AMPLIFIER RESEARCH

OPERATING AND SERVICE MANUAL

MODEL

700A

PART NO.

1001061-502

SERIAL NO.

4664

FORM 144 REV 0378

AMPLIFIER RESEARCH

SOUDERTON, PA. 18964

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MODEL 700A

CAUTION NOTE:

IMPROVED PERFORMANCE CAN BE OBTAINED IF THE AMPLIFIER OUTPUT IMPEDANCE TAP IS SELECTED TO MINIMIZE REFLECTED POWER AS INDICATED ON THE PANEL METER. NORMALLY THIS WILL MATCH THE OUTPUT IMPEDANCE AND THE AMPLIFIER WILL RUN COOLER AND PROVIDE MORE OUTPUT VOLTAGE FOR THE SAME AMOUNT OF DRIVE.

DO NOT SWITCH THE IMPEDANCE TAP WITH POWER APPLIED TO THE LOAD. REMOVE DRIVE TO THE AMPLIFIER BEFORE SWITCHING.

ENGINEERING DEPARTMENT
AMPLIFIER RESEARCH

SECTION I

GENERAL INFORMATION

1.1 General Description

The Model 700A Power Amplifier is a self-contained high power unit designed primarily for severe industrial applications.

The Model 700A Amplifier is completely solid state. It is protected against damage which might be caused by excessive VSWR, high instantaneous line voltage, excessive output power or over-temperature operation. A built-in time delay and zero-crossing turn-on reduce current inrush to prolong component life. Power supply regulation is used to remove noise and output fluctuations. A directional wattmeter and front panel selector switch provide convenient measurement of forward power from the amplifier and reverse power reflected by the load. Cooling is provided by self-contained fans. All sub-assemblies are plug-in for easy maintenance and repair.

1.2 POWER SUPPLIES

This unit has a self-contained 115 VAC, 50/60 Hz regulated power supply. The power consumption is a nominal 1500 watts @ 700 watts output. Primary fusing is provided. Delayed zero-crossing turn on circuitry is used to avoid high in-rush currents.

1.3 SPECIFICATIONS

Refer to Amplifier Research Data Sheet on next page for detailed specifications.

AMPLIFIER RESEARCH

ULTRASONIC POWER AMPLIFIER
700 WATTS, 10-250 KHz
MODEL 700A

The Model 700A Power Amplifier is completely solid state and contains no mechanical circuit breakers or relays. Even its over-temperature sensor is a solid state device. Designed for severe industrial applications, the Model 700A Amplifier is protected from damage which might be caused by excessive VSWR, high instantaneous line current, excessive output power or over-temperature operation. A built-in time delay and zero-crossing turn-on reduce current inrush to prolong component life. Power Supply voltage regulation is used to remove noise and output fluctuations. A directional wattmeter and front panel selector switch provide convenient measurement of the forward power from the amplifier and reverse power reflected by the load. A non-linear meter scale allows extremely sensitive tuning of the load simply by adjusting for minimum reflected power.

The Model 700A cooling is provided by self-contained fans. Air is drawn in through filtered inlets to protect the circuitry from exposure to excessively dirty environments which may be encountered in industrial applications. All sub-assemblies are plug-in and can be readily removed for maintenance and repair.

The Model 700A may be purchased initially for low power requirements and when additional power is required another Model 700A and a hybrid power combiner may be used to provide performance equivalent to our Model 1400A.

The Model 700A is complete with a built-in 115 VAC power supply, regulators, power meter and protection circuitry. It is normally supplied in a handsome bench top cabinet with rack mounting available as an option.

160 SCHOOL HOUSE ROAD
SOUDERTON, PA. 18964

PHONE: 215-723-8181

REV 0379

SECTION II

OPERATING INSTRUCTIONS

2.1 GENERAL

Operation of the Model 700A Power Amplifier is simple and straight forward. The input signal is fed to the jack marked INPUT and the amplifier output is taken from the jack marked OUTPUT. Both input and output jacks are standard type BNC. The unit is turned on by activating the power switch marked OFF, ON. In the event of a malfunction protection is provided by internal shutdown circuits, and also by fusing located at the rear of the unit. A polarized three (3) wire AC power cord is also included with the unit to provide cabinet and chassis grounding to the power mains. A front panel power meter calibrated in watts is provided to enable the operator to measure the power actually delivered to the load. A switch is included to enable the selection of either forward or reflected power. A front panel attenuator control sets the output level.

CAUTION

THE MODEL 700A AMPLIFIER IS NOT CRITICAL IN REGARDS TO SOURCE AND LOAD VSWR AND WILL REMAIN UNCONDITIONALLY STABLE WITH ANY MAGNITUDE AND PHASE OF SOURCE AND LOAD VSWR. IT ALSO HAS BEEN DESIGNED TO WITHSTAND, WITHOUT DAMAGE, RF INPUT POWER UP TO TWENTY (20) TIMES ITS RATED INPUT OF 1 mW: HOWEVER, SIGNAL LEVELS HIGHER THAN 20 mW OR TRANSIENTS WITH HIGH PEAK VOLTAGES CAN DAMAGE THE AMPLIFIER. ALSO, ACCIDENTAL CONNECTION OF THE 700A OUTPUT TO THE INPUT CAUSES OSCILLATIONS WHICH WILL PERMANENTLY DAMAGE THE INPUT TRANSISTOR.

2.2 AMPLIFIER OPERATION

Figure 2.1 shows the Model 700A Amplifier in pictorial form.

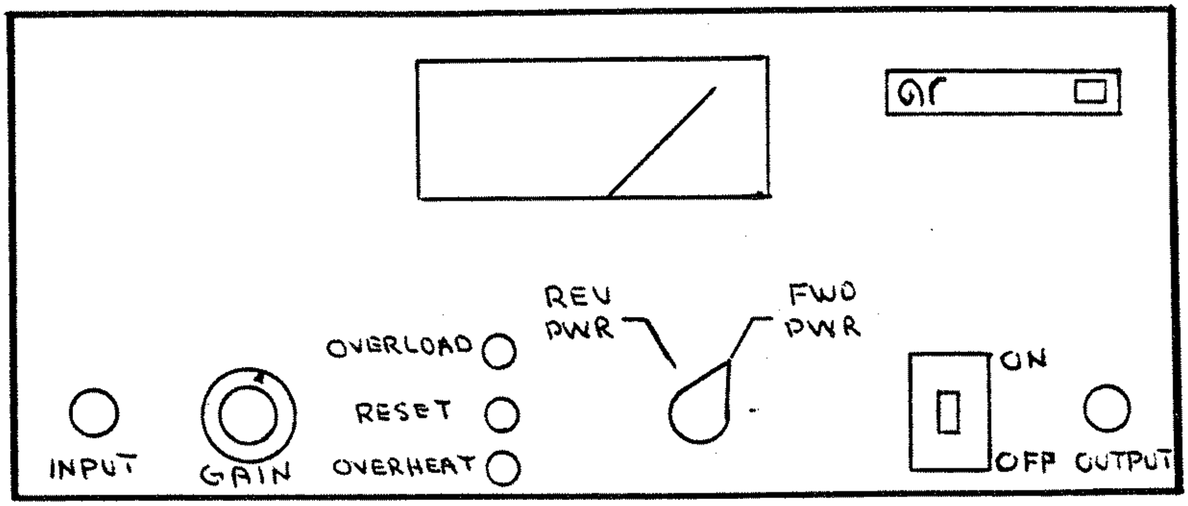

Figure 2.1
Amplifier Operation

Turn On Sequence:

1. Connect input signal to INPUT connector.
2. Connect load to OUTPUT connector.
3. Set GAIN control fully counter clockwise.
4. Activate power switch to ON position. A red indicator light mounted within the switch will light when power is applied.
5. Monitor output power (FWD) and adjust gain for desired level.

SECTION III

THEORY OF OPERATION

3.1 INTRODUCTION

Refer to Block Diagram on the following page. The Model 700A incorporates a low level section which consists of an integrated circuit pre-amplifier followed by a gain control and a single transistor stage which in turn drives a push-pull stage.

The output of the low level stage is fed to a four way power splitter. The four identical outputs of the power splitter are fed to 2 pairs of push-pull stages. The outputs of these stages are combined in the final combiner and routed to the output connector.

Input and output matching networks are utilized to provide optimum power transfer to and from the amplifier with a 50 ohm source and load impedance respectively. Interstage coupling is accomplished by using broadband ferrite transformers that provide the essential overall flat frequency response.

The self-contained power supply employs a full wave rectifier, transistor error sensing amplifier and series pass transistors to provide regulated output voltages. It also utilizes delayed, zero-crossing turn on to avoid high inrush currents.

3.1 INTRODUCTION (continued)

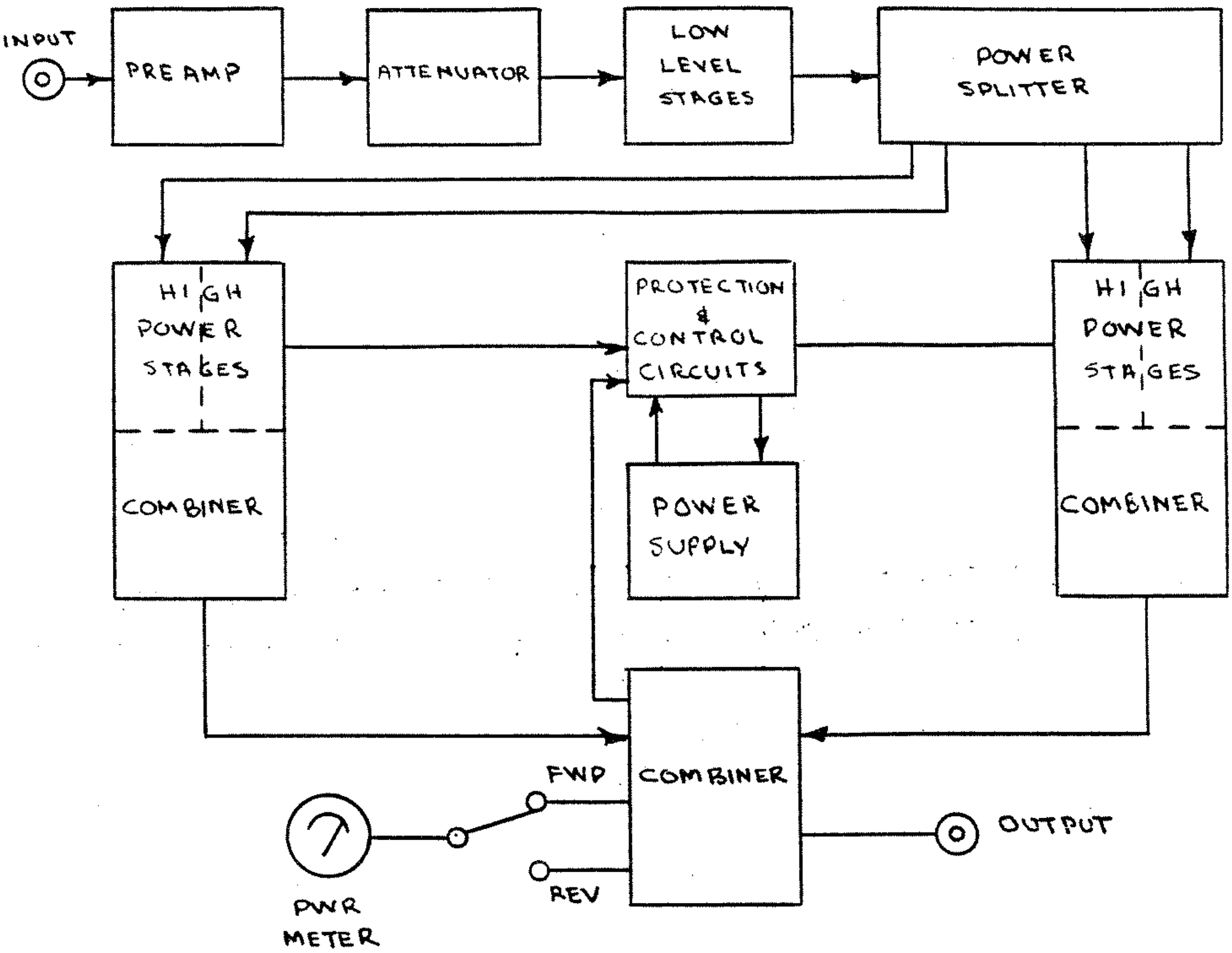

FIGURE 3.1
BLOCK DIAGRAM
MODEL 700A

3.2 AMPLIFIER SECTION

Refer to Schematic Diagram Nos. 1001059, 1000837, 1001054, 1000845.

The input signal is fed from the front panel input connector to the integrated circuit pre-amp A2U1. The output of A2U1 is fed to emitter follower A2Q2 which provides the power and impedance transformation to drive the front panel gain control and the low level stages. The low level amplifier stages (Schematic 1000837) consists of Q1 which is fed through impedance matching transformer T1. The output of Q1 drives the push-pull amplifier stage consisting of T2, Q2, Q3, and T3.

The signal is then fed to the four way splitter consisting of T5, T6, and T7. This provides four identical output signals.

