

UNCLASSIFIED

SOLID STATE EXCITER

MODEL SMEE-1A



THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y.

OTTAWA, ONTARIO

(1) a stepping switch with code input and readback output receptacles for remote control of the CHANNEL selector switch; (2) a connector receptacle (J1534) for interconnecting wiring between transmitter tuning circuits and sequential relays in the SMEE.

The circuitry in the SMEE for TechniMatic tuning enables remote control of the CHANNEL (output frequency) selector switch and consequent automatic tuning and loading of the transmitter to that frequency. Sequential relays operate to turn on the carrier output during the transmitter tuning phase.

INSTALLATION

Mechanical installation of the SMEE-1A is the same as that for the SME.

Electrical installation is the same except for the following:

- (1) Connect transmitter tuning cable at J1534 receptacle, located on the chassis rear panel.
- (2) There is no remote control of sideband switching in the SMEE-1A at terminal 18 of E1501 as in the SME.
- (3) Connect ALDC input from transmitter at J1536 receptacle on the chassis rear panel.

OPERATOR'S SECTION

All controls appearing on the SME control panel also appear on the SMEE -1A. With the exception noted below, SME and SMEE-1A controls have the same functions. Because of remote-tuning features, the CHANNEL switch of the SMEE-1A rotates only in a clockwise direction. Further, the F1/F2 switch appearing on the TTRT module employed in the SME does not appear on the TTRT module employed in the SMEE-1A.

<u>CONTROL</u>	<u>FUNCTION</u>
CW/SSB/-20DB/AME/MCW switch	Operates normally except when CHANNEL switch is set at 1. With CHANNEL switch set at 1, only AME mode of transmission is possible regardless of CW/SSB/-20DB/AME/MCW switch setting.

The operating procedure of the SMEE-1A in a manual tuning of the transmitter is the same as that for the SME. Operating procedure for TechniMatic tuning, however, differs in its sequence, since certain controls must be pre-set before the automatic tuning of the transmitter takes place.

To operate the SMEE-1A for TechniMatic transmitter tuning:

- (1) Set POWER switch at OFF.
- (2) Using CHANNEL selector, select desired operating frequency.
- (3) Using mode switch, select desired mode of transmission (CW, SSB, -20DB, AME and MCW).
- (4) Using LSB/USB switch, select the desired sideband.
- (5) Set VOX/PTT switch at PTT.
- (6) Set RF GAIN knob fully clockwise and AF GAIN knob fully counter-clockwise.
- (7) Set METER switch at AF.
- (8) Set POWER switch at ON. Transmitter tuning and loading now takes place.
- (9) When indicators on transmitter show tuning is complete, apply normal audio input test signal at SMEE; turn AF GAIN control slowly clockwise until meter indicates "0" db. Leave RF gain set at its maximum clockwise position.
- (10) If VOX operation is desired, set VOX/PTT switch at VOX and make adjustment to VOX GAIN and ANTI VOX knobs as described in SME manual.

PRINCIPLES OF OPERATION (Figure A).

Principles involved in the operation of the SMEE are similar to those of the SME with three exceptions. These are: (1) in the i-f section; (2) in the addition of automation circuitry and (3) in the signal output level.

The i-f section of the SMEE-1A has one conversion stage (to 1.75 mc), with two modulators, two sideband filters and one oscillator; the SME has two conversion stages (to 250 kc and 1.75 mc), with one modulator, one sideband filter and three oscillators (see figure 4-1 in SME manual). In the SMEE i-f section (see figure A) the audio output from the a-f section is applied to either an LSB input or the USB input in the i-f section, depending on the position of the LSB/USB switch. There is a separate balanced modulator for each input and the appropriate sideband filter at the modulator output. The 1.75 mc oscillator provides the injection frequency for both modulators and the settings of the individual potentiometers (R1707 and R1716) cancel out the 1.75 mc component in each modulator output. The sideband frequencies are then applied to the mixer and carrier re-insertion into the signal is obtained from the 1.75 mc oscillator. Automatic carrier level selection is provided through the mode switch in the same manner as for the SME.

The function of the automation circuitry in the SMEE is to enable an automatic tuning of the power amplifier stages of the transmitter to the desired frequency from a positioning of the CHANNEL (frequency selector) switch. Tuning of the power amplifier is divided into two main phases: pre-positioning of the tuning controls (coarse tuning) and final tuning (fine tuning). The SMEE starts with its regular signal output shut off and extends the selected frequency information (from the CHANNEL switch position) to the amplifier for the pre-positioning phase; then it extends an r-f output, containing the carrier component only, for the final tuning phase. When the tuning is complete the SMEE presents the full signal con-

sisting of sideband (and/or carrier) and transmission of intelligence begins. During the tuning phase, the carrier component is extended regardless of the mode of transmission selected (i.e., CW and SSB modes contain no carrier component). Circuitry in the SMEE-1A keeps this tuning carrier at a level a power equal to the aggregate power of all components (sideband and carrier) to appear in the final transmitted signal. This arrangement prevents a consequent over driving of the power amplifier stages when the tuning is completed and the regular signal is applied.

Automation circuitry in the SMEE (see figure A) consists of relays K1501 through K1504, an extra wafer on mode switch S1517, potentiometer R1553, carrier notch filter FL1501, a cam attached to S1515 CHANNEL switch shaft, cam-operated switch S1519, and pre-positioning wafer on S1515.

S1515 CHANNEL switch movement starts the sequence of events in the tuning process. The movement of S1515 works through the cam and microswitch S1519 to energize relay K1501 while the movement continues, and de-energize it when the movement stops. The energized K1501 keeps the SMEE r-f output shut off and deactivates the transmitter power amplifier tuning circuits. The SMEE r-f output is kept shut off by breaking the energization path to the T/R relay (K1500) from the relay driver in the PTT/VOX circuit. (K1500, energized, supplies power voltage to SMEE i-f and r-f stages.) This arrangement prevents an inadvertent application of audio (through the VOX/PTT circuit) from causing the SMEE to transmit at this instance. The transmitter tuning circuitry is de-activated by extending a ground to it, via pins W and U of J1534, to shut off power at the site.

When CHANNEL switch S1515 is set at position 1, +12 vdc is extended to relay K1505 which energizes dis-abling the CW/SSB/-20DB/AME/MCW switch. This prevents the possibility of suppressed carrier transmissions on frequencies where suppressed carrier is not authorized.

Addendum to SME-1
Instruction Manual
(IN-2030)

When S1515 CHANNEL switch is brought to its proper position, pre-positioning takes place. Relay K1501 de-energizes and power is again supplied to the transmitter tuning circuitry. Information from the pre-positioning wafer of S1515 is now fed to the tuning circuit via pins A through K in J1534 receptacle and the amplifier controls become pre-positioned. After this event, the tuning circuitry extends a 24 V supply across pins R and P of J1534, energizing relays K1502 and K1503.

The energized K1502 and K1503 relays cause the SMEE to put forth the carrier sample at the proper level for final tuning purposes. K1502, energized, allows carrier generation only (without sideband) by disabling the a-f section and energizing K1500 relay to supply power voltages to the i-f and r-f sections. K1503, energized, adjusts the carrier component to the proper level by causing the 1.75 mc carrier re-insertion line to by-pass the dropping resistors selected by mode switch S1517. In carrier components modes (-20DB, AME and MCW) K1503 also energized relay K1504; K1504 then causes the i-f section output to by-pass carrier notch filter FL1501, further heightening the tuning sample.

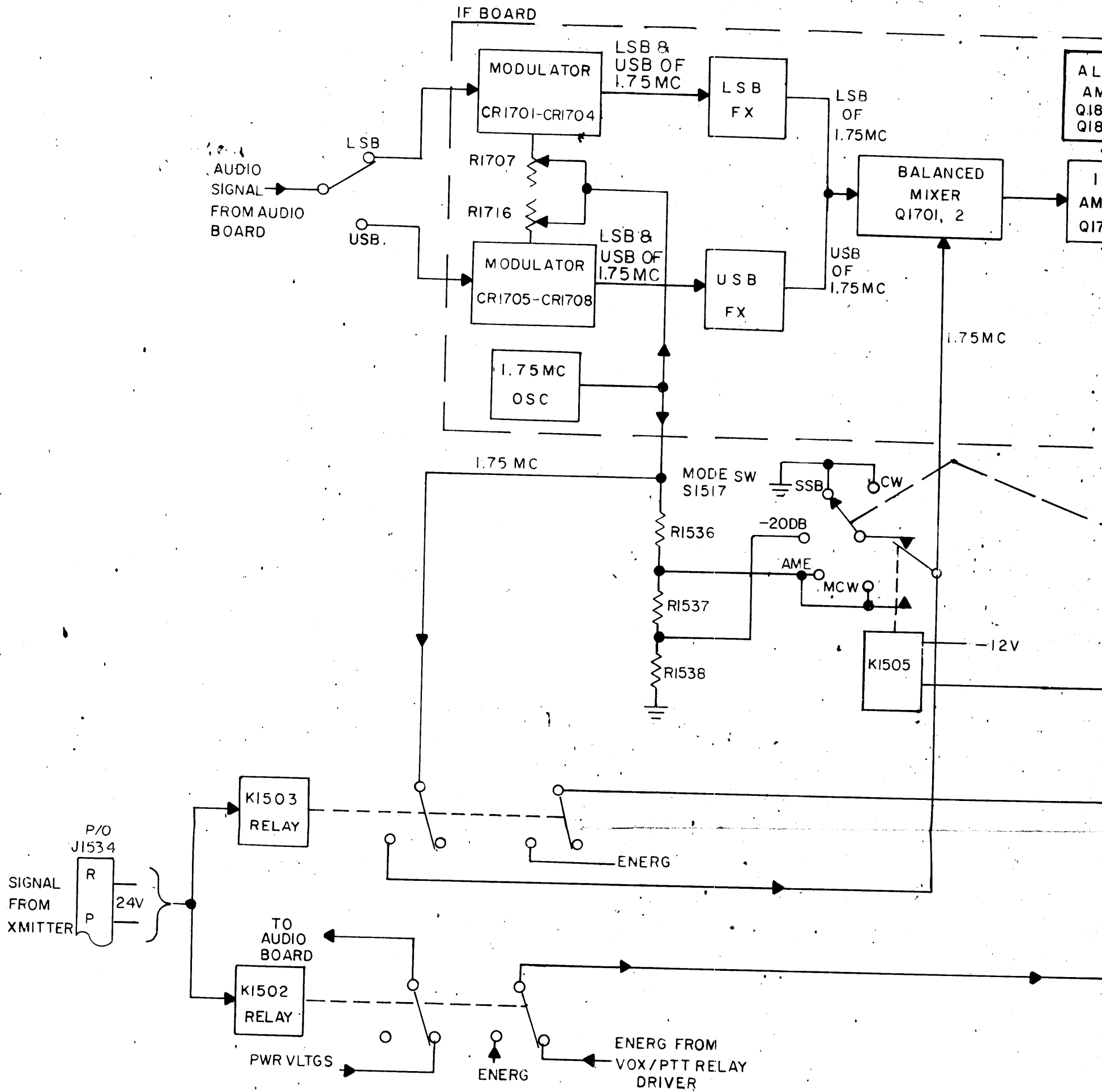
When the transmitter tuning is complete, the SMEE is returned to its normal operating state. When sensing servos in the tuning circuitry have moved the controls to zero-in on the the SMEE frequency, the 24 V sitting across pins R and P of J1534 is removed, de-energizing relays K1502, 3 and 4. K1502 re-connects power voltages to the a-f section and disconnects voltages to the i-f and r-f sections by de-energizing K1500. K1500 can now only be energized in the normal manner (i.e. through the VOX/PTT relay driver output). K1503 reconnects the carrier re-insertion line back across the proper dropping resistor for the selected mode of transmission and the de-energized K1504 re-connects carrier notch filter FL1501 back into the i-f output line. The transmitter is now ready to be operated by means of the VOX/PTT circuit working on T/R relay K1500.

An r-f pre-amplifier stage is added into the SMEE in order to step up power output for automatic tuning purposes and supply a buffer in this area for load variations during tuning. To supply power required for operation of the pre-amplifier, an additional power supply board (CK1263) is coupled to the a-c line voltage through additional transformer T903.

PARTS LIST

The parts list for the SMEE is included in this addendum.

POSITION INFO
FROM MASTER STEP SW



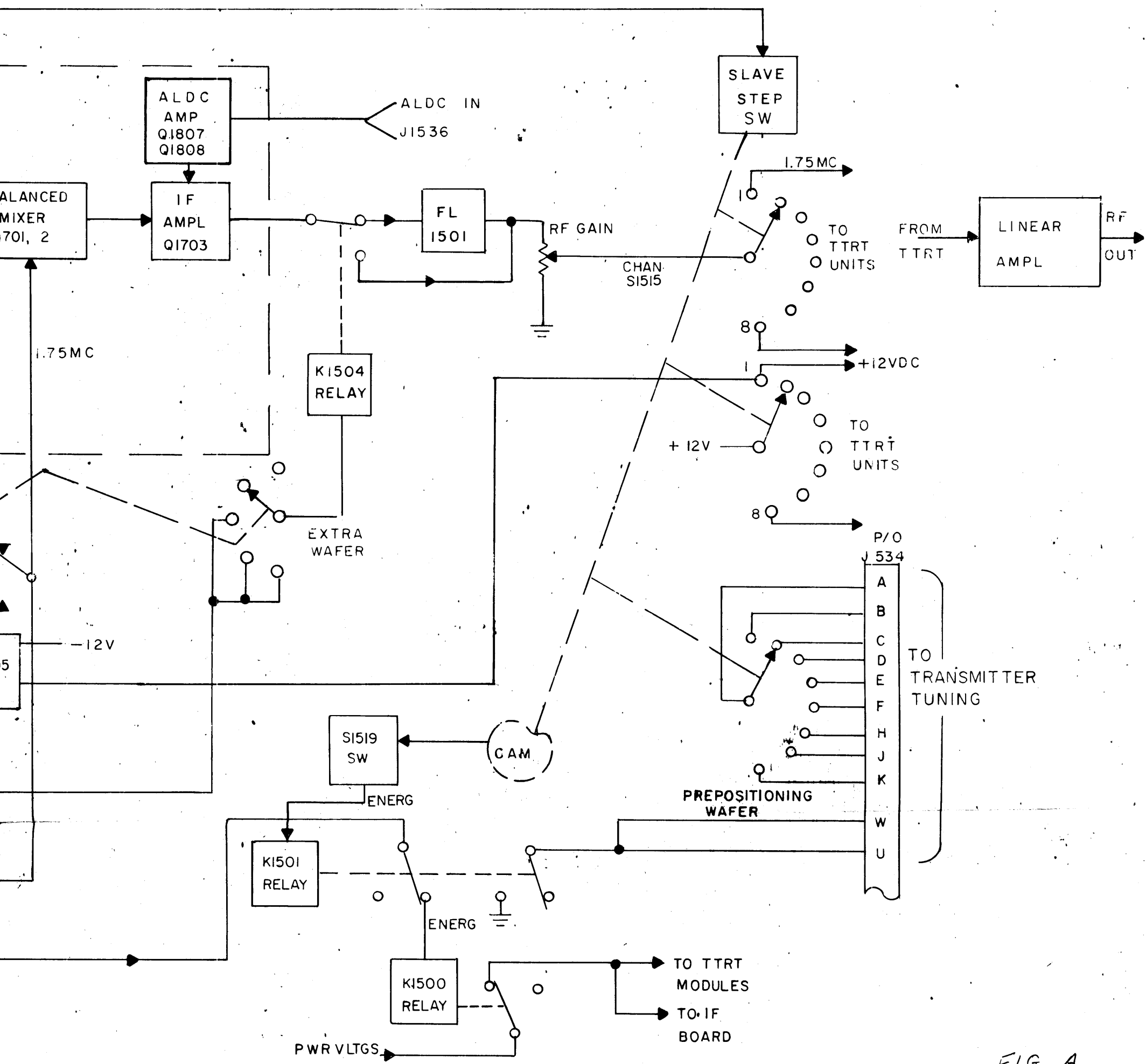


FIG. A
SMEE-1A

PARTS LIST
for
LINEAR AMPLIFIER, POWER SUPPLY BOARD ASSY.

