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TECHNICAL MANUAL

for

AMPLIFIER, RADIO FREQUENCY AM-2123/U

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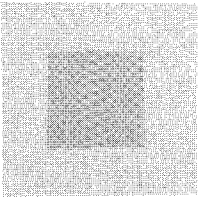
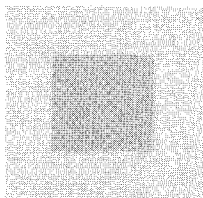
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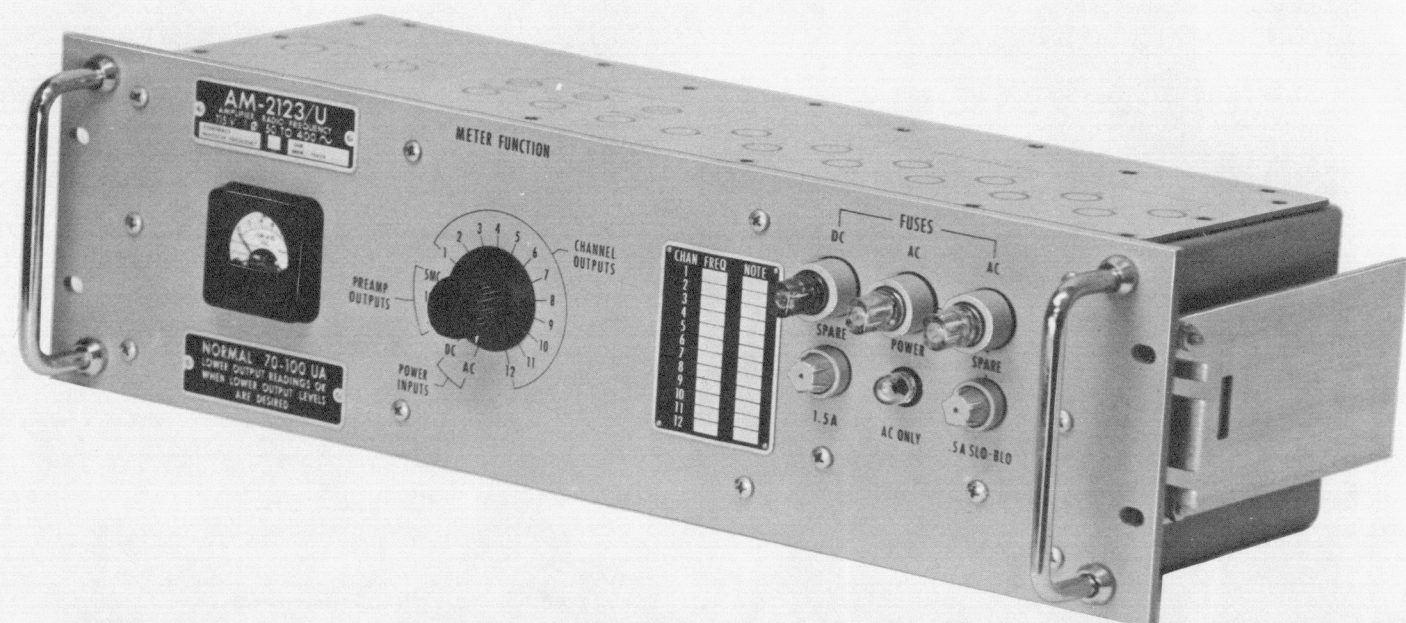
EFFECTIVITY PAGES	
1 THRU 8	ORIGINAL

EXPLANATION OF SHADING	
<div></div> <p>GREY SHADED AREAS ON BLOCKED SCHEMATIC AND BLOCKED TEXT INDICATE THE PHYSICAL ASSEMBLIES OF THE EQUIPMENT. DARKER GREY SHADES INDICATE SUB-PACKAGING WITHIN THE LIGHTER SHADE OF GREY.</p>	<div></div> <p>BLUE SHADED AREAS ON BLOCKED SCHEMATIC AND BLOCKED TEXT INDICATE FUNCTIONAL GROUPING OF COMPONENTS OR CIRCUITS. DARKER BLUE SHADES INDICATE SUB-FUNCTIONAL CIRCUITS WITHIN FUNCTIONAL CIRCUITS.</p>

EXPLANATION OF SPECIAL SYMBOLS		
CATEGORY	SPECIAL SYMBOLS	MEANING OF SYMBOL
SIGNAL CODE SYMBOLS		MAJOR FUNCTIONAL FLOW
		SIGNAL USED TO PROVIDE METER READING
		FEEDBACK SIGNAL
STANDARD SYMBOLS USED ONLY FOR SPECIFIC INDICATED PURPOSE		ALL DC RETURN CONNECTIONS
SPECIAL DRAWING SYMBOLS USED		SCREWDRIVER ADJUSTMENT

THIS STYLE OF MANUAL AND ITS USE ARE DESCRIBED IN NAVSHIPS 0900-001-0000.

EXPLANATION OF FUNCTIONAL ENTITY IDENTIFIER CODES				
BASIC CATEGORY OF FUNCTIONALIZATION	LETTER CODES			NUMERICAL CODE
INDIVIDUAL CIRCUIT ELEMENTS AND LINEAR NETWORKS	FUNCTIONAL ENTITIES CONTAINING ONE OR MORE LINEAR COMPONENTS (RESISTORS, CAPACITORS, ETC.) ARRANGED IN A NETWORK ARE PRECEDED BY N.	N-FL-1 N-TUN-1	FILTER NETWORK TUNED CIRCUIT	WITHIN EACH ASSEMBLY, CODES FOR FUNCTIONAL ENTITY TYPES BEGIN AT 1. FOR EXAMPLE, IF A GIVEN ASSEMBLY HAS TWO TUNED CIRCUITS AND A VOLTAGE REGULATOR, CODE NUMBERS WOULD BE AS FOLLOWS: N-TUN-1 N-TUN-2 X-VR-1
CIRCUITS CONTAINING ONE OR MORE NON-LINEAR ELEMENTS WHICH MAY BE EITHER ACTIVE OR PASSIVE	FUNCTIONAL ENTITIES CONTAINING TRANSISTORS ARE PRECEDED BY Q.	Q-AMP-1 Q-EF-1 Q-SR-1 Q-PPA-1	AMPLIFIER EMITTER FOLLOWER SERIES REGULATOR PUSH-PULL AMPLIFIER	
	FUNCTIONAL ENTITIES CONTAINING SEMICONDUCTOR DIODES ARE PRECEDED BY X.	X-RCT-1 X-VR-1 X-DET-1	RECTIFIER VOLTAGE REGULATOR DETECTOR	
COMPOSITE CIRCUIT (ONE WHICH IS SUBFUNCTIONALIZED)	COMPOSITE FUNCTIONAL ENTITIES CONTAINING ONE OR MORE OF THE FUNCTIONAL ENTITIES (N, Q, OR X) LISTED ABOVE ARE PRECEDED BY C	C-PWR-1 C-PS-1 C-REG-1	POWER POWER SUPPLY REGULATOR	



INSTALLATION

The AM-2123/U Radio Frequency Amplifier may be rack or bench mounted. Slides are provided to facilitate mounting in a standard 19 inch rack. The slide brackets are slotted to accommodate the rack mounting bolts. Mounting holes have also been drilled in the front panel. In either case, install the unit rigidly; do not use resilient mounts.

Check that the preamplifiers are installed in the designated jacks, and that the amplifier assemblies are installed as desired. Mark the front panel channel chart with a grease pencil to show the frequency employed. Securely tighten the 16 screws that fasten the top cover to the outer chassis; then, securely tighten the 8 screws that fasten the top cover to the inner chassis, to prevent radio frequency interference (RFI).

Power requirements are:

115 VAC, single phase, 50 to 400 CPS, 0.5 Amp.
22 to 30 VDC, 1 Amp (standby source).

RADIO FREQUENCY AMPLIFIER AM-2123/U

Overall Description And Use

The Radio Frequency Amplifier performs the following functions:

Accepts three input frequencies: 0.1 MC, 1.0 MC, and 5.0 MC.

