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# T881 Transmitter

# UHF FM 800-960MHz

# (M881-00)

# Issue A

## 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 Product Support Group, Tait Electronics Ltd, at the above address.

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

## SCOPE OF MANUAL

This Manual contains general, technical and servicing information on the T881 transmitter.

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# SECTION 1 GENERAL INFORMATION

## 1.1 INTRODUCTION

The T881 is a synthesised, FM base station transmitter for single or multichannel operation in the 800 to 960MHz frequency range with a standard power output of 5W.

The RF section of the transmitter comprises a frequency synthesiser which provides 100mW of frequency modulated RF drive to the band pass pre-filter. 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 thermal shutdown feature is provided should operating temperatures exceed acceptable levels.

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, 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 PCB's 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 PCB's.

## 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 | .. 800-960MHz |
| Modulation Type | .. direct FM |
| Frequency Increment | .. 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 | .. crowbar diode |
| Keying Supply (if required) | .. -50V DC |
| Supply Current: | |
| Transmit | .. 2A (typical) |
| Standby | .. 120mA |
| Load Impedance | .. 50 ohms |
| Operating Temperature Range | .. -30°C to +60°C |
| Dimensions: | |
| Height | .. 191mm |
| Width | .. 60mm |
| Length | .. 322mm |
| Weight | .. 2.1kg |
| Time-Out Timer (optional) | .. 1 to 4 minutes (adjustable) |
| Tail Timer | .. 5ms to 4 seconds (adjustable) |

Transmit Key Time:
- Standard .. 45ms
- Short .. <2ms

Duty Cycle .. 100% @ 5W at +50°C
100% @ 2W at +60°C
40% @ 5W at +60°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 .. -88dBc
- At ±1MHz .. -100dBc

Radiated Spurious Emissions:
- Transmit .. -36dBm to 1GHz
  -30dBm to 4GHz
- Standby .. -57dBm to 1GHz
  -47dBm to 4GHz

Conducted Spurious Emissions:
- Transmit .. -36dBm to 1GHz
  -30dBm to 4GHz
- Standby .. -57dBm to 1GHz
  -47dBm to 4GHz

Frequency Stability:
- Standard Version .. ±1.5ppm, -30°C to +60°C
- High Stability Version .. ±1ppm, 0°C to +60°C

Power Output:
- Rated Power .. 5W
- Range Of Adjustment .. 1-7W

## 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 Response .. 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 .. -45dB (CEPT)
- Wide Band .. -50dB typical (300Hz to 3kHz [EIA])

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 VERSIONS

| Description | T881 Versions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 12 | 14 | 15 | 17 | 20 | 22 | 24 | 25 | 27 |
| 800-880MHz | + | + | + | + | + | | | | | |
| 850-960MHz | | | | | | + | + | + | + | + |
| 10kHz Deviation | | | + | | | | | + | | |
| 5kHz Deviation | + | + | | | | + | + | | | |
| 2.5kHz Deviation | | | | + | + | | | | + | + |
| 1.5ppm TCXO | + | | + | + | | + | | + | + | |
| 1ppm TCXO | | + | | | + | | + | | | + |

# SECTION 2 CIRCUIT OPERATION

## 2.1 INTRODUCTION

The individual circuit blocks which make up the T881 are: the synthesiser, VCO, audio processor, bandpass filter, power amplifier and 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 1. Refer to the Circuit Diagrams for more detail.

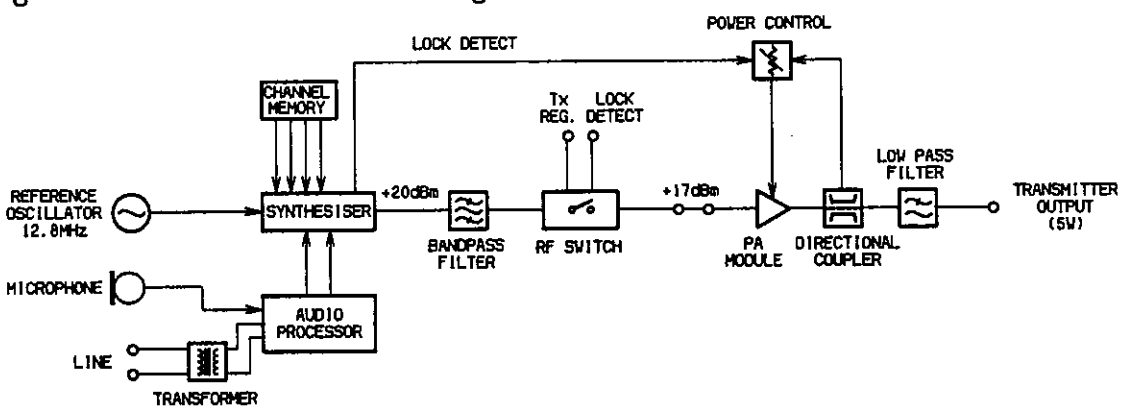



Figure 1 T881 High Level Block Diagram

## 2.2 SYNTHESISER (Refer to Figure 2.)

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 12.5kHz 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) provides rapid coarse tuning of the VCO until the phase error is within the range of the high gain sample and hold detector (PDA). The phase detector outputs are passed through an active loop filter (IC6) 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 IC6, producing the lock detect signal used to remove the control supply and the RF drive from the power module.

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.

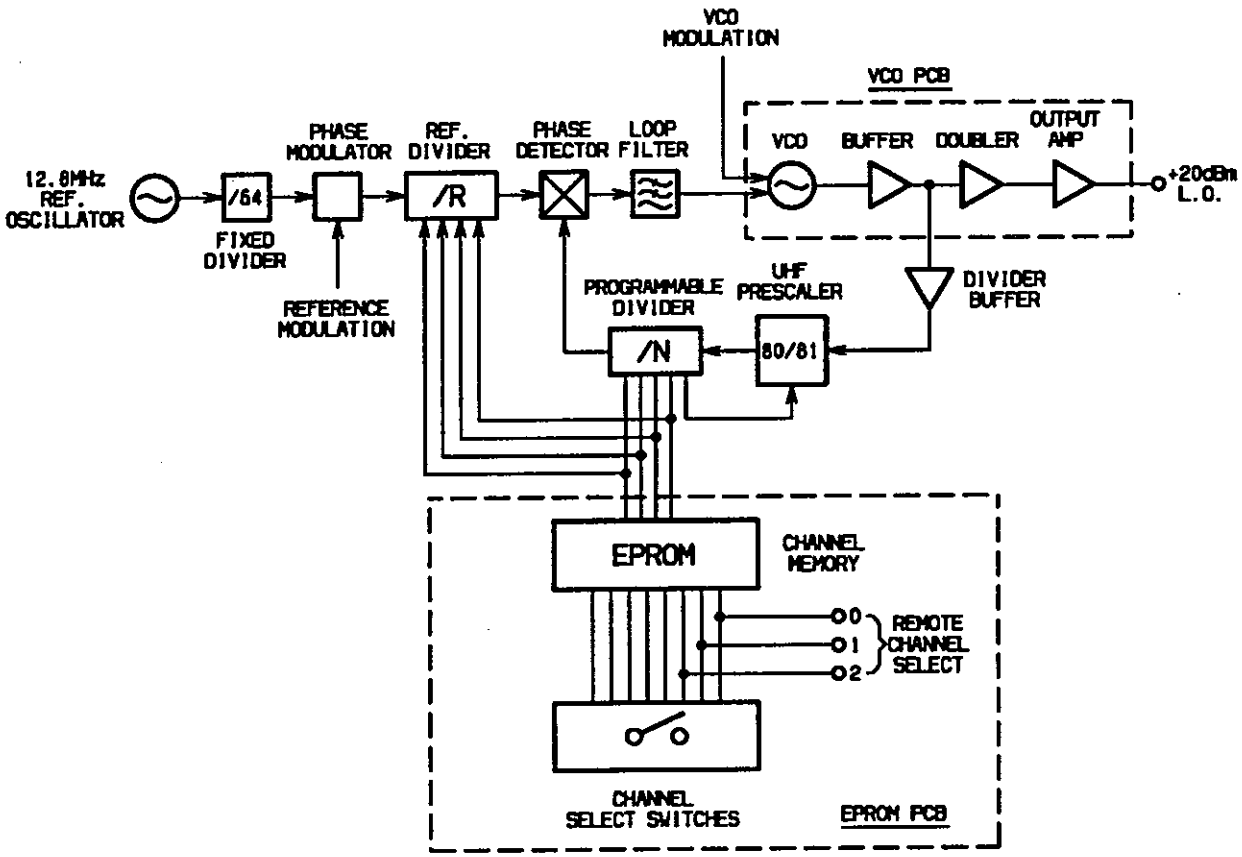



Figure 2 Synthesiser Block Diagram

## 2.3 VCO

The VCO transistor (Q1) operates in common emitter 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 (IC6) is applied to the varicaps (D1 & D2) to facilitate tuning. The output from the oscillator circuit drives a cascode amplifier stage (Q2, Q3) which drives a doubler (Q4). The final frequency is then applied to a further amplifier stage (Q5) via a 3dB pad. Q5 delivers +20dBm (typically) to a pre-power amplifier bandpass filter (#L300). The output stages Q4 & Q5 incorporate two notch filters to reduce $\frac{1}{2}$f.

A low level "sniff" is taken from the input to Q4 and used to drive the divider buffer for the UHF prescaler. The prescaler divides by 80/81.

The VCO is modulated by superimposing the audio signal onto the control voltage.

### 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.

## 2.4 AUDIO PROCESSOR (Refer to Figure 3.)

Note: IC102 and RV106 are designated "&IC102" and "&RV106" in the T881.

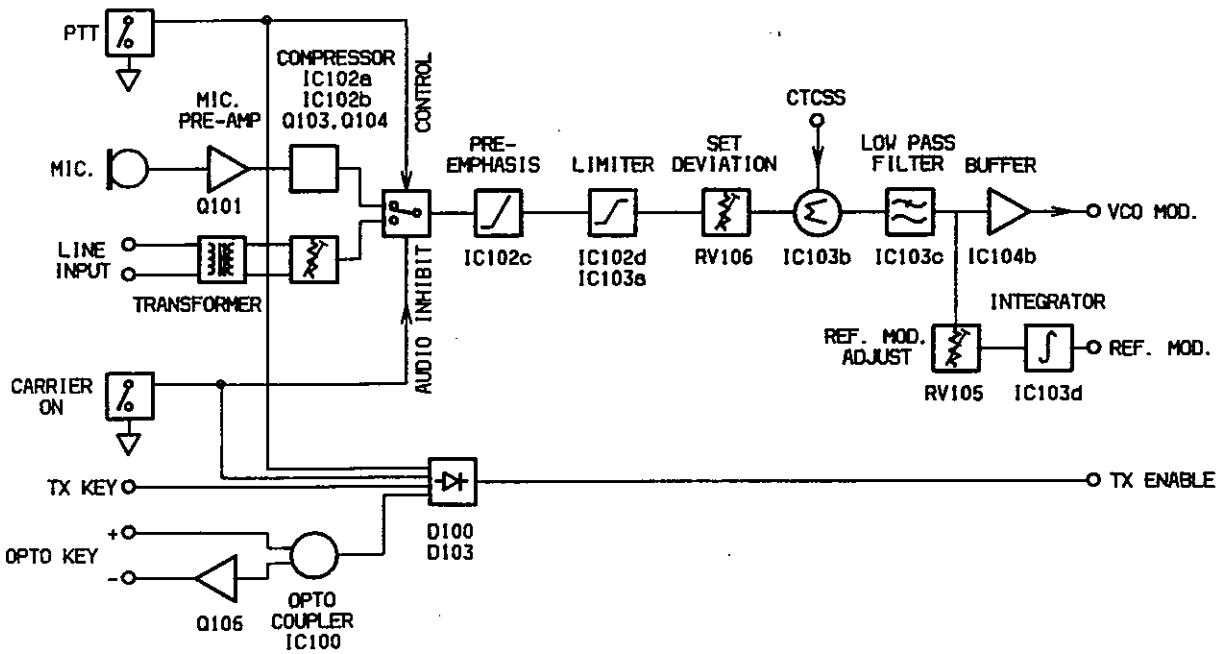



Figure 3 Audio Processor Block Diagram

### 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 4.4.1 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 pre-amplifier (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:

1. Pull the Tx-key line low (pin 13 on the D-range connector at the rear of the set).

2. Push the "Carrier" button on the front panel - this will inhibit all audio.

3. Use the PTT button on the local microphone, which disables audio from the line.

4. 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).

## 2.5 POWER SUPPLY & REGULATOR CIRCUITS (Refer to Figure 4.)

The T881 is 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 the removal of R257.

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

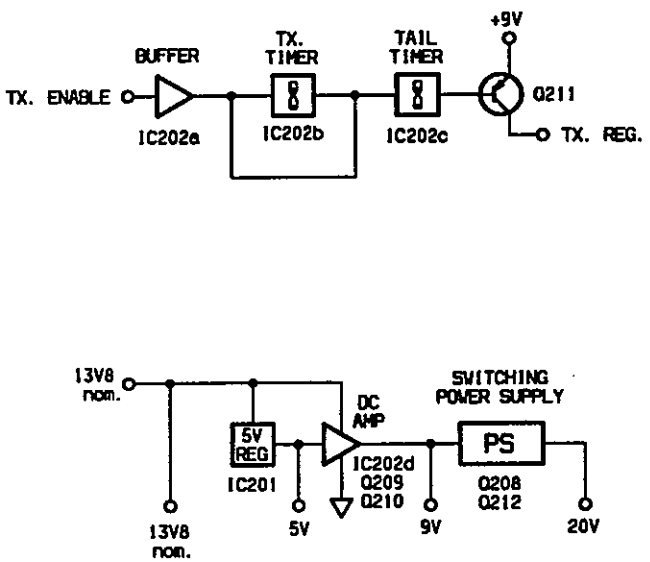



Figure 4 Power Supply & Regulator Block Diagram

## 2.6 BANDPASS PRE-FILTER & PA (Refer to Figure 1.)

A helical filter (#L300) followed by an RF switch results in a level of 17dBm for an input of +20dBm from the VCO.

The PA (#IC404) consists of a single module, followed by a directional coupler to provide power control feedback, and a low pass harmonic filter. The RF output is taken from a rear mounted "N" type connector.

# SECTION 3 INTRODUCTION TO SERVICING

## 3.1 GENERAL

### 3.1.1 NOTES

If further information is required about the T881 or this Manual, it may be obtained from Tait Electronics Ltd or accredited agents. When requesting this information, please quote either the equipment serial number or works order number (found on a label at the back of the set). In the case of the Service Manual quote the Tait Internal Part Number (IPN) and Issue, and for Circuit Diagrams quote the 'Title' and 'Issue'.

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 manufacturers' data books covering CMOS devices, e.g. Philips Data Handbook Covering CMOS Devices; Motorola CMOS Data Book Section 5 (Handling Procedures), etc.

### 3.1.2 TECHNICAL INSTRUCTIONS (TI's)

From time to time TI's are issued by Tait Electronics Engineering Division. These TI's may be used to update equipment or information, or to meet specific operational requirements.

## 3.2 MECHANICAL

### 3.2.1 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.

## 3.3 COMPONENT REPLACEMENT

### 3.3.1 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 PCB's are detailed below.

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

#### 3.3.1.1 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).

### 3.3.1.2 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.

## 3.3.2 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 personel may result in permanent damage. If in doubt, contact Tait Electronics Ltd or your nearest Tait Branch or Subsidiary.**

## 3.3.3 POWER MODULE

When replacing the power module, every precaution must be taken to ensure that the mounting flange and leads are secured and soldered in an unstressed state.

When installing a new module, the following procedure must be followed:

Ensure that both the mounting and earth plates are clean and free from burrs, particularly around the mounting screws.

Ensure that the module flange is clean.

Apply thermal conducting compound to the module flange, using enough to fill gaps.

Secure the module to the heatsink as follows:

- tighten the screws alternately and evenly until both are finger tight;
- progressively (at least two steps) increase the torque on the screws alternately and evenly until a final torque of 0.55N.m (5in.lbs) is attained on each screw.

Solder the leads to the PCB.

Clean the area by hand - the module must not be immersed in defluxing fluids as it is not sealed.

# SECTION 4 INITIAL TUNING & ADJUSTMENT

## 4.1 INTRODUCTION

The full tuning and adjustment procedure is as follows:

- channel programming
- channel selection
- selecting required audio links
- synthesiser alignment
- PA alignment
- modulator adjustment
- limiter adjustment
- setting line level
- compressor adjustment.

These operations are described more fully in the following Sections.

## 4.2 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

Note: Only CMOS EPROMs may be used.

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* PC, a PROM programmer and the PGM800 software package. For a full description of the programming procedure, refer to the T800 Programming Handbook.

*IBM is a registered trademark of International Business Machines.

## 4.3 DIP SWITCH CODES FOR CHANNEL ADDRESSES

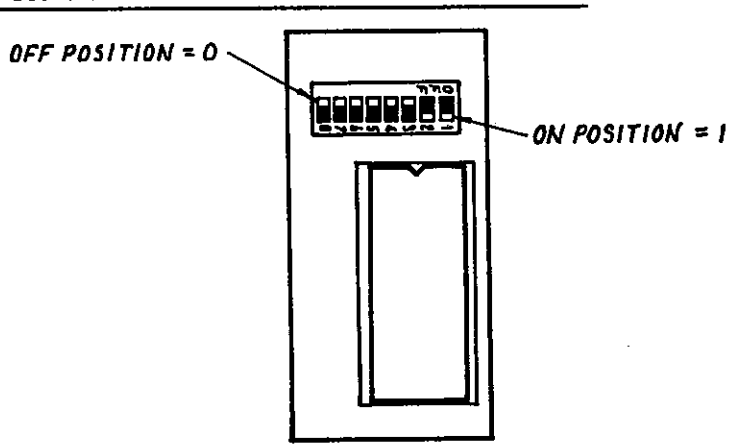



Figure 5 Channel DIP Switch Setting

The PGM800 software used to programme the EPROM will present the user with a DIP switch code for each channel address. For example, channel 124 will be assigned a switch code of X0000011, in which case the switches should be set as shown in Figure 5, i.e. 00000011.

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 4.2). 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 may have an access slot between these two compartments.

## 4.4 AUDIO PROCESSOR LINKS

### 4.4.1 LINK DETAILS

The links available for various circuit block options are listed by function as follows (refer to the Test Points & Options Diagram at the rear of this Manual):

| | | |
|---|---|---|
| Plug PL100 | 1-2 | not connected |
| | 3-4 | microphone pre-amp. output to compressor input |
| | 5-6 | microphone pre-amp. output to multiplexer input |
| Plug PL101 | 1-2 | mulitplexer output to pre-emphasis input |
| | 3-4 | multiplexer output to compressor input |
| | 5-6 | multiplexer output to limiter input |
| Plug 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 |
| Plug PL103 | 1-2 | pre-emphasis output to multiplexer input |
| | 3-4 | pre-emphasis output to limiter input |
| | 5-6 | not connected |

### 4.4.2 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 |

## 4.5 TEST EQUIPMENT SET-UP

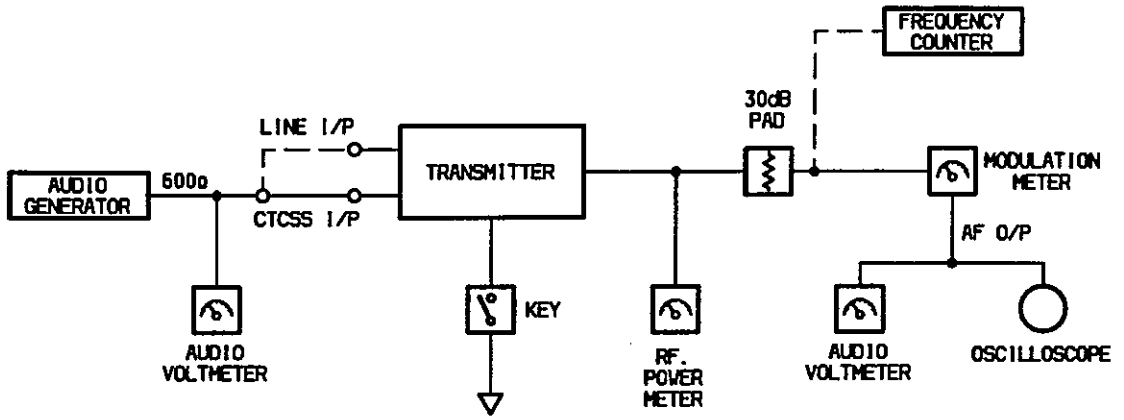



Figure 6 Test Equipment Set-Up

## 4.6 SYNTHESISER ALIGNMENT

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

2. Single Channel:

   Select a channel on the EPROM PCB DIP switch.