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FIXED, ELECTROLYTIC: tantalum; 50 uf, 60 WVDC; polarized.	CE107-1
C2 thru C4	Same as C1.	
CR1	SEMICONDUCTOR DEVICE, DIODE: silicon	1N2071A
CR2 thru CR4.	Same as CR1.	
CR5	SEMICONDUCTOR DEVICE, DIODE: silicon	1N2986B
L1	COIL, RADIO FREQUENCY: fixed; 3 PI; 1 mh inductance; 23 ohms, $\pm 10\%$; max. current rating 75-100 ma.	CL101-2
R1	RESISTOR, FIXED, COMPOSITION: 100 ohms, $\pm 5\%$; 1 watt.	RC32GF101J
R2	Same as R1.	
R3	RESISTOR, FIXED, COMPOSITION: 1,800 ohms, $\pm 5\%$; 1 watt.	RC32GF182J

PARTS LIST
for
LINEAR AMPLIFIER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 uuf, GMV; 500 WVDC.	CC100-16
C2 thru C6	Same as C1.	
C7	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 100,000 uuf, +80% -20%; 100 WVDC.	CC100-28
C8	Same as C1.	
C9	Same as C1.	
C10	Same as C7.	
L1	COIL, RADIO FREQUENCY: fixed; 100 uh, $\pm 10\%$; max. DC resistance 2.8 ohms; molded case.	CL240-100
L2	Same as L1.	
L3	Same as L1.	
L4	NOT USED	
L5	COIL, RADIO FREQUENCY: fixed; 2.20 uh, $\pm 20\%$; max. DC resistance 0.35 ohms; molded case.	CL240-2.2
L6 thru L8	Same as L1.	
Q1	TRANSISTOR	2N3296
Q2	Same as Q1.	
R1	RESISTOR, FIXED, COMPOSITION: 47 ohms, $\pm 5\%$; 1/2 watt.	RC20GF470J
R2	RESISTOR, FIXED, COMPOSITION: 6,800 ohms, $\pm 5\%$; 1/4 watt.	RC07GF682J
R3	RESISTOR, FIXED, COMPOSITION: 1,000 ohms, $\pm 5\%$; 1/4 watt.	RC07GF102J
R4	RESISTOR, VARIABLE, COMPOSITION: 5,000 ohms, $\pm 30\%$; 1/2 watt.	RV124-1-502

PARTS LIST (CONT)
 LINEAR AMPLIFIER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R5	RESISTOR, FIXED, COMPOSITION: 10 ohms, $\pm 5\%$; 1/2 watt.	RC20GF100J
R6	RESISTOR, FIXED, COMPOSITION: 220 ohms, $\pm 5\%$; 1/4 watt.	RC07GF221J
R7	NOT USED	
R8	Same as R3.	
R9	RESISTOR, FIXED, COMPOSITION: 3,300 ohms, $\pm 5\%$; 1/4 watt.	RC07GF332J
R10	Same as R4.	
R11	Same as R5.	
R12	NOT USED	
R13	RESISTOR, FIXED, COMPOSITION: 68 ohms, $\pm 5\%$; 1/4 watt.	RC07GF680J
R14	RESISTOR, FIXED, COMPOSITION: 15 ohms, $\pm 5\%$; 1/4 watt.	RC07GF150J
R15	Same as R14.	

PARTS LIST
for
TRANSMITTER METER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FIXED, CERAMIC DIELECTRIC: .22 uf, $\pm 20\%$; 25 WVDC.	CC112R224M
C2	CAPACITOR, FIXED, ELECTROLYTIC: 50 uf, -10% $+150\%$ at 120 Hz at 25°C ; 15 WVDC; polarized.	CE105-50-15
C3	Same as C1.	
C4	CAPACITOR, FIXED, ELECTROLYTIC: 5 uf, -10% $+150\%$ at 120 Hz at 25°C ; 15 WVDC; polarized.	CE105-5-15
C5A,B	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 2 x 2,000 uuf, GMV; 1,000 WVDC.	CC100-19
CR1	SEMICONDUCTOR DEVICE, DIODE: germanium	1N270
CR2	SEMICONDUCTOR DEVICE, DIODE: silicon	1N252
L1	COIL, RADIO FREQUENCY: fixed; 0.560 uh, $\pm 10\%$; current rating 100 ma; molded case.	CL140-5
Q1	TRANSISTOR: germanium; PNP; JEDEC type 2N1370-7 transistor with a controlled hfe limit of 120-150; JEDEC type T05 case.	TX108
Q2	Same as Q1.	
R1	RESISTOR, FIXED, COMPOSITION: 1.5 megohms, $\pm 5\%$; 1/2 watt.	RC20GF155J
R2	RESISTOR, FIXED, COMPOSITION: 10,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF103J
R3	RESISTOR, FIXED, COMPOSITION: 3,300 ohms, $\pm 5\%$; 1/2 watt.	RC20GF332J
R4	RESISTOR, FIXED, COMPOSITION: 4,700 ohms, $\pm 5\%$; 1/2 watt.	RC20GF472J
R5	RESISTOR, FIXED, COMPOSITION: 5,600 ohms, $\pm 5\%$; 1/2 watt.	RC20GF562J
R6	Same as R4.	
R7	RESISTOR, FIXED, COMPOSITION: 8,200 ohms, $\pm 5\%$; 1/2 watt.	RC20GF822J
R8	RESISTOR, FIXED, COMPOSITION: 82,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF823J

PARTS LIST
for
POWER SUPPLY, MAIN CHASSIS ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C900 thru C906	NOT USED	
C907	CAPACITOR, FIXED, ELECTROLYTIC: 2,000 uf, 25 WVDC; polarized.	CE116-5VN
C908	CAPACITOR, FIXED, ELECTROLYTIC: 100 uf, -10% +150% at 120 Hz at 25°C; 25 WVDC; polarized.	CE105-100-25
C909	Same as C908.	
C910	Same as C907.	
C911	Same as C907.	
C912	Same as C908.	
C913	Same as C908.	
C914	NOT USED	
C915	CAPACITOR, FIXED, ELECTROLYTIC: 20 uf, -10% +150% at 120 Hz at 25°C; 100 WVDC; polarized.	CE105-20-100
C916	Same as C915.	
C917	Same as C915.	
C918	CAPACITOR, FIXED, ELECTROLYTIC: 25 uf, -10% +150% at 120 Hz at 25°C; 50 WVDC; polarized.	CE105-25-50
C919	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20,000 uuf, +80% -20%; 500 WVDC.	CC100-24
C920	Same as C919.	
C921	CAPACITOR, FIXED, ELECTROLYTIC: 100 uf, 150 WVDC; polarized.	CE116-7VN
CR900 thru CR909	NOT USED	
CR910	SEMICONDUCTOR DEVICE, DIODE: silicon	1N547
CR911	Same as CR910.	
CR912	SEMICONDUCTOR DEVICE, DIODE: silicon	1N3022B

PARTS LIST (CONT)
POWER SUPPLY, MAIN CHASSIS ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
CR913	Same as CR910.	
CR914	Same as CR910.	
CR915	Same as CR912.	
CR916	Same as CR910.	
CR917	Same as CR910.	
CR918	SEMICONDUCTOR DEVICE, DIODE: silicon	1N3033B
F900 thru F906	NOT USED	
F907	FUSE, CARTRIDGE: 1/16 amp; time lag; 1-1/4" long x 1/4" dia.; slo-blo. (For 230 VAC operation)	FU102-.062
F907	FUSE, CARTRIDGE: 1/8 amp; time lag; 1-1/4" long x 1/4" dia.; slo-blo. (For 115 VAC operation)	FU102-.125
* F908	FUSE, CARTRIDGE: ___ amp; time lag; 1-1/4" long x 1/4" dia.; slo-blo.	FU102-XXX
F909	FUSE, CARTRIDGE: 1/8 amp; 1-1/4" long x 1/4" dia.; quick acting.	FU100-.125
F910	Same as F909.	
F911	Same as F909.	
F912	FUSE, CARTRIDGE: 1/4 amp; 1-1/4" long x 1/4" dia.; quick acting.	FU100-.250
J900 thru J903	NOT USED	
J904	CONNECTOR, RECEPTACLE, ELECTRICAL: male	MS3102A16S5P
J905	CONNECTOR, RECEPTACLE, ELECTRICAL: 2 prong male.	JJ119-3
L900	NOT USED	
L901	NOT USED	
L902	COIL, RADIO FREQUENCY: fixed; 3 PI; 1 mh inductance; 23 ohms, <u>+10%</u> resistance; current rating 75-100 ma.	CL101-2

* F908 fuse size is dependent upon the type of OC-100 crystal oven used.

PARTS LIST (CONT)

POWER SUPPLY, MAIN CHASSIS ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
L903	Same as L902.	
L904	Same as L902.	
Q900	TRANSISTOR: germanium	2N350A
Q901	Same as Q900.	
Q902	Same as Q900.	
Q903	TRANSISTOR	2N3789
R900 thru R910	NOT USED	
R911	RESISTOR, FIXED, COMPOSITION: 100 ohms, $\pm 5\%$; 1 watt.	RC32GF101J
R912	Same as R911.	
R913 thru R915	NOT USED	
R916	Same as R911.	
R917	Same as R911.	
R918	NOT USED	
R919	RESISTOR, FIXED, COMPOSITION: 1,000 ohms, $\pm 5\%$; 1 watt.	RC32GF102J
R920	Same as R919.	
R921	Same as R919.	
S900	NOT USED	
S901	SWITCH, TOGGLE: DPST; bat type handle.	ST22K
S902	SWITCH, TOGGLE: DPDT; bat type handle.	ST22N
T900	NOT USED	
T901	NOT USED	

PARTS LIST (CONT)
POWER SUPPLY, MAIN CHASSIS ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
T902	TRANSFORMER, POWER: step-down; primary input (#1) 104/115 or 208/230 VAC; secondary (#1,2) 24 V at 300 ma, (#3) 80 V at 100 ma, CT; 15 solder lug type terminals; open frame case.	TF298
T903	TRANSFORMER, POWER: primary 115/230 VAC; frequency 50/60 cps (Hz), single phase; secondary 123 V RMS; CT at 61.5 V; current rating 1.1 amps; 7 solder lug type terminals; stud mounted.	TF312
XF900 thru XF906	NOT USED	
XF907	FUSEHOLDER: accommodates cartridge fuse 1-1/4" long x 1/4" dia.; current rating 15 amps at 250 volts.	FH103
XF908 thru XF912.	Same as XF907.	
XQ900	SOCKET, SEMICONDUCTOR DEVICE: 7 pin accommodation; 0.040 or 0.050 dia.; polarized; 1 terminal lug grounding strap; o/a dim. 1-37/64" x 1" max.	TS166-1
XQ901 thru XQ903	Same as XQ900.	

PARTS LIST
for
SIDE BAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1500	CAPACITOR, FIXED, ELECTROLYTIC: 2,000 uf, 25 WVDC.	CE116-5VN
C1501	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1,000 uuf, GMV; 500 WVDC.	CC100-29
C1502 thru C1513	Same as C1501.	
C1514	CAPACITOR, FIXED, ELECTROLYTIC: 25 uf, -10% +150% at 120 cps at 25°C; 50 WVDC.	CE105-25-50
C1515 thru C1529	Same as C1501.	
C1530 thru C1533	NOT USED	
C1534	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 uuf, GMV; 1,000 WVDC.	CC100-16
C1535	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 200,000 uuf, +80% -20%; 25 WVDC.	CC100-33
C1536	Same as C1534.	
C1537	Same as C1534.	
C1538	CAPACITOR, FIXED, ELECTROLYTIC: 50 uf, -10% +150% at 120 cps at 25°C; 15 WVDC.	CE105-50-15
C1539	NOT USED	
C1540	NOT USED	
C1541	CAPACITOR, FIXED, MICA DIELECTRIC: 39 uuf, <u>±</u> 5%; 500 WVDC.	CM15C390J03
C1542	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 5,000 uuf, GMV; 500 WVDC.	CC100-15
C1543	Same as C1535.	
C1544	CAPACITOR, FIXED, ELECTROLYTIC: 5 uf, -10% +150% at 120 cps at 25°C; 15 WVDC.	CE105-5-15

PARTS LIST (CONT)

SIDEBAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1545 thru C1552	Same as C1543.	
C1553	NOT USED	
C1554	CAPACITOR, FIXED, ELECTROLYTIC: 1,000 uuf, 50 WVDC.	CE116-8VN
C1555	CAPACITOR, FIXED, MICA DIELECTRIC: .001 uf, 300 WVDC.	CB21QW102K
C1556 thru C1558	Same as C1555.	
C1559	Same as C1554.	
C1560 thru C1582	Same as C1555.	
C1583	Same as C1501.	
C1584	Same as C1501.	
DS1501	LAMP, INCANDESCENT: 28 VAC/DC; 0.20 amps; single contact, T-1-3/4 bulb.	BI110-7
FL1501	FILTER, BAND SUPPRESSION: input/output impedance 100 ohms; 4 pin contact; stud mounted.	FX273
J1500 thru J1514	NOT USED	
J1515	SOCKET, PANEL MOUNT: 6 male contacts, straight type.	JJ212
J1516	CONNECTOR, RECEPTACLE, ELECTRICAL: 52 ohms; BNC type.	UG625*/U
J1517 thru J1525	NOT USED	
J1526	CONNECTOR, RECEPTACLE, ELECTRICAL: 20 female contacts rated for 5 amps at 600 VAC RMS.	JJ287-20
J1527 thru J1533	Same as J1526.	
J1534	CONNECTOR, RECEPTACLE, ELECTRICAL: 20 male contacts rated at 1,900 V RMS at sea level, 700 V RMS at 60,000 feet.	JJ242-6P

PARTS LIST CONT
 SIDEBAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
J1535	Same as J1516.	
J1536	CONNECTOR, RECEPTACLE, ELECTRICAL: 1 round female contact, straight type; BNC to BNC.	JJ172
J1537	CONNECTOR, RECEPTACLE, ELECTRICAL: 11 male contacts, rated for 3 amps at 1,800 V RMS; polarized.	JJ311-1P
K1500	RELAY, ARMATURE: 6PDT; 185 ohms, $\pm 10\%$ DC resistance; operating voltage 12 VDC; current rating 60 ma; power rating 700 mw at 25°C; 20 contacts rated for 0.5 amps at 115 VAC resistive or 1 amp at 29 VDC resistive; clear high impact styrene dust cover case.	RL156-6
K1501	RELAY, ARMATURE: DPDT; 185 ohms, $\pm 10\%$ DC resistance; operating voltage 12 VDC; current rating 65 ma; power rating 700 mw at 25°C; 8 contacts rated for 3 amps at 115 VAC resistive or 5 amps at 29 VDC resistive; clear high impact styrene dust cover case.	RL156-13
K1502	RELAY, ARMATURE: 6PDT; 430 ohms, $\pm 10\%$ DC resistance; operating voltage 24 VDC; current rating 56 ma; power rating 1,500 mw at 25°C; 20 contacts rated for 3 amps at 115 VAC resistive or 5 amps at 29 VDC resistive; clear high impact styrene dust cover case.	RL156-5
K1503	RELAY, ARMATURE: DPDT; 675 ohms DC resistance; current rating .019 amps; 13.5 V at 25°C; eight contacts rated for 3 amps at 26.5 VDC; hermetically sealed case.	RL143-6
K1504	Same as K1503.	
K1505	Same as K1503.	
L1500	NOT USED	
L1501	COIL, RADIO FREQUENCY: fixed; 0.150 mh, $\pm 10\%$; molded case.	CL140-2
L1502 thru L1527	Same as L1501.	
L1528	COIL, RADIO FREQUENCY: 120 uh, $\pm 10\%$; molded case.	CL275-121J
M1500	NOT USED	
M1501	NOT USED	

PARTS LIST (CONT)

SIDEBAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
M1502	METER, AF/RF: 0-50 ua movement; 2,000 ohms; knife edge pointer.	MR183
Q1500	TRANSISTOR: germanium; NPN; JEDEC type 2N1308 transistor with a controlled hfe limit of 80-150; JEDEC type T0-5 case.	TX106
Q1501	TRANSISTOR: germanium; PNP; JEDEC type 2N1370-4 transistor with a controlled hfe limit of 60-75; JEDEC type T0-5 case.	TX107
R1500 thru R1512	NOT USED	
R1513	RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms, $\pm 10\%$; 2 watts.	RV4NAYSA103A-YY
R1514 thru R1516	NOT USED	
R1517	RESISTOR, VARIABLE, COMPOSITION: 500 ohms, $\pm 10\%$; 2 watts.	RV4NAYSA501A-YY
R1518	NOT USED	
R1519	NOT USED	
R1520	RESISTOR, FIXED, COMPOSITION: 68 ohms, $\pm 5\%$; 1/2 watt.	RC20GF680J
R1521	Same as R1520.	
R1522	RESISTOR, FIXED, COMPOSITION: 10,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF103J
R1523	Same as R1522.	
R1524	RESISTOR, FIXED, COMPOSITION: 3,900 ohms, $\pm 5\%$; 1/2 watt.	RC20GF392J
R1525	Same as R1524.	
R1526	Same as R1523.	
R1527	RESISTOR, FIXED, COMPOSITION: 48,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF483J
R1528	RESISTOR, FIXED, COMPOSITION: 4,700 ohms, $\pm 5\%$; 1/2 watt.	RC20GF472J
R1529 thru R1531	Same as R1528.	

