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T508-21/22

Power Supply

(M508-21)

Issue A

TECHNICAL INFORMATION

For further information about this Manual, or the equipment it describes, contact the Product Distribution Group, Tait Electronics Ltd, at the above address.

UPDATING EQUIPMENT & SERVICE MANUALS

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 covers the general, technical and servicing information on the T508-21 and T508-22 Power Supply.

Ordering Tait Service Manuals

When ordering Tait Service Manuals, quote the Tait Internal Part Number (IPN) and, where applicable, the version.

Date Of Issue

IPN M508-21

T508-21/22 Service Manual

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SECTION 1 GENERAL INFORMATION

1.1 INTRODUCTION

The T508-21/22 Power Supply is a mains operated power supply designed to provide the DC supply requirements of the Tait T500 Series I & II two way radios. It uses switch mode technology to control the regulation of the output voltage which results in a power supply with a higher temperature rating, improved efficiency and greater reliability.

The T508-21/22 can either be operated with the radio sitting on top as a desk top unit, using the specially designed spacers as supplied, or with the radio and power supply detached as two separate units (see Section 4, Installation).

The T508-21/22 is 'blow-out' proof. The unit cannot be damaged by any combination of faults in the line or load, or by temperature variations. Current limiting is included to restrict the peak current to about 8A. In addition a self-restoring thermal shutdown keeps the temperature of the switching transistor within the 'safe operation area ratings'. The point of thermal shutdown is also dependant on the load current to allow for a higher duty cycle rating at lower output currents. The output voltage and thermal shutdown points are preset at the factory.

The T508-21/22 also has a limited capability to float charge a lead acid battery under constant voltage conditions (see Section 4, Installation).

1.2 SPECIFICATIONS

1.2.1 INPUT

T508-21:

Voltage	.. 230V \pm 10% (limits: 207-253V AC)
Frequency	.. 50Hz

T508-22:

Voltage	.. 115V \pm 10% (limits: 105-130V AC)
Frequency	.. 60Hz

Power (mains input +10%, current limited output)	.. 200VA maximum
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1.2.2 OUTPUT

Voltage	.. 13.8V DC (adjustable 12.5 to 14.5V)
---------	--

Current:

Intermittent Operation (T _A = 25°C, input 230/115V)	.. 6.5A at 33% duty cycle (maximum 2 minutes <u>on</u>)
Peak Rating	.. 8A max. (duration limited by thermal shutdown)
Continuous Rating (T _A = 25°C, input 230/115V)	.. 4.5A max.

Voltage Regulation (supply variation \pm 10%, currents up to 6A, temp. range -10°C to +60°C)	.. \pm 5%
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1.2.3 PROTECTION

Current Limiting (T _A = 25°C)	.. 8.5A nominal
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Thermal Overload (‘cold’ start @ 25°C, input = 230/115V)	.. shutdown occurs at approximately 95°C heatsink temperature (7A continuous after 1 hour)
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Input:

Primary Fuse:	
T508-21	.. 1A time delayed
T508-22	.. 3A
Thermal Cutout	.. integral with transformer

1.2.4 GENERAL

Ripple and Noise	.. less than 10mV rms 0 to 6.0A, mains voltage \pm 10%
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Operating Temperature Range	.. -10°C to +40°C
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Weight	.. 3.0kg
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Dimensions:

Height	.. 95mm
Length	.. 225mm
Width	.. 150mm

1.3 PRECAUTIONS

1.3.1 WARNING: LETHAL VOLTAGES

The T508-21/22 contains voltages that may be lethal. The unit should not be dismantled without first disconnecting the mains supply. Servicing should be carried out only by qualified technicians.

1.3.2 CAUTION: VENTILATION

If the power supply is operated at high output currents and/or a high duty cycle rate for a prolonged period of time (e.g. more than 10 minutes), the heatsink will become very hot. Do not touch.

Do not operate the T508-21/22 in a sealed cabinet. Ensure that there is an adequate airflow past the unit and in particular past the heatsink at the back of the unit.

1.3.3 SUPPLY CORD

If the mains supply cord needs replacing, it must be replaced with a mains supply cord of the same size and type as originally fitted.

SECTION 2 CIRCUIT OPERATION

Refer to Circuit Diagram C691.

2.1 INPUT RECTIFIER

The mains supply is connected to the primary of the transformer (T1) via the supply cord, input fuse (F1) and on/off switch (SW1).

A conventional bridge rectifier (RB1) is used across the secondary winding of T1. Both positive and negative leads are isolated from earth. Five PCB mounted smoothing capacitors are used to produce a 23V DC bus from the 18V rms secondary of T1. The ripple on the DC bus is 4V peak to peak with an output current of 6A.

The front panel LED (LED1) is illuminated when mains power is applied.

2.2 TRANSISTOR SWITCH

Voltage regulation is provided by the complementary Darlington configuration of Q1 and Q2. The switching of this pair is derived directly from the TL-494 (IC1).

