



MAINTENANCE MANUAL

138-174 MHz RF ASSEMBLY 19D4I6693G1, G2
AND
MIXER/IF/NOISE BLANKER BOARD 19D4I6662G1

LBI4982C
(DF1107)

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DESCRIPTION

The RF Assembly uses five tuned helical resonators to provide front end RF selectivity. A preamplifier is standard in receivers with a noise blanker.

The Mixer/IF/Noise Blanker board (MIF/NB) uses the RF input from the RF Assembly and the mixer injection frequency from the oscillator multiplier board to generate the IF frequency. The noise blanker eliminates undesirable noise interference in the received audio.

CIRCUIT ANALYSIS

RF ASSEMBLY

RF PRE-AMPLIFIER

RF from the antenna is applied to antenna jack J551 on the MIF/NB board. The signal is transformer coupled through T551 to Gate 1 of preamplifier Q553, which is a dual-gate Field Effect Transistor (FET) and provides approximately 8 dB of gain. The primary of T551 provides a 50 ohm input impedance. The amplified output signal at the Drain terminal of Q553 is coupled through T552 to J1 on the Antenna Input board (A301) through cable W551. T552 is tapped to provide a 50 ohm output impedance.

ANTENNA INPUT A301

An RF signal from the receiver Pre-amplifier (Q553) is applied to A301 which provides an AC ground between vehicle ground and receiver A-. Resistor R1 prevents a static charge build up on the vehicle antenna. The output of A301 is coupled through five "high Q" helical resonators that provide front end RF selectivity. The helicals are tuned to the incoming frequency by C301 through C305.

MIXER/IF/NOISE BLANKER

MIXER AND CRYSTAL FILTER

The mixer uses a FET (Q501) as the active device. The FET mixer provides a high input impedance, high power gain, and an output relatively free of harmonics (low in intermodulation products).

In the mixer stage, RF from the RF amplifier stage is coupled through L502/C502 which matches the RF output to the gate of mixer Q501. Injection voltage from the multiplier-selectivity stages is applied to the source of the mixer. The mixer IF output signal is coupled from the drain of Q501 through a tuned circuit (L503 and C505) to the first FET noise blanker gate Q502. The IF signal is then coupled through a tuned circuit (L505 and C517) to the second FET noise blanker gate Q503.

During the presence of impulse noise from the antenna, the noise blanker circuit (IC-U551) provides a positive pulse to the gates of Q502 and Q503 which attenuates the IF signal during the noise pulse period (see noise blanker description for details). This eliminates undesirable noise interference in the received audio without degrading receiver performance.

The mixer IF output signal is then coupled to the input of the four-pole monolithic crystal filter. The highly selective crystal filter (FL501 and FL502) provides the first portion of the receiver IF Selectivity. The output of the crystal filter is coupled through impedance-matching network L520 and C522 to the IF Amplifier (Q520).

Service Note: Variable capacitor C521 does not require adjustment when performing normal alignment. If the four-pole monolithic crystal filter is replaced, then adjustment of C521 is necessary for optimum IF response.



IF AMPLIFIER

IF amplifier Q520 is a dual-gate FET. The crystal filter output is applied to Gate 1 of the amplifier, and the output is taken from the drain. The biasing on Gate 2 and the drain lead determines the gain of the stage. The amplifier provides approximately 20 dB of IF gain. The output of Q520 is coupled through a network (L521 and C528) that matches the amplifier output to the following stage. The output is coupled through C325 to the next IF stage, or to the MIF switch in Dual Front End applications.

Supply voltage for the RF amplifier and MIF/NB board is supplied through feed-through capacitor C326.

NOISE BLANKER

An RF signal and noise pulse from the antenna (J551) is fed simultaneously to the Noise Blanker 1st RF Amplifier and the RF Assembly (A302). The signal and noise is transformer coupled through L551 or T551 to the 1st RF Amplifier Q551 (dual-gate FET). The input signal is applied to Gate 1 of the amplifier, and the output is taken from the drain. The biasing of Gate 2 and the drain load determines the gain of the stage. The signal is then coupled through tuned circuits L552/C558 and L553/C560 to the 2nd RF amplifier Q552, which is also a dual-gate FET. The combined gain of Q551 and Q552 is approximately 35 dB.

The amplified signal is coupled through tuned circuit L554/C564 to pulse detector/amplifier/switch IC (U551). IC (U551) is a custom hybrid integrated circuit which contains a pulse detector, pulse amplifier, pulse amplifier switch, intermodulation detector and a blanker disable switch. The IC functions as a pulse detector and processing circuit for the noise blanker. Regulated 10 VDC, which powers U551, is applied through pin 3. The associated capacitors (C571, C572 and C574) provide emitter decoupling for various stages of the IC.