   Multichannel:

   Select the middle channel via the EPROM PCB DIP switch.

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

4. Earth the Tx key line.

   Single Channel:

   Tune VCO trimmer C6 for a synthesiser loop voltage of 7V.

   Multichannel:

   Tune VCO trimmer C6 for a synthesiser loop voltage of 7V on the middle channel.

   If there is no middle channel, tune C6 so that the channels are symmetrically placed around a loop voltage of 7V.

   All channels should lie within the upper and lower limits of 10V and 3V respectively.

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

5. 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.

## 4.7 PA ALIGNMENT

Measure and note the voltage on L416 (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 helical #L300 for maximum output power and check that this exceeds 7W.

Adjust power control RV356 for 5W.

## 4.8 THERMAL SHUTDOWN

Key the transmitter and set the output power to 5W as described in Section 4.7.

Short L416 to ground and key the transmitter.

Set RV355 (high temperature power set) for an output power of 1W.

Set RV351 (temperature adjust) to 0.16VL volts (measured at IC203 pin 10), where VL is the voltage measured at L416 in Section 4.7.

## 4.9 AUDIO PROCESSOR

### 4.9.1 TWO POINT MODULATION

The T881 utilises 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. $\Delta F > \pm 4$MHz).

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.

### 4.9.2 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 50 and 300Hz for peaks.

Note: A peak between 50 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.

### 4.9.3 LIMITER ADJUSTMENT

Set the audio processor links as appropriate for the required audio configuration (refer to Section 4.4).

Inject 1kHz at -10dBm into the line input (D range pins 1 & 4; pins 2 & 3 shorted and 6 & 7 shorted; refer to Sections 7.2 and 9.4).

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

Adjust RV106 (deviation) to set the peak deviation to ±4.7kHz [2.3kHz] (14kHz).

Sweep the audio frequency from 100Hz to 4kHz and ensure that the maximum deviation does not exceed 4.7kHz [2.3kHz] (14kHz). Readjust RV106 if necessary.

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

### 4.9.4 LINE LEVEL WITHOUT COMPRESSOR

This Section assumes that the compressor is not used. If the compressor is required, refer to Section 4.9.5.

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.

### 4.9.5 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.

#### 4.9.5.1 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] (4kHz) is still available.

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

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

### 4.9.5.2 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] deviation).

Adjust RV104 (compression level) anticlockwise until the demodulated waveform is just clipping (approximately 4kHz [2kHz] 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] deviation is produced. The modulated waveform should be basically sinusoidal.

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

As the line is to be used without compression, set the line sensitivity (RV100) as described in Section 4.9.4.

### 4.9.5.3 Compressor On Both Line & Microphone Inputs

Set up as described in Section 4.9.5.1.

## PGM800 DIP SWITCH CODES

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

0 = off
1 = on

# SECTION 5 FUNCTIONAL TESTS

The following test procedures will confirm that the T881 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.

## 5.1 CURRENT CONSUMPTION

Connect the T881 to a 13.8V power supply.

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

Key the transmitter (the "Carrier On" LED should light).

Check that the current is less than 2A for 5W RF output.

## 5.2 OUTPUT POWER

Connect an RF power meter to the transmitter output socket.

Key the transmitter.

Check that the output power adjusts to 7W.

## 5.3 OUTPUT FREQUENCY

Connect the transmitter output to a frequency counter via a 30dB attenuator pad.

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

## 5.4 TAIL TIMER

Adjust RV202 fully anticlockwise.

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

Reset RV202 fully clockwise.

Connect the key line to earth, then disconnect, ensuring that the transmitter turns off immediately the key line is broken.

Set RV202 for the required tail time.

## 5.5 TRANSMIT TIMER

Adjust RV201 fully anticlockwise.

Earth the key line.

Check that the transmitter turns off after approximately 1 minute.

Adjust RV201 fully clockwise.

Earth the key line.

Check that the transmitter turns off after approximately 3 minutes.

Set RV201 for the required transmit time.

## 5.6 FREQUENCY RESPONSE

If the transmitter has been correctly adjusted, the pre-emphasis and limiting responses should closely match those shown in Figures 7 and 8 respectively.

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

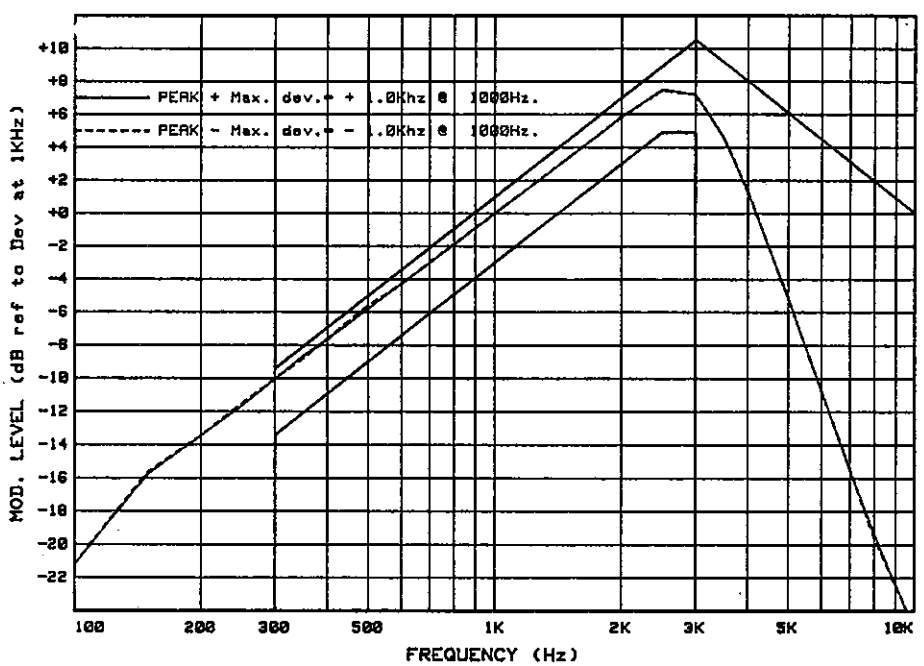



Figure 7 Pre-emphasis Response

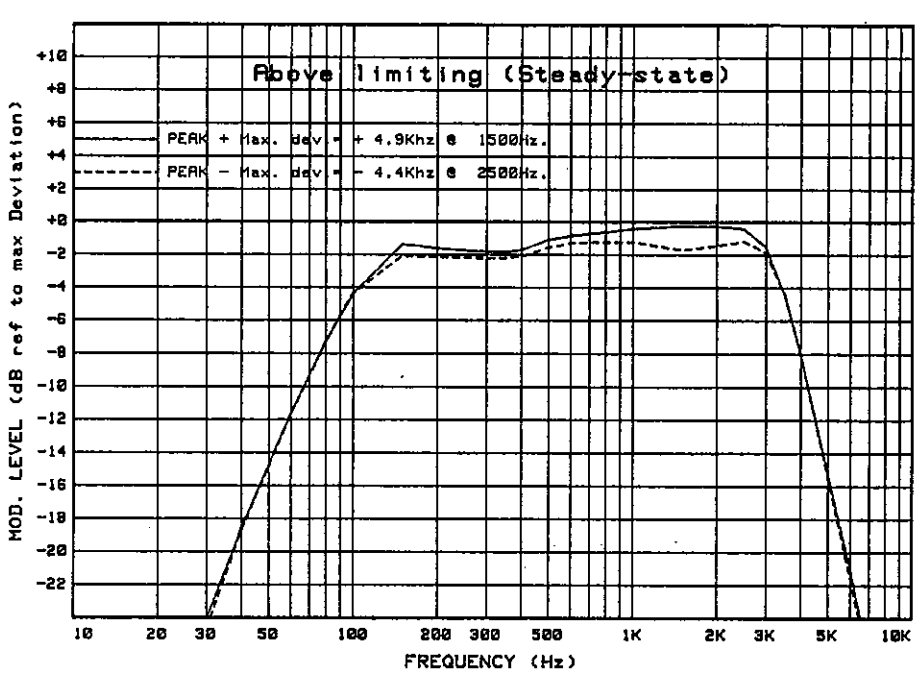



Figure 8 Limiting Response

1. 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 7.

2. 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 8.

## 5.7 AUDIO LEVEL INPUT SENSITIVITY

1. Adjust RV100 (line sensitivity) fully clockwise.

2. Check that the input sensitivities are better than those specified below:

| | | | |
|---|---|---|---|
| (a) | Line Input- | 600 ohms, 3kHz [1.5kHz] deviation at 1kHz: | |
| | | with compressor | -50dBm |
| | | without compressor | -30dBm |
| (b) | Microphone Input- | 600 ohms, 3kHz [1.5kHz] deviation at 1kHz: | |
| | | with compressor | -75dBm |
| | | without compressor | -55dBm |
| (c) | 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.

# SECTION 6 FAULT FINDING

## 6.1 VISUAL CHECKS

Remove the covers from the T881 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 3.3.

## 6.2 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 unsoldered). 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.

## 6.3 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.

## 6.4 FINDING COMPONENTS ON THE MAIN PCB

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 alphabetical order, along with the appropriate alphanumeric grid references.

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.

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 grid reference index is located between Diagrams 4 & 5.

The locations of commonly used test pads and options connectors are also shown on the Test Points & Options Diagram (Diagram 7).

## 6.5 DC CHECKS

### 6.5.1 POWER RAILS

Refer to Diagram 7 for test point locations, and to the regulator fault finding chart (Section 6.7) 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.

### 6.5.2 VCO LOCKING

Key the exciter.

Using a DMM, monitor the VCO control voltage on the long lead of L1 (located near 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 10V.

If the VCO is not locked, refer to the synthesiser fault finding chart (Section 6.8).

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.

## 6.6 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.

### 6.6.1 DRIVE POWER

Ensure that the VCO locks (refer to Section 6.5.2).

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

Check that the output power is between 65 and 100mW.

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.

### 6.6.2 PA OUTPUT POWER

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 >7W with power control RV356 adjusted fully clockwise.

### 6.6.3 AUDIO AND MODULATION

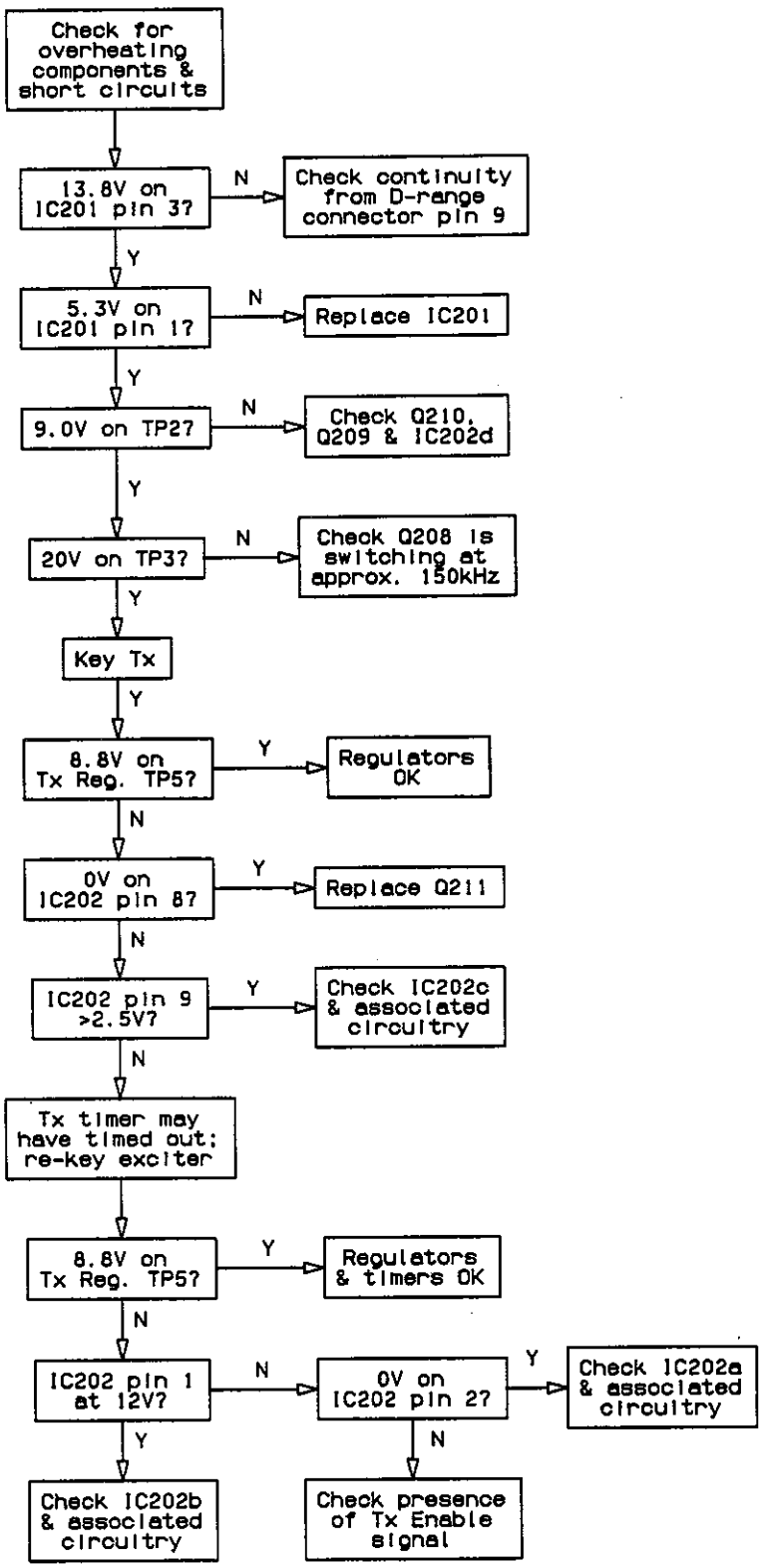
Refer to the audio processor fault finding chart (Section 6.10).

Set up the audio processor as described in Section 4.9.

Check that the demodulated RF output has the frequency response referred to in Section 5.6 with at least 5kHz [2.5kHz] (14kHz) deviation available at 1kHz modulating frequency.

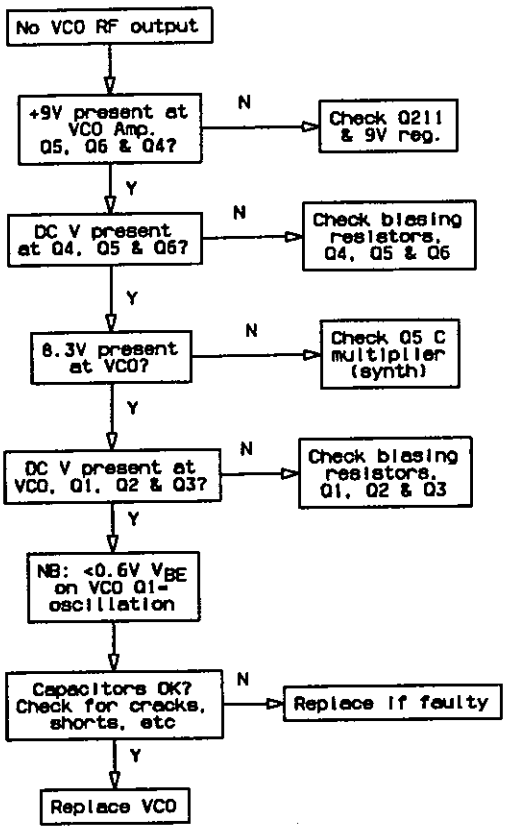
If the above result is not achieved, either the two modulators are incorrectly adjusted or a fault condition exists.

