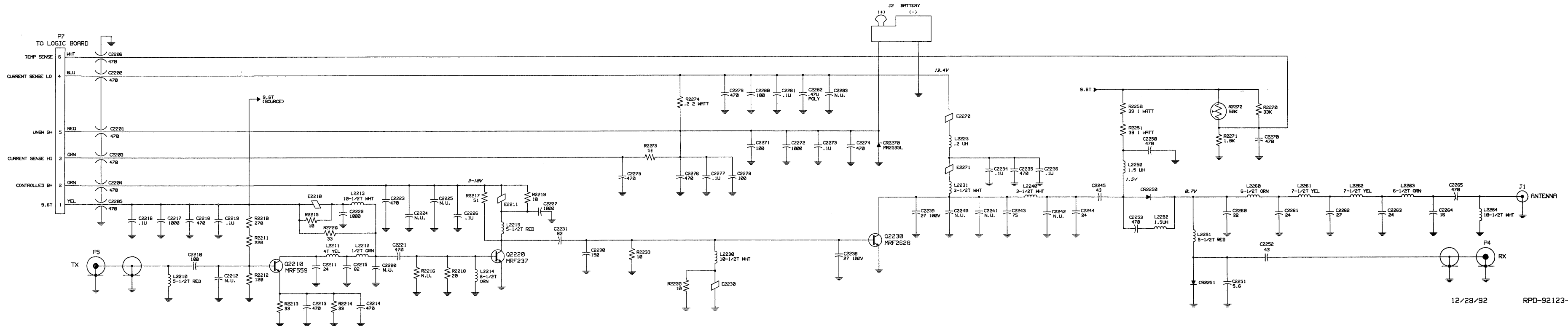


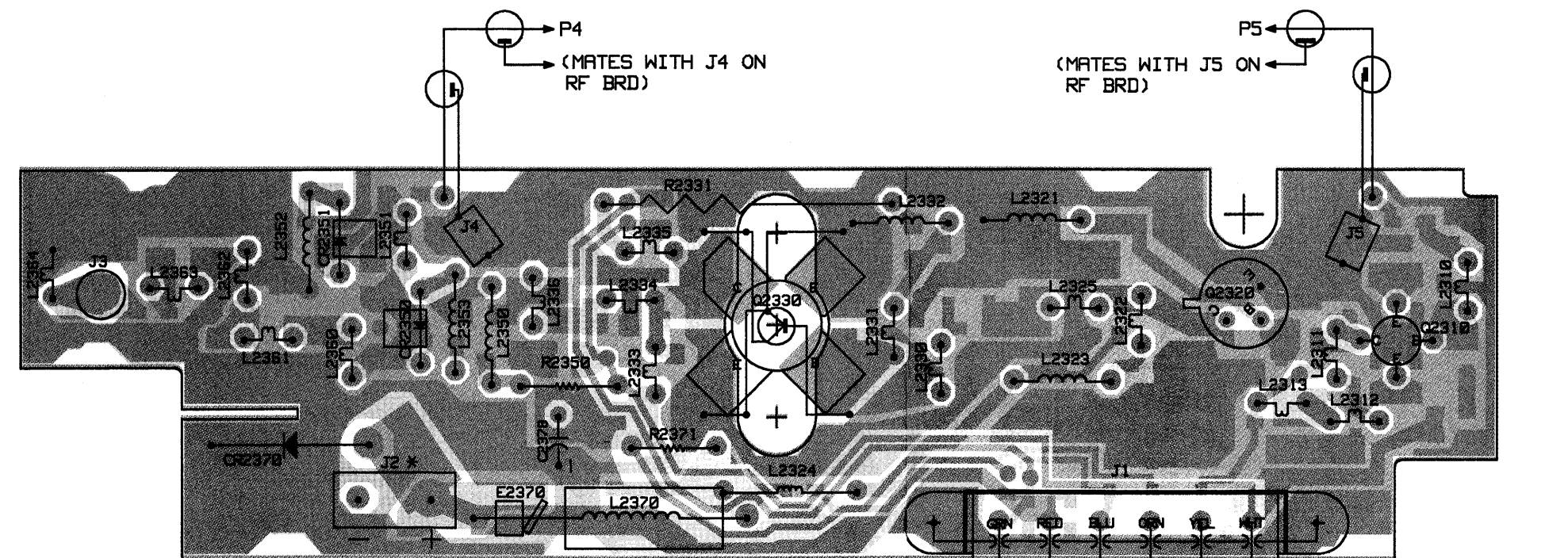
COMPONENT SIDE (Gray)  
 SOLDER SIDE (Pink)  
 OVERLAY -----



12/28/92 RPD-92123-0

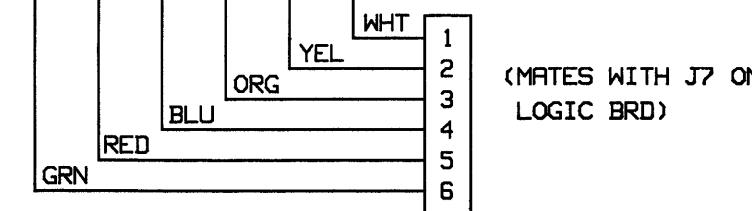
Circuit Board Details and Schematic for HLD8299A  
 VHF Power Amplifier, 146-174 MHz, 1-10 Watts

COMPONENT SIDE

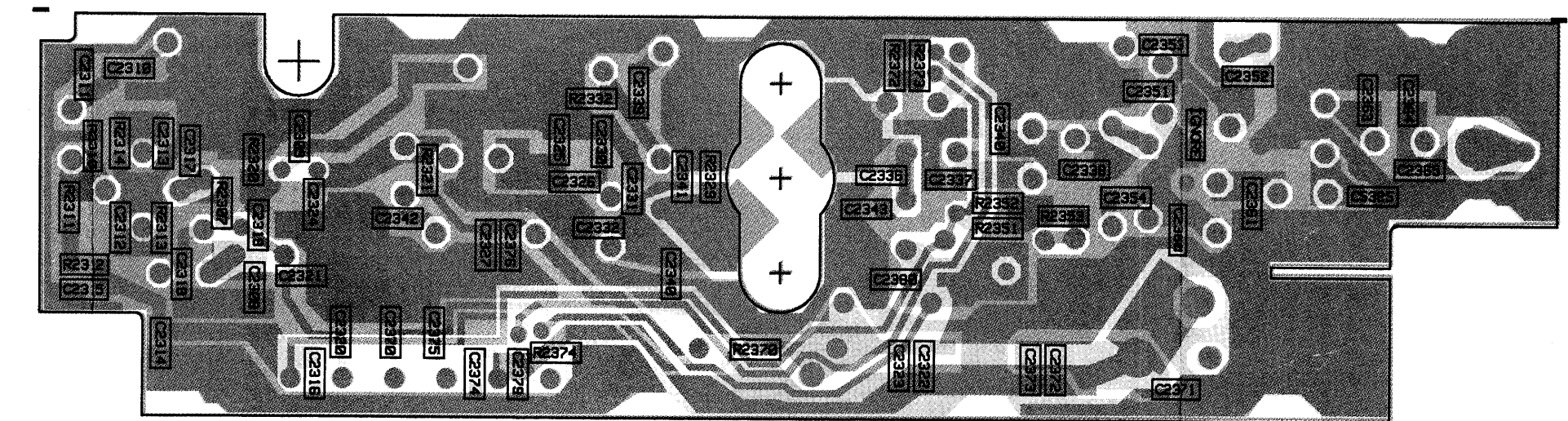


\* INCLUDES INTERGAL FEEDTHRU CAPACITOR

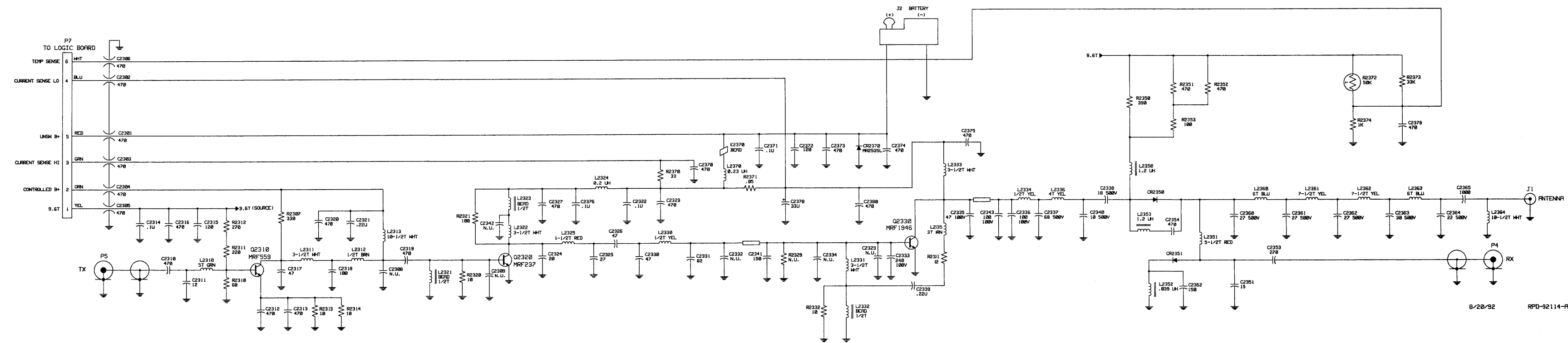
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----



SOLDER SIDE

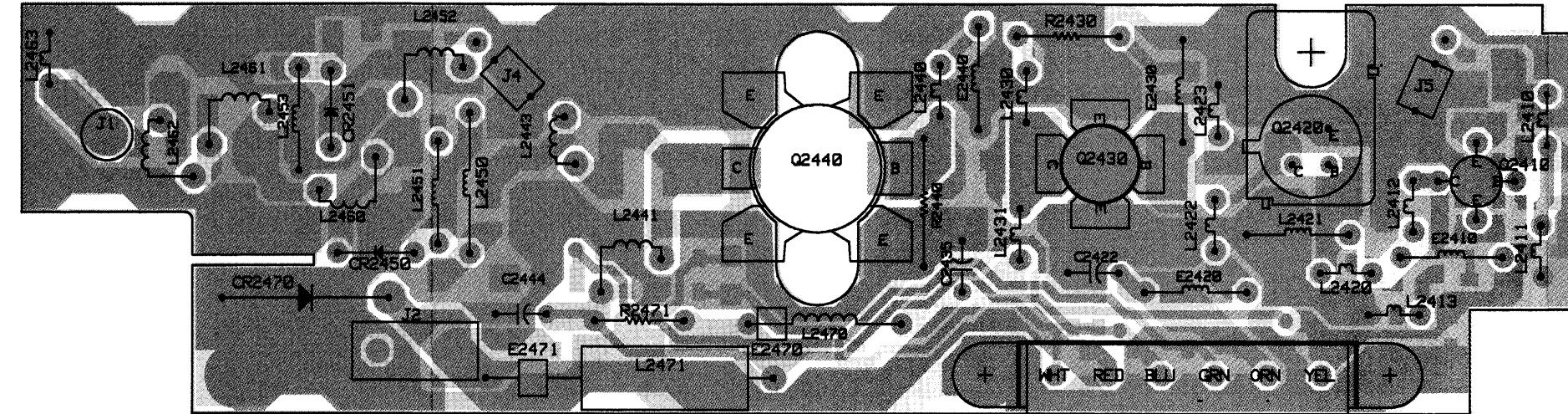


COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

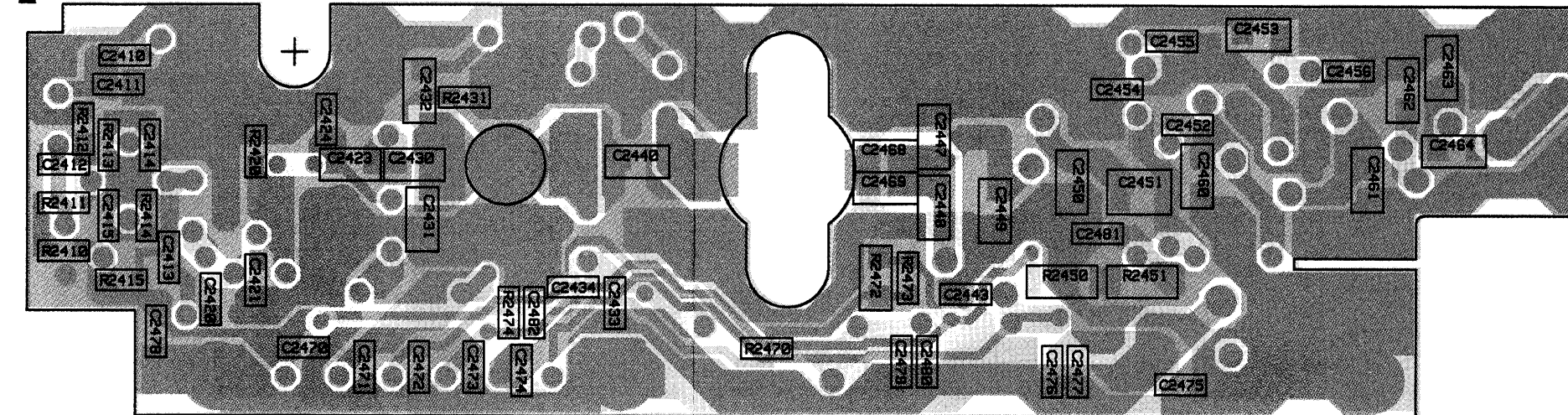


8/28/92 RPD-92114-R

COMPONENT SIDE

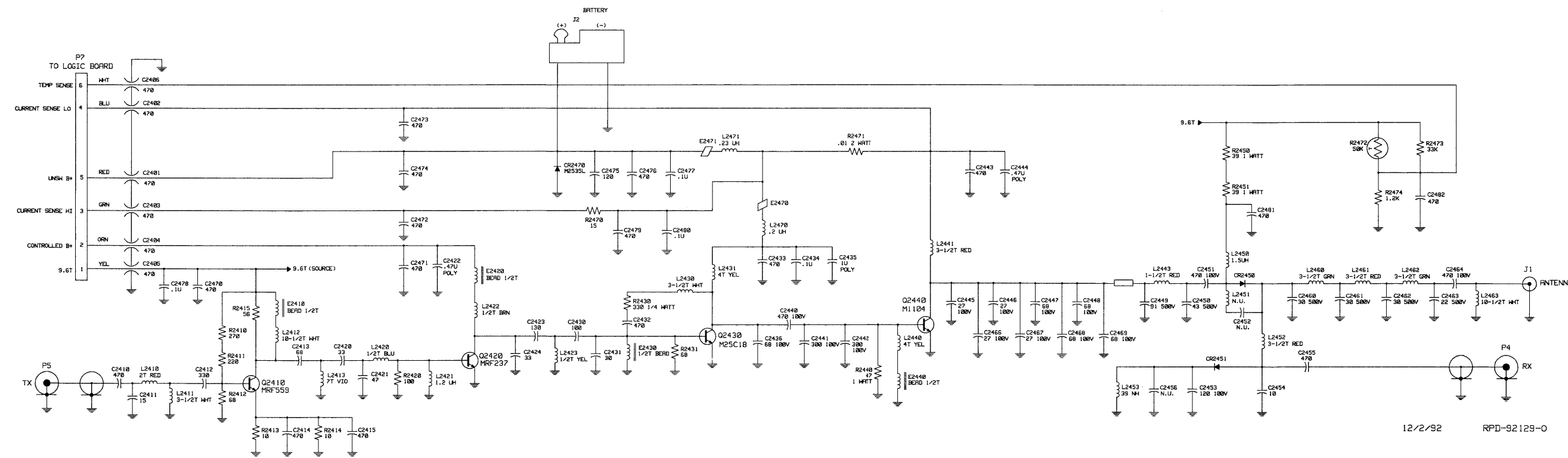


SOLDER SIDE



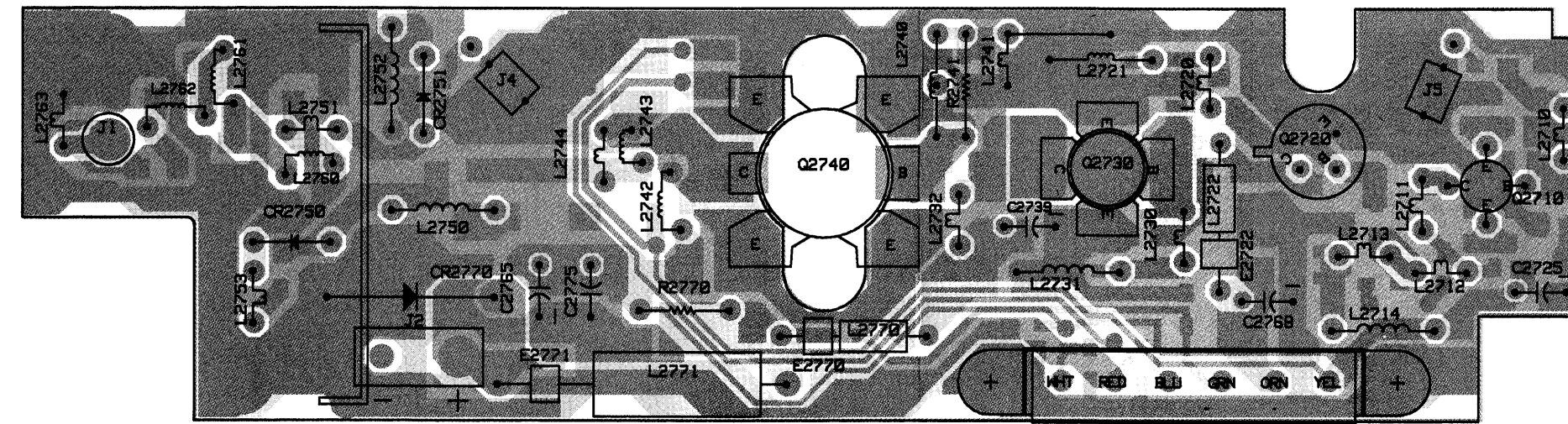
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

