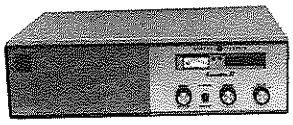
BENNETT

MOBILE RADIO

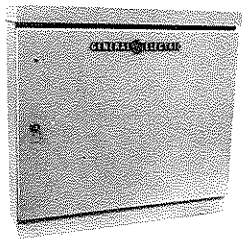
MASTR® *Executive II*

STATION COMBINATIONS
MAINTENANCE MANUAL LBI30131F

DATAFILE FOLDER DF9040



Desk Top
Station



Wall-Mount
Station

GENERAL ELECTRIC

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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 ENERGIZED!

SPECIFICATIONS*

EIA DIMENSIONS (H X W X D)	
Desk Top Station	6" x 20-1/4" x 13-3/4"
Wall Mount Station	21-1/4" x 22-1/2" x 7"
WEIGHT	
Desk Top Station	46 lbs.
Wall Mount Station	65 lbs.
INPUT VOLTAGE	121/242 VAC, 50/60 Hertz

	AC INPUT POWER		
RF OUTPUT	TRANSMIT	RECEIVE	STANDBY
Low Band-50 Watts	290 Watts	45 Watts	20 Watts
High Band-35 Watts	245 Watts	45 Watts	20 Watts
UHF Band-40 Watts	260 Watts	45 Watts	20 Watts
800 Band-25 Watts	300 Watts	72 Watts	36 Watts

TEMPERATURE RANGE -30°C to +60°C (-22°F to +140°F)

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

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th & 9th Digits		10th Digits
Mechanical Package	System Voltage	RF Power Output Range	Channel Spacing	Control	Number of Freq.	Options	Frequency Range MHz		Oscillator Stability
F Desk Top Station	**1** 121 VAC	**5** 16-38 Watts	**4** 20 kHz	**L** Local	**A** 1 TX 1 RX	**S** Standard	**13** 29.7-36	**23** 36-42	**A** 5 PPM
W Wall Mount Station		**6** 38-64 Watts	**5** 25 kHz	**K** Local/ Remote	**B** 2 TX 1 RX	**N** Noise Blanker	**33** 42-50	**44** 66-78	**B** 2 PPM
			6 30 kHz	**R** Remote	**C** 2 TX 2 RX	**P** Pre-Amp	**45** 77-88	**56** 138 - 150.8	
					D 1 TX 2 RX	**U** Channel Guard	**66** 150.8-174	**77** 406 - 420	
					E 3 TX 3 RX	**W** CG & NB	**88** 450 - 470	**89** 470 - 494	
					F 4 TX 4 RX	**G** CG & Pre-Amp	**91** 494 - 512	**92** 851 - 870 Rx 806 - 825 Tx	
					G 5 TX 5 RX				
					H 6 TX 6 RX				
					J 7 TX 7 RX				
					K 8 TX 8 RX				

TRANSMITTER TYPE NUMBERS

TRANSMITTER		FREQUENCY RANGE (MHz)	FREQUENCY STABILITY
DESK MOUNT	WALLMOUNT		
KT-123-A	KT-128-A	30-50	5 PPM
KT-158-A	KT-159-A	72-76	5 PPM
KT-124-A	KT-129-A	138-174	5 PPM
KT-125-A		406-512	5 PPM
KT-125-C		406-512	2 PPM
	KT-130-A	406-512	5 PPM
	KT-130-C	406-512	2 PPM
KT-149-C	KT-148-C	806-825	2 PPM

EQUIPMENT INDEX

EQUIPMENT	MODEL OR TYPE NUMBER	
	DESK TOP	WALL MOUNT
POWER SUPPLY	19D423500G1	19D423500G1
CONTROL PANEL	19D423452G1	19B227070G1
SYSTEM BOARD	19D423307G1	19D423307G1
CABINET		19D402658G2
TOP COVER	19A122161G4	
BOTTOM COVER	19C311827G2	
LOCK		5491682P14
KEY		5491682P8

DESCRIPTION

The General Electric MASTR® Executive II Desk Top and Wall Mount stations are fully transistorized, utilizing silicon transistors. The Desk Top Station transmitter/receiver assembly swings up to provide access to both sides of the unit. The chassis swings down in Wall Mount Stations. See Figures 1, 2 and 3.

The transmitter and receiver are equipped with centralized metering jacks for aiding the serviceman while performing the alignment and troubleshooting procedures. The receiver and transmitter exciter plug in and out from the top of the radio chassis. The System Audio Squelch Board is accessible when the chassis is pivoted out of the frame. The transmitter PA heat sink casting forms an enclosure for the PA Board which is mounted parallel to the casting. The PA heat sink is mounted on pivoting brackets to allow access to the PA Board.

The Station System-Audio-Squelch (SAS) Board, located on the underside of the radio chassis, (Figure 4) contains the 5-Watt Audio Amplifier, Squelch, 10-Volt regulator for the transmitter exciter and receiver, the transmit/receive switching controls and a station audio pre-amplifier. Jacks are provided on the SAS Board to accomodate Channel Guard, Carrier Control Timer and Multi-Frequency option boards. Jacks are also provided on the SAS board for plug-in interface with the control and power functions.

Two different local control units are used with the stations. The Desk-Top Station local control panel is mounted on the front of the station so that the controls will be convenient to the operator. The Wall Mount Station local control panel is mounted within the weather-proof cabinet.

The Remote Control Board is used with Local/Remote Desk-Top combinations and Remote Wall-Mount combinations. In Local/Remote Desk-Top combinations, the remote control circuits have transmit and Channel Guard monitor capability. Frequency

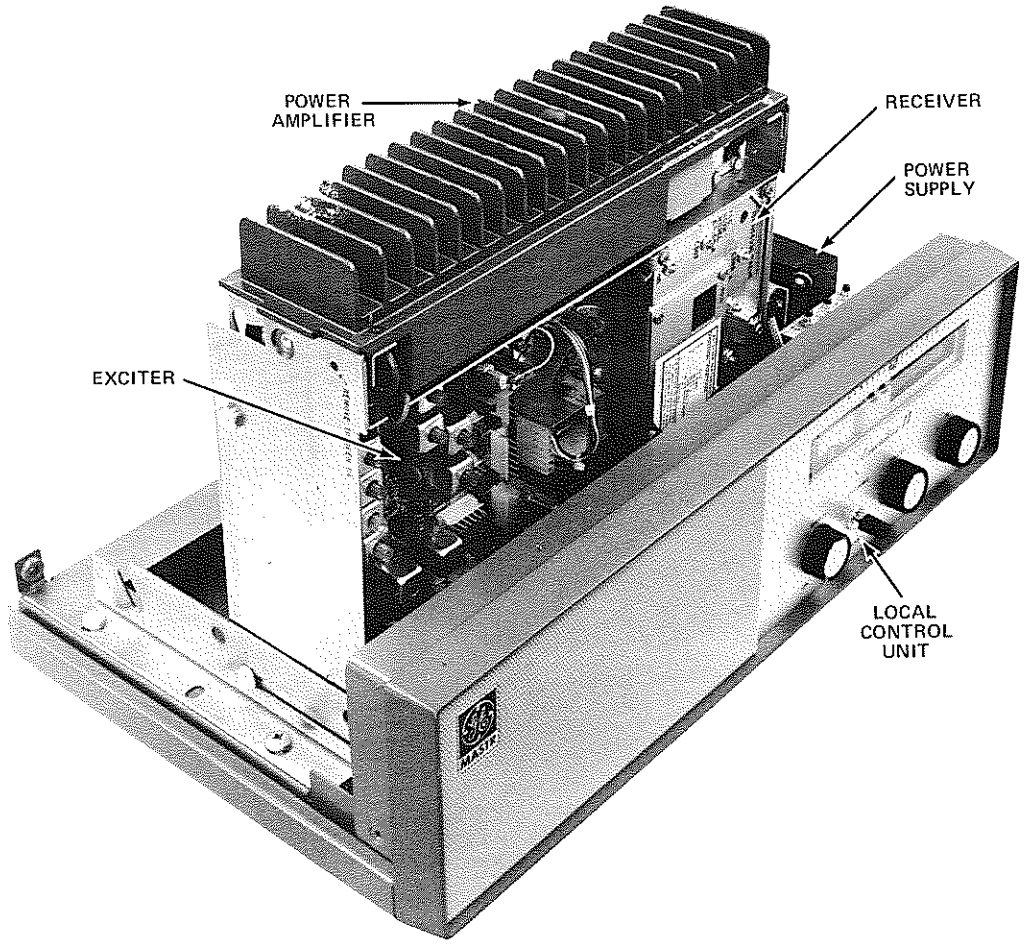


Figure 1 - Lo Band, Hi Band and UHF Desk-Top Station

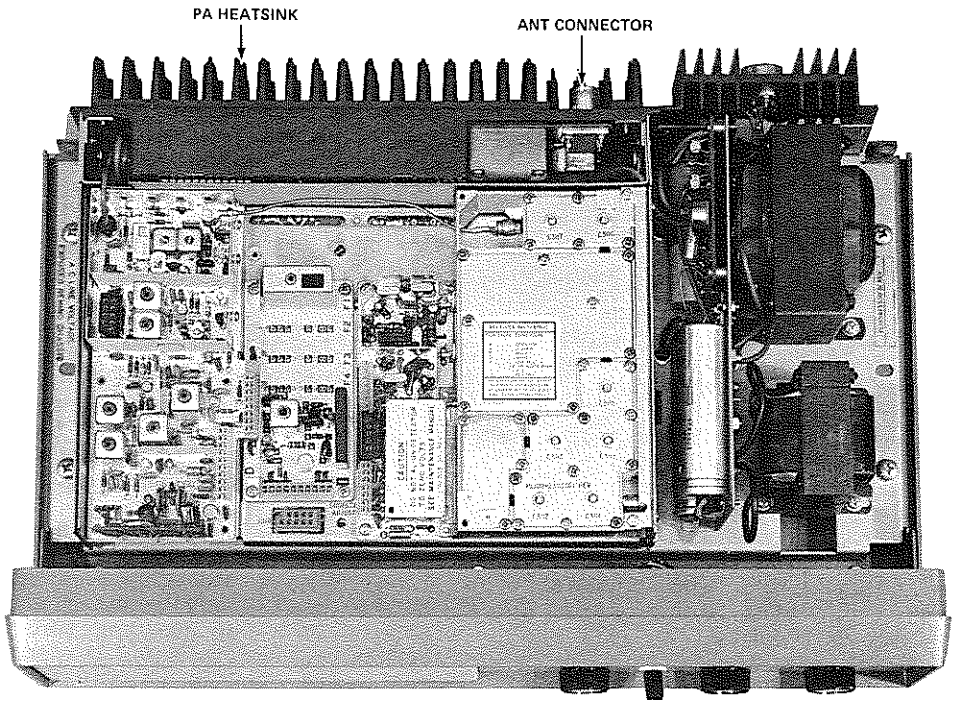


Figure 2 - 806-870 MHz Desk Top Station

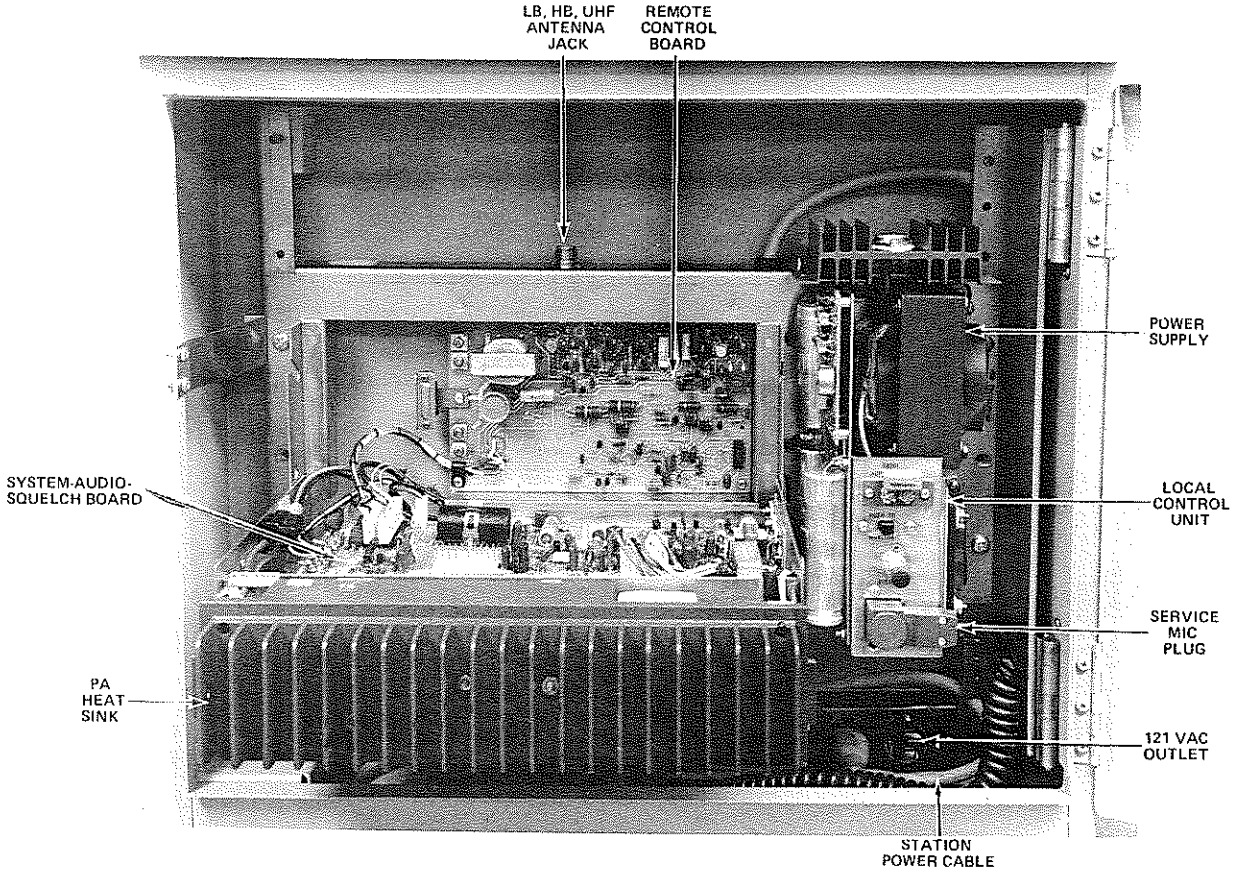


Figure 3 - Wall Mount Station

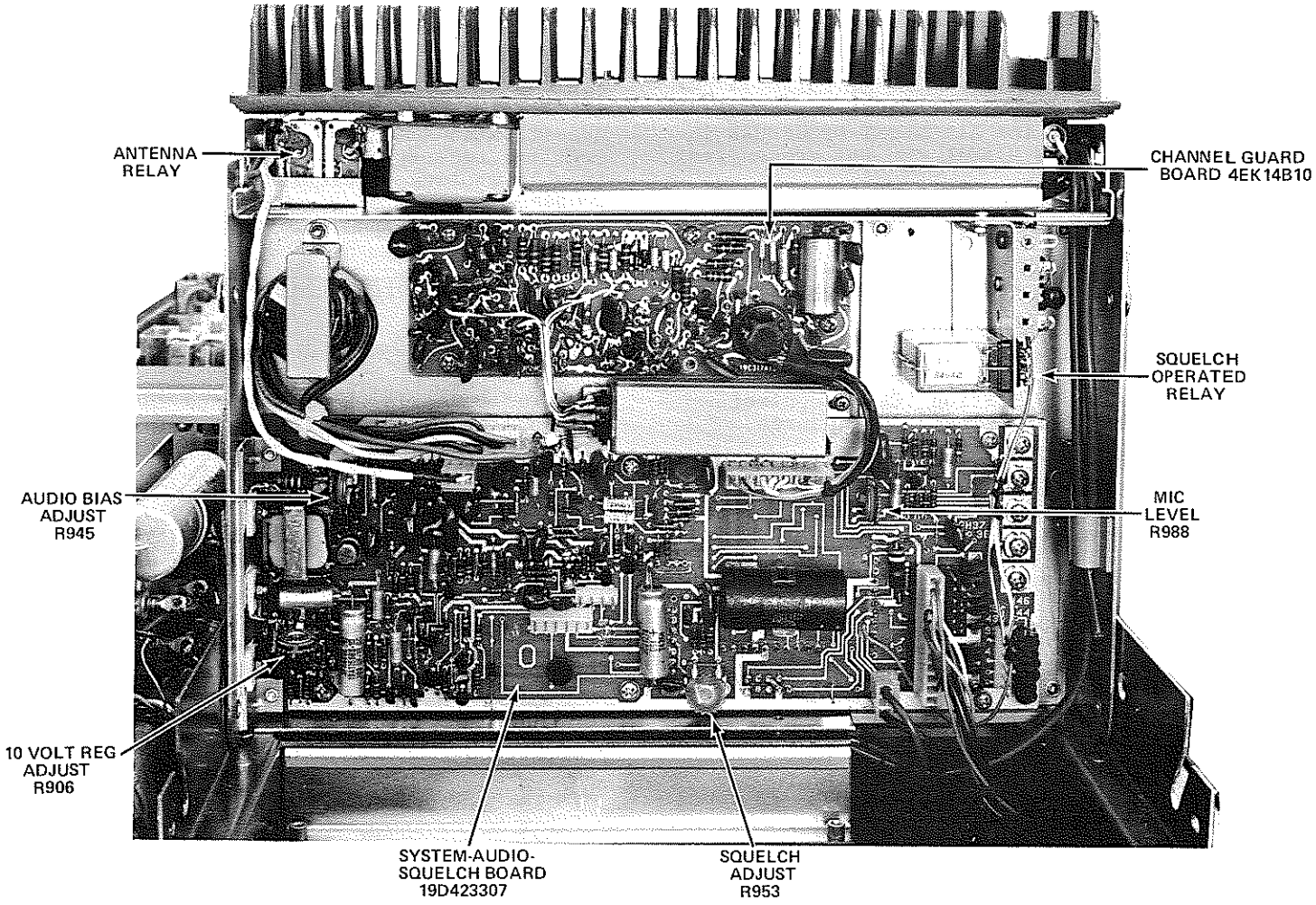


Figure 4 - System-Audio-Squelch Board and Channel Guard

selection is controlled at the local control point only. The Wall-Mount stations have full remote control capability. Remote functions available include F1 and F2 transmit, F1 and F2 receive and Channel Guard Monitor. The Remote Control Board contains a line-driver amplifier, station transmit amplifier and, on boards with Channel Guard Monitor, a Channel Guard filter is provided. The Remote Control Board mounts in the lower part of the Power Supply chassis and is accessible when the radio chassis is pivoted out of the frame.

The MASTR Executive II Power Supply operates from 121 VAC at 50 or 60 Hertz, delivering 16 VDC during receive and 13.2 VDC (at 11 Amperes) during transmit. Jumper connections are provided under the chassis for converting the Power Supply to 242 VAC operation.

INITIAL ADJUSTMENT

After the station combination has been installed (as described in the Installation Manual), the following adjustments should be made by an electronic technician holding a 1st or 2nd Class FCC Radiotelephone license. Make sure that a RADIO TRANSMITTER IDENTIFICATION Form (FCC Form 452-C or General Electric Form NP270303) has been filled out and attached to the transmitter.

TRANSMITTER ADJUSTMENT

The adjustment for the transmitter includes measuring the forward and reflected power and adjusting the antenna length for optimum ratio, then setting the transmitter to rated power (or to the specific

power output which may be required by the FCC station authorization). Next, measuring the frequency and modulation and entering these measurements in the FCC required station records.

For the complete transmitter adjustment, refer to the ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the transmitter.

RECEIVER ADJUSTMENT

The initial adjustment for the receiver includes tuning the input circuit to match the antenna. Refer to the FRONT END ALIGNMENT PROCEDURE in the receiver MAINTENANCE MANUAL.

To set the station VOLUME control (R701), use the following procedures:

1. Apply a 1,000 microvolt on-frequency test signal modulated by 1,000 Hertz with ±3 kHz deviation to the receiver antenna jack J2.
2. Connect an AC VTVM across P912, terminals 1 and 2. Adjust R701 on the Control Unit for a reading of 6.3 Volts RMS on the meter.

To set the station SQUELCH control (R953) use the following procedure:

1. Turn the SQUELCH control R953 (located on the SAS Board) clockwise as far as possible.
2. Adjust the VOLUME control until the noise is easily heard in the speaker and is not annoyingly loud.
3. Turn the SQUELCH control counterclockwise until the noise just disappears, then advance the control another 20 degrees.

MICROPHONE LEVEL ADJUSTMENT

While talking in a normal voice at four to six inches from the station microphone, adjust the MIC LEVEL control R988 (located on the SAS Board) for an average deviation of ±3.0 kHz as measured on a deviation monitor.

MAINTENANCE

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

Test and Troubleshooting Procedures

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

SYSTEM DESCRIPTION

RECEIVER

The Low-Band, High-Band and UHF receivers consist of an Oscillator/Multiplier Assembly (OSC/MULT), RF Assembly, Mixer/IF Assembly (MIF) and an IF filter. In receivers with noise blankers, the noise blanker circuit replaces the standard MIF board. Refer to the Receiver MAINTENANCE MANUAL for a complete description of the station receiver.

The 851-870 MHz Receiver consists of an RF assembly and IF-detector assembly (IFD). The audio and squelch circuitry is located on the System Board.

TRANSMITTER

The station transmitter consists of an exciter board assembly and a power amplifier assembly. The exciter contains the oscillator, modulator and all frequency multiplier functions. The exciter delivers the modulated carrier frequency to the power amplifier.

The power amplifier assembly includes a low pass filter along with circuitry to permit adjustment of the operating power level. The antenna relay is mounted on the system frame. Refer to the Transmitter MAINTENANCE MANUAL for a complete description of the station transmitter.

The 806-825 MHz Transmitter consists of an exciter and oscillator board and a power amplifier assembly. The PA assembly mounts on a hinged heatsink casting that swings down for easy access. A low-pass filter mounts next to the PA assembly. In the receive mode, the exciter serves as the receiver first oscillator. The antenna relay is mounted on the Low Pass Filter board.

DESK-TOP CONTROL PANEL

The Desk-Top Control Panel contains the station VOLUME control, a MONITOR switch, a green Power ON Light Emitting Diode (LED) indicator, a red Transmit LED indicator and the station speaker. Control units for

MAINTENANCE CHECK	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 unmodulated signal on the station frequency(s), adjust OSC-1 trimmer for each operating frequency for a zero discriminator reading. (See the Receiver Alignment Procedure MAINTENANCE Section).		X
Transmission Line - Check for positive indication of pressure on transmission line pressure guage (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 has accumulated inside the cabinet.	X	
Frequency Check - Check transmitter frequency & deviation as required by FCC.		X

multi-frequency station combinations are equipped with a frequency selector switch. Stations equipped with a Priority Search Lock Monitor option have a SEARCH switch and an amber LED indicator added. Stations without these options have dummy knobs in place of the switches.

VOLUME control R701 is a variable resistor used to control the audio output of speaker LS701.

Placing switch S703 in the MONITOR position disables the noise squelch circuit in the receiver. In radios equipped with Channel Guard, the MONITOR position also disables the receiver Channel Guard. The CG DISABLE position of the switch disables Channel Guard while permitting normal noise squelch operation.

In multi-frequency applications, a frequency selector switch is used to select the radio channel desired by connecting A- to the transmitter and receiver oscillator modules. S701 (19B226950G1) is used for 2-frequency station combinations. S702 (19B226950G2) is used for 3- or 4- frequency station combinations. S704 (19B226950G5) is used for 5 thru 8 frequency station combinations.

A transistorized dynamic desk-top microphone is used with the station. The versions of the microphone are available. The standard microphone (19B209458P1) has one pushbutton (TRANSMIT) and is used with systems not equipped with Channel Guard. The Channel Guard microphone has two pushbuttons on the mike base: A TRANSMIT button and a MONITOR button. The MONITOR button allows monitoring the receiver channel on noise squelch.

WALL-MOUNT CONTROL PANEL

The Wall-Mount Control Panel is mounted on the system frame next to the power supply. The control panel contains the VOLUME control (R701), the MONITOR switch (S701), the microphone connector, and the 3.5 ohm audio loud resistor (R702) connected across TB701-1 and 2. R702 is removed when the speaker option is used.

When the Wall-Mount station is equipped with a speaker pressing down the MONITORswitch disables the noise squelch circuit. If the station is equipped with Channel Guard, pressing the MONITOR switch also disables the receiver CG. VOLUME CONTROL R701 is a variable resistor used to control the output of the optional speaker. A transistorized dynamic hand held microphone is also available for local applications.

The station power supply provides all supply voltages for the station. The supply is normally wired for 121 VAC, 50 or 60 Hertz operation. Jumper connections are provided under the chassis to convert the supply to 242 VAC operation when

required. Refer to the Power Supply Schematic Diagram and to the 242 VAC modification instructions.

The station power supply delivers 16 Volts in the receive mode and 13.2 Volts in the transmit mode. A full-wave bridge rectifier (CR801-CR804) feeds a choke input filter (L801, C801, C802). A series pass regulator (Q801, Q802, Q803) provides regulation and filtering. The supply is designed for a 20% transmit duty cycle and a 100% receive duty cycle.

Power is applied to T801 by turning OFF-ON switch S801 to the ON position. A 4-Amp fuse in one side of the AC lead protects the supply from overloads. The AC voltage developed across the secondary of T801 is rectified by full-wave bridge rectifier CR801 through CR804. Some filtering of the rectified voltage is provided by L801, C801 and C802. The secondary of T801 is protected by 15-Amp fuse F1 (on A801).

The regulator is located on printed board A801. The pass transistor (Q801) is mounted on a heat sink which dissipates heat to the outside ambient in the Desk-Top station. The rectifier output is applied to the collectors of Q801 and Q802. In the transmit mode, Q801 and Q802 operate as a filter for the voltage applied to the transmitter. In the receive mode, the circuit acts as a limiter for the receiver supply voltage.

If the output of Q801 starts to rise, VR1 (in the base of Q803) breaks down and Q803 starts conducting. This causes Q801 and Q802 to conduct less, limiting the voltage to the receiver. Potentiometer R5 is set at the factory for a maximum output of 16 Volts at the emitter of Q801 when the station is in the receive mode.

The power supply may be equipped with a battery standby kit (Option 9911). This kit permits operation from a customer supplied 12-Volt battery in the event of an AC power failure. The circuit consists of fuse F802 and isolating diode CR805.

Under normal operating conditions, CR805 is reverse biased by the supply voltage from the limiter-filter circuit, preventing any drain on the battery. An AC power failure removes the reverse bias on CR805 and the battery voltage is automatically applied to the station.

For this application, a heavy duty battery (55 Ampere-hours or greater) and a trickle charger is recommended. These items must be supplied by the customer. This arrangement will supply 10 or more hours of standby capability.

SYSTEM-AUDIO-SQUELCH BOARD

The System-Audio-Squelch Board mounts on the underside of the radio chassis and is accessible when the radio chassis is pivoted out of the frame. The board provides interconnection between the control and radio modules. Molex pins on the board protrude through slots to make connection to the exciter, multi-frequency board and IF/Detector board. Molex pins on the top of the board provide connections to the station harness plugs.

The System-Audio-Squelch (SAS) Board contains the 10 VDC power regulator for the exciter and receiver, the transmit/receive switching controls, a microphone pre-amplifier and the station audio amplifier and squelch circuits.

MICROPHONE PRE-AMPLIFIER

Microphone pre-amplifier Q922 provides an additional 20-dB gain for use with a desk-type or service microphone. Audio from the microphone is connected to the MIC LEVEL control R988. Q922 amplifies the adjusted audio, which is then connected through pass transistor Q923.

Operating the LOCAL PTT circuit applies ground to the base of Q923, turning the transistor on and passing the mike audio to the station transmitter.

