



MX300 SERIES

"Handie-Talkie" FM Two-Way Radios

136-174 MHz

SPECIFICATIONS

GENERAL					
POWER SUPPLY:	One rechargeable nickel-cadmium battery, or one non-chargeable mercury battery				
SIZE:	2.84" wide x 1.41" deep. See chart below for height.				
HEIGHT:	MX320	MX330	MX340	MX350	MX360
	Housing	Housing	Housing	Housing	Housing
Radio Only	4.20" (107 mm)	4.59" (117 mm)	4.98" (127 mm)	5.76" (147 mm)	6.35" (162 mm)
Radio with battery	2-Hour Nickel-Cadmium Rechargeable Battery				
Ultra High Capacity	8.63" (219 mm)	9.02" (229 mm)	9.42" (239 mm)	10.2" (259 mm)	10.79" (274 mm)
	1-Hour Rapid Charge Batteries				
Light Capacity	5.66" (144 mm)	6.06" (154 mm)	6.45" (164 mm)	7.23" (184 mm)	7.82" (199 mm)
Medium Capacity	6.03" (154 mm)	6.42" (164 mm)	6.81" (173 mm)	7.59" (194 mm)	8.18" (209 mm)
High Capacity	7.75" (197 mm)	8.14" (207 mm)	8.53" (217 mm)	9.31" (236 mm)	9.90" (251 mm)
3500 mA Mercury	7.60" (193 mm)	7.99" (203 mm)	8.38" (213 mm)	9.16" (233 mm)	9.75" (249 mm)
WEIGHT:					
Radio Only	13.0 oz. (369g)	14.2 oz. (403g)	16.6 oz. (471g)	18.0 oz. (510g)	19.9 oz. (564g)
Radio with battery	2-Hour Nickel-Cadmium Rechargeable Battery				
Ultra High Capacity	34.0 oz. (968g)	35.2 oz. (1003g)	37.6 oz. (1071g)	39.0 oz. (1111g)	40.9 oz. (1165g)
	1-Hour Rapid Charge Batteries				
Light Capacity	18.2 oz. (516g)	19.4 oz. (550g)	21.8 oz. (618g)	23.2 oz. (657g)	25.1 oz. (711g)
Medium Capacity	20.3 oz. (576g)	21.5 oz. (610g)	23.9 oz. (678g)	25.3 oz. (717g)	27.2 oz. (771g)
High Capacity	27.0 oz. (769g)	28.2 oz. (803g)	30.6 oz. (871g)	32.0 oz. (910g)	33.9 oz. (964g)
3500 mA Mercury	27.1 oz. (772g)	28.3 oz. (806g)	Non-Chargeable Batteries 30.7 oz. (874g)	32.1 oz. (914g)	34.0 oz. (968g)

TRANSMITTER		
RF Power Output — NiCd Battery:	1 W/2.5 W/6.0 W	
Frequency Stability — (-30° C to +60° C; +25° C Ref):	±0.0005%	
Modulation:	16F3	
FM Noise:	-60 dB	
Audio Distortion — (at 1000 Hz, 3 kHz deviation):	3%	
Spurious & Harmonics —		
1 Watt:	-67 dB	
2.5 Watts:	-71 dB	
6.0 Watts:	-75 dB	
Frequency Spacing: (no degradation)	12 MHz	
Current Drain*		
(with 7.5 V Supply)	720 mA (1 W)	
	1270 mA (2.5 W)	
	2640 mA (6.0 W)	
RECEIVER		
Channel Spacing:	30 kHz	
Modulation Acceptance:	±7.2 kHz	
Sensitivity —	w/o Preamp	with Preamp
20 dB Quieting:	0.5 uV	0.25 uV
12 dB SINAD:	0.35 uV	0.18 uV
Squelch:	0.25 uV	0.13 uV
Selectivity: (EIA SINAD)	95 dB	90 dB
Frequency Separation —		
No Degradation:	2 MHz	4 MHz
1 dB Sensitivity Degradation:	3 MHz	6 MHz
3 dB Sensitivity Degradation:	4 MHz	10 MHz
6 dB Sensitivity Degradation:	--	12 MHz
Intermodulation: (EIA SINAD)	80 dB	75 dB
Frequency Stability — (-30° C to +60° C; +25° C Ref):	±0.0005%	±0.0005%
Spurious and Image Rejection:	80 dB	80 dB
Audio Output: (at less than 5% Distortion)	500 mW	500 mW
Current Drain*	174 mA (500 mW Audio)	
(with 7.5 V Supply)	23 mA (Standby)	
* Add 4 mA for "Private-Line" Models		

MODELS			NUMBER OF CHANNELS	TYPE OF SQUELCH
1 W	2.5 W	6 W		
H23AAU-	H33AAU-	H43AAU-		
	-1110B		1	Carrier
	-1120B		2	
	-1140B		4	
	-1160B		6	
	-1180B		8	Tone "Private-Line"
	-3110B		1	
	-3120B		2	
	-3140B		4	
	-3160B		6	
	-3180B		8	"Digital Private-Line"
	-6110B		1	
	-6120B		2	
	-6140B		4	
	-6160B		6	
	-6180B (except 6 W)		8	

Specifications Subject To Change Without Notice

RELATED PUBLICATIONS AVAILABLE SEPARATELY:
Theory/Maintenance Manual 68P81013C70
Operating Instructions 68P81007C55

Service Manual
68P81013C71-B

SAFETY INFORMATION

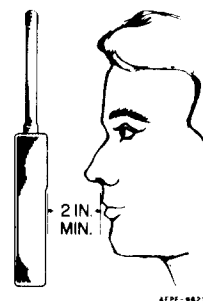
The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA), has established an electromagnetic energy safety standard which applies to the use of this equipment. Proper use of this radio will result in exposure below the OSHA limit.

DO NOT hold the radio such that the antenna is very close to, or touching, exposed parts of the body, especially the face or eyes, while transmitting. The radio will perform best if the microphone is two or three inches away from the lips and the radio is vertical.

DO NOT hold the transmit (PTT) switch on when not actually desiring to transmit.

DO NOT allow children to play with any radio equipment containing a transmitter.

DO NOT operate a portable transmitter near unshielded electrical blasting caps or in an explosive atmosphere unless it is a type especially qualified for such use.



FCC REGULATIONS

State that:

1. Radio transmitters may be tuned or adjusted only by persons holding a first or second class commercial radiotelephone operator's license or by personnel working under their immediate supervision.
2. The rf power output of a radio transmitter shall be no more than that required for satisfactory technical operation considering the area to be covered and the local conditions.
3. Frequency and deviation of a transmitter must be checked before it is placed in service and rechecked once each year thereafter.

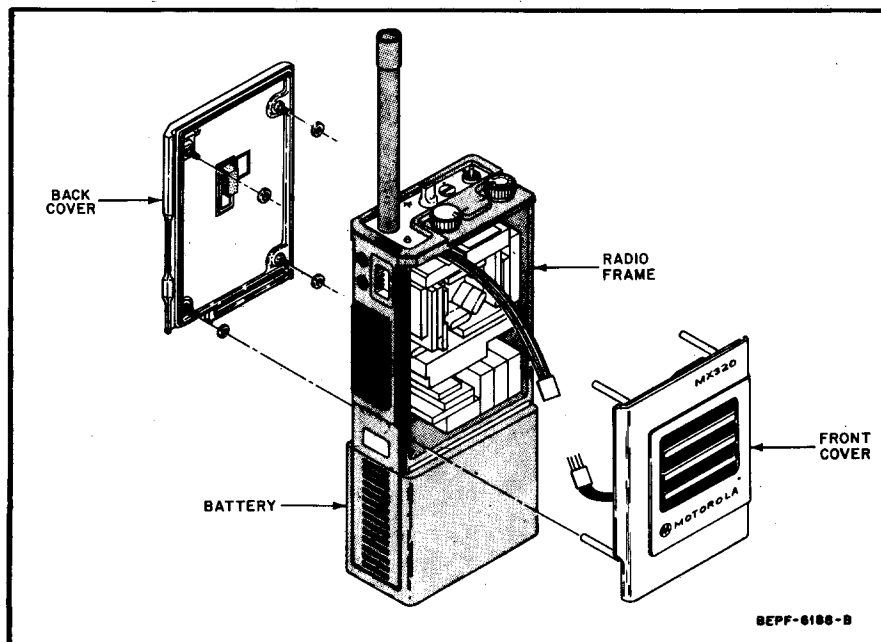
FCC DESIGNATIONS

POWER	NUMBER OF FREQUENCIES	CC DESIGNATION
1 W	2	3256
1 W	4	3257
1 W	6	3258
1 W	8	3259
2.5 W	2	3260
2.5 W	4	3261
2.5 W	6	3262
2.5 W	8	3263
6 W	2	3264
6 W	4	3265
6 W	6	3266
6 W	8	3267
RC DESIGNATION		0091

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DISASSEMBLY PROCEDURE

For most servicing, only the front and rear covers need to be removed. This provides access to both sides of the main circuit board, and the modules on the board may be replaced without further disassembly. Turn the radio off and remove battery before disassembly and before reassembly.



PROCEDURE

1. Loosen the four captive screws on the back cover until the back cover is free.
2. Remove the back cover. There is a captive washer on each screw. Do not remove or lose the washers. They protect the cover against excessive pressure from the front cover studs.
3. Carefully lift the front cover away from the frame.
4. Unplug the front cover assembly, if necessary.
5. When reassembling the radio, use care to replace the front cover. Slide it straight into the frame. Be sure the pad is in place around the speaker.

RADIO SERVICE NOTES

1. The main printed circuit board is a 4-layer board with two layers of printed circuit bonded inside the board.
2. Before removing the 4-layer board from the frame, unsolder the B+, B-, wires connecting the antenna jack to the board, and the ground wire at the bottom of the board.
3. The audio output to the speaker is a balanced output. Do not measure with a grounded voltmeter. Use a battery powered voltmeter or a 1:1 transformer, such as the Motorola Part No. 25C84903H01. This transformer has two secondary windings which must be connected in series to provide 1:1 turns ratio.
4. Flexible printed circuits are used in this radio. The foil pattern is bonded between two layers of flexible material. Use care when handling, avoid excessive bending. Do not overheat.

