



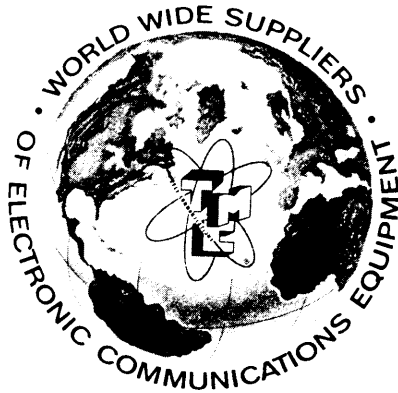
TECHNICAL MANUAL

FOR

ANTENNA MULTICOUPLER
AMC-21C

PUBLICATION NUMBER

THE TECHNICAL MATERIEL CORPORATION



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FOR

ANTENNA MULTICOUPLER - AMC-21C

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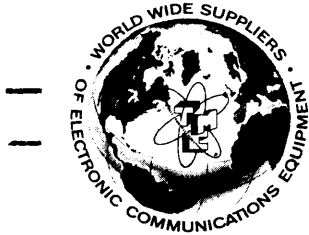
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Figure 1-1

ANTENNA MULTICOUPLER, MODEL AMC-21C

SECTION 1

GENERAL INFORMATION

1-1. FUNCTIONAL DESCRIPTION

The Antenna Multicoupler, Model AMC-21C, (figure 1-1) is a broadband antenna-to-receiver coupling device which permits the use of a common antenna by a number of communications receivers. It consists of a broadband transistorized preamplifier, optional filters, and a variable number of output modules.

The AMC-21C may be provided with any or all of its optional filters, or without any filters. The filters available are the broadcast band stop filter which cuts off all frequencies in the broadcast band, the high pass filter which cuts off frequencies below 2 MHz, and the low pass filter which cuts off frequencies above 2 MHz.

The basic AMC-21C provides 16 output stages (channels) for coupling a single antenna to 16 receivers. Inherent in the design of the AMC-21C is the capability of increasing or reducing the number of channels by adding or removing plug-in output modules in increments of two modules (four channels), so that units with 4,8,12 and 16 outputs are readily available. These models are designated AMC-21C-4, AMC-21C-8, AMC-21C-12 and AMC-21C-16. Unless otherwise noted, this manual will describe the AMC-21C-16; however, all models may be considered identical with respect to installation, operation, theory and maintenance.

Spurious signals generated in the AMC-21C are kept to a minimum. As a function of equipment design considerable reduction is achieved in the amplitude of signals re-radiated from one receiver to another or from any receiver to the common antenna system. The AMC-21C has built-in protection features against overloading in the antenna system by strong RF signals.

If operation of more than 16 receivers from a common antenna is desired, several AMC-21C's may be cascaded by connecting the individual outputs of one AMC-21C to the input connectors of additional AMC-21C units. This makes possible the operation of 16 x 16 or 256 receivers from a single antenna through 17 AMC-21C units. This cascading of units does not cause noticeable deterioration in their performance.

1-2. PHYSICAL DESCRIPTION

The AMC-21C is designed for mounting in a standard 19 inch wide rack, supported by its own front panel. All operator controls are located on the front panel, while the output modules plug into a receptacle in the rear panel. Most of the components are located on printed circuit board assemblies which in turn are mounted to the chassis. The remaining components are mounted directly to the chassis. The semiconductor and integrated circuit complement of the AMC-21C is given in Table 1-1. The loose items supplied with the equipment are listed in Table 1-2.

1-3. TECHNICAL SPECIFICATIONS

Frequency Range:	100 kHz to 32 MHz, (useable from 10 khz to 40 MHz).
Gain:	2 dB nominal
Frequency Response:	+ - 1.0 dB, from 100 kHz to 32 MHz.
Noise Figure:	Noise figure is such that the minimum discernible signal (MDS) will not be degraded.
VSWR:	Better than 1.5 to 1.
Input and Output Impedance:	50 or 75 ohms unbalanced (nominal).
Number of Outputs:	4,8,12 or 16
Intermodulation Distortion:	In no case are the second and third order products less than 60 dB below two 0.5v RMS signals applied at the input.
Back-to-Front Isolation:	Better than 60 dB down.
Output-to-Output Isolation:	50 dB average.
Output Phase Between Jacks:	$\pm 1^{\circ}$.
Filter Options:	Any or all of: a) Broadcast band stop filter b) High pass filter (rejects frequencies below 2 MHz). c) Low pass filter (rejects frequencies above 2 MHz).
Desensitization:	2.0v RMS, 10% removed in frequency, will reduce a 100 microvolt signal by no more than 3 dB.
Overload:	Protective device prevents components failure due to high RF voltage at input.
MTBF:	20,000 hours as per RADC reliability handbook.
Input Power:	115 or 230 vac, 50 to 400 Hz single phase.
Power Consumption:	25 watts (16 output channels)
Dimensions:	Height 3½ inches Width 19 inches Depth 14 inches
Weight:	25 pounds, approximately.

REFERENCE SYMBOL	TYPE	FUNCTION
Power Supply to Regulator CR1 CR2 Q1 Q2 1Q1 1Z1	1N758 1N252 TX10001 2N5086 2N3055 NW10005	Bias Regulator Bias Regulator Current Regulator Voltage Regulator Main Regulator Rectifier Bridge
Preamplifier 50 or 75 ohm CR1 Q1 Q2 Q3	1N456A 2N5160 2N5160 2N3866	Bias Regulator Buffer Current Amplifier Current Amplifier
Output Module 50 or 75 ohm Q3 Q4	2N3866 2N3866	Emitter Follower Emitter Follower

Table 1-1 Semiconductor and Integrated Circuit Complement, AMC-21C

NAME	DESIGNATION	FUNCTION	QTY.
Power Cable Ass'y.	CA10625	For connection to power connector J2	1
Connector Plug	BNCUG88/U	For connection to antenna jack J1	1
Connector Plug	BNCUG88/U	For connection to output modules	2
Technical Manual	120-040100C-000	Instructions for operation and maintenance of AMC-21C	1

Table 1-2 Loose Items Supplied, AMC-21C

SECTION 2

INSTALLATION

2-1. UNPACKING

Each AMC-21C 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, checking the packing material for parts shipped as loose items. The latter are listed in Table 1-2. 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.

2-2. POWER REQUIREMENTS

The AMC-21C can operate from either 115 or 230 vac, single phase, 50 to 400 Hz power source. It 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 7-1. For 115 vac operation, 0.75 amp fuses should be used in models AMC-21C-12 and AMC-21C-16; and 0.5 amp fuses should be used in models AMC-21C-4 and AMC-21C-8. For 230 vac operation, 0.4 amp fuses should be used in models AMC-21C-12 and AMC-21C-16; and 0.25 fuses should be used in models AMC-21C-4 and AMC-21C-8.

2-3. EQUIPMENT LOCATION

The AMC-21C 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 AMC-21C's may be installed one above the other in a rack.

2-4. ELECTRICAL INSTALLATION

Make the following connections from external equipment to the AMC-21C. Refer to figure 2-1 for guidance.

- a. Antenna: Attach the coaxial plug furnished with the AMC-21C to the antenna cable and connect it to ANTENNA INPUT jack J1 on the rear panel.
- b. Power: Connect primary power to pins A and C of POWER INPUT connector J2 on the rear panel using the power cord assembly provided. Ensure that the power transformer T1 is correctly wired and that fuses F1 and F2 are the proper values as outlined in paragraph 2-2.
- c. Outputs: Connect the outputs from the output modules to the associated receivers as required.

2-5. PERFORMANCE CHECK

Immediately after the AMC-21C has been installed it should be checked for proper operation by moving the power switch to the ON position. If POWER lamp DS1 lights up, correct installation has been made.

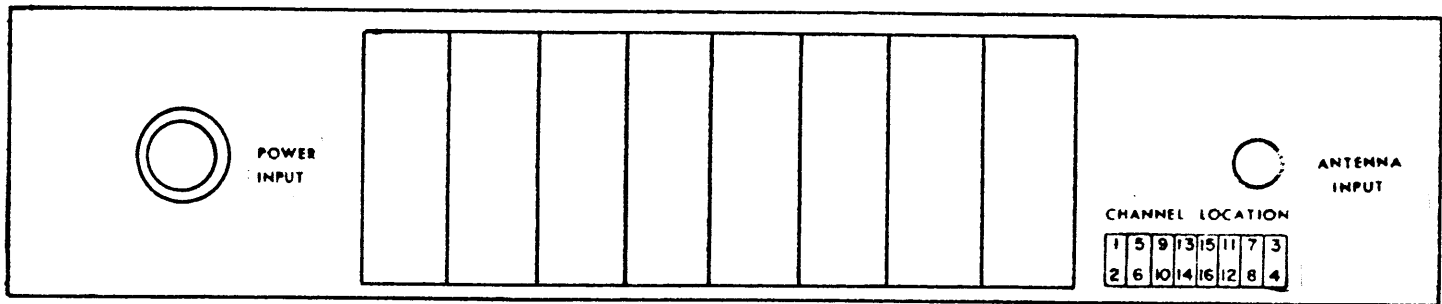


FIGURE 2-1 REAR PANEL, AMC-21C

SECTION 3
OPERATION

3-1. OPERATOR'S CONTROLS

Table 3-1 lists the operating controls, indicators and fuse holders on the front panel of the AMC-21C equipment.

3-2. OPERATING PROCEDURES

Operating procedures for the AMC-21C consist of turning on the power switch and selecting a filter if one is required.

CONTROL/INDICATOR	DESCRIPTION
FILTER Switch S1	Position 1 - broadcast band stop filter Position 2 - high pass filter Position 3 - low pass filter Position OUT - no filter
Power ON/OFF Switch S2	Controls primary power to the AMC-21C
POWER lamp DS1	Lights when primary power is connected to the AMC-21C and switch S2 is on.
Fuse holders for F1 and F2	Failure of a fuse is indicated by illumination of the fuse holder.

Table 3-1 Controls and Indicators

SECTION 4
PRINCIPLES OF OPERATION

4-1. GENERAL

The AMC-21C is a broadband distribution system interposed between a single antenna and the antenna terminals of a group of communications receivers. Input and output impedance of the AMC-21C is substantially constant over the specified frequency range within the limits of the voltage standing wave ratio (VSWR). The circuitry is comprised of four major circuits which are described in this section. Construction of the equipment is such that flexibility in the number of output channels is easily achieved.

4-2. INPUT CIRCUITS

The AMC-21C is normally supplied with one of two input impedances, 50 or 75 ohms, although other input impedances will be furnished on special request. The antenna input is connected to the preamplifier board assembly through an RF overload protection circuit, rotary switch S1 and a filter (if selected).

The RF overload protection prevents damage to components of the AMC-21C by large RF transients at the ANTENNA INPUT.