Provides a 4 to 5 volt output at any of the three input frequencies to any of twelve output channels.

Automatically switches over to external d-c power in the event of 115 VAC power failure.

Provides monitoring of power inputs, preamplifier inputs, and amplifier outputs.

The following assemblies are normally contained in the amplifier:

One 0.1 MC Preamplifier A1, 183848
One 1.0 MC Preamplifier A2, 183855
One 5.0 MC Preamplifier A5, 183889
Four 0.1 MC Amplifiers A3, 183863
Four 1.0 MC Amplifiers A4, 183871
Four 5.0 MC Amplifiers A6, 183897

The 0.1 MC, 1.0 MC, and 5.0 MC preamplifiers are mounted in jacks J16, J17, and J18, respectively.

Up to twelve amplifiers, in any combination, may be mounted in jacks J19 thru J30, representing Channels 1 thru 12, respectively. The frequency of the amplifier assembly installed for each channel may be marked with a grease pencil on the front panel chart. The NOTE column is provided for listing any additional information. For example, "REC 4" would indicate that the channel so marked is for receiver number 4.

Radio Frequency Amplifier AM-2123/U is basically a tuned linear amplifier for use in standard-frequency distribution systems.

Each of three input frequencies has its own connector, and the signal is applied through a preamplifier assembly to each and every amplifier assembly jack.

Each of twelve output channels consists of a plug-in assembly, and each assembly consists of a solid-state narrow-band, RF amplifier tuned to one of the three input frequencies. Frequency service for a given channel is selected by inserting an assembly of the desired frequency into that channel (no switching or change of wiring is required). The unit will operate with 1 to 12 assemblies plugged in.

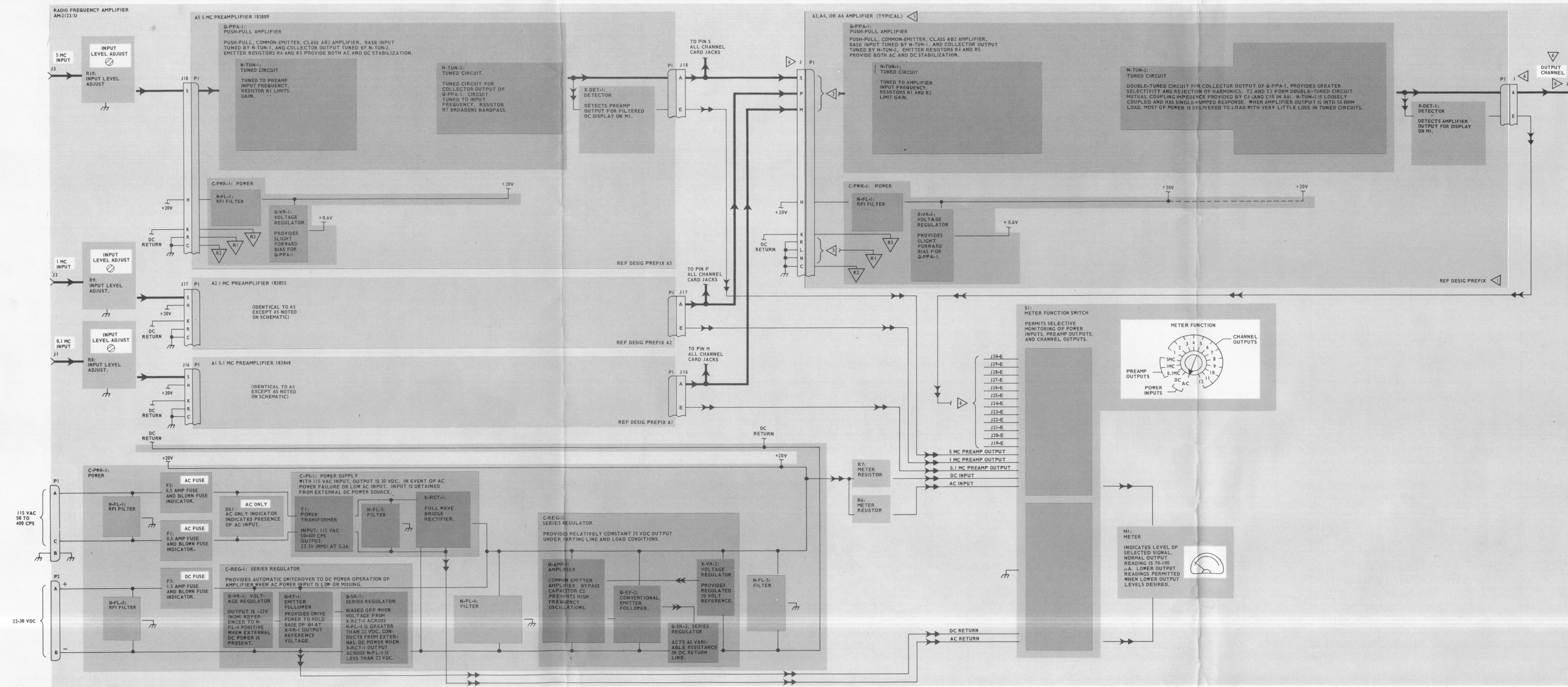
All input and output connections, and input level adjustments are located on the rear panel. A pilot lamp on the front panel lights when there is AC line power present. The front panel meter and associated meter function switch allows the power inputs and all outputs to be monitored. Although the unit will not be damaged by open-circuit or short-circuit outputs, it is recommended that the output channels always be terminated and the output level be maintained at 5 VAC or less (less than 100 μ A reading on meter). The 5 VAC output level is sufficient to provide 2 VAC into 50 ohms at the end of 1000 feet of RG-58/U at 5 MC. Lower attenuation will be experienced if lower loss coax is used and at lower frequencies.