## 6.7 REGULATOR FAULT FINDING CHART

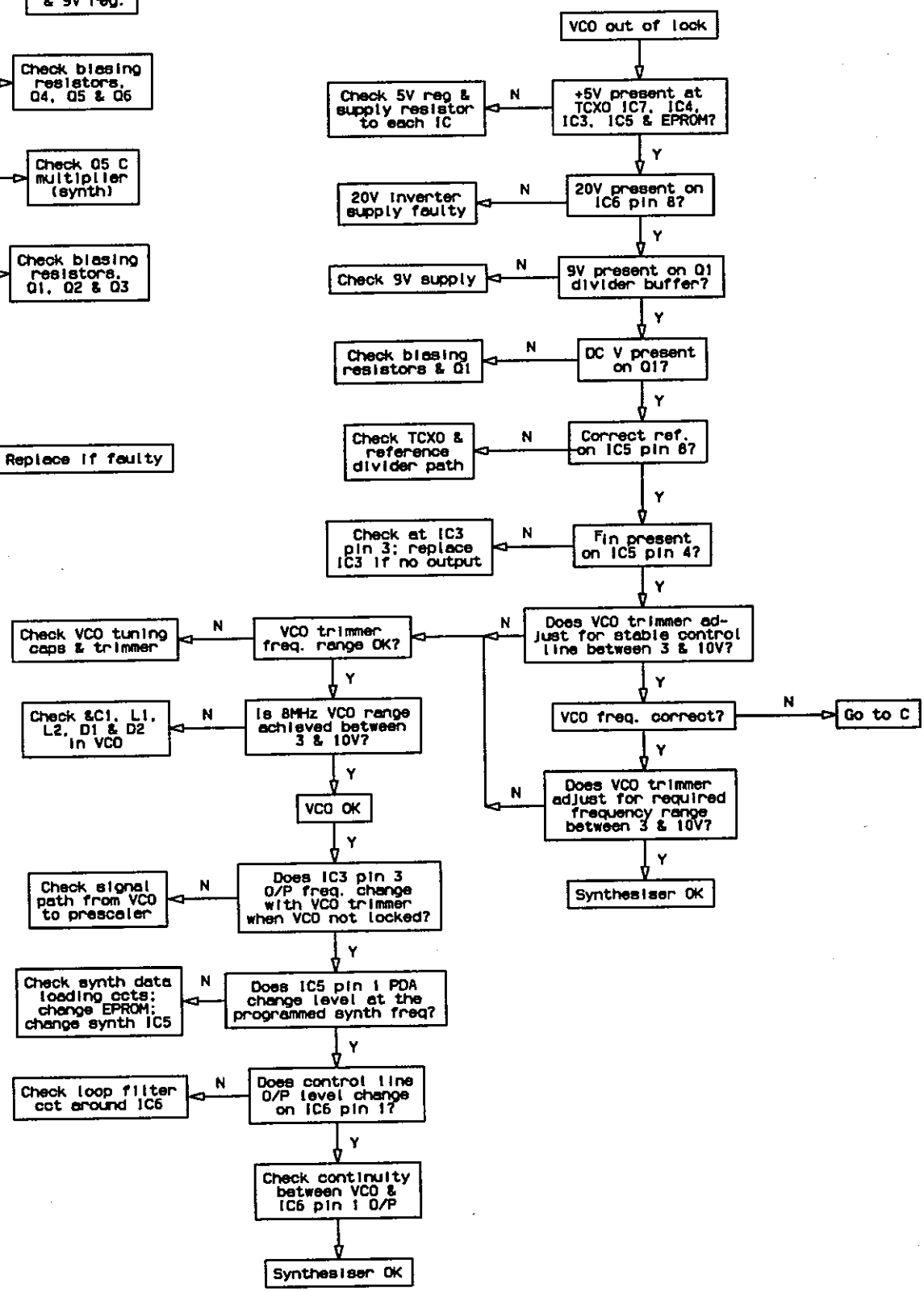


## 6.8 SYNTHESISER FAULT FINDING CHART

### A Refer to VCO Circuit Diagram

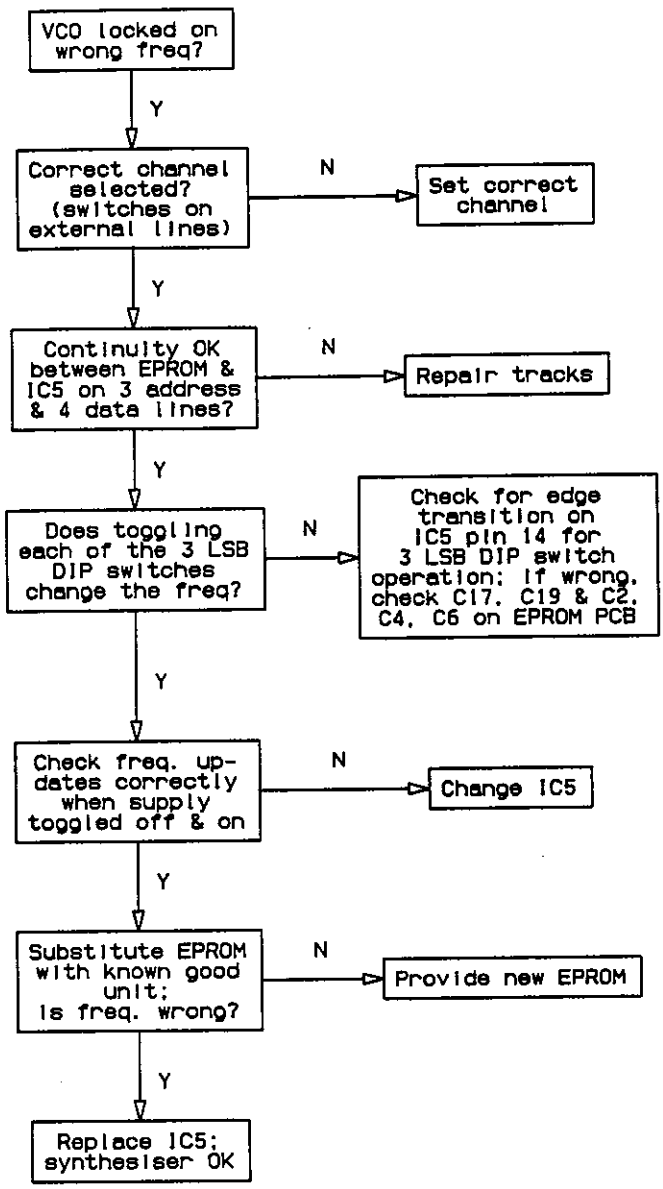



### B Refer to synthesiser Circuit Diagram

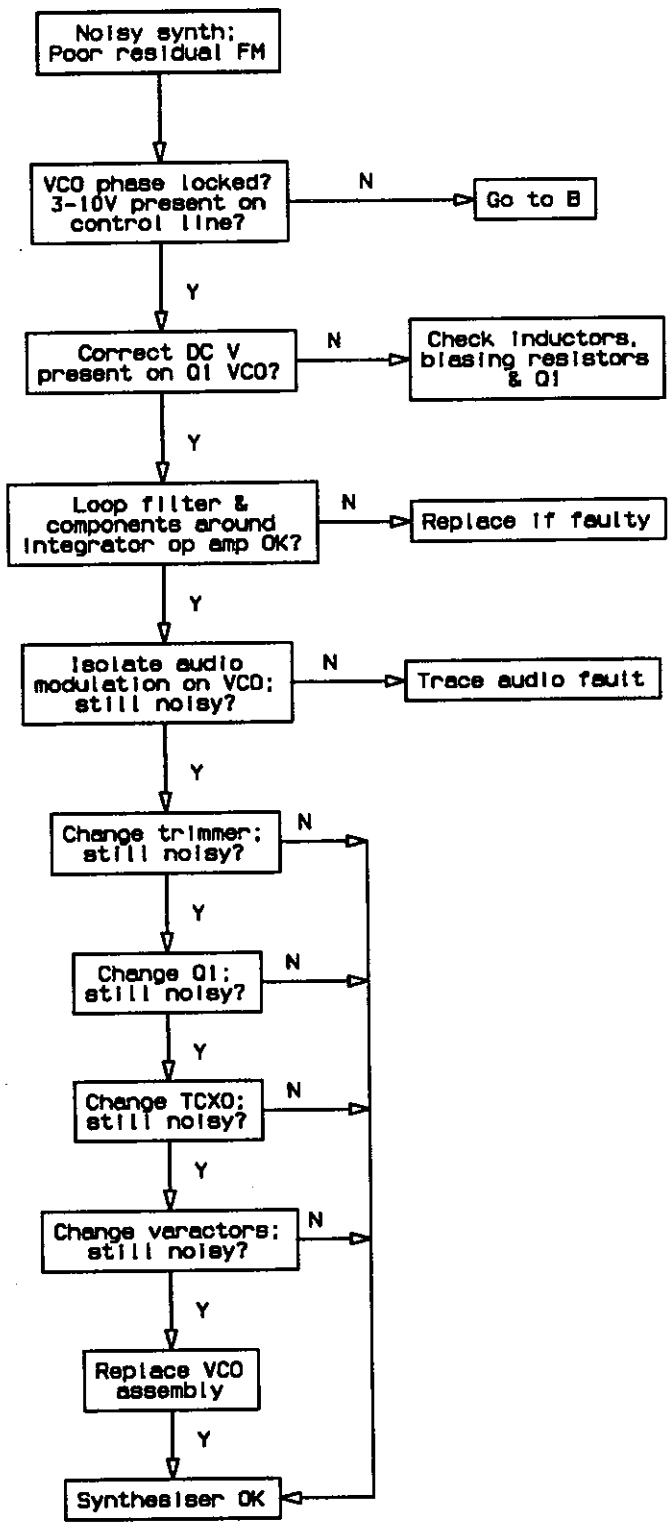



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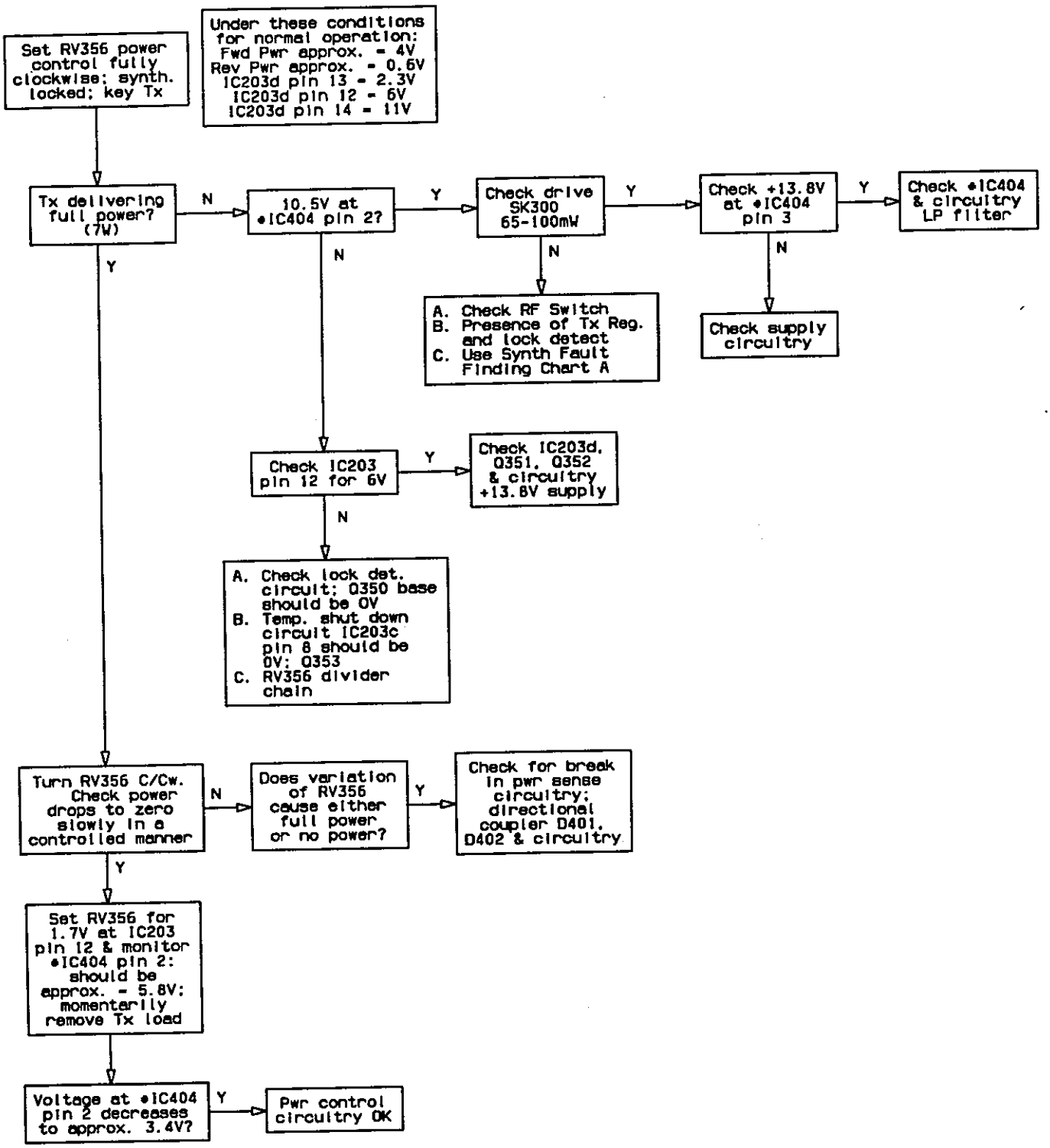
## C Refer to synthesiser Circuit Diagram



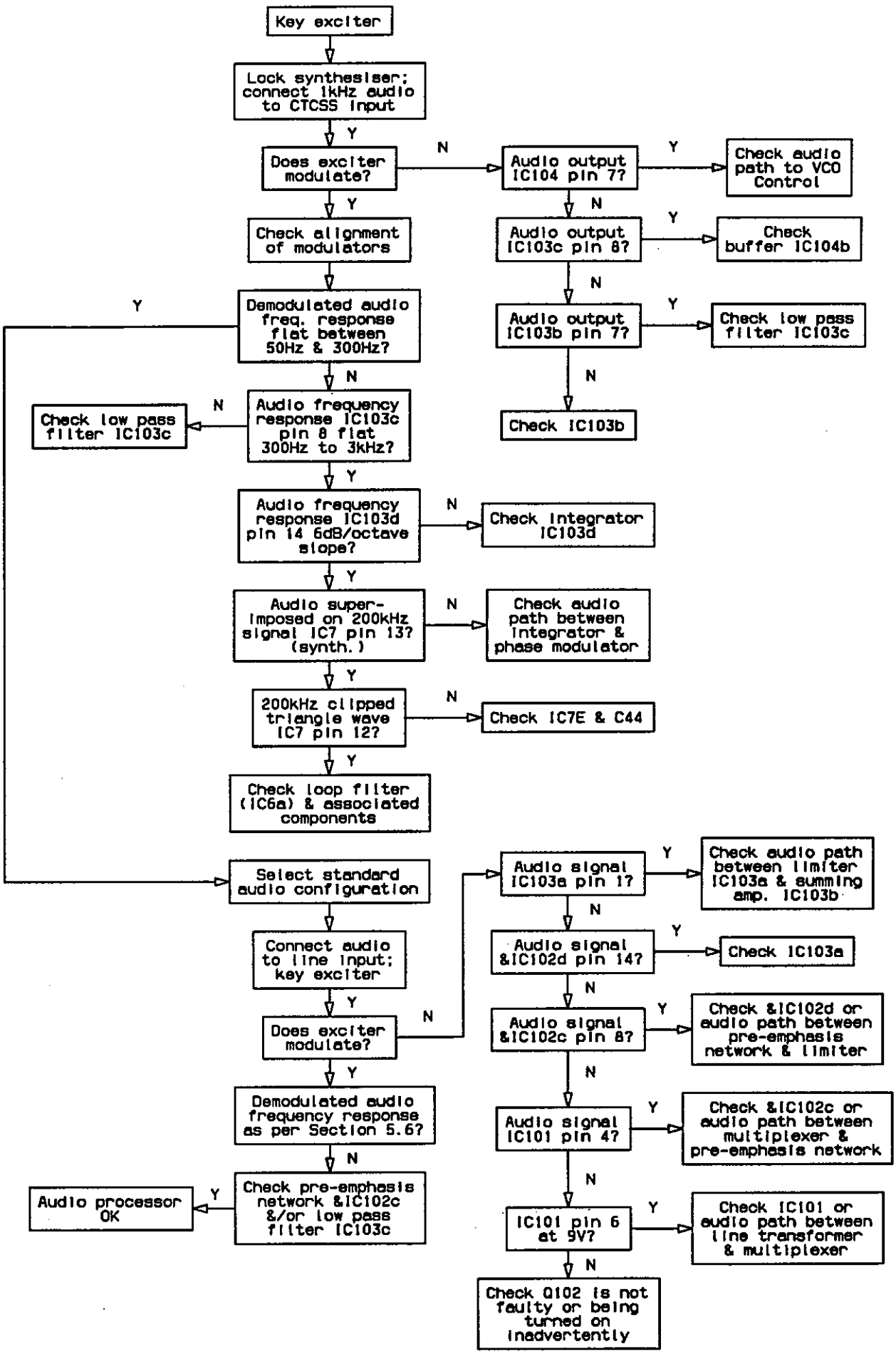

## D Refer to synthesiser & VCO Circuit Diagrams



## 6.9 PA & POWER CONTROL FAULT FINDING CHART



## 6.10 AUDIO PROCESSOR FAULT FINDING CHART



# SECTION 7 INSTALLATION

## 7.1 RACK MOUNTING

The T881 base station transmitter is 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 Figures 9 & 10).

A T800 Series guide is supplied with each T881. The guide is located in the rack frame with four screws, two at the rear and two at the front. The T881 is secured into the guide with two front panel mounting screws.

The RF output is via the rear N-type connector, while all DC, audio and control connections are via the D-range connector. An additional rear D-range connector (T800-03) is fitted when remote multichannel operation or additional control of low frequency lines is required.

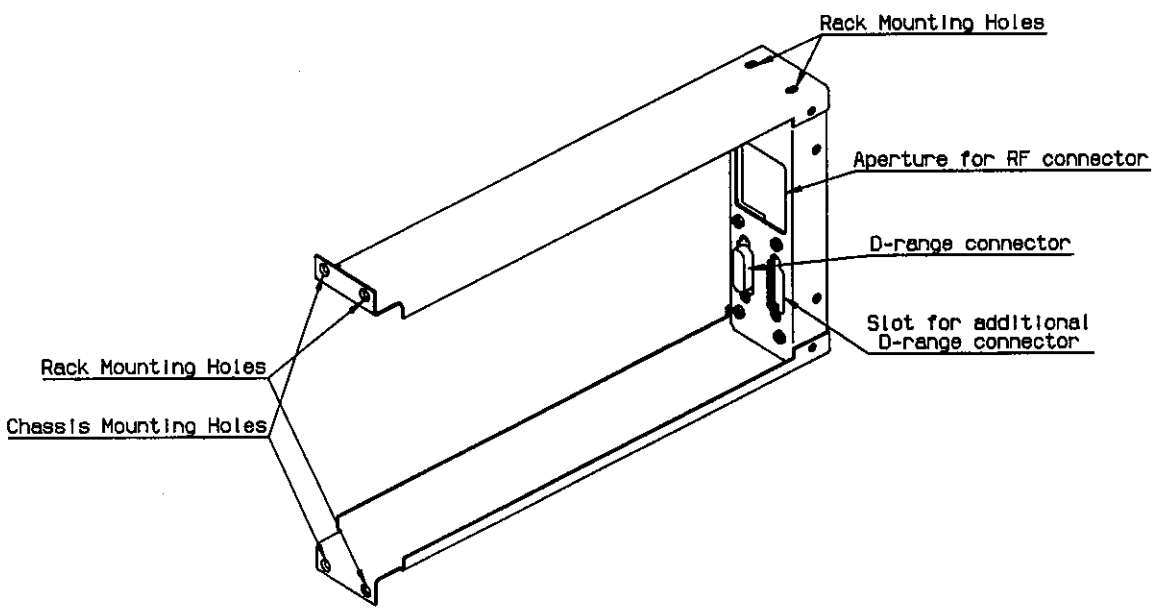



Figure 9 T800 Series Guide

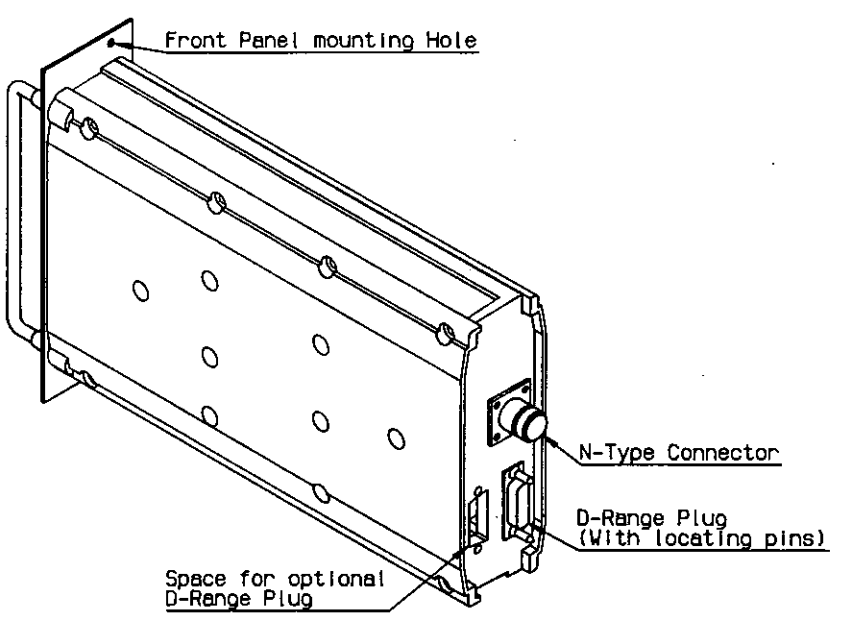



Figure 10 T881 Chassis Connectors

## 7.2 RACK WIRING

Wire the D-range connector according to the pin outs shown in Figure 11. 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.

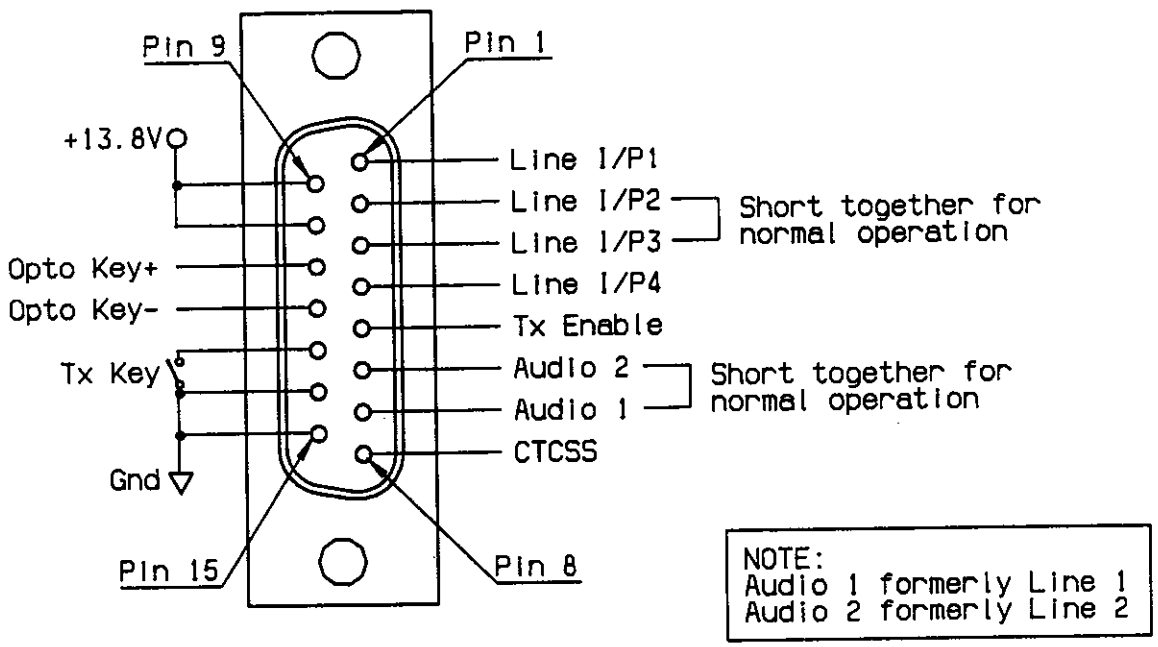



Figure 11 D-Range Wiring - Rear View

## 7.3 POWER SUPPLY

If a non-standard Tait power supply 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. Where several transmitters are powered by the same supply, each unit should be individually protected with a fuse.

**Note: It is particularly important when the prime power source is a battery that fuses be fitted in all supply lines.**

## 7.4 REVERSE POLARITY PROTECTION

A shunt diode is fitted to each T881 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.