PARTS LIST (CONT)

SIDEBAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R1553	RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms, $\pm 10\%$; 1/2 watt.	RV106UX8B103A
R1554	RESISTOR, FIXED, WIREWOUND: 100 ohms, 25 watts.	RW111-9
R1555	RESISTOR, FIXED, COMPOSITION: 18 ohms, $\pm 5\%$; 1/2 watt.	RC20GF180J
R1556	RESISTOR, FIXED, COMPOSITION: 100,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF104J
S1500	NOT USED	
S1501	SWITCH, TOGGLE: SPST; bat type handle.	ST12D
S1502	SWITCH, ROTARY: 1 section, 2 positions; mycalex wafer insulation.	SW119
S1503 thru S1505	NOT USED	
S1506	Same as S1501.	
S1507 thru S1514	NOT USED	
S1515A - E	SWITCH, ROTARY: 5 sections, 8 positions; mycalex wafer insulation.	SW434
S1515F	WAFER SWITCH, ROTARY: 1PST; contact current rating 1 ADC at 28 VDC or 1-1/2 AAC at 115 VAC.	WS139
S1516	NOT USED	
S1517	SWITCH, ROTARY: tab	SW375-1
S1518	NOT USED	
S1519	SWITCH, MICRO: SPDT; 5 amps at 125/250 VAC.	SW353-2
T1501	TRANSFORMER, INPUT: primary 200,000 ohms; DC resistance 6,500 ohms; secondary 1,000 ohms; DC resistance 245 ohms; open frame, lacquer coated.	TF246-6X
TB1500	NOT USED	
TB1501	NOT USED	

PARTS LIST (CONT)

SIDE BAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R1532	RESISTOR, FIXED, COMPOSITION: 1,800 ohms, $\pm 5\%$; 1/2 watt.	RC20GF182J
R1533	RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms, $\pm 10\%$; 0.25 watts.	RV111B103A
R1534	NOT USED	
R1535	RESISTOR, FIXED, COMPOSITION: 47,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF473J
R1536	RESISTOR, FIXED, COMPOSITION: 5,600 ohms, $\pm 5\%$; 1/2 watt.	RC20GF562J
R1537	Same as R1528.	
R1538	RESISTOR, FIXED, COMPOSITION: 390 ohms, $\pm 5\%$; 1/2 watt.	RC20GF391J
R1539	NOT USED	
R1540	NOT USED	
R1541	RESISTOR, FIXED, COMPOSITION: 330 ohms, $\pm 5\%$; 1/2 watt.	RC20GF331J
R1542	RESISTOR, FIXED, COMPOSITION: 1 megohm, $\pm 5\%$; 1/2 watt.	RC20GF105J
R1543	RESISTOR, VARIABLE, COMPOSITION: 50,000 ohms, $\pm 10\%$; 2 watts.	RV4LAYSAS503A
R1544	Same as R1543.	
R1545	NOT USED	
R1546	NOT USED	
R1547A,B	RESISTOR, VARIABLE, COMPOSITION: dual; (A) 100 ohms, (B) 5,000 ohms, $\pm 20\%$; linear taper.	RV109-3
R1548	RESISTOR, FIXED, COMPOSITION: 330,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF334J
R1549	RESISTOR, FIXED, COMPOSITION: 22 ohms, $\pm 5\%$; 1/2 watt.	RC20GF220J
R1550	RESISTOR, FIXED, COMPOSITION: 680 ohms, $\pm 5\%$; 1/2 watt.	RC20GF681J
R1551	RESISTOR, FIXED, COMPOSITION: 33,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF333J
R1552	RESISTOR, FIXED, COMPOSITION: 2,200 ohms, $\pm 5\%$; 1/2 watt.	RC20GF222J

PARTS LIST (CONT)

SIDEBAND MULTICHANNEL EXCITER, MODEL SMEE-1A

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
TB1502	TERMINAL BOARD, BARRIER: eighteen 6-32 thd. x 1/4" long binding head machine screws; black phenolic body.	TM100-18
XDS1500	NOT USED	
XDS1501	LIGHT, INDICATOR: with white translucent lens, sub-miniature type.	TS153-5
XK1500	SOCKET, RELAY: with retainer; 18 male beryllium copper gold plated contacts; black phenolic body.	TS171-2
XK1501	SOCKET, RELAY: with retainer; 6 male beryllium copper gold plated contacts; black phenolic body.	TS171-1
XK1502	Same as XK1500.	

PARTS LIST
for
IF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1701	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 uuf, GMV; 1,000 WVDC.	CC100-16
C1702	Same as C1701.	
C1703	CAPACITOR, VARIABLE, MICA DIELECTRIC; 10 to 75 uuf; 350 WVDC.	CV109-8
C1704	NOT USED	
C1705	CAPACITOR, FIXED, MICA DIELECTRIC: 22 uuf, $\pm 5\%$; 100 WVDC.	CM111C220J1S
C1706	CAPACITOR, FIXED, MICA DIELECTRIC: 1,000 uuf, $\pm 5\%$; 100 WVDC.	CM111C102J1S
C1707 thru C1710	NOT USED	
C1711	Same as C1701.	
C1712	Same as C1701.	
C1713	Same as C1705.	
C1714	Same as C1703.	
C1715 thru C1720	NOT USED	
C1721	CAPACITOR, FIXED, MICA DIELECTRIC: 180 uuf, $\pm 5\%$; 100 WVDC.	CM111C181J1S
C1722	Same as C1721.	
C1723	CAPACITOR, FIXED, CERAMIC DIELECTRIC: .2 uf, +80% -20%; 25 WVDC.	CC100-33
C1724	Same as C1723.	
C1725	CAPACITOR, VARIABLE, MICA DIELECTRIC: 30 to 280 uuf, 350 WVDC; compression type.	CV114-1
C1726	CAPACITOR, FIXED, MICA DIELECTRIC: 1,500 uuf, $\pm 5\%$; 100 WVDC.	CM112C152J1S
C1727	Same as C1726.	

PARTS LIST (CONT)
IF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1728	Same as C1725.	
C1729	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 100,000 uuf, +80% -20%; 100 WVDC.	CC100-28
C1730	Same as C1723.	
C1731	Same as C1729.	
C1732	Same as C1729.	
C1733	CAPACITOR, FIXED, MICA DIELECTRIC: 47 uuf, $\pm 5\%$; 100 WVDC.	CM111C470J1S
C1734	Same as C1703.	
C1735	NOT USED	
C1736	Same as C1706.	
C1737	Same as C1729.	
C1738	Same as C1705.	
C1739	Same as C1733.	
C1740	Same as C1701.	
C1741	Same as C1723.	
C1742	Same as C1729.	
CR1701	SEMICONDUCTOR DEVICE, DIODE: germanium.	1N34A
CR1702 thru CR1708	Same as CR1701.	
FL1701	FILTER, SIDEBAND: low 1750.300 Kc max. at 3 db, high 1753.000 Kc min. at 3 db, low 1749.000 Kc min. at 60 db, high 1755.000 Kc max. at 60 db; for LSB operation.	FX10014-1
FL1702	FILTER, SIDEBAND: low 1747.000 Kc max. at 3 db, high 1749.700 Kc min. at 3 db, low 1745.000 Kc min. at 60 db, high 1751.000 max. at 60 db; for USB operation.	FX10014-2
L1701	NOT USED	

PARTS LIST (CONT)
IF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
L1702	COIL, RADIO FREQUENCY: fixed; 220 uh, $\pm 10\%$; max. DC resistance 5.0 ohms.	CL275-221
Q1701	TRANSISTOR	2N2084
Q1702 thru Q1706	Same as Q1701.	
R1701	RESISTOR, FIXED, COMPOSITION: 1,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF102J
R1702 thru R1706	Same as R1701.	
R1707	RESISTOR, VARIABLE, COMPOSITION: 500 ohms, $\pm 10\%$; 0.25 watts.	RV111U501A
R1708 thru R1715	Same as R1701.	
R1716	Same as R1707.	
R1717 thru R1720	Same as R1701.	
R1721	RESISTOR, FIXED, COMPOSITION: 10,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF103J
R1722	Same as R1721.	
R1723	RESISTOR, FIXED, COMPOSITION: 50,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF503J
R1724	Same as R1701.	
R1725	RESISTOR, FIXED, COMPOSITION: 1,500 ohms, $\pm 5\%$; 1/2 watt.	RC20GF152J
R1726	Same as R1701.	
R1727	RESISTOR, FIXED, COMPOSITION: 470 ohms, $\pm 5\%$; 1/2 watt.	RC20GF471J
R1728	RESISTOR, FIXED, COMPOSITION: 39,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF393J

PARTS LIST (CONT)
IF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R1729	RESISTOR, FIXED, COMPOSITION: 15,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF153J
R1730	RESISTOR, FIXED, COMPOSITION: 12,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF123J
R1731	RESISTOR, FIXED, COMPOSITION: 47,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF473J
R1732	Same as R1701.	
R1733	Same as R1701.	
R1734	Same as R1728.	
R1735	Same as R1729.	
R1736	Same as R1727.	
R1737	RESISTOR, FIXED, COMPOSITION: 820 ohms, $\pm 5\%$; 1/2 watt.	RC20GF821J
R1738	RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms, $\pm 10\%$; 0.25 watts.	RV111U103A
R1739	RESISTOR, FIXED, COMPOSITION: 100 ohms, $\pm 5\%$; 1/2 watt.	RC20GF101J
S1701	Non-replaceable item. Part of Z1701.	
T1701	TRANSFORMER, INTERMEDIATE FREQUENCY: fixed; 1.75 mc; nominal primary inductance 5.0 uh, ± 0.250 uh; four terminals, wire lead type.	TZ124
T1702	TRANSFORMER, INTERMEDIATE FREQUENCY: fixed; 1.75 mc; nominal primary inductance 5.5 uh, ± 0.300 uh; five terminals, wire lead type.	TZ125
Y1701	CRYSTAL UNIT, QUARTZ: operating frequency 1750.00 Kc; max. impedance 400 ohms; HC-25/U type holder.	CR10006
Z1701	OVEN, CRYSTAL: 115 VAC; current rating 0.05 amps; operating temperature 75°C , $\pm 2.5^{\circ}\text{C}$.	OC100-3

PARTS LIST
for
AF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1701	CAPACITOR, FIXED, ELECTROLYTIC: 6 uf, -10% +150% at 120 cps (Hz) at 25°C; 15 WVDC; polarized.	CE105-6-15
C1702	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 200,000 uuf, +80% -20%; 25 WVDC.	CC100-33
C1703	CAPACITOR, FIXED, ELECTROLYTIC: 50 uf, -10% +150% at 120 cps (Hz) at 25°C; 15 WVDC; polarized.	CE105-50-15
C1704	Same as C1701.	
C1705	CAPACITOR, FIXED, ELECTROLYTIC: 10 uf, -10% +150% at 120 cps (Hz) at 25°C; 15 WVDC; polarized.	CE105-10-15
C1706	Same as C1703.	
C1707	Same as C1705.	
C1708	CAPACITOR, FIXED, ELECTROLYTIC: 4 uf, -10% +150% at 120 cps (Hz) at 25°C; 15 WVDC; polarized.	CE105-4-15
C1709	Same as C1701.	
C1710	Same as C1703.	
C1711	Same as C1702.	
C1712	CAPACITOR, FIXED, ELECTROLYTIC: 20 uf, -10% +150% at 120 cps (Hz) at 25°C; 15 WVDC; polarized.	CE105-20-15
C1713 thru C1728	NOT USED	
C1729	Same as C1705.	
C1730 thru C1760	NOT USED	
C1761	Same as C1702.	
C1762	NOT USED	
C1763	NOT USED	
C1764	Same as C1702.	

PARTS LIST (CONT)
AF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
CR1701	SEMICONDUCTOR DEVICE, DIODE	1N34A
CR1702 thru CR1705	Same as CR1701.	
Q1701	TRANSISTOR: germanium; NPN; JEDEC type 2N1308 transistor with a controlled hfe limit of 80-150; JEDEC type T09 case.	TX106
Q1702	TRANSISTOR: germanium; PNP; JEDEC type 2N1370-4 transistor with a controlled hfe limit of 60-75; JEDEC type T09 case.	TX107
Q1703 thru Q1705	Same as Q1702.	
Q1706	Same as Q1701.	
Q1707	Same as Q1702.	
Q1708	TRANSISTOR	2N2001
R1701	RESISTOR, FIXED, COMPOSITION: 22,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF223J
R1702	RESISTOR, FIXED, COMPOSITION: 10,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF103J
R1703	NOT USED	
R1704	RESISTOR, FIXED, COMPOSITION: 4,700 ohms, $\pm 5\%$; 1/2 watt.	RC20GF472J
R1705	RESISTOR, FIXED, COMPOSITION: 2,200 ohms, $\pm 5\%$; 1/2 watt.	RC20GF222J
R1706	Same as R1702.	
R1707	Same as R1705.	
R1708	RESISTOR, FIXED, COMPOSITION: 68,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF683J
R1709	Same as R1702.	

PARTS LIST (CONT)

AF TRANSMITTER, BOARD ASSEMBLY

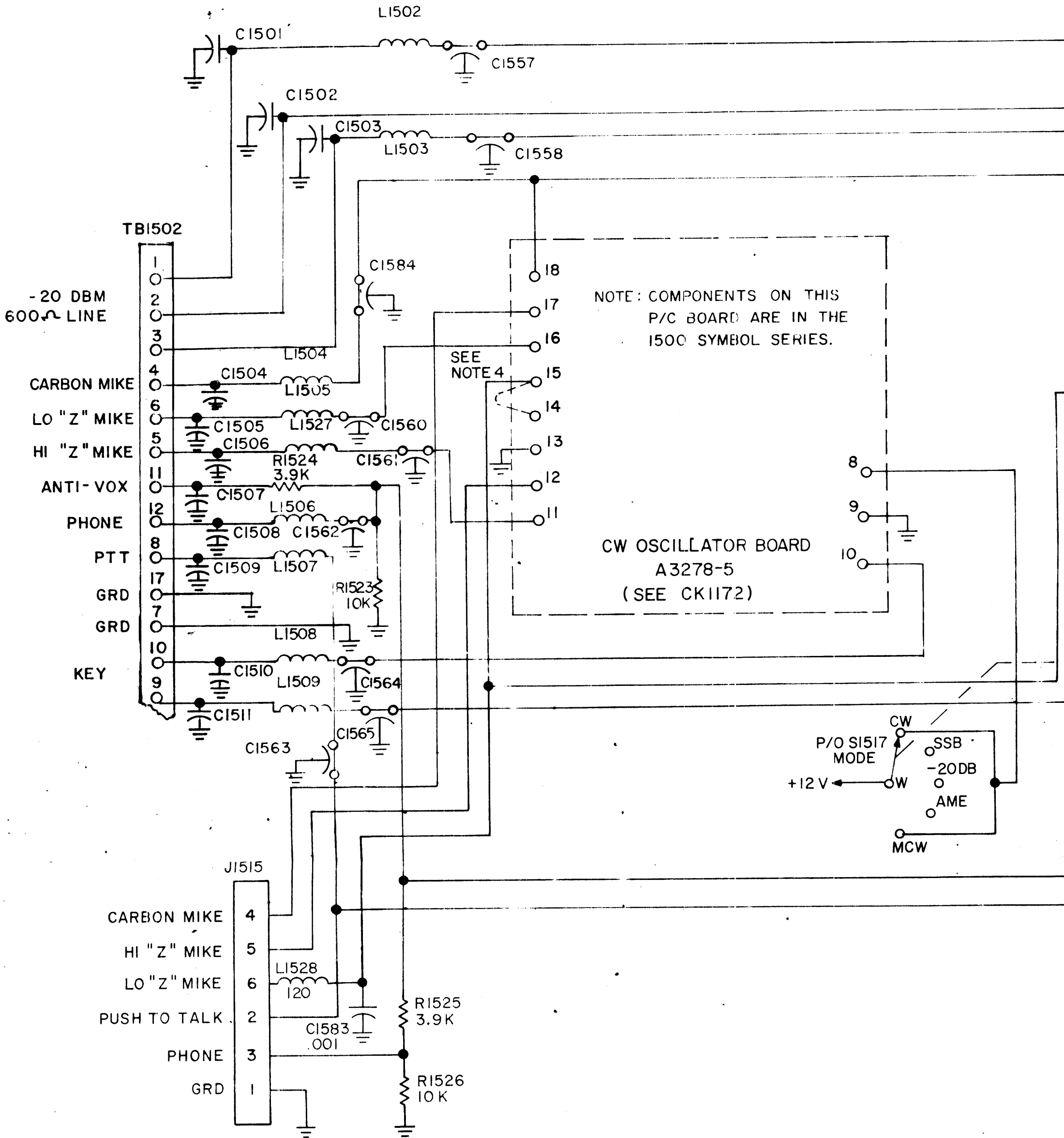
REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R1710	RESISTOR, FIXED, COMPOSITION: 3,300 ohms, $\pm 5\%$; 1/2 watt.	RC20GF332J
R1711	Same as R1710.	
R1712	RESISTOR, FIXED, COMPOSITION: 220 ohms, $\pm 5\%$; 1/2 watt.	RC20GF221J
R1713	Same as R1702.	
R1714	Same as R1702.	
R1715	RESISTOR, FIXED, COMPOSITION: 8,200 ohms, $\pm 5\%$; 1/2 watt.	RC20GF822J
R1716	RESISTOR, FIXED, COMPOSITION: 3,900 ohms, $\pm 5\%$; 1/2 watt.	RC20GF392J
R1717	RESISTOR, FIXED, COMPOSITION: 1,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF102J
R1718	RESISTOR, VARIABLE, COMPOSITION: 500 ohms, $\pm 10\%$; 0.25 watt at 70°C.	RV111U501A
R1719	RESISTOR, VARIABLE, COMPOSITION: 250,000 ohms, $\pm 10\%$; 0.25 watt at 70°C.	RV111U254A
R1720	RESISTOR, FIXED, COMPOSITION: 1.5 megohm, $\pm 5\%$; 1/2 watt.	RC20GF155J
R1721	NOT USED	
R1722	Same as R1702.	
R1723	RESISTOR, FIXED, COMPOSITION: 5,600 ohms, $\pm 5\%$; 1/2 watt.	RC20GF562J
R1724	Same as R1704.	
R1725	Same as R1702.	
R1726	Same as R1717.	
R1727	Same as R1723.	
R1728	RESISTOR, FIXED, COMPOSITION: 100,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF104J

