

MK. 301 RECEIVER

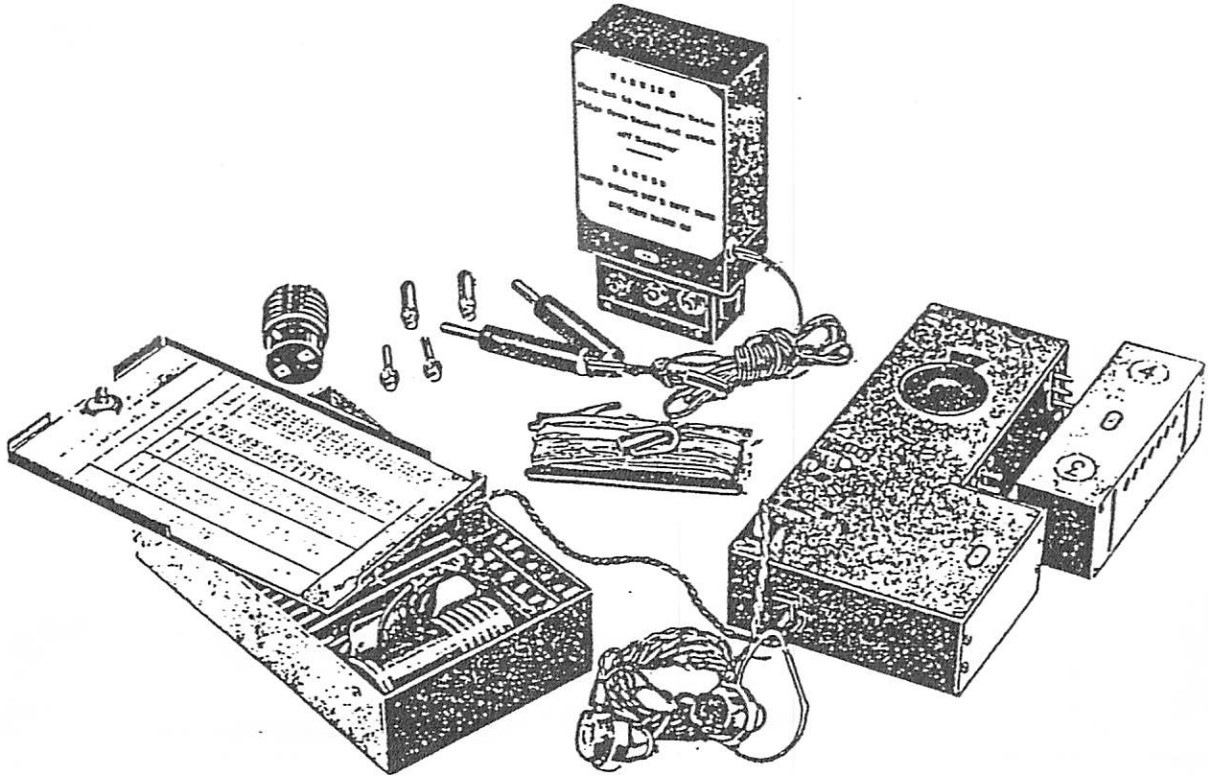
(and MK. 301 PP UNIT for AC POWER SUPPLY).

ISSUE 2

524

(and the MK.30LPP unit for A.C. Power Supply)

<u>Equipment.</u>	<u>Size.</u>	<u>Weight.</u>
Mk.301 Receiver	6.5/16" x 3.9/16" x 1 $\frac{3}{8}$ "	2 $\frac{1}{2}$ lbs.
Mk.301 Battery Box	6.5/16" x 3.9/16" x 1 $\frac{3}{8}$ "	2 $\frac{1}{2}$ lbs.
Mk.30LPP Power Supply Unit	5" x 2 $\frac{1}{2}$ " x 1 $\frac{1}{8}$ "	1 $\frac{1}{2}$ lbs.



The battery box contains the following ancillary equipment:-

"Deaf Aid" type Earphones, (2)

Y Cord for Earphones.

Earth lead fitted with plug and clip, 10 ft.

Aerial fitted with plug and midget insulator, 50 ft.

Extra battery lead assembly, 6 ft.

L.T. Battery, U.2 Type.

H.T. Battery, B101 Type.

The MK.30LPP ancillary bag contains :-

Universal mains adaptor.

Fuse, 2 amp (4)

Screwdriver

Spare screws (6)

SPECIFICATION

Frequency coverage 500 Kc/s - 18.5 Mc/s.