When Q1 is turned on, current flows in inductors L1, L2 and L3 to supply the output. Capacitors C6 and C7 hold the output voltage at a nominal 13.8V. When Q1 turns off, the current flowing in the inductors continues to flow via diode D1.

C8, C9 and L3 form a common mode filter to suppress conducted noise at the output.

2.3 CONTROL CIRCUIT

A pulse width modulating IC (IC1) controls the switching of Q1 and thus the regulation of the output voltage. A voltage divider (R4, R5 and VR1) converts the output voltage to a 5V nominal level. It is then compared to IC1's temperature compensated internal 5V reference. The length of time Q1 is turned on is proportional to the difference between the reference and the output voltage. Feedback compensation is provided by C10, C11, R6 and R7, while R10 improves the transient response for the feedback circuit.

2.4 CURRENT LIMITING

Current limiting is provided by monitoring the voltage across the current sense resistor (R18). When the current is increased to approximately 8.5A, the voltage on pin 15 of IC1 decreases to a point which results in the pulse width of the switching waveform decreasing.

2.5 THERMAL SHUTDOWN

Transistor Q3 is mounted on the heatsink and its junction temperature therefore follows closely that of both the heatsink and Q1. Q3 is biased by R12 and VR2. As the temperature of the heatsink increases, the temperature of the base-emitter junction of Q3 also increases, which results in the V_{be} of Q3 decreasing. At 95°C the base-emitter voltage is exceeded by the biasing voltage and Q3 switches on. As a result Q4 turns off and the "deadtime pin" (pin 4 of IC1) is pulled high. The "deadtime" is now 100%, which means Q1 is completely turned off.

SECTION 4 INSTALLATION

4.1 GENERAL

The T508-21/22 power supply is designed to provide the DC supply requirements of the Tait T500 Series I & II two way radios. It can be operated either with the radio sitting on top as a desk top unit, using the specially designed spacers supplied, or with the radio and power supply detached as two separate units. The bottom case of the T508-21/22 includes two screw recesses for wall mounting. The two way radio then can be mounted in its cradle next to the T508-21/22, or operated away from the supply, e.g. on a desk top, etc.

If the radio and the power supply are operated away from each other, an extension cable for the DC supply would have to be used. To keep the voltage drop of this extension cable reasonably low, the wiring should be of sufficient gauge to carry the required load. It is recommended that a minimum wire size of 1.5mm² is used.

The T508-21/22 requires a mains supply of 230V (115V) nominal 50Hz (60Hz) as set out in Section 1.2.

If the power supply is run at a high duty cycle rate, high continuous output currents and/or high mains input voltage, it will generate a considerable amount of heat. An adequate flow of cooling air past the unit, particularly past the heatsink, is therefore essential for reliable operation. Do not operate the T508-21/22 in a completely enclosed cabinet.

WARNING: Do not touch the heatsink after prolonged heavy duty operation. Keep the heatsink away from anything affected by heat (plastics, etc).

The microphone clip supplied with every T508-21/22 clips onto the T500 Series radio. The lead from this microphone clip may be inserted into the plug of either the T508-21/22 or the extension lead (refer to Wiring Diagram A2C707).

4.2 FLOAT CHARGING A LEAD ACID BATTERY

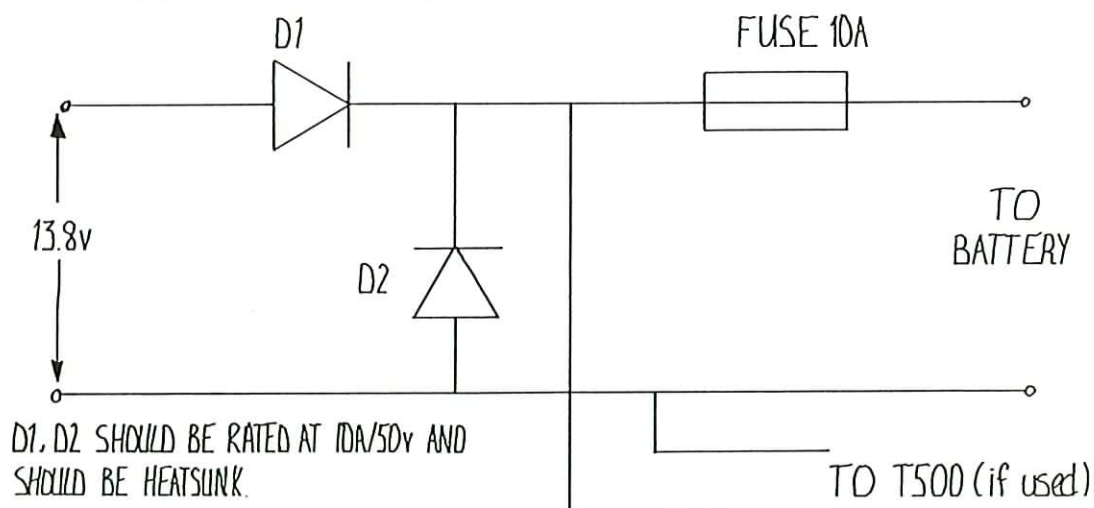


Figure 1 Float Charging Protection Circuit

The T508-21/22 has a limited capability to float charge a lead acid battery under constant voltage conditions. The performance is limited by the way the power supply's continuous output current rating is limited (typically 4.5A at 20°C).

