AUSTRON INC. 1915 KRAMER LANE, AUSTIN, TEXAS 78758 (512) 836-3523 TWX 910/874-1356

MODEL 1250 FREQUENCY STANDARD

April, 1975

P/N 127 96083-2

AUSTRON INC. 1915 KRAMER LANE, AUSTIN, TEXAS 78758 (512) 836-3523 TWX 910/874-1356

WARRANTY

AUSTRON, Inc., of Austin, Texas, warrants, for one year after delivery, to the original purchaser of any product manufactured by AUSTRON, that same shall be free of defects in material and workmanship. Obligation under this warranty shall be limited to repair or replacement, at AUSTRON's discretion, of any product or part thereof which has been returned by the original purchaser with transportation prepaid, and upon examination by AUSTRON, is found to be defective. AUSTRON assumes no responsibility for loss or damage to equipment being returned for repair or replacement under the terms of this warranty.

For this warranty to be effective, the purchaser agrees that the equipment will be properly installed and maintained. Equipment which, upon examination by AUSTRON, requires repair or replacement of parts thereof as a result of improper installation, misuse, unauthorized alterations or repairs, or user negligence, such repairs or replacement of parts thereof will be made at cost.

AUSTRON makes no representation or warranty of any kind, either expressed or implied, with respect to equipment operation and procedures. Any action that the user may take in reliance upon the operation or accuracy of this equipment shall be taken solely upon the user's own responsibility and risk.

AUSTRON shall not be liable for consequential damages to purchaser, user, or any others resulting form the possession or use of this equipment.

Prior to return of a product under terms of this warranty, AUSTRON, Inc., Austin, Texas, is to be notified. Notification is to include the Model Number and Serial Number of the product and full details of the problem.

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MODEL 1250 FREQUENCY STANDARD

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

1.1.1 The AUSTRON 1250 Frequency Standard generates highly stable output frequencies at 5 MHz, 1 MHz. Each of these outputs has excellent waveform and spectral purity. The AUSTRON Model 1250 employs a high-quality, high temperature bake-out crystal unit which, together with special oscillator circuitry, is mounted in a proportional oven. A highly stabilized feedback amplifier is used in connection with an AGC system to maintain the crystal power at the low constant value that is necessary to attain high frequency stability.

The AUSTRON Model 1250 utilizes high quality silicon semi conductors throughout. Other component parts have been chosen for reliability and long life. In order to facilitate servicing, the 1250 has been designed for easy access to all important components.

1.2 SPECIFICATIONS

OUTPUT FREQUENCY:	5 MHz, 1 MHz, 100 kHz sinusoidal
OUTPUT VOLTAGE:	1V. RMS $\pm$20% into 50 OHMS
STABILITY:	
Long term:	5×10^{-10} after 24 hrs, 1×10^{-10}/day after 30 days operation. Ultimate drift is typically 5×10^{-11}/day after 90 days operation.
Ambient:	Less than 2×10^{-9} from -10°C to +50°C.
Load:	Less than 1×10^{-11} for open, 50Ω load.
Supply voltage:	Less than 5×10^{-11} for 17-35V DC or 115/230V AC $\pm$10%.
Retrace:	Less than $\pm 1 \times 10^{-9}$ after 2 hrs. warm-up following a 24 hr. off-time.
Medium term:	Less than $\pm 1 \times 10^{-11}$ RMS for a 120 sec. averaging time.
Short term:	Less than $\pm 5 \times 10^{-12}$ RMS for a 1 sec. averaging time.
HARMONIC DISTORTION:	5 MHz, 1 MHz down more than 40 db from rated output. 100 kHz down more than 35 db from rated output.
NON-HARMONICALLY RELATED OUTPUTS:	(5 MHz, 1 MHz, 100 kHz) down more than 60 db from rated outputs.
OUTPUT TERMINALS:	Front and rear mounted BNC connectors.
FREQUENCY ADJUSTMENTS:	
Fine adjustment:	60×10^{-9} minimum, with digital dial having 5000 divisions.
Course adjustment:	300×10^{-9} minimum.
STORAGE TEMPERATURE:	-40°C +50°C (limited by batteries)
OPERATING TEMPERATURE:	-40°C +50°C (Batteries cannot be recharged below -17°C)
HUMIDITY:	0 - 95%
WEIGHT:	20 lbs 12 oz.
DIMENSIONS:	
Height:	3-1/2 inches
Width:	17 inches (without relay rack mounting tabs).

Depth:	11-5/8 inches behind the front panel, 13-3/4 inches overall.
POWER:	115/230V ±10%, 48-420 Hz. 17-35V DC 12W. max.
STANDBY POWER:	Internal Nicad battery pack provides 10 hours standby power.

2.0 INSTALLATION

2.1 UNPACKING AND INSPECTION

Unpack the equipment carefully. Thoroughly examine instrument package for damage that may have occurred during shipment.

2.2 INITIAL INSPECTION

Immediately report any equipment damage to the carrier and to AUSTRON, Inc. Inspect internal components and circuit boards by removing the appropriate covering panels. Examine exterior and interior parts carefully.

2.3 CIRCUIT BOARDS

Exercise care when removing and installing circuit boards to ensure that connector contacts are not damaged. The recommended installation procedure is to slide the board carefully along the guide until it meets resistance to movement, then to mate the contacts with a gentle, steady push.

2.4 INSTALLATION

The Model 1250 Frequency Standard is designed to be bench mounted, or rack mounted, using the mounting ears supplied. If the 1250 is to be rack mounted, choose a rack location which is clear of high heat producing components. If possible, the rack should be ventilated.

2.5 POWER REQUIREMENTS

The Model 1250 can be operated from either 115/230V $\pm$10% 48-420 Hz, or 17-35VDC. A slide switch on the rear panel provides selection of the AC power level.

3.0 OPERATING INSTRUCTIONS

3.1 INTRODUCTION

The AUSTRON Model 1250 Frequency Standard is operational as shipped from the factory, and no pre-operation procedures are required. This section will be divided into two main sections:

- Control Location and Function
- Operation

3.2 CONTROL LOCATION AND FUNCTION

3.2.1 Circuit Test Switch - Selects the internal functions to be monitored on an arbitrary scale displayed on the meter. (Front Panel).

3.2.2 Fine Frequency Adjust - Is a ten-turn pot coupled to a turns counting dial and the elctrical tuning range is set so as to let each minor division equal approximately 1×10^{-10}.

3.2.3 Coarse Frequency Adjust - Total range approximately 600×10^{-9}. (Front Panel).

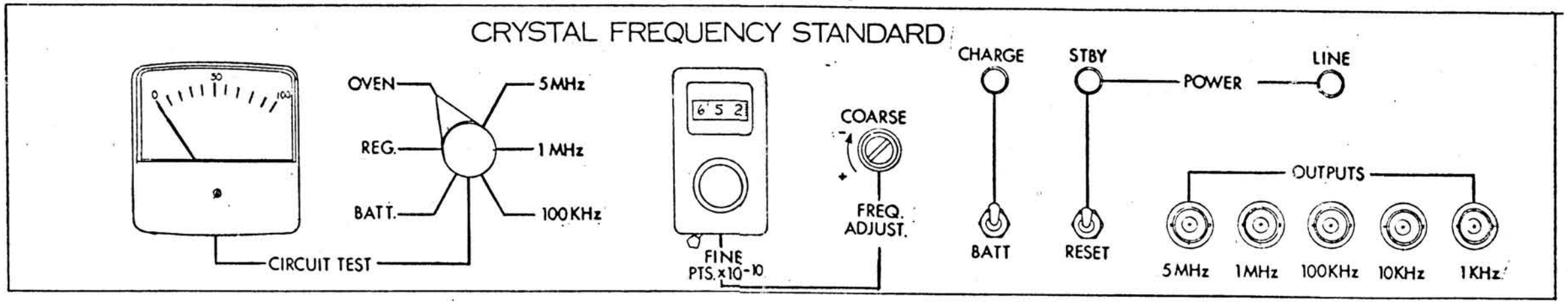
3.2.4 Batt - Toggle Switch - Selects high or low charge rate for the internal batteries. (Front Panel).

