
R357		036-13820-00	RES M/F 0805 CHIP 820E 5%
R358		036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R359	NB	036-15820-00	RES M/F 0805 CHIP 82K 5%
&R359	WB	036-15560-00	RES M/F 0805 CHIP 56K 5%
R360		045-05100-01	RES NTC 10K 20% 5MM DISC
R361		036-13220-00	RES M/F 0805 CHIP 220E 5%
R362		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R363		036-12100-00	RES M/F 0805 CHIP 10E 5%
R364		036-15100-00	RES M/F 0805 CHIP 10K 5%
R365		036-17100-00	RES M/F 0805 CHIP 1M 5%
R366		036-13180-00	RES M/F 0805 CHIP 180E 5%
R367		036-12100-00	RES M/F 0805 CHIP 10E 5%
R368		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R369		045-03150-01	RES NTC 150E 0.5W 5MM DISC
R370		036-13470-00	RES M/F 0805 CHIP 470E 5%
R371		036-12470-00	RES M/F 0805 CHIP 47E 5%
R372		036-16150-00	RES M/F 0805 CHIP 150K 5%
R373		036-12560-00	RES M/F 0805 CHIP 56E 5%
R374		036-15150-00	RES M/F 0805 CHIP 15K 5%
R375		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R376		036-13470-00	RES M/F 0805 CHIP 470E 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SW100		230-00010-30	SWITCH TOGGLE SPDT RT ANGLE PCB MT PARA
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN
X300		274-00010-22	XTAL 44.545MHZ SPEC TE/22 HC45-U C/W TEF
&XF300	NB	276-00010-57	FLTR XTAL 45MHZ 7.5K BW 4POLE 45N7.5BA 2

Ref	Var	IPN	Description
&XF300	WB	276-00010-58	FLTR XTAL 45M 15K B/W 4P 2 PCS C/W TEFLO
&XF301	NB	276-00010-54	FLTR XTAL 45M 7K5 B/W 2P 45N7.5A C/W TEF
&XF301	WB	276-00010-56	FLTR XTAL 45MHZ 14KHZ B/W 2 POLE 45N14AB
&XF302	NB	276-00010-13	FLTR CER 455KHZ 9KHZ B/W CFW455G
&XF302	WB	276-00010-14	FLTR CER 455KHZ 15KHZ B/W CFW455E

Ref	Var	IPN	Description

NOTE:

LOW	= 400-440MHZ
MID	= 440-480MHZ
HI	= 480-530MHZ
NB	= 7.5KHZ IF BANDWIDTH
WB	= 15KHZ IF BANDWIDTH
1PPM	= 1PPM TCXO
2PPM	= 2PPM TCXO
2.5PPM	= 2.5PPM TCXO

(REFER TO PART B, SECTION 1.3)

T855 Mechanical & Miscellaneous Parts (220-01139-00)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
061-00010-20	FORMER PTFE A4M765 HELIC RESNTR Fit on FL300 x2 and FL301 x2.
062-00010-13	CAN 10MM SQ X 11mm SANWA 613 A4M1017 Fit Over Coil T200.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8mm STACK POLE 15 Way D Range x15.
066-00010-20	SLUG BRASS A4M764 T196 HELIC RESNTR For FL300 x2 and FL301 x2.
201-00030-02	WIRE #1 T/C WIRE 7/0.2mm PVC RED 2 x30mm LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2mm PVC BLACK 2 x35mm LEDs.
220-01139-00	PCB T855 RX
230-00010-31	COVER LEVER FOR TOGGLE SW 230-00010-30
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL M
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMINAL
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103, 104, 105 & 106 x1 Each.
240-04020-64	SKT JACK AN 0.98mm PCB MTG 64 WAY SIL STRIP 7 Sockets, SK300 (3), SK301(4)
240-04020-65	SKT JACK PIN 1.3mm PCB MTG 64 WAY SIL STRIP
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q201 x1.
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-01047-00	HOUSING A2M2330 HELIC RESNTR COMPL T855 Fit Over FL300 x1 and FL301 x1
311-01015-00	KNOB SATO K34 AG 15mm & SKIRT 6mm SHFT FXDEQ Monitor Volume On Front Panel x1.
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06368-01	PNL FRT COMPL T855 A3M2208/1 A3M2208/2
316-85015-00	*USE 316-85015-01 PIN A4M775 LOCATING D For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
345-00040-08	SCREW M3*12mm PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6mm CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6mm PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4, Final Installation Kit x2
345-00040-20	SCREW M3*8mm BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-03	SCREW TAPTITE 4-40X1/4IN PAN POZI BZ Helical Resonator Mounting x4.
349-00020-32	SCREW TAPTITE M3X8mm PAN POZI BZ Pcb Mounting x8, N Connector x4.
349-00020-43	SCREW TAPTITE M4X12mm PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4X20mm PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
352-00010-50	NUT TRIM SCREEN 1/4 UNF SPIRE SNO 2780 For Securing FL300 x2 and FL301 x2.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
353-00010-13	WASHER M3 SHAKEPROOF INT BZ Vco Mtg x2.
360-00010-40	BUSH SNAP BLACK HEYCO SB-375-4
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q201 x1.
362-00010-33	GROMMET LED MTG 3mm LO CURRENT LEDS Used To Secure LEDs to Front Panel x3.
365-00011-03	LABEL TEST REPORT INSIDE A4A267
365-00100-03	LABEL BLANK 10.8X30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28X11MM QUIKSTIK RW718/4
400-00020-05	SLEEVING 1.5MM SIL RUBBER
410-00010-42	PKG CARTON 60MM FXD EQUIP MODULE UEB 150
410-01056-00	CRTN STK#10 PRINTED 510X380X584MM
410-01076-00	PKG 340X50X20MM POLYST FOAM SL TYPE

T855 Grid Reference Index (IPN 220-01139-00)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
C1	2:K5	1-B4	C129	2:C12	2-E3	&C332	2:G10	4-J4	D300	2:G5	4-G2
C2	2:L5	1-B5	&C130	2:D8	2-B8	C333	2:G9	4-K4			4-G1
C3	2:K5	1-B4	&C131	2:C9	2-H6	C335	2:L12	4-K7	FL300	1:T11	4-E7
C4	2:L5	1-B5	&C132	2:D8	2-B8	C336	2:K12	4-L8	FL301	1:N11	4-H8
C5	2:K5	1-C4	C133	2:D6	2-E1	C337	2:G9	4-L4	&IC1	1:M4	1-D4
C6	2:L4	1-D5	C134	1:D3	2-R2	C338	2:J12	4-L8	=IC2	1:R5	1-B8
C7	2:M5	1-D5	C135	1:D3	2-R2	C339	2:G8	4-M5	IC3	1:N4	1-F3
C8	2:L5	1-D4	C136	2:D7	2-M6	C340	2:H12	4-M7	IC4	1:N4	1-K5
C9	2:R4	1-A8	C137	2:C10	2-L2	C341	2:G8	4-M6			1-N3
C13	1:L5	1-F4	C138	2:D5	2-C0	C342	2:F7	4-L2	IC5	1:T4	1-J8
C14	2:M4	1-F4	C200	2:S7	3-D1	C343	1:F8	4-M2			1-D7
C15	2:L3	1-G2	C201	1:S6	3-F1	C344	2:H11	4-M7			1-D7
C16	2:P3	1-G2	C202	2:R6	3-G1	C345	2:F6	4-M2			1-E7
C17	2:N3	1-H3	C203	2:S6	3-J3	C346	2:H11	4-N7			1-J8
C19	2:Q4	1-J2	C204	1:T7	3-L1	C347	2:G6	4-N4			1-K8
C20	1:P5	1-K5	C205	2:T7	3-M1	C350	2:H4	4-P2			1-L8
C21	2:M5	1-M2	C206	2:T8	3-M1	C351	2:H12	4-P8	IC6	1:T3	1-H8
C22	2:N5	1-L5	C207	1:R7	3-N6	C352	1:H11	4-P7			1-F8
C23	1:N4	1-L5	C210	2:R9	3-G6	C353	2:G6	4-P5			1-F7
C24	1:M5	1-P4	C211	1:Q8	3-G6	C354	2:H11	4-P7	IC100	1:C12	2-F3
C25	2:P8	1-M5	C212	1:R7	3-L5	C355	1:H7	4-N6			2-B2
C26	1:R4	1-Q8	C213	2:R7	3-J6	C356	2:G7	4-Q5			2-E1
C27	1:R5	1-Q7	C214	1:R8	3-H6	C357	2:H7	4-Q6	IC101	1:C10	2-R6
C28	2:R5	1-R7	C215	1:R9	3-E8	C359	2:H6	4-R6			2-F7
C30	2:P7	1-R8	C216	2:S7	3-H1	C360	2:F8	4-R4			2-G7
C31	2:L4	1-D5	C217	2:S6	3-J2	&C361	2:G11	4-C4	IC102	1:B7	2-P7
C32	2:L7	1-Q5	C218	2:T9	3-K3	C362	2:F8	4-K5	IC103	1:B8	2-N2
C33	2:Q4	1-C7	C219	2:R7	3-N6	C363	2:H12	4-N7	IC104	1:D6	2-E0
C34	2:T4	1-C8	C220	2:R8	3-G6	C364	2:G5	4-C1			2-D0
C35	2:S3	1-E9	C221	2:R6	3-M6	C365	2:F6	4-J2			2-B0
C36	1:S3	1-E9	C222	2:R9	3-F8	&C366	2:H9	4-H4	IC201	1:T6	3-H3
C100	1:E9	2-C8	&C300	2:G12	4-A4	&C367	2:G9	4-J4			3-H1
&C101	2:D10	2-D7	C301	2:G7	4-A2	C368	2:G10	4-F4			3-R0
C102	1:D9	2-D8	C302	2:V8	4-A7	C369	2:C9	2-J9	IC202	1:S7	3-E1
&C103	2:D10	2-E7	C303	2:G12	4-B4	C370	2:C9	2-H9	IC300	1:H6	4-B2
&C104	2:D10	2-E7	C304	2:G7	4-B2	C371	1:C9	2-J8			4-N5
C105	2:B11	2-D2	C305	2:V9	4-B7	DUMMY	0:B1				4-Q4
&C106	2:D10	2-E7	C306	2:V10	4-C7	D1	2:Q3	1-K2	IC301	1:L12	4-J8
C107	2:C12	2-F1	C307	2:H7	4-C1			1-K2	IC302	1:H4	4-N2
C108	2:C10	2-R6	C308	2:V11	4-C7	D2	2:M4	1-M3	L1	1:K5	1-B4
C110	1:D11	2-G5	C310	2:U11	4-D7			1-L3	L100	1:E3	2-K2
C111	2:C9	2-H6	C311	2:H4	4-D3	D100	2:C11	2-D2	L300	1:V8	4-B7
C112	1:B9	2-J8	C312	2:H5	4-E2			2-D2	L301	1:F12	4-B4
C113	2:B9	2-M2	C313	2:G11	4-E4	D101	2:E11	2-E4	L302	1:V9	4-B7
C114	2:C8	2-M5	C314	2:J5	4-E0			2-E4	L303	1:V10	4-C7
C115	2:D7	2-N7	&C315	2:G11	4-E4	D102	1:B11	2-H2	L304	1:F11	4-C4
C116	2:B9	2-M3	C316	2:G4	4-E2	D103	2:B10	2-J2	L305	1:V11	4-D7
C117	1:C7	2-P7	C317	2:R11	4-E7			2-H2	L306	1:F10	4-E4
C118	1:C8	2-N2	C318	2:Q12	4-F7	D104	2:D8	2-J4	L307	1:S10	4-F8
C119	2:B6	2-Q8	C319	2:G4	4-F2			2-J5	L308	1:H9	4-G5
C120	2:B8	2-P4	C320	2:H9	4-F5	D105	1:B10	2-K1	L309	1:F10	4-J4
C121	2:B6	2-Q8	C322	2:G10	4-G4	D106	1:E3	2-L1	L310	1:K12	4-L8
C122	1:B7	2-Q7	C323	2:Q11	4-G8	D107	1:D3	2-L0	L311	1:G8	4-L6
C123	2:B8	2-P4	C324	2:Q11	4-G8	D108	1:D3	2-L0	L312	1:H12	4-M7
C124	1:B8	2-P3	&C325	2:G10	4-H4	D200	2:T8	3-K3	L313	1:H12	4-N8
C125	1:C6	2-R8	C326	1:H4	4-G3			3-K3	L314	1:G5	4-M5
C126	2:A6	2-R7	C327	2:P10	4-G7	D201	1:V6	3-C7	L316	1:H8	4-Q5
C127	1:A8	2-P4	C328	1:R10	4-G8	D203	2:Q7	3-L7	PAD100	1:E11	2-A4
C128	2:B7	2-P2	C330	2:G5	4-H2			3-L6	PAD101	1:C10	2-A3

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
PAD103	1:C3	2-L0			3-B6	R103	2:B11	2-B2	RV300	1:H5	4-E1
PAD104	1:E3	2-R1			3-B6	RV103	1:B8	2-M7	R301	2:G8	4-A2
PAD105	1:E3	2-R0			3-B8	R104	2:D9	2-C9	RV301	1:G4	4-Q2
PAD106	1:C2	2-P1			3-B7	RV104	1:D5	2-C0	R302	2:G7	4-B2
PAD107	1:C2	2-P0	Q1	2:K4	1-C4	R105	2:D9	2-C8	R303	2:H4	4-D3
PAD108	1:C3	2-Q1	Q3	2:P3	1-J2	R106	2:C12	2-C2	R304	2:G5	4-D1
PAD109	1:C2	2-Q0	Q4	2:S4	1-Q9	&R107	2:D10	2-D8	R305	2:H4	4-D2
PAD110	1:E3	2-A9	Q100	2:C11	2-G2	R108	2:D9	2-D8	R306	2:H4	4-D2
PAD111	1:E8	2-A8	Q101	2:D11	2-H4	&R109	2:D10	2-D8	R307	2:H4	4-D1
PAD112	1:C3	2-A5	Q102	2:B11	2-H2	R110	2:D12	2-D2	R308	2:T11	4-D7
PAD113	1:D11	2-A4	Q103	2:C8	2-J4	R111	2:C12	2-D2	R309	2:G4	4-E2
PAD114	1:D12	2-A1	Q104	2:C3	2-K0	&R112	2:D10	2-E8	R310	2:G5	4-E1
PAD115	1:E4	2-A1	Q105	2:D7	2-N6	R113	2:C11	2-E2	R311	2:R11	4-E7
PAD116	1:C11	2-G2	Q106	2:B9	2-M2	R114	2:C12	2-F1	R313	2:G4	4-E3
PAD117	1:B4	2-Q3	Q107	2:D7	2-M6	R115	2:C10	2-G6	R314	2:H10	4-F4
PAD118	1:E3	2-A8	Q108	2:C10	2-L2	R116	2:D11	2-F4	R315	2:Q11	4-F7
PAD119	1:D9	2-H9	Q200	1:S6	3-K1	R117	2:C11	2-F2	R316	2:G10	4-F4
PAD120	1:B4	2-L8	Q201	1:T9	3-L2	R119	2:C11	2-F2	R317	2:G5	4-F2
PAD121	1:E5	2-A5	Q202	2:Q7	3-K6	R120	2:D9	2-F8	R318	2:R10	4-F8
PAD122	1:C2	2-K9	Q203	2:S8	3-H7	R121	2:E11	2-F5	R319	2:Q11	4-F8
PL1	1:L8	1-A4	Q300	2:H5	4-D1	&R122	2:C10	2-G7	R320	2:Q11	4-G8
PL2	1:L7	1-R5	Q301	2:G5	4-E2	R123	2:D11	2-G4	R321	2:Q11	4-G7
PL3	1:P8	1-R6	Q302	2:H10	4-F4	R124	2:C11	2-G3	R322	2:H10	4-G6
		1-R7	Q303	2:Q11	4-G7	R125	2:D11	2-G5	R323	2:H10	4-G5
		1-R6	Q304	2:F9	4-L4	&R126	2:C9	2-H7	R324	2:F5	4-G3
		1-R5	Q305	1:H12	4-N8	&R127	2:C9	2-H7	R325	2:G5	4-G2
		1-R9	Q306	2:G7	4-P4	R128	2:C4	2-H1	R326	2:H9	4-G5
PL4	1:K8	1-R3	Q307	2:C9	2-J9	R129	2:C3	2-H0	R327	2:F5	4-G2
		1-R4	R1	2:L5	1-B6	R130	2:B10	2-J4	R328	2:P11	4-H8
		1-R4	R2	2:M3	1-B1	R131	2:C10	2-J7	R329	2:F6	4-H2
		1-R3	R3	2:K5	1-B4	R132	2:B10	2-J2	R330	2:L11	4-H7
		1-R4	R4	2:M3	1-B1	R133	2:A9	2-K1	R332	2:L11	4-J8
PL5	1:P5	1-R0	R5	2:K5	1-C5	R134	2:B9	2-K3	R333	2:L12	4-J7
		1-R0	R6	2:K4	1-C5	R135	2:B10	2-L3	R334	2:K11	4-J8
		1-R1	R7	2:K5	1-C4	R136	2:B9	2-M3	R335	2:G9	4-K4
		1-R2	R8	2:M3	1-C1	R137	2:B8	2-M7	R336	2:K11	4-K9
		1-R1	R9	2:L4	1-C5	R138	2:C8	2-M4	R337	2:K11	4-K8
		1-R2	R10	2:K4	1-C1	R139	2:C8	2-M3	R338	2:L12	4-K7
		1-R3	R11	2:L4	1-C5	R140	2:D7	2-M7	R339	2:F9	4-K4
		1-R2	R12	2:L4	1-D1	R141	2:D7	2-N7	R340	2:G8	4-K6
		1-R2	R13	2:L3	1-D1	R142	2:C7	2-N7	R341	2:F9	4-K5
		1-R1	R14	2:M5	1-D6	R143	2:C8	2-N3	R342	2:G7	4-L3
PL100	1:D11	2-H3	R15	2:L3	1-D1	R144	2:A7	2-R6	R343	1:F7	4-L2
		2-H3	R16	2:R4	1-B9	R145	2:B7	2-P2	R344	2:F6	4-L1
		2-H3	R20	2:M4	1-G5	R146	2:B6	2-R7	R345	2:G9	4-L4
PL101	1:D9	2-H7	R21	2:M3	1-H3	R147	2:B5	2-Q3	R346	2:G6	4-L3
		2-H6	R22	2:L4	1-H4	R148	2:C4	2-Q3	R347	2:G8	4-L6
		2-H7	R23	2:N4	1-J4	R149	2:C11	2-F3	R348	2:G8	4-M6
PL102	1:D3	2-L0	R24	2:M4	1-J3	R150	2:B11	2-G3	R349	2:H11	4-M7
		2-L1	R25	2:M4	1-K3	R151	2:E8	2-B8	R350	2:H3	4-N2
		2-L1	R26	2:Q3	1-J2	&R152	2:E9	2-B7	R352	2:H12	4-N8
PL103	1:D9	2-B9	R27	2:P3	1-J2	R153	2:D8	2-J3	R353	2:H5	4-N6
		2-B8	R28	2:M5	1-L4	R154	2:D6	2-C1	R354	2:G6	4-N4
		2-B8	R29	2:M5	1-M3	R155	2:D6	2-C1	R355	2:G3	4-P2
PL104	1:C12	2-C1	R30	2:P5	1-J5	R156	2:D6	2-C0	R356	2:H10	4-P8
		2-C1	R31	2:P5	1-K6	R157	2:D6	2-C1	R357	2:G3	4-Q2
		2-C2	R32	2:N5	1-M4	R158	2:D8	2-L6	R358	2:F4	4-Q1
PL105	1:B9	2-K7	R33	2:N5	1-M2	R159	2:C10	2-L3	&R359	2:H8	4-R6
		2-K7	R34	2:N4	1-L5	R160	2:C11	2-G2	R360	1:F4	4-R1
		2-K7	R35	2:N5	1-N4	R161	2:C6	2-A0	R361	2:G8	4-R4
		2-K7	R36	2:P8	1-M5	R200	2:T8	3-D2	R362	2:G12	4-A5
		2-K8	R37	2:S4	1-Q8	R201	2:S7	3-G1	R363	2:H11	4-P7
PL106	1:B2	2-L8	R38	2:T4	1-C7	R203	2:T8	3-K3	R364	2:G6	4-P3
		2-L9	R39	2:S4	1-D8	R204	1:U9	3-K2	R365	2:G7	4-B2
		2-L8	R40	2:R3	1-D9	R205	1:U8	3-K3	R366	2:H5	4-C1
PL200	1:V5	3-B7	R41	2:L5	1-B5	R206	2:T6	3-L1	R367	2:H6	4-R6
		3-B6	R42	2:L4	1-D6	R207	2:T7	3-L0	R368	2:F5	4-F1
		3-B8	R100	2:B11	2-A3	R208	1:U8	3-L3	R369	1:G9	4-L4
		3-B7	RL100	1:D2	2-K1	R209	2:R7	3-M7	R370	2:G9	4-M4
		3-B6			2-N1	R212	2:Q9	3-G8	R371	2:F7	4-M2
		3-B5			2-N0	R213	2:R7	3-J6	R372	2:G7	4-Q5
		3-B5	RV100	1:B11	2-A2	R214	2:S7	3-J5	R373	2:L8	1-A4
		3-B9	R101	2:B12	2-A2	R215	2:S8	3-H5	R374	2:D9	2-H9
		3-B9	RV101	1:E11	2-F5	R216	2:S7	3-E0	R375	2:C9	2-J8
		3-B8	R102	2:C12	2-B1	R217	2:S7	3-F1	R376	2:C9	2-J8
		3-B8	RV102	1:B9	2-K3	R300	2:G8	4-A2	SK1	1:K5	1-A1

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
		1-A3									
		1-A3									
		1-A3									
		1-A2									
		1-A2									
		1-A2									
		1-A2									
		1-A1									
		1-A1									
SK300	1:F7	4-L0									
		4-M0									
		4-L0									
SK301	1:F4	4-R0									
		4-R0									
		4-Q0									
		4-Q0									
SW100	1:B6	2-A6									
T100	1:C4	2-Q2									
T200	1:R8	3-K7									
T200CAN	1:R8										
TP8	2:L11	4-H8									
TP9	2:G12	4-A4									
TP10	2:G10	4-E5									
TP300	2:K12	4-L8									
TP301	2:F5	4-J2									
TP302	2:G8	4-R5									
X300	1:H5	4-M6									
&XF300A	1:G12	4-C4									
&XF300B	1:G11	4-D4									
&XF301	1:G9	4-H4									
&XF302	1:H7	4-P5									

T855 Parts List (IPN 220-01139-02)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C143	Added to the audio processor circuitry to de-couple the +9V supply to prevent de-sensing of the Rx by CTCSS (positive to +9V, negative to ground). Fit this capacitor as close as possible to the 9V supply point pads. PCB layout grid reference 1:E6 (94/07-331)
R131	Changed from 4K7 (036-14470-00) to 1K (95/09-7075).
&XF302	276-00010-76 added to create Mid Band Rx for Czech Republic (95/08-7043).
L316	Changed from Coil No 655 (050-00016-55) to Coil No 631. Less susceptible to mechanical vibration (96/10-7176).

Ref	Var	IPN	Description
C1		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C2		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C3		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C4		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C7		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C8		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C9		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C13		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C14		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C15		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C16		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C17		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C19		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C20		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C21		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C22		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C23		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C24		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C25		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C26		025-08100-02	CAP TANT BEAD 10M 10% 16V
C27		025-08100-02	CAP TANT BEAD 10M 10% 16V
C28		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C30		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C31		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C32		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C33		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C34		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C35		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C36		025-08100-02	CAP TANT BEAD 10M 10% 16V
C100		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
&C101	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C101	MB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C101	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C101	UWB		NOT FITTED
C102		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
&C103	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C103	MB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C103	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C103	UWB	015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
&C104	NB	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
&C104	MB	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
&C104	WB	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
&C104	UWB		NOT FITTED
C105		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C106	NB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C106	MB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C106	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C106	UWB	015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C107		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C111		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C112		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C113		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C114		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C116		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C117		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C118		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C119		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C120		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C122		020-09470-07	CAP 470M 16V 20% ELECVERT8*20 3.5MM LO-ES
C123		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C124		020-09100-03	CAP ELECT RADL 100M 16V 8X11MM
C125		020-09220-01	CAP ELECT RADL 220M 16V 10X12.5MM
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C127		020-09220-01	CAP ELECT RADL 220M 16V 10X12.5MM
C128		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C129		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C130	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C130	MB	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C130	WB	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C130	UWB		NOT FITTED
&C131	NB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C131	MB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C131	WB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C131	UWB	015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
&C132	NB	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C132	MB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C132	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C132	UWB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C133		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C134		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C135		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C136		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C137		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C138		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C169		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C170		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C171		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C200		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C201		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C202		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C203		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C204		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM LO-E
C205		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C206		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C207		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C210		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C211		025-08100-02	CAP TANT BEAD 10M 10% 16V
C212		025-07330-01	CAP TANT BEAD 3M3 35V
C213		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C214		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C215		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C218		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V

Ref	Var	IPN	Description
C219		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C220		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C221		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C222		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C300	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C300	MB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C300	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C300	UWB	015-22180-01	CAP CER 0805 CHIP 18P +/-0.25P NPO 50V
C301		015-22390-01	CAP CER 0805 CHIP 39P 5% NPO 50V
C302		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C303		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C304		015-22390-01	CAP CER 0805 CHIP 39P 5% NPO 50V
C305		015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C306		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C307		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C308		015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C310		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C311		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C312		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C313		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C314		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C315	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C315	MB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C315	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C315	UWB	015-22180-01	CAP CER 0805 CHIP 18P +/-0.25P NPO 50V
C316		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C317		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C318		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C319		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C320		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C322		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C323		015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C324		015-23100-01	CAP CER 0805 CHIP 100P 5% NPO 50V
&C325	NB	015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
&C325	MB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
&C325	WB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
&C325	UWB	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C326		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C327		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C328		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C330		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C332	NB	015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
&C332	MB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
&C332	WB	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
&C332	UWB	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C333		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C335		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C336		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C337		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C338		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C339		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C340		015-21270-01	CAP CER 0805 CHIP 2P7 +/-0.25P NPO 50V
C341		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C342		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C343		025-08100-02	CAP TANT BEAD 10M 10% 16V
C344		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C345		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C346		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C347		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C350		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C351		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C352		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C353		015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C354		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C355		025-08100-02	CAP TANT BEAD 10M 10% 16V
C356		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C357		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C359		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C360		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C361	NB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C361	MB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C361	WB	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
&C361	UWB	015-22150-01	CAP CER 0805 CHIP 15P +/-0.25P NPO 50V
C362		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C363		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C364		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C365		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C366	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C366	MB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C366	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C366	UWB	015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
&C367	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C367	MB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C367	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C367	UWB	015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
C368		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
D1		001-10000-70	(S) DIODE SMD BAV70 DUALSWSOT-23 COMCATH
D2		001-10000-70	(S) DIODE SMD BAV70 DUALSWSOT-23 COMCATH
D100		001-10000-99	(S) DIODE SMD BAV99 DUAL SW SNGLE INLINE
D101		001-10000-56	(S) DIODE SMD BAW56 DUAL SWISOT-23 COM AN
D102		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D103		001-10000-70	(S) DIODE SMD BAV70 DUALSWSOT-23 COMCATH
D104		001-10000-70	(S) DIODE SMD BAV70 DUALSWSOT-23 COMCATH
D105		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
D106		001-00011-70	(S) DIODE 1N4001 1A/50V
D107		001-00011-70	(S) DIODE 1N4001 1A/50V
D108		001-00011-70	(S) DIODE 1N4001 1A/50V

Ref	Var	IPN	Description
D200		001-10000-99	(S) DIODE SMD BAV99 DUAL SW SNGLE INLINE
D201		001-00011-60	(S) DIODE SR2607 6A/30V
D203		001-10000-70	(S) DIODE SMD BAV70 DUALSWSOT-23 COMCATH
D300		001-10000-56	(S) DIODE SMD BAW56 DUAL SWISOT-23 COM AN
#FL300	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
#FL300	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
#FL300	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
#FL300	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
#FL300	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
#FL300	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
#FL301	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
#FL301	LOW	051-00005-47	COIL A/W 5.25T/8MM 400-450MHZ HELIC
#FL301	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
#FL301	MID	051-00005-48	COIL A/W 5T/8MM 430-480MHZ HELIC
#FL301	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
#FL301	HI	051-00005-49	COIL A/W 4.5T/8MM 470-520MHZ HELIC
&IC1	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
&IC1	MB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
&IC1	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
&IC1	UWB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
=IC2	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30+70C NDK NSA0175A
=IC2	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10-+60C NDK TIC3002A
=IC2	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
IC3		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC4		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC5		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC6		002-74000-74	(S) IC 74HC74 DUAL D F/F
IC100		002-00012-40	(S) IC 358P DUAL OP AMP
IC101		002-00012-40	(S) IC 358P DUAL OP AMP
IC102		002-00014-05	(S) IC TDA7231 1.6W AF PWR
IC103		002-00014-05	(S) IC TDA7231 1.6W AF PWR
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00012-40	(S) IC 358P DUAL OP AMP
IC202		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC300		002-00014-72	(S) IC MC3361 LO PWR FM IF
IC301		002-00022-01	(S) MIXER DOUBLE BLNCD TAK-1WH MXR
IC302		002-00014-58	(S) IC 78L05 5V 100MA REG TO-92
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L100		056-00021-02	IND FXD 100UH AXIAL
L300		052-08125-25	COIL A/W 2.5T/2.5MM HOR 0.8MM WIRE
L301		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L302		052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
L303		052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
L304		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L305		052-08125-25	COIL A/W 2.5T/2.5MM HOR 0.8MM WIRE
L306		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L307		056-00021-04	IND FXD 330NH AXIAL
L308		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L309		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L310		056-00021-04	IND FXD 330NH AXIAL
L311		050-00016-21	COIL TAIT NO 621 FXD 10.7MHZ 7MM CAN
L312		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L313		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L314		050-00016-22	COIL TAIT NO 622 20-120MHZ 7MM CAN
L316		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL5		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL101		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL102		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL103		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL104		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
PL105		240-00020-58	HEADER 5 WAY 1 ROW PCB MTG
PL106		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q3		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q4		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q100		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q104		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q105		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q106		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q107		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q108		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q109		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q200		000-00011-30	(S) XSTR BC557B PNP AF SML SIG TO92
Q201		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q202		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q203		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q301		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q302		000-10008-92	(S) XSTR SMD BFS17 NPN SOT-23 UHF SMALL SG
Q303		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q304		000-10009-91	(S) XSTR SMD BF991 DGMOSFET
Q305		000-00020-18	(S) XSTR BF247A JFET TO-92 VHF SMALL SIG
Q306		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-17100-00	RES M/F 0805 CHIP 1M 5%

Ref	Var	IPN	Description
R3		036-14100-00	RES M/F 0805 CHIP 1K 5%
R4		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R6		036-13120-00	RES M/F 0805 CHIP 120E 5%
R7		036-13100-00	RES M/F 0805 CHIP 100E 5%
R8		036-17100-00	RES M/F 0805 CHIP 1M 5%
R9		036-12180-00	RES M/F 0805 CHIP 18E 5%
R10		036-17100-00	RES M/F 0805 CHIP 1M 5%
R11		036-12680-00	RES M/F 0805 CHIP 68E 5%
R12		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-17100-00	RES M/F 0805 CHIP 1M 5%
R14		036-12100-00	RES M/F 0805 CHIP 10E 5%
R15		036-17100-00	RES M/F 0805 CHIP 1M 5%
R16		036-12220-00	RES M/F 0805 CHIP 22E 5%
R20		036-12220-00	RES M/F 0805 CHIP 22E 5%
R21		036-15120-00	RES M/F 0805 CHIP 12K 5%
R22		036-15100-00	RES M/F 0805 CHIP 10K 5%
R23		036-16470-00	RES M/F 0805 CHIP 470K 5%
R24		036-13100-00	RES M/F 0805 CHIP 100E 5%
R25		036-14100-00	RES M/F 0805 CHIP 1K 5%
R26		036-17100-00	RES M/F 0805 CHIP 1M 5%
R27		036-17100-00	RES M/F 0805 CHIP 1M 5%
R28		036-15100-00	RES M/F 0805 CHIP 10K 5%
R29		036-16100-00	RES M/F 0805 CHIP 100K 5%
R30		036-15100-00	RES M/F 0805 CHIP 10K 5%
R31		036-15100-00	RES M/F 0805 CHIP 10K 5%
R32		036-16470-00	RES M/F 0805 CHIP 470K 5%
R33		036-16470-00	RES M/F 0805 CHIP 470K 5%
R34		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R35		036-12220-00	RES M/F 0805 CHIP 22E 5%
R36		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R37		036-14100-00	RES M/F 0805 CHIP 1K 5%
R38		036-15150-00	RES M/F 0805 CHIP 15K 5%
R39		036-16100-00	RES M/F 0805 CHIP 100K 5%
R40		036-12220-00	RES M/F 0805 CHIP 22E 5%
R41		036-12100-00	RES M/F 0805 CHIP 10E 5%
R42		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-15270-00	RES M/F 0805 CHIP 27K 5%
RL100		237-00010-22	RELAY 12V DPDT 8PIN DIL PCB MTG FUJITSU 244
RV100		040-05100-21	POT 10K LIN VERT PCB MTG 15MM SLOT SHAFT
R101		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV101		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R102		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV102		040-05100-23	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R103		036-15220-00	RES M/F 0805 CHIP 22K 5%
RV103		040-05100-22	POT 10K LOG DUAL PCB MTG 6MM OD SHAFT
R104		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV104		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R105		036-16220-00	RES M/F 0805 CHIP 220K 5%
R106		036-16390-00	RES M/F 0805 CHIP 390K 5%
&R107	NB	036-15180-00	RES M/F 0805 CHIP 18K 5%
&R107	MB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R107	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R107	UWB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R108		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R109	NB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R109	MB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R109	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R109	UWB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
R110		036-16100-00	RES M/F 0805 CHIP 100K 5%
R111		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R112	NB	036-15390-00	RES M/F 0805 CHIP 39K 5%
&R112	MB	036-15390-00	RES M/F 0805 CHIP 39K 5%
&R112	WB	036-15390-00	RES M/F 0805 CHIP 39K 5%
&R112	UWB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R114		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R115		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R116		036-13100-00	RES M/F 0805 CHIP 100E 5%
R117		036-15470-00	RES M/F 0805 CHIP 47K 5%
R119		036-15100-00	RES M/F 0805 CHIP 10K 5%
R120		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R121		036-14100-00	RES M/F 0805 CHIP 1K 5%
&R122	NB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R122	MB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R122	WB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R122	UWB	036-14390-00	RES M/F 0805 CHIP 3K9 5%
R123		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R124		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R125		036-14100-00	RES M/F 0805 CHIP 1K 5%
&R126	NB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R126	MB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R126	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R126	UWB	036-15270-00	RES M/F 0805 CHIP 27K 5%
&R127	NB	036-16100-00	RES M/F 0805 CHIP 100K 5%
&R127	MB	036-16100-00	RES M/F 0805 CHIP 100K 5%
&R127	WB	036-16100-00	RES M/F 0805 CHIP 100K 5%
&R127	UWB	036-16330-00	RES M/F 0805 CHIP 330K 5%
R128		036-13560-00	RES M/F 0805 CHIP 560E 5%
R129		036-14100-00	RES M/F 0805 CHIP 1K 5%
R130		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R131		036-14100-00	RES M/F 0805 CHIP 1K 5%
R132		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R133		036-14120-00	RES M/F 0805 CHIP 1K2 5%
R134		036-15390-00	RES M/F 0805 CHIP 39K 5%
R135		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R136		036-15470-00	RES M/F 0805 CHIP 47K 5%
R137		036-15470-00	RES M/F 0805 CHIP 47K 5%
R138		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R139		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R140		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R141		036-15470-00	RES M/F 0805 CHIP 47K 5%
R142		036-15470-00	RES M/F 0805 CHIP 47K 5%
R143		036-15470-00	RES M/F 0805 CHIP 47K 5%
R144		036-11470-00	RES M/F 0805 CHIP 4E7 10%
R145		036-11470-00	RES M/F 0805 CHIP 4E7 10%
R146		036-14100-00	RES M/F 0805 CHIP 1K 5%
R147		036-13150-00	RES M/F 0805 CHIP 150E 5%
R148		036-14100-00	RES M/F 0805 CHIP 1K 5%
R149		036-13100-00	RES M/F 0805 CHIP 100E 5%
R150		036-14100-00	RES M/F 0805 CHIP 1K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	NB	036-14330-00	RES M/F 0805 CHIP 3K3 5%
&R152	MB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	WB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	UWB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
R153		036-15100-00	RES M/F 0805 CHIP 10K 5%
R154		036-13100-00	RES M/F 0805 CHIP 100E 5%
R155		036-15120-00	RES M/F 0805 CHIP 12K 5%
R156		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R157		036-16220-00	RES M/F 0805 CHIP 220K 5%
R158		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R160		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R161		036-16100-00	RES M/F 0805 CHIP 100K 5%
R174		036-15150-00	RES M/F 0805 CHIP 15K 5%
R175		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R176		036-13470-00	RES M/F 0805 CHIP 470E 5%
R200		036-12220-00	RES M/F 0805 CHIP 22E 5%
R201		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R203		036-14100-00	RES M/F 0805 CHIP 1K 5%
R204		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R205		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R206		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R207		036-15100-00	RES M/F 0805 CHIP 10K 5%
R208		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R209		036-13100-00	RES M/F 0805 CHIP 100E 5%
R212		036-12100-00	RES M/F 0805 CHIP 10E 5%
R213		036-15150-00	RES M/F 0805 CHIP 15K 5%
R214		036-16100-00	RES M/F 0805 CHIP 100K 5%
R215		036-15560-00	RES M/F 0805 CHIP 56K 5%
R216		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R217		036-13470-00	RES M/F 0805 CHIP 470E 5%
R300		036-15180-00	RES M/F 0805 CHIP 18K 5%
RV300		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R301		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV301		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R302		036-16390-00	RES M/F 0805 CHIP 390K 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R305		036-15150-00	RES M/F 0805 CHIP 15K 5%
R306		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R307		036-14100-00	RES M/F 0805 CHIP 1K 5%
R308		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R309		036-16100-00	RES M/F 0805 CHIP 100K 5%
R310		036-15220-00	RES M/F 0805 CHIP 22K 5%
R311		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R313		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R314		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R315		036-13330-00	RES M/F 0805 CHIP 330E 5%
R316		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R317		036-14100-00	RES M/F 0805 CHIP 1K 5%
R318		036-12100-00	RES M/F 0805 CHIP 10E 5%
R319		036-14100-00	RES M/F 0805 CHIP 1K 5%
R320		036-13150-00	RES M/F 0805 CHIP 150E 5%
R321		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-12470-00	RES M/F 0805 CHIP 47E 5%
R323		036-15100-00	RES M/F 0805 CHIP 10K 5%
R324		036-16100-00	RES M/F 0805 CHIP 100K 5%
R325		036-15100-00	RES M/F 0805 CHIP 10K 5%
R326		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R327		036-15470-00	RES M/F 0805 CHIP 47K 5%
R328		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R329		036-15470-00	RES M/F 0805 CHIP 47K 5%
R330		036-13470-00	RES M/F 0805 CHIP 470E 5%
R332		036-12100-00	RES M/F 0805 CHIP 10E 5%
R333		036-13470-00	RES M/F 0805 CHIP 470E 5%
R334		036-12220-00	RES M/F 0805 CHIP 22E 5%
R335		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R336		036-13220-00	RES M/F 0805 CHIP 220E 5%
R337		036-13220-00	RES M/F 0805 CHIP 220E 5%
R338		036-12470-00	RES M/F 0805 CHIP 47E 5%
R339		036-15100-00	RES M/F 0805 CHIP 10K 5%
R340		036-15100-00	RES M/F 0805 CHIP 10K 5%
R341		036-15220-00	RES M/F 0805 CHIP 22K 5%
R342		036-15120-00	RES M/F 0805 CHIP 12K 5%
R343		045-05100-01	RES NTC 10K 20% 5MM DISC
R344		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R345		036-13330-00	RES M/F 0805 CHIP 330E 5%
R346		036-15100-00	RES M/F 0805 CHIP 10K 5%
R347		036-14100-00	RES M/F 0805 CHIP 1K 5%
R348		036-12470-00	RES M/F 0805 CHIP 47E 5%
R349		036-12390-00	RES M/F 0805 CHIP 39E 5%
R350		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R352		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R353		036-14100-00	RES M/F 0805 CHIP 1K 5%

Ref	Var	IPN	Description
R354		036-15100-00	RES M/F 0805 CHIP 10K 5%
R355		036-13390-00	RES M/F 0805 CHIP 390E 5%
R356		036-12100-00	RES M/F 0805 CHIP 10E 5%
R357		036-13820-00	RES M/F 0805 CHIP 820E 5%
R358		036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R359	NB	036-15820-00	RES M/F 0805 CHIP 82K 5%
&R359	MB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R359	WB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R359	UWB	036-15150-00	RES M/F 0805 CHIP 15K 5%
R360		045-05100-01	RES NTC 10K 20% 5MM DISC
R361		036-13220-00	RES M/F 0805 CHIP 220E 5%
R362		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R363		036-12100-00	RES M/F 0805 CHIP 10E 5%
R364		036-15100-00	RES M/F 0805 CHIP 10K 5%
R365		036-17100-00	RES M/F 0805 CHIP 1M 5%
R366		036-13180-00	RES M/F 0805 CHIP 180E 5%
R367		036-12100-00	RES M/F 0805 CHIP 10E 5%
R368		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R369		045-03150-01	RES NTC 150E 0.5W 5MM DISC
R370		036-13470-00	RES M/F 0805 CHIP 470E 5%
R371		036-12470-00	RES M/F 0805 CHIP 47E 5%
R372		036-16150-00	RES M/F 0805 CHIP 150K 5%
R373		036-12560-00	RES M/F 0805 CHIP 56E 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SW100		230-00010-30	SWITCH TOGGLE SPDT RT ANGLE PCB MT
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN
X300		274-00010-22	XTAL 44.545MHZ SPEC TE/22 HC45-UC/W TEF INS
&XF300	NB	276-00010-57	FLTR XTAL 45MHZ 7.5K BW4POLE 45N7.5BA 2PCS
&XF300	MB	276-00010-58	FLTR XTAL 45M 15K B/W 4P 2 PCS C/W TEF INS
&XF300	WB	276-00010-58	FLTR XTAL 45M 15K B/W 4P 2 PCS C/W TEF INS
&XF300	UWB	276-00010-59	FLTR XTAL 45MHZ 30KHZ B/W 4 POLE 2 PCS
&XF301	NB	276-00010-54	FLTR XTAL 45M 7K5 B/W 2P 45N7.5A C/W TEF INS
&XF301	MB	276-00010-56	FLTR XTAL 45MHZ 14KHZ B/W 2 POLE 45N14AB
&XF301	WB	276-00010-56	FLTR XTAL 45MHZ 14KHZ B/W 2 POLE 45N14AB
&XF301	UWB	276-00010-60	FLTR XTAL 45MHZ 30KHZ B/W 2 POLE 45F30A
&XF302	NB	276-00010-13	FLTR CER 455KHZ 9KHZ B/W CFW455G
&XF302	MB	276-00010-76	FLTR CER 455KHZ 12KHZ B/W CFWS455F
&XF302	WB	276-00010-14	FLTR CER 455KHZ 15KHZ B/W CFW455E
&XF302	UWB	276-00010-16	FLTR CER 455KHZ 30KHZ B/W SFH455B

NOTE:

LOW	= 400-440MHZ
MID	= 440-480MHZ
HI	= 480-530MHZ
NB	= 7.5KHZ IF BANDWIDTH
MB	= 12KHZ IF BANDWIDTH
WB	= 15KHZ IF BANDWIDTH
UWB	= 30KHZ IF BANDWIDTH
1PPM	= 1PPM TCXO
2PPM	= 2PPM TCXO
2.5PPM	= 2.5PPM TCXO

T855 Mechanical & Miscellaneous Parts (220-01139-02)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
061-00010-20	FORMER PTFE A4M765 HELIC RESNTR Fit on FL300 x2 and FL301 x2.
062-00010-13	CAN 10MM SQ X 11mm SANWA 613 A4M1017 Fit Over Coil T200.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8mm STACK POLE 15 Way D Range x15.
066-00010-20	SLUG BRASS A4M764 T196 HELIC RESNTR For FL300 x2 and FL301 x2.
201-00030-02	WIRE #1 T/C WIRE 7/0.2mm PVC RED 2 x30mm LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2mm PVC BLACK 2 x35mm LEDs.
220-01139-02	PCB T855 RX
230-00010-31	COVER LEVER FOR TOGGLE SW 230-00010-30
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMINAL
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103, 104, 105 & 106 x1 Each.
240-04020-64	SKT JACK AN 0.98mm PCB MTG 64 WAY SIL STRIP 7 Sockets, SK300 (3), SK301(4)
240-04020-65	SKT JACK PIN 1.3mm PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q201 x1.
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-01047-00	HOUSING A2M2330 HELIC RESNTR COMPL T855 Fit Over FL300 x1 and FL301 x1
311-01015-00	KNOB SATO K34 AG 15mm & SKIRT 6mm SHFT FXDEQ Monitor Volume On Front Panel x1.
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06368-02	PNL FRT COMPL T855 A3M2208/1 & 2
316-85015-01	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857
	Attached To D Range Plug x1.
345-00040-06	SCREW M3*8mm PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12mm PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6mm CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6mm PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4, Final Installation Kit x2
345-00040-11	SCREW M3*10mm PAN POZI ST BZ For Final Installation Kit x4.
345-00040-20	SCREW M3*8mm BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-03	SCREW TAPTITE 4-40X1/4IN PAN POZI BZ Helical Resonator Mounting x4.
349-00020-31	SCREW TAPTITE M3X10mm PAN POZI BZ N Connector x4.
349-00020-32	SCREW TAPTITE M3X8mm PAN POZI BZ Pcb Mounting x8.
349-00020-43	SCREW TAPTITE M4X12mm PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4X20mm PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
352-00010-50	NUT TRIM SCREEN 1/4 UNF SPIRE SNO 2780 For Securing FL300 x2 and FL301 x2.
353-00010-10	WASHER M3 FLAT 7mm*0.6MM ST BZ Float Plate x4.
353-00010-11	WASHER M3 Flat 9.5mm*0.9mm ST BZ For Final Installation Kit x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
353-00010-13	WASHER M3 SHAKEPROOF INT BZ Vco Mtg x2.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q201 x1.
362-00010-33	GROMMET LED MTG 3mm LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37mm SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-20	LABEL WHITE S/A 28X11mm QUIKSTIK RW718/4 Rev No x1, EPROM x1, Helical Coils x2, T100 x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8mm TAMPERMARK VOID MATT FCC Rules Pt 15 x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01391-01	LABEL 24*12mm CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100mm
400-00010-07	SLEEVING 2mm SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T855 Grid Reference Index (IPN 220-01139-02)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
C1	2:K5	1-B4	C129	2:C12	2-E3	C327	2:P10	4-G7			4-G1
C2	2:L5	1-B5	&C130	2:D8	2-B8	C328	1:R10	4-G8	#FL300	1:T11	4-E8
C3	2:K5	1-B4	&C131	2:C9	2-H6	C330	2:G5	4-H2	#FL301	1:N11	4-H8
C4	2:L5	1-B5	&C132	2:D8	2-B8	&C332	2:G10	4-J4	&IC1	1:M4	1-D4
C5	2:K5	1-C4	C133	2:D6	2-E1	C333	2:G9	4-K4	=IC2	1:R5	1-B8
C6	2:L4	1-D5	C134	1:D3	2-R2	C335	2:L12	4-K7	IC3	1:N4	1-F3
C7	2:M5	1-D5	C135	1:D3	2-R2	C336	2:K12	4-L8	IC4	1:N4	1-N8
C8	2:L5	1-D4	C136	2:D7	2-M6	C337	2:G9	4-L4			1-L5
C9	2:R4	1-A8	C137	2:C10	2-L2	C338	2:J12	4-L8			1-N3
C13	1:L5	1-F4	C138	2:D5	2-C0	C339	2:G8	4-M5	IC5	1:T4	1-J8
C14	2:M4	1-F4	C169	2:C9	2-J9	C340	2:H12	4-M7			1-E7
C15	2:L3	1-G2	C170	2:C9	2-H9	C341	2:G8	4-M6			1-D7
C16	2:P3	1-G2	C171	1:C9	2-J8	C342	2:F7	4-L2			1-D7
C17	2:N3	1-H3	C200	2:S7	3-D1	C343	1:F8	4-M2			1-L8
C19	2:Q4	1-J2	C201	1:S6	3-F1	C344	2:H11	4-M7			1-K8
C20	1:P5	1-K5	C202	2:R6	3-G1	C345	2:F6	4-M2			1-J8
C21	2:M5	1-M2	C203	2:S6	3-J3	C346	2:H11	4-N7	IC6	1:T3	1-H8
C22	2:N5	1-L5	C204	1:T7	3-L1	C347	2:G6	4-N4			1-F8
C23	1:N4	1-L5	C205	2:T7	3-M1	C350	2:H4	4-P2			1-F7
C24	1:M5	1-P8	C206	2:T8	3-M1	C351	2:H12	4-P8	IC100	1:C12	2-F3
C25	2:P8	1-M5	C207	1:R7	3-N6	C352	1:H11	4-P7			2-B2
C26	1:R4	1-Q8	C210	2:R9	3-G6	C353	2:G6	4-P5			2-E1
C27	1:R5	1-Q7	C211	1:Q8	3-G6	C354	2:H11	4-P7	IC101	1:C10	2-R6
C28	2:R5	1-R7	C212	1:R7	3-L5	C355	1:H7	4-N6			2-G7
C30	2:P7	1-R8	C213	2:R7	3-J6	C356	2:G7	4-Q5			2-F7
C31	2:L4	1-D5	C214	1:R8	3-H6	C357	2:H7	4-Q6	IC102	1:B7	2-P7
C32	2:L7	1-Q5	C215	1:R9	3-E8	C359	2:H6	4-R6	IC103	1:B8	2-N2
C33	2:Q4	1-C7	C216	2:S7	3-H1	C360	2:F8	4-R4	IC104	1:D6	2-E0
C34	2:T4	1-C8	C217	2:S6	3-J2	&C361	2:G11	4-C4			2-B0
C35	2:S3	1-E9	C218	2:T9	3-K3	C362	2:F8	4-K5			2-D0
C36	1:S3	1-E9	C219	2:R7	3-N6	C363	2:H12	4-N7	IC201	1:T6	3-H3
C100	1:E9	2-C8	C220	2:R8	3-G6	C364	2:G5	4-C1			3-R0
&C101	2:D10	2-D7	C221	2:R6	3-M6	C365	2:F6	4-J2			3-H1
C102	1:D9	2-D8	C222	2:R9	3-F8	&C366	2:H9	4-H4	IC202	1:S7	3-E1
&C103	2:D10	2-E7	&C300	2:G12	4-A4	&C367	2:G9	4-J4	IC300	1:H6	4-B2
&C104	2:D10	2-E7	C301	2:G7	4-A2	C368	2:G10	4-F4			4-N5
C105	2:B11	2-D2	C302	2:V8	4-A7	D1	2:Q3	1-K2			4-Q4
&C106	2:D10	2-E7	C303	2:G12	4-B4			1-K2	IC301	1:L12	4-J8
C107	2:C12	2-F1	C304	2:G7	4-B2	D2	2:M4	1-M3	IC302	1:H4	4-N2
C108	2:C10	2-R6	C305	2:V9	4-B7			1-L3	L1	1:K5	1-B4
C110	1:D11	2-G5	C306	2:V10	4-C7	D100	2:C11	2-D2	L100	1:E3	2-K2
C111	2:C9	2-H6	C307	2:H7	4-C1			2-D2	L300	1:V8	4-B7
C112	1:B9	2-J8	C308	2:V11	4-C7	D101	2:E11	2-E4	L301	1:F12	4-B4
C113	2:B9	2-M2	C310	2:U11	4-D7			2-E4	L302	1:V9	4-B7
C114	2:C8	2-M5	C311	2:H4	4-D3	D102	1:B11	2-H2	L303	1:V10	4-C7
C115	2:D7	2-N7	C312	2:H5	4-E2	D103	2:B10	2-J2	L304	1:F11	4-C4
C116	2:B9	2-M3	C313	2:G11	4-E4			2-H2	L305	1:V11	4-D7
C117	1:C7	2-P7	C314	2:J5	4-E0	D104	2:D8	2-J4	L306	1:F10	4-E4
C118	1:C8	2-N2	&C315	2:G11	4-E4			2-J5	L307	1:S10	4-F8
C119	2:B6	2-Q8	C316	2:G4	4-E2	D105	1:B10	2-K1	L308	1:H9	4-G5
C120	2:B8	2-P4	C317	2:R11	4-E7	D106	1:E3	2-L1	L309	1:F10	4-J4
C121	2:B6	2-Q8	C318	2:Q12	4-F7	D107	1:D3	2-L0	L310	1:K12	4-L8
C122	1:B7	2-Q7	C319	2:G4	4-F2	D108	1:D3	2-L0	L311	1:G8	4-L6
C123	2:B8	2-P4	C320	2:H9	4-F5	D200	2:T8	3-K3	L312	1:H12	4-M7
C124	1:B8	2-P3	C322	2:G10	4-G4			3-K3	L313	1:H12	4-N8
C125	1:C6	2-R8	C323	2:Q11	4-G8	D201	1:V6	3-C7	L314	1:G5	4-M5
C126	2:A6	2-R7	C324	2:Q11	4-G8	D203	2:Q7	3-L7	L316	1:H8	4-Q5
C127	1:A8	2-P4	&C325	2:G10	4-H4			3-L6	PAD8		1-Q0
C128	2:B7	2-P2	C326	1:H4	4-G3	D300	2:G5	4-G2	PAD9		1-Q0

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
PAD10		1-Q0			3-B7	RV104	1:D5	2-C0	RV300	1:H5	4-E1
PAD11		1-Q1	Q1	2:K4	1-C4	R105	2:D9	2-C8	R301	2:G8	4-A2
PAD100	1:E11	2-A4	Q3	2:P3	1-J2	R106	2:C12	2-C2	RV301	1:G4	4-Q2
PAD101	1:C10	2-A3	Q4	2:S4	1-Q9	&R107	2:D10	2-D8	R302	2:G7	4-B2
PAD103	1:C3	2-L0	Q100	2:C11	2-G2	R108	2:D9	2-D8	R303	2:H4	4-D3
PAD104	1:E3	2-R1	Q101	2:D11	2-H4	&R109	2:D10	2-D8	R304	2:G5	4-D1
PAD105	1:E3	2-R0	Q102	2:B11	2-H2	R110	2:D12	2-D2	R305	2:H4	4-D2
PAD106	1:C2	2-P1	Q103	2:C8	2-J4	R111	2:C12	2-D2	R306	2:H4	4-D2
PAD107	1:C2	2-P0	Q104	2:C3	2-K0	&R112	2:D10	2-E8	R307	2:H4	4-D1
PAD108	1:C3	2-Q1	Q105	2:D7	2-N6	R113	2:B11	2-E2	R308	2:T11	4-D7
PAD109	1:C2	2-Q0	Q106	2:B9	2-M2	R114	2:C12	2-F1	R309	2:G4	4-E2
PAD110	1:E3	2-A9	Q107	2:D7	2-M6	R115	2:C10	2-G6	R310	2:G5	4-E1
PAD111	1:E8	2-A8	Q108	2:C10	2-L2	R116	2:D11	2-F4	R311	2:R11	4-E7
PAD112	1:C3	2-A5	Q109	2:C9	2-J9	R117	2:C11	2-F2	R313	2:G4	4-E3
PAD113	1:D11	2-A4	Q200	1:S6	3-K1	R119	2:C11	2-F2	R314	2:H10	4-F4
PAD114	1:D12	2-A1	Q201	1:T9	3-L2	R120	2:D9	2-F8	R315	2:Q11	4-F7
PAD115	1:E4	2-A1	Q202	2:Q7	3-K6	R121	2:E11	2-F5	R316	2:G10	4-F4
PAD116	1:C11	2-G2	Q203	2:S8	3-H7	&R122	2:C10	2-G7	R317	2:G5	4-F2
PAD117	1:B4	2-Q3	Q300	2:H5	4-D1	R123	2:D11	2-G4	R318	2:R10	4-F8
PAD118	1:E3	2-A8	Q301	2:G5	4-E2	R124	2:C11	2-G3	R319	2:Q11	4-F8
PAD119	1:D9	2-H9	Q302	2:H10	4-F4	R125	2:D11	2-G5	R320	2:Q11	4-G8
PAD120	1:B4	2-L8	Q303	2:Q11	4-G7	&R126	2:C9	2-H7	R321	2:Q11	4-G7
PAD121	1:E5	2-A5	Q304	2:F9	4-L4	&R127	2:C9	2-H7	R322	2:H10	4-G6
PAD122	1:C2	2-K9	Q305	1:H12	4-N8	R128	2:C4	2-H1	R323	2:H10	4-G5
PAD123	1:C10	2-G2	Q306	2:G7	4-P4	R129	2:C3	2-H0	R324	2:F5	4-G3
PAD124	1:B3	2-A8	R1	2:L5	1-B6	R130	2:B10	2-J4	R325	2:G5	4-G2
PAD125	1:B3	2-A8	R2	2:M3	1-B1	R131	2:C10	2-J7	R326	2:H9	4-G5
PAD126	1:D9	2-H9	R3	2:K5	1-B4	R132	2:B10	2-J2	R327	2:F5	4-G2
PAD127	1:C10	2-A4	R4	2:M3	1-B1	R133	2:A9	2-K1	R328	2:P11	4-H8
PAD128	1:B3	2-K9	R5	2:K5	1-C5	R134	2:B9	2-K3	R329	2:F6	4-H2
PL1	1:P5	1-R0	R6	2:K4	1-C5	R135	2:B10	2-L3	R330	2:L11	4-H7
		1-R1	R7	2:K5	1-C4	R136	2:B9	2-M3	R332	2:L11	4-J8
		1-R2	R8	2:M3	1-C1	R137	2:B8	2-M7	R333	2:L12	4-J7
		1-R2	R9	2:L4	1-C5	R138	2:C8	2-M4	R334	2:K11	4-J8
		1-R2	R10	2:K4	1-C1	R139	2:C8	2-M3	R335	2:G9	4-K4
		1-R2	R11	2:L4	1-C5	R140	2:D7	2-M7	R336	2:K11	4-K9
		1-R3	R12	2:L4	1-D1	R141	2:D7	2-N7	R337	2:K11	4-K8
		1-R1	R13	2:L3	1-D1	R142	2:C7	2-N7	R338	2:L12	4-K7
		1-R1	R14	2:M5	1-D6	R143	2:C8	2-N3	R339	2:F9	4-K4
PL100	1:D11	2-H3	R15	2:L3	1-D1	R144	2:A7	2-R6	R340	2:G8	4-K6
		2-H3	R16	2:R4	1-B9	R145	2:B7	2-P2	R341	2:F9	4-K5
		2-H3	R20	2:M4	1-G5	R146	2:B6	2-R7	R342	2:G7	4-L3
PL101	1:D9	2-H7	R21	2:M3	1-H3	R147	2:B5	2-Q3	R343	1:F7	4-L2
		2-H6	R22	2:L4	1-H4	R148	2:C4	2-Q3	R344	2:F6	4-L1
		2-H7	R23	2:N4	1-J4	R149	2:C11	2-F3	R345	2:G9	4-L4
PL102	1:D3	2-L0	R24	2:M4	1-J3	R150	2:B11	2-G3	R346	2:G6	4-L3
		2-L1	R25	2:M4	1-K3	R151	2:E8	2-B8	R347	2:G8	4-L6
		2-L1	R26	2:Q3	1-J2	&R152	2:E9	2-B7	R348	2:G8	4-M6
PL103	1:D9	2-B9	R27	2:P3	1-J2	R153	2:D8	2-J3	R349	2:H11	4-M7
		2-B8	R28	2:M5	1-L4	R154	2:D6	2-C1	R350	2:H3	4-N2
		2-B8	R29	2:M5	1-M3	R155	2:D6	2-C1	R352	2:H12	4-N8
PL104	1:C12	2-C1	R30	2:P5	1-J5	R156	2:D6	2-C0	R353	2:H5	4-N6
		2-C1	R31	2:P5	1-K6	R157	2:D6	2-C1	R354	2:G6	4-N4
		2-C2	R32	2:N5	1-M4	R158	2:D8	2-L6	R355	2:G3	4-P2
PL105	1:B9	2-K7	R33	2:N5	1-M2	R159	2:C10	2-L3	R356	2:H10	4-P8
		2-K7	R34	2:N4	1-L5	R160	2:C11	2-G2	R357	2:G3	4-Q2
		2-K7	R35	2:N5	1-N9	R161	2:C6	2-A0	R358	2:F4	4-Q1
		2-K7	R36	2:P8	1-M5	R174	2:D9	2-H9	&R359	2:H8	4-R6
		2-K8	R37	2:S4	1-Q8	R175	2:C9	2-J8	R360	1:F4	4-R1
PL106	1:B2	2-L8	R38	2:T4	1-C7	R176	2:C9	2-J8	R361	2:G8	4-R4
		2-L9	R39	2:S4	1-D8	R200	2:T8	3-D2	R362	2:G12	4-A5
		2-L8	R40	2:R3	1-D9	R201	2:S7	3-G1	R363	2:H11	4-P7
PL200	1:V5	3-B7	R41	2:L5	1-B5	R203	2:T8	3-K3	R364	2:G6	4-P3
		3-B6	R42	2:L4	1-D6	R204	1:U9	3-K2	R365	2:G7	4-B2
		3-B8	R100	2:B11	2-A3	R205	1:U8	3-K3	R366	2:H5	4-C1
		3-B7	RL100	1:D2	2-K1	R206	2:T6	3-L1	R367	2:H6	4-R6
		3-B6			2-N1	R207	2:T7	3-L0	R368	2:F5	4-F1
		3-B6			2-N0	R208	1:U8	3-L3	R369	1:G9	4-L4
		3-B5	RV100	1:B11	2-A2	R209	2:R7	3-M7	R370	2:G9	4-M4
		3-B5	R101	2:B12	2-A2	R212	2:Q9	3-G8	R371	2:F7	4-M2
		3-B9	RV101	1:E11	2-F5	R213	2:R7	3-J6	R372	2:G7	4-Q5
		3-B9	R102	2:C12	2-B1	R214	2:S7	3-J5	R373	2:L8	1-A4
		3-B8	RV102	1:B9	2-K3	R215	2:S8	3-H5	SJ2	1:L8	1-A4
		3-B8	R103	2:B11	2-B2	R216	2:S7	3-E0	SJ3	1:L7	1-R5
		3-B6	RV103	1:B8	2-M7	R217	2:S7	3-F1	SJ4-1	1:P8	1-R5
		3-B8	R104	2:D9	2-C9	R300	2:G8	4-A2	SJ4-2	1:P8	1-R7

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
SJ4-3	1:P7	1-R6									
SJ4-4	1:P7	1-R6									
SJ4-5	1:P7	1-R9									
SJ5-1	1:K8	1-R4									
SJ5-2	1:K8	1-R4									
SJ5-3	1:K8	1-R3									
SJ5-4	1:K7	1-R3									
SJ5-5	1:K7	1-R4									
SK1	1:K5	1-A1									
		1-A3									
		1-A3									
		1-A3									
		1-A2									
		1-A2									
		1-A2									
		1-A2									
		1-A1									
		1-A1									
SK300	1:F7	4-L0									
		4-M0									
		4-L0									
SK301	1:F4	4-R0									
		4-R0									
		4-Q0									
		4-Q0									
SW100	1:B6	2-A6									
TP1	1:E4	2-P8									
TP2	1:D6	2-D9									
TP3	1:R6	3-N7									
TP4	1:R6	3-G2									
TP5		4-D8									
TP6		4-E8									
TP7		4-H8									
TP8		4-H8									
TP9	1:G12	4-A4									
TP10	1:G10	4-E5									
TP11	1:G6	4-M5									
TP12	1:N4	1-P3									
TP13	1:F5	4-J2									
TP14	1:G8	4-R5									
TP15	1:K12	4-L8									
T100	1:C4	2-Q2									
T200	1:R8	3-K7									
T200CAN	1:R8										
X300	1:H5	4-M6									
&XF300A	1:G12	4-C4									
&XF300B	1:G11	4-D4									
&XF301	1:G9	4-H4									
&XF302	1:H7	4-P5									

Part C T856 Transmitter & T857 Exciter

This part of the manual is divided into six sections, as listed below. There is a detailed table of contents at the start of each section.

Section	Title
1	General Information
2	Circuit Operation
3	Initial Tuning & Adjustment
4	Functional Testing
5	Fault Finding
6	PCB Information

1 T856/857 General Information

This section provides a brief description of the T856 transmitter and T857 exciter, along with detailed specifications and a list of types available.

The following topics are covered in this section.

1.1 Introduction

The T856 is a synthesised, FM base station transmitter for single or multichannel operation in the 400 to 520MHz frequency range with a standard power output of 25W. The RF section of the transmitter comprises a frequency synthesiser which provides 100mW of frequency modulated RF drive to a two stage, wide band output driver followed by a 25W power amplifier.

A thermal shutdown feature is provided in the T856 should operating temperatures exceed acceptable levels.

The T857 is a synthesised, FM base station exciter for single or multichannel operation in the 400 to 520MHz frequency range. With a standard power output of only 1W, the exciter is designed for use with either the T858 50W or T859 100W power amplifier. The RF section of the exciter comprises a frequency synthesiser which provides 100mW of frequency modulated RF drive to a two stage, wide band output amplifier.

The synthesiser frequency is programmed via an EPROM which is attached to a separate plug-in memory PCB. A DIP switch on the memory PCB allows fast single channel selection from a multichannel programmed EPROM, but for true multichannel capability the EPROM must be addressed separately via an additional D-range connector at the rear of the set.

A wide selection of audio characteristics may be obtained from the audio processor. Optional circuit blocks are an audio compressor and a pre-emphasis stage. They can be bypassed or linked to one or both audio inputs (line or mic), and then back into the remaining audio circuitry in almost any combination. All audio processor options are link selectable.

All components except those of the VCO and memory PCBs are mounted on a single PCB. This is secured to a die-cast chassis which is divided into compartments to individually shield each section of circuitry. Access to both sides of the main circuit board is obtained by removing each of the chassis lids. There is provision within the chassis to mount small option PCBs.

1.2 Specifications

1.2.1 Introduction

The performance figures given are minimum figures, unless otherwise indicated, for equipment tuned with the maximum switching band and operating at standard room temperature (+22°C to +28°C).

Where applicable, the test methods used to obtain the following performance figures are those described in the EIA specification. However, there are several parameters for which performance according to the CEPT specification is given.

Details of test methods and the conditions which apply for Type Approval testing in all countries can be obtained from Tait Electronics Ltd.