CAUTION

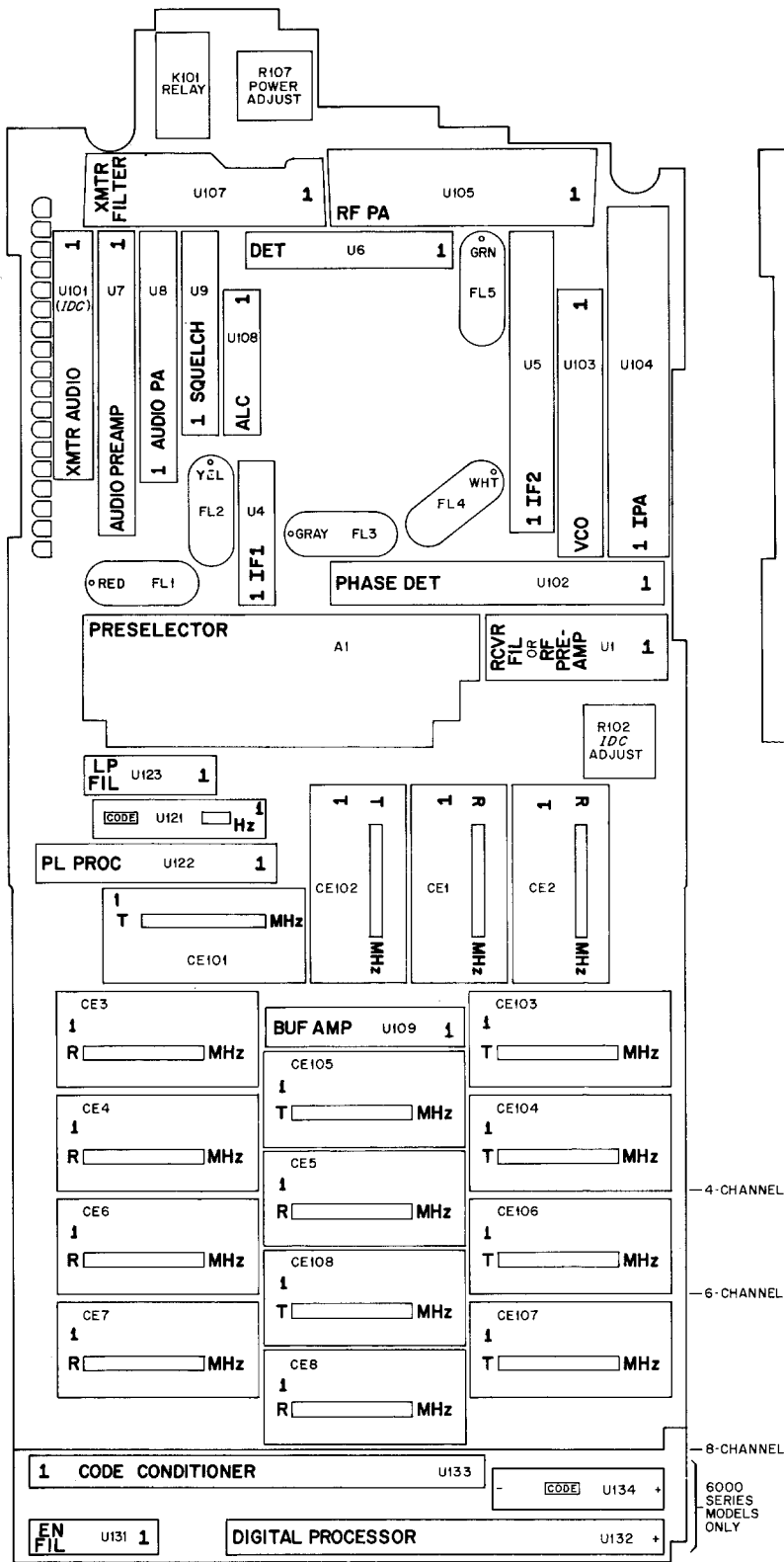
Use a temperature-controlled soldering iron with a 600° or 700° tip.
Avoid prolonged contact with the flexible circuit.

5. To connect the radio to a 7.5-volt bench power supply, use battery block ST-1175 and a current limiting power supply set at 3 amp maximum.
6. The digital PL modulation observed on the service monitor (without audio) is a group of random square wave pulses with various widths, depending on the code plug. The pattern repeats every 178 msec. When the transmitter is unkeyed, the 135 Hz sine wave turn-off code appears at a reduced level for 120 msec. Measure the pulse peak-to-peak amplitude for deviation.

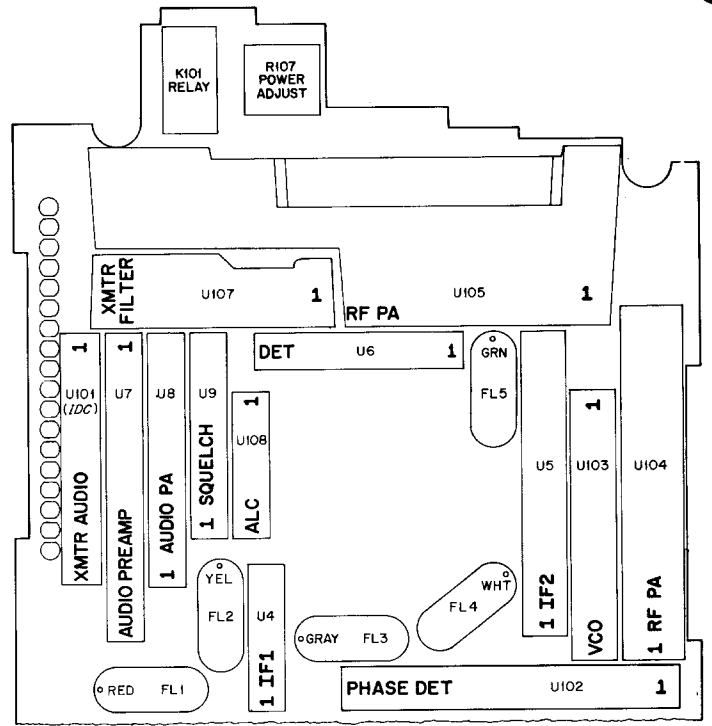
EPF-8198-A

MODULE LOCATIONS

1 W & 2.5 W RADIOS



6 W RADIOS



BEPF-8167-A

MODULE REMOVAL INSTRUCTIONS

CAUTION

Use the module pusher tool and remove modules with care. Avoid bending pins. Modules U132 and U133 (6000 series models) contain MOS devices which are susceptible to damage in handling due to static discharge. Handle with grounded tools and transport in conductive foam or a metallic tray. See MOS circuits handling precautions in the Theory/Maintenance Manual.

MODULE	REMOVAL PROCEDURE
Preselector and Transmitter Filter U107	Remove the threaded nuts securing the module to the board. Then press on the threaded studs and pull the module straight out from the component side.
Channel Elements	Push on the guide pin and the warp-coil-form from the solder side of the board using Module Pusher ST-1179. Then grasp the module with seizers and pull straight out from the component side.
U105, U122, U131, U132, and U133	Grasp the module with seizers and pull straight out. Observe caution above for U132 and U133.
All other modules	Push on the guide pins from the solder side of the board using the Module Pusher ST-1179. Then grasp the module with seizers and pull straight out from the component side.

NOTE: ACTUAL MODULE MARKING APPEARS IN BOLD LETTERS.
THE NUMERAL 1 AT THE END OF THE MODULE INDICATES PIN 1.

DEPF-8166-A

EPF-6552-D

ALIGNMENT PROCEDURE

GENERAL

Radios are aligned at the factory to provide peak performance over a long period of time. Realignment may be required if components are replaced or have aged. To perform these procedures it is only necessary to remove the front and back covers of the radio, as described in the "Disassembly Procedure."

Refer to the "Main Circuit Boards" layout diagrams for the locations of adjustments. A special alignment procedure for radios with wide channel spacing (greater than 4 MHz) is given in the Theory/Maintenance Manual.

RECOMMENDED TEST EQUIPMENT AND SERVICE AIDS

MOTOROLA MODEL NO.	ITEM	APPLICATION
R-1200	Service Monitor	Signal Generator and frequency/deviation meter
S-1053	AC Voltmeter	AC and audio measurements
S-1063	DC Multimeter	DC voltage, current, and resistance measurements
S-1350	Wattmeter	Transmitter power output measurements
S-1067	Audio Oscillator	Audio signal measurements and generate "PL" tones
ST-1175	Dummy Battery Block	Interconnects radio to bench 7.5 V power supply
NKN6222 S-1349 or RTX4005 RTK4021-A	Tune-Up Cable and MX300 Portable Test Set	Connects test equipment to the antenna jack on the radio and also enables convenient connections to the accessory jack, with switching functions
	Portable Test Set and Test Cable	Enables convenient connections to the accessory jack, with switching functions
ST-1180	RF Jack Wrench/Preselector Spanner Wrench	To remove the antenna jack and the nuts securing the preselector to the printed circuit board
SLN6413	DPL Test Set	Encodes and decodes digital PL signals
S-1333	Digital Tone Generator	Generates signals for Sel-Call measurements
S-1347	Power Supply	Bench power supply
T-1013	Dummy RF Load	Transmitter power output measurements

TRANSMITTER ALIGNMENT

Measurements are made with transmitter keyed and a 50-ohm load connected to J401.