Pulse Detector

The impulse noise from the RF amplifier is applied to pin 6 of U551 through tuned circuit L554/C564 to the pulse detector. Bias for the detector is established by R563, R564 and CR551. Diode CR551 is normally conducting, thus biasing the pulse detector. A positive pulse applied to the pulse detector causes it to conduct heavily. The output of the detector is a negative going pulse that is relatively free of any RF components. The pulse detector metering point (BLANKER METER) connects from pin 2 of U551 to connector J601-pin 7 and serves as a convenient measuring point when performing alignment.

Pulse Amplifier and Noise Blanker Disable Switch

The negative pulse output from the pulse detector turns the pulse amplifier ON, producing a positive output pulse. The threshold point of the pulse amplifier and the RF gain of the 1st and 2nd RF amplifier stages (Q551 and Q552) in the noise blanker circuit prevent noise blanking due to any low-level inherent receiver noise.

An optional noise blanker disable switch is available for manually disabling the noise blanker circuits. Connecting pin 4 of U551 to A- turns the disable switch ON, which in turn inhibits the pulse amplifier.

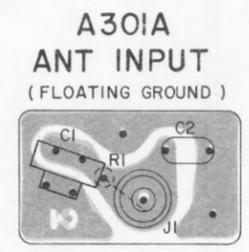
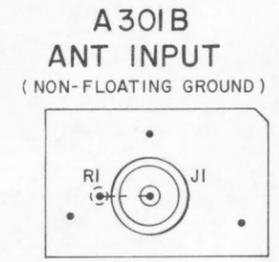
Pulse Amplifier/Switch

The positive output pulse from the pulse amplifier is fed to the pulse amplifier/switch. This circuit functions as a constant width pulse generator whose output is a positive 6 Volt pulse with a duration of 2 microseconds. This pulse is applied from pin 11 of U551 to the noise blanker gates (Q502 and Q503). Noise blanker gates Q502 and Q503 are turned ON (conducting) during the presence of the noise blanking pulse. These gates present a low impedance RF path to A- for the pulse duration (approximately 3 microseconds), providing approximately 60 dB attenuation of the IF signal and the impulse noise present. As the noise signal from the antenna is applied to the noise blanker circuits, the RF signal is also applied to the receiver RF input. The inherent delay presented to the received RF signal and the impulse noise by the helical resonators in the receiver RF assembly (L301/L311 through L305/L315) allows the noise blanking pulse to turn ON the blanking gates, attenuating the received signal just prior to the arrival of the impulse noise.