The four identical signals are then fed to two pairs of push-pull amplifier stages (Schematic 1001054). The inputs are transformer coupled to Q1, Q2, and Q3, Q4. Feedback is provided by RC networks from collector to base. Forward bias is provided by two resistors and a diode. This is used to lower crossover distortion. The outputs of each pair are combined in T5. The two outputs are then combined again in the final combiner (Schematic 1000845). This final combining takes place in T1 and T2. This combined signal then goes to the output connector. Integral to the final combiner is a detector circuit which is designed to produce DC voltages proportional to the forward and reflected power. These voltages are selected by the front panel switch and displayed as forward or reverse power (watts) on the power meter. This circuit also supplies forward and reverse overpower shutdown signals to the protective circuitry. The amplifier for the power meter (U2) is located on the turn on circuit board (A2).

3.3 TURN ON AND PROTECTIVE LOGIC CIRCUITRY

Refer to Schematic No. 1001050 and 1001052.

When the power ON switch is activated, +Vcc is applied to the logic circuitry. A2C11 charges through A2R8 until the voltage on A2C11 exceeds the zener voltage on A2VR1 at which time A2Q4 turns on. This provides a signal to the primary AC relay located on the power supply sub-assembly which in turn applies AC power to the high voltage power supply. The time constant of A2R8 and A2R11 provides a delayed turn on which prevents high inrush currents.

3.3 TURN ON AND PROTECTIVE LOGIC CIRCUITY (Continued)

In case of an excess of reflected power, a signal is sent from the final combiner sub-assembly to A1Q3 of the protective circuit sub-assembly. The conduction of A1Q3 turns on A1Q7 which turns on A1Q6. A1Q7 and A1Q6 then act as a latch, remaining in the on condition until reset by the front panel "reset" control. A1Q6 applies a signal to A2Q1 turning off the signal emitter follower A2Q2, and to A2Q3 which turns off A2Q4 removing the turn on signal to the high voltage supply, shutting off the high voltages to the power amplifier stages. The overload indicator lamp is also turned on. Forward power shutdown operation and overcurrent shutdown operation are similar. The forward power shutdown signal originates in the final combiner. The overcurrent shutdown signal originates in U1 of the power supply.

There are temperature sensors located on the power supply sub-assembly and the two final amplifier assemblies. In case of an over-temperature condition a signal is set to A1U1 turning one of the transistors on. Any one of these transistors turning on will turn on A1Q2 which then turns on A1Q1. A1Q1 and A1Q2 again act as a latch, remaining on until reset by the front panel "reset" control. The over temperature lamp is also turned on. A1Q1 again applies a signal to A2Q2 and A2Q3 which operate the same as above. There is also a cover inter-lock, which prevents turning on the unit with the cover off. The cover interlock signal is supplied from A1R19 through A1Q2 directly to the shutdown circuit.

3.4 POWER SUPPLY

Refer to Schematic Diagrams 1001059 and 1000833.

When the power on switch is activated, 115 VAC power is applied to the low voltage supply (VR1) which supplies the turn on and protective circuitry. It is also applied, at a reduced level through R10 to the bridge rectifier CR1. After the time delay has expired, a signal is sent to K1, a zero-crossing turn on relay, applying full power to CR1. The rectifier current is filtered by C1, then passes through the current limiting resistors, Q3 through Q8, and then to the output. The voltage drop across R2 and R3 is sensed by U1 through R4, R5, and VR4. The trip point of U1 is set by adjusting R5 to turn on X1 with the desired current flowing through R2 and R3. Q1 and VR1 sense any changes in the output. If the voltage increases Q1 turns on harder decreasing the bias to Q2. This lowers the current through the series pass transistors, lowering the output voltage to its original level.

3.4 POWER SUPPLY (Continued)

A decrease in output voltage has the opposite effect, thus regulating the output to the voltage set by R12. This voltage (140V) supplies the final amplifier.

Zener diodes are used to drop the 140 volt supply to 60 volts which is used in the driver amplifier.

SECTION IV

MAINTENANCE

4.1 GENERAL MAINTENANCE INFORMATION

The Model 700A should require little maintenance. It is built with etched circuit wiring and solid state devices which should ensure long, trouble-free life. In addition it contains circuitry to protect it against excess forward or reflected power, overcurrent, and over-temperature conditions.

However, should trouble occur special care must be taken in servicing, to avoid damage to the devices or the etched circuit boards.

Since the components are soldered in place, substitution of components should not be resorted to unless there is some indication that they are faulty. In addition, take care when troubleshooting not to short voltages across the amplifier. Small bias changes may ruin the amplifier due to excessive dissipation or transients.

Components within the Amplifier Research instruments are conservatively operated to provide maximum instrument reliability. In spite of this, parts within an instrument may fail. Usually, the instrument must be immediately repaired with a minimum of "down time". A systematic approach can greatly simplify and thereby speed up the repair.

However, due to the importance of the amplifier's alignment, it is recommended that when failure is caused by breakdown of any of the components in the signal circuits, the amplifier be returned to the factory for part replacement and amplifier realignment. Shipping instructions are as follows: ship PREPAID via United Parcel Service to Amplifier Research Corporation, 160 School House Road, Souderton, PA 18964.

4.2 COVER AND SUB-ASSEMBLY REMOVAL

To remove the top cover take out the screws located in the top and rear flange of the cover. Lift rear of cover and slide out from under front panel flange.

4.2 COVER AND SUB-ASSEMBLY REMOVAL (Continued)

To remove the Amplifier and power supply sub-assemblies disconnect all connectors and remove the 6 mounting screws for each assembly from the bottom of the unit.

Logic ards can be removed by taking out the mounting screws located in the upper corners of the card and gently pulling the cards from their connectors.

> CAUTION: When removing mounting screws do not drop the card separating spacers into the unit.

4.3 AIR FILTER SERVICE

Both outer side panels should be removed periodically and the air filters located behind them cleaned or replaced periodically.

> CAUTION: Failure to properly service air filters can cause overheating and shorten life of the Amplifier.

4.4 TROUBLESHOOTING

A good way to start troubleshooting is to check the supply voltages. First check for +12V at A1VR1. If it is low or missing, check the line fuse, VR1 and associated circuitry on the A2 board. If it is present next check for 140 volts on the regulated power supply module. If it is missing check for a turn-on signal at K1-3. If the signal is missing check through the logic circuitry, also checking that none of the protective shutdown conditions exist, and that the cover interlock switch is energized or bypassed. If the turn on signal is present check the power supply from CR1 through to the output.

If all the voltages are present, apply a signal to the input and attempt to trace it through the signal path until it disappears. Then check the individual components in that stage.

4.5 SERVICING ETCHED CIRCUIT BOARDS

When soldering leads, use a hot forty (40) watt or smaller iron. Apply heat sparingly to the leads, not to the printed wiring on the board. Before installing new parts clean holes to receive new part without forcing. Have new leads tinned to receive solder quickly with a minimum of heat and without residue.

SECTION V

REPLACEABLE PARTS

5.1 INTRODUCTION

This section contains information to ordering replacement parts. The following parts list show the parts in alphanumeric order of their reference designators and indicate the description; and, together with any applicable notes, provide the following:

- a. Description of the part.
- b. Manufacturer's part number.
- c. Typical manufacturer of the part.

Miscellaneous parts are listed at the end of the parts list.

5.2 ORDERING INFORMATION

To obtain replacement parts, address order to Amplifier Research, 160 School House Road, Souderton, PA 18964. Identify and include instrument model and serial numbers.

5.3 NONLISTED PARTS

To obtain a part that is not listed, include:

- a. Instrument model number.
- b. Instrument serial number.
- c. Description of the part.
- d. Function and location of the part.

5.4 REFERENCE DESIGNATIONS

A = assembly
B = fan
BT = battery
C = capacitor
CB = circuit breaker
CR = diode
DS = lamp
E = terminal
F = fuse
IC = integrated circuit
J = jack
K = relay
L = inductor
M = meter
P = plug
Q = transistor, semiconductor
R = resistor, potentiometer
RT = temperature sensing element
S = switch
T = transformer
TB = terminal block
TP = test point
U = integrated circuit
V = vacuum tube, neon bulb, photocell, etc.
VR = zener diode
W = wire, cable
X = socket

5.5 PARTS LISTS

See the following sheets for Parts Lists.

ML 1001061-502 **MODEL** 700A

DESCRIPTIVE INFORMATION	SUPPORT DOCUMENTS
FREQUENCY 10-250 KHz	TEST DATA SHEET 1001044
POWER OUT 700W LINEAR	TEST PROCEDURE 1001903
PRIMARY POWER 115 VAC	ENVELOPE DWG -
COOLING INTERNAL FANS	SALES DATA SHEET INFORMAL
PACKAGE 17" LAB 7" PANEL	MANUAL CLASS I (SEE REVERSE SIDE)
OPTIONS INCLUDED	REMARKS

MATERIAL PULL INFORMATION												MANUAL INFO				
ASSY LEVEL								DESCRIPTION	QTY	ASSEMBLY NUMBER	S	PL	AS	SC	SCHEMATIC NUMBER	S
1	2	3	4	5	6	7	8									
X								AMPLIFIER ASSY	1	PL1001061-502		X				
	X							LOGIC ASSY A1	1	PL1001053-501	C	X		X	1001052	B
	X							LOGIC ASSY A2	1	PL1001056-501	C	X		X	1001050	B
	X							PWR CMBNR, DIR DET	1	PL1000852-502	B	X		X	1000845	A
	X							HVPS ASSY	1	PL1000835-502	B	X		X	1000833	B
		X						REGULATOR ASSY	1	PL1000834-501	B	X			1000833	B
	X							AMPLIFIER MODULE ASSY	1	PL1000841-503		X				
		X						RF BRD ASSY, FINAL	2	PL1001058-501	B	X		X	1001054	B
		X						RF BRD ASSY, LOLVL	1	PL1000838-503	B	X		X	1000837	B
	X							HSNG & INTRFC ASSY	1	PL1001060-503		X		X	1001059	C
		X						ATTENUATOR ASSY	1	PL1001092-501		X				
		X						TRANSFORMER ASSY	1	PL1001122-501						

FORM 109 REV0378

AMPLIFIER RESEARCH

DATE	R	DATE	R
28 Mar 78	-	8JUN79	B
26 Dec 78	A		

MASTER LIST

ECN

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
								REF		1000833	SCHEMATIC			A	12 76
														B	26Jul76
														C	12Nov76
														D	
														E	2MAR78
														F	18 APR. 78
														G	13 Nov 80
													356	H	5FEB82
										5	G	NOT PART OF MANUAL			
										4	H				
										3	C				
										2	F				
										1	H				
										SHEET	REV				

MODEL 796 FREQ CONN,700A

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWPoth	DATE 25Mar76
TITLE REGULATOR ASSY HVPS				DWG. NO. PL1000834	
				SHEET 1 OF 5	REV

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
								1	Q8	TIP 35C	TRANSISTOR				TI △1
								1	Q7	TIP 35C	TRANSISTOR				TI △1
								1	Q6	TIP 35C	TRANSISTOR				TI △1
								1	Q5	TIP 35C	TRANSISTOR				TI △1
								1	Q4	TIP 35C	TRANSISTOR				TI △1
								1	Q3	TIP 35C	TRANSISTOR				TI △1
								1	Q2	TIP35C	TRANSISTOR				TI △1
								1	Q1	TIP51	TRANSISTOR				TI △1
								1	CR1	1N5061	DIODE				ANY
								1	C6	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C5	TVA-1437	CAP, FXD, ELEC	4µF		200V	SPRAGUE
								1	C4	811-000X5R0472K	CAP, FXD, CERAMIC	4700pF		500V	ERIE
								1	C3	5GAP10	CAP, FXD, CERAMIC	0.1µF		500V	SPRAGUE
								1	C2	TVA 1305.5	CAP, FXD,	20µF		50V	SPRAGUE
								-	C1	—	—				

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ORIGINATOR DWRoth DATE 25 Mar 76
TITLE REGULATOR ASSY
HVPS
DWG. NO. PL1000834
SHEET 2 OF REV F

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								1	R15	TYPE BWH	RES, FXD, WW	0.27Ω		3W	
								1	R14		RES, FXD, COMP	1.0K	5%	¼W	
								1	R13	4658	RES, FXD, WW	15K		5W	OHMITE
								1	R12	U201R102B	RES, VAR	1.0K		¼W	
								1	R11		RES, FXD, COMP	6.8K	5%	¼W	
								1	R10	NOT USED					
								1	R9	4642	RES, FXD, WW	5K		5W	OHMITE
								1	R8		RES, FXD, COMP	1.0K	5%	2W	
								–	R7	NOT USED					
								–	R6	NOT USED					
								1	R5	U201R101B	RES, VAR	100 Ω		¼W	CTS
								1	R4		RES, FXD, COMP	22 Ω	5%	¼W	
								1	R3	1802A	RES, FXD, WW	1.0Ω		20W	OHMITE
								1	R2	1802A	RES, FXD, WW	1.0Ω		20W	OHMITE
								–	R1	–	–				

QUANTITY REQUIRED

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APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE REGULATOR ASSY HVPS			
ORIGINATOR WJ Roth	DATE 25 Mar 76		
DWG. NO. PL-1000834			
SHEET 3 OF	REV		

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								8		4778A	INSULATOR (TIP-35)				THERMALLOY ◁1
								1		1000819-101	PC BOARD				AR
								1		1000823-101	HEAT SINK				AR
								—		TXBF-030-025B	HEAT SINK				IERC
								1	U1	4N27 (MOC1002)	OPTO-ISOLATOR				MOTOROLA
								1	VR4	SZ 2.8 1%	ZENER DIODE	2.8V	1%		SCHAUER
								1	VR1	IN5231	ZENER DIODE				ANY
								1	R20	TYPE BWH	RES, FXD, WW	0.27Ω		3W	
								1	R19	TYPE BWH	RES, FXD, WW	0.27Ω		3W	
								1	R18	TYPE BWH	RES, FXD, WW	0.27Ω		3W	
								1	R17	TYPE BWH	RES, FXD, WW	0.27Ω		3W	
								1	R16	TYPE BWH	RES, FXD, WW	0.27Ω		3W	

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TITLE REGULATOR ASSY HVPS				DWG. NO. PL1000834	
				SHEET 4 OF	REV. H

509	508	507	506	505	504	503	502 MODEL 700A,850,851	501 MODEL 796	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL ECN	RATING	SPECIFICATION OR VENDOR
														A	12 R 76
														B	26 JUL 76
														C	12 Nov 76
							REF.	REF.		1000833	SCHEMATIC			D	9 SEP 77
														E	3 MAR 78
														F	18 APR 78
														G	29 AUG 78
														H	8 JUN 79
													571	J	1 JUN 83
										3	H				
										2	J				
										1	J				
										SHEET.	REV.				