1.2.2 General

Frequency Range	.. 400-520MHz (refer to Section 1.3)
Modulation Type	.. direct FM
Frequency Increment	.. 6.25 or 12.5kHz
Switching Range	.. 8MHz
Number Of Channels:	
Standard	.. 1
Optional	.. 8
Internally Selectable	.. 128
Supply Voltage:	
Operating Voltage	.. 10.8 to 16V DC
Standard Test Voltage	.. 13.8V DC
Polarity	.. negative earth only
Polarity Protection	.. diode
Keying Supply (if required)	.. -50V DC
Supply Current:	
Transmit - T856	.. 5A (typical)
- T857	.. 750mA
Standby	.. 120mA
Load Impedance	.. 50 ohms
Operating Temperature Range	.. -30°C to +60°C

Frequency Stability:

Standard Version	..	±2.5ppm, -30°C to +60°C
High Stability Version	..	±2ppm, -10°C to +60°C
Very High Stability Option	..	±1ppm, 0°C to +60°C

Dimensions:

Height	..	191mm
Width	..	60mm
Length - T856	..	322mm
- T857	..	316mm

Weight	..	2.1kg
Time-Out Timer (optional)	..	1 to 4 minutes (adjustable)
Tail Timer	..	5ms to 4 seconds (adjustable)

Transmit Key Time:

Standard	..	<25ms
Short	..	<2ms

Duty Cycle (T856 Only)	..	100% @ 25W at +25°C
	..	25% @ 25W at +60°C
	..	100% @ 10W at +40°C

1.2.3 RF Section

Adjacent Channel Power (full deviation):

Wide Band (±25kHz / 15kHz B / W)	..	-75dBc
Narrow Band (±12.5kHz / 7.5kHz B / W)	..	-65dBc

Transmitter Side Band Noise:
(no modulation, 15kHz bandwidth)

At ±25kHz	..	-95dBc
At ±1MHz	..	-105dBc

Radiated Spurious Emissions

T856 Early Issue PCBs:

Transmit	..	-36dBm to 1GHz
		-30dBm to 4GHz
Standby	..	-57dBm to 1GHz
		-47dBm to 4GHz

T856 Issue -03 & Later PCBs

Transmit	..	-36dBm to 1GHz
		-30dBm to 4GHz
		-54dBm between 470 and 862MHz
		-54dBm between 10.7 and 12.75GHz

Standby	.. -57dBm to 1GHz -47dBm to 4GHz

T857:

Transmit	.. -36dBm to 1GHz -30dBm to 4GHz
Standby	.. -57dBm to 1GHz -47dBm to 4GHz

Conducted Spurious Emissions

T856 Early Issue PCBs:

Transmit	.. -36dBm to 1GHz -30dBm to 4GHz
Standby	.. -57dBm to 1GHz -47dBm to 4GHz

T856 Issue -03 & Later PCBs:

Transmit	.. -36dBm to 1GHz -30dBm to 4GHz -54dBm between 470 and 862MHz -54dBm between 10.7 and 12.75GHz
Standby	.. -57dBm to 1GHz -47dBm to 4GHz

Power Output:

T856 - Rated Power	.. 25W
- Range Of Adjustment	.. 5-25W
T857	.. 1W ±300mW

1.2.4 Audio Processor

Inputs Available	.. line, microphone and CTCSS

Line Input:

Impedance	.. 600 ohms (balanced)
Sensitivity (60% modulation @ 1kHz)-	
With Compressor	.. -50dBm
Without Compressor	.. -30dBm

Microphone Input:

Impedance	.. 600 ohms
Sensitivity (60% modulation @ 1kHz)-	
With Compressor	.. -70dBm
Without Compressor	.. -50dBm

Modulation Characteristics

Frequency Response (below limiting)	.. flat or pre-emphasised (optional)
Line And Microphone Inputs:	
Pre-emphasised Response-	
Bandwidth	.. 300Hz to 3kHz
Below Limiting	.. within +1, -3dB of a 6dB/octave pre-emphasis characteristic
Flat Response	.. within +1, -2dB of output at 1kHz
Above Limiting Response	.. within +1, -2dB of a flat response (ref. 1kHz)
Distortion	.. 2%
Hum And Noise:	
Narrow Band	
- T856	.. -50dB (CEPT)
- T857	.. -45dB (CEPT)
Wide Band	.. -55dB (300Hz to 3kHz [EIA]) typical
Compressor (optional):	
Attack Time	.. 10ms
Decay Time	.. 800ms
Range	.. 50dB
CTCSS Input:	
Bandwidth	.. 65 to 250Hz
Response	.. within ±1dB of a flat response (ref. 150Hz)

1.3 T856 Product Codes

Frequency Range (MHz)		400-440					
Deviation (kHz)		2.5		4	5		10
TCXO	±2.5ppm -30°C to +60°C			●	●		●
	±2ppm -10°C to +60°C	●					
	±1ppm 0°C to +60°C		●			●	
Transmitter Type: T856-		15	17	13	10	12	14

Frequency Range (MHz)		440-480					
Deviation (kHz)		2.5		4	5		10
TCXO	±2.5ppm -30°C to +60°C			●	●		●
	±2ppm -10°C to +60°C	●					
	±1ppm 0°C to +60°C		●			●	
Transmitter Type: T856-		25	27	23	20	22	24

Frequency Range (MHz)		480-512		480-520		
Deviation (kHz)		2.5		5		10
TCXO	±2.5ppm -30°C to +60°C			●		●
	±2ppm -10°C to +60°C	●				
	±1ppm 0°C to +60°C		●		●	
Transmitter Type: T856-		35	37	30	32	34

1.4 T857 Product Codes

Frequency Range (MHz)		400-440			
Deviation (kHz)		2.5		4	5
TCXO	±2.5ppm -30°C to +60°C			●	●
	±2ppm -10°C to +60°C	●			
	±1ppm 0°C to +60°C		●		
Exciter Type: T857-		15	17	13	10

Frequency Range (MHz)		440-480				
Deviation (kHz)		2.5		4	5	
TCXO	±2.5ppm -30°C to +60°C			●	●	
	±2ppm -10°C to +60°C	●				
	±1ppm 0°C to +60°C		●			●
Exciter Type: T857-		25	27	23	20	22

Frequency Range (MHz)		480-512		480-520
Deviation (kHz)		2.5		5
TCXO	±2.5ppm -30°C to +60°C			●
	±2ppm -10°C to +60°C	●		
	±1ppm 0°C to +60°C		●	
Exciter Type: T857-		35	37	30

2 T856/857 Circuit Operation

This section provides a basic description of the circuit operation of the T856 transmitter and T857 exciter.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

2.1 Introduction

The individual circuit blocks which make up the T856 and T857 are:

- synthesiser
- VCO
- audio processor
- drive amplifier
- power amplifier (T856 only)
- low pass filter (T826 only)
- voltage regulators.

Each of these circuit blocks is set in its own shielded compartment, formed as an integral part of the main chassis.

The configuration of the circuit blocks may be seen on a functional level in Figure 2.1, Figure 2.2, and Figure 2.3. Refer to the circuit diagrams for more detail.

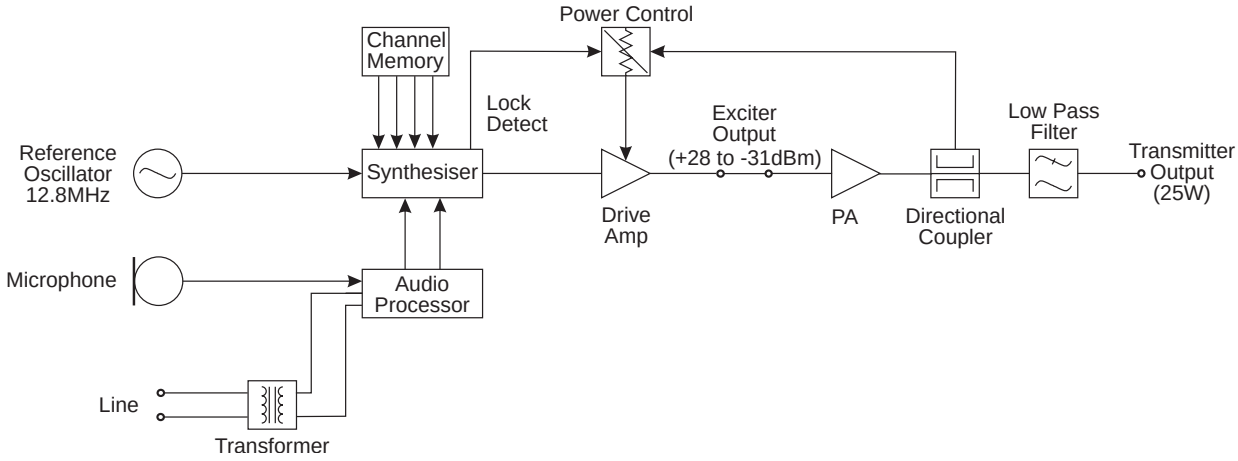


Figure 2.1 T856 High Level Block Diagram (Early Issue PCBs)

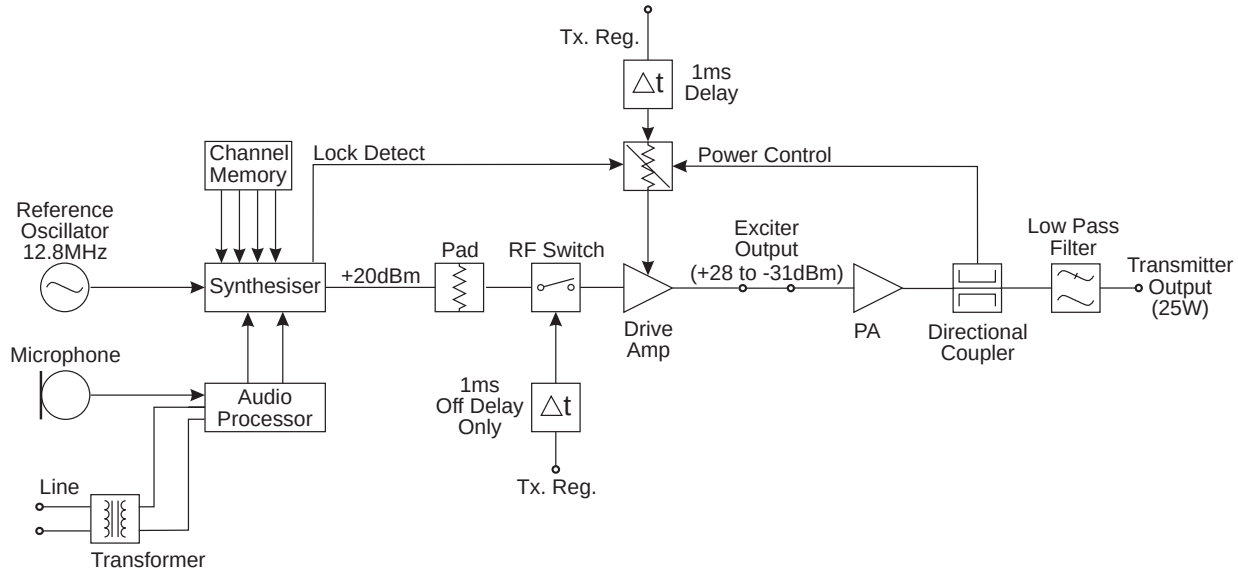


Figure 2.2 T856 High Level Block Diagram (Issue -03 & Later PCBs)

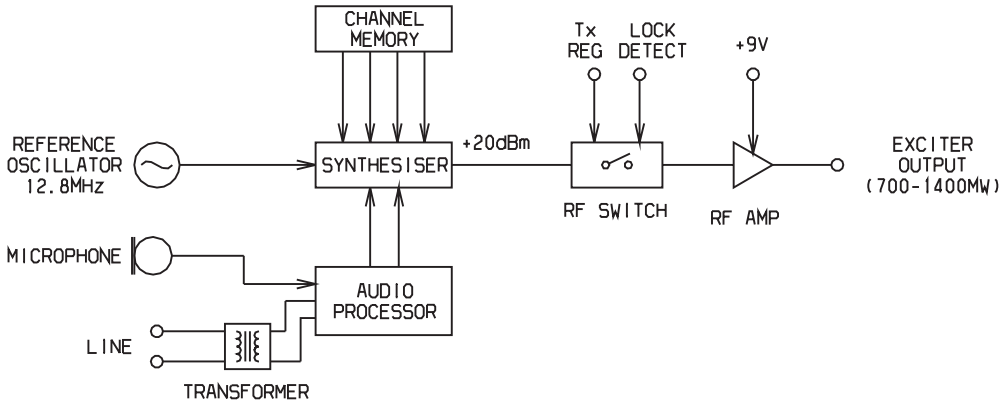


Figure 2.3 T857 High Level Block Diagram

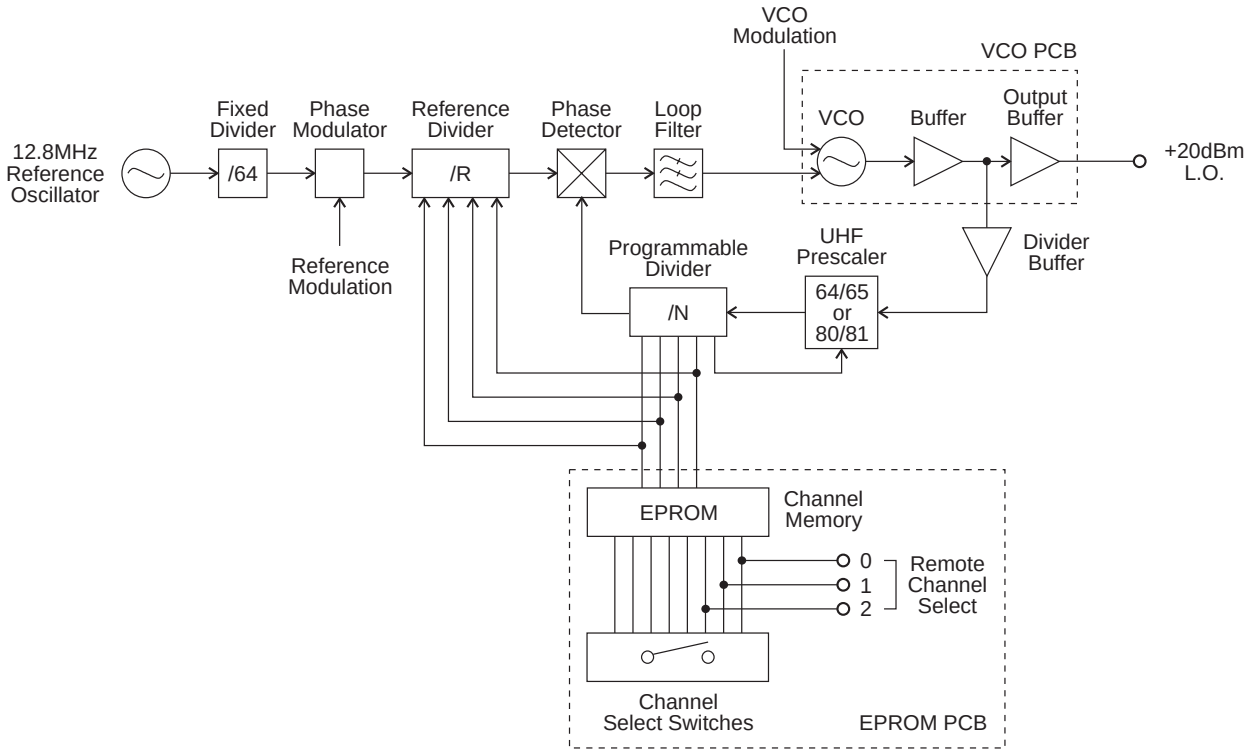


Figure 2.4 T856/857 Synthesiser Block Diagram

2.2 Synthesiser

(Refer to the T856 or T857 synthesiser circuit diagrams in Section 6 and Figure 2.4.)

The synthesiser employs a phase-locked loop (PLL) to lock a voltage controlled oscillator (VCO) to a given reference frequency. A reference oscillator at 12.8MHz (=IC1) is buffered (IC7a, b & c) and divided down to 200kHz (IC4). This 200kHz square wave is then summed with the modulating audio and passed to an integrator (IC7f). This produces a ramping waveform which is centred around a DC level determined by the incoming audio. IC7e performs as a comparator, ultimately producing a phase-modulated 200kHz square wave which is divided down to 12.5 or 6.25kHz within the synthesiser IC (IC5).

A buffered output of the VCO is divided with a programmable divider, comprising a UHF prescaler (&IC3) and a divider within IC5. This signal is compared with the phase modulated reference signal at the phase detectors in IC5. A digital phase detector PDB (IC5 pin 2) provides rapid coarse tuning of the VCO until the phase error is within the range of the high gain sample and hold detector PDA (IC5 pin 1). The phase detector outputs are passed through an active loop filter (IC6a) which produces a DC voltage between 0V and 20V to tune the VCO. This VCO control line is further filtered to attenuate noise and other spurious signals. Note that the VCO frequency increases with increasing control voltage.

If the synthesiser loop loses lock, a pulsed signal appears at LD (pin 3) of IC5. This signal is filtered and buffered by IC6b, producing the lock detect signal used to gate either the RF output of the T857 exciter or the VCO output to the T856 drive amplifier.

The division ratio of the programmable divider is stored within EPROM memory. Up to 128 frequencies can be stored within the EPROM and are addressed using the internal DIP switches. Three of the address lines are also available for external frequency control via an extra D-range connector at the rear of the chassis. A change of state of any of these three lines commences a programming cycle, during which time the frequency data in the EPROM is down loaded to the divider (IC5). 32 bits of data are loaded in eight 4-bit words.

Note: The three address lines must change their state decisively and simultaneously. External frequency control should therefore be achieved by use of the T800-07 multichannel memory PCB. Methods which allow the states of the three lines during transition to be undefined for indeterminate lengths of time, as with some mechanical BCD switches, are unsuitable.

2.3 VCO

(Refer to the VCO circuit diagram in Part E.)

The VCO transistor (Q1) operates in common emitter mode and uses a low loss transmission line resonator (TL1). The transmission line is used in a two port configuration with varicaps positioned at one of its ends. The VCO control voltage from the loop filter (IC6a) is applied to the varicaps (D1 & D2) to facilitate tuning. The output from the oscillator circuit drives a cascode amplifier stage (Q2, Q3) which supplies +10dBm (typically) to a further stage of amplification, Q5. This is the final amplifier on the VCO PCB, and delivers +20dBm (typically) to the exciter drive amplifier.

A low level "sniff" is taken from the input to Q5 and used to drive the divider buffer for the UHF prescaler. The prescaler divides by 64/65 for 12.5kHz channel increments, or 80/81 for 6.25kHz channel increments.

The VCO operates at the actual output frequency of the exciter, i.e. there are no multiplier stages. It is modulated by superimposing the audio signal onto the control voltage. A compensation stage (Q8) is fitted in the synthesiser to smooth out variations in VCO sensitivity to modulation across the switching band.

2.3.1 Two-Point Modulation

Both the VCO and reference oscillator are modulated so that the phase detectors of IC5 see no frequency error under modulation. Thus, the synthesiser loop will not attempt to correct for modulation and the response of the transmitter remains unaffected.

2.3.2 VCO Supply

2.3.2.1 Early Issue T856/857 PCBs

The VCO is supplied with two switched supplies from the +9V rail under the control of the Tx reg. supply:

- VCO
- output buffer amplifier

The VCO supply is switched by Q6 via the C multiplier Q5, C34. The buffer supply is switched by Q10.

2.3.2.2 T856 PCB Issue 220-01171-03 & Later

The VCO is supplied with two switched supplies from the +9V rail under the control of the Tx reg. supply:

- VCO
- output buffer amplifier

The VCO supply is switched by Q6 via the C multiplier Q5, C34. The buffer supply is switched by Q10.

C41, R53 provide a 1ms delay when Tx reg. is keyed off. The VCO is kept on for this time to allow the power control to turn off the drive amplifiers (Q300, Q301) in the exciter in a controlled manner.

LINK A is provided to enable the VCO to run continuously to achieve the short transmit key time option. Refer to Section 2.7 in Part G.

2.3.2.3 T857 PCB Issue 220-01140-04 & Later

The VCO is supplied with two switched supplies from the +9V rail under the control of the Tx reg. supply:

- VCO
- output buffer amplifier

The VCO supply is switched by Q6 via the C multiplier Q5, C34. The buffer supply is switched by Q10.

LINKS A & B and R78 are provided to enable the VCO to run continuously to achieve the short transmit key time option. Refer to Section 2.7 in Part G.

2.4 Audio Processor

(Refer to the T856 or T857 audio processor circuit diagrams in Section 6.

Note: IC102, IC103 and RV106 are designated "&IC102", "&IC103" and "&RV106" in the T856.)

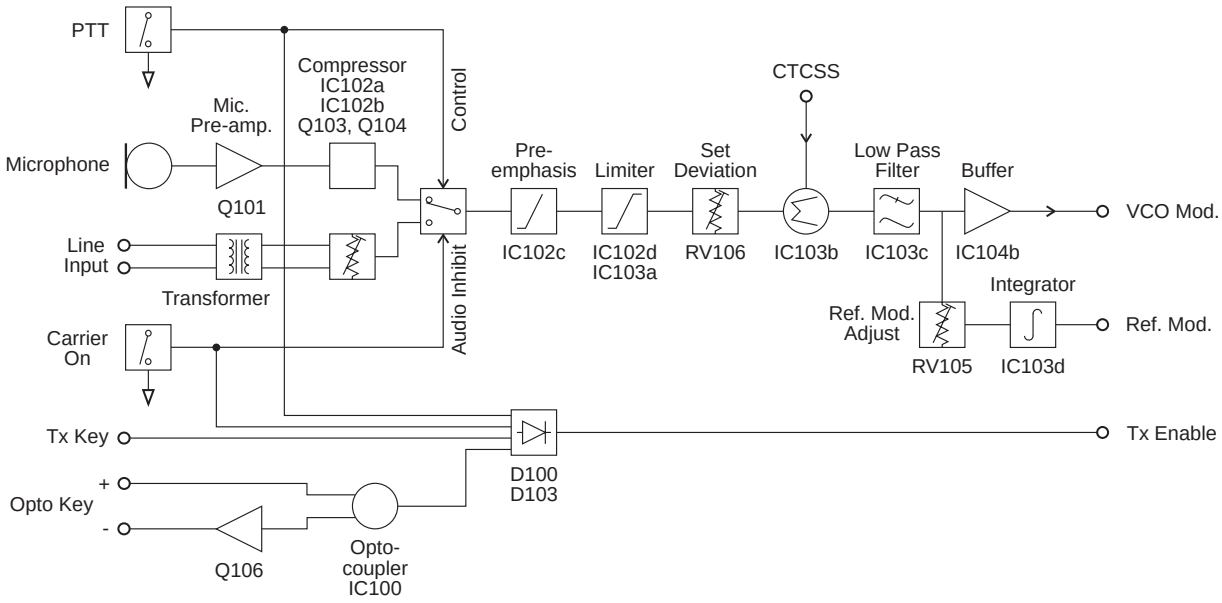


Figure 2.5 T856/857 Audio Processor Block Diagram

2.4.1 General

The audio processor comprises several link selectable circuit blocks which may be configured in a variety of combinations to suit individual requirements. The pre-emphasis network and compressor may be linked individually or cascaded between either or both audio inputs and the limiter.

Refer to Section 3.3.1 for linking details.

2.4.2 Audio Inputs

Two audio inputs are available: one from a 600 ohm balanced (or unbalanced) line, and the other from a local microphone. The microphone signal is passed first to a Preamplifier (Q101) and ultimately to a multiplexer (IC101), but in between may pass through the compressor (depending on the linking details). The line transformer is also connected to the multiplexer and is disabled by the microphone PTT switch.

A third input for CTCSS tones is also provided.

2.4.3 Keying Inputs

There are four ways to key the exciter:

- pulling the Tx-key line low (pin 13 on the D-range connector at the rear of the set);
- pushing the "Carrier" button on the front panel - this will inhibit all audio;
- using the PTT button on the local microphone, disabling audio from the line;
- via the opto-key inputs (pins 11 and 12 on the D-range connector) where electrical isolation is required. This features a constant current source (Q106) to ensure reliable activation of the opto-coupler (IC100) at low keying voltages.

2.4.4 Compressor

The input signal is fed via a current controlled attenuator (Q103, Q104) to a high gain stage (IC102a) from which the output signal is taken. This signal is passed to a comparator (IC102b) which toggles whenever the audio signal exceeds a DC threshold determined by RV104. Thus, the comparator produces a square wave whose mark-space ratio is determined by the amplitude of the audio signal. This square wave pumps up the reservoir capacitor (C129) which controls the attenuator (Q103, Q104), thus completing the feedback loop.

The compression level is set by adjustment of the comparator threshold (RV104).

Note: Although the high dynamic range of the compressor allows the use of very low audio signal levels, such conditions will be accompanied by a degradation of the signal to noise ratio. Very low audio input levels should therefore be avoided where possible.

2.4.5 Outputs To Modulators

The output signal from the limiter (IC102d, IC103a) is added to any incoming CTCSS tone at a summing amplifier (IC103b). The signal is then low pass filtered (IC103c) and split to supply the two modulators.

Since the VCO modulator is a true frequency modulator, its audio is simply buffered (IC104b). The reference modulator, however, is a phase modulator and its audio must first be integrated (IC103d).

It is vital that the audio levels to the modulators are accurately set, ***relative to each other***. Hence the inclusion of level adjustment in the reference modulator path (RV105). Once set, adjustments to absolute deviation may be made only via the deviation pot (RV106).

Note: If the two point modulation is incorrectly set it is possible for the synthesiser to believe it is in an out of lock condition when audio is applied.

2.5 Power Supply & Regulator Circuits

(Refer to the T856 regulators or T857 regulators & exciter circuit diagrams in Section 6.)

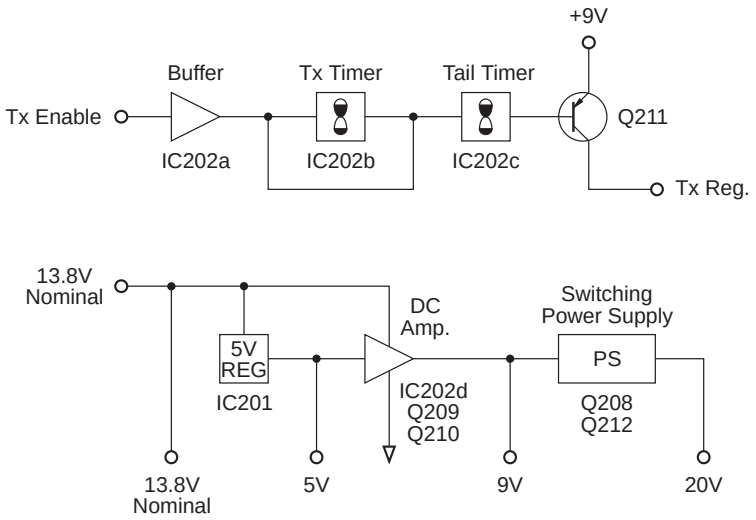


Figure 2.6 T826/827 Power Supply & Regulator Block Diagram

The T856 and T857 are designed to operate from a 10.8-16V DC supply, although the standard test voltage is 13.8V. A 5.3V regulator (IC201) running directly from the 13.8V rail drives much of the synthesiser circuitry. It is also used as the reference for a DC amplifier (IC202d, Q209, Q210) which provides a medium current capability 9V supply.

A self-oscillating, switching power supply (Q208, Q212) runs from the 9V supply, producing a low current capability +20V supply. This is used to supply the synthesiser loop filter (IC6), giving a VCO control voltage range of up to 20V.

Ultimate control of the transmitter is via the Tx reg. supply, switched from 9V by Q211. This is enabled by the Tx enable signal from the audio processor, but is subject to gating by the transmit timer (IC202b). If the transmitter is keyed continuously for a time exceeding that set by RV201 and C222, the Tx timer will force the Tx reg. supply off until the transmitter is keyed again. If required, the Tx timer may be disabled by transferring the link on PL201 from pins 1-2 to pins 2-3.

The tail timer provides a repeater tail of up to several seconds and is adjusted by RV202.

2.6 T856 Drive Amplifier & PA

2.6.1 Early Issue PCBs

(Refer to the relevant T856 PA circuit diagram in Section 6 and Figure 2.1.)

A two-stage, wide band amplifier (Q300, Q301) provides an output level of approximately 1W (+30dBm) for an input of 100mW (+20dBm) from the VCO. The amplifier is powered from the +13.8V rail via a series pass transistor (Q352).

The PA consists of Q401 & Q402 and a directional coupler for power control feedback, followed by a low pass harmonic filter. The RF output is taken from a rear mounted "N" type connector.

2.6.2 Issue -03 & Later PCBs

(Refer to the relevant T856 PA circuit diagram in Section 6 and Figure 2.2.)

The output from the VCO at +20dBm is applied through a pad and PIN diode switch to a two-stage, wide band amplifier (Q300, Q301) which provides an output level of approximately +30dBm.

The amplifier is powered from the +13.8V rail via the power control circuitry. To reduce spurious transmissions when keyed on and off, the power control line is turned on and off in a controlled manner by the "Millar" action of Q350 and C354..

The RF switch is controlled by Tx reg. through an off-delay circuit (C310, R310) of approximately 1ms. The switch provides the isolation between the VCO and output to the PA when the VCO is run continuously for the short key time option. The off-delay allows the controlled turn-off action to function.

The PA consists of an input pad, Q401/Q402, a directional coupler for power control feedback and a low pass harmonic filter. The RF output is taken from a rear mounted "N" type connector.

2.7 T857 Exciter Drive Amplifier

(Refer to the T857 regulators & exciter circuit diagram in Section 6 and Figure 2.3.)

A two-stage, wide band amplifier (Q300, Q301) provides an output level of approximately 1W (+30dBm) for an input of 100mW (+20dBm) from the VCO. The amplifier powered from the 9V rail.

To reduce the spurious output level when the synthesiser is not locked, an RF switch (also gated by lock detect) is included at the input to the amplifier.

3 T856/857 Initial Tuning & Adjustment

The following section describes the full tuning and adjustment procedure and provides information on:

- channel programming
- channel selection
- selecting required audio links
- synthesiser alignment
- PA alignment (T856 only)
- modulator adjustment
- limiter adjustment
- setting line level
- compressor adjustment
- timer adjustment.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

3.1 Channel Programming

Up to 128 channel frequencies can be stored in the EPROM memory (IC1). Each channel can be addressed using the bank of 8 switches (SW1). The most significant bit of this switch is set according to the type of EPROM fitted:

ON = 27C16
OFF = 27C64

Up to 8 channels may be addressed externally when the optional extra rear D-range connector is fitted.

Programming is accomplished by using an IBM[1] PC, a PROM programmer and the PGM800 software package. For a full description of the programming procedure, refer to the T800 Programming Software User's Manual.

3.2 DIP Switch Codes For Channel Addresses

The PGM800 software used to programme the EPROM will present the user with a DIP switch code for each channel address (refer to Section 3.10). For example, channel 125 will be assigned a switch code of X0000011 (1-128 channel numbering), in which case the switches should be set as shown in Figure 3.1, i.e. **0**0000011.

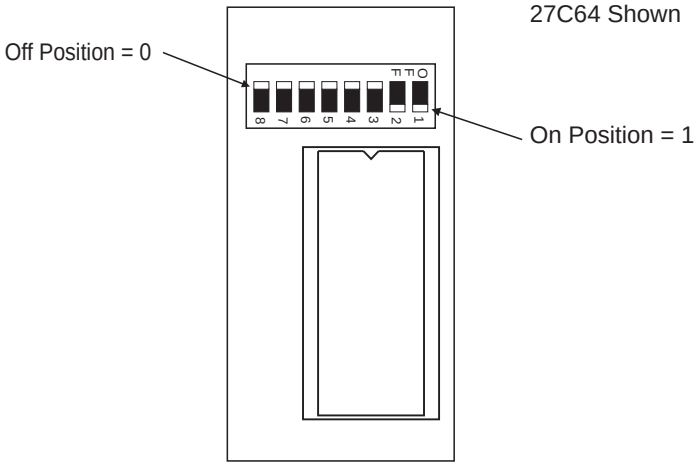


Figure 3.1 Channel DIP Switch Setting

Note 1: For remote multichannel applications using the T800-07 multichannel memory PCB, the DIP switch is not used and should have the first 3 least significant bits (1-3) in the ***off*** position. The next 4 bits (4-7) should be ***on***, while the most significant bit (8) is selected according to the EPROM used (refer to Section 3.1). This will allow the existing CHSEL lines to be used to select up to 8 channels. It is possible to address blocks of 8 channels throughout the 128 channel EPROM capacity by switching bits 4 to 7 on the DIP switch.

Note 2: Alternatively, all 128 channels may be remotely addressed on the T800-07, but bits 1-7 of the DIP switch should be in the ***off*** position. In this case it will be necessary to drill a hole to route the 7 channel select lines from the synthesiser compartment to the D-range connector. Later models have an access slot between these two compartments.

1. IBM is a registered trademark of International Business Machines.

3.3 Audio Processor Links

3.3.1 Link Details

The links available for various circuit block options are listed by function as follows:

Plug	Link	Function
PL100	1-2	not connected
	3-4	microphone pre-amp. output to compressor input
	5-6	microphone pre-amp. output to multiplexer input
PL101	1-2	multiplexer output to pre-emphasis input
	3-4	multiplexer output to compressor input
	5-6	multiplexer output to limiter input
PL102	1-2	not connected
	3-4	not connected
	5-6	compressor output to pre-emphasis input
	7-8	compressor output to limiter input
	9-10	compressor output to multiplexer input
PL103	1-2	pre-emphasis output to multiplexer input
	3-4	pre-emphasis output to limiter input
	5-6	not connected

3.3.2 Typical Options

	PL100	PL101	PL102	PL103
microphone pre-amp. compressed and pre-emphasised; line input pre-emphasised (standard set-up)	3-4	1-2	9-10	3-4
microphone pre-amp. compressed and pre-emphasised; line input unprocessed	3-4	5-6	5-6	1-2
line and microphone compressed and pre-emphasised	5-6	3-4	5-6	3-4
microphone pre-amp. compressed; line and microphone flat response	3-4	5-6	9-10	5-6

3.4 Test Equipment Set-up

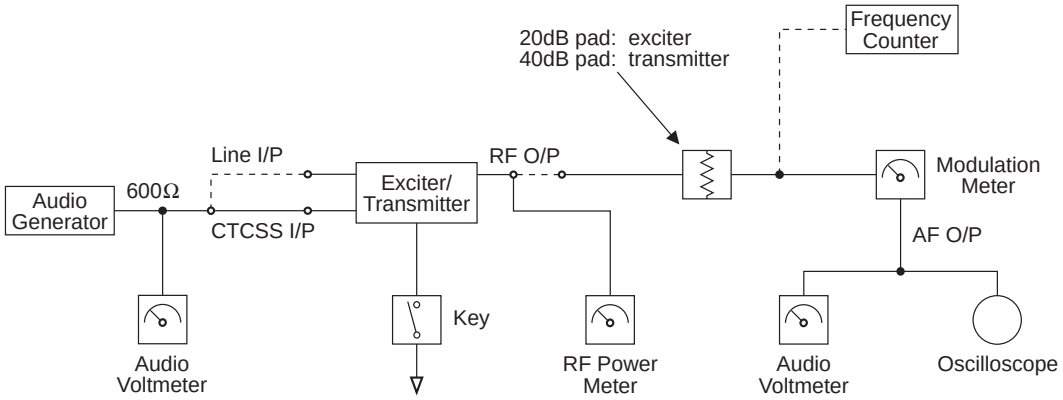


Figure 3.2 T856/857 Test Equipment Set-up

3.5 Synthesiser Alignment

- Ensure that the EPROM (IC1) has been programmed with the required frequencies using PGM800 software.

- **Single Channel** Select a channel on the EPROM PCB DIP switch.

  Multichannel Select the lowest channel via the EPROM PCB DIP switch.

- Connect a high impedance voltmeter to the long lead of L1 in the VCO (this measures the synthesiser loop voltage).

- Earth the Tx key line.

  Single Channel Tune VCO trimmer C6 for a synthesiser loop voltage of 10V.

  Multichannel Tune VCO trimmer C6 for a synthesiser loop voltage of 10V on the middle channel.

  If there is no middle channel, tune C6 so that the channels are symmetrically placed around a loop voltage of 10V.

  All channels should lie within the upper and lower limits of 16V and 3V respectively.

  Do not attempt to programme channels with a greater frequency separation than the specified switching range (8MHz).

- **T857 Only** Check that the exciter output power is 1W ±300mW.

- Measure the exciter output frequency and adjust the TCXO (=IC1) trimmer if required.

Caution: **This trimmer is susceptible to physical damage. Do not exert a downward force of more than 500g (1lb) when adjusting.**

3.6 PA Alignment (T856 Only)

Note: Before the following measurement is taken ensure the heatsink is at ambient temperature (20°C to 25°C).

Measure and note the voltage on L420 (this is for later adjustment of the thermal shutdown circuitry).

Connect an RF power meter to the output socket and key the transmitter.

Set power control RV356 fully clockwise.

Adjust #CV414 for maximum output power and check that this exceeds 30W.

Adjust power control RV356 for 25W.

Readjust #CV414 to reduce the supply current by up to 0.5A.

3.7 Thermal Shutdown (T856 Only)

Key the transmitter and set the output power to 25W as described in Section 3.6.

Short L420 to ground and key the transmitter.

Set RV355 (shutdown level) for an output power of 5W.

Set RV351 (temperature set) to 0.16VL volts (measured at IC350 pin 5), where VL is the voltage measured at L420 in Section 3.6.

3.8 Audio Processor

3.8.1 Two Point Modulation

The T856 and T857 utilise two point modulation to obtain a wide audio bandwidth independent of the synthesiser loop filter response. This is achieved by simultaneously frequency modulating the VCO and phase modulating the synthesiser reference frequency. The relative signal levels fed to the two modulators are quite critical and cause interaction when setting up.

Both modulating signals require readjustment when the exciter is shifted in frequency greater than the switching range (i.e. $\Delta F > \pm 4MHz$).

Note: In this and following sections deviation settings are given first for wide band sets, followed by settings in brackets for narrow band [ ] and T856 ultra-wide band ( ) sets.

3.8.2 Modulator Adjustment

1. Inject an audio signal of 250Hz 1.5V rms (+5dBm) into the CTCSS input (D-range pin 8).

   Earth the key line.

2. Adjust the output from the audio generator to obtain ±3kHz [±1.5kHz] (±4kHz) deviation at 250Hz.

3. Change the input frequency to 100Hz and adjust RV105 (ref. mod.) to obtain ±3kHz [±1.5kHz] (±4kHz) deviation.

4. Change the input frequency back to 250Hz.

   Repeat steps 2 and 3 above until the deviations achieved at the two input frequencies are within 0.2dB of each other. This will need to be done at least four times.

5. Sweep the audio between 50Hz and 300Hz for peaks.

Note: A peak between 50Hz and 300Hz will indicate a fault condition, i.e:

- incorrectly set-up

or - modulation circuitry fault.

The specification window is ±1dB relative to 150Hz from 65 to 260Hz.

3.8.3 Limiter Adjustment

Set the audio processor links as appropriate for the required audio configuration (refer to Section 3.3).

Inject 1kHz at -10dBm into the line input (D-range pins 1 & 4; pins 2 & 3 shorted

and 6 & 7 shorted; refer to Section 1.2 of Part F).

Adjust RV100 (line sensitivity) fully clockwise and earth the key line. Adjust &RV106 (T856) or RV106 (T857) [deviation] to set the peak deviation to ±4.7kHz [±2.3kHz] (±10kHz).

Sweep the audio frequency from 100Hz to 4kHz and ensure that the maximum deviation does not exceed 4.7kHz [2.3kHz] (10kHz). Readjust &RV106/RV106 if necessary.

Note: For multichannel operation this test should be performed on the channel with the highest deviation.

3.8.4 Line Level Without Compressor

This section assumes that the compressor is not used. If the compressor is required, refer to Section 3.8.5.

Adjust the line sensitivity as follows:

- set the injected signal at the line input to the required line level (typically -10 to -20dBm);
- adjust RV100 (line sensitivity) to provide ±3kHz [±1.5kHz] (±4kHz) deviation.

3.8.5 Compressor

The compressor may be used on the line input only, the microphone input only, or on both the line and microphone inputs. If the compressor is used, refer to one of the following sections as appropriate.

3.8.5.1 Compressor On Line Input Only

Set RV100 (line sensitivity) fully clockwise and earth the key line.

Reduce the line level to -50dBm at 1kHz and set RV104 (compression level) fully clockwise.

Check that 3kHz deviation [1.5kHz] (6kHz) is still available.

Slowly increase the audio input level until the demodulated waveform shows significant signs of clipping (approximately 4.5kHz [2.3kHz] (9kHz) deviation).

Adjust RV104 (compression level) anticlockwise until the demodulated waveform is just clipping (approximately 4kHz [2kHz] (8kHz) deviation).

Increase the input level to -10dBm and check that the test tone is still held just into clipping. The input line level should be typically -10 to -20dBm.

3.8.5.2 Compressor On Microphone Input Only

Open the key line and plug a microphone jack into the front panel socket.

Adjust RV104 (compression level) fully clockwise.

Acoustically couple the microphone to a tone box (1kHz) and close the PTT switch.

Increase the audio level until the demodulated waveform shows significant signs of clipping (approximately 4.5kHz [2.3kHz] (9kHz) deviation).

Adjust RV104 (compression level) anticlockwise until the demodulated waveform is just clipping (approximately 4kHz [2kHz] (8kHz) deviation).

Increase the audio level by 10dB and verify that the test tone is held just into clipping.

Whistle steadily into the microphone, checking that approximately 4kHz [2kHz] (9kHz) deviation is produced. The modulated waveform should be basically sinusoidal.

Speak into the microphone, checking that the modulation peaks reach about 5kHz [2.5kHz] (10kHz) deviation.

As the line is to be used without compression, set the line sensitivity (RV100) as described in Section 3.8.4.

3.8.5.3 Compressor On Both Line & Microphone Inputs

Set up as described in Section 3.8.5.1.

3.9 PGM800 DIP Switch Codes

PGM800 channel numbers can range from 0-127 or 1-128, depending on which version you are using:

Version	Channel Numbers
V2 and earlier	0-127
V2.01	1-128
V2.21 and later PGM800Win	0-127 or 1-128

The following sections provide DIP switch code lists for both numbering systems.

3.9.1 DIP Switch Codes For Channel Numbers 0-127

0 = off 1 = on

Channel	DIP Code	Channel	DIP Code	Channel	DIP Code
0	X1111111	45	X1010010	90	X0100101
1	X1111110	46	X1010001	91	X0100100
2	X1111101	47	X1010000	92	X0100011
3	X1111100	48	X1001111	93	X0100010
4	X1111011	49	X1001110	94	X0100001
5	X1111010	50	X1001101	95	X0100000
6	X1111001	51	X1001100	96	X0011111
7	X1111000	52	X1001011	97	X0011110
8	X1110111	53	X1001010	98	X0011101
9	X1110110	54	X1001001	99	X0011100
10	X1110101	55	X1001000	100	X0011011
11	X1110100	56	X1000111	101	X0011010
12	X1110011	57	X1000110	102	X0011001
13	X1110010	58	X1000101	103	X0011000
14	X1110001	59	X1000100	104	X0010111
15	X1110000	60	X1000011	105	X0010110
16	X1101111	61	X1000010	106	X0010101
17	X1101110	62	X1000001	107	X0010100
18	X1101101	63	X1000000	108	X0010011
19	X1101100	64	X0111111	109	X0010010
20	X1101011	65	X0111110	110	X0010001
21	X1101010	66	X0111101	111	X0010000
22	X1101001	67	X0111100	112	X0001111
23	X1101000	68	X0111011	113	X0001110
24	X1100111	69	X0111010	114	X0001101
25	X1100110	70	X0111001	115	X0001100
26	X1100101	71	X0111000	116	X0001011
27	X1100100	72	X0110111	117	X0001010
28	X1100011	73	X0110110	118	X0001001
29	X1100010	74	X0110101	119	X0001000
30	X1100001	75	X0110100	120	X0000111
31	X1100000	76	X0110011	121	X0000110
32	X1011111	77	X0110010	122	X0000101
33	X1011110	78	X0110001	123	X0000100
34	X1011101	79	X0110000	124	X0000011
35	X1011100	80	X0101111	125	X0000010
36	X1011011	81	X0101110	126	X0000001
37	X1011010	82	X0101101	127	X0000000
38	X1011001	83	X0101100		
39	X1011000	84	X0101011		
40	X1010111	85	X0101010		
41	X1010110	86	X0101001		
42	X1010101	87	X0101000		
43	X1010100	88	X0100111		
44	X1010011	89	X0100110		

3.9.2 DIP Switch Codes For Channel Numbers 1-128

0 = off 1 = on

Channel	DIP Code	Channel	DIP Code	Channel	DIP Code
1	X1111111	46	X1010010	91	X0100101
2	X1111110	47	X1010001	92	X0100100
3	X1111101	48	X1010000	93	X0100011
4	X1111100	49	X1001111	94	X0100010
5	X1111011	50	X1001110	95	X0100001
6	X1111010	51	X1001101	96	X0100000
7	X1111001	52	X1001100	97	X0011111
8	X1111000	53	X1001011	98	X0011110
9	X1110111	54	X1001010	99	X0011101
10	X1110110	55	X1001001	100	X0011100
11	X1110101	56	X1001000	101	X0011011
12	X1110100	57	X1000111	102	X0011010
13	X1110011	58	X1000110	103	X0011001
14	X1110010	59	X1000101	104	X0011000
15	X1110001	60	X1000100	105	X0010111
16	X1110000	61	X1000011	106	X0010110
17	X1101111	62	X1000010	107	X0010101
18	X1101110	63	X1000001	108	X0010100
19	X1101101	64	X1000000	109	X0010011
20	X1101100	65	X0111111	110	X0010010
21	X1101011	66	X0111110	111	X0010001
22	X1101010	67	X0111101	112	X0010000
23	X1101001	68	X0111100	113	X0001111
24	X1101000	69	X0111011	114	X0001110
25	X1100111	70	X0111010	115	X0001101
26	X1100110	71	X0111001	116	X0001100
27	X1100101	72	X0111000	117	X0001011
28	X1100100	73	X0110111	118	X0001010
29	X1100011	74	X0110110	119	X0001001
30	X1100010	75	X0110101	120	X0001000
31	X1100001	76	X0110100	121	X0000111
32	X1100000	77	X0110011	122	X0000110
33	X1011111	78	X0110010	123	X0000101
34	X1011110	79	X0110001	124	X0000100
35	X1011101	80	X0110000	125	X0000011
36	X1011100	81	X0101111	126	X0000010
37	X1011011	82	X0101110	127	X0000001
38	X1011010	83	X0101101	128	X0000000
39	X1011001	84	X0101100		
40	X1011000	85	X0101011		
41	X1010111	86	X0101010		
42	X1010110	87	X0101001		
43	X1010101	88	X0101000		
44	X1010100	89	X0100111		
45	X1010011	90	X0100110		

4 T856/857 Functional Testing

The following test procedures will confirm that the T856/857 has been tuned and adjusted correctly and is fully operational.

Refer to Figure 3.2 for the test equipment set-up.

Note: In this and following sections deviation settings are given first for wide band sets, followed by settings in brackets for narrow band [ ] and T856 Ultra-wide band sets.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

4.1 Current Consumption

Connect the T856/857 to a 13.8V power supply.

Connect an RF power meter to the T856/857 output socket.

Check that the current in the 13.8V power cable is less than 120mA.

Key the T856/857 (the "Carrier On" LED should light).

Check that the current is as follows:

T856	<5.5A
T857	<750mA.

4.2 Output Power

Connect an RF power meter to the T856/857 output socket.

Key the T856/857.

Check that:

T856	the output power adjusts to 25W
T857	the output power is 1W ±300mW.

4.3 Output Frequency

Connect the T856/857 output to a frequency counter via an attenuator pad:

T856	40dB pad
T857	20dB pad.

Measure the output frequency and, if necessary, adjust the TCXO (=IC1) to trim to the nominal frequency (±100Hz).

4.4 Tail Timer

Adjust RV202 fully anticlockwise.

Connect the key line to earth, then disconnect, and check that the T856/857 remains on for at least 3 seconds.

Reset RV202 fully clockwise.

Connect the key line to earth, then disconnect, ensuring that the T856/857 turns

off immediately the key line is broken.

Set RV202 for the required tail time.

4.5 Transmit Timer

Select the Tx timer by linking pins 1-2 of PL201.

Adjust RV201 fully anticlockwise.

Earth the key line.

Check that the T856/857 turns off after approximately 1 minute.

Adjust RV201 fully clockwise.

Earth the key line.

Check that the T856/857 turns off after approximately 3 minutes.

Set RV201 for the required transmit time.

4.6 Frequency Response

If the T856/857 has been correctly adjusted, the pre-emphasis and limiting responses should closely match those shown in Figure 4.1 and Figure 4.2 respectively.

Note 1: The limits shown on these graphs should not be exceeded.

Note 2: The curves are shown for wide band sets.

- Measure the pre-emphasis response as follows:

  Reduce the line level to give 1kHz [0.5kHz] deviation at 1kHz.

  Sweep the modulation frequency.

  The response should closely match that shown in Figure 4.1.

- Measure the limiting response as follows:

  Set the line level to give 3kHz [1.5kHz] deviation at 1kHz.

  Increase the line level 20dB and sweep the modulation frequency.

  The response should closely match that shown in Figure 4.2.

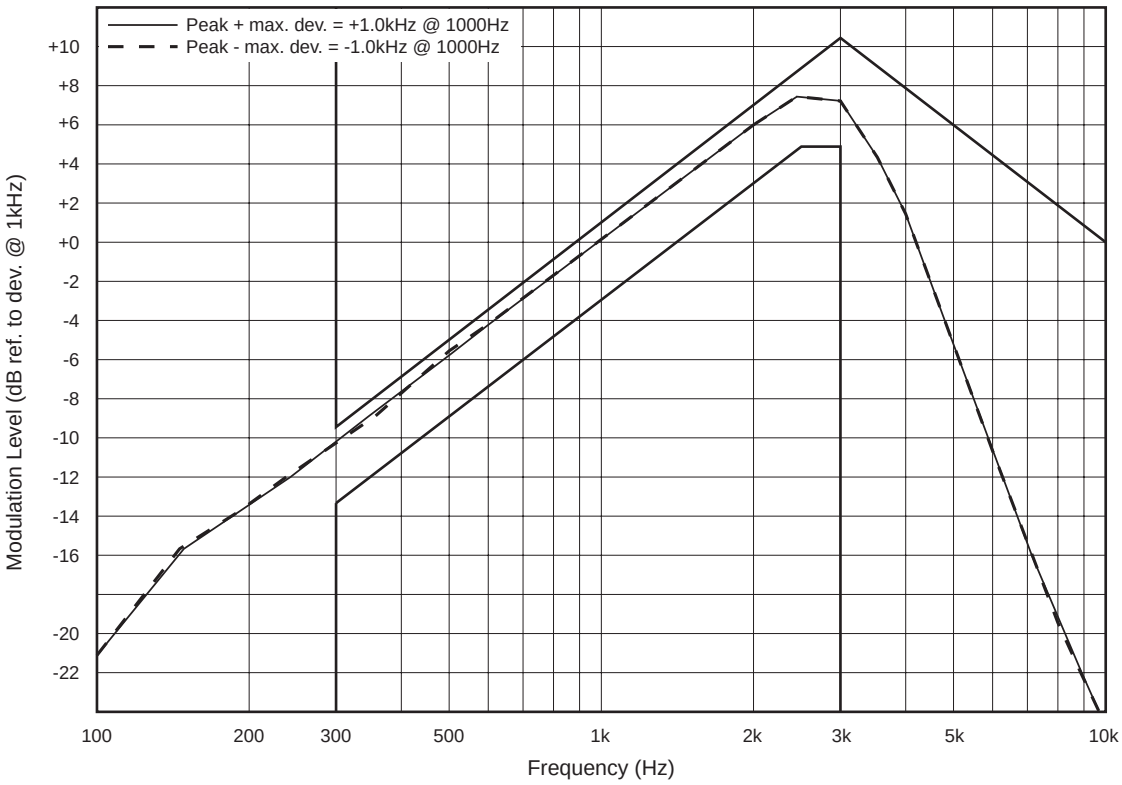


Figure 4.1 T856/857 Pre-emphasis Response

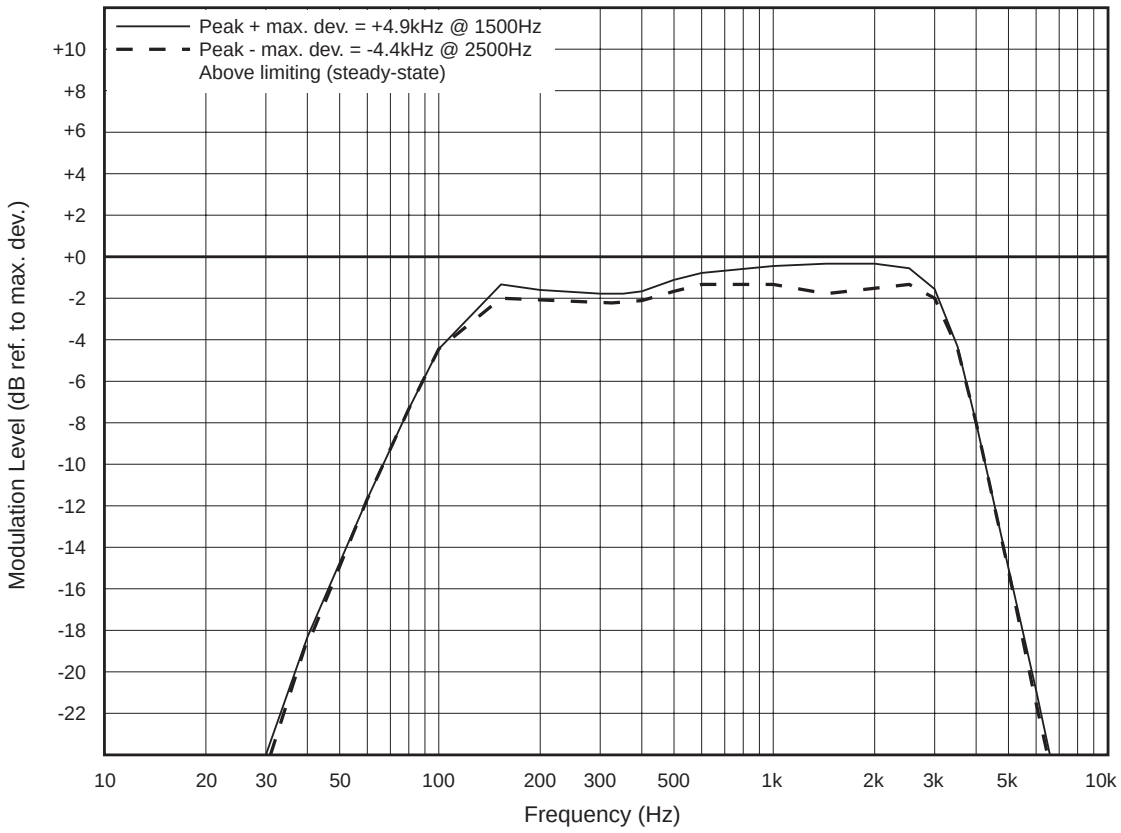


Figure 4.2 T856/857 Limiting Response

4.7 Audio Level Input Sensitivity

- Adjust RV100 (line sensitivity) fully clockwise.
- Check that the input sensitivities are better than those specified below:

Line Input	600 ohms, 3kHz [1.5kHz] (6kHz) deviation at 1kHz:	
	with compressor	-50dBm
	without compressor	-30dBm
Microphone Input	600 ohms, 3kHz [1.5kHz] (6kHz) deviation at 1kHz:	
	with compressor	-75dBm
	without compressor	-55dBm
CTCSS Input	1kHz deviation at 150Hz	500mV rms

Note: A degraded signal to noise ratio can be expected with the compressor selected. The extent of the degradation is dependent on the audio input level.

5 T856/857 Fault Finding

The following test procedures and fault finding flow charts may be used to help locate a hardware problem, however they are by no means a complete fault finding procedure. If the fault still exists after having progressed through them in a logical manner, contact your nearest authorised Tait Dealer or Service Centre. Further assistance may be obtained from the Customer Support Group, Radio Infrastructure Division, Tait Electronics Ltd, Christchurch, New Zealand.

Refer to Section 6 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components and test points on the main PCB. The parts lists and diagrams for the memory and VCO PCBs are in Part E.

The following topics are covered in this section.

5.1 Visual Checks

Remove the covers from the T856/857 and inspect the PCB for damaged or broken components, paying particular attention to the surface mounted devices (SMD's).

Check for defective solder joints. If repair or replacement is considered necessary, refer to Section 3 of Part A.

5.2 Component Checks

If a transistor is suspected of faulty operation, an indication of its performance can be assessed by measuring the forward and reverse resistance of the junctions. First make sure that the transistor is not shunted by some circuit resistance (unless the device is completely desoldered). A 20k ohm/V or better multimeter should be used for taking the measurements, using only the medium or low resistance ranges.

The collector current drawn by multi-junction transistors is a further guide to their performance.

If an IC is suspect, the most reliable check is to measure the DC operating voltages. Due to the catastrophic nature of most IC failures, the pin voltages will usually be markedly different from the recommended values in the presence of a fault. The recommended values can be obtained from either the circuit diagram or the component data catalogue.

5.3 DC Checks

5.3.1 Power Rails

Refer to the test points and options diagrams (Section 6) for test point locations, and to the regulator fault finding chart (Section 5.5.1) for fault diagnosis.

Check the 9V (TP2) and 13.8V (TP1) power supply test points in the directional coupler compartment with a DMM.

Check the 5V (TP4) and 20V (TP3) rails at their respective test points in the synthesiser compartment.

Check that Tx reg. (TP5) comes up to 8.8V when the exciter is keyed.

Check for short circuits.

5.3.2 VCO Locking

Key the exciter.

Using a DMM, monitor the VCO control voltage on the long lead of L1 (located adjacent to the electrolytic capacitor on the VCO PCB.

If the synthesiser is locked and the VCO aligned, the voltage at this point should be between 3 and 16V.

If the VCO is not locked, refer to the synthesiser fault finding chart (Section 5.5.2).

Note: When changing frequencies, only the three least significant bits of the EPROM address (e.g. DIP switch) will initiate a synthesiser programme cycle. Changing a high order bit will therefore not result in a change of frequency unless a low order bit is also changed last.

5.4 RF Checks

In-circuit RF levels may be measured with an RF probe on which the earth lead has been shortened to a minimum (i.e. 13mm). Refer to the circuit diagrams for typical levels.

5.4.1 T856 Drive Power

Refer to the drive amplifier fault finding chart (Section 5.5.3).

Ensure that the VCO locks (refer to Section 5.3.2).

Connect the drive output to a power meter and key the transmitter.

Check that the output power is between 700 and 1300mW.

Note: The lock detector (synthesiser, IC5 pin 3) will not allow the RF signal to reach the PA if the synthesiser is out of lock.

5.4.2 T856 PA Output Power

Refer to the PA & power control fault finding chart (Section 5.5.4).

Reconnect the drive output to the PA input.

Connect the PA to a power meter and key the transmitter.

Check that the output power is >30W with power control RV356 adjusted fully clockwise.

5.4.3 T857 Output Power

Refer to the exciter drive amplifier fault finding chart (Section 5.5.5).

Ensure that the VCO locks (refer to Section 5.3.2).

Connect the exciter output to a power meter and key the exciter.

Check that the output power is between 700 and 1300mW.

Note: The lock detector (synthesiser, IC5 pin 3) will not allow the RF signal to reach the drive amplifier if the synthesiser is out of lock. This is achieved by the use of a diode switch formed by D302, D303 and D304.

5.4.4 Audio And Modulation

Refer to the audio processor fault finding chart (Section 5.5.6).

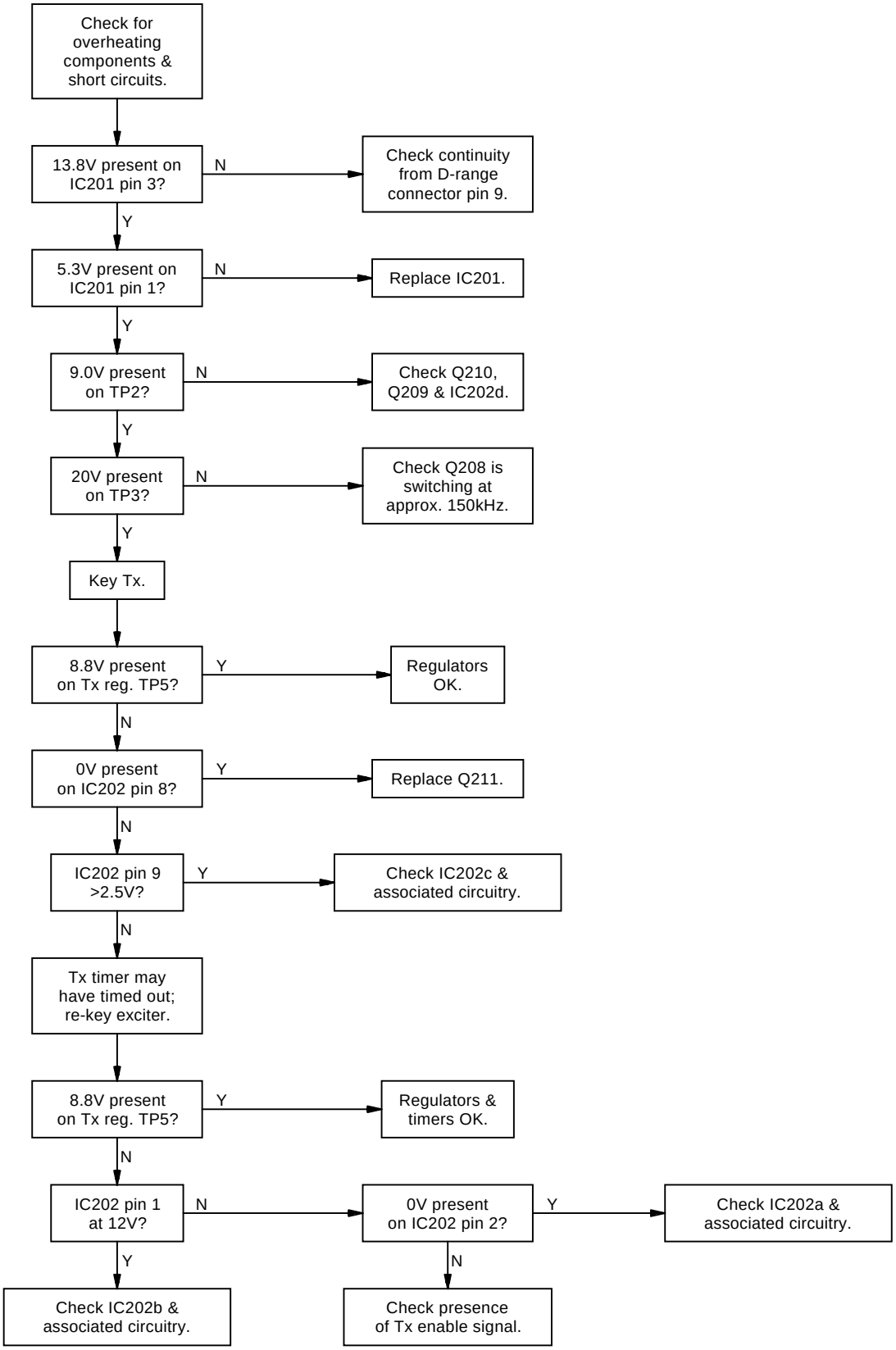
Set up the audio processor as described in Section 3.8.

Check that the demodulated RF output has the frequency response referred to in Section 4.6 with at least 5kHz [2.5kHz] (10kHz) deviation available at 1kHz modulating frequency.

If the above result is not achieved, either the two modulators are incorrectly adjusted or a fault condition exists.