Band 1.	500	-	1250 Kc/s.
2.	1200	-	3250 Kc/s.
3.	3110	-	7770 Kc/s.
4.	7750	-	18500 Kc/s.

The above coils are contained in one coil box and switching is accomplished by plugging the box into the receiver in any one of four positions.

Circuit. Four valve super-heterodyne receiver with B.F.O. for c.w. and telephony reception.

Valves.

DK96	Frequency changer.
DF72.	I.F. Amplifier.
DAF70	Detector and 1st Audio Amplifier.
DL75	Audio Output.
DF72	B.F.O.

Intermediate Frequency 465 Kc/s.

Calibration: The dial is calibrated in 100 divisions and a chart showing spot frequencies at every 5 divisions is attached to the lid of the battery box.

Output. 1 MW into 15,000 ohms at 1,000 c.p.s.

INSTALLATION

Aerial. Erect an outdoor aerial if at all possible for it will prove much more efficient than one indoors. Erect it as high as possible keeping the greatest proportion of it horizontal to the ground and keep the lead-in short and as clear as possible of water-pipes, overhead mains cables, telephone lines, etc.

Two aerial sockets provide alternative means of coupling the aerial to the aerial coil. In effect this doubles the range of the gain control, one socket position being for weak signals and the other for strong ones.

Earth. The clip on the earth lead should be attached to as good an earth as possible.

Power, Battery The $1\frac{1}{2}$ v. and $67\frac{1}{2}$ v. batteries are normally carried in the battery box and the battery lead is permanently connected to these. The plug has a keyway and this must be correctly located before pressing it home in the socket in the receiver.

DO NOT TRY TO FORCE THIS PLUG IN THE WRONG WAY ROUND.

IMPORTANT: It is very advisable that the batteries be removed from the box if the set is to remain unused for any length of time.

Extra battery lead. This lead is provided to enable the use of external batteries. The leads are labelled and must be connected to the correct voltages.

IMPORTANT: On no account must the L.T. leads be connected to a 2-volt supply. Any voltage over 1.5 is definitely not to be used. The H.T. voltage must not be raised above $67\frac{1}{2}$ volts.

Battery life.

The receiver will continue to function with reduced sensitivity when the voltage at the H.T. battery terminals has fallen to 48 volts and at the L.T. battery terminals to 1.13 volts. L.T. consumption is 125 mA.