STEP	ADJUST	TEST EQUIPMENT USED		MEASUREMENT	
		TYPE	CONNECTED AT	CONDITIONS	DESCRIPTION & LEVEL
1	R107	Wattmeter	J401	Set frequency select switch (FS) to lowest power channel.	1 W (H23AAU) 2.5 W (H33AAU) 6 W (H43AAU)
		Ammeter (DC Multimeter)	DC supply		720 mA at 1 W output 1270 mA at 2.5 W output 2640 mA at 6 W output
2	CE101	Service monitor set at F1 carrier freq.	Radiated	FS set to F1	Zero error indication
3	CE102 thru CE108	Service monitor set at channel carrier freq.	Radiated	FS set to F2 thru F8	Zero error indication
4	R102	Deviation meter (on service monitor)	Radiated	FS set to the channel having the highest deviation	±5 kHz max carrier dev.
		Audio oscillator	J402, pin 3	Set to 1 kHz, 0.025 V	
5	none	Deviation meter (on service monitor)	Radiated	FS set to the channel having the highest deviation	On PL models, tone or digital PL deviation should be ±500 to ±1000 Hz

NOTE: Channel element (CE101, CE102, etc.) frequency = f_c/3

RECEIVER ALIGNMENT

Preliminary Adjustments:

- Turn PL switch off (if applicable).
- Set squelch control to maximum ccw position.
- Set frequency select switch to F1 position on 2 channel models, or to the channel nearest the center of the range on 4 to 8 channel models.
- Turn Z1 thru Z4 until they are flush with the circuit board.
- Turn Z5 thru Z7 to their maximum cw position.

STEP	ADJUST	FOR	MEASURED AT	USING	NOTE
1	L4	Max Vdc (1.29 V min 136-150.8 MHz; 1.1 V min, 150.8-174 MHz)	M1	DC voltmeter (DC multimeter)	
2	Z5 & Z6 out 2 turns	Increase in Vdc	M2	DC voltmeter (DC multimeter)	Repeat until Vdc increase occurs
3	Z5, Z6 & Z7	Max Vdc (0.8 V min)	M2	DC voltmeter (DC multimeter)	Do not repeat
4	CE1	Channel element freq. See NOTE	M1	Error meter on service monitor, set to CE1 freq.	S301 set to F1
5	CE2	Channel element freq. See NOTE	M1	Error meter on service monitor, set to CE2 freq.	S301 set to F2
4A	Freq. dial on service monitor	Channel element CE1 freq. See NOTE		Service monitor	Connect a Motorola TEK-10 probe to the PRESELECTOR input on the service monitor
5A	CE1	Zero error	M1	Error meter on service monitor	S501 set to F1
5B	Repeat steps 4A and 5A for each channel in the radio as applicable; CE2/F2, CE3/F3, CE4/F4, etc.				
6	Z1,Z2,Z3 & Z4	Best quieting (lowest ac voltage) with freq. select sw. set to channel used in step 1	J402, pin 10 to pin 2 (Accessory connector)	AC voltmeter with ST1349 or RTX4005 Portable Test Sets	Inject carrier freq. at J401 to produce 20 dB quieting. While tuning Z1 thru Z4, adjust the input to maintain 20 dB quieting.
20 dB QUIETING TEST					
1	Volume Control	1.73 Vac noise out	J402, pin 10 to pin 2	AC voltmeter with ST1349 or RTX4005 Portable Test Sets	Establishes reference noise level for no signal input
2	Signal generator	Carrier freq., 0 output level	Gen. output connector	Signal generator on service monitor	Connect signal gen. to J401 (Ext. Ant. Jack)
3	Signal generator output level	Slowly increase until noise decreases 20 dB	J402, pin 10 to pin 2	AC voltmeter with ST1349 or RTX4005 Portable Test Sets	Signal must be less than 0.5 uV (0.25 uV with H903AA RF Preamp Option)

NOTE: Receiver channel element (CE1, CE2, etc.) output frequency = (F_c - 21.4 MHz) /2

TYPICAL TEST AND ADJUSTMENT PROCEDURES FOR MX300 SERIES RADIOS USING RTX4005 PORTABLE TEST SET

TEST OR ADJUSTMENT	MT B+	AC/DC MTR	AUDIO IN	METER SELECTOR	SPKR LOAD	MT MX	MX PL	PTT
Receiver Alignment	Not Used	To ac voltmeter	Not Used	AUDIO PA	Any	MX	Not Used	Center
NOTE: Receiver audio output measured on ac voltmeter. Adjust for best quieting.								
Receiver Sensitivity	Not Used	To ac voltmeter or SINAD meter	Not Used	AUDIO PA	Any	MX	Not Used	Center
NOTE: Receiver audio output measured on ac voltmeter. Check for 20 dB quieting or 12 dB SINAD.								
Receiver Audio Output	Not Used	To ac voltmeter	Not Used	AUDIO PA	Any	MX	Not Used	Center
NOTE: Apply a 1000 uV on-frequency carrier modulated with 1000 Hz tone @ ±3 kHz deviation to the radio. Set VOLUME control to maximum. The ac voltmeter should indicate no less than 3.74 V ac.								
Transmitter Frequency and Power Output	Not Used	Not Used	Not Used	Any	Any	MX	Not Used	CONT or MOMT
NOTE: Makes it possible to key transmitter for test purposes.								
Transmitter Deviation Adjustment	Not Used	To ac voltmeter	Audio Oscillator at 1000 Hz and 25 mV	MIC	Any	MX	Not Used	CONT or MOMT
NOTE: Adjust "IDC" for ±5 kHz deviation.								
Transmitter Modulation Sensitivity	Not Used	To ac voltmeter	Audio Osc. at 1000 Hz and 3.5 mV	MIC	Any	MX	Not Used	CONT or MOMT
NOTE: With PL tone filter removed, deviation should be no less than ±3 kHz.								
Discriminator Output Measurement	Not Used	To ac voltmeter and then to a dc voltmeter	Not Used	DISC	Any	MX	Not Used	Center
NOTE: ACVM should indicate 250 to 400 mV of noise (audible from speaker) or recovered audio if 1000 uV carrier frequency is applied with a 1000 Hz tone @ ±3 kHz deviation. The dc voltmeter should indicate 1.2 to 1.8 V dc with no carrier applied.								
Audio Filter and Regulator Module U7 Output Check	Not Used	To ac voltmeter	Not Used	VOL	Any	MX	Not Used	Center
NOTE: Apply a 1000 uV on-frequency carrier modulated with 1000 Hz tone @ ±3 kHz. The ac voltmeter should indicate an output of more than 62 mV ac.								
To inject Audio into Audio Power Amplifier	Not Used	To ac voltmeter	Audio Oscillator at 1000 Hz and 40 mV	VOL	Any	MX	Not Used	Center
NOTE: Apply a 1000 uV on-frequency carrier (unmodulated) to the radio. Set audio oscillator level to 40 mV. Adjust volume control to maximum. Verify 3.74 V ac minimum (rated audio output) is available at output.								
Microphone Output Measurement	Not Used	To ac voltmeter	Not Used	MIC	Any	MX	Not Used	Center
NOTE: Key transmitter with PTT switch on radio. AC voltmeter measures microphone output. A loud whistle or "four" into microphone should cause a meter indication of 25 mV minimum.								

SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM NOTES:

- INDICATES CONNECTION POINT TO INTERCONNECT FLEXIBLE CIRCUIT.
- UNLESS OTHERWISE STATED, RESISTANCES ARE IN OHMS, CAPACITANCES ARE IN pF.
- CHANNEL ELEMENT AND C19 APPLICATION FOR 1- AND 2- CHANNEL RADIOS:

H23AAU... H33AAU... H43AAU...	NO. XMIT CHANNELS	NO. REC CHANNELS	CE102	CE2	JU1	JU2	C19
-1110, -3110, -6110	1	1	out	out	in	in	in
-1120, -3120, -6120	2	2	in	in	out	out	out
----	2	1	in	out	in	out	in
----	1	2	out	in	out	in	out

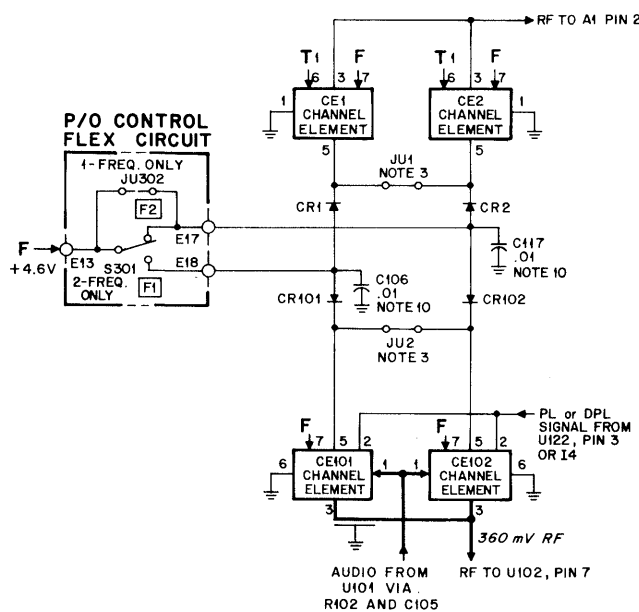
4. JUMPER INFORMATION:

REF. DESIG.	JUMPER CUT FOR
JU1, JU2	SEE NOTE 3
JU3-JU7	NOT USED
JU8	ALL RADIOS, EXCEPT SELECTIVE CALL OPTIONS H701, H702, AND H703
JU9	PL-DPL MODELS (3000 AND 6000 SERIES MODELS)
JU10	PL-DPL ON TRANSMIT ONLY OPTIONS H820 AND H850
JU11-JU16	NOT USED
JU17	ALL 1 & 2.5 W MODELS (NOT USED ON 6 W MODELS)
JU18, JU19	SEE NOTE 5
JU20	SEE NOTE 17
JU301	RADIOS EQUIPPED WITH U301 (SEE NOTE 5)

5. U301, C303, C305, C306, C307, JU18, AND JU19 ADDED FOR TIME-OUT TIMER OPTION H901.
6. SEE PARTS LIST.
7. JUMPERS MAY BE ADDED AS REQUIRED WHEN SAME RECEIVER FREQUENCY (CE1-CE8) IS REQUIRED IN MORE THAN ONE POSITION OF S501. HOLES 1 THROUGH 16 ARE USED.
EXAMPLE:
IF RECEIVE FREQUENCY FOR F1, F2, & F3 IS THE SAME, USE JUMPERS IN POSITIONS 1 TO 3 AND HOLES 4 TO 6. ONLY ONE CHANNEL ELEMENT IS REQUIRED FOR THESE 3 POSITIONS.
8. JUMPERS MAY BE ADDED AS REQUIRED WHEN SAME TRANSMITTER FREQUENCY (CE101-CE108) IS REQUIRED IN MORE THAN ONE POSITION OF S501. HOLES 21 THROUGH 36 ARE USED.
9. FREQUENCY SELECT SWITCH SHOWN FOR 8-CHANNEL RADIO. FOUR- AND SIX-CHANNEL RADIOS USE PROPORTIONALLY LESS DIODES. FLEXIBLE CIRCUIT IS CUT AS REQUIRED FOR THE RADIO.
10. 6 W MODELS ONLY.
11. 2.5 W MODELS ONLY.
12. 1 W MODELS ONLY.
13. 1.29 V MIN. (136-150.8 MHz); 1.1 V MIN. (150.8-174 MHz).
14. 1- AND 2-CHANNEL MODELS ONLY.
15. 4-, 6-, AND 8-CHANNEL MODELS ONLY.
16. R113 AND JU102 ARE USED ONLY IN 2.5 W MODELS OPERATING IN THE 136-150.8 MHz RANGE, AND IN 6 W MODELS OPERATING IN THE 162-174 MHz RANGE.