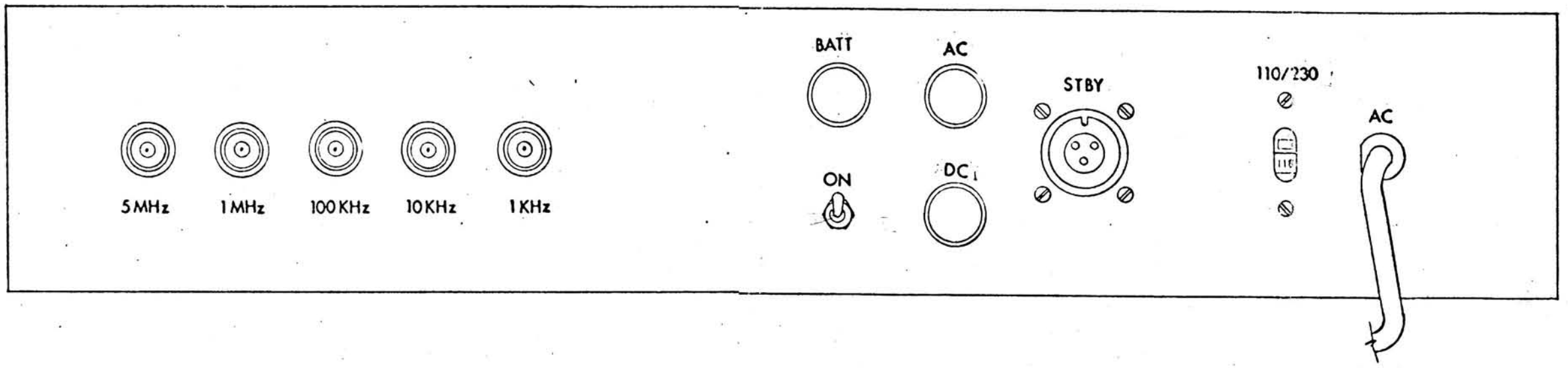
3.2.5 Charge Lamp - Indicates when the internal batteries are on high charge.

3.2.6 Reset - Toggle Switch which will reset the standby lamp and also start the frequency standard on its internal batteries when AC power is not present. (Front Panel). NOTE: Not recommended for cold starts.

3.2.7 Stby Lamp - Indicates that the AC power has failed. (Front Panel).

3.2.8 Line Lamp - Indicates if AC power is present. (Front Panel).





FRONT AND REAR PANELS
124 96093

3.2.9 Outputs - BNC connectors which provide sinewave outputs at 1V RMS into 50Ω at the various frequencies as labeled. (Front Panel).

3.2.10 Outputs - Same as front panel outputs. (Back Panel).

3.2.11 Batt - Fuse in the battery line. (Back Panel).

3.2.12 AC - Fuse in the power line. (Back Panel).

3.2.13 DC - Fuse in the DC power supply line. (Back Panel).

3.2.14 ON - Power switch both AC and DC. (Back Panel).

3.2.15 Stby - External DC input 17-35V. (Back Panel).

3.2.16 115/230 - Select line voltage on transformer primary. (Back Panel).

3.2.17 Power - AC input cord. (Back Panel).

3.3 OPERATION

3.3.1 Power - The Model 1250 Frequency Standard is designed to operate from either a 115 or 230 volt 48-420 Hz power source. Voltage selection is made by positioning the selector switch located on the back panel to the proper voltage. The 1250, when shipped from the factory, has been set for 115V service. If operation from a 230V service is required, place the selector switch to the 230 volt position and remove the 1 amp AC fuse and replace with a 1/2 amp of the same type.

3.3.2 Throw power switch located on the back panel to the ON position.

3.3.3 Check the circuit test monitor and verify the following:

1) Batt between 40 and 60, 50 nominal.
2) Reg. between 40 and 60.
3) OVEN less than 10 (oven cold).
4) 5 MHz between 40 and 60.
5) 1 MHz between 40 and 60.
6) 100 kHz between 40 and 60.

3.3.4 At this time, allow six hours for the 1250 to stabilize. Do not make any frequency adjustments during this period.

3.3.5 After stabilization, the frequency may be corrected with the fine frequency control, by comparing the output to a reference source with a phase comparator or frequency difference meter.

3.3.6 When corrections can no longer be made with the fine frequency control, return the control to about 750 on the dial and remove the coarse tuning access screw. With the tool provided, engage the tuning capacitor and set the oscillator on frequency. Remove the tool and replace the access screw. Allow 15 minutes for the oven to stabilize. Make final frequency correction with the fine frequency control.

4.0 MAINTENANCE

4.1 The Model 1250 Frequency Standard has been designed not to require any periodic maintenance. However, in view of the fact that switches and pushbuttons have a limited operational life span, and that electronic components suffer catastrophic failures, this section is provided to furnish a competent technician with the data required to trouble shoot the unit. All schematics, circuit descriptions and parts call-out are included in this section.

Care should be exercised in the removal and insertion of parts in the printed circuit board. Use of a low wattage soldering iron, and some means of solder removal, (such as Dri-Wick, or Solder-Wick), is highly recommended, as is 63/37 low melting point solder.

1250 POWER SUPPLY

The 1250 power supply is designed to perform several functions, such as automatic battery switch-over, automatic external DC switch-over, automatic low voltage battery cut-out, AC interruption indication, and electrical tuning.

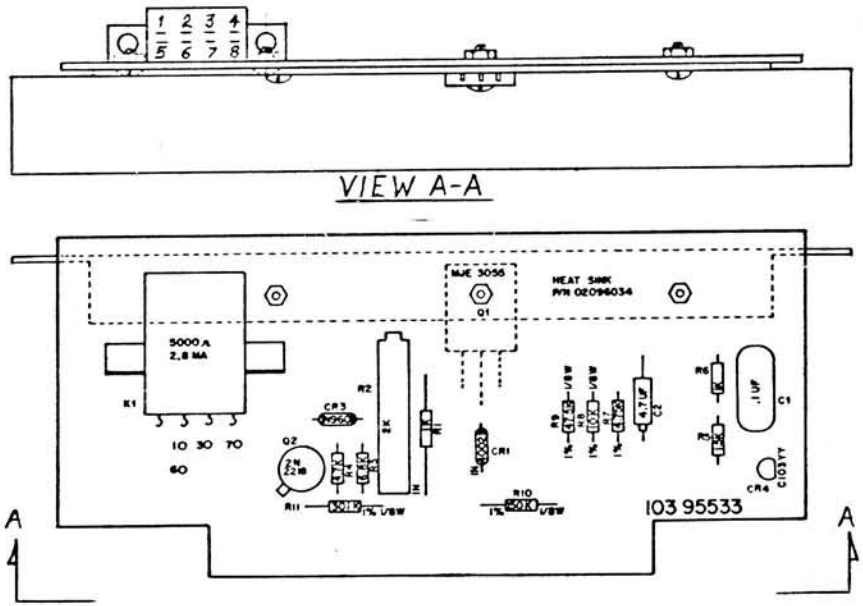
Diode CR1 is used as an external DC switch, when back biased by the bridge input the external DC is cut off. The transistor Q1 is used as a series regulator to supply the load. The reference voltage for Q1 is supplied by the batteries through relay K1, which is held closed by Q2 whose bias is furnished by CR3 which along with resistors R1, R2 and R3, detect the battery voltage.