T508-21/22 Installation

If a battery is to be float charged, an external circuit consisting of two diodes with the appropriate ratings (i.e. 10A/50V) should be configured as in Figure 1. This prevents damage to the T508-21/22 due to reverse current or the battery being connected with reverse polarity.

The current limit prevents charging from being excessive should a discharged battery be connected. The output voltage of the T508-21/22 does not compensate for the temperature dependance of lead acid batteries.

SECTION 5 SERVICING

5.1 GENERAL

5.1.1 WARNING: LETHAL VOLTAGES

The T508-21/22 contains voltages that may be lethal. The unit must not be dismantled without first disconnecting the mains supply. Servicing should be carried out only by a qualified technician.

5.1.2 CAUTION: VENTILATION

If the power supply is operated at high output currents and/or a high duty cycle rate for a prolonged period of time (e.g. more than 10 minutes) the heatsink will become very hot. Do not touch.

Do not operate the T508-21/22 in a sealed cabinet. Ensure that there is an adequate airflow past the unit and in particular past the heatsink at the back of the unit.

5.1.3 SUPPLY CORD

If the mains supply cord needs replacing, it must be replaced with a mains supply cord of the same size and type as originally fitted.

5.2 MECHANICAL

5.2.1 CONSTRUCTION

The T508-21/22 power supply is a mechanically compact unit designed to match the T500 Series I & II two way radios electrically as well as aesthetically. The unique design feature of the front panel operated mains on/off switch does away with knobs, buttons, etc.

All sub-assemblies (e.g. transformer, PCB/heatsink) are housed in a specially moulded plastic case with no screws. The top and bottom halves of the plastic case are fastened by 4 self-tapping screws .

All electrical components except the transformer and LED are mounted on either the larger regulator/heatsink PCB or on the smaller mains input PCB. This fact, together with the ready accessibility of the sub-assemblies, should guarantee easy and trouble-free servicing.

5.2.2 DISASSEMBLY

WARNING: Disconnect the unit from the mains supply before attempting to remove the top case.

5.2.2.1 To Remove The Top Case

Turn the unit upside down and remove the two self-tapping screws.

Turn the unit back on its feet and remove the two top screws.

Carefully lift the top case away from the unit.

All the sub-assemblies are now easily accessible and can be lifted out as necessary.

5.2.2.2 To Replace the Switching Transistor (Q1)

Unsolder the leads of the transistor using solder wick or a solder sucker.

Remove the appropriate screws and carefully lift off the transistor.

Mount the new transistor using a silicon insulating gasket on the underside. Do not use any other insulators (mica, etc) as they are unlikely to fit under Q1 and/or would require thermal compound.

Refit the two screws for Q1 from the copper side of the PCB. Isolate each of these two mounting screws from touching the heatsink with a 3mm length of silicon rubber sleeving. Use spring washers under the two nuts.

Carefully position the PCB onto the heatsink before tightening the two screws/nuts.

Ensure that Q3 sits firmly against the walls in its slot on the heatsink.

Resolder the leads of the transistor.

5.2.2.3 Reassembly

Reassembly is carried out in the reverse order to disassembly.

5.3 REPAIR

5.3.1 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). An AVO model 8 or equivalent meter should be used for taking the measurements, using only the medium or low resistance ranges.

The collector current drawn by multijunction transistors is a further guide to their operating performance.

5.3.2 COMPONENT REPLACEMENT

Whenever components are removed from, or fitted to the printed circuit track, care must be taken to avoid damage to the track. If it is necessary to remove a component from the track, the following procedure is recommended:

Remove the solder from the component leads using a solder wick or solder sucker.

Loosen the individual leads from the printed track.

Withdraw the component from the top of the PCB.

Do not remove the component from the PCB while the solder is still molten.

Keep all soldering operations, and the heat and solder applied to a minimum. A thermally controlled, fine tip soldering iron should be used.

5.4 SETTING UP

5.4.1 TEST EQUIPMENT REQUIRED

Ammeter	10A DC
Voltmeter	0 - 20v DC
Load Resistor	0 - 100 ohms, 10A (variable)
Short Circuit Plug-in Link	IPN 240-04020-62
Ohm Meter	infinity to 0 ohms

5.4.2 PRELIMINARY

Refer to Circuit Diagram C691 and Wiring Diagram A2C707.

