Mobile Communications

MASTR® II 806-870 MHz 100-WATT STATION COMBINATIONS

Maintenance Manual

Ericsson GE Mobile Communications Inc.
Mountain View Road • Lynchburg, Virginia 24502

Printed in U.S.A.

LBI-31782

TABLE OF CONTENTS

ILLUSTRATIONS

SPECIFICATIONS*

FCC FILING NUMBER	
Transmitter, Continuous Duty	KT-256-A2
Receiver	ER-97-D
FREQUENCY RANGE	
Transmitter	851-870 MHz
Receiver	806-825 MHz
RF OUTPUT POWER	100-Watts
INPUT VOLTAGE	121 Vac, 60 Hz (242 Vac, 50 Hz Optional)
AC INPUT POWER	
TRANSMIT	600 Watts
RECEIVER	
Standby	139 Watts
Rated Audio	145 Watts
TEMPERATURE RANGE	-30° to +60° C (-22° to +140° F) NOTE: A cabinet blower is required for continuous duty operation above 40° C ambient.
EIA DIMENSIONS (H x W x D)	
DESK MATE (30-inch)	30-1/4" x 21-1/2" x 15.5"
DESK MATE (44-inch)	44-1/4" x 21-1/2" x 15.5"
POLE MOUNT	45" x 21-1/2" x 21"
FLOOR MOUNT	69" X 23" X 21"
WEIGHT	
DESK MATE (30-inch)	160 lbs.
DESK MATE (44-inch)	280 lbs.
POLE MOUNT	325 lbs.
FLOOR MOUNT (69-inch)	388 lbs.

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage, or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

High level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS WHEN THE TRANSMITTER IS KEYED.

* These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specification Sheet for the complete specifications.

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COMBINATION NOMENCLATURE

DIGITS 1,2	DIGIT 3	DIGITS 4,5,6	DIGIT 7	DIGIT 8	DIGIT 9	DIGIT 10	DIGIT 11
PRODUCT CODE	CABINET	POWER OUTPUT	CONTROL	NUMBER OF	OPTIONS	FREQUENCY RANGE	APPLICATION (MHz)
S3	**D** DK MATE 30-IN	**100** 100-WATTS	**R** DC REMOTE	**A** ONE	**S** STANDARD	**Z** 800	**C** 800 MHz
	S DK MATE 44-IN		**T** TONE REMOTE		**D** DUPLEX		
	P POLE MT		**U** DC REM/		**L** CG/DUPLEX		
	V FLOOR MT		**V** TONE REM/ REPEAT		**U** CHANNEL GUARD		
			Y REPEAT		**S** STANDARD		

DESCRIPTION

General Electric MASTR II 100 watt Solid State Radio Station Combinations operate on the 806-870 MHz frequency range, transmiting on the 851-870 MHz frequency band and receiving on the 806-825 frequency band. The continuous duty station may be operated using either DC or Tone Remote Control. The station may also be operated as a repeater, receiving and retransmitting signals simultaneously.

The station receiver is mounted in a shielded enclosure on the radio panel front door, along with a receiver system board which accommodates Channel Guard and other option boards. Jacks are provided on the system board for plug-in interface with the options and control functions. The station transmitter exciter is located in a shielded compartment in the radio panel front door. Figure 1 shows a typical station assembly.

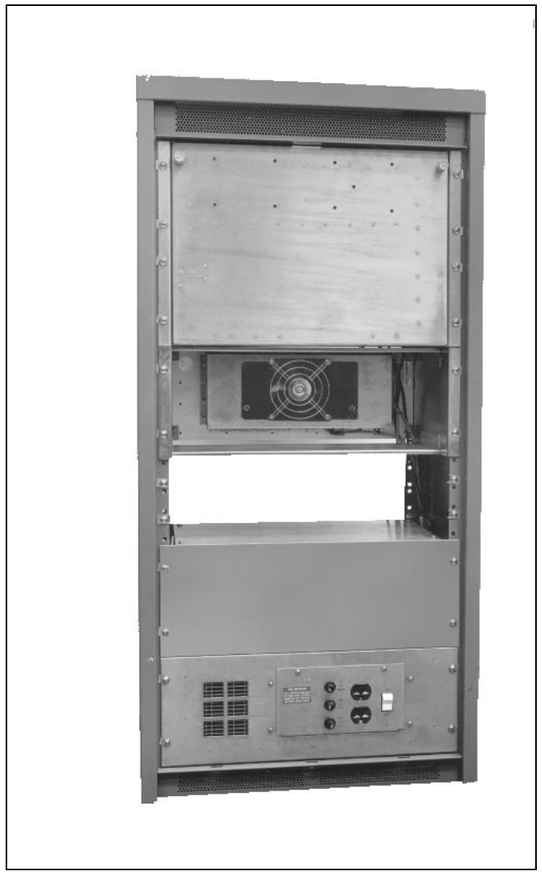

Figure 1 - Front View of 80 Watt Station

The station transmitter is a crystal controlled, phase modulated, solid state transmitter designed for single frequency operation. The transmitter utilizes both integrated circuits and discrete components and consists of the following modules:

- Exciter board with audio amplifier, modulator, and multiplier stages
- Driver amplifier with power control and low pass filter assembly.
- Power Amplifier with low pass filter assembly, with or without antenna relay.

100-WATT PA ASSEMBLY

The 100 watt PA assembly uses four RF power transistors to provide the rated power output. The output power of the 100 watt PA is adjustable over a range of 10 to 100 watts.

The transmitter power amplifier hinges from the bottom rear of the radio housing. The PA consists of a frame mounted to a heat sink. A cover snaps into the frame to form an RF tight enclosure for the PA board assembly.

CONTROL SHELF

The station Control Shelf is mounted directly above the PA assembly which is located just behind the Radio Panel Front Door. This shelf houses the Control Panel.

Front Panel controls include REM PTT, Speaker, Auxiliary receiver, ICOM (Intercom) and TEST switches, and the VOLUME Control. Indicators include the TX (transmit), RPTR Disable. Figure 2 shows a typical Control Shelf mounted in the station rack.

Interconnections to the Control Shelf are made to TB1201 located on the back of the shelf.

The station power supply is located at the bottom of the station cabinet. A power switch, primary and secondary fuses and two AC outlets are located on the front panel. A high current fuse is located on the back panel of the power supply.

SYSTEM DESCRIPTION

RECEIVER

The station receiver consists of an oscillator/multiplier assembly (OSC/MULT), RF Assembly, Mixer/IF Assembly (MIF) and IF-Audio Squelch Assembly (IFAS). Refer to the Receiver Maintenance Manual for a complete description of the station receiver.

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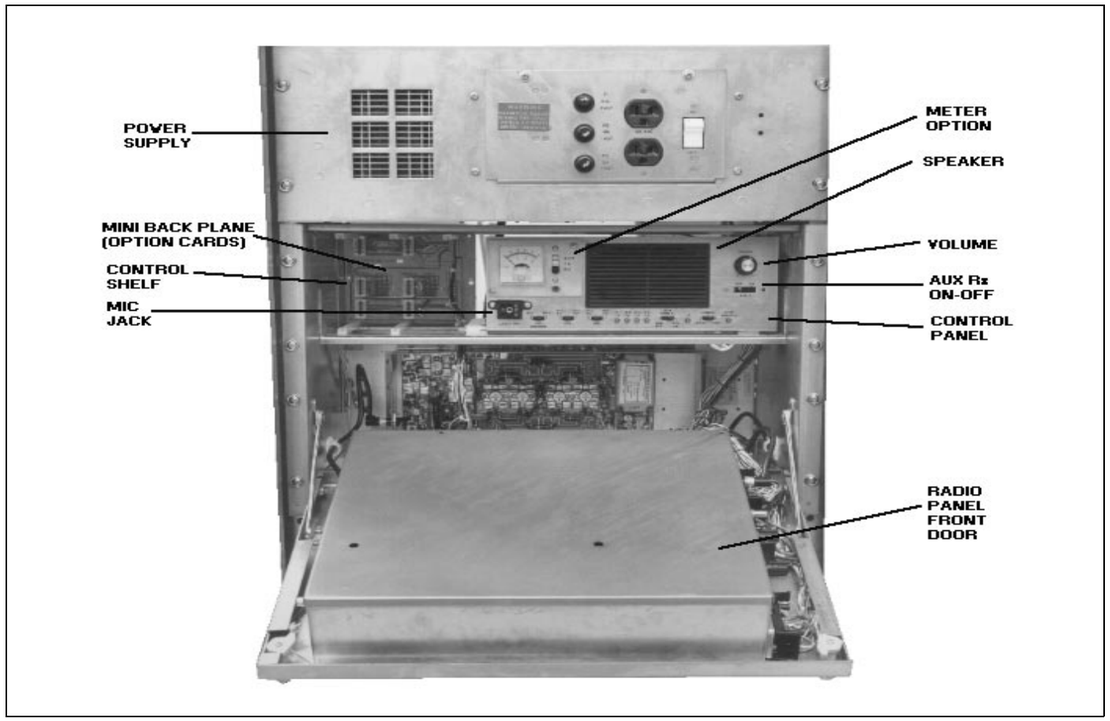

Figure 2 - Typical Control Shelf Assembly

TRANSMITTER

The station transmitter consists of an exciter board assembly, a power control board and a 100-watt power amplifier board. Refer to the Transmitter Maintenance Manual for a complete description of the station transmitter.

SYSTEM BOARD A901

The station System Board is located on the Radio Panel Front Door and the receiver modules plug directly into the board. Along the edge of the System Board are two connectors which interconnect with the Control Shelf and Power Supply.

Plug-in Channel Guard and Carrier Control Timer option jacks are provided. A metering jack is provided to accommodate the General Electric Model 4EX3A11 Test Set. VOLUME Control R3 is located on the System Board. SQUELCH Control R901 is located on the reciever/exciter door.

VOLUME SQUELCH HI from the receiver Audio Pre-Amplifier circuit is connected via J904-12 to the VOLUME (R3) and SQUELCH (R901) controls. The VOLUME control arm is returned to the receiver IFAS board where the audio is amplified by the receiver Audio Power Amplifer circuit. The audio output of the PA is then connected to the speaker leads at P904-18 and -19. The station VOLUME control is normally adjusted for 1-watt output and the station speaker level is controlled by the VOLUME control on the Control Shelf.

DC REMOTE CONTROL

In DC Remote Control Systems, DC currents are selectively applied to a telephone pair at a remote control console to set the system operating characteristics. Items that are controlled by the DC Remote Control system include Channel Guard Disable, Repeater Disable, and Auxiliary Receiver. In some cases combinations of the above may be selected. Refer to the Control Panel Maintenance Manual for a complete description of this system.

TONE REMOTE CONTROL

Up to 13 functions may be controlled in the Tone Remote Control system. This is accomplished by applying the specified tone frequency at the prescribed level to the transmission medium at a remote control console for detection by the Tone Remote Control system on the Control Shelf. The controlled functions include Rx Channel Guard Disable, Channel Guard or Repeater Enable/Disable, Auxiliary function on/off, repeater enable, and Tx hold. Refer to the Control Shelf Maintenance Manual for a complete system description.

CHANNEL GUARD

In stations equipped with Channel Guard, the Channel Guard Board is plugged into the System Board at P908 and P909. Each MASTR II receiver is equipped with a tone reject filter to prevent the CG tone from being heard in the speaker. In addition, all transmitters are provided with a Channel Guard Modulation control to set deviation.

Channel Guard is a continuous tone controlled squelch system that provides communications control in accordance with EIA standard RS-220. The system utilizes standard tone frequencies from 71.9 to 210 Hz with both the encoder and operating on the same frequency. The STE circuit (Squelch Tail Eliminator) employs a phase shift of approximately 180 degrees in the encode function to eliminate undesirable noise bursts after each transmission.

The Channel Guard decoder operates in conjunction with the receiver to inhibit all calls that are not tone coded with the proper Channel Guard tone frequency. The Volume/ Squelch output of the receiver is applied to the Channel Guard decoder at P908-1. When the received signal is not properly coded with the CG tone, a ground is supplied through P908-5 to mute the receiver. When a properly coded signal is received, the receiver unsquelches and the desired signal is heard.

A Channel Guard Filter is used in the remote audio to attenuate frequencies below 203.5 Hertz to prevent the Channel Guard tone from being applied to the remote audio pair.

In duplex combinations, a separate encoder is used in the exciter and a separate decoder is used in the receiver. The encoder is located in the transmitter exciter compartment, and the CG Decode Board is plugged into the System Board at P908 and P909. This permits simultaneous encode and decode functions.

A repeater will not key in Channel Guard systems unless the received signal is coded with the proper Channel Guard tone. The CG MONITOR function when selected will not allow the repeater to key on an encoded signal but will allow the operator to hear all channel activity.

INTERCOM BOARD (OPTION MCO2)

The Intercom Board, when used, plugs into J934 on the System Board. This board allows monitoring of the remote audio line and communications between the base station and the remote control dispatcher. If the station receiver unsquelches, the received audio will be switched to the station speaker and the receiver audio will override the line audio.

The line audio is coupled to the Intercom Board from the compressor amplifier on the Remote Audio Board. FET switch Q6 is normally conducting and the audio is passed to the station reciever audio amplifier through MONITOR LEVEL ADJUST control R15. The amplified audio from the receiver PA is then coupled to the station speaker. Refer to LBI-4831 for details.

ISOPLEXER (OPTION DUO7)

If duplex operation of the station from a single antenna is required, Option DU07 provides a duplexer; and two coax cables for this application are provided by Option DU06. Refer to the Table of Contentes for Installation Instructions of this option.

INITIAL ADJUSTMENT

After the MASTR II Solid State High Power Station has been installed as described in the Installation Manual, the following adjustments should be made by a certified electronics service technician before the station is placed in service.

TEST EQUIPMENT REQUIRED

1. Deviation Monitor
2. Wattmeter, 50 ohms, rated power
3. RF Generator, (Station RF Frequencies)
4. AC Voltmeter
5. 30 DB Coupler

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TRANSMITTER ADJUSTMENT

Transmitter adjustment includes measuring the forward and reflected power and adjusting the antenna length for optimum ratio, then setting the transmitter to the rated power output. Next measure and record the frequency and modulation for future reference. For complete transmitter adjustment procedures, refer to the Alignment Procedure in the applicable radio Maintenance Manual.

