

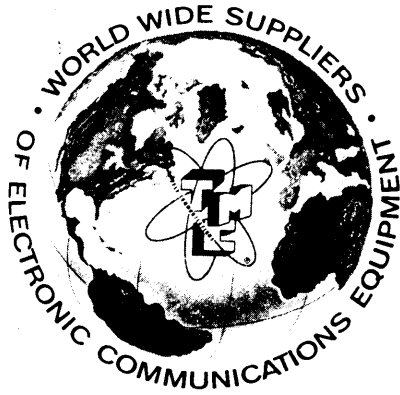


TECHNICAL MANUAL

FOR

ANTENNA MULTICOUPLER
AMC-32A

THE TECHNICAL MATERIEL CORPORATION



TECHNICAL MANUAL

FOR

ANTENNA MULTICOUPLER
AMC-32A

PUBLICATION NUMBER

120-040100-003

ISSUE DATE

Sept. 1979

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THE CONTENTS AND INFORMATION CONTAINED IN THIS INSTRUCTION MANUAL IS PROPRIETARY TO THE TECHNICAL MATERIEL CORPORATION TO BE USED AS A GUIDE TO THE OPERATION AND MAINTENANCE OF THE EQUIPMENT FOR WHICH THE MANUAL IS ISSUED AND MAY NOT BE DUPLICATED EITHER IN WHOLE OR IN PART BY ANY MEANS WHATSOEVER WITHOUT THE WRITTEN CONSENT OF THE TECHNICAL MATERIEL CORPORATION.

RECORD OF REVISIONS

NO.	EMN.# ISSUED	DESCRIPTION	ENTERED	BY
001	21797	R3, 100K, ½ w added Pg. 4-2,5-1	4-29-80	RU
002	21886	PAGES 4-5,5-5,5-8 REVISED	6-22-81	RU
003	21886	PAGES 4-6,5-2 — 4-6A ADDED	8-25-81	RU
004				
005				
006				
007				
008				
009				
010				

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THE TECHNICAL MATERIEL CORPORATION

C O M M U N I C A T I O N S E N G I N E E R S

700 FENIMORE ROAD

MAMARONECK, N. Y.

W a r r a n t y

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes, *fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

*Electron tubes also include semi-conductor devices.

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FIGURE 1-1 ANTENNA MULTICOUPLER, MODEL AMC-32A

SECTION 1
INTRODUCTION

1-1. GENERAL

The antenna multicoupler AMC-32A manufactured by The Technical Materiel Corporation, is an antenna-to-receiver coupling device which permits the use of a common antenna by a number of communication receivers.

The antenna multicoupler consists of a broadband transistorized pre-amplifier, output modules, power supply and optional filter(s).

1-2. TECHNICAL SPECIFICATIONS

Basic Model	AMC-32A
No. of Outputs	32
Frequency Range w/o Filters	100 KHz-60 MHz
Nominal Gain	2db
Noise Figure Less Than	7db
<u>Isolation</u>	
Output to Input db	55
Output to Output db	40
Desensitization of 3 db @	4V Peak
<u>Intermodulation</u>	
2nd order	60
3rd order	65
<u>VSWR</u>	
Max. Input	1.5
Max. Output	1.2

1-3. INSTALLATION AND ENVIRONMENTAL

Basic Model	AMC-32A
<u>Power Source</u>	
Volts ac	115/230
Freq. Hz	50-400
<u>Power Consumption</u>	
Watts	85
Weight lbs.	17 (8.10 Kg)
<u>Dimensions</u>	
Width	19" (48.25 cm)
Height	3½" (8.89 cm)
Depth	15½" (39.37 cm)

1-4. PHYSICAL DESCRIPTION

The AMC-32A is designed for mounting in a standard 19 inch rack. The unit is supported by four retaining screws on the front panel. All operating controls are located on the front panel. The input output and power supply connectors are mounted on the rear panel. The majority of the discrete components and semi-conductors are mounted on the printed circuit boards which in turn are fastened to the chassis. Some components are mounted directly on the chassis. The loose items supplied with the equipment are listed in table 1-1.

Name	Part No.	Function	Qty.
Power Cable Assembly	CA10625	For connection to power connector	1
Technical Manual		Technical manual	1

Table 1-1 Loose Items Supplied

1-5. FILTERS AVAILABLE

Table 1-2 lists the filters available for use with the AMC-32A. For characteristic curves of these filters refer to figure 1-2 and schematic diagram figure 5-2.

FILTER TYPE	TMC PART NUMBER	OHMS	FREQUENCY RANGE (NOMINAL)	CONNECTION IN/OUT
Band Pass	FX10018	75	2-32 MHz	BNC/BNC
Band Pass	FX10034	50	2-32 MHz	BNC/BNC

Table 1-2 Filters Available

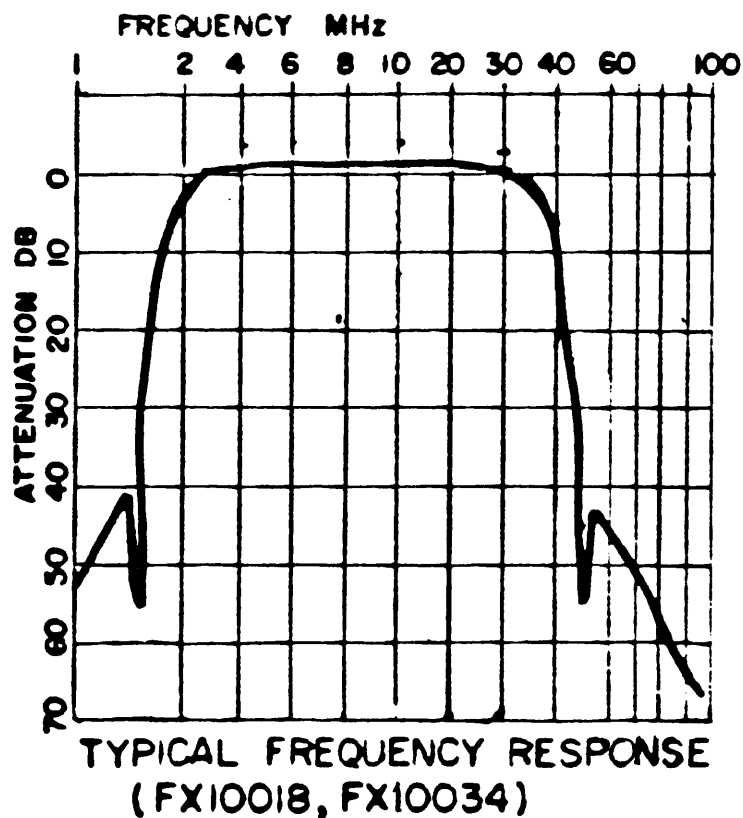


Figure 1-2

SECTION 2
FUNCTIONAL DESCRIPTION

2-1. GENERAL

The thirty-two output antenna multicoupler (AMC-32A) is a broadband and distribution system designed to couple a single 75 ohm or 50 ohm antenna to antenna inputs of up to thirty-two HF communications receivers. The antenna output is coupled directly to the preamplifier board.

The preamplifier (para. 2-2) is a low noise, wideband fully transistorized amplifier having a voltage gain of approximately 8 db. The output of the preamplifier is fed to a common feed line. This feed line distributes the signal to four identical 8-output circuits (para. 2-3). The thirty-two outputs are terminated at thirty-two output connectors with an overall nominal gain of 2 db for each output. The unit can be operated from 115/230vac, single phase 50 to 400 Hz power source. The built in power supply (para. 2-4) converts the ac supply into dc and then regulates it to the required voltage for operating the preamplifier and output module networks.

2-2. PRE-AMPLIFIER BOARDS (Figure 5-5, 5-7)

The input to the amplifier Q1 is coupled through a step-up transformer T1. Q1 provides the required voltage gain. The output of Q1 is coupled to a complementary push-pull amplifier circuit consisting of Q2 and Q3. The latter circuit serves a balancing function to minimize higher order intermodulation products. CR1 provides the required temperature compensation and R6, a variable resistor provides an adjustment for the standing current in the output circuit. The dc supply for operating the networks is -27 vdc.

