5601-0104

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SECTION 1
GENERAL

INTRODUCTION AND SCOPE

1.1 This manual applies to the 7010/7120 FM/AM Field Service Monitors. The manual contains all the information necessary for the owner to install and operate the equipment.

1.2 This manual is composed of six sections and an appendix containing the following information:

a. SECTION 1, GENERAL, contains the description and specifications of the CE 7010/7120, their accessories, and their options.

b. SECTION 2, SHIPPING AND RECEIVING, contains information required for receiving, preparation for use, and shipping of the CE 7010/7120.

c. SECTION 3, OPERATION, contains operating instructions for the CE 7010/7120.

d. SECTION 4, SIGNAL CENTER UNIVERSAL ENCODER, describes functions of and provides operating instructions for the Universal Signaling Encoder circuits of the CE 7010/7120.

e. SECTION 5, PARTS LIST.

f. SECTION 6, PCB LAYOUTS.

g. SECTION 7, SCHEMATICS.

DESCRIPTION

1.3 The CE 7010/7120 FM/AM Field Service Monitor is a test set which can either generate accurate RF signals for performance testing of radio receivers or monitor the characteristics of RF signals received from radio transmitters. Characteristics of both generated and received signals are presented on three front-panel digital meters and the optional oscilloscope display.

1.4 Designed for the mobile radio service and repair industry, the CE 7010/7120 provides broad capability in installation, maintenance and repair situations requiring

precise signal generation and measurement in CW, FM, or AM modes. The optional oscilloscope display provides visual representations of modulation waveforms. An optional internal battery adds to the versatility of the CE 7010/7120 for field-repair work.

1.5 The signal generating system of the CE 7010/7120 is a sophisticated frequency synthesizer which combines high accuracy and stability with rapid digital frequency selection via seven front-panel lever switches. The frequency range of signal generation is from 10 KHz to 1 GHz. A front-panel attenuator provides a calibrated output range of -127 dBm (0.1 microvolt) to -27 dBm (10 millivolts) at the front-panel SIG GEN/RF IN connector. There is also a switch in the attenuator assembly which provides an uncalibrated high-level (30 dB higher than the attenuator setting) RF output at the connector. Modulation for the generated signal can be an internally-generated 1 KHz tone, any one of eight internally-generated synthesized audio or digital tone signaling sequences, an external modulation input signal, or an external microphone input. The modulation signal can be used for either frequency or amplitude modulation of the generated signal. The FM frequency deviation or AM percentage modulation of the generated signal can be monitored on the front-panel Deviation/Percentage Modulation Meter. In addition, the generated signal can be unmodulated (CW).

1.6 When a generated signal is modulated to test an external radio receiver, the instrument can measure and display the receiver SINAD sensitivity. This is accomplished through connection of the audio output of the receiver to the SINAD input of the instrument with the test result displayed on the front-panel SINAD/Power Meter.

1.7 In the Receive (Monitor) Mode, input RF signals from the radio transmitter under test are applied to the SIG GEN/RF IN connector of the CE 7010/7120 for power measurement. Power levels of up to 150 watts can be measured on the front-panel SINAD/Power Meter. The CE 7010/7120 contains a protection circuit which automatically switches the instrument into the Receive Mode if a high power level is applied to the SIG GEN/RF IN connector.

1.8 In addition to transmitter power measurement in the Receive Mode, off-the-air RF signals from the radio transmitter under test are applied to the ANT (antenna) input connector of the CE 7010/7120 for signal analysis. Signal analysis capabilities of the instrument include measurement of transmitter frequency error, FM frequency deviation, and AM percentage modulation. The frequency range of Receive Mode operation is 50 KHz to 1 GHz with sensitivity of 2

microvolts. The frequency of the received signal is preset on the seven front-panel level switches with the difference between the preset and received frequencies displayed on the front-panel Frequency Error Meter. The CE 7010/7120 is capable of demodulating FM, AM carriers with the resultant frequency deviation or percentage modulation indicated on the front-panel Deviation/Percentage Modulation Meter. In addition, demodulated waveforms can be visually monitored on the oscilloscope display.

1.9 The meter circuits of the CE 7010/7120 are disabled unless the received signal at the antenna input is sufficiently strong for reliable measurements. When the input signal is strong enough, a front-panel signal level indicator is activated.

1.10 The CE 7010/7120 can also operate in simplex mode which is a special capability of the instrument in the FM Receive Mode. In this mode, the optional microphone is used for producing modulation tones to a mobile radio under test. When the microphone is keyed, the instrument is automatically switched from Receive Mode to Generate Mode; when the microphone is turned off, the instrument switches back to Receive Mode. Simplex operation is useful for checking transmit/receive relays in mobile radios or base stations.

1.11 Operating power for the CE 7010/7120 is 115 volts AC, 230 volts AC, external +11 to +15 volts DC, or internal (optional battery) +12 volts DC, selectable with front-panel and rear-panel switches.

SPECIFICATIONS

1.12 Specifications for the CE 7010/7120 are provided in the Table 1-1 of this section.

OPTIONS

1.13 The CE 7010/7120 can be configured with five available options. These options are described briefly as follows:

OP-01 - Battery Pack
OP-02 - OCXO
OP-03 - DTMF Decode
OP-04 - External Scope out (XY out)
OP-05 - Offset Generator

TABLE 1-1 - CE 7120 SPECIFICATIONS

ITEM	CHARACTERISTICS
RF SIGNAL GENERATOR	
FREQUENCY	
Range	0.1 MHz to 999.9999 MHz
Resolution	100 Hz
Accuracy	
AM and CW Modes	± 0.0001% ± 0.5 ppm
FM Mode	± 50 Hz additional
LEVEL	
Range (into 50 ohm load)	- 127 dBm (0.1 uV RMS) to - 27 dBm (10 mV RMS) -97 dBm (3 uV) to + 3 dBm (300 mV)
ATTENUATOR	
Step Attenuator Range	80 dB in 20 dB steps
Dial Attenuator Range	20 dB in 1 dB settings
Overall Attenuator Accuracy	± 2 dB
OUTPUT IMPEDANCE	50 ohms nominal
FM MODULATION	
Internal	
Fixed Frequency	1 kHz sine wave
Universal Signaling Encoder	
Single-Tone Generator	0.1 to 3275 Hz
Multi-Frequency Tone Pairs	0.1 to 2100 Hz each
Resolution	0.1 Hz
Accuracy	± 0.01%
Output	
Waveshape	Sinusoidal
Distortion	Less than 1% at 1 kHz
Phase Jitter	Less than 3 degrees peak-to-peak
Response	+ 0.25/-1.0 dB from 50 to 3275 Hz. using 1 kHz reference
Inter-Tone Timing	
Tone ON/OFF	0 to 64 seconds
Control and Delay Range Resolution	1 ms
Display	8-digit LCD
Types of Tones (Type of Signaling)	
ITN	Single Tone (CTCSS)
SGL	Dial Interrupt
2TN	Two Tone Sequential
DTMF	Dual Tone Multi-Frequency

TABLE 1-1 - CE 7120 SPECIFICATIONS (CONT'D)

ITEM	CHARACTERISTICS
MTS	Mobile Telephone Service
IMTS	Improved Mobile Telephone Service
5/6TN	Up to 6 Tone Pager
TNRMT	Remote Base Station
DGTL	Digital Coded Squelch (CDCSS), POCSAG, NEC, and GOLAY Signaling
External	
Frequency Range	
Sine	5 Hz to 20 kHz
Square	5 Hz to 1 kHz
Pulse	5 Hz (5% to 95% duty cycle)
Deviation Range	
Sine	0 to 100 kHz, minimum
Square	0 to 2 kHz, minimum
Input Impedance	1 kilohm, nominal DTMF Microphone
AM MODULATION	
Internal	
Fixed Frequency	1 kHz sine wave
External	
Frequency Range	5 Hz to 20 kHz (usable to 100 kHz)
Sensitivity	150 mV RMS for 80% modulation
Input Impedance	1 kilohm, nominal
Modulation Range	0 to 95%
Distortion	
30% Modulation	Less than 5%
80% Modulation	Less than 10%
SPURIOUS OUTPUTS	
Harmonics (Carrier Frequency of 1 MHz)	-40 dB typical
Non-Harmonic Products	-50 dB typical
MONITOR	
Received Frequency	
Range	50 kHz to 1000 MHz
Resolution (of dialed freq)	100 Hz
Sensitivity	2 uV typical; 2 to 1000 MHZ

TABLE 1-1 - CE 7120 SPECIFICATIONS (CONT'D)

ITEM	CHARACTERISTICS
Frequency Error/CTCSS Decoder	
Range	
x1	± 30 kHz
x10	± 30 kHz
Accuracy	
x1	10.0 Hz
x10	1.0 Hz
CTCSS (PL) Decoder	
Range	
x1	15-3000 Hz
x10	30-1500 Hz Min 15-5000 Hz Typ
Resolution	
x1	1.0 Hz
x10	0.1 Hz
Modulation Meter	
Range	
FM Deviation	0 to 10 kHz, 0 to 100 kHz
AM Percentage	0 to 100%
Accuracy	± 4% of full scale
SINAD/Power Meter	
SINAD Sensitivity	
Meter Range	0 to 20 dB
Measurement Range	0 to 20 dB SINAD
Input Level	0.5 to 10 volts RMS
Input Frequency	1 kHz ± 1 Hz
Accuracy (10, 12 and 20 dB)	± 1.5 dB
Power	
Range	0 to 15 watts, 0 to 150 watts
Accuracy (1 to 500 MHz) (500 MHz to 1 GHz)	10% of full scale 20% of full scale
High-power duration	2 minutes typical above 100 watts
DEMOD OUTPUT	
Level	Greater than 3 volts RMS into 1K load at 2.5 kHz FM deviation
Distortion	Less than 5%
Frequency Response	5 Hz to 5 kHz
MOD OUTPUT	
Level	0 to greater than 3 volts RMS into 1K load
Distortion	Less than 5% at level of 1.5 volts RMS

TABLE 1-1 - CE 7120 SPECIFICATIONS (CONT'D)

ITEM	CHARACTERISTICS
SEE AND HEAR SPECTRUM MONITOR	
FREQUENCY RANGE	10 to 1000 Hz (usable to 100 kHz)
DYNAMIC RANGE	+0 to -115 dB
RF ATTENUATOR	≥40 dB in 20 dB steps
DISPLAY RANGE	70 dB (10 dB/div.) and 8 dB (1 dB/div.)
VERTICAL OFFSET RANGE	>20 dB (1dB/div. only)
LOG SCALE LINEARITY	±1.5 dB from 0 to -60 dB 10 dB/div. ±.25 dB from 0 to 8 dB 1 dB/div.
ABSOLUTE LEVEL ACCURACY	±4.5 dB (SN ≥ 20dB)
SCAN WIDTHS	
Fixed	10, 100 kHz/div., 1. MHz/div., zero scan
MINIMUM RESOLUTION	3 kHz for 2 equal signal levels
OSCILLOSCOPE	
FM VERTICAL SCALE (Full scale peak-to-peak deviation)	
Normal	100 kHz
x10	10 kHz
	10 kHz
	1 kHz
Accuracy	± 5% of full scale
AM VERTICAL SCALE (100% full scale)	
Accuracy	± 10% of full scale
HORIZONTAL SWEEP RATE	
Range	10 msec./div., 1 msec./div., 100 usec./div., 10 usec./div.
INT	Internal Tone
Accuracy	± 5% of full scale
GENERAL	
DIMENSIONS	
Height	4 inches
Width	11 inches
Depth	19 inches

TABLE 1-1 - CE 7120 SPECIFICATIONS (CONT'D)

ITEM	CHARACTERISTICS
WEIGHT	23 pounds
ENVIRONMENTAL	
Temperature	
Operating	0°C to + 55°C
TIME BASE (TCXO)	
Aging	± 1 part in 10^6 per year
Stability	± part in 10^6 per year, 0° to + 55°C
Warmup Time	30 seconds
POWER REQUIREMENTS	
AC	115V ± 10%, 50 to 400 Hz, 50 watts, maximum
	230V ± 10%, 50 to 400 Hz, 50 watts, maximum
DC	+12V battery (optional)
	+11V to +15V external
ACCESSORIES	
Supplied standard with monitor	Front cover, power cord, whip antenna, and operator manual. See price list for options

SECTION 2
SHIPPING AND RECEIVING

INTRODUCTION

2.1 This section contains instructions for receiving inspection, optional battery installation and charging, and preparations for shipment of the CE 7010/7120.

RECEIVING

2.2 Upon receipt, the CE 7010/7120 FM/AM Field Service Monitor will be packed in a shipping box with foam packaging designed to protect the equipment during shipment. It is recommended that the shipping box and foam packaging be kept in case it becomes necessary to ship the instrument for any reason.

2.3 If the CE 7010/7120 is ordered with Option 01 (internal battery power option), the battery will be shipped disconnected from the instrument to meet Federal Regulations.

BATTERY INSTALLATION

2.4 To install the CE 7010/7120 optional battery, proceed as follows:

1) Attach DC Power Connector to red and black binding posts, ie (DC input)
2) Attach front cover to rear of instrument

BATTERY CHARGING

2.5 When Option 01 is installed in the CE 7010/7120, the batter will be recharged whenever the instrument is plugged into an AC power source (either 115 or 230 volts) and the front panel power switch is set to AC. The battery will also be charged when the instrument is connected to an external DC source and the front panel power switches are positioned for external DC operation.

2.6 The battery will charge from full discharge to full charge in approximately 24 hours. The CE 7010/7120 will operate from a full charge for a minimum of one-half hour.

STORAGE

2.7 If the CE 7010/7120 is to be stored for an extended time, the battery should be recharged, disconnected and

removed from the instrument, and stored separately. Always recharge the battery before reuse after storage.

PREPARATION FOR SHIPMENT

2.8 It is recommended that the original shipping container and packaging material in which the equipment was received be kept in case it is necessary to ship the equipment for any reason. If the original container is lost or damaged, a replacement may be purchased by contacting the Cushman Electronics Customer Service Department, 2144 Bering Drive, San Jose, CA 95131. Telephone: 408-432-8100.

NOTE: Disconnect the internal (optional) battery prior to shipment!!!

2.9 The following is a general guide for repackaging the instrument for shipment. Use care when packing the instrument to minimize the possibility of damage during shipment.

NOTE: Before packing the instrument for shipment to the factory or Regional Service Center for repair, attach a tag with the following information:

* Owners Name
* Instrument Model Number
* Instrument Serial Number
* Service or repair required

2.10 In all correspondence with the factory or the Regional Service Centers, identify the instrument by model and serial number.

2.11 When shipping the instrument in the original container, perform the following:

a. Place the tagged instrument in the original packing material.

b. Place the instrument and packing material in the original container.

c. Ensure that the container is well-sealed with strong tape.

See Figure 2-1 for an exploded view of the original shipping container and the packing material.

2.12 If the original container and packing material are not used, proceed as follows:

a. Wrap the tagged instrument in plastic or heavy paper and place in an inner container.

b. Place packing material around all sides of the wrapped instrument.

c. Place the instrument and inner container in a heavy carton or wooden box and seal with strong tape of metal bands.

d. Mark the shipping container as follows:

DELICATE
ELECTRONIC INSTRUMENT
FRAGILE

e. Ship the instrument to the following address:

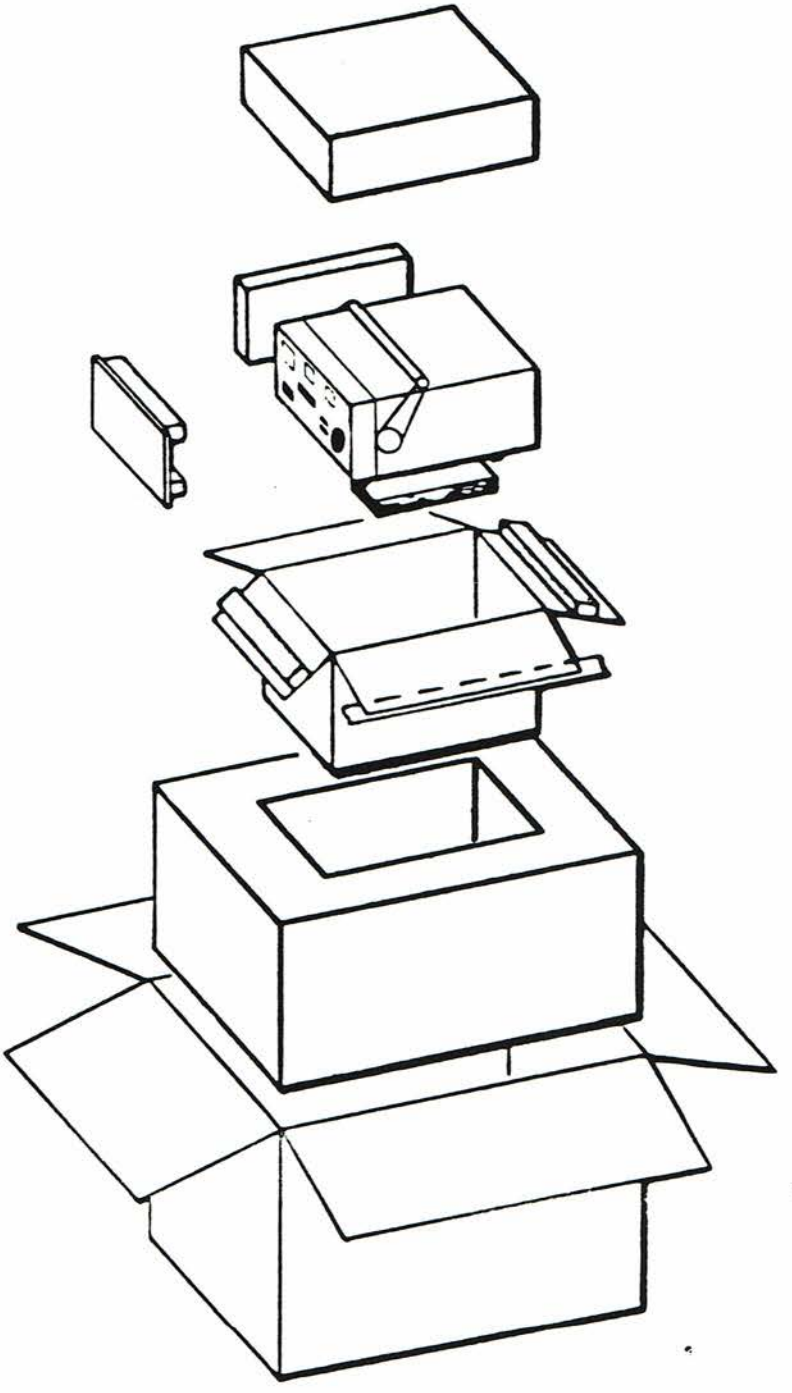


Figure 2-1. Preparation for Shipment

SECTION 3
OPERATION

INTRODUCTION

3.1 This section covers operation of the CE 7000 series FM/AM Field Service Monitor and consists of the following subsections: Environmental Requirements; Power Requirements; Controls, Indicators and Connectors; Turn-On and Warm-Up; Generate Mode Operating Procedures; and, Receive Mode Operating Procedures.

ENVIRONMENTAL REQUIREMENTS

Temperature

3.2 The CE 7000 series is designed to operate in ambient temperatures between 0° C (+32°F) and +55°C (+131°F). These temperatures can easily be exceeded in field operation unless proper precautions are taken. For instance, mountain-top temperatures in winter (usually well below 0° C) can noticeably degrade battery output while the temperature inside a closed automobile trunk during summer daylight hours can exceed +55° C. Exceeding the temperature limits for extended periods may not produce visible damage to the instrument, but may cause degraded performance or actual malfunctions.

RF Fields

3.3 Where extremely high RF radiation fields exist, such as when the CE 7000 series is used near a high-power transmitter or where many transmitters are in use, adjacent-channel interference may be experienced. In such cases, turn the front panel SQUELCH control up (cw) and set the SHARP/WIDE selectivity switch to SHARP. If satisfactory measurements cannot be made, direct connection (through a suitable attenuator) between the radio transmitter under test and the CE 7010/7120 may be required. For further information, contact the Cushman Electronics Customer Service Department.

POWER REQUIREMENTS

3.4 The CE 7010/7120 can be operated from any one of the following sources:

a. 115 VAC ±10%, 50 to 400 Hz
b. 230 VAC ±10%, 50 to 400 Hz

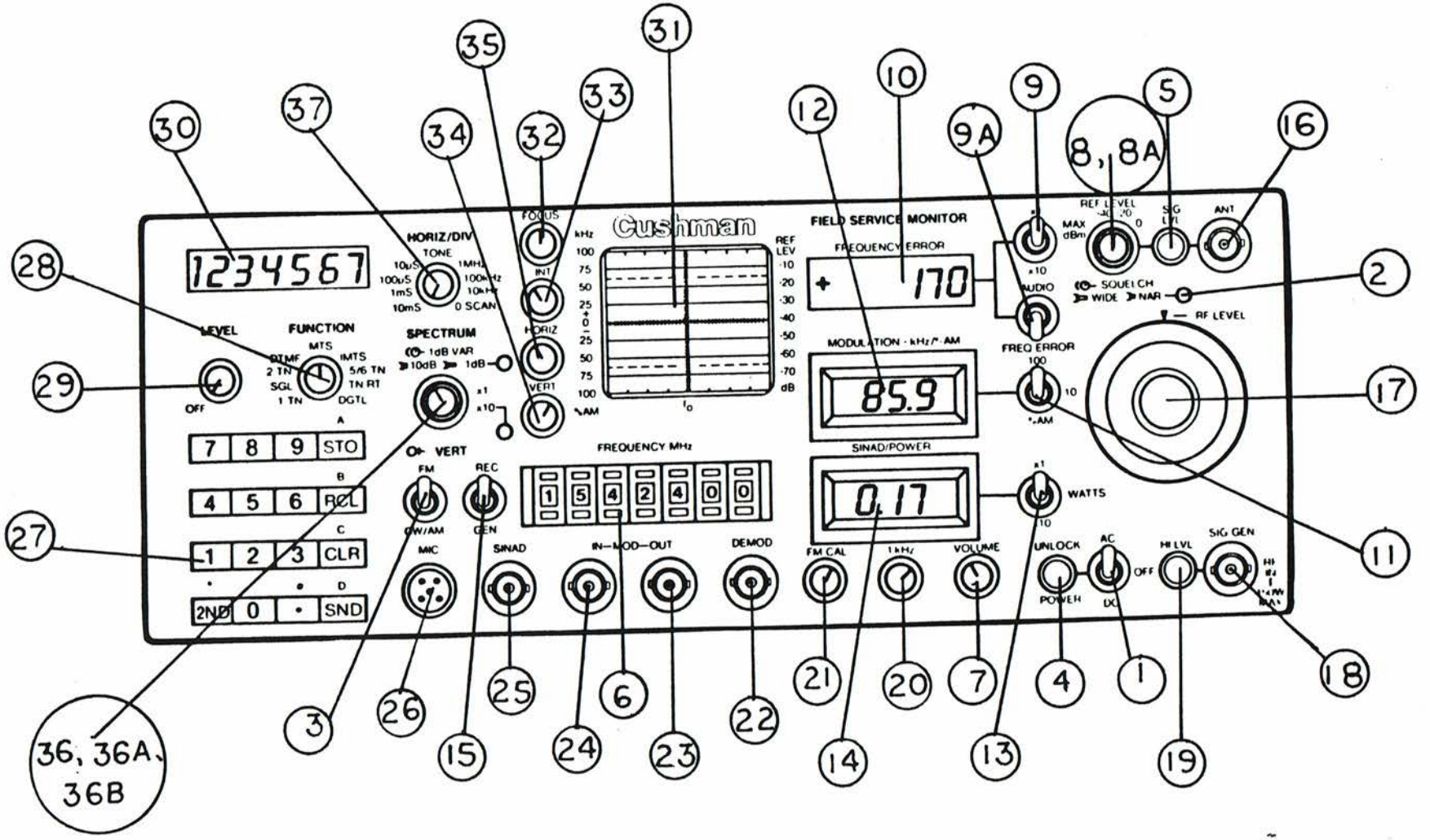
c. External +11 to +15 VDC
d. Internal +12 VDC (Optional Battery)

The Instrument is fused at the rear panel for protection of its circuits. Selection of source voltage between AC line and internal (optional) battery is made with the front-panel AC/OFF/DC switch. With line voltage selected, the level (115 or 230 volts) is selected with a rear-panel switch. External DC power is applied to a connector at the rear panel. To power the instrument from the external DC source, the front-panel AC/OFF/DC switch must be set to DC. Maximum power consumption of the CE 7010/7120 is 25 watts. When fully charged, the optional internal battery will operate the CE 7010/7120 for approximately one-half hour at room temperature.

CONTROLS, INDICATORS AND CONNECTORS

3.5 Front-panel controls, indicators and connectors of the CE 7010/7120 are shown in Figure 3-1 and described in Table 3-1. (next page)

CE 7120
FRONT PANEL CONTROLS



CE 7120
FRONT PANEL CONTROLS

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
1.	AC/OFF/DC	Selects AC (Line) or DC (Battery) primary power for the instrument. In off position, removes primary power from the instrument.
2.	PULL SWITCH	In Sharp position, sets IF bandwidth of receive circuits to 22 kHz.
3.	FM/CW/AM	A two-position switch that selects the type of signals generated in the Signal Generate Modes. In the FM position, FM signals are generated at the Sig Gen/RF In connector. In the CW/AM position, AM signals are generated at the Sig Gen/RF In connector if any of the modulation source.
4.	POWER/UNLOCK INDICATOR	Illuminates in steady green to indicate power is applied to the instrument and the frequency synthesizer circuits are in a locked stable state. Illuminates in flashing red to indicate power is applied to the instrument but the frequency synthesizer circuits are in an unlocked search state.
5.	SIGNAL LEVEL INDICATOR	In Receive mode, illuminates to indicate that the received signal is sufficiently strong for reliable measurements. When not illuminated, meter circuits of the instrument are disabled.

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
6.	FREQUENCY SELECTOR SWITCHES	A set of seven wheel switches determine the output frequency of the frequency synthesizer. In Generate mode, the synthesizer output frequency is equal to the switch settings. The range is from 10 kHz to 1 GHz. In Receive mode, the synthesizer functions as a local oscillator. In this mode, its output frequency is 10.7 mHz above the switch setting
7.	VOLUME POTENTIOMETER	Provides control of audio level to internal speaker.
8.	SQUELCH POTENTIOMETER	Provides squelch and sensitivity adjustment of main IF amplifier in FM Receive mode only.
8A.	REF LEVEL	The REF LEVEL (outer knob) selects RF input attenuations.(increase sensitivity, decrease attenuation) for monitor signals.
9.	X1/X10	Range switch for the Frequency Error Display in Receive Mode and FM Generate Mode of instrument operation. In X1 position provides full-scale display of ± 10 kHz. In X10 position, provides full-scale display of ± 100 kHz.

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
9A.	AUDIO/FREQ ERROR	Selects for LCD FREQUENCY ERROR display to indicate either modulation frequency or RF frequency Error. In Audio position, display indicates the audio modulation frequency. In Freq Error position, the LCD display indicates the frequency error in generate or receive modes.
10.	FREQUENCY ERROR DISPLAY	Indicates a difference between generated or received frequency and the frequency preset by the frequency select switches. Full scale ranges are determined by the setting of the X1/X10 switch.
11.	100KHZ/10KHZ/AM	Range switch for the Deviation/ Percentage Modulation Meter in both Receive and Generate Modes of instrument operation. In 100 kHz position, provides full scale range of 100 kHz for FM deviation measurements. In 10 kHz position, provides full scale range of 10 kHz for FM deviation measurements. In AM position, provides full scale range of 100% for AM Percentage Modulation measurements.

CE 7120
FRONT PANEL CONTROLS

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
12.	DEVIATION/PERCENTAGE MODULATION DISPLAY	Indicates level of FM deviation in KHZ and AM modulation in percentage. Full-scale ranges of the display are determined by the setting of the 100 kHz/ 10 kHz AM switch.
13.	PWRX1/X10	Range switch for the power measurement portion of the Sinad/Power Meter. In X1 position, provides full-scale range of 15 watts. In X10 position, provides full-scale range of 150 watts.
14.	SINAD/POWER DISPLAY	Indicates RF power level of signals applied to the Sig Gen/ RF In connector. Full-Scale power ranges of the display are determined by the setting of the PWRX1/X10 switch. Indicates Sinad sensitivity of signals applied to the Sinad input connector of the instrument.
15.	REC/GEN SWITCH	A two-position switch that selects between Receive and Generate Modes of the instrument. In the REC position, the instrument is placed in the Receive Mode. In the GEN position, the instrument is placed in the Generate Mode.

TABLE:

NUMBER	ITEM	DESCRIPTION
16.	ANT CONNECTOR	A BNC connector which accepts the off-the-air input RF signals from the radio transmitter under test in Receive Mode. The maximum input level at the connector is 0.5 volts, RMS.
17.	OUTPUT ATTENUATOR	A front-panel Attenuator Assembly containing a step attenuator with range of 80db in 20 db steps and a dial attenuator with range of 20db in 1db increments. Calibrated range of the Attenuator Assembly is from -27 dBm (10 millivolts RMS) to -127 dBm (0.1 microvolt RMS). The output signal level set by the Attenuator Assembly appears at the SIG GEN/RF IN connector. A push-pull switch in the Attenuator Assembly provides an uncalibrated high-level output signal level (nominally 30db higher than the Attenuator setting) at the SIG GEN/RF IN connector.
18.	SIG GEN/RF IN CONNECTOR	A BNC connector which routes the generated signal from the instrument to the radio receiver under test for power measurement.
19.	HIGH LEVEL INDICATOR	In Generate Mode, illuminates to indicate that the high-level output signal (0 dBm, nominal) is set by the Output Attenuator Assembly and is present at the SIG GEN/RF IN connector.

CE 7120
FRONT PANEL CONTROLS

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
20.	MOD ADJ POTENTIOMETER	In Generate Mode, provides control of internal 1 kHz FM deviation or AM percentage modulation, depending upon the setting of the FM/CW/AM switch.
21.	FM CAL POTENTIOMETER	In FM Generate Mode, provides adjustment of the center frequency of the generated signal as indicated on the front panel Frequency Error Meter. Center frequency can be offset up to ±15 kHz. (New model DETENT FM CAL is automatic centering)
22.	DEMOD CONNECTOR	A BNC connector that provides front panel access to the demodulated output of FM signals either generated or received by the instrument.
23.	MOD OUT CONNECTOR	A BNC connector that provides front panel access to a buffered output of the modulating signal (either internal or external) used in the Generate Mode.
24.	MOD IN CONNECTOR	A BNC connector that provides the input for external modulation signals.
25.	SINAD CONNECTOR	A BNC connector that provides the input for SINAD sensitivity measurements of audio signals from receivers or transmitters under test.
26.	MIC CONNECTOR	A 5-pin connector that provides the microphone input to the modulating circuits of the instrument.

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
27.	KEYBOARD	A front panel keyboard containing 16 function keys. Six of the 16 function keys are dual-function keys. The keyboard is used to modify frequency and timing parameters of standard signaling and paging formats selected by the front panel FUNCTION switch are used as modulating signals in the Generate Mode of the instrument.
28.	FUNCTION SWITCH	Selects the following signaling and paging formats:
	- SGL	Single tone of 2805 Hz at 10 pps standard programming. Can be used for any single interrupted or non-interrupted (continuous) tone formats. Useful for generating CTCSS and other in-banc tones.
	- 1T	Single Tone (CTCSS)
	- 2 TN	Provides standard and programmable two-tone paging formats. User can program first and second tone frequencies, tone durations, intertone gap time, number of repeat sequences, and delay time between repeat sequences.
	- DTMF	Preprogrammed and userprogrammable dula-tone formats.
	- MTS	(Mobile Telephone System) For mobile telephone testing.

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
	- IMTS	(Improved Mobile Telephone System) For mobile telephone testing.
	- 5/6 TN	Provides all standard EIA 5 and 6 tone pager signaling formats, including preamble and dual-address sequences.
	- TN RMT	Provides standard sequence to generate base station control and function tones necessary to fully emulate control point signaling.
	- DGTL	Provides two digital coded squelch (DCS) data sequences and three digital paging formats
29.	LEVEL POTENTIOMETER	Provides level control of encoder output signal selected by the FUNCTION switch. The OFF detent turns off the encoder signal generation circuits.
30.	LCD DISPLAY	An 8-digit display which displays the contents of the selected register of the signaling or paging format to be generated.
31.	CRT	The CRT displays the modulation on the generated signal or the received signal. The CRT serves as the display for spectrum function.
32.	FOCUS POTENTIOMETER	Focus control for the CRT display.

CE 7120
FRONT PANEL CONTROLS

TABLE: 3-1

NUMBER	ITEM	DESCRIPTION
33.	INT POTENTIOMETER	Controls the brightness of the CRT display.
34.	VERT. POTENTIOMETER	Adjusts the vertical positions of the CRT display.
35.	HORIZ. POTENTIOMETER	Adjusts the horizontal position of the CRT display.
36.	X1/X10	Vertical Sensitivity of the CRT display. X1-CRT agrees with devia-tion meter (100 kHz/10 kHz). X10-CRT display is 1/10 of the meter indication. Full scale either (10 kHz or 1 Hz)
36A.	10DB/1DB (PULL SWITCH)	Provides selection of sensi-tivity of CRT display in spec-trum mode.
36B.	1DB VARIABLE	Allows one to set a reference on CRT display when 1db/div is selected.
37.	HORIZ	Multiposition switch provides sweeps of 1 mHz, 100 kHz, 10 kHz, & 0 scan for the spectrum monitor function.

TURN-ON AND WARM-UP

3.6 Upon receipt, the CE 7010/7120 can be operated immediately on AC or external DC power. If internal battery operation is desired, Option 01 must be installed. Additional or spare batteries may be obtained by ordering Cushman Part Number 7060-0061. Battery installation is described in Section 2 of this manual.

3.7 Before making any power connections, ensure that the front-panel AC/OFF DC switch is set to OFF. For AC operation, the power cord should be connected between the AC power receptacle at the rear of the instrument and the specified AC power source (115 or 230 volts, 50 to 400 Hz). The power source is selected with a switch within the AC power receptacle assembly at the rear of the instrument. For external DC operation, the external DC power receptacle at the rear of the instrument should be connected to an external DC source (positive to positive and negative to negative). No connections are required for internal battery operation if the battery has already been installed. Refer to Section 2 of this manual.

NOTE

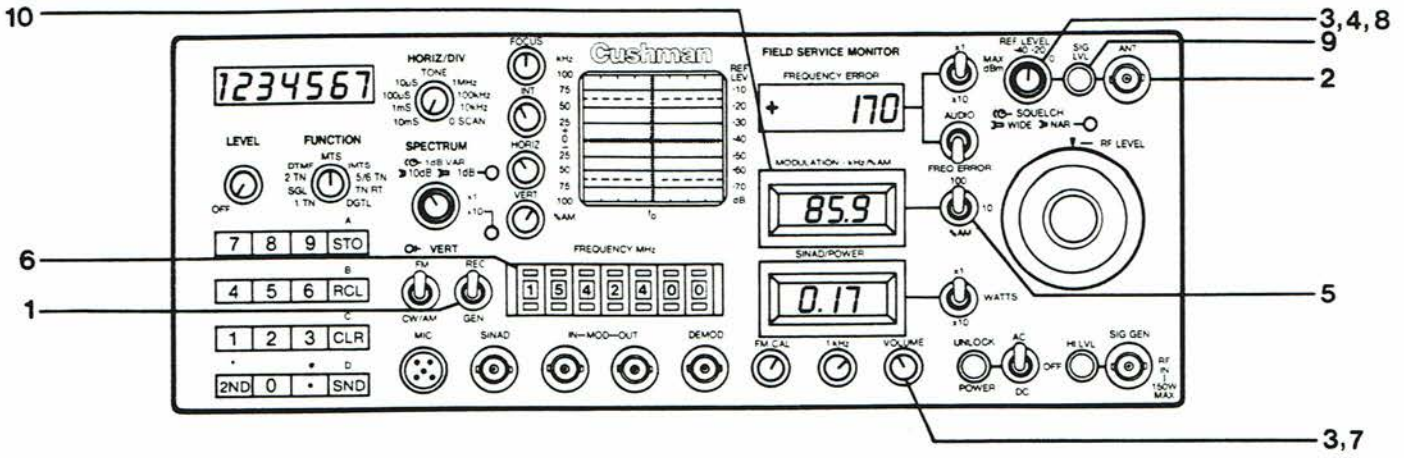
When the CE 7010/7120 is used with an internal battery, ensure that battery is sufficiently charged before operating the instrument. If the battery is fully discharged, it may be damaged and require replacement. Furthermore, if the battery voltage drops below +11 volts, the CE 7010/7120 may cycle off and on.

3.8 The CE 7010/7120 contains a temperature-compensated crystal oscillator (TCXO) time base. Normally, the maximum warm-up time after power application is 30 seconds, but if the instrument has been stored at temperatures below 0°C (+32° F), additional warm-up time may be required.

3.9 Power-On Procedure:

a. Select line (AC) or battery (DC) operation with the front-panel AC/OFF/DC switch. If AC is selected, ensure that the power source select switch within the rear-panel AC power receptacle assembly is set to the correct position (115 or 230) for the power source being used. If DC is selected, set the front-panel switch for either internal (optional) battery or external DC operation.

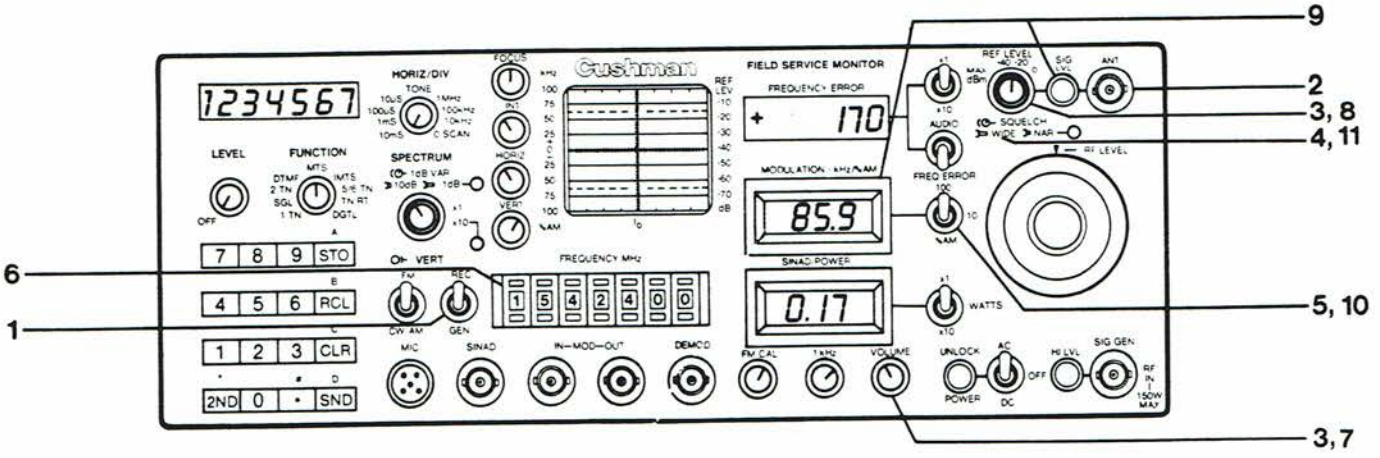
b. If battery operation is selected, ensure that the battery is fully charged before operating the instrument.



RECEIVE AM

To monitor an AM transmitter, proceed as follows:

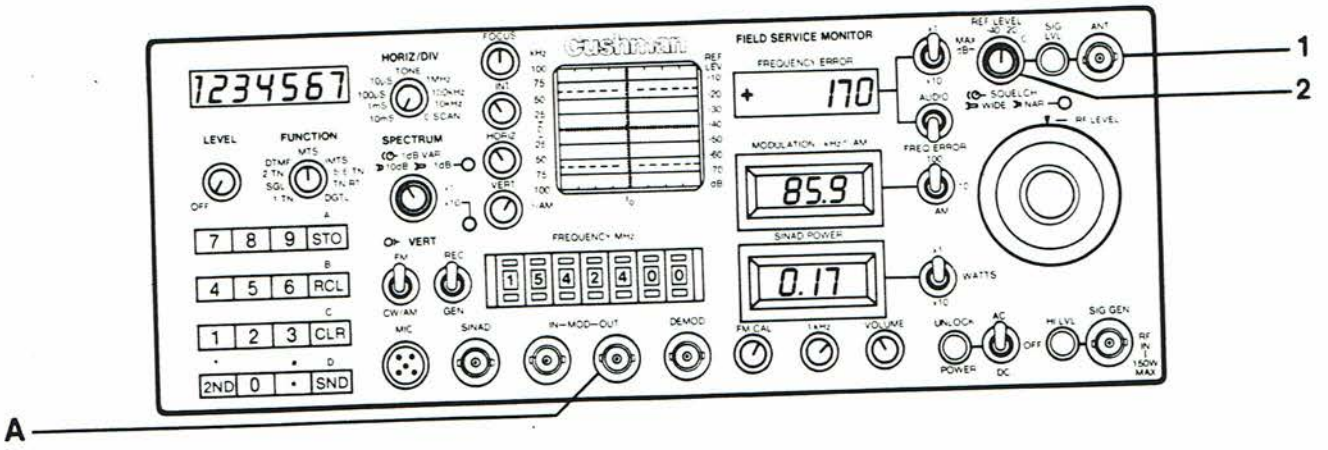
1. Set the REC/GEN switch to REC
2. Connect the whip antenna to the ANT connector
3. Turn the SQUELCH and VOL controls fully counter clockwise
4. Set the IF bandwidth switch to NARROW
5. Set the modulation meter switch to %AM
6. Set the FREQUENCY MHz switches to the center frequency of the transmitter under test
7. Turn up the VOLume until you can hear the noise
8. Set the SQUELCH control for critical squelch
9. Key the transmitter. The SIG LVL indicator will light, if the signal is strong enough to measure.
10. Read modulation percentage on the modulation meter. The demodulated AM signal can also be observed on the oscilloscope.



RECEIVE FM

To monitor an FM transmitter, proceed as follows:

1. Set the REC/GEN switch to REC
2. Connect the whip antenna to the ANT connector
3. Turn the SQUELCH and VOL controls fully counter clockwise
4. Set the IF bandwidth switch to WIDE
5. Set the modulation meter switch to 100kHz
6. Set the FREQUENCY MHz switches to the frequency of the transmitter under test
7. Turn up the VOLume until you can hear the interstation noise
8. Set the SQUELCH control for critical squelch
9. Key the transmitter. The SIG LVL indicator will light if there is enough signal to measure. Read the deviation on the modulation meter.
10. If the FM deviation is less than 10kHz, set the modulation meter switch to 10kHz. The demodulated FM signal can be observed on the oscilloscope.
11. If a narrow deviation signal sounds excessively noisy, set the IF bandwidth switch to NARrow.



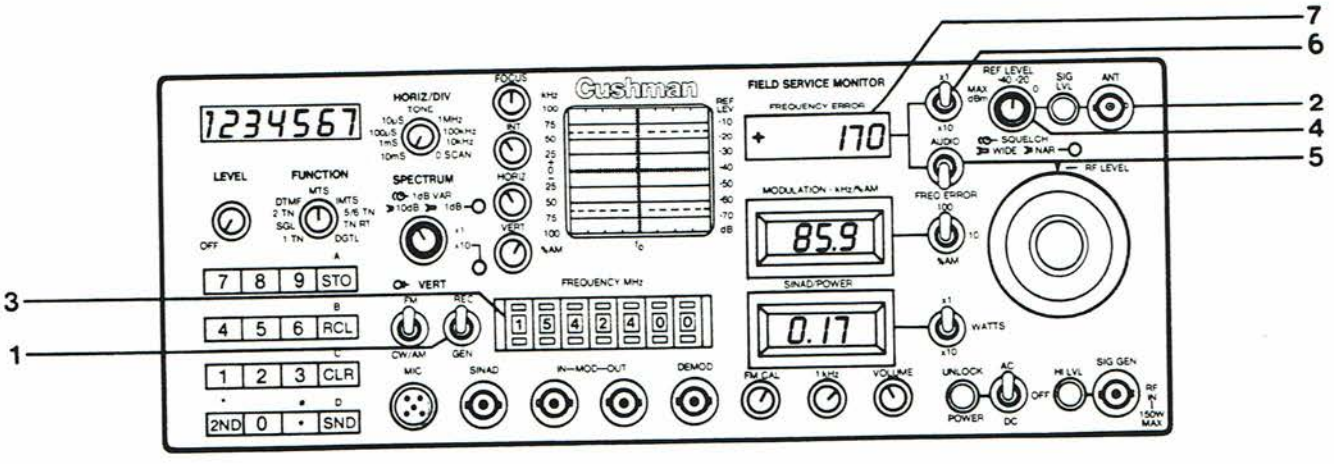
RECEIVER DEMODULATOR OUTPUT

Modulation recovered from the received signal is available at the DEMOD front panel jack. (A)

ANTENNA INPUT ATTENUATOR

To reduce the strength of input signals that cause the CE-7120's front end to overload.

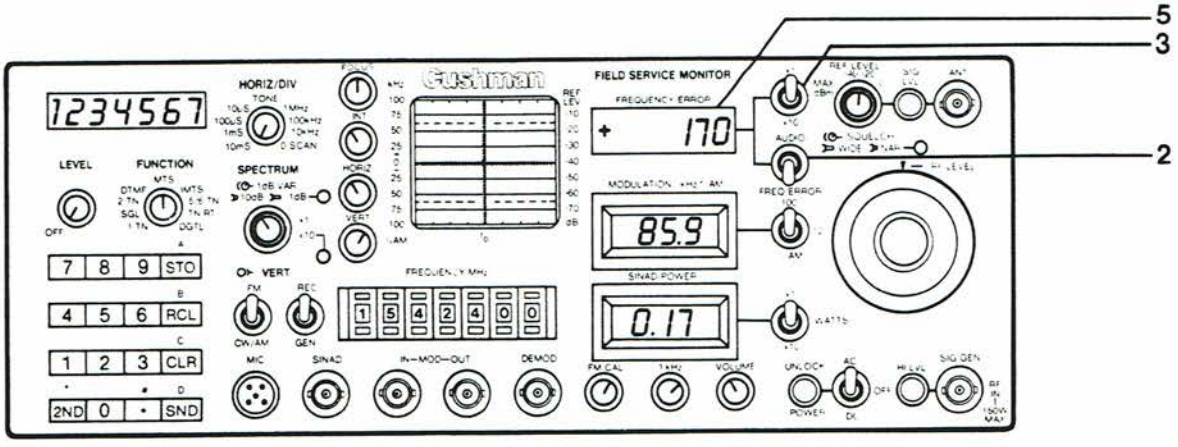
1. Use a smaller antenna, if possible, to pick up less signal.
2. Set the REF LEVEL switch one (or more) step(s) clockwise. Each step adds 20dB of attenuation to the antenna input, up to a maximum 60dB attenuation (REF LEVEL = 0).



FREQUENCY ERROR

To measure the Frequency Error of a transmitter:

1. Set the REC/GEN switch to REC
2. Connect the whip antenna to the ANT connector
3. Set the FREQUENCY MHz switches to the desired transmitter center frequency
4. Adjust the SQUELCH control for critical setting
5. Set the AUDIO/FREQ ERROR switch to FREQ ERROR
6. Select the desired frequency error resolution:
   - x1 — 10 Hz, 10 readings each second
   - x10 — 1 Hz, 1 reading each second
7. Key the transmitter under test. The frequency error will be displayed as a signal number in the top LCD.

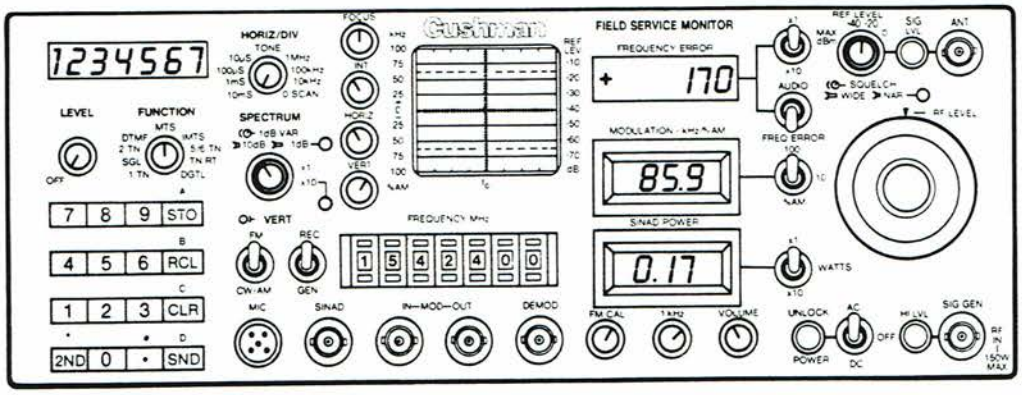


OFF-AIR AUDIO TONE COUNTER

To measure the frequency of CTCSS tones from signals off-the-air:

1. Set up the CE-7120 to RECEIVE AM or FM, whichever is appropriate
2. Set the AUDIO/FREQ ERROR switch to AUDIO
3. Select the desired measurement resolution
   - x1 — 1 Hz, one reading each second
   - x10 — 0.1 Hz, 10 readings each second
4. Key the transmitter signal to be measured
5. The CTCSS tone frequency will be displayed on the top LCD.

NOTE: A modulation level of 10% or more of the selected modulation measurement range is best for rapid, low noise tone measurements.



RECEIVE OSCILLOSCOPE DISPLAY

The demodulated waveform from the received signal is displayed on the oscilloscope.

To control the features of the oscilloscope display:

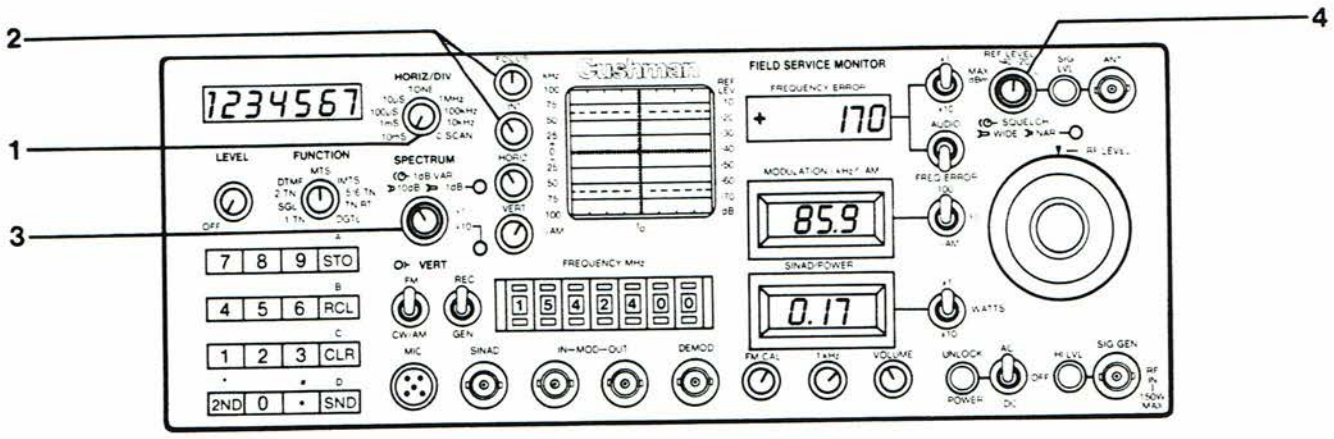
1. Adjust the trace intensity for comfortable viewing
2. Focus the trace into a sharp display
3. Set the vertical position so that the trace will be at mid-screen with no modulation present
4. With modulation present, select the best sweep speed for the most useful display
5. Modulation magnitude can be read from the scale to the left of the CRT screen. Full scale tracks the range set on the Modulation Meter:

   FM 100 kHz
   10 kHz
   AM 100%

6. For low level modulations, a X10 magnifier can be selected. Full scale on the CRT is now 1/10 of the Modulation Meter scale:

CRT Scale	Modulation Meter	
10 kHz	FM	100 kHz
1 kHz		10 kHz
10%	AM	100%

A red reminder light will show on the front panel.



SPECTRUM MONITOR OPERATION

The CE-7120's See-N-Hear™ spectrum monitor allows simultaneous viewing and demodulation of the received signal. At all times, the center of the CRT screen corresponds to the center tuned frequency of the CE-7120, shown on the Frequency MHz switches.

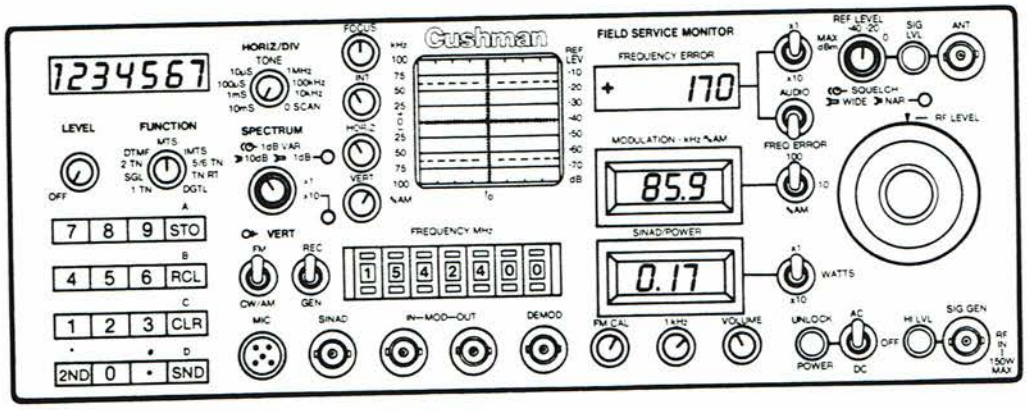
To display the received signal spectrum:

1. Select the desired frequency dispersion (scan width)
2. Adjust the CRT Intensity and Focus for a pleasing display.
3. Set the vertical calibration to 10 dB/div.
4. Signal strength at top-of-screen is set by the REF LEVEL control. This can be set to one of four levels, 20 dB apart: 0 dBm, -20 dBm, -40 dBm, MAX (-60 dBm).

For fine-grain amplitude measurements:

a. Select the 1 db/div. vertical calibration. A red reminder light will show on the front panel.
b. Use the 1 dB centering control to position the trace within the CRT window.

NOTE: Zero (0) SCAN fixed-tunes the spectrum monitor. The display is a single horizontal line corresponding to the signal amplitude at the receive center frequency; the received signal's field strength.



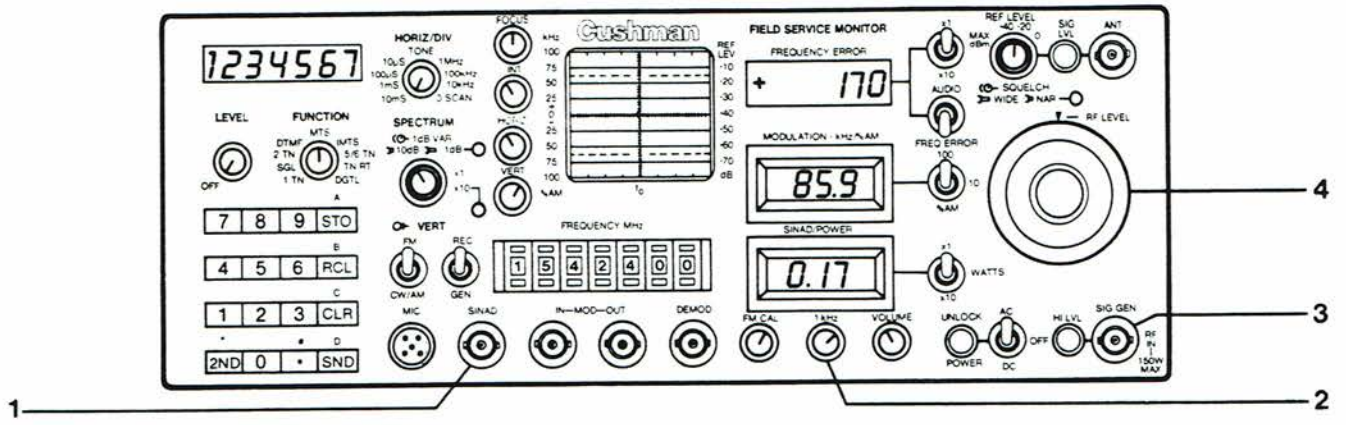
RF POWER

RF POWER MEASUREMENT

To measure the RF Power output of a transmitter:

1. Connect the output of the transmitter under test to the CE-7120 Signal Generator Out/RF in connector.
2. Select the proper range for the power meter:
   x1 — 15 Watts full scale
   x10 — 150 Watts full scale
3. Key on the transmitter. RF output power will be displayed on the bottom LCD (SINAD/Power meter)

NOTE: At high transmitter powers, an alarm will sound in the CE-7120 when the internal load temperature rises above 75°C. Key off the transmitter and wait for the power load to cool before performing more high power tests.

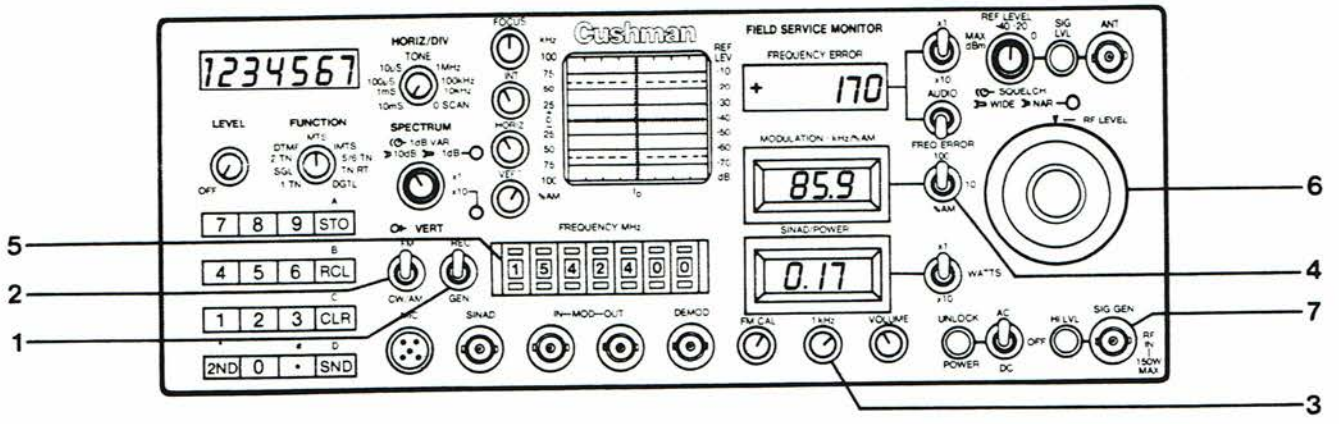


SINAD

SINAD MEASUREMENT

Receiver sensitivity and distortion measurements using the SINAD meter are performed as follows:

1. Connect the audio output from the receiver under test to the CE-7120 SINAD input
2. Set up the signal generator, modulated by the internal 1kHz tone, for ⅔ of the full modulation capability of the receiver-under-test (AM or FM).
3. Connect the signal generator output to the antenna input of the receiver under test.
4. Lower the output level of the signal generator until 12dB is shown on the bottom LCD (SINAD) power meter.
5. Read the signal generator output level setting. This is the 12 dB SINAD sensitivity of the receiver under test.

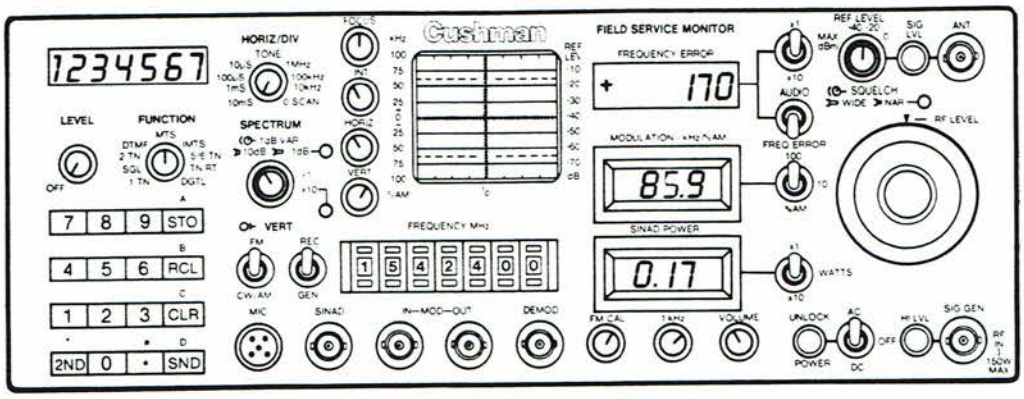


CW

GENERATE—NO MODULATION

The first step in generating either an AM or an FM signal is to generate an unmodulated RF signal. Proceed as follows:

1. Set the REC/GEN switch to GEN
2. Set the operating mode switch to CW/AM
3. Turn the 1 kHz control fully counter clockwise
4. Set the modulation meter switch to 10 kHz
5. Set the FREQUENCY MHz switches to the desired frequency
6. Set the output attenuator for the desired level
7. Connect the RF IN/SIG GEN connector to the antenna connector of the receiver under test
8. Refer to either AM GENERATE or FM GENERATE for further instructions.



AM

AM GENERATE

This section contains instructions for generating amplitude-modulated RF signals.

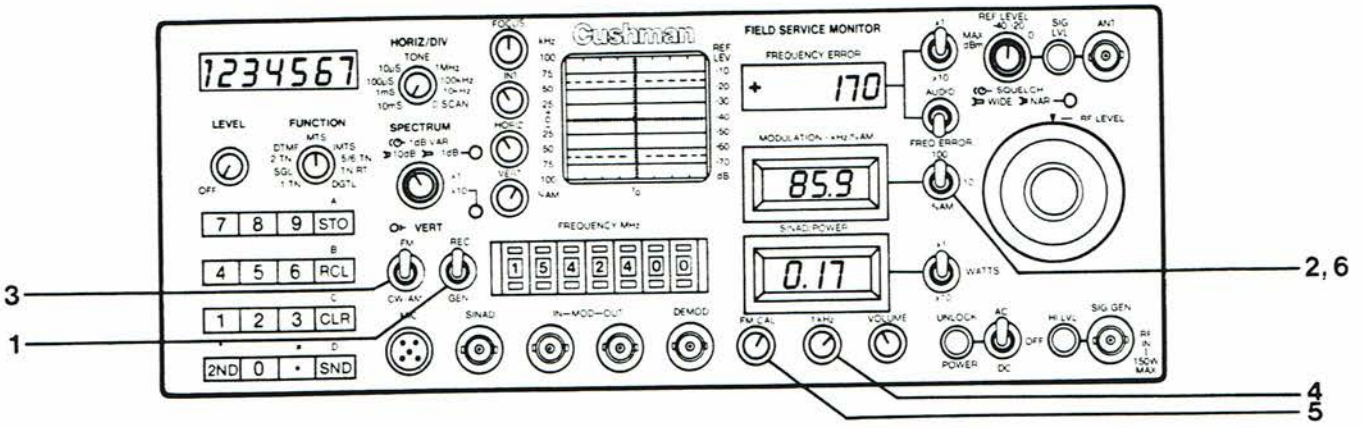
The RF signal can be modulated by an external AF source or by an internal 1 kHz reference signal.

Internal 1 kHz. To generate an RF signal with 1 kHz amplitude modulation, proceed as follows:

1. Generate a CW signal (refer to CW section)
2. Set the modulation meter switch to % AM
3. Set the operating mode switch to CW/AM
4. Using the 1 kHz control, adjust the audio level to obtain the desired percentage modulation.

External audio. To generate an RF signal amplitude modulated by an externally generated audio signal, proceed as follows:

a. Generate a CW signal (refer to CW)
b. Connect an externally generated audio signal (through an attenuator, minimal level; 60 Hz-3 kHz) to the MOD IN connector
c. Set the modulation meter switch to % AM
d. Set the operating mode switch to CW/AM
e. Adjust the audio level to obtain the desired percentage modulation.



FM

FM GENERATE

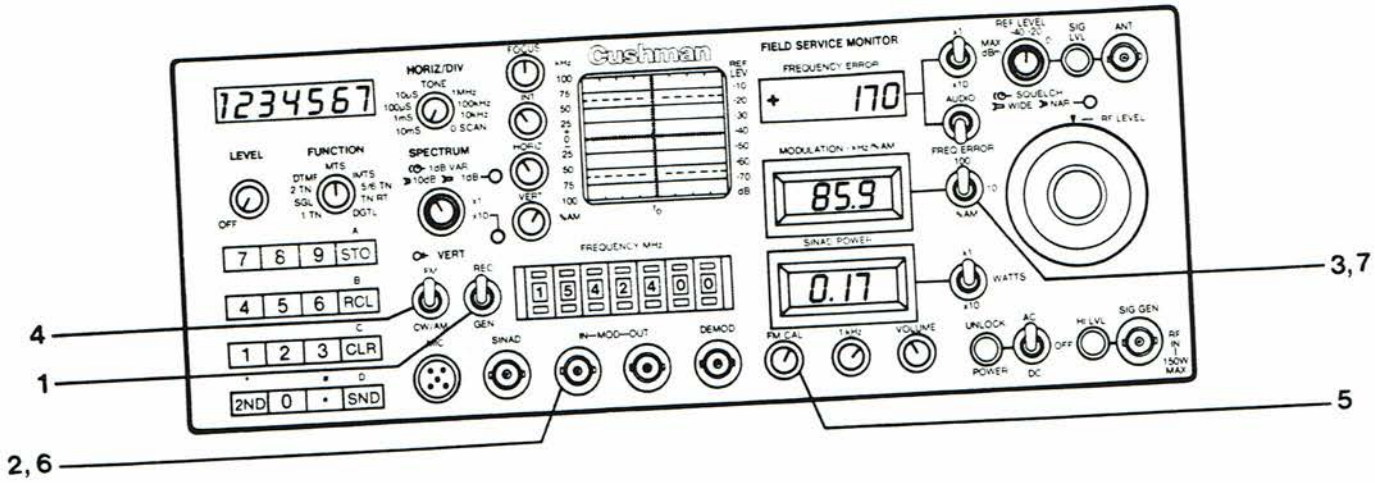
This section contains instructions for generating frequency-modulated RF signals.

The RF signal can be frequency modulated by:

a. an internally generated 1 kHz signal,
b. an external AF source,
c. voice,
d. digital or multifrequency selective signaling from the built-in universal encoder.

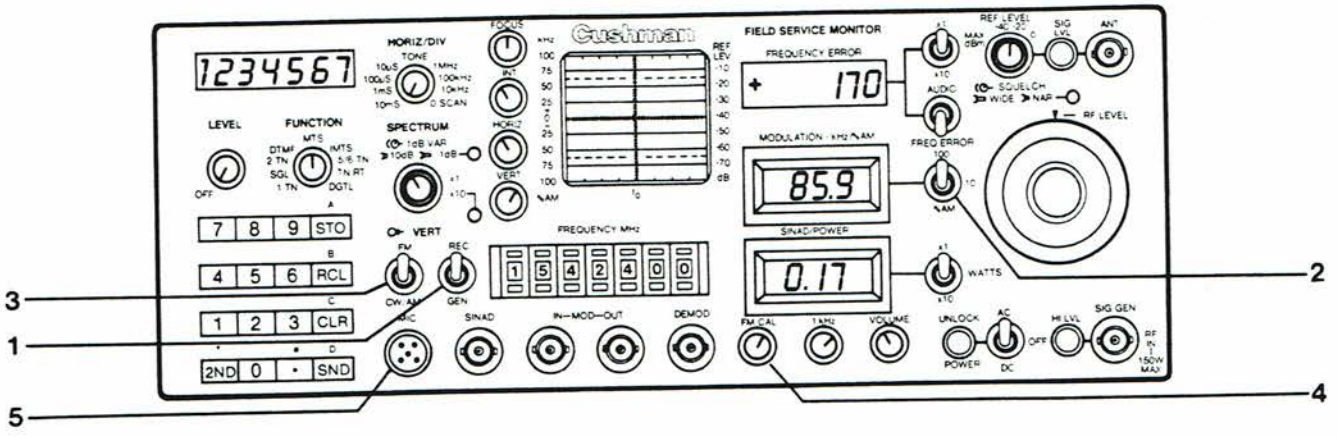
Internal 1 kHz. To generate an RF signal with 1 kHz frequency modulation, proceed as follows:

1. Generate an unmodulated RF signal (refer to CW)
2. Set the modulation meter switch to 100 kHz
3. Set the operating mode switch to FM
4. Adjust the FM CAL control to obtain a zero indication on the frequency error meter
5. Adjust the 1 kHz control to obtain the desired deviation
6. For lower deviations, set the modulation meter switch to 10 kHz.



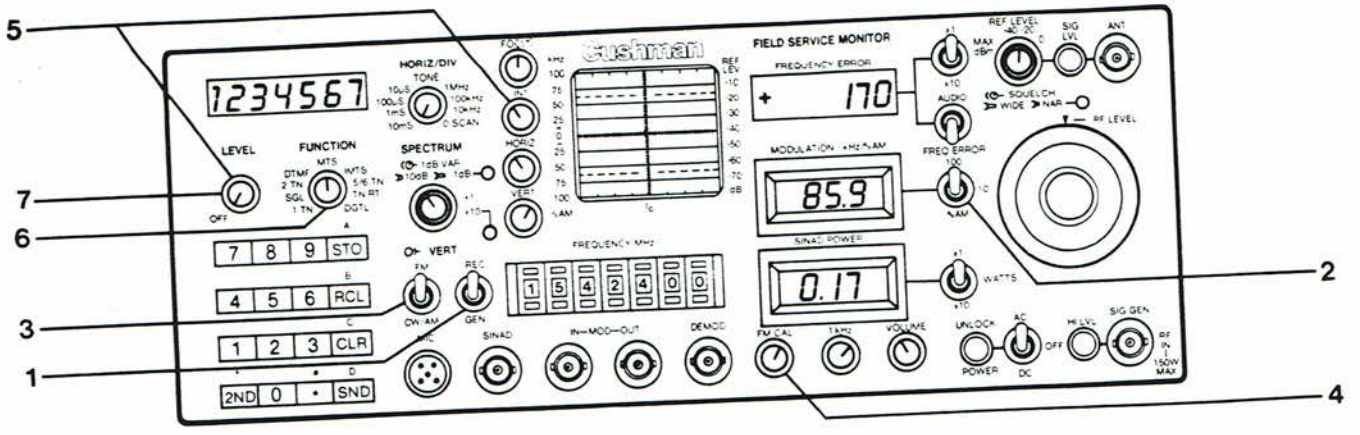
External audio. To generate an RF signal frequency modulated by an externally generated AF signal, proceed as follows:

1. Generate an unmodulated RF signal (refer to CW)
2. Connect a low-level AF signal through an attenuator to the MOD IN connector of the CE-7120
3. Set the modulation meter switch to 100 kHz
4. Set the operating mode switch to FM
5. Adjust the FM CAL control for zero indication on the frequency error meter
6. Adjust the audio signal generator output level to obtain the desired deviation. This can be as much as 100 kHz for sine-wave modulation (or up to 2 kHz for square waves or pulses.)
7. For lower deviations, set the modulation meter switch to 10 kHz.



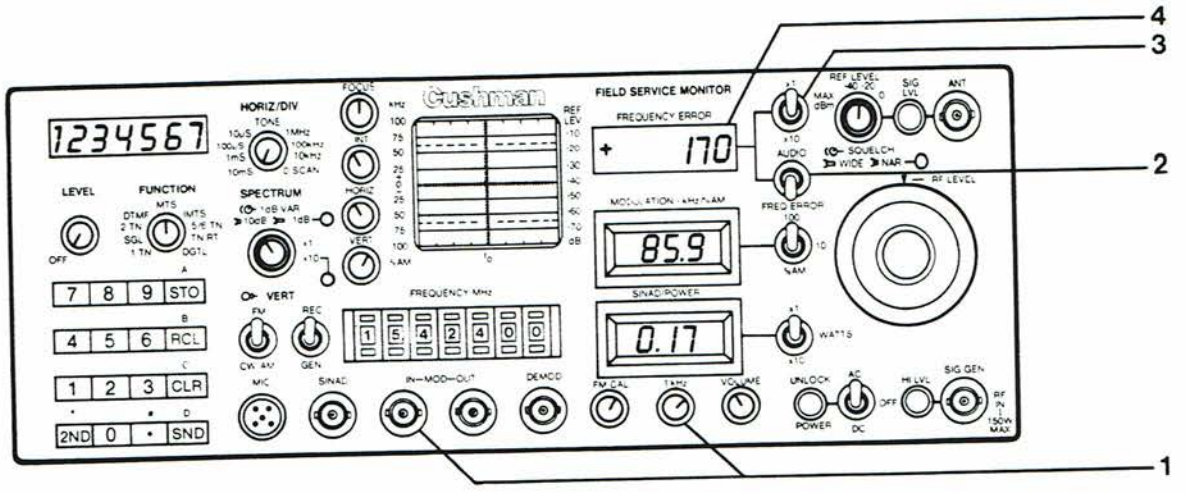
Voice. To generate a voice-modulated FM signal, proceed as follows:

1. Generate an unmodulated RF signal (refer to CW)
2. Set the modulation meter switch to 10kHz
3. Set the operating mode switch to FM
4. Adjust the FM CAL control to obtain a zero indication on the frequency error meter.
5. Connect a microphone to the MIC connector. If required, enter the receiver access code, using the microphone keyboard.
6. Speak into the microphone, and note the frequency deviation on the modulation meter.



Selective signaling. To generate an RF signal with digital or multitone selective signaling, proceed as follows:

1. Generate an unmodulated RF signal (refer to CW)
2. Set the modulation meter switch to 10kHz
3. Set the operating mode switch to FM
4. Adjust the FM CAL control to obtain a zero indication on the frequency error meter
5. Turn on the encoder and the oscilloscope (refer to the OSCILLOSCOPE and UNIVERSAL ENCODER sections)
6. Generate the desired digital or multitone signal
7. Adjust the encoder LEVEL for the desired deviation



GENERATE MODULATION TONE COUNTER

The off-the-air CTCSS tone counter can be activated in Generate, to count the frequency of modulation tones being used. This is most useful when external modulation is being applied.

1. Set up the desired modulation
2. Set the AUDIO/FREQ ERROR switch to AUDIO
3. Select the desired measurement resolution:
   - x1 — 1 Hz, one reading each second
   - x10 —0.1 Hz, 10 readings each second
4. The frequency of the modulation tone will be displayed on the top LCD.

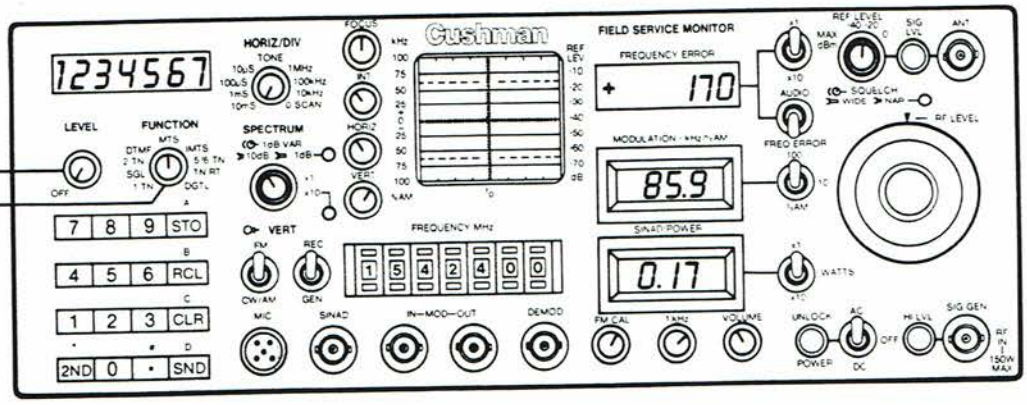
GENERATE OSCILLOSCOPE DISPLAY

The modulation waveform being applied to the RF signal is displayed on the oscilloscope.

Operation of the oscilloscope in Generate is identical to that described under Receive Oscilloscope Display.

MODULATION OUTPUT

The modulation waveform being applied to the RF signal is available at the front panel, from the MOD OUT jack.



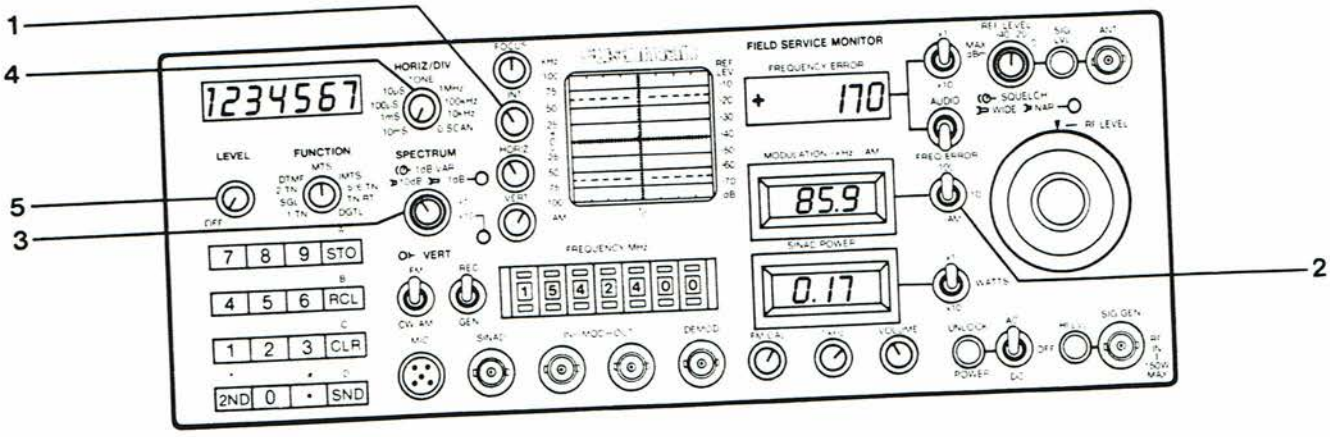
UNIVERSAL ENCODER

This section contains instructions for using the built-in universal encoder.

The encoder uses 16 registers—designated R0 through R9 plus RA, RB, RC, RD, R*, and R#, one for each of the 16 keys of the keyboard. Some of the registers contain preprogrammed frequency, timing, or numerical data (see the chart inside the rear cover). Others are blank. All may be overwritten by the user.

1. Turn power on
2. Select type

CDCSS	DGTL
Dial interrupt	SGL
Digital paging	DGTL
Dual tone multifrequency	DTMF
Five- or six-tone pager	5/6TN
Improved mobile telephone service	IMTS
Mobile telephone service	MTS
Motorola GOLAY	DGTL
NEC	DGTL
POCSAG	DGTL
Signal tone (CTCSS)	1 TN
Two-tone sequential paging	2 TN



OSCILLOSCOPE

This section contains instructions for using the built-in oscilloscope.

Turn on the oscilloscope by turning the INT control (1) CW. Always use the lowest intensity setting compatible with comfortable viewing.

> **Caution.** Never walk away and leave a bright trace on the screen; always turn the intensity down or OFF when the oscilloscope is not in use. The CRT phosphor is not covered by warranty.