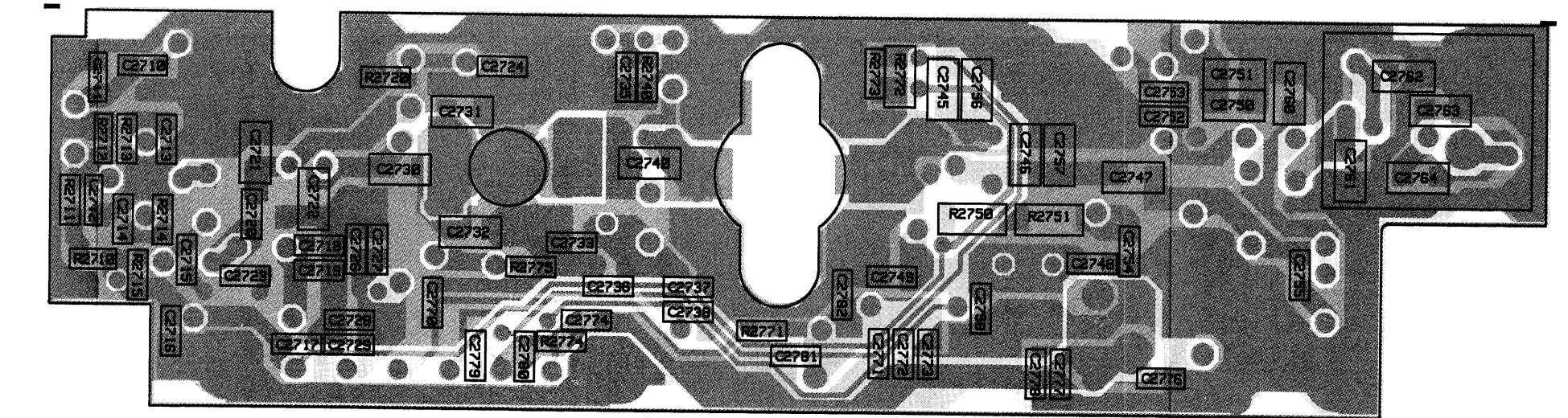


12/2/92 RPD-92129-0

COMPONENT SIDE

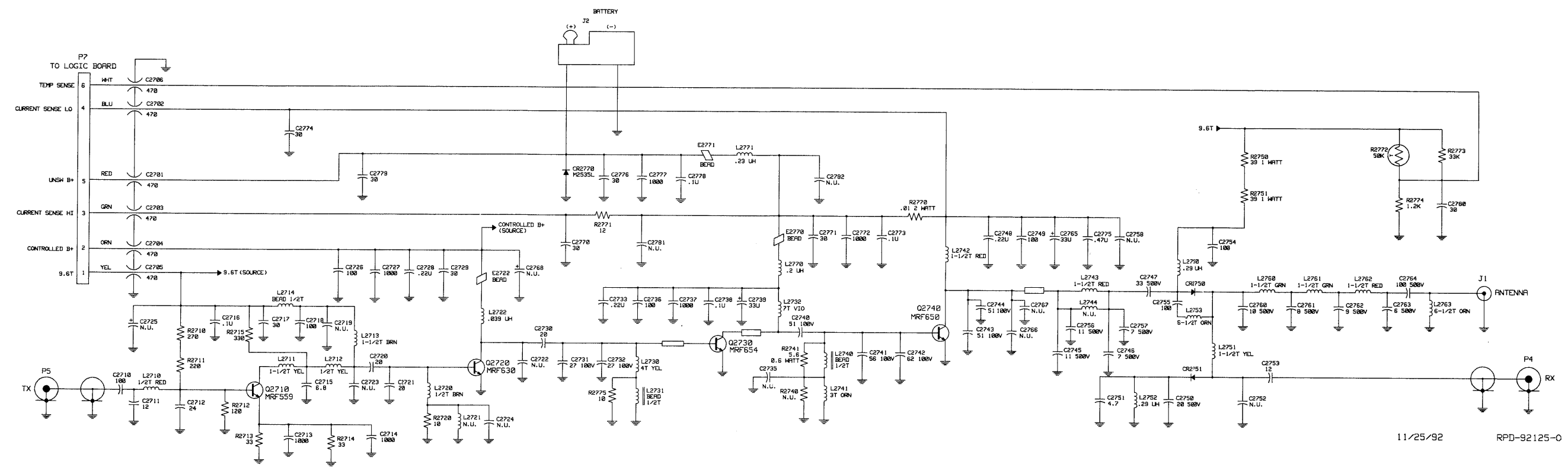


SOLDER SIDE



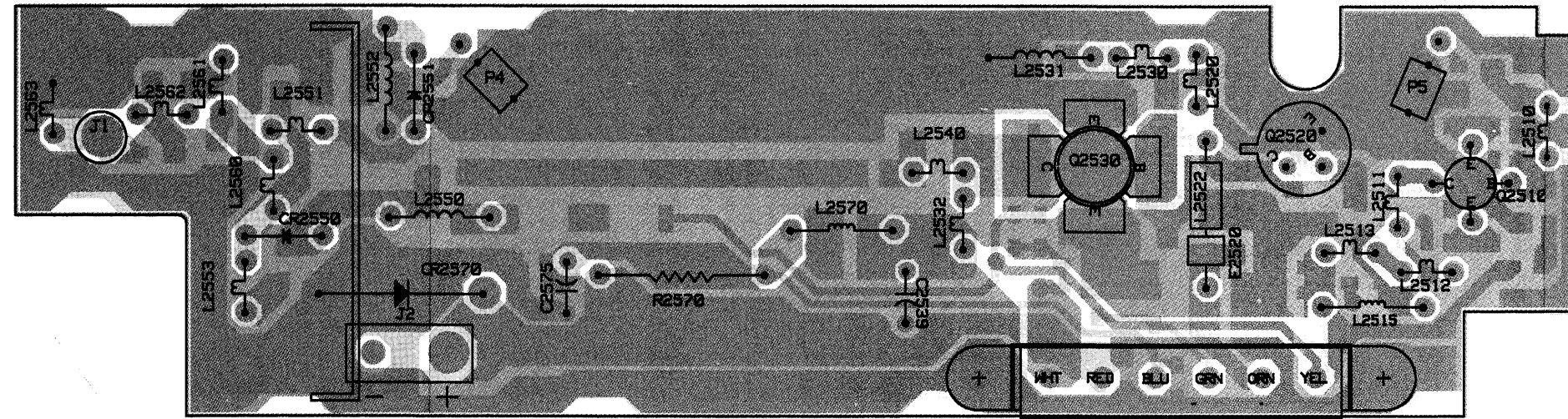
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

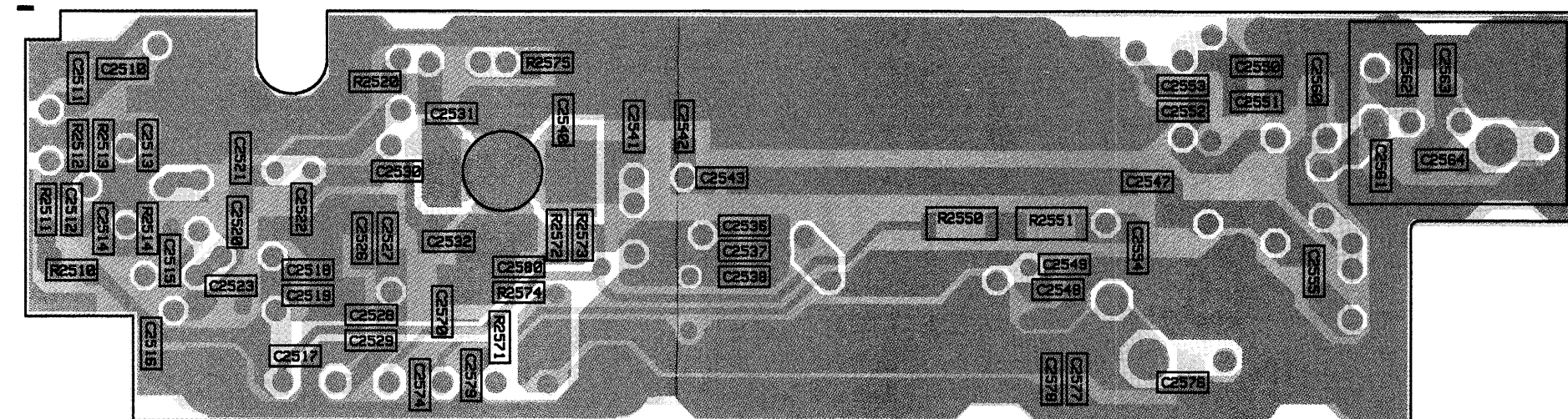


Circuit Board Details and Schematic for HLE8275A  
UHF Power Amplifier, 403-433 MHz, 25-40 Watts