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TITLE HVPS ASSY.				DWG. NO. PL1000835	
				SHEET 1 OF 3	REV J

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
							1	1	YR3	IN3324	ZENER DIODE				
							1	1	VR2	IN3324	ZENER DIODE				
							1	1	RT1	TS3-75	SENSOR, THERMAL				MULTI-STATE
							—	1	R10	1543	RES, FXD, WW	4.0K		8W	OHMITE
							1	1	R25	0200C	RES, FXD, WW	25Ω		25W	OHMITE
							1	1	R24	0200C	RES, FXD, WW	25Ω		25W	OHMITE
							1	1	R23	0200C	RES, FXD, WW	25Ω		25W	OHMITE
							—	1	R22		RES, FXD, COMP	1.0Ω	5%	½W	
							1	1	R21		RES, FXD, COMP	1.2K	5%	1W	
							—	1	R1	4549	RES, FXD, WW	5.0Ω		5W	OHMITE
							1	1		03-09-2151	CONN SHELL	15 PIN			WALDOM
							12	12	P1	02-09-2118	CONTACT, MALE				WALDOM
							—	—		02-09-1118	CONTACT, FEMALE				WALDOM
							—	1	K2	D04A	RELAY, SOLID STATE			4A	DOUGLASS RANDALL
							1	1	K1	SA10094125	RELAY, SOLID STATE			25A	ELECTROL
							—	1	E6	1417	TERMINAL				USECO
							1	1	CR1	SKB-25/04	DIODE BRIDGE				SEMI-KRON
							—	1	C7	MMW6W1	CAP, FXD, MYLAR	1.0µF		600V	CDE
Select from list of Alternates per Del/Price							1	1	C1	91C150CF52	CAP, FXD, ELEC	5000µF		150V	STM

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth
				DATE 25 Mar 86
TITLE HVPS ASSY				DWG. NO. PL1000835
				SHEET 2 OF
				REV J

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
									25						
									24						
									23						
									22						
									21						
									20						
									19						
									18						
									17						
									16						
									15						
									14						
									13						
							2	2	12	1/4 ID	SOLDER LUG	(for	VR2	&VR3)	
							1	1	11	3 1/2 DIA	HOSE CLAMP				
							1	1	10	1/4 DIA	CABLE CLAMP				
									9						
									8						
									7						
									6						
									5						
									4						
							1	1	3	1000824-101	CHASSIS				AR
									2						
							1	1	1	1000839-501	REGULATOR ASSY				AR

AMPLIFIER RESEARCH

APPROVED E.E.
DATE
APPROVED M.E.
DATE
ORIGINATOR DWRoth
DATE 25 Mar 76
TITLE HVPS ASSY
DWG. NO. PL1000835
SHEET 3 OF
REV H

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
						REF	REF	REF		1000837	SCHEMATIC			A	12, [illegible] 76
														B	26 Jul 76
														C	8 Sep 77
														D	23 Nov 77
														E	3 MAR 78
														F	18 APR. 78
														G	8 JUNE 78
														H	14 FEB. 79
												425		J	10 JUN 82
						MODEL 700A	MODEL 850,851	MODEL 796 FREQ CONV		7	—	OMIT FROM			MANUAL
										6	—	OMIT FROM			MANUAL
										5	E				
										4	D				
										3	D				
										2	J				
										1	J				
										SHEET	REV				

QUANTITY REQUIRED

ECN

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR D J Roth	DATE 25 May 76
TITLE RF BOARD ASSY				DWG. NO. PL1000838	
LOW LEVEL				SHEET 1 OF 7	REV J

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO:	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
						–	–	–	C13	NOT USED					
						1	1	1	C12	DD601	CAP, FXD, CERAMIC	600pF		1KV	CENTRALAB
						1	1	1	C11	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
						1	1	1	C10	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
						–	–	–	C9	NOT USED					
						1	1	1	C8	19C253 (125LD20)	CAP, FXD, CERAMIC	.002 μF		1KV	SPRAGUE
						1	–	–	C7	VP12BY333K	CAP, FxD CER	.033 μF		1KV	VITRAMON
						1	1	1	C6	19C253 (125LD20)	CAP, FXD, CERAMIC	.002 μF		1KV	SPRAGUE
						1	1	1	C5	C281AB/A120K	CAP, FXD, MYLAR	0.12μF		250V	
						1	1	1	C4	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	
						1	1	1	C3	TVA-1437	CAP, FXD, ELEC	4.0μF		200V	
						1	1	1	C2	TVA-1437	CAP, FXD, ELEC	4.0μF		200V	
						–	–	–	C1	NOT USED					
QUANTITY REQUIRED															

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE 25 Mar 76
TITLE RF BOARD ASSY LOW LEVEL				DWG. NO. PL1000838	
				SHEET 2 OF	REV J

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO:	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
						1	1	1		1000801-101	PC BOARD				AR
						1	1	1	T7	1000643-626	FERRITE CORE				AR △1
						1	1	1	T6	1000643-626	FERRITE CORE				AR △1
						1	1	1	T5	1000643-626	FERRITE CORE				AR △1
									T4	.NOT USED					
						1	1	1	T3	1000643-625	FERRITE CORE				AR △1
						1	1	1	T2	1000643-625	FERRITE CORE				AR △1
						1	1	1	T1	1000643-626	FERRITE CORE				AR △1

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E. | DATE | APPROVED M.E. | DATE

TITLE RF BOARD ASSY
LOW LEVEL

ORIGINATOR DWRoth
DATE 25May76
DWG. NO. PL1000838
SHEET 3 OF
REV D

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
						1	1	1	R15		RES, FXD, COMP	18Ω	5%	1W	
						1	1	1	R14		RES, FXD, COMP	100Ω	5%	½W	
						1	1	1	R13	1532	RES, FXD, WW	1.0K	–	8W	OHMITE
						1	1	1	R12	1532	RES, FXD, WW	1.0K	–	8W	OHMITE
						–	–	–	R11	NOT USED					
						1	1	1	R10	1504	RES, FXD, WW	5.0Ω	-	8W	OHMITE
						1	1	1	R9	1504	RES, FXD, WW	5.0Ω	-	8W	OHMITE
						1	1	1	R8	1532	RES, FXD, WW	1.0K	-	8W	OHMITE
						1	1	1	R7	1711	RES, FXD, WW	12Ω	-	12W	OHMITE
						1	1	1	R6	1532	RES, FXD, WW	1.0K	–	8W	OHMITE
						1	1	1	R5	1516	RES, FXD, WW	100Ω	–	8W	OHMITE
						–	–	–	R4	NOT USED					
						–	–	–	R3	NOT USED					
						–	–	–	R2	NOT USED					
						–	–	–	R1	NOT USED					

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE 25 May 76
TITLE RF BOARD ASSY LOW LEVEL				DWG. NO. PL1000838	
				SHEET 4 OF	REV D

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
						1	1	1	R21		RES, FXD, COMP	470Ω	5%	2W	
						—	—	—	R20		RES, FXD, COMP	4.7K	5%	¼W	
						1	1	1	R19		RES, FXD, COMP	33Ω	5%	2W	
						1	1	1	R18		RES, FXD, COMP	24Ω	5%	2W	
						1	1	1	R17		RES, FXD, COMP	24Ω	5%	2W	
						1	1	1	R16		RES, FXD, COMP	12Ω	5%	2W	

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.
DATE
APPROVED M.E.
DATE
ORIGINATOR DWPotts
DATE 25Mar76
TITLE RF BOARD ASSY
LOW LEVEL
DWG. NO. PL1000838
SHEET 5 OF
REV E

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
A	12	Ap	6												
B	26	Jul	76			1	1	1	Q3	2N6497	TRANSISTOR				MOTOROLA
C	12	Nov	76			1	1	1	Q2	2N6497	TRANSISTOR				MOTOROLA
D	23	Nov	77			1	1	1	Q1	2N6497	TRANSISTOR				MOTOROLA
E	3	MAR	78			2	2	2	TS1	TS3-75	THERMAL SENSOR				MULTI-STATE
F	9	FEB	82			2	2	2	J1	33-774	CONN, COAX				GC ELECTRONICS
									19						
									18						
						3	3	3	17	4778A	INSULATOR				THERMALLOY
						9	9	9	16	02-09-2118	PIN, MALE				
						1	1	1	15	03-09-2151	CONN SHELL, FEMALE			15PIN	WALDOM
									14		(CABLE LENGTH 6½")				
									13						
						1	1	1	12	3/16 DIA	CABLE CLAMP				
									11						
						AR	AR	AR	10	AWG 22	SHIELDED WIRE				
									9						
									8						
									7						
						1	–	–	6	1000838-503	RF BOARD ASSY,	LO LEVEL			
						2	–	–	5	1001058-501	RF BOARD ASSY,	FINAL			
						–	1	–	4	1000838-502	RF BOARD ASSY	LO LEVEL			
						2	2	2	3	1000809-101	SPACER BAR				
						–	–	1	2	1000838-501	RF BOARD ASSY	LO LEVEL			
						–	2	2	1	1000840-501	RF BOARD ASSY	FINAL			
QUANTITY REQUIRED						851									
						700A	850	796							

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE MODULE ASSY POWER AMPLIFIER			

ORIGINATOR DWRoth
DATE 1 Apr 76
DWG. NO. PL1000841
SHEET 1 OF 1 REV F

							REF	REF		1000845	SCHEMATIC			A	12 [illegible] 76
														B	26 JUL 76
														C	12 NOV 76
														D	29 MAR 77
														E	8 SEP 77
														F	5 MAY 78
														G	29 AUG 78
														H	22 JUN 81
							MODEL 700A,850	MODEL 796		4	F	OMIT FROM MANUAL			
										3	G				
										2	H				
										1	H				
										SHEET	REV				
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DW Roth	DATE
TITLE POWER COMB & DIRECTIONAL [illegible]				DWG. NO. PL 1000852	
				SHEET 1 OF 4 REV H	

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
							1	1	P3	03-07-2151	SHELL, FEMALE	15 PIN			WALDOM
							7	8	P3	02-09-2118	PIN, MALE				WALDOM
							1	1	P2	33-772	CONN, COAX	MALE			GC ELECTRONICS
							1	1	P1	33-772	CONN. COAX	MALE			GC ELECTRONICS
							—	1	L1	1000859-101	FORM, INDUCTOR				AR ◁1
							—	1	L2	023-623X1-11-26-1-1	INDUCTOR, TOROID				AR
							—	1	L3	023-623X1-11-26-1-1	INDUCTOR, TOROID				AR
							1	—	L2	.010x.100	STRAP				
							1	—	L3	.010x.100	STRAP				
							1	1	CR4	IN4448	DIODE				
							1	1	CR3	IN4448	DIODE				
							1	1	CR2	IN4448	DIODE				
							1	1	CR1	IN4448	DIODE				
							—	1	C7	811-000XSR0472	CAP, FXD, CERAMIC	4700pF		500V	ERIE
							—	1	C6	811-000XSR0472	CAP, FXD, CERAMIC	4700pF		500V	ERIE
							1	1	C5	5815000Y5U204Z	CAP, FXD, CERAMIC	0.2uF		25V	ERIE
							1	1	C4	5815000Y5U204Z	CAP, FXD, CERAMIC	0.2uF		25V	ERIE
							1	1	C3	5815000Y5U204Z	CAP, FXD, CERAMIC	0.2uF		25V	ERIE
							1	1	C2	5815-000Y5U204Z	CAP, FXD, CERAMIC	0.2uF		25V	ERIE
							1	1	C1	811-000XSR0472	CAP, FXD, CERAMIC	4700pF		500V	ERIE