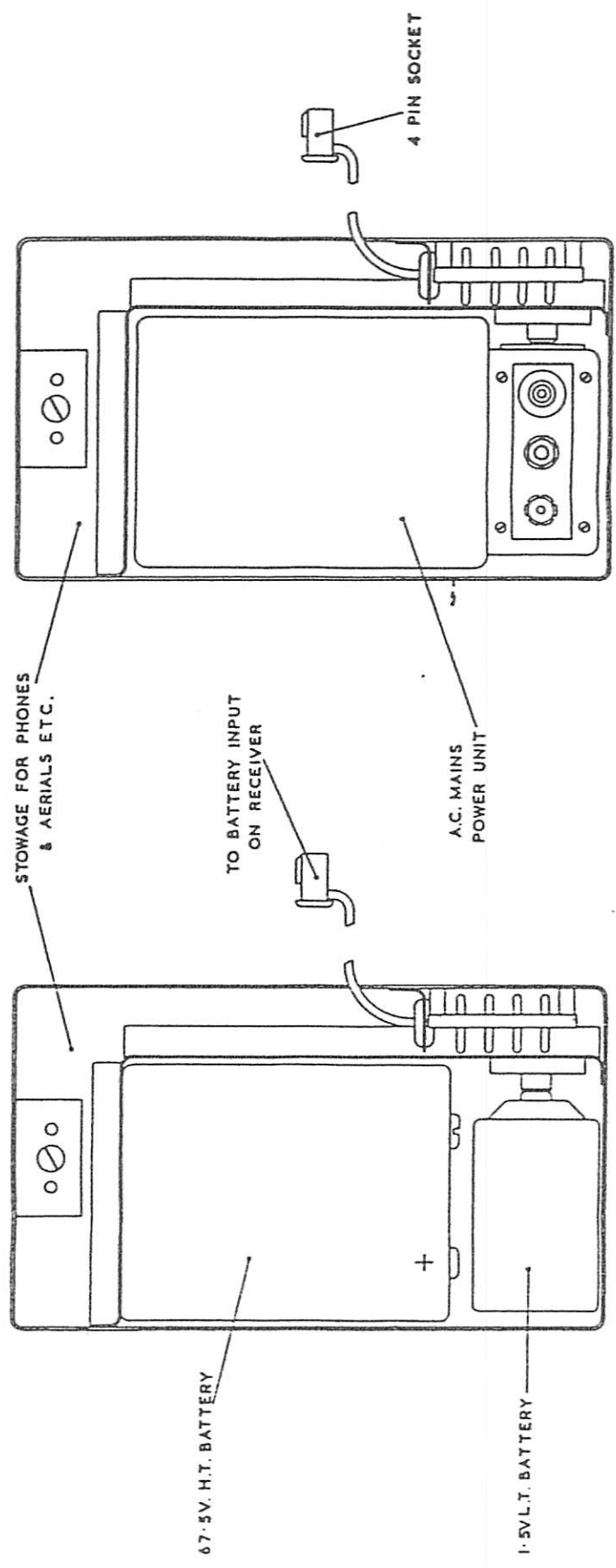
Power,
A.C.Mains

The MK.301FP unit is for A.C. supply only. It is designed to drop into the battery space and pick up the normal battery connections. At one side of this unit is an A.C. Power Line adjustment panel covering 100-250 volt. To adjust the power unit for any line voltage two small countersunk head screws are used and these should be screwed (a small driver is provided) into the two holes, the sum of whose corresponding numbers most nearly approximates to the A.C. Power Line voltage. For example, if the Line voltage is 220, then one screw should be inserted in the hole numbered 200 and the other into that marked 20. See that the screws are firmly in position.

IMPORTANT: DO NOT CARRY OUT ADJUSTMENTS WITH THE POWER SUPPLY CONNECTED. It is advisable never to plug into the supply unless the unit is properly located in the battery box.

The L.T. supply in the A.C. Power Unit is smoothed and stabilised by means of a miniature accumulator in float across it. It is therefore essential when switching off both to unplug the power unit from the supply and to switch off the set on the gain control switch, otherwise the cell will discharge into the set. If the accumulator cell becomes badly discharged a line hum will be heard in the receiver earphones when the set is in use. The cell may be restored by running the power supply unit plugged into the mains with the receiver disconnected for a period of about two hours. This will charge the accumulator at a heavy rate and for this reason should not be kept on for too long. For the same reason it is undesirable to have the set disconnected from the power unit or switched off when the unit is plugged into the A.C. Power Line except for the specific purpose of recharging the accumulator. The circuit is arranged so that the accumulator is normally being slowly charged all the time the set is in use, so that it should never become discharged by normal operation.