PARTS LIST (CONT)
AF TRANSMITTER, BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
R1729	RESISTOR, FIXED, COMPOSITION: 150,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF154J
R1730	Same as R1704.	
R1731	Same as R1705.	
R1732	Same as R1715.	
R1733	Same as R1729.	
R1734	RESISTOR, FIXED, COMPOSITION: 33 ohms, $\pm 5\%$; 1 watt.	RC32GF330J
R1735	Same as R1729.	
R1736 thru R1773	NOT USED	
R1774	RESISTOR, FIXED, COMPOSITION: 100 ohms, $\pm 5\%$; 1/2 watt.	RC20GF101J
T1701	TRANSFORMER, AUDIO FREQUENCY: fixed; primary imped- ance 25,000 ohms, CT; 1,550 ohms DC resistance, $\pm 20\%$; secondary impedance 1,200 ohms, CT; 88 ohms DC resistance, $\pm 20\%$; operating frequency range 200 to 15,000 cps (Hz); frequency response ± 3 db at 250 to 3,500 (Hz).	TF267-4
T1702	TRANSFORMER, AUDIO FREQUENCY: primary impedance 500 ohms CT; 60 ohms DC resistance; operating frequency range 100 cps (Hz) to 20 KC; open frame, lacquer coated.	TF246-17Z

PARTS LIST
for
ALDC BOARD ASSEMBLY

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
Q1800 thru Q1806	NOT USED	
Q1807	TRANSISTOR	2N3646
Q1808	Same as Q1807.	
R1800 thru R1836	NOT USED	
R1837	RESISTOR, FIXED, COMPOSITION: 1,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF102J
R1838	RESISTOR, FIXED, COMPOSITION: 470,000 ohms, $\pm 5\%$; 1/2 watt.	RC20GF474J



NOTE: COMPONENTS ON THIS P/C BOARD ARE IN THE 1500 SYMBOL SERIES.

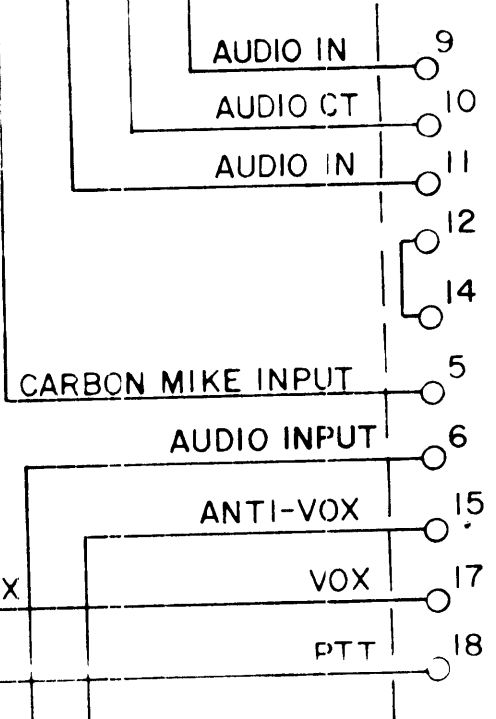
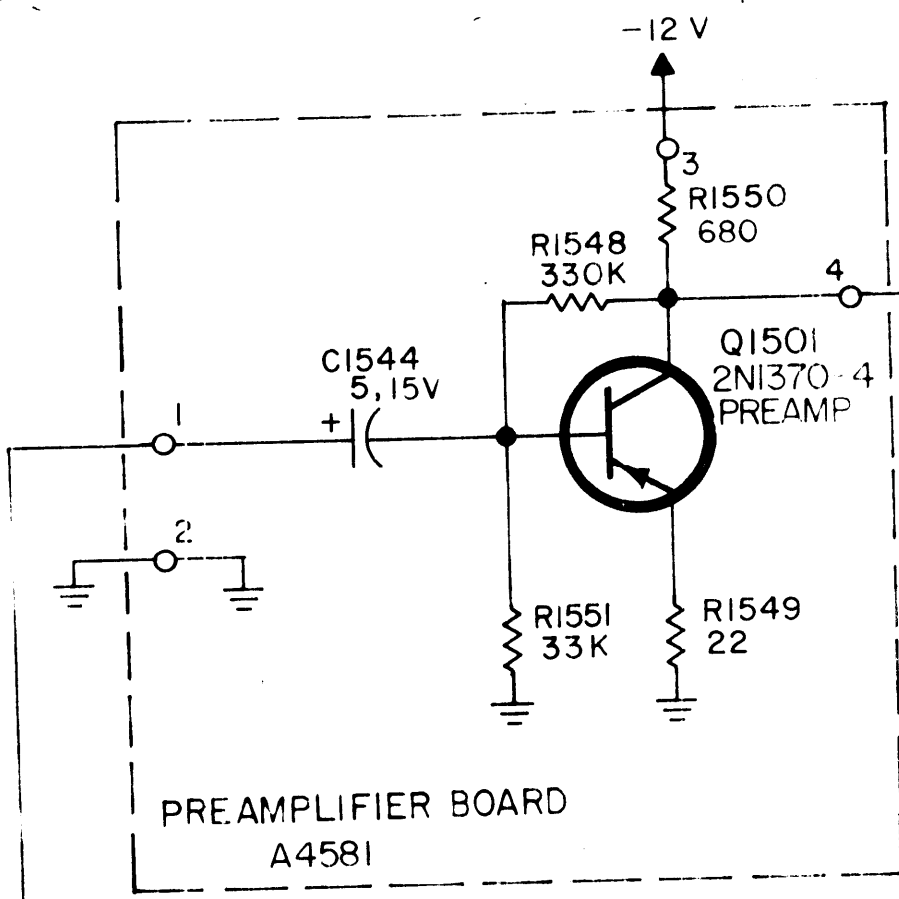
SEE NOTE 4

CW OSCILLATOR BOARD
A3278-5
(SEE CK1172)

NOTE: COMPONENTS ON THIS P/C BOARD ARE IN THE SINGLE SYMBOL SERIES.

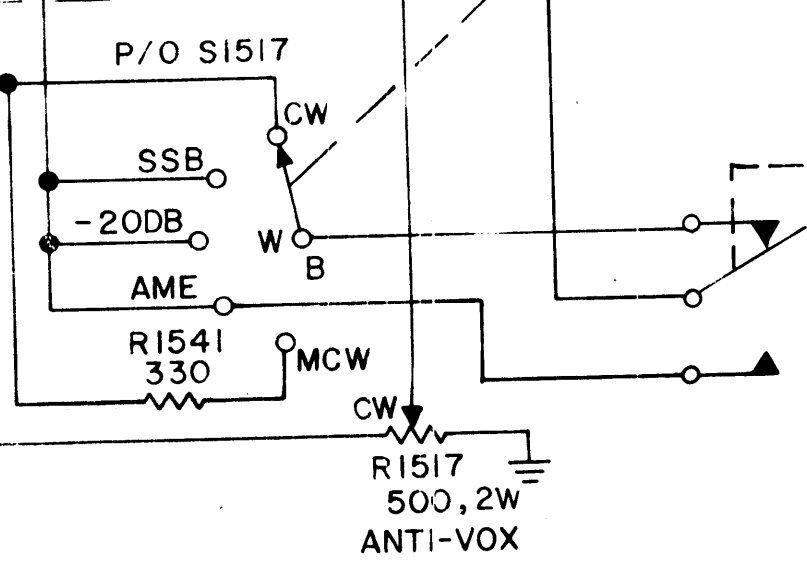
POWER S901

POWER INPUT J904



NOTE: COMPONENTS ON THIS P/C BOARD ARE IN THE 17CO SYMB

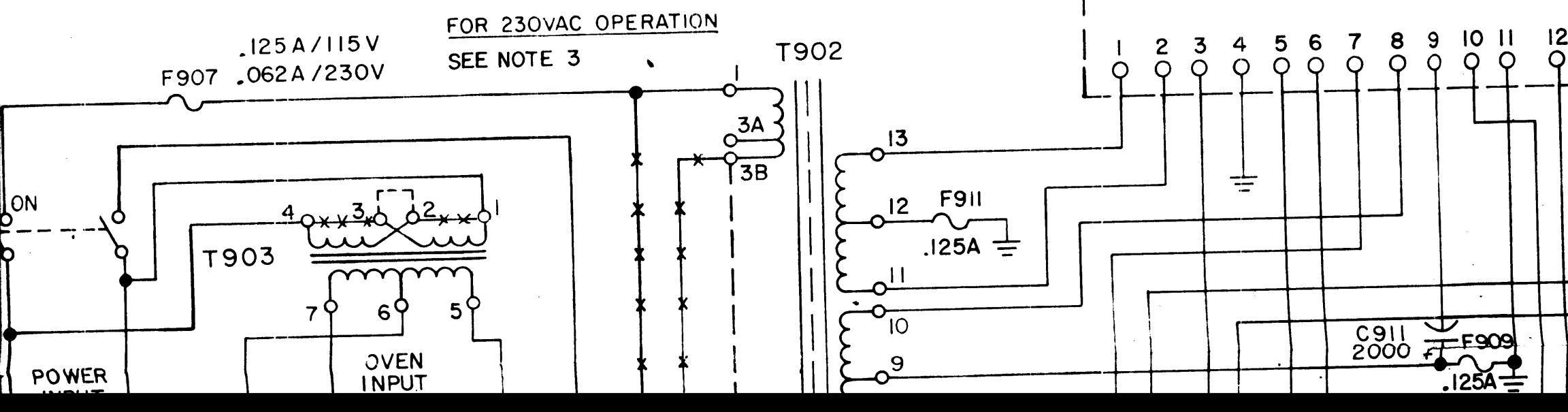
TRANSMITTER A322 (SEE CK)



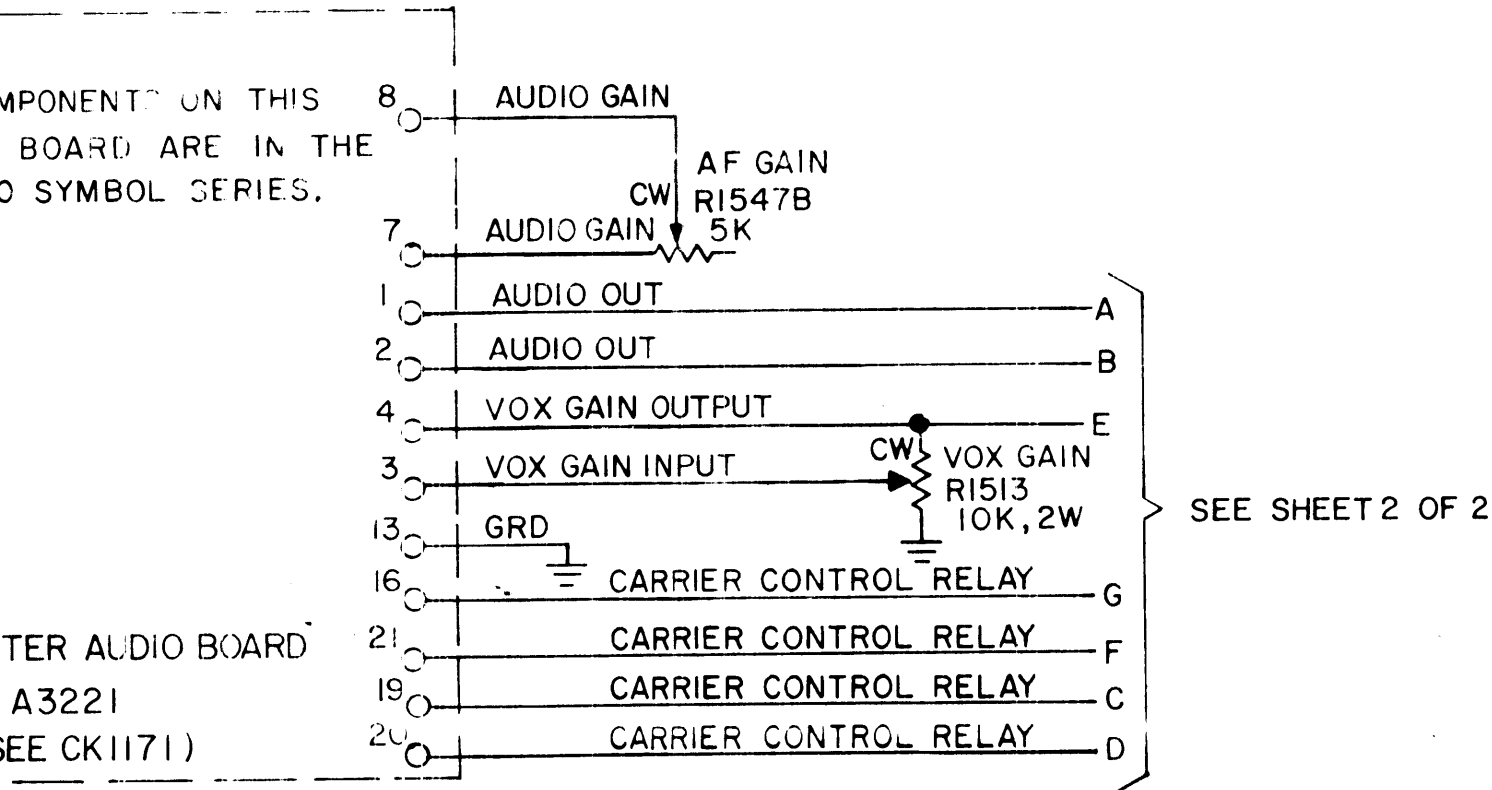
P/O KI505 (SEE CK)

NOTE: COMPONENTS ON THIS P/C ARE IN THE 17CO SYMB SERIES.