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE
TITLE POWER COMB & DIRECTN'L DETECTR				DWG. NO. PL1000852	
				SHEET 2 OF	REV H

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
									5						
									4						
							—	2	3	¼Hex #6 x ¼	SPACER	(MTG L1)			
									2						
							1	1	1	1000858-101	PC BOARD				R
							1	—	R4		RES, FXD, COMP	51 Ω	5%	½ W	
							1	—	R3		RES, FXD, COMP	51 Ω	5%	½ W	
							1	1	T4	1000643-625	FERRITE CORE				R △2
							1	1	T3	1000643-625	FERRITE CORE				R △2
							1	1	T2	1000643-625	FERRITE CORE				R △2
							1	1	T1	1000643-625	FERRITE CORE				R △2
							1	—	R9	1802C	RES, FXD, WW	3 Ω		20W	OHMITE
							—	1	R8		RES, FXD, COMP.	100Ω	5%	½ W	
							—	1	R7		RES, FXD, COMP	100Ω	5%	½ W	
							1	1	R6	U201R253B	RES, VAR	25K	5%	¼W	CTS
							1	1	R5	U201R253B	RES, VAR	25K	5%	¼W	CTS
							—	1	R4		RES, FXD, COMP	100Ω	5%	½W	
							—	1	R3		RES, FXD, COMP	100Ω	5%	½W	
							1	1	R2	1805	RES, FXD, WW	25Ω		20W	OHMITE
							1	1	R1	1805	RES, FXD, WW	25Ω		20W	OHMITE

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE
TITLE POWER COMB & DIRECTNL DETECTR				DWG. NO. PL1000852	
				SHEET 3 OF	REV G

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED								837							
														A	9J 8
									10						
									9						
									8						
									7						
									6						
								1	5	1/4" ID	LUG, GND				
									4						
								2	3	RC07	RES, FXD, COMP	51Ω	5%	1/4W	ANY
									2						
								1	1	GDIN056P500PA	ATTENUATOR	50Ω			ALLEN BRADLE

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 19 Oct 77
TITLE ATTENUATOR ASSY				DWG. NO. PL1001042	
				SHEET 1 OF 1	REV A

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
	A		MAR	78				REF	-	1001052	SCHEMATIC DIAGRAM				AR
	B	17	APR	78											
										6	-				
										5	B				
										4	-				
										3	-				
										2	A				
										1	B				
								700A		SHEET	REV				

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.
DATE
APPROVED M.E.
DATE
ORIGINATOR P.R.W.
DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1
DWG. NO. PL1001053
SHEET 1 OF 6 REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								1	CR7	IN4448	DIODE				ANY
								1	CR6	IN4448	DIODE				ANY
								1	CR5	IN4448	DIODE				ANY
								1	CR4	IN4448	DIODE				ANY
								1	CR3	IN4448	DIODE				ANY
								1	CR2	IN4448	DIODE				ANY
								1	CR1	IN4448	DIODE				ANY
								1	C9	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C8	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C7	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C6	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1µF			ERIE
								1	C5	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C4	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C3	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
								1	C2	TVA-1305.5	CAP, FXD, TANT	20µF		50V	SPRAGUE
								1	C1	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1				DWG. NO. PL1001053	
				SHEET 2 OF	REV A

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								1	R5	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R4	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R3	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R2	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R1	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	Q7	2N3906	TRANSISTOR				ANY
								1	Q6	2N3904	TRANSISTOR				ANY
								1	Q5	2N3904	TRANSISTOR				ANY
								1	Q4	2N3904	TRANSISTOR				ANY
								1	Q3	2N3904	TRANSISTOR				ANY
								1	Q2	2N3906	TRANSISTOR				ANY
								1	Q1	2N3904	TRANSISTOR				ANY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1				DWG. NO. PL1001053	
				SHEET 3 OF	REV –

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								1	R20	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R19	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
								1	R18	RC07	RES, FXD, COMP	470Ω	5%	$\frac{1}{4}$W	ANY
								1	R17	RC07	RES, FXD, COMP	1.8K	5%	$\frac{1}{4}$W	ANY
								1	R16	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R15	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
								1	R14	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R13	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R12	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R11	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R10	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R9	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R8	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R7	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R6	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1				DWG. NO. PL1001053	
				SHEET 4 OF	REV –

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								1	R33	RC07	RES, FXD, COMP	470 Ω	5%	$\frac{1}{4}$W	ANY
								1	R32	RC07	RES, FXD, COMP	1.8K	5%	$\frac{1}{4}$W	ANY
								1	R31	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R30	RC07	RES, FXD, COMP	470 Ω	5%	$\frac{1}{4}$W	ANY
								1	R29	U201R503B	RES, VAR, COMP	50K	20%	$\frac{1}{4}$W	CTS
								1	R28	RC07	RES, FXD, COMP	4.7K	5%	$\frac{1}{4}$W	ANY
								1	R27	RC07	RES, FXD, COMP	10K	5%	$\frac{1}{4}$W	ANY
								1	R26	RC07	RES, FXD, COMP	470 Ω	5%	$\frac{1}{4}$W	ANY
								1	R25	U201R503B	RES, VAR, COMP	50K	20%	$\frac{1}{4}$W	CTS
								1	R24	RC07	RES, FXD, COMP	2.2K	5%	$\frac{1}{4}$W	ANY
								1	R23	RC07	RES, FXD, COMP	3.3K	5%	$\frac{1}{4}$W	ANY
								1	R22	RC07	RES, FXD, COMP	1.0K	5%	$\frac{1}{4}$W	ANY
								1	R21	RC07	RES, FXD, COMP	680 Ω	5%	$\frac{1}{4}$W	ANY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1				DWG. NO. PL1001053	
				SHEET 5 OF	REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									5						
									4						
									3						
									2						
								1	1	100820-101	PC BOARD				AR
								1	XU1	C93-16-02	SOCKET, IC, 16 PIN, DIP				TI
								1	VR2	1N5230	DIODE, ZENER	4.7V		.5A	ANY
								1	VR1	1N5230	DIODE, ZENER	4.7V		.5A	ANY
								1	U1	CA3081	IC, XSTR ARRAY,	16 LEAD, DIP			RCA

ar AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 16 Nov 77
TITLE LOGIC BOARD ASSY, A1				DWG. NO. PL1001053	
				SHEET 6 OF	REV –

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
A	3	M	78				REF	REF	–	1001050	SCHEMATIC DIAGRAM				AR
B	17	APR	78												
C	5	FEB	79												
D	13	Nov	80												
							MODEL 700AM3	MODEL 700A		5	D				
										4	B				
										3	C				
										2	B				
										1	D				
										SHEET	REV				

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 22 Nov 77
TITLE LOGIC BOARD ASSY, A2				DWG. NO. PL1001056	
				SHEET 1 OF 5	REV D

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
							—	1	C16		CAP, FXD, CERAMIC	47 PF			
							-	1	C15	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
							—	1	C14	TVA-1305.5	CAP, FXD, ELEC	20µF		50V	SPRAGUE
							1	1	C13	39D158G040HP0	CAP, FXD, ELEC	1500µF		40V	SPRAGUE
							1	1	C12	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
							1	1	C11	TVA-1310	CAP, FXD, ELEC	100µF		50V	SPRAGUE
							1	1	C10	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
							1	1	C9	TVA-1305.5	CAP, FXD, ELEC	20µF		50V	SPRAGUE
							—	—	C8	NOT USED					
							—	—	C7	NOT USED					
							1	1	C6	TVA-1305.5	CAP, FXD, ELEC	20µF		50V	SPRAGUE
							1	1	C5	196D685X0035HA1	CAP, FXD, TANT	6.8µF		35V	SPRAGUE
							1	1	C4	5815-000Y5U104M	CAP, FXD, CERAMIC	0.1µF		25V	ERIE
							1	1	C3	FC150	CAP, FXD, CERAMIC	15 PF			AR
							1	1	C2	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE
							1	1	C1	811-000Z5U0103M	CAP, FXD, CERAMIC	.01µF		500V	ERIE

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 22 Nov 77
TITLE LOGIC BOARD ASSY, A2				DWG. NO. PL1001056	
				SHEET 2 OF	REV B

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
							1	1	R5	RC07	RES, FXD, COMP	2.2K	5%	$\frac{1}{4}$W	AI
							1	1	R4	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R3	RC07	RES, FXD, COMP	68K	5%	$\frac{1}{4}$W	ANY
							1	1	R2	RC07	RES, FXD, COMP	10K	5%	$\frac{1}{4}$W	ANY
							1	1	R1	RC07	RES, FXD, COMP	10K	5%	$\frac{1}{4}$W	ANY
							1	1	Q4	2N3904	TRANSISTOR				ANY
							1	1	Q3	2N3904	TRANSISTOR				ANY
							1	1	Q2	MPS-U01	TRANSISTOR				MOTOROLA
							1	1	Q1	2N3904	TRANSISTOR				ANY
							1	1	CR6	1N5061	DIODE				ANY
							1	1	CR5	1N5061	DIODE				ANY
							1	1	CR4	1N5061	DIODE				ANY
							1	1	CR3	1N4448	DIODE				ANY
							1	1	CR2	1N4448	DIODE				ANY
							1	1	CR1	1N4448	DIODE				ANY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 22 Nov 77
TITLE LOGIC BOARD ASSY, A2				DWG. NO. PL1001056	
				SHEET 3 OF	REV C

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
							1	1	R22	RC07	RES, FXD, COMP.	2.2K	5%	$\frac{1}{4}$W	ANY
							1	1	R21	4549	RES, FXD, WW	5Ω	5%	5W	
							-	1	R20	RN60D2742F	RES, FXD, FILM	27.4K	5%	$\frac{1}{4}$W	ANY
							-	1	R19	RC42	RES, FXD, COMP	560Ω	5%	2W	ANY
							1	1	R18	1805	RES, FXD, WW	25Ω		20W	OHMITE
							1	1	R17	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R16	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R15	RC32	RES, FXD, COMP	47Ω	5%	1W	ANY
							1	1	R14	RC07	RES, FXD, COMP	12K	5%	$\frac{1}{4}$W	ANY
							1	1	R13	RC07	RES, FXD, COMP	680Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R12	RC07	RES, FXD, COMP	10K	5%	$\frac{1}{4}$W	ANY
							1	1	R11	RC07	RES, FXD, COMP	51Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R10	RC07	RES, FXD, COMP	100Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R9	RC07	RES, FXD, COMP	100Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R8	RC07	RES, FXD, COMP	10K	5%	$\frac{1}{4}$W	ANY
							1	1	R7	RC07	RES, FXD, COMP	2.7Ω	5%	$\frac{1}{4}$W	ANY
							1	1	R6	RC07	RES, FXD, COMP	8.2K	5%	$\frac{1}{4}$W	ANY

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 22 Nov 77
TITLE LOGIC BOARD ASSY, A2				DWG. NO. PL1001056	
				SHEET 4 OF	REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
									5						
									4						
									3						
							1	1	2	362	HEATSINK				HEAT SINKS PLUS
							1	1	1	1001051-101	PC BOARD				AR
							—	1	XU2	8ICS	SOCKET, IC	8 PIN			CINCH-JONES
							1	1	XU1	8ICS	SOCKET, IC	8 PIN			CINCH-JONES
							—	1	VR2	IN4744	DIODE, ZENER	15V		1W	ANY
							1	1	VR1	IN5230	DIODE, ZENER	4.7V		½W	ANY
							—	1	U2	CA3130T	INTEGRATED CKT				RCA
							1	1	U1	CA3130T	INTEGRATED CKT				RCA

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.
DATE
APPROVED M.E.
DATE
ORIGINATOR P.R.W.
DATE 22 Nov 77
TITLE LOGIC BOARD ASSY, AZ
DWG. NO. PL1001056
SHEET 5 OF
REV

ECN

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
								REF	-	1001054	SCHEMATIC DIAGRAM			A	3 [illegible] 278
														B	13 Nov. 80
													356	C	4 FEB 82
										7	-	NOT PART OF MANUAL			
										6	C				
								MODEL 700A		5	-				
										4	A				
										3	-				
										2	-				
										1	C				
										SHT	REV				

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov 77
TITLE RF BOARD ASSY FINAL AMP				DWG. NO. PL1001058	
				SHEET 1 OF 7	REV C

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
								1	CR2	1N5061	DIODE				ANY
								1	CR1	1N5061	DIODE				ANY
								1	C9	C281AB/AZM2	CAP, FXD, MYLAR	2.2μF		250V	MEPCO-ELECTRA
								1	C8	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
								1	C7	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
								1	C6	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
								1	C5	C281AB/AIM	CAP, FXD, MYLAR	1.0μF		250V	MEPCO-ELECTRA
								–	C4	NOT USED					
								–	C3	NOT USED					
								–	C2	NOT USED					
								–	C1	NOT USED					

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov 77
TITLE RF BOARD ASSY				DWG. NO. PL1001058	
FINAL AMPLIFIER				SHEET 2 OF	REV –