# SECTION 8 SYSTEM CONFIGURATIONS

## 8.1 GENERAL

Tait Fixed Equipment transmitters and receivers may be assembled into a wide variety of fixed equipment systems, from a simple land mobile base to a complex linking system operating in hot standby mode.

## 8.2 AUDIO PROCESSOR

The T881 comes with a number of link selectable features which give added system flexibility.

Refer to Section 4.4 for further details.

## 8.3 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 Section 9).

## 8.4 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.

## 8.5 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 kit.

## 8.6 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.

## 8.7 KEYING WITH OPTION PCB'S

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.

## 8.8 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 as shown in Figure 12.

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 12).

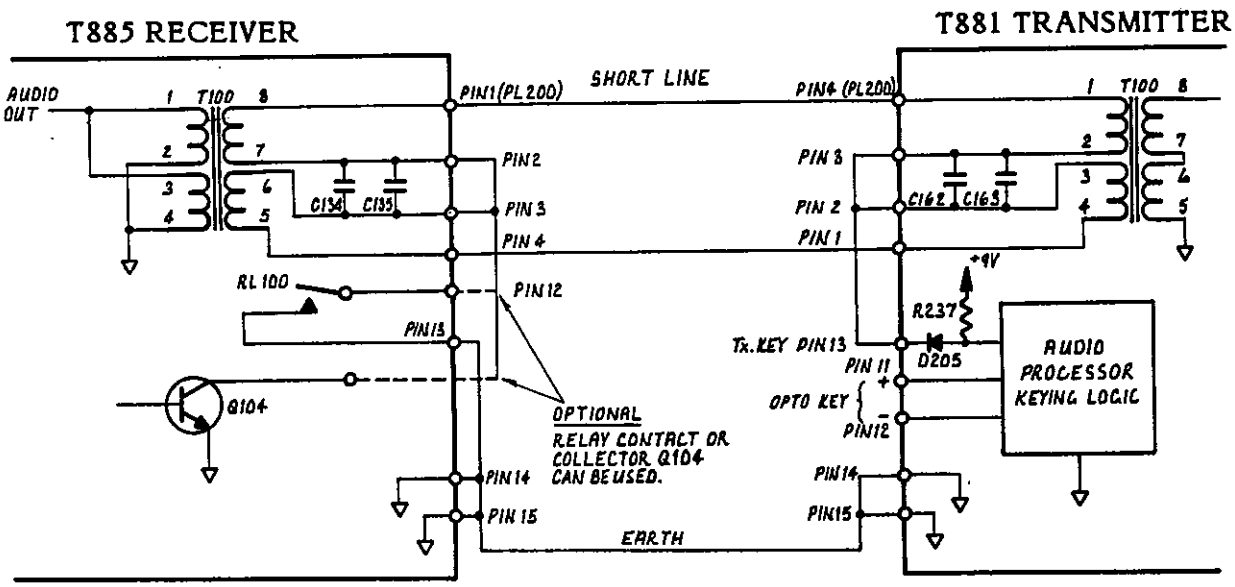



Figure 12 DC Loop Keying With Common Earth

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 Figures 13 & 14).

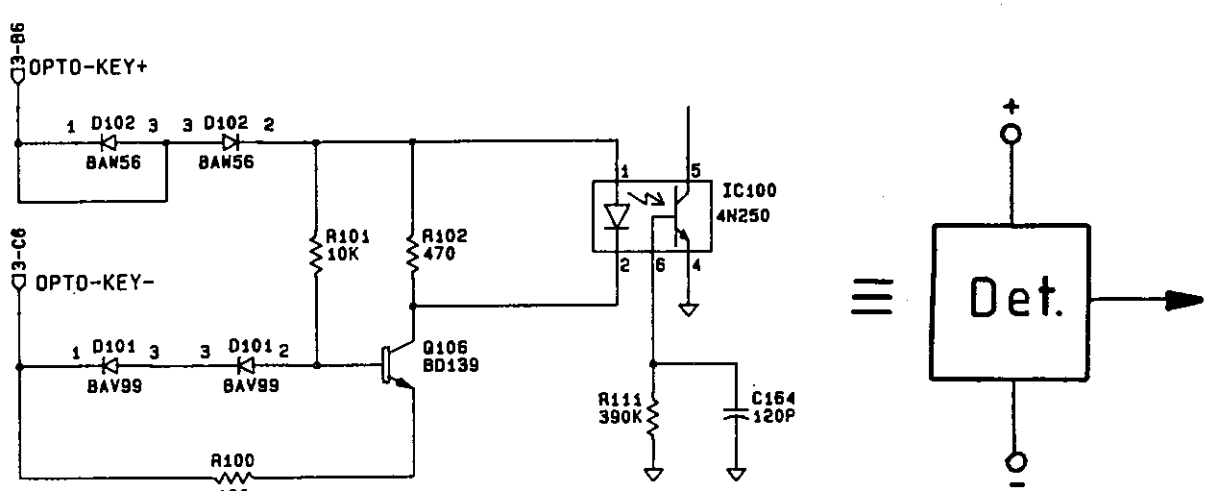



Figure 13 Isolated Constant Current Loop Current Detector
(Opto-key input on T881)

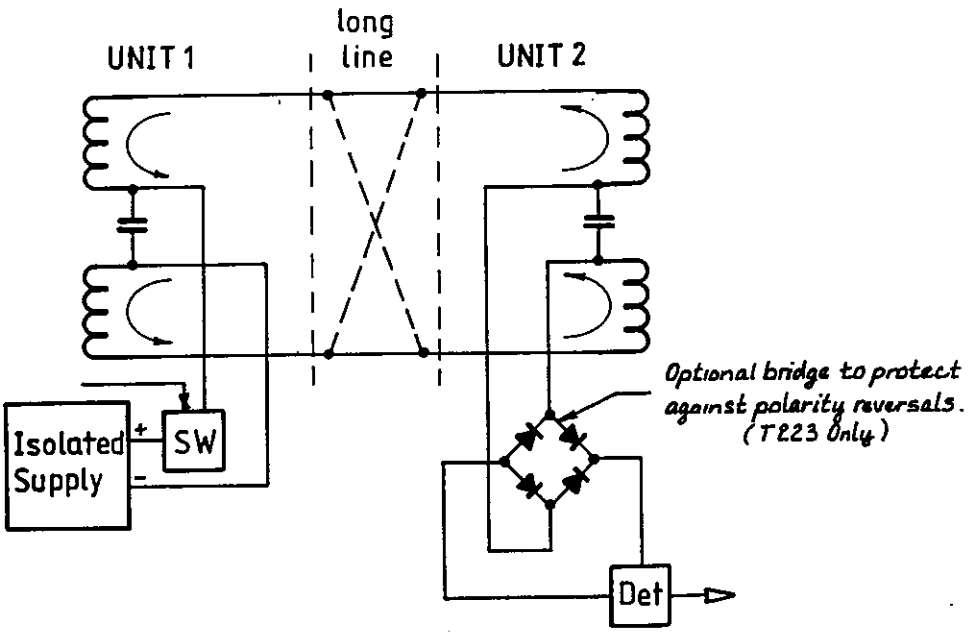



Figure 14 Typical System

## 8.9 TALK THROUGH REPEATER (Refer to Figure 15)

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.

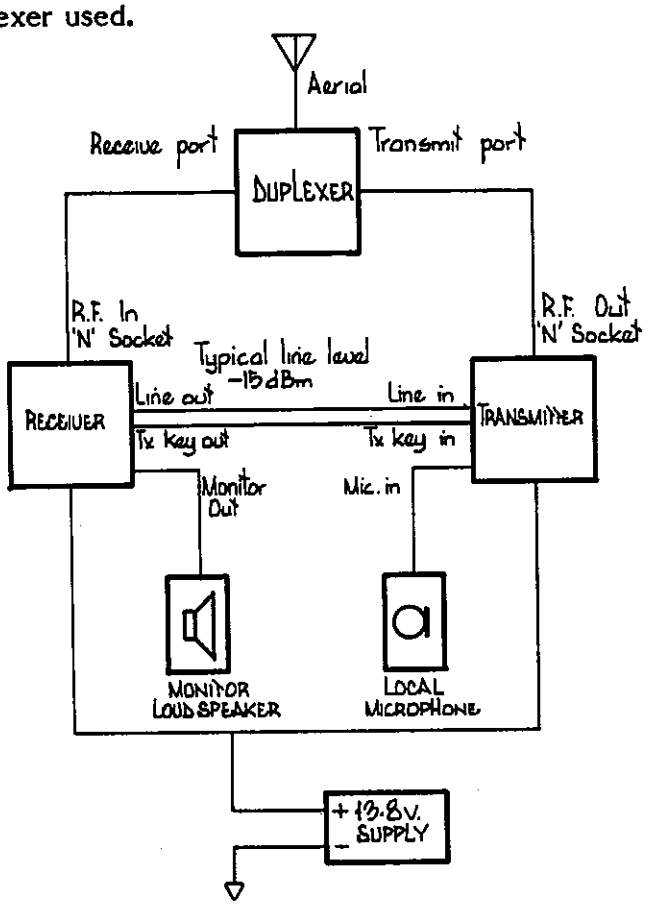



Figure 15 Talk Through Repeater

## 8.10 LINE CONTROLLED BASE STATION (WITHOUT TALK THROUGH)

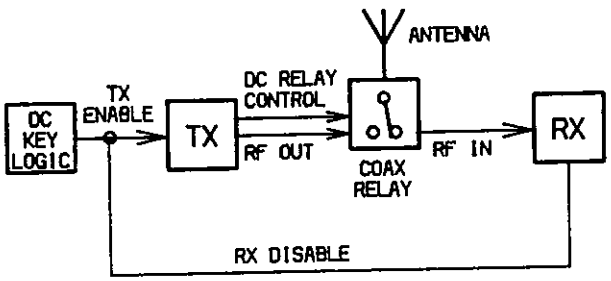



Figure 16 Basic Configuration

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).

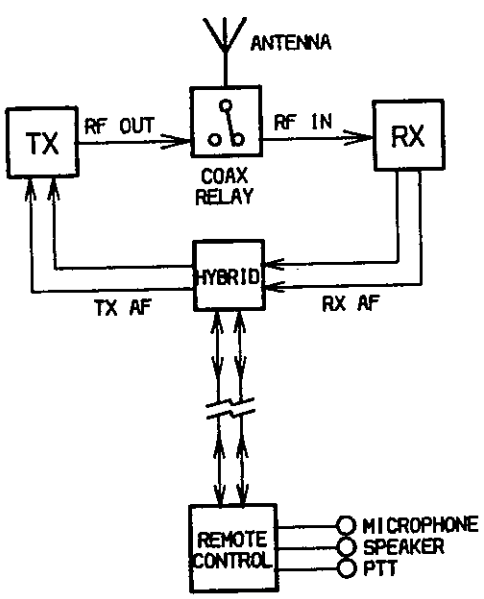



Figure 17 Remote Line Controlled Base Station

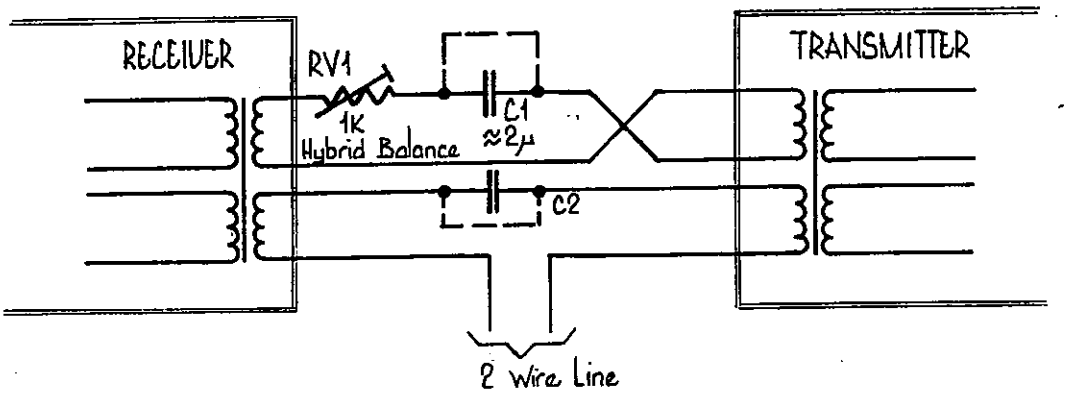



Figure 18 4-Wire to 2-Wire Converter

## 8.10.1 TRANSMITTER TAIL TIMER

If the transmitter has a tail timer fitted:

1. The receiver disable timer must be set so that $t_{Rx/Dis} > t_{Tx/Tail}$.

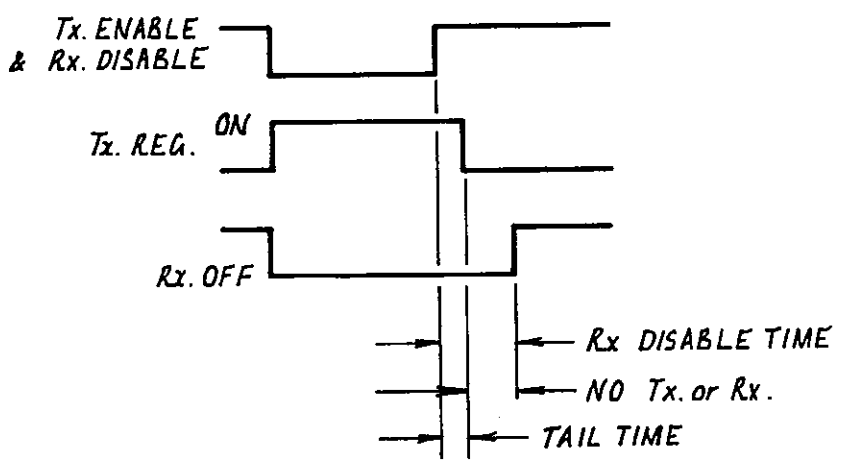



Figure 19 Receiver Disable Time vs Tail Time

2. 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.

3. 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.

## 8.11 TRANSMIT KEY TIME

1. 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 45ms.

2. 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.

# SECTION 9 STANDARD OPTIONS

## 9.1 GENERAL

The T881 is available with a range of standard options to suit many requirements. For further details on these or more specialised options, please contact your nearest Tait dealer or agent.

## 9.2 TCXO

A high stability TCXO is available to suit specific requirements. The stability of this and the standard TCXO is set out below:

| | |
|---|---|
| ±1ppm | 0°C to +60°C |
| ±1.5ppm | -30°C to +60°C (standard) |

They are pin compatible devices and may be fitted in location =IC1 in the synthesiser compartment.

Refer to Section 1.3 for details of specific versions.

## 9.3 MULTICHANNEL

### 9.3.1 REMOTE

For multichannel operation it is necessary to fit an additional D-range connector (T800-03) to the rear of the chassis and replace the standard plug-in EPROM PCB with the T800-07 multichannel memory PCB. Three channel select lines (CH SEL 0, 1 & 2) are brought into the D-range connector compartment and should be connected to pins 11, 12 and 13 of the extra D-range, providing 8 channel control. A control earth should be provided from pin 14 or 15 to the main PCB.

For remote operation it is necessary to disable these three lines internally by switching the 3 least significant address DIP switches (SW1:1-3) to the off position. Channel selection is achieved by pulling one or more of the channel select lines low.

If more channels are required (up to 128 are available), a hole must be drilled in the end wall of the synthesiser compartment to route the extra channel select wires. Later models may have an access slot between the synthesiser and D-range compartments.

### 9.3.2 INTERNAL SELECTION

The EPROM can be loaded with up to 128 channel frequencies, each of which is addressable via the 8 bit DIP switch (SW1). Thus, one of 128 channel operation is possible.

## 9.4 CTCSS

### 9.4.1 SINGLE CHANNEL - SINGLE TONE

For single tone use, the T800-02 unit should be used. This is a retrofit PCB which is mounted on the specially provided lugs in the audio processor compartment of the transmitter (refer to Figure 20).

Access to all necessary audio and power supply points is provided by accessory pads in the audio processor (refer to Figures 21 & 22).

If required, the CTCSS processing can be carried out in the receiver (refer to M885-00). This can have the advantage of pre-filtering the CTCSS tone from the speech before the signal is passed to the 600 ohm line (if desired).

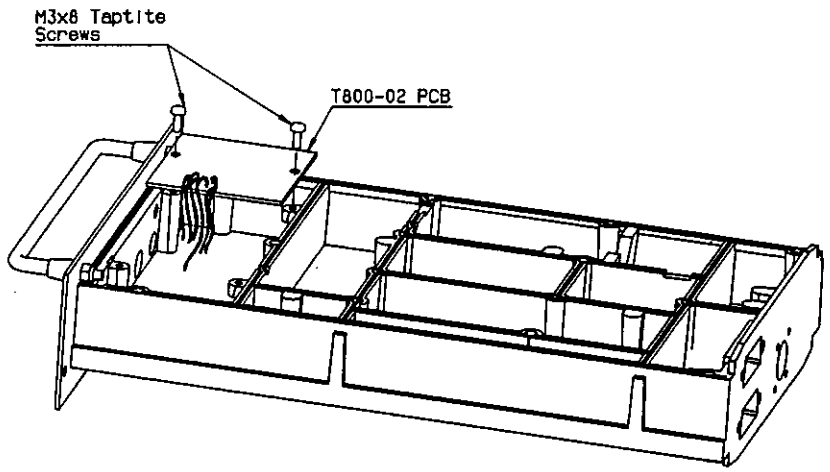



Figure 20 T800-02 Mounting Details

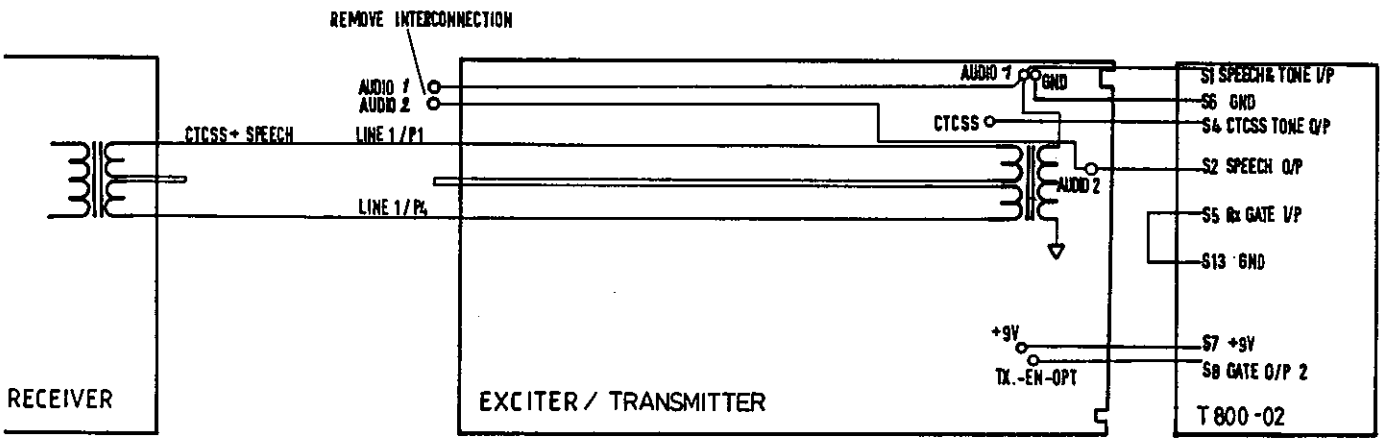



Figure 21 Talk Through Repeater Wiring

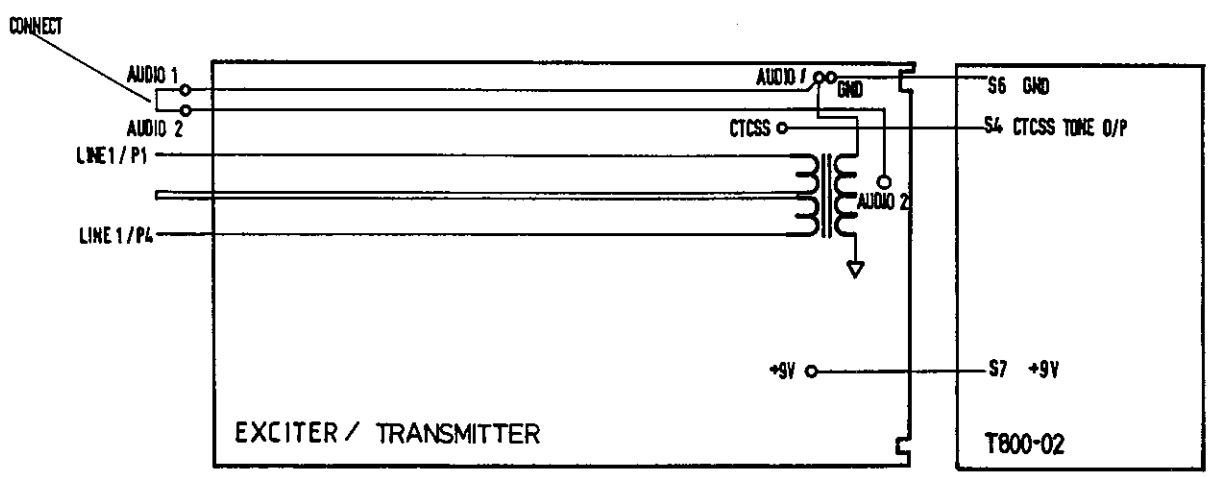



Figure 22 Base Station Transmitter Wiring
(Without talk through)

## 9.4.2 MULTICHANNEL - SEPARATE TONES

In applications where each RF channel has a separate CTCSS tone, it is necessary to take the CTCSS tone select lines to the additional rear D-range connector. From the D-range, up to eight RF channels and any of the CTCSS tones can be selected by grounding the necessary pins.