5.5 Fault Finding Charts

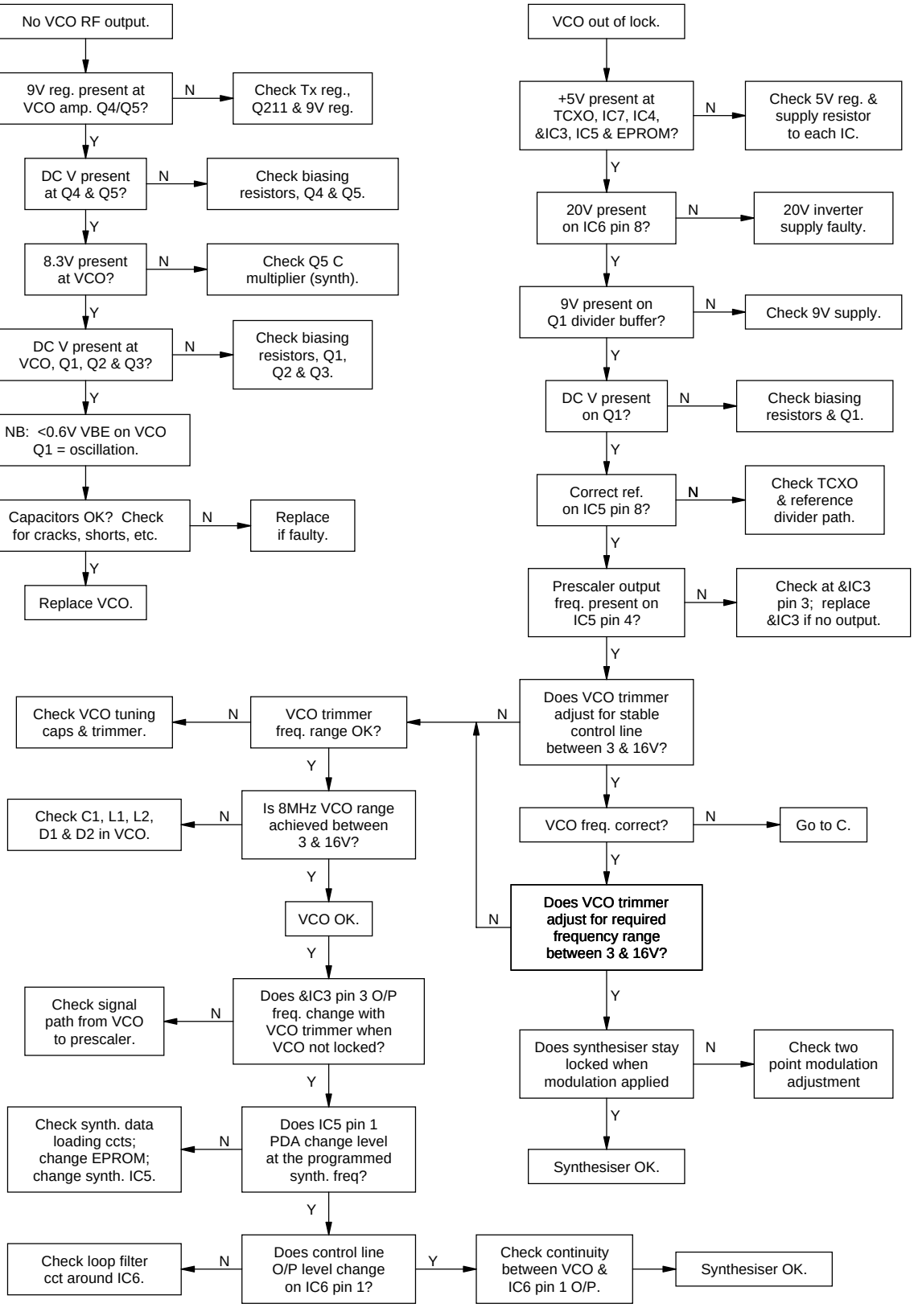
5.5.1 Regulator



5.5.2 Synthesiser

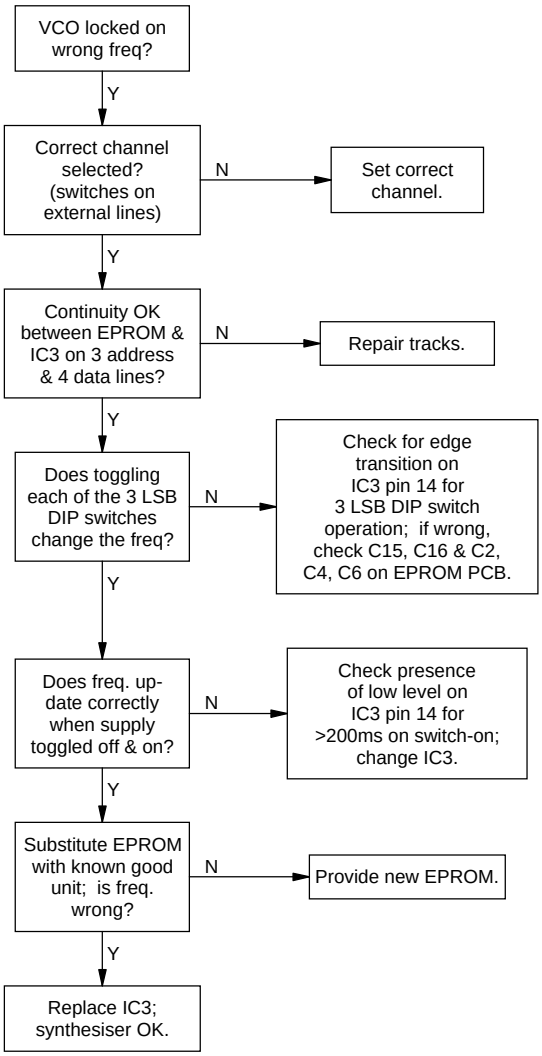
A (Refer to VCO circuit diagram)

B (Refer to synth. circuit diagram)

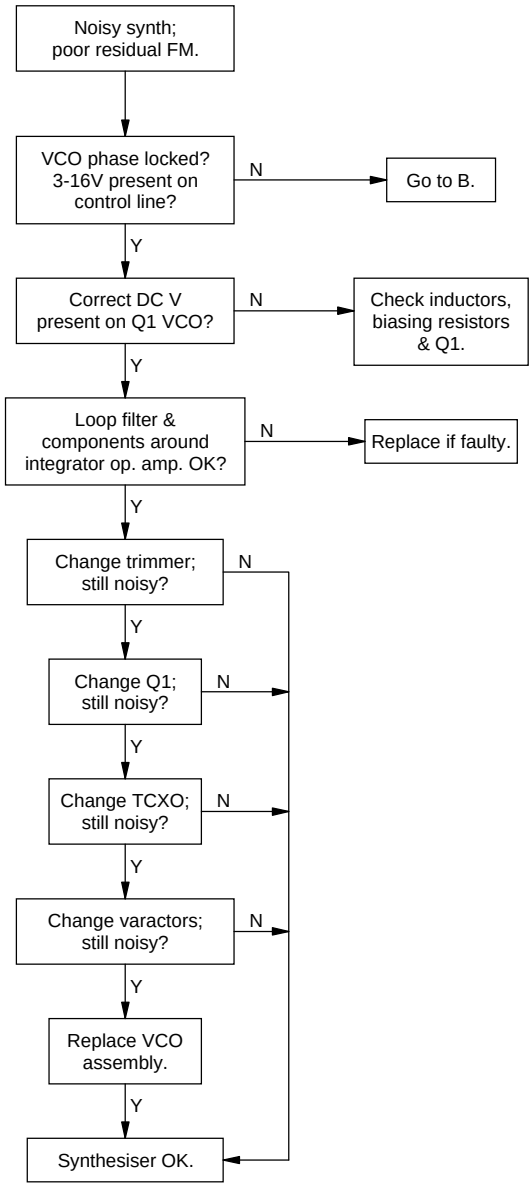


Continued on next page.

C (Refer to synth. circuit diagram)

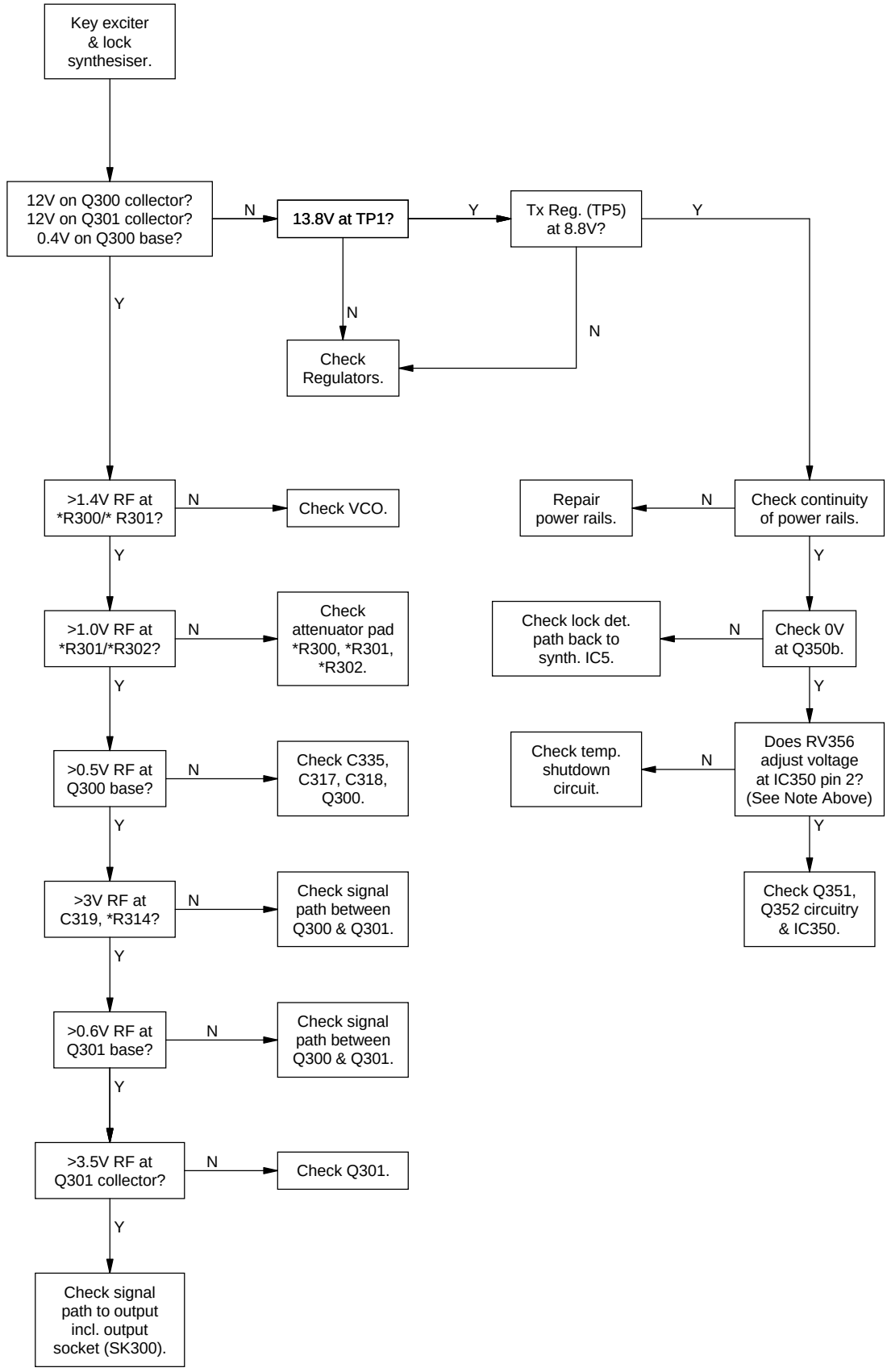


D (Refer to synth. & VCO circuit diagrams)

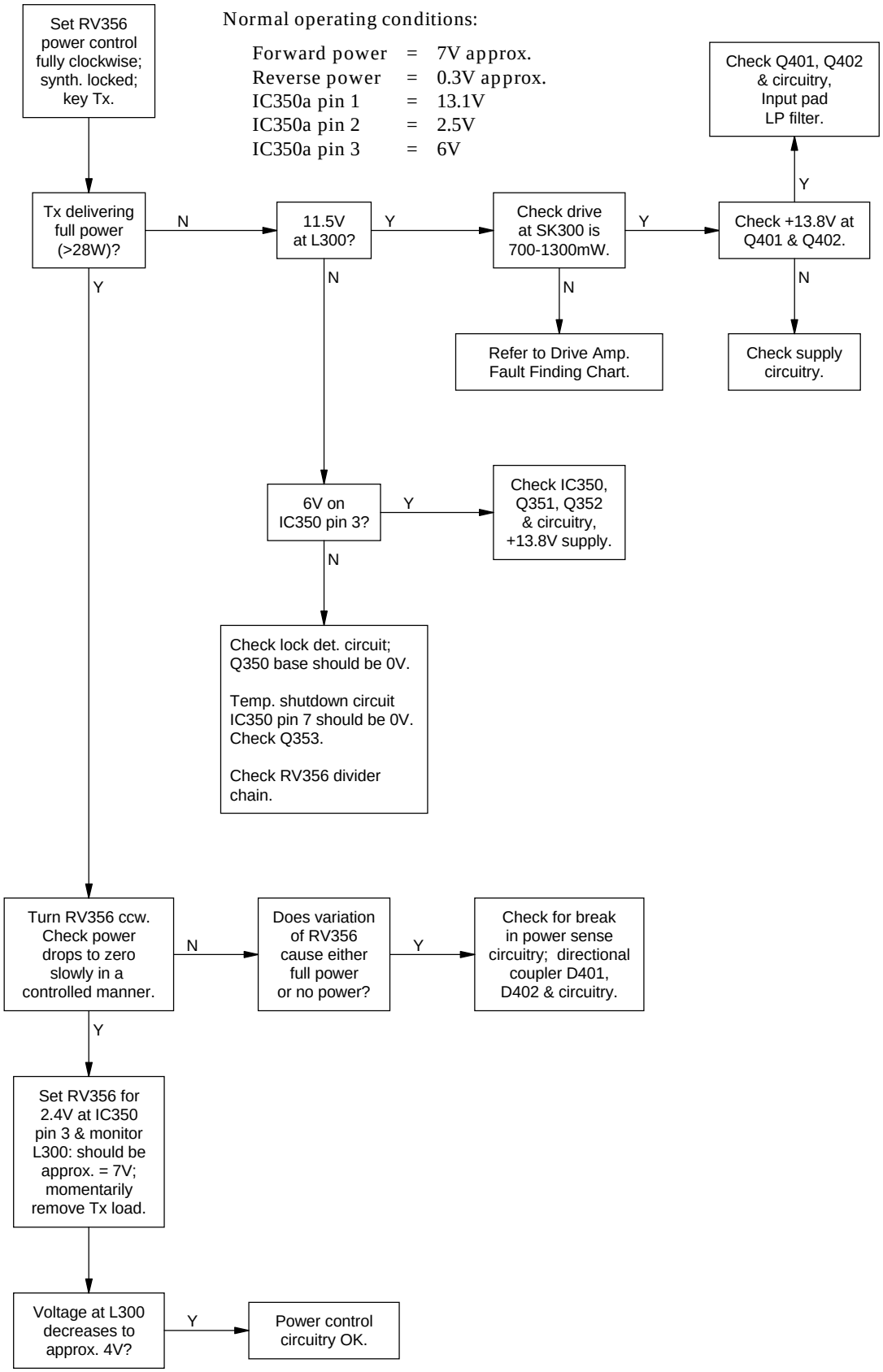


5.5.3 T856 Drive Amplifier

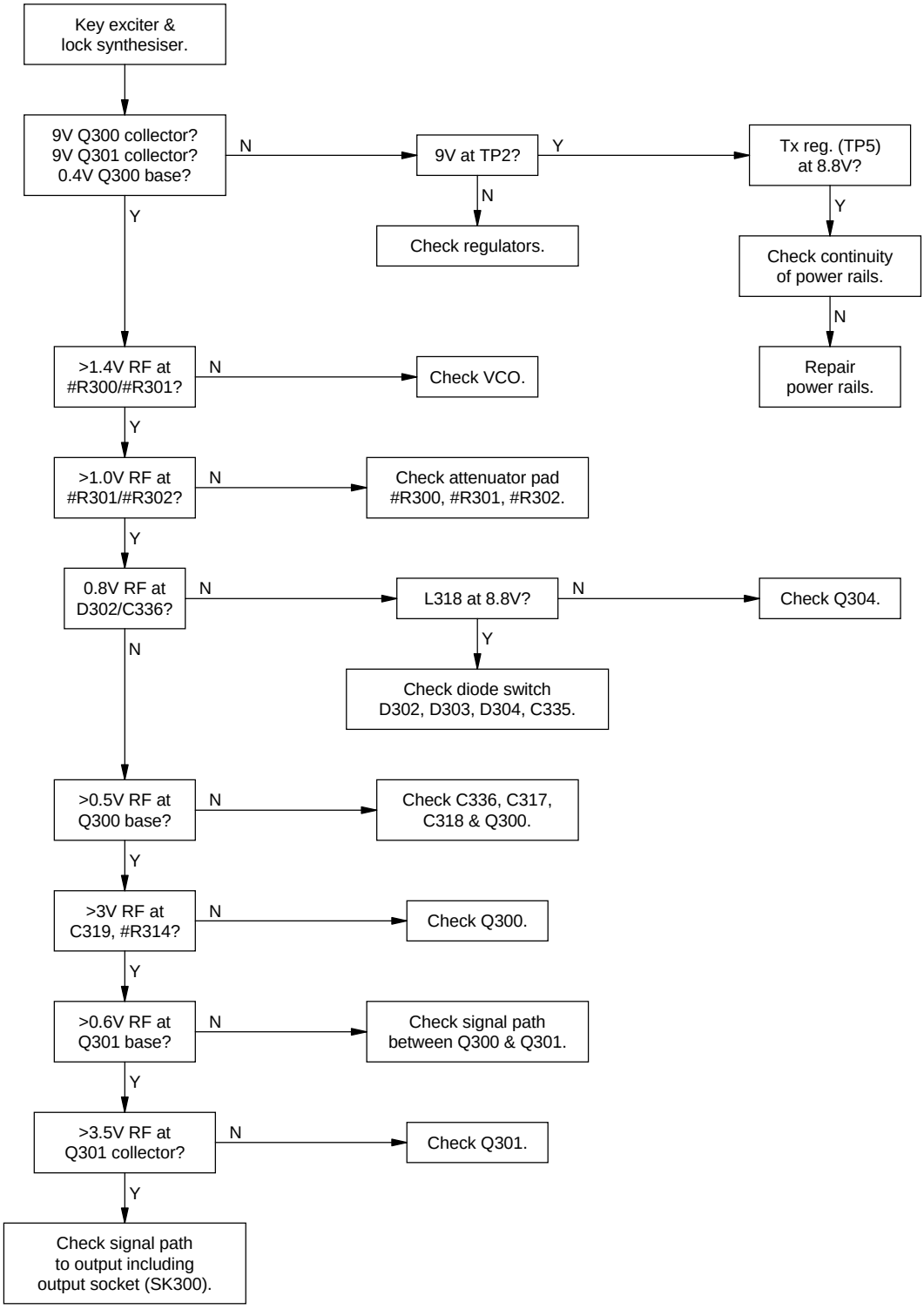
Note: On early issue PCBs RV356 acts on pin 3 of IC350.



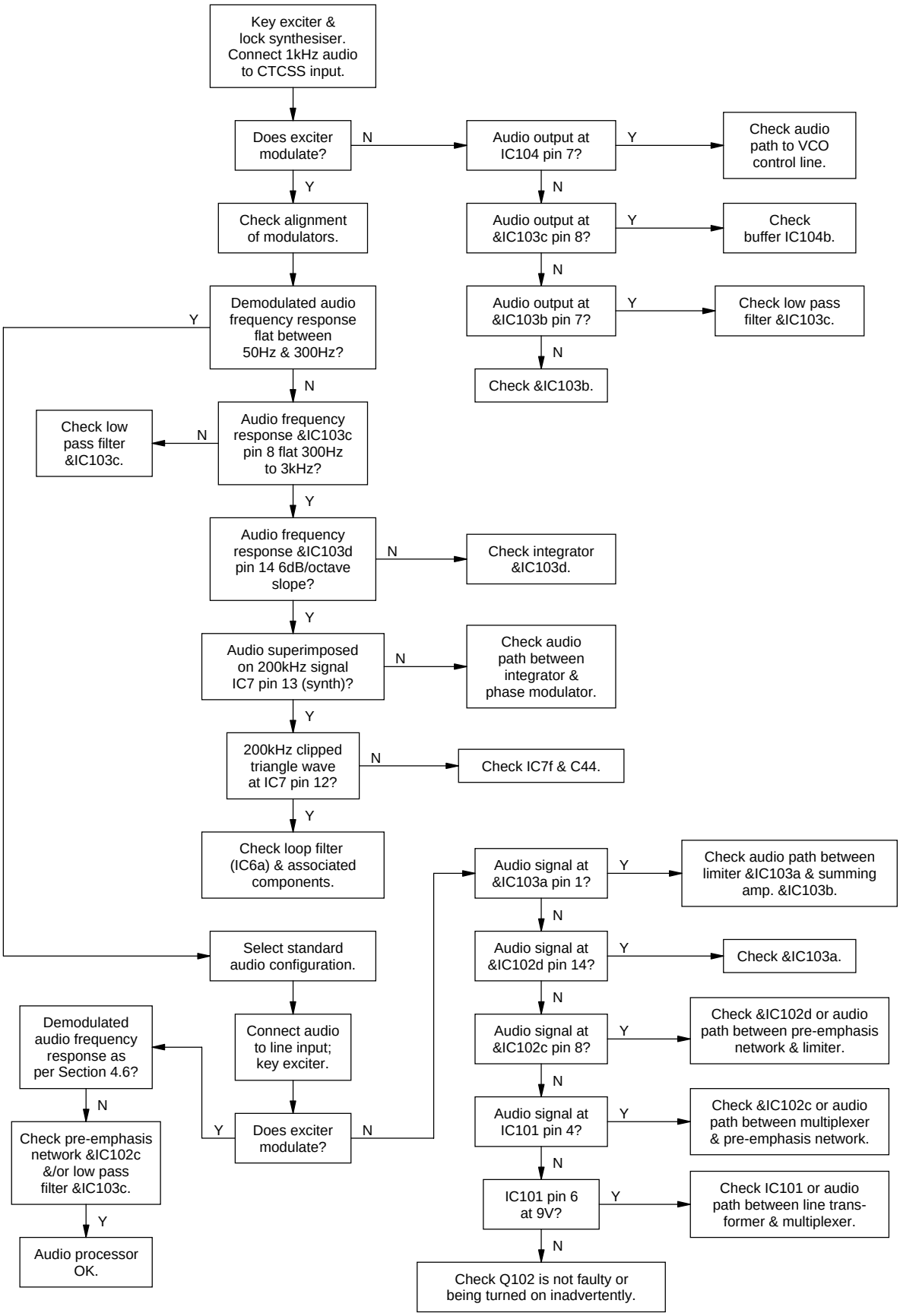
5.5.4 T826 PA & Power Control



5.5.5 T827 Exciter Drive Amplifier



5.5.6 Audio Processor



6 T856/857 PCB Information

This section provides parts lists, grid reference indices, PCB layouts, test points and options drawings and circuit diagrams for the T856 transmitter and T857 exciter.

This section contains the following information.

6.1 Introduction

PCB Identification

All PCBs are identified by a unique 10 digit “internal part number” (IPN), e.g. 220-12345-00, which is screen printed onto the PCB (usually on the top side). The last 2 digits of this number define the issue status, which starts at 00 and increments through 01, 02, 03, etc. as the PCB is updated. Some issue PCBs never reach full production status and are therefore not included in this manual. A letter following the 10 digit IPN has no relevance in identifying the PCB for service purposes.

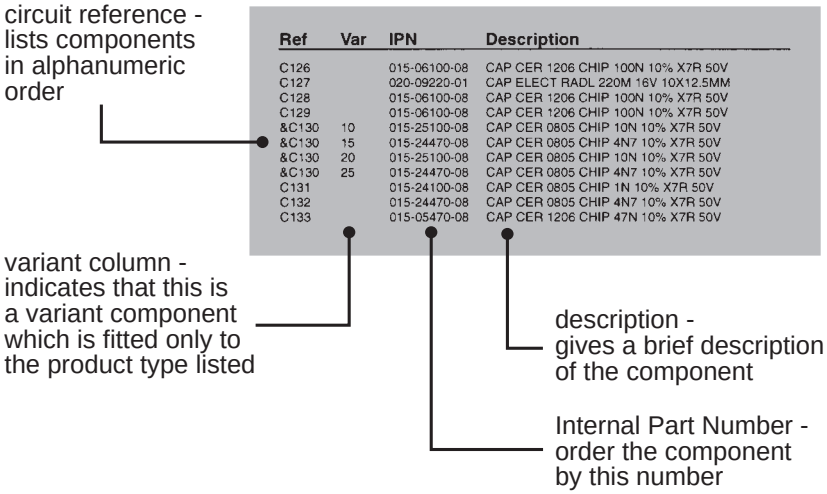
Note: It is important that you identify which issue PCB you are working on so that you can refer to the appropriate set of PCB information.

Parts Lists

The 10 digit numbers (000-00000-00) in this Parts List are “internal part numbers” (IPNs). Your spare parts orders can be handled more efficiently if you quote the IPN and provide a brief description of the part.

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns, as shown below:



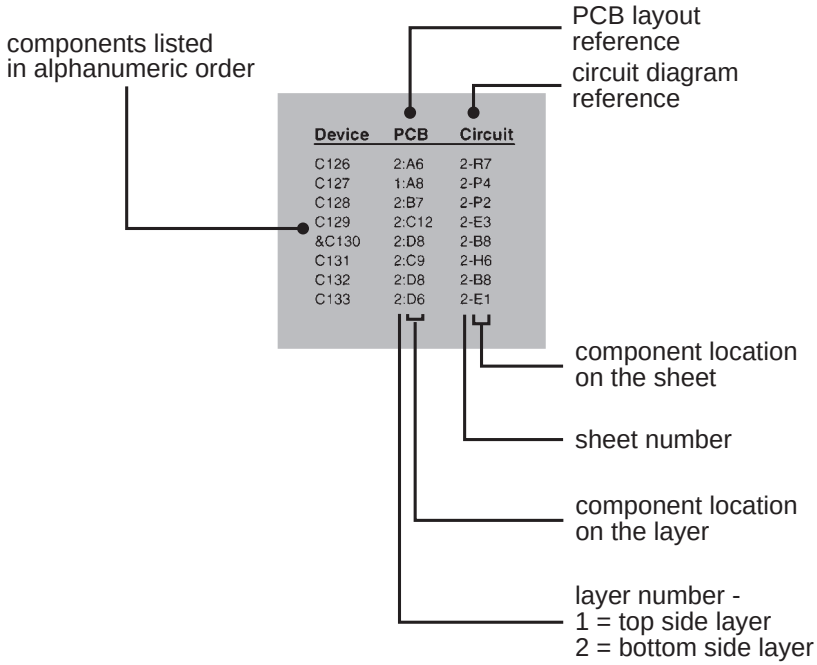
The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Variant Components

A variant component is one that has the same circuit reference but different value or specification in different product types. Variant components are indicated by a character prefix such as “&”, “#” or “=”.

Grid Reference Index

To assist in locating components and labelled pads on the PCB layouts and circuit diagrams, a component grid reference index has been provided. This index lists the components and pads in alphanumeric order, along with the appropriate alphanumeric grid references, as shown below:



Using CAD Circuit Diagrams

Reading a CAD circuit diagram is similar to reading a road map, in that both have an alphanumeric border. The circuit diagrams in this manual use letters to represent the horizontal axis, and numbers for the vertical axis. These circuit diagram “grid references” are useful in following a circuit that is spread over two or more sheets.

When a line representing part of the circuitry is discontinued, a reference will be given at the end of the line to indicate where the rest of the circuitry is located. The first digit refers to the sheet number (printed on the bottom right hand corner of the CAD diagram) and the last two characters refer to the location on that sheet of the continuation of the circuit (e.g. 1-D4).

If more than one line is represented (indicated by a double thickness line), a dot with a reference label will follow the route each individual line represents.

6.2 T856 Transmitter PCB

This section contains the following information.

T856 Parts List (IPN 220-01171-01)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C34		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
&C124	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C124	WB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C124	UWB		NOT FITTED
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
&C133	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C133	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C133	UWB		NOT FITTED
&C135	NB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C135	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C135	UWB	015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C141	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C141	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C141	UWB		NOT FITTED
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
&C151	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C151	WB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C151	UWB		NOT FITTED
C152		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
&C157	UWB		NOT FITTED
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C160	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C160	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C160	UWB		NOT FITTED
&C161	NB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C161	WB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C161	UWB	015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C167	NB		NOT FITTED
&C167	WB		NOT FITTED
&C167	UWB	015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C168		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C169	NB		NOT FITTED
&C169	WB		NOT FITTED
&C169	UWB	015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
&C170	NB		NOT FITTED
&C170	WB		NOT FITTED
&C170	UWB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C171		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C209		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM

Ref	Var	IPN	Description
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C234		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C308		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C311		025-08100-02	CAP TANT BEAD 10M 10% 16V
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
*C313	LOW	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
*C313	MID	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
*C313	HI	015-21560-01	CAP CER 0805 CHIP 5P6 +/-0.25P NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C320		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
*C322	LOW	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
*C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
*C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C330		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C350		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C351		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C352		025-08100-02	CAP TANT BEAD 10M 10% 16V
C354		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C355		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C356		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C357		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C358		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C359		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C360		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C361		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C362		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C363		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C401		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
*C402	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C402	MID	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C402	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
C403		029-02330-02	CAP MICA 5MM CASE 33P 5%
C404		029-02680-02	CAP MICA 5MM CASE 68P 5%
C405		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C406		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C407		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
*C408	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C408	MID	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C408	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C409	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C409	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C409	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C410	LOW	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C410	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C410	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C411	LOW	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C411	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C411	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
C412		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C413		020-07470-05	CAP ELECT RADL 4M7 50V 5X11MM 5MM L/S
C414		015-03100-03	CAP CER CHIP 100P 5% NPO 500V HIQ GRH111
*CV414	LOW	028-02160-03	CAP TRIM 2/16P JOHNSON 187-0109-175
*CV414	MID	028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*CV414	HI	028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
C415		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C416		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C417		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C418		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
*C419	LOW	015-01470-03	CAP CER 1206 CHIP 4P7 5% NPO 500V
*C419	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C419	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C421	LOW	015-01470-03	CAP CER 1206 CHIP 4P7 5% NPO 500V
*C421	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C421	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C422	LOW	015-01560-03	CAP CER 1206 CHIP 5P6 5% NPO 500V
*C422	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C422	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C425	LOW	015-01470-03	CAP CER 1206 CHIP 4P7 5% NPO 500V
*C425	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C425	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C426	LOW	015-01560-03	CAP CER 1206 CHIP 5P6 5% NPO 500V
*C426	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C426	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C429	LOW	015-01470-03	CAP CER 1206 CHIP 4P7 5% NPO 500V
*C429	MID	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
*C429	HI	015-01390-03	CAP CER 1206 CHIP 3P9 5% NPO 500V
C431		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C433		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
*C434	LOW		NOT FITTED
*C434	MID	015-01470-02	CAP CER HIQ 1210 CHIP 4P7 5% NPO 200V
*C434	HI		NOT FITTED
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT

Ref	Var	IPN	Description
D100		001-10000-56	(S) DIODE SMD BAW56 DUAL SW SOT-23 COMAN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INL
D102		001-10000-56	(S) DIODE SMD BAW56 DUAL SW SOT-23 COMAN
D103		001-10000-56	(S) DIODE SMD BAW56 DUAL SW SOT-23 COMAN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE IN
D106		001-00015-29	(S) DIODE ZENER 33V 0.4W BZX79/C33
D204		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INL
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D300		001-00011-70	(S) DIODE 1N4001 1A/50V
D300		065-00010-04	BEAD FERRITE F8 4X2X5MM
D401		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D402		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D403		001-00011-60	(S) DIODE SR2607 6A/30V
IC1	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30+70C NDK NSA0175A
IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10-+60C NDK TIC3002A
IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
IC3	UWB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
&IC102	NB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC102	WB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC102	UWB	002-00012-25	(S) IC TL084 QUAD OP AMP JFET I/P
&IC103	NB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC103	WB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC103	UWB	002-00012-25	(S) IC TL084 QUAD OP AMP JFET I/P
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
IC350		002-00012-40	(S) IC 358P DUAL OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L310		052-08130-25	COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE
L401		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L402		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L403		065-00010-04	BEAD FERRITE F8 4X2X5MM
L404		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L405		065-00010-04	BEAD FERRITE F8 4X2X5MM
L406		052-08130-35	COIL A/W 3.5T/3.0MM HOR 0.8MM WIRE
L407		065-00010-04	BEAD FERRITE F8 4X2X5MM
L408		065-00010-04	BEAD FERRITE F8 4X2X5MM
L409		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
L410		051-00005-56	COIL TAIT NO 556 13MM FORMED COPPER STRIP
L411		056-00021-04	IND FXD 330NH AXIAL
L412		056-00021-04	IND FXD 330NH AXIAL
*L413	LOW	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
*L413	MID	052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
*L413	HI	052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
*L414	LOW	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
*L414	MID	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
*L414	HI	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
*L415	LOW	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
*L415	MID	052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
*L415	HI	052-08140-15	COIL A/W 1.5T/4.0MM HOR 0.8MM WIRE
L420		056-00021-04	IND FXD 330NH AXIAL
L422		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q7		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF SML SIG TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR

Ref	Var	IPN	Description
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00005-55	(S) XSTR MRF555 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q350		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q351		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q352		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q353		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q401		000-00022-75	(S) XSTR SD1433 NPN STUD MTG UHF PWR 10W
Q402		000-00022-80	(S) XSTR SD1488 NPN 6LFL UHF PWR 40W
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15100-00	RES M/F 0805 CHIP 10K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-21	POT 10K LIN VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
&RV106	NB	042-04470-06	RES PRESET 4K7*CARBON 6MM FLAT
&RV106	WB	042-04470-06	RES PRESET 4K7*CARBON 6MM FLAT
&RV106	UWB	042-05100-06	RES PRESET 10K*CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
&R115	NB	036-14820-00	RES M/F 0805*CHIP 8K2 5%
&R115	WB	036-14820-00	RES M/F 0805*CHIP 8K2 5%
&R115	UWB	036-15120-00	RES M/F 0805*CHIP 12K 5%
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
&R118	NB	036-13560-00	RES M/F 0805*CHIP 560E 5%
&R118	WB	036-13560-00	RES M/F 0805*CHIP 560E 5%
&R118	UWB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
&R122	NB	036-15120-00	RES M/F 0805*CHIP 12K 5%
&R122	WB	036-15120-00	RES M/F 0805*CHIP 12K 5%
&R122	UWB	036-15150-00	RES M/F 0805*CHIP 15K 5%
&R123	NB	036-15150-00	RES M/F 0805*CHIP 15K 5%
&R123	WB	036-15150-00	RES M/F 0805*CHIP 15K 5%
&R123	UWB	036-15150-00	RES M/F 0805*CHIP 15K 5%
&R124	NB	036-14270-00	RES M/F 0805*CHIP 2K7 5%
&R124	WB	036-14270-00	RES M/F 0805*CHIP 2K7 5%
&R124	UWB		NOT FITTED
R127		036-16100-00	RES M/F 0805 CHIP 100K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-17100-00	RES M/F 0805 CHIP 1M 5%
&R136	NB	036-15100-00	RES M/F 0805*CHIP 10K 5%
&R136	WB	036-15100-00	RES M/F 0805*CHIP 10K 5%
&R136	UWB		NOT FITTED
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
&R147	NB	036-15470-00	RES M/F 0805*CHIP 47K 5%
&R147	WB	036-15470-00	RES M/F 0805*CHIP 47K 5%
&R147	UWB	036-15390-00	RES M/F 0805*CHIP 39K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
&R151	NB	036-14470-00	RES M/F 0805*CHIP 4K7 5%
&R151	WB	036-14470-00	RES M/F 0805*CHIP 4K7 5%
&R151	UWB		NOT FITTED
&R152	NB	036-15270-00	RES M/F 0805*CHIP 27K 5%
&R152	WB	036-15220-00	RES M/F 0805*CHIP 22K 5%
&R152	UWB	036-15220-00	RES M/F 0805*CHIP 22K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
&R163	NB	036-14100-00	RES M/F 0805*CHIP 1K 5%
&R163	WB	036-14100-00	RES M/F 0805*CHIP 1K 5%
&R163	UWB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-16120-00	RES M/F 0805 CHIP 120K 5%
&R170	NB	036-15100-00	RES M/F 0805*CHIP 10K 5%
&R170	WB	036-15100-00	RES M/F 0805*CHIP 10K 5%
&R170	UWB	036-15470-00	RES M/F 0805*CHIP 47K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
&R179	NB	036-15560-00	RES M/F 0805*CHIP 56K 5%
&R179	WB	036-15560-00	RES M/F 0805*CHIP 56K 5%
&R179	UWB	036-17100-00	RES M/F 0805*CHIP 1M 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
&R181	NB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R181	WB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R181	UWB		NOT FITTED
&R182	NB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R182	WB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R182	UWB		NOT FITTED
&R183	NB	036-14820-00	RES M/F 0805*CHIP 8K2 5%
&R183	WB	036-14820-00	RES M/F 0805*CHIP 8K2 5%
&R183	UWB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R184	NB	036-15220-00	RES M/F 0805*CHIP 22K 5%
&R184	WB	036-15150-00	RES M/F 0805*CHIP 15K 5%
&R184	UWB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
&R185	NB	036-15560-00	RES M/F 0805*CHIP 56K 5%
&R185	WB	036-15470-00	RES M/F 0805*CHIP 47K 5%
&R185	UWB	036-15220-00	RES M/F 0805*CHIP 22K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
&R189	NB	036-13560-00	RES M/F 0805*CHIP 560E 5%
&R189	WB	036-13560-00	RES M/F 0805*CHIP 560E 5%
&R189	UWB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
&R190	NB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R190	WB	036-14220-00	RES M/F 0805*CHIP 2K2 5%
&R190	UWB		NOT FITTED
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R197	NB	036-14270-00	RES M/F 0805*CHIP 2K7 5%
&R197	WB	036-14270-00	RES M/F 0805*CHIP 2K7 5%
&R197	UWB		NOT FITTED
&R198	NB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
&R198	WB	036-10000-00	RES M/F 0805*CHIP ZERO OHM
&R198	UWB		NOT FITTED
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%

Ref	Var	IPN	Description
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R257		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
*R300	LOW	036-13150-00	RES M/F 0805*CHIP 150E 5%
*R300	MID	036-13330-00	RES M/F 0805*CHIP 330E 5%
*R300	HI	036-13330-00	RES M/F 0805*CHIP 330E 5%
R301		036-12180-00	RES M/F 0805 CHIP 18E 5%
*R301	LOW	036-12330-00	RES M/F 0805*CHIP 33E 5%
*R301	MID	036-12180-00	RES M/F 0805*CHIP 18E 5%
*R301	HI	036-12180-00	RES M/F 0805*CHIP 18E 5%
*R302	LOW	036-13150-00	RES M/F 0805*CHIP 150E 5%
*R302	MID	036-13330-00	RES M/F 0805*CHIP 330E 5%
*R302	HI	036-13330-00	RES M/F 0805*CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
R307		030-03470-10	RES FILM 470E 5% 0.5W 7X2.5MM
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
*R314	LOW	030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
*R314	MID	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R314	HI	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R315	LOW	030-52180-20	RES FILM AI 18E 5% 0.4W 4X1.6MM
*R315	MID	030-02120-20	RES FILM 12E 5% 0.4W 4X1.6MM
*R315	HI	030-02120-20	RES FILM 12E 5% 0.4W 4X1.6MM
*R316	LOW	030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
*R316	MID	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R316	HI	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R350		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV351		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R352		036-14100-00	RES M/F 0805 CHIP 1K 5%
R353		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R354		036-16220-00	RES M/F 0805 CHIP 220K 5%
R355		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV355		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
RV356		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R357		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R358		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R359		036-14100-00	RES M/F 0805 CHIP 1K 5%
R360		036-13100-00	RES M/F 0805 CHIP 100E 5%
R361		036-15150-00	RES M/F 0805 CHIP 15K 5%
R362		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R364		036-12100-00	RES M/F 0805 CHIP 10E 5%
R366		036-14220-00	RES M/F 0805 CHIP 2K2 5%
*R401	LOW	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R401	MID	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
*R401	HI	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
*R402	LOW	030-52220-20	RES FILM AI 22E 5% 0.4W 4X1.6MM
*R402	MID	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
*R402	HI	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
*R403	LOW	030-52220-20	RES FILM AI 22E 5% 0.4W 4X1.6MM
*R403	MID	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
*R403	HI	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
*R404	LOW	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R404	MID	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
*R404	HI	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
R405		032-32220-00	RES M/F PWR 22E 5% 1W 12X4.5MM
R406		036-13100-00	RES M/F 0805 CHIP 100E 5%
R407		036-13100-00	RES M/F 0805 CHIP 100E 5%
R408		036-15470-00	RES M/F 0805 CHIP 47K 5%
R409		036-15470-00	RES M/F 0805 CHIP 47K 5%
R415		045-04470-01	RES NTC 4K7 20% 5MM DISC
R416		036-12560-00	RES M/F 0805 CHIP 56E 5%
R417		036-17100-00	RES M/F 0805 CHIP 1M 5%
R418		036-15470-00	RES M/F 0805 CHIP 47K 5%
R419		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R420		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R421		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SK401		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SW1		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BT
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN

Ref	Var	IPN	Description
NOTE:		LOW	= 400-440MHZ
		MID	= 440-480MHZ
		HI	= 480-520MHZ
		NB	= 2.5KHZ DEVIATION
		WB	= 5KHZ DEVIATION
		UWB	= 10KHZ DEVIATION
		1PPM	= 1PPM TCXO
		2PPM	= 2PPM TCXO
		2.5PPM	= 2.5PPM TCXO

T856 Mechanical & Miscellaneous Parts (220-01171-01)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range Plug.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range Plug x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2x70mm for LEDs
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2X70mm For LEDs
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 120MM EXCITER/PA
220-01171-01	PCB T856 TX
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH For SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG D Range Mounted On Rear Panel x1.
240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN PL2,PL3,PL4,PL5
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX Exciter/PA Connectors x2.
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMN N Connector Mounted On Rear Panel x1.
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRAP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
252-00010-12	MIC 600 OHM WITH HANGER CONN FOSTER
303-11169-00	CHASSIS HSINK T856 COMPL A3M2411
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1, Q352 x1.
303-50078-00	CLIP A4M2630 0.1MM SPR WIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-13090-00	HSINK A4M2361 BRKT COPPER T856
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06386-00	PNL FRT COMPL A3M2335/2 T856
316-85015-01	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4, Final Installation Kit x2
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
345-00040-26	SCREW M3X8MM SKT HEAD CAP BLACK ZINC PHOS
349-00020-32	SCREW TAPTITE M3X8MM PAN POZI BZ Pcb Mounting x8.
349-00020-34	SCREW TAPTITE M3X12MM PAN POZI BZ N Connector x2.
349-00020-43	SCREW TAPTITE M4X12MM PAN POZI BZ Top Cover Mtg x14, Copper H/sink Mtg x1.
349-00020-45	SCREW TAPTITE M4X20MM PAN POZI BZ Bottom Cover Mtg x14.
350-00016-42	SPACER 5MM HI 8MM X M3 STUD 2.5MM X M3 HOLE
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
352-00010-35	NUT 8-32 UNC HEX RF PWR XSTR MTG Q401 Mtg x1.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
353-00010-13	WASHER M3 SHAKEPROOF INT BZ Vco Mtg x2.
353-00010-24	WASHER M4 FLAT ST BZ A4M1957 H/sink Mtg x1.
360-00010-40	BUSH SNAP BLACK HEYCO SB-375-4
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q201 x1, Q352 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 SPECIAL ADHESIVE
365-00100-03	LABEL BLANK 10.8X30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28X11MM QUIKSTIK RW718/4
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01500-00	LABEL 24*12MM CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100MM
400-00020-07	SLEEVING 2MM SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T856 Grid Reference Index (IPN 220-01171-01)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first part of the circuit diagram reference is the abbreviated sheet name, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
C1	2:R5	1-A8	C145	2:C9	2-D5	C320	2:G7	4-N4			2-D3
C2	2:K5	1-B4	C146	2:B6	2-F6	C321	2:H8	4-P4	D104	2:B5	2-M5
C3	2:L5	1-B5	C147	1:B7	2-G4	*C322	2:G9	4-R4			2-L5
C4	2:K5	1-B4	C148	2:C7	2-H2	C330	2:S7	3-C2	D106	1:C12	2-R8
C5	2:L5	1-B5	C149	2:C6	2-H5	C335	2:H5	4-K5	D107	1:C4	2-B4
C6	2:Q4	1-B7	C150	1:C5	2-J6	C350	2:H11	4-C5	D108	1:B4	2-C4
C9	2:L5	1-C4	&C151	2:E6	2-L2	C351	2:G11	4-C5	D204	2:R7	3-L7
C10	2:L5	1-D5	C152	1:D6	2-L2	C352	1:G10	4-C7			3-L6
C11	2:M4	1-E5	C153	2:C4	2-L6	C354	2:H12	4-E6	D205	2:V5	3-C6
C12	2:M5	1-E4	C154	1:D4	2-M1	C355	2:H11	4-F7			3-C6
C13	2:S4	1-E8	C156	1:D4	2-N6	C356	2:H10	4-F7	D206	2:U9	3-D4
C14	1:T4	1-F8	&C157	2:E4	2-Q4	C357	2:H10	4-G8			3-D5
C15	1:M5	1-G4	C158	2:E6	2-P1	C358	2:J11	4-H8	D207	2:S7	3-H3
C16	2:M4	1-G4	&C160	2:C7	2-Q3	C359	2:H11	4-H7			3-J2
C17	2:M3	1-G2	&C161	2:D5	2-F1	C360	2:J11	4-J8	D208	2:S8	3-L3
C19	2:P3	1-G2	C162	1:E2	2-A3	C361	2:J12	4-J8			3-L3
C20	2:N3	1-H3	C163	1:E2	2-A3	C362	2:J10	4-H9	D209	2:S9	3-P2
C25	1:P5	1-K5	C164	2:E4	2-D0	C363	2:H12	4-G5			3-P2
C26	2:N5	1-K2	C166	2:E6	2-P2	C401	2:M11	4-C1	D210	1:S8	3-L1
C29	1:N4	1-L5	&C167	2:B9	2-D5	*C402	2:M11	4-D1	D211	2:S8	3-M1
C30	1:N5	1-L4	C168	2:D7	2-E2	C403	2:M11	4-E1			3-M1
C33	2:P8	1-M5	&C169	2:C7	2-H2	C404	2:P11	4-E1	D300	1:H7	4-L7
C34	1:U4	1-N8	&C170	2:D6	2-J2	C405	2:N10	4-E3	D401	1:T12	4-K2
C35	1:S5	1-Q7	C171	2:E4	2-Q6	C406	2:N10	4-F3	D402	1:T10	4-L1
C36	2:S5	1-R7	C209	1:R6	3-K6	C407	1:T10	4-G3	D403	1:V5	3-D7
C39	2:Q7	1-Q9	C212	2:R9	3-Q7	*C408	2:Q11	4-F1	IC1	1:R5	1-B8
C40	2:R4	1-C7	C213	1:R9	3-Q7	*C409	2:Q11	4-G1	IC3	1:M4	1-E4
C42	2:P4	1-L5	C214	2:T6	3-A2	*C410	2:R11	4-H1	IC4	1:T3	1-F7
C43	2:S3	1-G6	C215	1:T6	3-C2	*C411	2:R11	4-H1			1-G8
C44	2:S4	1-H7	C216	2:T6	3-C3	C412	2:S10	4-H2	IC5	1:N4	1-F3
C45	2:P8	1-N5	C217	2:V5	3-C5	C413	1:S10	4-H2	IC6	1:P4	1-K5
C46	2:M5	1-D5	C218	2:S7	3-H1	C414	2:S11	4-J2			1-K3
C101	1:D8	2-B7	C219	1:T8	3-F3	*CV414	1:S11	4-J1	IC7	1:T5	1-E8
C102	1:B3	2-C3	C220	2:T8	3-F3	C415	2:U12	4-J2			1-D7
C103	1:C4	2-C3	C221	2:T8	3-F3	C416	2:S12	4-J2			1-D7
C104	2:D11	2-C3	C222	1:T7	3-J3	C417	2:U10	4-L0			1-E7
C105	2:D8	2-C6	C223	1:R7	3-N1	C418	2:T12	4-L0			1-G7
C106	2:D8	2-C7	C224	1:R7	3-L6	*C419	2:W11	4-M1			1-H7
C107	1:E8	2-C8	C225	2:R7	3-N6	*C421	2:W10	4-N1			1-J7
C108	2:D11	2-D2	C226	1:S8	3-N6	*C422	2:W10	4-N1	IC100	1:E4	2-D1
C109	2:D11	2-D3	C227	1:R9	3-Q7	*C425	2:W9	4-P1	IC101	1:C10	2-E4
C110	2:C11	2-D3	C228	2:R6	3-D3	*C426	2:W9	4-P1	&IC102	1:C7	2-J4
C111	2:D11	2-E2	C229	2:T9	3-E4	*C429	2:W8	4-R1			2-G5
C112	1:D7	2-E6	C230	2:R7	3-P7	C431	2:P12	4-B6			2-K5
C113	2:D9	2-E2	C231	2:T8	3-R2	C433	2:L10	4-D3			2-F1
C115	2:D9	2-F6	C232	2:R6	3-K6	*C434	2:S11	4-J1			2-H2
C118	2:C8	2-F7	C233	2:S9	3-R7	D4	2:N5	1-J3	&IC103	1:E6	2-K4
C119	1:E9	2-G3	C234	2:S8	3-M2			1-K3			2-K2
C121	2:B6	2-G7	C302	2:H7	4-M7	D5	2:P4	1-N3			2-N4
C123	2:B6	2-H7	C303	2:H6	4-M6			1-N3			2-R4
&C124	2:C6	2-J1	C306	2:H6	4-M6	D6	2:P7	1-N7			2-P1
C126	2:C6	2-J4	C308	2:G11	4-Q7			1-N7	IC104	1:D8	2-R1
C128	2:B6	2-J7	C309	2:H9	4-Q6	D100	2:D11	2-C2			2-R2
C129	1:B5	2-K7	C311	1:G11	4-R7			2-D2			2-M3
&C133	2:E4	2-P4	C312	2:H9	4-R6	D101	2:D4	2-B1	IC201	1:T6	3-A2
&C135	2:E5	2-Q4	*C313	2:G9	4-R5			2-B1	IC202	1:S6	3-C2
C137	1:E7	2-N2	C317	2:H5	4-K4	D102	2:D3	2-B2			3-H2
C139	2:D5	2-K4	C318	2:H5	4-L4			2-B2			3-K2
&C141	2:E4	2-Q5	C319	2:H6	4-M5	D103	2:D11	2-C3			3-N1

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
		3-G1			3-B6	R56	2:S4	1-H6	&R183	2:D6	2-L2
IC350	1:H10	4-D9			3-B5	R60	2:P8	1-M5	&R184	2:E4	2-Q5
		4-D6			3-B9	R64	2:R4	1-C7	&R185	2:E4	2-Q5
		4-G8			3-B9	R65	2:S4	1-D7	R186	2:E7	2-N3
L1	1:K5	1-B4			3-B8	R67	2:S3	1-G7	R187	2:E7	2-P2
L300	1:H6	4-L6			3-B8	R68	2:S3	1-G6	R188	2:E6	2-P1
L302	1:G8	4-P4			3-B8	R69	2:P7	1-L6	&R189	2:E5	2-Q4
L303	1:G10	4-Q7			3-B7	R70	2:P7	1-L6	&R190	2:E5	2-R4
L308	1:G9	4-Q6			3-B6	R71	2:P7	1-M6	R192	2:E8	2-R2
L309	1:G9	4-Q5			3-B6	R72	2:P8	1-N5	R194	2:D7	2-Q3
L310	1:H6	4-M5			3-B7	R73	2:P8	1-N5	R195	2:E7	2-R2
L401	1:M11	4-C1			3-B6	R74	2:L5	1-B5	R196	2:E7	2-Q3
L402	1:M10	4-D1	P401	1:V8	4-R2	R75	2:M5	1-E5	&R197	2:E6	2-Q0
L403	1:K10	4-D0	Q1	2:L4	1-C4	R100	2:C4	2-B0	&R198	2:D6	2-J2
L404	1:P10	4-E2	Q5	2:T5	1-N9	RV100	1:B9	2-B4	RV201	1:T7	3-J3
L405	1:N10	4-F3	Q6	2:T4	1-P9	R101	2:D4	2-B1	RV202	1:S8	3-M1
L406	1:P10	4-F1	Q7	2:T4	1-P7	R102	2:D4	2-C1	R224	2:R6	3-K6
L407	1:N10	4-F1	Q8	2:P7	1-M7	R103	2:D8	2-C7	R227	2:R8	3-Q7
L408	1:S10	4-G3	Q101	2:D8	2-D7	R104	2:B4	2-C4	R228	2:T7	3-A3
L409	1:R11	4-G2	Q102	2:C11	2-E3	RV104	1:C5	2-J6	R230	2:S6	3-C2
L410	2:R11	4-J2	Q103	2:B6	2-H7	R105	2:D8	2-C5	R231	2:U8	3-D5
L411	1:S12	4-K3	Q104	2:B6	2-J8	RV105	1:D7	2-Q3	R232	1:T9	3-D3
L412	1:U12	4-L1	Q105	2:C11	2-Q8	R106	2:D8	2-C6	R233	1:U8	3-E5
*L413	1:V10	4-M2	Q106	1:C4	2-C1	&RV106	1:D5	2-L1	R234	1:U7	3-E5
*L414	1:V9	4-P2	Q208	2:R7	3-M6	R107	2:D8	2-D7	R235	2:S6	3-E3
*L415	1:V8	4-Q2	Q209	1:R6	3-D2	R108	2:D8	2-D8	R236	2:S7	3-E2
L420	1:N12	4-B6	Q210	1:T9	3-E4	R109	2:D8	2-D7	R237	2:S6	3-G3
L422	1:N10	4-E3	Q211	2:T8	3-R2	R110	2:C11	2-D5	R238	2:T7	3-G3
PAD1	1:D1	2-R8	Q212	2:R8	3-P7	R111	2:E4	2-D0	R239	2:S7	3-G2
PAD2	1:C11	2-R9	Q300	2:H6	4-L5	R112	2:C8	2-D4	R240	2:S7	3-H3
PAD3	1:D10	2-B2	Q301	1:H8	4-Q5	R113	2:C11	2-D3	R241	2:T7	3-J3
PAD4	1:D10	2-R6	Q350	2:H12	4-F5	&R115	2:E8	2-D6	R242	2:T7	3-J3
PAD5	1:E3	2-N6	Q351	2:J11	4-H7	R116	2:D11	2-E3	R243	2:T7	3-K3
PAD6	1:D1	2-R6	Q352	1:J12	4-J8	R117	2:E8	2-E8	R244	2:S7	3-K2
PAD7	1:B4	2-R7	Q353	2:G12	4-E6	&R118	2:D9	2-E2	R245	2:S8	3-K1
PL1	1:P5	1-Q1	Q401	2:N11	4-E1	R119	2:C10	2-E6	R246	2:T8	3-L3
		1-Q0	Q402	2:Q11	4-G1	R120	2:D9	2-E4	R247	2:S8	3-N2
		1-Q0	R1	2:M5	1-B6	R121	2:D9	2-E6	R248	2:R8	3-N1
		1-Q2	R2	2:R4	1-B9	&R122	2:E7	2-E2	R249	2:S9	3-P2
		1-Q2	R3	2:M3	1-B1	&R123	2:D5	2-F1	R250	2:T8	3-Q2
		1-Q2	R5	2:K5	1-B4	&R124	2:D6	2-F1	R251	2:T8	3-Q2
		1-Q3	R6	2:M3	1-B1	R127	2:D6	2-H3	R252	2:R7	3-M5
		1-Q2	R7	2:L5	1-C5	R128	2:C7	2-G7	R253	2:R7	3-N6
		1-Q1	R9	2:L4	1-C5	R131	2:D6	2-J2	R254	2:R7	3-P5
		1-Q1	R10	2:L5	1-C4	&R136	2:C7	2-J1	R255	2:S7	3-H3
PL100	1:D9	2-E8	R11	2:M3	1-C1	R141	2:B5	2-K7	R256	2:T8	3-L3
		2-D8	R13	2:L4	1-C5	R143	2:B5	2-L7	R257	2:S8	3-L2
		2-D7	R14	2:L4	1-C1	R146	2:D4	2-M6	R258	2:S9	3-P2
		2-D7	R15	2:L4	1-C5	&R147	2:D5	2-M1	R259	2:T6	3-B1
		2-E7	R16	2:L4	1-D1	R148	2:D4	2-N5	R260	2:T6	3-B2
		2-E7	R18	2:M5	1-D6	R149	2:D6	2-N5	*R300	2:K7	4-J4
PL101	1:D10	2-E3	R19	2:L3	1-D1	R150	2:E5	2-N4	*R301	2:K7	4-J5
		2-E3	R20	2:L3	1-D1	&R151	2:E5	2-P4	*R302	2:K7	4-K4
		2-E3	R21	2:S4	1-F8	&R152	2:E4	2-P5	R303	2:H5	4-L4
		2-F3	R24	2:M4	1-G5	R155	2:C11	2-Q8	R305	2:H6	4-L5
		2-F3	R25	2:N3	1-G3	R159	2:C11	2-Q8	R306	2:G8	4-P4
		2-F3	R29	2:N4	1-H3	R162	2:C11	2-R9	R307	1:H9	4-P6
PL102	1:D10	2-F3	R30	2:N4	1-H3	&R163	2:C2	2-R6	R313	2:H5	4-L5
		2-G3	R32	2:N4	1-J3	R164	2:C10	2-R6	*R314	1:G6	4-M4
		2-G4	R35	2:M5	1-J3	R166	2:C6	2-G6	*R315	1:H7	4-N5
		2-F4	R36	2:N5	1-J3	R167	2:B7	2-G4	*R316	1:G7	4-N4
		2-G3	R37	2:P5	1-J5	R168	2:C7	2-H5	R317	2:H9	4-R6
		2-G3	R38	2:P5	1-K6	R169	2:D7	2-H3	R350	2:H11	4-B6
		2-G3	R39	2:P5	1-K3	R170	2:C7	2-H4	RV351	1:G12	4-B5
		2-F3	R40	2:N5	1-K2	R171	2:B7	2-H4	R352	2:G11	4-B5
		2-F3	R42	2:N4	1-L5	R172	2:D5	2-J7	R353	2:H10	4-B7
		2-F3	R43	2:P5	1-L4	R173	2:C6	2-J5	R354	2:G11	4-D5
PL103	1:D9	2-G1	R46	2:Q8	1-M5	R174	2:C6	2-J5	R355	2:H11	4-E6
		2-G1	R47	2:U5	1-N8	R175	2:B6	2-J8	RV355	1:H12	4-E6
		2-G2	R48	2:T4	1-P8	R176	2:C5	2-J6	RV356	1:J10	4-D7
		2-G1	R49	2:T3	1-P7	R177	2:C6	2-J5	R357	2:J10	4-D7
		2-G2	R50	2:T3	1-P7	R178	2:D6	2-K2	R358	2:J10	4-G9
		2-G1	R51	2:T4	1-P7	&R179	2:D6	2-K3	R359	2:J11	4-G7
PL200	1:W5	3-B7	R52	2:M3	1-H4	R180	2:D6	2-L1	R360	2:J11	4-H9
		3-B7	R54	2:R3	1-G6	&R181	2:E6	2-L1	R361	2:J12	4-G5
		3-B8	R55	2:S4	1-H6	&R182	2:C5	2-L5	R362	2:H12	4-G5

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
R364	2:H10	4-C7									
R366	2:H12	4-E5									
*R401	2:L12	4-B0									
*R402	2:M12	4-B1									
*R403	2:L12	4-B1									
*R404	2:L11	4-C0									
R405	1:L10	4-C0									
R406	2:T11	4-K1									
R407	2:T12	4-K2									
R408	2:J12	4-F8									
R409	2:J12	4-F8									
R415	1:N12	4-A6									
R416	2:M8	1-A4									
R417	2:H10	4-E8									
R418	2:H11	4-E7									
R419	2:U10	4-K0									
R420	2:S12	4-K2									
R421	2:H10	4-D7									
SK1	1:K5	1-B1									
		1-B3									
		1-B2									
SK2-1	1:M8	1-A4									
SK3-1	1:L7	1-R8									
SK4-1	1:Q8	1-R5									
SK4-2	1:Q8	1-R8									
SK4-3	1:Q7	1-R8									
SK4-4	1:Q7	1-R9									
SK4-5	1:Q7	1-R9									
SK5-1	1:K8	1-Q3									
SK5-2	1:K8	1-Q3									
SK5-3	1:K8	1-Q4									
SK5-4	1:K7	1-Q4									
SK5-5	1:K7	1-Q4									
SK100	1:B8	2-A7									
SK300	1:G10	4-R5									
SK401	1:L12	4-A1									
SW101	1:C11	2-B5									
TP1	1:U10	4-G3									
TP2	1:T9	4-B8									
TP3	1:R5	3-K6									
TP4	1:R5	1-R7									
T100	1:D3	2-B3									
T200	1:R8	3-M7									

T856 Parts List (IPN 220-01171-03)

How To Use This Parts List

The circuitry and PCB component layout for issue -03 T856 PCB is the same as issue -04 PCB with the exception of the components noted below. Refer instead to the following list and to the information given for issue -04 PCB.

Parts List Differences Between -03 and -04 PCBs

Component	Issue -03 PCB		Issue -04 PCB	
C356	150pF	015-23150-01		deleted
#C421	3p3	015-01330-06	3p9	015-01390-06
#C422 (low band only)	3p3	015-01330-06	3p9	015-01390-06
#L414 (low band only)	15/5	052-08150-15	15/5.5	052-08155-15
RV100	10k lin.	040-05100-21	10k log.	040-05100-23
R359	1k0	036-14100-01	2k2	036-14220-00
R375	1k5	036-14150-00*	1k5	036-14150-00

*This component was a manually placed addition to the board from the Tx reg. line to ground and may be positioned close to C313 in the exciter

T856 Parts List (IPN 220-01171-04)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C405A	100nF (015-06100-08) added across C405 to cure 10MHz sprog at 400MHz (with MRF646 as final) (95/02-064).
C405A	Deleted from Parts List to cure 27 & 75 MHZ instability (95/07-7006).
C406	Changed from 1n (015-24100-08) to 100n to cure 27 & 75 MHz instability (95/07-7006).

Note: %D107 and %D108 are optional level limiting diodes for special applications.

=R17 (47 ohm) and =SK2 are fitted in place of =IC1 when an external frequency reference is used. These two components are supplied with the T800-06 auxiliary D-range kit.