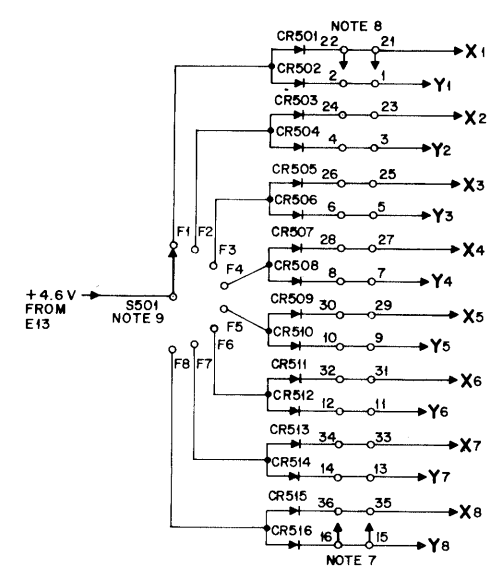
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1 AND 2 CHANNEL RADIOS

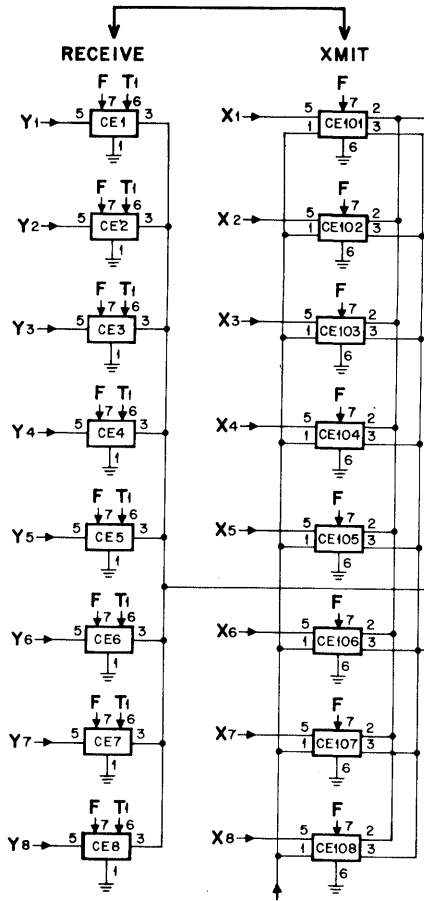


4, 6 AND 8 CHANNEL RADIOS

MULTIPLE - FREQUENCY FLEX CIRCUIT

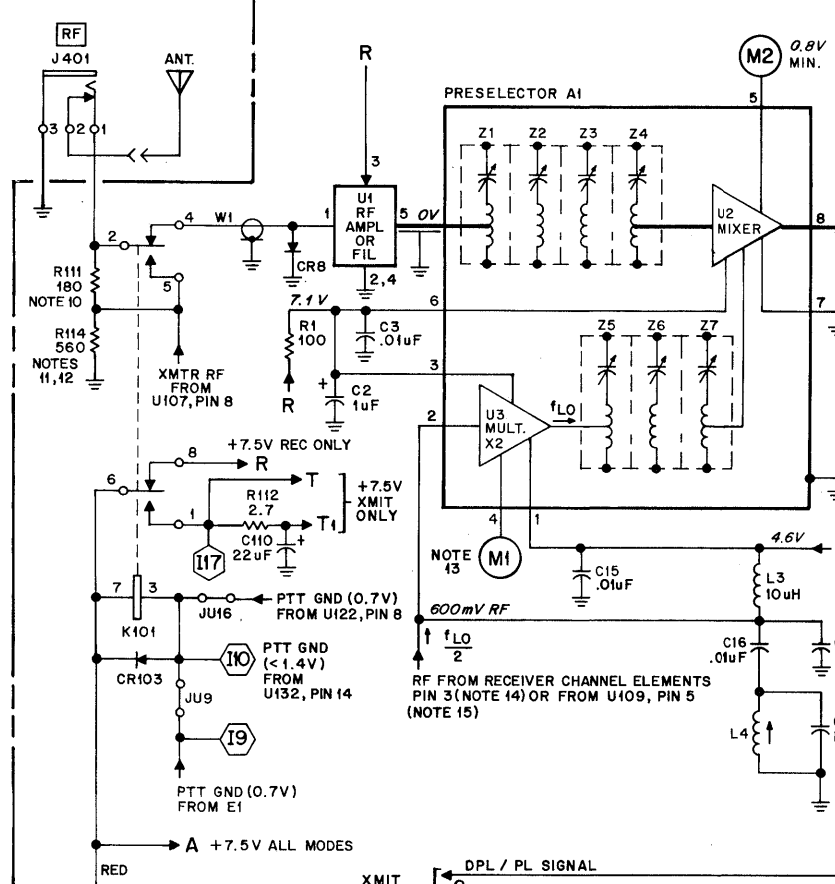


CHANNEL ELEMENTS

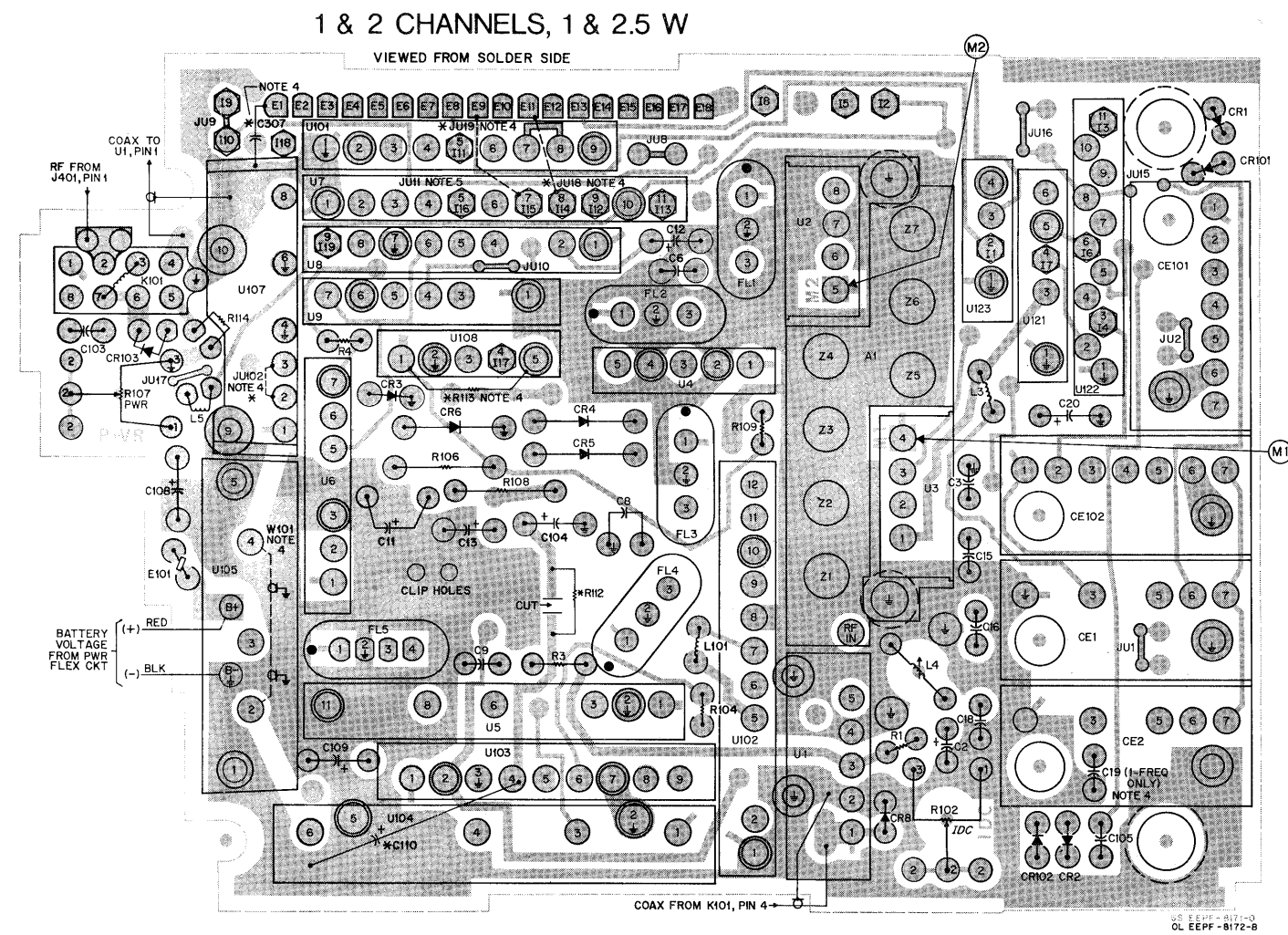


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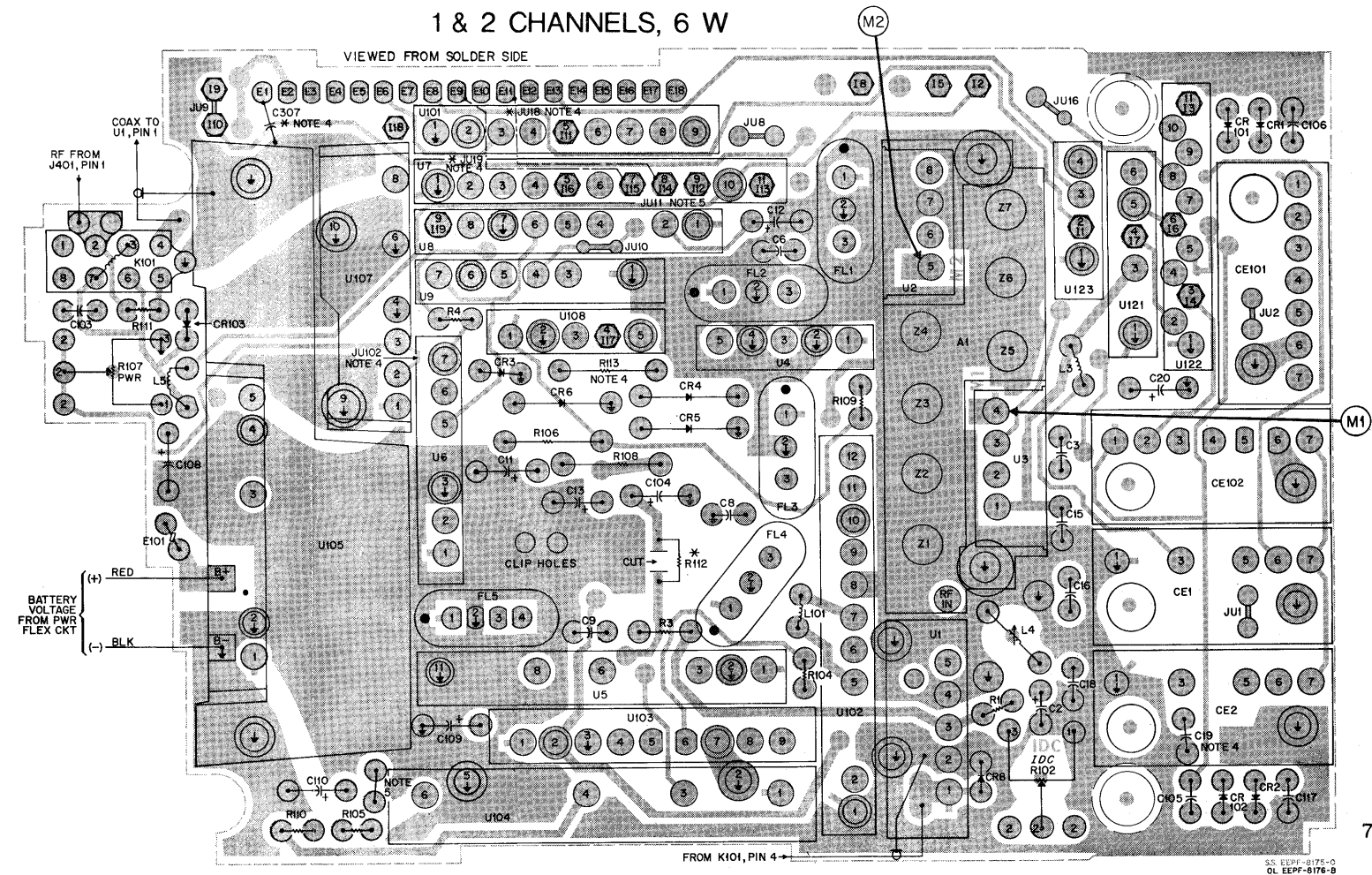
MAIN CIRCUIT BOARD



MAIN CIRCUIT BOARDS



1 & 2 CHANNELS, 6 W



NOTES:

1.  INDICATES ATTACHMENT PINS FOR INTERCONNECT FLEXIBLE CIRCUIT. THE "1" PREFIX IDENTIFIES POINTS ON THAT CIRCUIT.
2. CONCENTRIC CIRCLES ON MODULE PINS INDICATE GUIDE PIN.
3. * INDICATES PART MOUNTED ON SOLDER SIDE OF BOARD.
4. SEE APPLICABLE SCHEMATIC NOTE FOR WHEN USED.
5. JUMPER IS LOCATED ON COMPONENT SIDE.

ELECTRICAL PARTS LIST

PLF-1323-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
A1	VNLD6571A or NLD6572A or NLD6573A	<u>MODULE, Preselector:</u> Contains U2 & U3 136-150.8 MHz 150.8-162 MHz 162-174 MHz <u>CAPACITOR, Fixed:</u> pF $\pm 10\%$ 20 V unless stated Not Used C1 C2 2382397D07 C3 2184008H01 C4 Not Used C5 Not Used C6 2182358G76 C7 Not Used C8 2182358G76 C9 2184008H01 C10 Not Used C11 2382397D16 C12,13 2382397D03 C14 Not Used C15,16 2184008H01 C17 Not Used C18 2184511B13 or 2182358G50 2182358G21 C19 C20 2382397D15 C101 Not Used C102 Not Used C103 .01 uF; 50 V C104 2382397D16 C105 2184008H13 or 2184008H20 or 2184008H21 C106 2184008H01 C107 Not Used C108 15 uF $\pm 20\%$; 15 V C109 10 uF $\pm 20\%$ C110 22 uF $\pm 20\%$; 15 V C111 thru 116 Not Used C117 2184008H01 C118 thru 131 Not Used C132 .05 uF $\pm 20\%$; 25 V C301 0.27 uF C302 1 uF C303 33 uF $\pm 20\%$; 10 V (TOT option only) C304 0.27 uF C305,306 2105311E65 C307 2105311E64 CE1 thru 8 KXN1040B CE101 thru 108 KXN1099A CR1,2 4805824C01 CR3 thru 6 4805824C01 CR7 Not Used CR8 Silicon CR101,102 Silicon (1- & 2-Freq. Models only) CR103 Silicon CR104 Not Used CR131,132 4883654H01 CR301,302 4805824C01 CR303 Silicon CR501 thru 516 0105952G54 4805824C01 E101 2405913C04 F401 0105950E50 FL1/FL2 4805535C06 FL3/FL4 4805535C08 FL5 4805530C01

J301	0905537F01	<u>JACK:</u> Speaker, 2-conductor
J302	0905675C01	Socket, miniature; accessory connector
J303	0105957D83	Assy, cable; speaker micro-phone
J401	0905505C02	Antenna, 2-conductor
J402	1505673C01	Accessory connector, housing portion; contains S401