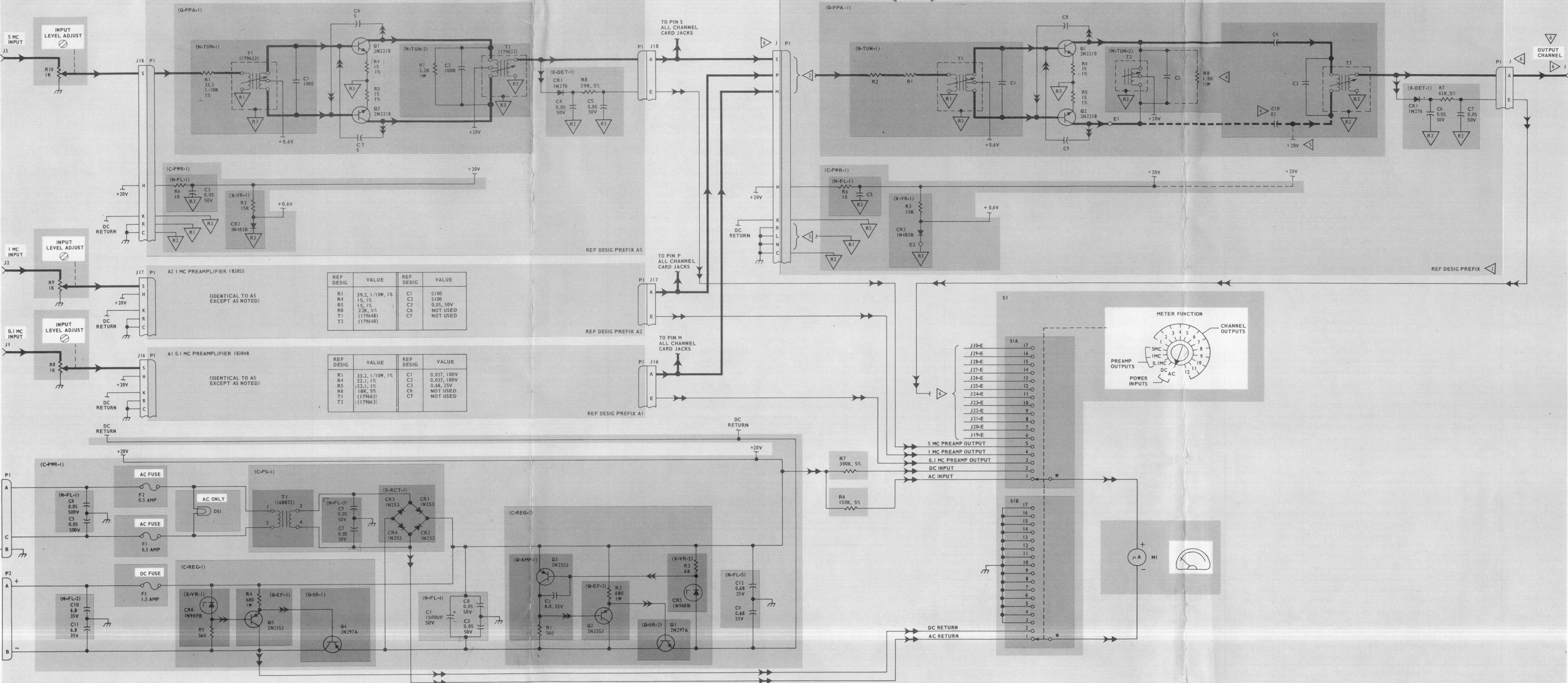
EQUIPMENT SPECIFICATIONS

DESIGNATED NAME	SPECIFICATION
1. Input Characteristics:	
Frequency	Three separate input channels: One each for 5.0 MC, 1.0 MC, and 0.1 MC.
Level	Input level 0.5 to 5.0 volts. Input level adjust control for each input.
Impedance	Input impedance on each channel greater than 50 ohms with any number of amplifier assemblies connected to that channel.
2. Output Characteristics:	
Level	4 to 5 volts rms at all outputs for one setting of input level adjust.
Bandwidth	Less than 2 percent of input fre- quency for 3 decibels (db) down and less than 10 percent for 30 db down.
Distortion	Any single distortion product is greater than 80 db below signal level, except harmonics which are greater than 60 db down.
Isolation	The signal at any output is changed by less than 1% by a short in any other output.

SHIPPING DATA

	Equipment	Boxed
Height	5-1/4"	6"
Width	19"	22-3/8"
Depth	8-1/2"	10-3/4"
Weight	16 lbs.	21 lbs.



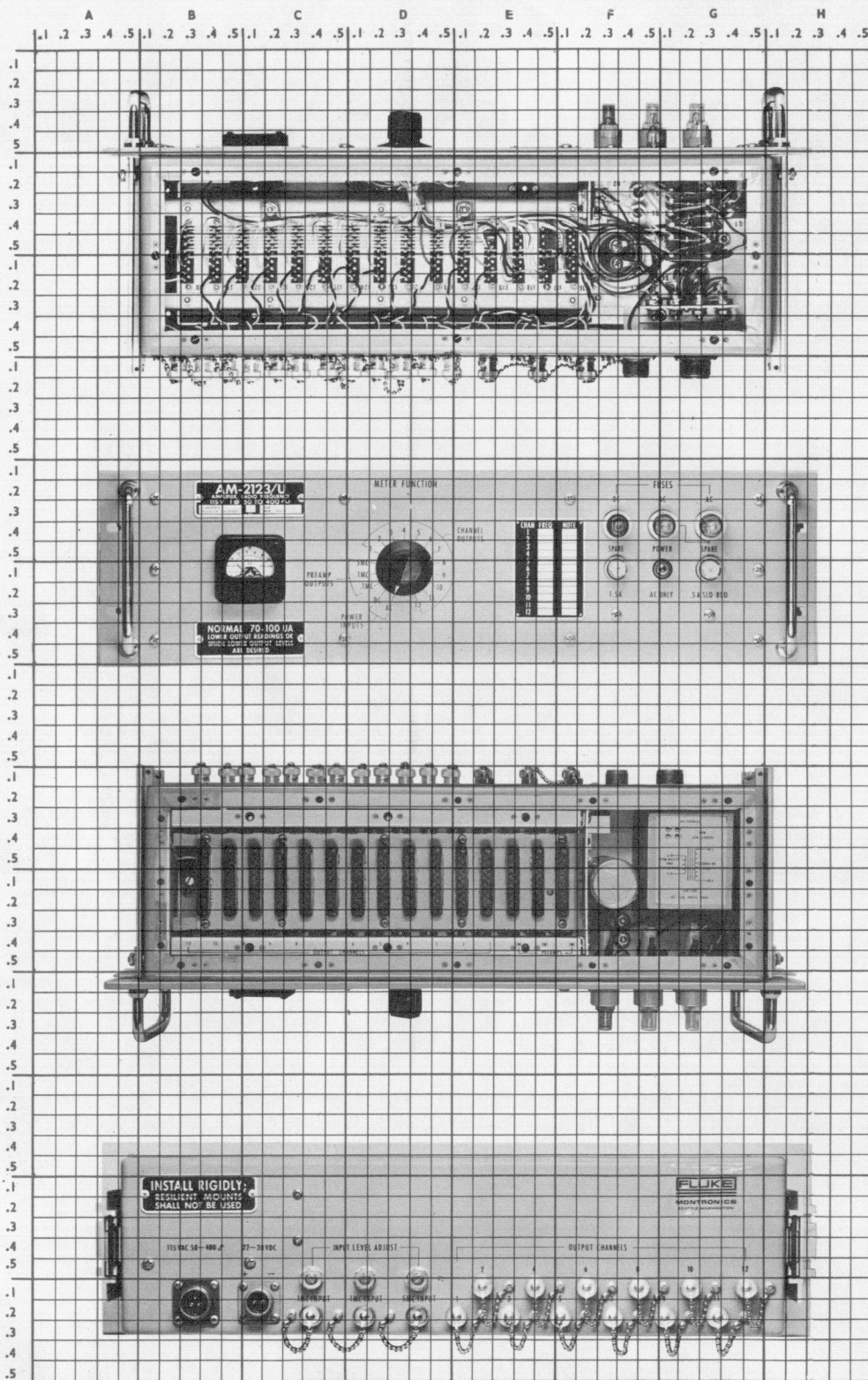


FLAG NOTES				
1. AMPLIFIERS A3, A4, AND A6 ARE IDENTICAL EXCEPT AS NOTED.				
REF DESIG	A3 183863	A4 183871	A6 183897	
C1	0.037, 100V	5100	1000	
C2	0.037, 100V	5100	1000	
C3	0.01, 100V	1200	270	
C4	3300	330	82	
C5	0.68, 25V	0.05, 50V	0.05, 50V	
C8	NOT USED	NOT USED	NOT USED	
C9	NOT USED	NOT USED	NOT USED	
R1 (FACTORY SELECTED)	27.4, 47.5, OR 68.1 1/10W, 1%	47.5, 56.2, 68.1 OR 82.5, 1/10W, 1%	27.4 OR 47.5 1/10W, 1%	
R2	182, 1/10W, 1%	56.2, 1/10W, 1%	150, 1/10W, 1%	
T1	(179663)	(179648)	(179622)	
T2	(179663)	(179648)	(179622)	
T3	(179655)	(179630)	(179614)	
2	PIN M	PIN P	PIN S	
3	PIN L	PIN N	PIN R	
4	NOT USED	NOT USED		
5			NOT USED	

ONE OF TWELVE CHANNELS (ALL CHANNELS IDENTICAL). JACK DESIGNATIONS FOR EACH CHANNEL AS NOTED.				
CHANNEL	CARD JACK	OUTPUT JACK	MONITORED OUTPUT	
			FROM	TO
1	J19	J4	J19-E	S1A-6
2	J20	J5	J20-E	S1A-7
3	J21	J6	J21-E	S1A-8
4	J22	J7	J22-E	S1A-9
5	J23	J8	J23-E	S1A-10
6	J24	J9	J24-E	S1A-11
7	J25	J10	J25-E	S1A-12
8	J26	J11	J26-E	S1A-13
9	J27	J12	J27-E	S1A-14
10	J28	J13	J28-E	S1A-15
11	J29	J14	J29-E	S1A-16
12	J30	J15	J30-E	S1A-17