The gate of the SCR CR3 is fired by the AC cut-out relay, this lights the standby lamp until the reset is pressed.

Components C2, R7, R8, and R9 form a linearizing circuit for the oscillator varicap.

Resistors R10 and R11 are used for voltage monitoring.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REVISED & REDRAWN PER ECO 1180	1-12-76	RDB
	B	REMOVE J3 PER ECO 1221	1-26-76	RDB
	C	ECO 1370: Q2 WAS 2N5189	5/11/76	RDB
	D	ECO 1403: ADDED REF DES, R11 WAS 300K, R9 WAS 47K; R7 WAS 4.7	5/11/76	RDB
	E	REVISED P/L PER ECO 2361	5-3-78	RDB
	F	REMOVED CR2 PER ECO. 2466	10-11-78	RDB
	G	REVISED P/L PER ECO 2661	1-16-79	RDB
	H	REVISED P/L PER ECO 2811	4-19-79	RDB



QTY REQD	ITEM NO	REF DES	PART NO	NOMENCLATURE	VENDOR
-1			LIST OF MATERIAL		

254 96649	1250B		4-2
254 96460	1220S		
254 97307+	1250A		4-2
254 95205 *	1250		
NEXT ASSY	USED ON	REF DES	FIG NO
APPLICATION			

ENGINEER	[illegible]	2-27-76
CHECKED	RDB	2-18-76
DRAFTSMAN	[illegible]	1-12-76

AUSTRON INC AUSTIN TEXAS

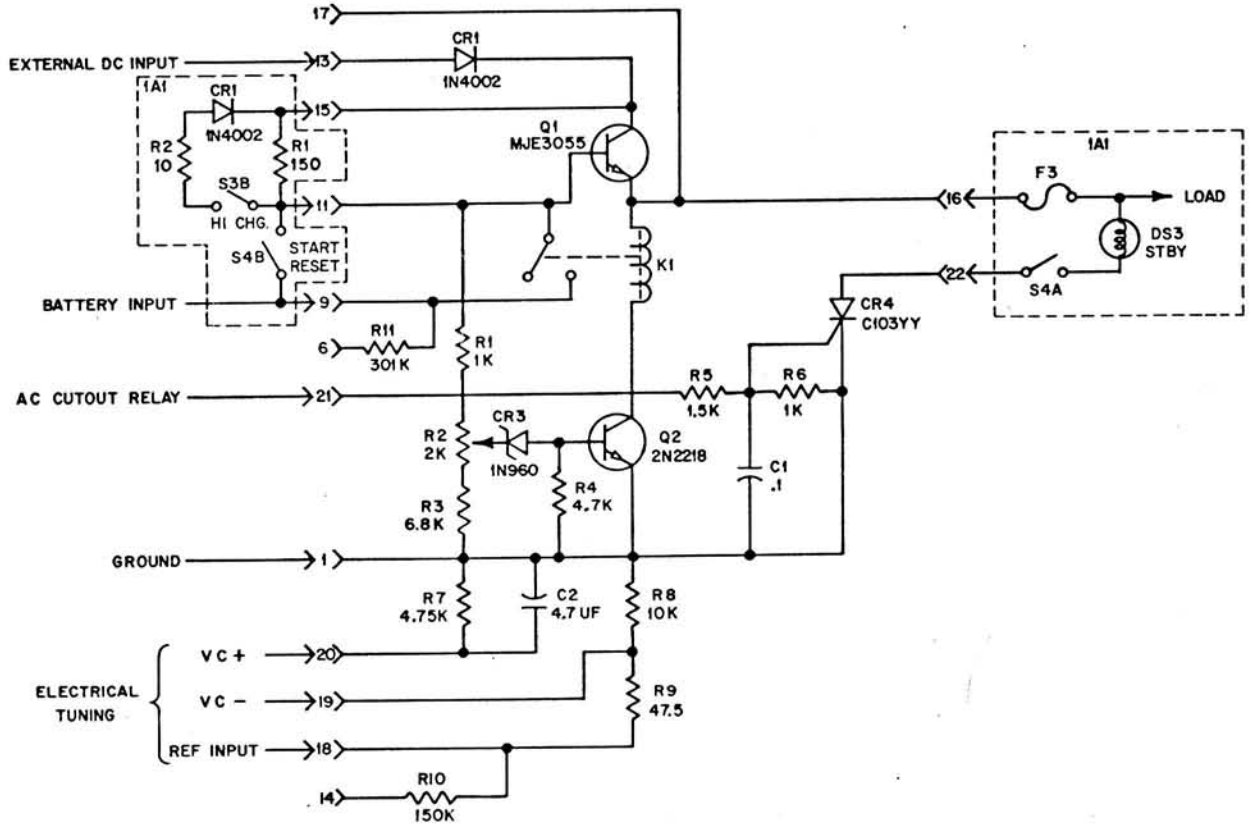
PC BOARD ASSY., POWER SUPPLY

SIZE	CODE IDENT NO		
2	24672	103 95533	H
SCALE		SHEET	OF

1. RUN #22 BUS WIRE WITH TEF TUBING FROM NUMBERED PINS OF RELAY TO CORRESPONDING NUMBERS ON BOARD (PINS 1,3,6,7 ONLY)

NOTES:

REVISIONS			
ZONE	[redacted]	DAT[redacted]	D
	D RE-DRAWN TO UNIVERSAL STANDARDS PER ECO 1799	1-6-77	RWB
	E IN AREA 1A1 R1 WAS 200Ω, R2 WAS 20Ω, DELETED CR2 MOVED R10 TO CONNECT WITH PIN 18 ECO. 2466	10-11-78	RWB
	F ADDED R3, 6.8K PER ECO. 2693	3-30-79	RWB



103 95533	1250B	1A1A2	4-1
103 95533	1220S	1A1A2	4-1
103 95533	1250A	1A1A2	4-1
NEXT ASSY	USED ON	REF DES	FIG NO
APPLICATION			

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS | FRACTIONS | ANGLES

MATERIAL:

ENGR	RWH	1-19-77
CHECK	[illegible]	1-19-77
DRFTSMN	[illegible]	1-19-77

AUSTRON INC.
AUSTIN, TEXAS

SCHEMATIC – POWER SUPPLY

SIZE	CODE IDENT NO		
3	24672	123 96100	F
SCALE		SHEET	OF

1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W, 10% WITH VALUES IN OHMS & ALL CAPACITANCE VALUES ARE IN MICROFARADS.