COMPONENT SIDE

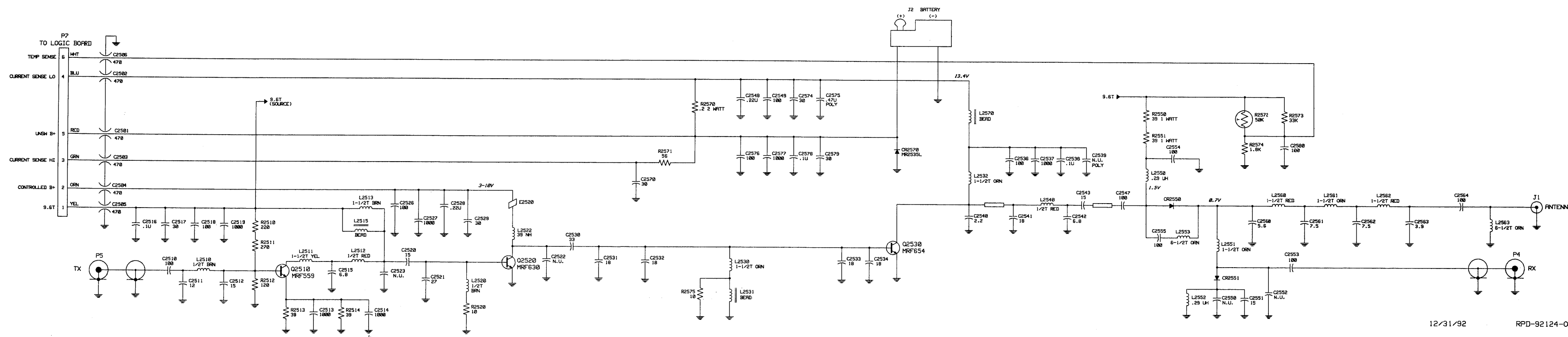


SOLDER SIDE

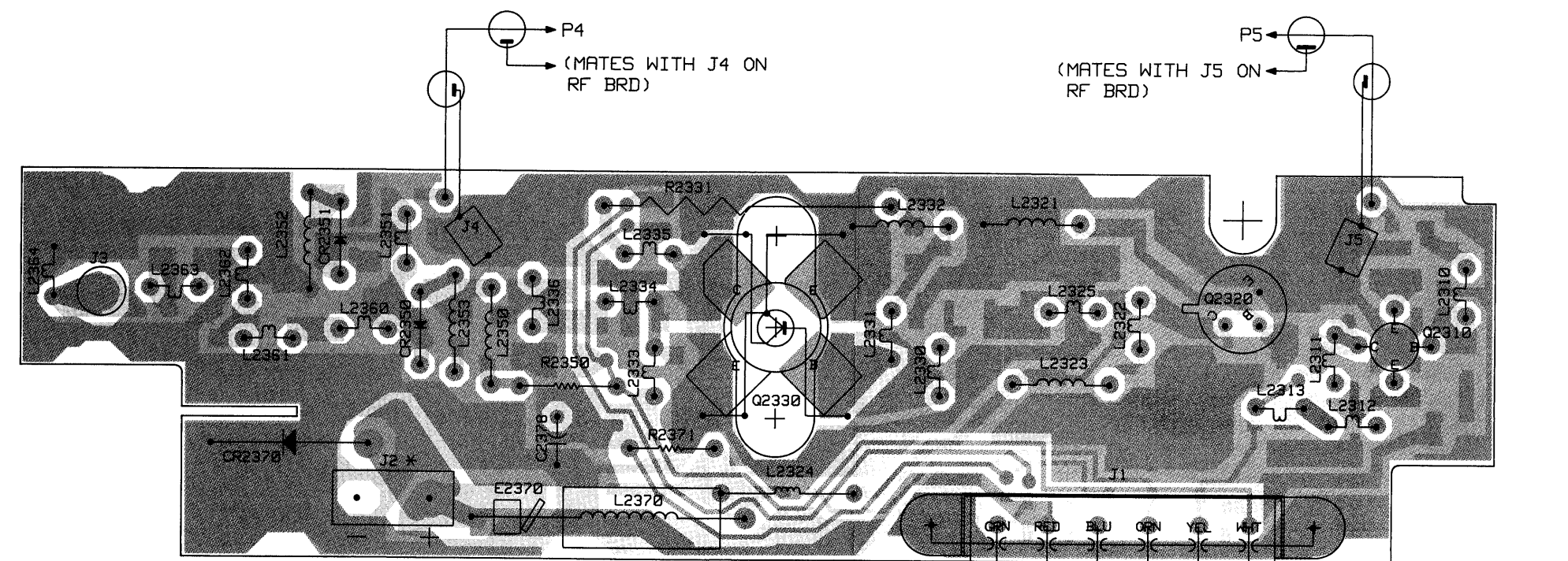


COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

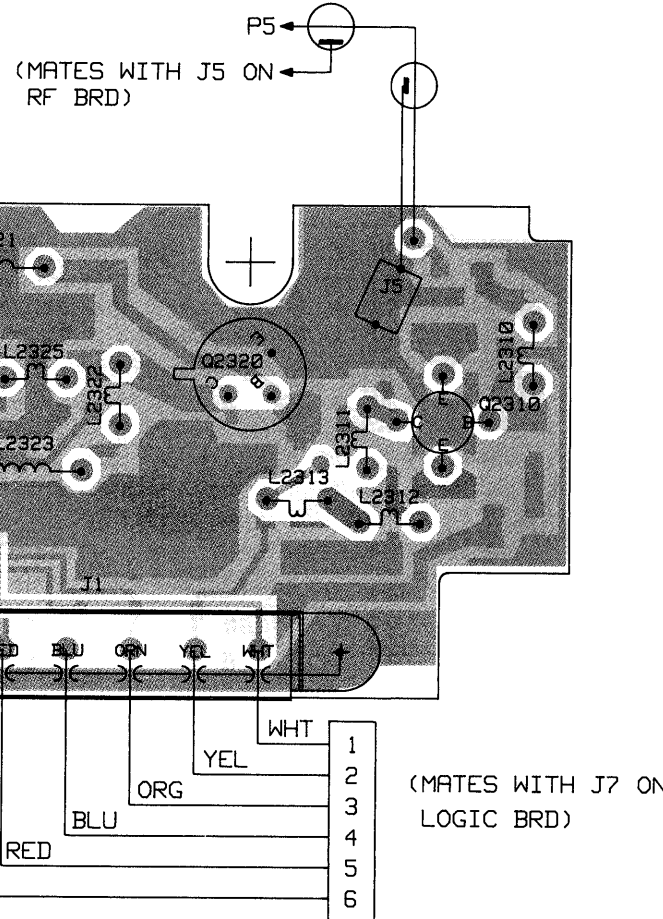


COMPONENT SIDE



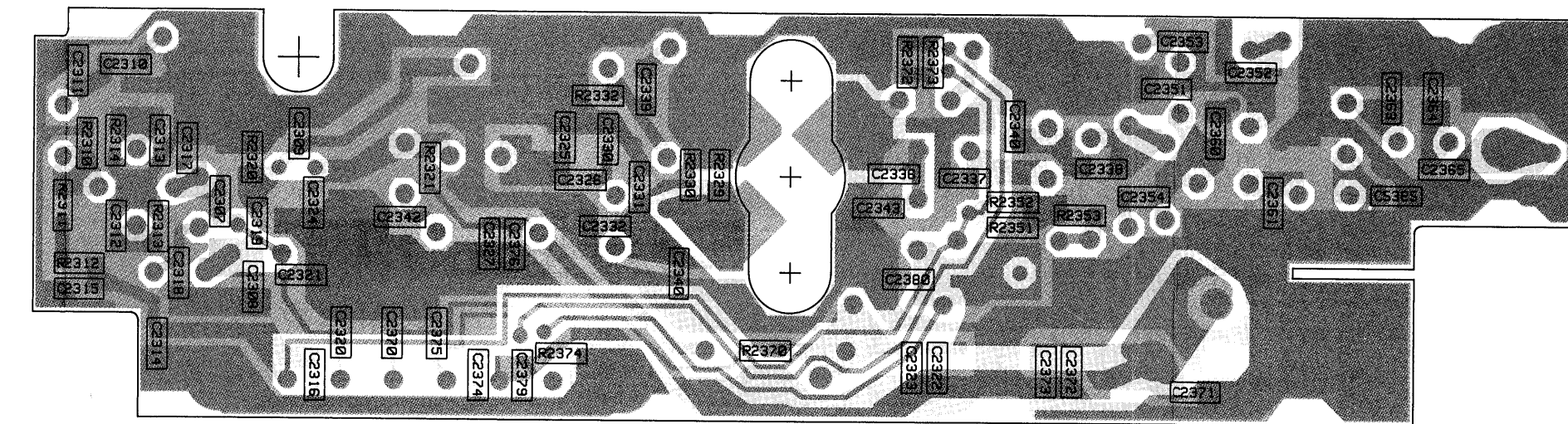
\* INCLUDES INTERGAL FEEDTHRU CAPACITOR

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

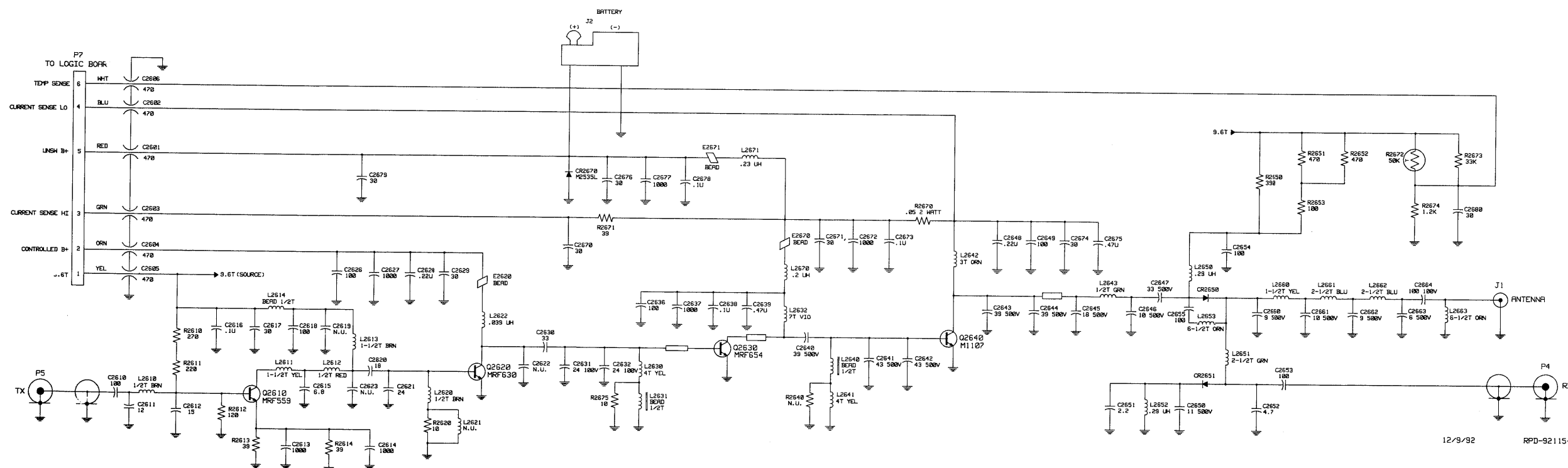


(MATES WITH J7 ON LOGIC BRD)

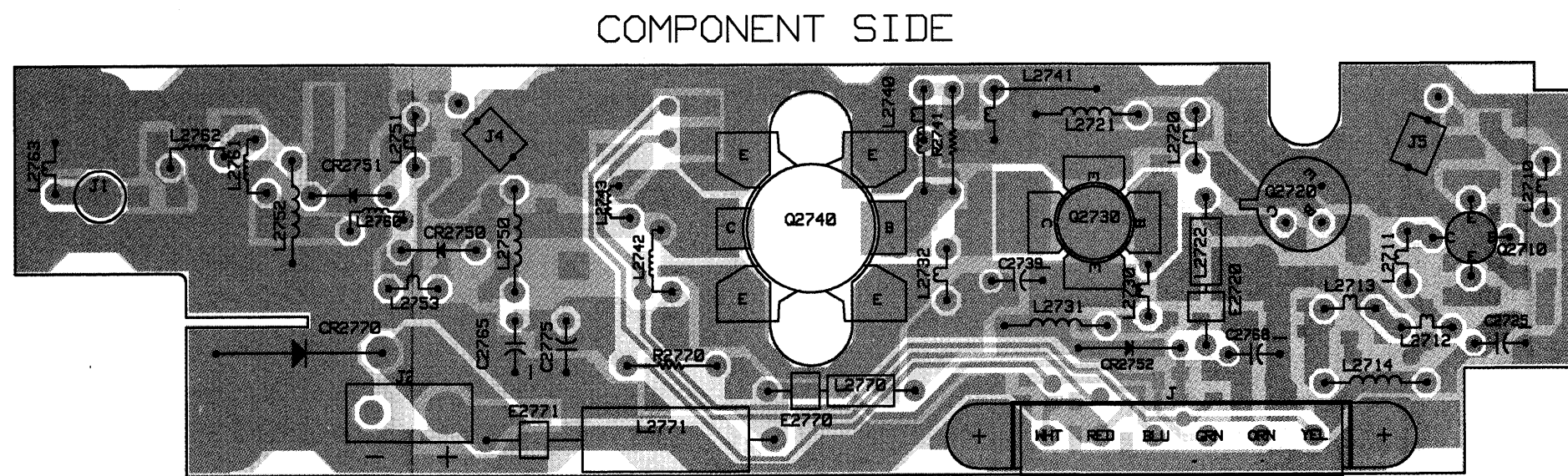
SOLDER SIDE



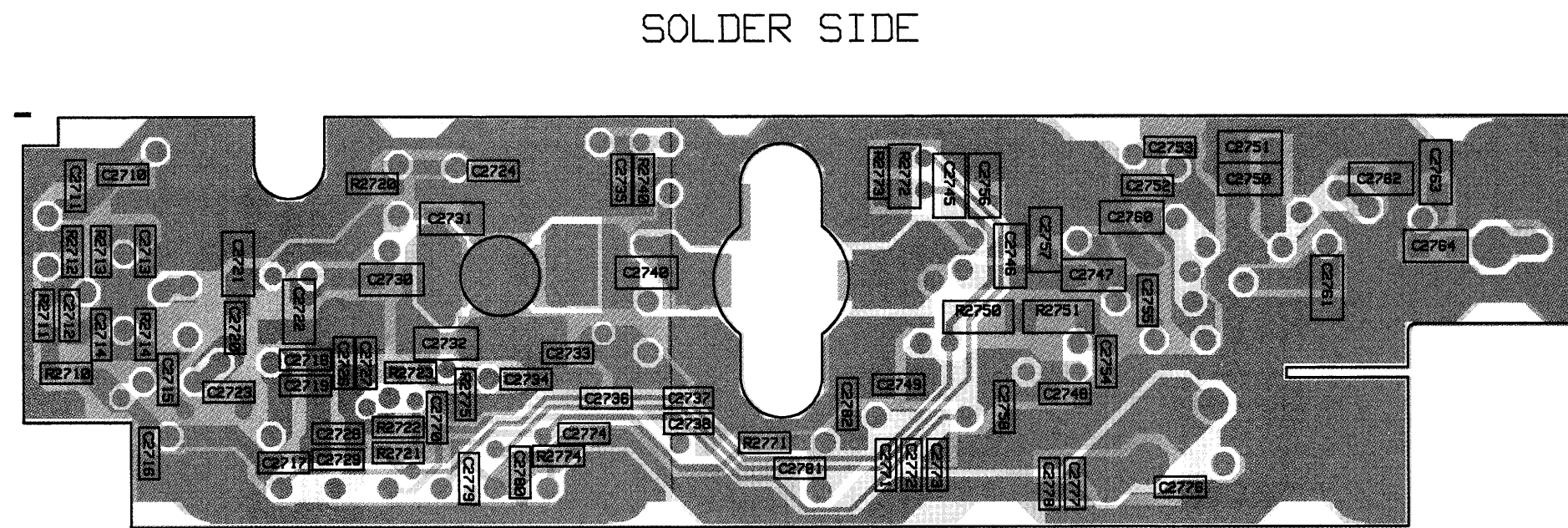
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----



12/9/92 RPD-92115-R



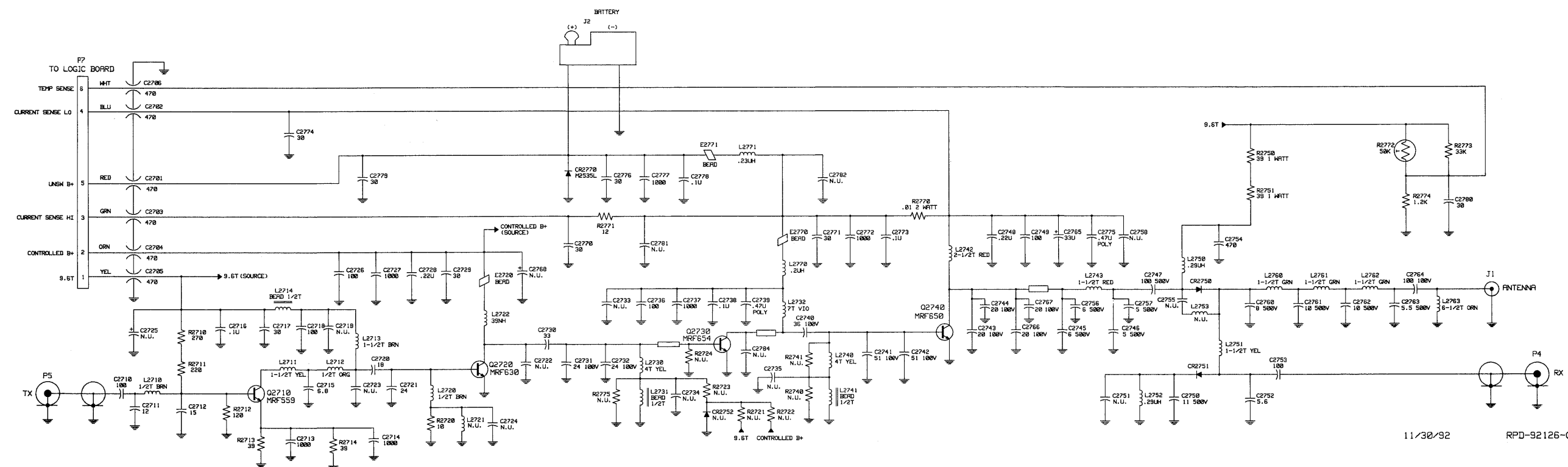
COMPONENT SIDE



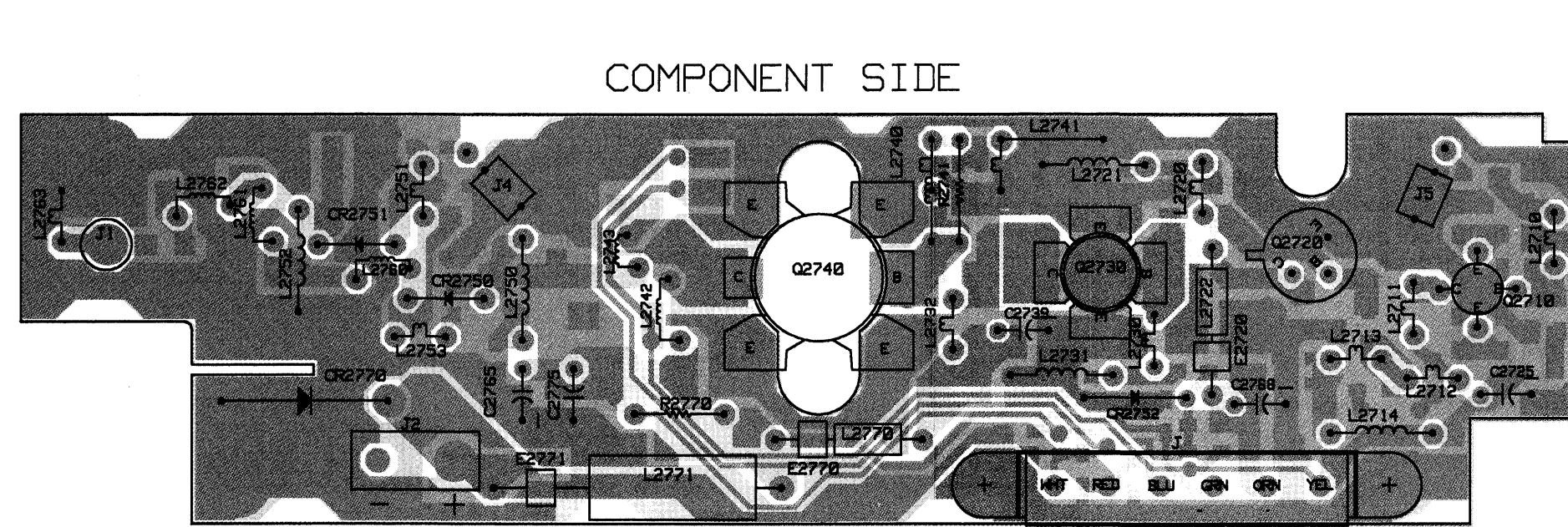
SOLDER SIDE

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

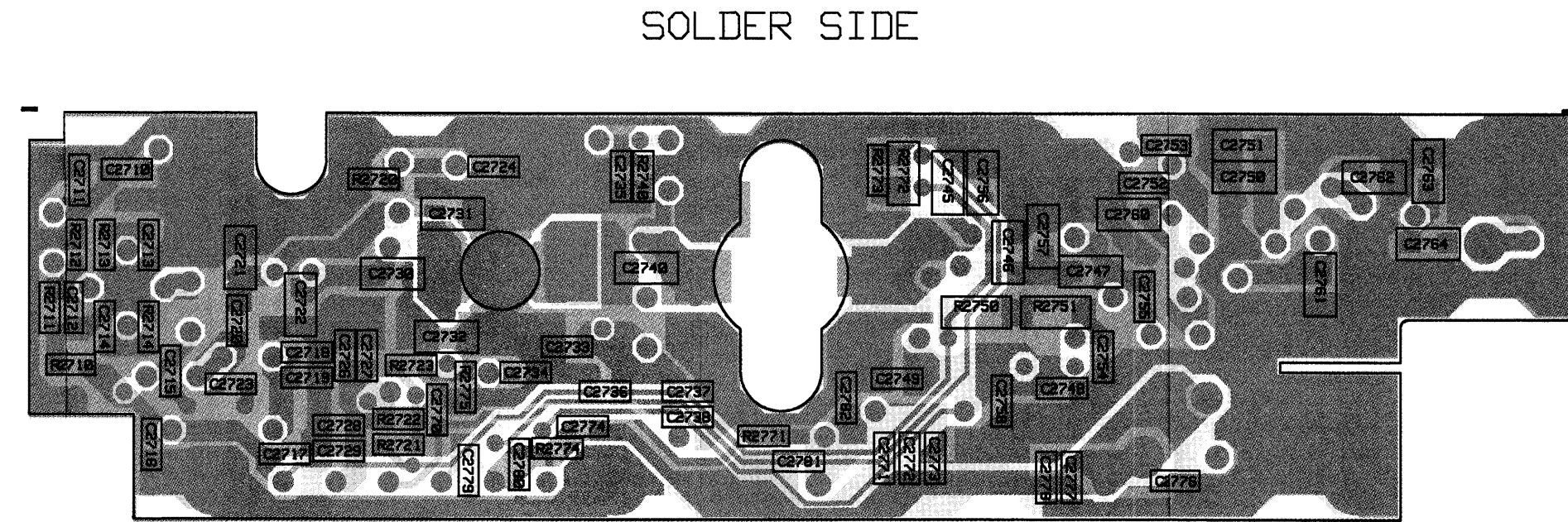
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----



Circuit Board Details and Schematic for HLE8271A  
UHF Power Amplifier, 438-470 MHz, 25-40 Watts