K101	8005037E01	<u>RELAY:</u> 8-pin, DPDT <u>COIL, RF:</u> unless stated Not Used L1 Not Used L2 Not Used L3 Choke, 10 uH L4 4-1/2 turns closewound, includes 7605385C01 CORE, Tuning L5 Choke, 0.41 uH L101 2482723H01 Choke, 1.2 uH LS401 5005181E02 MK401 0105953D67 or 0105954C39 P403 ----- R1 0600185B67 R2 Not Used R3 100 R4 0600185B73 R101 330 R102 Not Used R103 pot. 10 k R104 Not Used 0605139G03 or 0605139G08 or ----- or 0605139G04 R106 0600185B77 or 0600185B87 or 0600185B85 or 0600185B93 or 0600185B87 0105951F28 or 0600185B82 or ----- or 0600185B83 or 0600185B74 or 0600185B75 0600185B90 0605139G06 0600185B70 0605139G01 ---- 0600185B90 R107 0105951F28 R108 0600185B82 or ----- or 0600185B83 or 0600185B74 or 0600185B75 0600185B90 0605139G06 0600185B70 0605139G01 ---- 0600185B90 R109 0600185B90 R110 0605139G06 R111 0600185B70 R112 0605139G01 R113 ---- 0600185B90 R114 0600124C43 R115 thru 130 Not Used R131 27 k $\pm 5\%$ R132 1.2 k R301 47 $\pm 5\%$; 1/4 W R302 470 R303 470 R304 Not Used R305 Not Used R306 330 R307 4.7 k R308 pot. 50 k; contains S302 R309 560

R310	0600185B99	47 k
R311	1805430C02	pot. 25 k
R312		Not Used
R313,314	0600185B91	10 k
R315	0600185B75	470
S301	0105952E63	<u>SWITCH:</u> Rotary 2-position; 2-Freq. Models only ON/OFF, part of R308 toggle, SPDT; "PL" Sub-miniature, SPDT; Push-to-Talk part of J402 single-pole, 4-position; 4-Freq. Models single-pole, 6-position; 6-Freq. Models single-pole, 8-position; 8-Freq. Models U1 NFD6011A or NFD6012A or NLD6561A or NLD6562A U2,3 NLN8917A U4 NLN8773A U5 NLN5925A U6 NLN8777B U7 NLN8775B U8 NLN8776A U9 NLN5832A U101 NLD6592A U102 NLD6601A U103 or NLD6602B or NLD6603A NLD6610A U104 or NLD6611A or NLD6612B or NLD6621A or NLD6622A or NLD6623A or NLD6631A or NLD6632B or NLD6633B or NLD6641A or NLD6642A or NLD6643A U106 NFD6061A U107 or NFD6062A NLN8779A NLD6921A U108 NFN6010A U121 NLN4052B U122 NFN6009A U123 U124 thru 130 NFN6011B U131 NLN8921B U132 NLN8921B U133 NFN6012B U134 NLN8922A U301 NLN8947A VR131 4883461E47 VR301 4883461E48 W1 0105952D58

W101	or 0105953D84 0105952D59	ASSY, Coaxial; 6 W Models ASSY, Coaxial; 1 W Models only
NONREFERENCED ITEMS		
	2605434C02 1405601C01 1405736C01 7505295B01 0705196A02 0905604C06 0905287C06 2205794E01 4705598C01 NAD6282A NAD6283A NAD6284A 0705778D01 0305628C01 7605445C01 0300140107 0205863A01 0400115361 0405683D02 2905254F01	SHIELD, Coil; for L4 INSULATOR, for K101 INSULATOR, for Crystal (3-spot) FL5 PAD, for Crystals FL1-FL4 BOOT, for Crystals FL1-FL5 SOCKET, for Guide Pin SOCKET, Module PIN, for option flex connection SOCKET, Post; option (e.g.: 111-117) ANTENNA, Helical; 136-150.8 MHz (includes Antenna Cap 3884733H02) ANTENNA, Helical; 150.8-162 MHz (includes Antenna Cap 3805571C01) ANTENNA, Helical; 162-174 MHz (includes Antenna Cap 3805571C01) BOOT (for U108) SLUG and Mounting Stud for Preselector A1 SLUG (for channel elements) SCREW (for U107) NUT, for preselector LOCKWASHER, for preselector LOCKWASHER, For Filter U107 LUG, Grounding; between Antenna Jack J401 and P.C. Board

NOTE: For optimum performance, order replacement diodes by Motorola part number only.