## 9.4.3 SINGLE CHANNEL - MULTI-TONE

Where more than one tone is used on the same channel, some form of external encoding/decoding such as the T310-05 or T310-10 must be used. The system should be connected as shown in Figure 23.

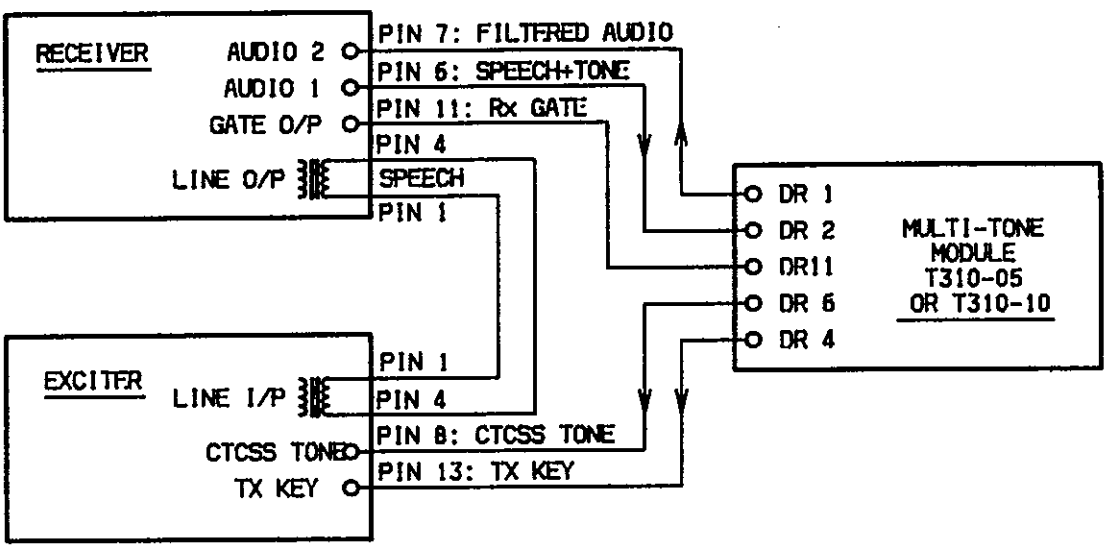



Figure 23 Multi-Tone Control with T310-05 or T310-10

## SECTION 10 PARTS LIST

### INTRODUCTION

The 10 digit numbers (000-00000-00) in this Parts List are "internal part numbers" (IPN's). Your spare parts orders can be handled more efficiently if you quote: equipment type, circuit reference and IPN, along with 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, D106, R121, etc) and those without (miscellaneous and mechanical).

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

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

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| | | |
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| | Diodes | 10.4 |
| | Integrated Circuits | 10.4 |
| | Links | 10.4 |
| | Coils | 10.4 |
| | Headers/Plugs | 10.4 |
| | Transistors | 10.4 |
| | Resistors | 10.4 |
| | Sockets/Switches | 10.6 |
| | Transformers | 10.6 |
| Miscellaneous & Mechanical | | 10.7 |
| Memory PCB | | 10.8 |
| VCO PCB | | 10.9 |

# T881 MAIN PCB PARTS LIST

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| C1 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C2 | | 015-23120-01 | CAP CER 0805 CHIP 120P 5% NPO 50V |
| C3 | | 015-06100-06 | 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 | | 015-24100-06 | 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 | | 015-06100-06 | 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 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C17 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C19 | | 015-23680-06 | CAP CER 0805 CHIP 680P 10% X7R 50V |
| C20 | | 015-23470-06 | CAP CER 0805 CHIP 470P 10% X7R 50V |
| C25 | | 020-58100-03 | CAP ELECT AI RDL 10M 50V 5X11MM |
| C26 | | 015-25100-06 | 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 | | 015-05470-06 | 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 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C39 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C40 | | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| C42 | | 015-25150-06 | CAP CER 0805 CHIP 15N 10% X7R 50V |
| C43 | | 015-25100-06 | CAP CER 0805 CHIP 10N 10% X7R 50V |
| C44 | | 015-23220-01 | CAP CER 0805 CHIP 220P 5% NPO 50V |
| C45 | | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| C46 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C47 | | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| C48 | | 015-22330-01 | CAP CER 0805 CHIP 33P 5% NPO 50V |
| C101 | | 020-58100-03 | CAP ELECT AI RDL 10M 50V 5X11MM |
| C102 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| C103 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| C104 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C105 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C106 | | 015-24220-06 | CAP CER 0805 CHIP 2N2 10% X7R 50V |
| C107 | | 020-08220-01 | CAP ELECT RADL 22M 16V 5X11MM |
| C108 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C109 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C110 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C111 | | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| C112 | | 020-08220-01 | CAP ELECT RADL 22M 16V 5X11MM |
| C113 | | 015-25100-06 | CAP CER 0805 CHIP 10N 10% X7R 50V |
| C115 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C118 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C119 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| C121 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C123 | | 015-23150-01 | CAP CER 0805 CHIP 150P 5% NPO 50V |
| &C124 | 10 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 12 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 15 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 17 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 20 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 22 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 25 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C124 | 27 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C126 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
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| C129 | | 020-58470-02 | CAP ELECT AI RDL 47M 16V 6X11MM |
| &C133 | 10 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 12 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 15 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 17 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 20 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 22 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 25 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C133 | 27 | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| &C135 | 10 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| &C135 | 12 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| &C135 | 14 | 015-23220-01 | CAP CER 0805 CHIP 220P 5% NPO 50V |
| &C135 | 15 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| &C135 | 17 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| &C135 | 20 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
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| &C135 | 25 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| &C135 | 27 | 015-22470-01 | CAP CER 0805 CHIP 47P 5% NPO 50V |
| C137 | | 020-08220-01 | CAP ELECT RADL 22M 16V 5X11MM |
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| &C141 | 15 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C141 | 17 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C141 | 20 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C141 | 22 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C141 | 25 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C141 | 27 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| C145 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C146 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C147 | | 020-57100-02 | CAP ELECT AI RDL 1M 50V 5X11MM |
| C148 | | 015-05220-06 | CAP CER 1206 CHIP 22N 10% X7R 50V |
| C149 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C150 | | 020-58100-03 | CAP ELECT AI RDL 10M 50V 5X11MM |
| &C151 | 10 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 12 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 15 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 17 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 20 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 22 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 25 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C151 | 27 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C152 | | 020-59100-03 | CAP ELECT AI RDL 100M 16V 8X11MM |
| C153 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C154 | | 020-59100-03 | CAP ELECT AI RDL 100M 16V 8X11MM |
| C156 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| &C157 | 10 | 015-21150-01 | CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V |
| &C157 | 12 | 015-21150-01 | CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V |
| &C157 | 15 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C157 | 17 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C157 | 20 | 015-21150-01 | CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V |
| &C157 | 22 | 015-21150-01 | CAP CER 0805 CHIP 1P5 +/-0.25P NPO 50V |
| &C157 | 25 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C157 | 27 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C158 | | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 10 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 12 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 15 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 17 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 20 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 22 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 25 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C160 | 27 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C161 | 10 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 12 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 14 | 015-23220-01 | CAP CER 0805 CHIP 220P 5% NPO 50V |
| &C161 | 15 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 17 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 20 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 22 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 24 | 015-23220-01 | CAP CER 0805 CHIP 220P 5% NPO 50V |
| &C161 | 25 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| &C161 | 27 | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C162 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| C163 | | 020-07470-91 | CAP ELECT RADL 4M7 63V 6X11MM BI-POLAR |
| C164 | | 015-23120-01 | CAP CER 0805 CHIP 120P 5% NPO 50V |
| C166 | | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C167 | 14 | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| &C167 | 24 | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C168 | | 015-25100-06 | CAP CER 0805 CHIP 10N 10% X7R 50V |
| &C169 | 14 | 015-05220-06 | CAP CER 1206 CHIP 22N 10% X7R 50V |
| &C169 | 24 | 015-05220-06 | CAP CER 1206 CHIP 22N 10% X7R 50V |
| &C170 | 14 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C170 | 24 | 015-05470-06 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C171 | 14 | 015-23470-06 | CAP CER 0805 CHIP 470P 10% X7R 50V |
| &C171 | 24 | 015-23470-06 | CAP CER 0805 CHIP 470P 10% X7R 50V |
| C209 | | 020-58100-03 | CAP ELECT AI RDL 10M 50V 5X11MM |
| C212 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C213 | | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| C214 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C215 | | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| C216 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C217 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C218 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C219 | | 020-08470-07 | CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/ |
| C220 | | 015-24470-06 | CAP CER 0805 CHIP 4N7 10% X7R 50V |
| C221 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C222 | | 020-59100-03 | CAP ELECT AI RDL 100M 16V 8X11MM |
| C223 | | 020-07220-01 | CAP ELECT RADL 2M2 50V 5X11MM |
| C224 | | 025-07330-01 | CAP TANT BEAD 3M3 35V |
| C225 | | 015-24470-06 | 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 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C233 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C234 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C235 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C300 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C301 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C302 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C303 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C310 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C320 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C350 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C351 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C352 | | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| C354 | | 015-25100-06 | CAP CER 0805 CHIP 10N 10% X7R 50V |
| C355 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C356 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C357 | | 015-25100-06 | CAP CER 0805 CHIP 10N 10% X7R 50V |
| C358 | | 015-24100-06 | CAP CER 0805 CHIP 1N 10% X7R 50V |
| C359 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C360 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |

# T881 MAIN PCB PARTS LIST

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| C361 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C362 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C363 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C364 | | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| C366 | | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| C367 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C368 | | 015-22390-01 | CAP CER 0805 CHIP 39P 5% NPO 50V |
| C369 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C370 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C371 | | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C372 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C373 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C374 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C415 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C416 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C417 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C418 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C419 | | 015-01270-06 | CAP CER 1210 CHIP 2P7 NPO 200V GRM42-2 |
| C422 | | 015-01470-06 | CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2 |
| C426 | | 015-01470-06 | CAP CER 1210 CHIP 4P7 NPO 500V GRM42-2 |
| C429 | | 015-01270-06 | CAP CER 1210 CHIP 2P7 NPO 200V GRM42-2 |
| C430 | | 020-07100-04 | CAP ELECT RADL 1M 63V 8X12MM HI TEMP |
| C431 | | 015-23100-01 | CAP CER 0805 CHIP 100P 5% NPO 50V |
| C432 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C433 | | 015-22330-01 | CAP CER 0805 CHIP 33P 5% NPO 50V |
| C437 | | 020-06470-07 | CAP 470M 16V 20% ELEC VERT 8*20 3.5MM L/ |
| C438 | | 015-06100-06 | CAP CER 1206 CHIP 100N 10% X7R 50V |
| C439 | | 015-22180-01 | CAP CER 0805 CHIP 18P 5% NPO 50V |
| C446 | | 025-07100-01 | CAP TANT BEAD 1M 35V |
| D4 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D5 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D100 | | 001-10000-56 | DIODE SMD BAW56 DUAL SWITCH SOT-23 COMM |
| D101 | | 001-10000-99 | DIODE SMD BAV99 DUAL SWITCH SOT-23 SINGL |
| D102 | | 001-10000-56 | DIODE SMD BAW56 DUAL SWITCH SOT-23 COMM |
| D103 | | 001-10000-56 | DIODE SMD BAW56 DUAL SWITCH SOT-23 COMM |
| D104 | | 001-10000-99 | DIODE SMD BAV99 DUAL SWITCH SOT-23 SINGL |
| D106 | | 001-00015-29 | DIODE ZENER 33V 0.4W BZX79/C33 |
| D204 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D205 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D206 | | 001-10000-99 | DIODE SMD BAV99 DUAL SWITCH SOT-23 SINGL |
| D207 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D208 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D209 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D210 | | 001-00015-17 | DIODE ZENER 9V1 0.4W BZX79/C9V1 |
| D211 | | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D300 | | 001-10000-18 | DIODE SMD BAT18 BANDSWITCH SOT-23 SINGLE |
| D301 | | 001-00015-69 | DIODE ZENER 11V 0.5W LO CURRENT HZ11B |
| D302 | | 001-10000-18 | DIODE SMD BAT18 BANDSWITCH SOT-23 SINGLE |
| D303 | | 001-10000-18 | DIODE SMD BAT18 BANDSWITCH SOT-23 SINGLE |
| D401 | | 001-00013-45 | DIODE SCHOTTKY 1SS97/2 (S) |
| D402 | | 001-00013-45 | DIODE SCHOTTKY 1SS97/2 (S) |
| D403 | | 001-00011-60 | DIODE SR2607 6A/30V |
| =IC1 | 10 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 12 | 539-00010-44 | TCXO 12.8MHZ +-1PPM 0 TO +60C |
| =IC1 | 14 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 15 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 17 | 539-00010-44 | TCXO 12.8MHZ +-1PPM 0 TO +60C |
| =IC1 | 20 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 22 | 539-00010-44 | TCXO 12.8MHZ +-1PPM 0 TO +60C |
| =IC1 | 24 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 25 | 539-00010-45 | TCXO 12.8MHZ +-1.5PPM -30 TO +70C DEG |
| =IC1 | 27 | 539-00010-44 | TCXO 12.8MHZ +-1PPM 0 TO +60C |
| IC3 | | 002-00017-47 | IC SP8719 UHF 80/81 PRESC (S) |
| IC4 | | 002-74045-20 | IC 74HC4520 DUAL 4BIT SYNCRO CNTR (S) |
| IC5 | | 002-00017-63 | IC NJ8820DP FREQ SYNTHESIZER (S) |
| IC6 | | 002-00012-47 | IC MC33078 DUAL OP AMP LO NOISE (S) |
| IC7 | | 002-74000-04 | IC 74HCU04 UNBUFF HEX INVERTER (S) |
| IC100 | | 002-00020-50 | IC 4N25A OPTOCOUPLER (S) |
| IC101 | | 002-00015-30 | IC 40538 2CHAN MUX/DEMUX (S) |
| &IC102 | 10 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 12 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 14 | 002-00012-25 | IC TL084 QUAD OP AMP JFET I/P (S) |
| &IC102 | 15 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 17 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 20 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 22 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 24 | 002-00012-25 | IC TL084 QUAD OP AMP JFET I/P (S) |
| &IC102 | 25 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| &IC102 | 27 | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| IC103 | | 002-00012-25 | IC TL084 QUAD OP AMP JFET I/P (S) |
| IC104 | | 002-00012-40 | IC 358P DUAL OP AMP (S) |
| IC201 | | 002-00014-62 | IC 317L 100MA REG 3 TERMINAL TO-92 |
| IC202 | | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| IC203 | | 002-00014-40 | IC 324P QUAD OP AMP (S) |
| #IC404 | 10 | 004-00010-10 | MODULE RF PWR MHW806A2 |
| #IC404 | 12 | 004-00010-10 | MODULE RF PWR MHW806A2 |
| #IC404 | 14 | 004-00010-10 | MODULE RF PWR MHW806A2 |
| #IC404 | 15 | 004-00010-10 | MODULE RF PWR MHW806A2 |
| #IC404 | 17 | 004-00010-10 | MODULE RF PWR MHW806A2 |
| #IC404 | 20 | 004-00010-12 | MODULE RF PWR MHW806A4 |
| #IC404 | 22 | 004-00010-12 | MODULE RF PWR MHW806A4 |
| #IC404 | 24 | 004-00010-12 | MODULE RF PWR MHW806A4 |
| #IC404 | 25 | 004-00010-12 | MODULE RF PWR MHW806A4 |

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| #IC404 | 27 | 004-00010-12 | MODULE RF PWR MHW806A4 |
| LKA | | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| LKB | | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| L1 | | 052-08125-15 | COIL A/W 1.5T/2.5MM HOR 0.5MM WIRE |
| #L300 | 10 | 051-00564-00 | COIL HELIC RES 2.625T 1.2MMSF 800-880MHZ |
| #L300 | 12 | 051-00564-00 | COIL HELIC RES 2.625T 1.2MMSF 800-880MHZ |
| #L300 | 14 | 051-00564-00 | COIL HELIC RES 2.625T 1.2MMSF 800-880MHZ |
| #L300 | 15 | 051-00564-00 | COIL HELIC RES 2.625T 1.2MMSF 800-880MHZ |
| #L300 | 17 | 051-00564-00 | COIL HELIC RES 2.625T 1.2MMSF 800-880MHZ |
| #L300 | 20 | 051-00565-00 | COIL HELIC RES 2.428T 1.2MMSF 880-960MHZ |
| #L300 | 22 | 051-00565-00 | COIL HELIC RES 2.428T 1.2MMSF 880-960MHZ |
| #L300 | 24 | 051-00565-00 | COIL HELIC RES 2.428T 1.2MMSF 880-960MHZ |
| #L300 | 25 | 051-00565-00 | COIL HELIC RES 2.428T 1.2MMSF 880-960MHZ |
| #L300 | 27 | 051-00565-00 | COIL HELIC RES 2.428T 1.2MMSF 880-960MHZ |
| L301 | | 052-08135-25 | COIL A/W 2.5T/3.5MM HOR 0.8MM WIRE |
| L302 | | 056-00021-60 | IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET |
| L410 | | 065-00010-04 | BEAD FERRITE F8 4X2X5MM |
| L411 | | 056-00021-04 | IND FXD 330NH AXIAL |
| L412 | | 056-00021-04 | IND FXD 330NH AXIAL |
| L413 | | 052-08330-10 | COIL A/W 1T/3.0MM SMD 0.8MM WIRE |
| L414 | | 052-08325-10 | COIL A/W 1T/2.5MM SMD 0.8MM WIRE |
| L415 | | 052-08320-10 | COIL A/W 1T/2.0MM SMD 0.8MM WIRE |
| L416 | | 056-00021-04 | IND FXD 330NH AXIAL |
| L417 | | 056-00021-04 | IND FXD 330NH AXIAL |
| 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 10 WAY 2 ROW (5*2) PCB MTG |
| PL103 | | 240-00020-67 | HEADER 6WAY 2X3 PCB MTG STD |
| PL200 | | 240-00010-55 | PLUG 15 WAY D RANGE WIRE WRAP PINS PNL M |
| Q1 | | 000-10057-10 | XSTR SMD MMBR571 NPN SOT-23 UHF LO PWR |
| Q5 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q6 | | 000-10008-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| Q7 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q101 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q102 | | 000-10008-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| Q103 | | 000-10008-17 | XSTR SMD BCX19/BC817 NPN SOT-23 AF LO PW |
| Q104 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q105 | | 000-10008-17 | XSTR SMD BCX19/BC817 NPN SOT-23 AF LO PW |
| Q106 | | 000-00011-91 | XSTR BD139 NPN TO-126 AF PWR |
| Q208 | | 000-10008-17 | XSTR SMD BCX19/BC817 NPN SOT-23 AF LO PW |
| Q209 | | 000-00011-30 | XSTR BC557B PNP TO-92 AF SMALL SIG |
| Q210 | | 000-00012-15 | XSTR BD234 PNP TO-126 AF PWR |
| Q211 | | 000-10008-07 | XSTR SMD BC807 PNP SOT-23 AF LO PWR |
| Q212 | | 000-10008-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| Q350 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q351 | | 000-10008-17 | XSTR SMD BCX19/BC817 NPN SOT-23 AF LO PW |
| Q352 | | 000-00012-15 | XSTR BD234 PNP TO-126 AF PWR |
| Q353 | | 000-10008-48 | XSTR SMD BCW60/BC848 NPN SOT-23 AF SMALL |
| Q354 | | 000-10008-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| Q355 | | 000-10008-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| 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 | | 036-14470-00 | 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% |