2-3. OUTPUT MODULE (Figure 5-3, 5-6)

The general principle of the output module is described in this paragraph. Each module supplies eight (8) outputs. The AMC-32A requires four (4) modules or a total of thirty-two (32) outputs. The output module circuit consists of eight (8) identical emitter followers Q11 and Q81. The input from the RF distribution line is RC coupled through C11 and R11 to the base of the emitter follower Q11. The dc bias for the transistor is obtained from a voltage divider network R12 and R13. The output from the emitter follower is applied to the output terminal through a matched 75 ohm or 50 ohm load circuit consisting of R15 and R13.

2-4. POWER SUPPLY (Figure 5-4)

The AMC-32A antenna multicoupler can be operated from 115/230 vac supply. Changeover from 115 vac to 230 vac or vice versa can be made by simple modification of the input power transformer wiring. Primary power source is supplied to the power ON/OFF switch through an ac filter Assembly (A5780). This filter removes an RF content from the ac supply. When the switch S1 is in the ON position, the input power is provided through fuses F1 and F2 to power transformer T1 and power indicator DS1. T1 is a step down transformer and produces a nominal supply of 30 vac. Z1 is a diode bridge network. The AC supply is rectified by this circuit and smoothed by electrolytic capacitor C1 before being applied to the regulator board. Transistor Q2 mounted on regulator board A1 and transistor Q1, mounted on the main chassis form a darlington pair and provide the voltage and current regulation required for operation of the preamplifier and output module networks. Transistor Q2 and diode pair CR1 and CR2 form a voltage reference circuit, sensitive to temperature and load changes. The regulated voltage obtained from these circuits is -27 vdc.

SECTION 3
INSTALLATION AND OPERATION

3-1. INSTALLATION

UNPACKING

The AMC-32A antenna multicoupler has been thoroughly tested and calibrated at the factory before being shipped. Upon receipt of the unit, inspect the packing case and its contents for possible damage. Unpack the equipment carefully, and check the packing material for parts shipped as loose items. The latter are listed in Table 1-1. With respect to damage of the equipment for which the carrier is liable, The Technical Materiel Corporation will assist in describing methods of repair and furnishing of replacement parts.

3-2. POWER REQUIREMENTS

The AMC-32A can operate from either 115 or 230 vac, single phase, 50 to 400 Hz power source. The unit AMC-32A is normally factory wired for operation from 115 vac. If 230 vac operation is required, the jumper connections for transformer T1 must be changed as shown in figure 5-1. The input to units is protected by two fuses, one on each side of the line. Refer to figure 5-1 for the required fuses for either 115 vac or 230 vac operation.

3-3. EQUIPMENT LOCATION

The equipment should be located in such a way that there is sufficient clearance at the rear of the unit for insertion and removal of the output modules. Front panel controls should be easily accessible to the operator. Because of its solid state construction, heat problems have been virtually eliminated; thus several antenna multicouplers may be installed one above the other in a rack.

3-4. ELECTRICAL INSTALLATION

The following external connections must be made to the unit after it has been installed in a rack.

1. Connect the antenna to the ANTENNA INPUT jack on the rear panel using coaxial cable of the correct impedance.
2. Power: Connect primary power to the unit by plugging the supplied power cable assembly into POWER INPUT connector on the rear panel ensuring that the keyway on the plug lines up with the key at the top of the POWER INPUT jack.

NOTE

When making power connection be sure that the power transformer T1 is correctly wired and the fuses are of the proper value as outlined in figure 5-1.

When wired for 230 vac the power plug is not supplied and the plug to suit the installation must be installed by the customer.

3. Outputs: Connect the outputs from the output modules to the associated receivers as required using coaxial cable of correct impedance.

3-5. PERFORMANCE CHECK

LIST OF TEST EQUIPMENT REQUIRED

Equipment	Recommended MFR Part No.	Remarks
Multimeter	Simpson 260	For High Frequency
RF Signal Generator	HP606A	
Oscilloscope	Tetronix Model 453	

3-6. TEST PROCEDURES

1. Switch the power on and note that the power lamp is lit.
2. Check for -27 volts on the input pins of the preamplifier and the output boards.
3. Connect the RF signal generator to the antenna input jack of the AMC-32A multicoupler.
4. Set the level of the generator to 100 mv at a frequency in the operating range of the multicoupler.
5. Terminate one output jack of multicoupler in 50 ohms load and connect an oscilloscope across this load.
6. The oscilloscope should indicate an output level of 360 mv Peak to Peak. (130 mv rms)
7. Repeat (6) above for remaining output jacks of the antenna multicoupler.

SECTION 4
PARTS LIST

4-1. INTRODUCTION

Reference designations have been assigned to identify all electrical parts. These designations are marked on the equipment adjacent to the parts that they identify and are included on all drawings, diagrams and part lists. The letters of a reference designation indicate the generic group of the parts, such as capacitor, resistor, transistor, etc. The numeral differentiates between parts of the same generic group. Sockets associated with any particular plug-in device, such as a transistor or fuse, are identified by a reference designation which incorporates the designation used for that device as well as a prefix symbol. To expedite delivery when ordering replacement parts, specify the TMC part number and the name and model number of the equipment.

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
A1	VOLTAGE REGULATOR	A10746-5
A2	PREAMPLIFIER, 50 ohms	A10735-8
A2	PREAMPLIFIER, 75 ohms	A10735-7
A3 to A6	OUTPUT MODULE: 8 output, 50 ohms	A10714-6
A3 to A6	OUTPUT MODULE: 8 output, 75 ohms	A10714-5
C1	CAPACITOR: Electrolytic, 6800 uF	CE71C682G
DS1	LAMP: Neon	
F1,F2	FUSE: slo-blo, 1.0 amp (115 Vac operation only)	FU102-1
F1,F2	FUSE: slo-blo, 0.5 amp (230 Vac operation only)	FU102-.5
FL1	FILTER: RF, line	A5780
J1	CONNECTOR: RF female receptable	JJ172
J2 to J33	CONNECTOR: BNC, female receptable	UG625 B/U
J34	CONNECTOR: male receptable	MS3102A-14S-7P
R1,R2 R3	RESISTOR: fixed, composition, Resistor: Fixed Composition	RC20GF110J RC20GF104J
S1	SWITCH: toggle	ST22K
T1	TRANSFORMER: power	TF445
Q1	TRANSISTOR	2N3055
Z1	DIODE BRIDGE NETWORK	DD142-1

MAIN Chassis
FRONT & REAR PANEL

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1,C2,C12,C13, C22,C23,C32,C33, C42,C43,C52,C53, C62,C63,C72,C73, C82,C83	CAPACITOR: Fixed, mica 0.1 uF	CC100-28
C11,C21,C31, C41,C51,C61,C71 C81	CAPACITOR: Fixed, mica, 0.01 uF	CC100-43
L11,L21,L31,L41, L51,L61,L71,L81	INDUCTOR: RF coil, 33 uH	CL275-330
R11,R21,R31,R41, R51,R61,R71,R81	RESISTOR: Fixed, composition 100 ohms, $\frac{1}{4}$ W, 5%	RC07GF101J
R12,R22,R32,R42, R52,R62,R72,R82	RESISTOR: Fixed, composition 4.3 K, $\frac{1}{4}$ W, 5%	RC07GF432J
R13,R23,R33,R43, R53,R63,R73,R83	RESISTOR: Fixed, composition 3.3 K, $\frac{1}{4}$ W, 5%	RC07GF332J
R14,R24,R34,R44, R54,R64,R74,R84	RESISTOR: Fixed, composition 220 ohms, 1W, 5%	RC07GF221J
* R15,R25,R35,R45, R55,R65,R75,R85	RESISTOR: Fixed, film 71.5 ohms, $\frac{1}{4}$ W, 1%	RNG0D71R5F
Q11,Q21,Q31,Q41, Q51,Q61,Q71,Q81	TRANSISTOR	2N3866
* The value of R15 and R85 for -6 is 51.3 ohms		