Check with the ohm meter that the heatsink is electrically isolated from the negative output.

Connect the variable load in series with the ammeter across the output terminals (see Wiring Diagram for the PIN configuration of the output plug).

Set the load to maximum resistance (minimum load current).

Connect the DC voltmeter across the output terminals of the T508-21/22.

Note: The DC output wiring should be of sufficient gauge to carry the load current required. It is recommended that a minimum wire size of 1.5mm² is used.

Plug in the mains connector.

5.4.3 OUTPUT VOLTAGE

Switch the T508-21/22 on.

Set VR1 for an output voltage of 13.8V.

Switch the T508-21/22 off.

5.4.4 THERMAL SHUTDOWN

Before setting up the temperature shutdown, ensure that the power supply is at ambient temperature, i.e. it has not been running recently with any significant load current. The temperature shutdown is based on a heatsink ambient temperature of 25°C.

Disconnect the load resistor.

Insert the plug-in link (1 - 2).

Switch the T508-21/22 on.

Set VR2 (thermal shut-down, TSD) so that the power supply just shuts down.

Switch the T508-21/22 off.

Remove the plug-in link.

5.4.5 OUTPUT CURRENT LIMIT

Reconnect the load resistor.

Switch the T508-21/22 on.

Decrease the load resistance (current rises) and set it for an output current of approximately 8.5A.

Further decreasing the load resistance should cause the voltage output to drop, indicating that current limiting is in progress.

Note: If the power supply is very hot, the current limit circuit may cause the unit to switch off completely. If this occurs, switch off the mains supply and wait approximately one minute. The power supply should now operate normally.

5.5 FAULT FINDING

5.5.1 GENERAL

The checks listed in Section 5.5.2 below have been included to provide assistance in locating faults. It is sometimes convenient to disable a complete section of the power supply in order to isolate a fault. If individual sections are isolated the rest of the unit should operate normally (refer to Section 5.5.2.3 for details). Faulty diodes and transistors can generally be found by a simple ohmmeter check. Set the ohmmeter to the ohms x 1 range and measure the front to back resistance of each junction. The resistance in one direction should be low - generally 30 to 100 ohms and the resistance in the other direction should be high (other components in the circuit may affect these readings unless the junctions are isolated).

In a faulty transistor or diode the junctions will usually be either short or open circuited.

5.5.2 POINTS TO CHECK

5.5.2.1 Thermal Shutdown

For normal operation of the thermal shutdown, the following voltages can be expected:

output voltage	13.8V
Q3 base-emitter voltage	0.2V approx.
Q4 base-emitter voltage	0.7V approx.
IC1 pin 4 voltage	0V

If the thermal shutdown is operating, the following voltages can be measured:

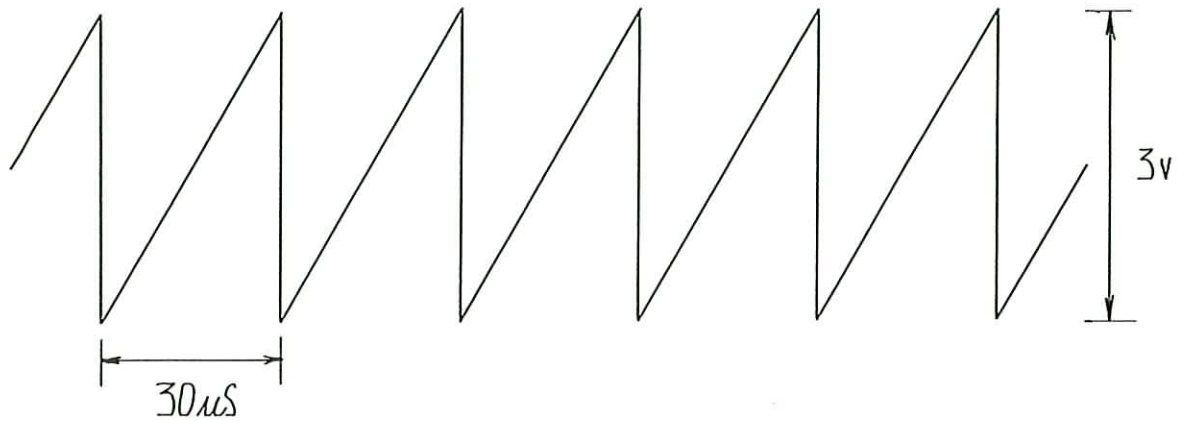
output voltage	0V
Q3 base-emitter voltage	0.7V approx.
Q4 base-emitter voltage	0V approx.
IC1 pin 4 voltage	5V