# T881 MAIN PCB PARTS LIST

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| 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% |
| 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% |
| R76 | | 036-16100-00 | RES M/F 0805 CHIP 100K 5% |
| R77 | | 036-16100-00 | RES M/F 0805 CHIP 100K 5% |
| R78 | | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| R100 | | 036-13100-00 | RES M/F 0805 CHIP 100E 5% |
| RV100 | | 040-05100-21 | 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 | 10 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 12 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 14 | 042-05100-06 | RES PRESET 10K CARBON 6MM FLAT |
| &RV106 | 15 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 17 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 20 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 22 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 24 | 042-05100-06 | RES PRESET 10K CARBON 6MM FLAT |
| &RV106 | 25 | 042-04470-06 | RES PRESET 4K7 CARBON 6MM FLAT |
| &RV106 | 27 | 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 | 10 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 12 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 14 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R115 | 15 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 17 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 20 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 22 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 24 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R115 | 25 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R115 | 27 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R116 | | 036-16100-00 | RES M/F 0805 CHIP 100K 5% |
| R117 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R118 | 10 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 12 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 14 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R118 | 15 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 17 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 20 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 22 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 24 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R118 | 25 | 036-13560-00 | RES M/F 0805 CHIP 560E 5% |
| &R118 | 27 | 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 | 10 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 12 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 14 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R122 | 15 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 17 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 20 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 22 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 24 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R122 | 25 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R122 | 27 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 10 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 12 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 14 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R123 | 15 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 17 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 20 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 22 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 24 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R123 | 25 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R123 | 27 | 036-15120-00 | RES M/F 0805 CHIP 12K 5% |
| &R124 | 10 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 12 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 15 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 17 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 20 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 22 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 25 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R124 | 27 | 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% |

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| R131 | | 036-17100-00 | RES M/F 0805 CHIP 1M 5% |
| &R136 | 10 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 12 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 15 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 17 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 20 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 22 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 25 | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| &R136 | 27 | 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 | 10 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 12 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 14 | 036-15390-00 | RES M/F 0805 CHIP 39K 5% |
| &R147 | 15 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 17 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 20 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 22 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 24 | 036-15390-00 | RES M/F 0805 CHIP 39K 5% |
| &R147 | 25 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R147 | 27 | 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 | 10 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 12 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 15 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 17 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 20 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 22 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 25 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R151 | 27 | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| &R152 | 10 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 12 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 14 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 15 | 036-15270-00 | RES M/F 0805 CHIP 27K 5% |
| &R152 | 17 | 036-15270-00 | RES M/F 0805 CHIP 27K 5% |
| &R152 | 20 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 22 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 24 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R152 | 25 | 036-15270-00 | RES M/F 0805 CHIP 27K 5% |
| &R152 | 27 | 036-15270-00 | RES M/F 0805 CHIP 27K 5% |
| R155 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R159 | | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| R162 | | 036-13680-00 | RES M/F 0805 CHIP 680E 5% |
| &R163 | 10 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 12 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 14 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R163 | 15 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 17 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 20 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 22 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 24 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R163 | 25 | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| &R163 | 27 | 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 | | 036-13330-00 | 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 | 10 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 12 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 14 | 036-17100-00 | RES M/F 0805 CHIP 1M 5% |
| &R179 | 15 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 17 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 20 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 22 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 24 | 036-17100-00 | RES M/F 0805 CHIP 1M 5% |
| &R179 | 25 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R179 | 27 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| R180 | | 036-17100-00 | RES M/F 0805 CHIP 1M 5% |
| &R181 | 10 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 12 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 15 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 17 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 20 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 22 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 25 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R181 | 27 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 10 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 12 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 15 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 17 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 20 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 22 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |

# T881 MAIN PCB PARTS LIST

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| &R182 | 25 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R182 | 27 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R183 | 10 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 12 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 14 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R183 | 15 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 17 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 20 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 22 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 24 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R183 | 25 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R183 | 27 | 036-14820-00 | RES M/F 0805 CHIP 8K2 5% |
| &R184 | 10 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R184 | 12 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R184 | 14 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R184 | 15 | 036-15180-00 | RES M/F 0805 CHIP 18K 5% |
| &R184 | 17 | 036-15180-00 | RES M/F 0805 CHIP 18K 5% |
| &R184 | 20 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R184 | 22 | 036-15150-00 | RES M/F 0805 CHIP 15K 5% |
| &R184 | 24 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R184 | 25 | 036-15180-00 | RES M/F 0805 CHIP 18K 5% |
| &R184 | 27 | 036-15180-00 | RES M/F 0805 CHIP 18K 5% |
| &R185 | 10 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R185 | 12 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R185 | 14 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R185 | 15 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R185 | 17 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R185 | 20 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R185 | 22 | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| &R185 | 24 | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| &R185 | 25 | 036-15560-00 | RES M/F 0805 CHIP 56K 5% |
| &R185 | 27 | 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 | 10 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 12 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 15 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 17 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 20 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 22 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 25 | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| &R190 | 27 | 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 | 10 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 12 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 15 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 17 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 20 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 22 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 25 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R197 | 27 | 036-14270-00 | RES M/F 0805 CHIP 2K7 5% |
| &R198 | 10 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 12 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 15 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 17 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 20 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 22 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 25 | 036-10000-00 | RES M/F 0805 CHIP ZERO OHM |
| &R198 | 27 | 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 | | 036-12330-00 | RES M/F 0805 CHIP 33E 5% |
| R229 | | 036-12330-00 | RES M/F 0805 CHIP 33E 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% |

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| 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 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R301 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R302 | | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| R303 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R304 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R305 | | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| R306 | | 036-14470-00 | RES M/F 0805 CHIP 4K7 5% |
| R307 | | 036-17100-00 | RES M/F 0805 CHIP 1M 5% |
| R308 | | 036-15470-00 | RES M/F 0805 CHIP 47K 5% |
| R340 | | 036-13220-00 | RES M/F 0805 CHIP 220E 5% |
| R341 | | 036-13100-00 | RES M/F 0805 CHIP 100E 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% |
| R363 | | 036-13100-00 | RES M/F 0805 CHIP 100E 5% |
| R364 | | 036-13100-00 | RES M/F 0805 CHIP 100E 5% |
| R365 | | 036-12100-00 | RES M/F 0805 CHIP 10E 5% |
| R366 | | 036-14220-00 | RES M/F 0805 CHIP 2K2 5% |
| R370 | | 036-12470-00 | RES M/F 0805 CHIP 47E 5% |
| R371 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R372 | | 036-13390-00 | RES M/F 0805 CHIP 390E 5% |
| R373 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R374 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R375 | | 036-13390-00 | RES M/F 0805 CHIP 390E 5% |
| R376 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R377 | | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| R378 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R379 | | 036-15220-00 | RES M/F 0805 CHIP 22K 5% |
| R380 | | 036-15100-00 | RES M/F 0805 CHIP 10K 5% |
| R406 | | 036-13100-00 | RES M/F 0805 CHIP 100E 5% |
| R407 | | 036-13100-00 | RES M/F 0805 CHIP 100E 5% |
| R432 | | 045-04470-01 | RES NTC 4K7 20% 5MM DISC |
| R437 | | 036-12100-00 | RES M/F 0805 CHIP 10E 5% |
| SUPPLY | | 008-00013-35 | LED 3MM GREEN LO CURRENT NO MTG (S) |
| SJ2 | | 240-04020-65 | SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL ST |
| SJ3 | | 240-04020-65 | SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL ST |
| SJ4 | | 240-04020-66 | SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL ST |
| SJ5 | | 240-04020-65 | SKT JACK PIN 1.3MM PCB MTG 64 WAY SIL ST |
| SK1 | | 240-04020-57 | SKT 10 WAY 1ROW PCB MTG TOP ENTRY |
| SK100 | | 240-02020-05 | SKT STEREO PHONE JACK PCB MTG |
| SW101 | | 232-00010-26 | SWITCH PUSH SPDT RT ANGLE PCB MTG NO BUT |
| SK300 | | 240-02100-44 | SKT COAX MINI JACK PCB MTG ANGLED |
| SK401 | | 240-02100-44 | SKT COAX MINI JACK PCB MTG ANGLED |
| TX-LED | | 008-00013-32 | LED 3MM RED LO CURRENT NO MTG (S) |
| T100 | | 053-00010-17 | XFMR T4030 LINE MATCH POTCORE |
| T200 | | 050-00016-50 | COIL TAIT NO 650 455KHZ 5.6MM CAN |

# T881 MECHANICAL & MISCELLANEOUS PARTS

| IPN | DESCRIPTION |
|---|---|
| 012-04150-01 | CAP CER F/THRU 1N5 NO LEAD<br>C1 - C15 |
| 065-00010-13 | BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE |
| 066-00010-20 | SLUG BRASS A4M764 T196 HELIC RESNTR |
| 201-00030-02 | WIRE #1 T/C WIRE 7/0.2MM PVC RED<br>2X20mm LED |
| 201-00030-10 | WIRE #1 T/C WIRE 7/0.2MM PVC BLACK<br>2X25mm LED |
| 206-00010-11 | CABLE COAX 50 OHM RG316-U PTFE |
| 220-01181-02 | PCB T881 800-960MHZ SW TX |
| 232-00020-26 | BUTTON PUSH FOR 232-00010-26 SWITCH |
| 240-00020-02 | PLUG STEREO PHONE JACK STD 1/4 INCH |
| 240-00100-43 | PLUG COAX MINI PIN PLUG CRIMP 1.5D COAX |
| 240-02010-54 | SKT 15WAY DRANGE PNL MTG DS-15SR-BT 105 |
| 240-02100-06 | SKT COAX N TYPE PNL MTG OPEN TERMN |
| 240-04020-62 | SKT 2 WAY RECEPTL SHORTING LINK<br>FOR PL100 PL101 PL102 PL103 |
| 252-00010-12 | MIC 600 OHM WITH HANGER CONN FOSTER |
| 303-11168-00 | CHASSIS HSINK PNTD CMPLT A1M2364 800 SER |
| 303-23118-00 | COVER A3M2247 D RANGE HOLE T655/7 |
| 303-50074-00 | CLIP A3M2246 SPRING XSTR CLAMP T857 |
| 303-50078-00 | CLIP A4M2630 0.1MM SPRING WIRE CABLE CLA |
| 306-01010-00 | FERRULE A4M948 HANDLE FXD EQUIP<br>FOR HANDLE |
| 308-01007-00 | HANDLE A4M949 FXD EQUIP |
| 308-01048-00 | HOUSING A3M2378 DOUBLET HELIC RESNTR T85 |
| 308-13094-00 | HSINK MODULE A3M2492 T881<br>FOR #IC404 |
| 312-01052-00 | LID TOP PNTD COMPL A1M2364 800 SERIES |
| 312-01053-00 | LID BOTTOM PNTD COMPL A1M2364 800 SERIES |
| 316-06411-00 | PNL FRT COMPL T881 A3M2335/5 A3M2335/1 |
| 316-85015-01 | PIN A4M775 LOCATING D RANGE |
| 316-85099-00 | PLATE FLOAT A2M2248 DUAL D RANGE SKT BOX |
| 316-85100-00 | PLATE FRT A2M2249 DUAL D RANGE SKT BOX |
| 318-01014-00 | RAIL A2M2214 FOR 800 SERIES FXD EQUIP |
| 319-01152-00 | SHIELD A3M2250 F/THRU MTG T857 |
| 319-04006-00 | STRAP EARTH FOR IC MHW SERIES A3M2491<br>C/REF: SHLD1 |
| 345-00040-06 | SCREW M3*8MM PAN POZI ST BZ<br>SKT BOX X 2 |
| 345-00040-08 | SCREW M3*12MM PAN POZI ST BZ<br>D RANGE HOLE COVER X 2 |
| 345-00040-09 | SCREW M3*6MM CSK POZI TRUNCATED HEAD ST<br>RAIL MOUNTING |
| 345-00040-10 | SCREW M3*6MM PAN POZI ST BZ<br>RAIL X 4; FLOAT PLATE X 4 |
| 345-00040-20 | SCREW M3*8MM BUTTON SKT HD BLACK ZINC PH<br>FRONT PANEL |
| 345-00050-07 | SCREW M4X10MM PAN POZI ST BZ<br>#IC404 MTG |
| 349-00020-32 | SCREW TAPTITE M3X8MM PAN POZI BZ<br>N TYPE CONNECTOR X4; MAIN BOARD MTG X8; HELICAL HOUSING X4 |
| 349-00020-43 | SCREW TAPTITE M4X12MM PAN POZI BZ<br>#IC404 MTG |

| IPN | DESCRIPTION |
|---|---|
| 349-00020-43 | SCREW TAPTITE M4X12MM PAN POZI BZ<br>TOP COVER X 14 |
| 349-00020-45 | SCREW TAPTITE M4X20MM PAN POZI BZ<br>BOTTOM COVER X 14 |
| 352-00010-08 | NUT M3 COLD FORM HEX ST BZ<br>D RANGE COVER X 2; D RANGE MTG X 2 |
| 352-00010-10 | NUT M4 COLD FORM HEX ST BZ<br>#IC404 MTG |
| 352-00010-29 | NUT M4 NYLOC HEX<br>FOR HANDLE |
| 352-00010-50 | NUT TRIM SCREEN 1/4 UNF SPIRE SNO 2780 |
| 353-00010-10 | WASHER M3 FLAT ST BZ 6.75MM OD A4M1215<br>FOR FLOAT PLATE |
| 353-00010-12 | WASHER M3 SPRING BZ<br>D RANGE COVER X 2; D RANGE MTG X 2 |
| 353-00010-20 | WASHER M4 SHAKEPROOF INT SZ<br>#IC404 MTG |
| 360-00010-40 | BUSH SNAP BLACK HEYCO SB-375-4 |
| 362-00010-23 | GASKET SIL INSULATING TO-220 CLIP MTD |
| 362-00010-33 | GROMMET LED MTG 3MM LO CURRENT LEDS |
| 365-00011-03 | LABEL TEST REPORT INSIDE A4A267 |
| 365-00100-03 | LABEL BLANK 10.8X30MM S/A METLSO POLYES |
| 400-00020-05 | SLEEVING 1.5MM SIL RUBBER |
| 410-00010-42 | PKG CARTON 60MM FXD EQUIP MODULE UEB 150 |
| 410-01066-00 | CARTON STOCK 10 PRINTED KIWI REF 12317 5 |

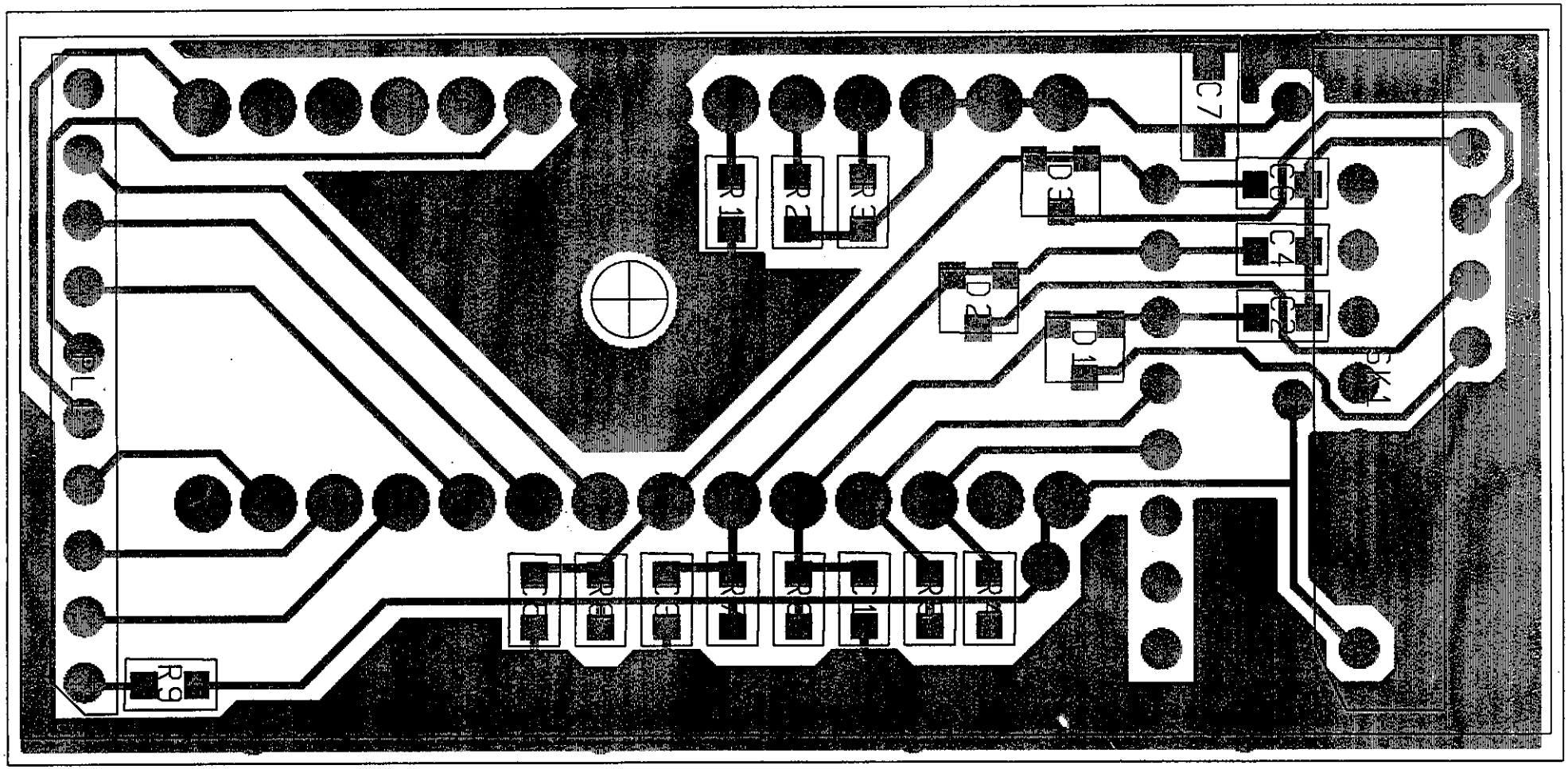
# T800 EPROM PCB PARTS

| REF | 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 | 025-06100-02 | CAP TANT BEAD 10M 10% 16V |
| D1 | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D2 | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| D3 | 001-10000-70 | DIODE SMD BAV70 DUAL SWITCH SOT-23 COMM |
| IC1 | 002-00018-04 | IC 27C64 CMOS 8K*8 UV EPROM (S) |
| 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 |
| SK1 | 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 FOR IC1 |