POWER SUPPLY BOARD A3153-6 (SEE CK1170)



REVISIONS					
ZONE	SYM	DESCRIPTION	DATE	E.M.N. NO.	APPD
	Ø	ORIGINAL RELEASE FOR PROD	3/10/67	Ø	<i>[Signature]</i>
	A	COMPLETELY REVISED. SEE SHEET 2	3/22/67	18021	RME <i>[Signature]</i>



505 (SEE SHEET 2)

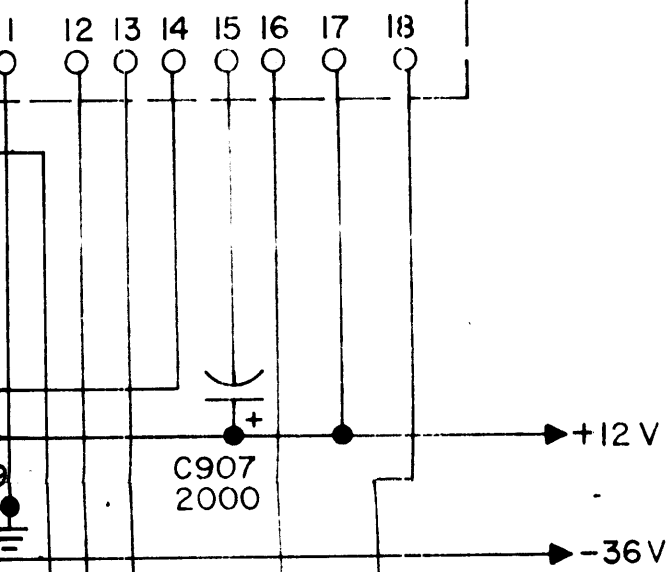
LAST SYMBOLS		MISSING SYMBOLS	
1500 SERIES	900 SERIES	1500 SERIES	900 SERIES
C1583	C921	C1530 THRU C1543	C900 THRU C906
DS1501	F912	DS1500	C908 ↑ C910
J1537	J905	J1500 THRU J1514	C912 ↑ C918
K1505	Q903	J1517 THRU J1525	F900 ↓ F906
M1502	S907	M1500, M1501	J900 THRU J903
Q1501	T903	Q1500	S900
R1555		R1500 THRU R1512	S903 THRU S906
S1519		R1514 ↑ R1516	T900, T901
TB1502		R1518 ↓ R1522	
FL1501		R1527 THRU R1535	
LI528		R1539, R1540	
		R1542	
		R1545, R1547	
		S1503 THRU S1505	
		S1507 THRU S1514	
		S1516, S1518	
		TB1500, TB1501	
		C1553	
		LI500	
		FL1500	

ARE IN THE 900 SYMBOL

LY BOARD

3-6

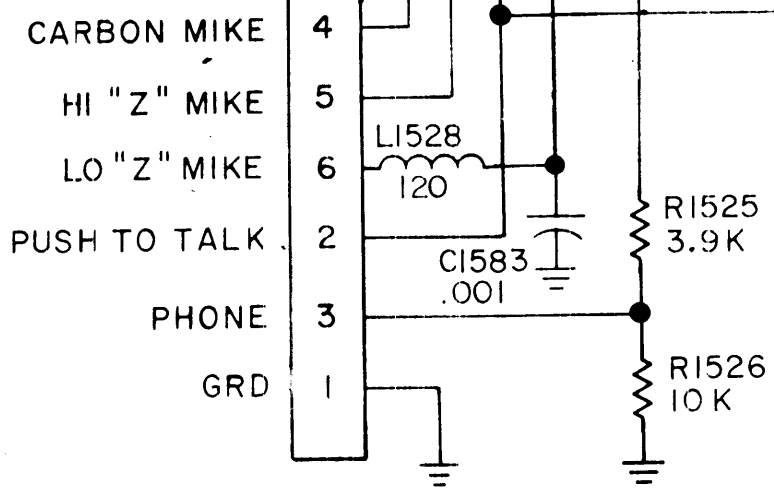
(1170)



NOTES

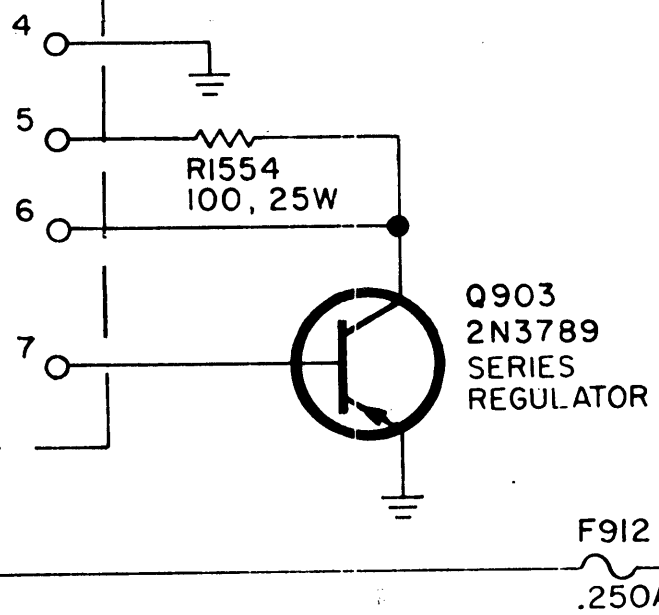
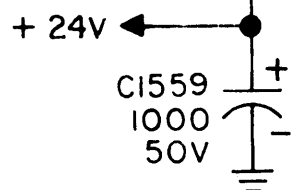
- 1- UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, 1/2 W. ALL CAPACITANCE VALUES ARE IN MICROFARADS AND ALL INDUCTANCE VALUES ARE IN MICROHENRIES.
- 2- THE VALUE OF F908 DEPENDS UPON THE OVEN SUPPLY VOLTAGE USED.
- 3- FOR 230 VOLT OPERATION, REMOVE JUMPERS MARKED X-X-X. ADD JUMPERS BETWEEN TRANSFORMER TERMINALS 2 AND 3, ON T903 AND TERMINALS 2 AND 3B ON T902 MARKED - - -

CK1308 A



NOTE: COMPONENTS ON THIS P/C BOARD ARE IN THE SINGLE SYMBOL SERIES.

POWER SUPPLY
 A 4542
 (SEE CK1263)



POWER
 S901

C919
0.02

POWER
 INPUT
 J904

A B C

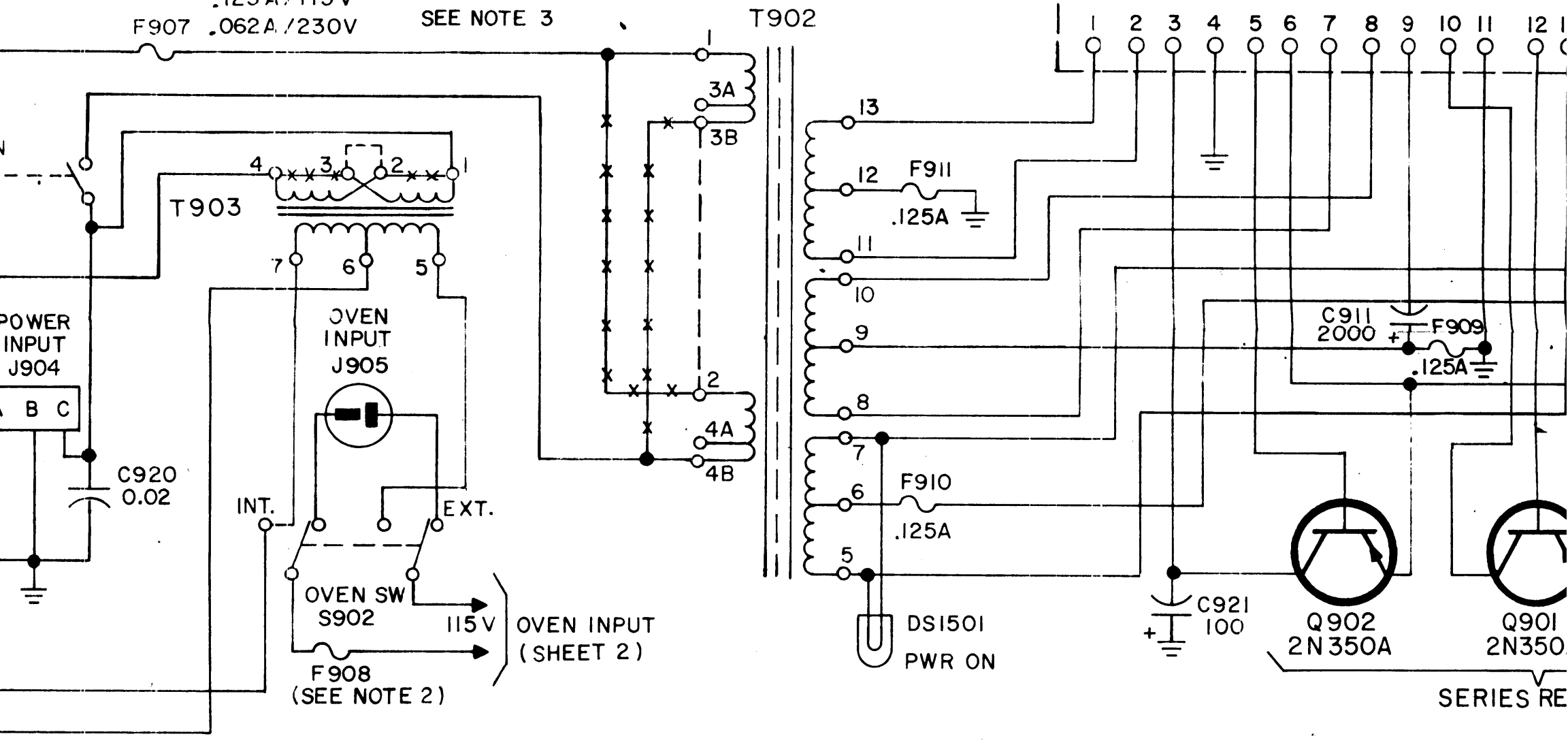
R1517
500, 2W
ANTI-VOX

NOTE: COMPONENTS ON THIS P/C ARE IN SERIES.

POWER SUPPLY BOARD
A3153-6
(SEE CK1170)

FOR 230VAC OPERATION
SEE NOTE 3

.125A/115V
F907 .062A/230V



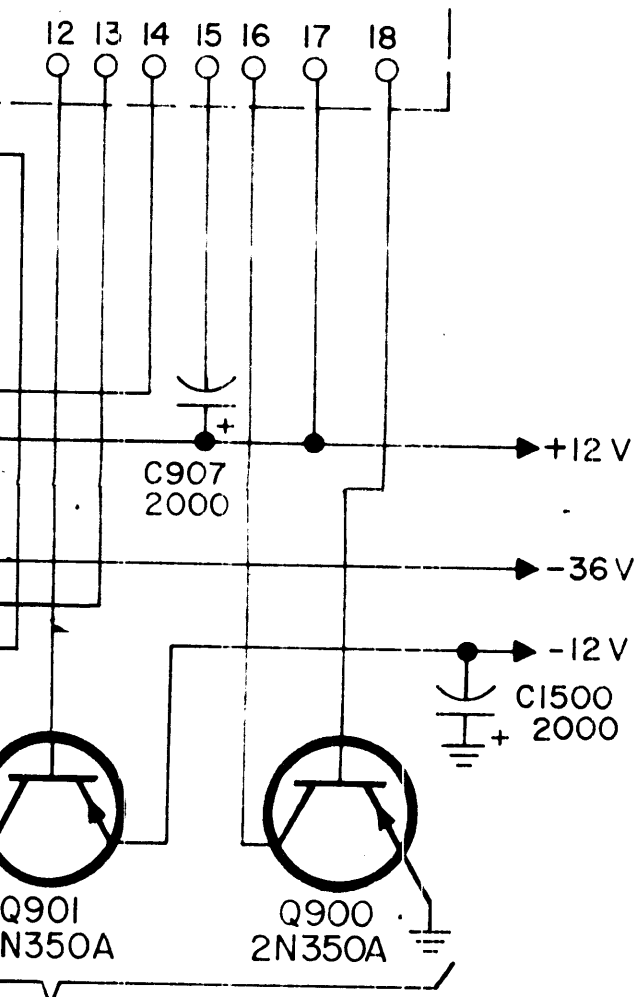
NOTES

8	7	6	5	
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SCALE
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R1555	R1500 THRU R1512	S900 THRU S906
S1519	R1514	T900, T901
TB1502	R1518	
FL1501	R1527 THRU R1535	
LI528	R1539, R1540	
	R1542	
	R1545, R1547	
	S1503 THRU S1505	
	S1507 THRU S1514	
	S1516, S1518	
	TB1500, TB1501	
	CI553	
	LI500	
	FL1500	

ARE IN THE 900 SYMBOL
 Y BOARD
 -6
 (170)



NOTES

- 1- UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, 1/2 W. ALL CAPACITANCE VALUES ARE IN MICROFARADS AND ALL INDUCTANCE VALUES ARE IN MICROHENRIES.
- 2- THE VALUE OF F908 DEPENDS UPON THE OVEN SUPPLY VOLTAGE USED.
- 3- FOR 230 VOLT OPERATION, REMOVE JUMPERS MARKED * * *
 ADD JUMPERS BETWEEN TRANSFORMER TERMINALS 2 AND 3, ON T903 AND TERMINALS 2 AND 3B ON T902 MARKED — — —
- 4- THESE TERMINALS ARE CONNECTED TOGETHER ONLY WHEN A HIGH IMPEDANCE MICROPHONE IS USED.
- 5- 15Q UH TYPICAL FOR LI502 THRU LI527
 .001 UF TYPICAL FOR CI557 THRU CI582 AND CI501 THRU CI511.

ES REGULATOR

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
O. POSE LIST OF MATERIAL				
MATERIAL			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
FINISH			TITLE DIAGRAM, INTERCONNECT	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN H. AUSTIN DATE 3-10-67 CHECKED DATE 3-10-67 ELECT. DES. DATE MECH. DES. DATE	FINAL APPROVA DATE 3/10/67 CK1308 A SHEET 1 OF 2
DECIMALS: .X ± .05, .XX ± .01, .XXX ± .005 TOLERANCES FRACTIONS: ± 1/64, ANGLES: ± 0° 30'			REPROVAL NO. 440H	

SMEE - IA		
QTY./UNIT	MODEL USED ON	ASSY NO
SCALE	CODE	
THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.		

4 3 2 1

CK1308
A

D
C
B
A

G

F

E

D

C

ALDC IN
J1536

C1555
1000PF

L1501
270 UH

C1556
1000PF

K1504

-12V

A

B

SIDEBAND
SELECTION
S1502

LSB

USB

LSB

USB

+12V

LSB AUDIO INPUT

LSB AUDIO INPUT

-12V

USB AUDIO INPUT

USB AUDIO INPUT

REINSERTED CARRIER

K1503

NOTE: COMPONENTS
ON THIS P/C BD.
ARE FROM THE 1700 SY
SERIES.

A4586
TRANSMITTER II
(SEE CK131)