FILTER switch S1 may be positioned to insert one of three optional filters into the input circuit. When position 1 of the FILTER switch is selected, the input signal passes through the broadcast band stop filter which rejects all broadcast band frequencies, before being applied to the preamplifier. In position 2, the signal passes through the high pass filter which rejects all frequencies below 2 MHz, and in position 3, the signal passes through the low pass filter which rejects all frequencies above 2 MHz. When the OUT position of the FILTER switch is selected, the signal is channelled directly to the preamplifier without passing through any filters.

4-3. PREAMPLIFIER

The preamplifier is a low noise, wideband fully transistorized amplifier having a voltage gain of 8 dB. The two versions normally supplied with 50 to 70 ohm impedances are shown in Figure 7-2, and are mounted on printed assembly A10735.

The input to the preamplifier circuit is applied to step-up transformer T1 via pin 1. The voltage level across the secondary of T1 is fed through buffer transistor Q1 to a complimentary push-pull amplifier circuit consisting of transistor Q2 and Q3. The latter circuit acts as a balancing device minimizing intermodulation products at the preamplifier output. Compensation for temperature variation is provided by diode CR1. R6 functions as an adjustment for the standing current in the output circuit. The output signal appears at the output terminal (pin 2) after passing through dc blocking capacitor C7.

4-4. OUTPUT MODULE

The output module is available in two output impedance versions 50 or 75 ohms. They are designated models AX10055 and AX10056 and are mounted on printed circuit assemblies A10686-8 and A10686-7 respectively. Each module contains two output channels which have identical low impedance outputs. The modules are fully interchangeable so that any module may be plugged into any position.

NOTE

The position of the output modules is important when fewer than the full complement of 8 modules (16 channels) is being used. In order to minimize intermodulation distortion, and to balance the RF feedline from the preamplifier to the output modules, the arrangement must be kept symmetrical as shown in Figure 4-2 for 4, 8 and 12 channel operation.

The output module circuits consists of two separate emitter followers, Q3 and Q4. The output impedance is normally either 50 or 75 ohms (nominal) unbalanced, but other output impedance circuits will be provided to customers on special request. The input appears at pin 5 and is fed simultaneously into the two identical emitter follower circuits through resistors R4 and R5 and isolation capacitors C3 and C4 respectively. Two outputs are taken from the emitters of Q3 and Q4, through matching resistors R12 and R13, and dc blocking capacitors C5 and C6, to two RF connectors. They are represented as OUTPUT NO. 1 and OUTPUT NO. 2.

4-5. POWER SUPPLY & REGULATOR

The components comprising the power supply are all chassis mounted except for the regulator circuit which is mounted on printed circuit assembly A10746-5. The latter is described in 4-5 paragraphs (3) and (4).

Primary power is supplied to power ON/OFF switch S2 through an ac line filter, A5780, which removes any RF content from the line. When the switch is in the ON position, the input power is provided through fuses F1 and F2 to power transformer T1 and POWER indicator DS1. Jumper connections required across the primary winding of T1 to adjust for 115 or 230 vac inputs are shown in Figure 7-1. T1 secondary produces 28 vac as required by the regulator circuit. A diode bridge 1Z1 provides rectification and smoothing is achieved by an electrolytic capacitor C5.

The regulator printed circuit board assembly and transistor 1Q1 provide the voltage and current regulation required for the -27 vac supply. Potentiometer R7 is used to set up the initial -27 vdc required by the AMC-21C (See 5-5, adjustments).

Transistor Q2 and diode pair CR1 and CR2 form a voltage reference circuit sensitive to temperature and load changes. It in turn controls Darlington-connected transistors Q1 and 1Q1. These transistors along with their associated components provide the necessary voltage and current regulation for the power supply, including short-circuit protection.

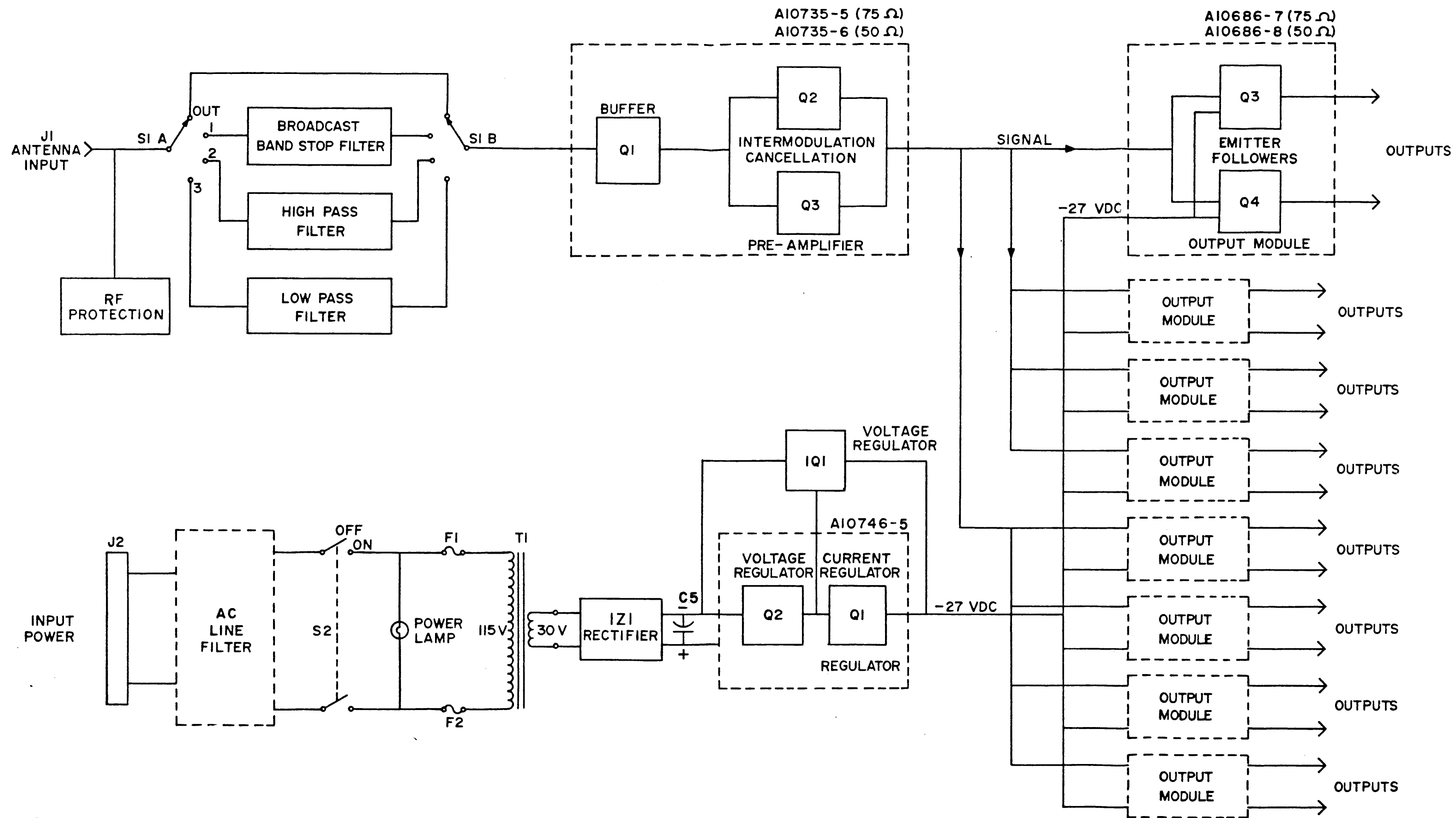
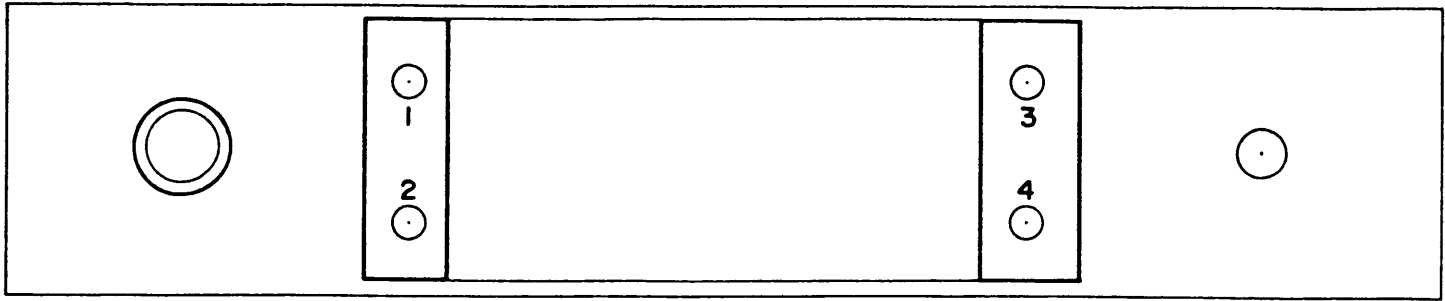
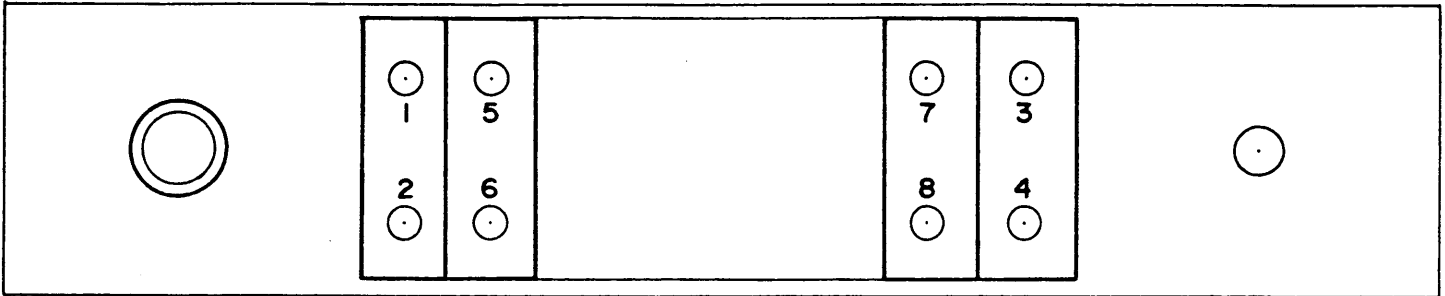