# T881 VCO PCB PARTS

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| &C1 | 10 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 12 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 14 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 15 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 17 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 20 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 22 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 24 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 25 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 NPO 50V |
| &C1 | 27 | 015-21180-01 | CAP CER 0805 CHIP 1P8 +/-0.25 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 1P0 +/-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 | 10 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 12 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 14 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 15 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 17 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 20 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 22 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 24 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 25 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C7 | 27 | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| &C8 | 10 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 12 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 14 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 15 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 17 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 20 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 22 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 24 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 25 | 015-22270-01 | CAP CER 0805 CHIP 27P 5% NPO 50V |
| &C8 | 27 | 015-22270-01 | CAP CER 0805 CHIP 27P 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 | | 015-22820-01 | CAP CER 0805 CHIP 82P 5% NPO 50V |
| C13 | | 015-23120-01 | CAP CER 0805 CHIP 120P 5% NPO 50V |
| C14 | | 015-23100-01 | CAP CER 0805 CHIP 100P 5% NPO 50V |
| C17 | | 015-23120-01 | CAP CER 0805 CHIP 120P 5% NPO 50V |
| C18 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C19 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C20 | | 015-23470-08 | CAP CER 0805 CHIP 470P 10% X7R 50V |
| &C21 | 10 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 12 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 14 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 15 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 17 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 20 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 22 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 24 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 25 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C21 | 27 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| C22 | | 015-21680-01 | CAP CER 0805 CHIP 6P8 +/-0.25P NPO 50V |
| C23 | | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C24 | | 015-21470-01 | CAP CER 0805 CHIP 4P7 +/-0.25P NPO 50V |
| C26 | | 015-22560-01 | CAP CER 0805 CHIP 56P 5% NPO 50V |
| C27 | | 015-05470-08 | CAP CER 1206 CHIP 47N 10% X7R 50V |
| &C28 | 10 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C28 | 12 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C28 | 14 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C28 | 15 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C28 | 17 | 015-22100-01 | CAP CER 0805 CHIP 10P +/-0.5P NPO 50V |
| &C28 | 20 | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| &C28 | 22 | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| &C28 | 24 | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| &C28 | 25 | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| &C28 | 27 | 015-21820-01 | CAP CER 0805 CHIP 8P2 +/-0.25P NPO 50V |
| C29 | | 015-21330-01 | CAP CER 0805 CHIP 3P3 +/-0.25P NPO 50V |
| C30 | | 015-21220-01 | CAP CER 0805 CHIP 2P2 +/-0.25P NPO 50V |
| D1 | | 001-00012-63 | DIODE VARICAP BB809 |
| D2 | | 001-00012-63 | 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 | | 052-08130-25 | COIL A/W 2.5T/3.0MM HOR 0.8MM WIRE |
| L6 | | 056-00021-60 | IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET |
| L7 | | 052-08125-15 | COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE |
| L8 | | 052-08125-15 | COIL A/W 1.5T/2.5MM HOR 0.8MM WIRE |
| L9 | | 056-00021-60 | IND FXD 330NH 6.6X2.7MM AXIAL NON MAGNET |
| L10 | | 052-08130-15 | COIL A/W 1.5T/3.0MM HOR 0.8MM WIRE |
| Q1 | | 000-10095-10 | XSTR SMD MMBR951 NPN UHF SOT-23 |
| Q2 | | 000-10057-10 | XSTR SMD MMBR571 NPN SOT-23 UHF LO PWR |
| Q3 | | 000-10057-10 | XSTR SMD MMBR571 NPN SOT-23 UHF LO PWR |
| Q4 | | 000-10057-10 | XSTR SMD MMBR571 NPN SOT-23 UHF LO PWR |
| Q5 | | 000-00032-61 | XSTR MRF571 NPN UHF 10V 10MA 1 W |
| Q6 | | 000-10006-57 | XSTR SMD BCW70/BC857 PNP SOT-23 AF SMALL |
| R1 | | 036-14390-00 | RES M/F 0805 CHIP 3K9 5% |

| REF | VAR | IPN | DESCRIPTION |
|---|---|---|---|
| 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 | | 036-12680-00 | RES M/F 0805 CHIP 68E 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 | | 036-12390-00 | RES M/F 0805 CHIP 39E 5% |
| R14 | | 036-13330-00 | RES M/F 0805 CHIP 330E 5% |
| R15 | | 036-14180-00 | RES M/F 0805 CHIP 1K8 5% |
| R16 | | 036-13470-00 | RES M/F 0805 CHIP 470E 5% |
| R17 | | 036-14120-00 | RES M/F 0805 CHIP 1K2 5% |
| R18 | | 036-12820-00 | RES M/F 0805 CHIP 82E 5% |
| R19 | | 036-12180-00 | RES M/F 0805 CHIP 18E 5% |
| R20 | | 036-13270-00 | RES M/F 0805 CHIP 270E 5% |
| R21 | | 036-13270-00 | RES M/F 0805 CHIP 270E 5% |
| R22 | | 036-14180-00 | RES M/F 0805 CHIP 1K8 5% |
| R23 | | 036-12270-00 | RES M/F 0805 CHIP 27E 5% |
| R24 | | 036-14680-00 | RES M/F 0805 CHIP 6K8 5% |
| R25 | | 036-13470-00 | RES M/F 0805 CHIP 470E 5% |
| R26 | | 036-14100-00 | RES M/F 0805 CHIP 1K 5% |
| R27 | | 036-12470-00 | RES M/F 0805 CHIP 47E 5% |
| &TL1 | 10 | 051-00005-61 | COIL RESNTR 400-457.5MHZ T800'S |
| &TL1 | 12 | 051-00005-61 | COIL RESNTR 400-457.5MHZ T800'S |
| &TL1 | 14 | 051-00005-61 | COIL RESNTR 400-457.5MHZ T800'S |
| &TL1 | 15 | 051-00005-61 | COIL RESNTR 400-457.5MHZ T800'S |
| &TL1 | 17 | 051-00005-61 | COIL RESNTR 400-457.5MHZ T800'S |
| &TL1 | 20 | 051-00005-42 | RESNTR TAIT NO 542 435-480MHZ T855/7 |
| &TL1 | 22 | 051-00005-42 | RESNTR TAIT NO 542 435-480MHZ T855/7 |
| &TL1 | 24 | 051-00005-42 | RESNTR TAIT NO 542 435-480MHZ T855/7 |
| &TL1 | 25 | 051-00005-42 | RESNTR TAIT NO 542 435-480MHZ T855/7 |
| &TL1 | 27 | 051-00005-42 | RESNTR TAIT NO 542 435-480MHZ T855/7 |
| | | 065-00010-13 | BEAD FERRITE 7D 1.9*0.9*3.8MM STACK POLE FIT TO LEAD OF L4 |
| | | 220-01184-01 | PCB T880 VCO |
| | | 240-00025-36 | PLUG 32WAY 1ROW PC MTG HARWIN PL1, PL2, PL3, PL4 |
| | | 345-00040-10 | SCREW M3*6MM PAN POZI ST BZ |
| | | 350-00016-42 | SPACER 5MM HI 8MM X M3 STUD 2.5MM X M3 H |
| | | 352-00010-08 | NUT M3 COLD FORM HEX ST BZ |
| | | 353-00010-10 | WASHER M3 FLAT ST BZ 6.75MM OD A4M1215 |
| | | 353-00010-13 | WASHER M3 SHAKEPROOF INT BZ |