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C34		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C41		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
&C124	WB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C124	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
&C133	WB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C133	NB	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C135	UWB	015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
&C135	WB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
&C135	NB	015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C141	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C141	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
&C151	WB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C151	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C152		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C160	WB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C160	NB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C161	UWB	015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
&C161	WB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
&C161	NB	015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
&C167	UWB	015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C168		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C169	UWB	015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
&C170	UWB	015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C171		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C209		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V

Ref	Var	IPN	Description
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C234		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C235		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C300		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C304		015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
C305		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C307		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C308		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C310		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C311		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C313		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
#C313	LOW	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
#C313	MID	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
#C313	HI	015-21560-01	CAP CER 0805 CHIP 5P6 +/-0.25P NPO 50V
C314		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C315		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22100-01	CAP CER 0805 CHIP 10P +/-0.5P NPO 50V
C320		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
#C322	LOW	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
#C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C342		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C350		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C351		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C352		025-08100-02	CAP TANT BEAD 10M 10% 16V
C353		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C354		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C355		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C357		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C358		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C359		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C360		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C361		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C362		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C363		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C401		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
#C402	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
#C402	MID	029-02390-02	CAP MICA 5MM CASE 39P 5%
#C402	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
C403		029-02330-02	CAP MICA 5MM CASE 33P 5%
C404		029-02680-02	CAP MICA 5MM CASE 68P 5%
C405		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C406		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C407		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
#C408	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
#C408	MID	029-02390-02	CAP MICA 5MM CASE 39P 5%
#C408	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
#C409	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
#C409	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
#C409	HI	029-02330-02	CAP MICA 5MM CASE 33P 5%
#C410	LOW	029-02220-02	CAP MICA 5MM CASE 22P 5%
#C410	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
#C410	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
#C411	LOW	029-02220-02	CAP MICA 5MM CASE 22P 5%
#C411	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
#C411	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
C412		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C413		020-07470-05	CAP ELECT RADL 4M7 50V 5X11MM 5MM L/S
C414		015-03100-03	CAP CER CHIP 100P 5% NPO 500V HIQ GRH111
#CV414	LOW	028-02160-03	CAP TRIM 2/16P JOHNSON 187-0109-175
#CV414	MID	028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
#CV414	HI	028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
C415		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C416		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C417		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C418		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
#C419	LOW	015-01470-06	CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2
#C419	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C419	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C421	LOW	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C421	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C421	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C422	LOW	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C422	MID	015-01470-06	CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2
#C422	HI	015-01470-06	CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2
#C425	LOW	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C425	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2

Ref	Var	IPN	Description
#C425	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C426	LOW	015-01470-06	CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2
#C426	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C426	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C427	LOW	015-01560-06	CAP CER 1210 CHIP 5P6 NPO 500V GRM42-2
#C427	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C427	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C428	LOW	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C428	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C428	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C429	LOW	015-01560-06	CAP CER 1210 CHIP 5P6 NPO 500V GRM42-2
#C429	MID	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C429	HI	015-01390-06	CAP CER 1210 CHIP 3P9 NPO 500V GRM42-2
#C430	LOW	015-21100-01	CAP CER 0805 CHIP 1PO +/-0.25P NPO 50V
C431		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
#C431	LOW	015-21100-01	CAP CER 0805 CHIP 1PO +/-0.25P NPO 50V
C433		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
#C434	MID	015-01470-02	CAP CER HIQ 1210 CHIP 4P7 5% NPO 200V
C435		015-03100-03	CAP CER CHIP 100P 5% NPO 500V HIQ GRH111
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D100		001-10000-56	(S) DIODE SMD BAW56 DUAL SWITCH COMAN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE
D102		001-10000-56	(S) DIODE SMD BAW56 DUAL SWITCH COMAN
D103		001-10000-56	(S) DIODE SMD BAW56 DUAL SWITCH COMAN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE
D106		001-00015-29	(S) DIODE ZENER 33V 0.4W BZX79/C33
D204		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW COMCATH
D300		001-00011-70	(S) DIODE 1N4001 1A/50V
D300		065-00010-04	BEAD FERRITE F8 4X2X5MM
D302		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D303		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D304		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D401		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D402		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D403		001-00011-60	(S) DIODE SR2607 6A/30V
=IC1	2.5ppm	539-00010-41	TCXO12.8MHZ +-2.5PPM -30 - +70C NDK NSA0175
=IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/-2PPM -10 -O +60C NDK TIC3002
=IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
IC3		800-00000-20	SKT IC 8 DIL LO PROF STD PINS
&IC3	UWB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
&IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
&IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
&IC102	UWB	002-00012-25	(S) IC TL084 QUAD OP AMP JFET I/P
&IC102	WB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC102	NB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC103	UWB	002-00012-25	(S) IC TL084 QUAD OP AMP JFET I/P
&IC103	WB	002-00014-40	(S) IC 324P QUAD OP AMP
&IC103	NB	002-00014-40	(S) IC 324P QUAD OP AMP
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
IC350		002-00012-40	(S) IC 358P DUAL OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L301		056-00021-04	IND FXD 330NH AXIAL
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L310		052-08130-25	COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE
L401		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L402		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L403		065-00010-04	BEAD FERRITE F8 4X2X5MM
L404		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L405		065-00010-04	BEAD FERRITE F8 4X2X5MM
L406		052-08130-35	COIL A/W 3.5T/3.0MM HOR 0.8MM WIRE
L407		065-00010-04	BEAD FERRITE F8 4X2X5MM
L408		065-00010-04	BEAD FERRITE F8 4X2X5MM
L409		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
L410		051-00005-56	COIL TAIT NO 556 13MM FORMED COPPER STRIP
L411		056-00021-04	IND FXD 330NH AXIAL
L412		056-00021-04	IND FXD 330NH AXIAL
#L413	LOW	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L413	MID	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L413	HI	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L414	LOW	052-08155-15	COIL A/W 1.5T/5.5MM HOR 0.8MM WIRE
#L414	MID	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L414	HI	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L415	LOW	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L415	MID	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE

Ref	Var	IPN	Description
#L415	HI	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
#L416	LOW	052-08150-15	COIL A/W 1.5T/5.0MM HOR 0.8MM WIRE
#L416	MID	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
#L416	HI	052-08145-15	COIL A/W 1.5T/4.5MM HOR 0.8MM WIRE
L420		056-00021-04	IND FXD 330NH AXIAL
L422		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL201		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q7		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q9		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q10		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00005-55	(S) XSTR MRF555 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q302		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q303		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q304		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q350		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q351		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q352		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q353		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q354		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q401		000-00022-75	(S) XSTR SD1433 NPN STUD MTG UHF PWR 10W
Q402		000-00022-80	(S) XSTR SD1488 NPN 6LFL UHF PWR 40W
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R4		036-12560-00	RES M/F 0805 CHIP 56E 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15220-00	RES M/F 0805 CHIP 22K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R53		036-16100-00	RES M/F 0805 CHIP 100K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R57		036-15470-00	RES M/F 0805 CHIP 47K 5%
R58		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R59		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-23	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
&RV106	UWB	042-05100-06	RES PRESET 10K CARBON 6MM FLAT
&RV106	WB	042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
&RV106	NB	042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
&R115	UWB	036-15120-00	RES M/F 0805 CHIP 12K 5%
&R115	WB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R115	NB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
&R118	UWB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
&R118	WB	036-13560-00	RES M/F 0805 CHIP 560E 5%
&R118	NB	036-13560-00	RES M/F 0805 CHIP 560E 5%
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
&R122	UWB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R122	WB	036-15120-00	RES M/F 0805 CHIP 12K 5%
&R122	NB	036-15120-00	RES M/F 0805 CHIP 12K 5%
R123		036-15150-00	RES M/F 0805 CHIP 15K 5%
&R124	WB	036-14270-00	RES M/F 0805 CHIP 2K7 5%
&R124	NB	036-14270-00	RES M/F 0805 CHIP 2K7 5%
R127		036-16100-00	RES M/F 0805 CHIP 100K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-17100-00	RES M/F 0805 CHIP 1M 5%
R132		030-50000-20	RES AI ZERO OHM 4X1.6MM
R133		030-50000-20	RES AI ZERO OHM 4X1.6MM
R134		030-50000-20	RES AI ZERO OHM 4X1.6MM
R135		030-50000-20	RES AI ZERO OHM 4X1.6MM
&R136	WB	036-15100-00	RES M/F 0805 CHIP 10K 5%
&R136	NB	036-15100-00	RES M/F 0805 CHIP 10K 5%
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
&R147	UWB	036-15390-00	RES M/F 0805 CHIP 39K 5%
&R147	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R147	NB	036-15470-00	RES M/F 0805 CHIP 47K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
&R151	WB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R151	NB	036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	UWB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R152	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R152	NB	036-15270-00	RES M/F 0805 CHIP 27K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
&R163	UWB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
&R163	WB	036-14100-00	RES M/F 0805 CHIP 1K 5%
&R163	NB	036-14100-00	RES M/F 0805 CHIP 1K 5%
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-16120-00	RES M/F 0805 CHIP 120K 5%
&R170	UWB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R170	WB	036-15100-00	RES M/F 0805 CHIP 10K 5%
&R170	NB	036-15100-00	RES M/F 0805 CHIP 10K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
&R179	UWB	036-17100-00	RES M/F 0805 CHIP 1M 5%
&R179	WB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R179	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
&R181	WB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R181	NB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R182	WB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R182	NB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R183	UWB	036-14220-00	RES M/F 0805 CHIP 2K2 5%

Ref	Var	IPN	Description
&R183	WB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R183	NB	036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R184	UWB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
&R184	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R184	NB	036-15180-00	RES M/F 0805 CHIP 18K 5%
&R185	UWB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R185	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R185	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
&R189	UWB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
&R189	WB	036-13560-00	RES M/F 0805 CHIP 560E 5%
&R189	NB	036-13560-00	RES M/F 0805 CHIP 560E 5%
&R190	WB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
&R190	NB	036-14220-00	RES M/F 0805 CHIP 2K2 5%
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R197	WB	036-14270-00	RES M/F 0805 CHIP 2K7 5%
&R197	NB	036-14270-00	RES M/F 0805 CHIP 2K7 5%
&R198	WB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
&R198	NB	036-10000-00	RES M/F 0805 CHIP ZERO OHM
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
#R300	LOW	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R300	MID	036-13330-00	RES M/F 0805 CHIP 330E 5%
#R300	HI	036-13330-00	RES M/F 0805 CHIP 330E 5%
#R301	LOW	036-12330-00	RES M/F 0805 CHIP 33E 5%
#R301	MID	036-12180-00	RES M/F 0805 CHIP 18E 5%
#R301	HI	036-12180-00	RES M/F 0805 CHIP 18E 5%
#R302	LOW	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R302	MID	036-13330-00	RES M/F 0805 CHIP 330E 5%
#R302	HI	036-13330-00	RES M/F 0805 CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-14100-00	RES M/F 0805 CHIP 1K 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
R307		030-03470-10	RES FILM 470E 5% 0.5W 7X2.5MM
R308		036-12470-00	RES M/F 0805 CHIP 47E 5%
R309		036-13560-00	RES M/F 0805 CHIP 560E 5%
R310		036-16100-00	RES M/F 0805 CHIP 100K 5%
R311		036-15470-00	RES M/F 0805 CHIP 47K 5%
R312		036-15220-00	RES M/F 0805 CHIP 22K 5%
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
#R314	LOW	030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
#R314	MID	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R314	HI	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R315	LOW	030-52180-20	RES FILM AI 18E 5% 0.4W 4X1.6MM
#R315	MID	030-02120-20	RES FILM 12E 5% 0.4W 4X1.6MM
#R315	HI	030-02120-20	RES FILM 12E 5% 0.4W 4X1.6MM
#R316	LOW	030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
#R316	MID	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R316	HI	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R318		036-15100-00	RES M/F 0805 CHIP 10K 5%
R319		036-14100-00	RES M/F 0805 CHIP 1K 5%
R320		036-15220-00	RES M/F 0805 CHIP 22K 5%
R321		036-14100-00	RES M/F 0805 CHIP 1K 5%
R322		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R323		036-12100-00	RES M/F 0805 CHIP 10E 5%
R350		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV351		042-04220-06	RES PRESET 2K2 CARBON 6MM FLAT
R352		036-14100-00	RES M/F 0805 CHIP 1K 5%
R353		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R354		036-16220-00	RES M/F 0805 CHIP 220K 5%
R355		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV355		042-06470-06	RES PRESET 470/500K 25% 6MM RND TOP ADJ
RV356		042-05100-06	RES PRESET 10K CARBON 6MM FLAT
R357		036-15100-00	RES M/F 0805 CHIP 10K 5%
R358		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R359		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R360		036-13100-00	RES M/F 0805 CHIP 100E 5%
R361		036-15150-00	RES M/F 0805 CHIP 15K 5%
R362		036-15150-00	RES M/F 0805 CHIP 15K 5%
R363		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R364		036-12100-00	RES M/F 0805 CHIP 10E 5%
R365		036-17100-00	RES M/F 0805 CHIP 1M 5%
R366		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R367		036-15470-00	RES M/F 0805 CHIP 47K 5%
R368		036-15470-00	RES M/F 0805 CHIP 47K 5%
R369		036-16330-00	RES M/F 0805 CHIP 330K 5%
R370		036-16100-00	RES M/F 0805 CHIP 100K 5%
R371		036-15100-00	RES M/F 0805 CHIP 10K 5%
R372		036-16100-00	RES M/F 0805 CHIP 100K 5%
R373		036-15100-00	RES M/F 0805 CHIP 10K 5%
R374		036-15220-00	RES M/F 0805 CHIP 22K 5%
R375		036-14150-00	RES M/F 0805 CHIP 1K5 5%
#R401	LOW	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R401	MID	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
#R401	HI	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
#R402	LOW	030-52220-20	RES FILM AI 22E 5% 0.4W 4X1.6MM
#R402	MID	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
#R402	HI	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
#R403	LOW	030-52220-20	RES FILM AI 22E 5% 0.4W 4X1.6MM
#R403	MID	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
#R403	HI	030-52100-20	RES FILM AI 10E 5% 0.4W 4X1.6MM
#R404	LOW	030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R404	MID	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
#R404	HI	030-53820-20	RES FILM AI 820E 5% 0.4W 4X1.6MM
R405		032-32220-00	RES M/F PWR 22E 5% 1W 12X4.5MM
R406		036-13100-00	RES M/F 0805 CHIP 100E 5%
R407		036-13100-00	RES M/F 0805 CHIP 100E 5%
R408		036-15470-00	RES M/F 0805 CHIP 47K 5%
R409		036-15470-00	RES M/F 0805 CHIP 47K 5%
R415		045-04470-01	RES NTC 4K7 20% 5MM DISC
R419		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R420		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SK401		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SW101		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BT
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN

NOTE:	LOW	= 400-440MHZ
	MID	= 440-480MHZ
	HI	= 480-520MHZ
	NB	= 2.5KHZ DEVIATION
	WB	= 5KHZ DEVIATION
	UWB	= 10KHZ DEVIATION
	1PPM	= 1PPM TCXO
	2PPM	= 2PPM TCXO
	2.5PPM	= 2.5PPM TCXO

(REFER TO PART C, SECTION 1.3)

T856 Mechanical & Miscellaneous Parts (220-01171-04)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range Plug.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range Plug x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2 x70mm for LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2 x70mm for LEDs.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 140mm Exciter/PA Connection x1.
220-01171-04	PCB T856 TX
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH For SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG D Range Mounted On Rear Panel x1.
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX Exciter/PA Connectors x2.
240-02010-54	SKT 15WAY DRANGE PNL MTG 125 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMINAL N Connector Mounted On Rear Panel x1.
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-00010-01	TAG SOLDER 3MM SHORT M6132/3.2 For Positioning Q402 x2.
303-00010-05	TAG SOLDER 4MM LONG M6142/4.2 For Positioning Q401 x1.
303-11169-01	CHASSIS HSINK T856 A3M2411
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1, Q352 x1.
303-50078-00	CLIP A4M2630 0.1MM SPRIWIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-13090-00	HSINK A4M2361 BRKT COPPER T856
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06386-01	PNL FRT COMPL A3M2335/2 T856
316-85015-01	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG Attached To D Range Plug x1.
319-01173-00	(L) SHIELD A3M2880 D RANGE T856 Fitted Across Rear of D Range Plug & Blanking Panel x1.
319-01174-00	(L) SHIELD A4M2881 N-CONNECTOR T856 Fitted Across Rear of N Connector x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4, Final Installation Kit x2
345-00040-11	SCREW M3*10MM PAN POZI ST BZ Final Installation Kit x4
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-09	SCREW 4-40 x 3/8 PAN POZI TAPTITE BLACK Q402 Mtg To Heatsink x2
349-00020-31	SCREW TAPTITE M3X10MM PAN POZI BZ N Connector x2.
349-00020-32	SCREW TAPTITE M3X8MM PAN POZI BZ Pcb Mounting x8.
349-00020-34	SCREW TAPTITE M3X12MM PAN POZI BZ N Connector x2.
349-00020-43	SCREW TAPTITE M4X12MM PAN POZI BZ Top Cover Mtg x14, Copper H/sink Mtg x1.
349-00020-45	SCREW TAPTITE M4X20MM PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
352-00010-35	NUT 8-32 UNC HEX RF POWER XSTR MTG Q401 Mtg x1.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-11	WASHER M3 FLAT 9.5MM*0.9MM ST BZ Final Installation Kit x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
353-00010-13	WASHER M3 SHAKEPROOF INT BZ Vco Mtg x2.
353-00010-24	WASHER M4 FLAT ST BZ A4M1957 H/sink Mtg x1.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q201 x1, Q352 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37MM SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-03	LABEL BLANK 10.8X30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28X11MM QUIKSTIK RW718/4 Rev No x1, EPROM x1, T100 x1, 'Test Report Inside' x1.

IPN	Description	IPN	Description
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.		
365-01500-00	LABEL 24*12MM CE CONFORMITY		
399-00010-51	BAG PLASTIC 75*100MM		
400-00010-07	SLEEVING 2MM SIL RUBBER		
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD		
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360		

T856 Grid Reference Index (IPN 220-01171-04)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first part of the circuit diagram reference is the abbreviated sheet name, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
C1	2:Q5	1-A8	&C141	2:E4	2-R5	C310	2:H4	4-H7	#C434	2:S11	4-J1
C2	2:K5	1-B4	C145	2:B9	2-D5	C311	1:G10	4-R7	C435	2:S11	4-J1
C3	2:L5	1-B5	C146	2:B6	2-G6	C312	2:H9	4-Q7	D4	2:M5	1-J3
C4	2:K5	1-B4	C147	1:B6	2-H4	#C313	2:F9	4-R6			1-K3
C5	2:L5	1-B5	C148	2:C7	2-H2	C313	2:H3	4-R9	D5	2:N4	1-N3
C6	2:Q4	1-B7	C149	2:C6	2-H5	C314	2:H4	4-K7			1-N3
C9	2:K5	1-C4	C150	1:B5	2-J6	C315	2:H4	4-L7	D6	2:P7	1-M6
C10	2:L5	1-D5	&C151	2:D6	2-L2	C317	2:G5	4-K5			1-M6
C11	2:M4	1-E5	C152	1:D6	2-L2	C318	2:G5	4-L5	D100	2:D11	2-B2
C12	2:L5	1-E4	C153	2:B4	2-L6	C319	2:G6	4-M5			2-D2
C13	2:S4	1-E8	C154	1:C4	2-M1	C320	2:G7	4-N5	D101	2:C4	2-B1
C14	1:S4	1-F8	C156	1:D4	2-N6	C321	2:G8	4-P5			2-B1
C15	1:M5	1-G4	&C157	2:E4	2-Q4	#C322	2:F9	4-R5	D102	2:D3	2-B2
C16	2:M4	1-G4	C158	2:D6	2-R1	C335	2:H6	4-H5			2-B2
C17	2:L3	1-G2	&C160	2:C7	2-Q3	C342	2:G11	4-B7	D103	2:C11	2-C3
C19	2:P3	1-G2	&C161	2:C5	2-F1	C350	2:G11	4-C5			2-D3
C20	2:N3	1-H3	C162	1:D2	2-A3	C351	2:G11	4-D5	D104	2:B5	2-M5
C25	1:P5	1-K5	C163	1:E2	2-B3	C352	1:G10	4-C8			2-L5
C26	2:M5	1-K2	C164	2:E4	2-C1	C353	2:G12	4-H6	D106	1:B12	2-R8
C29	1:N4	1-L5	C166	2:E6	2-Q2	C354	2:H12	4-G6	%D107	1:B4	2-B4
C30	1:N5	1-M2	&C167	2:B9	2-D5	C355	2:H11	4-F7	%D108	1:B4	2-C4
C33	2:P8	1-M5	C168	2:D7	2-E2	C357	2:H10	4-G9	D204	2:Q7	3-L7
C34	1:T4	1-P8	&C169	2:B7	2-H2	C358	2:J11	4-H8			3-L6
C35	1:R5	1-Q7	&C170	2:C6	2-J2	C359	2:J11	4-H7	D205	2:U5	3-C6
C36	2:R5	1-R7	C171	2:E4	2-R5	C360	2:H11	4-J8			3-C6
C39	2:Q7	1-Q9	C209	1:R6	3-K6	C361	2:J12	4-J9	D206	2:T9	3-E4
C40	2:Q4	1-C7	C212	2:R9	3-N7	C362	2:H10	4-H9			3-E4
C41	2:T3	1-N7	C213	1:R9	3-P7	C363	2:H12	4-G5	D207	2:S7	3-H3
C42	2:N4	1-L5	C214	2:T6	3-A2	C401	2:L11	4-C1			3-J2
C43	2:R3	1-G6	C215	1:S6	3-C2	#C402	2:M11	4-D0	D208	2:S7	3-L3
C44	2:S4	1-H7	C216	2:S7	3-C3	C403	2:M11	4-E0			3-L3
C45	2:P8	1-N6	C217	2:U5	3-C6	C404	2:P11	4-E1	D209	2:S9	3-P2
C46	2:M5	1-D5	C218	2:S7	3-H1	C405	2:N10	4-E2			3-P2
C101	1:C8	2-B7	C219	1:T8	3-F3	C406	2:M10	4-F2	D210	1:R8	3-L1
C102	1:B3	2-C4	C220	2:T8	3-F3	C407	1:T10	4-G2	D211	2:R8	3-M1
C103	1:B4	2-C4	C221	2:T8	3-F3	#C408	2:P11	4-F1			3-M1
C104	2:D11	2-C3	C222	1:S7	3-J3	#C409	2:P11	4-G1	D300	1:H7	4-L7
C105	2:C8	2-C6	C223	1:R7	3-N1	#C410	2:R11	4-H1	D302	2:H5	4-J5
C106	2:C8	2-D7	C224	1:Q7	3-K6	#C411	2:R11	4-H1	D303	2:H5	4-K5
C107	1:D8	2-C7	C225	2:R7	3-M6	C412	2:R10	4-H2	D304	2:H5	4-J5
C108	2:D11	2-D2	C226	1:R8	3-N6	C413	1:S10	4-H2	D401	1:S12	4-K2
C109	2:C11	2-D3	C227	1:R9	3-P7	C414	2:R11	4-J1	D402	1:T10	4-L1
C110	2:C11	2-D3	C228	2:R6	3-D3	#CV414	1:S11	4-J1	D403	1:V5	3-D7
C111	2:D11	2-E2	C229	2:T9	3-E4	C415	2:U12	4-J2	=IC1	1:R5	1-B8
C112	1:D7	2-E6	C230	2:R7	3-N7	C416	2:S12	4-J2	&IC3	1:M4	1-E4
C113	2:D9	2-E2	C231	2:T8	3-Q2	C417	2:U10	4-L0	IC4	1:T3	1-F7
C115	2:D9	2-E6	C232	2:R6	3-K6	C418	2:T12	4-L0			1-G8
C118	2:B8	2-F7	C233	2:R9	3-Q7	#C419	2:V11	4-N1	IC5	1:N4	1-F3
C119	1:D9	2-G3	C234	2:S8	3-M2	#C421	2:V10	4-P1	IC6	1:N4	1-L1
C121	2:B6	2-H6	C235	2:R7	3-C2	#C422	2:V10	4-P1			1-L3
C123	2:A6	2-H7	C300	2:H5	4-K4	#C425	2:V9	4-Q1			1-K5
&C124	2:C6	2-J1	C302	2:H7	4-M7	#C426	2:V9	4-Q1	IC7	1:S5	1-E8
C126	2:B6	2-J4	C303	2:G6	4-M6	#C427	2:U11	4-M1			1-D7
C128	2:B6	2-J7	C304	2:H5	4-K5	#C428	2:V11	4-M1			1-D7
C129	1:A5	2-K7	C305	2:H5	4-K5	#C429	2:V8	4-R1			1-E7
&C133	2:D4	2-P4	C306	2:G6	4-M6	#C430	2:V11	4-N1			1-G7
&C135	2:E5	2-Q4	C307	2:H4	4-K6	C431	2:N12	4-A6			1-H7
C137	1:D7	2-Q2	C308	2:G11	4-Q7	#C431	2:V10	4-P1			1-J7
C139	2:D5	2-K4	C309	2:G9	4-Q7	C433	2:L10	4-E2	IC100	1:D4	2-D1

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
IC101	1:B10	2-E4	PAD20	1:U3	1-Q0	Q300	2:G6	4-L5	R104	2:B4	2-C4
&IC102	1:B7	2-H5	PAD25	1:B2	2-R7	Q301	1:G8	4-Q5	RV105	1:D7	2-P3
		2-J4	PL100	1:D9	2-E8	Q302	2:H4	4-J7	R105	2:C8	2-C5
		2-K5			2-D8	Q303	2:H4	4-K7	R106	2:D8	2-C6
		2-F1			2-D7	Q304	2:H4	4-L6	&RV106	1:D5	2-L1
		2-H2			2-D7	Q350	2:H12	4-F6	R107	2:D8	2-C7
&IC103	1:D6	2-K4			2-E7	Q351	2:J11	4-H8	R108	2:D8	2-C8
		2-K2			2-E7	Q352	1:J12	4-J8	R109	2:D8	2-C7
		2-N4			2-D8	Q353	2:G11	4-E6	R110	2:C11	2-D5
		2-R4	PL101	1:C10	2-E3	Q354	2:G12	4-G6	R111	2:E4	2-D1
		2-R1			2-E3	Q401	2:N11	4-E1	R112	2:C8	2-D4
IC104	1:D8	2-R0			2-E3	Q402	2:Q11	4-G1	R113	2:C11	2-D3
		2-R3			2-F3	R1	2:L5	1-B6	&R115	2:E8	2-D6
		2-M3			2-F3	R2	2:R4	1-B9	R116	2:C11	2-E3
IC201	1:T6	3-A2			2-F3	R3	2:M3	1-B1	R117	2:E8	2-D7
IC202	1:S6	3-C2			2-E3	R4	2:L8	1-A4	&R118	2:D9	2-E2
		3-H2	PAD101	1:E1	2-A3	R5	2:K5	1-B4	R119	2:C10	2-E6
		3-K2	PL102	1:D10	2-G3	R6	2:M3	1-B1	R120	2:C9	2-F5
		3-N1			2-F4	R7	2:K5	1-C5	R121	2:C9	2-E6
		3-G1			2-F3	R9	2:K4	1-C5	&R122	2:D7	2-E2
IC350	1:H10	4-D9			2-G4	R10	2:K5	1-C4	&R123	2:D5	2-F1
		4-D6			2-G3	R11	2:M3	1-C1	&R124	2:C6	2-F1
		4-G8			2-G3	R13	2:L4	1-C5	R127	2:C6	2-H3
LINKA	2:T4	1-P7			2-G3	R14	2:K4	1-C1	R128	2:B7	2-G7
L1	1:K5	1-B4			2-F3	R15	2:L4	1-C5	R131	2:C6	2-J2
L300	1:H6	4-L7			2-F3	R16	2:L4	1-D1	R132	1:D2	2-A2
L301	1:H5	4-K5			2-F3	=R17	1:Q5	1-B7	R133	1:D2	2-A1
L302	1:G8	4-P5			2-F4	R18	2:M5	1-D6	R134	1:D2	2-A3
L303	1:G10	4-Q7	PAD102	1:E2	2-A2	R19	2:L3	1-D1	R135	1:D1	2-A3
L308	1:G9	4-Q6	PL103	1:C9	2-G1	R20	2:L3	1-D1	&R136	2:C7	2-J1
L309	1:G9	4-Q6			2-G1	R21	2:R4	1-F8	R141	2:A5	2-K7
L310	1:G6	4-M6			2-G1	R24	2:L4	1-G5	R143	2:B5	2-L7
L401	1:L11	4-C0			2-G2	R25	2:M3	1-G3	R146	2:D4	2-N5
L402	1:M10	4-D1			2-G2	R29	2:N4	1-H3	&R147	2:D4	2-M1
L403	1:K10	4-D0			2-G1	R30	2:M4	1-H3	R148	2:D4	2-N5
L404	1:N10	4-E2			2-G0	R32	2:M4	1-J3	R149	2:D6	2-N5
L405	1:M10	4-F2	PAD104	1:E2	2-A1	R35	2:M5	1-J3	R150	2:D5	2-P4
L406	1:P10	4-F1	PAD105	1:E2	2-A1	R36	2:M5	1-J3	&R151	2:D5	2-P4
L407	1:M10	4-F0	PL200	1:V5	3-B7	R37	2:P5	1-J5	&R152	2:D4	2-P5
L408	1:S10	4-G2			3-B7	R38	2:P5	1-K6	R155	2:B11	2-Q8
L409	1:R11	4-G2			3-B8	R39	2:N5	1-K3	R159	2:B11	2-Q8
L410	2:R11	4-H1			3-B7	R40	2:N5	1-K2	R162	2:B11	2-R9
L411	1:S12	4-K2			3-B8	R42	2:N4	1-L5	&R163	2:C2	2-R7
L412	1:T12	4-L1			3-B6	R43	2:N5	1-L2	R164	2:B10	2-R6
#L413	1:V10	4-N1			3-B5	R46	2:P8	1-M5	R166	2:B6	2-G6
#L414	1:V9	4-P1			3-B9	R47	2:T5	1-P8	R167	2:B7	2-H4
#L415	1:V8	4-R1			3-B9	R48	2:T4	1-P9	R168	2:B7	2-H5
#L416	1:V11	4-M1			3-B8	R49	2:T3	1-P7	R169	2:D7	2-H3
L420	1:N12	4-A6			3-B8	R50	2:T4	1-P7	&R170	2:B7	2-H4
L422	1:M10	4-E2			3-B6	R51	2:T4	1-N7	R171	2:B7	2-H4
PAD1	1:C1	2-R9			3-B6	R52	2:L3	1-H4	R172	2:D5	2-J7
PL1	1:P5	1-Q1			3-B7	R53	2:T3	1-N8	R173	2:C6	2-J5
		1-Q0			3-B6	R54	2:R3	1-G6	R174	2:C6	2-J5
		1-Q0			3-A5	R55	2:R4	1-H6	R175	2:B6	2-J8
		1-Q2	PL201	1:S8	3-M3	R56	2:R4	1-H6	R176	2:C5	2-J6
		1-Q3			3-M2	R57	2:T3	1-N7	R177	2:C6	2-J5
		1-Q2			3-M2	R58	2:T3	1-Q7	R178	2:D6	2-K2
		1-Q1			3-M3	R59	2:T3	1-Q7	&R179	2:D6	2-K3
		1-Q2	Q1	2:K4	1-C4	R60	2:P8	1-M5	R180	2:D6	2-L1
		1-Q2	Q5	2:T5	1-P9	R64	2:Q4	1-C7	&R181	2:D6	2-L1
		1-Q1	Q6	2:T5	1-Q9	R65	2:R4	1-D7	&R182	2:B5	2-L5
		1-Q0	Q7	2:T3	1-P7	R67	2:S3	1-G7	&R183	2:D6	2-L2
PAD2	1:B11	2-R9	Q8	2:P7	1-M6	R68	2:R3	1-G6	&R184	2:E4	2-P5
PAD3	1:C10	2-A2	Q9	2:T3	1-P7	R69	2:P7	1-L6	&R185	2:E4	2-Q5
PAD4	1:D10	2-R6	Q10	2:T4	1-Q8	R70	2:P7	1-L6	R186	2:D7	2-P2
PAD5	1:E3	2-N7	Q101	2:C8	2-D7	R71	2:P7	1-M6	R187	2:E7	2-Q2
PAD6	1:C1	2-R7	Q102	2:C11	2-E3	R72	2:P8	1-M6	R188	2:E6	2-R1
PAD7	1:E3	2-N6	Q103	2:A6	2-H7	R73	2:P8	1-N6	&R189	2:D5	2-Q4
PAD8	1:D10	2-R5	Q104	2:B6	2-J8	R74	2:L5	1-B5	&R190	2:E5	2-R4
PAD9	1:D1	2-R6	Q105	2:B11	2-Q8	R75	2:L5	1-E5	R192	2:E8	2-R3
PAD10	1:B12	2-R8	Q106	1:C4	2-C1	R100	2:C4	2-B0	R194	2:D7	2-Q3
PAD11	1:C2	2-R8	Q208	2:Q7	3-M6	RV100	1:B9	2-B5	R195	2:D7	2-R3
PAD12	1:C2	2-R7	Q209	1:R6	3-D2	R101	2:D4	2-B1	R196	2:E7	2-Q4
PAD15	1:U3	1-Q1	Q210	1:T9	3-E4	R102	2:D4	2-C1	&R197	2:E6	2-R1
PAD16	1:U3	1-Q0	Q211	2:T8	3-Q2	R103	2:D8	2-C7	&R198	2:D6	2-J2
PAD17	1:U4	1-Q0	Q212	2:R8	3-N6	RV104	1:C5	2-J6	RV201	1:T7	3-J3

Device	PCB	Circuit
RV202	1:S8	3-L1
R224	2:R6	3-K6
R227	2:R8	3-P7
R228	2:T7	3-A3
R230	2:R6	3-C2
R231	2:T8	3-D4
R232	1:T9	3-D3
R233	1:U8	3-E4
R234	1:U7	3-E4
R235	2:S6	3-E3
R236	2:S7	3-E2
R237	2:S6	3-G3
R238	2:S7	3-G3
R239	2:S7	3-G2
R240	2:S7	3-H3
R241	2:T7	3-J3
R242	2:T7	3-J3
R243	2:S7	3-K3
R244	2:R7	3-K2
R245	2:R8	3-K1
R246	2:S8	3-L3
R247	2:R8	3-N2
R248	2:R8	3-N1
R249	2:S9	3-N2
R250	2:S8	3-Q2
R251	2:T8	3-Q2
R252	2:R7	3-M6
R253	2:R7	3-M6
R254	2:R7	3-N5
R255	2:S7	3-H3
R256	2:S8	3-L3
R258	2:S9	3-P2
R259	2:T6	3-B1
R260	2:T6	3-B2
#R300	2:K7	4-G5
#R301	2:K7	4-H5
#R302	2:K7	4-H5
R303	2:G5	4-L5
R304	2:J5	4-H5
R305	2:G6	4-L6
R306	2:G8	4-P5
R307	1:H9	4-P6
R308	2:H5	4-J5
R309	2:H5	4-K5
R310	2:H4	4-H7
R311	2:H4	4-J7
R312	2:H4	4-J6
R313	2:H5	4-L6
#R314	1:G6	4-M5
#R315	1:G6	4-N5
#R316	1:G7	4-N5
R317	2:G9	4-Q7
R318	2:H4	4-K7
R319	2:H4	4-K6
R320	2:H4	4-K6
R321	2:H5	4-L6
R322	2:H7	4-M7
R323	2:G10	4-R7
R350	2:F11	4-B7
RV351	1:G12	4-B6
R352	2:G11	4-C6
R353	2:G11	4-C7
R354	2:G11	4-D6
R355	2:G11	4-E6
RV355	1:G12	4-E7
RV356	1:H10	4-D8
R357	2:H10	4-D8
R358	2:H10	4-G9
R359	2:J11	4-G8
R360	2:J12	4-H9
R361	2:H12	4-G6
R362	2:H12	4-G5
R363	2:J9	4-D8
R364	2:H10	4-C8
R365	2:H10	4-E8
R366	2:G11	4-E6
R367	2:H11	4-E8
R368	2:G12	4-E7
R369	2:G12	4-F6
R370	2:H11	4-G7
R371	2:H12	4-G6
R372	2:H12	4-G6
R373	2:G12	4-G6
R374	2:G12	4-H6
R375	2:F12	4-R9
#R401	1:L12	4-B0
#R402	1:L12	4-B1
#R403	1:L12	4-B0
#R404	1:L11	4-C0
R405	1:L10	4-C0
R406	2:S11	4-K1
R407	2:T12	4-L2
R408	2:J12	4-F9
R409	2:H12	4-F9
R415	1:N12	4-A6
R419	2:T10	4-K0
R420	2:S12	4-K2
SUPPLY	1:B10	2-R6
SK1	1:K5	1-B1
		1-B3
		1-B3
		1-B3
		1-B2
		1-B2
		1-B2
		1-B2
		1-B1
		1-B1
		1-A0
=SK2	1:Q5	1-A8
SK100	1:B8	2-A7
SW101	1:C11	2-B5
SJ2-1	1:L8	1-A4
SJ3-1	1:L7	1-R8
SK300	1:F10	4-R6
SJ4-1	1:P8	1-R5
SJ4-2	1:P8	1-R8
SJ4-3	1:P7	1-R8
SJ4-4	1:P7	1-R9
SJ4-5	1:P7	1-R9
S401	1:W8	4-R1
SK401	1:K12	4-A1
SJ5-1	1:K8	1-Q3
SJ5-2	1:K8	1-Q3
SJ5-3	1:K8	1-Q4
SJ5-4	1:K7	1-Q4
SJ5-5	1:K7	1-Q4
TX-LED	1:B11	2-R9
TP1	1:T10	4-F3
TP2	1:R9	4-B8
TP3	1:Q5	1-M2
TP4	1:R5	1-R7
TP5	1:H4	4-S9
TP12	1:N4	1-M4
T100	1:C3	2-B3
T200	1:R8	3-M7

Device	PCB	Circuit

Device	PCB	Circuit

6.3 T857 Exciter PCB

This section contains the following information.

T857 Parts List (IPN 220-01140-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C157	(WB) changed from 2p2 (015-21220-01) to 1p5. Low pass filter optimisation for EIA and FCC spec. (89/03-099).
C160	Changed from 15n (015-25150-01) to 47n. Low pass filter optimisation for EIA and FCC spec. (89/03-099).
R185	(WB) changed from 39K (036-15390-00) to 56K. Low pass filter optimisation for EIA and FCC spec. (89/03-099).
IC6	Changed from NE5532 (002-00012-45) to MC33078. Improved synth. lock-up times (89/03-110).
C157	(NB) changed from 5p6 (015-21560-01) to 4p7.Low pass filter optimisation for NB CEPT spec.(89/03-131).
R152	(NB) changed from 33K (036-15330-00) to 27K. Low pass filter optimisation for NB CEPT spec.(89/03-131).
R185	(NB) changed from 47K (036-15470-00) to 56K. Low pass filter optimisation for NB CEPT spec.(89/03-131).
C161	Changed from 2n2 (015-24220-01) to 1n. Filter specs. for EIA, FCC & Asia (89/05-238).
R185	(WB) changed from 56K (036-15560-00) to 47K. Filter specs. for EIA, FCC & Asia (89/05-238).
C315 & C316	Deleted. Updated after pilot run (89/05-240).
Q302 & Q303	Deleted. Updated after pilot run (89/05-240).
R309 & R310	Deleted. Updated after pilot run (89/05-240).
L320 & RV301	Deleted. Updated after pilot run (89/05-240).
C314	Changed from 1n (015-24100-08) to 150p. Updated after pilot run (89/05-240).
Q304	Changed from BC848 (000-10008-48) to BC857. Updated after pilot run (89/05-240).
R30	Changed from 270e (036-13270-00) to 100e. Updated after pilot run (89/05-240).
R322	Changed from 4K7 (036-14470-00) to 1K. Updated after pilot run (89/05-240).
C300 & C301	150p added. Updated after pilot run (89/05-240).
D304	BAT18 added. Updated after pilot run (89/05-240).
R296 & R304	56e added. Updated after pilot run (89/05-240).
R297 & R298	1K added. Updated after pilot run (89/05-240).
R327	4K7 added. Updated after pilot run (89/05-240).
R248	Changed from 100K (036-16100-00) to 120K. Tx timer unable to operate with Op Amp O/P low (89/05-265).
R245	Changed from 1K (036-14100-00) to 1K5. So that Tx timer still functions at high supply voltage (89/06-332).
R298 & R325	Changed from 1K (036-14100-00) to 2K7. To improve operation of diode switch at I/P to drive amp. (89/05-409).
C313	(Low) changed from 22p (015-22220-01) to 12p (89/09-456).
C313	(Mid) changed from 15p (015-22150-01) to 6p8 (89/09-456).
C313	(Hi) changed from 15p (015-22150-01) to 3p3 (89/09-456).
C319	Changed from 1n (015-24100-08) to 10p (89/09-456).
C322	(Hi) changed from 3p3 (015-21330-01) to 2p2 (89/09-456).
R300 & R302	(Low & Mid) changed from 330e (036-13330-00) to 150e (89/09-456).
R301	(Low & Mid) changed from 18e (036-12180-00) to 33e (89/09-456).
R314 & R316	(Mid & Hi) changed from 270e (030-03270-20) to 470e (89/09-456).
R315	(Mid & Hi) changed from 18e (030-02180-00) to 12e (89/09-456).
L309	(Hi) changed from 1.5T/2.5 HOR (052-08125-00) to 1.5T/3.0 HOR (89/09-456).
L319	Deleted (89/09-456).
C322	(Low) 3p9 added (89/09-456).
R155	Changed from 10K (036-15100-00) to 4K7. To ensure Q105 remains saturated when dr ext relay (89/09-466).

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V

Ref	Var	IPN	Description
C34		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C124		015-22120-01	CAP CER 0805 CHIP 12P +/-0.25P NPO 50V
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-08470-08	CAP ELECT AI RDL 47M 16V 6X11MM
C133		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C135		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C141		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C151		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C152		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C160		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C161		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C209		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C300		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C301		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C305		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
#C313	LOW	015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
#C313	MID	015-21680-01	CAP CER 0805 CHIP 6P8 5% NPO 50V
#C313	HI	015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C314		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22100-01	CAP CER 0805 CHIP 10P 5% NPO 50V
C320		015-22120-01	CAP CER 0805 CHIP 12P +/-0.25P NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
#C322	LOW	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
#C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C330		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C336		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C337		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D100		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D102		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D103		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D106		001-00010-40	(S) DIODE ZENER BZT03/C33
D204		001-10000-70	((S)DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D302		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D303		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D304		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
=IC1	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30-+70C NDK NSA0175
=IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10 - +60C NDK TIC3002A
=IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
&IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
&IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
IC102		002-00014-40	(S) IC 324P QUAD OP AMP
IC103		002-00014-40	(S) IC 324P QUAD OP AMP
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L307		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309		052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L310		052-08130-25	COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE
L317		065-00010-04	BEAD FERRITE F8 4X2X5MM
L318		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL201		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q7		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00032-47	(S) XSTR MRF559 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q304		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%

Ref	Var	IPN	Description
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15100-00	RES M/F 0805 CHIP 10K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-21	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV106		042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R115		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
R118		036-13560-00	RES M/F 0805 CHIP 560E 5%
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
R122		036-15120-00	RES M/F 0805 CHIP 12K 5%
R123		036-15120-00	RES M/F 0805 CHIP 12K 5%
R124		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R127		036-16180-00	RES M/F 0805 CHIP 180K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-16390-00	RES M/F 0805 CHIP 390K 5%
R136		036-15100-00	RES M/F 0805 CHIP 10K 5%
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
R147		036-15470-00	RES M/F 0805 CHIP 47K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	NB	036-15270-00	RES M/F 0805 CHIP 27K 5%
&R152	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
R163		036-14100-00	RES M/F 0805 CHIP 1K 5%
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-15470-00	RES M/F 0805 CHIP 47K 5%
R170		036-15100-00	RES M/F 0805 CHIP 10K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
R179		036-15560-00	RES M/F 0805 CHIP 56K 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
R181		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R182		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R183		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R184	NB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R184	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R185	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R185	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
R189		036-13560-00	RES M/F 0805 CHIP 560E 5%
R190		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R197		036-14270-00	RES M/F 0805 CHIP 2K7 5%
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R257		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
R296		036-12560-00	RES M/F 0805 CHIP 56E 5%
R297		036-14100-00	RES M/F 0805 CHIP 1K 5%
R298		036-14270-00	RES M/F 0805 CHIP 2K7 5%
#R300	LOW	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R300	MID	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R300	HI	036-13330-00	RES M/F 0805 CHIP 330E 5%
#R301	LOW	036-12330-00	RES M/F 0805 CHIP 33E 5%
#R301	MID	036-12330-00	RES M/F 0805 CHIP 33E 5%
#R301	HI	036-12180-00	RES M/F 0805 CHIP 18E 5%
#R302	LOW	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R302	MID	036-13150-00	RES M/F 0805 CHIP 150E 5%
#R302	HI	036-13330-00	RES M/F 0805 CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-12560-00	RES M/F 0805 CHIP 56E 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
#R307		032-33100-10	RES M/F PWR 100E 5% 2W 12X4.5MM NON PREF
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
#R314	LOW	030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
#R314	MID	030-03470-10	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R314	HI	030-03470-10	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R315	LOW	030-02180-10	RES FILM AI 18E 5% 0.4W 4X1.6MM
#R315	MID	030-02120-10	RES FILM AI 12E 5% 0.4W 4X1.6MM
#R315	HI	030-02120-10	RES FILM AI 12E 5% 0.4W 4X1.6MM
#R316	LOW	030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
#R316	MID	030-03470-10	RES FILM AI 470E 5% 0.4W 4X1.6MM
#R316	HI	030-03470-10	RES FILM AI 470E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-14100-00	RES M/F 0805 CHIP 1K 5%
R323		036-15150-00	RES M/F 0805 CHIP 15K 5%
R324		036-14100-00	RES M/F 0805 CHIP 1K 5%
R325		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R326		036-14100-00	RES M/F 0805 CHIP 1K 5%
R327		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SW101		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BU
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE

Ref	Var	IPN	Description	Ref	Var	IPN	Description
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN				

NOTE:

LOW	= 400-440MHZ
MID	= 440-480MHZ
HI	= 480-520MHZ
NB	= 2.5KHZ DEVIATION
WB	= 5KHZ DEVIATION
1PPM	= 1PPM TCXO
2PPM	= 2PPM TCXO
2.5PPM	= 2.5PPM TCXO

(REFER TO PART C, SECTION 1.3)

T857 Mechanical & Miscellaneous Parts (220-01140-00)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2 x70mm for LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2 x70mm for LEDs.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 140mm SK300/Front Panel x1, 90mm Final Inst Kit x1.
220-01140-00	PCB T857 MAIN BD
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH For SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG PL200
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX 140mm Coax Cable to SK300 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C 140mm Coax Cable to Front Panel x1.
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-46	SKT COAX ELBOW SUHNER 16SMC50-2-10C 90mm Coax Cable For Exciter/PA Connection x2
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23055-00	COVER A4M955 N CONN HOLE T857 Blanking Plate On Rear For N Connector x1.
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1.
303-50078-00	CLIP A4M2630 0.1MM SPRIWIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06392-00	PNL FRT COMPL T857 EX A3M2218/2
316-85015-00	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4.
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-31	SCREW TAPTITE M3X10MM PAN POZI BZ N Connector Cover x4.
349-00020-32	SCREW TAPTITE M3*8MM PAN POZI BZ PCB Mounting x8.
349-00020-43	SCREW TAPTITE M4*12MM PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4*20MM PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q210 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37MM SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-03	LABEL BLANK 10.8*30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28*11MM QUIKSTIK RW718/4 Rev No x1, EPROM x1, T100 x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules Pt 15 x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01500-00	LABEL 24*12MM CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100MM
400-00020-05	SLEEVING 1.5MM SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T857 Grid Reference Index (IPN 220-01140-00)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
CHSELGND	1:U3	1-Q0	C135	2:E5	2-Q4	C320	2:G8	4-F2			2-K5
CHSEL0	1:U3	1-Q1	C137	1:E7	2-Q1	C321	2:G9	4-G2			2-F1
C1	2:R5	1-A8	C139	2:D5	2-H0	#C322	2:F11	4-H2			2-H2
CHSEL1	1:U4	1-Q0	C141	2:E4	2-R5	C330	2:S7	3-C2			2-G0
C2	2:K5	1-B4	C145	2:B9	2-C5	C335	2:J6	4-B2	IC103	1:D6	2-K2
CHSEL2	1:U4	1-Q0	C146	2:B6	2-F6	C336	2:H6	4-B2			2-N4
C3	2:L5	1-B5	C147	1:B7	2-G4	C337	2:J5	4-C0			2-R4
C4	2:K5	1-B4	C148	2:C7	2-H2	D4	2:N5	1-J3			2-R1
C5	2:L5	1-B5	C149	2:C6	2-H5			1-K3			2-H0
C6	2:Q4	1-B7	C150	1:B5	2-J6	D5	2:N4	1-M3	IC104	1:D8	2-R2
C9	2:L5	1-C4	C151	2:E6	2-K2			1-M3			2-M0
C10	2:L5	1-D5	C152	1:D6	2-L2	D6	2:P7	1-N7			2-J0
C11	2:M4	1-E5	C153	2:C4	2-L6			1-N7	IC201	1:T6	3-A2
C12	2:M5	1-E4	C154	1:D4	2-M1	D100	2:D11	2-C2	IC202	1:S6	3-C2
C13	2:S4	1-E8	C156	1:D4	2-N6			2-D2			3-H2
C14	1:S4	1-F8	&C157	2:E4	2-Q4	D101	2:C4	2-B1			3-K2
C15	1:M5	1-G4	C158	2:E6	2-R0			2-B1			3-N1
C16	2:M4	1-G4	C160	2:C7	2-Q3	D102	2:D4	2-B2			3-G1
C17	2:M3	1-G2	C161	2:D5	2-F1			2-B2	L1	1:K5	1-B4
C19	2:P3	1-G2	C162	1:E2	2-A3	D103	2:D11	2-C3	L300	1:H7	4-D4
C20	2:N3	1-H3	C163	1:D2	2-A3			2-D3	L302	1:G8	4-F2
C25	1:P5	1-K5	C164	2:E4	2-D0	D104	2:B5	2-M5	L303	1:H11	4-H4
C26	2:N5	1-K2	C166	2:E6	2-Q1			2-L5	L307	1:G11	4-F4
C29	1:N4	1-L5	C209	1:R6	3-K6	D106	1:B12	2-R8	L308	1:G10	4-H3
C30	1:N5	1-L4	C212	2:R9	3-Q7	D204	2:R7	3-L7	L309	1:G11	4-H3
C33	2:P8	1-M5	C213	1:R9	3-Q7			3-L6	L310	1:H7	4-D3
C34	1:T4	1-N8	C214	2:T6	3-A2	D205	2:V5	3-C6	#L317	1:H8	4-D5
C35	1:R5	1-Q7	C215	1:S6	3-C2			3-C6	L318	1:J8	4-D1
C36	2:R5	1-R7	C216	2:T6	3-C3	D206	2:U9	3-D4	PAD1	1:C1	2-R8
C39	2:Q7	1-Q9	C217	2:V5	3-C5			3-D5	PAD2	1:C11	2-R9
C40	2:R4	1-C7	C218	2:S7	3-H1	D207	2:S7	3-H3	PAD3	1:D10	2-B2
C42	2:N4	1-L5	C219	1:T8	3-F3			3-J2	PAD4	1:D10	2-R6
C43	2:R3	1-G6	C220	2:T8	3-F3	D208	2:S8	3-L3	PAD5	1:E3	2-N6
C44	2:S4	1-H7	C221	2:T8	3-F3			3-L3	PAD6	1:D1	2-R6
C45	2:P8	1-N5	C222	1:S7	3-J3	D209	2:S9	3-P2	PL1	1:P5	1-Q1
C46	2:M5	1-D5	C223	1:R7	3-N1			3-P2			1-Q0
C101	1:D8	2-B7	C224	1:R7	3-L6	D210	1:S8	3-L1			1-Q0
C102	1:B3	2-C3	C225	2:R7	3-N6	D211	2:S8	3-M1			1-Q3
C103	1:B4	2-C3	C226	1:R8	3-N6			3-M1			1-Q2
C104	2:D11	2-C3	C227	1:R9	3-Q7	D302	2:J7	4-B1			1-Q2
C105	2:D8	2-C6	C228	2:R6	3-D3	D303	2:J6	4-C1			1-Q2
C106	2:D8	2-C7	C229	2:T9	3-E4	D304	2:J7	4-B1			1-Q1
C107	1:D8	2-C8	C230	2:R7	3-P7	=IC1	1:R5	1-B8			1-Q2
C108	2:D11	2-D2	C231	2:T8	3-R2	&IC3	1:M4	1-E4			1-Q1
C109	2:C11	2-D3	C232	2:R6	3-K6	IC4	1:T3	1-F7	PL2	1:K8	1-Q4
C110	2:C11	2-D3	C233	2:R9	3-R7			1-G8			1-Q4
C111	2:D11	2-E2	C300	2:J11	4-K2	IC5	1:N4	1-F3			1-Q3
C112	1:D7	2-E6	C301	2:H7	4-A1	IC6	1:P4	1-K5			1-Q4
C113	2:D9	2-E2	C302	2:H9	4-E4			1-K3			1-Q4
C115	2:D9	2-F6	C303	2:H7	4-E3	IC7	1:T5	1-E8	PL3	1:Q8	1-R8
C118	2:C8	2-F7	C305	1:H9	4-E4			1-D7			1-R9
C119	1:D9	2-G3	C306	2:H7	4-E3			1-D7			1-R8
C121	2:B6	2-G7	C309	2:H10	4-H3			1-E7			1-R5
C123	2:B6	2-H7	C312	2:H10	4-J3			1-G7			1-R9
C124	2:C6	2-J1	#C313	2:G11	4-H3			1-H7	PL4	1:M8	1-A4
C126	2:B6	2-H0	C314	2:J11	4-J1			1-J7	PL5	1:L7	1-R8
C128	2:B6	2-J7	C317	2:H6	4-C2	IC100	1:E4	2-D1	PL100	1:D9	2-E8
C129	1:B5	2-K7	C318	2:H6	4-C2	IC101	1:C10	2-E4			2-D7
C133	2:E4	2-P4	C319	2:G7	4-D3	IC102	1:C7	2-G5			2-D8

Device	PCB	Circuit
		2-D7
		2-E7
		2-E7
PL101	1:C10	2-E3
		2-E3
		2-E3
		2-F3
		2-F3
		2-F3
PL102	1:D10	2-F4
		2-F3
		2-G3
		2-G4
		2-G3
		2-G3
		2-G3
		2-F3
		2-F3
		2-F3
PL103	1:C9	2-G1
		2-G1
		2-G1
		2-G2
		2-G2
		2-G1
PL200	1:W5	3-B7
		3-B7
		3-B8
		3-B6
		3-B5
		3-B9
		3-B9
		3-B8
		3-B8
		3-B8
		3-B7
		3-B6
		3-B6
		3-B7
		3-B6
Q1	2:K4	1-C4
Q5	2:T5	1-N9
Q6	2:T4	1-P9
Q7	2:T4	1-P7
Q8	2:P7	1-M7
Q101	2:C8	2-D7
Q102	2:C11	2-E3
Q103	2:B6	2-H7
Q104	2:B6	2-J8
Q105	2:B11	2-Q8
Q106	1:C4	2-C1
Q208	2:R7	3-M6
Q209	1:R6	3-D2
Q210	1:T9	3-E4
Q211	2:T8	3-R2
Q212	2:R8	3-P7
Q300	2:G6	4-D2
Q301	1:G9	4-G3
Q304	2:J11	4-K2
R1	2:L5	1-B6
R2	2:R4	1-B9
R3	2:M3	1-B1
R5	2:K5	1-B4
R6	2:M3	1-B1
R7	2:K5	1-C5
R9	2:L4	1-C5
R10	2:K5	1-C4
R11	2:M3	1-C1
R13	2:L4	1-C5
R14	2:L4	1-C1
R15	2:L4	1-C5
R16	2:L4	1-D1
R18	2:M5	1-D6
R19	2:L3	1-D1
R20	2:L3	1-D1
R21	2:R4	1-F8
R24	2:M4	1-G5
R25	2:N3	1-G3
R29	2:N4	1-H3
R30	2:N4	1-H3
R32	2:M4	1-J3
R35	2:M5	1-J3
R36	2:M5	1-J3
R37	2:P5	1-J5
R38	2:P5	1-K6
R39	2:N5	1-K3
R40	2:N5	1-K2
R42	2:N4	1-L5
R43	2:N5	1-L4
R46	2:P8	1-M5
R47	2:T5	1-N8
R48	2:T4	1-P8
R49	2:T3	1-P7
R50	2:T3	1-P7
R51	2:T4	1-P7
R52	2:L3	1-H4
R54	2:R3	1-G6
R55	2:S4	1-H6
R56	2:R4	1-H6
R60	2:P8	1-M5
R64	2:Q4	1-C7
R65	2:S4	1-D7
R67	2:S3	1-G7
R68	2:S3	1-G6
R69	2:P7	1-L6
R70	2:P7	1-L6
R71	2:P7	1-M6
R72	2:P8	1-N5
R73	2:P8	1-N5
R74	2:L5	1-B5
R75	2:M5	1-E5
R100	2:C4	2-B0
RV100	1:B9	2-B4
R101	2:D4	2-B1
R102	2:D4	2-C1
R103	2:D8	2-C7
R104	2:B4	2-C4
RV104	1:C5	2-J6
R105	2:C8	2-C5
RV105	1:D7	2-Q3
R106	2:D8	2-C6
RV106	1:D5	2-L1
R107	2:D8	2-D7
R108	2:D8	2-D8
R109	2:D8	2-D7
R110	2:C11	2-D5
R111	2:E4	2-D0
R112	2:C8	2-D4
R113	2:C11	2-D3
R115	2:E8	2-D6
R116	2:C11	2-E3
R117	2:E8	2-E8
R118	2:D9	2-E2
R119	2:C10	2-E6
R120	2:C9	2-E4
R121	2:D9	2-E6
R122	2:D7	2-E2
R123	2:D5	2-F1
R124	2:C6	2-F1
R127	2:C6	2-H3
R128	2:B7	2-G7
R131	2:C6	2-J2
R136	2:C7	2-J1
R141	2:B5	2-K7
R143	2:B5	2-L7
R146	2:D4	2-M6
R147	2:D5	2-M1
R148	2:D4	2-N5
R149	2:D6	2-N5
R150	2:E5	2-N4
R151	2:D4	2-P4
&R152	2:E4	2-P5
R155	2:C11	2-Q8
R159	2:C11	2-Q8
R162	2:B11	2-R9
R163	2:C2	2-R6
R164	2:B10	2-R6
R166	2:B6	2-G6
R167	2:B7	2-G4
R168	2:B7	2-H5
R169	2:D7	2-H3
R170	2:B7	2-H4
R171	2:B7	2-H4
R172	2:D5	2-J7
R173	2:C6	2-J5
R174	2:C6	2-J5
R175	2:B6	2-J8
R176	2:C5	2-J6
R177	2:C6	2-J5
R178	2:D6	2-K2
R179	2:D6	2-K3
R180	2:D6	2-K1
R181	2:D6	2-L1
R182	2:B5	2-L5
R183	2:D6	2-L2
&R184	2:E4	2-Q5
&R185	2:E4	2-Q5
R186	2:D7	2-Q2
R187	2:E7	2-Q1
R188	2:E6	2-R0
R189	2:E5	2-Q4
R190	2:E5	2-R4
R192	2:E8	2-R2
R194	2:D7	2-Q3
R195	2:D7	2-R2
R196	2:E7	2-Q3
R197	2:E6	2-R0
RV201	1:T7	3-J3
RV202	1:S8	3-M1
R224	2:R6	3-K6
R227	2:R8	3-Q7
R228	2:T7	3-A3
R230	2:S6	3-C2
R231	2:U8	3-D5
R232	1:T9	3-D3
R233	1:U8	3-E5
R234	1:U7	3-E5
R235	2:S6	3-E3
R236	2:S7	3-E2
R237	2:S6	3-G3
R238	2:T7	3-G3
R239	2:S7	3-G2
R240	2:S7	3-H3
R241	2:T7	3-J3
R242	2:T7	3-J3
R243	2:S7	3-K3
R244	2:S7	3-K2
R245	2:R8	3-K1
R246	2:S8	3-L3
R247	2:S8	3-N2
R248	2:R8	3-N1
R249	2:S9	3-P2
R250	2:T8	3-Q2
R251	2:T8	3-Q2
R252	2:R7	3-M5
R253	2:R7	3-N6
R254	2:R7	3-P5
R255	2:S7	3-H3
R256	2:T8	3-L3
R257	2:S8	3-L2
R258	2:S9	3-P2
R259	2:T6	3-B1
R260	2:T6	3-B2
R296	2:H7	4-A0
R297	2:H7	4-A1
R298	2:J7	4-A0
#R300	2:K7	4-A2
#R301	2:K7	4-A2
#R302	2:K7	4-B2
R303	2:H6	4-D2
R304	2:M8	1-A4
R305	2:H7	4-D3
R306	2:G9	4-F2
#R307	1:H10	4-G3
R313	2:H6	4-D3
#R314	1:G7	4-E2
#R315	1:G7	4-E3
#R316	1:G8	4-E2
R317	2:H10	4-H4
R322	2:H11	4-K1
R323	2:J11	4-L2
R324	2:J6	4-B0
R325	2:H5	4-C1
R326	2:J6	4-C0
R327	2:J11	4-K2
SK1	1:K5	1-B1
		1-B3
		1-B3
		1-B3
		1-B2
		1-B2
		1-B2
		1-B2
		1-B1
		1-B1
SK100	1:B8	2-A7
SK300	1:G11	4-J3
SW101	1:C11	2-B5
T100	1:C3	2-B3
T200	1:R8	3-M7

T857 Parts List (IPN 220-01140-01)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C34		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C124		015-22120-01	CAP CER 0805 CHIP 12P +/-0.25P NPO 50V
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-08470-08	CAP ELECT AI RDL 47M 16V 6X11MM
C133		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C135		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C141		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C151		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C152		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C160		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C161		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C209		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C300		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C301		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C305		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
#C313	LOW	015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
#C313	MID	015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
#C313	HI	015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
C314		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22100-01	CAP CER 0805 CHIP 10P 5% NPO 50V
C320		015-22120-01	CAP CER 0805 CHIP 12P +/-0.25P NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
#C322	LOW		NOT FITTED
#C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V

Ref	Var	IPN	Description
C330		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C336		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C337		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D100		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D102		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D103		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D106		001-00010-40	(S) DIODE ZENER BZT03/C33
D204		001-10000-70	((S)DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D302		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D303		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D304		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D305		065-00010-04	BEAD FERRITE F8 4X2X5MM
D306		065-00010-04	BEAD FERRITE F8 4X2X5MM
=IC1	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30-+70C NDK NSA0175
=IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10 - +60C NDK TIC3002A
=IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
&IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
&IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
IC102		002-00014-40	(S) IC 324P QUAD OP AMP
IC103		002-00014-40	(S) IC 324P QUAD OP AMP
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L307		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309	LOW	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L309	MID	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L309	HI	052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L310		052-08130-25	COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE
L317		065-00010-04	BEAD FERRITE F8 4X2X5MM
L318		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL201		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q7		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00032-47	(S) XSTR MRF559 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q304		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15100-00	RES M/F 0805 CHIP 10K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-21	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV106		042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R115		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
R118		036-13560-00	RES M/F 0805 CHIP 560E 5%
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
R122		036-15120-00	RES M/F 0805 CHIP 12K 5%
R123		036-15120-00	RES M/F 0805 CHIP 12K 5%
R124		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R127		036-16180-00	RES M/F 0805 CHIP 180K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-16390-00	RES M/F 0805 CHIP 390K 5%
R136		036-15100-00	RES M/F 0805 CHIP 10K 5%
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
R147		036-15470-00	RES M/F 0805 CHIP 47K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	NB	036-15270-00	RES M/F 0805 CHIP 27K 5%
&R152	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
R163		036-14100-00	RES M/F 0805 CHIP 1K 5%
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-15470-00	RES M/F 0805 CHIP 47K 5%
R170		036-15100-00	RES M/F 0805 CHIP 10K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%

Ref	Var	IPN	Description
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
R179		036-15560-00	RES M/F 0805 CHIP 56K 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
R181		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R182		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R183		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R184	NB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R184	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R185	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R185	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
R189		036-13560-00	RES M/F 0805 CHIP 560E 5%
R190		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R197		036-14270-00	RES M/F 0805 CHIP 2K7 5%
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R257		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
R296		036-12560-00	RES M/F 0805 CHIP 56E 5%
R297		036-14100-00	RES M/F 0805 CHIP 1K 5%
R298		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R300		036-13330-00	RES M/F 0805 CHIP 330E 5%
R301		036-12180-00	RES M/F 0805 CHIP 18E 5%
R302		036-13330-00	RES M/F 0805 CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-12560-00	RES M/F 0805 CHIP 56E 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
R307		032-33100-10	RES M/F PWR 100E 5% 2W 12X4.5MM NON PREF
R312		036-13680-00	RES M/F 0805 CHIP 680E 5%
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
R314		030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
R315		030-02180-10	RES FILM AI 18E 5% 0.4W 4X1.6MM
R316		030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-14100-00	RES M/F 0805 CHIP 1K 5%
R323		036-15150-00	RES M/F 0805 CHIP 15K 5%
R324		036-14100-00	RES M/F 0805 CHIP 1K 5%
R325		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R326		036-14100-00	RES M/F 0805 CHIP 1K 5%
R327		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SW101		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BU
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN

Ref	Var	IPN	Description
NOTE:		LOW	= 400-440MHZ
		MID	= 440-480MHZ
		HI	= 480-520MHZ
		NB	= 2.5KHZ DEVIATION
		WB	= 5KHZ DEVIATION
		1PPM	= 1PPM TCXO
		2PPM	= 2PPM TCXO
		2.5PPM	= 2.5PPM TCXO

(REFER TO PART C, SECTION 1.3)

T857 Mechanical & Miscellaneous Parts (220-01140-01)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2 x70mm for LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2 x70mm for LEDs.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 140mm SK300/Front Panel x1, 90mm Final Inst Kit x1.
220-01140-01	PCB T857 MAIN BD
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH For SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG PL200
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX 140mm Coax Cable to SK300 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C 140mm Coax Cable to Front Panel x1.
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-46	SKT COAX ELBOW SUHNER 16SMC50-2-10C 90mm Coax Cable For Exciter/PA Connection x2
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23055-00	COVER A4M955 N CONN HOLE T857 Blanking Plate On Rear For N Connector x1.
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1.
303-50078-00	CLIP A4M2630 0.1MM SPRIWIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06392-00	PNL FRT COMPL T857 EX A3M2218/2
316-85015-00	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4.
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-31	SCREW TAPTITE M3X10MM PAN POZI BZ N Connector Cover x4.
349-00020-32	SCREW TAPTITE M3*8MM PAN POZI BZ PCB Mounting x8.
349-00020-43	SCREW TAPTITE M4*12MM PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4*20MM PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q210 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37MM SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-03	LABEL BLANK 10.8*30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28*11MM QUIKSTIK RW718/4 Rev No x1, EPROM x1, T100 x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules Pt 15 x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01500-00	LABEL 24*12MM CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100MM
400-00020-05	SLEEVING 1.5MM SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T857 Grid Reference Index (IPN 220-01140-01)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
CHSLGND	1:U3	1-Q0	C135	2:E5	2-Q4	C320	2:G8	4-F2			1-J7
CHSEL0	1:U3	1-Q1	C137	1:E7	2-Q1	C321	2:G9	4-G2	IC100	1:E4	2-D1
CHSEL1	1:U4	1-Q0	C139	2:D5	2-H0	#C322	2:F11		IC101	1:C10	2-E4
CHSEL2	1:U4	1-Q0	C141	2:E4	2-R5	C330	2:S7	3-C2	IC102	1:C7	2-G5
C1	2:R5	1-A8	C145	2:B9	2-C5	C335	2:J6	4-B2			2-K5
C2	2:K5	1-B4	C146	2:B6	2-F6	C336	2:H6	4-B2			2-F1
C3	2:L5	1-B5	C147	1:B7	2-G4	C337	2:J5	4-C0			2-H2
C4	2:K5	1-B4	C148	2:C7	2-H2	D4	2:N5	1-J3			2-G0
C5	2:L5	1-B5	C149	2:C6	2-H5			1-K3	IC103	1:D6	2-K2
C6	2:Q4	1-B7	C150	1:B5	2-J6	D5	2:N4	1-M3			2-N4
C9	2:L5	1-C4	C151	2:E6	2-K2			1-M3			2-R4
C10	2:L5	1-D5	C152	1:D6	2-L2	D6	2:P7	1-N7			2-R1
C11	2:M4	1-E5	C153	2:C4	2-L6			1-N7			2-H0
C12	2:M5	1-E4	C154	1:D4	2-M1	D100	2:D11	2-C2	IC104	1:D8	2-R2
C13	2:S4	1-E8	C156	1:D4	2-N6			2-D2			2-M0
C14	1:S4	1-F8	&C157	2:E4	2-Q4	D101	2:C4	2-B1			2-J0
C15	1:M5	1-G4	C158	2:E6	2-R0			2-B1	IC201	1:T6	3-A2
C16	2:M4	1-G4	C160	2:C7	2-Q3	D102	2:D4	2-B2	IC202	1:S6	3-C2
C17	2:M3	1-G2	C161	2:D5	2-F1			2-B2			3-H2
C19	2:P3	1-G2	C162	1:E2	2-A3	D103	2:D11	2-C3			3-K2
C20	2:N3	1-H3	C163	1:D2	2-A3			2-D3			3-N1
C25	1:P5	1-K5	C164	2:E4	2-D0	D104	2:B5	2-M5			3-G1
C26	2:N5	1-K2	C166	2:E6	2-Q1			2-L5	L1	1:K5	1-B4
C29	1:N4	1-L5	C209	1:R6	3-K6	D106	1:B12	2-R8	L300	1:H7	4-D4
C30	1:N5	1-L4	C212	2:R9	3-Q7	D107	1:C4	2-B4	L302	1:G8	4-F2
C33	2:P8	1-M5	C213	1:R9	3-Q7	D108	1:B4	2-C4	L303	1:H11	4-H4
C34	1:T4	1-N8	C214	2:T6	3-A2	D204	2:R7	3-L7	L307	1:H10	4-G4
C35	1:R5	1-Q7	C215	1:S6	3-C2			3-L6	L308	1:G10	4-H3
C36	2:R5	1-R7	C216	2:T6	3-C3	D205	2:V5	3-C6	#L309	1:G11	4-H3
C39	2:Q7	1-Q9	C217	2:V5	3-C5			3-C6	L310	1:H7	4-D3
C40	2:R4	1-C7	C218	2:S7	3-H1	D206	2:U9	3-D4	L317	1:H8	4-D5
C42	2:N4	1-L5	C219	1:T8	3-F3			3-D5	L318	1:J8	4-D1
C43	2:R3	1-G6	C220	2:T8	3-F3	D207	2:S7	3-H3	PAD1	1:C1	2-R8
C44	2:S4	1-H7	C221	2:T8	3-F3			3-J2	PAD2	1:C11	2-R9
C45	2:P8	1-N5	C222	1:S7	3-J3	D208	2:S8	3-L3	PAD3	1:D10	2-B2
C46	2:M5	1-D5	C223	1:R7	3-N1			3-L3	PAD4	1:D10	2-R6
C101	1:D8	2-B7	C224	1:R7	3-L6	D209	2:S9	3-P2	PAD5	1:E3	2-N6
C102	1:B3	2-C3	C225	2:R7	3-N6			3-P2	PAD6	1:D1	2-R6
C103	1:B4	2-C3	C226	1:R8	3-N6	D210	1:S8	3-L1	PL1	1:P5	1-Q1
C104	2:D11	2-C3	C227	1:R9	3-Q7	D211	2:S8	3-M1			1-Q0
C105	2:D8	2-C6	C228	2:R6	3-D3			3-M1			1-Q0
C106	2:D8	2-C7	C229	2:T9	3-E4	D302	2:J7	4-B1			1-Q2
C107	1:D8	2-C8	C230	2:R7	3-P7	D303	2:J6	4-C1			1-Q2
C108	2:D11	2-D2	C231	2:T8	3-R2	D304	2:J7	4-B1			1-Q2
C109	2:C11	2-D3	C232	2:R6	3-K6	D305	1:H9	4-F4			1-Q2
C110	2:C11	2-D3	C233	2:R9	3-R7	D306	1:H10	4-F4			1-Q3
C111	2:D11	2-E2	C300	2:J11	4-K2	=IC1	1:R5	1-B8			1-Q1
C112	1:D7	2-E6	C301	2:H7	4-A1	&IC3	1:M4	1-E4			1-Q1
C113	2:D9	2-E2	C302	2:H9	4-E4	IC4	1:T3	1-F7	PL2	1:K8	1-Q3
C115	2:D9	2-F6	C303	2:H7	4-E3			1-G8			1-Q4
C118	2:C8	2-F7	C305	1:H9	4-E4	IC5	1:N4	1-F3			1-Q4
C119	1:D9	2-G3	C306	2:H7	4-E3	IC6	1:P4	1-K5			1-Q4
C121	2:B6	2-G7	C309	2:H10	4-H3			1-K3			1-Q4
C123	2:B6	2-H7	C312	2:H10	4-J3	IC7	1:T5	1-E8	PL3	1:Q8	1-R8
C124	2:C6	2-J1	#C313	2:G11	4-H3			1-D7			1-R9
C126	2:B6	2-H0	C314	2:J11	4-J1			1-D7			1-R8
C128	2:B6	2-J7	C317	2:H6	4-C2			1-E7			1-R5
C129	1:B5	2-K7	C318	2:H6	4-C2			1-G7			1-R9
C133	2:E4	2-P4	C319	2:G7	4-D3			1-H7	PL4	1:M8	1-A4

Device	PCB	Circuit
PL5	1:L7	1-R8
PL100	1:D9	2-E8
		2-D8
		2-D7
		2-D7
		2-E7
		2-E7
PL101	1:C10	2-E3
		2-E3
		2-E3
		2-F3
		2-F3
		2-F3
PL102	1:D10	2-G4
		2-F4
		2-F3
		2-G3
		2-G3
		2-G3
		2-F3
		2-F3
		2-F3
PL103	1:C9	2-G1
		2-G1
		2-G2
		2-G1
		2-G2
		2-G1
PL200	1:W5	3-B7
		3-B7
		3-B8
		3-B5
		3-B6
		3-B9
		3-B9
		3-B8
		3-B8
		3-B8
		3-B7
		3-B6
		3-B6
		3-B7
		3-B6
Q1	2:K4	1-C4
Q5	2:T5	1-N9
Q6	2:T4	1-P9
Q7	2:T4	1-P7
Q8	2:P7	1-M7
Q101	2:C8	2-D7
Q102	2:C11	2-E3
Q103	2:B6	2-H7
Q104	2:B6	2-J8
Q105	2:B11	2-Q8
Q106	1:C4	2-C1
Q208	2:R7	3-M6
Q209	1:R6	3-D2
Q210	1:T9	3-E4
Q211	2:T8	3-R2
Q212	2:R8	3-P7
Q300	2:G6	4-D2
Q301	1:G9	4-G3
Q304	2:J11	4-K2
R1	2:L5	1-B6
R2	2:R4	1-B9
R3	2:M3	1-B1
R5	2:K5	1-B4
R6	2:M3	1-B1
R7	2:K5	1-C5
R9	2:L4	1-C5
R10	2:K5	1-C4
R11	2:M3	1-C1
R13	2:L4	1-C5
R14	2:L4	1-C1
R15	2:L4	1-C5
R16	2:L4	1-D1
R18	2:M5	1-D6
R19	2:L3	1-D1
R20	2:L3	1-D1
R21	2:R4	1-F8
R24	2:M4	1-G5
R25	2:N3	1-G3
R29	2:N4	1-H3
R30	2:N4	1-H3
R32	2:M4	1-J3
R35	2:M5	1-J3
R36	2:M5	1-J3
R37	2:P5	1-J5
R38	2:P5	1-K6
R39	2:N5	1-K3
R40	2:N5	1-K2
R42	2:N4	1-L5
R43	2:N5	1-L4
R46	2:P8	1-M5
R47	2:T5	1-N8
R48	2:T4	1-P8
R49	2:T3	1-P7
R50	2:T3	1-P7
R51	2:T4	1-P7
R52	2:L3	1-H4
R54	2:R3	1-G6
R55	2:S4	1-H6
R56	2:R4	1-H6
R60	2:P8	1-M5
R64	2:Q4	1-C7
R65	2:S4	1-D7
R67	2:S3	1-G7
R68	2:S3	1-G6
R69	2:P7	1-L6
R70	2:P7	1-L6
R71	2:P7	1-M6
R72	2:P8	1-N5
R73	2:P8	1-N5
R74	2:L5	1-B5
R75	2:M5	1-E5
R100	2:C4	2-B0
RV100	1:B9	2-B4
R101	2:D4	2-B1
R102	2:D4	2-C1
R103	2:D8	2-C7
R104	2:B4	2-C4
RV104	1:C5	2-J6
R105	2:C8	2-C5
RV105	1:D7	2-Q3
R106	2:D8	2-C6
RV106	1:D5	2-L1
R107	2:D8	2-D7
R108	2:D8	2-D8
R109	2:D8	2-D7
R110	2:C11	2-D5
R111	2:E4	2-D0
R112	2:C8	2-D4
R113	2:C11	2-D3
R115	2:E8	2-D6
R116	2:C11	2-E3
R117	2:E8	2-E8
R118	2:D9	2-E2
R119	2:C10	2-E6
R120	2:C9	2-E4
R121	2:D9	2-E6
R122	2:D7	2-E2
R123	2:D5	2-F1
R124	2:C6	2-F1
R127	2:C6	2-H3
R128	2:B7	2-G7
R131	2:C6	2-J2
R136	2:C7	2-J1
R141	2:B5	2-K7
R143	2:B5	2-L7
R146	2:D4	2-M6
R147	2:D5	2-M1
R148	2:D4	2-N5
R149	2:D6	2-N5
R150	2:E5	2-N4
R151	2:D4	2-P4
&R152	2:E4	2-P5
R155	2:C11	2-Q8
R159	2:C11	2-Q8
R162	2:B11	2-R9
R163	2:C2	2-R6
R164	2:B10	2-R6
R166	2:B6	2-G6
R167	2:B7	2-G4
R168	2:B7	2-H5
R169	2:D7	2-H3
R170	2:B7	2-H4
R171	2:B7	2-H4
R172	2:D5	2-J7
R173	2:C6	2-J5
R174	2:C6	2-J5
R175	2:B6	2-J8
R176	2:C5	2-J6
R177	2:C6	2-J5
R178	2:D6	2-K2
R179	2:D6	2-K3
R180	2:D6	2-K1
R181	2:D6	2-L1
R182	2:B5	2-L5
R183	2:D6	2-L2
&R184	2:E4	2-Q5
&R185	2:E4	2-Q5
R186	2:D7	2-Q2
R187	2:E7	2-Q1
R188	2:E6	2-R0
R189	2:E5	2-Q4
R190	2:E5	2-R4
R192	2:E8	2-R2
R194	2:D7	2-Q3
R195	2:D7	2-R2
R196	2:E7	2-Q3
R197	2:E6	2-R0
RV201	1:T7	3-J3
RV202	1:S8	3-M1
R224	2:R6	3-K6
R227	2:R8	3-Q7
R228	2:T7	3-A3
R230	2:S6	3-C2
R231	2:U8	3-D5
R232	1:T9	3-D3
R233	1:U8	3-E5
R234	1:U7	3-E5
R235	2:S6	3-E3
R236	2:S7	3-E2
R237	2:S6	3-G3
R238	2:T7	3-G3
R239	2:S7	3-G2
R240	2:S7	3-H3
R241	2:T7	3-J3
R242	2:T7	3-J3
R243	2:S7	3-K3
R244	2:S7	3-K2
R245	2:R8	3-K1
R246	2:S8	3-L3
R247	2:S8	3-N2
R248	2:R8	3-N1
R249	2:S9	3-P2
R250	2:T8	3-Q2
R251	2:T8	3-Q2
R252	2:R7	3-M5
R253	2:R7	3-N6
R254	2:R7	3-P5
R255	2:S7	3-H3
R256	2:T8	3-L3
R257	2:S8	3-L2
R258	2:S9	3-P2
R259	2:T6	3-B1
R260	2:T6	3-B2
R296	2:H7	4-A0
R297	2:H7	4-A1
R298	2:J7	4-A0
R300	2:K7	4-A2
R301	2:K7	4-A2
R302	2:K7	4-B2
R303	2:H6	4-D2
R304	2:M8	1-A4
R305	2:H7	4-D3
R306	2:G9	4-F2
R307	1:H10	4-G3
R313	2:H6	4-D3
R314	1:G7	4-E2
R315	1:G7	4-E3
R316	1:G8	4-E2
R317	2:H10	4-H4
R322	2:H11	4-K1
R323	2:J11	4-L2
R324	2:J6	4-B0
R325	2:H5	4-C1
R326	2:J6	4-C0
R327	2:J11	4-K2
SK1	1:K5	1-B1
		1-B3
		1-B3
		1-B3
		1-B2
		1-B2
		1-B2
		1-B2
		1-B1
		1-B1
SK100	1:B8	2-A7
SK300	1:G11	4-J3
SW101	1:C11	2-B5
T100	1:C3	2-B3
T200	1:R8	3-M7

T857 Parts List (IPN 220-01140-02)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C124	Changed from 12p (015-22120-01) to 4p7. Limiter offset problems due to DC coupled stages (90/06-275).
C148	Changed from 10n (015-25100-08) to 22n. Limiter offset problems due to DC coupled stages (90/06-275).
R127	Changed from 180K (036-16180-00) to 100K. Limiter offset problems due to DC coupled stages (90/06-275).
R131	Changed from 390K (036-16390-00) to 1M. Limiter offset problems due to DC coupled stages (90/06-275).
R169	Changed from 47K (036-15470-00) to 120K. Limiter offset problems due to DC coupled stages (90/06-275).