GENERAL NOTES	
UNLESS OTHERWISE SPECIFIED:	
1. RESISTOR VALUES IN OHMS, $\frac{1}{4}$ W, 10%.	
2. CAPACITOR VALUES:	
a. WHOLE NUMBERS IN UUF, 500V.	
b. DECIMAL NUMBERS IN UF, 500V.	
ENGINEERING SOURCE DATA	
203-1-109 REVISION 1	
203-1-101	
203-1-102	
203-1-103	
203-1-104	
203-1-105	
203-1-106	

RADIO FREQUENCY AMPLIFIER AM-2123/U BLOCKED SCHEMATIC

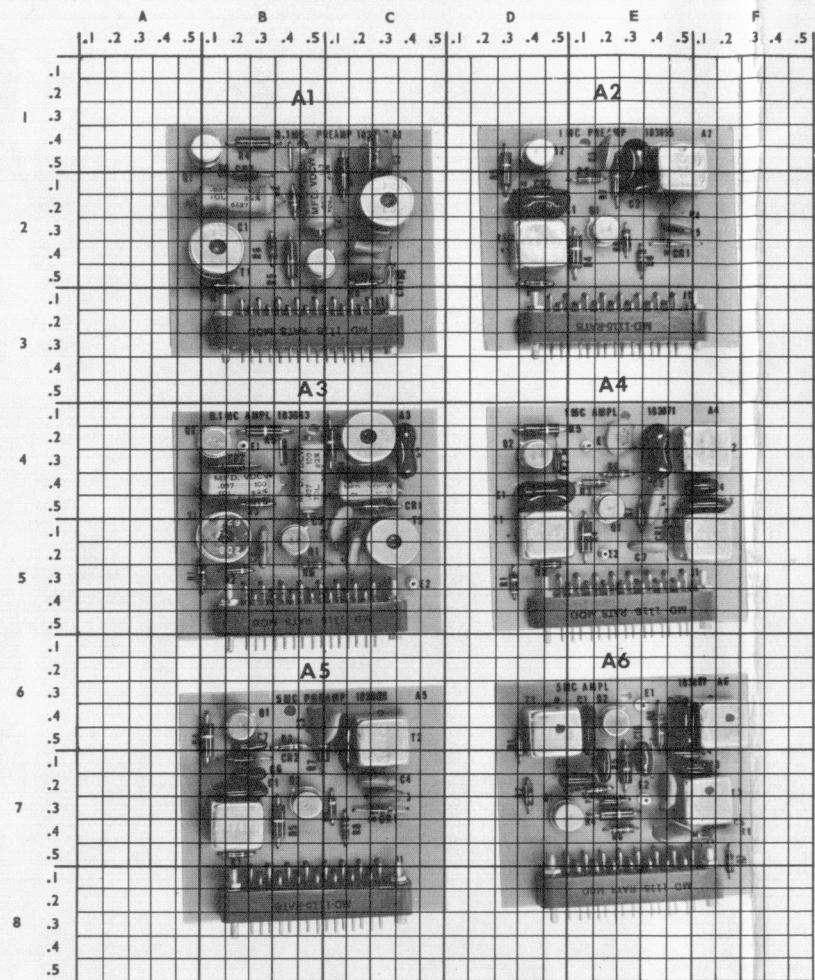


RADIO FREQUENCY AMPLIFIER AM-2123/U

PARTS DATA FOR RADIO FREQUENCY AMPLIFIER AM-2123/U

REF DESIG	LOCATING FUNCTION	NAME AND DESCRIPTION	REF DESIG	LOCATING FUNCTION	NAME AND DESCRIPTION
C1	F.3/2.5	CAPACITOR, ELECTROLYTIC, 1500 UF, 50 VDC, SPRAGUE NO. 36D152G050AB48	J22	D.3/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 4 AMPLIFIER)
C2	G.2/2.2	CAPACITOR, TANTALUM, 6.8 UF, 35 VDC, SPRAGUE NO. CS13AF68RM	J23	D.2/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 5 AMPLIFIER)
C3	G.1/3.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	J24	C.5/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 6 AMPLIFIER)
C4	E.5/2.5	CAPACITOR, CERAMIC, 0.68 UF, 25 VDC, SPRAGUE NO. 5C12A	J25	C.4/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 7 AMPLIFIER)
C5	G.1/3.4	CAPACITOR, CERAMIC, 0.05 UF, 500 VDC, SPRAGUE NO. 33C58	J26	C.3/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 8 AMPLIFIER)
C6	G.3/3.4	CAPACITOR, CERAMIC, 0.05 UF, 500 VDC, SPRAGUE NO. 33C58	J27	C.1/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 9 AMPLIFIER)
C7	G.2/3.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	J28	B.5/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 10 AMPLIFIER)
C8	G.3/3.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	J29	B.4/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 11 AMPLIFIER)
C9	G.1/3.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	J30	B.2/9.1	CONNECTOR, RECEPTACLE, METHODE MFG NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 12 AMPLIFIER)
C10	F.5/3.4 (H)	CAPACITOR, TANTALUM, 6.8 UF, 35 VDC, SPRAGUE NO. CS13AF68RM	M1	C.1/6.1	METER, MR13W100DCUAR
C11	F.4/3.4 (H)	CAPACITOR, TANTALUM, 6.8 UF, 35 VDC, SPRAGUE NO. CS13AF68RM	P1	B.3/13.2	CONNECTOR, PLUG, MS3102A-14S-3P
C12	E.5/3.1	CAPACITOR, CERAMIC, 0.68 UF, 25 VDC, SPRAGUE NO. 5C12A	P2	C.1/13.2	CONNECTOR, PLUG, MS3102A-12S-3P
CR1	G.3/3.3	SEMICONDUCTOR, DIODE, 1N253, MIL-S-19500/194A	Q1	G.4/2.2	TRANSISTOR, PNP, 2N2974, MIL-S-19500/36A
CR2	G.2/3.3	SEMICONDUCTOR, DIODE, 1N253, MIL-S-19500/194A	Q2	F.4/2.1 (H)	TRANSISTOR, PNP, 2N2553, MIL-S-19500/89C
CR3	G.1/3.3	SEMICONDUCTOR, DIODE, 1N253, MIL-S-19500/194A	Q3	F.4/2.2	TRANSISTOR, PNP, 2N2553, MIL-S-19500/89C
CR4	F.5/3.3	SEMICONDUCTOR, DIODE, 1N253, MIL-S-19500/194A	Q4	F.2/2.3	TRANSISTOR, PNP, 2N2974, MIL-S-19500/36A
CR5	G.2/2.1 (H)	SEMICONDUCTOR, DIODE, 1N668B, MIL-S-19500/117	Q5	F.4/2.3	TRANSISTOR, PNP, 2N2553, MIL-S-19500/89C
CR6	G.2/2.5	SEMICONDUCTOR, DIODE, 1N668B, MIL-S-19500/117	R1	G.2/2.3	RESISTOR, COMPOSITION, RC20GF561K
DS1	F.5/6.1	LAMP, NEON, MS25252B-NE2D	R2	G.1/2.2	RESISTOR, COMPOSITION, RC32GF681K
F1	G.3/5.4	FUSE, CARTRIDGE, DF02B-5A	R3	G.2/2.2 (H)	RESISTOR, COMPOSITION, RC20GF680K
F2	F.5/5.4	FUSE, CARTRIDGE, DF02B-5A	R4	G.2/2.5	RESISTOR, COMPOSITION, RC32GF681K
F3	F.3/5.4	FUSE, CARTRIDGE, F02A1-5A	R5	G.2/2.5	RESISTOR, COMPOSITION, RC20GF561K
SPARE	F.3/6.1	FUSE, CARTRIDGE, F02A1-5A	R6	G.2/2.4	RESISTOR, COMPOSITION, RC20GF154J
SPARE	G.3/6.1	FUSE, CARTRIDGE, DF02B-5A	R7	G.2/2.3	RESISTOR, COMPOSITION, RC20GF304J
J1	C.4/13.2	CONNECTOR, RECEPTACLE, UG625B/U	R8	C.4/12.5	RESISTOR, VARIABLE, COMPOSITION, RV4LAYSA102A
J2	D.1/13.2	CONNECTOR, RECEPTACLE, UG625B/U	R9	D.1/12.5	RESISTOR, VARIABLE, COMPOSITION, RV4LAYSA102A
J3	D.4/13.2	CONNECTOR, RECEPTACLE, UG625B/U	R10	D.4/12.5	RESISTOR, VARIABLE, COMPOSITION, RV4LAYSA102A
J4	E.1/13.2	CONNECTOR, RECEPTACLE, UG625B/U	S1	D.3/6.1	SWITCH, ROTARY, MONTRONICS NO. 179671
J5	E.2/13.1	CONNECTOR, RECEPTACLE, UG625B/U	T1	G.2/8.5	TRANSFORMER, POWER, MONTRONICS NO. 168872
J6	E.3/13.2	CONNECTOR, RECEPTACLE, UG625B/U			CABLE ASSEMBLY, MONTRONICS NO. 188250
J7	E.4/13.1	CONNECTOR, RECEPTACLE, UG625B/U			CONNECTOR, RECEPTACLE, MS3106A-12S-3S
J8	E.5/13.2	CONNECTOR, RECEPTACLE, UG625B/U			EXTENDER BOARD, MONTRONICS NO. 183905
J9	F.2/13.1	CONNECTOR, RECEPTACLE, UG625B/U			CARD PULLER, MONTRONICS NO. 170951
J10	F.3/13.2	CONNECTOR, RECEPTACLE, UG625B/U			SHORTING PLUG, CS159/U
J11	F.4/13.1	CONNECTOR, RECEPTACLE, UG625B/U			ADJUSTMENT TOOL, MONTRONICS NO. 153049
J12	G.1/13.2	CONNECTOR, RECEPTACLE, UG625B/U			ADJUSTMENT TOOL, MONTRONICS NO. 178814
J13	G.2/13.1	CONNECTOR, RECEPTACLE, UG625B/U			
J14	G.3/13.2	CONNECTOR, RECEPTACLE, UG625B/U			
J15	G.4/13.1	CONNECTOR, RECEPTACLE, UG625B/U			
J16	F.1/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR A1 0.1 MC PREAMPLIFIER)			
J17	E.5/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR A2 1MC PREAMPLIFIER)			
J18	E.3/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR A5 5MC PREAMPLIFIER)			
J19	E.2/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 1 AMPLIFIER)			
J20	E.1/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 2 AMPLIFIER)			
J21	D.4/9.1	CONNECTOR, RECEPTACLE, METHODE MFG. NO. FD-1115-TT (RECEPTACLE FOR CHANNEL 3 AMPLIFIER)			