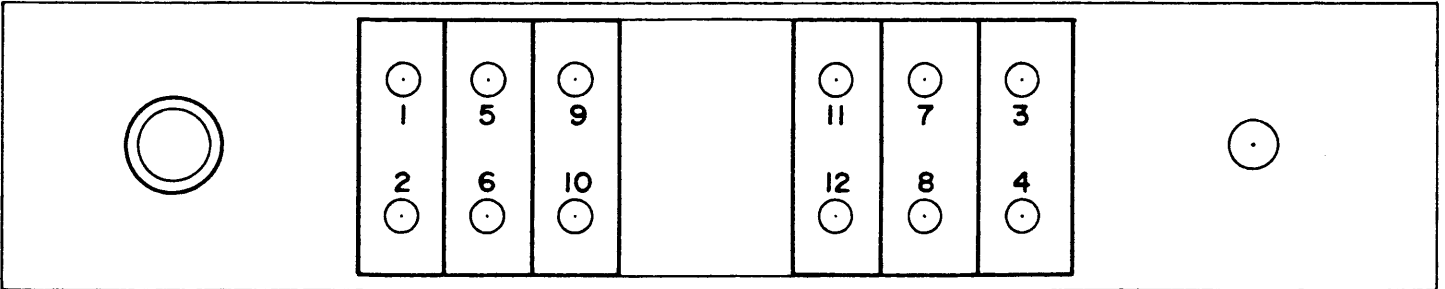
Figure 4-1
Block Diagram AMC-21C



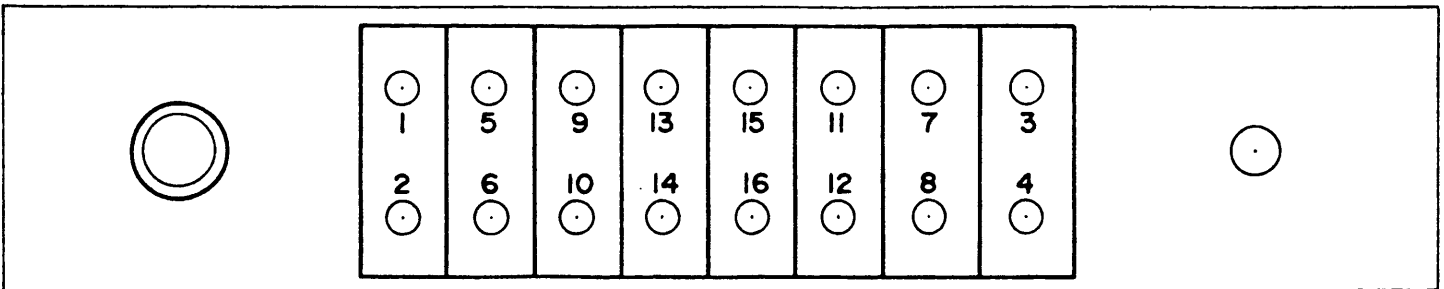
OUTPUT MODULE LOCATIONS WITH 4 CHANNEL OPERATION



OUTPUT MODULE LOCATIONS WITH 8 CHANNEL OPERATION



OUTPUT MODULE LOCATIONS WITH 12 CHANNEL OPERATION



OUTPUT MODULE LOCATIONS WITH 16 CHANNEL OPERATION

FIGURE 4-2 -- OUTPUT MODULE LOCATION FOR 4, 8, 12 & 16 CHANNEL OPERATION

SECTION 5
MAINTENANCE

5-1. GENERAL

This section describes preventive maintenance, troubleshooting and repair procedure for the AMC-21C equipment. The following test equipment is suggested in order to perform these procedures properly.

- a. RF Signal Generator, Hewlett Packard Model 606A or equivalent.
- b. Oscilloscope, Tektronix Model 545 or equivalent.

For aid in the location of components, refer to Figures 5-1 to 5-4 inclusive.

5-2. PREVENTIVE MAINTENANCE

In regard to the AMC-21C, preventive maintenance consists of routine functions such as visual inspection and cleaning. The latter is strongly recommended as dust may build up on components and not only reduce the efficiency of the coupler unit but also increase component failure. To facilitate cleaning the unit, use a vacuum cleaner or compressed air hose.

A simple visual check of the unit when it is opened up for servicing or cleaning will often expose potential trouble and hence reduce downtime due to component wear or failure. Signs of possible trouble are: discoloration, warped printed circuit assemblies and damaged wiring. Any deteriorating component should be replaced immediately. In addition all hardware should be checked for tightness.

5-3. TROUBLESHOOTING

The primary objective of this procedure is to narrow the problem area to one or two sections of the AMC-21C circuitry. In order to minimize labour costs while locating the source of trouble, systematic troubleshooting will greatly speed up the process, (as outlined in Table 5-1, Troubleshooting Hints.)

5-4. REPAIR

Repair work generally consists of the replacement of an electrical component, however the following precautions should be observed:

- a. Always replace a component with its exact duplicate.
- b. Place any new components in the same position as the one it replaces. It is not good practice to alter the existing layout. This includes the layout of wiring as well as discrete component replacement.
- c. Never attempt to solder with an iron having a power rating of more than 100 watts. Use a pair of long-nose pliers as a heat sink to offer protection while soldering.
- d. Extreme caution is called for whenever the replacement of components is warranted because excessive heat applied to a board may cause the printed circuit wiring to lift off.

- e. Always double check any solder joints made as cold or loose solder connections can cause trouble at a later date.

5-5. ADJUSTMENTS

There are two main areas in the AMC-21C circuitry that should be checked periodically and may require adjustment. They are as follows:

- a. Regulator: There is a screwdriver adjustable potentiometer R7 on the regulator printed circuit assembly. An arrow on the schematic denotes clockwise adjustment which lowers the regulated output voltage. It is adjusted to produce -27 vdc. Refer to Figure 7-6.
- b. Preamplifier: Screwdriver adjustable potentiometer R6 should be set to supply 90 ma. dc current to the preamplifier. To accomplish this, both wires must be removed from pin 3 of the preamplifier assembly and a dc current meter inserted.

Potentiometer R6 should then be adjusted until a reading of 90 ma. is observed. An arrow on the schematic denotes clockwise adjustment which lowers the standing current on the complimentary circuit. Refer to Figures 7-2.

SYMPTOM	FAULT	REMEDY	REMARKS
1. NO OUTPUT (on one output channel)	a) Defective output transistor (Q3 or Q4) in output module	Replace	Check associated transistor before re-applying power
	b) Choke (L3 or L4) open in output module	Replace	
	c) Input coupling capacitor (C3 or C4) open in output module	Replace	
	d) Cold solder joint on that particular jack	Resolder	
	e) Output coupling capacitor (C5 or C6)	Replace	
2. NO OUTPUT (both output channels on same module)	a) Choke L1 open circuited	Replace	Check both transistors before re-applying power. Check C1 for short circuit.
	b) Poor solder joint on input connector pin 5	Resolder	
3. NO OUTPUT (all output channels)	a) Check all preamplifier chokes for continuity	Replace if open circuited	Check associated semiconductors before re-applying power Repeated soldering of terminals can cause loosening
	b) Defective semiconductor in preamplifier	Replace	
	c) Loose terminals on preamplifier printed circuit board	Resolder carefully	
4. EXCESSIVE INTER-MODULATION DISTORTION (All outputs)	a) Q1 defective in preamplifier	Replace	
5. POOR INPUT VSWR	a) Q1 defective in preamplifier	Replace	
	b) Input transformer T1 defective	Replace	
	c) Preamplifier completely inoperative (due to loss of supply voltage etc.)	Locate in area in which trouble originates	
6. HIGH DC SUPPLY VOLTAGE (Approx. 30v and pot R7 is ineffective)	a) Q2 defective in regulator	Replace	Replace mica insulating washer and apply heat conducting compound
	b) 1Q1 defective	Replace	
7. NO DC SUPPLY VOLTAGE	a) 1Q1 defective	Replace	Replace mica washer and apply heat conducting compound
	b) No primary power	See No. 9	
8. LOW DC SUPPLY VOLTAGE (Pot R7 is ineffective)	a) C5 open b) Diode bridge 1Z1 defective (one or two arms)	Replace	

Table 5-1 Troubleshooting Hints

SYMPTOM	FAULT	REMEDY	REMARKS
9. NO PRIMARY POWER	a) Primary or secondary of T1 open b) Defective POWER ON/OFF switch S2 c) AC line filter open	Replace Replace Replace	
10. FUSE F1 and/or F2 BLOWS (immediately after application of power)	a) Incorrect fuse b) C5 shorted c) 1Z1 shorted d) T1 primary or secondary shorted	Consult Section 2, 2-2 Power Requirements Replace C5 and insert new fuse Replace 1Z1 and insert new fuse Replace T1 and insert new fuse	Check if case of C5 is shorted to chassis
11. FUSE F1 and/or F2 BLOWS (after a delay when power is turned on)	a) Shorted turn (s) in either the primary or secondary winding of the power transformer T1 b) Defective Regulator Assembly A10746-5 c) 1Z1 partially shorted (one arm)	Replace T1 and insert new fuse Refer to No. 6, 7 or 8 in this table Replace	