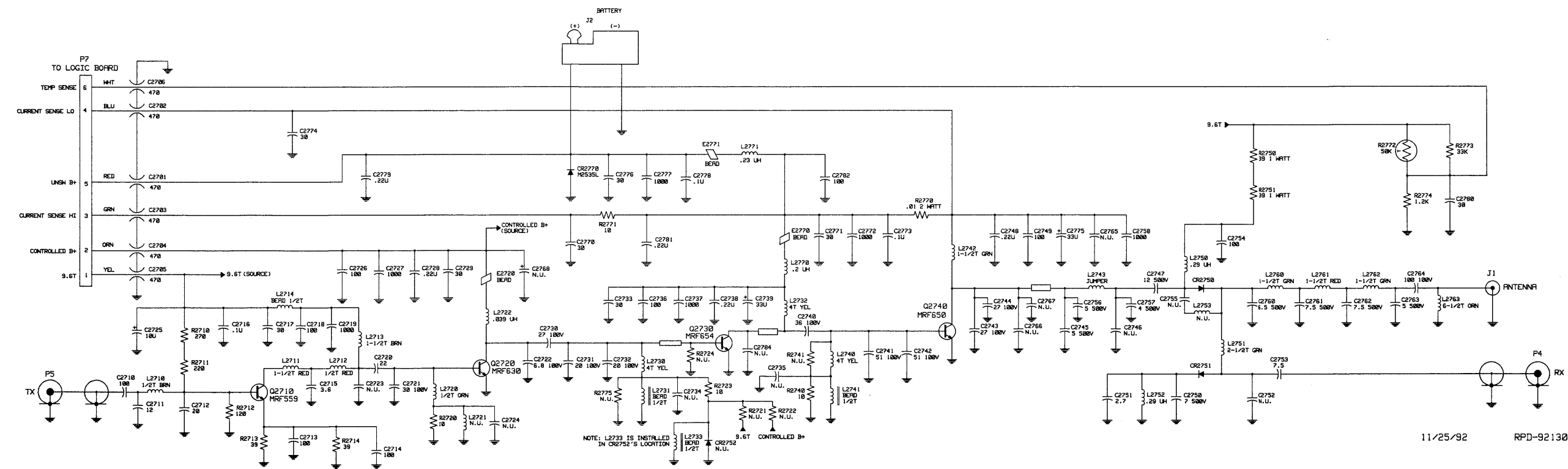
COMPONENT SIDE



SOLDER SIDE

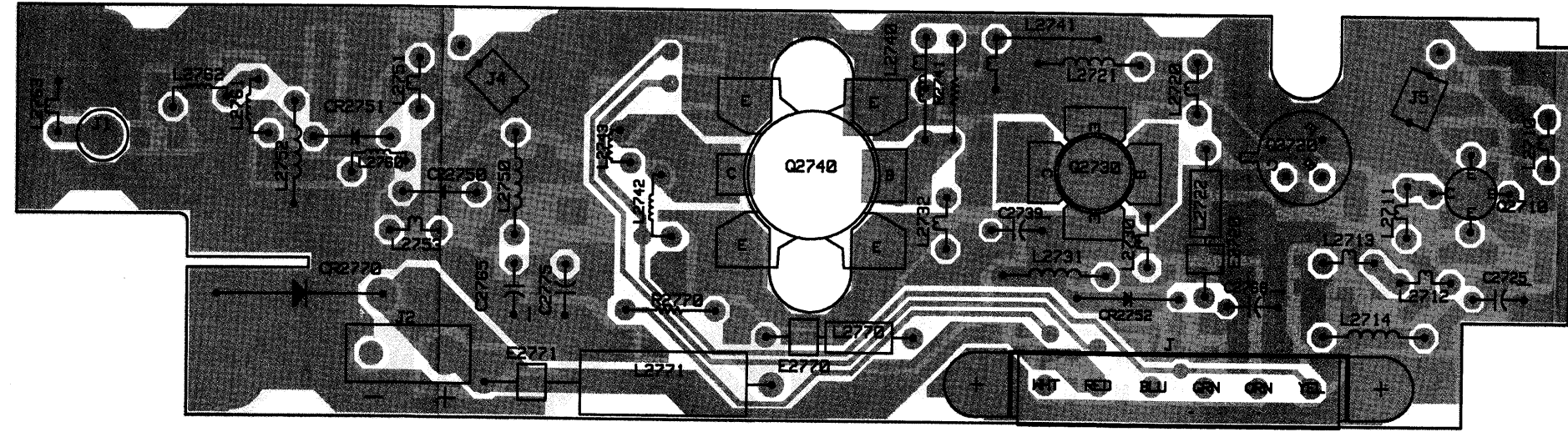
COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

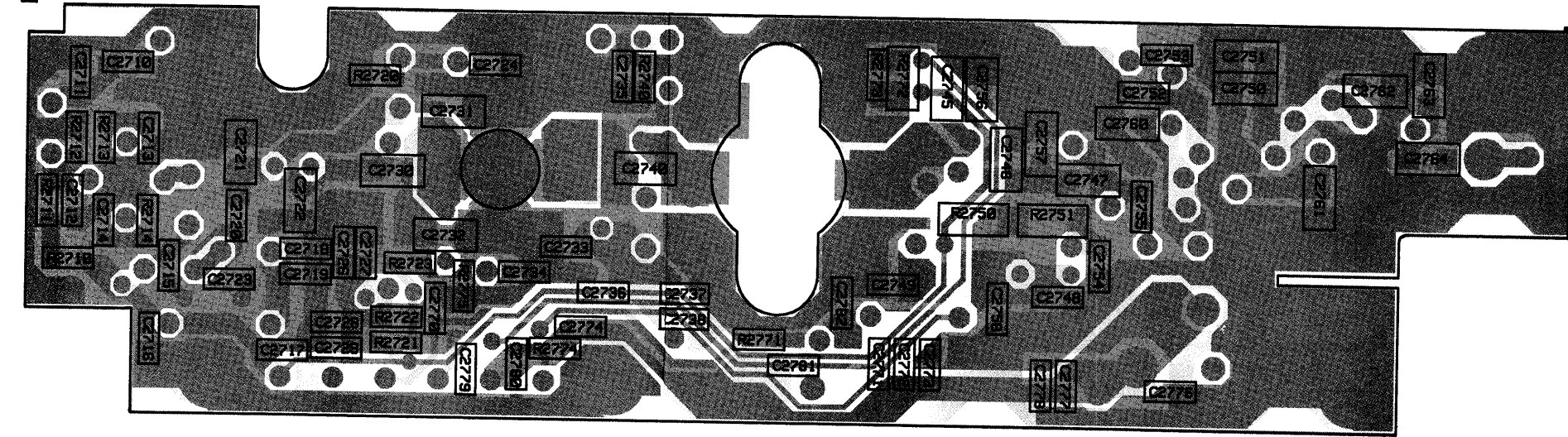




COMPONENT SIDE

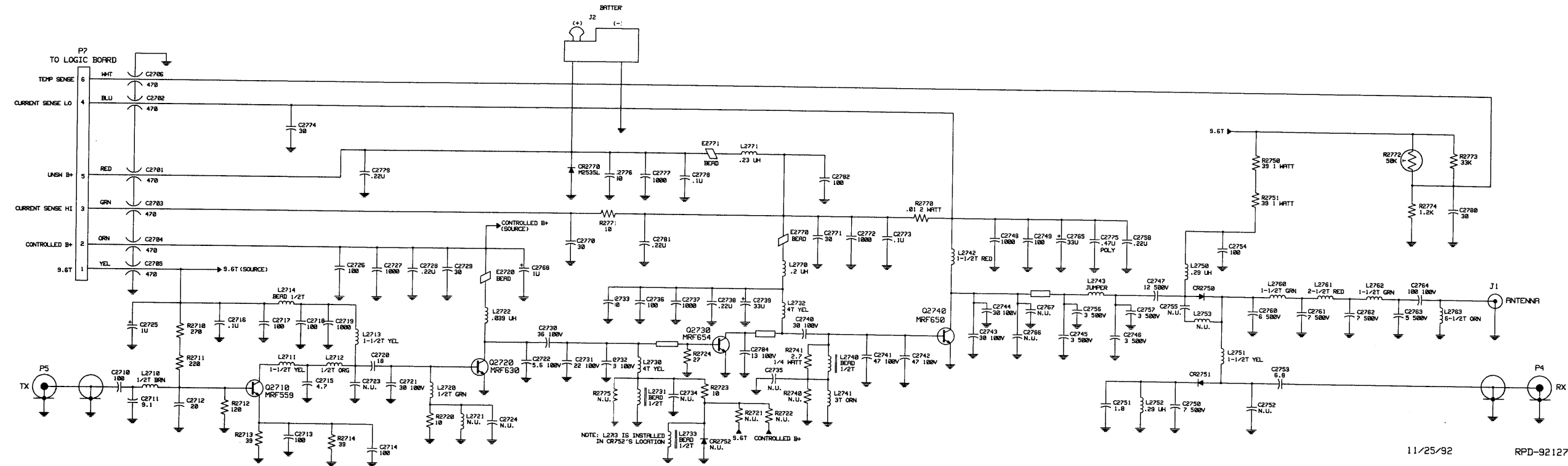


SOLDER SIDE

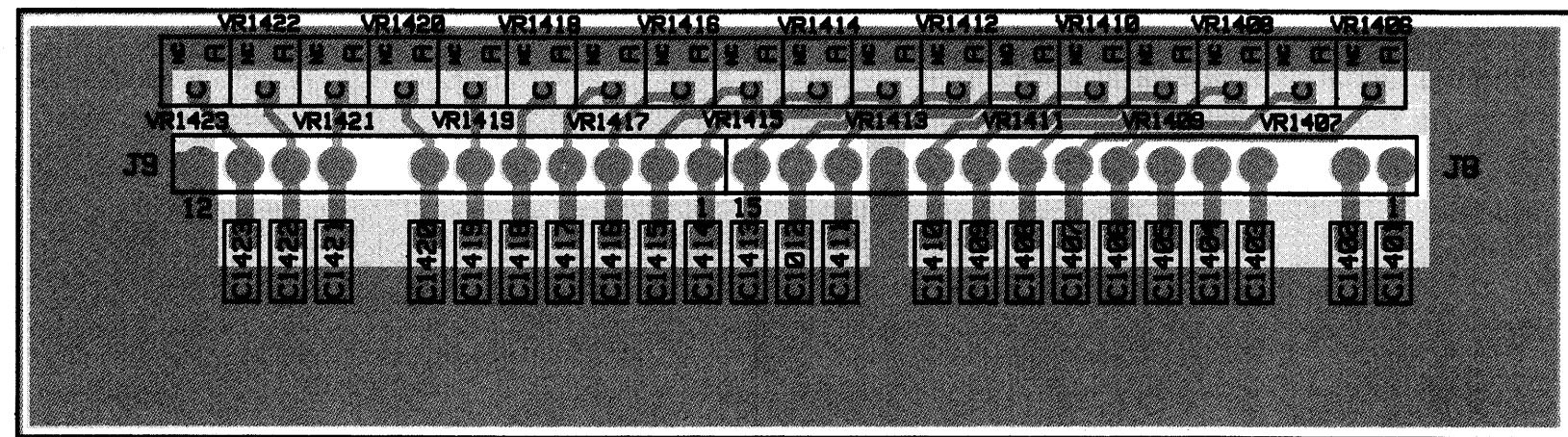


COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

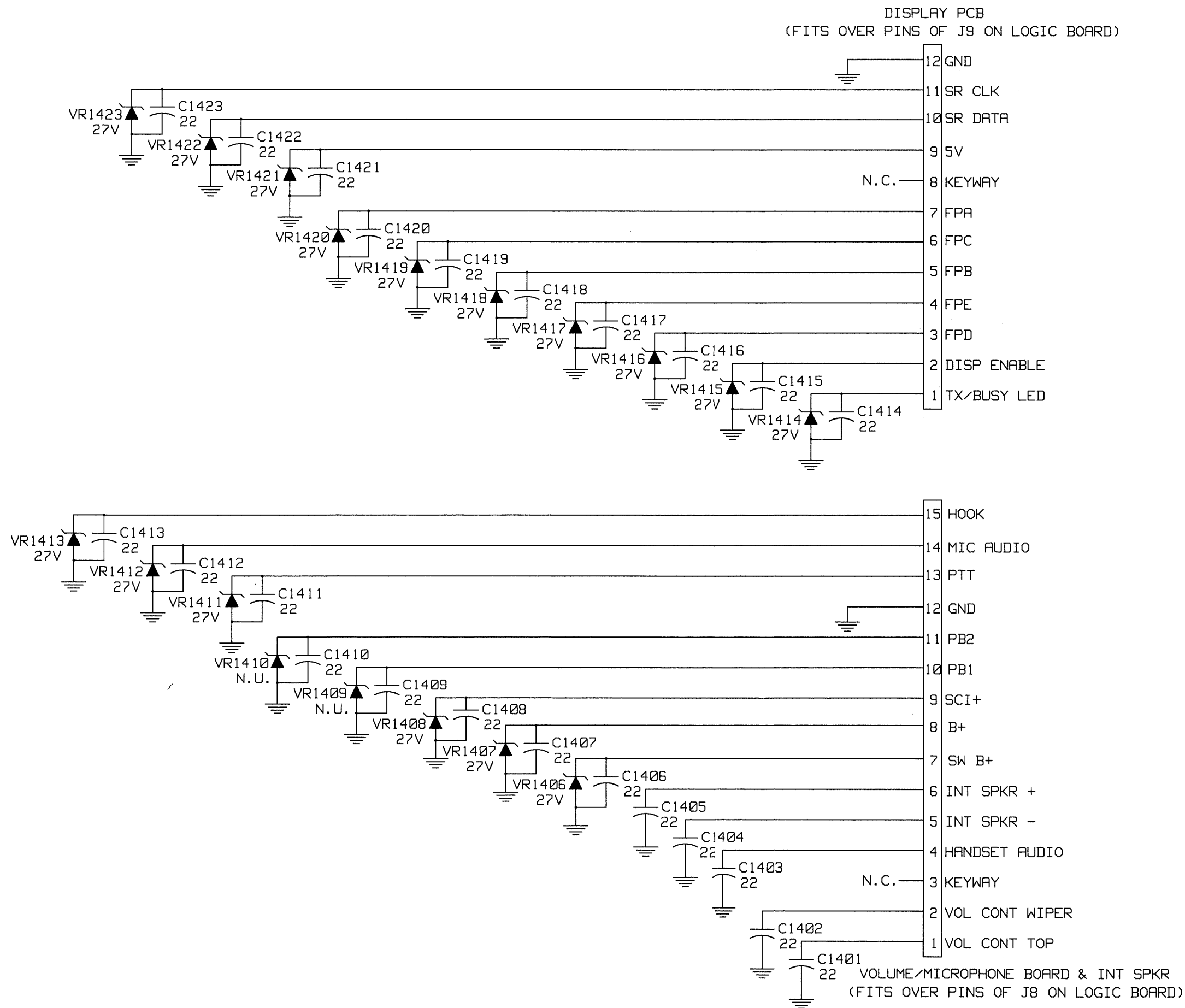


# COMPONENT SIDE



COMPONENT SIDE (Gray)  
 SOLDER SIDE (Pink)  
 OVERLAY -----

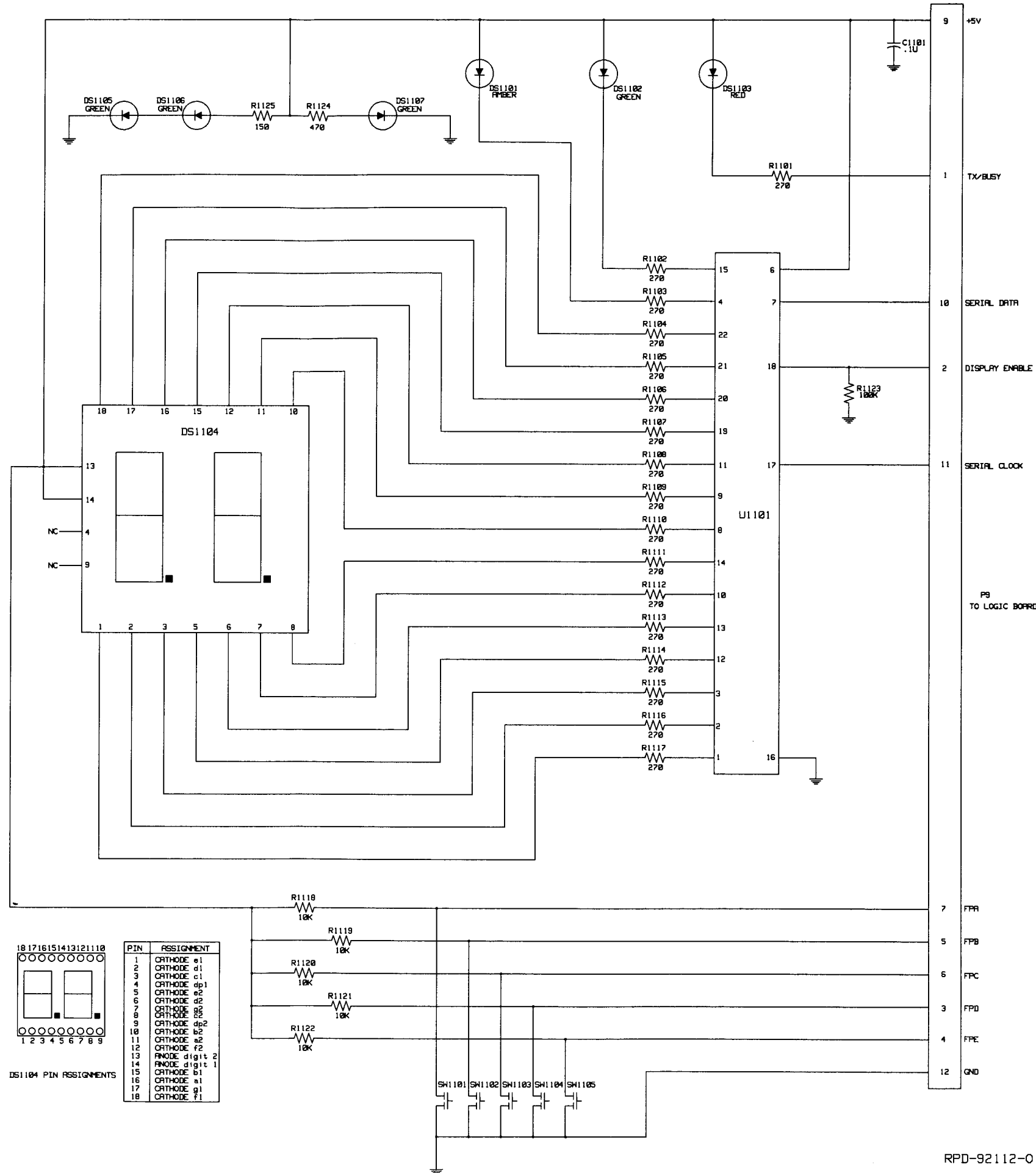
Circuit Board Detail, Schematic and Parts List for Front Panel Filter Board (01-80704Y83)