(H) = HIDDEN COMPONENT



ASSEMBLIES A1 THROUGH A6

PARTS DATA FOR ASSEMBLIES A1 THROUGH A6

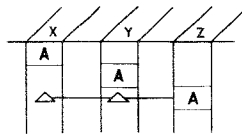
REF DESIG	LOCATING FUNCTION	NAME AND DESCRIPTION
A1	C.4/1.4	0.1 MC PREAMPLIFIER ASSEMBLY, 183848
A1C1	B.2/2.1	CAPACITOR, PLASTIC, 0.037 UF, 100 VDC, ARCO CAPACITOR NO. 1PC-373G
A1C2	B.5/2.1	CAPACITOR, CERAMIC, 0.68 UF, 25 VDC, SPRAGUE NO. 5C12A
A1C3	C.3/1.5	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A1C4	C.2/2.3	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A1C5	C.2/2.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A1CR1	C.3/2.5	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192
A1CR2	B.2/1.5	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118
A1P1	B.5/3.2	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS
A1Q1	A.5/1.4	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A1Q2	B.5/2.4	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A1R1	B.1/2.5	RESISTOR, METAL FILM, RN55D33R2F
A1R2	B.4/2.1	RESISTOR, COMPOSITION, RC07GF153K
A1R4	B.2/1.4	RESISTOR, METAL FILM, RN60D15R0F
A1R5	B.4/2.4	RESISTOR, METAL FILM, RN60D15R0F
A1R6	B.3/2.4	RESISTOR, COMPOSITION, RC07GF100K
A1R7	C.1/1.5	RESISTOR, COMPOSITION, RC20GF222K
A1R8	C.2/2.5	RESISTOR, COMPOSITION, RC07GF183J
A1T1	B.1/2.4	TRANSFORMER, R.F., MONTRONICS NO. 179663
A1T2	C.3/2.2	TRANSFORMER, R.F., MONTRONICS NO. 179663
A2	F.1/1.4	1 MC PREAMPLIFIER ASSEMBLY, 183855
A2C1	D.4/2.2	CAPACITOR, MICA, CM06F512J03