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C34		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C124		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-08470-08	CAP ELECT AI RDL 47M 16V 6X11MM
C133		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C135		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C141		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C151		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C152		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C160		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C161		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C209		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-09100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-07100-52	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-08100-07	CAP ELECT AI RDL 10M 50V 5X11MM
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C300		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C301		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C305		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
#C313	LOW	015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V

Ref	Var	IPN	Description
#C313	MID	015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
#C313	HI	015-21680-01	CAP CER 0805 CHIP 6P8 5% NPO 50V
C314		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22100-01	CAP CER 0805 CHIP 10P 5% NPO 50V
C320		015-22120-01	CAP CER 0805 CHIP 12P +/-0.25P NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
#C322	LOW		NOT FITTED
#C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C330		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C336		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C337		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D100		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D102		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D103		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D106		001-00010-40	(S) DIODE ZENER BZT03/C33
D203		001-00011-60	((S)DIODE SR2607 6A/30V
D204		001-10000-70	((S)DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D302		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D303		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D304		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D305		065-00010-04	BEAD FERRITE F8 4X2X5MM
D306		065-00010-04	BEAD FERRITE F8 4X2X5MM
=IC1	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30-+70C NDK NSA0175
=IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10 - +60C NDK TIC3002A
=IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
&IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
&IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
IC102		002-00014-40	(S) IC 324P QUAD OP AMP
IC103		002-00014-40	(S) IC 324P QUAD OP AMP
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L307		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309	LOW	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L309	MID	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L309	HI	052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L310		052-08130-25	COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE
L317		065-00010-04	BEAD FERRITE F8 4X2X5MM
L318		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL201		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q7		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00032-47	(S) XSTR MRF559 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q304		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15100-00	RES M/F 0805 CHIP 10K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-21	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV106		042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R115		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
R118		036-13560-00	RES M/F 0805 CHIP 560E 5%
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
R122		036-15120-00	RES M/F 0805 CHIP 12K 5%
R123		036-15120-00	RES M/F 0805 CHIP 12K 5%
R124		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R127		036-16100-00	RES M/F 0805 CHIP 100K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-17100-00	RES M/F 0805 CHIP 1M 5%
R136		036-15100-00	RES M/F 0805 CHIP 10K 5%
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
R147		036-15470-00	RES M/F 0805 CHIP 47K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	NB	036-15270-00	RES M/F 0805 CHIP 27K 5%
&R152	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%

Ref	Var	IPN	Description
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
R163		036-14100-00	RES M/F 0805 CHIP 1K 5%
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-16120-00	RES M/F 0805 CHIP 120K 5%
R170		036-15100-00	RES M/F 0805 CHIP 10K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
R179		036-15560-00	RES M/F 0805 CHIP 56K 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
R181		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R182		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R183		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R184	NB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R184	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R185	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
&R185	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
R189		036-13560-00	RES M/F 0805 CHIP 560E 5%
R190		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R197		036-14270-00	RES M/F 0805 CHIP 2K7 5%
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R257		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
R296		036-12560-00	RES M/F 0805 CHIP 56E 5%
R297		036-14100-00	RES M/F 0805 CHIP 1K 5%
R298		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R300		036-13330-00	RES M/F 0805 CHIP 330E 5%
R301		036-12180-00	RES M/F 0805 CHIP 18E 5%
R302		036-13330-00	RES M/F 0805 CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-12560-00	RES M/F 0805 CHIP 56E 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
R307		032-33100-10	RES M/F PWR 100E 5% 2W 12X4.5MM NON PREF
R312		036-13680-00	RES M/F 0805 CHIP 680E 5%
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
R314		030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
R315		030-02180-10	RES FILM AI 18E 5% 0.4W 4X1.6MM
R316		030-03270-10	RES FILM AI 270E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-14100-00	RES M/F 0805 CHIP 1K 5%
R323		036-15150-00	RES M/F 0805 CHIP 15K 5%
R324		036-14100-00	RES M/F 0805 CHIP 1K 5%
R325		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R326		036-14100-00	RES M/F 0805 CHIP 1K 5%
R327		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED

Ref	Var	IPN	Description
SW101		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BU
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN

NOTE:	LOW	= 400-440MHZ
	MID	= 440-480MHZ
	HI	= 480-520MHZ
	NB	= 2.5KHZ DEVIATION
	WB	= 5KHZ DEVIATION
	1PPM	= 1PPM TCXO
	2PPM	= 2PPM TCXO
	2.5PPM	= 2.5PPM TCXO

(REFER TO PART C, SECTION 1.3)

T857 Mechanical & Miscellaneous Parts (220-01140-02)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2 x70mm for LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2 x70mm for LEDs.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 140mm SK300/Front Panel x1, 90mm Final Inst Kit x1.
220-01140-02	PCB T857 MAIN BD
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH For SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG PL200
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX 140mm Coax Cable to SK300 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C 140mm Coax Cable to Front Panel x1.
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-46	SKT COAX ELBOW SUHNER 16SMC50-2-10C 90mm Coax Cable For Exciter/PA Connection x2
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23055-00	COVER A4M955 N CONN HOLE T857 Blanking Plate On Rear For N Connector x1.
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1.
303-50078-00	CLIP A4M2630 0.1MM SPRIWIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06392-00	PNL FRT COMPL T857 EX A3M2218/2
316-85015-00	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4.
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-31	SCREW TAPTITE M3X10MM PAN POZI BZ N Connector Cover x4.
349-00020-32	SCREW TAPTITE M3*8MM PAN POZI BZ PCB Mounting x8.
349-00020-43	SCREW TAPTITE M4*12MM PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4*20MM PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q210 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37MM SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-03	LABEL BLANK 10.8*30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28*11MM QUIKSTIK RW718/4 Rev No x1, EPROM x1, T100 x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules Pt 15 x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01500-00	LABEL 24*12MM CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100MM
400-00020-05	SLEEVING 1.5MM SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T857 Grid Reference Index (IPN 220-01140-02)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
CHSLGND	1:U3	1-Q0	C135	2:E5	2-Q4	C320	2:G8	4-F2			1-G7
CHSEL0	1:U3	1-Q1	C137	1:E7	2-Q1	C321	2:G9	4-G2			1-H7
CHSEL1	1:U4	1-Q0	C139	2:D5	2-J0	#C322	2:F11	4-H2			1-J7
CHSEL2	1:U4	1-Q0	C141	2:E4	2-R5	C330	2:S7	3-C2	IC100	1:E4	2-D1
C1	2:R5	1-A8	C145	2:B9	2-C5	C335	2:J6	4-B2	IC101	1:C10	2-E4
C2	2:K5	1-B4	C146	2:B6	2-F6	C336	2:H6	4-B2	IC102	1:C7	2-G5
C3	2:L5	1-B5	C147	1:B7	2-G4	C337	2:J5	4-C0			2-K5
C4	2:K5	1-B4	C148	2:C7	2-H2	D4	2:N5	1-J3			2-F1
C5	2:L5	1-B5	C149	2:C6	2-H5			1-K3			2-H2
C6	2:Q4	1-B7	C150	1:B5	2-J6	D5	2:N4	1-M3			2-H0
C9	2:L5	1-C4	C151	2:E6	2-K2			1-M3	IC103	1:D6	2-K2
C10	2:L5	1-D5	C152	1:D6	2-L2	D6	2:P7	1-N7			2-N4
C11	2:M4	1-E5	C153	2:C4	2-L6			1-N7			2-R4
C12	2:M5	1-E4	C154	1:D4	2-M1	D100	2:D11	2-C2			2-R1
C13	2:S4	1-E8	C156	1:D4	2-N6			2-D2			2-J0
C14	1:S4	1-F8	&C157	2:E4	2-Q4	D101	2:C4	2-B1	IC104	1:D8	2-R2
C15	1:M5	1-G4	C158	2:E6	2-R0			2-B1			2-M0
C16	2:M4	1-G4	C160	2:C7	2-Q3	D102	2:D4	2-B2			2-K0
C17	2:M3	1-G2	C161	2:D5	2-F1			2-B2	IC201	1:T6	3-A2
C19	2:P3	1-G2	C162	1:E2	2-A3	D103	2:D11	2-C3	IC202	1:S6	3-H2
C20	2:N3	1-H3	C163	1:D2	2-A3			2-D3			3-K2
C25	1:P5	1-K5	C164	2:E4	2-D0	D104	2:B5	2-M5			3-N1
C26	2:N5	1-K2	C166	2:E6	2-Q1			2-L5			3-C2
C29	1:N4	1-L5	C209	1:R6	3-K6	D106	1:B12	2-R8			3-G1
C30	1:N5	1-P3	C212	2:R9	3-Q7	D107	1:C4	2-B4	L1	1:K5	1-B4
C33	2:P8	1-M5	C213	1:R9	3-Q7	D108	1:B4	2-C4	L300	1:H7	4-D4
C34	1:T4	1-N8	C214	2:T6	3-A2	D203	1:V6	3-E6	L302	1:G8	4-F2
C35	1:R5	1-Q7	C215	1:S6	3-C2	D204	2:R7	3-L7	L303	1:H11	4-H4
C36	2:R5	1-R7	C216	2:T6	3-C3			3-L6	L307	1:G11	4-G4
C39	2:Q7	1-Q9	C217	2:V5	3-C5	D205	2:V5	3-C6	L308	1:G10	4-H3
C40	2:R4	1-C7	C218	2:S7	3-H1			3-C6	#L309	1:G11	4-H3
C42	2:N4	1-L5	C219	1:T8	3-F3	D206	2:U9	3-D4	L310	1:H7	4-D3
C43	2:R3	1-G6	C220	2:T8	3-F3			3-D5	L317	1:H8	4-D5
C44	2:S4	1-H7	C221	2:T8	3-F3	D207	2:S7	3-H3	L318	1:J8	4-D1
C45	2:P8	1-N5	C222	1:S7	3-J3			3-J2	PAD1	1:C1	2-R8
C46	2:M5	1-D5	C223	1:R7	3-N1	D208	2:S8	3-L3	PAD2	1:C11	2-R9
C101	1:D8	2-B7	C224	1:R7	3-L6			3-L3	PAD3	1:D10	2-B2
C102	1:B3	2-C3	C225	2:R7	3-N6	D209	2:S9	3-P2	PAD4	1:D10	2-R6
C103	1:B4	2-C3	C226	1:R8	3-N6			3-P2	PAD5	1:E3	2-N6
C104	2:D11	2-C3	C227	1:R9	3-Q7	D210	1:S8	3-L1	PAD6	1:D1	2-R6
C105	2:D8	2-C6	C228	2:R6	3-D3	D211	2:S8	3-M1	PAD7	1:E3	2-N6
C106	2:D8	2-C7	C229	2:T9	3-E4			3-M1	PAD8	1:D10	2-R6
C107	1:D8	2-C8	C230	2:R7	3-P7	D302	2:J7	4-B1	PAD9	1:D1	2-R7
C108	2:D11	2-D2	C231	2:T8	3-R2	D303	2:J6	4-C1	PAD10	1:C12	2-R8
C109	2:C11	2-D3	C232	2:R6	3-K6	D304	2:J7	4-B1	PAD11	1:C2	2-R9
C110	2:C11	2-D3	C233	2:R9	3-R7	D305	1:H9	4-F4	PAD12	1:C2	2-R9
C111	2:D11	2-E2	C300	2:J11	4-K2	D306	1:H10	4-F4	PAD13	1:B9	2-A7
C112	1:D7	2-E6	C301	2:H7	4-A1	=IC1	1:R5	1-B8	PAD14	1:E10	2-A9
C113	2:D9	2-E2	C302	2:H9	4-E4	&IC3	1:M4	1-E4	PAD15	1:C9	2-G1
C115	2:D10	2-F6	C303	2:H7	4-E3	IC4	1:T3	1-F7	PAD16	1:D9	2-G1
C118	2:C8	2-F7	C305	1:H9	4-E4			1-G8	PAD18	1:E2	2-A1
C119	1:D9	2-G3	C306	2:H7	4-E3	IC5	1:N4	1-F3	PAD19	1:E2	2-A1
C121	2:B6	2-G7	C309	2:H10	4-H3	IC6	1:P4	1-L5	PL1	1:P5	1-Q1
C123	2:B6	2-H7	C312	2:H10	4-J3			1-L3			1-Q0
C124	2:C6	2-J1	#C313	2:G11	4-H3			1-P3			1-Q0
C126	2:B6	2-H0	C314	2:J11	4-J1	IC7	1:T5	1-E8			1-Q2
C128	2:B6	2-J7	C317	2:H6	4-C2			1-D7			1-Q1
C129	1:B5	2-K7	C318	2:H6	4-C2			1-D7			1-Q2
C133	2:E4	2-P4	C319	2:G7	4-D3			1-E7			1-Q3

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
		1-Q2	R15	2:L4	1-C5	R147	2:D5	2-M1	R260	2:T6	3-B2
		1-Q2	R16	2:L4	1-D1	R148	2:D4	2-N5	R296	2:H7	4-A0
		1-Q1	R18	2:M5	1-D6	R149	2:D6	2-N5	R297	2:H7	4-A1
PL100	1:D9	2-E8	R19	2:L3	1-D1	R150	2:E5	2-N4	R298	2:J7	4-A0
		2-D7	R20	2:L3	1-D1	R151	2:D4	2-P4	R300	2:K7	4-A2
		2-D7	R21	2:R4	1-F8	&R152	2:E4	2-P5	R301	2:K7	4-A2
		2-D8	R24	2:M4	1-G5	R155	2:C11	2-Q8	R302	2:K7	4-B2
		2-E7	R25	2:N3	1-G3	R159	2:C11	2-Q8	R303	2:H6	4-D2
		2-E7	R29	2:N4	1-H3	R162	2:B11	2-R9	R304	2:M8	1-A4
PL101	1:C10	2-E3	R30	2:N4	1-H3	R163	2:C2	2-R6	R305	2:H7	4-D3
		2-E3	R32	2:M4	1-J3	R164	2:B10	2-R6	R306	2:G9	4-F2
		2-E3	R35	2:M5	1-J3	R166	2:B6	2-G6	R307	1:H10	4-G3
		2-F3	R36	2:M5	1-J3	R167	2:B7	2-G4	R313	2:H6	4-D3
		2-F3	R37	2:P5	1-J5	R168	2:B7	2-H5	R314	1:G7	4-E2
		2-F3	R38	2:P5	1-K6	R169	2:D7	2-H3	R315	1:G7	4-E3
PL102	1:D10	2-F3	R39	2:N5	1-K3	R170	2:B7	2-H4	R316	1:G8	4-E2
		2-G3	R40	2:N5	1-K2	R171	2:B7	2-H4	R317	2:H10	4-H4
		2-G3	R42	2:N4	1-L5	R172	2:D5	2-J7	R322	2:H11	4-K1
		2-G3	R43	2:N5	1-P3	R173	2:C6	2-J5	R323	2:J11	4-L2
		2-G3	R46	2:P8	1-M5	R174	2:C6	2-J5	R324	2:J6	4-B0
		2-F3	R47	2:T5	1-N8	R175	2:B6	2-J8	R325	2:H5	4-C1
		2-F4	R48	2:T4	1-P8	R176	2:C5	2-J6	R326	2:J6	4-C0
		2-F3	R49	2:T3	1-P7	R177	2:C6	2-J5	R327	2:J11	4-K2
		2-F3	R50	2:T3	1-P7	R178	2:D6	2-K2	SK1	1:K5	1-B1
		2-G4	R51	2:T4	1-P7	R179	2:D6	2-K3			1-B3
PL103	1:C9	2-G1	R52	2:L3	1-H4	R180	2:D6	2-K1			1-B3
		2-G1	R54	2:R3	1-G6	R181	2:D6	2-L1			1-B3
		2-G2	R55	2:S4	1-H6	R182	2:B5	2-L5			1-B2
		2-G1	R56	2:R4	1-H6	R183	2:D6	2-L2			1-B2
		2-G2	R60	2:P8	1-M5	&R184	2:E4	2-Q5			1-B2
		2-G1	R64	2:Q4	1-C7	&R185	2:E4	2-Q5			1-B2
PL200	1:W5	3-B7	R65	2:S4	1-D7	R186	2:D7	2-Q2			1-B1
		3-B7	R67	2:S3	1-G7	R187	2:E7	2-Q1			1-B1
		3-B8	R68	2:S3	1-G6	R188	2:E6	2-R0	SK4	1:M8	1-A4
		3-B7	R69	2:P7	1-L6	R189	2:E5	2-Q4	SK5	1:L7	1-R8
		3-B8	R70	2:P7	1-L6	R190	2:E5	2-R4	SK100	1:B8	2-A7
		3-B6	R71	2:P7	1-M6	R192	2:E8	2-R2	SW101	1:C11	2-B5
		3-B5	R72	2:P8	1-N5	R194	2:D7	2-Q3	SK2-1	1:K8	1-Q4
		3-B9	R73	2:P8	1-N5	R195	2:D7	2-R2	SK2-2	1:K8	1-Q4
		3-B9	R74	2:L5	1-B5	R196	2:E7	2-Q3	SK2-3	1:K8	1-Q4
		3-B8	R75	2:M5	1-E5	R197	2:E6	2-R0	SK2-4	1:K7	1-Q3
		3-B8	R100	2:C4	2-B0	RV201	1:T7	3-J3	SK2-5	1:K7	1-Q4
		3-B6	RV100	1:B9	2-B4	RV202	1:S8	3-M1	SK3-1	1:Q8	1-R5
		3-B6	R101	2:D4	2-B1	R224	2:R6	3-K6	SK3-2	1:Q8	1-R9
		3-B7	R102	2:D4	2-C1	R227	2:R8	3-Q7	SK3-3	1:Q7	1-R8
		3-B6	R103	2:D8	2-C7	R228	2:T7	3-A3	SK3-4	1:Q7	1-R8
Q1	2:K4	1-C4	RV104	1:C5	2-J6	R230	2:S6	3-C2	SK3-5	1:Q7	1-R9
Q5	2:T5	1-N9	R104	2:B4	2-C4	R231	2:U8	3-D5	SK300	1:G11	4-J3
Q6	2:T4	1-P9	RV105	1:D7	2-Q3	R232	1:T9	3-D3	TP1	1:R10	4-L7
Q7	2:T4	1-P7	R105	2:C8	2-C5	R233	1:U8	3-E5	TP2	1:R10	4-P6
Q8	2:P7	1-M7	R106	2:D8	2-C6	R234	1:U7	3-E5	TP3	1:P5	1-N3
Q101	2:C8	2-D7	RV106	1:D5	2-L1	R235	2:S6	3-E3	TP4	1:P5	1-R7
Q102	2:C11	2-E3	R107	2:D8	2-D7	R236	2:S7	3-E2	TP5	1:J5	4-C3
Q103	2:B6	2-H7	R108	2:D8	2-D8	R237	2:S6	3-G3	T100	1:C3	2-B3
Q104	2:B6	2-J8	R109	2:D8	2-D7	R238	2:T7	3-G3	T200	1:R8	3-M7
Q105	2:B11	2-Q8	R110	2:C11	2-D5	R239	2:S7	3-G2			
Q106	1:C4	2-C1	R111	2:E4	2-D0	R240	2:S7	3-H3			
Q208	2:R7	3-M6	R112	2:C8	2-D4	R241	2:T7	3-J3			
Q209	1:R6	3-D2	R113	2:C11	2-D3	R242	2:T7	3-J3			
Q210	1:T9	3-E4	R115	2:E8	2-D6	R243	2:S7	3-K3			
Q211	2:T8	3-R2	R116	2:C11	2-E3	R244	2:S7	3-K2			
Q212	2:R8	3-P7	R117	2:E8	2-E8	R245	2:R8	3-K1			
Q300	2:G6	4-D2	R118	2:D9	2-E2	R246	2:S8	3-L3			
Q301	1:G9	4-G3	R119	2:C10	2-E6	R247	2:S8	3-N2			
Q304	2:J11	4-K2	R120	2:C10	2-E4	R248	2:R8	3-N1			
R1	2:L5	1-B6	R121	2:D10	2-E6	R249	2:S9	3-P2			
R2	2:R4	1-B9	R122	2:D7	2-E2	R250	2:T8	3-Q2			
R3	2:M3	1-B1	R123	2:D5	2-F1	R251	2:T8	3-Q2			
R5	2:K5	1-B4	R124	2:C6	2-F1	R252	2:R7	3-M5			
R6	2:M3	1-B1	R127	2:C6	2-H3	R253	2:R7	3-N6			
R7	2:K5	1-C5	R128	2:B7	2-G7	R254	2:R7	3-P5			
R9	2:L4	1-C5	R131	2:C6	2-J2	R255	2:S7	3-H3			
R10	2:K5	1-C4	R136	2:C7	2-J1	R256	2:T8	3-L3			
R11	2:M3	1-C1	R141	2:B5	2-K7	R257	2:S8	3-L2			
R13	2:L4	1-C5	R143	2:B5	2-L7	R258	2:S9	3-P2			
R14	2:L4	1-C1	R146	2:D4	2-M6	R259	2:T6	3-B1			

T857 Parts List (IPN 220-01140-04)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C324	4p7 (015-01470-06) added across Q301 to increase stability and power at 512 & 520MHz (92/04-289).
R123	Changed from 12K (036-15120-00) to 15K. To increase line sensitivity (92/07-530).
C324	Deleted from circuit. To increase line sensitivity & reduce Tx current (92/09-684).
#C313	(Hi Band) changed from 6p8 (015-21680-01) to 8p2. To improve power o/p at 520MHz (93/05-261).
#C322	(Hi Band) changed from 3p3 (015-21330-01) to 2p2. To improve power o/p at 520MHz (93/05-261).
C319	Changed from 10p (015-22100-01) to 22p. To improve power o/p at 520MHz (93/05-261).
C320	Changed from 12p (015-22120-01) to 6p8. To improve power o/p at 520MHz (93/05-261).
L310	Changed from 2.5T/3.0mm (052-08130-25) to 1.5T/3.0mm. To improve power o/p at 520MHz (93/05-261).
#C322	(Low Band) added (2p2). To improve power o/p at 520MHz (93/05-261).
R132,R133, R134 & R135	Changed from Res Al 0 ohms (030-50000-20) to wire link (94/06-276).
D106	Changed from BZT03-C33 to BZX79/C33 to conform with T856 (96/01-7008).

Note: %D107 and %D108 are optional level limiting diodes for special applications.

Ref	Var	IPN	Description
C1		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C2		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C3		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C4		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C5		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C11		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C12		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C13		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C14		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C15		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C16		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C17		015-22560-01	CAP CER 0805 CHIP 56P 5% NPO 50V
C19		015-23680-08	CAP CER 0805 CHIP 680P 10% X7R 50V
C20		015-23470-08	CAP CER 0805 CHIP 470P 10% X7R 50V
C25		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C26		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C29		022-06330-03	CAP METAL POLYES 330N 10% 50V 5MM L/S
C30		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C33		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C34		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C35		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C36		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C39		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C40		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C42		015-25150-08	CAP CER 0805 CHIP 15N 10% X7R 50V
C43		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C44		015-23220-01	CAP CER 0805 CHIP 220P 5% NPO 50V
C45		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C46		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C101		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C102		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C103		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C104		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C105		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C106		015-24220-08	CAP CER 0805 CHIP 2N2 10% X7R 50V
C107		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C108		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C109		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C110		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C111		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C112		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C113		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C115		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C118		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C119		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C121		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C124		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		020-58470-02	CAP ELECT AI RDL 47M 16V 6X11MM
C133		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C135		015-22470-01	CAP CER 0805 CHIP 47P 5% NPO 50V
C137		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C139		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C141		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C145		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C146		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C147		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C148		015-05220-08	CAP CER 1206 CHIP 22N 10% X7R 50V
C149		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C150		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C151		015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C152		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C153		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C154		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C156		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
&C157	WB	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
&C157	NB	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C158		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C160		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C161		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C162		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C163		020-07470-92	CAP BI-POLAR RADL 4M7 50V 6X11MM 5MM L/S
C164		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C166		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C209		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C212		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C213		025-08100-02	CAP TANT BEAD 10M 10% 16V
C214		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C215		025-08100-02	CAP TANT BEAD 10M 10% 16V
C216		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C217		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C218		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C219		020-09470-07	CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/S

Ref	Var	IPN	Description
C220		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C221		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C222		020-59100-06	CAP ELECT AI RDL 100M 16V 6.3X11MM
C223		020-07220-02	CAP ELECT RADL 2M2 50V 5X11MM 5MM L/S
C224		025-07330-01	CAP TANT BEAD 3M3 35V
C225		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C226		020-57100-02	CAP ELECT AI RDL 1M 50V 5X11MM
C227		020-58100-03	CAP ELECT AI RDL 10M 50V 5X11MM
C228		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C229		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C230		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C231		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C232		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C233		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C234		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C300		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C301		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C302		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C303		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C305		020-08220-05	CAP ELECT RADL 22M 16V 5X11MM 5MM L/S
C306		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C309		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C312		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
#C313	LOW	015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
#C313	MID	015-22150-01	CAP CER 0805 CHIP 15P 5% NPO 50V
#C313	HI	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C314		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C317		015-22120-01	CAP CER 0805 CHIP 12P 5% NPO 50V
C318		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C319		015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
C320		015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C321		015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
#C322	LOW	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	MID	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
#C322	HI	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C335		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C336		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C337		015-22180-01	CAP CER 0805 CHIP 18P 5% NPO 50V
D4		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D5		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D100		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D101		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D102		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D103		001-10000-56	(S)DIODE SMD BAW56 DUAL SW SOT-23COM AN
D104		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D106		001-00015-29	(S) DIODE ZENER 33V 0.4W BZX79/C33
D203		001-00011-60	(S) DIODE SR2607 6A/30V
D204		001-10000-70	((S)DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D205		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D206		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SNGLE INLI
D207		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D208		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D209		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D210		001-00015-17	(S) DIODE ZENER 9V1 0.4W BZX79/C9V1
D211		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCAT
D302		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D303		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D304		001-10000-18	(S) DIODE SMD BAT18 BANDSWITCH SOT-23
D305		065-00010-04	BEAD FERRITE F8 4X2X5MM
D306		065-00010-04	BEAD FERRITE F8 4X2X5MM
=IC1	2.5ppm	539-00010-41	TCXO 12.8MHZ +-2.5PPM -30-+70C NDK NSA0175
=IC1	2ppm	539-00010-43	TCXO 12.8MHZ +/- 2PPM -10 - +60C NDK TIC3002A
=IC1	1ppm	539-00010-44	TCXO 12.8MHZ +-1PPM 0 TO +60C
&IC3	WB	002-00017-45	(S) IC SP8718 UHF 64/65 PRESC
&IC3	NB	002-00017-47	(S) IC SP8719 UHF 80/81 PRESC
IC4		002-74045-20	(S) IC 74HC4520 DUAL 4BIT SYNCRO CNTR
IC5		002-00017-63	(S) IC NJ8820DP FREQ SYNTHESIZER
IC6		002-00012-47	(S) IC MC33078 DUAL OP AMP LO NOISE
IC7		002-74000-04	(S) IC 74HCU04 UNBUFF HEX INVERTER
IC100		002-00020-50	(S) IC 4N25A OPTOCOUPLER
IC101		002-00015-30	(S) IC 4053B 2CHAN MUX/DEMUX
IC102		002-00014-40	(S) IC 324P QUAD OP AMP
IC103		002-00014-40	(S) IC 324P QUAD OP AMP
IC104		002-00012-40	(S) IC 358P DUAL OP AMP
IC201		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC202		002-00014-40	(S) IC 324P QUAD OP AMP
L1		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L300		065-00010-04	BEAD FERRITE F8 4X2X5MM
L302		065-00010-01	BEAD FERRITE 3B 6 HOLE
L303		065-00010-04	BEAD FERRITE F8 4X2X5MM
L307		065-00010-04	BEAD FERRITE F8 4X2X5MM
L308		052-08130-65	COIL A/W 6.5T/3.0MM HOR 0.8MM WIRE
L309		052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
#L309	LOW	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
#L309	MID	052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
#L309	HI	052-08125-15	COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE
L310		052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L317		065-00010-04	BEAD FERRITE F8 4X2X5MM
L318		056-00021-04	IND FXD 330NH AXIAL
LED1		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
LED2		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG

Ref	Var	IPN	Description
PL100		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL101		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL102		240-00020-44	HEADER 10WAY 2ROW STRAIGHT PCB MTG (5*2)
PL103		240-00020-67	HEADER 6WAY 2X3 PCB MTG STD
PL201		240-00020-59	HEADER 3 WAY 1 ROW PCB MTG
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO
Q5		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q6		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q7		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q8		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q101		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q102		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q103		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q104		000-10008-48	(S) XSTR SMD BCW60/BC848B215 NPN SOT23 AF
Q105		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q106		000-00011-91	(S) XSTR BD139 NPN AF PWR TO126
Q208		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q209		000-00011-30	(S) XSTR BC557B PNP AF TO92
Q210		000-00012-15	(S) XSTR BD234 PNP AF PWR TO126
Q211		000-10008-07	(S) XSTR SMD BC807 PNP SOT-23 AF LO PWR
Q212		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q300		000-00005-55	(S) XSTR MRF555 NPN RF LOW POWER
Q301		000-00032-56	(S) XSTR MRF630 NPN TO-39 UHF PWR 3W
Q304		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
R1		036-12100-00	RES M/F 0805 CHIP 10E 5%
R2		036-12220-00	RES M/F 0805 CHIP 22E 5%
R3		036-17100-00	RES M/F 0805 CHIP 1M 5%
R5		036-14100-00	RES M/F 0805 CHIP 1K 5%
R6		036-17100-00	RES M/F 0805 CHIP 1M 5%
R7		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R9		036-13120-00	RES M/F 0805 CHIP 120E 5%
R10		036-13390-00	RES M/F 0805 CHIP 390E 5%
R11		036-17100-00	RES M/F 0805 CHIP 1M 5%
R13		036-12180-00	RES M/F 0805 CHIP 18E 5%
R14		036-17100-00	RES M/F 0805 CHIP 1M 5%
R15		036-12680-00	RES M/F 0805 CHIP 68E 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R18		036-12100-00	RES M/F 0805 CHIP 10E 5%
R19		036-17100-00	RES M/F 0805 CHIP 1M 5%
R20		036-17100-00	RES M/F 0805 CHIP 1M 5%
R21		036-12220-00	RES M/F 0805 CHIP 22E 5%
R24		036-12220-00	RES M/F 0805 CHIP 22E 5%
R25		036-15120-00	RES M/F 0805 CHIP 12K 5%
R29		036-16470-00	RES M/F 0805 CHIP 470K 5%
R30		036-13100-00	RES M/F 0805 CHIP 100E 5%
R32		036-14100-00	RES M/F 0805 CHIP 1K 5%
R35		036-15100-00	RES M/F 0805 CHIP 10K 5%
R36		036-16470-00	RES M/F 0805 CHIP 470K 5%
R37		036-15100-00	RES M/F 0805 CHIP 10K 5%
R38		036-15100-00	RES M/F 0805 CHIP 10K 5%
R39		036-16470-00	RES M/F 0805 CHIP 470K 5%
R40		036-16470-00	RES M/F 0805 CHIP 470K 5%
R42		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R43		036-12220-00	RES M/F 0805 CHIP 22E 5%
R46		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R47		036-14100-00	RES M/F 0805 CHIP 1K 5%
R48		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R49		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R50		036-15100-00	RES M/F 0805 CHIP 10K 5%
R51		036-15100-00	RES M/F 0805 CHIP 10K 5%
R52		036-15100-00	RES M/F 0805 CHIP 10K 5%
R54		036-14100-00	RES M/F 0805 CHIP 1K 5%
R55		036-13100-00	RES M/F 0805 CHIP 100E 5%
R56		036-17100-00	RES M/F 0805 CHIP 1M 5%
R60		036-12330-00	RES M/F 0805 CHIP 33E 5%
R64		036-15150-00	RES M/F 0805 CHIP 15K 5%
R65		036-16100-00	RES M/F 0805 CHIP 100K 5%
R67		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R68		036-15560-00	RES M/F 0805 CHIP 56K 5%
R69		036-15100-00	RES M/F 0805 CHIP 10K 5%
R70		036-15100-00	RES M/F 0805 CHIP 10K 5%
R71		036-14560-00	RES M/F 0805 CHIP 5K6 5%
R72		036-15150-00	RES M/F 0805 CHIP 15K 5%
R73		036-13330-00	RES M/F 0805 CHIP 330E 5%
R74		036-12100-00	RES M/F 0805 CHIP 10E 5%
R75		036-12100-00	RES M/F 0805 CHIP 10E 5%
R78		036-10000-00	RES M/F 0805 CHIP ZERO OHM
R100		036-13100-00	RES M/F 0805 CHIP 100E 5%
RV100		040-05100-23	POT 10K LOG VERT PCB MTG 15MM SLOT SHAFT
R101		036-15100-00	RES M/F 0805 CHIP 10K 5%
R102		036-13470-00	RES M/F 0805 CHIP 470E 5%
R103		036-13560-00	RES M/F 0805 CHIP 560E 5%
R104		036-13560-00	RES M/F 0805 CHIP 560E 5%
RV104		042-05470-06	RES PRESET 47K CARBON 6MM FLAT TOP ADJ
R105		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV105		042-06100-06	RES PRESET 100K CARBON 6MM FLAT
R106		036-14220-00	RES M/F 0805 CHIP 2K2 5%
RV106		042-04470-06	RES PRESET 4K7 CARBON 6MM FLAT
R107		036-15100-00	RES M/F 0805 CHIP 10K 5%
R108		036-14100-00	RES M/F 0805 CHIP 1K 5%
R109		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R110		036-15100-00	RES M/F 0805 CHIP 10K 5%
R111		036-16390-00	RES M/F 0805 CHIP 390K 5%
R112		036-16100-00	RES M/F 0805 CHIP 100K 5%
R113		036-16100-00	RES M/F 0805 CHIP 100K 5%
R115		036-14820-00	RES M/F 0805 CHIP 8K2 5%

Ref	Var	IPN	Description
R116		036-16100-00	RES M/F 0805 CHIP 100K 5%
R117		036-15100-00	RES M/F 0805 CHIP 10K 5%
R118		036-13560-00	RES M/F 0805 CHIP 560E 5%
R119		036-16100-00	RES M/F 0805 CHIP 100K 5%
R120		036-16100-00	RES M/F 0805 CHIP 100K 5%
R121		036-16100-00	RES M/F 0805 CHIP 100K 5%
R122		036-15120-00	RES M/F 0805 CHIP 12K 5%
R123		036-15150-00	RES M/F 0805 CHIP 15K 5%
R124		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R127		036-16100-00	RES M/F 0805 CHIP 100K 5%
R128		036-16100-00	RES M/F 0805 CHIP 100K 5%
R131		036-17100-00	RES M/F 0805 CHIP 1M 5%
R132		200-00010-05	LINK WIRE T/C 0.5MM
R133		200-00010-05	LINK WIRE T/C 0.5MM
R134		200-00010-05	LINK WIRE T/C 0.5MM
R135		200-00010-05	LINK WIRE T/C 0.5MM
R136		036-15100-00	RES M/F 0805 CHIP 10K 5%
R141		036-16150-00	RES M/F 0805 CHIP 150K 5%
R143		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R146		036-15220-00	RES M/F 0805 CHIP 22K 5%
R147		036-15470-00	RES M/F 0805 CHIP 47K 5%
R148		036-16150-00	RES M/F 0805 CHIP 150K 5%
R149		036-15470-00	RES M/F 0805 CHIP 47K 5%
R150		036-15470-00	RES M/F 0805 CHIP 47K 5%
R151		036-14470-00	RES M/F 0805 CHIP 4K7 5%
&R152	WB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R152	NB	036-15270-00	RES M/F 0805 CHIP 27K 5%
R155		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R159		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R162		036-13680-00	RES M/F 0805 CHIP 680E 5%
R163		036-14100-00	RES M/F 0805 CHIP 1K 5%
R164		036-13680-00	RES M/F 0805 CHIP 680E 5%
R166		036-17100-00	RES M/F 0805 CHIP 1M 5%
R167		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R168		036-17100-00	RES M/F 0805 CHIP 1M 5%
R169		036-16120-00	RES M/F 0805 CHIP 120K 5%
R170		036-15100-00	RES M/F 0805 CHIP 10K 5%
R171		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R172		036-16470-00	RES M/F 0805 CHIP 470K 5%
R173		036-15100-00	RES M/F 0805 CHIP 10K 5%
R174		036-16330-00	RES M/F 0805 CHIP 330K 5%
R175		036-14100-00	RES M/F 0805 CHIP 1K 5%
R176		036-16100-00	RES M/F 0805 CHIP 100K 5%
R177		036-16100-00	RES M/F 0805 CHIP 100K 5%
R178		036-15560-00	RES M/F 0805 CHIP 56K 5%
R179		036-15560-00	RES M/F 0805 CHIP 56K 5%
R180		036-17100-00	RES M/F 0805 CHIP 1M 5%
R181		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R182		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R183		036-14820-00	RES M/F 0805 CHIP 8K2 5%
&R184	WB	036-15150-00	RES M/F 0805 CHIP 15K 5%
&R184	NB	036-15220-00	RES M/F 0805 CHIP 22K 5%
&R185	WB	036-15470-00	RES M/F 0805 CHIP 47K 5%
&R185	NB	036-15560-00	RES M/F 0805 CHIP 56K 5%
R186		036-15100-00	RES M/F 0805 CHIP 10K 5%
R187		036-15560-00	RES M/F 0805 CHIP 56K 5%
R188		036-17100-00	RES M/F 0805 CHIP 1M 5%
R189		036-13560-00	RES M/F 0805 CHIP 560E 5%
R190		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R192		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R194		036-15470-00	RES M/F 0805 CHIP 47K 5%
R195		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R196		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R197		036-14270-00	RES M/F 0805 CHIP 2K7 5%
RV201		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
RV202		042-07100-06	RES PRESET 1M CARBON 6MM FLAT
R224		036-13100-00	RES M/F 0805 CHIP 100E 5%
R227		036-12100-00	RES M/F 0805 CHIP 10E 5%
R228		036-12220-00	RES M/F 0805 CHIP 22E 5%
R230		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R231		036-14100-00	RES M/F 0805 CHIP 1K 5%
R232		032-33270-00	RES M/F PWR 270E 5% 1W 12X4.5MM
R233		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R234		032-31100-00	RES M/F PWR 1E0 5% 1W 12X4.5MM
R235		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R236		036-15100-00	RES M/F 0805 CHIP 10K 5%
R237		036-15100-00	RES M/F 0805 CHIP 10K 5%
R238		036-16100-00	RES M/F 0805 CHIP 100K 5%
R239		036-16100-00	RES M/F 0805 CHIP 100K 5%
R240		036-15470-00	RES M/F 0805 CHIP 47K 5%
R241		036-16470-00	RES M/F 0805 CHIP 470K 5%
R242		036-14100-00	RES M/F 0805 CHIP 1K 5%
R243		036-16100-00	RES M/F 0805 CHIP 100K 5%
R244		036-16100-00	RES M/F 0805 CHIP 100K 5%
R245		036-14150-00	RES M/F 0805 CHIP 1K5 5%
R246		036-15470-00	RES M/F 0805 CHIP 47K 5%
R247		036-16330-00	RES M/F 0805 CHIP 330K 5%
R248		036-16120-00	RES M/F 0805 CHIP 120K 5%
R249		036-16330-00	RES M/F 0805 CHIP 330K 5%
R250		036-14100-00	RES M/F 0805 CHIP 1K 5%
R251		036-13560-00	RES M/F 0805 CHIP 560E 5%
R252		036-16100-00	RES M/F 0805 CHIP 100K 5%
R253		036-15150-00	RES M/F 0805 CHIP 15K 5%
R254		036-15560-00	RES M/F 0805 CHIP 56K 5%
R255		036-15100-00	RES M/F 0805 CHIP 10K 5%
R256		036-15100-00	RES M/F 0805 CHIP 10K 5%
R258		036-15100-00	RES M/F 0805 CHIP 10K 5%
R259		036-14150-00	RES M/F 0805 CHIP 1K5 5%

Ref	Var	IPN	Description
R260		036-13470-00	RES M/F 0805 CHIP 470E 5%
R296		036-12560-00	RES M/F 0805 CHIP 56E 5%
R297		036-14100-00	RES M/F 0805 CHIP 1K 5%
R298		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R300		036-13330-00	RES M/F 0805 CHIP 330E 5%
R301		036-12180-00	RES M/F 0805 CHIP 18E 5%
R302		036-13330-00	RES M/F 0805 CHIP 330E 5%
R303		036-12470-00	RES M/F 0805 CHIP 47E 5%
R304		036-12560-00	RES M/F 0805 CHIP 56E 5%
R305		036-13470-00	RES M/F 0805 CHIP 470E 5%
R306		036-12470-00	RES M/F 0805 CHIP 47E 5%
R307		032-33100-10	RES M/F PWR 100E 5% 2W 12X4.5MM NON PREF
R313		036-14100-00	RES M/F 0805 CHIP 1K 5%
R314		030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
R315		030-52180-20	RES FILM AI 18E 5% 0.4W 4X1.6MM
R316		030-53270-20	RES FILM AI 270E 5% 0.4W 4X1.6MM
R317		036-12100-00	RES M/F 0805 CHIP 10E 5%
R322		036-14100-00	RES M/F 0805 CHIP 1K 5%
R323		036-15150-00	RES M/F 0805 CHIP 15K 5%
R324		036-14100-00	RES M/F 0805 CHIP 1K 5%
R325		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R326		036-14100-00	RES M/F 0805 CHIP 1K 5%
R327		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
SK100		240-02020-05	SKT STEREO PHONE JACK PCB MTG
SK300		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED
SW101		232-00010-26	SWITCH PUSH SPDT RT ANGLE PCB MTG NO BU
T100		053-00010-17	XFMR T4030 LINE MATCH POTCORE
T200		050-00016-31	COIL TAIT NO 631 455KHZ IF 7MM CAN

NOTE:	LOW	= 400-440MHZ
	MID	= 440-480MHZ
	HI	= 480-520MHZ
	NB	= 2.5KHZ DEVIATION
	WB	= 5KHZ DEVIATION
	1PPM	= 1PPM TCXO
	2PPM	= 2PPM TCXO
	2.5PPM	= 2.5PPM TCXO

(REFER TO PART C, SECTION 1.3)

T857 Mechanical & Miscellaneous Parts (220-01140-04)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
201-00030-02	WIRE #1 T/C WIRE 7/0.2MM PVC RED 2 x70mm for LEDs.
201-00030-10	WIRE #1 T/C WIRE 7/0.2MM PVC BLACK 2 x70mm for LEDs.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 140mm SK300/Front Panel x1, 90mm Final Inst Kit x1.
220-01140-04	PCB T857 MAIN BD
232-00020-26	BUTTON PUSH FOR 232-00010-26 SWITCH SW101.
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX 140mm Coax Cable to SK300 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C 140mm Coax Cable to Front Panel x1.
240-02010-54	SKT 15WAY DRANGE PNL MTG 105 DEG C Guide Rail Assembly Component, Part of Installation Kit x1
240-02100-46	SKT COAX ELBOW SUHNER 16SMC50-2-10C 90mm Coax Cable For Exciter/PA Connection x2
240-04020-62	SKT 2 WAY RECEPTL SHORTING LINK For PLs100, 101, 102, 103 & 201 x1 Each.
240-04020-65	SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL STRIP For SJ2-1, SJ3-1, SJ4-1 TO SJ4-5, SJ5-1 TO SJ5-5
303-11168-00	CHASSIS HSINK PNTD CMPLT A1M2364 800 SERIES
303-23055-00	COVER A4M955 N CONN HOLE T857 Blanking Plate On Rear For N Connector x1.
303-23118-00	COVER A3M2247 D RANGE HOLE T855/7 Blanking Plate On Rear For Extra D Range Connector x1.
303-50074-00	CLIP A3M2246 SPRING XSTR CLAMP T857 Q210 x1.
303-50078-00	CLIP A4M2630 0.1MM SPRIWIRE CABLE CLAMP T800 For Securing 140mm Coax Cable x1
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
312-01052-00	LID TOP PNTD COMPL A1M2364 800 SERIES
312-01053-00	LID BOTTOM PNTD COMPL A1M2364 800 SERIES
316-06364-01	PNL FRT COMPL T857 EX A3M2218/2
316-85015-01	PIN A4M775 LOCATING D RANGE For Securing D Range x2.
316-85099-00	PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
316-85100-00	PLATE FRT A2M2249 DUAL D RANGE SKT BOX Guide Rail Assembly Component, Part of Installation Kit x1
318-01014-00	RAIL A2M2214 FOR 800 SERIES FXD EQUIP Guide Rail Assembly Component, Part of Installation Kit x2
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.

IPN	Description
345-00040-06	SCREW M3*8MM PAN POZI ST BZ For Final Installation Kit x2.
345-00040-08	SCREW M3*12MM PAN POZI ST BZ D Range Blanking Cover Mtg x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ For Final Installation Kit x2.
345-00040-10	SCREW M3*6MM PAN POZI ST BZ Guide Skt to Float Plate x4, Rail x4, Final Installation Kit x2
345-00040-11	SCREW M3*10MM PAN POZI ST BZ Final Installation Kit x4
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel Mtg x4.
349-00020-31	SCREW TAPTITE M3X10MM PAN POZI BZ N Connector Cover x4.
349-00020-32	SCREW TAPTITE M3*8MM PAN POZI BZ PCB Mounting x8.
349-00020-43	SCREW TAPTITE M4*12MM PAN POZI BZ Top Cover Mtg x14.
349-00020-45	SCREW TAPTITE M4*20MM PAN POZI BZ Bottom Cover Mtg x14.
352-00010-08	NUT M3 COLD FORM HEX ST BZ D Range x2, D Range Cover x2, Vco Mtg x2.
352-00010-29	NUT M4 NYLOC HEX Handle x2.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Float Plate x4.
353-00010-11	WASHER M3 FLAT 9.5MM*0.9MM ST BZ Final Installation Kit x4.
353-00010-12	WASHER M3 SPRING BZ D Range x2, D Range Cover x2.
362-00010-23	GASKET SIL INSULATING TO-220 CLIP MTD Q210 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS
365-00011-53	LABEL WHITE RW2365/1 104*37MM SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-03	LABEL BLANK 10.8*30MM S/A METLSD POLYES
365-00100-20	LABEL WHITE S/A 28*11MM QUIKSTIK RW718/4 Rev No x1, EPROM x1, T100 x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8MM TAMPERMARK VOID MATT FCC Rules Pt 15 x1, FCC ID x1, Aust DOTC Cert x1, Ser No x1, Canadian DOC x1.
365-01500-00	LABEL 24*12MM CE CONFORMITY
399-00010-51	BAG PLASTIC 75*100MM
400-00010-07	SLEEVING 2MM SIL RUBBER
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

T857 Grid Reference Index (IPN 220-01140-04)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
C1	2:Q6	1-A8	C145	2:B10	2-D5	C335	2:J7	4-B2	IC101	1:B11	2-F4
C2	2:K6	1-B4	C146	2:B7	2-G6	C336	2:H7	4-B2	IC102	1:B8	2-H5
C3	2:L6	1-B5	C147	1:B8	2-H4	C337	2:H6	4-C0			2-K5
C4	2:K6	1-B4	C148	2:C8	2-H2	D4	2:M6	1-I3			2-F1
C5	2:L6	1-B5	C149	2:C7	2-J5			1-J3			2-I2
C6	2:Q5	1-B7	C150	1:B6	2-J6	D5	2:N5	1-L3			2-H0
C9	2:K6	1-C4	C151	2:D7	2-K2			1-L3	IC103	1:D7	2-J2
C10	2:L6	1-D5	C152	1:D7	2-K2	D6	2:P8	1-M7			2-M4
C11	2:M5	1-E5	C153	2:B5	2-K6			1-M7			2-P4
C12	2:L6	1-E4	C154	1:C5	2-L1	D100	2:D12	2-C2			2-P1
C13	2:S5	1-E8	C156	1:D5	2-M6			2-E2			2-I0
C14	1:S5	1-F8	&C157	2:E5	2-Q4	D101	2:C5	2-C1	IC104	1:D9	2-P2
C15	1:M6	1-G4	C158	2:D7	2-P0			2-D1			2-L0
C16	2:M5	1-G4	C160	2:C8	2-Q3	D102	2:D5	2-C2			2-J0
C17	2:L4	1-G2	C161	2:C6	2-G1			2-D2	IC201	1:T7	3-A2
C19	2:P4	1-G2	C162	1:D3	2-B3	D103	2:C12	2-D3	IC202	1:S7	3-H2
C20	2:N4	1-H3	C163	1:E3	2-C3			2-E3			3-J2
C25	1:P6	1-J5	C164	2:E5	2-E0	D104	2:B6	2-L5			3-M1
C26	2:N6	1-J2	C166	2:E7	2-Q1			2-L5			3-C2
C29	1:N5	1-K5	C209	1:R7	3-J6	D106	1:B13	2-P8			3-G1
C30	1:M6	1-N3	C212	2:R10	3-Q7	%D107	1:C5	2-C4	LINKB	2:T5	1-N7
C33	2:P9	1-L5	C213	1:R10	3-Q7	%D108	1:B5	2-D4	LINKA	2:T4	1-Q8
C34	1:T5	1-M8	C214	2:T7	3-A2	D203	1:V7	3-E6	L1	1:K6	1-B4
C35	1:R6	1-Q7	C215	1:S7	3-C2	D204	2:Q8	3-K7	L300	1:H8	4-D4
C36	2:R6	1-P7	C216	2:S7	3-C3			3-K6	L302	1:G10	4-F2
C39	2:Q8	1-Q9	C217	2:U6	3-C5	D205	2:U6	3-C6	L303	1:G12	4-H4
C40	2:Q5	1-C7	C218	2:S8	3-H1			3-C6	L307	1:G12	4-G4
C42	2:N5	1-K5	C219	1:T9	3-F3	D206	2:T10	3-D4	L308	1:G11	4-H3
C43	2:R4	1-G6	C220	2:T9	3-F3			3-D5	#L309	1:F12	4-H3
C44	2:S5	1-H7	C221	2:T9	3-F3	D207	2:R8	3-H3	L310	1:G8	4-D3
C45	2:P9	1-M5	C222	1:S8	3-I3			3-I2	L317	1:H9	4-D5
C46	2:M6	1-D5	C223	1:R8	3-M1	D208	2:S8	3-K3	L318	1:H9	4-D1
C101	1:C9	2-C7	C224	1:R8	3-K6			3-K3	PAD1	1:C2	2-P8
C102	1:B4	2-D3	C225	2:R8	3-M6	D209	2:S10	3-N2	PAD2	1:B12	2-P9
C103	1:B5	2-D3	C226	1:R9	3-M6			3-N2	PAD3	1:C11	2-A2
C104	2:D12	2-D3	C227	1:R10	3-Q7	D210	1:R9	3-K1	PAD4	1:D11	2-P6
C105	2:C9	2-D6	C228	2:R7	3-D3	D211	2:R9	3-L1	PAD5	1:E4	2-M6
C106	2:C9	2-D7	C229	2:T10	3-E4			3-L1	PAD6	1:D2	2-P6
C107	1:D9	2-D8	C230	2:R8	3-N7	D302	2:J8	4-B1	PAD7	1:E4	2-M6
C108	2:D12	2-E2	C231	2:T9	3-P2	D303	2:H7	4-C1	PAD8	1:D11	2-P6
C109	2:C12	2-E3	C232	2:R7	3-J6	D304	2:J8	4-B1	PAD9	1:D2	2-P7
C110	2:C12	2-E4	C233	2:R10	3-P7	D305	1:H10	4-F4	PAD10	1:B13	2-P8
C111	2:D12	2-F2	C234	2:R8	3-C2	D306	1:H11	4-F4	PAD11	1:C3	2-P9
C112	1:D8	2-F6	C300	2:J12	4-J2	=IC1	1:R6	1-B8	PAD12	1:C3	2-P9
C113	2:D10	2-F2	C301	2:H8	4-A1	&IC3	1:M5	1-E4	PAD15	1:U4	1-Q1
C115	2:D11	2-G6	C302	2:H10	4-E4	IC4	1:T4	1-F7	PAD16	1:U5	1-Q0
C118	2:B9	2-G7	C303	2:H8	4-E3			1-G8	PAD17	1:U5	1-Q0
C119	1:D10	2-H3	C305	1:H10	4-E4	IC5	1:N5	1-F3	PAD20	1:U4	1-Q0
C121	2:B7	2-H6	C306	2:G8	4-E3	IC6	1:N5	1-K5	PAD21	1:R13	5-I5
C123	2:A7	2-J7	C309	2:H11	4-H3			1-K3	PAD22	1:S13	5-I4
C124	2:C7	2-I1	C312	2:H11	4-I3			1-N3	PAD23	1:S11	5-G2
C126	2:B7	2-H0	#C313	2:F12	4-H3	IC7	1:S6	1-E8	PAD24	1:R11	5-G2
C128	2:B7	2-J7	C314	2:H12	4-I1			1-D7	PAD25	1:B4	2-P7
C129	1:A6	2-K7	C317	2:H7	4-C2			1-D7	PAD101	1:E2	2-A3
C133	2:D5	2-N4	C318	2:G7	4-C2			1-E7	PAD102	1:E3	2-A3
C135	2:E6	2-Q4	C319	2:G8	4-D3			1-G7	PAD104	1:E4	2-A1
C137	1:D8	2-Q1	C320	2:G9	4-F2			1-H7	PAD105	1:E3	2-A0
C139	2:D6	2-I0	C321	2:G10	4-G2			1-I7	PL1	1:P6	1-Q1
C141	2:E5	2-P5	#C322	2:F12	4-H2	IC100	1:D5	2-E1			1-Q0

Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit	Device	PCB	Circuit
		1-Q0	R9	2:K5	1-C5	R127	2:C7	2-I3	R249	2:S10	3-N2
		1-Q2	R10	2:K6	1-C4	R128	2:B8	2-H7	R250	2:S9	3-Q2
		1-Q2	R11	2:M4	1-C1	R131	2:C7	2-I2	R251	2:T9	3-Q2
		1-Q3	R13	2:L5	1-C5	R132	1:E4	2-B2	R252	2:R8	3-L5
		1-Q2	R14	2:K5	1-C1	R133	1:E3	2-B1	R253	2:R8	3-M6
		1-Q2	R15	2:L5	1-C5	R134	1:E3	2-B3	R254	2:R8	3-N5
		1-Q1	R16	2:L5	1-D1	R135	1:E2	2-B3	R255	2:S8	3-H3
		1-Q1	=R17	1:Q6	1-B7	R136	2:C8	2-J1	R256	2:S9	3-K3
PL100	1:D10	2-F8	R18	2:M6	1-D6	R141	2:A6	2-J7	R258	2:S10	3-N2
		2-E7	R19	2:L4	1-D1	R143	2:B6	2-K7	R259	2:T7	3-B1
		2-E7	R20	2:L4	1-D1	R146	2:D5	2-L6	R260	2:T7	3-B2
		2-E8	R21	2:R5	1-F8	R147	2:D6	2-L1	R296	2:H8	4-A0
		2-F7	R24	2:L5	1-G5	R148	2:D5	2-M5	R297	2:H8	4-A1
		2-F7	R25	2:M4	1-G3	R149	2:D7	2-M5	R298	2:H8	4-A0
PL101	1:C11	2-F3	R29	2:N5	1-H3	R150	2:D6	2-M4	R300	2:K8	4-A2
		2-F3	R30	2:M5	1-H3	R151	2:D5	2-N4	R301	2:K8	4-A2
		2-F3	R32	2:M5	1-I3	&R152	2:E5	2-N5	R302	2:K8	4-B2
		2-G3	R35	2:M6	1-I3	R155	2:B12	2-Q8	R303	2:G7	4-D2
		2-G3	R36	2:M6	1-I3	R159	2:B12	2-Q8	R304	2:L9	1-A4
		2-G3	R37	2:P6	1-I5	R162	2:B12	2-P9	R305	2:H8	4-D3
PL102	1:D11	2-G3	R38	2:P6	1-J6	R163	2:C3	2-Q7	R306	2:G10	4-F2
		2-H3	R39	2:N6	1-J3	R164	2:B11	2-P6	R307	1:H11	4-G3
		2-H3	R40	2:N6	1-J2	R166	2:B7	2-H6	R313	2:H7	4-D3
		2-H3	R42	2:N5	1-K5	R167	2:B8	2-H4	R314	1:G8	4-E2
		2-H3	R43	2:N6	1-N3	R168	2:B8	2-I5	R315	1:G8	4-E3
		2-G3	R46	2:P9	1-L5	R169	2:D8	2-I3	R316	1:G9	4-E2
		2-G3	R47	2:T6	1-M8	R170	2:B8	2-I4	R317	2:H11	4-H4
		2-G3	R48	2:T5	1-N8	R171	2:B8	2-I4	R322	2:H12	4-J1
PL103	1:C10	2-G1	R49	2:T4	1-N7	R172	2:D6	2-J6	R323	2:J12	4-K2
		2-H1	R50	2:T4	1-N7	R173	2:C7	2-J6	R324	2:H7	4-B0
		2-G2	R51	2:T5	1-N7	R174	2:C7	2-J5	R325	2:H6	4-C1
		2-G1	R52	2:L4	1-H4	R175	2:B7	2-J8	R326	2:J7	4-C0
		2-H2	R54	2:R4	1-G6	R176	2:C6	2-J6	R327	2:J12	4-J2
		2-H1	R55	2:R5	1-H6	R177	2:C7	2-J5	SK1	1:K6	1-B1
PL200	1:V6	3-B7	R56	2:R5	1-H6	R178	2:C7	2-J2			1-B3
		3-B7	R60	2:P9	1-L5	R179	2:D7	2-J3			1-B3
		3-B8	R64	2:Q5	1-C7	R180	2:D7	2-K1			1-B3
		3-B7	R65	2:R5	1-D7	R181	2:D7	2-K1			1-B2
		3-B8	R67	2:S4	1-G7	R182	2:B6	2-K6			1-B2
		3-B6	R68	2:R4	1-G6	R183	2:D7	2-L2			1-B2
		3-B5	R69	2:P8	1-K6	&R184	2:E5	2-Q5			1-B2
		3-B9	R70	2:P8	1-K6	&R185	2:E5	2-Q5			1-B1
		3-B9	R71	2:P8	1-L6	R186	2:D8	2-Q2			1-B1
		3-B8	R72	2:P9	1-M5	R187	2:E8	2-Q1	SJ2	1:L9	1-A4
		3-B8	R73	2:P9	1-M5	R188	2:E7	2-P0	=SK2	1:Q6	1-A8
		3-B6	R74	2:L6	1-B5	R189	2:D6	2-Q4	SJ3	1:L8	1-P8
		3-B6	R75	2:L6	1-E5	R190	2:E6	2-P4	SK100	1:B9	2-A7
		3-B7	R78	2:T4	1-Q8	R192	2:E9	2-P2	SW101	1:C12	2-B5
		3-B6	R100	2:C5	2-D0	R194	2:D8	2-Q3	SK300	1:G12	4-I3
PL201	1:S9	3-K2	RV100	1:B10	2-C5	R195	2:D8	2-P2	SJ4-1	1:P9	1-P5
		3-K2	R101	2:D5	2-D1	R196	2:E8	2-Q3	SJ4-2	1:P9	1-P9
Q1	2:K5	1-C4	R102	2:D5	2-D1	R197	2:E7	2-P0	SJ4-3	1:P8	1-P8
Q5	2:T6	1-M9	R103	2:D9	2-D7	RV201	1:T8	3-I3	SJ4-4	1:P8	1-P8
Q6	2:T5	1-N9	RV104	1:C6	2-J6	RV202	1:S9	3-L1	SJ4-5	1:P8	1-P9
Q7	2:T5	1-N7	R104	2:B5	2-D4	R224	2:Q7	3-J6	SJ5-1	1:K9	1-Q4
Q8	2:P8	1-L7	RV105	1:D8	2-Q3	R227	2:R9	3-Q7	SJ5-2	1:K9	1-Q4
Q101	2:C9	2-E7	R105	2:C9	2-D5	R228	2:T8	3-A3	SJ5-3	1:K9	1-Q4
Q102	2:C12	2-F3	R106	2:D9	2-D6	R230	2:R7	3-C2	SJ5-4	1:K8	1-Q3
Q103	2:A7	2-I7	RV106	1:D6	2-L1	R231	2:T9	3-D5	SJ5-5	1:K8	1-Q4
Q104	2:B7	2-J8	R107	2:D9	2-E7	R232	1:T10	3-D3	TP1	1:R11	4-J4
Q105	2:B12	2-Q8	R108	2:D9	2-E8	R233	1:U9	3-E5	TP2	1:R11	4-J3
Q106	1:C5	2-D1	R109	2:D9	2-E7	R234	1:U8	3-E5	TP3	1:N6	1-M3
Q208	2:Q8	3-L6	R110	2:C12	2-E5	R235	2:S7	3-E3	TP4	1:P6	1-P7
Q209	1:R7	3-D2	R111	2:E5	2-E0	R236	2:S8	3-E2	TP5	1:H6	4-C3
Q210	1:T10	3-E4	R112	2:C9	2-E4	R237	2:S7	3-G3	TP12	1:M6	1-K4
Q211	2:T9	3-P2	R113	2:C12	2-E3	R238	2:S8	3-G3	T100	1:C4	2-C3
Q212	2:R9	3-N7	R115	2:E9	2-E6	R239	2:S8	3-G2	T200	1:R9	3-L7
Q300	2:G7	4-D2	R116	2:C12	2-F3	R240	2:S8	3-H3			
Q301	1:G10	4-G3	R117	2:E9	2-F8	R241	2:T8	3-I3			
Q304	2:H12	4-J2	R118	2:D10	2-F2	R242	2:T8	3-I3			
R1	2:L6	1-B6	R119	2:C11	2-F6	R243	2:S8	3-J3			
R2	2:R5	1-B9	R120	2:C11	2-F4	R244	2:R8	3-J2			
R3	2:M4	1-B1	R121	2:D11	2-F6	R245	2:R9	3-J1			
R5	2:K6	1-B4	R122	2:D8	2-F2	R246	2:S9	3-K3			
R6	2:M4	1-B1	R123	2:D6	2-G1	R247	2:R9	3-M2			
R7	2:K6	1-C5	R124	2:C7	2-G1	R248	2:R9	3-M1			

Part D T858 & T859 Power Amplifiers

This part of the manual is divided into five sections, as listed below. There is a detailed table of contents at the start of each section.