01-80704Y83 Front Panel Filter Board

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Capacitor, chip, 5%, 50V unless otherwise indicated.		
C1401	21-13740B33	22 pF
C1402	21-13740B33	22 pF
C1403	21-13740B33	22 pF
C1404	21-13740B33	22 pF
C1405	21-13740B33	22 pF
C1406	21-13740B33	22 pF
C1407	21-13740B33	22 pF
C1408	21-13740B33	22 pF
C1409	21-13740B33	22 pF
C1410	21-13740B33	22 pF
C1411	21-13740B33	22 pF
C1412	21-13740B33	22 pF
C1413	21-13740B33	22 pF
C1414	21-13740B33	22 pF
C1415	21-13740B33	22 pF
C1416	21-13740B33	22 pF
C1417	21-13740B33	22 pF
C1418	21-13740B33	22 pF
C1419	21-13740B33	22 pF
C1420	21-13740B33	22 pF
C1421	21-13740B33	22 pF
C1422	21-13740B33	22 pF
C1423	21-13740B33	22 pF
Voltage regulators (see note)		
VR1406	48-80948V01	zener diode 27V SOT
VR1407	48-80948V01	zener diode 27V SOT
VR1408	48-80948V01	zener diode 27V SOT
VR1409		not used
VR1410		not used
VR1411	48-80948V01	zener diode 27V SOT
VR1412	48-80948V01	zener diode 27V SOT
VR1413	48-80948V01	zener diode 27V SOT
VR1414	48-80948V01	zener diode 27V SOT
VR1415	48-80948V01	zener diode 27V SOT
VR1416	48-80948V01	zener diode 27V SOT
VR1417	48-80948V01	zener diode 27V SOT
VR1418	48-80948V01	zener diode 27V SOT
VR1419	48-80948V01	zener diode 27V SOT
VR1420	48-80948V01	zener diode 27V SOT
VR1421	48-80948V01	zener diode 27V SOT
VR1422	48-80948V01	zener diode 27V SOT
VR1423	48-80948V01	zener diode 27V SOT

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.



HLN8075A Display Board

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
------------------	-------------------	-------------

Capacitor, chip, 5%, 50V unless otherwise indicated.

C1101 21-13741B69 .1 uF

Displays and Indicators

DS1101	48-80051M03	diode LED amber
DS1102	48-80051M02	diode LED green
DS1103	48-80051M01	diode LED red
DS1104	48-80055M01	dual 7 segment LED
DS1105	48-83636N04	diode LED green
DS1106	48-83636N04	diode LED green
DS1107	48-83636N04	diode LED green

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1101	06-11077A60	270
R1102	06-11077A60	270
R1103	06-11077A60	270
R1104	06-11077A60	270
R1105	06-11077A60	270
R1106	06-11077A60	270
R1107	06-11077A60	270
R1108	06-11077A60	270
R1109	06-11077A60	270
R1110	06-11077A60	270
R1111	06-11077A60	270
R1112	06-11077A60	270
R1113	06-11077A60	270
R1114	06-11077A60	270
R1115	06-11077A60	270
R1116	06-11077A60	270
R1117	06-11077A60	270
R1118	06-11077A98	10k
R1119	06-11077A98	10k
R1120	06-11077A98	10k
R1121	06-11077A98	10k
R1122	06-11077A98	10k
R1123	06-11077B23	100k
R1124	06-11077A66	470
R1125	06-11077A54	150

Integrated circuits and modules (see note)

U1101 51-84437N25 driver, serial to parallel

Non-referenced items

01-80747T11	cable assembly (includes P9)
42-80053N01	ground strap
43-80278L01	spacer, LED display
43-80280L01	spacer, LED

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

3/12/92

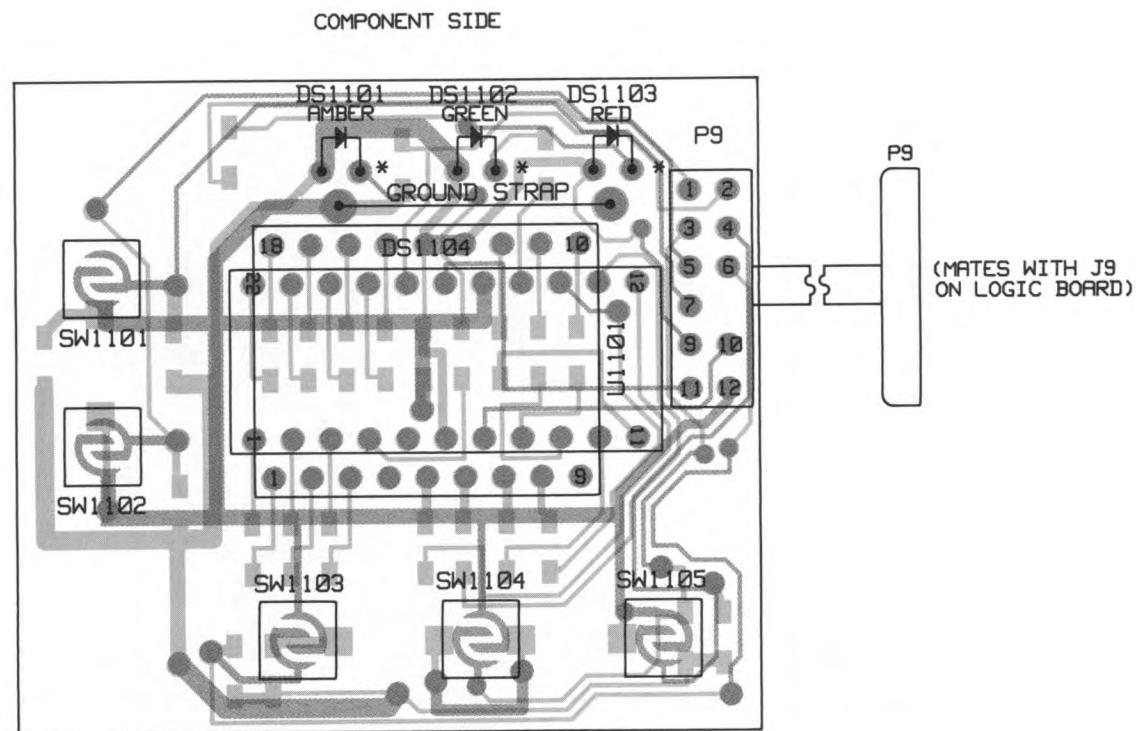
PL-921013-O

DS1104 PIN ASSIGNMENTS

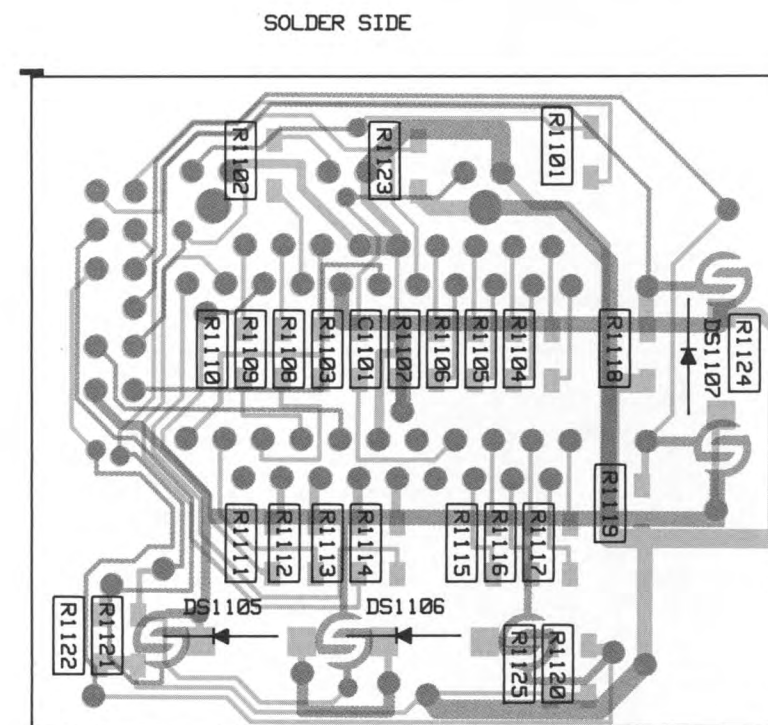
PIN	ASSIGNMENT
1	CATHODE a1
2	CATHODE d1
3	CATHODE c1
4	CATHODE dp1
5	CATHODE e2
6	CATHODE d2
7	CATHODE a2
8	CATHODE b2
9	CATHODE dp2
10	CATHODE b1
11	CATHODE a2
12	CATHODE f2
13	ANODE digit 2
14	ANODE digit 1
15	CATHODE b1
16	CATHODE a1
17	CATHODE g1
18	CATHODE f1

RPD-92112-0

Schematic Diagram and Parts List for HLN8075A Display Board



COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----



COMPONENT SIDE (Gray)  
SOLDER SIDE (Pink)  
OVERLAY -----

HLN8071A Volume/Microphone Board

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
------------------	-------------------	-------------

Receptacle, jack

J11	09-80132M01	telephone type, 8 contact
-----	-------------	---------------------------

Resistors

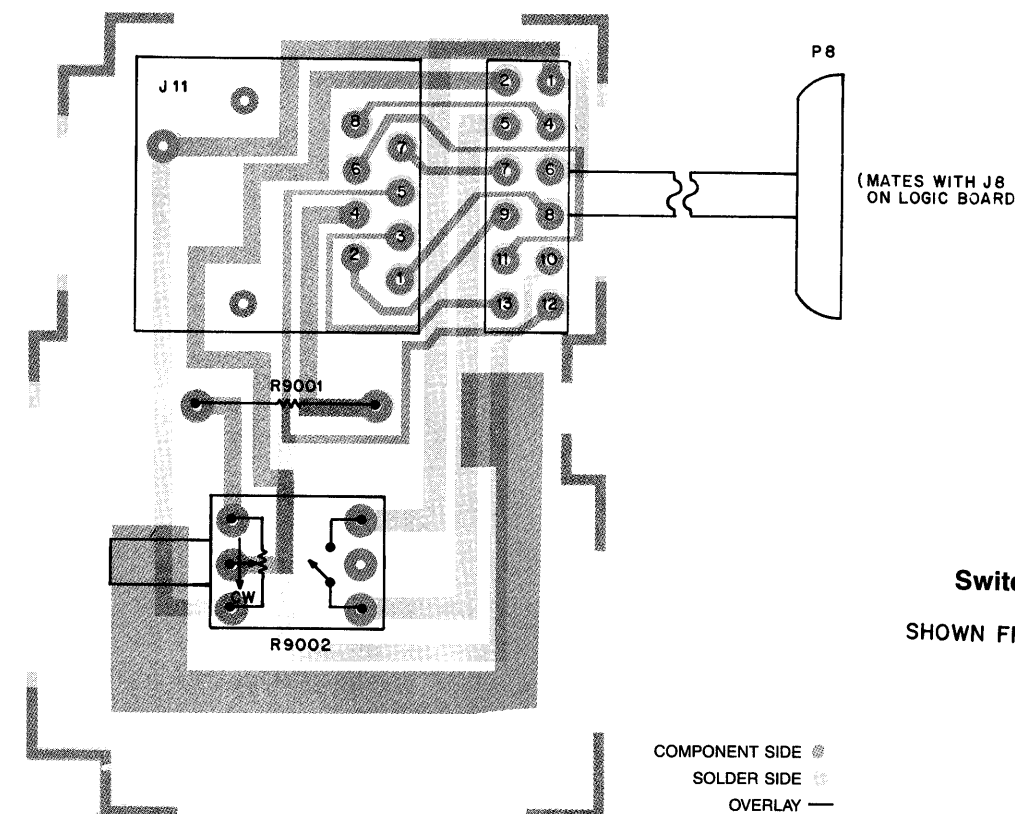
R9001	06-11009A01	10 5% 1/4 watt
R9002	18-80140M01	2k VOLUME with switch

Non-referenced items

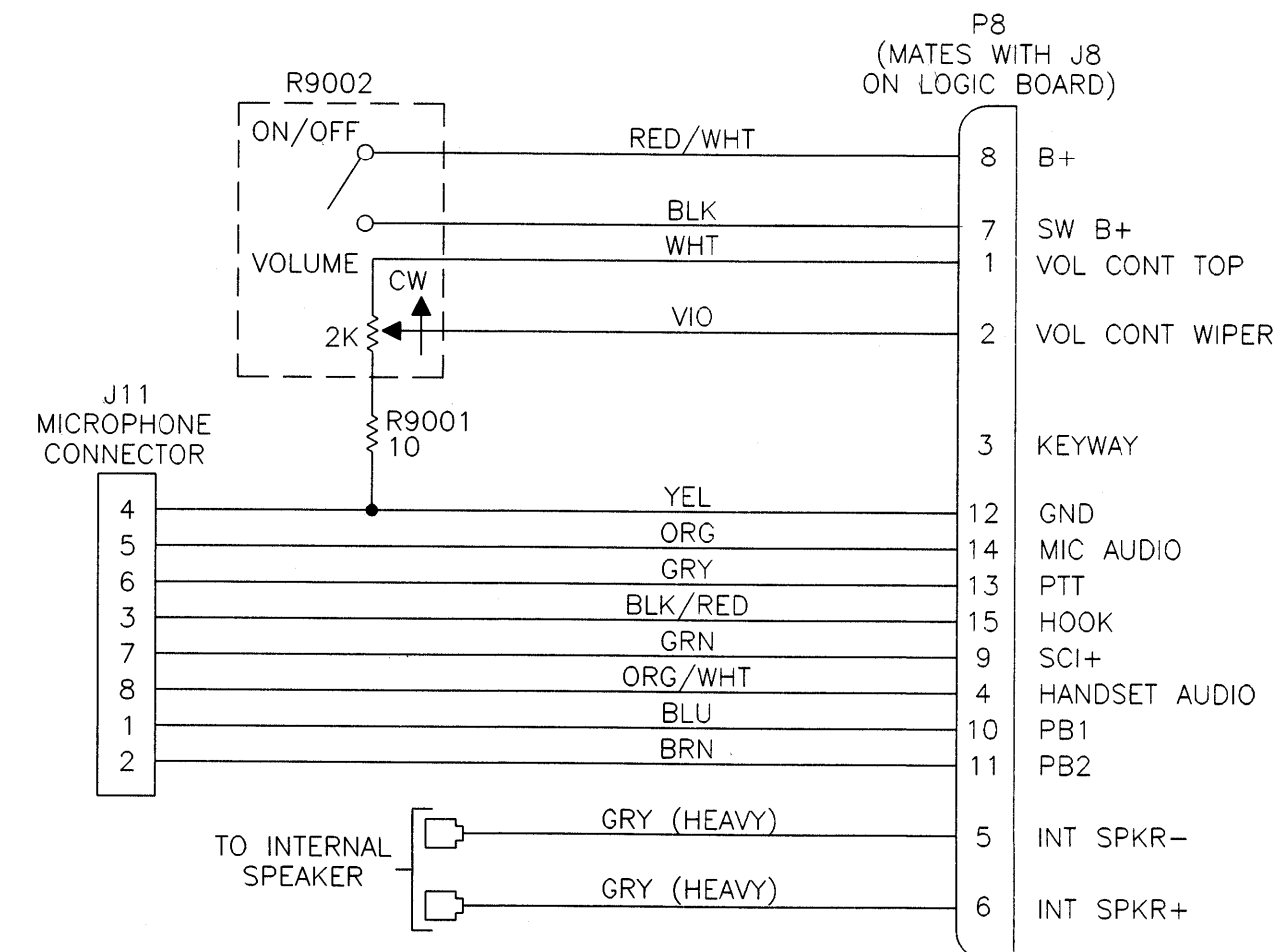
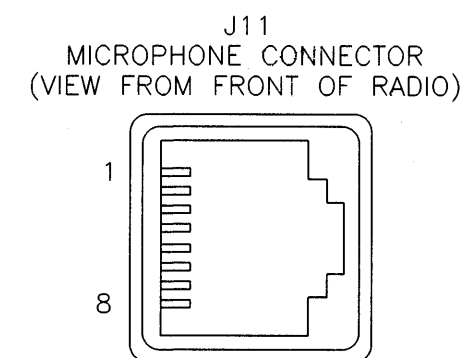
01-80614B01	cable assembly (includes P8)
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3/12/92