MK. 301. SUPPLY UNIT



VIEW SHOWING A.C. MAINS
POWER UNIT IN POSITION

VIEW SHOWING POSITION
OF BATTERIES

MK. 301. RECEIVER

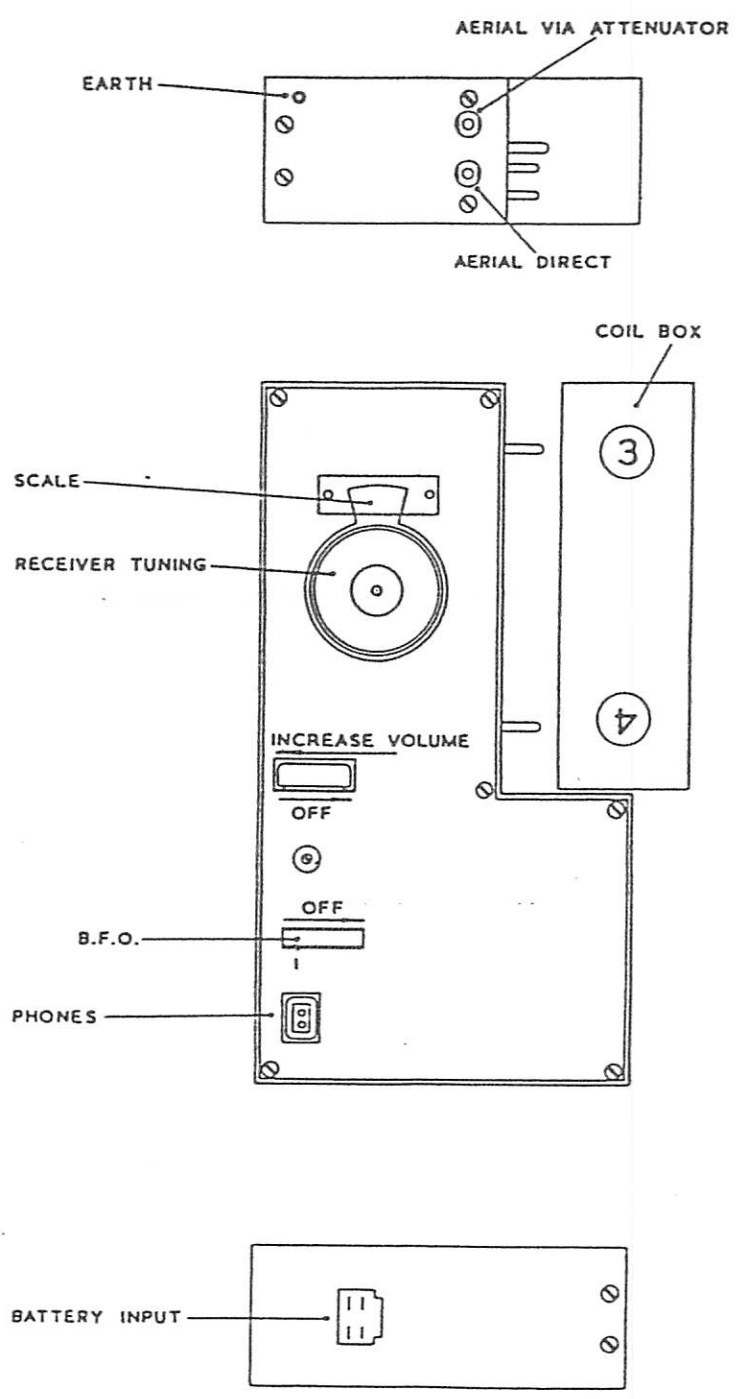
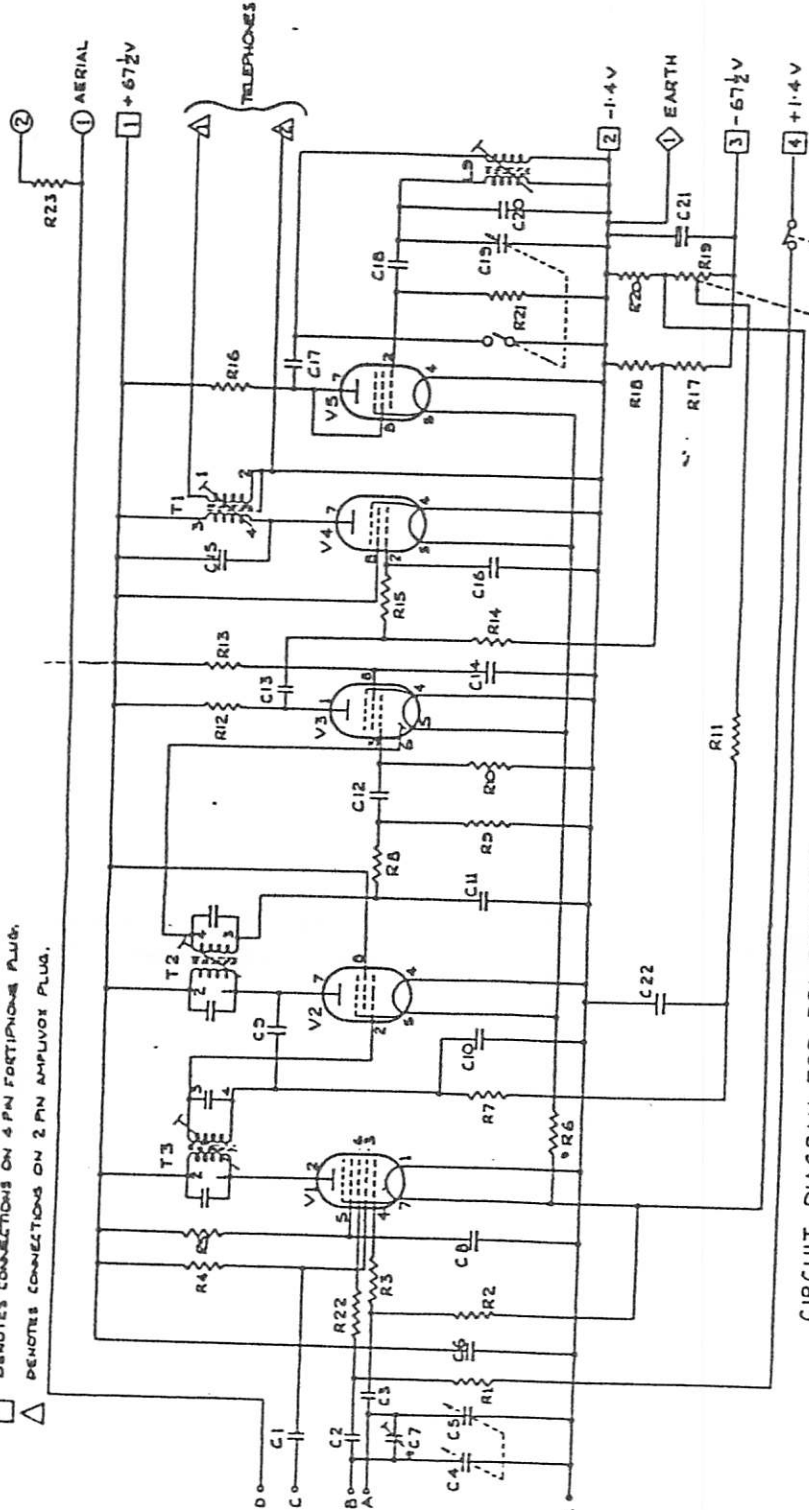
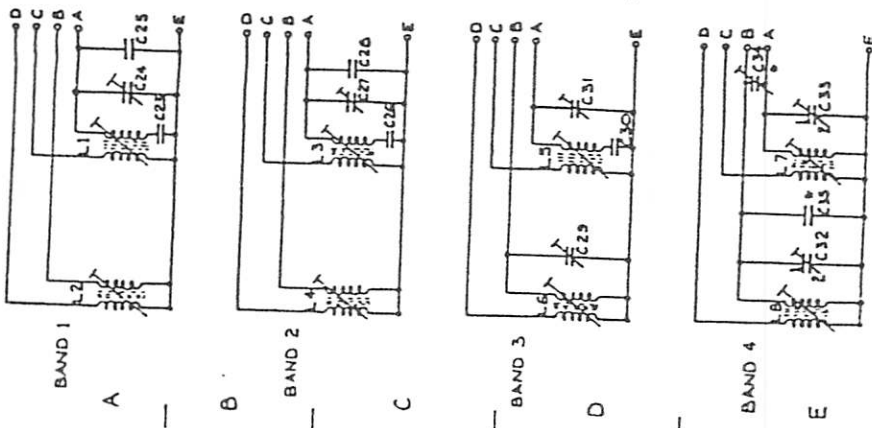