RECEIVER ADJUSTMENT

Initial adjustment of the receiver includes tuning the input circuit to match the antenna, adjusting the station volume control, and setting the station squelch control. Refer to the Front End Alignment and Adjustment Procedures in the Maintenance Manual.

STATION VOLUME (R3 ON SYSTEM BOARD)

1. Apply a 1000 microvolt on-frequency test signal modulated by 1000 Hz with ± 3 kHz deviation to the receiver antenna jack J937.
2. Turn service speaker switch (S1) to desired RCVR position.
3. Connect an AC Voltmeter across J905 terminals 1 & 2 and adjust R3 for a reading of 6.3 Volts RMS on the meter.
4. Set VOLUME switch S2 on the service speaker to the desired listening level.

CAUTION

Adjusting the VOLUME control for levels higher than specified may cause damage to the speaker.

STATION SQUELCH (R901 ON RECEIVER EXCITER DOOR)

1. Turn the SQUELCH control clockwise as far as possible.
2. Turn the SQUELCH control counterclockwise until the noise just disappears, then advance the control (clockwise) another 20 degrees.

LOCAL CONTROL MODULATION ADJUSTMENT

1. Apply a 1000 Hz, 1 VRMS signal across P3-2 (MIC HI) and P3-1 (low). Connect a 0.5 microfarad (or larger) DC blocking capacitor in series with the MIC HI lead, P3-2.
2. Set MOD ADJUST control R103 on the exciter for 4.5 kHz deviation as indicated on a frequency modulation monitor.
3. While talking in a normal voice, at the station microphone, adjust LOCAL TX MOD LEVEL R222 (Tone Panel) or R46 (DC Panel) on the Control Panel for a deviation of 3 TO 4 kHz as measured on the deviation monitor.

REPEATER CONTROL ADJUSTMENT

1. Apply a 1000 Hz, on frequency signal modulated with 1000 Hz tone at ± 3 kHz deviation to the station receiver.
2. Adjust TX MOD control R60 on the Control Panel for a 3.0 kHz deviation as indicated on the deviation monitor.

NOTE

The repeater drop out delay timing may be adjusted before placing the station in operation. Refer to the MASTR II Repeater Station Control Panel Maintenance Manual for these adjustments.

REMOTE CONTROL ADJUSTMENTS

The transmitter modulation gain, the remote audio input and line output must be adjusted before placing the station in operation. Refer to the appropriate Maintenance Manual, DC or Tone Remote Control for these adjustments.

MAINTENANCE

To insure high operating efficiency and to prevent mechanical and electrical failures from interrupting system operation, routine checks should be made of all mechanical and electrical parts at regular intervals. This preventive maintenance should include the checks listed in the table of Maintenance Checks.

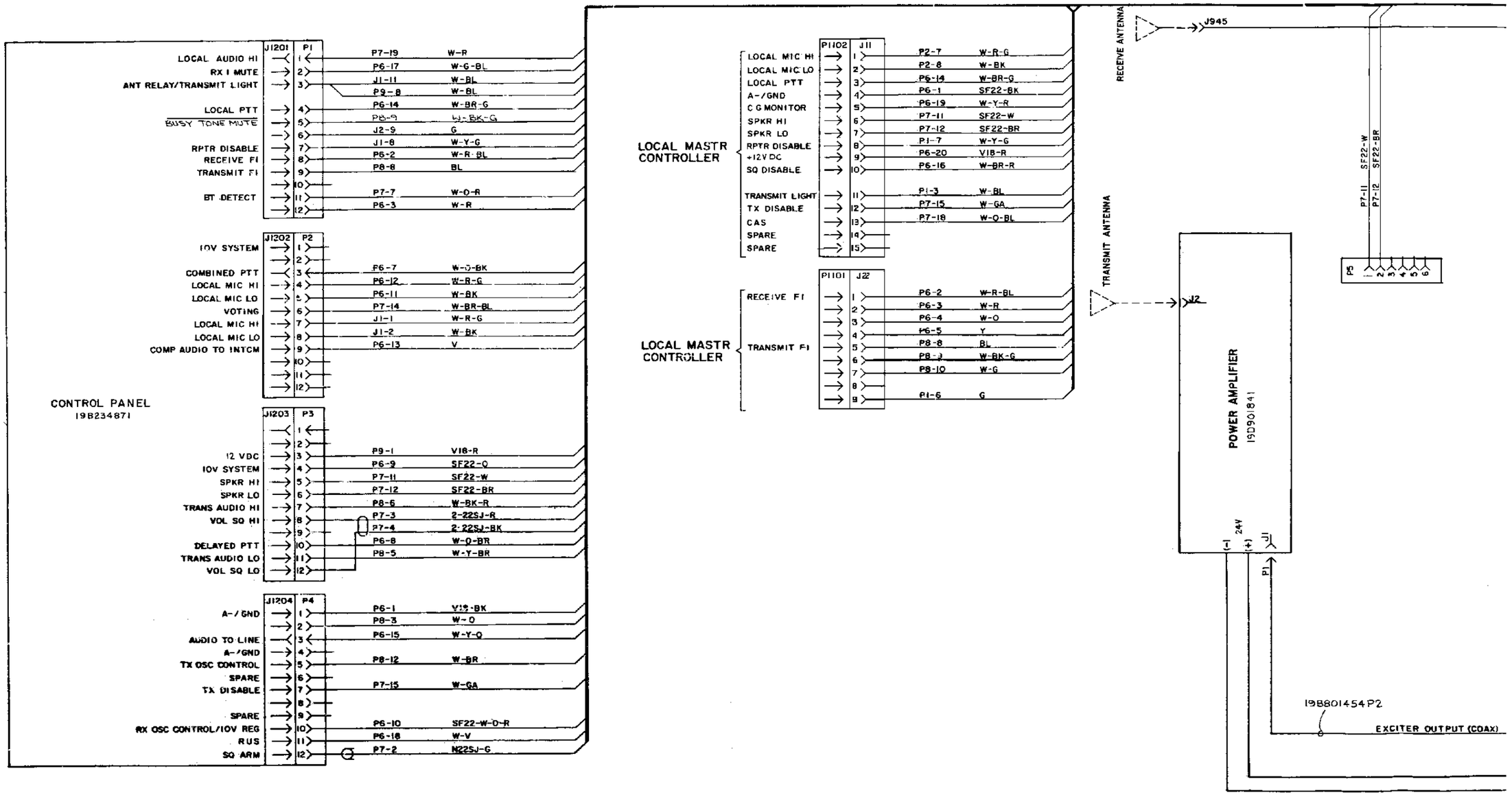
TEST AND TROUBLESHOOTING PROCEDURES

The individual Maintenance Manuals for the transmitter and receiver describe standard test procedures which the technician can use to compare the actual performance of the transmitter or receiver against the specifications of the unit when shipped from the factory. In addition, specific troubleshooting procedures are available to assist the technician when servicing the transmitter and receiver.

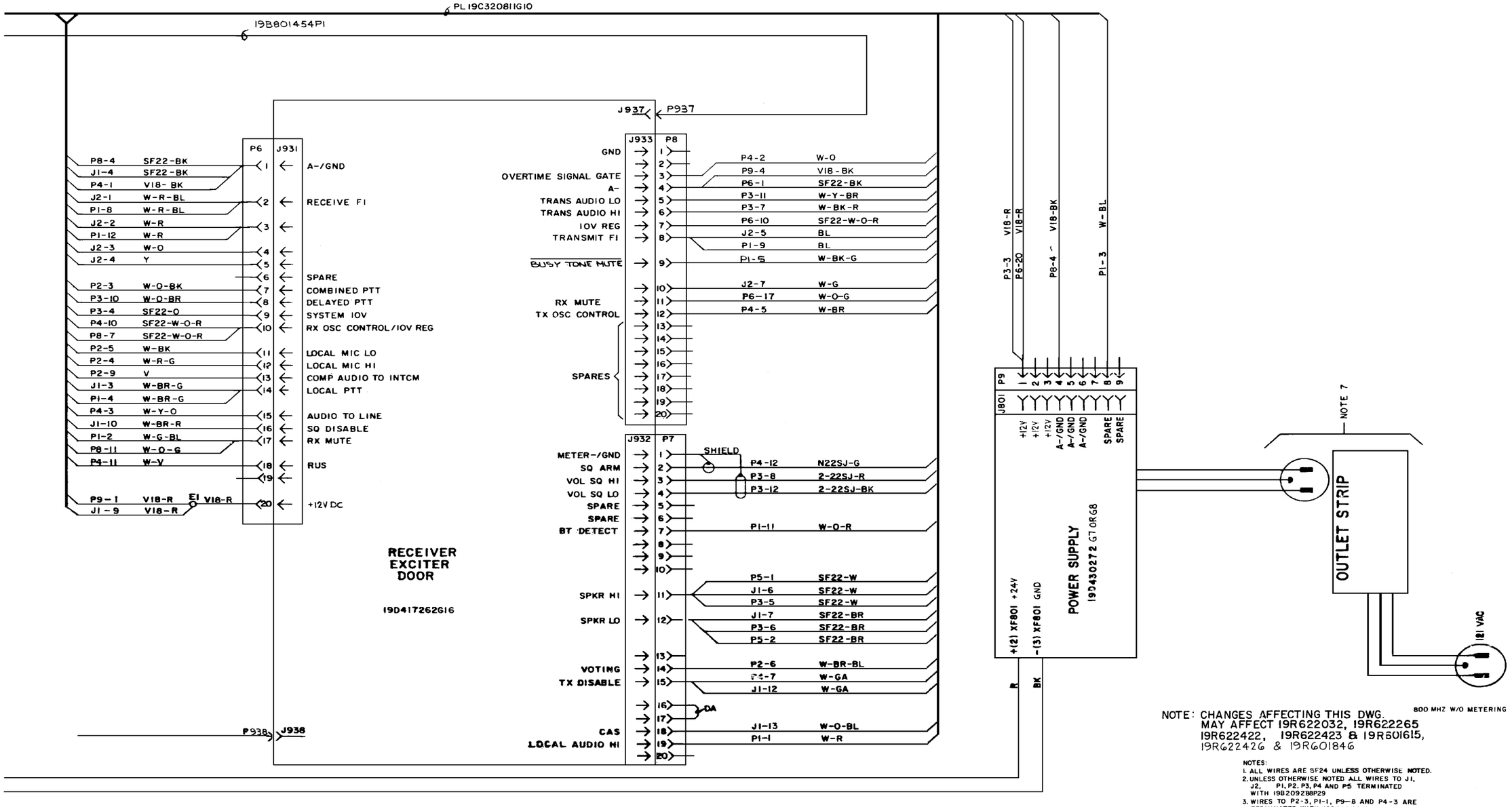
Removing IC's and other soldered-in components can be easily accomplished by using a vacuum de-soldering tool. To remove an IC, heat each lead separately on the solder side and remove the old solder with the de-soldering tool.

An alternate method is to use a special soldering tip that heats all of the pins simultaneously.

MAINTENANCE CHECKS	INTERVAL BETWEEN CHECKS	
	Every 6 months	As Required
Transmitter Alignment: Compare meter readings at transmitter multiplier metering jacks with voltages read during initial tune up. Touch up multiplier tuning. Check power output. (See Alignment Procedure for Transmitter).		X
Receiver: While receiving an un-modulated signal on the station frequency(s), adjust OSC-1 trimmer for each operating frequency for a zero discriminator reading. (See the Receiver Alignment Procedure).		X
Transmission Line: Check for positive indication of pressure on transmission line pressure gauge (if pressurized line is used).	X	
Antenna: Check antenna & mast for mechanical stability.	X	
Mechanical Inspection: Visually check cables, plugs, sockets, terminal boards & components for good electrical connections. Check for tightness of nuts, bolts, & screws to make sure that nothing is working loose from its mounting.	X	
Cleaning: Use a vacuum cleaner to remove dust which may have accumulated inside the cabinet.	X	
Frequency Check: Check transmitter frequency & deviation.		X



806-870 MHz 100 WATT STATION HARNESS
19C320811G11



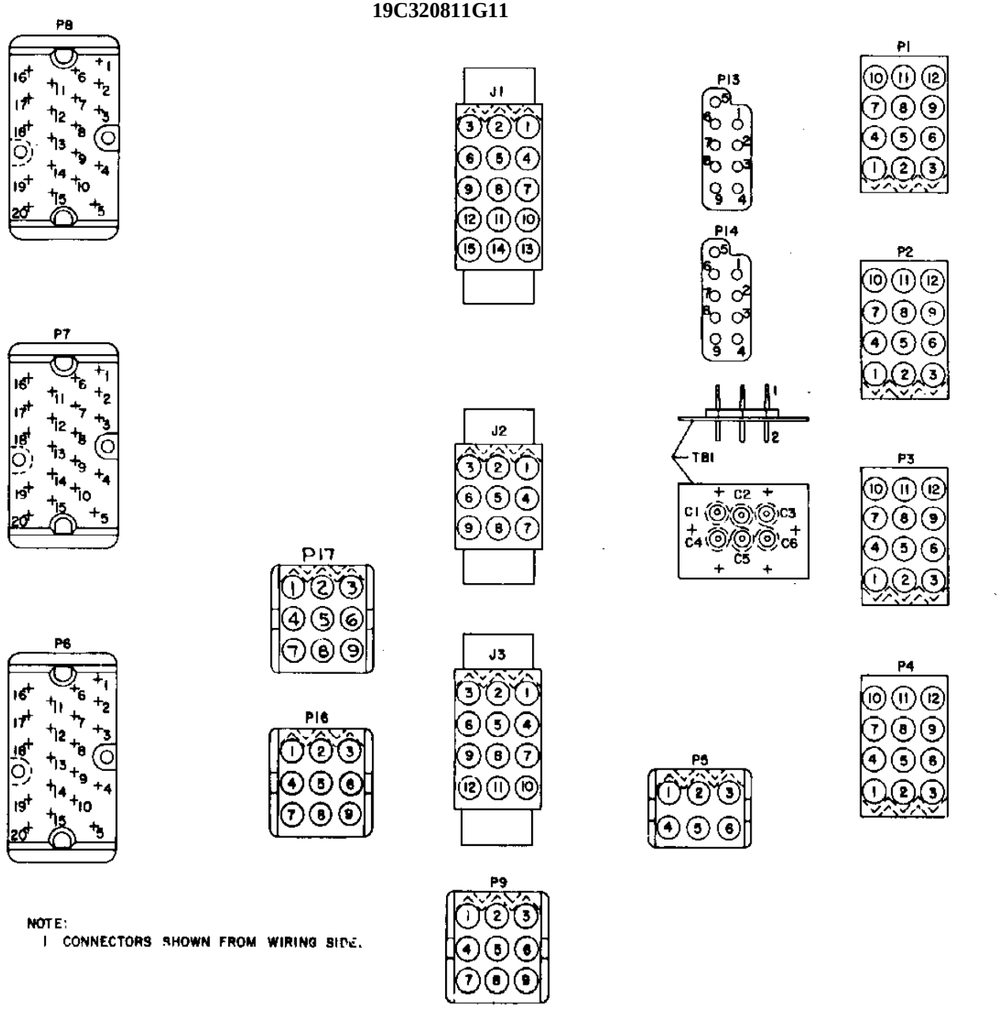
NOTE: CHANGES AFFECTING THIS DWG. MAY AFFECT 19R622032, 19R622265 19R622422, 19R622423 & 19R501615, 19R622426 & 19R601846

800 MHZ W/O METERING

NOTES:
1. ALL WIRES ARE SF24 UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE NOTED ALL WIRES TO J1, J2, P1, P2, P3, P4 AND P5 TERMINATED WITH 19B209288P29
3. WIRES TO P2-3, P1-1, P9-8 AND P4-3 ARE TERMINATED WITH 19B209288P30
4. WIRES TO P9-1 AND P9-4 ARE TERMINATED WITH 19B209288P2.
5.
6. WIRES TO P3-3, P4-1, P4-4 AND J1-9 ARE TERMINATED WITH 19B209288P1.
7. PLUG POWER CORDS INTO OUTLET STRIP.
   OUTLET STRIP PL19B226209G1 USED IN ALL STATIONS EXCEPT OUTDOOR.
   OUTLET STRIP PL19B226350G1 USED IN OUTDOOR STATIONS AND IS LESS POWER CORD FROM OUTLET STRIP.