Intermodulation (IM) Detector

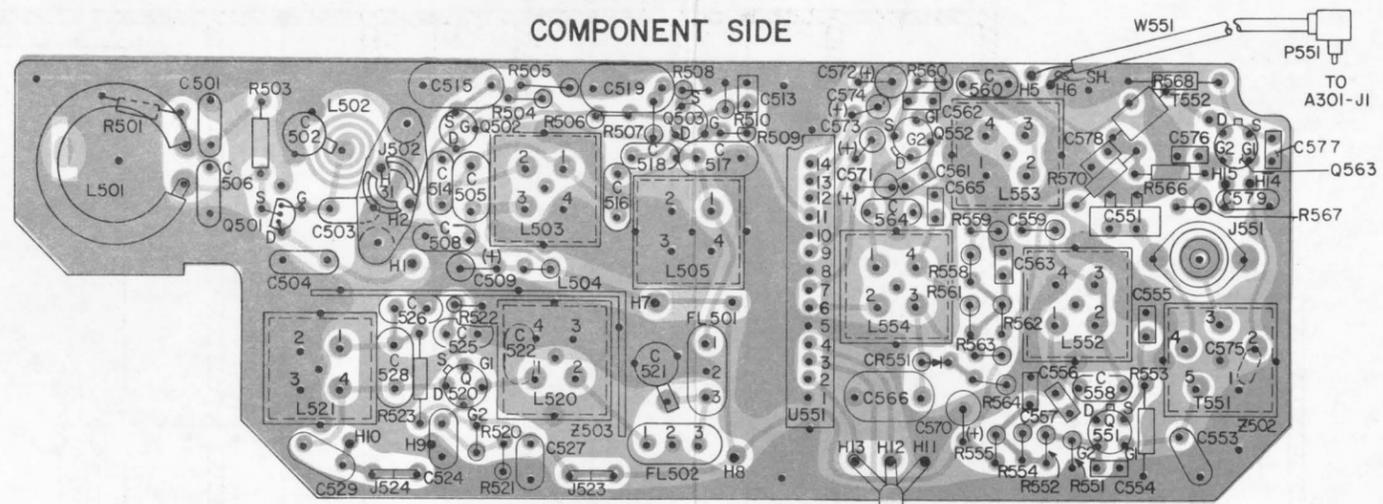
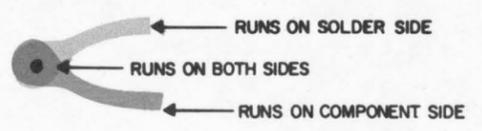
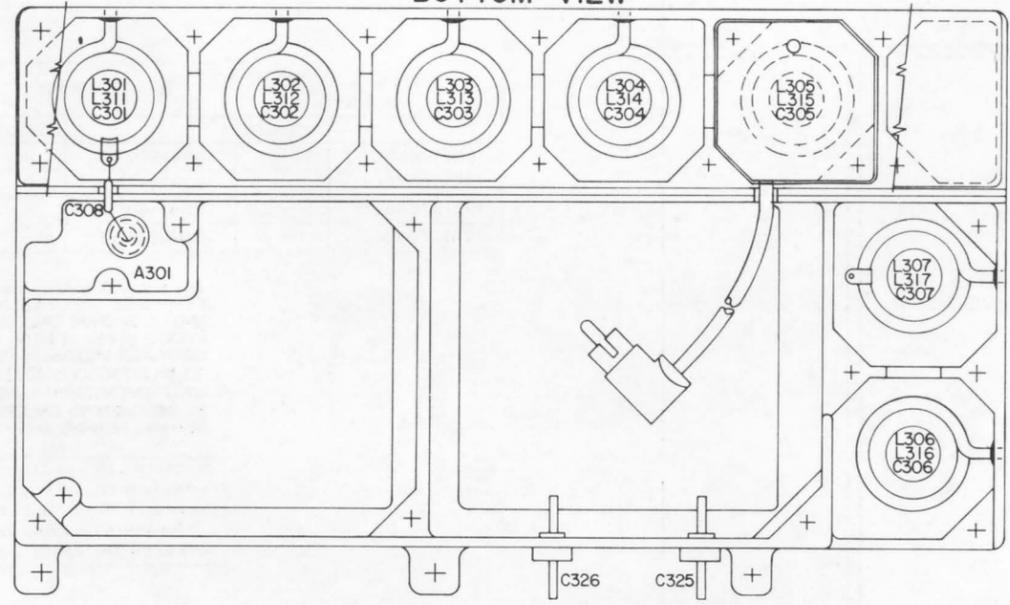
The output of the pulse amplifier is also applied to the IM detector. The IM detector does not respond to noise pulses appearing at its input because of the circuit design utilized, but the detector is activated during the presence of a sinusoidal signal. This sinusoidal signal is the beat frequency difference of two signals present in the noise blanker channel. A resultant AGC voltage (approximately +3 VDC) is developed through the integrating action of C573 and is applied from pin 13 of U551 to the 2nd RF Amplifier (Q552) of the noise blanker circuit. This action sufficiently reduces the gain of the noise blanker RF stage (Q552) so that receiver performance is not degraded by blanking pulses which would create receiver intermodulation close to the receiver operating frequency.