5.5.2.2 Voltage Reference

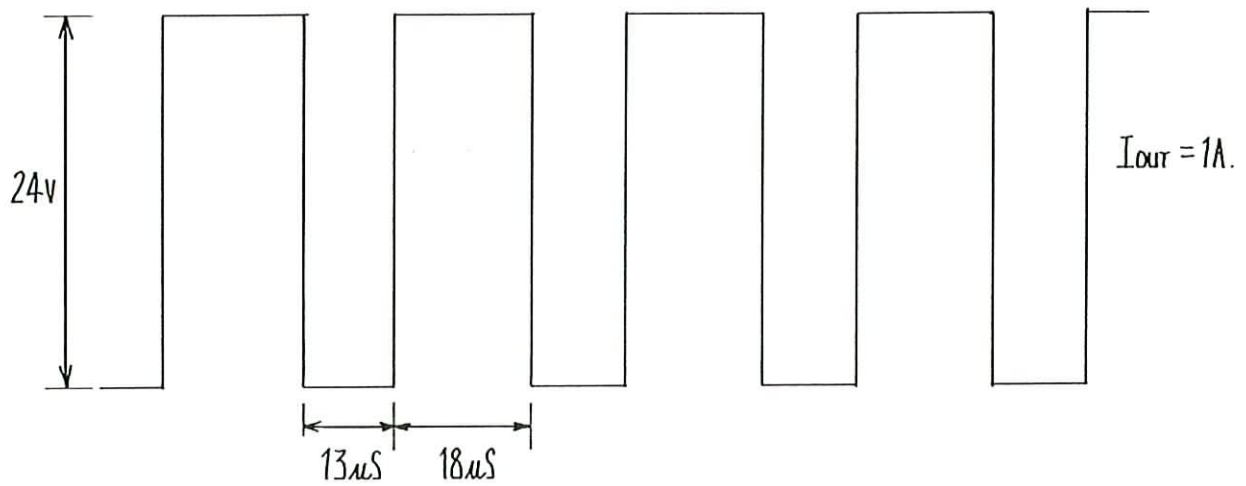
Under all conditions the voltage reference (IC1 pin 14) should be 5V.

5.5.2.3 Typical Waveforms

The following waveforms can be expected under the stated conditions.



Pin 5 (oscillator) - all conditions of current (0A - full current).



Pin 11 (feed to switching transistors).

If $I_{\text{out}} = 0\text{A}$ (i.e. open circuit), no switching occurs and pin 11 is at 25V DC.

Figure 2 Typical Waveforms

SECTION 6 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, D6, R121, etc) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped by component type in numerical order. Each component entry may comprise four columns: the circuit reference, variant, IPN and description.

Those without a circuit reference are listed in IPN order.

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PARTS LIST T508-21/22

REF	VAR	IPN	DESCRIPTION
C1		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C2		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C3		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C4		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C5		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C6		020-19220-03	CAPACITOR ELECTRO RADIAL 2200M 35V 16X31MM
C7		020-09470-02	CAPACITOR ELECTRO RADIAL 470M 16V 10X20MM
C8		017-15470-01	CAPACITOR CERAMIC SURFACE BARRIER 47N 20% 50V
C9		017-15470-01	CAPACITOR CERAMIC SURFACE BARRIER 47N 20% 50V
C10		022-05150-01	CAPACITOR MYLAR 15N 10% 50V
C11		022-04220-01	CAPACITOR MYLAR 2N2 10% 50V
C14		022-05100-01	CAPACITOR MYLAR 10N 10% 50V
D1		001-00011-50	DIODE MUR810 8A 100V FAST RECOVERY TO-220
D2		008-00012-52	LED 2MM TOWER 5MM BASE RED
F1	21	265-00010-45	FUSE 1A CARTRIDGE 6*32MM SLOBLOW
F1	22	265-00010-05	FUSE 3A CARTRIDGE 6*32MM BS4265
ICI		002-00016-63	INTEGRATED CCT TL494/594 SMPS PWM CONTROL (S)
L1		056-00010-47	INDUCTOR FIXED 125UH POWER CHOKE TOROIDAL
L2		056-00010-20	INDUCTOR FIXED 25UH POWER CHOKE
PL1		240-00020-68	HEADER 2WAY PCB MOUNTING STANDARD
Q1		000-00022-07	TRANSISTOR 2N3772 NPN PWR TO-204
Q2		000-00012-15	TRANSISTOR BD234 PNP TO-126 AF POWER
Q3		000-00011-10	TRANSISTOR BC548B NPN TO-92 AF SMALL SIG
Q4		000-00011-10	TRANSISTOR BC548B NPN TO-92 AF SMALL SIG
R1		030-03120-20	RESISTOR FILM 120E 5% 0.4W 4X1.6MM
RV1		042-03470-01	RESISTOR PRESET 470E CARBON 10MM FLAT
R2		032-33330-00	RESISTOR MF POWER 330E 5% 1W 12X4.5MM
RV2		042-03470-01	RESISTOR PRESET 470E CARBON 10MM FLAT
R3		030-02330-20	RESISTOR FILM 33E 5% 0.4W 4X1.6MM
R4		030-04680-20	RESISTOR FILM 6K8 5% 0.4W 4X1.6MM
R5		030-04390-20	RESISTOR FILM 3K9 5% 0.4W 4X1.6MM
R6		030-04180-20	RESISTOR FILM 1K8 5% 0.4W 4X1.6MM
R7		030-05100-20	RESISTOR FILM 10K 5% 0.4W 4X1.6MM
R8		030-04560-20	RESISTOR FILM 5K6 5% 0.4W 4X1.6MM
R9		030-03120-20	RESISTOR FILM 120E 5% 0.4W 4X1.6MM
R10		030-05680-20	RESISTOR FILM 68K 5% 0.4W 4X1.6MM
R11		030-05100-20	RESISTOR FILM 10K 5% 0.4W 4X1.6MM
R12		030-04330-20	RESISTOR FILM 3K3 5% 0.4W 4X1.6MM
R13		030-04390-20	RESISTOR FILM 3K9 5% 0.4W 4X1.6MM
R14		030-05220-20	RESISTOR FILM 22K 5% 0.4W 4X1.6MM
R15		030-04330-20	RESISTOR FILM 3K3 5% 0.4W 4X1.6MM
R16		030-03470-20	RESISTOR FILM 470E 5% 0.4W 4X1.6MM
R17		030-03470-20	RESISTOR FILM 470E 5% 0.4W 4X1.6MM
R18		039-10018-63	RESISTOR WIRE WOUND 0.017E A4M1863 T508
R19		030-50000-00	LINK WIRE AUTOINSERT ZERO OHM 0.6MM WIRE
R20		030-06220-20	RESISTOR FILM 220K 5% 0.4W 4X1.6MM
SW1		232-00010-21	SWITCH PUSH SPST MAINS ON/OFF
T1	21	053-00010-53	TRANSFORMER T4063A 230V MAINS PROTECTED T508
T1	22	053-00010-51	TRANSFORMER T4065 115V MAINS T508