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
								1	R5	1532	RES, FXD, WW	1.0K		8W	OHMITE
								–	R4	NOT USED					
								–	R3	NOT USED					
								1	R2	4651	RES, FXD, WW	8.2K		5W	OHMITE
								1	R1	4651	RES, FXD, WW	8.2K		5W	OHMITE
								1	Q4	DTS-409	TRANSISTOR				DELCO
								1	Q3	DTS-409	TRANSISTOR				DELCO
								1	Q2	DTS-409	TRANSISTOR				DELCO
								1	Q1	DTS-409	TRANSISTOR				DELCO
								1	F2	AGC-3	FUSE	3A			ANY
								1	F1	AGC-3	FUSE	3A			ANY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov 77
TITLE RF BOARD ASSY FINAL AMP				DWG. NO. PL1001058	
				SHEET 3 OF	REV –

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
								1	R19	1808	RES, FXD, WW	100Ω		20W	OHMITE
								–	R18	NOT USED					
								–	R17	NOT USED					
								1	R16	4539	RES, FXD, WW	2.4Ω		5W	OHMITE
								1	R15	4539	RES, FXD, WW	2.4Ω		5W	OHMITE
								1	R14	4531	RES, FXD, WW	2.4Ω		5W	OHMITE
								1	R13	4539	RES, FXD, WW	2.4Ω		5W	OHMITE
								1	R12	1532	RES, FXD, WW	1.0K		8W	OHMITE
								1	R11	4651	RES, FXD, WW	8.2K		5W	OHMITE
								1	R10	4651	RES, FXD, WW	8.2K		5W	OHMITE
								1	R9	1532	RES, FXD, WW	1.0K		8W	OHMITE
								1	R8	1532	RES, FXD, WW	1.0K		8W	OHMITE
								–	R7	NOT USED					
								–	R6	NOT USED					

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov. 7
TITLE RF BOARD ASSY FINAL AMP				DWG. NO. PL1001058	
				SHEET 4 OF	REV A

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
								2	XF2	798	CLIP, FUSE				ZIERICK
								2	XF1	798	CLIP, FUSE				ZIERICK
								1	T5	1000643-625	CORE, FERRITE				AR △1
								1	T4	1000643-625	CORE, FERRITE				AR △1
								1	T3	1000643-625	CORE, FERRITE				AR △1
								1	T2	1000643-626	CORE, FERRITE				AR △1
								1	T1	1000643-626	CORE, FERRITE				AR △1

AMPLIFIER RESEARCH

APPROVED E.E. | DATE | APPROVED M.E. | DATE
TITLE RF BOARD ASSY
FINAL AMPLIFIER
ORIGINATOR P.R.W.
DATE 23 Nov 77
DWG. NO. PL1001058
SHEET 5 OF REV -

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
									25						
									24						
								AR	23		THERMAL JOINT COMPOUND				
								AR	22	6-32 x 3/8	SCREW, SELF-TAP				
									21						
									20						
									19						
								8	18	#6	WASHER, FLAT				
								4	17	#6 INTERNAL TH	WASHER, LOCK				
								8	16	6-32 x 1/2	SCREW, PAN HD				
								4	15	4726A	INSULATOR, TO-3				THERMALLOY
								4	14	#6	LUG, SOLDER				
								8	13	#6 ID	WASHER, SHOULDER, NYLON				
								8	12	.312 OD x .164 ID x .060	SPACER				AERO-MISSILE
									11						
								8	10	450-3286-003	SOCKET, PIN				CAMBION
									9						
									8						
									7						
									6						
								1	5	1000803-101	HEATSINK				AR
									4						
									3						
									2						
								1	1	1000802-101	PC BOARD				AR

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 22 Nov 77
TITLE RF BOARD ASSY FINAL AMP				DWG. NO. PL1001058	
				SHEET 6 OF	REV C

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
														A	3 [illegible]R 78
														B	17 APR 78
														C	14 SEP 78
					REF	REF	—	—		1001059	INTERCONNECTION DIAG			D	20 OCT 78
					—	—	REF	—		1001091	INTERCONNECTION DIAG			E	6 JUN 79
														F	13 NOV 80
														G	19 JUN 81
					MODEL 700AM6	**MODEL 700A**	**MODEL 700AM3**	~~**MODEL 700A**~~ **OBSOLETE**							
										6	D	NOT PART OF MANUAL			
										5	E				
										4	F				
										3	G				
										2	D				
										1	G				
										SHEET	REV				

QUANTITY REQUIRED

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 NOV 77
TITLE HOUSING & INTERFACE ASSY				DWG. NO. PL1001060	
				SHEET 1 OF 6 REV G	

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
					1	1	1	1	F1	ABC-15	FUSE	15A		250V	ANY
					—	—	1	1	DS4	(PART OF S4)	LIGHT, IND				
					—	—	—	—	DS3	NOT USED					
					1	1	1	1	DS2	5082-4855 5082-4707	LED WITH MTG KIT				HP
					1	1	1	1	DS1	5082-4855 5082-4707	LED WITH MTG KIT				HP
					1	1	1	1	B2	WS2107FL	FAN, BOXER				IMC
					1	1	1	1	B1	WS2107FL	FAN, BOXER				IMC

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.V.	DATE 23 Nov 77
TITLE HOUSING & INTERFACE ASSY				DWG. NO. PL1001060	
				SHEET 2 OF	REV D

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
					1	–	–	–	J10	UG-568/U	CONNECTOR, COAX	C			ANY ⚠2
					–	–	1	–	J10	UG-625B/U	CONNECTOR, COAX	BNC			ANY
					–	1	–	1	J10	UG-2628U	CONNECTOR, COAX	BNC			ANY
					1	1	–	1	J9	KC-19-288	CONNECTOR, COAX	BNC			KINGS
					–	–	1	–	J9	UG-625 B/U	CONNECTOR, COAX	BNC			ANY
					–	–	–	–	J8	NOT USED					
					–	–	–	–	J7	NOT USED					
					–	–	–	–	J6	NOT USED					
					2	2	2	2	J5	02-09-2118	PIN, MALE				WALDOM
					8	8	2	8		02-09-1118	PIN, FEMALE				WALDOM
					1	1	1	1		03-09-1151	SHELL, FEMALE				WALDOM
					2	2	2	2	J4	02-09-2118	PIN, MALE				WALDOM
					11	11	11	11		02-09-1118	PIN, FEMALE				WALDOM
					1	1	1	1		03-09-1151	SHELL, FEMALE				WALDOM
					2	2	2	2	J3	02-09-2118	PIN, MALE				WALDOM
					9	9	9	9		02-09-1118	PIN, FEMALE				WALDOM
					1	1	1	1		03-09-1151	SHELL, FEMALE				WALDOM
					1	1	1	1	J2	143-036-01	CONNECTOR, PC				AMPHENOL
					1	1	1	1	J1	143-036-01	CONNECTOR, PC				AMPHENOL

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov 77
TITLE HOUSING & INTERFACE ASSY				DWG. NO. PL1001060	
				SHEET 3 OF	REV ·G

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
					1	1	1	1	XF1	342001	FUSEHOLDER				LI FUSE
					1	1	1	1	VR1	IN2976B	DIODE, ZENER				ANY
					1	1	1	1	VP1	V130LA20	VARISTOR				GE
					1	—	—	—	T2	1001122-502	TRANSFORMER IMP MATCHING				AR
					—	1	1	—	T2	1001122-501	TRANSFORMER IMP MATCHING				AR
					1	1	1	1	T1	1001063-101	TRANSFORMER				AR
					1	1	1	–	S6	JV9001	SWITCH, ROTARY				CENTRALAB
					1	1	—	1	S5	1407	SWITCH, ROTARY				CENTRALAB
					—	—	—	—	S3	NOT USED					
					1	1	1	1	S4	LTIGK501LWHRCA WITH IND. PILOT LITE	SWITCH				CARLING
					1	1	1	1	S2	MSPS-103C	SWITCH, PB				ALCO
					1	1	1	1	S1	BA-2RV-A2	SWITCH, INTERLOCK				HONEYWELL
					1	1	—	1	M1	1000992-301	METER				AR
QUANTITY REQUIRED															

AMPLIFIER RESEARCH

APPROVED E.E.
DATE
APPROVED M.E.
DATE
ORIGINATOR P.R.W.
DATE 23 Nov 77
TITLE HOUSING + INTERFACE ASSY
DWG. NO. PL1001060
SHEET 4 OF
REV F

QUANTITY REQUIRED															
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
									25						
					—	36"	—	—	24	RG-210/U	CABLE, COAX (95Ω)	FOR OUTPUT CABLE			
					—	—	—	AR	23	RG-142 B/U	CABLE, COAX	FOR OUTPUT CABLE			
					1	1	1	1	22	1000249-101	NAMEPLATE				AR
					4	4	4	4	21	1/4 HEX x 6-32 x 2 1/4	SPACER (MTG J3, J4, J5)				
					2	2	2	2	20	1/4 HEX x 6-32 x 3/4	SPACER (PC BOARD SUPPORT)				
					4	4	4	4	19	1/4 HEX x 6-32 x 5/8	SPACER (MTG J1 + J2)				
					6	6	10	6	18	1/4 HEX x 6-32 x 1/2	SPACER (MTG PWR COMBINER & TRANSFORMER)				
					2	2	2	2	17	1/4 HEX x #6 x 1/2	SPACER (PC BOARD SUPPORT)				
					1	1	1	1	16	RB-67-1-SK-7-M	KNOB, SKIRTED	1/8" SHAFT			ROGAN
					2	2	1	1	15	RB-67-1-P-DC-M	KNOB, POINTER				ROGAN
					1	1	1	1	14	1523	STRAIN RELIEF				GC
					1	1	1	1	13	17419	LINE CORD				BELDEN
					2	2	2	2	12	ED155B	HANDLE				UNICORP
					4	4	—	4	11	2182	FOOT, CHASSIS				H.H. SMITH
					2	2	2	2	10	65-175	GUARD, FINGER				IMC
					1	1	1	1	9	2005	TERMINAL STRIP				CINCH-JONES
					—	—	1	—	8	1000832-111-1	PANEL, FRONT				AR
					1	1	1	—	7	1000832-102-1	PANEL, REAR				AR
					1	1	1	1	6	1001042-501	ATTENUATOR				AR
					1	1	1	1	5	1000860-101	PLATE, MTG, CONN.				AR
					2	2	2	2	4	1000832-301	PLATE, SIDE, INTERNAL				AR
					1	1	1	1	3	1000832-105	PLATE, MTG, BOTTOM				AR
					—	—	—	1	2	1000832-119-2	PANEL, REAR				AR
					1	1	—	1	1	1000832-116-1	PANEL, FRONT				AR

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 23 Nov 77
TITLE INTERFACE + HOUSING ASSY				DWG. NO. PL1001060	
				SHEET 5 OF	REV E

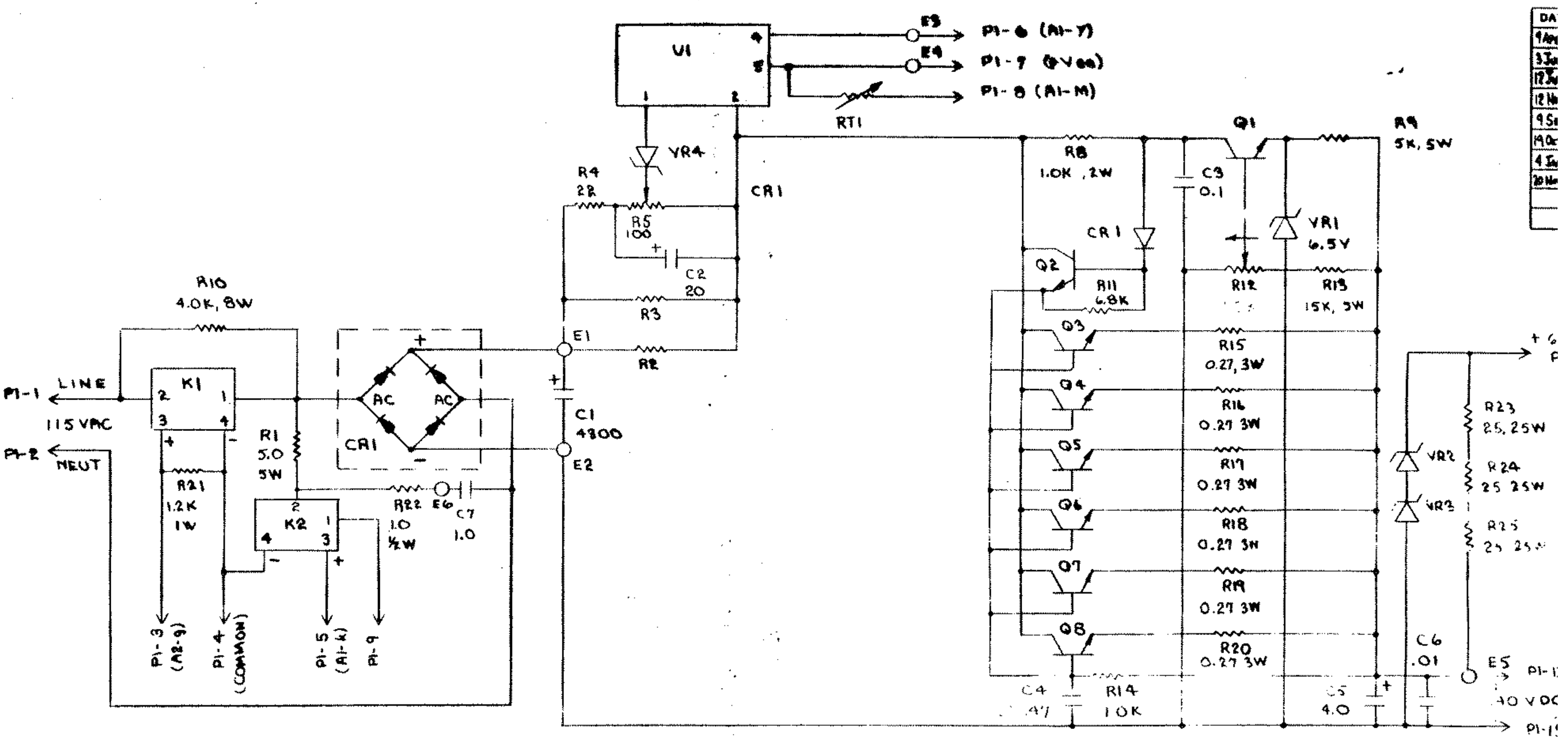
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED						700A M6	700A M5	Void							
A	6 Dec								15						
B	3 Mar 78								14						
C	19 Oct 78								13						
									12						
									11						
									10						
									9						
						2	2	2	8	1000861-101	FILTER, AIR				AR
									7						
						2	2	2	6	1000832-107-2	PLATE, SIDE				AR
						1	1	1	5	1000832-106-2	COVER, TOP				AR
									4						
						1	–	–	3	1001060-504	HOUSING & INTERFACE ASSY				AR
						–	1	–	2	1001060-503	HOUSING & INTERFACE ASSY				AR
						–	–	1	1	1001060-501	HOUSING & INTERFACE ASSY				AR
						1	1	1	A5	1000852-502	PWR COMB. & DIR. DET. ASSY				AR
						1	1	1	A4	1000841-503	AMPLIFIER MODULE ASSY				AR
						1	1	1	A3	1000835-502	HVPS ASSY				AR
						1	1	1	A2	1001056-501	LOGIC ASSY, A2				AR
						1	1	1	A1	1001053-501	LOGIC ASSY, A1				AR