8 OUTPUT ASSEMBLY
A10714-5 and -6

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1,C6,C4	CAPACITOR: Fixed, ceramic, 0.1 uF	CC100-28
C2	CAPACITOR: Fixed, tantalum, 6.8 uF	CSR13G685ML
C3,C5	CAPACITOR: Fixed, tantalum, 0.47 uF	CSR13G474ML
CR1	DIODE: Zener	1N758
CR2	DIODE	1N914B
R1	RESISTOR: Fixed, composition, 47K, $\frac{1}{2}$ W, 5%	RC20GF473J
R2	RESISTOR: Fixed, composition, 68K, $\frac{1}{2}$ W, 5%	RC20GF683J
R3	RESISTOR: Fixed, composition, 15 ohms, $\frac{1}{2}$ W, 5%	RC20GF150J
R4	RESISTOR: Fixed, composition 560 ohms, $\frac{1}{2}$ W, 5%	RC20GF561J
R5	RESISTOR: Fixed, composition, 1.2K, $\frac{1}{2}$ W, 5%	RC20GF122J
R6	RESISTOR: Fixed, composition, 2.9K, $\frac{1}{2}$ W, 5%	RC20GF392J
R7	RESISTOR: Variable, composition 1K, linear curve, $\frac{1}{4}$ W	RV111U102A
R8	RESISTOR: Fixed, composition, $\frac{1}{2}$ W, 6.8K, 5%	RC20GF682J
Q1	TRANSISTOR: NPN, silicon	TX10001
Q2	TRANSISTOR: PNP, silicon	2N5086

A1, REGULATOR ASSEMBLY
A10746-5

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1,C6	CAPACITOR: Fixed, ceramic 0.1 uF	CC100-28
C2	CAPACITOR: Fixed, mica 68 pf pF, 2% (used only in A10735-5 and -7)	CM104ED470G03
C3,C4,C5, C8,C9	CAPACITOR: Fixed, ceramic .01 uF	CC100-43
CR1	DIODE	1N914B
C10	CAPACITOR: Fixed, mica	CM111E680J1SS
R1	RESISTOR: Fixed, film, 680 ohms $\frac{1}{2}$ W, 2%	RL07S681G
R2	RESISTOR: Fixed, film 3K, $\frac{1}{4}$ W, $\frac{1}{2}$ W, 2%	RL07S822G
R3	RESISTOR: Fixed, film 3K, $\frac{1}{4}$ W, 2%	RL07S302G
R4	RESISTOR: Fixed, comp, 330 ohms, $\frac{1}{2}$ W, 5%	RC20GF331J
R5,R7	RESISTOR: Fixed, film 1.8K, $\frac{1}{4}$ W, 2%	RL07S182G
R6	RESISTOR: Variable, 500 ohms	RV10009-501AP
R8,R9	RESISTOR: Fixed, comp, 7.5 ohms, $\frac{1}{4}$ W, 5%	RC07GF7R5J
L1	INDUCTOR: RF coil, 33 uH	CL275-330
L2	INDUCTOR: RF coil, 0.33 uH	CL10044
L6	INDUCTOR: RF COIL, 1.5 UH	CL 500
L3,L4,L5	INDUCTOR: RF coil, 220 uH	CL275-221
T1	TRANSFORMER: RF	TR10005
Q1,Q2	TRANSISTOR	2N5160
Q3	TRANSISTOR	2N3866

PRE-AMPLIFIER ASSEMBLY

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1,C3,C9,C10, C13	CAPACITOR: Variable, air	CV112-7
C2,C6	CAPACITOR: Fixed, mica 56 pF, 1%	CM04ED560F03
C4,C8	CAPACITOR: Fixed, mica 5 pF	CM04CD050D03
C5	CAPACITOR: Fixed, mica 820 pF, 1%	CM06FD821F03
C7	CAPACITOR: Fixed, mica 91 pF, 2%	CM04FD910G03
C11	CAPACITOR: Fixed, mica 27 pF, 2%	CM04ED270G03
C12	CAPACITOR: Fixed, mica 1300 pF, 1%	CM06FD132F03
C14	CAPACITOR: Fixed, mica 43 pF, 2%	CM04ED430G03
DS1	LAMP: Neon glow	BI10005
J1,J2	CONNECTOR: BNC, receptable	UG290A/U
L1	INDUCTOR: RF coil 5.61 uH	CL10042-2
L2	INDUCTOR: RF coil .448 uH	CL10043-1
L3	INDUCTOR: RF coil 29.2 uH	CL10042-5
L4	INDUCTOR: RF coil 3.58 uH	CL10042-1
L5	INDUCTOR: RF coil .306 uH	CL10043-2
L6	INDUCTOR: RF coil 9.52 uH	CL10042-4
L7	INDUCTOR: RF coil 7-5 uH	CL10042-3

BANDPASS FILTER ASSEMBLY
(FX10018)

REF. DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1,C3,C9,C10,C13	CAPACITOR: Variable, air	CV112-7
C2	CAPACITOR: FIXED, MICA 82PF	CM04ED820G03
C4,C6	CAPACITOR: Fixed, mica 12 pF, 1%	CM05CD120J03
C8	CAPACITOR: Fixed, mica 47 pF	CM04ED470G03
C5	CAPACITOR: Fixed, mica 1300 pF, 1%	CM06FD132F03
C7	CAPACITOR: Fixed, mica 100 pF, 2%	CM04FD101J03
C11	CAPACITOR: Fixed, mica 43 pF, 2%	CM04ED430G03
C12	CAPACITOR: Fixed, mica 1200 pF, 1%	CM06FD122F03
C14	CAPACITOR: Fixed, mica 68 pF, 2%	CM04ED680G03
C15	CAPACITOR: FIXED MICA 750 PF	CM06FD751F03
C16	CAPACITOR: FIXED MICA 5 PF	CM04CD050D03
DS1	LAMP: Neon glow	BI10005
J1,J2	CONNECTOR: BNC, receptable	UG290A/U
L1	INDUCTOR: RF coil 3.75 uH	CL10050-2
L2	INDUCTOR: RF coil.299 uH	CL10051-1
L3	INDUCTOR: RF coil 19.45 uH	CL10050-5
L4	INDUCTOR: RF coil 2.93 uH	CL10050-1
L5	INDUCTOR: RF coil.204 uH	CL10051-2
L6	INDUCTOR: RF coil 6.35 uH	CL10050-4
L7	INDUCTOR: RF coil 5 uH	CL10050-3

BANDPASS FILTER ASSEMBLY
(FX10034)