Section	Title
1	General Information
2	Circuit Operation
3	Initial Adjustment
4	Fault Finding
5	PCB Information

1 T858/859 General Information

This section provides a brief description of the T858 & T859 power amplifiers, along with detailed specifications and a list of types available.

The following topics are covered in this section.

1.1 Introduction

The T858 and T859 are FM base station power amplifiers designed for single or multichannel operation within the frequency range 400 to 520MHz. The output power capabilities are as follows:

T858 - 10 to 60W
T859 - 20 to 110W

The PA comprises a broad band, three stage drive amplifier whose output is split to drive two separate output stages. The outputs from these final stages are then recombined and filtered before being fed to the output socket. This type of balanced output stage offers two advantages over single ended types:

- improved intermodulation performance in the presence of high signal levels from adjacent transmitters;
- enhanced reliability: if one of the two output stages fails, the transmitter can still produce one quarter of its rated power.

VSWR and thermal protection are incorporated into the basic design, while monitoring and alarm signals are available for both forward and reverse power. The output power is adjustable from the front panel.

The circuitry is built on a single PCB which is mounted directly on a die-cast chassis/heatsink. Extensive use is made of surface mount technology.

Forced air cooling for the heatsink is provided on the T859 by a fan, which is activated whenever the transmitter is keyed. Thermal sensors will also activate the fan automatically if the internal temperature reaches an unacceptable level.

The T858 has a width of 60mm, occupying a single module in a Tait rack shelf (T99-770) which will accommodate up to seven standard modules to give an attractive and convenient installation. The T859 has a width of 120mm and occupies a double module.

1.2 Specifications

1.2.1 Introduction

The performance figures given are minimum figures, unless otherwise indicated, for equipment tuned with the maximum switching band and operating at standard room temperature (+22°C to +28°C).

Where applicable, the test methods used to obtain the following performance figures are those described in the EIA specification. However, there are several parameters for which performance according to the CEPT specification is given.

Details of test methods and the conditions which apply for Type Approval testing in all countries can be obtained from Tait Electronics Ltd.

1.2.2 General

Power Output:

T858	- Rated Power	.. 50W
	- Range Of Adjustment	.. 10 to 60W (typical)
T859	- Rated Power	.. 100W
	- Range Of Adjustment	.. 20 to 105W (typical)

Duty Cycle Rating

T858	.. 50W continuous to +60°C
	.. 60W continuous to +40°C
T859	.. 100W continuous to +60°C

Intermodulation (PA with output isolator)	.. -70dBc or -40dBi[1] with 25dB isolation & interfering signal of -30dBc

Mismatch Capability:

Ruggedness ..	.. infinite VSWR
Stability ..	.. 5:1 VSWR (all phase angles)

Supply Voltage:

Operating Voltage ..	.. 10.8 to 16V DC
Standard Test Voltage ..	.. 13.8V DC
Polarity ..	.. negative earth only
Polarity Protection..	.. diode

Maximum Supply Current (T858 @ 50W, T859 @ 100W):

Standby	..	.. 50mA
Transmit	- T858	.. 11A
	- T859	.. 22A

1. dBi denotes the level of intermodulation product relative to the interfering signal.

Spurious Emissions:

Conducted	- Transmit ..	-36dBm to 1GHz
		-30dBm to 4GHz
	- Standby ..	-57dBm to 1GHz
		-47dBm to 4GHz
Radiated	- Transmit ..	-36dBm to 1GHz
		-30dBm to 4GHz
	- Standby ..	-57dBm to 1GHz
		-47dBm to 4GHz

Operating Temperature Range .. -30°C to +60°C

Dimensions:

Height		.. 191mm
Width	- T858	.. 60mm
	- T859	.. 120mm
Length		.. 340mm

Weight:

T858	..	3.1kg
T859	..	3.5kg

1.3 Product Codes

Output Power (W)	50			100		
Frequency Range (MHz)	400-440	440-480	480-520	400-440	440-480	480-520
PA Type: T858-	10	20	30			
PA Type: T859-				10	20	30

2 T858/859 Circuit Operation

This section provides a basic description of the circuit operation of the T858 and T859 power amplifiers.

Refer to Section 5 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components.

The following topics are covered in this section.

2.1 Introduction

T858	0.7-1W	2-3dB	2W	8-10W	20-30W	35-40W	60-70W
T859	0.7-1W	2dB	5W	15-20W	40-50W	60-70W	105-120W
T878	0.7-1.8W	4dB	5W		20-35W	35-40W	60-80W

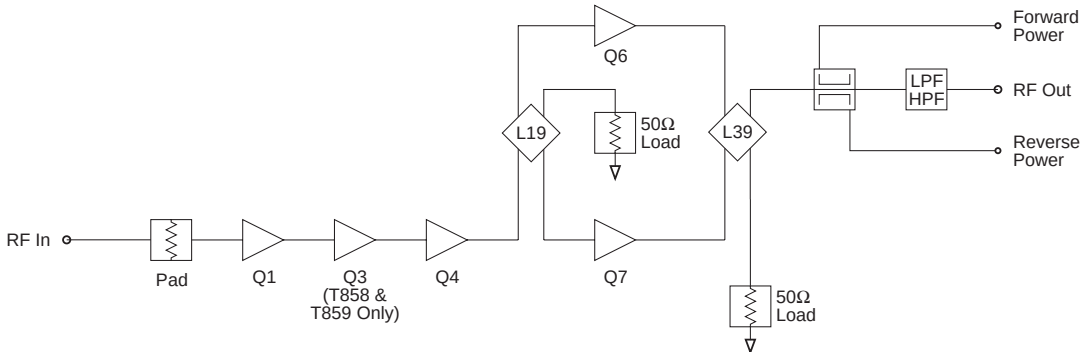


Figure 2.1 T858/859 High Level Block Diagram

The T858 and T859 comprise a five-stage RF power amplifier, the final two stages of which are combined, and extensive control circuitry.

The configuration of each of the main circuit blocks may be seen on a functional level in Figure 2.1.

2.2 RF Circuitry

(Refer to the RF section circuit diagram in Section 5.)

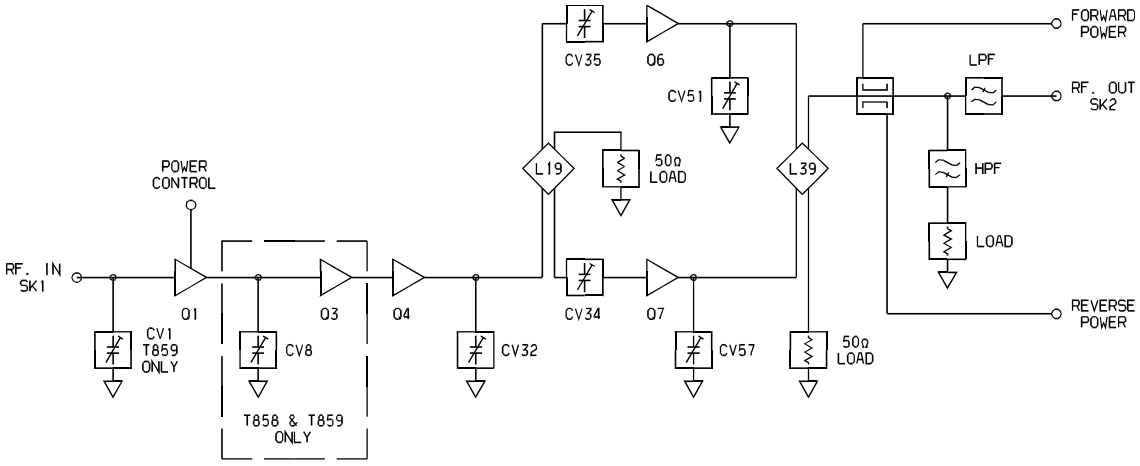


Figure 2.2 T858/859 RF Circuitry Block Diagram

The driver stage of the T858/859 consists of a three-stage transistor amplifier (Q1, Q3 & Q4) which delivers 30W in the T858 and 50W in the T859. This signal is split via a 3dB coupler (L19) and used to drive the two final amplifiers (Q6 & Q7). The outputs from the finals are passed to the antenna socket via the harmonic filter.

The diplexer presents the final amplifiers with a good load at harmonic frequencies, which helps to achieve the expected harmonic attenuation in the output filter.

The directional coupler senses forward and reflected power, which is rectified (D1 & D2) and passed to the control circuitry for metering, alarm and power control purposes.

Power control is via a series pass transistor (Q16), which controls the supply voltage on the collector of the driver transistor (Q1).

2.3 Control Circuitry

(Refer to the control section circuit diagram in Section 5.)

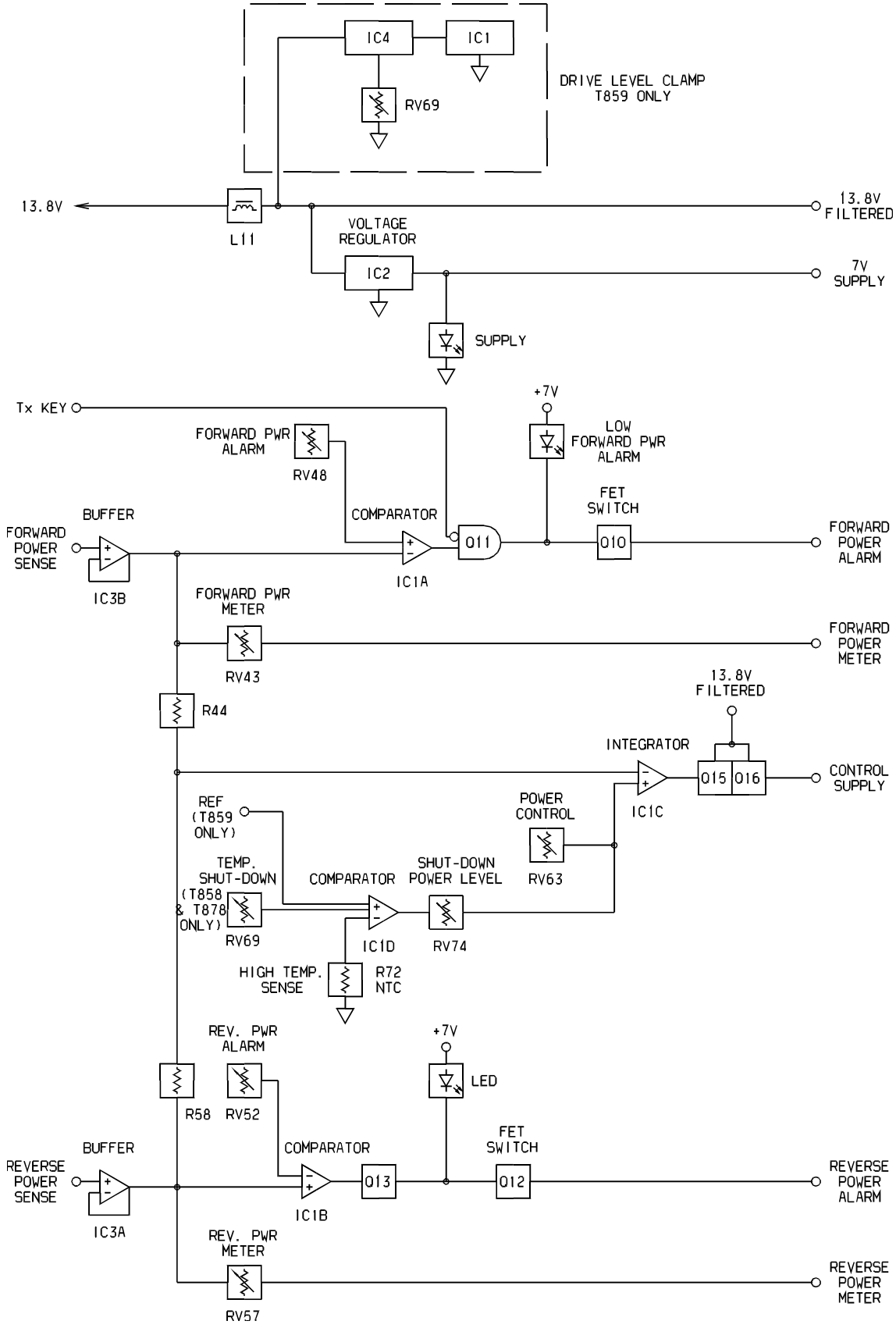


Figure 2.3 T858/859 Control Circuitry Block Diagram

2.3.1 Power Control

The DC voltages from the directional coupler representing forward and reflected power are buffered by the two voltage followers IC3 pins 1, 2 & 3 and pins 5, 6 & 7. Their outputs are summed at an integrator (IC1 pins 8, 9 & 10), which drives the series pass control element (Q16).

Forward and reflected power are summed so that, under high output VSWR, the power control turns the PA down. This is because the control loop adjusts for the same DC voltage from the directional coupler that would have been present if there were no reflected power.

2.3.2 T859 Driver Power Level

A ceiling is placed on the output power available from driver stages Q1, Q3 and Q4 to ensure final stages Q6 and Q7 are not overdriven. This is achieved by RV69 and IC4 controlling the supply voltage of power control error amplifier IC1c, which in turn limits the maximum supply voltage that can be applied to driver Q4 by power control transistor Q16.

Note: T859 PAs with serial numbers prior to 217262 do not have this feature.

2.3.3 Thermal Protection

At excessively high temperatures, the output power will automatically reduce to a preset level, thus preventing the PA from overheating.

A thermistor controlled voltage divider (R68, R72) applies a voltage to a comparator with hysteresis (IC1 pins 12, 13 & 14). In all T858 PAs and T859 PAs with serial numbers prior to 217262, the threshold of the comparator is independently set by RV69 which sets the shutdown temperature.

Note: On later model T859 PAs this threshold is fixed.

The output current from the comparator is summed into the power control network via RV74 so that the power level to which the PA must turn down may be set.

2.3.4 Forward And Reverse Power Alarms

If forward power drops below, or reverse power rises above, presettable limits, alarms may be triggered.

The alarm outputs are open drain configuration and are low under normal conditions (i.e. forward and reverse power levels are normal).

IC1 pins 1, 2 & 3 and pins 5, 6 & 7 form comparators with thresholds adjusted via RV48 and RV52 respectively. The inputs are from the forward and reverse power signals from

the directional coupler, buffered by IC3 pins 1, 2 & 3 and pins 5, 6 & 7. Thus, the power levels at which the alarms are triggered are defined by RV48 and RV52.

2.3.5 Forward And Reverse Power Metering

Forward and reverse power signals from the two IC3 buffers are available for metering purposes. The output currents are adjustable via RV43 and RV57.

2.3.6 T859 Fan Control Circuitry

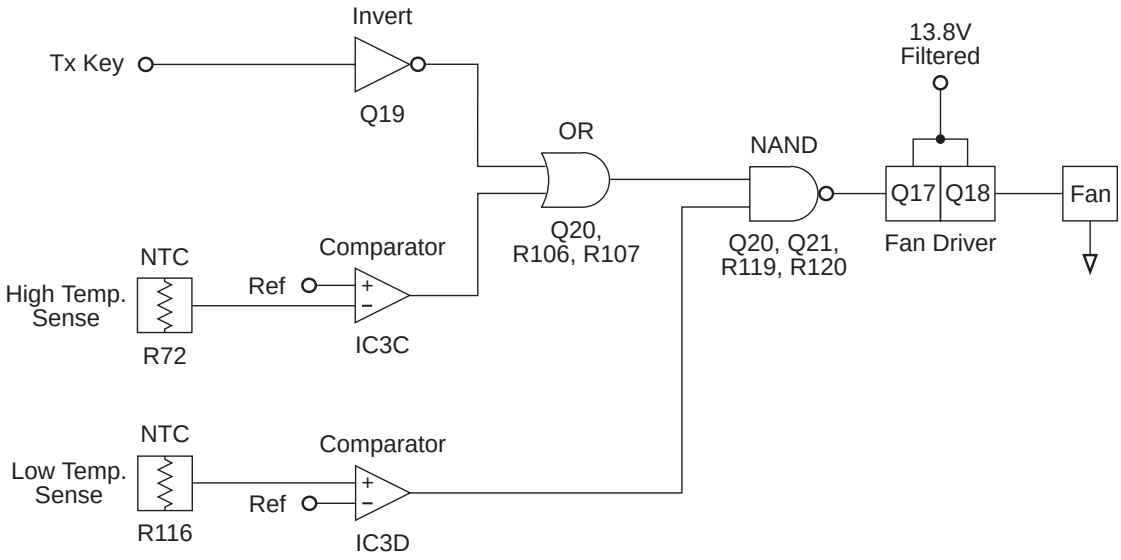


Figure 2.4 T859 Fan Control Logic Diagram

Comparator IC3 pins 8, 9 & 10 are set to trigger at heatsink temperatures greater than +70°C, and pins 12, 13 & 14 at temperatures greater than -10°C.

A logic AND function is applied to the comparator outputs by Q20 and Q21, thereby turning on the fan unconditionally (via Q17 and Q18) if the heatsink temperature exceeds +70°C.

A logic OR function is applied to the comparator IC3 pins 8, 9 & 10 and Tx KEY signals, thereby turning on the fan when the transmitter is keyed and the temperature is between -10°C and +70°C.

If the temperature drops below -10°C, Q21 is turned off, preventing either Q19 or Q20 from activating the fan.

Fan operation may be summarised as follows:

T < -10°C	- fan unconditionally turned off.
-10°C < T < +70°C	- fan turned on only when transmitter keyed.
T > +70°C	- fan unconditionally turned on.

3 T858/859 Initial Adjustment

The following section describes the full adjustment procedure to be carried out before operating the T858/859.

Refer to Section 5 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components.

The following topics are covered in this section.

3.1 Test Equipment Required

- DC power supply capable of delivering the following at 13.8V:

  T858 >16A (e.g. Tait T807).
  T859 >25A (e.g. Tait T808).

- Multimeter or DMM (e.g. Fluke 77).

- RF power meter usable 400-520MHz (e.g. Bird 43 with 5 & 100W elements for the T858 or 5 & 250W elements for the T859).

- 150W 20dB 50 ohm pad (e.g. Weinschel 40-20-34), or other suitable load.

- 300W 3dB 50 ohm pad (e.g. Weinschel 40-3-34).

- 'BNC' to 'N' type adaptors (e.g. Amphenol, Greenpar).

- Appropriate trimming tools.

- Special connector 50 ohm BNC to SMC female.

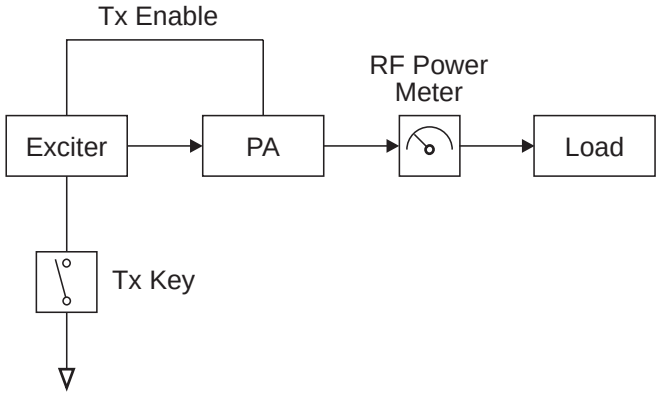


Figure 3.1 Test Equipment Set-up

3.2 Preliminary Checks

Check for short circuits between the positive rail and earth.

Set up the test equipment as in Figure 3.1.

Connect the T858/859 to a 13.8V DC supply.

Check that the quiescent current is approximately 45mA.

To key the transmitter, earth the key line (D Range pin 13) on the exciter.

Check that the power supply is still at 13.8V under load.

Check that the regulated power control supply is approximately 7V (pin 1 of IC2).

Note: The output power and alarm levels should be set with the cover shield on. If the cover is removed for other adjustment procedures, make a final check of the output power and alarm levels with the cover shield on.

3.3 RF Alignment

T859 Only: For sets with serial numbers following 217262, set RV69 (driver power level) fully clockwise.

Preset all trimmers as shown in Figure 3.1.

Set RV63 (power control) fully clockwise.

Key on the drive source.

T859 Only: Adjust CV1 for maximum output.

Adjust CV8 for maximum output.

Adjust CV32 for maximum output.

Adjust CV51 and CV57 for maximum output.

Adjust CV34 and CV35 for maximum output.

Recheck all settings. The power output should exceed:

T858	60W
T859	110W.

T859 Only: For sets with serial numbers following 217262, adjust RV69 (driver power level) until the output power drops to 110W.

Adjust RV63 to reduce the power output to the required level (e.g. 50W for T858, 100W for T859).

3.3.1 Tuning Control Settings

After alignment the settings of the tuning controls should approximate those shown in Figure 3.2

	450MHz	485MHz	520MHz
CV32, CV51, CV57			
CV34, CV35			
CV8, CV1			

Figure 3.2 T858/859 Tuning Control Settings

3.3.2 Tuning For Best Efficiency

Retune CV32, CV51 and CV57 towards maximum capacitance to obtain minimum supply current, but do not exceed a maximum drop of 0.5A per control.

Check that the supply current is:

T858 <12A for 50W output power
T859 <22A for 100W output power.

Note: These control settings are normally very close to minimum supply current. If the current is reduced too far, maximum power output will drop and 2f rejection may degrade.

3.4 Setting The Output Power

Caution: **If the temperature shutdown power level has not yet been set or is unknown, check that the unit does not overheat while setting the output power.**

Note 1: Cables and connectors can easily cause a power loss of several watts if either too long or poorly terminated. Always use the shortest possible lead between the T858/859 and power meter.

Note 2: With the T858/859 partially withdrawn from the rack frame for tuning, the T006-80 (formerly TA-068) lead is required to connect the T858/859 to the T857 exciter.

Note 3: The actual power used may be limited by regulatory requirements.

Connect the exciter output to the PA input via a thru-line wattmeter with a 5W full scale reading. Special SMC/BNC leads will be required.

Connect an RF power meter to the PA output. Set the front panel power control preset (RV63) fully clockwise.

Key on the drive source.

Check that the exciter power is 700mW to 1.3W.

Check that the power output exceeds:

T858	60W
T859	110W

Adjust RV63 to reduce the power output to the required level (e.g. 50W for T858, 100W for T859).

3.5 Limiting The Maximum Output Power (T858 Only)

Refer to the control section circuit diagram in Section 5.

Two chip resistors are provided on the PCB if there is a requirement to limit the maximum output power. These two resistors are normally bypassed by a section of track.

Cut the track as shown in Figure 3.3 to bring R99 & R100 into circuit.

Set the maximum output power by selecting the values of R99 & R100 according to the table on the control section circuit diagram.

Note: The values of R99 & R100 are factory set for 50W maximum output power.

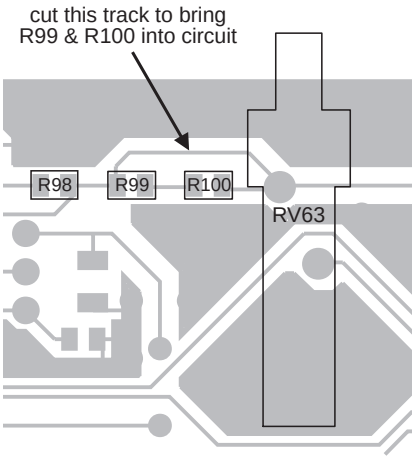


Figure 3.3 Modifications To Limit Maximum Output Power

3.6 Temperature Shutdown (T858 Only)

Note 1: The temperature shutdown circuit is factory set to approximately 130°C and 20W. RV69 and RV74 should not be readjusted if normal operation is required.

Note 2: This Section applies ***only*** to T858 PAs, and T859 PAs with serial numbers prior to 217262.

Power up the T858 and adjust the power control pot (RV63) for the normal operating power level.

Turn the temperature set pot. (RV69) fully anticlockwise to avoid RF power cycling between the levels set by RV63 and RV74.

Apply heat to the NTC (R72) with the tip of a soldering iron.

Adjust the shutdown power level pot. (RV74) to the desired level. For continuous operation during fault conditions, set the shutdown power to 20W

Adjust RV69 so that the voltage at IC1 pin 13 is 380mV.

3.7 Temperature Shutdown (T859 Only)

Note 1: The temperature shutdown circuit is factory set to approximately 130°C and 40W. RV74 should not be readjusted if normal operation is required. Temperature adjustment is not provided on the T859.

Note 2: This Section applies ***only*** to T859s with serial numbers from 217263 onwards. For T859s with serial numbers prior to this refer to Section 3.6 above.

Power up the T859 and adjust the drive level clamp (RV69) and the power control pot (RV63) for the normal operating power level.

Apply heat to the NTC (R72) with the tip of a soldering iron.

Adjust the shutdown power level pot. (RV74) to the desired level. For continuous operation during fault conditions, set the shutdown power to 40W

3.8 Remote Forward Power Meter Calibration

If a remote meter is connected, adjust the forward power meter calibration control (RV43) for the remote reading to agree with the RF power meter reading.

3.9 Remote Reverse Power Meter Calibration

If a remote meter is connected, connect a 50 ohm 3dB pad (with the output open circuit) to the PA output.

Apply RF drive and Tx key.

Adjust the reverse power meter calibration control (RV57) for a quarter of the forward power reading.

3.10 Setting Alarm Levels

Note: If forward and reverse power metering is being used, set up their calibration (Section 3.8 and Section 3.9) before setting the alarm levels.

3.10.1 Forward Power

Power up the T858/859 and adjust the front panel power control (RV63) so that the output power is at the alarm level required (e.g. 40W if the PA normally oper-

ates at 50W).

Adjust the forward power alarm set control (RV48) so that the forward power alarm LED lights.

Check the alarm level setting by adjusting the power up and down and observing the alarm LED. A few watts hysteresis can be expected.

Readjust RV63 for the normal operating level.

Note: Remote indication is available at D-range pin 3.

3.10.2 Reverse Power

Power up the T858/859 and adjust the front panel power control (RV63) for the normal operating power level.

Place a known mismatch of the required value (e.g. 5:1 VSWR) and adjust the reverse power alarm set control (RV52) so that the reverse power alarm LED lights.

Example: A VSWR of 3:1 can be simulated by connecting an unterminated 3dB pad to the PA output. This will result in a return loss of 6dB.

Note: Remote indication is available at D-range pin 4.

4 T858/859 Fault Finding

The following test procedures and fault finding flow charts may be used to help locate a hardware problem, however they are by no means a complete fault finding procedure. If the fault still exists after having progressed through them in a logical manner, contact your nearest authorised Tait Dealer or Service Centre. Further assistance may be obtained from the Customer Support Group, Radio Infrastructure Division, Tait Electronics Ltd, Christchurch, New Zealand.

Refer to Section 5 where the parts lists, grid reference index and diagrams will provide detailed information on identifying and locating components.

The following topics are covered in this section.

4.1 Visual Checks

Remove the cover from the T858/859 and inspect the PCB for damaged or broken components, paying particular attention to the surface mounted devices (SMD's).

Check for defective solder joints. If repair or replacement is considered necessary, refer to Sections 3, 4 and 5 of Part A.

4.2 Component Checks

If a transistor is suspected of faulty operation, an indication of its performance can be assessed by measuring the forward and reverse resistance of the junctions. First make sure that the transistor is not shunted by some circuit resistance (unless the device is completely desoldered). A 20k ohm/V or better multimeter should be used for taking the measurements, using only the medium or low resistance ranges.

The collector current drawn by multi-junction transistors is a further guide to their performance.

If an IC is suspect, the most reliable check is to measure the DC operating voltages. Due to the catastrophic nature of most IC failures, the pin voltages will usually be markedly different from the recommended values in the presence of a fault. The recommended values can be obtained from either the circuit diagram or the component data catalogue.

4.3 DC Checks

Note: No RF power is to be applied during these checks.

Check that +13.8V is present on the collectors of Q3, Q4, Q5, Q6 and Q7. Make this measurement when the transmitter is not keyed.

Check that approximately 12-13V is present on the collector of Q1 (in the T859 the level is dependent on RV69 being set to maximum).

T858 Only Check that +13.8V is present at pin 4 of IC1 and IC3.

T859 Only Check that +13.8V is present at pin 4 of IC3.

Check that approximately +12V is present at pin 4 of IC1 (the level is dependent on RV69 being set to maximum).

Check that +7.0V is present at the output of regulator IC2.

4.4 RF Checks

4.4.1 General

In circuit RF levels around Q1 and Q3 may be measured with an RF probe on which the earth lead has been shortened to a minimum (i.e. 13mm); refer to the PA Fault Finding Charts (Section 4.6.1 or Section 4.6.3 as appropriate). All other stages must be measured with a power meter at the 50 ohm points in the circuit.

For problems with the power control circuitry, refer to the Power Control Fault Finding Charts (Section 4.6.2 or Section 4.6.4 as appropriate).

4.4.2 PA Faults

If a PA fault has occurred, or is suspected, it is easier to find if the various stages are isolated by use of the test breaks (refer to Figure 4.1) and each stage analysed individually.

Eight 50 ohm test break points have been included throughout the RF circuitry to enable individual transistor stages to be tested.

Test point A can be accessed from the input drive plug on the front panel and test point H from the N connector on the rear. No desoldering is required for these two test points. Testing may be performed from test break points B-G by desoldering the appropriate wireline and soldering a 50 ohm test lead in its place or to the wireline as appropriate in order to inject and / or measure RF power.

T858/859 Test Break Point Location

replace A4 pages D4.5/D4.6 with A3 pages D4.5/D4.6, file name 8500d4.101

T858/859 Test Break Point Location

replace A4 pages D4.5/D4.6 with A3 pages D4.5/D4.6, file name 8500d4.101

4.5 Voltage Chart

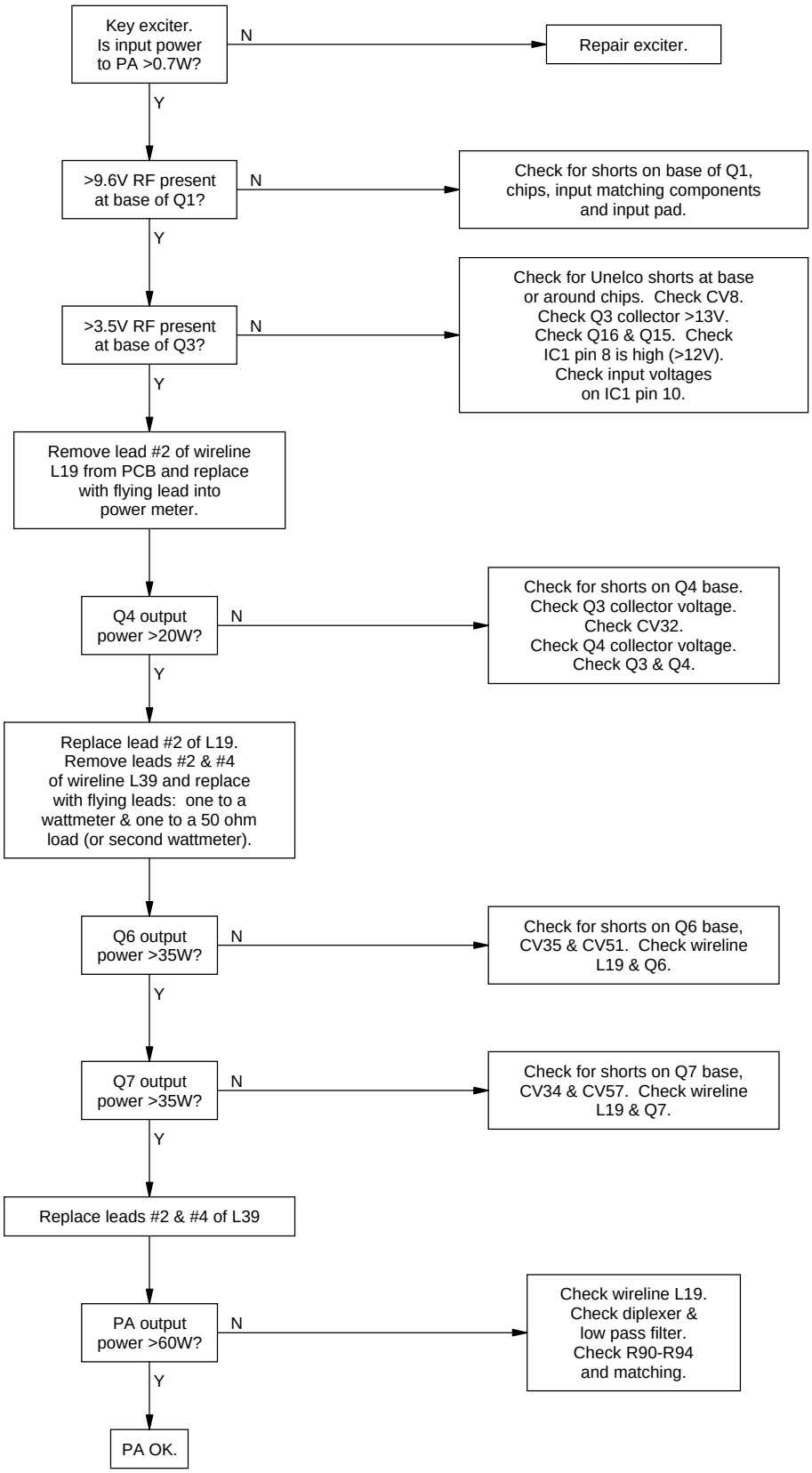
Test conditions:

- typical DC voltages measured with Fluke 77 DVM
- supply voltage 13.8V at socket
- transmitter unkeyed
- allow ±20% for spread of transistor characteristics.

Device	Emitter	Base	Collector
Q1	0.0V	0.0V	13.0V
Q3	0.0V	0.0V	13.8V
Q4	0.0V	0.0V	13.8V
Q6	0.0V	0.0V	13.8V
Q7	0.0V	0.0V	13.8V
Q11	1.8V	2.2V	5.9V
Q13	0.0V	0.0V	5.9V
Q15	13.0V	13.6V	13.6V
Q16	13.8V	13.6V	13.0V

4.6 Fault Finding Charts

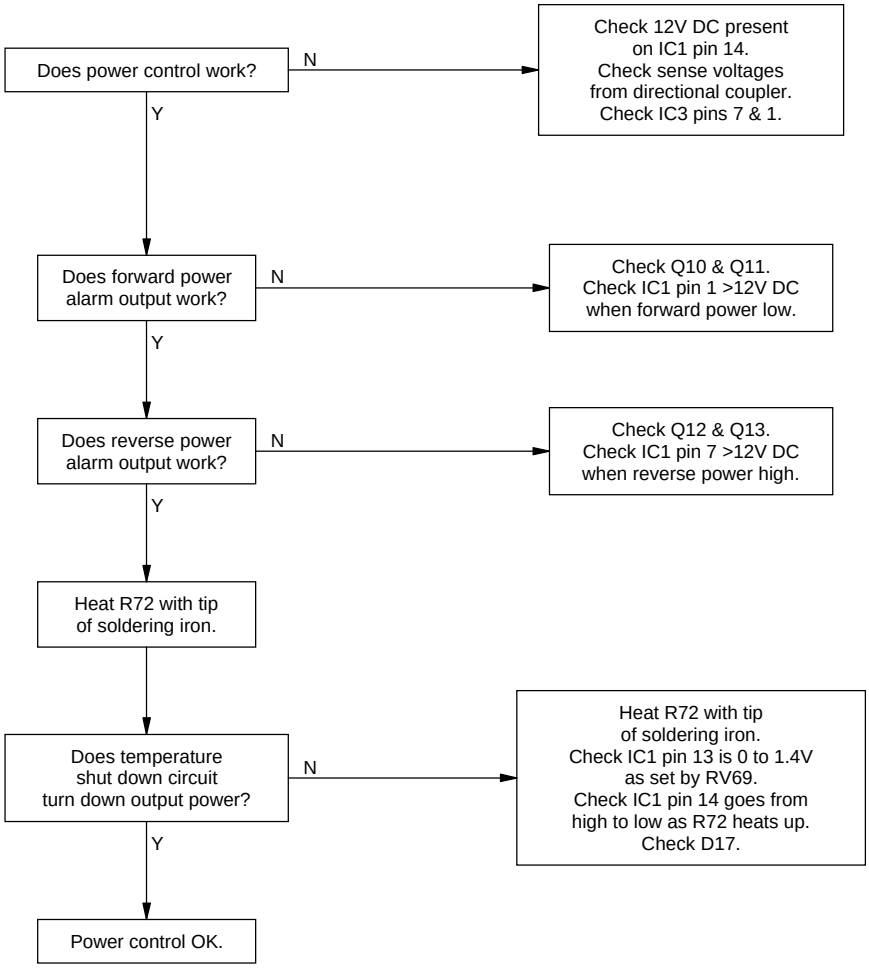
4.6.1 T858 PA



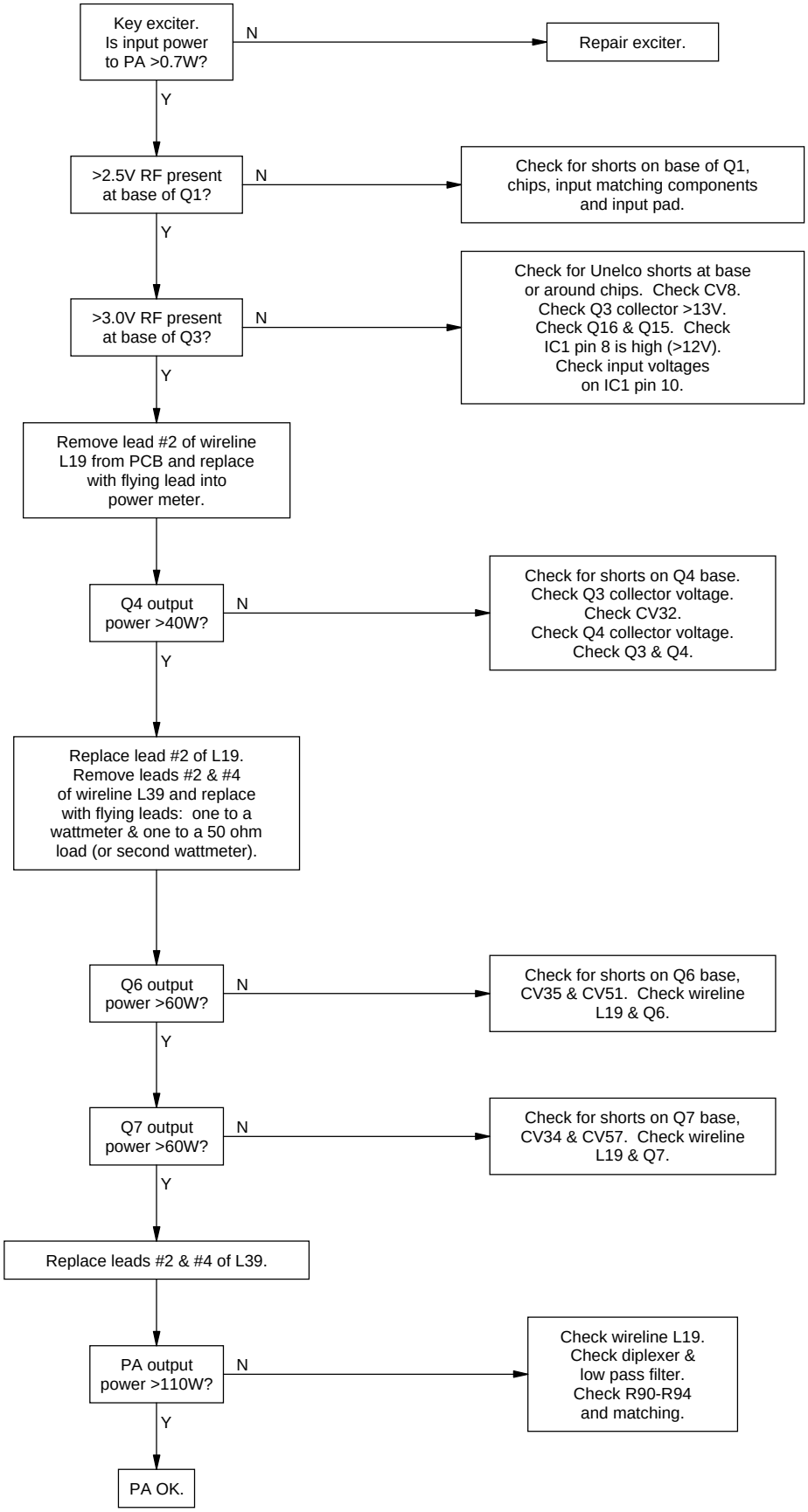
4.6.2 T858 Power Control

Approximate voltages under normal operating conditions:

Measurement	Output Power	
	20W	50W
forward power at "FWD-PWR" pad (beside IC3)	2.5V	4V
RV63 / R64 (RV63 wiper)	1.4V	2.1V



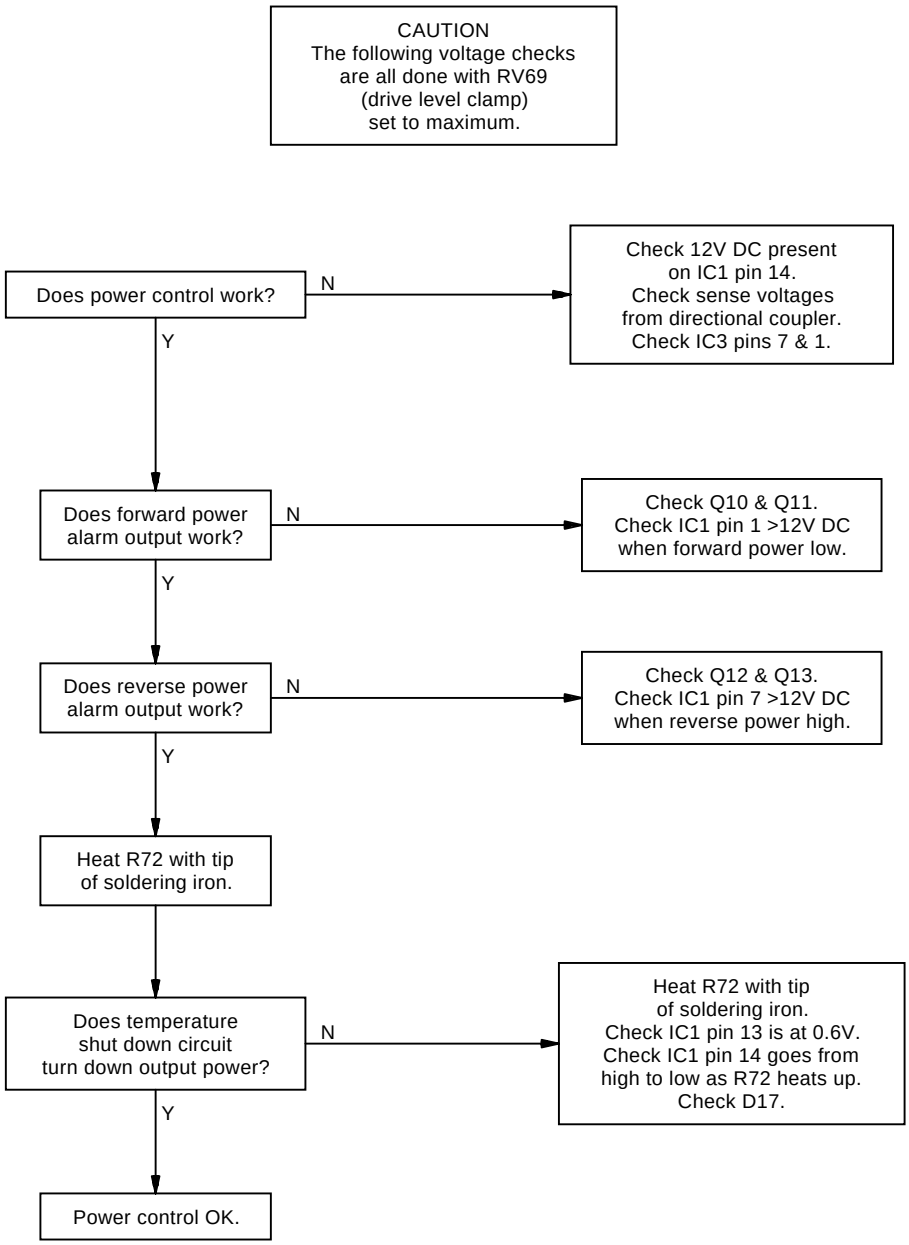
4.6.3 T859 PA



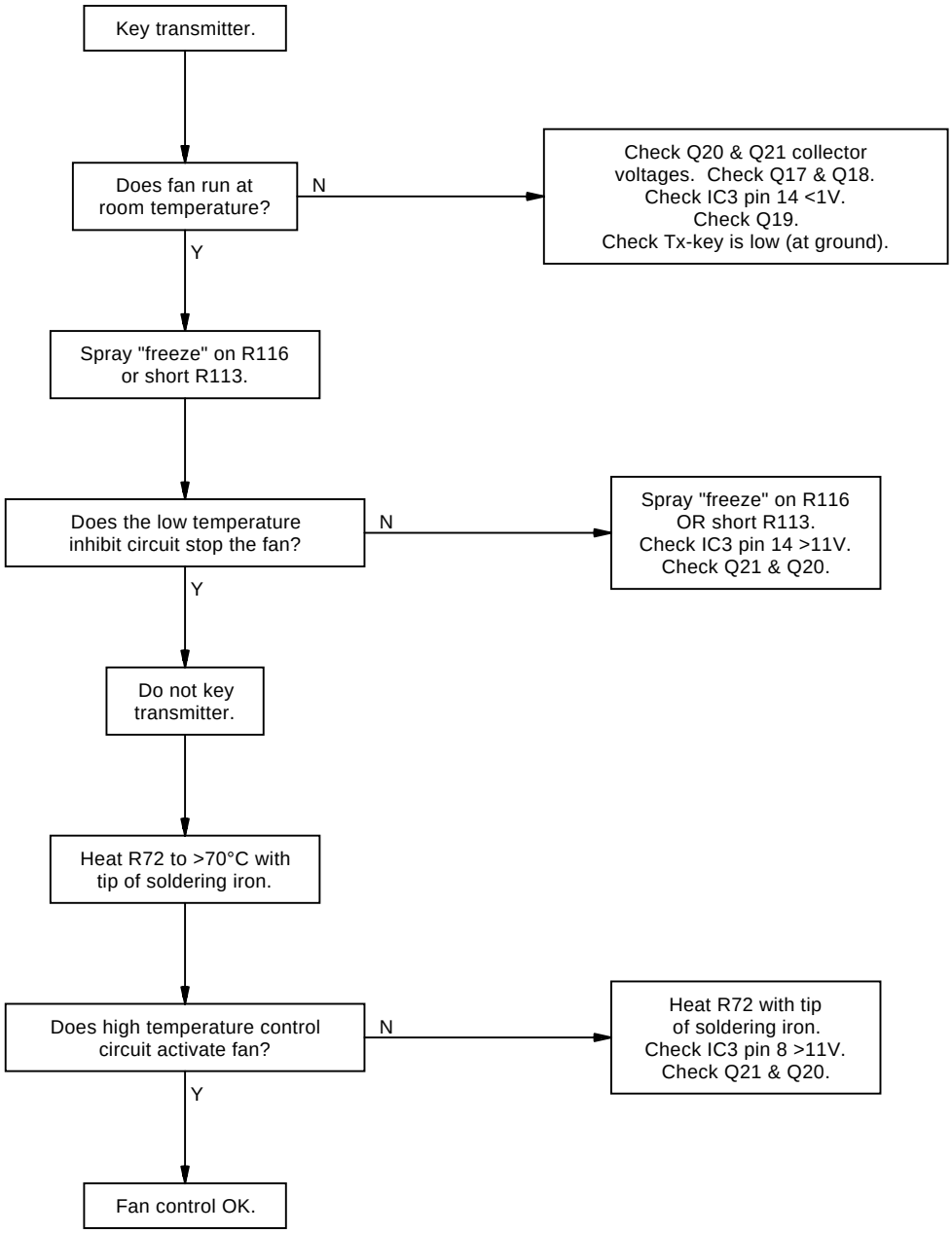
4.6.4 T859 Power Control

Approximate voltages under normal operating conditions:

Measurement	Output Power	
	20W	50W
forward power at "FWD-PWR" pad (beside IC3)	2.5V	4V
RV63 / R64 (RV63 wiper)	1.4V	2.1V



4.6.5 T859 Fan Control Circuitry



5 T858/859 PCB Information

This section provides parts lists, a grid reference index, PCB layouts and circuit diagrams for the T858 and T859 power amplifiers.

This section contains the following information.

5.1 Introduction

PCB Identification

All PCBs are identified by a unique 10 digit “internal part number” (IPN), e.g. 220-12345-00, which is screen printed onto the PCB (usually on the top side). The last 2 digits of this number define the issue status, which starts at 00 and increments through 01, 02, 03, etc. as the PCB is updated. Some issue PCBs never reach full production status and are therefore not included in this manual. A letter following the 10 digit IPN has no relevance in identifying the PCB for service purposes.

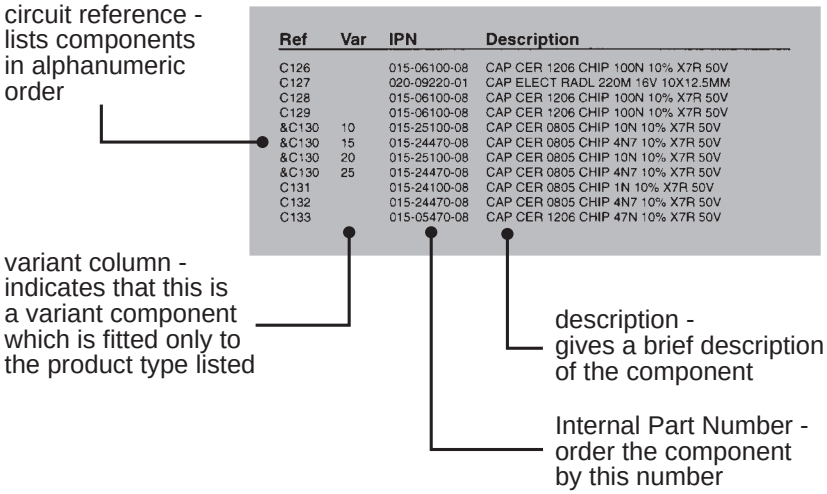
Note: It is important that you identify which issue PCB you are working on so that you can refer to the appropriate set of PCB information.

Parts Lists

The 10 digit numbers (000-00000-00) in this Parts List are “internal part numbers” (IPNs). Your spare parts orders can be handled more efficiently if you quote the IPN and provide a brief description of the part.

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns, as shown below:



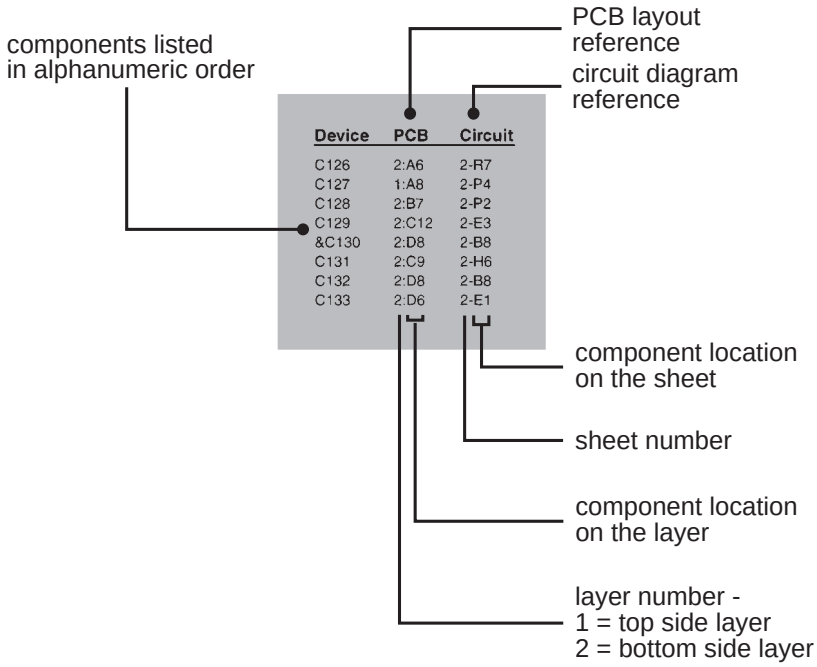
The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Variant Components

A variant component is one that has the same circuit reference but different value or specification in different product types. Variant components are indicated by a character prefix such as “&”, “#” or “=”.

Grid Reference Index

To assist in locating components and labelled pads on the PCB layouts and circuit diagrams, a component grid reference index has been provided. This index lists the components and pads in alphanumeric order, along with the appropriate alphanumeric grid references, as shown below:



Using CAD Circuit Diagrams

Reading a CAD circuit diagram is similar to reading a road map, in that both have an alphanumeric border. The circuit diagrams in this manual use letters to represent the horizontal axis, and numbers for the vertical axis. These circuit diagram “grid references” are useful in following a circuit that is spread over two or more sheets.

When a line representing part of the circuitry is discontinued, a reference will be given at the end of the line to indicate where the rest of the circuitry is located. The first digit refers to the sheet number and the last two characters refer to the location on that sheet of the continuation of the circuit (e.g. 1-D4).

If more than one line is represented (indicated by a double thickness line), a dot with a reference label will follow the route each individual line represents.

5.2 T858 PA PCB

This section contains the following information.

T858 Parts List (IPN 220-01141-01)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

C33,C52 & C58	(Low Band) changed from 8p2 (029-01820-02) to 10p (89/06-341).
R67	Changed from 4K7 (036-14470-00) to 10K (89/06-341).
R99	2K7 added in series with RV63 (89/06-341).
R100	4K7 added in series with RV63 (89/06-341).
C62	(Low Band) changed from 3p3 (015-01330-02) to 3p9 (89/07-411).
C63 & C65	(Low Band) changed from 10p (029-02100-01) to 12p (89/07-411).
C66	(Low Band) changed from 4p7 (029-01470-02) to 5p6 (89/07-411).
C70	(Low Band) changed from 3p9 (015-01390-02) to 4p7 (89/07-411).
L42	(Low Band) changed from 1T/3.0mm (052-08330-10) to 1T/4.0mm (89/07-411).
L45	(Low Band) changed from 2T/3.5mm (052-08335-20) to 2T/4.5mm (89/07-411).
L46	(Low Band) changed from 2T/4.0mm (052-08330-10) to 2T/4.5mm (89/07-411).
L47	(Low Band) changed from 2T/3.5mm (052-08335-20) to 2T/4.0mm (89/07-411).
L14,L15 & L23	Inductor Tait No.545 added. To remove heat sources from PCB (89/08-438).
C33,C52 & C58	(Mid Band) changed from 3p3 (015-01330-02) to 3p9 Case Mica type (89/08-460).
R47	Changed from 100K (036-16100-00) to 47K. To improve control range of forward power alarm (89/09-506).
R93	Change from 10K (036-15100-00) to 4K7. To raise limits of reverse power alarm switching point (3/10/89).
L27 & L31	Changed from 1.5T/6.0mm (052-08160-15) to 2.5T/6.0mm. To reduce heating in base ferrite beads (89/10-568).
R1 & R3	(Low Band) changed from 270e (030-03270-00) to 150e. To reduce power into the driver (90/07-341).
R2	(Low Band) changed from 18e (030-02180-00) to 39e. To reduce power into the driver (90/07-341).
L1	(Low Band) changed from 1T/3.0mm (052-08330-10) to 1T/4.0mm . To meet rated power (90/10-534).
C80 & C86	150p deleted. To prevent 800kHz instability (94/05-234).
R11	Changed from 100e (030-03100-00) to SOT (Min value 22e). To reduce gain in drive stage (96/07-7104).