VERTICAL SCALE

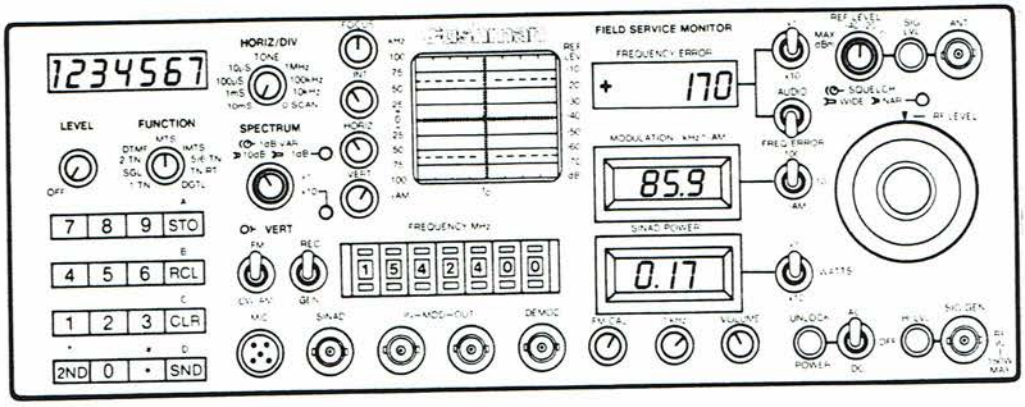
The vertical scale of the oscilloscope tracks the setting of the modulation meter switch (2) when the VERT switch (3) is in the X1 position. When the VERT switch is in the X10 position, full-scale deflection is 10 kHz, 1 kHz, or 10% AM.

HORIZONTAL SCALE

Horizontal scale is set by the HORIZ selector (4).

LISSAJOUS PATTERNS

For measurement of modulation frequency, place the HORIZ selector (4) in the TONE position and adjust the LEVEL (5) as required to obtain a suitable pattern.



DC OPERATION

The CE-7120 can function from a 12V DC source.

1. Connect the 12 VDC external power source, or the optional battery pack, to the DC power connectors on the rear panel.
2. Activate the DC power source by selecting DC power on the front panel.

Recharging batteries.

1. Connect the optional battery pack to the DC power connectors on the rear panel.
2. Select AC operation on the front panel.

The following five functions are fundamental to the operation of the universal encoder.

CLEAR. To stop signal generation and clear the display, press the CLR key. The CLR key clears the display only; it does not affect the register contents.

ENTER. Clear the display, and enter numerical values via the encoder keyboard. To enter characters A, B, C, D, *, and #, use the two-key sequences in the following table. Note that the character displayed is not necessarily the same as the character entered.

Character	Sequence		Display
A	2ND	STO	A
B	2ND	RCL	b
C	2ND	CLR	C
D	2ND	SND	d
*	2ND	2ND	E
#	2ND	•	F

RECALL. To recall preprogrammed or user-programmed values stored in a given register,
1. Set the FUNCTION switch to the desired function.
2. Press the RCL key
3. Enter the desired register character or digit

SET DEVIATION. To set deviation for digital functions, proceed as follows:
1. Set the FUNCTION switch to DGTL
2. Store a 2 in RO — 2 STO 0
3. Press SND — SND
4. Adjust the encoder LEVEL control to obtain the required deviation as indicated on the modulation meter or CRT
5. Press CLR to stop the transmission — CLR

STORE. To store a value, proceed as follows:
1. Set the FUNCTION switch to the desired function
2. Enter the desired value
3. Press STO — STO
4. Enter the designator for the register wherein the value is to be stored (e.g., "0" for R0). The stored value will replace any previous value in the register and remain in the register until the encoder is turned off.

SINGLE TONE (CTCSS) FUNCTION: 1 TN

To generate CTCSS-type tones:

1. ENTER the desired tone frequency — 000.0
2. Press SND — SND

To change the frequency, repeat steps 1 and 2.

DIAL INTERRUPT FUNCTION: SGL

To generate the dial interrupt signal, turn on the encoder and set the FUNCTION switch to SGL.

To generate a custom tone, proceed as follows:

1. CLEAR the display — CLR
2. STORE the new tone frequency (f) in R1 — f STO 1

TWO-TONE SEQUENTIAL PAGING

Custom signaling FUNCTION: 2 TN

To generate a custom two-tone sequential signal, proceed as follows:

1. CLEAR the display — CLR
2. STORE the new first tone frequency in R1 — F1 STO 1
3. STORE the new second tone frequency in R2 — f2 STO 2
4. Press SND. The following sequence is displayed. — SND

1	first tone frequency
1—	intertone gap
1—2	second tone frequency

Multiple sequences FUNCTION: 2 TN

To generate multiple two-tone sequences:

1. Store the total number of cycles desired (n) in R0 — n STO 0
2. Store the delay time between sequences (t) in R6 — t STO 6
3. Press SND to start the cycle. The display reads "1—2—" during the display period. — SND

DUAL TONE MULTIFREQUENCY (DTMF

This is the default mode. FUNCTION: DTMF

To generate a DTMF signal, enter the desired number and press SND. — *n n .. n* SND

To send the same number again, press RCL and then SND. — 2ND SND

Custom DTMF FUNCTION: DTMF

In DTMF signaling, each key selects a pair of frequencies. Since there are 16 keys, there are 16 possible frequency pairs. Think of the keyboard as a 4 X 4 matrix.

row frequencies \ column frequencies →	R7	R8	R9	RA
R3	7	8	9	A
R4	4	5	6	B
R5	1	2	3	C
R6	*	0	•	D

Standard DTMF

R3	852 Hz	R7	1209 Hz
R4	770 Hz	R8	1336 Hz
R5	697 Hz	R9	1477 Hz
R6	941 Hz	RA	1633 Hz

When you press a key, you select the frequency that is stored in the register for that row and also the frequency that is stored in the register for that column; for instance, pressing the 5 key selects the frequencies stored in R4 and R8. In custom DTMF, registers R3 through RA are initially blank and must be programmed by the user. Proceed as follows:

1. STORE a 1 in R0 — 1 STO 0
2. STORE a frequency value in each of the registers R3 through RA — *n n .. n* STO n

To dial a number, press CLR, enter the desired number, and press SND. — CLR n SND

To reselect standard DTMF, store a 0 in R0. — 0 STO 0

MOBILE TELEPHONE SERVICE

The Mobile Telephone Service (MTS) function is preprogrammed to generate 600/1500 Hz signaling at 100 ms (10 pps) with an interdigit time of 500 ms. Refer to the table inside the back cover for programmed parameters and their corresponding registers. All parameters can be modified for custom signaling.

Custom signaling FUNCTION: MTS

To generate a custom MTS signal:

1. Modify parameter values as desired
2. Press SND. [SND]

Preprogrammed signaling FUNCTION: MTS

To generate a preprogrammed MTS signal, press SND. [SND]

IMPROVED MOBILE TELEPHONE SERVICE

In Improved Mobile Telephone Service (IMTS), the type of signaling is determined by the value stored in R0: A "1" selects base-to-mobile, and a "2" selects mobile-to-base.

R2 through R5 determine the frequency and timing for base-to-mobile signaling. The values in there registers may be either preprogrammed or custom FSK signals. These registers are not used for mobile-to-base signaling. R6 contains a delay mode used to ensure that ANI signals are not sent before the terminal is ready.

Base to mobile FUNCTION: IMTS

Generate base-to-mobile signals as follows:

1. STORE a 1 in R0 [1] [STO] [0]
2. Modify the values in R3 through R5 as desired
3. ENTER the mobile's eight ANI digits *n n n n n n n n*
4. Press the SND key. A dash (–) in the display verifies that the ANI digits were indeed sent. [SND]
5. Perform one of the following operations:
   a. ENTER additional digits to be sent one at a time. (Enter zeros to simulate ringing to the mobile.)
   b. Press the RCL key to send the idle TONE and recall the latest ANI sent [RCL]
   c. Press the CLR key to send the idle tone and clear the display. [CLR]

Mobile-to-base FUNCTION: IMTS

Mobile-to-base signaling tests the operation of an IMTS central office. The CE-7010 will simulate a call from a mobile unit and the mobile's response. Three keyboard sequences perform special functions:

Sequence		
Acknowledge	[2ND]	[2ND]
Answer	[2ND]	[•]
Disconnect	[2ND]	[SND]

Generate mobile-to-base signals as follows:

1. STORE a 2 in R0 [2] [STO] [0]
2. ENTER the mobile's eight ANI digits *n n n n n n n n*
3. Press SND. A dash (–) in the display verifies that the digits were sent. [SND]
4. Perform one of the following operations:
   a. ENTER additional digits to be sent, one at a time. (Enter zeros to simulate ringing to the mobile.) A dash is displayed after each digit to indicate that the encoder circuits are ready.
   b. Press RCL to send the idle tone and recall the last ANI sent, or [RCL]
   c. ENTER a D to send the idle tone and display the latest ANI sent. [2ND] [SND]

Simulate the mobile's response as follows:

1. CLEAR the display [CLR]
2. ENTER an asterisk(*) to send the mobile's acknowledgement tone [2ND] [2ND]
3. ENTER a number sign (#) to simulate the mobile's answer [2ND] [•]
4. ENTER a D to send the mobile disconnect tone and display the latest ANI sent. [2ND] [SND]

FIVE- AND SIX-TONE PAGER

FUNCTION: 5/6 TN

Preamble tone
The preamble tone must be stored in RB. Proceed as follows:

1. Determine the preamble digit (n) from the cap code
2. Select the register corresponding to the preamble digit. The display shows the current preamble frequency. [RCL] [n]
3. STORE the displayed value in register B [STO] [2ND] [RCL]

To send the preamble tone:

1. ENTER a B [2ND] [RCL]
2. ENTER the pager's five-digit cap code *n n n n n*
3. ENTER a D [2ND] [SND]
4. Press SND [SND]

Signaling FUNCTION: 5/6 TN

To signal a five- to six-tone pager, enter the pager's five-digit cap code and press SND [SND]

Signaling, dual address FUNCTION: 5/6 TN

To signal a five- or six-tone dual-address pager, proceed as follows:

1. ENTER the pager's five-digit cap code *n n n n n*
2. ENTER a D [2ND] [SND]
3. Press the SND key [SND]

TONE REMOTE

FUNCTION: TN RT

To send the tone remote signal, press SND. [SND]

The following sequence is displayed:

1	high-level guard tone
12	function tone
-12	low-level guard tone

Press CLR to terminate the sequence [CLR]

DIGITAL CODED SQUELCH

FUNCTION: DGTL

To generate a digital-coded squelch signal, proceed as follows:

1. Set deviation between 500 and 1000 Hz
2. Store a 1 in R0 [1] [STO] [0]
3. Enter the three-digit octal DCS code number [n] [n] [n]
4. To send noninverted data, press SND [SND]

   To send inverted data, enter a decimal point (.) and press SND [.] [SND]

An error message indicates that either one of the DCS digits was greater than 7 or more or fewer than three digits were entered in step 3.

To stop DCS generation, press CLR or select another FUNCTION. [CLR]

MOTOROLA GOLAY

FUNCTION: DGTL

To send the Motorola GOLAY signal:

1. SET DEVIATION
2. STORE a 2 in R0 [2] [STO] [0]
3. ENTER the pager's six-digit address. For digital display pagers, add the function code and mode number (see table and the Motorola maintenance manual).

Output Address Format	Function Code
W1 W2	1
W1 W2	2
W1 W2	3
W1 W2	4

Type of Pager	Mode Number
Tone only	1
Tone/display	2
Tone/voice	3

NEC

FUNCTION: DGTL

To send the NEC signal:

1. SET DEVIATION
2. STORE a 3 in R0 — [3] [STO] [0]
3. ENTER the synchronization digit: 1, 2, 3, or 4 (1 is standard) and the pager's six-digit address — *n n n n n n*
4. Press SND. — [SND]

POCSAG

FUNCTION: DGTL

To send the POCSAG signal:

1. SET DEVIATION
2. STORE a 4 in R0 — [4] [STO] [0]
3. ENTER the appropriate function code digit — [n]

Function	Digit
1	0
2	1
3	2
4	3

4. Enter the six-digit pager code (or the last six digits of a seven-digit code). — *n n n n n n*

Cushman Universal Signal Encoder preprogrammed values. Frequencies (bold type) are in Hertz; timing intervals (light type) are in milliseconds.

FUNCTION	R0	R1	R2	R3	R4	R5	R6	R7	R8	R9	RA	RB	RC	RD	R*
DGTL	0														
DTMF	0	100	100	852	770	697	941	1209	1336	1477	1633				
5/6TN	600	741	882	1023	1164	1305	1446	1587	1728	1869	633	600	33	2010	459
IMTS	1	2000	1800	50	50	250	500								
MTS		600	1500	100	500										
SGL		2805	50	50	250										
TN RT	2175	1950	125	40											
2 TN	1	1000	500	1000	250	2500	2000								

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SECTION 4
SIGNAL CENTER UNIVERSAL ENCODER

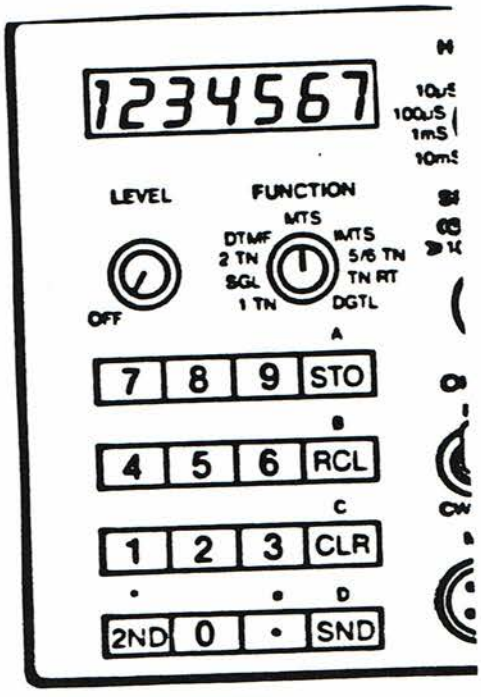

FIGURE 4-1

DESCRIPTION

4.0 The Cushman Model CE 7000 Signal Center is a dual microprocessor-controlled universal encoder that can generate tone and digital formats used for selective signalling over voice-grade communications channels. The front panel FUNCTION switch provides eight of the most common analog tone signalling formats (1 tone, two tone, single tone, DTMF, MTS, IMTS, 5/6 TONE, and tone remote), plus a digital position which allows the selection of digital-coded squelch (CDCSS), and POCSAG, NEC, and Motorola GOLAY digital pager address/display codes when the proper mode number is entered.

4.1 Each function selected generates a specific sequence of tones and data from a preprogrammed set of parameters stored in the CE 7000 memory. Or the user can reprogram the memory parameters for special purpose signalling requirements.

POWER-ON AND CHECKOUT

4.2 To turn on power and check out the Model CE 7000 perform the following:

a. Turn the Level/On-Off pot clockwise and observe the display for "CE 408d". If nothing appears, check with your factory authorized center.

b. Set the FUNCTION switch to any one of the nine functions available.

c. Turn the FUNCTION switch to a different function; the display should now show only a single zero.

d. To control the level of the signal, adjust the CE 7000 Series Level/On-off control as required.

4.3 Verify that all of the keyboard keys are operational by performing the following tests:

a. Enter the digits "1" through "8" by pressing each of the corresponding digit keys on the keyboard. As each key is pressed its corresponding number should be entered into the display. The display should now read "1 2 3 4 5 6 7 8".

b. Press the CLR key to clear the display. Note that the display again shows a single zero.

c. Enter the digits "9" and "0" by pressing the corresponding keys. Then enter the DTMF digits (2nd) A, (2nd) B, (2nd) C, and (2nd) D by first pressing the "2nd" key (to select the key's second function) followed by the STO/A, RCL/B, CLR/C, and SND/D keys (respectively). The display should now read "9 0 A B C D".

d. Enter the DTMF characters "2nd *" and "2nd #" by pressing the "2nd /*" key two times for the "*" character, and then the "2nd" key followed by the "./#" key for the "#" character. Since the "2nd *" is displayed as "E", and the "2nd #" as "F", the display should now read "9 0 A B C D E F".

KEYBOARD BASICS

4.4 The following paragraphs describe in detail the use of the keyboard function keys.

4.4.1 The CE 7000 keyboard contains 16 operation keys. However, to fully utilize the power of the Model CE 7000 Signal Center, it is necessary to be able to enter 22 different operations - either data or commands. This means that 6 keys must perform more than one function. The six dual function keys are listed with their functions in Table 4-2.

a. To use the first function associated with a key, just press that key.

b. To use the second (2nd) function, press the "2nd" key followed by the key corresponding to the function desired. Refer to Paragraphs 4.3 (c.) and (d.) above.

TABLE 4-2. DUAL FUNCTION KEYS

DUAL FUNCTION KEY	FIRST FUNCTION	SECOND FUNCTION
STO/A	STO - Store display data in a register.	Enter "A" character
RCL/B	RCL - Recall and display register contents.	Enter "B" character
CLR/C	CLR - Clear LCD display	Enter "C" character
SND/D	SND - Send sequence	Enter "D" character
2nd/*	2nd - Select 2nd function for next key pressed.	Enter "*" character Displayed as "E"
./#	. - Enter decimal point	Enter "#" character Displayed as "F"

ERROR MESSAGES

4.5 The message "ERROR - - - - " indicates that one of the following types of invalid keyboard operations was performed:

a. Attempt to store (STO) or recall (RCL) a function register that does not exist.

b. Sending a sequence (SND) before the cap-code or dialed digit information has been entered (for 5/6 tone and IMTS, Mode 2).

c. Storing a number (STO) that is larger than that allowed for frequency and timing parameters.

4.6 If an error message is displayed, press the CLR key and then enter the correct information.

PREPROGRAMMED FREQUENCY AND TIMING PARAMETERS

4.7 Each function that the Model CE 7000 is capable of generating has from 1 to 16 memory locations associated with it. Each memory location or register is designated by a number from 0 - 9, or the letters A, B, C, D, or the characters "*" or "#" (displayed as "E" and "F", respectively). The registers hold frequency and timing information to be used by the particular function selected when a sequence is generated. Each time the Model CE 7000 Signal Center is turned on, all registers are preprogrammed with the frequency and timing parameters most often used with each function. Refer to TABLE 4-3.

DISPLAYING PARAMETERS - RCL KEY

4.8 To display a register's contents for a particular function, first set the FUNCTION switch to that function. Then, using TABLE 7-3, determine the register number for the desired parameter. To display the parameter value, press the RCL key, followed by the key corresponding to the register number. The display will now show the register number (in the farthest left digit position), followed by the value stored in that register. If the register holds frequency information, a decimal point will also be displayed. Otherwise, the register holds timing or miscellaneous information which has no decimal point.

4.9 All frequency information is displayed in Hz with a resolution of 0.1 Hz. Timing information is displayed in milliseconds (ms), with a resolution of 1 ms. Therefore, one second will be displayed as "R 1000", where "R" is the register number.

TABLE 4-3. PREPROGRAMMED PARAMETERS

MANUAL SECTION	FUNCTION	DESCRIPTION	REGISTER NUMBER	PROGRAMMED VALUE
4.13	DTMF	Mode Number	0	0
		Tone On Time	1	100 ms
		Tone Off Time	2	100 ms
		MF Row Freq.	3-6	0.0 Hz
		MF Column Freq.	7-A	0.0 Hz
4.18	MTS	Frequency 1	1	600.0 Hz
		Frequency 2	2	1500.0 Hz
		Dial Pulse Width	3	100 ms
		Interdigit Time	4	500 ms
4.20	IMTS	Mode Number	0	1
		Idle Tone Freq.	1	2000.0 Hz
		Seize Tone Freq.	2	1800.0 Hz
		Dial Pulse-Break Time	3	50 ms
		Dial Pulse-Make Time	4	50 ms
		Interdigit Time	5	250 ms
		Delay Time before ANI	6	500 ms
4.24	ITN	Single Tone	-	0 Hz
4.25	SGL	Tone Frequency	1	2805.0 Hz
		Dial Pulse-Break Time	2	50 ms
		Dial Pulse-Make Time	3	50 ms
		Interdigit Time	4	250 ms
4.37	DGTL	Mode Number 0	0	134 Hz
		Mode Number 1	0	DPL
		Mode Number 2	0	MOT GOLAY
		Mode Number 3	0	NEC
		Mode Number 4	0	POCSAG
		Mode Number 0	1	NORMAL
		Mode Number 1	1	INVERTED CODE
		Mode Number 0	2	SEND ONCE
		Mode Number 1	2	SEND REPEATEDLY

TABLE 4-3. PREPROGRAMMED PARAMETERS - CONT.

MANUAL SECTION	FUNCTION	DESCRIPTION	REGISTER NUMBER	PROGRAMMED VALUE
4.26	2 TN	Number of 2-Tone Cycles	0	1
		First Tone Freq	1	1000.0 Hz
		Second Tone Freq	2	500.0 Hz
		First Tone On Time	3	1000 ms
		Intertone Gap Time	4	250 ms
		Second Tone On Time	5	2500 ms
		Delay Time Until Repeat	6	2000 ms
4.29	5/6 TONE	Digit 0 Frequency	0	600.0 Hz
		Digit 1 Frequency	1	741.0 Hz
		Digit 2 Frequency	2	882.0 Hz
		Digit 3 Frequency	3	1023.0 Hz
		Digit 4 Frequency	4	1164.0 Hz
		Digit 5 Frequency	5	1305.0 Hz
		Digit 6 Frequency	6	1446.0 Hz
		Digit 7 Frequency	7	1587.0 Hz
		Digit 8 Frequency	8	1728.0 Hz
		Digit 9 Frequency	9	1869.0 Hz
		Preamble On Time	A	633 ms
		Preamble Tone Freq	B	600.0 Hz
		Digit Tone On Time	C	33 ms
		Dual Address Tone Frequency	D	2010.0 Hz
		Repeat Tone Freq	* (E)	459.0 Hz
4.35	TN RMT	Guard Tone Freq	0	2175.0 Hz
		Function Tone Freq	1	1950.0 Hz
		High Level Guard Tone Burst Time	2	125 ms
		Function Tone Burst Time	3	40 ms

MODIFYING REGISTER INFORMATION - STO KEY

4.10 Any of the parameters stored in the registers listed in TABLE 4-3 can be modified by the following procedures:

a. Select the particular function to be modified.

b. Enter the new value of the parameter, using the keyboard, into the LCD display. If necessary, use the CLR key to clear mistakes and then enter the correct information.

NOTE

The CLR key clears the display only, and not the contents of the register. Register contents can only be modified by the STO (store) function.

c. With the desired information to be stored now displayed, press the STO key, followed by the key corresponding to the desired register number. The left-most digit of the display will now indicate the register in which the information was stored.

4.11 The following rules apply to storing data in registers:

a. If an attempt is made to store data in a register that does not exist for the function selected, the error message will be displayed.

b. Frequency information may not exceed 3275 Hz, and timing information may not exceed 64,000 ms (64 seconds).

c. Frequency information may be programed with a resolution of 0.1 Hz. If a decimal point is not entered, it will be assumed to be located to the right of the last digit entered. If a decimal point is entered, then only one additional digit will be accepted.

EXAMPLE

TABLE 4-3 lists the single (SGL) tone frequency as 2805 Hz, and it is stored in register 1 under that (SGL) function. To modify it to generate a 2700 Hz tone instead, select the SGL function on the FUNCTION switch, and press the "2", "7", "0", and "0" (again) keys on the CE 7000 keyboard. Then press the "STO" and "1" keys. The display should now read "1 2700", and the Model CE 7000 should now be generating a 2700 Hz tone.

DIALED DIGIT OUTPULSING

4.12 Dialed digits may be outpulsed in a group of from 1 to 8 digits, or outpulsed individually (one at a time) for the DTMF, MTS, IMTS, and SGL functions.

a. To outpulse digits individually, first clear the display. Press the SND key and wait for the "-" (dash) to be displayed. Then, enter the digit to be outpulsed. A dash will again be displayed when the CE 7000 has completed outpulsing the digit. As soon as the dash appears, the unit is ready to accept another digit for outpulsing.

b. To outpulse groups of digits, first clear the display and then enter the group of digits. The first digit to be outpulsed is entered first. Then press the SND key to start the outpulsing, which outpulses the left most digit of the display first. The dash will again be displayed when all the digits in the group are outpulsed. Once the dash is displayed, the user may press the RCL key (do not enter a register number) to recall the last group of digits outpulsed back into the display to be outpulsed once again by pressing the SND key. Or a new group of digits may be outpulsed, if desired, by entering the individual digits as before and again pressing the SND key.

USING THE MODEL CE 7000 SIGNAL CENTER FUNCTIONS

DTMF FUNCTION

4.13 The DTMF function is used to generate any of the standard tone pairs associated with the 16 DTMF digits using Mode 0, as well as custom user defined Multi-Frequency (MF) tone pairs using Mode 1. There are 11 registers associated with the DTMF function. The first 3 registers are preprogrammed with parameters on power-up, and are listed in TABLE 4-3 with their preprogrammed values. Registers 3 through A, which are used in Mode 1 only, contain all zeroes and must be programed by the user with row and column frequency information.

4.14 The DTMF digits may be sent (outpulsed) as a group or individually, the rate at which the digits are sent depends on the information stored in registers 1 and 2. Each time a digit is outpulsed, the tone pair corresponding to the digit entered is generated for the amount of time specified in register 1, followed by a gap of no tone for the amount of time specified in register 2.

4.15 To select the standard DTMF tone pair frequencies, enter a zero in register 0 (i.e., select Mode 0). Registers 3 through A are not used in Mode 0, therefore the frequency information stored in these registers has no effect on the tone pair frequencies for standard DTMF generation.

4.16 To generate custom FM tone pairs, first store a 1 in register 0 (RO) to select the bank of user frequencies stored in registers 3 - A (R3 - RA). Then, program row frequencies in registers 3 - 6 (R3 - R6), and column frequencies in registers 7 - A (R7 - RA). The following TABLE 4-4 shows the relationship between the keyboard digits and the row and column frequency registers.

TABLE 4-4

		R7	R8	R9	RA
(ROW)	R3	7	8	9	A
	R4	4	5	6	B
	R5	1	2	3	C
	R6	*	0	#	D

(COLUMN)

4.17 The tone pair frequencies for a particular digit corresponds to the frequency stored in the two (row and column) registers associated with the digit in the above matrix. For example, the frequency pair associated with the digit 6 in the above matrix are the frequencies stored in R4 (the row) and R9 (the column) registers. NOTE: The largest frequency that may be generated in this mode is 2100.0 Hz.

EXAMPLE

Generate 2+2 signalling consisting of a 1500/800 Hz tone pair for 1 second, followed by a 900/750 Hz tone pair for 1 second.

STEP 1: Using the digit 1 for the first tone pair, and 5 for the second pair, (other digits could be used) we can determine that the row and column registers associated with digit 1 are (respectively) R5 and R7. Likewise, the registers associated with digit 5 are (respectively) R4 and R8.

STEP 2: Program the frequencies for digit 1 (the first tone pair) by storing 1500.0 in register R5 and 800.0 in R7.

STEP 3: Program the frequencies for digit 5 (the second tone pair) by storing 900.0 in register R4 and 750.0 in R8.

STEP 4: Program the tone duration times by storing 1000 in register R1 (1000 ms - 1 second), and the tone off time by storing 0 in R2 (no time between tones).

STEP 5: Generate the tone sequence by entering digits 1 and 5 into the CE 7000 and pressing SND. To send the same tone sequence again, press RCL and SND.

STEP 6: To send different frequencies, repeat STEPS 1 - 5 and enter the new frequencies instead of the frequencies of STEPS 2 and 3.

MTS (MOBILE TELEPHONE SYSTEM) FUNCTION

4.18 The MTS function is used to generate Mobile Telephone Service (MTS) 600/1500 Hz signalling at 10 pps. However, in this function the Model CE 7000 Signal Center is not limited to generating only the standard frequencies and timing associated with MTS. The user may change the two frequencies used, as well as the outpulsing rate. The MTS digits may be outpulsed in a group of individually. TABLE 4-5 is a list of the four registers associated with MTS signalling and their preprogrammed values.

TABLE 4-5

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Frequency 1	1	600.0 Hz
Frequency 2	2	1500.0 Hz
Dial Pulse Width	3	100 ms (10 pps)
Interdigit Time	4	500 ms

4.19 In the MTS function, pressing the SND key causes a clearing pulse to be generated before the digits in the display are outpulsed. The clearing pulse consists of 710 ms of frequency 1, followed by 710 ms of frequency 2. Each digit is separated by the interdigit time stored in register 4 (R4).

IMTS (IMPROVED MOBILE TELEPHONE SYSTEM)

4.20 This function is used to generate IMTS base-to-mobile, mobile-to-base, and general purpose FSK signalling. The type of signalling generated depends on the information stored in the 7 registers associated with the IMTS function. TABLE 4-6 lists these 7 registers and their preprogrammed values.

TABLE 4-6

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Mode Number	0	1
Idle Tone Frequency	1	2000.0 Hz
Seize Tone Frequency	2	1800.0 Hz
Dial Pulse-Break Time	3	50 ms
Dial Pulse-Make Time	4	50 ms
Interdigit Time	5	250 ms
Delay Time Before ANI	6	500 ms

4.21 The number stored in register 0 (R0) determines which type of signalling the CE 7000 Signal Center is to generate. For IMTS base-to-mobile signalling, a 1 must be stored in R0. Then, registers 2 through 5 determine the frequency and timing of the digits to be outpulsed. Also, the user can change these parameters to generate custom FSK type signalling. For IMTS mobile-to-base signalling, a 2 must be stored in R0. Using this mode, the user can either originate a call to an IMTS terminal or simulate a mobile's response to a call from an IMTS terminal. Registers 2 through 5 are not used in IMTS Mode 2.

4.22 Since the Model CE 7000 Signal Center does not decode signalling from the IMTS terminal, it can't know when the terminal is ready to accept the mobile's ANI digits. To ensure that ANI is not sent before the terminal is ready, it is delayed before sending by the time stored in register 6 (R6).

4.23 There are two modes of IMTS operation on the CE 7000 Mode 1 is for base-to-mobile signalling, and Mode 2 is for mobile-to-base signalling.

BASE-TO-MOBILE (MODE 1)

4.23.1 In IMTS Mode 1, the CE 7000 Signal Center will initially generate idle tone when the function is selected. To signal an IMTS mobile, enter the mobile's ANI digits (from 1 - 8) and press the SND key. The ANI

digits will then be outpulsed according to the timing parameters stored in R3 - R5. After all the digits have been outpulsed, a dash will be displayed. The user may then do one of the following:

a. Enter additional digits to be outpulsed, one at a time. Enter zeroes to simulate ringing to the mobile.

b. Press the RCL key to return to sending idle tone and recall the last ANI sent.

c. Press the CLR key to return to sending idle tone and clear the display.

MOBILE-TO-BASE (MODE 2)

4.23.2 IMTS Mode 2 is used for testing the operation of IMTS Central Office terminal equipment. In this mode, the CE 7000 Signal Center may be used to simulate a call from an IMTS mobile or to simulate the mobile's response to a terminal originated call. In IMTS Mode 2, three of the keyboard keys take on a special meaning, as described below:

KEYBOARD DIGIT	NEW FUNCTION
2nd *	Send Acknowledge Tone
2nd #	Send Answer Tone
2nd D	Send Disconnect Tones

4.23.3 To simulate a call from a mobile to an IMTS terminal, a 2 must be stored in the register 0 (R0) of the IMTS function (must be in Mode 2). Enter the mobile unit's ANI digits (from 1 - 8 digits). While the digits are displayed, press the SND key. The CE 7000 Signal Center will generate a connect sequence, delay (wait) for the amount of time stored in R6, and then send the ANI which was displayed at 20pps (with parity).

4.23.4 When all the ANI digits have been outpulsed, a dash will be displayed. At this time, the user may simulate IMTS mobile dial pulsing by entering each digit, one at a time. Each time a digit is entered, it will be outpulsed and the dash again displayed to indicate that the CE 7000 is ready to accept the next digit.

4.23.5 While the dash is displayed, the user may (instead of simulating dial pulsing) press the RCL key to recall the last ANI sent. Or mobile disconnect signalling can be sent by entering the 2nd D character. After the disconnect tones are sent, the display will automatically recall the last ANI sent.

4.23.6 To simulate a mobile's response to an IMTS terminal call, first clear the display. When the IMTS terminal completes base-to-mobile signalling, send the mobile acknowledgment tone by entering the 2nd * character. Then press the 2nd # key to simulate mobile answer. Press the 2nd D key to send disconnect.

1TN (CONTINUOUS TONE)

4.24 To generate a CTSS, or continuous tone, select 1TN on the FUNCTION switch. Enter the desired frequency into the CE 7000 Signal Center display and press the SND key.

SGL (SINGLE FUNCTION)

4.25 The SGL (Single) function may be used for generating single tones (i.e., CTCSS tones), but is primarily used for single-tone interrupted signalling. Single-tone interrupted digits may be outpulsed in a group or individually. There are 4 registers associated with the SGL function, and they are listed with their preprogrammed values in TABLE 4-7.

TABLE 4-7

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Tone Frequency	1	2805.0 Hz
Dial Pulse-Break Time	2	50 ms
Dial Pulse-Make Time	3	50 ms
Interdigit Time	4	250 ms

2 TN (TWO - TONE FUNCTION)

4.26 The 2TN (Two-Tone) function has 7 registers, and can generate 2-Tone sequential signalling. The registers and their preprogrammed values are listed in TABLE 4-8.

TABLE 4-8

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Number of 2-Tone Cycles	0	1
First Tone Frequency	1	1000.0 Hz
Second Tone Frequency	2	500.0 Hz
First Tone On Time	3	1000 ms
Intertone Gap Time	4	250 ms
Second Tone On Time	5	2500 ms
Delay Time Before Repeat	6	2000 ms

4.27 To send a Two-Tone sequence, first store the desired first and second tone frequencies in registers R1 and R2 (respectively). Press the SND key to generate the tone sequence according to the timing parameters stored in registers R3 - R5. If more than one sequence is to be generated, store the total number of cycles in R0 and the delay time between sequences in R6. Then press the SND key to start the cycle.

4.28 While the first tone is being generated, the display will read " 1". During the intertone gap, the display will be " 1-", and during the generation of the second tone, it displays " 1-2". If the value stored in R6 is greater than 1, the display will read " 1-2-" during the repeat delay period.

5/6 TONE FUNCTION

4.29 The 5/6 Tone function can generate sequences of from 1 to 8 tone bursts. Four different formats may be generated (i.e. US 5/6 Tone, and European ZVEI, CCIR & EEA) depending on what mode has been selected. There are 16 registers associated with the 5/6 Tone function and the contents of register "F" determines what format will be generated. When the encoder is first turned on the frequency and timing values listed in TABLE 4-9A, which are for the US 5/6 Tone format, are automatically loaded into the 16 registers. To change to another format, all that is necessary is to store the format's mode designation digit in register "F" (only modes 1-4 are valid) and the other 15 registers are automatically modified.

4.30 In the 5/6 Tone code plan, each digit in the capcode (i.e. the decoder's address) represents a specific tone frequency. In the CE 7000 Signal Center, these digits (0-9) also correspond to the registers in which the decimal digits frequency is stored. Therefore, the tone frequencies sent are those stored in the registers corresponding to the capcode.

NOTE

If the cap-code consist of 2 or more identical digits in a row, the repeat tone (stored in Register "E") is automatically sent when required.

TABLE 4-9A

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Digit 0 Frequency	0	600.0 Hz
Digit 1 Frequency	1	741.0 Hz
Digit 2 Frequency	2	882.0 Hz
Digit 3 Frequency	3	1023.0 Hz
Digit 4 Frequency	4	1164.0 Hz
Digit 5 Frequency	5	1305.0 Hz
Digit 6 Frequency	6	1446.0 Hz
Digit 7 Frequency	7	1587.0 Hz
Digit 8 Frequency	8	1728.0 Hz
Digit 9 Frequency	9	1869.0 Hz
Preamble On Time	A	690 ms
Preamble Tone Frequency	B	600.0 Hz
Digit Tone On Time	C	33 ms
Dual Address Tone Frequency	D	2010.0 Hz
Repeat Tone Frequency	E (*)	459.0 Hz
Mode (Format Selection	F (#)	1

4.31 US 5/6 TONE

4.31.1 To signal a 5-Toner pager, simply enter the pager's five digit cap-code, as is, and press the SND key.

4.31.2 To signal the pager's dual address, enter the same five digit cap-code, followed by 2nd D. Press the SND key.

4.31.3 To send a preamble tone before the address signalling, first press the 2nd B key. Then enter the five digit cap-code (i.e. the cap-code less the preamble digit). If a dual address is desired, now press the 2nd D key. Finally, to send the entire sequence, press the SND key.

NOTE

The preamble register (RB) must be programmed with the preamble frequency being used.

4.31.4 To program the preamble frequency in register B (RB), first determine the preamble digit from the cap-code. Then, use the CE 7000 Signal Center to determine the corresponding frequency for this digit by pressing the RCL key, followed by "P" (where P is the preamble digit). Then, while the frequency is being displayed, press STO and 2nd B to program RB with the preamble frequency to generate.

4.32 EUROPEAN ZVEI, CCIR & EEA FORMATS - The formats ZVEI, CCIR and EEA may be generated by entering either a 2, 3 or 4 respectively in register F (RF). Whenever the CE 7000 Signal Center detects a change in the contents of RF it automatically changes the frequency and timing parameters in register 0 to E for the format selected. TABLE 4-9B lists the register contents for the 3 European formats available.

TABLE 4-9B

REGISTER #	ZVEI	CCIR	EEA	UNITS
0	2400.0	1981.0	1981.0	Hz
1	1060.0	1124.0	1124.0	Hz
2	1160.0	1197.0	1197.0	Hz
3	1270.0	1275.0	1275.0	Hz
4	1400.0	1358.0	1358.0	Hz
5	1530.0	1446.0	1446.0	Hz
6	1670.0	1540.0	1540.0	Hz
7	1830.0	1640.0	1640.0	Hz
8	2000.0	1747.0	1747.0	Hz
9	2200.0	1860.0	1860.0	Hz
A	70	100	40	ms
B	2400.0	1981.0	1981.0	Hz
C	70	100	40	ms
D	2800.0	2400.0	1055.0	Hz
E(*)	2600.0	2110.0	2110.0	Hz
F(#)	2	3	4	Mode

4.33 The procedure for generating a ZVEI, CCIR or EEA signaling sequence is essentially the same as for the US 5/6 Tone format with the following exceptions:

4.33.1 The preamble feature should not be used (i.e. preceding an address by the "B" digit). This will cause the frequency stored in RB to be sent for the amount of time stored in RA followed by a gap of 45 ms

before the other digits in the address are sent. NOTE: In cases where it is necessary to extend the time of the first tone, simply enter that time in register A. The CE 7000 always sends the first digit of the address entered (ZVEI, CCIR or EEA only) for the amount of time stored in RA and the remaining digits for the amount of time stored in RC.

4.33.2 Register D contains the group call tone frequency and as in the US 5/6 Tone Format, register E holds the repeat tone frequency.

EXAMPLE

To generate a group call to the addresses 12500 to 12599 enter 125DD. The CE 7000 will automatically insert the repeat tone where necessary, in this example the tones sent would be equivalent to entering 125DE.

4.34 To program the preamble frequency in register RB, first determine the preamble digit from the cap-code. Then, use the CE 7000 Signal Center to determine the corresponding frequency for this digit by pressing the RCL key, followed by "P" (where P is the preamble digit). Then, while the frequency is being displayed, press STO and 2nd B to program the register RB with the preamble frequency to be generated.

TN RMT (TONE REMOTE) FUNCTION

4.35 The TN RMT function generates the tone sequence used in tone remote control of base station equipment. The TN RMT sequence consists of a burst of high-level guard tone (at 0 d Br), followed by a burst of function tone (also at 0 d Br), which is followed by low-level guard tone (-20 dBr transmit hold tone). There are 4 registers associated with the TN RMT function, and they are listed with their preprogrammed values in TABLE 4-10.

TABLE 4-10

DESCRIPTION	REGISTER #	PREPROGRAMMED VALUE
Guard Tone Frequency	0	2175.0 Hz
Function Tone Frequency	1	1950.0 Hz
High-Level Tone Burst Time	2	125 ms
Function Tone Burst Time	3	40 ms

4.36 To start the ton control sequence, press the SND key. The display will read " 1" while the high-level guard tone is being generated, followed by " 12-" while the low-level guard tone is generated.

NOTE

Low-level guard tone will continue to be sent until the CLR key is pressed.

DGTL (DIGITAL) FUNCTION

4.37 The DGTL (Digital) function allows the user to generate non-return-to-zero (NRZ) data sequences. The data sequence generated corresponds to the mode number stored in register 0 (R0) of the DGTL function. TABLE 4-11 contains a list of data sequences available:

TABLE 4-11

MODE #	DESCRIPTION
0	134 Hz Test Signal
1	Digital Coded Squelch (DCS) (continuous 23-bit word)
2	GOLAY Digital Display
3	NEC Digital Display
4	POCSAC Digital Display

4.38 Operation of each of the DGTL Modes is described in the following paragraphs.

134 HZ TEST AND DIGITAL CODED SQUELCH (DCS)

4.38.1 Both Modes 0 and 1 are associated with testing DCS systems such as those manufactured by Motorola, E.F. Johnson, and Ferritronics. Mode 0 generates a test signal useful in setting an FM signal generator (if used) deviation. Mode 1 allows the user to generate actual 23-bit DCS data by simply entering the 3-digit octal DCS code.

4.38.2 Polarity control register (R1) determines if data is to be sent non-inverted (register R1 = 0), or inverted (R1 = 1). Normally, a 0 is automatically inserted.

4.38.3 Repeat register (R2) will send the bit stream repeatedly if there is a 1 in the register. Normally, a 0 (send once) is automatically stored in the register.

NOTE

A logical "1" in the bit stream will cause the carrier to shift in a positive direction (above 0) and logical "0" will cause it to shift negative (below 0) in a NRZ (Non-Return to Zero) system.

4.38.4 MODE 0 - The digital (NRZ) output may be input to an FM signal generator, or directly connected to the digital input of the DCS board under test. If a signal generator is used, the Mode 0 function (set by storing a 0 in R0) must be used first to set the proper FM deviation. Use the following procedure to set the signal generator deviation:

a. Select the UNIV function, and make sure that a 0 is stored in R0.

b. Press the SND key to generate the 134 Hz test signal.

c. Adjust the FM deviation to ±0.5 - ±1.0 kHz as viewed on CRT.

d. Press the CLR key to stop generation of the test signal.

NOTE

The keyboard will be locked (except for the CLR key) while the CE 7000 Signal Center is generating continuous data sequences. To halt data generation and unlock the keyboard, either press the CLR key, or select another function.

4.38.5 MODE 1 - The following procedure is used to generate DCS data (i.e., a continuous sequence of the 23-bit code word).

a. Select the DGTL function, and make sure that a 1 is stored in R0 (to select Mode 1).

b. Enter the 3-digit octal DCS code number.

c. To send noninverted data, just press the SND key. To send inverted data, first enter a decimal point and then press the SND key.

d. To halt data generation, press the CLR key or select another function. Either of these actions will cause the CE 7000 Signal Center to send a 180 ms burst of 134 Hz turn-off code and then halt data generation.

NOTE

An error message indicates that either a digit in the DCS code was larger than 7, or more (or less) than 3 digits were entered for the code number.

4.38.6 MODE 2 - The following procedure is used to signal Motorola digital pagers using the GSC format. These pagers include the Model BPR-2000 and the OPTRX. For this format each pager is assigned a 6 digit address or cap-code (The OPTRX may have two cap-codes). For each cap-code the pager can be alerted in four different ways. In other words each address has 4 functions or sub addresses.

NOTE

In ALL cases where Motorola's Golay-sequential-Code (GSC) is to be encoded, the pagers cap-code consist of a 6 digit number. However, on some later model pagers, and in particular OPTRX pagers, a 7 digit address is printed on the pager. The seventh digit is known as the "Pager Function" and represents both the CE 7000 function digit (e.i. 1,2,3, or 4) and the CE 7000 mode digit (e.i. 1=tone only, 2=display, or 3=voice). To generate the correct signaling enter the first 6 digits (i.e. the pager's address) as is, and then use the following table to convert the Motorola Pager Function to the function and mode digits required by the CE 7000.

EXAMPLE

A Motorola OPTRX pager has the address "1234565" printed on it. Using the following table, the correct eight digits for the CE 7000 are "12345612" which will cause a Data Display Page to be generated.

MOTOROLA PAGER FUNCTION	CE-7000 FUNCTION-MODE DIGIT	TYPE OF PAGE
1	1 - 3	Tone & Voice
2	2 - 3	Tone & Voice
3	3 - 3	Tone & Voice
4	4 - 3	Tone & Voice
5	1 - 2	Data Display
6	2 - 2	Data Display
7	3 - 2*	Data Display
8	4 - 2*	Data Display
9	1 - 1*	Tone Only
0	2 - 1*	Tone Only

NOTE: The Function-Mode digit combinations marked with an "*" are the only valid entries for the BPR-2000 pager.

The following procedure is used to signal Motorola GSC type pagers:

STEP 1: Rotate the selector switch to DGTL.

STEP 2: Use Mode-0 to set the proper FM deviation to +/- 4.5 kHz if this has not already been done.

STEP 3: To select the Motorola GSC format store a "2" in the mode register R0 (The CE 7000 will remain in the Motorola GSC mode until another code is stored in R0. Therefore, it is not necessary to repeat this step before each test page).

STEP 4: Enter the pagers 6 digit cap-code (include leading zeroes.

STEP 5: Enter the desired pager function digit: (1,2,3 or 4).

STEP 6: Enter the "mode" number, either a 1,2, or 3 depending on the type of page you want the CE 7000 to generate. Entering a 1 causes the CE 7000 to send just the pager's address. Therefore, this type should be used only when the pager's Tone-Only functions are to be alerted. Entering a 2 causes the CE 7000 to send an address followed by the prestored display message "123456789-0" NOTE: For the OPTRX pager the test message is "A,49'F-P". This mode should be used only when alerting the pager's display functions. Entering a 3 causes the

CE 7000 to send the pager's address followed by a speaker activation code used for Tone and Voice Paging.

STEP 7: Press the Send (SND) button each time the page is to be transmitted except where R2 has been programmed for repeat page.

4.38.7 NEC D3 DISPLAY (MODE 3)

STEP 1: Rotate the function selector to DGTL.

STEP 2: Use mode 0 to set the proper FM deviation if this has not already been done.

STEP 3: Store a 3 in R0 to select Mode 3 (The CE 7000 will remain in the NEC mode until another code is stored in R0).

STEP 4: Enter the one digit synchronization code (i.e. 1,2,3 or 4). This code is pager dependent, however, most systems use sync. code "1".

STEP 5: Enter a "0" followed by the 6 digit pager address. There should now be a total of 8 digits in the display.

STEP 6: Press SND to start the page. The prestored display message is "1234567890".

4.38.8 POCSAG & NEC D4 (MODE 4)

STEP 1: Rotate the selector switch to DGTL.

STEP 2: Use mode 0 to set the FM deviation if this has not already been done.

STEP 3: Store a 4 in R0 to select mode 4 (The CE 7000 will remain in the POCSAG (Also NEC D4) mode until another code is stored in R0)

STEP 4: Enter the desired function code 1,2,3, or 4.

STEP 5: Enter the 7 digit pager address (include leading zeroes). There should now be 8 digits in the display.

STEP 6: Press the SND button to start the page sequence. The prestored display message of "12345" is sent to the pager for all four functions of the address.

BILL OF MATERIAL
AS OF 2/25/87

7120

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7000-0111 OPCODE: 0 REV: N FNL ASSY-FLD SVCE MON SPECTRUM
MODEL: 7120
ECO NO: 87011
DATE OF LAST ECO: 2/10/87

OP: ORDER POLICY CODE
REQ'TY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1969-0010	HOLDER-4" SNAP IN NYLON PC BD	1		1	4.000	1.000	EA	B1	N	N	4.000	0	0		00/00/00	99/99/99
2001-0009	OSC-TCXO 10.0 MHZ	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2240-0079	PARTITION-LEFT SIDE	0		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2240-0080	PARTITION-RIGHT SIDE	0		4	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2245-0206	PLATE-SCOPE MOUNTING	0		7	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2275-0029	DECK-PCB MOUNTING	0		9	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0267	SHIELD-RF MAIN LOGIC REAR	0		61	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0268	SHIELD-RF MAIN LOGIC FRONT	0		62	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0272	SHIELD-RF	0		11	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2805-0034	PNL-LEFT SIDE W/F	1	A	25	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2805-0036	PNL-RIGHT SIDE W/F	1	A	26	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2831-0176	LBL-ANTENNA INPUT CAUTION	0		27	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3002-0013	BMPR-1.5LGX.5WX.25H BLK PLSTC	0		84	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
3183-0002	WIRE-26 INS 7 ST 600 V RED	0		56	4.000	1.000	IN	F3	N	N	4.000	0	0	AS REQ	00/00/00	99/99/99
3277-0001	WIRE-22 BUS	0		98	1.000	1.000	IN	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
3640-0028	KPR-DRAW LATCH RD MACHINED	1	B	5	2.000	1.000	EA	X1	N	N	2.000	0	0		00/00/00	99/99/99
3657-0022	TIE-CABLE 11 IN. LONG	0		76	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3658-0005	MOUNT-#6 LARGE CABLE TIE	0		87	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3875-0024	BRKT-PCB	0		66	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4000-0023	NUT-4-40X.187X.375 RD SLOTTED	0		68	12.000	1.000	EA	F3	N	N	12.000	0	0		00/00/00	99/99/99
4002-0001	NUT-4-40X1/4 HEX STL CP EXTLK	0		6	8.000	1.000	EA	F3	N	N	8.000	0	0		00/00/00	99/99/99
4030-0010	SCR-4-40X5/8 BINDING HD	0		63	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		8	55.000	1.000	EA	F3	N	N	55.000	0	0		00/00/00	99/99/99
4030-0023	SCR-4-40X3/8 PAN HD W/INT L W	0		73	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0061	SCR-4-40X1/4 ALN STL BLK OXD S	1		85	8.000	1.000	EA	F3	N	N	8.000	0	0		00/00/00	99/99/99
4030-0064	SCR-4-40X3/8X82 FLH BLK OXD	0		10	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0066	SCR-6-32X3/8 PHIL STL CP BLK P	0		12	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4031-0073	SCR-6-32X3/4X82 PHIL STL BLK	1		13	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4031-0075	SCR-6-32X1/4 FLT HD BLK OXD	1		80	19.000	1.000	EA	F3	N	N	19.000	0	0		00/00/00	99/99/99
4033-0015	SCR-10-32X5/8 SLT STL CP OVH	0		14	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4080-0002	WSHR-4 INTERNAL	0		81	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4082-0022	WSHR-.125X.250X.028 FLAT	0		67	12.000	1.000	EA	F3	N	N	12.000	0	0		00/00/00	99/99/99
4230-0021	HDL-9IN BLACK VINYL	0		15	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
4295-0015	SPCR-3/16X1/4	0		70	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4297-0002	SPCR-5/8	0		69	6.000	1.000	EA	F3	N	N	6.000	0	0		00/00/00	99/99/99
4297-0012	SPCR-6-32X15/16	0		75	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4297-0029	SPCR-4-40X3/4X1/4	0		82	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4335-0012	SPR-.07X.34X24 RF GR SELF ADHE	0		89	6.000	1.000	EA	F3	N	N	6.000	0	0	AS REQ	00/00/00	99/99/99
4335-0013	SPR-STRIP SELF ADHESIVE GR	0		88	4.000	1.000	EA	F3	N	N	4.000	0	0	AS REQ	00/00/00	99/99/99
4560-0089	BZL-FRONT W/F	1	A	16	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
4630-0017	ADH-COARSE THREAD LKG&SEG BLU	0		86	.001	1.000	BT	F3	N	N	.001	0	0	AS REQ	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7000-0111 OPCODE: 0 REV: N FNL ASSY-FLD SVCE MON SPECTRUM
MODEL: 7120
ECO NO: 87011
DATE OF LAST ECO: 2/10/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5176-0005	TBG-1/16 SHRINK BLK	0		91	.001	1.000	IN	F3	N	N	.001	0	0	AS REQ	00/00/00	99/99/99
6445-0001	STRIP-COPPER .005" X 1/2"	0		83	1.000	1.000	IN	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
7001-0886	PCB ASSY-RELAY CONTROL	1	B	28	1.000	1.000	EA	S1	N	N	1.000	0	0	3200	00/00/00	99/99/99
7001-0894	PCB ASSY-HI VOLT PWR SPLY	1	D	72	1.000	1.000	EA	S1	N	N	1.000	0	0	6200	00/00/00	99/99/99
7001-0899	PCB ASSY-MAIN LOGIC	1	C	20	1.000	1.000	EA	S1	N	N	1.000	0	0	2100	00/00/00	99/99/99
7001-0923	PCB ASSY-OSCILLOSCOPE	0	B	71	1.000	1.000	EA	S1	N	N	1.000	0	0	6100	00/00/00	99/99/99
7001-0929	PCB ASSY-RCVR CONV/IF AMPL	0	J	22	1.000	1.000	EA	S1	N	N	1.000	0	0	2500	00/00/00	99/99/99
7001-0930	PCB ASSY-SINAD/PWR MTR DRIVER	0	C	21	1.000	1.000	EA	S1	N	N	1.000	0	0	2700	00/00/00	99/99/99
7001-0932	PCB ASSY-FILTER LOW PASS 1000M	0	C	33	1.000	1.000	EA	S1	N	N	1.000	0	0	3450	00/00/00	99/99/99
7001-0933	PCB ASSY-VOLTAGE CONTROL ATTEN	0	B	34	1.000	1.000	EA	S1	N	N	1.000	0	0	3600	00/00/00	99/99/99
7001-0938	PCB ASSY-MAIN INTERCONNECT	0	D	35	1.000	1.000	EA	S1	N	N	1.000	0	0	6400	00/00/00	99/99/99
7001-0939	PCB ASSY-SPECTRUM	0	C	36	1.000	1.000	EA	S1	N	N	1.000	0	0	6300	00/00/00	99/99/99
7001-0951	PCB ASSY-100HZ PLL/17.9-19MHZ	0	A	17	1.000	1.000	EA	S1	N	N	1.000	0	0	2200	00/00/00	99/99/99
7001-0952	PCB ASSY-100KHZ PLL/RF MIXER	0	A	18	1.000	1.000	EA	S1	N	N	1.000	0	0	2300	00/00/00	99/99/99
7001-0956	PCB ASSY-1325-2225MHZ OSC/PLL	0	B	30	1.000	1.000	EA	S1	N	N	1.000	0	0	3800	00/00/00	99/99/99
7001-0958	PCB ASSY-1214-1325MHZ OSC/PLL	0	B	31	1.000	1.000	EA	S1	N	N	1.000	0	0	3700	00/00/00	99/99/99
7001-0968	PCB ASSY-REF GEN/MOD/DC/CONT	0	XX	19	1.000	1.000	EA	M1	Y	N	1.000	0	0	2400	00/00/00	99/99/99
7003-0185	PNL ASSY-REAR	1	H	24	1.000	1.000	EA	S1	N	N	1.000	0	0	5000	00/00/00	99/99/99
7003-0201	PANEL ASSY-FRONT	0	D	23	1.000	1.000	EA	M1	N	N	1.000	0	0	1000	00/00/00	99/99/99
7030-0368	HARN ASSY-26Y POWER	0	A	74	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7032-4407	CA ASSY-RG188 DUAL SMB RTANG P	1	A	29	1.000	1.000	EA	S1	N	N	1.000	0	0	LBL EE	00/00/00	99/99/99
7032-4409	CA ASSY-RG188 DUAL SMB RTANG P	0	1	37	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL S LBL V	00/00/00	99/99/99
7032-4415	CA ASSY-RG188 DUAL SMB RTANG P	0	1	38	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL W LBL R	00/00/00	99/99/99
7032-4425	CA ASSY-RG188 DUAL SMB RTANG P	1	A	39	1.000	1.000	EA	S1	N	N	1.000	0	0	LBL U	00/00/00	99/99/99
7032-4427	CA ASSY-RG188 DUAL SMB RTANG P	0	A	40	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL Y	00/00/00	99/99/99
7032-4435	CA ASSY-RG188 DUAL SMB RTANG P	1	A	32	2.000	1.000	EA	S1	N	N	2.000	0	0	LBL N LBL BB	00/00/00	99/99/99
7032-4440	CA ASSY-RG188 DUAL SMB RTANG P	1	A	41	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL X	00/00/00	99/99/99
7033-0175	CA ASSY-34 CNDCT RIBBON	0	A	43	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0177	CA ASSY-26CNDT RIBBON	0	A	44	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0178	CA ASSY-.086 SEMI-RG COAX	0	A	45	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL A	00/00/00	99/99/99
7033-0183	CA ASSY-.086 SEMI-RGD COAX	0	A	47	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL B	00/00/00	99/99/99
7033-0184	CA ASSY-.086 SEMI-RGD COAX	0	A	48	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL D	00/00/00	99/99/99
7033-0185	CA ASSY-.086 SEMI-RGD COAX	0	A	49	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL E	00/00/00	99/99/99
7033-0186	CA ASSY-.086 SEMI-RGD COAX	0	A	52	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL H	00/00/00	99/99/99
7033-0187	CA ASSY-.086 SEMI-RGD COAX	0	A	53	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL P	00/00/00	99/99/99
7033-0188	CA ASSY-20 CONDUCTOR RIBBON	0	A	54	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0190	CA ASSY-26 CNDCT RIBBON	0		55	3.000	1.000	EA	B1	N	N	3.000	0	0		00/00/00	99/99/99
7033-0193	CA ASSY-10 CNDCT RIBBON	0	A	57	1.000	1.000	EA	M1	N	N	1.000	0	0		00/00/00	99/99/99

AS OF 2/25/87

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7000-0111 OPCODE: 0 REV: N FNL ASSY-FLD SVCE MON SPECTRUM
MODEL: 7120
ECO NO: 87011
DATE OF LAST ECO: 2/10/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R EQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
7033-0411	CA ASSY-10CNDCT FL DUAL IDC PL	0		58	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7046-0082	CSTG ASSY-RF OUTPUT	1	B	59	1.000	1.000	EA	S1	N	N	1.000	0	0	3100	00/00/00	99/99/99
7046-0084	CNTNR ASSY-OCTAL SOCKET SHLD	1	E	46	1.000	1.000	EA	X1	N	N	1.000	0	0	2900	00/00/00	99/99/99
7060-0055	MDL ASSY-HIGH LEVEL AMPL	1	C	60	1.000	1.000	EA	S1	N	N	1.000	0	0	2600	00/00/00	99/99/99
7060-0065	MDL ASSY-RF ATTENUATOR	0	A	64	1.000	1.000	EA	M1	N	N	1.000	0	0	2800	00/00/00	99/99/99
7060-0070	MDL ASSY-FM BAND REJECT FILTER	0	XX	0	1.000	1.000	EA	M1	Y	N	1.000	0	0	3000	00/00/00	99/99/99
D5650-0905	TEST PROC-FINAL CAL 7000	0	*	65	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7000-0111	FINAL ASSY-FLD SVCE MON	0	D	50	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1054	INTCON DIAG-MAIN	0	*	51	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 5/29/87

1000

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
RQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7003-0201 OPCODE: 0 REV: E PANEL ASSY-FRONT
MODEL: 7120 1000
ECO NO: 87039
DATE OF LAST ECO: 5/29/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	RQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0077	CAP-1000PF +100-0% 300V CER FE	1		1	4.000	1.000	EA	B1	N	N	4.000	0	0	C1	00/00/00	99/99/99
														C2		
														C3		
														C4		
1005-0081	CAP-1000PF 10% 100V WSR MINTR	1		3	4.000	1.000	EA	B1	N	N	4.000	0	0	C5	00/00/00	99/99/99
														C6		
														C7		
														C8		
1066-1025	RES-1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R20	00/00/00	99/99/99
1066-1625	RES-1.6K 5% 1/4W CC	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1066-5135	RES-51K 5% 1/4W CC	1		2	1.000	1.000	EA	B1	Y	N	1.000	0	0	R11	00/00/00	99/99/99
1203-0113	POT-10K 20% LOG 1/8 SFT CC W/D	0		10	1.000	1.000	EA	B1	N	N	1.000	0	0	R9/S10	00/00/00	99/99/99
1203-0121	POT-500K 10% 1/2W LIN 1/8 SFT	0		72	1.000	1.000	EA	B1	N	N	1.000	0	0	R15	00/00/00	99/99/99
1203-0122	POT-1MEG 10% 1/2W LIN 1/8 SFT	0		73	1.000	1.000	EA	B1	N	N	1.000	0	0	R14	00/00/00	99/99/99
1203-0140	POT-5K 10% 1/2W1/8DIAX5/8 SFT	0		9	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1203-0143	POT-500OHM10%1/2WLIN1/8SFT5/8L	0		74	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1203-0144	POT-10K10% 1/2WLIN 1/8SFT 5/8L	0		75	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1203-0150	POT-1K 10% 1/2W LOG TAPER	0		7	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1203-0151	POT-10K%1/2W1/8X5/8 SHFT	0		108	1.000	1.000	EA	B1	Y	N	1.000	0	0	R3/S12	00/00/00	99/99/99
1270-0025	TUBE-RECT CRT 1.38HX1.73W	1		76	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1281-0137	DIO-LT EMIT RED 1.6V W ANG T1	1		8	3.000	1.000	EA	B1	N	N	3.000	0	0	CR5	00/00/00	99/99/99
														CR6		
														CR7		
1281-0146	DIO-LT EMIT YEL 5V SNAP-IN MT	1		12	2.000	1.000	EA	B1	N	N	2.000	0	0	CR1	00/00/00	99/99/99
														CR3		
1281-0182	DIO-LT EMIT RED/GRN M ANG	1		13	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1586-0011	CH-5 TURN C101 TOROID	0	B	11	4.000	1.000	EA	X1	N	N	4.000	0	0	L1	00/00/00	99/99/99
														L2		
														L3		
														L4		
1850-0008	SW-TOGGLE SPDT	0		17	2.000	1.000	EA	B1	N	N	2.000	0	0	S3	00/00/00	99/99/99
														S8		
1850-0014	SW-TOGGLE DPDT	0		18	1.000	1.000	EA	B1	N	N	1.000	0	0	S4	00/00/00	99/99/99
1850-0048	SW-TOGGLE DP ON-ON-ON RD HDL W	0		19	2.000	1.000	EA	B1	N	N	2.000	0	0	S2	00/00/00	99/99/99
														S7		
1851-0158	SW-RTRY 1 POLE 9 POSN PNL MT	1		20	1.000	1.000	EA	B1	N	N	1.000	0	0	S11	00/00/00	99/99/99
1851-0168	SW-RTRY 10POS 1POLE 3DECK ADJ	0		77	1.000	1.000	EA	B1	N	N	1.000	0	0	S 13	00/00/00	99/99/99
1851-0169	SW RTRY-2POLE 4POS.30IA PNL MT	0		106	1.000	1.000	EA	B1	N	N	1.000	0	0	S6	00/00/00	99/99/99
2030-0006	DISPL-LTQ XTAL 7MM HI CHAR NUM	1		21	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2245-0200	PL-POT MTG	1		78	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2535-0209	CONN-52.0X2.3X2.3MM MULTI COND	1		22	2.000	1.000	EA	B1	N	N	2.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 5/29/87

1000

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N PART OPTIONAL
PI: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7003-0201 OPCODE: 0 REV: E PANEL ASSY-FRONT
MODEL: 7120
ECO NO: 87039
DATE OF LAST ECO: 5/29/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PI	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2536-0010	CONN-BNC JACK RECT. PANEL MT.	1		23	4.000	1.000	EA	B1	N	N	4.000	0	0	J3 J4 J5 J6	00/00/00	99/99/99
2586-0033	CONN-5 PIN MINIR AUDIO PNL MT	0		26	1.000	1.000	EA	B1	N	N	1.000	0	0	J2	00/00/00	99/99/99
2657-0255	SHLD-CRT	1	A	79	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0256	SHLD-CRT	1		80	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0269	SHIELD-RF CONNECTOR	0		14	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2780-0074	KNOB-.5DIA BLK .125FT W/SKIRT	1		28	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2780-0075	KNOB-CNCTRC BLK .25SFT	1		29	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2780-0076	KNOB-RND MATTE BLK W/IND LINE	0		27	13.000	1.000	EA	B1	N	N	13.000	0	0		00/00/00	99/99/99
2780-0078	KNOB-.5DIA BLK.25 SHFT W/IND L	0	A	15	2.000	1.000	EA	M1	N	N	2.000	0	0		00/00/00	99/99/99
2800-0371	PANEL-FRONT W/F	0	A	30	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2831-0018	LBL-DANGER HIGH VOLTAGE	1		81	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3183-0006	WIRE-26 INS 7 ST 600V VIOLET	0		109	8.000	1.000	IN	F3	Y	N	8.000	0	0	AS REQ	00/00/00	99/99/99
3278-0001	WIRE-24GA TINNED COPPER BUS	0		35	6.000	1.000	IN	F3	N	N	6.000	0	0	AS REQ	00/00/00	99/99/99
3500-0003	CPLR-1/8 X 1/8	1		82	2.000	1.000	EA	B1	N	N	2.000	0	0		00/00/00	99/99/99
3657-0014	TIE-MINI CABLE 5.5" LG	0		36	1.000	1.000	EA	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
3657-0022	TIE-CABLE 11 IN. LONG	0		37	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3766-0012	LUG-1/4" I D SOLDER	0		38	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3870-2906	SFT-.125X1.25 GL EPOXY RD CONT	1	A	83	2.000	1.000	EA	B3	N	N	2.000	0	0		00/00/00	99/99/99
3875-0381	BRKT-POT MTG	1		84	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3875-0382	BRKT-FRONT PANEL LEFT	1		85	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3875-0383	BRKT-FRONT PANEL RIGHT	1		86	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
4000-0001	NUT-2/56X3/16X1/16 HEX S S	0		40	9.000	1.000	EA	F3	N	N	9.000	0	0		00/00/00	99/99/99
4000-0002	NUT-4/40X3/16 HEX S S	0		41	6.000	1.000	EA	F3	N	N	6.000	0	0		00/00/00	99/99/99
4000-0005	NUT-1/4-32X5/16X5/64 BR NP HEX	0		104	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4000-0018	NUT-3/8-32X1/2X3/32 RING BR NI	0		42	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4000-0036	NUT-1/4-40X.375X.12 BR NP SW M	0		43	13.000	1.000	EA	F3	N	N	13.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		88	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0015	SCR-4-40X1/4 PAN HD W/INT L W	0		44	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4031-0007	SCR-6-32X5/16 FLAT HD S S	0		45	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0028	SCR-6-32X1/8 ALLEN HD LESS SET	0		46	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0035	SCR-6-32X3/16 SET HEX STL	0		47	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4080-0001	WSHR-2 INTERNAL	0		89	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4080-0006	WSHR-1/4X15/32 INTERNAL	0		90	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4082-0002	WSHR-4X5/16X1/32 FLAT	0		102	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
4082-0007	WSHR-4X3/16X.018-.020 FLAT	0		49	5.000	1.000	EA	F3	N	N	5.000	0	0		00/00/00	99/99/99
4082-0008	WSHR-1/4X7/16X.032 FLAT	0		48	8.000	1.000	EA	F3	N	N	8.000	0	0		00/00/00	99/99/99
4082-0016	WSHR-.250X.375X.006 FLAT	0		50	14.000	1.000	EA	F3	N	N	14.000	0	0		00/00/00	99/99/99
4082-0029	WSHR-3/8X1/2X.010THK SST FLAT	0		51	2.000	1.000	EA	F1	N	N	2.000	0	0		00/00/00	99/99/99

1851-0164

BILL OF MATERIAL
AS OF 5/29/87

1000

CLASS CODE: 3
OUTSIDE VENDOR

7003-0201 UPCODE: 0 REV: E PANEL ASSY-FRONT
MODEL: 7120
ECO NO: 87039
DATE OF LAST ECO: 5/29/87

OP: ORDER POLICY CODE
E=QTY=PART REQUIRED
B=QTY=PHANTOM
PF: Y=PART PRINTS ON SALES ORDER
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
4086-0005	WSHR-4X3/16 SPLIT LOCK	0		103	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4297-0047	SPCR-LCD MTG	1		52	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
4297-0048	SPCR-3/16 O.D.X1/8 I.D.X.40L	0		54	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4297-0051	SPCR-4-40X1/4X7/16 HEX NYLON	0		55	4.000	1.000	EA	B1	N	N	4.000	0	0		00/00/00	99/99/99
4630-0002	IS06 LOCTITE (1 OZ)	0		53	.001	1.000	BT	F3	N	N	.001	0	0	AS REQ	00/00/00	99/99/99
4630-0010	ADH-140 RTV SILICONE RUBBER 5	0		61	.001	1.000	TB	F3	N	N	.001	0	0	AS REQ	00/00/00	99/99/99
4941-0039	CRATCU-SCOPE	1		91	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
5156-0014	TAPE-FOAM #10 1/2W X 1/8 THK	0		92	15.000	1.000	IN	F3	N	N	15.000	0	0	AS REQ	00/00/00	99/99/99
5158-0006	RBR-1/8X1/2 PRESS SENS BLK NPR	0		101	3.000	1.000	IN	F3	N	N	3.000	0	0	AS REQ	00/00/00	99/99/99
5176-0004	TBG-1/8 SHRINK BLK	0		56	12.000	1.000	IN	F3	N	N	12.000	0	0	AS REQ	00/00/00	99/99/99
5176-0005	TBG-1/16 SHRINK BLK	0		107	6.000	1.000	IN	F3	N	N	6.000	0	0	AS REQ	00/00/00	99/99/99
5176-0013	TBG-3/4 SHRINK YELLOW	0		93	3.000	1.000	IN	F3	N	N	3.000	0	0	AS REQ	00/00/00	99/99/99
5176-0016	SLV-#24 NATURAL	0		57	6.000	1.000	IN	F3	N	N	6.000	0	0	AS REQ	00/00/00	99/99/99
5285-0018	BAG-FOAM POUCH 9X12X1/8THK ANT	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7001-0830	PCB ASSY-KEY PAD CONTROL	0	A	58	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7001-0831	PCB ASSY-LCD INTERFACE	0	A	59	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7001-0925	PCB ASSY-LCD INTFC NO.2	0	D	62	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
7001-0926	PCB ASSY-LCD DRIVER	0	C	63	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
7001-0961	PCB ASSY-REFERENCE ADJUSTMENT	0	A	105	1.000	1.000	EA	M1	N	N	1.000	0	0		00/00/00	99/99/99
7011-0048	SW ASSY-FREQ ENTRY	0	A	60	1.000	1.000	EA	X1	N	N	1.000	0	0	1600	00/00/00	99/99/99
7011-0049	SW ASSY-RTRY 2POS W/2.5K/DPDT	0	A	64	1.000	1.000	EA	X1	N	N	1.000	0	0	S5	00/00/00	99/99/99
7011-0050	SW ASSY-RTRY 4POS W/500K/DPDT	0	A	87	1.000	1.000	EA	X1	N	N	1.000	0	0	S14/17/R17	00/00/00	99/99/99
7030-0365	HARN ASSY-FOCUS & INTENSITY	1	A	94	1.000	1.000	EA	M1	N	N	1.000	0	0	S1/S15/R1	00/00/00	99/99/99
7030-0394	HARNESS ASSY-FM BAND REJECT	0	A	115	1.000	1.000	EA	M1	Y	N	1.000	0	0		00/00/00	99/99/99
7032-4817	CA ASSY-RG188 BNC BHD JK-RTANG	0	A	70	1.000	1.000	EA	S1	Y	N	1.000	0	0	J1/LBL AA	00/00/00	99/99/99
7033-0150	CA ASSY-.086 SEMI-RGD COAX	1	A	71	1.000	1.000	EA	X1	N	N	1.000	0	0	J7/LBL JJ	00/00/00	99/99/99
7033-0174	CA ASSY-26 CNDCT RIBBON	0	A	65	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0181	CA ASSY-34 CONDUCTOR RIBBON	0	A	95	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0182	CA ASSY-20 CONDUCTOR RIBBON	0	A	96	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0192	CA ASSY-20 CNDCT RIBBON	0	B	97	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0194	CA ASSY-20 CONDUCTOR RIBBON	0	A	99	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7036-0013	CA ASSY-4/20GA AC/DC LOGIC	1	B	66	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7040-0065	ATTEN ASSY-RTRY 2008 STEP 0-80	1	A	67	1.000	1.000	EA	X1	N	N	1.000	0	0	AT1/R7/S9	00/00/00	99/99/99
A5650-0955	TEST PROC-FRONT PANEL	0	B	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7003-0201	PANEL ASSY-FRONT	0	C	68	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1065	INTCON DIAG-FRONT PANEL	0	H	69	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

ASSEMBLY PART NUMBER? *

BILL OF MATERIAL

AS OF 2/25/87

1100

7120/1200

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0830 OPCODE: 0 REV: A PCB ASSY-KEY PAD CONTROL

MODEL: 408D/7120
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ'Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1780-1160	PCB-KEY PAD CONTROL	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1852-0043	SW-PB SPST MOM PCB MT W/O CAP	1		2	16.000	1.000	EA	B1	N	N	16.000	0	0	SW 1	00/00/00	99/99/99
														SW 2		
														SW 3		
														SW 4		
														SW 5		
														SW 6		
														SW 7		
														SW 8		
														SW 9		
														SW 10		
														SW 11		
														SW 12		
														SW 13		
														SW 14		
														SW 15		
														SW 16		
2535-0141	CONN-8 PIN .TSP STR UCG PCB MT	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0	J 1	00/00/00	99/99/99
2584-1301	CAP-10X6MM BLK "1"	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1302	CAP-10X6MM BLK "2"	1		5	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1303	CAP-10X6MM BLK "3"	1		6	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1304	CAP-10X6MM BLK "4"	1		7	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1305	CAP-10X6MM BLK "5"	1		8	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1306	CAP-10X6MM BLK "6"	1		9	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1307	CAP-10X6MM BLK "7"	1		10	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1308	CAP-10X6MM BLK "8"	1		11	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1309	CAP-10X6MM BLK "9"	1		12	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1310	CAP-10X6MM BLK "0"	1		13	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1311	CAP-10X6MM BLK "."	1		14	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1312	CAP-10X6MM BLK "RCL"	1		15	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1313	CAP-10X6MM BLK "STO"	1		16	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1314	CAP-10X6MM BLK "CLR"	1		17	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1315	CAP-10X6MM BLK "SND"	1		18	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2584-1401	CAP-10X6MM BLU "2ND"	1		19	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0830	PCB ASSY-KEY PAD CONTROL	0	A	20	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0942	SCHEM DIAG-KEY PAD CONTROL	0	A	21	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7120/1200

1200

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0831 OPCODE: 0 REV: A PCB ASSY-LCD INTERFACE
MODEL: 408D/7120
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1780-1161	PCB-LCD INTERFACE	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2535-0154	CONN-34(2X17)CONT STR PCB MT J	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0	J 1	00/00/00	99/99/99
D7001-0831	PCB ASSY- LCD INTERFACE	0	A	3	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0943	SCHEM DIAG-LCD INTERFACE	0	A	4	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

CLASS CODE: 2
MAKE & PHANTOM ASSYS

1300

7940-0065 OPCODE: I REV: A ATTEN ASSY-RTRY 20DB STEP 0-30
MODEL: 7000
ECO NO:
DATE OF LAST ECO: 4/02/85

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1203-0133	POT-2.5K 10% 1/2W LINEAR SW	I		1	1.000	1.000	EA	B1	N	N	1.000	0	0	R7/S3	00/00/00	99/99/99
2361-9010	ATTEN-RTRY 20DB STEP 0-80DB DC	I		2	1.000	1.000	EA	B1	N	N	1.000	0	0	AT1	00/00/00	99/99/99
D7940-0065	ATTEN ASSY-RTRY 20DB STEP 0-30	0	B	3	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

JUN 30 1987

BILL OF MATERIAL

AS OF 2/25/87

1400

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0925 OPCODE: 0 REV: D PCB ASSY-LCD INTFC NO.2
MODEL: 7120 / 1400
ECO NO: 86223
DATE OF LAST ECO: 12/16/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-1025	RES-1K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R6	00/00/00	99/99/99
1065-1035	RES-10K 5% 1/8W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R7	00/00/00	99/99/99
														R8		
														R9		
1065-1045	RES-100K 5% 1/8W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R2	00/00/00	99/99/99
														R3		
														R4		
1065-3325	RES-3.3K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R5	00/00/00	99/99/99
1066-2455	RES-2.4M 5% 1/4W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1281-0027	DIO-1N4739A SI ZENER A98A 9.1V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1780-1328	PCB-LCD INTFC NO.2	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0456	IC-4066B QUADR BILATERAL SWS	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0457	IC-4011B QUADR 2-INP NAND GATE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2030-0008	DSPL-LIQUID CRYSTAL DVM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	LCD 2	00/00/00	99/99/99
														LCD 3		
2030-0009	DSPL-LIQ XTAL UP-DOWN COUNTER	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	LCD 1	00/00/00	99/99/99
2535-0251	CONN-17PIN .1SP STR PCB MT JK	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		2	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7033-0189	CA ASSY-10 CNDCT RIBBON	0		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0922	TEST PROC-LCD INTFC NO.2	0	*	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0925	PCB ASSY-LCD INTFC NO.2	0	D	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1056	SCHEM DIAG-LCD INTFC NO.2	0	D	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 2/25/87

1400

7120/140

CLASS CODE: 3
OUTSIDE VENDOR

7001-0944 OPCODE: 0 REV: A PCB ASSY-LCD INTFC NO. 2
MODEL: 7120
ECO NO: UD-4
DATE OF LAST ECO: 12/08/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-1045	RES-100K 5% 1/8W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R2 R3 R4	00/00/00	99/99/99
1066-2455	RES-2.4M 5% 1/4W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1780-1338	PCB-LCD INTFC NO.2	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0456	IC-4066B QUADR BILATERAL SWS	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0457	IC-4011B QUADR 2-INP NAND GATE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2030-0009	DSPL-LIQ XTAL UP-DOWN COUNTER	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	LCD 1	00/00/00	99/99/99
2535-0251	CONN-17PIN .1SP STR PCB MT JK	0		3	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2535-0259	CONN-16 PIN SINGLE ROW MALE	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		9	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7001-0954	PCB ASSY-LCD MAXIM	0	B	4	1.000	1.000	EA	M1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0189	CA ASSY-10 CNDCT RIBBON	0		5	1.000	1.000	EA	B1	N	N	1.000	0	0	J2	00/00/00	99/99/99
A5650-0941	TEST PROC-LCD INTFC NO.2	0	*	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
C7001-0944	PCB ASSY-LCD INTFC NO.2	0	C	7	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
C8000-1078	SCHEM DIAG-LCD INTFC NO.2	0	C	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

1450

AS OF 9/23/86

1450

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0943 REV: XX PCB ASSY-LCD
MODEL: 7120
ECO NO: UD-3
DATE OF LAST ECO: 7/03/86