REF DESIG	LOCATING FUNCTION	NAME AND DESCRIPTION	REF DESIG	LOCATING FUNCTION	NAME AND DESCRIPTION
A2C2	E.3/2.1	CAPACITOR, MICA, CM06F512J03	A4R3	E.4/4.4	RESISTOR, COMPOSITION, RC07GF153K
A2C3	E.2/1.5	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A4R4	E.1/5.1	RESISTOR, METAL FILM, RN60D15R0F
A2C4	E.5/2.3	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A4R5	D.4/4.2	RESISTOR, METAL FILM, RN60D15R0F
A2C5	E.5/2.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A4R6	E.2/4.4	RESISTOR, COMPOSITION, RC07GF100K
A2CR1	E.4/2.4	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192	A4R7	E.3/4.5	RESISTOR, COMPOSITION, RC07GF623J
A2CR2	D.4/2.1	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118	A4T1	D.4/5.1	TRANSFORMER, R.F., MONTRONICS NO. 179648
A2P1	E.2/3.2	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS	A4T2	F.1/4.2	TRANSFORMER, R.F., MONTRONICS NO. 179648
A2Q1	E.2/2.3	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A4T3	F.1/5.1	TRANSFORMER, R.F., MONTRONICS NO. 179630
A2Q2	D.4/1.5	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A5	C.4/6.3	5 MC PREAMPLIFIER ASSEMBLY, 183889
A2R1	D.4/2.5	RESISTOR, METAL FILM, RN55D33R2F	A5C1	B.1/7.2	CAPACITOR, MICA, CM05D102J03
A2R2	E.1/2.1	RESISTOR, COMPOSITION, RC07GF153K	A5C2	C.1/6.5	CAPACITOR, MICA, CM05D102J03
A2R4	E.1/2.4	RESISTOR, METAL FILM, RN60D15R0F	A5C3	B.4/6.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A2R5	D.3/1.5	RESISTOR, METAL FILM, RN60D15R0F	A5C4	C.2/7.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A2R6	E.3/2.3	RESISTOR, COMPOSITION, RC07GF100K	A5C5	C.2/7.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A2R7	E.2/2.1	RESISTOR, COMPOSITION, RC20GF222K	A5C6	B.2/7.1	CAPACITOR, MICA, CM05C050K03
A2R8	E.3/2.5	RESISTOR, COMPOSITION, RC07GF223J	A5C7	B.2/6.5	CAPACITOR, MICA, CM05C050K03
A2T1	D.4/2.4	TRANSFORMER, R.F., MONTRONICS NO. 179648	A5CR1	C.2/7.3	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192
A2T2	E.5/1.5	TRANSFORMER, R.F., MONTRONICS NO. 179648	A5CR2	B.1/7.1	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118
A3	C.4/4.1	0.1 MC AMPLIFIER ASSEMBLY, 183863	A5P1	B.4/8.2	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS
A3C1	B.2/4.2	CAPACITOR, PLASTIC, 0.037 UF, 100 VDC, ARCO CAPACITOR NO. 1PC-373G	A5Q1	B.1/6.4	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A3C2	B.4/4.4	CAPACITOR, PLASTIC, 0.037 UF, 100 VDC, ARCO CAPACITOR NO. 1PC-373G	A5Q2	B.4/7.2	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A3C3	C.2/4.4	CAPACITOR, PLASTIC, 0.01 UF, 100 VDC, ARCO CAPACITOR NO. 1PC-103G	A5R1	B.1/7.5	RESISTOR, METAL FILM, RN55D33R2F
A3C4	C.3/4.3	CAPACITOR, MICA, CM06D102J103	A5R3	B.3/6.5	RESISTOR, COMPOSITION, RC07GF153K
A3C5	B.2/5.2	CAPACITOR, CERAMIC, 0.68 UF, 25 VDC, SPRAGUE NO. 5C12A	A5R4	A.5/6.5	RESISTOR, METAL FILM, RN60D15R0F
A3C6	C.1/4.5	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A5R5	B.3/7.4	RESISTOR, METAL FILM, RN60D15R0F
A3C7	C.1/5.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A5R6	B.5/7.3	RESISTOR, COMPOSITION, RC20GF100K
A3CR1	C.2/4.5	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192	A5R7	B.5/6.5	RESISTOR, COMPOSITION, RC20GF222K
A3CR2	B.1/4.3	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118	A5R8	C.1/7.4	RESISTOR, COMPOSITION, RC07GF393J
A3P1	B.5/5.5	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS	A5T1	B.1/7.4	TRANSFORMER, R.F., MONTRONICS NO. 179622
A3Q1	B.4/5.1	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A5T2	C.2/6.5	TRANSFORMER, R.F., MONTRONICS NO. 179622
A3Q2	A.5/4.2	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A6	F.1/6.3	5 MC AMPLIFIER ASSEMBLY, 183897
A3R1	A.5/5.3	RESISTOR, METAL FILM:	A6C1	E.1/6.5	CAPACITOR, MICA, CM06D102J03
		VALUE NO.	A6C2	E.4/6.4	CAPACITOR, MICA, CM06D102J03
		27.4 OHMS RN55D27R4F	A6C3	E.5/7.1	CAPACITOR, MICA, CM05D271J03
		47.5 OHMS RN55D47R5F	A6C4	E.4/7.1	CAPACITOR, MICA, CM05D820J03
		68.1 OHMS RN55D68R1F	A6C5	E.4/7.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A3R2	B.1/5.3	RESISTOR, METAL FILM, RN55D1820F	A6C6	F.1/7.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A3R3	B.2/4.5	RESISTOR, COMPOSITION, RC07GF153K	A6C7	E.4/7.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1
A3R4	B.5/4.2	RESISTOR, METAL FILM, RN60D15R0F	A6C8	E.1/7.1	CAPACITOR, MICA, CM05C050K03
A3R5	B.3/4.1	RESISTOR, METAL FILM, RN60D15R0F	A6C9	D.5/7.2	CAPACITOR, MICA, CM05C050K03
A3R6	B.4/5.2	RESISTOR, COMPOSITION, RC20GF100K	A6C10	E.3/7.1	CAPACITOR, MICA, CM05D820J03
A3R7	B.5/5.1 (H)	RESISTOR, COMPOSITION, RC07GF623J	A6CR1	E.5/7.4	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192
A3T1	B.1/5.1	TRANSFORMER, R.F., MONTRONICS NO. 179663	A6CR2	E.1/7.3	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118
A3T2	C.2/4.2	TRANSFORMER, R.F., MONTRONICS NO. 179663	A6P1	E.2/8.2	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS
A3T3	C.3/5.1	TRANSFORMER, R.F., MONTRONICS NO. 179655	A6Q1	D.4/7.3	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A4	F.1/4.1	1 MC AMPLIFIER ASSEMBLY, 183871	A6Q2	E.2/6.4	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A
A4C1	D.4/4.4	CAPACITOR, MICA, CM06D512J03	A6R1	D.3/6.5	RESISTOR, METAL FILM:
A4C2	E.4/4.3	CAPACITOR, MICA, CM06D512J03			VALUE NO.
A4C3	F.1/4.5	CAPACITOR, MICA, CM06D122J03			27.4 OHMS RN55D27R4F
A4C4	F.1/4.4	CAPACITOR, MICA, CM05D331J03			47.5 OHMS RN55D47R5F
A4C5	E.2/4.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A6R2	D.3/7.2	RESISTOR, METAL FILM, RN55D1500F
A4C6	E.4/4.4	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A6R3	E.1/7.2	RESISTOR, COMPOSITION, RC07GF153K
A4C7	E.3/5.2	CAPACITOR, CERAMIC, 0.05 UF, 50 VDC, SPRAGUE NO. 55C23A1	A6R4	E.2/7.3	RESISTOR, METAL FILM, RN60D15R0F
A4CR1	E.4/5.1	SEMICONDUCTOR, DIODE, 1N276, MIL-S-19500/192	A6R5	E.2/7.1	RESISTOR, METAL FILM, RN60D15R0F
A4CR2	D.5/4.3	SEMICONDUCTOR, DIODE, 1N483B, MIL-S-19500/118	A6R6	E.2/7.4	RESISTOR, COMPOSITION, RC07GF100K
A4P1	E.2/5.5	CONNECTOR, PLUG, METHODE MFG. NO. MD-1115-RATS	A6R7	F.1/7.5	RESISTOR, COMPOSITION, RC07GF623J
A4Q1	E.2/4.5	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A6R8	E.3/6.4	RESISTOR, COMPOSITION, RC20GF182K
A4Q2	D.4/4.3	TRANSISTOR, NPN, 2N2218, MIL-S-19500/251A	A6T1	D.4/6.4	TRANSFORMER, R.F., MONTRONICS NO. 179622
A4R1	D.3/5.3	RESISTOR, METAL FILM:	A6T2	F.1/6.4	TRANSFORMER, R.F., MONTRONICS NO. 179622
		VALUE NO.	A6T3	E.5/7.3	TRANSFORMER, R.F., MONTRONICS NO. 179614
		47.5 OHMS RN55D47R5F			
		56.2 OHMS RN55D56R2F			
		82.5 OHMS RN55D82R5F			
A4R2	D.4/5.3	RESISTOR, METAL FILM, RN55D33R2F			

(H) = HIDDEN COMPONENT

CHART MAKE-UP

THE INTEGRATED MAINTENANCE CHART PRESENTS DETAILED INFORMATION ABOUT THE EVENTS OCCURRING AS A RESULT OF EACH CHECK-OUT PROCEDURE. THIS SCHEME DESCRIBES EXACTLY HOW THE ENERGY IS PROCESSED THROUGHOUT THE SYSTEM. IT PRESENTS THE EVENTS IN A SCHEME THAT DEFINES THE INTERDEPENDENT RELATIONSHIP OF EACH OF THE SUCCESSIVE EVENTS. WITH THE DEPENDENCY RELATIONSHIP CLEARLY OUTLINED, THE INTEGRATED MAINTENANCE CHART SERVES AS AN EXCELLENT TROUBLESHOOTING TOOL.



EACH PART OF THE CHART HAS THREE MAIN AREAS: THE PROCEDURE COLUMN (ON THE LEFT), THE HEADING (ACROSS THE TOP), AND THE BODY. THE PROCEDURE COLUMN OUTLINES THE TURN-ON AND CHECK-OUT STEPS TO BE TAKEN. THE HEADINGS LIST THE CIRCUITS AND DEFINE THE CHECKPOINTS AT WHICH THE EVENTS OCCUR (GIVING A SPECIFICATION OR DESCRIPTION OF THE EVENT THAT APPEARS THERE). THE BODY TO THE RIGHT OF EACH STEP GIVES THE EVENTS THAT OCCUR AS A RESULT OF THAT STEP AND IDENTIFIES THE CIRCUITS THAT MUST FUNCTION PROPERLY FOR THOSE EVENTS TO OCCUR.

THE PROCEDURE COLUMN

THE PROCEDURE COLUMN SPECIFIES THE ACTIONS TO BE PERFORMED IN ORDER TO TURN ON AND CHECK OUT THE EQUIPMENT. THE CHECKOUT PROCEDURE SHOULD BE PERFORMED IN THE ORDER GIVEN SINCE EACH STEP IS DEPENDENT ON THE PROPER OPERATION OF THE PRECEDING STEP.