TRANSMIT / RECEIVE
RELAY
K1500

I

4

7

6

5

10

9

8

13

12

11

19

18

17

22

21

+12V

-12V

-36V

+12V

-12V

F

G

C

D

-12V

CW
SSB
-20DB
AME
CARRIER
INSERTION
P/O S1517

C1566

C1567

L1510

L1511

C1569

L1512

C1513

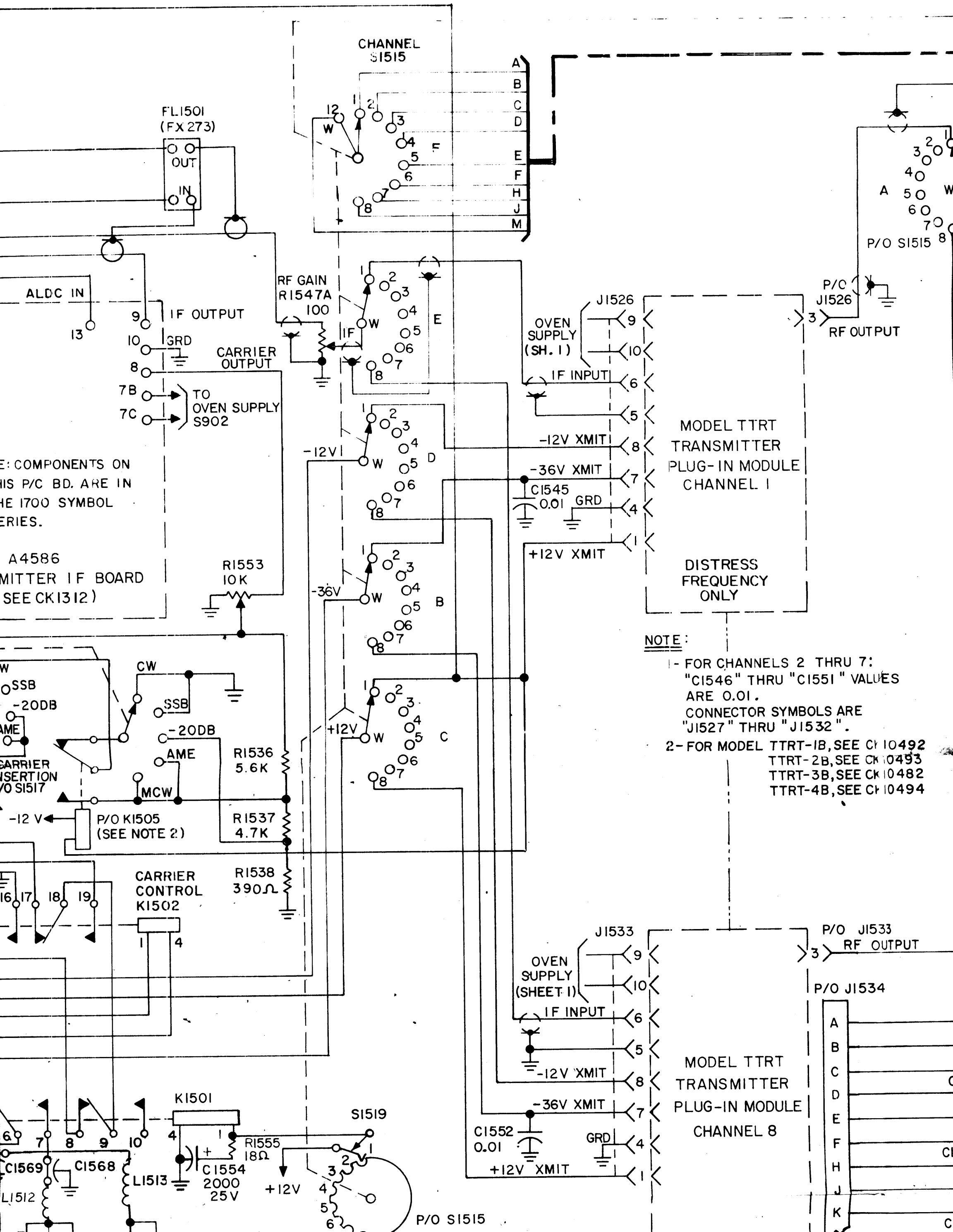
SEE SHEET 1 OF 2

C

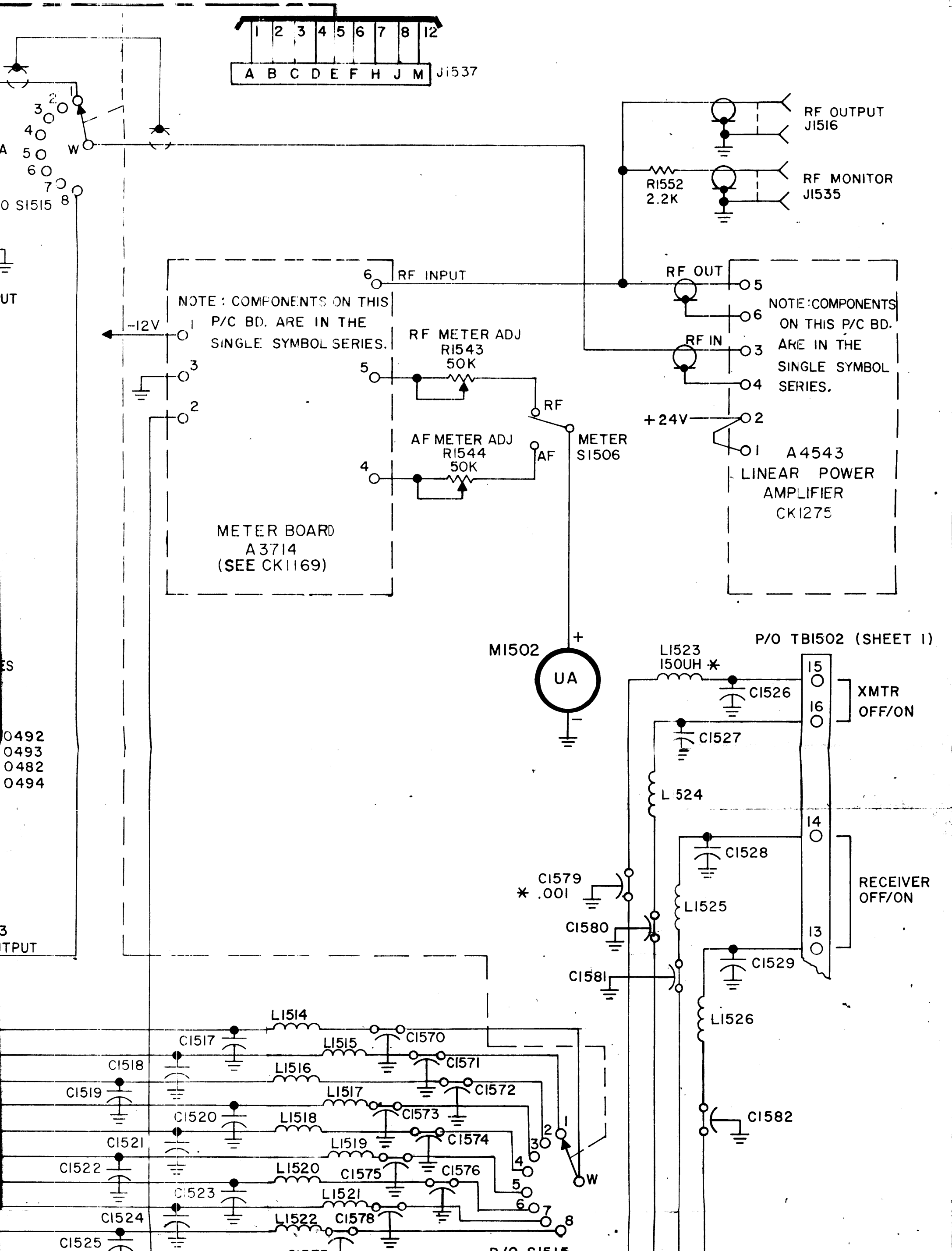
D

F

G



REVISIONS							
ZONE	SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
	B	ORIGINAL RELEASE FOR PROD	3/10/47				
	A	COMPLETELY REVISED SEE SHEET 1	3/23/61	18021	KME		



SEE SHEET 1 OF 2

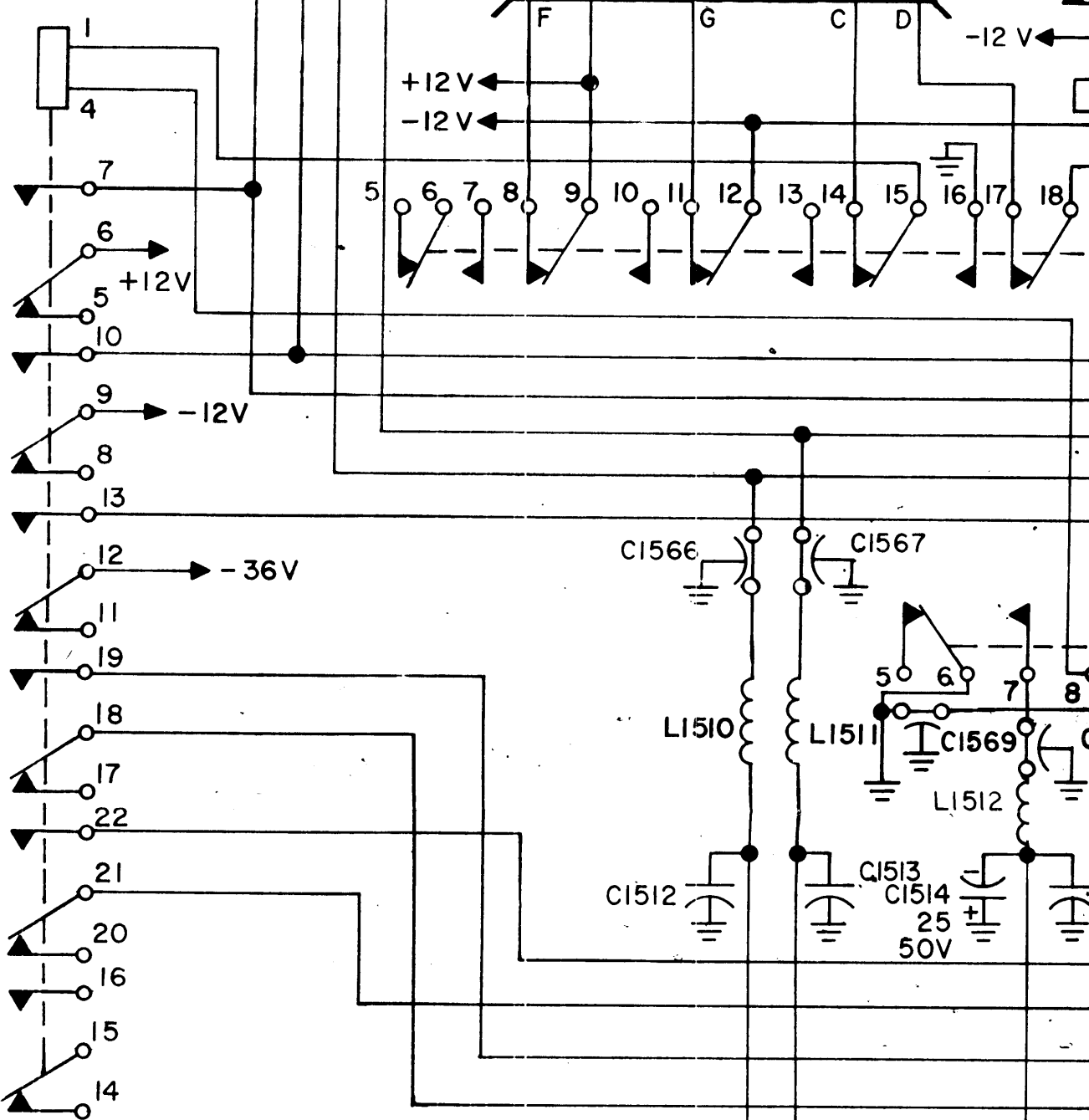
RELAY
KI500

INSERTION
P/O SI517

D
F
G

+12V
-12V

-12V



C

B

A

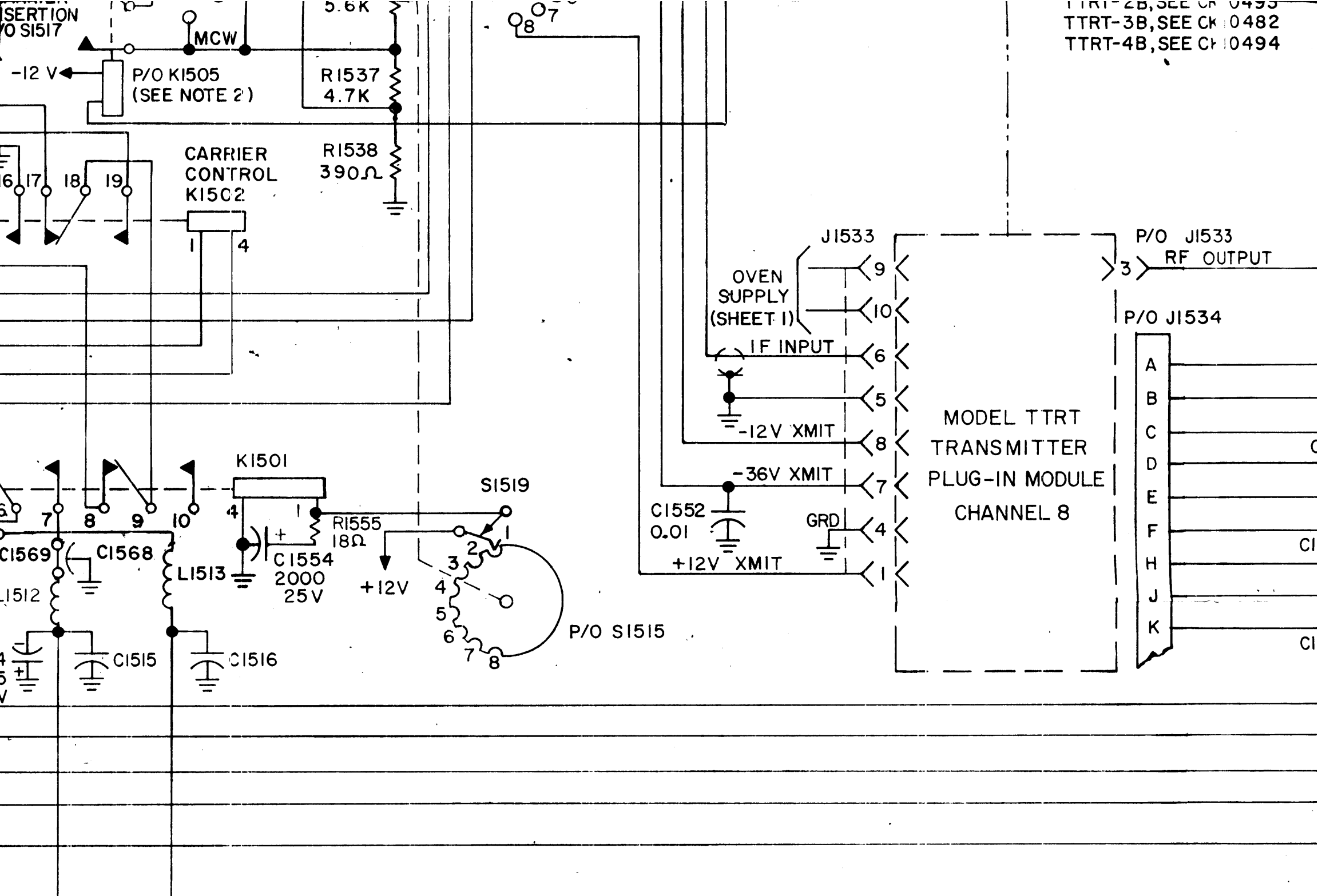
TMC FORM 111

11

10

9

8



TTRT-2B, SEE CR 0493
 TTRT-3B, SEE CR 0482
 TTRT-4B, SEE CR 0494

W U X P/O J1534

- NOTE 1:** * "150UH" TYPICAL FOR L1502 THRU L1527.
 * ".001" TYPICAL FOR C1512, C1513 & C1515 THRU C1529 AND C1557 THRU C1582.
- NOTE 2:** SEL SHEET 1 FOR REMAINING CONTACTS OF K1505.

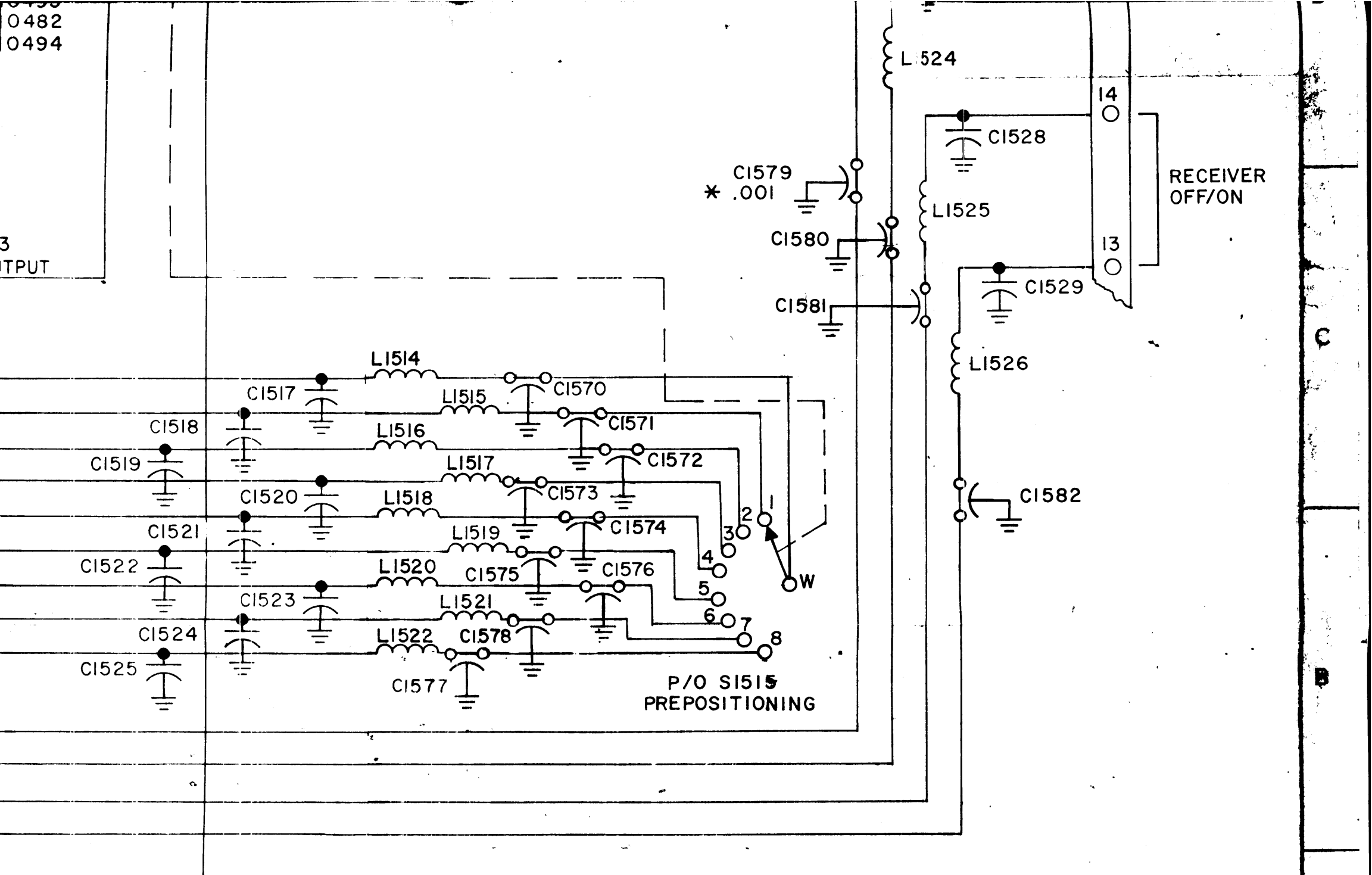
QTY/UNIT	1
SCALE	
THE CONT OF THE TE REPRODU	

NOTES

7	6	5	4
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0482
0494

3
OUTPUT



REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
O. POSE				
LIST OF MATERIAL				
MATERIAL			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
FINISH			TITLE	
			DIAGRAM, INTERCONNECT	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN H. AUSTIN	DATE 3/10/67
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005 TOLERANCES FRACTIONS ± 1/64 ANGLES ± 0° 30'			CHECKED <i>J. A. Ne</i>	DATE 3/10/67
			FINAL APPROVAL <i>A. J. Kay</i> CK1308 A REV. LTR.	
			MECH. DES.	DATE
			SHEET 2 OF 2	

Q'TY./UNIT	SMEE-1A	MODEL USED ON	ASSY. NO
SCALE	CODE		
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4

3

2

1

REPROVEL N 240M

A

CK1172

No change in drawing
provided for initial
submission.