+10 VOLT REGULATOR

The +10 Volt Regulator provides a closely-controlled supply voltage for the transmitter exciter, the receiver, Channel Guard, the Carrier Control Timer and multi-frequency boards. The 13.8 VDC from the station power supply is applied to the choke input filter composed of L901 and C920. The output of this filter is then applied to the regulator circuit which consists of Q901, Q902, Q903 and zener diode VR901.

When the output of the regulator starts to increase, Q903 conducts harder. Q902 conducts less, causing Q901 to conduct less. This increases the voltage drop across Q901, keeping the output voltage constant. Potentiometer R906 is used to set the base voltage of Q903 for the desired 10-Volt output.

SYSTEM CONTROL

Operating the PTT switch grounds the base of Q904 in the receiver muting and delay circuit, turning the transistor on. Operating Q904 turns on Q905, causing its collector to drop. When Q904 is operating, the receiver squelch and audio control circuits are turned on, muting the receiver.

With the PTT switch operated, C925 changes to the +10-Volt line. When the PTT switch is released, C925 discharges through R909, keeping Q904 and Q905 on for approximately 75 milliseconds as the capacitor discharges. This delays the turn-on of the receiver audio for 75 milliseconds.

TRANSMITTER KEYING AND DELAY

Operating the PTT switch on the microphone (or the remote control unit) applies A- to the base of Q906. Capacitor C926 starts to charge through R916 and R917. In approximately 30 milliseconds, C926 has charged to a voltage high enough to allow time delay switch Q906 to turn on. This causes transmitter oscillator control switch Q907 to turn on. Operation of Q907 applies voltage to the transmitter oscillator, keying the transmitter. The collector voltage of Q907 turns off Q908, removing the supply voltage from the receiver oscillator.

The 30 millisecond time delay in the transmitter oscillator keying circuit allows the antenna relay to energize before RF is applied to the relay. When the PTT switch is released, CR903 delays the antenna relay from de-energizing until the RF is removed from the contacts.

When the radio is in the receive mode (transmitter unkeyed), the transmitter oscillator control switch Q907 is off and receiver control switch Q908 is conducting. The voltage at the collector of Q908 operates the receiver oscillator circuits.

TRANSMITTER DISABLE

When the station is equipped with a Carrier Control Timer, the TX DISABLE lead from the Carrier Control Timer Board is connected to the base of Q906. When the timing cycle on the Carrier Control Timer times out, A- is applied to the base of Q906, turning off the transmitter oscillator control voltage and disabling the transmitter.

AUDIO AMPLIFIER AND DRIVER

The audio signal from the VOLUME control is fed to the de-emphasis network consisting of C933, C935, R931, R932. The signal is then fed to the base of audio amplifier Q914. The output of Q914 is coupled to audio driver Q915. The two stages of audio gain have their turn-on, turn-off time controlled by time-constant circuitry to reduce objectionable thumps.

AUDIO BIAS ADJUST trimmer R945 sets the bias on the audio output stage. The trimmer is adjusted for a reading of 20 mA between J906 and P406. The output of Q915 is applied through transformer T901 to the push-pull audio PA stage. The transformer provides phase inversion for the push-pull stage.

Q916 and Q917 operate as a push-pull Class AB audio PA stage. The PA output is coupled through audio transformer T1901 to the loudspeaker. The yellow and white tertiary winding of T1901 supplies balanced feedback to the collector of Q915. This feedback winding minimizes distortion and prevents pick-up of external electrical noise.

SQUELCH

Audio is applied to the SQUELCH ADJUST control R953. The control setting determines the squelch opening sensitivity. High-pass filter R981 and C946 reduces the effects resulting from high settings of the SQUELCH CIRCUIT. Diodes CR914 and CR915, together with amplifier Q920, prevent squelch clipping.

The compensator circuit composed of Q918, RT902 and RT903, insures that the squelch will tighten at both temperature extremes. The circuit compensates for gain changes by shunting less of the noise to ground with temperature changes. Below approximately 40°C RT902 keeps Q918 turned on; the impedance of RT903 increases and less noise is shunted to ground. Above 40°C, RT902 turns Q918 off. This removes the shunting effect of RT903.

C953, C954 and L902 form a high-pass filter for preventing audio signals from reaching the detector (CR916 and CR917). Positive filtered DC from the detector is fed to the base of Q909, turning the transistor on. The collector of Q909 drops to near zero, turning Q913 off and removing the bias from audio amplifiers Q914 and Q915. The receiver is squelched.

A hysteresis action is provided by the positive DC feedback from the collector of Q909, and from the collector of Q914 to the base of Q909. As Q909 and Q914 are switched on and off, noise amplifier Q920 gain is changed in such a way as to assist this action and provide positive switching.

SQUELCH MONITOR

Closing the SQUELCH MONITOR switch S703 on the station control unit applies ground to the base of Q910, turning the transistor off. Transistors Q909 and Q911 are both prevented from operating. Q913 is now allowed to conduct, turning on Q914 and Q915 and passing the receiver audio through to the speaker.

CARRIER CONTROL TIMER (OPTION 9909)

The Carrier Control Timer (CCT) determines the maximum time period of each transmission. When the preset transmission time has elapsed, a squelch disable voltage 0.7V is applied to the base of squelch disable switch Q912. The transistor operates and applies a regulated +10 Volts to audio amplifiers Q914 and Q915, allowing tone to be heard in the speaker.

At the same time, a transmitter disable signal is applied to the base of keying transistor Q906, turning Q906 and Q907 off. This removes the transmitter oscillator keying voltage. In stations equipped with Channel Guard, the transmitter CG Control voltage is also removed.

CHANNEL GUARD

In stations equipped with Channel Guard, the interconnections to the SAS Board is made through J907. The Channel Guard board contains a reject filter which prevents the tone from being heard in the speaker. The output of the tone reject filter is applied to the audio de-emphasis network (junction of R932, C936 and C935) in the base circuit of Q914.

CRYSTAL MODULE (5 PPM OSCILLATOR)

Crystal modules determine the operating frequency of the Lo Band, High Band and UHF transmitter and receiver. The plug-in module contains a crystal, a trimmer capacitor, and varicap for temperature compensation.

The quartz crystals used in the crystal module exhibit the traditional "S" curve characteristics of output frequency versus operating temperature. In the mid temperature range, -10°C to +50°C, the raw crystal characteristics are maintained. The compensation voltage which drives the crystal module varicap is approximately constant over this temperature range; consequently, the crystal almost solely determines the temperature characteristics. The crystals whose temperature characteristics lie toward the high limit of +4 PPM shown in Figure 4 are rotated slightly. All others have little to no rotation.

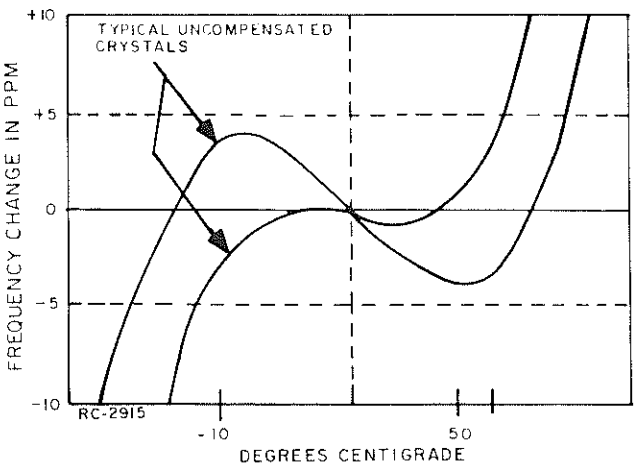


Figure 5 - Crystal Characteristics

The cold end temperature characteristic is "lifted" by a temperature dependent increasing voltage. The compensator which drives the crystal module varicap procuces a voltage which increases linearly from -10°C to -30°C. This voltage decreases the varicap capacity, which in turn increases the module tuned circuit frequency to compensate for the decreasing frequency characteristic of the crystal.

The hot end crystal temperature characteristic in Figure 4 is shown to be increasing with temperature. The hot end, above 50°C, crystal characteristic as compensated for by a decreasing voltage from the compensator. This results in added capability from the varicap. In turn a decreasing module frequency results to counteract the increasing frequency response of the crystal.

Compensation voltage from the exciter is applied to pin 4 of the crystal modules to maintain frequency stability within ±5 PPM over a temperature range of -30°C to +60°C.

> Service Note: Proper crystal module operation is dependent on the closely-controlled input voltages from the 10-Volt regulator. Should all of the crystal modules shift off frequency, check the 10-Volt regulator.

The compensation voltage varies nonlinearly with temperature to complement the temperature/frequency characteristics of the crystal. Listed below are typical minimum and maximum voltage readings to be expected at pin 4 of the crystal modules, as measured with a high impedance meter.

TEMPERATURE RANGE	OUTPUT VOLTAGE MINIMUM	MAXIMUM
-30°C	4.9 Volts	6.0 Volts
-10°C to +50°C	3.7 Volts	4.3 Volts
75°C	3.3 Volts	3.8 Volts

Trimmer capacitor C3 is used to adjust the radio for the exact operating frequency. Refer to the applicable Alignment Procedure for details.

Operating voltage for the crystal module is supplied from the Tx or Rx OSC control circuit on the SAS board or through the forward biased pin diode on the multi-frequency board to pin 1 of the selected crystal module.

5 PPM OSCILLATOR MULTI-FREQUENCY BOARDS

Two 5 PPM multi-frequency oscillator boards are available for radios with more than one operating frequency. The 19C321611G1 Multi-Frequency Board is used in two- to four frequency applications. The 19C327565G1 Multi-Frequency Board is used for five- to eight frequency applications. The boards contain the necessary circuitry to provide the additional transmit and receive frequencies for the radio. The boards plug into J904 on the SAS board and utilize crystal modules to determine the exact operating frequencies.

The transmit and receive oscillator circuits are indentical, each using a single transistor in conjunction with the selected crystal module to comprise the oscillator circuit. Crystal modules are selected for operation by the frequency select lead from the control unit. PIN diodes are used to switch the output of the selected crystal module to the base of the appropriate transistor, Q2601 (transmit) or Q2602 (receive).

Since the oscillator circuits are identical, only the F2 transmit circuit is described here.

When F2 is selected on the control unit, A- is applied to the junction of R2601 and R2606 (R2608) through P904-9. Pin diode CR2601 now is forward biased applying the output of the crystal module (pin 1) to the base of common oscillator transistor Q2601. The selected crystal module and the transistor circuit comprise a Colpitts oscillator.

The oscillator control voltage, required for oscillator operation, is controlled by the transmit keying and delay circuits on the SAS board.

Pressing the PTT switch applies the Tx Osc. Control Voltage (+10 V) to the emitter/base circuit of Q2601 causing it to oscillate at the assigned F2 crystal frequency.

A short plug-in coaxial cable (W2601) connects the output of the oscillator to J102 on the exciter board. When the PTT switch is released, the transmit oscillator control voltage is removed from Q2601 and the anode of PIN diode CR2601. Q2601 stops oscillating and therefore, does not provide an input to the exciter.

With the PTT switch released, the Receiver Oscillator Control Voltage from the transmit keying and delay circuit on the SAS board is applied to the emitter base circuit of Q2602. Since the transmit and receive modules are selected simultaneously, (on SAS board) Q2602 now oscillates at the F2 receive crystal frequency and provides an output to J401 on the receive osc-mult board through cable W2602.

When a different frequency is selected, A- is removed from the junction of the pull-up resistors. This reverse biases PIN diode CR2601 and removes the crystal module output from the base circuit of Q2601.

2 PPM OSCILLATOR BOARD

In UHF station applications requiring a frequency stability of 0.0002 PPM, Integrated Circuit Oscillator Modules (ICOMs) are used. The 2 PPM Oscillator Board contains up to four transmit and four receive ICOMs a maximum of two transmit and two receive ICOMs are available as standard. The quartz crystals in ICOMs exhibit the same traditional "S" curve characteristics of output frequency versus operating temperature as described for the crystal modules.

A voltage regulator, composed of Q2601, C2601, C2602, R2601 and VR2601, provides adequate supply stability for the 2 PPM oscillator compensation. The Tx F1, Tx F2, Rx F1 and Rx F2 frequency select lines are connected to separate control pins. The Tx F3, Tx F4, Rx F3 and Rx F4 select lines are connected to a common area on the multi-frequency board. Control of these oscillators is accomplished by adding individual wires. The output of the 2 PPM oscillators are connected to the transmitter exciter and receiver oscillator/multiplier boards with two wires similar to the 5 PPM multi-frequency board.

806-825 MHz EXCITER AND OSCILLATOR

The 806-825 MHz exciter is a crystal controlled, frequency modulated exciter designed for one through four frequency operation in the 806-825 MHz band. In the receive mode, the exciter provides the injection frequency for the local oscillator input to the 1st mixer stage. Refer to the 806-825 MHz transmitter MAINTENANCE MANUAL for a complete description of the exciter and oscillator boards.

ANTENNA TRANSFER RELAY

Three different types of antenna transfer relay are used in MASTR Executive II Stations.

Antenna transfer relay 19C321741 is used in radios operating in the 30-50 MHz and 138-174 MHz frequency range. (Used in earlier production models).

Antenna transfer relay 19B227069 is used in radios operating in the 406-512 MHz frequency range. (Used in earlier production models).

A Low Pass Filter/Relay Assembly (FL202) is used in 806-825 MASTR Executive II radios. This assembly is independently mounted outside the shielded compartment of the station PA. The filter connects to the power amplifier by means of a semi-rigid coaxial cable.

Power to operate antenna transfer relay K1901 is supplied from the Tx Enable lead through J905-1 on the SAS board to the "S" lead on K1901. When the PTT switch is pressed A- is applied through J905-3 on

the SAS board to the "F" lead on K1901 closing normally open contacts between J2 (antenna) and P202 (transmitter). Releasing the PTT switch de-energizes K1901 closing the receiver contacts between J2 and P301 (receiver).

Power to operate the 800 MHz antenna transfer relay (K1) is supplied from the Tx enable lead through J905-1 on the SAS board to K1-6. When the PTT switch is operated, A- is applied through J405-3 to K1-2. Normally open contacts between J2 (antenna) and the transmitter low-pass filter output are closed. Releasing PTT de-energizes K1, closing the receiver contacts between antenna jack J2 and Rx jack J1.

VU METER KIT (OPTION 9910)

The VU Meter allows the operator to check the mike output level. Only LOCAL PTT activates the VU Meter circuit by turning off Q3 and allowing the MIKE HI audio through to the meter M1. This prevents the meter from deflecting on background noise when a "live" microphone is used. The VU Meter Kit is located in the space provided on the front cover assembly of the Desk Top stations.

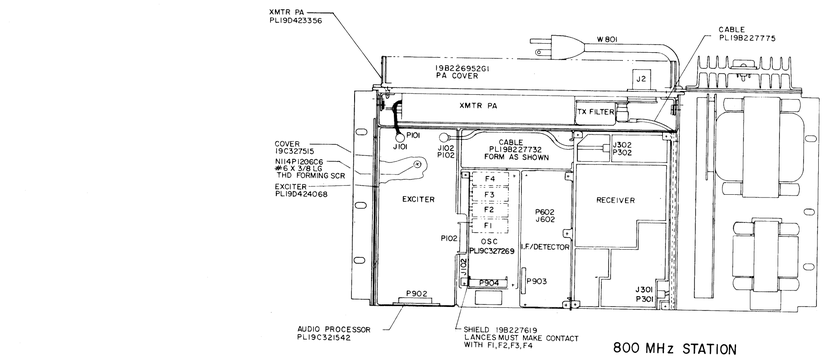
ELECTRONIC DIGITAL CLOCK (OPTIONS 9913-9920)

The Electronic Digital Clock is designed for operation with a 12-Hour or 24-Hour readout. The readout consists of six digit positions. Each digit position is composed of a seven-segment display. The Clock Kit is located in the space provided on the Desk Top Station front cover assembly adjacent to the VU Meter. The following versions of the Electronic Digital Clock are available:

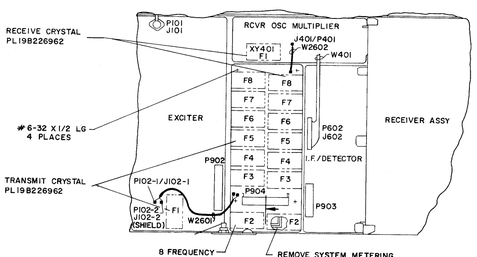
Option 9913:	12 Hour Readout,	242 Volts,	60 Hertz
Option 9914:	12 Hour Readout,	242 Volts,	50 Hertz
Option 9915:	24 Hour Readout,	242 Volts,	60 Hertz
Option 9916	24 Hour Readout,	242 Volts,	50 Hertz
Option 9917:	12 Hour Readout,	121 Volts,	50 Hertz
Option 9918:	12 Hour Readout,	121 Volts,	60 Hertz
Option 9919:	24 Hour Readout,	121 Volts,	60 Hertz
Option 9920:	24 Hour Readout,	121 Volts,	50 Hertz

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

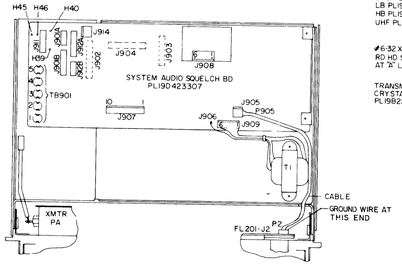
GENERAL ELECTRIC*
U.S.A.

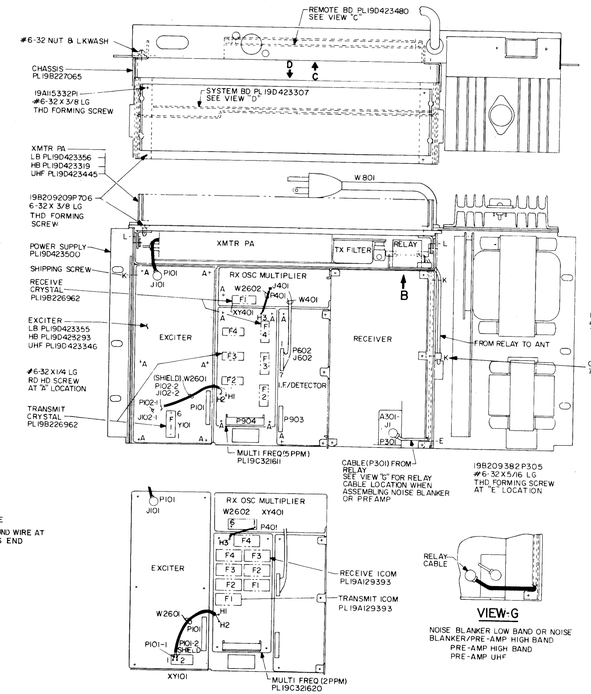


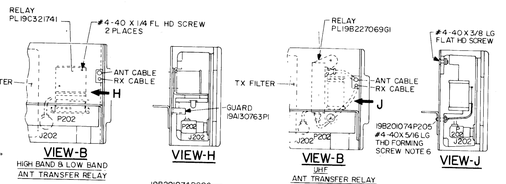
800 MHz STATION

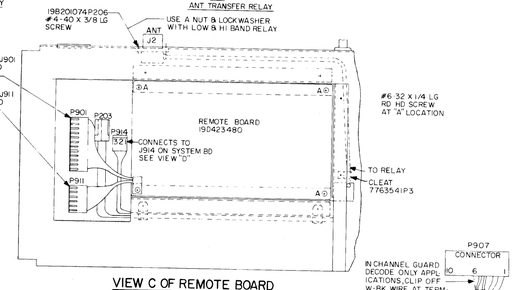


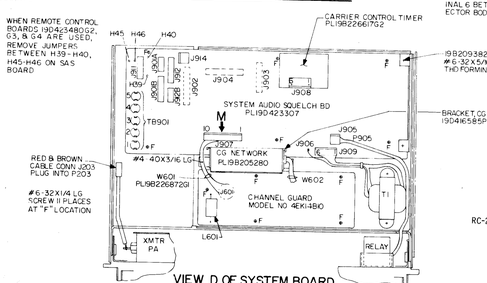
TOP VIEW
8 FREQUENCY
PARTIAL





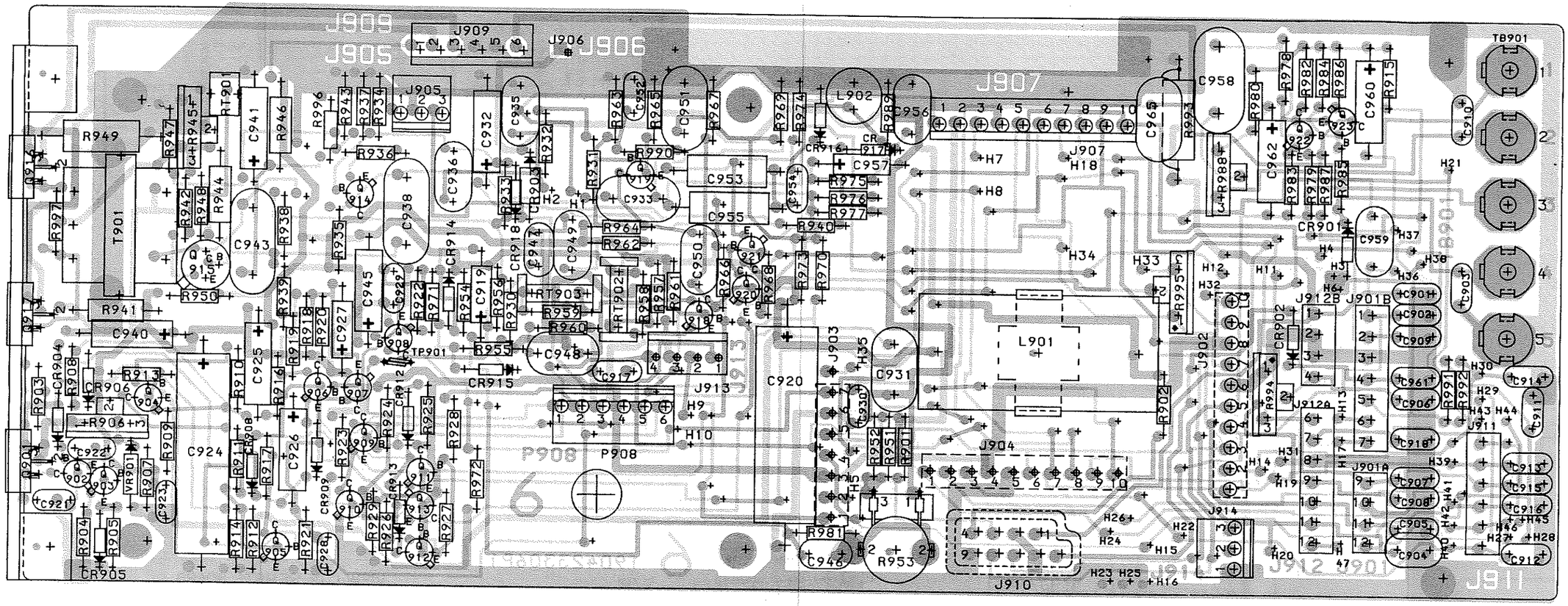




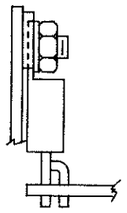


OUTLINE DIAGRAM

MASTR EXECUTIVE II STATIONS
19D423540, SHEET 1, 4

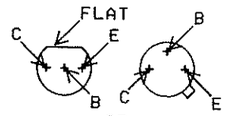


(19D423982, Rev. 6)
(19B226882, Sh. 2, Rev. 6)
(19B226882, Sh. 3, Rev. 6)

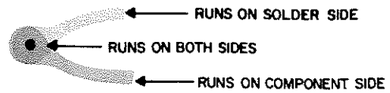


TYPICAL MOUNTING FOR
Q901, Q916 AND Q917

LEAD IDENTIFICATION
FOR Q902-Q915 &
Q918-Q923

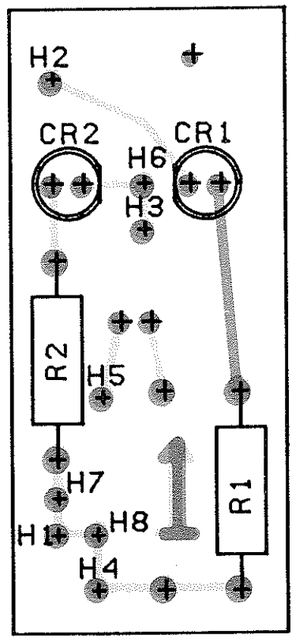


NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION. TAB INDICATES EMITTER LEAD.