MIXER/IF/NOISE BLANKER BOARD

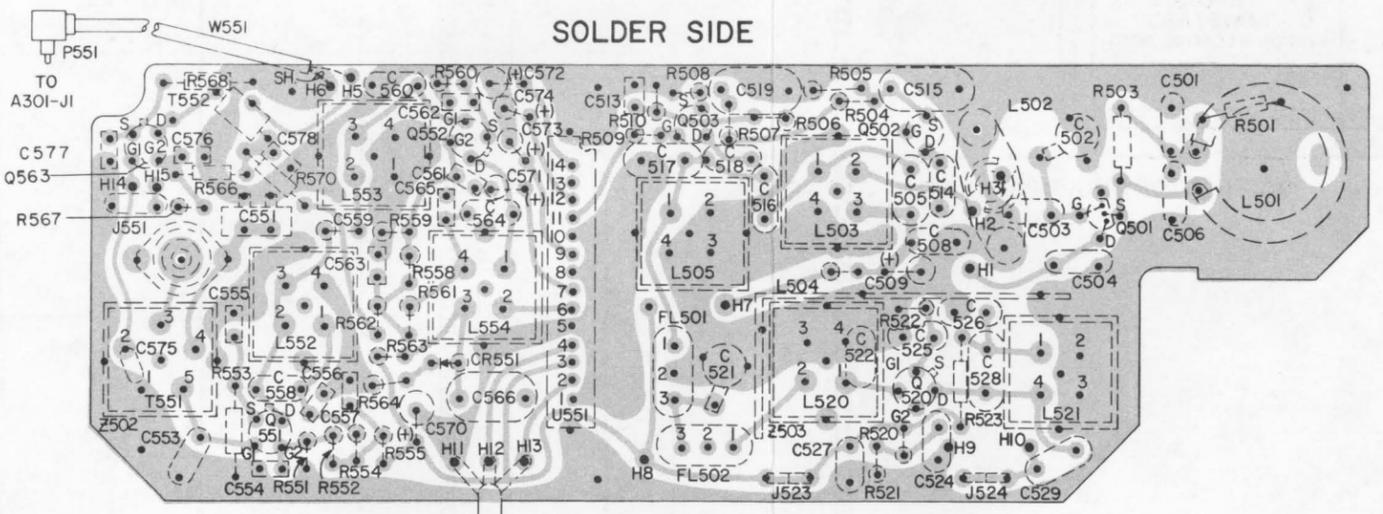


(19B219679, Sh. 2, Rev. 2)
(19B219679, Sh. 3, Rev. 2)

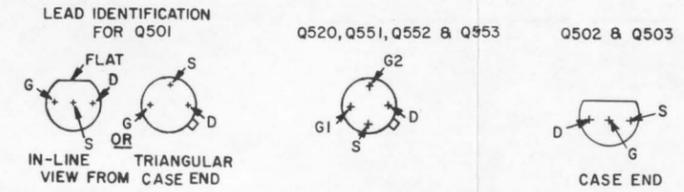
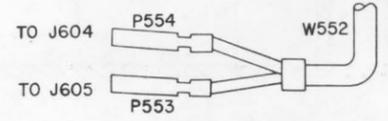
**RF ASSEMBLY
BOTTOM VIEW**



(19D417681, Sh. 2, Rev. 0)
(19D417681, Sh. 3, Rev. 1)



(19D417681, Sh. 2, Rev. 0)