PART NUMBER	DESCRIPTION	RV	ITEM #	QTY PER ASSEMBLY	UN	SC	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0092	CAP-.47UF 10% 50V MLD CER		0	2.000	EA	B1	C5	00/00/00	99/99/99
1005-0096	CAP-.047UF 20% 100V Y5W MINTR		0	2.000	EA	B1	C11 C6	00/00/00	99/99/99
1012-0013	CAP-.01UF 5% 50V W5R CHIP		0	2.000	EA	B1	C12 C4	00/00/00	99/99/99
1012-0016	CAP-51PF 5% 50V PORCELAIN CHIP		0	2.000	EA	B1	C10 C2	00/00/00	99/99/99
1012-0038	CAP-.1UF 20% 50V BX CER CHIP		0	4.000	EA	B1	C8 C1	00/00/00	99/99/99
1065-1025	RES-1K 5% 1/8W CC		0	2.000	EA	B1	C3 C7 C9 R1	00/00/00	99/99/99
1065-1055	RES-1MEG 5% 1/8W CC		0	4.000	EA	B1	R8 R5	00/00/00	99/99/99
1065-1845	RES-180K 5% 1/8W CC		0	4.000	EA	B1	R7 R12 R14 R2	00/00/00	99/99/99
1065-3325	RES-3.3K 5% 1/8W CC		0	2.000	EA	B1	R6 R9 R13 R15	00/00/00	99/99/99
1068-2445	RES-240K 5% 1/4W CC		0	2.000	EA	B1	R16 R3	00/00/00	99/99/99
1203-0061	POT-10K 20% 1/2W 4T CERMET TRM		0	2.000	EA	B1	R10 R4	00/00/00	99/99/99
1272-0132	XSTR-VN0104 SI T092 MOSFET N-C		0	2.000	EA	B1	R11 Q1	00/00/00	99/99/99
1281-0027	DIO-1N4739A SI ZENER A99A 9.1V		0	2.000	EA	B1	Q2 CR1	00/00/00	99/99/99
1780-1337	PCB-LCD		1	1.000	EA	B1	CR2	00/00/00	99/99/99
2025-0472	IC-ICL-7136-CM44		0	2.000	EA	B1	U1	00/00/00	99/99/99
2030-0010	DSPL-LIQUID CRYSTAL		10	2.000	EA	B1	U2 LCD 2	00/00/00	99/99/99
2535-0209	CONN-52.0X2.3X2.3MM MULTI COND		2	4.000	EA	B1	LCD 3	00/00/00	99/99/99
2831-0149	LBL-.25X.50 BLANK		9	1.000	SH	F3		00/00/00	99/99/99
3003-0019	INSUL-LCD MDL		9	4.000	EA	F1		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU		3	.000	IN	F3	AS REQ	00/00/00	99/99/99
4560-0096	BEZEL-LCD MOUNTING		4	2.000	EA	B1		00/00/00	99/99/99

AS OF 9/23/86

1450

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0943 REV: XX PCB ASSY-LCD
MODEL: 7120
ECO NO: UD-3
DATE OF LAST ECO: 7/03/86

PART NUMBER	DESCRIPTION	RV	ITEM #	QTY PER ASSEMBLY	UM	SC	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
A5650-0940	TEST PROC-LCD	*	5	1.000	EA	F5		00/00/00	99/99/99
C7061-0943	PCB ASSY-LCD	*	6	1.000	EA	F5		00/00/00	99/99/99
C9000-1077	SCHEM DIAG-LCD	*	7	1.000	EA	F5		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7120/1500 Assy

1500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0926 OPCODE: 0 REV: C PCB ASSY-LCD DRIVER
MODEL: 7120
ECO NO: 86221
DATE OF LAST ECO: 12/16/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C10 C11	00/00/00	99/99/99
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C3 C6 C13	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	7.000	1.000	EA	S1	N	N	7.000	0	0	C2 C5 C7 C8 C9 C12 C16	00/00/00	99/99/99
1005-0105	CAP-470PF 10% 50V X7R MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C15	00/00/00	99/99/99
1011-0001	CAP-2.2UF 10% 35V RDL TANT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C4	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1 C14	00/00/00	99/99/99
1065-1035	RES-10K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R16	00/00/00	99/99/99
1065-2055	RES-2.0 MG 1/8W	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R15	00/00/00	99/99/99
1065-4725	RES-4.7K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1065-6835	RES-68K 5% 1/8W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R14	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R20	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R4 R5 R8	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R2 R17	00/00/00	99/99/99
1066-1055	RES-1MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1066-2025	RES-2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R18 R19	00/00/00	99/99/99
1066-2035	RES-20K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R11 R12 R21 R22	00/00/00	99/99/99
1066-2045	RES-200K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R9	00/00/00	99/99/99
1066-2245	RES-220K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1066-5145	RES-510K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1066-9135	RES-91K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1272-0059	XSTR-2N5962 NPN SI T092 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q1	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR1 CR2 CR3	00/00/00	99/99/99

BILL OF MATERIAL
AS OF 2/25/87

1500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0926 OPCODE: 0 REV: C PCB ASSY-LCD DRIVER
MODEL: 7120
ECO NO: 86221
DATE OF LAST ECO: 12/16/86

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR4	00/00/00	99/99/99
														CR5		
														CR6		
														CR7		
1586-0001	CH-2 1/2 TURN WIDEBAND 3B	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L1	00/00/00	99/99/99
1780-1329	PCB-LCD DRIVER	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0041	IC-74LS73 14PIN DIP J-K MA SLA	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U9	00/00/00	99/99/99
2025-0046	IC-SN7445N ECD TO DECIMAL DECD	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U12	00/00/00	99/99/99
2025-0193	IC-4066B 14 PIN DIP QUAD BILAT	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U4	00/00/00	99/99/99
														U5		
														U10		
2025-0212	IC-4518B 16 PIN DIP DUAL BCD U	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U3	00/00/00	99/99/99
														U8		
2025-0316	IC-74LS123 16PIN DIP MONOSTABL	0	*	0	1.000	1.000	EA	B1	N	N	1.000	0	0	U11	00/00/00	99/99/99
2025-0453	IC-74HC14 HEX INVTG ST.	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2025-0454	IC-74HC193 SYN BIN UP/DN CNTRS	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U6	00/00/00	99/99/99
														U7		
2025-0455	IC-4046 PH LOCK LOOP	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U2	00/00/00	99/99/99
														U13		
2535-0250	CONN-17PIN .1SP PCB MT PL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J2	00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		2	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5285-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7033-0189	CA ASSY-10 CNDCT RIBBON	0		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0923	TEST PROC-LCD DRIVER	0	*	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0926	PCB ASSY-LCD DRIVER	0	C	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1057	SCHEM DIAG-LCD DRIVER	0	C	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

1600

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7120/1600

7001-0961 OPCODE: 0 REV: A PCB ASSY-REFERENCE ADJUSTMENT

MODEL: 7120
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1215-0006	POT-100K 10% 3/4W 15T CERMET T	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R1 R2	00/00/00	99/99/99
1780-1346	PCB-REFERENCE ADJUSTMENT	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3183-0001	WIRE-26 INS 7 ST 600V BROWN	0		2	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0002	WIRE-26 INS 7 ST 600 V RED	0		3	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0005	WIRE-26 INS 7 ST 600V BLUE	0		4	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0006	WIRE-26 INS 7 ST 600V VIOLET	0		5	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
C7001-0961	PCB ASSY-REFERENCE ADJUSTMENT	0	A	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

2100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0899 OPCODE: 1 REV: C PCB ASSY-MAIN LOGIC
MODEL: 7120 / 2100
ECO NO: 8612
DATE OF LAST ECO: 7/18/86

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0013	CAP-68PF 5% 500V DIP MICA	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0	C 13	00/00/00	99/99/99
1002-0015	CAP-1000PF 5% 100V DIP MICA	1		51	1.000	1.000	EA	B1	N	N	1.000	0	0	C 31	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	30.000	1.000	EA	S1	N	N	30.000	0	0	C 1	00/00/00	99/99/99
														C 3		
														C 4		
														C 5		
														C 6		
														C 7		
														C 8		
														C 9		
														C 10		
														C 11		
														C 12		
														C 14		
														C 16		
														C 17		
														C 18		
														C 19		
														C 20		
														C 21		
														C 22		
														C 23		
														C24,C25		
														C26,C27		
														C29,C33		
														C34,C35		
														C40,C41		
1008-0085	CAP-.0047UF 10% 100V RDL POLYE	1		3	2.000	1.000	EA	B1	N	N	2.000	0	0	C 15	00/00/00	99/99/99
														C 30		
1008-0099	CAP-.01UF 10% 600V RDL MET-POL	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0	C 28	00/00/00	99/99/99
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		5	5.000	1.000	EA	B1	N	N	5.000	0	0	C 2	00/00/00	99/99/99
														C 36		
														C 37		
														C 38		
														C 39		
1066-1025	RES-1K 5% 1/4W CC	1		6	5.000	1.000	EA	B1	N	N	5.000	0	0	R 10	00/00/00	99/99/99
														R 12		
														R 20		
														R 27		
														R 29		
1066-1035	RES-10K 5% 1/4W CC	1		7	7.000	1.000	EA	B1	N	N	7.000	0	0	R 1	00/00/00	99/99/99

AS OF 2/25/87

2100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0899 OPCODE: 1 REV: C PCB ASSY-MAIN LOGIC
MODEL: 7120
ECO NO: 86112
DATE OF LAST ECO: 7/18/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1035	RES-10K 5% 1/4W CC	1		7	7.000	1.000	EA	B1	N	N	7.000	0	0	R 13	00/00/00	99/99/99
														R 14		
														R 21		
														R 33		
														R 35		
														R 36		
1066-1045	RES-100K 5% 1/4W CC	1		8	6.000	1.000	EA	B1	N	N	6.000	0	0	R 24	00/00/00	99/99/99
														R 25		
														R 26		
														R 31		
														R 32		
														R 37		
1066-1545	RES-150K 5% 1/4W CC	1		9	1.000	1.000	EA	B1	N	N	1.000	0	0	R 22	00/00/00	99/99/99
1066-2035	RES-20K 5% 1/4W CC	1		58	1.000	1.000	EA	B1	N	N	1.000	0	0	R 38	00/00/00	99/99/99
1066-3025	RES-3K 5% 1/4W CC	1		10	5.000	1.000	EA	B1	N	N	5.000	0	0	R 9	8/09/83	99/99/99
														R 11		
														R 19		
														R 28		
														R 30		
1066-4715	RES-470 OHM 5% 1/4W CC	1		11	2.000	1.000	EA	B1	N	N	2.000	0	0	R 2	00/00/00	99/99/99
														R 3		
1066-4725	RES-4.7K 5% 1/4W CC	1		12	2.000	1.000	EA	B1	N	N	2.000	0	0	R 6	00/00/00	99/99/99
														R 15		
1066-4735	RES-47K 5% 1/4W CC	1		13	2.000	1.000	EA	B1	N	N	2.000	0	0	R 7	00/00/00	99/99/99
														R 16		
1066-6215	RES-620 OHM 5% 1/4W CC	1		14	1.000	1.000	EA	B1	N	N	1.000	0	0	R 34	8/09/83	99/99/99
1066-8235	RES-82K 5% 1/4W CC	1		15	1.000	1.000	EA	B1	N	N	1.000	0	0	R 23	00/00/00	99/99/99
1075-0014	RES-8.25K 1% 100PPM FILM	1		16	1.000	1.000	EA	B1	N	N	1.000	0	0	R 18	00/00/00	99/99/99
1075-0027	RES-2.49K 1% 100PPM FILM	1		17	1.000	1.000	EA	B1	N	N	1.000	0	0	R 4	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		18	1.000	1.000	EA	B1	N	N	1.000	0	0	R 8	00/00/00	99/99/99
1075-0052	RES-3.83K 1% 100PPM FILM	1		19	1.000	1.000	EA	B1	N	N	1.000	0	0	R 17	8/09/83	99/99/99
1075-0095	RES-4.99K 1% 100PPM FILM	1		20	1.000	1.000	EA	B1	N	N	1.000	0	0	R 5	00/00/00	99/99/99
1115-0005	RNET-9/10K 2% 100PPM 10 PIN SI	1		21	1.000	1.000	EA	B1	N	N	1.000	0	0	RN 1	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		22	5.000	1.000	EA	B1	N	N	5.000	0	0	Q 1	8/09/83	99/99/99
														Q 2		
														Q 3		
														Q 4		
														Q 5		
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		23	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 1	00/00/00	99/99/99
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		24	1.000	1.000	EA	B1	N	N	1.000	0	0	L 1	8/09/83	99/99/99
1780-1322	PCB-MAIN LOGIC	1		25	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

2100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0899 OPCODE: 1 REV: C PCB ASSY-MAIN LOGIC
MODEL: 7120
ECO NO: 86112
DATE OF LAST ECO: 7/18/86

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2001-0016	OSC-6.291456MHZ 0.01%	1		26	1.000	1.000	EA	B1	N	N	1.000	0	0	Y 1	00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		27	3.000	1.000	EA	B1	N	N	3.000	0	0	U 1 U 2 U 5	00/00/00	99/99/99
2025-0084	IC-SN74LS04N HEX INVERTOR	1		28	1.000	1.000	EA	B1	N	N	1.000	0	0	U 15	00/00/00	99/99/99
2025-0108	IC-SN74LS02N QUAD 2-INOT POS-N	1		29	1.000	1.000	EA	B1	N	N	1.000	0	0	U 16	00/00/00	99/99/99
2025-0130	IC-74LS138 DECODER/DEMULTIPLEX	0		30	1.000	1.000	EA	B1	N	N	1.000	0	0	U 11	00/00/00	99/99/99
2025-0188	IC-08 16 PIN DIP D/A CONVERTER	0		31	1.000	1.000	EA	B1	N	N	1.000	0	0	U 3	00/00/00	99/99/99
2025-0193	IC-4066B 14 PIN DIP QUAD BILAT	1		32	2.000	1.000	EA	B1	N	N	2.000	0	0	U 4 U 17	00/00/00	99/99/99
2025-0305	IC-79L05A T092 3-TERM NEG V RG	0		33	1.000	1.000	EA	B1	N	N	1.000	0	0	U 22	00/00/00	99/99/99
2025-0331	IC-2912A 16PIN DIP PCM XMIT/RC	1		35	1.000	1.000	EA	B1	N	N	1.000	0	0	U 6	00/00/00	99/99/99
2025-0332	IC-5000B 24PIN DIP MASTER LCD	1		36	1.000	1.000	EA	B1	N	N	1.000	0	0	U 19	00/00/00	99/99/99
2025-0333	IC-5001B 18PIN DIP SLAVE LCD D	1		37	2.000	1.000	EA	B1	N	N	2.000	0	0	U 20 U 21	00/00/00	99/99/99
2025-0334	IC-8155H 40PIN DIP RAM W/IO &	1		38	1.000	1.000	EA	B1	N	N	1.000	0	0	U 18	00/00/00	99/99/99
2025-0335	IC-8279 40PIN DIP KYBD/DISPL C	1		39	1.000	1.000	EA	B1	N	N	1.000	0	0	U 13	00/00/00	99/99/99
2025-0337	IC-74LS374 20PIN DIP OCTAL D F	1		41	1.000	1.000	EA	B1	N	N	1.000	0	0	U 7	00/00/00	99/99/99
2025-0338	IC-8085AH 40PIN DIP SGL 8 BIT	1		42	1.000	1.000	EA	B1	N	N	1.000	0	0	U 12	00/00/00	99/99/99
2028-0001	FIRMWARE-ERS PROM 8748H/2028-0	1	B	40	1.000	1.000	EA	M1	N	N	1.000	0	0	U 10	9/15/83	99/99/99
2028-0202	FIRMWARE-ERS PROM 2764/2028-02	1	D	34	1.000	1.000	EA	M1	N	N	1.000	0	0	U 9	9/15/83	99/99/99
2535-0146	CONN-6 PIN .1SP STR LKG PCB MT	1		57	1.000	1.000	EA	B1	N	N	1.000	0	0	J 1	00/00/00	99/99/99
2535-0153	CONN-26(2X13)CONT STR PCB MT J	0		55	1.000	1.000	EA	B1	N	N	1.000	0	0	J 3	00/00/00	99/99/99
2535-0154	CONN-34(2X17)CONT STR PCB MT J	0		56	1.000	1.000	EA	B1	N	N	1.000	0	0	J 2	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		54	1.000	1.000	EA	B1	N	N	1.000	0	0	J5	00/00/00	99/99/99
2606-0013	SKT-40PIN DUAL INLINE IC.196H	0		44	5.000	1.000	EA	B1	N	N	5.000	0	0		8/25/83	99/99/99
2606-0015	SKT-24PIN DUAL INLINE IC.196H	1		45	1.000	1.000	EA	B1	N	N	1.000	0	0		8/25/83	99/99/99
2606-0018	SKT-28PIN DUAL INLINE IC .196H	1		46	1.000	1.000	EA	B1	N	N	1.000	0	0		8/25/83	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		63	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3906-0008	BSHG-.188 X .187 OD	0		62	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
5176-0015	SLV-#22 NATURAL	0		53	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5285-0018	BAG-FOAM POUCH 9X12X1/8THK ANT	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0866	TEST PROC-MAIN LOGIC	0	*	47	1.000	1.000	CP	F5	N	N	1.000	0	0		8/25/83	99/99/99
D7001-0899	PCB ASSY-MAIN LOGIC	0	C	48	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1023	SCHEM DIAG-MAIN LOGIC	0	A	49	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 6/03/87

2200

CLASS CODE: 3
OUTSIDE VENDOR

2200

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
ECO NO: 87046
DATE OF LAST ECO: 6/02/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1001-0010	CAP-2-8PF 350V NPO H MT CER TR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C76	00/00/00	99/99/99
1002-0001	CAP-15PF 5% 500V DIP MICA	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C40	00/00/00	99/99/99
														C56		
														C64		
														C90		
1002-0005	CAP-180PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 79	00/00/00	99/99/99
1002-0010	CAP-120PF 5% 500V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C 93	00/00/00	99/99/99
														C 95		
														C 97		
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C53	00/00/00	99/99/99
														C66		
														C87		
1002-0016	CAP-10PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 92	00/00/00	99/99/99
														C 98		
1002-0018	CAP-39PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 100	00/00/00	99/99/99
1002-0026	CAP-110PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 59	00/00/00	99/99/99
														C 61		
1002-0028	CAP-5PF .5PF 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 77	00/00/00	99/99/99
1002-0029	CAP-220PF 5% 500V DIP MICA	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C 38	00/00/00	99/99/99
														C 41		
														C 49		
														C 78		
1002-0030	CAP-240PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 50	00/00/00	99/99/99
1002-0031	CAP-270PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 75	00/00/00	99/99/99
1002-0032	CAP-330PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 72	00/00/00	99/99/99
1002-0039	CAP-820PF 5% 300V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 51	00/00/00	99/99/99
1002-0041	CAP-36PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 39	00/00/00	99/99/99
1002-0049	CAP-96PF 1% 500V DIP MICA	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C 57	00/00/00	99/99/99
														C 63		
														C 91		
														C 99		
1002-0060	CAP-20PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 82	00/00/00	99/99/99
1005-0003	CAP-.002UF 20% 500V Z5U CER DI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 44	00/00/00	99/99/99
1005-0013	CAP-.01UF +80-20% 25V Y5U CER	1		0	10.000	1.000	EA	B1	N	N	10.000	0	0	C3	00/00/00	99/99/99
														C37		
														C43		
														C47		
														C70		
														C74		
														C80		
														C81		

BILL OF MATERIAL

AS OF 6/03/87

2200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
ECO NO: 87046
DATE OF LAST ECO: 6/02/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0013	CAP-.01UF +80-20% 25V Y5U CER	1		0	10.000	1.000	EA	B1	N	N	10.000	0	0	C84	00/00/00	99/99/99
														C86		
1005-0014	CAP-.05UF +80-20% 25V Y5U CER	1		0	27.000	1.000	EA	B1	N	N	27.000	0	0	C1	00/00/00	99/99/99
														C2		
														C4		
														C5		
														C6		
														C7		
														C9		
														C11		
														C13		
														C15		
														C18		
														C21		
														C35		
														C36		
														C42		
														C52		
														C54		
														C55		
														C65		
														C67 C68		
														C69 C71		
														C83 C85		
														C88 C89		
1005-0017	CAP-2.2PF .25PF 500V NPO CER T	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 58	00/00/00	99/99/99
														C 62		
1005-0041	CAP-1.5PF .25PF 500V NPO CER T	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 60	00/00/00	99/99/99
1005-0043	CAP-8.2PF .25PF 500V NPO CER T	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 94	00/00/00	99/99/99
														C 96		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	1.000	1.000	EA	S1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1008-0020	CAP-.0022UF 10% 100V RDL POLYE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 73	00/00/00	99/99/99
1008-0040	CAP-.012UF 10% 100V RDL POLYES	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 8	00/00/00	99/99/99
1011-0006	CAP-10UF 20% 35V RDL TANT	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C10	00/00/00	99/99/99
														C12		
														C20		
														C48		
1011-0009	CAP-47UF 20% 20V RDL TANT	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 14	00/00/00	99/99/99
1011-0010	CAP-100UF 20% 20V RDL TANT	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C34	00/00/00	99/99/99
1013-0001	CAP-1.5UF 10% 35V AXL TANT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C17	00/00/00	99/99/99
														C19		

C26 C29

1008-0100

AS OF 6/03/87

2200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
ECO NO: 87046
DATE OF LAST ECO: 6/02/87

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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 43	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	R45	00/00/00	99/99/99
														R69		
														R70		
														R71		
														R72		
														R73		
														R76		
1066-1035	RES-10K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R15	00/00/00	99/99/99
1066-1205	RES-12 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 5	00/00/00	99/99/99
1066-1215	RES-120 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 1	00/00/00	99/99/99
														R 62		
1066-1225	RES-1.2K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R3	00/00/00	99/99/99
														R6		
														R8		
1066-1525	RES-1.5K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R55	00/00/00	99/99/99
														R58		
														R63		
														R77		
1066-1825	RES-1.8K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 56	00/00/00	99/99/99
														R 59		
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 51	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 4	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 61	00/00/00	99/99/99
1066-2245	RES-220K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1066-2735	RES-27K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R10	00/00/00	99/99/99
														R11		
1066-3025	RES-3K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R14	00/00/00	99/99/99
														R18		
1066-4315	RES-430 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 52	00/00/00	99/99/99
1066-4705	RES-47 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 57	00/00/00	99/99/99
														R 60		
1066-4715	RES-470 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 7	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 75	00/00/00	99/99/99
														R 79		
														R 80		
1066-4735	RES-47K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R16	00/00/00	99/99/99
														R17		
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 66	00/00/00	99/99/99
														R 67		
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R53	00/00/00	99/99/99

AS OF 6/03/87

2200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
ECO NO: 87046
DATE OF LAST ECO: 6/02/87

OP: ORDER POLICY CODE
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1066-5615	RES-560 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 2 R 64	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 9	00/00/00	99/99/99
1066-7525	RES-7.5K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 54 R 74 R 78	00/00/00	99/99/99
1074-1011	RES-26.1 OHM 1% 150PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 47	00/00/00	99/99/99
1075-0010	RES-2.21K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 46 R 44	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R40 R48	00/00/00	99/99/99
1075-0038	RES-4.75K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 41	00/00/00	99/99/99
1075-0039	RES-1.5K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 42	00/00/00	99/99/99
1075-0071	RES-2.74K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 39	00/00/00	99/99/99
1075-0079	RES-2K 1% 25PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 38	00/00/00	99/99/99
1115-0007	RNET-9/4.7K 5% 100PPM 10 PIN S	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	RN 1 RN 2	00/00/00	99/99/99
1215-0010	POT-100 OHM 10% 3/4W 15T CERME	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 65 R 68	00/00/00	99/99/99
1272-0016	XSTR-2N4275 NPN SI R110 LOW PW	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	Q4 Q21 Q22	00/00/00	99/99/99
1272-0017	XSTR-2N3565 NPN SI R110 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q15	00/00/00	99/99/99
1272-0022	XSTR-2N3563 NPN SI R110 LOW PW	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	Q1 Q2 Q18 Q19 Q20 Q23 Q24	00/00/00	99/99/99
1272-0024	XSTR-2N4249 PNP SI R124B LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q3	00/00/00	99/99/99
1272-0031	XSTR-2N5089 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 16	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 17	00/00/00	99/99/99
1281-0058	DIO-MV104 SI DUAL VARICAP T092	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 5	00/00/00	99/99/99
1282-0016	DIO-1N270 GE SIG D07 80PRV	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	CR 14 CR 15 CR 16 CR 17	00/00/00	99/99/99
1283-0001	DIO-HP2809 SI HOT CARR A1N 2PF	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	CR10 CR11	00/00/00	99/99/99

BILL OF MATERIAL

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2200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
ECO NO: 87046
DATE OF LAST ECO: 6/02/87

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1283-0001	DIO-HP2800 SI HOT CARR A1N 2PF	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	CR12	00/00/00	99/99/99
														CR13		
1579-0017	ASSY-TRIFILAR COIL	0	A	0	2.000	1.000	EA	B3	N	N	2.000	0	0	T1	00/00/00	99/99/99
														T2		
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	L 5	00/00/00	99/99/99
														L 6		
														L 8		
														L 9		
														L 15		
														L 17		
1585-0020	CH-1000UH 5% RF MLD AXL .19DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 1	00/00/00	99/99/99
1585-0022	CH-33UH 5% RF MLD AXL .16DX.38	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 4	00/00/00	99/99/99
1585-0027	CH-1UH 10% RF MLD AXL .16DX.38	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L 18	00/00/00	99/99/99
														L 19		
1585-0033	CH-120UH 5% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 16	00/00/00	99/99/99
1585-0042	CH-56UH 5% RF MLD AXL .16DX.38	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 3	00/00/00	99/99/99
1596-0111	COIL-5-.75 UH, VARIABLE	1		0	12.000	1.000	EA	B1	N	N	12.000	0	0	L 7	00/00/00	99/99/99
														L 10		
														L 11		
														L 12		
														L 13		
														L 14		
														L 20		
														L 21		
														L 22		
														L 23		
														L 24		
														L 25		
1596-0114	COIL-VAR IF .85-1.2UF	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 2	00/00/00	99/99/99
1780-1341	PCB-100HZ PLL/17.9-19MHZ	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2010-0009	MXR-SBL-1 DBL BAL 1-500MHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2025-0002	IC-SN7490N	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 19	00/00/00	99/99/99
2025-0004	IC-SN7430A NAND GATES	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U 8	00/00/00	99/99/99
														U 9		
2025-0007	IC-SN7472N TTL DUAL FLIP FLOP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 11	00/00/00	99/99/99
2025-0053	IC-MC8601P MONOSTABLE MULTI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 13	00/00/00	99/99/99
2025-0110	IC-SN74LS73N DUAL J-K FLIP FLO	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 7	00/00/00	99/99/99
2025-0111	IC-SN74LS196N DECADE COUNTERS	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	U 2	00/00/00	99/99/99
														U 3		
														U 4		
														U 5		

BILL OF MATERIAL

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2200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0951 OPCODE: 0 REV: B PCB ASSY-100HZ PLL/17.9-19MHZ
MODEL: 7110/7120
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2025-0111	IC-SN74LS196N DECADE COUNTERS	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	U 12	00/00/00	99/99/99
2025-0113	IC-SN74LS90N DECADE COUNTER	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U 14	00/00/00	99/99/99
2025-0114	IC-SN74LS00N TTL NAND GATES	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	U 20 U1 U10 U16 U22	00/00/00	99/99/99
2025-0124	IC-74LS74 DUAL D POS &DGETRIGF	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 23	00/00/00	99/99/99
2025-0199	IC-TL081 8PIN DIP J-FET-INP OP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U18	00/00/00	99/99/99
2025-0402	IC-74197 14PIN DIP PRESETABLE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 6	00/00/00	99/99/99
2025-0455	IC-4046 PH LOCK LOOP	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U17	00/00/00	99/99/99
2028-0009	FIRMWARE-BIPOLAR PROM 74S188	1	A	0	1.000	1.000	EA	B1	N	N	1.000	0	0	U21	00/00/00	99/99/99
2535-0236	CONN-26(2X13)PIN.1X.1SP RTANG	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J5	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	J 1 J 2 J 3 J 4	00/00/00	99/99/99
2606-0011	SKI-16PIN DUAL INLINE IC.175H	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0	U 21	00/00/00	99/99/99
3277-0001	WIRE-22 BUS	0		11	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3875-0024	BRKT-PCB	0		6	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4000-0002	NUT-4/40X3/16 HEX S S	0		8	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		7	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
A5650-0945	TEST PROC-100HZ PLL/17.9-19MHZ	0	*	16	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0951	PCB ASSY-100HZ PLL/17.9-19MHZ	0	A	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1082	SCHEM DIAG-100HZPLL/17.9-19MHZ	0	A	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

2300 BX

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87042
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0010	CAP-120PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 45	00/00/00	99/99/99
														C 49		
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C 21	00/00/00	99/99/99
														C 33		
														C 3		
1002-0014	CAP-18PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 78	00/00/00	99/99/99
1002-0015	CAP-1000PF 5% 100V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C 30	00/00/00	99/99/99
														C 37		
														C 97		
1002-0016	CAP-10PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 69	00/00/00	99/99/99
														C 71		
1002-0021	CAP-150PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 41	00/00/00	99/99/99
														C 44		
1002-0023	CAP-22PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 29	00/00/00	99/99/99
1002-0028	CAP-5PF .5PF 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 74	00/00/00	99/99/99
														C 81		
1002-0029	CAP-220PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 31	00/00/00	99/99/99
														C 60		
1002-0031	CAP-270PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 42	00/00/00	99/99/99
														C 43		
1002-0038	CAP-620PF 5% 300V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 47	00/00/00	99/99/99
														C 50		
1002-0060	CAP-20PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 73	00/00/00	99/99/99
1004-0009	CAP-27PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 58	00/00/00	99/99/99
1005-0003	CAP-.002UF 20% 500V Z5U CER DI	1		0	11.000	1.000	EA	B1	N	N	11.000	0	0	C 35	00/00/00	99/99/99
														C 46		
														C 65		
														C 66		
														C 67		
														C 75		
														C 76		
														C 77		
														C 79		
														C 80		
														C 82		
1005-0013	CAP-.01UF +80-20% 25V Y5U CER	1		0	8.000	1.000	EA	B1	N	N	8.000	0	0	C 52	00/00/00	99/99/99
														C 54		
														C 56		
														C 63		
														C 64		
														C 83		

BILL OF MATERIAL

AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/PF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0013	CAP-.01UF +80-20% 25V Y5U CER	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C 86	00/00/00	99/99/99
														C 87		
1005-0014	CAP-.05UF +80-20% 25V Y5U CER	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 34	00/00/00	99/99/99
1005-0075	CAP-220PF 10% 100V W5R MINTR C	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C 53	00/00/00	99/99/99
														C 55		
														C 57		
														C 61		
														C 62		
														C 89		
1005-0080	CAP-100PF 20% 250V Z5U CER FEE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C 91	00/00/00	99/99/99
														C 92		
														C 93		
1005-0096	CAP-.047UF 20% 100V Y5W MINTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 20	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	11.000	1.000	EA	S1	N	N	11.000	0	0	C 4	00/00/00	99/99/99
														C 5		
														C 18		
														C 22		
														C 25		
														C 28		
														C 40		
														C 48		
														C 85		
														C 95		
														C 96		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	14.000	1.000	EA	S1	N	N	14.000	0	0	C 2	00/00/00	99/99/99
														C 6		
														C 7		
														C 8		
														C 9		
														C 10		
														C 11		
														C 12		
														C 13		
														C 14		
														C 15		
														C 16		
														C 26		
														C 39		
1005-0110	CAP-120PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 59	00/00/00	99/99/99
1005-0111	CAP-5.6PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 88	00/00/00	99/99/99

BILL OF MATERIAL
AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0121	CAP-1.5PF .25PF 100V NPO MINTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 70	00/00/00	99/99/99
1005-0132	CAP-3.3PF 10% 100V NPO MINTR C	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 68	00/00/00	99/99/99
														C 72		
1008-0052	CAP-.0039UF 10% 100V RDL POLYE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 98	00/00/00	99/99/99
1011-0006	CAP-10UF 20% 35V RDL TANT	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	C 23	00/00/00	99/99/99
														C 38		
														C 24		
														C 27		
														C 51		
1013-0003	CAP-100UF +75-10% 25V AXL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 1	00/00/00	99/99/99
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 36	7/25/86	99/99/99
														C 94		
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C 32	00/00/00	99/99/99
														C 84		
1065-1035	RES-10K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 92	00/00/00	99/99/99
1065-3905	RES-39 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 78	00/00/00	99/99/99
1066-0001	RES-4.7 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 47	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	8.000	1.000	EA	B1	N	N	8.000	0	0	R 5	00/00/00	99/99/99
														R 12		
														R 22		
														R 41		
														R 69		
														R 73		
														R 75		
														R 85		
1066-1025	RES-1K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 21	00/00/00	99/99/99
														R 71		
														R 83		
														R 89		
1066-1035	RES-10K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 90	00/00/00	99/99/99
1066-1215	RES-120 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 31	00/00/00	99/99/99
1066-1225	RES-1.2K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 13	00/00/00	99/99/99
														R 27		
														R 33		
														R 49		
1066-1325	RES-1.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 28	00/00/00	99/99/99
1066-1505	RES-15 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 18	00/00/00	99/99/99
1066-1525	RES-1.5K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 2	00/00/00	99/99/99
														R 48		
														R 79		
														R 81		

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1625	RES-1.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R19	00/00/00	99/99/99
1066-1825	RES-1.8K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R43	00/00/00	99/99/99
														R45		
														R52		
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 23	00/00/00	99/99/99
														R 42		
1066-2025	RES-2K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 11	00/00/00	99/99/99
														R 25		
														R 29		
														R 67		
1066-2045	RES-200K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 66	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 15	00/00/00	99/99/99
														R 84		
1066-2225	RES-2.2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 46	00/00/00	99/99/99
														R 51		
1066-2705	RES-27 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 10	00/00/00	99/99/99
1066-2725	RES-2.7K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 26	00/00/00	99/99/99
														R 70		
														R 72		
1066-3015	RES-300 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 20	00/00/00	99/99/99
1066-3315	RES-330 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 74	00/00/00	99/99/99
1066-3635	RES-36K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 16	00/00/00	99/99/99
														R 35		
														R 37		
1066-3905	RES-39 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 77	00/00/00	99/99/99
1066-3915	RES-390 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 76	00/00/00	99/99/99
1066-4715	RES-470 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 24	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R 17	00/00/00	99/99/99
														R 44		
														R 86		
														R 87		
														R 88		
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 32	00/00/00	99/99/99
														R 40		
														R 68		
														R 82		
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 3	00/00/00	99/99/99
														R 34		
														R 36		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 38	00/00/00	99/99/99
														R 39		

BILL OF MATERIAL
AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 50	00/00/00	99/99/99
1066-5155	RES-5.1MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 91	00/00/00	99/99/99
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R 1	00/00/00	99/99/99
														R 30		
														R 80		
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 14	00/00/00	99/99/99
1075-0009	RES-10K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R 63	00/00/00	99/99/99
														R 64		
1075-0013	RES-5.62K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 7	00/00/00	99/99/99
1075-0059	RES-16.9K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 65	00/00/00	99/99/99
1075-0076	RES-47.5K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R8	00/00/00	99/99/99
														R9		
1075-0092	RES-3.24K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 6	00/00/00	99/99/99
1115-0007	RNET-9/4.7K 5% 100PPM 10 PIN S	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	RN 1	00/00/00	99/99/99
														RN 2		
1115-0008	RNET-8/3.3K 2% 100PPM 16PIN DI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	RN3	00/00/00	99/99/99
1215-0047	POT-10K 10% 1/2W 25T CERMET TR	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R 58	00/00/00	99/99/99
														R 59		
														R 60		
														R 61		
														R 62		
1215-0048	POT-20K 10% 1/2W 25T CERMET TR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 57	00/00/00	99/99/99
1215-0049	POT-100K 10% 1/2W 25T CERMET T	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R 53	00/00/00	99/99/99
														R 54		
														R 55		
														R 56		
1272-0016	XSTR-2N4275 NPN SI R110 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 1	00/00/00	99/99/99
														Q 5		
1272-0022	XSTR-2N3563 NPN SI R110 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 3	00/00/00	99/99/99
														Q 4		
1272-0023	XSTR-2N4121 PNP SI R110 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 8	00/00/00	99/99/99
														Q 9		
1272-0031	XSTR-2N5089 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 2	00/00/00	99/99/99
1272-0060	XSTR-2N5179 NPN SI T072 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 11	00/00/00	99/99/99
1272-0111	XSTR-MPSH81 PNP SI T092 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 6	00/00/00	99/99/99
1272-0112	XSTR-NE73432E NPN SI TO92 LOW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 7	00/00/00	99/99/99
1272-0128	XSTR-40673 SI T072 FET N-CHAN	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 10	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 3	00/00/00	99/99/99
1281-0058	DIO-MV104 SI DUAL VARICAP T092	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 1	00/00/00	99/99/99
1281-0186	DIO-MVAM125 TUN HI CAP RATIO	0		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	CR2	00/00/00	99/99/99
														CR4		

BILL OF MATERIAL
AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1579-0050	XFMR-TOROIDAL 2/36GA/4T	0	1	0	1.000	1.000	EA	X1	N	N	1.000	0	0	T 1	00/00/00	99/99/99
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L 2	00/00/00	99/99/99
														L 12		
1585-0014	CH-3.9UH 10% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 27	00/00/00	99/99/99
1585-0025	CH-22UH 10% RF MLD AXL .28DX.9	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 5	00/00/00	99/99/99
1585-0031	CH-.47UH 20% RF MLD AXL .16DX.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L 9	00/00/00	99/99/99
														L 11		
1585-0034	CH-15UH 10% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 17	00/00/00	99/99/99
1585-0036	CH-.56UH 10% RF MLD AXL .19DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 10	00/00/00	99/99/99
1585-0039	CH-.22UH 20% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 6	00/00/00	99/99/99
1585-0051	CH-15UH 10% RF MLD AXL .10DX.2	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 15	00/00/00	99/99/99
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L 7	00/00/00	99/99/99
														L 28		
1585-0065	CH-.15UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 4	00/00/00	99/99/99
1586-0003	CH-2 1/2 TURN UIDEBAND 4B	0	B	0	5.000	1.000	EA	B1	N	N	5.000	0	0	L 1	00/00/00	99/99/99
														L 18		
														L 21		
														L 22		
														L 26		
1586-0004	CH-.047X.138X.118 FERRITE BEAD	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 19	00/00/00	99/99/99
1586-0007	CH-3B FERRITE BEAD 30GA/6T	0	A	0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 13	00/00/00	99/99/99
1596-0045	COIL-1.4 UH 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 8	00/00/00	99/99/99
1596-0051	ASSY-COIL VARIABLE 1-3/4 TURN	0	A	0	2.000	1.000	EA	X1	N	N	2.000	0	0	L 20	00/00/00	99/99/99
														L 23		
1596-0052	ASSY-COIL VARIABLE 3-1/4 TURN	0	A	0	2.000	1.000	EA	X1	N	N	2.000	0	0	L 24	00/00/00	99/99/99
														L 25		
1596-0331	COIL-.054 UH RF W/CORE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L 14	00/00/00	99/99/99
1780-1342	PCB-100KHZ PLL/RF MIXER	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2010-0009	MXR-SBL-1 DBL BAL 1-500MHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2025-0023	IC-SN74H72N	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 7	00/00/00	99/99/99
2025-0032	IC-LM301A OP AMP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 13	00/00/00	99/99/99
2025-0046	IC-SN7445N ECD TO DECIMAL DECD	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 12	00/00/00	99/99/99
2025-0057	IC-LM 308H 8-PIN TYPE OP-AMP	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U11	00/00/00	99/99/99
2025-0067	IC-UA741CP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 16	00/00/00	99/99/99
2025-0109	IC-SN74LS11N TRIPLE 3-INPUT PO	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 6	00/00/00	99/99/99
2025-0111	IC-SN74LS196N DECADE COUNTERS	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	U 1	00/00/00	99/99/99
														U 2		
														U 3		
														U 4		
2025-0171	IC-CA 3046 XSTR AND D10 ARRAY	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 10	00/00/00	99/99/99
2025-0216	IC-74LS20 14 PIN DIP DUAL 4-IN	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 5	00/00/00	99/99/99

BILL OF MATERIAL
AS OF 6/04/87

2300

CLASS CODE: 3
OUTSIDE VENDOR

7001-0952 OPCODE: 0 REV: C PCB ASSY-100KHZ PLL/RF MIXER
MODEL: 7120/7110
ECO NO: 87047
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2025-0452	IC-12040 14PIN PH-FREQ DET	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 15	00/00/00	99/99/99
2025-0455	IC-4046 PH LOCK LOOP	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U8	00/00/00	99/99/99
2025-0473	IC-74HC30 8-INPUT NAND CMOS	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U 9	00/00/00	99/99/99
2028-0010	FIRMWARE-BIPOLAR PROM 74S188	1	A	0	1.000	1.000	EA	B1	N	N	1.000	0	0	U14	00/00/00	99/99/99
2535-0236	CONN-26(2X13)PIN.1X.1SP RTANG	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	J 2	00/00/00	99/99/99
														J 5		
														J 6		
2606-0011	SKT-16PIN DUAL INLINE IC.175H	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0	U 14	00/00/00	99/99/99
2657-0275	SHLD-100KHZ PLL/RF MIXER	0		11	1.000	1.000	EA	B1	Y	N	1.000	0	0		00/00/00	99/99/99
3001-0014	PAD-I C LEAD CONVERSION 8 PIN	0		3	2.000	1.000	EA	F3	N	N	2.000	0	0	U 11	00/00/00	99/99/99
														U 13		
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		10	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3276-0001	WIRE-20GA TINNED COPPER BUS	0		9	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3875-0024	BRKT-PCB	0		4	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4002-0001	NUT-4-40X1/4 HEX STL CP EXTLK	0		6	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		5	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
5265-0018	BAG-FOAM POUCH 9X12X1/8THK ANT	0		14	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7032-4147	CA ASSY-RG188 RTANG SMB-FRL 17	0	1	12	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0946	TEST PROC-100KHZ PLL/RF MIXER	0	B	13	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0952	PCB ASSY-100KHZ PLL/RF MIXER	0	C	7	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1083	SCHEM DIAG-100KHZ PLL/RF MIXER	0	B	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 6/01/87

2400

CLASS CODE: 3 2400/2450
OUTSIDE VENDOR

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C54	00/00/00	99/99/99
1002-0018	CAP-39PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1002-0023	CAP-22PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C9	00/00/00	99/99/99
1002-0024	CAP-33PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C7	00/00/00	99/99/99
1002-0033	CAP-390PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C17	00/00/00	99/99/99
1002-0034	CAP-430PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C108	00/00/00	99/99/99
1002-0035	CAP-470PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C11	00/00/00	99/99/99
														C12		
1002-0043	CAP-30PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C14	00/00/00	99/99/99
1002-0091	CAP-160PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C112	00/00/00	99/99/99
														C113		
1004-0009	CAP-27PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C111	00/00/00	99/99/99
1005-0007	CAP-22PF 2% 500V N750 CER TUB	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1005-0065	CAP-.01UF 10% 200V MLD CER	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C50	00/00/00	99/99/99
														C52		
1005-0075	CAP-220PF 10% 100V W5R MINTR C	1		0	18.000	1.000	EA	B1	N	N	18.000	0	0	C22	00/00/00	99/99/99
														C24		
														C26		
														C34		
														C35		
														C39		
														C40		
														C41		
														C42		
														C82		
														C85		
														C86		
														C99		
														C100		
														C101		
														C102		
														C103		
														C106		
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C6	00/00/00	99/99/99
														C80		
														C92		
														C98		
														C116		
														C118		
1005-0092	CAP-.47UF 10% 50V MLD CER	0		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	C122	00/00/00	99/99/99
														C123		

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0096	CAP-.047UF 20% 100V Y5W MINTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C53	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	21.000	1.000	EA	S1	N	N	21.000	0	0	C1	00/00/00	99/99/99
														C2		
														C3		
														C23		
														C25		
														C37		
														C43		
														C44		
														C59		
														C60		
														C73		
														C83		
														C84		
														C91		
														C94		
														C96		
														C97		
														C104		
														C107		
														C109		
														C120		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	17.000	1.000	EA	S1	N	N	17.000	0	0	C4	00/00/00	99/99/99
														C5		
														C10		
														C13		
														C15		
														C18		
														C19		
														C20		
														C21		
														C38		
														C65		
														C66		
														C68		
														C70		
														C72		
														C105		
														C117		
1005-0108	CAP-150PF 10% 100V NPO MINTR C	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C45	00/00/00	99/99/99
														C95		

AS O 5/01/87

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0109	CAP-56PF 10% 100V NPO MINTR CE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C32	00/00/00	99/99/99
														C87		
1005-0110	CAP-120PF 10% 100V NPO MINTR C	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C33	00/00/00	99/99/99
														C88		
1005-0143	CAP-68PF 5% 50V N470 MINTR CER	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C119	00/00/00	99/99/99
														C121		
1008-0023	CAP-.082UF 10% 100V RDL POLYES	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C81	00/00/00	99/99/99
1008-0031	CAP-.1UF 10% 100V RDL POLYESTE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C49	00/00/00	99/99/99
														C51		
1013-0029	CAP-100UF +100-30% 16V RDL NP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C110	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C79	00/00/00	99/99/99
														C89		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C90	00/00/00	99/99/99
1013-0042	CAP-15UF +100-10% 25V RDL NP E	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C67	00/00/00	99/99/99
1013-0043	CAP-470UF+100-10% 6.3V MIN RDL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C28	00/00/00	99/99/99
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C27	00/00/00	99/99/99
														C29		
														C30		
														C31		
1065-1005	RES-10 OHM 5% 1/8 CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R42	00/00/00	99/99/99
														R156		
1065-1015	RES-100 OHM 5% 1/8W CC	1		0	9.000	1.000	EA	B1	N	N	9.000	0	0	R29	00/00/00	99/99/99
														R31		
														R41		
														R57		
														R69		
														R112		
														R136		
														R138		
														R160		
1065-1025	RES-1K 5% 1/8W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R32	00/00/00	99/99/99
														R43		
														R140		
														R161		
1065-1325	RES-1.3K 5% 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R38	00/00/00	99/99/99
														R155		
1065-2715	RES-270 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R40	00/00/00	99/99/99
														R159		
1065-2725	RES-2.7K 5% 1/8 CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R30	00/00/00	99/99/99
														R33		
														R137		

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-2725	RES-2.7K 5% 1/8 CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R139	00/00/00	99/99/99
1065-3905	RES-39 OHM 5% 1/8W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R34	00/00/00	99/99/99
														R36		
														R153		
														R154		
1065-3915	RES-390 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R39	00/00/00	99/99/99
														R157		
1065-5615	RES-560 OHM 5% 1/8W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R37	00/00/00	99/99/99
														R44		
														R45		
														R158		
														R162		
														R163		
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R21	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R107	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R126	00/00/00	99/99/99
														R127		
														R133		
														R134		
														R166		
														R167		
1066-1035	RES-10K 5% 1/4W CC	1		0	15.000	1.000	EA	B1	N	N	15.000	0	0	R12	00/00/00	99/99/99
														R13		
														R17		
														R22		
														R26		
														R27		
														R51		
														R54		
														R66		
														R94		
														R95		
														R97		
														R98		
														R109		
														R135		
1066-1045	RES-100K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R7	00/00/00	99/99/99
														R8		
														R141		
1066-1055	RES-1MEG 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R4	00/00/00	99/99/99
														R5		

AS O[illegible]/01/87

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1055	RES-1MEG 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R9	00/00/00	99/99/99
1066-1225	RES-1.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R143	00/00/00	99/99/99
1066-1235	RES-12K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R1	00/00/00	99/99/99
1066-1525	RES-1.5K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R56	00/00/00	99/99/99
1066-1535	RES-15K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R68 R55 R67	00/00/00	99/99/99
1066-1835	RES-18K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R151 R152 R101	00/00/00	99/99/99
1066-2025	RES-2K 5% 1/4W CC	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	R46 R78 R79 R80 R147 R150	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R144 R28 R128	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R23 R25	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R10 R24	00/00/00	99/99/99
1066-2425	RES-2.4K 5% 1/4W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R35 R49 R50 R146 R148 R149	00/00/00	99/99/99
1066-2705	RES-27 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R48	00/00/00	99/99/99
1066-2735	RES-27K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R105 R106	00/00/00	99/99/99
1066-3025	RES-3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R71	00/00/00	99/99/99
1066-3035	RES-30K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R52	00/00/00	99/99/99
1066-3335	RES-33K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R142	00/00/00	99/99/99
1066-3625	RES-3.6K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R104 R108	00/00/00	99/99/99
1066-3935	RES-39K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R11 R111	00/00/00	99/99/99
1066-4325	RES-4.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R132	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R16	00/00/00	99/99/99

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF CEN/MOD/DC/CONT
MODEL: 2120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-4225	RES-4.7K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R72	00/00/00	99/99/99
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R47	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R165	00/00/00	99/99/99
1066-5125	RES-5.1K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	Y	N	5.000	0	0	R99	00/00/00	99/99/99
														R120		
														R121		
														R122		
1066-5135	RES-51K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R129		
														R2	00/00/00	99/99/99
1066-5625	RES-5.6K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R164		
														R15	00/00/00	99/99/99
														R103		
														R145		
1066-6825	RES-6.8K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R114	00/00/00	99/99/99
1066-6835	RES-68K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R70	00/00/00	99/99/99
1066-8225	RES-8.2K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R18	00/00/00	99/99/99
														R19		
														R20		
														R53		
1075-0096	RES-20K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R124	00/00/00	99/99/99
1075-0137	RES-21.5K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R168	00/00/00	99/99/99
1075-0152	RES-150K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R113	00/00/00	99/99/99
1203-0137	POT-5K 10% 1/2W 25T	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R125	00/00/00	99/99/99
														R131		
1203-0138	POT-10K 10% 1/2W 18T CER TR SI	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R96	00/00/00	99/99/99
														R102		
														R110		
1203-0139	POT-20K 10% 1/2W 18T CER TR SI	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R100	00/00/00	99/99/99
														R119		
														R123		
1253-0002	THMS-1K 10% 3.5MW RDL DISC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R130	00/00/00	99/99/99
1272-0016	XSTR-2N4275 NPN SI R110 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q3	00/00/00	99/99/99
														Q5		
1272-0017	XSTR-2N3565 NPN SI R110 LOW PW	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	Q9	00/00/00	99/99/99
														Q10		
														Q18		
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	Q13	00/00/00	99/99/99
														Q14		
														Q15		
														Q17		
														Q20		

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
DATE OF LAST ECO: 5/27/87

OP: ORDER POLICY CODE
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1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q4	00/00/00	99/99/99
1272-0054	XSTR-2N4392 SI T018 J-FET N-CH	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1	00/00/00	99/99/99
														Q2		
1272-0111	XSTR-MPSH81 PNP SI T092 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q6	00/00/00	99/99/99
														Q19		
1272-0112	XSTR-NE73432E NPN SI T092 LOW	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	Q7	00/00/00	99/99/99
														Q8		
														Q21		
														Q22		
1281-0010	DIO-V33 SI VARICAP D014 33PF 2	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR3	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	15.000	1.000	EA	B1	N	N	15.000	0	0	CR1	00/00/00	99/99/99
														CR2		
														CR4		
														CR7		
														CR8		
														CR9		
														CR16		
														CR17		
														CR19		
														CR22		
														CR23		
														CR24		
														CR25		
														CR26		
														CR27		
1281-0064	DIO-MV209 SI VARICAP M764 29PF	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	CR5	00/00/00	99/99/99
														CR6		
														CR20		
														CR21		
1313-0033	RLY-DPDT 9VDC COIL 2C 1A PCB M	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	K1	00/00/00	99/99/99
1579-0050	XFMR-TOROIDAL 2/36CA/4T	0	1	0	4.000	1.000	EA	X1	N	N	4.000	0	0	T1	00/00/00	99/99/99
														T2		
														T3		
														T4		
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L11	00/00/00	99/99/99
														L13		
														L27		
1585-0013	CH-2.2UH 10% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L25	00/00/00	99/99/99
1585-0015	CH-6.8UH 10% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	L18	00/00/00	99/99/99
1585-0017	CH-100UH 5% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L19	00/00/00	99/99/99
1585-0032	CH-82UH 5% RF MLD AXL .16DX.38	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L1	00/00/00	99/99/99

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
ECO NO: 87059
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1585-0032	CH-82UH 5% RF MLD AXL .16DX.38	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L3	00/00/00	99/99/99
														L5		
1585-0040	CH-100UH 20% ENCAP AXL .31DX1.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L12	00/00/00	99/99/99
1585-0051	CH-15UH 10% RF MLD AXL .10DX.2	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L9	00/00/00	99/99/99
														L22		
1585-0062	CH-.39UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L26	00/00/00	99/99/99
1585-0079	CH-2.7UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	L23	00/00/00	99/99/99
1586-0007	CH-3B FERRITE BEAD 30GA/6T	0	A	0	4.000	1.000	EA	B1	N	N	4.000	0	0	L6	00/00/00	99/99/99
														L20		
														L10		
														L24		
1596-0025	COIL-3.8 TO 7.3 UH	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L2	00/00/00	99/99/99
1596-0111	COIL-5-.75 UH, VARIABLE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L4	00/00/00	99/99/99
1596-0329	COIL-AIR CORE CT.169DI/20GA 3T	0	B	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L7	00/00/00	99/99/99
1596-0330	COIL-AIR CORE CT.169DI/20GA 4T	0	B	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L21	00/00/00	99/99/99
1780-1347	PCB-REF GEN/MOD/DC/CONT	0		1	1.000	1.000	EA	B1	Y	N	1.000	0	0		00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U1	00/00/00	99/99/99
														U7		
														U11		
2025-0067	IC-UA741CP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U12	00/00/00	99/99/99
2025-0113	IC-SN74LS90N DECADE COUNTER	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	U13	00/00/00	99/99/99
														U14		
														U16		
														U17		
2025-0114	IC-SN74LS00N TTL NAND GATES	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U6	00/00/00	99/99/99
														U18		
2025-0228	IC-74LS193 16 PIN DIP UP/DN CO	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U21	00/00/00	99/99/99
														U24		
2025-0237	IC-CA 3140E 8 PIN DIP OP AMPL	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U2	00/00/00	99/99/99
														U19		
														U26		
2025-0263	IC-74LS190 16 PIN DIP BCD UP/D	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U4	00/00/00	99/99/99
														U25		
2025-0447	IC-11C91DC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U3	00/00/00	99/99/99
														U23		
2025-0471	IC-74HC73 DUAL J-K FLIP-FLOPS	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U5	00/00/00	99/99/99
														U20		
														U22		
2535-0110	CONN-12 (2X6)PIN .1X.1SP STR P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J14	00/00/00	99/99/99
2535-0236	CONN-26(2X13)PIN.1X.1SP RTANG	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	J2	00/00/00	99/99/99

CLASS CODE: 3
OUTSIDE VENDOR

2400

7001-0968 OPCODE: 0 REV: B PCB ASSY-REF GEN/MOD/DC/CONT
MODEL: 7120
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OP: ORDER POLICY CODE
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2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	J4	00/00/00	99/99/99
2657-0270	SHIELD-PCB RF	0		2	2.000	1.000	EA	B1	N	N	2.000	0	0		00/00/00	99/99/99
3001-0006	PAD-TRANSISTOR	0		3	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		4	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3766-0014	LUG-#6 SOLDER	0		5	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3875-0024	BRKT-PCB	0		6	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4002-0001	NUT-4-40X1/4 HEX STL CP EXTLK	0		21	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		7	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4030-0023	SCR-4-40X3/8 PAN HD W/INT L W	0		8	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4295-0061	SPCR-4-40X1/4X5/8 BR CP HEX	0		9	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
5176-0017	SLV-#20 NATURAL	0		10	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5285-0018	BAG-FOAM POUCH 9X12X1/8THK ANT	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7001-0914	PCB ASSY-AUDIO AMPLIFIER	0	A	11	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
7032-4117	CA ASSY-RG188 RTANG SMB PL-FRL	0	1	12	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL F LBL L	00/00/00	99/99/99
7032-4133	CA ASSY-RG188 RTANG SMB PL-FRL	0	A	13	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL C	00/00/00	99/99/99
7032-4134	CA ASSY-RG188 RGANG SMB PL-FRL	0	A	0	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL Z	00/00/00	99/99/99
7032-4135	CA ASSY-RG188 RTANG SMB PL-FRL	1	A	14	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL J	00/00/00	99/99/99
7032-4137	CA ASSY-RG188 RTANG SMB PL-FRL	0	A	15	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL M LBL FF	00/00/00	99/99/99
7032-4145	CA ASSY-RG188 RTANG SMB PL-FRL	0	A	17	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL T	00/00/00	99/99/99
7032-4147	CA ASSY-RG188 RTANG SMB-FRL 12	0	1	0	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL K	00/00/00	99/99/99
A5650-0938	TEST PROC-REF/GEN/MOD/DC CONT	0	B	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0968	PCB ASSY-REF GEN/MOD/DC/CONT	0	A	19	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1096	SCHEM DIAG-REF GEN/MOD/DC/CONT	0	A	20	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

2450

CLASS CODE: 3 7100+7120 / 2400+2450
OUTSIDE VENDOR

7001-0914 OPCODE: 0 REV: A PCB ASSY-AUDIO AMPLIFIER
MODEL: 7110/7120
ECO NO:
DATE OF LAST ECO: 4/03/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0096	CAP-.047UF 20% 100V Y5W MINTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C64	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	6.000	1.000	EA	S1	N	N	6.000	0	0	C47	00/00/00	99/99/99
														C48		
														C56		
														C57		
														C114		
														C115		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	1.000	1.000	EA	S1	N	N	1.000	0	0	C46	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C55	00/00/00	99/99/99
														C61		
														C62		
														C63		
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C58	00/00/00	99/99/99
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R91	00/00/00	99/99/99
														R92		
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R82	00/00/00	99/99/99
														R84		
1066-1035	RES-10K 5% 1/4W CC	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	R58	00/00/00	99/99/99
														R59		
														R60		
														R64		
														R65		
														R73		
														R77		
1066-2035	RES-20K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R61	00/00/00	99/99/99
														R74		
														R83		
1066-2045	RES-200K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R76	00/00/00	99/99/99
1066-2205	RES-22 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R93	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 85	00/00/00	99/99/99
1066-2735	RES-27K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R62	00/00/00	99/99/99
1066-3025	RES-3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R88	00/00/00	99/99/99
1066-3035	RES-30K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R63	00/00/00	99/99/99
														R81		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R75	00/00/00	99/99/99
														R87		
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R90	00/00/00	99/99/99
1067-8205	RES-82 OHM 5% 1/2W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R86	00/00/00	99/99/99
														R89		
1272-0018	XSTR-2N3642 NPN SI R110A LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q11	00/00/00	99/99/99
1272-0040	XSTR-2N3644 PNP SI R110A LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q12	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

2450

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0914 OPCODE: 0 REV: A PCB ASSY-AUDIO AMPLIFIER
MODEL: 7110/7120
ECO NO:
DATE OF LAST ECO: 4/03/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR10 CR11 CR13 CR14 CR15	00/00/00	99/99/99
1281-0031	DIO-1N4733A SI ZENER D041 5.1V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR12	00/00/00	99/99/99
1780-1326	PCB-AUDIO AMPLIFIER	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U8 U9 U10	00/00/00	99/99/99
3181-0009	WIRE-22 INS 7 ST 600V WHITE	0		2	9.000	1.000	IN	F3	N	N	9.000	0	0		00/00/00	99/99/99
3181-0010	WIRE-22 INS 7 ST 600V BLACK	0		3	9.000	1.000	IN	F3	N	N	9.000	0	0		00/00/00	99/99/99
3657-0010	TIE-MINI CABLE	0		9	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3766-0014	LUG-#6 SOLDER	0		10	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3766-0028	LUG-22-18GA PRE-INSUL RECEPTAC	0		4	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
7030-0376	HARNESS ASSY-AUDIO AMP PCB	0	A	5	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7032-4117	CA ASSY-RG188 RTANG SMB PL-FRL	0	1	6	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL 2	00/00/00	99/99/99
7032-4129	CA ASSY-RG188 RTANG SMB PL-FRL	1	A	7	2.000	1.000	EA	X1	N	N	2.000	0	0	LBL 1 LBL DD	00/00/00	99/99/99
D7001-0914	PCB ASSY-AUDIO AMPLIFIER	0	A1	11	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1033	SCHEM-REF/GEN/MOD/DC CONTROL	0	E	12	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

2500

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0001	CMT-RES FSV 5% 1/4W CC	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R32	00/00/00	99/99/99
1001-0017	CAP-15-60PF 200V N1500 V MT CE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C24	00/00/00	99/99/99
1002-0015	CAP-1000PF 5% 100V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C87	00/00/00	99/99/99
														C88		
														C114		
1002-0033	CAP-390PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C106	00/00/00	99/99/99
														C107		
1002-0037	CAP-560PF 5% 300V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C143	8/14/85	99/99/99
1002-0042	CAP-200PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C89	00/00/00	99/99/99
1004-0003	CAP-22PF 5% 500V THIN DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C18	00/00/00	99/99/99
1004-0006	CAP-33PF 5% 500V THIN DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C25	00/00/00	99/99/99
1004-0016	CAP-270PF 5% 300V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C90	00/00/00	99/99/99
1005-0075	CAP-220PF 10% 100V W5R MINTR C	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C5	00/00/00	99/99/99
														C10		
														C14		
														C16		
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C21	00/00/00	99/99/99
														C37		
														C75		
														C108		
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C61	00/00/00	99/99/99
1005-0092	CAP-.47UF 10% 50V MLD CER	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C69	00/00/00	99/99/99
														C71		
1005-0096	CAP-.047UF 20% 100V Y5W MINTR	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C39	00/00/00	99/99/99
														C42		
														C45		
														C50		
														C53		
														C129		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	40.000	1.000	EA	S1	N	N	40.000	0	0	C13,C15	00/00/00	99/99/99
														C22,C26		
														C27,C28		
														C33,C34		
														C36,C41		
														C44,C47		
														C49,C52		
														C62,C63		
														C65,C66		
														C67,C68		
														C72,C73		
														C74,C79		

2500

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	40.000	1.000	EA	S1	N	N	40.000	0	0	C82,C84 C85,C96 C101,C109 C116,C131 C132,C133 C141,C137 C142,C146 C147,C151	00/00/00	99/99/99
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	28.000	1.000	EA	S1	N	N	28.000	0	0	C1 C2 C3 C4 C8 C9 C11 C12 C23 C32 C43 C48 C56 C57 C76 C77 C78 C80 C86,C91 C136,C93 C95,C99 C103,C104 C113,C135	00/00/00	99/99/99
1005-0105	CAP-470PF 10% 50V X7R MINTR CE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C38 C55 C59	00/00/00	99/99/99
1005-0108	CAP-150PF 10% 100V NPO MINTR C	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C19 C145	00/00/00	99/99/99
1005-0123	CAP-15PF 10% 100V NPO MINTR CE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C97 C102	00/00/00	99/99/99
1005-0129	CAP-2000PF 5% 100V NPO MINTR C	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C92 C144	00/00/00	99/99/99

2500

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
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7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0130	CAP-2700PF 5% 100V NPO MINTR C	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C139 C140 C150	00/00/00	99/99/99
1005-0140	CAP-390PF 5% 100V NPO MINTR CE	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C51 C81 C98 C118	00/00/00	99/99/99
1005-0143	CAP-68PF 5% 50V N470 MINTR CER	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1008-0012	CAP-.0068UF 10% 200V AXL POLYE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C111	00/00/00	99/99/99
1008-0020	CAP-.0022UF 10% 100V RDL POLYE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C110 C112	00/00/00	99/99/99
1011-0013	CAP-1UF 20% 50V RDL TANT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C134	00/00/00	99/99/99
1012-0004	CAP-100PF 10% 50V NPO CHIP	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C6 C20	00/00/00	99/99/99
1012-0013	CAP-.01UF 5% 50V W5R CHIP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C7	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C138	00/00/00	99/99/99
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	C58 C83 C100 C105 C115 C117 C149	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	C29 C30 C31 C54 C60 C94 C130	00/00/00	99/99/99
1040-0041	FLTR-XTAL 10.7MHZ 3DB BW 22KHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	FL1	00/00/00	99/99/99
1040-0043	FLTR-CER 10.7 MHZ 3DB BW 280 K	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	FL2 FL3	00/00/00	99/99/99
1065-1015	RES-100 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R6 R10	00/00/00	99/99/99
1065-1515	RES-150 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1065-2205	RES-22 OHM 5% 1/8W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R4 R5 R9	00/00/00	99/99/99
1065-2725	RES-2.7K 5% 1/8 CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1065-3915	RES-390 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-4315	RES-430 OHM 5% 1/8 CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R2	00/00/00	99/99/99
														R11		
1065-4715	RES-470 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R8	00/00/00	99/99/99
														R158		
1065-5105	RES-51 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R159	00/00/00	99/99/99
1065-5605	RES-56 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R157	00/00/00	99/99/99
1065-8205	RES-82 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1066-9001	RES-4.7 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R23	00/00/00	99/99/99
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R102	00/00/00	99/99/99
														R122		
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R107	00/00/00	99/99/99
														R115		
1066-1025	RES-1K 5% 1/4W CC	1		0	13.000	1.000	EA	B1	N	N	13.000	0	0	R24	00/00/00	99/99/99
														R25		
														R26		
														R27		
														R28		
														R29		
														R50		
														R113		
														R116		
														R120		
														R125		
														R126		
														R155		
1066-1035	RES-10K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R41	00/00/00	99/99/99
														R64		
														R71		
														R77		
														R171		
1066-1045	RES-100K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R59	00/00/00	99/99/99
														R86		
														R87		
1066-1055	RES-1MEG 5% 1/4W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R57	00/00/00	99/99/99
														R58		
														R88		
														R89		
														R90		
														R91		
1066-1065	RES-10MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R66	00/00/00	99/99/99
1066-1125	RES-1.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R123	00/00/00	99/99/99

2500

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1145	RES-110K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R47	00/00/00	99/99/99
1066-1225	RES-1.2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R118 R162	00/00/00	99/99/99
1066-1235	RES-12K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R108 R109	00/00/00	99/99/99
1066-1515	RES-150 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R22	00/00/00	99/99/99
1066-1525	RES-1.5K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R21 R80	00/00/00	99/99/99
1066-1535	RES-15K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R52 R69 R81 R167	00/00/00	99/99/99
1066-1545	RES-150K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1066-1825	RES-1.8K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R160	00/00/00	99/99/99
1066-1835	RES-18K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R154	00/00/00	99/99/99
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R97 R105	00/00/00	99/99/99
1066-2035	RES-20K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R42 R53 R54 R84 R85	00/00/00	99/99/99
1066-2055	RES-2MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R43	00/00/00	99/99/99
1066-2205	RES-22 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R106 R117	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R98	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R74 R96 R112	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R48 R49	00/00/00	99/99/99
1066-2425	RES-2.4K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1066-2715	RES-270 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1066-2735	RES-27K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R62	00/00/00	99/99/99
1066-3015	RES-300 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R139	00/00/00	99/99/99
1066-3315	RES-330 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R20 R37 R39 R111	00/00/00	99/99/99
1066-3335	RES-33K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R172 R45	00/00/00	99/99/99

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CLASS CODE: 3
OUTSIDE VENDOR

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7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-3335	RES-33K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R76 R169	00/00/00	99/99/99
1066-3345	RES-330K 5% 1/4 CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1066-3905	RES-39 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R19	00/00/00	99/99/99
1066-3915	RES-390 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R36 R38	00/00/00	99/99/99
1066-3925	RES-3.9K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R16 R161	00/00/00	99/99/99
1066-3935	RES-39K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R65 R166	00/00/00	99/99/99
1066-4315	RES-430 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R121	00/00/00	99/99/99
1066-4335	RES-43K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R51 R60	00/00/00	99/99/99
1066-4715	RES-470 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R119	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R128 R170	00/00/00	99/99/99
1066-4735	RES-47K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R1 R55 R94	00/00/00	99/99/99
1066-4745	RES-470K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R78	00/00/00	99/99/99
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R15 R114	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R17 R75	00/00/00	99/99/99
1066-5125	RES-5.1K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R40 R70 R72 R73	00/00/00	99/99/99
1066-5625	RES-5.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R61	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R92	00/00/00	99/99/99
1066-6245	RES-620K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R67	00/00/00	99/99/99
1066-6805	RES-68 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R131	00/00/00	99/99/99
1066-6835	RES-68K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1066-7515	RES-750 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R30 R31	00/00/00	99/99/99
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R124	00/00/00	99/99/99
1066-8225	RES-8.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R35	00/00/00	99/99/99
1066-8235	RES-82K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R63 R79 R83	00/00/00	99/99/99
1066-9125	RES-9.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R138	00/00/00	99/99/99

BILL OF MATERIAL
AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
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7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-9135	RES-91K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R33	00/00/00	99/99/99
1074-0107	RES-30.1K 1% 25PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R127	00/00/00	99/99/99
1074-1018	RES-5.11K 1% 150PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R99	00/00/00	99/99/99
														R103		
1074-1054	RES-261 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R101	00/00/00	99/99/99
1075-0009	RES-10K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R129	00/00/00	99/99/99
														R130		
1075-0021	RES-1.43K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R100	00/00/00	99/99/99
														R104		
1075-0037	RES-1K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R110	00/00/00	99/99/99
1215-0047	POT-10K 10% 1/2W 25T CERMET TR	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R46	00/00/00	99/99/99
														R82		
														R93		
1215-0049	POT-100K 10% 1/2W 25T CERMET T	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R95	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	8.000	1.000	EA	B1	N	N	8.000	0	0	Q4	00/00/00	99/99/99
														Q7		
														Q10		
														Q11		
														Q14		
														Q15		
														Q19		
														Q20		
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q9	00/00/00	99/99/99
1272-0054	XSTR-2N4392 SI T018 J-FET N-CH	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	Q8	00/00/00	99/99/99
														Q12		
														Q13		
1272-0086	XSTR-NE57835 NPN SI LOW PWR	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	Q1	00/00/00	99/99/99
														Q2		
														Q3		
1281-0007	DIO-1N957 SI ZENER D07 6.8V 20	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR24	00/00/00	99/99/99
1281-0023	DIO-1N4002 SI RECT A23F 100PRV	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR26	00/00/00	99/99/99
1281-0031	DIO-1N4733A SI ZENER D041 5.1V	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR1	00/00/00	99/99/99
														CR25		
1281-0080	DIO-1N3062 SI SW D07 1PF 75PRV	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR2	00/00/00	99/99/99
														CR3		
1281-0105	DIO-1N3064 SI SW D035 75PRV .2	1		0	19.000	1.000	EA	B1	N	N	19.000	0	0	CR4	00/00/00	99/99/99
														CR5		
														CR6		
														CR7		
														CR8		
														CR9		

BILL OF MATERIAL

AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
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PF: Y=PART PRINTS ON SALES ORDER
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1281-0105	DIO-1N3064 SI SW D035 75PRV .2	1		0	19.000	1.000	EA	B1	N	N	19.000	0	0	CR10	00/00/00	99/99/99
														CR11		
														CR12		
														CR15		
														CR18		
														CR19		
														CR20		
														CR21		
														CR22		
														CR23		
														CR28		
														CR31		
														CR32		
1282-0016	DIO-1N270 GE SIG D07 80PRV	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR16	00/00/00	99/99/99
														CR29		
1283-0001	DIO-HP2800 SI HOT CARR A1N 2PF	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR13	00/00/00	99/99/99
														CR14		
1579-0017	ASSY-TRIFILAR COIL	0	A	0	2.000	1.000	EA	B3	N	N	2.000	0	0	T 1	00/00/00	99/99/99
														T 2		
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L24	00/00/00	99/99/99
1585-0013	CH-2.2UH 10% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L21	00/00/00	99/99/99
1585-0017	CH-100UH 5% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L25	00/00/00	99/99/99
1585-0020	CH-1000UH 5% RF MLD AXL .19DX.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L27	00/00/00	99/99/99
														L28		
1585-0035	CH-180UH 5% RF MLD AXL .16DX.3	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L26	00/00/00	99/99/99
1585-0039	CH-.22UH 20% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L2	00/00/00	99/99/99
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		0	10.000	1.000	EA	B1	N	N	10.000	0	0	L3	00/00/00	99/99/99
														L11		
														L13		
														L14		
														L15		
														L16		
														L17		
														L18		
														L19		
														L31		
1585-0064	CH-10UH 10% RF MLD AXL .10DX.2	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L36	00/00/00	99/99/99
1585-0085	CH-1000UH 10% RF MLD AXL.10DX.	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	L8	00/00/00	99/99/99
														L9		
														L10		
														L32		

BILL OF MATERIAL
AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1585-0085	CH-1000UH 10% RF MLD AXL.10DX.	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	L33	00/00/00	99/99/99
														L34		
1585-0091	CH-1UH 10% RF MLD AXL .100X.25	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L35		
1586-0003	CH-2 1/2 TURN UIDEBAND 4B	0	B	0	4.000	1.000	EA	B1	N	N	4.000	0	0	L37	00/00/00	99/99/99
														L5	00/00/00	99/99/99
														L6		
														L7		
1586-0004	CH-.047X.138X.118 FERRITE BEAD	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L22		
1586-0007	CH-3B FERRITE BEAD 30GA/6T	0	A	0	2.000	1.000	EA	B1	N	N	2.000	0	0	L20	00/00/00	99/99/99
														L1	00/00/00	99/99/99
1596-0104	COIL 3.9 MHZ	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L30		
														L4	00/00/00	99/99/99
1596-0111	COIL-5-.75 UH, VARIABLE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L12		
1597-0004	XFMR-VAR IF L43-7/28GA	1	A1	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L23	00/00/00	99/99/99
1780-1330	PCB-RCVR CONV/IF AMPL	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0	T 3	00/00/00	99/99/99
2010-0011	MXR-TFM-2 DBL BAL 1-1000MHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0028	IC-UA710C HI SPD DIFFERENTIAL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	U17	00/00/00	99/99/99
														U6	00/00/00	99/99/99
														U7		
														U8		
2025-0067	IC-UA741CP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U10		
2025-0160	IC-CA3089E FM IF SYSTEM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U16	00/00/00	99/99/99
2025-0171	IC-CA 3046 XSTR AND D10 ARRAY	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U9	00/00/00	99/99/99
2025-0261	IC-74LS93 14 PIN DIP 4-BIT BIN	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U11	00/00/00	99/99/99
2025-0271	IC-74221 16 PIN DIP MONOSTABLE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U12		
2025-0282	IC-1061 T012 CASCADABLE AMPL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U19	00/00/00	99/99/99
2025-0440	IC-1350 8PIN DIP IF AMPL	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U18	00/00/00	99/99/99
														U1	00/00/00	99/99/99
														U 3	00/00/00	99/99/99
														U 4		
														U 5		
2535-0146	CONN-6 PIN .1SP STR LKG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J12	00/00/00	99/99/99
2535-0150	CONN-10 PIN .1SP STR LKG PCB M	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	J1	00/00/00	99/99/99
														J11		
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	J2	00/00/00	99/99/99
														J3		
														J5		
														J7		
														J10		
3001-0014	PAD-I C LEAD CONVERSION 8 PIN	0		2	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 6/04/87

2500

CLASS CODE: 3
OUTSIDE VENDOR

7001-0929 OPCODE: 0 REV: L PCB ASSY-RCVR CONV/IF AMPL
MODEL: 7120
ECO NO: 87069
DATE OF LAST ECO: 6/03/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		9	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5176-0017	SLV-#20 NATURAL	0		7	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5265-0018	BAG-FOAM POUCH 9X12X1/8THK ANT	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7032-4125	CA ASSY-RG188 RTANG SMB PL-FRL	0	A	4	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL C	00/00/00	99/99/99
A5650-0926	TEST PROC-RCVR CONV/IF AMPL	0	A	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0929	PCB ASSY-RCVR CONV/IF AMPL	0	H	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8006-1059	SCHEM DIAG-RCVR CONV/IF AMPL	0	H	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

2600

CLASS CODE: 3
OUTSIDE VENDOR

7060-0055 OPCODE: 1 REV: C MDL ASSY=HIGH LEVEL AMPL
MODEL: 7000 FAM/2600
ECO NO: 86057
DATE OF LAST ECO: 4/28/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1012-0009	CAP-4.7PF .25PF 50V NPO CHIP	1		12	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1040-0044	FLTR-EMI 1500PF 200V 10A	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0	FL 1	00/00/00	99/99/99
2115-0034	HSG=AMPLIFIER	1		7	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2180-0286	COV-HIGH LEVEL AMPL CSTG	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0084	CONN-SMB 50 OHM STR JK FT BHD	1		3	2.000	1.000	EA	B1	N	N	2.000	0	0	J 1 J 2	00/00/00	99/99/99
4029-0019	SCR-2-56X1/4 STL CP TORX HEX H	0		5	8.000	1.000	EA	F3	N	N	8.000	0	0		00/00/00	99/99/99
4165-0003	DR SCR-#2X3/16 TU STL CP RDH	0		6	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
5285-0017	BAG=FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7001-0736	PCB ASSY-HIGH LEVEL AMPL	0	A	8	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0743	TEST PROC-HIGH LEVEL AMPL	0	B	9	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99
C7060-0055	MDL ASSY=HIGH LEVEL AMPL	0	B	10	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0810	SCHEM DIAG - HIGH LEVEL AMPL	0	B	11	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7120/2650

2650

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0736 OPCODE: 0 REV: A PCB ASSY-HIGH LEVEL AMPL
MODEL: ~~CE-318~~ 200
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1012-0038	CAP-.1UF 20% 50V BX CER CHIP	1		1	7.000	1.000	EA	B1	N	N	7.000	0	0	C 1 C 2 C 3 C 4 C 5 C 6 C 7	00/00/00	99/99/99
1780-1130	PCB-AMPLIFIER	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
~~2025-0279~~	~~IC-1062 T012 CASCADABLE AMPL~~	~~0~~		~~3~~	~~1.000~~	~~1.000~~	~~EA~~	~~B1~~	~~N~~	~~N~~	~~1.000~~	~~0~~	~~0~~	~~U 2~~	~~00/00/00~~	~~99/99/99~~
2025-0280	IC-1063 T012 CASCADABLE AMPL	0		4	1.000	1.000	EA	B1	N	N	1.000	0	0	U 3	00/00/00	99/99/99
2025-0282	IC-1061 T012 CASCADABLE AMPL	0		5	1.000	1.000	EA	B1	N	N	1.000	0	0	U 1	00/00/00	99/99/99
~~3277-0001~~	~~WIRE-22 BUS~~	~~0~~		~~6~~	~~.000~~	~~1.000~~	~~IN~~	~~F3~~	~~N~~	~~N~~	~~.000~~	~~0~~	~~0~~	~~AS REQ~~	~~00/00/00~~	~~99/99/99~~
5176-0015	SLV-#22 NATURAL	0		7	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
6445-0001	STRIP-COPPER .005" X 1/2"	0		8	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
~~C7001-0736~~	~~PCB ASSY-HIGH LEVEL AMPL~~	~~0~~	~~A~~	~~9~~	~~1.000~~	~~1.000~~	~~CP~~	~~F5~~	~~N~~	~~N~~	~~1.000~~	~~0~~	~~0~~	~~COPY~~	~~00/00/00~~	~~99/99/99~~
D8000-0810	SCHEM DIAG - HIGH LEVEL AMPL	0	B	10	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 7/07/87