NOTES:

ASSEMBLY PCB ASSY POWER SUPPLY
ASSY NO 10395533
QUANTITY 1 E

REF DES	PCB CORD	PART DESCRIPTION				PART NO	REV
C1		.1UF	100V	10	CAP DIP PAPER	606030-0104	
C2		4.7UF	35V	10	CAP TANT	608017-0475	
CR1		1N4002	1A		DIODE RECT	7011N4002	
CR2		1N4002	1A		DIODE RECT	7011N4002	
CR3		C103YY			SCR	702C103YY	
K1		WJS-6D	2.8MA		RELAY	554201-0001	
Q1		MJE3055	90W		XSTR NPN	702MJE3055	
Q2		2N2218	1W		XSTR NPN	7022N2218	
R1		1K	1/4W	10	RES FXD COMP	651102-0102	
R2		2K			RES VAR CERAMIT	659012-0202	
R3		6.8K	1/4W	10	RES FXD COMP	651102-0682	
R4		4.7K	1/4W	10	RES FXD COMP	651102-0472	
R5		1.5K	1/4W	10	RES FXD COMP	651102-0152	
R6		1K	1/4W	10	RES FXD COMP	651102-0102	
R7		4.75K	1/8W	1	RES FXD FILM	653001-4751	
R8		10K	1/8W	1	RES FXD FILM	653001-1002	
R9		47.5K	1/8W	1	RES FXD FILM	653001-4752	
R10		150K	1/8W	1	RES FXD FILM	653001-1503	
R11		301K	1/8W	1	RES FXD FILM	653001-3013	
VR1		1N960B	9.1V		DIODE ZENER	7011N960B	

CIRCUIT DESCRIPTION
1200 SINE CONVERTER

General

The 1200 sine converter card contains a 5 MHz clipper, 5 MHz buffer gates, a divide by 5 stage, a decade divider and two sine converter, buffer amplifiers.

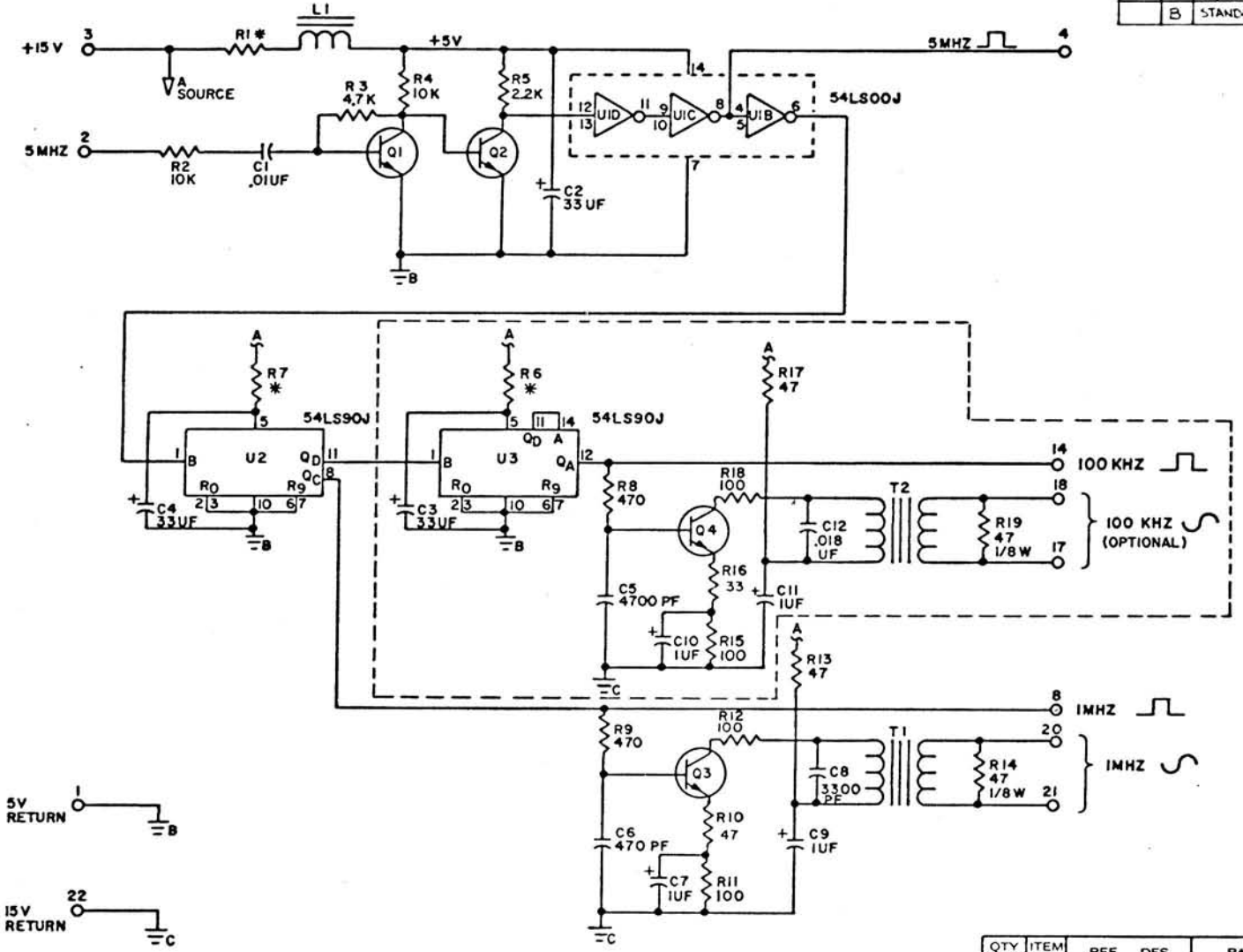
Theory of Operation

The 5 MHz sinewave from the internal oscillator is supplied through isolating resistor R2 and coupling capacitor C1 to the input of a two-stage direct coupled amplifier made up of Q1 and Q2. The output of this amplifier is a 5 MHz pulse which has the proper characteristics to drive U1B, C, D, a 5 MHz buffer gate. The output of U1C is a 5 MHz TTL signal which is supplied to U2.

U2 is a divide by five stage which produces a 1 MHz TTL output from the 5 MHz TTL input. The 1 MHz TTL output from U2 is fed through a low pass filter R9, C6, to the base of a collector tuned RF amplifier. The resulting 1 MHz sinewave at the secondary of T1 is used to drive the 1 MHz output buffer.

U3 is a decade divider which produces a 100 kHz TTL output from a 1 MHz TTL input supplied from U2. The 100 kHz TTL signal is fed through a low pass filter R8 and C5 to the base of Q4, a collector tuned output amplifier. The 100 kHz signal present at the secondary of T2 is used to drive the 100 kHz output buffer.

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	—	RELEASED	10-9-75	KLS
	A	ADDED DASHED LINE TO LOCATE SECTION; R16 WAS 47; R18 WAS 33 PER ECO 1600	5-18-76	KLS
	B	STANDARDIZED ON E400 J'S PER ECO. 2058, 2087	9-23-77	KLS



NOTES:
1 * R1, R6, AND R7 ARE SELECTED TO PROVIDE 5V TO THE RESPECTIVE IC.
2 ALL RESISTORS ARE 1/4 W 10% UNLESS NOTED.
3 ALL TRANSISTORS 2N 3904
4 IC'S ARE SELECTED FOR AMBIENT TEMPERATURE REQUIREMENT OF THE UNIT.