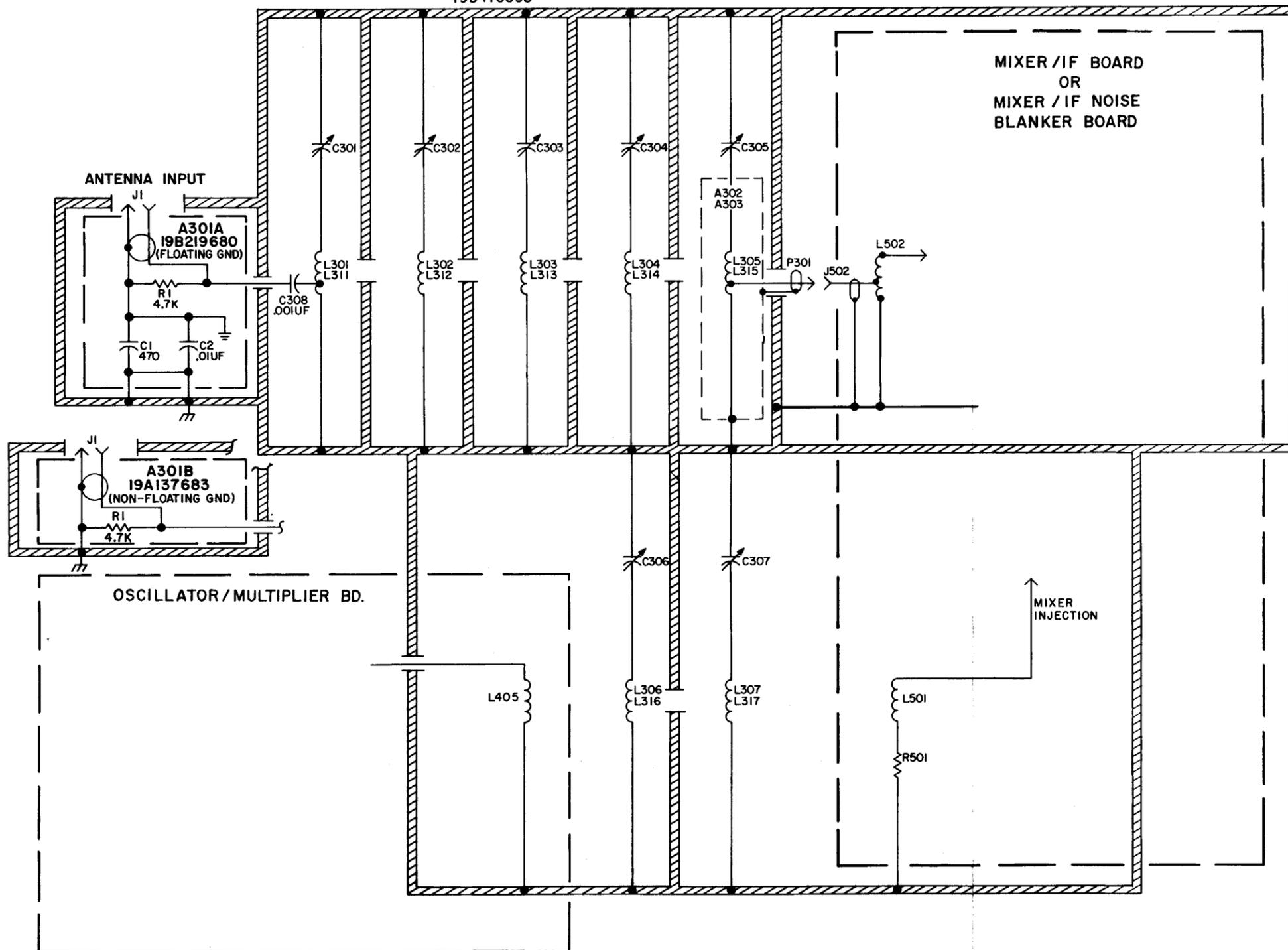


NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

OUTLINE DIAGRAM

138-174 MHz RF ASSEMBLY AND MIXER/IF/NOISE BLANKER

R F ASSEMBLY
19D416693



ANTENNA INPUT A301	RF ASSEMBLY		FREQ RANGE (MHZ)
	REV	LTR	
19B219680G1	-	19D416693G1 B	138-155
19B219680G1	-	19D416693G2 C	150.8-174
19A137683G1	-	19D416693G7 -	138-155
19A137683G1	-	19D416693G8 -	150.8-174

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 PICO FARADS (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.

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MEASURED TO SYSTEM NEGATIVE (P903-10) WITH TEST SET MODEL 4EX3A11 OR A 20,000 OHM-PER-VOLT METER.

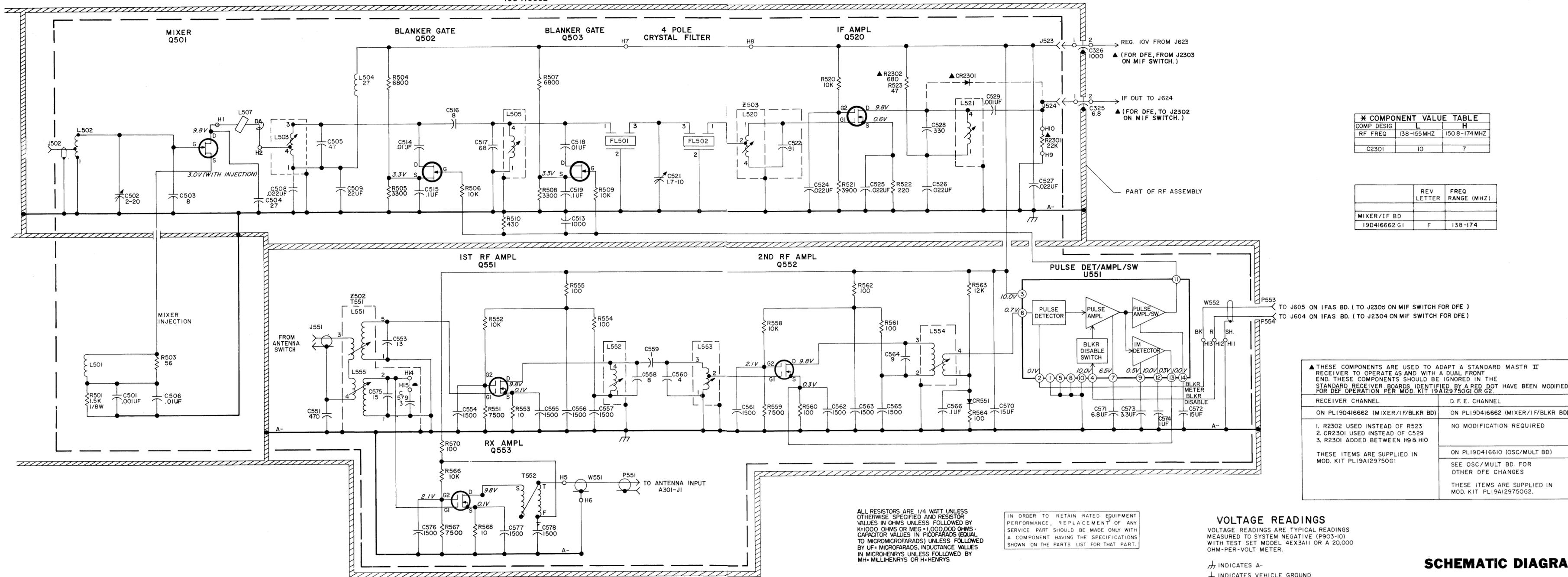
⏏ INDICATES A-
⊥ INDICATES VEHICLE GROUND

(19D423469, Rev. 1)

SCHEMATIC DIAGRAM

138-174 MHz RF ASSEMBLY

MIXER/IF/BLANKER BD
19D416662



*** COMPONENT VALUE TABLE**

COMP DESIG	L	H
RF FREQ	138-155MHZ	150.8-174MHZ
C2301	10	7

	REV LETTER	FREQ RANGE (MHZ)
MIXER/IF BD		
19D416662 G1	F	138-174

▲ THESE COMPONENTS ARE USED TO ADAPT A STANDARD MASTR II RECEIVER TO OPERATE AS AND WITH A DUAL FRONT END. THESE COMPONENTS SHOULD BE IGNORED IN THE STANDARD RECEIVER BOARDS IDENTIFIED BY A RED DOT HAVE BEEN MODIFIED FOR DEF OPERATION PER MOD. KIT PL19A129750G1 OR G2.