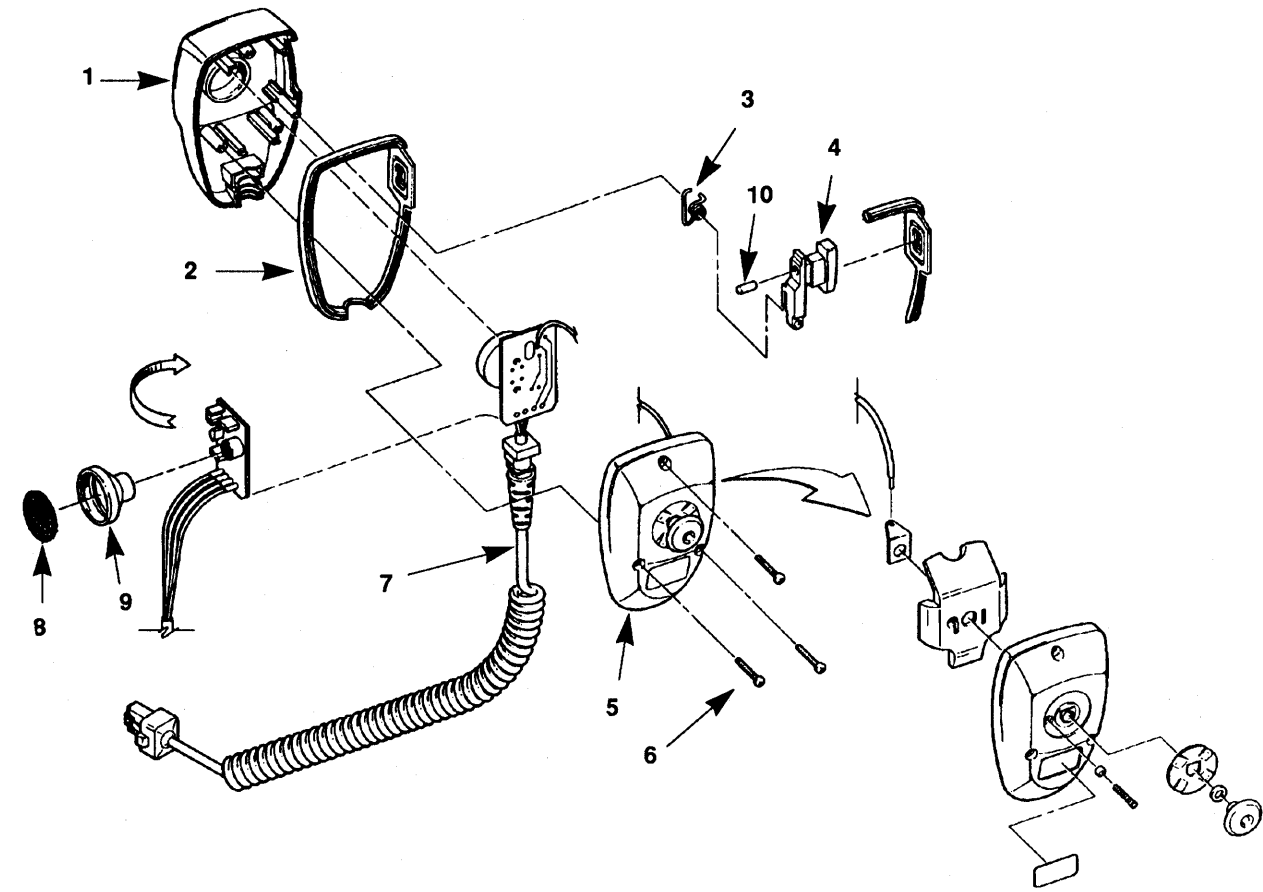
PL-921019-O



Switchboard  
SHOWN FROM COMPONENT SIDE



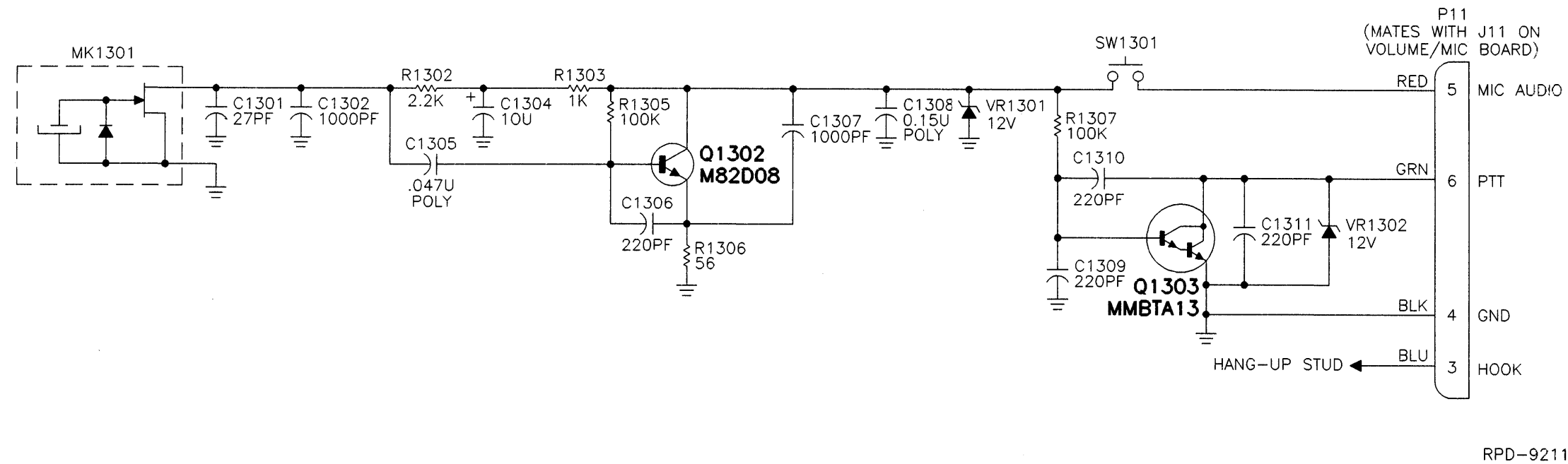
RPD-92116-0



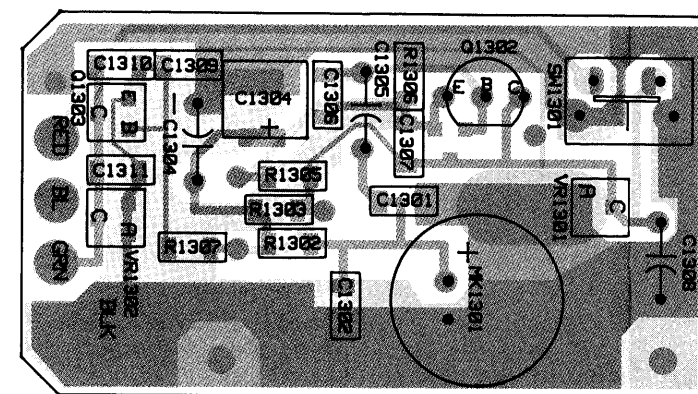
## parts list

HMN3596A: MICROPHONE EXPLODED VIEW PARTS LIST (part of HMN3413A)

REF SYMBOL	MOTOROLA PART NUMBER	DESCRIPTION	QTY. USED
1	15-80566B02	FRONT HOUSING	1
2	32-80565B01	GASKET, MICROPHONE	1
3	41-80150R01	SPRING	1
4	38-80568B01	PTT BUTTON	1
5	01-80704Y99	REAR HOUSING RIVETED	1
6	03-11994A23	SCREWS 5-20 x 7/8	3
7	30-80978Z03	COIL CORD, MICROPHONE	1
8	35-80132R01	FELT, BAFFLE, MICROPHONE	1
9	05-80149R01	GROMMET, MIC.	1
10	75-80983Z02	RUBBER SPACER, SWITCH	1



RPD-92117-0



COMPONENT SIDE  
SOLDER SIDE

SHOWN FROM COMPONENT SIDE

01-80704Y98 Microphone Board  
(Used in HMN3596A Microphone)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Capacitors, chip, 5%, 50V unless otherwise indicated		
C1301	21-13740B35	27 pF
C1302	21-13740B73	1000 pF
C1304	23-11049J27	tantalum 10 uF 10% 25V
C1305	08-11051A11	poly .047 uF 63V
C1306	21-13740B57	220 pF
C1307	21-13740B73	1000 pF
C1308	08-11051A14	poly .15 uF 63V
C1309	21-13740B57	220 pF
C1310	21-13740B57	220 pF
C1311	21-13740B57	220 pF

### Microphone

MK1301 50-80258E04 cartridge electret

### Transistors (see note)

Q1302 48-80182D08 NPN; type M8208  
Q1303 48-05128M19 NPN; type MMBTA13

### Resistors, chip, 5%, 1/8 watt

R1302 06-11077A82 2.2k  
R1303 06-11077A74 1k  
R1305 06-11077B23 100k  
R1306 06-11077A44 56  
R1307 06-11077B23 100k

### Switch

SW1301 40-80164S01 momentary pushbutton

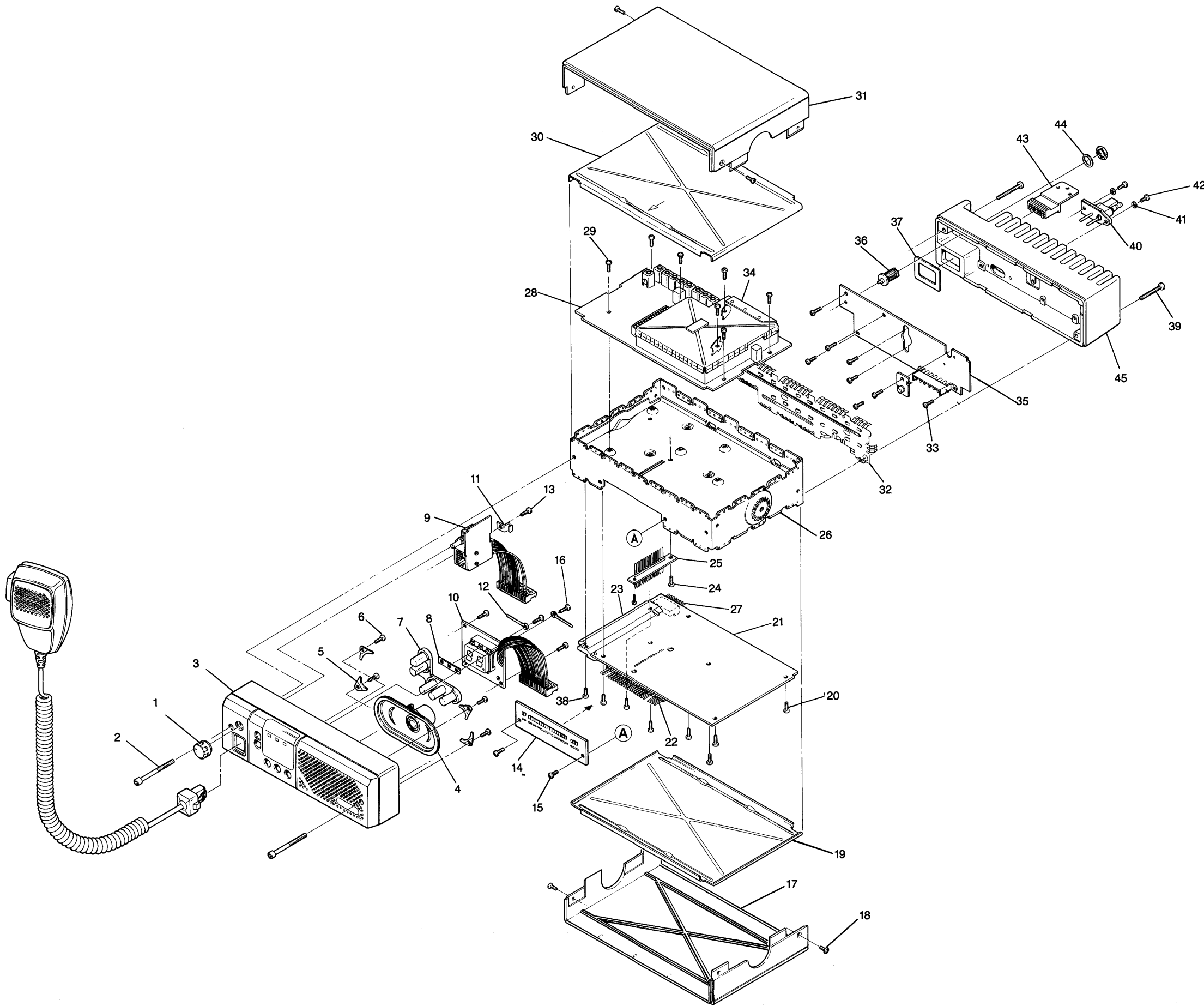
### Voltage regulators (see note)

VR1301 48-80140L17 zener diode 12V 5% SOT  
VR1302 48-80140L17 zener diode 12V 5% SOT

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

3/12/92

PL-921020-O



## parts list

(GM300 Mobile Radio exploded view)

REF SYMBOL	MOTOROLA PART NUMBER	DESCRIPTION	QTY. USED
1	36-80106M03	Knob, Control	1
2	03-80270L01	Screw, M4 x .7 x 38 cap blk	2
3	15-80516B01	Housing, Front-Panel, 8/16 freq.	1
4	50-80085D03	Speaker	1
5	42-80253L01	Bracket, speaker	4
6	03-10945A11	Screw, M3 x 8 plastite	4
7	75-80517B01	Keypad, elastomeric, 8/16 freq.	1
8	32-80039M01	Gasket, LED	1
9	HLN8071A	Vol/Mic. cable assembly	1
10	HLN8075A	Display PCB assembly, 8/16 freq.	1
11	07-80037M01	Bracket, PCB retainer	1
12	29-00129883	Lug	1
13	03-10945A11	Screw, M3 x 8 plastite	1
14	01-80704Y83	Front Panel Filter PCB	1
15	03-10943M09	Screw, M3 x 6	2
16	03-10945A11	Screw, M3 x 8 plastite	4
17	15-80127L01	Cover, housing	1
18	03-10943R55	Screw, M3 x 8	4
19	26-80498B01	Shield, chassis	1
20	03-10943M09	Screw, M3 x 6	6
21	-----	Logic Bd. (See model chart)	1
22	28-80600B01	Connector, 27 pin, J8 & J9	1
23	26-80497B01	Heatsink, logic bd	1
24	03-10943M09	Screw, M3 x 6	2
25	01-80605B01	Feed-thru assembly, RF/Logic	1
26	27-80496B01	Chassis	1
27	28-80923V01	Connector, 16 pin	1
28	-----	RF Bd. (See model chart)	1
29	03-10943M09	Screw, M3 x 6	7
30	26-80498B01	Shield, chassis	1
31	15-80127L01	Cover, housing	1
32	26-80223M07	Shield, PA	1
33	03-10943M10	Screw, M3 x 8	8
34	26-80229L03	Shield, VCO	1
35	-----	(Part of P.A. assembly)	1
36	09-80131M01	Antenna connector, mini UHF	1
37	32-80014N03	Gasket, accessory conn.	1
38	03-10943M10	Screw, M3 x 8	2
39	03-80271L01	Screw, M4 x 27	2
40	09-80255E01	Power connector	1
41	04-05587G01	Washer, power conn.	1
42	03-10943M11	Screw, M3 x 10	2
43	01-80701Y58	Connector assembly	1
44	04-80943V01	Lock-washer, ant.conn.	1
45	26-80124L01	Heatsink, P.A.	1

.90 EA

5.90 EA

.09 EA

9.46 EA

9.46 EA

SAME

Exploded Mechanical View and Parts List for GM300 Mobile Radios

(PAGE 66 IS BLANK)

HLD8029A RF Board, 146-174 MHz, 12.5 kHz (N)  
HLD8031A RF Board, 146-174 MHz, 25 kHz (W)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
------------------	-------------------	-------------

Capacitor, chip, 5%, 50V unless otherwise indicated.