QTY REQD	ITEM NO	REF DES	PART NO	NOMENCLATURE	VENDOR
-1				LIST OF MATERIAL	

1A1A4	4-3	127 97317	1250A
A18	4-12	103 96025	1210 D
REF DES	FIG NO	NEXT ASSY	USED ON
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DO NOT SCALE DRAWINGS

TOLERANCES
UNLESS OTHERWISE SPECIFIED

DECIMALS	FRACTIONS	ANGLES

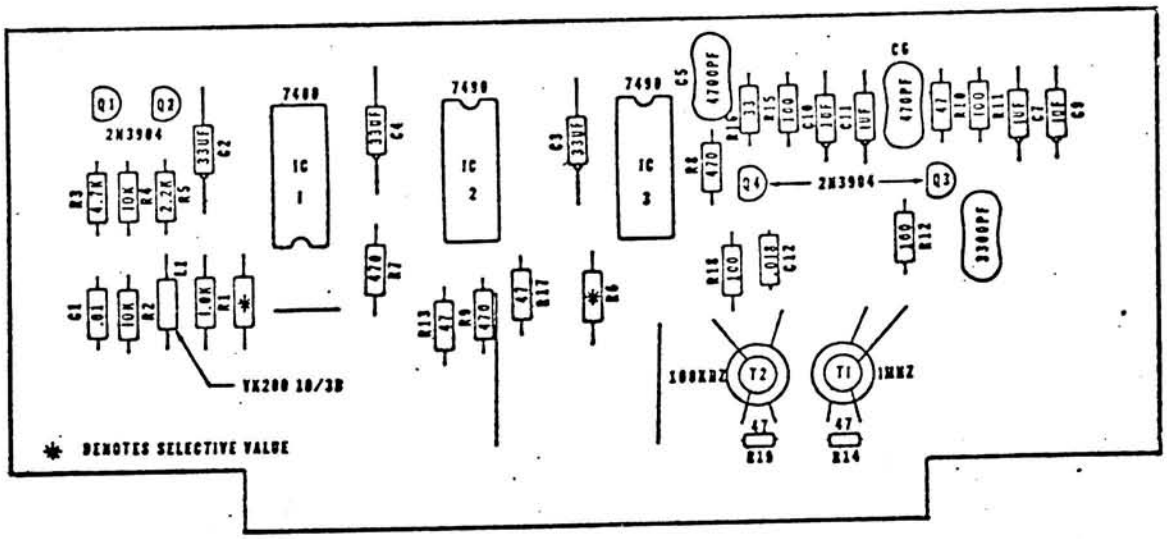
MATERIAL:

ENGINEER	[illegible]	10-7-75
CHECKED	[illegible]	10-9-75
DRAFTSMAN	[illegible]	

AUSTRON INC. AUSTIN, TEXAS

SCHEMATIC DIAGRAM
SINE CONVERTER

SIZE	CODE IDENT NO.		
3	24672	123 96096	B
SCALE NONE			SHEET 1 OF 1



PCB SINE CONVERTER

124 96097

ASSEMBLY PCB ASSY SINE CONVERTOR
ASSY NO 10396025
QUANTITY 1 E

REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
C1		.01UF 100V 20 CAP CERA	601205-0103	
C2		33UF 10V 10 CAP TANT	608014-0336	
C3		33UF 10V 10 CAP TANT	608014-0336	
C4		33UF 10V 10 CAP TANT	608014-0336	
C5		4700PF 100V 5 CAP DIP MICA	603000-0472	
C6		470PF 500V 5 CAP DIP MICA	603000-0471	
C7		1UF 35V 10 CAP TANT	608017-0105	
C8		3300PF 100V 5 CAP DIP MICA	603000-0332	
C9		1UF 35V 10 CAP TANT	608017-0105	
C10		1UF 35V 10 CAP TANT	608017-0105	
C11		1UF 35V 10 CAP TANT	608017-0105	
C12		.018UF 50V 10 CAP FILM	607050-0183	
L1		VK200 10/3B CHOKE	751102-0000	
MP1		PCB SINE CONVERTOR	00396024	
Q1		2N3904 310MW XSTR NPN	7022N3904	
Q2		2N3904 310MW XSTR NPN	7022N3904	
Q3		2N3904 310MW XSTR NPN	7022N3904	
Q4		2N3904 310MW XSTR NPN	7022N3904	
R1		1K 1/4W 10 RES FXD COMP	651102-0102	
R2		10K 1/4W 10 RES FXD COMP	651102-0103	
R3		4.7K 1/4W 10 RES FXD COMP	651102-0472	
R4		10K 1/4W 10 RES FXD COMP	651102-0103	
R5		2.2K 1/4W 10 RES FXD COMP	651102-0222	
R6		SEL 1/4W 10 RES FXD COMP	651102-SEL	
R7		SEL 1/4W 10 RES FXD COMP	651102-SEL	
R8		470 OHM 1/4W 10 RES FXD COMP	651102-0471	
R9		470 OHM 1/4W 10 RES FXD COMP	651102-0471	
R10		33 OHM 1/4W 10 RES FXD COMP	651102-0330	
R11		100 OHM 1/4W 10 RES FXD COMP	651102-0101	
R12		100 OHM 1/4W 10 RES FXD COMP	651102-0101	
R13		47 OHM 1/4W 10 RES FXD COMP	651102-0470	
R14		47 OHM 1/8W 10 RES FXD COMP	651110-0470	