Ref	Var	IPN	Description
C1		015-02120-02	CAP CER HIQ 1210 CHIP 12P 5% NPO 200V
C2		015-02180-02	CAP CER HIQ 1210 CHIP 18P 5% NPO 200V
C3		015-02220-02	CAP CER HIQ 1210 CHIP 22P 5% NPO 200V
C6		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C7		015-02150-02	CAP CER HIQ 1210 CHIP 15P 5% NPO 200V
CV8		028-02200-01	CAP TRIM 4/20P N750 TOP ADJ RED MUR TZ
C11		015-02220-02	CAP CER HIQ 1210 CHIP 22P 5% NPO 200V
C12		015-02180-02	CAP CER HIQ 1210 CHIP 18P 5% NPO 200V
C15		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C16		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C17		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C18		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C19		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C20		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C22		015-02680-02	CAP CER HIQ 1210 CHIP 68P 5% NPO 200V
C23		029-02270-02	CAP MICA 5MM CASE 27P 5%
C24		029-02330-02	CAP MICA 5MM CASE 33P 5%
*C27	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C27	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C27	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C28	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C28	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C28	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
C29		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV32		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C33	LOW	029-02100-02	CAP MICA 5MM CASE 10P 5%
*C33	MID	029-01390-02	CAP MICA 5MM CASE 3P9 5%
*C33	HI		NOT FITTED
CV34		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
CV35		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
C36		029-02270-02	CAP MICA 5MM CASE 27P 5%
C37		029-02270-02	CAP MICA 5MM CASE 27P 5%
C40		029-02270-02	CAP MICA 5MM CASE 27P 5%
C41		029-02270-02	CAP MICA 5MM CASE 27P 5%
*C42	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C42	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C42	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C43	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C43	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C43	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C45		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C46		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
*C47	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C47	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C47	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C49	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C49	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C49	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C50		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV51		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C52	LOW	029-02100-02	CAP MICA 5MM CASE 10P 5%
*C52	MID	029-01390-02	CAP MICA 5MM CASE 3P9 5%
*C52	HI		NOT FITTED
C54		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C55		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C56		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV57		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C58	LOW	029-02100-02	CAP MICA 5MM CASE 10P 5%
*C58	MID	029-01390-02	CAP MICA 5MM CASE 3P9 5%
*C58	HI		NOT FITTED
C60		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C61		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
*C62	LOW	015-01390-02	CAP CER HIQ 1210 CHIP 3P9 5% NPO 200V
*C62	MID	015-01330-02	CAP CER HIQ 1210 CHIP 3P3 5% NPO 200V
*C62	HI	015-01330-02	CAP CER HIQ 1210 CHIP 3P3 5% NPO 200V
*C63	LOW	029-02120-01	CAP MICA 10MM CASE 12P 5%
*C63	MID	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C63	HI	029-02100-01	CAP MICA 10MM CASE 10P 10%

Ref	Var	IPN	Description
*C65	LOW	029-02120-01	CAP MICA 10MM CASE 12P 5%
*C65	MID	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C65	HI	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C66	LOW	029-01560-02	CAP MICA 5MM CASE 5P6 5%
*C66	MID	029-01470-02	CAP MICA 5MM CASE 4P7 5%
*C66	HI	029-01470-02	CAP MICA 5MM CASE 4P7 5%
C67		015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C68		015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
*C70	LOW	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
*C70	MID	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
*C70	HI	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
C72		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C73		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C76		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C77		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C78		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C81		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C84		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C85		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C87		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C90		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C91		025-08100-02	CAP TANT BEAD 10M 10% 16V
C92		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C93		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C95		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C96		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C97		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C98		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C99		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C100		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C101		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C102		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C103		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C104		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C105		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C106		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C107		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C108		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C109		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C110		015-01470-02	CAP CER HIQ 1210 CHIP 4P7 5% NPO 200V
C111		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C112		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C113		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
D1		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D2		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D3		001-00011-60	(S) DIODE SR2607 6A/30V
D5		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCTH
D10		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
D11		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D13		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCTH
D17		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COMCTH
IC1		002-10003-24	(S) IC SMD 324 QUAD OP AMP SO14
IC2		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC3		002-10003-58	(S) IC SMD LM358 DUAL OP AMP
*L1	LOW	052-08340-10	COIL A/W 1T/4.0MM SMD 0.8MM WIRE
*L1	MID	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
*L1	HI	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L2		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L3		065-00010-04	BEAD FERRITE F8 4X2X5MM
L5		065-00010-04	BEAD FERRITE F8 4X2X5MM
L6		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L7		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L8		065-00010-04	BEAD FERRITE F8 4X2X5MM
L11		065-00010-04	BEAD FERRITE F8 4X2X5MM
L12		065-00010-04	BEAD FERRITE F8 4X2X5MM
L13		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L14		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L15		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L16		065-00010-04	BEAD FERRITE F8 4X2X5MM
L17		065-00010-04	BEAD FERRITE F8 4X2X5MM
L18		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
L19		051-00005-39	COUPLER WIRELINE TAIT COIL DWG NO 539
L21		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L22		065-00010-04	BEAD FERRITE F8 4X2X5MM
L23		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L25		052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L26		052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L27		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L28		065-00010-04	BEAD FERRITE F8 4X2X5MM
L31		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L32		065-00010-04	BEAD FERRITE F8 4X2X5MM
L35		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
L36		065-00010-04	BEAD FERRITE F8 4X2X5MM
L37		065-00010-04	BEAD FERRITE F8 4X2X5MM
L38		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
L39		051-00005-39	COUPLER WIRELINE TAIT COIL DWG NO 539
L41		056-00021-04	IND FXD 330NH AXIAL
*L42	LOW	052-08340-10	COIL A/W 1T/4.0MM SMD 0.8MM WIRE
*L42	MID	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
*L42	HI	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L43		052-08335-10	COIL A/W 1T/3.5MM SMD 0.8MM WIRE
*L45	LOW	052-08345-20	COIL A/W 2T/4.5MM SMD 0.8MM WIRE
*L45	MID	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
*L45	HI	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE

Ref	Var	IPN	Description
*L46	LOW	052-08345-20	COIL A/W 2T/4.5MM SMD 0.8MM WIRE
*L46	MID	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L46	HI	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L47	LOW	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L47	MID	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
*L47	HI	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
L49		056-00021-04	IND FXD 330NH AXIAL
L51		056-00021-04	IND FXD 330NH AXIAL
L52		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
Q1		000-00022-70	(S) XSTR SD1134 NPN STUD MTG UHF PWR 2W
Q3		000-00022-75	(S) XSTR SD1433 NPN STUD MTG UHF PWR 10W
Q4		000-00022-80	(S) XSTR SD1488 NPN 6LFL UHF PWR 40W
Q6		000-00022-80	(S) XSTR SD1488 NPN 6LFL UHF PWR 40W
Q7		000-00022-80	(S) XSTR SD1488 NPN 6LFL UHF PWR 40W
Q10		000-00020-70	(S) XSTR BS170 JFET TO-92 SMALL SIG
Q11		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q12		000-00020-70	(S) XSTR BS170 JFET TO-92 SMALL SIG
Q13		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q15		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q16		000-00030-95	(S) XSTR 2N6107 PNP TO-220 AF PWR
*R1	LOW	032-33150-02	RES M/F PWR 150E 5% 1W 8X2.5MM 12MML/S
*R1	MID	030-03270-00	RES FILM 270E 5% 0.25W 7X2.5MM
*R1	HI	030-03470-00	RES FILM 470E 5% 0.25W 7X2.5MM
*R2	LOW	032-32390-02	RES M/F PWR 39E 5% 1W 8X2.5MM 12MML/S
*R2	MID	030-02180-00	RES FILM 18E 5% 0.25W 7X2.5
*R2	HI	030-02120-00	RES FILM 12E 5% 0.25W 7X2.5W
*R3	LOW	030-03150-00	RES FILM 150E 5% 0.25W 7X2.5MM
*R3	MID	030-03270-00	RES FILM 270E 5% 0.25W 7X2.5MM
*R3	HI	030-03470-00	RES FILM 470E 5% 0.25W 7X2.5MM
R7		030-02100-00	RES FILM 10E 5% 0.25W 7X2.5MM
R8		032-33100-00	RES M/F PWR 100E 5% 1W 10X4MM
R11		030-03100-00	RES FILM 100E 5% 0.25W 7X2.5MM
R30		030-03100-00	RES FILM 100E 5% 0.25W 7X2.5MM
R31		030-03100-00	RES FILM 100E 5% 0.25W 7X2.5MM
R32		030-02820-00	RES FILM 82E 5% 0.25W 7X2.5MM
R33		030-02820-00	RES FILM 82E 5% 0.25W 7X2.5MM
R36		036-13680-00	RES M/F 0805 CHIP 680E 5%
R38		036-17100-00	RES M/F 0805 CHIP 1M 5%
R39		036-16100-00	RES M/F 0805 CHIP 100K 5%
R42		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV43		042-05470-09	RES PRESET 50K CERMET 9.5MM SQ FLAT
R44		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R47		036-15470-00	RES M/F 0805 CHIP 47K 5%
RV48		042-04500-08	RES PRESET 5K CERMET 9.5MM SQ FLAT
R49		036-13680-00	RES M/F 0805 CHIP 680E 5%
R50		036-13680-00	RES M/F 0805 CHIP 680E 5%
RV52		042-04500-08	RES PRESET 5K CERMET 9.5MM SQ FLAT
R55		036-17100-00	RES M/F 0805 CHIP 1M 5%
R56		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV57		042-05470-09	RES PRESET 50K CERMET 9.5MM SQ FLAT
R58		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R61		036-13220-00	RES M/F 0805 CHIP 220E 5%
R62		036-14100-00	RES M/F 0805 CHIP 1K 5%
RV63		044-04200-03	RES PRESET MULTITURN 2K 10T PNL MTG
R64		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R67		036-15100-00	RES M/F 0805 CHIP 10K 5%
R68		036-14470-00	RES M/F 0805 CHIP 4K7 5%
RV69		042-04220-02	RES PRESET 2K CERMET 9.5MM SQ FLAT
R72		045-04470-01	RES NTC 4K7 20% 5MM DISC
R73		036-16220-00	RES M/F 0805 CHIP 220K 5%
RV74		042-05100-10	RES PRESET 10K CERMET 9.5MM SQ FLAT
R77		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R78		036-14100-00	RES M/F 0805 CHIP 1K 5%
R80		036-13100-00	RES M/F 0805 CHIP 100E 5%
R81		036-14100-00	RES M/F 0805 CHIP 1K 5%
R82		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R83		036-14100-00	RES M/F 0805 CHIP 1K 5%
R84		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R85		036-14100-00	RES M/F 0805 CHIP 1K 5%
R86		036-14100-00	RES M/F 0805 CHIP 1K 5%
R87		036-15100-00	RES M/F 0805 CHIP 10K 5%
R88		036-15100-00	RES M/F 0805 CHIP 10K 5%
R89		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R90		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R91		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R92		036-14100-00	RES M/F 0805 CHIP 1K 5%
R93		036-15100-00	RES M/F 0805 CHIP 10K 5%
R94		036-14100-00	RES M/F 0805 CHIP 1K 5%
R95		036-14100-00	RES M/F 0805 CHIP 1K 5%
R96		036-14100-00	RES M/F 0805 CHIP 1K 5%
R97		036-14100-00	RES M/F 0805 CHIP 1K 5%
R98		036-12100-00	RES M/F 0805 CHIP 10E 5%
R99		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R100		036-14470-00	RES M/F 0805 CHIP 4K7 5%
SK1		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED

NOTE: LOW = 400-440MHZ
MID = 440-480MHZ
HI = 480-520MHZ

T858 Mechanical & Miscellaneous Parts (220-01141-01)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2, LED3 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
065-00010-20	BEAD FERRITE BALUN 4B1 PHILIPS Placed On 13.8V Cables At D Range End x1.
200-00010-05	WIRE T/C 0.5MM 10mm Lengths For Ferrite Beads x12.
201-00030-01	WIRE T/C 7/0.2MM PVC BROWN Fwd Pwr Alm. 1 x410mm.
201-00030-02	WIRE T/C 7/0.2MM PVC RED LEDs 1, 2 & 3 x20mm Each.
201-00030-03	WIRE T/C 7/0.2MM PVC ORANGE Rev Pwr Met. 1 x235mm.
201-00030-04	WIRE T/C 7/0.2MM PVC YELLOW Reverse Pwr. 1 x325mm.
201-00030-05	WIRE T/C 7/0.2MM PVC GREEN Fwd Pwr Met. 1 x265mm.
201-00030-06	WIRE T/C 7/0.2MM PVC BLUE Tx Key. 1 x410mm.
201-00030-07	WIRE T/C 7/0.2MM PVC VIOLET Rev Pwr Alm. 1 x410mm.
201-00030-09	WIRE T/C 7/0.2MM PVC WHITE Temp Sense. 1 x285mm.
201-00030-10	WIRE T/C 7/0.2MM PVC BLACK Fwd Pwr. 1 x310mm, LEDs 1, 2 & 3 x25mm Each.
201-00050-12	CABLE AUTO 152 RED 28/0.3MM PVC 13.8v. 1 x290mm, 1 x220mm.
201-00050-20	CABLE AUTO 152 BLACK 28/0.3MM PVC Ground. 1 x40mm.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 190mm SK1/Front Panel x1.
220-01141-01	PCB T858 50W PA
220-01152-00	PCB T858/859 DIRNL COUPLER
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX Connects Coax Cable To Sk1 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C Input Drive On Front Panel x1.
240-02010-54	SKT 15WAY D RANGE PNL MTG 125 DEG C Part of Installation Kit x1.
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMN
240-06010-14	CLAMP LATCHING 15 WAY D RANGE Part Of Installation Kit x1.
240-06010-15	BLOCK LATCHING 15WAY D RANGE For Securing D Range To Rear x2.
303-23117-00	COVER COMPL A2M2223/2 A2M2223/1 SIDE
303-23120-00	COVER A3M2288 HOLE BLANKING T858 On Rear Next To N Type Connector x1.
303-50005-00	CONTACT A4M2311 SPRING EARTH T858 Solders On To Shield Lid (319-01148-00) x1.
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-13085-00	HSINK A1M2275 T859 50W PA Diecast Chassis.
308-13086-00	HSINK A3M2271 2MM THICK WIRELINE T859 50W PA Wireline Heatsink x4.
316-06366-00	PNL FRT COMPL T858 PA A3M2219/2
316-85018-00	PIN A4M1397 COAX CONDUCTOR T316 346 377PA Soldered To N Type Skt x1.
318-01011-00	RAIL A2M1872 BOTTOM T377 PA Part Of Installation Kit x1.
318-01012-00	RAIL A3M1873 TOP T377 PA Part Of Installation Kit x1.
319-01147-00	SHIELD A3M2224 WALL T859 PA Goes Around Filter At N Connector End Of Board x1.
319-01148-00	SHIELD A3M2225 LID T859 PA Goes On Top Of Shield Wall (319-01148-00) Above x1.
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
319-30033-00	SPACER A4M1339 UHF PA Q1 x1, Q3 x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ Part Of Installation Kit x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ Part Of Installation Kit x4.
345-00040-16	SCREW M3X20MM PAN POZI ST BZ D Range x2.
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel x4.
349-00020-07	SCREW 4-40 X 5/16 PAN POZI TAPTITE BLACK Top Cover x18, PCB Mounting x12, N Type x4, Q16 x1, Blanking Cover x2, R89 - R91 x1 Ea., Q4, Q6 & Q7 x2 Ea.
349-00020-35	SCREW TAPTITE M3X16MM PAN POZI BZ Wireline Heatsink x4.
352-00010-29	NUT M4 NYLOC HEX For Handle x2.
352-00010-35	NUT 8-32 UNC HEX RF PWR XSTR MTG Q1 x1, Q3 x1.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Q16 x1.
356-00010-01	TAG SOLDER 3MM SHORT M6132/3.2 Q4, Q6 & Q7 x2 Each
356-00010-03	TAG SOLDER 3MM LONG M614/3.2 Loom Restraints x5. D Range Earthing x2.
360-00010-41	BUSH SHORTY BLACK HEYCO B-187-125 For Power Adjustment Hole On Front Panel x1
362-00010-07	GASKET SIL INSULATING TO-220 Q16 x1.
362-00010-13	BUSH INSULATING 1.1MM TOP HAT Q16 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS Used To Secure LEDs to Front Panel x3.
365-00011-53	LABEL WHITE RW2365/1 104*37mm SPECIAL ADHSIVE Item Description On Outside Of Box x1.

IPN	Description
365-00100-20	LABEL WHITE S/A 28X11mm QUIKSTIK RW718/4 Rev No x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8mm TAMPERMARK VOID MATT FCC ID x1, Aust DOTC Cert x2, Can DOC x1, Ser No x1.
365-01391-01	LABEL 24*12mm CE CONFORMITY
369-00010-14	TIE CABLE NYLON 100*2.6MM For Looms x6.
399-00010-56	BAG PLASTIC 200*250MM
400-00020-07	SLEEVING 2MM SIL RUBBER For Solder Tags Used as Loom Restraints. 5 x25mm. For LEDs. 6 x35mm.
410-01081-00	CRTN T800 MODULE KIWI REF22860 PRTD
410-01082-00	CRTN 10 T800 KIWI REF24417 423X410X360

IPN	Description

T858 Grid Reference Index (IPN 220-01141-01)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit
C1	1:Q9	1-C7
C2	1:Q9	1-C6
C3	1:R9	1-C6
C6	1:S8	1-D7
C7	1:Q7	1-E7
CV8	1:R7	1-E7
C11	1:R6	1-A1
C12	1:Q6	1-A1
C15	1:S5	1-B2
C16	1:S5	1-C3
C17	1:T6	1-C3
C18	1:S2	1-D3
C19	1:T3	1-D3
C20	1:S3	1-E3
C22	1:Q5	1-B2
C23	1:Q5	1-C2
C24	1:R5	1-C2
*C27	1:Q3	1-D2
*C28	1:R3	1-D2
C29	1:P3	1-E2
CV32	1:P2	1-E2
*C33	1:P3	1-F2
CV34	1:M4	1-G2
CV35	1:M8	1-G5
C36	1:L8	1-G4
C37	1:L8	1-H4
C40	1:L4	1-G2
C41	1:L3	1-H2
*C42	1:K4	1-J2
*C43	1:K3	1-J2
C45	1:K4	1-J3
C46	1:K7	1-J4
*C47	1:K8	1-J4
*C49	1:K8	1-J4
C50	1:H8	1-K5
CV51	1:H8	1-L4
*C52	1:J8	1-K4
C54	1:K6	1-K3
C55	1:K6	1-K3
C56	1:H4	1-L2
CV57	1:H3	1-L2
*C58	1:J3	1-K2
C60	1:E9	1-N4
C61	1:F9	1-N4
*C62	See Note	1-P4
*C63	1:C9	1-P5
*C65	1:C9	1-Q5
*C66	1:B8	1-Q4
C67	See Note	1-P4
C68	1:D7	1-P4
*C70	1:D6	1-Q4
C72	1:E6	1-M6
C73	1:F6	1-M5
C76	1:V10	2-B7
C77	1:V10	2-C7
C78	1:U10	2-D6
C80	1:V5	2-F7
C81	1:U2	2-G6
C84	1:V9	2-C5
C85	1:V9	2-C5
C86	1:V5	2-F4
C87	1:S2	2-G3
C90	1:V7	2-K5
C91	1:W8	2-N5
C92	1:U5	2-N5
C93	1:U5	2-N5
C95	1:V5	2-H1
C96	1:U5	2-N3
C97	1:K10	1-J1
C98	1:L10	1-J1
C99	1:U5	2-M2
C100	1:T5	2-N4
C101	1:V3	2-P2
C102	1:U8	2-Q5
C103	1:U8	2-Q4
C104	1:U7	2-R6
C105	1:T9	2-R5
C106	1:T8	2-R5
C107	1:U4	2-H8
C108	1:T4	2-J7
C109	1:T4	2-J4
C110	1:G3	1-L3
C111	1:W10	2-A7
C112	1:V9	2-B5
C113	1:V3	2-N4
D1	1:F6	1-M5
D2	1:E9	1-N4
D3	1:T2	2-A2
D5	1:W9	2-C7
D6	1:U2	2-G6
		2-G6
D10	1:W10	2-C5
D11	1:W9	2-D5
D13	1:R2	2-F3
		2-F3
D17	1:V3	2-N4
		2-M4
IC1	1:U5	2-H1
		2-F7
		2-E5
		2-N5
		2-N3
IC2	1:V8	2-K5
IC3	1:T4	2-J8
		2-H7
		2-H4
* L1	1:R9	1-C6
L2	1:P8	1-D6
L3	1:P9	1-D5
L5	1:T8	1-D8
L6	1:R7	1-D7
L7	1:P7	1-E6
L8	1:P8	1-E6
L11	1:T7	1-B4
L12	1:S5	1-B3
L13	1:R5	1-B2
L14	1:Q3	1-E2
L15	1:K8	1-K5
L16	1:S4	1-D3
L17	1:S3	1-D3
L18	1:R3	1-D2
L19	1:N6	1-F3
L21	1:P5	1-C1
L22	1:P6	1-C1
L23	1:K4	1-K2
L25	1:M3	1-F2
L26	1:M9	1-F4
L27	1:L9	1-G4
L28	1:M9	1-G4
L31	1:M3	1-G2
L32	1:M2	1-G1
L35	1:J7	1-J4
L36	1:J6	1-J4
L37	1:J5	1-J3
L38	1:J4	1-J3
L39	1:H6	1-L4
L41	1:F9	1-N4
*L42	1:D7	1-P4
L43	1:C6	1-Q4
*L45	1:C8	1-P5
*L46	1:C9	1-P5
*L47	1:B8	1-Q5
L49	1:F6	1-M6
L51	1:L10	1-J1
L52	1:C7	1-P4
PL1	1:G5	2-A3
		2-A2
		2-A2
		2-A2
		2-A3
		2-A8
		2-A8
		2-A1
		2-A1
		2-A1
		2-A1
		2-A0
		2-A5
		2-A3
		2-A7
Q1	1:Q8	1-D7
Q3	1:Q6	1-B2
Q4	1:Q4	1-D2
Q6	1:K8	1-H5
Q7	1:K4	1-H2
Q10	1:V10	2-B7
Q11	1:V10	2-D7
Q12	1:V9	2-C5
Q13	1:V9	2-D5
Q15	1:U8	2-Q5
Q16	1:T10	2-R5
*R1	1:R10	1-B6
*R2	1:R10	1-B7
*R3	1:R9	1-B6
R7	1:R8	1-C6
R8	1:S7	1-D7
R11	1:R6	1-F7
R30	1:G9	1-M4
R31	1:E7	1-N5
R32	1:D6	1-Q4
R33	1:D6	1-Q4
R36	1:W9	2-C6
R38	1:V5	2-E7
R39	1:V5	2-E6
R42	1:V5	2-F7
RV43	1:V1	2-G7
R44	1:U4	2-H6
R47	1:V4	2-F6
RV48	1:W1	2-F6
R49	1:W10	2-C6
R50	1:W8	2-D6
RV52	1:T1	2-F5
R55	1:V5	2-E4
R56	1:V5	2-F4
RV57	1:S1	2-F4
R58	1:U5	2-H5
R61	1:V8	2-L5
R62	1:V8	2-L5
RV63	1:V6	2-M5
R64	1:T5	2-N5
R67	1:V3	2-M4
R68	1:U4	2-L3
RV69	1:V2	2-M3
R72	1:K10	1-H1
R73	1:U4	2-N2
RV74	1:W2	2-P2
R77	1:U6	2-P6
R78	1:U8	2-Q5
R80	1:U8	2-Q6
R81	1:V4	2-D7
R82	1:V4	2-D7
R83	1:V5	2-D4
R84	1:V5	2-D5
R85	1:U4	2-F4
R86	1:U4	2-G7
R87	1:T4	2-J7
R88	1:T5	2-J4
R89	1:N10	1-F3
R90	1:G1	1-M3
R91	1:F1	1-M3
R92	1:S1	2-D3
R93	1:U1	2-F6
R94	1:U2	2-F8
R95	1:U4	2-M2
R96	1:T4	2-K7
R97	1:T5	2-K5
R98	1:W8	2-M5
R99	1:W7	2-M5
R100	1:W7	2-M5
SK1	1:R10	1-A7

Note:

*C62 & C67 are mounted on the Directional Coupler PCB (220-01152-00).

5.3 T859 PA PCB

This section contains the following information.

T859 Parts List (IPN 220-01159-01)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

R96	Changed from 10K (036-15100-00) to 4K7. To raise limits of reverse power alarm switching point (3/10/89).
C23	(Hi Band) changed from 47p (029-02470-02) to 39p. To accommodate power variations across the band (89/10-547)
C27,C43 & C47	(Hi Band) changed from 33p (029-02330-02) to 27p. To accommodate power variations across the band (89/10-547)
L18, L35 & L38	Changed from coil 1.5T/8.0mm (052-08180-15) to Inductor Hairpin 10mm Tall (89/10-566).
L27 & L31	Changed from coil 1.5T/6.0mm (052-08160-15) to 2.5T/6.0mm (89/10-566).
R98	Changed from 1K (036-14100-00) to 3K9. To provide adequate setting margin for forward power alarm (89/11-581).
C22	(Low Band) changed from 100p (015-03100-02) to 33p. To eliminate instability &improve power out (90/01-023).
C22	(Mid & Hi Bands) changed from 100p (015-03100-02) to 22p.To eliminate instability &improve powr out (90/01-023).
C23	(Low Band) changed from 47p (029-02470-02) to 27p. To eliminate instability &improve power out (90/01-023).
C23	(Mid & Hi Bands) changed from 39p (029-02390-02) to 18p. To eliminate instability &improve power out (90/01-023).
C24	(Low Band) changed from 39p (029-02390-02) to 22p. To eliminate instability &improve power out (90/01-023).
C24	(Mid Band) changed from 39p (029-02390-02) to 18p. To eliminate instability &improve power out (90/01-023).
C24	(Hi Band) changed from 33p (029-02330-02) to 18p. To eliminate instability &improve power out (90/01-023).
C28 & C49	(Mid & Hi Bands) changed from 33p (029-02330-02) to 27p. To eliminate instability &improve power out (90/01-023).
C69	10u added. To eliminate instability &improve power out (90/01-023).
C70A	100n added. To eliminate instability &improve power out (90/01-023).
C130 & C131	150p added. To eliminate instability &improve power out (90/01-023).
L21	Changed from coil 1.5T/6.0mm (052-08160-15) to 2.5T/6.0mm (90/01-023).
IC4	LM317L added. To eliminate instability &improve power out (90/01-023).
R34 & R35	(Low & Mid Bands) 180e added across base & emitter of Q6. To eliminate instability &improve pwr out (90/01-023).
R37	1K added. To eliminate instability &improve power out (90/01-023).
R69	10e added. To eliminate instability &improve power out (90/01-023).
R70	220e added. To eliminate instability &improve power out (90/01-023).
R11	(Hi Band) changed from 10e (032-32100-00) to 22e. To improve power output from driver stages (90/06-240).
C11 & C12	(Hi Band) 10p added across base & emitters of Q3. To ensure adequate drive pwr on hi band versions (90/08-390).
R7	(Hi Band) changed from 33e (030-02330-20) to 68e. To ensure adequate drive pwr on hi band versions (90/08-390).
R82 & R84	Changed from 4K7 (036-14470-00) to 2K2. To ensure proper operation of alarm circuits (92/07-501).
C80 & C86	150p deleted. To prevent 800kHz instability (93/03-155).
C102	150p deleted. To prevent 800kHz instability of Q15 & Q16 (95/08-7040 & 96/08-7113).
C27, C28, C42, C43, C47 & C49	Changed from mica case type to ceramic chip type. All values remain the same. To eliminate 3MHz & 90 MHz instabilities (95/08-7040 & 96/07-7106)).

Ref	Var	IPN	Description
BRKT		012-04100-05	CAP F/THRU 1N SUPPR FLTR STUD MTG
CV1		028-02100-06	CAP TRIM 3/10P NPO TOP ADJ BLUE MUR TZ
C2		015-02270-02	CAP CER HIQ 1210 CHIP 27P 5% NPO 200V
C3		015-02270-02	CAP CER HIQ 1210 CHIP 27P 5% NPO 200V
C6		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C7		015-02220-02	CAP CER HIQ 1210 CHIP 22P 5% NPO 200V
CV8		028-02200-01	CAP TRIM 4/20P N750 TOP ADJ RED MUR TZ
*C11	LOW		NOT FITTED
*C11	MID		NOT FITTED
*C11	HI	015-02100-02	CAP CER HIQ 1210 CHIP 10P 5% NPO 200V
*C12	LOW		NOT FITTED
*C12	MID		NOT FITTED
*C12	HI	015-02100-02	CAP CER HIQ 1210 CHIP 10P 5% NPO 200V
C15		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C16		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C17		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C18		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C19		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C20		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
*C22	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C22	MID	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C22	HI	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C23	LOW	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C23	MID	029-02180-02	CAP MICA 5MM CASE 18P 5%
*C23	HI	029-02180-02	CAP MICA 5MM CASE 18P 5%
*C24	LOW	029-02220-02	CAP MICA 5MM CASE 22P 5%
*C24	MID	029-02180-02	CAP MICA 5MM CASE 18P 5%
*C24	HI	029-02180-02	CAP MICA 5MM CASE 18P 5%
*C27	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C27	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C27	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C28	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C28	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C28	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C29		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV32		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C33	LOW	015-01560-02	CAP CER HIQ 1210 CHIP 5P6 5% NPO 200V
*C33	MID		NOT FITTED
*C33	HI		NOT FITTED

Ref	Var	IPN	Description
CV34		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
CV35		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C36	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C36	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C36	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C37		029-02330-02	CAP MICA 5MM CASE 33P 5%
*C40	LOW	029-02390-02	CAP MICA 5MM CASE 39P 5%
*C40	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C40	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C41		029-02330-02	CAP MICA 5MM CASE 33P 5%
*C42	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C42	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C42	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C43	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C43	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C43	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C45		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
C46		015-03100-02	CAP CER HIQ 1210 CHIP 100P 5% NPO 200V
*C47	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C47	MID	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C47	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C49	LOW	029-02330-02	CAP MICA 5MM CASE 33P 5%
*C49	MID	029-02270-02	CAP MICA 5MM CASE 27P 5%
*C49	HI	029-02270-02	CAP MICA 5MM CASE 27P 5%
C50		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV51		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C52	LOW	015-01560-02	CAP CER HIQ 1210 CHIP 5P6 5% NPO 200V
*C52	MID		NOT FITTED
*C52	HI		NOT FITTED
C54		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C55		020-07470-04	CAP ELECT RADL 4M7 25V 20% 8X13MM SOLID
C56		029-03100-02	CAP MICA 5MM CASE 100P 5%
CV57		028-02100-03	CAP TRIM 2/10P JOHNSON 187-0106-175
*C58	LOW	015-01560-02	CAP CER HIQ 1210 CHIP 5P6 5% NPO 200V
*C58	MID		NOT FITTED
*C58	HI		NOT FITTED
C60		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C61		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
*C62	LOW	015-01390-02	CAP CER HIQ 1210 CHIP 3P9 5% NPO 200V
*C62	MID	015-01330-02	CAP CER HIQ 1210 CHIP 3P3 5% NPO 200V
*C62	HI	015-01330-02	CAP CER HIQ 1210 CHIP 3P3 5% NPO 200V
*C63	LOW	029-02120-01	CAP MICA 10MM CASE 12P 5%
*C63	MID	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C63	HI	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C65	LOW	029-02120-01	CAP MICA 10MM CASE 12P 5%
*C65	MID	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C65	HI	029-02100-01	CAP MICA 10MM CASE 10P 10%
*C66	LOW	029-01560-02	CAP MICA 5MM CASE 5P6 5%
*C66	MID	029-01470-02	CAP MICA 5MM CASE 4P7 5%
*C66	HI	029-01470-02	CAP MICA 5MM CASE 4P7 5%
C67		015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C68		015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C69		025-08100-02	CAP TANT BEAD 10M 10% 16V
*C70	LOW	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
*C70	MID	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
*C70	HI	015-21390-01	CAP CER 0805 CHIP 3P9 +/-0.25P NPO 50V
C70A		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C72		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C73		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C76		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C77		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C78		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C81		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C84		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C85		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C87		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C90		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C91		025-08100-02	CAP TANT BEAD 10M 10% 16V
C92		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C93		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C96		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C97		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C98		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C99		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C100		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C101		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C102		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C103		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C104		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C105		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C106		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C108		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C109		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C110		015-01680-02	CAP CER HIQ 1210 CHIP 6P8 5% NPO 200V
C111		015-01560-02	CAP CER HIQ 1210 CHIP 5P6 5% NPO 200V
C112		015-01820-06	CAP CER 1210 CHIP 8P2 NPO 500V GRM42-2
C113		015-01820-06	CAP CER 1210 CHIP 8P2 NPO 500V GRM42-2
C114		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C115		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C116		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C117		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C118		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C119		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C120		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C121		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C122		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C123		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C124		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C125		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C126		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C127		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C128		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C129		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C130		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
C131		015-23150-01	CAP CER 0805 CHIP 150P 5% NPO 50V
D1		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D2		001-00013-45	(S) DIODE SCHOTTKY 1SS97/2
D3		001-00011-60	(S) DIODE SR2607 6A/30V
D5		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D6		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COM CA
D10		008-00013-35	(S) LED 3MM GREEN LO CURRENT NO MTG
D11		008-00013-32	(S) LED 3MM RED LO CURRENT NO MTG
D13		001-10000-70	(S) DIODE SMD BAV70 DUAL SWSOT-23 COM CA
D17		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COM CA
IC1		002-10003-24	(S) IC SMD 324 QUAD OP AMP SO14
IC2		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
IC3		002-10003-24	(S) IC SMD 324 QUAD OP AMP SO14
IC4		002-00014-62	(S) IC 317L 100MA REG 3 TERMINAL TO-92
L1		052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L2		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L3		065-00010-04	BEAD FERRITE F8 4X2X5MM
L5		065-00010-04	BEAD FERRITE F8 4X2X5MM
L6		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L7		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L8		065-00010-04	BEAD FERRITE F8 4X2X5MM
L11		065-00010-04	BEAD FERRITE F8 4X2X5MM
L12		065-00010-04	BEAD FERRITE F8 4X2X5MM
L13		052-08160-15	COIL A/W 1.5T/6.0MM HOR 0.8MM WIRE
L14		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L15		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L16		065-00010-04	BEAD FERRITE F8 4X2X5MM
L17		065-00010-04	BEAD FERRITE F8 4X2X5MM
L18		051-00005-60	IND HAIRPIN 10MM TALL T859
L19		051-00005-39	COUPLER WIRELINE TAIT COIL DWG NO 539
L20		052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
L21		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L22		065-00010-04	BEAD FERRITE F8 4X2X5MM
L23		051-00005-45	COIL IND 18MM FORMED COPPER STRIP
L24		052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
L25		052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L26		052-08130-15	COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE
L27		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L28		065-00010-04	BEAD FERRITE F8 4X2X5MM
L31		052-08160-25	COIL A/W 2.5T/6.0MM HOR 0.8MM WIRE
L32		065-00010-04	BEAD FERRITE F8 4X2X5MM
L35		051-00005-60	IND HAIRPIN 10MM TALL T859
L36		065-00010-04	BEAD FERRITE F8 4X2X5MM
L37		065-00010-04	BEAD FERRITE F8 4X2X5MM
L38		051-00005-60	IND HAIRPIN 10MM TALL T859
L39		051-00005-54	COUPLER WIRELINE TAIT COIL DWG NO 554
L41		056-00021-04	IND FXD 330NH AXIAL
*L42	LOW	052-08340-10	COIL A/W 1T/4.0MM SMD 0.8MM WIRE
*L42	MID	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
*L42	HI	052-08330-10	COIL A/W 1T/3.0MM SMD 0.8MM WIRE
L43		052-08335-10	COIL A/W 1T/3.5MM SMD 0.8MM WIRE
*L45	LOW	052-08345-20	COIL A/W 2T/4.5MM SMD 0.8MM WIRE
*L45	MID	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
*L45	HI	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
*L46	LOW	052-08345-20	COIL A/W 2T/4.5MM SMD 0.8MM WIRE
*L46	MID	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L46	HI	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L47	LOW	052-08340-20	COIL A/W 2T/4.0MM SMD 0.8MM WIRE
*L47	MID	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
*L47	HI	052-08335-20	COIL A/W 2T/3.5MM SMD 0.8MM WIRE
L49		056-00021-04	IND FXD 330NH AXIAL
L51		056-00021-04	IND FXD 330NH AXIAL
L52		051-00005-53	COIL TAIT NO 553 A/W 10MM LINK T858/9
Q1		000-00022-71	(S) XSTR SD1135 NPN STUD MTG UHF PWR 5W
Q3		000-00032-79	(S) XSTR MRF654 UHF PWR 15W STUD
Q4		000-00032-67	(S) XSTR MRF648 UHF PWR 60W 6LFL
Q6		000-00032-67	(S) XSTR MRF648 UHF PWR 60W 6LFL
Q7		000-00032-67	(S) XSTR MRF648 UHF PWR 60W 6LFL
Q10		000-00020-70	(S) XSTR BS170 JFET TO-92 SMALL SIG
Q11		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q12		000-00020-70	(S) XSTR BS170 JFET TO-92 SMALL SIG
Q13		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q15		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q16		000-00030-95	(S) XSTR 2N6107 PNP TO-220 AF PWR
Q17		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q18		000-00011-70	(S) XSTR BD136 PNP AF PWR TO126
Q19		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23 AF
Q20		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
Q21		000-10008-17	(S) XSTR SMD BC817-25 NPN SOT-23 AF LO PWR
R1		030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
R2		030-02120-20	RES FILM 12E 5% 0.4W 4X1.6MM
R3		030-53470-20	RES FILM AI 470E 5% 0.4W 4X1.6MM
*R7	LOW	030-52330-20	RES FILM AI 33E 5% 0.4W 4X1.6MM
*R7	MID	030-52330-20	RES FILM AI 33E 5% 0.4W 4X1.6MM
*R7	HI	030-52680-20	RES FILM AI 68E 5% 0.4W 4X1.6MM
R8		032-33100-00	RES M/F PWR 100E 5% 1W 10X4MM
*R11	LOW	032-32100-00	RES M/F PWR 10E 5% 1W 10X4MM

Ref	Var	IPN	Description
*R11	MID	032-32100-00	RES M/F PWR 10E 5% 1W 10X4MM
*R11	HI	032-32220-00	RES M/F PWR 22E 5% 1W 12X4.5MM
R30		030-53100-20	RES FILM AI 100E 5% 0.4W 4X1.6MM
R31		030-53100-20	RES FILM AI 100E 5% 0.4W 4X1.6MM
R32		030-02820-20	RES FILM 82E 5% 0.4W 4X1.6MM
R33		030-02820-20	RES FILM 82E 5% 0.4W 4X1.6MM
*R34	LOW	032-33180-01	RES M/F PWR 180E 5% 2.5W 17X5MM
*R34	MID	032-33180-01	RES M/F PWR 180E 5% 2.5W 17X5MM
*R34	HI		NOT FITTED
*R35	LOW	032-33180-01	RES M/F PWR 180E 5% 2.5W 17X5MM
*R35	MID	032-33180-01	RES M/F PWR 180E 5% 2.5W 17X5MM
*R35	HI		NOT FITTED
R36		036-13680-00	RES M/F 0805 CHIP 680E 5%
R37		036-14100-00	RES M/F 0805 CHIP 1K 5%
R38		036-17100-00	RES M/F 0805 CHIP 1M 5%
R42		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV43		042-05470-09	RES PRESET 50K CERMET 9.5MM SQ FLAT
R44		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R47		036-16100-00	RES M/F 0805 CHIP 100K 5%
RV48		042-04500-08	RES PRESET 5K CERMET 9.5MM SQ FLAT
R49		036-13680-00	RES M/F 0805 CHIP 680E 5%
R50		036-13680-00	RES M/F 0805 CHIP 680E 5%
RV52		042-04500-08	RES PRESET 5K CERMET 9.5MM SQ FLAT
R55		036-17100-00	RES M/F 0805 CHIP 1M 5%
R56		036-15100-00	RES M/F 0805 CHIP 10K 5%
RV57		042-05470-09	RES PRESET 50K CERMET 9.5MM SQ FLAT
R58		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R61		036-13220-00	RES M/F 0805 CHIP 220E 5%
R62		036-14100-00	RES M/F 0805 CHIP 1K 5%
*RV63	LOW	044-04200-03	RES PRESET MULTITURN 2K 10T PNL MTG
*RV63	MID	044-04200-03	RES PRESET MULTITURN 2K 10T PNL MTG
*RV63	HI	044-04200-03	RES PRESET MULTITURN 2K 10T PNL MTG
R64		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R67		036-15100-00	RES M/F 0805 CHIP 10K 5%
R68		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R69		036-12100-00	RES M/F 0805 CHIP 10E 5%
RV69		042-04220-02	RES PRESET 2K CERMET 9.5MM SQ FLAT
R70		036-13220-00	RES M/F 0805 CHIP 220E 5%
R72		045-04470-01	RES NTC 4K7 20% 5MM DISC
R73		036-16220-00	RES M/F 0805 CHIP 220K 5%
RV74		042-05100-10	RES PRESET 10K CERMET 9.5MM SQ FLAT
R77		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R78		036-14100-00	RES M/F 0805 CHIP 1K 5%
R80		036-13100-00	RES M/F 0805 CHIP 100E 5%
R81		036-14100-00	RES M/F 0805 CHIP 1K 5%
R82		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R83		036-14100-00	RES M/F 0805 CHIP 1K 5%
R84		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R85		036-14100-00	RES M/F 0805 CHIP 1K 5%
R86		036-14100-00	RES M/F 0805 CHIP 1K 5%
R87		036-15100-00	RES M/F 0805 CHIP 10K 5%
R88		036-15100-00	RES M/F 0805 CHIP 10K 5%
R89		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R90		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R91		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R92		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R93		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R94		039-02500-01	DUMMY LOAD 50E 1% 10W TO-220 NIKKOHM
R95		036-14100-00	RES M/F 0805 CHIP 1K 5%
R96		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R97		036-14100-00	RES M/F 0805 CHIP 1K 5%
R98		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R99		036-14100-00	RES M/F 0805 CHIP 1K 5%
R100		036-14100-00	RES M/F 0805 CHIP 1K 5%
R101		036-12100-00	RES M/F 0805 CHIP 10E 5%
R102		036-16220-00	RES M/F 0805 CHIP 220K 5%
R103		036-15330-00	RES M/F 0805 CHIP 33K 5%
R104		036-15150-00	RES M/F 0805 CHIP 15K 5%
R105		036-16470-00	RES M/F 0805 CHIP 470K 5%
R106		036-15150-00	RES M/F 0805 CHIP 15K 5%
R107		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R108		036-15100-00	RES M/F 0805 CHIP 10K 5%
R109		036-14330-00	RES M/F 0805 CHIP 3K3 5%
R110		036-16100-00	RES M/F 0805 CHIP 100K 5%
R111		036-16220-00	RES M/F 0805 CHIP 220K 5%
R112		036-16220-00	RES M/F 0805 CHIP 220K 5%
R113		036-15270-00	RES M/F 0805 CHIP 27K 5%
R115		036-16470-00	RES M/F 0805 CHIP 470K 5%
R116		045-04470-01	RES NTC 4K7 20% 5MM DISC
R117		036-15150-00	RES M/F 0805 CHIP 15K 5%
R118		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R119		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R120		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R121		036-14100-00	RES M/F 0805 CHIP 1K 5%
R122		036-14100-00	RES M/F 0805 CHIP 1K 5%
R123		036-13470-00	RES M/F 0805 CHIP 470E 5%
R124		036-13220-00	RES M/F 0805 CHIP 220E 5%
SK1		240-02100-44	SKT COAX MINI JACK PCB MTG ANGLED

NOTE:
LOW = 400-440MHZ
MID = 440-480MHZ
HI = 480-520MHZ

T859 Mechanical & Miscellaneous Parts (220-01159-01)

IPN	Description
012-04150-01	CAP CER F/THRU 1N5 NO LEAD C1-C15 On 15 Way D Range.
051-00006-02	SOLDER SPRING 1.3MM A4M1877 LED1 x2, LED2 x2, LED3 x2.
065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE 15 Way D Range x15.
065-00010-20	BEAD FERRITE BALUN 4B1 PHILIPS Placed On 13.8V Cables At D Range End x1.
200-00010-05	WIRE T/C 0.5MM 10mm Lengths For Ferrite Beads x12.
201-00030-01	WIRE #1 T/C WIRE 7/0.2MM PVC BROWN Fwd Pwr Alm. 1 x410mm.
201-00030-02	WIRE T/C 7/0.2MM PVC RED LEDs 1, 2 & 3 x20mm Each. Fan. 1 x350mm.
201-00030-03	WIRE T/C 7/0.2MM PVC ORANGE Rev Pwr Met. 1 x235mm.
201-00030-04	WIRE T/C 7/0.2MM PVC YELLOW Reverse Pwr. 1 x325mm.
201-00030-05	WIRE T/C 7/0.2MM PVC GREEN Fwd Pwr Met. 1 x265mm.
201-00030-06	WIRE T/C 7/0.2MM PVC BLUE Tx Key. 1 x410mm.
201-00030-07	WIRE T/C 7/0.2MM PVC VIOLET Rev Pwr Alm. 1 x410mm.
201-00030-09	WIRE T/C 7/0.2MM PVC WHITE Temp Sense. 1 x285mm.
201-00030-10	WIRE T/C 7/0.2MM PVC BLACK Fwd Pwr. 1 x310mm, LEDs 1, 2 & 3 x25mm Each.
201-00050-12	CABLE AUTO 152 RED 28/0.3MM PVC 13.8v. 1 x290mm, 1 x220mm.
201-00050-20	CABLE AUTO 152 BLACK 28/0.3MM PVC Ground. 1 x40mm.
206-00010-11	CABLE COAX 50 OHM RG316-U PTFE 190mm SK1/Front Panel x1.
220-01152-00	PCB T858/859 DIRNL COUPLER
220-01159-01	PCB T859 100W PA A1C674
240-00010-55	PLUG 15 WAY D RANGE WIRE WRAP PINS PNL MTG
240-00100-43	PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX Connects Coax Cable To Sk1 x1.
240-00100-46	PLUG COAX PNL JACK SUHNER 24 SMC50-2-10C Input Drive On Front Panel x1.
240-02010-54	SKT 15WAY D RANGE PNL MTG 125 DEG C Part of Installation Kit x1.
240-02100-06	SKT COAX N TYPE PNL MTG OPEN TERMN
240-06010-14	CLAMP LATCHING 15 WAY D RANGE Part Of Installation Kit x1.
240-06010-15	BLOCK LATCHING 15WAY D RANGE For Securing D Range To Rear x2.
258-00010-03	FAN 12V 119 X 119 X 25MM TUBE AXIAL Fit To Bottom Of Chassis.
302-05204-00	BRKT A3M2314 F/THRU MTG T859 Fit To Rear Chassis For Electrical Connection Of Fan x1
303-23117-00	COVER COMPL A2M2223/2 A2M2223/1 SIDE
303-50005-00	CONTACT A4M2311 SPRING EARTH T858 Solders On To Shield Lid (319-01148-00) x1.
306-01010-00	FERRULE A4M948 HANDLE FXD EQUIP For Handle x2.
308-01007-00	HANDLE A4M949 FXD EQUIP
308-13085-00	HSINK A1M2275 T859 50W PA Diecast Chassis.
308-13086-00	HSINK A3M2271 2MM THICK WIRELINE T859 50W PA Wireline Heatsink x4.
316-06378-00	PNL FRT COMPL A3M2316/2 T859
316-85018-00	PIN A4M1397 COAX CONDUCTOR T316 346 377PA Soldered To N Type Skt x1.
318-01011-00	RAIL A2M1872 BOTTOM T377 PA Part Of Installation Kit x1.
318-01012-00	RAIL A3M1873 TOP T377 PA Part Of Installation Kit x1.
319-01147-00	SHIELD A3M2224 WALL T859 PA Goes Around Filter At N Connector End Of Board x1.
319-01148-00	SHIELD A3M2225 LID T859 PA Goes On Top Of Shield Wall (319-01148-00) Above x1.
319-01152-00	SHIELD A3M2250 F/THRU MTG T857 Attached To D Range Plug x1.
319-30033-00	SPACER A4M1339 UHF PA Q1 x1, Q3 x1.
345-00040-06	SCREW M3*8MM PAN POZI ST BZ Part Of Installation Kit x2.
345-00040-09	SCREW M3*6MM CSK POZI TRUNCATED HEAD ST BZ Part Of Installation Kit x4.
345-00040-16	SCREW M3X20MM PAN POZI ST BZ D Range x2.
345-00040-20	SCREW M3*8MM BUTTON SKT HD BLACK ZINC PHOS Front Panel x4.
349-00020-07	SCREW 4-40 X 5/16 PAN POZI TAPTITE BLACK Top Cover x18, PCB Mounting x12, N Type x4, Q16 x1, Fan Bracket x2, R89 - R94 x1 Ea., Q4, Q6 & Q7 x2 Ea.
349-00020-35	SCREW TAPTITE M3X16MM PAN POZI BZ Wireline Heatsink x4.
349-00020-43	SCREW TAPTITE M4X12MM PAN POZI BZ Cable Clamp x2. Torque to 8lb.
349-00020-49	SCREW TAPTITE M4X35MM PAN POZI BZ Fan x4. Torque to 10lbs
352-00010-29	NUT M4 NYLOC HEX For Handle x2.
352-00010-35	NUT 8-32 UNC HEX RF PWR XSTR MTG Q1 x1, Q3 x1.
353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ Q16 x1.
356-00010-01	TAG SOLDER 3MM SHORT M6132/3.2 Q4,Q6,Q7 x2 Each
356-00010-03	TAG SOLDER 3MM LONG M614/3.2 Loom Restraints x5. D Range Earthing x2.
357-00010-44	CLAMP CABLE 3.2MM P CLIP NYLON Assemble Fan Wires To Heatsink x2.
360-00010-41	BUSH SHORTY BLACK HEYCO B-187-125 For Power Adjustment Hole On Front Panel x1

IPN	Description
362-00010-07	GASKET SIL INSULATING TO-220 Q16 x1.
362-00010-13	BUSH INSULATING 1.1MM TOP HAT Q16 x1.
362-00010-33	GROMMET LED MTG 3MM LO CURRENT LEDS Used To Secure LEDs to Front Panel x3.
365-00011-53	LABEL WHITE RW2365/1 104*37mm SPECIAL ADHSIVE Item Description On Outside Of Box x1.
365-00100-20	LABEL WHITE S/A 28X11mm QUIKSTIK RW718/4 Rev No x1, 'Test Report Inside' x1.
365-01391-01	LABEL 30*10.8mm TAMPERMARK VOID MATT FCC ID x1, Aust DOTC Cert x2, Ser No x1.
369-00010-14	TIE CABLE NYLON 100*2.6MM For Looms x6.
399-00010-56	BAG PLASTIC 200*250MM
400-00020-07	SLEEVING 2MM SIL RUBBER For Solder Tags Used as Loom Restraints. 5 x25mm. For LEDs. 6 x35mm.
400-00020-30	HEATSHRINK 3MM MTG FAN WIRES.
410-00010-43	PKG T296 AMPAC REF 73-46

IPN	Description

T859 Grid Reference Index (IPN 220-01159-01)

How To Use This Grid Reference Index

The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

Device	PCB	Circuit
CV1	1:Q9	1-E7
C2	1:Q8	1-E7
C3	1:R8	1-E7
C6	1:S8	1-B8
C7	1:Q7	1-C8
CV8	1:R7	1-B7
C15	1:S5	1-B2
C16	1:S5	1-B3
C17	1:S6	1-C3
C18	1:T3	1-C3
C19	1:S2	1-D3
C20	1:S3	1-E3
*C22	1:Q5	1-B2
*C23	1:Q5	1-C2
*C24	1:R5	1-C1
*C27	1:Q3	1-D2
*C28	1:R3	1-E2
C29	1:P3	1-E2
CV32	1:P2	1-E1
*C33	1:P3	1-F1
CV34	1:M4	1-G2
CV35	1:M8	1-G5
*C36	1:L8	1-G5
C37	1:L8	1-H5
*C40	1:L4	1-G1
C41	1:L3	1-H1
*C42	1:K4	1-J1
*C43	1:K3	1-J1
C45	1:K4	1-J3
C46	1:K7	1-J6
*C47	1:K8	1-J5
*C49	1:K8	1-J5
C50	1:H8	1-K5
CV51	1:H8	1-L5
*C52	1:J8	1-K5
C54	1:K6	1-K3
C55	1:K6	1-K3
C56	1:H4	1-L2
CV57	1:H3	1-L1
*C58	1:J3	1-K1
C60	1:E9	1-N5
C61	1:F9	1-N5
*C62	See Note	1-P5
*C63	1:C9	1-P5
*C65	1:C9	1-Q5
*C66	1:B8	1-R5
C67	See Note	1-P4
C68	1:D7	1-Q4
C69	1:W6	2-G1
*C70	1:D6	1-Q4
C70A	See Note	2-J1
C72	1:E6	1-L6
C73	1:F6	1-L6
C76	1:V10	2-B8
C77	1:V10	2-B8
C78	1:U10	2-C7
C80	1:U6	2-H8
C81	1:U2	2-F6
C84	1:V9	2-B4
C85	1:V9	2-B4
C86	1:W6	2-G3
C87	1:T2	2-E2
C90	1:V7	2-C0
C91	1:W8	2-M2
C92	1:U6	2-P2
C93	1:U6	2-N2
C96	1:U5	2-K0
C97	1:J10	1-Q8
C98	1:K10	1-R8
C99	1:U6	2-L0
C100	1:U6	2-N1
C101	1:V3	2-N0
C102	1:U8	2-Q2
C103	1:U8	2-Q1
C104	1:T6	2-R3
C105	1:T9	2-R2
C106	1:T8	2-R1
C108	1:T4	2-J8
C109	1:T4	2-H3
C110	1:E3	1-N3
C111	1:N8	1-F5
C112	1:F3	1-M1
C113	1:D3	1-P1
C114	1:V10	2-A8
C115	1:V9	2-A4
C116	1:V3	2-N1
C117	1:W5	2-P8
C118	1:V4	2-P8
C119	1:U4	2-P7
C120	1:U4	2-P6
C121	1:V4	2-P5
C122	1:V4	2-P5
C123	1:T5	2-Q7
C124	1:U5	2-Q7
C125	1:T5	2-R8
C126	1:U3	2-N6
C127	1:U3	2-M7
C128	1:V3	2-M4
C129	1:U3	2-N5
C130	1:V10	2-C8
C131	1:V9	2-C4
D1	1:F6	1-M6
D2	1:E9	1-N5
D3	1:S3	2-B1
D5	1:W9	2-C8
D6	1:U2	2-G6
D10	1:W10	2-B5
D11	1:W9	2-C5
D13	1:T2	2-E2
D17	1:V3	2-N1
		2-N1
IC1	1:V6	2-E8
		2-D5
		2-P2
		2-L1
		2-G1
IC2	1:V8	2-D0
IC3	1:U4	2-H8
		2-G4
		2-N6
		2-N5
		2-F1
IC4	1:V5	2-H1
L1	1:R9	1-E7
L2	1:P9	1-D7
L3	1:P9	1-D7
L5	1:T8	1-D9
L6	1:R7	1-C8
L7	1:P7	1-B7
L8	1:P8	1-B7
L11	1:S7	1-A4
L12	1:S5	1-A3
L13	1:R5	1-A2
L14	1:Q3	1-E2
L15	1:K8	1-K5
L16	1:S4	1-C3
L17	1:S3	1-D3
L18	1:R3	1-D2
L19	1:N6	1-F3
L20	1:F3	1-M2
L21	1:P5	1-B2
L22	1:P6	1-B1
L23	1:K4	1-K2
L24	1:D3	1-P2
L25	1:M3	1-F1
L26	1:M8	1-F5
L27	1:L9	1-G5
L28	1:M9	1-G5
L31	1:M3	1-G2
L32	1:M2	1-G1
L35	1:J7	1-J6
L36	1:J6	1-J6
L37	1:J5	1-J3
L38	1:J4	1-J2
L39	1:H6	1-L4
L41	1:F9	1-N5
*L42	1:D7	1-P4
L43	1:C7	1-Q4
*L45	1:C8	1-P5
*L46	1:C9	1-Q5
*L47	1:B8	1-Q5
L49	1:F6	1-M6
L51	1:K10	1-Q9
L52	1:C7	1-P4
PL1	1:J5	2-A2
		2-A1
		2-A2
		2-A2
		2-A1
		2-A9
		2-A6
		2-A0
		2-A0
		2-A1
		2-A1
		2-A0
		2-A5
Q1	1:Q8	1-C7
Q3	1:Q6	1-A2
Q4	1:Q4	1-D2
Q6	1:K8	1-H5
Q7	1:K4	1-H2
Q10	1:V10	2-B8
Q11	1:U10	2-C8
Q12	1:V9	2-B5
Q13	1:U9	2-C4
Q15	1:U8	2-Q2
Q16	1:T10	2-R2
Q17	1:T5	2-R7
Q18	1:T5	2-R8
Q19	1:V4	2-P8
Q20	1:U5	2-Q7
Q21	1:V4	2-Q5
R1	1:R10	1-F7
R2	1:R9	1-F7
R3	1:R9	1-F7
R7	1:R9	1-D7
R8	1:S7	1-C8
R11	1:R6	1-A7
R30	1:G9	1-M5
R31	1:E7	1-N6
R32	1:D6	1-Q4
R33	1:D6	1-R4
*R34	See Note	1-G5
*R35	See Note	1-H5
R36	1:W9	2-C7
R37	1:W4	2-K0
R38	1:W5	2-E8
R42	1:V5	2-F8
RV43	1:V1	2-G6
R44	1:U6	2-G6
R47	1:W5	2-F8
RV48	1:W1	2-F8
R49	1:W10	2-B6
R50	1:W8	2-C5
RV52	1:T1	2-F5
R55	1:V6	2-D4
R56	1:V6	2-E4
RV57	1:S1	2-E3
R58	1:U6	2-G5
R61	1:V8	2-E0
R62	1:V8	2-D0
*RV63	1:V6	2-M2
R64	1:U6	2-N2
R67	1:W5	2-K2
R68	1:U5	2-L2
R69	1:V6	2-G1
RV69	1:V2	2-H1
R70	1:V5	2-G1
R72	1:J10	1-Q8
R73	1:U5	2-L0
RV74	1:W2	2-M0
R77	1:V6	2-P3
R78	1:U8	2-Q2

Device	PCB	Circuit
R80	1:U8	2-Q3
R81	1:W5	2-D7
R82	1:V5	2-D8
R83	1:V6	2-C4
R84	1:V6	2-C4
R85	1:T6	2-E3
R86	1:W3	2-G7
R87	1:T3	2-J8
R88	1:T4	2-H3
R89	1:N10	1-E5
R90	1:G1	1-M1
R91	1:F1	1-N1
R92	1:P10	1-D5
R93	1:D1	1-P2
R94	1:C1	1-Q2
R95	1:S1	2-C3
R96	1:U2	2-F5
R97	1:U2	2-D6
R98	1:U3	2-J9
R99	1:T4	2-H4
R100	1:U5	2-L2
R101	1:W8	2-M2
R102	1:U2	2-N8
R103	1:U2	2-N6
R104	1:U4	2-P7
R105	1:U3	2-N7
R106	1:U4	2-P7
R107	1:U4	2-P6
R108	1:W4	2-N8
R109	1:V3	2-P9
R110	1:U3	2-M5
R111	1:U3	2-M4
R112	1:U2	2-M4
R113	1:U3	2-N4
R115	1:V3	2-N5
R116	1:V3	2-M5
R117	1:V3	2-P5
R118	1:V4	2-P4
R119	1:U5	2-Q7
R120	1:U5	2-Q8
R121	1:T5	2-Q8
R122	1:V5	2-M6
R123	1:W7	2-M3
R124	1:W7	2-M2
SK1	1:R10	1-G7

Device	PCB	Circuit

Device	PCB	Circuit

Device	PCB	Circuit

Note:

*C62 & C67 are mounted on the Directional Coupler PCB (220-01152-00).

C70A with the grid references of: **PCB** 1:V5 & **Circuit** 2-J1 is incorrectly shown in the artwork as C70.

*R34 & *R35 are mounted across the base and emitter of Q6.

Part E T800 Memory & T850 VCO PCB Information

This part of the manual is divided into the sections listed below. These sections provide parts lists, PCB layouts and circuit diagrams for the T800 memory and T850 VCO PCBs. There is a detailed table of contents at the start of each section.

1 Introduction

PCB Identification

All PCBs are identified by a unique 10 digit “internal part number” (IPN), e.g. 220-12345-00, which is screen printed onto the PCB (usually on the top side). The last 2 digits of this number define the issue status, which starts at 00 and increments through 01, 02, 03, etc. as the PCB is updated. Some issue PCBs never reach full production status and are therefore not included in this manual. A letter following the 10 digit IPN has no relevance in identifying the PCB for service purposes.

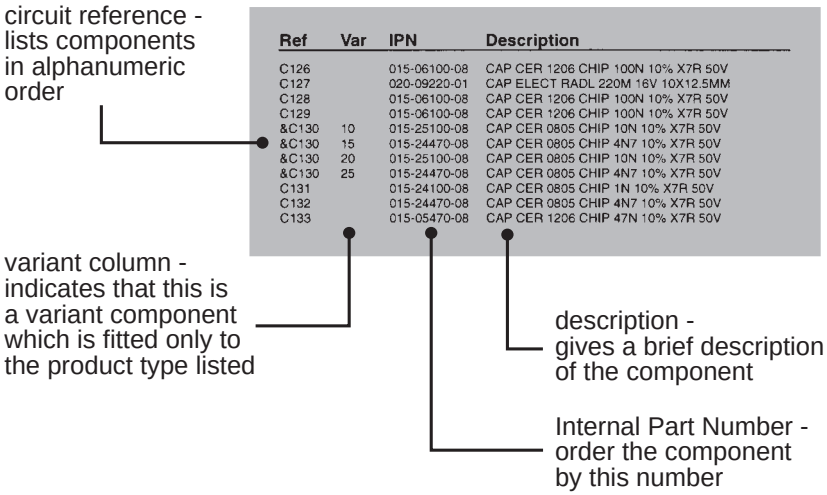
Note: It is important that you identify which issue PCB you are working on so that you can refer to the appropriate set of PCB information.

Parts Lists

The 10 digit numbers (000-00000-00) in this Parts List are "internal part numbers" (IPNs). Your spare parts orders can be handled more efficiently if you quote the IPN and provide a brief description of the part.

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns, as shown below:



The miscellaneous and mechanical parts are listed in IPN order at the end of the parts list.

Variant Components

A variant component is one that has the same circuit reference but different value or specification in different product types. Variant components are indicated by a character prefix such as “&”, “#” or “=”.

2 T800 Memory PCB

This section contains the following information.

T800 Memory PCB Parts List (IPN 220-01144-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

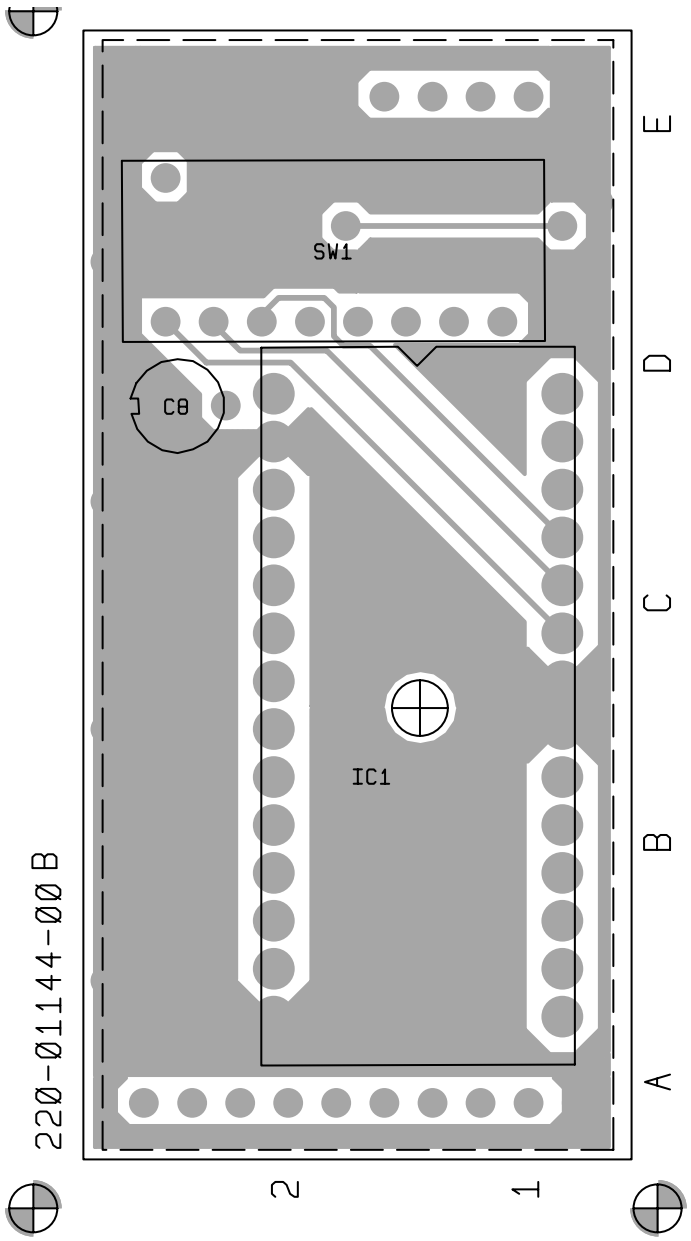
Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

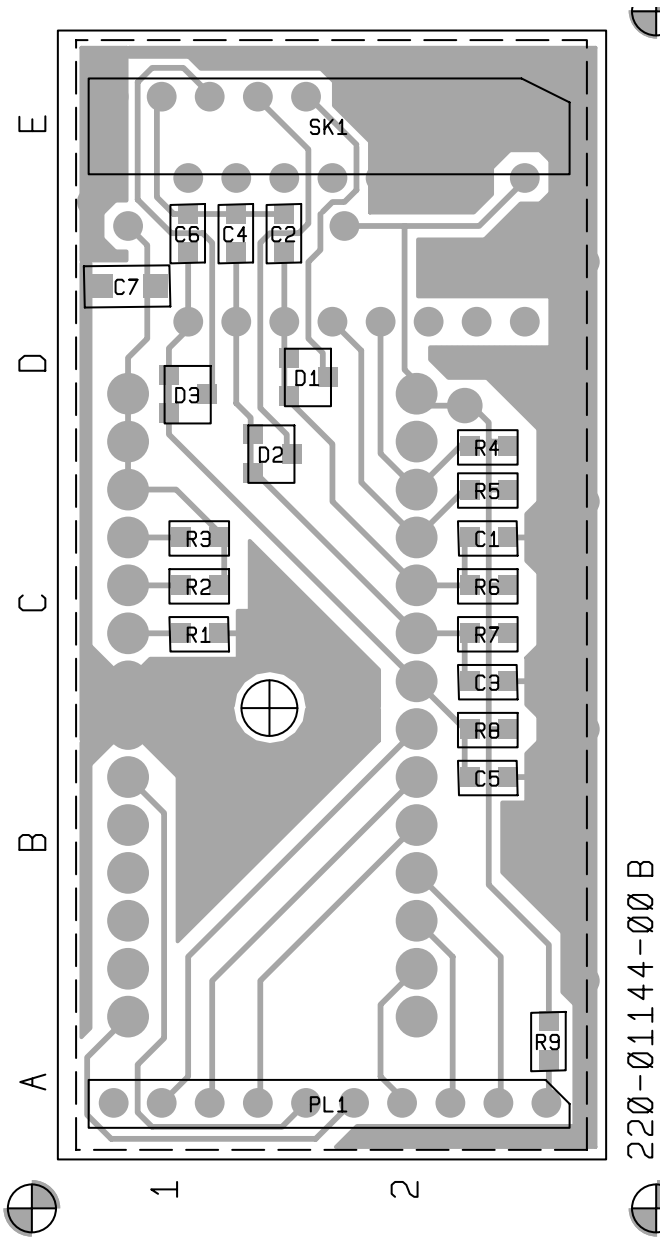
Parts List Amendments

There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C2		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C3		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C4		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C5		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C6		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C7		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C8		025-08100-02	CAP TANT BEAD 10M 10% 16V
D1		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COM-CATH
D2		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 CO CATH
D3		001-10000-70	(S) DIODE SMD BAV70 DUAL SW SOT-23 COM CATH
IC1		002-00018-04	(S) IC 27C64 CMOS 8K*8 UV EPROM 250NS - 150NS
PL1		240-00020-57	HEADER 10 WAY 1 ROW PCB MTG
R1		036-15100-00	RES M/F 0805 CHIP 10K 5%
R2		036-15100-00	RES M/F 0805 CHIP 10K 5%
R3		036-15100-00	RES M/F 0805 CHIP 10K 5%
R4		036-15100-00	RES M/F 0805 CHIP 10K 5%
R5		036-15100-00	RES M/F 0805 CHIP 10K 5%
R6		036-15100-00	RES M/F 0805 CHIP 10K 5%
R7		036-15100-00	RES M/F 0805 CHIP 10K 5%
R8		036-15100-00	RES M/F 0805 CHIP 10K 5%
R9		036-12220-00	RES M/F 0805 CHIP 22E 5%
SW1		230-00010-19	SWITCH*8 SPST DIP PKG
SKT1		240-04020-57	SKT 10 WAY 1ROW PCB MTG TOP ENTRY
		220-01144-00	PCB T855/856/857 MEM
		240-04020-35	SKT 28 PIN DIL IC LO PROF IC1
		365-00011-38	LABEL STATIC WARNING YELLOW A4A315
		365-00011-54	LABEL WHITE RW1556/2 SPECIAL ADHESIVE
		399-00010-86	BAG STATIC SHIELDING 127X203MM
		410-00010-64	PKG HEADER CARD A3M2392



T800 Memory PCB (IPN 220-01144-00) - Top Side



T800 Memory PCB (IPN 220-01144-00) - Bottom Side

3 T850 VCO PCB

This section contains the following information.

T850 VCO PCB Parts List (IPN 220-01145-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. An entry in the variant column indicates that this is a variant component which is fitted only to the T825 (RX) or T826/827 (TX).