2700

CLASS CODE: 3 2700
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0930 OPCODE: 0 REV: E PCB ASSY-SINAD/PWR MTR DRIVER
MODEL: 7120/7110
ECO NO: 87074
DATE OF LAST ECO: 7/06/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0059	CAP-300PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C2	00/00/00	99/99/99
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C5	00/00/00	99/99/99
														C7		
1005-0092	CAP-.47UF 10% 50V MLD CER	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C9	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	10.000	1.000	EA	S1	N	N	10.000	0	0	C1	00/00/00	99/99/99
														C4		
														C6		
														C18		
														C19		
														C21		
														C22		
														C24		
														C25		
														C27		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	4.000	1.000	EA	S1	N	N	4.000	0	0	C29	00/00/00	99/99/99
														C32		
														C33		
														C40		
1005-0108	CAP-150PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C37	00/00/00	99/99/99
1008-0091	CAP-.22UF 10% 100V RDL MET-MYL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C34	00/00/00	99/99/99
1008-0111	CAP-.022UF 1% 100V RDL POLYCAR	0		0	0.000	1.000	EA	B1	N	N	0.000	0	0	C10	00/00/00	99/99/99
														C11		
														C12		
														C13		
														C14		
														C15		
														C16		
														C17		
1008-0113	CAP-1UF 10% 100V RDL MET-POLYE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C31	00/00/00	99/99/99
1011-0001	CAP-2.2UF 10% 35V RDL TANT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	4.000	1.000	EA	B1	Y	N	4.000	0	0	C3	00/00/00	99/99/99
														C26		
														C20		
														C23		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C28	00/00/00	99/99/99
														C38		
														C39		
1013-0043	CAP-470UF+100-10% 6.3V MIN RDL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C30	00/00/00	99/99/99
														C36		
1066-1025	RES-1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	Y	N	3.000	0	0	R33	00/00/00	99/99/99

AS OF 7/07/87

2700

CLASS CODE: 3
OUTSIDE VENDOR

7081-0930 OPCODE: 0 REV: E PCB ASSY-SINAD/PWR MTR DRIVER
MODEL: 7120/7110
ECO NO: 87074
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1025	RES-1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	Y	N	3.000	0	0	R52 R53	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R10 R24 R26 R30	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R50	00/00/00	99/99/99
1066-1535	RES-15K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1066-1845	RES-180K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R3 R8	00/00/00	99/99/99
1066-2435	RES-24K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R5 R6	00/00/00	99/99/99
1066-2445	RES-240K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R23	00/00/00	99/99/99
1066-3315	RES-330 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R4 R51	00/00/00	99/99/99
1066-4715	RES-470 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R45	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R7 R12	00/00/00	99/99/99
1066-6235	RES-62K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R11	00/00/00	99/99/99
1066-6835	RES-68K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R9	00/00/00	99/99/99
1074-0024	RES-654.4 OHM .25% 25PPM FILM	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R14 R16 R19 R22	00/00/00	99/99/99
1074-0109	RES-100K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R39 R40	00/00/00	99/99/99
1074-1022	RES-18.7K 1% 150PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R48	00/00/00	99/99/99
1074-1023	RES-53.6K 1% 150PPM FILM	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R46	00/00/00	99/99/99
1074-1024	RES-1.43K 1% 25PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R28	00/00/00	99/99/99
1074-1034	RES-475 OHM 1% 100PPM FILM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R35 R58	00/00/00	99/99/99
1074-1035	RES-12.7K 1% 150PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R41	00/00/00	99/99/99
1074-1050	RES-1.13K 1% 100PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R57	00/00/00	99/99/99
1075-0009	RES-10K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R55	00/00/00	99/99/99
1075-0020	RES-3.4K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R36 R37 R54	00/00/00	99/99/99
1075-0060	RES-78.7K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R42	00/00/00	99/99/99
1075-0082	RES-200 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R38	00/00/00	99/99/99
1075-0095	RES-4.99K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99

AS OF 7/07/87

2700

CLASS CODE: 3
OUTSIDE VENDOR

7001-0930 OPCODE: 0 REV: E PCB ASSY-SINAD/PWR MTR DRIVER

MODEL: 7120/7110
ECO NO: 87074
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1075-0096	RES-20K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R32	00/00/00	99/99/99
1075-0098	RES-33.2K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R44	00/00/00	99/99/99
1075-0135	RES-75K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R15 R28	00/00/00	99/99/99
1075-0228	RES-39.2K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R49	00/00/00	99/99/99
1075-0241	RES-1.10K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1177-0012	RES-1K 1% .3W@70C+3500PPM AXL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R27	00/00/00	99/99/99
1203-0147	POT-500K 10% 1/2W 18T CERMET	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R25	00/00/00	99/99/99
1203-0148	POT-100OHM 10% 1/2W 18T CERMET	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R13 R17 R19 R21 R29	00/00/00	99/99/99
1203-0149	POT-5K 10% 1/2W 18T TR SI	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R31	00/00/00	99/99/99
1215-0047	POT-10K 10% 1/2W 25T CERMET TR	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R43 R47	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	Q1 Q2 Q3	00/00/00	99/99/99
1281-0007	DIO-1N957 SI ZENER D07 6.8V 20	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR7 CR11	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR1 CR2 CR3 CR4 CR5 CR6 CR8	00/00/00	99/99/99
1281-0042	DIO-1N752A SI ZENER A1 5.6V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR9	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW D07 75PRV .25	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR10 CR12 CR13	00/00/00	99/99/99
1313-0033	RLY-DPDT 9VDC COIL 2C 1A PCB M	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	K1	00/00/00	99/99/99
1586-0003	CH-2 1/2 TURN WIDEBAND 4B	0	B	0	3.000	1.000	EA	B1	N	N	3.000	0	0	L1 L2 L3	00/00/00	99/99/99
1780-1331	PCB-SINAD/PWR MTR DRIVER	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U2 U5	00/00/00	99/99/99
2025-0171	IC-CA 3046 XSTR AND D10 ARRAY	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U7	00/00/00	99/99/99
2025-0192	IC-TL082 8 PIN DIP BIFET OP AM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U4	00/00/00	99/99/99

BILL OF MATERIAL
AS OF 7/07/87

2700

CLASS CODE: 3
OUTSIDE VENDOR

7001-0930 OPCODE: 0 REV: E PCB ASSY-SINAD/PWR MTR DRIVER

MODEL: 7120/7110
ECO NO: 87074
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2025-0192	IC-TL082 8 PIN DIP BIFET OP AM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U8	00/00/00	99/99/99
2025-0230	IC-78L05A TO92 5V 5% POS RGLTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U11	00/00/00	99/99/99
2025-0269	IC-3130 8 PIN DIP OP AMPL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U3	00/00/00	99/99/99
2025-0275	IC-3080 8 PIN OP TRANSCOND AMP	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2025-0283	IC-636J 10PIN CAN TRUE RMS-TO-	0		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U6	00/00/00	99/99/99
2025-0349	IC-0832 20PIN DIP 8-BIT D-TO-A	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U14	00/00/00	99/99/99
2025-0369	IC-084 14PIN DIP QUAD OP AMP	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U10	00/00/00	99/99/99
2025-0453	IC-74HC14 HEX INVTG ST.	0		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U9	00/00/00	99/99/99
2025-0459	IC-0809 8-BIT UP A/D CONV 8 CM	0		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U12	00/00/00	99/99/99
2028-0018	FIRMWARE-ERS PROM 2764/2028-00	0	B	0	1.000	1.000	EA	M1	Y	N	1.000	0	0	U13	00/00/00	99/99/99
2535-0180	CONN-10 PIN .1SP RTANG LKG PCB	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	J1	00/00/00	99/99/99
2606-0018	SKT-28PIN DUAL INLINE IC .196H	1		2	2.000	1.000	EA	B1	N	N	2.000	0	0		00/00/00	99/99/99
2606-0019	SKT-20PIN DUAL INLINE IC .1X.3	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3001-0015	PAD-I C LEAD CONVERSION 10 PIN	0		0	1.000	1.000	EA	F3	Y	N	1.000	0	0		00/00/00	99/99/99
3875-0024	BRKT-PCB	0		5	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4000-0002	NUT-4/40X3/16 HEX S S	0		6	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		7	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
5285-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0927	TEST PROC-SINAD/PWR MTR DRIVER	0	A	8	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99
D7001-0930	PCB ASSY-SINAD/PWR MTR DRIVER	0	A	9	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99
D6000-1060	SCHEM DIAG-SINAD/PWR MTR DRVR	0	D	10	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7120/2800 Assy

2800

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7060-0065 OPCODE: 0 REV: A MDL ASSY-RF ATTENUATOR
MODEL: 7120
ECO NO:
DATE OF LAST ECO: 3/11/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2115-0035	HSG-RF ATTEN	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0084	CONN-SMB 50 OHM STR JK FT BHD	1		2	2.000	1.000	EA	B1	N	N	2.000	0	0	J 1 J 2	00/00/00	99/99/99
3183-0009	WIRE-26 INS 7 ST 600V OR/WH	0		3	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0010	WIRE-26 INS 7 ST 600V YEL/RED	0		4	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0016	WIRE-26 INS 7 ST 600V GRY/OR	0		5	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3183-0023	WIRE-26 INS 7 ST 600V BLU/WH	0		6	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3766-0025	LUG-#2X1/4X21/32 SOLDER	0		16	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4000-0001	NUT-2/56X3/16X1/16 HEX S S	0		17	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4029-0001	SCR-2-56X1/4 BINDER HD S S	0		7	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0015	SCR-4-40X1/4 PAN HD W/INT L W	0		8	6.000	1.000	EA	F3	N	N	6.000	0	0		00/00/00	99/99/99
4096-0007	WSHR-4X.120X7/32 FIBER	0		10	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7001-0764	PCB ASSY-RF ATTENUATOR	0	C	11	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0373	HARN ASSY-RF ATTEN	0	A	18	1.000	1.000	EA	M1	N	N	1.000	0	0		00/00/00	99/99/99
7040-0044	PL ASSY-CAPACITOR MOUNTING	0	C	12	1.000	1.000	EA	M1	N	N	1.000	0	0	C 1 C 2 C 3 C 4	00/00/00	99/99/99
C7060-0065	MDL ASSY-RF ATTENUATOR	0	A	14	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1069	INTCON DIAG-RF ATTEN MDL	0	B	15	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7120/2850

2850

CLASS CODE: 3
OUTSIDE VENDOR

7001-0764 OPCODE: 0 REV: C PCB ASSY-RF ATTENUATOR
MODEL: 6000
ECO NO: 86187
DATE OF LAST ECO: 11/06/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0005	CMT-CAP FSV 10% 100V MINTR CER	0		1	.000	1.000	EA	F3	N	N	.000	0	0	REF	00/00/00	99/99/99
														C 22		
1005-0074	CAP-10PF 10% 100V NPO MINTR CE	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0	C 22	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	3	22.000	1.000	EA	S1	N	N	22.000	0	0	C 1	00/00/00	99/99/99
														C 2		
														C 3		
														C 4		
														C 5		
														C 6		
														C 7		
														C 8		
														C 9		
														C 10		
														C 11		
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														C 16		
														C 17		
														C 18		
														C 19		
														C 20		
														C 21		
														C 24		
1005-0124	CAP-2.7PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 23	00/00/00	99/99/99
1011-0006	CAP-10UF 20% 35V RDL TANT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 25	00/00/00	99/99/99
1065-1015	RES-100 OHM 5% 1/8W CC	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0	R 8	00/00/00	99/99/99
1065-1025	RES-1K 5% 1/8W CC	1		5	2.000	1.000	EA	B1	N	N	2.000	0	0	R 19	00/00/00	99/99/99
														R 18		
1065-1215	RES-120 OHM 5% 1/8W CC	1		6	1.000	1.000	EA	B1	N	N	1.000	0	0	R 15	00/00/00	99/99/99
1065-1225	RES-1.2K 5% 1/8W CC	1		7	1.000	1.000	EA	B1	N	N	1.000	0	0	R 2	00/00/00	99/99/99
1065-1325	RES-1.3K 5% 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 5	00/00/00	99/99/99
1065-1515	RES-150 OHM 5% 1/8W CC	1		9	1.000	1.000	EA	B1	N	N	1.000	0	0	R 13	00/00/00	99/99/99
1065-2425	RES-2.4K 5% 1/8W CC	1		10	1.000	1.000	EA	B1	N	N	1.000	0	0	R 4	00/00/00	99/99/99
1065-3005	RES-30 OHM 5% 1/8W CC	1		23	1.000	1.000	EA	B1	N	N	1.000	0	0	R 14	00/00/00	99/99/99
1065-5105	RES-51 OHM 5% 1/8W CC	1		12	2.000	1.000	EA	B1	N	N	2.000	0	0	R 17	00/00/00	99/99/99
														R 12		
1065-5115	RES-510 OHM 5% 1/8W CC	1		13	3.000	1.000	EA	B1	N	N	3.000	0	0	R 7	00/00/00	99/99/99
														R 9		
														R 30		

2850

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0764 OPCODE: 0 REV: C PCB ASSY=RF ATTENUATOR
MODEL: 6000
ECO NO: 86187
DATE OF LAST ECO: 11/06/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-5125	RES-5.1K 5% 1/8W CC	1		11	1.000	1.000	EA	B1	N	N	1.000	0	0	R 16	00/00/00	99/99/99
1065-6205	RES-62 OHM 5% 1/8W CC	1		33	1.000	1.000	EA	B1	N	N	1.000	0	0	R 10	00/00/00	99/99/99
1065-6805	RES-68 OHM 5% 1/8W CC	1		14	3.000	1.000	EA	B1	N	N	3.000	0	0	R 3 R 6 R 25	00/00/00	99/99/99
1065-8225	RES-8.2K 5% 1/8W CC	1		15	1.000	1.000	EA	B1	N	N	1.000	0	0	R 1	00/00/00	99/99/99
1074-0114	RES-243 OHM 1% 100PPM FILM	1		16	2.000	1.000	EA	B1	N	N	2.000	0	0	R 21 R 26	00/00/00	99/99/99
1074-0115	RES-60.4 OHM 1% 100PPM FILM	1		17	1.000	1.000	EA	B1	N	N	1.000	0	0	R 20	00/00/00	99/99/99
1075-0067	RES-59 OHM 1% 100PPM FILM	1		18	3.000	1.000	EA	B1	N	N	3.000	0	0	R 22 R 27 R 28	00/00/00	99/99/99
1272-0086	XSTR-NE57835 NPN SI LOW PWR	0		19	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 2 Q 4	00/00/00	99/99/99
1272-0090	XSTR-2N4126 PNP SI T092 LOW PW	1		20	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 1 Q 3	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		21	4.000	1.000	EA	B1	N	N	4.000	0	0	CR 11 CR 12 CR 13 CR 14	00/00/00	99/99/99
1281-0155	DIO-A5S420 SI SW D034 50PRV 3W	0		24	2.000	1.000	EA	B1	N	N	2.000	0	0	CR 15 CR 16	00/00/00	99/99/99
1281-0185	DIO-5082-3077 SI PIN	0		22	10.000	1.000	EA	B1	N	N	10.000	0	0	CR1 CR2 CR3 CR4 CR5 CR6 CR7 CR8 CR9 CR10	00/00/00	99/99/99
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		25	21.000	1.000	EA	B1	N	N	21.000	0	0	L 2 L 4 L 5 L 6 L 7 L 8 L 9 L 10 L 11	00/00/00	99/99/99

2850

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0764 OPCODE: 0 REV: C PCB ASSY-RF ATTENUATOR
MODEL: 6000
ECO NO: 86187
DATE OF LAST ECO: 11/06/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		25	21.000	1.000	EA	B1	N	N	21.000	0	0	L 12 L 13 L 14 L 15 L 16 L 17 L 18 L 19 L 20 L 21 L 22 L 23	00/00/00	99/99/99
1596-0271	COIL-AIR CORE .090 DIA/22GA/3T	0	A	26	2.000	1.000	EA	X1	N	N	2.000	0	0	L 1 L 3	00/00/00	99/99/99
1780-1250	PCB-RF ATTENUATOR	1	B	27	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
3277-0001	WIRE-22 BUS	0		28	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
6445-0001	STRIP-COPPER .005" X 1/2"	0		29	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
A5650-0770	TEST PROC-RF ATTENUATOR	0	A	30	.000	1.000	CP	F5	N	N	.000	0	0	REF	00/00/00	99/99/99
C7001-0764	PCB ASSY-RF ATTENUATOR	0	3	31	.000	1.000	CP	F5	N	N	.000	0	0	REF	00/00/00	99/99/99
D8000-0838	SCHEM DIAG-RF ATTENUATOR	0	B	32	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

2900

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7046-0084 OPCODE: 1 REV: E CNTNR ASSY-OCTAL SOCKET SHLD
MODEL: 7000/7120 /2900
ECO NO: 86150
DATE OF LAST ECO: 9/24/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0042	CAP-200PF 5% 500V DIP MICA	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0	C7	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	1	1.000	1.000	EA	S1	N	N	1.000	0	0	C 3	00/00/00	99/99/99
1005-0107	CAP-1000PF GMV/20% 500V CER FE	1		2	2.000	1.000	EA	B1	N	N	2.000	0	0	C 1 C 2	00/00/00	99/99/99
1011-0006	CAP-10UF 20% 35V RDL TANT	1		3	2.000	1.000	EA	B1	N	N	2.000	0	0	C 4 C 6	00/00/00	99/99/99
1013-0045	CAP-47UF 20% 35V RDL ELCTLT	1		15	1.000	1.000	EA	B1	N	N	1.000	0	0	C 5	00/00/00	99/99/99
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		5	1.000	1.000	EA	B1	N	N	1.000	0	0	L 2	00/00/00	99/99/99
1585-0020	CH-1000UH 5% RF MLD AXL .19DX.	1		20	1.000	1.000	EA	B1	N	N	1.000	0	0	L1	00/00/00	99/99/99
2025-0100	IC-MC7812CP 12V POS RGLTR	0		16	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2536-0084	CONN-SMB 50 OHM STR JK FT BHD	1		6	2.000	1.000	EA	B1	N	N	2.000	0	0	J 1 J 2	00/00/00	99/99/99
2605-0001	SKT-OCTAL	1		7	1.000	1.000	EA	B1	N	N	1.000	0	0	XY1	00/00/00	99/99/99
2657-0249	SHLD-OCTAL	1		8	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		9	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
4000-0002	NUT-4/40X3/16 HEX S S	0		19	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4010-0004	NUT-4-40X1/4X.143 HEX ST CAD P	0		11	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0005	SCR-4-40X5/16 FLAT HD S S	0		12	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		18	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
5176-0015	SLV-#22 NATURAL	0		13	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7030-0378	HARN ASSY-OSCILLATOR POWER	0	A	17	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
D7046-0084	CNTNR ASSY-OCTAL SOCKET SHLD	0	C	21	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1012	SCHEM DIAG-OCTAL SKT CNTNR	0	D	14	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 5/29/87

3000

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7060-0070 OPCODE: 0 REV: XX MDL ASSY-FM BAND REJECT FILTER
MODEL: 7120
ECO NO: UD-1
DATE OF LAST ECO: 1/29/87

option

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2475-0109	HSG-FM BAND REJECT FILTER	0		1	1.000	1.000	EA	B1	Y	N	1.000	0	0		00/00/00	99/99/99
2536-0084	CONN-SMB 50 OHM STR JK FT BHD	1		2	2.000	1.000	EA	B1	Y	N	2.000	0	0	J1 J2	00/00/00	99/99/99
4000-0001	NUT-2/56X3/16X1/16 HEX S S	0		3	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4029-0001	SCR-2-56X1/4 BINDER HD S S	0		4	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
4030-0015	SCR-4-40X1/4 PAN HD W/INT L W	0		5	2.000	1.000	EA	F3	Y	N	2.000	0	0		00/00/00	99/99/99
7001-0969	PCB ASSY-FM BAND REJECT FILTER	0	XX	6	1.000	1.000	EA	M1	Y	N	1.000	0	0		00/00/00	99/99/99
7030-0393	HARN ASSY-FM BAND REJECT MDL	0	A	7	1.000	1.000	EA	M1	Y	N	1.000	0	0		00/00/00	99/99/99
7040-0044	PL ASSY-CAPACITOR MOUNTING	0	C	8	1.000	1.000	EA	M1	Y	N	1.000	0	0		00/00/00	99/99/99
D7060-0070	MDL ASSY-FM BAND REJECT FLTR	0	*	0	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99
D8000-1100	INTCON DIAG-FM BAND REJECT MDL	0	*	0	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99

ASSEMBLY PART NUMBER? *

BILL OF MATERIAL

AS OF 2/25/87

3050

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7001-0969 OPCODE: 0 REV: XX PCB ASSY-FM BAND REJECT FILTER

MODEL: 7120 / 3050
ECO NO:

DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ'TY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0014	CAP-18PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	C3 C7	00/00/00	99/99/99
~~1002-0017~~	~~CAP-12PF 5% 500V DIP MICA~~	~~1~~		~~0~~	~~2.000~~	~~1.000~~	~~EA~~	~~B1~~	~~Y~~	~~N~~	~~2.000~~	~~0~~	~~0~~	~~C4 C6~~	~~00/00/00~~	~~99/99/99~~
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	2.000	1.000	EA	S1	Y	N	2.000	0	0	C2 C8	00/00/00	99/99/99
1005-0123	CAP-15PF 10% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	C5	00/00/00	99/99/99
1005-0134	CAP-220PF 5% 100V NPO MINTR CE	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	C1 C9	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R6	00/00/00	99/99/99
1066-2035	RES-20K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R4	00/00/00	99/99/99
~~1066-2225~~	~~RES-2.2K 5% 1/4W CC~~	~~1~~		~~0~~	~~2.000~~	~~1.000~~	~~EA~~	~~B1~~	~~Y~~	~~N~~	~~2.000~~	~~0~~	~~0~~	~~R1 R2~~	~~00/00/00~~	~~99/99/99~~
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	Y	N	3.000	0	0	R3 R5 R7	00/00/00	99/99/99
1272-0040	XSTR-2N3644 PNP SI R110A LOW P	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	Q1 Q2	00/00/00	99/99/99
1283-0001	DIO-HP2800 SI HOT CARR A1N 2PF	1		0	5.000	1.000	EA	B1	Y	N	5.000	0	0	CR1 CR2 CR3 CR4 CR5	00/00/00	99/99/99
1585-0017	CH-100UH 5% RF MLD AXL .16DX.3	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	L7 L9	00/00/00	99/99/99
1585-0065	CH-.15UH 10% RF MLD AXL .10DX.	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	L1 L5	00/00/00	99/99/99
1585-0074	CH-.18UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	L3	00/00/00	99/99/99
1585-0075	CH-.22UH 10% RF MLD AXL .10DX.	1		0	2.000	1.000	EA	B1	Y	N	2.000	0	0	L2 L4	00/00/00	99/99/99
1596-0229	COIL ASSY-AIR CORE 3 1/2 TURNS	0	A	0	2.000	1.000	EA	X1	Y	N	2.000	0	0	L6 L8	00/00/00	99/99/99
~~1780-1348~~	~~PCB-FM BAND REJECT FILTER~~	~~0~~		~~1~~	~~1.000~~	~~1.000~~	~~EA~~	~~B1~~	~~Y~~	~~N~~	~~1.000~~	~~0~~	~~0~~		~~00/00/00~~	~~99/99/99~~
A5650-0958	TEST PROC-FM BAND REJECT FIL	0	*	0	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99
C7001-0969	PCB ASSY-FM BAND REJECT FILTER	0	A	0	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99
D8000-1097	SCHEM DIAG-FM BAND REJECT FLTR	0	A	0	1.000	1.000	EA	F5	Y	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 2/25/87

7000 Family
3100 Assy

3100

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7046-0082 OPCODE: 1 REV: B CSTG ASSY-RF OUTPUT
MODEL: 7000
ECO NO: 85103
DATE OF LAST ECO: 7/12/85

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER.
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1040-0044	FLTR-EMI 1500PF 200V 10A	0		1	4.000	1.000	EA	B1	N	N	4.000	0	0	FL 1 FL 2 FL 3 FL 4	00/00/00	99/99/99
2180-0291	COV-RF OUTPUT CSTG	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0084	CONN-SMB 50 OHM STR JK FT BHD	1		3	3.000	1.000	EA	B1	N	N	3.000	0	0	J 2 J 3 J 4	00/00/00	99/99/99
2536-0190	CONN-SMC 50 OHM STR JK FT BHD	0		4	2.000	1.000	EA	B1	N	N	2.000	0	0	J1 J5	00/00/00	99/99/99
3277-0001	WIRE-22 BUS	0		5	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
4029-0019	SCR-2-56X1/4 STL CP TORX HEX H	0		6	25.000	1.000	EA	F3	N	N	25.000	0	0		00/00/00	99/99/99
4080-0007	WSHR-12 INTERNAL	0		7	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4560-0094	CSTG=RF OUTPUT DIE MACH	1	A	8	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
5176-0015	SLV-#22 NATURAL	0		9	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5285-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7001-0799	PCB ASSY-OUTPUT PROT/PWR DET	0	C	10	1.000	1.000	EA	S1	N	N	1.000	0	0	2200	00/00/00	99/99/99
7033-0160	CA ASSY-.086 SEMI-RGD COAX	1	A	11	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0161	CA ASSY-.086 SEMI-RGD COAX	0	A	12	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0813	TEST PROC-RF OUTPUT CSTG	0	*	13	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7046-0082	CSTG ASSY-RF OUTPUT	0	A	14	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1018	INTCON DIAG-RF OUTPUT CSTG	0	A	15	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

3150 fm 7120 / 2200 Assy fm 6000

3150

CLASS CODE: 3
OUTSIDE VENDOR

7001-0799 OPCODE: 0 REV: C PCB ASSY-OUTPUT PROT/PWR DET
MODEL: 6000
ECO NO: 83068
DATE OF LAST ECO: 5/17/84

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0011	CMT-CAP FSV CHIP	0		0	.000	1.000	EA	F3	N	N	.000	0	0	REF	00/00/00	99/99/99
														C 15		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	9	1.000	1.000	EA	S1	N	N	1.000	0	0	C 14	00/00/00	99/99/99
1005-0108	CAP-150PF 10% 100V NPO MINTR C	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0	C 13	00/00/00	99/99/99
1005-0121	CAP-1.5PF .25PF 100V NPO MINTR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C 17	00/00/00	99/99/99
1011-0006	CAP-10UF 20% 35V RDL TANT	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0	C 10	00/00/00	99/99/99
1012-0004	CAP-100PF 10% 50V NPO CHIP	1		44	2.000	1.000	EA	B1	N	N	2.000	0	0	C 8	00/00/00	99/99/99
														C 12		
1012-0012	CAP-6.8PF .5PF 50V NPO CHIP	1		7	1.000	1.000	EA	B1	N	N	1.000	0	0	C 5	00/00/00	99/99/99
1012-0019	CAP-1PF .5PF 50V NPO CHIP	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0	C 4	00/00/00	99/99/99
1012-0032	CAP-2.7PF .25PF 50V NPO CHIP	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0	C 15	00/00/00	99/99/99
1012-0041	CAP-.082 UF 20% 100V BX CHIP	1		5	5.000	1.000	EA	B1	N	N	5.000	0	0	C 2	00/00/00	99/99/99
														C 1		
														C 6		
														C 9		
														C 11		
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		12	1.000	1.000	EA	B1	N	N	1.000	0	0	C 16	00/00/00	99/99/99
1065-1025	RES-1K 5% 1/8W CC	1		45	1.000	1.000	EA	B1	N	N	1.000	0	0	R 21	00/00/00	99/99/99
1065-1045	RES-100K 5% 1/8W CC	1		46	1.000	1.000	EA	B1	N	N	1.000	0	0	R 13	00/00/00	99/99/99
1065-1055	RES-1MEG 5% 1/8W CC	1		8	1.000	1.000	EA	B1	N	N	1.000	0	0	R 3	00/00/00	99/99/99
1065-1545	RES-150K 5% 1/8W CC	1		17	1.000	1.000	EA	B1	N	N	1.000	0	0	R 4	00/00/00	99/99/99
1065-1815	RES-180 OHM 5% 1/8W CC	1		11	1.000	1.000	EA	B1	N	N	1.000	0	0	R 17	00/00/00	99/99/99
1065-2035	RES-20K 5% 1/8W CC	1		10	2.000	1.000	EA	B1	N	N	2.000	0	0	R 15	00/00/00	99/99/99
														R 11		
1065-3005	RES-30 OHM 5% 1/8W CC	1		13	1.000	1.000	EA	B1	N	N	1.000	0	0	R 18	00/00/00	99/99/99
1065-3035	RES-30K 5% 1/8W CC	1		42	1.000	1.000	EA	B1	N	N	1.000	0	0	R 20	00/00/00	99/99/99
1065-3905	RES-39 OHM 5% 1/8W CC	1		43	1.000	1.000	EA	B1	N	N	1.000	0	0	R 19	00/00/00	99/99/99
1065-3925	RES-3.9K 5% 1/8W CC	1		14	1.000	1.000	EA	B1	N	N	1.000	0	0	R 9	00/00/00	99/99/99
1065-5105	RES-51 OHM 5% 1/8W CC	1		15	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
														R 16		
1065-6225	RES-6.2K 5% 1/8W CC	1		16	1.000	1.000	EA	B1	N	N	1.000	0	0	R 12	00/00/00	99/99/99
1065-8205	RES-82 OHM 5% 1/8W CC	1		6	1.000	1.000	EA	B1	N	N	1.000	0	0	R 7	00/00/00	99/99/99
1215-0051	POT-500 OHM 10% 1/2W IT CERMET	0		18	1.000	1.000	EA	B1	N	N	1.000	0	0	R 5	00/00/00	99/99/99
1272-0132	XSTR-VN0104 SI T092 MOSFET N-C	1		19	1.000	1.000	EA	B1	N	N	1.000	0	0	Q 1	00/00/00	99/99/99
1281-0023	DIO-1N4002 SI RECT A23F 100PRV	1		20	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 5	00/00/00	99/99/99
1281-0027	DIO-1N4739A SI ZENER A98A 9.1V	1		39	1.000	1.000	EA	B1	N	N	1.000	0	0	CR 10	00/00/00	99/99/99
1281-0080	DIO-1N3062 SI SW D07 1PF 75PRV	1		21	2.000	1.000	EA	B1	N	N	2.000	0	0	CR 1	00/00/00	99/99/99
														CR 2		

BILL OF MATERIAL
AS OF 2/25/87

3150

CLASS CODE: 3
OUTSIDE VENDOR

7001-0799 OPCODE: 0 REV: C PCB ASSY-OUTPUT PROT/PWR DET
MODEL: 6000
ECO NO: 93068
DATE OF LAST ECO: 5/17/84

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1281-0169	DIO-1N5167 SI SW A1AC 20V .125	0		24	3.000	1.000	EA	B1	N	N	3.000	0	0	CR 6 CR 7 CR 9	00/00/00	99/99/99
1283-0005	DIO-HP2826 HOT CARR 1.2PF A1N	1		25	2.000	1.000	EA	B1	N	N	2.000	0	0	CR 3 CR 4	00/00/00	99/99/99
1313-0038	RLY-DPDT 12VDC COIL 2A CONT PC	0		26	1.000	1.000	EA	B1	N	N	1.000	0	0	K 1	00/00/00	99/99/99
1586-0003	CH-2 1/2 TURN WIDEBAND 4B	0	B	0	1.000	1.000	EA	S1	N	N	1.000	0	0	L 4	00/00/00	99/99/99
1780-1273	PCB-OUTPUT PROT/PWR DET	1	B	29	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0161	IC-CA3130T OP AMPL	0		30	1.000	1.000	EA	B1	N	N	1.000	0	0	V 1	00/00/00	99/99/99
2025-0269	IC-3130 8 PIN DIP OP AMPL	0		31	1.000	1.000	EA	B1	N	N	1.000	0	0	U 2	00/00/00	99/99/99
2657-0238	SHLD-PC BOARD RF	0	A	40	1.000	1.000	EA	B3	N	N	1.000	0	0		00/00/00	99/99/99
3001-0014	PAD-I C LEAD CONVERSION 8 PIN	0		41	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3001-0024	PAD-TRANS MTG TO-18 .200 OD X	0		32	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3277-0001	WIRE-22 BUS	0		33	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
6445-0001	STRIP-COPPER .005" X 1/2"	0		34	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
C7001-0799	PCB ASSY-OUTPUT PROT/PWR DET	0	E	36	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99
D8000-0896	SCHEM DIAG-OUTPUT PROT/PWR DET	0	C	37	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

3200

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0896 OPCODE: 1 REV: B PCB ASSY-RELAY CONTROL
MODEL: 7000 Family/3200
ECO NO: 85035
DATE OF LAST ECO: 3/08/85

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1 C3	00/00/00	99/99/99
1005-0134	CAP-220PF 5% 100V NPO MINTR CE	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C2 C4	00/00/00	99/99/99
1066-3915	RES-390 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 1	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW DO7 75PRV .25	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR 1 CR 2	00/00/00	99/99/99
1313-0021	RLY-DPDT 12VDC COIL 1A CONT TO	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	K 1 K 2 K 3	00/00/00	99/99/99
1780-1318	PCB-RELAY CONTROL	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	J 2 J 3 J 4 J 5	00/00/00	99/99/99
5285-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0896	PCB ASSY-RELAY CONTROL	0	B	2	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1007	SCHEM DIAG-RELAY CONTROL	0	B	3	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

3450 Assy

3450

CLASS CODE: 3
OUTSIDE VENDOR

7001-0932 OPCODE: 0 REV: C PCB ASSY=FILTER LOW PASS 1000M
MODEL: Z120/Z110
ECO NO: 86228
DATE OF LAST ECO: 12/16/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1065-1805	RES-18 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1065-3015	RES-300 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R1	00/00/00	99/99/99
														R3		
1065-5105	RES-51 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1074-1007	RES-6.34K 1% 150PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R16	00/00/00	99/99/99
1074-1008	RES-511 OHM 1% 150 PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R19	00/00/00	99/99/99
														R23		
1075-0009	RES-10K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R10	00/00/00	99/99/99
														R13		
1075-0014	RES-8.25K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1075-0071	RES-2.74K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R25	00/00/00	99/99/99
1075-0151	RES-402 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R5	00/00/00	99/99/99
1075-0158	RES-7.5K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1075-0168	RES-4.87K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R11	00/00/00	99/99/99
1075-0183	RES-2.26K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R8	00/00/00	99/99/99
1075-0214	RES-3.65K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R14	00/00/00	99/99/99
1215-0052	POT-1K 10% 1/2W 1T CERMET TRMR	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R20	00/00/00	99/99/99
														R21		
														R22		
														R26		
1215-0053	POT-5K 10% 1/2W 1T CERMET TRMR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R24	00/00/00	99/99/99
1215-0057	POT-2K 10% 1/2W 1T CERMET TRMR	0		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R6	00/00/00	99/99/99
														R9		
														R12		
														R15		
														R18		
														R24		
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1780-1335	PCB-FILTER LOW PASS 1000MHZ	0	A	1	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2010-0012	MXR-DBL BAL TO8 1.8-2.2GHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2535-0110	CONN-12 (2X6)PIN .1X.1SP STR P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J4	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		2	2.000	1.000	EA	B1	N	N	2.000	0	0	J1	00/00/00	99/99/99
														J3		
C7001-0932	PCB ASSY-FILTER LOW PASS 1000M	0	C	3	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1063	SCHEM DIAG-FLTR LOW PASS 1000M	0	*	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

3600

CLASS CODE: 3
OUTSIDE VENDOR

7001-0933 OPCODE: 0 REV: B PCB ASSY-VOLTAGE CONTROL ATTEN
MODEL: 7120/3600
ECO NO: 86096
DATE OF LAST ECO: 7/11/86

OP: ORDER POLICY CODE
REQ'TY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0075	CAP-220PF 10% 100V W5R MINTR C	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C3 C7 C11 C15 C19 C23	00/00/00	99/99/99
1005-0077	CAP-1000PF +100-0% 300V CER FE	1		0	10.000	1.000	EA	B1	N	N	10.000	0	0	C2 C5 C6 C9 C10 C14 C17 C18 C21 C22	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C25	00/00/00	99/99/99
1012-0004	CAP-100PF 10% 50V NPO CHIP	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	C26 C1 C4 C8 C12 C16 C20 C24	00/00/00	99/99/99
1065-1805	RES-18 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1065-3015	RES-300 OHM 5% 1/8W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R1	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R3 R6	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R14 R18 R23	00/00/00	99/99/99
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R4 R8 R12 R16	00/00/00	99/99/99
1066-6825	RES-6.8K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R19 R21 R24 R26	00/00/00	99/99/99
1066-7515	RES-750 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R17	00/00/00	99/99/99

AS OF 2/25/87

3600

CLASS CODE: 3
OUTSIDE VENDOR

7001-0933 OPCODE: 0 REV: B PCB ASSY-VOLTAGE CONTROL ATTEN

MODEL: 7120
ECO NO: 86096
DATE OF LAST ECO: 7/11/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-7515	RES-750 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R22	00/00/00	99/99/99
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R5	00/00/00	99/99/99
														R7		
														R13		
														R15		
1203-0054	POT-5K 20% 1/2W 4T CERMET TRMR	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R20	00/00/00	99/99/99
														R25		
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q2	00/00/00	99/99/99
														Q4		
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1	00/00/00	99/99/99
														Q3		
1281-0140	DIO-1N5767 SI PIN ATAH (HP)	1		0	10.000	1.000	EA	B1	N	N	10.000	0	0	CR1	00/00/00	99/99/99
														CR2		
														CR3		
														CR4		
														CR5		
														CR6		
														CR7		
														CR8		
														CR9		
														CR10		
1586-0004	CH-.047X.138X.118 FERRITE BEAD	1		0	16.000	1.000	EA	B1	N	N	16.000	0	0	L1	00/00/00	99/99/99
														L2		
														L3		
														L4		
														L5		
														L6		
														L7		
														L8		
														L9		
														L10		
														L11		
														L12		
														L13		
														L14		
														L15		
														L16		
1780-1332	PCB-VOLTAGE CONTROL ATTEN	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	J1	00/00/00	99/99/99
														J2		
3277-0001	WIRE-22 BUS	0		2	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

3600

CLASS CODE: 3
OUTSIDE VENDOR

7001-0933 OPCODE: 0 REV: B PCB ASSY-VOLTAGE CONTROL ATTEN
MODEL: 7120
ECO NO: 86096
DATE OF LAST ECO: 7/11/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5176-0015	SLV-#22 NATURAL	0		3	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
A5650-0130	TEST PROC-ATTENUATOR VOLTAGE C	0	B	4	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0933	PCB ASSY-VOLTAGE CONTROL ATTEN	0	A	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1067	SCHEM DIAG-VOLTAGE CONTROL ATT	0	A	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

3200

AS OF 5/03/87

3700

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

700T-0958 OPCODE: 0 REV: B PCB ASSY-1214-1328MHZ OSC/PLL
MODEL: 7120
ECO NO: 87006
DATE OF LAST ECO: 2/11/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0022	CAP-680PF 5% 300V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C26	00/00/00	99/99/99
														C29		
1002-0050	CAP-100PF 2% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C24	00/00/00	99/99/99
1005-0074	CAP-10PF 10% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C56	00/00/00	99/99/99
1005-0077	CAP-1000PF +100-0% 300V CER FE	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	C1	00/00/00	99/99/99
														C4		
														C6		
														C41		
														C45		
1005-0080	CAP-100PF 20% 250V Z5U CER FEE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C38	00/00/00	99/99/99
														C39		
														C40		
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C47	00/00/00	99/99/99
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	16.000	1.000	EA	S1	N	N	16.000	0	0	C3	00/00/00	99/99/99
														C15		
														C16		
														C17		
														C18		
														C19		
														C20		
														C21		
														C22		
														C23		
														C25		
														C27		
														C28		
														C30		
														C32		
														C43		
1005-0111	CAP-5.6PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C55	00/00/00	99/99/99
1012-0008	CAP-1.8PF .5PF 50V NPO CHIP	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C53	00/00/00	99/99/99
														C54		
1012-0033	CAP-220PF 10% 50V NPO CHIP	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C48	00/00/00	99/99/99
														C49		
														C50		
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C2	00/00/00	99/99/99
														C5		
														C7		
														C9		
														C31		

3700

CLASS CODE: 3
OUTSIDE VENDOR

7001-0958 OPCODE: 0 REV: B PCB ASSY-1214-1325MHZ OSC/PLL
MODEL: 7120
ECO NO: 87006
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C42	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C51	00/00/00	99/99/99
1065-1025	RES-1K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R69	00/00/00	99/99/99
1065-1315	RES-130 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R57	00/00/00	99/99/99
1065-1815	RES-180 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R49	00/00/00	99/99/99
1065-2015	RES-200 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R31	00/00/00	99/99/99
1065-2205	RES-22 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99
1065-3005	RES-30 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R50	00/00/00	99/99/99
1065-4305	RES-43 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R61	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R14 R23 R29 R38	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R42 R58	00/00/00	99/99/99
1066-1125	RES-1.1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R39 R65	00/00/00	99/99/99
1066-1225	RES-1.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1066-1315	RES-130 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R12 R15 R16	00/00/00	99/99/99
1066-2055	RES-2MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R43	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R28 R51 R59	00/00/00	99/99/99
1066-2425	RES-2.4K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R11 R27 R47 R48	00/00/00	99/99/99
1066-3325	RES-3.3K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R45 R46	00/00/00	99/99/99
1066-3615	RES-360 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R52	00/00/00	99/99/99
1066-3925	RES-3.9K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-3935	RES-39K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R10 R36	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R18 R21	00/00/00	99/99/99
1066-6215	RES-620 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R24 R25	00/00/00	99/99/99

AS OF 5/03/87

3700

CLASS CODE: 3
OUTSIDE VENDOR

7001-0958 OPCODE: 0 REV: B PCB ASSY-1214-1325MHZ OSC/PLL
MODEL: 7120
ECO NO: 87006
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-7505	RES-75 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-7515	RES-750 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R66	00/00/00	99/99/99
1066-8205	RES-82 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1067-1015	RES-100 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1074-1005	RES-4.64K 1% 25PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R6	00/00/00	99/99/99
1075-0009	RES-10K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R67	00/00/00	99/99/99
1075-0011	RES-12.1K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R5	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R8	00/00/00	99/99/99
														R9		
														R26		
1075-0140	RES-6.81K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1215-0043	POT-10K 20% 1/2W 1T CERMET TRM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R69	00/00/00	99/99/99
1215-0053	POT-5K 10% 1/2W 1T CERMET TRMR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1253-0002	THMS-1K 10% 3.5MW RDL DISC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R60	00/00/00	99/99/99
1272-0060	XSTR-2N5179 NPN SI T072 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q3	00/00/00	99/99/99
														Q4		
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	CR1	00/00/00	99/99/99
														CR2		
														CR3		
														CR6		
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR5	00/00/00	99/99/99
1282-0006	DIO-HP0180 SI STEP RCVY D07 4.	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR4	00/00/00	99/99/99
1585-0006	CH-4700UH 5% RF MLD AXL .240X.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L5	00/00/00	99/99/99
														L6		
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L1	00/00/00	99/99/99
														L2		
														L10		
1585-0025	CH-22UH 10% RF MLD AXL .28DX.9	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L3	00/00/00	99/99/99
1585-0062	CH-.39UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L7	00/00/00	99/99/99
1585-0065	CH-.15UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L11	00/00/00	99/99/99
1586-0004	CH-.047X.138X.118 FERRITE BEAD	1		0	10.000	1.000	EA	B1	Y	N	10.000	0	0	L12	00/00/00	99/99/99
														L13		
														L14		
														L15		
														L16		
														L17		
														L18		
														L19		
														L20		
														L21		
1596-0069	ASSY-COIL-AIR CORE	0	A	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L8	00/00/00	99/99/99

3700

CLASS CODE: 3
OUTSIDE VENDOR

7001-0958 OPCODE: 0 REV: B PCB ASSY-1214-1325MHZ OSC/PLL
MODEL: 7120
ECO NO: 87006
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1780-1344	PCB-1214-1325MHZ OSC/PLL	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2061-0021	OSC-VTO-9120-1200-2000MHZ	0		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	U7	00/00/00	99/99/99
2010-0016	MXR-FREQ LEVEL 10 50KHZ-3GHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0160	IC-CA3089E FM IF SYSTEM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0171	IC-CA 3046 XSTR AND DIO ARRAY	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U3	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U6	00/00/00	99/99/99
2025-0452	IC-12040 14PIN PH-FREQ DET	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U4	00/00/00	99/99/99
2025-0460	IC-MSA-404 CASCADABLE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U8	00/00/00	99/99/99
2535-0260	CONN-POLARIZING KEY	0		14	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	J1 J2 J3	00/00/00	99/99/99
2657-0264	SHIELD-PCB RF	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		4	1.000	1.000	IN	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
3657-0010	TIE-MINI CABLE	0		11	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3766-0014	LUG-#6 SOLDER	0		12	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3768-0010	TERMNL-TURRET TYPE	0		13	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4630-0002	IS06 LOCTITE (1 OZ)	0		15	.001	1.000	BT	F3	Y	N	.001	0	0	AS REQ	00/00/00	99/99/99
7033-0176	CA ASSY-10 CNDCT RIBBON	0	A	6	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0200	CA ASSY-.086 SEMI-RIGID COAX	0	A	7	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0949	TEST PROC-1214-1325MHZ OSC/PLL	0	*	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0958	PCB ASSY-1214-1325MHZ OSC/PLL	0	B	9	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8009-1089	SCHEM DIAG-1214-1325MHZ OSC/PL	0	A	10	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

3800

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CLASS CODE: 3
OUTSIDE VENDOR

7001-0956 OPCODE: 0 REV: B PCB ASSY-1325-2225MHZ OSC/PLL
MODEL: 7120
ECO NO: 87005
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ:Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0022	CAP-680PF 5% 300V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C26	00/00/00	99/99/99
														C29		
~~1002-0050~~	~~CAP-100PF 2% 500V DIP MICA~~	~~1~~		~~0~~	~~1.000~~	~~1.000~~	~~EA~~	~~B1~~	~~N~~	~~N~~	~~1.000~~	~~0~~	~~0~~	~~C24~~	~~00/00/00~~	~~99/99/99~~
1005-0077	CAP-1000PF +100-0% 300V CER FE	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C1	00/00/00	99/99/99
														C4		
														C6		
														C8		
														C41		
														C45		
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C38	00/00/00	99/99/99
														C39		
														C40		
														C57		
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C47	00/00/00	99/99/99
~~1005-0100~~	~~CAP-.01UF 20% 100V Y5P MINTR C~~	~~1~~	~~A~~	~~0~~	~~19.000~~	~~1.000~~	~~EA~~	~~S1~~	~~N~~	~~N~~	~~19.000~~	~~0~~	~~0~~	~~C3~~	~~00/00/00~~	~~99/99/99~~
														C11		
														C15		
														C16		
														C17		
														C18		
														C19		
														C20		
														C21		
														C22		
														C23		
														C25		
														C27		
														C28		
														C30		
														C32		
														C43		
														C52		
														C58		
1005-0111	CAP-5.6PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C55	00/00/00	99/99/99
1005-0123	CAP-15PF 10% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C56	00/00/00	99/99/99
~~1012-0008~~	~~CAP-1.8PF .5PF 50V NPO CHIP~~	~~1~~		~~0~~	~~2.000~~	~~1.000~~	~~EA~~	~~B1~~	~~N~~	~~N~~	~~2.000~~	~~0~~	~~0~~	~~C53~~	~~00/00/00~~	~~99/99/99~~
														C54		
1012-0033	CAP-220PF 10% 50V NPO CHIP	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C48	00/00/00	99/99/99
														C49		
														C50		
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C2	00/00/00	99/99/99

3800

CLASS CODE: 3
OUTSIDE VENDOR

7001-0956 OPCODE: 0 REV: B PCB ASSY-1325-2225MHZ OSC/PLL
MODEL: 7120
ECO NO: 87005
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C5	00/00/00	99/99/99
														C7		
														C9		
														C31		
														C42		
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C51	00/00/00	99/99/99
1065-1015	RES-100 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R71	00/00/00	99/99/99
1065-1025	RES-1K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R72	00/00/00	99/99/99
1065-1315	RES-130 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R57	00/00/00	99/99/99
1065-1815	RES-180 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R49	00/00/00	99/99/99
1065-2015	RES-200 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R31	00/00/00	99/99/99
1065-2205	RES-22 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99
1065-2225	RES-2.2K 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R70	00/00/00	99/99/99
1065-3005	RES-30 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R50	00/00/00	99/99/99
1065-4305	RES-43 OHM 5% 1/8W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R61	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R8	00/00/00	99/99/99
														R14		
														R23		
														R29		
														R38		
1066-1045	RES-100K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R42	00/00/00	99/99/99
														R58		
1066-1125	RES-1.1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R39	00/00/00	99/99/99
														R65		
1066-1225	RES-1.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R13	00/00/00	99/99/99
1066-1315	RES-130 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-1525	RES-1.5K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R62	00/00/00	99/99/99
														R68		
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R3	00/00/00	99/99/99
														R12		
														R15		
														R16		
1066-2055	RES-2MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R43	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R51	00/00/00	99/99/99
														R59		
1066-2425	RES-2.4K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R11	00/00/00	99/99/99
														R27		
														R47		
														R48		
														R63		
1066-3325	RES-3.3K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R45	00/00/00	99/99/99

AS OF 5/03/87

3800

CLASS CODE: 3
OUTSIDE VENDOR

7001-0956 OPCODE: 0 REV: B PCB ASSY-1325-2225MHZ OSC/PLL
MODEL: 7120
ECO NO: 87005
DATE OF LAST ECO: 2/11/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-3325	RES-3.3K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R46	00/00/00	99/99/99
1066-3615	RES-360 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R52	00/00/00	99/99/99
1066-3925	RES-3.9K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-3935	RES-39K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R10	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R36 R2 R18 R21	00/00/00	99/99/99
1066-5125	RES-5.1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R19 R20	00/00/00	99/99/99
1066-6215	RES-620 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R24 R25	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R28 R69	00/00/00	99/99/99
1066-7505	RES-75 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-8205	RES-82 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1067-1015	RES-100 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R9 R26	00/00/00	99/99/99
1075-0111	RES-4.32K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R5	00/00/00	99/99/99
1075-0140	RES-6.81K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1075-0184	RES-8.66K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R6	00/00/00	99/99/99
1203-0071	POT-5K 20% 1/2W 1T CERMET TRMR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R67	00/00/00	99/99/99
1215-0052	POT-1K 10% 1/2W 1T CERMET TRMR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1272-0027	XSTR-2N4342 SI R124B J-FET P-C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0042	XSTR-2N4391 SI TO 18 J-FET N-C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q6	00/00/00	99/99/99
1272-0060	XSTR-2N5179 NPN SI T072 LOW PW	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q3 Q4	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR1 CR3 CR5 CR2 CR6	00/00/00	99/99/99
1282-0006	DIO-HP0180 SI STEP RCVY D07 4.	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR4	00/00/00	99/99/99
1585-0006	CH-4700UH 5% RF MLD AXL .240X.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L5 L6	00/00/00	99/99/99
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L1 L2 L10	00/00/00	99/99/99
1585-0025	CH-22UH 10% RF MLD AXL .28DX.9	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L3	00/00/00	99/99/99

3800

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0956 OPCODE: 0 REV: B PCB ASSY-1325-2225MHZ OSC/PLL
MODEL: 7120
ECO NO: 87005
DATE OF LAST ECO: 2/11/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1585-0062	CH-.39UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L7	00/00/00	99/99/99
1585-0065	CH-.15UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L11	00/00/00	99/99/99
1586-0004	CH-.047X.138X.118 FERRITE BEAD	1		0	10.000	1.000	EA	B1	Y	N	10.000	0	0	L12	00/00/00	99/99/99
														L13		
														L14		
														L15		
														L16		
														L17		
														L18		
														L19		
														L20		
														L21		
1596-0069	ASSY-COIL-AIR CORE	0	A	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L8	00/00/00	99/99/99
1780-1345	PCB-1325-2225MHZ OSC/PLL	0	A	1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2061-0020	OSC-VTO-9130 1300-2300MHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U7	00/00/00	99/99/99
2010-0016	MXR-FREQ LEVEL 10 50KHZ-3GHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	BM1	00/00/00	99/99/99
2025-0058	IC-1458 DUAL OP AMP 8PIN DIP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0160	IC-CA3089E FM IF SYSTEM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0171	IC-CA 3046 XSTR AND D10 ARRAY	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U3	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U6	00/00/00	99/99/99
2025-0451	IC-10131 16P DUAL D MA-SLAV FF	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U1	00/00/00	99/99/99
2025-0452	IC-12040 14PIN PH-FREQ DET	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U4	00/00/00	99/99/99
2025-0460	IC-MSA-404 CASCADABLE	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U8	00/00/00	99/99/99
2535-0260	CONN-POLARIZING KEY	0		14	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	J1	00/00/00	99/99/99
														J2		
														J3		
2657-0264	SHIELD-PCB RF	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		4	1.000	1.000	IN	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
3657-0010	TIE-MINI CABLE	0		11	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3766-0014	LUG-#6 SOLDER	0		12	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3768-0010	TERMNL-TURRET TYPE	0		13	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4430-0002	ISO6 LOCTITE (1 OZ)	0		15	.001	1.000	BT	F3	Y	N	.001	0	0	AS REQ	00/00/00	99/99/99
7033-0176	CA ASSY-10 CNDCT RIBBON	0	A	6	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7033-0206	CA ASSY-.086 SEMI-RIGID COAX	0	A	7	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0948	TEST PROC-1325-2225MHZ OSC/PLL	0	*	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0956	PCB ASSY-1325-2225MHZ OSC/PLL	0	C	9	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1055	SCHEM DIA-1325-2225MHZ OSC/PLL	0	A	10	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7000 Family
5000 Assy

5000

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7003-0185 OPCODE: 1 REV: H PNL ASSY-REAR
MODEL: 7000 FAM.
ECO NO: 86194
DATE OF LAST ECO: 11/26/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0014	CAP-.05UF +80-20% 25V Y5U CER	1		43	1.000	1.000	EA	B1	N	N	1.000	0	0	C15	00/00/00	99/99/99
1005-0047	CAP-820PF 10% 1KV Z5R CER DISC	1		44	1.000	1.000	EA	B1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1005-0055	CAP-.047UF 10% 100V MLD CER	1		1	7.000	1.000	EA	B1	N	N	7.000	0	0	C8 C9 C10 C11 C12 C13 C14	00/00/00	99/99/99
1005-0118	CAP-680PF 20% 3KV Z5U CER DISC	1		45	2.000	1.000	EA	B1	N	N	2.000	0	0	C17 C18	00/00/00	99/99/99
1005-0135	CAP-1000PF CMV 200V W5U CER FE	0		2	7.000	1.000	EA	B1	N	N	7.000	0	0	C1 C2 C3 C4 C5 C6 C7	00/00/00	99/99/99
1585-0040	CH-100UH 20% ENCAP AXL .31DX1.	1		46	2.000	1.000	EA	B1	N	N	2.000	0	0	L4 L5	00/00/00	99/99/99
1595-0003	COIL-TOROIDAL 90UH/.825DIA/20G	1	A	36	3.000	1.000	EA	B3	N	N	3.000	0	0	L1 L2 L3	00/00/00	99/99/99
1645-0043	CORE-.312X.500X.250 TOROIDAL	1		47	1.000	1.000	EA	B1	N	N	1.000	0	0	L6	00/00/00	99/99/99
1760-0016	STRIP-TERMINAL 3 LUG TYPE #52A	0		48	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
1955-0023	FU-2-1/2 AMP SLO BLO	1		57	1.000	1.000	EA	B1	N	N	1.000	0	0	F1	00/00/00	99/99/99
1970-0037	HTSK-PWR SPLY W/F	1	A	3	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
2245-0202	PLATE-BATTERY PACK MOUNTING	1		53	2.000	1.000	EA	B1	N	N	2.000	0	0		8/08/85	99/99/99
2535-0235	CONN-3PIN AC JK W/FU HLDR & RF	1		4	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2595-0002	POST-BINDING BLACK INSULATED H	0		5	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2595-0003	POST-BINDING RED INSULATED HEA	1		6	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0251	SHLD-PC BOARD	1		7	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2657-0252	SHLD-PWR SPLY RFI	1		8	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2800-0338	PNL-I/O W/F	1	A	9	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
3001-0012	ST-OFF-9/16"	0		37	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
3002-0013	BMPR-1.5LGX.5WX.25H BLK PLSTC	0		58	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3181-0009	WIRE-22 INS 7 ST 600V WHITE	0		50	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3181-0010	WIRE-22 INS 7 ST 600V BLACK	0		49	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
3640-0028	KPR-DRAW LATCH RD MACHINED	1	B	54	2.000	1.000	EA	X1	N	N	2.000	0	0		00/00/00	99/99/99
3766-0001	LUG-#6 SOLDER	0		12	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
3766-0002	LUG-#8 SOLDER	0		13	9.000	1.000	EA	F3	N	N	9.000	0	0		00/00/00	99/99/99

5000

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
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7003-0185 OPCODE: 1 REV: H PNL ASSY-REAR
MODEL: 7000 FAM.
ECO NO: 86194
DATE OF LAST ECO: 11/26/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
3766-0014	LUG-#6 SOLDER	0		51	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4000-0003	NUT-6/32X1/4 HEX S S	0		14	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4000-0035	NUT-6-32X5/16X7/32 NYL HEX LOC	0		38	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		39	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
4030-0061	SCR-4-40X1/4 ALN STL BLK OXD S	1		15	9.000	1.000	EA	F3	N	N	9.000	0	0		00/00/00	99/99/99
4030-0063	SCR-4-40X1/4X82 FLH BLK OXD	0		56	4.000	1.000	EA	F3	N	N	4.000	0	0		8/08/85	99/99/99
4030-0064	SCR-4-40X3/8X82 FLH BLK OXD	0		55	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0023	STUD-6-32X3/4 CONT THREAD BRAS	0		17	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0038	SCR-6-32X3/8 PAN HD S S	0		18	6.000	1.000	EA	F3	N	N	6.000	0	0		00/00/00	99/99/99
4031-0047	SCR-6-32X1/4 PAN HD S S	0		19	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4031-0069	SCR-6-32X3/4 SLT NYL BDGH NATU	0		40	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
4031-0076	SCR-6-32X5/16 PHIL STL CP BLK	0		20	4.000	1.000	EA	F1	N	N	4.000	0	0		00/00/00	99/99/99
4080-0004	WSHR-8X.336X.020 STL NP INT LK	0		21	7.000	1.000	EA	F3	N	N	7.000	0	0		00/00/00	99/99/99
4081-0002	WSHR-4 EXTERNAL	0		41	3.000	1.000	EA	F3	N	N	3.000	0	0		00/00/00	99/99/99
4081-0003	WSHR-6 EXTERNAL	0		22	8.000	1.000	EA	F3	N	N	8.000	0	0		00/00/00	99/99/99
4096-0002	WSHR-.637X.50X.032 FIBER	0		42	6.000	1.000	EA	F	N	N	6.000	0	0		00/00/00	99/99/99
4096-0008	WSHR-.253X.437X.031 TEFLON FLA	0		23	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4295-0026	SPCR-6-32 MALE/FEMALE	1		24	4.000	1.000	EA	F3	N	N	4.000	0	0		00/00/00	99/99/99
4295-0088	SPCR-6-32X1/4X1.0 AL IP HEX	1		25	2.000	1.000	EA	B1	N	N	2.000	0	0		00/00/00	99/99/99
4560-0091	BZL-REAR W/F	1	A	26	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
5156-0024	TAPE-1ML THKX.70YD MYLAR SELF	0		60	.000	1.000	RL	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5176-0004	TBG-1/8 SHRINK BLK	0		27	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5176-0011	TBG-3/8 SHRINK BLK	0		52	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5176-0015	SLV-#22 NATURAL	0		29	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7001-0861	PCB ASSY-AC/DC SWITCHER	1	D	30	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0355	HARN ASSY-AC/DC LOGIC	1	A	31	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0356	HARN ASSY-DC SUPPLY	1	A	32	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7032-6113	CA ASSY-RG188 SMC BHD JK-RTANG	1	B	33	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7032-6123	CA ASSY-RG188 SMC BHD JK-RTANG	0	B	34	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7046-0083	CSTG ASSY-PWR ATTEN	1	B	35	1.000	1.000	EA	M1	N	N	1.000	0	0		00/00/00	99/99/99
D7003-0185	PNL ASSY-REAR	0	E	0	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1011	INTCON DIAG-REAR PANEL	0	B	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

7000 Family

5100

5100

CLASS CODE: 2
MAKE & PHANTOM ASSYS

7046-0083 OPCODE: 1 REV: B CSTG ASSY-PWR ATTEN
MODEL: 7000
ECO NO: 85170
DATE OF LAST ECO: 10/03/85

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1780-1280	PCB-HYBRID TRANSITION	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2180-0259	COV-PWR ATTEN	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2536-0190	CONN-SMC 50 OHM STR JK FT BHD	0		3	3.000	1.000	EA	B1	N	N	3.000	0	0	J 1 J 2 J 3	00/00/00	99/99/99
3279-0001	WIRE-26GA TINNED COPPER BUS	0		4	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
4029-0019	SCR-2-56X1/4 STL CP TORX HEX H	0		5	16.000	1.000	EA	F3	N	N	16.000	0	0		00/00/00	99/99/99
4560-0093	CSTG-PWR ATTEN W/F	1	A	6	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
4630-0018	ADH-SILVER POLYIMIDE CONDUCTIV	0		7	.000	1.000	OZ	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5195-0001	CMPD-DOW #340 SILICONE HEAT SI	0		8	.000	1.000	TB	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7041-0051	PL ASSY-30DB HI-PWR ATTEN	1	1	9	1.000	1.000	EA	S1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0824	TEST ROC-PWR ATTEN CSTG	0	A	11	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99
D7046-0083	CSTG ASSY-PWR ATTEN	0	B	12	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0913	INTCON DIAG-PWR ATTEN CSTG	0	A	13	1.000	1.000	CP	F5	N	N	1.000	0	0	COPY	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

5200

7100 Family
5200

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0001	CMT-RES FSV 5% 1/4W CC	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R61	00/00/00	99/99/99
-CMT-0003	CMT-RES FSV 1% 1/8W MF	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R44	00/00/00	99/99/99
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C13	00/00/00	99/99/99
1005-0051	CAP-.01UF 20% 1.4KV CER DISC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C3	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C6	00/00/00	99/99/99
														C21		
														C25		
														C59		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	16.000	1.000	EA	S1	N	N	16.000	0	0	C4	00/00/00	99/99/99
														C7		
														C29		
														C30		
														C34		
														C39		
														C40		
														C42		
														C43		
														C45		
														C46		
														C48		
														C51		
														C54		
														C55		
														C60		
1005-0098	CAP-2200PF 20% 3KV Z5U CER DIS	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1	00/00/00	99/99/99
														C2		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	7.000	1.000	EA	S1	N	N	7.000	0	0	C26	00/00/00	99/99/99
														C27		
														C36		
														C47		
														C56		
														C57		
														C58		
1008-0031	CAP-.1UF 10% 100V RDL POLYESTE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1008-0103	CAP-.1UF 10% 600V AXL MET-POLY	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C12	00/00/00	99/99/99
1011-0013	CAP-1UF 20% 50V RDL TANT	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C5	00/00/00	99/99/99
														C22		
														C41		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1013-0052	CAP-100UF +50-10% 50V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C19	00/00/00	99/99/99
1013-0065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C23	00/00/00	99/99/99

5200

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1013-0065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C24 C28 C31	00/00/00	99/99/99
1013-0066	CAP-100UF +50-10% 25V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C20 C32	00/00/00	99/99/99
1013-0067	CAP-100UF 20% 250V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C9 C11	00/00/00	99/99/99
1013-0068	CAP-470UF +50-10% 35V RDL ELC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C15 C52 C53	00/00/00	99/99/99
1013-0069	CAP-680 UF 20% 25V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C10 C14	00/00/00	99/99/99
1013-0070	CAP-1000UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C17	00/00/00	99/99/99
1013-0071	CAP-1000UF +50-10% 25V RDL ELC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C18	00/00/00	99/99/99
1013-0072	CAP-2200UF 20% 35V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C33	00/00/00	99/99/99
1013-0073	CAP-6800UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1066-0001	RES-4.7 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R31 R56 R57	00/00/00	99/99/99
1066-0002	RES-5.1 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R37 R62	00/00/00	99/99/99
1066-0006	RES-3.3 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R58 R59 R60	00/00/00	99/99/99
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R63	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R35	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R66 R69	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R11 R43 R49	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R6 R7 R8 R20	00/00/00	99/99/99
1066-1055	RES-1MEG 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R27 R73	00/00/00	99/99/99
1066-1135	RES-11K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R65	00/00/00	99/99/99
1066-1205	RES-12 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R14 R15	00/00/00	99/99/99
1066-1235	RES-12K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 2/25/87

5200

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ'Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1505	RES-15 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R39	00/00/00	99/99/99
1066-1835	RES-18K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R29	00/00/00	99/99/99
														R33		
														R38		
														R45		
1066-2425	RES-2.4K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R26	00/00/00	99/99/99
1066-2745	RES-270K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R36	00/00/00	99/99/99
1066-3325	RES-3.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R54	00/00/00	99/99/99
1066-3335	RES-33K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R9	00/00/00	99/99/99
														R47		
1066-3625	RES-3.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R51	00/00/00	99/99/99
1066-3635	RES-36K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R19	00/00/00	99/99/99
														R50		
1066-4325	RES-4.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-4735	RES-47K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R42	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R23	00/00/00	99/99/99
														R55		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R21	00/00/00	99/99/99
														R28		
														R52		
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R72	00/00/00	99/99/99
1066-5625	RES-5.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R22	00/00/00	99/99/99
														R46		
														R48		
1066-9125	RES-9.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1067-4715	RES-470 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1067-5115	RES-510 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1068-1005	RES-10 OHM 5% 1W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1068-1315	RES-130 OHM 5% 1W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1069-1115	RES-110 OHM 5% 2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R71	00/00/00	99/99/99
1075-0153	RES-1.30K 1% 100PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1099-0004	RES-56K 5% 2W @ 70C MOF	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R5	00/00/00	99/99/99
														R13		
1159-0009	RES-33 OHM 5% 3W 20PPM AXL WW	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1203-0071	POT-5K 20% 1/2W 1T CERMET TRMR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R41	00/00/00	99/99/99
1203-0072	POT-2K 20% 1/2W 1T CERMET TRMR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R24	00/00/00	99/99/99
														R25		

BILL OF MATERIAL

AS OF 2/25/87

5200

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER

MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1215-0050	POT-200 OHM 10% 1/2W 1T CERMET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R67 R70	00/00/00	99/99/99
1253-0005	THMS-25 OHM 10% 25MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1253-0006	THMS-100 OHM 10% 8MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1254-0002	VRIS-275VAC/369VDC 6500A RDL D	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q6	00/00/00	99/99/99
1272-0113	XSTR-92PU45 NPN SI DARLINGTON	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1 Q4	00/00/00	99/99/99
1272-0140	XSTR-IRF721 SI TO220AB MOSFET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q2 Q3	00/00/00	99/99/99
1272-0147	XSTR-35N06 SI TO218AC TMOSFET	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q8	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW DO7/DO35 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR18 CR19 CR20 CR21 CR25 CR26 CR30	00/00/00	99/99/99
1281-0028	DIO-1N4744 SI ZENER A98A 15V	1	1	0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR3 CR6 CR7 CR8 CR9	00/00/00	99/99/99
1281-0103	DIO-VM48 SI BRDG RECT 6 PIN DI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1281-0104	DIO-1N827 SI ZENER DO7 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW DO7 75PRV .25	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR29	00/00/00	99/99/99
1281-0160	DIO-IN 5908 SI SURGE LIMITER 5	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR13	00/00/00	99/99/99
1281-0178	DIO-1535CT DUAL RECT TO220 35P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR12 CR28	00/00/00	99/99/99
1281-0183	DIO-1N5817 SI RECT A1WU 20PRV	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR22 CR23 CR17	00/00/00	99/99/99
1281-0184	DIO-1N4743A SI ZENER DO41 13V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR31	00/00/00	99/99/99
1282-0010	DIO-1N5615 SI F RCVY A109C 200	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR16	00/00/00	99/99/99
1282-0022	DIO-1402 SI F RCVY TO220 100PR	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR11 CR14 CR15 CR24 CR27	00/00/00	99/99/99
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR4	00/00/00	99/99/99

5200

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ:Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR5 CR10	00/00/00	99/99/99
1575-0054	XFMR-POT CORE 18X11	0	C	0	1.000	1.000	EA	X1	N	N	1.000	0	0	T1	00/00/00	99/99/99
1780-1315	PCB-AC/DC SWITCHER	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0038	HTSK-PWR XSTR MTG	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0039	HTSK-PWR XSTR MTG	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0091	IC-MC1455P1 TIMING CIRCUIT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U1 U6 U7	00/00/00	99/99/99
2025-0320	IC-317 TO220 3 TERM ADJ POS RG	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U8 U9	00/00/00	99/99/99
2025-0443	IC-6502 14PIN DIP QUAD XSTR AR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0444	IC-UC3524A REG PULSE WIDTH MOD	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U3 U4	00/00/00	99/99/99
3003-0012	INSUL-SILICONE THERMAL TIP-36	0		4	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		5	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		6	5.000	1.000	EA	F3	N	N	5.000	0	0		00/00/00	99/99/99
4096-0027	WSHR-.113X.23X.23 SHLDR .095X.	0		7	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
A5650-0956	TEST PROC-AC/DC SWITCHER	0	A	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0861	PCB ASSY-AC/DC SWITCHER	0	*	8	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0984	SCHEM DIAG-AC/DC SWITCHER	0	*	9	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 7/07/87

6100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0923 OPCODE: 0 REV: C PCB ASSY-OSCILLOSCOPE
MODEL: 7120/7110
ECO NO: 87075 6100Bd
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1002-0039	CAP-820PF 5% 300V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C27	00/00/00	99/99/99
1002-0040	CAP-360PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C25	00/00/00	99/99/99
1005-0094	CAP-.01UF +80-20% 500V Y5U CER	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C26	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	4.000	1.000	EA	S1	N	N	4.000	0	0	C22	00/00/00	99/99/99
														C23		
														C24		
														C32		
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	15.000	1.000	EA	S1	N	N	15.000	0	0	C3	00/00/00	99/99/99
														C4		
														C7		
														C8		
														C9		
														C13		
														C15		
														C17		
														C20		
														C21		
														C28		
														C29		
														C33		
														C34		
														C35		
1005-0109	CAP-56PF 10% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C36	00/00/00	99/99/99
1008-0115	CAP-.1UF 1% 50V AXL MET-POLYCA	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C1	00/00/00	99/99/99
1008-0116	CAP-.01UF 1% 50V AXL MET-POLYC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C2	00/00/00	99/99/99
1008-0117	CAP-.001UF 1% 50V AXL MET-POLY	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C30	00/00/00	99/99/99
1008-0118	CAP-1UF 1% 50V AXL MET-POLYCAR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C31	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C14	00/00/00	99/99/99
														C16		
														C18		
														C11		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C5	00/00/00	99/99/99
														C12		
1013-0042	CAP-15UF +100-10% 25V RDL NP E	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C10	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C6	00/00/00	99/99/99
														C19		
1066-0002	RES-5.1 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R16	00/00/00	99/99/99
														R73		
1066-1035	RES-10K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R5	00/00/00	99/99/99
														R19		

6100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0923 OPCODE: 0 REV: C PCB ASSY-OSCILLOSCOPE
MODEL: 7120/7110
ECO NO: 87075
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ:Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1035	RES-10K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R33	00/00/00	99/99/99
														R74		
1066-1045	RES-100K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R27	00/00/00	99/99/99
														R30		
														R31		
														R48		
														R49		
1066-1135	RES-11K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R69	00/00/00	99/99/99
1066-1225	RES-1.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R70	00/00/00	99/99/99
1066-1245	RES-120K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R13	00/00/00	99/99/99
														R20		
1066-1325	RES-1.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1066-1335	RES-13K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R23	00/00/00	99/99/99
1066-1535	RES-15K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R21	00/00/00	99/99/99
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R24	00/00/00	99/99/99
1066-2025	RES-2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R15	00/00/00	99/99/99
														R26		
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R75	00/00/00	99/99/99
1066-2725	RES-2.7K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R8	00/00/00	99/99/99
1066-3025	RES-3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R29	00/00/00	99/99/99
1066-3325	RES-3.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-3635	RES-36K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R22	00/00/00	99/99/99
1066-4735	RES-47K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1066-5155	RES-5.1MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R32	00/00/00	99/99/99
1066-7525	RES-7.5K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R11	00/00/00	99/99/99
														R14		
														R28		
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R25	00/00/00	99/99/99
1066-8225	RES-8.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1069-3335	RES-33K 5% 2W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R46	00/00/00	99/99/99
														R47		
														R57		
														R58		
1074-0103	RES-931 OHM 1% 100PPM FILM	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R41	00/00/00	99/99/99
														R42		
														R43		
														R65		
1074-0106	RES-11K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R6	00/00/00	99/99/99
1074-1019	RES-9.09K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R38	00/00/00	99/99/99
1075-9009	RES-10K 1% 100PPM FILM	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R1	00/00/00	99/99/99

AS OF 7/07/87

6100

CLASS CODE: 3
OUTSIDE VENDOR

7001-0923 OPCODE: 0 REV: C PCB ASSY-OSCILLOSCOPE
MODEL: 7120/7110
ECO NO: 87075
DATE OF LAST ECO: 7/06/87

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1075-0009	RES-10K 1% 100PPM FILM	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R3	00/00/00	99/99/99
														R36		
														R34		
														R35		
1075-0010	RES-2.21K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R62	00/00/00	99/99/99
														R63		
1075-0011	RES-12.1K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R50	00/00/00	99/99/99
1075-0013	RES-5.62K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1075-0027	RES-2.49K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R51	00/00/00	99/99/99
1075-0035	RES-75 OHM 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R54	00/00/00	99/99/99
														R55		
1075-0037	RES-1K 1% 100PPM FILM	1		0	4.000	1.000	EA	B1	Y	N	4.000	0	0	R44	00/00/00	99/99/99
														R52		
														R53		
														R61		
1075-0041	RES-562 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1075-0050	RES-143K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1075-0082	RES-200 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R59	00/00/00	99/99/99
1075-0092	RES-3.24K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R66	00/00/00	99/99/99
1075-0094	RES-4.02K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R67	00/00/00	99/99/99
1075-0096	RES-20K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1075-0193	RES-392K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1075-0230	RES-49.9K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R37	00/00/00	99/99/99
1075-0244	RES-887 OHM 1% 25PPM FILM MIL	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R39	00/00/00	99/99/99
1203-0071	POT-5K 20% 1/2W 1T CERMET TRMR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R72	00/00/00	99/99/99
1203-0072	POT-2K 20% 1/2W 1T CERMET TRMR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R45	00/00/00	99/99/99
														R60		
1215-0046	POT-100K 20% 1/2W 1T CERMET TR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R9	00/00/00	99/99/99
														R71		
1272-0031	XSTR-2N5089 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q4	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q14	00/00/00	99/99/99
1272-0038	XSTR-2N5087 PNP SI TO 92 LOW P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1	00/00/00	99/99/99
														Q3		
1272-0042	XSTR-2N4391 SI TO 18 J-FET N-C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q2	00/00/00	99/99/99
1272-0091	XSTR-2N4124 NPN SI T092 LOW PW	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	Q8	00/00/00	99/99/99
														Q9		
														Q10		
														Q13		
1272-0135	XSTR-2N6558 NPN SI T0202AC HIG	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	Q6	00/00/00	99/99/99
														Q7		

6100

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0923 OPCODE: 0 REV: C PCB ASSY-OSCILLOSCOPE
MODEL: 7120/7110
ECO NO: 87075
DATE OF LAST ECO: 7/06/87

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1272-0135	XSTR-2N6558 NPN SI T0202AC HIG	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	Q11 Q12	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR4 CR5	00/00/00	99/99/99
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR1 CR3	00/00/00	99/99/99
1281-0160	DIO-IN 5908 SI SURGE LIMITER 5	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1780-1339	PCB-OSCILLOSCOPE	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0037	IC-74LS02 14PIN DIP QUAD 2-IP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U3	00/00/00	99/99/99
2025-0185	IC-74LS76 16 PIN DIP DUAL J-K	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U4	00/00/00	99/99/99
2025-0186	IC-74LS123 16 PIN DIP MONOSTAB	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0192	IC-TL082 8 PIN DIP BIFET OP AM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U1 U7	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0278	IC-356B 8 PIN DIP OP AMPL/BUFF	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U6	00/00/00	99/99/99
2025-0461	IC-DG403 16PIN CMOS ANALOG SW	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U8	00/00/00	99/99/99
2535-0141	CONN-8 PIN .1SP STR UCG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2535-0144	CONN-4PIN .1SP STR LKG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J4	00/00/00	99/99/99
2535-0146	CONN-6 PIN .1SP STR LKG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J5	00/00/00	99/99/99
2535-0157	CONN-20(2X10)PIN.1X.1SP STR PC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J2	00/00/00	99/99/99
2831-0159	LBL-.25X.50 BLANK WHT	0		7	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
3001-0024	PAD-TRANS MTG TO-18 .200 OD X	0		2	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
5285-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7032-4147	CA ASSY-RG188 RTANG SMB-FRL 17	0	1	6	1.000	1.000	EA	X1	N	N	1.000	0	0	LBL MM	00/00/00	99/99/99
A5650-0954	TEST PROC-OSCILLOSCOPE	0	A	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0923	PCB ASSY-OSCILLOSCOPE	0	B	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1073	SCHEM DIAG-OSCILLOSCOPE	0	C	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 5/21/87

6200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0894 OPCODE: 1 REV: D PCB ASSY-HI VOLT PWR SPLY
MODEL: 7010
ECO NO: 86017
DATE OF LAST ECO: 3/12/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0051	CAP-.01UF 20% 1.4KV CER DISC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C4	00/00/00	99/99/99
														C5		
														C6		
														C7		
														C8		
														C12		
1005-0052	CAP-.05UF +80-20% 500V Z5U CER	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C11	00/00/00	99/99/99
														C14		
1008-0036	CAP-.068UF 10% 100V RDL POLYES	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C2	00/00/00	99/99/99
														C3		
1008-0083	CAP-.047UF 10% 4KV AXL MET-MYL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C9	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C13	00/00/00	99/99/99
1013-0036	CAP-100UF +100-10% 50V RDL ELC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C1	00/00/00	99/99/99
1013-0051	CAP-10UF+50-10% 250V RDL ELCTL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C10	00/00/00	99/99/99
1066-0006	RES-3.3 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R16	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R5	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1066-5135	RES-51K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1067-2235	RES-22K 5% 1/2W CC	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R8	00/00/00	99/99/99
														R9		
														R10		
														R6		
1067-5145	RES-510K 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R11	00/00/00	99/99/99
1068-1015	RES-100 OHM 5% 1W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R15	00/00/00	99/99/99
1068-8215	RES-820 OHM 5% 1W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R 1	7/08/83	99/99/99
1130-0010	RES-309K OHMS 1% 1W 100PPM MF	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R12	00/00/00	99/99/99
														R13		
														R14		
1215-0046	POT-100K 20% 1/2W 1T CERMET TR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1215-0062	POT-500K 20% 1/2W 1T CERMET TR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R7	00/00/00	99/99/99
1272-0146	XSTR-TIP31C NPN SI B1 HIGH PWR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q 1	00/00/00	99/99/99
														Q 2		
1281-0023	DIO-1N4002 SI RECT A23F 100PRV	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR9	00/00/00	99/99/99
														CR10		
1281-0077	DIO-1N5273B SI ZENER D07 120V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR8	00/00/00	99/99/99
1282-0019	DIO-1N4948 SI F RCVY AITC 1000	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR1	00/00/00	99/99/99
														CR2		
														CR3		
														CR4		
														CR5		
														CR6		