Table 5-1 Troubleshooting Hints

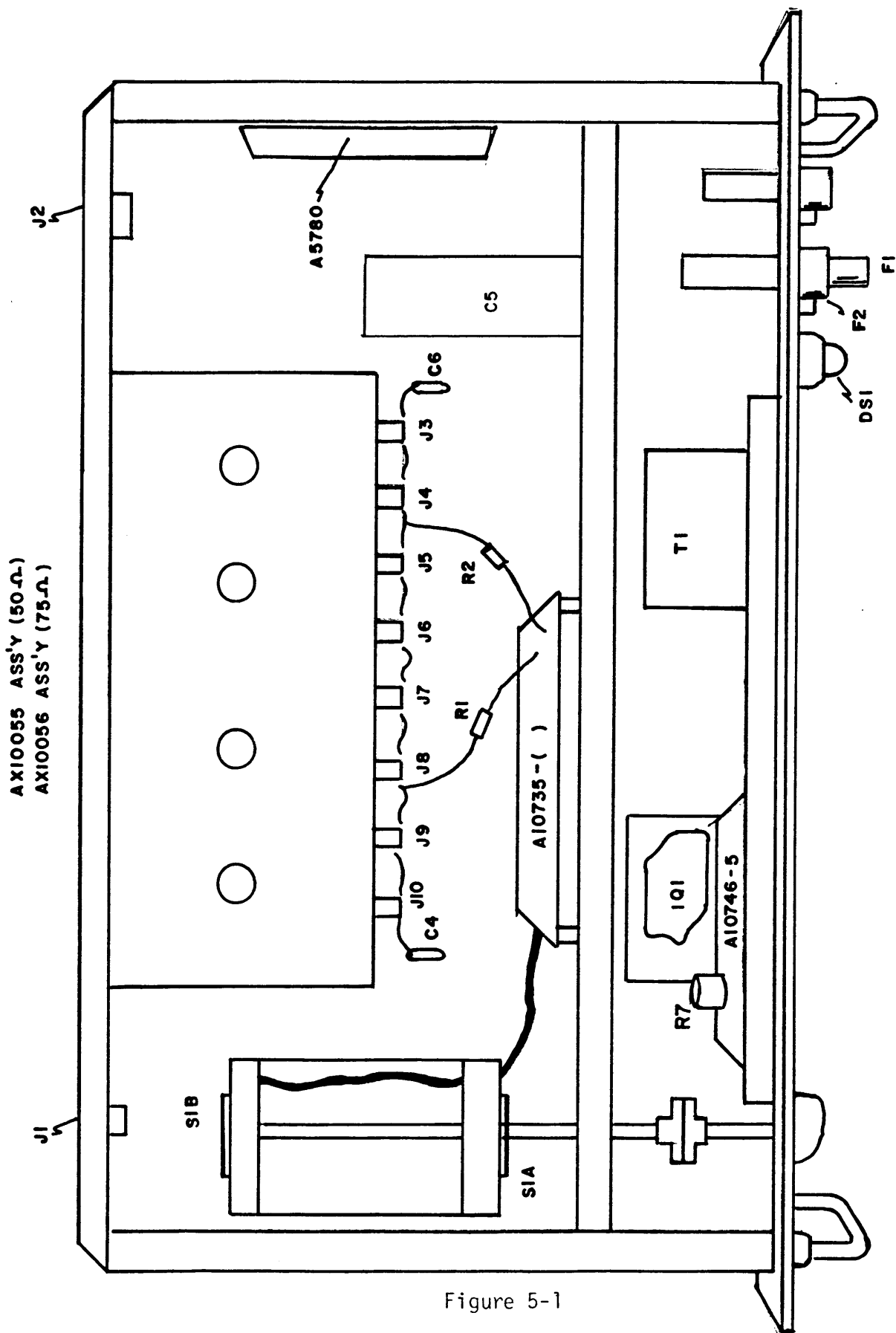
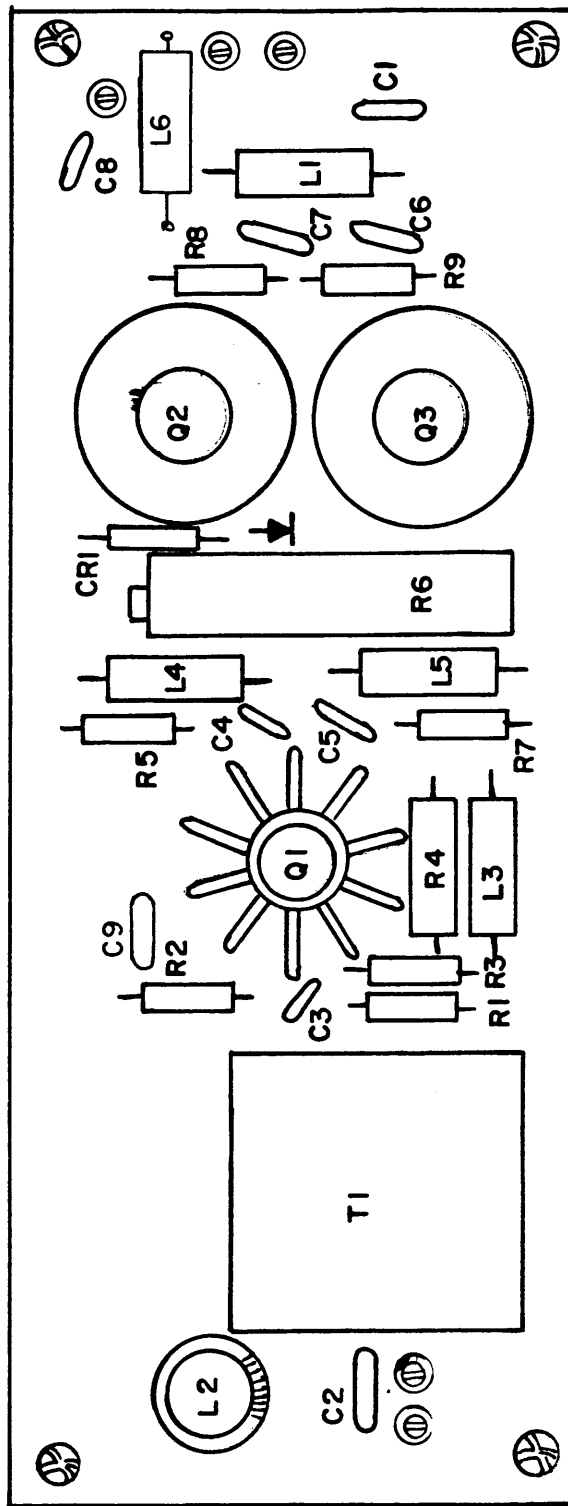


Figure 5-1

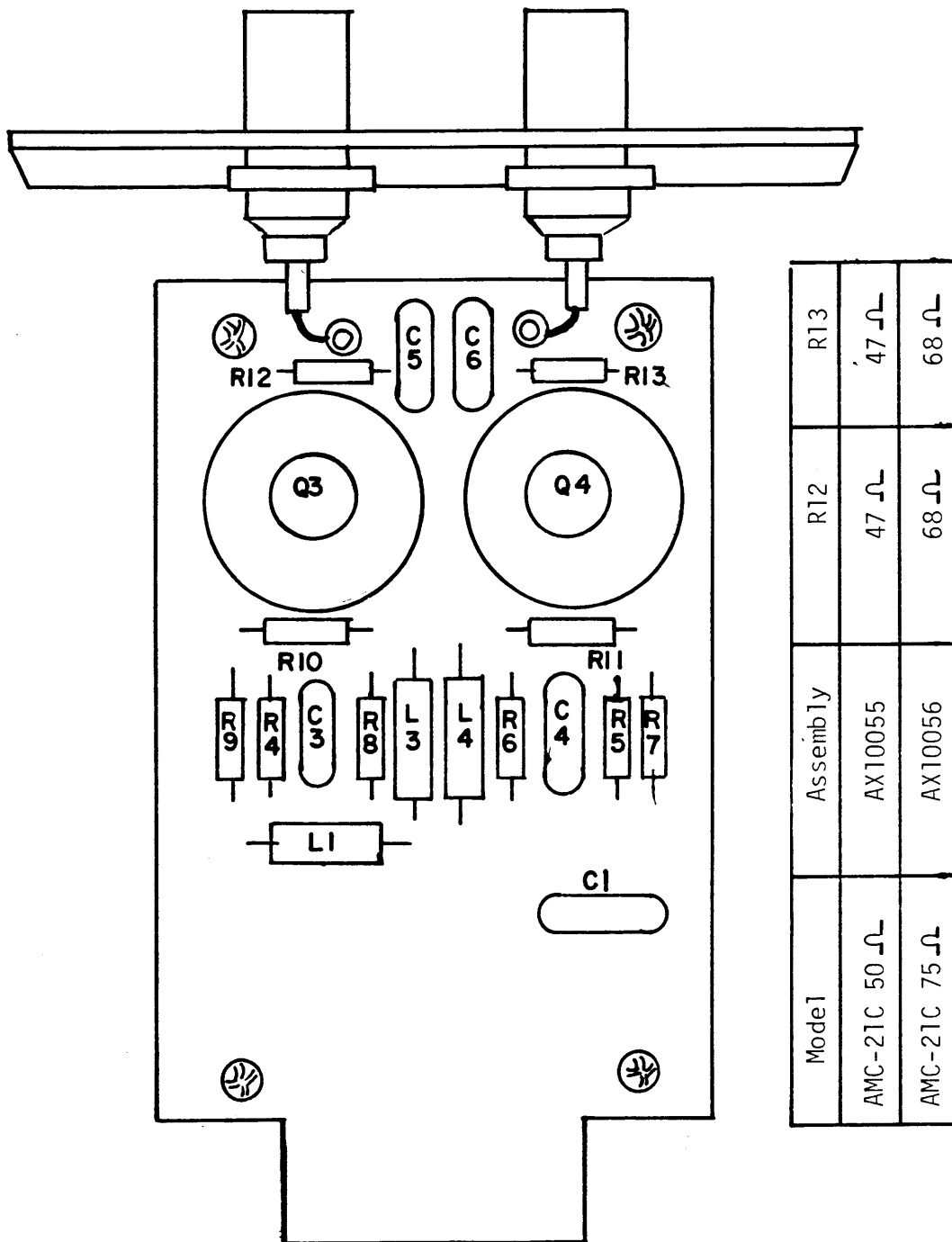
Top View With Cover Removed AMC-21C



Model	C2	C7	C9	L2	R1	R5	R7	R8	R9	Assembly
AMC-21C, 50 Ω		.1uF	.01uF		510 Ω	2K	2K	7.5 Ω	7.5 Ω	A10735-6
AMC-21C, 75 Ω	47pF	.1uF	.01uF	.33uH	910 Ω	2K	2K	7.5 Ω	7.5 Ω	A10735-5

Figure 5-2

Preamplifier Assembly A10735- ()



Model	Assembly	R12	R13
AMC-21C 50 Ω	AX10055	47 Ω	47 Ω
AMC-21C 75 Ω	AX10056	68 Ω	68 Ω

Figure 5-3
Output Module

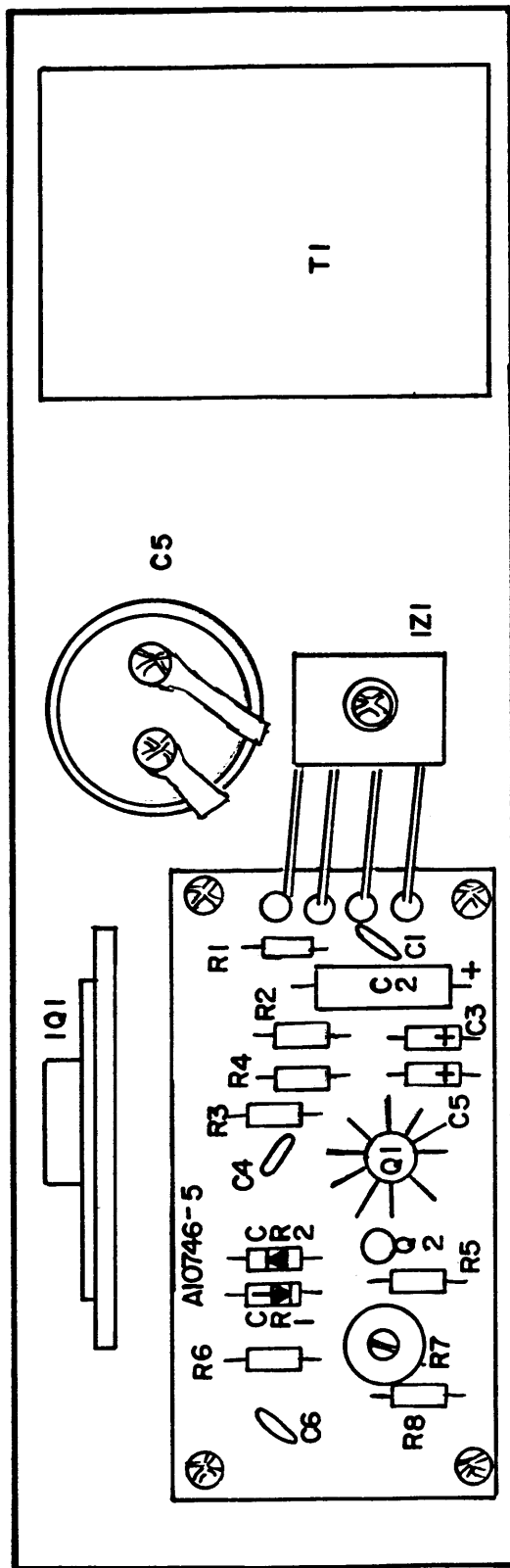


Figure 5-4

Power Supply Component Locations

SECTION 6

PARTS LIST

6-1. INTRODUCTION

Reference designations have been assigned to identify all electrical parts of the equipment. These designations are used for marking the equipment (adjacent to the parts they identify) and are included on drawings, diagrams and the parts list. The letters of a reference designation indicate the kind of part (generic group), such as resistor, capacitor, transistor, etc. The number differentiates between parts of the same generic group. Sockets associated with a particular plug-in device, such as a transistor or fuse, are identified by a reference designation which includes the reference designation of the particular plug-in device.

a. Example: The socket for lamp DS1 is designated XDS1.