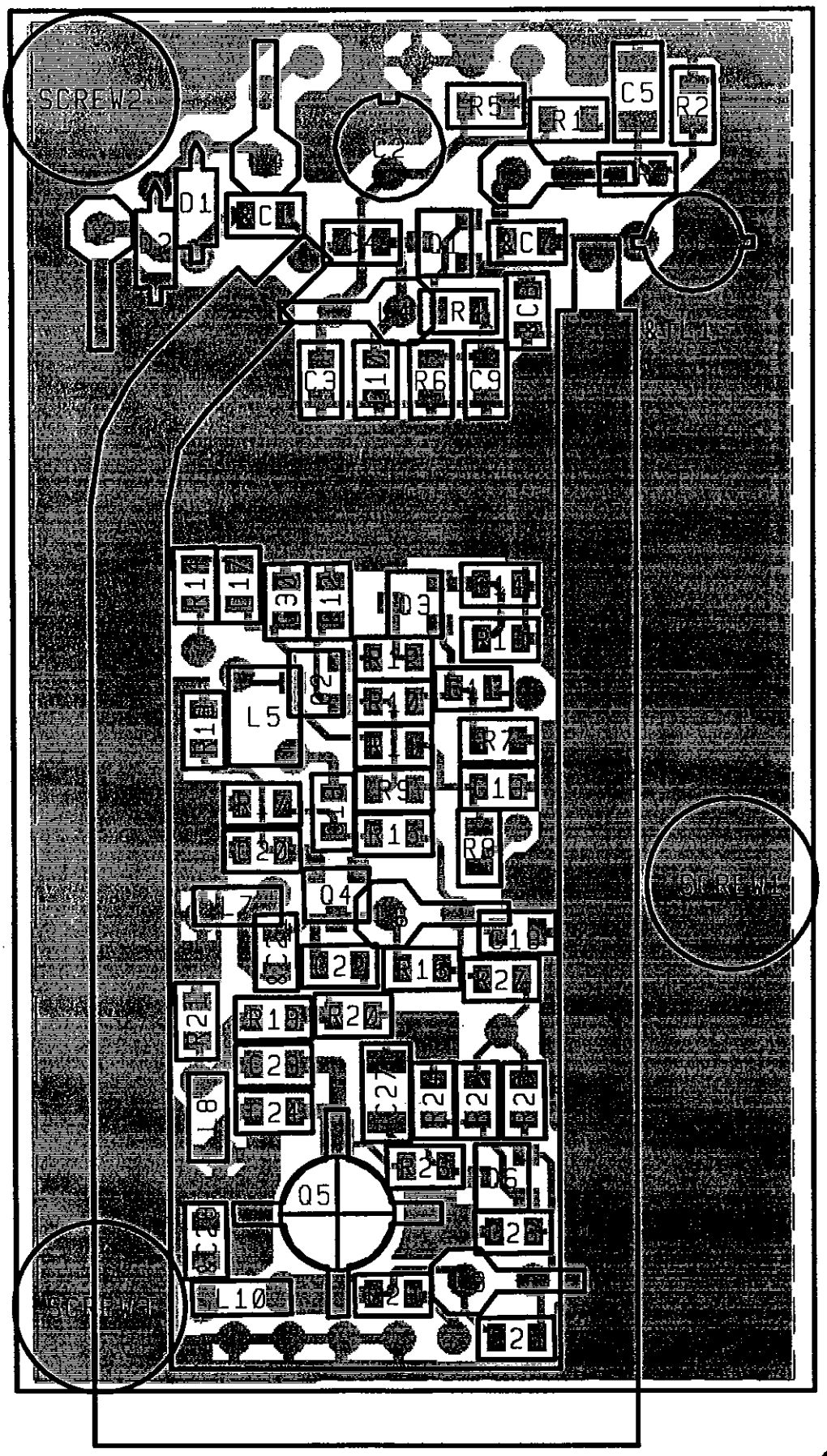



220-00011-44 B

220-00011-44B

DIAGRAM 1 - EPROM PCB LAYOUT - TOP SIDE

220-01184-01 1A



220-01184-01 1A

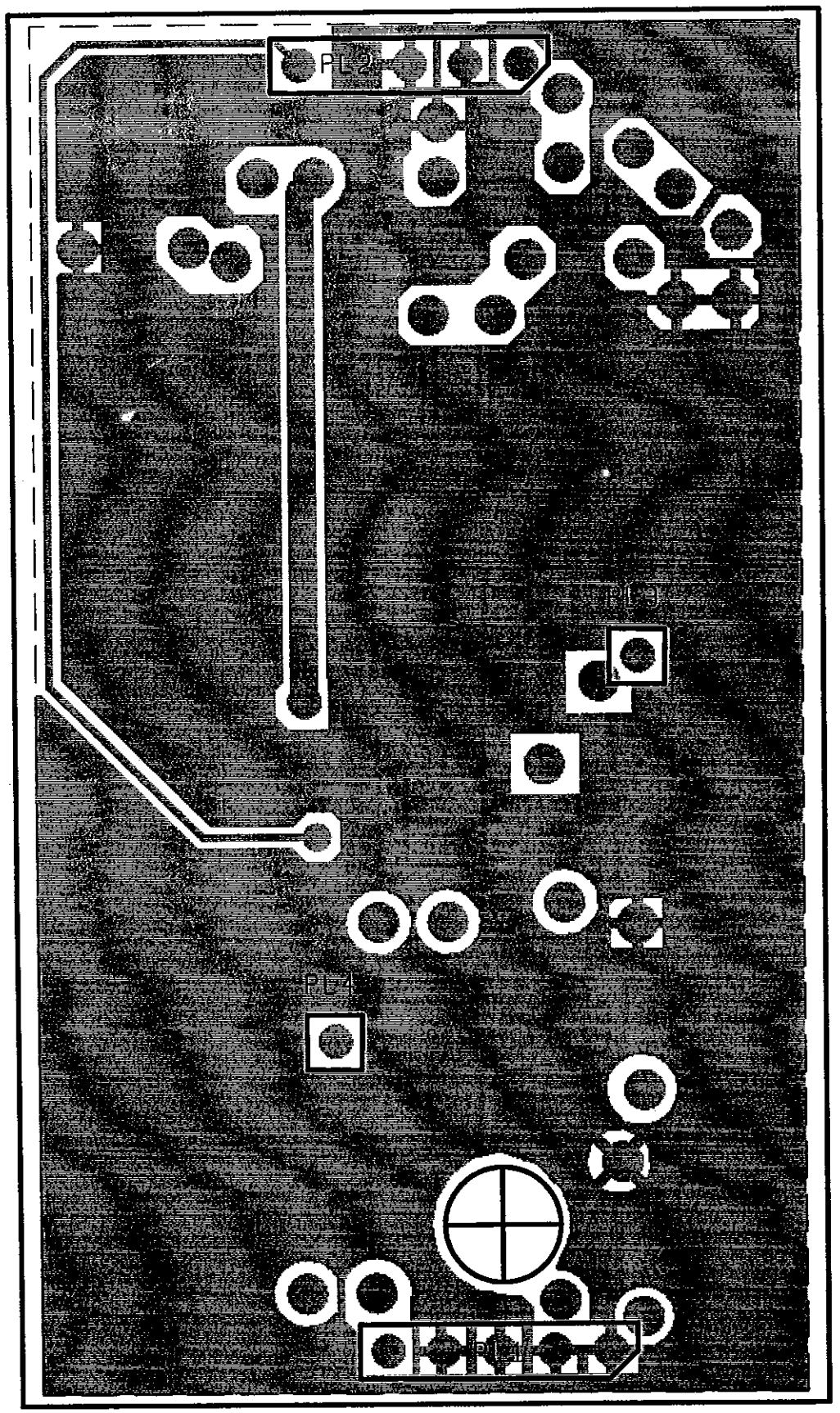



DIAGRAM 4 VCO PCB LAYOUT - BOTTOM SIDE

# T881 Grid Reference Index

| DEVICE | PCB | CIRCUIT |
|---|---|---|
| C1 | 2:O6 | 1-A8 |
| C2 | 2:K6 | 1-B4 |
| C3 | 2:L6 | 1-B5 |
| C4 | 2:K6 | 1-B4 |
| C5 | 2:L6 | 1-B5 |
| C6 | 2:O5 | 1-B7 |
| C9 | 2:K6 | 1-C4 |
| C10 | 2:L6 | 1-D5 |
| C11 | 2:M5 | 1-E5 |
| C12 | 2:L6 | 1-E4 |
| C13 | 2:S5 | 1-E8 |
| C14 | 1:S5 | 1-F8 |
| C15 | 1:M6 | 1-G4 |
| C16 | 2:M5 | 1-G4 |
| C17 | 2:L4 | 1-G2 |
| C19 | 2:P4 | 1-G2 |
| C20 | 2:N4 | 1-H3 |
| C25 | 1:P6 | 1-J5 |
| C26 | 2:M6 | 1-J2 |
| C29 | 1:N5 | 1-K5 |
| C30 | 1:N6 | 1-N5 |
| C33 | 2:P9 | 1-L5 |
| C34 | 1:T5 | 1-M8 |
| C35 | 1:R6 | 1-O7 |
| C36 | 2:R6 | 1-P7 |
| C39 | 2:O8 | 1-O9 |
| C40 | 2:O5 | 1-C7 |
| C42 | 2:N5 | 1-K5 |
| C43 | 2:R4 | 1-G6 |
| C44 | 2:S5 | 1-H7 |
| C45 | 2:P9 | 1-M6 |
| C46 | 2:M6 | 1-D5 |
| C47 | 1:R6 | 1-C9 |
| C48 | 2:P8 | 1-O9 |
| C101 | 1:C9 | 2-B7 |
| C102 | 1:B4 | 2-C3 |
| C103 | 1:B5 | 2-C3 |
| C104 | 2:D12 | 2-C3 |
| C105 | 2:C9 | 2-C6 |
| C106 | 2:C9 | 2-C7 |
| C107 | 1:D9 | 2-C8 |
| C108 | 2:D12 | 2-D2 |
| C109 | 2:C12 | 2-D3 |
| C110 | 2:C12 | 2-D3 |
| C111 | 2:D12 | 2-E2 |
| C112 | 1:D8 | 2-E6 |
| C113 | 2:D10 | 2-E2 |
| C115 | 2:D10 | 2-F6 |
| C118 | 2:B9 | 2-F7 |
| C119 | 1:D10 | 2-G3 |
| C121 | 2:B7 | 2-G7 |
| C123 | 2:A7 | 2-H7 |
| &C124 | 2:C7 | 2-I1 |
| C126 | 2:B7 | 2-H0 |
| C128 | 2:B7 | 2-I7 |
| C129 | 1:A6 | 2-J7 |
| &C133 | 2:D5 | 2-N4 |
| &C135 | 2:E6 | 2-O4 |
| C137 | 1:D8 | 2-O1 |
| C139 | 2:D6 | 2-H0 |
| &C141 | 2:E5 | 2-O5 |
| C145 | 2:B10 | 2-D5 |
| C146 | 2:B7 | 2-F6 |
| C147 | 1:B8 | 2-G4 |
| C148 | 2:B8 | 2-H2 |
| C149 | 2:C7 | 2-H5 |
| C150 | 1:B6 | 2-I6 |
| &C151 | 2:D7 | 2-K2 |
| C152 | 1:D7 | 2-K2 |
| C153 | 2:B5 | 2-K6 |
| C154 | 1:C5 | 2-L1 |
| C156 | 1:D5 | 2-M6 |
| &C157 | 2:E5 | 2-O4 |
| C158 | 2:D7 | 2-P0 |
| &C160 | 2:C8 | 2-O3 |
| &C161 | 2:C6 | 2-F1 |
| C162 | 1:E3 | 2-A3 |
| C163 | 1:D3 | 2-A3 |
| C164 | 2:E5 | 2-D0 |
| C166 | 2:E7 | 2-O1 |
| &C167 | 2:B10 | 2-D5 |
| C168 | 2:C8 | 2-E2 |
| &C169 | 2:C8 | 2-H2 |
| &C170 | 2:D7 | 2-I2 |
| &C171 | 2:E5 | 2-O6 |
| C209 | 1:O7 | 3-J6 |
| C212 | 2:R9 | 3-O7 |
| C213 | 1:O9 | 3-O7 |
| C214 | 2:T7 | 3-A2 |
| C215 | 1:S7 | 3-C2 |
| C216 | 2:S7 | 3-C3 |
| C217 | 2:U6 | 3-C5 |
| C218 | 2:S8 | 3-H1 |
| C219 | 1:T9 | 3-F3 |
| C220 | 2:T9 | 3-F3 |
| C221 | 2:T9 | 3-F3 |
| C222 | 1:S8 | 3-I3 |
| C223 | 1:R9 | 3-M1 |
| C224 | 1:O8 | 3-K6 |
| C225 | 2:R8 | 3-M6 |
| C226 | 1:R9 | 3-M6 |
| C227 | 1:R10 | 3-O7 |
| C228 | 2:R7 | 3-D3 |
| C229 | 2:T10 | 3-E4 |
| C230 | 2:R9 | 3-N7 |
| C231 | 2:T9 | 3-P2 |
| C232 | 2:R7 | 3-J6 |
| C233 | 2:R10 | 3-P7 |
| C234 | 2:R7 | 3-I6 |
| C235 | 2:R8 | 3-C2 |
| C300 | 2:H11 | 4-B8 |
| C301 | 2:H11 | 4-C8 |
| C302 | 2:H12 | 4-B7 |
| C303 | 2:H12 | 4-C6 |
| C310 | 2:G12 | 4-H5 |
| C320 | 2:G11 | 4-J9 |
| C350 | 2:G12 | 4-F5 |
| C351 | 2:G12 | 4-G5 |
| C352 | 1:J11 | 4-F7 |
| C354 | 2:G11 | 4-H7 |
| C355 | 2:G11 | 4-I7 |
| C356 | 2:G11 | 4-I7 |
| C357 | 2:G11 | 4-J8 |
| C358 | 2:H13 | 4-K8 |
| C359 | 2:H13 | 4-K7 |
| C360 | 2:H13 | 4-L8 |
| C361 | 2:H13 | 4-M8 |
| C362 | 2:J12 | 4-K9 |
| C363 | 2:H10 | 4-J6 |
| C364 | 1:J12 | 4-I9 |
| C366 | 2:G9 | 4-C0 |
| C367 | 2:G9 | 4-C1 |
| C368 | 2:F9 | 4-D1 |
| C369 | 2:F10 | 4-F1 |
| C370 | 2:G10 | 4-F2 |
| C371 | 2:G10 | 4-F0 |
| C372 | 2:H10 | 4-E2 |
| C373 | 2:H10 | 4-E3 |
| C374 | 2:H9 | 4-F3 |
| C415 | 2:S13 | 4-M0 |
| C416 | 2:T13 | 4-L0 |
| C417 | 2:T13 | 4-O2 |
| C418 | 2:T11 | 4-N2 |
| C419 | 2:V12 | 4-N1 |
| C422 | 2:V11 | 4-O1 |
| C426 | 2:V10 | 4-O1 |
| C429 | 2:V9 | 4-P1 |
| C430 | 1:N13 | 4-L3 |
| C431 | 2:M13 | 4-K2 |
| C432 | 2:P13 | 4-K2 |
| C433 | 2:S11 | 4-K3 |
| C437 | 1:S13 | 4-J2 |
| C438 | 2:N13 | 4-L3 |
| C439 | 2:L11 | 4-E6 |
| C446 | 1:R11 | 4-M8 |
| D4 | 2:M6 | 1-I3 |
| | | 1-J3 |
| D5 | 2:N5 | 1-M3 |
| | | 1-M3 |
| D100 | 2:D12 | 2-C2 |
| | | 2-D2 |
| D101 | 2:C5 | 2-B1 |
| | | 2-B1 |
| D102 | 2:D4 | 2-B2 |
| | | 2-B2 |
| D103 | 2:C12 | 2-C3 |
| | | 2-D3 |
| D104 | 2:B6 | 2-L5 |
| | | 2-K5 |
| D106 | 1:B13 | 2-P8 |
| %D107 | 1:C5 | 2-B4 |
| %D108 | 1:B5 | 2-C4 |
| D204 | 2:Q8 | 3-K7 |
| | | 3-K6 |
| D205 | 2:U6 | 3-C6 |
| | | 3-C6 |
| D206 | 2:T10 | 3-D4 |
| | | 3-D5 |
| D207 | 2:R8 | 3-H3 |
| | | 3-I2 |
| D208 | 2:S9 | 3-K3 |
| | | 3-K3 |
| D209 | 2:S10 | 3-N2 |
| | | 3-N2 |
| D210 | 1:S9 | 3-K1 |
| D211 | 2:R9 | 3-L1 |
| | | 3-L1 |
| D300 | 2:G9 | 4-D1 |
| D301 | 1:H11 | 4-J9 |
| D302 | 2:G9 | 4-D1 |
| D303 | 2:G10 | 4-E1 |
| D401 | 1:S13 | 4-M1 |
| D402 | 1:T11 | 4-N2 |
| D403 | 1:V6 | 3-D7 |
| FWD-PWR1 | 1:J13 | 4-B9 |
| FWD-PWR2 | 1:T13 | 4-L1 |
| =IC1 | 1:R6 | 1-B8 |
| IC3 | 1:M5 | 1-E4 |
| IC4 | 1:T4 | 1-F7 |
| | | 1-G8 |
| IC5 | 1:N5 | 1-F3 |
| IC6 | 1:N5 | 1-M4 |
| | | 1-K5 |
| | | 1-K3 |
| IC7 | 1:S6 | 1-E8 |
| | | 1-D7 |
| | | 1-D7 |
| | | 1-E7 |
| | | 1-G7 |
| | | 1-H7 |
| | | 1-I7 |
| IC100 | 1:D5 | 2-D1 |
| IC101 | 1:B11 | 2-E4 |
| &IC102 | 1:B8 | 2-G5 |
| | | 2-J5 |
| | | 2-F1 |
| | | 2-H2 |
| | | 2-G0 |
| IC103 | 1:D7 | 2-H0 |
| | | 2-J2 |
| | | 2-M4 |
| | | 2-P4 |
| | | 2-P1 |
| IC104 | 1:D9 | 2-M3 |
| | | 2-P2 |
| | | 2-M0 |
| IC201 | 1:T7 | 3-A2 |
| IC202 | 1:S7 | 3-C2 |
| | | 3-H2 |
| | | 3-J2 |
| | | 3-M1 |
| | | 3-G1 |
| IC203 | 1:H11 | 4-I9 |
| | | 4-C8 |
| | | 4-C6 |
| | | 4-G6 |
| | | 4-J8 |
| #IC404 | 2:Q12 | 4-K2 |
| LKA | 2:T6 | 1-O8 |
| LKB | 2:T5 | 1-N7 |
| L1 | 1:K6 | 1-B4 |
| #L300 | 1:H7 | 4-B1 |
| L301 | 1:F10 | 4-E1 |
| L302 | 1:G10 | 4-E1 |
| L410 | 1:S12 | 4-K3 |
| L411 | 1:S13 | 4-M1 |
| L412 | 1:T11 | 4-O3 |
| L413 | 2:V11 | 4-O2 |
| L414 | 2:V10 | 4-O2 |
| L415 | 2:V9 | 4-P2 |
| L416 | 1:L11 | 4-E6 |
| L417 | 1:S11 | 4-N9 |
| PAD1 | 1:C2 | 2-P8 |
| PL1 | 1:P6 | 1-O1 |
| | | 1-O1 |
| | | 1-O0 |
| | | 1-O2 |
| | | 1-O3 |
| | | 1-O2 |
| | | 1-O2 |
| | | 1-O1 |
| | | 1-O2 |
| | | 1-O1 |
| PAD2 | 1:B12 | 2-P9 |
| PAD3 | 1:C11 | 2-B2 |
| PAD4 | 1:D11 | 2-P6 |
| PAD5 | 1:E4 | 2-M6 |
| PAD6 | 1:C2 | 2-P6 |
| PAD7 | 1:A5 | 2-P7 |
| PAD8 | 1:U4 | 1-P0 |
| PAD9 | 1:U4 | 1-O1 |
| PAD10 | 1:U4 | 1-O1 |
| PAD11 | 1:U5 | 1-O0 |
| PAD12 | 1:C13 | 2-O8 |
| PL100 | 1:D10 | 2-E8 |
| | | 2-D8 |
| | | 2-D7 |
| | | 2-D7 |
| | | 2-E7 |
| | | 2-E7 |
| PL101 | 1:C11 | 2-E3 |
| | | 2-E3 |
| | | 2-E3 |
| | | 2-F3 |
| | | 2-F3 |
| | | 2-F3 |
| PL102 | 1:D11 | 2-F3 |
| | | 2-G3 |
| | | 2-F4 |
| | | 2-G4 |
| | | 2-G3 |
| | | 2-G3 |
| | | 2-G3 |
| | | 2-F3 |
| | | 2-F3 |
| | | 2-F3 |
| PL103 | 1:C10 | 2-G1 |
| | | 2-G1 |
| | | 2-G2 |
| | | 2-G1 |
| | | 2-G2 |
| | | 2-G1 |
| PL200 | 1:V6 | 3-B7 |
| | | 3-B7 |
| | | 3-B8 |
| | | 3-B7 |
| | | 3-B8 |
| | | 3-B6 |
| | | 3-B5 |
| | | 3-B9 |
| | | 3-B9 |
| | | 3-B8 |
| | | 3-B8 |
| | | 3-B6 |
| | | 3-B6 |
| | | 3-B7 |
| | | 3-B6 |
| P401 | 1:V9 | 4-P2 |
| Q1 | 2:K5 | 1-C4 |
| Q5 | 2:T6 | 1-M9 |
| Q6 | 2:T5 | 1-N9 |
| Q7 | 2:T5 | 1-N7 |
| Q101 | 2:C9 | 2-D7 |
| Q102 | 2:C12 | 2-E3 |
| Q103 | 2:A7 | 2-H7 |
| Q104 | 2:B7 | 2-I8 |
| Q105 | 2:B12 | 2-O8 |
| Q106 | 1:C5 | 2-C1 |
| Q208 | 2:O8 | 3-L6 |
| Q209 | 1:R8 | 3-D2 |
| Q210 | 1:T10 | 3-E4 |
| Q211 | 2:T9 | 3-P2 |
| Q212 | 2:R9 | 3-N7 |
| Q350 | 2:H10 | 4-I6 |
| Q351 | 2:H13 | 4-L7 |
| Q352 | 1:J13 | 4-M8 |
| Q353 | 2:G12 | 4-I6 |
| Q354 | 2:G10 | 4-E2 |
| Q355 | 2:H9 | 4-E3 |
| R1 | 2:L6 | 1-B6 |
| REV-PWR1 | 1:H13 | 4-B7 |
| R2 | 2:R5 | 1-B9 |
| REV-PWR2 | 1:T13 | 4-O3 |
| R3 | 2:M4 | 1-B1 |
| R4 | 2:M9 | 1-A4 |
| R5 | 2:K6 | 1-B4 |
| R6 | 2:M4 | 1-B1 |
| R7 | 2:K6 | 1-C5 |
| R9 | 2:K5 | 1-C5 |
| R10 | 2:K6 | 1-C4 |
| R11 | 2:M4 | 1-C1 |
| R13 | 2:L5 | 1-C5 |
| R14 | 2:K5 | 1-C1 |
| R15 | 2:L5 | 1-C5 |
| R16 | 2:L5 | 1-D1 |
| =R17 | 1:O6 | 1-B7 |
| R18 | 2:M6 | 1-D6 |
| R19 | 2:L4 | 1-D1 |
| R20 | 2:L4 | 1-D1 |
| R21 | 2:R5 | 1-F8 |
| R24 | 2:L5 | 1-G5 |
| R25 | 2:M4 | 1-G3 |
| R29 | 2:N5 | 1-H3 |
| R30 | 2:M5 | 1-H3 |
| R32 | 2:M5 | 1-I3 |
| R35 | 2:M6 | 1-I3 |
| R36 | 2:M6 | 1-I3 |
| R37 | 2:P6 | 1-I5 |
| R38 | 2:P6 | 1-J6 |
| R39 | 2:N6 | 1-J3 |
| R40 | 2:N6 | 1-J2 |
| R42 | 2:N5 | 1-K5 |
| R43 | 2:N6 | 1-M5 |
| R46 | 2:P9 | 1-L5 |
| R47 | 2:T6 | 1-M8 |
| R48 | 2:T5 | 1-N8 |
| R49 | 2:T4 | 1-N7 |
| R50 | 2:T4 | 1-N7 |
| R51 | 2:T5 | 1-N7 |
| R52 | 2:L4 | 1-H4 |

# T881 Grid Reference Index

| DEVICE | PCB | CIRCUIT |
|---|---|---|
| R54 | 2:R4 | 1-G6 |
| R55 | 2:R5 | 1-H6 |
| R56 | 2:R5 | 1-H6 |
| R60 | 2:P9 | 1-L5 |
| R64 | 2:O5 | 1-C7 |
| R65 | 2:R5 | 1-D7 |
| R67 | 2:S4 | 1-G7 |
| R68 | 2:R4 | 1-G6 |
| R72 | 2:P9 | 1-M6 |
| R73 | 2:P9 | 1-M6 |
| R74 | 2:L6 | 1-B5 |
| R75 | 2:L6 | 1-E5 |
| R76 | 2:O6 | 1-B9 |
| R77 | 2:O6 | 1-C9 |
| R78 | 2:U6 | 1-O6 |
| RV100 | 1:B10 | 2-B4 |
| R100 | 2:C5 | 2-B0 |
| R101 | 2:D5 | 2-B1 |
| R102 | 2:D5 | 2-C1 |
| R103 | 2:D9 | 2-C7 |
| RV104 | 1:C6 | 2-I6 |
| R104 | 2:B5 | 2-C4 |
| RV105 | 1:D8 | 2-C3 |
| R105 | 2:C9 | 2-C5 |
| R106 | 2:D9 | 2-C6 |
| &RV106 | 1:D6 | 2-K1 |
| R107 | 2:D9 | 2-D7 |
| R108 | 2:D9 | 2-D8 |
| R109 | 2:D9 | 2-D7 |
| R110 | 2:C12 | 2-D5 |
| R111 | 2:E5 | 2-D0 |
| R112 | 2:C9 | 2-D4 |
| R113 | 2:C12 | 2-D3 |
| &R115 | 2:E9 | 2-D6 |
| R116 | 2:C12 | 2-E3 |
| R117 | 2:E9 | 2-E8 |
| &R118 | 2:D10 | 2-E2 |
| R119 | 2:C11 | 2-E6 |
| R120 | 2:C10 | 2-E4 |
| R121 | 2:C10 | 2-E6 |
| &R122 | 2:D8 | 2-E2 |
| &R123 | 2:D6 | 2-F1 |
| &R124 | 2:C6 | 2-F1 |
| R127 | 2:C7 | 2-H3 |
| R128 | 2:B8 | 2-G7 |
| R131 | 2:C8 | 2-I2 |
| &R136 | 2:C8 | 2-I1 |
| R141 | 2:A6 | 2-J7 |
| R143 | 2:B6 | 2-K7 |
| R146 | 2:D5 | 2-L6 |
| &R147 | 2:D5 | 2-L1 |
| R148 | 2:D5 | 2-M5 |
| R149 | 2:D7 | 2-M5 |
| R150 | 2:D6 | 2-M4 |
| &R151 | 2:D6 | 2-N4 |
| &R152 | 2:D5 | 2-N5 |
| R155 | 2:B12 | 2-O8 |
| R159 | 2:B12 | 2-O8 |
| R162 | 2:B12 | 2-P9 |
| &R163 | 2:C3 | 2-O6 |
| R164 | 2:B11 | 2-P6 |
| R166 | 2:B7 | 2-G6 |
| R167 | 2:B8 | 2-G4 |
| R168 | 2:B8 | 2-H5 |
| R169 | 2:D8 | 2-H3 |
| R170 | 2:B8 | 2-H4 |
| R171 | 2:B8 | 2-H4 |
| R172 | 2:D6 | 2-I7 |
| R173 | 2:C7 | 2-I5 |
| R174 | 2:C7 | 2-I5 |
| R175 | 2:B7 | 2-I8 |
| R176 | 2:C6 | 2-I6 |
| R177 | 2:C7 | 2-I5 |
| R178 | 2:D7 | 2-J2 |
| &R179 | 2:D7 | 2-J3 |
| R180 | 2:D7 | 2-K1 |
| &R181 | 2:D7 | 2-K1 |
| &R182 | 2:B6 | 2-K5 |
| &R183 | 2:D7 | 2-K2 |
| &R184 | 2:D5 | 2-O5 |
| &R185 | 2:E5 | 2-O5 |
| R186 | 2:D8 | 2-O2 |
| R187 | 2:E8 | 2-O1 |
| R188 | 2:E7 | 2-P0 |
| R189 | 2:D6 | 2-O4 |
| &R190 | 2:E6 | 2-P4 |
| R192 | 2:E9 | 2-P2 |
| R194 | 2:D8 | 2-O3 |
| R195 | 2:D8 | 2-P2 |
| R196 | 2:E8 | 2-O3 |
| &R197 | 2:E7 | 2-P0 |
| &R198 | 2:C7 | 2-I2 |
| RV201 | 1:T8 | 3-I3 |
| RV202 | 1:S9 | 3-L1 |
| R224 | 2:Q7 | 3-J6 |

| DEVICE | PCB | CIRCUIT |
|---|---|---|
| R227 | 2:Q10 | 3-O7 |
| R228 | 2:T8 | 3-A3 |
| R229 | 2:S8 | 3-A3 |
| R230 | 2:R7 | 3-C2 |
| R231 | 2:T9 | 3-D5 |
| R232 | 1:T10 | 3-D3 |
| R233 | 1:U9 | 3-E5 |
| R234 | 1:U8 | 3-E5 |
| R235 | 2:S7 | 3-E3 |
| R236 | 2:S8 | 3-E2 |
| R237 | 2:S7 | 3-G3 |
| R238 | 2:S8 | 3-G3 |
| R239 | 2:S8 | 3-G2 |
| R240 | 2:S8 | 3-H3 |
| R241 | 2:T8 | 3-I3 |
| R242 | 2:T8 | 3-I3 |
| R243 | 2:S8 | 3-J3 |
| R244 | 2:R8 | 3-J2 |
| R245 | 2:R9 | 3-J1 |
| R246 | 2:S9 | 3-K3 |
| R247 | 2:S10 | 3-M2 |
| R248 | 2:R9 | 3-M1 |
| R249 | 2:S10 | 3-N2 |
| R250 | 2:S9 | 3-O2 |
| R251 | 2:T9 | 3-O2 |
| R252 | 2:O9 | 3-L5 |
| R253 | 2:R8 | 3-M6 |
| R254 | 2:O9 | 3-N5 |
| R255 | 2:S8 | 3-H3 |
| R256 | 2:S9 | 3-K3 |
| R257 | 2:S9 | 3-K2 |
| R258 | 2:S10 | 3-N2 |
| R259 | 2:T7 | 3-B1 |
| R260 | 2:T7 | 3-B2 |
| R300 | 2:H11 | 4-B8 |
| R301 | 2:H11 | 4-B8 |
| R302 | 2:G11 | 4-D8 |
| R303 | 2:H12 | 4-B7 |
| R304 | 2:H12 | 4-B7 |
| R305 | 2:G11 | 4-D7 |
| R306 | 2:H11 | 4-G7 |
| R307 | 2:G11 | 4-H8 |
| R308 | 2:G11 | 4-I7 |
| R340 | 2:G11 | 4-I8 |
| R341 | 2:H13 | 4-L8 |
| R350 | 2:G12 | 4-E6 |
| RV351 | 1:F13 | 4-E5 |
| R352 | 2:F12 | 4-F5 |
| R353 | 2:G12 | 4-F7 |
| R354 | 2:G12 | 4-G5 |
| R355 | 2:G12 | 4-H6 |
| RV355 | 1:G13 | 4-I6 |
| RV356 | 1:H10 | 4-G7 |
| R357 | 2:H10 | 4-H7 |
| R358 | 2:G11 | 4-K9 |
| R359 | 2:G13 | 4-K7 |
| R360 | 2:H13 | 4-L9 |
| R361 | 2:H10 | 4-J6 |
| R362 | 2:H10 | 4-J6 |
| R363 | 2:H11 | 4-K9 |
| R364 | 2:J12 | 4-K9 |
| R365 | 2:H11 | 4-F7 |
| R366 | 2:G12 | 4-H5 |
| R370 | 2:G9 | 4-C0 |
| R371 | 2:G9 | 4-C0 |
| R372 | 2:G9 | 4-C1 |
| R373 | 2:G10 | 4-D0 |
| R374 | 2:G10 | 4-E1 |
| R375 | 2:G10 | 4-E0 |
| R376 | 2:H10 | 4-E2 |
| R377 | 2:G10 | 4-E2 |
| R378 | 2:H9 | 4-F3 |
| R379 | 2:H9 | 4-F3 |
| R380 | 2:H9 | 4-J6 |
| R406 | 2:S12 | 4-M2 |
| R407 | 2:T12 | 4-N1 |
| R432 | 1:L11 | 4-E6 |
| R437 | 2:R11 | 4-M9 |
| SUPPLY | 1:B11 | 2-P6 |
| SK1 | 1:K6 | 1-B1 |
| | | 1-B3 |
| | | 1-B3 |
| | | 1-B3 |
| | | 1-B2 |
| | | 1-B2 |
| | | 1-B2 |
| | | 1-B2 |
| | | 1-B1 |
| | | 1-B1 |
| =SK2 | 1:O6 | 1-B8 |
| SJ2 | 1:M9 | 1-A4 |
| SJ3 | 1:L8 | 1-P8 |
| SK100 | 1:B9 | 2-A7 |
| SW101 | 1:C12 | 2-B5 |

| DEVICE | PCB | CIRCUIT |
|---|---|---|
| SK300 | 1:F10 | 4-F1 |
| SJ4-1 | 1:P9 | 1-P5 |
| SJ4-2 | 1:P9 | 1-P9 |
| SJ4-3 | 1:P8 | 1-P8 |
| SJ4-4 | 1:P8 | 1-P8 |
| SJ4-5 | 1:P8 | 1-P9 |
| SK401 | 1:M13 | 4-J2 |
| SJ5-1 | 1:K9 | 1-P5 |
| SJ5-2 | 1:K9 | 1-P4 |
| SJ5-3 | 1:K9 | 1-P4 |
| SJ5-4 | 1:K8 | 1-P4 |
| SJ5-5 | 1:K8 | 1-P5 |
| TX-LED | 1:B12 | 2-P9 |
| TP1 | 1:T11 | 4-O9 |
| TP2 | 1:T11 | 4-E7 |
| TP3 | 1:N6 | 1-N5 |
| TP4 | 1:R6 | 1-P7 |
| TP5 | 1:J5 | 4-F3 |
| TP6 | 1:F12 | 4-F6 |
| TP12 | 1:M5 | 1-L3 |
| T100 | 1:C4 | 2-B3 |
| T200 | 1:R9 | 3-L7 |