SECTION 5
SCHEMATIC & ASSEMBLY DIAGRAMS
AMC-32A

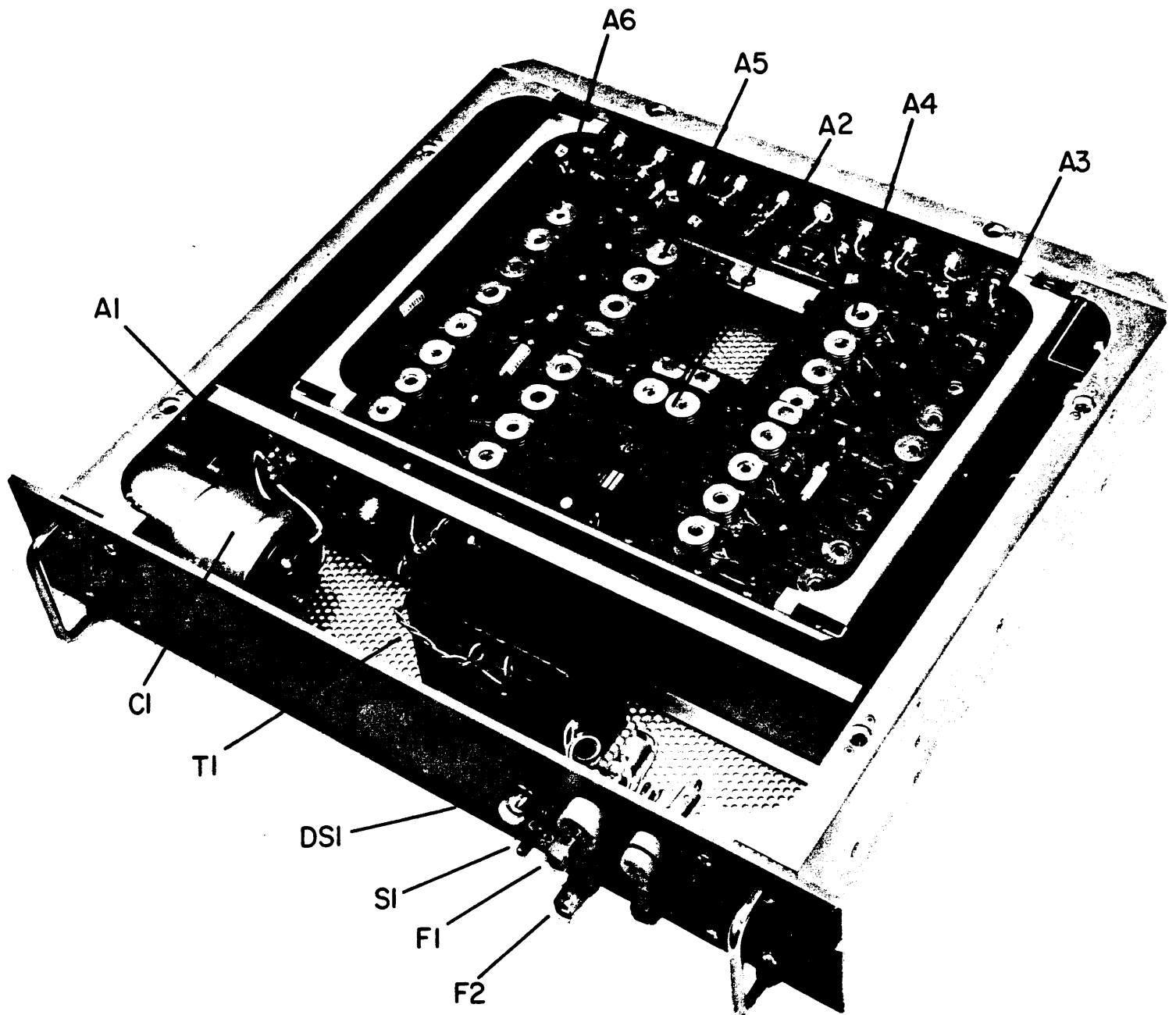


FIGURE 5-0 COMPONENT PARTS, MODEL AMC-32A

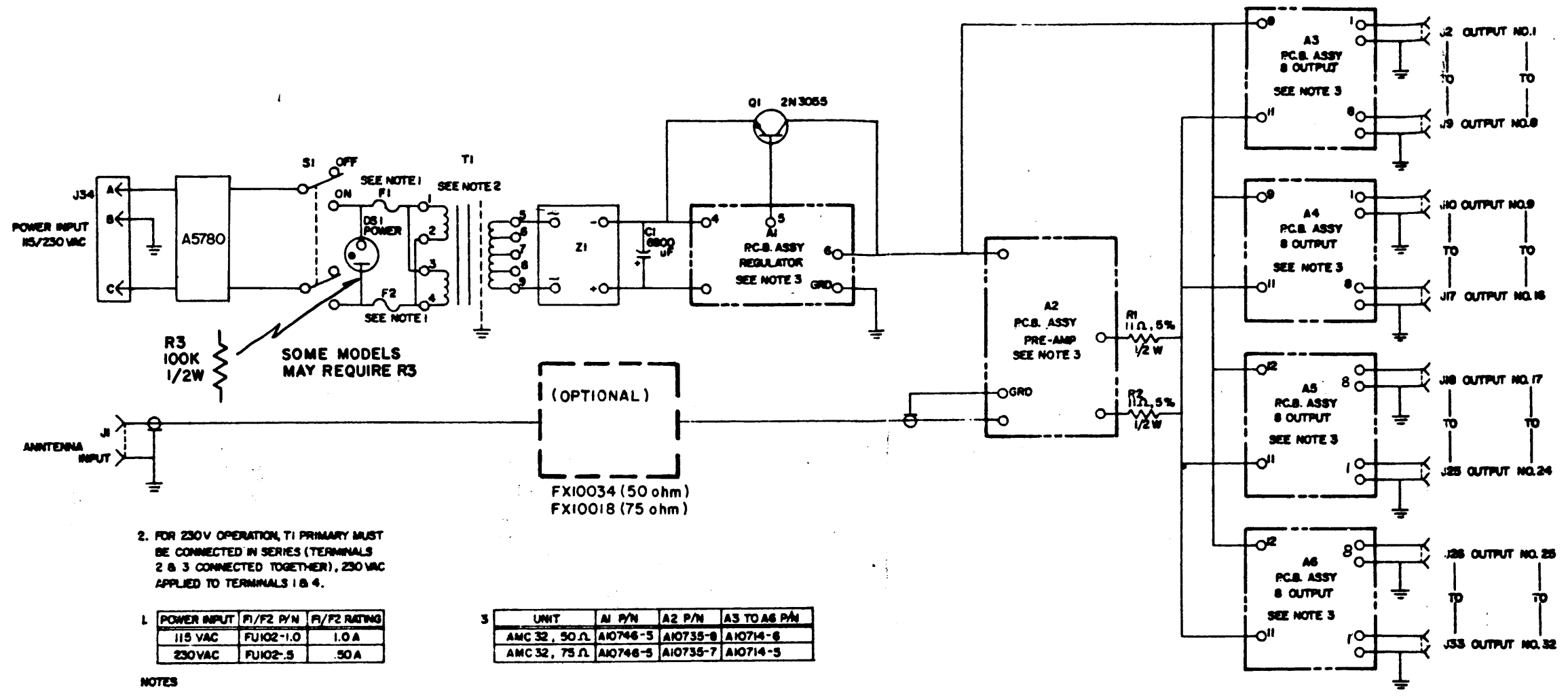
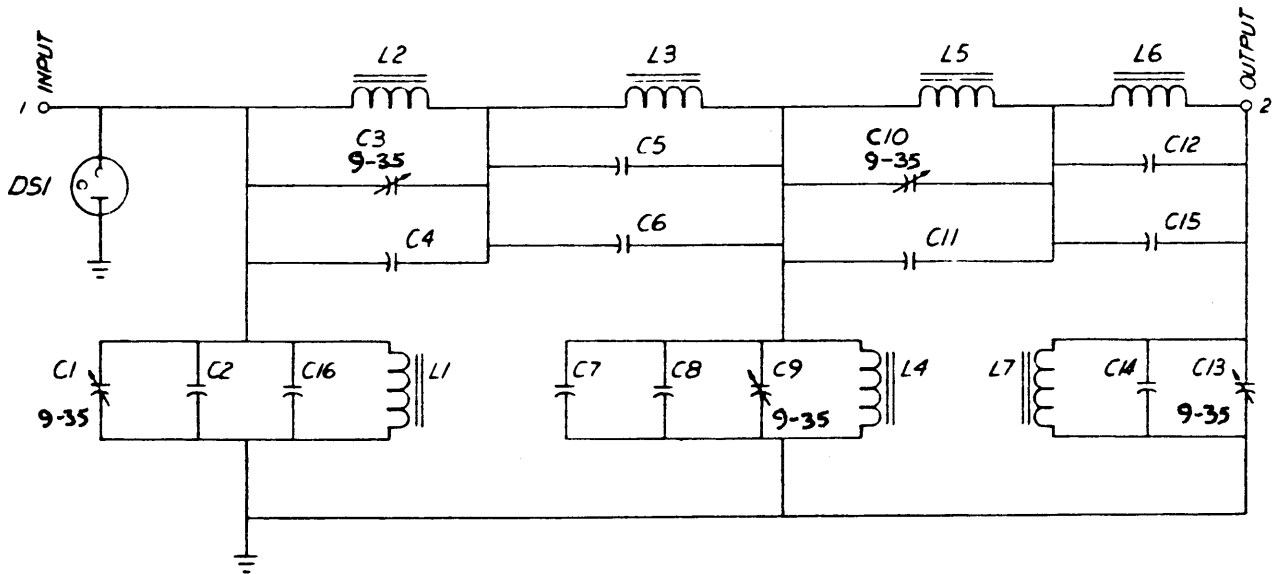