In order to expedite delivery when ordering replacement parts, specify the TMC part number and model number of the equipment.

MAIN CHASSIS

REF DESIGNATION	DESCRIPTION	TMC PART NUMBER
C1A	CAPACITOR, FIXED, MICA: 22 pF \pm 10%; 500 WVdc	CM111C220K5S
C1B	Same as C1A	
C2	CAPACITOR, FLAT, FOIL: 0.1 uF \pm 20%; 250 WVdc	CC10011-8
C3	NOT USED	
C4	CAPACITOR, FLAT, FOIL: 0.22 uF \pm 20%; 250 WVdc	CC10011-10
C5	CAPACITOR, ELECTROLYTIC: 2800 uF; 50 WVdc	CE112-15
C6	Same as C4	
DS1	INDICATOR, NEON	B1100-51
F1	FUSE, CARTRIDGE: slow-blow; for 230 VAC operation, Models AMC-21C-4 and AMC-21C-8	FU102-250
F1	FUSE, CARTRIDGE: slow-blow; for 230 VAC operation, Models AMC-21C-12 and AMC-21C-16	FU102-400
F1	FUSE, CARTRIDGE: slow-blow; for 115 VAC operation, Models AMC-21C-4 and AMC-21C-8	FU102-500
F1	FUSE, CARTRIDGE: slow-blow; for 115 VAC operation, Models AMC-21C-12 and AMC-21C-16	FU102-750
F2	Same as F1	
J1	CONNECTOR, RF	UG625-B/U
J2	CONNECTOR, BOX, RECEPTACLE	MS3102R-14S-7P
J3	CONNECTOR, RECEPTACLE, FEMALE	JJ285-6
J4 to J10	Same as J3	
R1	RESISTOR, FIXED, COMPOSITION: 12 ohms \pm 5%, 1/2 watt	RC20GF120J
R2	Same as R1	
R3	RESISTOR, FIXED, COMPOSITION	RC20GF104J
S1A	WAFER, SWITCH	SW10045-W
S1B	Same as S1A	
S2	SWITCH, TOGGLE, DPST	ST22K
T1	TRANSFORMER, POWER	TF443
XDS1	LAMPHOLDER	TS106-2

* Used only with 50 ohm impedance

MAIN CHASSIS

REF DESIGNATION	DESCRIPTION	TMC PART NUMBER
XF1	FUSEHOLDER INDICATOR:	
XF2	Same as XF1	
	OPTIONAL FILTERS: BROADCAST BAND STOP FILTER HIGH PASS FILTER LOW PASS FILTER	FX10020 FX10021 FX10022
IQ1 IZ1	See Power Supply and Regulator Parts List for these items.	

50 OHM PREAMPLIFIER
A10735-6

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FIXED, CERAMIC: 0.1uF	CC10015-X5V104M
C2	NOT USED	
C3	CAPACITOR, FIXED, CERAMIC: 0.1uF	CC10017-X5V103M
C4	Same as C3	
C5	Same as C3	
C6	Same as C1	
C7	Same as C1	
C8	Same as C3	
C9	CAPACITOR, FIXED, CERAMIC: 0.1uF	CC10023
CR1	DIODE	1N456A
R1	RESISTOR, FIXED, FILM: 510 ohms, 1/4 w 2%	RC07S511G
R2	RESISTOR, FIXED, FILM: 8.2 K, 1/4 w 2%	RL07S822G
R3	RESISTOR, FIXED, FILM: 3 K, 1/4 w 2%	RL07S302G
R4	RESISTOR, FIXED, COMP: 330 ohms, 1/2 w 5%	RC20GF331J
R5	RESISTOR, FIXED, FILM: 2 K, 1/4 w 2%	RL07S202G
R6	RESISTOR, VARIABLE: 500 ohms	RV10009-501AP
R7	Same as R5	
R8	RESISTOR, FIXED, COMP: 7.5 ohms, 1/4 w 5%	RC07GF7R5J
R9	Same as R8	
L1	INDUCTOR, RF COIL: 33 uh	CL275-330
L2	NOT USED	
L3	INDUCTOR, RF COIL: 220 uh	CL275-221
L4	Same as L3	
L5	Same as L3	
L6	INDUCTOR, RF COIL 1.5 UH	CL500
T1	TRANSFORMER	TR10005
Q1	TRANSISTOR, PNP	2N5160
Q2	Same as Q1	
Q3	TRANSISTOR, NPN	2N3866

75 OHM PREAMPLIFIER
A10735-5

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FIXED, CERAMIC: 0.1uF	CC10015-X5V104M
C2	CAPACITOR, FIXED, MICA: 47 pF	CM04ED470G03
C3	CAPACITOR, FIXED, CERAMIC: 0.1 uF	CC10017-X5V103M
C4	Same as C3	
C5	Same as C3	
C6	Same as C1	
C7	Same as C1	
C8	Same as C3	
C9	CAPACITOR, FIXED, CERAMIC: 0.1 uF	CC10023
CR1	DIODE	1N456A
R1	RESISTOR, FIXED, FILM: 910 ohms, 1/4 w 2%	RL07S911G
R2	RESISTOR, FIXED, FILM: 8.2 K, 1/4 w 2%	RL07S822G
R3	RESISTOR, FIXED, FILM: 3 K, 1/4 w 2%	RL07S302G
R4	RESISTOR, FIXED, COMP: 330 ohms, 1/2 w 5%	RC20GF331J
R5	RESISTOR, FIXED, FILM: 2 K, 1/4 w 2%	RL07S202G
R6	RESISTOR, VARIABLE: 500 ohms	RV10009-501AP
R7	Same as R5	
R8	RESISTOR, FIXED, COMP: 7.5 ohms, 1/4 w 5%	RC07GF7R5J
R9	Same as R8	
L1	INDUCTOR, RF COIL: 33 uh	CL275-330
L2	INDUCTOR, RF COIL: 0.33 uh	CL10044
L3	INDUCTOR, RF COIL: 220 uh	CL275-221
L4	Same as L3	
L5	Same as L3	
L6	INDUCTOR, RF COIL 1.5 UH	CL500
T1	TRANSFORMER, RF	TR10005
Q1	TRANSISTOR, PNP	2N5160
Q2	Same as Q1	
Q3	TRANSISTOR, NPN	2N3866

REF SYMBOL	OUTPUT MODULE AX10055(50Ω) AX10056 (75Ω) DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR, FLAT, FOIL: 0.1 uF, 250 vdc	CC10011-8
C2	NOT USED	
C3	CAPACITOR, FLAT, FOIL: .047 uF, 250 vdc	CC10011-5
C4	Same as C3	
C5	Same as C1	
C6	Same as C1	
CR1	NOT USED	
J1	CONNECTOR, RF	UG625-B/U
J2	Same as J1	
L1	INDUCTOR, RF COIL: 220 uh, 500 vdc	CL275-221
L2	NOT USED	
L3	Same as L1	
L4	Same as L1	
Q1	NOT USED	
Q2	NOT USED	
Q3	TRANSISTOR, NPN, SILICON	2N3866
Q4	Same as Q3	
R1	NOT USED	
R2	NOT USED	
R3	NOT USED	
R4	RESISTOR, FIXED, COMPOSITION: 100 ohms, 5%, 1/4 w	RC07GF101J
R5	Same as R4	
R6	RESISTOR, FIXED, COMPOSITION: 4.7 K, 5%, 1/4 w	RC07GF472J
R7	RESISTOR, FIXED, COMPOSITION: 3.3 K, 5%, 1/4 w	RC07GF332J
R8	Same as R6	
R9	Same as R7	
R10	RESISTOR, FIXED, BERLM. OXIDE: 220 ohms, 5%, 1 w	RR10004-221-3RO
R11	Same as R10	
R13 *	Same as R12	
R12 *	RESISTOR, FIXED, COMPOSITION: 47 ohms, 5%, 1/4 w	RC07GF470J

* USE RC07GF680J
FOR AX10056 (75Ω)

REF DESIGNATION	DESCRIPTION	TMC PART NUMBER
DS1	Indicator Neon	BI10005
CR1	Diode RF Protection	IN914B
CR2	Same as CR1	
CR3	Same as CR1	
CR4	Same as CR1	
CR5	Same as CR1	
CR6	Same as CR1	
AC FILTER ASSEMBLY - A5780		
C1	Capacitor, Fixed	CC100-32
C2	Same as C1	
C3	Same as C1	
C4	Same as C1	
L1	Coil Fixed	CL105-1
L2	Same as L1	

POWER SUPPLY & REGULATOR
A10746-5

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
C1	CAPACITOR: Fixed, ceramic, 0.1uf	CC10015-X5V104M
C2	CAPACITOR: Fixed, tantalum, 6.8 uf	CSR13G685ML
C3	CAPACITOR: Fixed, tantalum, 0.47 uf	CSR13G474ML
C4	CAPACITOR: Fixed, ceramic, 0.01 uf	CC10017-X5V103M
C5	SAME AS C3	
C6	SAME AS C1	
CR1	DIODE: Zener	IN758A
CR2	DIODE:	IN914B
R1	RESISTOR: Fixed, composition, 47 K, 1/2 w, 5%	RC20GF473J
R2	RESISTOR: Fixed, composition, 68 K, 1/2 w, 5%	RC20GF683J
R3	RESISTOR: Fixed, composition, 15 ohms, 1/2 w, 5%	RC20GF150J
R4	RESISTOR: Fixed, composition, 560 ohms, 1/2 w, 5%	RC20GF561J
R5	RESISTOR: Fixed, composition, 1.2 K, 1/2 w, 5%	RC20GF122J
R6	RESISTOR: Fixed, composition, 3.9 K, 1/2 w, 5%	RC20GF392J
R7	RESISTOR: Variable, composition, 1K, linear curve	RV111U102A
R8	RESISTOR: Fixed, composition, 6.8 K, 1/2 w, 5%	RC20GF682J
Q1	TRANSISTOR: NPN, Silicon	TX10001
Q2	TRANSISTOR: PNP, Silicon	2N5086
	The items below are electrically part of the power supply but are physically mounted on the chassis.	
1Q1	TRANSISTOR: NPN	2N3055
1Z1	DIODE NETWORK: rectifier	NW10005