806-870 MHz 100 WATT STATION HARNESS
19C320811G11

STATION HARNESS
19C320811G11

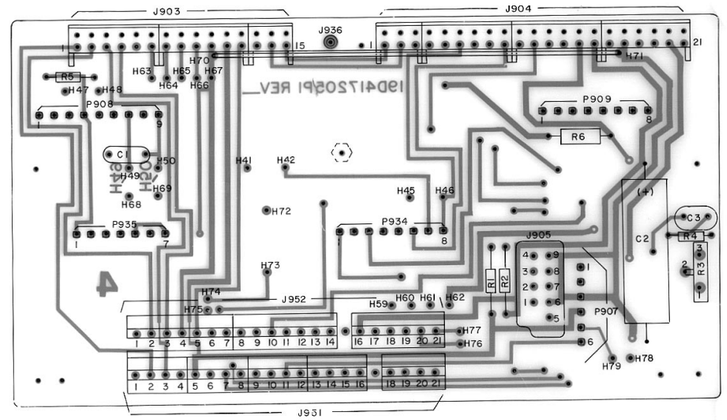


NOTE:
1 CONNECTORS SHOWN FROM WIRING SIDE.

(19C328112, Rev. 2)

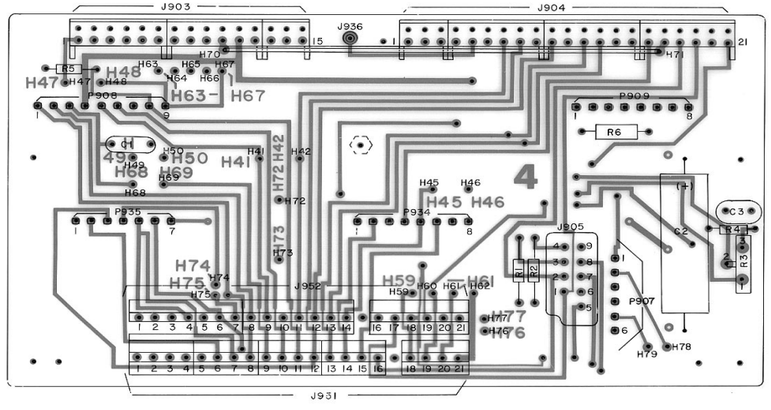
SYSTEM BOARD A901 and
STATION HARNESS 19C320811G11

SYSTEM BOARD A901

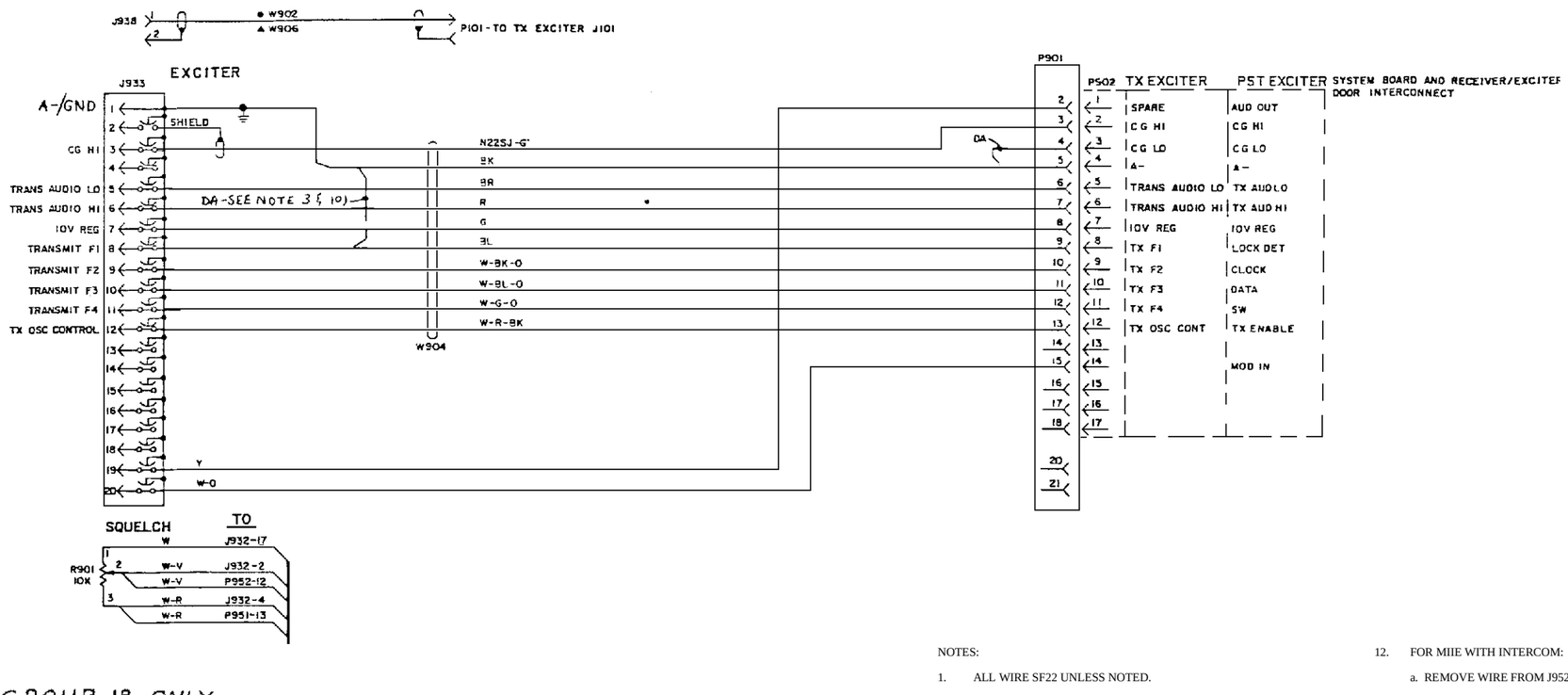


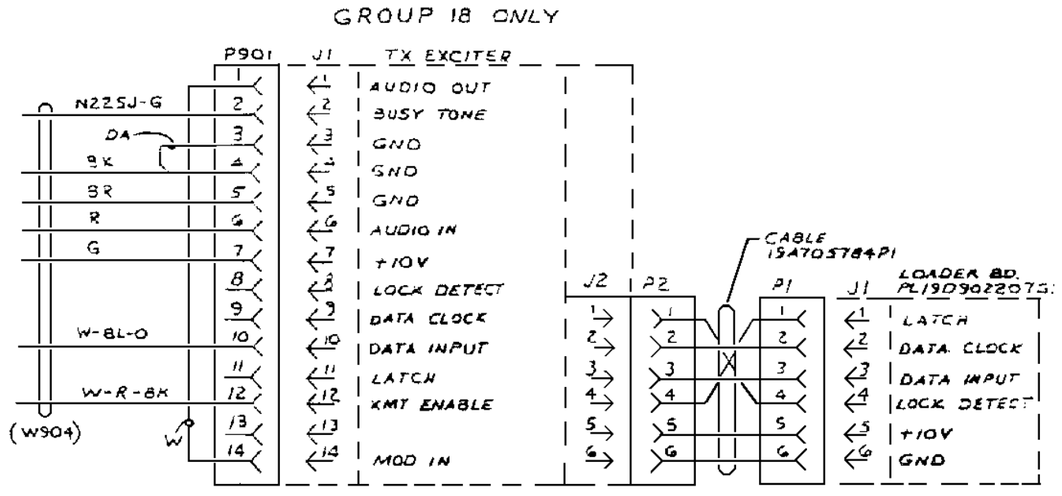
(19D423147, Rev. 2)
(19D417205, Sh. 2, Rev. 3)

REFER TO WIRING DIAGRAM FOR THE FOLLOWING CONNECTIONS	
FROM	TO
H41	H42
H50	H77
H45	H46
H47	H48
H68	H69
H49	H76



(19D423147, Rev. 2)
(19D417205, Sh. 3, Rev. 3)





RADIO PANEL FRONT DOOR
19D417262G4

NOTES:

1. ALL WIRE SF22 UNLESS NOTED.
2. JUMPER FROM A901-H47 TO A901-H48 PRESENT IN SINGLE FREQUENCY RECEIVE STATIONS.
3. DA FROM J933 PIN 1 TO PIN 8 PRESENT IN SINGLE FREQ. TRANSMIT STATIONS.
4. JUMPER FROM A901-H41 TO A901-H42 AND A901-H69 TO A901-H68 PRESENT IN ALL STATIONS EXCEPT CHANNEL GUARD REPEATERS OR CHANNEL GUARD REMOTE/REPEAT STATIONS.

   IN VOICE GUARD STATION OPTIONS 9783 THRU 9785 (REMOTE ONLY E/D), H41-H42 AND H68-H69 ARE BOTH PRESENT. IN OPTIONS 9786 THRU 9788 (E/D REMOTE/REPEAT), H41-H42 IS REMOVED H68-H69 IS PRESENT.
5. JUMPER FROM A901-H45 TO A901-H46 NOT PRESENT WITH INTERCOM.
6. CARRIER CONTROL TIMER MAY NOT BE USED IN C.G. REPEATER OR C.G. REMOTE/REPEAT STATIONS.
7. IN 2 WIRE DC CONTROL SYSTEMS WITH VOTING TONE BOARD. JUMPER FROM A901-H74 TO A901-H75 IS NOT PRESENT. JUMPER FROM A901-H72 TO A901-H73 IS PRESENT.

   IN 4 WIRE STATIONS WITH VOTING TONE BOARD, JUMPERS H74-H75, H72-H73 ARE NOT PRESENT
8. ▲ 800 MHz

   ● LB, HB & 450 MHz
9. IN VOICE GUARD STATION OPTIONS 9783 THRU 9788, ADD DA JUMPER FROM H59 TO P934-4.
10. FOR PST APPLICATION REMOVE JUMPER FROM J933-1 TO J933-8. ADD Y WIRE FROM J933-10 TO P901-2 AND W-O WIRE FROM J933-20 TO P901-15
11. SF24-V WIRE ADDED AND RUN CUT FROM P935-3 WHEN MODIFIED FOR PST VOTING.
12. FOR MIIE WITH INTERCOM:
    a. REMOVE WIRE FROM J952-19 AND INSULATE
    b. REMOVE R4
    c. ADD WIRE FROM P935-5 TO P934-8
    d. ADD WIRE FROM J904-13 TO J952-19
    e. ADD WIRE FROM P934-2 TO R4 (hole closest to radio housing)
    f. ADD WIRE FROM P934-3 TO R4 (hole furthest from radio housing)