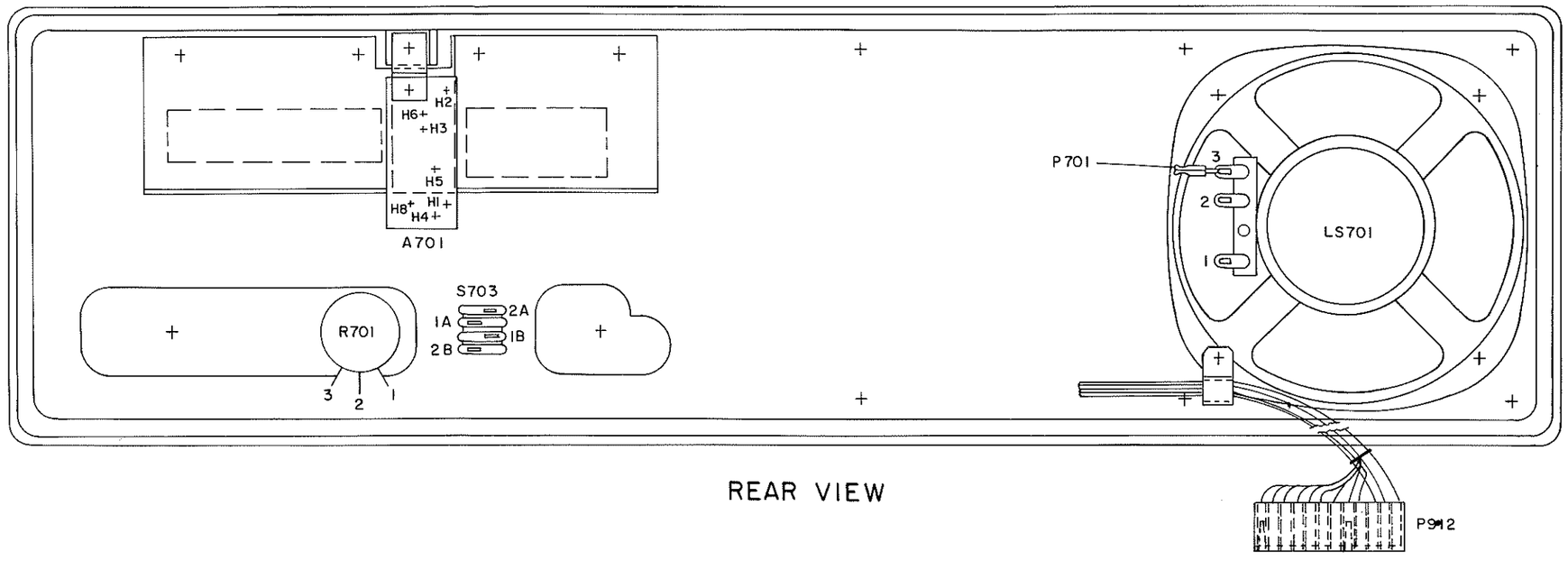


OUTLINE DIAGRAM

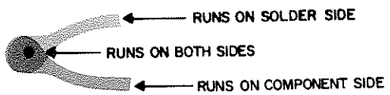
SYSTEM-AUDIO-SQUELCH BOARD
19D423307G1

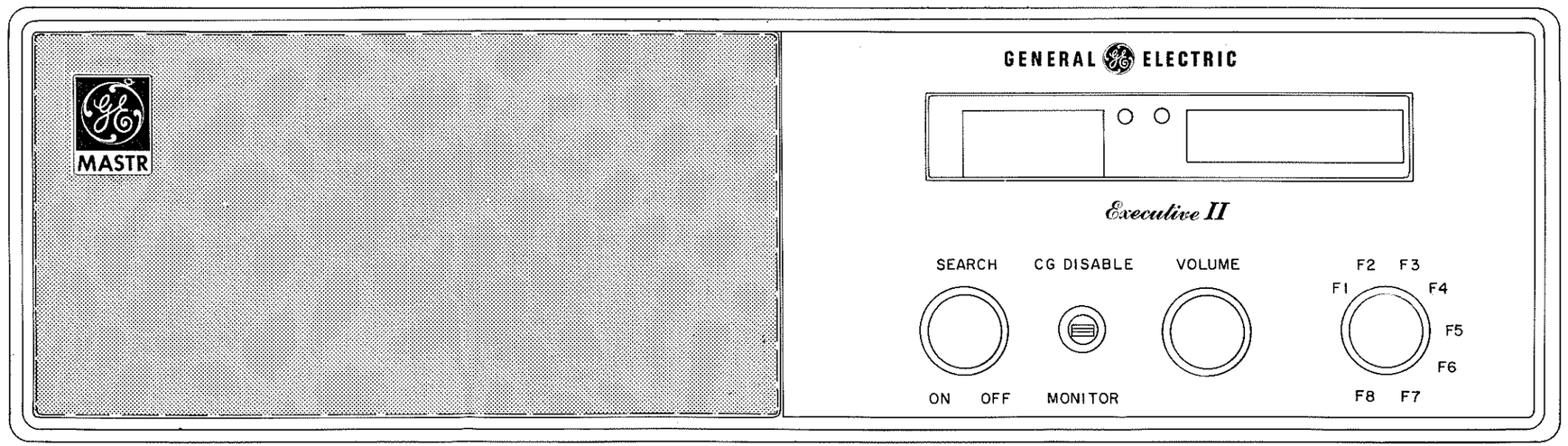


(19B227408, Rev. 0)
(19A130726, Sh. 2, Rev. 1)
(19A130726, Sh. 3, Rev. 1)



REAR VIEW





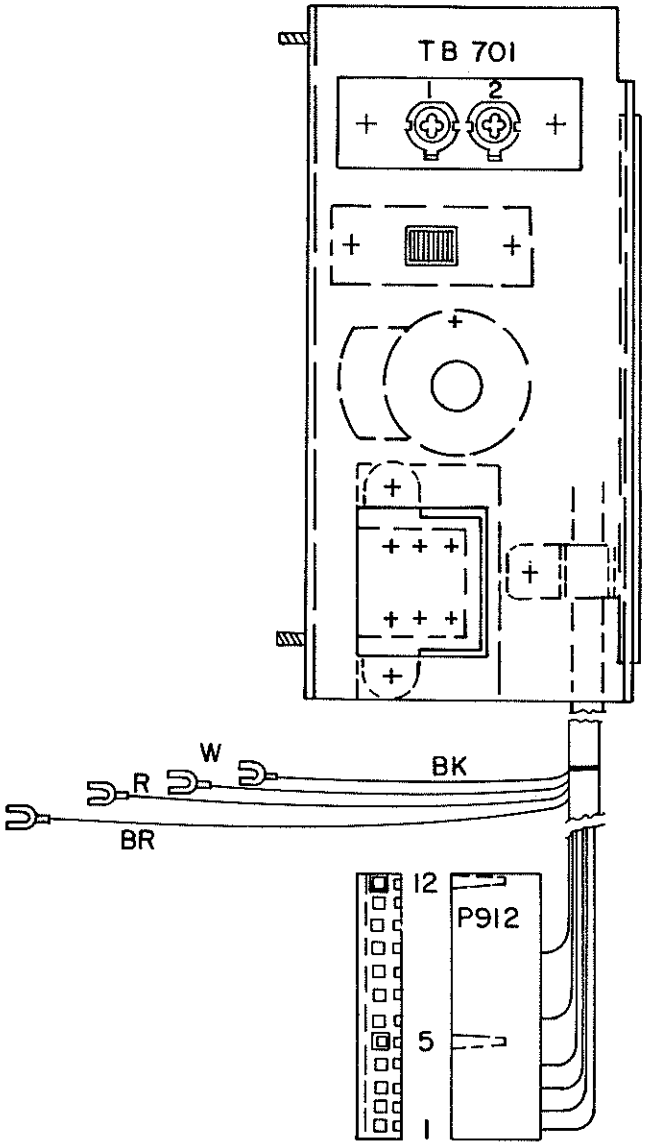
FRONT VIEW

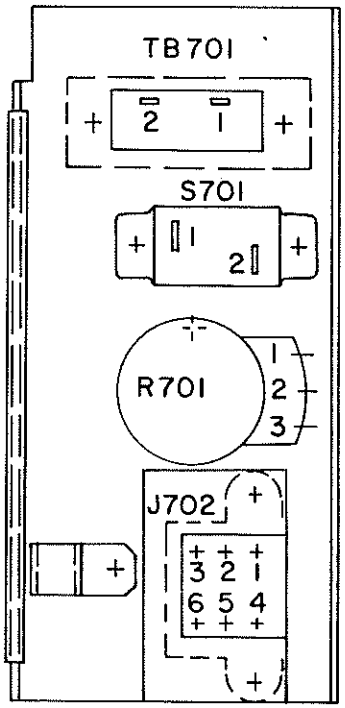
(19D424005, Rev. 2)

OUTLINE DIAGRAM

DESK TOP CONTROL PANEL 19D423452G1

Issue 4



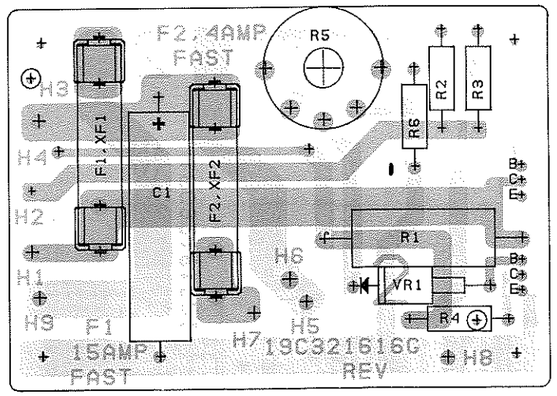


(19B227414, Rev. 1)

OUTLINE DIAGRAM

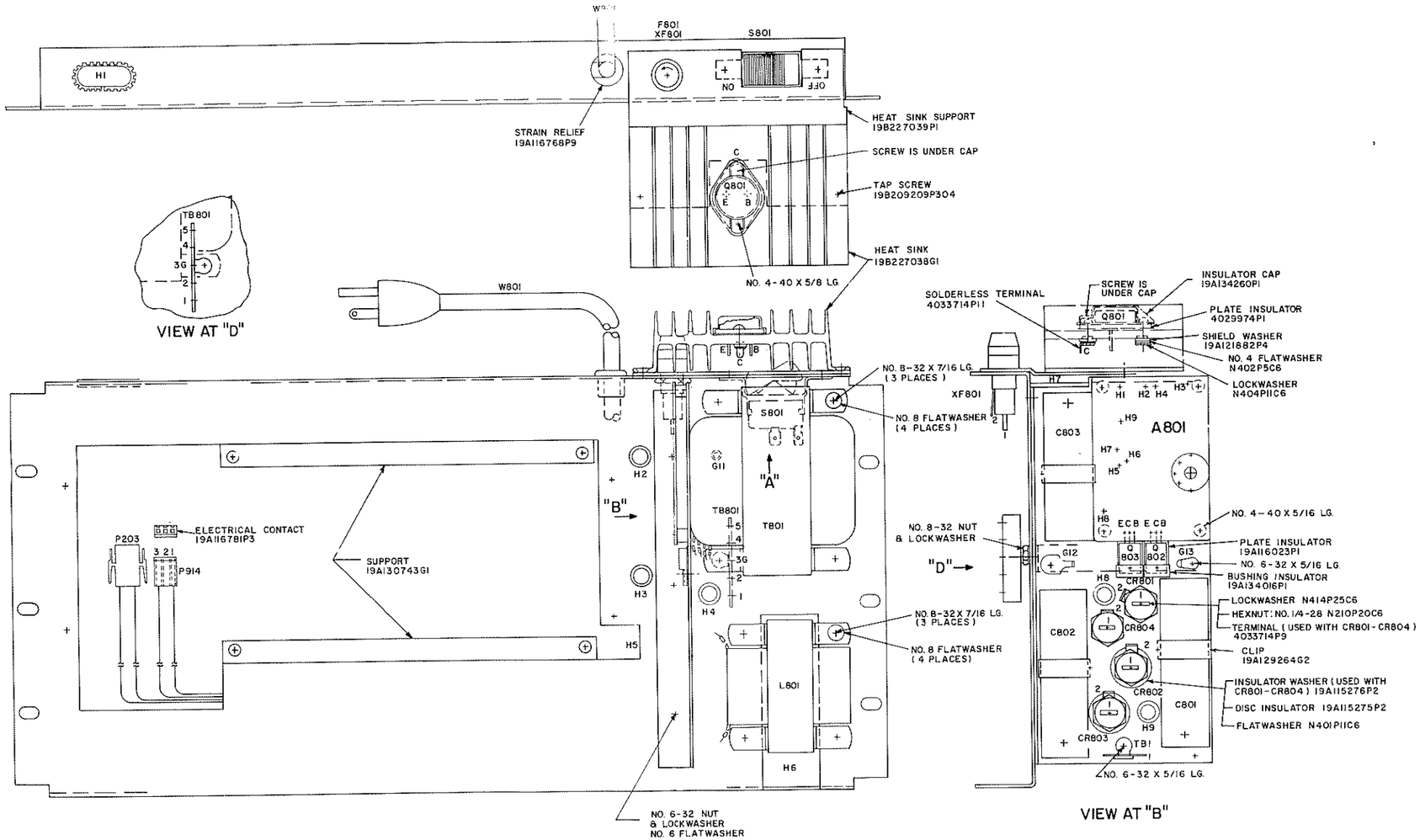
WALL MOUNT LOCAL CONTROL PANEL
19B227070G1

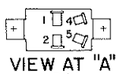
A801

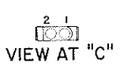


(19B227407, Rev. 1)
(19B226885, Sh. 1, Rev. 2)
(19B226885, Sh. 2, Rev. 2)

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE





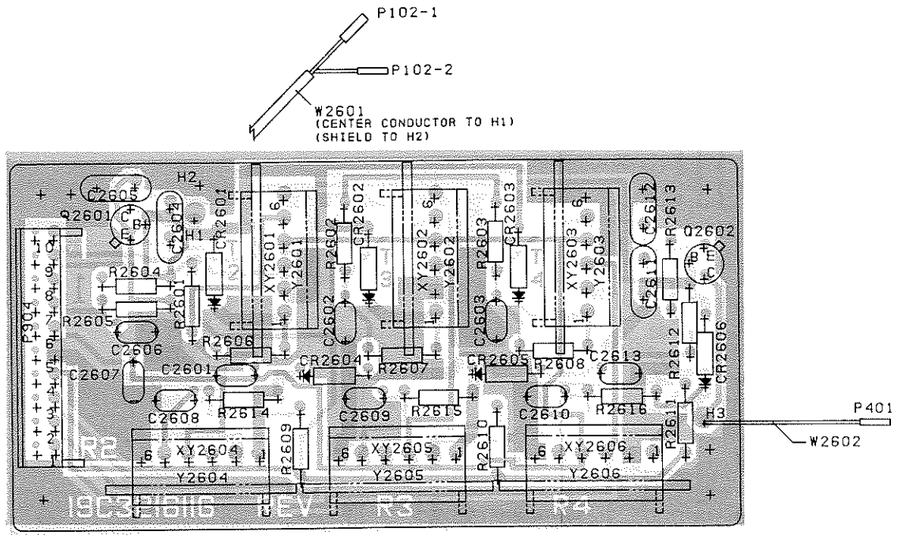


(19D423973, Rev. 2)

OUTLINE DIAGRAM

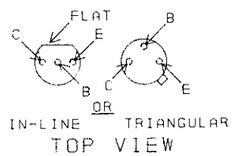
POWER SUPPLY 19D423500G1

1 - 4 FREQUENCY



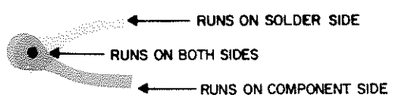
(19C327100, Rev. 1)
(19C321612, Sh. 2, Rev. 1)
(19C321612, Sh. 3, Rev. 1)

LEAD IDENTIFICATION
FOR Q2601 & Q2602



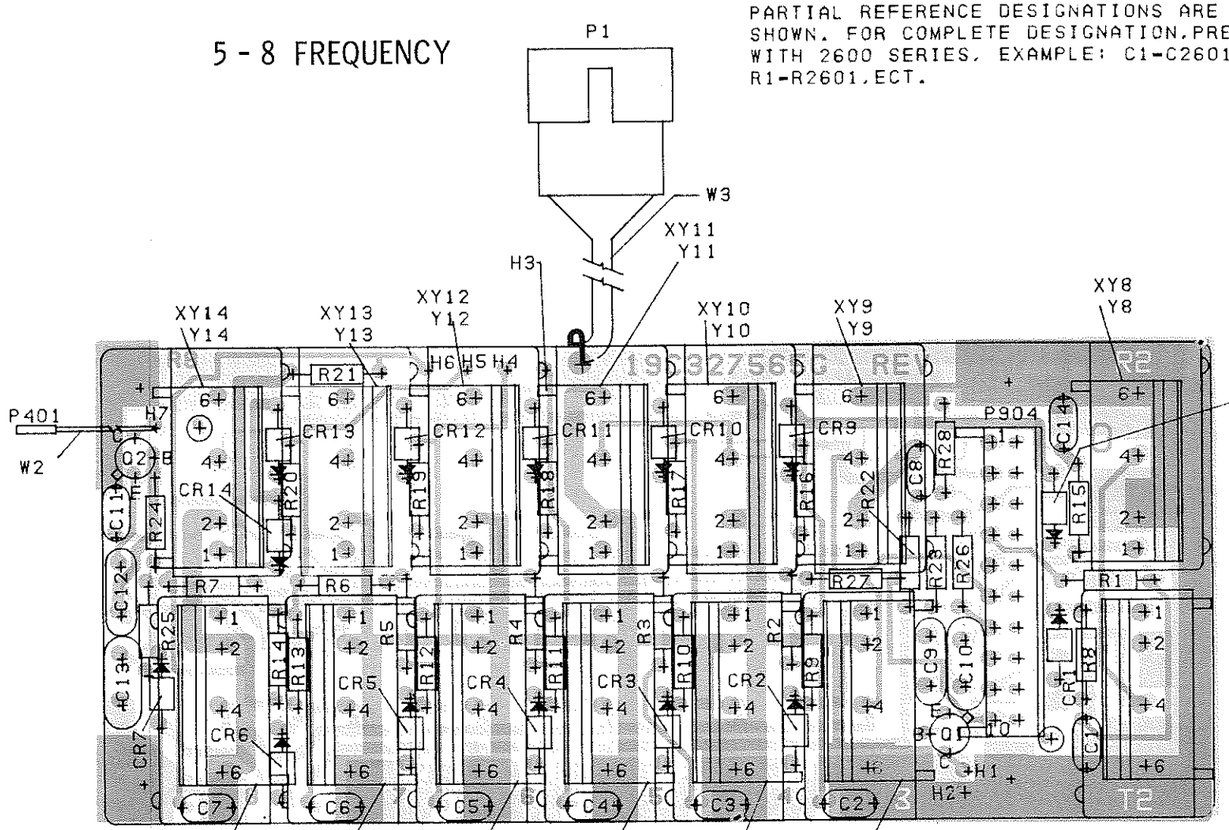
TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

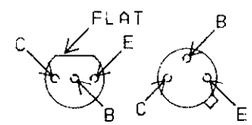


5 - 8 FREQUENCY

WITH THE EXCEPTION OF P904, P102, & P401, PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH 2600 SERIES. EXAMPLE: C1-C2601 R1-R2601, ECT.



LEAD IDENTIFICATION
FOR Q1 & Q2

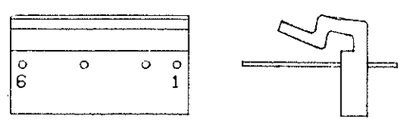


TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

(19C327568, Rev. 1)
(19C327567, Sh. 1, Rev. 0)
(19C327567, Sh. 2, Rev. 0)

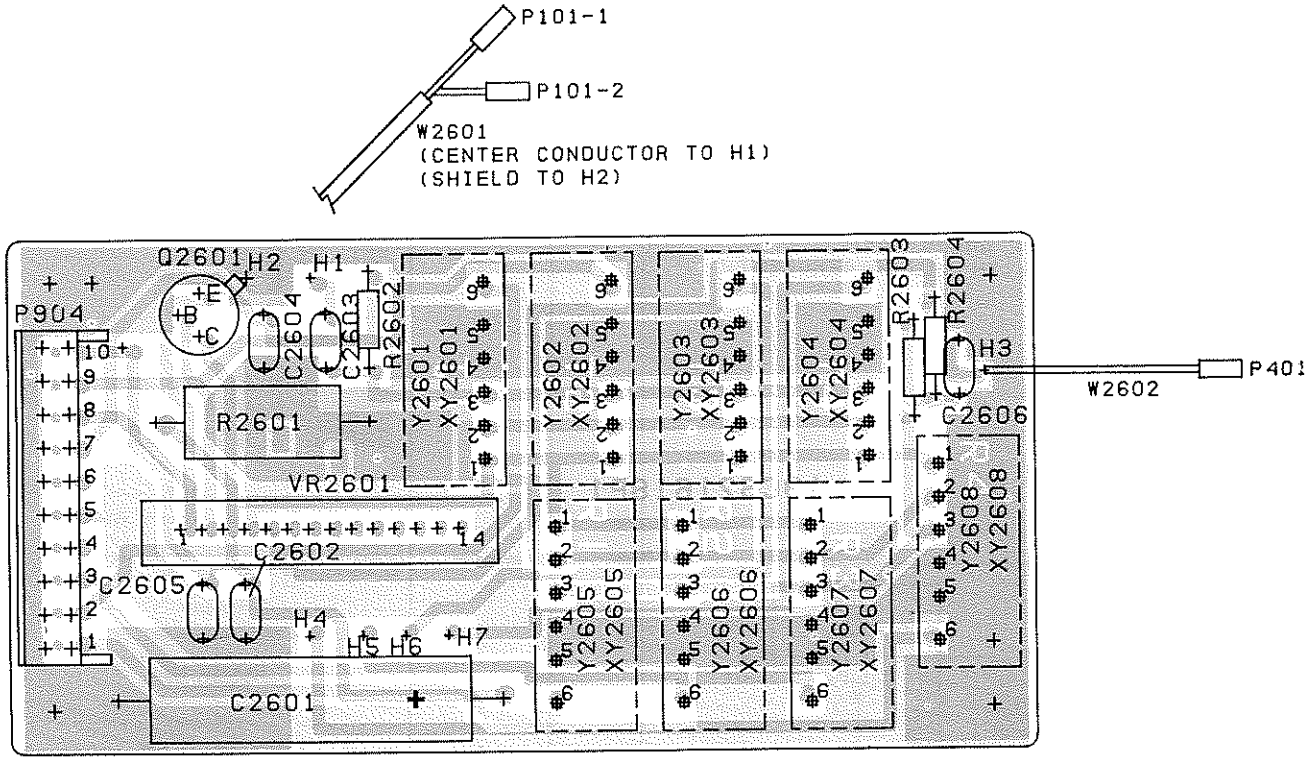
CONNECTIONS CHART	
FROM	TO
W3-BR	H3
W3-O	H4
W3-R	H5
W3-G	H6



PIN ORIENTATION
FOR XY1-XY14

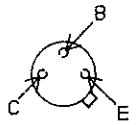
OUTLINE DIAGRAM

5 PPM MULTI-FREQUENCY BOARDS
19C321611G1 (1-4 FREQUENCY)
19C327565G1 (5-8 FREQUENCY)



(19C327180, Rev. 1)
(19C321619, Sh. 1, Rev. 0)
(19C321619, Sh. 2, Rev. 0)

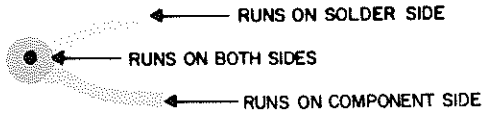
LEAD IDENTIFICATION
FOR Q2601



TRIANGULAR

TOP VIEW

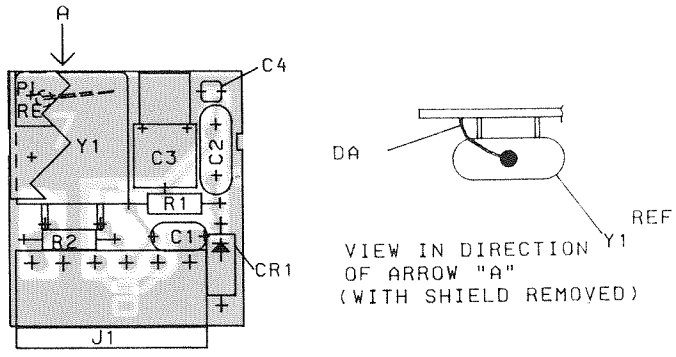
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.



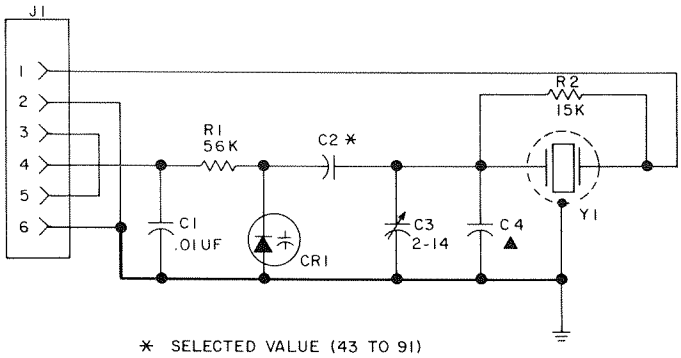
OUTLINE DIAGRAM

2 PPM OSCILLATOR BOARD 19C321620G1

OUTLINE DIAGRAM



(19B227337, Rev. 6)
(19B226851, Sh. 1, Rev. 7)
(19B226851, Sh. 2, Rev. 6)



* SELECTED VALUE (43 TO 91)

▲ PART OF PRINTED BOARD. C4 IS DISCONNECTED WHEN C2 BECOMES 75 PF OR GREATER.

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.

MODEL NO	REV LETTER
PLI9B226962G1-27	

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.

(19B226951, Rev. 3)

PARTS LIST

LBI-30069B

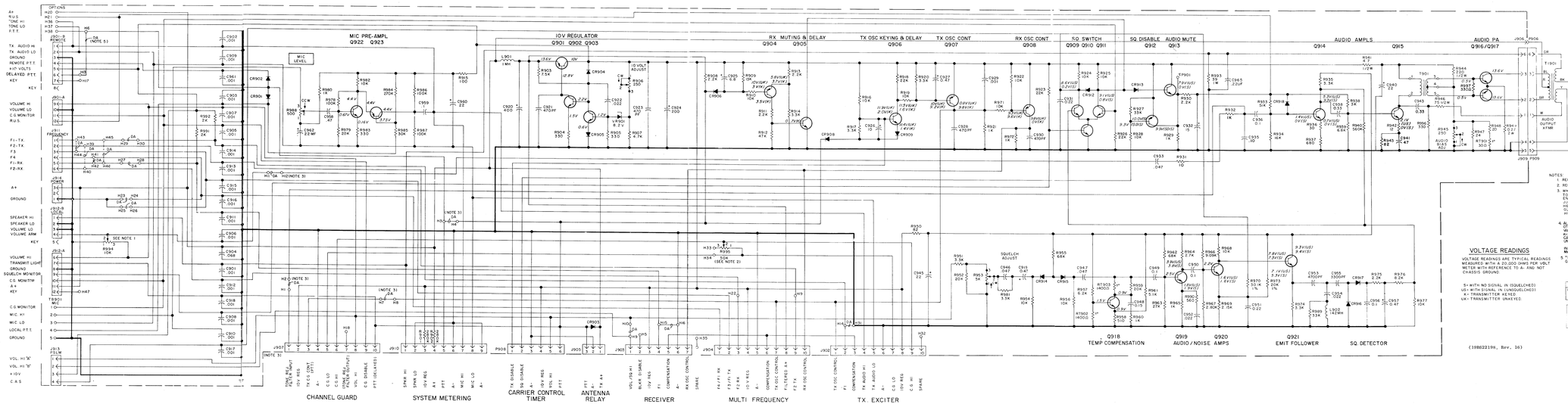
CRYSTAL MODULE (5 PPM)
19B226962G1-G27

SYMBOL	GE PART NO.	DESCRIPTION
		19B226962G1 Tx 30-36 MHz 19B226962G2 Tx 36-42 MHz 19B226962G3 Tx 42-50 MHz 19B226962G4 Tx 138-155 MHz 19B226962G5 Tx 150.8-174 MHz 19B226962G6 Tx 406-420 MHz 19B226962G7 Tx 450-470 MHz 19B226962G8 Tx 470-494 MHz 19B226962G9 Tx 494-512 MHz 19B226962G10 Rx 30-36 MHz 19B226962G11 Rx 36-42 MHz 19B226962G12 Rx 42-50 MHz 19B226962G13 Rx 138-155 MHz 19B226962G14 Rx 150.8-174 MHz 19B226962G15 Rx 406-420 MHz 19B226962G16 Rx 450-470 MHz 19B226962G17 Rx 470-494 MHz 19B226962G18 Rx 494-512 MHz 19B226962G19 Rx 138-155 MHz HIGH SIDE INJECT 19B226962G20 Rx 150.8-174 MHz HIGH SIDE INJECT 19B226962G21 Rx 406-420 MHz HIGH SIDE INJECT 19B226962G22 Rx 450-470 MHz HIGH SIDE INJECT 19B226962G23 Rx 470-494 MHz HIGH SIDE INJECT 19B226962G24 Rx 494-512 MHz HIGH SIDE INJECT 19B226962G25 Rx 30-36 MHz ALTERNATE IF 19B226962G26 Rx 36-42 MHz ALTERNATE IF 19B226962G27 Rx 42-50 MHz ALTERNATE IF
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C2		Capacitor, compensating. (Factory selected to match crystal characteristics).
C3	19B209544P6	Variable, air: 2.28 to 14.13 pf; sim to EF Johnson Type T 187-0309-105.
		- - - - - - - - - - CRYSTALS - - - - - - - - - -
Y1		Crystal. (Not Field replaceable).
		COMPONENT BOARD 19B226849G1
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C1	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C4		(Part of printed board 19B226850P1).
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1	5495769P19	Diode, silicon.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1	19A116659P6	Connector, printed wiring: 6 contacts; sim to Molex 09-52-3061.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R152P563J	Composition: 56K ohms ±5%, 1/4 w.
R2	3R152P153J	Composition: 15K ohms ±5%, 1/4 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SCHEMATIC & OUTLINE DIAGRAM

CRYSTAL MODULE



SCHEMATIC DIAGRAM

SYSTEM-AUDIO-SQUELCH BOARD 19D423307G1

Issue 5

PARTS LIST

LBI30125C

MASTR EXECUTIVE II STATION
SYSTEM AUDIO SQUELCH BOARD
19D423307G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C901 thru C903	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C904	19A116080P106	Polyester: 0.068 µf ±10%, 50 VDCW.
C905 thru C918	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C919	5496267P28	Tantalum: 0.47 µf ±20%, 35 VDCW; sim to Sprague Type 150D.
C920	19A115680P24	Electrolytic: 400 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
C921	5494481P107	Ceramic disc: 470 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C922	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCW.
C923	5494481P107	Ceramic disc: 470 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C924	19A115680P10	Electrolytic: 200 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
C925	5496267P18	Tantalum: 6.8 µf ±10%, 35 VDCW; sim to Sprague Type 150D.
C926	19B200869P10	Tantalum: 10 µf ±5%, 15 VDCW.
C927	5496267P28	Tantalum: 0.47 µf ±20%, 35 VDCW; sim to Sprague Type 150D.
C928	5494481P107	Ceramic disc: 470 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C929	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C930	5494481P107	Ceramic disc: 470 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C931	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
C932	5496267P14	Tantalum: 15 µf ±20%, 20 VDCW; sim to Sprague Type 150D.
C933	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
C935*	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW. In REV B & earlier:
	19A116080P106	Polyester: 0.068 µf ±10%, 50 VDCW.
C936	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C937*	5494481P112	Ceramic disc: 1000 pf ±10%, 1000 VDCW; sim to RMC Type JF Discap. Deleted by REV C.
C938	19A116080P110	Polyester: 0.33 µf ±10%, 50 VDCW.
C939*	5496267P22	Tantalum: 47 µf ±20%, 6 VDCW; sim to Sprague Type 150D. Deleted by REV C.
C940	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C941	5496267P22	Tantalum: 47 µf ±20%, 6 VDCW; sim to Sprague Type 150D.
C943	19A116080P110	Polyester: 0.33 µf ±10%, 50 VDCW.
C945	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C946 and C947	19A116080P105	Polyester: 0.047 µf ±10%, 50 VDCW.
C948	19A116080P108	Polyester: 0.15 µf ±10%, 50 VDCW.
C949 thru C950	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C951	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
C952	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCW.
C953	5496165P46	Polyester: 4700 pf ±5%, 100 VDCW; sim to GE Type 81K.
C954	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCW.