FILTER ASSEMBLY
FX10022

REF DESIGNATION	DESCRIPTION	TMC PART NUMBER
C2	Capacitor, Fixed, Mica	CM06FD132F03
C3	Capacitor, Fixed, Mica	CM04FD121F03
C4	Capacitor, Fixed, Mica	CM06FD102F03
C5	Capacitor, Fixed, Mica	CM06FD751F03
C6	Capacitor, Fixed, Mica	CM06FD511J03
C7	Capacitor, Fixed, Mica	CM06FD202F03
C8	Capacitor, Fixed, Mica	CM05FD391J03
C9	Same as C4	
C10	Same as C5	
C11	Same as C2	
C12	Same as C3	
L1	Coil, RF	CL10040-4
L2	Coil, RF	CL10040-5
L3	Same as L2	
L4	Same as L1	
FILTER ASSEMBLY - FX10021		
C1	Capacitor, Fixed, Mica	CM06FD132F03
C2	Capacitor, Fixed, Mica	CM06FD102FD3
C3	Capacitor, Fixed, Mica	CM07FD103F03
C4	Capacitor, Fixed, Mica	CM04ED390G03
C5	Capacitor, Fixed, Mica	CM06FD751F03
C6	Capacitor, Fixed, Mica	CM08FD273F03
C7	Capacitor, Fixed, Mica	CM04ED470G03
C8	Capacitor, Fixed, Mica	CM06FD911F03
C9	Same as C1	

FILTER ASSEMBLY
FX10021 (cont)

REF DESIGNATION	DESCRIPTION	TMC PART NUMBER
L1	Coil, RF	CL10040-1
L2	Coil, RF	CL10040-2
L3	Coil, RF	CL10040-3
L4	Coil, RF	CL10040-6
FILTER ASSEMBLY - FX10020		
C1	Capacitor, Fixed, Mica	CM06FD202F03
C3	Capacitor, Fixed, Mica	CM07FD622F03
C4	Capacitor, Fixed, Mica	CM04ED220J03
C5	Same as C1	
L1	Coil, RF	CL10039-1
L2	Coil, RF	CL10039-2
L3	Same as L1	

SECTION 7

SCHEMATIC DIAGRAMS

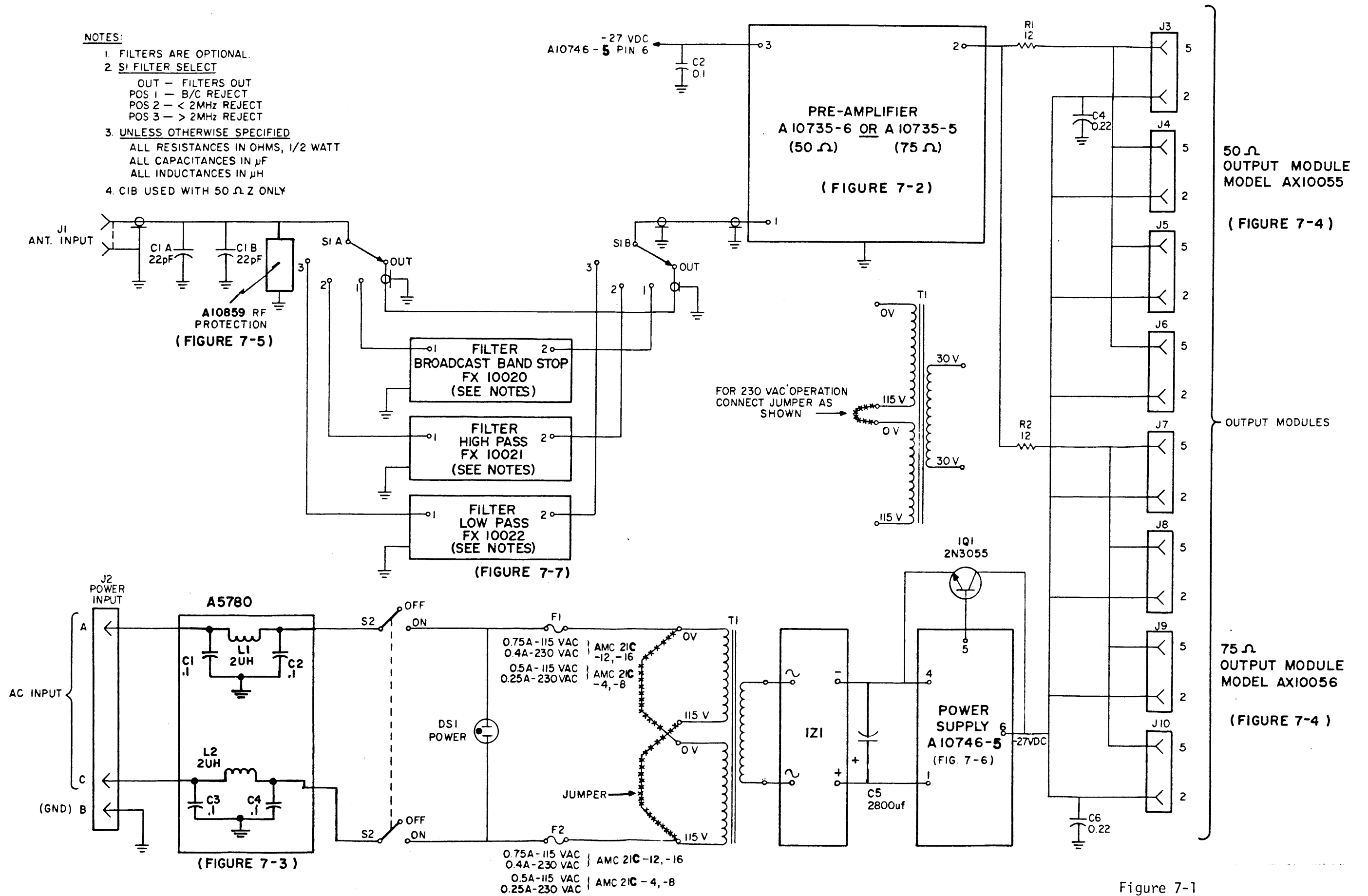
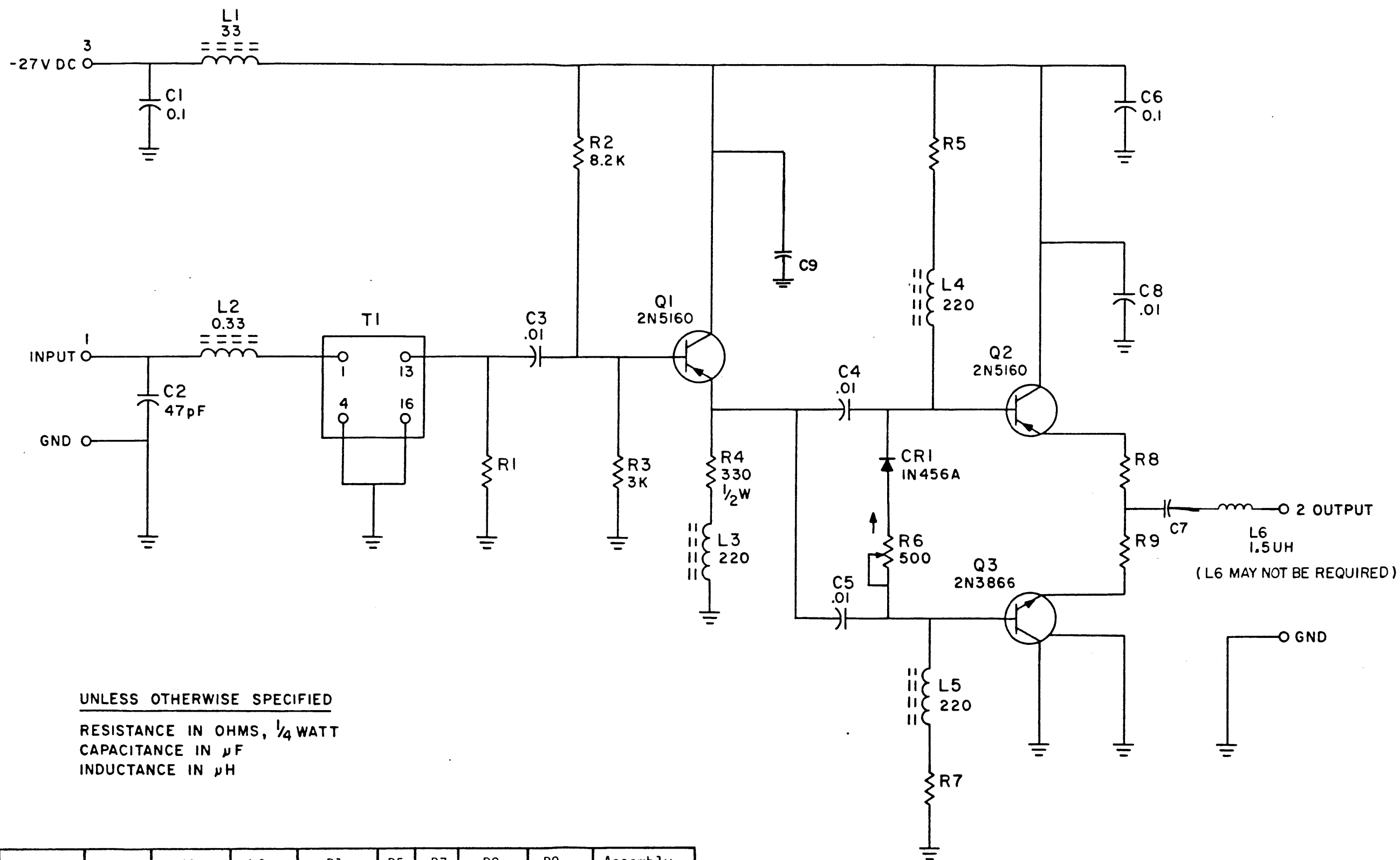


Figure 7-1

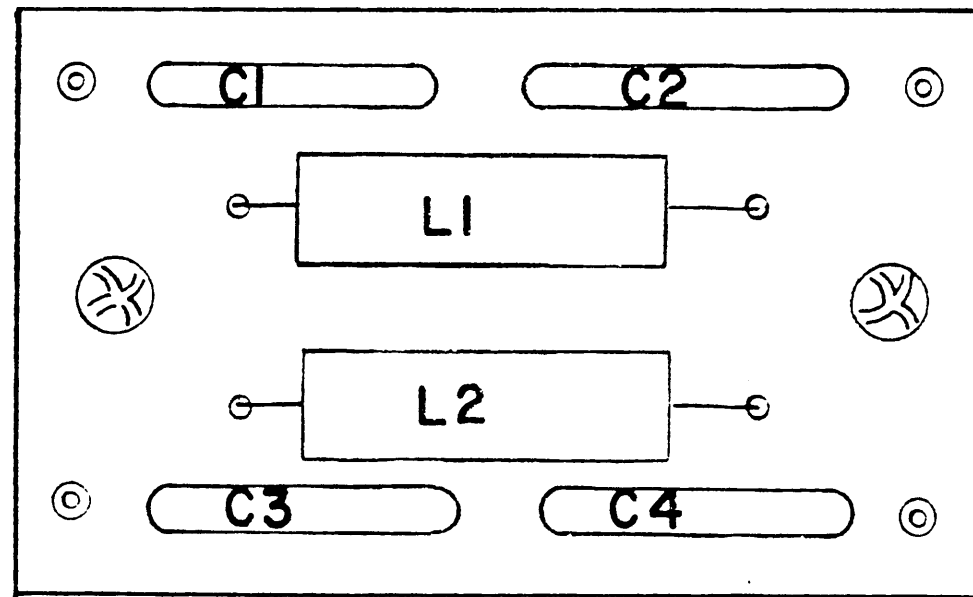


UNLESS OTHERWISE SPECIFIED
 RESISTANCE IN OHMS, 1/4 WATT
 CAPACITANCE IN μF
 INDUCTANCE IN μH

Model	C2	C7	C9	L2	R1	R5	R7	R8	R9	Assembly
AMC-21C, 50 Ω		.1μF	.01μF		510 Ω	2K	2K	7.5 Ω	7.5 Ω	A10735-6
AMC-21C, 75 Ω	47pF	.1μF	.01μF	.33μH	910 Ω	2K	2K	7.5 Ω	7.5 Ω	A10735-5