BILL OF MATERIAL
AS OF 5/21/87

6200

CLASS CODE: 3
OUTSIDE VENDOR

7001-0894 OPCODE: 1 REV: D PCB ASSY-HI VOLT PWR SPLY
MODEL: 7010
ECO NO: 86017
DATE OF LAST ECO: 3/12/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1202-0019	DIO-1N4948 SI F RCVY AITC 1000	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR7	00/00/00	99/99/99
1575-0080	XFMR-POT CORE 32X30	1	A	0	1.000	1.000	EA	B1	N	N	1.000	0	0	T 1	7/08/83	99/99/99
1595-0004	COIL-TOROIDAL 1MH/1.2DIA/24GA/	1	A	0	1.000	1.000	EA	B3	N	N	1.000	0	0	L 1	00/00/00	99/99/99
1596-0266	INDCTR-POT CORE 18X11/400.5T/3	0	B	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L2	00/00/00	99/99/99
1780-1323	PCB-HI VOLT PWR SPLY	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2535-0074	CONN-6 PIN LOCKING MINTR JK	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J2	00/00/00	99/99/99
2535-0142	CONN-2 PIN .1SP STR LKG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2831-0148	LBL-CAUTION HIGH VOLTAGE	1		12	1.000	1.000	EA	F3	N	N	1.000	0	0		8/07/85	99/99/99
3657-0014	TIE-MINI CABLE 5.5" LG	0		2	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4000-0035	NUT-6-32X5/16X7/32 NYL HEX LOC	0		3	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4002-0001	NUT-4-40X1/4 HEX STL CR EXTLK	0		4	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4030-0004	SCR-4-40X5/16 PAN HD	0		5	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
4031-0069	SCR-6-32X3/4 SLT NYL BDGH NATU	0		6	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
4096-0002	WSHR-.637X.50X.032 FIBER	0		7	1.000	1.000	EA	F	N	N	1.000	0	0		6/09/83	99/99/99
4096-0021	WSHR .120X.20X.065 SHLDR .045X	0		8	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
5207-0013	YARN-ELECTRICAL INSULATING POL	0		9	.000	1.000	EA	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
5265-0017	BAG-FOAM PORCH 6X9X1/8THK ANTI	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0		00/00/00	99/99/99
7030-0284	HARN ASSY-HI VOLTAGE SPLY	0	A	10	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0366	HARN ASSY-CRT	0	C	11	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0897	TEST PROC-HI VOLTAGE PWR SPLY	0	*	13	1.000	1.000	EA	F5	N	N	1.000	0	0		8/07/85	99/99/99
D7001-0894	PCB ASSY-HI VOLT PWR SPLY	0	C	14	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D6000-1017	SCHEM DIAG-HI VOLT PWR SPLY	0	B	15	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

6300

CLASS CODE: 3
OUTSIDE VENDOR

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7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120/6300 ASSY
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1001-0006	CAP-9-35PF 200V N650 V MT CER	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C104 C105	00/00/00	99/99/99
1001-0008	CAP-5.5-18PF 350V NPO V MT CER	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C68 C114 C115	00/00/00	99/99/99
1001-0022	CAP-5.5-60PF 100V H-ADJ TEF TR	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C17 C18 C19	00/00/00	99/99/99
1002-0023	CAP-22PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C34 C119	00/00/00	99/99/99
1002-0028	CAP-5PF .5PF 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C132	00/00/00	99/99/99
1002-0029	CAP-220PF 5% 500V DIP MICA	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C9 C11 C26	00/00/00	99/99/99
1002-0033	CAP-390PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C89 C90	00/00/00	99/99/99
1002-0034	CAP-430PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C87 C88	00/00/00	99/99/99
1002-0035	CAP-470PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C7	00/00/00	99/99/99
1002-0040	CAP-360PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C10	00/00/00	99/99/99
1002-0045	CAP-51PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C106	00/00/00	99/99/99
1002-0046	CAP-43PF 5% 500V DIP MICA	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	C38 C39 C40 C43 C67	00/00/00	99/99/99
1002-0052	CAP-750PF 5% 300V DIP MICA	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C6 C8	00/00/00	99/99/99
1002-0059	CAP-300PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C133	00/00/00	99/99/99
1002-0091	CAP-160PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C134	00/00/00	99/99/99
1004-0008	CAP-20PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C31 C32	00/00/00	99/99/99
1004-0010	CAP-30PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C120	00/00/00	99/99/99
1004-0014	CAP-68PF 5% 500V DIP MICA	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C41 C42	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	16.000	1.000	EA	B1	N	N	16.000	0	0	C4 C12 C14 C20 C23 C25	7/03/86	99/99/99

BILL OF MATERIAL
AS OF 2/25/87

6300

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7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	16.000	1.000	EA	B1	N	N	16.000	0	0	C27 C29 C44 C46 C62 C69 C95 C121 C122 C128	7/03/86	99/99/99
1005-0082	CAP-100PF 5% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C30	00/00/00	99/99/99
1005-0092	CAP-.47UF 10% 50V MLD CER	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C80 C81 C82	00/00/00	99/99/99
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	13.000	1.000	EA	S1	N	N	13.000	0	0	C140 C47 C48 C66 C84 C86 C91 C92 C93 C94 C123 C127 C131	00/00/00	99/99/99
1005-0099	CAP-6800PF 10% 200V MLD CER	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C72 C73 C124 C125	00/00/00	99/99/99
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	53.000	1.000	EA	S1	N	N	53.000	0	0	C5 C13 C21 C24,28,36 C37,45,49 C50,53,54 C56,57,58 C60,63,64 C65,74,75 C76,78,83 C96,97,98	00/00/00	99/99/99

5-98

BILL OF MATERIAL

AS OF 2/25/87

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CLASS CODE: 3
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7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0100	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	53.000	1.000	EA	S1	N	N	53.000	0	0	C99,C100 C101 C102,C103 C107,C108 C109,C110 C111,C112 C113,C116 C117,C118 C129,C130 C142,C143 C144,C145 C146,C147 C148,C149 C59	00/00/00	99/99/99
1005-0124	CAP-2.7PF 10% 100V NPO MINTR C	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C33	00/00/00	99/99/99
1005-0140	CAP-390PF 5% 100V NPO MINTR CE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C139	00/00/00	99/99/99
1008-0091	CAP-.22UF 10% 100V RDL MET-MYL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C79	00/00/00	99/99/99
1008-0095	CAP-.0082UF 5% 600V RDL POLYES	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C126	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1013-0043	CAP-470UF+100-10% 6.3V MIN RDL	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C51 C52 C55	00/00/00	99/99/99
1013-0044	CAP-10UF 20% 35V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1 C3	00/00/00	99/99/99
1013-0045	CAP-47UF 20% 35V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C2 C77	00/00/00	99/99/99
1013-0047	CAP-1UF -10+50% 50V RDL ELCTLT	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	C135 C136 C137 C138 C141 C85	00/00/00	99/99/99
1040-0052	FLTR-XTAL 21.3MHZ 3DB BW 10KHZ	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	FL1	00/00/00	99/99/99
1040-0053	FLTR-XTAL 21.3MHZ 3DB BW 60KHZ	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	FL2	00/00/00	99/99/99
1040-0055	FLTR-CER 455KHZ 3DB BW 4KHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	FL3	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R14 R41 R54	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R2 R13 R43	00/00/00	99/99/99

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7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1035	RES-10K 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R28 R29 R37 R38 R58	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R35	00/00/00	99/99/99
1066-1055	RES-1MEG 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R87	00/00/00	99/99/99
1066-1525	RES-1.5K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R23 R27	00/00/00	99/99/99
1066-1535	RES-15K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R21 R22 R26 R89	00/00/00	99/99/99
1066-1625	RES-1.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R77	00/00/00	99/99/99
1066-2015	RES-200 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1066-2025	RES-2K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R20 R55	00/00/00	99/99/99
1066-2035	RES-20K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R24	00/00/00	99/99/99
1066-2415	RES-240 OHM 5% 1/4W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R1 R4 R7 R8 R19 R46	00/00/00	99/99/99
1066-2725	RES-2.7K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R15 R16	00/00/00	99/99/99
1066-3015	RES-300 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-3925	RES-3.9K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R42	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R90	00/00/00	99/99/99
1066-5105	RES-51 OHM 5% 1/4W CC	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	R88 R5 R6 R11 R12 R18	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	14.000	1.000	EA	B1	N	N	14.000	0	0	R40 R44 R47 R48 R49	00/00/00	99/99/99

BILL OF MATERIAL

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7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	14.000	1.000	EA	B1	N	N	14.000	0	0	R51	00/00/00	99/99/99
														R64		
														R65		
														R67		
														R70		
														R71		
														R73		
														R74		
														R84		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R82	00/00/00	99/99/99
														R83		
1066-5135	RES-51K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	R50	00/00/00	99/99/99
														R63		
														R66		
														R72		
														R75		
1074-0048	RES-68.1 OHM .1% 25PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R69	00/00/00	99/99/99
1074-1029	RES-10K 1% 25PPM FILM	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R60	00/00/00	99/99/99
														R62		
														R76		
1075-0018	RES-61.9K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99
1075-0027	RES-2.49K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R78	00/00/00	99/99/99
1075-0037	RES-1K 1% 100PPM FILM	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R52	00/00/00	99/99/99
														R61		
1075-0040	RES-221K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R39	00/00/00	99/99/99
1075-0083	RES-267 OHM 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1075-0105	RES-100K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R56	00/00/00	99/99/99
1075-0240	RES-40.2K 1% 100PPM FILM	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R85	00/00/00	99/99/99
1115-0005	RNET-9/10K 2% 100PPM 10 PIN SI	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	RN1	00/00/00	99/99/99
														RN2		
1203-0054	POT-5K 20% 1/2W 4T CERMET TRMR	0		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R33	00/00/00	99/99/99
														R57		
														R80		
1203-0059	POT-50K 20% 1/2W 4T CERMET TRM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R32	00/00/00	99/99/99
1203-0061	POT-10K 20% 1/2W 4T CERMET TRM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R79	00/00/00	99/99/99
														R81		
1215-0019	POT-10K 10% 1/2W 20T CERMET TR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R59	00/00/00	99/99/99
1215-0049	POT-100K 10% 1/2W 25T CERMET T	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R31	00/00/00	99/99/99
														R36		
1215-0061	POT-20K 10% 1/2W 25T CERMET TR	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R86	00/00/00	99/99/99

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N=PART DOES NOT PRINT ON SO

7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1215-0061	POT-20K 10% 1/2W 25T CERMET TR	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R25	00/00/00	99/99/99
1272-0018	XSTR-2N3642 NPN SI R110A LOW P	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	Q1	00/00/00	99/99/99
														Q4		
														Q6		
														Q7		
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0060	XSTR-2N5179 NPN SI T072 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q3	00/00/00	99/99/99
1272-0111	XSTR-MPSH81 PNP SI T092 LOW PW	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q2	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	9.000	1.000	EA	B1	N	N	9.000	0	0	CR9	00/00/00	99/99/99
														CR10		
														CR11		
														CR13		
														CR15		
														CR16		
														CR17		
														CR18		
														CR19		
1281-0064	DIO-MV209 SI VARICAP M764 29PF	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR1	00/00/00	99/99/99
														CR2		
1281-0083	DIO-1N756 SI ZENER A1 8.2V 5%	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR12	00/00/00	99/99/99
														CR14		
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR6	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW D07 75PRV .25	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR3	00/00/00	99/99/99
														CR4		
														CR5		
1282-0016	DIO-1N270 GE SIG D07 80PRV	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR7	00/00/00	99/99/99
														CR8		
1585-0005	CH-2.2UH 10% RF MLD AXL .28DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L8	00/00/00	99/99/99
1585-0012	CH-22UH 10% RF MLD AXL .16DX.3	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L29	00/00/00	99/99/99
														L30		
1585-0024	CH-.68UH 10% RF MLD AXL .16DX.	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L4	00/00/00	99/99/99
														L5		
1585-0038	CH-1.5UH 10% RF MLD AXL .16DX.	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	L2	00/00/00	99/99/99
														L3		
														L9		
														L17		
1585-0051	CH-15UH 10% RF MLD AXL .10DX.2	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L22	00/00/00	99/99/99
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	L11	00/00/00	99/99/99
														L26		
														L27		
														L31		

6300

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1585-0054	CH-100UH 10% RF MLD AXL .10DX.	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	L33	00/00/00	99/99/99
														L35		
														L36		
1585-0072	CH-1.8UH 10% RF MLD AXL .16DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L28	00/00/00	99/99/99
1585-0075	CH-.22UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L15	00/00/00	99/99/99
1585-0077	CH-180UH 10% RF MLD AXL .10DX.	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L34	00/00/00	99/99/99
1585-0080	CH-3.3UH 10% RF MLD AXL .10DX.	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	L18	00/00/00	99/99/99
														L20		
														L25		
1585-0086	CH-470UH 10% RF MLD AXL.10DX.2	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L23	00/00/00	99/99/99
1585-0088	CH-390UH 10% RF MLD AXL.10DX.2	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	L24	00/00/00	99/99/99
1596-0068	ASSY-COIL-AIR CORE	0	A	0	1.000	1.000	EA	X1	N	N	1.000	0	0	L32	00/00/00	99/99/99
1596-0331	COIL-.054 UH RF W/CORE	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	L6	00/00/00	99/99/99
														L7		
1596-5701	ASSY-COIL .06 UH	0	B	0	5.000	1.000	EA	X1	N	N	5.000	0	0	L10	00/00/00	99/99/99
														L12		
														L13		
														L14		
														L16		
1780-1334	PCB-SPECTRUM	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2010-0001	MXR-DBL BAL	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	BM1	00/00/00	99/99/99
														BM2		
2010-0009	MXR-SBL-1 DBL BAL 1-500MHZ	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	BM3	00/00/00	99/99/99
														BM4		
2025-0093	IC-SN7406N HEX INV BUFFERS/DRI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U25	00/00/00	99/99/99
2025-0110	IC-SN74LS73N DUAL J-K FLIP FLO	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U8	00/00/00	99/99/99
2025-0114	IC-SN74LS00N TTL NAND GATES	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U9	00/00/00	99/99/99
2025-0192	IC-TL082 8 PIN DIP BIFET OP AM	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U14	00/00/00	99/99/99
														U21		
2025-0369	IC-084 14PIN DIP QUAD OP AMP	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U10	00/00/00	99/99/99
2025-0462	IC-DG509A DUAL 4 CHAN ANLG MUX	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U11	00/00/00	99/99/99
2025-0463	IC-604 LOW POWER FM IF SYSTEM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U20	00/00/00	99/99/99
2025-0466	IC-12015 2-MOD PRESCALER L PWR	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U7	00/00/00	99/99/99
2025-0467	IC-5205 WBH FREQ AMPL	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	U17	00/00/00	99/99/99
														U18		
														U23		
														U24		
2025-0468	IC-MSA-0104 CASCADABLE AMPL	0		0	7.000	1.000	EA	B1	N	N	7.000	0	0	U1	00/00/00	99/99/99
														U2		
														U4		
														U5		

6300

CLASS CODE: 3
OUTSIDE VENDOR

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0939 OPCODE: 0 REV: C PCB ASSY-SPECTRUM
MODEL: 7120
ECO NO: 86226
DATE OF LAST ECO: 12/15/86

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2025-0468	IC-MSA-0104 CASCADABLE AMPL	0		0	7.000	1.000	EA	B1	N	N	7.000	0	0	U6 U13 U16	00/00/00	99/99/99
2025-0469	IC-MSA-0304 CASCADABLE AMPL	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U26	00/00/00	99/99/99
2025-0470	IC-5341 CMOS/D-MOS ANLG SW	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U22	00/00/00	99/99/99
2028-0019	FIRMWARE=32X8 PROM 74S288/0019	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U19	00/00/00	99/99/99
2035-3104	XTAL-21.755MHZ	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Y1	00/00/00	99/99/99
2535-0141	CONN-8 PIN .1SP STR UCG PCB MT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J4	00/00/00	99/99/99
2535-0157	CONN=20C2X10)PIN.1X.1SP STR PC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J6	00/00/00	99/99/99
2536-0071	CONN-SMB 50 OHM STR JK PC MT S	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	J1 J2 J3 J5	00/00/00	99/99/99
2657-0281	SHIELD-RF PCB	0		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
5176-0015	SLV=#22 NATURAL	0		8	.000	1.000	IN	F3	N	N	.000	0	0	AS REQ	00/00/00	99/99/99
7032-0304	CA ASSY-RG188A/U RVS PGTL-RVS	0	C	7	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A5650-0933	TEST PROC-SPECTRUM	0	*	4	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0939	PCB ASSY-SPECTRUM	0	C	5	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-1071	SCHEM DIAG-SPECTRUM	0	A	6	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99

Y1 XTAL - 21.755MHZ
2035-3104

7120/6400

6400

CLASS CODE: 2
MAKE & PHANTOM ASSYS

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0938 OPCODE: 0 REV: D PCB ASSY-MAIN INTERCONNECT
MODEL: 7120
ECO NO: 86219
DATE OF LAST ECO: 1/30/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	15.000	1.000	EA	S1	N	N	15.000	0	0	C2	00/00/00	99/99/99
														C3		
														C5		
														C7		
														C8		
														C10		
														C11		
														C12		
														C13		
														C14		
														C15		
														C16		
														C17		
														C18		
														C19		
1011-0006	CAP-10UF 20% 35V RDL TANT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C1	00/00/00	99/99/99
1013-0033	CAP-100UF -10+75% 16V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C4	00/00/00	99/99/99
														C6		
1013-0052	CAP-100UF +50-10% 50V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C9	00/00/00	99/99/99
1066-2215	RES-220 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1066-2715	RES-270 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1066-4315	RES-430 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1066-5125	RES-5.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	Y	N	1.000	0	0	R5	00/00/00	99/99/99
1066-8215	RES-820 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1586-0001	CH-2 1/2 TURN WIDEBAND 3B	1		0	6.000	1.000	EA	B1	N	N	6.000	0	0	L1	00/00/00	99/99/99
														L2		
														L3		
														L4		
														L5		
														L6		
1780-1333	PCB-MAIN INTERCONNECT	0		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2535-0153	CONN-26(2X13)CONT STR PCB MT J	0		0	4.000	1.000	EA	B1	N	N	4.000	0	0	J11	00/00/00	99/99/99
														J12		
														J13		
														J14		
2535-0154	CONN-34(2X17)CONT STR PCB MT J	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J1	00/00/00	99/99/99
2535-0157	CONN-20(2X10)PIN.1X.1SP STR PC	0		0	7.000	1.000	EA	B1	N	N	7.000	0	0	J2	00/00/00	99/99/99
														J3		
														J4		
														J5		

BILL OF MATERIAL

AS OF 2/25/87

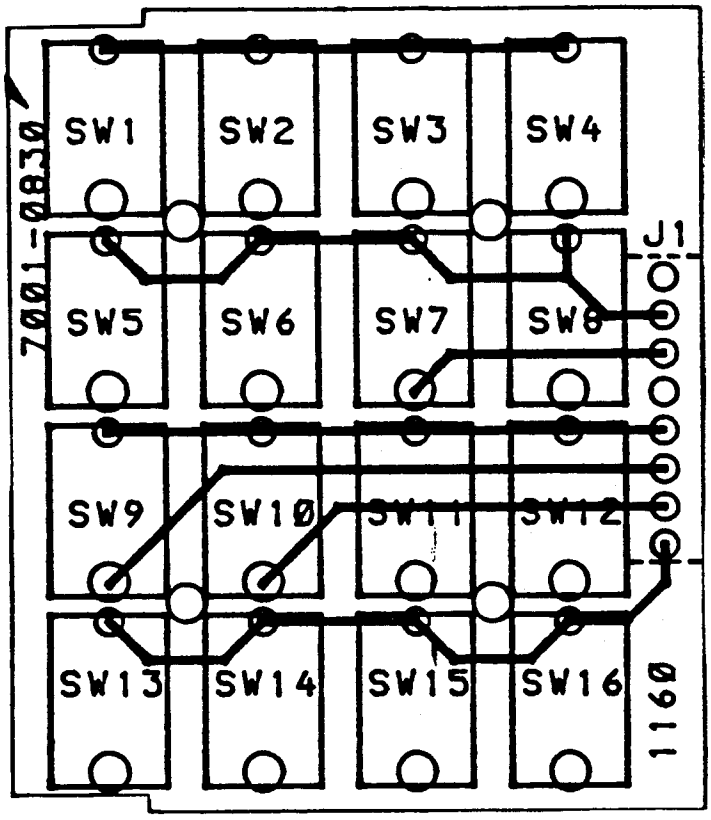
6400

CLASS CODE: 2
MAKE & PHANTOM ASSYS

OP: ORDER POLICY CODE
REQTY=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0938 OPCODE: 0 REV: D PCB ASSY-MAIN INTERCONNECT
MODEL: 7120
ECO NO: 86219
DATE OF LAST ECO: 1/30/87

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
2535-0157	CONN-20(2X10)PIN.1X.1SP STR PC	0		0	7.000	1.000	EA	B1	N	N	7.000	0	0	J6 J10 J15 J16 J17 J18	00/00/00	99/99/99
2535-0176	CONN-6 PIN .1SP RTANG LKG PCB	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	J8	00/00/00	99/99/99
2535-0180	CONN-10 PIN .1SP RTANG LKG PCB	1		10	1.000	1.000	EA	B1	N	N	1.000	0	0	J7	00/00/00	99/99/99
3197-0001	WIRE-24 KYNAR INS SGL ST BLU	0		2	1.000	1.000	IN	F3	N	N	1.000	0	0	AS REQ	00/00/00	99/99/99
3657-0010	TIE-MINI CABLE	0		3	2.000	1.000	EA	F3	N	N	2.000	0	0		00/00/00	99/99/99
7030-0374	HARNESS ASSY-POWER INPUT	0	A	4	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0375	HARNESS ASSY-OSC PWR INPUT	0	A	5	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0379	HARNESS ASSY-SCOPE POWER IN	0	B	6	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
7030-0380	HARN ASSY-SPECTRUM	0	A	11	1.000	1.000	EA	X1	N	N	1.000	0	0		00/00/00	99/99/99
A8000-1070	INTCON LIST-MAIN INTERCONNECT	0	A	7	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0938	PCB ASSY-MAIN INTERCONNECT	0	E	8	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99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SW1
SW2
SW3
SW4
SW5
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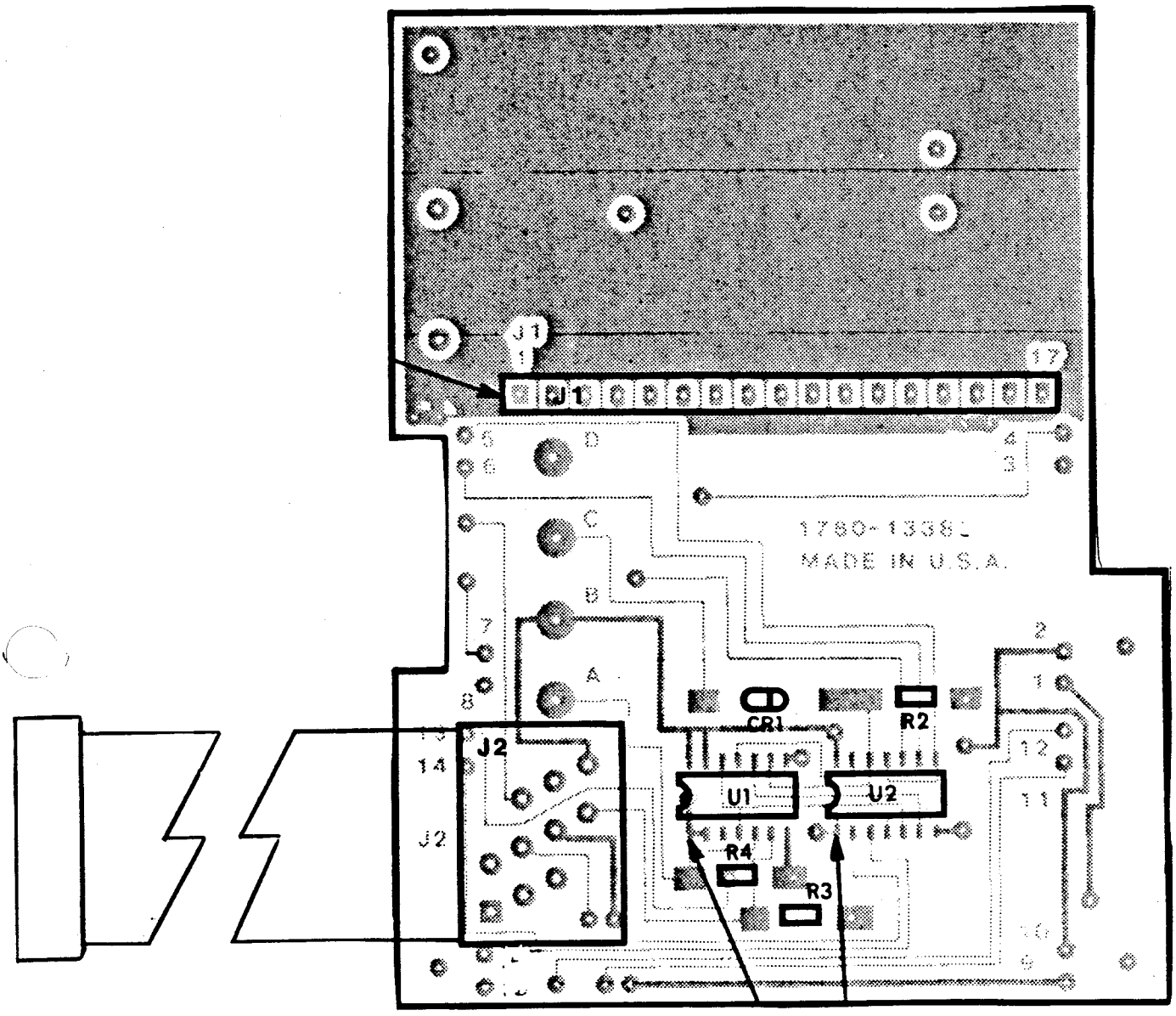
SW8
SW9
SW10
SW11
SW12
SW13
SW14
SW15
SW16
J1
1160

1200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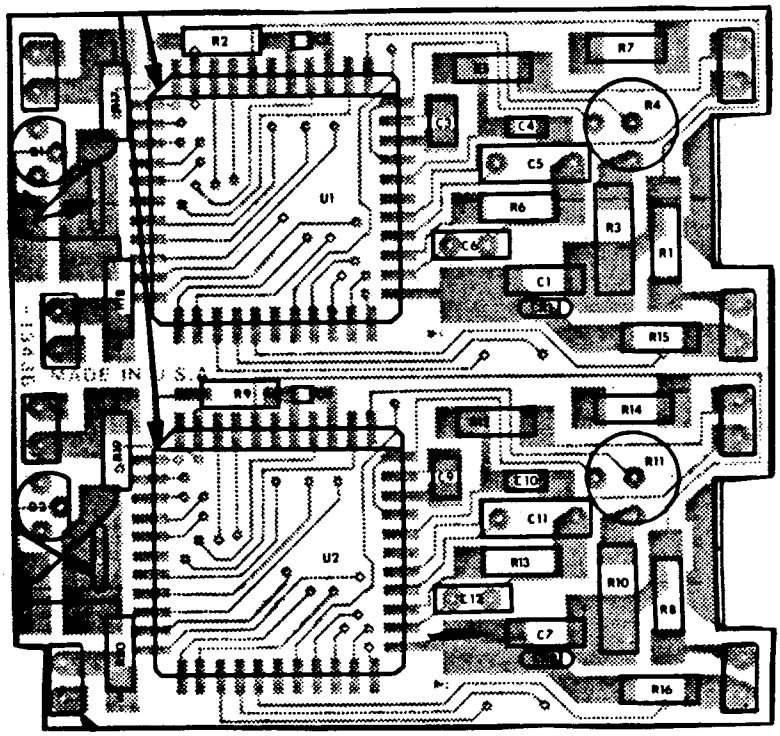
J1
5
6
D
4
3
C
1780-1338L
MADE IN U.S.A.
B
7
8
A
2
1
J2
14
J2
CR1
R2
12
U1
U2
11
R4
R3
10

1400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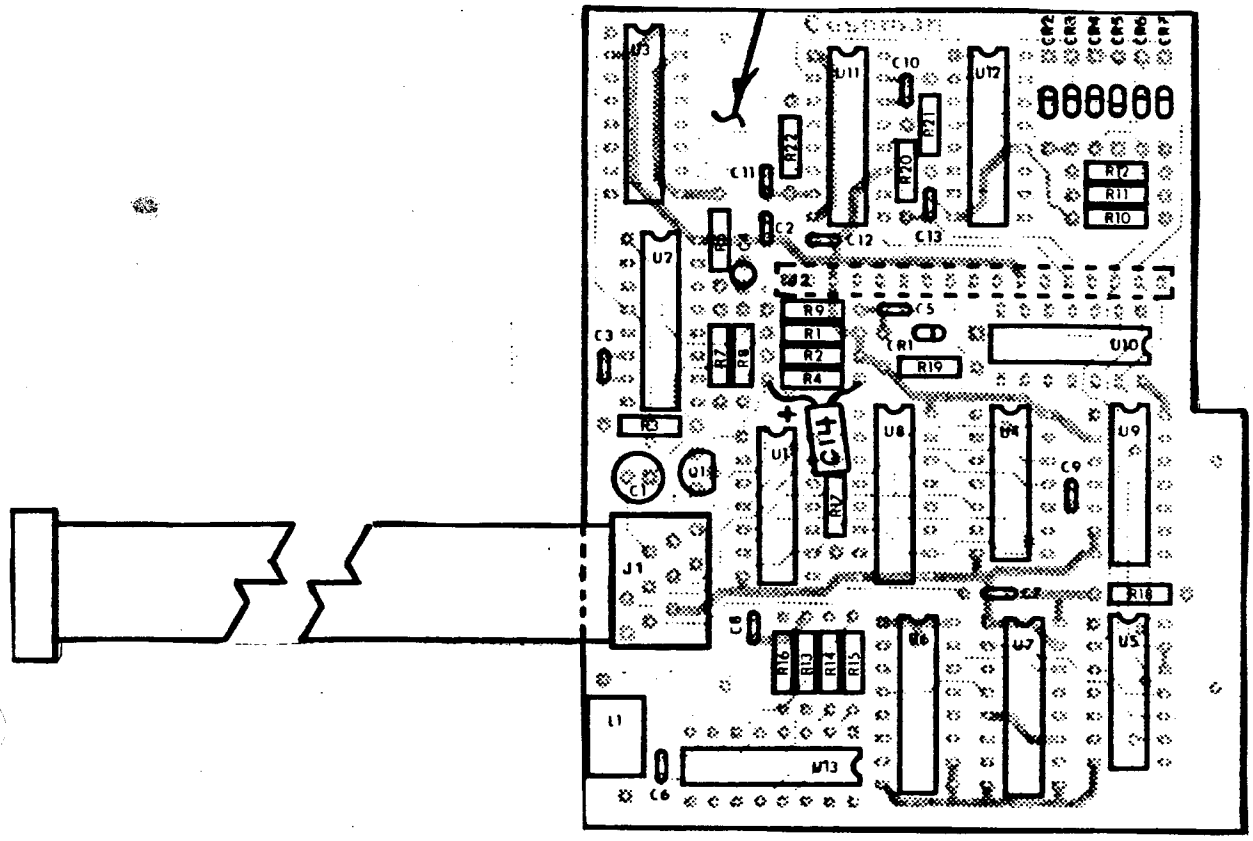
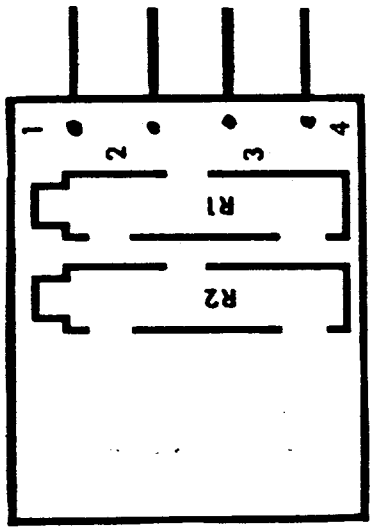
R7
R4
C4
C5
U1
R6
R3
R1
C1
R15
MADE IN U.S.A.
R14
R11
C10
C11
U2
R13
R10
R8
C7
R16

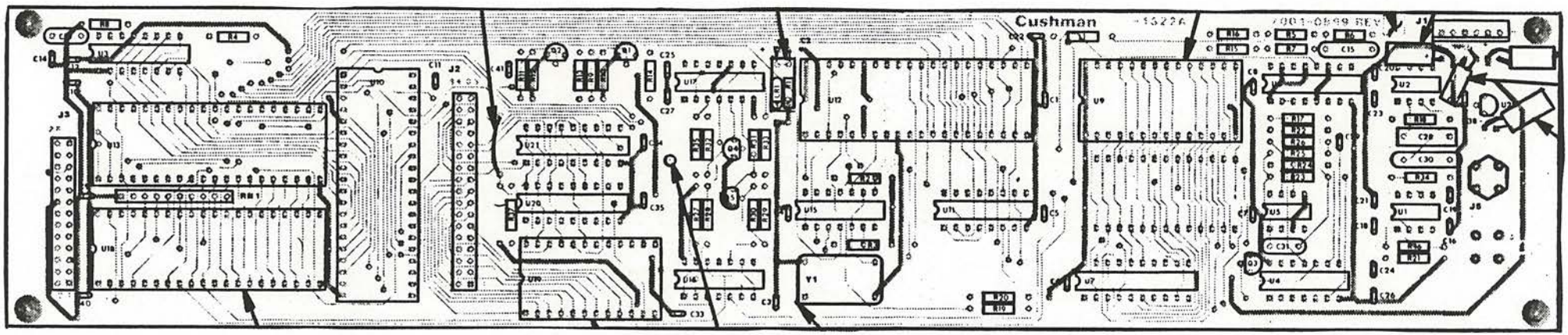
1450



1500

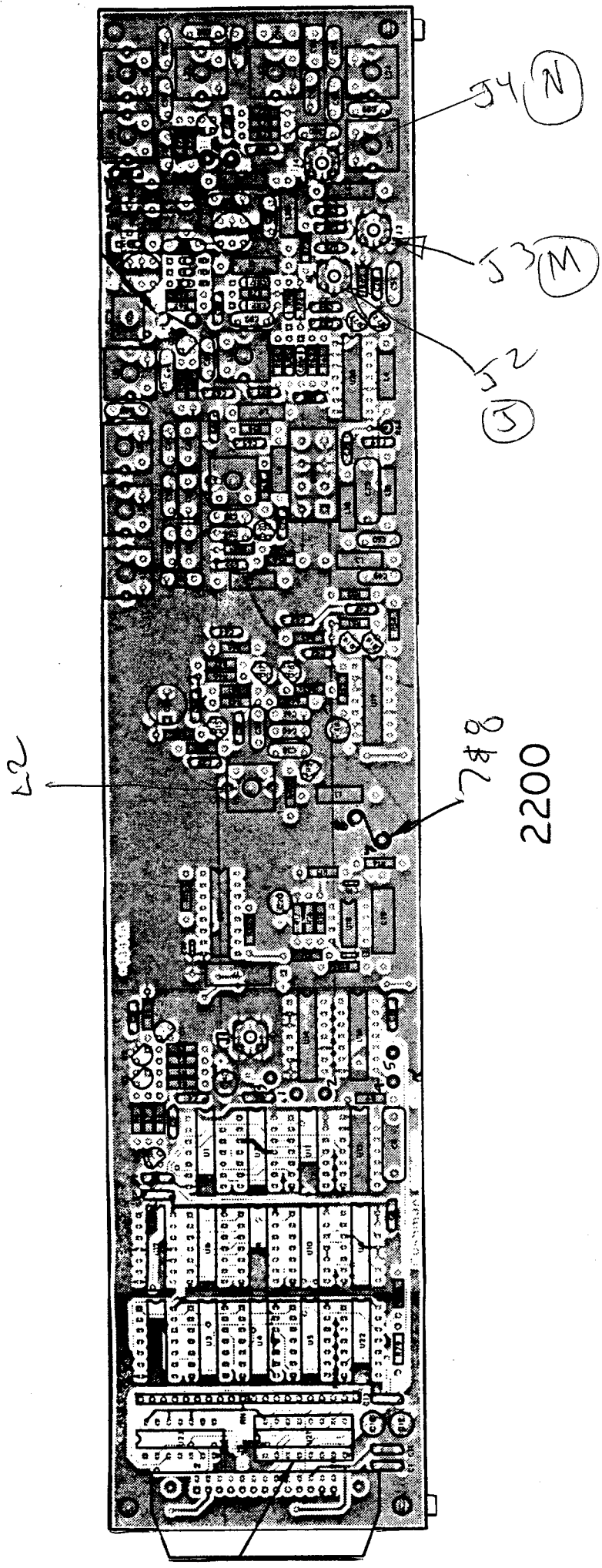


1600



2100

FOR OTHER VERSION
SEE FILE CAB.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J3
M
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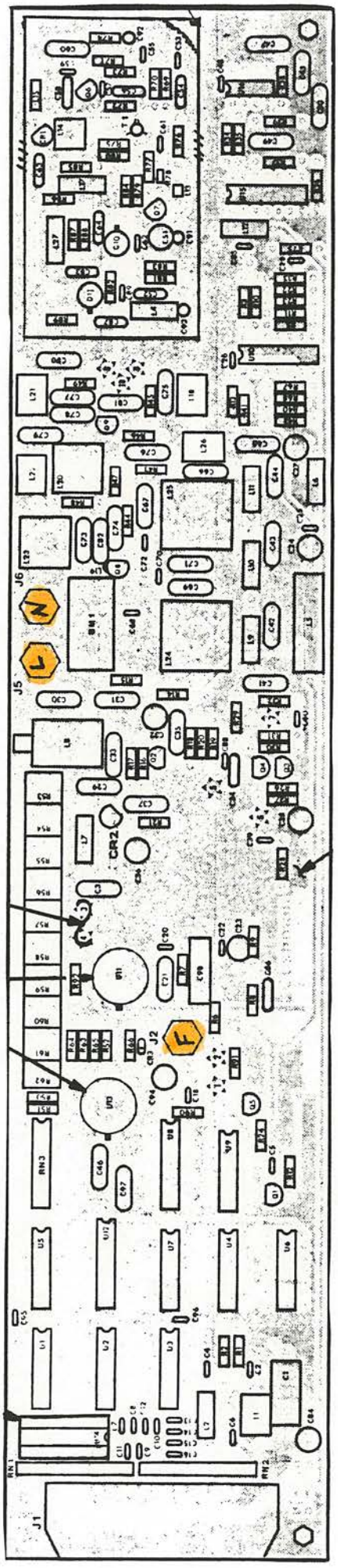
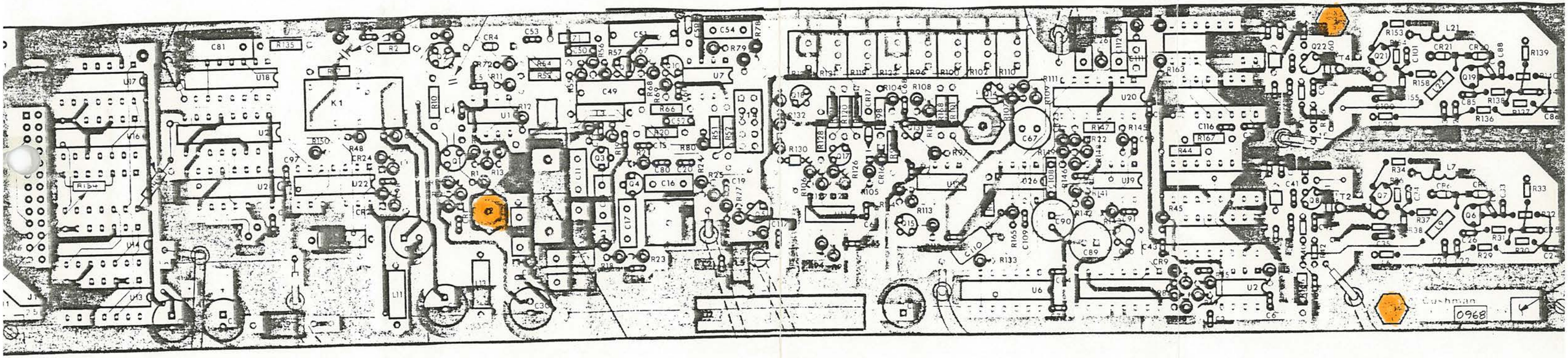
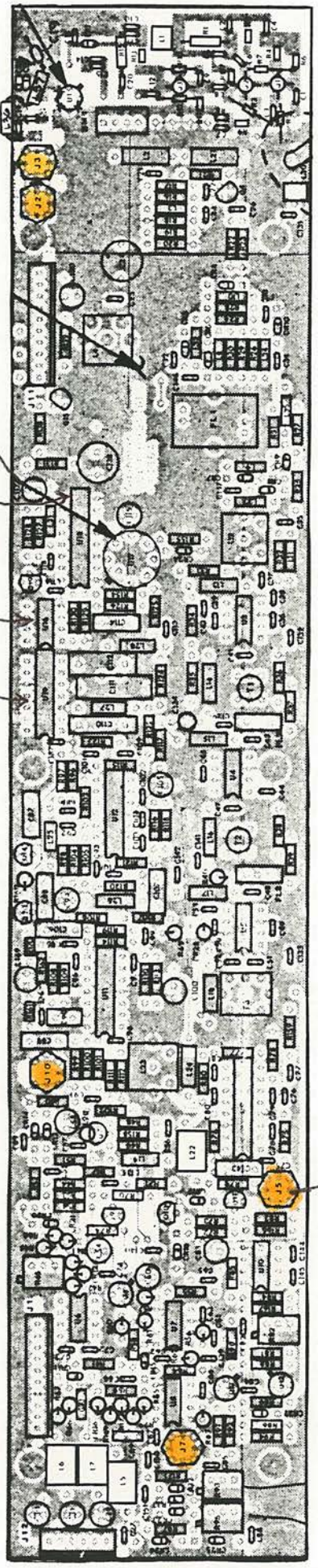


2300

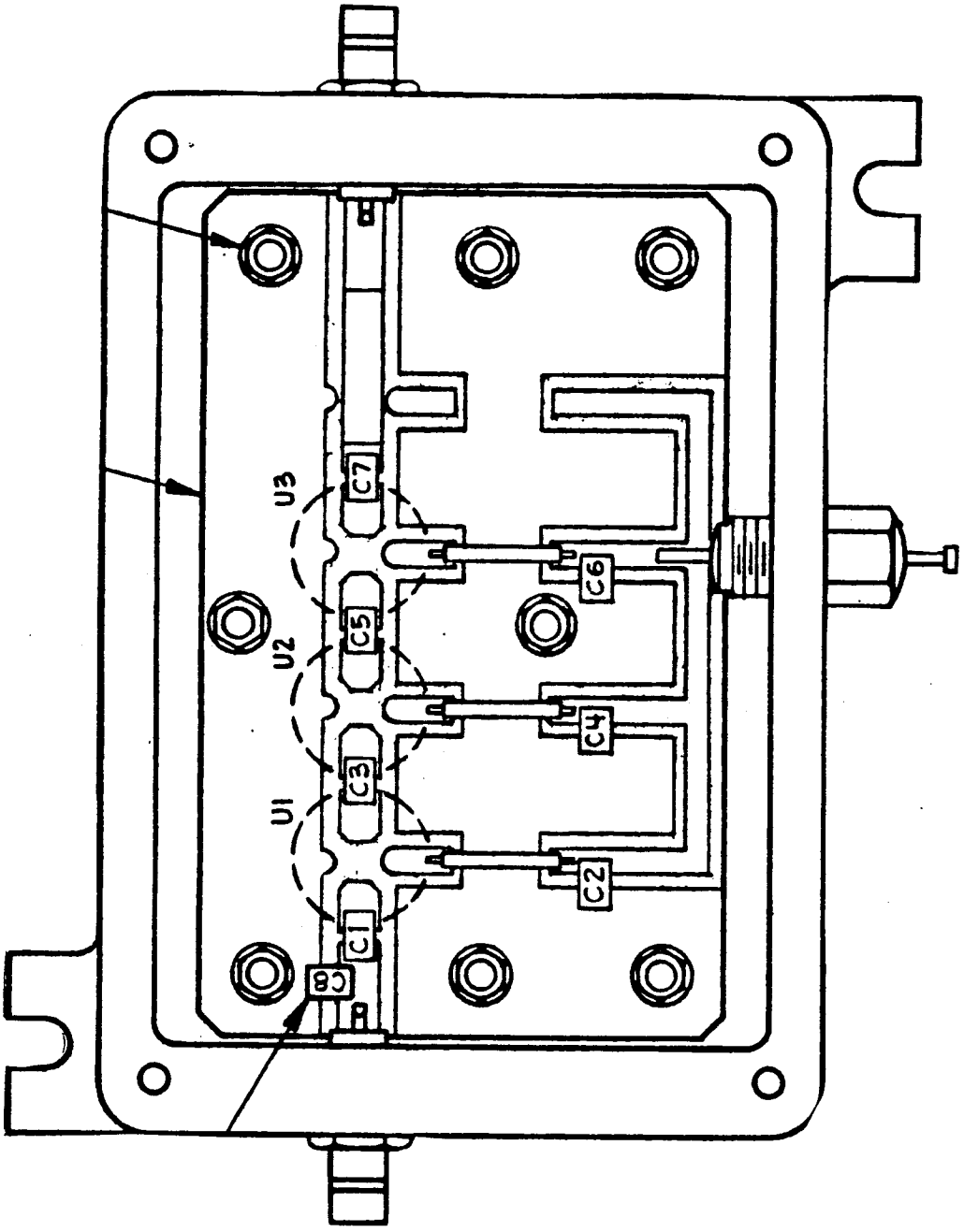


2400

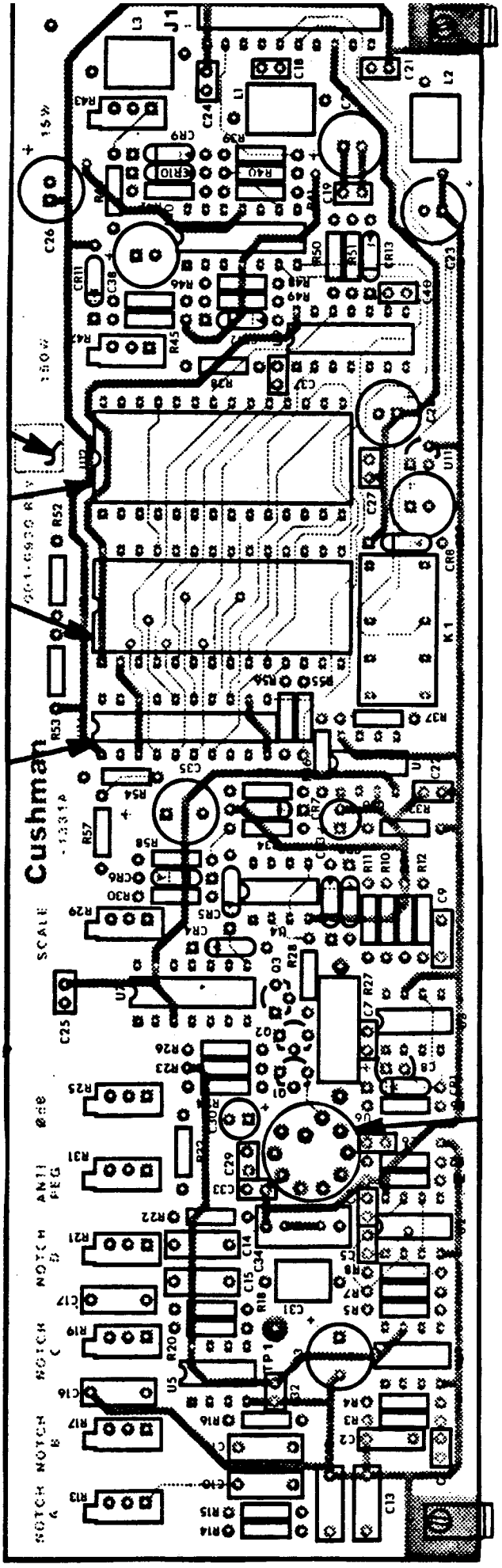
VERSION 2
(SEE PREVIOUS PAGE FOR VERSION 1)



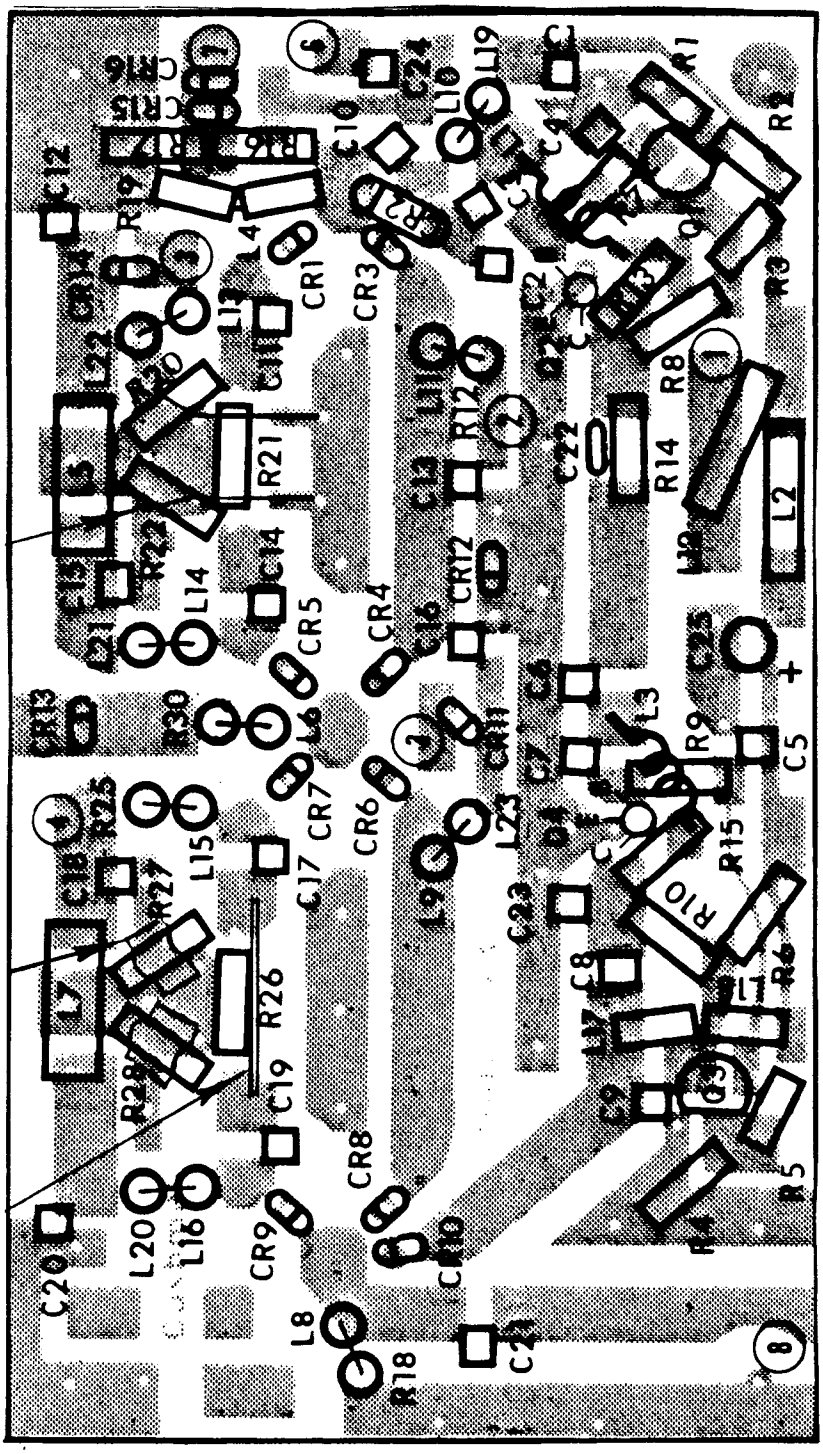
2500



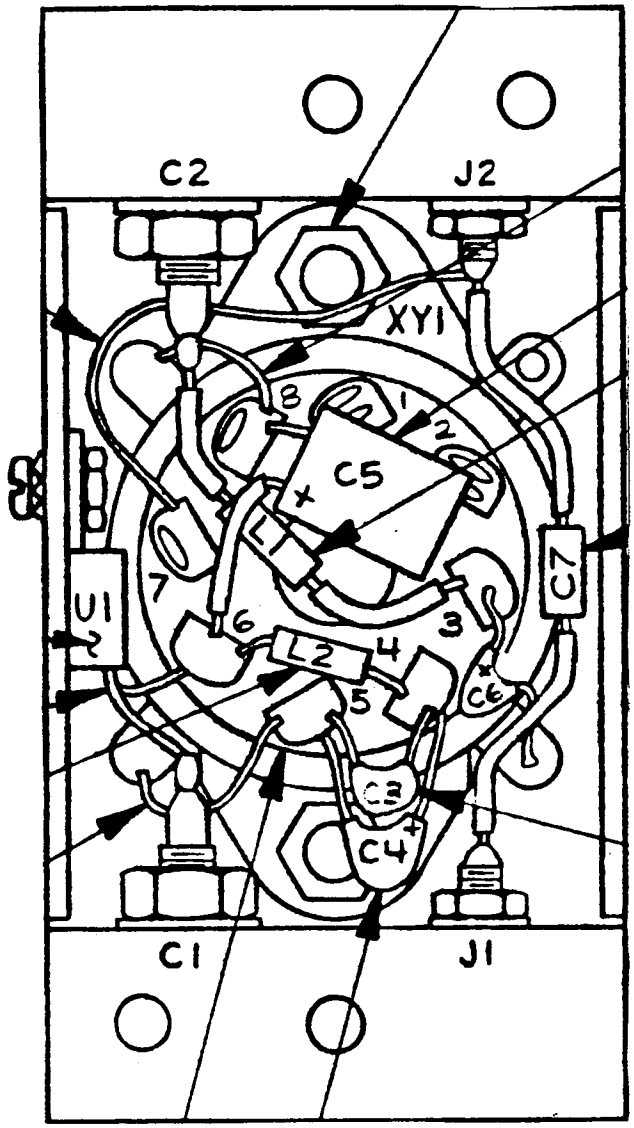
2600



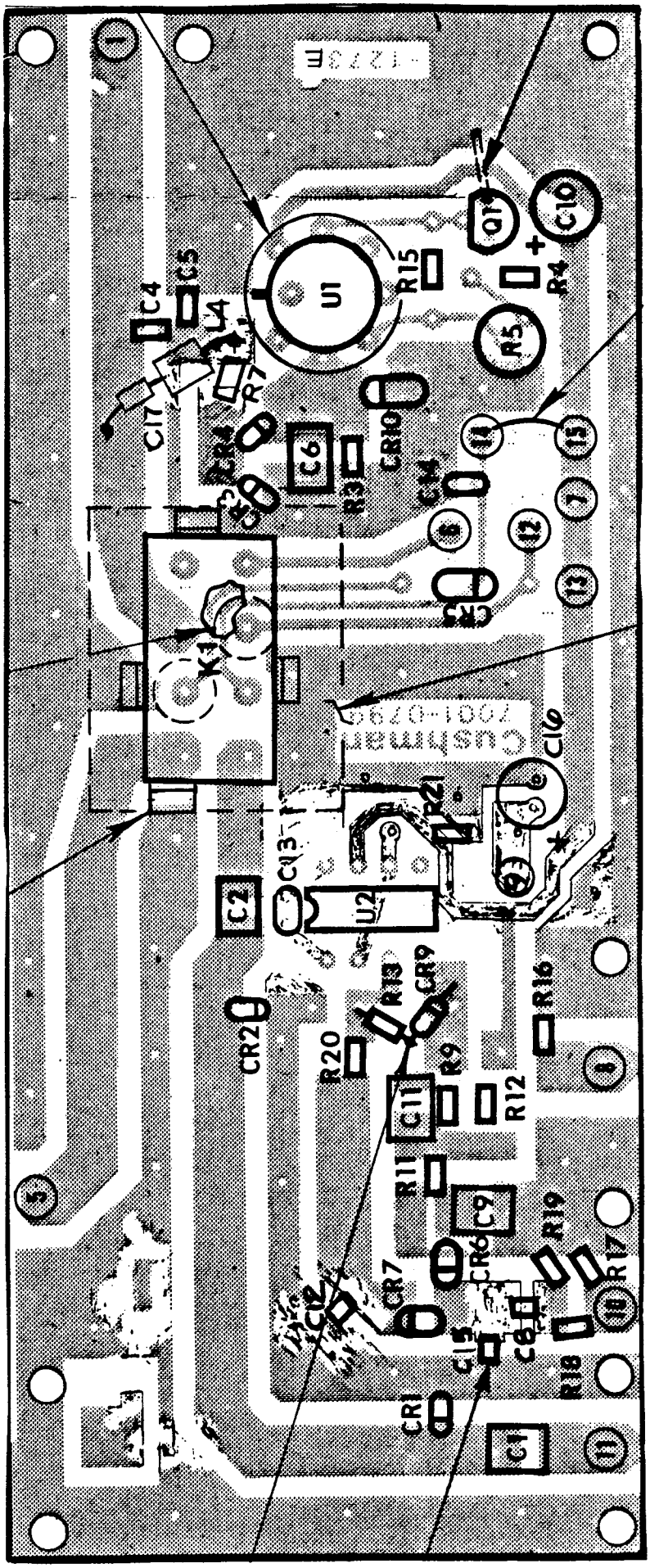
2700



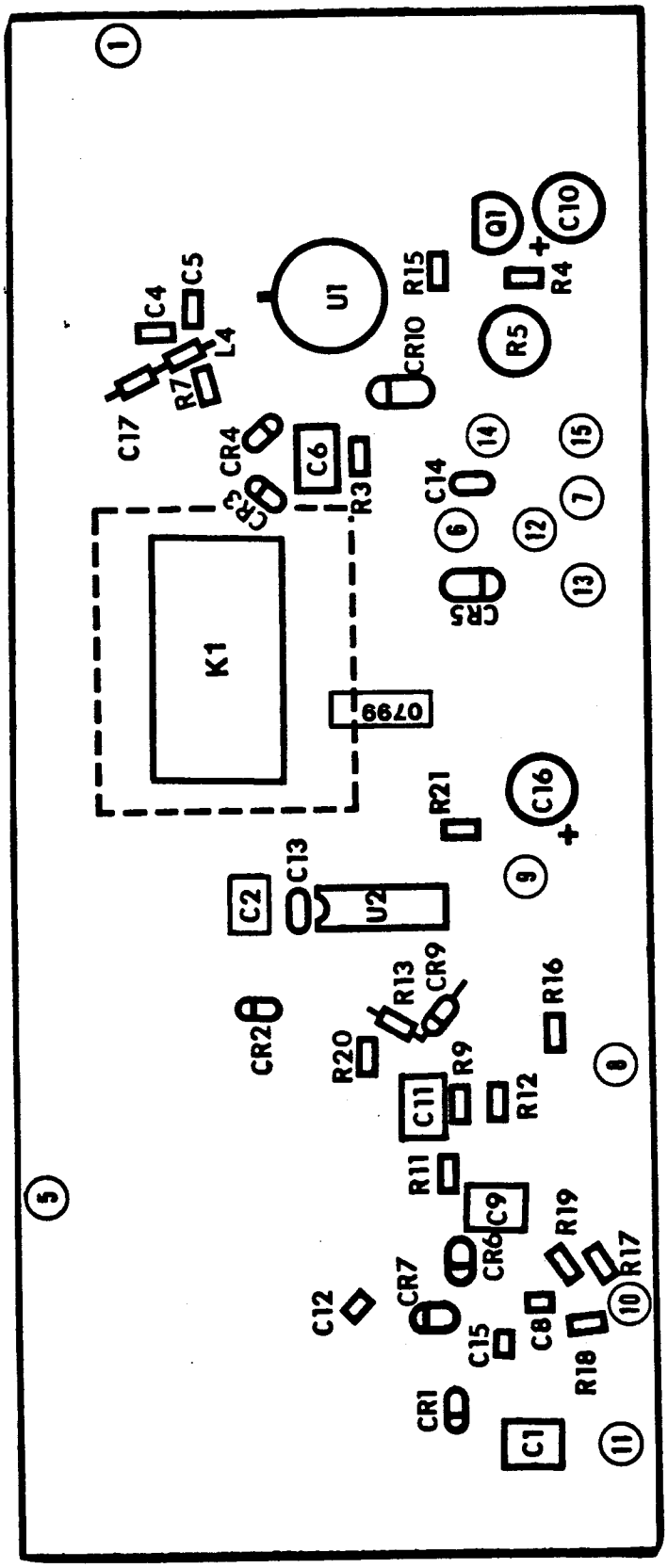
2850



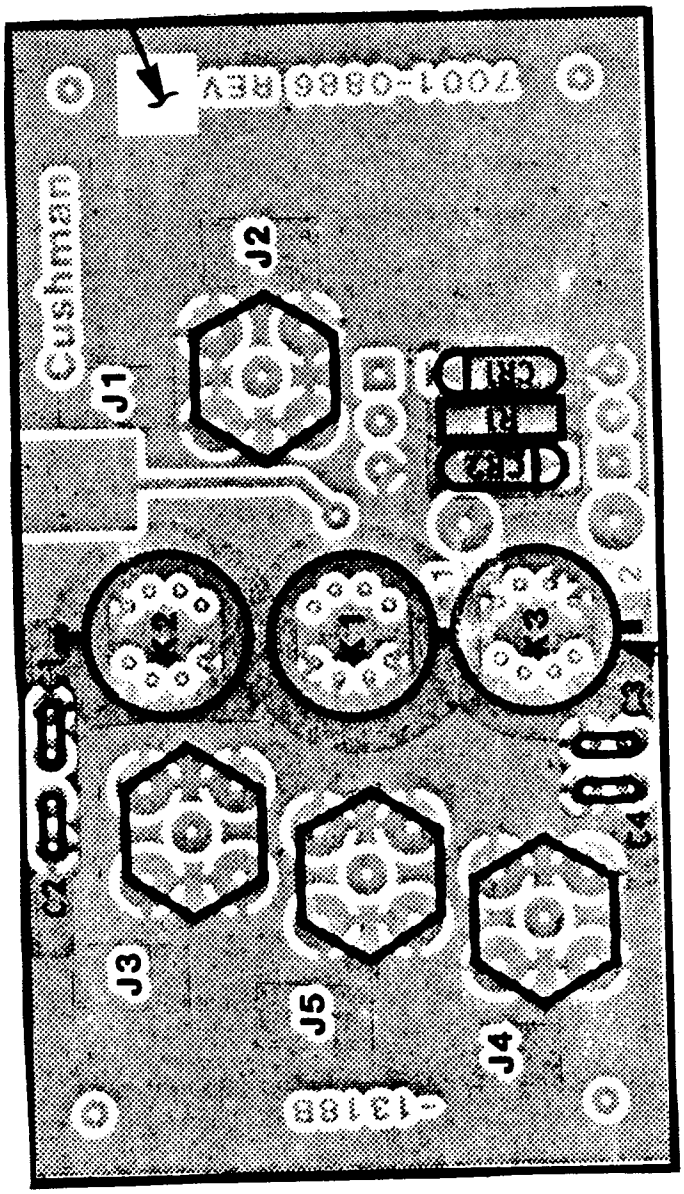
2900


U1
Q1
C10
R15
R4
R5
C4
C5
L4
R7
C17
CR10
C6
R3
C14
K1
C16
C13
C2
U2
R21
CR9
R13
R16
CR2
R20
R9
C11
R12
R11
C9
CR8
R19
R17
CR7
C12
C15
C8
R18
CR1
C1
Cushman
7001-0795

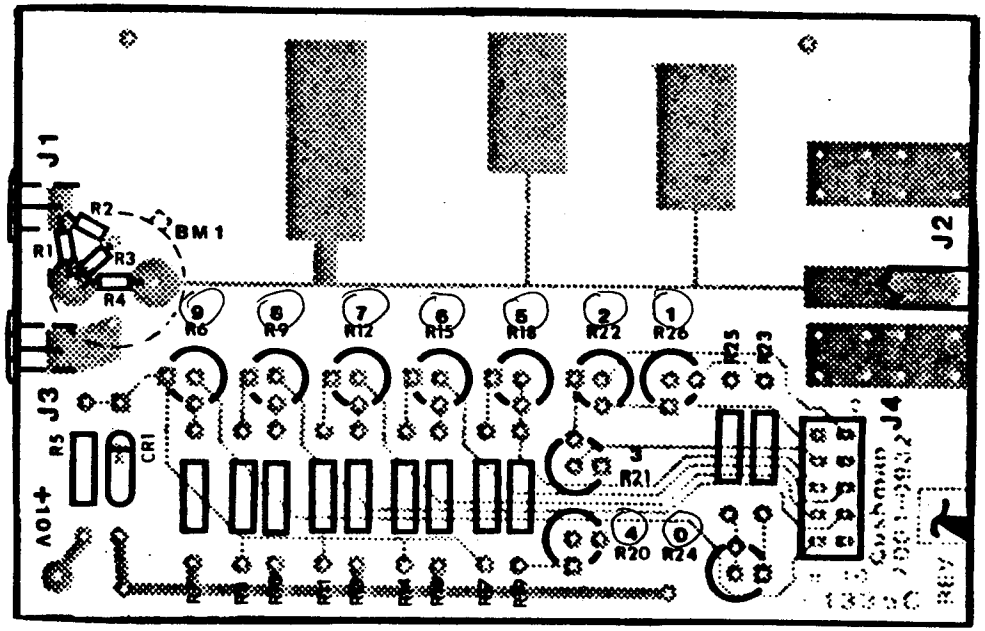
3100


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
C1
C2
C4
C5
C6
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
CR1
CR2
CR4
CR5
CR6
CR7
CR9
CR10
K1
L4
Q1
R3
R4
R5
R7
R9
R11
R12
R13
R15
R16
R17
R18
R19
R20
R21
U1
U2
0799

3150



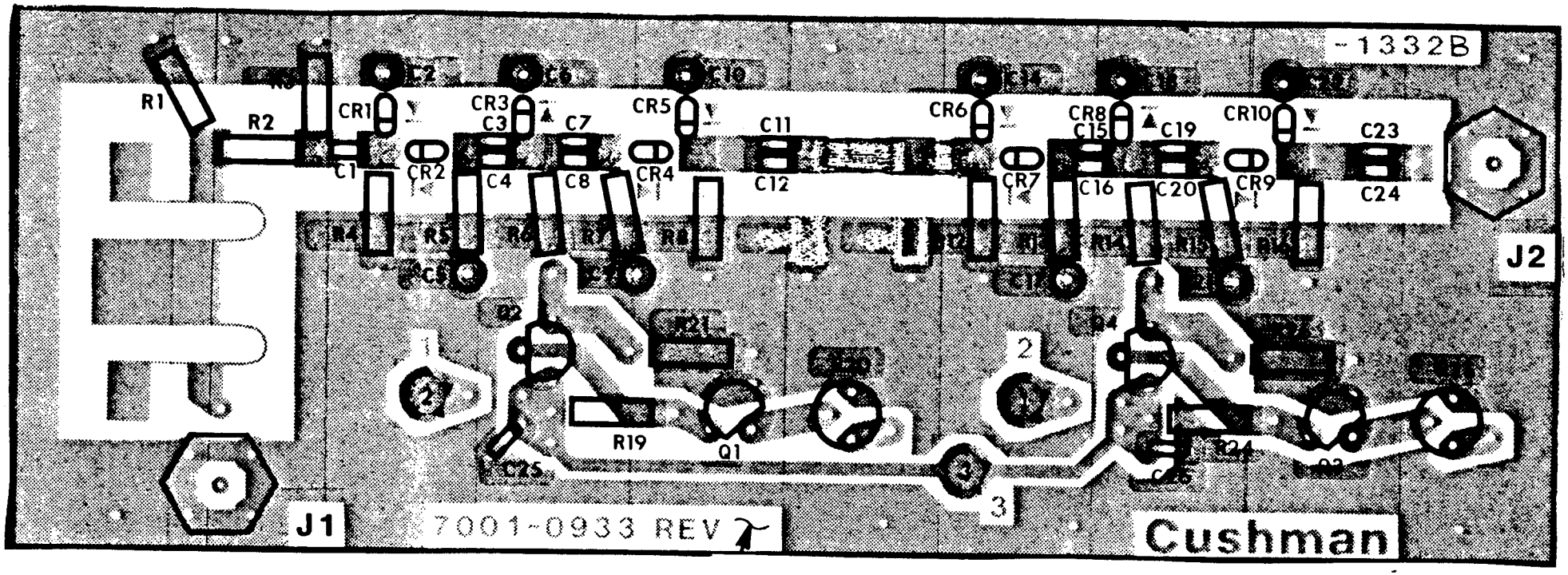
3200



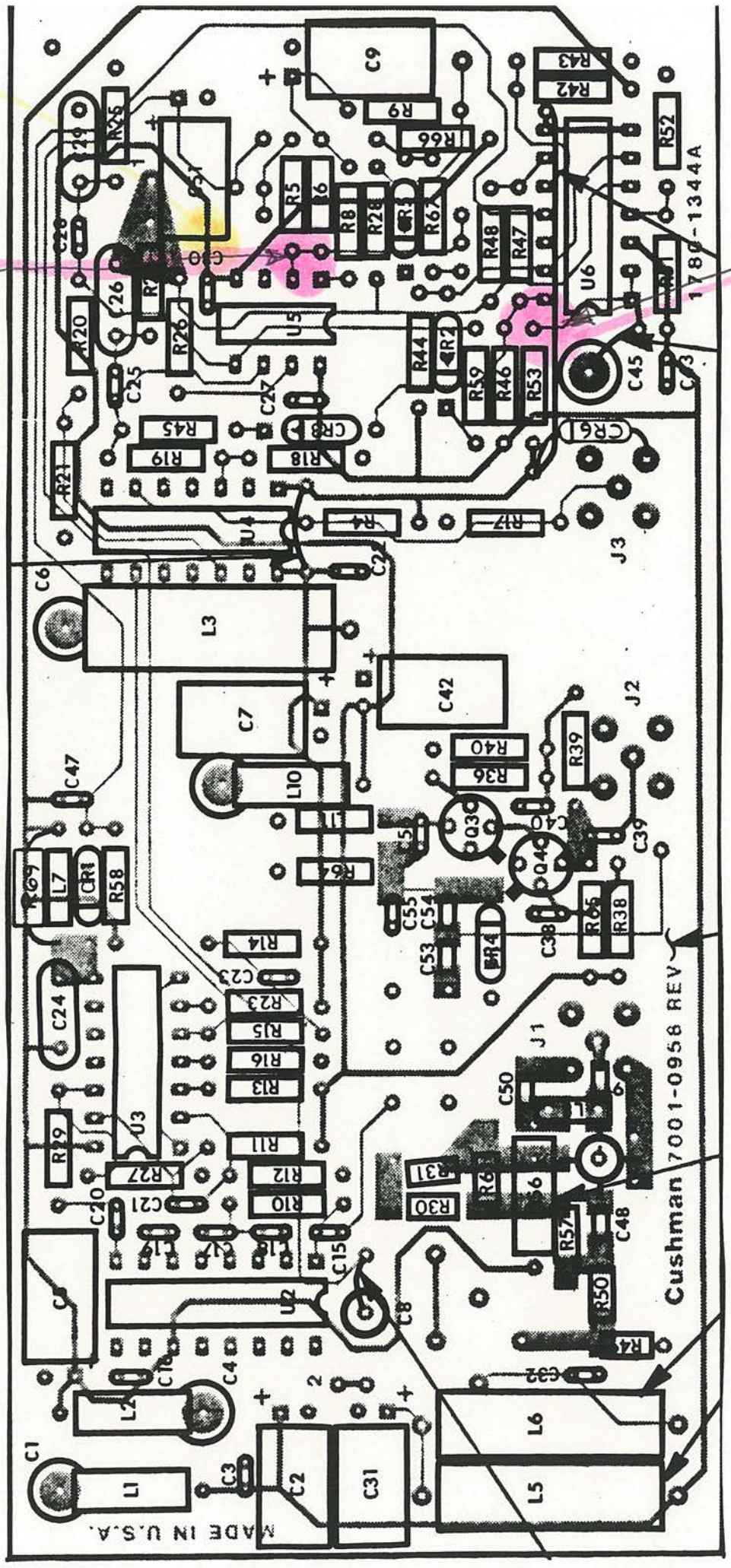
3450

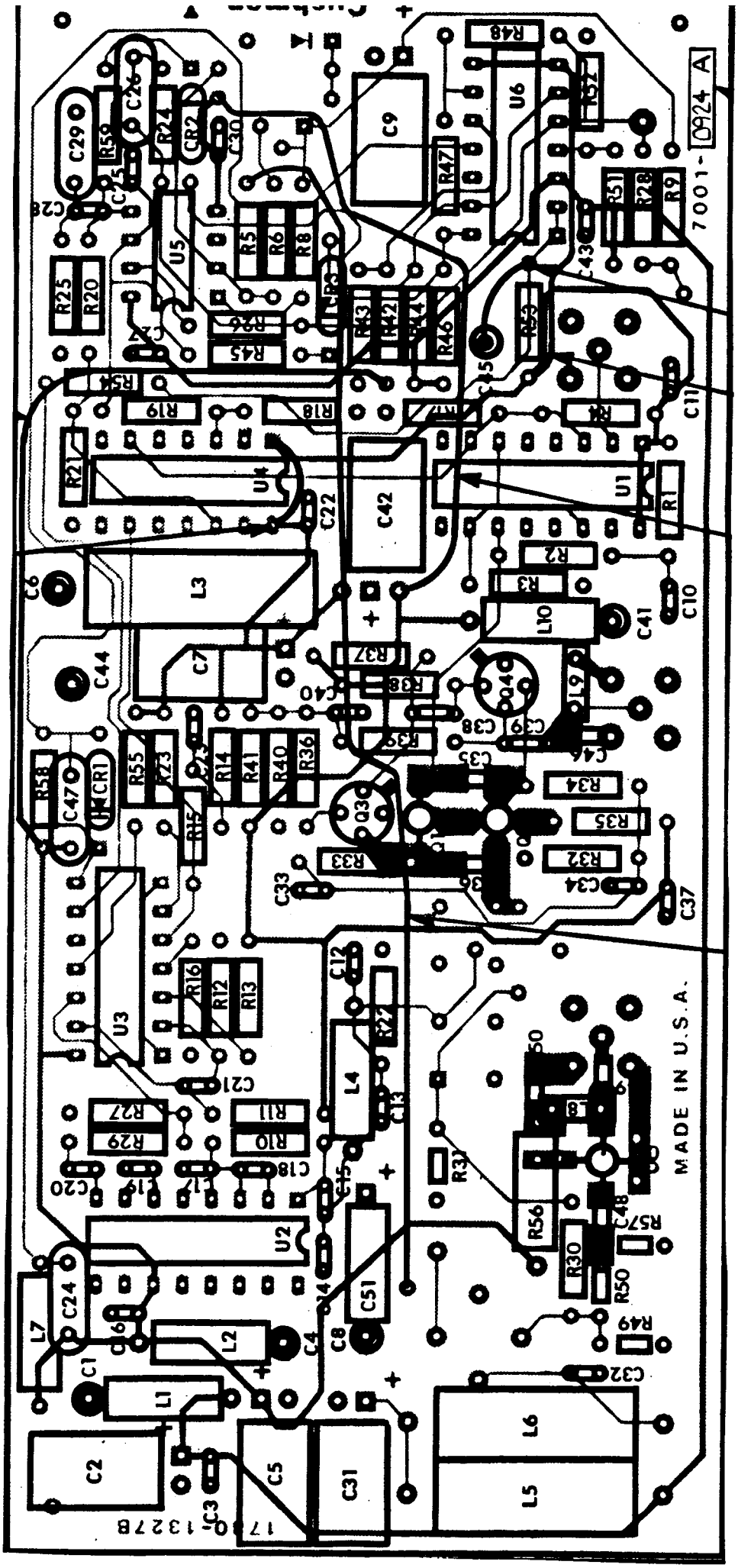
ADJ. ABOVE POTS PER LABELS FOR FA. 100 MHz RANGE AFTER FIRST ADJ 2 POTS R7 & R67 ON OSC. BOARD ALIGNMENT PROCEDURE

- ALSO MAY NEED TO REFER TO OLDER STYLE BOARD LAYOUT WITH ONLY 6 POTS

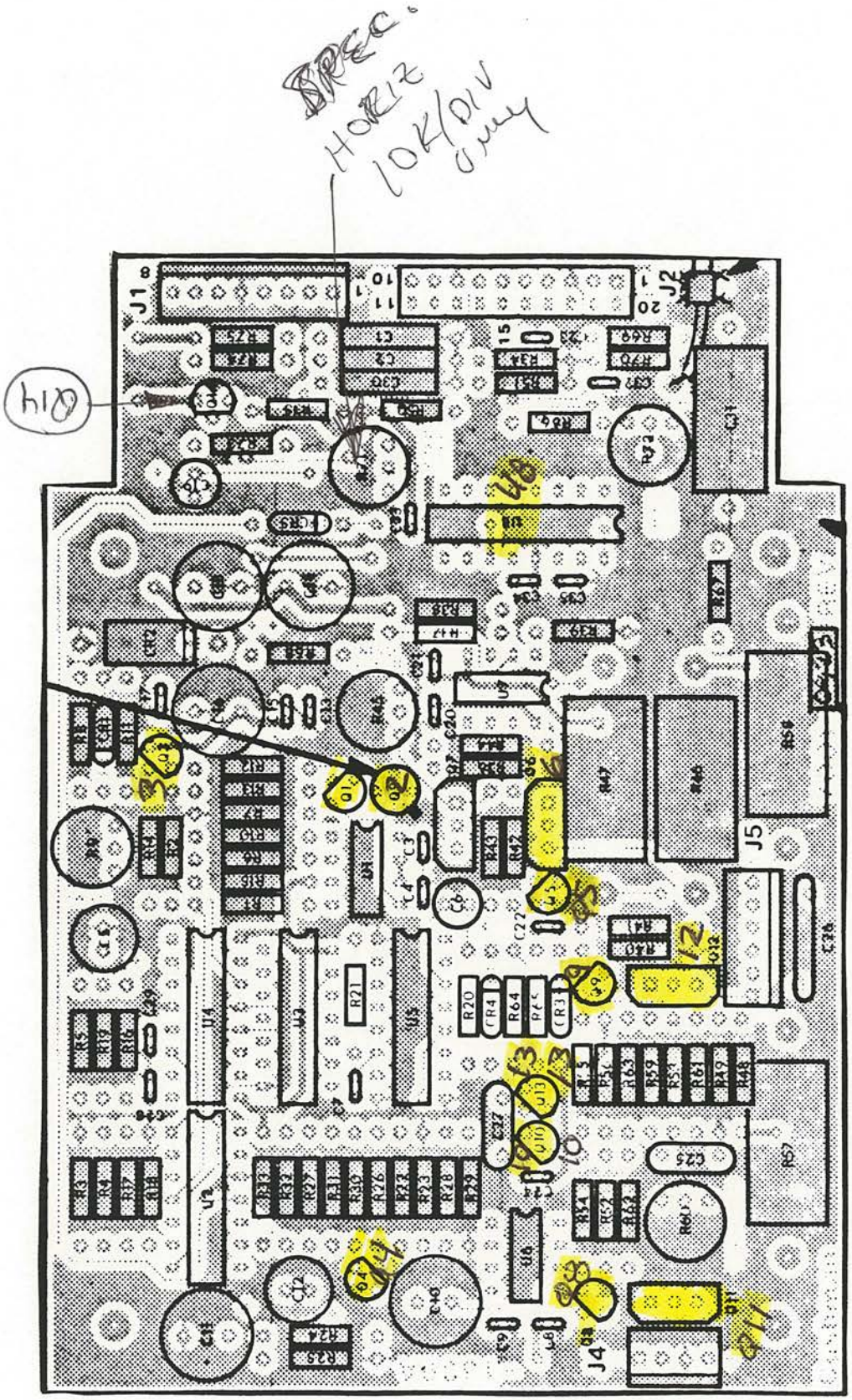

-1332B
R1
R2
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
C1
C3
C4
C7
C8
C11
C12
C15
C16
C19
C20
C23
C24
J1
J2
Q1
R19
7001-0933 REV
Cushman

3600

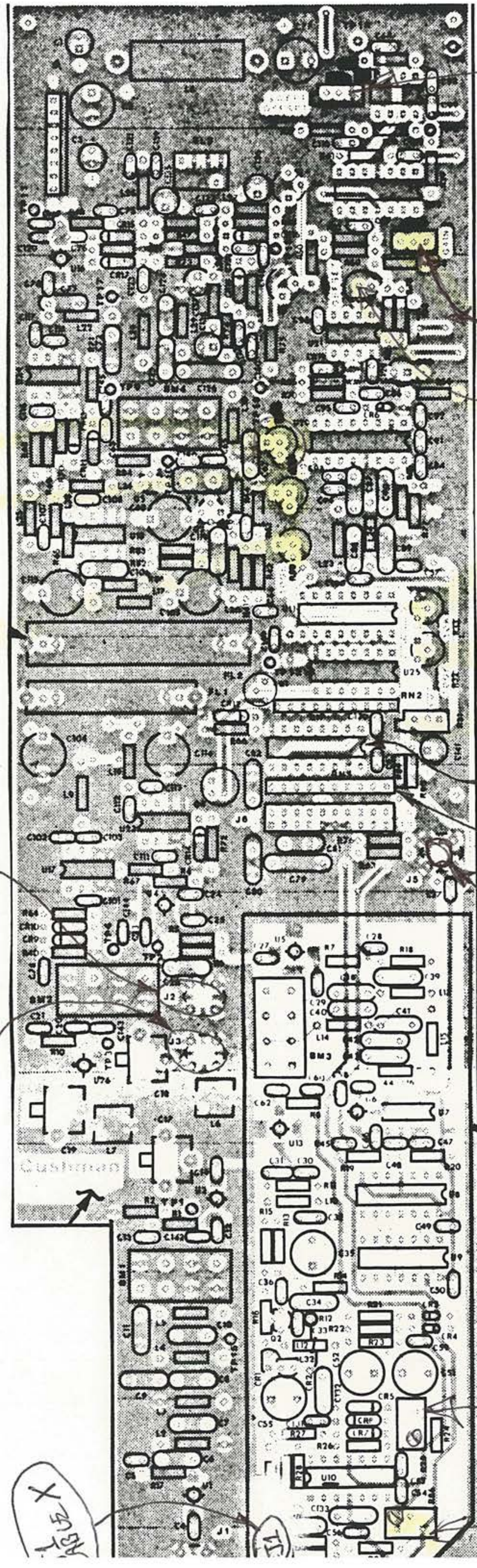

TP1
R7
SM. WHITE POT
R68
BCK POT
Cushman 7001-0958 REV
1780-1344A
MADE IN U.S.A.
3700



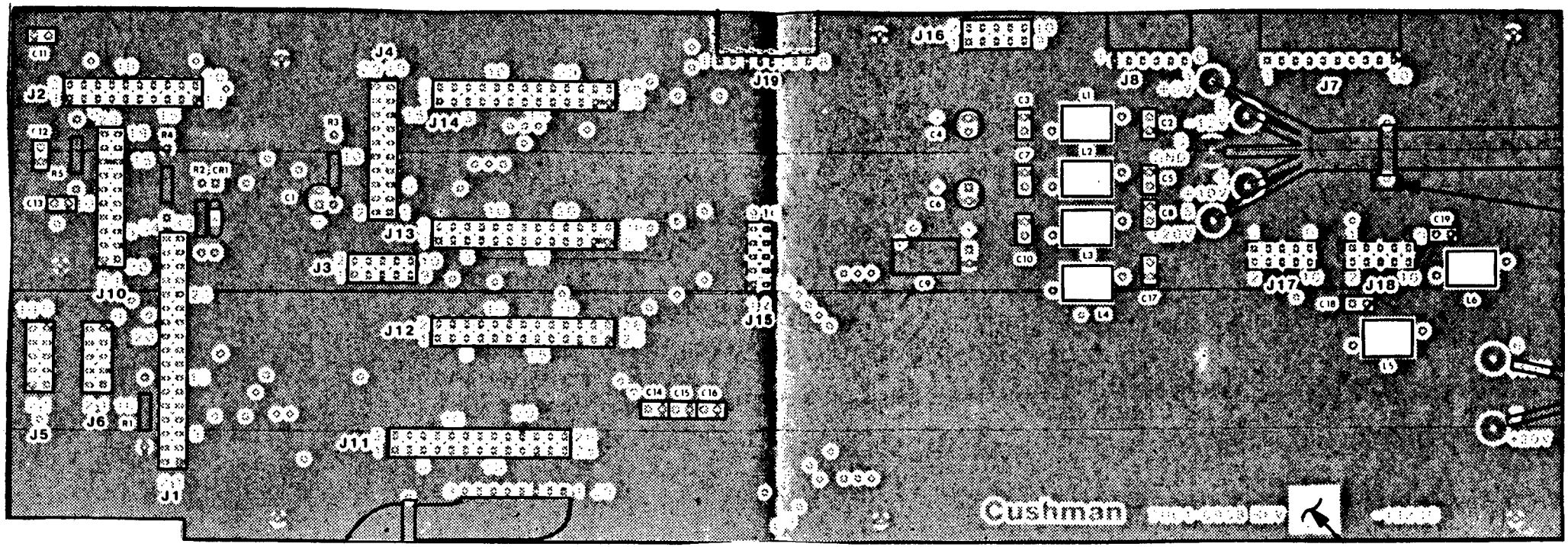
3800



6100


R36
SWEEP CENTERING
R59 GAIN
R57 OFFSET
U19
RN1
J5 CABLE Z
J2 CABLE K
J3 CABLE Y
CABLE X
J1
OFFSET NULL

6300

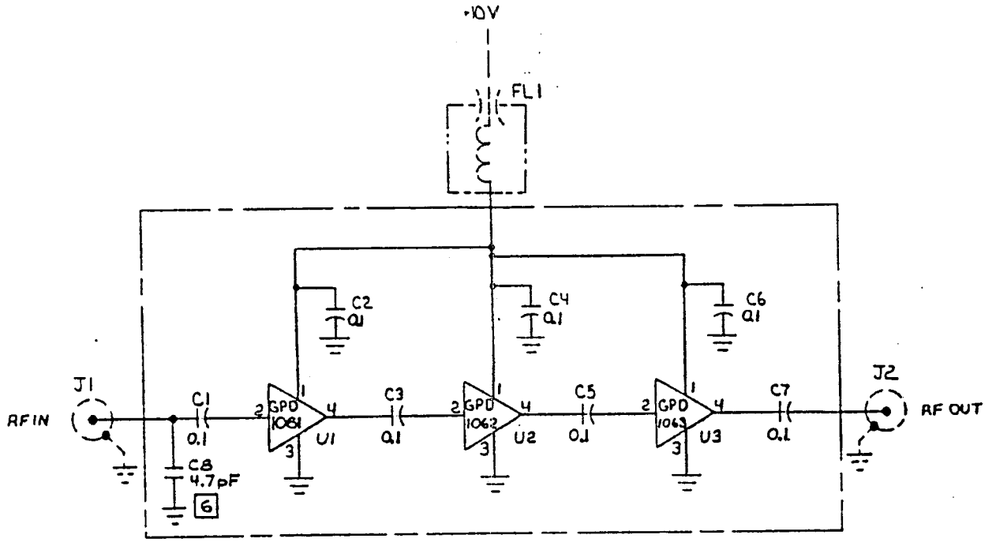

J2
J4
J14
J13
J3
J10
J12
J5
J6
J11
J1
J19
J16
J8
J7
J17
J18
J15
Cushman

6400

Section 7

DWG. NO. C 8000-0810 | REV B

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	11-10-81	
B	REVISED PER ECO NO. 86057	5-28-84	



U1,2,3 BOTTOM VIEW

NOTE:

1. RESISTORS - 1/4W. 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.

[6] USED ON 70XX, 71XX UNITS ONLY.