SYMBOL	GE PART NO.	DESCRIPTION
C955	5491656P73	Polyester: 3300 pf ±5%, 100 VDCW; sim to GE Type 61F.
C956	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C957	5496267P228	Tantalum: 0.47 µf ±5%, 35 VDCW; sim to Sprague Type 150D.
C958	19A116080P111	Polyester: 0.47 µf ±10%, 50 VDCW.
C959	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C960	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C961	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C962	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C963* thru C964*	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW. Added by REV A. Deleted by REV H.
C965*	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW. Added by REV E.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR901 thru CR902	19A115250P5	Silicon, fast recovery, 225 mA, 50 PIV.
CR903	4037882P1	Silicon, 1000 mA, 400 PIV.
CR904 thru CR905	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR906 and CR909	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR912 thru CR917	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR918*	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV. Added by REV A.
		- - - - - - - - - - JACKS AND RECEPTACLES - - - - - -
J901A	19A116659P85	Connector, printed wiring: 4 contacts; sim to Molex 09-64-1042.
J901B	19A116659P86	Connector, printed wiring: 7 contacts; sim to Molex 09-64-1072.
J902	19A116659P29	Connector, printed wiring: sim to Molex 09-64-1150.
J903	19B210930P41	Contact, electrical: 7 pins.
J904	19A116659P29	Connector, printed wiring: sim to Molex 09-64-1150.
J905	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
J906	19A116277P91	Contact, electrical: sim to Molex 09-50-0404.
J907	19A116659P109	Connector, printed wiring: 10 contacts; sim to Molex 09-60-1101.
J909	19A116659P105	Connector, printed wiring: 6 contacts; sim to Molex 09-60-1061.
J910	19B210937G2	Connector: 9 contacts.
J911	19A116659P105	Connector, printed wiring: 6 contacts; sim to Molex 09-60-1061.
J912A	19A116659P66	Connector, printed wiring: 7 contacts; sim to Molex 09-64-1072.
J912B	19A116659P85	Connector, printed wiring: 4 contacts; sim to Molex 09-64-1042.
J913	19A116659P103	Connector, printed wiring: 4 contacts; sim to Molex 09-60-1041.
J914	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L901	19A115694P1	Audio freq: 1.0 mh inductance, 0.35 ohms DC res.
L902	19B209410G91	Reactor, audio freq: 142 mh ±5%, at 0.1 v thru 0.27 v; sim to Aladdin 405-101.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P908	19A116659P50	Connector, printed wiring: 6 contacts; sim to Molex 09-65-1061.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q901	19A116375P1	Silicon, PNP.

SYMBOL	GE PART NO.	DESCRIPTION
Q902 and Q903	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q904	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q905 and Q906	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q907 and Q908	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q909 thru Q911	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q912	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q913 and Q914	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q915	19A115300P4	Silicon, NPN.
Q916 and Q917	19A116741P2	Silicon, NPN.
Q918 thru Q922	19A116774P1	Silicon, NPN; sim to Type 2N5210.
Q923	19A115852P1	Silicon, PNP; sim to Type 2N3906.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R901 and R902	19C314256P22803	Metal film: 280K ohms ±1%, 1/4 w.
R903	3815297532J	Composition: 7.5K ohms ±5%, 1/4 w.
R904 and R905	3815297531J	Composition: 330 ohms ±5%, 1/4 w.
R907	3815298712J	Composition: 4.7K ohms ±5%, 1/4 w.
R908	3815299225K	Composition: 2.2K ohms ±10%, 1/4 w.
R909	3815297133J	Composition: 13K ohms ±5%, 1/4 w.
R910	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R911	3815299225K	Composition: 2.2K ohms ±10%, 1/4 w.
R912	3815297473K	Composition: 47K ohms ±10%, 1/4 w.
R913	3815299225K	Composition: 2.2K ohms ±10%, 1/4 w.
R914	3815299103K	Composition: 3.3K ohms ±10%, 1/4 w.
R915	3815299101K	Composition: 100 ohms ±10%, 1/4 w.
R916	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R917	3815299332K	Composition: 3.3K ohms ±10%, 1/4 w.
R918	3815299223J	Composition: 22K ohms ±5%, 1/4 w.
R919	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R920	3815299333K	Composition: 33K ohms ±10%, 1/4 w.
R921	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R922	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R923	3815299223J	Composition: 22K ohms ±5%, 1/4 w.
R924 and R925	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R926	3815299233J	Composition: 22K ohms ±5%, 1/4 w.
R927	3815299335K	Composition: 33K ohms ±10%, 1/4 w.
R928	3815299103K	Composition: 10K ohms ±10%, 1/4 w.
R929	3815299102K	Composition: 1K ohms ±10%, 1/4 w.
R930	3815299222J	Composition: 2.2K ohms ±5%, 1/4 w.
R931	3815299106J	Composition: 10 ohms ±5%, 1/4 w.
R932*	3815299102J	Composition: 1K ohms ±5%, 1/4 w. In REV B & earlier:
	3815299222J	Composition: 2.2K ohms ±5%, 1/4 w.
R933	3815299513J	Composition: 51K ohms ±5%, 1/4 w.
R934	3815299163J	Composition: 16K ohms ±5%, 1/4 w.

SYMBOL	GE PART NO.	DESCRIPTION
R935	3815299332J	Composition: 3.3K ohms ±5%, 1/4 w.
R936	3815299700J	Composition: 30 ohms ±5%, 1/4 w.
R937	3815299681J	Composition: 680 ohms ±5%, 1/4 w.
R938*	3815299702J	Composition: 3K ohms ±5%, 1/4 w. In REV B and earlier:
	3815299392J	Composition: 3.9K ohms ±5%, 1/4 w.
R939	7815299682J	Composition: 6.8K ohms ±5%, 1/4 w.
R940	3815299564J	Composition: 0.56 megohm ±5%, 1/4 w.
R941	7147161P13	Composition: 4.7 ohms ±5%, 1/2 w.
R942	3815299120J	Composition: 12 ohms ±5%, 1/4 w.
R943	3815299820J	Composition: 82 ohms ±5%, 1/4 w.
R944	3877P231J	Composition: 220 ohms ±5%, 1/2 w.
R945	19B209358P10	Variable, carbon film: approx 25 to 250 ohms ±10%, 0.2 w; sim to CTS Type X-201.
R946	3877P250J	Composition: 75 ohms ±5%, 1/2 w.
R947	3815297240J	Composition: 24 ohms ±5%, 1/4 w.
R948	3815299000J	Composition: 20 ohms ±5%, 1/4 w.
R949	19B209022P101	Wirewound: .27 ohms ±10%, 2 w; sim to IRC Type BWH.
R950	3815299820J	Composition: 820 ohms ±5%, 1/4 w.
R951	3815299732J	Composition: 3.3K ohms ±5%, 1/4 w.
R952	3815299203J	Composition: 20K ohms ±5%, 1/4 w.
R953	19B209358P5	Variable, carbon film: approx 200 to 5K ohms ±20%, 0.25 w; sim to CTS Type X-201.
R954	3815299105J	Composition: 10K ohms ±5%, 1/4 w.
R955	3815299683J	Composition: 68K ohms ±5%, 1/4 w.
R956	3815299105J	Composition: 10K ohms ±5%, 1/4 w.
R957	3815299623J	Composition: 6.2K ohms ±5%, 1/4 w.
R958	3815299511J	Composition: 510 ohms ±5%, 1/4 w.
R959	3815299203J	Composition: 20K ohms ±5%, 1/4 w.
R960	3815299102J	Composition: 1K ohms ±5%, 1/4 w.
R961	3815299512J	Composition: 5.1K ohms ±5%, 1/4 w.
R962	3815299683J	Composition: 68K ohms ±5%, 1/4 w.
R963	3815299733J	Composition: 27K ohms ±5%, 1/4 w.
R964	3815299272J	Composition: 2.7K ohms ±5%, 1/4 w.
R965	3815299102J	Composition: 1K ohms ±5%, 1/4 w.
R966	19C314256P29091	Metal film: 9.09K ohms ±1%, 1/4 w.
R967	19C314256P22801	Metal film: 2.8K ohms ±1%, 1/4 w.
R968	3815299105J	Composition: 10K ohms ±5%, 1/4 w.
R969	19C314256P22151	Metal film: 3.15K ohms ±1%, 1/4 w.
R970	19C314256P23012	Metal film: 30.1K ohms ±1%, 1/4 w.
R971	3815299105J	Composition: 10K ohms ±5%, 1/4 w.
R972	3815299102J	Composition: 1K ohms ±5%, 1/4 w.
R973	19C314256P22002	Metal film: 20K ohms ±1%, 1/4 w.
R974	3815299732J	Composition: 3.3K ohms ±5%, 1/4 w.
R975	3815299222J	Composition: 2.2K ohms ±5%, 1/4 w.
R976	3815299822J	Composition: 8.2K ohms ±5%, 1/4 w.
R977	3815299103J	Composition: 10K ohms ±5%, 1/4 w.
R978	3815299104J	Composition: 0.10 megohm ±5%, 1/4 w.
R979	3815299203J	Composition: 20K ohms ±5%, 1/4 w.
R980	3815299102J	Composition: 1K ohms ±5%, 1/4 w.
R981	3815299332J	Composition: 3.3K ohms ±5%, 1/4 w.
R982	3815299105J	Composition: 10K ohms ±5%, 1/4 w.
R983	3815299331J	Composition: 330 ohms ±5%, 1/4 w.
R984	3815299754J	Composition: 0.27 megohm ±5%, 1/4 w.
R985*	3815299303J	Composition: 30K ohms ±5%, 1/4 w. In REV G & earlier:
	3815299623J	Composition: 62K ohms ±5%, 1/4 w.
R986 and R987	3815299104J	Composition: 100K ohms ±5%, 1/4 w.

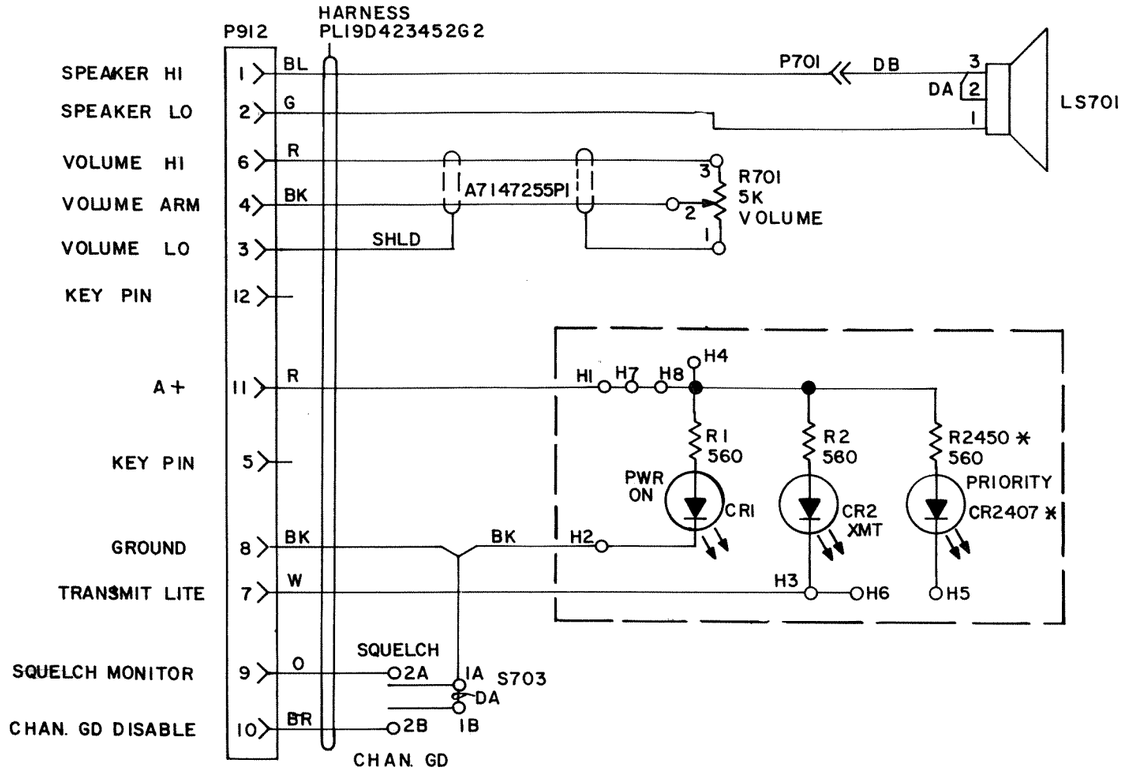
SYMBOL	GE PART NO.	DESCRIPTION
R988	19B209358P102	Variable, carbon film: approx 25 to 500 ohms ±10%, 0.2 w; sim to CTS Type X-201.
R989	3815299332J	Composition: 33K ohms ±5%, 1/4 w.
R990	3815299561J	Composition: 560 ohms ±5%, 1/4 w.
R991 and R992	3815299203J	Composition: 2K ohms ±5%, 1/4 w.
R993	3X382P90J	Composition: 39 ohms ±5%, 1 w.
R996	3815299331J	Composition: 330 ohms ±5%, 1/4 w.
R997*	3815299331K	Composition: 330 ohms ±10%, 1/4 w. Added by REV D.
		- - - - - - - - - - THERMISTORS - - - - - - - - - -
RT901	5490828P41	Thermistor: 30 ohms ±10%, color code black and white; sim to Carborundum Type R2311J-4.
RT902 and RT903	5490828P28	Thermistor: 1.4K ohms ±5%, color code green and white; sim to Carborundum Type 723H-2.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T901	19A116040P1	Audio freq: 300- 4000 Hz, Pri: 2 ohms ±10% DC res, Sec: 23.5 ohms ±10% DC res.
T1901	19A116067P3	Plate out. (Quantity 5).
		- - - - - - - - - - TEST POINTS - - - - - - - - - -
TP901	19B211379P1	Spring (Test Point).
		- - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR901	4036887P40	Silicon, Zener.
		ASSOCIATED ASSEMBLIES
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
		TRANSFORMER ASSEMBLY 19B226864G1
		- - - - - - - - - - PLUGS - - - - - - - - - -
P906	19A127062P2	Terminal, solderless: sim to Malco 12093-10.
P909		Includes:
	19A116659P80	Shell: sim to Molex 09-50-7061.
	19A116781P5	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0106.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T1901	19A116041P2	Audio: 300-4000 Hz, Pri: 1.00 ohms ±15% DC res, Sec 1: .23 ohms ±10% DC res, Sec 2: 10.5 ohms ±15% DC res.
		ANTENNA RELAY 19C321774G1 (130-50 MHz) 19C321774G2 (138-174 MHz)
C1901L	19A116656P82J	Ceramic disc: 82 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1901R	19A116656P32J	Ceramic disc: 33 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1902	19A116656P52J	Ceramic disc: 53 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1903	19A116656P62J	Ceramic disc: 62 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J2		(Part of W1903).

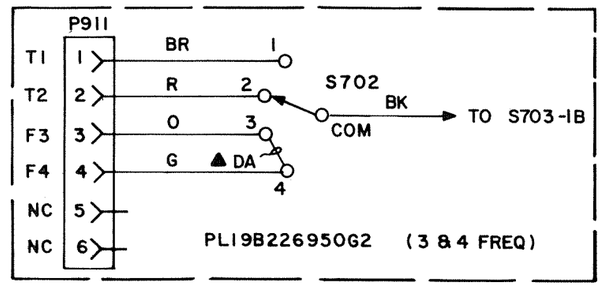
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1901	19C307020P5	Armature: 12 VDC nominal, 2.5 w max operating, 80 ohms ±10% coil res, 2 form C contacts; sim to P. A. Scherns MD-4D.
		System Audio Squelch Board 19D423307G1
REV. A:	To eliminate noise and improve frequency stability Added diode CR918 and capacitors C963 and C964.	
REV. B:	To prevent oscillations in audio PA Deleted C963 and C964; Added R997	
REV. C:	To improve frequency response Changed C920, R922 and R938; Deleted C937 and C939	
REV. D:	Removed Pin 7 on J901-8 and Pin 12 on J912-A.	
REV. E:	To stop the 200 kHz oscillation. Added C965.	
REV. F:	To stop audio oscillation of PA. Relocated C965.	
REV. G:	To change test set audio to output of pre-amp. To provide deviation setting from the test set mic. Changed the printed pattern.	
REV. H:	To improve distortion figure. Changed R985.	
P202		(Part of W1902).
P301		(Part of W1901).
P905		(Part of W1904).
		- - - - - - - - - - CABLES - - - - - - - - - -
W1901	5491689P118	Cable, RF: approx 14 inches long; 330 VRMS, 500 VDC operating voltage. (Includes P301).
W1902	19A130734G1	Cable, RF: approx 3-1/4 inches long; 330 VRMS, 500 VDC operating voltage. (Includes P202).
W1903	19B230989G1	Cable: approx 2 feet long. (Includes J2).
W1904	19A130696G1	Cable: approx 11 inches long. (Includes P905).
		ANTENNA RELAY 403-512 MHz 19B223706G1
J2		(Part of K1901).
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1901	19B209582P1	Coaxial: 13.6 VDC ±20%, 100 watts RF at 25 to 512 MHz (into 50 ohms), 1 form C contact; sim to Ragnerafi Electric Co. 1231-06.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P202		(Part of W1902).
P301		(Part of W1901).
P905		(Part of W1904).
		- - - - - - - - - - CABLES - - - - - - - - - -
W1901 thru W1903		(Part of W1901).
W1904	19A130696G1	Cable: approx 11 inches long. Includes:
	19A116659P14	Shell.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0103.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19A134016P1	Insulator, bushing. (Used with Q901, Q916, Q917).
	19A116023P1	Insulator, plate. (Used with Q901, Q916, Q917).
	19A134369P1	Heat sink. (Used with Q901, Q916, Q917).
	4036855P1	Insulator, disc. (Used with Q915).
	7118719P5	Clip, spring tension: sim to Prestole E-50007-003. (Secures L901).
	19B200325P153	Rivet, tubular. (Secures L901 clip).
	19B200325P180	Rivet, tubular. (Secures transistor heat sink).
	19B203174P904	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4. (Secures TB1 plate nuts).
	19A116417P4	Bumper, plastic.

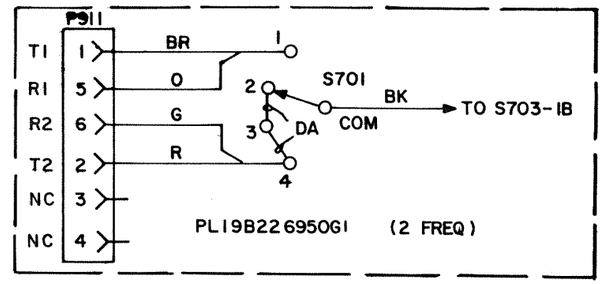
PRODUCTION CHANGES

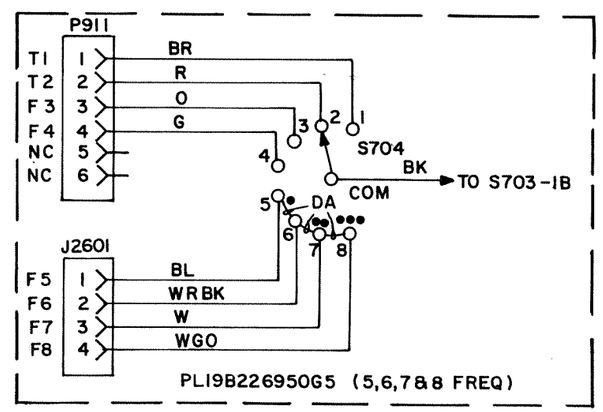
Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES









THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9D423452G1	B

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG = 1,000,000 OHMS.

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.

NOTES:

1. ALL WIRES ARE SF22
2. * PART OF KIT PLI9C321727G1
3. ▲ PRESENT IN 3 FREQ ONLY
4. • NOT PRESENT IN 6 THRU 8 FREQ.
5. •• NOT PRESENT IN 7 THRU 8 FREQ.
6. ••• NOT PRESENT IN 8 FREQ.

(19C321801, Rev. 5)

SCHEMATIC DIAGRAM

DESK TOP CONTROL PANEL 19D423452G1

Issue 3

PARTS LIST

LBI-30127

MASTR EXECUTIVE II
DESK TOP STATION CONTROL PANEL
19D423452G1

SYMBOL	GE PART NO.	DESCRIPTION
A701		COMPONENT BOARD 19B227018G1
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A134146P5	Diode, optoelectronic: green; sim to Opcoa LSM-16L.
CR2	19A134146P4	Diode, optoelectronic: red; sim to Opcoa LSM-6L.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	3R77P561J	Composition: 560 ohms ±5%, 1/2 w.
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS701	19A116910P1	Permanent magnet: 5 inch, 3.2 ohms ±15% imp, 5 w max operating; sim to Pioneer 002009.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P701	4036634P1	Contact, electrical; sim to AMP 42428-2.
P912		Connector. Includes:
	19A116659P21	Printed wire board: sim to Molex 09-50-3121.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
	19B209519P1	Polarized tab.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R701	5496870P23	Variable, carbon film: 5000 ohms ±20%; sim to Mallory LC(5K).
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S703	19B209139P6	Lever: 2 ma at 4 VDC, Position up: 1 form A contact, locking, Position center: no contacts, Position down: 1 form A contact, momentary; sim to Swiftcraft 205-1023.
		HARNESS ASSEMBLY 19D423452G2 (Includes P701, P912)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	NP280036	Nameplate. (CONTROL IDENTIFICATION).
	NP243513	Nameplate. (GE MONOGRAM).
	19B205292P1	Window, dummy.
	7165075P2	Hex nut, brass: thd size No. 3/8-32. (Used with R701).
	19A115679P1	Knob, push on. (Used with R701 dummy position).
	7115130P9	Lockwasher: No. 3/8; sim to Shakeproof 1220-2. (Used with R701).
	4035007P4	Retainer ring. (Used with dummy knobs).
	N402P13C13	Flatwasher: No. 3/8. (Used with dummy knobs).
	4032256P1	Support. (Used with dummy knobs).
	7127662P1	Flatwasher: 3/8. (Used with dummy knobs).
	19C303921P2	Grille.
	19A122390P1	Grille cloth.
	N101P1304P	Tap screw, phillips: No. 6-18 x 1/4. (Secures front grille).
	19B201074P203	Tap screw, Phillips POZIDRIV®: No. 4-40 x 3/16. (Secures A701 to support).
	19B201074P305	Tap screw, Phillips POZIDRIV®: No. 6-32 x 5/16. (Secures A701 support to chassis).
	4029851P27	Clip loop. (Used with P912).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI30124A

TWO FREQUENCY SWITCH 19B226950G1
FOUR FREQUENCY SWITCH 19B226950G2
EIGHT FREQUENCY SWITCH 19B226950G5

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
J2601		Connector. Includes:
	19B209505P204	Shell.
	19B209505P21	Contact, electrical.
P911		Connector. Includes:
	19A116659P80	Printed board: sim to Molex 09-50-7061.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
		- - - - - - - - - - - SWITCHES - - - - - - - - - - -
S701 and S702	19B200394P4	Rotary: 1 pole, 4 positions, non-shorting, 36° indexing contacts, 10 ma at 115 VDC or 1 amp at 28 VDC, molded melamine plastic base, without mounting hardware; sim to Grayhill Inc Series 24.
S704	19B200394P10	Rotary, 1 pole, 8 positions, non-shorting, 36° indexing contacts, 10 ma at 115 VDC or 1 amp at 28 VDC, molded melamine plastic base, without mounting hardware; sim to Grayhill Inc. Series 24.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B200394P5	Stop tab. (Used with S701, S702).
	7165075P2	Hex nut, brass: thd. size No. 3/8-32.
	4029851P26	Clip loop: nylon.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

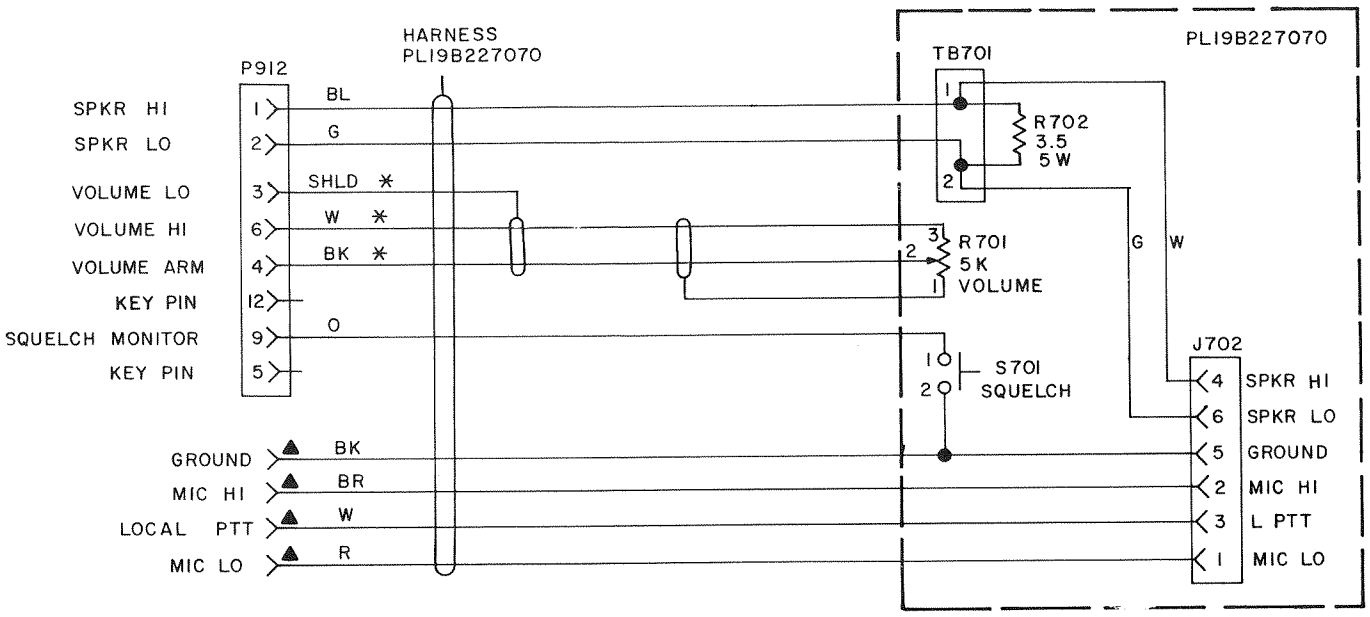
PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

CONTROL PANEL 19D423452G1

REV. A: Added 19B209519P1 Polarity Tab to P912.