THE HEADINGS

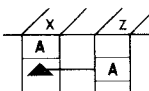
THE HEADINGS ARE A LISTING OF CHECKPOINTS AND CIRCUITS TO WHICH THE SYMBOLS IN THE BODY OF THE CHART CORRESPOND. THE EQUIPMENT LOCATION OF EACH HEADING ENTRY IS GIVEN AT THE TOP OF THE CHART BY THE NAME OF THE ASSEMBLY. A CHECKPOINT HEADING APPEARS ABOVE EACH EVENT ENTRY. A SIGNAL SPECIFICATION LINE IMMEDIATELY BELOW THE CHECKPOINT HEADINGS REFERENCE THE SPECIFICATION OR DESCRIPTION OF THAT EVENT.

FOR EACH CIRCUIT ENTRY (POSSIBLE FAULT) THE CORRESPONDING HEADING CONTAINS AN IDENTIFYING REFERENCE DESIGNATION OR FUNCTIONAL ENTITY IDENTIFIER. IF THERE IS APPLICABLE PANEL NOMENCLATURE, IT APPEARS IN A SHADED AREA FOLLOWING THE IDENTIFIER FOR EITHER A CHECKPOINT HEADING OR A CIRCUIT HEADING.

THE BODY

THE BODY OF THE CHART PRESENTS THE EVENTS THAT OCCUR AS A RESULT OF EACH PROCEDURAL STEP. IT OUTLINES THE INTER-RELATIONSHIP BETWEEN THE EVENTS AND IDENTIFIES THE CIRCUITS THAT MUST FUNCTION PROPERLY FOR THE VARIOUS EVENTS TO OCCUR. EACH EVENT IS REPRESENTED BY A RECTANGLE CONTAINING DESCRIPTIVE LETTERS. IF A PRECEDING EVENT IS REQUIRED FOR AN EVENT TO BE CONSIDERED TO OCCUR SIMULTANEOUSLY, EVEN THOUGH THESE EVENTS OCCUR INSTANTANEOUSLY, EACH DEPENDS ON ONE OR MORE OF THE PRECEDING EVENTS. THIS DEPENDENCY IS SHOWN BY "PROOF MARKERS". PROOF MARKERS ARE EITHER SOLID BLACK TRIANGLES OR OPEN TRIANGLES THAT POINT TO THE PRECEDING EVENTS ON THE PROOF MARKER LINE TO OCCUR. BLACK TRIANGLES INDICATE THAT THE PRECEDING EVENTS MUST OCCUR. WHITE TRIANGLES INDICATE THAT ANY ONE OF THE PRECEDING EVENTS ON THE PROOF MARKER LINE MUST OCCUR.

FOR EXAMPLE:

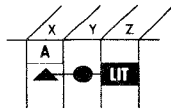


THE AVAILABILITY OF THE SIGNAL (WITHIN SPEC) AT "X" IS NECESSARY FOR THE SIGNAL AT "Z" TO BE PRESENT (AND WITHIN SPEC).

WOULD BE READ. . .

THE AVAILABILITY OF THE SIGNAL (WITHIN SPEC) AT EITHER "X" OR "Y" IS NECESSARY FOR THE SIGNAL AT "Z" TO BE PRESENT (AND WITHIN SPEC).

CIRCUIT OR CIRCUIT ELEMENTS ARE IDENTIFIED BY DOTS THUS



WOULD BE READ. .

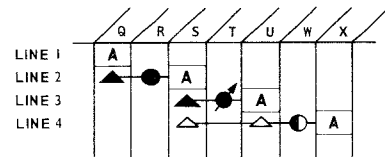
AVAILABILITY OF THE SIGNAL AT "X" AND THE PROPER OPERATION OF THE CIRCUIT ELEMENT "Y" ARE NECESSARY FOR THE LAMP "Z" TO BE LIT.

OR. . .

THE FACT THAT "Z" IS LIT PROVES THAT CIRCUIT ELEMENT "Y" IS OPERATING PROPERLY AND THAT THE SIGNAL AT "X" IS AVAILABLE.

AN ADJUSTABLE CIRCUIT ELEMENT IS IDENTIFIED THUS:

AN EXAMPLE OF UTILIZING ALL OF THE CIRCUIT SYMBOLS IS AS FOLLOWS:



LINE 1. THE INPUT EVENT.

LINE 2. THE AVAILABILITY OF THE SIGNAL AT "S" PROVES. .

1. THAT CIRCUIT ELEMENT "R" IS OPERATING PROPERLY AND
2. THAT THE SIGNAL AT "Q" IS AVAILABLE

LINE 3. THE AVAILABILITY OF THE SIGNAL AT "U" PROVES. . .











1. THAT ADJUSTABLE CIRCUIT ELEMENT "T" IS OPERATING PROPERLY AND

2. THE AVAILABILITY OF THE SIGNAL AT "S".

LINE 4. THE AVAILABILITY OF THE SIGNAL AT "X" PROVES...

1. ONE ASPECT OF CIRCUIT "W" AND

1. ONE ASPECT OF CIRCUIT "W" AND...
2. THE AVAILABILITY OF THE SIGNAL AT EITHER "S" "U" OR BOTH

DEFINITION OF SYMBOLS USED ON INTEGRATED MAINTENANCE CHART		
TYPE	SYMBOL	MEANING
CONDITION OR EVENTS	 ,  OR   	COLOR OF SYMBOL INDICATES EASE OF ACCESS. BLACK: PANEL GREY: EASY ACCESS WHITE: DIFFICULT ACCESS SIGNAL AVAILABLE AND WITHIN SPEC INDICATOR LAMP LIT METER INDICATES WITHIN SPEC
CIRCUIT	  	CIRCUIT OR CIRCUIT ELEMENT THAT MUST FUNCTION PROPERLY FOR EVENT ON SAME LINE TO OCCUR. ADJUSTABLE CIRCUIT OR CIRCUIT ELEMENT THAT MUST FUNCTION PROPERLY FOR EVENT ON SAME LINE TO OCCUR. CIRCUIT THAT MUST BE PARTIALLY GOOD (SUCH AS SWITCH CONTACTS) FOR EVENT ON SAME LINE TO OCCUR.
PROOF/DEPENDENCY	 	EVENT ON SAME LINE DEPENDS ON CONDITION OR EVENT ABOVE. EVENT ON SAME LINE DEPENDS ON ANY ONE OF CONDITIONS OR EVENTS ABOVE.

TURN-ON AND CHECKOUT PROCEDURE		RADIO FREQUENCY AMPLIFIER AM-2123/U																					
		AC FUSES				DC FUSE				J3 SMC INPUT LEVEL ADJUST				J2 IMC INPUT LEVEL ADJUST				J1 0.1MC INPUT LEVEL ADJUST				ST METER FUNCTION	
		P1-A/C	P1-B/C	P1-C	P1-D	P1-E	P1-F	P1-G	P1-H	P1-I	P1-J	P1-K	P1-L	P1-M	P1-N	P1-O	P1-P	P1-Q	P1-R	P1-S	P1-T	P1-U	P1-V
SIGNAL SPECIFICATION NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. APPLY 115 VAC, 10, 50-400 CPS TO P1, AND 22-30V TO P2																							
A. SET METER FUNCTION SWITCH S1 TO POWER INPUTS AC																							
B. SET METER FUNCTION SWITCH S1 TO POWER INPUTS DC																							
C. REMOVE AC FUSE F1																							
2. APPLY SMC 0.5-5.0 VAC TO J3 SMC INPUT																							
A. SET METER FUNCTION SWITCH S1 TO PREAMP OUTPUTS SMC																							
3. APPLY IMC 0.5-5.0 VAC TO J2 IMC INPUT																							
A. SET METER FUNCTION SWITCH S1 TO PREAMP OUTPUTS IMC																							
4. APPLY 0.1MC 0.5-5.0 VAC TO J1 0.1MC INPUT																							
A. SET METER FUNCTION SWITCH S1 TO PREAMP OUTPUTS 0.1MC																							
B. SET METER FUNCTION SWITCH S1 TO EACH OF THE TWELVE CHANNEL OUTPUTS POSITIONS																							