Figure 5-1
AMC-32A MAIN SCHEMATIC



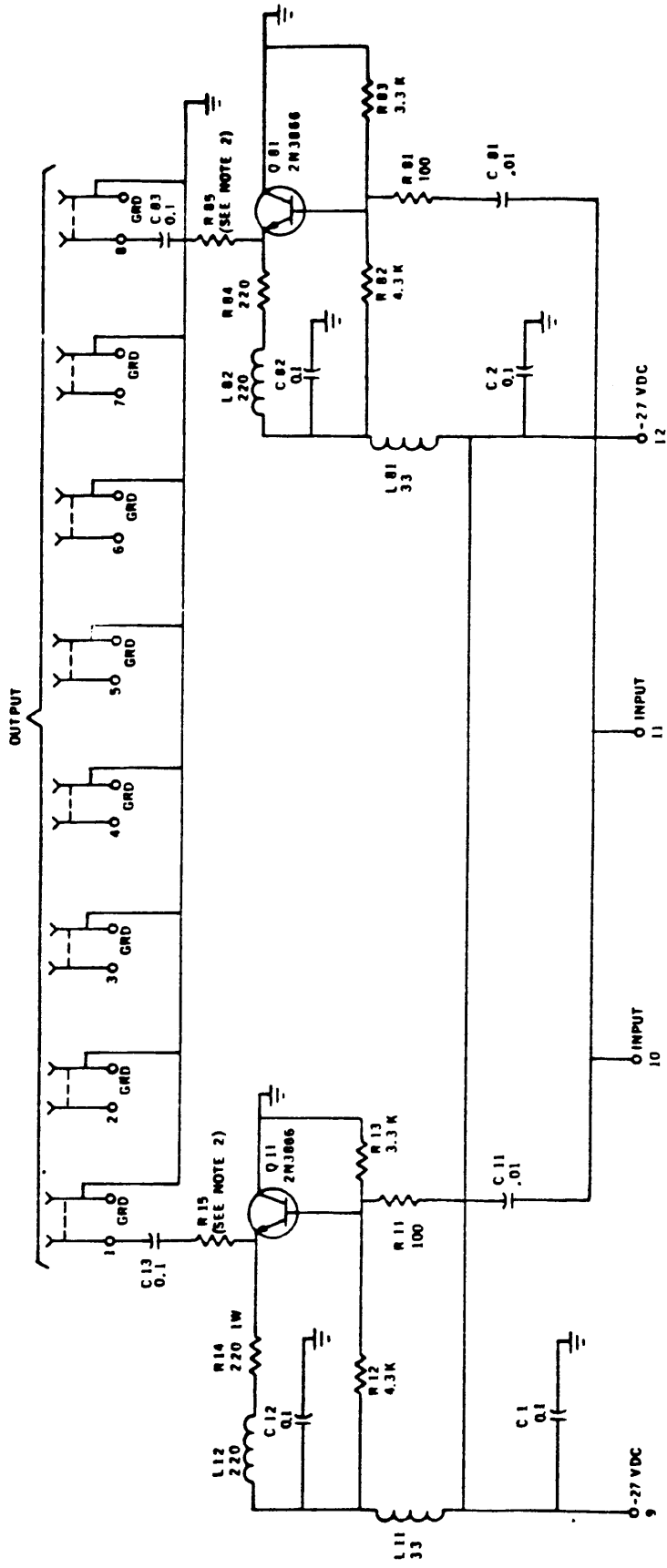
C16	DSI	L7	
LAST COMP USED		MISSING COMP	

FX10018	CK10660-2	75 Ω	5.61	.448	29.2	3.58	.306	9.52	7.5	56	5	820	56	91	5	27	1300	43	—	—
FX10034	CK10660-1	50 Ω	3.74	.299	19.45	2.39	.204	6.35	5	82	12	1300	12	100	47	43	1200	68	750	5
	SCHEMATIC	IMPEDENCE	L1	L2	L3	L4	L5	L6	L7	C2	C4	C5	C6	C7	C8	C11	C12	C14	C15	C16

BANDPASS FILTER

1. UNLESS OTHERWISE SPECIFIED:
 ALL RESISTANCE IN OHMS
 ALL INDUCTANCE IN MICROHENRIES
 ALL CAPACITANCE IN PICOFARADS
 NOTES

Figure 5-2
 BANDPASS FILTER



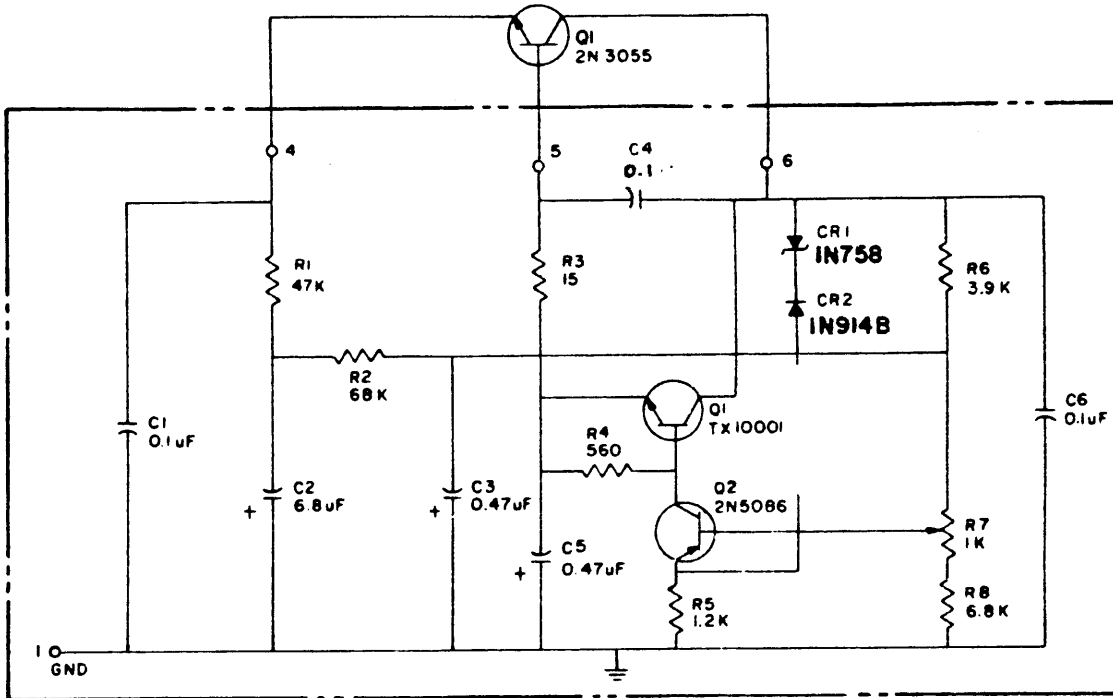
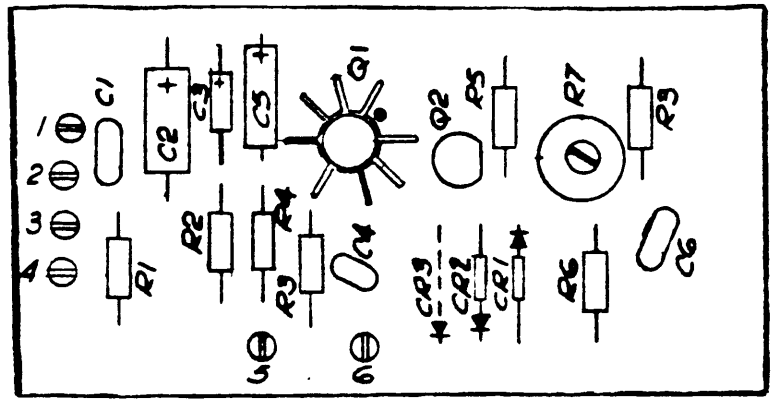
NOTES

- 1 INDUCTANCE IN MICROMHRIES
- CAPACITANCE IN MICROFARADS
- RESISTANCE IN OHMS
- UNLESS OTHERWISE STATED:

MODEL	R 15		R 85		ASSEMBLY NO
	50 Ω	75 Ω	50 Ω	75 Ω	
AMC 52	52,3	71,5	52,3	71,5	A-10714-6
					A-10714-5

2

Figure 5-3
(8) OUTPUT MODULE

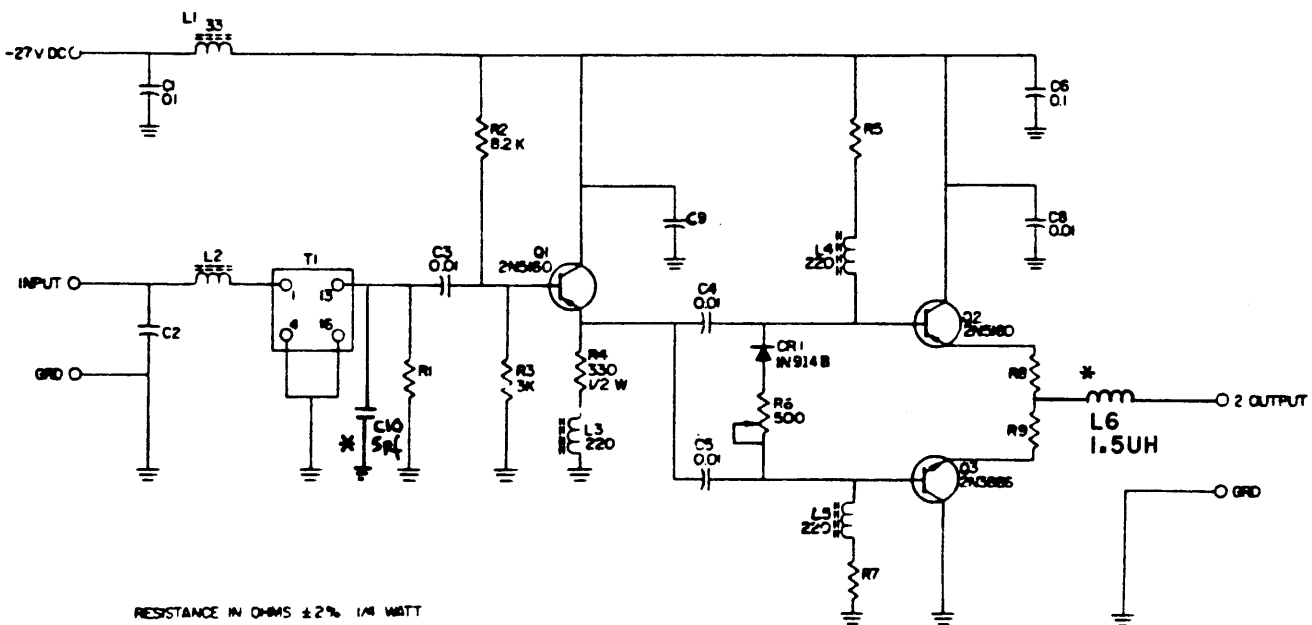


A10746-5

1. CAPACITANCE IN MICROFARADS
RESISTANCE IN OHMS .5 WATT
UNLESS OTHERWISE STATED:

NOTES

Figure 5-4
REGULATOR



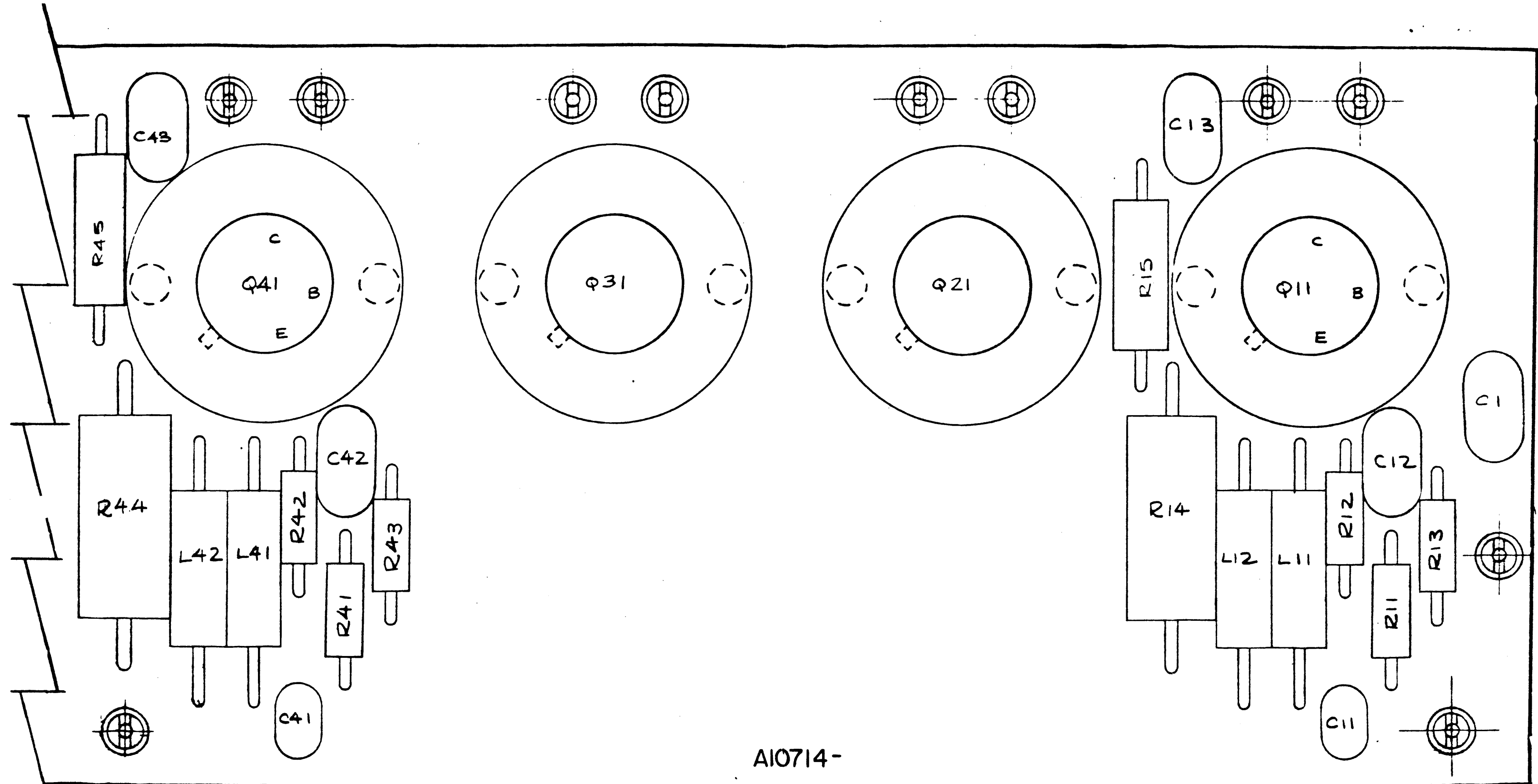
RESISTANCE IN OHMS $\pm 2\%$ 1/4 WATT
 CAPACITANCE IN μF
 INDUCTANCE IN μH
 UNLESS OTHERWISE STATED

NOTES

* C10 MAY NOT BE REQUIRED, WHEN REQUIRED VALUE MAY VARY
 L6 MAY NOT BE REQUIRED

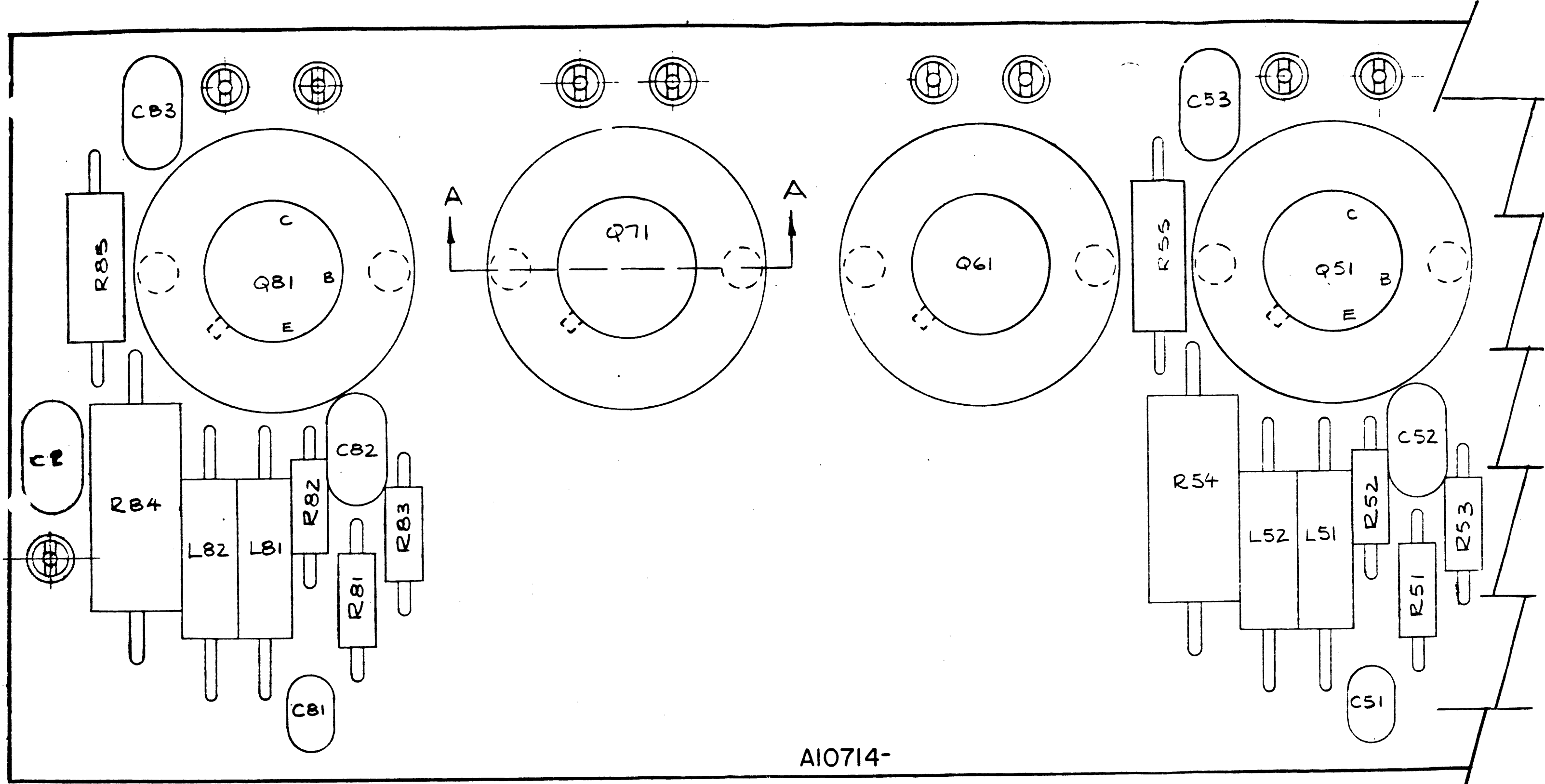
MODEL	C2	C7	C9	L2	R1	R5	R7	R8	R9	ASSEMBLY
AMC 32 50 Ω	68 pF	—	0.01 μF	0.33 μH	680 Ω	10K	10K	11 Ω OPTIONAL	11 Ω OPTIONAL	A10735-B
AMC 32 75 Ω	47 pF	—	0.01 μF	0.33 μH	1K	10K	10K	11 Ω OPTIONAL	11 Ω OPTIONAL	A10735-7