ASSEMBLY PCB ASSY SINE CONVERTOR
ASSY NO 10396025
QUANTITY 1 E

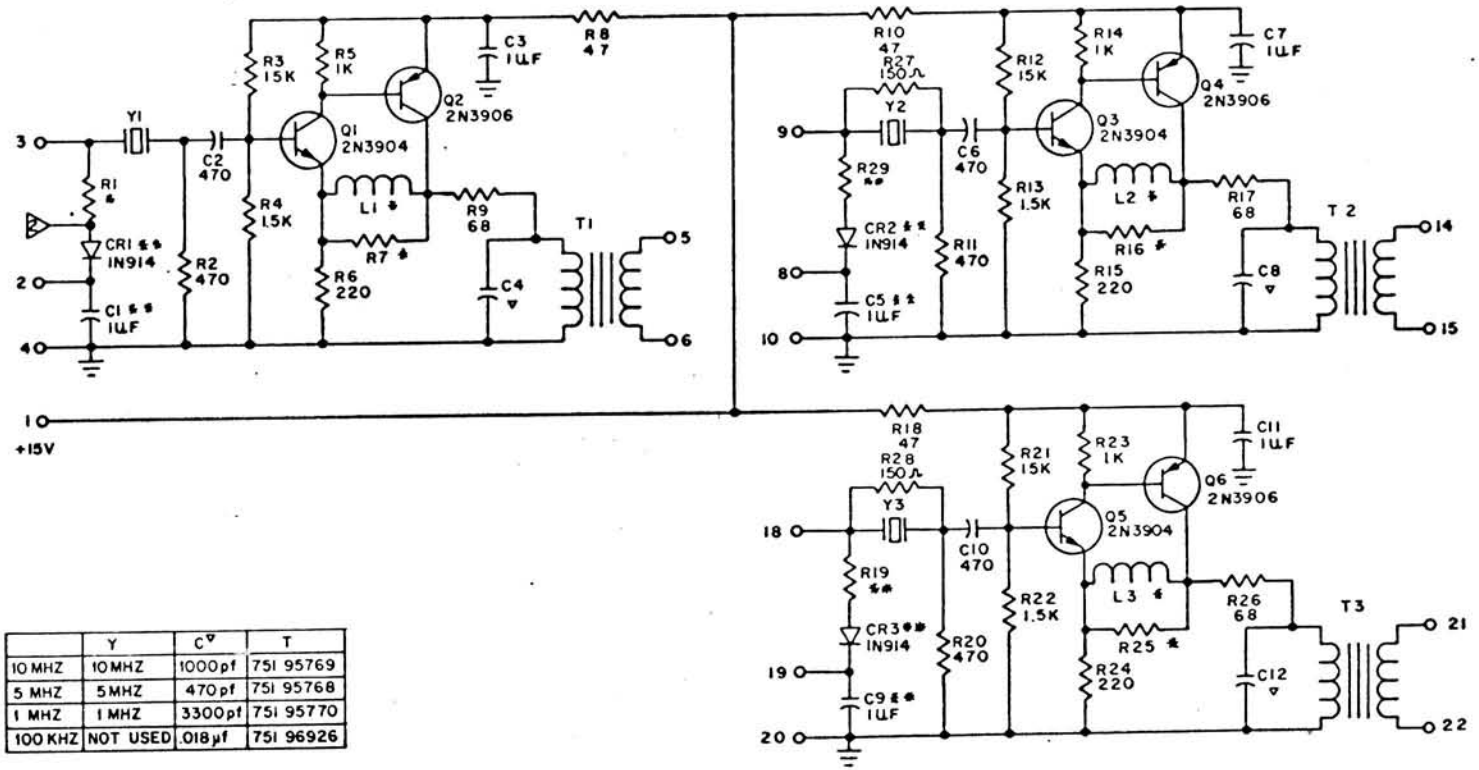
REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
R15		100 OHM 1/4W 10 RES FXD COMP	651102-0101	
R16		47 OHM 1/4W 10 RES FXD COMP	651102-0470	
R17		47 OHM 1/4W 10 RES FXD COMP	651102-0470	
R18		100 OHM 1/4W 10 RES FXD COMP	651102-0101	
R19		47 OHM 1/8W 10 RES FXD COMP	651110-0470	
T1		1MHZ XFMAR TOROID	75195770	
T2		100KHZ XFMAR TOROID	75196926	
U1		SN7400N IC	703SN7400N	
U2		SN7490N IC	703SN7490N	
U3		SN7490N IC	703SN7490N	
XU1		SOCKET 14 DIP	551026-0859	
XU2		SOCKET 14 DIP	551026-0859	
XU3		SOCKET 14 DIP	551026-0859	

1250 OUTPUT AMPLIFIERS

The 1250 output amplifier card contains three similar amplifiers which operate in like manner. For example, we will discuss the 5 MHz amplifier.

Components R1, CR1 and C1 form a monitoring circuit to check the input to the amplifier. Crystal Y1 in an input filter with R2 as its load. The transistors Q1 and Q2 form a two-stage common emitter, collector tuned amplifier with negative feedback. The feedback ratio is determined by R7 and R6. These amplifiers have been designed to allow a minimum level change for a maximum load change.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	–	RELEASED	11-24-75	
	A	ECO 1273 (1) ADDED R27 R28 AND NOTE 2	2-17-76	
	B	ADDED REF TO R1 IN NOTE 2; DELETED VALUES FROM R7 R16, & R25 PER ECO 1463	5-18-76	RLB
	D	R29 WAS R9; R29, R19 AND CR3 WERE ANOTATED WITH JUST A SINGLE ASTERISK, DELETED ⊳ TWO PLACES PER ECO 2261	3-7-78	



	Y	C▽	T
10 MHZ	10 MHZ	1000 pf	751 95769
5 MHZ	5 MHZ	470 pf	751 95768
1 MHZ	1 MHZ	3300 pf	751 95770
100 KHZ	NOT USED	.018 µf	751 96926

⊳ THIS POINT IS GROUNDED ON 1210-D AND R1 IS 47 OHMS.
** USED ON 1250 ONLY -- PARTS ARE OMITTED IN 1210D.
1.* SELECTED FOR OUTPUT LEVEL 1V RMS INTO 50 OHMS

NOTES:

103 96031	1250		
103 96031-1	1210D	A19	4-14
NEXT ASSY	USED ON	REF DES	FIG NO
APPLICATION			

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS | FRACTIONS | ANGLES

MATERIAL:

ENGR	L.L. ISERT, JR	10-4-75
CHECK	R. BARKER	10-4-75
DRAFTSMAN	K. WIGINTON	9-30-75

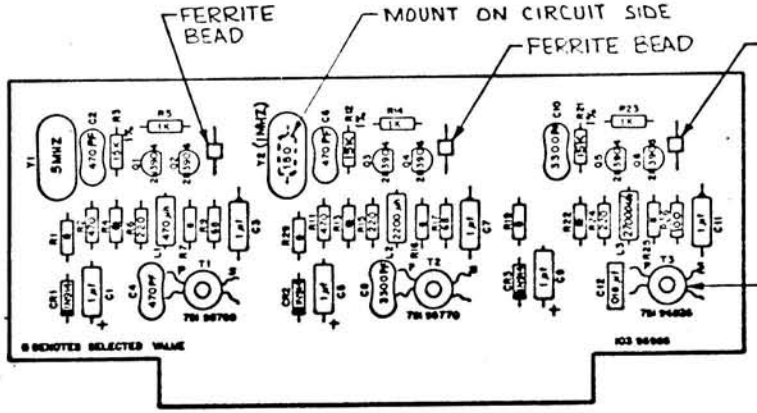
AUSTRON INC.
AUSTIN, TEXAS

SCHEMATIC DIAGRAM - OUTPUT AMPLIFIER

SIZE	CODE IDENT NO		
3	24672	123 96098	D

SCALE N/A | SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	–	RELEASED	3-23-76	
	A	REVISED PICTURE TO AGREE WITH SCREEN CHANGES PER ECO # 1432	5-12-76	
	B	ECO 1518: C10 WAS 470; ADDED 150Ω RES ACROSS Y2	8-23-76	
	C	ECO 2210: IDENTIFIED WINDINGS ON T1, T2, & T3; ADDED VALUES TO Y1 & Y2	2-13-78	
	D	REVISED PARTS LIST PER ECO. 2809	4-16-79	
	E	REVISED PARTS LIST & SCREEN ECO. 3082	12-17-79	
	F	ADDED NOTE FOR T3 PER ECO. 3480	3-28-80	



NOTE:
WHEN INSTALLING T3, CONNECT PRIMARY FINISH LEAD WITHOUT TRIMMING EXCESS LENGTH.