Figure D. CW Oscillator Board

CK1171

No change in drawing
provided for initial
submission.

Figure E. Transmitter Audio Board

CK1169

No change in drawing
provided for initial
submission.

Figure G. Meter Board

CK1275

No change in drawing
provided for initial
submission.

Figure H. Linear Power Amplifier

CK1170

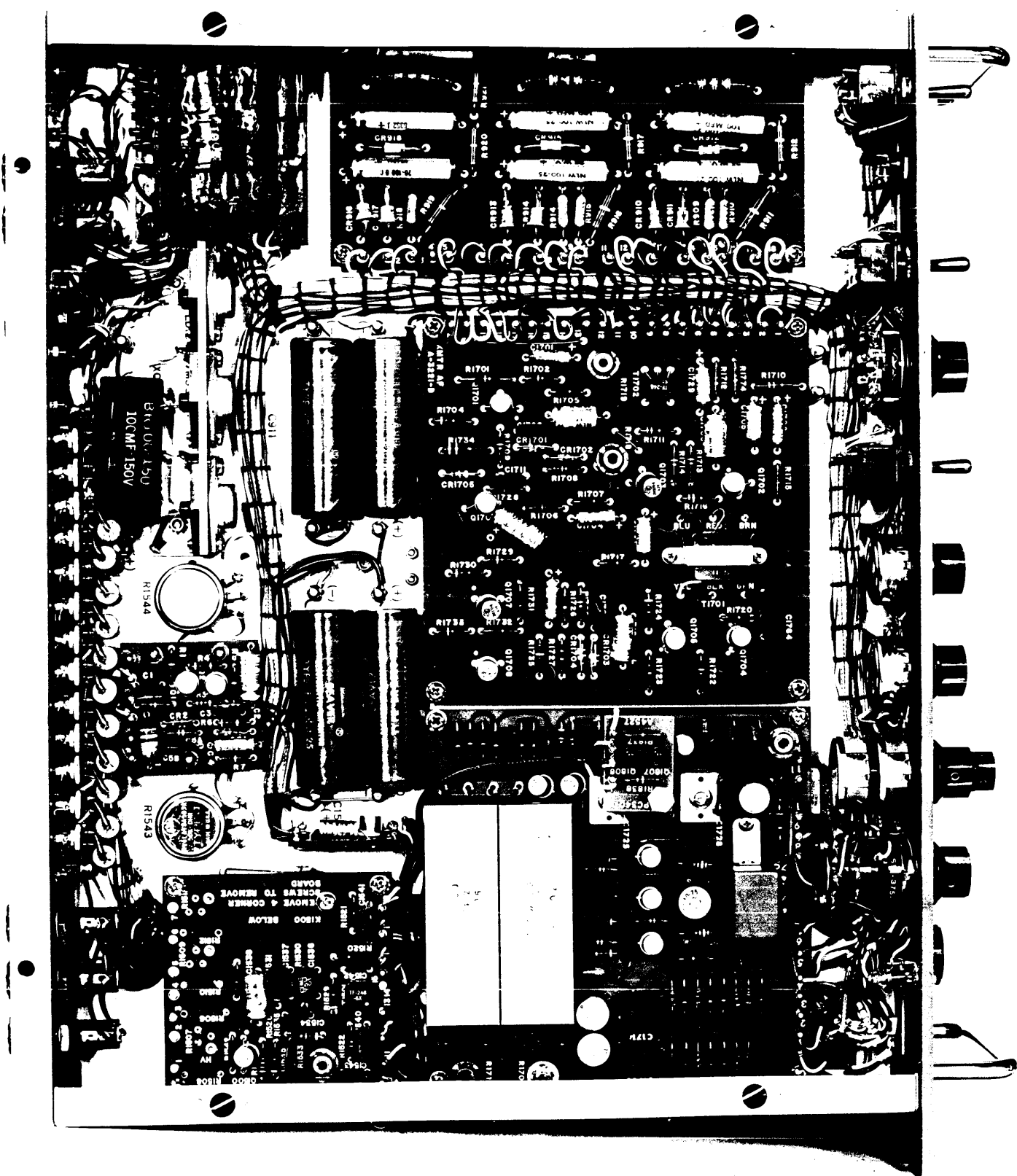
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provided for initial
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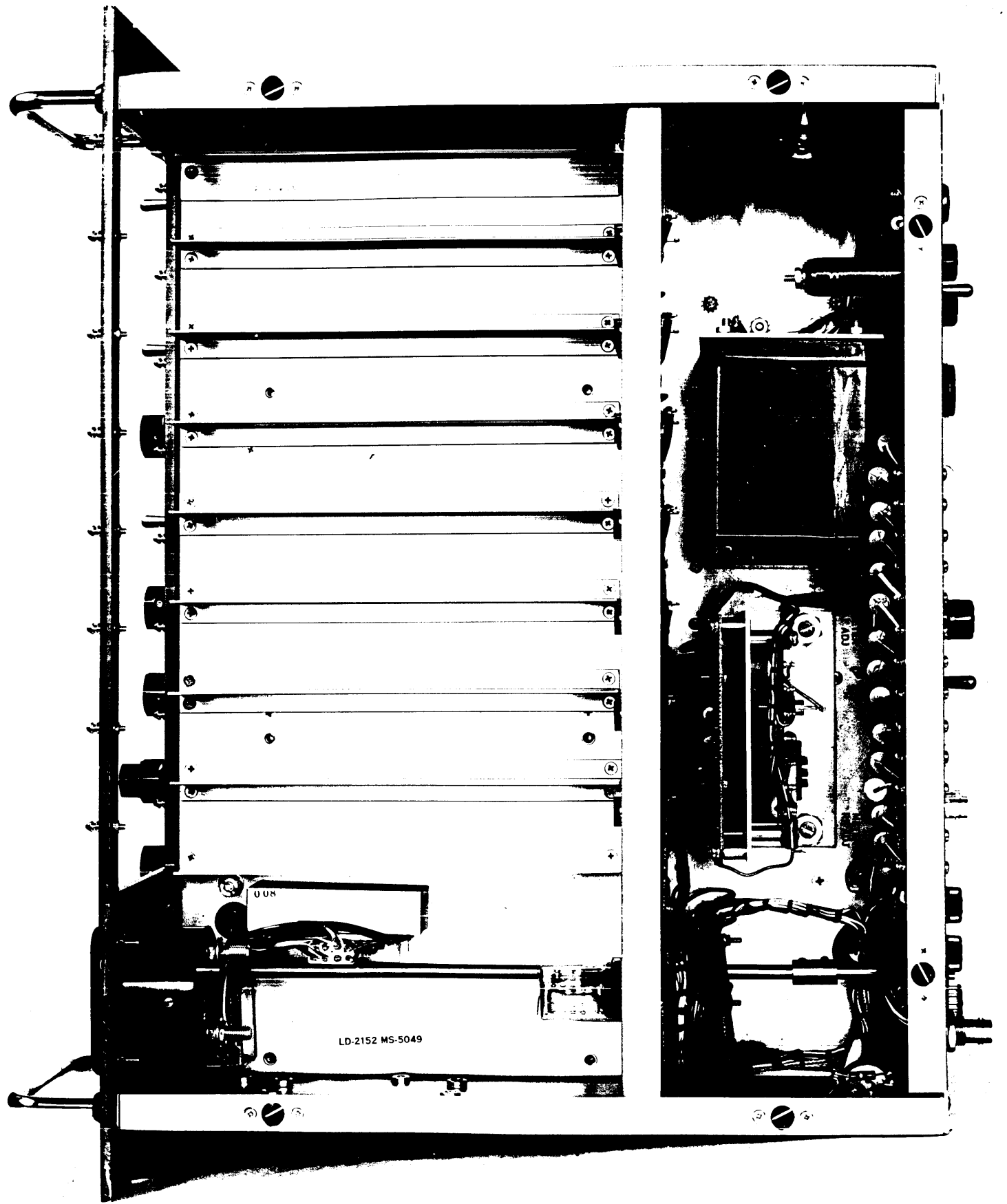
Figure I. Power Supply Board

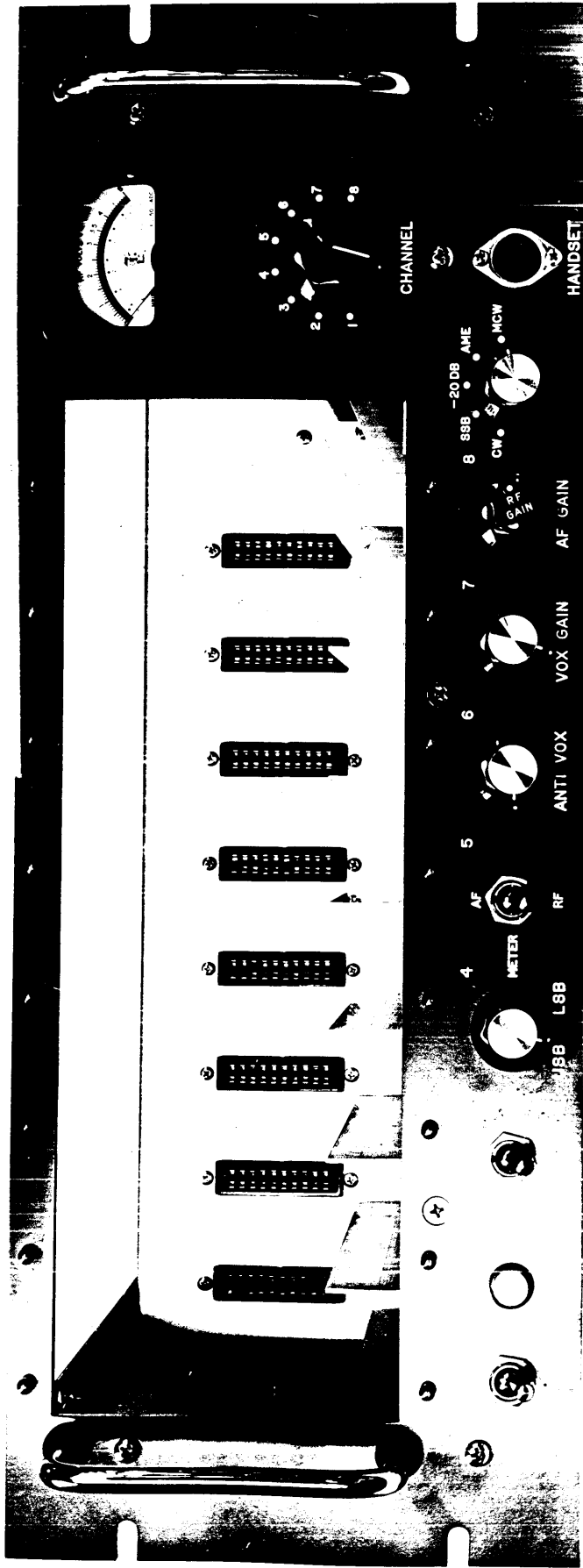
CK1263

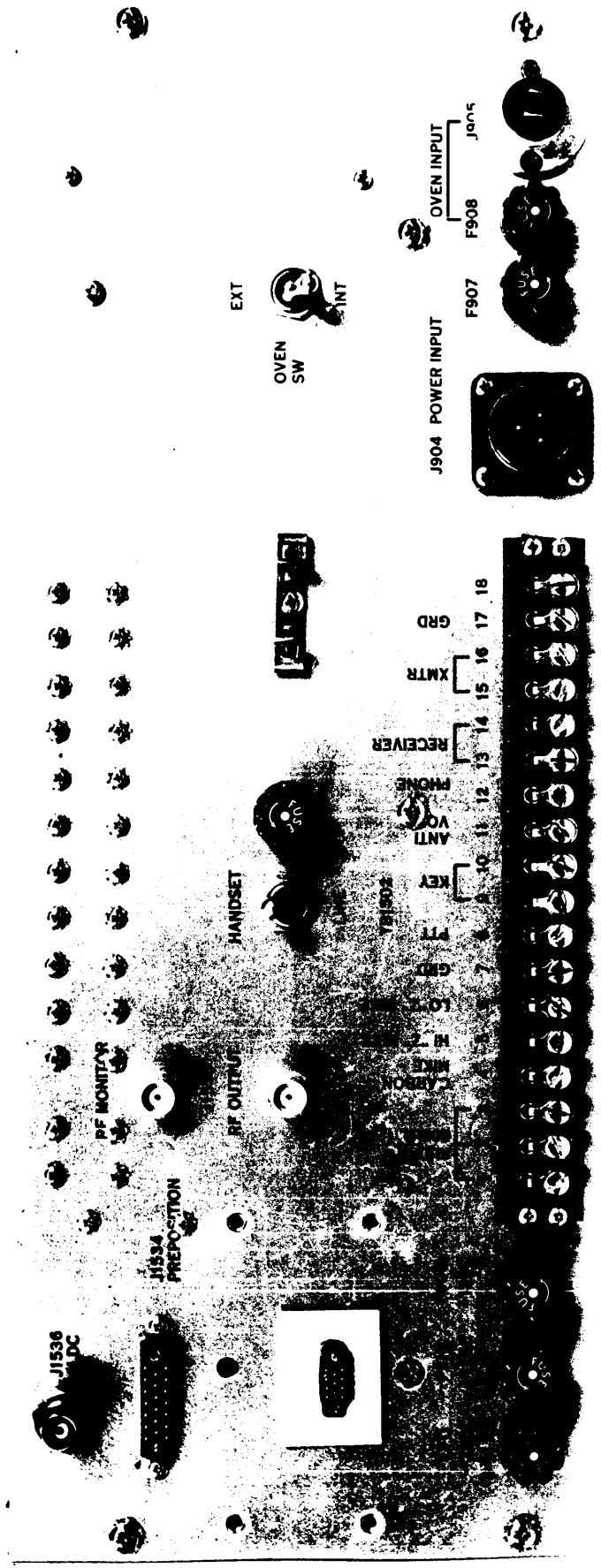
No change in drawing
provided for initial
submission.