PARTS LIST T508-21/22 MISCELLANEOUS MECHANICAL

IPN	DESCRIPTION
<u>T508-21</u>	<u>11 POWER SUPPLY FOR 500 SERIES 240V MAINS SWITCH MODE</u>
240-00010-18	PLUG 3 PIN MOULDED ON 2.4M 0.75MM2 FLEX 230V MAINS
<u>T508-22</u>	<u>11 POWER SUPPLY FOR 500 SERIES 115V MAINS SWITCH MODE</u>
240-00010-19	PLUG US 3PIN MOULDED ON 2.4M FLEX 120V 10A
<u>COMMON PARTS</u>	
001-00011-37	DIODE BRIDGE RECTIFIER MDA2500 15A/50V D 1
065-00010-20	BEAD FERRITE BALUN 4B1 PHILIPS
200-00010-03	WIRE TINNED COPPER 0.85MM
201-00030-02	WIRE REMIT 7.02MM PVC RED
201-00030-05	WIRE REMIT 7.02MM PVC GREEN C8 & C9 wiring to heatsink
201-00030-10	WIRE REMIT 7.02MM PVC BLACK
205-00010-06	CABLE TWIN AUTO 153 2/28*0.3 RED & BLACK
220-01170-00	PRINTED CIRCUIT BOARD T508-21
240-02010-60	SOCKET HOUSING 4 WAY MOLEX Cable 153 Twin Auto .
240-02010-61	SOCKET RECEPTACLE 152 AUTO CRIMP MOLEX
240-02010-62	SOCKET RECEPTACLE 7.0.2 WIRE CRIMP MOLEX
303-03023-00	CASE TOP PLASTIC COMPLETE A1M1760 T508
303-03024-00	CASE BTM PLASTIC COMPLETE A1M1761 T508
303-50064-00	CLIP A3M1789 MICROPHONE EARTHING T508
303-50065-00	CLIP A2M1788 MICROPHONE PLASTIC T508
308-13064-00	HEATSINK A1M1755 DIECAST T508
316-06316-00	PANEL FRONT COMPLETE A4M2489 T508
319-30045-00	SPACER A2M1786 PLASTIC PWR SUPPLY/RADIO 500 SERIES
340-00010-06	FUSE CLIP PCB MOUNTING 6.3MM CARTRIDGE FUSE F1
340-00011-52	COVER INSULATING FUSEHOLDER PCB MOUNTED
345-00040-08	SCREW M3*12MM PAN POZI ST BZ
349-00010-28	SCREW NO6X1/2 PAN POZI TYPE 25 THREADCUTTER ZP
349-00010-33	SCREW SELFTAP NO 6*3/4 IN TYPE AB PAN POZI BZ
349-00020-30	SCREW TAPTITE M3X6MM PAN POZI BZ
349-00020-32	SCREW TAPTITE M3X8MM PAN POZI BZ
349-00020-47	SCREW M4X25MM PAN POZI TAPTITE BLACK
352-00010-08	NUT M3 COLD FORM HEX ST BZ Q1 mounting
353-00010-12	WASHER M3 SPRING BZ Q1 mounting
353-00010-23	WASHER M4 SPRING BZ
353-00010-24	WASHER M4 FLAT ST BZ A4M1957
356-00010-04	TAG SOLDER 3MM HEAVY DUTY EARTH Mains earth tag to heatsink.
362-00010-09	GASKET SILICONE INSULATING TO-3
365-00010-04	LABEL BLANK 30X6.7MM S/A METALLISED POLYESTER
365-00010-20	LABEL WHITE S/A 28X11MM QUIKSTIK RW718/4
369-00010-05	FOOT PLASTIC 10MM SQ SELF ADHESIVE BLACK