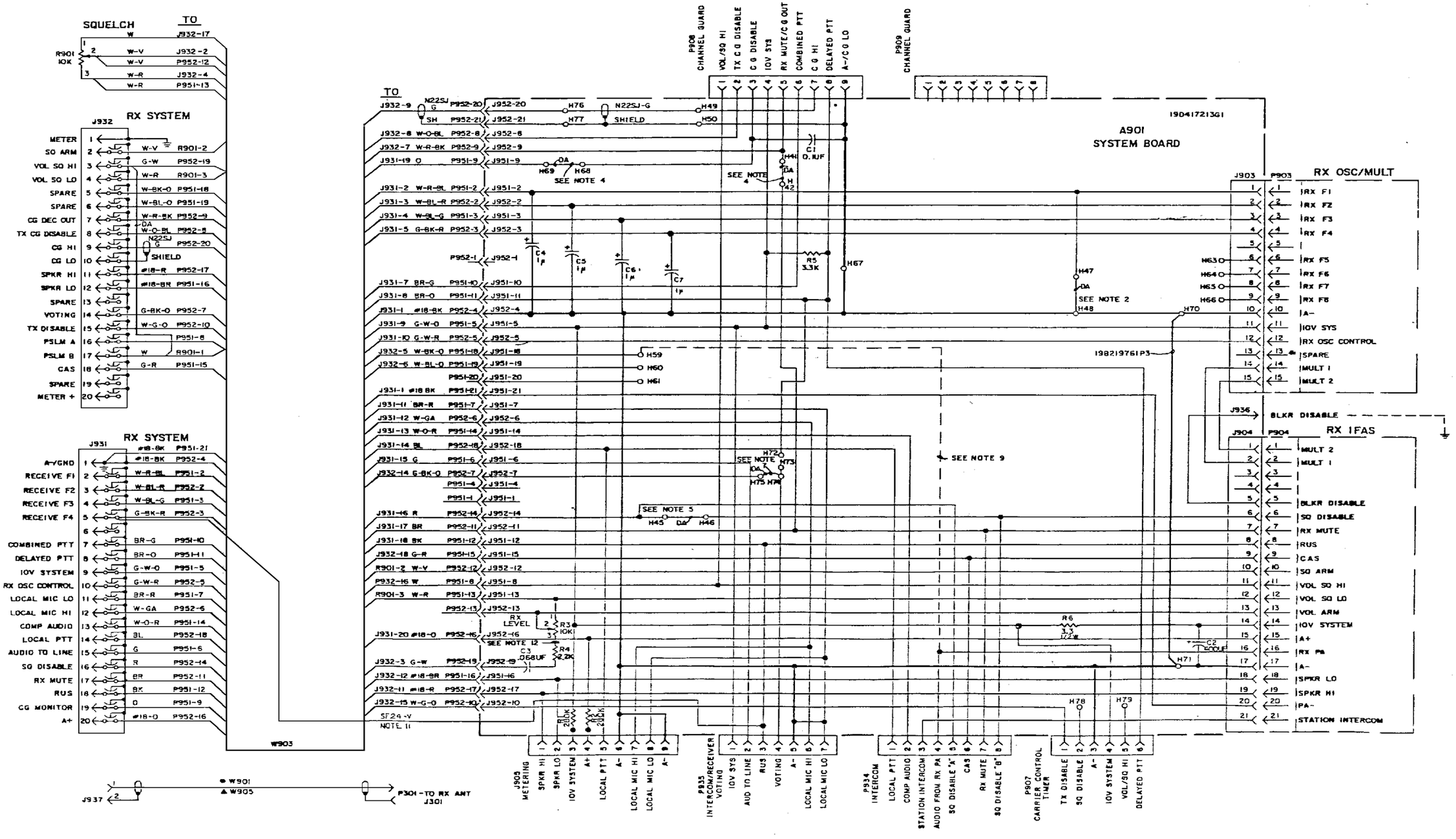
ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DES- CRIPTION OF CHANGES UNDER EACH REVISION LETTER

THIS ELEM DIAG APPLIES TO:

MODEL NO	REV LETTER
PL19D417213G1	C
PL19D417262G1	
PL19D417262G4	
PL19D417262G18	



(19E501154, Rev. 21)

RADIO FRONT PANEL DOOR
19D417262G4

PARTS LIST

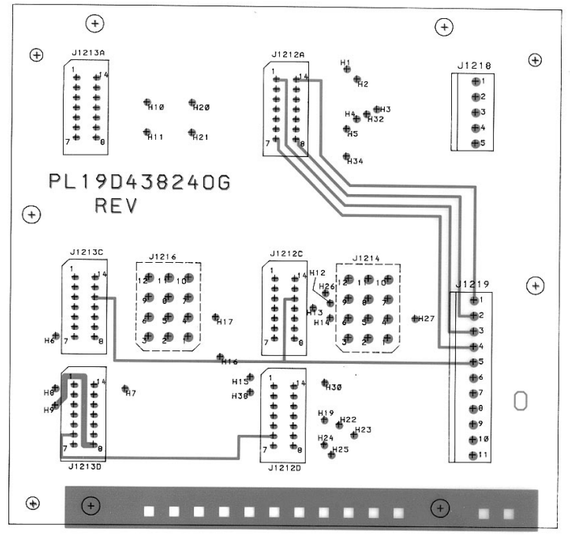
LBI30566B

MASTR II 800 MHz STATION RADIO PANEL
FRONT DOOR ASSEMBLY
19D417262G4

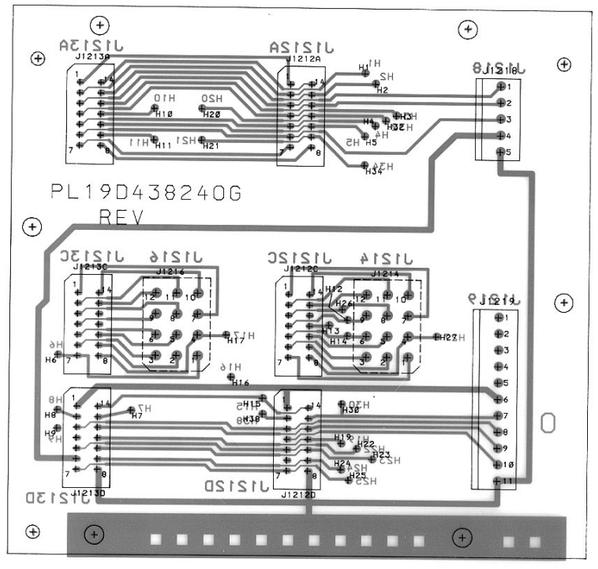
SYMBOL	GE PART NO.	DESCRIPTION
		DOOR ASSEMBLY 19D417262G4
A901		COMPONENT BOARD 19D417213G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C2	19A115880P24	Electrolytic: 400 uF +150% -10%, 18 VDCW; sim to Mallory Type TT.
C3	19A116080P106	Polyester: 0.068 uF ±10%, 50 VDCW.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J903		Connector. Includes:
	19A116659P1	Connector, printed wiring: 3 contacts rated at 5 amps; sim to Molex 09-52-3032. (Quantity 1).
	19A116659P4	Connector, printed wiring: 6 contacts rated at 5 amps; sim to Molex 09-52-3062. (Quantity 4).
J904		Connector. Includes:
	19A116659P1	Connector, printed wiring: 3 contacts rated at 5 amps; sim to Molex 09-52-3032. (Quantity 1).
	19A116659P4	Connector, printed wiring: 6 contacts rated at 5 amps; sim to Molex 09-52-3062. (Quantity 3).
J905	18821037G3	Connector: 9 contacts.
J938	4033513P4	Contact, electrical: sim to Bead Chain LS3-3.
J951		Connector. Includes:
	19A116659P13	Connector, printed wiring: 4 contacts rated at 5 amps; sim to Molex 09-64-1041. (Quantity 5).
J952		Connector. Includes:
	19A116659P11	Connector, printed wiring: 7 contacts rated at 5 amps; sim to Molex 09-64-1071. (Quantity 2).
	19A116659P12	Connector, printed wiring: 8 contacts rated @ 5 amps; sim to Molex 09-64-1081. (Quantity 1).
		- - - - - - - - - - PLUGS - - - - - - - - - -
P907	19A701785P1	Contact, electrical; sim to Molex 08-50-0404. (Quantity 6).
P908	19A701785P1	Contact, electrical; sim to Molex 08-50-0404. (Quantity 9).
P909	19A701785P1	Contact, electrical; sim to Molex 08-50-0404. (Quantity 8).
P934	19A701785P1	Contact, electrical; sim to Molex 08-50-0404. (Quantity 8).
P935	19A701785P1	Contact, electrical; sim to Molex 08-50-0404. (Quantity 7).
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	19A701230P444	Metal film: 280K ohms ±1%, 1/4 w.
R3	19B209358P106	Variable, cermet film: approx 30Ω to 10K ohms ±10%, 1/4 w; sim to CTS Type X-201.
R4	19A700106P71	Composition: 2.2K ohms ±5%, 1/4 w.
R5	19A700106P75	Composition: 3.3K ohms ±5%, 1/4 w.
R6	19A700113P3	Composition: 3.3 ohms ±5%, 1/2 w.
		- - - - - - - - - - CABLES - - - - - - - - - -
W903		CABLE ASSEMBLY 19D417262G2
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J931 and J932	19C320426G1	Connector: 20 pin contacts.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - PLUGS - - - - - - - - - -
P951 and P952		Connector. Includes:
	19A116659P25	Shell.
	19A116781P3	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0105.
	19A116781P4	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0107.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R901	5496870P31	Variable, carbon film: 10K ohms ±20%, sim to Mallory LC(25E).
W904		EXCITER CABLE 19D417262G3
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J933	19C303426G1	Connector: 20 pin contacts.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P901		Connector. Includes:
	19A116659P25	Shell.
	19A116781P3	Contact, electrical: wire No. 16-20 AWG; sim to Molex 08-50-0105.
	19A116781P4	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0107.
W905		CABLE ASSEMBLY 19A136930G2
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J937	19A115938P12	Connector, coaxial: (BNC Series); sim to Amphenol 31-343.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P301	19A134357P8	Cable, RF: approx 21 inches long.
W906		CABLE ASSEMBLY 19A136893G01
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J938	19A115938P1	Connector, coaxial: (BNC Series); sim to Amphenol 31-318.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P101	19A134357P8	Cable, RF: approx 8 inches long.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19C320878G1	Door.
	19B234589P1	Panel. (Part of door latch).
	19C336435P1	Knob. (Part of door latch).
	MS3P120BS6	Tap screw, phillips head: No. 6-20 x 1/2. (Part of door latch).
	8493361P8	Washer, spring tension. (Part of door latch).
	19A121676P1	Guide pin. (Used with J931-J933).
	18B209519P1	Polarity tab. (Used with P901, P951, P952).
	7115130P8	Lockwasher, internal tooth: No. 5/8. (Used with E901 mounting).
	7165075P2	Hex nut, brass: thd. size No. 3/8-32. (Used with E901 mounting).
	19A115874P1	Catch, friction. (Latches A901).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

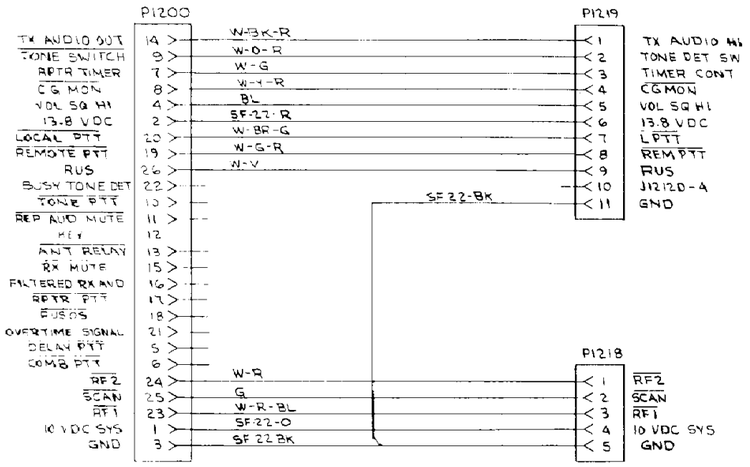


(19D438242, Rev. o)
(19A149200, Sh. 1, Rev. 0)



(19D438242, Rev. 0)
(19A149200, Sh. 2, Rev. 0)

RADIO PANEL FRONT DOOR
19D417262G4



NOTE:
1. ALL WIRING TO BE SIZE 22 UNLESS OTHERWISE SPECIFIED

(19B234956, Sh. 1, Rev. 2)

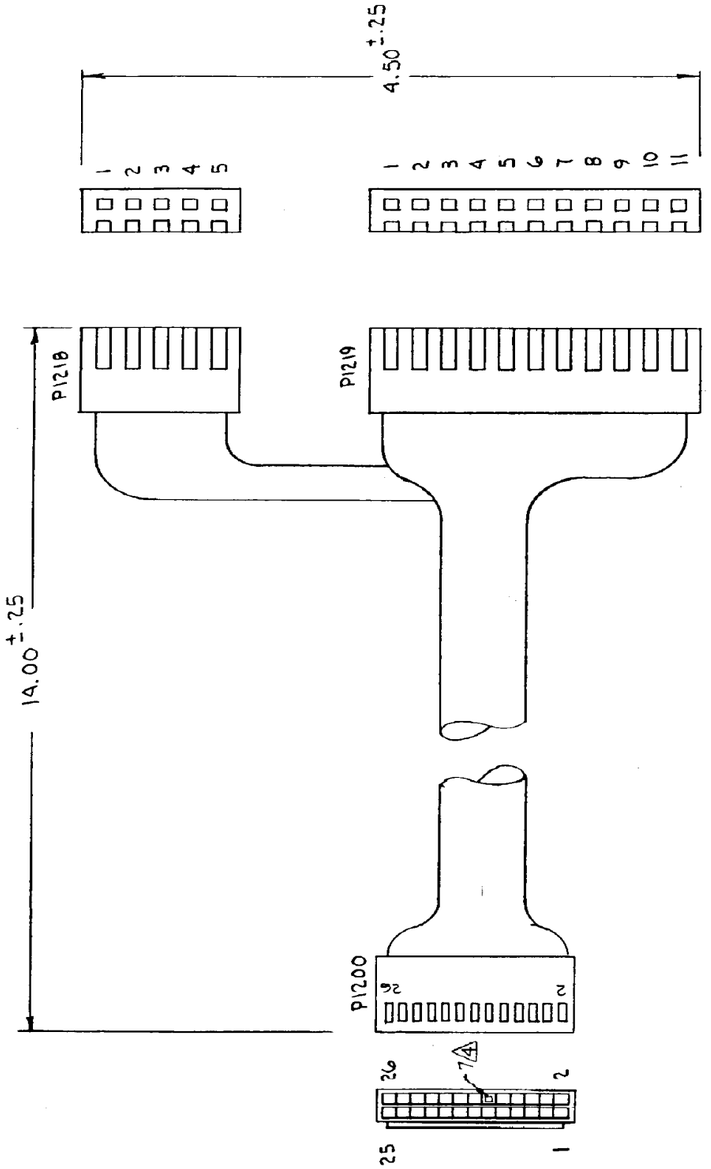
PARTS LIST

CONTROL SHELF BACKPLANE
19D438240G1

ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CONNECTORS - - - - - - - - - -
J1212A	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1212C	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1212D	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1213A	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1213C	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1213D	19A116446P5	Connector, printed wiring: 14 contacts rated at 3 amps.
J1214	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
J1216	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
J1218	19A116659P56	Printed wire, 5 contacts rated @ 5 amps; sim to Molex 09-65-1051.
J1219		Connector. Includes:
	19A116659P52	Connector, printed wiring: 8 contacts rated at 5 amps; sim to Molex 09-65-1081.
	19A116659P55	Connector, printed wiring: 3 contacts rated at 5 amps; sim to Molex 09-65-1031.
		HARDWARE KIT 19A149326G2
	19B201074P305	Tap screw, Phillips POZIDRIV: No. 6-32 x 5/16.
	19C315863P1	Card guide.