BACK-DATING INFORMATION		
KIT AND SUFFIX NO.	REFERENCE SYMBOL	CHANGE
NLN8784A, NLN8785A, NLN8786A, & NLN8787A	F401	Was part number 65-00139554; value unchanged
NLD6670A, NLD6671B, NLD6672A, NLD6680A, NLD6681B, NLD6682A, NLD6810A, NLD6811B, NLD6812A, NLD6820A, NLD6821B, NLD6822A,	C11	Was part number 23-82397D51; voltage rating changed from 6 V to 15 V.

NLD6830A, NLD6831B, NLD6832A, NLD6840A, NLD6841B, NLD6842A, NLD6850A, NLD6851B, NLD6852A, NLD6860A, NLD6861B, NLD6862A, NLD7190A, NLD7191A, NLD7192A, NLD7200A, NLD7201A, NLD7202A, NLD7210A, NLD7211A, NLD7212A, & NLD7220A	-	As Shown
NLN8784A-1, NLN8785A-1, NLN8786A-1, & NLN8787A-1	-	As Shown
NLD6670A-1, NLD6671B-1, NLD6672A-1, NLD6680A-1, NLD6681B-1, NLD6682A-1, NLD6810A-1, NLD6811B-1, NLD6812A-1, NLD6820A-1, NLD6821B-1, NLD6822A-1, NLD6830A-1, NLD6831B-1, NLD6832A-1, NLD6840A-1, NLD6841B-1, NLD6842A-1, NLD6850A-1, NLD6851B-1, NLD6852A-1, NLD6860A-1, NLD6861B-1, NLD6862A-1, NLD7190A-1, NLD7191A-1, NLD7192A-1, NLD7200A-1, NLD7201A-1, NLD7202A-1, NLD7210A-1, NLD7211A-1, NLD7212A-1, NLD7220A-1, NLD7221A-1, & NLD7222A-1	-	As Shown

DIGITAL PL VOLTAGE MEASUREMENTS

TEST PRECAUTION

FOR ENCODE (XMIT) TESTS, DO NOT TRANSMIT INTO SERVICE MONITOR RF INPUT. USE WATTMETER AND MONITOR ON RECEIVE PORTION OF SERVICE MONITOR VIA ANTENNA.

PIN NO.	ENCODE (XMIT)		DECODE (RECEIVE)		PIN NO.	ENCODE (XMIT)		DECODE (RECEIVE)	
	DC VOLTAGE	WAVEFORM & AC V	DC VOLTAGE	WAVEFORM & AC V		DC VOLTAGE	WAVEFORM & AC V	DC VOLTAGE	WAVEFORM & AC V
CODE CONDITIONER MODULE U133 (2)					DIGITAL "PL" PROCESSOR MODULE U132				
1	---	---	---	135 Hz @ 120-270 mV p-p	1	0 V or 5.2 V	0V or 5.2 V	(1)	---
2	Ground	---	Ground	---	thru	(1)	---	(1)	---
3	N/A	---	---	---	9	---	---	---	---
4	7.5 V	---	7.5 V	---	10	---	2.6 V	135 Hz @ 5.2 V p-p	---
5	3.75 V	---	3.75 V	135 Hz @ 0.6 - 1.35 V p-p	11	0 V	0, 5.2 V (5)	---	---
6	3.75 V	---	3.75 V	135 Hz @ 6.1 V p-p	12	2.6 V	Random 5.2 V p-p	135 Hz @ 5.2 V p-p	---
7	N/A	---	---	---	13	5.2 V	---	5.2 V	---
8	---	---	2.6 V	135 Hz @ 5.2 V p-p	14	Less than .8 V	---	7.5 V	---
10	3.75 V	---	3.75 V	135 Hz @ 6.1 V p-p	15	0 V	---	6.8 V	---
11	5.2 V	---	5.2 V	---	17	0 V	---	0 V	---
12	5.2 V (3) or <0.2 V (4)	---	5.2 V (3) or <0.2 V (4)	---	ENCODER FILTER MODULE U131				
13	<0 V	---	0, 5.2 V (5)	---	1	2.6 V	Random 3.0 V p-p	2.6 V	135 Hz @ 3.0 V p-p
14	≈0 V (3) 7.5 V (4)	---	≈0 V (3) 7.5 V (4)	---	2	0 V	Random 1.0 V p-p	0V	135 Hz @ 1.0 V p-p
SOCKET FOR CODE PLUG (U134 REMOVED)					3	7.5 V	---	7.5 V	---
1-9	5.2 V	---	5.2 V	---	4	7.5 V	---	7.5 V	---
10	0 V	---	0 V	---	5	3.5 V	Same as pin 2 but inverted	3.5 V	Same as pin 2 but inverted
					6	N/A	---	N/A	---
					7	Ground	---	Ground	---

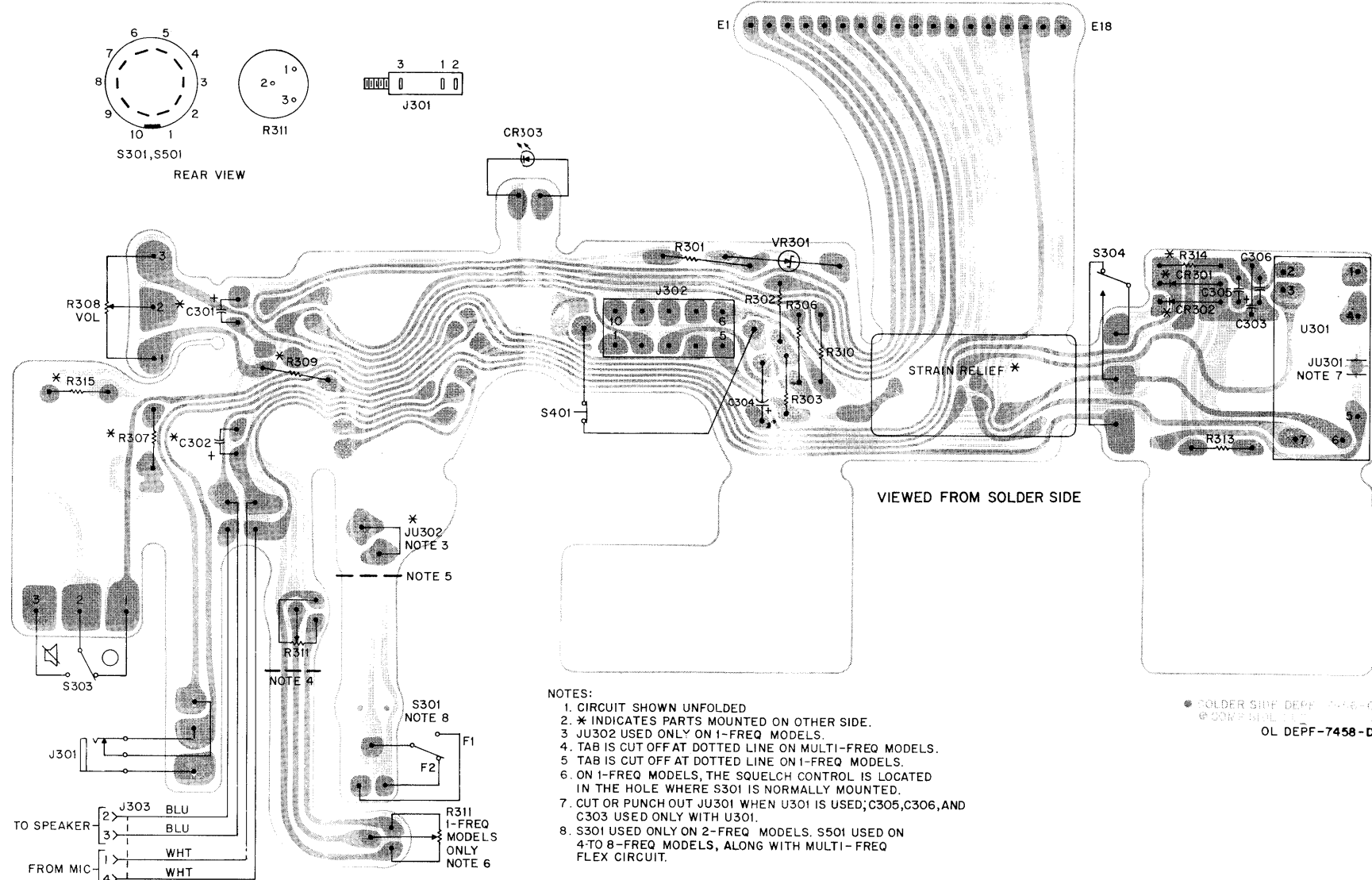
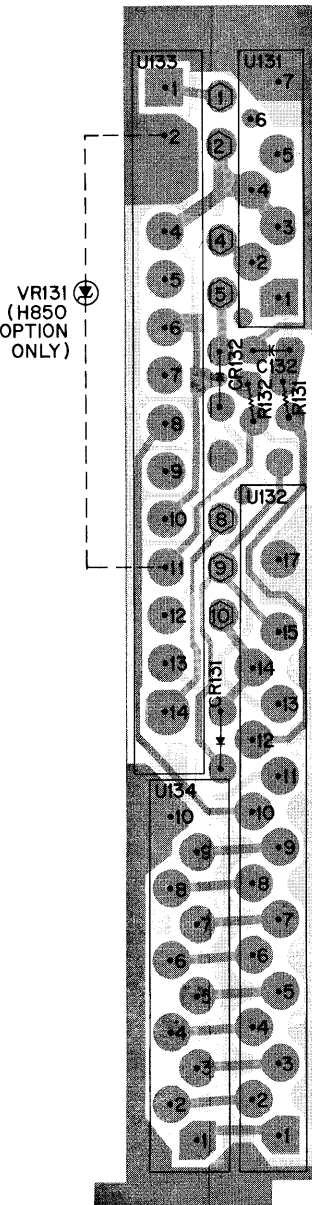
TEST MEASUREMENTS ARE NOMINAL; "PL" SWITCH ON OR OFF AND NO CARRIER INPUT. NUMBERS IN () REFER TO THE FOLLOWING NOTES:

- (1) DETERMINED BY CODE PLUG U134.
- (2) SLN-6413A DIGITAL ENCODER-DECODED SHOULD BE IN THE DECODE (RECEIVE) MODE WITH PTT ON FIXTURE NOT DEPRESSED.
- (3) "PL" SWITCH ON.
- (4) "PL" SWITCH OFF.
- (5) "PL" SWITCH ON AND PROPER DPL CODE INPUT.