C1	21-13740B30	16 pF
C2	21-13740B38	36 pF
C3	21-13740B36	30 pF
C4	21-13740B30	16 pF
C5		not used
C6	21-13740B13	3.3 +/- .25 pF
C7	21-13740B13	3.3 +/- .25 pF
C8	21-13740B25	10 pF
C9	21-13740B37	33 pF
C10	21-13740B38	36 pF
C11	21-13740B33	22 pF
C12	21-13740B65	470 pF
C13	21-13740B32	20 pF
C14	21-13740B45	68 pF
C15	21-13740B43	56 pF
C16	21-13740B34	24 pF
C17	21-13740B42	51 pF
C18	21-13740B27	12 pF
C19	21-13740B65	470 pF
C20	21-11032B15	.22 uF +80/-20%
C21	21-11032B15	.22 uF +80/-20%
C22	21-13741B45	.01 uF
C23	21-13741B45	.01 uF
C51	21-13740B35	27 pF
C52	21-13740B35	27 pF
C53	21-13740B18	5.1 +/- .25 pF
C54	21-13740B47	82 pF
C55	21-13741B45	.01 uF
C56	21-13741B45	.01 uF
C57	21-13740B29	15 pF
C58	21-13740B25	10 pF
C59	21-13740B29	15 pF
C60	21-13741B45	.01 uF
C61	21-13741B45	.01 uF
C65	21-11032B15	.22 uF +80/-20%
C66	21-13741B45	.01 uF
C67	23-13749C39	tantalum 10 uF 10% 20V
C68	21-13740B29	15 pF
C69	21-13740B39	39 pF
C70	21-13740B29	15 pF
C71	21-11032B15	.22 uF +80/-20%
C72	21-11032B15	.22 uF +80/-20%
C73	23-13749C39	tantalum 10 uF 10% 20V
C74	23-11048B13	lytic 10 uF 20% 16V
C75	21-13741B69	.1 uF
C76	23-11048B05	lytic 1 uF 20% 50V
C77	21-11032B15	.22 uF +80/-20%
C78	21-11032B15	.22 uF +80/-20%
C79	21-13741B29	.0022 uF
C80	21-11032B15	.22 uF +80/-20%
C81	21-13740B55	180 pF
C82	21-11032B15	.22 uF +80/-20%
C83	21-11032B15	.22 uF +80/-20%
C84	21-13740B09	2.2 +/- .25 pF
C85	21-13740B25	10 pF
C86		not used
C87	21-13741B45	.01 uF
C88	21-11032B15	.22 uF +80/-20%
C89		not used
C101	23-11048B13	lytic 10 uF 20% 16V
C102	08-11051A13	poly .1 uF 63V
C103	21-13741B45	.01 uF
C104	21-13741B45	.01 uF
C105	23-11048B13	lytic 10 uF 20% 16V
C106	21-13740B29	15 pF
C107	21-13741B69	.1 uF
C108	21-13741B69	.1 uF
C109	08-11051A13	poly .1 uF 63V
C110	08-11051A19	poly 1 uF 63V
C111	08-11051A09	poly .022 uF 63V
C112		not used
C113	21-13741B69	.1 uF
C114	21-13740B73	1000 pF
C115	21-13741B45	.01 uF
C116	21-13740B73	1000 pF
C117	21-13740B73	1000 pF
C118	21-13740B31	18 pF
C119	21-13740B73	1000 pF
C120	21-13740B73	1000 pF
C121	21-13740B29	15 pF
C122	21-13740B49	100 pF
C127		not used
C151	21-13740B73	1000 pF
C152	21-13740B47	82 pF
C153	21-13740B25	10 pF
C154	21-13741B45	.01 uF
C155	21-13740B55	180 pF
C156	21-13740B55	180 pF
C157	21-13741B45	.01 uF
C158	08-11051A15	poly .22 uF 63V
C159	21-13740B35	27 pF
C160	21-13740B29	15 pF
C161	21-13740B73	1000 pF
C162	23-11048B13	lytic 10 uF 20% 16V
C163	08-11051A17	poly .47 uF 63V
C164	21-13741B69	.1 uF
C165	21-13740B73	1000 pF
C166	21-13740B49	100 pF
C167	21-13740B49	100 pF
C168	21-13740B49	100 pF
C169		not used
C176	21-13740B73	1000 pF
C177	21-13741B69	.1 uF
C201	23-11048B13	lytic 10 uF 20% 16V
C205	21-13740B73	1000 pF
C206	21-13740B27	12 pF
C207	21-13740B29	15 pF
C208	21-13740B27	12 pF
C209	21-13740B23	8.2 +/- .25 pF
C210	21-13740B73	1000 pF
C211	21-13740B73	1000 pF
C212	21-13740B73	1000 pF
C213	21-13740B19	5.6 +/- .25 pF
C214	21-13740B13	3.3 +/- .25 pF
C215	21-13740B73	1000 pF
C216	21-13740B47	82 pF
C217		not used
C218	21-13741B45	.01 uF
C219	21-13740B13	3.3 +/- .25 pF
C220	21-13740B73	1000 pF
C221	21-13740B05	1.5 +/- .25 pF
C222	21-13741B45	.01 uF
C223	21-13740B13	3.3 +/- .25 pF
C224	21-13740B73	1000 pF
C225	21-13740B73	1000 pF
C228	21-13740B80	2200 pF
C229	21-13740B05	1.5 +/- .25 pF
C230	21-13740B05	1.5 +/- .25 pF
C231	21-13740B38	36 pF
C232		not used
C233	21-13740B40	43 pF
C234	21-13740B29	15 pF
C235	21-13740B23	8.2 +/- .25 pF
C236	21-13740B23	8.2 +/- .25 pF
C237	21-13740B73	1000 pF
C238	21-13740B73	1000 pF
C239	21-13740B73	1000 pF
C240	21-13740B13	3.3 +/- .25 pF
C241	21-13740B19	5.6 +/- .25 pF
C242	21-13740B73	1000 pF
C243	21-13740B47	82 pF
C244		not used
C245	21-13740B73	1000 pF
C246	21-13740B25	10 pF
C247	21-13740B73	1000 pF
C248	21-13740B01	1 +/- .25 pF
C249	21-13741B45	.01 uF
C250	21-13740B17	4.7 +/- .25 pF



C251	21-13740B73	1000 pF
C252	21-13740B73	1000 pF
C253		not used
C256	21-13741B45	.01 uF
C258	08-11051A08	poly .015 uF 63V
C276	21-13741B45	.01 uF
C277	23-11048B19	lytic 47 uF 20% 16V
C278	23-11048B19	lytic 47 uF 20% 16V
C301	21-13741B45	.01 uF
C302		not used
C303	21-13740B65	470 pF
C304		not used
C305		not used
C306		not used
C307		not used
C308		not used
C309		not used
C310		not used
C311		not used
C312		not used
C313		not used

## Diodes (see note)

CR2	48-80154K03	dual Schottky SOT
CR5	48-80142L01	silicon PIN SOT MMBV3401
CR51	48-05129M76	silicon SOT
CR52	48-05129M76	silicon SOT
CR101	48-05129M76	silicon SOT
CR102	48-05129M76	silicon SOT
CR151	48-80006E10	silicon varactor SOT
CR152	48-80006E10	silicon varactor SOT
CR153	48-84336R03	dual silicon SOT MMBD7000
CR202	48-80006E11	silicon varactor SOT
CR203	48-80006E11	silicon varactor SOT
CR204	48-80006E11	silicon varactor SOT
CR205	48-80006E11	silicon varactor SOT
CR206	48-80154K03	dual Schottky SOT
CR209	48-80006E10	silicon varactor SOT
CR210	48-80006E11	silicon varactor SOT
CR211	48-80006E11	silicon varactor SOT
CR212	48-80006E11	silicon varactor SOT
CR213	48-80006E11	silicon varactor SOT
CR214	48-80154K03	dual Schottky SOT

## Filters

FL51(N)	91-80097D04	455 kHz 6F
FL51(W)	91-80097D06	455 kHz 6D
FL52(N)	91-80098D04	455 kHz 4F
FL52(W)	91-80098D06	455 kHz 4D

## Connector, receptacle

J4	09-80135M01	coaxial (RX)
J5	09-80135M01	coaxial (TX)
J6	09-80130M03	14-pin, RF board

## Coils

L1	24-62587E51	chip 68 nH 5%
L2	24-62587E51	chip 68 nH 5%
L3	24-62587E51	chip 68 nH 5%
L4	24-62587E51	chip 68 nH 5%
L5	24-62587E51	chip 68 nH 5%
L6	24-62587E51	chip 68 nH 5%
L7	24-62587E51	chip 68 nH 5%
L8	24-62587E69	chip 1.2 uH 5%
L10	24-62587E69	chip 1.2 uH 5%
L11	24-62587E51	chip 68 nH 5%
L51	24-62587E61	chip .47 uH 5%
L52	24-62587E61	chip .47 uH 5%
L53	24-62587E61	chip .47 uH 5%
L54	24-62587E76	chip 4.7 uH 5%
L55	24-80164M02	tunable .7 uH E715
L56	24-80164M01	tunable .7 uH E713
L57	24-80164M04	tunable .7 uH E714
L58	24-62587E76	chip 4.7 uH 5%

L59	24-80164M03	tunable .7 uH E716
L60	24-62587E69	chip 1.2 uH 5%
L61	25-80000E01	tunable 455 kHz with cap
L101	24-62587E69	chip 1.2 uH 5%
L102	24-62587E47	chip 33 nH 5%
L103	24-62587E76	chip 4.7 uH 5%
L151	24-80299D01	tunable 17-3/4 turns
L152	24-11087A35	chip 5.6 uH 10%
L202	24-80148M05	tunable 3-1/2 turns
L203	24-62587E69	chip 1.2 uH 5%
L204	24-62587E47	chip 33 nH 5%
L205	24-62587E69	chip 1.2 uH 5%
L206	24-62587E69	chip 1.2 uH 5%
L207	24-62587E69	chip 1.2 uH 5%
L208	24-62587E47	chip 33 nH 5%
L209	24-62587E56	chip .18 uH 5%
L210	24-62587E52	chip 82 nH 5%
L211	24-62587E69	chip 1.2 uH 5%
L213	24-80148M08	tunable 4-1/2 turns
L214	24-62587E69	chip 1.2 uH 5%
L215	24-62587E52	chip 82 nH 5%
L216	24-62587E69	chip 1.2 uH 5%
L217	24-62587E69	chip 1.2 uH 5%
L218	24-62587E69	chip 1.2 uH 5%
L219	24-62587E47	chip 33 nH 5%
L220	24-62587E56	chip .18 uH 5%
L221	24-62587E54	chip .12 uH 5%
L222	24-62587E69	chip 1.2 uH 5%
L301	24-84657R01	ferrite bead

## Transistors (see note)

Q1	48-80950X01	NPN; type M50X01
Q2	48-05128M67	PNP; type MMBT3906
Q5	48-05128M67	PNP; type MMBT3906
Q6	48-80214G02	NPN; type MMBT3904
Q51	48-05128M66	field effect; type MMBFU310
Q52	48-05128M66	field effect; type MMBFU310
Q53	48-80214G02	NPN; type MMBT3904
Q101	48-05128M67	PNP; type MMBT3906
Q102	48-80182D20	NPN; type M82D20/M9987
Q103	48-80182D20	NPN; type M82D20/M9987
Q104	48-05128M67	PNP; type MMBT3906
Q105	48-80214G02	NPN; type MMBT3904
Q106	48-80214G02	NPN; type MMBT3904
Q107	48-11043C19	NPN; type M43C19/M9658
Q151	48-11043C19	NPN; type M43C19/M9658
Q152	48-11043C06	PNP; type M43C06/M9643
Q203	48-05128M66	field effect; type MMBFU310
Q204	48-11043C19	NPN; type M43C19/M9658
Q205	48-11043C19	NPN; type M43C19/M9658
Q206	48-05128M66	field effect; type MMBFU310
Q207	48-11043C19	NPN; type M43C19/M9658
Q208	48-11043C19	NPN; type M43C19/M9658
Q276	48-80214G02	NPN; type MMBT3904
Q277	48-05128M67	PNP; type MMBT3906
Q278	48-05128M67	PNP; type MMBT3906
Q279	48-05128M67	PNP; type MMBT3906

## Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1	06-11077A30	15
R2		not used
R3		470
R4	06-11077A66	2.7k
R5	06-11077A84	180
R6	06-11077A56	10k
R7	06-11077A98	10k
R8	06-11077A96	8.2k
R9	06-11077A98	10k
R10	06-11077A90	4.7k
R11	06-11077B07	22k
R12	06-11077B15	47k
R13	06-11077A50	100
R14	06-11077A50	100
R15	06-11077A68	560
R51	06-11077A43	51
R52	06-11077A54	150
R53	06-11077A88	3.9k
R54	06-11077A54	150

R56	06-11077B45	820k
R57	06-11077A72	820
R58	06-11077B23	100k
R59	06-11077B27	150k
R60	18-05500L08	variable 22k
R61(N)	06-11077B07	22k
R61(W)	06-11077B19	68k
R62(N)	06-11077A26	10
R62(W)	06-11077B09	27k
R63	06-11077B21	82k
R102	06-11077A62	330
R103	06-11077A98	10k
R104	06-11077A98	10k
R105	06-11077B11	33k
R106	06-11077A74	1k
R107	06-11077A78	1.5k
R108	06-11077A26	10
R109	06-11077A26	10
R110	06-11077B03	15k
R111	06-11077A72	820
R112	06-11077A86	3.3k
R113	06-11077A74	1k
R114	06-11077A72	820
R115	06-11077A70	680
R116	06-11077A92	5.6k
R118	06-11077A70	680
R119	06-11077A90	4.7k
R120	06-11077A88	3.9k
R121	06-11077A88	3.9k
R122	06-11077A43	51
R123	06-11077A50	100
R124	06-11077A84	2.7k
R125	06-11077A72	820
R151	06-11077B15	47k
R152	06-11077B11	33k
R153	06-11077B15	47k
R154	06-11077A34	22
R155	06-11077A98	10k
R156	06-11077B03	15k
R157	06-11077A78	1.5k
R158	06-11077A74	1k
R159	06-11077A74	1k
R160		not used
R161	06-11077A98	10k
R162		not used
R163(N)	06-11077B11	33k
R163(W)	06-11077A50	100
R164	18-05500L08	variable 22k
R165(N)	06-11077A98	10k
R165(W)	06-11077B03	15k
R176	06-11077G26	22.6k 1%
R177	06-11077G18	18.7k 1%
R178	06-11077F91	10.0k 1%
R179	06-11077F91	10.0k 1%
R180	06-11077G52	42.2k 1%
R181	06-11077F91	10.0k 1%
R182	06-11077G28	23.7k 1%
R207	06-11077A44	56
R208	06-11077A44	56
R209	06-11077A50	100
R210	06-11077A84	2.7k
R211	06-11077A98	10k
R212	06-11077A84	2.7k
R213	06-11077A72	820
R214	06-11077A50	100
R215	06-11077A84	2.7k
R216	06-11077A72	820
R217	06-11077A42	47
R218	06-11077A54	150
R219	06-11077A40	39
R220	06-11077A54	150
R222	06-11077A88	3.9k
R223(N)	06-11077A92	5.6k
R223(W)	06-11077A66	470
R224	06-11077B23	100k
R225(N)	06-11077A92	5.6k
R225(W)	06-11077B01	12k
R226	06-11077A44	56

R227	06-11077A44	56
R228	06-11077A50	100
R229	06-11077A84	2.7k
R230	06-11077A98	10k
R231	06-11077A84	2.7k
R232	06-11077A72	820
R233	06-11077A50	100
R234	06-11077A84	2.7k
R235	06-11077A72	820
R236	06-11077A42	47
R237	06-11077A62	330
R238	06-11077A32	18
R239	06-11077A62	330
R241	06-11077B23	100k
R276	06-11077A98	10k
R277	06-11077A60	270
R278	06-11077A26	10
R279	06-11077A90	4.7k
R280	06-11077A98	10k
R281	06-11077A90	4.7k
R301	06-11077A74	1k
R302	18-05500L08	variable 22k
R303	06-11077B01	12k

## Transformers

T1	25-80163M02	balun
T2	25-80163M02	balun

## Integrated circuits and modules (see note)

U1	48-80174R01	quad Schottky ring SOIC
U51	51-05479G05	receiver system 14.87
U101	51-84704M75	synthesizer
U102	51-84810F66	prescaler
U176	51-80932W01	dual op-amp

## Voltage regulators (see note)

VR176	48-82256C11	zener diode 10V 5%
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## Crystals