700A

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR P.R.W.	DATE 28 Nov 77
TITLE AMPLIFIER ASSY				DWG. NO. PL1001061	
MODEL 70 A SERIES				SHEET 1 OF 1	REV C

SECTION VI
SCHEMATICS



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE ¼W
CAPACITOR VALUES ARE MICROFARADS

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS LAST USED		REFERENCE DESIGNATIONS NOT USED
C7	R25	R6, R7
CR1	RT1	
K2	VR4	
Q8	U1	
E6	P1	

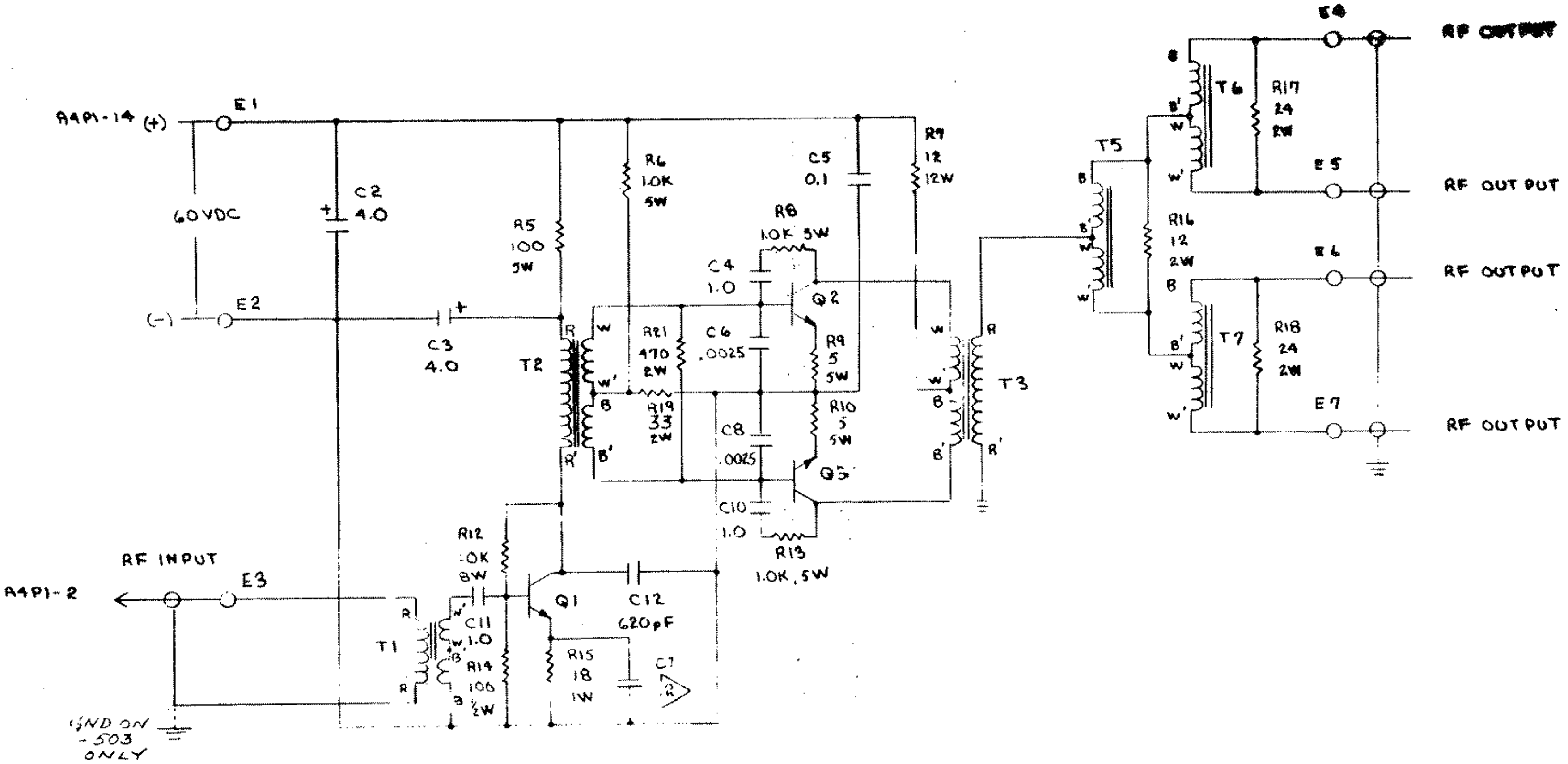
QTY. REQD.	ITEM	PART NO.	DESCRIPTION
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010

DRAWN DWB
DATE 25 Mar 76
CHKD
DATE
MECH
DATE
ELEC
DATE

SCHEMATIC DIAG
HVPS &REG ASS

DWG. SCALE
DWG. NO. 1000833
SHEET 1 OF 1



NOTES
1.0 UNLESS OTHERWISE SPECIFIED
1.1 CAPACITOR VALUES ARE SHOWN IN MICROFARADS
1.2 RESISTOR VALUES ARE SHOWN IN OHMS
1.3 RESISTOR RATINGS ARE ¼ WATT

△ 2.0 SEE APPROPRIATE PARTS LIST FOR COMPONENT VALUES

REFERENCE LAST USED		DESIGNATIONS NOT USED
C12	T7	C1, C9, C13
E7		R1, R2, R3, R4, R11
Q3		R20
R21		T4

	ITEM	PART NO.	DESCRIPTION	MARK	FIN
QTY. REQD.		PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCES ± .005

DRAWN DWRoth
DATE 29 Mar 76
CHKD
DATE
DATE
DATE

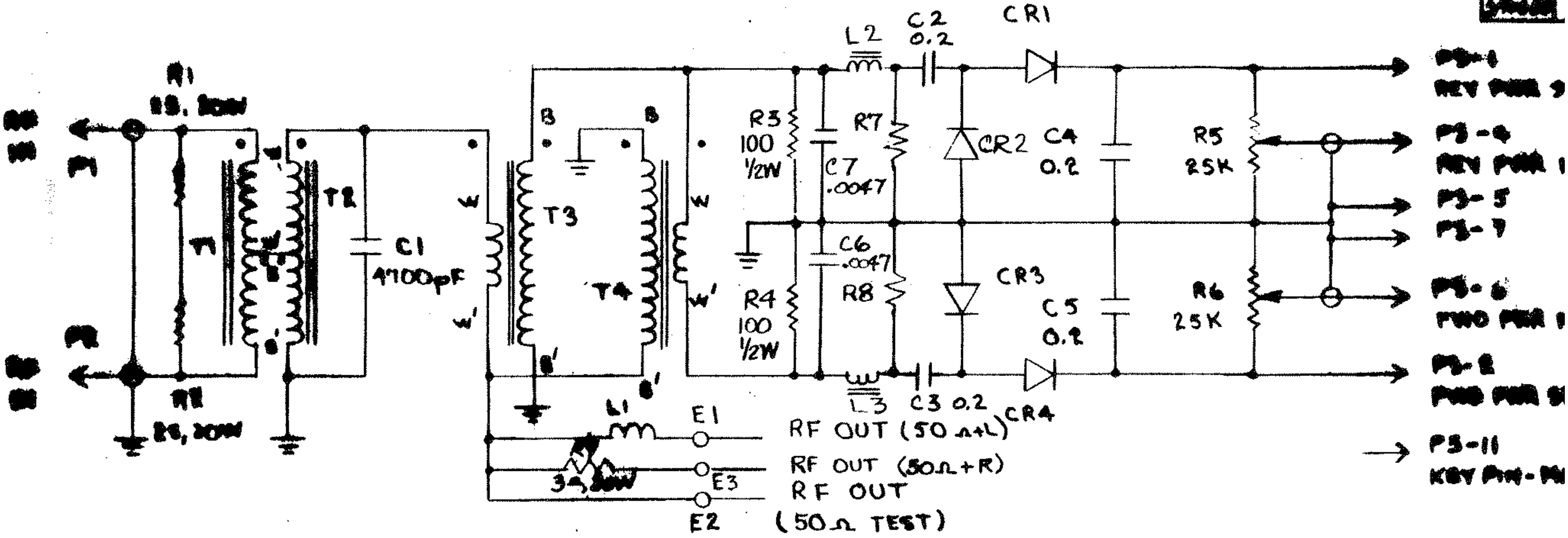
AMPLIFIER RESEARCH

SCHEMATIC DIAG
LOW LEVEL AMP

DWG. SCALE
DWG. NO. 1000837
SHEET 1 OF 1

4 Apr
18 May
13 Jul
8 Sep
4 Jan
3 Mar
18 Apr

DATE



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE 1/4 WATT
CAPACITOR VALUES ARE MICROFARADS

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS

LAST USED	NOT USED
C7 P3	
CR4 R9	
E3 T4	
3	

850
700A
796

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN
		PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERA : ±.010.

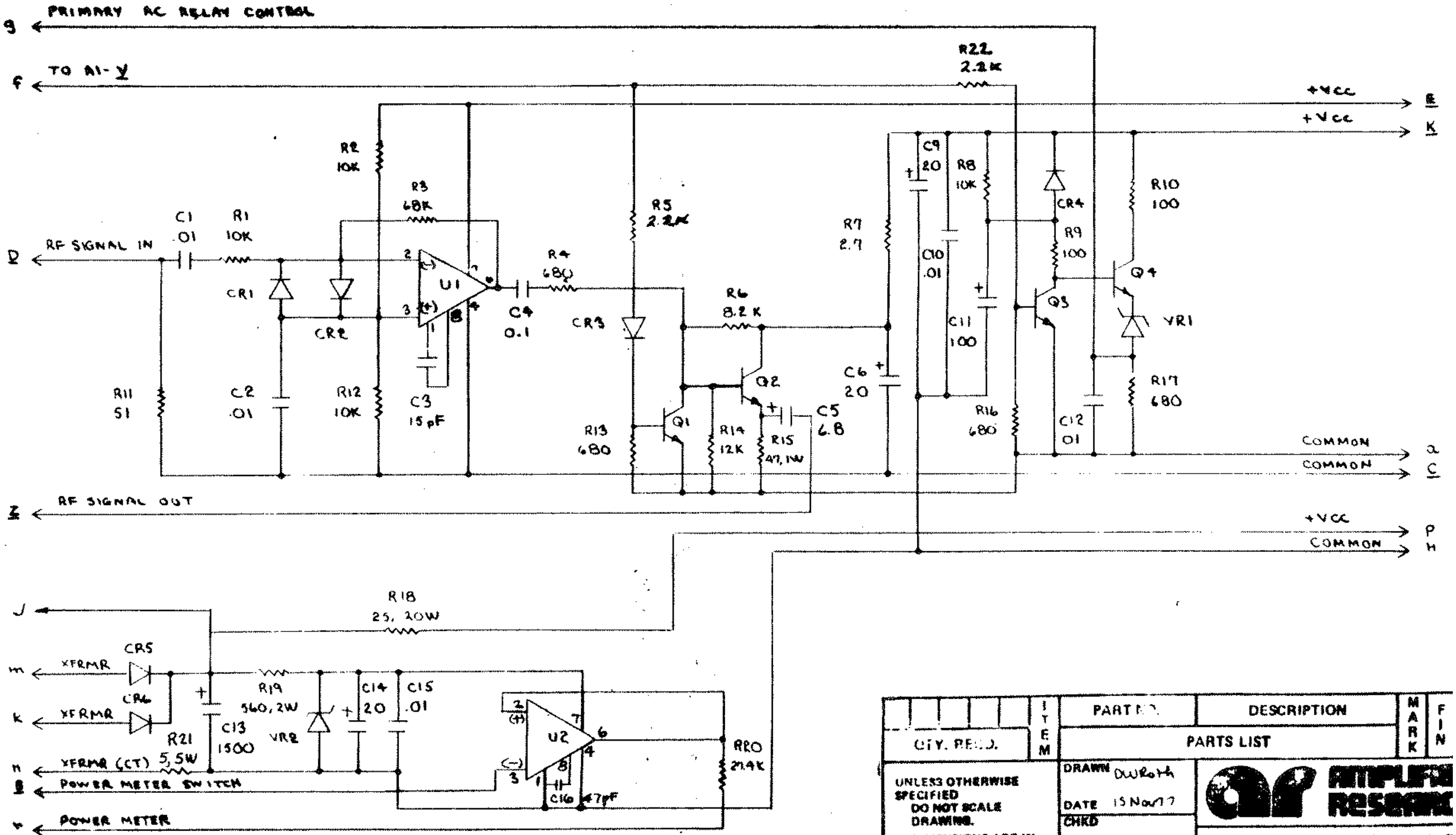
DRAWN DWRoth
DATE 1 Apr 76
CHKD
DATE
MECH
DATE
ELEC
DATE