REV. B: To provide 8 frequency capability. Changed nameplate.



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.

(19B227072, Rev. 3)

ALL WIRES ARE SF22
* WIRE 19A116885P1
▲ TERMINATE WITH 19B209260P103

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9B227070G1	A

SCHEMATIC DIAGRAM

WALL MOUNT LOCAL CONTROL PANEL
19B227070G1

PARTS LIST

LBI-30126

MASTR EXECUTIVE II WALL MOUNT
STATION CONTROL PANEL
19B227070G1

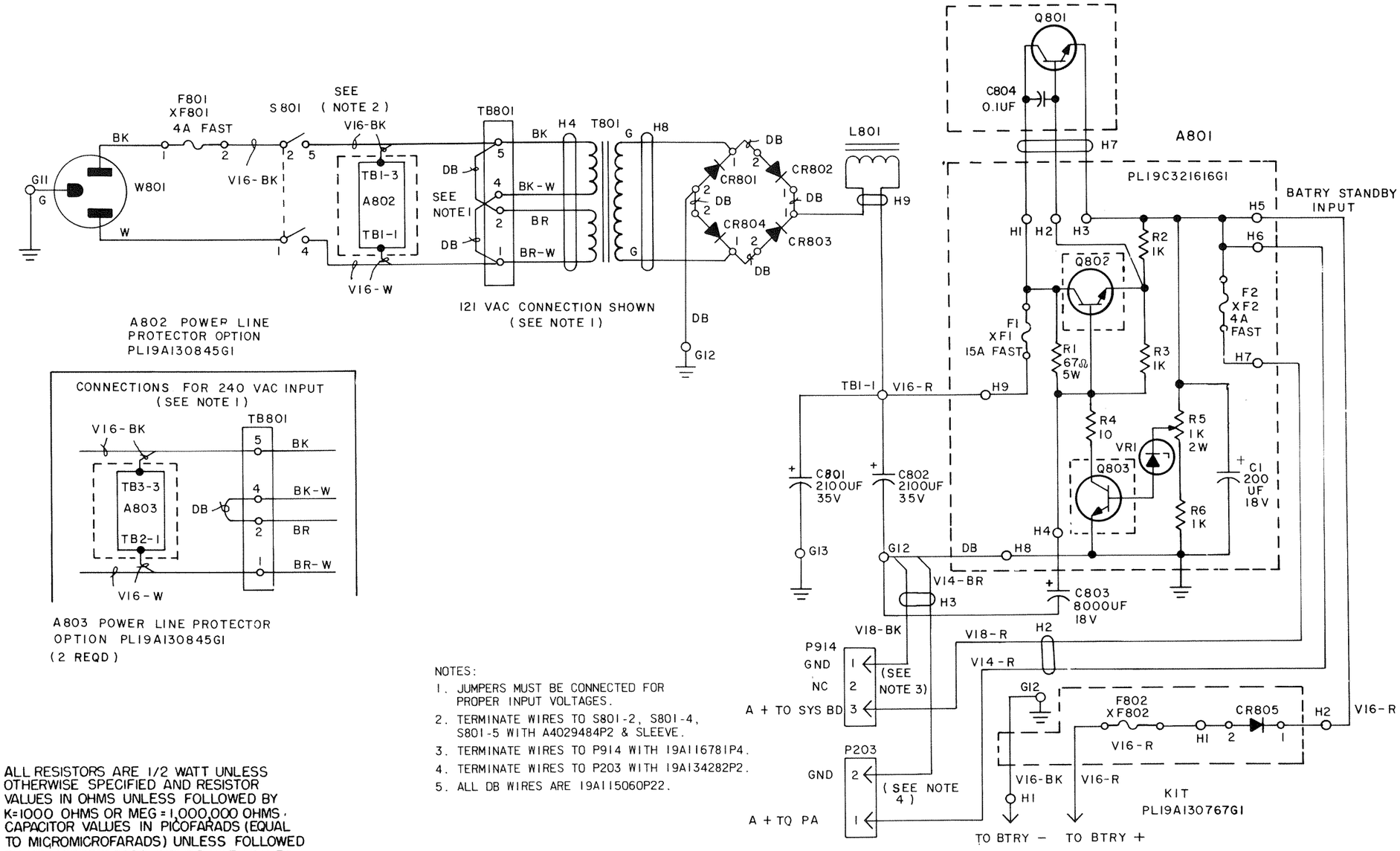
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J702	19B219627G1	Connector: 6 contacts.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P912		Connector. Includes:
	19A116659P21	Connector, printed wiring: sim to Molex 09-50-3121.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
	19B209519P1	Polarity tab.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R701	5496870P14	Variable, carbon film: 5000 ohms ±20%; sim to Mallory LC(5K).
R702	7141971G10	Resistor kit: includes 3.5 ohms ±5%, 5 w resistor with 2 spade tongue terminals.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S701	4031922P1	Push: SPST, normally open, 1/2 amp at 12 VDC; sim to Stackpole Type SS-15.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - -
TB701	7117710P2	Phen: 2 terminals; sim to Cinch 1781.
		HARNESS ASSEMBLY 19B227070G2 (Includes J702, P912)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209260P103	Terminal, solderless: wire range No. 24-20; sim to AMP 60495-1. (Part of harness assembly).
	19A115308P1	Knob. (Used with R701).
	7115130P9	Lockwasher: No. 3/8; sim to Shakeproof 1220-2. (Used with R701).
	7165075P2	Hex nut, brass: thd. size No. 3/8-32. (Used with R701).
	19A130758P1	Plate. (Used with J702).
	4029851P14	Clip loop. (Used with harness assembly).
	4029030P17	Seal, rubber channel.

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A: Added 19B209519P1 Polarity tab to P912.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



(19C321802, Rev. 4)

NOTES:

1. JUMPERS MUST BE CONNECTED FOR PROPER INPUT VOLTAGES.
2. TERMINATE WIRES TO S801-2, S801-4, S801-5 WITH A4029484P2 & SLEEVE.
3. TERMINATE WIRES TO P914 WITH I9AII6781P4.
4. TERMINATE WIRES TO P203 WITH I9AI34282P2.
5. ALL DB WIRES ARE I9AII5060P22.

ALL RESISTORS ARE 1/2 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.

MODEL NO	REV LETTER
PLI9D423500GI	A
PLI9C321616GI	A

SCHEMATIC DIAGRAM

POWER SUPPLY 19D423500G1

PARTS LIST

LBI30128B

MASTR EXECUTIVE II
STATION POWER SUPPLY
19D423500G1

SYMBOL	GE PART NO.	DESCRIPTION
A801		COMPONENT BOARD 19C321616G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1*	19A115680P10	Electrolytic: 200 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX. Added by REV A.
		- - - - - - - - - - - FUSES - - - - - - - - - -
F1	7102673P2	Quick blowing: 15 amps at 32 v; sim to Littelfuse 311015 or Bussmann AGC15.
F2	1R16P7	Quick blowing: 4 amps at 250 v; sim to Littelfuse 312004 or Bussmann MTH-4.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	5493035P19	Wirewound: 67 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
R2 and R3	3R77P102K	Composition: 1K ohms ±10%, 1/2 w.
R4	3R77P100J	Composition: 10 ohms ±10%, 1/2 w.
R5	19A115681P1	Variable, wirewound: 1K ohms ±20%, 2.25 w; sim to CTS Series 115.
R6	3R77P102K	Composition: 1K ohms ±10%, 1/2 w.
		- - - - - - - - - VOLTAGE REGULATORS - - - - - -
VR1	19A115528P4	Zener: 1 watt, 6.6 mW.
		- - - - - - - - - - SOCKETS - - - - - - - - - - -
XF1 and XF2	19A116688P1	Fuse clip: sim to Littlefuse, Inc. 102068. (Quantity 2 used with each holder).
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C801 and C802	19A126770P106	Electrolytic: 2100 µf ±75-10%, 35 VDCW; sim to Sprague 34D218G035JT0.
C803	5493132P17	Electrolytic: 8000 µf +150-10%, 20 VDCW.
C804	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR801 thru CR804	19A115617P2	Rectifier, silicon.
		- - - - - - - - - - - FUSES - - - - - - - - - -
F801	1R16P7	Quick blowing: 4 amps at 250 v; sim to Littelfuse 312004 or Bussmann MTH-4.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L801	19A116038P1	Reactor: 4.5 mh at 11 amps DC, 0.1 ohm DC res max, 58 VDC operating.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P203		Connector. Includes:
	19A134281P1	Shell.
	19A134282P2	Contact, electrical: sim to AMP 350200-2. (Quantity 2).
P914		Connector. Includes:
	19A116659P14	Shell.
	19A116781P5	Contact, electrical: wire range No. 18-24 AWG; sim to Molex 08-50-0106. (Quantity 2).
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q801	19A116753P1	Silicon, NPN; sim to Type 2N5302.
Q802 and Q803	19A116118P1	Silicon, NPN.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S801	19B209498P1	Push: DPST, 20 amps and 220 VRMS; sim to McG111 0811-0188.
		- - - - - - - - - - TRANSFORMERS - - - - - - - -
T801	19A116037P1	Power, step-down: Pri: 117 VRMS, 60 Hz (Parallel connected), Sec: 16.0 VDC at 11 amps.
		- - - - - - - - - TERMINAL BOARDS - - - - - - -
TB1	7775500P45	Phen: 3 terminals.
TB801	7775500P111	Phen: 5 terminals.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W801	19A130809G1	Cable, RF: 3 conductor, approx 10 feet long.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XF801	19B209005P1	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342012.
		HARNESS ASSEMBLY 19D423500G2 (includes P203, P914)
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A116768P9	Strain relief: sim to HEYCO SR-6P3-4. (Used with W801).
	19B227039P1	Support. (Mounts Q801 heat sink).
	19B209209P304	Tap screw, Phillips Pozidriv®: No. 6-32 x 1/4. (Secures heat sink to support).
	19B227038G1	Heat sink. (Q801).
	19A134260P1	Insulator, plate. (Used with Q801).
	4029974P1	Insulator, plate: aluminum. (Used with Q801).
	19A121882P1	Washer, shield. (Used with Q801).
	4033714P11	Solderless terminal. (Used with Q801).
	19A116023P1	Insulator, plate. (Used with Q802, Q803).
	19A134016P1	Insulator, bushing. (Used with Q802, Q803).
	19A129264G2	Clip. (Secures C801).
	19A115276P4	Insulator, washer. (Used with CR801-CR804).
	4033714P9	Terminal: sim to Stewart Stampinc 928. (Used with CR801-CR804).
	N414P25C6	Lockwasher, internal tooth: No. 1/4. (Used with CR801-CR804).
	N210P20C6	Hex nut: No. 1/4-28. (Used with CR801-CR804).
	19A115275P2	Insulator, disc. (Used with CR801-CR804).
	N401P11C6	Flatwasher: No. 1/4. (Used with CR801-CR804).
	19B209075P3	Solderless terminal. (Located at G12).
	4029851P27	Clip loop. (Secures cable to P203 & P914).
	4029484P2	Contact, electrical. (Located at T801).
	4036994P1	Solderless terminal. (Located at G13).
	N26P21008C6	Cap screw. (External ground connection).
	N403P25C6	Lockwasher, external tooth. (External ground connection).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-30116

BATTERY STANDBY KIT
19A130767G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR805	19A115617P2	Silicon.
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F802	7102673P2	Quick blowing: 15 amps at 32 v; sim to Littelfuse 311015 or Bussmann AGC-15.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XF802	19A122111G1	Fuse, lead: approx 8 feet long.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A127199P2	Support. (Mounts CR805).
	19A115276P2	Insulator, washer: mica. (Used with CR805).
	19A115275P2	Insulator, disc: teflon. (Used with CR805).
	4033714P9	Solderless terminal: sim to Stewart Stampinc 928. (Used with CR805).
	N401P11C6	Flatwasher: No. 1/4. (Used with CR805).
	N414P25C6	Lockwasher, internal tooth: No. 1/4. (Used with CR805).
	N210P20C6	Hex nut: No. 1/4-28. (Used with CR805).
	19B201074P305	Tap screw, Phillips POZIDRIV®: No. 6-32 x 5/16. (Secures CR805 support).
	4029851P4	Cable clamp: nylon.
	N80P13005C6	Machine screw: 6-32 x 5/16. (Secures cable clamp).
	7141225P3	Hex nut: No. 6-32. (Secures cable clamp).
	N404P13C6	Lockwasher: No. 6. (Secures cable clamp).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-30118A

POWER LINE PROTECTOR KIT
19A130845G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	19A116062P1	Selenium.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1 thru TB3	7775500P107	Phen: 2 insulated, 1 grounded terminal.
		NOTE: USE ONE KIT FOR A802 TWO KITS FOR A803.

PRODUCTION CHANGES

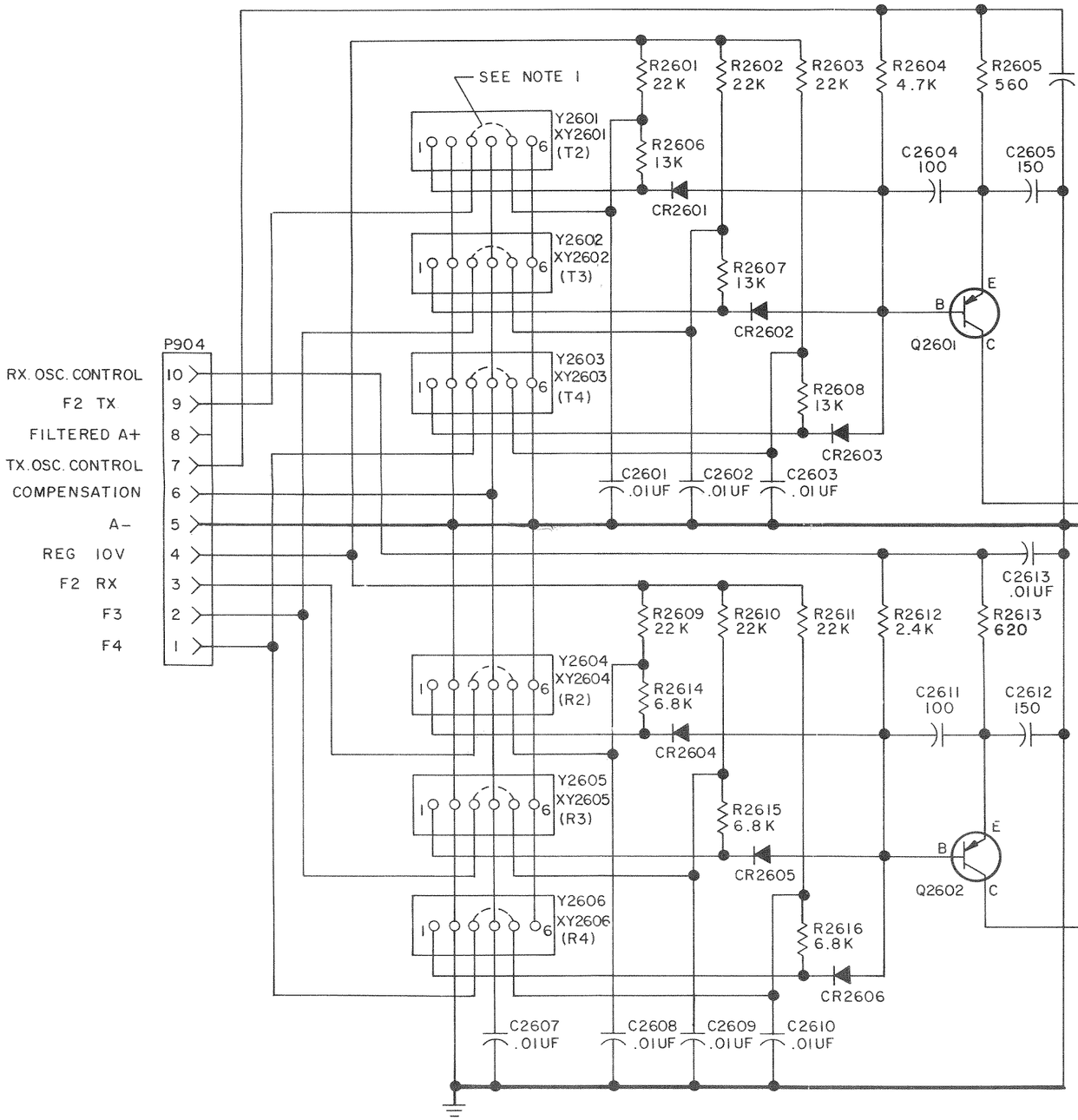
Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

COMPONENT BOARD A801 (19C321616G1)

REV. A - To eliminate oscillation in voltage regulator, added C1.

STATION POWER SUPPLY 19D423500G1

REV. A - To make the Power Supply safer. Reversed terminal numbers of XF801.



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

THIS ELEM DIAG APPLIES TO

MODEL NO	REV LETTER
PLI9C321611G1	A

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.

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.

NOTES:

1. PIN 3 TO PIN 5 CONNECTIONS, SHOWN DOTTED, ARE MADE WHEN XTAL MODULES ARE USED.

(19C321756, Rev. 3)

SCHEMATIC DIAGRAM

5 PPM 1-4 FREQUENCY BOARD
19C321611G1

PARTS LIST

LBI30075C

MULTI-FREQUENCY BOARD
19C321611G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C2601 thru C2603	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C2604	5496218P763	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -750 PPM.
C2605	7489162P31	Silver mica: 150 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C2606 thru C2610	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C2611	5496218P763	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -750 PPM.
C2612	7489162P31	Silver mica: 150 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C2613	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR2601 thru CR2606	19A116925P4	Diode, silicon.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P102	19A127042P2	Terminal, solderless: sim to Malco 12093-10. (Part of W2601).
P401	19A127042P2	Terminal, solderless: sim to Malco 12093-10. (Part of W2602).
P904	19A116659P2	Connector, printed wiring: 10 contacts; sim to Molex 09-52-3102.
		- - - - - - - - - - TRANSISTORS - - - - - - - - -
Q2601 and Q2602	19A115852P1	Silicon, PNP; sim to Type 2N3906.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R2601 thru R2603	3R152P223J	Composition: 22K ohms ±5%, 1/4 w.
R2604	3R152P472J	Composition: 4.7K ohms ±5%, 1/4 w.
R2605	3R152P561J	Composition: 560 ohms ±5%, 1/4 w.
R2606 thru R2608	3R152P133J	Composition: 13K ohms ±5%, 1/4 w.
R2609 thru R2611	3R152P223J	Composition: 22K ohms ±5%, 1/4 w.
R2612	3R152P242J	Composition: 2.4K ohms ±5%, 1/4 w.
R2613*	3R152P621J	Composition: 620 ohms ±5%, 1/4 w.
		Earlier than REV A:
	3R152P681J	Composition: 680 ohms ±5%, 1/4 w.
R2614 thru R2616	3R152P682J	Composition: 6800 ohms ±5%, 1/4 w.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W2601	19A130744G1	Cable: approx 5 inches long. (Includes P102).
W2602	19A129947G2	Cable: approx 3 inches long. (Includes P401).
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XY2601 thru XY2606	19A116659P50	Connector, printed wiring: 6 contacts; sim to Molex 09-65-1061.

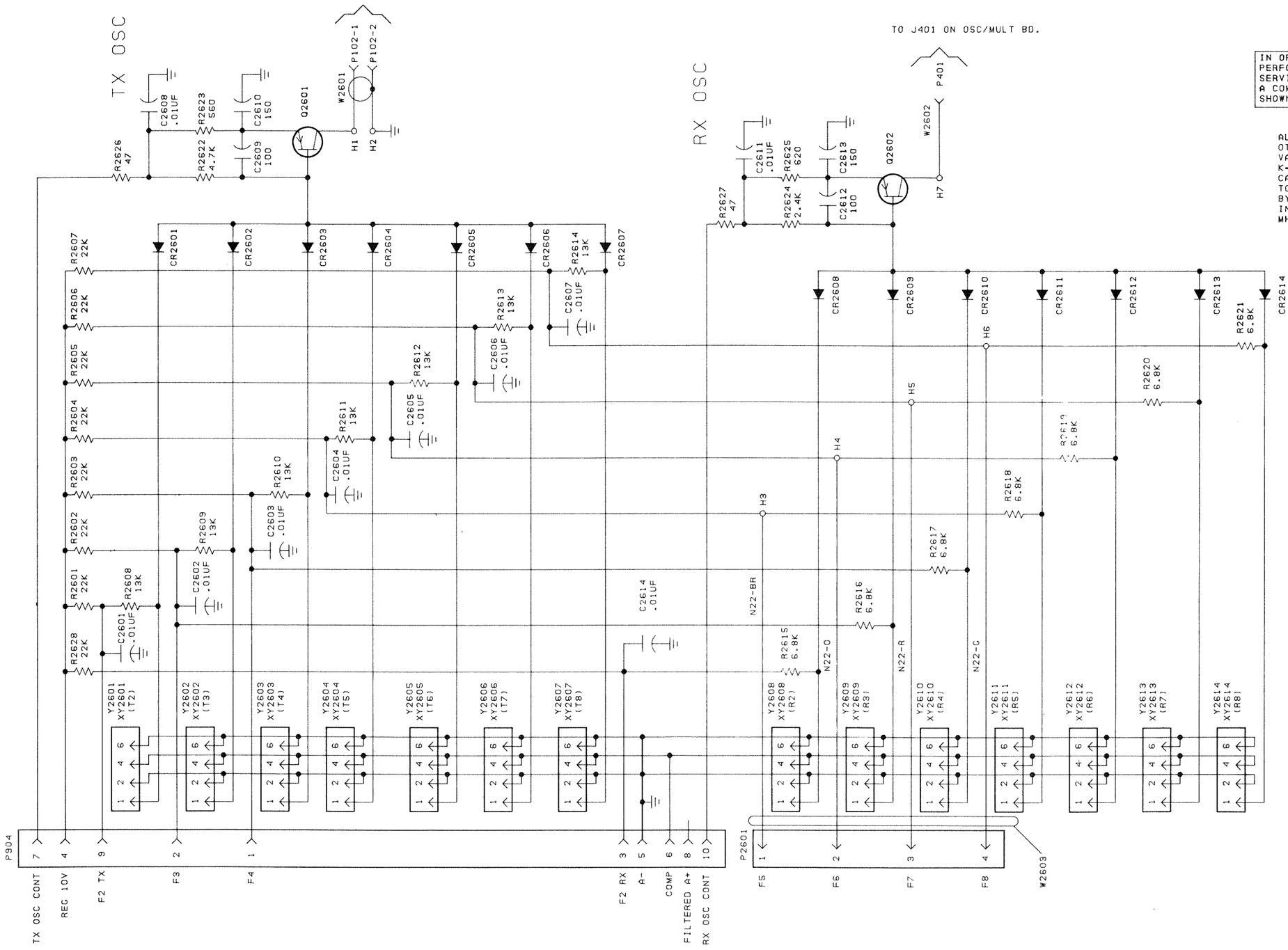
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - CRYSTAL MODULES - - - - - - - - -
		NOTE: When reordering, give GE Part Number and specify exact transmitter or receiver frequency needed.
Y2601 thru Y2606	19B226962G1	Tx. 5 PPM (30-36 MHz).
	19B226962G2	Tx. 5 PPM (36-42 MHz).
	19B226962G3	Tx. 5 PPM (42-50 MHz).
	19B226962G4	Tx. 5 PPM (138-155 MHz).
	19B226962G5	Tx. 5 PPM (150.8-174 MHz).
	19B226962G6	Tx. 5 PPM (406-420 MHz).
	19B226962G7	Tx. 5 PPM (450-470 MHz).
	19B226962G8	Tx. 5 PPM (470-494 MHz).
	19B226962G9	Tx. 5 PPM (494-512 MHz).
	19B226962G10	Rx. 5 PPM (30-36 MHz).
	19B226962G11	Rx. 5 PPM (36-42 MHz).
	19B226962G12	Rx. 5 PPM (42-50 MHz).
	19B226962G13	Rx. 5 PPM (138-155 MHz).
	19B226962G14	Rx. 5 PPM (150.8-174 MHz).
	19B226962G15	Rx. 5 PPM (406-420 MHz).
	19B226962G16	Rx. 5 PPM (450-470 MHz).
	19B226962G17	Rx. 5 PPM (470-494 MHz).
	19B226962G18	Rx. 5 PPM (494-512 MHz).

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - To compensate for variations in diode characteristics. Changed value of R2613.

 *COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



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.

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.