Figure 7-2
 Preamplifier Schematic A10735-5

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



A5780

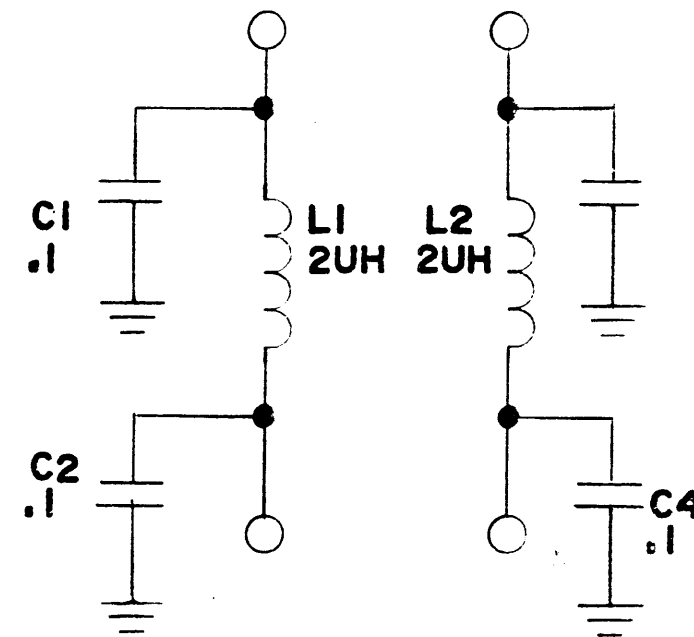
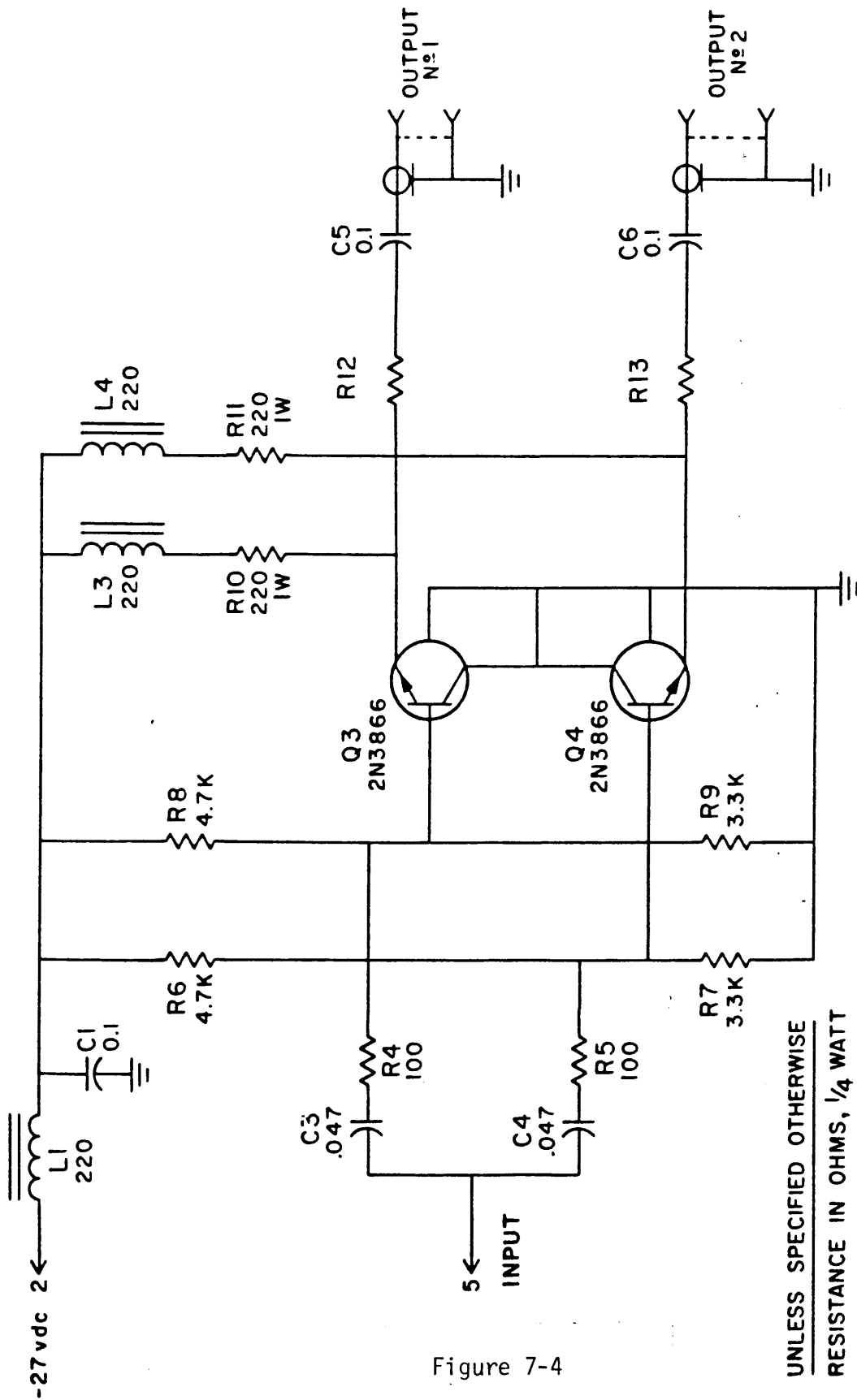


Figure 7-3
AC Filter Diagram



Model	Assembly	R12	R13
AMC-21C 50 Ω	AX10055	47 Ω	47 Ω
AMC-21C 75 Ω	AX10056	68 Ω	68 Ω

Figure 7-4
Output Module Diagram

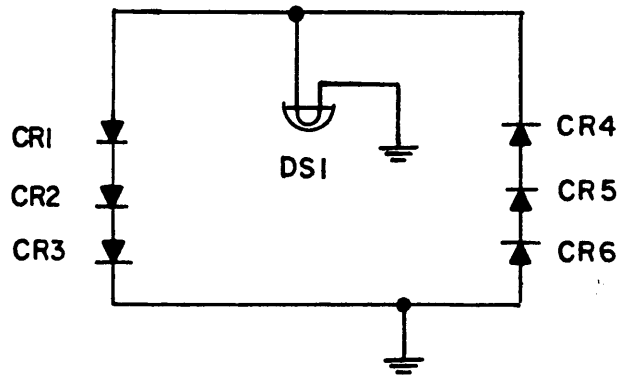
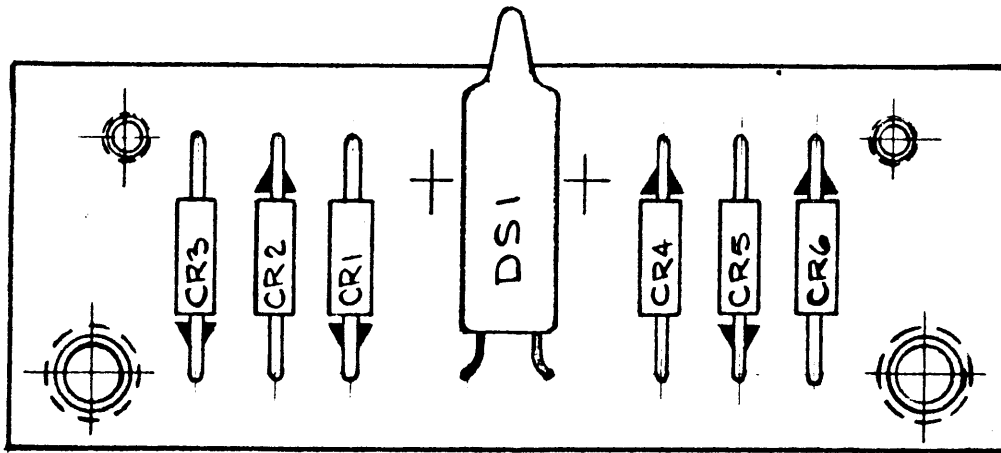
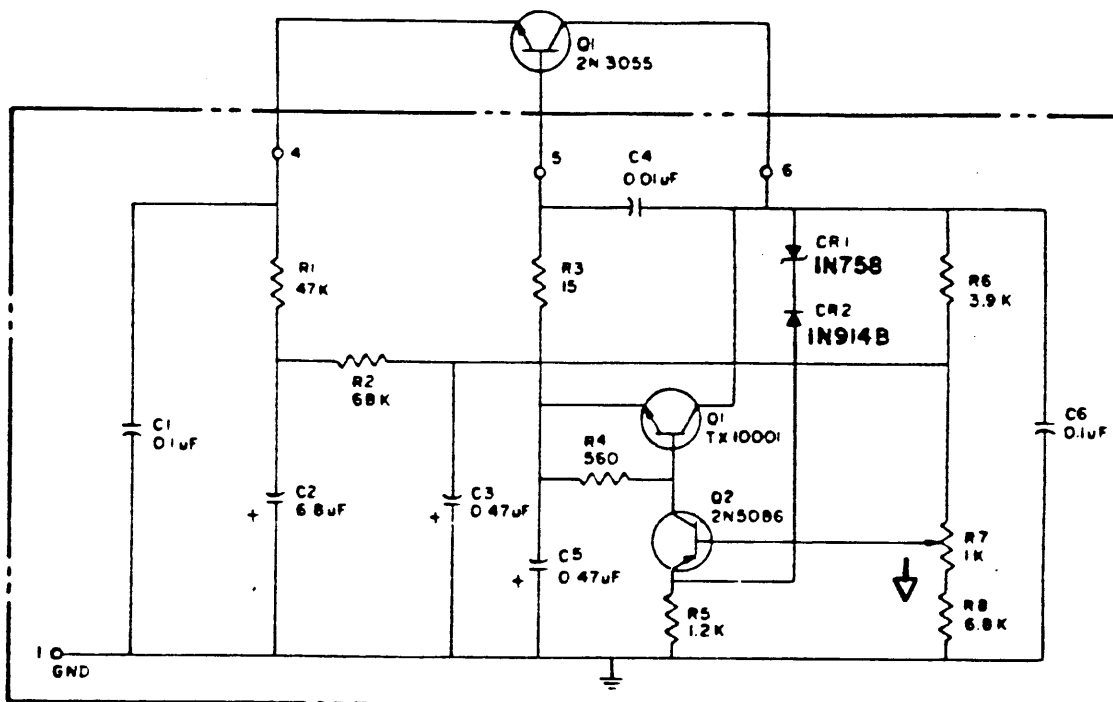
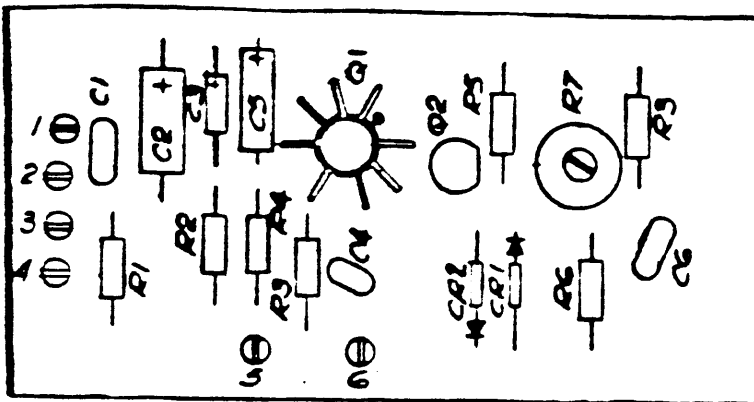