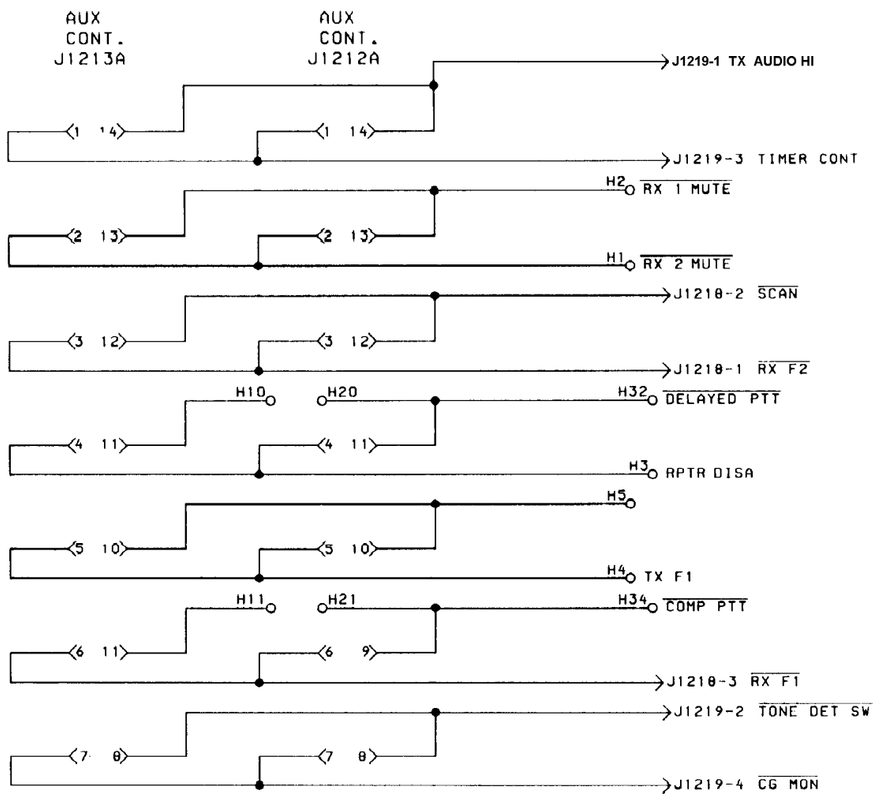
MINI BACKPLANE BOARD



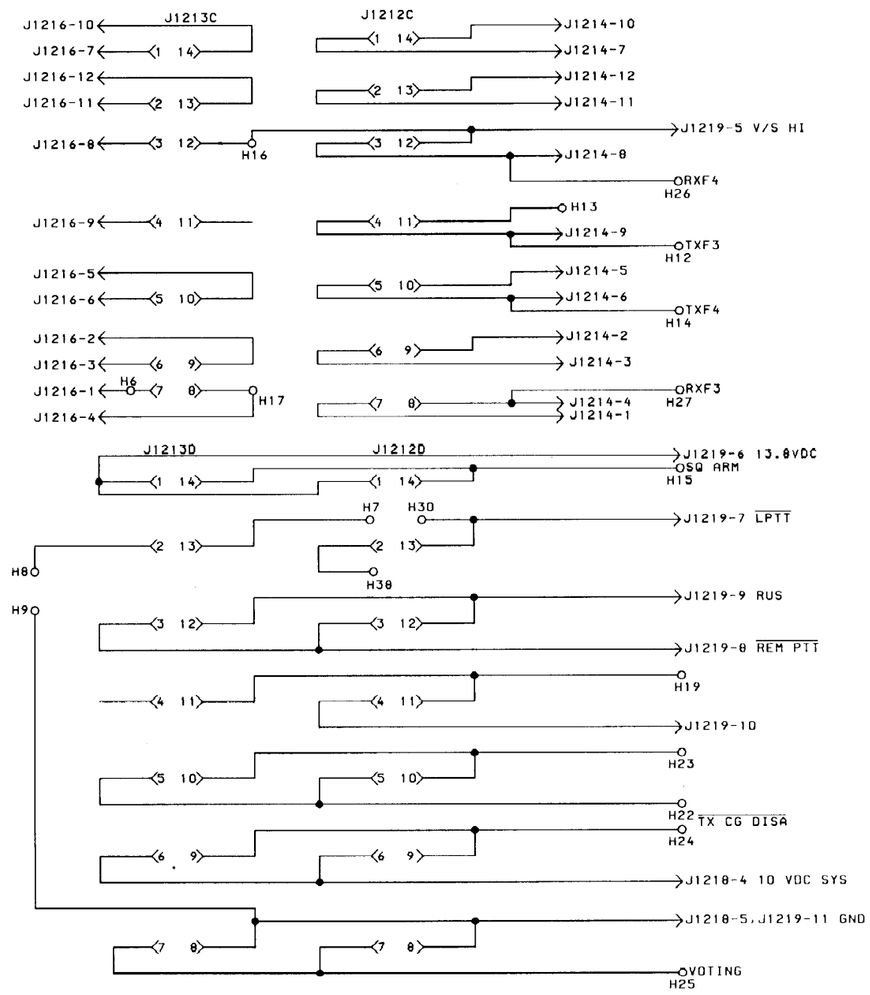
NOTES:
1. TERMINATE WIRES: AT P1200 WITH ITEM 2; AT P1218 AND P1219 WITH ITEM 3. AT P1218-5 WITH ITEM 6.
2. SPOT TIE CABLE WITH ITEM 4.
3. ON P1200 MARK PINS 1, 25 ON ONE SIDE AND PINS 2, 26 ON OTHER SIDE, (LOCATION TYPICAL AS SHOWN PINS 2, 26); MARK PER 19A115748P1.

4 INSTALL ITEM 7 INTO P1200-12 FROM WIRING SIDE.

(1)



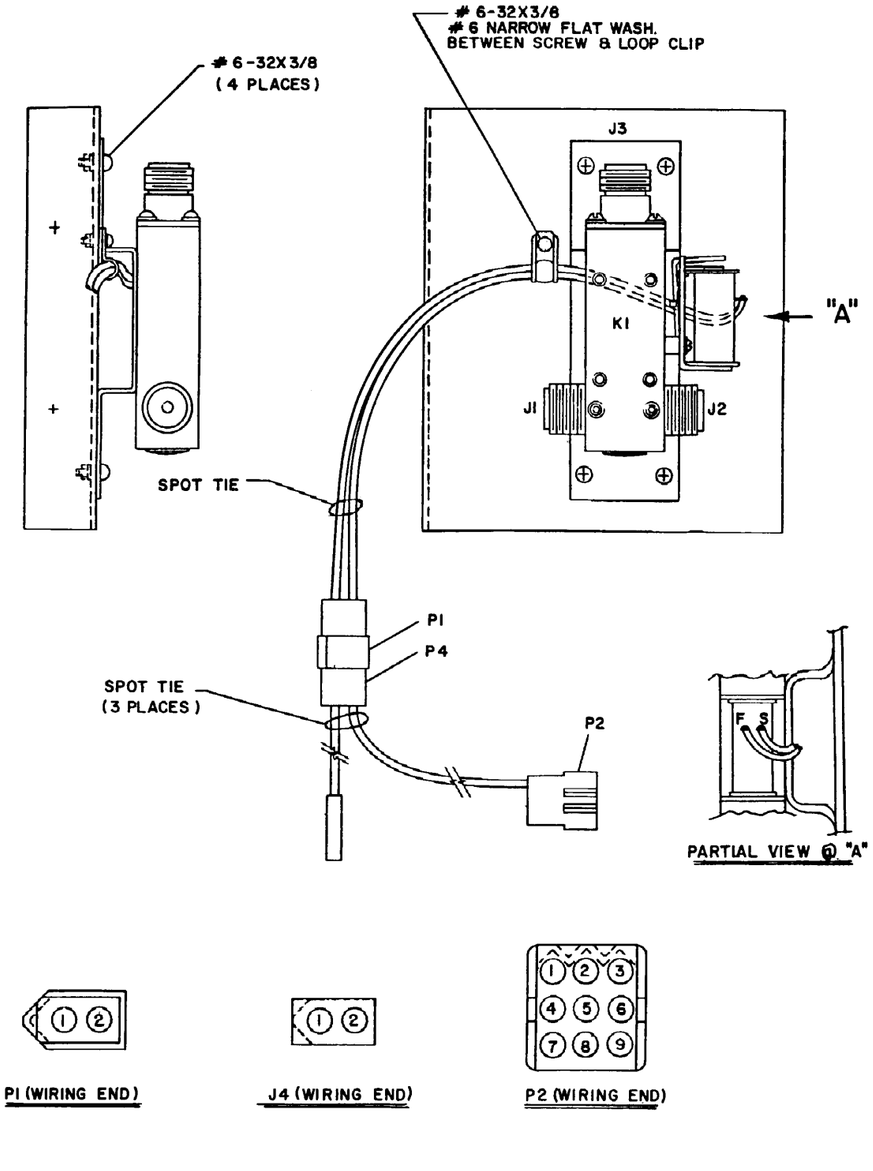
19D438305, Sh. 1, Rev. 0



19D438305, Sh. 1, Rev. 0

MINI BACKPLANE BOARD
19D438240G1

MINI BACKPLANE BOARD
19D438240G1



(19C331419, Rev. 0)

PARTS LIST

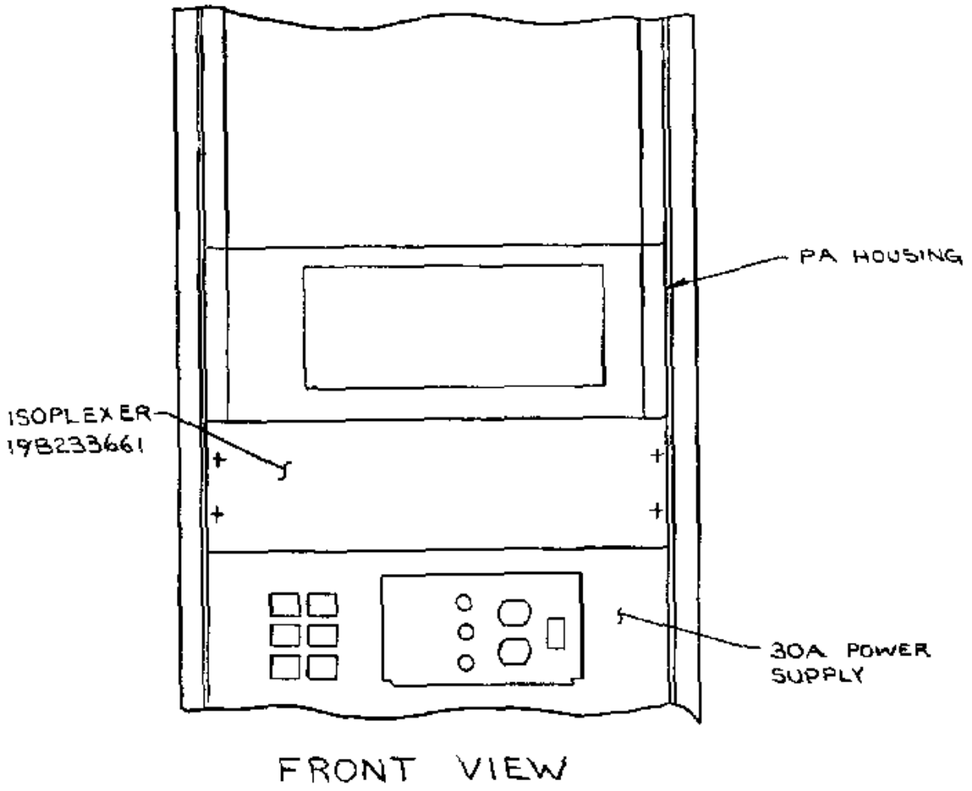
ANTENNA RELAY PANEL
19C331268G1

ISSUE 3

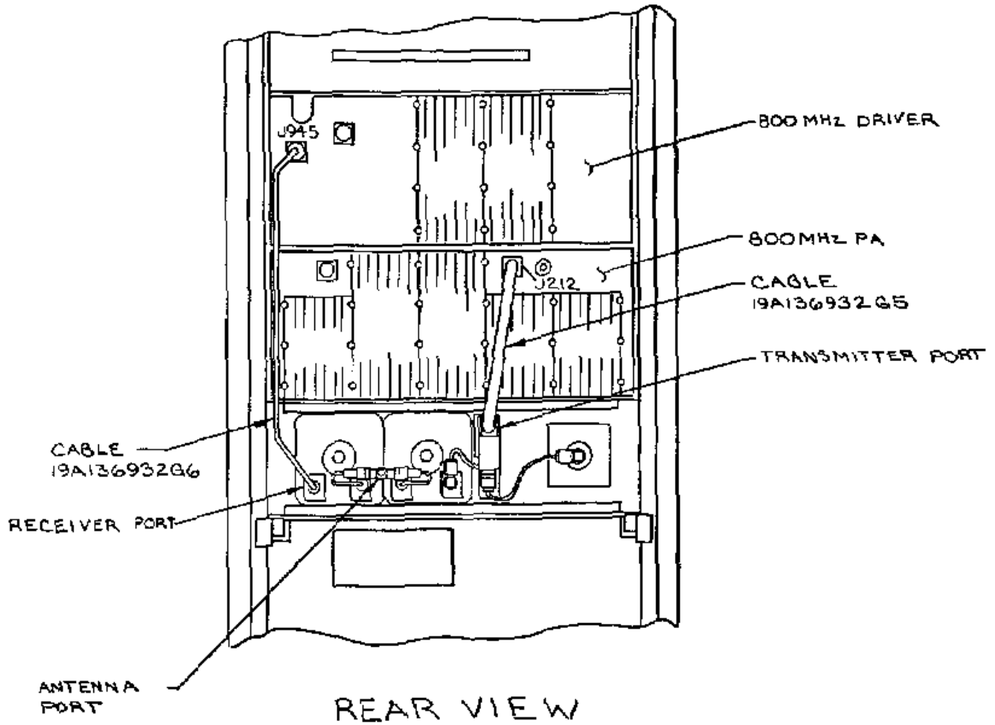
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 thru J3		(Part of K1).
J4		Connector. Includes:
	19B209288P12	Shell.
	19B209288P1	Contact, female: wire size 14-20 AWG. (Located on red wire).
	19B209288P20	Contact, female: wire size 22-30 AWG. (Located on blue wire).
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K1	19B234872G2	Coaxial: 75 ohms ±10% coil res, 12 VDC nominal, 1 form C contact; sim to Amphenol 300-11941.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P1		Connector. Includes:
	19B209288P14	Shell.
	19B209288P2	Contact, male: wire size 14-20 AWG. (Quantity 2).
P2		Connector. Includes:
	19B209288P4	Shell.
	19B209288P2	Contact, male: wire size 14-20 AWG.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19C331231P1	Relay support.
	19C331268G2	Harness. (Includes P1).
	19C331268G3	Harness. (Includes J4 & P2).
	19A701863P13	Clip loop. (Secures 19C331268G2 & G3 harnesses).
	7143845P8	Splice, connector. (Located on wire from J4).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

ANTENNA RELAY PANEL
19C331268G1



FRONT VIEW



REAR VIEW

INSTRUCTIONS:

1. USING HARDWARE SUPPLIED IN INSTALLATION KIT, MOUNT ISOPLEXER FROM FRONT OF CABINET BETWEEN PA HOUSING AND 30A POWER SUPPLY. USE SPRING NUTS ON RAILS AND PLACE PLAIN WASHER AGAINST FRONT OF ISOPLEXER PANEL. USE LOCK WASHER BETWEEN PLAIN WASHER AND SCREW.
2. CONNECT 19A13693266 CABLE BETWEEN RECEIVER PORT ON ISOPLEXER AND J945 ON 800 MHz DRIVER CHASSIS.
3. CONNECT 19A136932G5 CABLE BETWEEN TRANSMITTER PORT ON ISOPLEXER AN J212 ON 800 MHz PA CHASSIS.