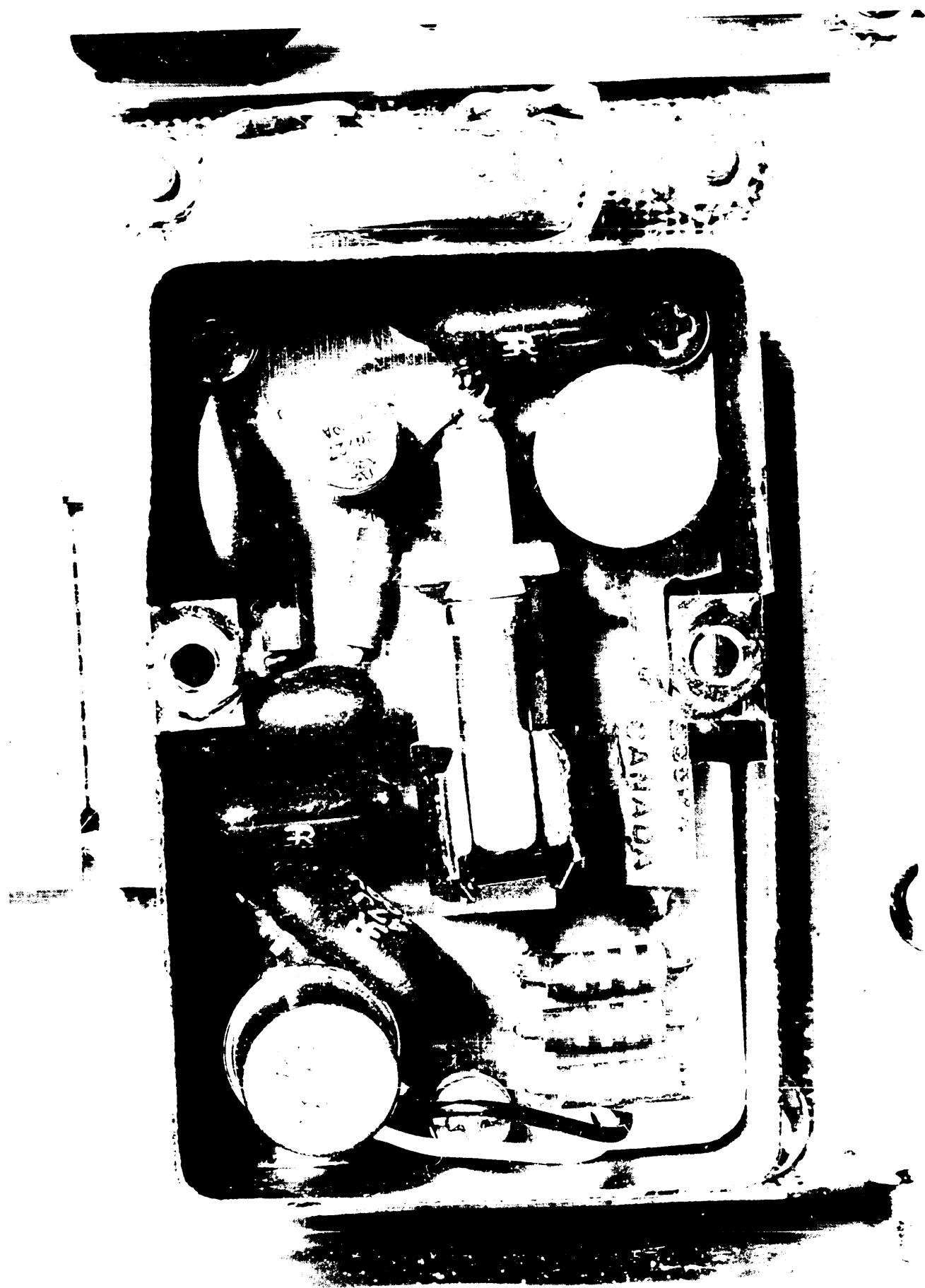
Figure J. Power Supply Board

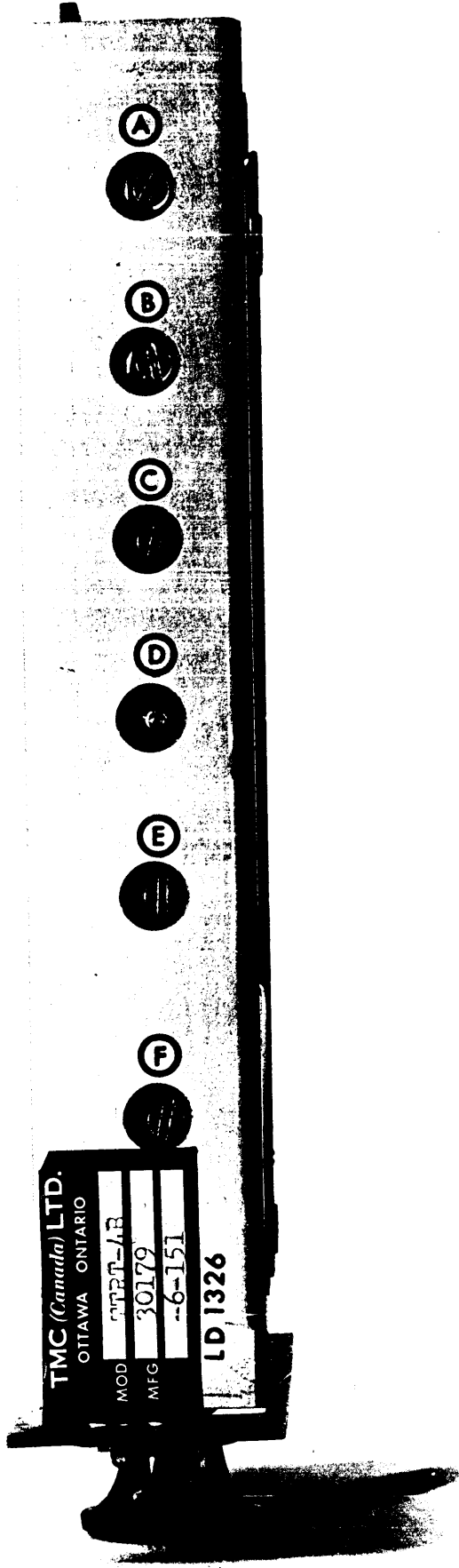












TMC (Canada) LTD.
OTTAWA ONTARIO

MOD

MFG

LD 1326



TMC (Canada) LTD.
OTTAWA ONTARIO

MOD

30177

MFG

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F



E



D



C



B



A

3

C.R. SNELGROVE CO. LTD.

TMC

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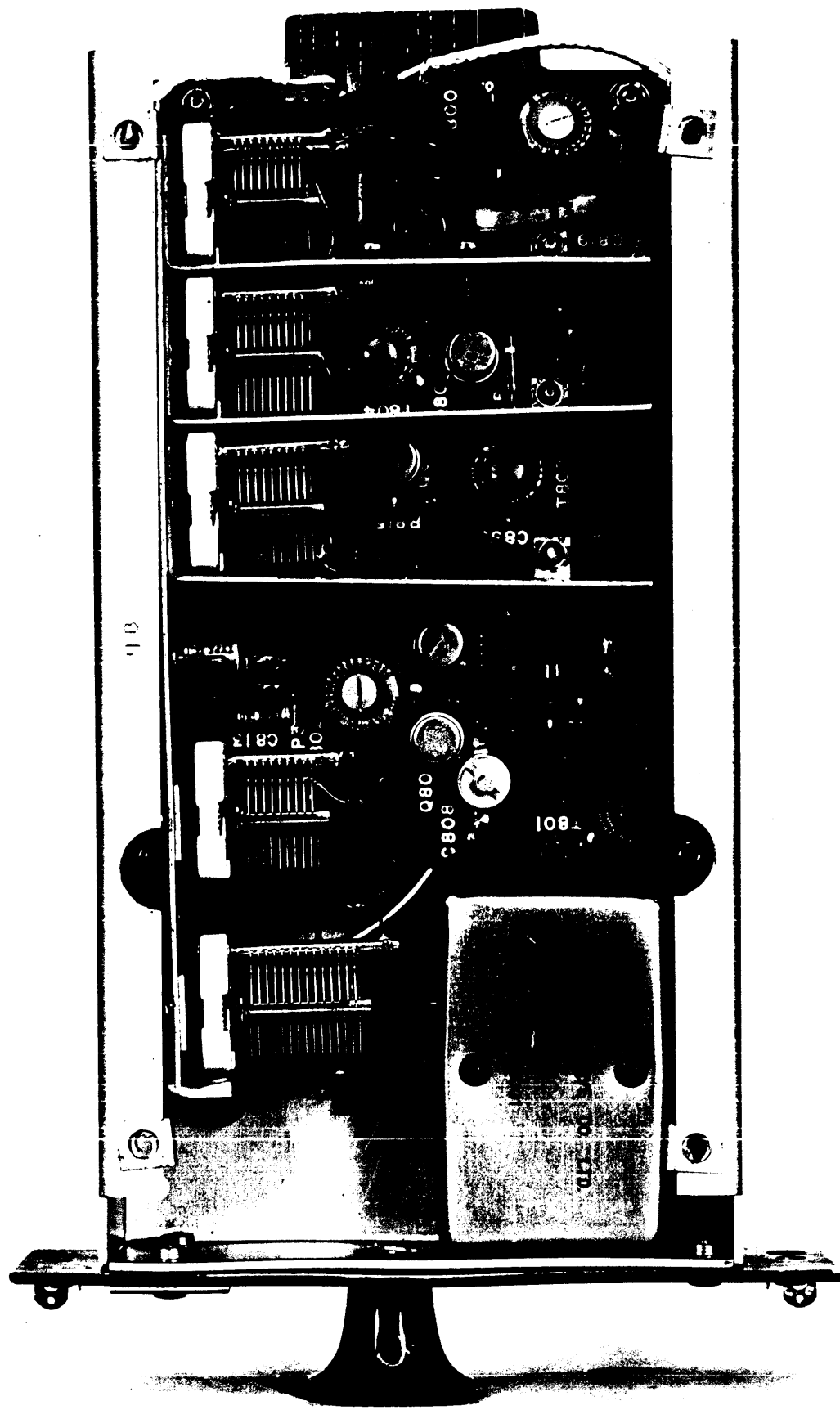
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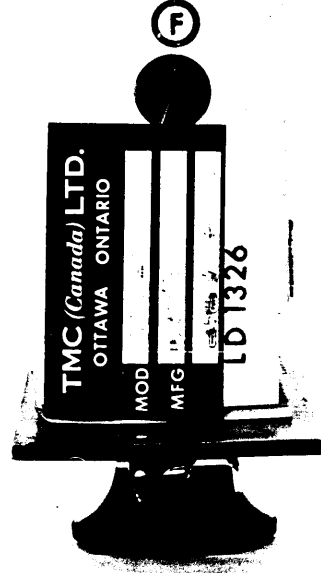
C8

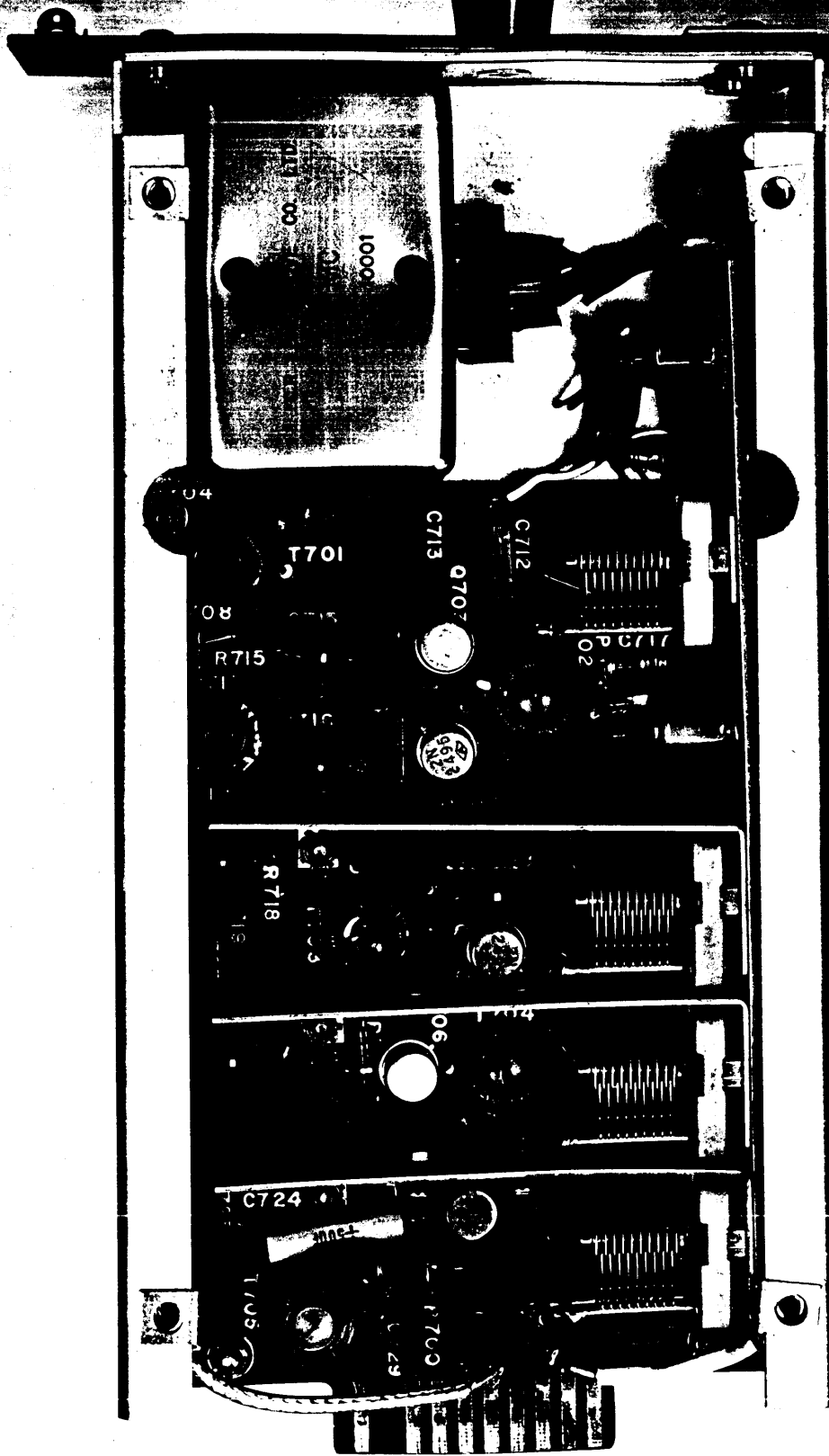
2

M1

M1







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CO. LTD.

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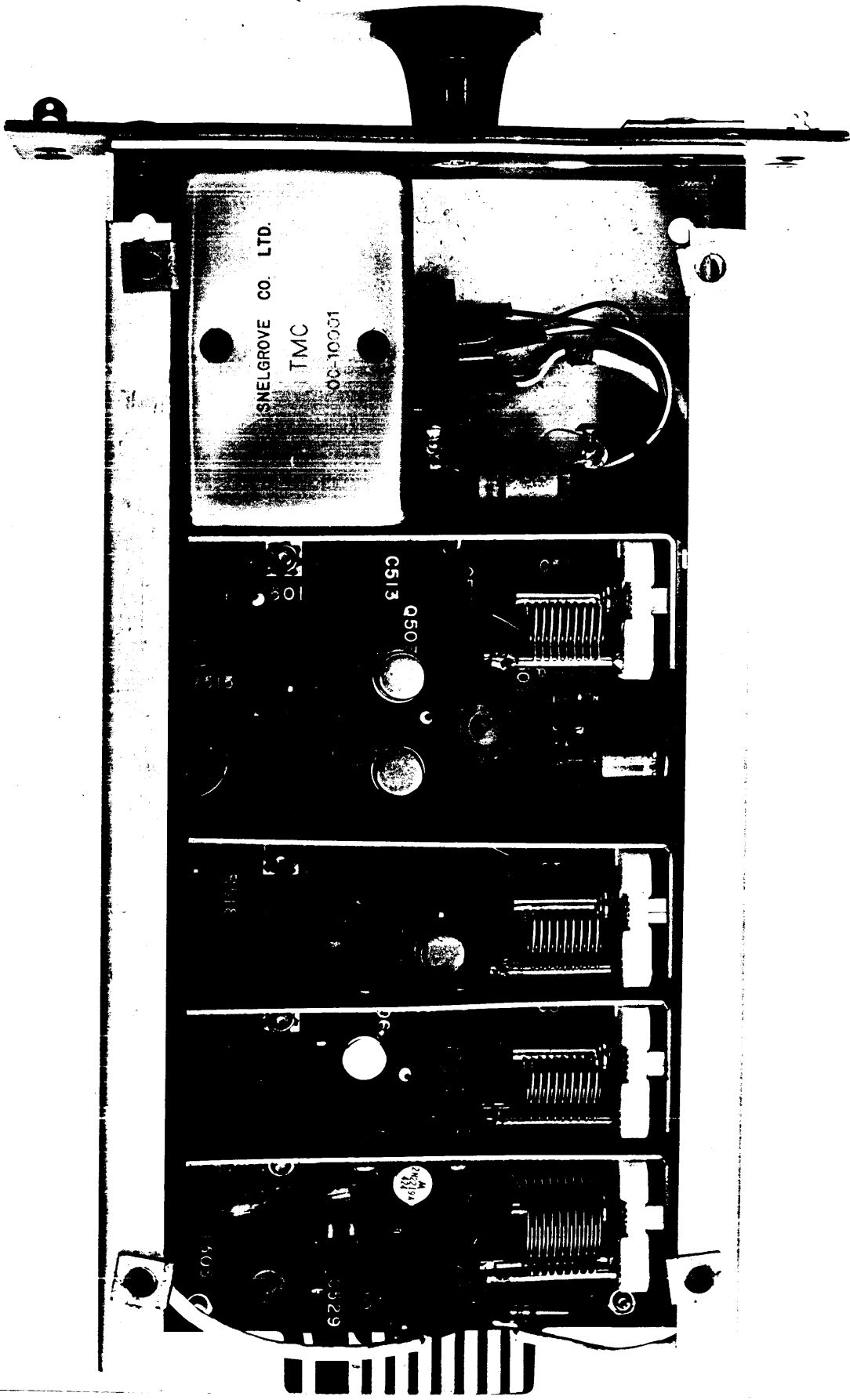
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1/05



SNELGROVE CO. LTD.

TMC

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