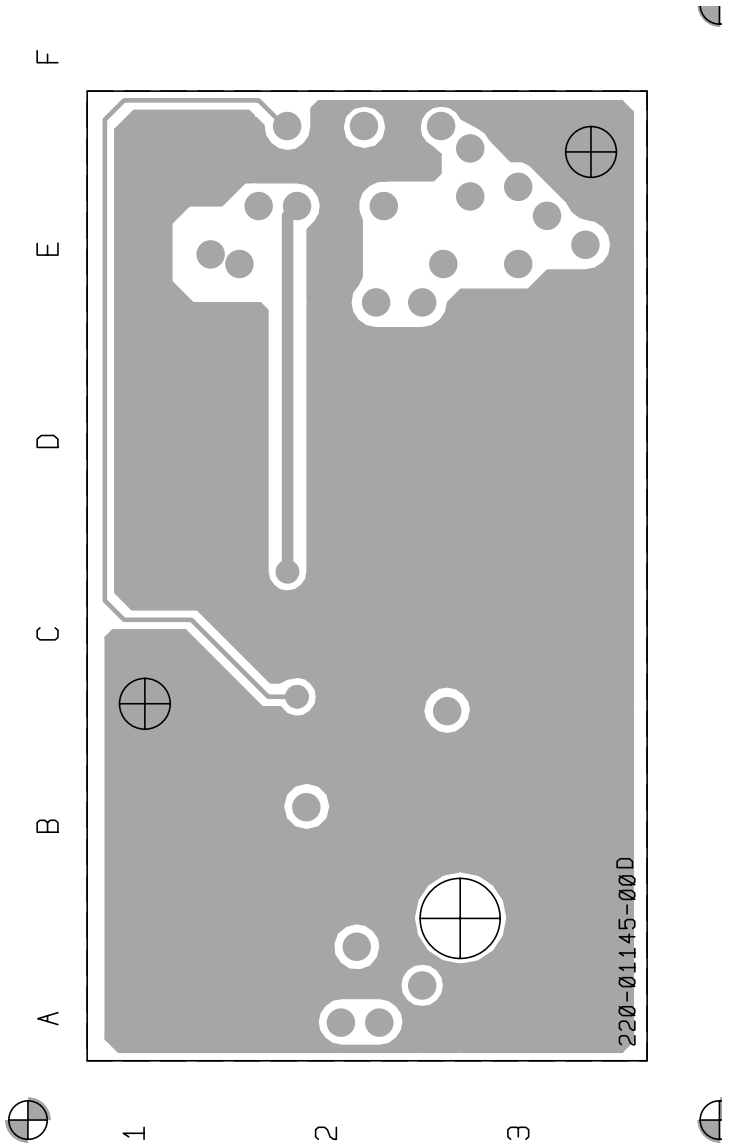
The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

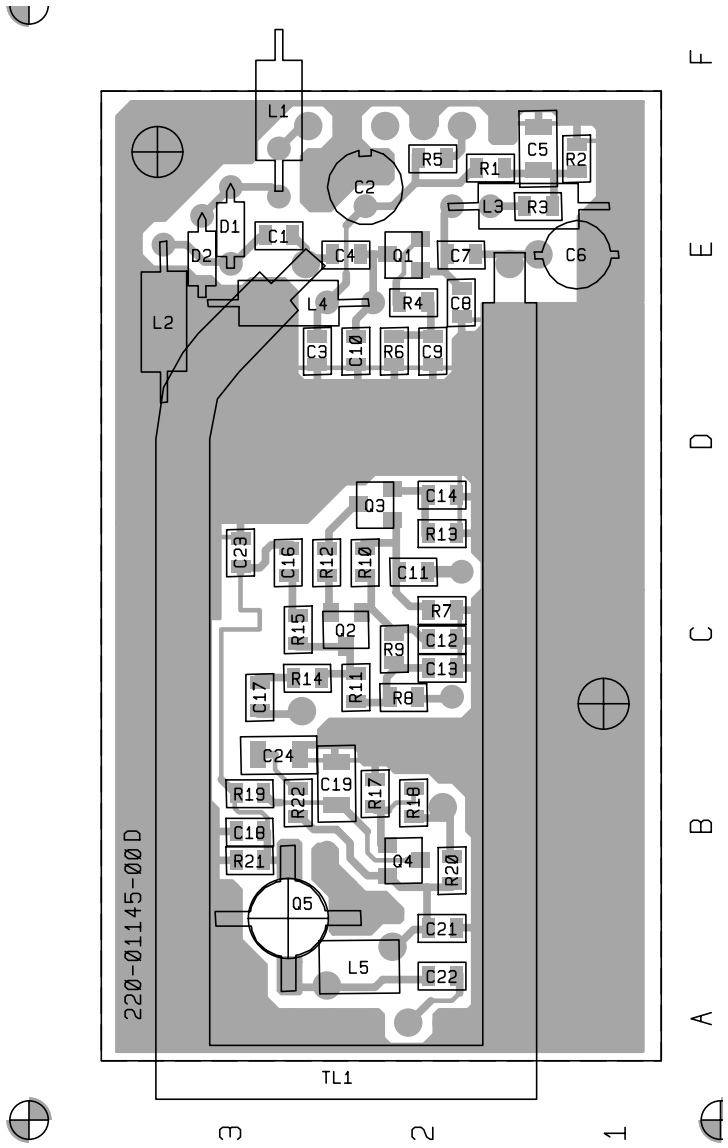
There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1	A	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
C1	B	015-21180-01	CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V
C1	C	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C1	D	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C2		025-08100-02	CAP TANT BEAD 10M 10% 16V
C3		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C4		015-21100-01	CAP CER 0805 CHIP 1PO +/-0.25P NPO 50V
C5		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C6		028-02100-08	CAP TRIM 2/10P CER 5MM TOP ADJ
C7	A	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C7	B	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C7	C	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C7	D	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C8	A	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C8	B	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C8	C	015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C8	D	015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-21180-01	CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V
C11		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C12		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C13		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C14		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C16		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C17		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C18		015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
C19		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C21		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C22		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C23		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C24		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
D1		001-00012-63	(S) DIODE VARICAP BB809
D2		001-00012-63	(S) DIODE VARICAP BB809
L1		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L2		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L3		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L4		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L5		052-08135-35	COIL A/W 3.5T/3.5MM HOR 0.8MM WIRE
PL2		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL3		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL4		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL5		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q2		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q3		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q4		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23AF
Q5		000-00032-47	(S) XSTR MRF559 NPN XPACK UHF PWR 0.5W
R1		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R2		036-14100-00	RES M/F 0805 CHIP 1K 5%
R3		036-13100-00	RES M/F 0805 CHIP 100E 5%
R4		036-12220-00	RES M/F 0805 CHIP 22E 5%
R5		036-12270-00	RES M/F 0805 CHIP 27E 5%
R6	A	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	B	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	C	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	D	036-13120-00	RES M/F 0805 CHIP 120E 5%
R7		036-14100-00	RES M/F 0805 CHIP 1K 5%
R8		036-12220-00	RES M/F 0805 CHIP 22E 5%
R9		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R10		036-14120-00	RES M/F 0805 CHIP 1K2 5%
R11		036-13150-00	RES M/F 0805 CHIP 150E 5%
R12		036-12100-00	RES M/F 0805 CHIP 10E 5%
R13		036-12560-00	RES M/F 0805 CHIP 56E 5%
R14		036-13330-00	RES M/F 0805 CHIP 330E 5%
R15		036-12100-00	RES M/F 0805 CHIP 10E 5%
R17		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R18		036-14180-00	RES M/F 0805 CHIP 1K8 5%
R19		036-14100-00	RES M/F 0805 CHIP 1K 5%
R20		036-12180-00	RES M/F 0805 CHIP 18E 5%
R21		036-13330-00	RES M/F 0805 CHIP 330E 5%
R22		036-12100-00	RES M/F 0805 CHIP 10E 5%
TL1	A	051-00005-43	RESNTR TAIT NO 543 480-520MHZ T855/7
TL1	B	051-00005-42	RESNTR TAIT NO 542 435-480MHZ T855/7
TL1	C	051-00005-41	RESNTR TAIT NO 541 395-440MHZ T855/7
TL1	D	051-00005-40	RESNTR TAIT NO 540 355-395MHZ T855/7
		065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE Place On Lead Of L4, Secure With Loctite 454-16 Gel
		220-01145-00	PCB T855/856/857 VCO
		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
		345-00040-10	SCREW M3*6MM PAN POZI ST BZ
		350-00016-42	SPACER 5MM HI 8MM X M3 STUD 2.5MM X M3
		353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ
		353-00010-13	WASHER M3 SHAKEPROOF INT BZ

Variant Code	Description	T855 (MHz)	T856/857 (MHz)
A	Tx High	-	480-520
B	Tx Mid/Rx High	480-530	440-480
C	Tx Low/Rx Mid	440-480	400-440
D	Rx Low	400-440	-



T850 VCO PCB (IPN 220-01145-00) - Bottom Side



T850 VCO PCB (IPN 220-01145-00) - Top Side

T850 VCO Parts List (IPN 220-01145-02)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped by component type in numerical order. Each component entry comprises three or four columns: the circuit reference, variant number (if applicable), IPN and description. A number in the variant column indicates that this component is fitted only to that variant.

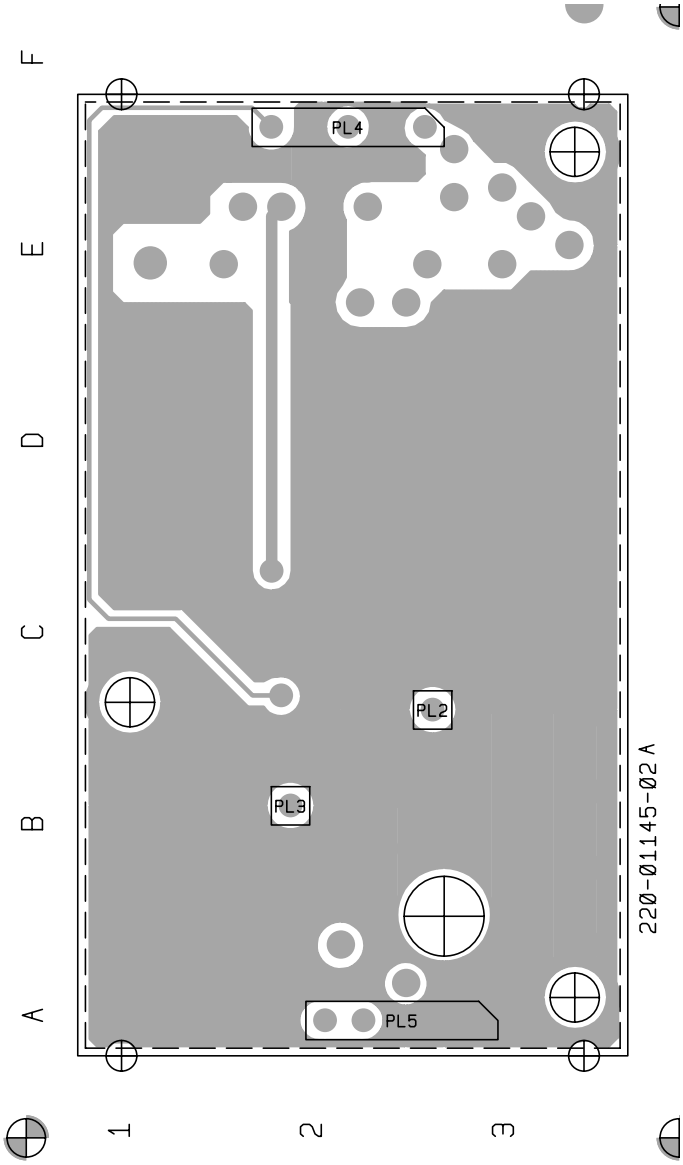
The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

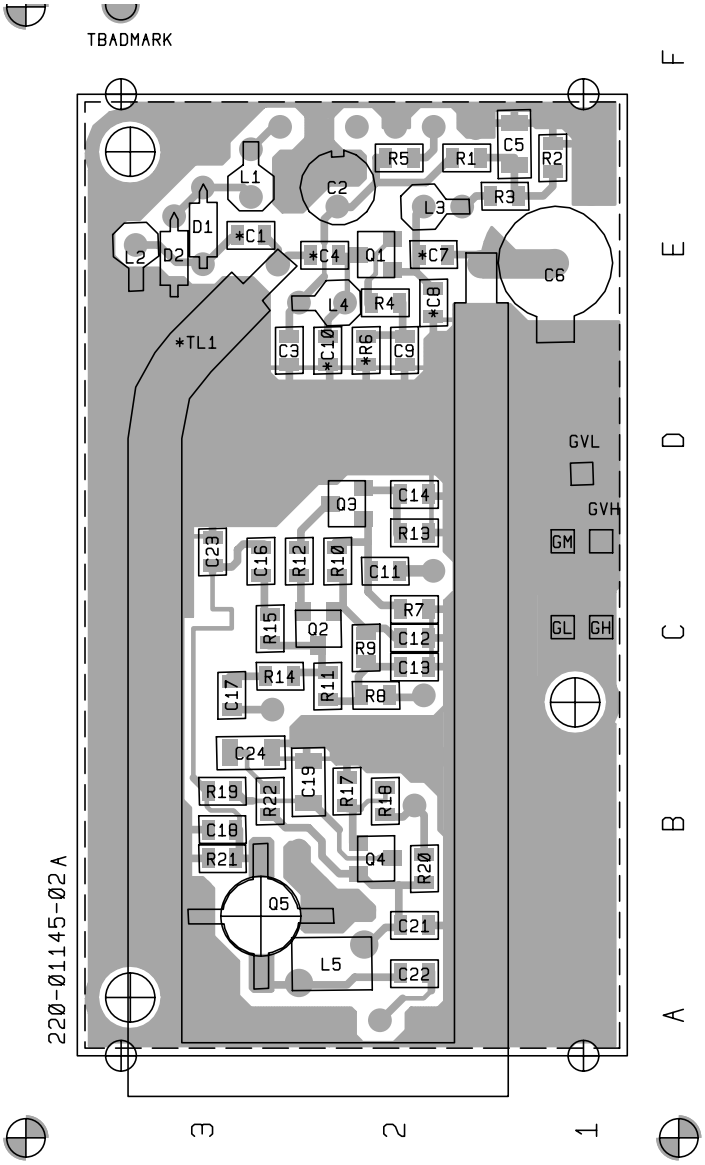
There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description
C1	A	015-21150-01	CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V
C1	B	015-21180-01	CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V
C1	C	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C1	D	015-21220-01	CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V
C2		025-08100-02	CAP TANT BEAD 10M 10% 16V
C3		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C4		015-21100-01	CAP CER 0805 CHIP 1PO +/-0.25P NPO 50V
C5		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C6		028-02100-08	CAP TRIM 2/10P CER 5MM TOP ADJ
C7	A	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C7	B	015-21470-01	CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V
C7	C	015-21680-01	CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V
C7	D	015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C8	A	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C8	B	015-22270-01	CAP CER 0805 CHIP 27P 5% NPO 50V
C8	C	015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C8	D	015-22330-01	CAP CER 0805 CHIP 33P 5% NPO 50V
C9		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C10		015-21180-01	CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V
C11		015-21330-01	CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V
C12		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C13		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C14		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C16		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C17		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C18		015-22220-01	CAP CER 0805 CHIP 22P 5% NPO 50V
C19		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
C21		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C22		015-23120-01	CAP CER 0805 CHIP 120P 5% NPO 50V
C23		015-21820-01	CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V
C24		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V
D1		001-00012-63	(S) DIODE VARICAP BB809
D2		001-00012-63	(S) DIODE VARICAP BB809
L1		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L2		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L3		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L4		056-00021-60	IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET
L5		052-08135-35	COIL A/W 3.5T/3.5MM HOR 0.8MM WIRE
PL2		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL3		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL4		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
PL5		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
Q1		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q2		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q3		000-10057-10	(S) XSTR SMD MMBR571 NPN SOT-23 UHF LO PW
Q4		000-10008-57	(S) XSTR SMD BCW70/BC857-215 PNP SOT23AF
Q5		000-00032-47	(S) XSTR MRF559 NPN XPACK UHF PWR 0.5W
R1		036-14390-00	RES M/F 0805 CHIP 3K9 5%
R2		036-14100-00	RES M/F 0805 CHIP 1K 5%
R3		036-13100-00	RES M/F 0805 CHIP 100E 5%
R4		036-12220-00	RES M/F 0805 CHIP 22E 5%
R5		036-12270-00	RES M/F 0805 CHIP 27E 5%
R6	A	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	B	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	C	036-12820-00	RES M/F 0805 CHIP 82E 5%
R6	D	036-13120-00	RES M/F 0805 CHIP 120E 5%
R7		036-14100-00	RES M/F 0805 CHIP 1K 5%
R8		036-12220-00	RES M/F 0805 CHIP 22E 5%
R9		036-14270-00	RES M/F 0805 CHIP 2K7 5%
R10		036-14120-00	RES M/F 0805 CHIP 1K2 5%
R11		036-13150-00	RES M/F 0805 CHIP 150E 5%
R12		036-12100-00	RES M/F 0805 CHIP 10E 5%
R13		036-12560-00	RES M/F 0805 CHIP 56E 5%
R14		036-13330-00	RES M/F 0805 CHIP 330E 5%
R15		036-12100-00	RES M/F 0805 CHIP 10E 5%
R17		036-14680-00	RES M/F 0805 CHIP 6K8 5%
R18		036-14180-00	RES M/F 0805 CHIP 1K8 5%
R19		036-14100-00	RES M/F 0805 CHIP 1K 5%
R20		036-12180-00	RES M/F 0805 CHIP 18E 5%
R21		036-13330-00	RES M/F 0805 CHIP 330E 5%
R22		036-12100-00	RES M/F 0805 CHIP 10E 5%
TL1	A	051-00005-43	RESNTR TAIT NO 543 480-520MHZ T855/7
TL1	B	051-00005-42	RESNTR TAIT NO 542 435-480MHZ T855/7
TL1	C	051-00005-41	RESNTR TAIT NO 541 395-440MHZ T855/7
TL1	D	051-00005-40	RESNTR TAIT NO 540 355-395MHZ T855/7
		065-00010-13	BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE Place On Lead Of L4, Secure With Loctite 454-16 Gel
		220-01145-00	PCB T855/856/857 VCO
		240-00025-36	PLUG 32WAY 1ROW PC MTG HARWIN
		345-00040-10	SCREW M3*6MM PAN POZI ST BZ
		350-00016-42	SPACER 5MM HI 8MM X M3 STUD 2.5MM X M3
		353-00010-10	WASHER M3 FLAT 7MM*0.6MM ST BZ
		353-00010-13	WASHER M3 SHAKEPROOF INT BZ

Variant Code	Description	T855 (MHz)	T856/857 (MHz)
A	Tx High	-	480-500
B	Tx Mid/Rx High	480-520	440-480
C	Tx Low/Rx Mid	440-480	400-440
D	Rx Low	400-440	-



T850 VCO PCB (IPN 220-01145-02) - Bottom Side



T850 VCO PCB (IPN 220-01145-02) - Top Side

Part F Installation

This part of the manual is divided into the sections listed below. These sections give a brief description of the basic rack mounting and wiring procedures for the T855 receiver, T856 transmitter, T857 exciter and T858/859 power amplifiers.

1 T855/856/857 Installation

1.1 Rack Mounting

The T855 receiver, T856 transmitter and T857 exciter are designed for use in a standard 483mm rack frame using a Tait T800 Series guide which locates and mates the rear D-range connectors (refer to Figure 1.1, Figure 1.2 and Figure 1.3).

A T800 Series guide is supplied with each unit. The guide is located in the rack frame with four screws, two at the rear and two at the front, and the T800 unit is secured into the guide with two front panel mounting screws.

A rear mounted N-type connector is used for RF input on the T855 receiver and RF output on the T856 transmitter, while the T857 exciter RF output is via the front panel SMC connector. All DC, audio and control connections are via the rear mounted D-range connector. An additional rear D-range connector (T800-03) is fitted when remote multichannel operation, or additional control or low frequency lines are required.

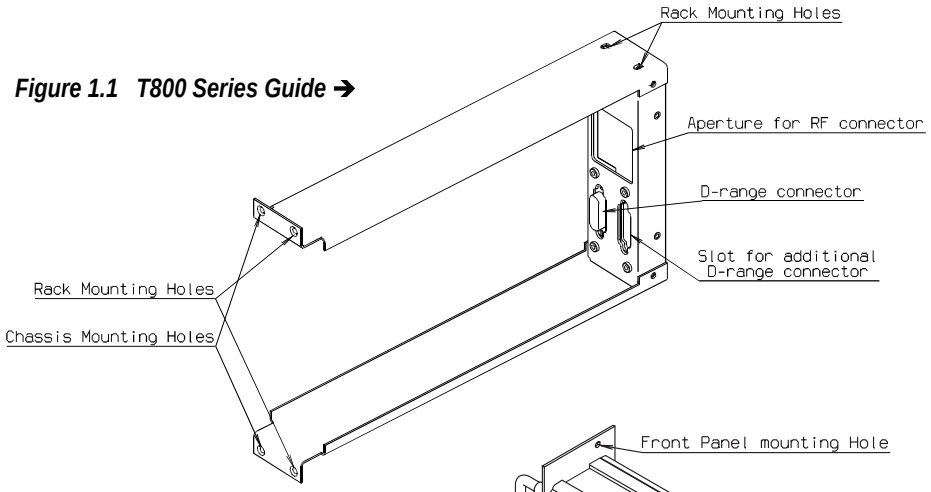


Figure 1.1 T800 Series Guide ➔

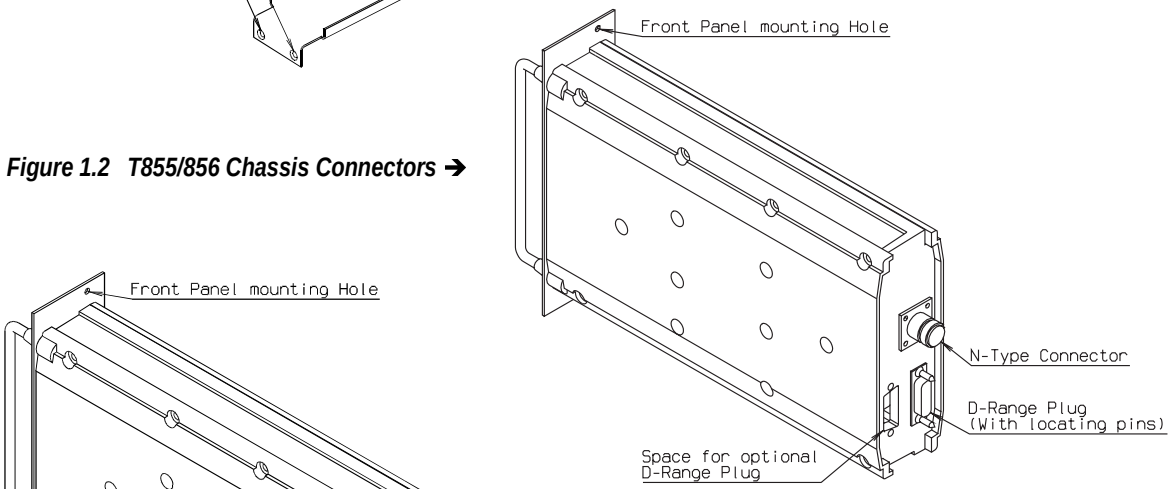
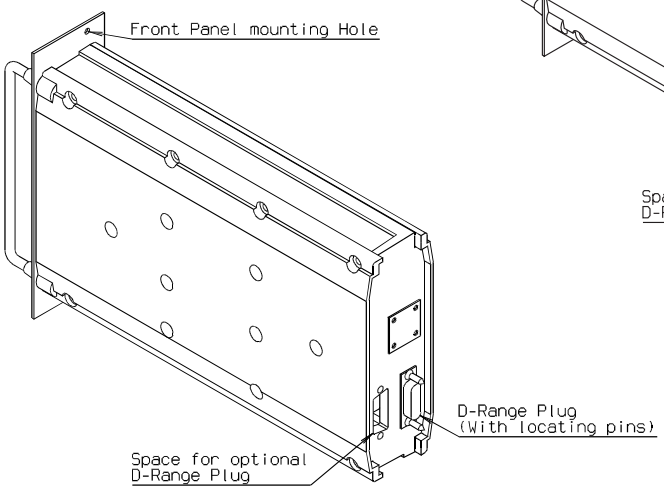


Figure 1.2 T855/856 Chassis Connectors ➔



← *Figure 1.3 T857 Chassis Connectors*

1.2 Rack Wiring

Wire the D-range connector as shown in Figure 1.4 or Figure 1.5. Ensure that the cables are not subjected to any stresses due to tight bends or incorrect lengths.

The RF coaxial cable to the N-type connector should be free from acute bends or twists. If access to the rear of the rack frame is restricted, the cable should be long enough to permit full withdrawal of the chassis from the guide.

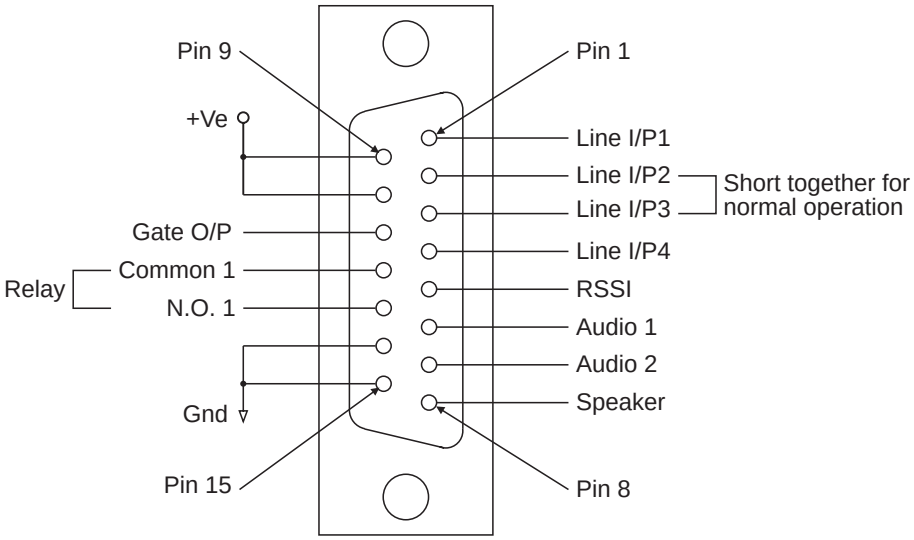


Figure 1.4 T855 D-Range Wiring - Rear View

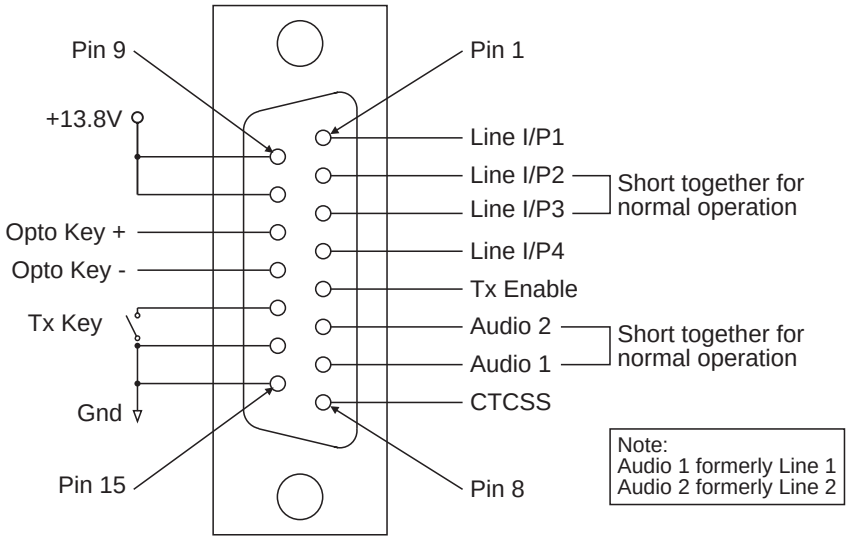


Figure 1.5 T856/857 D-Range Wiring - Rear View

1.3 T856/857 Non-standard D-Range Connections

(Refer to the audio processor circuit diagram and Figure 1.5.)

To enable non-standard connections to be made via the existing D-range connector, pins 2, 3, 11 and 12 have been provided with I/O pads and removable links in the form of zero ohm resistors (R132, R133, R134 and R135).

In the standard configuration pins 2 and 3 are shorted together externally. To make use of these pins, remove R134 and R135, then link "LINE-I/P-2" to "LINE-I/P-3" internally. Connections made to pads 101 and 102 will now be available at D-range pins 2 and 3 respectively. However, in this case, external access to the centre of the line transformer will be disabled.

Similarly, the removal of R132 and R133 will enable connections made to pads 104 and 105 to be available at D-range pins 11 and 12 respectively. However, in this case, external access to the optocoupler will be disabled.

1.4 Power Supply

If a power supply other than an appropriate Tait model is used, ensure that it is capable of providing enough current to drive the T800 system and is also free from excessive ripple or noise.

The system should be protected by the use of appropriately rated fuses in the power supply.

Note: It is particularly important when the prime power source is a battery that fuses be employed in all supply lines.

1.5 Reverse Polarity Protection

A shunt diode is fitted to all T855 receivers, T856 transmitters and T857 exciters for protection against connection to a power supply of incorrect polarity.

Note: A fuse must be fitted in the power supply line for the diode to provide effective protection.

2 T858/859 Installation

2.1 Rack Mounting

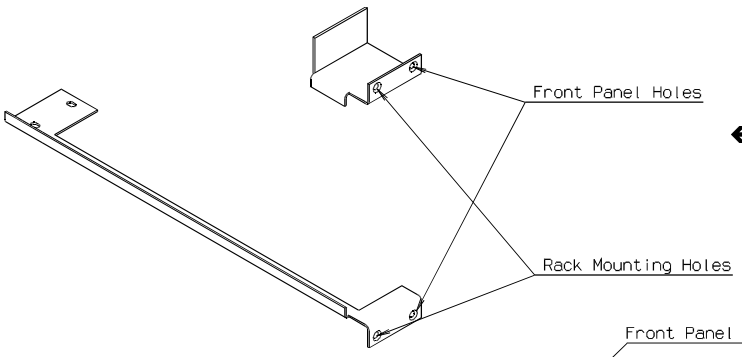
The T858 50W PA and T859 100W PA are designed for use in a standard 483mm rack frame using the supporting guide rails supplied with the units (refer to Figure 2.1).

The lower guide rail is located in the rack frame with three screws, two at the rear and one at the front. The short upper guide rail is located with just one screw. The PA is secured into the guide with two front panel mounting screws.

The RF input via the front panel SMC connector should be connected to an adjacent T857 exciter. The RF output is via the rear N-type connector, whilst all DC, audio and control connections are via the D-range connector.

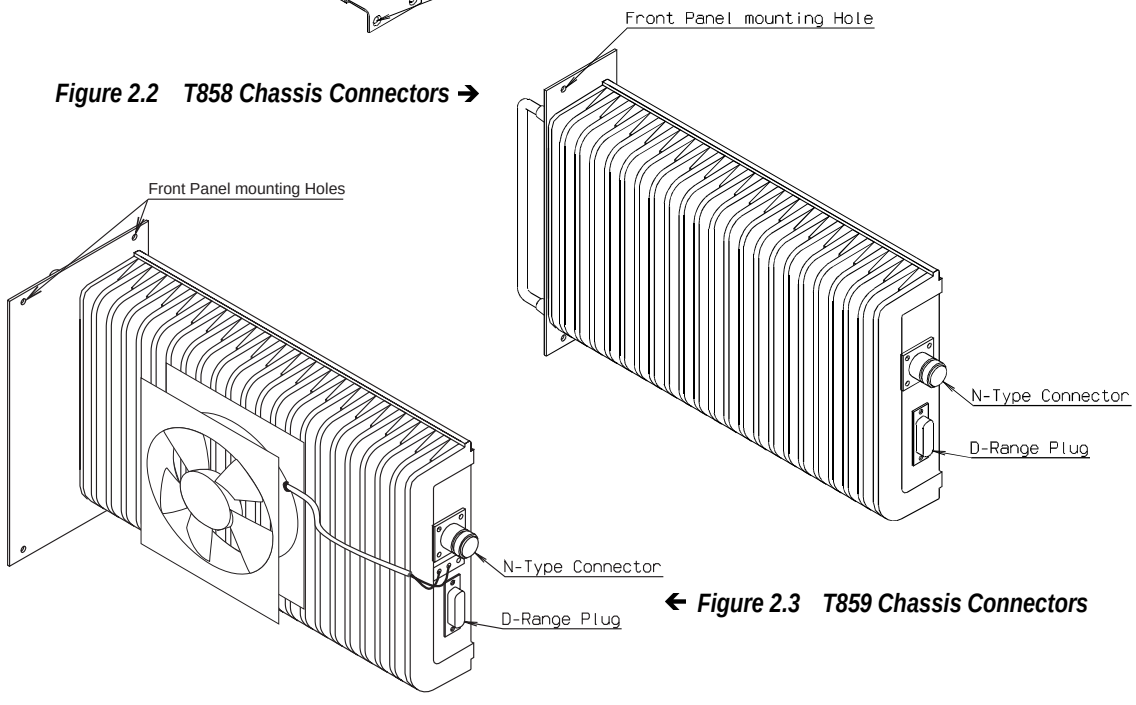
The guide rails will allow the PA to be latched in the extended position (refer to Figure 2.4).

Caution: **If continuous operation of the T858 is required, the rack module position immediately adjacent to the finned heatsink should be left vacant. Adequate airflow over the fins should be maintained at all times.**



← *Figure 2.1 T858/859 Guide*

Figure 2.2 T858 Chassis Connectors →



← *Figure 2.3 T859 Chassis Connectors*

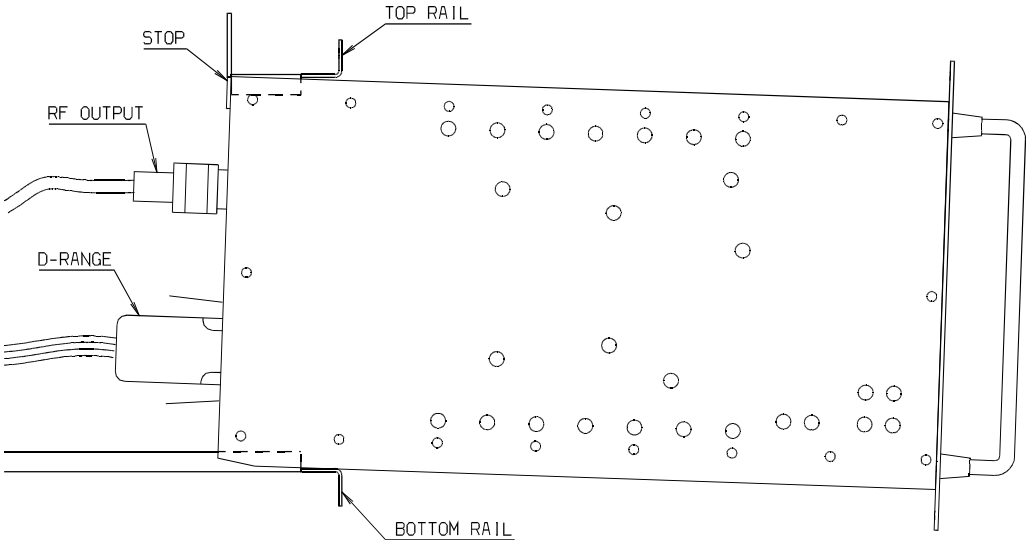


Figure 2.4 T858/859 Latched Position

2.2 Rack Wiring

Wire the D-range connector as shown in Figure 2.5. Ensure that the cables are not subjected to any stresses due to tight bends or incorrect lengths.

The RF coaxial cable to the N-type connector should be free from acute bends or twists. If access to the rear of the rack frame is restricted, the cable should be long enough to permit full withdrawal of the chassis from the guide.

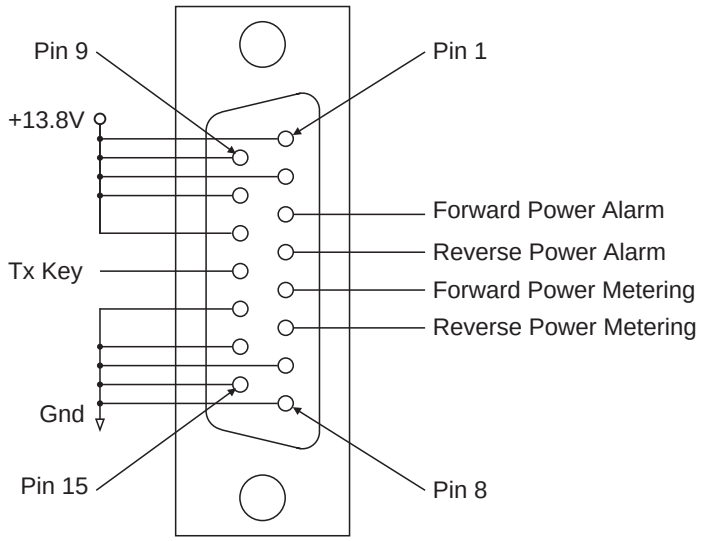


Figure 2.5 T858/859 D-Range Wiring - Rear View

2.3 Power Supply

If a power supply other than an appropriate Tait model is used, ensure that it is capable of providing enough current to drive the T800 system and is also free from excessive ripple or noise.

2.4 Reverse Polarity Protection

A shunt diode is fitted to all T858/859 power amplifiers for protection against connection to a power supply of incorrect polarity.

Note: A fuse must be fitted in the power supply line for the diode to provide effective protection.

Part G System Configurations

This part of the manual is divided into the sections listed below. These sections provide some brief information on basic system types and how to configure T850 equipment for use in them.

1 T855 Link Selectable Features

The T855 comes with a number of link selectable features which give added system flexibility

1.1 Flat Or De-emphasised Response

The links of PL101 and PL103 may be set to give either a flat or de-emphasised audio frequency response (refer to Section 3.3 in Part B for further details).

1.2 Mute Relay Control

A relay with undedicated contacts (RL100) is available in the audio processor circuit block for various switching applications. A link (PL102) is available for control of the relay from the mute circuit (refer to Section 3.3 in Part B). This makes the relay suitable for controlling the keying of a transmitter in repeater applications.

1.3 Mute Selection

Link PL104 may be set to operate with noise mute or carrier mute (refer to Section 3.3 in Part B).

1.4 Receiver Disable

The receiver audio can be disabled by pulling the "Rx disable" line low. When the circuit is pulled from low to high, the receiver audio cannot be re-enabled until the disable timer completes its operation. This time is variable from 15ms to 200ms by adjusting RV101 in the audio processor section.

If required, the operation of this circuit can be disabled by changing the link of PL100 from 1-2 to 2-3.

Typical applications of the receiver disable are as an extra mute for signalling purposes, or when the T855 is configured as a line controlled base station (refer to Section 4 in Part G).

1.5 CTCSS Configuration

Links PL105 & PL106 select various CTCSS options (refer to Section 3.3.2 in Part B).

1.6 300Hz High Pass Filter

Link PL105 also allows the insertion of this filter to improve hum and noise performance.

2 T856/857 Optional Features

2.1 Audio Processor

The T856 and T857 come with a number of link selectable features which give added system flexibility.

Refer to Section 3.3 in Part C for further details.

2.2 Line Transformer Inputs And Outputs

The line transformer (T100) is designed to provide a balanced interface to 600 ohm lines. For normal operation the two centre connections (LINE I/P 2, LINE I/P 3) are shorted together, and the 600 ohm line is connected between LINE I/P 1 and LINE I/P 4.

The secondary winding of the transformer is connected via a 1k resistor to pin 7 of the D-range connector and may be used to monitor audio on the line. It is normally shorted at the connector socket to pin 6 to route the audio signal back into the processor. If required, the audio path may be broken at this point for use with signalling options, e.g. CTCSS (refer to TI-346).

Note: Ultra-wide band versions of the T856 have a zero ohm resistor in the line to pin 7 of the D-range.

2.3 Opto Key

The keying circuitry may be completely isolated from the rest of the system by means of the optocoupler (IC100) connected between pins 11 and 12 of the D-range connector. A constant current source (Q106) allows keying voltages between 6 and 50V.

2.4 Relay Driver

A dedicated transistor (Q105) is provided for the purpose of switching an external (e.g. coaxial) relay. The output is open collector and is activated by the Tx-reg rail.

This output is not normally connected to the standard D-range connector, and use of the relay driver will necessitate manual wiring to an additional D-range connector, as supplied with the T800-03 auxiliary D-range.

2.5 Local Microphone

Use of the local microphone (via the front panel stereo socket) will disable the audio input from the line. The audio switching occurs when the PTT switch is closed.

2.6 Keying With Option PCBs

If an option PCB (e.g. CTCSS) is fitted to the exciter, keying may then be accomplished via the TX-EN-OPT pad in the audio processor. The line must be pulled low to key.

2.7 Transmit Key Time

2.7.1 T856 Issue -03 & Later PCBs

- **Standard**

  Leave LINK A open circuit.

- **Short**

  Make LINK A.

2.7.2 T857 Issue -04 & Later PCBs

- **Standard**

  Ensure that zero ohm resistor R78 is in circuit, and that solder links A & B in the synthesiser are ***not*** made.

  The key time will be approximately 25ms.

- **Short**

  Remove R78 and make solder links A & B.

  The key time should now be <2ms.

  In this configuration the standby spurious emission should be <-65dBm.

3 Talk Through Repeater

In this configuration the receiver directly keys the transmitter when the signal is received. The demodulated audio is fed via 600 ohm lines to the transmitter to modulate the carrier. The receiver and transmitter operate simultaneously and must therefore be on different frequencies. The minimum frequency separation depends on the duplexer used.

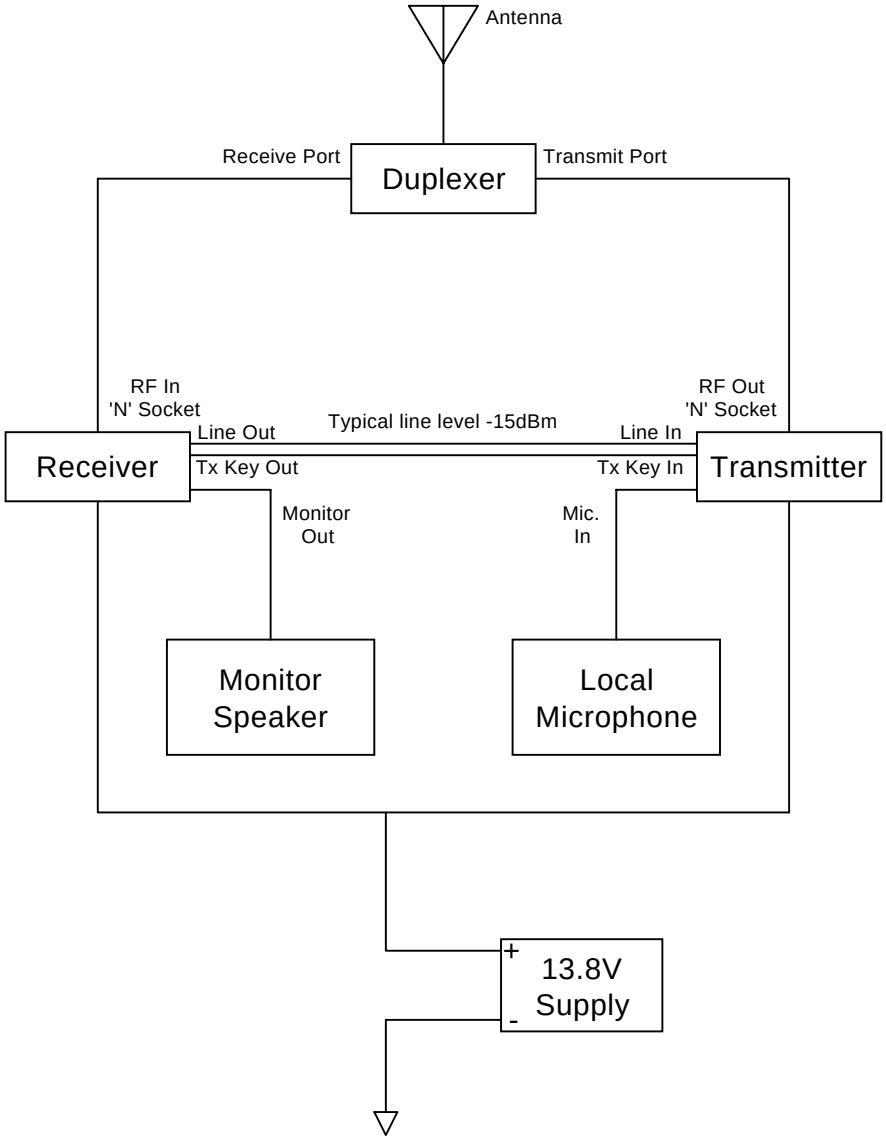


Figure 3.1 Talk Through Repeater

4 Line Controlled Base Without Talk Through

4.1 General

This installation contains a transmitter and receiver which may or may not be on the same frequency, thus simultaneous transmission and reception is not possible. When the transmitter is keyed, the coaxial relay is also energised. When the relay is in its rest position, signals from the aerial are passed to the receiver and the demodulated output is fed via 600 ohm lines to the RCU.

The receiver is disabled when the transmitter is energised to prevent the receiver mute opening from RF due to lack of isolation in the relay, direct radiation or the noise skirt of the dual frequency link.

Since the base station may be controlled via a 2-wire line and a 4-wire to 2-wire hybrid, there is a possibility of system oscillation if the receiver is not disabled during transmit. This occurs when the transmit energy enters the receiver and produces an audio response which can pass from the receive to the transmit audio part of the hybrid (impedance imbalance, etc).

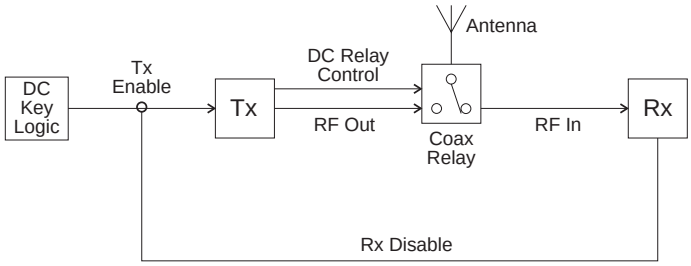


Figure 4.1 Basic Configuration

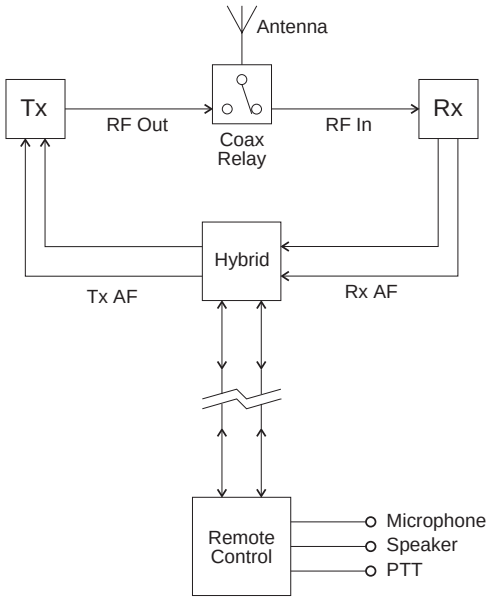


Figure 4.2 Remote Line Controlled Base Station

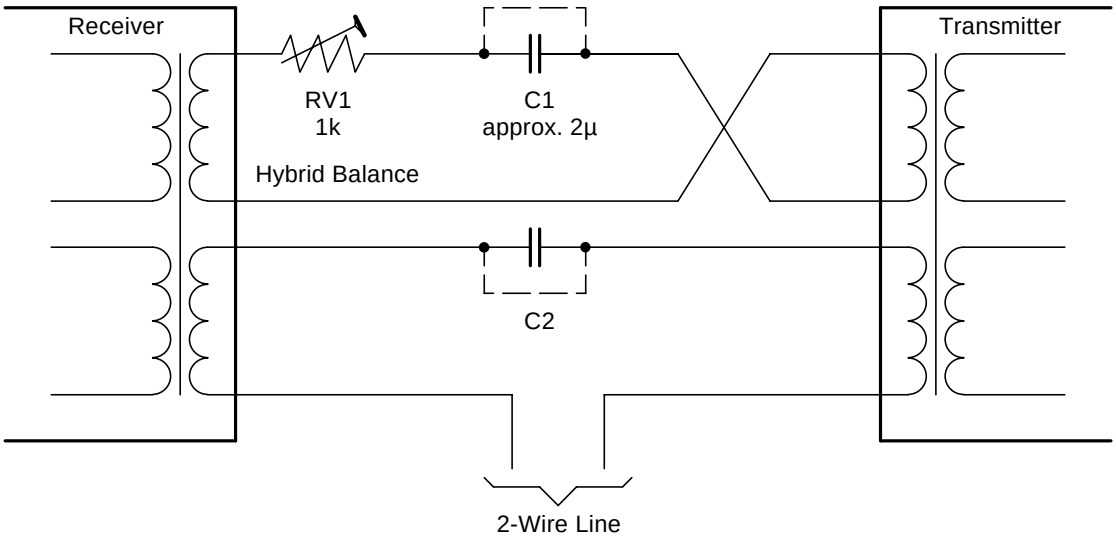


Figure 4.3 4-Wire to 2-Wire Converter

4.2 Transmitter Tail Timer

If the transmitter has a tail timer fitted:

- the receiver disable timer must be set so that ^{t}Rx / Dis > ^{t}Tx / Tail;

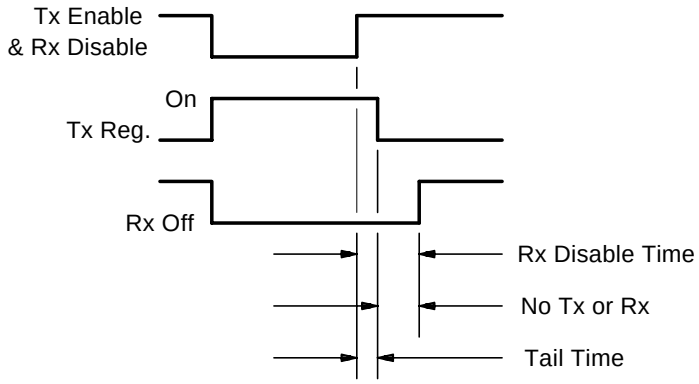


Figure 4.4 Receiver Disable Time vs Tail Time

- if the system configuration also uses an aerial changeover relay as well as the tail timer, the changeover relay must be driven from the relay driver (Q105) in the audio processor rather than by Tx key or Tx enable;

- depending on tail time requirements, it is possible for the transmitter tail time to exceed the receiver disable time capability; in this situation the receiver disable line should also be driven from relay driver Q105.

5 DC Line Keying

Where the transmitter and receiver are separated by only a short distance and DC isolation is not required, DC loop keying may be employed.

A small DC current (usually less than 10mA) can be fed via the balanced 2-wire line to provide remote control of various functions.

In a duplex system the receiver mute is used to key a transmitter, provided there is a common earth between the two units (refer to Figure 5.1).

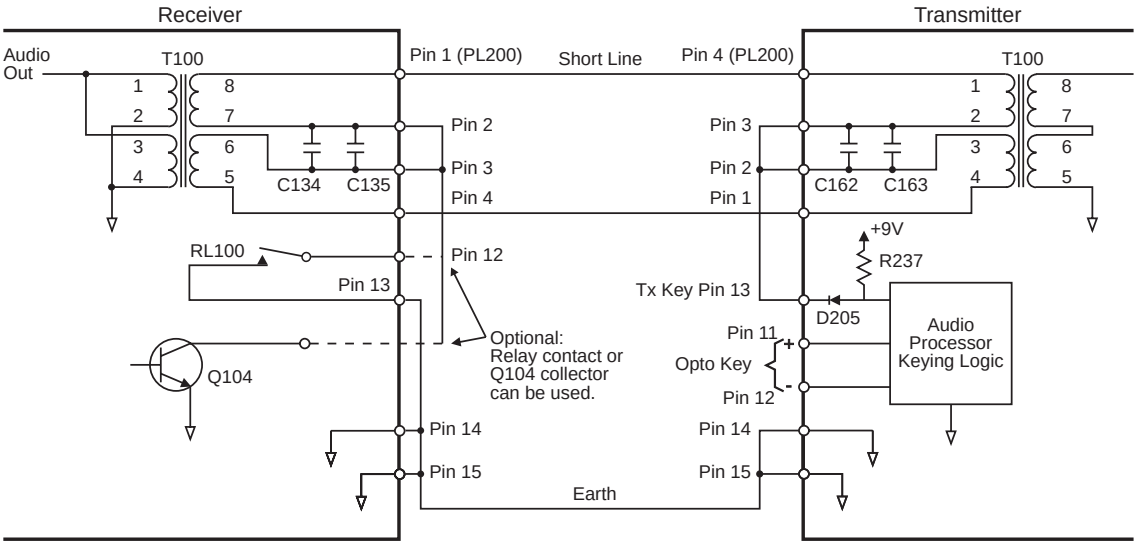


Figure 5.1 DC Loop Keying With Common Earth

Where the receiver and transmitter (or remote control) are distant, DC loop keying is provided by an isolated supply, driver and detector because an earth cannot be relied on (refer to Figure 5.2, Figure 5.3 & Figure 5.4).

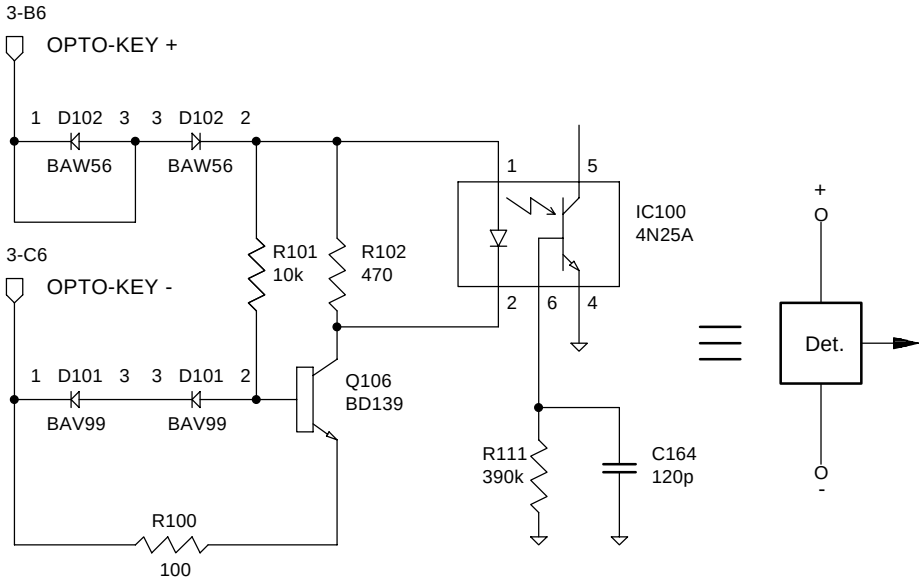


Figure 5.2 Isolated Constant Current Loop Current Detector (Opto-key input on T856 & T857)

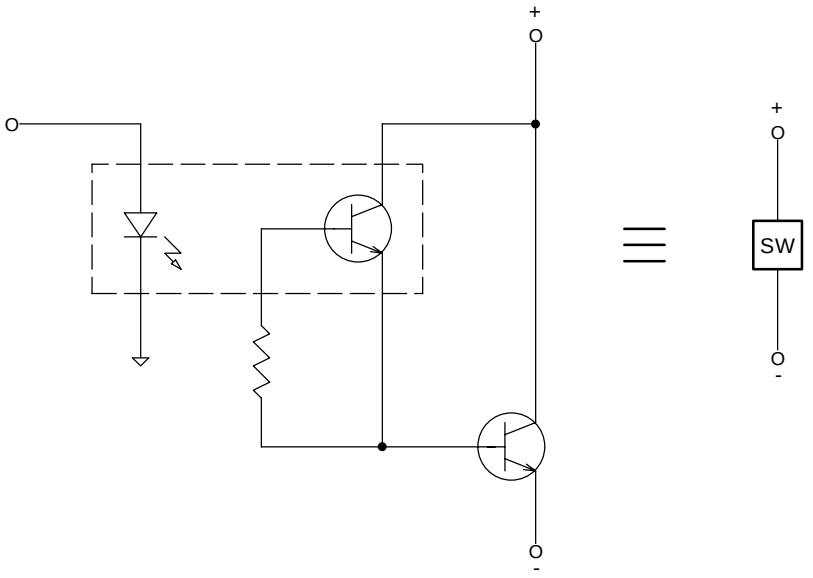


Figure 5.3 Isolated Loop Current Switch

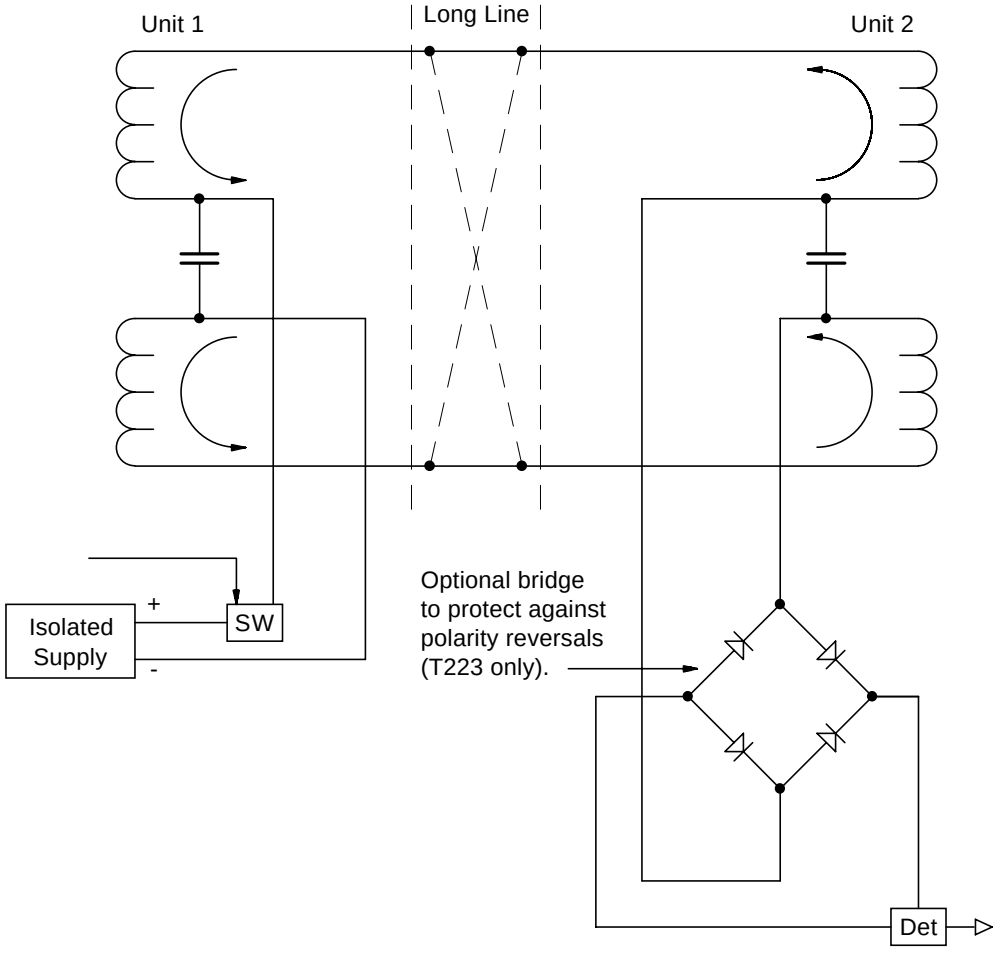


Figure 5.4 Typical System

Part H T800 Ancillary Equipment

This part of the manual gives a brief description of the ancillary equipment and accessory kits available for use with T800 series base station equipment.

T800 Ancillary Equipment

This Part of the manual features a brief description of the major ancillaries that may be used with T800 series equipment. For a comprehensive list of available ancillary equipment, please contact your nearest approved Tait Dealer or Service Centre.

T318-02 Receiver/Transmitter Monitor

The T318-02 is designed to monitor the basic operational functions of one T800 receiver and transmitter. The meter and selector switches for monitoring the required functions are mounted on the front panel, as is the monitor speaker which is driven by a built-in amplifier. An optional mute circuit may be used to silence the audio when no carrier is present.

Refer to M318-02.

T708-91/92 Mains Power Supplies

The T708-91/92 mains power supplies are designed to power the T800-60 Slimline Repeater and mount on the front panel instead of the options tray. Two versions are available:

T708-91 230V/50Hz mains supply
T708-92 120V/60Hz mains supply.

The units are electrically the same as (although mechanically different from) the T708-01 and T708-02 respectively.

Refer to M700-00 or M708-01.

T800-01-001 Programming Kit

The T800-01-001 kit is used for programming T800 series base station equipment and must be used in conjunction with a PC, an EPROM programming device and appropriate software capable of programming an EPROM from an Intel hex format or binary file.

The kit comprises the following items:

PGM800Win programming software user's manual
PGM800Win programming software on 3½" floppy discs.

T800-02 CTCSS Dencoder

The T800-02 CTCSS unit is designed to operate with the T800 range of receivers and transmitters. It will encode and decode CTCSS tone frequencies within the range 67 to 250.3Hz and is compatible with any other CTCSS unit which conforms to EIA RS220.

Refer to TI-346.

T800-03 Auxiliary D-Range

The T800-03 is an additional D-range kit comprising 1 D-range plug assembly, 1 D-range socket and 2 locating pins, nuts & washers.

T800-04 RSSI

The T800-04 RSSI option PCB plugs directly into the main PCB (support circuitry being fitted as standard). It is fitted to the T855, T875 and T885 whenever receiver signal strength monitoring is required, e.g. trunking or voting. Its function is to provide a DC voltage proportional to the signal level at the receiver input.

Refer to the appropriate service manual.

T800-05 Guide Rail

The standard T800 series guide with one D-range socket for mounting in the standard 483mm rack frame assembly.

T800-06 External Frequency Reference Kit

The T800-06 kit features an additional D-range plug which incorporates a miniature RF connector to carry an externally generated 12.8MHz reference signal into a T800 module. This enables the use of very high stability external reference oscillators for special applications.

T800-07 Multichannel Kit

The T800-07 is a plug-in multichannel memory PCB (supplied with connecting cable) which is intended as a substitute for the T800-10 memory PCB. Up to 128 channels may be addressed via the on-board DIP switch or remotely via the T800-03 D-range kit. CTCSS frequencies may also be stored alongside channel information within the EPROM.

Refer to TI-356.

T800-10 Memory Module

The T800-10 is the standard, plug-in T800 channel memory PCB.

T800-13 Extender Rail

The T800-13 extender rail allows a T800 unit to be operated out of the rack with the covers off for tuning purposes. It is fitted with two 15-way D-range connectors.

T800-14 Extender Rail

The T800-14 extender rail allows a T800 unit to be operated out of the rack with the covers off for tuning purposes. It is fitted with one 15-way D-range connector and one 11-way D-range incorporating a miniature RF connector for an externally generated reference signal.

T800-15 Speaker Panel

A 60mm speaker panel fitted with a 4Ω speaker and complete with mounting hardware.

T800-16 Speaker Panel (formerly T359-01)

A 120mm speaker panel fitted with a 75mm x 125mm 4Ω speaker and complete with mounting hardware.

T800-19 Rack Mounting Fan

The T800-19 kit features a rack mounting fan which is designed to fit into the base of any standard 483mm rack frame without affecting its ability to house 7 modules. The kit contains all mounting hardware.

T800-20 Pre-wired Rack

The T800-20 is a standard 5U high rack which is wired to accommodate one 25, 50 or 100W base station or repeater. It comes complete with a T800-15 speaker panel and T992-01 blank panel.

T800-21 Pre-wired Rack With Interface PCB

The T800-21 is a standard 5U high rack which is wired to accommodate one 25, 50 or 100W base station or repeater. It is also fitted with an interface PCB containing a 25-way D-range to allow the easy integration of OEM products into the base station or repeater configuration. The T800-21 comes complete with a T800-15 speaker panel and T992-01 blank panel.

T800-30 & T800-35 DFSK Modulators

The T800-30 and T800-35 are DFSK modulators for T800 transmitters, suitable for POC-SAG or similar paging data formats. Analogue transmissions (e.g. tone or speech) are still possible by disabling the data path via a control line. 512 or 1200 baud data rates are link selectable. The T800-35 is adapted for use with an external reference oscillator for simulcast transmission.

Refer to TI-373.

T800-60 Slimline Repeater Mounting Kit

The T800-60 Slimline Repeater kit enables one T800 receiver and one T800 transmitter to be mounted horizontally side-by-side in a standard 483mm rack frame. The kit contains a front panel complete with speaker, an options tray (for mounting a power supply, duplexer, etc.), and a wiring loom to connect the two T800 modules to the terminal blocks mounted on the rear of the options tray. The T708-91/92 mains power supplies (available separately) are designed for use with the T800-60. The rack height of the assembled unit is 2U.

T800-80 Local Microphone

A 600Ω microphone complete with 300mm cord terminated in a ¼" stereo plug.

T800-81 Narrow Band Conversion Kit

The T800-81 kit provides the components required to convert one T835 receiver from 25kHz channel spacing to 12.5kHz channel spacing for narrow band operation.

T800-82 Narrow Band Conversion Kit

The T800-82 kit provides the components required to convert one T836 transmitter ***or*** one T837 exciter from 5kHz deviation to 2.5kHz deviation for narrow band operation.

T800-83 Narrow Band Conversion Kit

The T800-83 kit provides the components required to convert one T855 receiver from 25kHz channel spacing to 12.5kHz channel spacing for narrow band operation.

T800-84 Narrow Band Conversion Kit

The T800-84 kit provides the components required to convert one T856 transmitter ***or*** one T857 exciter from 5kHz deviation to 2.5kHz deviation for narrow band operation.

T801 Frequency Reference Module

The T801 frequency reference module provides a high stability frequency source to which the synthesiser within a T800 base station can be locked. The master standard within the T801 is primarily intended to be rubidium, although high quality ovenised crystal oscillators can also be used in applications where more frequent readjustment of frequency is acceptable. The T801 converts the output frequency from its master standard to the 12.8MHz required by the T800 base station.

Refer to M801-00.

T801-10 OCXO Module

The T801-10 OCXO module provides a high stability frequency source to which the synthesiser within a T800 base station can be locked. This will provide T800 transmitters with the frequency stability required for simulcast transmission. The master standard within the T801-10 is a high quality ovenised crystal oscillator (OCXO). Three outputs are provided on the rear panel, which allows up to three T800 transmitters to be referenced to the source oscillator.

T802-00 Remote Monitor

The T802-00 is a microprocessor controlled remote monitor unit designed for use with Tait base station equipment. Each remote base requires one T802-00 which communicates via its integral modem with a centrally located PC based controller. The PC controller runs software to convert the raw data from the T802-00 into a user friendly form.

Refer to M802-00.

T802-10 RF Splitter

The T802-10 RF splitters are used to take attenuated RF from the transmitter to the T802–00 where it is mixed onto the receiver frequency by the shift mixer. This RF is then inserted via another splitter into the receiver. Each T802-10 kit contains 2 identical RF splitter modules.

Refer to M802-00.

T802-20 Modem & Programming Kit

The T802-20 kit provides a modem and the operating software for the T802-00 remote monitor PC controller and comprises the following items:

a CCITT V.23 modem
T802-00 PC software user's manual
T802-00 PC software on a 5¼" floppy disc.

T802-21 Programming Kit

The T802-21 kit provides the operating software for the T802-00 remote monitor PC controller and comprises the following items:

T802-00 PC software user's manual
T802-00 PC software on a 5¼" floppy disc.

T802-22 Modem

A CCITT V.23 modem for use with the T802-00 PC controller.

T806 Mains Power Supply

The T806 is a power supply capable of supplying up to 6A at 11-14V DC and is available in 2 versions to suit a mains supply of either 230V/50Hz or 115V/60Hz (nominal values). The T806 is designed to power T800 series 25W transmitters (plus receivers, etc.) and comes complete with a guide to mount in a standard 60mm rack frame assembly.

Refer to M806-00.

T807 Mains Power Supply

The T807 is a switching power supply capable of supplying up to 15A at 11-14V DC. It requires a mains supply of 230V/50Hz or 115V/60Hz (nominal values) which can be internally selected with a switch or wire links. The T807 is designed to power T800 series 50W transmitters (plus receivers, etc.) and comes complete with a guide to mount in a standard 60mm rack frame assembly.

Refer to M807-00.

T808 Mains Power Supply

The T808 is a switching power supply capable of supplying up to 25A at 11-14V DC. It requires a mains supply of 230V/50Hz or 115V/60Hz (nominal values) which can be internally selected with a switch or wire links. The T808 is designed to power T800 series 100W transmitters (plus receivers, etc.) and comes complete with a guide to mount in a standard 60mm rack frame assembly.

Refer to M807-00.

T1500-50 Trunking Extra D-Range (formerly T800-50)

Trunking systems require additional outputs for flat audio (FFSK) and Rx line monitoring. This kit provides the components to connect these outputs via a second D-range.

T1500-51 Trunking Transmitter Interface (formerly T800-51)

When fitted to a T800 series transmitter, the T1500-51 trunking transmitter interface PCB allows the trunking system to switch the audio processor between FFSK and normal audio. The PCB comes complete with wires, sockets and screws, but a T800-03 auxiliary D-range kit will also be required.

KS820 Spares Kit

The KS820 spares kit contains all the parts on the T820 series recommended spares list and is intended to provided enough spares to maintain a single installation of up to ten channels. Included in the kit are electrical and mechanical parts that are either unique to Tait equipment, hard to obtain or susceptible to damage or wear and tear. All parts are securely packed in clearly labelled screw top containers in a handy plastic carry case.

Note: The kit does not contain standard chip capacitors or resistors.

KS830 Spares Kit

The KS830 spares kit contains all the parts on the T830 series recommended spares list and is intended to provided enough spares to maintain a single installation of up to ten channels. Included in the kit are electrical and mechanical parts that are either unique to Tait equipment, hard to obtain or susceptible to damage or wear and tear. All parts are securely packed in clearly labelled screw top containers in a handy plastic carry case.

Note: The kit does not contain standard chip capacitors or resistors.

KS850 Spares Kit

The KS850 spares kit contains all the parts on the T850 series recommended spares list and is intended to provided enough spares to maintain a single installation of up to ten channels. Included in the kit are electrical and mechanical parts that are either unique to Tait equipment, hard to obtain or susceptible to damage or wear and tear. All parts are securely packed in clearly labelled screw top containers in a handy plastic carry case.

Note: The kit does not contain standard chip capacitors or resistors.

KS880 Spares Kit

The KS880 spares kit contains all the parts on the T880 series recommended spares list and is intended to provided enough spares to maintain a single installation of up to ten channels. Included in the kit are electrical and mechanical parts that are either unique to Tait equipment, hard to obtain or susceptible to damage or wear and tear. All parts

are securely packed in clearly labelled screw top containers in a handy plastic carry case.

Note: The kit does not contain standard chip capacitors or resistors.