MODEL NO	REV LETTER
PL19C327565G1	

(19D424527, Rev. 3)

SCHEMATIC DIAGRAM

5 PPM, 5-8 FREQUENCY OSCILLATOR
BOARD 19C327565G1

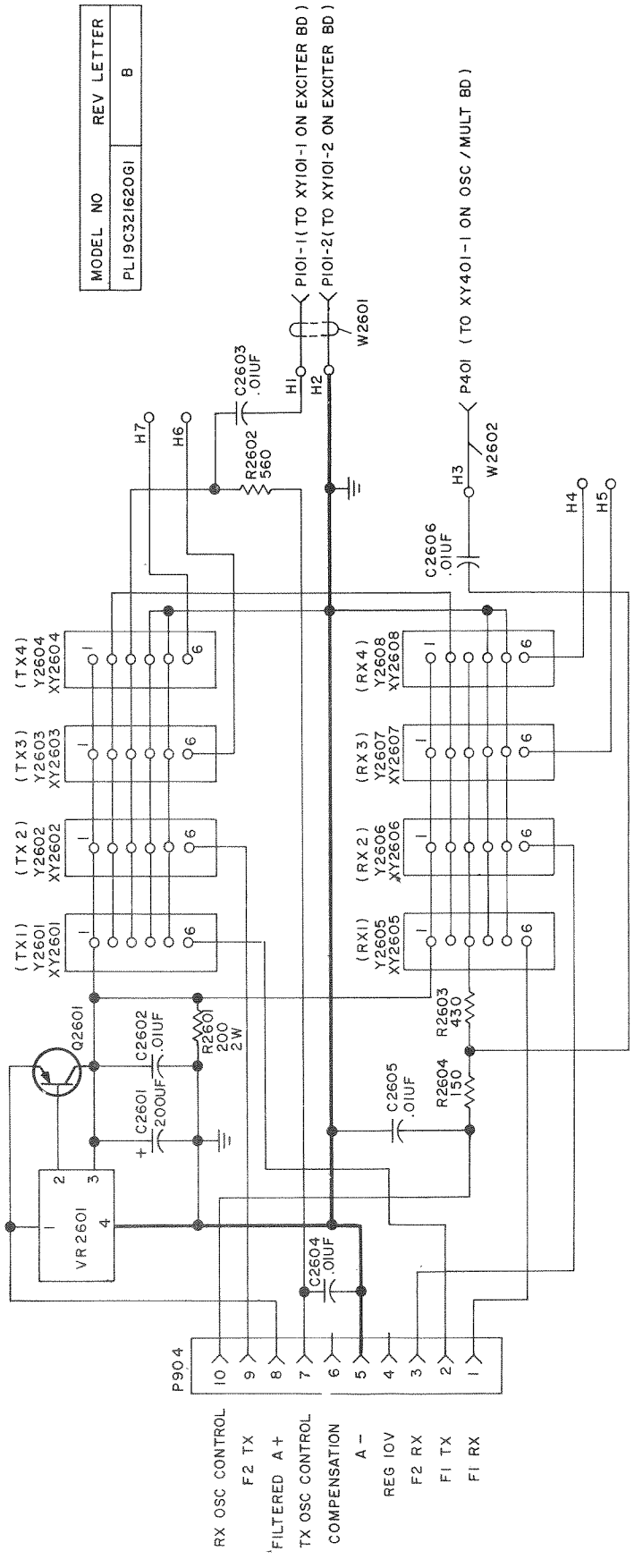
PARTS LIST

8 FREQUENCY OSCILLATOR
19C327565G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C2601 thru C2608	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C2609	5496218P763	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -750 PPM.
C2610	7489162P31	Silver mica: 150 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C2611	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C2612	5496218P763	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -750 PPM.
C2613	7489162P31	Silver mica: 150 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C2614	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR2601 thru CR2614	19A116925P4	Silicon, pin: 50 volt Reverse Breakdown, 400 mW.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1		Connector. Includes:
	19B209505P104	Shell.
	19B209505P20	Contact, electrical: male, wire size No. 18-24 AWG. (Quantity 4).
P102	19A127042P2	Contact, electrical: sim to Malco 12093-10. (Quantity 2).
P401	19A127042P1	Solderless terminal: sim to Malco 12093-12.
P904	19A116659P2	Connector, printed wiring: 10 contacts; sim to Molex 09-52-3102.
		- - - - - - - - - - TRANSISTORS - - - - - - - -
Q2601 and Q2602	19A115852P1	Silicon, PNP; sim to Type 2N3906.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R2601 thru R2607	3R152P223J	Composition: 22K ohms ±5%, 1/4 w.
R2608 thru R2614	3R152P133J	Composition: 13K ohms ±5%, 1/4 w.
R2615 thru R2621	3R152P682J	Composition: 6.8K ohms ±5%, 1/4 w.
R2622	3R152P472J	Composition: 4.7K ohms ±5%, 1/4 w.
R2623	3R152P561J	Composition: 560 ohms ±5%, 1/4 w.
R2624	3R152P242J	Composition: 2.4K ohms ±5%, 1/4 w.
R2625	3R152P621J	Composition: 620 ohms ±5%, 1/4 w.
R2626 and R2627	3R152P470J	Composition: 47 ohms ±5%, 1/4 w.
R2628	3R152P223J	Composition: 22K ohms ±5%, 1/4 w.
		- - - - - - - - - - CABLES - - - - - - - - - -
W2601	19A130744G1	Cable: 2 conduct, approx 5 inches long.
W2602	19A129947G2	Cable: single conductor, approx 3 inches long.
W2603	19B227851G1	Cable: 4 conductors; approx 4 inches long. Includes (P1) and (4) 19B209505P20 contacts.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XY2601 thru XY2614	19A130958G1	Connector, printed wire: 6 contacts.
		- - - - - - - - CRYSTAL MODULES - - - - - - - - -
		NOTE: When reordering, give GE Part Number and specify exact transmitter or receiver frequency needed.
Y2601 thru Y2614	19B226962G1	Tx. 5 PPM (30-36 MHz).
	19B226962G2	Tx. 5 PPM (36-42 MHz).
	19B226962G3	Tx. 5 PPM (42-50 MHz).
	19B226962G4	Tx. 5 PPM (138-155 MHz).
	19B226962G5	Tx. 5 PPM (150.8-174 MHz).
	19B226962G6	Tx. 5 PPM (406-420 MHz).
	19B226962G7	Tx. 5 PPM (450-470 MHz).
	19B226962G8	Tx. 5 PPM (470-494 MHz).
	19B226962G9	Tx. 5 PPM (494-512 MHz).
	19B226962G10	Rx. 5 PPM (30-36 MHz).
	19B226962G11	Rx. 5 PPM (36-42 MHz).
	19B226962G12	Rx. 5 PPM (42-50 MHz).
	19B226962G13	Rx. 5 PPM (138-155 MHz).
	19B226962G14	Rx. 5 PPM (150.8-174 MHz).
	19B226962G15	Rx. 5 PPM (406-420 MHz).
	19B226962G16	Rx. 5 PPM (450-470 MHz).
	19B226962G17	Rx. 5 PPM (470-494 MHz).
	19B226962G18	Rx. 5 PPM (494-512 MHz).
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	4035656P69	Spacer, threaded. (Quantity 4).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



SCHEMATIC DIAGRAM

2 PPM OSCILLATOR BOARD 19C321620G1

Issue 3

PARTS LIST

LBI30119B

2 PPM OSCILLATOR BOARD
19C321620G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C2601	19A115680P10	Electrolytic: 200 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
C2602 thru C2606	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P101	4036634P1	Contact, electrical; sim to AMP 42428-2. (Part of W2601).
P401	4036634P1	Contact, electrical; sim to AMP 42428-2. (Part of W2602).
P904	19A116659P2	Connector, printed wiring: 10 contacts; sim to Molex 09-52-3102.
		- - - - - - - - - - TRANSISTORS - - - - - - - -
Q2601	19A115562P2	Silicon, PNP; sim to Type 2N2904A.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R2601	3R79P201J	Composition: 200 ohms ±5%, 2 w.
R2602	3R152P561J	Composition: 560 ohms ±5%, 1/4 w.
R2603	3R152P431J	Composition: 430 ohms ±5%, 1/4 w.
R2604	3R152P151J	Composition: 150 ohms ±5%, 1/4 w.
		- - - - - - - - VOLTAGE REGULATORS - - - - - - -
VR2601*	19D416564G4	Regulator: 10 volt.
		In REV A and earlier:
	19D416564G3	Regulator: 10 volt.
		- - - - - - - - - - CABLES - - - - - - - - - -
W2601	19A130744G1	2 wire, approx 5 inches long. Includes P101-1, P101-2.
W2602	19A129947G3	1 wire, approx 3 inches long. Includes P401.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XY2601 thru XY2608	19A116779P1	Contact, electrical: sim to Molex 08-50-0404. (Quantity 6 for each socket).
		- - - - - - - - - - Rx ICOMS - - - - - - - - - -
		NOTE: When reordering specify ICOM Frequency. FOR STANDARD LOW SIDE INJECTION FREQUENCY.
		ICOM FREQ. = $\frac{\text{Operating Freq} - 11.2}{27}$
Y2601 thru Y2608	19A129393G4	Externally compensated: ±2 PPM, 406-512 MHz.
		FOR HIGH SIDE INJECTION FREQUENCY.
		ICOM FREQ. = $\frac{\text{Operating Freq} + 11.2}{27}$
Y2601 thru Y2608	19A130283G2	Compensated: ±2 PPM, 406-512 MHz.
		- - - - - - - - - - Tx ICOMS - - - - - - - - - -
		NOTE: When reordering specify ICOM Frequency. FOR STANDARD LOW SIDE INJECTION FREQUENCY.
		ICOM FREQ. = $\frac{\text{Operating Freq}}{36}$
Y2601 thru Y2608	19A129393G15	Externally compensated: ±2 PPM, 406-512 MHz.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	4036555P1	Insulator, disc. (Used with Q2601).

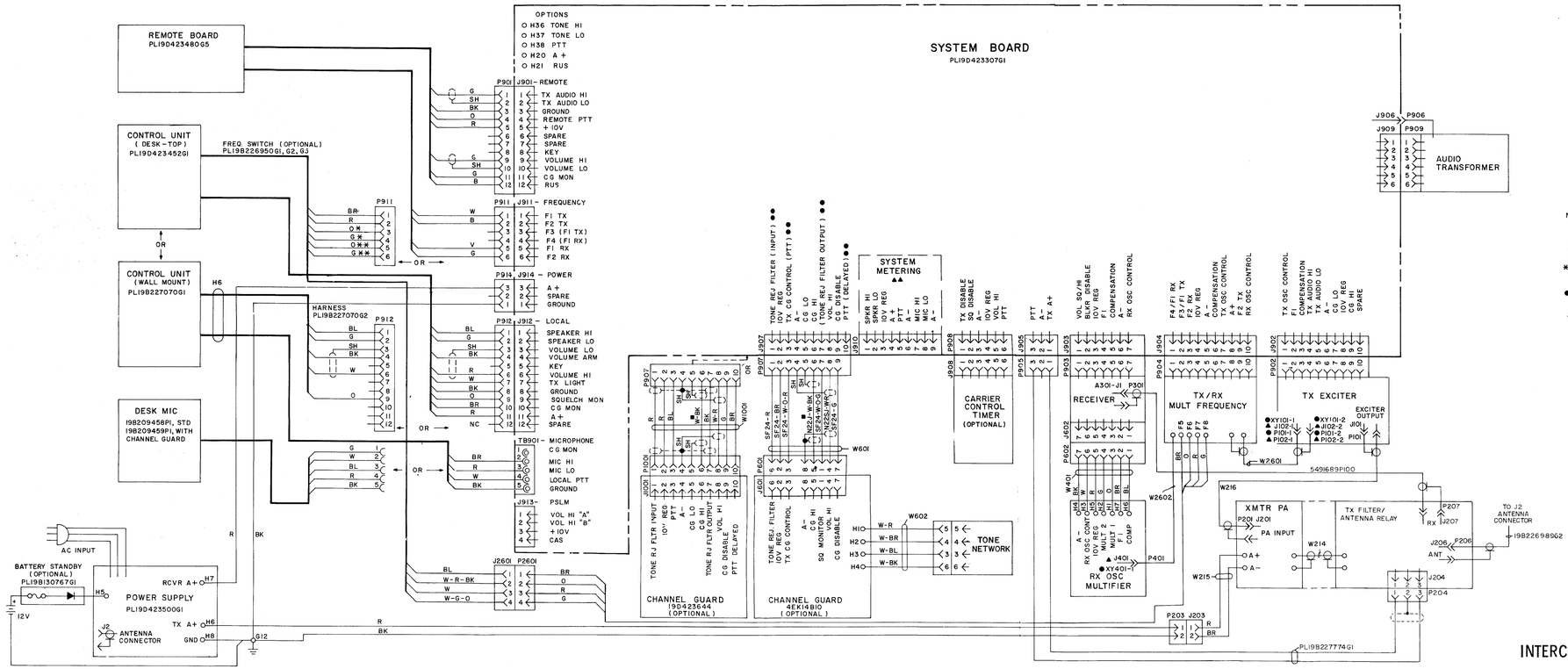
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - To eliminate possible saturation of Q402 on oscillator/multiplier board. Interchanged R2603 and R2604.

REV. B - To solve the 10-Volt Regulator switching problem. Changed VR2601.

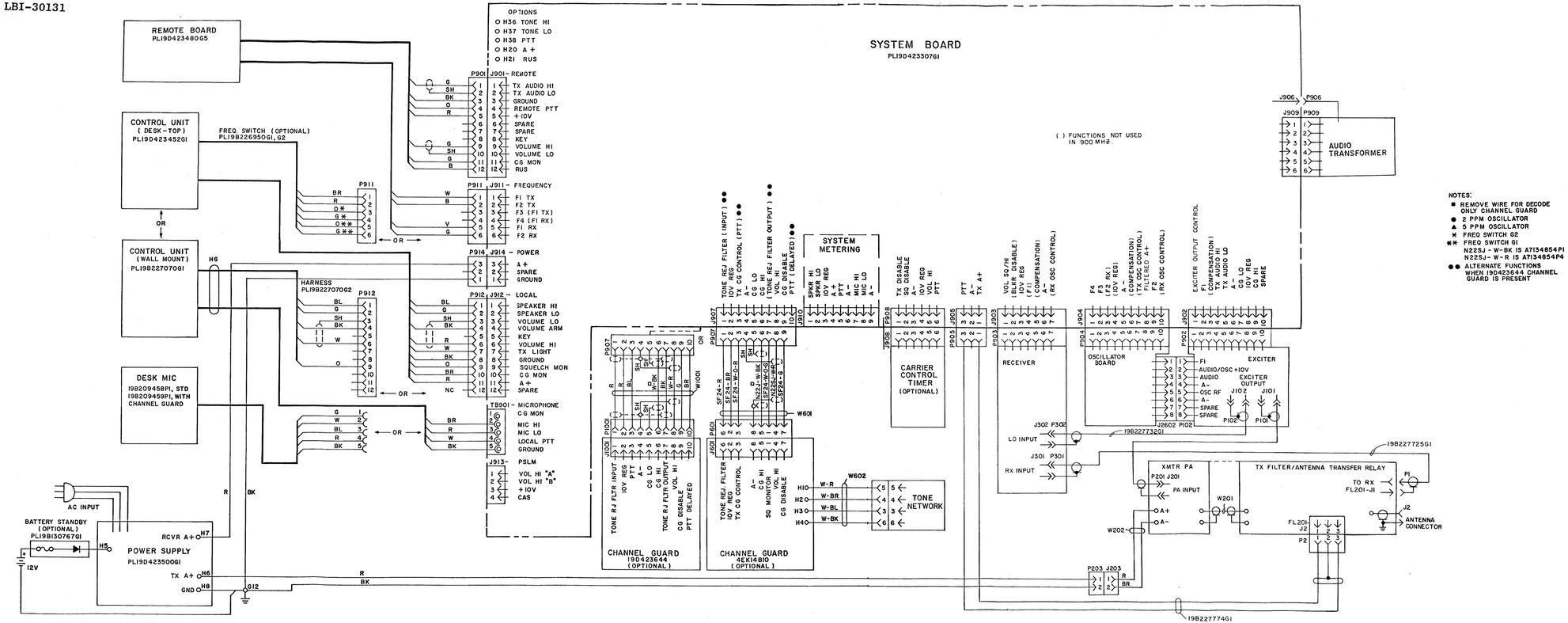


NOTES:
- ■ REMOVE WIRE FOR DECODE ONLY CHANNEL GUARD
- ● 2 PPM OSCILLATOR
- ▲ 5 PPM OSCILLATOR
- * FREQ SWITCH G2, G5
- ** FREQ SWITCH G1
  N225J - W-BK IS A7134854P1
  N225J - W-R IS A7134854P4
- ●● ALTERNATE FUNCTIONS WHEN 19D423644 CHANNEL GUARD IS PRESENT
- ▲▲ SYSTEM METERING J910 NOT PRESENT ON FIVE, SIX, SEVEN, OR EIGHT FREQUENCY COMBINATIONS.

(19B622200, Rev. 5)

INTERCONNECTION DIAGRAM

MASTR EXECUTIVE II STATION LO BAND, HI BAND AND UHF



INTERCONNECTION DIAGRAM

806—870 MHz, MASTR EXECUTIVE II STATION

(19R622269, Rev. 0)

THESE INSTRUCTIONS COVER INSTALLATION OF MULTI-FREQ SWITCH PLI9B226950GI, G2 TO MASTR EXEC II DESK TOP STATION.

(1) 1 FREQ. XMT, 2 FREQ. RCV. OR 2 FREQ. XMT, 1 FREQ. RCV. OR 2 FREQ. XMT, 2 FREQ. RCV. OR 3 FREQ. XMT, 3 FREQ. RCV.

INSTRUCTIONS:
1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S701 OR S702 AS SHOWN. SAVE KNOB AND ASM TO SWITCH.
2. SOLDER BK WIRE FROM MULTI-FREQ.SWITCH TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ. SWITCH TO J911 ON SYSTEM BOARD AS SHOWN.

(2) 4 FREQ. XMT, 4 FREQ. RCV. - 5 PPM OSCILLATOR.

INSTRUCTIONS:
1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S702 AS SHOWN. SAVE KNOB AND ASM TO SWITCH.
2. SOLDER BK WIRE FROM MULTI-FREQ. SWITCH TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ. SWITCH TO J911 ON SYSTEM BOARD AS SHOWN.
5. REMOVE DA JUMPER BETWEEN TERMINAL 3 AND TERMINAL 4 ON S702, VIEW AT A.

THESE INSTRUCTIONS COVER JUMPER CHANGES ON THE STATION SYSTEM BOARD FOR MULTI-FREQUENCY OPERATION (5 PPM OSCILLATORS)

(3) 2 FREQ. XMT, 1 FREQ. RCV. - 5 PPM. OSC.

INSTRUCTION:
1. REMOVE JUMPERS BETWEEN H14 & H31 AND H27 & H28 FROM SYSTEM BOARD, VIEW AT B.

(4) 2 FREQ. XMT, 2 FREQ. RCV. - 5 PPM. OSC.

INSTRUCTION:
1. REMOVE JUMPERS BETWEEN H14 & H31 AND H15 & H16 FROM SYSTEM BOARD, VIEW AT B.

(5) 1 FREQ. XMT, 2 FREQ. RCV. - 5 PPM. OSC.

INSTRUCTION:
1. REMOVE JUMPERS BETWEEN H15 & H16 AND H29 & H30 FROM SYSTEM BOARD, VIEW AT B.

(6) 3 FREQ. XMT, 3 FREQ. RCV OR 4 FREQ. XMT, 4 FREQ. RCV. - 5 PPM. OSC.

INSTRUCTION:
1. INSTALL JUMPERS BETWEEN H45 & H46 AND H39 & H40 TO SYSTEM BOARD, VIEW AT B. REMOVE JUMPERS BETWEEN H15 & H16 AND H14 & H31 FROM SYSTEM BOARD, VIEW AT B.

THESE INSTRUCTIONS COVER JUMPER CHANGES ON THE STATION SYSTEM BOARD AND MODIFICATION TO THE RECEIVER OSCILLATOR MULTIPLIER BOARD FOR UHF 2 PPM. OSCILLATORS.

(7) 1 FREQ. XMT, 1 FREQ. RCV. - 2 PPM. OSC.

INSTRUCTIONS:
1. INSTALL JUMPERS BETWEEN H25 & H26 AND H23 & H24 ON SYSTEM BOARD, VIEW AT B.
2. REMOVE C402 (100 Pf.) FROM OSC/MULT BOARD. VIEW AT C.

(8) 2 FREQ. XMT, 1 FREQ. RCV. - 2 PPM OSC.

INSTRUCTIONS:
1. REMOVE JUMPERS BETWEEN H27 & H28 AND H29 & H30 FROM SYSTEM BOARD, VIEW AT B.
2. INSTALL JUMPERS BETWEEN H 23 & H24 AND H43 & H44 ON SYSTEM BOARD, VIEW AT B.
3. REMOVE C402 (100 Pf) FROM OSC/MULT BOARD, VIEW AT C.

(9) 2 FREQ. XMT, 2 FREQ. RCV. - 2 PPM. OSC.

INSTRUCTIONS:
1. REMOVE JUMPERS BETWEEN H29 & H30 AND H27 & H28 FROM SYSTEM BOARD. VIEW AT B.
2. INSTALL JUMPERS BETWEEN H41 & H42 AND H43 & H44 ON SYSTEM BOARD. VIEW AT B.
3. REMOVE C402 (100 Pf) FROM OSC/MULT BOARD, VIEW AT C.

(10) 1 FREQ. XMT, 2 FREQ. RCV. - 2 PPM. OSC.

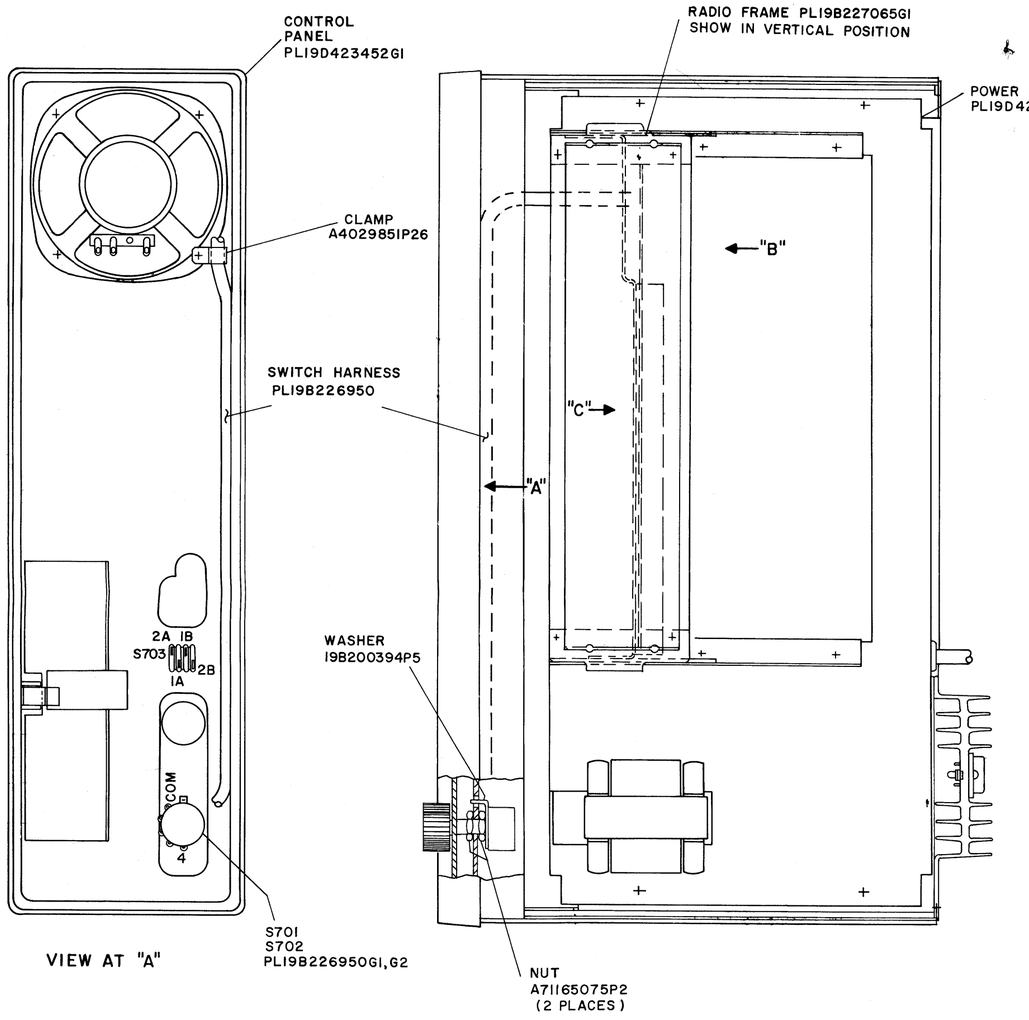
INSTRUCTIONS:
1. REMOVE JUMPERS BETWEEN H27 & H28 AND H29 & H30 FROM SYSTEM BOARD. VIEW AT B.
2. INSTALL JUMPERS BETWEEN H25 & H26 AND H41 & H42.
3. REMOVE C402 (100 Pf) FROM OSC/MULT BOARD, VIEW AT C.

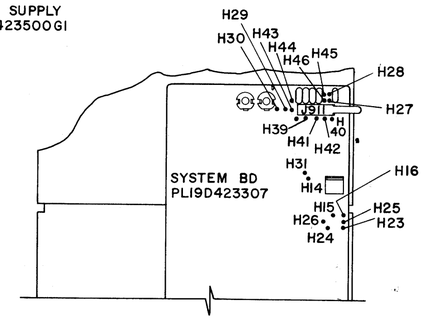
(11) THESE INSTRUCTIONS COVER JUMPER CHANGES ON THE STATION SYSTEM BOARD FOR MULTI-FREQ OPERATION FOR 800MHz 2 PPM OSCILLATORS.

2 FREQUENCY XMIT, 2 FREQUENCY RCV; 3 FREQUENCY XMIT, 3 FREQUENCY RCV; 4 FREQUENCY XMIT, 4 FREQUENCY RCV-2 PPM (800MHz).

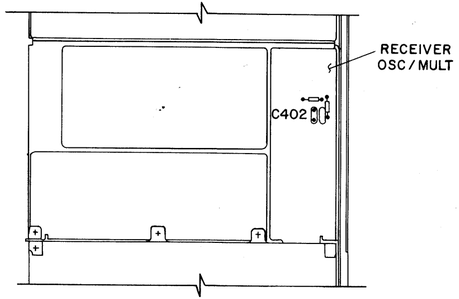
INSTRUCTIONS:
1. REMOVE JUMPER BETWEEN H14 & H31 FROM SYSTEM BOARD. SEE VIEW AT "B" ALSO, REMOVE JUMPER BETWEEN H15 & H16.

(19D423534, Rev. 5





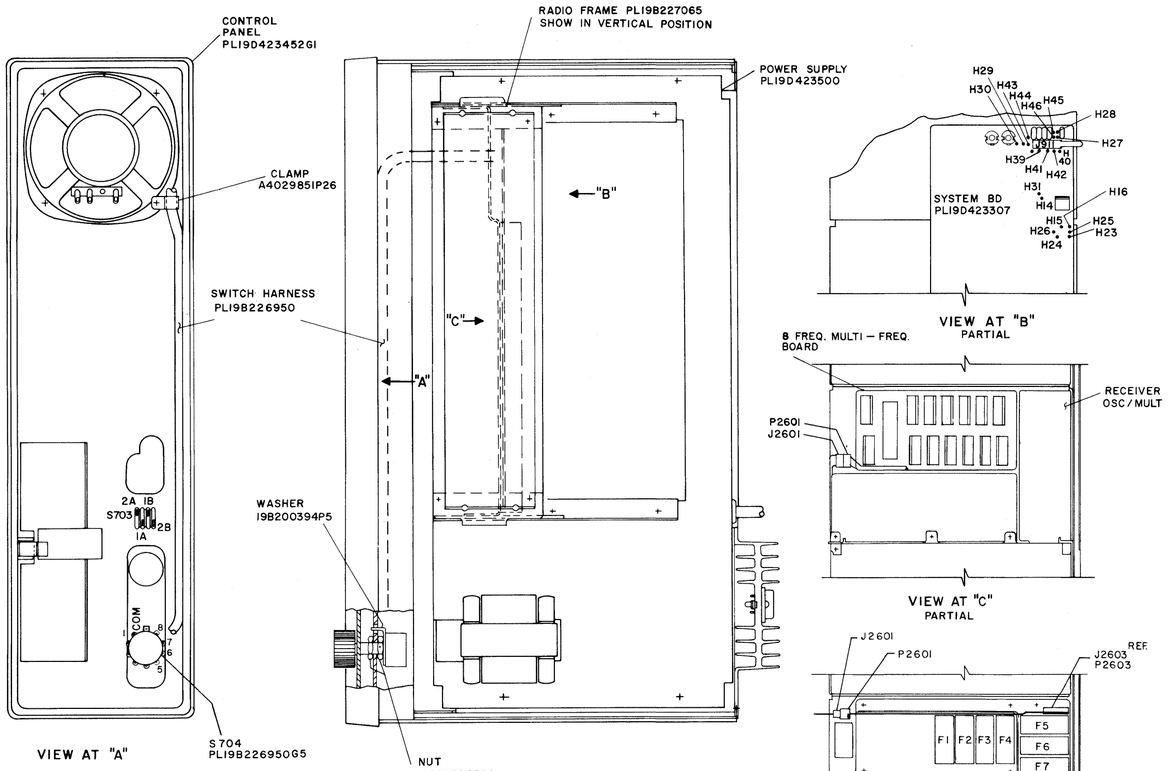
VIEW AT "B"
PARTIAL

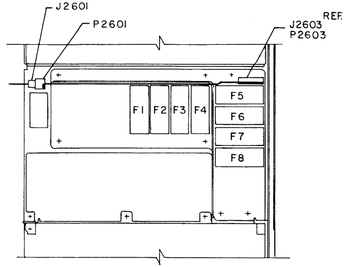


VIEW AT "C"
PARTIAL

INSTALLATION INSTRUCTIONS

1-4 FREQUENCY SWITCHES
19B226950G1 & G2





INSTALLATION INSTRUCTIONS

5-8 FREQUENCY SWITCH
19B226950G5

THESE INSTRUCTIONS COVER THE INSTALLATION OF MULTI-FREQ SWITCH PLI9B226950G5 TO MASTR EXEC II DESK TOP STATION.

5 FREQ TX, 5 FREQ RX

INSTRUCTIONS:

1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S704 AS SHOWN. SAVE KNOB AND ASSEMBLE TO SWITCH.
2. SOLDER BK WIRE FROM S704 TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ SWITCH TO J911 ON SYSTEM BOARD AS SHOWN AND CONNECT J2601 TO P2601 AT THE 8 FREQ MULTI-FREQ BOARD AS SHOWN.
5. AT S704, CLIP AND TAPE THE FOLLOWING WIRES: WHITE-RED-BLACK, WHITE & WHITE-GREEN-ORANGE.