EPF-7459-C

DIGITAL PRIVATE-LINE BOARD

VIEWED FROM SOLDER SIDE



EXPLODED VIEW PARTS LIST

PLF-1325-B

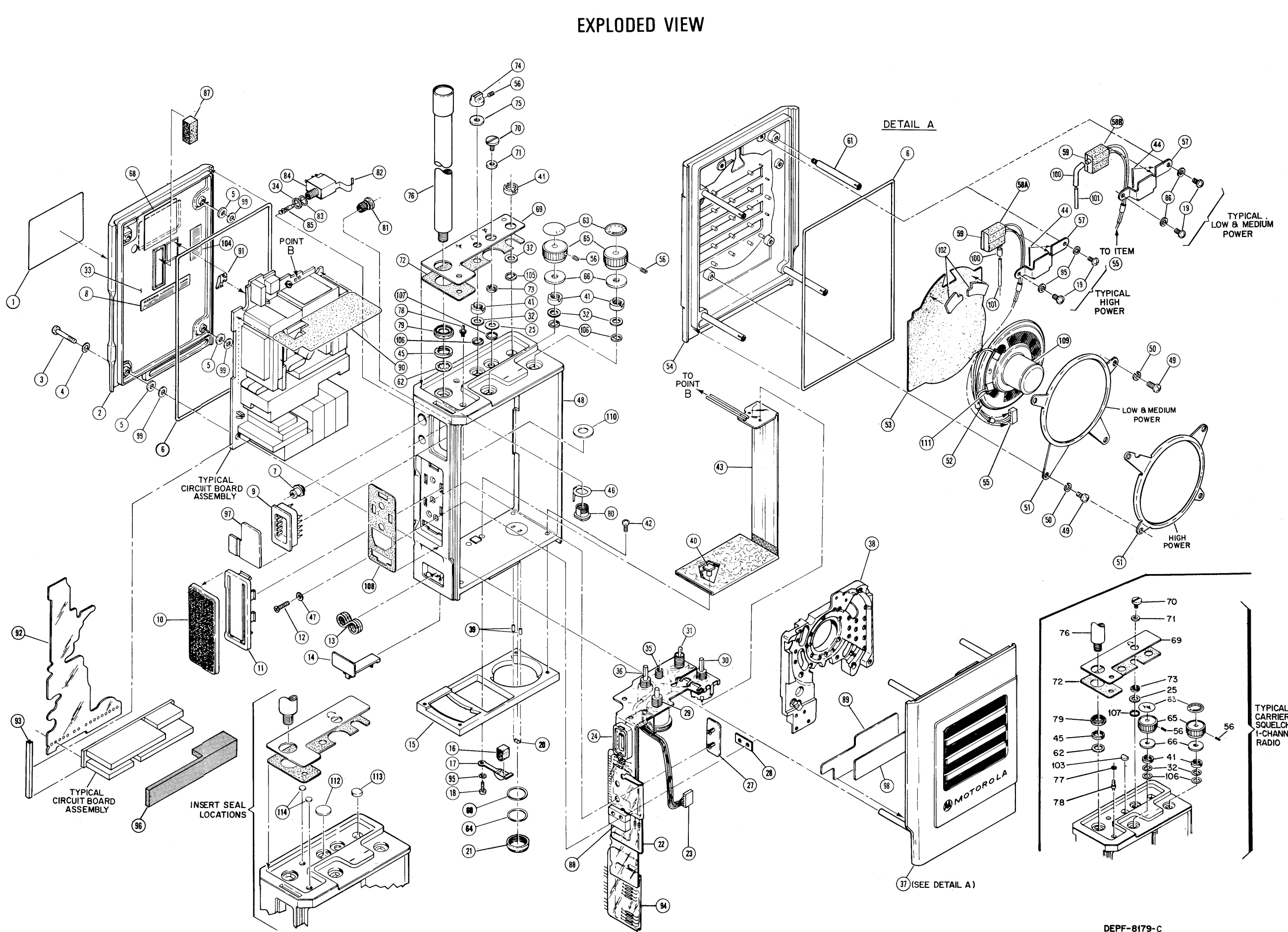
ITEM NO.	NOMENCLATURE	MOTOROLA PART NO.
1	PLATE, Serial MX320 Series MX330 Series MX340 Series MX350 Series MX360 Series	NLN7080A NLN7081A NLN7082A NLN7083A NLN7084A
2	*BACK COVER KITS: NLN7311A, NLN7312A, NLN7313A, NLN7314A and NLN7315A, include: a. COVER, Back; (item 2) MX320 Series (NLN7311A) MX330 Series (NLN7312A) MX340 Series (NLN7313A) MX350 Series (NLN7314A) MX360 Series (NLN7315A) b. Items 3, 4, 5, 6, 8, 33, 68, 87, & 99	15-05392C02 15-05393C02 15-05860C02 15-05869C02 15-05861C02
3	SCREW, Captive	0382210E15
4	WASHER, Seal; .112 x .245 x .012	0405465C01
5	WASHER, Flat; .180 x .096 x .010	0405818D01
6	GASKET, "O" Ring; MX320 Series MX330 Series MX340 Series MX350 Series MX360 Series	0105957C65 0105957C66 0105957C67 0105957C68 0105957C69
7	NUT, Retainer; special	0205785C01
8	LABEL, Intrinsically safe	5405171E01
9	HOUSING, Connector; J402	See Note
10	BOOT	3205427C04
11	ACTUATOR	4505509C02
12	SCREW, Phillips; 2-64	0305685F01
13	SPRING, Latch	4105414C01
14	LATCH, Battery	5505417C01
15	BASE, Frame Support	0705528C01
16	SUPPORT, Battery Contact	0705830C01
17	CONTACT, Battery	3905421C01
18	SCREW, Slotted; 2-56 x 1/8"	0300138651
19	FUSE (F401)	See Note
20	CAP, Fuse	3805881D01
21	FLEX CIRCUIT, Control	NLN4171B
22	CONNECTOR, Plug (J303)	See Note
23	SOCKET (J302)	See Note
24	WASHER	0405342C03
25	Not Used	
26	STRAIN RELIEF, Snap-in	4205506C01
27	PLATE, Nut	6405683F01
28	SWITCH (S501) or (S301)	See Note
29	RESISTOR (R308)	See Note
30	SWITCH (S303)	See Note
31	WASHER	0405342C03
32	INSULATOR, Ground Shield	6405535D06
33	GASKET	3205295F01
34	JACK (J301)	See Note
35	RESISTOR (R311)	See Note
36	FRONT COVER KITS: Include items 6, 19, 44, 49, 50, 51, 52, 53, 54, 57, 58, 59, 60, 61, 95, 100, 101, and 102	NLN8790A NLN8791A NLN8792A NLN8793A NLN8794A NLN8796A NLN8797A NLN8798A
38	PAD, Contour	NLN8799A
39	SOCKET, Fuse	7505589E01
40	STUD, Battery Contact	0905604C07
41	NUT, Mounting; special	4605461C01
42	SCREW, Phillips; 2-56	0282653D05
43	FLEX CIRCUIT, Power: MX320 Series MX330 Series MX340 Series MX350 Series MX360 Series	0105953C37 0105953C38 0105953C39 0105953C40 0105953C41
44	INSULATOR, Teflon	1405424D04
45	NUT, Mounting	0205543E01
46	LUG, Antenna	2905548E01
47	LOCKWASHER	0400139740
48	*FRAME, MX320 Series (NLN8784A) MX330 Series (NLN8785A)	0105953B81 0105957B50