AMPLIFIER RESEARCH

SCHEMATIC DIAG.
FINAL COMB & DETEC

DWG SCALE NONE
DWG. NO. 1000845
SHEET
E

DATE	REV
[illegible]	A
[illegible]	B



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE ¼W
CAPACITOR VALUES ARE MICROFARADS

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE
ASSEMBLIES. SEE APPROPRIATE PARTS LIST

REFERENCE DESIGNATIONS

LAST USED		NOT USED
C16	U2	C7,C8
C16	VR2	
Q4		
R22		

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN
		PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

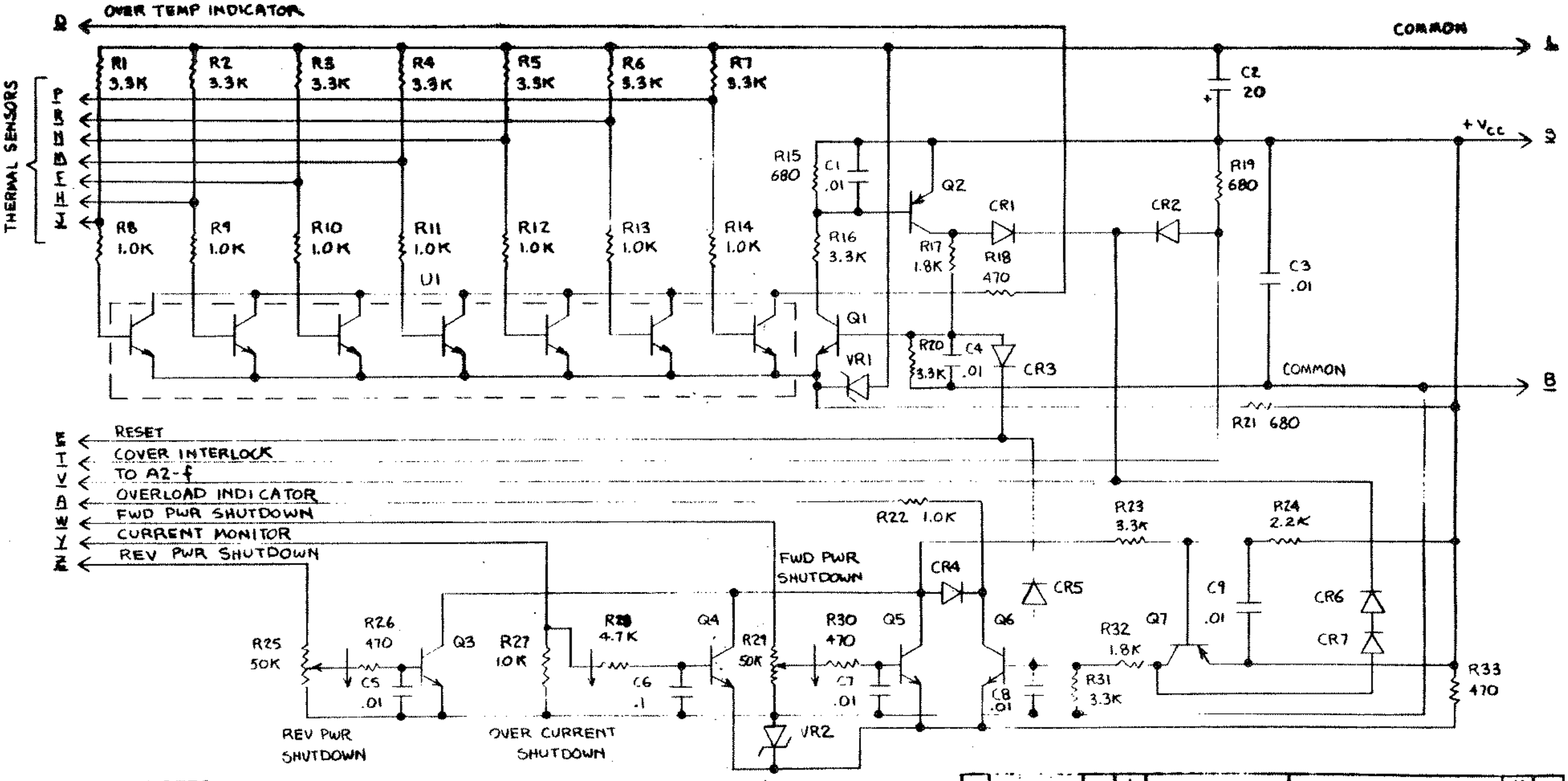
DRAWN DWRoth
DATE 15 Nov 77
CHKD
DATE
MECH
DATE
ELEC
DATE

AMPLIFIER RESEARCH

SCHEMATIC DIAG
LOGIC BOARD A2

DWG. SCALE NONE
DWG. NO. 1001050
SHEET 1 OF 1

DATE	REV
[illegible]	A



NOTES:
1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE ¼W
CAPACITOR VALUES ARE MICROFARADS
2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS LAST USED	REFERENCE DESIGNATIONS NOT USED
C9	R33
CR7	U1
Q7	VR2

QTY. RECD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN
		PARTS LIST			

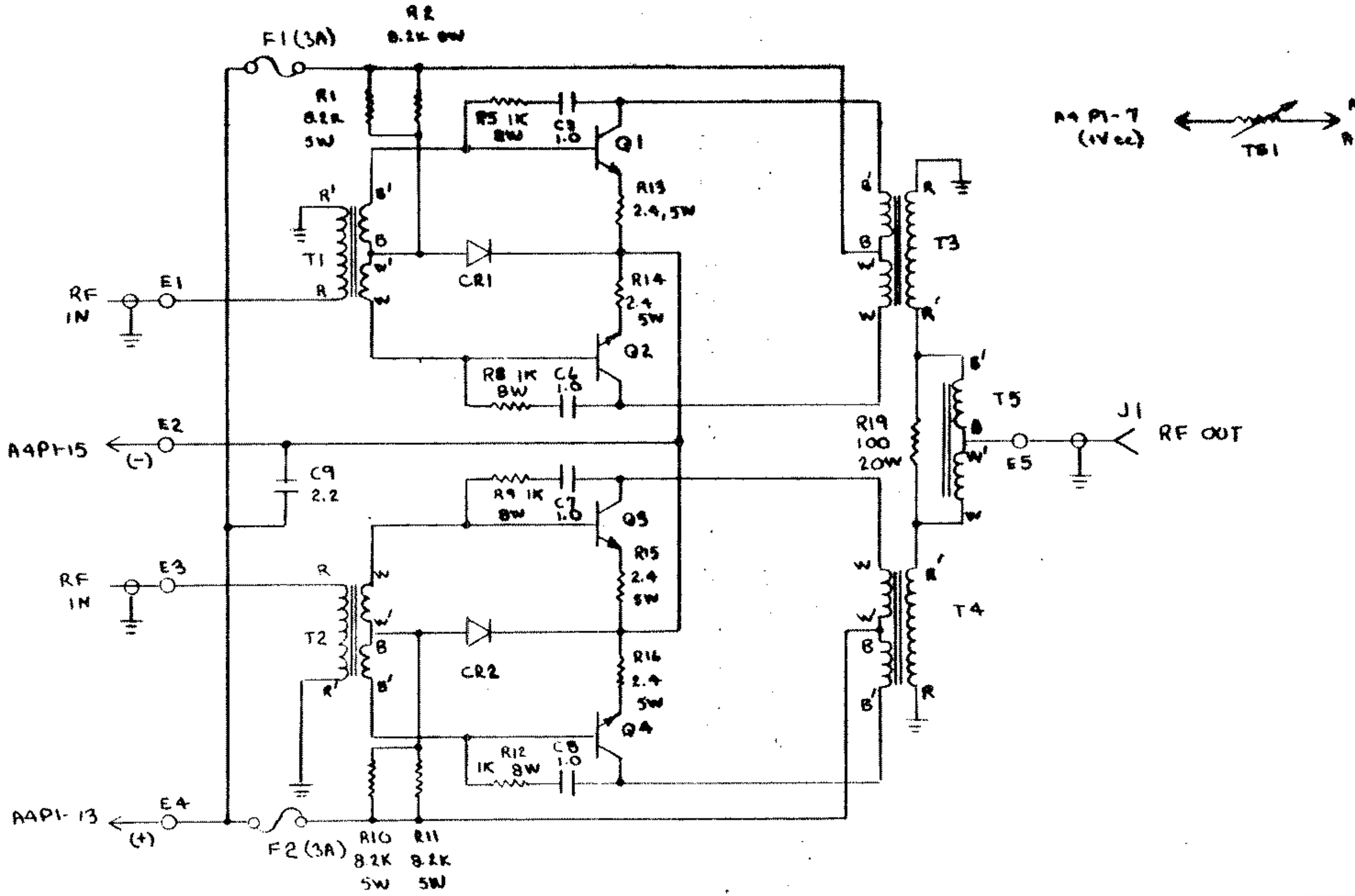
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.015

DRAWN P.R. Whitby
DATE 15 Nov 77
CHKD
DATE
DATE

SCHEMATIC DIAG
LOGIC A1

DWG. SCALE
DWG. NO. 1001062

MATL



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE ¼W
CAPACITOR VALUES ARE MICROFARADS

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS		
LAST USED		NOT USED
C9	R19	C1,C2,C3,C4
CR2	T5	R6,R7,R3,R4
F2	E5	R17,R18
Q4		

					I T E M	PART NO.	DESCRIPTION	M A R K	F I N
QTY. REQD.						PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCES ±.010

DRAWN DWRoth
DATE 16 Nov 77
CHKD
DATE
DATE
DATE

SCHEMATIC DIAG
RF BD FINAL AMP

DWG. NO.
1001064

SHEET 1 OF 1

AMPLIFIER RESEARCH

WARRANTIES: LIMITATION OF LIABILITY

Seller warrants (i) that seller has title to the goods sold and (ii) that the goods will be free from defects in material and workmanship for a period of one year from date of shipment shown on Amplifier Research invoice. Seller's sole responsibility in fulfilling these warranties shall be to repair or replace any goods which do not conform to the foregoing warranties or, at seller's option, to give buyer credit for defective goods. Warranty service will be provided only for defective goods which are returned within the warranty period, freight costs prepaid, to Amplifier Research or its designated repair facility.

> THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS. SELLER SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH OF WARRANTY.

No person other than an officer of Amplifier Research Corporation, has any authority to bind seller to any affirmation, representation or warranty except as specifically included in the preceding terms and conditions.