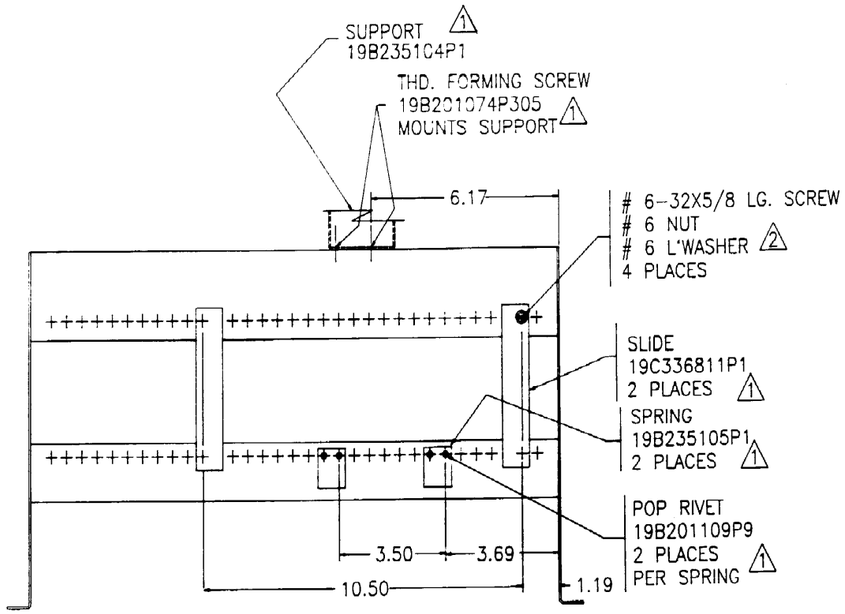
(19C330920, Sh. 1, Rev. 0)

(1) THESE INSTRUCTIONS COVER THE INSTALLATION OF THE 19B233661 ISOPLEXER AND 19A13078562 INSTALLATION HARDWARE KIT IN 800 MHz 90W SOLID STATE STATIONS

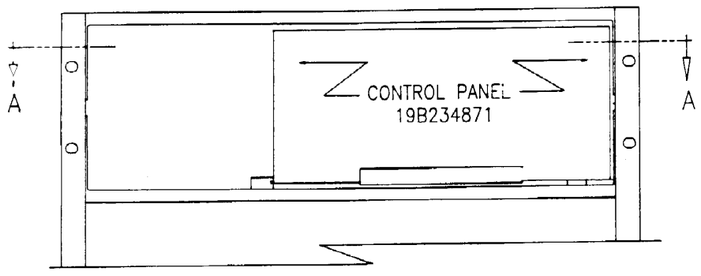
(19C330920, Sh. 1, Rev. 0)

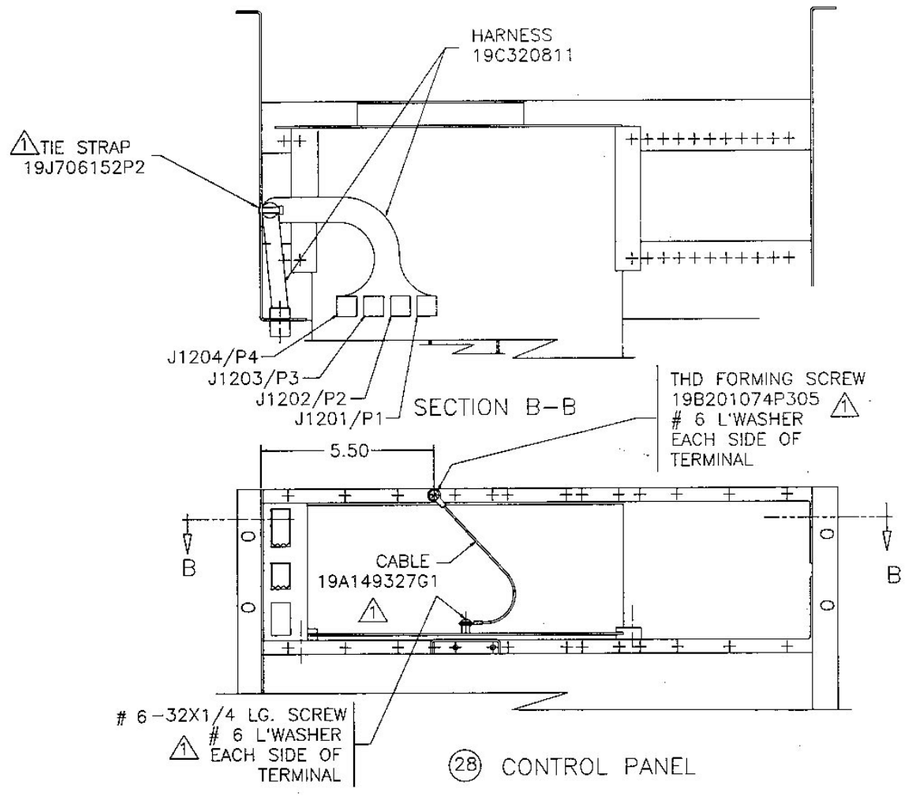
ISOPLEXER
19B233661P1 (OPTION DU08)

ISOPLEXER
19B233661P1 (OPTION DU08)



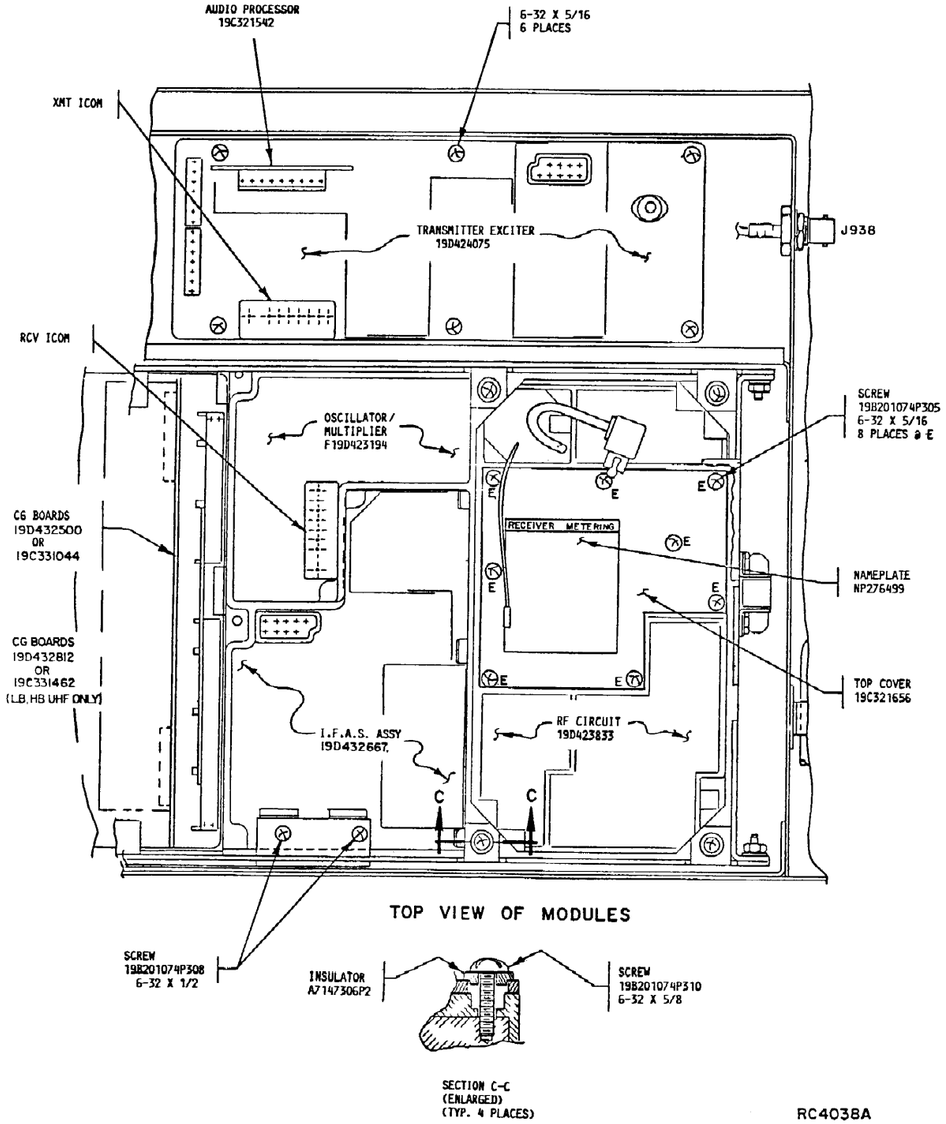
SECTION A-A
(WITH CONTROL PANEL REMOVED)

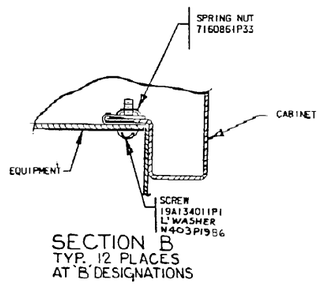


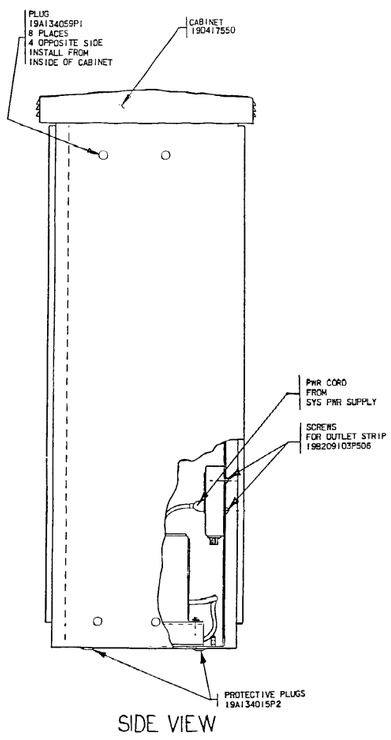


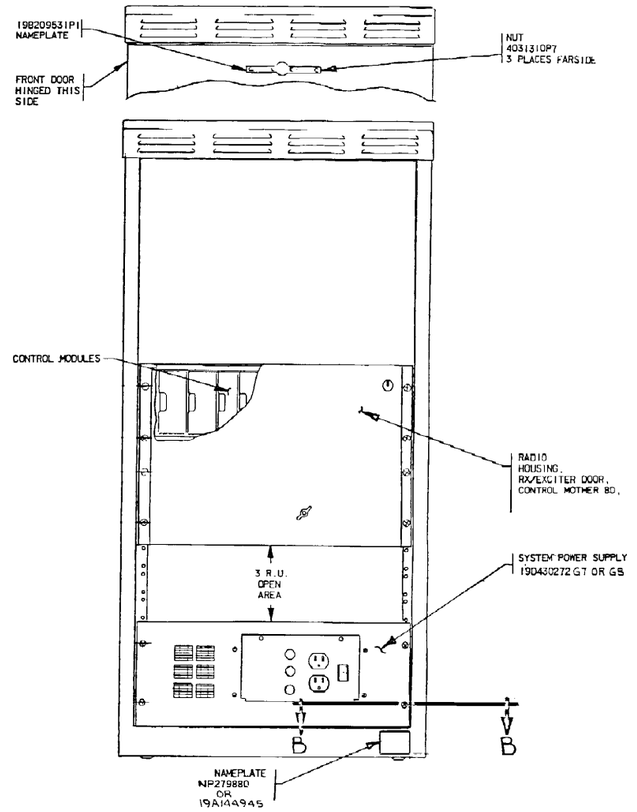
28 CONTROL PANEL

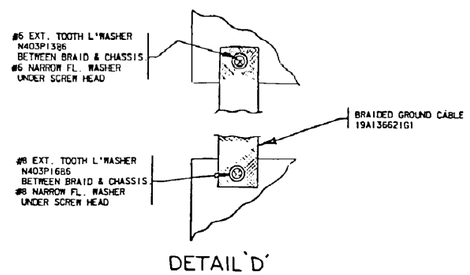
(19D417483, Sh. 2A, Rev. 3)