RECEIVER CHANNEL	D. F. E. CHANNEL
ON PL19D416662 (MIXER/IF/BLKR BD)	ON PL19D416662 (MIXER/IF/BLKR BD)
1. R2302 USED INSTEAD OF R523 2. CR2301 USED INSTEAD OF C529 3. R2301 ADDED BETWEEN H9 & H10	NO MODIFICATION REQUIRED
THESE ITEMS ARE SUPPLIED IN MOD. KIT PL19A129750G1	ON PL19D416610 (OSC/MULT BD)
	SEE OSC/MULT BD. FOR OTHER DFE CHANGES
	THESE ITEMS ARE SUPPLIED IN MOD. KIT PL19A129750G2.

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

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

VOLTAGE READINGS
VOLTAGE READINGS ARE TYPICAL READINGS MEASURED TO SYSTEM NEGATIVE (P903-10) WITH TEST SET MODEL 4EX3A11 OR A 20,000 OHM-PER-VOLT METER.

⊥ INDICATES A-
⊥ INDICATES VEHICLE GROUND

SCHEMATIC DIAGRAM

138-174 MHz MIXER/IF/
NOISE BLANKER BOARD

PARTS LIST

LBI4983C
RF ASSEMBLY
19D416693G1 138-155 MHz
19D416693G2 150.8-174 MHz
AND
MIF ASSEMBLY (NOISE BLANKER)
19D416682G1

SYMBOL	GE PART NO.	DESCRIPTION
A301		ANTENNA INPUT BOARD 19B219680G1
		----- CAPACITORS -----
C1	19A116679P470K	Mica: 470 pf ±10%, 250 VDCW.
C2	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
		----- JACKS AND RECEPTACLES -----
J1	7104941P16	Connector, phono: Jack; sim to National Tel. Barrel Ceramic.
		----- RESISTORS -----
R1	3R152P472J	Composition: 4.7K ohms ±5%, 1/4 w.
A302 and A303		COMPONENT BOARD A302 19B226512G1 138-155 MHz A303 19B226512G2 150.8-174 MHz
		----- INDUCTORS -----
L305	19B216112G20	Coil.
L315	19B216112G21	Coil.
		----- CABLES -----
P301	5491689P85	Cable, RF: approx 4 inches long, 350 VRMS, 500 VDC operating voltage.
		----- CAPACITORS -----
		Includes:
C301 thru C305	19C328755P3	Screw.
	7137968P9	Nut, stamped: thd size No. 8-32; sim to Palnut TO832005.
C306 and C307	4036765G12	Screw.
	7137968P9	Nut, stamped: thd size No. 8-32; sim to Palnut TO832005.
C308	5494481P11	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C325	19B209488P1	Ceramic, feed-thru: 6.8 pf ±20%, 500 VDCW; sim to Allen-Bradley Style FA5D.
C326	19B209488P2	Ceramic, feed-thru: 1000 pf ±10% -10%, 500 VDCW; sim to Allen-Bradley Style FA5D.
		----- INDUCTORS -----
L301	19B216112G19	Coil.
L302 thru L304	19B216112G11	Coil.
L306 and L307	19B204461G18	Coil.
L311	19B216112G17	Coil.
L312 thru L314	19B216112G15	Coil.
L316 and L317	19B204461G19	Coil.