160 SCHOOL HOUSE ROAD
SOUDERTON, PA. 18964
PHONE 215-723-8181
TWX 510-661-6094

REV1081

AMPLIFIER RESEARCH

MODEL NO. 700A
SERIAL NO. 4664
TESTED BY KH
DATE 2-29-84

TEST DATA SHEET

FREQ (KHz)	POWER OUTPUT:100W RMS		POWER OUTPUT:300W RMS	
	GAIN (dB)	DISTORTION(%)	GAIN (dB)	DISTORTION(%)
10	61.8	2.2	60.3	5.4
15	62.3	2.2	60.5	7.2
20	62.3	2.2	61.1	7.8
30	62.8	2.2	62.1	6.0
50	63.0	1.8	62.1	6.2
75	63.2	2.0	61.9	7.2
100	63.3	2.7	61.9	8.2
150	63.6	2.9	62.0	8.2
175	63.7	3.0	62.0	8.0
200	64.0	3.4	61.8	7.6
225	64.1	3.4	61.8	7.4
250	64.1	3.4	61.5	7.6

OPEN & SHORT TEST ✓

OVERDRIVE SHUTDOWN 500 WATTS RMS

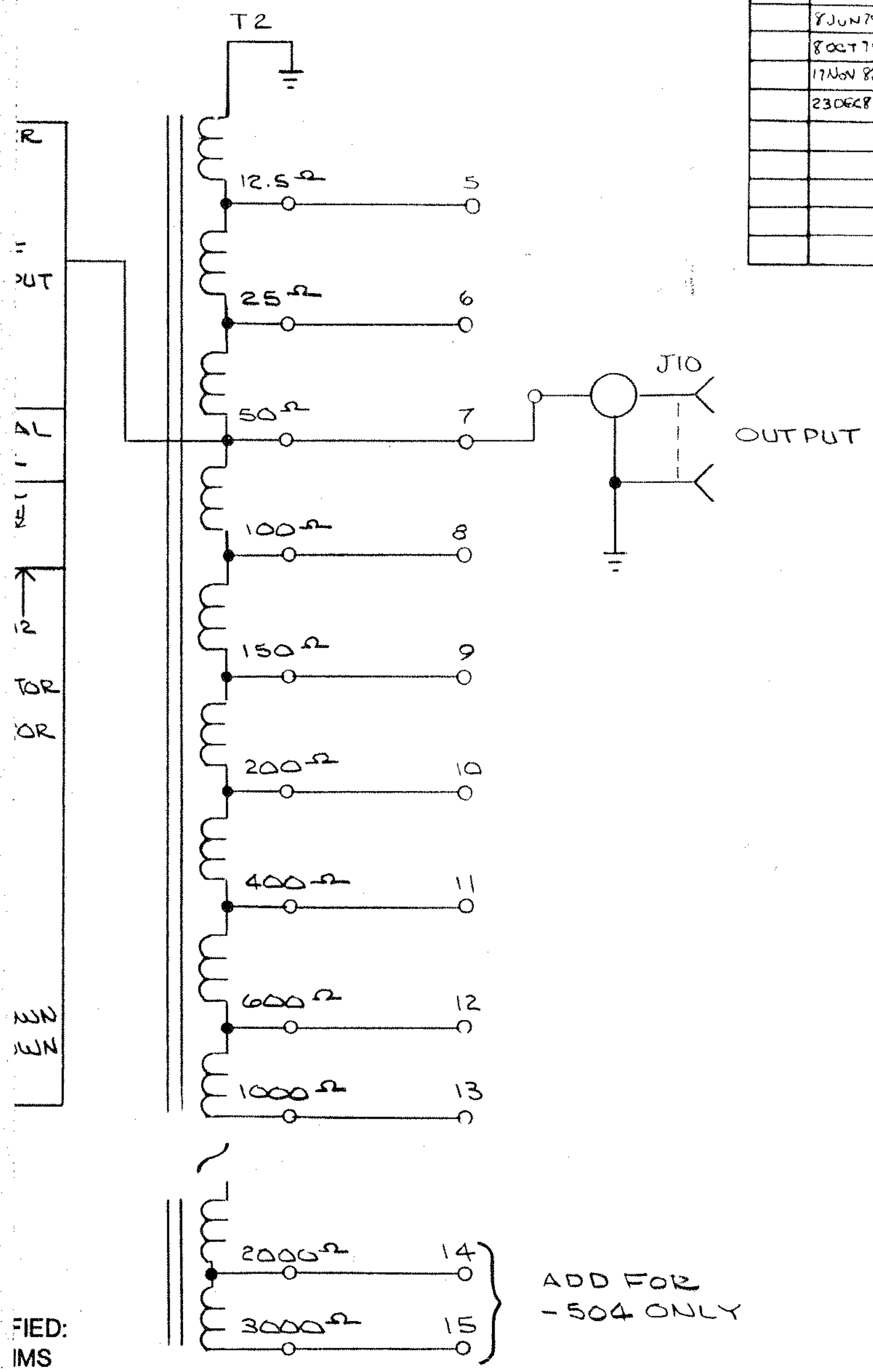
VSWR SHUTDOWN 200 WATTS RMS

160 SCHOOL HOUSE ROAD
SOUDERTON, PA. 18964

PHONE: 215-723-8181

1001044

ECN	DATE	REV
	19APR78	A
	8JUN79	B
	8OCT79	C
	17NOV 86	D
	23DEC87	E



FIED:
IMS
/4 WATT
ICROFARADS

RESENT MULTIPLE
RIATE PARTS LIST
LUES.

	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
TY. REQD.		PARTS LIST				

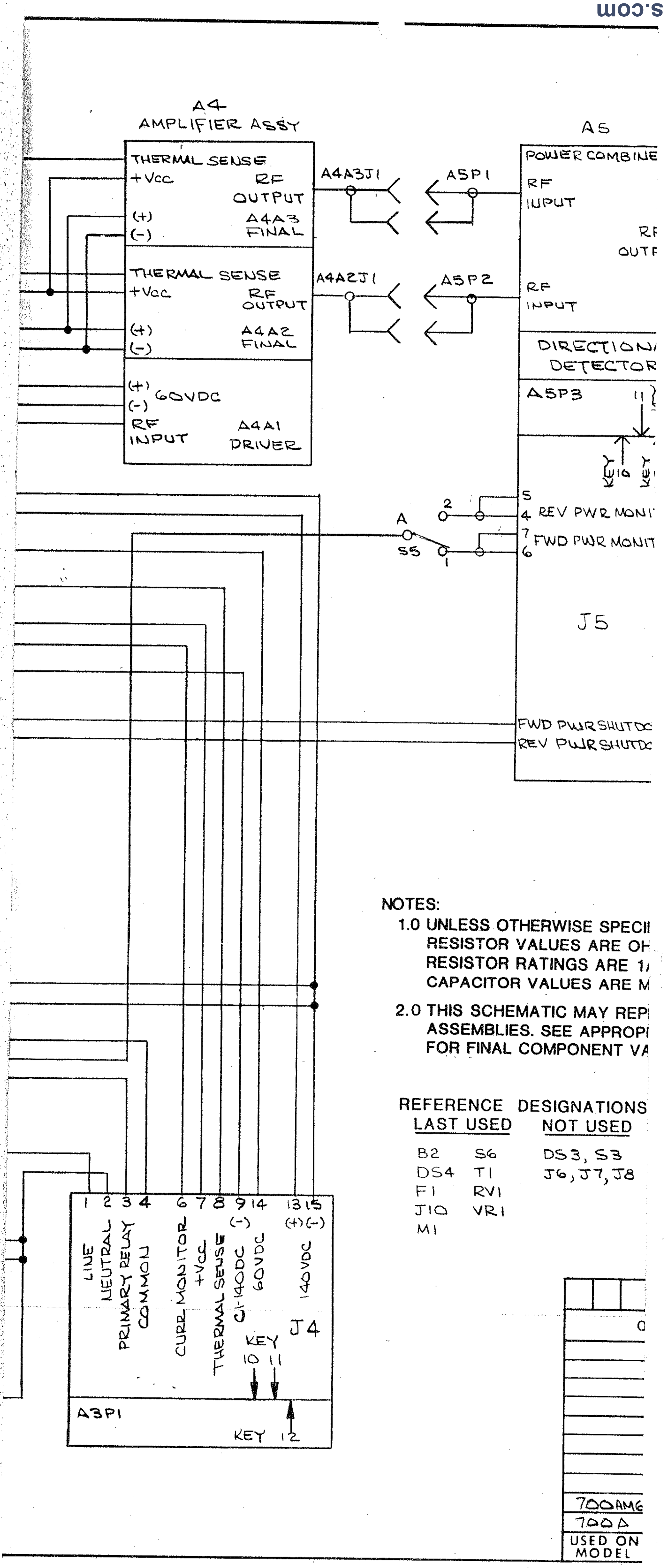
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

RE-DRAWN J. VOGENBERG
DATE 9 MAR 89
CHKD
DATE
MECH
DATE
ELEC
DATE

AMPLIFIER RESEARCH

INTERCONNECT DIAGRAM
HOUSING & INTERFACE

DWG. SCALE: 𝑓
DWG. NO. 1001059
REV. E
SHEET 1 OF 1



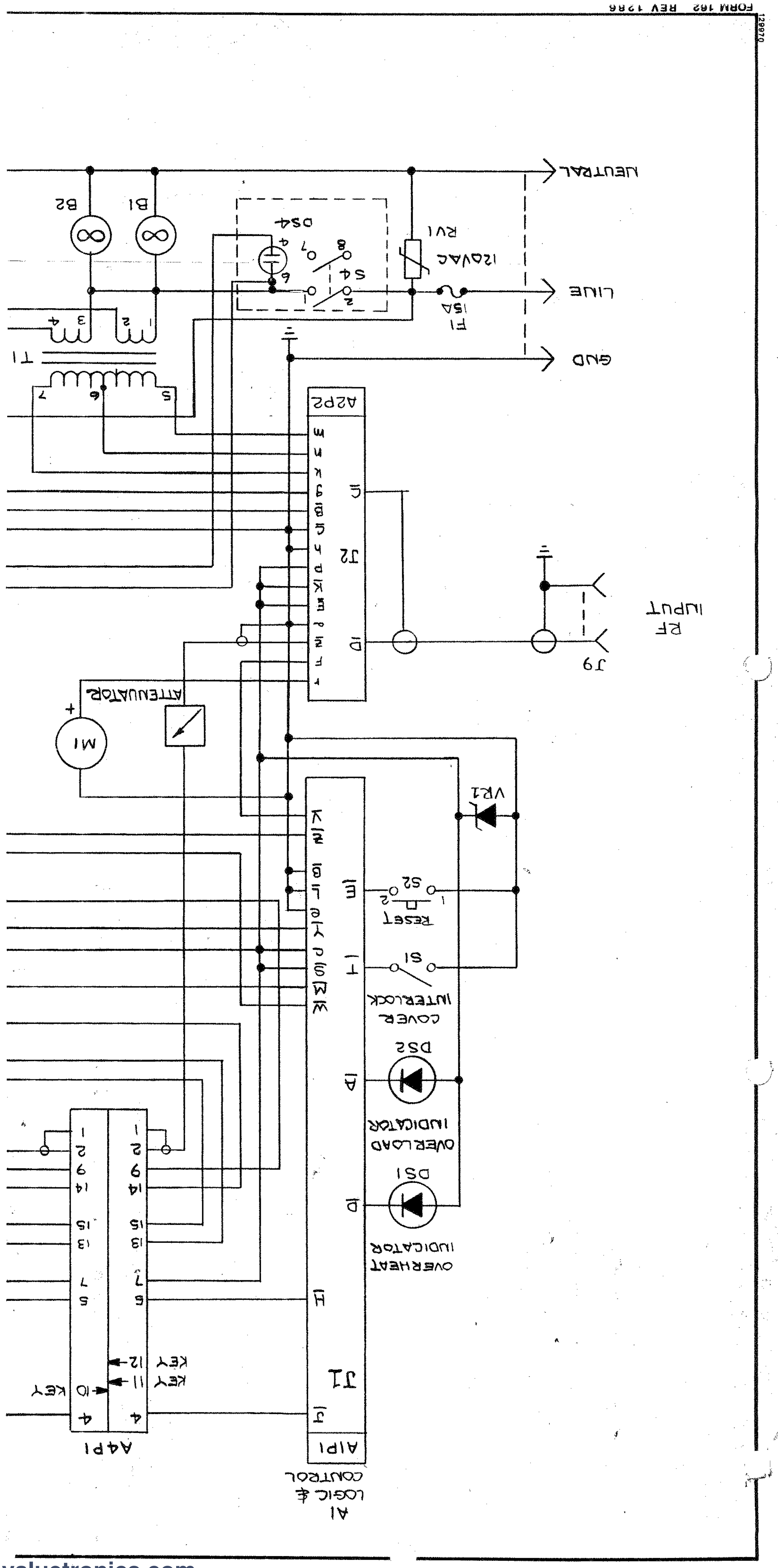
NOTES:

1.0 UNLESS OTHERWISE SPECI
RESISTOR VALUES ARE OH
RESISTOR RATINGS ARE 1/
CAPACITOR VALUES ARE M

2.0 THIS SCHEMATIC MAY REP
ASSEMBLIES. SEE APPROPI
FOR FINAL COMPONENT VA

REFERENCE DESIGNATIONS

LAST USED		NOT USED
B2	S6	DS3, S3
DS4	T1	J6, J7, J8
F1	RV1	
J10	VR1	
M1		


FORM 182 REV 1286
NEUTRAL
LINE
GND
B1
B2
DS4
S4
RV1
120VAC
F1
15A
T1
A2P2
J2
RF INPUT
J9
ATTENUATOR
M1
VR1
RESET
S2
COVER INTERLOCK
S1
DS2
OVERLOAD INDICATOR
DS1
OVERHEAT INDICATOR
J1
A1P1
A1
LOGIC & CONTROL
A4P1
KEY