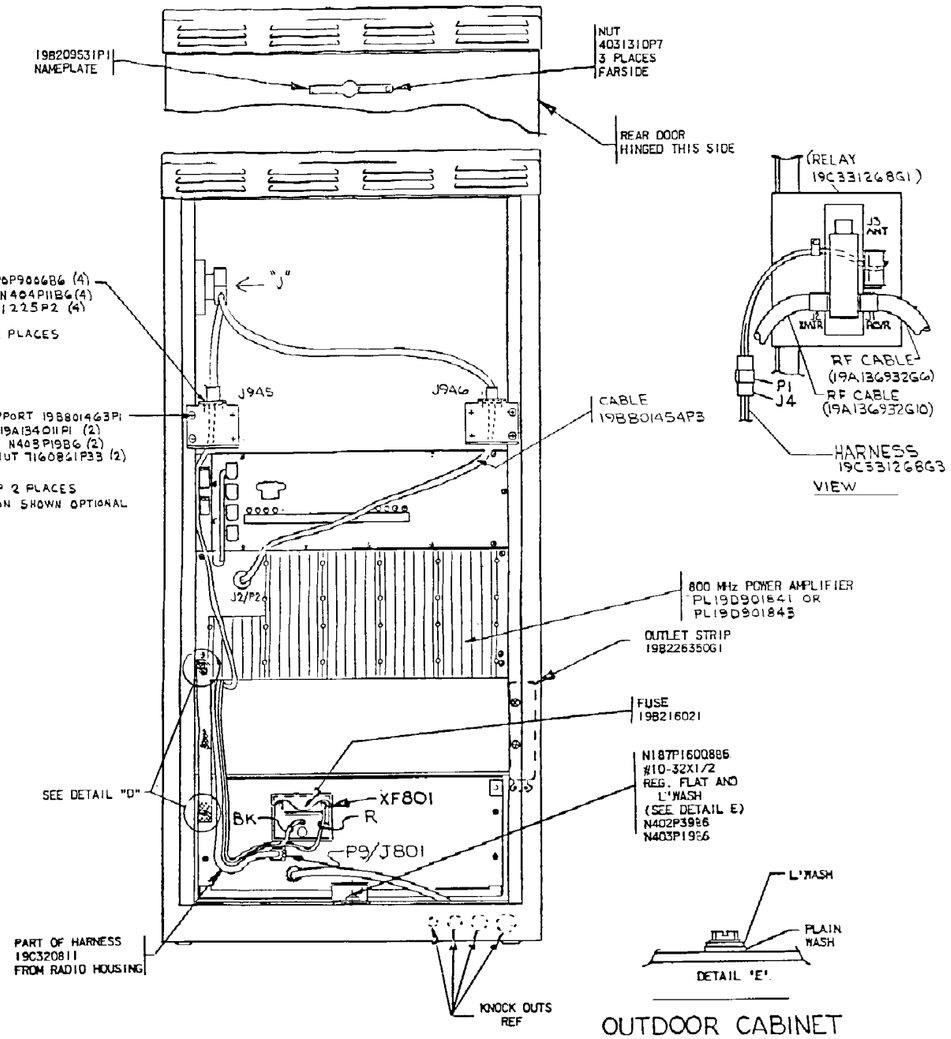






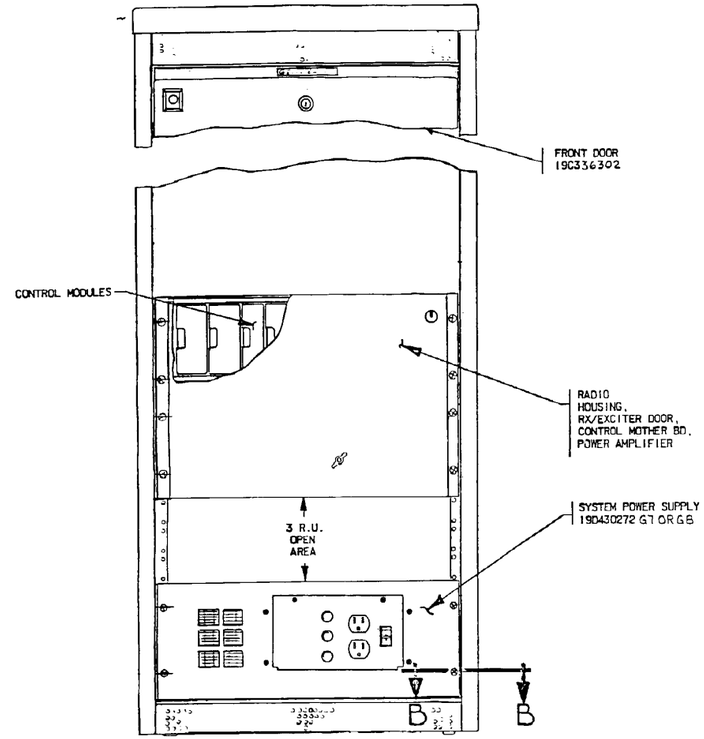
RADIO PANEL FRONT DOOR

POLE MOUNT STATION
19D417550

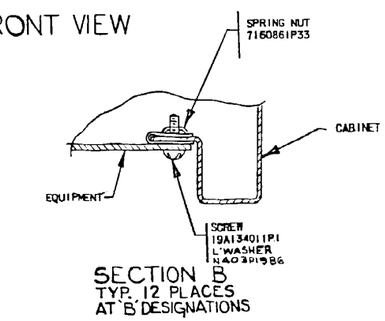


REAR VIEW

POLE MOUNT STATION
19D417550

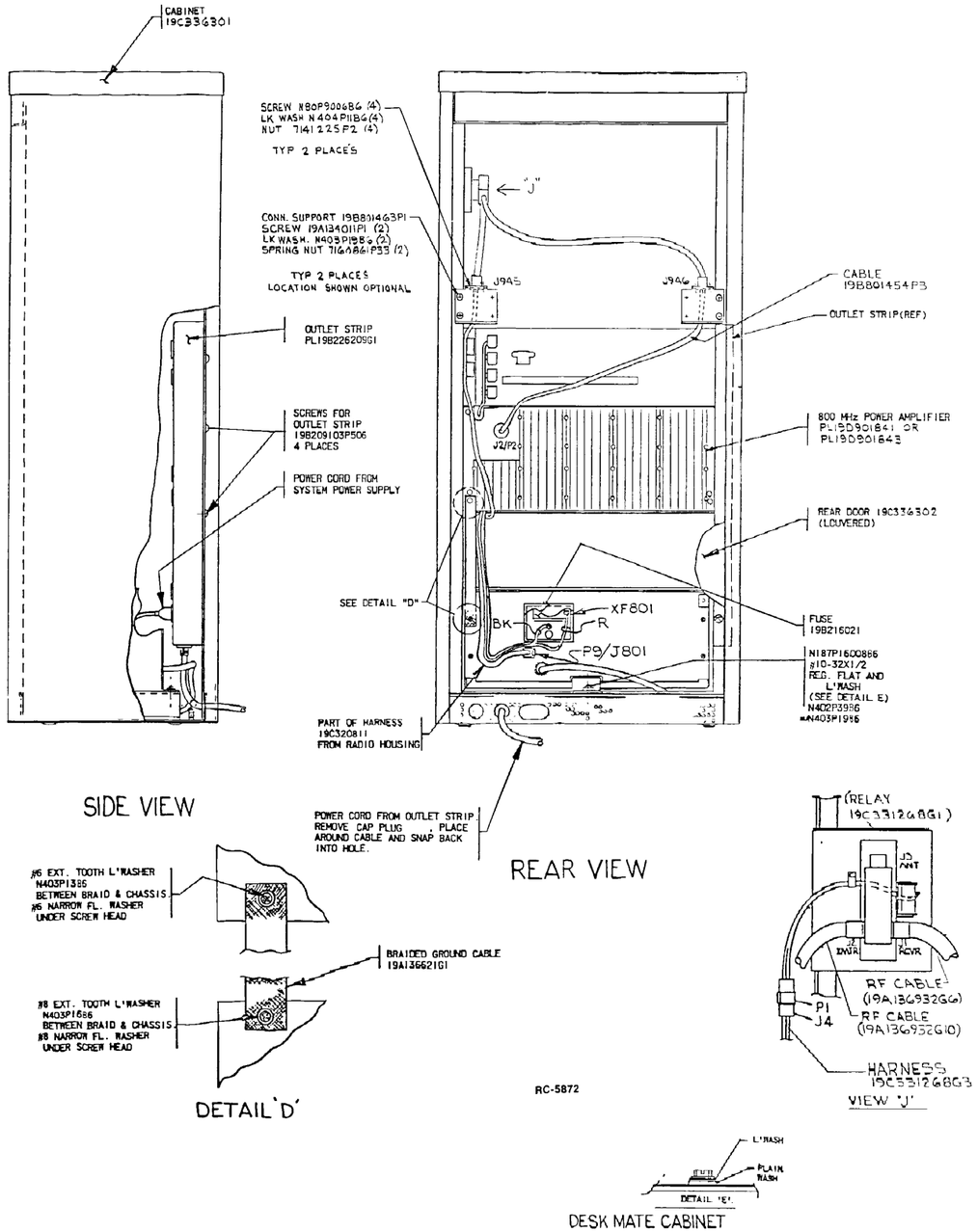


FRONT VIEW

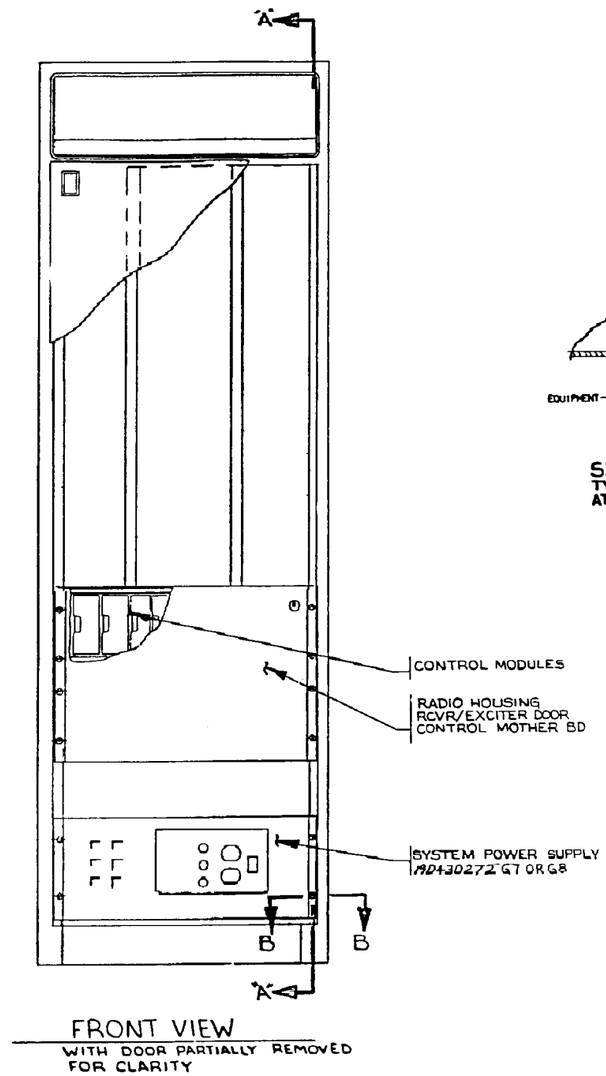


SECTION B
TYP. 12 PLACES
AT 'B' DESIGNATIONS

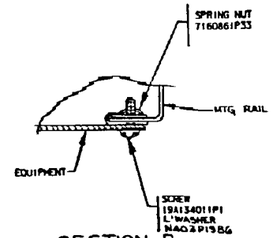
DESK MATE STATION
19C336301G1,2



DESK MATE STATION
19C336301G1,2

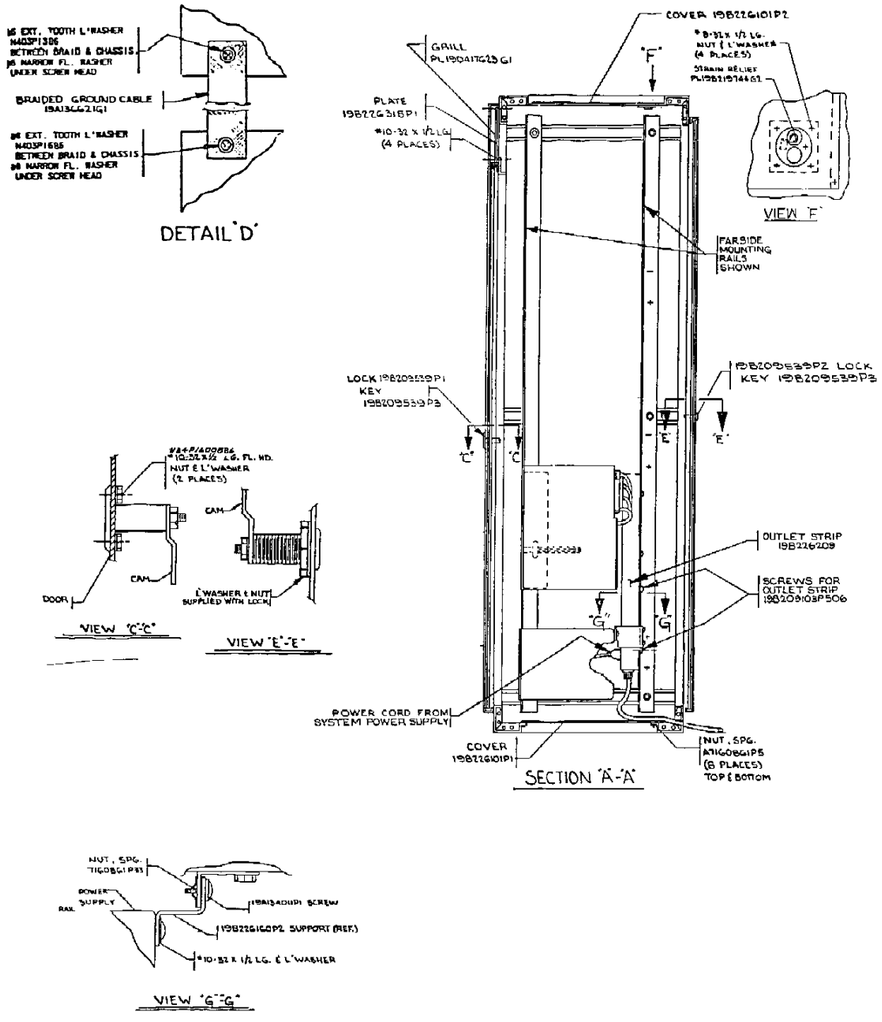


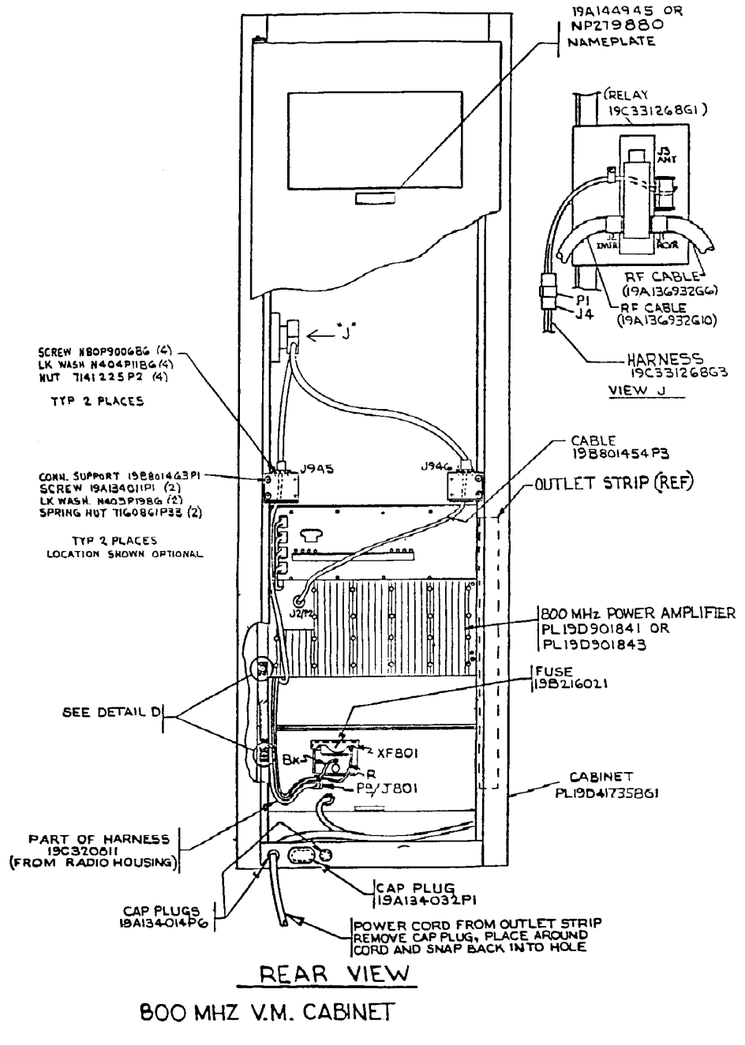
FRONT VIEW
WITH DOOR PARTIALLY REMOVED FOR CLARITY



SECTION B
TYP. 12 PLACES
AT 'B' DESIGNATIONS

FLOOR MOUNT STATION
19D417358G1





RC-5870

FLOOR MOUNT STATION
19D417358G1

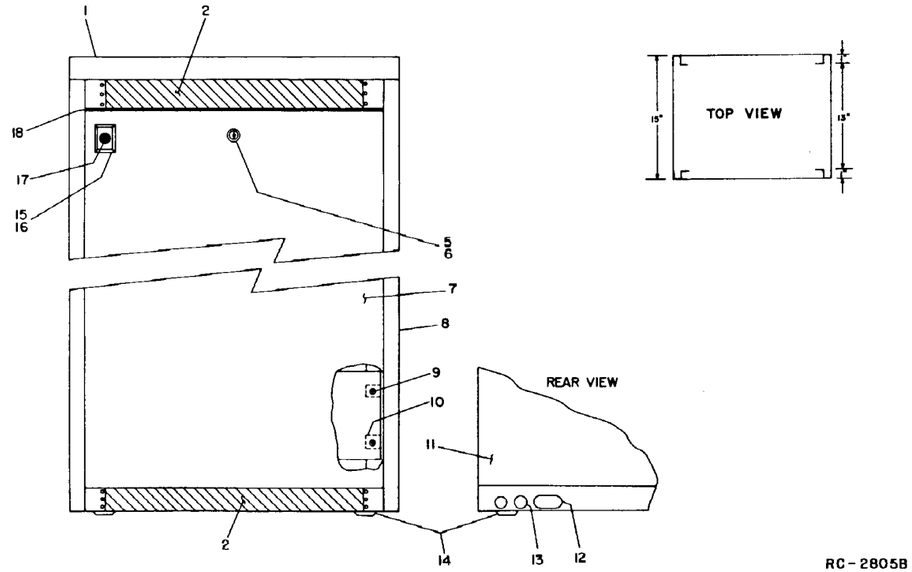
FLOOR MOUNT STATION
19D417358G1

LBI-4975F

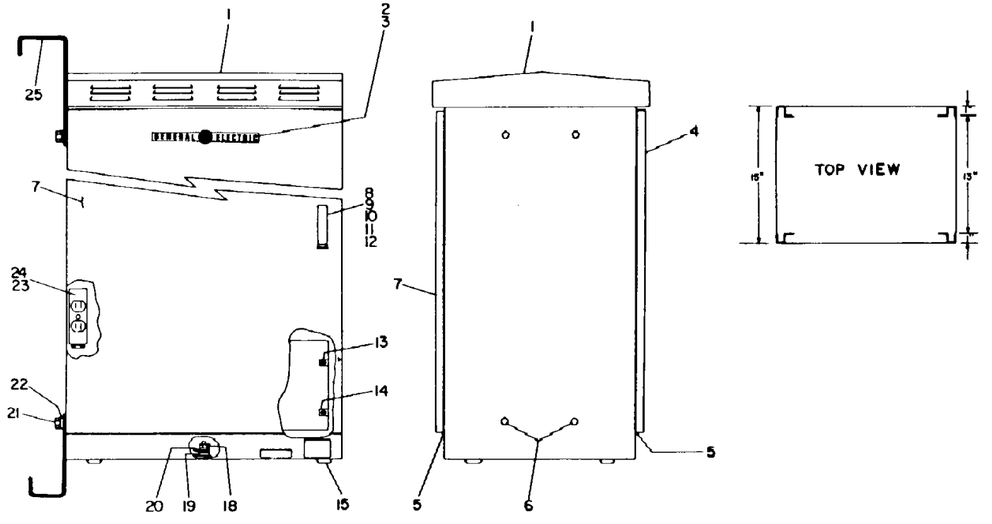
DESK MATE STATION CABINET
CONTINUOUS AND INTERMITTANT DUTY
(SEE RC-2805)

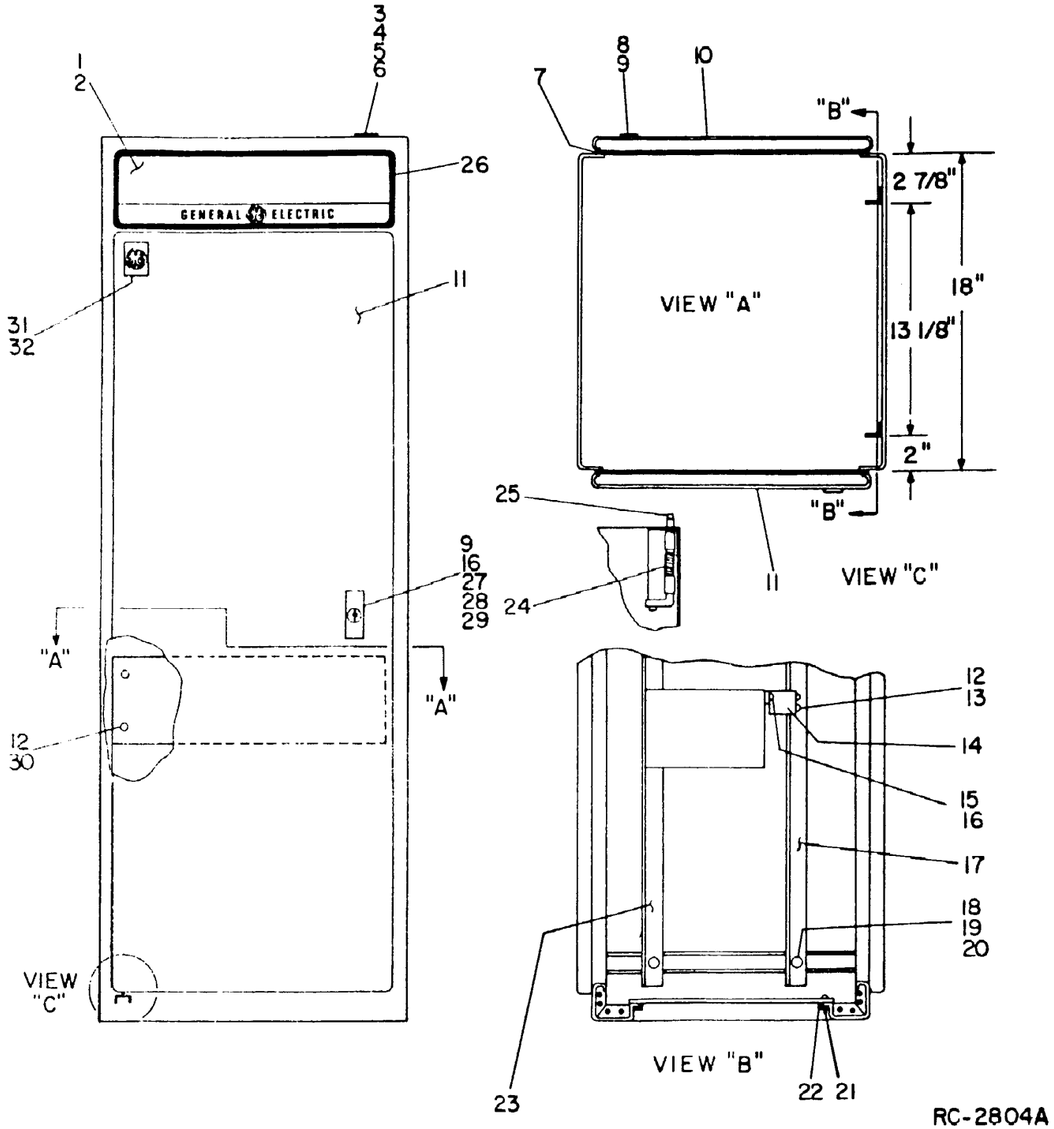
SYMBOL	GE PART NO.	DESCRIPTION
		30 INCH CABINET
1	19C320655P1	Top.
2	19C320654P1	Screen.
3		(Not Used).
4		(Not Used).
5	5491682P23	Lock. Yale and Towne F6857DX1.
6	5491682P4	Key. Yale and Towne BF-10A.
7	19C336302G9	Front door.
	19C320744G7	Front door. (Earlier Models).
8	19D417231G3	Cabinet. (LESS DOORS). (Includes items 1 and 2).
9	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
10	7160861P33	Nut, sheet spring: sim to Tinnerman C1794-10Z-24. (Quantity 52).
11	19C336302G10	Rear door.
	19C320744G8	Rear door. (Earlier Models).
12	19A134032P1	Protective plug. (Quantity 1).
13	19A134014P6	Bushing, strain relief: sim to Heyco UB-1093.
14	19A134015P1	Protective plug: sim to Caplug BPF-1/2. (Quantity 4).
15	19C311298P1	Frame. (Used with monogram).
16	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67. (Quantity 1).
17	NP257660	Nameplate.
18	NP276482	Nameplate. (GENERAL ELECTRIC).
		44 INCH CABINET
1	19C320655P1	Top.
2	19C320654P1	Screen.
3		(Not Used).
4		(Not Used).
5	5491682P23	Lock. Yale and Towne F6857DX1.
6	5491682P4	Key. Yale and Towne BF-10A.
7	19C336302G11	Front door.
	19C320744G9	Front door. (Earlier Models).