FIG 4-6

QTY REQD	ITEM NO	REF DES	PART NO	NOMENCLATURE	VENDOR
-1			LIST OF MATERIAL		

25497307	1250A
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DO NOT SCALE DRAWING
TOLERANCES UNLESS OTHERWISE SPECIFIED
DEC | FRACT | ANG
MATERIAL:

ENGINEER [illegible] 3-23-76
CHECKED [illegible] 3-23-76
DRAFTSMAN BARKER 3-17-76

AUSTRON INC AUSTIN TEXAS

PC BOARD ASSY. – OUTPUT AMPLIFIER

SIZE	CODE IDENT NO		
2	24672	103 96986	F

SCALE 1:1 SHEET OF

ASSEMBLY PCB ASSY OUTPUT AMP
ASSY NO 10396986
QUANTITY 1 E

REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
C1		1UF 35V 10 CAP TANT	608017-0105	
C2		470PF 500V 5 CAP DIP MICA	603000-0471	
C3		1UF 35V 10 CAP TANT	608017-0105	
C4		470PF 500V 5 CAP DIP MICA	603000-0471	
C5		1UF 35V 10 CAP TANT	608017-0105	
C6		470PF 500V 5 CAP DIP MICA	603000-0471	
C7		1UF 35V 10 CAP TANT	608017-0105	
C8		3300PF 100V 5 CAP DIP MICA	603000-0332	
C9		1UF 35V 10 CAP TANT	608017-0105	
C10		3300F 500V 5 CAP DIP MICA	603000-0471	
C11		1UF 35V 10 CAP TANT	608017-0105	
C12		.018UF 100V 10 CAP FILM	607050-0183	
CR1		1N914 DIODE SIL SIG	7011N914	
CR2		1N914 DIODE SIL SIG	7011N914	
CR3		1N914 DIODE SIL SIG	7011N914	
L1		470UH CHOKE	751104-0471	
L2		2200UH CHOKE	751104-0222	
L3		27000UH CHOKE	751104-0273	
Q1		2N3904 310MW XSTR NPN	7022N3904	
Q2		2N3906 310MW XSTR PNP	7022N3906	
Q3		2N3904 310MW XSTR NPN	7022N3904	
Q4		2N3906 310MW XSTR PNP	7022N3906	
Q5		2N3904 310MW XSTR NPN	7022N3904	
Q6		2N3906 310MW XSTR PNP	7022N3906	
R2		470 OHM 1/4W 10 RES FXD COMP	651102-0471	
R3		15K 1/4W 10 RES FXD COMP	651102-0153	
R4		1.5K 1/4W 10 RES FXD COMP	651102-0152	
R5		1K 1/4W 10 RES FXD COMP	651102-0102	
R6		220 OHM 1/4W 10 RES FXD COMP	651102-0221	
R8		47 OHM 1/4W 10 RES FXD COMP	651102-0470	
R9		68 OHM 1/4W 10 RES FXD COMP	651102-0680	
R10		47 OHM 1/4W 10 RES FXD COMP	651102-0470	

ASSEMBLY PCB ASSY OUTPUT AMP
ASSY NO 10396986
QUANTITY 1 E

REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
R11		470 OHM 1/4W 10 RES FXD COMP	651102-0471	
R12		15K 1/4W 10 RES FXD COMP	651102-0153	
R13		1.5K 1/4W 10 RES FXD COMP	651102-0152	
R14		1K 1/4W 10 RES FXD COMP	651102-0102	
R15		220 OHM 1/4W 10 RES FXD COMP	651102-0221	
R17		68 OHM 1/4W 10 RES FXD COMP	651102-0680	
R18		47 OHM 1/4W 10 RES FXD COMP	651102-0470	
R21		15K 1/4W 10 RES FXD COMP	651102-0153	
R22		1.5K 1/4W 10 RES FXD COMP	651102-0152	
R23		1K 1/4W 10 RES FXD COMP	651102-0102	
R24		220 OHM 1/4W 10 RES FXD COMP	651102-0221	
R26		100 OHM 1/4W 10 RES FXD COMP	651102-0101	
T1		5MHZ XFMAR TOROID	75195768	
T2		1MHZ XFMAR TOROID	751-95770	
T3		100KHZ XFMAR TOROID	7596926	
Y1		5MHZ XTAL	752B5000000	
Y2		1MHZ XTAL	752A1000000	

ASSEMBLY FREQ STD 5.1MHZ:100KHZ
ASSY NO 30495206-2
QUANTITY 1 E

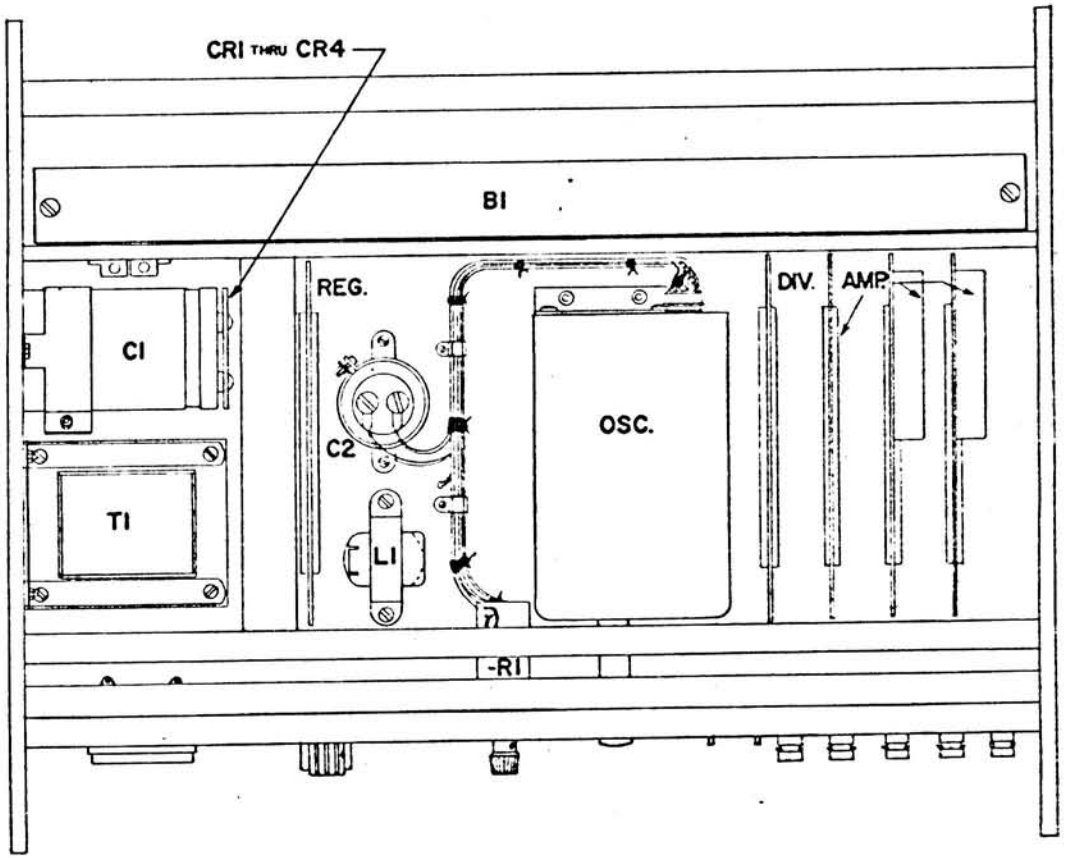
REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
A1		PCB ASSY DIODE BRIDGE	10395977	
A2		PCB ASSY POWER SUPPLY	10395533	
A3		OSC 1150	30295838	
A4		PCB ASSY SINE CONVERTOR	10396025	
A5		PCB ASSY OUTPUT AMP	10396031	
BT1A		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1B		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1C		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1D		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1E		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1F		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1G		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1H		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1I		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1J		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1K		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
BT1L		4.0SC 1.25 4AH BATT NICAD D-CELL	570900-0018	
C1		6500UF 50V 10 CAP ELECT	602036-0032	
C2		1500UF 25V 10 CAP ELECT	602045-0158	
DS1		LAMP 28V GRN	555008-0005	
DS2		LAMP 28V YEL	555008-0004	
DS3		LAMP 28V RED	555008-0002	
F1		1A 3AG STD FUSE	552001-0019	
F2		1A 3AG SB FUSE	552002-0010	
F3		1A 3AG SB FUSE	552002-0010	
J1		CONNECTOR MS3102A14S2P	551102-0018	
J2		CONNECTOR BNC	551100-7935	
J3		CONNECTOR BNC	551100-7935	
J4		CONNECTOR BNC	551100-7935	
J7		CONNECTOR BNC	551100-7935	
J8		CONNECTOR BNC	551100-7935	
J9		CONNECTOR BNC	551100-7935	