Figure 7-5
RF Protection Diagram



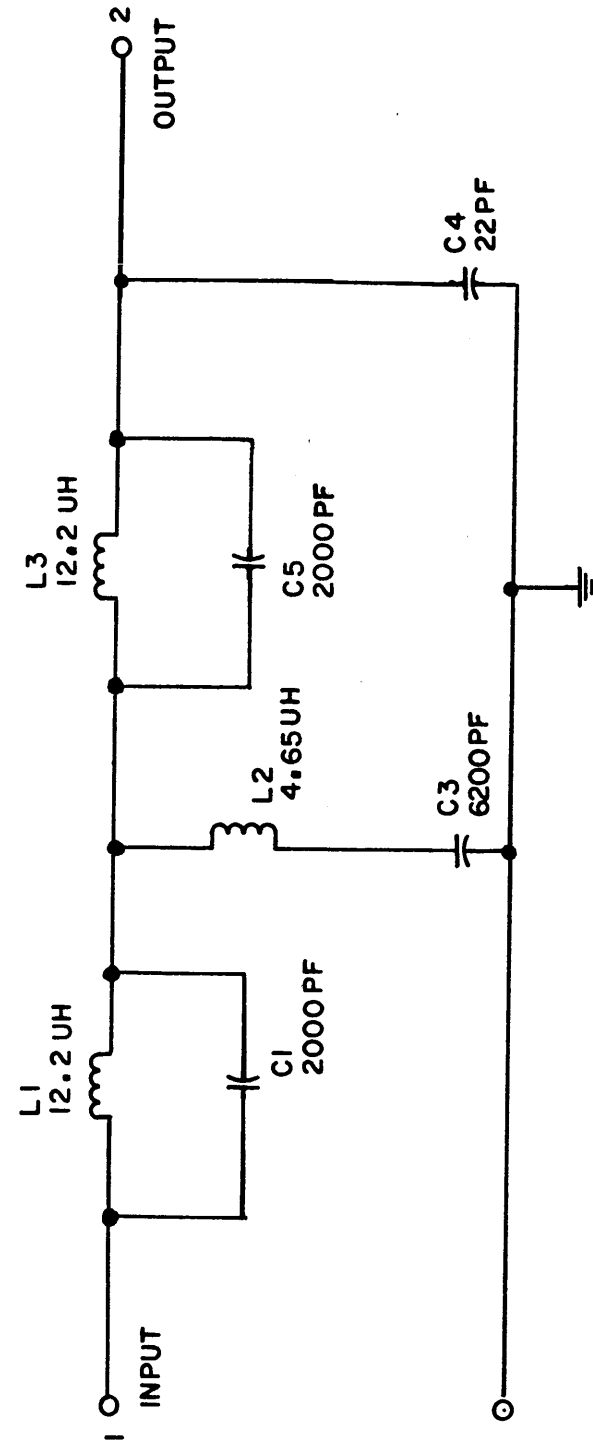
A10746-5

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

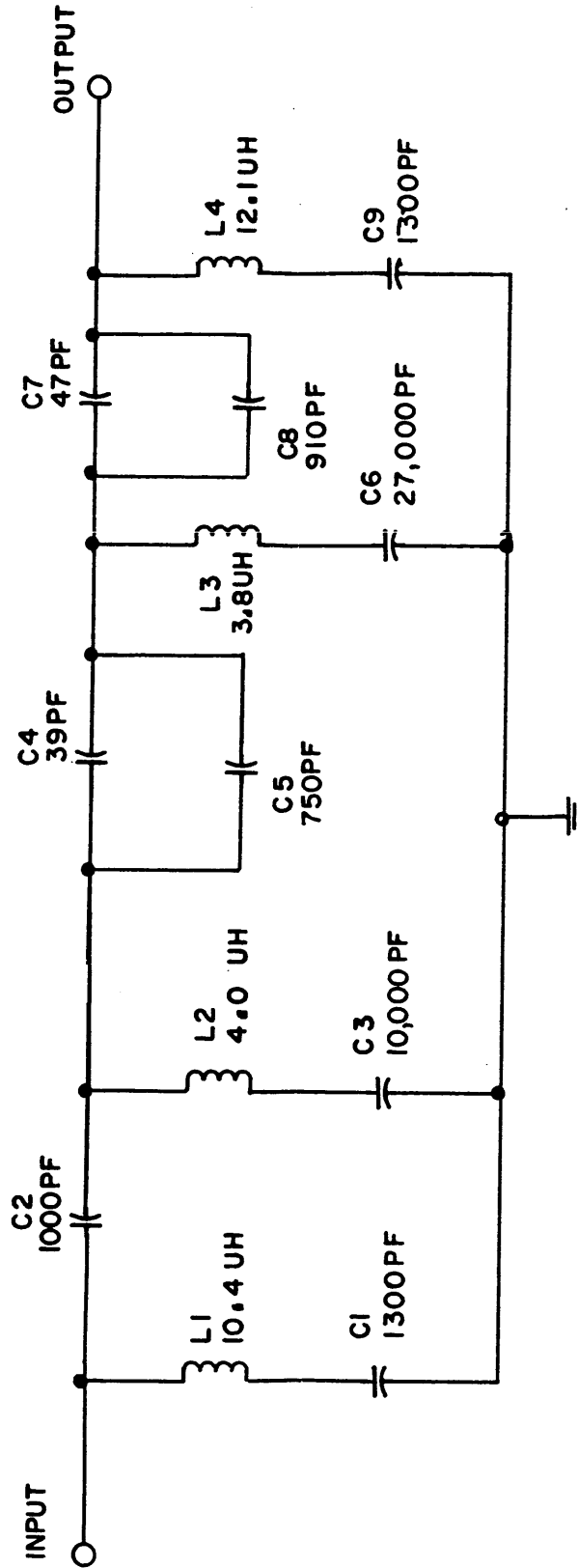
NOTES

Figure 7-6
 Regulator Schematic (A10746-5)

BROADCAST BANDSTOP FILTER (FX10020)



HIGH PASS FILTER (FX10021)



LOW PASS FILTER (FX10022)

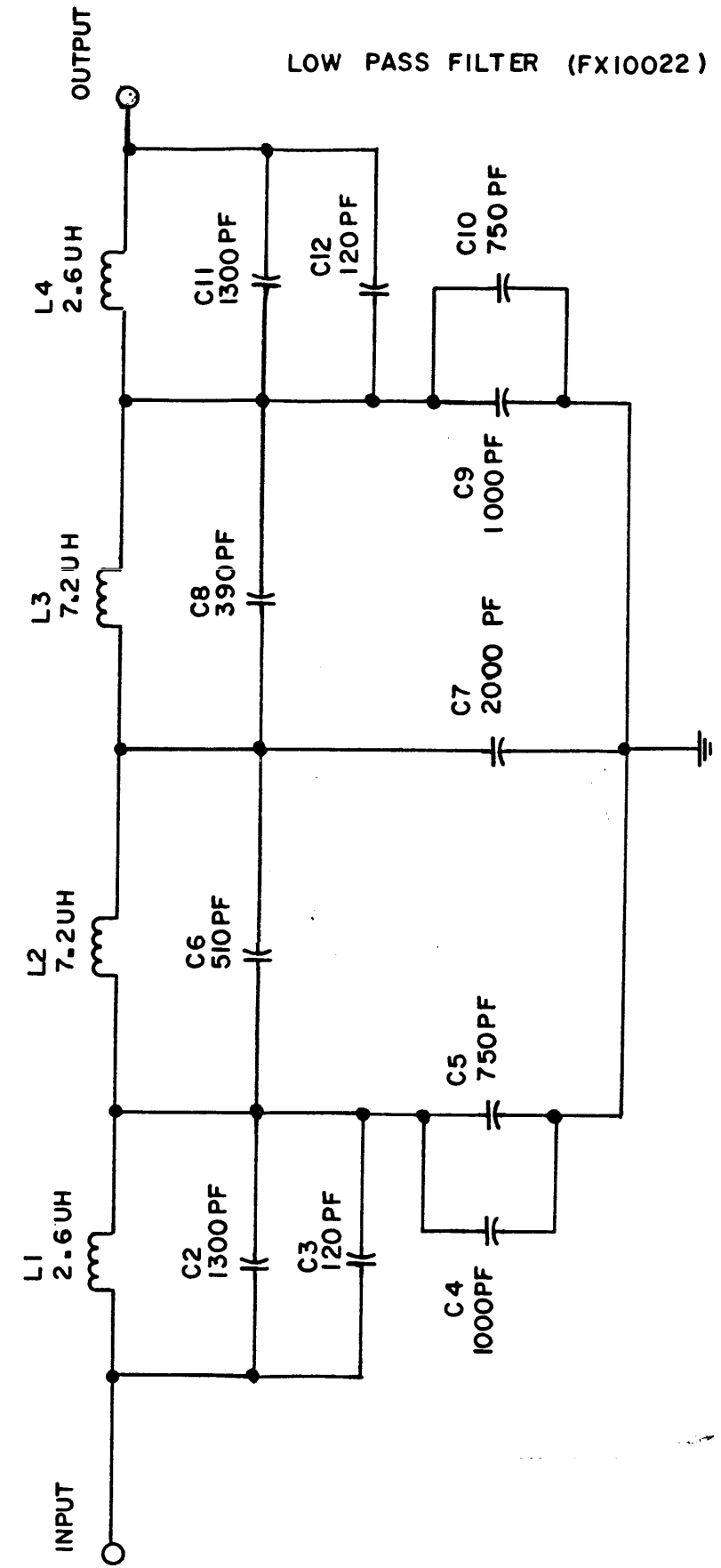


Figure 7-7
Filter (Options)