SYMBOL	GE PART NO.	DESCRIPTION
		----- MISCELLANEOUS -----
	19E500969P1	Casting.
	19C320251P1	Cover.
	19B209209P305	Tap screw, Phillips Pozidriv®: No. 6-32 x 5/16. (Secures cover).
	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4. (Used with A301-A303).
		MIF ASSEMBLY (NOISE BLANKER) 19D416682G1
		----- CAPACITORS -----
C501	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C502	19A700012P2	Variable, ceramic: 2.5 to 20 pf, 200 VDCW, temp coef -250 -700 Parts/M°C; sim to Panasonic ECY-12-W20X32.
C503	19A116656P8K0	Ceramic disc: 8 pf ±1 pf, 500 VDCW, temp coef 0 PPM.
C504	19A116656P27K0	Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef 0 PPM.
C505	5490008P19	Silver mica: 47 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C506	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C508	19A116080P3	Polyester: 0.022 µf ±20%, 50 VDCW.
C509	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C513	19A116192P13	Ceramic: 1000 pf ±10%, 50 VDCW; sim to Erie 8121-A050-W5R.
C514	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C515	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C516	19A116656P8J0	Ceramic disc: 8 pf ±0.5 pf, 500 VDCW, temp coef 0 PPM.
C517*	5490008P23	Silver mica: 68 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. In REV E & earlier:
	5490008P19	Silver mica: 47 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C518	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C519	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C521	19A700012P1	Variable, ceramic: 2 to 10 pf, 200 VDCW temp coef +500 -350 Parts/M°C; sim to Panasonic ECY-12W10X32.
C522		(Part of Z503).
C524 thru C527	19A116080P3	Polyester: 0.022 µf ±20%, 50 VDCW.
C528	5490008P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C529	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C551	19A700015P45	Teflon/Mica: 470 pf ±5%, 250 VDCW.
C553	19A116656P13J8	Ceramic disc: 13 pf ±5%, 500 VDCW, temp coef -80 PPM.
C554 thru C557	19A116192P10	Ceramic: 1500 pf ±20%, 50 VDCW; sim to Erie 8121-A050-W5R.
C558	19A116656P8J8	Ceramic disc: 8 pf ±0.5 pf, 500 VDCW, temp coef -80 PPM.
C559	19A700013P13	Phenolic: 1.0 pf ±5%, 500 VDCW.
C560	19A116656P4J8	Ceramic disc: 4 pf ±0.5 pf, 500 VDCW, temp coef -80 PPM.
C561 thru C563	19A116192P10	Ceramic: 1500 pf ±20%, 50 VDCW; sim to Erie 8121-A050-W5R.
C564	19A116656P9J8	Ceramic disc: 9 pf ±0.5 pf, 500 VDCW, temp coef -80 PPM.
C565	19A116192P10	Ceramic: 1500 pf ±20%, 50 VDCW; sim to Erie 8121-A050-W5R.

SYMBOL	GE PART NO.	DESCRIPTION
C566	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C570	5496267P14	Tantalum: 15 µf ±20%, 20 VDCW; sim to Sprague Type 150D.
C571	5496267P1	Tantalum: 6.8 µf ±20%, 6 VDCW; sim to Sprague Type 150D.
C572	5496267P14	Tantalum: 15 µf ±20%, 20 VDCW; sim to Sprague Type 150D.
C573	5496267P9	Tantalum: 3.3 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C574	5496267P17	Tantalum: 1.0 µf ±20%, 35 VDCW; sim to Sprague Type 150D.
C575		(Part of Z502).
C576 thru C578	19A116192P10	Ceramic: 1500 pf ±20%, 50 VDCW; sim to Erie 8121-A050-W5R.
C579	19A116656P3K8	Ceramic disc: 3 pf ±1 pf, 500 VDCW, temp coef -80 PPM.
		----- DIODES AND RECTIFIERS -----
CR551	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		----- TERMINALS -----
E10 and E11	19B209055P8	Terminal, feed-thru: sim to Electrical Ind. ABAS40WSS.
		----- FILTERS -----
FL501	19E219573G3	Crystal, freq: 11200.000 KHz, Resonator A: 11196.024 KHz.
FL502		(Part of FL501).
		----- JACKS AND RECEPTACLES -----
J502	19A130394G1	Connector, phono type: sim to Cinch National Tel.
J523 and J524	19A116975P1	Receptacle, wire spring.
J551	19A130924G1	Connector, receptacle: coaxial, jack type; sim to Cinch 14H1613.
L501	19A129280P1	Coil.
L502		(Part of printed board 19D417681P1).
L503	19C320141G24	Coil. Includes:
	5493185P9	Tuning slug.
L504	19E209420P130	Coil, RF: 27.0 µh ±10%, 3.60 ohms DC res max; sim to Jeffers 1316-5K.
L505	19C320141G23	Coil. Includes:
	5493185P9	Tuning slug.
L507	19A126140P1	Core, toroidal.
L520		(Part of Z503).
L521	19C320141G6	Coil. Includes:
	5493185P9	Tuning slug.
L551		(Part of T551).
L552 and L553	19C320141G25	Coil. Includes:
	5493185P9	Tuning slug.
L554	19C320141G26	Coil. Includes:
	5493185P9	Tuning slug.
L555		(Part of Z502).
		----- PLUGS -----
P551		(Part of W551).
P553 and P554		(Part of W552).