49	MX340 Series (NLN8786A)	0105959B35
50	MX350 Series (NLN8787A)	0105959B36
51	MX360 Series (NLN8788A)	0105959B37
52	SCREW, 4-40	0305466C01
53	WASHER, #4 split	0400009743
54	BRACKET, Ring; for Low & Med Pwr Models or BRACKET, Ring; for Hi Pwr Models	0705423C01
55	SPEAKER (LS401)	See Note
56	COVER, Speaker; felt	7505396C01
57	COVER and GRILLE Assembly	0105953B83
58	MX320 Series	0105957B51
58A	MX330 Series	0105959B38
58B	MX340 Series	0105959B39
59	MX350 Series	0105959B40
60	MX360 Series	2805551D01
61	CONNECTOR, Plug (P403)	0305480E02
62	SETSCREW	0705462C01
63	CLIP, Mounting	1405445G02
64	INSULATOR (for Hi Pwr Models)	1405445G01
65	INSULATOR (For Low & Med Pwr Models)	See Note
66	MICROPHONE (MK401)	0405342C04
67	WASHER, Rubber Seal	4305467C02
68	SPACER, Stand-off	0400139731
69	WASHER	3305484G01
70	LABEL, Knob	0405342C05
71	WASHER, Mylar	3605510C01
72	KNOB	0405555C02
73	WASHER, Thrust	
74	Not Used	
75	DECAL, Patent No.	1305436E01
76	ESCUTCHEON: 1-Channel Carrier Squelch Models, with LED Multi-Channel Carrier Squelch Models, with LED 1-Channel Carrier Squelch Models, without LED Multi-Channel Carrier Squelch Models, without LED 1-Channel "Private-Line" Models, with LED Multi-Channel "Private-Line" Models, with LED 1-Channel "Private-Line" Models, without LED Multi-Channel "Private-Line" Models, without LED	1305107E12 1305107E11 1305107E16 1305107E15 1305107E10 1305107E09 1305107E14 1305107E13 0305857C01 0483799H04 1105092E02 0205256C02 3605577C01 0405342C01
77	SCREW, Cap	See Note
78	WASHER, Insulating	1405545E01
79	ADHESIVE TAPE, Escutcheon	4305544E02
80	NUT, Speaker Jack	---
81	KNOB	2605767C01
82	WASHER, Thrust	0405294F01
83	ANTENNA, Refer to Electrical Parts List (NONREFERENCED ITEMS)	See Note
84	Not Used	
85	DIODE (CR303)	0105585H01
86	INSULATOR	0400120088
87	BUSHING, Antenna	7505585C01
88	p/o item 48	See Note
89	SHEILD, Jack	7505606E01
90	WASHER	7505606E02
91	JACK (J401)	7505606E03
92	ASSEMBLY; Plug, Spring and Insulator	7505606E04
93	LOCKWASHER	7505606E06
94	PAD, Pressure	7505606E05
95	SWITCH (S304)	7505606E07
96	PAD, Channel Element	1405939D01
97	MX320 Series, Lo & Hi Pwr and MX330 Series, Hi Power	3905188D03
98	MX330 Series, Low Power and MX340 Series, Hi Power	
99	MX340 Series, Low Power	
100	MX350 Series, Hi Power	
101	MX350 Series, Low Power	
102	MX360 Series, Hi Power	
103	MX360 Series, Low Power	
104	INSULATOR	
105	SPRING, Grounding	
106	FLEX CIRCUIT, Digital "PL": 1- & 2-Freq. Models 4-Freq. VHF Models 6-Freq. VHF Models 8-Freq. VHF Models	NLN4107A NLN4109A NLN4110A NLN4111A
107	BRACKET, Rail Mounting	0705829C01
108	1-Unit length (0.93")	0705829C02
109	2-Unit length (1.125")	0705829C03
110	3-Unit length (1.320")	
111	4-Unit length (1.515")	
112	5-Unit length (1.710")	
113	6-Unit length (1.905")	
114	7-Unit length (2.100")	
115	8-Unit length (2.295")	
116	9-Unit length (2.490")	
117	10-Unit length (2.685")	
118	11-Unit length (2.880")	
119	FLEX, Freq. Select Switch VHF 2-Freq. Models 4-Freq. Models 6-Freq. Models 8-Freq. Models	NLN8819A NLD6881A NLD6891A NLD6901A
120	LOCKWASHER, Ext Tooth	0400002625
121	PAD, Digital "PL" Contour	7505890C01
122	BOOT	3205428C01
123	SPACER, Channel Element: MX320 Series MX330 Series MX340 Series MX350 Series MX360 Series	1405576E01 1405576E02 1405576E03 1405576E04 1405576E05 0484345A06
124	WASHER, Nylon	3705144E01
125	TUBING, Flexible (for High Power Models) or TUBING, Flexible (for Low & Med Power Models)	3705412F01 4705143E01
126	PIPE, Sound	7505705D01
127	PAD	4305930C04
128	INSERT, Seal	5400865436
129	LABEL, FCC	0405757E02
130	SEAL	0405757E03
131	SEAL, Rubber	0405757E01
132	SEAL	3205255G01
133	BOOT, Speaker	7505191E01
134	WASHER, Sponge Seal	0482519J01
135	INSULATOR, Speaker Lug (Qty 2)	1482392E07
136	SEAL, Insert (for Squelch Control)	4305358G01
137	SEAL, Insert (for PL Switch)	4305359G01
138	PLUG, Insert (for LED & screw hole)	4305360G01

NOTE: See Electrical Parts List for part number and description.
* High-power radios with Unit ID option require different Frame and Back Cover Kits. Refer to Unit ID Manual.

Filler pads listed in the following table are used to fill empty areas (missing channel elements, etc.) in the radio. PLF-1131-A

MOTOROLA PART NO.	DESCRIPTION AND APPLICATION
7505117E01	1-Unit length (0.93"), for growth in frame
7505117E02	2-Unit length (1.125"), for growth in frame
7505117E03	3-Unit length (1.320"), for growth in frame
7505117E04	4-Unit length (1.515"), for growth in frame
7505117E05	5-Unit length (1.710"), for growth in frame
7505117E06	6-Unit length (1.905"), for growth in frame
7505117E07	7-Unit length (2.100"), for growth in frame
7505117E08	8-Unit length (2.295"), for growth in frame
7505118E01	One channel-element size
7505118E05	Two channel-element size (e.g. CE1 & CE2)
7505118E06	Fills space for U121, U122, & U123 in radios w/o tone "PL"
7505118E07	Three-channel-element size (e.g. CE3, CE4, & CE6)
7505118E08	Fills space for 1/2 channel element at bottom, due to staggered channel elements



**MOTOROLA**INSTRUCTION MANUAL REVISION

for

Manual No. 68P 81013C71-B

"MX300" SERIES

"Handie-Talkie" FM Two-Way Radios

FMR- 971
Issue- 4**GENERAL**

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to supplement your manual. Installation of these changes in earlier equipment is not necessary except as recommended in Motorola Service and Repair Notes (SRN's).

REVISION DETAILS

Item No.	Change Affects	Kit Number	New Suffix
1.	Circuit Board Detail, Schematic Diagram, and Parts List	NLD6680A	2
		NLD6681B	2
		NLD6682B	1
		NLD6840A	2
		NLD6841B	2
		NLD6842A	2
		NLD6850A	2
		NLD6851B	2
		NLD6852A	2
2.	Parts List	NLD6860A	2
		NLD6670A	---
		NLD6671B	---
		NLD6672A	---
		NLD6680A	---
		NLD6681B	---
		NLD6682A	---
		NLD6810A	---
		NLD6811B	---
		NLD6812A	---
		NLD6820A	---
		NLD6821B	---
		NLD6822A	---
		NLD6830A	---
		NLD6831B	---
		NLD6832A	---
		NLD6840A	---
		NLD6841B	---
		NLD6842A	---
		NLD6850A	---
		NLD6851B	---
		NLD6852A	---
		NLD6860A	---
		NLD6861B	---
		NLD6862A	---

Item No.	Change Affects	Kit Number	New Suffix
		NLD7190A	---
		NLD7191A	---
		NLD7192A	---
		NLD7200A	---
		NLD7201A	---
		NLD7202A	---
		NLD7210A	---
		NLD7211A	---
		NLD7212A	---
		NLD7220A	---
		NLD7221A	---
		NLD7222A	---
3	Control Flexible Circuit, Schematic Diagram, Parts List	NLN4171B	1
4	Electrical Parts List (Page 8)	---	---

CHANGES

Item No.	Ref. Sym.	Action	Part Number	Description
1	C133	added	2182358G23	<u>CAPACITOR, Fixed: pF</u> 68 $\pm 5\%$; 75V (6W models, solder side of board, from PA side of E101 to ground)
2	R102	changed to	1805690G03	Pot.; 10k
	R107	changed to	1805690G01	Pot.; 2k
3	R302	deleted	0600185B75	<u>RESISTOR, Fixed:</u> 470 Ω $\pm 10\%$; 1/8W (replaced with an insulated wire jumper)
	R303	changed to	0660075A49	1k $\pm 5\%$; 1/8W
4	R1		0660075A25	<u>RESISTOR, Fixed: Ω $\pm 5\%$;</u>
	R3		0660075A25	<u>1/8W unless stated</u>
	R4		0660075A37	
	R106		0660075A45 (1W)	NOTE: Only part numbers
		or	0660075A65 (2.5W)	have been changed. Values
			(136-150.8 MHz)	remain the same.
		or	0660075A61 (2.5W)	
			(150.8-174 MHz)	
		or	0660075A77 (6W - 136-162 MHz)	
		or	0660075A65 (6W - 162-174 MHz)	
	R108		0660075A55 (1W)	
		or	0660075A57 (2.5W - 150.8-174 MHz)	
		or	0660075A39 (6W - 136-150.8 MHz)	
		or	0660075A41 (6W - 150.8-174 MHz)	
	R109		0660075A71	

Item No.	Ref. Sym.	Part Number	Description
4			
(cont'd)	R111	0660075A31	
	R113	0660075A71	
	R114	0611009C43	
	R131	0660075A83	
	R132	0660075A51	
	R303	0660075A49	
	R306	0660075A37	
	R307	0660075A65	
	R309	0660075A43	
	R310	0660075A89	
	R313, 314	0660075A73	
	R315	0660075A41	



INSTRUCTION MANUAL REVISION for

FMR- 1068
Issue- 5

Service Sheet No. 68P81013C71-B
"MX300" Series Radios 136-174MHz

GENERAL

This revision outlines changes that have occurred since the printing of your service sheet. Installation of these changes in earlier equipment is not necessary except as recommended in Motorola Service and Repair Notes (SRN's).

REVISION DETAILS

		NC = No Change In Suffix		Item	
No.	Change Affects			Number	Suffix
1	Parts List			---	---
2	General Information			---	---
3	Parts List			NLN4171B	---
4	Parts List			NLD6841B	3
				NLD6842A	3
				NLD6851B	3
				NLD6852A	3
				NLD6861B	2
				NLD6862A	2
5	Parts List			NLN4171B	NC

CHANGES

No.	Ref. Sym.	Action	Part No.	Description
1	W1	changed to	0105957D39	CABLE: ASSY, Coaxial; 1W & 2.5W Models
			or 0105958E28	CABLE: ASSY, Coaxial; 6W Models

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4	R104	changed to	0605139G09	33Ω ±5%; 1/4W
5	R308	changed to	1805466L03	Pot., 50k; contains S302