IPN	DESCRIPTION
369-00010-14	TIE CABLE NYLON 100*2.6MM
399-00010-10	RUBBER BAND NO 33 Mains plug.
399-00010-51	BAG PLASTIC 75*100MM
399-00010-59	BAG PLASTIC 225*300MM
400-00020-03	SLEEVING 1MM SILICONE RUBBER
400-00020-05	SLEEVING 1.5MM SILICONE RUBBER
400-00020-09	SLEEVING 3MM SILICONE RUBBER
409-50800-00	HANDBOOK T508 POWER SUPPLY OPERATORS HANDBOOK
410-00010-35	SLEEVE CARD T508 A4A376 A4M1814
410-00010-36	PACKAGING POLY FOAM 2 PCS T508 A1M1860
410-00010-71	PACKAGING CARTON STOCK NUMBER-7

220-01170-00 1A

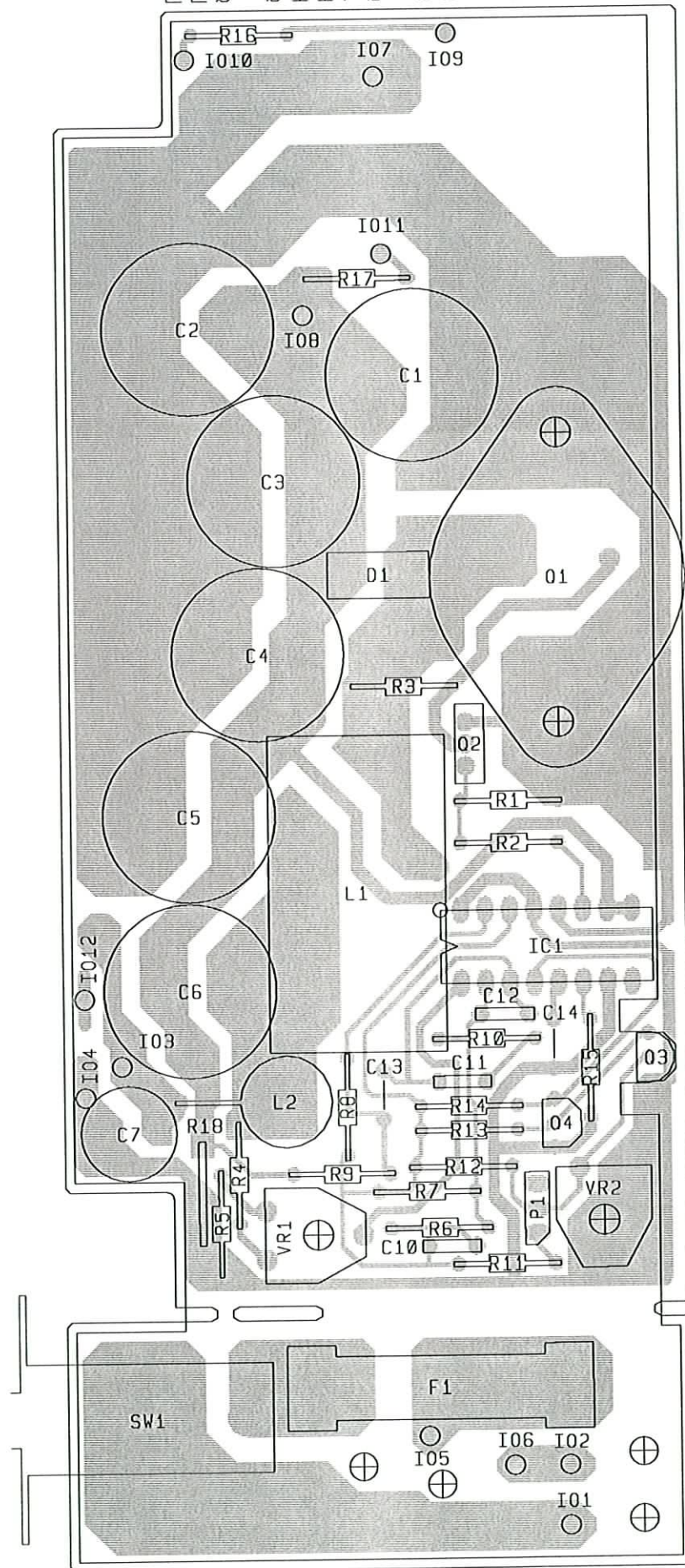
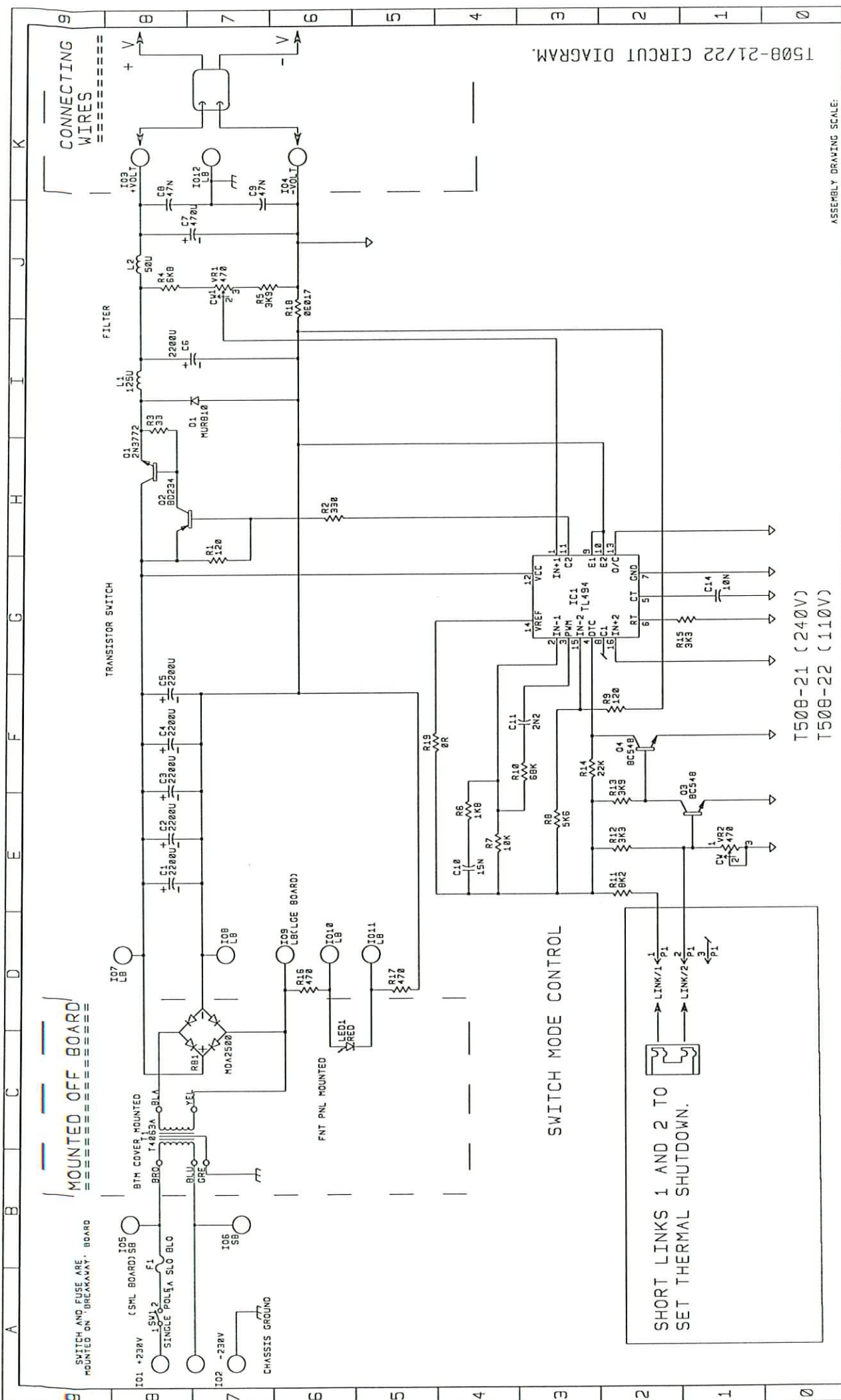


DIAGRAM 1 : T508-21/22 PCB LAYOUT - TOP ENCODING/BOTTOM COPPER



T508-21/22 CIRCUIT DIAGRAM.

T508-21 (240V)
T508-22 (110V)

ASSEMBLY DRAWING SCALE:

TAIT ELECTRONICS NEW ZEALAND	
DRAWING NO: C691	SHEET 1
IPN: 220-01170-00	OF 1
FILE NAME: 5085PL1A	ISSUE 1A
TITLE	
T508-21/22	
S'MODE PS	
DATE: 18/12/88	APVD: DATE:
DRWN: CHKD: APVD: DATE:	AMENDMENTS:

