

**DSI**

**MODEL R-1250  
WIDE RANGE RECEIVER  
INSTRUCTION MANUAL**

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**DYNAMIC SCIENCES INCORPORATED**

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## **CERTIFICATION**

Dynamic Sciences Incorporated Certifies that this instrument has been designed for operation in accordance with International Safety Requirements, and further certifies that this instrument has met the published specifications in effect on the date of shipment.

## **ASSISTANCE**

Service contracts and/or field engineering assistance agreements are available for products manufactured by Dynamic Sciences Incorporated. For information contact:

Dynamic Sciences Inc.  
7660 Gloria Avenue  
Van Nuys California 91406

TELE: (818) 782-0820  
TWX: (910) 495-1780

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# **SECTION 1**

## **GENERAL INFORMATION**

### **1.1 INTRODUCTION**

This document provides information concerning the installation and operation of the model R-1250 wide range receiver, manufactured by Dynamic Sciences Incorporated, Van Nuys, California.

The manual consists of individual sections which provide the following information:

**SECTION I, General Information**, describes the purpose and function of the unit, and includes equipment specifications and descriptions of options and accessories.

**SECTION II, Installation**, supplies the information required to unpack and install the equipment, and provides the recommended connections for power and interface cables.

**SECTION III, Operation**, outlines the location and function of all equipment controls and indicators. Information regarding the instrument initialization and fault indications are included in this section.

**SECTION IV, Theory of Operation**, provides a general explanation of circuit functions supported by signal flow diagrams for each of the major sections.

**SECTION V, Service and Alignment**, provides the information required to aid the service representative in fault isolation, based on flow chart procedures.

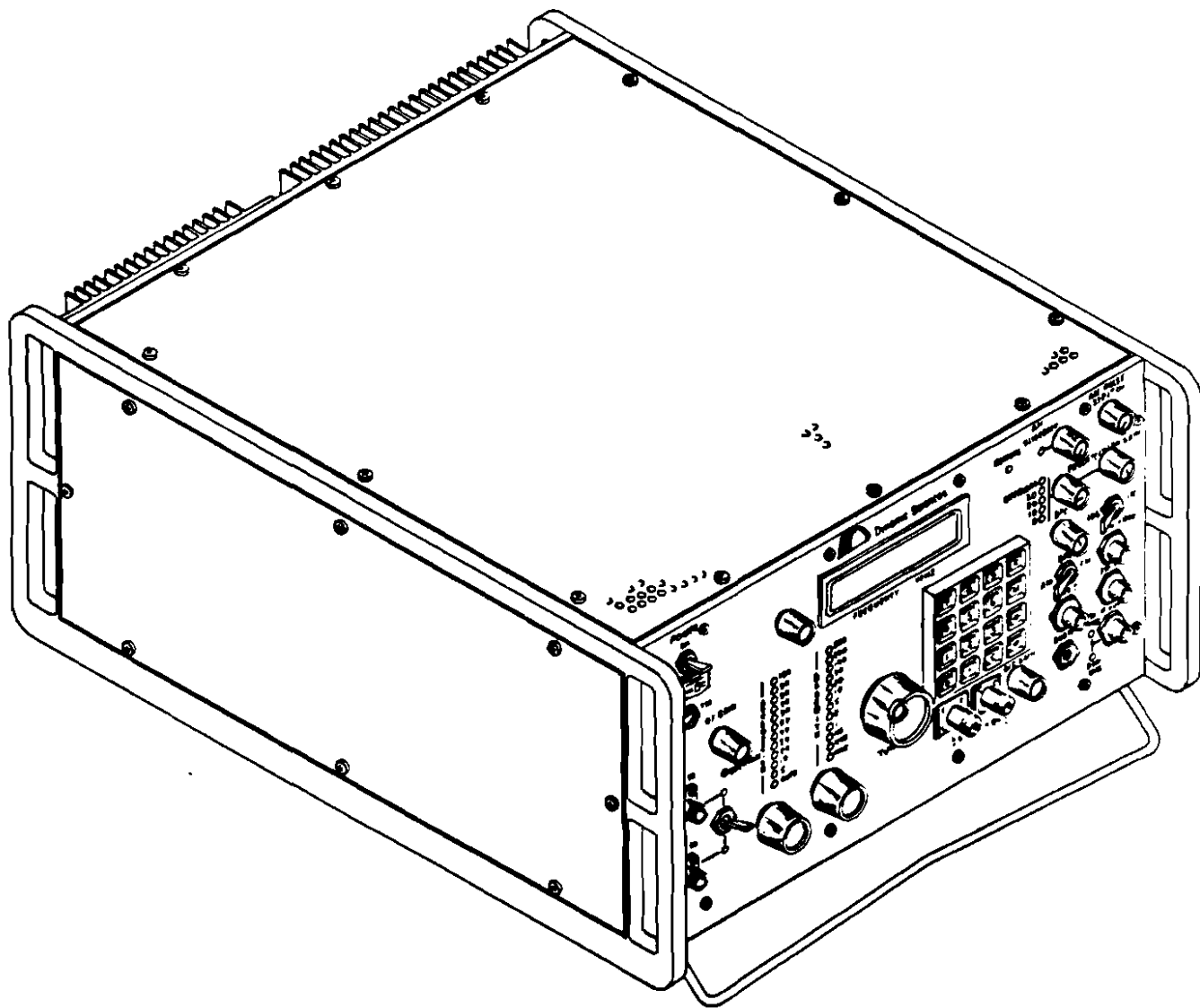
### **1.2 EQUIPMENT FUNCTION**

The model R-1250, as shown in figure 1-1, is a solid-state radio frequency receiver that provides a means of detecting and measuring signals associated with the requirements specified for electromagnetic analysis, TEMPEST, spectrum analysis, and frequency surveillance. The receiver circuits are enclosed in a rugged compact chassis, and process RF signals in the form of a continuous wave (cw) or modulated carriers, both amplitude modulated (AM), and frequency modulated (FM), within the frequency range of 100 Hertz to 1.0 Gigahertz. Two modes of the receiver operation are incorporated into the instrument, a manual mode and a remote mode that uses computer control for tuning and function selection. The design of the model R-1250 receiver meets or exceeds the requirements as outlined in NACSIM specification 5100A.

The R-1250 uses two signal paths: one for low frequency signals from 100 Hz to 250 KHz and a second path for signals above 250 KHz. These paths are designed to optimize performance by reducing noise pick-up and eliminating the affects of ground loops.

### **1.3 EQUIPMENT DESCRIPTION**

The model R-1250 wide range receiver consists of modularly constructed electronic circuits that are contained within a radio frequency shielded enclosure and integrated with a front panel section containing the operator controls and indicators. Input and output connections are provided by dedicated connectors located on the front and back panels of the instrument. Function control signals and interface data used by separately mounted equipment are provided through multi-contact connectors that use distinctive configurations to prevent improper positioning when mated. Two mounting configurations may be used when installing the receiver, a tilt stand bench mount or a rack mount. Physical characteristics for both configurations are listed in table 1-1. Mechanical dimensions are shown in figure 1-2.



**FIGURE 1-1 MODEL R-1250 WIDE RANGE RECEIVER**

**TABLE 1-1**

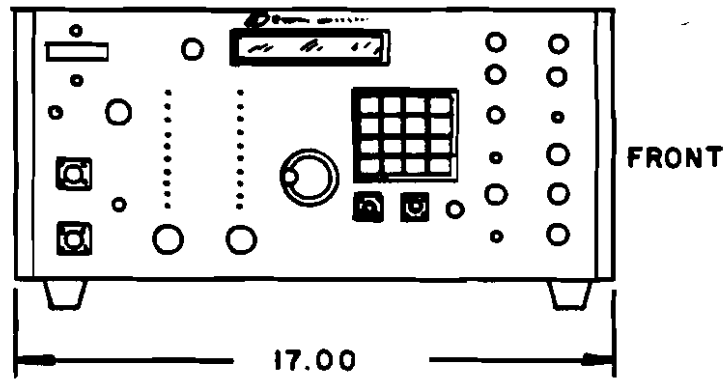
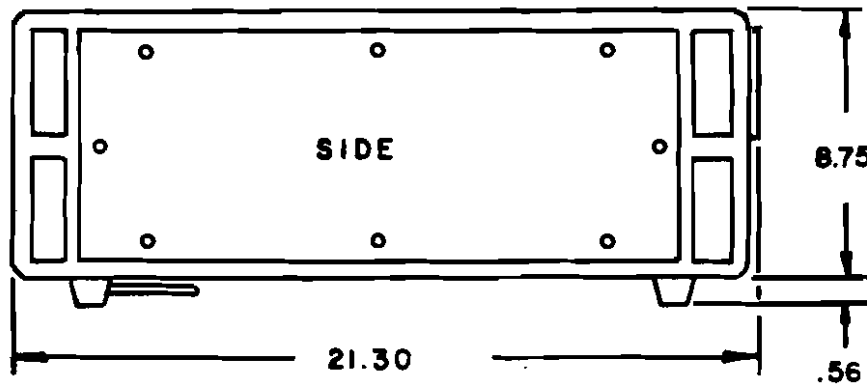
**PHYSICAL CHARACTERISTICS**

<b><u>CHARACTERISTIC</u></b>	<b><u>PARAMETER</u></b>
<b>Dimensions</b>	
Standard Height	8.75 in (222 mm)
Standard Width	17.0 in (432 mm)
Standard Depth	21.3 in (541 mm)
Rack Mount Height	8.75 in (222 mm)
Rack Mount Width	19.0 in (483 mm)
Rack Mount Depth	19.6 in (496 mm)
Weight (with AC Power Module)	86.0 lbs (38.7kg)
Weight (with DC power Module)	75.1 lbs (33.8kg)
<b>TEMPERATURE</b>	
Operating	32 to 95 F (0 to 35 C)
Storage	- 40 to 137 F (- 40 to 75 C)
<b>RELATIVE HUMIDITY</b>	
Operating	0 to 85% non condensing
Storage	0 to 95% non condensing

**1.4 SPECIFICATIONS**

Instrument specifications are listed in table 1-2. The specifications outlined are the performance standards to which the instrument is tested. If variations to specifications have been requested, a notice of engineering change and identification of the variance are included in this document.

STANDARD  
MOUNT



RACK  
MOUNT

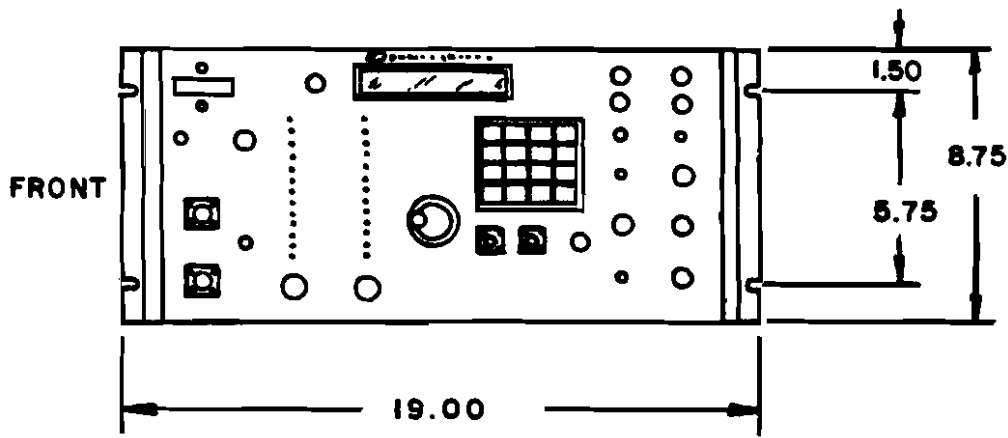
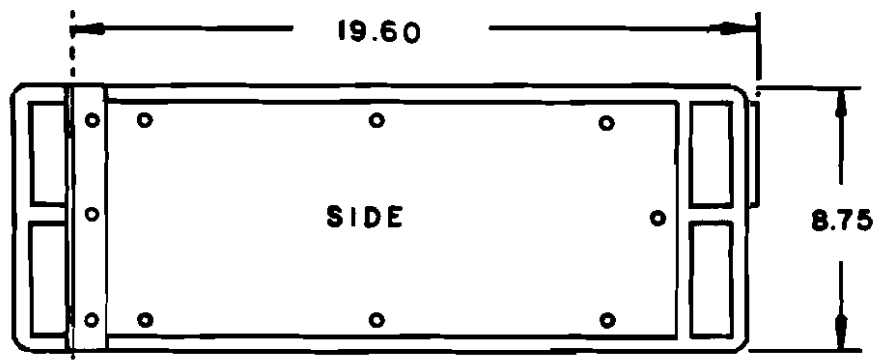


FIGURE 1-2 MECHANICAL DIMENSIONS

**TABLE 1-2  
RECEIVER SPECIFICATIONS**

<b>FREQUENCY RANGE;</b>	<b>100 Hz to 1 GHz</b>
<b>PRESELECTION:</b>	<b>Preselection is accomplished automatically as a function of input frequency using fixed filters.</b>
<b>INPUT VSWR:</b>	<b>2:1 maximum</b>
<b>NOISE FIGURE:</b>	<b>10 dB Nominal, 13 dB Maximum</b>
<b>INPUT IMPEDANCE:</b>	<b>50 ohms nominal at all attenuator settings</b>
<b>TUNING:</b>	<b>Single Knob Tuning with selectable tuning rate.</b>
<b>FREQUENCY DISPLAY:</b>	<b>8 digit LED, adjustable intensity</b>
<b>FREQUENCY RESOLUTION:</b>	<b>0.1 Hz below 250 kHz 1.0 Hz from 250 kHz to 20 MHz 100 Hz above 20 MHz</b>
<b>AUDIO DETECTOR FUNCTIONS;</b>	<b>BFO(CW), FM, AM</b>
<b>VIDEO RECEPTION MODES;</b>	<b>AM, FM (Available Simultaneously)</b>
<b>AGC MODES:</b>	<b>Off, Fast, Slow</b>
<b>SELECTABLE AM VIDEO FUNCTIONS;</b>	<b>Peak, Slideback, Pulse Stretch</b>
<b>AM VIDEO OUTPUT MODES;</b>	<b>Linear, Log</b>
<b>I-F BANDWIDTHS;</b>	<b>18 Bandwidths available, 50 Hz to 20 MHz in 1-2-5 sequence.</b>
<b>I-F SHAPE FACTOR;</b>	<b>Nominal 4:1 (60 to 6 dB)</b>
<b>I-F OUTPUT CENTER FREQUENCIES:</b>	<b>200 kHz and 30 MHz</b>

**TABLE 1-2**  
**RECEIVER SPECIFICATIONS**  
**(continued)**

**INPUT ATTENUATOR:**

Range:	0 to 100 dB in 10 dB steps
Operation:	Manual, auto
Switching Times:	Less than 20 ms.

**MAXIMUM TOLERATED RF INPUT:**

CW (rms): 0.5 watt  
Peak: 1000 watts, 1  $\mu$ s, 1 KHz PRF

**I-F OUTPUT LEVEL;**

+ 18 dBm maximum, into 50 ohms

**VIDEO BANDWIDTH;**

Not less than 1/2 the selected IF BW

**VIDEO OUTPUT IMPEDANCE;**

50 ohms

**VIDEO OUTPUT LEVEL;**

(Into 50 ohms)  
AM: 3.0 Volts P-P  
FM: 1.0 volts P-P

**AUDIO BANDWIDTH;**

100 Hz to 20 KHz, minimum at - 3 dB

**AUDIO GAIN CONTROL RANGE:**

40 dB

**AUDIO OUTPUT LEVEL:**

1.6 volts rms into 8 ohms or more

**IMAGE REJECTION;**

>90 dB

**I-F REJECTION;**

<250 kHz 80 dB Nominal  
>250 kHz 90 dB Nominal

**LO LEAKAGE AT INPUT CONNECTOR;**

<250 kHz less than - 85 dBm Nominal  
>250 kHz less than - 95 dBm Nominal

**INTERMODULATION RATIO FOR  
TWO TONES IN RF PASSBAND:**

2nd Order: 60 dB  
3rd Order <250 kHz: 60 dB  
3rd Order >250 kHz: 75 dB

**TABLE 1-2**  
**RECEIVER SPECIFICATIONS**  
**(continued)**

<b>CW DYNAMIC RANGE:</b>	<b>60 dB</b>
<b>AM DETECTOR DYNAMIC RANGE;</b>	<b>40 dB Nominal</b>
<b>FREQUENCY ACCURACY;</b>	<b>.1 PPM</b>
<b>CLOCK FREQUENCY STABILITY (Aging Rate):</b>	<b>.005 PPM per day</b>
<b>CLOCK FREQUENCY OFFSET VS TEMPERATURE;</b>	<b>.005 PPM 0 to 35 C</b>
<b>OPERATING FREQUENCY STABILITY;</b>	<b>After 10 minutes warm-up stability is nominally equal to clock stability.</b>
<b>REMOTELY CONTROLLABLE FUNCTIONS;</b>	<b>Frequency, IF Bandwidth, RF Attenuator, Detection mode, Predetection Gain, RF Gain, AGC Mode, SIGNAL IN/CALIBRATE IN</b>
<b>INPUT POWER:</b>	<b>AC Power Module 115/230 VAC±10% 50-60 Hz single phase, 150 watts</b>

## **1.5 ANCILLARY EQUIPMENT**

For system configurations, one or more of the ancillary subsystems outlined in the following paragraphs may be integrated with the model R-1250 wide range receiver. Individual items of subsystem equipment are supplied with an appropriate technical document that includes operation and installation procedures.

### **1.5.1 SYSTEM CONTROLLER**

The model R-1160 C is a system controller that provides both manual and automatic control of interface signals to other elements of a signal acquisition and processing system. Digital communication between the system controller and a host computer is implemented with a general purpose IEEE-488 interface bus. In both manual and automatic modes, the control functions of the instrument include multiple antenna input selection and calibration signal generation from built-in impulse generators. Analog-to-digital conversion, combined with peak signal detection and variable rate sample and hold circuitry, encode the video outputs from both the RF receiver and the wide bandwidth adapter.

### **1.5.2 PRESELECTOR**

The model R-1250-30 Preselector provides input filtering that supplements the filter stages contained within the receiver. The preselector is only active when the receiver is tuned to frequencies in the range of 250 kHz to 20 MHz, and automatically selects the appropriate filter.

### **1.5.3 MICROWAVE DOWNCONVERTER**

The model R-1180 microwave downconverter, extends the frequency of the wide range receiver from 1.0 GHz up to 18.0 GHz. The downconverter utilizes multiple conversion techniques using digitally synthesized local oscillators to convert incoming signals into frequencies that are within the range of the receiver. The wide range receiver is slaved to the microwave downconverter to provide automatic tuning to the conversion frequency. Microprocessor circuitry within the downconverter provides control of the instrument functions and status indications.

### **1.5.4 NARROWBAND AUDIO PROCESSOR**

The model R-1150-70 provides a means of searching a spectrum for signals, using simultaneous broadband and narrowband techniques. The audio processor contains an independent IF stage with narrowband characteristics, and an AM detector stage which drives an auxiliary audio output section. The narrowband audio processor allows the scanning of the frequency spectrum using broadband video, while simultaneously listening to narrowband audio.

### **1.5.5 PANORAMIC DISPLAY UNIT**

The model R-1150-40 panoramic display unit provides a visual indication of the RF spectrum. A CRT displays signals up to 10 MHz on either side of the receiver's tuned frequency. Variable sweepwidth provides expansion of the display for wide bandwidth monitoring or analysis of signals using an internal crystal controlled marker generator.

### **1.5.6 PORTABLE ANTENNA KIT**

The model R-1150-10A portable antenna kit contains a variety of antennas, designed to support electric field measurements within the frequency range of 100 Hz through 1.0 GHz in addition to magnetic field measurements from 100 Hz through 10 MHz. The antenna kit includes passive biconical and log-periodic antennas as well as active antennas which connect to a base unit containing preamplifier and filter stages.

### **1.5.7 WIDE BANDWIDTH ADAPTER**

The model R-1250-20A is a wide bandwidth adapter, which adds 50, 100, and 200 MHz bandwidth capability to the receiver. The adapter may be controlled manually using front panel mounted controls, or automatically when interfaced with remote computer control instruments.

## SECTION II INSTALLATION

### 2.1 INTRODUCTION

This section provides installation information for the model R-1250 wide range receiver, and includes interconnection data for integrating the receiver with interface subsystems.

### 2.2 INSPECTION

The instrument is packaged within a specially constructed shipping container, as shown in figure 2-1, that protects the instrument during transit. Each instrument is carefully tested and inspected prior to shipment. When unpacking the unit, inspect the container and the instrument for evidence of shipping damage. If damage is indicated, notify the freight carrier immediately. Check each item, against the packing list or the purchase order, to ensure that all items have been received. Determine that all instrument serial numbers are identical to the numbers shown on the packing list. If portions of the shipment are missing, and are not listed as back ordered items, contact the freight carrier or Dynamic Sciences.

### 2.3 UNPACKING

Retain the shipping container and all packing material for subsequent shipments of the instrument, or when storage is required. When an instrument is returned to the factory, for repair or modification, attach a tag to the instrument indicating service required, serial number, model number, and the complete return address.

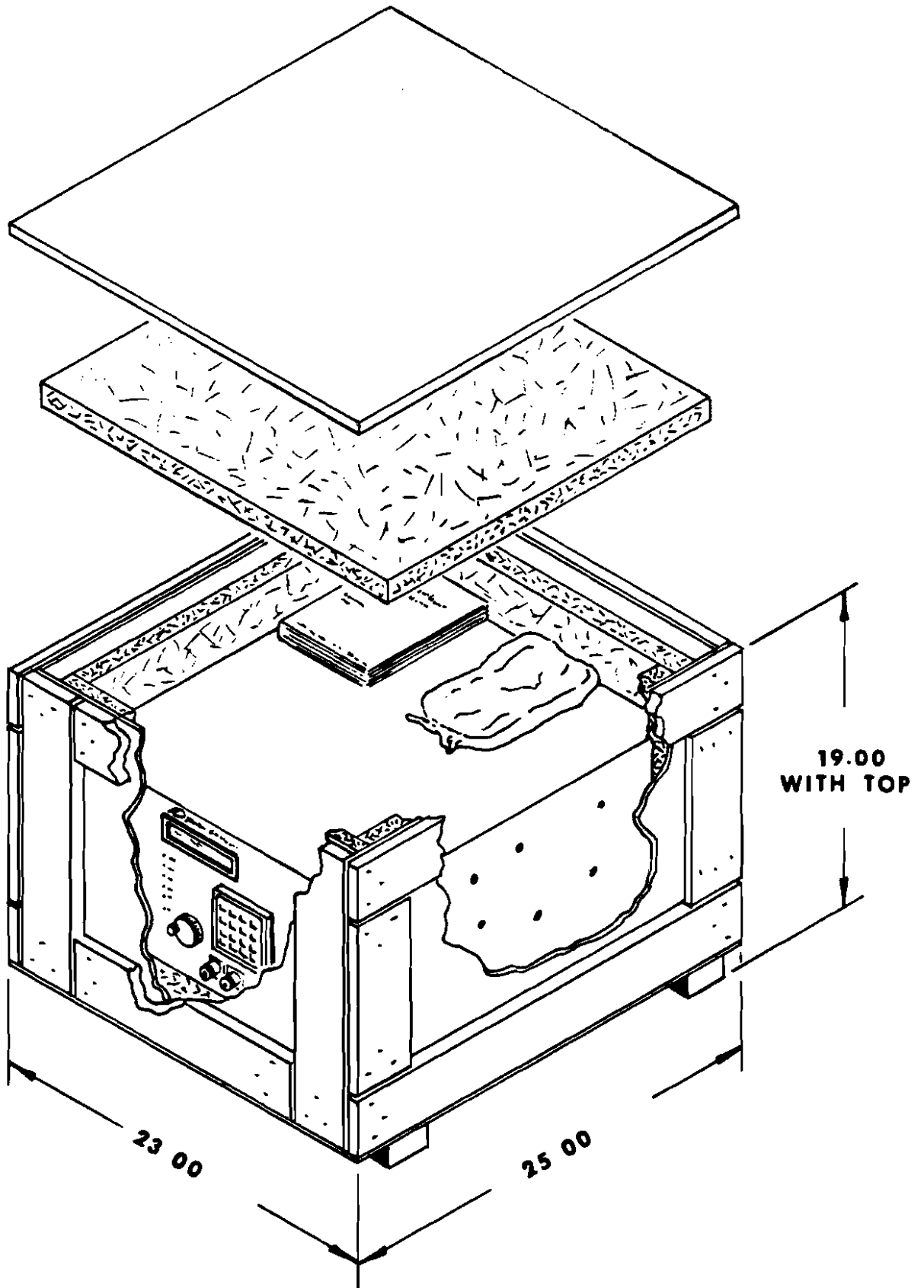
**\*\*\* CAUTION \*\*\***

*Banding material used in packaging is under tension, and may cause injury when released. Use of hand and eye protection devices is recommended.*

**Unpacking Procedure:**

1. Cut and remove banding material from the shipping container.
2. Remove fasteners from the container top cover.
3. Remove the top layer of shock absorbent material.
4. Remove the instrument from the shipping container by lifting straight up.  
Consult specifications for instrument weight.
5. Ensure that accessory packages have been removed.

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**FIGURE 2-1 EQUIPMENT PACKAGING**

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## 2.4 MOUNTING

The unit is designed for either bench operation or rack mounting. When used for bench operation, the instrument has a folding tilt stand attached to the front set of chassis supports. The tilt stand raises the front of the instrument for easier viewing of the control panel. When the instrument is rack mounted, a minimum clearance of 1.5 inches above the and below the instrument is required to ensure adequate free air movement. When used in a system configuration, the location of the receiver and any associated subsystems are not specified, and should be determined by the user.

## 2.5 CONNECTION

All signals interface with the receiver through connectors that are located on the front and back panels of the instrument. Table 2-1 identifies the receiver connectors. The instrument is shipped from the factory preset to operate from a power source of 115 volts 50 or 60 hertz, single phase. For operation from other voltage ranges, select the proper fuse rating from table 2-2, and proceed as follows:

- a. Move the voltage slide select switch located on the rear panel of the instrument to the proper position.
- b. Select and install the proper line fuses for the input voltage to be used.
- c. Set the line voltage range switch to the required position.

<u>Select Switch</u>	<u>Range Switch</u>	<u>Input Voltage Range</u>
115 V	Low	95-105 VAC
115 V	Norm	105-115 VAC
115 V	High	115-126 VAC
230 V	Low	190-210 VAC
230 V	Norm	210-231 VAC
230 V	High	231-253 VAC

**TABLE 2-1**  
**CONNECTOR IDENTIFICATION**

<b>IDENTIFIER</b>	<b>NOMENCLATURE</b>
<b><u>Front Panel</u></b>	
Signal In	Type N, female conn.
Calibrate In	Type N, female conn.
Signal In (Low Freq)	Type N, female conn.
Calibrate In (Low Freq)	Type N, female conn.
AM Video	BNC, female conn.
FM Video	BNC, female conn.
IF Out	BNC, female conn.
Audio	BNC, female conn.
Audio	Phone plug, female 2 conn.
<b><u>Rear Panel</u></b>	
IF Out	SMA, female conn.
Audio	SMA, female conn.
1470MHz	Type N, female conn.
J121	Female conn. 24 contact, 2rows, IEEE STD 488
J122	Female conn. 36 contact, 2rows, Amphenol 57-20360-2

**TABLE 2-2**  
**FUSE SELECTION**

<b>VOLTAGE</b>	<b>FUSE RATING</b>
<b><u>AC Input</u></b>	
115 V Range	4 AMP, 3AG slo-blo, Little-Fuse 311004
230 V Range	1.5 AMP, 3AG slo-blo, Little-Fuse 31301.5
<b><u>DC Output</u></b>	
+20vdc	3 AMP, 3AG Little-Fuse 312003
-20vdc	3 AMP, 3AG Little-Fuse 312003
+10vdc	10 AMP, 3AG Little-Fuse 311010
+50vdc	1/8 AMP, 3AG slo-blo, Little-Fuse 313.125

**2.5 CONNECTION (cont.)**

For operation from an AC Source, the instrument has a 3 conductor power cable which, when connected to an appropriate receptacle, grounds the instrument chassis for safety.

**\*\*\* WARNING \*\*\***

*The AC power cable should only be connected to receptacles that have active protected earth ground contacts. Bypassing or defeating the earth ground protection can result in injury to operating personnel.*

## **2.6 DATA INTERFACE**

Pin numbers and signal identification for the IEEE-488 bus interface connector, J121, are listed in Table 2-3. The status and control signal identification, used to interface optional equipment, is listed in Table 2-4.

The following paragraphs identify the addresses which control the programmable functions of the R-1250 receiver. A summary of the function codes is shown in table 2-5 that lists the individual driver codes and the associated control function.

### **2.6.1 PREDETECTION GAIN**

<b><u>INPUT</u></b>	<b><u>RESPONSE</u></b>
P0	0dB
P1	10dB
P2	20dB
P3	30dB
P4 through ?	Not Used

### **2.6.2 ATTENUATION**

<b><u>INPUT</u></b>	<b><u>RESPONSE</u></b>
A0	0dB
A1	10dB
A2	20dB
A3	30dB
A4	40dB
A5	50dB
A6	60dB
A7	70dB
A8	80dB
A9	90dB
A:	100dB
A; through A?	Not Used

### **2.6.3 BANDWIDTH CONTROL**

Bandwidth control is accomplished by a 5 bit control word consisting of four characters. The "C" driver code followed by a single character controls the most significant bit and the "B" driver code followed by a single character controls the four least significant bits.

<b><u>INPUT</u></b>	<b><u>RESPONSE</u></b>
<b>C1B1</b>	<b>20 MHz</b>
<b>C1B0</b>	<b>10 MHz</b>
<b>COB?</b>	<b>5 MHz</b>
<b>COB&gt;</b>	<b>2 MHz</b>
<b>COB=</b>	<b>1 MHz</b>
<b>COB&lt;</b>	<b>500 KHz</b>
<b>COB;</b>	<b>200 KHz</b>
<b>COB:</b>	<b>100 KHz</b>
<b>COB9</b>	<b>50 KHz</b>
<b>COB8</b>	<b>20 KHz</b>
<b>COB7</b>	<b>10 KHz</b>
<b>COB6</b>	<b>5 KHz</b>
<b>COB5</b>	<b>2 KHz</b>
<b>COB4</b>	<b>1 KHz</b>
<b>COB3</b>	<b>500 Hz</b>
<b>COB2</b>	<b>200 Hz</b>
<b>COB1</b>	<b>100 Hz</b>
<b>COB0</b>	<b>50 Hz</b>

## 2.6.4 FREQUENCY CONTROL

Frequency selection is controlled by a variable length character string with a maximum of 11 characters, eight numeric digits and a decimal point preceded by the driver code "F" and terminated by the character "/". The following are examples of frequency control inputs.

<u>INPUT</u>	<u>RCVR DISPLAY (MHz)</u>	<u>FREQUENCY</u>
F.000100/	00.0001000	100 Hz
F.0001001/	00.0001001	100.1 Hz
F.2499999/	00.2499999	249.9999 KHz
F.250000/	00.2500000	250.000 KHz
F.10.01/	10.0100000	10.01 MHz
F.20.0001/	20.0001000	20.0001 MHz

## 2.6.5 RF GAIN

Gain is controlled by a four character word that is converted to an analog voltage by a D-to-A converter. The driver code "H" followed by a single character controls the 4 most significant bits to the D/A and the driver code "G" followed by a single character controls the 4 least significant bits.

<u>INPUT</u>	<u>RESPONSE</u>
H0G0	MAXIMUM RF GAIN (50dB)
H0G1	50dB- (50/256) ~ 49.8 dB
H0G?	50dB- (128/256) ~ 25.0 dB
H?G,	0dB- (50/256)C ~ 0.2 dB
H?G?	MINIMUM RF GAIN (0dB)

## 2.6.6 AGC/LOG/LIN

The AGC modes (FAST,SLOW,OFF) and the selection of either logarithmic or linear response are controlled by variations of the driver code "M" followed by a single character. Specific input codes are shown as not used, and are reserved to control functions related to microwave downconversion when the receiver is used in a system configuration.

<u>INPUT</u>	<u>LOG/LIN RESPONSE</u>	<u>AGC MODE</u>
M7	LINEAR	OFF
M6	LOG	OFF
M5	LINEAR	SLOW
M4	LOG	SLOW
M3	LINEAR	FAST
M2	LOG	FAST
M1	NOT USED	
M0	NOT USED	

**TABLE 2-3**  
**IEEE-488 INTERFACE BUS**

<b>Pin No.</b>	<b>Signal</b>	<b>Pin No.</b>	<b>Signal</b>
1	DI01	13	DI05
2	DI02	14	DI06
3	DI03	15	DI07
4	DI04	16	DI08
5	EOI	17	REN
6	DAV	18	GND (6)
7	NRFP	19	GND (7)
8	NDAC	20	GND (8)
9	IFC	21	GND (9)
10	SRQ	22	GND (10)
11	ATN	23	GND (11)
12	SHIELD	24	GND (LOGIC)

**NOTE: Numbers in parenthesis identify the signal line associated with the indicated ground.**

**TABLE 2-4**  
**STATUS/CONTROL SIGNALS**

<b><u>J122 Pin No.</u></b>	<b><u>Signal Name</u></b>	<b><u>Signal Identification</u></b>
1	DETOL	Detector overload
2	RFOL	RF Overload
3	LSTAT	Phase Lock Status
4	PRE 01	PRESELECTOR BIT 1
5	PRE 02	PRESELECTOR BIT 2
6	PRE 03	PRESELECTOR BIT 3
7	PRE 04	PRESELECTOR BIT 4
17	WBACL	Wide BW IF Transfer Control
18	CSA	Audio Select
19	GND	Signal Ground

**TABLE 2-5**  
**IEEE FUNCTION CODES**

<b>HEX</b>	<b>ASCII*</b>	<b>ASCII FUNCTION CODE*</b>	<b>FUNCTION</b>
0	0	P	PREDETECTION GAIN
1	1	A	ATTENUATION
2	2	B	BANDWIDTH LSB
3	3	C	BANDWIDTH MSB
4	4	-	(SPARE)
5	5	-	(SPARE)
6	6	F	FREQUENCY
7	7	G	RF GAIN LSB
8	8	H	RF GAIN MSB
9	9	-	(SPARE)
A	:	-	(SPARE)
B	;	-	(SPARE)
C	<	-	(SPARE)
D	=	M	AGC/LOG/LIN
E	>	-	(SPARE)
F	?	-	(SPARE)

\* Hex equivalent is the lower 4 bits of the ASCII character

## **SECTION III OPERATION**

### **3.1 INTRODUCTION**

This section describes the location and function of the instrument controls, indicators, and signal connectors. Figure 3-1 is a front view of the receiver with numerical designators that are referenced to the identification list of table 3-1. Figure 3-2 provides a back view of the instrument and is referenced to the nomenclature listed in table 3-2. Text regarding initialization and operation of the receiver will refer to a control or indicator by the listed nomenclature followed by the reference designator.

### **3.2 FUNCTION IDENTIFICATION**

The following provides an explanation of function and purpose for each designated item located on the front and back panels of the receiver.

<b>POWER SWITCH:</b>	Two position toggle switch that controls the input power to the receiver.
<b>SIGNAL INDICATOR:</b>	Provides a visual display of either AM signal relative strength or FM signal, center tuning.
<b>AM/FM SWITCH:</b>	Two position toggle switch that selects the signal for display on the Signal Indicator.
<b>AGC SWITCH:</b>	Three position toggle switch for selection of automatic gain control modes.
<b>RF GAIN CONTROL:</b>	Provides manual variation of receiver gain.
<b>RF OVERLOAD INDICATOR:</b>	Light emitting diode that illuminates to indicate an RF overload.
<b>SIGNAL IN CONNECTOR:</b>	Type N jack for RF input signals above 250 KHz.
<b>SIGNAL IN INDICATOR:</b>	Light emitting diode (LED) that illuminates when the Signal In connectors are selected.
<b>INPUT SELECT SWITCH:</b>	Two position toggle switch for selection of Signal or Calibrate connectors.
<b>CALIBRATE IN INDICATOR:</b>	Light emitting diode that illuminates when the Calibrate In connectors are selected.
<b>CALIBRATE IN CONNECTOR:</b>	Type N jack for calibration signals above 250 KHz.

### **3.2 FUNCTION IDENTIFICATION (cont.)**

<b>ATTENUATION INDICATORS:</b>	Twelve LEDs which individually illuminate to indicate the switch selected attenuation level.
<b>ATTENUATION SWITCH:</b>	Multi-position rotary switch that selects the input signal attenuation level.
<b>BANDWIDTH INDICATORS:</b>	Twelve LED's that illuminate in selected combinations to indicate bandwidth.
<b>BANDWIDTH SWITCH:</b>	Multi-position rotary switch that selects bandwidth.
<b>TUNING CONTROL:</b>	Provides manual tuning over the entire receiver frequency range.
<b>ENTRY KEYPAD:</b>	Key pad switches, used to enter frequency, decimal point, and tuning resolution.
<b>AUDIO GAIN CONTROL:</b>	Provides manual variation of audio output level.
<b>AUDIO OUTPUT JACK:</b>	Two conductor female phone jack for connection of headset or speaker.
<b>200 KHz IF INDICATOR:</b>	LED that illuminates when the 200 KHz IF is selected.
<b>IF OUT CONNECTOR:</b>	BNC Jack for connection of output signal from selected IF.
<b>30 MHz IF INDICATOR:</b>	LED that illuminates when the 30 MHz IF is selected.
<b>FM VIDEO CONNECTOR:</b>	BNC Jack for connection of detected FM video output signal.
<b>AUDIO OUTPUT JACK:</b>	BNC Jack for connection of detected audio output signal.
<b>MODE SWITCH:</b>	Three position toggle switch that selects the audio mode.
<b>AM VIDEO CONNECTOR:</b>	BNC Jack for connection of detected AM video output signal.
<b>LOG/LINEAR SWITCH:</b>	Two position toggle switch for selection of logarithmic or linear AM video detector response.

## **3.2 FUNCTION IDENTIFICATION (cont.)**

<b>BFO CONTROL:</b>	Provides manual tuning of the 200 KHz IF beat frequency oscillator.
<b>PRED. GAIN INDICATORS:</b>	LED's that individually illuminate to indicate selected gain levels.
<b>IF OVERLOAD INDICATOR:</b>	LED that illuminates to indicate an IF overload condition.
<b>PREDETECTION GAIN CONTROL:</b>	Provides manual variation of the predetection gain level.
<b>PREDETECTION GAIN SWITCH:</b>	Multi-Position switch that selects predetection gain levels in 10 dB steps.
<b>AM PULSE STRETCH CONTROL:</b>	Provides manual variation of pulse width output from the AM video detector.
<b>AM SLIDEBACK CONTROL:</b>	Provides manual variation of AM threshold level used to indicate the peak value of the detected AM video.
<b>SLIDEBACK INDICATOR:</b>	LED that illuminates when the peak value of the detected AM video is equal to or above the threshold setting of the AM slideback control.
<b>REMOTE INDICATOR:</b>	LED that illuminates when receiver functions are under automatic control from data over the IEEE-488 interface.
<b>FREQUENCY INDICATOR:</b>	Eight digit display that provides visual indication of receiver tuned frequency.
<b>DISPLAY INTENSITY CONTROL:</b>	Provides manual variation of frequency indicator.
<b>CAL IN (LOW FREQ) CONNECTOR:</b>	Type N jack for calibration signals up to 250 KHz.
<b>SIG IN (LOW FREQ) CONNECTOR:</b>	Type N jack for RF signals up to 250 KHz.

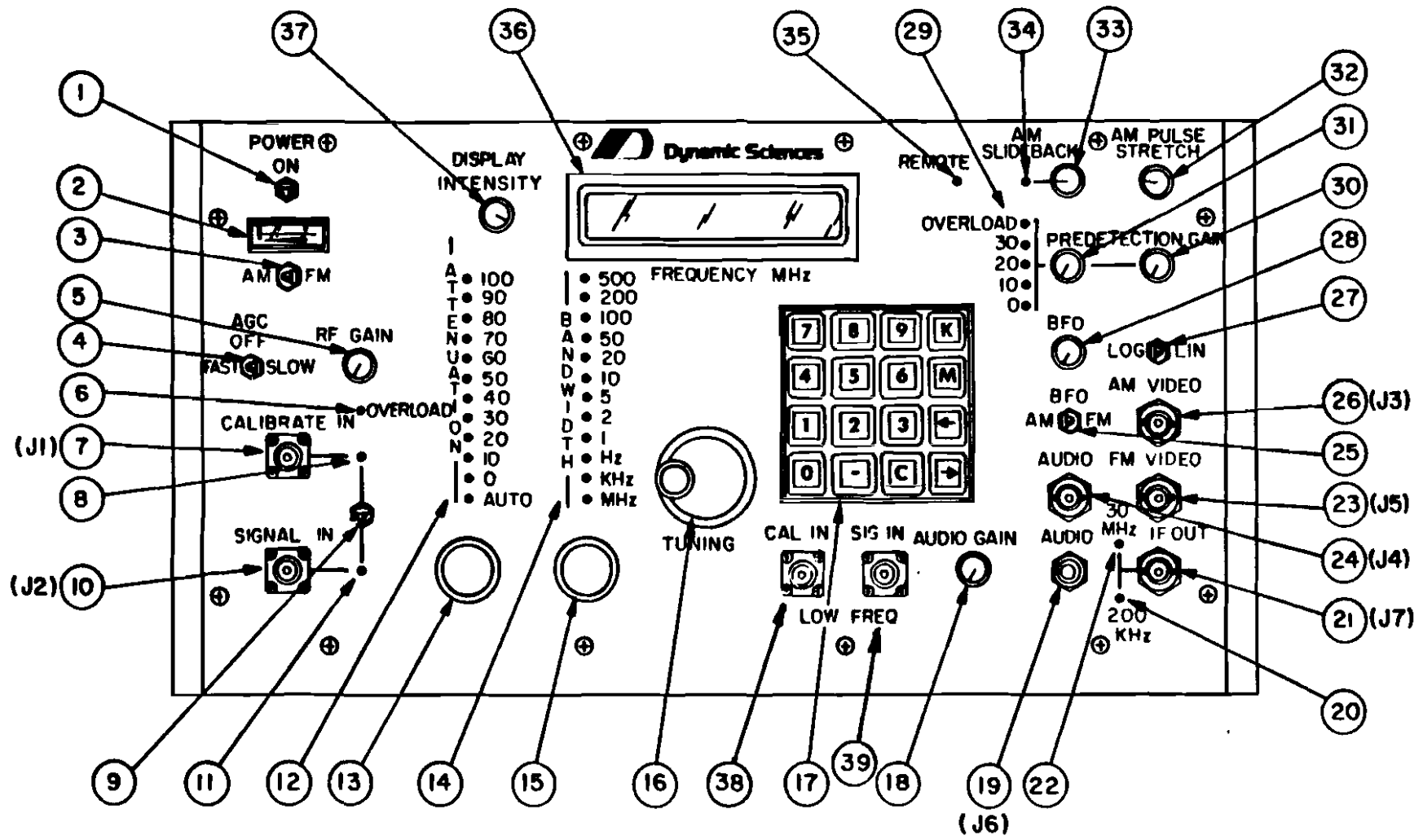
### **REAR PANEL:**

<b>REGULATOR INDICATORS:</b>	Seven light emitting diodes that indicate power supply regulator operation.
<b>IF OUT CONNECTOR:</b>	SMA Jack for the connection of the 30 MHz IF output signal.
<b>AUDIO CONNECTOR:</b>	SMA Jack for the connection of detected audio output signals.

## **3.2 FUNCTION IDENTIFICATION (cont.)**

- INTERFACE BUS CONNECTOR:** Double row, 24 contact connector used to interface input/output IEEE-488 data.
- STATUS/CONTROL CONNECTOR:** Double row, 36 contact connector used to interface status and control data between subsystems.
- 1470 MHz OUTPUT CONNECTOR:** Type N Jack for the connection of the 1470 MHz output signal.
- LINE VOLTAGE RANGE SWITCH :** Three position rotary switch used to select the range of AC input voltage.
- LINE VOLTAGE SELECT SWITCH:** Two position slide switch used to select either 115V or 230V input AC power.

FIGURE 3-1 FRONT PANEL NOMENCLATURE LOCATION



**TABLE 3-1**  
**FRONT PANEL NOMENCLATURE**

<b>Location</b>	<b>Identification</b>	<b>Location</b>	<b>Identification</b>
1	Power switch	20	200KHz IF indicator
2	Signal indicator	21	IF out connector
3	AM/FM switch	22	30 MHz IF indicator
4	AGC switch	23	FM video connector
5	RF Gain control	24	Audio output jack
6	RF Overload indicator	25	Mode switch
7	Calibrate in connector (Hi-Freq)	26	AM Video connector
8	Calibrate In indicator	27	Log/linear switch
9	Input select switch	28	BFO control
10	Signal in connector (Hi-Freq)	29	Pred. Gain and IF overload
11	Signal in indicator	30	Predetection gain control
12	Attenuation indicators	31	Predetection gain switch
13	Attenuation switch	32	AM Pulse stretch control
14	Bandwidth indicators	33	AM slideback control
15	Bandwidth switch	34	Slideback indicator
16	Tuning control	35	Remote indicator
17	Entry Key Pad	36	Frequency indicator
18	Audio Gain control	37	Display intensity control
19	Audio Output jack	38	Calibrate In Connector (Low Freq)
		39	Signal In Connector (Low Freq)

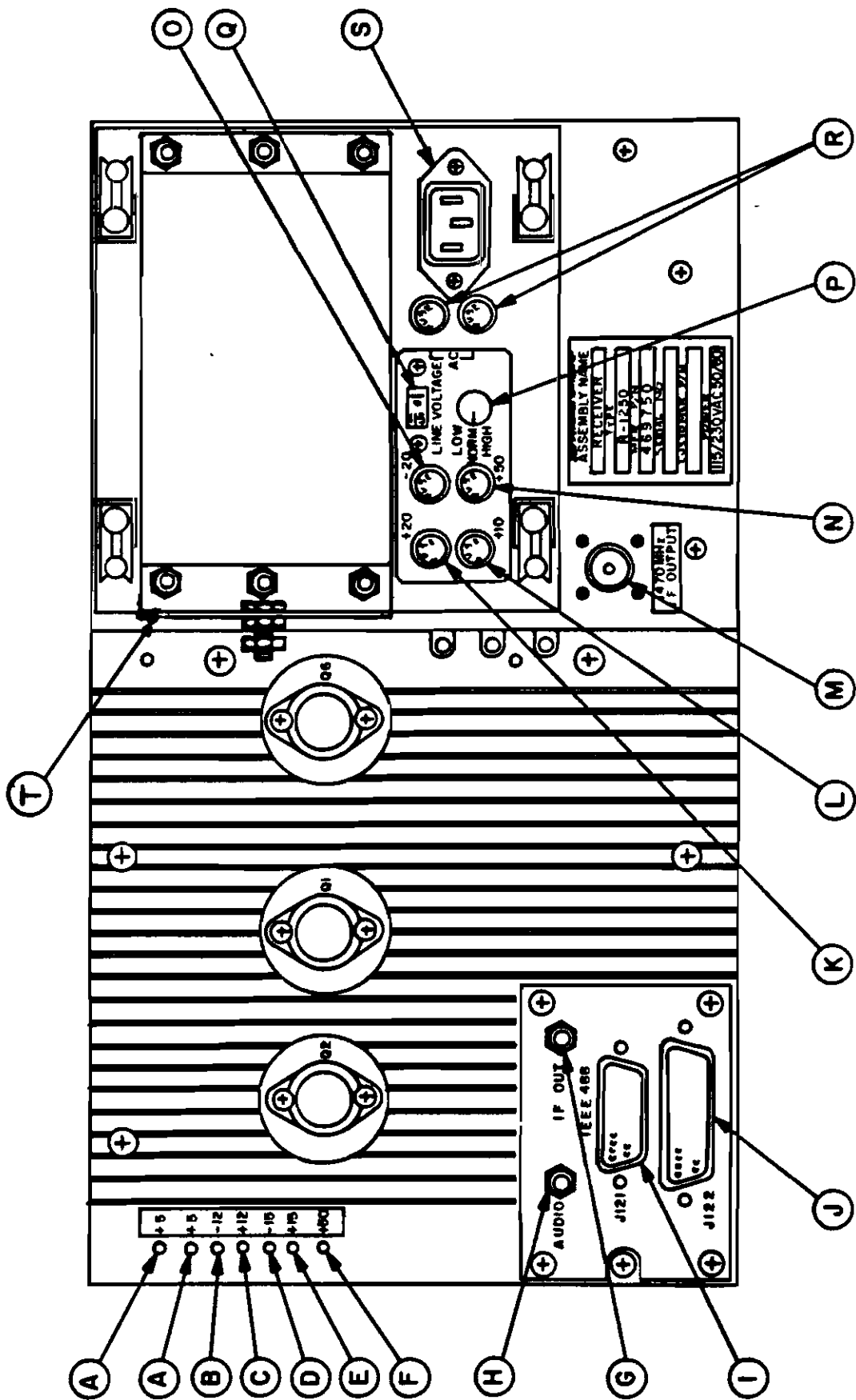


FIGURE 3-2 BACK PANEL NOMENCLATURE LOCATION

**TABLE 3-2**  
**BACK PANEL NOMENCLATURE**

<b>Location</b>	<b>Identification</b>	<b>Location</b>	<b>Identification</b>
<b>A</b>	<b>+5VDC indicators</b>	<b>K</b>	<b>+20VDC fuse</b>
<b>B</b>	<b>-12VDC indicator</b>	<b>L</b>	<b>+10VDC fuse</b>
<b>C</b>	<b>+12VDC indicator</b>	<b>M</b>	<b>1470 MHz IF out connector</b>
<b>D</b>	<b>-15VDC indicator</b>	<b>N</b>	<b>+50VDC fuse</b>
<b>E</b>	<b>+15VDC indicator</b>	<b>O</b>	<b>-20VDC fuse</b>
<b>F</b>	<b>+50VDC indicator</b>	<b>P</b>	<b>Line voltage range switch</b>
<b>G</b>	<b>IF out connector (with pad)</b>	<b>Q</b>	<b>Line voltage select switch</b>
<b>H</b>	<b>Audio out connector</b>	<b>R</b>	<b>AC input fuses</b>
<b>I</b>	<b>Interface bus connector</b>	<b>S</b>	<b>AC input connector</b>
<b>J</b>	<b>Status/control connector</b>	<b>T</b>	<b>Ground Strap</b>

### **3.3 INITIALIZATION**

Before applying power to the receiver, ensure that the line voltage selection switches, located on the rear panel, are set for the line voltage to be used.

Verify that a 50 ohm pad is connected to the IF out SMA connector on the rear panel.

Connect the appropriate 50 ohm impedance input device to the Signal In (7) connector. A signal generator may be connected to the Calibrate In (10) connector for signal substitution and comparison. Place the Input Select switch (9) to the desired signal source. Connect any external signal monitoring or interface subsystems to the appropriate connection points.

Set the following controls to the position required for the type of signal to be received.

Place the Power switch (1) to the on position.

Place the AM/FM switch (3) to the required position for display on the signal indicator (2). Select the AGC mode (4), and adjust the RF Gain (5) until the overload indicator (6) is extinguished.

**\*\*\* NOTE \*\*\***

*When either fast or slow AGC modes are selected, position the RF Gain (5) control to the full clockwise position.*

Select the desired attenuator setting (13) for either the Auto Mode, or any setting from 0 to 100 dB. The appropriate indicator will illuminate as each attenuator setting is selected.

Using the keyboard shown in figure 3-3, and the identifier listed in table 3-3, enter the frequency to be received by pressing the proper keys (1) in sequence, and entering the decimal point (2) , until the desired frequency is displayed. Errors in values entered may be canceled by pressing the clear key (3) which will clear the entire entry and the display will indicate any previously entered value. Enter the final designator by pressing the desired terminator key, K (7) for kilohertz, or M (6) for megahertz.

**\*\*\* NOTE \*\*\***

*The displayed value is always shown in MHz. For example, a frequency entry of 1, followed by pressing the K terminator will result in a displayed value of 0.0010000MHz.*

### 3.3 INITIALIZATION(continued)

Coarse or fine tuning may now be performed, using the tuning control (16). Resolution selection is determined by the shift left (5), or the shift right (4) key entries.

Select the bandwidth (15) for the signal to be received. The bandwidth indicators (14) will illuminate to display the selected setting. The IF output frequencies of either 200 KHz or 30 MHz will be automatically selected according to the setting of the bandwidth switch, and will illuminate the appropriate LED indicator that shows the signal available at the IF out (21) jack.

**\*\*\* NOTE \*\*\***

*When flashing of the bandwidth LED indicators occurs, it indicates that an out of range bandwidth value has been selected. For instance, if the receiver is tuned to 10 MHz, the maximum bandwidth which can be used is 5MHz; if a larger bandwidth is selected the indicators will flash.*

Select the desired mode, with the mode select switch (25).

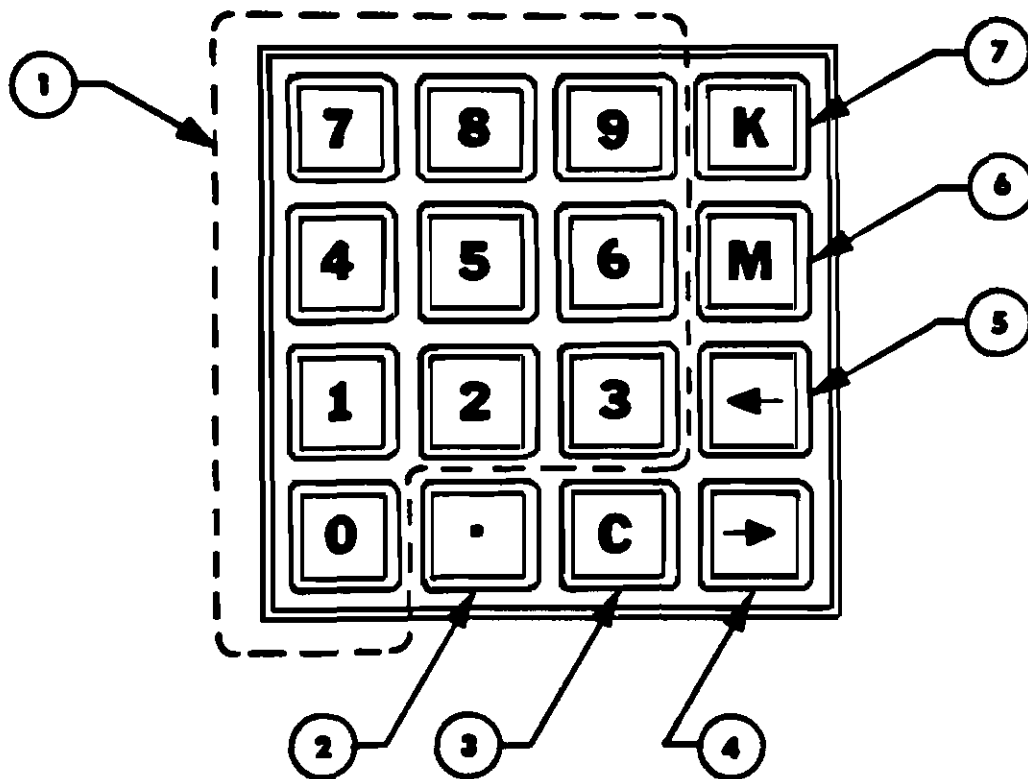
For reception of AM signals, the predetection gain switch (31) should be set to the desired gain in dB, and the predetection gain control (30) should be adjusted to provide optimum dynamic range without an overload indication (29).

For reception of CW signals, a variable beat frequency oscillator signal is available when the 200 KHz IF has been selected, and may be adjusted  $\pm 1$ KHz by use of the BFO control (28).

**\*\*\* NOTE \*\*\***

*When using the AM mode, the AM slideback control (33) may be used to establish the peak value of the input signal, thus providing a reference point for comparison against an external standard. Adjust the AM slideback control (33) until the reference indicator (34) is just extinguished, then apply an external calibration source and adjust its signal level until the reference indicator (34) is just extinguished. The external calibration signal is now equivalent to the receiver input signal.*

Select the AM video response desired, either linear or logarithmic (27).



**FIGURE 3-3 KEY PAD NOMENCLATURE LOCATION**

**TABLE 3-3**  
**KEYPAD NOMENCLATURE**

<b>Location</b>		<b>Function</b>
1	<b>Numeric Keys:</b>	used to enter individual numbers
2	<b>Decimal Point Key:</b>	used to establish a decimal value
3	<b>Clear Key:</b>	used to clear the value being entered
4	<b>Shift Right Key:</b>	changes the tuning resolution by selecting one of five digits which individually flash to indicate the selected tuning digit
5	<b>Shift Left Key:</b>	changes the tuning resolution by selecting one of five digits which individually flash to indicate the selected tuning digit
6	<b>Megahertz Key:</b>	termination designator for the entered frequency
7	<b>Kilohertz Key:</b>	termination designator for the entered frequency

### **3.4 FAULT INDICATIONS**

The power supply voltage indicators located on the back panel of the instrument are normally illuminated when the instrument is operating. If an abnormal function is observed, determine that all LED indicators are illuminated. If any of the indicators, but not all of them are extinguished, check the fuse associated with the voltage source indicated. If all indicators are extinguished, check the power source to the instrument and the AC line fuses.

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## **SECTION IV THEORY OF OPERATION**

### **4.1 INTRODUCTION**

The model R-1250 is a wide range superheterodyne surveillance receiver that is continuously tunable, covering the range of 100Hz to 1GHz in 8 bands. The receiver detects RF signals in the form of continuous wave (CW) or modulated carriers, both amplitude (AM) and frequency modulated (FM).

The simplified block diagram of figure 4-1 shows the use of three conversion sections that divide the input range into specific frequency bands. The conversion sections contain the preselection filters and the mixer circuits used to heterodyne the tuned input signal to an intermediate frequency. Two intermediate frequencies are used to provide a full range of selectable bandwidths. The output from the selected IF section is routed to the appropriate detector/discriminator which provides the audio and video output signal.

The receiver utilizes precision phase locked loop synthesizer circuits to create the required local oscillator signals, thus providing accurate frequency control and high resolution.

Digital circuits within the receiver provide timing and control of the various functions and displays that originate from front panel switch selection or the automatic control function provided by the IEEE-488 General Purpose Interface Bus.

Direct current operating voltages used by the various circuits are derived from the power section of the receiver which converts the input power into eight individually regulated DC voltages.

### **4.2 FUNCTIONAL DESCRIPTION**

The block diagram in figure 4-2 is detailed to show the heterodyne stages and the local oscillator (LO) values used to derive the two intermediate frequencies. The conversion stages cover the tuning range of the receiver in eight individual bands as shown in table 4-1. Input signals to the receiver are applied to a programmable step attenuator and then routed to the appropriate conversion stage by automatic band selection relays. The RF section is used for converting the frequencies within bands 3 through 8. This section used three individual heterodyne stages to produce two separate output frequencies.

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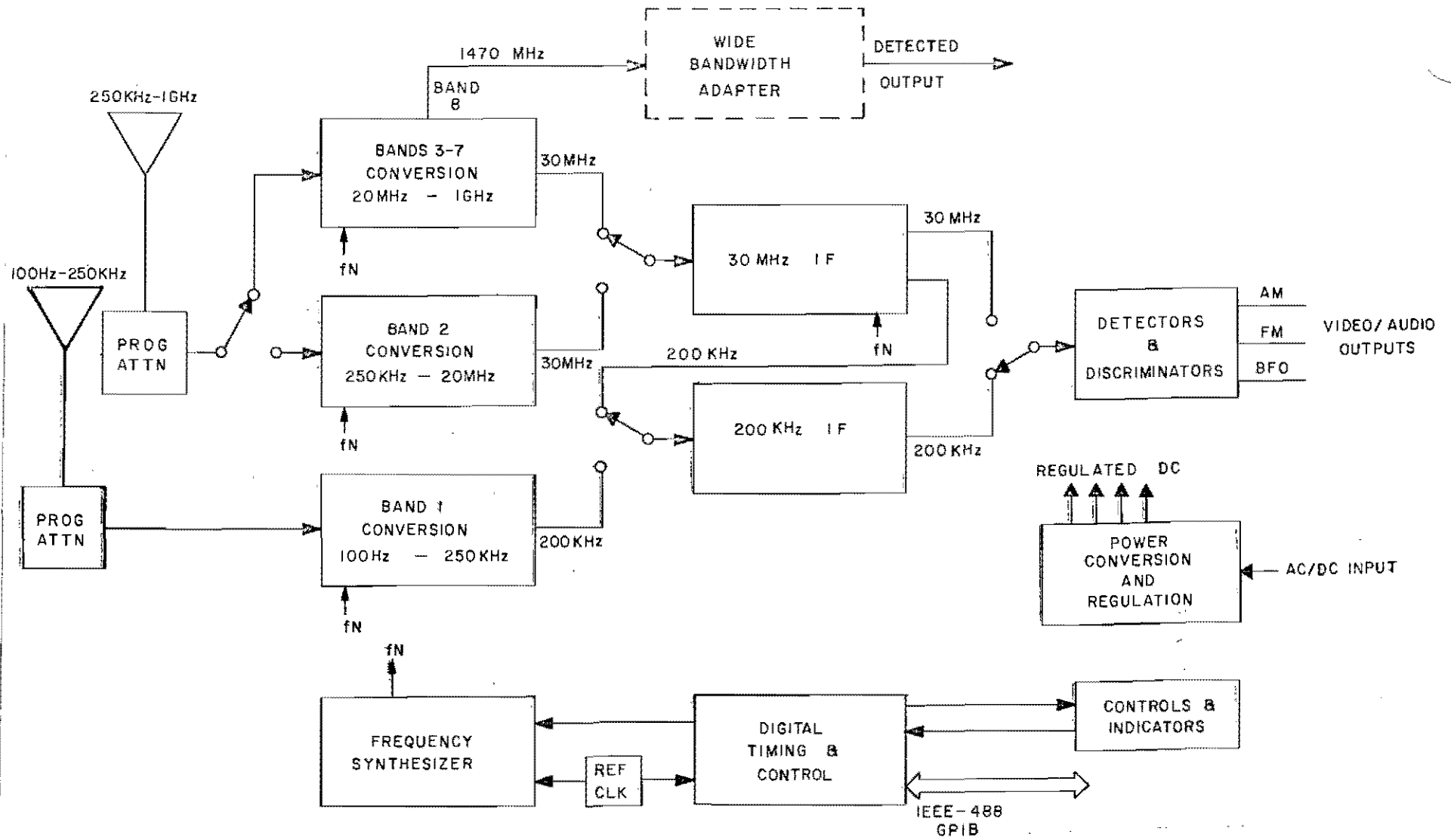


FIGURE 4-1 SIMPLIFIED BLOCK DIAGRAM  
4-3/4-4

**TABLE 4-1**  
**FREQUENCY BANDS**

<b>BAND 1</b>	<b>100 Hz to 250 KHz</b>	<b>BAND 5</b>	<b>350 MHz to 550 MHz</b>
<b>BAND 2</b>	<b>250 KHz to 20 MHz</b>	<b>BAND 6</b>	<b>550 MHz to 750 MHz</b>
<b>BAND 3</b>	<b>20 MHz to 200 MHz</b>	<b>BAND 7</b>	<b>750 MHz to 1 GHz</b>
<b>BAND 4</b>	<b>200 MHz to 350 MHz</b>	<b>BAND 8</b>	<b>20 MHz to 1 GHz</b>

**NOTE: Band 8 is only used when the Wide Bandwidth Adapter is integrated with the receiver.**

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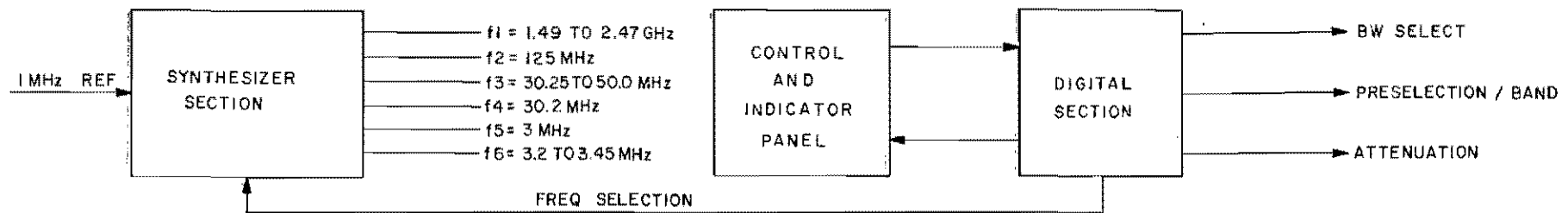
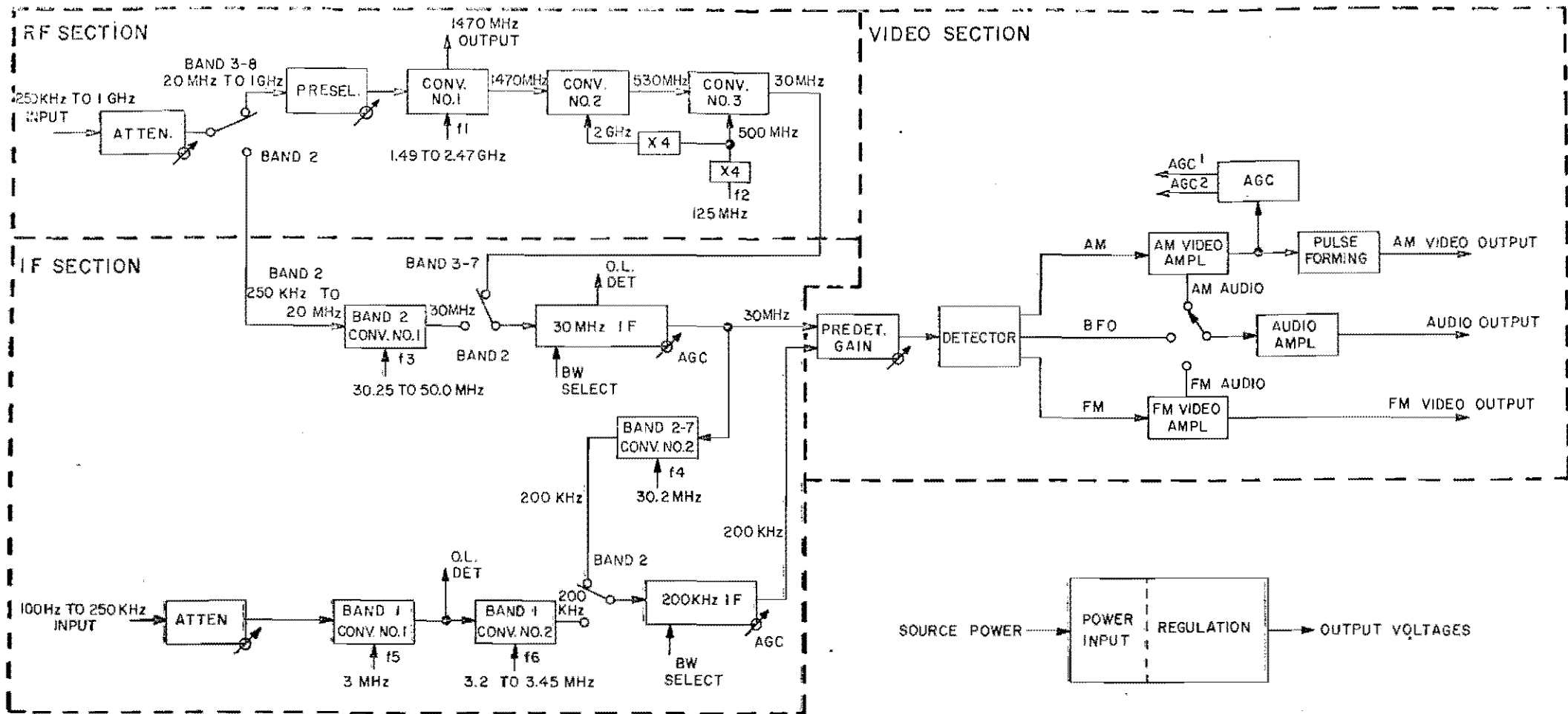


FIGURE 4-2 SIGNAL CONVERSION DIAGRAM  
4-7/4-8

## **4.2 FUNCTIONAL DESCRIPTION(continued)**

The first conversion stage produces a difference frequency of 1470 MHz. This first conversion product is directed by relay to either the rear panel connector of the receiver for interfacing the optional Wide Bandwidth Adapter, or the signal is routed through two consecutive mixer stages to produce the receivers 30 MHz intermediate frequency.

The IF section shown in the block diagram includes conversion stages for signals within band 2 as well as band 1. The range of frequencies within band 2, 250 KHz to 20 MHz, are converted to a 30 MHz intermediate frequency by the first mixer stage and routed to the 30 MHz IF Strip for further processing. Note that the IF section includes a second converter for band 2-7 frequencies as part of the output from the IF Strip. The second converter mixes the 30 MHz IF output with a fixed LO frequency of 30.2 MHz to produce a difference of 200 KHz. This converted signal becomes the input to the 200KHz IF and is used when a bandwidth less than 50 KHz has been selected for frequencies within bands 2 through 7.

Frequencies within the range of band 1, 100 Hz to 250 KHz, are converted to a 200 KHz intermediate frequency using two mixer stages. The first mixer is an up-converter that produces the sum of two signals, the band 1 received frequency and a 3 MHz LO signal. The first mixer stage output, which is always 3 MHz above the band 1 frequency, is routed to a second converter where it is mixed with a variable LO frequency ranging from 3.2 to 3.45 MHz to produce a fixed 200 KHz intermediate frequency.

## **4.3 RF SECTION**

The RF section of the receiver is shown in the diagram of figure 4-3. The RF conversion circuitry is contained on two microwave assemblies, M1 and M2. The microwave assemblies also contain portions of the synthesizer circuitry, as indicated by the shaded areas of the diagram.

Input signals are applied through a transfer relay that permits the selection of an alternate input comparison signal used for calibrating the unit. The input (or calibration) signal is routed to a programmable attenuator that is variable in 10dB steps from 0 to 100dB, providing an output that is directed by the band selection relays to the appropriate conversion section. The RF section provides the conversion stages for frequencies within bands 3 through 8. Frequencies within these bands are applied through coaxial switch contacts to the appropriate discrete filter networks that form the preselector. The filter networks are selected as a function of the tuned frequency and improve the receivers performance by rejecting any signal outside the passband. Band 3 frequencies are routed through a low pass filter network while bands 4 through 7 are band - pass filtered frequencies within band 8, which continuously covers the frequencies of bands 3 through 7, are filtered by a low pass network.

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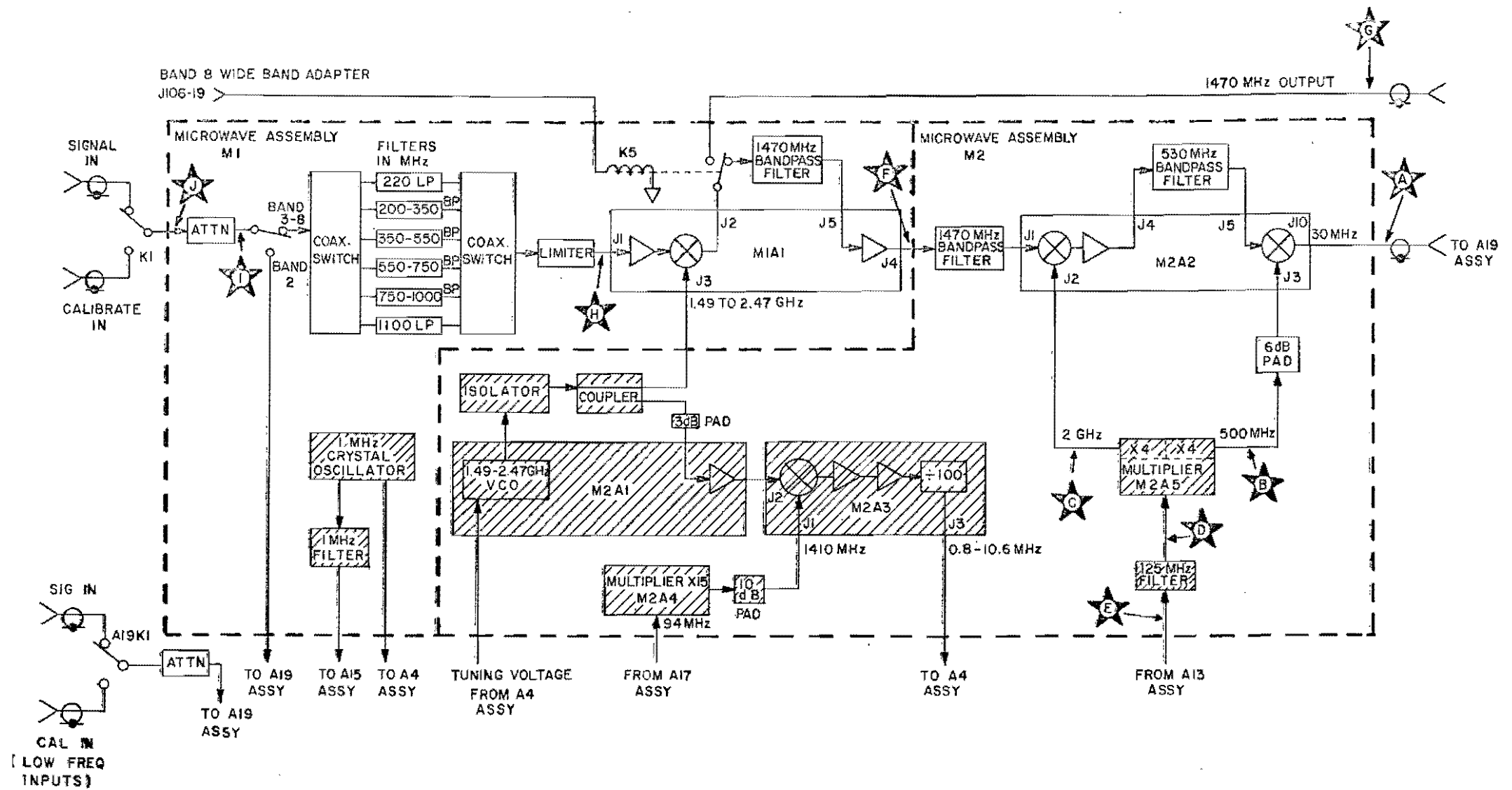


FIGURE 4-3 RF SECTION SIGNAL FLOW DIAGRAM  
4-11/4-12

### **4.3 RF SECTION (continued)**

The preselector output is applied to a wide band limiter for protection against transient spikes, before going through an amplifier that has a wide dynamic range and a low noise figure. The amplified signal is routed to the first conversion stage where the tuned input signal is heterodyned with a LO signal to produce an output of 1470 MHz. The LO signal is derived from a VCO that generates a frequency covering the range of 1490 to 2470 MHz. When the wide bandwidth adapter is used with the receiver, a band 8 selected signal energizes the relay K5, which routes the 1470 MHz signal to an external connector for interfacing the adapter. For preselected frequencies within bands 3 through 7, the 1470 MHz signal is routed through bandpass filters and an amplifier stage to a second converter. The 1470 MHz input is mixed with a fixed LO frequency of 2 GHz to produce an output frequency of 530 MHz. This signal is amplified and filtered before going into a third conversion stage where it is mixed with a fixed LO frequency of 500 MHz, to derive the 30 MHz intermediate frequency.

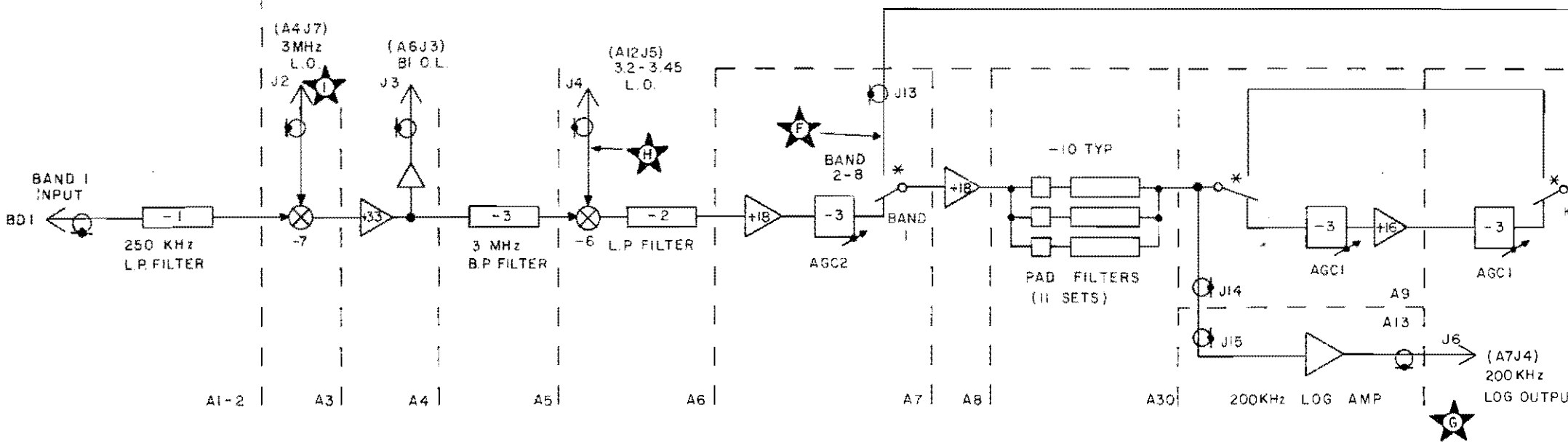
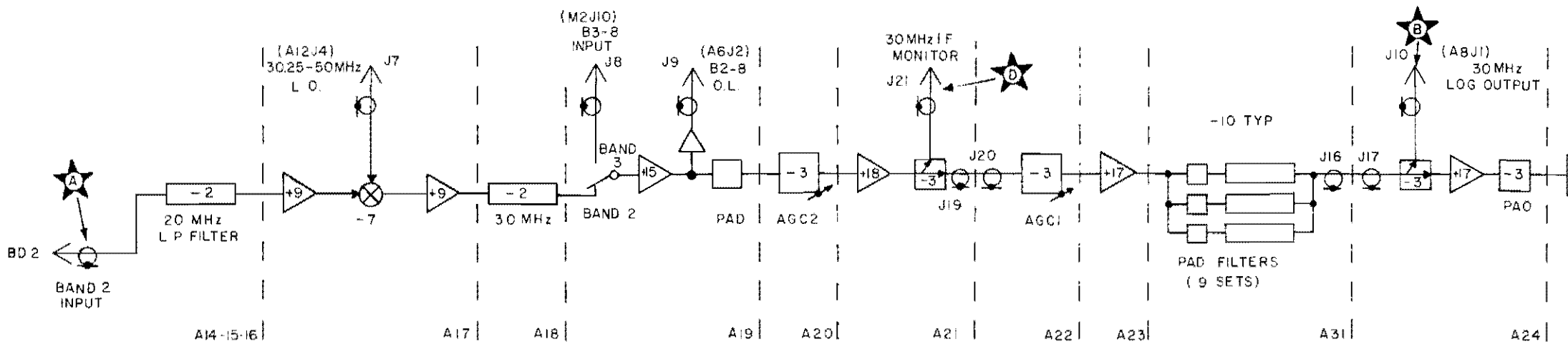
### **4.4 IF SECTION**

The receiver's wide range of input frequencies are separated into the individual bands shown in table 4-1. The frequencies within each band are heterodyned into intermediate frequencies and processed by the IF amplifier stages. The range of frequencies within bands 3 through 7 are converted to 30 MHz signal by the circuits within the RF section of the receiver. The range of frequencies within bands 1 and 2 use individual conversion stages that are part of the IF section.

The conversion and amplification stages for both intermediate frequencies are shown in figure 4-4. Two intermediate frequencies and the use of multiple bandwidth filters ensures maximum sensitivity and signal selectivity over the full range of the receiver. The upper half of the diagram shows the conversion stages for band 2 frequencies that range from 250 KHz to 20 MHz followed by the amplification stages for the 30 MHz, intermediate frequency. The lower half of the diagram shows the conversion and amplification stages of the 200 KHz IF which process band 1 frequencies ranging from 100Hz to 250 KHz.

The frequencies within band 2 are routed for conversion from the band selection relay to a 20 MHz low pass filter and applied to a low noise amplifier that has a wide dynamic range. The signal is then applied to a double balanced mixer where it is heterodyned with an LO frequency ranging from 30.25 to 50 MHz. The difference frequency of 30 MHz is amplified and filtered before being routed through another relay to the 30 MHz IF amplification strip. The input to the 30 MHz IF strip is thus relay selected from either the conversion stage for band 2 frequencies or the RF section which provides conversion of frequencies within band 3 through 7.

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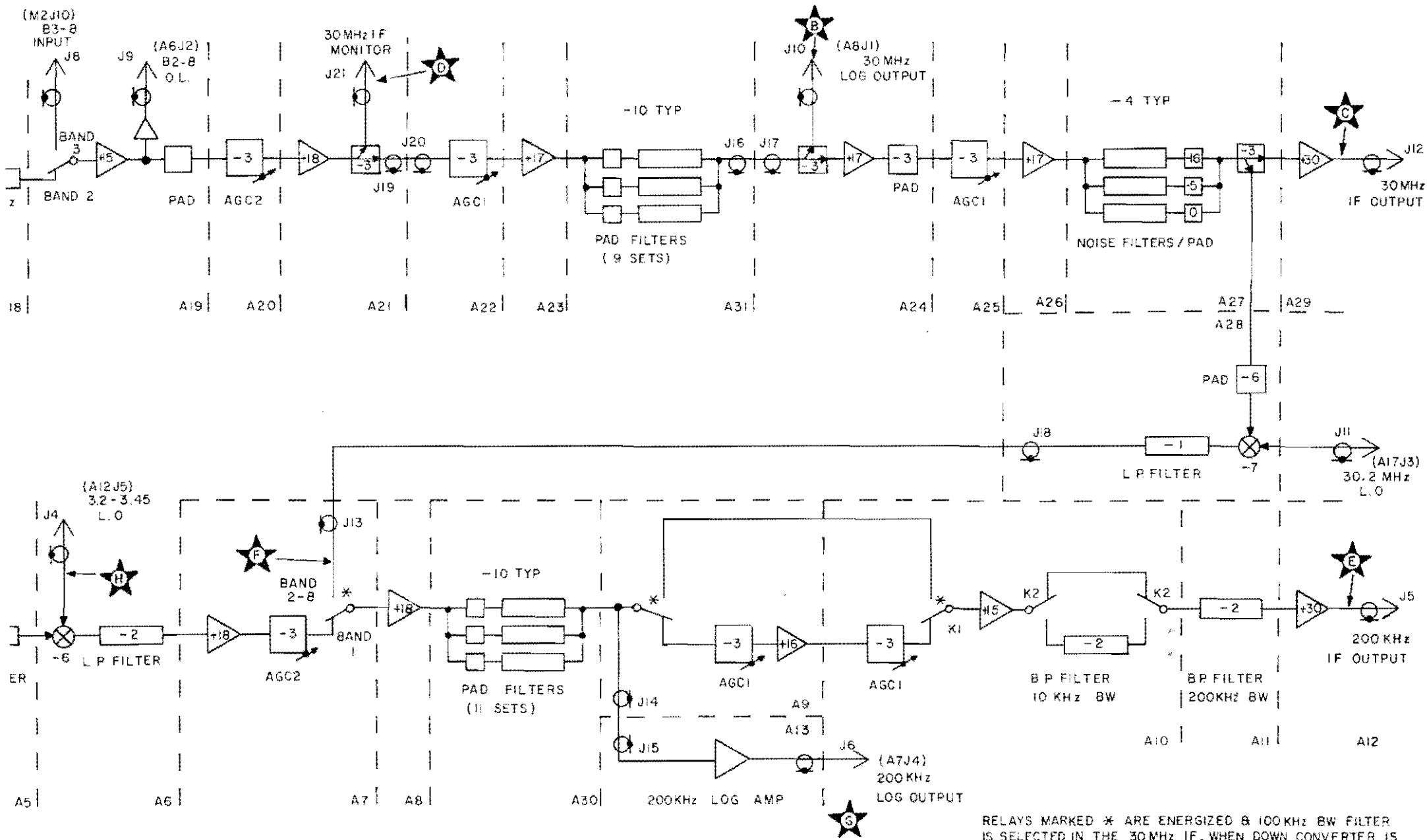


FIGURE 4-4 IF SECTION SIGNAL FLOW DIAGRAM  
4-15/4-16

#### **4.4 IF SECTION (continued)**

The relay selected input signal is first amplified and the output is monitored for detection RF overload conditions. To prevent overloading of the broader front-end stages by strong signals outside of the IF passband, an overload detection circuit is provided. The circuit functions by monitoring the signal and routing it through peak detection and threshold comparison stages. The detected signal is compared with a DC voltage to provide a drive signal when an overload condition exists. The drive signal activates a light emitting diode on the receiver front panel in the manual mode and automatically controls the input attenuator when in the auto mode.

The amplifier output is sent through an AGC stage, amplified again and routed through a power splitter. Automatic gain control is accomplished using voltage controlled pin diode attenuators for AGC 1 and AGC 2 stages. The AGC stages use control signals that vary the pin diode attenuator of each stage to optimize the sensitivity and dynamic range.

The power splitter provides a signal path to rear panel connector used to monitor the 30 MHz IF, and also couples the signal to the nine sets of selectable attenuator/filter networks used to establish the IF bandwidth. Each bandpass filter is preceded by an equalization network that compensates for insertion loss. The selectable bandwidth filters follow a 1,2,5 sequence, starting at 50 KHz and ending at 20 MHz. The output from the selected bandwidth filter is routed through another splitter to a sequential log detector in the video section, and is also amplified and coupled to selectable noise filter networks. The filters are selected as a function of the bandwidth, and minimize the noise generated by the preceding high gain amplifier stages.

A third power splitter follows the noise filters and routes half of the signal through an amplifier stage for coupling to the video detectors. The remaining output from the splitter is applied to a double balanced mixer and is heterodyned with a fixed LO frequency to produce a 200 KHz output. The converted signal is filtered and routed to a band selection relay for use when bandwidths less than 50 KHz have been selected for receiver input signals within bands 2 through 7 (250 KHz to 1000MHz).

Received frequencies within the range of 100 Hz to 250 KHz are routed from the attenuator to the band 1 frequency conversion stages. The signal is applied to a 250 KHz low pass filter and coupled to a double balanced mixer where it is up-converted by mixing with a fixed 3 MHz LO. The sum of the two frequencies is amplified and the signal is monitored for detecting a signal overload. The amplified signal is routed through a bandpass filter into a second converter for mixing with a variable LO frequency that ranges from 3.2 to 3.45 MHz. The difference frequency of the signals is 200 KHz, which is amplified and routed to a band selection relay. The 200 KHz input to the next amplifier stage is selected from either the converted frequency of band 1, or the signal derived from the 30 MHz IF that has been converted from signals within the range of bands 2 through 7.

The amplified 200 KHz intermediate frequency is routed through one of eleven selectable bandwidth filters that follow the same 1,2,5 sequence of the filter networks in the 30 MHz IF. Each filter is preceded by a loss equalization network and range in bandwidth from 50 Hz up to 100 KHz. The output from the selected bandwidth filter is routed through an amplifier that provides a logarithmic output, and is also routed through two stages of gain control followed by amplifier and filter stages that couple the 200 KHz IF signal to the video section.

The two stages of automatic gain control are automatically bypassed when the band selection relay derives the input signal from the 30 MHz IF. When an IF bandwidth of 2 KHz or less is selected, relay K2 is energized and routes the IF signal through an additional bandpass filter that reduces broadband noise before being routed to the video section.

## **4.5 VIDEO SECTION**

The block diagram in figure 4-5 shows the printed circuit card assemblies that are used in the video section of the receiver. The input signal to the video circuits is automatically selected by the IF Transfer relay from either the 30 MHz or the 200 KHz IF output, depending on the band and bandwidth combination used. The signal is applied to a predetection gain stage that has selectable step attenuators in addition to a variable predetection gain control. The output signal from the predetection gain stage is routed to the relay selected amplifier before going to the detectors.

Linear IF signals from the predetection amplifiers are routed to the corresponding 200 KHz or 30 MHz, AM and FM detectors. Logarithmic inputs from the 200 KHz and the 30 MHz IF, are switch selectable depending on the position of the front panel log/linear switch.

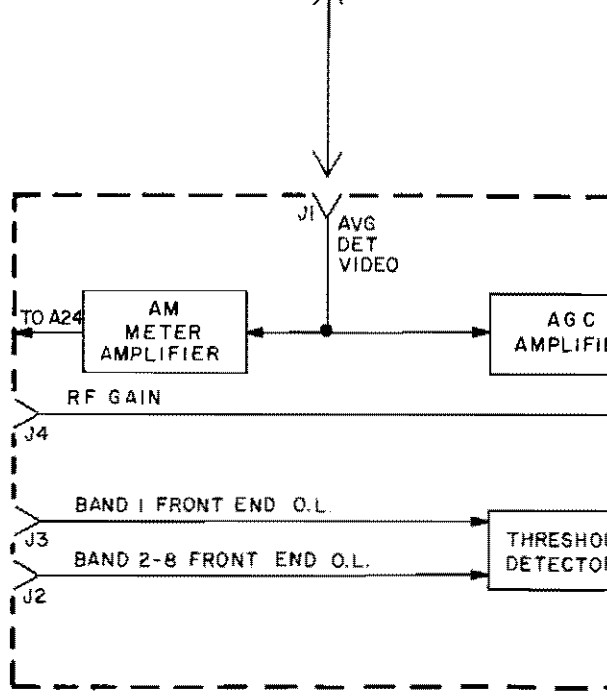
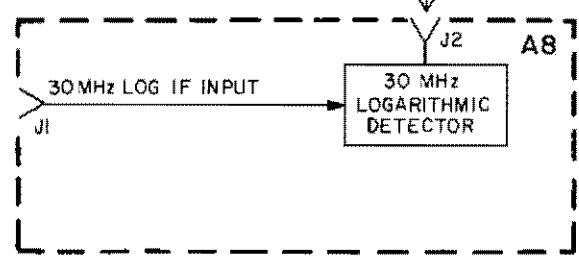
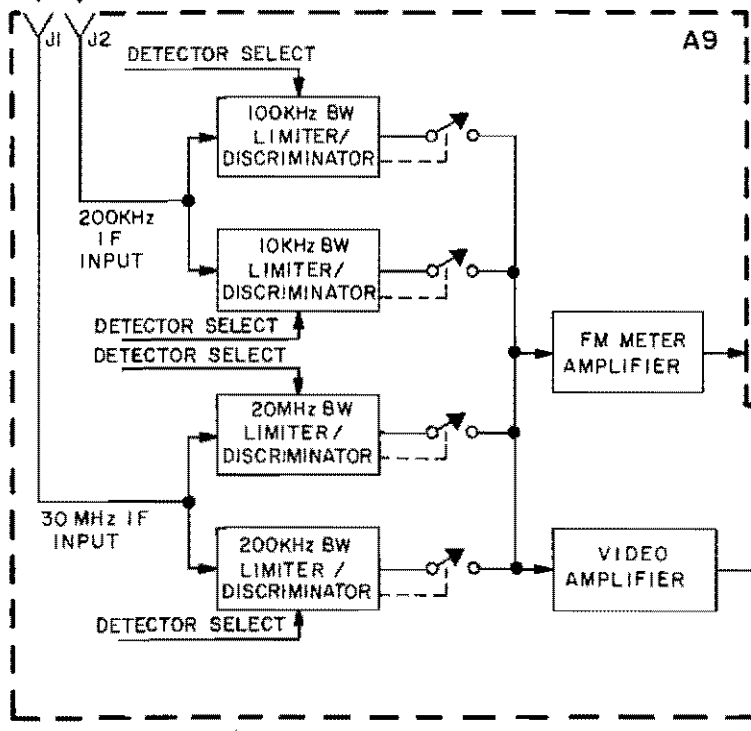
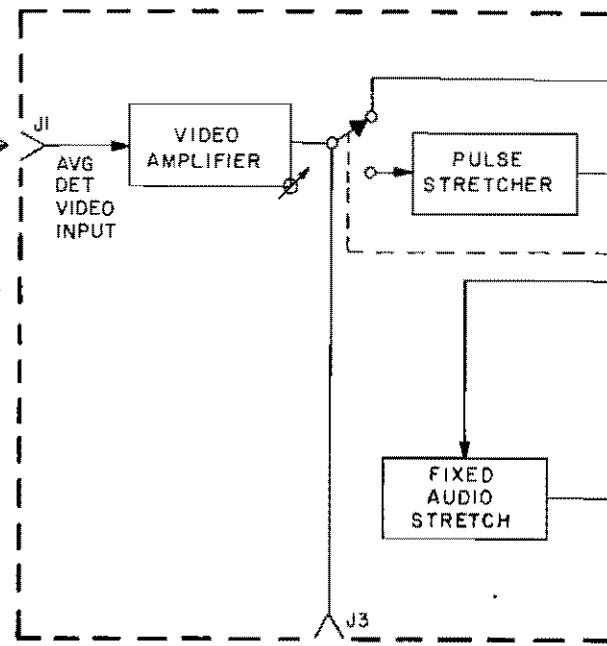
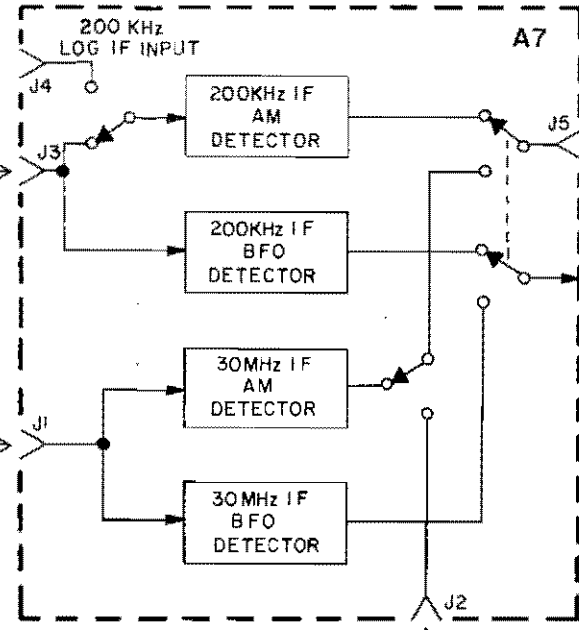
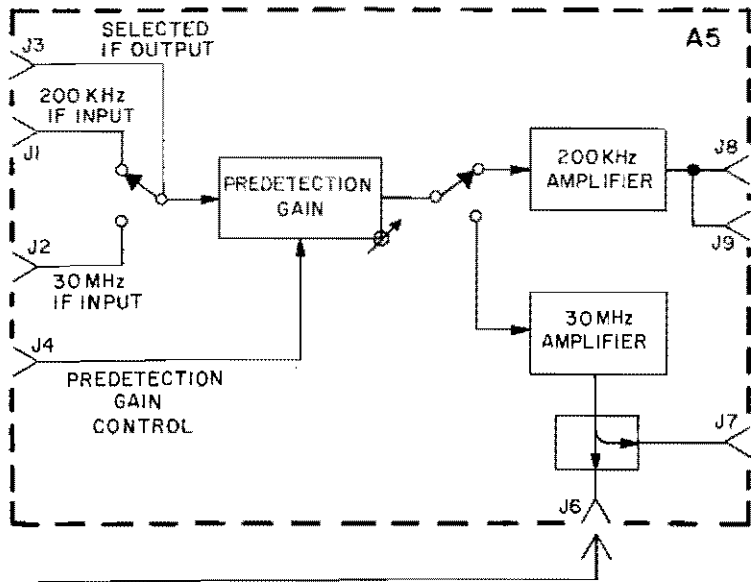
BFO circuits that aid the detection of continuous wave (CW) signals are provided for both the 200 KHz and the 30 MHz IF. The beat frequency for the 200 KHz detector is variable within  $\pm 1$  KHz by a front panel BFO control. The BFO signal for the 30 MHz IF is derived from a fixed 30 MHz crystal oscillator circuit and is not variable since the narrowest bandwidth selection for the 30 MHz IF is a width of 50 KHz, and the audio bandwidth of the receiver is only 20 KHz.

The amplitude modulated (AM) signal processing circuits include pulse stretch and slide back networks for both the 200 KHz and 30 MHz AM detectors. For slide back operation the front panel control is used to vary the video output signal from the AM detector, thus eliminating lower level signals and noise. The signal levels that are adjusted above a threshold level will illuminate the front panel slide back indicator.

When the pulse stretcher circuits are activated, they lengthen the pulse without changing the relative amplitude in order to obtain additional time to observe the detected video. Audio signals are separated from the detected output and routed to amplifier stages located on the A24 assembly. An audio stretch network using a fixed length, may be switch selected to allow very narrow audio pulses to be heard.

Frequency modulated signals are routed from the predetection amplifiers to the limiter/discriminator circuits which form the A9 assembly. In the FM mode, the individual limiter/discriminator networks are automatically selected depending upon the IF in use and the selected bandwidth. The detected output is applied through a video amplifier and routed to the FM video output connector. The amplified signal is filtered to separate the audio signal which is routed to the amplifier stage on the A24 assembly.

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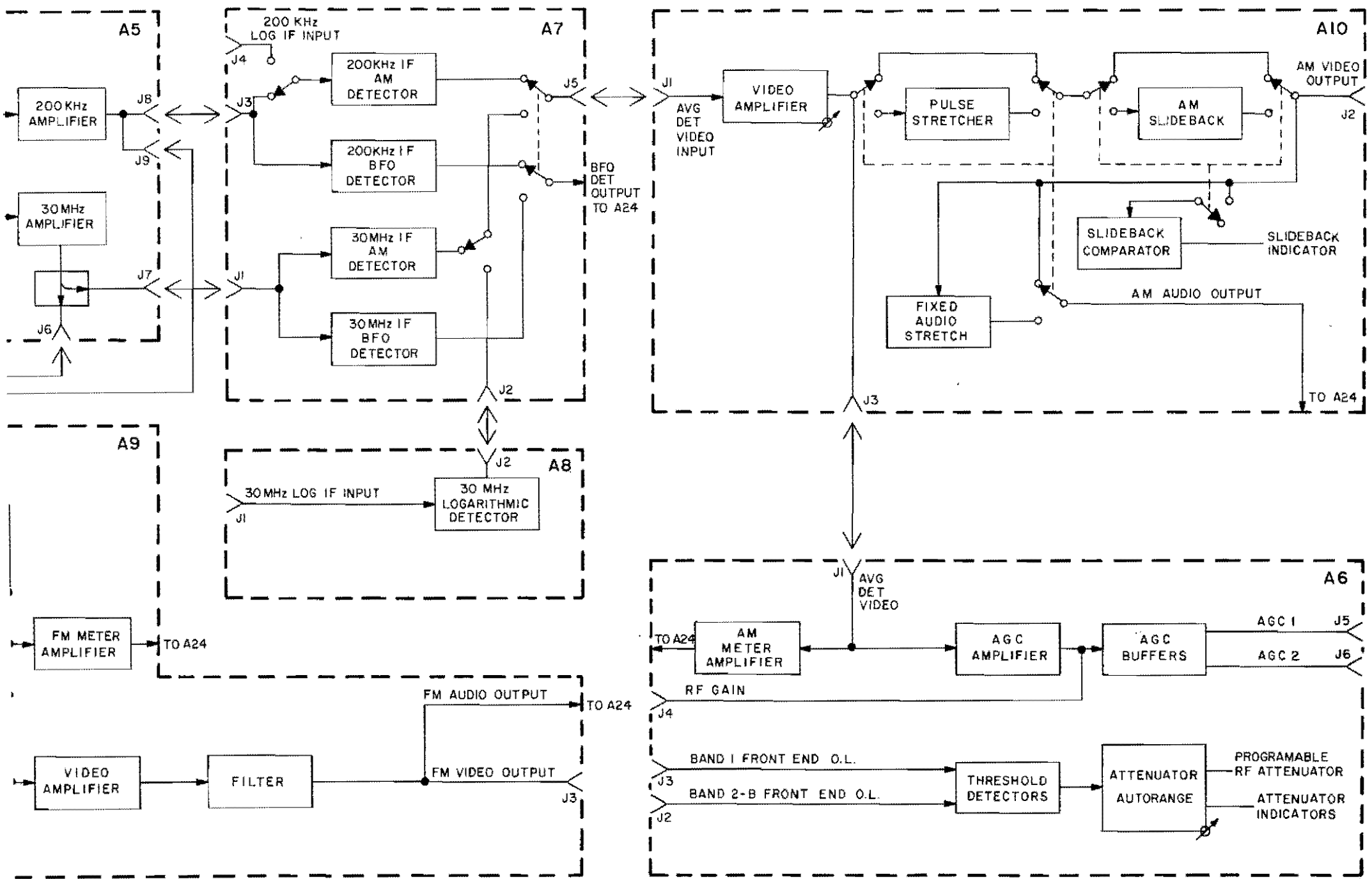


FIGURE 4-5 VIDEO SECTION BLOCK DIAGRAM  
4-21/4-22

## **4.5 VIDEO SECTION (continued)**

The A6 assembly contains the AGC amplifier and buffer circuits that generate the appropriate outputs (AGC 1 and 2), for application to the pin diode attenuator stages used in the IF amplifier strips. A delayed AGC is used so that the gain is not reduced by the attenuators near the front of the IF strip until the maximum gain reduction has been achieved by the attenuators located in the final stages of the IF strip, resulting in the best signal to noise ratio for varying signal conditions.

A front panel mounted RF gain control provides a variable output voltage that is a substitute for the outputs of the AGC circuits and is used when the manual gain position is selected. When either the FAST or SLOW AGC switch positions are selected, the RF gain control is used to override the automatic gain function, allowing manual variation of the receiver gain.

## **4.6 SYNTHESIZER SECTION**

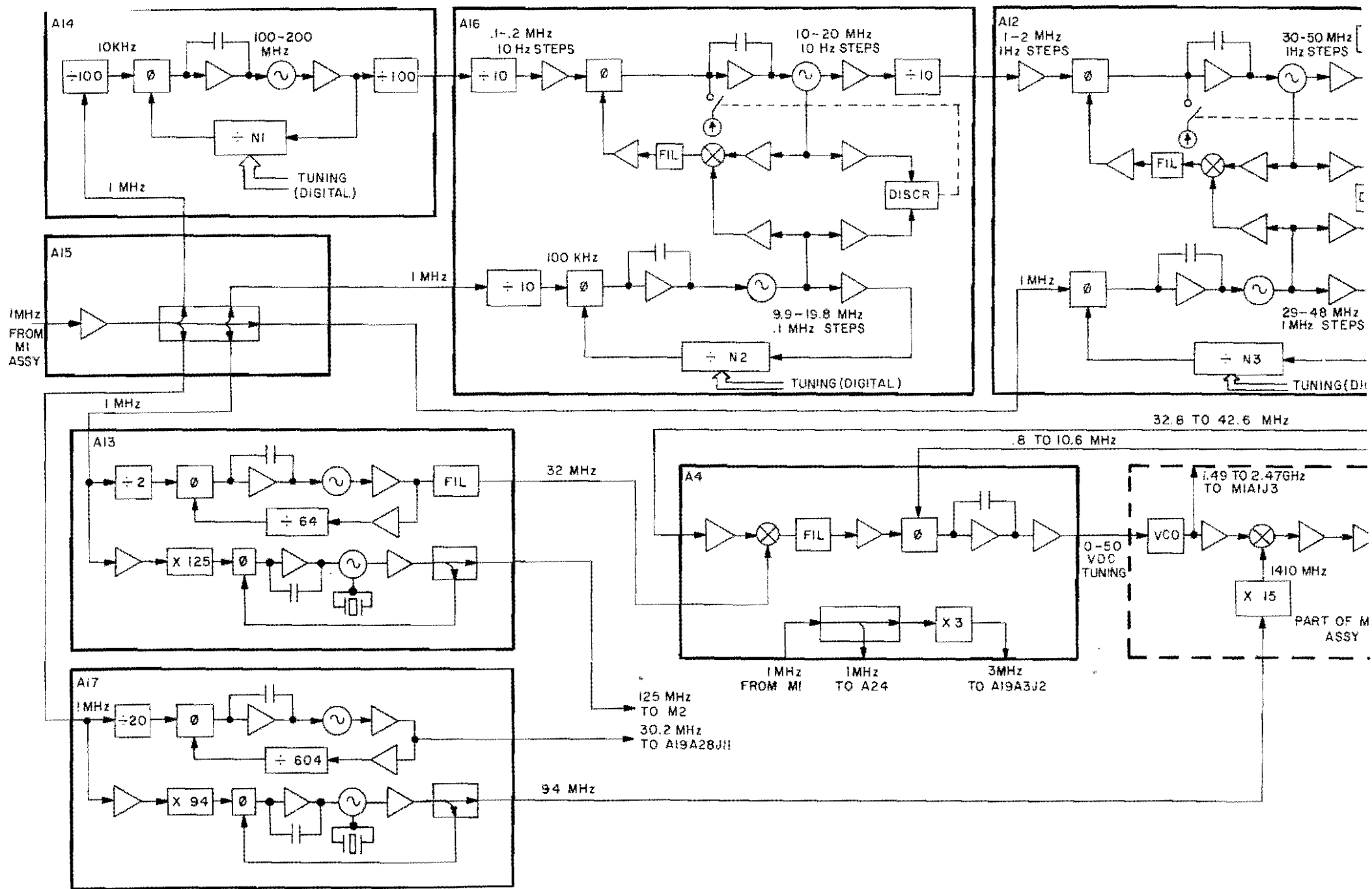
The frequency synthesizer, as shown in the diagram of figure 4-6, consists of individual printed circuit card assemblies and portions of the microwave assemblies that are part of the RF Section. The circuits within the synthesizer section generate and control both fixed and variable local oscillator frequencies, which are used in conversion stages to heterodyne receiver input frequencies into intermediate frequencies.

The theory of operation for the synthesizer section first covers the main LO which uses multiple phase locked loops to generate the variable frequencies, followed by the theory for individual circuits used to generate fixed frequency signals. All frequencies generated by the synthesizer are referenced to a precision crystal oscillator that produces a 1 megahertz signal which is routed to the A15 assembly for amplification and distribution.

### **4.6.1. MAIN LOCAL OSCILLATOR**

The main LO consists of circuit card assemblies A4, A12, A14, A16 and portions of the microwave assemble. Two configurations of phase locked loop circuits are used by the main LO: the single-loop/divide circuit that forms the A14 assembly, and the double-loop/mix and divide circuits that are used on the A12 and A16 assemblies.

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FIGURE

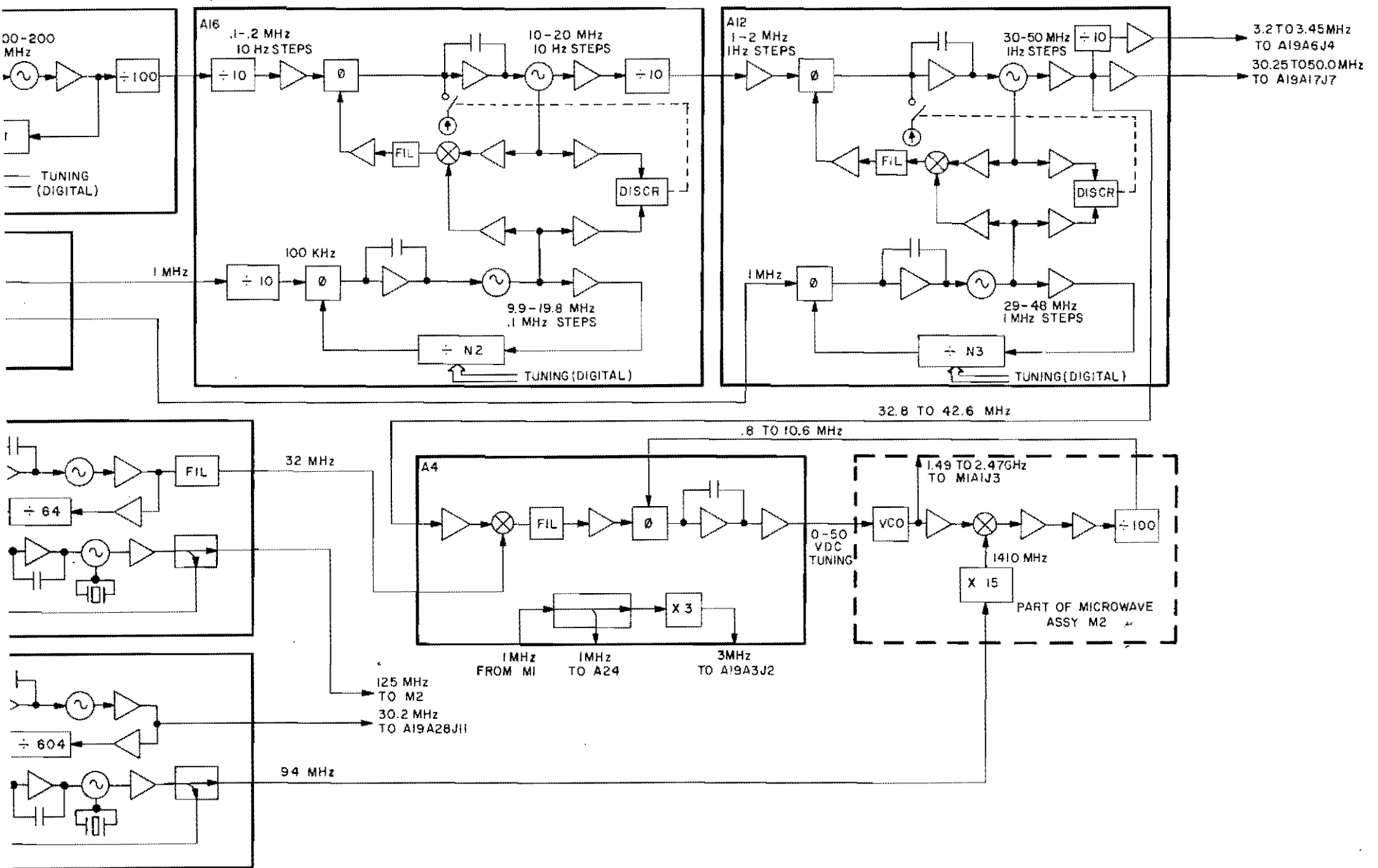


FIGURE 4-6 SYNTHESIZER SECTION BLOCK DIAGRAM  
4-25/4-26

#### **4.6.1. MAIN LOCAL OSCILLATOR(continued)**

The single-loop/divide synthesizer circuit is based on a free-running voltage controlled oscillator (VCO) that generates an output ranging from 100 to 200 MHz. A divide-by-N1 prescaler converts a sample of the VCO output into a range that is equal to the prescaled value of the reference signal; in this case the 1 MHz reference is divided by 100 providing a 10 KHz signal. The tuning input to the N1 divider consists of the 16 bits from the 4 LEDs of the tuned receiver frequency. The fixed reference signal and the divided N1 tuning signal are routed to a phase/frequency detector that produces an error signal if the two inputs differ. The error signal is integrated, producing an increasing or decreasing drive voltage to the VCO. The output signal from the VCO is divided by 100 to produce an output range of 1 to 2 MHz that locks in 100 Hz steps and is coupled to the A16 assembly.

The circuits which form the A16 assembly consist of a double-loop/mix and divide synthesizer that is separated into two sections; a primary phase lock loop shown in the upper portion, and a secondary phase lock loop that operates identically to the single-loop/divide synthesizer of the preceding stage.

The secondary loop VCO generates a frequency across the range of 9.9 to 19.8 MHz which is slightly less than the frequency range of the primary loop VCO. The smaller frequency range is controlled by the divide-by-N2 tuning signal, whose binary weight represents the 3rd and 4th digit of the tuned receiver frequency. The output of the N2 divider is compared with the prescaled reference signal, which is 100 KHz, in the phase/frequency detector. The sense of the error signal produced by the detector drives an integrator which tunes the VCO in the direction required to obtain phase lock.

The primary phase lock loop is similar in operation, except the higher frequency range of this VCO is sampled and routed to a converter stage where it is mixed with the phase locked frequency of the secondary loop. The converted signal from the mixer is filtered and compared with the signal derived from the A14 assembly in a phase/frequency detector. Error signals produced by the phase detector are fed to an integrator which drives the VCO across its tuning range in 10 hertz steps. The VCO frequency is divided by 10, producing an output signal with a range from 1 to 2 MHz and a resolution of 1 Hz, that is routed to the A12 assembly.

To ensure that the primary loop frequency is always higher than the secondary loop frequency the two VCO signals are also sent to a discriminator. Should an input signal to the N2 divider cause the secondary loop VCO to be driven higher in frequency than the present output of the primary loop VCO, the discriminator senses the state of the two signals and activates a current source which drives the primary loop integrator, thus increasing the frequency of the 10 to 20 MHz VCO.

The operation of the A12 assembly is identical to that of the A16 assembly except the divide-by-N3 tuning signal represents the 2 MSD of the tuned receiver frequency. The double loop synthesis circuit for this portion of the main LO provides three separate outputs. Each output is within the range of 30 to 50 MHz, but shown on the block diagram as the exact frequency range used by the respective conversion stages.

The first output (F6) is divided by 10 to produce a frequency ranging from 3.2 to 3.45 MHz. This signal has a resolution of .1 Hz and is used in the second mixer stage of the band 1 converter. The second frequency (F3) output has a range from 30.25 to 50.0 MHz with a resolution of 1 Hz and is used in the first mixer stage for conversion of band 2 frequencies (see figure 4-4).

The remaining variable frequency generated by the A12 assembly ranges from 32.8 to 42.6 MHz and is routed to the A4 assembly. The circuits contained on the A4 assembly and those that are part of the RF section, provide the control signals and the lock loop for the microwave local oscillator frequency ranging from 1.49 to 2.47 GHz. The microwave LO signal is used by the first mixer stage in the RF section which produces the 1470 MHz intermediate frequency.

The microwave LO signal, designated F1, is generated by a free-running VCO. A sample of the VCO signal is down converted by mixing with a fixed frequency of 1410 MHz. This fixed frequency is produced by multiplying a fixed 94 MHz that is generated on the A17 assembly. The down converted signal is amplified and divided by 100 to derive a phase comparison signal ranging from .8 to 10.6 MHz. The remaining comparison signal, which must also range from .8 to 10.6 MHz, is developed by mixing the variable frequency of 32.8 to 42.6 MHz with a fixed 32 MHz signal from the A13 assembly. The down-converted signal is filtered to remove any harmonic components and routed for comparison to a phase/frequency detector.

Any error signal produced by the phase difference of the two signals drives an integrator which produces a 0 to 50 volt DC drive signal to the VCO, increasing or decreasing the frequency until phase lock is obtained.

## **4.6.2 FIXED FREQUENCY OSCILLATORS**

Four individual phase locked loop circuits are used to generate fixed frequencies. The A13 assembly contains synthesizer loops which generate a 32 MHz signal and the 125 MHz signal. The 125 MHz signal is subsequently multiplied and used in conversion stages that produce the 30 MHz IF. The 32 MHz signal is produced by a VCO whose output is filtered and routed to the A4 assembly. A portion of the VCO signal is sampled and divided by 64 to provide a 500 KHz signal that is phase compared with a prescaled reference digital frequency. Any variation in the VCO frequency produces a phase error that is integrated, driving the VCO in the direction required to maintain phase lock. The 125 MHz signal is also generated by a single loop synthesizer except that frequency is phase locked to a voltage controlled crystal oscillator (VCXO). The VCXO frequency is sampled and fed directly to a phase frequency detector. Since the two input signals to the detector must be at the same frequency, the 1 MHz reference signal is multiplied by 125 and compared with the crystal frequency to produce an error signal that drives an integrator.

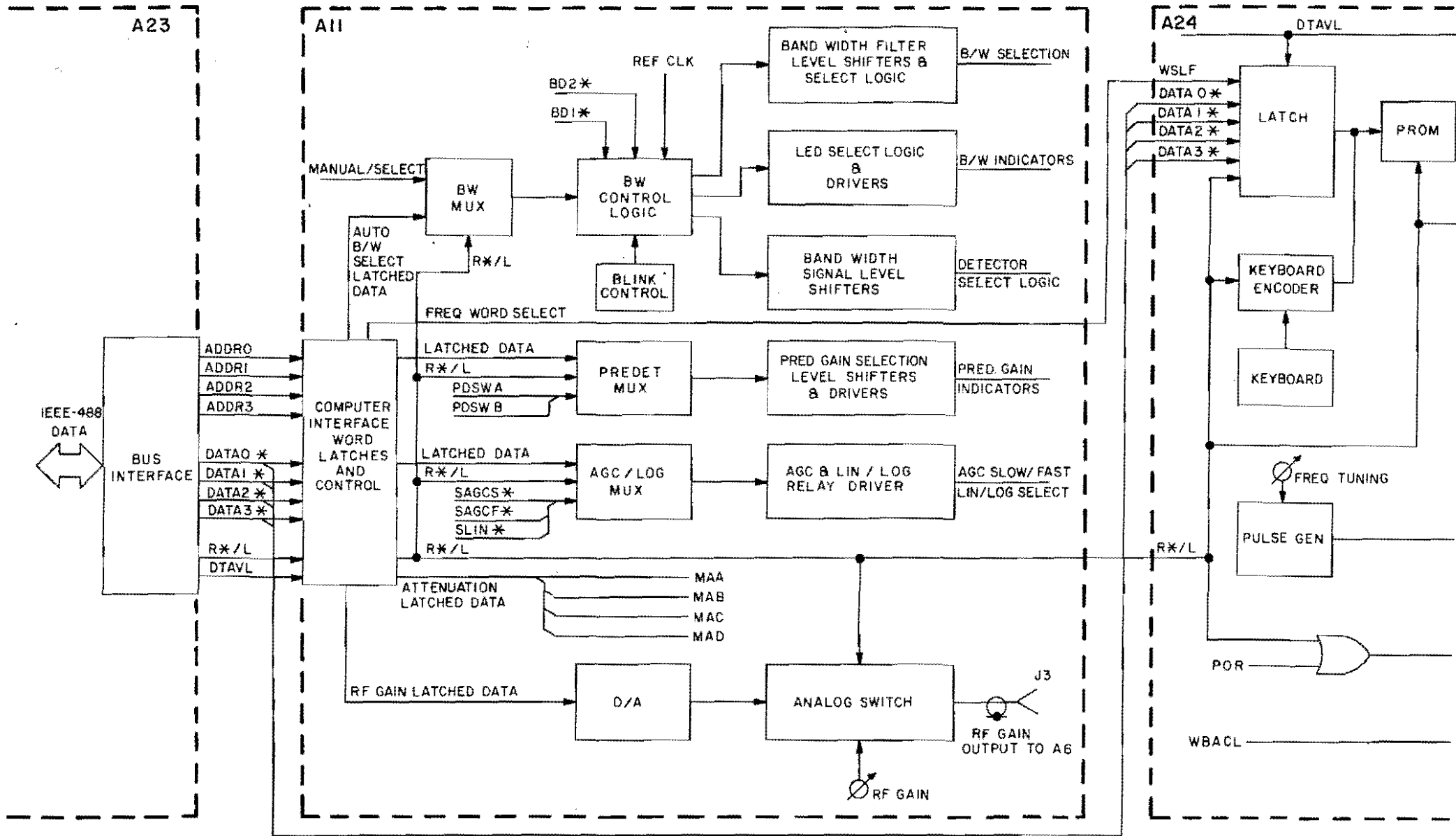
The phase locked loops that generate the fixed frequencies of 30.2 MHz and 94 MHz are identical to those contained on the A13 assembly with the exception of the prescaled values used to derive frequency comparison signals. The 94 MHz signal is routed to the RF section as previously discussed. The fixed 30.2 MHz signal is designated F4 and is used by the second mixer stage of the 30 MHz IF for conversion of signals within bands 2-7 that have a selected bandwidth less than 50 KHz.

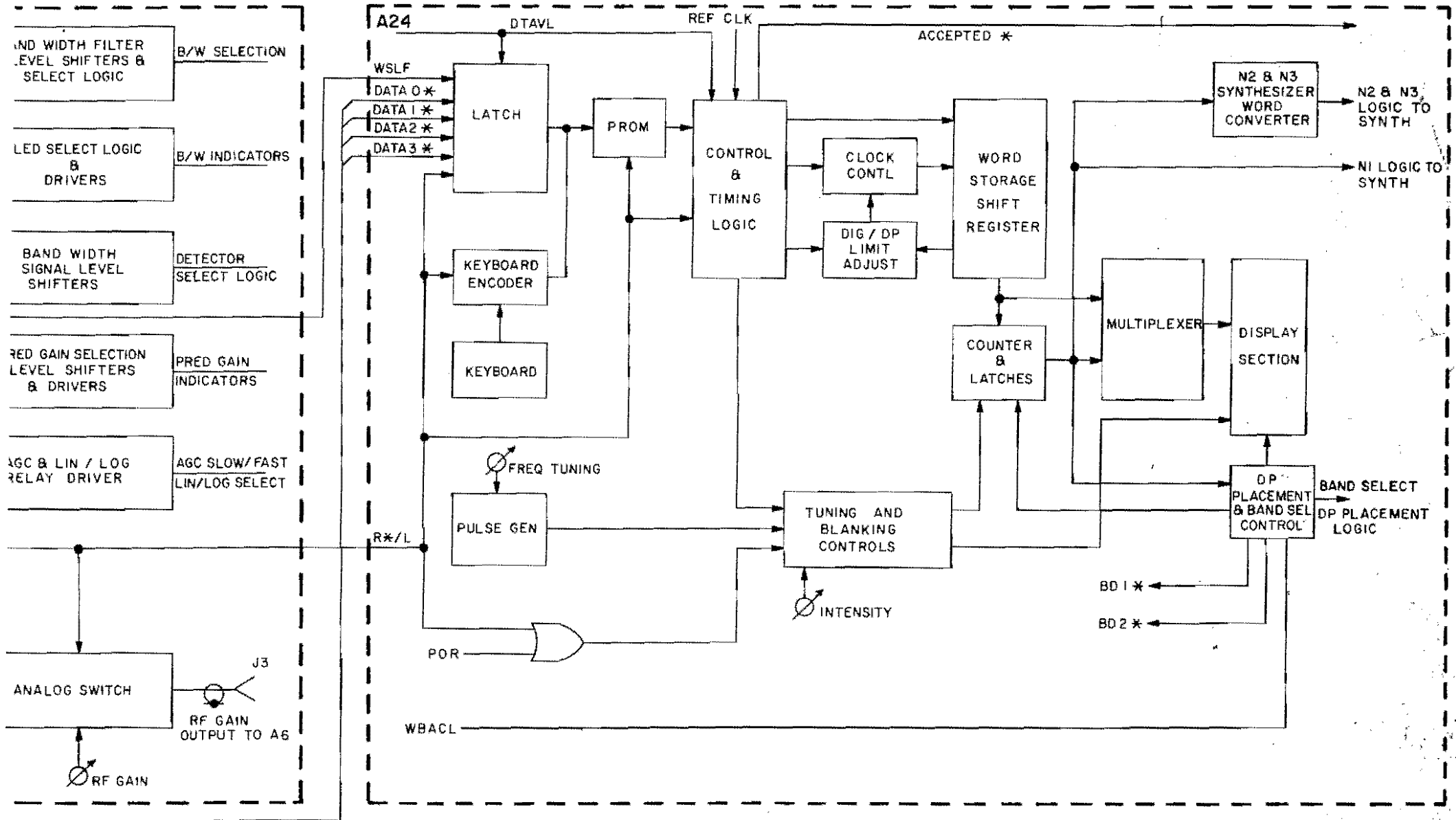
## **4.7 DIGITAL SECTION**

The major assemblies of the digital section are shown in the block diagram of figure 4-7. The digital circuits provide the timing and control of the various functions within the receiver for both manual and automatic modes of operation. Manual functions from the front panel controls and auto functions carried over the IEEE-488 interface bus are converted into digital formats that are used to control the displayed frequency, status indicators, band/bandwidth functions and the frequency tuning data used by the synthesizer circuits.

The digital section consists of three major assemblies: the IEEE bus interface (A23), the control and switching logic circuits (A11), and the front panel logic assembly (A24). The bus interface circuits and the control and switching logic are each contained on individual printed circuit assemblies located in a card cage. The front panel logic circuits include the front panel mounted controls and indicators, along with a printed circuit assembly that is mounted behind the front panel and interconnects with other circuits over dedicated wires.

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## **4.7 DIGITAL SECTION (continued)**

The bus interface assembly contains circuits that provide the timing logic required for the automatic data control signals which interface with the receiver over the IEEE-488 General Purpose Interface Bus (GPIB). Descriptions and specifications for the bus are contained in the IEEE standard for programmable instrumentation, "IEEE Std. 488-1978".

Bus interface data is sent to the control and switching logic circuits and is loaded into computer interface word latches. The latches are enabled by the state of the R<sup>\*</sup>/L ( Remote/Local) line. The data lines provide the input logic to the word latches and are controlled by the address lines that determine which latches will be strobed depending on the state of the DTAVL (data valid) line. Latched data is sent to the various function multiplexers and a D to A (digital-to-analog) conversion stage.

Input data to each multiplexer is derived from either the computer interface circuits, when using the auto mode, or from signals generated by the front panel controls when in the manual mode. The mode of operation determines the status of the R<sup>\*</sup>/L line.

Multiplexed bandwidth selection data is applied to the bandwidth control circuits which use a series of combinational logic and PROM resident look-up tables to generate the specific function codes. The unique codes derived from the control circuits determine the bandwidth selected, the state of the BW indicators, the position of each frequency band selection relay, and the detector/discriminator select logic. In addition to the multiplexed bandwidth selection and control logic, individual multiplexers are used to provide predetection gain selection and the selection of AGC logic along with linear or logarithmic functions.

RF gain latched data is converted into a DC voltage by the digital to analog conversion stage. The DC voltage is used to control an analog switch which provides selection of either a computer controlled analog signal or a variable DC signal derived from the front panel mounted RF gain control.

Data lines from the bus interface circuits of the A23 assembly are also routed to separate latch circuits on the front panel logic assembly (A24). The state of the R<sup>\*</sup>/L logic determines the use of either latched data from a remote source or keyboard encoded data from the front panel. The selected data source provides the preprogrammed coded output from the read-only-memory which is sent to control and logic timing circuits.

Coded data corresponding to digit entries and decimal point location selection are routed to the word storage shift registers and sequentially loaded. The loaded data is monitored by the DIG/DP (digit/decimal point) limit adjust logic which issues a single clock pulse for each load sequence. The output from the shift registers is multiplexed providing drive signals to the display section and is also loaded into a counter/latch circuit which holds the bit pattern until the termination logic (MHz or KHz) is loaded, at which time the DIG/DP limit circuit issues the appropriate number of clock pulsed based on an interrogation of the shift registers.

Each time new frequency values are entered and encoded, the shift registers provide new bit pattern information to the counter/latch circuits. The data from the counter/latch circuits provides updated multiplexed display values and also provide band selection logic and new N1, N2 and N3 synthesizer words.

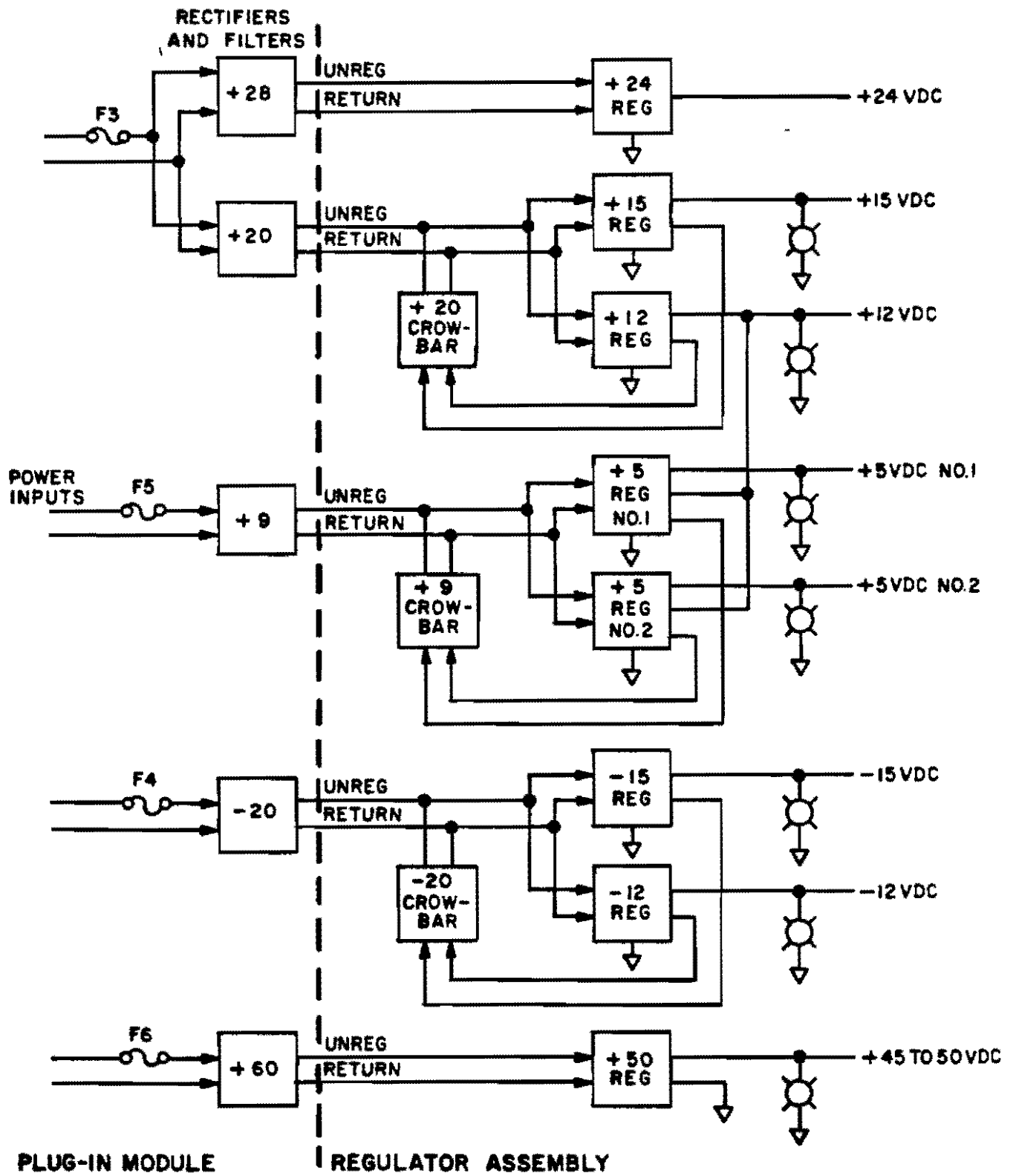
Increment and decrement logic drives a counter in the tuning and blanking control circuits, thus selecting one of five digits that will respond to the pulse generator output controlled by the frequency tuning knob. The blanking control circuit issues a blanking pulse to the display causing the selected digit to blink at a fixed rate. The pulse generator controlled by the frequency tuning knob produces TTL logic signals that are rotation sensitive. The pulse output is sent to the tuning and blanking circuits which in turn drive the counter/latch stage which determines the direction of rotation and the resulting increase or decrease of the selected digit location.

## **4.8 POWER SECTION**

The Power Supply section includes a regulator assembly and a separate plug-in module that provides conversion of the input source power into five unregulated direct current levels. A combination of bridge rectifiers and filter networks produce the unregulated voltages which are routed to individual regulation circuits that provide the operating voltages for the receiver.

The block diagram of figure 4-8 shows the unregulated voltages produced by the rectifier/filter stages and the routing of these DC levels to the individual regulator networks. Each regulated output, with the exception of the +28 VDC, is independently adjustable and includes a rear panel mounted light emitting diode that indicates voltage output.

The plus and minus 15 VDC, the plus and minus 12VDC, and both plus 5VDC regulator outputs are fed into crowbar networks. Each circuit is individually adjusted to a predetermined trigger level that shuts down the regulator if its output exceeds the preset limit.



**FIGURE 4-8 POWER SECTION BLOCK DIAGRAM**

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## **SECTION V SERVICE AND ALIGNMENT**

### **5.1 INTRODUCTION**

This section provides the service and alignment information that will aid the service representative in isolating and correcting equipment malfunctions.

The correction procedures for specific equipment faults are outlined to the extent of identifying the major assembly that has malfunctioned.

### **5.2 MAINTENANCE PROCEDURE**

Two levels of maintenance are contained in this document, preventive maintenance which is outlined in table 5-1, and corrective maintenance procedures that are based on the receiver performance test.

Each level of maintenance is presented in flow-chart format that when followed, will provide a step-by-step fault isolation sequence such that only a correctly operating receiver will allow the service representative to "END" the maintenance sequence.

### **5.3 PREVENTIVE MAINTENANCE**

Preventive maintenance includes correct installation and connection, periodic inspection, cleaning, and the operation/verification of the receiver performance test.

The model R-1250 receiver is a solid-state electronic instrument that requires a minimum of periodic maintenance unless abusive conditions exist such as improper handling and operation, or environmental extremes.

#### **5.3.1 PERIODIC MAINTENANCE**

The procedures shown in table 5-1 are the periodic maintenance checks that should be followed at the specific intervals shown to help insure that the receiver remains operational.

**TABLE 5-1  
PREVENTIVE MAINTENANCE**

<b><u>TASK</u></b>	<b><u>INTERVAL</u></b>	<b><u>DESCRIPTION</u></b>
<b>Inspect Cables</b>	<b>4 Months</b>	<b>Check for frayed cables and wires. Check that wires and coax cables are not crimped between structural members. Inspect connectors.</b>
<b>Inspect Circuit Cards</b>	<b>12 Months</b>	<b>Look for discoloration of resistor and capacitor coding bands or loss of coating that would indicate abnormal operation such as extreme heat conditions.</b>
<b>Clean Connectors</b>	<b>12 Months</b>	<b>Dissolve and wipe away any grease deposits on card connectors and front and rear panel connections. Use a cotton swab dipped in Freon TF or alcohol. Do not burnish card edge connectors.</b>
<b>Clean Chassis</b>	<b>12 Months</b>	<b>Wipe all dust and grease from the interior and exterior chassis parts. Remove dirt and other deposits with a vacuum or compressed air.</b>
<b>Execute Performance Test and Adjust as required</b>	<b>12 Months</b>	<b>Perform thorough calibration of receiver to insure specified performance is maintained.</b>

### **5.3.2. PERFORMANCE TEST**

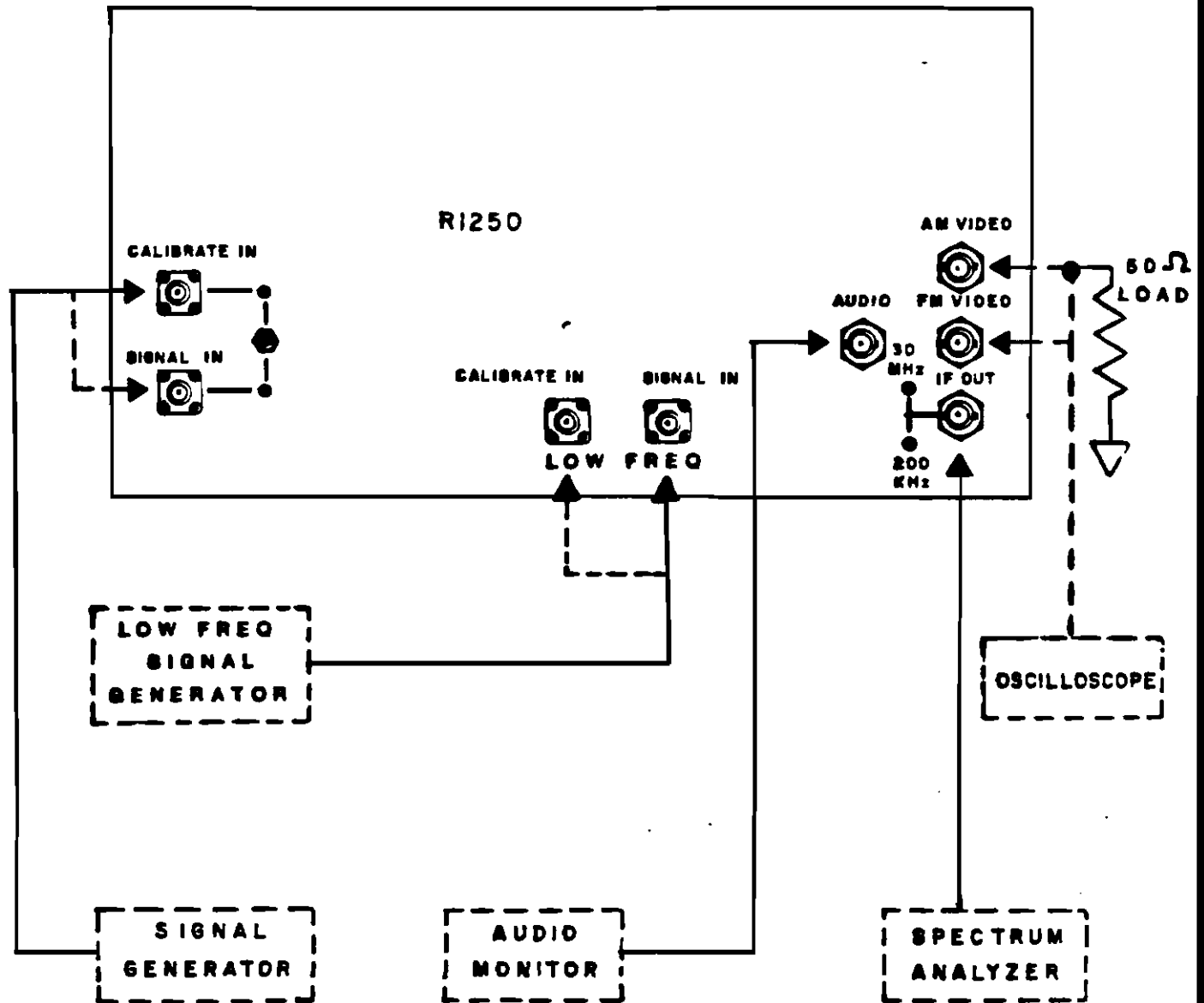
The performance test sequence requires the utilization of specific items of test equipment, as listed in table 5-2, connected to the receiver as shown in figure 5-1.

The test sequence consists of applying either a CW signal or a modulated input signal to the receiver and monitoring the output while activating each appropriate front panel function to determine proper operation.

Connect the test equipment and set the controls as outlined in the following paragraphs. If a receiver function is inoperable or out of tolerance, locate the malfunction from the list of table 5-3 which will direct the operator or service representative to the applicable fault isolation procedure.

- a. Connect a signal generator to the desired receiver input connector.
- b. Set the signal generator for a frequency within the range of the desired band, at an output level of -20dBm.
- c. Set the signal generator to the type of modulation desired, CW, AM, or FM. For AM signals use a modulation frequency of 1000 Hz adjusted to modulate at a 30% amplitude. For FM use a 1000 Hz modulation frequency.
- d. Connect a spectrum analyzer to the desired monitor point depending on the type of input signal selected. For audio output signals, connect an audio monitor to the appropriate output jack.
- e. Verify that the receiver functions are operational based on the frequency range and modulation mode selected. For instructions regarding receiver operation, refer to Section III of this document.
- f. A complete performance test consist of providing input signals within the frequency range of each band (1 through 7), using each type of carrier (CW or modulated), and checking each control, selector, or indicator associated with the applicable signal.

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**FIGURE 5-1 TEST EQUIPMENT CONNECTION**

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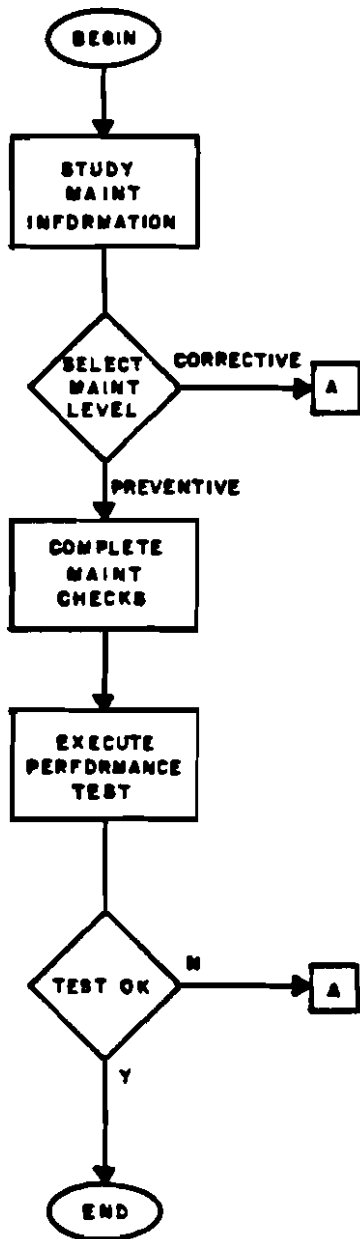
**TABLE 5-2  
TEST EQUIPMENT**

<b><u>NOMENCLATURE</u></b>	<b><u>SPECIFICATIONS</u></b>	<b><u>MODEL NUMBER</u></b>
Signal Generator	100 Hz to 1 GHz AM,FM,CW	Systron Donner Model 1702
RMS Voltmeter	1mV to 3 V.F.S. 20KHz to 600 MHz	Hewlett Packard Model 3406
Spectrum analyzer	10 KHz to 1.8 GHz	Tektronix Model 7013/7L13
Oscilloscope	200 MHz Bandwidth	Tektronix Model 475
Frequency Counter	DC to 2.5 GHz	Hewlett Packard Model 5248L/5254C
Microwave Power Meter	10 $\mu$ W to 10 MW F.S.	Hewlett Packard Model 432 B
Digital Multimeter	0-1000 VDC, 0-1A 0-500 VAC,0-1A 0-10 Megohm	Hewlett Packard Model 3465A

**TABLE 5-3  
MALFUNCTION LOCATION**

**INPUT SIGNAL SELECTOR OR INDICATOR 5-7,5-8,5-9**  
**AM/FM SELECTOR OR INDICATOR 5-12, 5-13**  
**AGC SELECTOR OR FUNCTION 5-10,5-11,5-12,5-13,DIGITAL**  
**RF GAIN ADJUST OR INDICATOR 5-7,5-12,5-13,DIGITAL**  
**ATTEN SELECTOR OR INDICATOR 5-7, 5-10, 5-11, 5-12, 5-13, DIGITAL**  
**BW SELECTOR OR INDICATOR 5-10, 5-11, DIGITAL**  
**FREQ SELECTOR, TUNING OR INDICATOR 5-7, 5-10, 5-11, 5-14, DIGITAL**  
**AUDIO LEVEL ADJUST 5-12, 5-13**  
**AUDIO OUTPUT 5-12, 5-13**  
**AM VIDEO OUTPUT 5-12, 5-13**  
**FM VIDEO OUTPUT 5-12, 5-13**  
**30 MHz IF OUT OR INDICATOR 5-10, DIGITAL**  
**200 KHz IF OUT OR INDICATOR 5-11, DIGITAL**  
**BFO SELECTOR OR FUNCTION 5-12, 5-13**  
**LOG/LIN SELECT 5-10, 5-11, 5-12, 5-13**  
**PREDETECTION SELECT, ADJUST OR INDICATOR 5-10, 5-11, 5-12,5-13,DIGITAL**  
**AM PULSE STRETCH/SLIDE BACK ADJUST 5-12, 5-13**  
**REMOTE INDICATOR OR FUNCTION DIGITAL**

**TABLE 5-4  
MAINTENANCE SELECTION**



The operator or service representative should read the maintenance information and become familiar with the equipment.

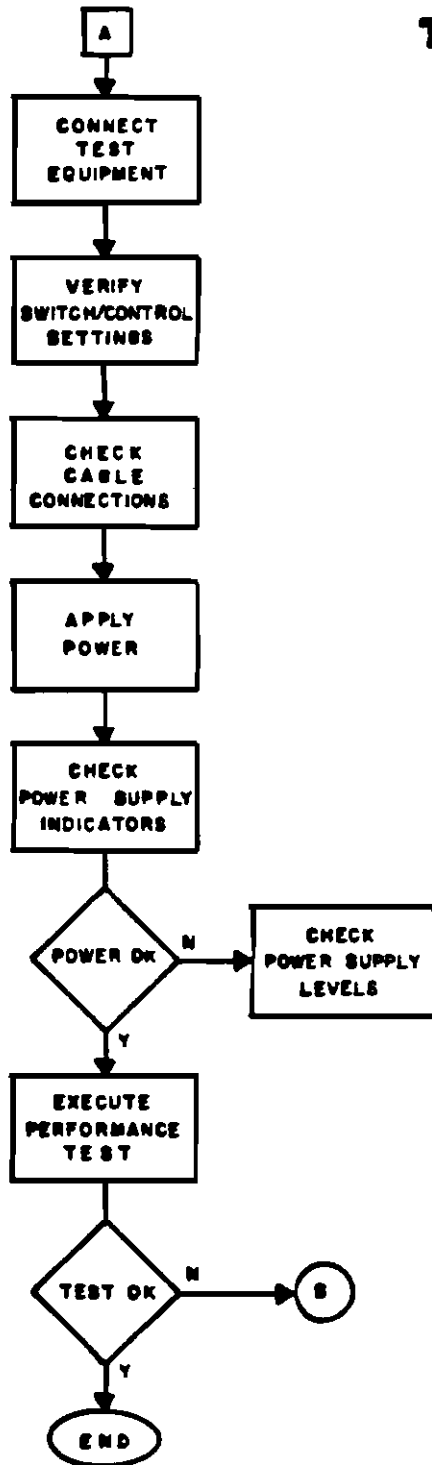
Select the level of maintenance that is to be performed.

Clean and/or check the applicable items listed in paragraph 5.3.2.

Initiate a complete performance test and list any malfunctions indicated.

If a normal performance test has been completed, the instrument is ready for use.

**TABLE 5-5  
TEST SEQUENCE**



Ensure that test equipment is calibrated and in proper working condition.

Ensure that the controls on both the instrument to be tested and the test equipment, are set for the type of measurement to be performed.

Check for proper coaxial cable connections and test equipment interconnection.

Verify that the line voltage applied to the instrument is rated for the specified input.

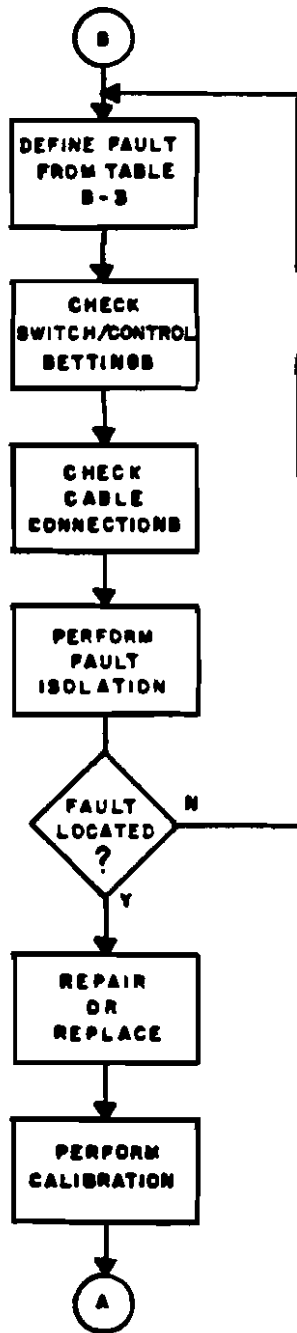
Power supply indicators on the rear panel of the instrument indicate output only, not correct voltage levels.

Refer to the power supply adjustment parameters listed in paragraph 5.5.9.

Initiate a complete performance test and list any malfunctions indicated.

If a normal performance test has been completed, the instrument is ready for use.

**TABLE 5-6  
FAULT LOCATION, GENERAL**



Malfunctions should be compared with the associated functions listed in table 5-3.

Ensure that the instrument and test equipment switches and controls are properly set.

Check for proper coaxial cable connections and test equipment interconnection.

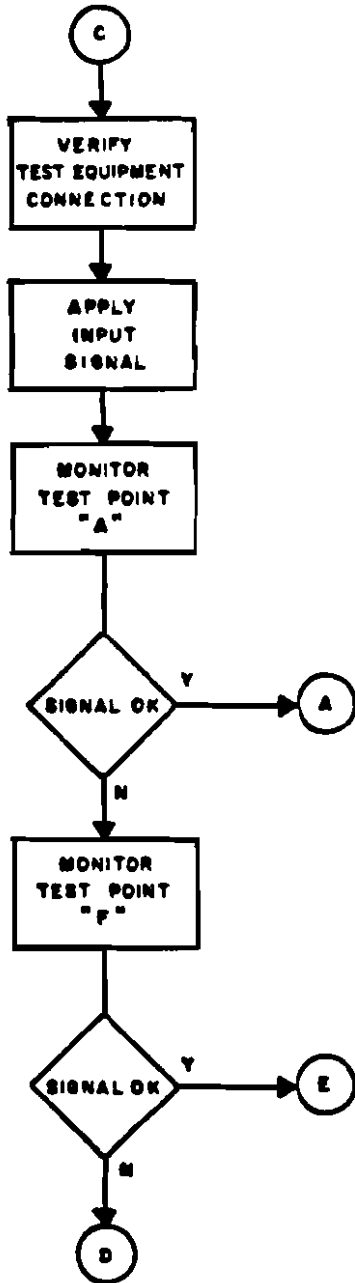
Initiate the isolation sequence indicated by the applicable flow chart selected from table 5-3.

If the malfunction was not located by the sequence of the first flow chart, redefine the fault area.

When the malfunction is located, initiate a repair or replacement sequence.

Complete calibration requires sophisticated test equipment. When a subassembly has been replaced, refer to the field service adjustments.

**TABLE 5-7  
FAULT ISOLATION  
RF SECTION**



Ensure that properly operating test equipment is correctly connected and applicable to the test sequence.

Apply a CW signal of 530 MHz at a level of -20 dBm.

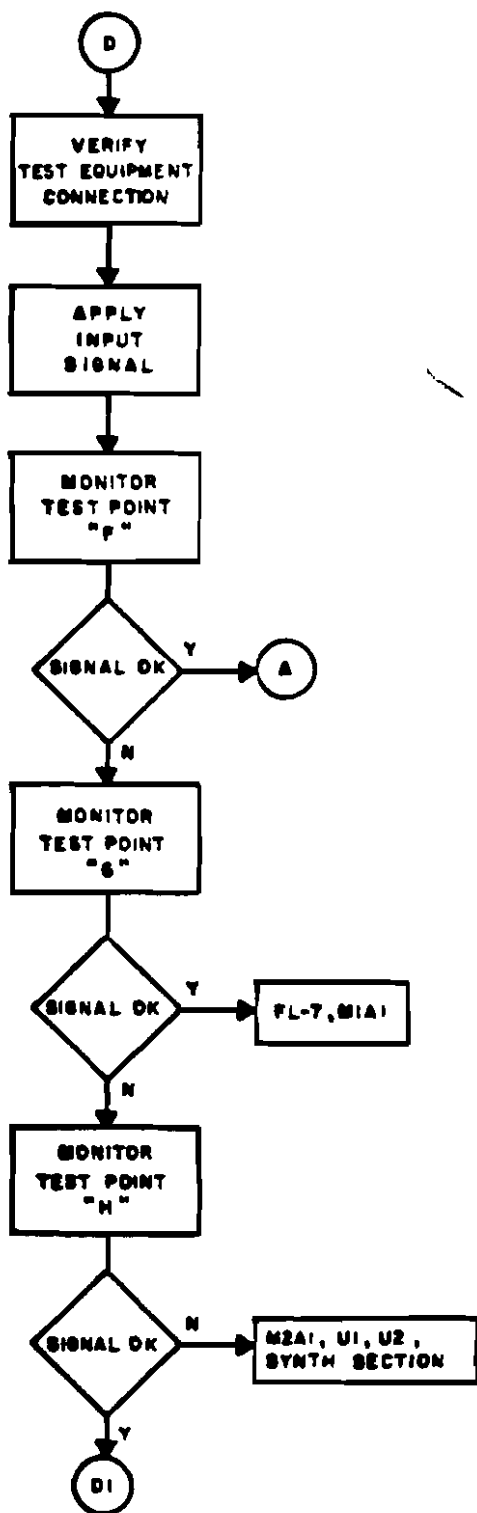
Refer to figure 5-2 for location of test points. Verify a signal of 30 MHz at approx. -9dBm.

A normal signal indicates that the malfunction is related to external cable connections or test equipment operation.

Refer to figure 5-2 for location of test points. Verify a signal 1470 MHz at approx. -8 dBm.

A normal signal indicates that the malfunction may be related to the M2 assembly. An abnormal signal indicates a problem related to the M1 assembly.

**TABLE 5-8  
FAULT ISOLATION  
M1 ASSEMBLY**



Ensure that properly operating test equipment is correctly connected and applicable to the test sequence.

Apply a CW signal of 530 MHz at a level of -20 dBm.

Refer to figure 5-2 for location of test points. Verify a signal of 1470 MHz at approx. -8dBm.

A normal signal indicates that the malfunction is related to external cable connections or test equipment operation.

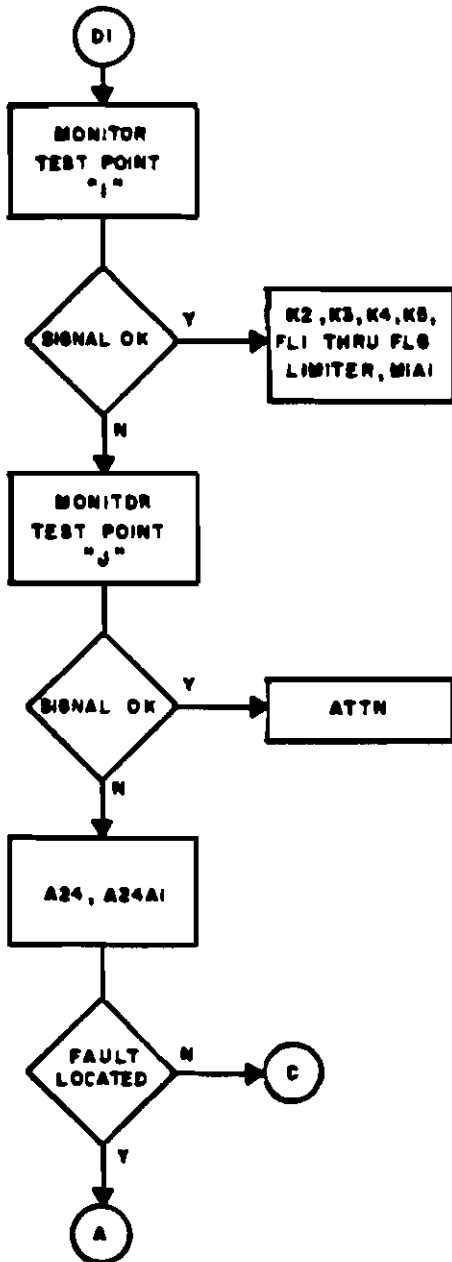
Activate K5 by applying +28 VDC at J122-17 and verify a signal of 1470 MHz at approx. -16.5 dBm.

Isolate the cause of the malfunction and repair or replace.

Verify a signal of 2000 MHz at approx. +7 dBm.

Isolate the cause of the malfunction and repair or replace.

## TABLE 5-8 (CONT) FAULT ISOLATION M1 ASSEMBLY



Verify a signal of 530 MHz at approx. -21 dBM.

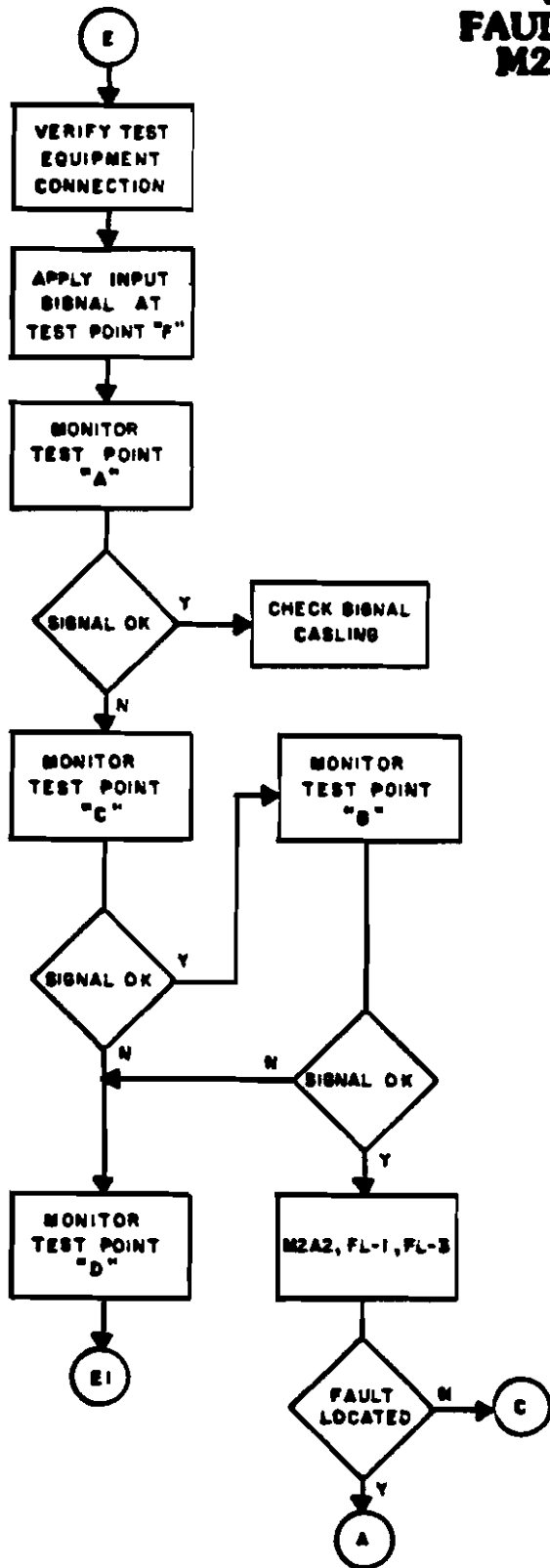
Isolate the cause of the malfunction and repair or replace.

Verify a signal of 530 MHz at approx. -20 dBM.

Isolate the cause of the malfunction and repair or replace.

If the fault has been located, and repairs completed, you are directed to the beginning of the test sequence to verify normal operation.

**TABLE 5-9  
FAULT ISOLATION  
M2 ASSEMBLY**



Apply a CW signal of 1470 MHz at a level of -8 dBM.

Refer to figure 5-2 for location of test points. Verify a signal of 30 MHz at approx. -9 dBM.

Verify proper cable connections and cable loss factors for interconnecting coax lines within the RF section.

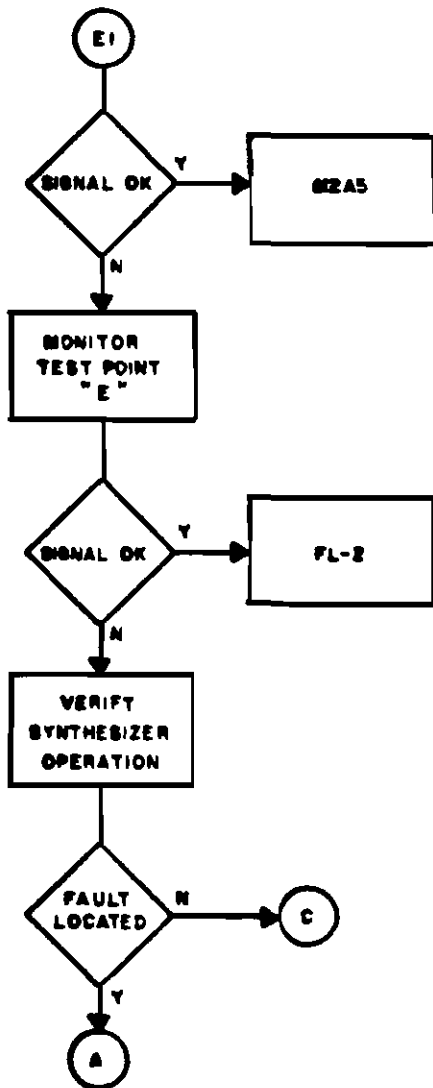
Verify a signal of 2000 MHz at approx. +10 dBM.

Refer to figure 5-2 for location of test points. Verify a signal of 500 MHz at approx. +12 dBM.

Verify a signal of 125 MHz at approx. +5 dBM.

Isolate the cause of the malfunction and repair or replace.

**TABLE 5-9 (CONT)  
FAULT ISOLATION  
M2 ASSEMBLY**



Isolate the cause of the malfunction and repair or replace.

Refer to figure 5-2 for location of test points. Verify a signal of 125 MHz at approx. +7dBm.

Isolate the cause of the malfunction and repair or replace.

Refer to the fault isolation sequence for the synthesizer section and ensure that the applicable signal is OK.

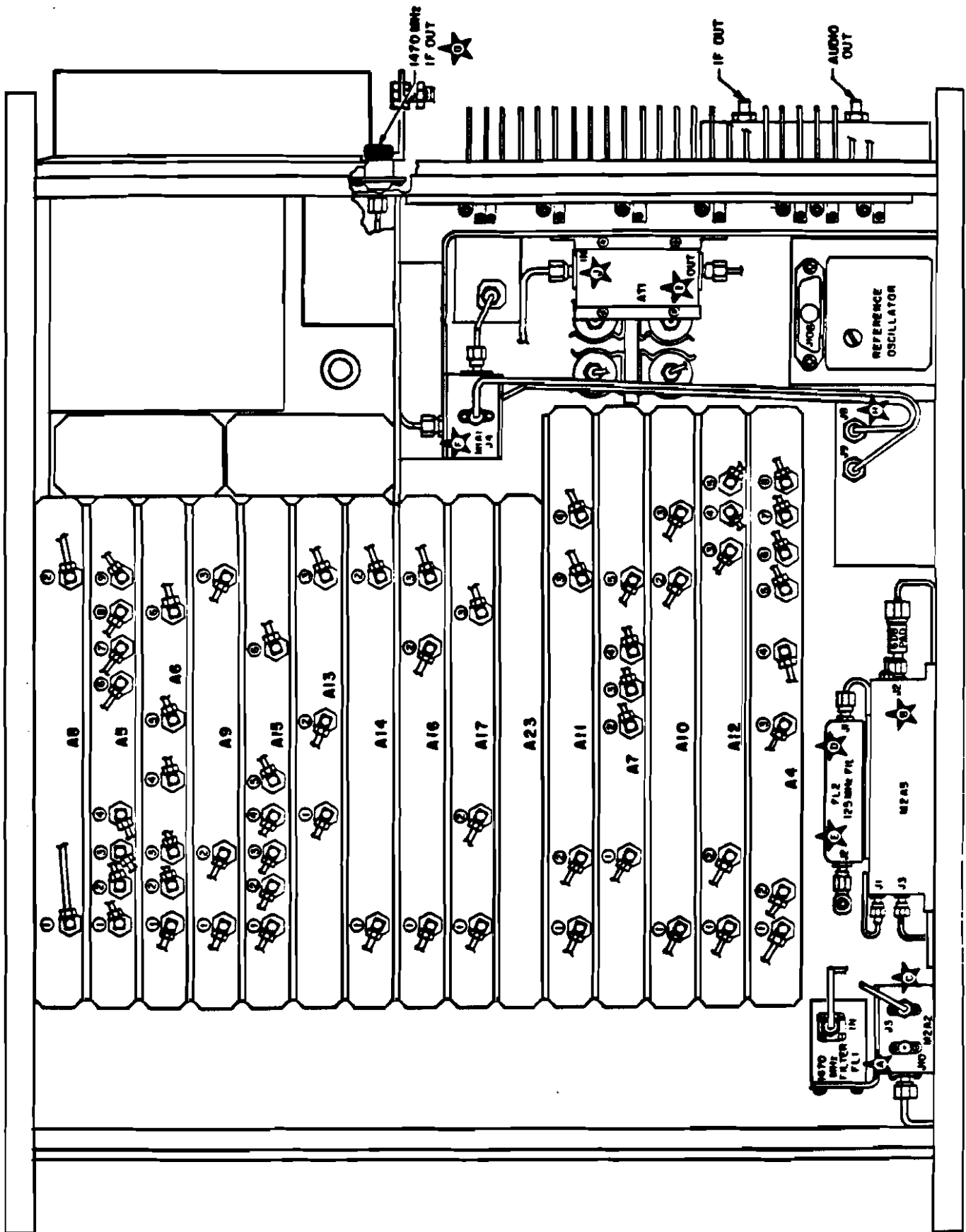
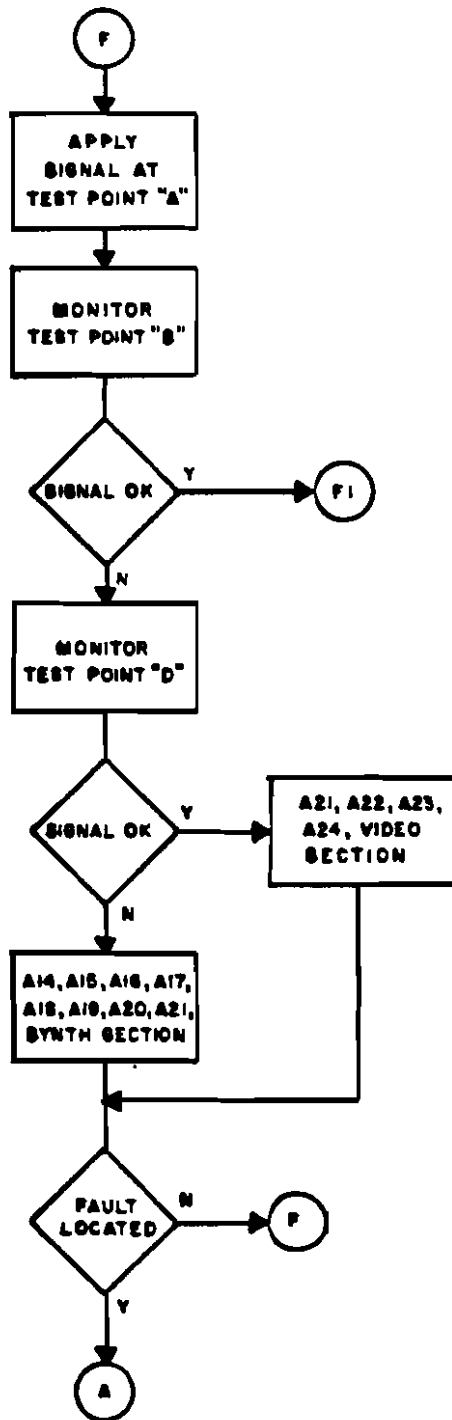


FIGURE 5-2 RF SECTION TEST POINT LOCATIONS

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**TABLE 5-10  
FAULT ISOLATION  
30 MHZ IF ASSEMBLY**



Apply a 30 MHz, CW signal of 0 dBm at the input to A19A14J1.

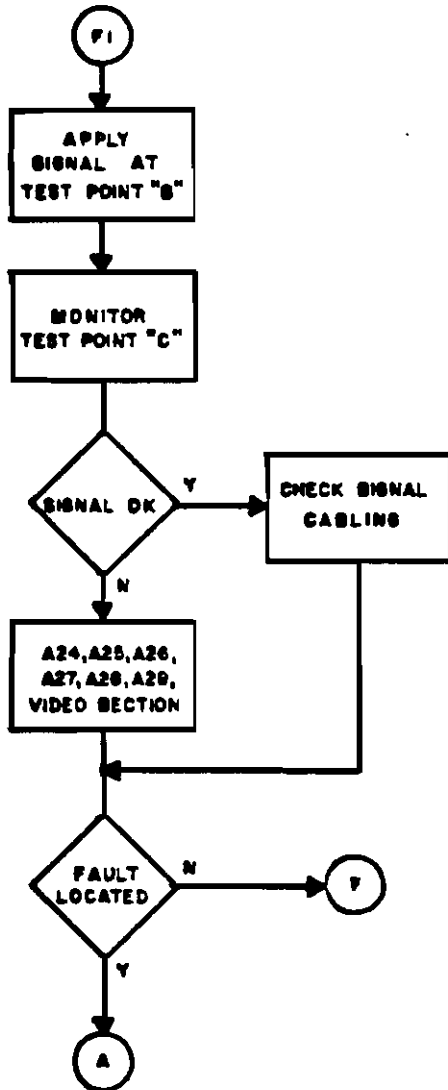
Monitor the output at A19A24J10 which is the logarithmic output to the video section.

The accumulative gain of each stage may be approximated from the values shown in figure 4-4.

Test point "D" is the video out, on the rear panel of the instrument..

Isolate the cause of the malfunction and repair or replace.

**TABLE 5-10 (CONT)  
 FAULT ISOLATION  
 30 MHZ IF ASSEMBLY**



Apply a 30 MHz signal at 0 dBm at A19A24J17.

Test point "C" is the output of the IF stage, A19A29J12. Verify a 30 MHz signal.

Verify proper cable connections and cable loss factors for interconnecting coax lines within the IF section.

Isolate the cause of the malfunction and repair or replace.

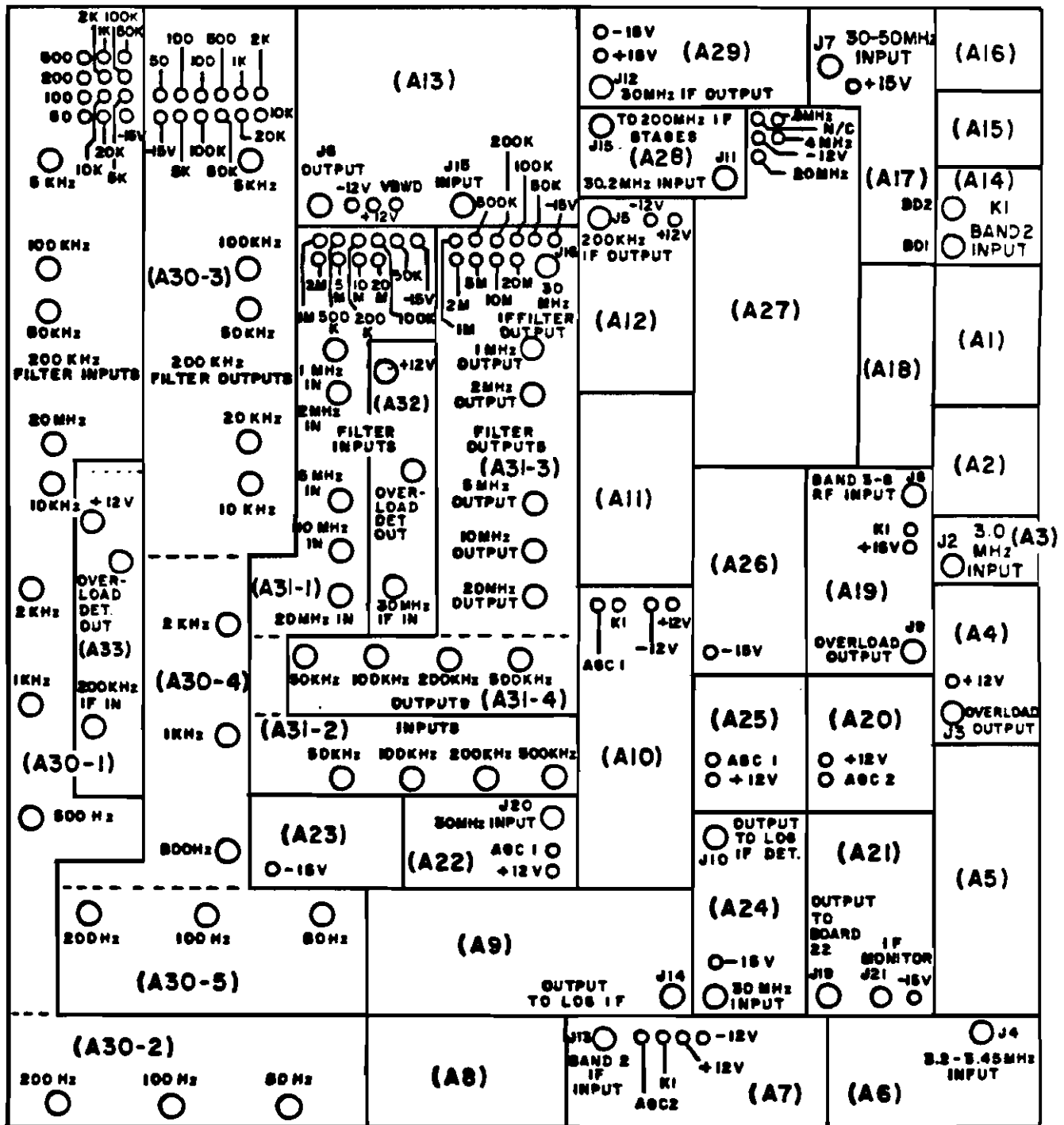
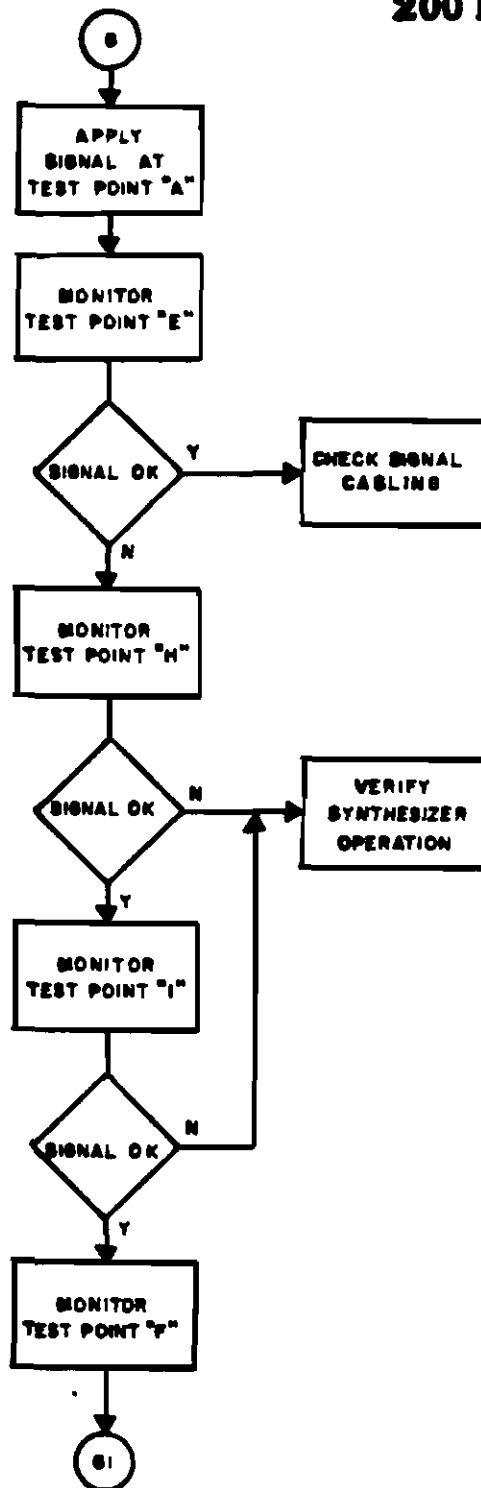


FIGURE 5-3 IF CHASSIS TERMINAL LOCATIONS

**TABLE 5-11  
FAULT ISOLATION  
200 KHZ IF ASSEMBLY**



Apply a 200 KHz, CW signal of 0 dBm at the input A19A1.

Test point "E" is the output of the IF stage, A19A12J5. Verify a 200 KHz signal.

Verify proper cable connections and cable loss factors for interconnecting coax lines within the IF section.

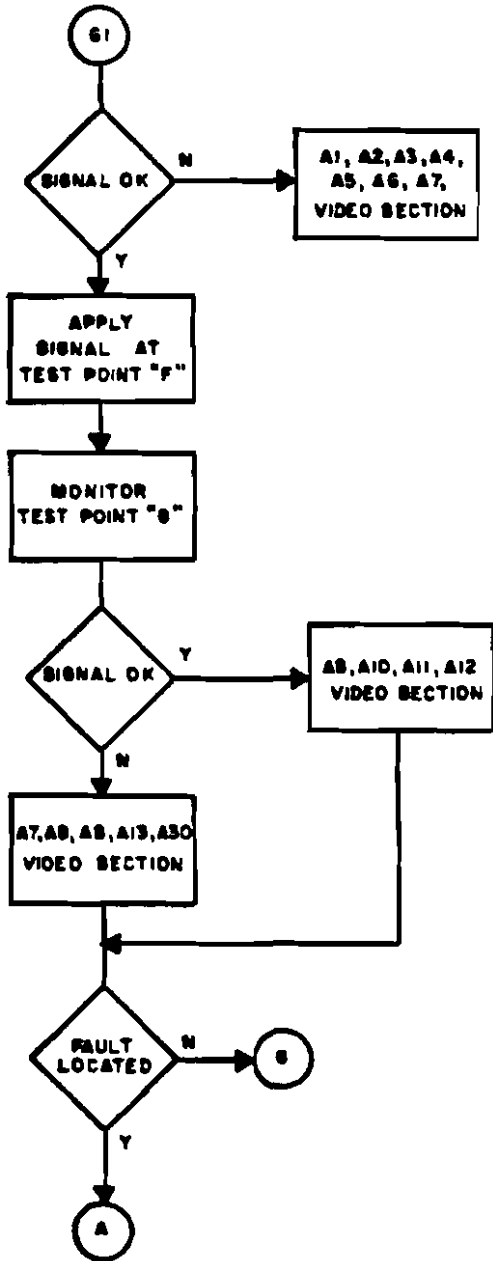
Test point "H" is a local oscillator input to a mixer stage. Verify that signal is present and correct.

Improper signals at TP "H" or TP "I" indicate a malfunction in the synthesizer. Refer to the appropriate fault isolation sequence.

Test point "I" is a local oscillator input to a mixer stage. Verify that signal is present and correct.

Test point "F" is the junction between the output of A19A7 and the input to A19A8. Verify a 200 KHz signal.

**TABLE 5-11 (CONT)  
 FAULT ISOLATION  
 200 KHZ IF ASSEMBLY**



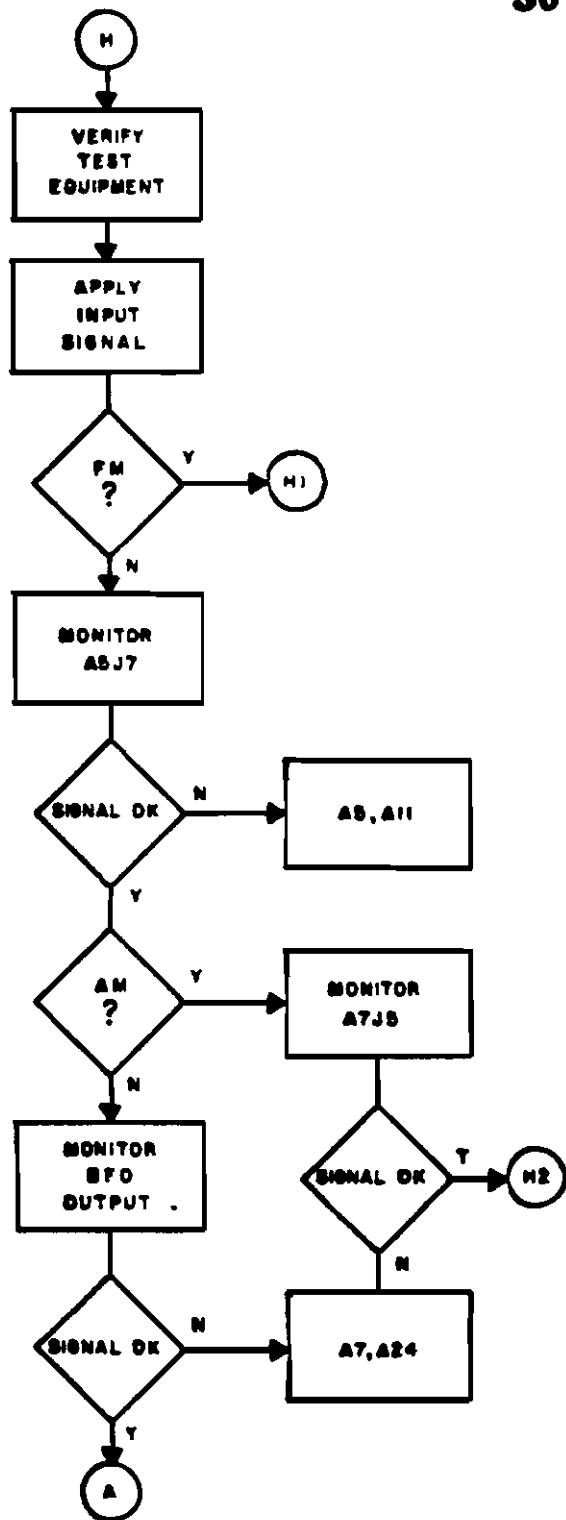
**Isolate the cause of the malfunction and repair or replace.**

**Apply a 200 KHz signal at 0 dBm to the input of A19A8.**

**Test point "G" is the log output to the video section. Monitor A19A13J6 for a 200 KHz signal.**

**Isolate the cause of the malfunction and repair or replace.**

**TABLE 5-12  
FAULT ISOLATION  
30 MHZ VIDEO**



Apply a 30 MHz signal, CW or modulated, similar to the signal used when the malfunction was noted.

If the input signal is frequency modulated, refer to starting point H1.

Refer to figure 5-4 for location of monitor points.

Isolate the cause of malfunction and repair or replace.

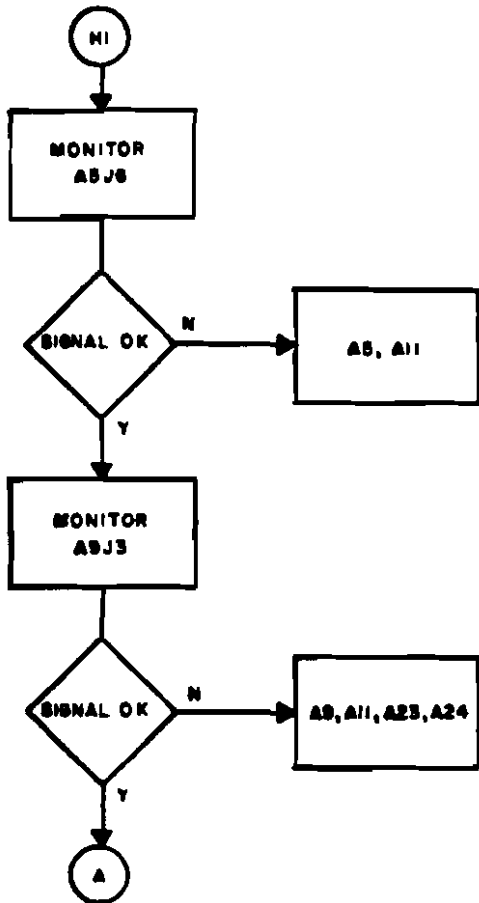
Refer to figure 5-4 for location of monitor points.

If the input signal is amplitude modulated refer to the starting point H2.

Refer to the A7 card schematic for the location of the BFO output monitor point.

Isolate the cause of malfunction and repair or replace.

**TABLE 5-12 (CONT)  
 FAULT ISOLATION  
 30 MHZ VIDEO**



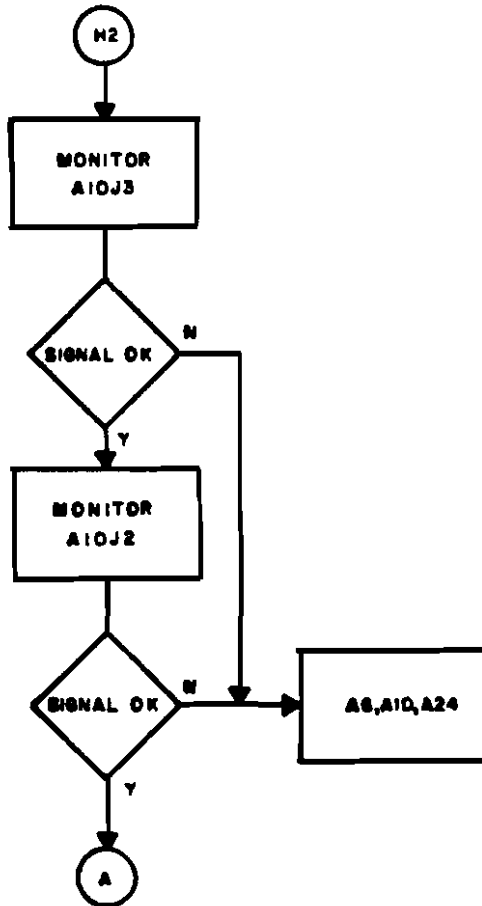
Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

**TABLE 5-12 (CONT)  
FAULT ISOLATION  
30 MHZ VIDEO**

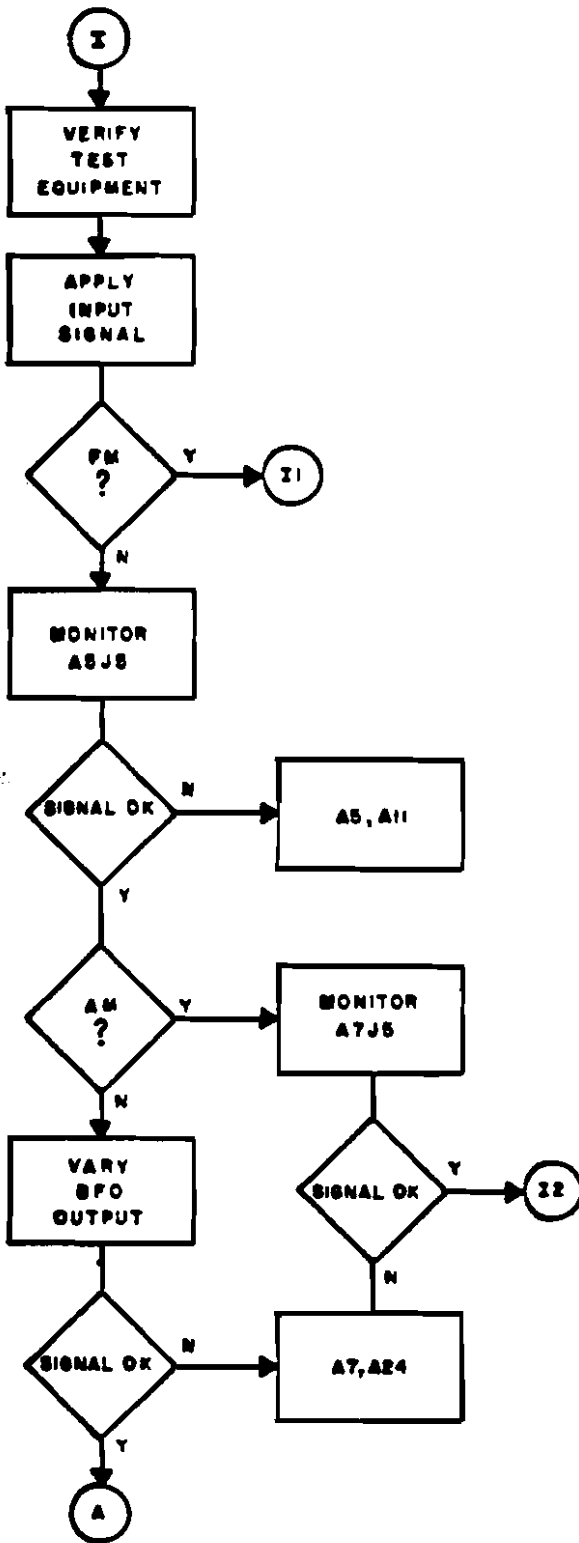


Refer to figure 5-4 for location of monitor points.

Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

**TABLE 5-13  
FAULT ISOLATION  
200 KHZ VIDEO**



Apply a 200 KHz signal, CW or modulated, similar to the signal used when the malfunction was noted.

If the input signal is frequency modulated refer to starting point I1.

Refer to figure 5-4 for location of monitor point.

Isolate the cause of malfunction and repair or replace.

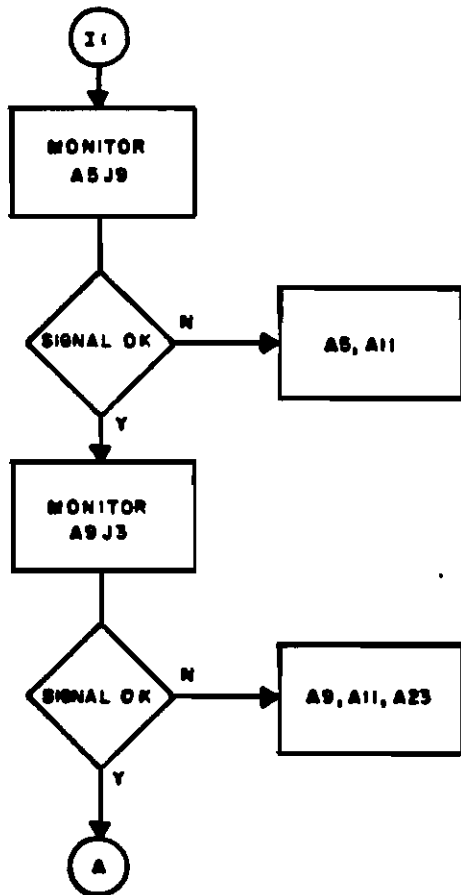
Refer to figure 5-4 for location of monitor points.

If the input signal is amplitude modulated refer to starting point I2.

Vary the oscillator output to obtain a beat frequency or refer to the schematic of the A7 card for an output monitor point.

Isolate the malfunction and repair or replace.

**TABLE 5-13 (CONT)  
 FAULT ISOLATION  
 200 KHZ VIDEO**



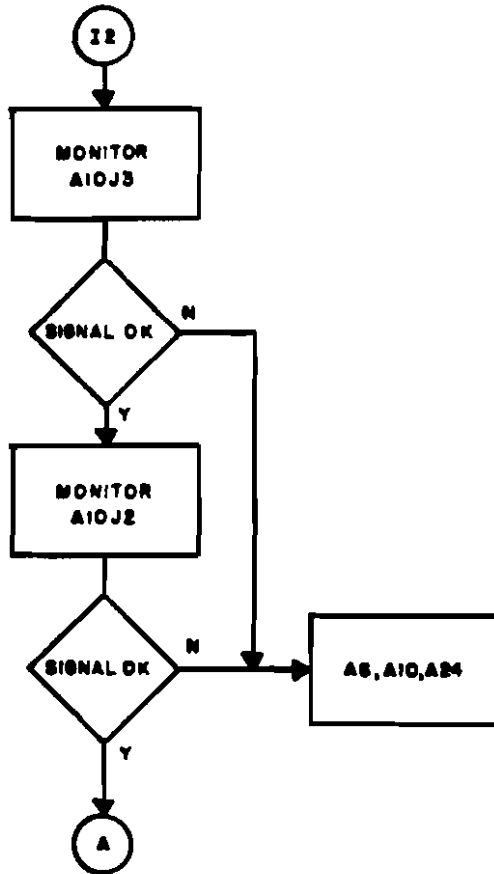
Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

**TABLE 5-13 (CONT)  
FAULT ISOLATION  
200 KHZ VIDEO**



Refer to figure 5-4 for location of monitor points.

Isolate the malfunction and repair or replace.

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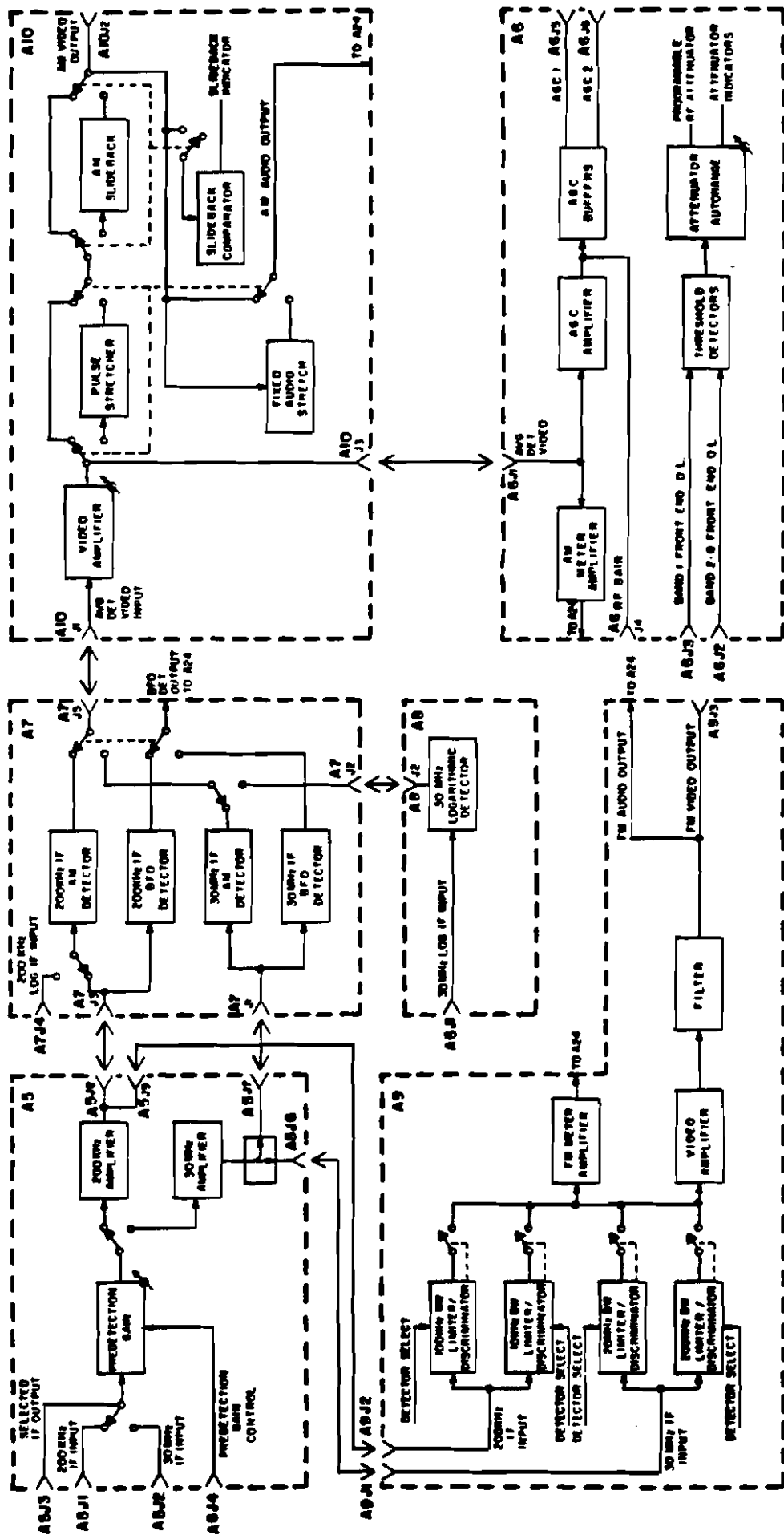
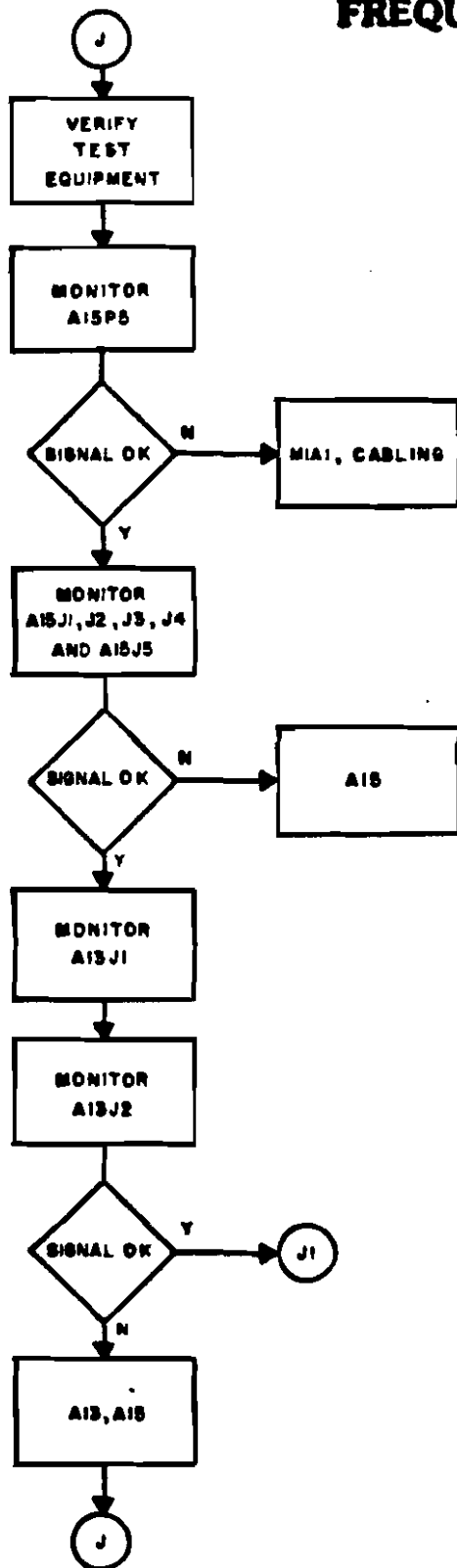


FIGURE 5-4 VIDEO SECTION MONITOR POINTS

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**TABLE 5-14  
FAULT ISOLATION  
FREQUENCY SYNTHESIS**



Verify a 1 MHz signal at the input connector.

Isolate the malfunction and repair or replace.

Verify a 1 MHz signal at each output listed.

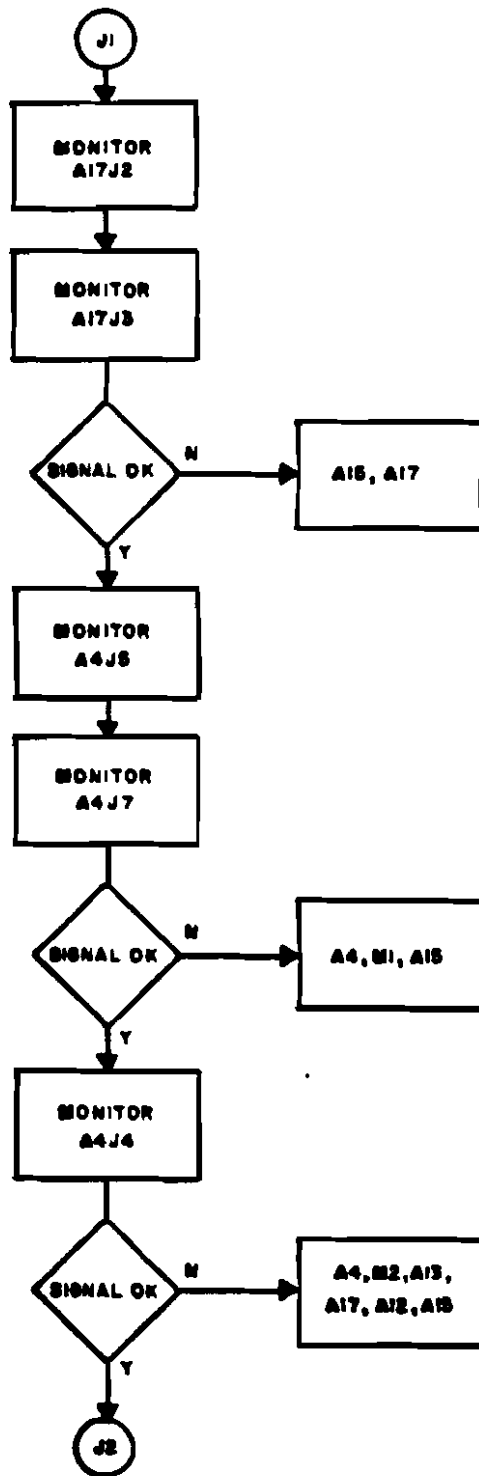
Repair or replace the A15 card assembly.

Verify a 125 MHz signal at the output connector.

Verify a 32 MHz signal at the output connector.

Isolate the malfunction and repair or replace.

**TABLE 5-14 (CONT)  
FAULT ISOLATION  
FREQUENCY SYNTHESIS**



Verify a 94 MHz signal at the output connector.

Verify a 30.2 MHz signal at the output connector.

Isolate the malfunction and repair or replace.

Verify a 1 MHz signal at the output connector.

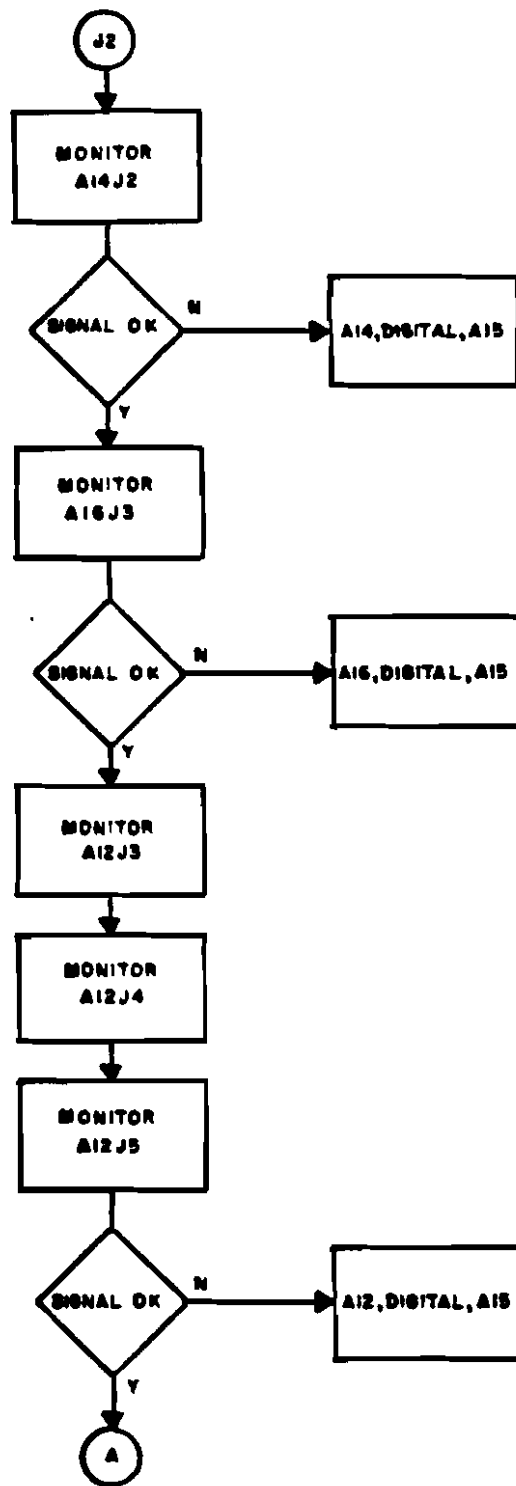
Verify a 3 MHz signal at the output connector.

Isolate the malfunction and repair or replace.

Verify a DC voltage that increases or decreases to its end limit when the coax at A4J3 is removed.

Isolate the malfunction and repair or replace.

**TABLE 5-14 (CONT)  
FAULT ISOLATION  
FREQUENCY SYNTHESIS**



Verify an output frequency that varies from 1 to 2 MHz in 100 Hz steps as the tuning knob is rotated.

Isolate the malfunction and repair or replace.

Verify an output frequency that varies from 1 to 2 MHz in 1 Hz steps as the tuning knob is rotated.

Isolate the malfunction and repair or replace.

Verify an output frequency that varies from 32.8 to 42.6 MHz as the tuning knob is rotated.

Verify an output frequency that varies from 30.25 to 50.0 MHz as the tuning knob is rotated.

Verify an output frequency that varies from 3.2 to 3.45 MHz as the tuning knob is rotated.

Isolate the malfunction and repair or replace.

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## 5.4 DISASSEMBLY

### **\*\*\*CAUTION\*\*\***

*Use care to prevent damage to wires, cables and components. Make sure that SMB connectors are pulled straight out from the mating connector. Use the connector extractor if at all possible. Do not bend rigid copper coaxial cables more than necessary to disconnect them, especially near the connector.*

**Top and Bottom Covers and SMB Connectors** - The receiver may be disassembled with ordinary hand tools. Removing the top cover allows access to the plug-in assemblies in the card cage.

### **\*\*\*NOTE\*\*\***

*It is important to prevent damage to the connectors. Use the SMB Connector Extractor supplied in the maintenance accessory kit to disengage the connectors on the top of the card cage.*

The extractor should also be used where possible on similar connectors throughout the receiver whether used with rigid or flexible coaxial cable.

Inside the bottom cover are individual covers that allow access to subassemblies of the IF chassis, A19 section.

### **Rear Panel**

To remove the rear panel perform the following steps. Directions are as viewed from the rear.

1. Disconnect power cord.
2. Remove top cover.
3. Release 4 slide-catches and remove plug-in module.

4. Remove 8 screws - 4 retaining each of the control connectors located at the bottom left corner of the panel. The hardware is captive behind the panel.
5. Remove 4 screws nearest the bottom edge of the panel.
6. Remove 2 screws adjacent to the left side handle.
7. Remove 2 screws adjacent to the right side handle.
8. Pull straight out on the panel until the connector located next to the plug-in module connector is disconnected from the mainframe.
9. Reassembly may be accomplished by performing steps 1 through 8 in the reverse order.

**\*\*\* CAUTION \*\*\***

*Use care to ensure that the connector is mating properly with the mainframe connector. Do not force it. If the connectors have become misaligned it may be necessary to use hand pressure on the U-channel to help align the connectors when reinstalling the rear panel.*

**Left Side Panel**

Remove all screws from the panel.

**Right Side Panel**

Perform the following steps:

1. Disconnect power cord.
2. Remove top cover.
3. Disconnect the 2 screw on coaxial connectors located on the bracket at the rear or the side panel, and the J-10 connector toward the front panel.
4. Remove only the 8 screws located around the periphery of the side panel plus the 2 screws located nearest the rear edge of the panel. All other screws are securing components to the side panel.
5. There is sufficient service loop in the remaining cables to allow the side panel to lie flat beside the receiver for servicing. If it is desired to completely disconnect the side panel, the remaining connectors may be located by visual inspection.

6. To reinstall the panel, perform steps 2 through 5 in the reverse order.

### **Front Panel**

To remove the front panel perform the following steps. Directions are as viewed from the front.

1. Disconnect power cord.
2. Remove top cover.
3. Disconnect the in-line connectors in the rigid coax located immediately behind the POWER switch at the top, left corner of the panel.

**\*\*\*NOTE\*\*\***

*Use 2 wrenches of the proper size to avoid damaging the coax.*

4. Remove 4 screws nearest the bottom edge of the panel.
5. Release the catches and disconnect the 4 rectangular shaped connectors located across the front of the card cage.
6. Using the SMB Connector Extractor, disconnect the entire bundle of coaxial cables interconnecting the front panel with the top of the card cage. This is the bundle coming up behind the AM SLIDEBACK control.
7. Remove 2 screws adjacent to left side handle.
8. Remove 2 screws adjacent to right side handle.
9. Remove the SMB connector to the left side of the front panel board.
10. Slide the front panel forward until it is free of the receiver.
11. To reinstall the front panel perform steps 2 through 9 in the reverse order.

## **5.5 FIELD SERVICE ADJUSTMENTS**

### **5.5.1 GENERAL**

The following are adjustments that may be required when a previously adjusted spare assembly is installed in the receiver. No special test fixture or equipments are required other than those described.

Unless otherwise directed for particular adjustments, the replacement card should be temporarily installed using the extender card, rods, and cables supplied with the receiver.

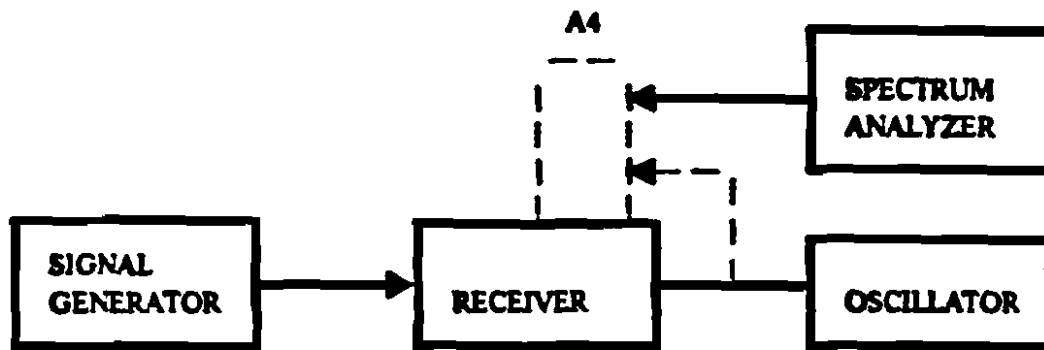
The procedures make use of a regular signal processed normally through the receiver. The 50 KHz position of the BANDWIDTH selector is used to route the signal through the 30 MHz IF circuits and the 20 KHz position is used for the 200 KHz IF. Unless otherwise specified, the receiver is tuned to 10 MHz.

**\*\*\* CAUTION \*\*\***

*Turn off the receiver when removing or installing any assemblies.*

## 5.5.2 A4 MICROWAVE OSCILLATOR PLL CONTROL

### Setup:



### Procedure:

#### A. Power Supply

1. Install the A4 board on the extender card.
2. Monitor the output voltage at J8.
3. Adjust R100 for  $+15\text{ VDC} \pm .1$ .
4. Monitor the voltage across capacitor C58.
5. Adjust R95 for  $-15\text{ VDC} \pm .1$ .

#### B. Frequency Multiplier

1. Connect the signal generator to J6.
2. Set the signal generator for 1 MHz, cw, at 0 dBm.
3. Connect the oscilloscope to J7.
4. Adjust L3 and L4 for 3 MHz output level of 2 volts.

### **C. Shaping Amp**

- 1. Preset R75 and R51 to the full cw position.**
- 2. Preset R50 to the full ccw position.**
- 3. Preset R84 to a mid range position.**
- 4. Remove component U6 from the socket.**
- 5. Connect a variable DC source (0-12V) to the junction of C37 and R43.**
- 6. Monitor the voltage level at J4.**
- 7. Set the DC source to 11.0 volts.**
- 8. Adjust R75 for 48.5 volts at J4.**
- 9. Set the DC source to 0 volts.**
- 10. Adjust R84 for 1.5 volts at J4.**
- 11. Set the DC source to 11.0 volts.**
- 12. Readjust R75 for 48.5 volts at J4.**

### **D. Clamps**

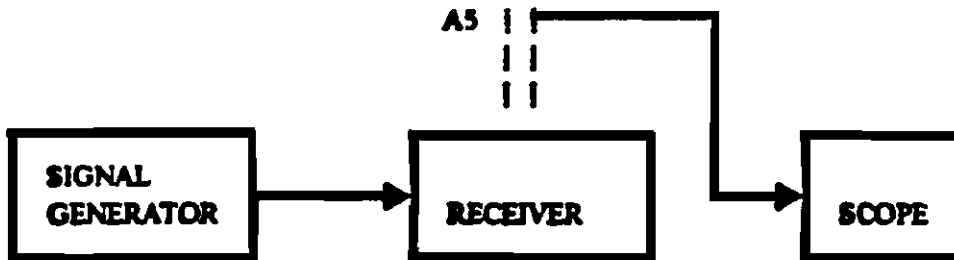
- 1. Reconnect tuning input at J4 to microwave bracket #2.**
- 2. Monitor the prescaler output with scope (J3 cable).**
- 3. Set the DC source to 12.0 volts.**
- 4. Adjust R50 for a prescaler output frequency of 10.9 MHz.**
- 5. Set the DC source to 0 volts.**
- 6. Adjust R51 for 0.35 MHz.**
- 7. Apply a cw signal at J2 of 32 MHz at -6 dBm.**
- 8. Apply a cw signal at J1 between 32.8 and 42.6 MHz at 0 dBm.**

### **E. Phase Lock**

- 1. Connect the prescaler output to J3.**
- 2. Replace component U6.**
- 3. Monitor the prescaler output.**
- 4. Verify that the J1 signal varies between 32.8 MHz and 42.6 MHz and that the prescaler output simultaneously varies between .8 MHz and 10.6 MHz.**
- 5. Readjust the upper clamp to 11 MHz and adjust the lower clamp to the maximum value that is consistent with stability at .8 MHz and throughout the range.**

### 5.5.3 A5 - PREDETECTION GAIN CONTROL

#### Setup:



**Preset Controls: INPUT FREQUENCY .25 to 20 MHz, BANDWIDTH 50 KHz.**

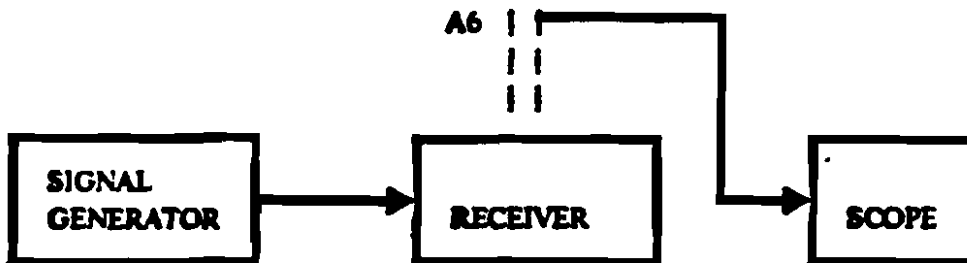
#### **Procedure:**

##### **A. A5R93 200 KHz predetection amplifier gain.**

1. Apply a 10 MHz signal, 30% amplitude modulated with 1000 Hz, to the SIGNAL IN connector.
2. Monitor A5J7 with the oscilloscope and adjust the signal level, RF GAIN and PREDETECTION GAIN for a level of 0.5 V pk-pk.
3. Set receiver BANDWIDTH to 20 KHz.
4. Monitor A5J9 with oscilloscope and adjust A5R93 for a level of 0.5 pk-pk.
5. Remove extenders and install assembly in receiver.

## 5.5.4 A6-AGC RF OVERLOAD - AUTORANGING

### Setup:



**Preset Controls:** INPUT FREQUENCY 0 to .25 MHz, AGC-OFF, FR GAIN fully CW.

### **Procedure:**

#### **A. A6R14 - Band 1 front end overload threshold.**

1. Tune receiver to 100 KHz.
2. Apply a 100 KHz signal, 30% amplitude modulated with 1000 Hz, to the SIGNAL IN connector. Adjust signal generator output level to -25 dBm.
3. Adjust A6R14 to make the OVERLOAD indicator just flicker.

#### **B. A6R8 - Band 1 Attenuator autoranging low-level threshold.**

1. Proceed as in A1 and 2 except reduce generator output to -38 dBm.
2. Connect oscilloscope to A6U5 pin 10.
3. Adjust A6R8 to make the signal seen on the oscilloscope go high (about +3.5 V dc ) on modulation peaks.
4. Check attenuator autoranging by increasing the modulation level to 100% and slowly increasing the generator output level to +20 dBm.

**C. A6R10 - Bands 2 through 8 front end overload threshold.**

1. Tune receiver to 60 MHz.
2. Apply a 60 MHz signal, 30% amplitude modulated with 1000 Hz, to the SIGNAL IN connector. Adjust signal generator output level to -14 dBM.
3. Adjust A6R10 to make the OVERLOAD indicator just flicker,

**D. A6R6 - Bands 2 through 8 attenuator autoranging lowlevel threshold.**

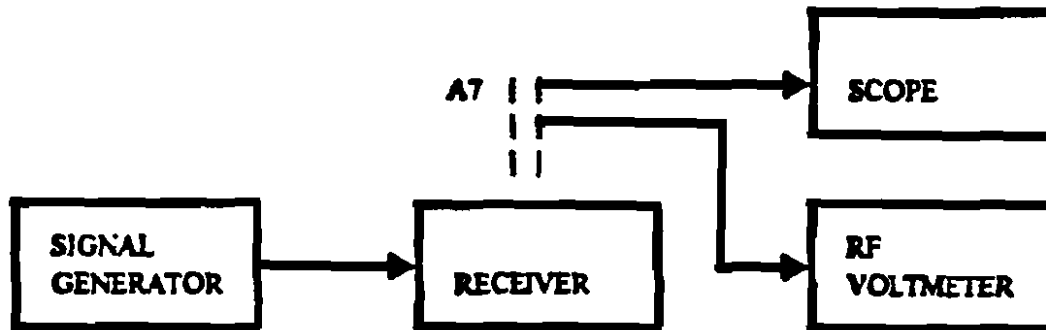
1. Proceed as in C1 and 2 except reduce generator output to -29 dBM.
2. Connect oscilloscope to A6U5 pin 10.
3. Adjust A6R6 to make the signal seen on the oscilloscope go high (about +3.5 Vdc) on modulation peaks.
4. Check attenuator autoranging by increasing the modulation level to 100% and slowly increasing the generator output level to +20 dBM.

**E.A6R68 - AM meter offset**

1. Remove input signal and reduce RF GAIN to MIN.
2. Position METER switch to AM.
3. Adjust A6R68 to make the meter reading correspond to mechanical zero (meter reading with POWER OFF).

## 5.5.5 A7 - A-M and BFO DETECTORS

### Setup:



**Preset Controls: INPUT FREQUENCY .25 to 20MHz**

### Procedure:

#### A. A7R25 200 KHz and 30 MHz detector balance

1. Set BANDWIDTH to 50 KHz.(30 MHz detector)
2. Apply a 450 MHz signal, -95dBm level to the SIGNAL IN connector.
3. Monitor A7I5 with the oscilloscope adjust signal generator level for 1 volt peak output
4. Position the BANDWIDTH selector to 20 KHz (200KHz detector) and again note the level as in step 3. If the levels seen in steps 3 and 4 are unequal adjust A7R25 to equalize them while switching between the 20 and 50 KHz bandwidth positions. Note: A7R25 changes the 200KHz detector only

#### B. A7R85 30MHz BFO Frequency Adjust

1. Set the signal generator to a frequency of 30MHz -95dBm level.
2. Tune receiver to 30MHz, 50KHz bandwidth.
3. Monitor AM VIDEO out on scope.

4. Set AM-FM-BFO switch to BFO.
5. Adjust A7R85 (available at top of A7 assembly for a zero beat on the scope.

**\*\*\*NOTE\*\*\***

*R6, R25, and R51 interact. Procedures A, B and C may have to be repeated until both the audio and dc levels are equalized. If this condition cannot be achieved, see procedure C.*

**C. A7T51 - 200 KHz A-M detector dc offset.**

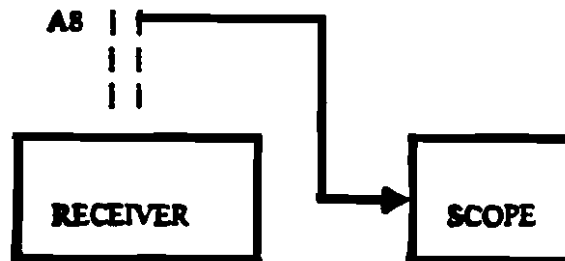
1. This adjustment is not required unless indicated by B.3. If necessary, repeat procedures A and B, except adjust A7R51 instead of R6.

**D. A7R32 - 30 MHz BFO gain and A7R76 - 200 KHz BFO gain.**

1. Set receiver bandwidth to 50 KHz and perform procedure A. 1,2, and 3 above, except turn off signal modulation.
2. Monitor A7P1 pin R or 14 with the oscilloscope. Observe the audio beat not on the oscilloscope and adjust A7R32 for maximum output.
3. Change receiver bandwidth to 20 KHz and adjust A7R76 for maximum output level of the audio beat note.
4. While alternating between bandwidth settings of 20 and 50 KHz, readjust either R32 or R76 to make the higher output equal to the lower obtained in steps 2 and 3 above.
5. Remove extenders and install assembly in receiver.

## 5.5.6 A8 - 30MHZ LOG IF DETECTOR

### Setup:



**Preset Controls:** INPUT FREQUENCY .25 to 20 MHz, BANDWIDTH, 50 KHz, AM VIDEO -LINEAR, RF GAIN- fully counter-clockwise.

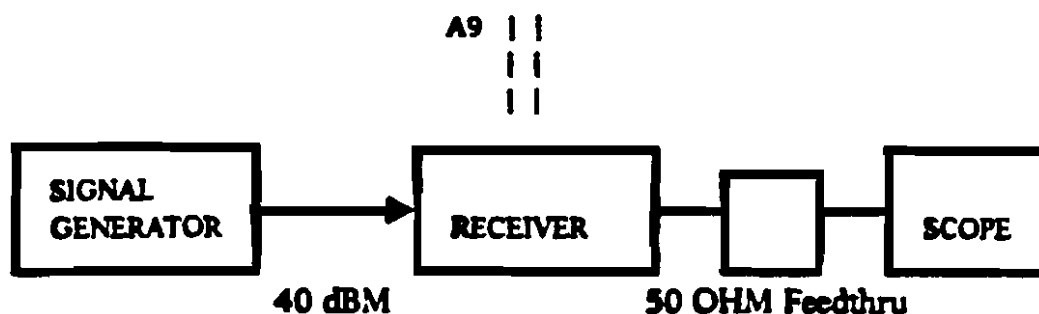
### Procedure:

#### A. A8R69 - DC offset.

1. Monitor the signal at the AM VIDEO connector with the oscilloscope. The dc level of the video signal should be zero. If not, see the adjustment procedure for A10.
2. Position the AM VIDEO switch to LOG. Adjust A8R69, if necessary, to zero the dc level of the signal seen on the oscilloscope.
3. Remove extenders and install assembly in receiver.

## 5.5.7 A9 FM DETECTORS, AUDIO and VIDEO AMPL

### Setup:



**Preset Controls: INPUT FREQUENCY 20 to 200 MHz, AGC- SLOW , METER-FM.**

### Procedure:

#### I. 20 MHz discriminator

##### A. A9L1 - Center frequency.

1. Set the BANDWIDTH selector to the 20 MHz position.
2. Apply a 100 MHz signal, frequency modulated with 1000 Hz, at a signal level of -40 dBm to the SIGNAL IN connector.
3. Monitor the FM VIDEO connector on the front panel with the oscilloscope.

**\*\*\*NOTE\*\*\***

*Use a 50 ohm feedthrough termination or a TEE and a 50 ohm load between the VIDEO connector and the oscilloscope.*

4. Adjust A9L1 slightly for maximum 1000 Hz indication on the oscilloscope.

**B. A9R26 - FM meter offset.**

1. Under the same conditions as in A above, except remove modulation from input signal, adjust A9R26 for a center scale reading on the TUNING meter.

**C. A9R30 - FM meter gain.**

1. While alternating the signal generator output frequency between 95 MHz and 105 MHz, adjust A9R30 for a meter reading of about 1/6 and 5/6 full scale respectively.

**\*\*\*NOTE\*\*\***

*The adjustments of procedures I. A, B, and C interact and may have to be repeated until the desired readings are obtained.*

**II. 200 KHz Discriminator**

**A. A9L2- Center Frequency**

1. Set the BANDWIDTH selector to the .2 MHz position.
2. Continue complete procedure as in I.A except adjust A9L2.

**\*\*\*NOTE\*\*\***

*Adjust L2 very cautiously as this is a difficult adjustment.*

**B. A9R33 - FM meter offset.**

1. Turn off generator modulation and adjust A9R33 for a center scale reading on the TUNING meter.

**C. A9R39 - FM meter gain.**

1. While alternating the signal generator output frequency between 99.950 and 100.050 MHz, adjust A9R39 for a meter reading of about 1/6 and 5/6 full scale.

**\*\*\*NOTE\*\*\***

*The adjustments of procedures II A,B and C interact and may have to be repeated until the desired readings are obtained.*

**III. 100 KHz Discriminator**

**A. A9L3- Center frequency.**

1. Set the BANDWIDTH selector to the 20 KHz position.
2. Continue complete procedure as in I. A, except adjust A9L3.

**B. A9R41- FM meter offset.**

1. Turn off generator modulation and adjust A9R41 for a center scale reading on the Tuning meter.

**C. A9R46 - FM meter gain.**

1. While alternating the signal generator output frequency between 99.975 and 100.025 MHz, adjust A9R46 for a meter reading of about 1/6 and 5/6 full scale.

**\*\*\*NOTE\*\*\***

*The adjustments of procedures III. A,B and C interact and may have to be repeated until the desired readings are obtained.*

#### **IV. 10 KHz Discriminator**

##### **A. A9L4 - Center Frequency**

1. Set the BANDWIDTH selector to the 10 KHz position.
2. Continue complete procedure as in I.A, except adjust A9L4.

##### **B. A9R47- FM meter offset.**

1. Turn off generator modulation and adjust A9R47 for a center scale reading of the Tuning meter.

##### **C. A9R52 -FM meter gain.**

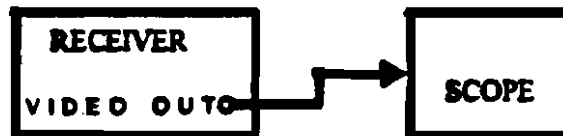
1. While alternating the signal generator output frequency between 99.995 and 100.005 MHz, adjust A9R52 for a meter reading of about 1/6 and 5/6 full scale.

**\*\*\*NOTE\*\*\***

*The adjustments of procedures IV. A,B and C interact and may have to be repeated until the desired readings are obtained.*

## 5.5.8 A10 A-M VIDEO-SLIDEBACK PULSE-AUDIO STRETCH

### Setup:



**Preset Control: INPUT FREQUENCY .25 to 20 MHz, BANDWIDTH 50 MHz, AM VIDEO - LINEAR, RF GAIN-fully counterclockwise, PREDETECTION GAIN-0.**

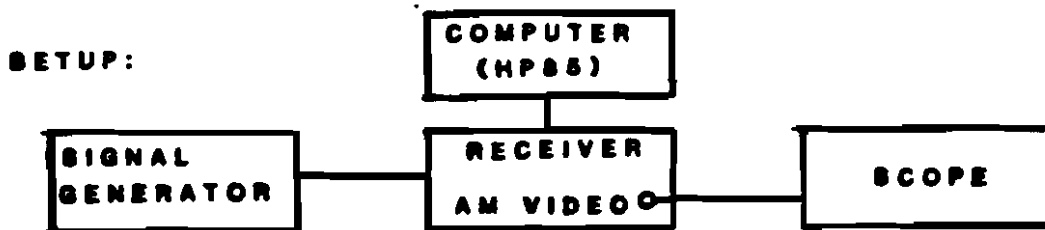
### Procedure:

#### A. A10R18- Video dc offset.

1. Monitor the signal at the AM VIDEO connector with the oscilloscope.
2. Adjust A10R18, if necessary, to zero the dc level of the signal seen on the oscilloscope.

(A10R18 is available from top of A10 essembly; extender not required)

### 5.5.9 A11 Logic and Switching Control



#### Procedure:

##### A. A11R23 End-to-End Gain Adjust

1. Monitor signal at AM VIDEO connector on scope.
2. Set the signal generator to 100MHz, -95dBm level.
3. Tune receiver to 100MHz, 200KHz BW, attenuator 0, predetect gain 0.
4. Adjust R23 (available from top of A11 assembly) for 1 volt out on scope.

##### B. A11R25 MDC GAIN Compensation

**NOTE:** This is a DSI System adjustment and is not required for standalone operation.

1. Ensure that end-to-end gain is correct as in the procedure.

##### Step A. Monitor signal at AM VIDEO connector on scope.

2. Connect computer to receiver IEEE port.
3. Put receiver in quasi remote mode (command M14).
4. Set signal generator to 100MHz, -82dBm level.
5. Tune receiver to 100MHz, set RF attenuator to 0, select 200KHz bandwidth.
6. Adjust A11R25 (available from top of A11 assembly) for 1 volt peak video signal.

## 5.6 HARNESSES AND INTERCONNECTION

Figure 5-6 shows the card cage coax connector locations. Table 5-15 lists the coax harness connections to the cards, and shows where the various signals are routed.

Table 5-16 through 5-26 are lists showing the wiring (not coax) between the receivers modules and connectors.

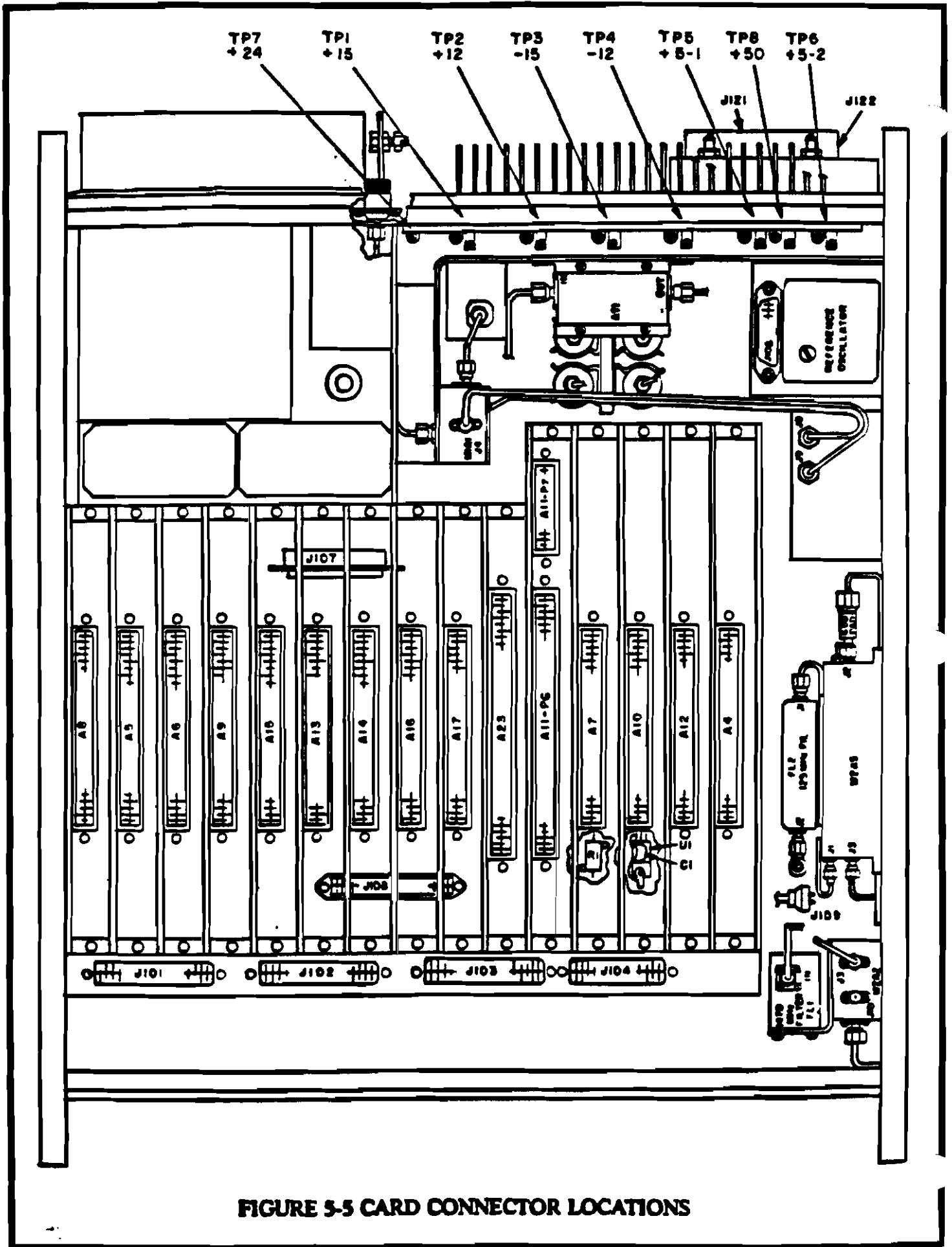


FIGURE 5-5 CARD CONNECTOR LOCATIONS

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NOTE:  
 1. ① DENOTES J REFERENCE NUMBER

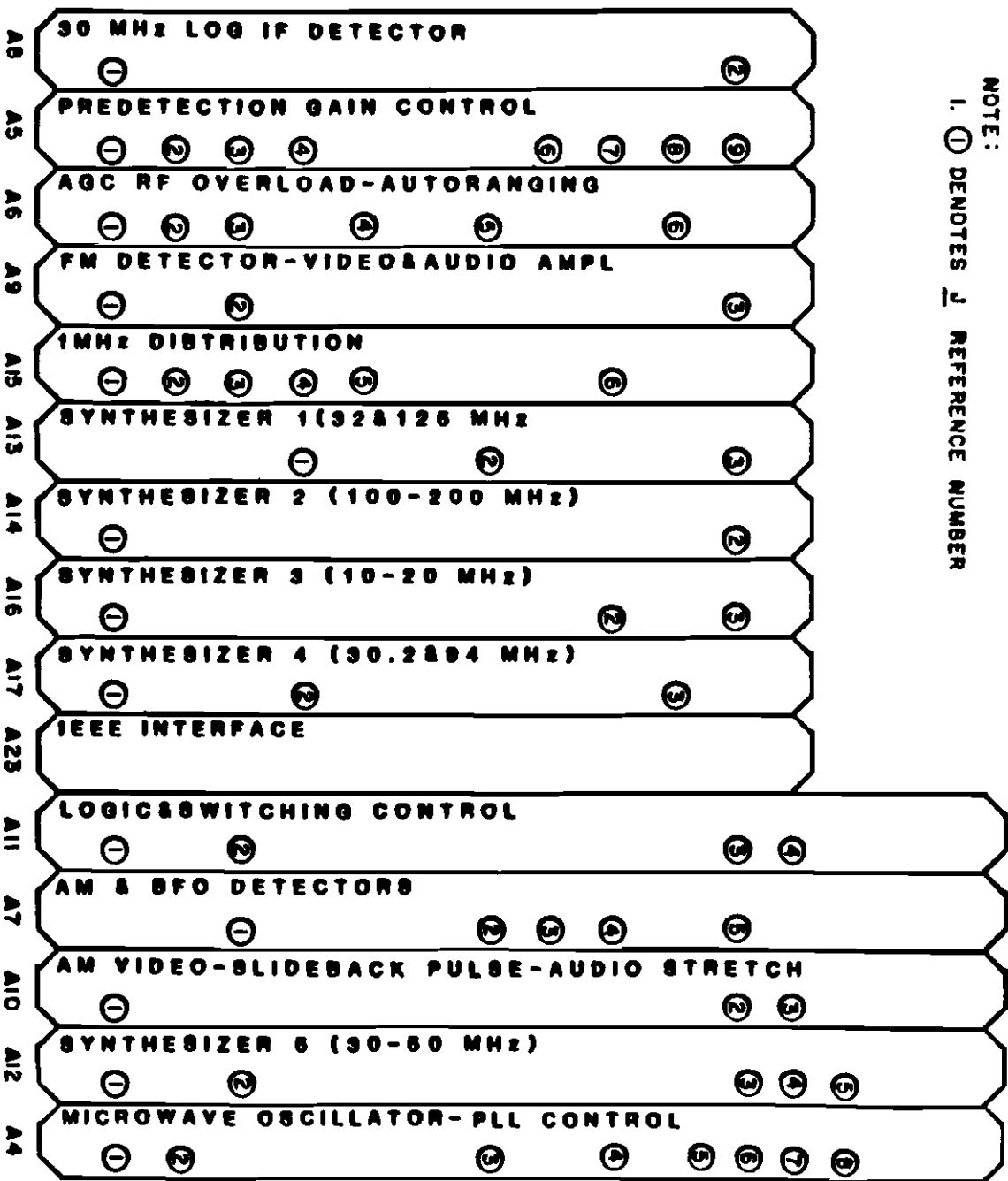


FIGURE 5-6 CARD CAGE COAX CONNECTIONS

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**CARD CAGE COAXIAL CONNECTOR LIST  
TABLE 5-15**

<b>Assembly</b>	<b>Connector</b>	<b>Signal</b>	<b>Connects To</b>
<b>A4</b>	J1	32.8 to 42.6 MHz	A12J3
	J2	32 MHz	A13J2
	J3	.8 to 10.6 MHz	uWave Bkt #2
	J4	VCO Tune	uWave Bkt #2
	J5	1MHz out	A11J4
	J6	1MHz Input	uWave Bkt #1
	J7	3MHz	A19J2
	J8	+15V	uWave Bkt #2
<b>A5</b>	J1	200 KHz IF	A19J5
	J2	30 MHz IF	A19J12
	J3	IF Out	A24J7
	J4	IF gain	A24
	J6	30 MHz Pred IF	A9J1
	J7	30 MHz Pred IF	A7J1
	J8	200 KHz Pred IF	A9J2
	J9	200 KHz Pred IF	A7J3
	<b>A6</b>	J1	AGC Sig
J2		30 MHz IF Overload	A19J9
J3		200 KHz IF overload	A19J3
J4		RF gain	A11J3
J5		AGC 1	A19
J6		AGC 2	A19
<b>A7</b>	J1	30 MHz Pred IF	A5J7
	J2	30 MHz Log Video	A8J2
	J3	200 KHz Pred IF	A5J9
	J4	200 KHz log IF	A19J6
	J5	Ave Det Output	A10J1
<b>A8</b>	J1	30 MHz IF	A19J10
	J2	30 MHz Log Video	A7J2
<b>A9</b>	J1	30 MHz Pred IF	A5J6
	J2	200 KHz Pred IF	A5J8
	J3	FM Video Output	A24J5
<b>A10</b>	J1	Ave Detected Video Input	A7J5
	J2	Video Output	A24J3
	J3	AGC Signal	A6J1
<b>A11</b>	J1	1MHz	A24A1J3
	J2	RF Gain, Man	A24
	J3	RF Gain	A6J4
	J4	1MHz	A4J5
<b>A12</b>	J1	1MHz	A15J1
	J2	1-2 MHz	A16J2
	J3	32.8-42.6 MHz	A4J1
	J4	30.25-50.0MHz	A19J7
	J5	3.2 -3.45 MHz	A19J4

### CARD CAGE COAXIAL LIST (CONT)

Assembly	Connector	Signal	Connects To
A13	J1	125 MHz	uWave Bkt #2
	J2	32 MHz	A4J2
	J3	1 MHz	A15J5
A14	J1	1 MHz	A15J4
	J2	1-2 MHz	A16J3
A15	J1	1 MHz	A12J1
	J2	1 MHz	A17J1
	J3	1 MHz	A16J1
	J4	1 MHz	A14J1
	J5	1 MHz	A13J3
	J6	1 MHz	uWave Bkt #1
A16	J1	1MHz	A15J3
	J2	1-2 MHz	A12J2
	J3	1-2 MHz	A14J2
A17	J1	1 MHz	A15J2
	J2	94 MHz	uWave Bkt #2
	J3	30.2 MHz	A19J11

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	AB	B/2	A12	B
+15V	RED	24	AB	B/2	A5	B/2
+15V	RED	24	A5	B/2	A6	22
+15V	RED	24	A6	22	A9	B/2
+15V	RED	24	A9	B/2	A15	B/2
+15V	RED	24	A15	B/2	TB101	6
+15V	RED	24	A15	B/2	A13	B/2
+15V	RED	24	A13	B/2	A14	B/2
+15V	RED	24	A14	B/2	A16	B/2
+15V	RED	24	A16	B/2	A17	B/2
+15V	RED	24	A17	B/2	A11P7	B7/A7
+15V	RED	24	A11P7	B7/A7	A7	B/2
+15V	RED	24	A7	B/2	A10	B/2
+15V	RED	24	A10	B/2	A12	B
-15V	VIO	24	AB	C/3	A5	C/3
-15V	VIO	24	A5	C/3	A6	21
-15V	VIO	24	A6	21	A9	C/3
-15V	VIO	24	A9	C/3	A15	C/3
-15V	VIO	24	A15	C/3	TB101	7
-15V	VIO	24	A15	C/3	A13	C/3
-15V	VIO	24	A13	C/3	A14	C/3
-15V	VIO	24	A14	C/3	A16	C/3
-15V	VIO	24	A16	C/3	A17	C/3
-15V	VIO	24	A17	C/3	A7	C/3
-15V	VIO	24	A7	C/3	A10	C/3
-15V	VIO	24	A10	C/3	A12	C/3
-15V	VIO	24	A12	C/3	A11P7	B4/A4
+12V	RED	24	A5	D/4	A9	D/4
+12V	RED	24	A9	D/4	A15	D/4
+12V	RED	24	A15	D/4	TB101	4
+12V	RED	24	A15	D/4	A17	D/4
+12V	RED	24	A17	D/4	A7	D/4
+12V	RED	24	A7	D/4	A10	D/4
SYNTH. 5V	GRN	24	A12	U/17	U1	3
REG. IN	RED	24	U1	1	R1	2
+12V	RED	24	A10	4	R1	1
-12V	VIO	24	A5	E/5	A9	E/5
-12V	VIO	24	A9	E/5	A15	E/5
-12V	VIO	24	A15	E/5	TB101	5
-12V	VIO	24	A15	E/5	A17	E/5
-12V	VIO	24	A17	E/5	A7	E/5
-12V	VIO	24	A7	E/5	A10	E/5
ANALOG+5V	GRN	18	A5	F/6	A6	Y
ANALOG+5V	GRN	18	A6	Y	A9	F/6
ANALOG+5V	GRN	18	A9	F/6	A15	F/6
ANALOG+5V	GRN	18	A15	F/6	TB101	3
ANALOG+5V	GRN	18	A15	F/6	A13	F/6
ANALOG+5V	GRN	18	A13	F/6	A14	E/5
ANALOG+5V	GRN	18	A14	E/5	A16	E/5
ANALOG+5V	GRN	18	A16	E/5	A17	F/6

### R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
ANALOG+5V	GRN	18	A17	F/6	A7	F/6
ANALOG+5V	GRN	18	A7	F/6	A10	F/6
ANALOG+5V	GRN	18	A10	F/6	A4	F/6
ANALOG+5V	GRN	18	A4	F/6	A12	F/6
DIGITAL+5V	GRN	20	A23	A1/B1	TB101	1
DIGITAL+5V	BUSS	24	A23	A1/B1	A23	B1/B2
DIGITAL+5V	BUSS	24	A23	B2	A23	A2
DIGITAL+5V	BUSS	24	A23	A2	A23	A1
DIGITAL+5V	GRN	20	A11F7	A6/B6	TB101	1
DIGITAL+5V	GRN	24	A23	B2	J103	25
DIGITAL+5V	GRN	24	J103	25	J103	50
DIGITAL+5V	GRN	24	J103	50	J104	C
+50V	ORN	24	A4	H/7	TB101	8
-24V	VID	24	A4	K/9	TB101	9
+24V	RED	24	A4	J/8	TB101	2
DIGITAL+5V	GREEN	24	J103	25	A23	B2
DIGITAL+5V	GREEN	24	J103	50	A23	A2
DIGITAL+5V	GRN	18	J104	C	TB101	1
+12V	RED	18	J104	F	TB101	4
+24V	RED	18	J104	M	TB101	2
+24V	RED	24	F106	7	J102	7
+12V	RED	24	F106	23	TB101	4
+15V	RED	24	F106	24	TB101	6
+15V	RED	18	J107	A	TB101	6
+12V	RED	18	J107	C	TB101	4
-15V	VID	18	J107	E	TB101	7
-12V	VID	18	J107	H	TB101	5
+50V	ORN	24	J107	K	TB101	8
DIGITAL+5V	GRN	18	J107	L	TB101	1
ANALOG+5V	GRN	18	J107	N	TB101	3
+24V	RED	24	J107	R	TB101	2
-24V	VID	24	J107	S	TB101	9
+12V	RED	24	J108	21	TB101	4
-12V	VID	24	J108	22	TB101	5
+15V	RED	24	J108	23	TB101	6
-15V	VID	24	J108	24	TB101	7
ANALOG+5V	GRN	24	J109	A	TB101	3
+15V	RED	24	J109	D	TB101	6

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
GND	BLK	24	U1	2		
GND	BLACK	22	A11P6	LUG	A11P6	A1/B
GND	BUSS	24	A23	48	A23	A49
GND	BUSS	24	A23	A49	A23	A50
GND	BUSS	24	A23	B48	A23	B49
GND	BUSS	24	A23	B49	A23	B50
GND	BUSS	24	A23	B50	A23	A50
GND	BLACK	22	A23	LUG	A23	A50
GND	BLACK	22	A11P7	LUG	A11P7	A15/B15
GND	BLK	22	A23	A48	J103	26
GND	BLACK	22	J103	1	A23	B48
GND	BLACK	22	J103	26	A23	A48
GND	BLK	18	J104	A	J104	LUG
GND	BLK	26	F106	1	A17	LUG
GND	BLK	26	F106	21	A17	LUG
GND	BLK	18	J107	X	TR101	LUG
GND	BLK	22	J108	49	J108	LUG
GND	BLK	22	J108	50	J108	LUG
GND	BLK	24	J109	B	TB101	LUG
GND	BLK	26	J121	18	A23	LUG
GND	BLK	26	J121	19	A23	LUG
GND	BLK	26	J121	20	A23	LUG
GND	BLK	26	J121	21	A23	LUG
GND	BLK	26	J121	22	A23	LUG
GND	BLK	26	J121	23	A23	LUG
GND	BLK	22	J122	19		GND

### R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
WBACL	W/V	26	A4	C/3	J102	30
WBACL	WHT	26	A4	C/3	F106	19
WBACL	W/R	26	A4	C/3	J122	17
LSTAT	WHT	26	A4	E/5	A11F6	B9
ANALDG+5V	GRN	18	A4	F/6	A10	F/6
ANALDG+5V	GRN	18	A4	F/6	A12	F/6
+50V	ORN	24	A4	H/7	TB101	8
+24V	RED	24	A4	J/8	TB101	2
-24V	VIO	24	A4	K/9	TB101	9

### R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	A5	B/2	A8	B/2
+15V	RED	24	A5	B/2	A6	22
-15V	VIO	24	A5	C/3	A8	C/3
-15V	VIO	24	A5	C/3	A6	21
+12V	RED	24	A5	D/4	A9	D/4
-12V	VIO	24	A5	E/5	A9	E/5
ANALOG+5V	GRN	18	A5	F/6	A6	Y
30MHZIF	W/V	26	A5	V/18	A11F6	B36
30MHZIF	WHT	26	A5	V/18	A11P6	B36
PD30	W/V	26	A5	W/19	A11F7	B9
PD 20	W/V	26	A5	X/20	A11P7	A9
PD 10	W/V	26	A5	Y/21	A11P7	BB
PD 0	W/V	26	A5	Z/22	A11P7	AB

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
100dBLED*	YELLOW	26	A6	1	J101	30
80dBLED*	YELLOW	26	A6	2	J101	32
60dBLED*	YELLOW	26	A6	3	J101	34
40dBLED*	YELLOW	26	A6	4	J101	36
20dBLED*	YELLOW	26	A6	5	J101	38
0dBLED*	YELLOW	26	A6	6	J101	42
20dB	WHT	26	A6	7	P106	3
20DB	WHT	26	A6	7	J108	35
40dB	WHT	26	A6	8	P106	5
40dB	WHT	26	A6	8	J108	37
AGCS*	WHT	26	A6	10	A11F6	A43
RFOL	WHT	26	A6	11	A11F6	A40
MAE	WHT	26	A6	12	A11F6	B21
MAC	WHT	26	A6	13	A11F6	A22
R*/L	WHT	26	A6	14	A11F6	B12
R*/L	WHT	26	A6	14	A23	B14
R*/L	WHT	26	A6	14	J103	3
ATSW30*	W/V	26	A6	16	J102	38
ATSW10*	W/V	26	A6	17	J102	36
ATSW80*	W/V	26	A6	18	J102	43
ATSW60*	W/V	26	A6	19	J102	41
ATSW40*	W/V	26	A6	20	J102	39
-15V	VIO	24	A6	21	A5	C/3
-15V	VIO	24	A6	21	A9	C/3
+15V	RED	24	A6	22	A5	B/2
+15V	RED	24	A6	22	A9	B/2
90dBLED*	YELLOW	26	A6	B	J101	31
70dBLED*	YELLOW	26	A6	C	J101	33
50dBLED*	YELLOW	26	A6	D	J101	35
30dBLED	YELLOW	26	A6	E	J101	37
10dBLED	YELLOW	26	A6	F	J101	39
10dB	WHT	26	A6	H	P106	2
-10dB	WHT	26	A6	H	J108	34
30dB	WHT	26	A6	J	P106	4
30dB	WHT	26	A6	J	J108	36
AM MET	W/V	26	A6	K	J104	D
AGCF*	WHT	26	A6	L	A11F6	B43
DETOL	WHT	26	A6	M	A11F6	A42
MAA	WHT	26	A6	P	A11F6	A21
MAD	WHT	26	A6	R	A11F6	B22
SAUTO*	W/V	26	A6	S	J102	46
SAUTO*	W/V	26	A6	S	A11F6	A38
SAUTO*	W/V	26	A6	S	A11F6	A38
ATSW100*	W/V	26	A6	T	J102	45
ATSW20*	W/V	26	A6	U	J102	37
ATSW90*	W/V	26	A6	V	J102	44
ATSW70*	W/V	26	A6	W	J102	42
ATSW50*	W/V	26	A6	X	J102	40
ANALOG+5V	BRN	18	A6	Y	A5	F/6

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
ANALOG+5V	GRN	18	A6	Y	A9	F/6

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN.
LOG*	WHT	26	A7	10	A11P6	A12
+15V	RED	24	A7	B/2	A11F7	B7/A7
+15V	RED	24	A7	B/2	A10	B/2
-15V	VID	24	A7	C/3	A17	C/3
-15V	VID	24	A7	C/3	A10	C/3
+12V	RED	24	A7	D/4	A17	D/4
+12V	RED	24	A7	D/4	A10	D/4
-12V	VID	24	A7	E/5	A17	E/5
-12V	VID	24	A7	E/5	A10	E/5
ANALOG+5V	GRN	18	A7	F/6	A17	F/6
ANALOG+5V	GRN	18	A7	F/6	A10	F/6
30MHZIF	WHT	26	A7	H/7	A11P6	B36
BFO TUNE	COAX		A7	J/8	J104	X
BFO AUDIO	COAX		A7	R/14	J104	U

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	AB	B/2	A12	B
+15V	RED	24	AB	B/2	A5	B/2
-15V	VID	24	AB	C/3	A5	C/3

### R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
FM MET	W/V	26	A9	7	J104	E
+15V	RED	24	A9	B/2	A6	22
+15V	RED	24	A9	B/2	A15	B/2
-15V	VIO	24	A9	C/3	A6	21
-15V	VIO	24	A9	C/3	A15	C/3
+12V	RED	24	A9	D/4	A5	D/4
+12V	RED	24	A9	D/4	A15	D/4
-12V	VIO	24	A9	E/5	A5	E/5
-12V	VIO	24	A9	E/5	A15	E/5
ANALOG+5V	GRN	18	A9	F/6	A6	Y
ANALOG+5V	GRN	18	A9	F/6	A15	F/6
FM AUDIO	CDAX		A9	J/8	J104	S
FM10K	W/V	26	A9	W/19	A11F7	B14
FM100K	W/V	26	A9	X/20	A11F7	B13
FM200K	W/V	26	A9	Y/21	A11F7	B12
FM20M	W/V	26	A9	Z/22	A11F7	B11

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+12V	RED	24	A10	4	R1	1
PULSESTRCH	W/V	26	A10	8	J102	4B
SLIDEBACK	W/V	26	A10	9	J102	49
SIDEBCKVOL	W/V	26	A10	14	J102	50
SLBACK	WHT	26	A10	15	A11P6	A27
VBWD	W/V	26	A10	19	J108	31
VBWD	W/V	26	A10	19	A11P7	A13
+15V	RED	24	A10	B/2	A7	B/2
+15V	RED	24	A10	B/2	A12	B
-15V	VID	24	A10	C/3	A7	C/3
-15V	VID	24	A10	C/3	A12	C/3
+12V	RED	24	A10	D/4	A7	D/4
-12V	VID	24	A10	E/5	A7	E/5
ANALOG+5V	GRN	18	A10	F/6	A7	F/6
ANALOG+5V	GRN	18	A10	F/6	A4	F/6
PULSESTRCH	COAX		A10	H/7	J104	N
AM AUDIO	COAX		A10	L/10	J104	T
VBWC	W/V	26	A10	X/20	A11P7	A12
VBWB	W/V	26	A10	Y/21	A11P7	A11
VBNA/NF4M	W/V	26	A10	Z/22	A11P7	A10

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	A12	B	AB	B/2
+15V	RED	24	A12	B	A10	B/2
-15V	VIO	24	A12	C/3	A10	C/3
-15V	VIO	24	A12	C/3	A11F7	B4/A4
BD1*	WHT	26	A12	D/4	A11F6	A1B
CSE	WHT	26	A12	E/5	A13	D/4
ANALOG+5V	GRN	18	A12	F/6	A4	F/6
SYN1	WHT	26	A12	J/8	A11P6	A4
MIX1	WHT	26	A12	K/9	A11P6	A5
N37	WHT	26	A12	L/10	J103	43
N36	WHT	26	A12	M/11	J103	42
N35	WHT	26	A12	N/12	J103	41
N34	WHT	26	A12	P/13	J103	40
N32	WHT	26	A12	R/14	J103	39
N31	WHT	26	A12	S/15	J103	38
N30	WHT	26	A12	T/16	J103	37
SYNTH.5V	GRN	24	A12	U/17	U1	3

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	A13	B/2	A15	B/2
+15V	RED	24	A13	B/2	A14	B/2
-15V	VIO	24	A13	C/3	A15	C/3
-15V	VIO	24	A13	C/3	A14	C/3
CSE	WHT	26	A13	D/4	J103	4B
CSE	WHT	26	A13	D/4	A12	E/5
ANALDG+5V	GRN	18	A13	F/6	A15	F/6
ANALDG+5V	GRN	18	A13	F/6	A14	E/5
94MHZPWR	WHT	26	A13	H/7	A17	J/8
94MHZPWR	WHT	26	A13	H/7	A11F6	A34

### R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
ODEF0D	WHT	26	A14	7	J103	14
ODEF0C	WHT	26	A14	8	J103	13
ODEF0E	WHT	26	A14	9	J103	12
ODEF0A	WHT	26	A14	10	J103	11
ODEF1D	WHT	26	A14	11	J103	18
ODEF1C	WHT	26	A14	12	J103	17
ODEF1E	WHT	26	A14	13	J103	16
ODEF1A	WHT	26	A14	14	J103	15
ODEF2D	WHT	26	A14	15	J103	22
ODEF2C	WHT	26	A14	16	J103	21
ODEF2E	WHT	26	A14	17	J103	20
ODEF2A	WHT	26	A14	18	J103	19
ODEF3D	WHT	26	A14	19	J103	28
ODEF3C	WHT	26	A14	20	J103	27
ODEF3E	WHT	26	A14	21	J103	24
ODEF3A	WHT	26	A14	22	J103	23
+15V	RED	24	A14	B/2	A13	B/2
+15V	RED	24	A14	B/2	A16	B/2
-15V	VIO	24	A14	C/3	A13	C/3
-15V	VIO	24	A14	C/3	A16	C/3
ANALOG+5V	GRN	18	A14	E/5	A13	F/6
ANALOG+5V	GRN	18	A14	E/5	A16	E/5
SYN3	WHT	26	A14	Y	A11P6	B8

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	A15	B/2	A9	B/2
+15V	RED	24	A15	B/2	TB101	6
+15V	RED	24	A15	B/2	A13	B/2
-15V	VIO	24	A15	C/3	A9	C/3
-15V	VIO	24	A15	C/3	TB101	7
-15V	VIO	24	A15	C/3	A13	C/3
+12V	RED	24	A15	D/4	A9	D/4
+12V	RED	24	A15	D/4	TB101	4
+12V	RED	24	A15	D/4	A17	D/4
-12V	VIO	24	A15	E/5	A9	E/5
-12V	VIO	24	A15	E/5	TB101	5
-12V	VIO	24	A15	E/5	A17	E/5
ANALOG+5V	GRN	18	A15	F/6	A9	F/6
ANALOG+5V	GRN	18	A15	F/6	TB101	3
ANALOG+5V	GRN	18	A15	F/6	A13	F/6

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
N20	WHT	26	A16	8	J103	29
N21	WHT	26	A16	9	J103	30
N22	WHT	26	A16	10	J103	31
N23	WHT	26	A16	11	J103	32
N24	WHT	26	A16	12	J103	33
N25	WHT	26	A16	13	J103	34
N26	WHT	26	A16	14	J103	35
N27	WHT	26	A16	15	J103	36
+15V	RED	24	A16	B/2	A14	B/2
+15V	RED	24	A16	B/2	A17	B/2
-15V	VIO	24	A16	C/3	A14	C/3
-15V	VIO	24	A16	C/3	A17	C/3
ANALOG+5V	GRN	18	A16	E/5	A14	E/5
ANALOG+5V	GRN	18	A16	E/5	A17	F/6
SYN2	WHT	26	A16	H/7	A11F6	B4
MIX2	WHT	26	A16	T/16	A11F6	B5

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	24	A17	B/2	A16	B/2
+15V	RED	24	A17	B/2	A11F7	B7/A7
-15V	VIO	24	A17	C/3	A16	C/3
-15V	VIO	24	A17	C/3	A7	C/3
+12V	RED	24	A17	D/4	A15	D/4
+12V	RED	24	A17	D/4	A7	D/4
-12V	VIO	24	A17	E/5	A15	E/5
-12V	VIO	24	A17	E/5	A7	E/5
ANALOG+5V	GRN	18	A17	F/6	A16	E/5
ANALOG+5V	GRN	18	A17	F/6	A7	F/6
DWN. CONV.	WHT	26	A17	H/7	A11F6	A39
DWN. CONV.	WHT	26	A17	H/7	J10B	26
94MHZPWR	WHT	26	A17	J/B	A13	H/7
94MHZPWR	WHT	26	A17	J/B	A11F6	A34
GND	BLK	26	A17	LUG	P106	1
GND	BLK	26	A17	LUG	P106	21

## R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
DIGITAL+5V	BUSS	24	A23	A1	A23	A2
DIGITAL+5V	GRN	20	A23	A1/B1	TB101	1
DIGITAL+5V	BUSS	24	A23	A2	A23	B2
DIGITAL+5V	GREEN	24	A23	A2	J103	50
ADDR0	WHT	26	A23	A21	A11P6	A6
ADDR1	WHT	26	A23	A22	A11P6	B6
ADDR2	WHT	26	A23	A23	A11P6	A7
ADDR3	WHT	26	A23	A24	A11P6	B7
EOI	WHT	26	A23	A40	J121	5
ATN	WHT	26	A23	A41	J121	11
SRQ	WHT	26	A23	A42	J121	10
NRFF	WHT	26	A23	A43	J121	7
NDAC	WHT	26	A23	A44	J121	8
DAV	WHT	26	A23	A45	J121	6
REN	WHT	26	A23	A46	J121	17
IFC	WHT	26	A23	A47	J121	9
GND	BLK	22	A23	A48	J103	26
GND	BUSS	24	A23	A49	A23	48
GND	BUSS	24	A23	A50	A23	A49
GND	BUSS	24	A23	A50	A23	B50
GND	BLACK	22	A23	A50	A23	LUG
DIGITAL+5V	BUSS	24	A23	B1/B2	A23	A1/B1
PDR*	WHT	26	A23	B10	J103	9
PDR*	WHT	26	A23	B10	A11P6	A41
ACCEPTED*	WHT	26	A23	B11	J103	8
DTAVL*	WHT	26	A23	B12	J103	2
DTAVL*	WHT	26	A23	B12	A11P6	A9
COMFCLR*	WHT	26	A23	B13	J103	10
COMCLR*	WHT	26	A23	B13	A11P6	B41
R*/L	WHT	26	A23	B14	A6	14
DATA0*	WHT	26	A23	B16	A11P6	A10
DATA1*	WHT	26	A23	B17	A11P6	B10
DATA2*	WHT	26	A23	B18	A11P6	A11
DATA3*	WHT	26	A23	B19	A11P6	B11
DIGITAL+5V	GREEN	24	A23	B2	J103	25
DATA0	WHT	26	A23	B21	J103	4
DATA1	WHT	26	A23	B22	J103	5
DATA2	WHT	26	A23	B23	J103	6
DATA3	WHT	26	A23	B24	J103	7
DI01	WHT	26	A23	B40	J121	1
DI02	WHT	26	A23	B41	J121	2
DI03	WHT	26	A23	B42	J121	3
DI04	WHT	26	A23	B43	J121	4
DI05	WHT	26	A23	B44	J121	13

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
DI06	WHT	26	A23	B45	J121	14
DI07	WHT	26	A23	B46	J121	15
DI08	WHT	26	A23	B47	J121	16
GND	BLACK	22	A23	B48	J103	1
GND	BUSS	24	A23	B49	A23	B48
GND	BUSS	24	A23	B50	A23	B49
GND	BLK	26	A23	LUG	J121	18
GND	BLK	26	A23	LUG	J121	19
GND	BLK	26	A23	LUG	J121	20
GND	BLK	26	A23	LUG	J121	21
GND	BLK	26	A23	LUG	J121	22
GND	BLK	26	A23	LUG	J121	23
LOGICGND	BLK	22	A23	LUG	J121	24

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
DIGITAL+5V	GRN	20	TB101	1	A23	A1/B1
DIGITAL+5V	GRN	20	TB101	1	A11P7	A6/B6
DIGITAL+5V	GRN	18	TB101	1	J104	C
DIGITAL+5V	GRN	18	TB101	1	J107	L
+24V	RED	24	TB101	2	A4	J/B
+24V	RED	18	TB101	2	J104	M
+24V	RED	24	TB101	2	J107	R
ANALOG+5V	GRN	18	TB101	3	A15	F/6
ANALOG+5V	GRN	18	TB101	3	J107	N
ANALOG+5V	GRN	24	TB101	3	J109	A
+12V	RED	24	TB101	4	A15	D/4
+12V	RED	18	TB101	4	J104	F
+12V	RED	24	TB101	4	F106	23
+12V	RED	18	TB101	4	J107	C
+12V	RED	24	TB101	4	J108	21
-12V	VIO	24	TB101	5	A15	E/5
-12	VIO	24	TB101	5	F106	22
-12V	VIO	18	TB101	5	J107	H
-12V	VIO	24	TB101	5	J108	22
+15V	RED	24	TB101	6	A15	B/2
+15V	RED	24	TB101	6	F106	24
+15V	RED	18	TB101	6	J107	A
+15V	RED	24	TB101	6	J108	23
+15V	RED	24	TB101	6	J109	D
-15V	VIO	24	TB101	7	A15	C/3
-15V	VIO	18	TB101	7	J107	E
-15V	VIO	24	TB101	7	J108	24
+50V	DRN	24	TB101	8	A4	H/7
+50V	DRN	24	TB101	8	J107	K
-24V	VIO	24	TB101	9	A4	K/9
-24V	VIO	24	TB101	9	J107	S
BND	BLK	18	TB101	LUG	J107	X
GND	BLK	24	TB101	LUG	J109	B

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
BW500LED*	YELLOW	26	J101	1	A11P6	B29
BW200LED*	YELLOW	26	J101	2	A11P6	A29
DETOLED*	YELLOW	26	J101	3	A11P6	B42
BW100LED*	YELLOW	26	J101	4	A11P6	B28
PDOLED*	YELLOW	26	J101	5	A11P6	A13
BW50LED*	YELLOW	26	J101	6	A11P6	A28
PD10LED*	YELLOW	26	J101	7	A11P6	B13
BW20LED*	YELLOW	26	J101	8	A11P6	A32
PD20LED*	YELLOW	26	J101	9	A11P6	A41
BW10LED*	YELLOW	26	J101	10	A11P6	B31
PD30LED*	YELLOW	26	J101	11	A11P6	B14
BW5LED*	YELLOW	26	J101	12	A11P6	A31
30MHZLED*	YELLOW	26	J101	13	A11P6	B37
BW2LED*	YELLOW	26	J101	14	A11P6	B30
200MHZLED*	YELLOW	26	J101	15	A11P6	A37
BW1LED*	YELLOW	26	J101	16	A11P6	A30
KHZLED*	YELLOW	26	J101	18	A11P6	A16
KHZLED*	YELLOW	26	J101	19	A11P6	B16
			J101	20		
			J101	21		
			J101	22		
			J101	23		
			J101	24		
			J101	25		
			J101	26		
			J101	27		
SLIDEBACKL	YELLOW	26	J101	28	A11P6	B26
			J101	29		
100dBLED*	YELLOW	26	J101	30	A6	1
90dBLED*	YELLOW	26	J101	31	A6	B
80dBLED*	YELLOW	26	J101	32	A6	2
70dBLED*	YELLOW	26	J101	33	A6	C
60dBLED*	YELLOW	26	J101	34	A6	3
50dBLED*	YELLOW	26	J101	35	A6	D
40dBLED*	YELLOW	26	J101	36	A6	4
30dBLED	YELLOW	26	J101	37	A6	E
20dBLED*	YELLOW	26	J101	38	A6	5
10dBLED	YELLOW	26	J101	39	A6	F
RFOLED*	YELLOW	26	J101	40	A11P6	B40
			J101	41		
0dBLED*	YELLOW	26	J101	42	A6	6
AUTOLED*	YELLOW	26	J101	43	A11P6	B39
MHZLED*	YELLOW	26	J101	44	A11P6	A17
			J101	45		
			J101	46		
			J101	47		
			J101	48		
			J101	49		
			J101	50		

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
BWSW0	W/V	26	J102	1	A11P6	A24
BWSW1	W/V	26	J102	2	A11P6	B24
BWSW2	W/V	26	J102	3	A11P6	A25
BWSW3	W/V	26	J102	4	A11P6	B25
BWSW4	W/V	26	J102	5	A11P6	A26
+24	W/V		J102	6	J10B	3B
+24	WHT	26	J102	6	J10B	3B
+24	RED	24	J102	7	P106	7
BLIN*	W/V	26	J102	8	A11P6	B27
			J102	9		
RB3	W/V	26	J102	10	P106	8
RB4	W/V	26	J102	11	P106	10
RB5	C/V	26	J102	12	P106	12
RB5	W/V	26	J102	12	P106	12
RB6	W/V	26	J102	13	P106	14
RB7	W/V	26	J102	14	P106	16
RB8	W/V	26	J102	15	P106	18
EB8	W/V	26	J102	15	P106	18
CALRLY	W/V	26	J102	16	J10B	25
BD1EN	W/V	26	J102	16	J10B	25
DB3/BEN*	W/V	26	J102	17	J10B	27
BD3/BEN*	W/V	26	J102	17	J10B	27
BD1/2EN*	W/V	26	J102	18	P106	6
PDSWA	W/V	26	J102	19	A11P6	A33
PDSWB	W/V	26	J102	20	A11P6	B33
			J102	21		
			J102	22		
SAGCS*	W/V	26	J102	23	A11P6	A35
SAGCF*	W/V	26	J102	24	A11P6	B35
			J102	25		
			J102	26		
			J102	27		
			J102	28		
			J102	29		
WBACL	W/V	26	J102	30	A4	C/3
WBACL	W/V	26	J102	30	A4	C/3
PRE01	WHT	26	J102	31	J122	4
PRE02	WHT	26	J102	32	J122	5
PRE03	WHT	26	J102	33	J122	6
PRE04	WHT	26	J102	34	J122	7

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
			J102	35		
ATSW10*	W/V	26	J102	36	A6	17
ATSW20*	W/V	26	J102	37	A6	U
ATSW30*	W/V	26	J102	38	A6	16
ATSW40*	W/V	26	J102	39	A6	20
ATSW50*	W/V	26	J102	40	A6	X
ATSW60*	W/V	26	J102	41	A6	19
ATSW70*	W/V	26	J102	42	A6	W
ATSW80*	W/V	26	J102	43	A6	18
ATSW90*	W/V	26	J102	44	A6	V
ATSW100*	W/V	26	J102	45	A6	T
SAUTO*	W/V	26	J102	46	A6	S
			J102	47		
PULSESTRCH	W/V	26	J102	48	A10	8/J
SLIDEBACK	W/V	26	J102	49	A10	9/K
SIDEBCKVOL	W/V	26	J102	50	A10	14/R

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
GND	BLACK	22	J103	1	A23	B4B
DTAVL*	WHT	26	J103	2	A23	B12
DTAVL*	WHT	26	J103	2	A11F6	A9
R*/L	WHT	26	J103	3	A6	14
DATA0	WHT	26	J103	4	A23	B21
DATA1	WHT	26	J103	5	A23	B22
DATA2	WHT	26	J103	6	A23	B23
DATA3	WHT	26	J103	7	A23	B24
ACCEPTED*	WHT	26	J103	8	A23	B11
PDR*	WHT	26	J103	9	A23	B10
COMPCLR*	WHT	26	J103	10	A23	B13
COMCLR*	WHT	26	J103	10	A11F6	B41
ODBF0A	WHT	26	J103	11	A14	10
ODBF0B	WHT	26	J103	12	A14	9
ODBF0C	WHT	26	J103	13	A14	8
ODBF0D	WHT	26	J103	14	A14	7
ODBF1A	WHT	26	J103	15	A14	14
ODBF1B	WHT	26	J103	16	A14	13
ODBF1C	WHT	26	J103	17	A14	12
ODBF1D	WHT	26	J103	18	A14	11
ODBF2A	WHT	26	J103	19	A14	18
ODBF2B	WHT	26	J103	20	A14	17
ODBF2C	WHT	26	J103	21	A14	16
ODBF2D	WHT	26	J103	22	A14	15
ODBF3A	WHT	26	J103	23	A14	22
ODBF3B	WHT	26	J103	24	A14	21
DIGITAL+5V	GREEN	24	J103	25	A23	B2
GND	BLACK	22	J103	26	A23	A4B
ODBF3C	WHT	26	J103	27	A14	20
ODBF3D	WHT	26	J103	28	A14	19
N20	WHT	26	J103	29	A16	8
N21	WHT	26	J103	30	A16	9
N22	WHT	26	J103	31	A16	10
N23	WHT	26	J103	32	A16	11
N24	WHT	26	J103	33	A16	12
N25	WHT	26	J103	34	A16	13
N26	WHT	26	J103	35	A16	14
N27	WHT	26	J103	36	A16	15
N30	WHT	26	J103	37	A12	T/16
N31	WHT	26	J103	38	A12	B/15
N32	WHT	26	J103	39	A12	R/14
N34	WHT	26	J103	40	A12	P/13
N35	WHT	26	J103	41	A12	N/12
N36	WHT	26	J103	42	A12	M/11
N37	WHT	26	J103	43	A12	L/10
			J103	44		

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
BD1*	WHT	26	J103	45	A11P6	A18
BD2	WHT	26	J103	46	A11P6	B18
CSA	WHT	26	J103	47	J122	18
CSB	WHT	26	J103	48	A13	D/4
NSLF*	WHT	26	J103	49	A11P6	A20
DIGITAL+5V	GRN	24	J103	50	J103	25
DIGITAL+5V	GRN	24	J103	50	J104	C
DIGITAL+5V	GREEN	24	J103	50	A23	A2

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
			J104	B		
DIGITAL+5V	GRN	24	J104	C	J103	50
DIGITAL+5V	GRN	18	J104	C	TB101	1
AM MET	W/V	26	J104	D	A6	K
FM MET	W/V	26	J104	E	A9	7/H
+12V	RED	18	J104	F	TB101	4
AC	GRAY	18	J104	H	J107	W
AC	GRAY	18	J104	J	J107	V
AC	GRAY	18	J104	K	J107	U
AC	GRAY	18	J104	L	J107	T
GND	BLK	18	J104	LUG	J104	A
+24V	RED	18	J104	M	TB101	2
PULSESTRCH	COAX		J104	N	A10	H/7
			J104	P		
AUDIO	COAX		J104	R		BACK
FM AUDIO	COAX		J104	S	A9	J/8
AM AUDIO	COAX		J104	T	A10	L/10
BFD AUDIO	COAX		J104	U	A7	R/14
			J104	V		
			J104	W		
BFD TUNE	COAX		J104	X	A7	J/8

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
GND	BLK	26	F106	1	A17	LUG
10dB	WHT	26	F106	2	A6	H
20dB	WHT	26	F106	3	A6	7
30dB	WHT	26	F106	4	A6	J
40dB	WHT	26	F106	5	A6	B
BD1/2EN*	W/V	26	F106	6	J102	1B
+24	RED	24	F106	7	J102	7
RB3	W/V	26	F106	8	J102	10
RB4	W/V	26	F106	9	J102	11
RB5	C/V	26	F106	11	J102	12
RB5	W/V	26	F106	12	J102	12
RB6	W/V	26	F106	13	J102	13
RB7	W/V	26	F106	14	J102	14
RBB	W/V	26	F106	15	J102	15
EBB	W/V	26	F106	16	J102	15
WBACL	WHT	26	F106	17	A4	C/3
GND	BLK	26	F106	18	A17	LUG
-12	VID	24	F106	19	TB101	5
+12V	RED	24	F106	20	TB101	4
+15V	RED	24	F106	21	TB101	6

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
+15V	RED	18	J107	A	TB101	6
			J107	B		
+12V	RED	18	J107	C	TB101	4
			J107	D		
-15V	VID	18	J107	E	TB101	7
			J107	F		
-12V	VID	18	J107	H	TB101	5
			J107	J		
+50V	DRN	24	J107	K	TB101	8
DIGITAL+5V	GRN	18	J107	L	TB101	1
			J107	M		
ANALOG+5V	GRN	18	J107	N	TB101	3
			J107	P		
+24V	RED	24	J107	R	TB101	2
-24V	VID	24	J107	S	TB101	9
AC	GRAY	18	J107	T	J104	L
AC	GRAY	18	J107	U	J104	K
AC	GRAY	18	J107	V	J104	J
AC	GRAY	18	J107	W	J104	H
GND	BLK	18	J107	X	TB101	LUG
			J107	Y		

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
BW1	W/V	26	J10B	1	A11F6	A44
BW2	W/V	26	J10B	2	A11F6	B44
BW3	W/V	26	J10B	3	A11F6	A45
BW4	W/V	26	J10B	4	A11F6	B45
BW5	W/V	26	J10B	5	A11F6	A46
BW6	W/V	26	J10B	6	A11F6	B46
BW7	W/V	26	J10B	7	A11F6	A47
BW8	W/V	26	J10B	8	A11F6	B47
BW9	W/V	26	J10B	9	A11F6	A48
BW10K	W/V	26	J10B	10	A11F6	B48
BW10M	W/V	26	J10B	11	A11F6	A49
BW11K	W/V	26	J10B	12	A11F6	B49
BW11M	W/V	26	J10B	13	A11F6	A50
BW12	W/V	26	J10B	14	A11F6	B50
BW13	W/V	26	J10B	15	A11F7	A1
BW14	W/V	26	J10B	16	A11F7	B1
BW15	W/V	26	J10B	17	A11F7	A2
BW16	W/V	26	J10B	18	A11F7	B2
BW17	W/V	26	J10B	19	A11F7	A3
BW18	W/V	26	J10B	20	A11F7	B3
+12V	RED	24	J10B	21	TB101	4
-12V	VID	24	J10B	22	TB101	5
+15V	RED	24	J10B	23	TB101	6
-15V	VID	24	J10B	24	TB101	7
CALRLY	W/V	26	J10B	25	J102	16
BD1EN	W/V	26	J10B	25	J102	16
DWN. CONV.	WHT	26	J10B	26	A11P6	A39
DWN. CONV.	WHT	26	J10B	26	A17	H/7
DB3/BEN*	W/V	26	J10B	27	J102	17
NF20M	WHT	26	J10B	28	A11P7	A14
VBWA/NF4M	W/V	26	J10B	29	A11P7	A10
NF. BM	W	26	J10B	30	A11P7	B10
VBWD	W/V	26	J10B	31	A10	19/W
VBWD	W	26	J10B	31	A11P7	A13
30MOL	WHT	26	J10B	32	J122	8
200KOL	WHT	26	J10B	33	J122	9
-10dB	WHT	26	J10B	34	A6	H
20dB	WHT	26	J10B	35	A6	7
30dB	WHT	26	J10B	36	A6	J
40dB	WHT	26	J10B	37	A6	8
+24	W/V	26	J10B	38	J102	6
+24	WHT	26	J10B	38	J102	6
			J10B	39		
			J10B	40		

**R-1250 WIRE LIST**

<b>SIGNAL NAME</b>	<b>WIRE COLOR</b>	<b>WIRE GAUGE</b>	<b>FROM CONN</b>	<b>FROM PIN</b>	<b>TO CONN</b>	<b>TO PIN</b>
			<b>J108</b>	<b>41</b>		
			<b>J108</b>	<b>42</b>		
			<b>J108</b>	<b>43</b>		
			<b>J108</b>	<b>44</b>		
			<b>J108</b>	<b>45</b>		
			<b>J108</b>	<b>46</b>		
			<b>J108</b>	<b>47</b>		
			<b>J108</b>	<b>48</b>		
<b>GND</b>	<b>BLK</b>	<b>22</b>	<b>J108</b>	<b>LUG</b>	<b>J108</b>	<b>49</b>
<b>GND</b>	<b>BLK</b>	<b>22</b>	<b>J108</b>	<b>LUG</b>	<b>J108</b>	<b>50</b>

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
DI01	WHT	26	J121	1	A23	B40
DI02	WHT	26	J121	2	A23	B41
DI03	WHT	26	J121	3	A23	B42
DI04	WHT	26	J121	4	A23	B43
EOI	WHT	26	J121	5	A23	A40
DAV	WHT	26	J121	6	A23	A45
NRFP	WHT	26	J121	7	A23	A43
NDAC	WHT	26	J121	8	A23	A44
IFC	WHT	26	J121	9	A23	A47
SRD	WHT	26	J121	10	A23	A42
ATN	WHT	26	J121	11	A23	A41
DI05	WHT	26	J121	13	A23	B44
DI06	WHT	26	J121	14	A23	B45
DI07	WHT	26	J121	15	A23	B46
DI08	WHT	26	J121	16	A23	B47
REN	WHT	26	J121	17	A23	A46
GND	BLK	26	J121	18	A23	LUG
GND	BLK	26	J121	19	A23	LUG
GND	BLK	26	J121	20	A23	LUG
GND	BLK	26	J121	21	A23	LUG
GND	BLK	26	J121	22	A23	LUG
GND	BLK	26	J121	23	A23	LUG
LOGICGND	BLK	22	J121	24	A23	LUG
SHIELDGND	BLK	22	J121	LUG	J121	12

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
DETOL*	W/R	26	J122	1	A11F6	B3B
RFOL*	W/R	26	J122	2	A11F6	A36
LSTAT	W/R	26	J122	3	A11F6	AB
PRE01	WHT	26	J122	4	J102	31
PRE02	WHT	26	J122	5	J102	32
PRE03	WHT	26	J122	6	J102	33
PRE04	WHT	26	J122	7	J102	34
30MDL	WHT	26	J122	8	J10B	32
200KDL	WHT	26	J122	9	J10B	33
			J122	10		
			J122	11		
			J122	12		
			J122	13		
			J122	14		
			J122	15		
			J122	16		
WBACL	W/R	26	J122	17	A4	C/3
CSA	WHT	26	J122	18	J103	47
GND	BLK	22	J122	19		GND
			J122	20		
			J122	21		
			J122	22		
			J122	23		
			J122	24		
			J122	25		
			J122	26		
			J122	27		
			J122	28		
			J122	29		
			J122	30		
			J122	31		
			J122	32		
			J122	33		
			J122	34		
			J122	35		
			J122	36		
			J122	37		
			J122	38		
			J122	39		
			J122	40		
			J122	41		
			J122	42		
			J122	43		

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
			J122	44		
			J122	45		
			J122	46		
			J122	47		
			J122	48		

R-1250 WIRE LIST

SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
GND	BLACK	22	A11P6	A1/B	A11P6	LUG
DATA0*	WHT	26	A11P6	A10	A23	B16
DATA2*	WHT	26	A11P6	A11	A23	B18
LOG*	WHT	26	A11P6	A12	A7	10
PDOLED*	YELLOW	26	A11P6	A13	J101	5
KHZLED*	YELLOW	26	A11P6	A16	J101	18
MHZLED*	YELLOW	26	A11P6	A17	J101	44
BD1*	WHT	26	A11P6	A18	A12	D/4
BD1*	WHT	26	A11P6	A18	J103	45
BD1*	WHT	26	A11P6	A18	A12	D/4
WSLF*	WHT	26	A11P6	A20	J103	49
MAA	WHT	26	A11P6	A21	A6	P
MAC	WHT	26	A11P6	A22	A6	13
BWSW0	W/V	26	A11P6	A24	J102	1
BWSW2	W/V	26	A11P6	A25	J102	3
BWSW4	W/V	26	A11P6	A26	J102	5
SLBACK	WHT	26	A11P6	A27	A10	15
BW50LED*	YELLOW	26	A11P6	A28	J101	6
BW200LED*	YELLOW	26	A11P6	A29	J101	2
BW1LED*	YELLOW	26	A11P6	A30	J101	16
BW5LED*	YELLOW	26	A11P6	A31	J101	12
BW20LED*	YELLOW	26	A11P6	A32	J101	8
PDSWA	W/V	26	A11P6	A33	J102	19
94MHZPWR	WHT	26	A11P6	A34	A17	J/B
94MHZPWR	WHT	26	A11P6	A34	A13	H/7
SAGCS*	W/V	26	A11P6	A35	J102	23
RFOL*	W/R	26	A11P6	A36	J122	2
200MHZLED*	YELLOW	26	A11P6	A37	J101	15
SAUTO*	W/V	26	A11P6	A38	A6	8
DWN. CONV.	WHT	26	A11P6	A39	J108	26
DWN. CONV.	WHT	26	A11P6	A39	A17	H/7
SYN1	WHT	26	A11P6	A4	A12	J/B
RFOL	WHT	26	A11P6	A40	A6	11
PD20LED*	YELLOW	26	A11P6	A41	J101	9
POR*	WHT	26	A11P6	A41	A23	B10
DETDL	WHT	26	A11P6	A42	A6	M
AGCS*	WHT	26	A11P6	A43	A6	10
BW1	W/V	26	A11P6	A44	J108	1
BW3	W/V	26	A11P6	A45	J108	3
BW5	W/V	26	A11P6	A46	J108	5
BW7	W/V	26	A11P6	A47	J108	7
BW9	W/V	26	A11P6	A48	J108	9
BW10M	W/V	26	A11P6	A49	J108	11
MIX1	WHT	26	A11P6	A5	A12	K/9
BW11M	W/V	26	A11P6	A50	J108	13

## R-1250 WIRE LIST

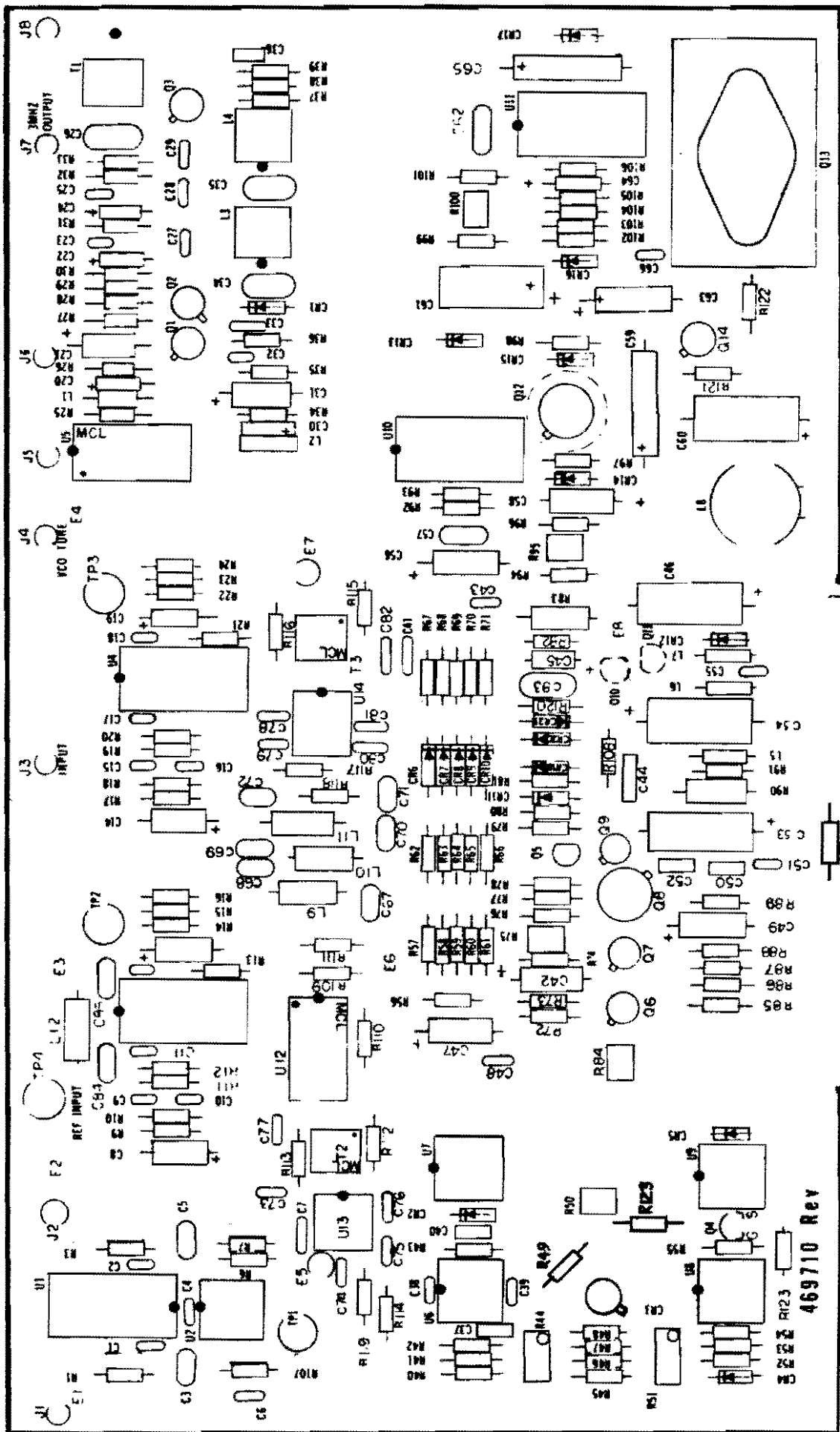
SIGNAL NAME	WIRE COLOR	WIRE GAUGE	FROM CONN	FROM PIN	TO CONN	TO PIN
ADDR0	WHT	26	A11P6	A6	A23	A21
ADDR2	WHT	26	A11P6	A7	A23	A23
LSTAT	W/R	26	A11P6	AB	J122	3
DTAVL*	WHT	26	A11P6	A9	J103	2
DTAVL*	WHT	26	A11P6	A9	A23	B12
DATA1*	WHT	26	A11P6	B10	A23	B17
DATA3*	WHT	26	A11P6	B11	A23	B19
R*/L	WHT	26	A11P6	B12	A6	14
PD10LED*	YELLOW	26	A11P6	B13	J101	7
PD30LED*	YELLOW	26	A11P6	B14	J101	11
KHZLED*	YELLOW	26	A11P6	B16	J101	19
BD2	WHT	26	A11P6	B18	J103	46
MAB	WHT	26	A11P6	B21	A6	12
MAD	WHT	26	A11P6	B22	A6	R
BWSW1	W/V	26	A11P6	B24	J102	2
BWSW3	W/V	26	A11P6	B25	J102	4
SLIDEBACKL	YELLOW	26	A11P6	B26	J101	28
SLIN*	W/V	26	A11P6	B27	J102	8
BW10LED*	YELLOW	26	A11P6	B28	J101	4
BW50LED*	YELLOW	26	A11P6	B29	J101	1
BW2LED*	YELLOW	26	A11P6	B30	J101	14
BW10LED*	YELLOW	26	A11P6	B31	J101	10
PDSWB	W/V	26	A11P6	B33	J102	20
SAGCF*	W/V	26	A11P6	B35	J102	24
30MHZIF	W/V	26	A11P6	B36	A5	V/18
30MHZIF	WHT	26	A11P6	B36	A7	H/7
30MHZIF	WHT	26	A11P6	B36	A5	V/18
30MHZLED*	YELLOW	26	A11P6	B37	J101	13
DETDL*	W/R	26	A11P6	B38	J122	1
AUTDLED*	YELLOW	26	A11P6	B39	J101	43
SYN2	WHT	26	A11P6	B4	A16	H/7
RFOLED*	YELLOW	26	A11P6	B40	J101	40
COMCLR*	WHT	26	A11P6	B41	J103	10
COMCLR*	WHT	26	A11P6	B41	A23	B13
DETOLED*	YELLOW	26	A11P6	B42	J101	3
AGCF*	WHT	26	A11P6	B43	A6	L
BW2	W/V	26	A11P6	B44	J108	2
BW4	W/V	26	A11P6	B45	J108	4
BW6	W/V	26	A11P6	B46	J108	6
BW8	W/V	26	A11P6	B47	J108	8
BW10K	W/V	26	A11P6	B48	J108	10
BW11K	W/V	26	A11P6	B49	J108	12
MIX2	WHT	26	A11P6	B5	A16	T/16
BW12	W/V	26	A11P6	B50	J108	14
ADDR1	WHT	26	A11P6	B6	A23	A22
ADDR3	WHT	26	A11P6	B7	A23	A24
SYN3	WHT	26	A11P6	B8	A14	Y
LSTAT	WHT	26	A11P6	B9	A4	E/5





**APPENDIX**





A4 MICROWAVE OSCILLATOR-PLL CONTROL

SEE R123  
469710 Rev

Assembly : 469710  
Stock Number : 180247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	6	163079	DM5FY301J	CAP, MICA, 300 PF	C68-71, 84, 85	ARC
2	1	163061	DM5EC270J	CAP, MICA, 27 PF	C28	ARC
3	1	163021	DM15-821J	CAP, MICA, 820 PF	C52	ARC
4	4	163066	DM5FC331J	CAP, MICA, 330 PF	C3, 5, 67, 72	ARC
5	2	163030	DM15-511J	CAP, MICA, 510 PF	C57, 62	ARC
6	3	163022	DM15-911J	CAP, MICA, 910 PF	C26, 34, 35	ARC
7	1	163019	DM15-102J	CAP, MICA, 1000 PF	C83	ARC
9	1	154053	CK05BX102K	CAP, CER, .001 UF	C50	AVX
10	1	154057	CK05BX152K	CAP, CER, 1500 PF	C40	AVX
11	21	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C1, 2, 4, 7, 9-12, 15-18, 23, 25, 27, 29, 32, 36, 38, 39, 55	ERI
12	4	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C33, 41, 74, 82	ERI
13	2	154074	CK06BX474K	CAP, CER, .47 UF	C37, 44	AVX
14	2	158009	CS13BF106K	CAP, TANT, 10 UF, 35V	C59, 65	SPG
15	8	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C20, 22, 24, 30, 45, 56, 63, 64	SPG
16	4	158003	CS13BE106K	CAP, TANT, 10 UF, 20V	C8, 13, 14, 19	SPG
17	6	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C21, 31, 42, 47, 49, 58	SPG
18	3	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C46, 60, 61	SPG
19	9	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C48, 73, 75-81	ERI
20	2	158011	CS13BH106K	CAP, TANT, 10 UF, 75V	C53, 54	SPG
21	12	172010	1N914	DIODE, SILICON, D035	CR1, 2, 4-10, 18, 20, 21	MOT
22	4	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C6, 43, 51, 66	ERI
23	2	172066	1N4002	DIODE, SILICON	CR13, 17	MOT
25	1	172072	1N753A	DIODE, ZENER, 6.2V, .4W, 5x	CR15	MOT
26	2	172092	UZ471B	DIODE, ZENER, 18V, 5W	CR14, 16	UNI

Assembly : 469710  
Stock Number : 180247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
27	1	172093	UZ4756	DIODE, ZENER, 56V, 5W	CR12	UNI
28	2	170600	MC1350P	I. C. , 1350	U13, 14	MOT
29	1	172059	1N270	DIODE, GERMANIUM	CR11	MOT
30	1	161023	SRA-1	MIXER, DOUBLE, BAL	U12	MCL
31	2	170605	UA723	I. C. , 723	U10, 11	FRS
32	2	170607	MC1741NCP1	I. C. , 741, PLAS, OP-AMP, 8 DIP	U8, 9	MOT
33	2	170596	MC10102P	I. C. , 10102, PLASTIC	U3, 4	MOT
34	1	170598	MC12040P	I. C. , 12040	U1	MOT
35	3	170586	LF355N	I. C. , 355, FET OP-AMP, PLAS, 8 DIP	U2, 6, 7	NSC
37	5	166015	WD-10	INDUCTOR, 10 UH	L1, 2, 5, 6, 7	NYT
40	2	134039	T13-1T	TRANSFORMER	T2, 3	MCL
41	1	153066	3262W-1-503K	RES, ADJ, 50K	R50	BRN
42	1	153063	3262W-1-103K	RES, ADJ, 10K, 100PPM	R75	BRN
43	2	153065	3262W-1-502K	RES, ADJ, 5K, 100 PPM	R95, 100	BRN
44	1	153062	3262W-1-102K	RES, ADJ, 1K, 100PPM	R84	BRN
45	1	153071	3299W-1-103K	RES, ADJ, 10K	R51	BRN
46	5	148002	RL07S103G	RES, M. FILM, 10K, 2%	R65, 76, 77, 99, 101	CGE
47	1	153077	3299W-1-503K	RES, ADJ, 50K	R44	BRN
48	2	148024	RL07S393G	RES, M. FILM, 39K, 2%	R56, 79	CGE
49	1	148008	RL07S152G	RES, M. FILM, 1.5K, 2%	R62	CGE
50	1	148027	RL07S472G	RES, M. FILM, 4.7K, 2%	R63	ALB
51	1	148036	RL07S822G	RES, M. FILM, 8.2K, 2%	R64	CGE
52	1	148034	RL07S683G	RES, M. FILM, 68K, 2%	R66	ALB
53	1	148016	RL07S222G	RES, M. FILM, 2.2K, 2%	R67	CGE
54	2	148021	RL07S302G	RES, M. FILM, 3.0K, 2%	R92, 93	ALB
55	1	148014	RL07S203G	RES, M. FILM, 20K, 2%	R94	CGE

Assembly : 469710  
Stock Number : 180247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
56	1	148031	RL07S622G	RES. M. FILM, 6. 2K, 2X	R96	I
57	1	150069	R25J270	RES. C. FILM, 270 HMS, 1/4W, 5X	R121	ROM
58	1	148023	RL07S392G	RES. M. FILM, 3. 9K, 2X	R72	CGE
59	1	148160	C415K2X	RES. MF, 15K, 1/4W2X, 100PPM, RL07	R53	CGE
60	2	151053	R50J10K	RES. C. FILM, 10K, 1/2W, 5X	R83, 90	ROM
61	1	150070	R25J430	RES. C. FILM, 430 HMS, 1/4W, 5X	R42	ROM
62	7	150053	R25J10	RES. C. FILM, 10 HMS, 1/4W, 5X	R38, 57-61, 91	ROM
64	2	150032	R25J15	RES. C. FILM, 15 HMS, 1/4W, 5X	R97, 125	ROM
65	2	150153	R25J8. 2	RES. C. FILM, 8. 2 HMS, 1/4W, 5X	R102, 103	ROM
66	2	150037	R25J1. 5K	RES. C. FILM, 1. 5K, 1/4W, 5X	R33, 89	ROM
67	2	150147	R25J510	RES. C. FILM, 510 HMS, 1/4W, 5X	R9, 17	ROM
68	2	150038	R25J1. 8K	RES. C. FILM, 1. 8K, 1/4W, 5X	R10, 18	ROM
69	3	150004	R25J1K	RES. C. FILM, 1K, 1/4W, 5X	R19, 39, 82	ROM
71	3	150007	R25J10K	RES. C. FILM, 10K, 1/4W, 5X	R49, 80, 125	K
73	10	150026	R25J560	RES. C. FILM, 560 HMS, 1/4W, 5X	R1, 3, 12, 13, 15, 16, 20, 21, 23, 24	ROM
74	4	150022	R25J100	RES. C. FILM, 100 HMS, 1/4W, 5X	R78, 85, 112, 115	ROM
75	2	150067	R25J2. 4K	RES. C. FILM, 2. 4K, 1/4W, 5X	R14, 22	ROM
76	2	150092	R25J68	RES. C. FILM, 68 HMS, 1/4W, 5X	R110, 111	ROM
77	6	150107	R25J200	RES. C. FILM, 200 HMS, 1/4W, 5X	R68-71, 113, 116	ROM
78	3	150094	R25J5. 1K	RES. C. FILM, 5. 1K, 1/4W, 5X	R32, 114, 118	ROM
79	4	150006	R25J4. 7K	RES. C. FILM, 4. 7K, 1/4W, 5X	R106, 120, 126, 127	ROM
80	1	150128	R25J130	RES. C. FILM, 130 HMS, 1/4W, 5X	R109	ROM
81	2	150060	R25J2K	RES. C. FILM, 2K, 1/4W, 5X	R74, 98	ROM
82	8	150081	R25J51	RES. C. FILM, 51 HMS, 1/4W, 5X	R26, 29, 31, 34, 73, 86, 117, 119	ROM
84	2	150116	R25J56	RES. C. FILM, 56 HMS, 1/4W, 5X	R11, 25	ROM

Assembly : 469710  
Stock Number : 180247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
85	1	150137	R25J300	RES. C. FILM, 300 HMS, 1/4W, 5%	R88	ROM
86	1	150072	R25J3. 9K	RES, C. FILM, 3. 9K, 1/4W, 5%	R87	ROM
87	3	150136	R25J3K	RES. C. FILM, 3K, 1/4W, 5%	R27, 35, 37	ROM
88	1	148168	C433K2X	RES, MF, 33K, 1/4W2X, 100PPM, RL07	R55	CGE
89	1	150036	R25J1. 2K	RES, C. FILM, 1. 2K, 1/4W, 5%	R43	ROM
90	1	148179	C491K2X	RES, MF, 91K, 1/4W2X, 100PPM, RL07	R52	CGE
91	2	148161	C416K2X	RES, MF, 16K, 1/4W2X, 100PPM, RL07	R45, 48	CGE
92	1	148180	C4100K2X	RES, MF, 100K, 1/4W2X, 100PPM, RL07	R41	CGE
93	2	150040	R25J3. 3K	RES, C. FILM, 3. 3K, 1/4W, 5%	R36, 105	ROM
94	2	150005	R25J2. 7K	RES, C. FILM, 2. 7K, 1/4W, 5%	R28, 122	ROM
95	1	150001	R25J2. 2K	RES, C. FILM, 2. 2K, 1/4W, 5%	R30	ROM
96	1	150003	R25J470	RES, C. FILM, 470 HMS, 1/4W, 5%	R104	ROM
97	2	148197	CT4510K2X	RES, MF, 510K, 1/4W2X, 100PPM, RL07	R6, 107	CGE
98	1	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R123	ROM
99	1	171109	J505	TRANSIS, CURRENT, SOURCE	Q5	SNX
100	1	172096	ICL8069000	DIODE, ZENER, TC, 1. 2V, 10 MW	CR3	ITS
101	1	171118	TN3019	TRANSIS, NPN, SILICON, HIGH POWER	Q11	NSC
102	1	171114	TN4033	TRANSIS	Q10	NSC
103	4	171076	2N2907A	TRANSIS, PNP	Q6, 9, 14, 15	MOT
104	3	171072	2N2222A	TRANSIS, NPN	Q1, 7, 16	MOT
105	1	171075	2N2905	TRANSIS, PNP	Q12	MOT
106	1	171084	2N4910	TRANSIS, NPN	Q13	ASI
107	2	171087	2N5179	TRANSIS, NPN	Q2, 3	MOT
108	1	171110	J-105	TRANSIS	Q4	SNX
109	1	171077	2N2920	TRANSIS, NPN, DUAL	Q8	MOT
113	4	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR

Assembly : 469710  
Stock Number : 100247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
114	4	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		F
116	2	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U10, 11	AUG
117	4	121054	B1591-B-11	MOUNT, BLOCK		USE
121	1	127004	469404	HEATSINK		DSI
122	1	127001	207-CB	HEATSINK	Q12	WAK
123	1	142025	43-66-2	INSULATOR, MICA		KEY
125	1	147219	469700	P. C. , CARD, A4	A4	DSI
127	2	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
129	2	120259	NAS671C4	NUT, 4/40		HPR
130	7	141213	508-AG-10D	SOCKET, 8 PIN, IC	U2, 6-9, 13, 14	AUG
131	2	142022	334, .375	LUG, GND, 3/8, ID		ZTE
132	2	141225	516-AG-10D	SOCKET, 16 PIN, I. C.	U3, 4	AUG
133	4	120255	NAS620C4	WASHER, FLAT, #4		HPR
135	3	166007	RFC-S-1.0	INDUCTOR, 1 UH	L9-11	N
136	3	125162	UT. 034TP	CABLE, COAX, .035DIA		CAS
137	3	125168	#18, 1500-18ST	SLEEVING, TEFLON		ALC
138	1	111021	51135-0360G	ADHESIVE		MMM
139	2	125169	#9, 1500-9T	SLEEVING, TEFLON, .070 LG		ALC
140	1	111022	WAKEFIELD 120	HEATSINK COMPOUND		WAK
141	1	166008	RFC-S-1.5	INDUCTOR, 1.5 UH	L12	NYT
142	1	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R124	ROM
143	1	150058	R25J620K	RES, C. FILM, 620K, 1/4W, 5%	R7	ROM
144	1	130280	469400-1	SHIELD, R. F.		DSI
145	1	130281	469400-2	SHIELD, R. F.		DSI
146	4	142027	450-7004-01-03-00	JACK	TP1-4	CAM
147	1	140123	C4430R2X	RES, MF, 430, 1/4W2X, 100PPM, RL07	R42	CGE

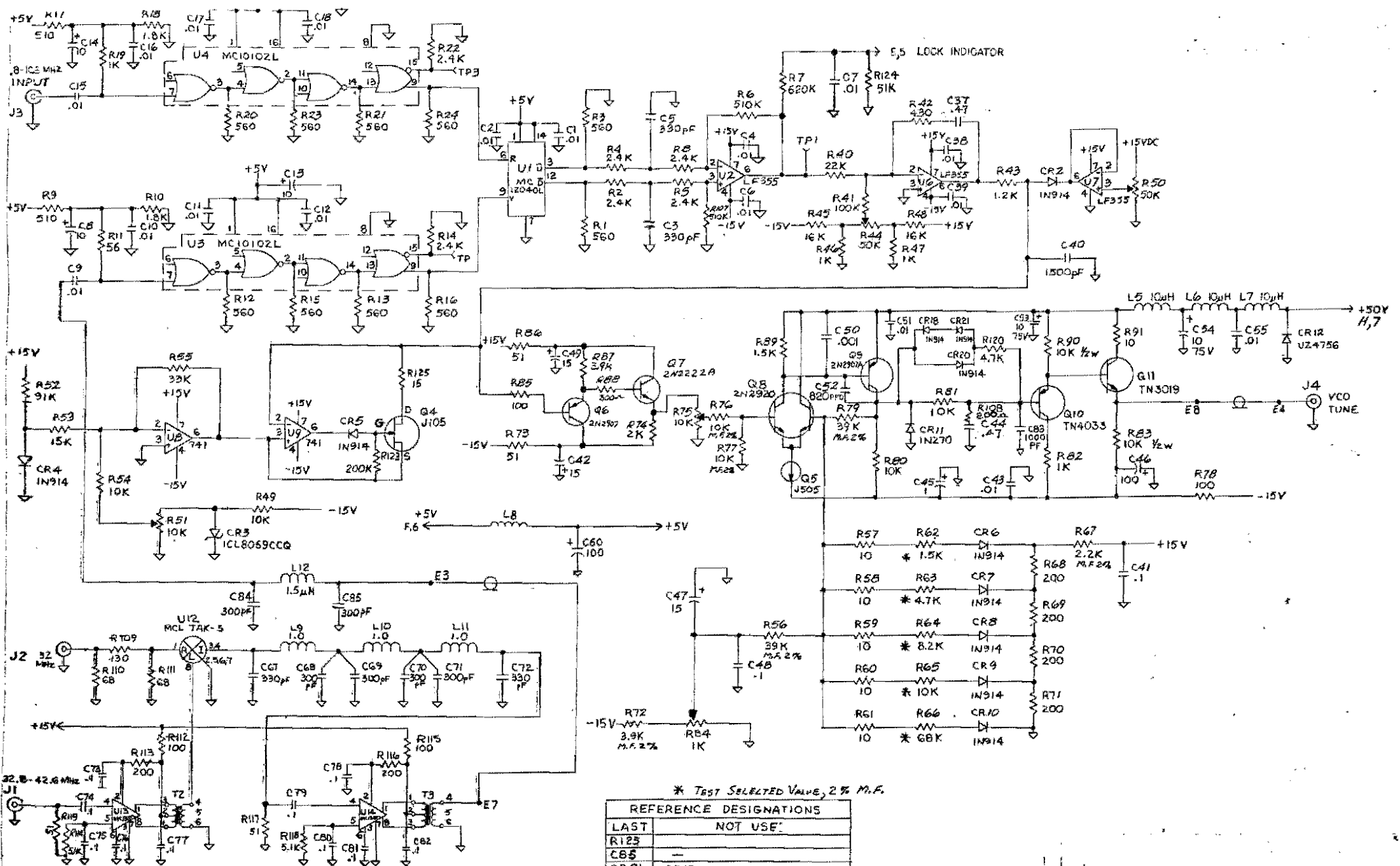
Assembly : 469710  
Stock Number : 180247

ASSY, A4, MW OSC-PLL CONT

REV J1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
148	2	148132	C41K2X	RES, MF, 1K, 1/4W2X, 100PPM, RL07	R46, 47	CGE
149	2	148156	C410K2X	RES, MF, 10K, 1/4W2X, 100PPM, RL07	R54, 81	CGE
150	1	148164	C422K2X	RES, MF, 22K, 1/4W2X, 100PPM, RL07	R40	CGE
151	4	148141	C42.4K2X	RES, MF, 2.4K, 1/4W2X, 100PPM, RL07	R2, 4, 5, 8	CGE
152	1	134089	472113D	ASSY, INDUCTOR/TRANSFORMER, TAB	L8 (USE 472113-5)	DSI
153	1	134082	472101-1	ASSY, INDUCTOR/TRANSFORMER, TAB	T1 (USE 472101-1)	DSI
154	2	134083	472101-2, 3	ASSY, INDUCTOR/TRANSFORMER, TAB	L3 (USE 472101-2) L4 (USE 472101-3)	DSI
155	1	148115	C4200R2X	RES, MF, 200, 1/4W2X, 100PPM, RL07	R108	CGE
156	1	179138	469479	ASSY, MOUNTING PLATES, A4		DSI
157	2	150071	R25J91	RES, C. FILM, 91 HMS, 1/4W, 5%	R128, 129	RDM
158	1	150117	R25J75	RES, C. FILM, 75 HMS, 1/4W, 5%	R130	RDM

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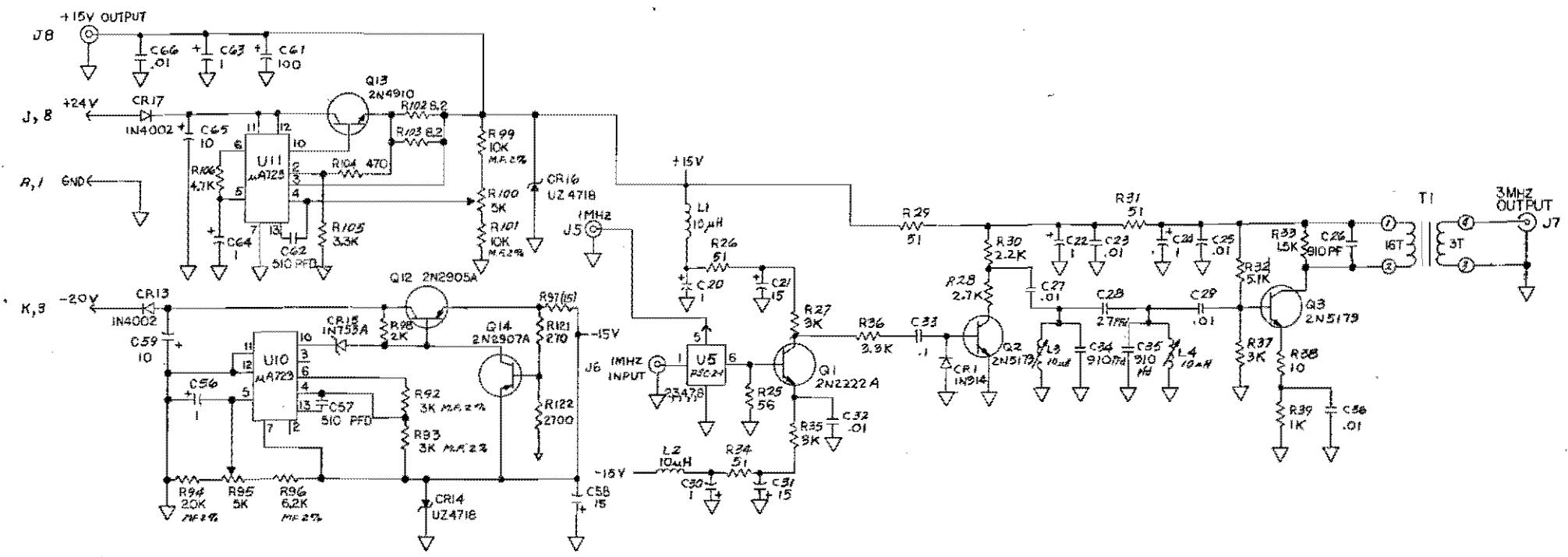


1. RESISTOR VALUES IN OHMS.  
 CAPACITOR VALUES IN MICROFARADS.  
 NOTES: UNLESS OTHERWISE SPECIFIED

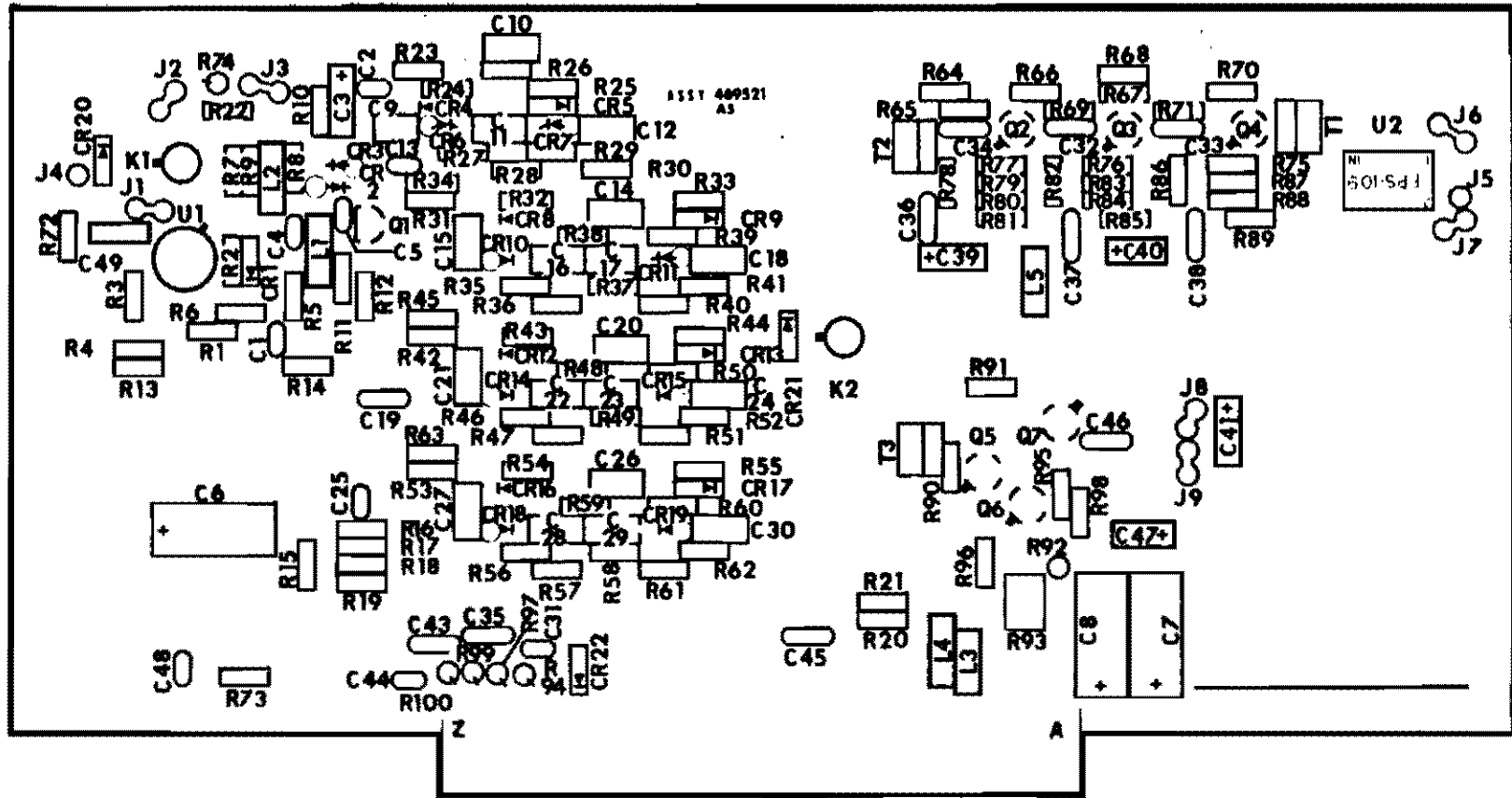
\* TEST SELECTED VALUE, 2% M.F.

REFERENCE DESIGNATIONS	
LAST	NOT USE:
R123	---
C85	---
CR21	CR19
Q14	---
L12	---
U4	---

A4 - MICROWAVE OSCILLATOR - PLL CONTROL, SHT 1 OF 2



1-9V



A5 PREDETECTION GAIN CONTROL

Assembly : 469521  
 Stock Number : 180175

ASSY, PRED., GAIN, A5

REV E5  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C1, 4, 48	ERI
2	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C46	ERI
3	8	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C2, 5, 13, 19, 25, 31, 44	ERI
4	9	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C32-38, 43, 45	ERI
5	5	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C3, 39, 40, 41, 47	SPG
6	15	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C9, 11, 12, 15-18, 21-24 , 27-30	ERI
7	4	154071	CK06BX105K	CAP, CER, 1 UF	C10, 14, 20, 26	AVX
8	1	154053	CK05BX102K	CAP, CER, .001 UF	C49	AVX
9	3	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C6-8	SPG
10	12	172010	1N914	DIODE, SILICON, D035	CR1, 4, 5, 8, 9, 12, 13, 16 , 17, 20, 21, 22	MOT
11	10	172091	UM4001B	DIODE, PIN	CR2, 3, 6, 7, 10, 11, 14, 1 5, 18, 19	UNI
12	2	145065	732-12	RELAY, DPDT	K1, 2	T-R
13	5	166015	WD-10	INDUCTOR, 10 UH	L1-5	NYT
14	1	171097	MPF820	TRANSIS, FET	Q1	MGT
15	3	171087	2N5179	TRANSIS, NPN	Q2, 3, 4	MOT
16	2	171072	2N2322A	TRANSIS, NPN	Q5, 6	MGT
17	1	171076	2N2907A	TRANSIS, PNP	Q7	MOT
18	1	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5X	R1	ROM
19	7	150034	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5X	R2, 64, 67, 70, 78, 82, 86	ROM
20	4	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5X	R3, 14, 73, 96	ROM
21	1	150042	R25J6.2K	RES, C. FILM, 6.2K, 1/4W, 5X	R4	ROM
22	1	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5X	R5	ROM
23	4	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5X	R6, 9, 15, 92	ROM
24	2	148001	RL07S101G	RES, M. FILM, 100 HMS, 2X	R37, 39	CGE

Assembly : 469521  
Stock Number : 180175

ASSY, PRED., GAIN, A5

REV E5  
05/01/86

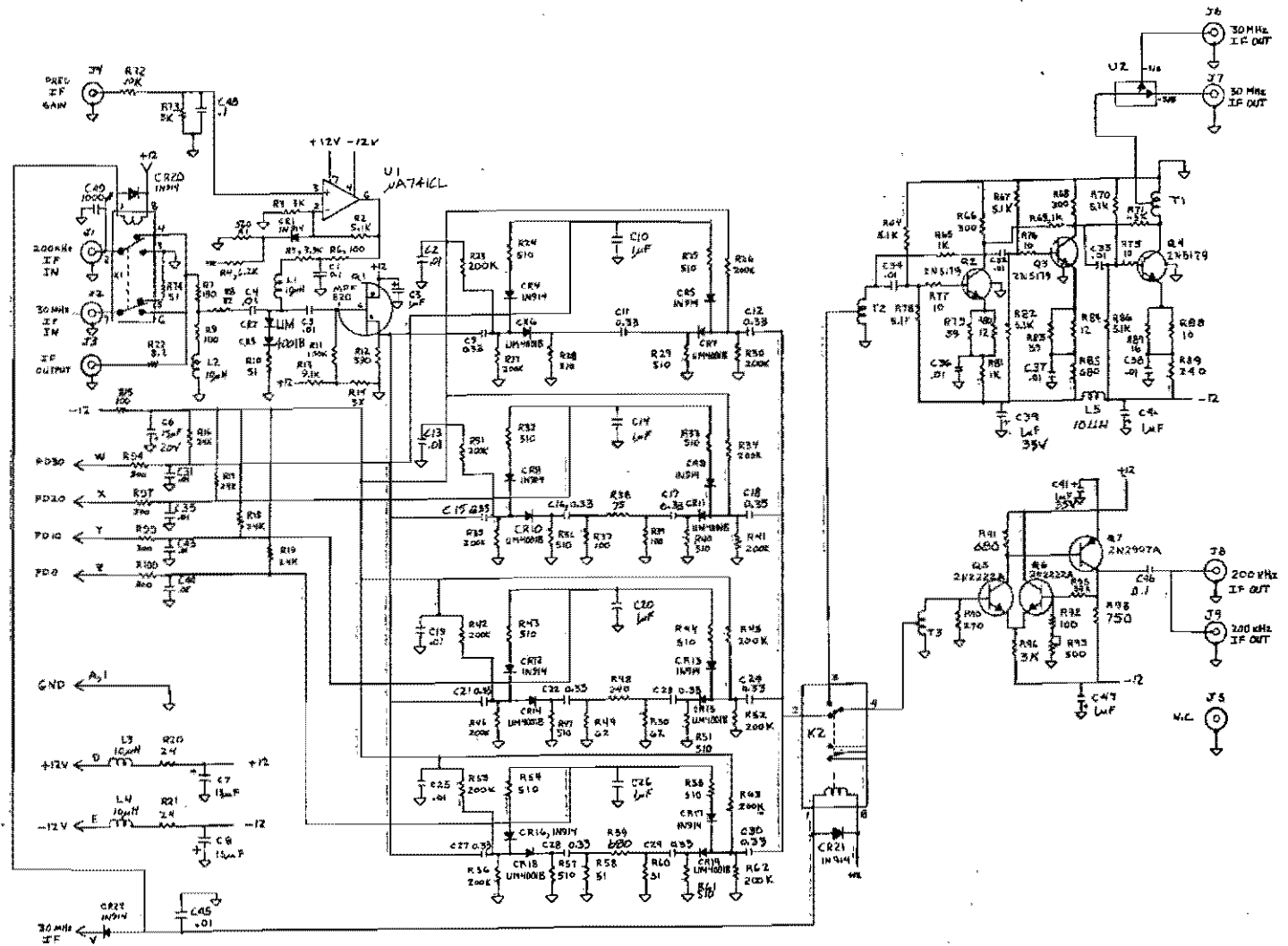
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
25	1	150109	R25J180	RES, C. FILM, 180 HMS, 1/4W, 5X	R7	ROM
26	1	150152	R25J82	RES, C. FILM, 82 HMS, 1/4W, 5X	R8	ROM
27	2	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R10, 74	ROM
28	2	148028	RL07S510G	RES, M. FILM, 51 HMS, 2X	R58, 60	CGE
29	1	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5X	R11	ROM
30	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5X	R12	ROM
31	1	150155	R25J9. 1K	RES, C. FILM, 9. 1K, 1/4W, 5X	R13	ROM
32	4	150085	R25J24K	RES, C. FILM, 24K, 1/4W, 5X	R16, 17, 18, 19	ROM
33	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5X	R20, 21	ROM
34	1	150153	R25J8. 2	RES, C. FILM, 8. 2 HMS, 1/4W, 5X	R22	ROM
35	16	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5X	R23, 26, 27, 30, 31, 34, 35, 41, 42, 45, 46, 52, 53 , 56, 62, 63	ROM
36	16	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5X	R24, 25, 28, 29, 32, 33, 36, 40, 43, 44, 47, 51, 54 55, 57, 61	ROM
37	1	148035	RL07S750G	RES, M. FILM, 75 HMS, 2X	R38	CGE
38	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5X	R89	ROM
39	1	148018	RL07S241G	RES, M. FILM, 240 HMS, 2X	R48	CGE
40	2	148030	RL07S620G	RES, M. FILM, 62 HMS, 2X	R49, 50	CGE
41	1	148032	RL07S681G	RES, M. FILM, 680 HMS, 2X	R59	CGE
42	3	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R65, 69, 81	ROM
43	6	150137	R25J300	RES, C. FILM, 300 HMS, 1/4W, 5X	R66, 68, 94, 99, 100, 97	ROM
44	1	150037	R25J1. 5K	RES, C. FILM, 1. 5K, 1/4W, 5X	R71	ROM
45	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R72	ROM
46	4	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R75, 76, 77, 88 (SAT)	ROM
47	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5X	R79, 83 (SAT)	ROM
48	2	150096	R25J12	RES, C. FILM, 12 HMS, 1/4W, 5X	R80, 84 (SAT)	ROM

Assembly : 469521  
Stock Number : 180175

ASSY, PRED. , GAIN, A5

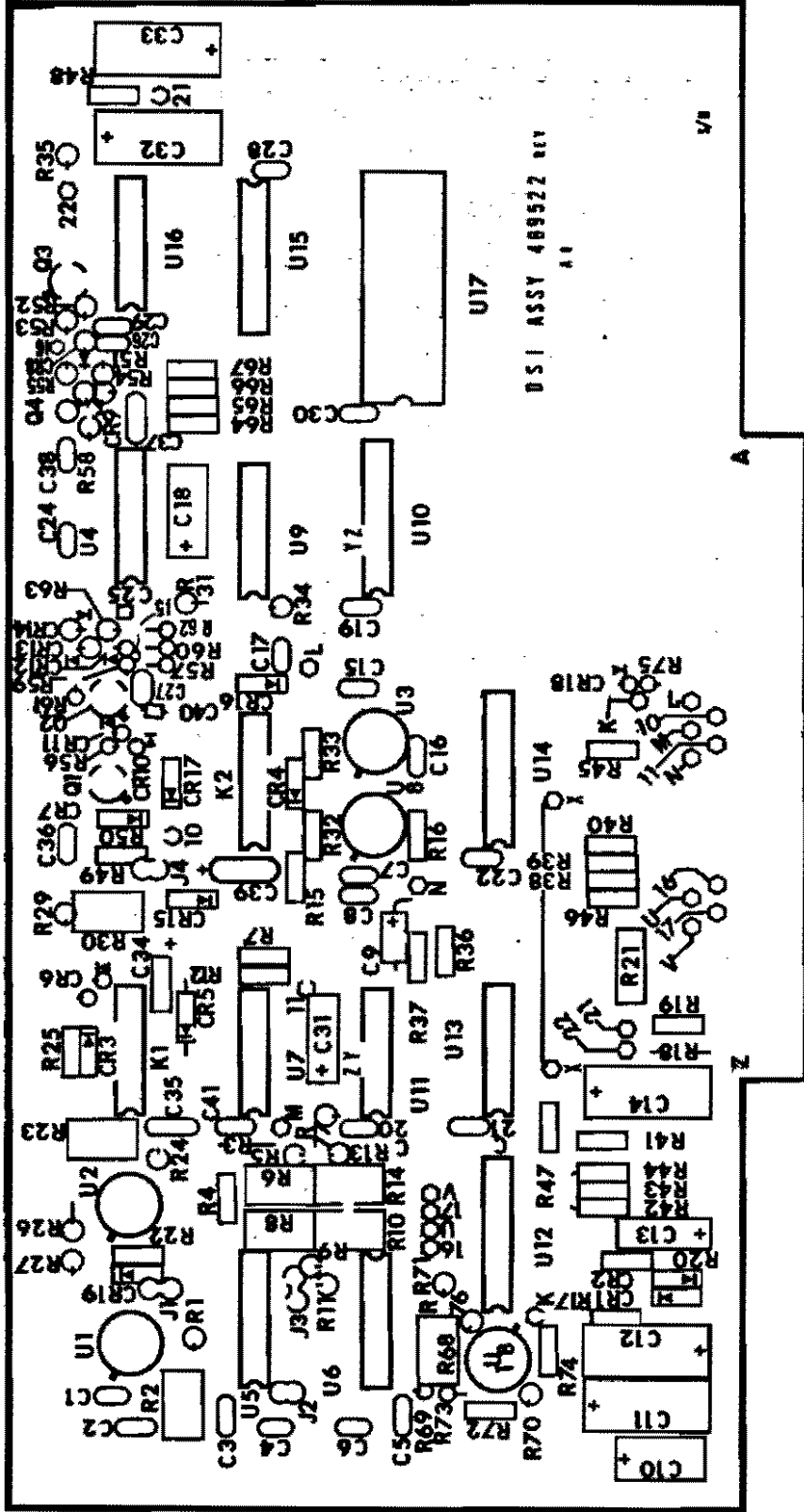
REV E5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
49	2	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R85, 91	R
50	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5%	R87 (SAT)	ROM
51	1	150069	R25J270	RES, C. FILM, 270 HMS, 1/4W, 5%	R90	ROM
52	1	153075	3299W-1-501K	RES, ADJ, 500 HMS	R93	BRN
53	1	150144	R25J39K	RES, C. FILM, 39K, 1/4W, 5%	R95	ROM
54	1	150120	R25J750	RES, C. FILM, 750 HMS, 1/4W, 5%	R98	ROM
55	3	134040	T4-1	TRANSFORMER	T1, 2, 3,	MCL
56	1	170686	UA741HC	I. C. , 741, 8 PIN, CAN	U1	FRS
57	1	161018	FPS-109	POWER, DIVIDER	U2	MCL
58	1	147191	469105	P. C. , CARD, A5		DSI
60	3	121054	B1591-B-11	MOUNT, BLOCK		USE
63	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
64	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
66	4	125160	RG178 B/U	CABLE, COAX		R
68	6	121056	1127 (350)	SPACER, GLASS		KKR
69	10	121057	1130	SPACER, GLASS		KKR
70	1	179139	469480	ASSY, MOUNTING PLATES, A5		DSI



NOTES: UNLESS OTHERWISE SPECIFIED  
 1. RESISTOR VALUES ARE IN OHMS.  
 2. CAPACITOR VALUES ARE IN MICROFARADS.

A5 - PREDETECTION GAIN CONTROL



Assembly : 469522  
Stock Number : 180176

ASSY, AGC, AMP, A6

REV G3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	18	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1-6, 17, 19-22, 26-30, 36, 41	ERI
2	6	154045	RPE121Z5U104M100V	CAP, CER, .1 UF, 100V	C7, 8, 15, 24, 38, 16	ERI
3	1	158008	CS138F105K	CAP, TANT, 1 UF, 35V	C9	SPG
4	4	158005	CS138E156K	CAP, TANT, 15 UF, 20V	C10, 18, 31, 13	SPG
5	4	158004	CS138E107K	CAP, TANT, 100 UF, 20V	C11, 12, 32, 33	SPG
6	1	158002	CS138B337K	CAP, TANT, 330 UF, 6V	C14	SPG
7	1	154051	RPE113Z5U334M100V	CAP, CER, .33 UF, 100V	C37	ERI
8	1	154071	CK06BX105K	CAP, CER, 1 UF	C39	AVX
9	1	154059	CK05BX222K	CAP, CER, 2200 PF	C25	AVX
10	1	158003	CS138E106K	CAP, TANT, 10 UF, 20V	C34	SPG
11	1	154053	CK05BX102K	CAP, CER, .001 UF	C35	AVX
12	1	172075	1N759A	DIODE, ZENER, 12V, .4W, 5%	CR1	MDT
13	1	172072	1N753A	DIODE, ZENER, 6.2V, .4W, 5%	CR2	MDT
14	13	172010	1N914	DIODE, SILICON, D035	CR3, 4, 7-14, 16-18	MDT
15	2	172059	1N270	DIODE, GERMANIUM	CR5, 6	MDT
16	2	172078	5082-2800	DIODE, SILICON	CR15, 19	HEW
18	2	145073	PRMA-10037	RELAY, SPST	K1, 2	CPC
19	2	171072	2N222A	TRANSIS, NPN	Q1, 3	MDT
20	2	171076	2N2907A	TRANSIS, PNP	Q2, 4	MDT
21	3	153075	3299W-1-501K	RES, ADJ, 500 HMS	R2, 6, 8	BRN
22	4	153071	3299W-1-103K	RES, ADJ, 10K	R10, 14, 23, 68	BRN
23	1	153073	3299W-1-105K	RES, ADJ, 1M	R30	BRN
24	1	150006	R25J4.7K	RES, C. FILM, 4.7K, 1/4W, 5%	R77	ROM
25	7	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R1, 5, 9, 31, 58, 61, 26	ROM
26	2	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R3, 7	ROM

Assembly : 469522  
Stock Number : 180176

ASSY, AGC, AMP, A6

REV G3  
05/01/86

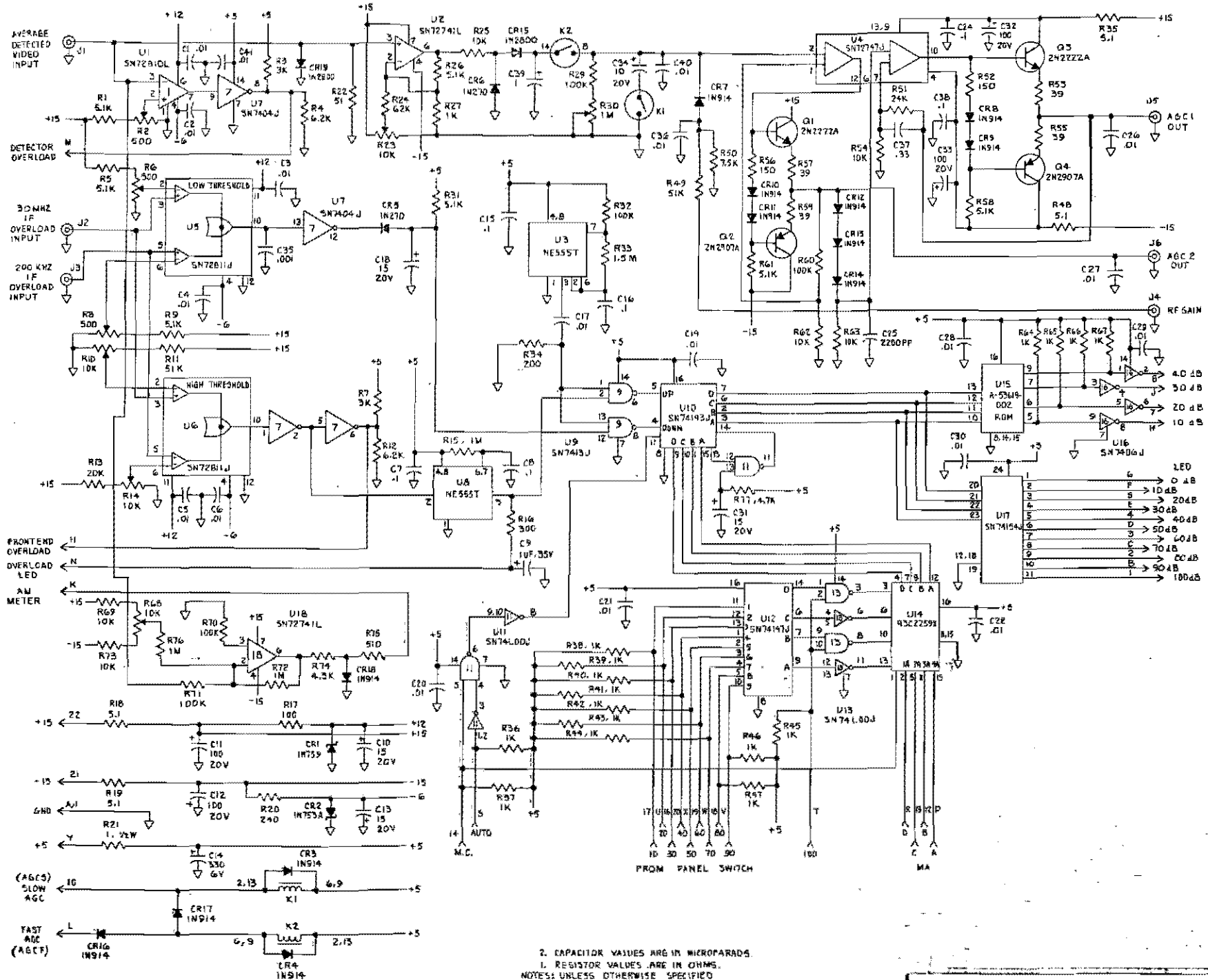
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
27	2	150042	R25J6.2K	RES. C. FILM, 6.2K, 1/4W, 5X	R4, 12	ROM
28	1	150058	R25J51K	RES. C. FILM, 51K, 1/4W, 5X	R11	ROM
29	1	150078	R25J20K	RES. C. FILM, 20K, 1/4W, 5X	R13	ROM
30	3	150031	R25J1M	RES. C. FILM, 1M, 1/4W, 5X	R15, 72, 76	ROM
31	1	150137	R25J300	RES. C. FILM, 300 HMS, 1/4W, 5X	R16	ROM
32	1	150022	R25J100	RES. C. FILM, 100 HMS, 1/4W, 5X	R17	ROM
33	1	150081	R25J51	RES. C. FILM, 51 HMS, 1/4W, 5X	R22	ROM
34	4	150148	R25J5.1	RES. C. FILM, 5.1 HMS, 1/4W, 5X	R18, 19, 35, 48	ROM
35	1	150097	R25J240	RES. C. FILM, 240 HMS, 1/4W, 5X	R20	ROM
36	1	150044	R25J62K	RES. C. FILM, 62K, 1/4W, 5X	R24	ROM
37	6	150007	R25J10K	RES. C. FILM, 10K, 1/4W, 5X	R25, 54, 62, 63, 69, 73	ROM
38	17	150004	R25J1K	RES. C. FILM, 1K, 1/4W, 5X	R27, 36-47, 64-67	ROM
39	5	150009	R25J100K	RES. C. FILM, 100K, 1/4W, 5X	R29, 32, 60, 70, 71	ROM
40	1	150049	R25J1.5M	RES. C. FILM, 1.5M, 1/4W, 5X	R33	ROM
41	1	150107	R25J200	RES. C. FILM, 200 HMS, 1/4W, 5X	R34	ROM
42	1	150095	R25J7.5K	RES. C. FILM, 7.5K, 1/4W, 5X	R50	ROM
43	1	150085	R25J24K	RES. C. FILM, 24K, 1/4W, 5X	R51	ROM
44	2	150034	R25J150	RES. C. COMP, 150 HMS, 1/4W, 5X	R52, 56	ROM
45	4	150105	R25J39	RES. C. FILM, 39 HMS, 1/4W, 5X	R53, 55, 57, 59	ROM
46	1	150108	R25J4.3K	RES. C. FILM, 4.3K, 1/4W, 5X	R74	ROM
47	1	150147	R25J510	RES. C. FILM, 510 HMS, 1/4W, 5X	R75	ROM
48	1	151033	R50J1	RES. C. FILM, 1 HMS, 1/2W, 5X	R21	ROM
49	1	170587	LM306H	I. C. , 306	U1	NSC
50	2	170686	UA741HC	I. C. , 741, 8 PIN, CAN	U2, 18	FRS
51	2	170613	LM555CH	I. C. , 555, CAN	U3, 8	RCA
52	1	170687	UA747CJ	I. C. , 747	U4	FRS

Assembly : 469522  
Stock Number : 180176

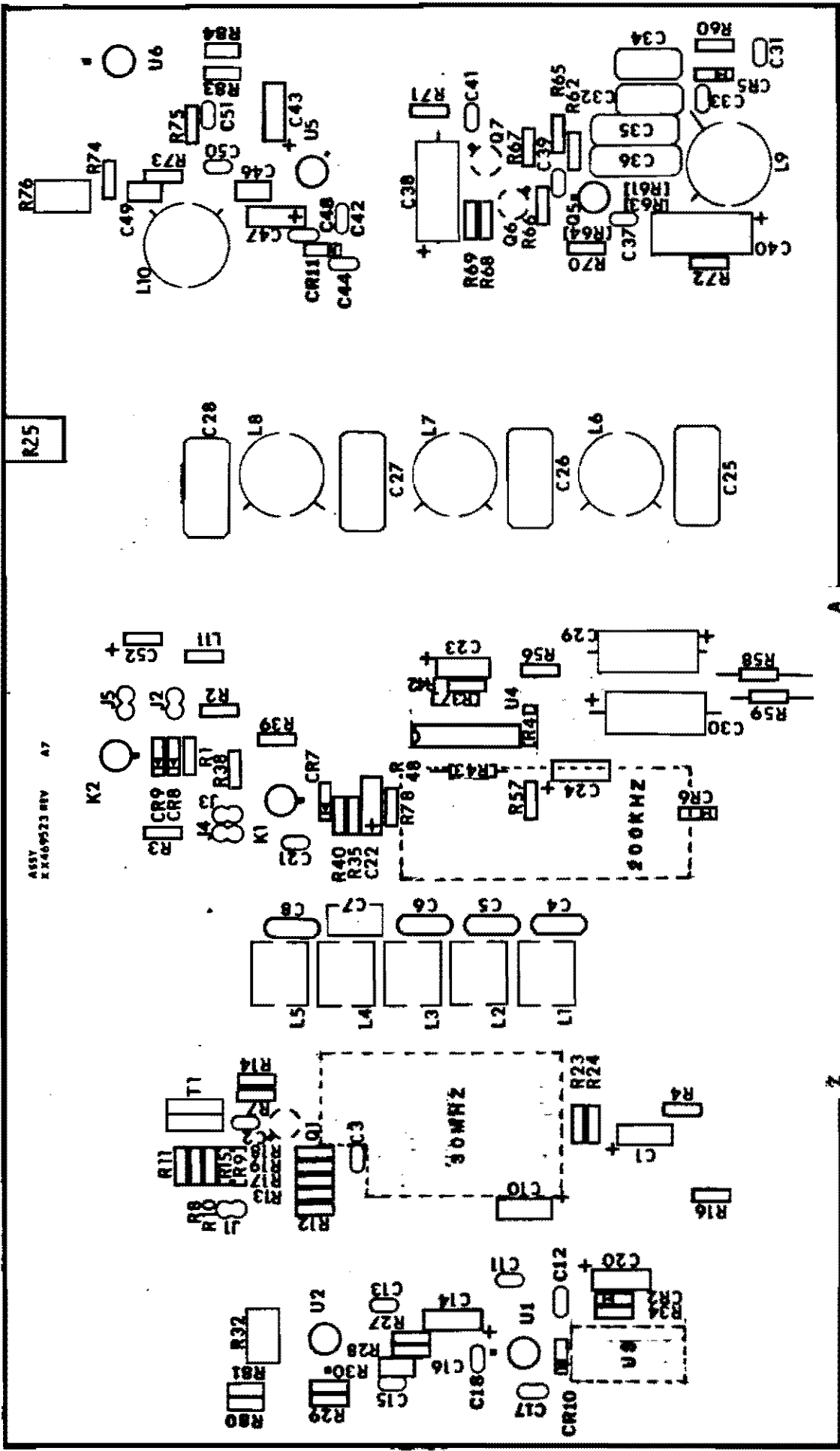
ASSY, AGC, AMP, A6

REV G3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
53	2	170684	TL811MJ	I. C. , 811	U5, 6	
54	1	170631	SN7404J	I. C. , 7404, CER, HEX INVERT	U7	TXI
55	1	170638	SN7413J	I. C. , 7413, CER	U9	TXI
56	1	170642	SN74193J	I. C. , 74193, CER	U10	TXI
57	2	170651	SN74L00J	I. C. , 74L00, CER, QUAD-2, INPUT	U11, 13	TXI
58	1	170639	SN74147J	I. C. , 74147, CER	U12	TXI
59	1	170565	F93L22DC	I. C. , 93L22, CER	U14	FRS
60	1	170953	469254	ASSY, I. C. , PROGRAMMED	U15	DSI
61	1	170632	SN7406J	I. C. , 7406, CER	U16	TXI
62	1	170641	SN74154J	I. C. , 74154, CER	U17	TXI
63	8	141223	514-AG-100	SOCKET, 14 PIN, I. C.		AUG
64	4	141225	516-AG-100	SOCKET, 16 PIN, I. C.		AUG
65	1	141231	524-AG-100	SOCKET, 24, PIN, I. C.		AUG
66	1	147200	469124	P. C. , CARD, A6		DSI
68	3	121054	B1591-B-11	MOUNT, BLOCK		USE
71	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
72	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
74	42	121056	1127 (350)	SPACER, GLASS		KKR
75	1	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C40	ERI
76	1	150144	R25J39K	RES, C. FILM, 39K, 1/4W, 5%	R49	RCM
77	1	179140	469481	ASSY, MOUNTING PLATES, A6		DSI



2. CAPACITOR VALUES ARE IN MICROFARADS.  
 1. RESISTOR VALUES ARE IN OHMS.  
 NOTE: UNLESS OTHERWISE SPECIFIED



A7 AMBFO DETECTORS

Assembly : 469523  
Stock Number : 180177

ASSY, AM/BFO, DETECTOR, A7

REV G6  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	9	158008	CS13BF105K	CAP, TANT, .1 UF, 35V	C1, 10, 14, 20, 22, 23, 24, 47, 52	
2	9	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C2, 3, 11, 18, 21, 33, 37, 39, 43	ERI
8	11	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C12, 13, 15, 17, 31, 41, 42, 44, 48, 50, 51	ERI
9	1	154061	CK05BX332K	CAP, CER, .0033 UF	C46	AVX
12	2	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C38, 40	SPG
13	2	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C29, 30	SPG
14	1	163019	DM15-102J	CAP, MICA, 1000 PF	C32	ARC
15	1	163024	DM15-121J	CAP, MICA, 120 PF	C34	ARC
16	2	163034	DM19-562J	CAP, MICA, 5600 PF	C35, 36	ARC
17	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C49	AVX
18	1	154053	CK05BX102K	CAP, CER, .001 UF	C16	AVX
20	1	172073	1N757A	DIODE, ZENER, 9.1V, .4W, 5x	CR2	MOT
22	1	172084	DKV6520B	DIODE, VARICAP	CR5	ALI
23	4	172010	1N914	DIODE, SILICON, D035	CR6, 7, 8, 9	MOT
24	2	145065	732-12	RELAY, DPDT	K1, 2	TLR
25	1	166015	WD-10	INDUCTOR, 10 UH	L11	NYT
26	1	165008	2673-000101	CORE, BEAD, CHOKE	L12	MIM
27	2	171087	2N5179	TRANSIS, NPN	Q1, 6	MOT
30	1	171104	40673	TRANSIS, FET	Q5	RCA
31	1	171078	2N3012	TRANSIS, PNP	Q7	MOT
34	2	153071	3299W-1-103K	RES, ADJ, 10K	R32, 76	BRN
36	2	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5x	R1, 18	RDM
37	2	150137	R25J300	RES, C. FILM, 300 HMS, 1/4W, 5x	R2, 3	RDM
38	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5x	R4, 16	RDM

Assembly : 469523  
Stock Number : 180177

ASSY, AM/BFO, DETECTOR, A7

REV G6  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
39	1	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5X	R43	ROM
40	2	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5X	R7, 40	ROM
41	1	150141	R25J36	RES, C. FILM, 36 HMS, 1/4W, 5X	R8	ROM
42	1	150154	R25J910	RES, C. FILM, 910 HMS, 1/4W, 5X	R9	ROM
43	2	150034	R25J150	RES, C. COMP, 150 HMS, 1/4W, 5X	R10, 11	ROM
44	4	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5X	R12, 13, 35, 62	ROM
45	4	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R14, 19, 58, 59	ROM
46	1	150092	R25J68	RES, C. FILM, 68 HMS, 1/4W, 5X	R15	ROM
47	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5X	R17	ROM
49	1	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5X	R60	ROM
51	3	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R27, 37, 42	ROM
52	2	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R28, 73	ROM
53	6	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5X	R29, 30, 61, 63, 74, 75	ROM
54	1	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5X	R34	ROM
55	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5X	R78	ROM
56	2	150155	R25J9.1K	RES, C. FILM, 9.1K, 1/4W, 5X	R38, 41	ROM
57	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5X	R39	ROM
64	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5X	R56, 57	ROM
65	2	150068	R25J120K	RES, C. FILM, 120K, 1/4W, 5X	R66, 67	ROM
66	1	150085	R25J24K	RES, C. FILM, 24K, 1/4W, 5X	R68	ROM
67	1	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5X	R69	ROM
68	2	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R70, 72	ROM
69	1	150149	R25J62	RES, C. FILM, 62 HMS, 1/4W, 5X	R71	ROM
70	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R65	ROM
71	1	150057	R25J150K	RES, C. FILM, 150K, 1/4W, 5X	R64	ROM
72	1	134040	T4-1	TRANSFORMER	T1	MCL

Assembly : 469523  
 Stock Number : 180177

ASSY, AM/BFO, DETECTOR, A7

REV G6  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
73	2	170626	SL640C	I. C. ,640	U1, 5	
74	2	170686	UA741HC	I. C. , 741, 8 PIN, CAN	U2, 6	FRS
75	1	170610	MHQ6002	I. C. , 6002	U4	MDT
76	1	180372	469191	ASSY, PCB, 30 MHZ OSC, BFO	U3	DSI
77	1	147195	469109	P. C. , CARD, A7		DSI
79	4	121054	B1591-B-11	MOUNT, BLOCK		USE
81	2	130297	469400-10	SHIELD, R. F.		DSI
82	4	120164	M551957-13	SCREW, PNHD, 4-40X1/4		HPR
83	4	120242	MS35338-135	WASHER, SPLITLOCK. #4		HPR
89	3	130298	469400-11	SHIELD, R. F.		DSI
90	1	130299	469400-12	SHIELD, R. F.		DSI
91	1	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG
92	2	150072	R25J3. 9K	RES. C. FILM, 3. 9K, 1/4W, 5%	R80, 83	ROM
93	2	150114	R25J33K	RES. C. FILM, 33K, 1/4W, 5%	R81, 84	K.
94	2	172071	1N751A	DIODE, ZENER, 5. 1V, . 4W, 5%	CR10, 11	MOT
95	1	134088	472113C	ASSY, INDUCTOR/TRANSFORMER, TAB	L9 (USE 472113-4)	DSI
98	1	134093	472113H	ASSY, INDUCTOR/TRANSFORMER, TAB	L10 (USE 472113-13)	DSI
104	1	179141	469482	ASSY, MOUNTING PLATES, A7		DSI
105	1	180370	469438	ASSY, PCB, 200 KHZ DETECTOR		DSI
106	1	180371	469440	ASSY, PCB, 30 MHZ DETECTOR		DSI
107	2	163106	DM05240J	CAP, MICA, 24 PF	C4, 7	ARC
108	2	163005	DM10-101J	CAP, MICA, 100 PF	C5, 6	ARC
109	2	157054	719B1CA223PJ401SA	CAP, METAL, POLYCARB. . 022 UF	C25, 28	MEP
110	2	157053	719B1CB333PJ401SA	CAP, METAL, POLYCARB. . 033 UF	C26, 27	MEP
111	3	165024	T37-10	CORE, TOROID	L1-3	MIM
112	3	165026	T50-26	CORE, TOROID	L6-8	MIM

Assembly : 469523  
Stock Number : 180177

ASSY, AM/BFO, DETECTOR, A7

REV G6  
05/01/86

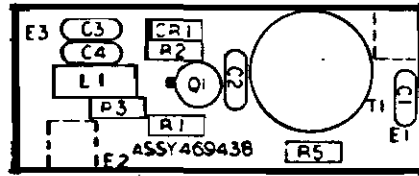
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
113	60	125172	#30HS	WIRE, MAGNET, HS#30		MSW
114	150	125331	32GA, SPN, RED, MAG	WIRE, 32GA, RED, MAGNET		PIW

Assembly : 469438  
Stock Number : 180370

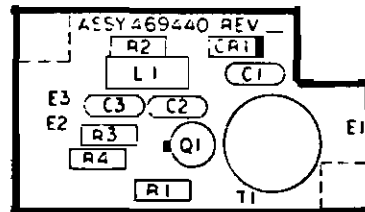
ASSY, PCB, 200 KHZ DETECTOR

REV X3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147311	469418	PCB, 200 KHZ, DETECTOR		
2	1	171120	NED2112	TRANSIS, HIGH FREQ, NPN	Q1	NEC
3	4	154071	CK06BX105K	CAP, CER, 1 UF	C1-4	AVX
4	1	172010	1N914	DIODE, SILICON, D035	CR1	MOT
5	1	148174	C456K2%	RES, MF, 56K, 1/4W2%, 100PPM, RL07	R1	CGE
6	1	148158	C412K2%	RES, MF, 12K, 1/4W2%, 100PPM, RL07	R2	CGE
7	1	148115	C4200R2%	RES, MF, 200, 1/4W2%, 100PPM, RL07	R3	CGE
8	1	134058	469409	ASSY, TRANSFORMER, TOROID	T1	DSI
9	1	148108	C4100R2%	RES, MF, 100, 1/4W2%, 100PPM, RL07	R5	CGE
10	1	166028	WD-220	INDUCTOR, 220 UH	L1	NYT
11	2	120279	350-1248-09-07-00	STANDOFF		CAM
12	1	111039	4016-5	TAPE, FOAM, DOUBLE SIDED, 1/2 IN		MMM
13	1	163103	DM10-161J	CAP, MICA, 160 PF, 300V, 5%	C5	ARC



**200 KHZ DETECTOR**



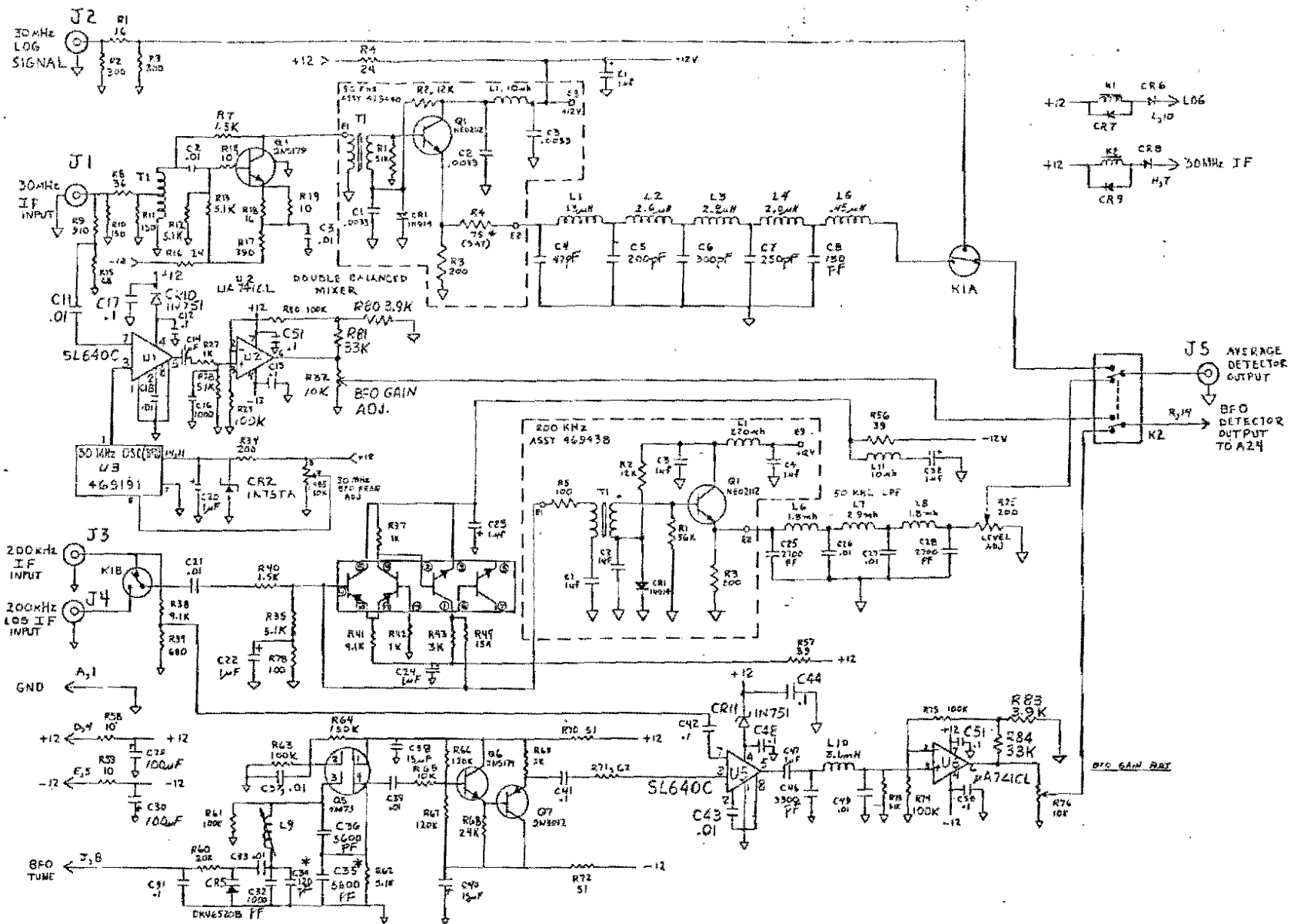
**30 MHZ DETECTOR**

Assembly : 469440  
Stock Number : 180371

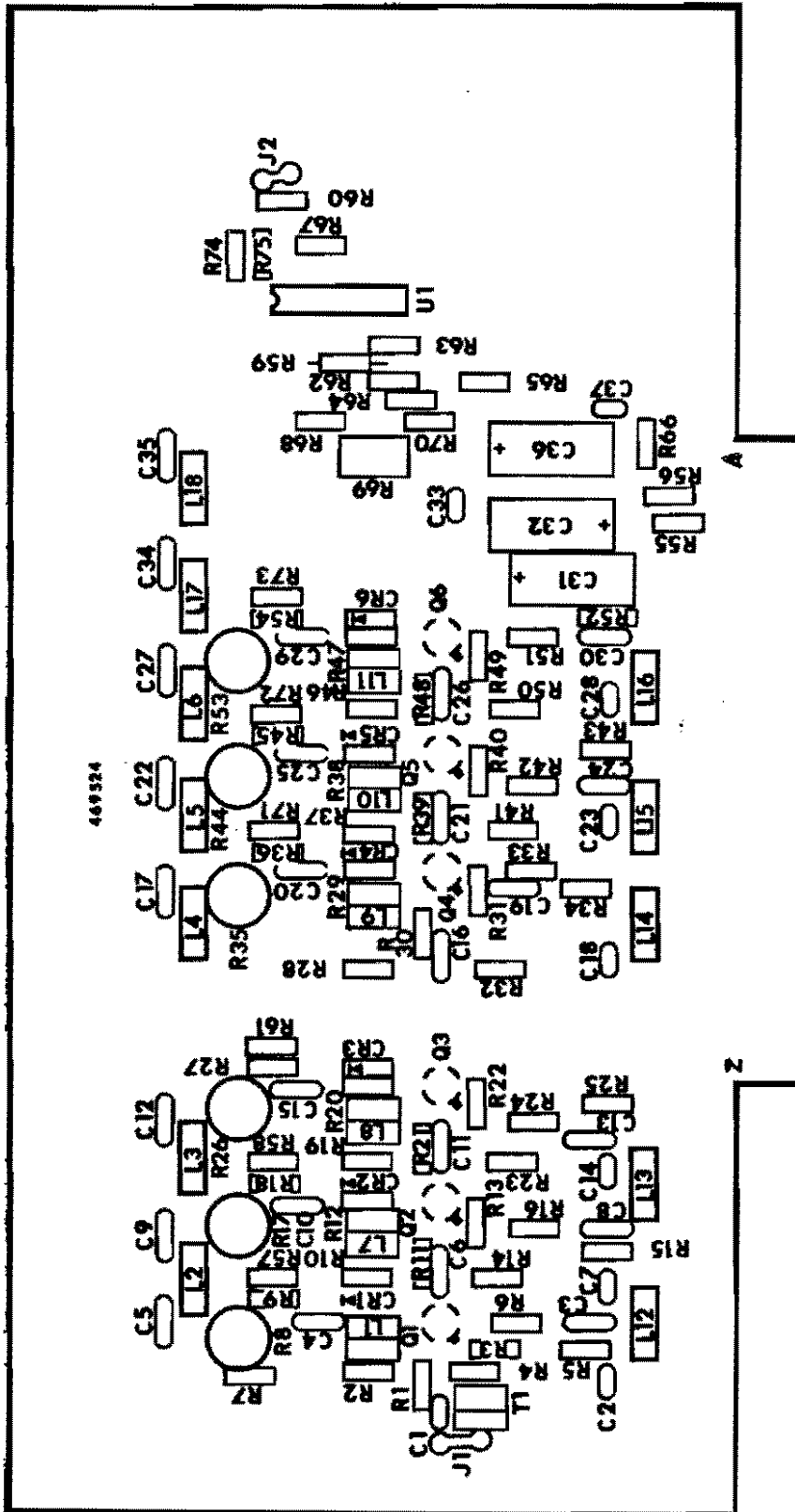
ASSY, PCB, 30 MHZ DETECTOR

REV A  
05/01/66

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147312	469419	PCB, 30 MHZ, DETECTOR		
2	3	154061	CK05BX332K	CAP, CER, .0033 UF	C1-3	AVX
3	1	172010	1N914	DIODE, SILICON, D035	CR1	MOT
4	1	148174	C456K2X	RES, MF, 56K, 1/4W2X, 100PPM, RL07	R1	CGE
5	1	148158	C412K2X	RES, MF, 12K, 1/4W2X, 100PPM, RL07	R2	CGE
6	1	148115	C4200R2X	RES, MF, 200, 1/4W2X, 100PPM, RL07	R3	CGE
7	1	148105	C475R2X	RES, MF, 75, 1/4W2X, 100PPM, RL07	R4	CGE
8	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
9	1	171120	NE02112	TRANSIS, HIGH FREQ, NPN	Q1	NEC
10	1	134057	469408	ASSY, TRANSFORMER, TOROID	T1	DSI
11	2	120279	350-1248-09-07-00	STANDOFF		CAM
12	1	111039	4016-5	TAPE, FOAM, DOUBLE SIDED, 1/2 IN		MMM
13	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM



A7 - AM & BFO DETECTORS



AB 30MHz LOG IF DETECTOR

Assembly : 469524  
 Stock Number : 180178

ASSY, LOG, AMP, AB

REV C2  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	9	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1, 2, 7, 14, 18, 23, 28, 33, 37	EP
2	6	154053	CK05BX102K	CAP, CER, .001 UF	C3, 8, 13, 19, 24, 30	AVX
3	6	163058	DM5CC180J	CAP, MICA, 18 PF	C4, 10, 15, 20, 25, 29	ARC
4	2	163060	DM5CC220J	CAP, MICA, 22 PF	C5, 35	ARC
5	5	163072	DM5EC510J	CAP, MICA, 51 PF	C6, 11, 16, 21, 26	ARC
6	6	163069	DM5EC430J	CAP, MICA, 43 PF	C9, 12, 17, 22, 27, 34	ARC
7	3	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C31, 32, 36	SPG
8	6	171087	2N5179	TRANSIS, NPN	Q1-6	MOT
9	5	172010	1N914	DIODE, SILICON, D035	CR1, 2, 3, 4, 5,	MOT
10	1	172081	5082-2835	DIODE, SILICON	CR6	HEW
11	7	134040	T4-1	TRANSFORMER	L1, 7, 8, 9, 10, 11, T1	MCL
12	7	166017	WD-12	INDUCTOR, 12 UH	L2-6, 17, 18	NYT
13	5	166015	WD-10	INDUCTOR, 10 UH	L12-16	NYT
14	6	150124	R25J1.1K	RES, C. FILM, 1.1K, 1/4W, 5%	R1, 11, 21, 30, 39, 48,	ROM
15	13	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R2, 4, 10, 14, 19, 23, 28, 32, 37, 41, 46, 50, 75	ROM
16	7	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R3, 6, 13, 22, 31, 40, 49	ROM
17	7	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R5, 15, 25, 34, 43, 52, 59	ROM
18	7	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R7, 12, 20, 29, 38, 47, 64	ROM
19	12	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R9, 18, 27, 36, 45, 54, 57, 58, 61, 71-73	ROM
20	5	150127	R25J13	RES, C. FILM, 13 HMS, 1/4W, 5%	R16, 24, 33, 42, 51	ROM
21	3	150089	R25J18	RES, C. FILM, 18 HMS, 1/4W, 5%	R55, 56, 66	ROM
22	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R68, 70	ROM
23	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R60	ROM
24	1	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R65	ROM

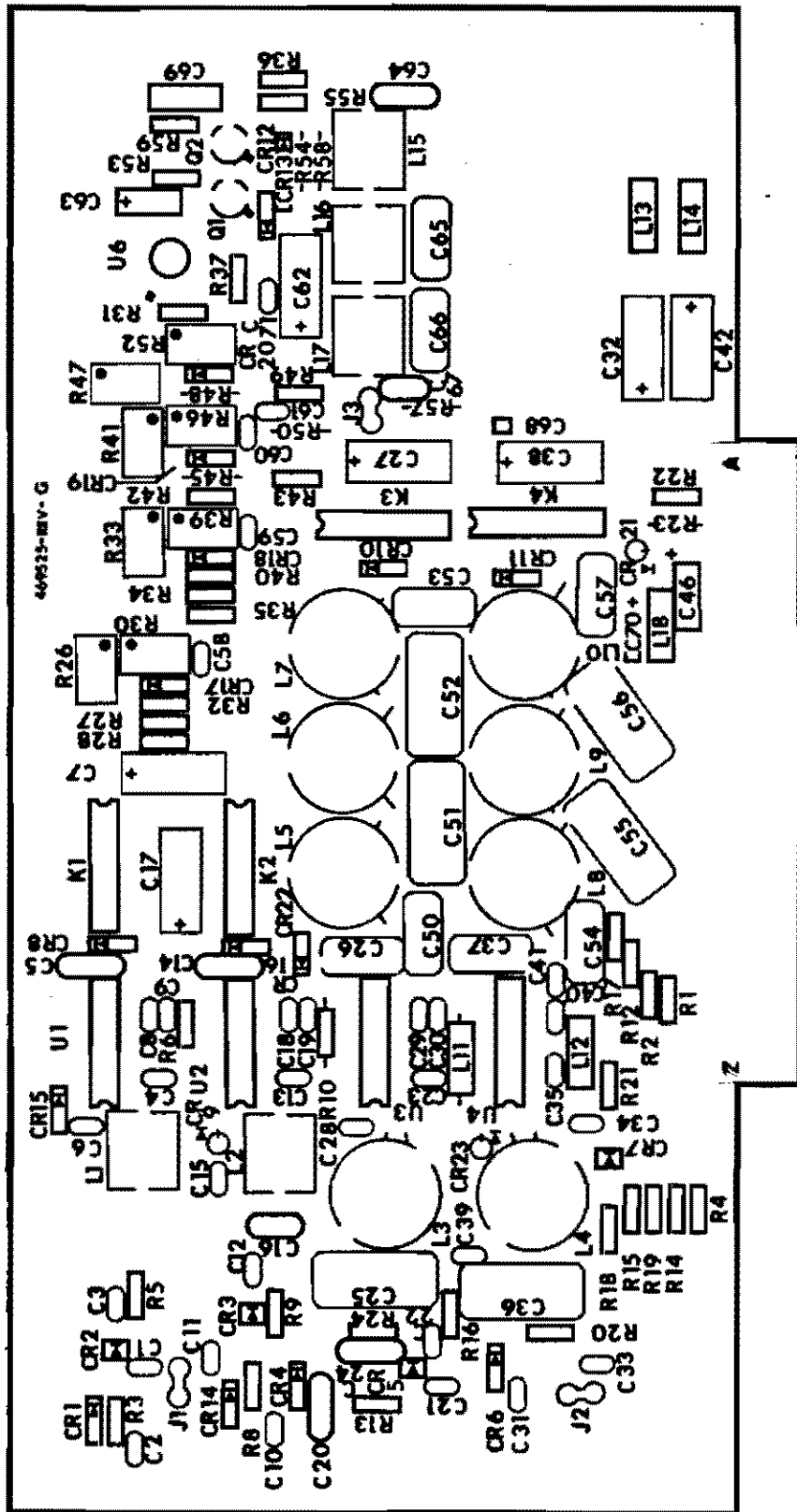
Assembly : 469524  
Stock Number : 180178

ASSY, LOG, AMP, AB

REV C2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
25	6	153082	3329P-1-502K	RES, ADJ, 5K	R8, 17, 26, 35, 44, 53,	BRN
26	1	153071	3299W-1-103K	RES, ADJ, 10K	R69	BRN
27	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5%	R74	ROM
28	2	150033	R25J47	RES, C. FILM, 47 HMS, 1/4W, 5%	R62, 63	ROM
29	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R67	ROM
30	1	170610	MH06002	I. C., 6002	U1	MOT
31	1	147190	469103	P. C., CARD, AB		DSI
33	3	121054	B1591-B-11	MOUNT, BLOCK		USE
35	1	130302	469400-13	SHIELD, R. F.		DSI
36	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
37	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
39	2	125160	RG17B B/U	CABLE, COAX		ALC
41	1	141223	514-AG-100	SOCKET, 14 PIN, I. C.		AUG
42	1	179142	469483	ASSY, MOUNTING PLATES, AB		DSI

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AF PM DETECTORS - AUDIO VIDEO AMPL

Assembly : 469525  
Stock Number : 180179

ASSY, FM, DETECTOR, A9

REV H5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	20	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1-4, 6, 8-13, 15, 18, 19 , 28, 39, 58-61	EP
2	1	163075	DM5EC750J	CAP, MICA, 75 PF	C5	ARC
3	7	158005	CS138E156K	CAP, TANT, 15 UF, 20V	C7, 17, 27, 32, 38, 42, 62	SPG
4	1	163050	DM5CC050D	CAP, MICA, 5 PF	C14	ARC
5	1	163074	DM5EC680J	CAP, MICA, 68 PF	C16	ARC
6	4	158008	CS138F105K	CAP, TANT, 1 UF, 35V	C46, 63, 69, 70	SPG
7	11	154045	RPE121Z5U104M100V	CAP, CER, .1 UF, 100V	C21, 22, 23, 29, 30, 33- 35, 40, 41, 71	ERI
8	1	163082	DM5FY391J	CAP, MICA, 390 PF	C24*	ARC
10	2	163036	DM19-202J	CAP, MICA, 2000 PF	C26, 36	ARC
11	1	163027	DM15-431J	CAP, MICA, 430 PF	C37	ARC
12	4	163031	DM15-561J	CAP, MICA, 560 PF	C50, 53, 54, 57	ARC
13	4	163037	DM19-222J	CAP, MICA, 2200 PF	C51, 52, 55, 56	ARC
14	2	163042	DM5FA131J	CAP, MICA, 130 PF	C64, 67	
15	2	163030	DM15-511J	CAP, MICA, 510 PF	C65, 66	ARC
16	1	154053	CK05BX102K	CAP, CER, .001 UF	C68	AVX
17	2	163045	DM5FA201J	CAP, MICA, 200 PF	C72, 73	ARC
18	2	154071	CK06BX105K	CAP, CER, 1 UF	C31, 20	AVX
19	15	172010	1N914	DIODE, SILICON, D035	CR1, 4, 6, 8-16, 21, 22, 23	MOT
20	4	172082	5082-3188	DIODE, PIN	CR2, 3, 5, 7	HEW
21	4	172059	1N270	DIODE, GERMANIUM	CR17-20	MOT
22	4	145074	PRME-1A12	RELAY, SPST	K1-4	CPC
23	2	166016	WD-1000	INDUCTOR, 1 MH	L11, 12	NYT
24	3	166015	WD-10	INDUCTOR, 10 UH	L13, 14, 18	NYT
25	1	171073	2N2369A	TRANSIS, NPN	Q1	MOT

Assembly : 469525  
Stock Number : 180179

ASSY, FM, DETECTOR, A9

REV H5  
05/01/86

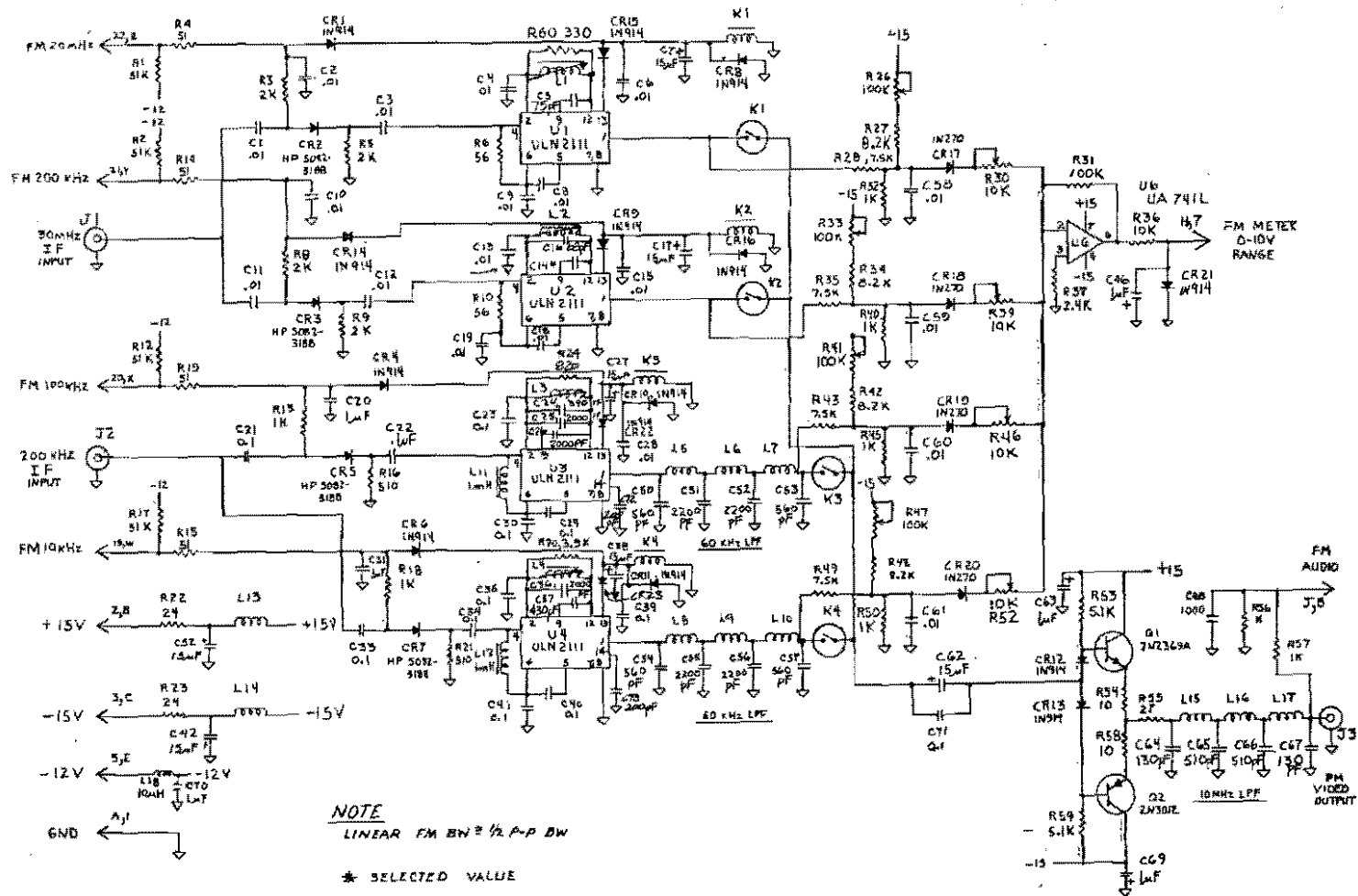
31	4	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R4, 14, 15, 19	ROM
32	1	150035	R25J820	RES, C. FILM, 820 HMS, 1/4W, 5X	R24	ROM
33	2	150116	R25J56	RES, C. FILM, 56 HMS, 1/4W, 5X	R6, 10	ROM
34	2	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5X	R53, 59	ROM
35	7	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R13, 18, 32, 40, 45, 50, 57	ROM
36	2	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5X	R16, 21	ROM
37	4	150023	R25J8. 2K	RES, C. FILM, 8. 2K, 1/4W, 5X	R27, 34, 42, 48	ROM
38	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5X	R22, 23	ROM
39	4	150095	R25J7. 5K	RES, C. FILM, 7. 5K, 1/4W, 5X	R28, 35, 43, 49	ROM
40	1	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5X	R31	ROM
41	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R36	ROM
42	1	150067	R25J2. 4K	RES, C. FILM, 2. 4K, 1/4W, 5X	R37	ROM
43	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R54, 58	ROM
44	1	150119	R25J27	RES, C. FILM, 27 HMS, 1/4W, 5X	R55	ROM
45	4	170688	ULN2111A	I. C. , 2111	U1, 2, 3, 4	SPG
46	1	170686	UA741HC	I. C. , 741, 8 PIN, CAN	U6	FRS
47	1	147192	469106	P. C. , CARD, A9		DSI
49	3	121054	B1591-B-11	MOUNT, BLOCK		USE
52	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
53	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR

Assembly : 469525  
Stock Number : 180179

ASSY, FM, DETECTOR, A9

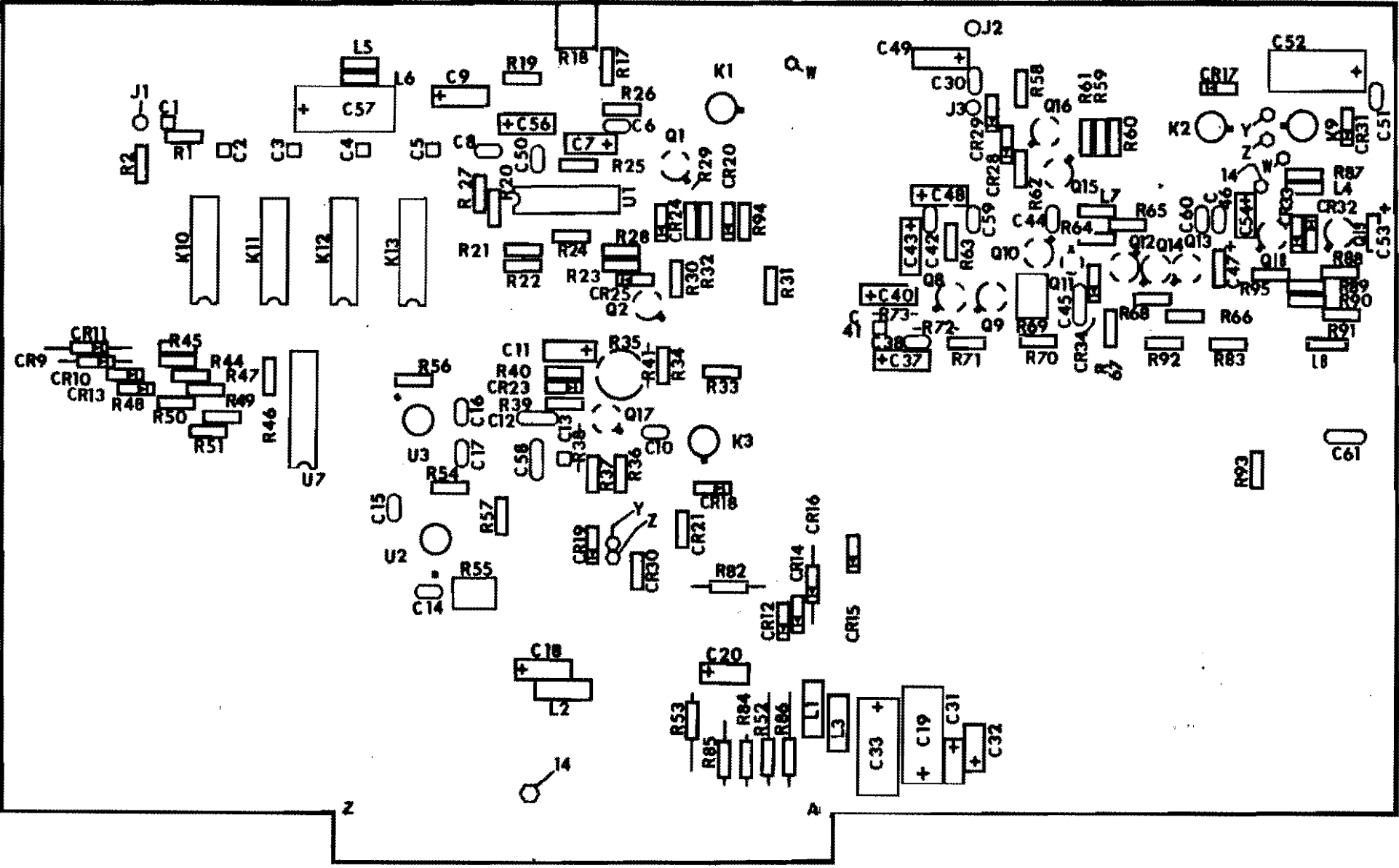
REV H5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
54	4	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U1-4	PHI
60	5	165015	L45-6-CT-B4	CORE, INDUCTOR	L1, 2, 15, 16, 17	MIM
61	3	125160	R6178 B/U	CABLE, COAX		ALC
63	3	121056	1127(350)	SPACER, GLASS		KKR
64	1	150002	R25J330	RES, C. FILM, 330 HMS, 1/4W, 5%	R60	RGM
65	1	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5%	R20	RGM
66	4	134096	472113J	ASSY, INDUCTOR/TRANSFORMER, TAB	L5 (USE 472113-20) L7 (USE 472113-19) L8 (USE 472113-18) L10 (USE 472113-17)	DSI
67	2	134095	472113K	ASSY, INDUCTOR/TRANSFORMER, TAB	L6 (USE 472113-21) L9 (USE 472113-22)	DSI
68	1	134072	472111J	ASSY, INDUCTOR, TABULATED	L4 (USE 472111-21)	DSI
69	1	134099	472102A	ASSY, INDUCTOR, TABULATED	L1 (USE 472102-1)	DSI
70	1	134101	472102C	ASSY, INDUCTOR, TABULATED	L2 (USE 472102-4)	DSI
71	1	134118	472102T	ASSY, INDUCTOR, TABULATED	L15 (USE 472102-36)	F
72	1	134116	472102R	ASSY, INDUCTOR, TABULATED	L16 (USE 472102-34)	DSI
73	1	134119	472102U	ASSY, INDUCTOR, TABULATED	L17 (USE 472102-37)	DSI
74	1	179143	469484	ASSY, MOUNTING PLATES, A9		DSI
75	1	134127	472113-23	ASSY, INDUCTOR/TRANSFORMER, TAB	L3	DSI



NOTES: UNLESS OTHERWISE SPECIFIED  
 1. RESISTOR VALUES ARE IN OHMS  
 2. CAPACITOR VALUES ARE IN MICROFARADS

A10-1



A10 AM VIDEO-SLIDEBACK PULSE-AUDIO STRETCH

Assembly : 469526

Stock Number : 180180

ASSY, A10, AM VID, SLBK PLSE, A S

REV J

05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154068	CK05BX820K	CAP, CER, 82 PF	C2	ARC
2	1	163045	DM5FA201J	CAP, MICA, 200 PF	C1	ARC
3	1	154069	CK05BX821K	CAP, CER, 820 PF	C3	AVX
4	1	154070	CK05BX822K	CAP, CER, 8200 PF	C4	AVX
5	1	154076	CK06BX823K	CAP, CER, .082 UF	C5	AVX
6	1	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C61	ERI
7	12	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C6, 8, 14, 15, 17, 30, 38, 42, 44, 46, 50, 51	ERI
8	2	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C10, 16	ERI
9	15	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C7, 9, 11, 18, 20, 31, 32, 37, 40, 43, 47, 48, 49, 53 , 54	SPG
10	4	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C19, 33, 52, 56	SPG
11	1	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C57	SPG
12	2	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C12, 58	ERI
13	1	154066	CK05BX561K	CAP, CER, 560 PF	C13	AVX
21	1	163019	DM15-102J	CAP, MICA, 1000 PF	C45	ARC
22	2	154043	RPE121COG102J100V	CAP, CER, .001 UF, 100V	C59, 60	ERI
23	20	172010	1N914	DIODE, SILICON, D035	CR9-21, 24, 25, 28-30, 32, 33	MOT
24	1	172079	5082-2810	DIODE, SILICON	CR23	HEW
25	1	172081	5082-2835	DIODE, SILICON	CR31	HEW
26	1	172078	5082-2800	DIODE, SILICON	CR34	HEW
27	1	145068	732-5	RELAY, DPDT, 5V, TO-5 CASE	K9	TLR
28	3	145065	732-12	RELAY, DPDT	K1, 2, 3	TLR
29	5	145073	PRMA-10037	RELAY, SPST	K4, 10-13	CPC
30	8	166015	WD-10	INDUCTOR, 10 UH	L1-8	NYT
31	4	171073	2N2369A	TRANSIS, NPN	Q1, 9, 16, 19	MOT

Assembly : 469526  
Stock Number : 180180

ASSY, A10, AM VID, SLBK PLSE, A S

REV J  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
32	3	171078	2N3012	TRANSIS, PNP	Q2, 15, 18	MOT
33	2	171087	2N5179	TRANSIS, NPN	Q13, 14	MOT
34	1	171072	2N2222A	TRANSIS, NPN	Q8	MOT
35	2	171076	2N2907A	TRANSIS, PNP	Q10, 12	MOT
36	1	171102	3N138	TRANSIS, FET	Q11	RCA
37	1	171083	2N4416	TRANSIS, FET	Q17	MOT
38	1	153080	3329P-1-102K	RES, ADJ, 1K	R35	BRN
39	1	153070	3299W-1-102K	RES, ADJ, 1K	R69	BRN
40	2	153071	3299W-1-103K	RES, ADJ, 10K	R18, 55	BRN
41	3	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R1, 87, 94	ROM
42	1	148115	C4200R2X	RES, MF, 200, 1/4W2X, 100PPM, RL07	R2	CGE
43	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R83, 92	ROM
44	2	148002	RL07S103G	RES, M. FILM, 10K, 2%	R17, 19	CGE
45	3	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R20, 34, 67	ROM
46	2	150141	R25J36	RES, C. FILM, 36 HMS, 1/4W, 5%	R21, 22	ROM
47	1	150128	R25J130	RES, C. FILM, 130 HMS, 1/4W, 5%	R23	ROM
48	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R24	ROM
49	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R25	ROM
50	5	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R26, 31, 65, 70, 73	ROM
51	1	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5%	R27	ROM
52	1	150067	R25J2.4K	RES, C. FILM, 2.4K, 1/4W, 5%	R28	ROM
53	6	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R29, 30, 59, 61, 89, 90	ROM
54	1	150146	R25J43	RES, C. FILM, 43 HMS, 1/4W, 5%	R32	ROM
55	7	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R33, 39, 54, 58, 62, 88, 95	ROM
56	1	150010	R25J220	RES, C. FILM, 220 HMS, 1/4W, 5%	R36	ROM

Assembly : 469526  
 Stock Number : 180180

ASSY, A10, AM VID, SLBK PLSE, A S

REV J  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
57	3	150074	R25J510K	RES, C. FILM, 510K, 1/4W, 5%	R37, 38, 40	I
58	3	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R41, 84, 85	ROM
59	4	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5%	R44, 45, 47, 49	ROM
60	4	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5%	R46, 48, 50, 51	ROM
61	1	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R68	ROM
62	1	150137	R25J300	RES, C. FILM, 300 HMS, 1/4W, 5%	R57	ROM
63	3	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R60, 63, 91	ROM
64	1	150123	R25J110	RES, C. FILM, 110 HMS, 1/4W, 5%	R64	ROM
65	1	150155	R25J9.1K	RES, C. FILM, 9.1K, 1/4W, 5%	R66	ROM
66	3	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5%	R71, 72, 93	ROM
69	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R82	ROM
70	2	150089	R25J18	RES, C. FILM, 18 HMS, 1/4W, 5%	R52, 86	ROM
71	1	150135	R25J2.7	RES, C. FILM, 2.7 HMS, 1/4W, 5%	R53	ROM
72	1	150031	R25J1M	RES, C. FILM, 1M, 1/4W, 5%	R56	I
73	1	150057	R25J150K	RES, C. FILM, 150K, 1/4W, 5%	R96	ROM
75	1	170587	LM306H	I. C., 306	U2	NSC
76	1	170613	LM555CH	I. C., 555, CAN	U3	RCA
78	1	170566	CA3082	I. C., 3082	U7	RCA
80	1	141225	516-AG-10D	SOCKET, 16 PIN, I. C.		AUG
81	1	147196	469110	P. C., CARD, A10		DSI
83	4	121054	B1591-B-11	MOUNT, BLOCK		USE
86	4	120164	M551957-13	SCREW, PNHD, 4-40X1/4		HPR
87	4	120242	M535338-135	WASHER, SPLITLOCK, #4		HPR
89	1	171081	2N3906	TRANSIS, PNP	Q20	MGT
90	1	171092	1T120A	TRANSIS, NPN	Q21	ITS
91	1	130433	469400-18	SHIELD, RF		DSI

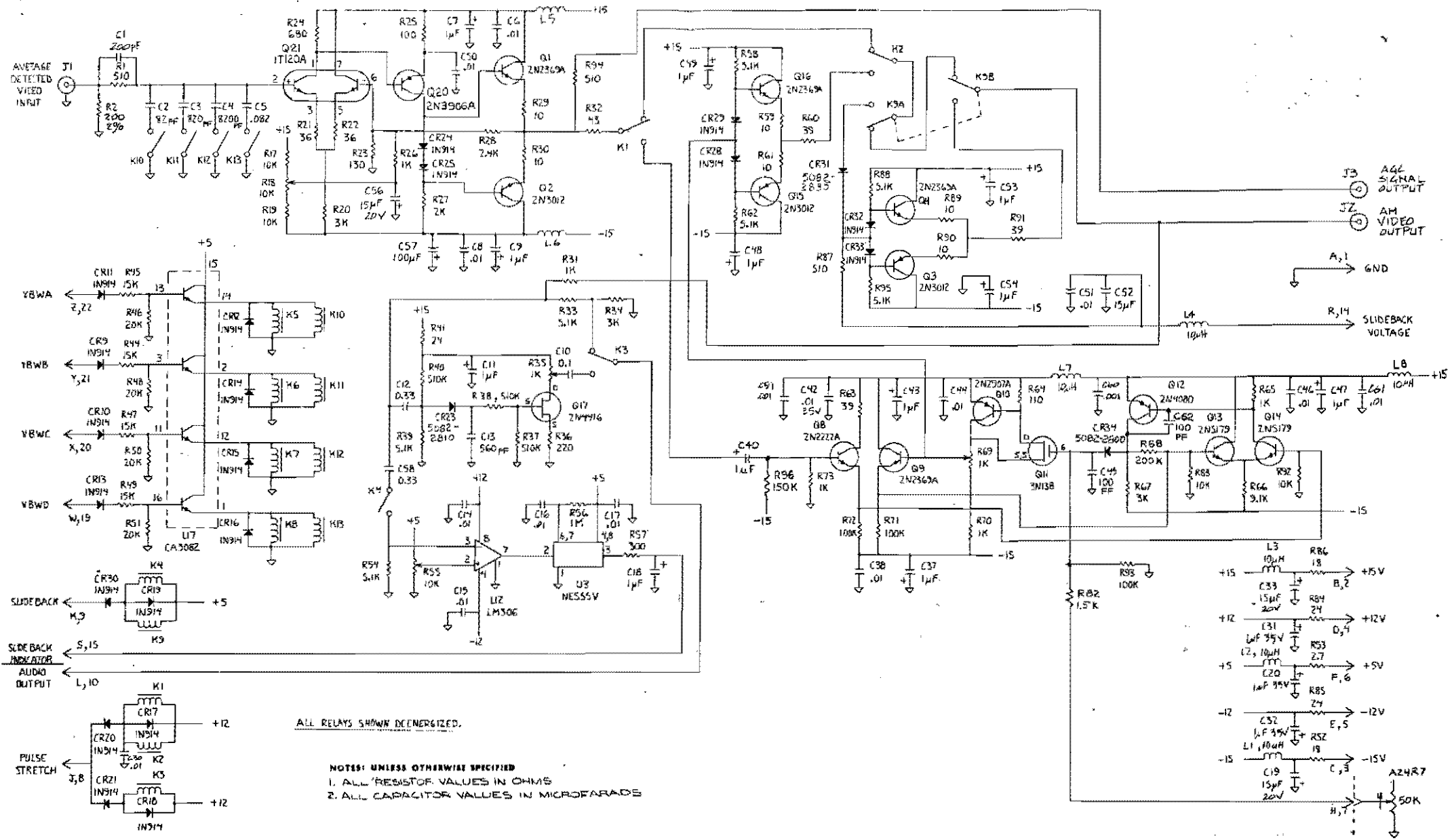
Assembly : 469526  
Stock Number : 180180

ASSY, A10, AM VID, SLBK PLSE, A S

REV J  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
92	1	130432	469400-19	SHIELD, RF		DSI
93	1	130431	469400-20	SHIELD, RF		DSI
94	1	179144	469485	ASSY, MOUNTING PLATES, A10		DSI

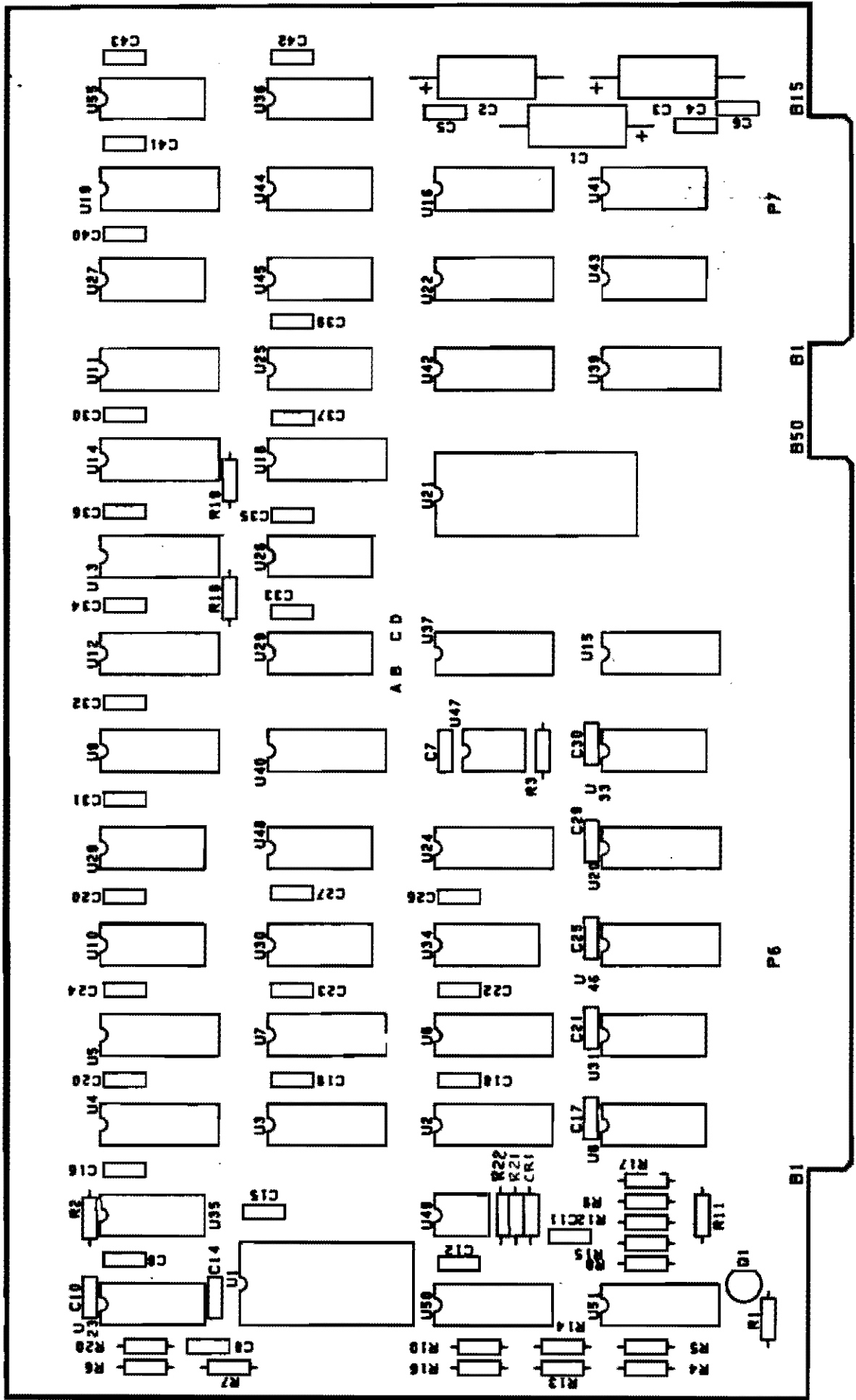
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ALL RELAYS SHOWN DEENERGIZED.

NOTES: UNLESS OTHERWISE SPECIFIED  
 1. ALL RESISTOR VALUES IN OHMS  
 2. ALL CAPACITOR VALUES IN MICROFARADS

A10 - AM VIDEO - SLIDEBACK PULSE - AUDIO STRETCH



Assembly : 469915  
Stock Number : 180248

ASSY, A11, LOG & SWITCH CONT

REV C3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147265	469545	PCB, A11, R-1250	A11	F
2	2	141213	500-AG-10D	SOCKET, 8 PIN, IC		AUG
3	20	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG
4	25	141225	516-AG-10D	SOCKET, 16 PIN, I. C.		AUG
5	1	141231	524-AG-10D	SOCKET, 24, PIN, I. C.		AUG
6	1	141316	528-AG-10D	SOCKET, 28 PIN, I. C.		AUG
7	1	170949	469250	ASSY, I. C., PROGRAMMED	U11	DSI
8	1	170950	469251	ASSY, I. C., PROGRAMMED	U12	DSI
9	1	170951	469252	ASSY, I. C., PROGRAMMED	U13	DSI
10	1	170952	469253	ASSY, I. C., PROGRAMMED	U14	DSI
11	1	170093	74LS00	I. C., 74LS00, QUAD, NAND	U35	TXI
12	1	170098	74LS01	I. C., 74LS01, COLLET, OUTPUT	U28	TXI
13	1	170101	74LS02	I. C., 74LS02, QUAD, NOR	U31	TXI
14	5	170094	74LS04	I. C., 74LS04, HEX, INVERTER	U8, 33, 34, 48, 55	
15	3	170117	74LS08	I. C., 74LS08, QUAD, AND	U10, 26, 36	TXI
16	1	170124	74LS10	I. C., 74LS10, 3-INPUT, NAND	U29	TXI
17	1	170614	74LS138	I. C., 74LS138, 3:8 DECODER	U20	TXI
18	1	170269	74LS139	I. C., 74LS139, DUAL, 2-TO-4 LINE	U46	TXI
19	1	170557	74LS154	I. C., 74LS154	U1	MOT
20	3	170276	74LS157	I. C., 74LS157, QUAD, 2:1 MUX	U9, 18, 19	TXI
21	6	170559	74LS379	I. C., 74LS379	U2-7	TXI
22	2	170115	7407	I. C., 7407, HEX INVERTER	U25, 27	TXI
23	1	170232	74LS74	I. C., 74LS74	U30	TXI
24	3	170726	DG508ACJ	I. C., 508	U15, 16, 22	SNX
25	1	170727	DG506ACJ	I. C., 506	U21	SNX
26	1	170570	DG201ACJ	I. C., 201	U37	SNX

Assembly : 469915  
Stock Number : 180248

ASSY, A11, LOG & SWITCH CONT

REV C3  
05/01/86

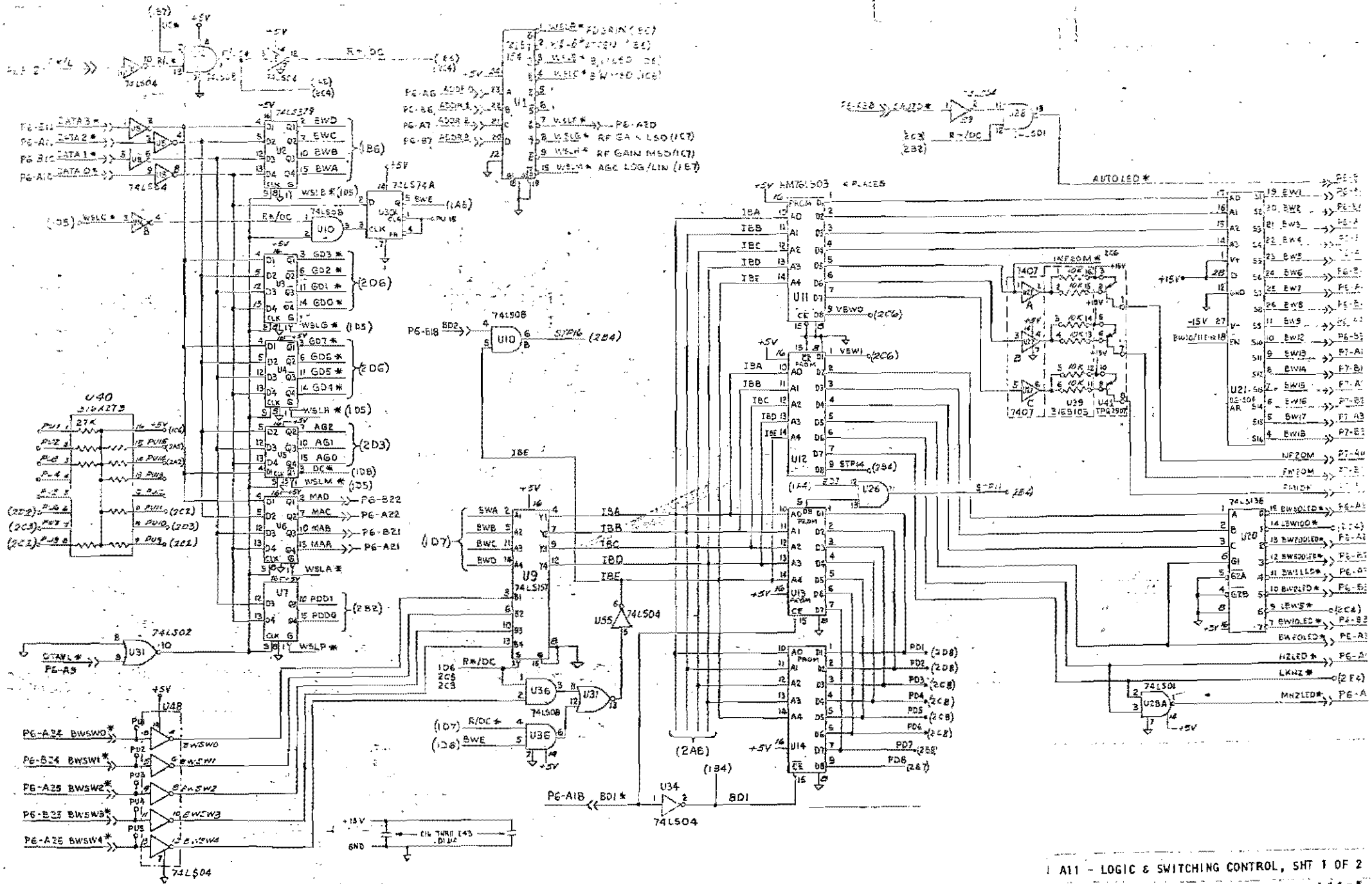
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27	1	170692	314B102	RESIS PAK, 1 K, 5%, ISO, 16 DIP	U45	ALB
28	2	170713	316B103	RESIS PAK, 10 K, 5%, ISO, 16 PIN	U39, 42	ALB
29	1	170725	316A273	RESIS PAK, 27K, 5%, BUSS, 16 DIP	U40	ALB
30	1	170758	LM308N	I. C. , 308	U47	NSC
31	1	171100	TPQ2222	TRANSIS, PAK	U44	SPG
32	2	171101	TPQ2907	TRANSIS, PAK	U41, 43	SPG
33	1	170699	LM556CN	I. C. , 556, TIMER, DUAL	U23	NSC
34	1	170730	DAC100CCQ3	I. C. , 100, D/A CONVERTER	U24	PMI
35	1	170619	LM358N	I. C. , 358, DUAL OP-AMP, PLAS, 8 D	U49	NSC
36	2	172085	FSA2619M	DIODE PAK	U50, 51	FRS
37	32	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C4, 5, 6, C15-43	ERI
38	2	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C2, 3	SPG
39	1	158002	CS13BB337K	CAP, TANT, 330 UF, 6V	C1	SPG
40	3	154045	RPE12125U104M100V	CAP, CER, .1 UF, 100V	C8, 10, 11	ERI
42	1	163063	DM5EC300J	CAP, MICA, 30 PF	C7	ARC
43	2	154071	DK06BX105K	CAP, CER, 1 UF	C9, 14	AVX
44	4	150106	R25J200K	RES. C. FILM, 200K, 1/4W, 5%	R1, 8, 10, 13	ROM
45	1	150009	R25J100K	RES. C. FILM, 100K, 1/4W, 5%	R4	ROM
46	4	150030	R25J10M	RES. C. FILM, 10 M. 1/4W, 5%	R11, 14, 15, 16	ROM
47	1	150031	R25J1M	RES. C. FILM, 1M, 1/4W, 5%	R5	ROM
48	1	150038	R25J1.8K	RES. C. FILM, 1.8K, 1/4W, 5%	R17	ROM
49	1	150165	R25J60K	RES. C. FILM, 60K, 1/4W, 5%	R9	ROM
50	1	150055	R25J1.3K	RES. C. FILM, 1.3K, 1/4W, 5%	R12	ROM
51	1	150074	R25J510K	RES. C. FILM, 510K, 1/4W, 5%	R7, 20	ROM
52	1	150129	R25J13K	RES. C. FILM, 13K, 1/4W, 5%	R6	ROM
53	1	150020	R25J56K	RES. C. FILM, 56K, 1/4W, 5%	R2	ROM

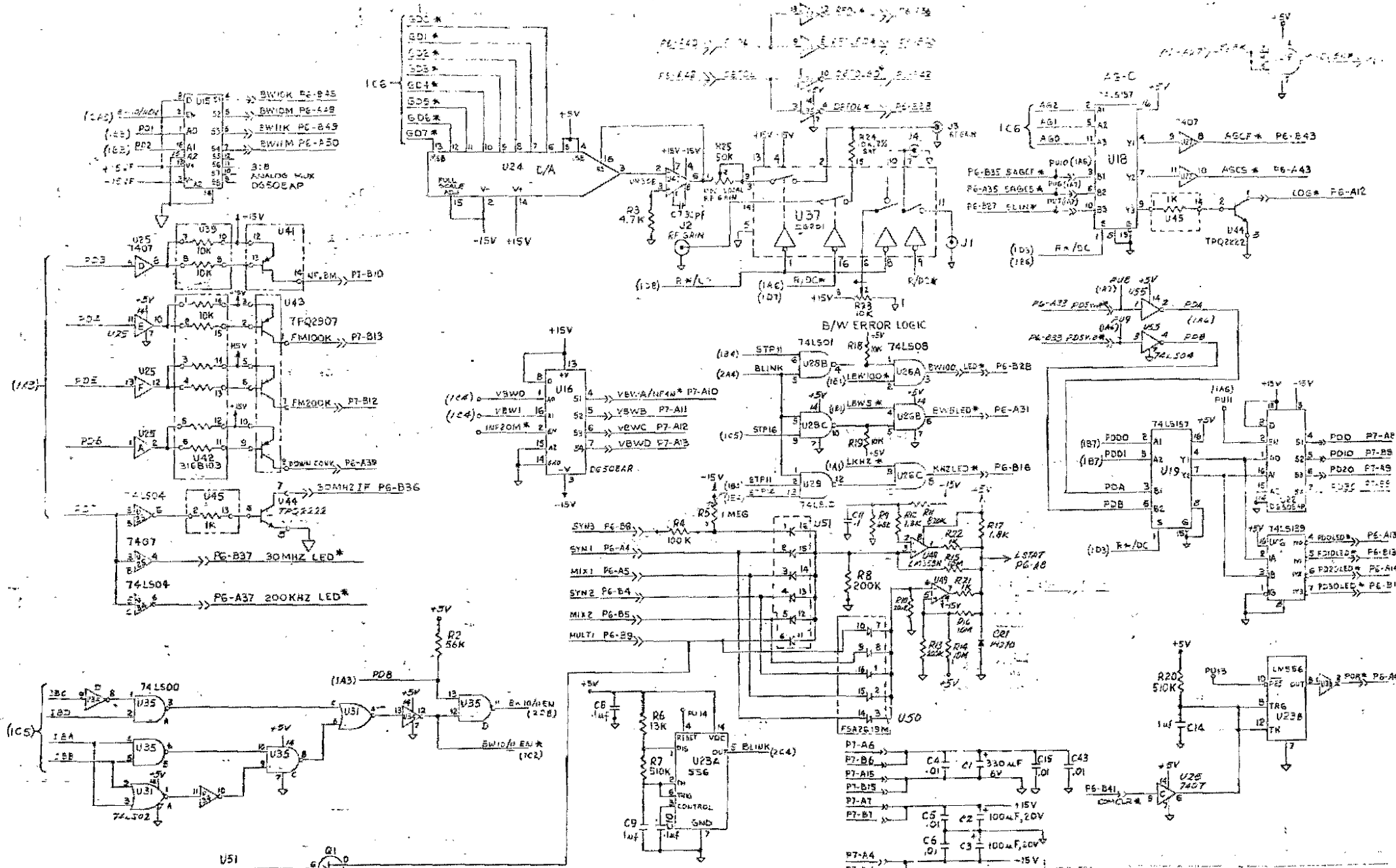
Assembly : 469915  
Stock Number : 180248

ASSY, A11, LOG & SWITCH CONT

REV C3  
05/01/86

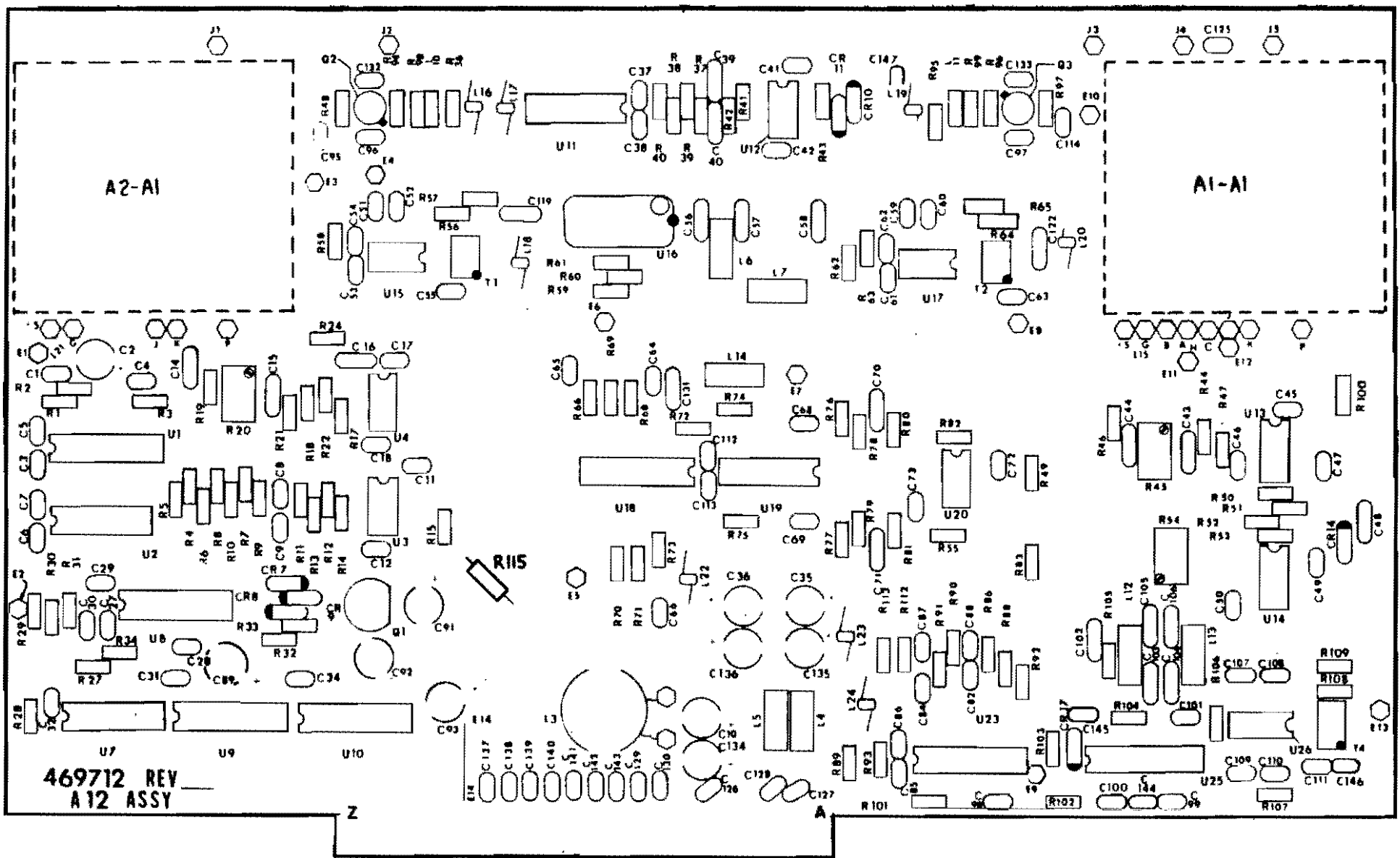
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
54	1	150006	R25J4.7K	RES, C. FILM, 4.7K, 1/4W, 5%	R3	R
55	1	171110	J-105	TRANSIS	Q1	SNX
58	2	125160	RG178 B/U	CABLE, COAX		ALC
59	4	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
60	4	120164	MS51957-13	SCREW, ANHD, 4-40X1/4		HPR
61	4	121054	B1591-B-11	MOUNT, BLOCK		USE
63	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R18, 19	ROM
64	1	172059	1N270	DIODE, GERMANIUM	CR1	MOT
65	2	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R21, 22	ROM
66	1	153097	3292P-1-103	RES, TRIMPOT, CERMET, 10K	R23	BRN
67	1	179145	463486	ASSY, MOUNTING PLATES, A11		DSI





A11 - LOGIC & SWITCHING CONTROL, SHT 2 OF 2

A12-1



A12 SYNTHESIZER B (30-60 MHz)

Assembly : 469712  
Stock Number : 180249

ASSY, A12, SYNTH 5, 30-50 MHZ

REV G2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147256	469702	P. C. , CARD, A12	A12	
3	4	121054	B1591-B-11	MOUNT, BLOCK		USE
6	2	180285	469905	ASSY, OSCILLATOR, A12-A1/A2		DSI
8	10	154047	RPE113Z5U105M50V	CAP, CER, 1 UF, 50V, 20%	C14, 15, 43, 44, 119, 122 , 144-147	ERI
9	2	158016	T368-C157-M006AS	CAP, TANT, 150 UF, 6V	C10, 134	KEM
11	1	163056	DM5FC121J	CAP, MICA, 120 PF	C103	ARC
12	2	154057	CK05BX152K	CAP, CER, 1500 PF	C102, 106	AVX
13	1	154059	CK05BX222K	CAP, CER, 2200 PF	C104	AVX
14	1	154060	CK05BX272K	CAP, CER, 2700 PF	C57	AVX
15	3	154053	CK05BX102K	CAP, CER, .001 UF	C56, 58, 131	AVX
16	7	163066	DM5FC331J	CAP, MICA, 330 PF	C8, 9, 39, 40, 70, 71, 105	ARC
17	9	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V	C2, 35, 36, 89, 91-93, 13 5, 136	KEM
18	2	154055	CK05BX104K	CAP, CER, .10 UF, 50V	C47, 48	A
19	1	154073	CK06BX224K	CAP, CER, .22 UF	C16	AVX
20	48	154045	RPE121Z5U104M100V	CAP, CER, .1 UF, 100V	C3-7, 11, 12, 17, 18, 20, ERI C30-32, 34, 41, 42, 45, C46, 49-55, 59-65, 72, C73, 85, 86, 99-101, C107-113, 148	ERI
21	31	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1, 27, 29, 37, 38, 60, 69 ERI , 82, 84, 87, 88, 95-98, 114, 125-130, 132, 133, 137-143	ERI
24	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5%	R33	ROM
25	1	150154	R25J910	RES, C. FILM, 910 HMS, 1/4W, 5%	R32	ROM
26	6	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R28, 29, 34, 70, 68, 91	ROM
27	7	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R3, 27, 30, 31, 71, 86, 90	ROM
28	4	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R89, 93, 112, 113	ROM

Assembly : 469712  
Stock Number : 180249

ASSY, A12, SYNTH 5, 30-50 MHZ

REV G2  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
29	4	150002	R25J330	RES, C. FILM, 330 HMS, 1/4W, 5%	R36, 94, 95, 96	ROM
30	5	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R18, 43, 44, 46, 51	ROM
31	2	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R115, 83	ROM
32	6	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R17, 55, 58, 63, 82, 107	ROM
33	4	150067	R25J2. 4K	RES, C. FILM, 2. 4K, 1/4W, 5%	R37, 39, 41, 42	ROM
34	3	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5%	R62, 68, 106	ROM
35	1	150038	R25J1. 8K	RES, C. FILM, 1. 8K, 1/4W, 5%	R2	ROM
36	13	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R4-6, 8, 10, 38, 42, 72-77	ROM
37	4	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R1, 66, 92, 101	ROM
38	1	150128	R25J130	RES, C. FILM, 130 HMS, 1/4W, 5%	R60	ROM
39	2	150034	R25J150	RES, C. COMP, 150 HMS, 1/4W, 5%	R48, 97	ROM
40	1	150063	R25J2. 2M	RES, C. FILM, 2. 2M, 1/4W, 5%	R53	ROM
41	1	148163	C420K2X	RES, MF, 20K, 1/4W2X, 100PPM, RL07	R49	CGE
42	2	148129	C4750R2X	RES, MF, 750. 1/4W2X, 100PPM, RL07	R22, 50	CGE
43	1	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5%	R52	ROM
44	3	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R56, 64, 108	ROM
45	3	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R57, 65, 109	ROM
46	2	150092	R25J68	RES, C. FILM, 68 HMS, 1/4W, 5%	R59, 61	ROM
47	1	150065	R25J120	RES, C. FILM, 120 HMS, 1/4W, 5%	R104	ROM
48	1	150149	R25J62	RES, C. FILM, 62 HMS, 1/4W, 5%	R105	ROM
49	3	150003	R25J470	RES, C. FILM, 470 HMS, 1/4W, 5%	R98, 99, 102	ROM
50	1	150116	R25J56	RES, C. FILM, 56 HMS, 1/4W, 5%	R103	ROM
52	3	153071	3299W-1-103K	RES, ADJ, 10K	R20, 45, 54	BRN
53	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R24, 100	ROM
55	7	172010	1N914	DIODE, SILICON, D035	CR7-11, 14, 17	MCT

Assembly : 469712  
Stock Number : 180249

ASSY, A12, SYNTH 5, 30-50 MHZ

REV G2  
05/01/86

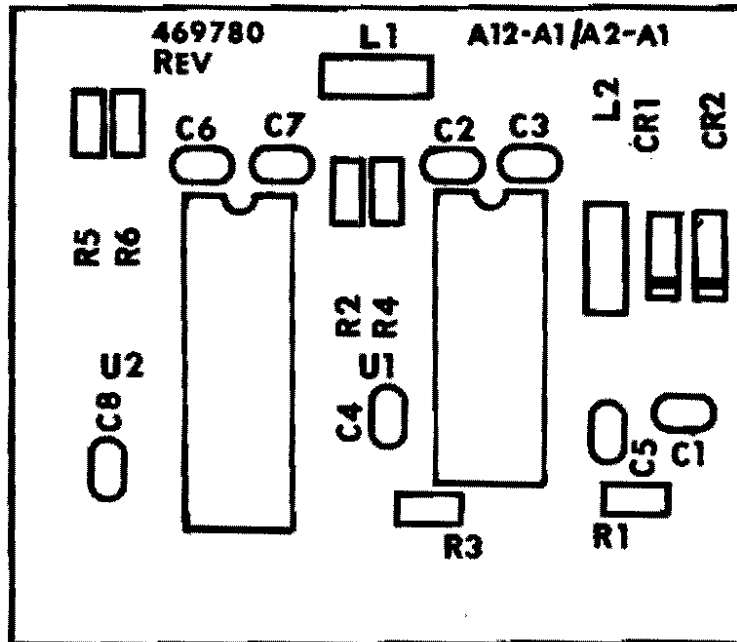
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
57	2	166011	RFC-S-5.6	INDUCTOR, 5.6 UH	L6, 7	NYT
58	1	166026	RFC-S-2.2	INDUCTOR, 2.2 UH	L13	NYT
59	2	166007	RFC-S-1.0	INDUCTOR, 1 UH	L10, 11	NYT
60	2	166015	WD-10	INDUCTOR, 10 UH	L4, 5	NYT
61	1	134089	472113D	ASSY, INDUCTOR/TRANSFORMER, TAB	L3(USE472113-6)	DSI
62	1	166019	WD-2.2	INDUCTOR, 2.2 UH	L14	NYT
63	1	166009	RFC-S-1.8	INDUCTOR, 1.8 UH	L12	NYT
64	10	165008	2673-000101	CORE, BEAD, CHOKE	L15-24	MIM
66	3	134039	T13-1T	TRANSFORMER	T1, 2, 4	MCL
68	1	171089	2N5771	TRANSIS	Q1	FRS
69	2	171083	2N4416	TRANSIS, FET	Q2, 3	MOT
71	3	170598	MC12040P	I. C., 12040	U2, 11, 19	MOT
72	1	170607	MC1741NCP1	I. C., 741, PLAS. OP-AMP, 8 DIP	U12	MOT
73	5	170586	LF355N	I. C., 355, FET OP-AMP, PLAS, 8 DIP	U3, 4, 13, 14, 20	MOT
74	3	170596	MC10102P	I. C., 10102, PLASTIC	U1, 18, 23	MOT
75	1	170659	SN74LS02J	I. C., 74LS02, CER	U7	TXI
76	1	170702	SP8647B	I. C., DIVIDER	U25	PLS
77	1	170704	SP8720B	I. C., DIVIDER	U8	PLS
78	1	170895	SN74ALS168BN	IC, SYNCH BIN UP/DWN 4 BIT CNTR	U9	TXI
79	1	170896	SN74ALS169BN	IC, SYNCH BIN UP/DWN 4 BIT CNTR	U10	TXI
80	3	170600	MC1350P	I. C., 1350	U15, 17, 26	MOT
81	1	161023	SRA-1	MIXER, DOUBLE, BAL	U16	MCL
84	1	125160	RG17B B/U	CABLE, COAX		ALC
85	4	125162	UT. 034TP	CABLE, COAX, .035DIA		CAS
88	7	141225	516-AG-10D	SOCKET, 16 PIN, I. C.		AUG
89	1	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG

Assembly : 469712  
Stock Number : 180249

ASSY, A12, SYNTH 5, 30-50 MHZ

REV G2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
90	9	141213	508-AG-10D	SOCKET, 8 PIN, IC		AUG
93	2	179093	469907	ASSY, OSC, CAN COVER, A12-A1&A2		DSI
94	6	120271	8104-B-0440-28	STANDOFF, 4/40, HEX, 3/8, F/F		AMA
95	6	120160	MS51957-12	SCREW, PNHD, 4/40, 3/16		HPR
96	2	130277	469400-17	SHIELD, R. F.		DSI
97	4	130278	469400-16	SHIELD, R. F.		DSI
98	4	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
99	4	120242	MS35338-135	WASHER, SPALITLOCK, #4		HPR
100	1	150018	R25J470K	RES, C. FILM, 470 K, 1/4W, 5%	R15	ROM
101	1	150036	R25J1.2K	RES, C. FILM, 1.2K, 1/4W, 5%	R69	ROM
102	3	148156	C410K2X	RES, MF, 10K, 1/4W2X, 100PPM, RL07	R19, 21, 47	CGE
103	2	148173	C451K2X	RES, MF, 51K, 1/4W2X, 100PPM, RL07	R13, 14	CGE
104	6	148141	C42.4K2X	RES, MF, 2.4K, 1/4W2X, 100PPM, RL07	R7, 9, 11, 12, 78-81	CGE
105	1	179146	469487	ASSY, MOUNTING PLATES, A12		DSI
106	1	134128	472003	ASSY, INDUCTOR, TOROID	L25	DSI
107	1	111039	4016-5	TAPE, FOAM, DOUBLE SIDED, 1/2 IN		MMK



A12-A1/A2

A12-6

Assembly : 469905  
Stock Number : 180285

ASSY, OSCILLATOR, A12-A1/A2

REV B1  
05/01/86

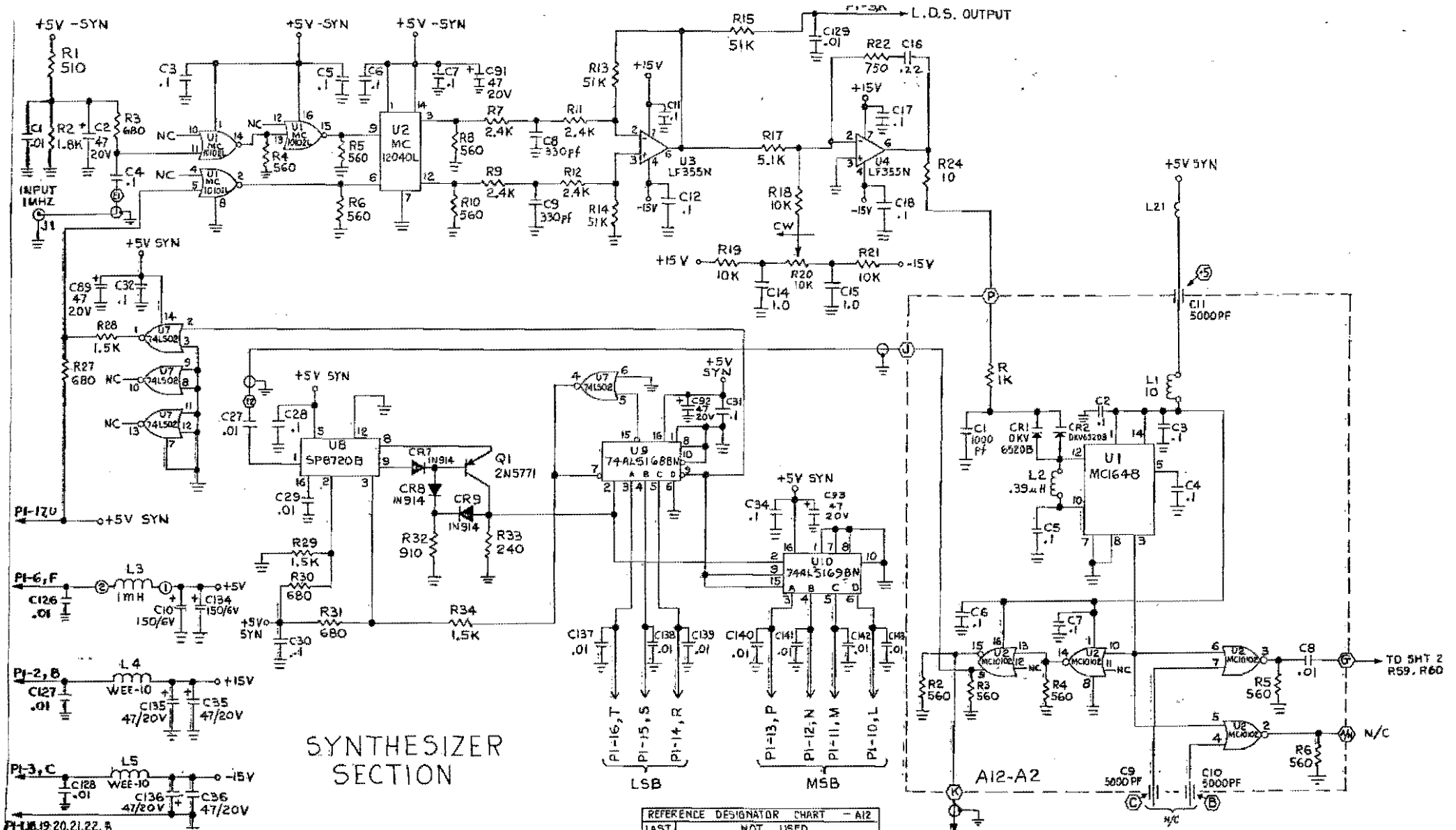
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	180264	469780	ASSY, A12-A2		DSI
15	3	120165	MS51957-14	SCREW, PNHD, 4/40X5/16, PHL, CD, ZN		HPR
16	2	129031	1245	TAPE, COPPER EMBOSSED, 5"WIDE		MMM
17	1	129025	469907-1	FAB, COVER, CAN, DEEP DRAWN		DSI
18	2	129027	469906	FAB, CAN, DEEP DRAWN, BRASS		DSI

Assembly : 469780  
Stock Number : 180264

ASSY, A12-A2

REV C2  
05/01/86

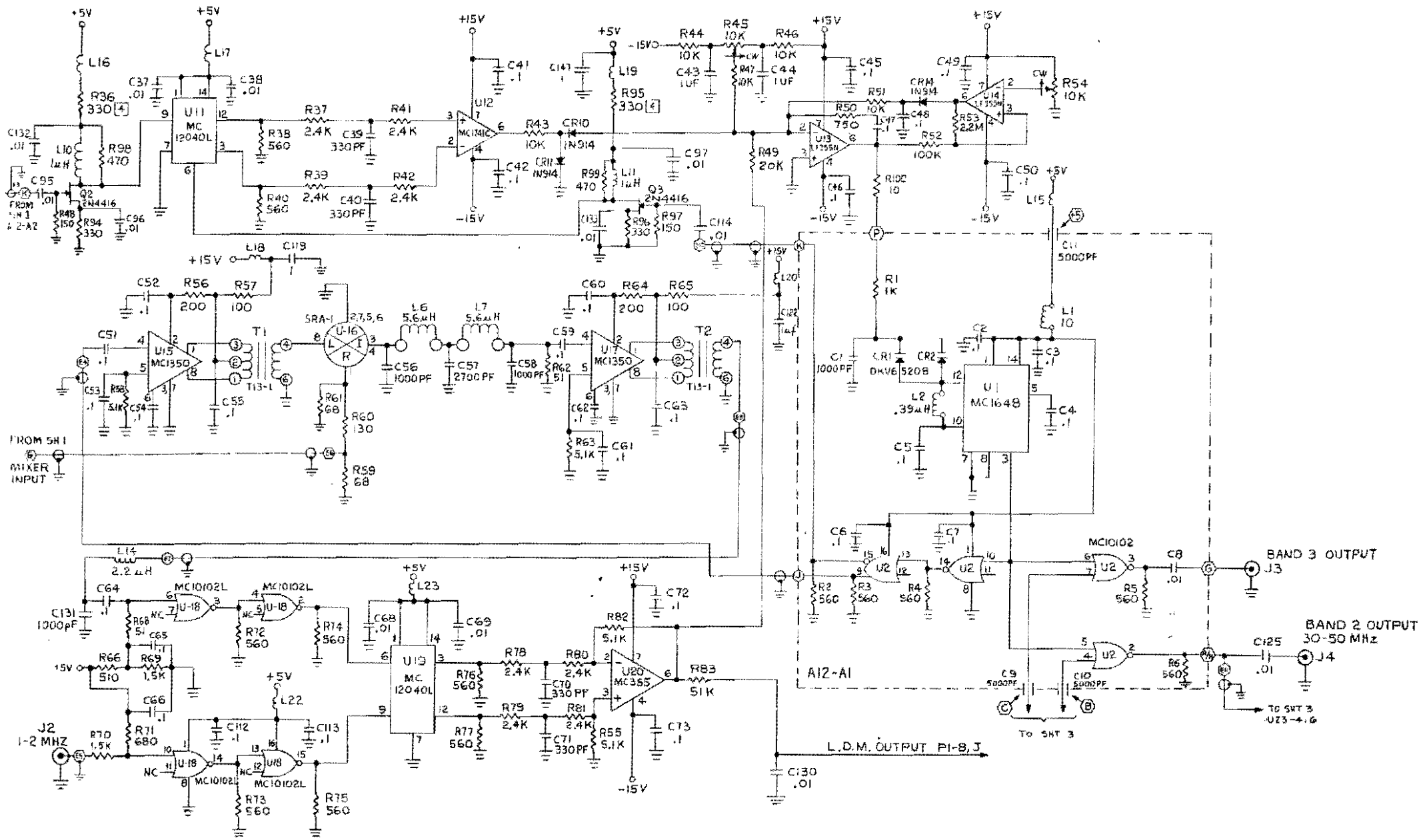
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147244	469904	P. C. , CARD, A12-A2/A3		J
5	3	120263	KF2-440	FASTENER, SOLDERABLE		PEM
10	1	154053	CK05BX102K	CAP, CER, .001 UF	C1	AVX
11	1	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C8	ERI
12	6	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C2-7	ERI
14	2	172084	DKV6520B	DIODE, VARICAP	CR1, 2	ALI
16	1	166006	RFC-5-.39	INDUCTOR, .39 UH	L2	NYT
17	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
19	5	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R2-6	ROM
20	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R1	ROM
22	1	170596	MC10102P	I. C. , 10102, PLASTIC	U2	MOT
23	1	170604	MC1648	I. C. , 1648	U1	MOT
25	24	125311	E26-126-9	WIRE, 26 GA. SOLID, WHITE		PIW
26	1	129027	469906	FAB, CAN, DEEP DRAWN, BRASS		D
27	5	142041	AA-40W-PP	TERMINAL, FEED THRU		EID
28	3	162004	ZS1C2-502H	CAP, FEEDTHRU, 5000 PF		USE
29	3	120255	NAS620C4	WASHER, FLAT, #4		HPR
30	6	120164	M551957-13	SCREW, PNHD, 4-40X1/4		HPR
31	3	120271	8104-B-0440-28	STANDOFF, 4/40, HEX, 3/8, F/F		AMA



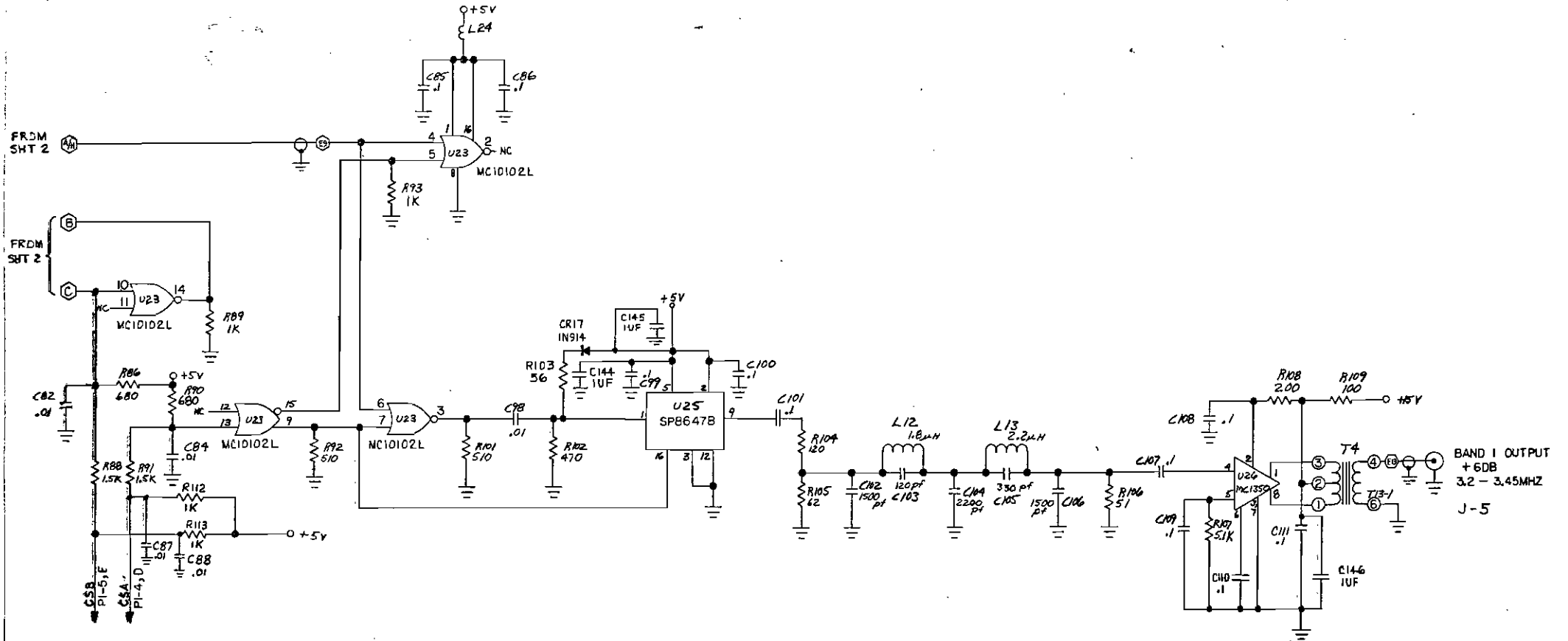
REFERENCE DESIGNATOR	CHART	NOT USED
LAST		
C147	C3, 19-26, 33, 47, 76, 83, 90, 94, 115-118, 120, C121, 123, 124	
CR17	CR1, 2-6, 12, 13, 15, 16	
J5		
L24	U.2, 8, 9	
Q3		
R113	R16, 23, 25, 26, 35, 47, 84, 85, 87, 110, 111	
T4		
U26	U5, 6, 21, 22, 24	

1. INSTALL VALUE SHOWN; COMPONENT MAY BE SELECTED AT TEST  
 2. FOR ARTWORK SEE 4-69702.  
 3. ALL CAPACITOR VALUES ARE IN MICROFARADS.  
 4. ALL RESISTOR VALUES ARE IN OHMS.  
 NOTES: UNLESS OTHERWISE SPECIFIED

A12 - SYNTHESIZER 5 (30 - 50 MHZ), SHT 1 OF 3

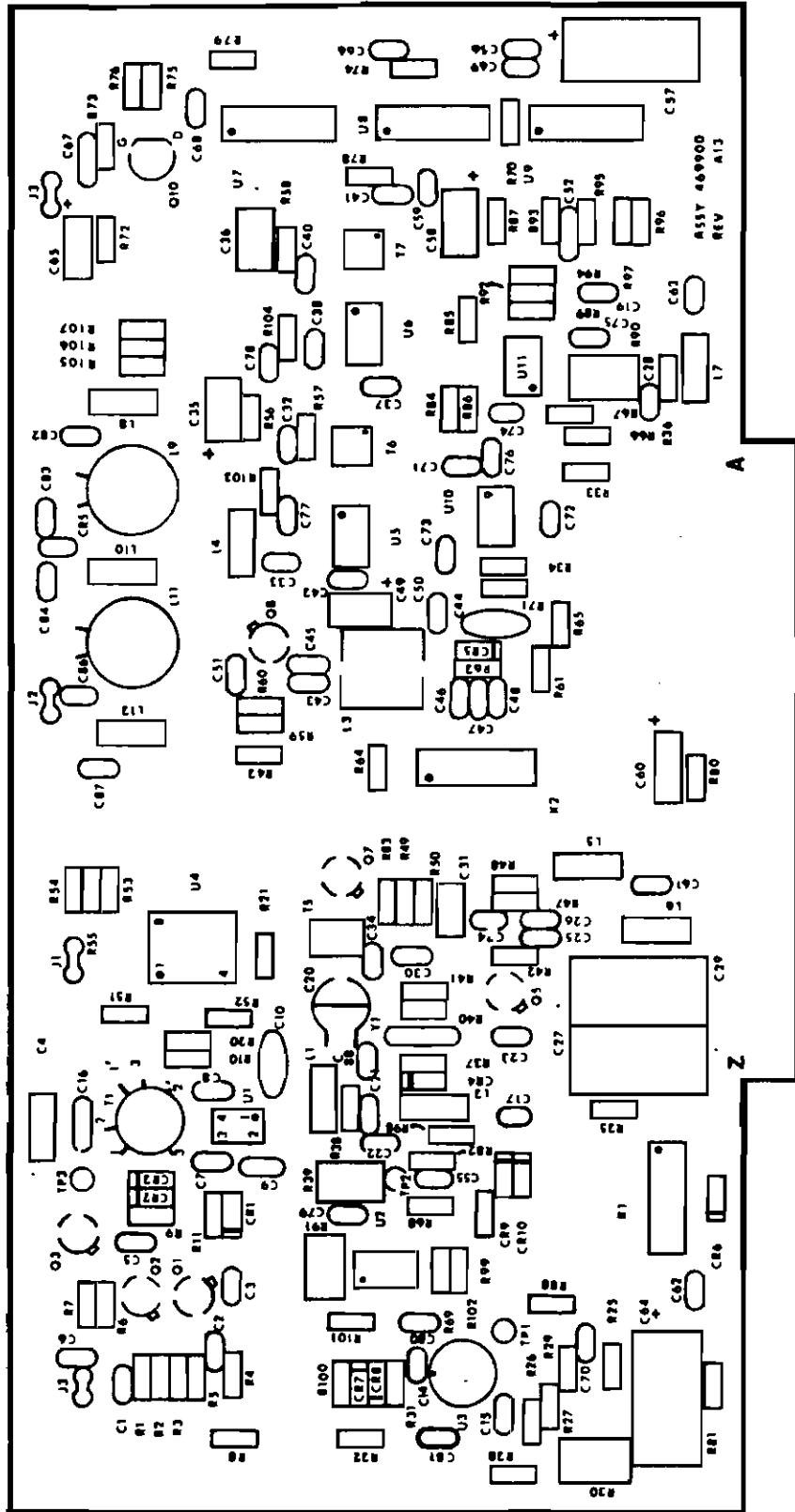


MIXER SECTION



BAND	CSB	CSA
1	1	0
2	1	1
3	0	1

A12 - SYNTHESIZER 5 (30 - 50 MHZ), SHT 3 OF 3



A13 SYNTHESIZER 1 (82 & 126 MHz)

Assembly : 469900  
 Stock Number : 180277

ASSY, A13, SYNTH 1, 32 & 125 MHZ

REV F  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147243	469901	P. C. , CARD, A13		SI
3	1	130260	469400-3	SHIELD, R. F.		DSI
4	1	130264	469400-7	SHIELD, R. F.		DSI
5	1	130263	469400-6	SHIELD, R. F.		DSI
7	3	121054	B1591-B-11	MOUNT, BLOCK		USE
9	1	130262	469400-5	SHIELD, R. F.		DSI
10	1	130237	469798	COVER, SHIELD, RF		DSI
14	25	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1-3, 6, 14, 15, 17, 28, 42, 56, 59, 61-63, 66, 68, , 69, 70, 72-78	ERI
15	1	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C4	SPG
16	1	163066	DM5FC331J	CAP, MICA, 330 PF	C5	ARC
17	5	163052	DM5CC100J	CAP, MICA, 10 PF	C7, 8, 16, 37, 47	ARC
18	1	163072	DM5EC510J	CAP, MICA, 51 PF	C9	ARC
19	1	163019	DM15-102J	CAP, MICA, 1000 PF	C10	
20	2	154053	CK05BX102K	CAP, CER, .001 UF	C22, 24	AVX
21	1	163045	DM5FA201J	CAP, MICA, 200 PF	C81	ARC
22	1	164005	187-0103-005	CAP, ADJ, 1.3-5.4PF	C20	EFJ
23	2	163059	DM5CC200J	CAP, MICA, 20 PF	C21, 23	ARC
24	1	163050	DM5CC050D	CAP, MICA, 5 PF	C25	ARC
25	1	163049	DM5CC020D	CAP, MICA, 2 PF, 300V	C26	ARC
26	1	163082	DM5FY391J	CAP, MICA, 390 PF	C19	ARC
27	8	154043	RPE121C0G102J100V	CAP, CER, .001 UF, 100V	C30, 32, 33, 34, 38, 40, 50, 51	ERI
28	1	163001	DM10-391J	CAP, MICA, 390 PF	C52	ARC
30	7	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C31, 35, 36, 49, 58, 60, C65	SPG
31	1	163028	DM15-471J	CAP, MICA, 470 PF	C41	ARC

Assembly : 469900  
Stock Number : 180277

ASSY, A13, SYNTH 1, 32 & 125 MHZ

REV F  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
32	1	163048	DM5CC010D	CAP, MICA, .1 PF	C43	ARC
33	2	163054	DM5FC111J	CAP, MICA, 110 PF	C45, 48	ARC
34	1	163070	DM5EC470J	CAP, MICA, 47 PF	C46	ARC
35	2	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C55, C71	AVX
36	3	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C27, 29, 57	SPG
37	1	158002	CS13BB337K	CAP, TANT, 330 UF, 6V	C64	SPG
38	1	163015	DM10-510J	CAP, MICA, 51 PF	C44	ARC
39	1	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C67	ERI
40	2	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C79, 80	ERI
41	2	172071	1N751A	DIODE, ZENER, 5.1V, .4W, 5X	CR9, 10	MOT
42	4	172010	1N914	DIODE, SILICON, D035	CR1, 6-8	MOT
43	1	172076	5082-0180	DIODE, SILICON	CR2	HEW
44	1	172081	5082-2835	DIODE, SILICON	CR3	HEW
45	2	172084	DKV6520B	DIODE, VARICAP	CR4, 5	ALI
47	2	145073	PRMA-10037	RELAY, SPST	K1, 2	CPC
48	1	134113	4721020	ASSY, INDUCTOR, TABULATED	L3 (USE 472102-30)	DSI
49	1	166001	RFC-S-.1	INDUCTOR, .10 UH	L1*	NYT
50	1	166020	WD-47	INDUCTOR, 47 UH	L4	NYT
51	3	166015	WD-10	INDUCTOR, 10 UH	L5, 6, 7	NYT
52	1	166003	RFC-S-.15	INDUCTOR, .15 UH	L2	NYT
53	1	171076	2N2907A	TRANSIS, PNP	Q1	MOT
54	2	171073	2N2369A	TRANSIS, NPN	Q2, 3	MOT
55	1	171087	2N5179	TRANSIS, NPN	Q8	MOT
56	1	171090	AT-0025	TRANSIS, NPN	Q5	AVN
58	1	171097	MPF820	TRANSIS, FET	Q10	MOT
59	1	150040	R25J3.3K	RES, C. FILM, 3.3K, 1/4W, 5X	R74	ROM

Assembly : 469900  
 Stock Number : 180277

ASSY, A13, SYNTH 1, 32 & 125 MHZ

REV F  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
60	1	152030	TG-1/8, 4.7K	THERMISTER, 4.7K	R82	TXI
61	2	153072	3299W-1-104K	RES, ADJ, 100K	R90, 91	BRN
62	1	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5X	R73	ROM
63	1	153071	3299W-1-103K	RES, ADJ, 10K	R30	BRN
64	1	153077	3299W-1-503K	RES, ADJ, 50K	R39	BRN
65	1	148029	RL07S512G	RES, M. FILM, 5.1K, 2X	R37	CGE
66	3	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5X	R1, 57, 78	ROM
67	2	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5X	R2, 3	ROM
68	2	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5X	R4, 5	ROM
69	2	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5X	R6, 63	ROM
70	1	150036	R25J1.2K	RES, C. FILM, 1.2K, 1/4W, 5X	R7	ROM
71	1	150133	R25J22	RES, C. FILM, 22 HMS, 1/4W, 5X	R8	ROM
72	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5X	R100	ROM
73	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R49, 70	ROM
75	3	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R76, 86, 88	ROM
76	4	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R20, 61, 62, 65	ROM
77	2	148204	CT41M2X	RES, MF, 1M, 1/4W2X, 100PPM, RL07	R31, 101	CGE
78	2	150149	R25J62	RES, C. FILM, 62 HMS, 1/4W, 5X	R21, 51	ROM
80	1	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R80	ROM
81	1	150135	R25J2.7	RES, C. FILM, 2.7 HMS, 1/4W, 5X	R81	ROM
82	1	150125	R25J11K	RES, C. FILM, 11K, 1/4W, 5X	R84	ROM
83	4	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5X	R40, 41, 47, 48	ROM
84	2	150037	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5X	R50, 52	ROM
85	2	150137	R25J300	RES, C. FILM, 300 HMS, 1/4W, 5X	R53, 54	ROM
86	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5X	R35, 36	ROM
87	5	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R9-11, 60, 79	ROM

Assembly : 469900

Stock Number : 180277

ASSY, A13, SYNTH 1, 32 & 125 MHZ

REV F

05/01/86

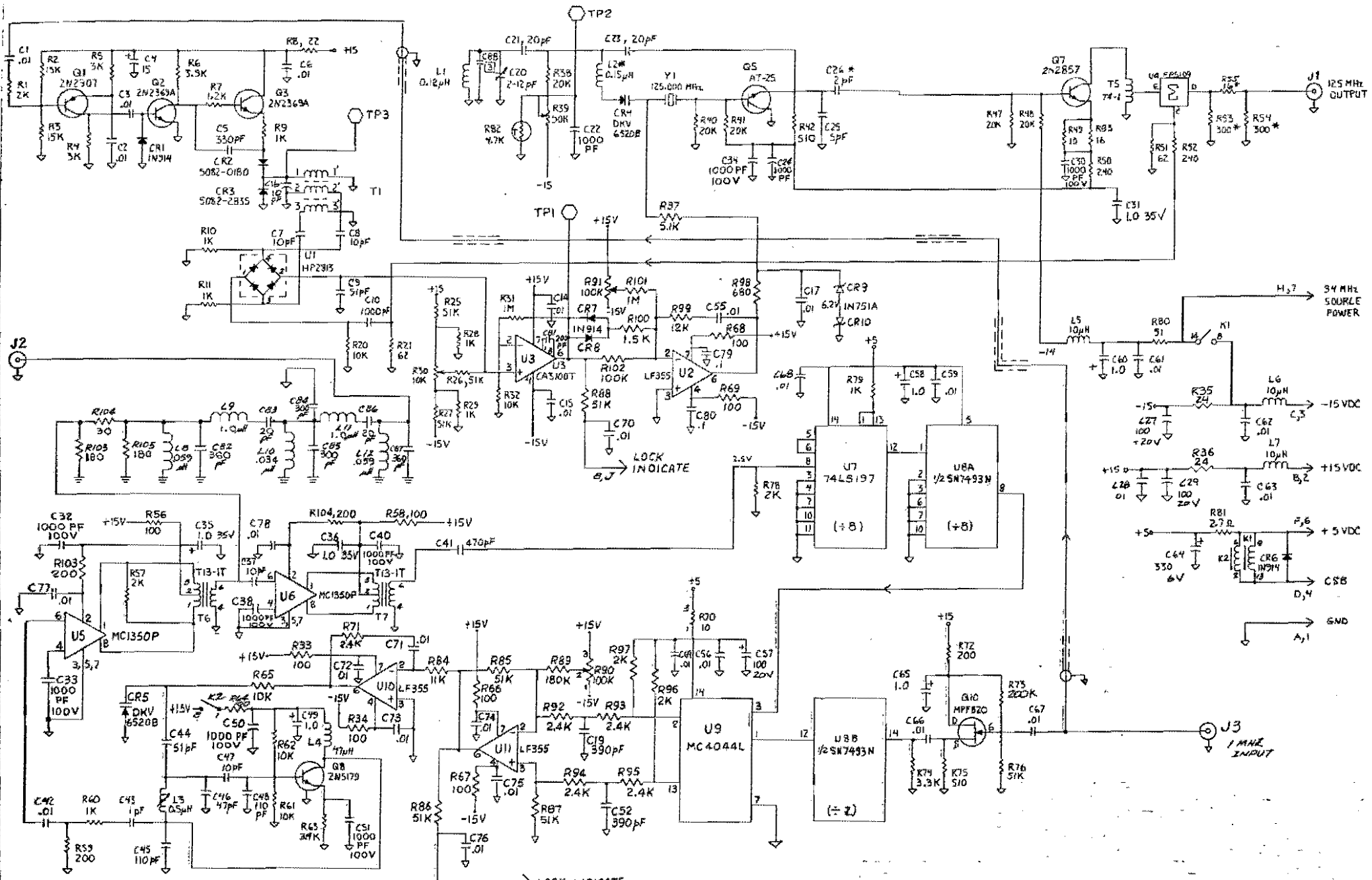
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
88	1	148014	RL07S203G	RES, M. FILM, 20K, 2%	R38	CGE
90	4	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R59, 72, 103, 104	ROM
91	2	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R42, 75	ROM
92	2	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5%	R55, 83	ROM
94	9	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R33, 34, 56, 58, 64, 66-69	ROM
95	1	134040	T4-1	TRANSFORMER	T5	MCL
96	1	171115	2N2857	TRANSIS, NPN	Q7	MDT
97	1	172080	5062-2013	DIODE, BRIDGE	U1	HEW
98	1	161018	FPS-109	POWER, DIVIDER	U4	MCL
99	1	170568	CA3100T	I. C., 3100	U3	RCA
100	1	170668	SN74LS197J	I. C., 74LS197, CER	U7	TXI
101	2	170600	MC1350P	I. C., 1350	U5, 6	MOT
102	1	170947	SN7493N	I. C., 4 BIT, BINARY COUNTER	U8	TXI
103	1	170609	MC4044P	I. C., 4044	U9	MOT
104	3	170586	LF355N	I. C., 355, FET OP-AMP, PLAS, 8 DIP	U2, 10, 11	NSC
105	1	174002	396-1C/125.003MHZ	CRYSTAL, 125.003 MHZ	Y1	PZC
107	1	134063	472108-1, 2	ASSY, TRANSFORMER, TABULATED	T1 (USE 472108-1)	DSI
108	2	134039	T13-1T	TRANSFORMER	T6, 7	MCL
111	5	141213	508-AG-10D	SOCKET, 8 PIN, IC	U2, 5, 6, 10, 11	AUG
112	3	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U7-9	AUG
114	3	142027	450-7004-01-03-00	JACK	TP1-3	CAM
116	1	125162	UT. 034TP	CABLE, COAX, .035DIA		CAS
119	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
122	2	120211	2707-18550-N116	WASHER, NYLON, SHLDR, 5/16		AMA
123	4	120206	2258-N171	WASHER, FLAT, INSULATING, #8		AMA

Assembly : 469900  
 Stock Number : 180277

ASSY, A13, SYNTH 1, 32 & 125 MHZ

REV F  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
124	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HFR
127	1	120204	2502	SCREW, PNHD, 4/40, 1/2		HHS
128	1	120208	2554	NUT, HEX, NYLON, 4/40		HHS
129	2	120207	2505	SCREW, PNHD, 6/32, 1/2		HHS
130	2	120209	2555	NUT, HEX, NYLON, 6/32		HHS
131	2	163003	DM10-301J	CAP, MICA, 300 PF	C84, 85	ARC
132	2	163009	DM10-200J	CAP, MICA, 20 PF	C83, 86	ARC
133	2	163013	DM10-361J	CAP, MICA, 360 PF	C82, 87	ARC
134	1	000019	DM5	CAP, MICA, (SELECTED AT TEST)	C88	ARC
136	2	134061	472105-3, 4	ASSY, INDUCTOR, TABULATED	L9 (USE 472105-3) L11 (USE 472105-4)	DSI
139	1	150136	R25J30	RES, C. FILM, 30 HMS, 1/4W, 5%	R106	ROM
140	2	150109	R25J180	RES, C. FILM, 180 HMS, 1/4W, 5%	R105, 107	ROM
141	1	148180	C4100K2X	RES, MF, 100K, 1/4W2X, 100PPM, RL07	R102	CGE
142	1	148158	C412K2X	RES, MF, 12K, 1/4W2X, 100PPM, RL07	R99	CGE
143	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R98	ROM
144	5	148141	C42.4K2X	RES, MF, 2.4K, 1/4W2X, 100PPM, RL07	R71, 92-95	CGE
145	1	150085	R25J180K	RES, C. FILM, 180K, 1/4W, 5%	R89	ROM
146	1	149026	R10J1.5K	RES, C. FILM, 1.5K, 1/8W, 5%	R108	ROM
147	2	148139	C42K2X	RES, MF, 2K, 1/4W2X, 100PPM, RL07	R96, 97	CGE
148	5	148173	C451K2X	RES, MF, 51K, 1/4W2X, 100PPM, RL07	R25-27, 85, 87	CGE
149	1	148156	C410K2X	RES, MF, 10K, 1/4W2X, 100PPM, RL07	R32	CGE
150	2	148132	C41K2X	RES, MF, 1K, 1/4W2X, 100PPM, RL07	R28, 29	CGE
151	1	179147	469488	ASSY, MOUNTING PLATES, A13		DSI

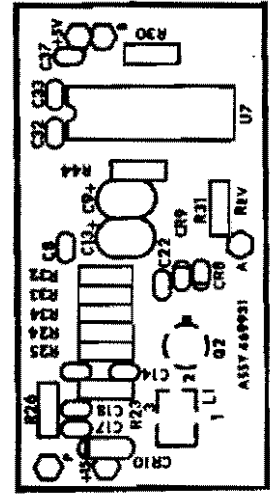
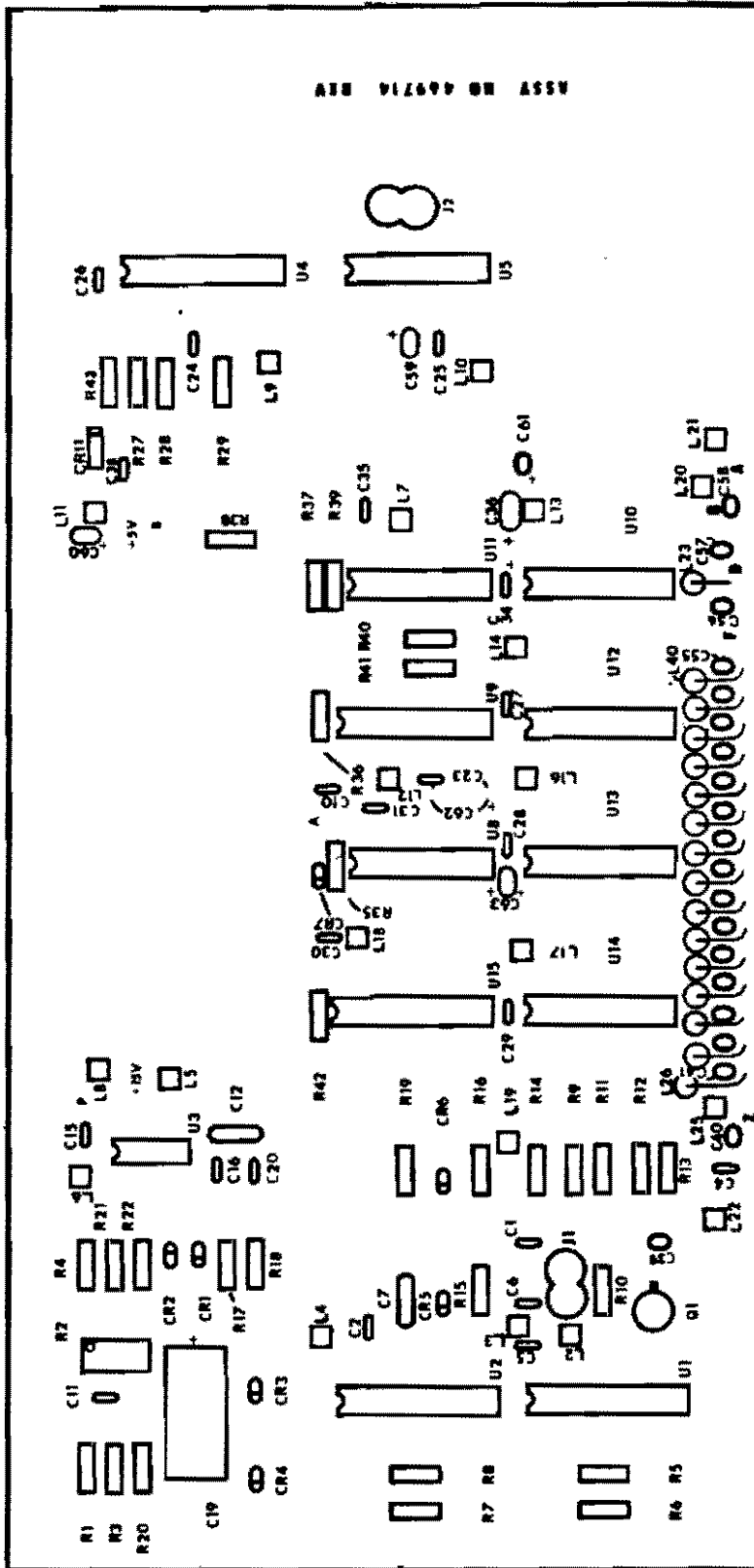


**NOTES: UNLESS OTHERWISE SPECIFIED**

- 1. ALL RESISTOR VALUES IN OHMS.
- 2. ALL CAPACITOR VALUES IN MICROFARADS.
- + SELECTED VALUE

[3] COMPONENT VALUE TO BE SELECTED DURING TEST (NOT USED IN ALL UNITS)

SEE DRAWING ON ASSY



A14 SYNTHESIZER 2 (100-200 MHz)

Assembly : 469714  
Stock Number : 180251

ASSY, A14, SYNTH 2, 100-200 MHZ

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	16	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C1, 2, 5, 6, 11, 15, 16, 20, 23, 26-31, 34	F
2	10	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C4, 10, 24, 25, 35, 38, 39 , 56-58	ERI
4	1	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C19	SPG
5	1	163015	DM10-510J	CAP, MICA, 51 PF	C7	ARC
6	1	154071	CK06BX105K	CAP, CER, 1 UF	C12	AVX
8	5	158015	T360-B226-M015AS	CAP, TANT, 22 UF, 15V	C36, 59-61, 63	KEM
9	8	172010	1N914	DIODE, SILICON, D035	CR1-CR7, CR11	MOT
12	1	171072	2N2222A	TRANSIS, NPN	Q1	MOT
14	1	153070	3299W-1-102K	RES, ADJ, 1K	R2	BRN
15	1	150031	R25J1M	RES, C. FILM, 1M, 1/4W, 5X	R4	ROM
16	4	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5X	R5, 6, 7, 8	ROM
17	4	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R13, 15, 17, 18	ROM
18	2	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5X	R1, 3	
19	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R22	ROM
21	1	150035	R25J820	RES, C. FILM, 820 HMS, 1/4W, 5X	R10	ROM
22	3	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5X	R28, 37, 39	ROM
23	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5X	R12	ROM
24	2	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5X	R29, 42	ROM
25	2	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5X	R38, 40	ROM
26	2	150155	R25J9.1K	RES, C. FILM, 9.1K, 1/4W, 5X	R9, 20	ROM
27	1	150043	R25J27K	RES, C. FILM, 27K, 1/4W, 5X	R19	ROM
30	2	150116	R25J56	RES, C. FILM, 56 HMS, 1/4W, 5X	R35, 43	ROM
31	2	150003	R25J470	RES, C. FILM, 470 HMS, 1/4W, 5X	R36, 27	ROM
32	1	150074	R25J510K	RES, C. FILM, 510K, 1/4W, 5X	R14	ROM
34	1	150114	R25J33K	RES, C. FILM, 33K, 1/4W, 5X	R16	ROM

Assembly : 469714  
 Stock Number : 180251

ASSY, A14, SYNTH 2, 100-200 MHZ

REV G  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
35	1	150143	R25J3, 6M	RES, C, FILM, 3.6M, 1/4W, 5%	R21	ROM
38	1	150036	R25J1, 2K	RES, C, FILM, 1.2K, 1/4W, 5%	R11	ROM
40	2	170702	SP8647B	I. C., DIVIDER	U4, U9	PLS
41	1	170603	MC14583BCP	I. C., 14583	U1	MOT
42	1	170602	MC14568BCP	I. C., 14568	U2	MOT
43	1	170586	LF355N	I. C., 355, FET OP-AMP, PLAS, 8 DIP	U3	NSC
44	1	170560	74LS90J	I. C., 74LS90, CER	U5	MOT
46	5	170895	SN74ALS168BN	IC, SYNCH BIN UP/DWN 4 BIT CNTR	U10, U12-U15	TXI
47	1	170659	SN74LS02J	I. C., 74LS02, CER	U11	TXI
48	1	170830	74HC32	I. C., 74HC32, QUAD OR, CMOS	U8	TXI
51	37	165008	2673-000101	CORE, BEAD, CHOKE	L2-14, 16-23, 25-40	MIM
52	1	147222	469704	P. C., CARD, A14		DSI
54	3	121054	B1591-B-11	MOUNT, BLOCK		USE
57	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
58	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
60	2	125160	RG17B B/U	CABLE, COAX		ALC
62	1	141213	508-AG-10D	SOCKET, 8 PIN, IC		AUG
63	3	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG
64	10	141225	516-AG-10D	SOCKET, 16 PIN, I. C.		AUG
66	1	180286	469934	ASSY, OSCILLATOR CAN, A14-A1		DSI
67	1	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V	C62	KEM
68	16	154043	RPE121COG102J100V	CAP, CER, .001 UF, 100V	C40-55	ERI
69	1	148116	C4220R2X	RES, MF, 220, 1/4W2%, 100PPM, RL07	R41	CGE
70	1	179148	469489	ASSY, MOUNTING PLATES, A14		DSI

Assembly : 469934  
Stock Number : 180286

ASSY, OSCILLATOR CAN, A14-A1

REV B3  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	129028	469932	FAB, CAN, MODIFICATION, A14-A1		E
2	1	128016	469933-1	COVER, A14-A1		DSI
4	1	180287	469931	ASSY, A14-A1-A1, P. C., CARD		DSI
5	1	142069	469928	INSULATOR		DSI
7	2	162004	1S1C2-502H	CAP, FEEDTHRU, 5000 PF		USE
8	3	142041	AA-40W-PP	TERMINAL, FEED THRU		EID
9	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
10	12	125311	E26-126-9	WIRE, 26 GA, SOLID, WHITE		PIW

Assembly : 469931  
Stock Number : 180287

ASSY, A14-A1-A1, P. C., CARD

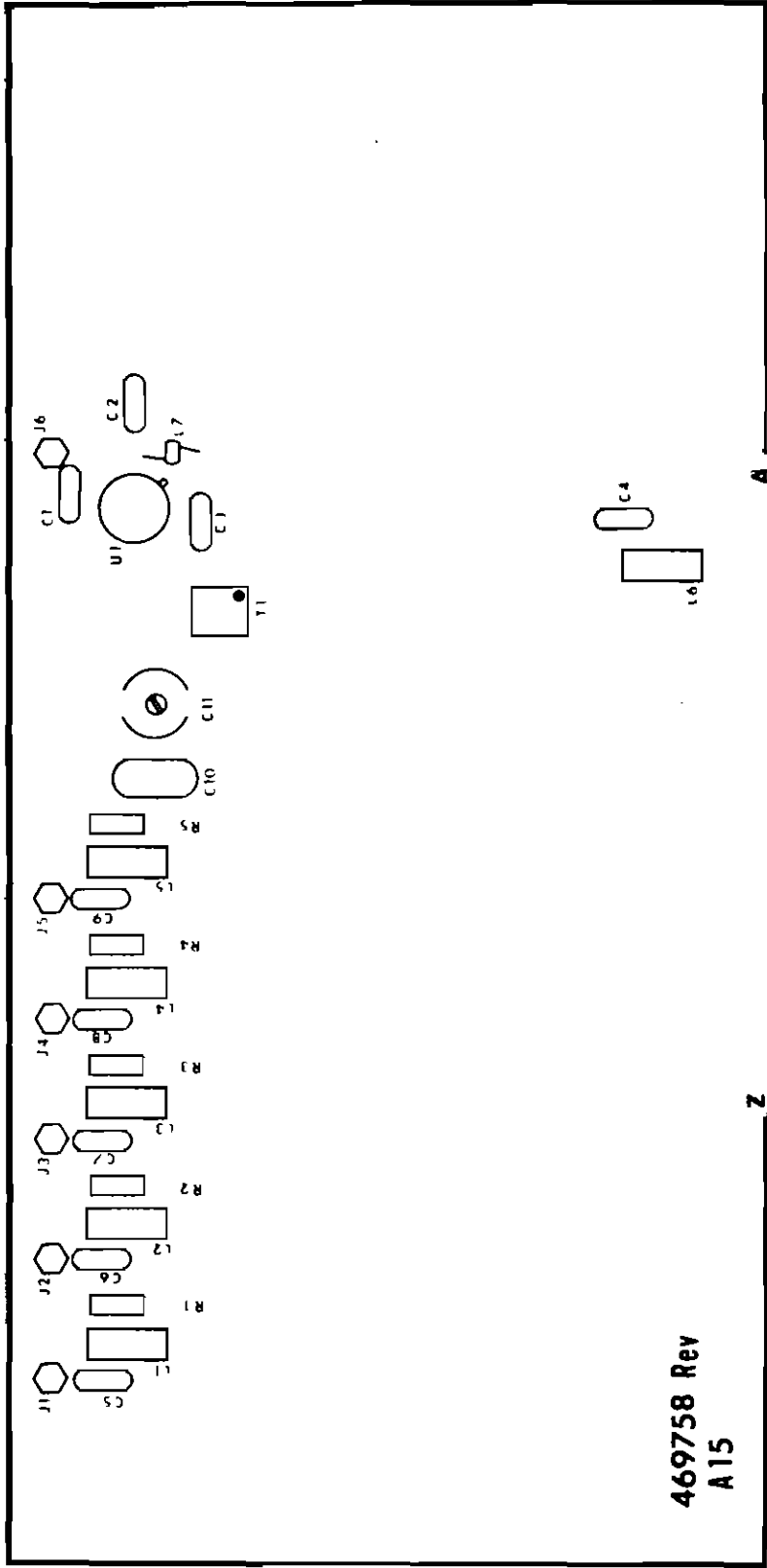
REV C  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147257	469930	P. C., CARD, A14-A1		DSI
3	3	120263	KF2-440	FASTENER, SOLDERABLE		PEM
5	2	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C14, 37	ERI
6	5	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C8, 21, 22, 32, 33	ERI
7	2	158014	T368-B156-M020AS	CAP, TANT, 15 MF, 20V	C9, 13	KEM
8	2	154043	RPE121C06102J100V	CAP, CER, .001 UF, 100V	C17, 18	ERI
10	2	172010	1N914	DIODE, SILICON, D035	CR8, 9	MOT
11	1	172084	DKV6520B	DIODE, VARICAP	CR10	ALI
13	1	171104	40673	TRANSIS, FET	Q2	RCA
15	1	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5%	R24	ROM
16	2	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R26, 32	ROM
17	1	150144	R25J39K	RES, C. FILM, 39K, 1/4W, 5%	R23	ROM
18	3	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R30, 31, 44	ROM
19	1	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R34	ROM
20	1	150146	R25J43	RES, C. FILM, 43 HMS, 1/4W, 5%	R25	ROM
21	1	150038	R25J1.8K	RES, C. FILM, 1.8K, 1/4W, 5%	R33	ROM
23	1	170606	MC1662L	I. C., 1662, 16 PIN DIP	U7	MOT

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11'



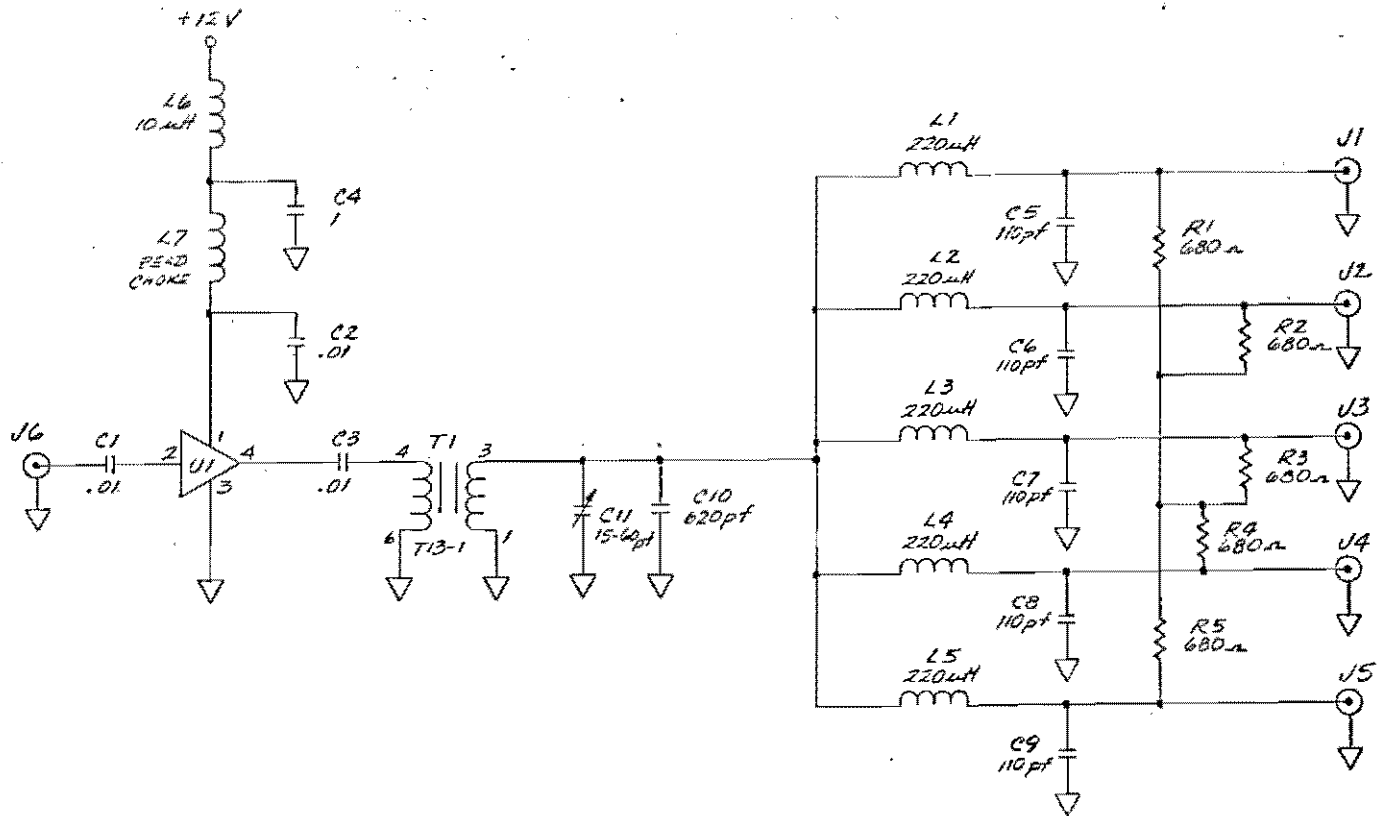
A15 1MHz DISTRIBUTION

Assembly : 46975B  
Stock Number : 180263

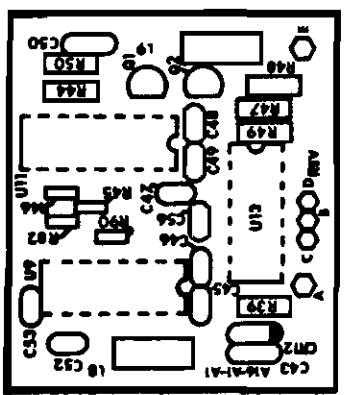
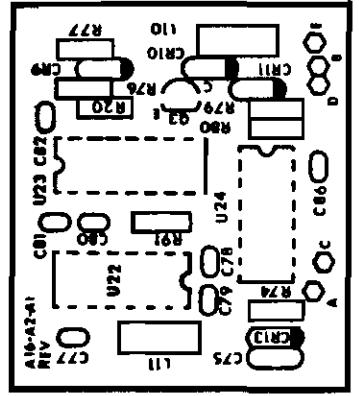
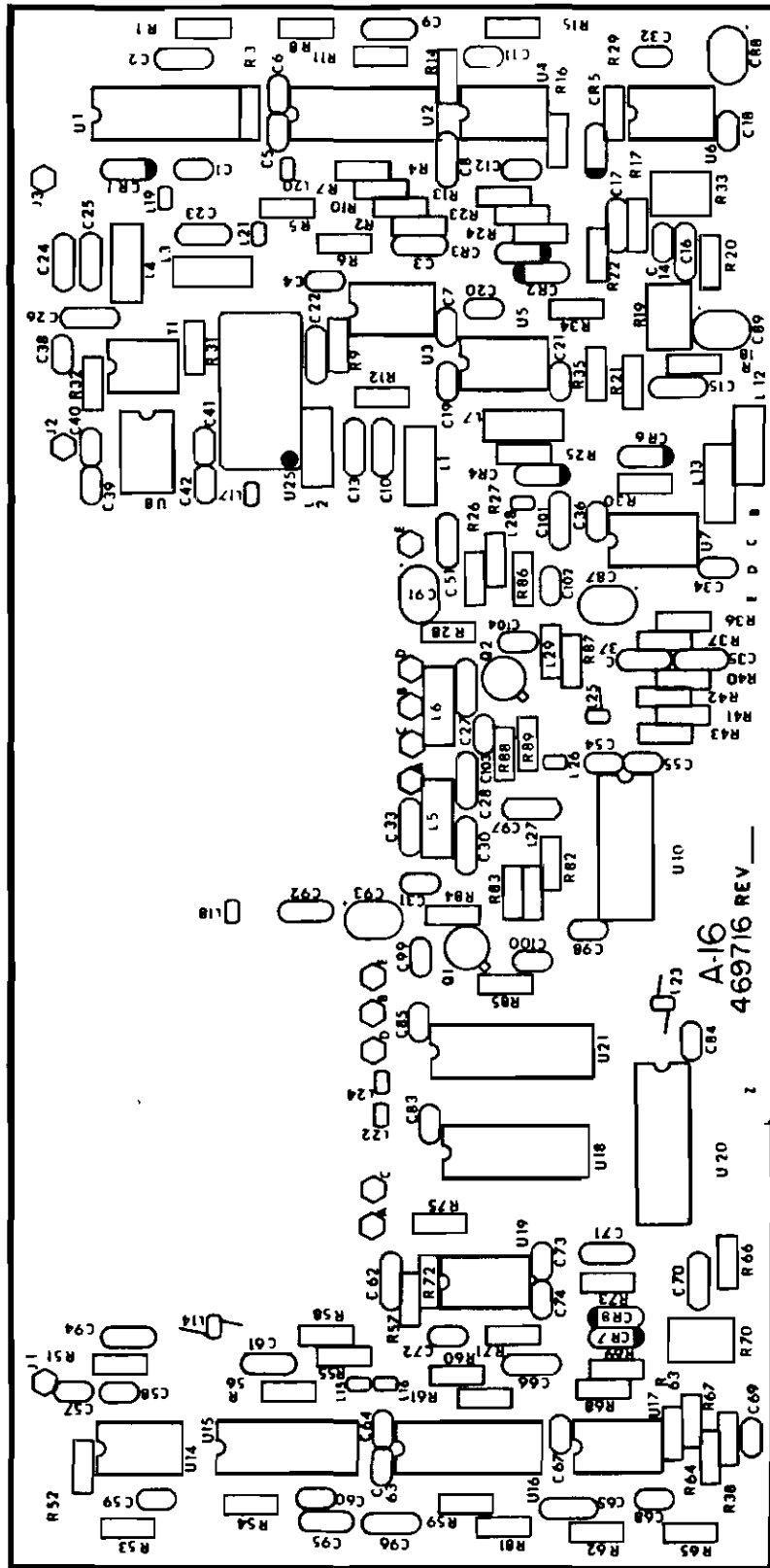
ASSY, A15

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147250	469766	P. C., CARD, A15, (SN 509)		T
5	1	170706	6PD-462	I. C., AMPLIFIER	U1	AVN
8	5	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R1-5	ROM
11	3	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C1-3	AVX
12	1	154047	RPE11375U105M50V	CAP, CER, 1 UF, 50V, 20%	C4	ERI
13	5	163054	DM5FC111J	CAP, MICA, 110 PF	C5-9	ARC
14	1	163083	DM15-621J	CAP, MICA, 620 PF	C10	ARC
16	1	164004	538-011F, 15-60PF	CAP, ADJ, 15-60 PF	C11	ERI
18	5	166028	WD-220	INDUCTOR, 220 UH	L1-5	NYT
19	1	165008	2673-000101	CORE, BEAD, CHOKE	L7	MIM
20	1	166015	WD-10	INDUCTOR, 10 UH	L6	NYT
21	1	134039	T13-1T	TRANSFORMER	T1	MCL
24	3	121054	B1591-B-11	MOUNT, BLOCK		USE
26	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		
27	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
29	1	125160	RG178 B/U	CABLE, COAX		ALC
31	1	179149	469490	ASSY. MOUNTING PLATES, A15		DSI



11'



A-16  
469716 REV

A 16 SYNTHESIZER B (10-20 MHz)

Assembly : 469716  
Stock Number : 180253

ASSY, A16

REV G4  
05/01/86

Item	Dty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147224	469706	P. C., CARD. A16		
2	1	180281	469920	ASSY, OSCILLATOR CAN, A16-A1		DSI
4	3	121054	B1591-B-11	MOUNT, BLOCK		USE
7	1	180282	469921	ASSY, OSCILLATOR CAN, A16-A2		DSI
8	4	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5X	R3, 4, 55, 58	ROM
9	3	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5X	R5, 9, 54	ROM
10	2	150034	R25J150	RES, C. COMP, 150 HMS, 1/4W, 5X	R84, 68	ROM
11	3	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5X	R6, 30, 34	ROM
12	6	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5X	R7, 8, 41, 43, 59, 61	ROM
13	4	150002	R25J330	RES, C. FILM, 330 HMS, 1/4W, 5X	R82, 85, 86, 89	ROM
14	4	150067	R25J2.4K	RES, C. FILM, 2.4K, 1/4W, 5X	R36, 37, 40, 42	ROM
15	1	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R12	ROM
16	2	148149	C45.1K2X	RES, MF, 5.1K, 1/4W2X, 100PPM, RL07	R15, 16	CGE
17	3	150018	R25J470K	RES, C. FILM, 470 K, 1/4W, 5X	R21, 67, 71	
18	2	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R17, 38	ROM
19	1	150057	R25J150K	RES, C. FILM, 150K, 1/4W, 5X	R73	ROM
20	2	150070	R25J430	RES, C. FILM, 430 HMS, 1/4W, 5X	R83, 87	ROM
21	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R22	ROM
22	1	150075	R25J240K	RES, C. FILM, 240K, 1/4W, 5X	R23	ROM
23	1	150008	R25J22K	RES, C. FILM, 22K, 1/4W, 5X	R72	ROM
24	2	150117	R25J75	RES, C. FILM, 75 HMS, 1/4W, 5X	R26, 52	ROM
25	5	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5X	R27, 28, 31, 51, 53	ROM
26	1	150139	R25J300K	RES, C. FILM, 300K, 1/4W, 5X	R24	ROM
27	1	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5X	R32	ROM
28	1	150164	R25J1.8M	RES, C. FILM, 1.8M, 1/4W, 5X	R29	ROM
29	2	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R35, 75	ROM

Assembly : 469716  
Stock Number : 180253

ASSY, A16

REV G4  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
30	4	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R1, 2, 56, 57	ROM
31	1	150001	R25J2.2K	RES, C. FILM, 2.2K, 1/4W, 5%	R25	ROM
33	1	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R69	ROM
35	2	153071	3299W-1-103K	RES, ADJ, 10K	R19, 70	BRN
36	1	153076	3299W-1-502K	RES, ADJ, 5K	R33	BRN
37	2	125175	1224	BRAID, FLAT, 3/32W		ALC
38	8	172010	1N914	DIODE, SILICON, D035	CR1-CR6, CR7*, CR8*	MOT
40	3	125162	UT. 034TP	CABLE, COAX, .035DIA		CAS
41	2	171083	2N4416	TRANSIS, FET	Q1, 2	MOT
42	1	130304	469400-15	SHIELD, R. F.		DSI
43	1	134039	T13-1T	TRANSFORMER	T1	MCL
45	2	141225	516-AG-10D	SOCKET, 16 PIN, I. C.	U20, 21	AUG
46	3	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U1, 15, 18	AUG
47	9	141213	508-AG-10D	SOCKET, 8 PIN, IC	U3-8, 14, 17, 19	AUG
49	1	161023	SRA-1	MIXER, DOUBLE, BAL	U25	MCL
50	2	170560	74LS90J	I. C., 74LS90, CER	U1, 15	MOT
51	3	170598	MC12040P	I. C., 12040	U2, 10, 16	MOT
52	2	170586	LM311N	I. C., 311	U3, 14	MOT
53	6	170586	LF355N	I. C., 355, FET OP-AMP, PLAS, 8 DIP	U4-7, 17, 19	NSC
54	1	170600	MC1350P	I. C., 1350	U8	MOT
57	1	170830	74HC32	I. C., 74HC32, QUAD OR, CMOS	U18	TXI
58	2	170896	SN74ALS169BN	IC, SYNCH BIN UP/DWN 4 BIT CNTR	U20, 21	TXI
59	14	165008	2673-000101	CORE, BEAD, CHOKE	L14-26, 28	MIM
60	2	166021	WD-5.6	INDUCTOR, 5.6 UH	L1, 2	NYT
61	4	166006	RFC-S-.39	INDUCTOR, .39 UH	L3-6	NYT
62	1	166018	WD-18,000	INDUCTOR, 18 MH	L7	NYT

Assembly : 469716  
Stock Number : 180253

ASSY, A16

REV 64  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
63	2	166029	9230-40	INDUCTOR, 6. 0MH	L27, 29	
64	2	166015	WD-10	INDUCTOR, 10 UH	L12, 13	NYT
65	2	125160	RG178 B/U	CABLE, COAX		ALC
66	33	154045	RPE12175U104M100V	CAP, CER, . 1 UF, 100V	C1, 4-7, 11, 12, 18, 20, 21, 32, 34, 36, 38-42, 54, 55, 57-60, 63, 64, 67, 68, 73, 74, 83-85	ERI
67	10	154044	RPE11075U103M100V	CAP, CER, . 01 UF, 100V	C14, 31, 69, 72, 98-100, 102-104	ERI
68	4	154047	RPE11375U105M50V	CAP, CER, 1 UF, 50V, 20%	C15, 16, 70, 71	ERI
69	4	163050	DM5CC050D	CAP, MICA, 5 PF	C2, 3, 61, 62	ARC
70	1	163078	DM5FY221J	CAP, MICA, 220 PF	C24	ARC
71	1	163046	DM5FY241J	CAP, MICA, 240 PF	C25	ARC
72	10	163066	DM5FC331J	CAP, MICA, 330 PF	C8, 9, 23, 26, 27, 30, 35, 37, 65, 66	ARC
73	2	158014	T368-B156-M020AS	CAP, TANT, 15 MF, 20V	C88, 89	KEM
74	3	158016	T368-C157-M006AS	CAP, TANT, 150 UF, 6V	C87, 91, 93	KEM
75	1	154073	CK06BX224K	CAP, CER, . 22 UF	C17	AVX
76	2	154057	CK05BX152K	CAP, CER, 1500 PF	C10, 22	AVX
77	1	154061	CK05BX332K	CAP, CER, . 0033 UF	C13	AVX
78	1	154058	CK05BX153K	CAP, CER, . 015 UF	C33	AVX
79	1	163028	DM15-471J	CAP, MICA, 470 PF	C28	ARC
80	7	154071	CK06BX105K	CAP, CER, 1 UF	C51, 92, 94-97, 101	AVX
81	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
82	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
83	1	154055	CK05BX104K	CAP, CER, . 10 UF, 50V	C19	AVX
84	8	148141	C42. 4K2%	RES, MF, 2. 4K, 1/4W2%, 100PPM, RL07	R10, 11, 13, 14, 60, 62, 63, 81	CGE
85	2	148173	C451K2%	RES, MF, 51K, 1/4W2%, 100PPM, RL07	R64, 65	CGE

Assembly : 469716  
Stock Number : 180253

ASSY, A16

REV 64  
05/01/86

Item	Dty	Stk Num	Part Number	Description	Reference Desig.	Mfr
86	3	148184	C4150K2%	RES, MF, 150K, 1/4W2%, 100PPM, RL07	R18.20, 66	CGE
87	1	179150	469491	ASSY, MOUNTING PLATES, A16		DSI

Assembly : 469709  
Stock Number : 180246

ASSY, A16-A1-A1

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147225	469707	P. C. , CARD, A16-A1		PCB
4	3	149024	R10J560	RES, C. FILM, 560 HMS, 1/8W, 5%	R45, 46, 82	ROM
5	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R39	ROM
6	1	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R44	ROM
7	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5%	R47	ROM
8	1	150109	R25J180	RES, C. FILM, 180 HMS, 1/4W, 5%	R48	ROM
9	1	150124	R25J1.1K	RES, C. FILM, 1.1K, 1/4W, 5%	R49	ROM
10	1	150141	R25J36	RES, C. FILM, 36 HMS, 1/4W, 5%	R50	ROM
11	1	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5%	R90	ROM
12	8	154045	RPE121Z5U104M100V	CAP, CER, .1 UF, 100V	C45-49, 52, 53, 56	ERI
13	1	154053	CK05BX102K	CAP, CER, .001 UF	C43	AVX
14	1	154047	RPE113Z5U105MS0V	CAP, CER, 1 UF, 50V, 20%	C50	ERI
16	1	166008	RFC-S-1.5	INDUCTOR, 1.5 LH	L8	NYT
17	1	166015	WD-10	INDUCTOR, 10 UH	L9	
19	1	170604	MC1648	I. C. , 1648	U9	MOT
20	1	170621	MC10102	I. C. , 10102	U11	MOT
21	1	170261	SN74LS90	I. C. , 74LS90, DECADE COUNTER	U13	TXI
23	1	172090	DKV6523	DIODE	CR12	ALI
25	2	171089	2N5771	TRANSIS	Q1, 2	FRS

Assembly : 469788  
Stock Number : 180272

ASSY, A16-A2-A1

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147252	469789	P. C. ,CARD, A16-A2-A1		DSI
7	3	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5X	R20, 76, 77	ROM
8	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R74	ROM
9	1	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5X	R79	ROM
10	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5X	R80	ROM
11	1	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5X	R91	ROM
12	7	154045	RPE12175U104M100V	CAP, CER, .1 UF, 100V	C77-82, 86	ERI
13	1	154053	CK05BX102K	CAP, CER, .001 UF	C75	AVX
14	1	166015	WD-10	INDUCTOR, 10 UH	L10	NYT
15	1	166008	RFC-S-1.5	INDUCTOR, 1.5 UH	L11	NYT
17	3	172010	1N914	DIODE, SILICON, D035	CR9, 10, 11	MDT
18	1	172090	DKV6523	DIODE	CR13	ALI
20	1	170604	MC1648	I. C. , 1648	U22	MDT
21	1	170621	MC10102	I. C. , 10102	U23	MDT
22	1	170826	74HC00	I. C. , 74HC00, QUAD, NAND, CMOS	U24	TXI
24	1	171089	2N5771	TRANSIS	Q3	FRS

Assembly : 469920  
Stock Number : 180281

ASSY, OSCILLATOR CAN, A16-A1

REV C2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	130267	469917	FAB, CAN, MODIFIED		
2	1	130268	469922-1	FAB, COVER, MODIFIED		DSI
3	1	180246	469709	ASSY, A16-A1-A1		DSI
4	1	142060	469919	INSULATOR		DSI
5	3	142041	AA-40W-PP	TERMINAL, FEED THRU	B, C, D	EID
6	1	162004	ZS1C2-502H	CAP, FEEDTHRU, 5000 PF	E	USE
7	1	162002	ZS1C2-122H	CAP, FEEDTHRU, 1200 PF	A	USE
8	12	125311	E26-126-9	WIRE, 26 GA, SOLID, WHITE		PIW

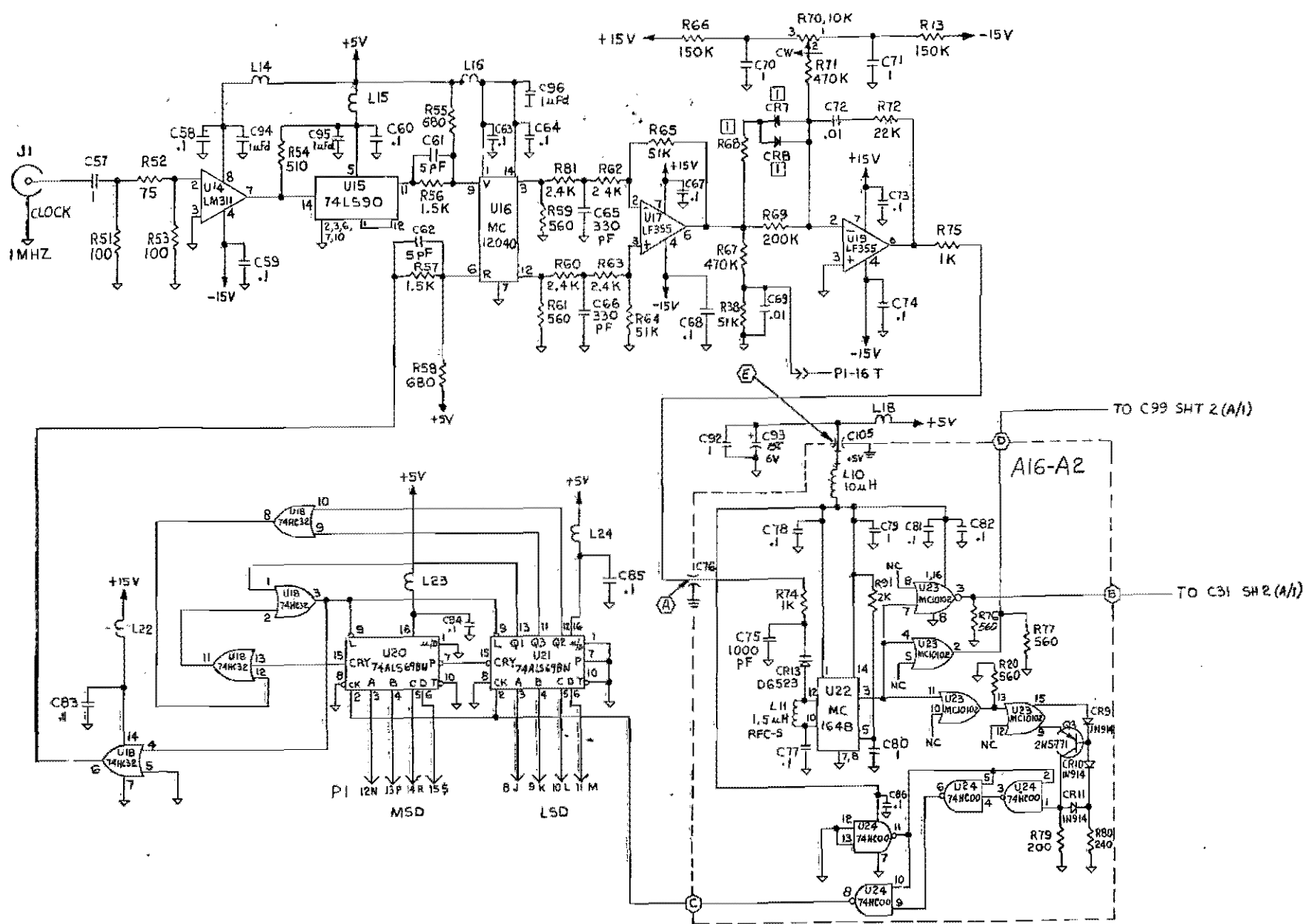
Assembly : 469921  
Stock Number : 180282

ASSY, OSCILLATOR CAN, A16-A2

REV B1  
05/01/86

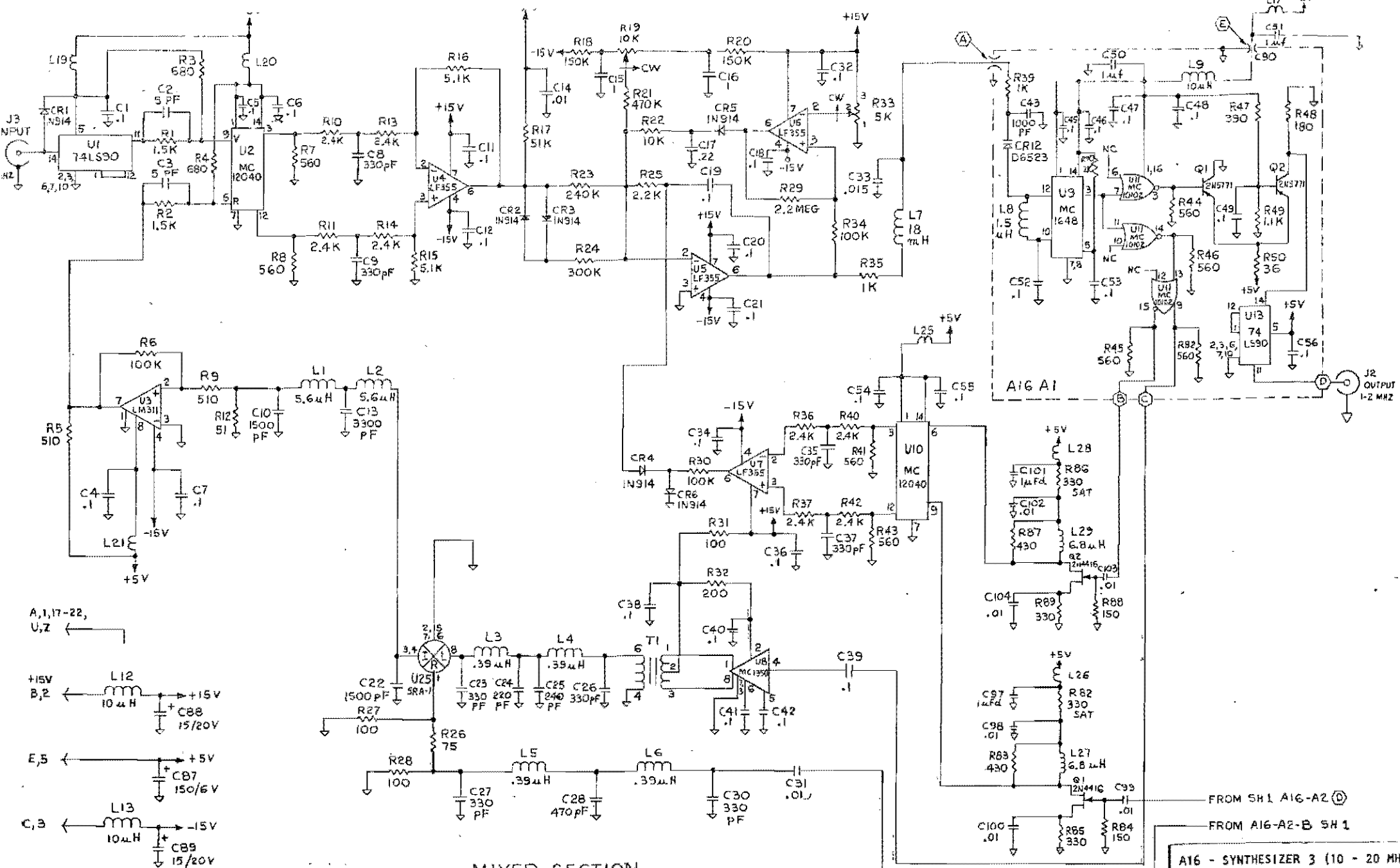
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	129020	469918	FAB, CAN, MODIFIED		DSI
2	1	130268	469922-1	FAB, COVER, MODIFIED		DSI
3	1	180272	469788	ASSY, A16-A2-A1		DSI
4	1	142060	469919	INSULATOR		DSI
5	3	142041	AA-40W-PP	TERMINAL, FEED THRU	B, C, D	EID
6	1	162004	ZS1C2-502H	CAP, FEEDTHRU, 5000 PF	E	USE
7	1	162002	ZS1C2-122H	CAP, FEEDTHRU, 1200 PF	A	USE
8	12	125311	E26-126-9	WIRE, 26 GA, SOLID, WHITE		PIW

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SYNTHESIZER SECTION

1 INSTALL RC8, CR7 + CR8 DURING TEST. MAY NOT BE REQD IN ALL UNITS.  
 NOTES: UNLESS OTHERWISE SPECIFIED

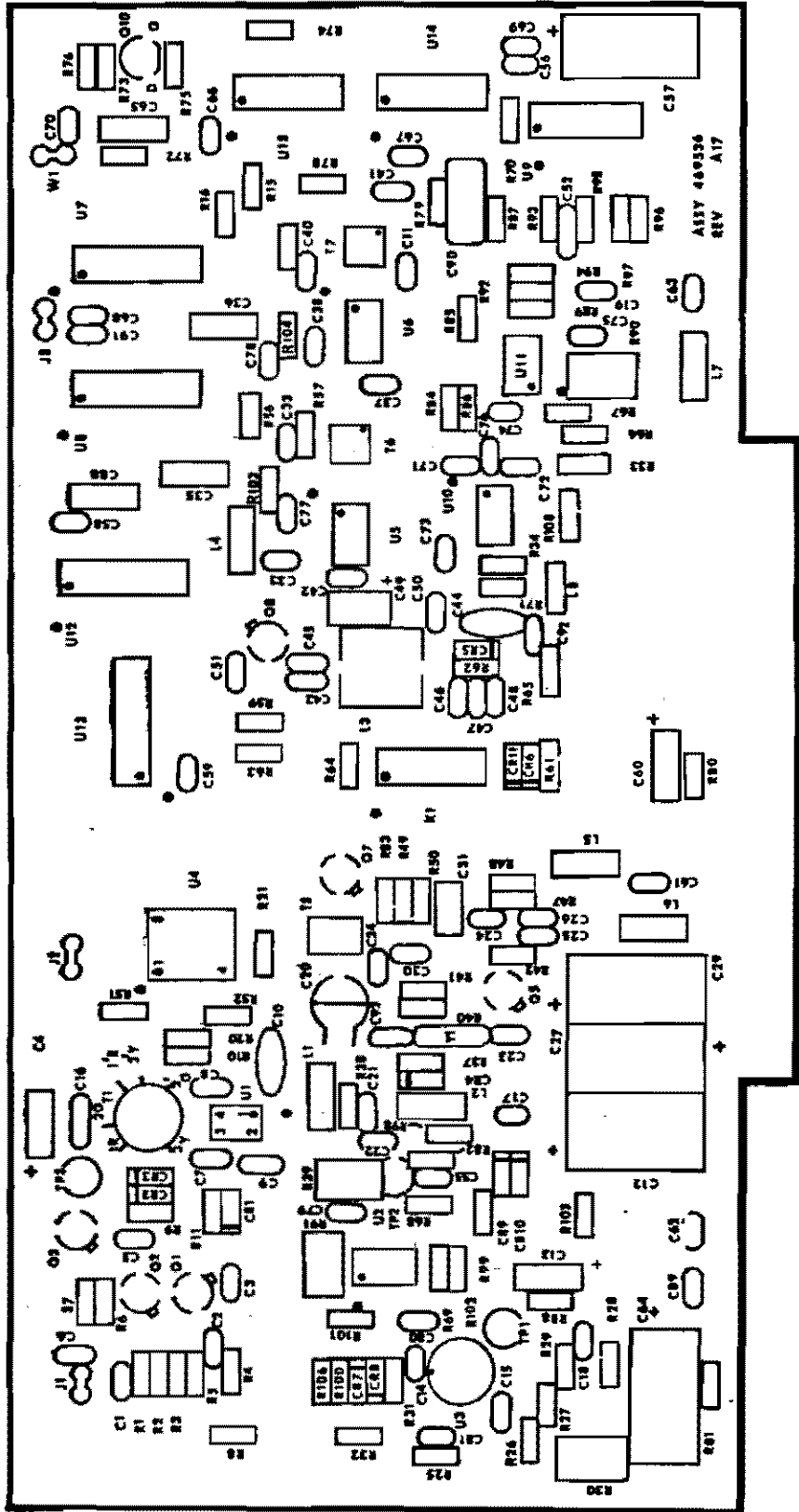


MIXER SECTION

A16 - SYNTHESIZER 3 (10 - 20 MHz)

FROM SH1 A16-A2 (D)

FROM A16-A2-B SH 1



A17 SYNTHESIZER 4 (80.2&94 MHz)

Assembly : 469536  
 Stock Number : 180190

ASSY, 94MHZ, SOURCE, A17

REV K2  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147232	469772	P. C., CARD, A17		DEF
3	1	000019	DMS	CAP, MICA, (SELECTED AT TEST)	C93	ARC
4	1	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V	C13	KEM
5	1	154058	CK05BX153K	CAP, CER, .015 UF	C92	AVX
7	3	121054	B1591-B-11	MOUNT, BLOCK		USE
9	1	130264	469400-7	SHIELD, R. F.		DSI
10	1	130237	469798	COVER, SHIELD, RF		DSI
14	29	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1-3, 6, 14, 15, 17, 18, 42, 56, 58, 59, 61-63, 66 , 67-70, 72-78, 85, 91	ERI
15	1	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C4	SPG
16	1	163066	DM5FC331J	CAP, MICA, 330 PF	C5	ARC
17	6	163052	DM5CC100J	CAP, MICA, 10 PF	C7, 8, 16, 25, 37, 47	ARC
18	1	163072	DM5EC510J	CAP, MICA, 51 PF	C9	ARC
19	2	163019	DM15-102J	CAP, MICA, 1000 PF	C10	ARC
20	3	154053	CK05BX102K	CAP, CER, .001 UF	C22, 24, 34	AVX
21	1	163045	DM5FA201J	CAP, MICA, 200 PF	C81	ARC
22	1	164001	187-0106-005	CAP, ADJ, 2-12 PF	C20	EFJ
23	1	163027	DM15-431J	CAP, MICA, 430 PF	C41	ARC
24	2	163061	DM5EC270J	CAP, MICA, 27 PF	C21, 23	ARC
25	1	163049	DM5CC020D	CAP, MICA, 2 PF, 300V	C26	ARC
26	1	163082	DM5FY391J	CAP, MICA, 390 PF	C19*	ARC
27	7	154043	RPE121C06102J100V	CAP, CER, .001 UF, 100V	C30, 32, 33, 38, 40, 50, 51	ERI
28	1	163001	DM10-391J	CAP, MICA, 390 PF	C52	ARC
29	2	158016	T368-C157-M006AS	CAP, TANT, 150 UF, 6V	C88, 90	KEM
30	6	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C31, 35, 36, 49, 60, 65	SPG

Assembly : 469536  
Stock Number : 180190

ASSY, 94MHZ, SOURCE, A17

REV K2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
32	1	163048	DM5CC010D	CAP, MICA, 1 PF	C43	ARC
33	2	163054	DM5FC111J	CAP, MICA, 110 PF	C45, 48	ARC
34	1	163070	DM5EC470J	CAP, MICA, 47 PF	C46	ARC
35	2	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C55, 71	AVX
36	4	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C12, 27, 29, 57	SPG
37	1	158002	CS13BB337K	CAP, TANT, 330 UF, 6V	C64	SPG
38	1	163015	DM10-510J	CAP, MICA, 51 PF	C44	ARC
40	3	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C11, 79, 80	ERI
41	2	172071	1N751A	DIODE, ZENER, 5.1V, .4W, 5%	CR9, 10	MOT
42	5	172010	1N914	DIODE, SILICON, D035	CR1, 6-8, 11	MOT
43	1	172076	5082-0180	DIODE, SILICON	CR2	HEW
44	1	172081	5082-2835	DIODE, SILICON	CR3	HEW
45	2	172084	DKV6520B	DIODE, VARICAP	CR4, 5	ALI
46	1	166018	WD-18, 000	INDUCTOR, 18 MH	L8	NYT
47	1	145074	PRME-1A12	RELAY, SPST	K1	CPC
48	1	134112	472102N	ASSY, INDUCTOR, TABULATED	L3 (USE 472102-29)	DSI
49	1	166003	RFC-S-.15	INDUCTOR, .15 UH	L1*	NYT
50	1	166020	WD-47	INDUCTOR, 47 UH	L4	NYT
51	3	166015	WD-10	INDUCTOR, 10 UH	L5, 6, 7	NYT
52	1	166004	RFC-S-.22	INDUCTOR, .22 UH	L2*	NYT
53	1	171076	2N2907A	TRANSIS, PNP	Q1	MOT
54	2	171073	2N2363A	TRANSIS, NPN	Q2, 3	MOT
55	1	171087	2N5173	TRANSIS, NPN	Q8	MOT
56	1	171090	AT-0025	TRANSIS, NPN	Q5	AVN
57	1	171115	2N2857	TRANSIS, NPN	Q7	MOT
58	1	171097	MPFB20	TRANSIS, FET	Q10	MOT

Assembly : 469536  
 Stock Number : 180190

ASSY, 94MHZ, SOURCE, A17

REV K2  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
60	1	152030	TG-1/8, 4.7K	THERMISTER, 4.7K	R82	
61	2	153072	3299W-1-104K	RES, ADJ, 100K	R90, 91	BRN
62	1	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5X	R73	ROM
63	1	153071	3299W-1-103K	RES, ADJ, 10K	R30	BRN
64	1	153077	3299W-1-503K	RES, ADJ, 50K	R39	BRN
65	2	148029	RL07S512G	RES, M. FILM, 5.1K, 2X	R37, 71	CGE
66	2	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5X	R1, 57	ROM
67	2	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5X	R2, 3	ROM
68	2	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5X	R4, 5	ROM
69	2	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5X	R6, 63	ROM
70	1	150036	R25J1.2K	RES, C. FILM, 1.2K, 1/4W, 5X	R7	ROM
71	1	150133	R25J22	RES, C. FILM, 22 HMS, 1/4W, 5X	R8	ROM
72	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5X	R100	ROM
73	3	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R49, 70, 79	
75	3	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R76, 86, 88	ROM
76	4	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5X	R20, 61, 62, 65	ROM
77	2	148204	CT41M2X	RES, MF, 1M, 1/4W2X, 100PPM, RL07	R31, 101	CGE
78	2	150149	R25J62	RES, C. FILM, 62 HMS, 1/4W, 5X	R21, 51	ROM
79	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5X	R50	ROM
80	1	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5X	R80	ROM
81	1	150135	R25J2.7	RES, C. FILM, 2.7 HMS, 1/4W, 5X	R81	ROM
82	1	150125	R25J11K	RES, C. FILM, 11K, 1/4W, 5X	R84	ROM
83	4	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5X	R40, 41, 47, 48	ROM
84	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5X	R52	ROM
85	2	150168	R25J1	RES, C. FILM, 1 HMS, 1/4W, 5X	R15, 16	ROM
87	4	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5X	R9-11, 108	ROM

Assembly : 469536  
Stock Number : 180190

ASSY, 94MHZ, SOURCE, A17

REV K2  
05/01/86

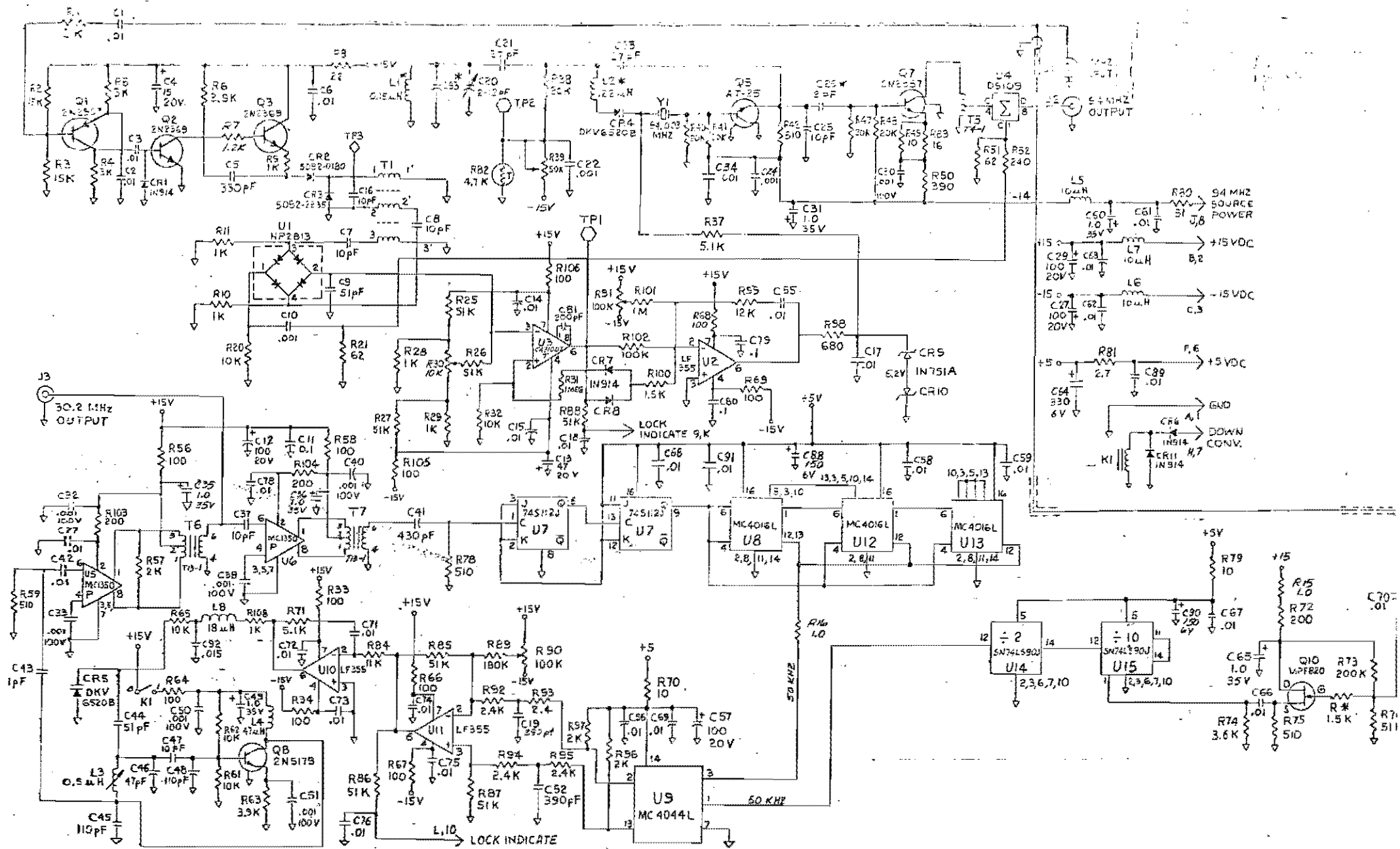
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
88	1	148014	RL07S203G	RES, M. FILM, 20K, 2X	R38	CGE
90	3	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5X	R72, 103, 104	ROM
91	4	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5X	R42, 59, 75, 78	ROM
92	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5X	R83	ROM
93	11	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5X	R34, 56, 58, 64, 66-69, 33, 105, 106	ROM
95	1	134040	T4-1	TRANSFORMER	T5	MCL
97	1	172060	5082-2B13	DIODE, BRIDGE	U1	HEW
98	1	161018	FPS-103	POWER, DIVIDER	U4	MCL
99	1	170568	CA3100T	I. C. , 3100	U3	RCA
100	1	170675	SN74S112J	I. C. , 74S112, CER	U7	TXI
101	2	170600	MC1350P	I. C. , 1350	U5, 6	MOT
102	3	170608	MC4016L	I. C. , 4016	U8, 12, 13	MOT
103	1	170609	MC4044P	I. C. , 4044	U9	MOT
104	3	170586	LF355N	I. C. , 355, FET OP-AMP, PLAS, 8 DIP	U2, 10, 11	NSC
105	1	174001	396-1 HC-18/U	CRYSTAL, 94.003 MHZ	Y1	PZC
106	2	170560	74LS90J	I. C. , 74LS90, CER	U14, 15	MOT
107	1	134063	472108-1, 2	ASSY, TRANSFORMER, TABULATED	T1 (USE 472108-2)	DSI
108	2	134039	T13-1T	TRANSFORMER	T6, 7	MCL
111	5	141213	508-AG-10D	SOCKET, 8 PIN, IC	U2, 5, 6, 10, 11	AUG
112	3	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U9, 14, 15	AUG
113	4	141225	516-AG-10D	SOCKET, 16 PIN, I. C.	U7, 8, 12, 13	AUG
114	3	142027	450-7004-01-03-00	JACK	TP1-3	CAM
116	1	125162	UT. 034TP	CABLE, COAX, .035DIA		CAS
118	1	150013	R25J3.6K	RES, C. FILM, 3.6K, 1/4W, 5X	R74	ROM
119	1	148180	C4100K2X	RES, MF, 100K, 1/4W2X, 100PPM, RL07	R102	CGE

Assembly : 469536  
Stock Number : 180190

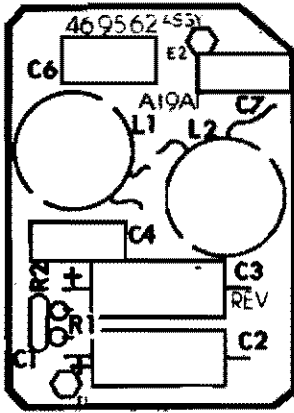
ASSY, 94MHZ, SOURCE, A17

REV K2  
05/01/86

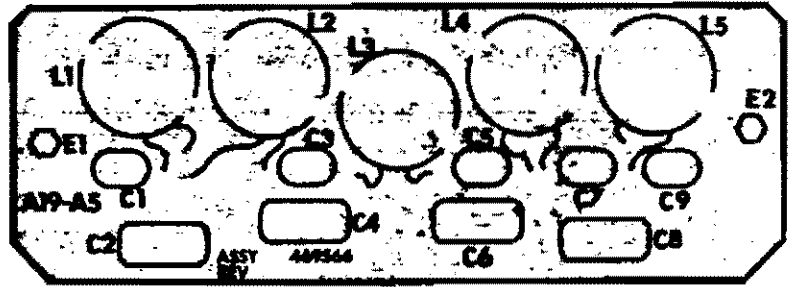
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120	1	148158	C412K2X	RES, MF, 12K, 1/4W2X, 100PPM, RL07	R99	F
121	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5X	R98	ROM
122	4	148141	C42.4K2X	RES, MF, 2.4K, 1/4W2X, 100PPM, RL07	R92-95	CGE
123	1	150086	R25J180K	RES, C. FILM, 180K, 1/4W, 5X	R89	ROM
126	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
128	1	120204	2502	SCREW, PNHD, 4/40, 1/2		HHS
129	1	120208	2554	NUT, HEX, NYLON, 4/40		HHS
131	1	130274	469400-9	SHIELD, R. F.		DSI
132	1	130273	469400-8	SHIELD, R. F.		DSI
133	1	149026	R10J1.5K	RES, C. FILM, 1.5K, 1/8W, 5X	R109	ROM
134	2	148139	C42K2X	RES, MF, 2K, 1/4W2X, 100PPM, RL07	R96, 97	CGE
135	5	148173	C451K2X	RES, MF, 51K, 1/4W2X, 100PPM, RL07	R25-27, 65, 67	CGE
136	1	148156	C410K2X	RES, MF, 10K, 1/4W2X, 100PPM, RL07	R32	CGE
137	2	148132	C41K2X	RES, MF, 1K, 1/4W2X, 100PPM, RL07	R28, 29	
138	1	179151	469492	ASSY, MOUNTING PLATES, A17		DSI



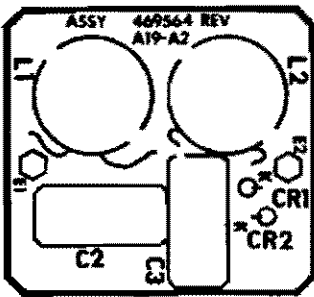
A17 - SYNTHESIZER 4 (30.2 & 94 MHz)  
A17-7



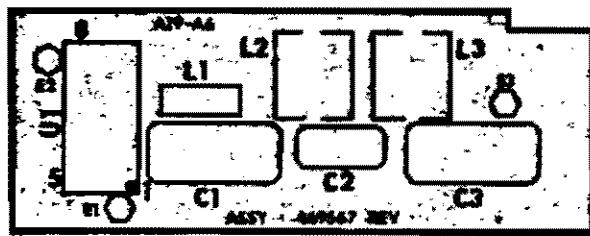
A19-A1



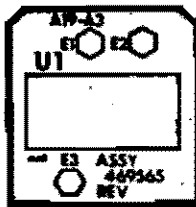
A19-A5



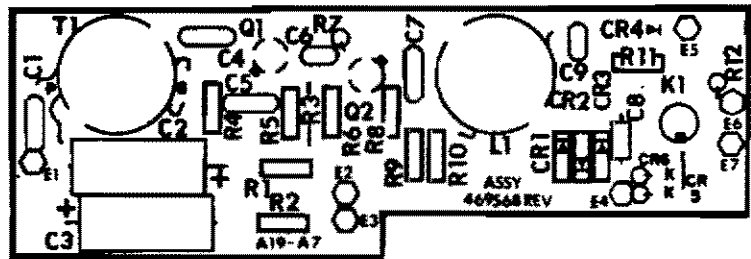
A19-A2



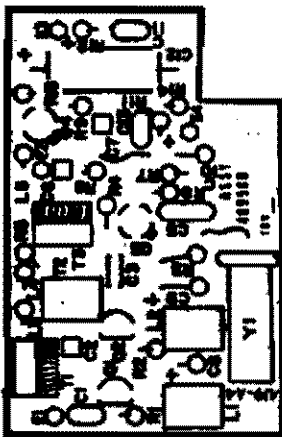
A19-A6



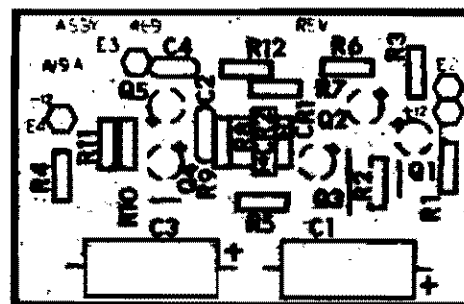
A19-A3



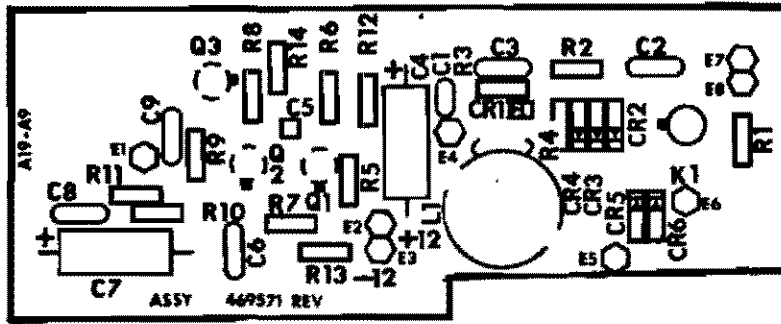
A19-A7



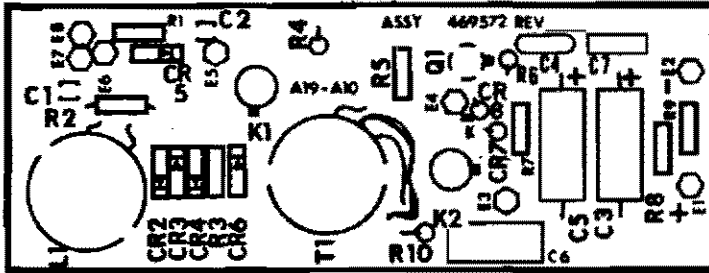
A19-A4



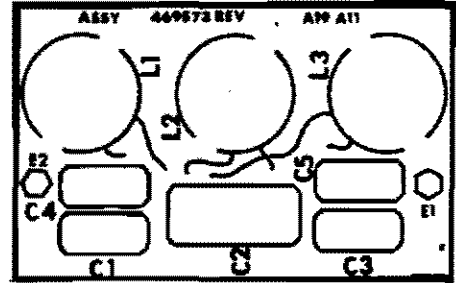
A19-A8 & A19-A12



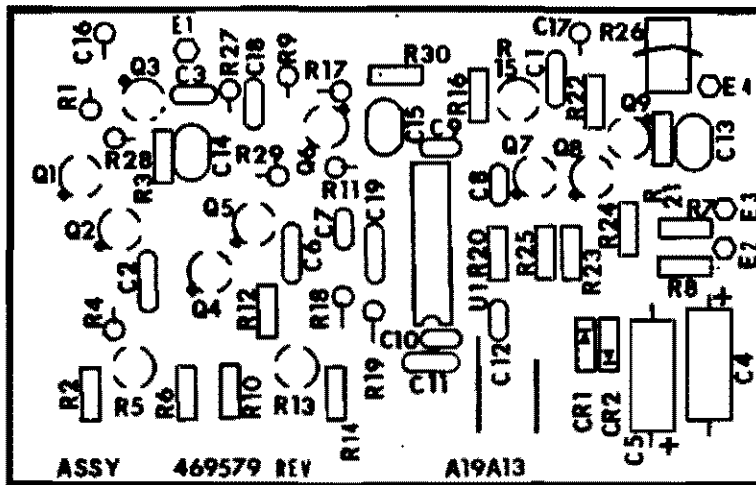
A19-A9



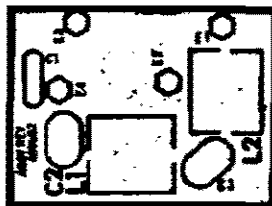
A19-A10



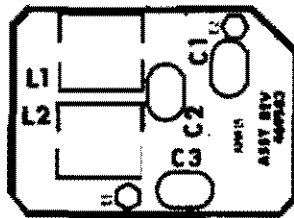
A19-A11



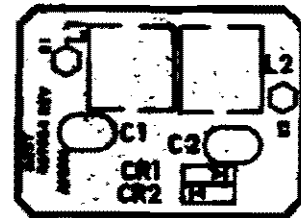
A19-A13



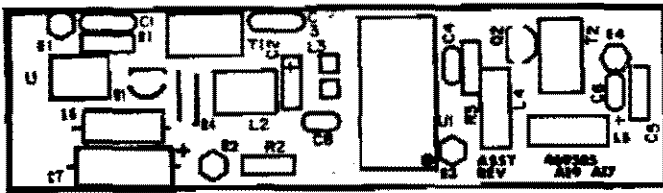
A19-A14



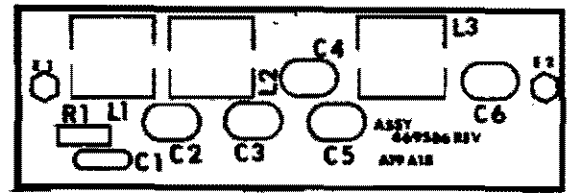
A19-A15



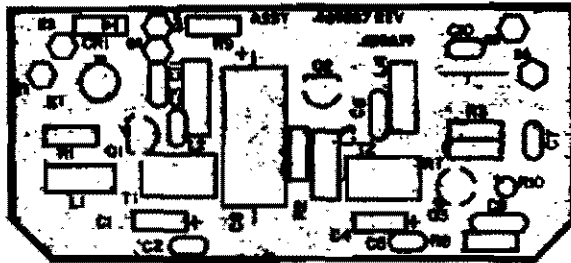
A19-A16



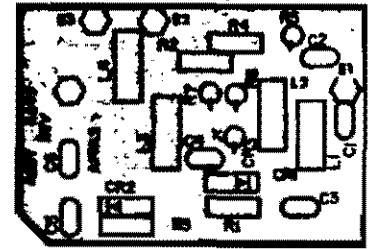
A19-A17



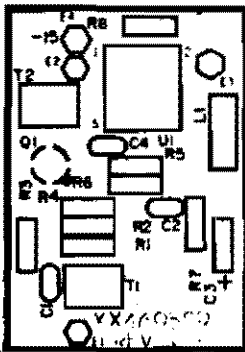
A19-A18



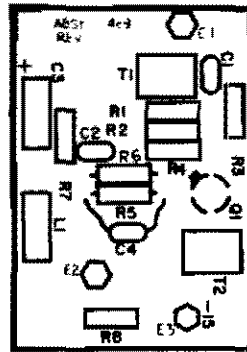
A19-A19



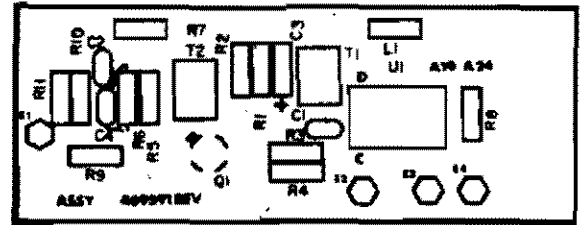
A19-A20, A19-A22 & A19-A25



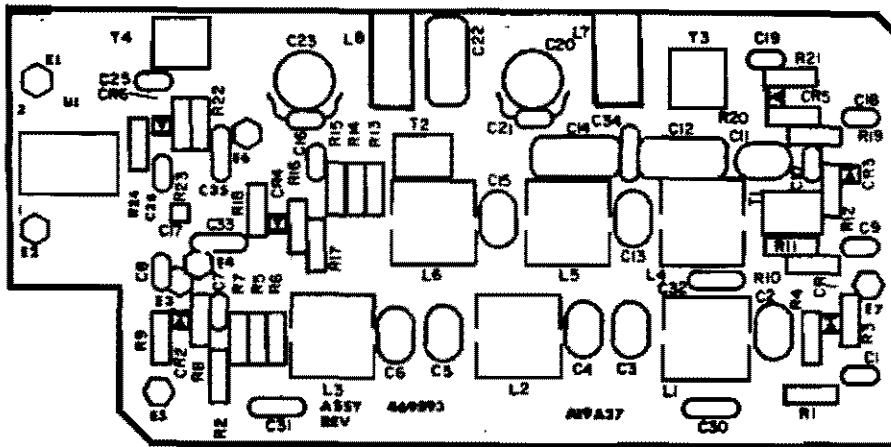
A19-A21



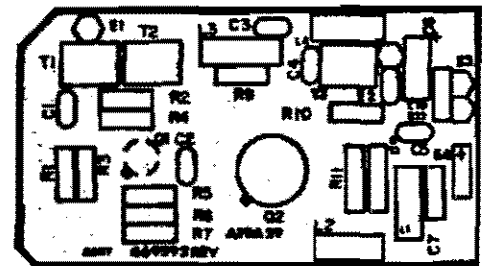
A-19-23 & A19-A26



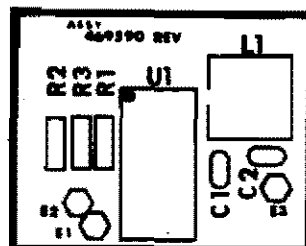
A19-A24



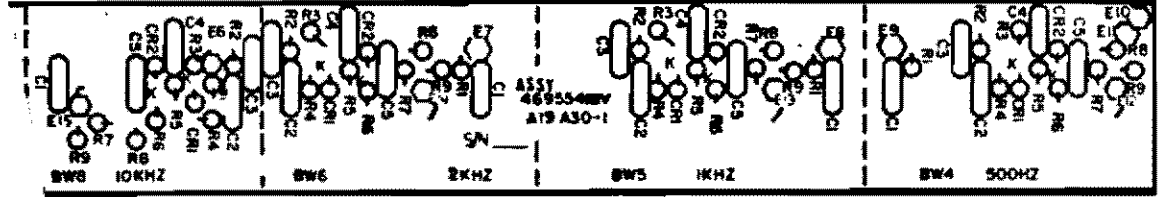
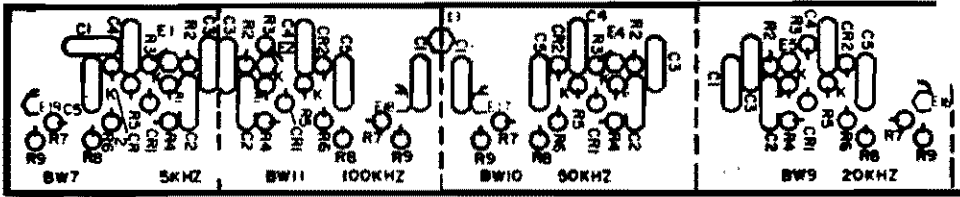
A19-A27



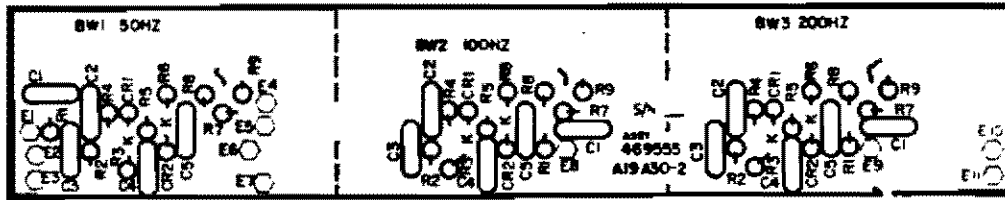
A19-A29



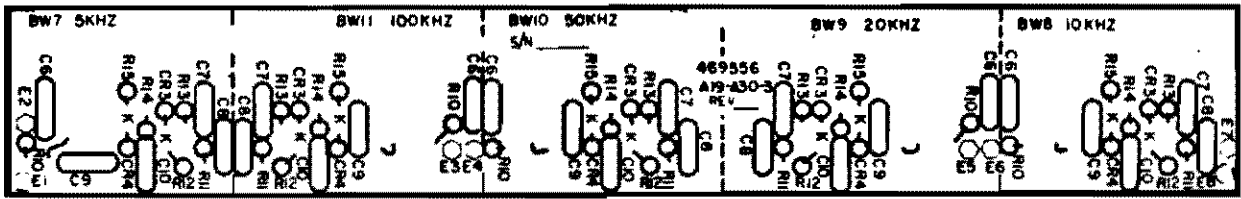
A19-A28



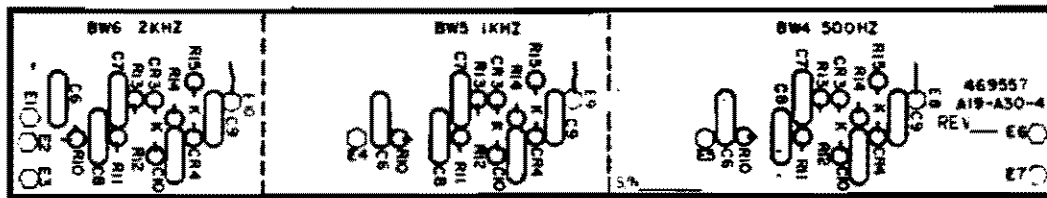
A19-A30-1



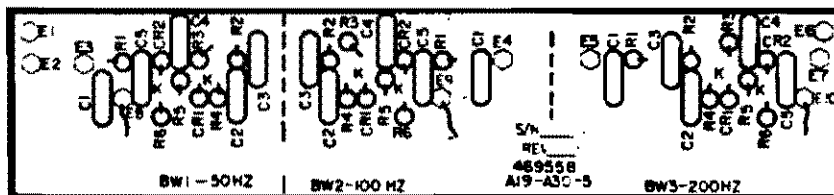
A19-A30-2



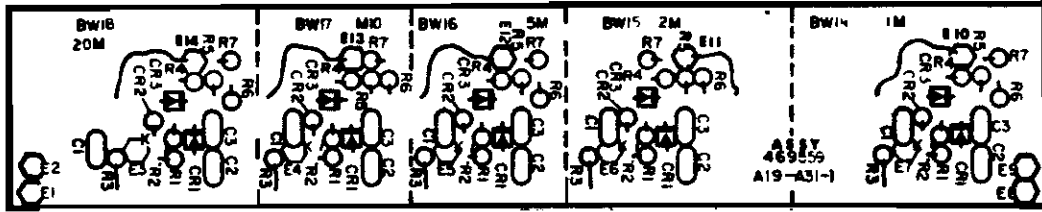
A19-A30-3



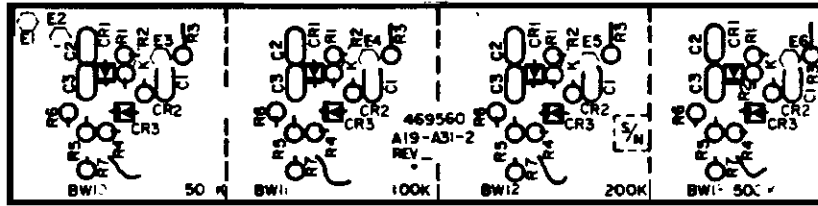
A19-A30-4



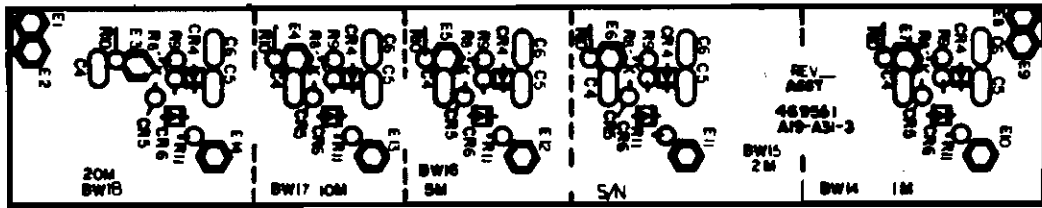
A19-A30-5



A19-A31-1



A19-A31-2



Assembly : 469503  
Stock Number : 179003

ASSY, CHASSIS, IF

REV J5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	130144	469020	FAB, CHASSIS, IF		DSI
2	1	180204	469562	ASSY, A19-A1, FILTER, LP	A1	DSI
3	1	180206	469564	ASSY, A19-A2, FILTER	A2	DSI
4	1	180207	469565	ASSY, A19-A3, UPCON	A3	DSI
5	1	180221	469580	ASSY, A19-A4	A4	DSI
6	1	180208	469566	ASSY, A19-A5, FILTER, BP	A5	DSI
7	1	180209	469567	ASSY, A19-A6, DWN, CONN	A6	DSI
8	1	180210	469568	ASSY, A19-A7, AMP, AGC	A7	DSI
9	1	180211	469570	ASSY, A19-A8, AMP	A8	DSI
10	1	180212	469571	ASSY, A19-A9, AMP, AGC	A9	DSI
11	1	180213	469572	ASSY, A19-A10, SEL	A10	DSI
12	1	180214	469573	ASSY, A19-A11, 200KHZ, BP, FILTER	A11	DSI
13	1	180220	469579	ASSY, LOG, AMP, A19-A13	A13	DSI
14	1	180222	469582	ASSY, FILTER, LP, A19-A14	A14	DSI
15	1	180223	469583	ASSY, FILTER, LP, A19-A15	A15	DSI
16	1	180224	469584	ASSY, FILTER, LP, A19-A16	A16	DSI
17	1	180225	469585	ASSY, CONV, B2, A19-A17	A17	DSI
18	1	180226	469586	ASSY, FILTER, BP, A19-A18	A18	DSI
19	1	180227	469587	ASSY, AMP, DET, A19-A19	A19	DSI
20	1	180228	469588	ASSY, PIN, ATT, A19-A20	A20	DSI
21	1	180229	469589	ASSY, AMP, A19-A21	A21	DSI
22	1	180231	469591	ASSY, AMP, A19-A24	A24	DSI
23	1	180233	469593	ASSY, FILTER, BP, A19-A27	A27	DSI
24	1	180230	469590	ASSY, DN, CONV, A19-A28	A28	DSI
25	1	180232	469592	ASSY, OUTPUT, AMP, A19-A29	A29	DSI
26	1	180195	469554	ASSY, A19-A30-1, SWITCH	A30.1	DSI

Assembly : 469503  
Stock Number : 179003

ASSY, CHASSIS, IF

REV J5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
27	1	180197	469555	ASSY, A19-A30-2, SWITCH	A30.2	DSI
28	1	180198	469556	ASSY, A19-A30-3, SWITCH	A30.3	DSI
29	1	180199	469557	ASSY, A19-A30-4, SWITCH	A30.4	DSI
30	1	180200	469558	ASSY, A19-A30-5, SWITCH	A30.5	DSI
31	1	180201	469559	ASSY, A19-A31.1, SWITCH	A31.1	DSI
32	1	180202	469560	ASSY, A19-A31-2, SWITCH	A31.2	DSI
33	1	180203	469561	ASSY, A19-A31-3, SWITCH	A31.3	DSI
34	1	180205	469563	ASSY, A19-A31-4, SWITCH	A31.4	DSI
35	80	162001	1270-016	CAP, FEEDTHRU	C1THRU C80	ERI
36	22	141220	051-049-0000-220	CONN, COAX	BD1, 2, J2-21	SEA
37	27	141222	051-311-3196-220	CONN, COAX, SMB, RTA		SEA
39	1	167014	469513	ASSY, 5 KHZ, FILTER	FL7	DSI
40	1	167015	469514	ASSY, 50, 100 KHZ, FILTER	FA3	DSI
41	1	167016	469515	ASSY, 10, 20 KHZ, FILTER	FA2	DSI
42	1	167017	469516	ASSY, 5, 10, 20 MHZ, FILTER	FA5	DSI
43	1	167018	469517	ASSY, 1, 2 MHZ, FILTER	FA4	DSI
44	1	167019	469518	ASSY, 2 KHZ, FILTER	FL6	DSI
45	1	167068	469374	FILTER, CRYSTAL, 1 KHZ	FL5	DSI
46	1	167067	469373	FILTER, CRYSTAL, 500 HZ	FL4	DSI
47	1	167066	469372	FILTER, CRYSTAL, 200 HZ	FL3	DSI
48	1	167065	469371	FILTER, CRYSTAL, 100 HZ	FL2	DSI
49	1	167064	469370	FILTER, CRYSTAL, 50 HZ	FL1	DSI
50	1	167061	469376	FILTER, CRYSTAL, 100 KHZ	FL13	DSI
51	1	167062	469377	FILTER, CRYSTAL, 200 KHZ	FL14	DSI
52	1	167020	469519	ASSY, 500 KHZ, FILTER	FL15	DSI
53	1	167060	469375	FILTER, CRYSTAL, 50 KHZ	FL12	DSI

Assembly : 469503  
 Stock Number : 179003

ASSY, CHASSIS, IF

REV J5  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
54	1	163060	DM5CC220J	CAP, MICA, 22 PF	C81	F
55	2	166002	RFC-S-, 12	INDUCTOR, .12 UH	L7, 8	NYT
56	8	142039	7A-, .250	LUG, GND, 1/4, ID		ZIE
57	1	142022	334, .375	LUG, GND, 3/8, ID		ZIE
58	138	120178	MS51957-4	SCREW, PNHD, 2/56, 5/16		HPR
59	18	120169	MS51957-18	SCREW, PNHD, 4/40, 5/8		HPR
61	106	120170	MS51957-2	SCREW, PNHD, 2-56X3/16		HPR
62	106	120132	MS35338-134	WASHER, SPLITLOCK, #2		HPR
64	24	120260	NAS671C6	NUT, HEX, 6-32		HPR
65	8	120259	NAS671C4	NUT, 4/40		HPR
66	2	120258	NAS671C2	NUT, HEX, 2-56		HPR
67	55	125160	R6178 B/U	CABLE, COAX		ALC
68	2	120237	3585-4CN0375	INSERT, HELECOIL, 1/4-20X. 375		HCL
69	1	179071	469030	ASSY, COVER, IF CHASSIS		
70	1	179064	469031	ASSY, COVER, IFCHASSIS, #2		DSI
71	1	179063	469032	ASSY, COVER, IF CHASSIS #3		DSI
72	1	179065	469033	ASSY, COVER, IF CHASSIS #4		DSI
73	1	179066	469034	ASSY, COVER, IF CHASSIS #5		DSI
74	1	130167	469156	CONN, MOUNT, BRACKET		DSI
75	10	120185	MS51957-6	SCREW, PNHD, 2/56X7/16		HPR
76	1	142015	1480C	TERMINAL, TURRET		USE
77	1	141345	050-610-3196-310	CONN, COAX		SEA
78	1	180217	469576	ASSY, AMP, A19-A23	A23	DSI
79	1	180215	469574	ASSY, A19-A12, AMP	A12	DSI
80	1	180216	469575	ASSY, A19-A22, AGC	A22	DSI
81	1	180218	469577	ASSY, AGC, A19-A25	A25	DSI

Assembly : 469503  
Stock Number : 179003

ASSY, CHASSIS, IF

REV J5  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
82	1	180219	469578	ASSY, AMP, A19-A26	A26	DSI
83	3	166022	WD-68	INDUCTOR, 68 UH	L5, 9, 10	NYT
84	2	154047	RPE113Z5U105M50V	CAP, CER, 1 UF, 50V, 20%	C82, 83	ERI
86	8	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
87	4	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
88	4	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
89	8	120255	NAS62004	WASHER, FLAT, #4		HPR
90	1	148022	RL075360G	RES, M. FILM, 36 HMS, 2%	R1	CGE
91	1	180346	469498	ASSY, PCB, A19-A32, 30MHZ, DL DET	A32	DSI
92	1	180347	469499	ASSY, PCB, A19-A33, 200KHZ, DL DET	A33	DSI
93	2	166015	WD-10	INDUCTOR, 10 UH	L11, 12	NYT
94	1	125307	MPNY-750NA	MOUNTING PAD, CABLE TIE		BRD
95	1	161009	50DA100-131	ATT, PROG, 100dB	AT7	ALN
96	1	128033	469167	INSULATOR, ATTENUATOR		DSI
97	4	120211	2707-18550-N116	WASHER, NYLON, SHLDR, 5/16		AMA
98	1	145071	CS33S10	RELAY, SPDT	K1	TRS
99	2	120345	N440-3/4-PNHD, NAT	SCREW, NYLON, 4-40X3/4		MIL
100	2	172010	1N914	DIODE, SILICON, D035		MOT
101	1	128032	469166	INSULATOR, RELAY		DSI
102	2	142014	1480A	TERMINAL, INSULATED		USE
103	1	166015	WD-10	INDUCTOR, 10 UH		NYT
104	6	125163	UTB5TP	CABLE, COAX		UTI
105	6	125169	#9.1500-9T	SLEEVING, TEFLON, .070 LB		ALC
106	1	142037	75, #4	LUG		ZIE
107	3	141358	227868-1	CONN, COAX, SMA, 085		AMP
108	1	141218	051-011-9702-220	CONN, COAX, SME, RTA		SEA

Assembly : 469503  
Stock Number : 179003

ASSY, CHASSIS, IF

REV JS  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
109	1	179123	469468	ASSY, IF CHASSIS, CONN		DPT
110	4	172066	1N4002	DIODE, SILICON	CR1-4	MOT

Assembly : 469498  
Stock Number : 180346

ASSY, PCB, A19-A32, 30MHZ, OL DET

REV A3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147297	469437	PCB, OVERLOAD DETECTOR		DSI
2	1	170620	LM311J-8	I. C. , 311, COMPARATOR	U1	NSC
3	1	170745	LM555	I. C. , 555, TIMER, PLAS, 8 DIP	U2	NSC
4	1	154055	CK05BX104K	CAP, CER, .10 UF, 50V	C1	AVX
5	1	154074	CK06BX474K	CAP, CER, .47 UF	C2	AVX
6	2	154050	RPE11425U105M	CAP, CER, 1 UF	C3, 6	ERI
7	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C4	AVX
8	1	154065	CK05BX473K	CAP, CER, .047 UF, 50V	C5	AVX
9	3	142066	140-1785-02-01-00	TERMINAL, BIFURCATED	E1-3	CAM
10	3	172070	5002-2000	DIODE, SILICON	CR1-3	HEW
11	1	150000	R25J22K	RES, C. FILM, 22K, 1/4W, 5%	R1	ROM
12	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R2	ROM
13	1	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5%	R3	ROM
14	1	150023	R25J8.2K	RES, C. FILM, 8.2K, 1/4W, 5%	R4	ROM
15	1	153100	3292W-1-102	RES, VARIABLE, CERMET, 1K	R5	BRN
16	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R6	ROM
17	1	150173	R25J360K	RES, C. FILM, 360K, 1/4W, 5%	R7	ROM
18	1	150129	R25J13K	RES, C. FILM, 13K, 1/4W, 5%	R8	ROM
19	1	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R9	ROM
21	1	134054	469407	ASSY, TRANSFORMER, TOROID	T1	DSI
22	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
23	2	120302	60516390	SCREW, PNHD, #4X1/4, PHIL, SELFTAP		SOU

Assembly : 469499  
 Stock Number : 180347

ASSY, PCB, A19-A33, 200KHZ, OL DET REV A3  
 05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147297	469437	PCB, OVERLOAD DETECTOR		
2	1	170620	LM311J-B	I. C. , 311, COMPARATOR	U1	NSC
3	1	170745	LM555	I. C. , 555, TIMER, PLAS, 8 DIP	U2	NSC
4	1	154055	CK05BX104K	CAP, CER, . 10 UF, 50V	C1	AVX
5	1	154074	CK06BX474K	CAP, CER, . 47 UF	C2	AVX
6	2	154050	RPE11475U105M	CAP, CER, 1 UF	C3, 6	ERI
7	1	154054	CK05BX103K	CAP, CER, . 01 UF, 100V	C4	AVX
8	1	154065	CK05BX473K	CAP, CER, . 047 UF, 50V	C5	AVX
9	3	142066	140-1785-02-01-00	TERMINAL, BIFURCATED	E1-3	CAM
10	3	172078	5082-2800	DIODE, SILICON	CR1-3	HEW
11	1	150008	R25J22K	RES, C. FILM, 22K, 1/4W, 5%	R1	ROM
13	1	150031	R25J1M	RES, C. FILM, 1M, 1/4W, 5%	R3	ROM
14	1	150023	R25J8. 2K	RES, C. FILM, 8. 2K, 1/4W, 5%	R4	ROM
15	1	153100	3292W-1-102	RES, VARIABLE, CERMET, 1K	R5	L
16	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R2, 6	ROM
17	1	150173	R25J360K	RES, C. FILM, 360K, 1/4W, 5%	R7	ROM
18	1	150129	R25J13K	RES, C. FILM, 13K, 1/4W, 5%	R8	ROM
19	1	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R9	ROM
21	1	134050	469405	ASSY, TRANSFORMER, TORROID	T1	DSI
22	1	166065	469406	ASSY, INDUCTOR, 720 UH	L1	DSI
23	2	120302	60516390	SCREW, PNHD, #4X1/4, PHIL, SELFTAP		SOU
24	2	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
25	2	125307	MPNY-750NA	MOUNTING PAD, CABLE TIE		BRD
26	2	120207	2505	SCREW, PNHD, 6/32, 1/2		HHS
27	2	120206	2258-N171	WASHER, FLAT, INSULATING, #8		AMA
28	2	120209	2555	NUT, HEX, NYLON, 6/32		HHS

Assembly : 469562  
Stock Number : 180204

ASSY, A19-A1, FILTER, LP

REV D1  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C1	ERI
2	2	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C2, 3	SPB
3	1	155025	F320B-1802J-050	CAP, FILM, .018 UF	C4	UCC
4	2	155027	F320B-3302J-050	CAP, FILM, .033 UF	C6, 7	UCC
7	2	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R1, 2	ROM
8	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
9	2	142012	140-2083-02-01-00	TERMINAL, BIF	E1, 2	CAM
12	1	147158	469062	P. C., CARD, A19-A1		DSI
14	2	121056	1127 (350)	SPACER, GLASS		KKR
15	1	134065	472111B	ASSY, INDUCTOR, TABULATED	L1 (USE 472111-3)	DSI
16	1	134066	472111C	ASSY, INDUCTOR, TABULATED	L2 (USE 472111-7)	DSI

Assembly : 469564  
Stock Number : 180206

ASSY, A19-A2, FILTER

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	155027	F320B-3302J-050	CAP, FILM, .033 UF	C2	UCC
2	1	155025	F320B-1002J-050	CAP, FILM, .018 UF	C3	UCC
3	2	172091	UM4001B	DIODE, PIN	CR1, 2	UNI
5	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
6	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
9	2	121049	903-060	SPACER, COMP, .0471. D.		BIV
10	1	147160	469064	P. C. , CARD, A19-A2		DSI
12	1	134066	472111C	ASSY, INDUCTOR, TABULATED	L1 (USE 472111-6)	DSI
13	1	134065	472111B	ASSY, INDUCTOR, TABULATED	L2 (USE 472111-2)	DSI

Assembly : 469565  
Stock Number : 180207

ASSY, A19-A3, UPCON

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	161023	SRA-1	MIXER, DOUBLE, BAL	U1	MCL
2	8	142027	450-7004-01-03-00	JACK		CAM
3	4	120216	350-1249-11-07-00	STANDOFF, 1/4		CAM
4	3	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
5	1	147161	469065	P. C. , CARD, A19-A3		DSI

Assembly : 469580

Stock Number : 180221

ASSY, A19-A4

REV D4

05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	3	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1, 11, 13	
2	3	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C2, 3, 7	ERI
3	3	158008	CS138F105K	CAP, TANT, 1 UF, 35V	C8, 9, 10	SPG
4	1	158005	CS138E156K	CAP, TANT, 15 UF, 20V	C12	SPG
5	2	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C5, 6	ERI
6	3	134040	T4-1	TRANSFORMER	L1, 2, T2	MCL
7	3	166015	WD-10	INDUCTOR, 10 UH	L3, 4, 5	NYT
8	2	171097	MPF820	TRANSIS, FET	Q1, 2	MOT
9	1	171087	2N5179	TRANSIS, NPN	Q3	MOT
10	1	171073	2N2369A	TRANSIS, NPN	Q4	MOT
11	2	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R1, 2	ROM
12	1	150054	R25J20	RES, C. FILM, 20 HMS, 1/4W, 5%	R8	ROM
13	2	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R3, 5	ROM
14	1	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R4	F
15	2	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R6, 11	ROM
16	1	150002	R25J330	RES, C. FILM, 330 HMS, 1/4W, 5%	R7	ROM
17	1	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R9	ROM
18	1	150089	R25J18	RES, C. FILM, 18 HMS, 1/4W, 5%	R12	ROM
19	1	150075	R25J240K	RES, C. FILM, 240K, 1/4W, 5%	R13	ROM
20	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R14	ROM
22	1	174003	3MHZ-433340	CRYSTAL, 3 MHZ	Y1	ICC
23	5	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
24	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
25	1	147170	469080	P. C., CARD, A19-A4		DSI
26	13	121056	1127 (350)	SPACER, GLASS		KKR
27	2	134078	472106-1, 2	ASSY, TRANSFORMER, TABULATED	T1 (USE 472106-1)	DSI

Assembly : 469580  
Stock Number : 180221

ASSY, A19-A4

REV D4  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
28	1	163016	DM10-680J	CAP, MICA, 68 PF	T3(USE 472106-2) C14	ARC



Assembly : 469566  
Stock Number : 180208

ASSY, A19-A5, FILTER, BP

REV C1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	5	163073	DM5EC620J	CAP, MICA, 62 PF	C1, 3, 5, 7, 9	ARC
2	2	163022	DM15-911J	CAP, MICA, 910 PF	C2, 8	ARC
3	2	163019	DM15-102J	CAP, MICA, 1000 PF	C4, 6	ARC
5	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
6	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
7	1	147162	469066	P. C., CARD, A19-A5		DSI
10	2	134097	472109-1, 2	ASSY, INDUCTOR, TABULATED	L1 (USE 472109-2) L5 (USE 472109-1)	DSI
11	3	134098	472109-3-5	ASSY, INDUCTOR, TABULATED	L2 (USE 472109-3) L3 (USE 472109-4) L4 (USE 472109-5)	DSI

Assembly : 469567  
Stock Number : 180203

ASSY, A19-A6, DWN, CONN

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	163034	DM19-562J	CAP, MICA, 5600 PF	C1,3	
2	1	155024	F320B-1502J-050	CAP, FILM, .015 UF	C2	UCC
3	1	166019	WD-2.2	INDUCTOR, 2.2 UH	L1	NYT
4	2	134084	472101-5,6	ASSY, INDUCTOR/TRANSFORMER, TAB	L2 (USE 472101-5) L3 (USE 472101-6)	DSI
5	1	161023	SRA-1	MIXER, DOUBLE, BAL	U1	MCL
6	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
7	3	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
8	1	147163	469067	P. C., CARD, A19-A6		DSI

Assembly : 46956A  
Stock Number : 100210

ASSY, A19-A7, AMP, ABC

REV E2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154051	RPE113Z5U334M100V	CAP, CER, .33 UF, 100V	C1	ERI
2	2	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C2, 3	SPG
3	3	154049	RPE122Z5U104M100V	CAP, CER, .1 UF, 100V	C4, 5, 7	ERI
4	1	154048	RPE122Z5U103M	CAP, CER, .01 UF, 100V	C8	ERI
5	2	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C6, 9	ERI
6	3	172091	UM4001B	DIODE, PIN	CR1-3	UNI
7	1	172071	1N751A	DIODE, ZENER, 5.1V, .4W, 5%	CR4	MOT
8	2	172010	1N914	DIODE, SILICON, D035	CR5, 6	MOT
9	1	145067	732-18	RELAY, DPDT	K1	TLR
10	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R1, 2	ROM
11	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R3	ROM
12	1	150035	R25J820	RES, C. FILM, 820 HMS, 1/4W, 5%	R4	ROM
13	2	150144	R25J39K	RES, C. FILM, 39K, 1/4W, 5%	R6, 7	ROM
14	1	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R8	ROM
15	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R9	ROM
16	1	150055	R25J1.3K	RES, C. FILM, 1.3K, 1/4W, 5%	R10	ROM
17	1	150054	R25J20	RES, C. FILM, 20 HMS, 1/4W, 5%	R11	ROM
18	1	150116	R25J56	RES, C. FILM, 56 HMS, 1/4W, 5%	R12	ROM
19	1	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R5	ROM
21	1	171072	2N2222A	TRANSIS, NPN	Q2	MOT
22	1	171083	2N4416	TRANSIS, FET	Q1	MOT
23	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
24	7	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
25	1	147164	469068	P. C., CARD, A19-A7		DSI
28	4	121056	1127(350)	SPACER, GLASS		KKR
29	1	134090	472113E	ASSY, INDUCTOR/TRANSFORMER, TAB	T1 (USE 472113-7)	DSI

Assembly : 469568  
Stock Number : 180210

ASSY, A19-A7, AMP, AGC

REV E2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
30	1	134094	472113I	ASSY, INDUCTOR/TRANSFORMER, TAB	L1 (USE 472113-14)	:

Assembly : 469570  
Stock Number : 180211

ASSY, A19-AB, AMP

REV C  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	158004	CS138E107K	CAP, TANT, 100 UF, 20V	C1, 3	SPG
2	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C2	ERI
3	1	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C4	ERI
4	2	172010	1N914	DIODE, SILICON, D035	CR1, 2	MOT
5	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
6	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
7	3	171072	2N2222A	TRANSIS, NPN	Q1, 2, 4	MOT
8	2	171076	2N2907A	TRANSIS, PNP	Q3, 5	MOT
9	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R1, 4	ROM
10	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R2	ROM
11	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R3	ROM
12	1	150155	R25J9.1K	RES, C. FILM, 9.1K, 1/4W, 5%	R5	ROM
13	1	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R6	ROM
14	1	150043	R25J27K	RES, C. FILM, 27K, 1/4W, 5%	R7	ROM
15	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5%	R8	ROM
16	1	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R9	ROM
17	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R10, 11	ROM
18	1	150035	R25J820	RES, C. FILM, 820 HMS, 1/4W, 5%	R12	ROM
19	1	147165	469070	P. C. , CARD, A19-AB		DSI

Assembly : 469574  
Stock Number : 180215

ASSY, A19-A12, AMP

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	150004	CS13BE107K	CAP, TANT, 100 UF, 20V	C1, 3	
2	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C2	ERI
3	1	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C4	ERI
4	1	154061	CK05BX332K	CAP, CER, .0033 UF	C5	AVX
5	2	172010	1N914	DIODE, SILICON, D035	CR1, 2	MOT
6	3	171072	2N2222A	TRANSIS, NPN	Q1, 2, 4	MOT
7	2	171076	2N2907A	TRANSIS, PNP	Q3, 5	MOT
8	2	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R1, 4	ROM
9	1	149002	R10J1K	RES, C. FILM, 1K, 1/8W, 5%	R2	ROM
10	1	150155	R25J9.1K	RES, C. FILM, 9.1K, 1/4W, 5%	R5	ROM
11	2	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R3, 6	ROM
12	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R7	ROM
13	1	150097	R25J240	RES, C. FILM, 240 HMS, 1/4W, 5%	R8	ROM
14	1	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R9	R
15	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R10, 11	ROM
16	1	150033	R25J47	RES, C. FILM, 47 HMS, 1/4W, 5%	R12	ROM
17	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
18	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
19	1	147165	469070	P. C., CARD, A19-A8		DSI

Assembly : 469571  
Stock Number : 180212

ASSY, A19-A9, AMP, ABC

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1	ERI
2	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C5	AVX
3	5	154049	RPE122Z5U104M100V	CAP, CER, .1 UF, 100V	C2, 3, 6, 8, 9	ERI
4	2	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C4, 7	SPG
5	1	172072	1N753A	DIODE, ZENER, 6.2V, .4W, 5%	CR1	MOT
6	3	172091	UM4001B	DIODE, PIN	CR2-4	UNI
7	2	172010	1N914	DIODE, SILICON, D035	CR5, 6	MOT
8	1	145067	732-18	RELAY, DPDT	K1	TLR
9	1	134094	472113I	ASSY, INDUCTOR/TRANSFORMER, TAB	L1 (USE 472113-15)	DSI
10	1	171083	2N4416	TRANSIS, FET	Q1	MOT
11	1	171072	2N2222A	TRANSIS, NPN	Q2	MOT
12	1	171076	2N2907A	TRANSIS, PNP	Q3	MOT
13	1	150149	R25J62	RES, C. FILM, 62 HMS, 1/4W, 5%	R1	ROM
14	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R2	ROM
15	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R3	ROM
16	1	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5%	R4	ROM
17	1	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5%	R5	ROM
18	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R6	ROM
19	1	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R7	ROM
20	1	150150	R25J620	RES, C. FILM, 620 HMS, 1/4W, 5%	R8	ROM
21	3	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R9-11	ROM
22	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R12, 13	ROM
23	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R14	ROM
24	6	120215	350-1249-03-07-00	STANDOFF, 1/8		CAM
25	8	142012	140-2085-02-01-00	TERMINAL, BIF	E1-8	CAM
26	1	147166	469071	P. C., CARD, A19-A9		DSI

Assembly : 469572  
Stock Number : 180213

ASSY, A19-A10, SEL

REV D1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1, 2	ERI
2	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C4	ERI
3	2	158005	CS138E156K	CAP, TANT, 15 UF, 20V	C3, 5	SPG
4	1	155026	F320B-2702J-050	CAP, FILM, .027 UF	C6	UCC
5	3	172091	UM4001B	DIODE, PIN	CR2-4	UNI
6	4	172010	1N914	DIODE, SILICON, D035	CR5-8	MOT
7	1	145067	732-18	RELAY, DPDT	K1	TLR
8	1	145065	732-12	RELAY, DPDT	K2	TLR
11	1	171072	2N2222A	TRANSIS, NPN	Q1	MOT
12	1	150061	R25J680	RES, C. FILM, 680 HMS, 1/4W, 5%	R1	ROM
13	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R2	ROM
14	1	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5%	R3	ROM
15	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R4	ROM
16	2	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R5, 10	F
17	1	150054	R25J20	RES, C. FILM, 20 HMS, 1/4W, 5%	R6	ROM
18	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R7	ROM
19	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R8, 9	ROM
20	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
21	8	142012	140-2089-02-01-00	TERMINAL, BIF	E1-8	CAM
22	1	147167	469072	P. C. , CARD, A19-A10		DSI
27	1	154071	CK06BX105K	CAP, CER, 1 UF	C7	AVX
28	5	121056	1127(350)	SPACER, GLASS		KKR
29	1	134094	472113I	ASSY, INDUCTOR/TRANSFORMER, TAB	L1(USE 472113-16)	DSI
30	1	134062	472110-1	ASSY, TRANSFORMER, TABULATED	T1(USE 472110-1)	DSI

Assembly : 469573  
Stock Number : 180214

ASSY, A19-A11, 200KHZ, BP, FILTER

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	163022	DM15-911J	CAP, MICA, 910 PF	C1,3	ARC
2	1	163041	DM19-472J	CAP, MICA, 4700 PF	C2	ARC
3	2	163030	DM15-511J	CAP, MICA, 510 PF	C4,5	ARC
5	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
6	2	142012	140-2083-02-01-00	TERMINAL, BIF		CAM
7	1	147168	469073	P. C., CARD, A19-A11		DSI
10	1	134086	472113A	ASSY, INDUCTOR/TRANSFORMER, TAB	L2 (USE 472113-1)	DSI
11	2	134087	472113B	ASSY, INDUCTOR/TRANSFORMER, TAB	L1 (USE 472113-2) L3 (USE 472113-3)	DSI

Assembly : 469579  
Stock Number : 188220

ASSY, LOG, AMP, A19-A13

REV E1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C1	I
2	2	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C2, 6	ERI
3	6	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C3, 7, 8, 9, 10, 12	ERI
4	1	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C11	ERI
5	2	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C4, 5	SPG
6	2	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C16, 17	SPG
7	3	163052	DM5CC100J	CAP, MICA, 10 PF	C13-15	ARC
8	2	163078	DM5FY221J	CAP, MICA, 220 PF	C18, 19	ARC
9	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
10	2	172072	1N753A	DIODE, ZENER, 6.2V, .4W, 5%	CR1, 2	MOT
11	4	142012	140-2089-02-01-00	TERMINAL, BIF	E1, 2, 3, 4	CAM
12	6	171072	2N2222A	TRANSIS, NPN	Q1, 2, 4, 5, 7, 8	MOT
13	3	171076	2N2907A	TRANSIS, PNP	Q3, 6, 9	MOT
14	3	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R1, 9, 22	F
15	3	150006	R25J4.7K	RES, C. FILM, 4.7K, 1/4W, 5%	R2, 25, 10	ROM
16	1	150078	R25J20K	RES, C. FILM, 20K, 1/4W, 5%	R3	ROM
17	3	150081	R25J51	RES, C. FILM, 51 HMS, 1/4W, 5%	R4, 12, 30	ROM
18	3	150154	R25J910	RES, C. FILM, 910 HMS, 1/4W, 5%	R6, 14, 24	ROM
19	1	150065	R25J120	RES, C. FILM, 120 HMS, 1/4W, 5%	R7	ROM
20	1	150034	R25J150	RES, C. COMP, 150 HMS, 1/4W, 5%	R8	ROM
21	1	150042	R25J6.2K	RES, C. FILM, 6.2K, 1/4W, 5%	R27	ROM
22	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R16, 21	ROM
23	2	150001	R25J2.2K	RES, C. FILM, 2.2K, 1/4W, 5%	R17, 18	ROM
24	2	150013	R25J3.6K	RES, C. FILM, 3.6K, 1/4W, 5%	R19, 20	ROM
25	1	150005	R25J2.7K	RES, C. FILM, 2.7K, 1/4W, 5%	R11	ROM
26	1	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R23	ROM

Assembly : 469579  
Stock Number : 180220

ASSY, LOG, AMP, A19-A13

REV E1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
27	2	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R28, 29	ROM
28	2	153079	3329P-1-101K	RES, ADJ, 100 HMS	R5, 13	BRN
29	1	153081	3329P-1-103K	RES, ADJ, 10K	R15	BRN
30	1	153071	3299W-1-103K	RES, ADJ, 10K	R26	BRN
31	1	141225	516-AG-100	SOCKET, 16 PIN, I. C.	U1	AUG
32	1	170682	TL441CJ	I. C., 441	U1	TXI
33	1	147169	469079	P. C., CARD, A19-A13		DSI
34	20	121056	1127(350)	SPACER, GLASS		KKR
35	1	125155	TFT200, 18GA.	SLEEVING, TEFLON		ALC

Assembly : 469582  
Stock Number : 180222

ASSY, FILTER, LP, A19-A14

REV C3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C1	r
2	1	163010	DM10-201J	CAP, MICA, 200 PF	C2	ARC
3	1	163004	DM10-331J	CAP, MICA, 330 PF	C3	ARC
6	2	134104	472102F	ASSY, INDUCTOR, TABULATED	L1 (USE 472102-10) L2 (USE 472102-11)	DSI
7	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
8	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
9	1	147171	469082	P. C. , CARD, A19-A14		DSI
10	2	172082	5082-3168	DIODE, PIN	CR2, CR3	HEW
11	12	125276	26-T/C	WIRE, BUSS, 26 GA		PIW
12	1	150004	R25J1K	RES. C. FILM, 1K, 1/4W, 5%	R1	ROM

Assembly : 469583  
Stock Number : 180223

ASSY, FILTER, LP, A19-A15

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	3	163004	DM10-331J	CAP, MICA, 330 PF	C1-3	ARC
2	2	134104	472102F	ASSY, INDUCTOR, TABULATED	L1 (USE 472102-14) L2 (USE 472102-16)	DSI
3	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
4	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
5	1	147172	469083	P. C., CARD, A19-A15		DSI

Assembly : 469584  
Stock Number : 180224

ASSY, FILTER, LP, A19-A16

REV C1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	163004	DM10-331J	CAP, MICA, 330 PF	C1	r
2	1	163008	DM10-181J	CAP, MICA, 180 PF	C2	ARC
3	2	172091	UM4001B	DIODE, PIN	CR1,2	UNI
4	2	134104	472102F	ASSY, INDUCTOR, TABULATED	L1 (USE 472102-12) L2 (USE 472102-15)	DSI
5	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
6	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
7	1	147173	469084	P. C., CARD, A19-A16		DSI

Assembly : 469585  
Stock Number : 180225

ASSY, CONV, B2, A19-A17

REV C1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C1, 3	ERI
2	2	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C2, 5	SPG
3	3	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C4, 6, 8	ERI
4	1	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C7	SPG
6	2	134040	T4-1	TRANSFORMER	L1, 2	MCL
7	2	165008	2673-000101	CORE, BEAD, CHOKE	L3 (2 EA)	MIM
8	2	166015	WD-10	INDUCTOR, 10 UH	L4, 5	NYT
10	2	171097	MPF820	TRANSIS, FET	Q1, 2	MDT
11	2	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R1, 3	ROM
12	1	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R2	ROM
13	6	120216	350-1249-11-07-00	STANDOFF, 1/4		CAM
14	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
17	8	142027	450-7004-01-03-00	JACK		CAM
18	1	161024	SRA-1-1	MIXER, DOUBLE, BAL	U1	MCL
19	1	147174	469085	P. C., CARD, A19-A17		DSI
20	1	166017	WD-12	INDUCTOR, 12 UH	L6	NYT
21	1	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5%	R4	ROM
22	1	134079	472106-3	ASSY, TRANSFORMER, TABULATED	T1 (USE 472106-3)	DSI
23	1	134076	472107-1	ASSY, TRANSFORMER, TABULATED	T2 (USE 472107-1)	DSI

Assembly : 469586  
Stock Number : 180226

ASSY, FILTER, BP, A19-A18

REV C1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	154064	CK058X472K	CAP, CER, 4700 PF	C1	
2	1	163015	DM10-510J	CAP, MICA, 51 PF	C2	ARC
3	2	163006	DM10-121J	CAP, MICA, 120 PF	C3, 5	ARC
4	2	163012	DM10-360J	CAP, MICA, 36 PF	C4, 6	ARC
6	1	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R1	ROM
7	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
8	2	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
9	1	147175	469086	P. C., CARD, A19-A18		DSI
10	1	134111	472102M	ASSY, INDUCTOR, TABULATED	L3 (USE 472102-28)	DSI
11	2	134115	472102Q	ASSY, INDUCTOR, TABULATED	L1 (USE 472102-32) L2 (USE 472102-33)	DSI

Assembly : 469587  
Stock Number : 180227

ASSY, AMP, DET, A19-A19

REV D1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	158008	CS13RF105K	CAP, TANT, 1 UF, 35V	C1, 4	SP6
2	6	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C2, 3, 5, 6, 7, 10	ERI
3	1	158005	CS13RE156K	CAP, TANT, 15 UF, 20V	C8	SP6
4	1	163014	DM10-470J	CAP, MICA, 47 PF	C9	ARC
5	1	154053	CK05BX102K	CAP, CER, .001 UF	C11	AVX
6	1	172010	1N914	DIODE, SILICON, D035	CR1	MGT
7	1	145067	732-18	RELAY, DPDT	K1	TLR
8	4	166015	WD-10	INDUCTOR, 10 UH	L1-4	NYT
9	2	171097	MPF820	TRANSIS, FET	Q1, 2	MGT
10	1	171073	2N2369A	TRANSIS, NPN	Q3	MGT
12	6	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
13	6	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
14	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R3	ROM
15	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R7	ROM
16	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R8	ROM
17	1	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R9	ROM
18	1	150075	R25J240K	RES, C. FILM, 240K, 1/4W, 5%	R10	ROM
19	2	150107	R25J200	RES, C. FILM, 200 HMS, 1/4W, 5%	R1, 2	ROM
20	1	147176	469087	P. C. , CARD, A19-A19		DSI
21	1	121056	1127 (350)	SPACER, GLASS		KKR
22	2	134077	472107-2, 3	ASSY, TRANSFORMER, TABULATED	T1 (USE 472107-2) T2 (USE 472107-2)	DSI

Assembly : 469588

Stock Number : 180228

ASSY, PIN, ATT, A19-A20

REV E

05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	6	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1-6	r
2	3	172091	UM4001R	DIODE, PIN	CR1, 2, 3	UNI
3	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
4	4	166015	WD-10	INDUCTOR, 10 UH	L1-4	NYT
5	4	142012	140-2089-02-01-00	TERMINAL, BIF	E1-E4	CAM
6	2	150146	R25J43	RES, C. FILM, 43 HMS, 1/4W, 5%	R1, 3	RDM
7	1	150038	R25J1.8K	RES, C. FILM, 1.8K, 1/4W, 5%	R2	RDM
8	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R4	RDM
9	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R6, 7	RDM
10	1	147177	469088	P. C., CARD, A19-A20		DSI
11	2	121056	1127 (350)	SPACER, GLASS		KKR
12	1	121057	1130	SPACER, GLASS		KKR

Assembly : 469589  
Stock Number : 180229

ASSY, AMP, A19-A21

REV D  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1, 2	ERI
2	1	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C3	SPG
3	1	154043	RPE121COG102J100V	CAP, CER, .001 UF, 100V	C4	ERI
4	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
5	1	171087	2N5179	TRANSIS, NPN	Q1	MOT
6	2	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R1, 2	ROM
7	1	150037	R25J1. 5K	RES, C. FILM, 1. 5K, 1/4W, 5%	R3	ROM
8	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R4, 5	ROM
9	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5%	R6	ROM
10	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5%	R7	ROM
11	1	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R8	ROM
12	2	134040	T4-1	TRANSFORMER	T1, 2	MCL
13	1	161018	FPS-109	POWER, DIVIDER	U1	MCL
14	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
15	4	142012	140-2089-02-01-00	TERMINAL, RIF	E1-E4	CAM
16	1	147213	469189	P. C. , CARD, A19-A21		DSI

Assembly : 469575  
Stock Number : 180216

ASSY, A19-A22, ABC

REV E  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	6	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1-6	E
2	3	172091	UM4001B	DIODE, PIN	CR1-3	UNI
3	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
4	4	166015	WD-10	INDUCTOR, 10 UH	L1-4	NYT
5	5	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
6	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5%	R1, 3	ROM
7	1	150038	R25J1.8K	RES, C. FILM, 1.8K, 1/4W, 5%	R2	ROM
8	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R4	ROM
9	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R6, 7	ROM
10	1	147300	469182	PCB, A19-A22		DSI
11	2	121056	1127 (350)	SPACER, GLASS		KKR
12	1	121057	1130	SPACER, GLASS		KKR
13	1	163104	DM5FY201J	CAP, MICA, 200PF, 100V	C7	ARC
14	1	134074	472104-9	ASSY, COIL, INDUCTOR	L5	
15	1	120204	2502	SCREW, PNHD, 4/40, 1/2		HMS
16	1	120283	MS51859-2	WASHER, #4, FLAT, NYLON		HPR
17	1	120208	2554	NUT, HEX, NYLON, 4/40		HMS
18	1	163059	DM5CC200J	CAP, MICA, 20 PF	C8	ARC

Assembly : 469576  
Stock Number : 180217

ASSY, AMP, A19-A23

REV C  
05/01/85

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1, 2	ERI
2	1	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C3	SPG
3	1	154043	RPE121COG102J100V	CAP, CER, .001 UF, 100V	C4	ERI
4	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
5	1	171087	2N5179	TRANSIS, NPN	Q1	MOT
6	2	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R1, 2	ROM
7	1	150037	R25J1. 5K	RES, C. FILM, 1. 5K, 1/4W, 5%	R3	ROM
8	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R4, 5	ROM
9	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5%	R6	ROM
10	1	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5%	R7	ROM
11	1	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5%	R8	ROM
12	2	134040	T4-1	TRANSFORMER	T1, 2	MCL
13	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
14	3	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
15	1	147178	469089	P. C. , CARD, A19-A23		DSI

Assembly : 469591  
Stock Number : 180231

ASSY, AMP, A19-A24

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1, 2	EF
2	1	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C3	SPG
3	1	154043	RPE121COG102J100V	CAP, CER, .001 UF, 100V	C4	ERI
4	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
5	1	171087	2N5179	TRANSIS, NPN	Q1	MOT
6	2	134040	T4-1	TRANSFORMER	T1, 2	MCL
7	1	161018	FPS-109	POWER, DIVIDER	U1	MCL
8	1	150134	R25J24	RES, C. FILM, 24 HMS, 1/4W, 5X	R8	ROM
9	2	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5X	R1, 2	ROM
10	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5X	R3	ROM
11	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R4, 5	ROM
12	2	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5X	R6, 9	ROM
13	1	150002	R25J330	RES, C. FILM, 330 HMS, 1/4W, 5X	R7	ROM
14	2	150137	R25J300	RES, C. FILM, 300 HMS, 1/4W, 5X	R10, 11	F
15	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
16	4	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
17	1	147180	469091	P. C. , CARD, A19-A24		DSI

Assembly : 469577  
Stock Number : 180218

ASSY, ABC, A19-A25

REV E  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	6	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1-6	ERI
2	3	172091	UM4001B	DIODE, PIN	CR1-3	UNI
3	4	166015	WD-10	INDUCTOR, 10 UH	L1-4	NYT
5	2	150105	R25J39	RES, C. FILM, 39 HMS, 1/4W, 5x	R1, 3	ROM
6	1	150038	R25J1.8K	RES, C. FILM, 1.8K, 1/4W, 5x	R2	ROM
7	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5x	R4	ROM
8	1	150060	R25J2K	RES, C. FILM, 2K, 1/4W, 5x	R5	ROM
9	2	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5x	R6, 7	ROM
10	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
11	4	142012	140-2089-02-01-00	TERMINAL, BIF	E1-4	CAM
12	1	147177	469088	P. C. , CARD, A19-A20		DSI
13	3	121056	1127(350)	SPACER, GLASS		KKR
14	1	121057	1130	SPACER, GLASS		KKR

Assembly : 46957B  
Stock Number : 180219

ASSY, AMP, A19-A26

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1,2	ENC
2	1	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C3	SPG
3	1	163045	DMSFA201J	CAP, MICA, 200 PF	C4	ARC
4	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
5	1	134040	T4-1	TRANSFORMER	T2	MCL
6	1	171086	2N5109	TRANSIS, NPN	Q1	MOT
7	2	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5X	R1,2	ROM
8	1	150154	R25J910	RES, C. FILM, 910 HMS, 1/4W, 5X	R3	ROM
9	3	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5X	R4,5,8	ROM
10	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5X	R6	ROM
11	2	150118	R25J390	RES, C. FILM, 390 HMS, 1/4W, 5X	R7,9	ROM
13	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
14	3	142012	140-2089-02-01-00	TERMINAL, BIF	E1-3	CAM
15	1	147178	469089	P. C., CARD, A19-A23		I
16	1	166014	WD-1.5	INDUCTOR, 1.5 UH	L2	NYT
17	1	120313	2259-T253	WASHER, TFE, 1/4 ID, 7/16 OD		AMA

Assembly : 469593  
Stock Number : 180233

ASSY, FILTER, BP, A19-A27

REV D2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	10	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1, 7, 8, 9, 10, 16, 18, 19 , 25, 26	ERI
2	6	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C30-35	ERI
3	3	163007	DM10-151J	CAP, MICA, 150 PF	C2, 4, 6	ARC
4	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C17	AVX
5	2	163005	DM10-101J	CAP, MICA, 100 PF	C3, 5	ARC
6	3	163016	DM10-680J	CAP, MICA, 68 PF	C11, 13, 15	ARC
7	2	163029	DM15-501J	CAP, MICA, 500 PF	C12, 14	ARC
8	2	164002	187-0106-175	CAP, ADJ, 2-12 PF	C20, 23	EFJ
9	2	163051	DM5CC060D	CAP, MICA, 6 PF	C21, 24	ARC
10	1	163083	DM15-621J	CAP, MICA, 620 PF	C22	ARC
11	6	172082	5082-3188	DIODE, PIN	CR1-6	HEW
14	7	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
15	7	142012	140-2089-02-01-00	TERMINAL, BIF	E1-7	CAM
16	12	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R1, 2, 4, 9, 10, 12, 16, 18 , 19, 21, 22, 24	ROM
17	6	150009	R25J100K	RES, C. FILM, 100K, 1/4W, 5%	R3, 8, 11, 17, 20, 23	ROM
18	2	150092	R25J68	RES, C. FILM, 68 HMS, 1/4W, 5%	R6, 7	ROM
19	1	150034	R25J150	RES, C. COMP, 150 HMS, 1/4W, 5%	R5	ROM
20	2	150109	R25J180	RES, C. FILM, 180 HMS, 1/4W, 5%	R13, 15	ROM
21	1	150136	R25J30	RES, C. FILM, 30 HMS, 1/4W, 5%	R14	ROM
22	2	134040	T4-1	TRANSFORMER	T1, 2	MCL
23	2	134042	T9-1	TRANSFORMER	T3, 4	MCL
24	1	161018	FPS-109	POWER, DIVIDER	U1	MCL
25	1	147182	469093	P. C., CARD, A19-A27		DSI
26	2	134100	472102B	ASSY. INDUCTOR, TABULATED	L1 (USE 472102-3) L3 (USE 472102-2)	DSI

Assembly : 469593

Stock Number : 180233

ASSY, FILTER, BP, A19-A27

REV D2

05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
27	3	134103	472102E	ASSY, INDUCTOR, TABULATED	L4 (USE 472102-7) L5 (USE 472102-8) L6 (USE 472102-9)	D
28	1	134105	472102G	ASSY, INDUCTOR, TABULATED	L2 (USE 472102-13)	DSI
29	2	134060	472105-1,2	ASSY, INDUCTOR, TABULATED	L7 (USE 472105-1) L8 (USE 472105-2)	DSI

Assembly : 469590  
Stock Number : 180230

ASSY, DN, CONV, A19-A28

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	154054	CK05BX103K	CAP, CER. .01 UF, 100V	C1,2	AVX
2	1	134085	472101-7	ASSY, INDUCTOR/TRANSFORMER, TAB	L1 (USE 472101-7)	DSI
3	2	148001	RL07S101G	RES, M. FILM, 100 HMS, 2x	R1,3	CGE
4	1	148039	RL07S680G	RES, M. FILM, 68 HMS, 2x	R2	CGE
5	1	161023	SRA-1	MIXER, DOUBLE, BAL	U1	MCL
6	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
7	3	142012	140-2089-02-01-00	TERMINAL, BIF	E1-3	CAM
8	1	147179	469090	P.C., CARD, A19-A28		DSI

Assembly : 469592  
Stock Number : 180232

ASSY, OUTPUT, AMP, A19-A29

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	5	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C1, 3, 4, 5, 10	E
2	1	154053	CK05BX102K	CAP, CER, .001 UF	C2	AVX
3	2	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C6, 7	SPG
4	3	166015	WD-10	INDUCTOR, 10 UH	L1, 2, 4	NYT
5	1	166014	WD-1.5	INDUCTOR, 1.5 UH	L3	NYT
6	2	150094	R25J5.1K	RES, C. FILM, 5.1K, 1/4W, 5%	R1, 3	ROM
7	1	150037	R25J1.5K	RES, C. FILM, 1.5K, 1/4W, 5%	R2	ROM
8	5	150053	R25J10	RES, C. FILM, 10 HMS, 1/4W, 5%	R4, 6, 8, 10, 12	ROM
9	1	150131	R25J16	RES, C. FILM, 16 HMS, 1/4W, 5%	R5	ROM
10	1	150026	R25J560	RES, C. FILM, 560 HMS, 1/4W, 5%	R7	ROM
11	1	150150	R25J620	RES, C. FILM, 620 HMS, 1/4W, 5%	R9	ROM
12	2	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R11, 13	ROM
13	1	171087	2N5179	TRANSIS, NPN	Q1	MDT
14	1	171086	2N5109	TRANSIS, NPN	Q2	
15	3	134040	T4-1	TRANSFORMER	T1-3	MCL
16	1	127001	207-CB	HEATSINK		WAK
17	4	120215	350-1249-09-07-00	STANDOFF, 1/8		CAM
18	4	142012	140-2089-02-01-00	TERMINAL, BIF	E1-3	CAM
19	1	147181	469092	P. C., CARD, A19-A29		DSI

Assembly : 469554  
Stock Number : 180195

ASSY, A19-A30-1, SWITCH

REV F  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	24	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C1, 4, 5 (8 EA)	ERI
2	16	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C2, 3 (8 EA)	ERI
3	8	172010	1N914	DIODE, SILICON, D035	CR1 (8 EA)	MDT
4	8	172091	UM4001B	DIODE, PIN	CR2 (8 EA)	UNI
5	2	148022	RL07S360G	RES, M. FILM, 36 HMS, 2%	BW8R7, BW9R7	CGE
6	1	148025	RL07S430G	RES, M. FILM, 43 HMS, 2%	BW10R7	CGE
7	2	148026	RL07S431G	RES, M. FILM, 430 HMS, 2%	BW4, R8, 9	CGE
8	24	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R4, 6, 1 (8 EA)	ROM
9	8	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R2 (8 EA)	ROM
10	16	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R3, 5 (8 EA)	ROM
11	2	148006	RL07S131G	RES, M. FILM, 130 HMS, 2%	BW10R8, R9	CGE
12	2	148005	RL07S121G	RES, M. FILM, 120 HMS, 2%	BW11R8, 9	CGE
13	4	148040	RL07S151G	RES, M. FILM, 150 HMS, 2%	BW8, R8, 9-BW9, R8, 9	CGE
14	1	148028	RL07S510G	RES, M. FILM, 51 HMS, 2%	BW11R7	CGE
15	1	148004	RL07S120G	RES, M. FILM, 12 HMS, 2%	BW4R7	CGE
16	2	148015	RL07S221G	RES, M. FILM, 220 HMS, 2%	BW7, R8, 9	CGE
17	1	147150	469054	P. C. , CARD, A19-A30-1		DSI
18	1	148017	RL07S240G	RES, M. FILM, 24 HMS, 2%	BW7, R7	CGE
19	11	142012	140-2089-02-01-00	TERMINAL, BIF	E1-11	CAM
20	10	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
21	80	121056	1127 (350)	SPACER, GLASS		KKR
22	8	121057	1130	SPACER, GLASS		KKR

Assembly : 469555  
Stock Number : 180197

ASSY, A19-A30-2, SWITCH

REV E1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	9	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	C1, 4, 5 (3 SETS)	E
2	6	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C2, 3 (3 SETS)	ERI
3	3	172010	1N914	DIODE, SILICON, D035	CR1 (3 SETS)	MOT
4	3	172091	UM4001B	DIODE, PIN	CR2 (3 SETS)	UNI
5	2	148020	RL07S301G	RES, M. FILM, 300 HMS, 2%	BW1R8, 9	CGE
6	9	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R1, 4, 6 (3 SETS)	ROM
7	1	148010	RL07S180G	RES, M. FILM, 18 HMS, 2%	BW1R7	CGE
8	3	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R2 (3 SETS)	ROM
9	2	148026	RL07S431G	RES, M. FILM, 430 HMS, 2%	BW3R8, R9	CGE
10	6	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R3, 5 (3 SETS)	ROM
13	1	148004	RL07S120G	RES, M. FILM, 12 HMS, 2%	BW3R7	CGE
14	1	134090	472113E	ASSY, INDUCTOR/TRANSFORMER, TAB	T1 (USE 472113-18)	DSI
15	1	147151	469055	P. C. , CARD, A19-A30-2		DSI
16	6	120214	350-1247-09-07-00	STANDOFF, 1/8		(
17	10	142012	140-2089-02-01-00	TERMINAL, BIF	E1-11	CAM
20	30	121056	1127(350)	SPACER, GLASS		KKR
21	3	121057	1130	SPACER, GLASS		KKR
22	2	148044	RL07S911G	RES, M. FILM, 910 OHM, 1/4W, 2%	BW2R8, R9	ALB
23	1	150172	R25J5.6	RES, C. FILM, 5.6 HMS, 1/4W, 5%	BW2R7	ROM

Assembly : 469556  
Stock Number : 188198

ASSY, A19-A30-3, SWITCH

REV D  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	15	154051	RPE113Z5U334M100V	CAP, CER, .33 UF, 100V	C6, 9, 10 (5 EA)	ERI
2	10	154049	RPE122Z5U104M100V	CAP, CER, .1 UF, 100V	C7, 8 (5 EA)	ERI
3	5	172010	1N914	DIODE, SILICON, D035	CR3 (5 EA)	MOT
4	5	172091	UM4001B	DIODE, PIN	CR4 (5 EA)	UNI
5	15	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R10, 13, 15 (5 EA)	ROM
6	5	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R11 (5 EA)	ROM
7	10	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R12, 14 (5 EA)	ROM
8	1	147152	469056	P. C., CARD, A19-A30-3		DSI
9	5	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
10	8	142012	140-2089-02-01-00	TERMINAL, BIF	E1-8	CAM
11	35	121056	1127 (350)	SPACER, GLASS		KKR
12	5	121057	1130	SPACER, GLASS		KKR

Assembly : 469557  
Stock Number : 180199

ASSY, A19-A30-4, SWITCH

REV D  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	9	154051	RPE11375U334M100V	CAP, CER, .33 UF, 100V	6, 9, 10 (3 SETS)	F
2	6	154049	RPE12275U104M100V	CAP, CER, .1 UF, 100V	C7, 8 (3 SETS)	ERI
3	3	172010	1N914	DIODE, SILICON, D035	CR3 (3 SETS)	MOT
4	3	172091	UM4001B	DIODE, PIN	CR4 (3 SETS)	UNI
5	9	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5X	R10, 13, 15 (3 SETS)	ROM
6	3	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5X	R11 (3 SETS)	ROM
7	6	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5X	R12, 14 (3 SETS)	ROM
8	1	147153	469057	P. C., CARD, A19-A30. 4		DSI
9	6	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
10	7	142012	140-2089-02-01-00	TERMINAL, BIF	E1-E7	CAM
11	21	121056	1127 (350)	SPACER, GLASS		KKR
12	3	121057	1130	SPACER, GLASS		KKR

Assembly : 469558  
Stock Number : 180200

ASSY, A19-A30-5, SWITCH

REV C  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	9	154051	RPE113Z5U334M100V	CAP, CER, .33 UF, 100V	C1, 4, 5 (3 EA)	ERI
2	6	154049	RPE122Z5U104M100V	CAP, CER, .1 UF, 100V	C2, 3 (3 EA)	ERI
3	3	172010	1N914	DIODE, SILICON, D035	CR1 (3 EA)	MOT
4	3	172091	UM4001B	DIODE, PIN	CR2 (3 EA)	UNI
5	9	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R1, 4, 6 (3 EA)	ROM
6	3	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R2 (3 EA)	ROM
7	6	150106	R25J200K	RES, C. FILM, 200K, 1/4W, 5%	R3, 5 (3 EA)	ROM
8	1	147154	469058	P. C., CARD, A19-A30. 5		DSI
9	5	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
10	10	142012	140-2089-02-01-00	TERMINAL, BIF	E1-10	CAM
11	21	121056	1127(350)	SPACER, GLASS		KKR
12	3	121057	1130	SPACER, GLASS		KKR

Assembly : 469559  
Stock Number : 180201

ASSY, A19-A31. 1, SWITCH

REV F  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	15	154044	RPE110ZSU103M100V	CAP, CER, .01 UF, 100V	C1,2,3 (5 SETS)	F
2	10	172082	5082-3180	DIODE, PIN	CR1,3 (5 SETS)	HEW
3	5	172010	1N914	DIODE, SILICON, D035	CR2 (5 SETS)	MDT
4	2	148037	RL07S820G	RES, M. FILM, 82 HMS, 2X	BW16-R6,7	CGE
5	1	148038	RL07S910G	RES, M. FILM, 91 HMS, 2X	BW16-R5	CGE
6	2	148039	RL07S680G	RES, M. FILM, 68 HMS, 2X	BW17-R6,7	CGE
7	15	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5X	R1,2,4 (5 SETS)	ROM
8	1	148040	RL07S151G	RES, M. FILM, 150 HMS, 2X	BW17-R5	CGE
9	5	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5X	R3 (5 SETS)	ROM
10	1	148005	RL07S121G	RES, M. FILM, 120 HMS, 2X	BW15-R5	CGE
13	1	147155	469059	P. C. , CARD, A19-A31. 1		DSI
14	1	148041	RL07S271G	RES, M. FILM, 270 HMS, 2X	BW18-R5	CGE
15	3	148030	RL07S620G	RES, M. FILM, 62 HMS, 2X	BW18-R6,7 BW14R5	CGE
16	4	120214	350-1247-09-07-00	STANDOFF, 1/8		Chm
17	13	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
18	38	121056	1127(350)	SPACER, GLASS		KKR
19	2	148001	RL07S101G	RES, M. FILM, 100 HMS, 2X	BW14R6,7	CGE
20	2	148035	RL07S750G	RES, M. FILM, 75 HMS, 2X	BW15R6,7	CGE

Assembly : 469560  
Stock Number : 180202

ASSY, A19-A31-2, SWITCH

REV E  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	12	154044	RPE11075U103M100V	CAP, CER, .01 UF, 100V	C1,2,3 (4 SETS)	ERI
2	8	172082	5082-3188	DIODE, PIN	CR1,3 (4 SETS)	HEW
3	4	172010	1N914	DIODE, SILICON, D035	CR2 (4 SETS)	MOT
4	2	148011	RL07S181G	RES, M. FILM, 180 HMS, 2%	BW10-R6, 7	CGE
5	1	148019	RL07S300G	RES, M. FILM, 30 HMS, 2%	BW10-R5	CGE
6	2	148044	RL07S911G	RES, M. FILM, 910 OHM, 1/4W, 2%	BW11-R6, 7	ALB
7	12	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R1, 2, 4 (4 SETS)	ROM
8	1	150172	R25J5.6	RES, C. FILM, 5.6 HMS, 1/4W, 5%	BW11R5	ROM
9	4	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5%	R3 (4 SETS)	ROM
12	4	148026	RL07S431G	RES, M. FILM, 430 HMS, 2%	BW13-R6, 7, BW12-R6, R7	CGE
13	1	147156	469060	P. C. , CARD, A19-A31. 2		DSI
14	2	148004	RL07S120G	RES, M. FILM, 12 HMS, 2%	BW13-R5, BW12-R5	CGE
15	4	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
16	6	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
17	32	121056	1127 (350)	SPACER, GLASS		KKR

Assembly : 469561  
Stock Number : 180203

ASSY, A19-A31-3, SWITCH

REV C1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	15	154044	RPE110Z5U103M100V	CAP, CER, .01 UF, 100V	C4-6 (5 SETS)	I
2	10	172082	5082-3188	DIODE, PIN	CR4, 6 (5 SETS)	HEW
3	5	172010	1N914	DIODE, SILICON, D035	CR5 (5 SETS)	MOT
4	15	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R8, 9, 11 (5 SETS)	ROM
5	5	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5%	R10 (5 SETS)	ROM
6	1	147157	469061	P. C. , CARD, A19-A31. 3		DSI
7	4	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
8	9	142012	140-2089-02-01-00	TERMINAL, BIF	E1-9	CAM
9	25	121056	1127(350)	SPACER, GLASS		KKR
10	1	125208	E24-1936-9	WIRE, 24 GA, TYPE E, WHITE		PIW

Assembly : 469563  
Stock Number : 180205

ASSY, A19-A31-4, SWITCH

REV E  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	12	154044	RPE110ZSU103M100V	CAP, CER, .01 UF, 100V	C4, 5, 6 (4 SETS)	ERI
2	8	172082	5082-3188	DIODE, PIN	CR4, 6 (4 SETS)	HEW
3	4	172010	1N914	DIODE, SILICON, D035	CR5 (4 SETS)	MOT
4	12	150138	R25J3K	RES, C. FILM, 3K, 1/4W, 5%	R8, 9, 11 (4 SETS)	ROM
5	4	150072	R25J3.9K	RES, C. FILM, 3.9K, 1/4W, 5%	R10 (4 SETS)	ROM
6	1	147159	469063	P. C., CARD, A19-A31-4		DSI
7	4	120214	350-1247-09-07-00	STANDOFF, 1/8		CAM
8	6	142012	140-2089-02-01-00	TERMINAL, BIF		CAM
9	20	121056	1127 (350)	SPACER, GLASS		KKR

Assembly : 469498  
Stock Number : 180346

ASSY, PCB, A19-A32, 30MHZ, OL DET

REV A3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147297	469437	PCB, OVERLOAD DETECTOR		L
2	1	170620	LM311J-8	I. C., 311, COMPARATOR	U1	NSC
3	1	170745	LM555	I. C., 555, TIMER, PLAS, 8 DIP	U2	NSC
4	1	154055	CK05BX104K	CAP, CER, .10 UF, 50V	C1	AVX
5	1	154074	CK06BX474K	CAP, CER, .47 UF	C2	AVX
6	2	154050	RPE11425U105M	CAP, CER, 1 UF	C3, 6	ERI
7	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C4	AVX
8	1	154065	CK05BX473K	CAP, CER, .047 UF, 50V	C5	AVX
9	3	142066	140-1785-02-01-00	TERMINAL, BIFURCATED	E1-3	CAM
10	3	172078	5082-2800	DIODE, SILICON	CR1-3	HEW
11	1	150008	R25J22K	RES, C. FILM, 22K, 1/4W, 5%	R1	ROM
12	1	150022	R25J100	RES, C. FILM, 100 HMS, 1/4W, 5%	R2	ROM
13	1	150039	R25J15K	RES, C. FILM, 15K, 1/4W, 5%	R3	ROM
14	1	150023	R25JB. 2K	RES, C. FILM, 8. 2K, 1/4W, 5%	R4	ROM
15	1	153100	3292W-1-102	RES, VARIABLE, CERMET, 1K	R5	BRN
16	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R6	ROM
17	1	150173	R25J360K	RES, C. FILM, 360K, 1/4W, 5%	R7	ROM
18	1	150129	R25J13K	RES, C. FILM, 13K, 1/4W, 5%	R8	ROM
19	1	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R9	ROM
21	1	134054	469407	ASSY, TRANSFORMER, TOROID	T1	DSI
22	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
23	2	120302	60516390	SCREW, PNHD, #4X1/4, PHIL, SELFTAP		SOU

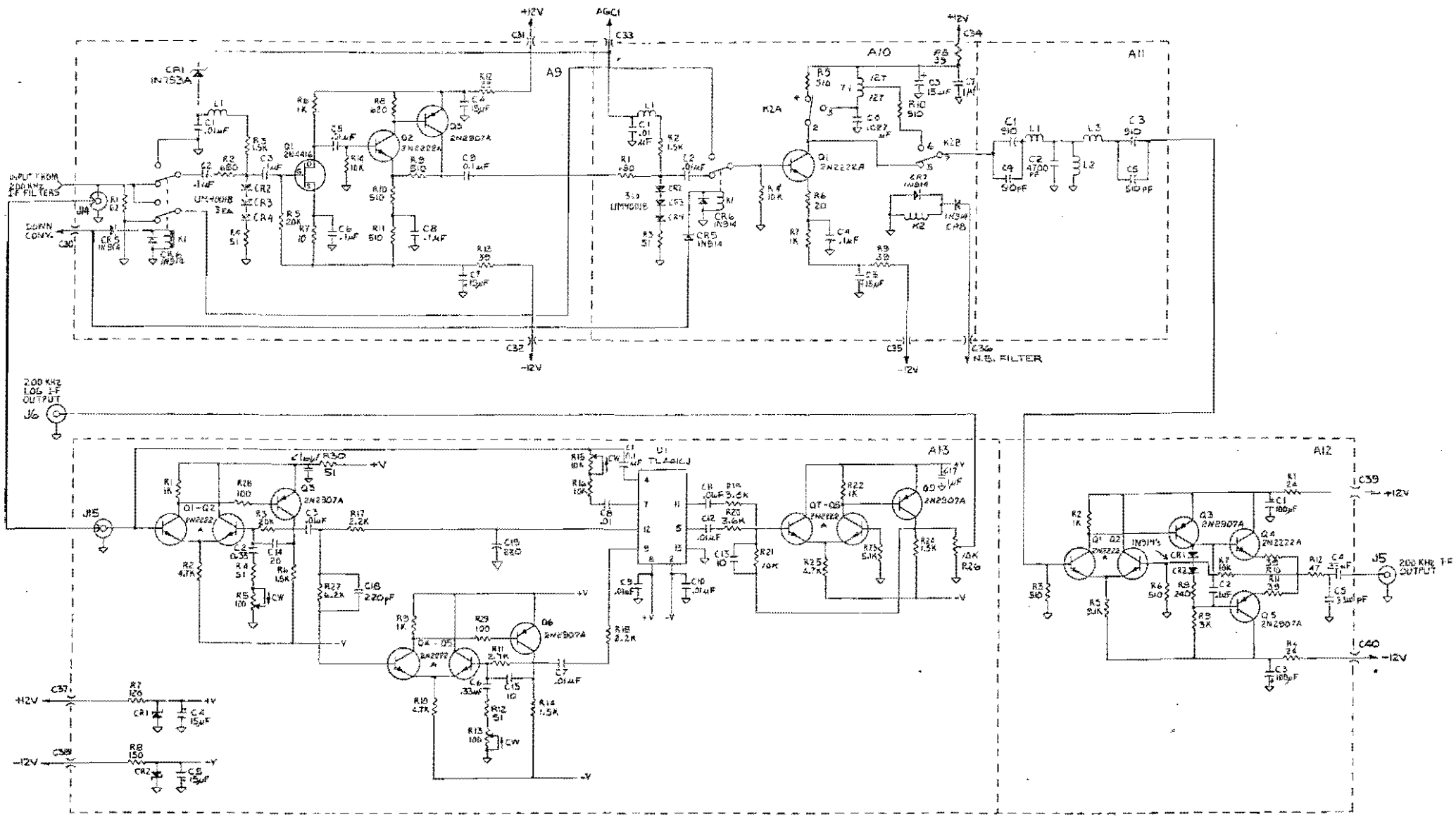
Assembly : 469499  
Stock Number : 180347

ASSY, PCB, A19-A33, 200KHZ, OL DET REV A3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147297	469437	PCB, OVERLOAD DETECTOR		DSI
2	1	170620	LM311J-8	I. C., 311, COMPARATOR	U1	NSC
3	1	170745	LM555	I. C., 555, TIMER, ALAS, 8 DIP	U2	NSC
4	1	154055	CK05BX104K	CAP, CER, .10 UF, 50V	C1	AVX
5	1	154074	CK06BX474K	CAP, CER, .47 UF	C2	AVX
6	2	154050	RPE11425U105M	CAP, CER, 1 UF	C3, 6	ERI
7	1	154054	CK05BX103K	CAP, CER, .01 UF, 100V	C4	AVX
8	1	154065	CK05BX473K	CAP, CER, .047 UF, 50V	C5	AVX
9	3	142066	140-1785-02-01-00	TERMINAL, BIFURCATED	E1-3	CAM
10	3	172078	5082-2800	DIODE, SILICON	CR1-3	HEW
11	1	150008	R25J22K	RES, C. FILM, 22K, 1/4W, 5%	R1	ROM
13	1	150031	R25J1M	RES, C. FILM, 1M, 1/4W, 5%	R3	ROM
14	1	150023	R25J8. 2K	RES, C. FILM, 8. 2K, 1/4W, 5%	R4	ROM
15	1	153100	3292W-1-102	RES, VARIABLE, CERMET, 1K	R5	BRN
16	2	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R2, 6	ROM
17	1	150173	R25J360K	RES, C. FILM, 360K, 1/4W, 5%	R7	ROM
18	1	150129	R25J13K	RES, C. FILM, 13K, 1/4W, 5%	R8	ROM
19	1	150094	R25J5. 1K	RES, C. FILM, 5. 1K, 1/4W, 5%	R9	ROM
21	1	134050	469405	ASSY, TRANSFORMER, TORROID	T1	DSI
22	1	166065	469406	ASSY, INDUCTOR, 720 UH	L1	DSI
23	2	120302	60516390	SCREW, PNHD, #4X1/4, PHIL, SELFTAP		SOU
24	2	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
25	2	125307	MPNY-750NA	MOUNTING PAD, CABLE TIE		BRD
26	2	120207	2505	SCREW, PNHD, 6/32, 1/2		HHS
27	2	120206	225B-N171	WASHER, FLAT, INSULATING, #8		AMA
28	2	120209	2555	NUT, HEX, NYLON, 6/32		HHS

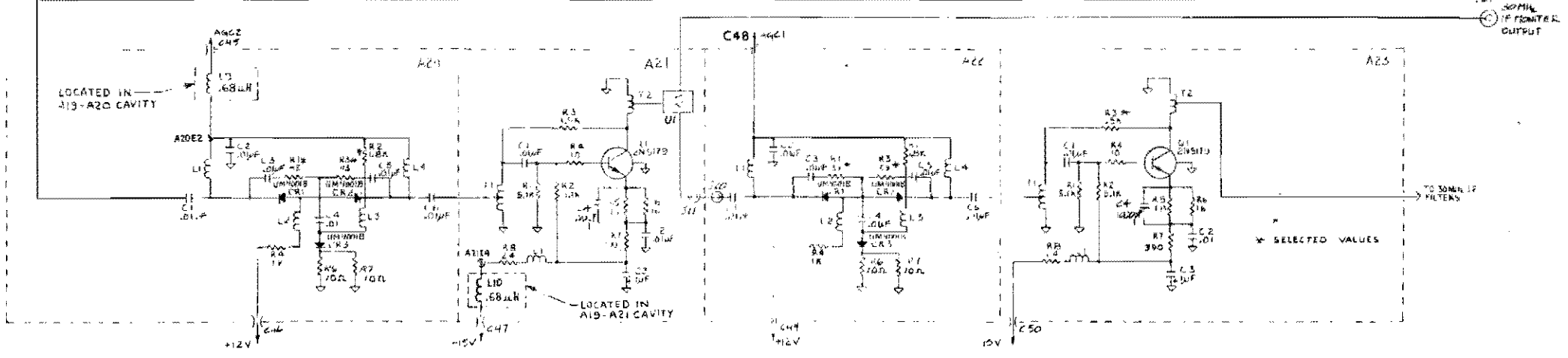
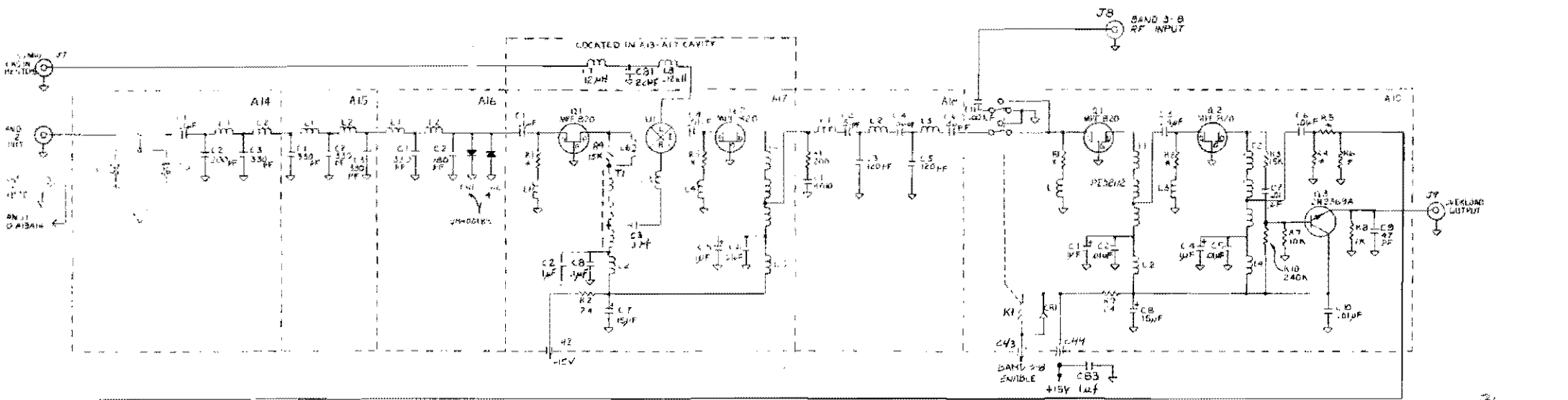
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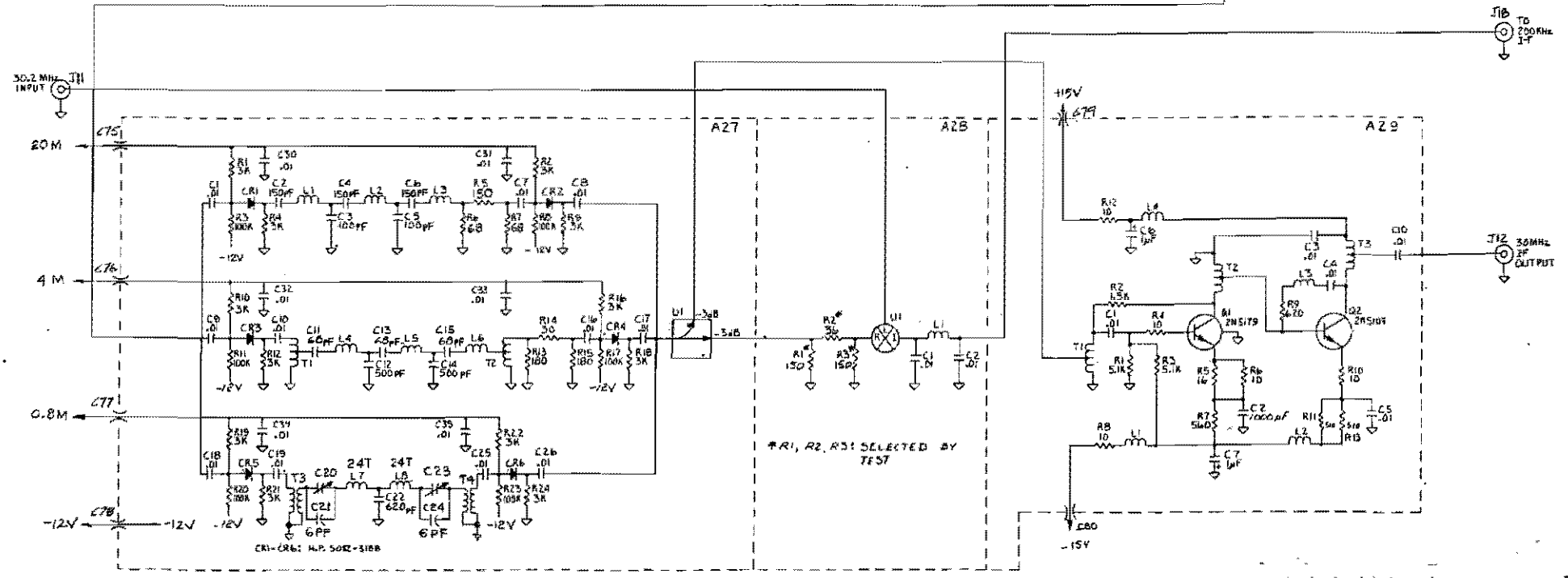
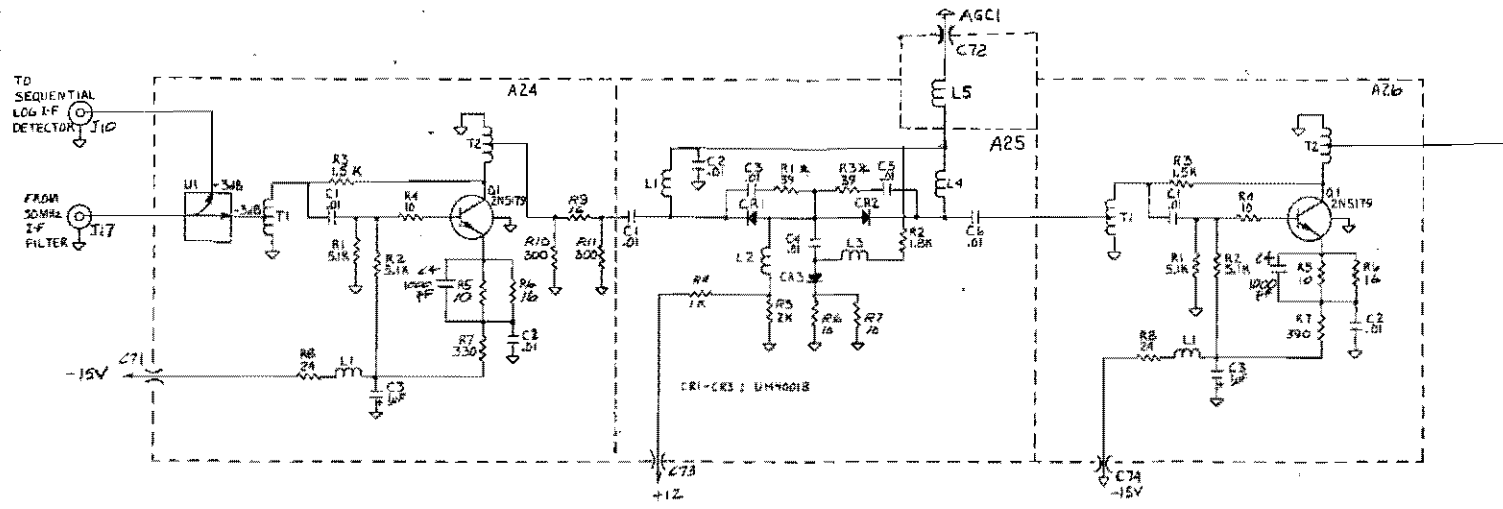


NOTES: UNLESS OTHERWISE SPECIFIED  
 1. RESISTOR VALUES ARE IN OHMS  
 2. CAPACITOR VALUES ARE IN MICROFARADS

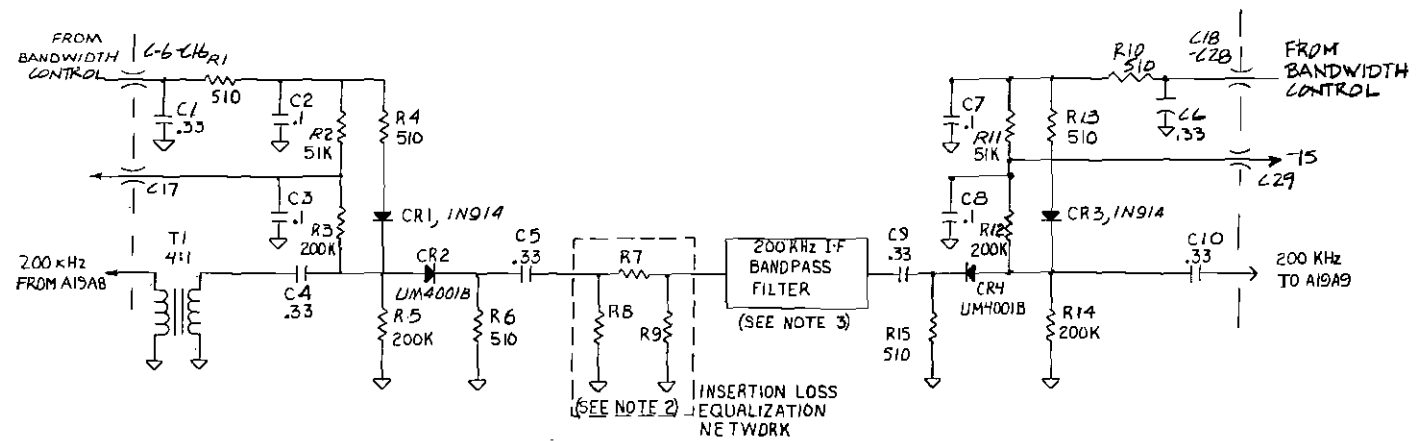
IF CHASSIS, A19A9 - A19A13



RESISTOR VALUES ARE IN OHMS



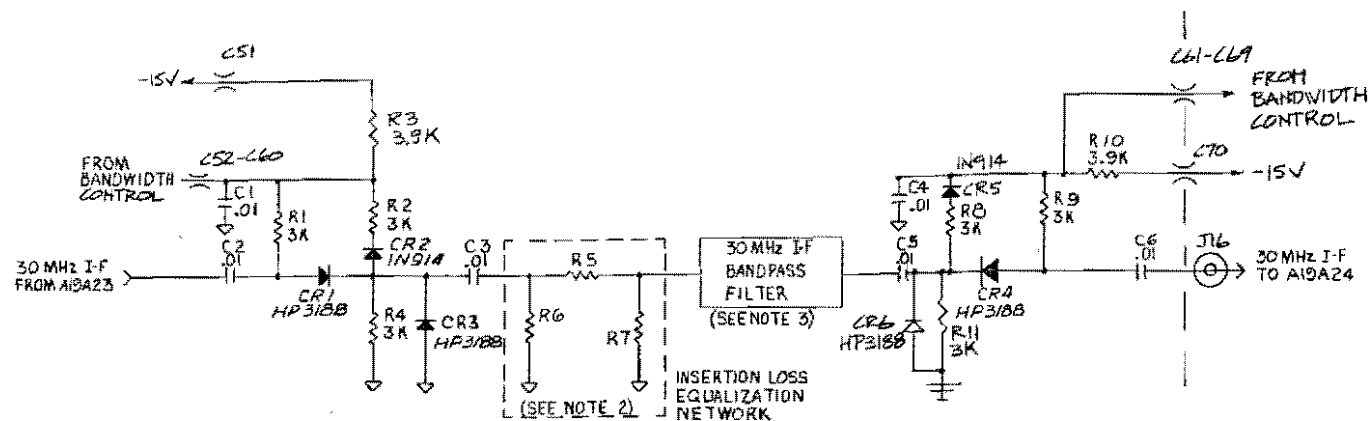
NOTE: UNLESS OTHERWISE SPECIFIED  
RESISTOR VALUES ARE IN OHMS  
CAPACITOR VALUES ARE IN MICROFARADS



1. THERE ARE ELEVEN 200 KHz I-F FILTER CIRCUITS, DIFFERING ONLY IN INSERTION LOSS EQUALIZATION NETWORK AND I-F BANDPASS FILTER.
  2. RESISTOR VALUES ARE FACTORY SELECTED TO EQUALIZE INSERTION LOSS OF THE ELEVEN I-F FILTERS.
  3. 200 KHz I-F FILTER BANDWIDTHS ARE: 50, 100, 200, AND 500 Hz AND 1, 2, 5, 10, 20, 50 AND 100 KHz.
  4. RESISTOR VALUES MEASURED IN OHMS
  5. CAPACITOR VALUES MEASURED IN MICRO FARADS
- NOTES: UNLESS OTHERWISE SPECIFIED

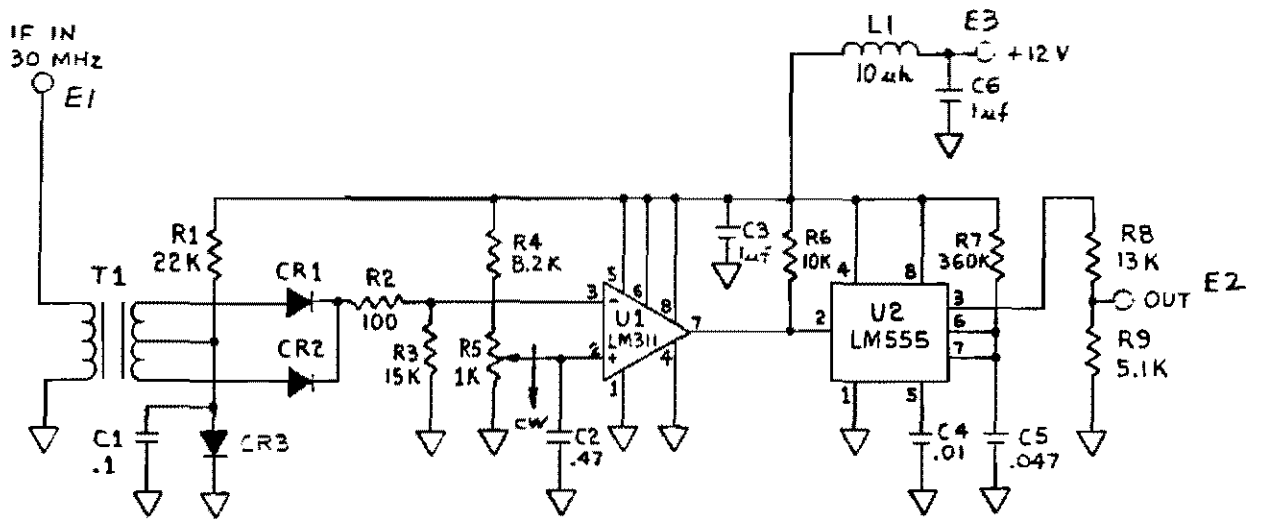
I-F FILTER, 200 KHz, A19A30

A18-61

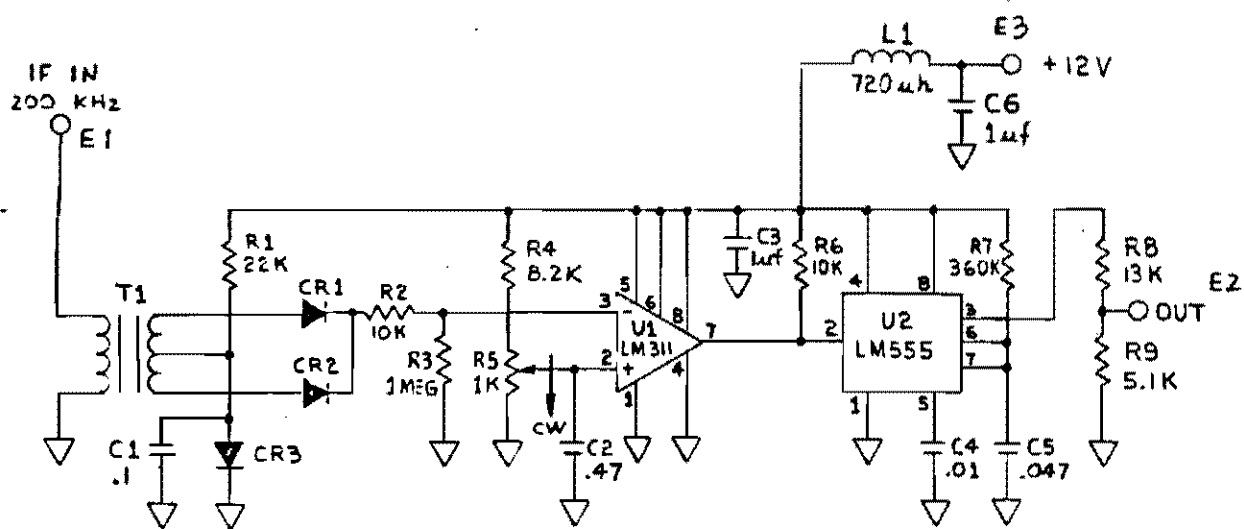


1. THERE ARE NINE 30 MHz I-F FILTER CIRCUITS, DIFFERING ONLY IN INSERTION LOSS EQUALIZATION NETWORK AND I-F BANDPASS FILTER.
  2. RESISTOR VALUES ARE FACTORY SELECTED TO EQUALIZE INSERTION LOSS OF THE NINE I-F FILTERS.
  3. 30 MHz I-F BANDWIDTHS ARE : 50, 100, 200 AND 500 kHz AND 1, 2, 5, 10 AND 20 MHz.
  4. RESISTOR VALUES ARE MEASURED IN OHMS.
  5. CAPACITOR VALUES ARE MEASURED IN MICROFARADS
- NOTES: UNLESS OTHERWISE SPECIFIED

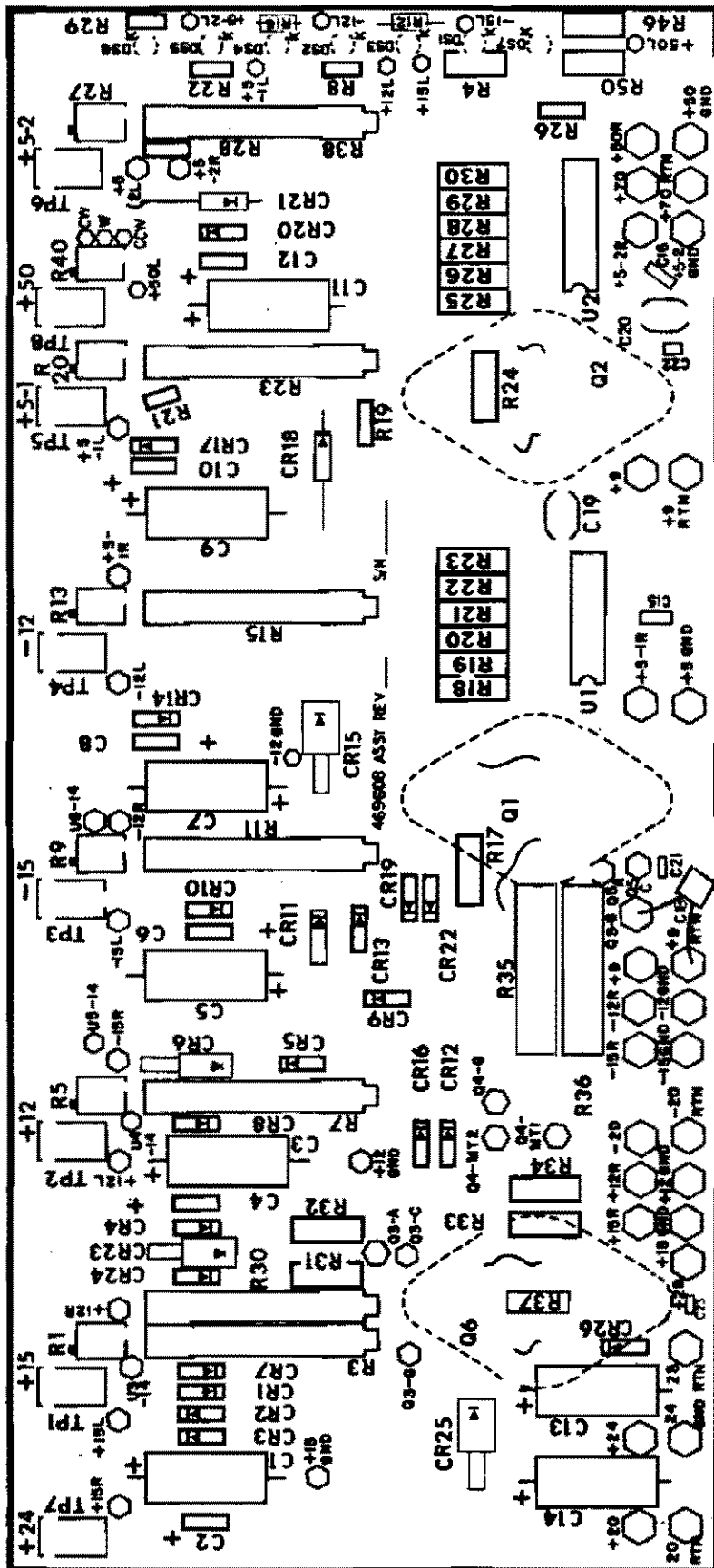
IF FILTER, 30 MHz, A19A31



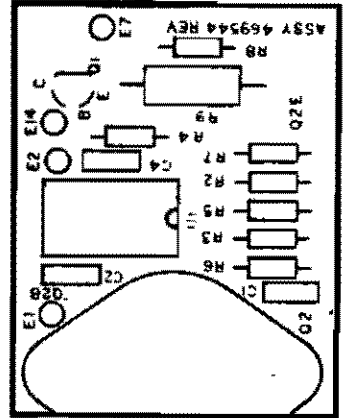
OVERLOAD DETECTOR, 30 MHZ, A19A32



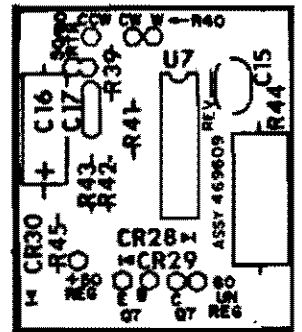
OVERLOAD DETECTOR, 200 KHZ, A19A33  
A 19-64



A22-A2



A22-A4 & A22-A5



A22-A3

Assembly : 469941  
Stock Number : 179048

ASSY, POWER SUPPLY, A22

REV D1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
2	2	171094	MJ900	TRANSIS, PNP	Q1, 2	MOT
3	2	173003	56220B	S. C. R.	Q3, 5	RCA
4	1	127002	260 4TH 5B	HEATSINK		WAK
5	1	180245	469609	ASSY, REG, 50V, A22-A3	A3	DSI
6	1	173004	T4121B	TRIAC	Q4	RCA
7	1	171093	MJ1000	TRANSIS, NPN	Q6	MOT
8	1	171079	2N3440	TRANSIS, NPN	Q7	MOT
9	3	142011	121-1-.010	INSULATOR, WAFER 1.627X1.10		ABL
10	3	142029	4616	INSULATOR, LOCATING PLATE		KEY
11	1	170582	LA62215	I. C., 2215	U3	LAM
12	1	170581	LA62212	I. C., 2212	U4	LAM
13	2	167053	469544	ASSY, REGULATOR, NEG. VOLTAGE	A4/A5	DSI
15	1	180244	469608	ASSY, A22-A2, LOW VOLT, REG	A2	DSI
17	7	142076	B04, #4	LUG		
18	6	120090	MS51957-32	SCREW, PNHD, 6/32, 3/4		HPR
19	15	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
21	2	130177	469206	GUIDE, RAIL, MOUNT		DSI
22	2	130178	469207	GUIDE, RAIL		DSI
23	1	130176	469205	RAIL, MOUNT, CONN		DSI
24	1	130200	469256	ANCHOR, COVER, TOP, REAR		DSI
25	1	130226	469752	FAB, PANEL, REAR		DSI
26	4	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
27	23	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
28	4	120155	MS24693-C3	SCREW, FLHD, 4/40, 5/16		HPR
29	2	120174	MS51957-28	SCREW, PNHD, 6-32X3/8		HPR
30	2	120068	MS51957-30	SCREW, PNHD, 6/32, 1/2		HPR

Assembly : 469941  
Stock Number : 179048

ASSY, POWER SUPPLY, A22

REV D1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
31	3	120186	MS51957-9	SCREW, PNHD, 2/56X3/4		HPR
33	4	120160	MS51957-12	SCREW, PNHD, 4/40, 3/16		HPR
34	31	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
36	33	120255	MS3520C4	WASHER, FLAT, #4		HPR
41	1	105066	469926	TAG, 1470 MHZ, OUTPUT		DSI
42	1	105059	469228	TAG, LED		DSI
43	20	121064	MS-08	BASKET, RFI		SPI
45	1	141193	3080-2242-00	CONN, COAX, N/SMA		OSM
47	1	142114	4634	COVER, TRANSIS, NYLON		KEY
48	1	142119	03-06-1041	RECEPTACLE, MODEL 1625-4	J130	MDL
49	4	142120	02-06-1103	TERMINAL, FEMALE	J130	MDL
50	1	179131	469476	ASSY, POWER SUPPLY, CONN		DSI

Assembly : 469500  
Stock Number : 180170

ASSY, MODULE, AC, A22-A1

REV F2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	2	156028	39D1186050HP4	CAP, ELECT, 1100 UF, 50V	C1, 2	SPC
2	2	156023	3186BC402U040AMA1	CAP, ELECT, 4000 UF, 40V	C3, 4	MEP
3	1	156044	36DX183G010AB2A	CAP, ELECT, 18000 UF, 10V	C5	SPG
4	1	156024	3186BC192U075AMA1	CAP, ELECT, 1900 UF, 75V	C6	MEP
5	1	130447	469188	PANEL, PLUG IN, LOW FREQUENCY		DSI
6	1	145136	311006	FUSE, 6AMP, LOW VOLT (32V)	F5	LTF
7	2	145043	313003	FUSE, 3 AMP, SLO-BLO	F1, 2	LTF
8	2	145123	311004	FUSE, 4AMP, LOW VOLT (32V)	F3, 4	LTF
9	1	145122	311010	FUSE, 10AMP, LOW VOLT (32V)	F5	LTF
10	1	145041	313.125	FUSE, 1/8 AMP, SLO-BLO	F6	LTF
11	1	179122	469467	ASSY, AC MODULE, CONN		DSI
12	2	167033	51-321-319	FILTER, EMI	FL1, 2	SPC
13	6	167047	9051-100-0000	FILTER, EMI	FL3-8	ERI
14	2	162001	1270-016	CAP, FEEDTHRU	C7, 8	
15	1	130210	469275	SHIELD, POWER, SUPPLY		DSI
17	6	145078	342014	HOLDER, FUSE		LTF
18	1	130211	469276	COVER, POWER, SUPPLY		DSI
19	1	152029	RS-5-1	RES, W. W., 1 HMS, 5W	R1	DAL
20	1	152024	RC42GF271J	RES, C. COMP, 270 HMS, 2W	R2	ALB
21	2	130175	469203	GUIDE, CHASSIS		DSI
22	1	105056	469227	PLATE, LINE, VOLTAGE		DSI
23	1	145054	46206-LFR	SWITCH, SLIDE, DPDT	S1	SWC
24	1	145047	42A36-01-02-3N	SWITCH, ROTARY, 2P3T	S2	GHI
25	2	130180	469219	RETAINER, CAP		DSI
26	1	134043	469050	TRANSFORMER, POWER	T1	DSI
27	8	121045	8181-A-0440-B	SPACER, 1/400, 4/40, 3 1/4LG		AMA

Assembly : 469500  
Stock Number : 180170

ASSY, MODULE, AC, A22-A1

REV F2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
28	4	142038	766A	TERMINAL, INSULATED		USE
30	5	172112	MDA2502	DIODE, BRIDGE, 200V, 25AMP	U1-5	MGT
31	8	142020	29A-.250	LUG, GND, 1/4, ID		ZIE
32	1	142037	75, #4	LUG		ZIE
33	1	142046	EAC-310	RECEPT. AC		SWC
34	14	120155	MS24693-C3	SCREW, FLHD, 4/40, 5/16		HPR
36	4	120152	MS24693-C1	SCREW, FLHD, 4/40, 3/16		HPR
37	2	120168	MS51957-17	SCREW, PNHD, 4/40, 1/2		HPR
38	2	120167	MS51957-16	SCREW, PNHD, 4-40X7/16		HPR
41	16	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
42	6	132066	ARLON 7A	PAD, RUBBER		ARL
44	32	120255	NAS620C4	WASHER, FLAT, #4		HPR
48	28	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
52	12	120259	NAS671C4	NUT, 4/40		HPR
53	1	140029	1123BK-4	KNOB		RAD
54	1	121082	75-327	BUSHING, TERMINAL KIT		SPG
57	1	179154	469193	ASSY. TOROID, INSIDE		DSI
58	4	120195	MS51959-29	SCREW, FLHD, 6/32X7/16		HPR
59	9	120248	MS35649-264	NUT, HEX, 6/32		HPR
60	9	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
61	1	142117	03-06-1032	RECEPTACLE, MDEL 1625-3	J6	MGL
62	3	142120	02-06-1103	TERMINAL, FEMALE	J6	MGL
63	1	161054	V631L-115-VAC	FAN, AC, WITH CAP		MIR
64	1	130453	469165	BRACKET, GROUND		DSI
65	2	120337	MS24693-C268	SCREW, FLHD, CSK 100, 10-32X1/4		MIL
66	4	120336	MS24693-C273	SCREW, FLHD, CSK 100, 10-32X5/8		MIL

Assembly : 469500  
Stock Number : 180170

ASSY, MODULE, AC, A22-A1

REV F2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
68	1	121090	AN931-7-11, RC#19	GROMMET, RUBBER		P-R
69	1	120347	MS35309-6	SCREW, 1/4-20X3/4, HEX BRASS		MIL
70	2	120346	MS51969-1	NUT, HEX, 1/4-20, BRASS	71	MIL
71	1	111039	4016-5	TAPE, FOAM, DOUBLE SIDED, 1/2 IN		MMM
72	1	142116	03-06-2032	PLUG, MODEL 1625-3	P6	MOL
73	3	142121	02-06-2103	TERMINAL, MALE	P6	MOL
74	1	179155	469194	ASSY, TOROID, OUTSIDE		DSI
75	5	120351	MS51959-32	SCREW, FLHD, 6-32X3/4, 82, CSNK		HPR
76	5	120256	NAS620C6	WASHER, FLAT, #6		HPR

Assembly : 469608  
Stock Number : 180244

ASSY, A22-A2, LOW VOLT, REG

REV E3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	4	158004	CS13BE107K	CAP, TANT, 100 UF, 20V	C1, 3, 5, 7	SPG
2	8	158008	CS13BF105K	CAP, TANT, 1 UF, 35V	C2, 4, 6, 8, 10, 12, 15, 16	SPG
3	1	154071	CK06BX105K	CAP, CER, 1 UF	C18	AVX
4	2	158002	CS13BB337K	CAP, TANT, 330 UF, 6V	C9, 11	SPG
5	2	158010	CS13BF476K	CAP, TANT, 47 UF, 35V	C13, 14	SPG
6	2	163019	DM15-102J	CAP, MICA, 1000 PF	C19, 20	ARC
7	3	154048	RPE12275U103M	CAP, CER, .01 UF, 100V	C21-23	ERI
8	13	172066	1N4002	DIODE, SILICON	CR1, 2, 4, 5, 9, 10, 13, 14 , 17, 18, 20, 21, 26	MOT
9	2	172067	1N4742A	DIODE, ZENER, 12V, 1W, 5%	CR3, 11	MOT
10	2	172061	1N3020B	DIODE, ZENER, 10V, 1W, 5%	CR6, 15	MOT
11	7	172010	1N914	DIODE, SILICON, D035	CR7, 8, 12, 16, 19, 22, 24	MOT
12	1	172063	1N3030B	DIODE, ZENER, 27V, 1W, 5%	CR23	MOT
13	1	172064	1N3031B	DIODE, ZENER, 30V, 1W, 5%	CR25	MOT
14	7	172086	HLMP-1301	DIODE, LED, RED	DS1-7	HEW
15	4	153069	3262X-1-502K	RES, ADJ, 5K	R1, 5, 9, 13	BRN
16	7	153060	3057P-1-201K	RES, ADJ, 200 HMS	R3, 7, 11, 15, 23, 30, 38	BRN
17	2	151054	R50J1.3K	RES, C. FILM, 1.3K, 1/2W, 5%	R4, 12	ROM
18	4	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R8, 16, 19, 26	ROM
19	2	151059	R50J62	RES, C. FILM, 62 HMS, 1/2, 5%	R17, 24	ROM
20	16	151033	R50J1	RES, C. FILM, 1 HMS, 1/2W, 5%	R18, 25, 31-34, 51-60	ROM
21	2	152029	RS-5-1	RES, W. W., 1 HMS, 5W	R35, 36	DAL
22	2	153068	3262X-1-202K	RES, ADJ, 2K	R20, 27	BRN
23	2	150006	R25J4.7K	RES, C. FILM, 4.7K, 1/4W, 5%	R21, 28	ROM
24	2	150142	R25J360	RES, C. FILM, 360 HMS, 1/4W, 5%	R22, 29	ROM
25	1	150003	R25J470	RES, C. FILM, 470 HMS, 1/4W, 5%	R37	ROM

Assembly : 469608  
Stock Number : 100244

ASSY, A22-A2, LOW VOLT, REG

REV E3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
26	2	151053	R50J10K	RES, C. FILM, 10K, 1/2W, 5%	R46, 50	
27	1	153067	3262X-1-103K	RES, ADJ, 10K	R40	BRN
28	2	170685	UA723	I. C. , 723	U1, 2	FRS
29	8	142002	026-4006-000-209	TEST, POINTS	TP1-8	CAM
30	2	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG
31	6	120213	350-1246-12-07-00	STANDOFF		CAM
32	1	147214	469215	P. C. , CARD, A22-A2		DSI
33	30	142057	160-2004-02-01-00	TERMINAL, TURRET		CAM
34	6	120299	3448-B-144	WASHER, FLAT, BRASS, #6, .312 OD		AMA
35	6	142079	LAS2215-PIN	PIN, SOCKET		LAM

Assembly : 469609  
Stock Number : 180245

ASSY, REG, 50V, A22-A3

REV A1  
05/01/86

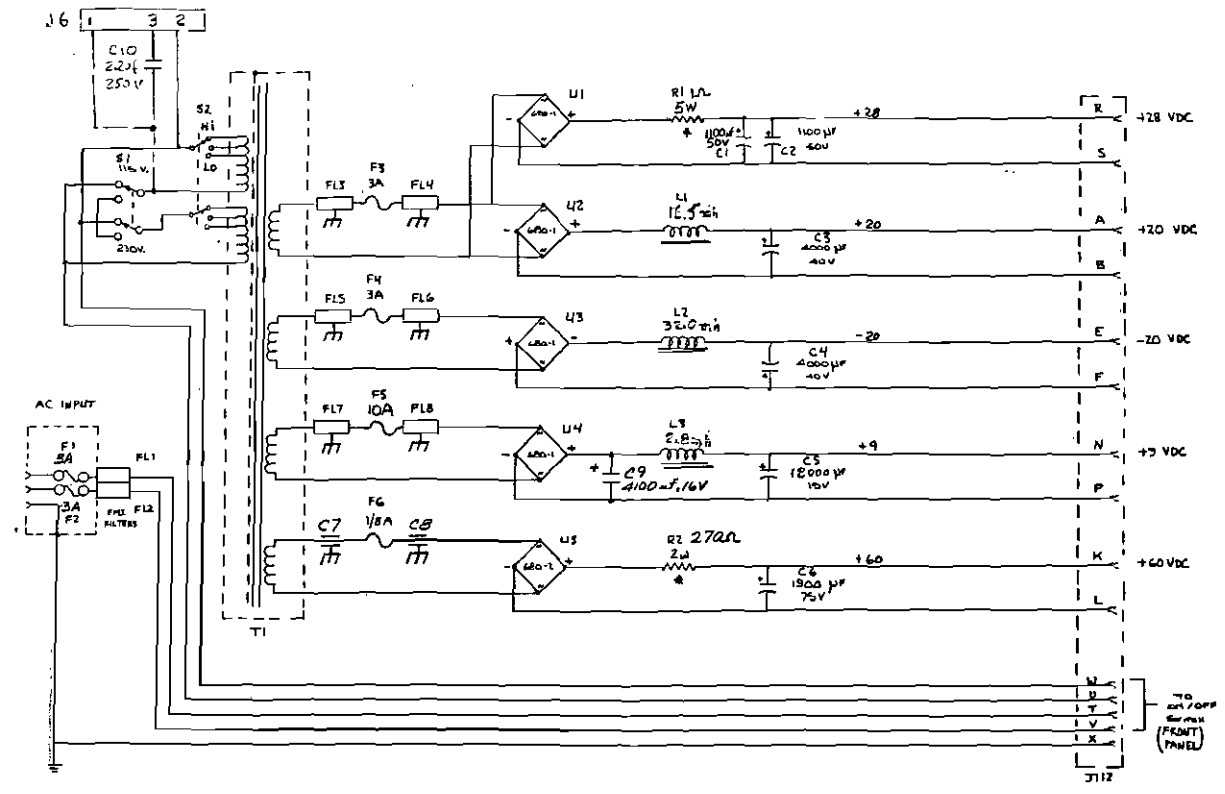
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	163030	DM15-511J	CAP. MICA, 510 PF	C15	ARC
2	1	158011	CS13BH106K	CAP, TANT, 10 UF, 75V	C16	SPG
3	1	154048	RPE122Z5U103M	CAP, CER, .01 UF, 100V	C17	ERI
4	1	172069	1N5365A	DIODE, ZENER, 36V, 5W, 10%	CR28	MDT
5	1	172070	1N5372A	DIODE, ZENER, 62V, 5W, 10%	CR29	MDT
6	1	172012	1N4004	DIODE, SILICON	CR30	MDT
7	1	150004	R25J1K	RES. C. FILM, 1K, 1/4W, 5%	R41	ROM
8	1	150012	R25J47K	RES. C. FILM, 47K, 1/4W, 5%	R39	ROM
9	1	152026	RC42GF511J	RES. C. COMP, 510 HMS, 2W	R44	ALB
10	2	150138	R25J3K	RES. C. FILM, 3K, 1/4W, 5%	R42, 43	ROM
11	1	150148	R25J5.1	RES. C. FILM, 5.1 HMS, 1/4W, 5%	R45	ROM
12	1	170685	UA723	I. C., 723	U7	FRS
13	1	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		AUG
14	3	120216	350-1249-11-07-00	STANDOFF, 1/4		CAM
15	1	147199	469117	P. C., CARD, A22-A3		DSI

Assembly : 469544  
 Stock Number : 167053

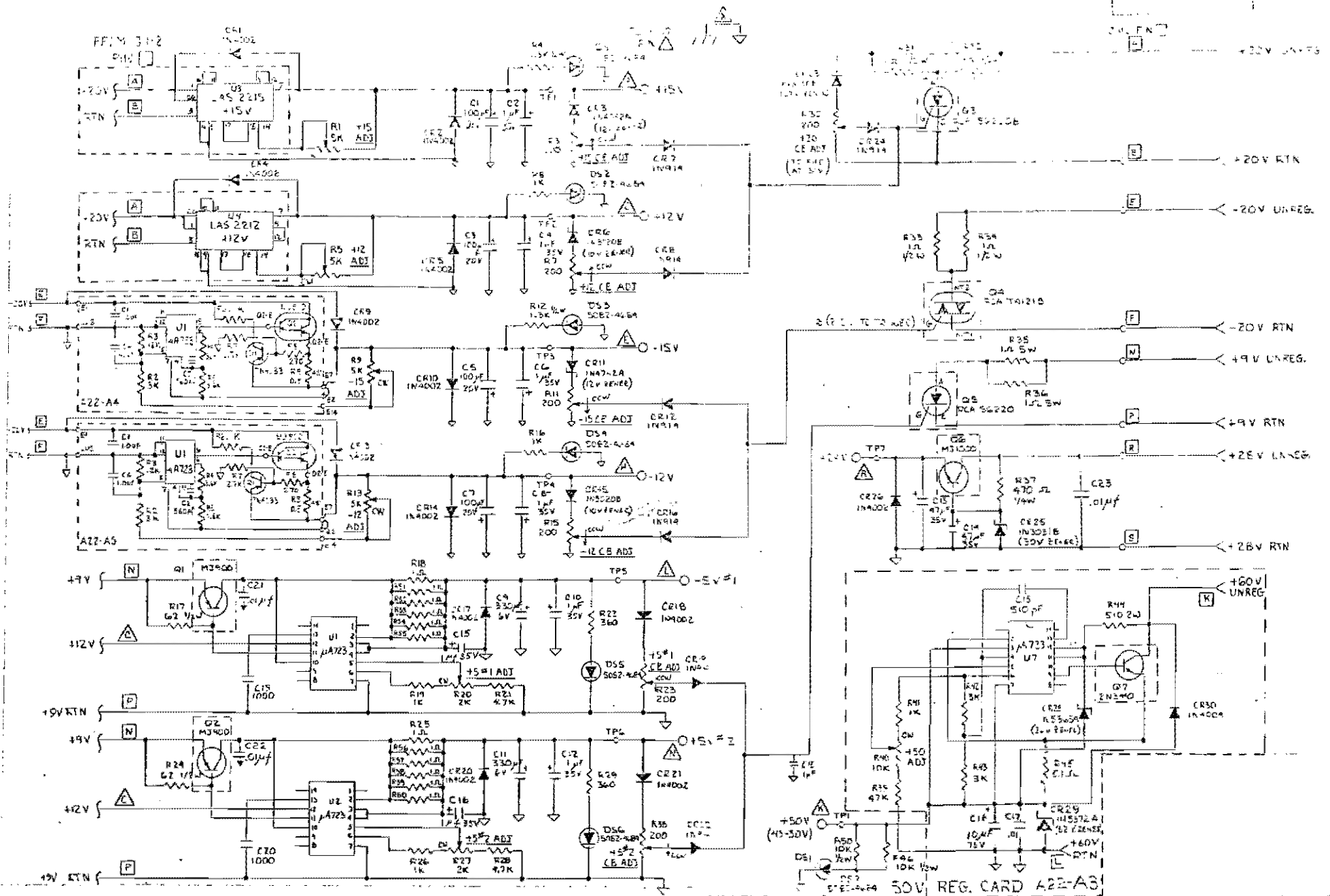
ASSY, REGULATOR, NEG. VOLTAGE

REV A  
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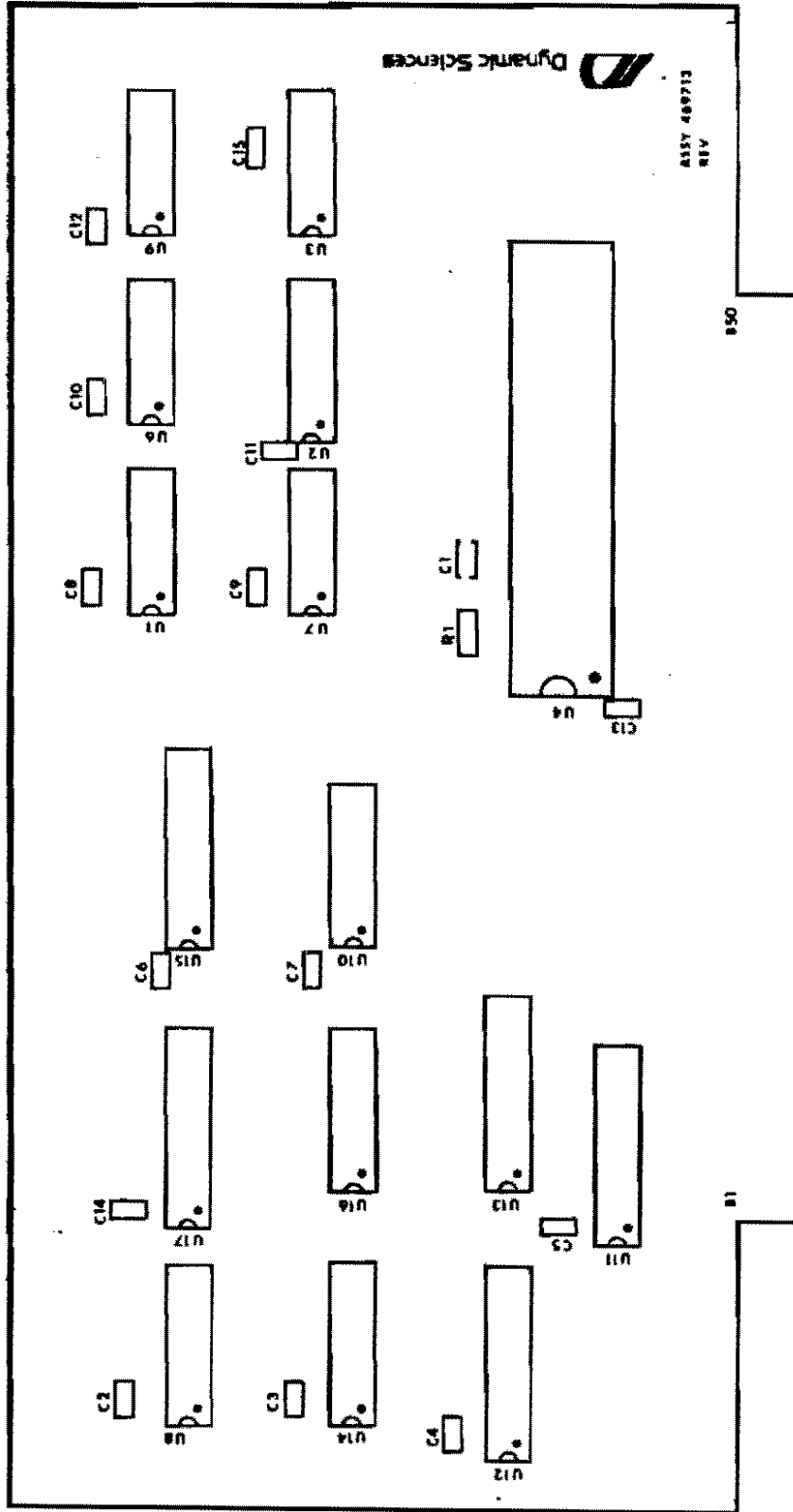
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	141223	514-AG-10D	SOCKET, 14 PIN, I. C.		A
2	2	120167	MS51957-16	SCREW, PNHD, 4-40X7/16		HPR
3	2	120236	AN960-C4L	WASHER, FLAT, #4		HPR
4	2	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
5	2	120279	350-1248-09-07-00	STANDOFF		CAM
6	4	142078	160-1026-02-05	TERMINAL		CAM
7	1	142010	12-1-.010	INSULATOR, PREFORM		ABL
8	1	142077	4651	INULATOR, MICA, MODIFIED		KEY
9	1	130307	469170	BASEPLATE		DSI
10	1	147263	469171	PCB, REGULATOR, NEG VOLT, R1250		DSI
11	2	125174	FIT 100	WIRE, 3/16"		
13	1	152036	TG-5-.05	RES, .5 OHM, W. W., 4W, 3%	R9	TRW
14	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R6	RDM
15	1	150005	R25J2.7K	RES, C. FILM, 2.7K, 1/4W, 5%	R7	F
16	1	150069	R25J270	RES, C. FILM, 270 HMS, 1/4W, 5%	R8	RDM
17	1	148021	RL07S302G	RES, M. FILM, 3.0K, 2%	R2	ALB
18	2	148043	RL07S362G	RES, M. FILM, 3.6K, 1/4W, 2%	R4, R5	ALB
19	1	148042	RL07S123G	RES, M. FILM, 12K, 1/4W, 2%	R3	ALB
22	1	154066	CK05BX561K	CAP, CER, 560 PF	C2	AVX
23	2	154047	RPE113Z5U105M50V	CAP, CER, 1 UF, 50V, 20%	C4, C1	ERI
26	1	171114	TN4033	TRANSIS	Q1	NSC
27	1	171094	MJ900	TRANSIS, PNP	Q2	MDT
28	6	125173	ET-20	WIRE, INS STRANDED		PIW
30	1	170685	UA723	I. C., 723	U1	FRS



POWER SUPPLY, A22A1  
A 22-1 3



REGULATOR, A22  
A22-12



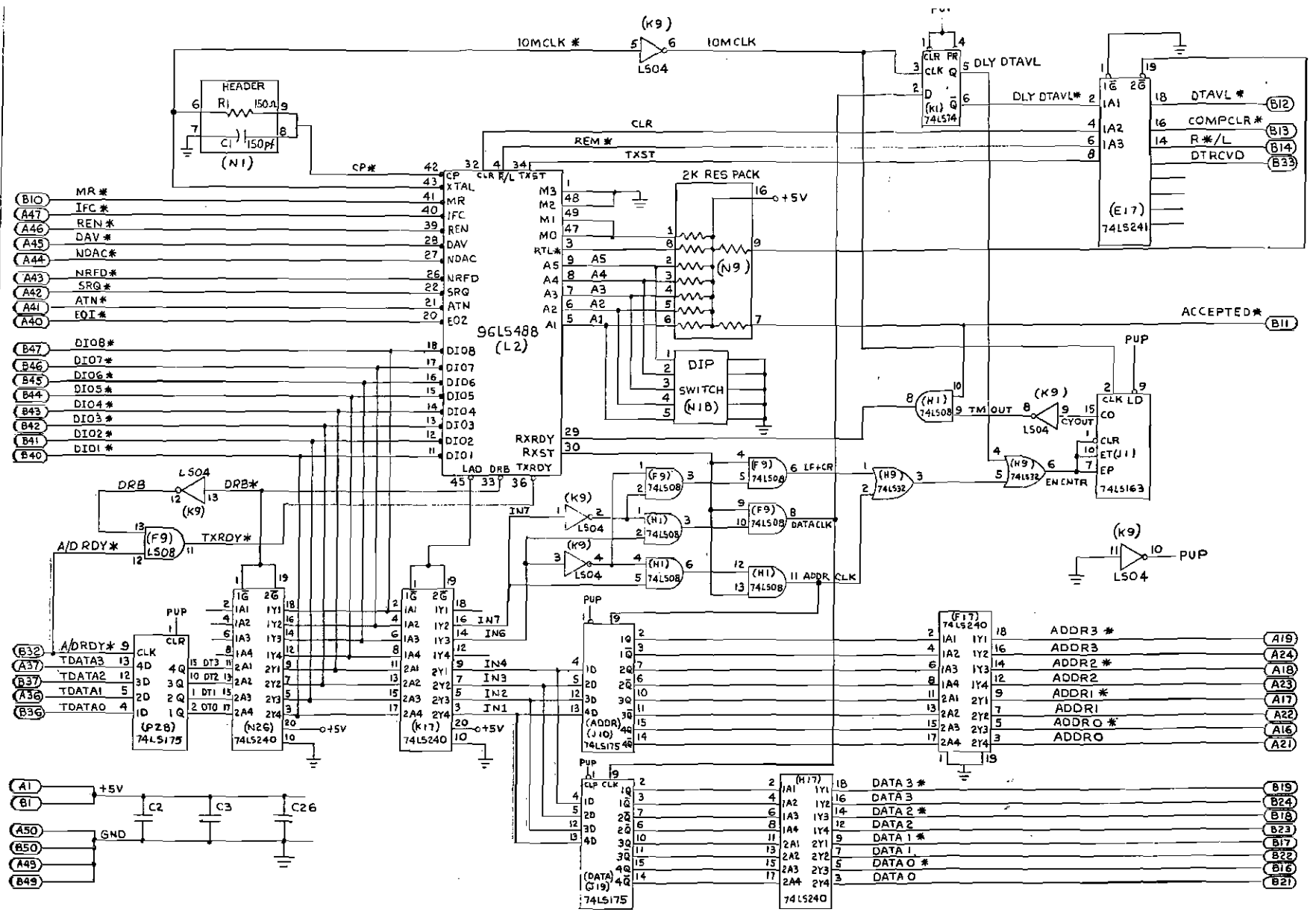
A23 IEEB INTERFACE

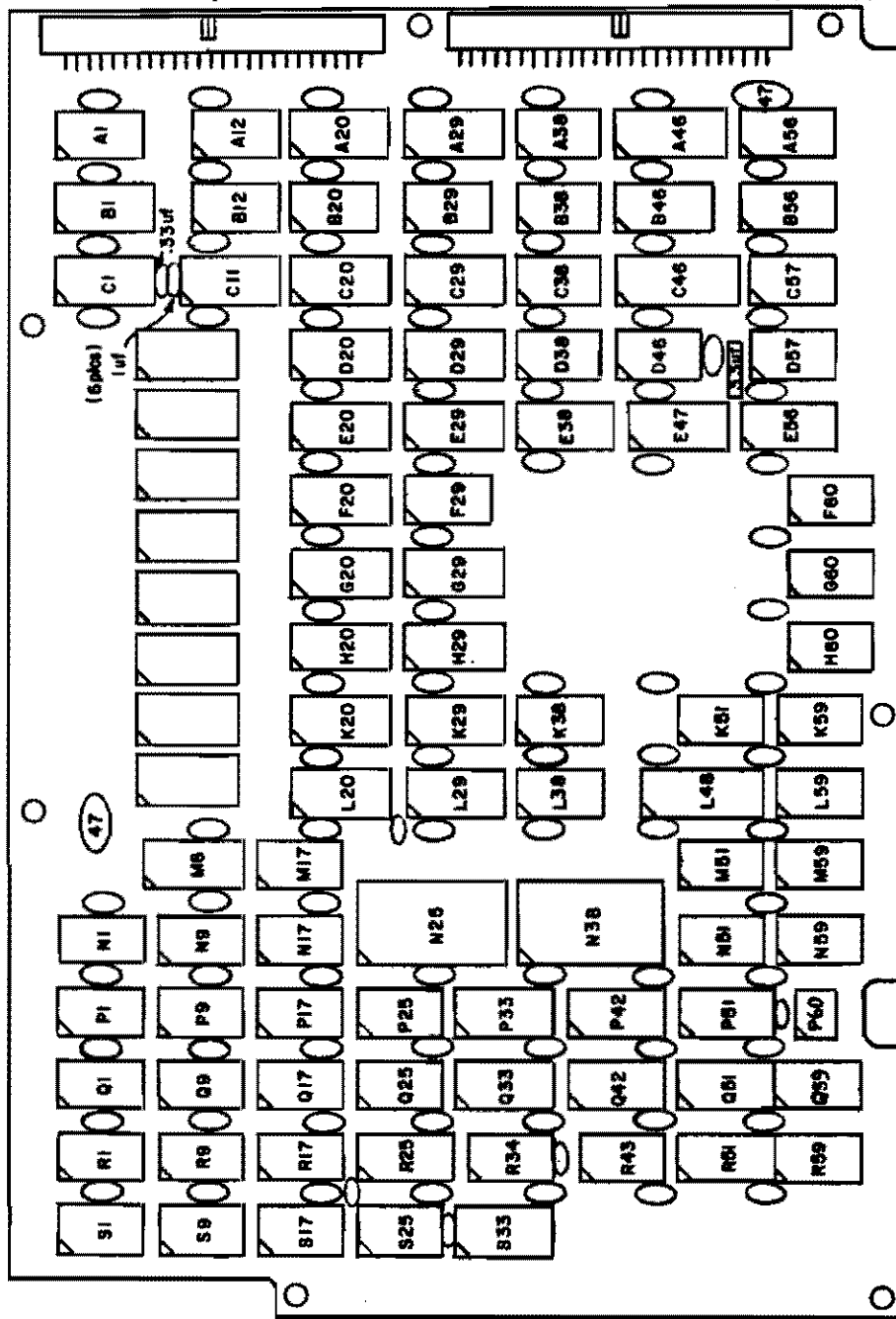
Assembly : 469713  
Stock Number : 180250

ASSY, IEEE INTERFACE, A23

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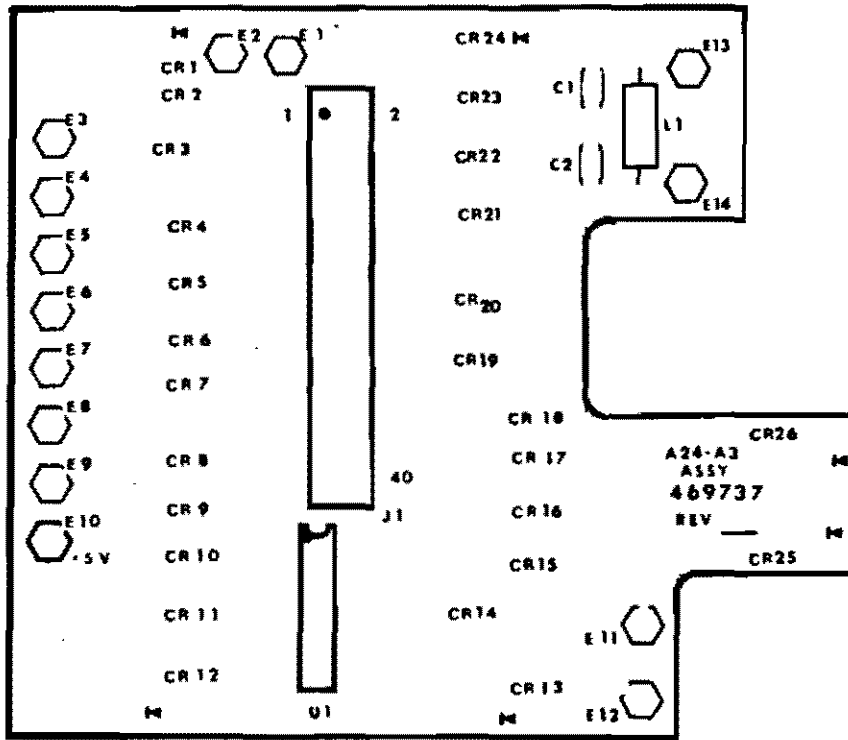
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1.	1	147262	469948	P. C. , CARD, A23, IEEE-488 BUSS		E
3	5	141223	514-AG-10D	SOCKET, 14 PIN, I. C.	U1, 3, 6, 7, 9	AUG
4	5	141225	516-AG-10D	SOCKET, 16 PIN, I. C.	U2, 8, 10, 14, 16	AUG
5	5	141311	520-AG-10D	SOCKET, 20 PIN, I. C.	U11, 12, 13, 15, 17	AUG
6	2	141231	524-AG-10D	SOCKET, 24, PIN, I. C.	U4	AUG
7	1	170697	898-1-R2K	RESIS PAK, 2 K, 5X, BUSS, 16 DIP	U10	BEC
8	1	170576	F96LS488DC	I. C. , 96LS488, CER	U4	FRS
9	1	170232	74LS74	I. C. , 74LS74	U3	TXI
10	1	170094	74LS04	I. C. , 74LS04, HEX, INVERTER	U9	TXI
11	1	170663	SN74LS163	I. C. , 74LS163	U2	TXI
12	1	170167	74LS32	I. C. , 74LS32, QUAD-2, INPUT	U7	TXI
13	2	170117	74LS08	I. C. , 74LS08, QUAD, AND	U1, 6	TXI
14	2	170573	74LS175	I. C. , 74LS175	U8, 14	TXI
15	4	170574	74LS240	I. C. , 74LS240	U12, 13, 15, 17	
16	1	170575	74LS241	I. C. , 74LS241	U11	TXI
17	1	145034	K40-D8S	SWITCH, DIP, SPST, 16 PIN	U16	ARE
18	1	150034	R25J150	RES, C, COMP, 150 HMS, 1/4W, 5X	R1	ROM
19	1	154056	CK05BX151K	CAP, CER, 150 PF	C1	AVX
20	14	154045	RPE121ZSU104M100V	CAP, CER, .1 UF, 100V	C2-15	ERI
21	3	121054	R1591-B-11	MOUNT, BLOCK		USE
23	3	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
24	3	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
25	1	179152	469493	ASSY, MOUNTING PLATES, A23		DSI



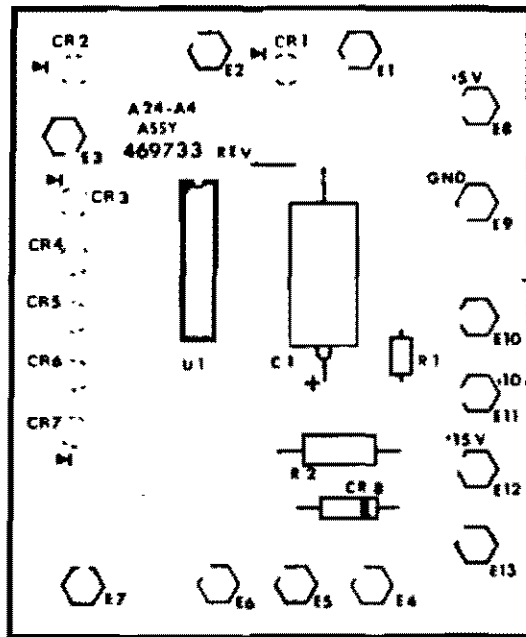


A24-A1

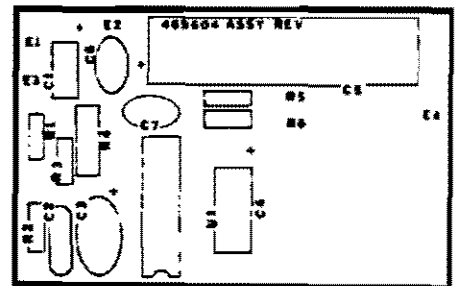
A 24 - 1



A24-A3



A24-A4



A24-A10

Assembly : 469730  
Stock Number : 179010

ASSY, FRONT PANEL, A24

REV J2  
05/01/86

Item	Dty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	130225	469731	PANEL, FRONT DETAIL		DSI
3	1	180255	469735	ASSY, FRONT PANEL, A24-A1	A24-A1	DSI
4	1	180256	469737	ASSY, FRONT PANEL, A24-A3	A24-A3	DSI
5	1	180254	469733	ASSY, FRONT PANEL, A24-A4	A24-A4	DSI
6	1	180258	469742	ASSY, A24-A5	A24-A5	DSI
7	1	180259	469743	ASSY, A24-A8	A24-A8	DSI
8	1	180242	469604	ASSY, AMP, AUDIO, A24-A10	A24-A10	DSI
9	1	179012	469771	ASSY, FRONT PANEL, SHIELD	A24-A2	DSI
10	1	129010	469423	WINDOW, EMC		DSI
11	1	131017	469264	BEZEL		DSI
12	1	130203	469265	PLATE, BEZEL, BACK-UP		DSI
13	1	130170	469161	ANCHOR, COVER, TOP, FRONT		DSI
14	1	126000	469754	ASSY, CABLE		DSI
16	1	145080	84881-001	KEYBOARD, FRONT MTG	S4	GHI
17	1	161030	152-1176	METER, .5-E MODEL	M1	EPI
18	1	161007	5060-0329	PULSE GEN ASSY	S2	HEW
20	1	153086	70KIG048R102U	RES. ADJ 1K, W/SWITCH	R6	ALB
21	1	153095	70KIG048R503U	RES, ADJ 50K, W/SWITCH	R7	ALB
22	2	153084	70BIG048P103W	RES, ADJ 10K	R2, 8	ALB
23	2	153085	70BIG048P503W	RES, ADJ 50K		ALB
24	1	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R11	RDM
25	1	145062	7211P3DE	SWITCH, TOGGLE, DP3T	S16	CKC
26	1	145072	MTF-206P	SWITCH, TOGGLE, DPDT	S5	ALS
27	1	145069	9201P3H3E	SWITCH, TOGGLE, DPST	S12	CKC
28	3	145060	7201P3DE	SWITCH, TOGGLE, DPST	S1, 6, 15	CKC
29	1	145125	919C70100	RELAY, SPDT	K1	TRS

Assembly : 469730  
Stock Number : 179010

ASSY, FRONT PANEL, A24

REV J2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
31	1	145050	436037-1	SWITCH, ROTARY, BCD	S14	f
32	1	145049	436028-1	SWITCH, ROTARY, BCD	S13	AMP
33	1	145052	436042-1	SWITCH, ROTARY	S3	AMP
34	1	150094	R25J5.1K	RES, C, FILM, 5.1K, 1/4W, 5X	R12	ROM
35	4	141193	3080-2242-00	CONN, COAX, N/SMA	J1, 2, 8, 9	OSM
36	4	141259	KC-19-118	CONN, COAX, BNC	J3, 4, 5, 7	KEC
37	5	141222	051-311-3196-220	CONN, COAX, SMB, RTA		SEA
38	2	140033	A62-BL-8-L	KNOB, .62 OD BLUE	R6, 7	RAD
39	5	140032	A62-BL-4-L	KNOB, 5/8, DIA	R1, 2, 8, 9, 10	RAD
40	1	140040	S15-2-BL-4	KNOB, SPINNER	S2	RAD
41	2	140030	A102-BL-4	KNOB, 1.00 OD BLUE	S3, 13	RAD
42	1	140031	A62-BL-4	KNOB, .62 OD BLUE	S14	RAD
46	2	120231	9739-A-0632	STANDOFF, ALUM, 6/32, 1/2, M/F		AMA
47	2	120232	9740-N-0632	STANDOFF, NYLON, 6/32, 5/8, M/F		f
48	2	120219	4313	STANDOFF, NYLON, 6/32, 7/8, F/F		HHS
49	3	120220	4316	STANDOFF, NYLON, 6/32, 1.0, F/F		HHS
50	3	142061	756A	TERMINAL, INSULATED		USE
51	1	172010	1N914	DIODE, SILICON, D035	CR2	MOT
54	6	120294	NAS662C2R5	SCREW, FLHD, 2-56, 5/16, LB		HPR
56	7	120255	NAS620C4	WASHER, FLAT, #4		HPR
57	23	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
58	6	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
59	1	141183	22-01-2056	CONN, 5 PIN	S14	MOL
60	1	141184	22-01-2076	CONN, 7 PIN	S13	MOL
61	1	141187	22-01-2176	CONN, 17 PIN	S3	MOL
62	22	120256	NAS620C6	WASHER, FLAT, #6		HPR

Assembly : 469730

Stock Number : 179010

ASSY, FRONT PANEL, A24

REV  
1 70

REV J2

05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
63	10	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
64	6	120248	MS35649-264	NUT, HEX, 6/32		HPR
65	2	120174	MS51957-28	SCREW, PNHD, 6-32X3/8		HPR
66	7	120205	2503	SCREW, PNHD, NYLON, 6/32, 1/4		HHS
67	3	142056	15-04-9209	KEY, POLARIZING		MDL
68	1	120239	MS25082-C20	NUT, THIN, 3/8, 32		HPR
69	15	120259	NA5671C4	NUT, 4/40		HPR
70	15	142040	87667-2	CONTACT, CRIMP		AMP
76	2	142032	558-.38	LUG, GND, 3/8, ID	R1, 9, 10	ZIE
77	3	142009	115-.25	LUG, GND, 1/4, ID	S1, 5, 15	ZIE
80	3	142047	KC8958	COVER, BNC	FOR SHIPPING ONLY	KEC
81	3	142024	346-0045-00	CORD, BNC, COVER	FOR SHIPPING ONLY	TEK
82	2	120088	MS51957-30	SCREW, PNHD, 6/32, 1/2		HPR
83	1	179125	469470	ASSY, FRONT PANEL, CONN		DSI
84	3	125160	RG17B B/U	CABLE, COAX		ALC
85	1	153101	70B1G048P103A	RES, ADJ, 10K	R10	ALB
86	1	105079	469765	LABEL, METER FACE, R1250		DSI
87	21	142053	08-50-0136	TERMINALS, CONN		MGL
88	24	125333	250-3908	CABLE, COAX, DOUBLE SHIELD		MDT
89	4	141237	055-628-9188-310	CONN, COAX, SMA		SEA
91	8	120211	2707-18550-N116	WASHER, NYLON, SHLDR, 5/16		AMA
93	1	130452	469619	MOUNT, RELAY, SPDT		DSI
94	2	130471	470551-2	INSULATOR, TYPE N, R1250		DSI
96	12	120127	MS51957-19	SCREW, PNHD, 4/40, 3/4		HPR
97	1	142118	03-06-2041	PLUG, MODEL 1625-4	P130	MDL
98	4	142121	02-06-2103	TERMINAL, MALE	P130	MDL

Assembly : 469730  
Stock Number : 179010

ASSY, FRONT PANEL, A24

REV J2  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
99	6	141358	227868-1	CONN, COAX, SMA, Ø85		F
100	18	125163	UT85TP	CABLE, COAX		UTI

Assembly : 469735  
Stock Number : 180255

ASSY, FRONT PANEL, A24-A1

REV G3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147251	469736	P. C. , CARD, LOGIC BD		DSI
2	8	141168	516-AG-11D	SOCKET, 16 PIN, I. C.		AUG
5	228	142052	150-1206-02-04-00	CLIP, POWER AND GROUND		CAM
7	8	141286	316-AG5F-R	SOCKET, 16 PIN, DIP		AUG
8	48	141177	ICS-314-WGG-2	SOCKET, 14 PIN, DIP		SAM
9	38	141178	ICS-316-WGG	SOCKET, 16 PIN, DIP		SAM
10	2	141179	ICS-318-WGG	SOCKET, 18 PIN, DIP		SAM
11	2	141180	ICS-320-WGG-2	SOCKET, 20 PIN, DIP		SAM
12	2	141176	IC-624-WGG-2	SOCKET, 24 PIN, DIP		SAM
13	2	141154	609-5047	CONN, 50 PIN, HEADER	J1, 2	AUG
14	1	141221	051-051-0000-220	CONN, COAX	J3	SEA
15	1	170618	74LS173	I. C. , 74LS173, QUAD, D, FLIP/FLOP	A56	TXI
16	1	170707	MM74C922N	I. C. , KEYBOARD ENCODER	A46	NSC
18	4	170094	74LS04	I. C. , 74LS04, HEX, INVERTER	A30, R43, Q25, Q9	TXI
19	5	170093	74LS00	I. C. , 74LS00, QUAD, NAND	C57, H60, G60, R1, R17	TXI
20	2	170516	74LS377	I. C. , 74LS377, OCTAL, D, FLIP/FLOP	C46, L40	TXI
21	5	170101	74LS02	I. C. , 74LS02, QUAD, NOR	D46, R25, S9, M17, M1	TXI
22	2	170209	74LS54	I. C. , 74LS54, AND OR INVERT	K51, S9	TXI
23	5	170615	74LS164	I. C. , 74LS164, 8 BIT SERIAL	B30, C30, D30, L30, K30	TXI
24	3	170158	74LS27	I. C. , 74LS27, 3, INPUT, NOR	M59, Q1, L59	TXI
25	2	170556	74LS260	I. C. , 74LS260, DUAL, 5, INPUT, NOR	N59, F29	SIG
26	1	170213	74LS55	I. C. , 74LS55, 2 WIDE-4 INPUT	N51	TXI
27	4	170117	74LS08	I. C. , 74LS08, QUAD, AND	M51, R34, N1, P1	TXI
28	1	170617	74LS169	I. C. , 74LS169, BINARY, UP/DOWN	P51	TXI
29	2	170709	CD4040B	I. C. , 4040, 12 STAGE RIPPLE	Q51, R51	RCA
30	1	170266	74LS123	I. C. , 74LS123, DUAL, ONE SHOT	S44	TXI

Assembly : 469735  
Stock Number : 180255

ASSY, FRONT PANEL, A24-A1

REV G3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
31	1	170614	74LS138	I. C. , 74LS138, 3:8 DECODER	Q42	T
32	11	170276	74LS157	I. C. , 74LS157, QUAD, 2:1 MUX	B1, P33, R25, L20, K20, H20, G20, F20, E20, D20, C20	TXI
33	8	170895	SN74ALS168BN	IC, SYNCH BIN UP/DWN 4 BIT CNTR	L29, K29, H29, G29, Q33, E29, D29, C29	TXI
34	8	170681	TIL 309	I. C. , DECIMAL DISPLAY, RT. PT.	DS1-DS8	TXI
36	3	170145	74LS20	I. C. , 74LS20, DUAL, 4-INPUT, NAND	N17, P17, A12	TXI
37	3	170203	74LS51	I. C. , 74LS51, AND-OR-INVERT GATE	D57, S1, R9	TXI
38	3	170124	74LS10	I. C. , 74LS10, 3-INPUT, NAND	F60, Q17, N9	TXI
39	2	170115	7407	I. C. , 7407, HEX INVERTER	P9, B12	TXI
40	1	170711	316A243	RESIS PAK, 24 K, 5%, BUSS, 16 DIP	C11	ALB
41	1	170692	314B102	RESIS PAK, 1 K, 5%, ISO, 16 DIP	S9	ALB
42	1	170712	314B622	RESIS PAK, 6. 2K, 5%, ISO, 14 DIP	A1	ALB
43	2	172085	FSA2619M	DIODE PAK	A20, 29	F
44	1	170713	316B103	RESIS PAK, 10 K, 5%, ISO, 16 PIN	E38	ALB
45	1	170714	316B152	RESIS PAK, 1. 5K, 5%, ISO, 16 DIP	E47	ALB
46	2	170715	FPQ2907	I. C. , TRANSIS, ARRAY	B20, 29	FRS
47	2	170263	74LS109	I. C. , 74LS109, JK POS, EDGE	S25, 34	TXI
48	1	170886	469180	ASSY, I. C. , PROM, E56	E56	DSI
51	1	158021	CS13BD335K	CAP, TANT, 3. 3 UF	CAP3	SPG
52	1	154051	RPE11375U334M100V	CAP, CER, . 33 UF, 100V	CAP1	ERI
53	2	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V		KEM
54	93	154048	RPE12275U103M	CAP, CER, . 01 UF, 100V	FILTER CAPS, CAP2	ERI
55	6	154047	RPE11375U105M50V	CAP, CER, 1 UF, 50V, 20%		ERI
57	14	142068	T44	PIN, STAKE		VCL
59	1	170718	469935	ASSY, I. C. , PROM	B46	DSI

Assembly : 469735  
Stock Number : 180255

ASSY, FRONT PANEL, A24-A1

REV G3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
60	1	170719	469936	ASSY, I. C., PROM	B56	DSI
61	1	170720	469937	ASSY, I. C., PROM	P42	DSI
62	1	170721	469938	ASSY, I. C., PROM	M8	DSI
63	1	170722	469939	ASSY, I. C., PROM	N25	DSI
64	1	170723	469940	ASSY, I. C., PROM	N38	DSI
65	1	170674	SN74S04J	I. C., 74S04, CER	S17	TXI
71	1	170738	UDN2981A	I. C., 2981	S54	SPG
72	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	S63	RCM
73	1	163070	DM5EC470J	CAP, MICA, 47 PF	S64	ARC
74	1	163063	DM5EC300J	CAP, MICA, 30 PF	S65	ARC

Assembly : 469737  
Stock Number : 180256

ASSY, FRONT PANEL, A24-A3

REV B1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147228	469738	P.C., CARD, A24-A3		D.
2	1	126007	469753	ASSY, CABLE, R1250		DSI
4	14	142012	140-2089-02-01-00	TERMINAL, BIF	E1-14	CAM
6	26	172086	HLMP-1301	DIODE, LED, RED	CR1-CR26	HEW
8	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
9	1	170691	314A331	RESIS PAK, 330 OHM, 5%, BUSS, 14 D U1		ALB
11	2	154048	RPE122Z5U103M	CAP, CER, .01 UF, 100V	C1, 2	ERI

Assembly : 469733  
Stock Number : 100254

ASSY, FRONT PANEL, A24-A4

REV C  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147227	469734	P. C. ,CARD, A24-A4		DSI
4	13	142012	140-2089-02-01-00	TERMINAL, BIF	E1-E13	CAM
6	7	172086	HLMP-1301	DIODE, LED, RED	CR1-CR7	HEW
7	1	172074	1N758A	DIODE, ZENER, 10V, .4W, 5%	CR8	MOT
9	1	150147	R25J510	RES, C. FILM, 510 HMS, 1/4W, 5%	R1	ROM
10	1	151055	R50J180	RES, C. FILM, 180 HMS, 1/2W, 5%	R2	ROM
12	1	158004	CS138E107K	CAP, TANT, 100 UF, 20V	C1	SPG
14	1	170691	314A331	RESIS PAK, 330 OHM, 5%, BUSS, 14 D U1		ALB

Assembly : 469742  
Stock Number : 180258

ASSY, A24-A5

REV A1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147230	469739-2	P. C., CARD, A24-A5		1
2	2	172086	HLMP-1301	DIODE, LED, RED		HEW

Assembly : 469743  
Stock Number : 180259

ASSY, A24-AB

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147229	469735-1	P. C., CARD, A24-AB		DSI
2	1	172086	HLMP-1301	DIODE, LED, RED		HEW

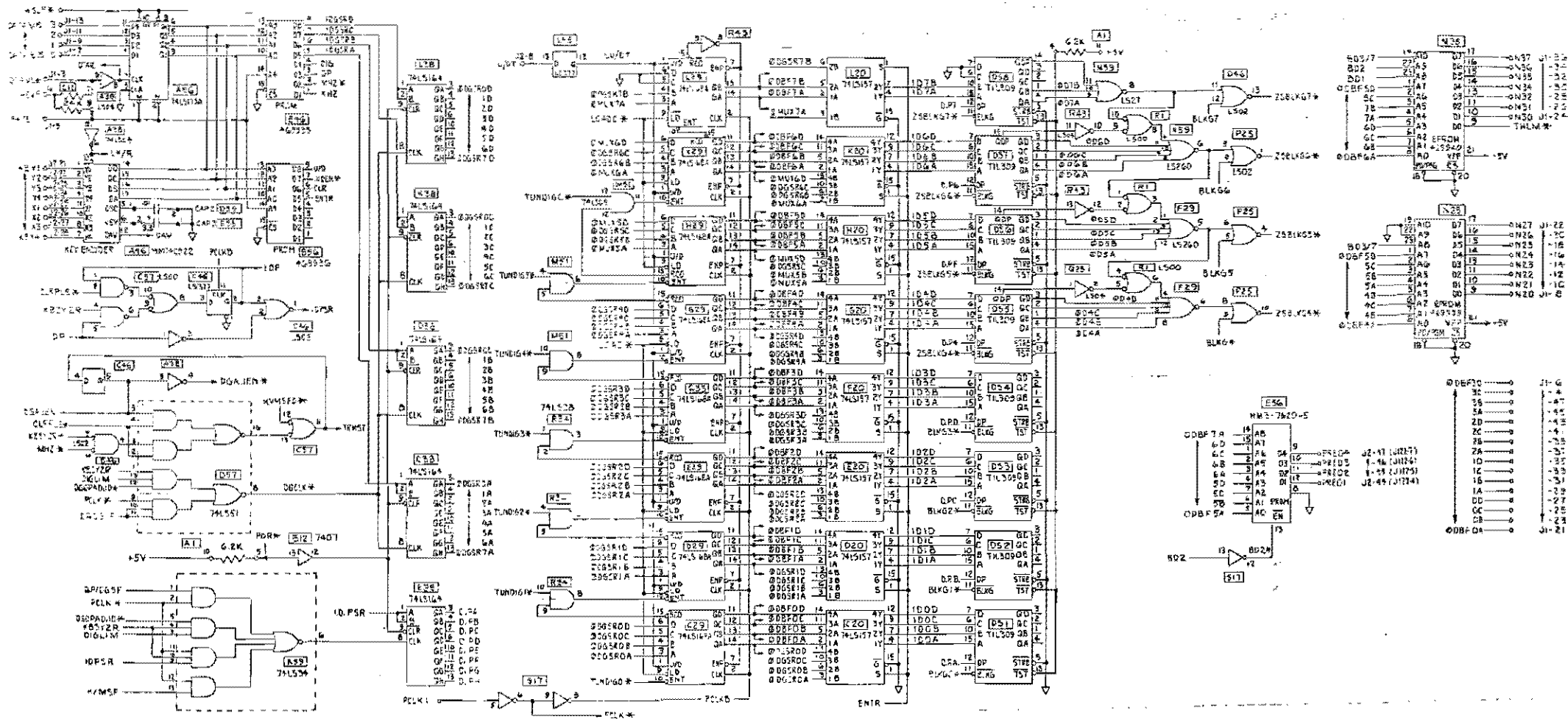
Assembly : 469604  
Stock Number : 180242

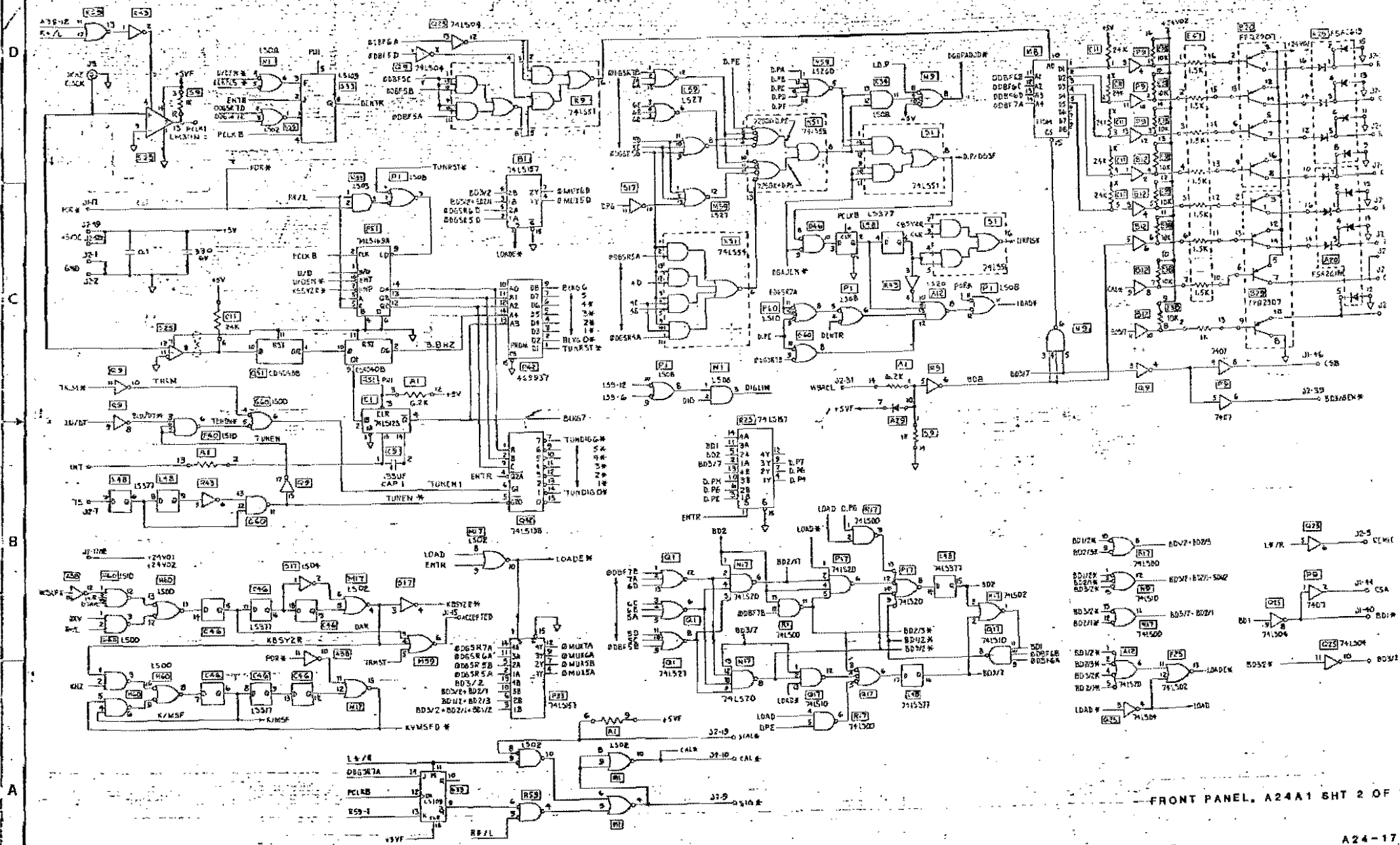
ASSY, AMP, AUDIO, A24-A10

REV C1  
05/01/86

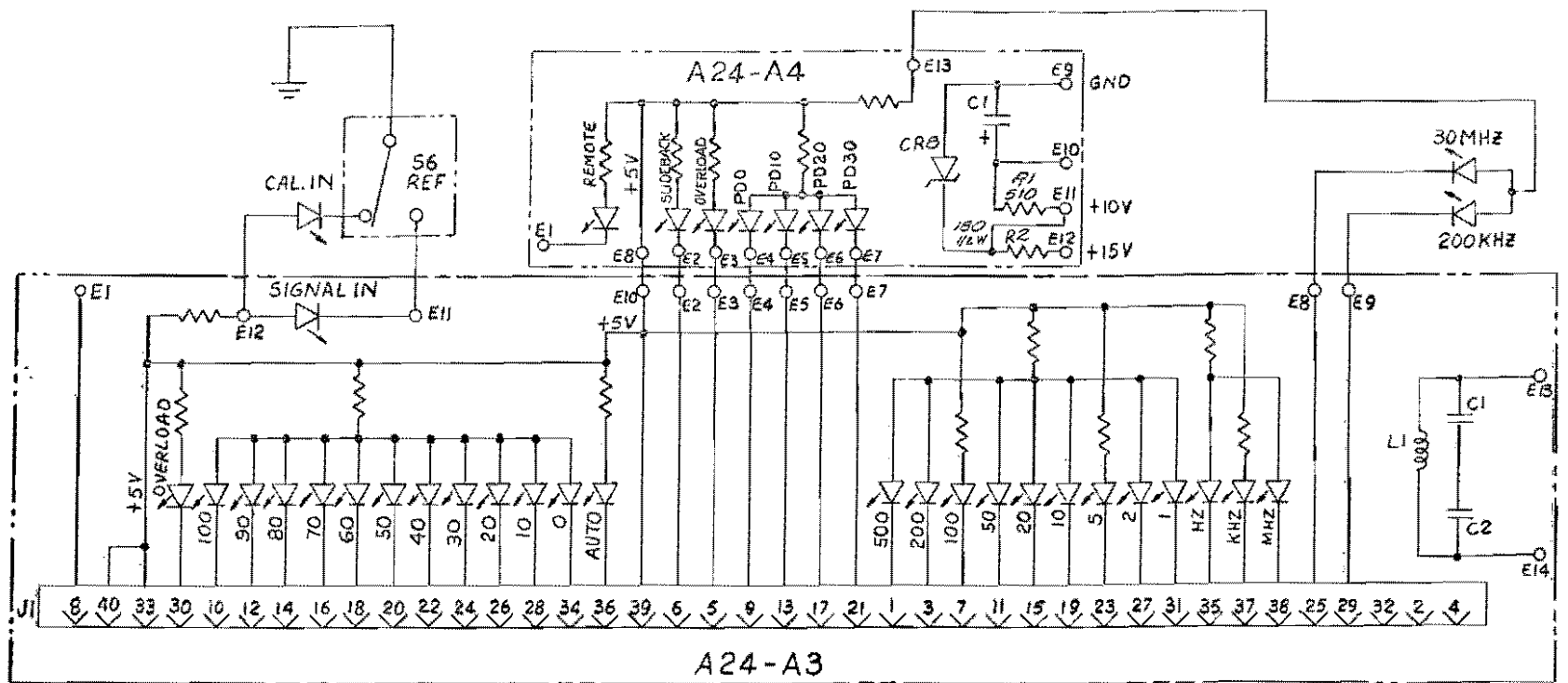
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	147217	469281	P. C. , CARD, A24-A10		L
2	1	142045	CN11	JACK, AUDIO	J6	SWC
3	1	170698	LM380N	I. C. , AUDIO	U1	NSC
4	1	158019	TC1505	CAP, TANT, 500 UF, 15V	C5	MAL
5	1	158008	CS138F105K	CAP, TANT, 1 UF, 35V	C1	SPG
6	1	158005	CS13BE156K	CAP, TANT, 15 UF, 20V	C4	SPG
7	1	162001	1270-016	CAP, FEEDTHRU	C8	ERI
8	1	163028	DM15-471J	CAP, MICA, 470 PF	C2	ARC
9	1	150004	R25J1K	RES, C. FILM, 1K, 1/4W, 5%	R3	ROM
10	1	150007	R25J10K	RES, C. FILM, 10K, 1/4W, 5%	R1	ROM
11	2	150058	R25J51K	RES, C. FILM, 51K, 1/4W, 5%	R2, 5	ROM
12	1	151061	R50J10	RES, C. FILM, 10 HMS, 1/2W, 5%	R4	ROM
13	4	142012	140-2089-02-01-00	TERMINAL, BIF	E1-E4	COM
14	2	142080	75-0.093	LUG, .093		ZIE
15	1	120176	MS51957-3	SCREW, PNHD, 2/56, 1/4		HPR
16	1	120258	NAS671C2	NUT, HEX, 2-56		HPR
17	1	120132	MS35338-134	WASHER, SPLITLOCK, #2		HPR
18	1	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V	C3	KEM
19	1	154047	RPE113Z5U105M50V	CAP, CER, 1 UF, 50V, 20%	C6	ERI
20	1	154045	RPE121Z5U104M100V	CAP, CER, .1 UF, 100V	C7	ERI
21	1	150135	R25J2.7	RES, C. FILM, 2.7 HMS, 1/4W, 5%	R6	ROM







FRONT PANEL, A24A1 SHT 2 OF 1



2. FOR COMPLETE SCHEMATIC SEE 469729  
 1. ALL RESISTORS ARE 330Ω, 1/8W IN NETWORK.  
 NOTES: UNLESS OTHERWISE SPECIFIED:

FRONT PANEL LED DISPLAY, A24A3 & A24A4  
 A 2 4 - 1 8

Assembly : 469740  
Stock Number : 180257

ASSY, MW BRACKET#1

REV E3  
05/01/86

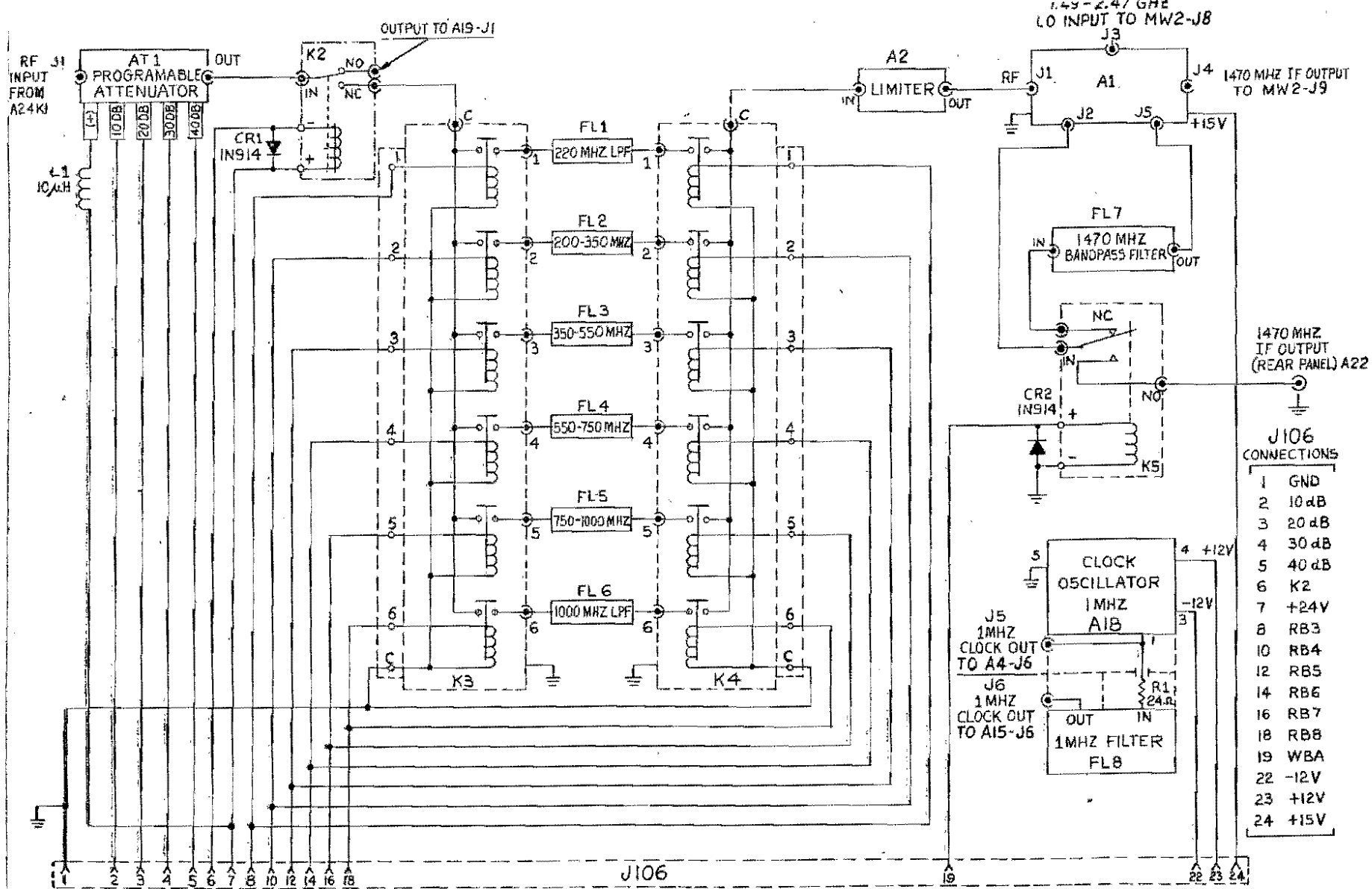
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	130427	469027	SUBCHASSIS, MW#1		DSI
2	1	130169	469160	MOUNT, SPDT, COAX, SWITCH		DSI
3	1	130164	469147	BRACKET, MOUNT, FILTER		DSI
4	1	130424	469432	BRACKET, RELAY, MTG PLATE		DSI
5	1	130426	469436	BRACKET, CLOCK, MTG		DSI
6	1	130425	469435	BRACKET, CLOCK, MTG		DSI
8	12	142028	4521-75-62-1C	CLIP		SES
9	1	142034	683, #4	LUG		ZIE
10	2	141220	051-049-0000-220	CONN, COAX	J5, 6	SEA
11	1	180171	469508	ASSY, CONVERTER, MW, M1-A1	A1	DSI
12	1	161003	MIC-3175-1	LIMITER	A2	AEL
13	1	168004	500-0138	OSCILLATOR, CLOCK, 1 MHZ	A18	WZL
14	1	161009	50DA100-131	ATT, PRDG, 100dB	AT1	ALN
15	1	167059	469381	FILTER, CRYSTAL, 220 MHZ	FL1	DSI
16	1	167054	469382	FILTER, CRYSTAL, 275-170 MHZ	FL2	DSI
17	1	167055	469383	FILTER, CRYSTAL, 350-550 MHZ	FL3	DSI
18	1	167057	469384	FILTER, CRYSTAL, 550-750 MHZ	FL4	DSI
19	1	167058	469385	FILTER, CRYSTAL, 750-1000 MHZ	FL5	DSI
20	1	167053	469386	FILTER, CRYSTAL, 1100 MHZ	FL6	DSI
21	1	167021	469775	FILTER, BP, 1470MHZ	FL7	DSI
22	1	167069	469378	FILTER, CRYSTAL, XTAL, 1 MHZ	FL8	DSI
23	2	145125	919C70100	RELAY, SPDT	K2, 5	TRS
24	2	145088	146C70600-8	RELAY, SP6T	K3, 4	TRA
25	1	166015	WD-10	INDUCTOR, 10 UH	L1	NYT
26	1	150134	R25J24	RES. C. FILM, 24 HMS, 1/4W, 5%	R1	ROM
27	4	120191	MS51959-13	SCREW, FLHD, 4/40X1/4		HPR

Assembly : 469740  
Stock Number : 180257

ASSY, MW BRACKET#1

REV E3  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
28	4	120172	MS51957-26	SCREW, PNHD, 6-32X1/4		
29	14	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
30	2	120164	MS51957-13	SCREW, PNHD, 4-40X1/4		HPR
31	4	120087	MS51957-34	SCREW, PNHD, 6/32, 1.0		HPR
32	4	120195	MS51959-29	SCREW, FLHD, 6/32X7/16		HPR
33	4	120127	MS51957-19	SCREW, PNHD, 4/40, 3/4		HPR
34	4	120193	MS51959-26	SCREW, FLHD, 6-32X1/4		HPR
35	22	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
36	12	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
37	5	120260	NAS671C6	NUT, HEX, 6-32		HPR
38	14	120259	NAS671C4	NUT, 4/40		HPR
41	4	120192	MS51959-14	SCREW, FLHD, 4/40X5/16		HPR
48	2	142014	1480A	TERMINAL, INSULATED		USE
49	2	172010	1N914	DIODE, SILICON, D035	CR1, 2	I
50	1	142037	75, #4	LUG		ZIE
51	2	125177	SW22	SLEEVING, TRFLON		PIW
52	2	125176	22-T/C	WIRE, BUSS, 22 GA		PIW
53	2	120256	NAS620C6	WASHER, FLAT, #6		HPR
54	2	132068	920-2693	BROMMET, CATEPILLAR		HHS
55	37	141358	227868-1	CONN, COAX, SMA, 085		AMP
56	1	130430	469434	BRACKET, RELAY MTG		DSI
57	1	130429	469433	BRACKET, RELAY MTG		DSI
58	1	179126	469471	ASSY, M1, CONN		DSI
59	1	179132	469477	ASSY, M1 CABLES, SEMI-RIGID		DSI
60	4	120238	MS15795-803	WASHER, FLAT #4		HPR
61	4	172066	1N4002	DIODE, SILICON	CR3-6	MGT



MICROWAVE BRACKET NO. 1  
MW1-8

Assembly : 469745  
 Stock Number : 180261

ASSY, MW BRACKET#2

REV F  
 05/01/86

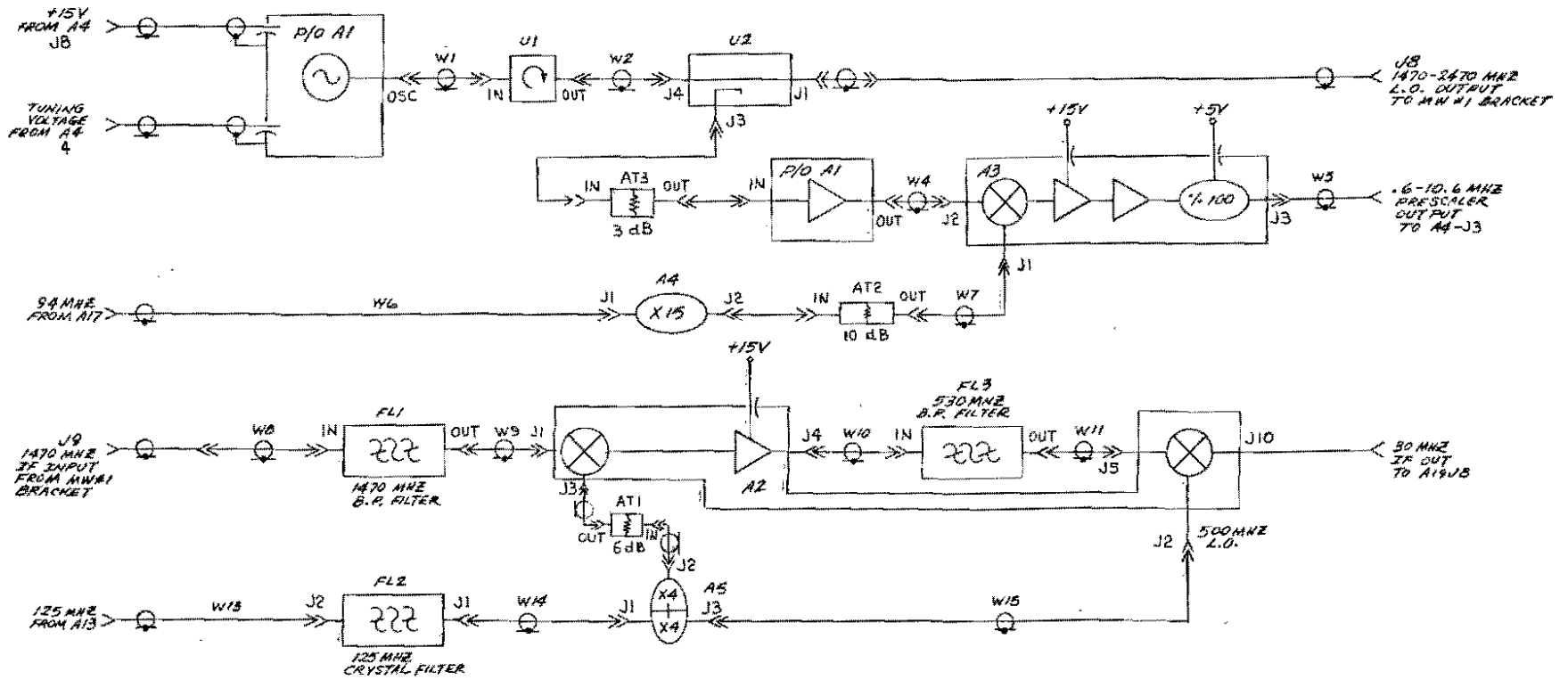
Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	130165	469151	FAB, BRACKET, MW #2		DSI
3	1	130221	469411	PLATE, MTG, COUPLER		DSI
5	1	180169	469363	ASSY, OSC, M2-A1	A1	DSI
6	1	180172	469509	ASSY, CONVERTER, MW, M2-A2	A2	DSI
7	1	180173	469510	ASSY, PRESCALER, M2-A3	A3	DSI
8	1	161006	469914	MULTIPLIER, 1470MHZ	A4	DSI
9	1	161005	469913	MULTIPLIER, 2GHZ	A5	DSI
10	1	167021	469775	FILTER, BP, 1470MHZ	FL1	DSI
11	1	167022	469776	ASSY, 125MHZ FILTER, M2-FL2	FL2	DSI
12	1	167056	469380	FILTER, CRYSTAL, 530 MHZ	FL3	DSI
13	1	161014	CT-2106-DT	ISOLATOR, 1.5-3.0 GHZ	U1	UTE
14	1	161013	CL1530-10	COUPLER, 10DB	U2	ENM
15	1	161012	A406M	TERMINATOR, PAD, 6DB	AT1	ENM
16	1	130244	469911	ADAPTER PLATE, 1410 MHZ		DSI
17	1	130243	469910	ADAPTER PLATE, 2GHZ		DSI
18	4	141222	051-311-3196-220	CONN, COAX, SMB, RTA		SEA
19	2	141237	055-628-9188-310	CONN, COAX, SMA		SEA
24	1	141257	JF1S-3PB	CONN, 4 PIN	P109	WIN
25	2	121076	B1553-1/4-11	SPACER, .131D, .250D, .25LG		USE
27	6	125160	RG178 B/U	CABLE, COAX		ALC
28	2	161032	A410M	TERMINATOR, PAD, 10 DB	AT2*, AT4*	ENM
29	8	120151	MS24693-4	SCREW, FLHD, 4/40, 3/8		HPR
30	2	120159	MS51957-10	SCREW, PNHD, 2/56, 7/8		HPR
31	20	120166	MS51957-15	SCREW, PNHD, 4-40X3/8		HPR
33	4	120174	MS51957-28	SCREW, PNHD, 6-32X3/8		HPR
34	2	120163	MS51957-125	SCREW, PNHD, 6/32, 1.375		HPR

Assembly : 469745  
Stock Number : 180261

ASSY, MW BRACKET#2

REV F  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
35	2	120254	NAS620C2	WASHER, FLAT, #2		HPR
37	16	120255	NAS620C4	WASHER, FLAT, #4		HPR
38	2	120256	NAS620C6	WASHER, FLAT, #6		HPR
39	2	120132	MS35338-134	WASHER, SPLITLOCK, #2		HPR
40	28	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR
41	6	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
42	2	120258	NAS671C2	NUT, HEX, 2-56		HPR
43	16	120259	NAS671C4	NUT, 4/40		HPR
44	2	120260	NAS671C6	NUT, HEX, 6-32		HPR
47	1	161012	A406M	TERMINATOR, PAD, 6DB	AT3*	ENM
48	1	179133	469478	ASSY, M2, CABLES, SEMI-RIGID		DSI



MICROWAVE BRACKET NO. 2  
MW2-3

Assembly : 469750  
Stock Number : 179011

ASSY, TOP

REV F10  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	179003	469503	ASSY, CHASSIS, IF	A19	DSI
2	2	131016	469021	FAB, FRAME, SIDE		DSI
3	1	179010	469730	ASSY, FRONT PANEL, A24	A24	DSI
4	1	179009	469717	ASSY, CARD CAGE, C1	C1	DSI
5	1	179048	469941	ASSY, POWER SUPPLY, A22	A22	DSI
6	1	180170	469500	ASSY, MODULE, AC, A22-A1	A1	DSI
7	1	180257	469740	ASSY, MW BRACKET#1	M1	DSI
8	1	180261	469745	ASSY, MW BRACKET#2	M2	DSI
9	1	130158	469095	FAB, PANEL, SIDE, LEFT		DSI
10	1	130171	469162-1	FAB, COVER, BOTTOM		DSI
11	1	179156	469168	ASSY, COVER, AIR DEFLECTOR		DSI
12	6	120180	MS51957-42	SCREW, PNHD, 8/32, 5/16		HPR
13	7	120182	MS51957-45	SCREW, PNHD, 8/32X1/2		HPR
14	4	120171	MS51957-25	SCREW, PNHD, 6/32, 3/16		HPR
15	2	120149	MS16995-50	SCREW, SDC. HD, 1/4-20		HPR
16	4	120181	MS51957-43	SCREW, PNHD, 8/32X3/8		HPR
17	24	120174	MS51957-28	SCREW, PNHD, 6-32X3/8		HPR
18	10	120088	MS51957-30	SCREW, PNHD, 6/32, 1/2		HPR
19	8	120194	MS51959-28	SCREW, FLHD, 6/32X3/8		HPR
20	2	120278	NAS620C4L	WASHER, FLAT, #4, THIN		HPR
21	24	120257	NAS620C8	WASHER, FLAT, #8		HPR
22	32	120256	NAS620C6	WASHER, FLAT, #6		HPR
23	6	120255	NAS620C4	WASHER, FLAT, #4		HPR
24	28	120244	MS35338-137	WASHER, SPLITLOCK, #8		HPR
25	38	120243	MS35338-136	WASHER, SPLITLOCK, #6		HPR
26	2	120242	MS35338-135	WASHER, SPLITLOCK, #4		HPR

Assembly : 469750  
Stock Number : 179011

ASSY, TOP

REV F10  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
34	6	120260	NAS67106	NUT, HEX, 6-32		HPS
37	1	180247	469710	ASSY, A4, MW OSC-PLL CONT	A4	DSI
38	1	180175	469521	ASSY, PRED., GAIN, A5	A5	DSI
39	1	180176	469522	ASSY, AGC, AMP, A6	A6	DSI
40	1	180177	469523	ASSY, AM/BFO, DETECTOR, A7	A7	DSI
41	1	180178	469524	ASSY, LOG, AMP, A8	A8	DSI
42	1	180179	469525	ASSY, FM, DETECTOR, A9	A9	DSI
43	1	180180	469526	ASSY, A10, AM VID, SLBK PLSE, A S	A10	DSI
44	1	180248	469515	ASSY, A11, LOG & SWITCH CONT	A11	DSI
45	1	180249	469712	ASSY, A12, SYNTH 5, 30-50 MHZ	A12	DSI
46	1	180277	469900	ASSY, A13, SYNTH 1, 32 & 125 MHZ	A13 (469756 for 302)	DSI
47	1	180251	469714	ASSY, A14, SYNTH 2, 100-200 MHZ	A14	DSI
48	1	180263	469758	ASSY, A15	A15	DSI
49	1	180253	469716	ASSY, A16	A16	DSI
50	1	180190	469536	ASSY, 94MHZ, SOURCE, A17	A17	DSI
51	1	180250	469713	ASSY, IEEE INTERFACE, A23	A23	DSI
59	1	179056	469620	ASSY, SERVICE, KIT	K1	DSI
62	1	121062	MP40008-5	BAIL/FEET		BUC
64	11	121064	MS-08	BASKET, RFI		SPI
65	1	126035	500045	ASSY, CABLE, POWER		DSI
68	1	126004	469627	ASSY, HARNESS, COAX, CARD CAGE	C1-H1, H2	DSI
69	1	130257	469751	FAB, HOUSING, CONN, MOUNTING		DSI
70	1	130258	469767	PLATE, CONN, REAR PANEL		DSI
73	1	141313	552633-3	STUD KIT, IEEE, SET		AMP
74	1	141238	552568-1	CONN, MTG KIT, STD STUD		APN
75	1	141314	T170B	TERMINATION, BNC	(IF OUT)	ENM

Assembly : 469750  
Stock Number : 179011

ASSY, TOP

REV F10  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
76	1	141315	T180M	TERMINATION, SMA	(IF OUT)	ENM
73	1	126036	500046	ASSY, CABLE, I' CON, ONE END BARE		DSI
50	1	126089	469402	ASSY, CABLES		DSI
81	1	128034	469038	DETAIL, SHIELD	A24-A11	DSI
81	1	105051	206-1040	LABEL, EQUIPMENT		DSI
82	1	161072	294-3	PAD, ATTENUATOR, 3 DB, 2 GHZ	AT1	MMW

Assembly : 469753  
Stock Number : 126007

ASSY, CABLE, R1250

REV A  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	1	141198	3564-1001	CONN, 50 PIN		
2	1	141273	609-4053	CONN, 40 PIN		TBA
3	1	125157	171-40	CABLE, RIBBON		TBA

Assembly : 469754  
Stock Number : 126008

ASSY, CABLE

REV B  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
	1	141198	3564-1001	CONN, 50 PIN		MMM
	1	141281	609-5001M	CONN, RI, RECEP		TBA
	1	125158	171-50	CABLE, RIBBON		TBA

Assembly : 469718  
Stock Number : 126006

ASSY, HARNESS, C1-H3

REV F1  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
2	2	141197	341-100-500-203	CONN, 100 PIN	A11P6, 23	E
6	1	141196	341-030-500-203	CONN, 30 PIN	A11P7	EDC
12	1	130181	469221	BRKT, CONNECTOR, MTG		DSI
20	10	142016	160-2051-01-01-00	TERMINAL, TURRET		CAM
21	6	125156	1229	BRAID		ALC
22	2	142031	5-174	TERMINAL, STRIP	TB101-	CCH
23	2	120260	NAS671C6	NUT, HEX, 6-32		HPR
24	1	142039	7A-.250	LUG, GND, 1/4, ID		ZIE
25	28	142034	683, #4	LUG		ZIE
26	4	142037	75, #4	LUG		ZIE
28	1	170701	MC7805CT	I. C. , 7805, REGULATOR	U1	MDT
29	1	152027	RH5-12	RES, 12 HMS, 5W	R1	DAL
30	1	158020	T368-C476-K020AS	CAP, TANT, 47 UF, 20V	C1	KEM
31	1	179124	469469	ASSY, CARD CAGE, CONN		

Assembly : 469627  
Stock Number : 126004

ASSY, HARNESS, COAX, CARD CAGE

REV C  
05/01/86

Item	Qty	Stk Num	Part Number	Description	Reference Desig.	Mfr
1	42	141222	051-311-3196-220	CONN. COAX, SMB, RTA		SEA
2	30	125160	RG178 B/U	CABLE, COAX		ALC
5	1	105067	9621	NUMBERS, RJB-ON, 1/8		DAT