SYMBOL	GE PART NO.	DESCRIPTION
		----- TRANSISTORS -----
Q501	19A116154P1	N Type, field effect; sim to 2N5245.
Q502* and Q503*	19A134137P3	N Type, field effect.
		Earlier than REV E:
	19A115934P3	N channel, field effect; sim to Type 2N3819.
Q520	19A116818P1	N Channel, field effect; sim to Type 3N187.
Q551 thru Q553	19A116818P1	N Channel, field effect; sim to Type 3N187.
		----- RESISTORS -----
R501	3R151P152J	Composition: 1.5K ohms ±5%, 1/8 w.
R503	3R152P560J	Composition: 56 ohms ±5%, 1/4 w.
R504	3R152P682J	Composition: 6.8K ohms ±5%, 1/4 w.
R505	3R152P332J	Composition: 3.3K ohms ±5%, 1/4 w.
R506	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R507	3R152P682J	Composition: 6.8K ohms ±5%, 1/4 w.
R508	3R152P332J	Composition: 3.3K ohms ±5%, 1/4 w.
R509	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R510	3R152P431J	Composition: 430 ohms ±5%, 1/4 w.
R520	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R521	3R152P392J	Composition: 3.9K ohms ±5%, 1/4 w.
R522	3R152P221J	Composition: 220 ohms ±5%, 1/4 w.
R523	3R152P470J	Composition: 47 ohms ±5%, 1/4 w.
R551	3R152P752J	Composition: 7.5K ohms ±5%, 1/4 w.
R552	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R553	3R152P100J	Composition: 10 ohms ±5%, 1/4 w.
R554 and R555	3R152P101J	Composition: 100 ohms ±5%, 1/4 w.
R558	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R559	3R152P752J	Composition: 7.5K ohms ±5%, 1/4 w.
R560 thru R562	3R152P101J	Composition: 100 ohms ±5%, 1/4 w.
R563	3R152P123J	Composition: 12K ohms ±5%, 1/4 w.
R564	3R152P101J	Composition: 100 ohms ±5%, 1/4 w.
R566	3R152P103J	Composition: 10K ohms ±5%, 1/4 w.
R567	3R152P752J	Composition: 7.5K ohms ±5%, 1/4 w.
R568	3R152P100J	Composition: 10 ohms ±5%, 1/4 w.
R570	3R152P101J	Composition: 100 ohms ±5%, 1/4 w.
		----- TRANSFORMERS -----
T551		(Part of Z502).
T552	19A127108G1	Coil.
		----- INTEGRATED CIRCUITS -----
U551	19D417378G2	Noise Blanker.
		----- CABLES -----
W551	5491689P87	Cable, RF: approx 2-1/4 inches long, includes P551).
W552	19B219764G2	Cable, RF: approx 6 inches long. Includes P553 & P554.
		----- NETWORKS -----
Z502		COIL ASSEMBLY 19C321174G1
		----- CAPACITORS -----
C575	5496218P244	Ceramic disc: 15 pf ±5%, 500 VDCW, temp coef -80 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
		----- INDUCTORS -----
L555	19C321174P2	Coil. Includes:
	19B209674P4	Tuning slug.
Z503		COIL ASSEMBLY 19C320141G16
		----- CAPACITORS -----
C522	19A116114P1063	Ceramic: 91 pf ±5%, 100 VDCW; temp coef -3300 PPM.
		----- INDUCTORS -----
L520	19C320141P26	Coil. Includes:
	19B209674P2	Tuning slug.
		----- MISCELLANEOUS -----
	19B219470P2	Shield.
	19A129424G1	Can. (Used with L503, L505, L521, L552-L554, Z503).
	19A129424G2	Can. (Used with Z502).
	4035656P35	Spacer, threaded. (Used with J502).
	N80P13004C6	Screw, phillips: No. 6-32 x 1/4. (Secures J502).
	4035306P23	Washer, non-metallic. (Used with J551).
	4031594P1	Insulator. (Used with C502 & C521).
		RECEIVER MODIFICATION KIT 19A129750G1
		----- DIODES AND RECTIFIERS -----
CR2301	19A116925P1	Silicon, pin: 35 volt Reverse Breakdown, 400 mW.
		----- RESISTORS -----
R2301	3R152P223J	Composition: 22K ohms ±5%, 1/4 w.
R2302	3R152P681J	Composition: 680 ohms ±5%, 1/4 w.
		----- CABLES -----
W2301	19B219999G2	Cable, RF: approx 10-1/2 inches long. (Includes 5496078P2 connector).

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 thru D - Mixer/IF/Noise Blanker Board 19D416662G1

REV. A and B - RF Assembly 19D416693G1, C2
Above revisions incorporated in initial shipment.

REV. C - To improve band end tuning. Changed C306 and C307.

REV. E - Mixer/IF/Noise Blanker Board 19D416662G1

To improve blanker operation. Changed Q502 and Q503.

REV. F - To improve noise blanker operation. Changed C517.