Figure 5-5
 PRE-AMPLIFIER



A10714-

Figure 5-6a
OUTPUT ASSEMBLY



A10714-

Figure 5-6b
OUTPUT ASSEMBLY

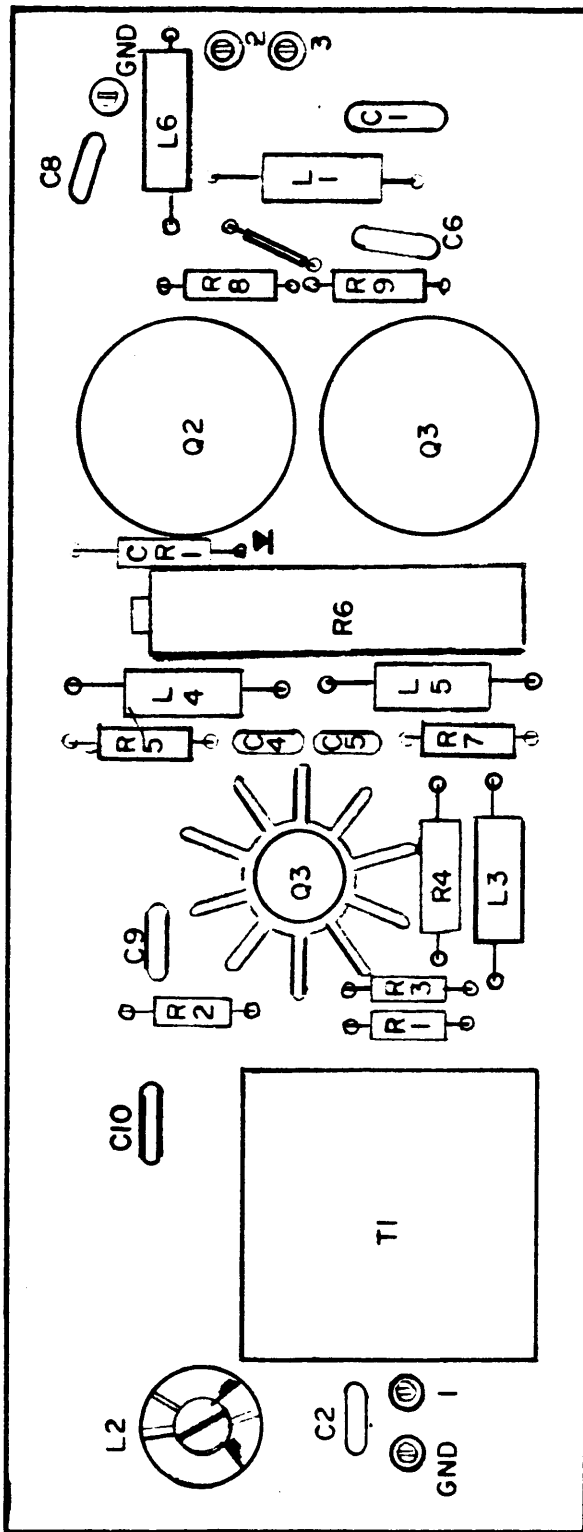


Figure 5-7 A10735-()