SMC PREAMPLIFIER
18389
A5

IMC PREAMPLIFIER
18355
A1

0.1MC PREAMPLIFIER
18348
A1

SMC, IMC OR 0.1MC
AMPLIFIER
A3 183863
A4 183871
A6 183897

1. 115 VAC

2. 115 VAC

3. 12 VAC (AP)

4. 22-30V

5. 22-30V

6. A1, A2: +

7. +20V

8. 0.5-5.0 VAC

9. 0.5 ± 0.05

10. + 0.6V (AP)

11. 2.75VAC (R)

12. 0.5-5.0 VAC

13. 0.4 ± 0.04

14. + 0.6V (AP)

15. 1.55 VAC (R)

16. 0.5-5.0 VAC

17. 0.16 ± 0.01

18. + 0.6V (AP)

19. 1.30 VAC (R)

20. + 0.6V (AP)

21. 4.5 ± 0.45

22. IND 1-6; 7

TROUBLESHOOTING

A MALFUNCTION INDICATED BY AN INCORRECT OUTGOING SWITCHING METER QUICKLY ISOLATED CAN THEN BE IDENTIFIED

LIST OF TEST EQUIPMENT

VTVM AN/USM-116
OR EQUIVALENT

TROUBLESHOOTING PROCEDURE FOR RADIO FREQUENCY AMPLIFIER AM-2123/U

A MALFUNCTION IN THE AM-2123/U WILL BE READILY APPARENT BY NOTING AN INCORRECT OUTPUT FROM ONE OR MORE OF THE TWELVE OUTPUT CHANNELS. SWITCHING METER FUNCTION SWITCH S1 THROUGH ALL OF ITS POSITIONS WILL QUICKLY ISOLATE A MALFUNCTION TO A PARTICULAR ASSEMBLY. A MALFUNCTION CAN THEN BE ISOLATED BY SIGNAL TRACING THROUGH THE ASSEMBLY WITH A VTVM

SIGNAL SPECIFICATIONS

1. 115 VAC
2. 115 VAC
3. 12 VAC (APPROX)
4. 22-30V
5. 22-30V
6. A1, A2: +30V
7. +20V
8. 0.5-5.0 VAC
9. 0.5 ± 0.05 VAC (REFER TO PREAMPLIFIER ALIGNMENT.)
10. + 0.6V (APPROX)
11. 2.75VAC (REFER TO PREAMPLIFIER ALIGNMENT.)
12. 0.5-5.0 VAC
13. 0.4 ± 0.04 VAC (REFER TO PREAMPLIFIER ALIGNMENT.)
14. + 0.6V (APPROX)
15. 1.55VAC (REFER TO PREAMPLIFIER ALIGNMENT.)
16. 0.5-5.0 VAC
17. 0.16 ± 0.02 VAC (REFER TO PREAMPLIFIER ALIGNMENT.)
18. + 0.6V (APPROX)
19. 1.30 VAC (REFER TO PREAMPLIFIER ALIGNMENT)
20. + 0.6V (APPROX)
21. 4.5 ± 0.45 VAC INTO 50 OHM LOAD. (REFER TO AMPLIFIER ALIGNMENT.)
22. IND 1-6; 7-10 DIVISIONS

ALIGNMENT PROCEDURE	
NOTE Card Puller, Extender Board, Shorting Plug and Two (2) Adjustment Tools are located under bottom cover.	
Preamplifiers A1, A2, and A5	<p>A. Test Equipment Required:</p> <ol style="list-style-type: none">0.1 MC, 1 MC, and 5 MC frequency source.AC VTVM, Electronic Multimeter AN/USM-116. <p>B. Procedure:</p> <ol style="list-style-type: none">With preamplifier on extender board and METER FUNCTION switch set to appropriate position, adjust T1 and T2 for maximum output as indicated on front panel meter. Keep panel meter on scale by adjusting INPUT LEVEL ADJUST control.Adjust appropriate INPUT LEVEL ADJUST control for 1.30 volts RMS for 0.1 MC, 1.55 volts RMS for 1 MC, and 2.75 volts RMS for 5 MC at output of preamplifier, pin A of P1, with respect to ground.Measure 4.0 (±0.6) volts RMS for 0.1 MC, 6.8 (±1.0) volts RMS for 1 MC, and 9.0 (±1.4) volts RMS for 5 MC at collectors of Q1 and Q2 with respect to ground.Measure 0.16 (±0.02) volts RMS for 0.1 MC, 0.4 (±0.04) volts RMS for 1 MC, and 0.5 (±0.05) volts RMS for 5 MC at input to preamplifier, pin S of P1 with respect to ground. <p>NOTE Steps 3 and 4 are used as a gain check.</p>
Amplifiers A3, A4, and A6	<p>A. Test Equipment Required:</p> <ol style="list-style-type: none">Same as above. <p>B. Procedure:</p> <ol style="list-style-type: none">Perform preamplifier alignment procedure.With amplifier on extender board, clip ground lead of AC VTVM to circuit ground (test point E2) and the other side of VTVM to Q2 collector (test point E1).Short circuit output connector with shorting plug provided.Adjust T1 and T2 for maximum voltage on VTVM, adjusting INPUT LEVEL ADJUST as necessary to maintain reading less than 10 volts.Remove shorting plug and adjust T3 for minimum voltage on VTVM.Connect a 50 ohm load from the output to ground at the output connector, and reset INPUT LEVEL ADJUST as in Preamplifier Procedure step 2.Measure 8.5 (±1.3) volts RMS for 0.1 MC and 9.0 (±1.4) volts RMS for 1 MC and 5 MC at E1 with respect to E2.Measure 4.5 (±0.45) volts RMS at output jack. <p>NOTE Steps 6 through 8 are used as a gain check.</p>

RESISTOR SELECTION PROCEDURE FOR

0.1, 1, and 5 MC AMPLIFIER MODULES

On the 0.1, 1, and 5 MC Amplifier Modules, R1 is selected to compensate for accumulative component tolerances which affect gain. If a component is replaced which causes the gain to be out of tolerance, R1 should be replaced with a value that brings gain within tolerance. Proceed as follows:

- a. Allow a warmup period of at least 30 minutes for the biasing diode CR2 and transistors Q1 and Q2 to reach normal operating temperature.
- b. Apply necessary voltage and frequency to proper input connector to obtain the voltage indicated in the following tables at the amplifier input with respect to ground.
- c. Connect a 50 ohm load from the output to ground at the output connector, and measure the voltage at the output connector of the amplifier.
- d. If output voltage is not within Output Voltage Tolerance Band, replace R1 as indicated in table and then recheck output voltage.

5 MC AMPLIFIER

Input Voltage: 2.75 V RMS at pin S of A6P1.

Output Voltage Tolerance Band: 4.1 to 4.9 V RMS.

Nominal Value of R1: 27 ohms.

E_O Range	Change R1 To
Less than 4.1	Reject module*
4.1 to 4.9	No change
More than 4.9	47 ohms

1 MC AMPLIFIER

Input Voltage: 1.55 V RMS at pin P of A4P1.

Output Voltage Tolerance Band: 4.1 to 4.9 V RMS.

Nominal Value of R1: 56 ohms.

E _O Range	Change R1 To
Less than 3.7	Reject module*
3.7 to 4.1	47 ohms
4.1 to 4.9	No change
4.9 to 5.1	68 ohms
More than 5.1	82 ohms

0.1 MC AMPLIFIER

Input Voltage: 1.30 V RMS at pin M of A3P1.

Output Voltage Tolerance Band: 4.1 to 4.9 V RMS.

Nominal Value of R1: 47 ohms.

E _O Range	Change R1 To
Less than 3.7	Reject module*
3.7 to 4.1	27 ohms
4.1 to 4.9	No change
More than 4.9	68 ohms

RETURN TO
SUPPLIER'S
LIBRARY

*Examine module for defective components and/or low β transistors.