ASSEMBLY FREQ STD 5.1MHZ:100KHZ
ASSY NO 30495206-2
QUANTITY 1 E

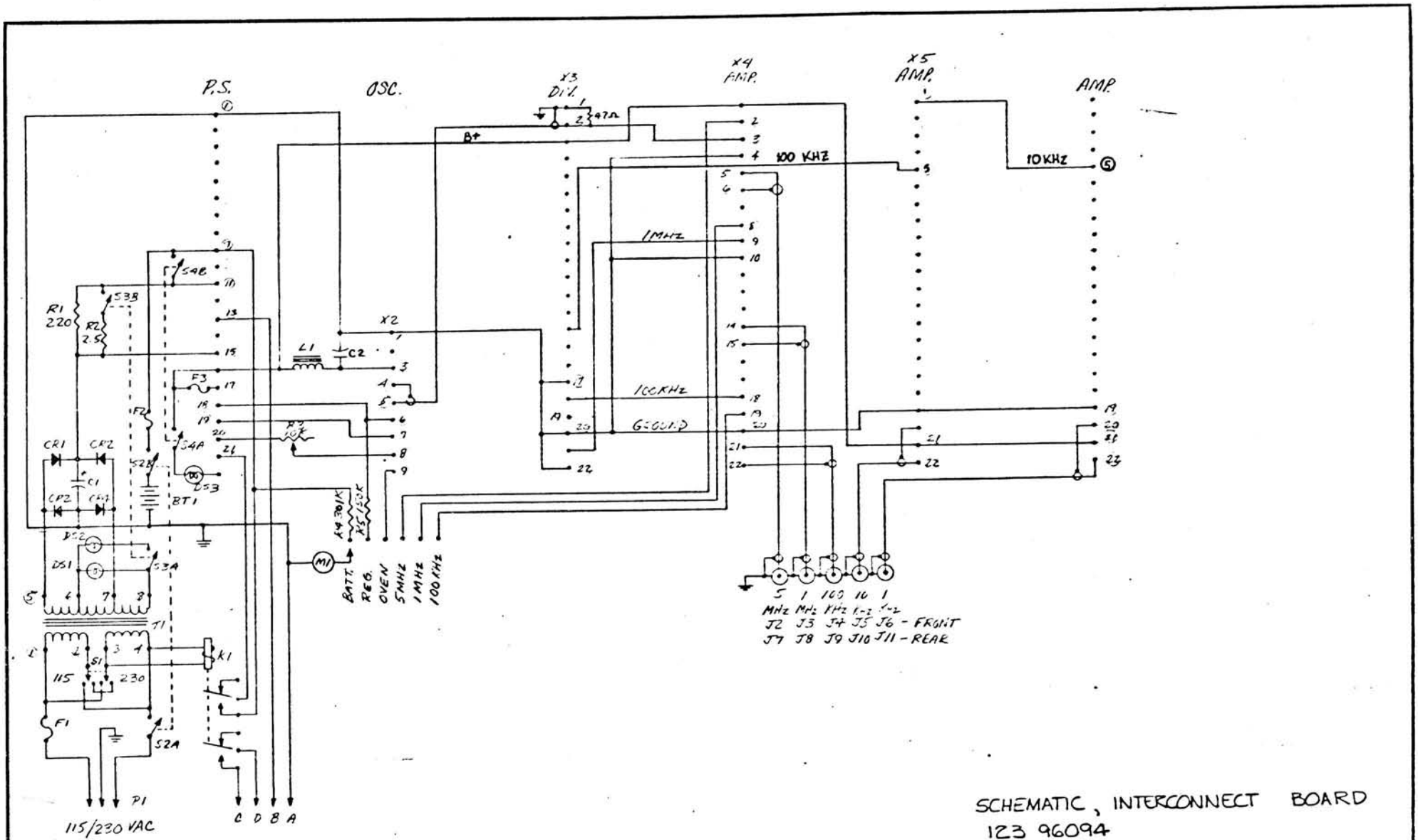
REF DES	PCB CORD	PART DESCRIPTION		PART NO	REV
K1		DPDT 10A	RELAY	554004-0010	
L1		TM-1514	CHOKE FILTER	751310-1514	
M1		100UA DC	METER	557000-0020	
MP1		DIAL TURNS COUNTING		505010-0015	
MP2		KNOB POINTER		505001-0010	
MP3		BUSHING STRAIN RELEAF		520203-0939	
MP4		CLAMP CAP MTG		507065-0003	
MP5		CLAMP CAP MTG		507065-0008	
R1		220 OHM 12.5W	RES FXD W.W.	652010-0221	
R2		SEL 12.5W	RES FXD W.W.	652010-SEL	
R3		10K 10T 1	RES VAR W.W.	659275-0103	
S1		DPDT	SWT SLIDE	553007-0001	
S2		DPDT	SWT TOGGLE	553010-0006	
S3		DPDT	SWT TOGGLE	553010-0006	
S4		DPDT MOMENTARY	SWT TOGGLE	553405-0001	
S5		1P6T	SWT ROTARY	553002-2045	
T1		TM-2208	XFMAR POWER	751310-2208	
W1		CORD POWER		570075-0001	
XA2		SOCKET PCB		551009-0016	
XA3		SOCKET 9PIN		551005-0004	
XA4		SOCKET PCB		551009-0016	
XA5		SOCKET PCB		551009-0016	
XF1		HOLDER FUSE		507001-0001	
XF2		HOLDER FUSE		507001-0001	
XF3		HOLDER FUSE		507001-0001	
		TUNING WAND		02096081	

ASSEMBLY PCB ASSY DIODE BRIDGE
ASSY NO 10395977
QUANTITY 1

REF DES	PCB CORD	PART DESCRIPTION	PART NO	REV
CR1		DIODE	7011N4005	
CR2		DIODE	7011N4005	
CR3		DIODE	7011N4005	
CR4		DIODE	7011N4005	
MP1		PCB DIODE BRIDGE	00395976	



TOP VIEW MODEL 1250
12496095



SCHEMATIC, INTERCONNECT BOARD
123 96094