PRE-AMPLIFIER 1A3

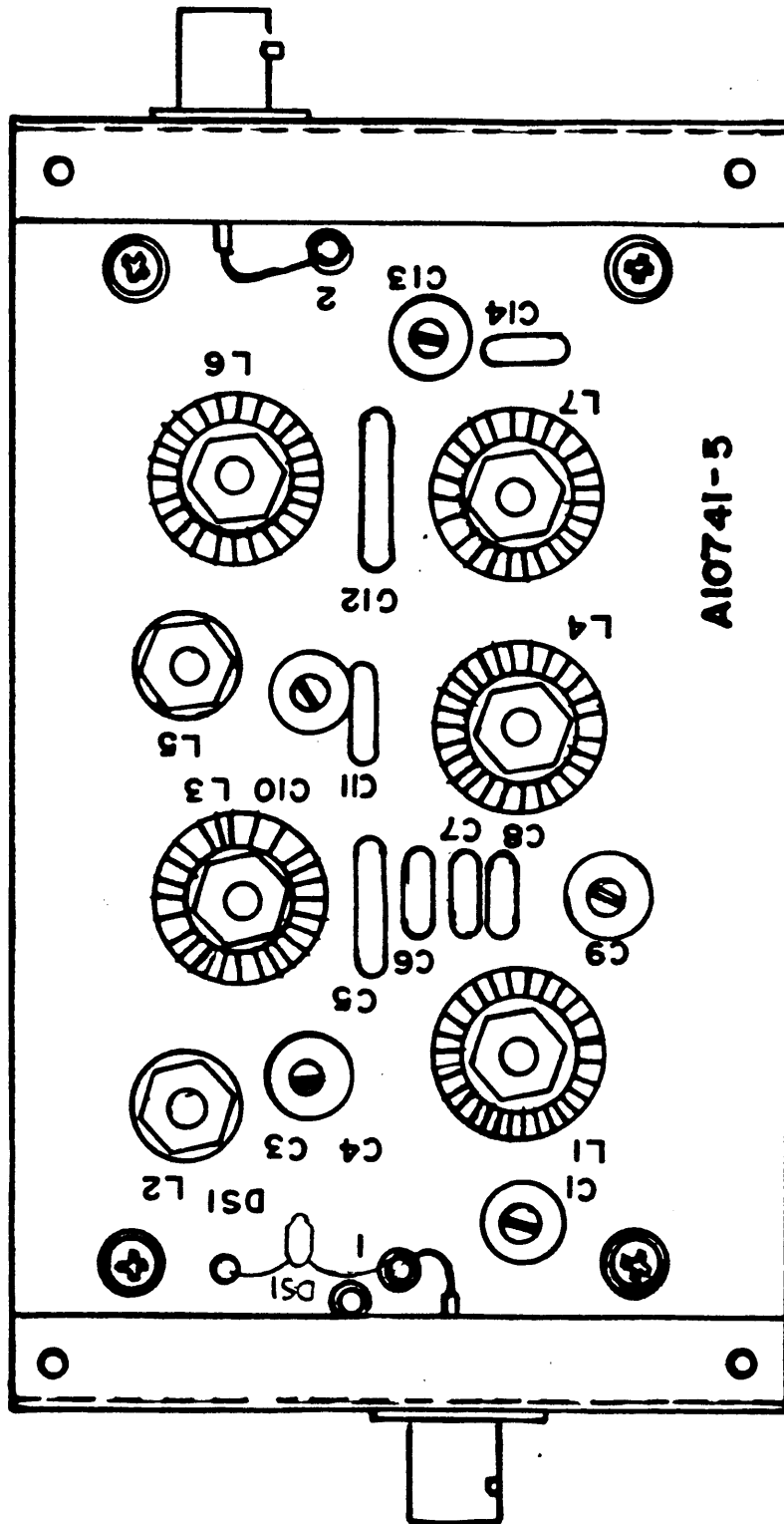


Figure 5-8

Bandpass Filter (FX10018-1) Assembly 1A2 Cover Removed

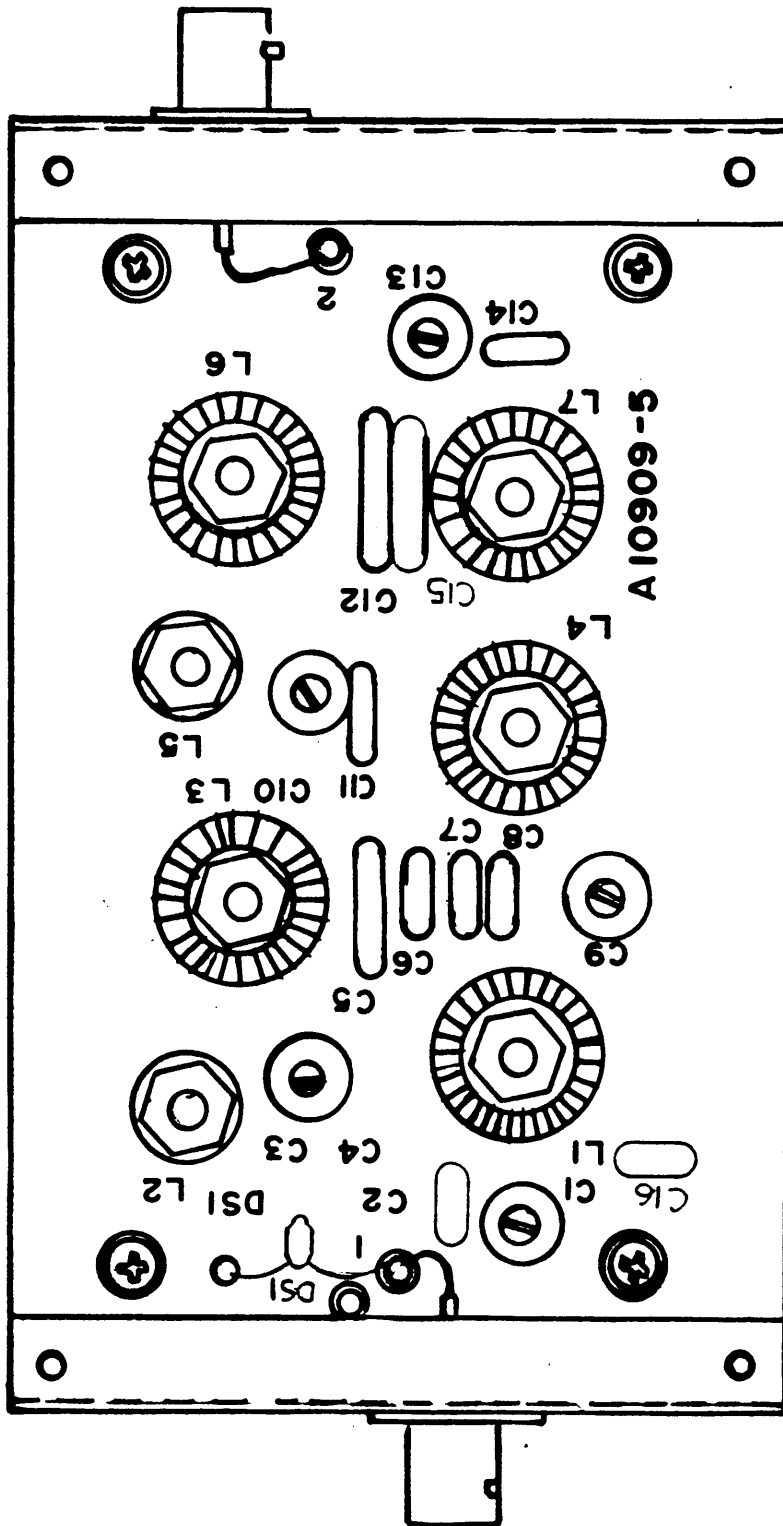
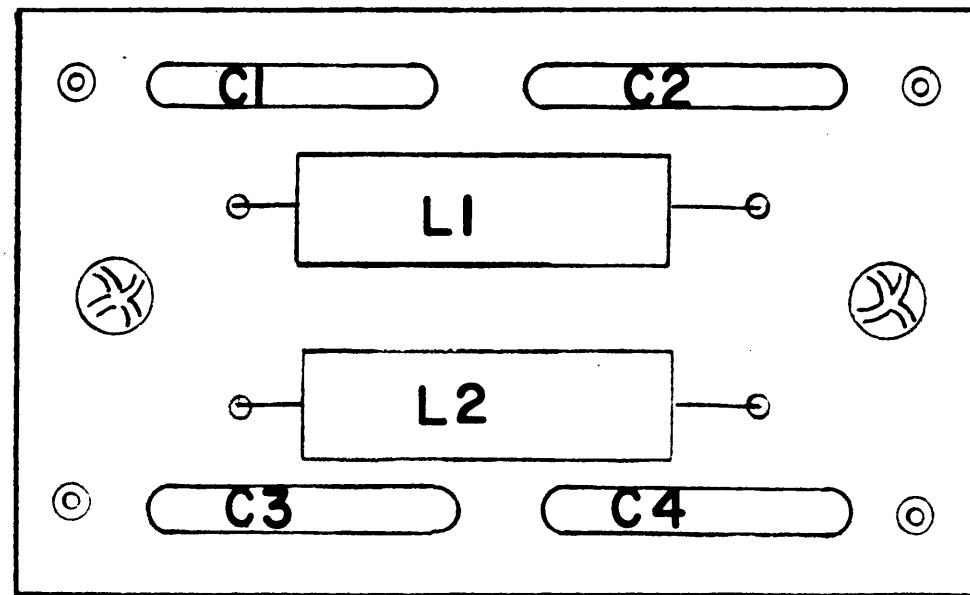


Figure 5-9

Bandpass Filter (FX10034) Assembly 1A2 Cover Removed

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1,C2 C3,C4	CAPACITOR: Fixed	CC100-32
L1,L2	COIL: Fixed	CL105-1



A5780 (FLI)

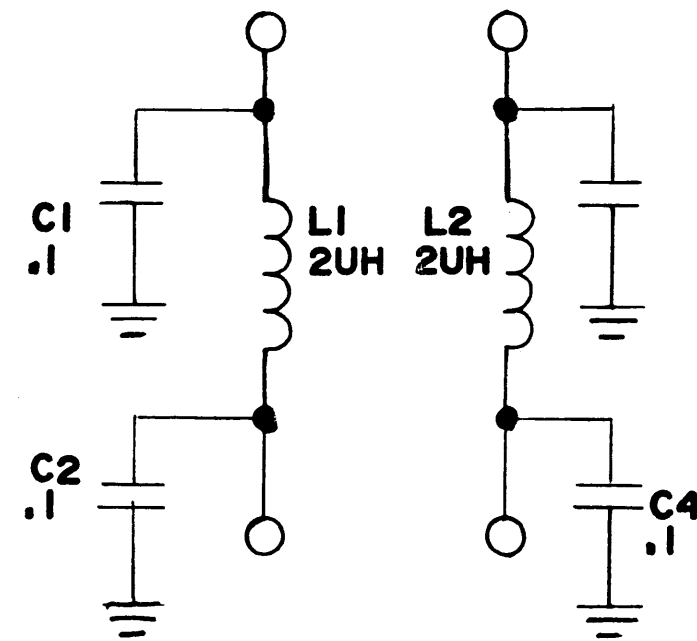


Figure 5-10

AC Filter Diagram