6 FREQ TX, 6 FREQ RX

INSTRUCTIONS:

1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S704 AS SHOWN. SAVE KNOB AND ASSEMBLE TO SWITCH.
2. SOLDER BK WIRE FROM S704 TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ SWITCH TO J911 ON SYSTEM BOARD AS SHOWN AND CONNECT J2601 TO P2601 AT THE 8 FREQ MULTI-FREQ BOARD AS SHOWN.
5. AT S704, REMOVE DA JUMPER BETWEEN TERMINAL 5 AND TERMINAL 6.
6. AT S704, CLIP AND TAPE THE FOLLOWING WIRES: WHITE & WHITE-GREEN-ORANGE

7 FREQ TX, 7 FREQ RX

INSTRUCTIONS:

1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S704 AS SHOWN. SAVE KNOB AND ASSEMBLE TO SWITCH.
2. SOLDER BK WIRE FROM S704 TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ SWITCH TO J911 ON SYSTEM BOARD AS SHOWN AND CONNECT J2601 TO P2601 AT THE 8 FREQ MULTI-FREQ BOARD AS SHOWN.
5. AT S704, REMOVE DA JUMPERS BETWEEN TERMINAL 5, TERMINAL 6 AND TERMINAL 7.
6. AT S704, CLIP AND TAPE THE WHITE-GREEN-ORANGE WIRE.

8 FREQ TX, 8 FREQ RX

INSTRUCTIONS:

1. REMOVE AND DISCARD DUMMY SHAFT AND REPLACE WITH S704 AS SHOWN. SAVE KNOB AND ASSEMBLE TO SWITCH.
2. SOLDER BK WIRE FROM S704 TO S703-1B.
3. DRESS HARNESS WITH CONTROL PANEL HARNESS AND SPOT TIE. REMOVE CABLE CLAMP AND REPLACE WITH NEW PART AS SHOWN.
4. CONNECT PLUG FROM MULTI-FREQ SWITCH TO J911 ON SYSTEM BOARD AS SHOWN AND CONNECT J2601 TO P2601 AT THE 8 FREQ MULTI-FREQ BOARD AS SHOWN.
5. AT S704, REMOVE THE JUMPERS BETWEEN TERMINAL 5, TERMINAL 6, TERMINAL 7 AND TERMINAL 8.

THESE INSTRUCTIONS COVER JUMPER CHANGES ON THE STATION SYSTEM BOARD FOR MULTI-FREQ OPERATION

5 FREQ TX, 5 FREQ RX; 6 FREQ TX, 6 FREQ RX;
7 FREQ TX, 7 FREQ RX; 8 FREQ TX, 8 FREQ RX

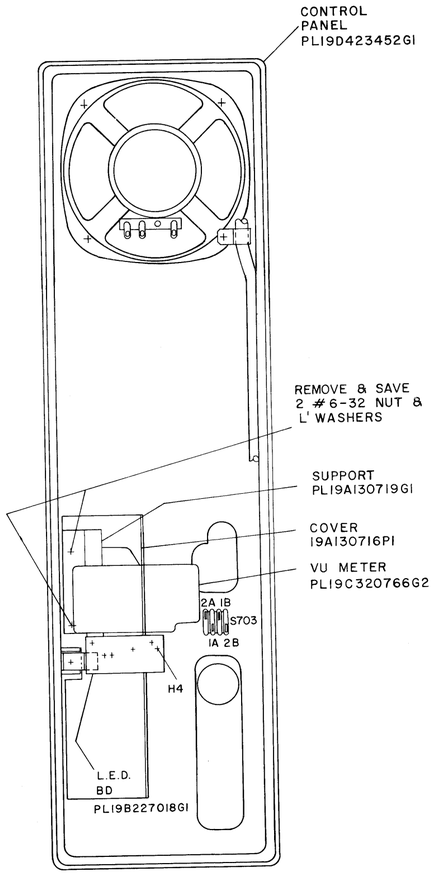
INSTRUCTIONS:

1. INSTALL JUMPERS BETWEEN H45 & H46 AND H39 & H40 TO SYSTEM BOARD, VIEW AT B.
   REMOVE JUMPERS BETWEEN H15 & H16 AND H14 & H31 FROM SYSTEM BOARD, VIEW AT B.

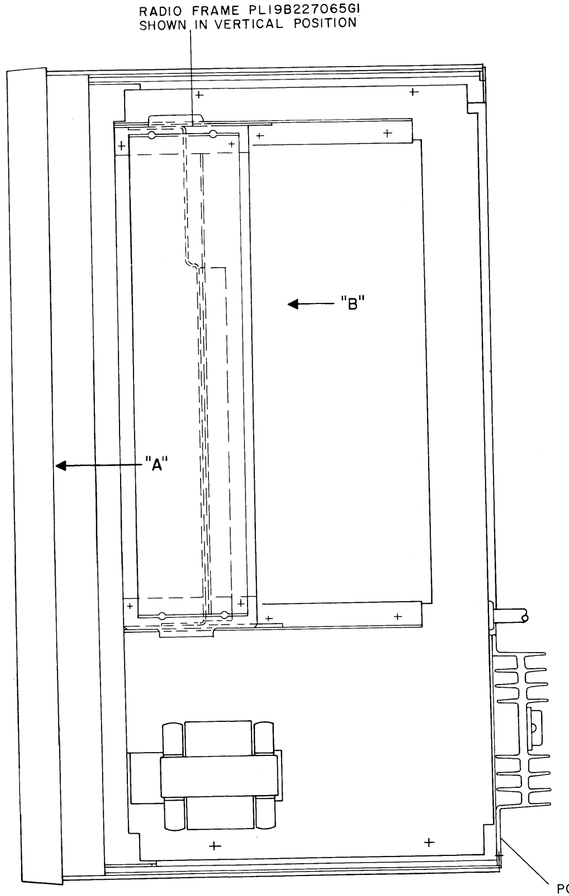
THIS INSTRUCTION COVERS INSTALLATION OF V.U. METER PL 19A129382G3 INTO MASTR EXEC. II DESK TOP STATION.

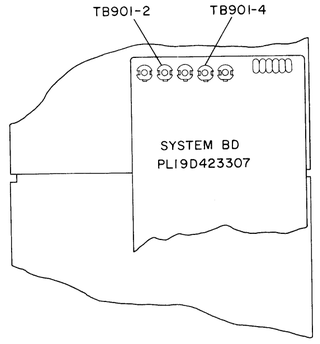
I. INSTRUCTIONS:

1. REMOVE AND DISCARD COVER PLATE 19A130716P1 AND SAVE 2 6-32 NUTS AND L'WASHERS.
2. MOUNT V.U. METER (PL19C320766G2) BY USING MOUNTING PLATE PL19A130719G1 AND 6 NUTS AND L'WASHERS.
3. SOLDER R WIRE FROM METER BD TO HOLE 4 OF L.E.D. BD.
4. SOLDER BK WIRE FROM METER BD TO S703-1B.
5. DRESS GR AND BL WITH CONTROL PANEL HARNESS, CABLE CLAMP AND SPOT TIE. CONNECT GR WIRE TO TB901-4 SYSTEMS BD. BL WIRE TO TB901-2 SYSTEM BD.



VIEW AT "A"





VIEW AT "B"

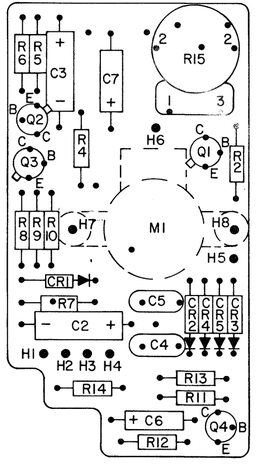
(19D423550, Rev. 2)

INSTALLATION INSTRUCTIONS

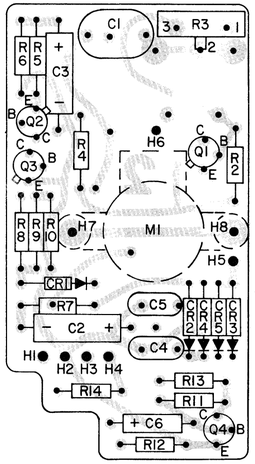
VU METER KIT (OPTION 9910)
19A129382G3

OUTLINE DIAGRAM

VU METER BOARD
19C320766G2

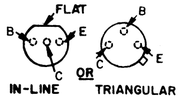


VU METER BOARD
19C320766G1



(19C327197, Rev. 1)
(19C320765, Sh. 2, Rev. 2)
(19C320765, Sh. 3, Rev. 2)

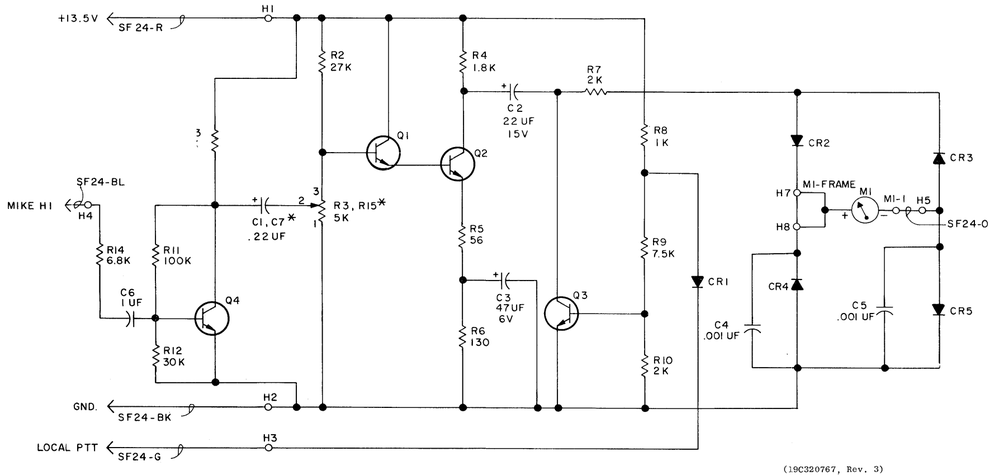
LEAD IDENTIFICATION FOR
Q1,Q2,Q3 & Q4



TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

SCHEMATIC DIAGRAM



(19C320767, Rev. 3)

MODEL NO.	REV LETTER
PL19C320766G1	A
PL19C320766G2	A

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.

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.

* C1 & R3 IN G1 ONLY
C7 & R15 IN G2 ONLY

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

19C320766G1 & G2 COMPONENT BOARD

REV. A - To standardize transistors. Changed Q1, Q2 and Q3.

PARTS LIST

LBI30117A

VU METER KIT
19A129382G2, G3

SYMBOL	GE PART NO.	DESCRIPTION
		COMPONENT BOARD 19C320766G1, G2
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW. (Used in G1 only).
C2	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C3	5496267P2	Tantalum: 47 µf ±20%, 6 VDCW; sim to Sprague Type 150D.
C4 and C5	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C6	5496267P17	Tantalum: 1.0 µf ±20%, 35 VDCW; sim to Sprague Type 150D.
C7	5496267P26	Tantalum: 0.22 µf ±20%, 35 VDCW; sim to Sprague Type 150D. (Used in G2 only).
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR2 thru CR5	4038056P1	Germanium.
		- - - - - - - - - - - METERS - - - - - - - - - -
M1	19A116729P1	Panel DC: 200 µA mechanism; sim to Jewel Instruments 20504003-032.
		- - - - - - - - - - TRANSISTORS - - - - - - - - -
Q1* and Q2*	19A115910P1	Silicon, NPN; sim to Type 2N3904. Earlier than REV A:
	19A115889P1	Silicon, NPN.
Q3*	19A115910P1	Silicon, NPN; sim to Type 2N3904. Earlier than REV A:
	19A115720P1	Silicon, NPN; sim to Type 2N2222.
Q4	19A115910P1	Silicon, NPN; sim to Type 2N3904.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R2	3R152P273J	Composition: 27K ohms ±5%, 1/4 w.
R3	19B209358P105	Variable, carbon film: approx 200 to 5000 ohms ±10%, 0.25 w; sim to CTS Type X-201. (Used in G1 only).
R4	3R152P182J	Composition: 1.8K ohms ±5%, 1/4 w.
R5	3R152P560J	Composition: 56 ohms ±5%, 1/4 w.
R6	3R152P131J	Composition: 130 ohms ±5%, 1/4 w.
R7	3R152P202J	Composition: 2K ohms ±5%, 1/4 w.
R8	3R152P102J	Composition: 1K ohms ±5%, 1/4 w.
R9	3R152P752J	Composition: 7.5K ohms ±5%, 1/4 w.
R10	3R152P202J	Composition: 2K ohms ±5%, 1/4 w.
R11	3R152P104J	Composition: 100K ohms ±5%, 1/4 w.
R12	3R152P303J	Composition: 30K ohms ±5%, 1/4 w.
R13	3R152P202J	Composition: 2K ohms ±5%, 1/4 w.
R14	3R152P682J	Composition: 6.8K ohms ±5%, 1/4 w.
R15	19B209358P5	Variable, carbon film: approx 200 to 5000 ohms ±20%, 0.25 w; sim to CTS Type U-201. (Used in G2 only).
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A116022P1	Insulator, bushing. (Used with M1).
	19B209260P103	Terminal, solderless. (Terminates wires from H1-H4).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SERVICE SHEET

VU METER KIT (OPTION 9910)
19A129382

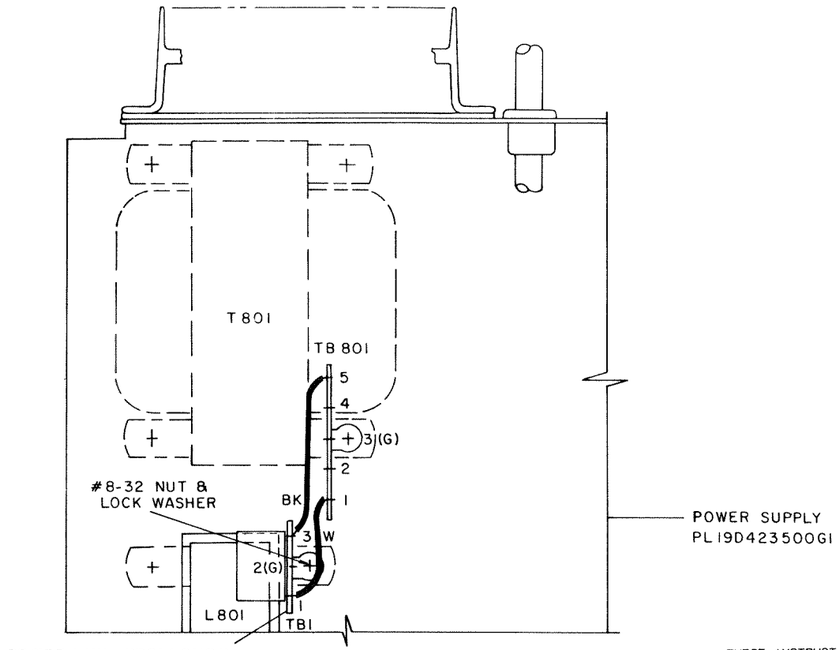


FIG. 1
FOR 121 VAC

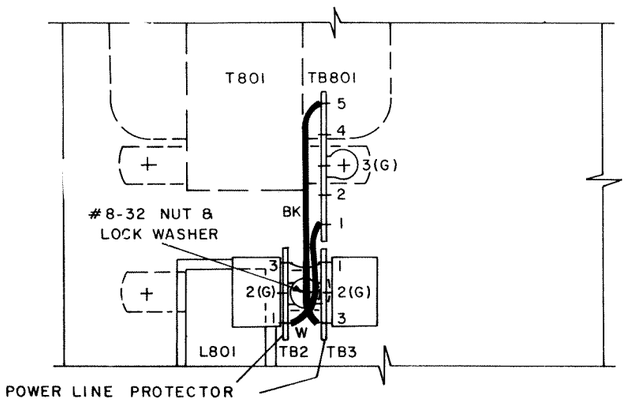


FIG. 2
FOR 242 VAC

THESE INSTRUCTIONS COVER THE INSTALLATION OF POWER LINE PROTECTOR TO MASTR EXEC II STATIONS.

INSTRUCTIONS:

FOR FIG. 1 121 VAC.

(1)

1. INSTALL TB1 AS SHOWN, OVER THE EXISTING NUT FOR L801.
2. CONNECT BLACK WIRE FROM TB1-3 TO TB801-5. AND WHITE WIRE FROM TB1-1 TO TB801-1.

(2)

FOR FIG. 2 242 VAC.

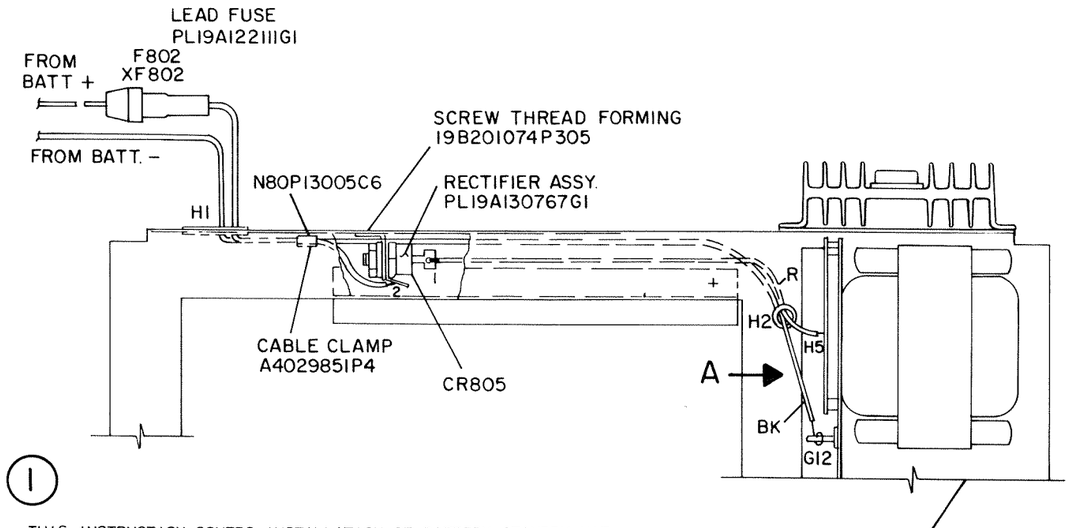
1. INSTALL TB2 AND TB3 AS SHOWN, OVER THE EXISTING NUT FOR L801
2. REMOVE BLACK WIRE FROM TB2-3.
3. REMOVE WHITE WIRE FROM TB3-1.
4. CONNECT DB WIRE FROM TB2-3 TO TB3-1.
5. CONNECT WHITE WIRE FROM TB2-1 TO TB801-1. AND BLACK WIRE FROM TB3-3 TO TB801-5

REFER TO WIRING DIAGRAM 19C321802.

(19C321887, Rev. 1)

INSTALLATION INSTRUCTIONS

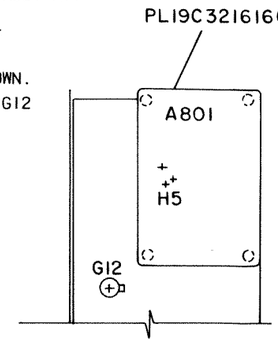
POWER LINE PROTECTOR KIT
(OPTIONS 9903 & 9904) 19A130845G1



(1)

THIS INSTRUCTION COVERS INSTALLATION OF BATTERY STANDBY KIT INTO MASTR EXEC II STATIONS.

1. ADD RECTIFIER ASM TO POWER SUPPLY BY USING SELF FORMING SCREW (19B201074P305) AS SHOWN.
2. TERMINATE FUSE LEAD TO CR805-2 AND CLAMP AS SHOWN.
3. TERMINATE R-WIRE TO H5 OF A801, AND BK-WIRE TO G12 AS SHOWN.

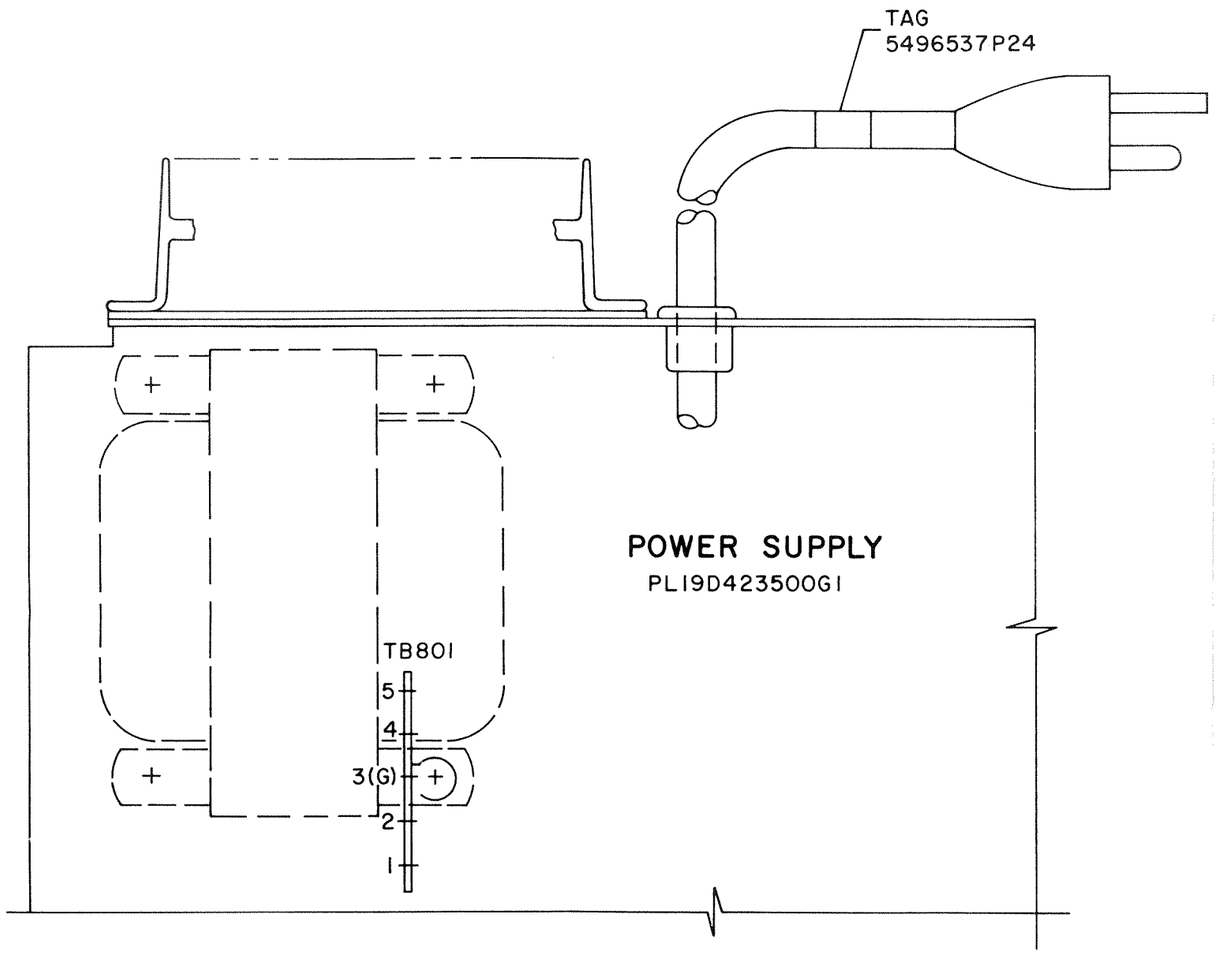


VIEW AT "A"

(19B227077, Rev. 1)

INSTALLATION INSTRUCTIONS

BATTERY STANDBY KIT (OPTION 9911)
19A130767G1



(19C321816, Rev. 2)

THESE INSTRUCTIONS COVER THE MODIFICATION FOR 242 VAC INPUT FOR MASTR EXEC II STATION

(1)

INSTRUCTIONS:

1. REMOVE DB WIRES BETWEEN TB801-5 AND 2, TB801-4 AND 1.

2. SOLDER DB WIRE 19A115060P22 BETWEEN TB801-4 AND 2.

3. CLIP PLUG OFF THE AC POWER CABLE. STRIP OFF APPROX. 3 INCHES OF OUTSIDE JACKET. STRIP AND TIN THE THREE WIRES APPROX. 1/2 INCH. REMOVE THE MARKER TAPE (IF PRESENT) WHICH INDICATES UL APPROVAL.

4. APPLY 5496537P24 TAG APPROXIMATELY 3 INCHES FROM STRIPPED END OF CABLE.

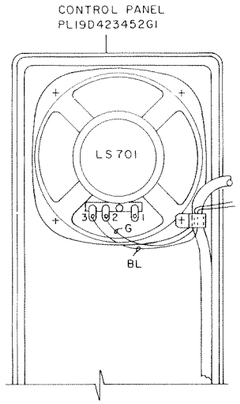
NOTE:

THIS UNIT MUST BE TESTED WITH 242 VAC SOURCE. REFER TO WIRING DIAGRAM 19C321802.

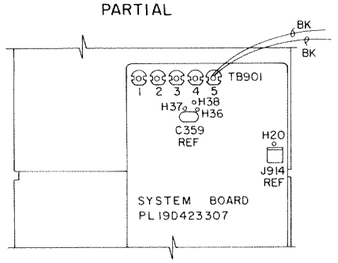
MODIFICATION INSTRUCTIONS

242 VAC STATION MODIFICATION
(OPTION 9906)

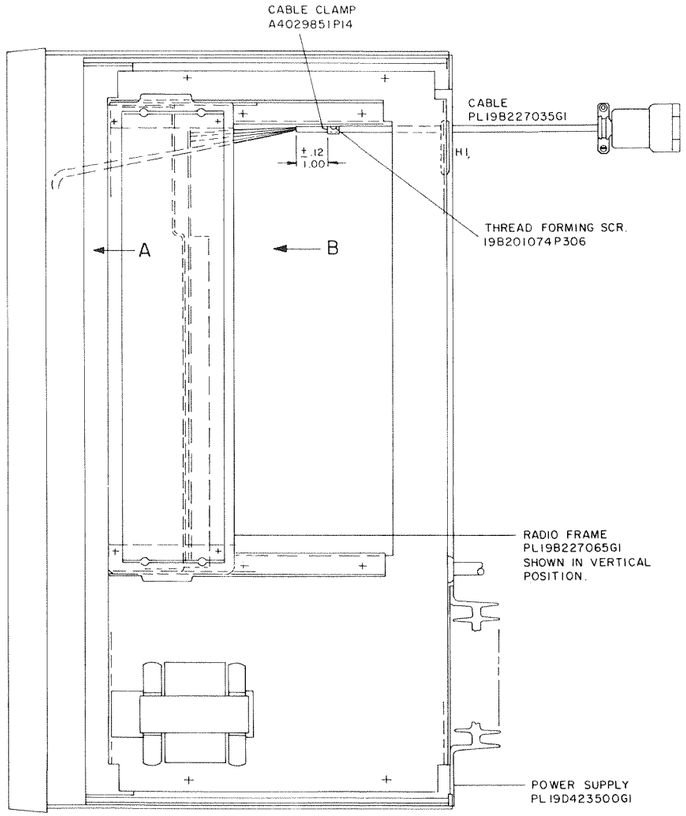
INSTALLATION INSTRUCTIONS



VIEW AT A
PARTIAL



VIEW AT B
PARTIAL



THESE INSTRUCTIONS COVER THE INSTALLATION OF EXTERNAL TONE CABLE, TO MASTR EXEC II STATION.

(1) INSTRUCTIONS:

REFER TO WIRING DIAGRAM 19C321900

1. ROUTE CABLE PL19B227035G1 THRU HOLE 1 AND SECURE WITH CABLE CLAMP AS SHOWN. CONNECT THE 2 BLACK WIRES TERMINATED WITH TERMINAL TO TB901-5 ON SYSTEM BOARD VIEW AT B.

   SOLDER GREEN LEAD FROM PI-J TO H36 ON SYSTEM BOARD VIEW AT B.
   " SHIELD " " PI-C TO H37 " " " "
   " BROWN " " PI-H TO H38 " " " "
   " RED " " PI-D TO H20 " " " "

2. ROUTE THE TWO LONG WIRES - GREEN AND BLUE THRU THE CABLE CLAMP ON LS701 VIEW AT A. THEN SOLDER THE GREEN WIRE TO LS701-2 AND THE BLUE WIRE TO LS701-3.