8	19D417231G4	Cabinet. (LESS DOORS). (Includes items 1 and 2).
9	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
10	7160861P33	Nut, sheet spring; sim to Tinnerman C19840-10AB-3B. (Quantity 52).
11	19C336302G12	Rear door.
	19C320744G10	Rear door. (Earlier Models).
12	19A134032P1	Protective plug. (Quantity 1).
13	19A134014P6	Bushing, strain relief: sim to Heyco UB-1093.
14	19A134015P1	Protective plug: sim to Caplug BPF-1/2. (Quantity 4).
15	19C311298P1	Frame. (Used with monogram).
16	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67. (Quantity 1).
17	NP257660	Nameplate.
18	NP276482	Nameplate. (GENERAL ELECTRIC).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



RC-2805B





PARTS LIST

LBI4877D

FLOOR MOUNT STATION CABINET
19D417358G3
(SEE EC-2804)

SYMBOL	GE PART NO.	DESCRIPTION
1	19D417623G2	Grille.
2	19B226318P2	Grille plate. (Located under grille).
3	19B219744G2	Strain relief.
4	MSOP15D08C6	Machine screw: No. 8-32 x 1/2.
5	N210P15C6	Hex nut: No. 8-32.
6	N403P16C6	Lockwasher, external tooth: No. 8.
7	19A126220P1	Gasket, door.
8	19B209538P2	Lock, rear door; sim to Chicago Lock Co. 1703-67.
9	19B209539P3	Key; sim to Chicago Lock Co. 1000 GE.
10	19C320756G4	Door, rear. 64 inch.
11	19C320756G3	Door, front. 59 inch.
12	19A134011P1	Tap screw: No. 10-16 x 1-1/8. (Quantity 52).
13	7160861P32	Nut, sheet spring; sim to Tinnerman C1704-10K-24. (Quantity 16).
14	19B226160P2	Support.
15	MSOP16008C6	Machine screw: No. 10-32 x 1/2.
16	N403P19C6	Lockwasher: No. 10.
17	19B226084P2	Support.
18	MSOP21012C6	Machine screw: No. 1/4-20 x 3/4.
19	N403P25C6	Lockwasher: No. 1/4.
20	N402P41C6	Flatwasher: No. 1/4.
21	MSOP15008C6	Machine screw: No. 8-32 x 3/8.
22	7160861P5	Nut, sheet spring; sim to Tinnerman C1505-1032-157.
23	19B226094P1	Support.
24	19A129902P1	Spring.
25	19B226088P1	Pin hinge.
26	19B226092G1	Frame.
27	19B209539P1	Lock, front; sim to Chicago Lock Co. 4260-1.
28	MSOP16007C6	Machine screw: No. 10-32 x 7/16.
29	N210P16C6	Hex nut: No. 10-32.
30	7160861P31	Nut, sheet spring; sim to Tinnerman C18610-031.
31	NP257660	Nameplate. (GE).
32	4031083P7	Nut, sheet spring; sim to Tinnerman C12046-012-67.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.