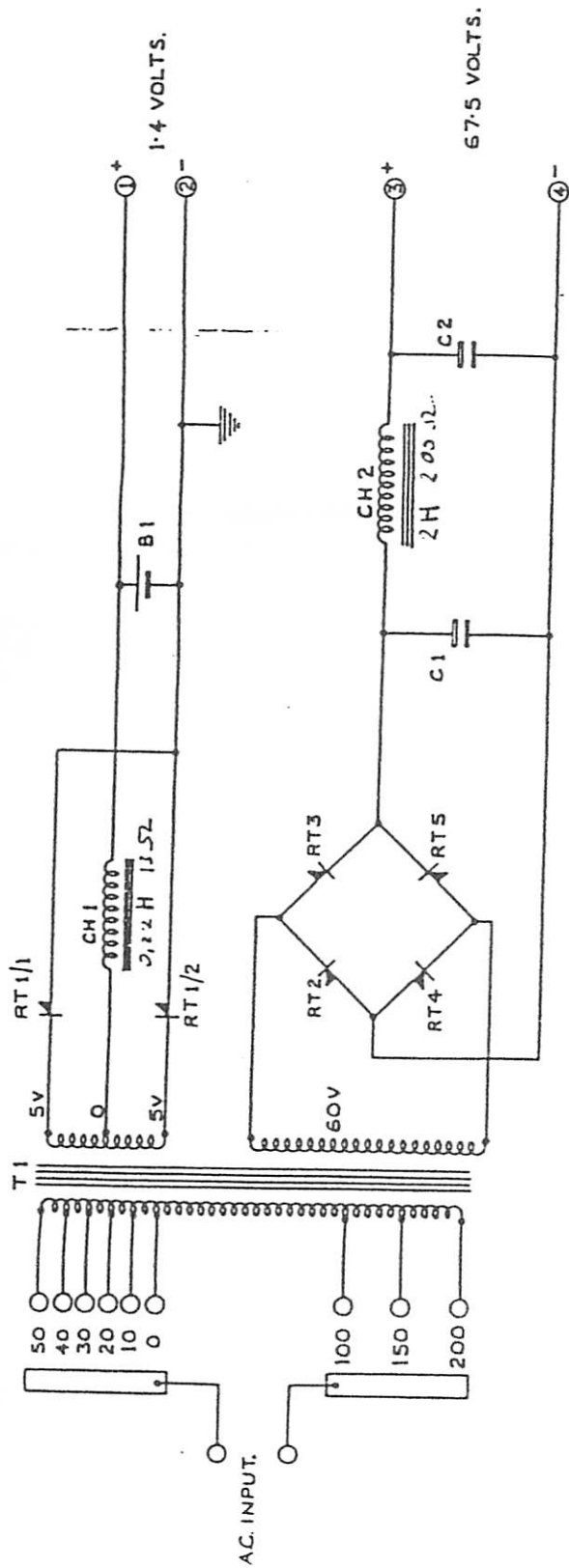
DIAGRAM SHOWN FOR WORKING IN
BAND 3

- * R6 WIRE - SOLDED BETWEEN PIN 7 OF V1 & PINS OF V4, & SLEEVED $\frac{1}{2}$ " H. SUPER ELECTRO COILS 33 $\frac{1}{2}$ LA. (1-5A)
- * C7 WIRE - WRAPPED ABOUT TAG ON OSC. SECT. OF GAIN COND. & ADJUSTED ON TEST FOR BEST NEUTRALIZATION ON BAND 3
- * C8A WIRE - FROM PIN 1 C12 MOUNTED ROUND PIN 1 C33 (PROVISELY SLEEVED) FOR 4 TURNS. TURNS ARE ADJUSTED ON TEST TO GIVE BEST NEUTRALIZATION FOR BAND 4 OPERATION.
- * C8B WIRE - THREADED ROUND EARTH RAIL FOR 20 TURNS.
- * DENOTES CONNECTIONS ON 4 PIN FORTIPHONE PLUG.
- * DENOTES CONNECTIONS ON 2 PIN AMPHVOX PLUG.



CIRCUIT DIAGRAM FOR 3OI RECEIVER.

CRC LOC. REF. N°	PART N°	RESISTORS	CONDENSERS	NEUTRALIZERS	COILS	TRANSFORMERS
R1	R1530M	1500 \pm 20% ERIE 50 Ω W	C1 C3 CH300M	C1 C3 CH300M	L1 A2 30I/750	L1 A2 30I/750
R2	R1532M	2700 \pm 20% ERIE 50 Ω W	C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18	C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18	L2 A1 30I/140	L2 A1 30I/140
R3	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L3 C2 30I/250	L3 C2 30I/250
R4	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L4 C1 30I/250	L4 C1 30I/250
R5	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L5 D2 30I/370	L5 D2 30I/370
R6	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L6 D1 30I/370	L6 D1 30I/370
R7	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L7 E2 30I/380	L7 E2 30I/380
R8	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L8 E1 30I/270	L8 E1 30I/270
R9	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	L9 D3 30I/150	L9 D3 30I/150
R10	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	V1 C5 6X4	V1 C5 6X4
R11	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	V2 C6 6X4	V2 C6 6X4
R12	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	V3 C7 6X4	V3 C7 6X4
R13	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	V4 E8 6X4	V4 E8 6X4
R14	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	V5 C9 6X4	V5 C9 6X4
R15	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	T1 B8 6X4	T1 B8 6X4
R16	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	T2 B6 6X4	T2 B6 6X4
R17	R1537M	2700 \pm 20% ERIE 50 Ω W	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35	T3 B5 6X4	T3 B5 6X4



CIRCUIT DIAGRAM FOR 301 POWER PACK

CIRCUIT REF	PART N°	DESCRIPTION.	CIRCUIT REF	PART N°	DESCRIPTION.
T1	T63U	MAINS TRANSFORMER	CH1	CL121	LT SMOOTHING CHOKE
RT1/1	RT72	RECTIFIER	CH2	CL120	HT. "
RT1/2		S.T.C. 1213	C1	CEBTM/5	COND. 8MFD. 150V D.C. PK. WKG.
RT2	RT71	"	C2	"	"
RT3	"	S.T.C. Q8/3	B1	AB112	ACCUMULATEUR ETANCHE SA(14-50)
RT4	"	"			
RT5	"	"			