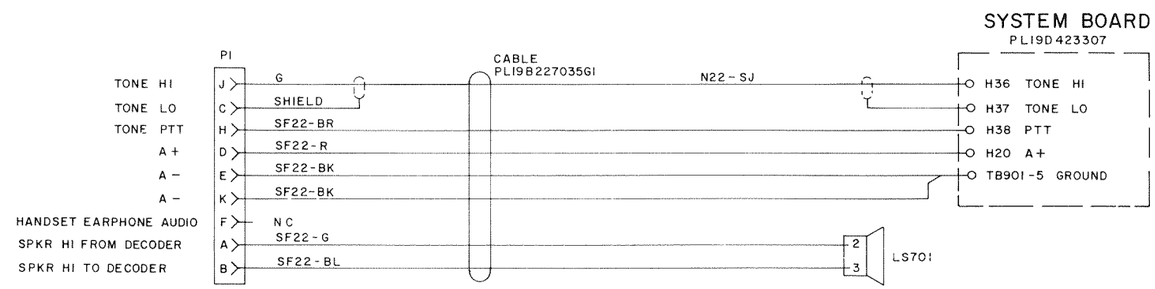
NOTES:

1. WHEN TONE DECODER IS PRESENT, JUMPER FROM LS701-3 TO LS701-2 MAY BE CUT IF MUTING IS DESIRED.
2. EITHER STATION OR MOBILE (12 VDC) ENCODERS OR DECODERS MAY BE USED WITH STATION. EXTENSION CABLE PL19B216148G1 MAY NOT BE USED WITH 12 VDC UNITS.

(19C321900, Rev. 1)

SCHEMATIC DIAGRAM

UNIVERSAL TONE DECODE,
TYPE 90 & DIGITAL ENCODE



NOTES:

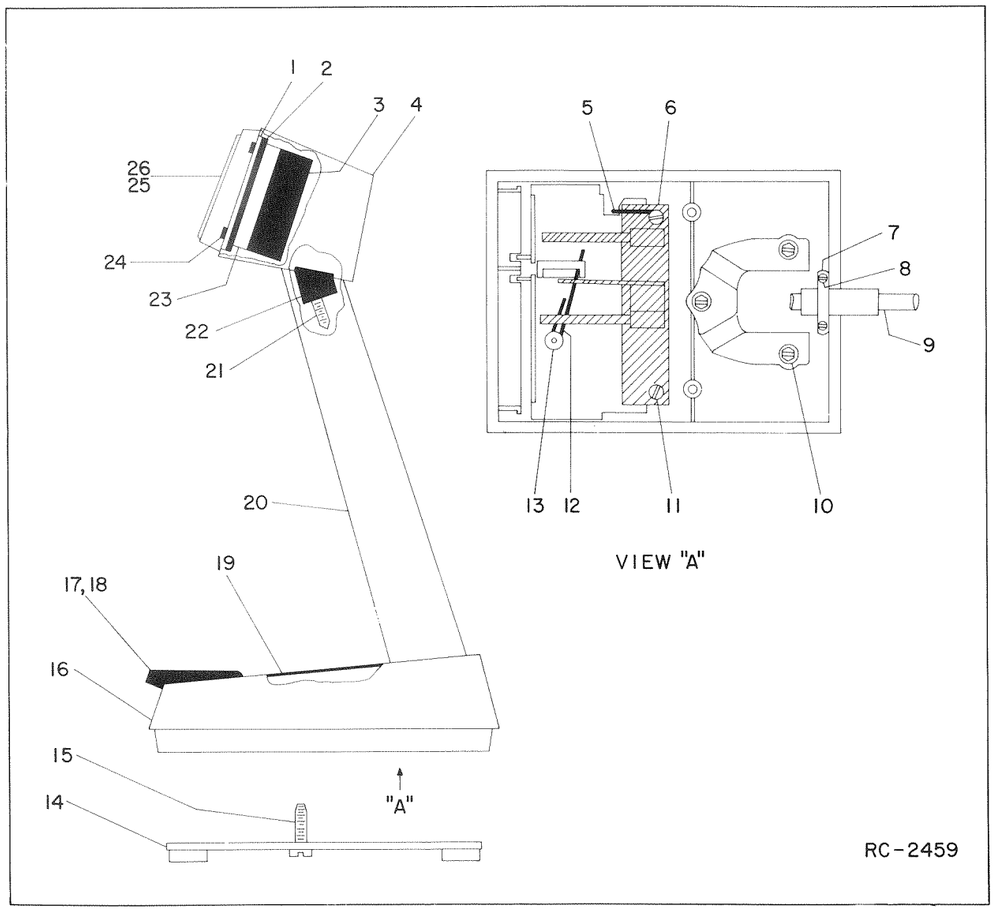
1. WHEN TONE DECODER IS PRESENT, JUMPER FROM LS701-3 TO LS701-2 MAY BE CUT IF MUTING IS DESIRED.
2. EITHER STATION OR MOBILE (12VDC) ENCODERS OR DECODERS MAY BE USED WITH STATION.
   EXTENSION CABLE 19B216148G1 MAY NOT BE USED WITH 12VDC UNITS.

(19D423646, Rev. 1)

SERVICE SHEET

TONE APPLICATION KIT
(OPTION 9908) 19B227035G1

Issue 1



PARTS LIST

LBI-4473

DESK MICROPHONES
19B209458P1 (STANDARD)
19B209459P1 (CHANNEL GUARD)
(SEE RC-2459)

SYMBOL	GE PART NO.	DESCRIPTION
		STANDARD DESK MICROPHONE 19B209458P1
1		Locking plate. (Part of item 4).
2		Gasket. (Part of item 4).
3		"O" Ring. (Part of item 4).
4		Head Assembly. RP122. (Includes items 1-3, 24-26).
5		(Not Used).
6		Switch Kit. RP124. (Includes items 11, 17).
7		Retaining Bar. (Part of item 9).
8		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 9).
9		Cable Kit. RP123. (Includes items 7, 8).
10		Screw, thread forming, slotted: No. 8 x 3/4. (Part of item 20).
11		Screw, thread forming, slotted: No. 4 x 5/8. (Part of item 6).
12		(Not Used).
13		(Not Used).
14		Base plate. (Part of item 16).
15		Screw, thread forming, slotted: No. 8 x 3/4. (Secures Base Plate- Part of item 16).
16		Base Assembly. RP125. (Includes items 14, 15, 19).
17		Pushbutton, Transmit. (Part of item 6).
18		(Not Used).
19		Nameplate. (Part of item 16).
20		Stem Assembly. RP121.
21		Screw, thread forming, slotted: No. 8 x 1/2. (Part of item 20).
22		Clamp. (Secures Head Assembly to Stem Assembly- Part of item 20).
23		Transistorized Cartridge. RP117.
24		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 4).
25		Grille. (Part of item 4).
26		Dust cloth. (Part of item 4).
		CHANNEL GUARD DESK MICROPHONE 19B209459P1
1		Locking plate. (Part of item 4).
2		Gasket. (Part of item 4).
3		"O" Ring. (Part of item 4).
4		Head Assembly. RP122. (Includes items 1-3, 24-26).
5		Lock spring. (Part of item 6).
6		Switch Kit. RP119. (Includes items 5, 11, 12, 13, 17, 18).
7		Retaining Bar. (Part of item 9).
8		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 9).
9		Cable Kit. RP118. (Includes items 7, 8).
10		Screw, thread forming, slotted: No. 8 x 3/4. (Part of item 20).
11		Screw, thread forming, slotted: No. 4 x 5/8. (Part of item 6).
12		Spring. (Part of item 6).
13		Retainer. (Part of item 1).
14		Base plate. (Part of item 16).
15		Screw, thread forming slotted: No. 8 x 3/4. (Secures Base Plate- Part of item 16).
16		Base Assembly. RP120. (Includes items 14, 15, 19).
17		Pushbutton, Monitor. (Part of item 6).
18		Pushbutton, Transmit. (Part of item 6).
19		Nameplate. (Part of item 16).
20		Stem Assembly. RP121.
21		Screw, thread forming, slotted: No. 8 x 1/2. (Part of item 20).
22		Clamp. (Secures Head Assembly to Stem Assembly- Part of item 20).
23		Transistorized Cartridge. RP117.
24		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 4).
25		Grille. (Part of item 4).
26		Dust cloth. (Part of item 4).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SERVICE SHEET

DESK MICROPHONES 19B209458P1
AND 19B209459P1

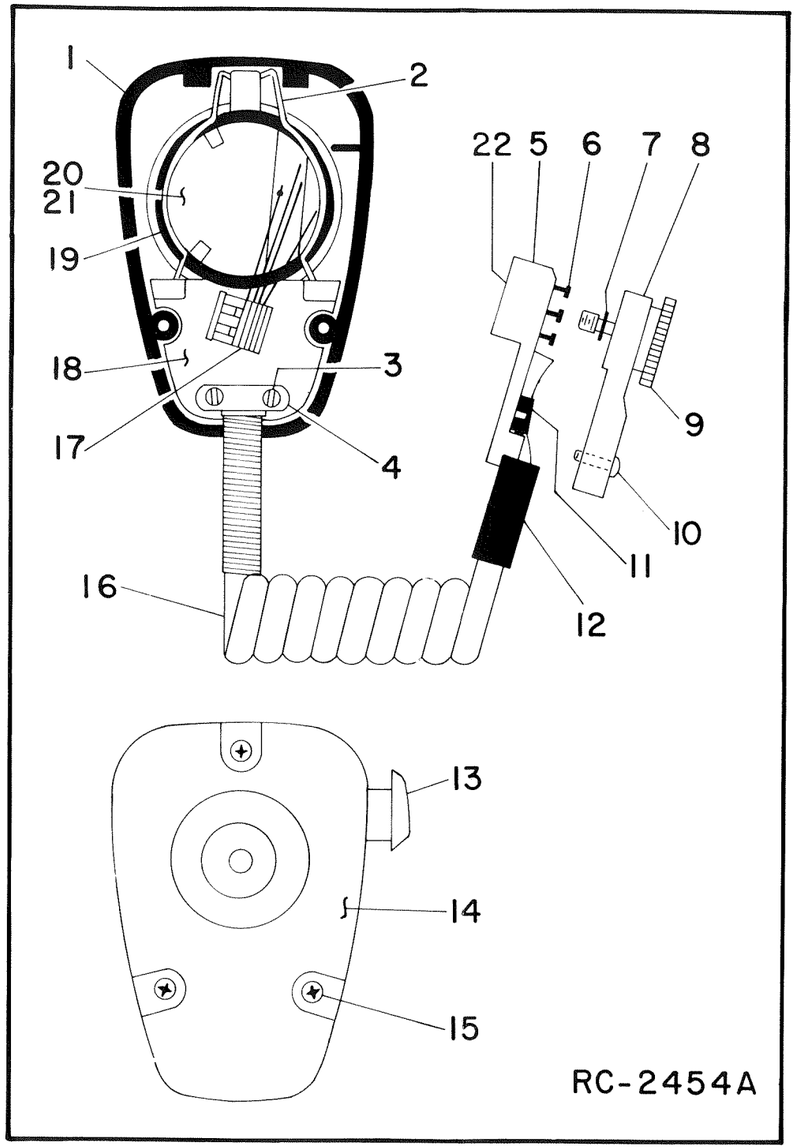
PARTS LIST

LBI-4481B

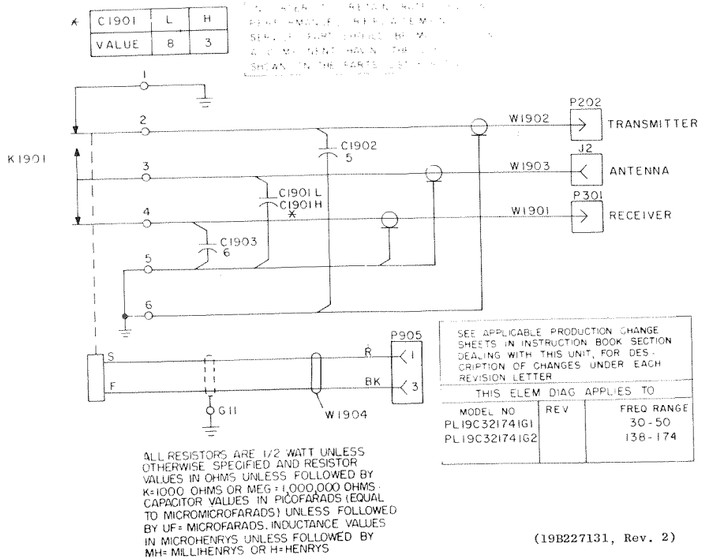
TRANSISTORIZED DYNAMIC MICROPHONE
19C320270G1, G2
(SEE RC-2454)

SYMBOL	GE PART NO.	DESCRIPTION
1		Front Case Assembly. RP127. (includes items 14, 15).
2		Retaining spring. (Part of item 18).
3		Tap screw, phillips. (Part of item 16).
4		Retaining bar. (Part of item 16).
5	19D416766P1	Connector base.
6	19A129435P1	Contact.
7	7109043P1	Retaining ring.
8	19D416767P1	Connector cover.
9	19B219723G1	Screw.
10	N136AP905C	Tap screw, phillips: No. 4 x 5/16.
11	19A116937P1	Cable clip.
12	19B219749P1	Strain relief.
13		Switch button kit. RP126.
14		Rear Case Assembly. (Part of item 1).
15		Tap screw, phillips. (Part of item 1).
16	19C321016G1	Cable assembly: Includes items 3-12 and cable RP129.
17		Switch Assembly. RP128.
18		Grille Assembly. RP130. (includes items 2, 19, 21).
19		"O" Ring. (Part of item 18).
20		Transistorized Cartridge. RP117.
21		Washer. (Located under cartridge- part of item 18).
22	19C321016G3	Connector assembly: Includes items 5-12.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

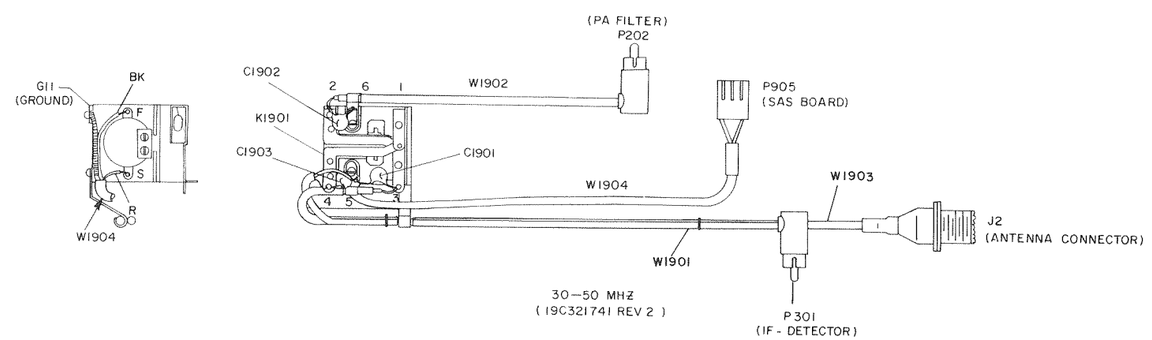


SCHEMATIC DIAGRAM

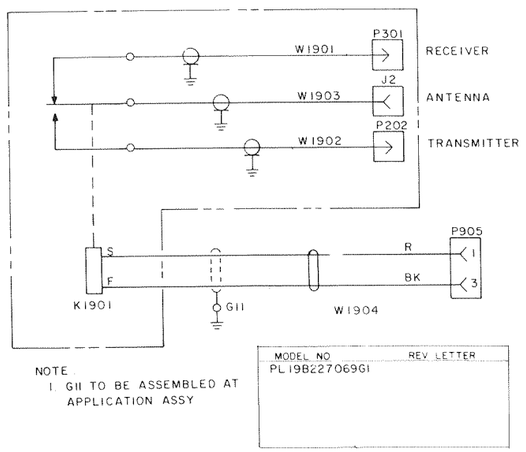


(19B227131, Rev. 2)

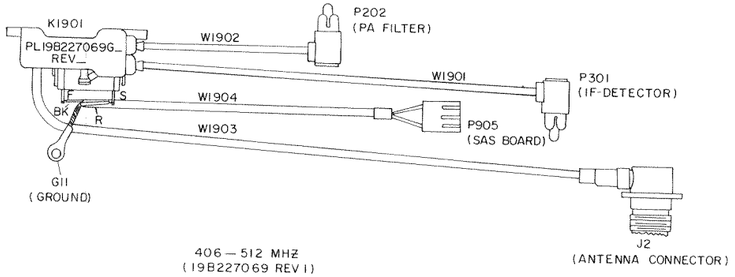
OUTLINE DIAGRAM



SCHEMATIC DIAGRAM



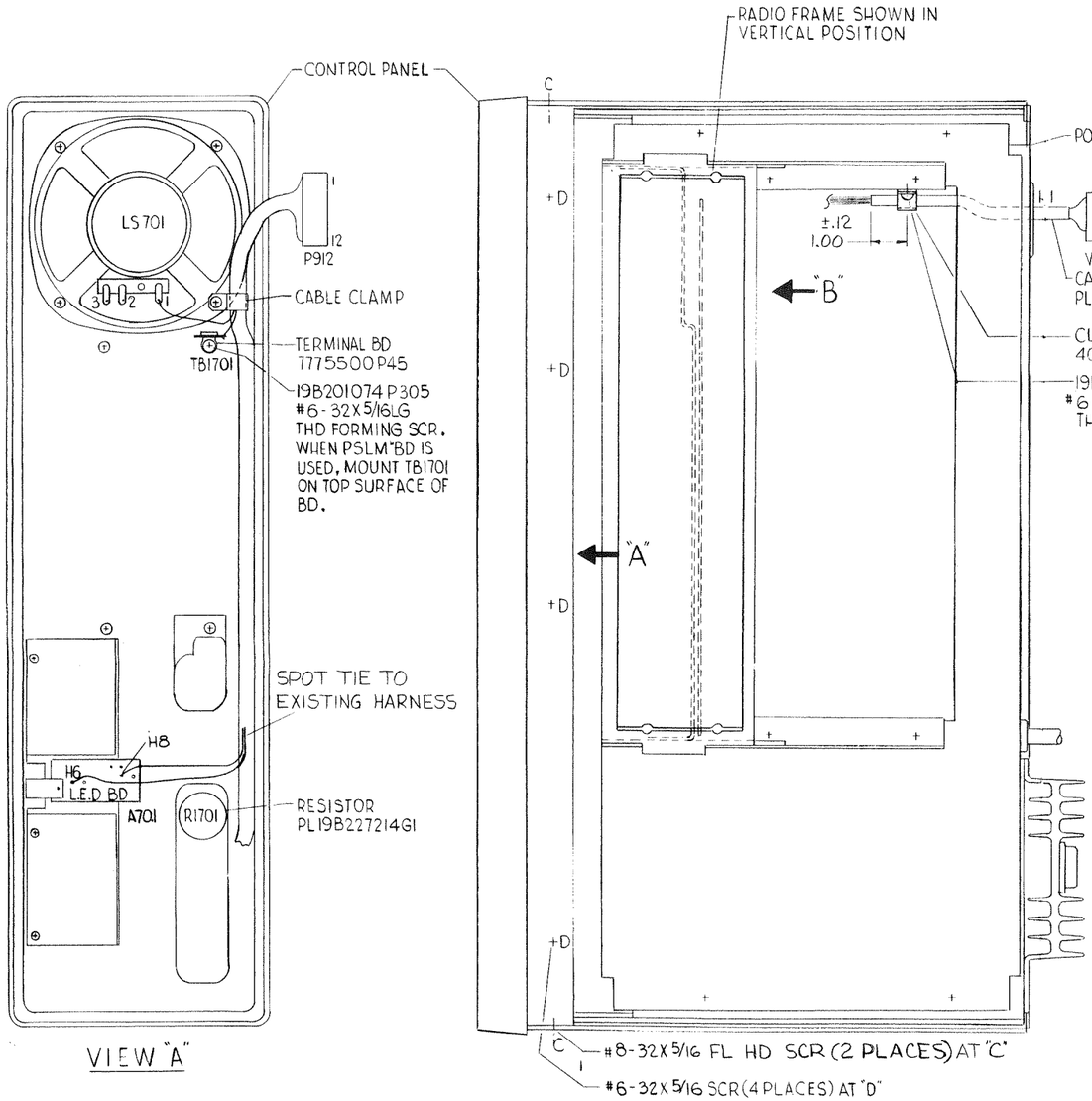
(19B227133, Rev. 2)

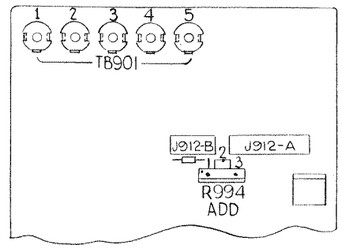


(19C327142, Rev. 1)

SERVICE SHEET

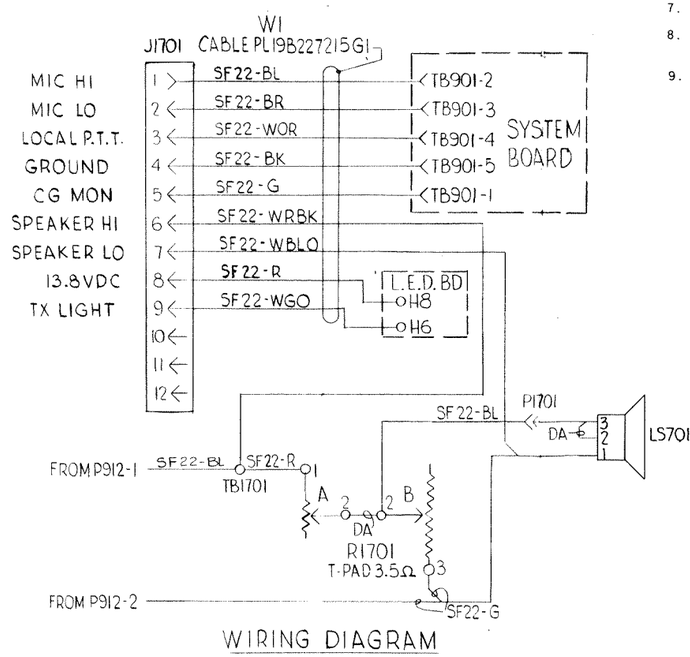
ANTENNA TRANSFER RELAY
19C321741G1 (30-50 MHz)
19C321741G2 (138-174 MHz)
19B227069G1 (406-512 MHz)





VIEW "B"

PARTIAL VIEW-FULL SIZE
OF SYSTEM BOARD



WIRING DIAGRAM

(19D423699, Rev. 0)

THESE INSTRUCTIONS COVER THE INSTALLATION OF MOD. KIT PL19A130927G1 TO ADAPT MASTR EXEC II DESK TOP STATION FOR USE WITH LOCAL CONTROLLER EXTENSION.

ALL MATERIAL IS INCLUDED IN KIT PL19A130927G1.

INSTRUCTIONS:

1. REMOVE THE CONTROL PANEL FROM THE BASE & SAVE HARDWARE FOR REASSEMBLY.
2. ASSEMBLE TB1701 AS SHOWN.
3. UNPLUG BL WIRE FROM LS701-3 AND CUTOFF CONNECTOR P701. SOLDER BL WIRE TO TB1701.
4. REPLACE R701 WITH R1701 (19B227214G1) USING KNOB AND MOUNTING HARDWARE FROM R701. CUT OFF LEADS FROM R701 AND TAPE TO PREVENT SHORTS.
5. CONNECT WIRES HANGING FROM R1701 AS FOLLOWS:
   (a) SOLDER G WIRE TO LS701-1
   (b) CONNECT BL WIRE (P1701) TO LS701-3
   (c) SOLDER R WIRE TO TB1701
6. ASSEMBLE W1 (19B227215G1) AS SHOWN. ROUTE WIRES THRU CABLE CLAMP ON LS701 AND CONNECT AS FOLLOWS:
   (a) SOLDER W-R-BK TO TB1701
   (b) SOLDER W-BL-O TO LS701-1
   (c) SOLDER R TO H8 ON LED BD.
   (d) SOLDER W-G-O TO H6 ON LED BD.
7. REASSEMBLE CONTROL PANEL TO BASE.
8. INSTALL R994 (19B209358P106) ON SYSTEM BOARD AS SHOWN IN VIEW AT "B".
9. CONNECT WIRES FROM W1 (19B227215G1) TO SYSTEM BOARD TB901 AS FOLLOWS:
   (a) CONNECT G WIRE TO TB901-1
   (b) CONNECT BL WIRE TO TB901-2
   (c) CONNECT BR WIRE TO TB901-3
   (d) CONNECT W-O-R WIRE TO TB901-4
   (e) CONNECT BK WIRE TO TB901-5

INSTALLATION INSTRUCTIONS

LOCAL CONTROLLER EXTENSION (OPTION 9923)

PARTS LIST

LBI-30236

ANTENNA TRANSFER RELAY
19C321741G1 30-50 MHz
19C321741G2 138-174 MHz

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1901L	19A116656P8J0	Ceramic disc: 8 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1901H	19A116656P3J0	Ceramic disc: 3 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1902	19A116656P5J0	Ceramic disc: 5 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C1903	119A116656P6J0	Ceramic disc: 6 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
		- - - - - - - - JACKS AND RECEPTACLES - - - - -
J2		(Part of W1903).
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K1901	19C307020P5	Armature: 12 VDC nominal, 2.5 w max operating, 80 ohms ±15% coil res, 2 form C contacts.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P202		(Part of W1902).
P301		(Part of W1901).
P905		(Part of W1904).
		- - - - - - - - - - - CABLES - - - - - - - - - -
W1901	5491689P118	Cable, RF: approx 14 inches long. Includes (P301).
W1902	19A130734G1	Cable, RF: approx 5-1/4 inches long. Includes (P202).
W1903	19B226989G1	Cable, RF: approx 2 feet long. Includes J2.
W1904		CABLE ASSEMBLY 19A130696G1
		- - - - - - - - - - TERMINALS - - - - - - - - - -
G11	19B209260P107	Terminal, solderless: wire range No. 22-16; sim to AMP 34107.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P905	19A116659P14	Shell.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-30237

ANTENNA TRANSFER RELAY (406-512 MHz)
19B227069G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J2		(Part of K1901).
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K1901	19B209582P1	Relay, coaxial: 13.6 VDC ±20%, 1 form C contact; sim to GE 3SBW1009A2.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P202		(Part of K1901).
P301		(Part of K1901).
P905		(Part of W1904).
		- - - - - - - - - - - CABLES - - - - - - - - - -
W1901 thru W1903		(Part of K1901).
W1904		CABLE ASSEMBLY 19A130696G1
		- - - - - - - - - - TERMINALS - - - - - - - - - -
G11	19B209260P107	Terminal, solderless: wire range No. 22-16; sim to AMP 34107.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P905	19A116659P14	Shell.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-30604

LOCAL CONTROLLER EXTENSION
INSTALLATION KIT
19A130927G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R994	19B209358P106	Variable, carbon film: approx 300 to 10K ohms ±10%, 0.25 w; sim to CTS Type X-201.
R1701	19B227214G1	Variable, audio, L-pad: 3.5 ohms ±15%, 2.5 w; sim to CTS Type AW, includes (P1701) 4036634P1 electrical contact.
		- - - - - - - - TERMINAL BOARDS - - - - - - -
TB1701	7775500P45	Terminal board: phen, 3 terminals.
		- - - - - - - - - - - CABLES - - - - - - - - - -
W1	19B227215G1	Cable, RF: approx 11 inches long. Includes (J1701) connector 19B209288P24.
		- - - - - - - - - - MISCELLANEOUS - - - - - - -
	4029851P14	Clip, loop.
	19B201074P305	Tap screw, Phillips POZIDRIV®: No. 6-32 x 5/16.