CIRCUIT REFERENCE SERIES: 2600 (7120) / 7100 (4000)

CIRCUIT REFERENCE USED:			
C( ) - C( )	8	Q( ) - Q( )	
CR( ) - CR( )		R( ) - R( )	
DS( ) - DS( )		S( ) - S( )	
F( ) - F( )		T( ) - T( )	
U( ) - U( )	3	Y( ) - Y( )	
		J( ) - J( )	

7010	JCP	7060-0055	
CE-31B	JCP	7001-0736	
MODEL NO.	QTY	NEXT ASSY.	

DRAWN	DATE 8/27/81
CHECKED	DATE 8-31-81
MECH ENGR	DATE 11-10-81
PROJ ENGR	DATE 11-11-81
MFG ENGR	DATE 11-13-81

7-28

CUSHMAN ELECTRONICS, INC

SCHEMATIC DIAGRAM
HIGH LEVEL AMPLIFIER

CLOSE ITEM NT. NO.	SIZE	DRAWING NO.	REV
26192	C	8000-0810	B

SHEET 1 OF 1

LTR	REVISIONS DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	3-17-86	
B	REVISED PER ECO NO. 86055	5-29-86	
C	REVISED PER ECO NO 86152	9-22-86	
D	REVISED PER ECO NO 87052	6-8-87	

AGC

1KHz NOTCH

METER DRIVE

TRUE-rms TO DC CONVERTER

ANALOG CONVERSION

PROM LINERIZER

DIGITAL CONVERSION

INPUT SCALING

FROM J1003 VOLTAGE IN 300mV TO 10V RMS

SW+10VRF FROM OUTPUT CASTING

REVERSE PWR DET FROM OUTPUT CASTING

X10 ENABLE

P/O FP S1008

TO M1003 +

TO M1003 −

UNUSED GATES

U NO	TYPE	VCC	GND
U1	3080		4
U2,U5	1458		4
U3	3130		4
U4,U8	TL082		
U6	636J		5
U7	CA3046		
U8	TL082		
U9	74HC14	14	7
U10	TL084		
U11	78L05		
U12	0809	11	13
U13	2764	28	14
U14	0832	20	10

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION
R58	U8-2

CIRCUIT REFERENCE SERIES: 2700

CIRCUIT REFERENCE USED:

C( ) - C(40)	Q( ) - Q(3)		
CR( ) - CR(13)	R( ) - R(58)		
DS( ) - DS( )	S( ) - S( )		
F( ) - F( )	T( ) - T( )		
U( ) - U(14)	K( ) - K(1)		
L( ) - L(3)	J( ) - J( )		

7130 | 7001-0930

MODEL NO | NEXT ASSY

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. #FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

DRAWN shore 11/20/84
CHECKED 12/10/84
MECH ENGR
PROJ ENGR 12/10/84
MFG ENGR

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM— SINAD/POWER METER DRIVER

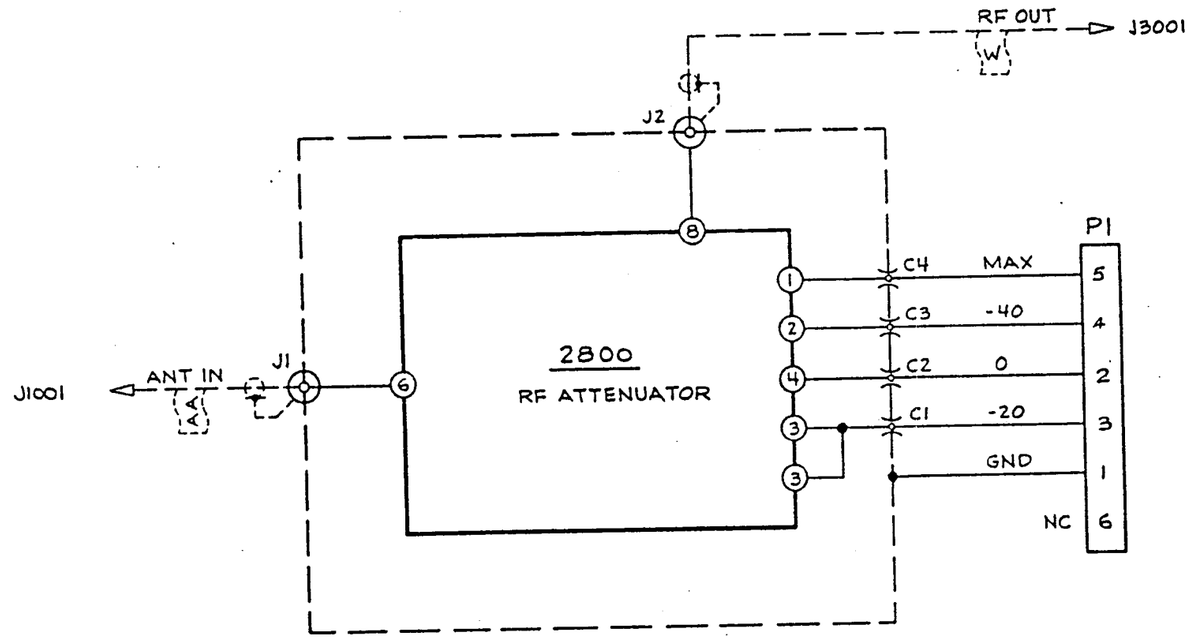
CODE IDENT NO 26192 | SIZE D | DRAWING NO. 8000-1060 | REV

SHEET 10F

7-29

C 8000-1069 | 1 | C

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	3-7-86	
B	CHANGED PIN 2 WAS 5, PIN 3 WAS 4, PIN 4 WAS 3, PIN 6 WAS 2 - NO ECO	4-7-86	
C	REVISED PER ECO NO. 87011	5-22-87	



CIRCUIT REFERENCE SERIES: 2800

CIRCUIT REFERENCE USED:			
C(1) - C(4)		Q( ) - Q( )	
CR( ) - CR( )		R( ) - R( )	
DS( ) - DS( )		S( ) - S( )	
F( ) - F( )		T( ) - T( )	
U( ) - U( )		Y( ) - Y( )	
L( ) - L( )		J(1) - J(2)	

7120/7110	7060-0065
MODEL NO.	NEXT ASSY.

DRAWN D. North	DATE 3/7/86
CHECKED	DATE 3/7/86
MECH ENGR	DATE 3/7/86
PROJ ENGR	DATE 5-7-86
MFG ENGR	DATE

7-30

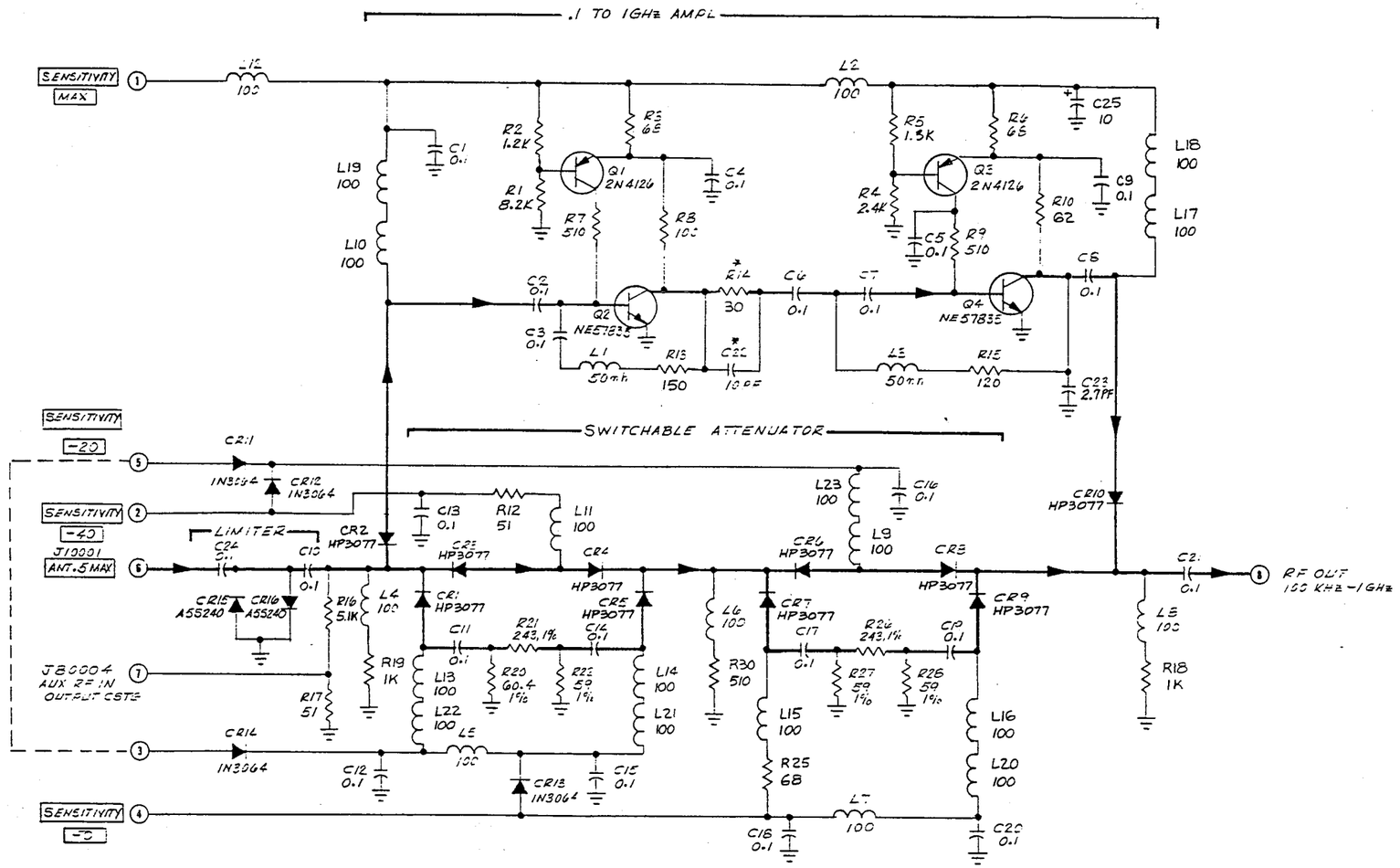
CUSHMAN ELECTRONICS, INC.

INTERCONNECT DIAGRAM - RF ATTENUATOR MODULE

CODE IDENT. NO	SIZE	DRAWING NO	REV
26192	C	8000-1069	C

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
1	ORIGINAL DRAFT	1-28-82	
2	PILOT RUN	3-9-82	
3	ADDED C22	11-30-82	
4	REDRAWN. NC ECO	12-21-82	
5	PILOT RUN	12-22-82	
6	REVISED (ECO RD1852)	3-4-83	
A	REVISED PER ECO NO. 86002	5-12-86	
B	REVISED PER ECO NO. 86187	11-5-86	



ANALYZER REF dB	MAX SENS	-40 SENS	-20 SENS	-0 SENS
PAD dB	+20	0	-20	-40
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3/5	OFF	OFF	ON	OFF
4	OFF	OFF	OFF	ON

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/8W 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

U NO	TYPE	VCC	GND

REF NOT USED:
R11, 23, 24, 28

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 41000 / 6000 6100 / 4000 7120 2850

CIRCUIT REFERENCE USED:

C( )/- C( )25	C( )/- Q( )4		
CR( )/- CR( )/*	R( )/- R( )30		
DS( ) - DS( )	S( ) - S( )		
F( ) - F( )	T( ) - T( )		
U( ) - U( )	Y( ) - Y( )		
L( )/- L( )23	J( ) - J( )		

MODEL NO	NEXT ASSY
7120	7001-0764
40005	7001-0764
E119	7001-0764

DRAWN	T. Williamson	DATE 12-15-82
CHECKED	T. SIEKS	DATE 1-25-82
MECH ENGR	—	DATE —
PROJ ENGR	J. ENGLISH	DATE 1-25-82
MFG ENGR		DATE

7-31

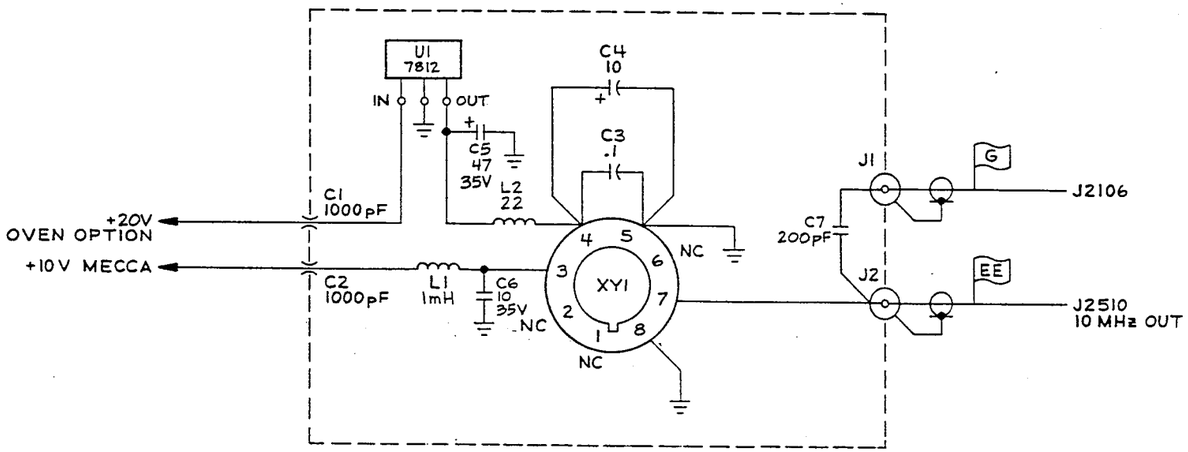
CUSHMAN ELECTRONICS INC

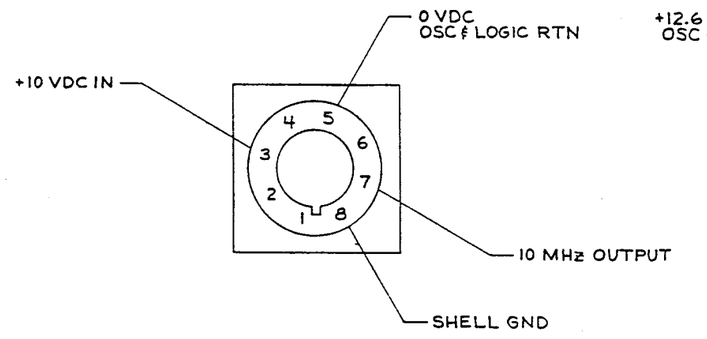
SCHEMATIC DIAGRAM
R.F. ATTENUATOR

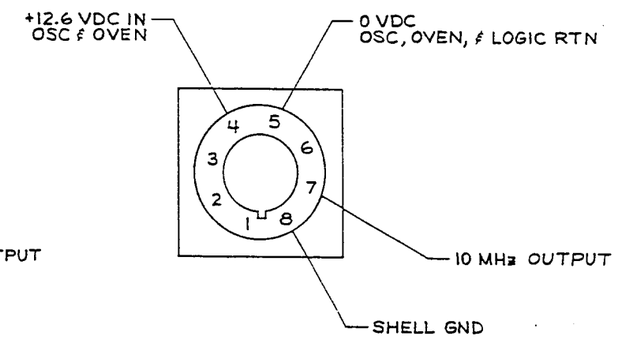
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-0835	B

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PROD.	2-8-85	
B	REVISED PER ECO 86033	3/6/86	
C	REVISED PER ECO 86113	7/18/86	
D	REVISED PER ECO 86150	11/5/86	







U NO	TYPE	VCC	GND

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W. 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 2900

CIRCUIT REFERENCE USED:

C( ) - C( )	Q( ) - Q( )
CR( ) - CR( )	R( ) - R( )
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U( ) - U( )	XY( ) - XY( )
L( ) - L( )	J( ) - J( )

MODEL NO	NEXT ASSY
7120	7046-0084
7000	7046-0084

DRAWN	D. North	DATE 2/6/85
CHECKED		DATE 2-8-85
MECH ENGR		DATE
MFG ENGR		DATE 3-5-85

7-32

CUSHMAN ELECTRONICS, INC

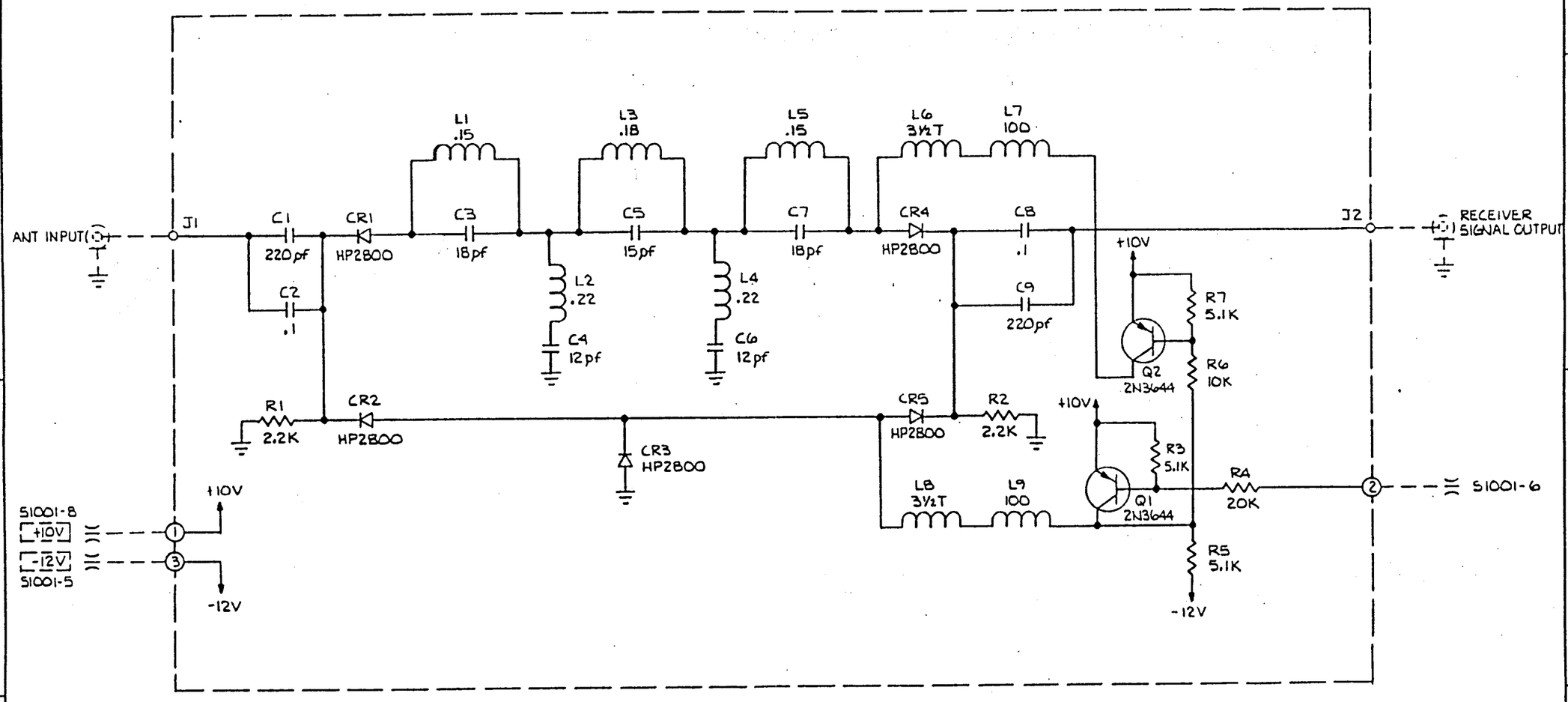
SCHEMATIC DIAGRAM OCTAL SOCKET CONTAINER

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1012	D

SHEET 1 OF 1

8000-1097 | 1 | A

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	7/87	



7-33

CIRCUIT REFERENCE SERIES: 3050

CIRCUIT REFERENCE USED:	
C( ) - C(9)	Q( ) - Q(2)
CR( ) - CR(5)	R( ) - R(7)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U( ) - U( )	Y( ) - Y( )
L( ) - L(9)	J( ) - J(2)

MODEL NO.	NEXT ASSY.
7120	7001-0969

DRAWN	D.A.N.	DATE	12-22-86
CHECKED		DATE	
MECH ENGR		DATE	
PROJ ENGR		DATE	1/7/87
MFG ENGR		DATE	

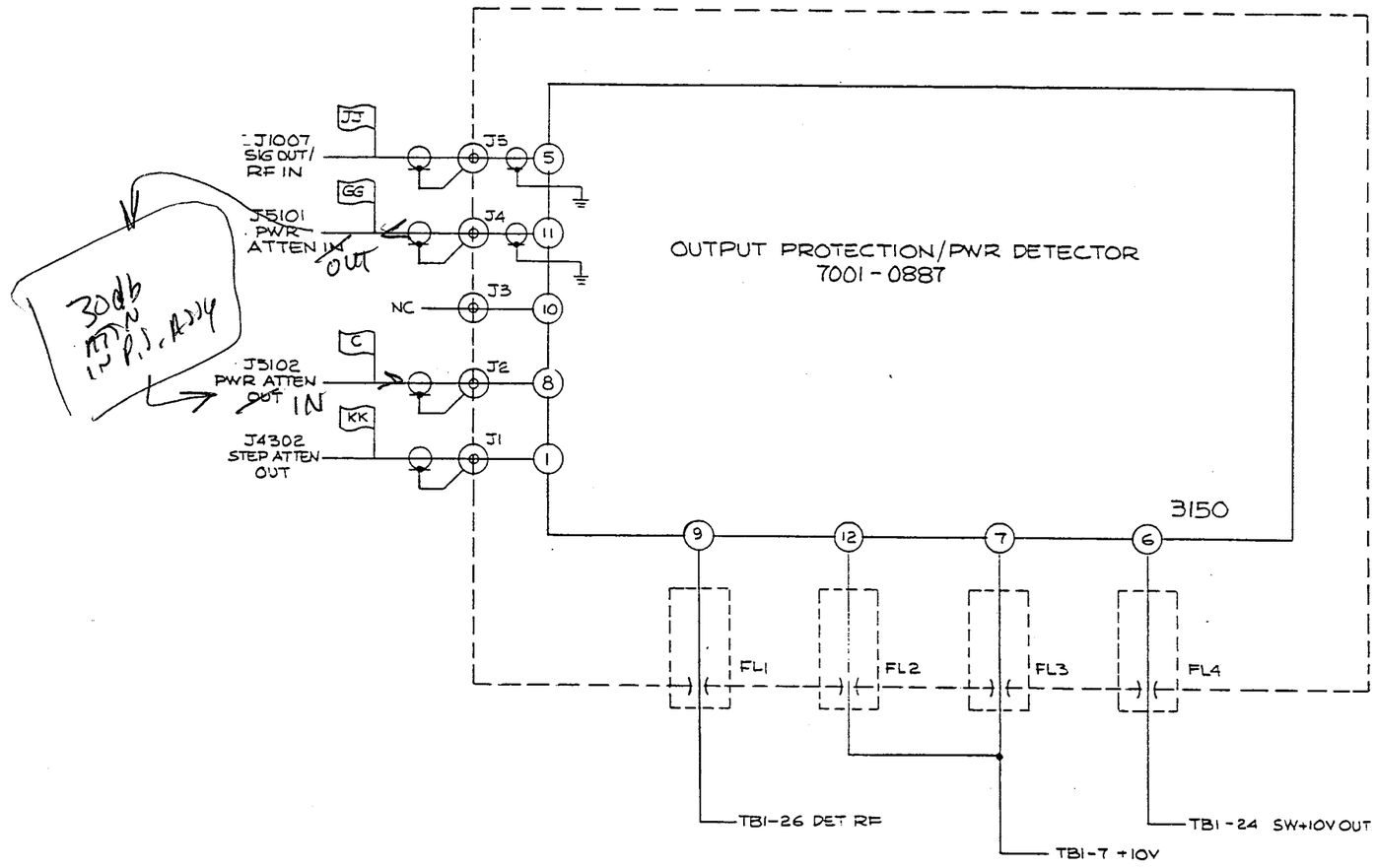
CUSHMAN ELECTRONICS, INC

SCHEMATIC DIAGRAM-
FM BAND REJECT FILTER

CODE IDENT. NO.	SIZE	DRAWING NO	REV
26192	C	8000-1097	A

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PROD.	3-28-85	



OUTPUT PROTECTION/PWR DETECTOR
7001-0887

NOTE:

5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 3100

CIRCUIT REFERENCE USED:

C( ) - C( )		Q( ) - Q( )			
CR( ) - CR( )		R( ) - R( )			
DS( ) - DS( )		S( ) - S( )			
F( ) - F( )		T( ) - T( )			
U( ) - U( )		Y( ) - Y( )			
L( ) - L( )		J( ) - J( )			

MODEL NO	NEXT ASSY
7000	7046-0082

DRAWN		DATE 3/8/85
CHECKED		DATE 3-85
MECH ENGR		DATE
PROJ ENGR		DATE 3-7-85
MFG ENGR		DATE

7-34

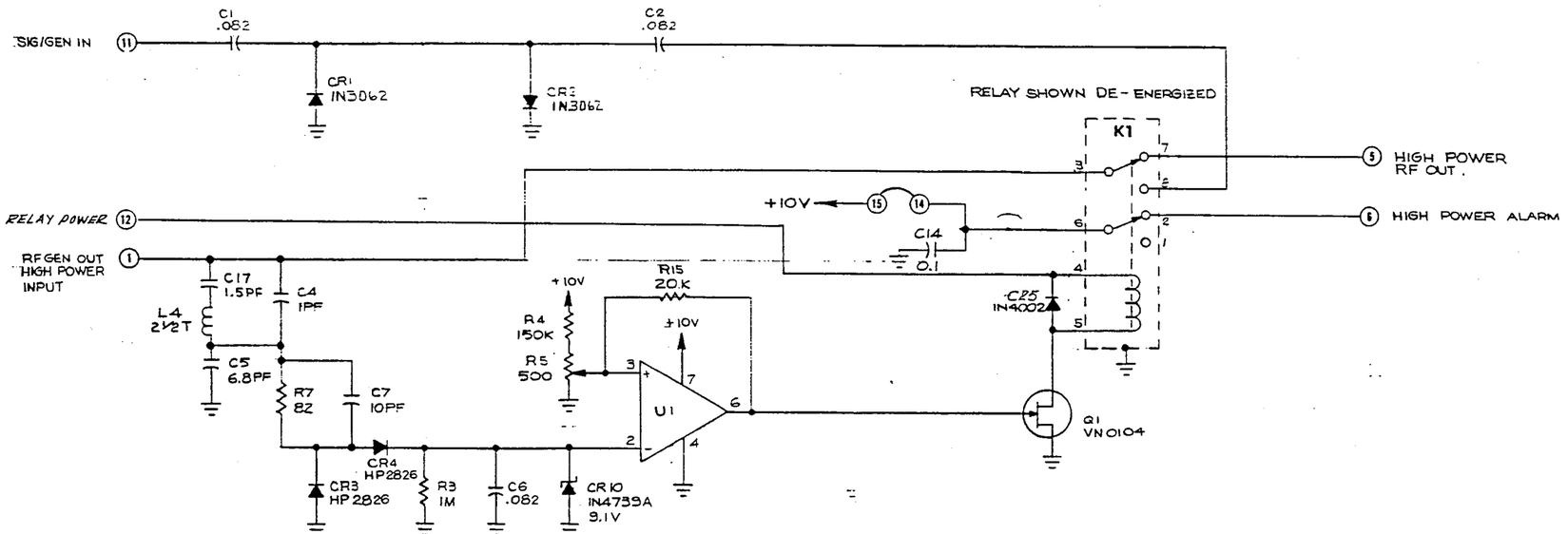
CUSHMAN ELECTRONICS INC

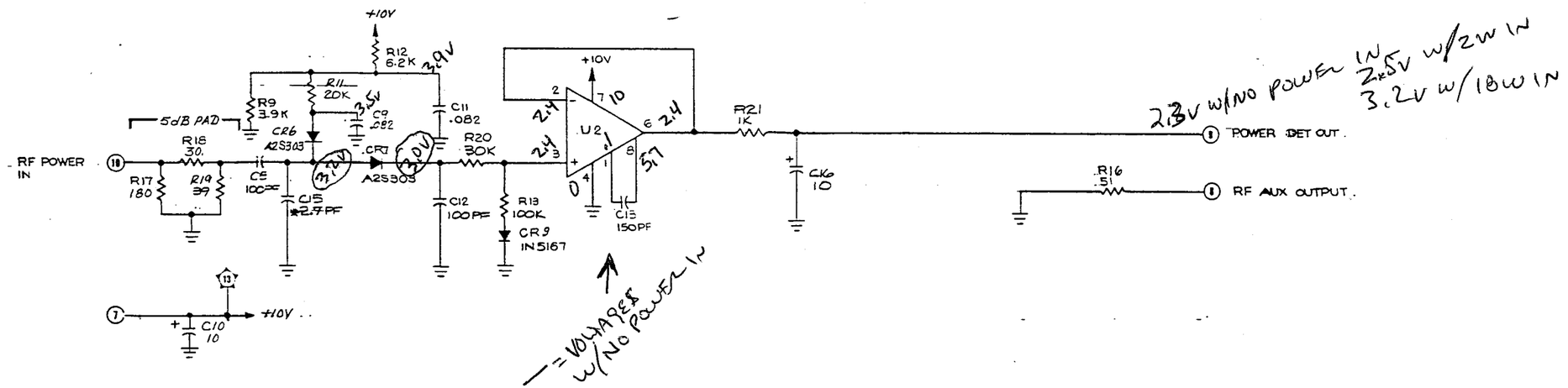
INTERCONNECTION DIAGRAM
RF OUTPUT CASTING

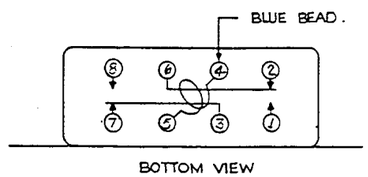
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1018	A

SHEET 1 OF 1

LTR	REVISIONS DESCRIPTION	DATE	APPROVED
1	ORIGINAL DRAFT	6-3-82	TB
2	REVISED PER REDLINE PRINT	6-19-82	
3	PILOT RUN	6-24-82	
4	REVISED PER ECO 82197	7-1-82	
5	ADDED CR9 — NO ECO	9-10-82	
6	REVISED PER ECO 82258	9-21-82	
7	REVISED PER ECO 82289	11-3-82	
A	REVISED AND RELEASED TO PRODUCTION PER 82339	1-6-83	
B	REVISED PER ECO 83060	3-4-83	
C	REVISED PER ECO 83068	3-17-83	







U NO	TYPE	VCC	GND
1	IC 3130T		
2	IC 3130		

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION
CR8	NEAR L1
R15	NEAR U1

REF DES NOT USED:
C3, L2, R1, R10, R14, R2, WT 2, 3, 4 CR8 DC R9

CIRCUIT REFERENCE SERIES: 3150 (7120) 6000 - (4600) 4000 - (4800)

CIRCUIT REFERENCE USED:

C( ) 1 - C( ) 17	Q( ) 1 - Q( )		
CR( ) 1 - CR( ) 10	R( ) 1 - R( ) 21	6000	7001-0799
DS( ) - DS( )	S( ) - S( )	4000	7001-0799
F( ) - F( )	T( ) - T( )		
U( ) - U( )	X( ) 1 - X( )	MODEL NO	NEXT ASSY

DRAWN C.R	DATE 6-3-82	
CHECKED	DATE 6/27/82	
MECH ENGR	DATE	
PROJ ENGR	DATE 6-24-82	
PROJ MGR	DATE 1-6-82	

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CUSHMAN ELECTRONICS INC

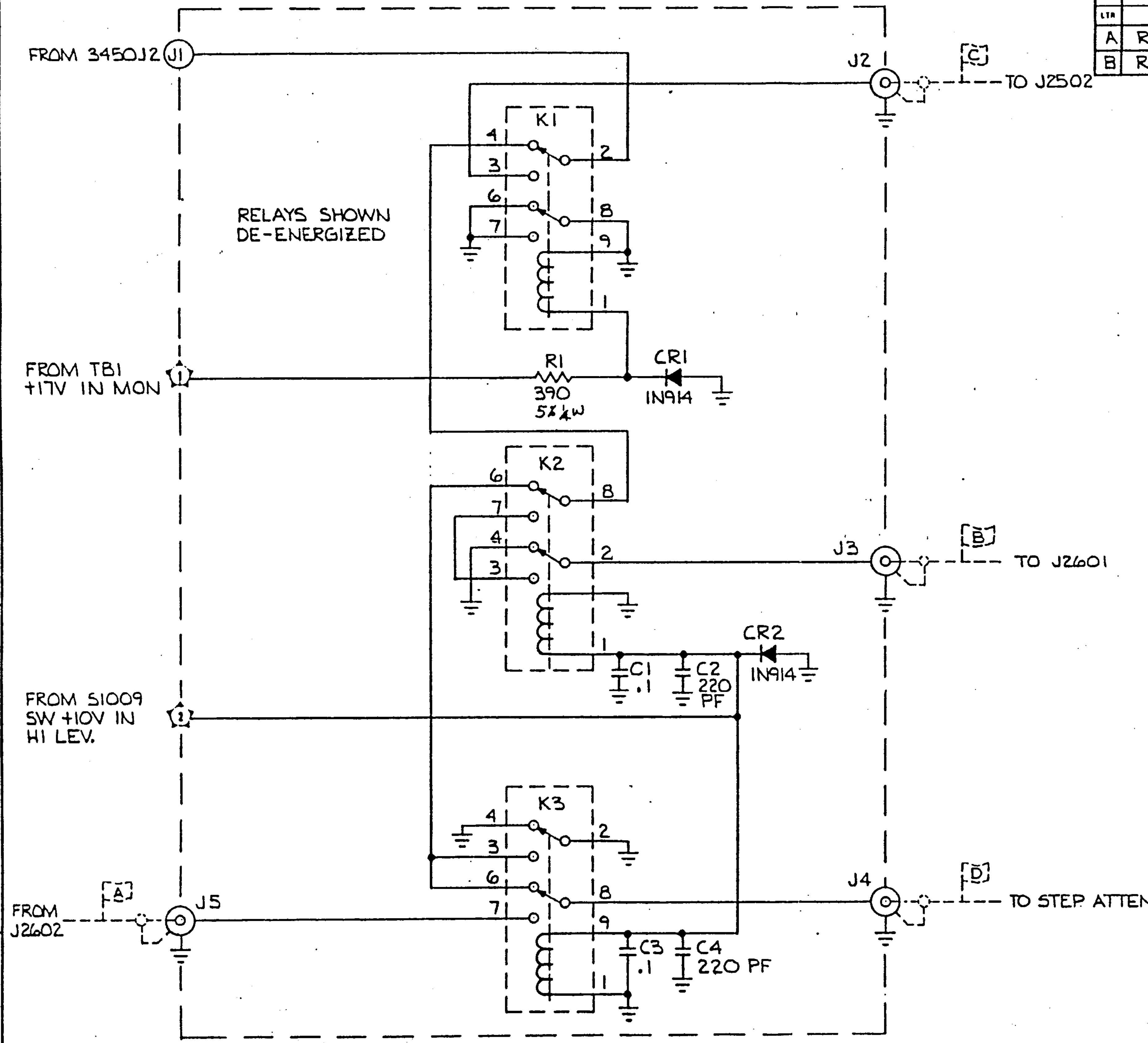
SCHEMATIC DIAGRAM - OUTPUT PROT / PWR DET

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-0896	C

SHEET 1 OF 1

C8000-1007 | 1 | B

LTR	DESCRIPTION	DATE	APPROVED
A	RELEASE TO PRODUCTION	[illegible]	[illegible]
B	REVISED PER ECO 85035	[illegible]	[illegible]



7-36

CUSHMAN ELECTRONICS, INC

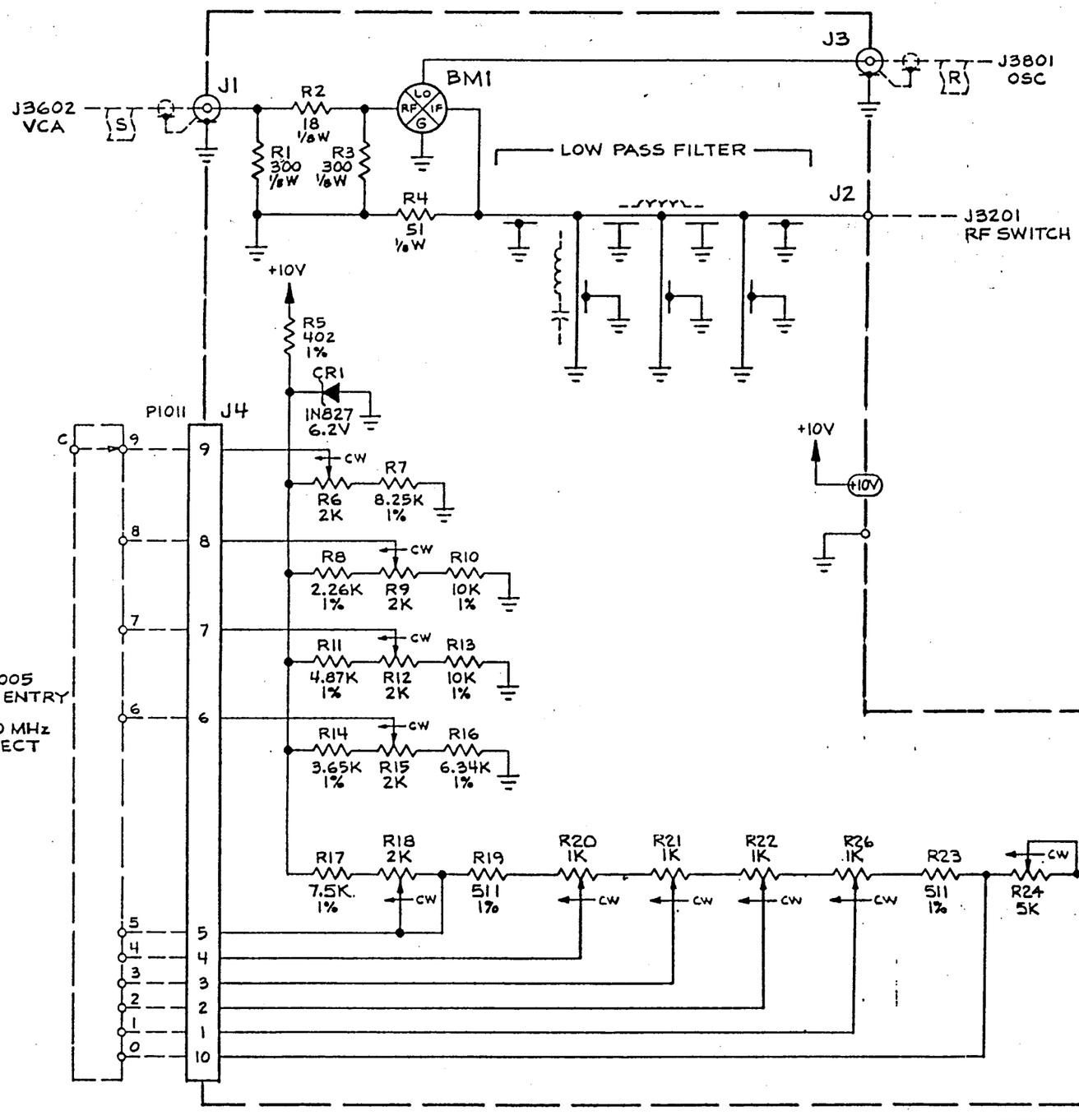
SCHEMATIC DIAGRAM
RELAY CONTROL

DRAWN: D. NORTHGRAVE	DATE: 11-30-84	CODE IDENT. NO.: 26192	SIZE: C
CHECKED: [illegible]	DATE: 12-10-84	DRAWING NO.: 8000-1007	REV.: B
MECH ENGR	DATE	SHEET 1 OF 1	
PROJ ENGR: [illegible]	DATE: 12-10-84		
MFG ENGR	DATE		

CIRCUIT REFERENCE SERIES: 3200

CIRCUIT REFERENCE USED:		MODEL NO.	NEXT ASSY.
C( ) - C( ) 4	Q( ) - Q( ) —	7120\7110	7001-0886
CR( ) - CR( ) 2	R( ) - R( ) 1	7000\7010	7001-0886
DS( ) - DS( ) —	S( ) - S( ) —		
K( ) - K( ) 3	T( ) - T( ) —		
U( ) - U( ) —	Y( ) - Y( ) —		
L( ) - L( ) —	J( ) - J( ) 5		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	4-11-86	
B	REVISED PER ECO NO. 86077	6-11-86	
C	REVISED PER ECO NO. 86228	12-19-86	



NOTES: UNLESS OTHERWISE SPECIFIED

1. RESISTANCE VALUES ARE IN OHMS, ±5%, 1/4W.
2. VOLTAGES ARE DC.

CIRCUIT REFERENCE SERIES: 3450

CIRCUIT REFERENCE USED:	
C( ) - C( )	Q( ) - Q( )
CR(1) - CR(1)	R(1) - R(26)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U( ) - U( )	Y( ) - Y( )
L( ) - L( )	J(1) - J(4)

MODEL NO.	NEXT ASSY.
7120	7001-0932

DRAWN D. North	DATE 4/7/86	
CHECKED	DATE 4/86	
MECH ENGR	DATE	
PROJ ENGR	DATE 4/14/86	
MFG ENGR	DATE	

7-37

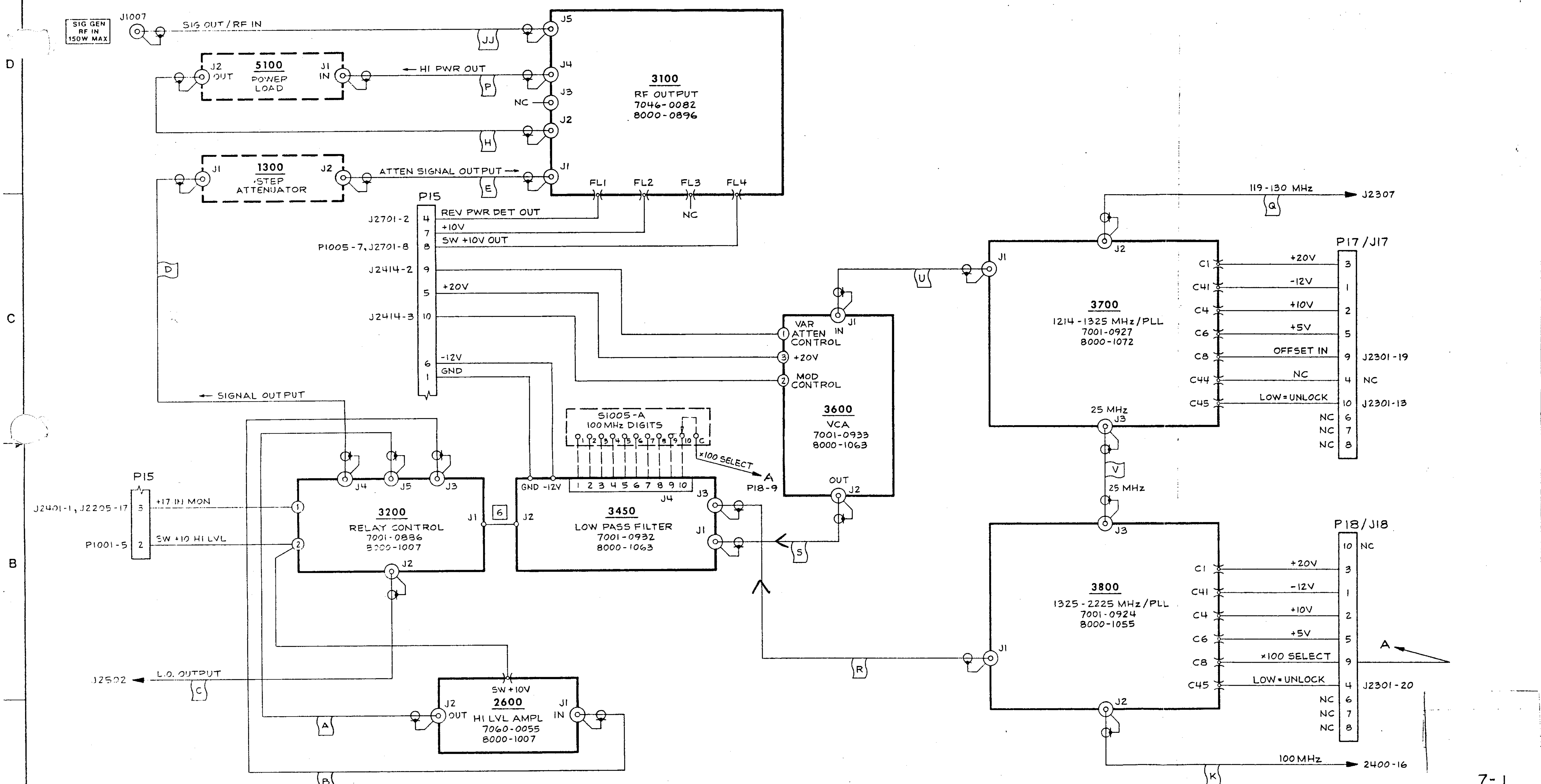
CUSHMAN ELECTRONICS, INC

SCHEMATIC DIAGRAM-
FILTER LOW PASS 1000M

CODE IDENT. NO.	SIZE	DRAWING NO.	REV.
26192	C	8000 - 1063	C

SHEET 1 OF 1

LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION		



SIG GEN RF IN 150W MAX
J1007
SIG OUT / RF IN
5100
POWER LOAD
J2 OUT
J1 IN
HI PWR OUT
3100
RF OUTPUT
7046-0082
8000-0896
J5 J4 J3 J2 J1
NC
FL1 FL2 FL3 FL4
1300
STEP ATTENUATOR
ATTEN SIGNAL OUTPUT
P15
J2701-2
P1005-7, J2701-8
J2414-2
J2414-3
REV PWR DET OUT
+10V
SW +10V OUT
+20V
-12V
GND
SIGNAL OUTPUT
119-130 MHz
J2307
3700
1214-1325 MHz/PLL
7001-0927
8000-1072
P17/J17
OFFSET IN
J2301-19
LOW=UNLOCK
J2301-13
25 MHz
VAR ATTEN CONTROL
MOD CONTROL
3600
VCA
7001-0933
8000-1063
OUT
S1005-A
100 MHz DIGITS
x100 SELECT
P18-9
P15
J2401-1, J2205-17
P1001-5
+17 IN MON
SW +10 HI LVL
3200
RELAY CONTROL
7001-0886
8000-1007
3450
LOW PASS FILTER
7001-0932
8000-1063
GND -12V
3800
1325-2225 MHz/PLL
7001-0924
8000-1055
P18/J18
J2301-20
J2502
L.O. OUTPUT
SW +10V
2600
HI LVL AMPL
7060-0055
8000-1007
100 MHz
2400-16

7-1

CONN NO. — PIN NO.

8. MAIN INTERCONNECT SYMBOLS: —>II 16>—<1-18<—
7. ▲ = FERRITE BEAD.
6. COPPER CONNECTION STRIP.

NOTES:

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE

REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES:

CIRCUIT REFERENCE USED:

MODEL NO	NEXT ASSY
7120	7000-0111

DRAWN D. North DATE 3/6/86

CHECKED

MECH ENGR

PROJ ENGR

MFG ENGR

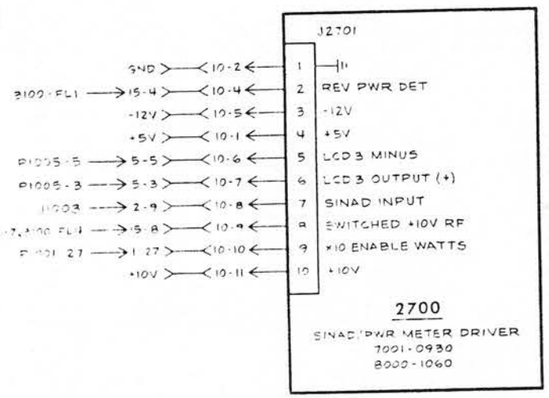
(7120) CE CUSHMAN ELECTRONICS INC

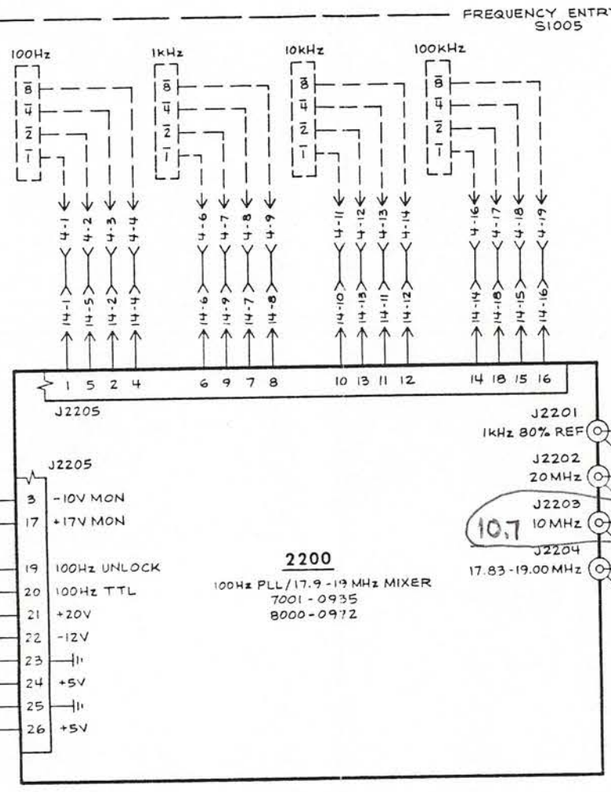
INTERCONNECT DIAGRAM-MAIN

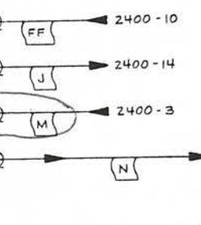
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1054	A

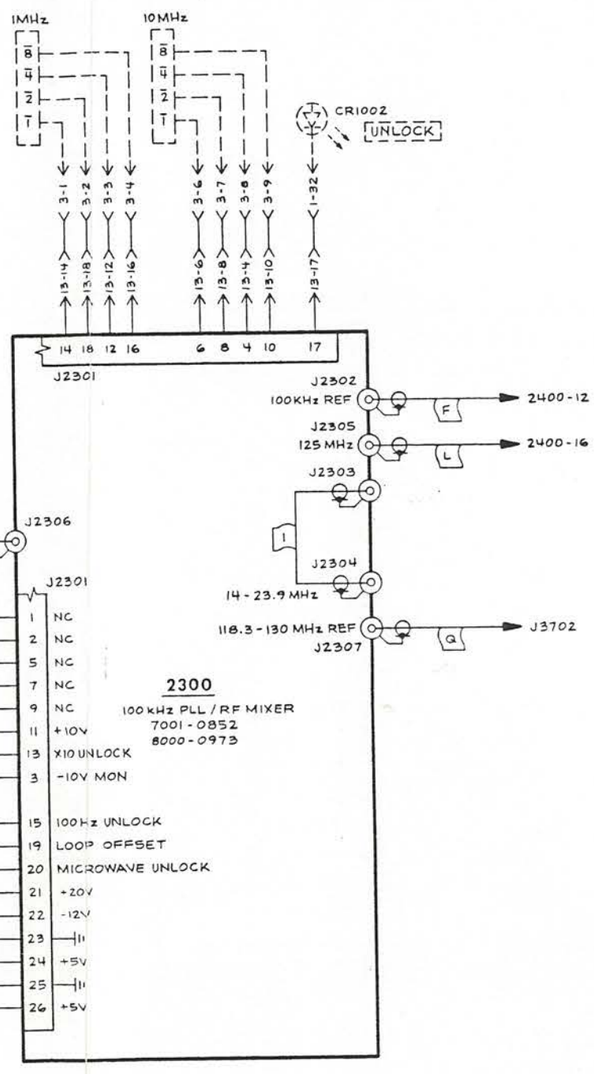
SHEET 1 OF 4

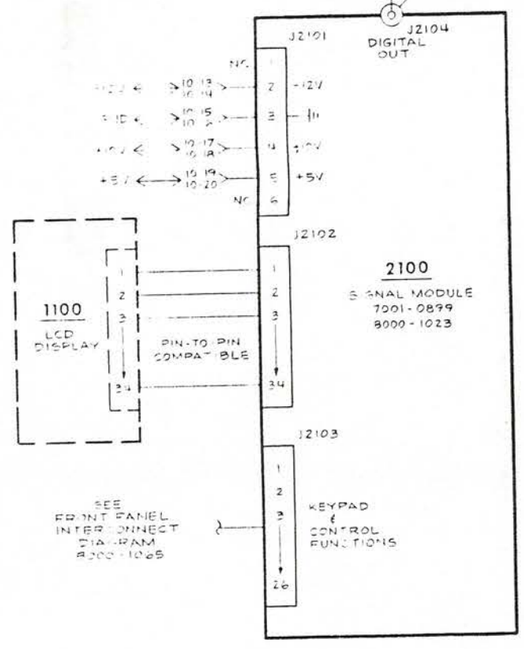
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

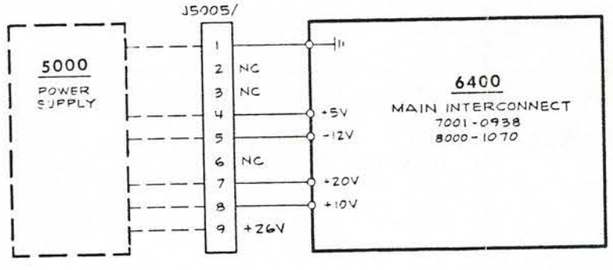












MAIN INTERCONNECT SYMBOLS: CONN NO. → 11-16 ← PIN NO 1-18

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES:

CIRCUIT REFERENCE USED:

C( ) - C( )	Q( ) - Q( )		
CR( ) - CR( )	R( ) - R( )		
DS( ) - DS( )	S( ) - S( )		
F( ) - F( )	T( ) - T( )		
U( ) - U( )	Y( ) - Y( )		

7120	7000-0111
MODEL NO	NEXT ASSY

DRAWN	D. North	DATE 4/23/86
CHECKED		DATE
MECH ENGR		DATE
PROJ ENGR		DATE
MFG ENGR		DATE

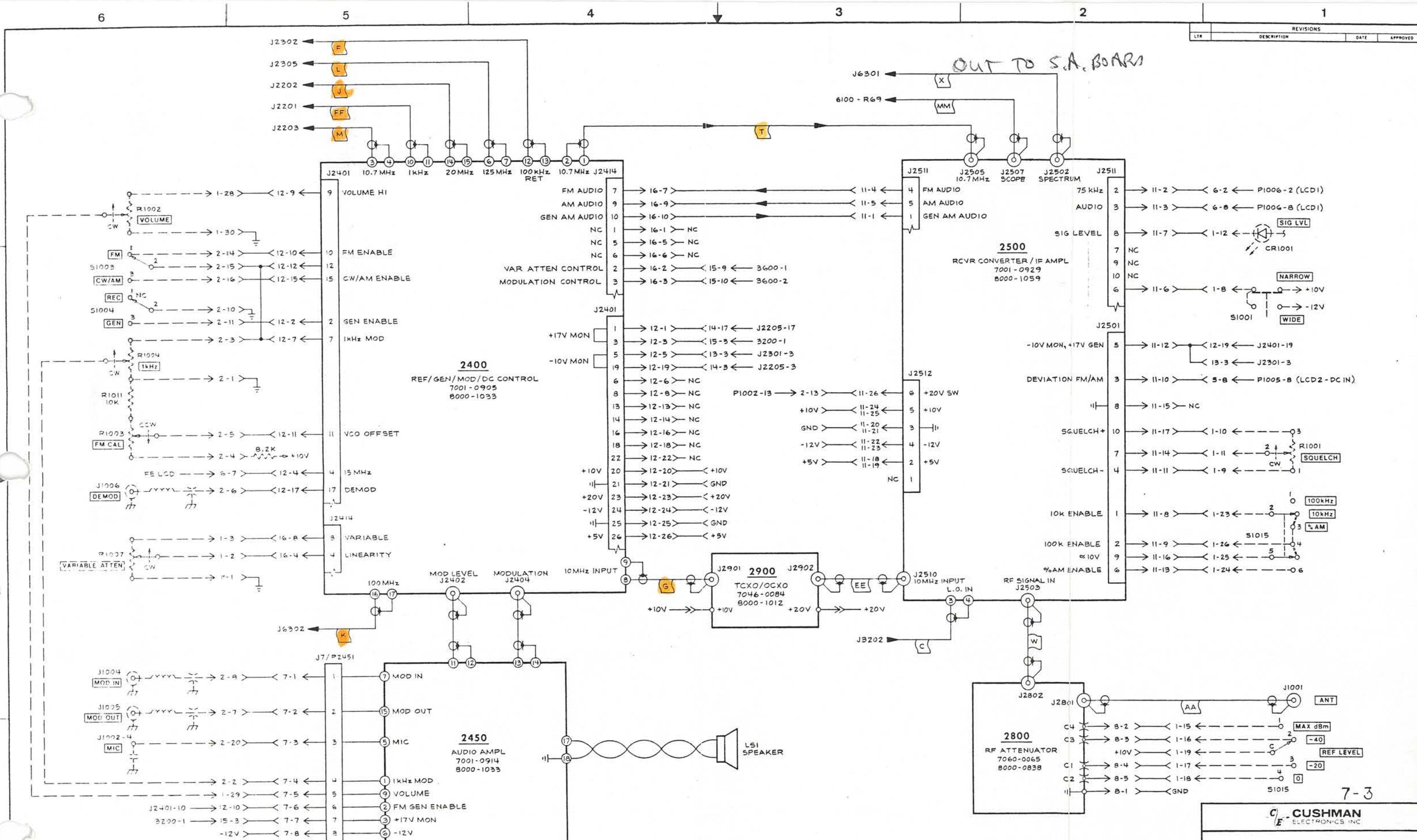
7-2

CUSHMAN ELECTRONICS INC

INTERCONNECT DIAGRAM - MAIN

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1054	A

SHEET 2 OF 4



OUT OF SEQUENCE TABLE

REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES:

CIRCUIT REFERENCE USED:

7120 | 7000-0111

MODEL NO | NEXT ASSY

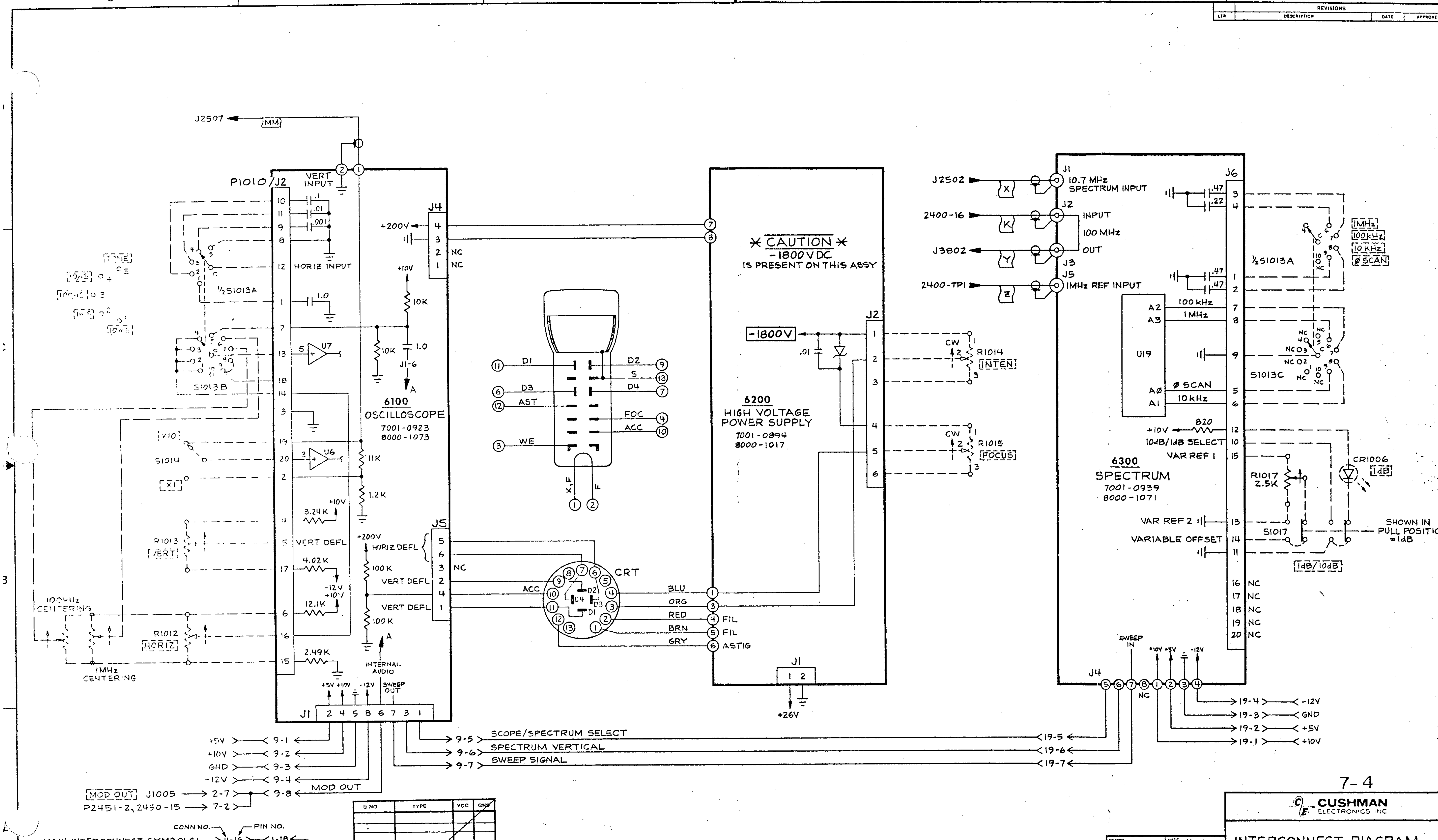
DRAWN D. North DATE 4/27/86

CUSHMAN ELECTRONICS INC

INTERCONNECT DIAGRAM - MAIN

CODE IDENT NO 26192 | SIZE D | DRAWING NO 8000-1054 | REV A

SHEET 3 OF 4



J2507
MM
P1010/J2
VERT INPUT
HORIZ INPUT
1/2 S1013A
S1013B
S1014
R1013 VERT
R1012 HORIZ
100kHz CENTERING
1MHz CENTERING
VERT DEFL
HORIZ DEFL
J4
+200V
J5
6100
OSCILLOSCOPE
7001-0923
8000-1073
INTERNAL AUDIO
J1
+5V +10V -12V SWEEP OUT
CRT
D1 D2 D3 D4 S AST WE FOC ACC K,F F
BLU ORG RED BRN GRY
FIL FIL ASTIG
* CAUTION *
-1800 VDC
IS PRESENT ON THIS ASSY
-1800V
6200
HIGH VOLTAGE
POWER SUPPLY
7001-0894
8000-1017
+26V
R1014 INTEN
R1015 FOCUS
CW
J2502
2400-16
J3802
2400-TP1
10.7 MHz SPECTRUM INPUT
INPUT
100 MHz
OUT
1MHz REF INPUT
J6
U19
100 kHz
1MHz
Ø SCAN
10 kHz
1/2 S1013A
S1013C
1MHz
100kHz
10kHz
Ø SCAN
+10V
820
10dB/1dB SELECT
VAR REF 1
VAR REF 2
VARIABLE OFFSET
R1017 2.5K
CR1006
1dB
S1017
SHOWN IN PULL POSITION =1dB
1dB/10dB
6300
SPECTRUM
7001-0939
8000-1071
SWEEP IN
19-4 -12V
19-3 GND
19-2 +5V
19-1 +10V
+5V 9-1
+10V 9-2
GND 9-3
-12V 9-4
9-5 SCOPE/SPECTRUM SELECT 19-5
9-6 SPECTRUM VERTICAL 19-6
9-7 SWEEP SIGNAL 19-7
MOD OUT J1005 → 2-7 9-8
MOD OUT
P2451-2, 2450-15 → 7-2
CONN NO.
PIN NO.
MAIN INTERCONNECT SYMBOLS: → 11-16 1-18

NOTE: SEE SHEET 1

7-4

CUSHMAN ELECTRONICS INC

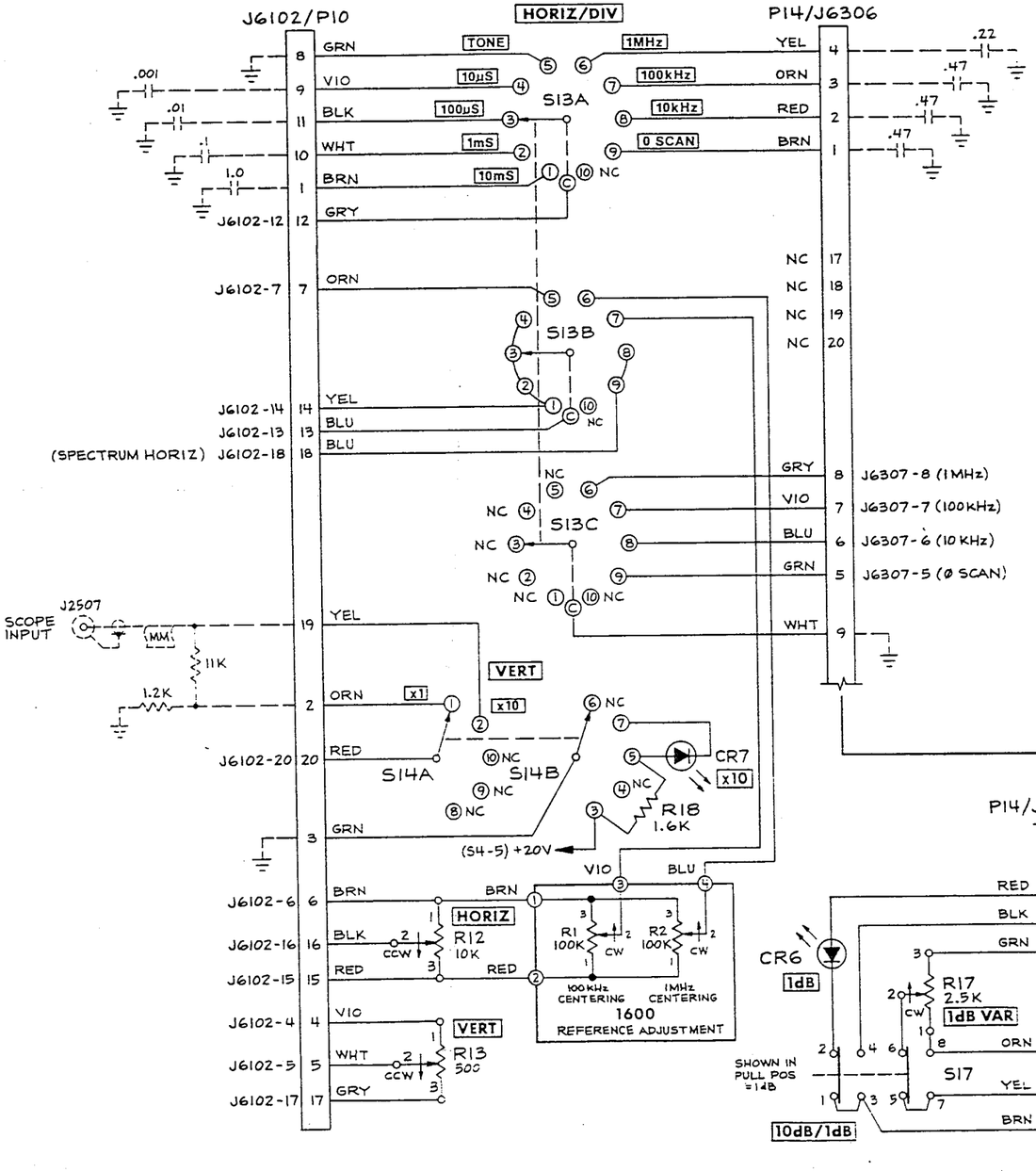
INTERCONNECT DIAGRAM - MAIN

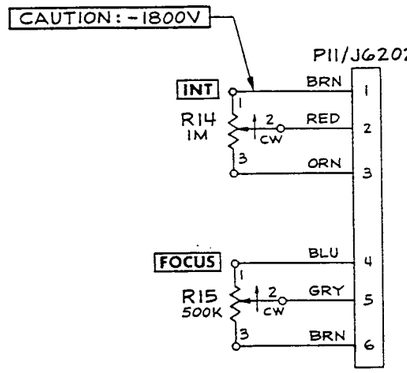
DRAWN	DATE
D. North	4/25/86

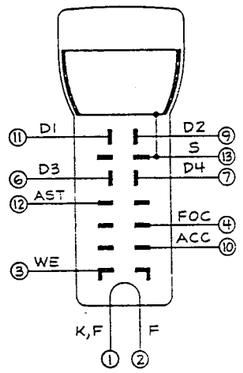
MODEL NO	NEXT ASSY
7120	7000-0111

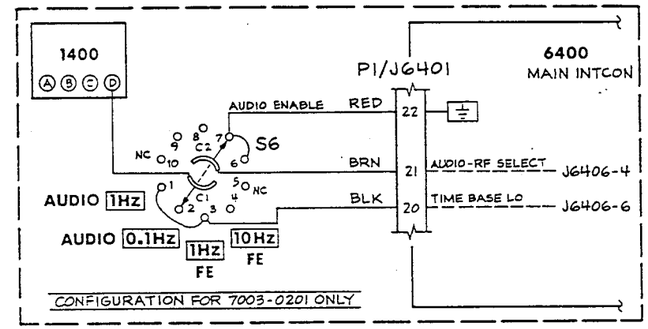
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1054	A

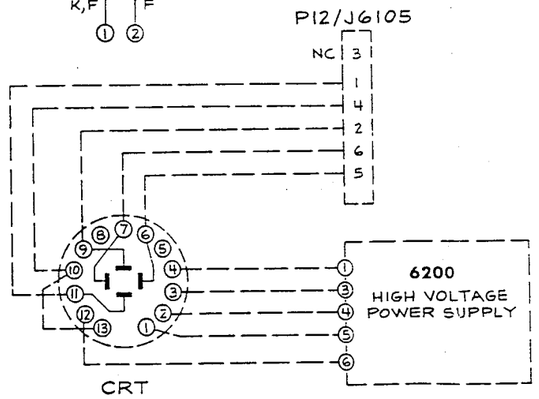
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	5-13-86	
B	UPDATED 'P' NOS. - NO ECO	6/23/86	
C	REVISED PER ECO NO. 86160	10/1/86	
D	REVISED PER ECO NO. 86169	10/1/86	
E	REVISED PER ECO NO. 86161	10/24/86	
F	REVISED PER ECO NO. 86186	11-5-86	
H	REVISED PER ECO NO. 86219	2-2-87	
J	REVISED PER ECO NO. 87011	5-12-87	
K	REVISED PER ECO NO. 87039	5-12-87	











U NO	TYPE	VCC	GND

REF NO.S NOT USED	OUT OF SEQUENCE TABLE	
	REF NO	APPROX LOCATION
CR4 R5, R6, R8, R10, R16, R19		

CIRCUIT REFERENCE SERIES: 1000

CIRCUIT REFERENCE USED:

C(1) - C(8)	Q( ) - Q( )
CR(1) - CR(7)	R( ) - R(20)
DS( ) - DS( )	S( ) - S(17)
F( ) - F( )	T( ) - T( )
U( ) - U( )	Y( ) - Y( )
L( ) - L(4)	J( ) - J(7)

MODEL NO	NEXT ASSY
7120	7003-0201
7120	7003-0196

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

DRAWN	D. North	DATE	4/14/86
CHECKED		DATE	5-86
MECH ENGR		DATE	
MFG ENGR		DATE	5-13-86
		DATE	

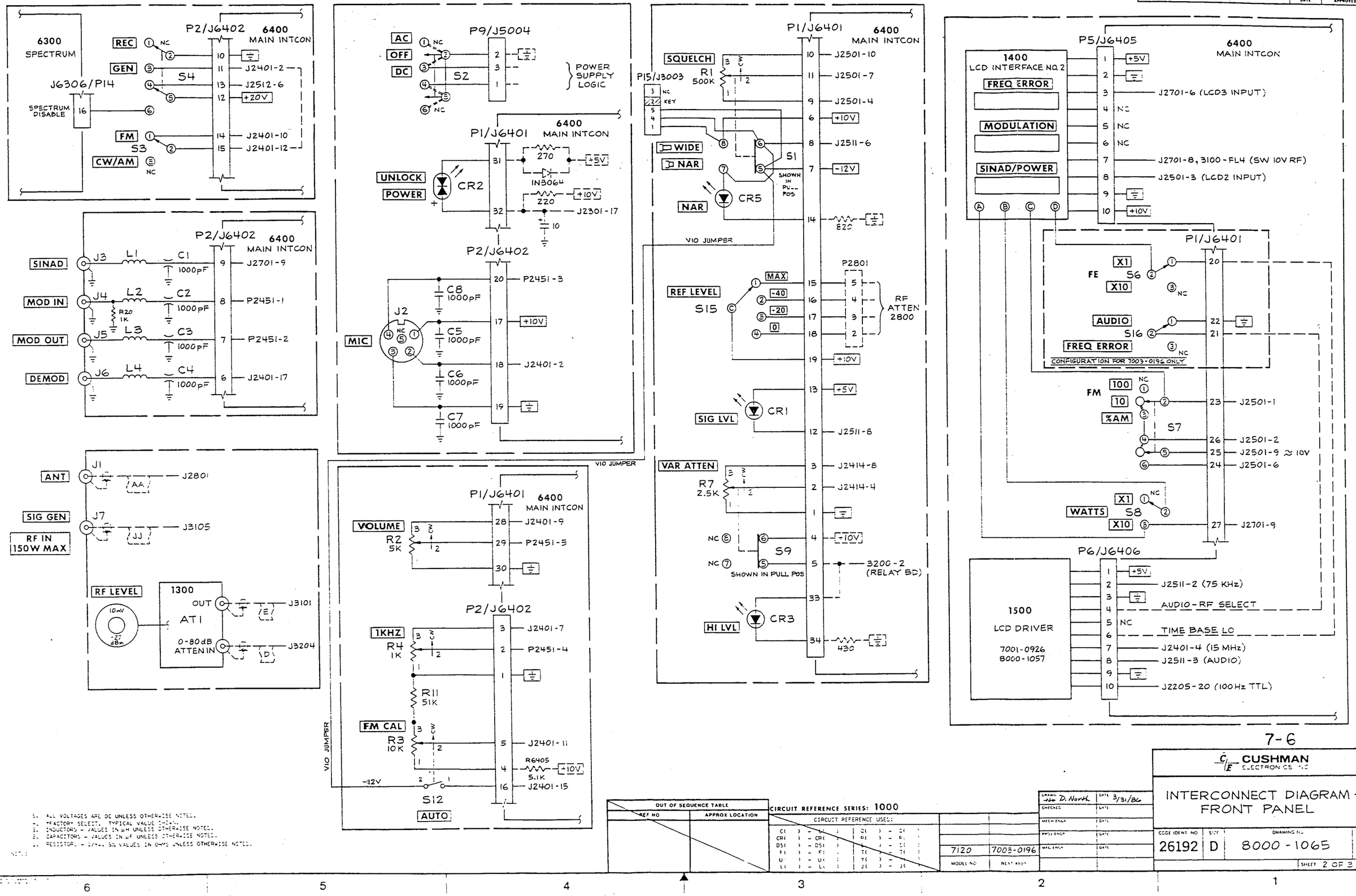
CUSHMAN ELECTRONICS INC

INTERCONNECT DIAGRAM - FRONT PANEL

CODE IDENT NO.	SIZE	DRAWING NO	REV
26192	D	8000-1065	K

SHEET 1 OF 3

7-5



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

NOTES:
1. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
2. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS = VALUES IN μH UNLESS OTHERWISE NOTED.
4. CAPACITORS = VALUES IN μF UNLESS OTHERWISE NOTED.
5. RESISTORS = 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE

REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1000

CIRCUIT REFERENCE USED:

C( ) – C( )	CR( ) – CR( )	DS( ) – DS( )	F( ) – F( )
J( ) – J( )	P( ) – P( )	R( ) – R( )	S( ) – S( )
TC( ) – TC( )	U( ) – U( )	VR( ) – VR( )	W( ) – W( )

7120	7003-0196
MODEL NO	NEXT ASSY

DRAWN	D. North	DATE 3/31/86
CHECKED		DATE
MECH ENGR		DATE
PROJ ENGR		DATE
MFG ENGR		DATE

CUSHMAN ELECTRONICS INC

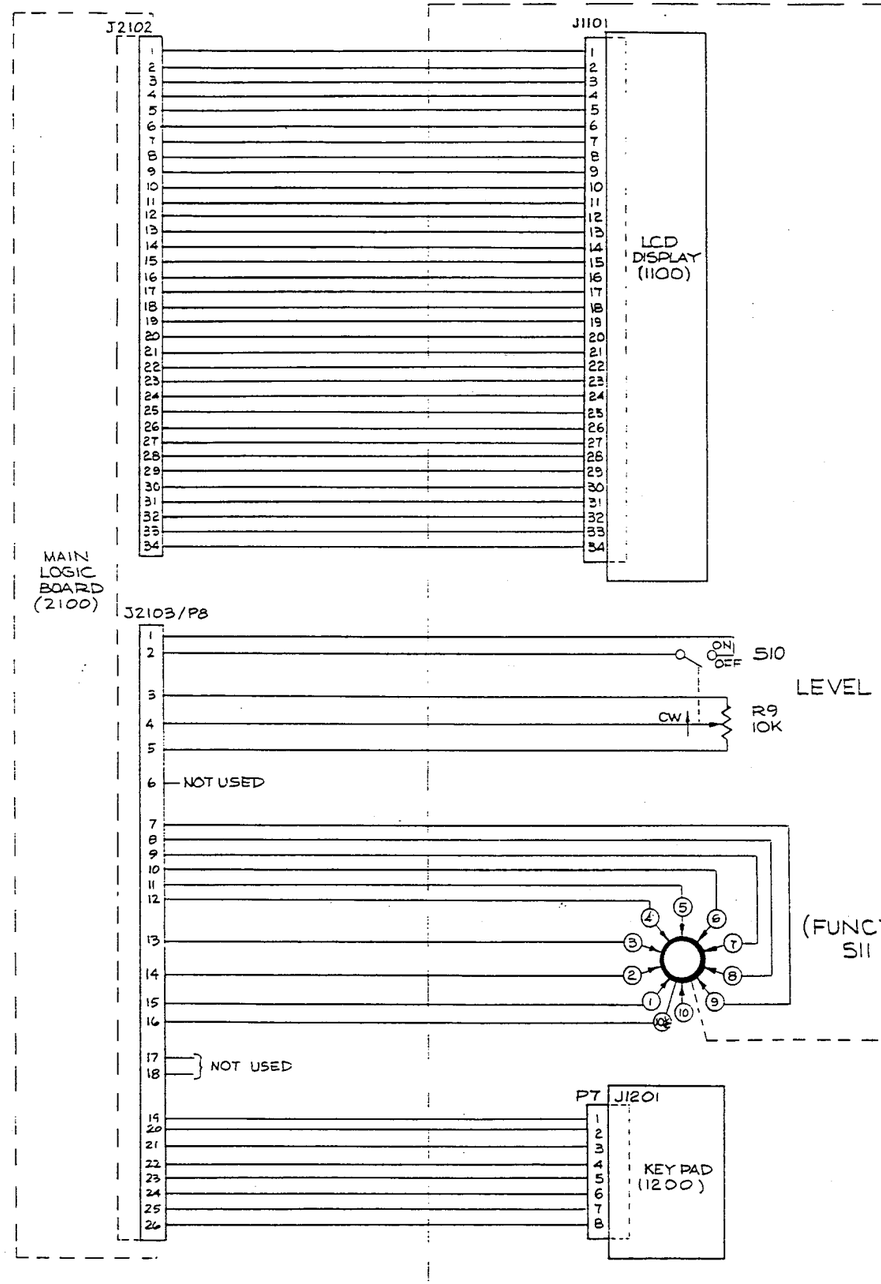
INTERCONNECT DIAGRAM - FRONT PANEL

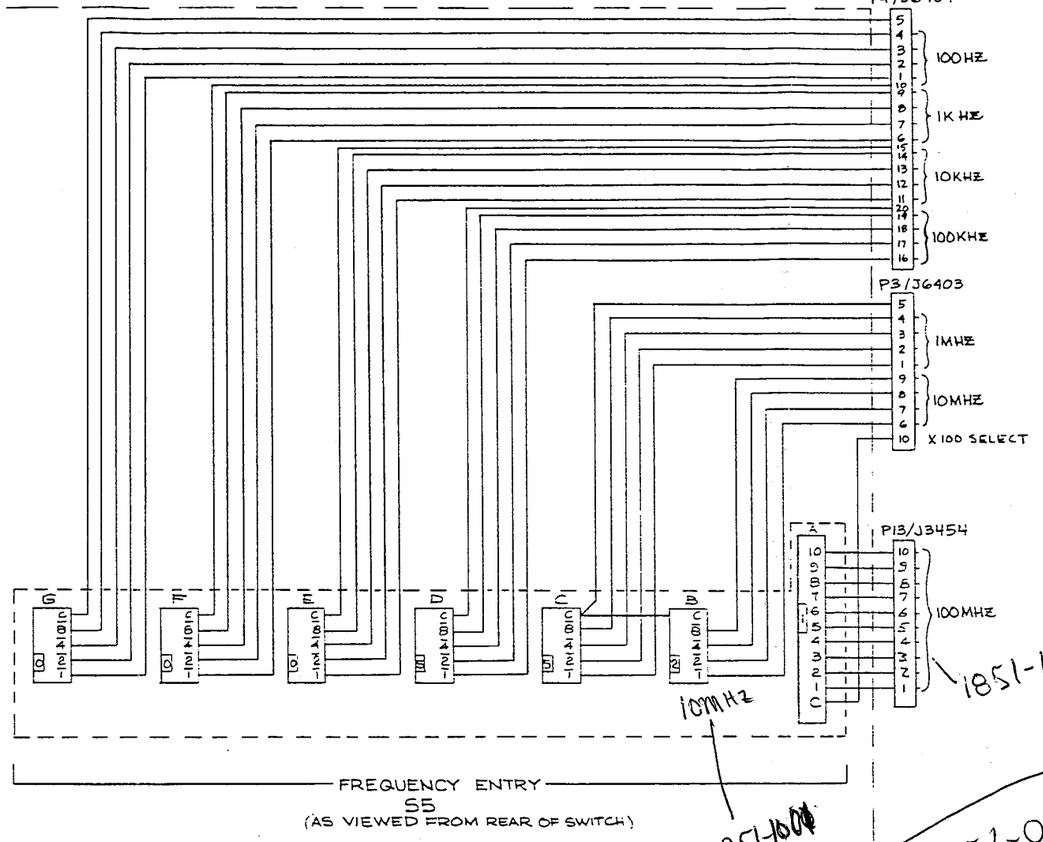
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1065	K

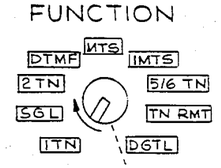
SHEET 2 OF 3

7-6

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED







1851-1000

1851-0164
SW ASSY

7011-0048
W/CABLE ASSY

U NO	TYPE	VCC	GND

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS – VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS – VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS – 1/4w. 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1000

CIRCUIT REFERENCE USED:

C( ) – C( )		Q( ) – Q( )	
CR( ) – CR( )		R( ) – R( )	
DS( ) – DS( )		S( ) – S( )	
F( ) – F( )		T( ) – T( )	

DRAWN	DATE
CHECKED	DATE
MECH ENGR	DATE
PROJ ENGR	DATE
MFG ENGR	DATE

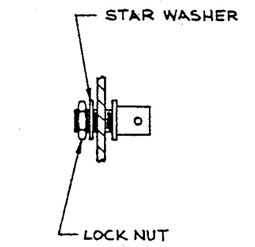
7-7

CUSHMAN ELECTRONICS INC

INTERCONNECT DIAGRAM – FRONT PANEL

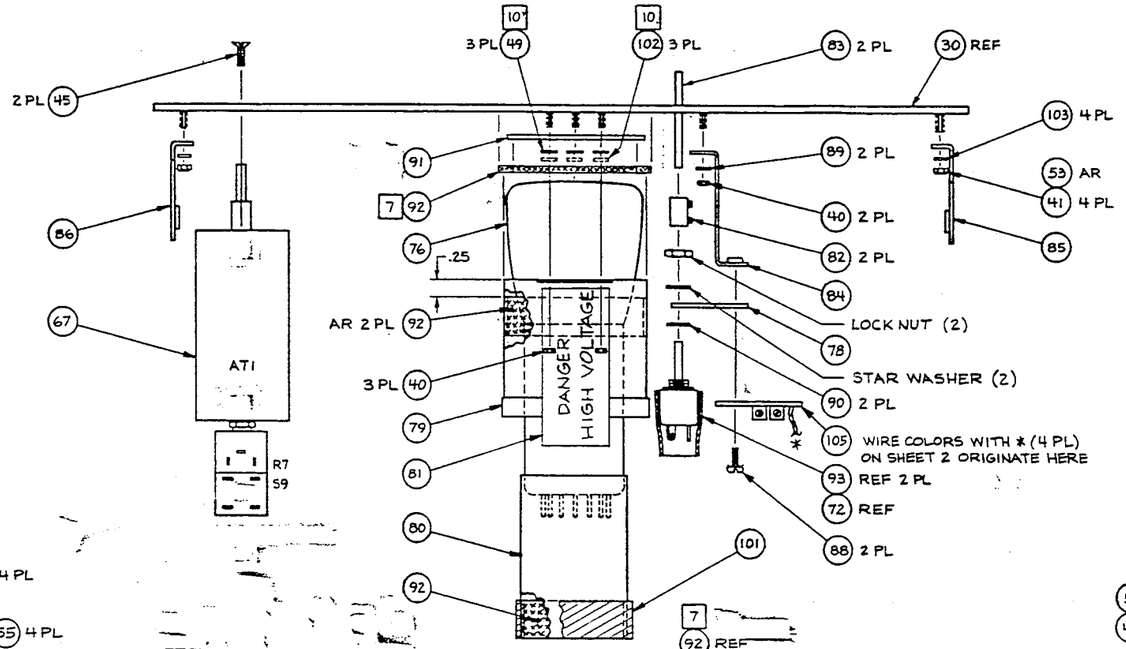
CODE IDENT NO.	SIZE	DRAWING NO.	REV
26192	D	8000 – 1065	K

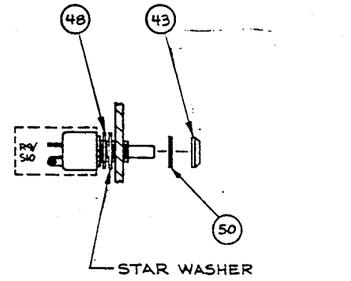
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	11-23-85	
B	REVISED PER ECO NO. 86186	11-25-86	
C	REVISED PER ECO NO. 86219	2-2-87	



TYPICAL CONNECTOR INSTALLATION

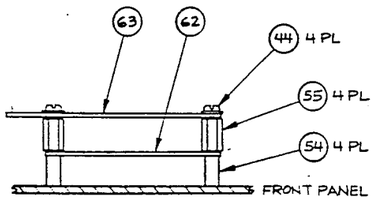
6



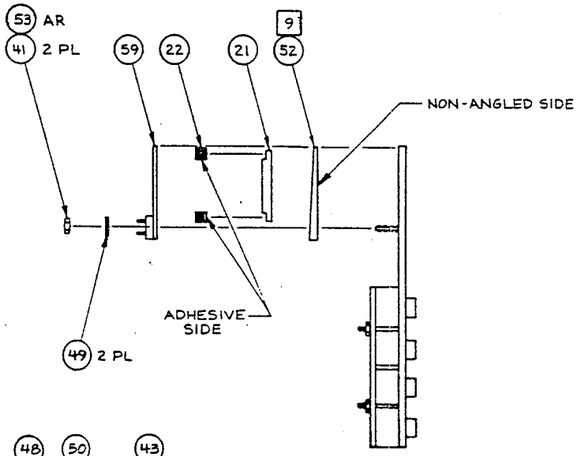


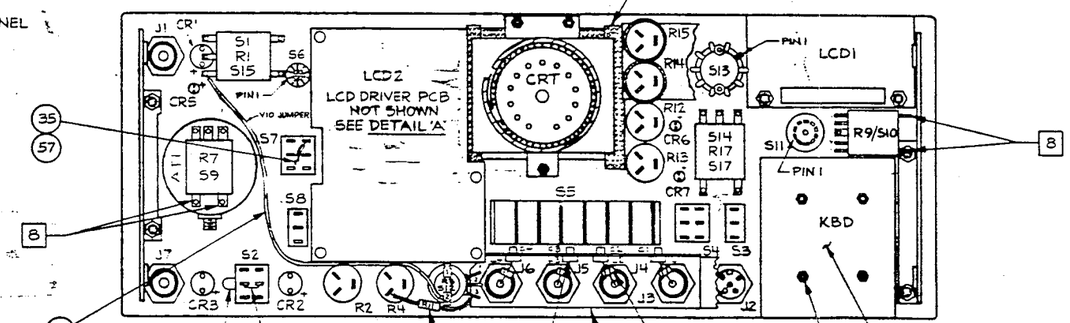
TYPICAL POT INSTALLATION

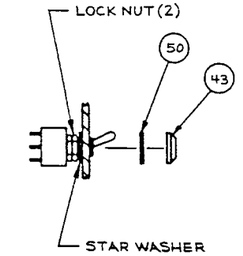
R2, R3/S12, R4, R12, R13, R9/S10



DETAIL A



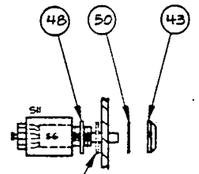




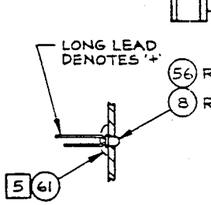
TYPICAL SWITCH INSTALLATION

S2, S3, S4, S7, S8

KEY ALL SWITCHES TO TOP

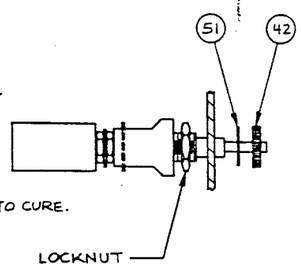


S6, S11 INSTALLATION

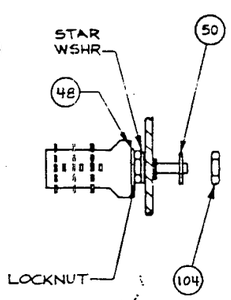


LED INSTALLATION

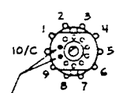
CR5, CR6, CR7



S1/R1/S15, S14/R17/S17 INSTALLATION



S13 INSTALLATION 4



FRONT VIEW

INSTALL STOP PINS IN POSITIONS SHOWN. FLAT OF SHAFT MUST NOT POINT TOWARDS PIN 3 DURING INSTALLATION. ITEM 48 SECURES PINS IN PLACE.

* NOTES CONTINUED SHEET 2 *

11. SEE ASSEMBLY PROCEDURE SHEET 3.

10 WHEN MOUNTING CRT: THE FACE OF THE TUBE SHOULD BE AS CLOSE TO GRATICULE AS POSSIBLE WITHOUT TOUCHING. FACES OF EACH TUBE HAVE SLIGHTLY DIFFERENT CONTOURS, SO DIFFERENT MOUNTING SYSTEMS ARE POSSIBLE:
- A. NO WASHERS
- ~~B. THREE WASHERS (ITEM 49) (.02 CLEARANCE)~~
- C. THREE WASHERS (ITEM 102) (.03 CLEARANCE)
- D. SIX WASHERS (ITEMS 49 & 102, 3 EA.) (.05 CLEARANCE)
- ~~E. OR OTHER COMBINATION.~~

IN ALL CASES, THE CLEARANCE MUST BE EQUAL AT EACH OF THE THREE POINTS.

9 ANGLED SIDE OF SPACER (ITEM 52) MUST FACE AWAY FROM FRONT PANEL.

8 LEADS IN THIS AREA ARE BENT AND SHRINK WRAPPED WHEN WIRED. CUT UNUSED PINS.

7 CUT LENGTH OF FOAM TAPE (ITEM 92) TO BE 1.7. CUT INTO 3 STRIPS LENGTHWISE. TAPE MUST NOT BE VISIBLE FROM FRONT OF PANEL AFTER INSTALLATION.

6 INSTALL SHIELD-RF CONNECTOR (ITEM 14) BETWEEN FRONT PANEL AND STAR WASHERS OF CONNECTORS J3, J4, J5, & J6 (ITEM 23).

5 LED'S TO BE FIRMLY SEATED IN MOUNTING HOLES. APPLY SMALL AMOUNT OF SEALANT (ITEM 61) TO REAR OF LED'S TO SECURE IN PLACE. ALLOW APPROX. 2 HRS TO CURE.

4 SWITCH S13 (ITEM 77) IS SET TO NINE POSITIONS. SEE 'S13 INSTALLATION' DETAIL.

3 IDENTIFY BY HAND STAMPING ASSY. NO. AND LATEST REV. IN .25 CHARACTERS WITH BLACK INDELIBLE INK. LOCATE AS SHOWN.

2 USE L/M 7003-0201 FOR IDENTIFICATION OF ALL PARTS.

NOTES:
1. COMPLETED ASSEMBLY TO CONFORM TO C/E WORKMANSHIP STANDARD #5599-0003.

MATERIALS
2

UNLESS OTHERWISE SPECIFIED
1. REMOVE BURRS & BREAK SHARP EDGES .01 MAX
2. USE MINIMUM BEND RADIUS & BEND RELIEFS
3. INTERPRET DIMENSIONS PER ANSI-Y 14.5
4. FINISH ALL MACHINED SURFACES
5. DIMENSIONS ARE IN INCHES

QUANTITY	C/E PART NO	DESCRIPTION	U/M	ITEM NO.
		LIST OF MATERIALS		
1	7000-0111	1	7120	

DRAWN	D. North	DATE 10/9/86
CHECKED		DATE 11/16/86
MFG ENGR		DATE 10/16/86
PROJ ENGR		DATE 11/86
APVD ENGR		DATE

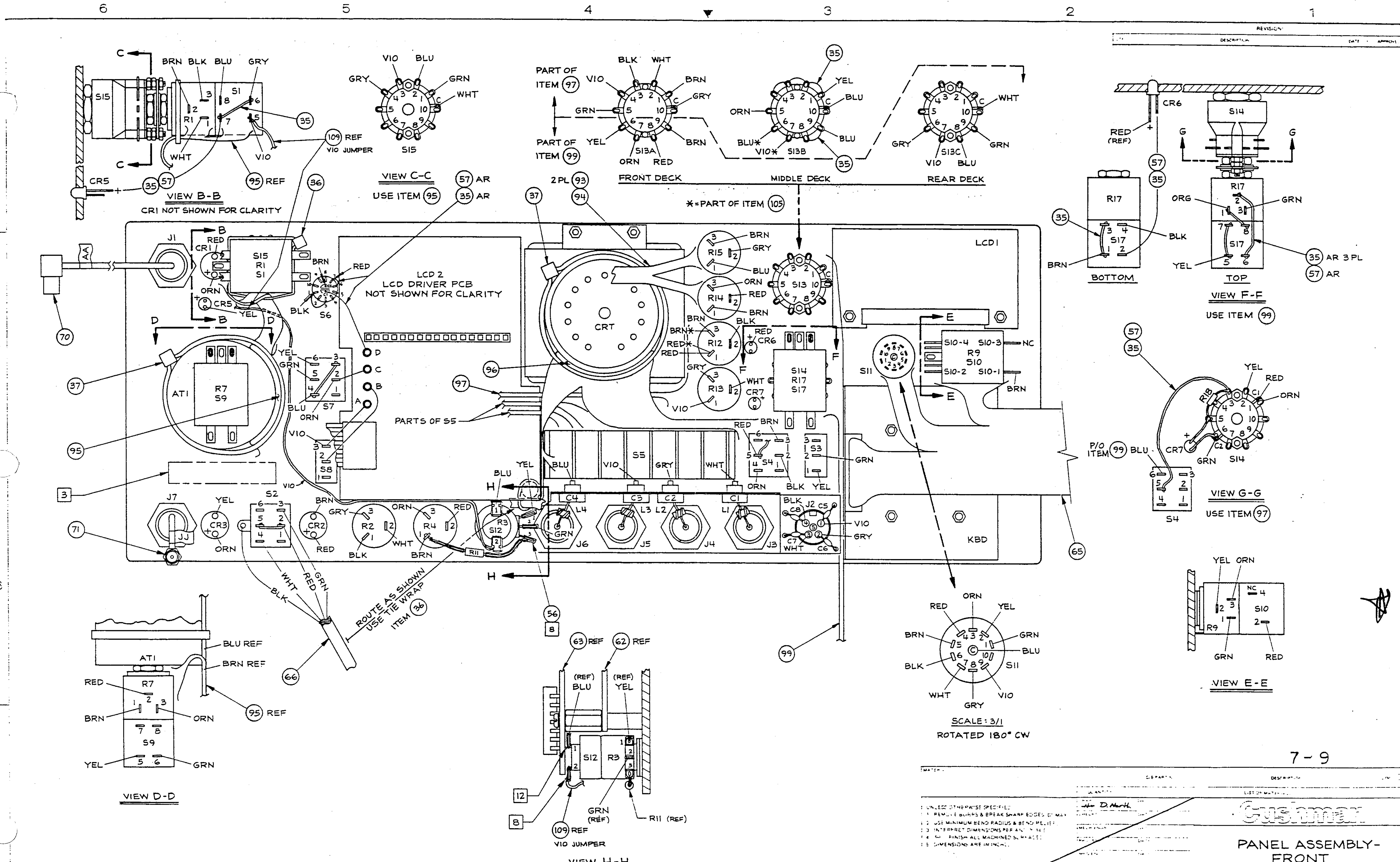
Cushman

PANEL ASSEMBLY - FRONT

UNLESS OTHERWISE SPECIFIED TOLERANCES ON
DECIMALS .000 ± .— .00 ± .05
ANGLES ± —

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	7003-0201	C

7-8


VIEW B-B
CR1 NOT SHOWN FOR CLARITY
VIEW C-C
USE ITEM (95)
PART OF ITEM (97)
PART OF ITEM (99)
FRONT DECK
MIDDLE DECK
REAR DECK
*=PART OF ITEM (105)
BOTTOM
TOP
VIEW F-F
USE ITEM (99)
LCD 2
LCD DRIVER PCB
NOT SHOWN FOR CLARITY
LCD1
CRT
KBD
PARTS OF S5
VIEW G-G
USE ITEM (97)
ROUTE AS SHOWN
USE TIE WRAP
ITEM (36)
SCALE: 3/1
ROTATED 180° CW
VIEW E-E
VIEW D-D
VIEW H-H
USE SHRINK TUBING, ITEM (56),
ON ALL LEADS
(109) REF
VIO JUMPER

NOTES [12.] LEADS OF IC ON PCB (ITEM 63) MAY NEED TO BE TRIMMED FOR CLEARANCE.

* CONTINUED FROM SHEET 1 *

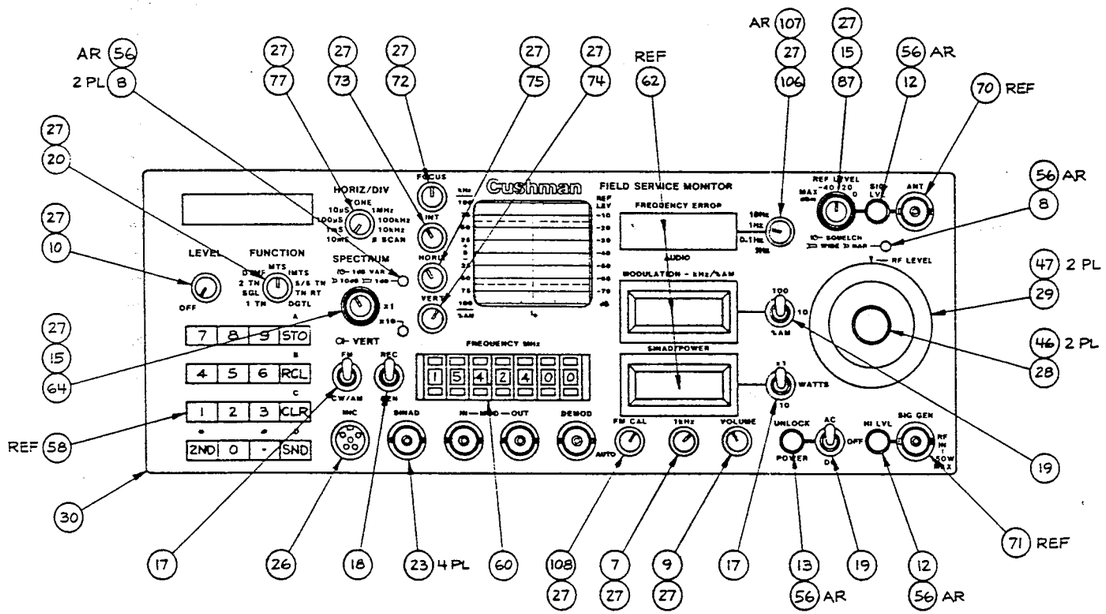
7-9

Cushman

PANEL ASSEMBLY-FRONT

7120 26192 D 7003-0201 C

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



ASSEMBLY INSTRUCTIONS (IN SEQUENCE)

1. INSTALL SIDE BRACKETS (ITEMS 85 & 86).
2. INSTALL CRT PORTION AS SHOWN SHEET 1. SEE NOTES [7] AND [10].
3. INSTALL CR5, 6, & 7 USING ADHESIVE (ITEM 61). SEE NOTE [5] AND 'LED INSTALLATION' DETAIL SHEET 1.
4. INSTALL AND WIRE S13 PRIOR TO INSTALLING R14 & R15.
5. WIRE R12 & R13 AND S14/R17/S17 PRIOR TO INSTALLATION IN PANEL.
6. INSTALL J2 PRIOR TO INSTALLATION OF ITEM 14 AND J3, 4, 5, & 6.
7. INSTALL ATTENUATOR ASSEMBLY (ITEM 67).
8. INSTALL AND WIRE 5G, 7, AND 8 PRIOR TO INSTALLATION OF LCD INTERFACE NO. 2 PCB (ITEM 62). WIRE SWITCHES TO PCB.
9. INSTALL AND WIRE REMAINING ITEMS AS SHOWN, EXCEPT ITEMS 60 & 63.
10. INSTALL LCD DRIVER PCB (ITEM 63).
11. INSTALL SWITCH ASSEMBLY (ITEM 60). ROUTE CABLES AS SHOWN SHEET 2.

NOTES:

7-10

MATERIAL	C/E PART NO.	DESCRIPTION	U/M	ITEM NO.
	QUANTITY	LIST OF MATERIALS		

UNLESS OTHERWISE SPECIFIED.
1. REMOVE BURRS & BREAK SHARP EDGES .01 MAX
2. USE MINIMUM BEND RADIUS & BEND RELIEFS
3. INTERPRET DIMENSIONS PER ANSI-Y 14.5
4. 63 FINISH ALL MACHINED SURFACES
5. DIMENSIONS ARE IN INCHES

	DRAWN	DATE
	CHECKED	DATE
	MECH ENGR	DATE
	PROJ ENGR	DATE
	MFG ENGR	DATE

Cushman

PANEL ASSEMBLY-FRONT

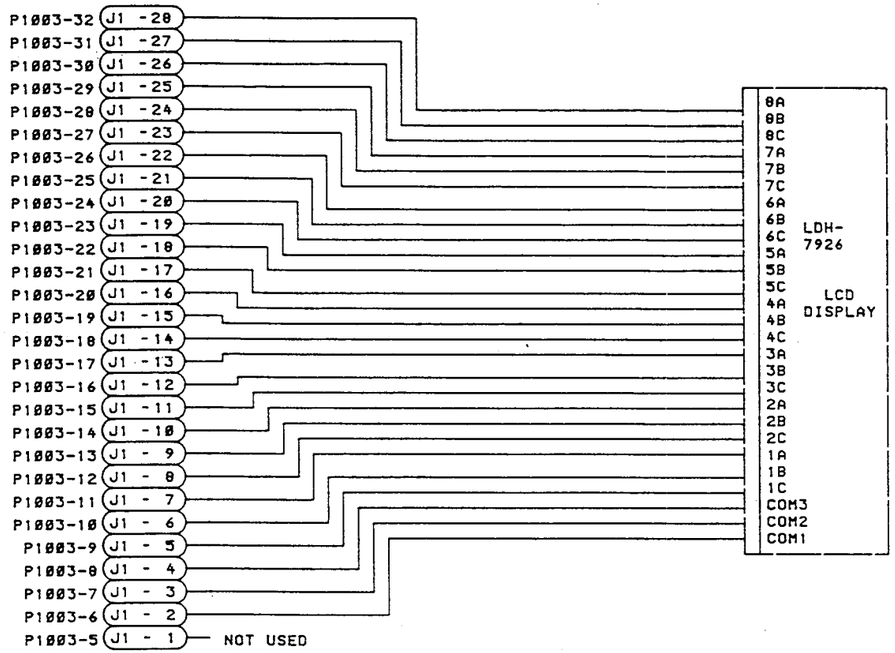
QTY PER HIGHER ASSY	NEXT ASSY	QTY PER MODEL	MODEL NO
			7120

UNLESS OTHERWISE SPECIFIED TOLERANCES ON: DECIMALS .800 ± .XXX ±; ANGLES ±

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	7003-0201	C

SCALE FULL SHEET 3 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	PILOT RUN	6-30-83	
A	REL TO PROD	8-31-83	



U NO	TYPE	VCC	

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1100

CIRCUIT REFERENCE USED:

408	7001-0831	DRAWN	H. LOW 6-20-83
408D	7001-0831	CHECKED	6-30-83
MODEL NO.	NEXT ASSY.	MECH ENGR	6-30-83
		ELECT ENGR	8-31-83
		APP ENGR	8-17-83

7-11

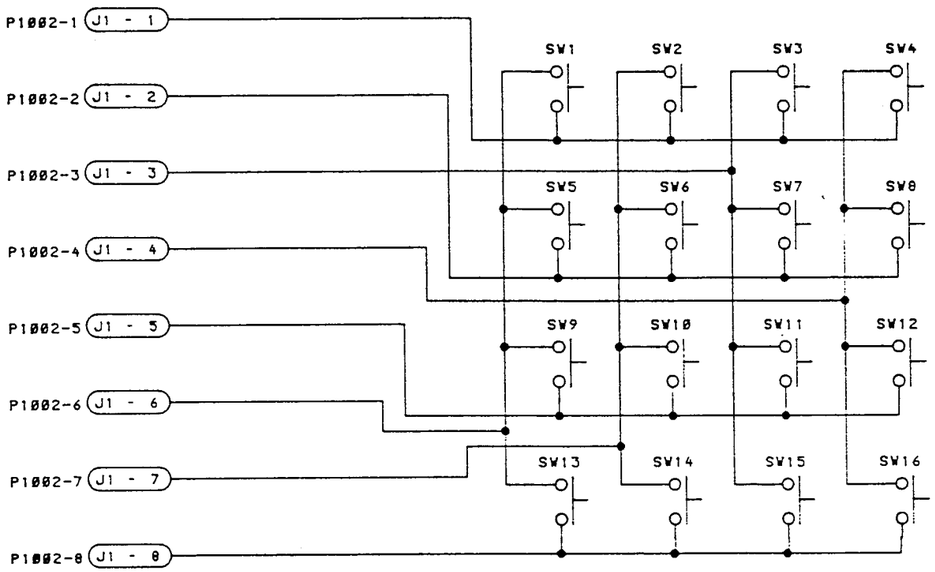
Cushman

SCHEMATIC DIAGRAM-
LCD INTERFACE

CODE IDENT. NO.	SIZE		REV.
26192	D	8000-0943	A

SHEET 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	PILOT RUN	6-30-83	
2	REVISED PER RED-LINED PRINT	8-29-83	
A	REL TO PROD	5-31-83	



SWITCH/LEGEND TABLE	
REF DES	CAP LEGEND
SW1	7
SW2	8
SW3	9
SW4	STO
SW5	4
SW6	5
SW6	6
SW8	RCL
SW9	1
SW10	2
SW11	3
SW12	CLR
SW13	2nd
SW14	0
SW15	.
SW16	SND

U NO	TYPE	VCC	

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1200

CIRCUIT REFERENCE USED:

403	7001-0930	
4080	7001-8030	

DRAWN	H. LOW	DATE 7-1-83
CHECKED		DATE 6-30-83
MECH ENGR		DATE 6-30-83
PROJ ENGR		DATE 5-31-83
MFG & TECH		DATE

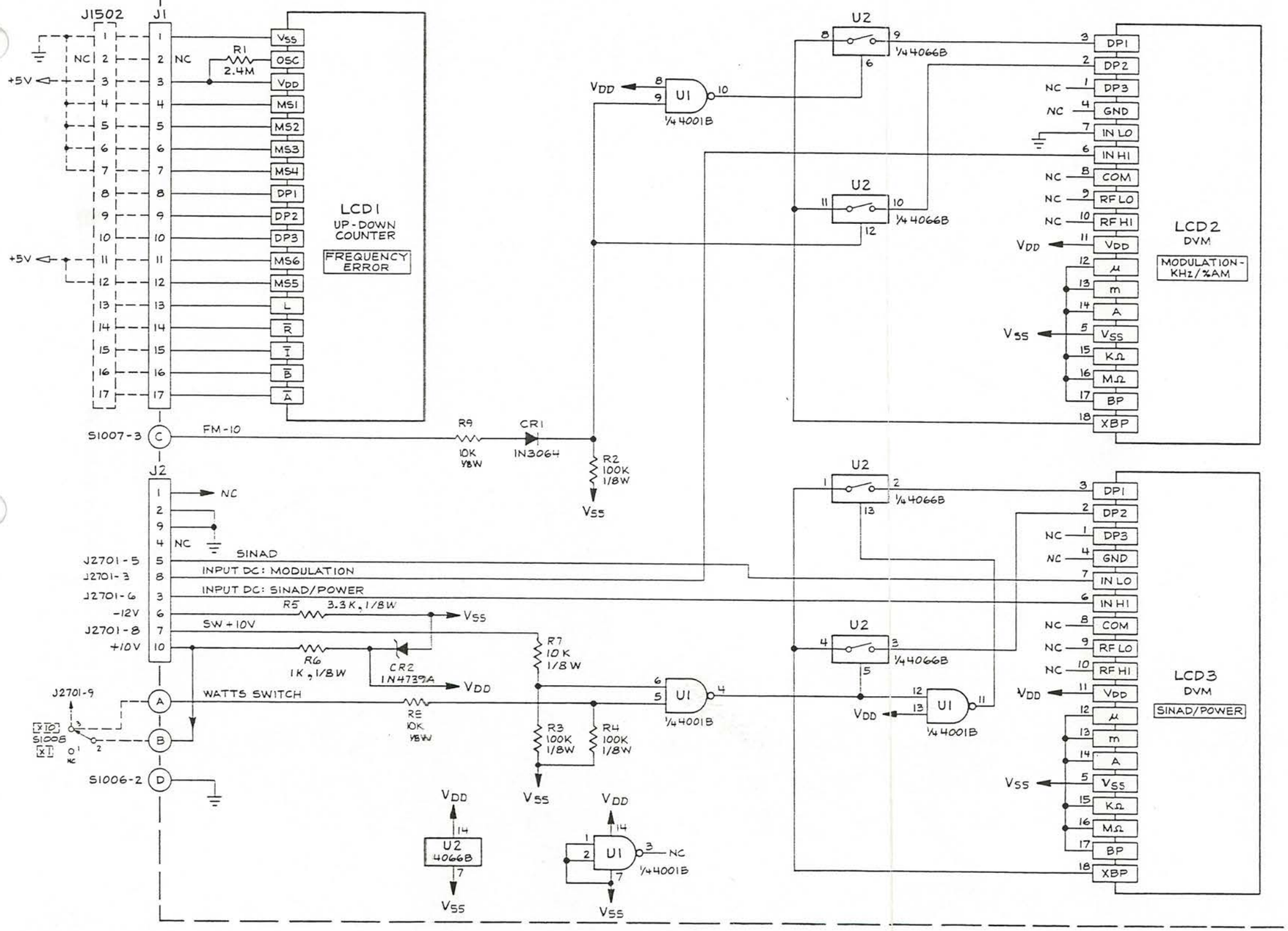
7-12

Cushman

SCHEMATIC DIAGRAM-
KEY PAD CONTROL

CODE IDENT. NO.	SIZE		REV.
26192	D	8000-0942	A

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	2-14-85	
B	REVISED PER ECO B6137	9-3-86	
C	REVISED PER ECO B6168	10-23-86	
D	REVISED PER ECO B6223	1-6-87	



U NO	TYPE	VDD	GND
U1	4001B	14	7
U2	4066B	14	7

NOTES:
1. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
2. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
4. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
5. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1400

CIRCUIT REFERENCE USED:

C( ) - C( ) | Q( ) - Q( )
CR(1) - CR(2) | R(1) - R(9)
DS( ) - DS( ) | S( ) - S( )
F( ) - F( ) | T( ) - T( )

7120 | 7001-0925

DRAWN D. North	DATE 2/4/86	
CHECKED	DATE 5-86	
MECH ENGR	DATE	
ENGINEER	DATE 2-14-86	
MFG ENGR	DATE	

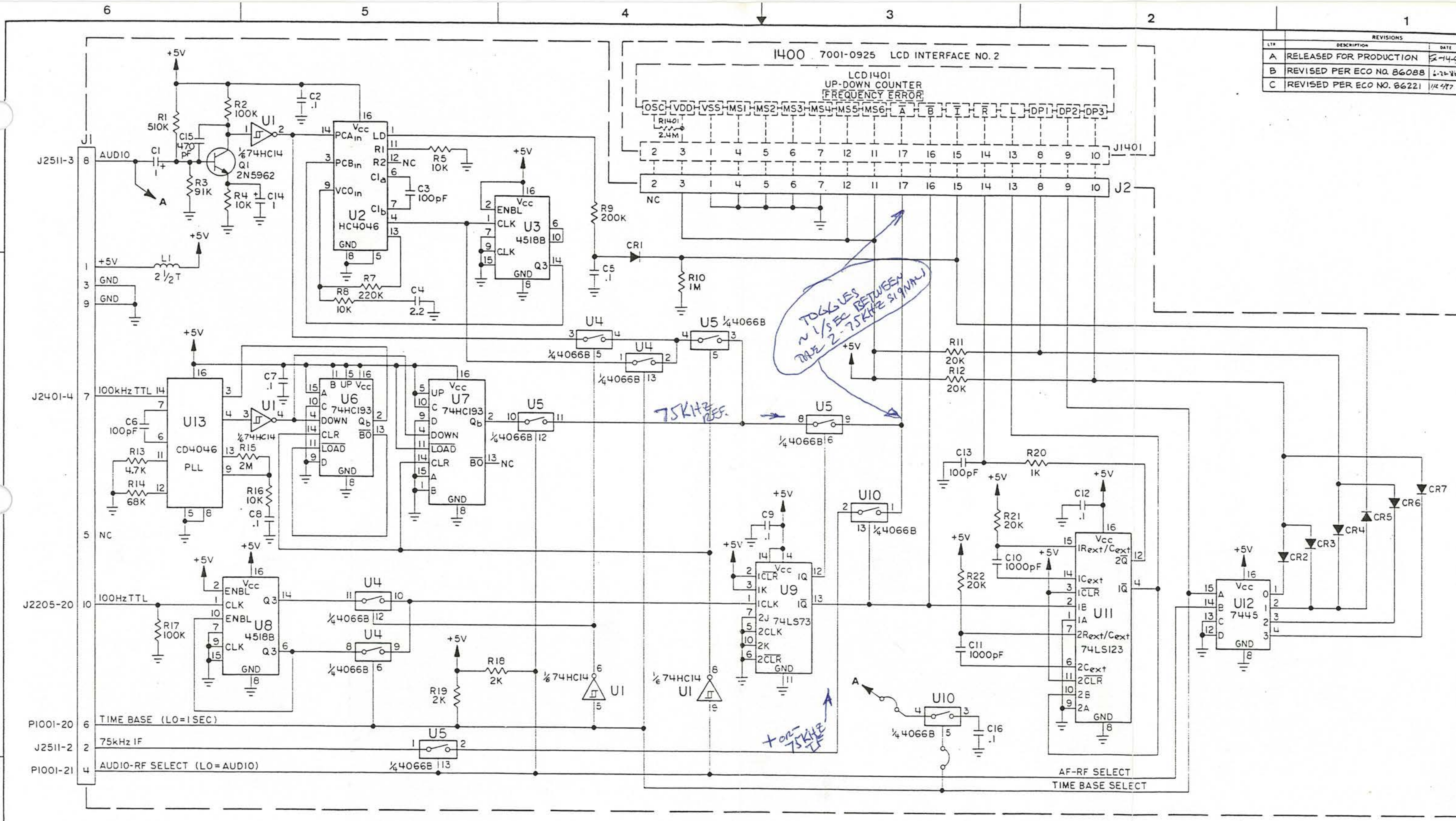
CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - LCD INTERFACE NO. 2

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1056	D

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	[illegible]	[illegible]
B	REVISED PER ECO NO. 86088	6-26-86	[illegible]
C	REVISED PER ECO NO. 86221	1/2 4/87	[illegible]



U NO	TYPE	VCC	GND
U1	74HC14	14	7
U2	HC4046	16	8
U3, U8	4518B	16	8
U4, U5, U10	4066B	14	7
U6, U7	74HC193	16	8
U9	74LS73	4	11
U11	74LS123	16	8
U12	7445	16	8
U13	CD4046	16	8

NOTE:

6. ALL DIODES ARE IN3064 UNLESS OTHERWISE NOTED.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

REF DES NOT USED
R6

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 1500

CIRCUIT REFERENCE USED:

C(1) - C(16)	Q(1) - Q(2)
CR(1) - CR(7)	R(1) - R(22)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U(1) - U(12)	Y( ) - Y( )

7120 7001-0926

7-14

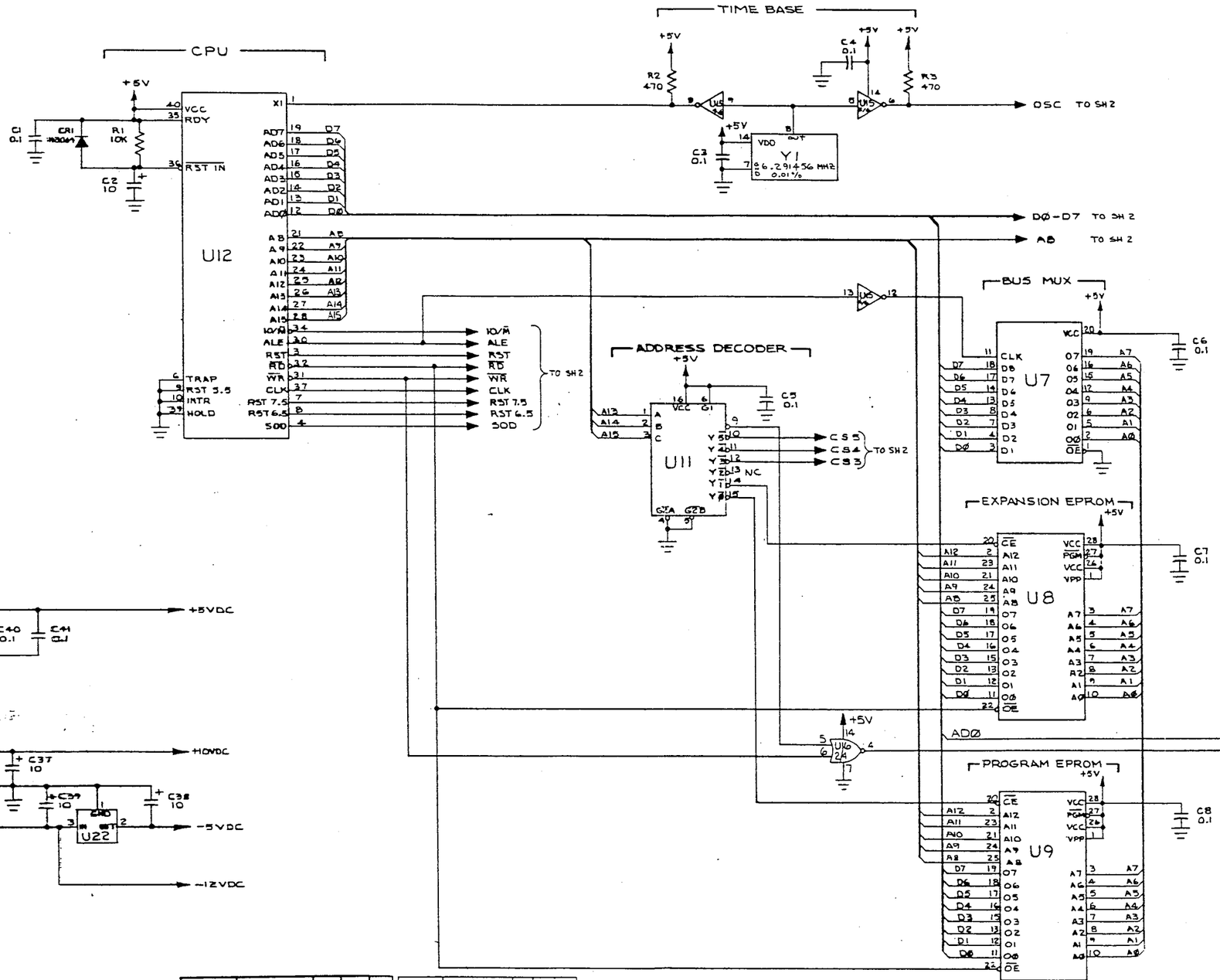
CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - LCD DRIVER

DRAWN	D. North	DATE	12/18/85
CHECKED		DATE	2-86
MECH ENGR		DATE	
PROJ ENGR		DATE	[illegible]
MFG ENGR		DATE	

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1057	C

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	3-20-85	



U NO	TYPE	VCC	GND	PINS
1,2,5	1458			8
3	DAC 08			16
4,17	4066			14
6	2912 A	9	11,15	16
7	74LS374	20	10	20
8,9	2764-4	28	14	28
10	8748 H	40	20	40
11	74LS138	16	8	16
12	8085A	40	20	40
13	8279-5	40	20	40
15	74LS04	14	7	14

U NO	TYPE	VCC	GND	PINS
16	74LS02N	14	7	14
18	8155 H	40	20	40
19	5000B			24
20,21	5001 B			18
22	7905A			

CIRCUIT REF NOT USED:
U14

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 2100

CIRCUIT REFERENCE USED:

NOTES:
1. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
2. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
4. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
5. RESISTORS - 1/4W. 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

DRAWN	D.NORTHGRAVE	DATE	4-22-85
CHECKED		DATE	5-1-85
MECH ENGR		DATE	
PROJ ENGR		DATE	
MFG ENGR		DATE	

7-20 | 7201-C899 | MODEL NO | NEXT ASSY

7-15

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - MAIN LOGIC

CODE IDENT NO	SIZE	DRAWING NO	
26192	D	8000-1023	A

SHEET 1 OF 2

SYSTEM RAM/IO/TIMER

SINE WAVE GENERATOR

NRZ DATA CONV

AUDIO/DATA MIXER

KEYBOARD CONTROL

DISPLAY DRIVER

AUDIO/DATA OUTPUT DRIVER

OSC TO SH1

J2/J1001 OSC TEST (6.291450 MHz TTL)

U18

U10

U3

U6

U13

U19

U21

U20

J3

KEYBOARD

FUNCTION SWITCH

PANEL DISPLAY

J3 LEVEL CTRL (LOW)

LEVEL CTRL (HIGH)

LEVEL CTRL (ARM)

J5 ANALOG OUT

J4 DIGITAL OUT

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 2100

CIRCUIT REFERENCE USED:

NOTE:
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

DRAWN	DATE
CHECKED	DATE
MECH ENGR	DATE
PROJ ENGR	DATE
MFG ENGR	DATE

MODEL NO | NEXT ASSY

7-16

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - MAIN LOGIC

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1023	A

SHEET 2

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	8-21-86	
B	REVISED PER ECO 87046	6-3-87	

÷N PROGRAM INPUT

100 Hz DIGIT | 1 KHz DIGIT | 10 KHz DIGIT

J5

+5V, -12V, GND, +20V

C1 .05, C9 .05, C2 .05, C10 10, C11 .05, C12 10, C13 .05

RN1 4.7K, RN2 4.7K, R79 4.7K, R80 4.7K

U21

U2, U3, U4, U5, U6, U7, U8, U9, U10, U11, U12, U13, U22, U23

÷10¹, ÷10², ÷10³, ÷10⁴, ÷2

9999 DETECTOR

(1" ON 9999-P)

(1" ON 19999-P)

10,000 MINUS PROGRAMMING LOCKOUT

"9993" DETECTOR

(1" ON COUNT 209993)

RESET FLIP FLOP

(1" ON COUNT 209994)

("0" ON COUNT 209999)

(1" ON COUNT 209998)

5 CLOCK DELAY (PRESET TO "4")

INPUT AMP/CLOCK DRIVER

25 μS ONE SHOT

R1 120, R2 360, R3 1.2K, R4 220, R5 12, R6 1.2K, R7 470, R8 1.2K, R9 6.2K

C3 .01, C4 .05, C5 .05, C7 .05, C8 .02

Q1 2N3563, Q2 2N3563, Q3 2N4249, Q4 2N4275

A (SH 2), B (SH 2)

200000 ≤ ÷N ≤ 209999

÷N OFFSET

DIAL	PROGRAM
0	9
1	8
2	7
3	6
4	5
5	4
6	3
7	2
8	1
9	0

REF DES NOT USED

U15
R19-37,49,50
C22-33,45,46
Q5-14
CR1-4,6-9

U NO.	TYPE	VCC	GND
2,3,4,5,12	74LS196	14	7
6	74197	14	7
8,9	7430	14	7
7	7473	4	11
11	7472	14	7
14,20	74LS90	5	10
1,10,16,22	74LS00	14	7
13	MC8601P	14	7
17	HC4046	16	8
18	TL081	—	—
21	DM74S188	16	8
19	7490	5	10
23	74LS74	14	7

OUT OF SEQUENCE TABLE

REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 2200

CIRCUIT REFERENCE USED:

C( ) - C(100)	Q( ) - Q(24)
CR( ) - CR(17)	R( ) - R(78)
DS( ) - DS( )	RN( ) - RN(2)
F( ) - F( )	T( ) - T(2)
U( ) - U(23)	Y( ) - Y( )
L( ) - L(25)	J( ) - J(5)

MODEL NO	NEXT ASSY
7120/7110	7001-0951

NOTE:

1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
6. ALL DIODES ARE IN3064 UNLESS OTHERWISE NOTED.

2200

7-17

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM — 100 Hz PLL/17.9-19 MHz MIXER

DRAWN	DATE
E K	6/25/86
CHECKED	DATE
MECH ENGR	DATE
PROJ ENGR	DATE 8/8/86
MFG ENGR	DATE

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1082	E

SHEET 1 OF 3

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

+5V ——— +5V

C14 47 (+)

C15 .05

J5 pin 7

100Hz TTL OUT P1006-10

J5 pin 20

J1 — FF

+5V

U14 — VCC BIN Q_A / A_{IN} Q_D / R_0 R_0 R_9 R_9 GND — pins 5 1 12 / 14 11 / 2 3 6 7 10

U16 (pins 4 5 6)

PHASE DETECTOR

+5V

C16 .05

U17 — VCC INH / R V / ϕ_c LOCK — pins 16 5 3 14 13 8 1

REF DIVIDER ÷10

U16 (pins 9 10 8)

B SHT1

LOOP AMPL

R10 27K

R11 27K

C17 1.5 (+)

U18 — pins 2 3 7 6 4

+20V

R14 3K

R13 7.5K

C18 .05

R12 220K

C19 1.5 (+)

C21 .05

R18 3K

-12V

+5V

R16 47K

R17 47K

C20 10 (+)

R15 10K

VCO REGULATOR

+20V

R38 2K 1%

C35 .05

C34 100 (+)

Q15 2N3565

R39 2.74K 1%

20.7 - 21.699 VCO

C36 .05

R41 4.75K 1%

R42 1.5K 1%

C37 .01

L2 1.0

C38 220pf

R44 2.21K 1%

Q16 2N5089

+20V

R43 100

C42 .05

R45 1K

C43 .01

C39 36pf

L1 1MH

R40 1K 1%

CR5 MV104

C40 15pf

C41 220 pf

Q17 2N3904

R46 2.21K 1%

R47 26.1 1%

R48 1K 1%

C44 .002

A SHT 1

J5 pin 19

HIGH = LOCK

LOW = UNLOCK

+5V

R52 430

C48 10 (+)

C47 .01

Q19 2N3563

Q18 2N3563

R51 200

R53 510

-12V

+5V

U19 — VCC / A_{IN} Q_D / B_{IN} Q_A / R_0 R_0 R_9 R_9 GND — pins 5 14 11 / 12 / 2 3 6 7 10

R54 B20

L3 56

L4 33

C49 220pf

C50 240pf

C51 820pf

C SHT3

UNLOCK DETECTOR

BUFFER

÷10

LOWPASS FILTER

2200 7-18

CUSHMAN ELECTRONICS INC

SCALE	APPROVED BY	DRAWN BY
DATE		REVISED

SCHEMATIC DIAGRAM- 100Hz PLL / 17.9 - 19MHz MIXER

N.H.	SHT 2	DRAWING NUMBER
7001-0951		8000-1082

REVISIONS			
	DESCRIPTION	DATE	APPROVED

21 MHz FILTER/AMPLIFIER

+20V

L5 22

L6 22

C52 .05

R55 1.5K

L7 3.3-7

C53 100pF

C54 .05

R58 1.5K

C65 .05

L14 3.3-7

C66 100pF

C67 .05

Q20 2N3563

Q23 2N3563

C56 15pF

C58 2.2 PF

C60 1.5 PF

C62 2.2 PF

C64 15 pF

L10 3.3-7

C57 96pF

L11 3.3-7

C59 110PF

L12 3.3-7

C61 110PF

L13 3.3-7

C63 96pF

R56 1.8K

R57 47

R59 1.8K

R60 47

C68 .05

-12V

L8 22

L9 22

C74 .01

+5V

L15 22

C69 .05

C35 .05

R61 2.2K

U20

R64 560

L16 120

C72 330pF

C73 .0022

BM1 SBL-1

Q21 2N4275

Q22

J3

C70 .01

R62 120

R63 1.5K

C71 .05

10 MHz +8dBm

DIVIDE BY 10 — 1.07 MHz LPF — MIXER

10.7 MHz AMPLIFIER

C75 270pf

L17 22

T1

BALANCE

CR10

CR11

CR12

CR13

HP2800

R65 100

R66 51

R67 51

C76 2-8pF

C77 5pF

T2

L18 1.0

L19 1.0

C78 220pF

C79 180pF

R68 100

LEVEL

90MV RMS

C80 .01

C81 .01

C82 20pF

R69 1K

R70 1K

C83 .05

C84 .01

R71 1K

R72 1K

C85 .05

C86 .01

CR14 IN270

CR15 IN270

CR16 IN270

CR17 IN270

R73 1K

MIXER/19 MHz LOW PASS FILTER

20/21 MHz SWITCH

J5

J2

20MHz -2dbm

R74 820

R75 4.7K

L20 3.3-7

C87 100pF

R76 1K

C88 .05

Q24 2N3563

R77 1.5K

C90 15pF

R78 820

C89 .05

C92 10PF

C94 8.2 pF

C96 8.2 pF

C98 10PF

C100 39pF

L21 3.3-7

C91 96pF

L22 3.3-7

C93 120pF

L23 3.3-7

C95 120pF

L24 3.3-7

C97 120pF

L25 3.3-7

C99 96pF

J4

90 MV RMS

AMPLIFIER/17.9-18MHz & 18.9-19 MHz FILTER

17.9-18 REC

18-19 REC

C (SHT2)

7-19

CIRCUIT REFERENCE SERIES: 2201

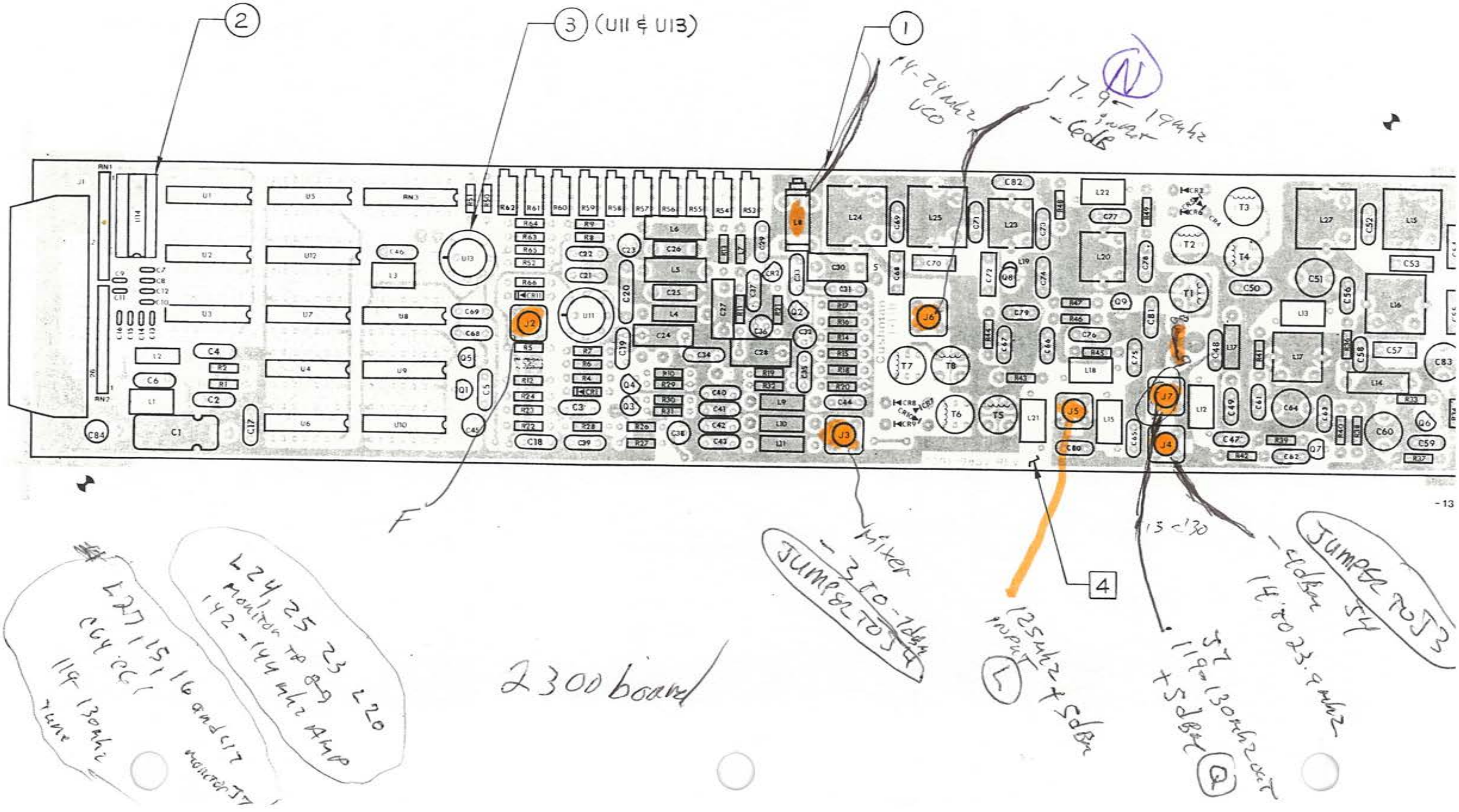
CIRCUIT REFERENCE USED:	
C( ) - C( )	Q( ) - Q( )
CR( ) - CR( )	R( ) - R( )
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
IC( ) - IC( )	Y( ) - Y( )
L( ) - L( )	

CUSHMAN ELECTRONICS, INC

SCALE NONE	APPROVED BY	DRAWN BY
DATE		REVISED B

SCHEMATIC DIAGRAM
100 Hz PLL/17.9-19 MHz MIXER

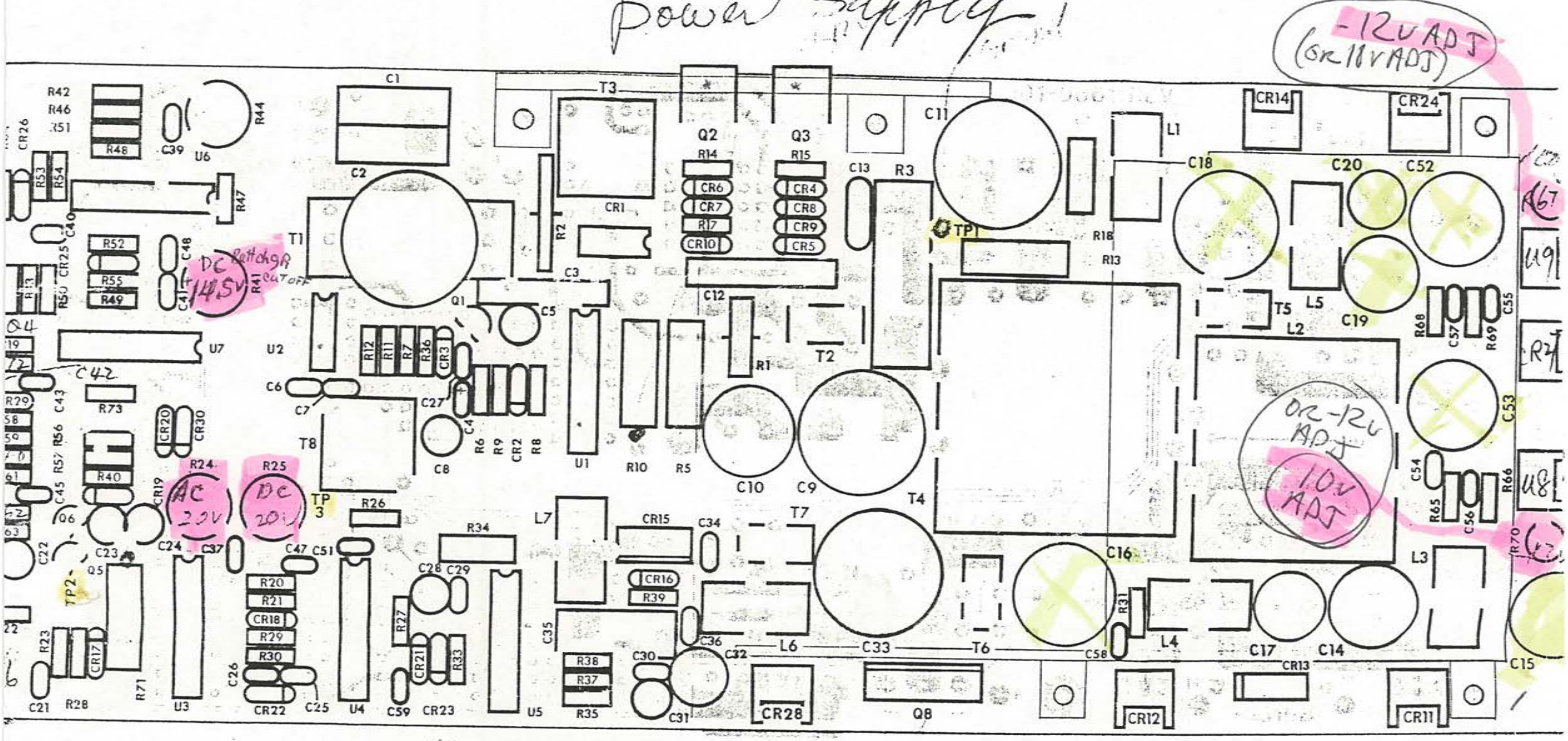
N/A 7001-0951	SHT 3 OF 3	DRAWING NUMBER 8000-1082



2
3 (U11 & U13)
1
4
F
14-24 MHz VCO
17.9 – 19 MHz input –6 dB
Mixer –3 to –7 dBm
Jumper to J4
125 MHz +5 dBm input
J7 119–130 MHz out +5 dBm
–5 dBm 14 to 23.9 MHz
Jumper to J3
13 – 30
L24 25 23 L20
Monitor to 8-9
142 – 144 MHz Amp
L27 15, 16 and C17
C64 C61
119 130 MHz
Tune
Monitor J7
2300 board
-13

7000 SERIES

Power Supply



-1315B

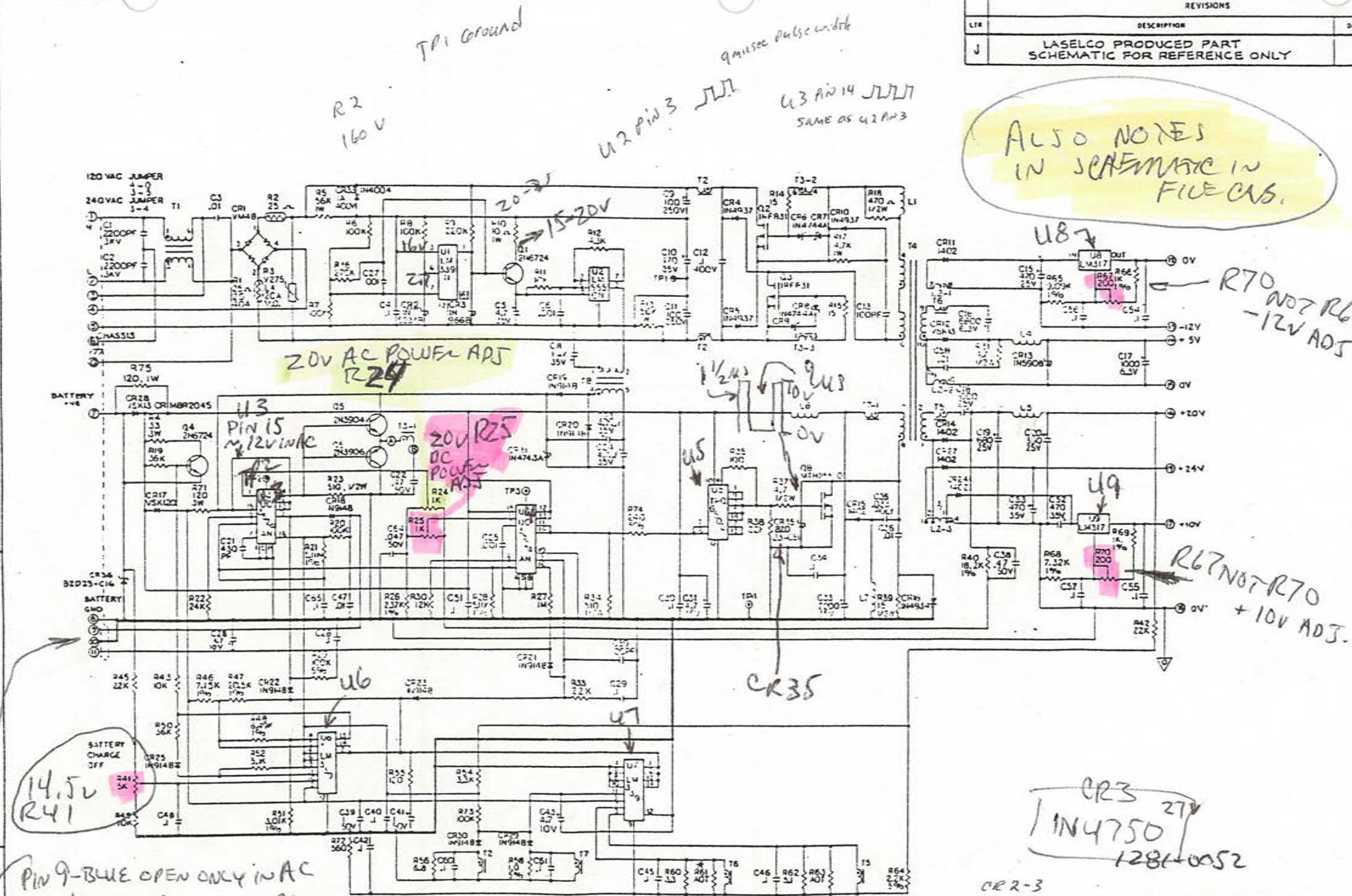
+10 R67

-12 Volt Adj R70

DWG NO	SH	REV
C 8000-0984	1	J

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
J	LASELCO PRODUCED PART SCHEMATIC FOR REFERENCE ONLY		



REF DES NOT USED
C7, 14, 32, 37, 44, 49, 50, 62, 63
CR32 L3 Q7 TP1
R16, 32, 44, 57, 59

8. T3 & T8 USE 6 PIN BOBBIN.
7. DRIVER TRANSFORMER T3 PRI HAS 2 FLYING LEADS.
6. 1N5246B IS ACCEPTABLE.
5. ALL VOLTAGES ARE DC.
4. * FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS: VALUES IN µH
2. CAPACITORS: VALUES IN µF
1. RESISTORS: VALUES IN OHMS, 1/4W, ±5%.

NOTES: UNLESS OTHERWISE SPECIFIED

CIRCUIT REFERENCE SERIES: 5200

CIRCUIT REFERENCE USED:

C(1) - C(65)	Q(1) - Q(8)
CR(1) - CR(36)	R(1) - R(75)
OSC( ) - OSC( )	S( ) - S( )
F( ) - F( )	T(1) - T(8)
U(1) - U(9)	Y( ) - Y( )

MODEL NO.	NEXT ASSY.
71XX	7001-0861

DRAWN D North DATE 11/18/86

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM- AC/DC SWITCHER

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	C	8000-0984	J

SHEET 1 OF 1

BILL OF AL
AS OF 11/02/87

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ:Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0001	CMT-RES FSV 5% 1/4W CC	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R61	00/00/00	99/99/99
-CMT-0003	CMT-RES FSV 1% 1/8W MF	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R44	00/00/00	99/99/99
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C13	00/00/00	99/99/99
1005-0051	CAP-.01UF 20% 1.4KV CER DISC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C3	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C6	00/00/00	99/99/99
														C21		
														C25		
														C59		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	16.000	1.000	EA	S1	N	N	16.000	0	0	C4	00/00/00	99/99/99
														C7		
														C29		
														C30		
														C34		
														C39		
														C40		
														C42		
														C43		
														C45		
														C46		
														C48		
														C51		
														C54		
														C55		
														C60		
1005-0096	CAP-2200PF 20% 3KV Z5U CER DIS	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1	00/00/00	99/99/99
														C2		
1005-0109	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	7.000	1.000	EA	S1	N	N	7.000	0	0	C26	00/00/00	99/99/99
														C27		
														C36		
														C47		
														C56		
														C57		
														C58		
1008-0031	CAP-.1UF 10% 100V RDL POLYESTE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1008-0103	CAP-.1UF 10% 600V AXL MET-POLY	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C12	00/00/00	99/99/99
1011-0013	CAP-1UF 20% 50V RDL TANT	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C5	00/00/00	99/99/99
														C22		
														C41		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1013-0052	CAP-100UF +50-10% 50V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C19	00/00/00	99/99/99
1013-0065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C23	00/00/00	99/99/99

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: I REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ:Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UN	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1013-0065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C24 C28 C31	00/00/00	99/99/99
1013-0066	CAP-100UF +50-10% 25V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C20 C32	00/00/00	99/99/99
1013-0067	CAP-100UF 20% 250V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C9 C11	00/00/00	99/99/99
1013-0068	CAP-470UF +50-10% 35V RDL ELC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C15 C52 C53	00/00/00	99/99/99
1013-0069	CAP-680 UF 20% 25V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C10 C14	00/00/00	99/99/99
1013-0070	CAP-1000UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C17	00/00/00	99/99/99
1013-0071	CAP-1000UF +50-10% 25V RDL ELC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C18	00/00/00	99/99/99
1013-0072	CAP-2200UF 20% 35V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C33	00/00/00	99/99/99
1013-0073	CAP-6800UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1066-0001	RES-4.7 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R31 R56 R57	00/00/00	99/99/99
1066-0002	RES-5.1 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R37 - 4.7 1/2W R62	00/00/00	99/99/99
1066-0006	RES-3.3 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R58 R59 R60	00/00/00	99/99/99
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R63	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R35	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R66 R69	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R11 R43 R49	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R6 R7 R8 R20	00/00/00	99/99/99
1066-1055	RES-1MEG 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R27 R73	00/00/00	99/99/99
1066-1135	RES-11K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R65	00/00/00	99/99/99
1066-1205	RES-12 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R14 R15	00/00/00	99/99/99
1066-1235	RES-12K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	O P	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	R E Q	P F	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1505	RES-15 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R39	00/00/00	99/99/99
1066-1835	RES-18K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R29	00/00/00	99/99/99
														R33		
														R38		
														R45		
1066-2425	RES-2.4K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R26	00/00/00	99/99/99
1066-2745	RES-270K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R36	00/00/00	99/99/99
1066-3325	RES-3.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R54	00/00/00	99/99/99
1066-3335	RES-33K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R9	00/00/00	99/99/99
														R47		
1066-3625	RES-3.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R51	00/00/00	99/99/99
1066-3635	RES-36K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R19	00/00/00	99/99/99
														R50		
1066-4325	RES-4.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-4735	RES-47K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R42	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R23	00/00/00	99/99/99
														R55		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R21	00/00/00	99/99/99
														R28		
														R52		
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R72	00/00/00	99/99/99
1066-5625	RES-5.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R22	00/00/00	99/99/99
														R46		
														R48		
1066-9125	RES-9.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1067-4715	RES-470 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1067-5115	RES-510 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1068-1005	RES-10 OHM 5% 1W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1068-1315	RES-130 OHM 5% 1W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1069-1115	RES-110 OHM 5% 2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R71	00/00/00	99/99/99
1075-0153	RES-1.30K 1% 100PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1099-9004	RES-56K 5% 2W @ 70C MOF	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R5	00/00/00	99/99/99
														R13		
1159-9009	RES-33 OHM 5% 3W 20PPM AXL WW	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1203-9071	POT-5K 20% 1/2W 1T CERMET TRMR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R41	00/00/00	99/99/99
1203-9072	POT-2K 20% 1/2W 1T CERMET TRMR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R24	00/00/00	99/99/99
														R25		

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1215-0050	POT-200 OHM 10% 1/2W IT CERMET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R67 R70	00/00/00	99/99/99
1253-0005	THMS-25 OHM 10% 25MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1253-0006	THMS-100 OHM 10% 8MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1254-0002	VRIS-275VAC/369VDC 6500A RDL D	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q6	00/00/00	99/99/99
1272-0113	XSTR-92PU45 NPN SI DARLINGTON	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1 Q4	00/00/00	99/99/99
= 1272-0140 ~~1272-0151~~ ~~REF831~~	XSTR-IRF721 SI T0220AB MOSFET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q2 Q3	00/00/00	99/99/99
~~1272-0147~~	XSTR-35N06 SI T0218AC TMOSFET	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q8	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR18 CR19 CR20 CR21 CR25 CR26 CR30	00/00/00	99/99/99
1281-0026	USE 1N4750 1281-0052 DIO-~~1N4744~~ SI ZENER A98A 15V	1	1	0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR3 CR6 CR7 CR8 CR9	00/00/00	99/99/99
1281-0103	DIO-VM48 SI BRDG RECT 6 PIN DI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW D07 75PRV .25	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR29	00/00/00	99/99/99
1281-0160	DIO-IN 5908 SI SURGE LIMITER 5	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR13	00/00/00	99/99/99
1281-0178	DIO-1535CT DUAL RECT T0220 35P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR12 CR28	00/00/00	99/99/99
1281-0183	DIO-1N5817 SI RECT A1WU 20PRV	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR22 CR23 CR17	00/00/00	99/99/99
1281-0184	DIO-1N4743A SI ZENER D041 13V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR31	00/00/00	99/99/99
1282-0010	DIO-1N5615 SI F RCVY A109C 200	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR16	00/00/00	99/99/99
1282-0022	DIO-1402 SI F RCVY T0220 100PR	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR11 CR14 CR15 CR24 CR27	00/00/00	99/99/99
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR4	00/00/00	99/99/99

BILL OF AL

AS OF 11/02/87

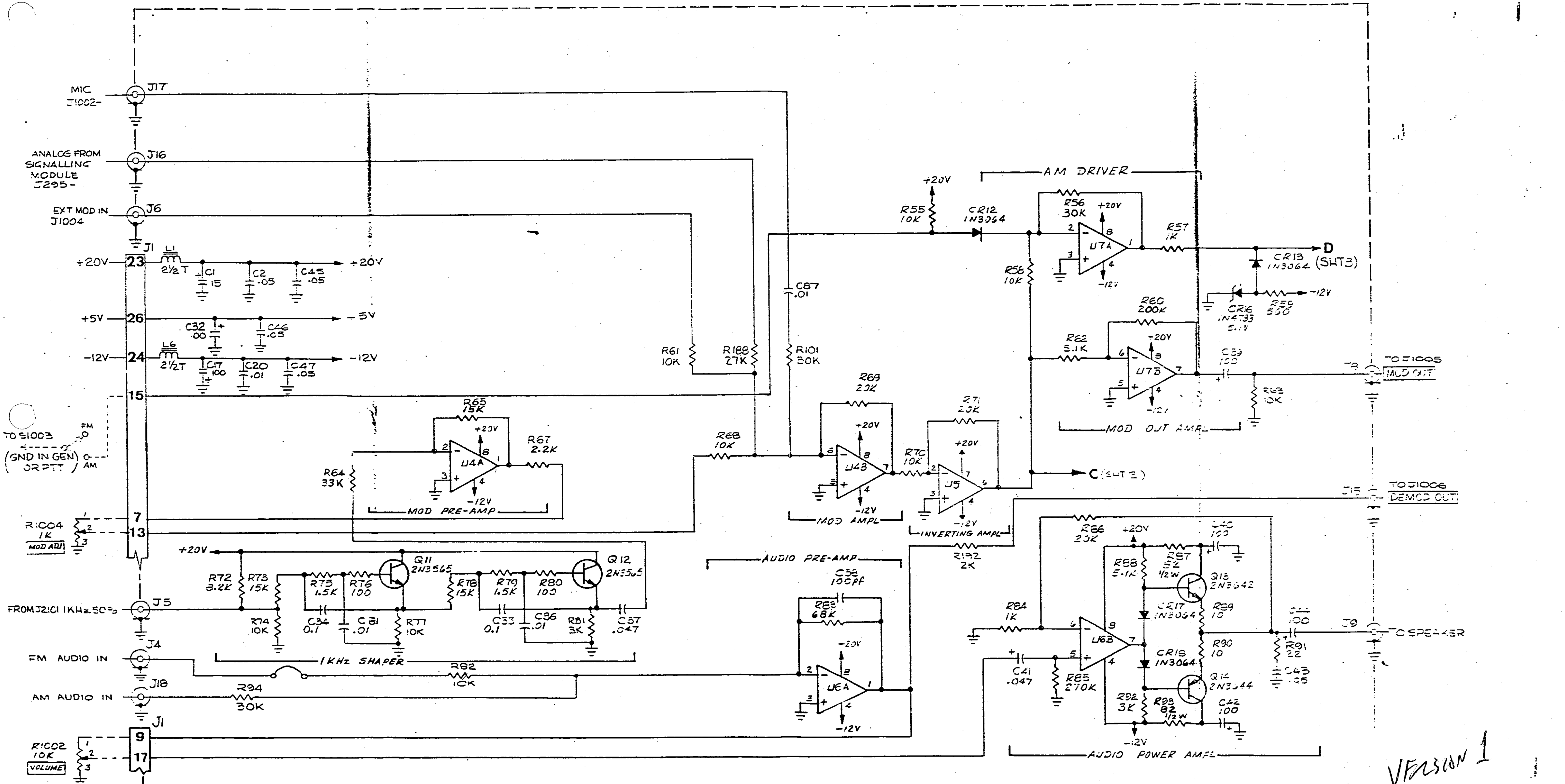
CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR5 CR10	00/00/00	99/99/99
1575-0054	XFMR-POT CORE 18X11	0	C	0	1.000	1.000	EA	X1	N	N	1.000	0	0	T1	00/00/00	99/99/99
1780-1315	PCB-AC/DC SWITCHER	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0038	HTSK-PWR XSTR MTG	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0039	HTSK-PWR XSTR MTG	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0091	IC-MC1455P1 TIMING CIRCUIT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U1 U6 U7	00/00/00	99/99/99
2025-0320	IC-317 TO220 3 TERM ADJ POS RG	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U8 U9	00/00/00	99/99/99
2025-0443	IC-6502 14PIN DIP QUAD XSTR AR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0444	IC-UC3524A REG PULSE WIDTH MOD	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U3 U4	00/00/00	99/99/99
3003-0012	INSUL=SILICONE THERMAL TIP-36	0		4	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		5	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		6	5.000	1.000	EA	F3	N	N	5.000	0	0		00/00/00	99/99/99
4096-0027	WSHR-.113X.23X.23 SHLDR .095X.	0		7	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
A5650-0956	TEST PROC-AC/DC SWITCHER	0	A	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0861	PCB ASSY-AC/DC SWITCHER	0	*	8	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0984	SCHEM DIAG-AC/DC SWITCHER	0	*	9	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99

A	RELEASED & REVISED PER 82052	
B	REVISED PER ECO 85113	


MIC
J1002-
J17
ANALOG FROM
SIGNALLING
MODULE
J295-
J16
EXT MOD IN
J1004
J6
J1
+20V
+5V
-12V
L1
2½T
L6
2½T
C1
15
C2
.05
C45
.05
C32
C46
.05
C17
100
C20
.01
C47
.05
TO S1003
(GND IN GEN OR PTT)
FM
AM
R1004
1K
MOD ADJ
FROM J2:C1 1KHz 50
J5
J4
FM AUDIO IN
J18
AM AUDIO IN
R1002
10K
VOLUME
R65
15K
R67
2.2K
R64
33K
U4A
MOD PRE-AMP
R72
8.2K
R73
15K
R74
10K
R75
1.5K
R76
100
Q11
2N3565
C34
0.1
C81
.01
R77
10K
R78
15K
R79
1.5K
R80
100
Q12
C33
0.1
C36
.01
R81
3K
C37
.047
1KHz SHAPER
R82
10K
R94
30K
R61
10K
R188
27K
C87
.01
R101
30K
R68
10K
R69
20K
U4B
MOD AMPL
R70
10K
R71
20K
U5
INVERTING AMPL
AUDIO PRE-AMP
C38
100pf
R83
68K
U6A
+20V
R55
10K
CR12
1N3064
AM DRIVER
R56
30K
U7A
R57
1K
R58
10K
CR13
1N3064
D
(SHT3)
CR16
1N4733
R59
560
R60
200K
R62
5.1K
U7B
C39
100
R63
10K
MOD OUT AMPL
TO J1005
MOD OUT
C (SHT 2)
J15
TO J1006
DEMOD OUT
R192
2K
R86
20K
R88
5.1K
R87
82
1/2W
C40
100
Q13
CR17
1N3064
R89
10
R84
1K
U6B
CR18
1N3064
R90
10
C41
.047
R85
270K
R92
3K
R93
82
1/2W
Q14
C42
100
R91
22
C43
.05
J9
TO SPEAKER
AUDIO POWER AMPL
+20V
-12V

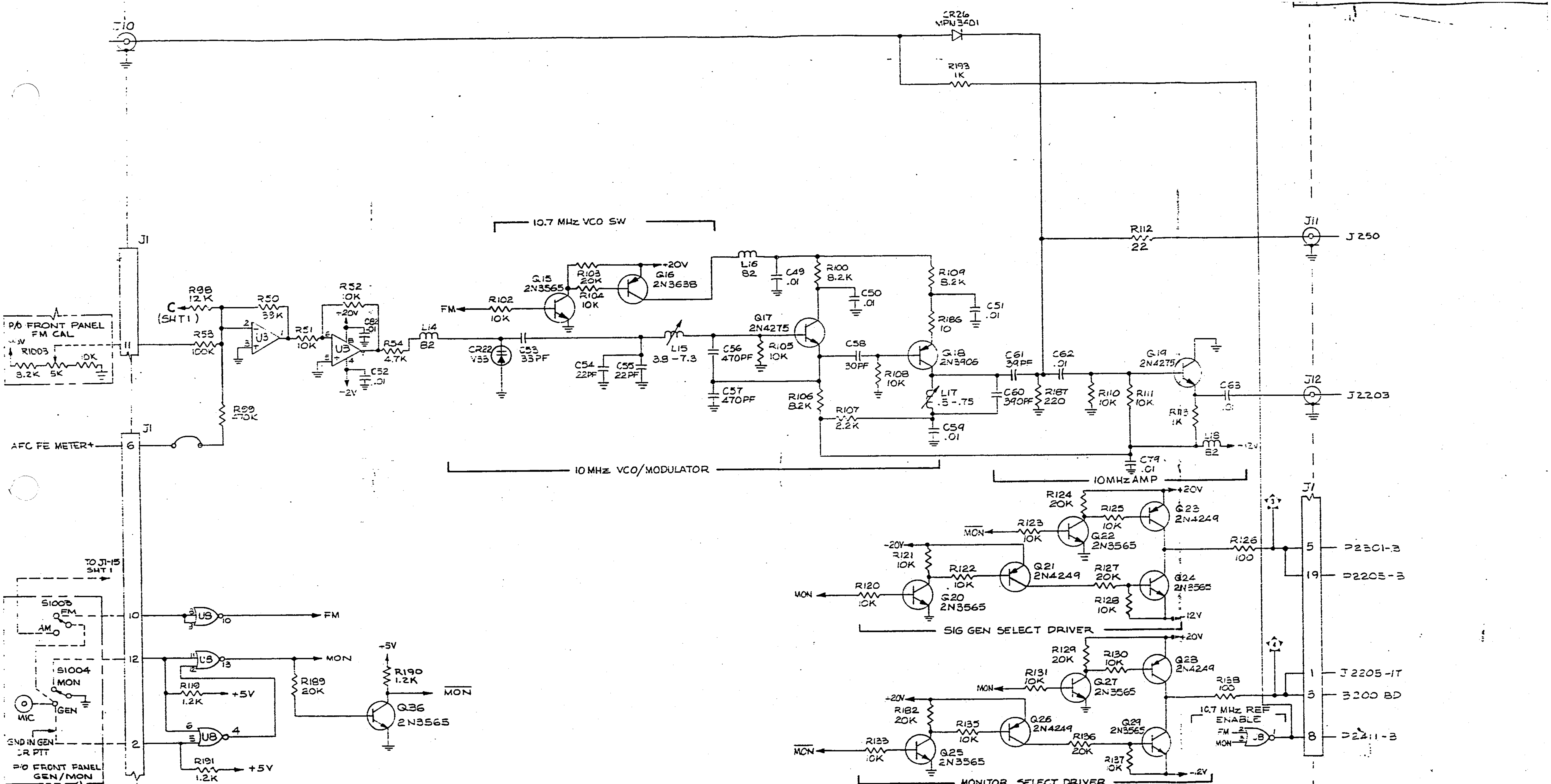
2406 VERSION 1

CUSHMAN ELECTRONICS, INC

SCHEM DIAG — FM MOD/DSCRM, AUDIO DC CONT

7001-0856 | MODEL NO. 7000 | SH 1 OF 3 | 5000-0977

NOTE: NOTES AND REFERENCE TABLES SHOWN ON SHEET 2.



REF DISIGNATIONS NOT USED:
R1-48, 66, 68, 74, 77, 81, 95, 96, 114-119, 132, 134, 146-149, 183-185
C 3-16, 18, 19, 21-31, 33, 48, 75, 77, 80, 83, 85, 86
CR 14, 15, 19, 20
L 2, 3, 4, 5, 7-13, 19, 21
J2, 3
U1, 2

U NO	TYPE	VCC	GND
3,4,6,7	1458		
5	UA741CP		
8	SN7402		
9	SN72741		
10	LM301		

OUT OF SEQUENCE TABLE CONT.	
C79	NEAR Q19(SHT2)
C82	NEAR U3(SHT2)
C84	NEAR U10(SHT2)
C87	NEAR J17(SH1)

REF NO	APPROX LOCATION
C81	NEAR Q11(SHT1)
J16, J17	NEAR U4B(SHT1)
C83	NEAR U3(SHT1)
R49 - R54	NEAR U3(SHT2)
R186 & R187	NEAR Q18(SHT2)

CIRCUIT REFERENCE SERIES: 2400

CIRCUIT REFERENCE USED:
C(1) - C(87); CR(12) - CR(26); U(3) - U(10); L(1) - L(22); Q(11) - Q(36); R(49) - R(193); J(1) - J(18)

VERSION 1 - SEE NEXT SCHM. FOR VERSION 2

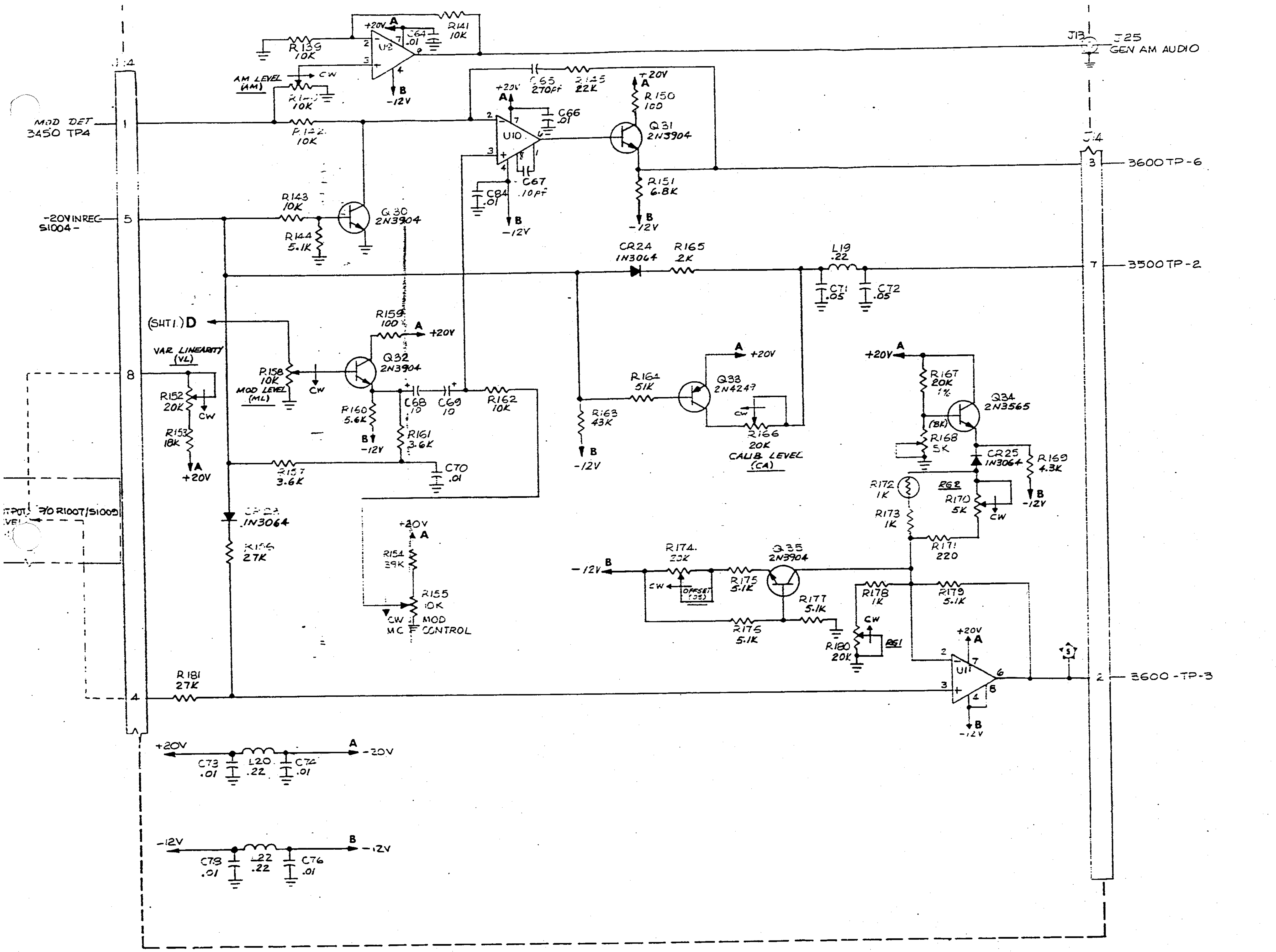
NOTE:
1. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
2. FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
4. CAPACITORS - VALUES IN UF UNLESS OTHERWISE NOTED.
5. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

CUSHMAN ELECTRONICS INC

SCHEM DIAG - FM MOD/DSCRM/AUDIO/DC CONT

26192 | D | 8000-0977 | SHEET 2

6 5 4 3 2 1


MOD DET
3450 TP4
-20V IN REG
S1004
VAR LINEARITY (VL)
TO R1007/S1009
R139 10K
R141 10K
C64 .01
U9
AM LEVEL (AM)
R142 10K
R143 10K
R144 5.1K
Q30 2N3904
C65 270PF
R145 22K
U10
C66 .01
C67 10PF
C84 .01
R150 100
Q31 2N3904
R151 6.8K
J13
J25
GEN AM AUDIO
3600 TP-6
CR24 1N3064
R165 2K
L19 .22
C71 .05
C72 .05
3500 TP-2
(SHT 1) D
R159 100
R158 10K
MOD LEVEL (ML)
Q32 2N3904
R160 5.6K
C68 10
C69 10
R161 3.6K
R162 10K
R157 3.6K
C70 .01
R152 20K
R153 18K
CR23 1N3064
R156 27K
R154 39K
R155 10K
MOD CONTROL
MC
R164 51K
Q33 2N4249
R163 43K
R166 20K
CALIB LEVEL (CA)
R167 20K 1%
Q34 2N3565
R168 5K
CR25 1N3064
R169 4.3K
R172 1K
R173 1K
R170 5K
R171 220
R174 20K
OFFSET (OS)
Q35 2N3904
R175 5.1K
R176 5.1K
R177 5.1K
R178 1K
R179 5.1K
R180 20K
U11
3600-TP-3
R181 27K
C73 .01
L20 .22
C74 .01
C75 .01
L22 .22
C76 .01
+20V
-12V
CW

2400 VERSION 1

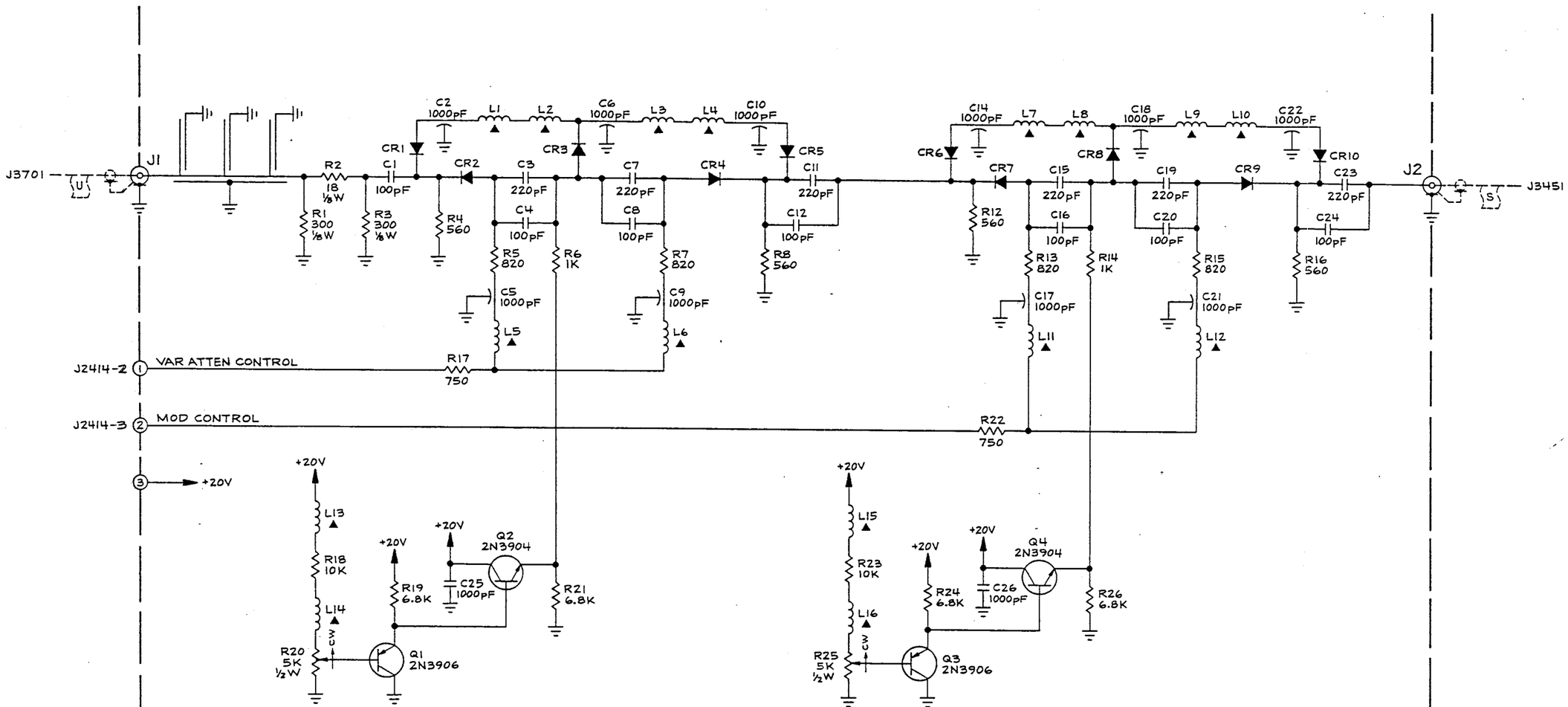
CUSHMAN ELECTRONICS, INC

SCHEM. DIAG.—
FM MOD/DSCRM/AUDIO/DC CONT.

SHEET 3 of 3

8000-0277

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	4-14-86	
B	REVISED PER ECO 86096	8-27-86	



NOTE:
7. ▲ = FERRITE BEAD.
6. ALL DIODES ARE IN5767 UNLESS OTHERWISE NOTED.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 3600

CIRCUIT REFERENCE USED:

C( ) - C(26)	Q( ) - Q(4)
CR( ) - CR(10)	R( ) - R(26)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U( ) - U( )	Y( ) - Y( )
L( ) - L(16)	J( ) - J(2)

MODEL NO	NEXT ASSY
7120	7001-0933

DRAWN	D. North	DATE 4/9/86
CHECKED	J. J. M.	DATE 4/10/86
MECH ENGR		DATE
PROJ ENGR	Eric Hill	DATE 4/10/86
MFG ENGR		DATE

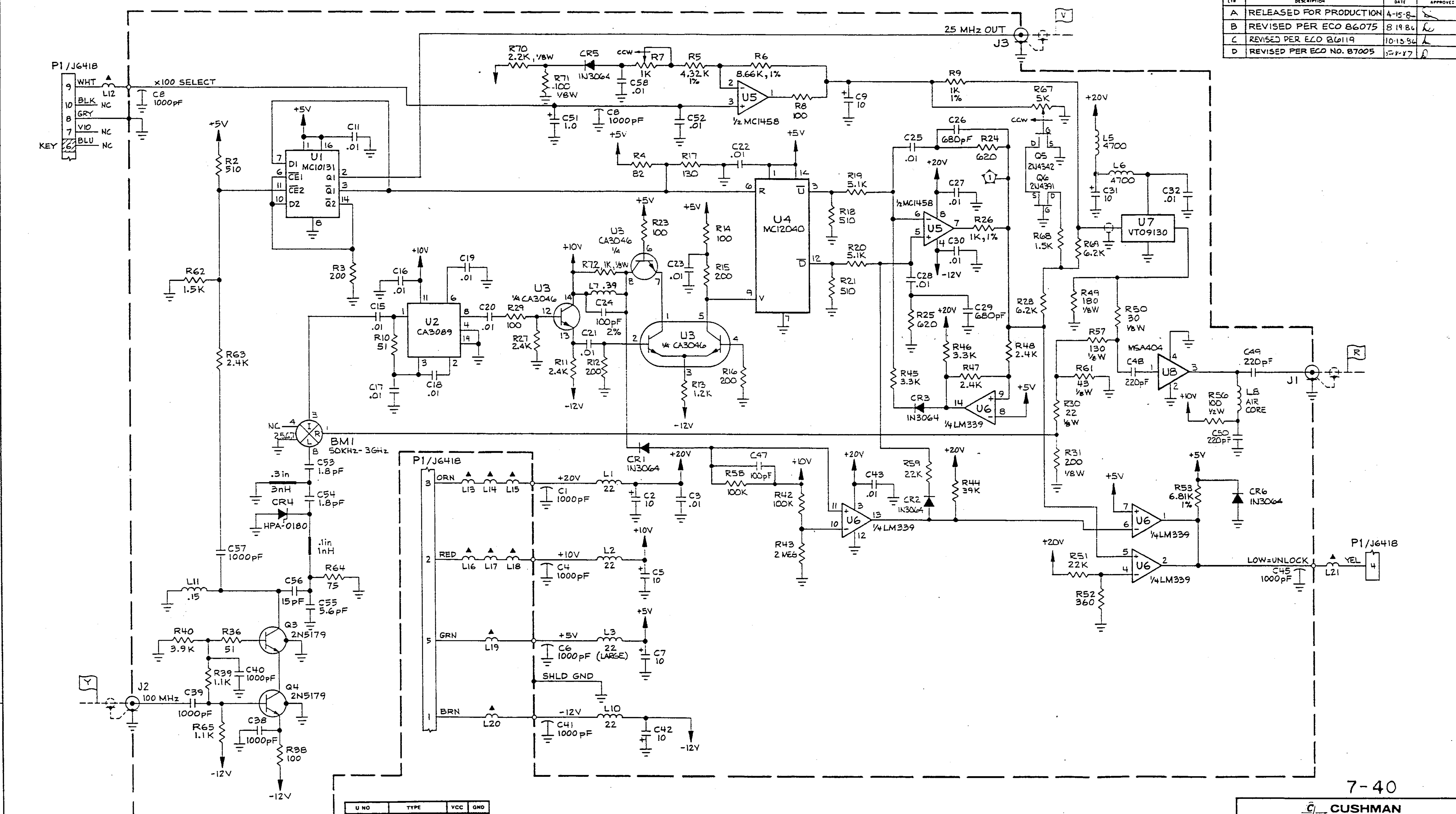
7-38

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - VOLTAGE CONTROL ATTENUATOR

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1067	B

SHEET 1 OF 1



LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	4-15-8_	
B	REVISED PER ECO 86075	8 19 86	
C	REVISED PER ECO 86119	10-13 86	
D	REVISED PER ECO NO. 87005	1-8-87	

7-40

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - 1325-2225 MHz OSC/PLL

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1055	D

SHEET 1 OF 1

DRAWN D. North	DATE 1/8/86		
CHECKED	DATE 1/9/86		
MECH ENGR	DATE		
PROJ ENGR	DATE 1/15/8_		
MFG ENGR	DATE		

MODEL NO	NEXT ASSY
7120	7001-0956
7120	7001-0924

CIRCUIT REFERENCE SERIES: 3800

CIRCUIT REFERENCE USED:	
C(1) - C(58)	Q(3) - Q(6)
CR(1) - CR(6)	R(2) - R(72)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U(1) - U(8)	Y( ) - Y( )
L(1) - L(21)	J(1) - J(3)

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

REF DES NOT USED

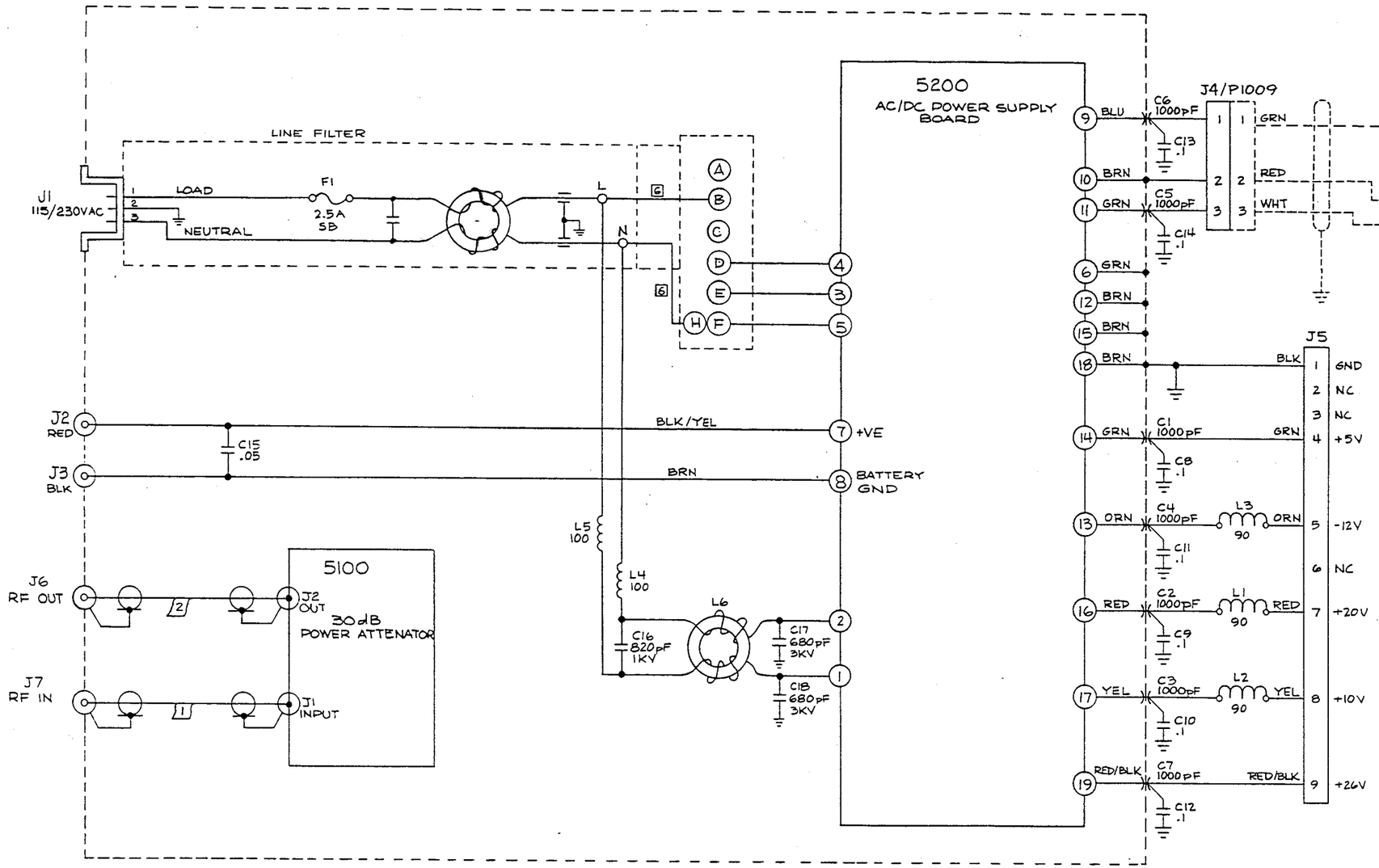
R7,22,32-35,37,41,44,54,55,60,66
C10,12-14,33-37,40,44,46
L4,9
Q1,2

U NO	TYPE	VCC	GND
U1	MC10131	1,16	8
U2	CA3089	11	4,14
U3	CA3046	—	—
U4	MC12040	1,14	7
U5	MC1458		
U6	LM339	3	12
U7	VT09130		
U8	MSA 404		2,4

NOTE:

6. ▲ = FERRITE BEAD.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PROD.	2-2-86	
B	REVISED PER ECO 86194	11/5/87	



OFF = RED, WHT & GRN ALL SHORTED
LINE = RED & WHT SHORTED
BAT = RED & GRN SHORTED

U NO	TYPE	VCC	GND

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 5000

CIRCUIT REFERENCE USED:

C( ) - C(18)	Q( ) - Q( )
CR( ) - CR( )	R( ) - R( )
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U( ) - U( )	Y( ) - Y( )
L( ) - L(6)	J( ) - J(7)

7000	7003-0185
MODEL NO	NEXT ASSY

NOTE:
- JUMPER ADDED AT ASSY.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

DRAWN		DATE 1/7/85
CHECKED		DATE 1-86
MECH ENGR		DATE
PROJ ENGR		DATE 2-86
MFG ENGR		DATE

7-41

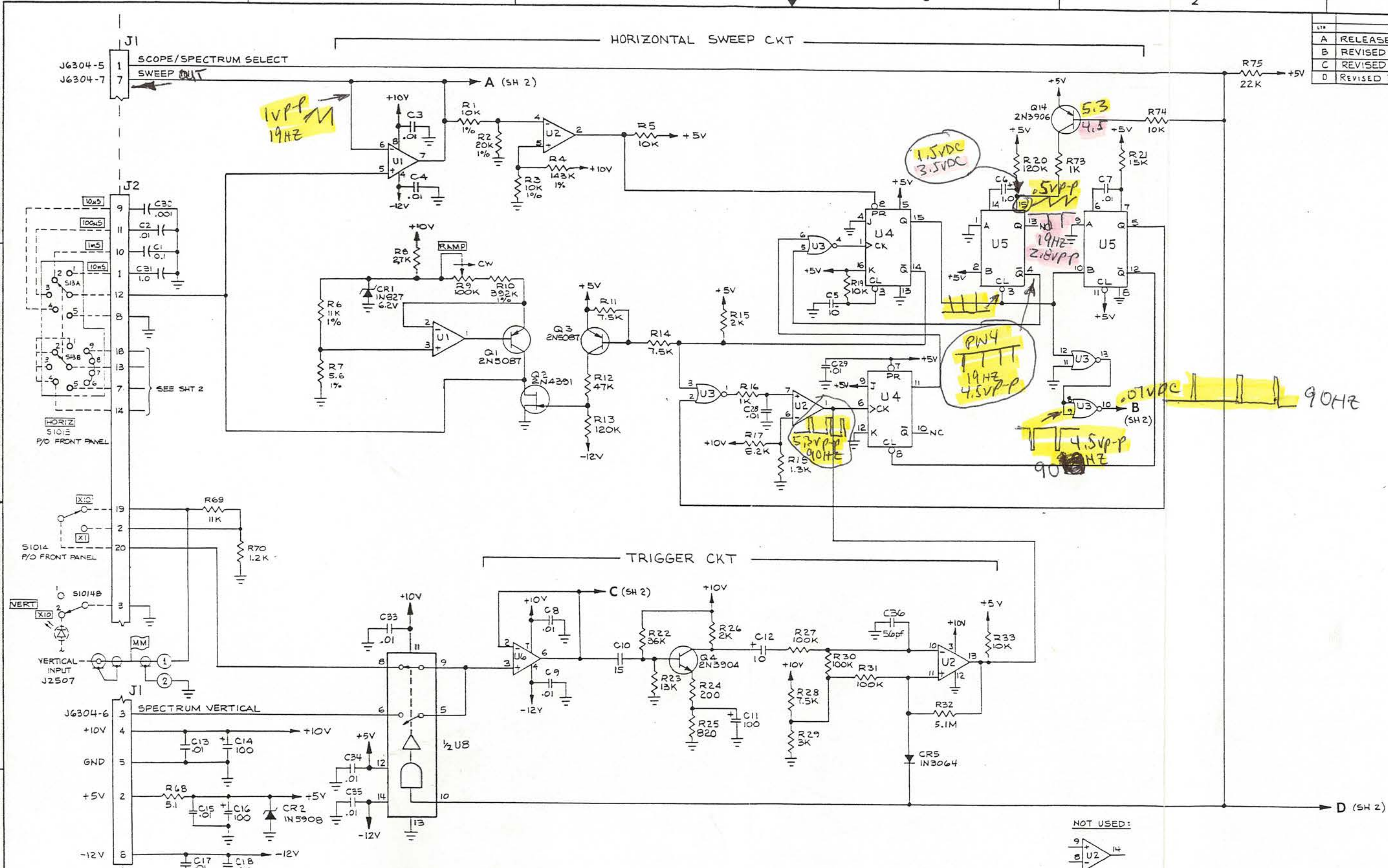
CUSHMAN ELECTRONICS INC

INTERCONNECT DIAGRAM-REAR PANEL

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1011	B

SHEET 1OF1

LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PROD	5-9-86	
B	REVISED PER ECO 86084	6-11-86	
C	REVISED PER ECO 86232	12-12-86	
D	REVISED PER ECO 87075	7-6-87	



7-42

U NO	TYPE	VCC	GND	VEE
1, 7	TL082	8		4
2	LM339	3	12	
3	74LS02N	14	7	
4	74LS76	5	13	
5	74LS123	16	8	
6	LF356	7		4
8	D6403		13	

NOTE:
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION
R68	J1-3
C28, 29	U2-9
R69, 70	NR J2-15, 17

CIRCUIT REFERENCE SERIES: 6100

CIRCUIT REFERENCE USED:

C(1) - C(36)	Q(1) - Q(14)
CR(1) - CR(5)	R(1) - R(75)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T( ) - T( )
U(1) - U(8)	Y( ) - Y( )
L( ) - L( )	J(1) - J(5) 3 N/U

MODEL NO	NEXT ASSY
7120	7001-0923

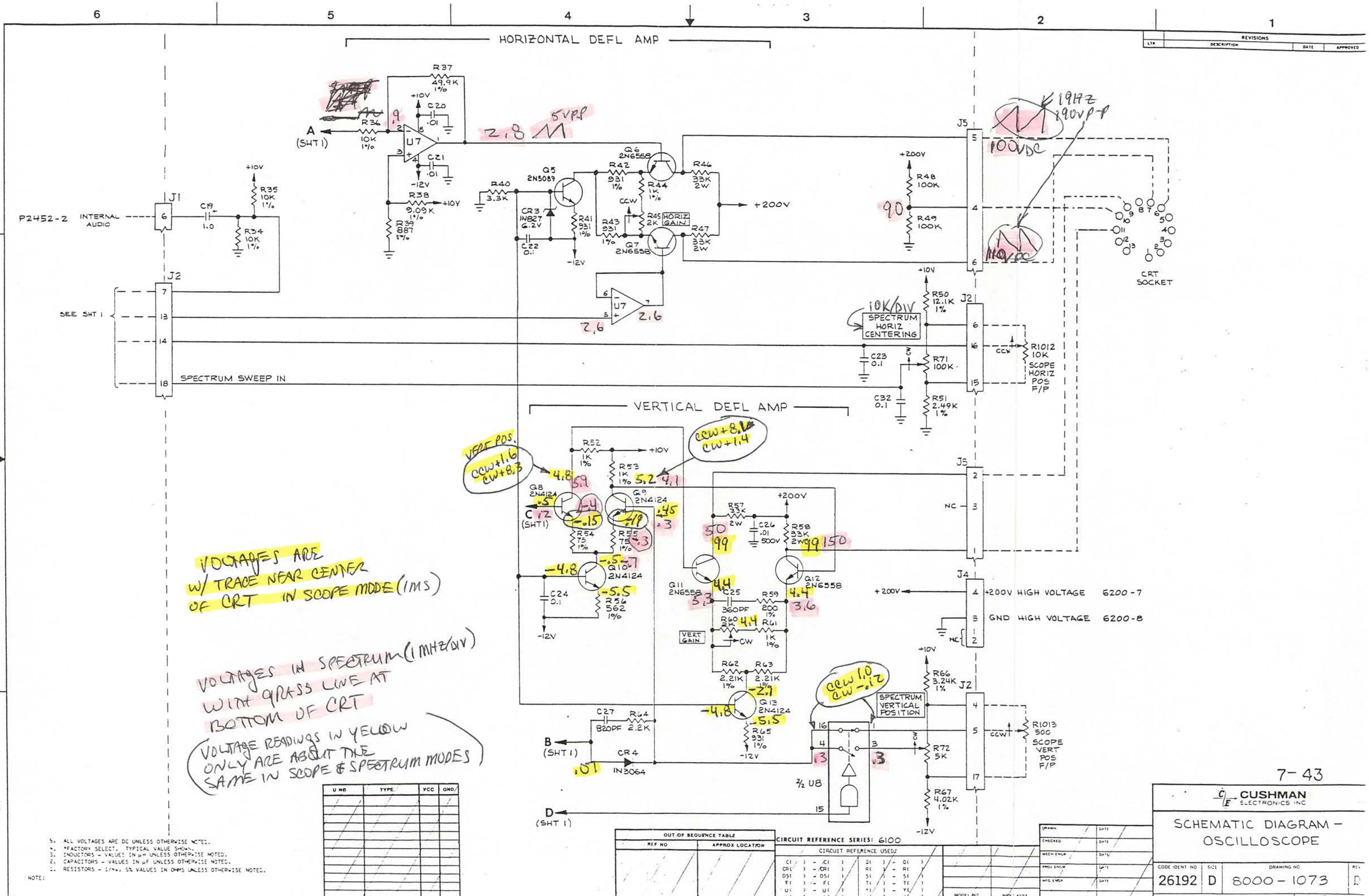
DRAWN 4/2/86 · CHECKED 5/86 · 5-9-86

CUSHMAN ELECTRONICS INC

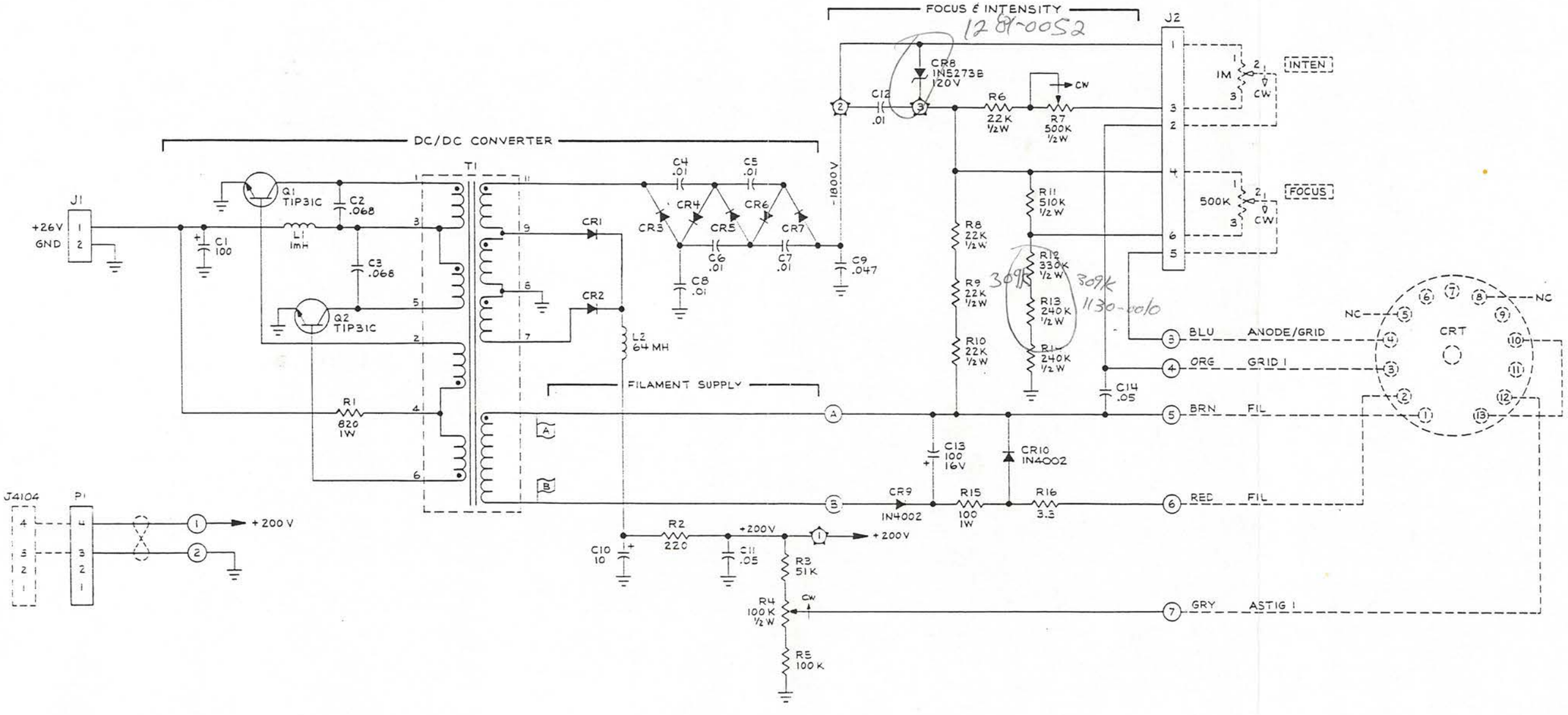
SCHEMATIC DIAGRAM - OSCILLOSCOPE

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1073	D

SHEET 1 OF 2


HORIZONTAL DEFL AMP
VERTICAL DEFL AMP
A (SHT 1)
B (SHT 1)
C (SHT 1)
D (SHT 1)
P2452-2
INTERNAL AUDIO
SEE SHT 1
SPECTRUM SWEEP IN
SPECTRUM HORIZ CENTERING
SPECTRUM VERTICAL POSITION
R1012 10K SCOPE HORIZ POS F/P
R1013 500 SCOPE VERT POS F/P
CRT SOCKET
+200V HIGH VOLTAGE 6200-7
GND HIGH VOLTAGE 6200-8
HORIZ GAIN
VERT GAIN
2/2 U8
5VPP
19HZ 190VP-P
100VDC
110VDC
10K/DIV
VERT POS. CCW+1.6 CW+8.3
CCW+8.1 CW+1.4
CCW 1.0 CW -.12
VOLTAGES ARE W/ TRACE NEAR CENTER OF CRT IN SCOPE MODE (1MS)
VOLTAGES IN SPECTRUM (1MHZ/DIV) WITH GRASS LINE AT BOTTOM OF CRT
(VOLTAGE READINGS IN YELLOW ONLY ARE ABOUT THE SAME IN SCOPE & SPECTRUM MODES)
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.
NOTE:
REVISIONS
OUT OF SEQUENCE TABLE
CIRCUIT REFERENCE SERIES: 6100
7-43
CUSHMAN ELECTRONICS INC
SCHEMATIC DIAGRAM - OSCILLOSCOPE
CODE IDENT NO 26192
SIZE D
DRAWING NO 8000-1073
SHEET 2

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PROD.	5-31-85	
B	REVISED PER ECO 85137	8-23-85	



7-44

U NO	TYPE	VCC	GND

NOTE:
6. ALL DIODES ARE 1N4948 UNLESS OTHERWISE NOTED.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN μH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN μF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 6200

CIRCUIT REFERENCE USED:

C(1) - C(14)	Q(1) - Q(2)
CR(1) - CR(10)	R(1) - R(16)
DS( ) - DS( )	S( ) - S( )
F( ) - F( )	T(1) - T( )
U( ) - U( )	P(1) - (1)
L(1) - L(2)	J(1) - J(2)

MODEL NO	NEXT ASSY
7010	7001-0894

DRAWN	D. North	DATE 5/9/85
CHECKED		DATE 5-10-85
MECH ENGR		DATE
PROJ ENGR		DATE
MFG ENGR		DATE

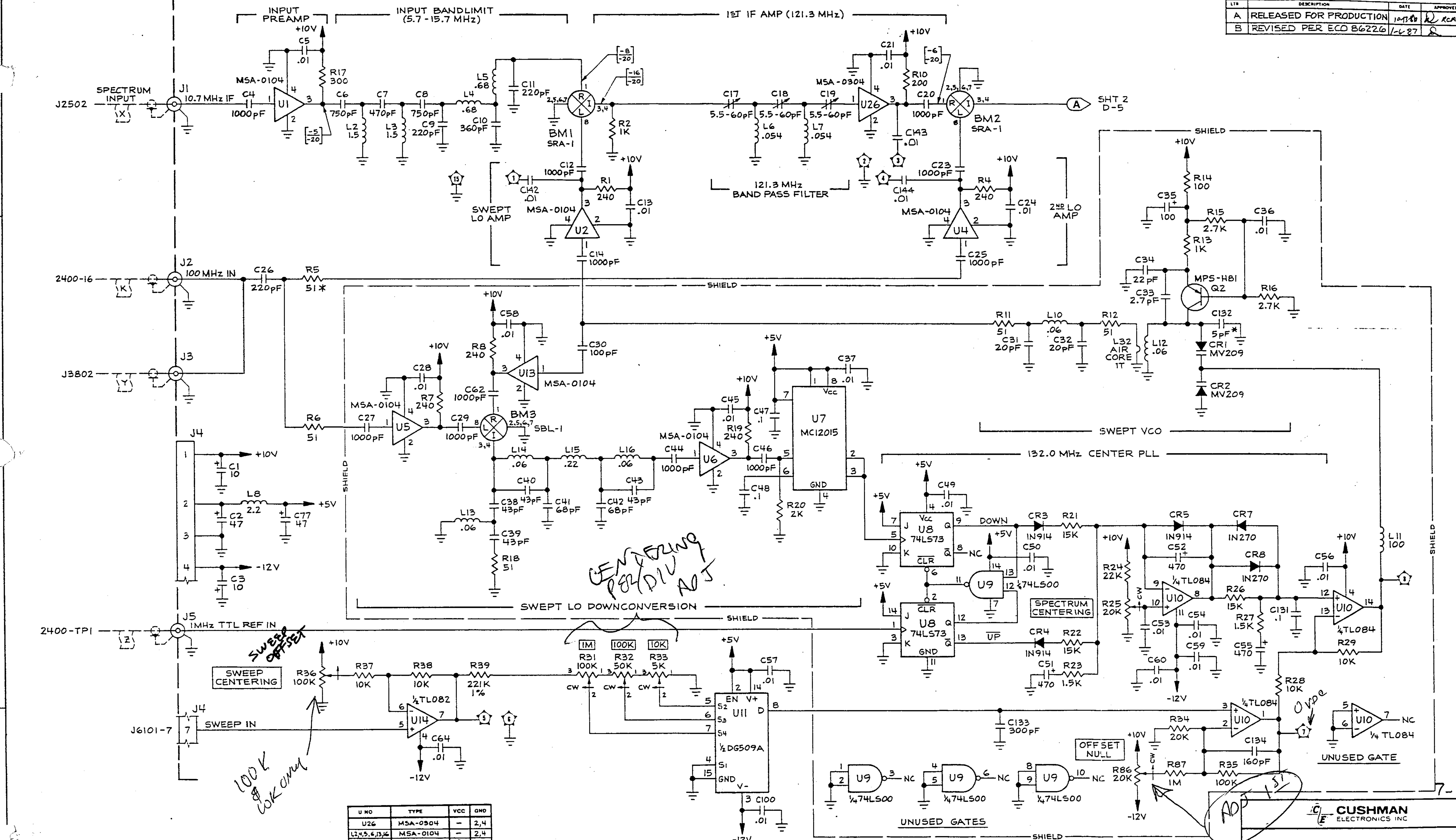
CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - HIGH VOLTAGE POWER SUPPLY

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1017	B

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	10/13/86	RCR
B	REVISED PER ECO 86226	1-6-87	



6. $\left[\frac{-5}{-20}\right] = \left[\frac{\text{POWER OUT}}{\text{POWER IN AT J1}}\right]$, MEASURED IN Ø SCAN MODE.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS - VALUES IN µH UNLESS OTHERWISE NOTED.
2. CAPACITORS - VALUES IN µF UNLESS OTHERWISE NOTED.
1. RESISTORS - 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.

NOTE:

U NO	TYPE	VCC	GND
U26	MSA-0304	—	2,4
U2,4,5,6,13,16	MSA-0104	—	2,4
U7	MC12015	8	4
U8	74LS73	4	11
U9	74LS00	14	7
U10	TL084	4	—
U11	DG509A	14	15
U22	CDG5341	11	4
U19	82S123	16	8
U20	NE604	4	2,13
U14,21	TL082	8	—
U17,18,23,24	NE5205	1,8	3,4,5,6

CONTINUED SHT 2

REF NO.S NOT USED
C15,16,22,61,70,71
R3,9,45
U3,12,15
L1,19,21

OUT OF SEQUENCE TABLE	
REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 6300

CIRCUIT REFERENCE USED:	
C(1) - C(149)	Q(1) - Q(7)
CR(1) - CR(19)	R(1) - R(90)
BM(1) - BM(4)	S(—) - S(—)
FL(1) - FL(3)	T(—) - T(—)
U(1) - U(26)	Y(1) - Y(1)
L(2) - L(36)	J(1) - J(6)

MODEL NO	NEXT ASSY
7120	7001-0939

		DATE
DRAWN	D. North	3/19/86
CHECKED		10/86
MECH ENGR		
PROJ ENGR		10/13/85
MFG ENGR		

CUSHMAN ELECTRONICS INC

SCHEMATIC DIAGRAM - SPECTRUM

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1071	B

SHEET 1 OF 2

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

2ND IF AMP (21.3 MHz)

NARROWBAND FILTERING

3RD LO

3RD IF AMP (455 kHz)

LOG AMP

10dB/1dB SCALE

SCOPE/SPECTRUM SELECT

VIDEO FILTER

SPECTRUM VERTICAL

GAIN

OFFSET

MODE SELECT

VARIABLE OFFSET

SHOWN IN PULL POS = 1dB

SW +20V ON IN S/G

51013A SWEEP OUT

U NO	TYPE	VCC	GND
U25	7406	14	7

NOTE:

1. RESISTORS – 1/4W, 5% VALUES IN OHMS UNLESS OTHERWISE NOTED.
2. CAPACITORS – VALUES IN µF UNLESS OTHERWISE NOTED.
3. INDUCTORS – VALUES IN µH UNLESS OTHERWISE NOTED.
4. *FACTORY SELECT. TYPICAL VALUE SHOWN.
5. ALL VOLTAGES ARE DC UNLESS OTHERWISE NOTED.

OUT OF SEQUENCE TABLE

REF NO	APPROX LOCATION

CIRCUIT REFERENCE SERIES: 6300

CIRCUIT REFERENCE USED:

C( ) – C( ) Q( ) – Q( )
CR( ) – CR( ) R( ) – R( )
DS( ) – DS( ) S( ) – S( )
F( ) – F( ) T( ) – T( )
U( ) – U( ) V( ) – V( )
L( ) – L( ) J( ) – J( )

MODEL NO | NEXT ASSY

		DATE
DRAWN		
CHECKED		
MECH ENGR		
PROJ ENGR		
MFG ENGR		

CUSHMAN ELECTRONICS, INC

SCHEMATIC DIAGRAM - SPECTRUM

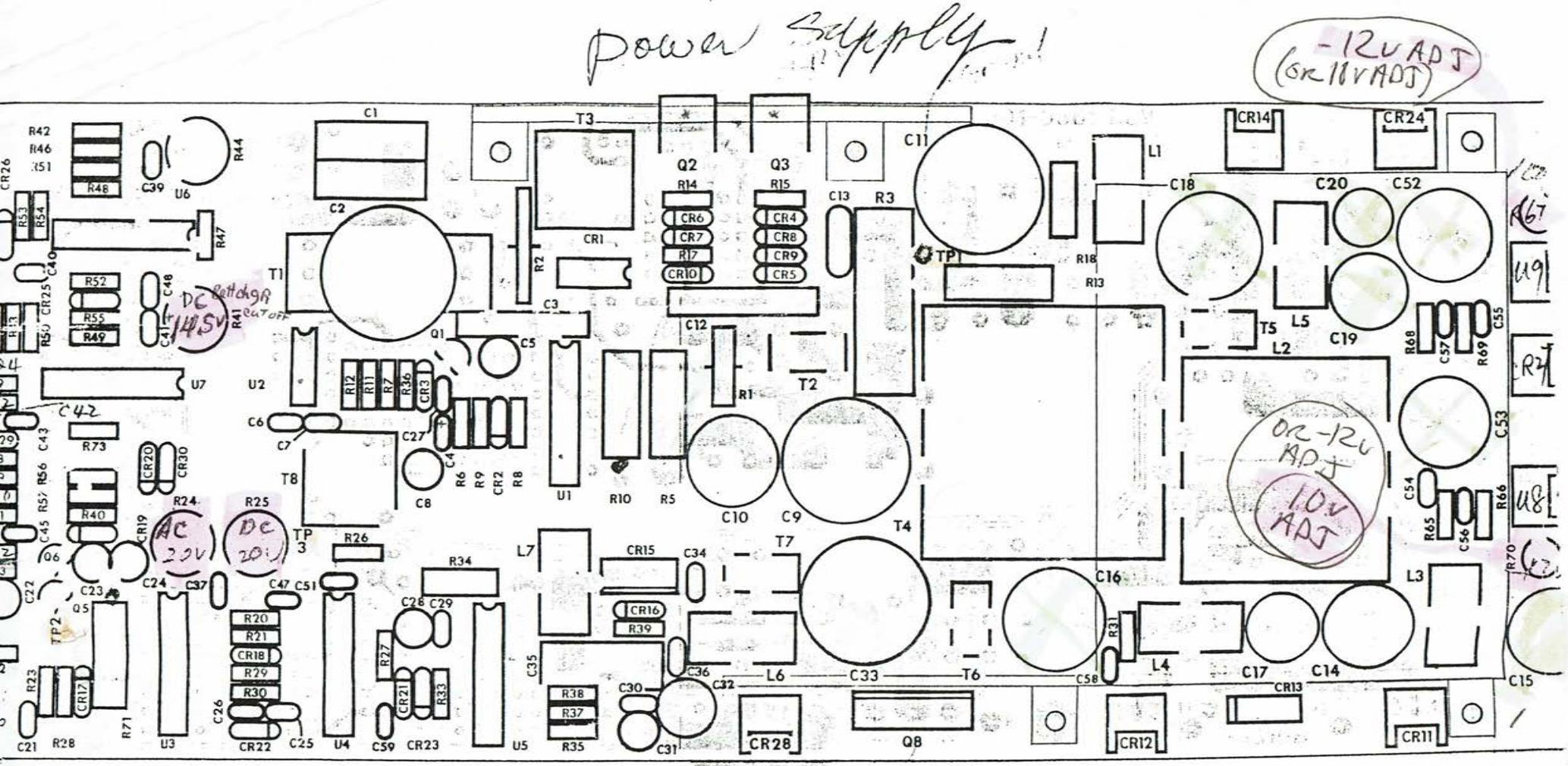
CODE IDENT NO	SIZE	DRAWING NO	REV
26192	D	8000-1071	B

SHEET 2 OF 2

7-46

700 series

Power Supply

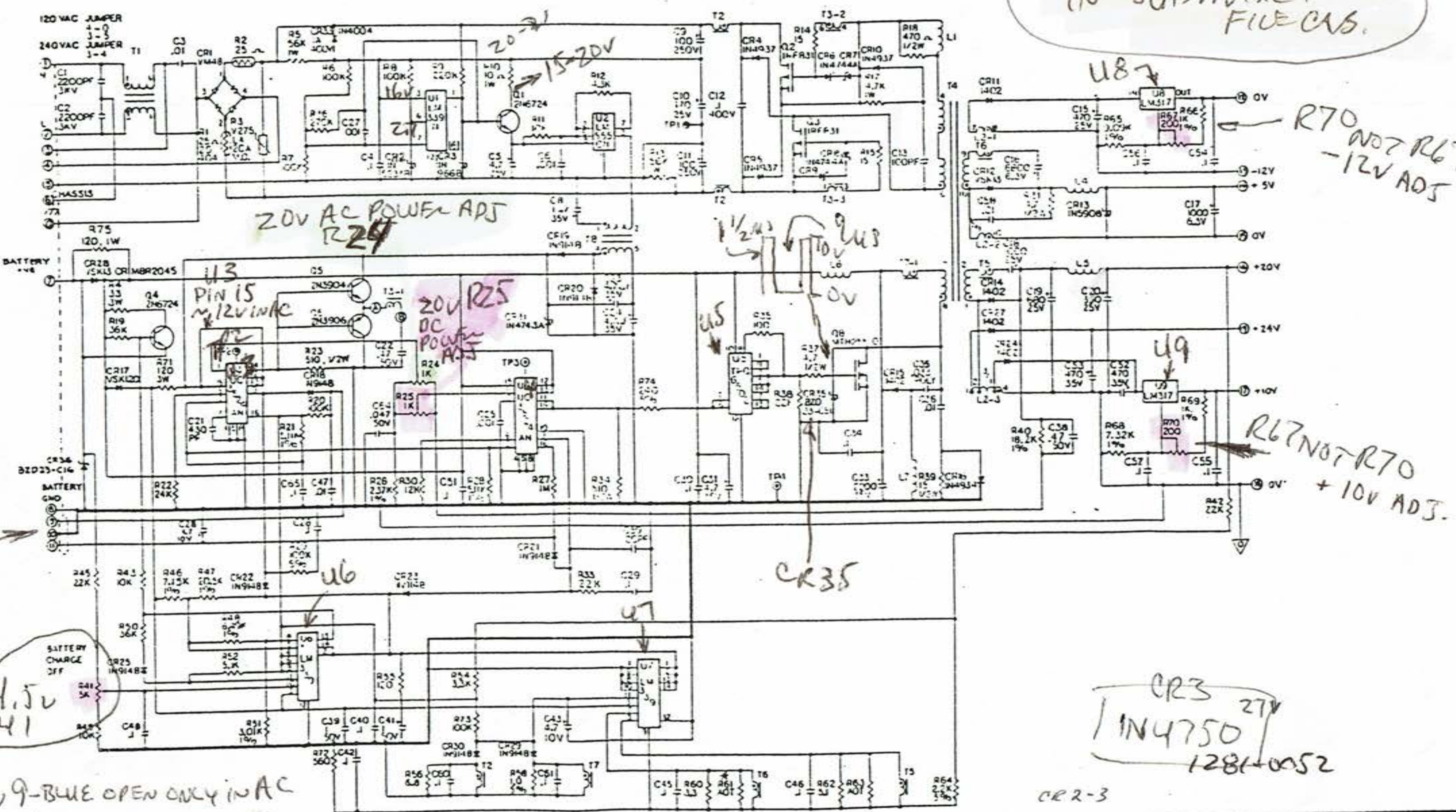


-1315B

+10 R67 -12V ADJ R70

DWG NO C 8000-0984 SH 1 REV J

LTR	REVISIONS DESCRIPTION	DATE	APPROVED
J	LASELCO PRODUCED PART SCHEMATIC FOR REFERENCE ONLY		



PIN 9 - BLUE OPEN ONLY IN AC
PIN 11 - GREEN OPEN ONLY IN DC
PIN 8 & 10 BROWN

CR 2-3
R10 10 Ω
U1-2 Q1 Q2,3 (Q8) DC
(U5) Bad DC

REF DES NOT USED
C7, 14, 32, 37, 44, 49, 50, 62, 63
CR32 L3 Q7 TP1
R16, 32, 44, 57, 59

8. T3 & T8 USE 6 PIN BOBBIN.
7. DRIVER TRANSFORMER T3 PRI HAS 2 FLYING LEADS.
6. 1N5246B IS ACCEPTABLE.
5. ALL VOLTAGES ARE DC.
4. * FACTORY SELECT. TYPICAL VALUE SHOWN.
3. INDUCTORS: VALUES IN μH
2. CAPACITORS: VALUES IN μF
1. RESISTORS: VALUES IN OHMS, ¼W, ±5%.
NOTES: UNLESS OTHERWISE SPECIFIED

IRF 831
750 mH
4 Amp 450 Volt GE

CIRCUIT REFERENCE SERIES: 5200

CIRCUIT REFERENCE USED:

C(1) - C(45)	Q(1) - Q(8)
CR(1) - CR(36)	R(1) - R(75)
OSC( ) - OSC( )	S( ) - S( )
F( ) - F( )	T(1) - T(8)
U(1) - U(9)	Y( ) - Y( )

MODEL NO.	NEXT ASSY.
71XX	7001-0861

DRAWN D. North DATE 11/18/86
CHECKED DATE
MECH ENGR DATE
PROJ ENGR DATE
MFG ENGR DATE

CUSHMAN ELECTRONICS, INC

SCHEMATIC DIAGRAM - AC/DC SWITCHER

CODE IDENT NO	SIZE	DRAWING NO	REV
26192	C	8000-0984	J

SHEET 1 OF 1

REQUESTER: MANAGER .PUB MAN

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86 ..

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
-CMT-0001	CMT-RES FSV 5% 1/4W CC	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R61	00/00/00	99/99/99
-CMT-0003	CMT-RES FSV 1% 1/8W MF	0		0	1.000	1.000	EA	F3	N	N	1.000	0	0	R44	00/00/00	99/99/99
1002-0011	CAP-100PF 5% 500V DIP MICA	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C13	00/00/00	99/99/99
1005-0051	CAP=.01UF 20% 1.4KV CER DISC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C3	00/00/00	99/99/99
1005-0081	CAP-1000PF 10% 100V W5R MINTR	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C6	00/00/00	99/99/99
														C21		
														C25		
														C59		
1005-0097	CAP-.1UF 20% 50V MINTR CER RED	1	A	0	16.000	1.000	EA	S1	N	N	16.000	0	0	C4	00/00/00	99/99/99
														C7		
														C29		
														C30		
														C34		
														C39		
														C40		
														C42		
														C43		
														C45		
														C46		
														C48		
														C51		
														C54		
														C55		
														C60		
1005-0098	CAP-2200PF 20% 3KV Z5U CER DIS	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C1	00/00/00	99/99/99
														C2		
1005-0109	CAP-.01UF 20% 100V Y5P MINTR C	1	A	0	7.000	1.000	EA	S1	N	N	7.000	0	0	C26	00/00/00	99/99/99
														C27		
														C36		
														C47		
														C56		
														C57		
														C58		
1008-0031	CAP-.1UF 10% 100V RDL POLYESTE	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C35	00/00/00	99/99/99
1008-0103	CAP-.1UF 10% 660V AXL MET-POLY	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C12	00/00/00	99/99/99
1011-0013	CAP-1UF 20% 50V RDL TANT	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C5	00/00/00	99/99/99
														C22		
														C41		
1013-0035	CAP-10UF +100-10% 25V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C8	00/00/00	99/99/99
1013-0052	CAP-100UF +50-10% 50V RDL ELCT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C19	00/00/00	99/99/99
1013-0065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C23	00/00/00	99/99/99

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

7001-0961 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86 ..

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UN	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1013-9065	CAP-4.7UF +50-10% 50V RDL ELET	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	C24 C28 C31	00/00/00	99/99/99
1013-9066	CAP-100UF +50-10% 25V RDL ELCT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C20 C32	00/00/00	99/99/99
1013-9067	CAP-100UF 20% 250V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C9 C11	00/00/00	99/99/99
1013-9068	CAP-470UF +50-10% 35V RDL ELC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	C15 C52 C53	00/00/00	99/99/99
1013-9069	CAP-680 UF 20% 25V RDL ELCTLT	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	C10 C14	00/00/00	99/99/99
1013-9070	CAP-1000UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C17	00/00/00	99/99/99
1013-9071	CAP-1000UF +50-10% 25V RDL ELC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C18	00/00/00	99/99/99
1013-9072	CAP-2200UF 20% 35V RDL ELCTLT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C33	00/00/00	99/99/99
1013-9073	CAP-6800UF +50-10% 6.3V RDL EL	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	C16	00/00/00	99/99/99
1066-9001	RES-4.7 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R31 R56 R57	00/00/00	99/99/99
1066-9002	RES-5.1 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R37 - 4.7 1/2W R62	00/00/00	99/99/99
1066-9006	RES-3.3 OHM 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R58 R59 R60	00/00/00	99/99/99
1066-1005	RES-10 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R63	00/00/00	99/99/99
1066-1015	RES-100 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R35.	00/00/00	99/99/99
1066-1025	RES-1K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R66 R69	00/00/00	99/99/99
1066-1035	RES-10K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R11 R43 R49	00/00/00	99/99/99
1066-1045	RES-100K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R6 R7 R8 R20	00/00/00	99/99/99
1066-1055	RES-1MEG 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R27 R73	00/00/00	99/99/99
1066-1135	RES-11K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R65	00/00/00	99/99/99
1066-1205	RES-12 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R14 R15	00/00/00	99/99/99
1066-1235	RES-12K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R30	00/00/00	99/99/99

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86 ..

PART NUMBER	DESCRIPTION	OP	PV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1066-1505	RES-15 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R39	00/00/00	99/99/99
1066-1835	RES-18K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R40	00/00/00	99/99/99
1066-2225	RES-2.2K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R64	00/00/00	99/99/99
1066-2235	RES-22K 5% 1/4W CC	1		0	4.000	1.000	EA	B1	N	N	4.000	0	0	R29	00/00/00	99/99/99
														R33		
														R38		
														R45		
1066-2425	RES-2.4K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R26	00/00/00	99/99/99
1066-2745	RES-270K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R36	00/00/00	99/99/99
1066-3325	RES-3.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R54	00/00/00	99/99/99
1066-3335	RES-33K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R9	00/00/00	99/99/99
														R47		
1066-3625	RES-3.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R51	00/00/00	99/99/99
1066-3635	RES-36K 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R19	00/00/00	99/99/99
														R50		
1066-4325	RES-4.3K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R12	00/00/00	99/99/99
1066-4725	RES-4.7K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R17	00/00/00	99/99/99
1066-4735	RES-47K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R42	00/00/00	99/99/99
1066-5115	RES-510 OHM 5% 1/4W CC	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R23	00/00/00	99/99/99
														R55		
1066-5125	RES-5.1K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R21	00/00/00	99/99/99
														R28		
														R52		
1066-5615	RES-560 OHM 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R72	00/00/00	99/99/99
1066-5625	RES-5.6K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R53	00/00/00	99/99/99
1066-6225	RES-6.2K 5% 1/4W CC	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	R22	00/00/00	99/99/99
														R46		
														R48		
1066-9125	RES-9.1K 5% 1/4W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R68	00/00/00	99/99/99
1067-4715	RES-470 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R18	00/00/00	99/99/99
1067-5115	RES-510 OHM 5% 1/2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R34	00/00/00	99/99/99
1068-1005	RES-10 OHM 5% 1W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R10	00/00/00	99/99/99
1068-1315	RES-130 OHM 5% 1W CC	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1069-1115	RES-110 OHM 5% 2W CC	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R71	00/00/00	99/99/99
1075-0153	RES-1.30K 1% 100PPM FILM	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R44	00/00/00	99/99/99
1099-5004	RES-56K 5% 2W @ 700 MOF	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R5	00/00/00	99/99/99
														R13		
1159-9009	RES-33 OHM 5% 3W 20PPM AXL WW	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R4	00/00/00	99/99/99
1293-9071	POT-5K 20% 1/2W 1T CERMET TRMR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R41	00/00/00	99/99/99
1293-9072	POT-2K 20% 1/2W 1T CERMET TRMR	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R24	00/00/00	99/99/99
														R25		

CLASS CODE: !
COMPONENT/OUTSIDEPROCESS PARTS

7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

OP: ORDER POLICY CODE
REQ: Y=PART REQUIRED
N=PART OPTIONAL
PF: Y=PART PRINTS ON SALES ORDER
N=PART DOES NOT PRINT ON SO

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1215-0050	POT-200 OHM 10% 1/2W IT CERMET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	R67 R70	00/00/00	99/99/99
1253-0005	THMS-25 OHM 10% 25MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R2	00/00/00	99/99/99
1253-0006	THMS-100 OHM 10% 8MW AXL/RDL D	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R1	00/00/00	99/99/99
1254-0002	VRIS-275VAC/369VDC 6500A RDL D	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	R3	00/00/00	99/99/99
1272-0032	XSTR-2N3904 NPN SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q5	00/00/00	99/99/99
1272-0037	XSTR-2N3906 PNP SI TO 92 LOW P	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q6	00/00/00	99/99/99
1272-0113	XSTR-92PU45 NPN SI DARLINGTON	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q1 Q4		
* 1272-0140 ~~1272-0151 IRF831~~	XSTR-IRF721 SI TO220AB MOSFET	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	Q2 Q3	00/00/00	99/99/99
~~1272-0147~~	XSTR-35N06 SI TO218AC TMOSFET	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	Q8	00/00/00	99/99/99
1281-0013	DIO-1N3064 SI SW D07/D035 75PR	1		0	7.000	1.000	EA	B1	N	N	7.000	0	0	CR18 CR19 CR20 CR21 CR25 CR26 CR30		
1281-0028	USE 1N4750 1281-0052 DIO-~~1N4744~~ SI ZENER A98A 15V 1	1		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR3 CR6 CR7 CR8 CR9	00/00/00	99/99/99
1281-0103	DIO-VM48 SI BRDG RECT 6 PIN DI	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR1	00/00/00	99/99/99
1281-0104	DIO-1N827 SI ZENER D07 6.2V 5%	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR2	00/00/00	99/99/99
1281-0112	DIO-1N914B SI SW D07 75PRV .25	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR29	00/00/00	99/99/99
1281-0160	DIO-IN 5908 SI SURGE LIMITER 5	0		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR13	00/00/00	99/99/99
1281-0170	DIO-1535CT DUAL RECT T0220 35P	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	CR12 CR28	00/00/00	99/99/99
1281-0183	DIO-1N5817 SI RECT A10U 20PRV	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR22 CR23 CR17		
1281-0184	DIO-1N4743A SI ZENER D041 13V	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR31	00/00/00	99/99/99
1282-0010	DIO-1N5615 SI F RCVY A109C 200	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	CR16	00/00/00	99/99/99
1282-0022	DIO-1402 SI F RCVY T0220 100PR	0		0	5.000	1.000	EA	B1	N	N	5.000	0	0	CR11 CR14 CR15 CR24 CR27	00/00/00	99/99/99
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR4	00/00/00	99/99/99

CLASS CODE: 1
COMPONENT/OUTSIDEPROCESS PARTS

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7001-0861 OPCODE: 1 REV: D PCB ASSY-AC/DC SWITCHER
MODEL: 7000
ECO NO: 86177
DATE OF LAST ECO: 10/21/86

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PF	DEFAULT QUANTITY	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
1282-0023	DIO-IN4937 SI F RCVY A1AZ 600P	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	CR5 CR10	00/00/00	99/99/99
1575-0054	XFMR-POT CORE 18X11	0	C	0	1.000	1.000	EA	X1	N	N	1.000	0	0	T1	00/00/00	99/99/99
1780-1315	PCB-AC/DC SWITCHER	1		1	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0038	HTSK-PWR XSTR MTG	1		2	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
1970-0039	HTSK-PWR XSTR MTG	1		3	1.000	1.000	EA	B1	N	N	1.000	0	0		00/00/00	99/99/99
2025-0091	IC-MC1455P1 TIMING CIRCUIT	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U2	00/00/00	99/99/99
2025-0201	IC-339 14 PIN DIP QUAD VOLTAGE	1		0	3.000	1.000	EA	B1	N	N	3.000	0	0	U1 U6 U7	00/00/00	99/99/99
2025-0320	IC-317 T0220 3 TERM ADJ POS RG	0		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U8 U9	00/00/00	99/99/99
2025-0443	IC-6502 14PIN DIP QUAD XSTR AR	1		0	1.000	1.000	EA	B1	N	N	1.000	0	0	U5	00/00/00	99/99/99
2025-0444	IC-UC3524A REG PULSE WIDTH MOD	1		0	2.000	1.000	EA	B1	N	N	2.000	0	0	U3 U4	00/00/00	99/99/99
3003-0012	INSUL-SILICONE THERMAL TIP-36	0		4	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0001	SCR-4-40X3/16 RD HD	0		5	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
4030-0013	SCR-4-40X1/4 PAN HD W/EXT L W	0		6	5.000	1.000	EA	F3	N	N	5.000	0	0		00/00/00	99/99/99
4096-0027	WSHR-.113X.23X.23 SHLDR .095X.	0		7	11.000	1.000	EA	F3	N	N	11.000	0	0		00/00/00	99/99/99
A5650-0956	TEST PROC-AC/DC SWITCHER	0	A	0	1.000	1.000	EA	F5	N	N	1.000	0	0		00/00/00	99/99/99
D7001-0861	PCB ASSY-AC/DC SWITCHER	0	*	8	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99
D8000-0984	SCHEM DIAG-AC/DC SWITCHER	0	*	9	1.000	1.000	CP	F5	N	N	1.000	0	0		00/00/00	99/99/99