Y51(N)	91-80022M03	filter 45.1 MHz 12.5 kHz
Y51(W)	91-80022M02	filter 45.1 MHz 25 kHz
Y52	48-80008K02	44.645 MHz
Y151	48-80174D05	14.4 MHz

## Non-referenced items

26-80097M01	shield coil can (for L151)
26-80098M01	shield coil can (10 used)
26-80228L01	shield can (2 used, for J4 and J5)
26-80229L03	shield VCO frame
75-05295B02	insulator (for Y151)
75-05295B05	insulator (3 used, for Y51A/B, Y52)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/14/92

PL-921009-A

HLE8230A RF Board, 403-433 MHz, 12.5 kHz (N)  
HLE8229A RF Board, 403-433 MHz, 25 kHz (W)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C1	21-13740G27	8.2 +/-1 pF
C2	21-13740G27	8.2 +/-1 pF
C3	21-13740G17	3.9 +/-1 pF
C4	21-13740G30	11 pF 2%
C5	21-13740G21	5.6 +/-1 pF
C6	21-13740G19	4.7 +/-1 pF
C7	21-13740G27	8.2 +/-1 pF
C8	21-13740G17	3.9 +/-1 pF
C9	21-13740G21	5.6 +/-1 pF
C10	21-13740G27	8.2 +/-1 pF
C11	21-13740G32	13 pF 2%
C12	21-13740B45	68 pF
C13	21-13740G27	8.2 +/-1 pF
C14		not used
C15	21-13740G13	2.7 +/-1 pF
C16	21-13740G20	5.1 +/-1 pF
C17	21-13740G37	22 pF 2%
C18	21-13740G19	4.7 +/-1 pF
C19	21-13740G16	3.6 +/-1 pF
C20	21-13740G36	20 pF 2%
C21	21-13740G18	4.3 +/-1 pF
C22	21-13740G17	3.9 +/-1 pF
C23	21-13740G35	18 pF 2%
C24	21-13740G20	5.1 +/-1 pF
C25	21-13740G29	10 pF 2%
C26	21-13740G31	12 pF 2%
C27	21-11032B15	.22 uF +80/-20%
C28	21-13740B45	68 pF
C29		not used
C30	21-13740B35	27 pF
C33	21-13741B45	.01 uF
C51	21-13740B55	180 pF
C52	21-13740B27	12 pF
C53	21-13740B47	82 pF
C54	21-13740B61	330 pF
C55	21-13741B45	.01 uF
C56	21-13741B45	.01 uF
C57(N)	21-13740B29	15 pF
C57(W)	21-13740B31	18 pF
C58(N)	21-13740B25	10 pF
C58(W)	21-13740B27	12 pF
C59(N)	21-13740B29	15 pF
C59(W)	21-13740B31	18 pF
C60	21-13741B45	.01 uF
C61	21-13741B45	.01 uF
C65	21-11032B15	.22 uF +80/-20%
C66	21-13741B45	.01 uF
C67	23-13749C39	tantalum 10 uF 10% 20V
C68	21-13740B29	15 pF
C69	21-13740B39	39 pF
C70	21-13740B29	15 pF
C71	21-11032B15	.22 uF +80/-20%
C72	21-11032B15	.22 uF +80/-20%
C73	23-13749C39	tantalum 10 uF 10% 20V
C74	23-11048B13	lytic 10 uF 20% 16V
C75	21-13741B69	.1 uF
C76	23-11048B05	lytic 1 uF 20% 50V
C77	21-11032B15	.22 uF +80/-20%
C78	21-11032B15	.22 uF +80/-20%
C79	21-13741B29	.0022 uF
C80	21-11032B15	.22 uF +80/-20%
C81	21-13740B55	180 pF
C82	21-11032B15	.22 uF +80/-20%
C83	21-11032B15	.22 uF +80/-20%
C84	21-13740B09	2.2 +/--.25 pF
C85	21-13740B25	10 pF
C86	21-11032B15	.22 uF +80/-20%
C87	21-11032B15	.22 uF +80/-20%
C90	21-13741B45	.01 uF
C91	21-13740B49	100 pF

C101	23-11048B13	lytic 10 uF 20% 16V
C102	08-11051A13	poly .1 uF 63V
C103	21-11032B15	.22 uF +80/-20%
C104	21-13741B45	.01 uF
C105	23-11048B13	lytic 10 uF 20% 16V
C106	21-13740B29	15 pF
C107	21-13741B69	.1 uF
C108	21-13741B69	.1 uF
C109	08-11051A13	poly .1 uF 63V
C110	08-11051A19	poly 1 uF 63V
C111	08-11051A09	poly .022 uF 63V
C112	08-11051A01	poly .001 uF 63V
C113	21-13741B45	.01 uF
C114	21-13740B45	68 pF
C115	21-13741B45	.01 uF
C116	21-13740B49	100 pF
C117		not used
C118		not used
C119	21-13740B45	68 pF
C120	21-13740B45	68 pF
C121	21-13740B19	5.6 +/--.25 pF
C122	21-13740B49	100 pF
C123	21-13740B45	68 pF
C124	21-13740B25	10 pF
C125	21-13740B73	1000 pF
C126		not used
C127	21-11032B15	.22 uF +80/-20%
C128	21-11032B15	.22 uF +80/-20%
C129	21-11032B15	.22 uF +80/-20%
C130	21-11032B15	.22 uF +80/-20%
C131	21-11032B15	.22 uF +80/-20%
C132	21-11032B15	.22 uF +80/-20%
C133	21-13740B49	100 pF
C151	21-13740B73	1000 pF
C152	21-13740B47	82 pF
C153	21-13740B25	10 pF
C154	21-13741B45	.01 uF
C155	21-13740B55	180 pF
C156	21-13740B55	180 pF
C157		not used
C158	08-11051A15	poly .22 uF 63V
C159	21-13740B35	27 pF
C160	21-13740B29	15 pF
C161	21-13740B73	1000 pF
C162	23-11048B13	lytic 10 uF 20% 16V
C163	08-11051A17	poly .47 uF 63V
C164	21-11032B15	.22 uF +80/-20%
C165	21-13741B33	.0033 uF
C176	21-13740B73	1000 pF
C201	23-11048B13	lytic 10 uF 20% 16V
C205	21-13740B49	100 pF
C206	21-13740B16	4.3 +/--.25 pF
C207	21-13740B19	5.6 +/--.25 pF
C208	21-13740B14	3.6 +/--.25 pF
C209	21-13740B14	3.6 +/--.25 pF
C210	21-13740B49	100 pF
C212	21-13740B49	100 pF
C213	21-13740B01	1 +/--.25 pF
C214	21-13740B13	3.3 +/--.25 pF
C215	21-13740B49	100 pF
C216	21-13740B13	3.3 +/--.25 pF
C218	21-13740B49	100 pF
C220	21-13740B25	10 pF
C221	21-13740B05	1.5 +/--.25 pF
C222	21-13740B49	100 pF
C224	21-13740B49	100 pF
C225	21-13740B49	100 pF
C228	21-13741B29	.0022 uF
C230	21-13740B05	1.5 +/--.25 pF
C231	21-13740B05	1.5 +/--.25 pF
C233	21-13740B18	5.1 +/--.25 pF
C234	21-13740B23	8.2 +/--.25 pF
C235	21-13740B22	7.5 +/--.25 pF
C236	21-13740B22	7.5 +/--.25 pF
C237	21-13740B49	100 pF
C239	21-13740B49	100 pF
C240	21-13740B05	1.5 +/--.25 pF
C242	21-13740B49	100 pF

C243	21-13740B13	3.3 +/- .25 pF
C244	21-11032B15	.22 uF +80/-20%
C245	21-13740B45	68 pF
C247	21-13740B23	8.2 +/- .25 pF
C248	21-13740B01	1 +/- .25 pF
C249	21-13740B49	100 pF
C251	21-13740B45	68 pF
C252	21-13740B49	100 pF
C253	21-13740B45	68 pF
C255		not used
C256	21-13741B45	.01 uF
C257		not used
C258	08-11051A07	poly .01 uF 63V
C259	21-13740B23	8.2 +/- .25 pF
C260		not used
C261	21-13741B45	.01 uF
C262		not used
C263	21-13740B19	5.6 +/- .25 pF
C264		not used
C265		not used
C266	21-13740B03	1.2 +/- .25 pF
C267	21-13740B01	1 +/- .25 pF
C268	21-13740B13	3.3 +/- .25 pF
C269	21-13740B09	2.2 +/- .25 pF
C270		not used
C271		not used
C272	21-13740B45	68 pF
C273		not used
C274	21-13740B49	100 pF
C275	21-13741B45	.01 uF
C276	21-13741B45	.01 uF
C277	23-11048B19	lytic 47 uF 20% 16V
C278	23-11048B19	lytic 47 uF 20% 16V
C279	21-13740B45	68 pF
C280	21-11032B15	.22 uF +80/-20%
C301	21-13741B45	.01 uF
C302	21-13740B45	68 pF
C303	21-13740B45	68 pF
C304	21-13740B45	68 pF
C305	21-13740B45	68 pF
C306	21-13740B45	68 pF
C307	21-13740B45	68 pF
C308	21-13740B45	68 pF
C309	21-13740B45	68 pF
C310	21-13740B45	68 pF
C311	21-13740B45	68 pF
C312	21-13740B45	68 pF
C313	21-13740B45	68 pF
C314	21-13740B49	100 pF

## Diodes (see note)

CR2	48-80154K03	dual Schottky SOT
CR3	48-80939T01	Schottky SOT
CR5	48-80142L01	silicon PIN SOT MMBV3401
CR51	48-05129M76	silicon SOT
CR52	48-05129M76	silicon SOT
CR101	48-05129M76	silicon SOT
CR102	48-05129M76	silicon SOT
CR151	48-80006E10	silicon varactor SOT
CR152	48-80006E10	silicon varactor SOT
CR153	48-84336R03	dual silicon SOT MMBD7000
CR203	48-84534N02	silicon varactor SOT
CR205	48-84534N02	silicon varactor SOT
CR206	48-80154K02	dual Schottky SOT
CR209	48-84534N02	silicon varactor SOT
CR211	48-84534N02	silicon varactor SOT
CR213	48-84534N02	silicon varactor SOT
CR214	48-80939T01	Schottky SOT

## Filters

FL51(N)	91-80097D04	455 kHz 6F
FL51(W)	91-80097D06	455 kHz 6D
FL52(N)	91-80098D04	455 kHz 4F
FL52(W)	91-80098D06	455 kHz 4D

## Connector, receptacle

J4	09-80135M01	coaxial (RX)
J5	09-80135M01	coaxial (TX)
J6	09-80130M03	14-pin, RF board

## Jumpers

JU1	06-11077A01	jumper
JU2	06-11077A01	jumper
JU3	06-11077A01	jumper
JU51	06-11077A01	jumper
JU52	06-11077A01	jumper
JU201		not used
JU201		not used

## Coils

L1	24-84562T04	4 turns airwound
L2	24-84562T04	4 turns airwound
L3	24-84562T04	4 turns airwound
L4	24-84562T04	4 turns airwound
L5	24-84562T04	4 turns airwound
L6	24-84562T04	4 turns airwound
L7	24-84562T04	4 turns airwound
L8	24-62587N42	chip 12 nH 5%
L9	24-62587N44	chip 18 nH 5%
L10	24-62587N54	chip .12 uH 5%
L51	24-11030B12	7-1/2 turns YEL
L52	24-62587N68	chip 1 uH 5%
L53	24-62587N56	chip .18 uH 5%
L54	24-62587N76	chip 4.7 uH 5%
L55	24-80164M02	tunable .7 uH E715
L56	24-80164M01	tunable .7 uH E713
L57	24-80164M04	tunable .7 uH E714
L58	24-62587N76	chip 4.7 uH 5%
L59	24-80164M03	tunable .7 uH E716
L60	24-62587N69	chip 1.2 uH 5%
L61	25-80000E01	tunable 455 kHz with cap
L101	24-62587N56	chip .18 uH 5%
L102	24-62587N47	chip 33 nH 5%
L151	24-80299D01	tunable 17-3/4 turns
L152	24-11087A35	chip 5.6 uH 10%
L202	24-80148M02	tunable 2-1/2 turns RED
L203	24-62587N55	chip .15 uH 5%
L204	24-11030A04	5 turns GRN
L205	24-62587N55	chip .15 uH 5%
L206	24-62587N55	chip .15 uH 5%
L207	24-62587N57	chip .22 uH 5%
L209	24-11030B05	2-1/2 turns GRN
L210	24-11030B08	4-1/2 turns BRN
L211	24-62587N57	chip .22 uH 5%
L213	24-80148M01	tunable 1-1/2 turns BRN
L214	24-62587N55	chip .15 uH 5%
L215	24-11030B08	4-1/2 turns BRN
L216	24-62587N55	chip .15 uH 5%
L217	24-62587N55	chip .15 uH 5%
L218	24-62587N57	chip .22 uH 5%
L220	24-11030B05	2-1/2 turns GRN
L221	24-11030B08	4-1/2 turns BRN
L222	24-62587N56	chip .18 uH 5%
L223		not used

## Transistors (see note)

Q1	48-80950X01	NPN; type M50X01
Q2	48-05128M67	PNP; type MMBT3906
Q3	48-05128M67	PNP; type MMBT3906
Q4	48-05128M67	PNP; type MMBT3906
Q5	48-05128M67	PNP; type MMBT3906
Q6	48-80214G02	NPN; type MMBT3904
Q51	48-05128M66	field effect; type MMBFU310
Q52	48-05128M66	field effect; type MMBFU310
Q53	48-80214G02	NPN; type MMBT3904
Q101	48-05128M67	PNP; type MMBT3906
Q102	48-80182D20	NPN; type M82D20/M9987
Q103	48-80182D20	NPN; type M82D20/M9987
Q104	48-05128M67	PNP; type MMBT3906

Q105	48-80214G02	NPN; type MMBT3904
Q106	48-80214G02	NPN; type MMBT3904
Q107	48-11043C19	NPN; type M43C19/M9658
Q151	48-11043C19	NPN; type M43C19/M9658
Q152	48-11043C06	PNP; type M43C06/M9643
Q203	48-05128M66	field effect; type MMBFU310
Q204	48-80950X01	NPN; type M50X01
Q205	48-80950X01	NPN; type M50X01
Q206	48-05128M66	field effect; type MMBFU310
Q207	48-80950X01	NPN; type M50X01
Q208	48-80950X01	NPN; type M50X01
Q276	48-80214G02	NPN; type MMBT3904
Q277	48-05128M67	PNP; type MMBT3906
Q278	48-05128M67	PNP; type MMBT3906
Q279	48-05128M67	PNP; type MMBT3906

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1	06-11077A84	2.7k
R2	06-11077A54	150
R3	06-11077A60	270
R4	06-11077B07	22k
R5	06-11077A95	7.5k
R6	06-11077A90	4.7k
R7	06-11077A98	10k
R8	06-11077A98	10k
R9	06-11077A90	4.7k
R10	06-11077B07	22k
R11	06-11077B15	47k
R12	06-11077A45	62
R13	06-11077A65	430
R51	06-11077A44	56
R52	06-11077A54	150
R53	06-11077A88	3.9k
R54	06-11077A54	150
R56	06-11077B45	820k
R57	06-11077A72	820
R58	06-11077B23	100k
R59	06-11077B27	150k
R60	18-05500L08	variable 22k
R61(N)	06-11077B07	22k
R61(W)	06-11077B19	68k
R62(N)	06-11077A26	10
R62(W)	06-11077B09	27k
R63	06-11077B21	82k
R102	06-11077A62	330
R103	06-11077A98	10k
R104	06-11077A98	10k
R105	06-11077B11	33k
R106	06-11077A73	910
R107	06-11077A78	1.5k
R108	06-11077A26	10
R109	06-11077A26	10
R110	06-11077B03	15k
R111	06-11077A54	150
R112	06-11077A72	820
R113	06-11077A58	220
R114	06-11077A54	150
R115	06-11077A70	680
R116	06-11077A92	5.6k
R118	06-11077A70	680
R119	06-11077A88	3.9k
R120	06-11077A88	3.9k
R121	06-11077A84	2.7k
R122	06-11077A88	3.9k
R123	06-11077A74	1k
R124	06-11077A78	1.5k
R125	06-11077A44	56
R126	06-11077A50	100
R127	06-11077A84	2.7k
R128	06-11077A72	820
R151	06-11077B15	47k
R152	06-11077B11	33k
R153	06-11077B15	47k
R154	06-11077A34	22
R155	06-11077A98	10k
R156	06-11077B03	15k
R157	06-11077A78	1.5k

R158	06-11077A74	1k
R159	06-11077A74	1k
R161	06-11077A98	10k
R162		not used
R163(N)	06-11077B23	100k
R163(W)	06-11077B17	56k
R164	18-05500L08	variable 22k
R165(N)	06-11077A98	10k
R165(W)	06-11077B03	15k
R176	06-11077G26	22.6k 1%
R177	06-11077G18	18.7k 1%
R178	06-11077F91	10.0k 1%
R179	06-11077F91	10.0k 1%
R180	06-11077G52	42.2k 1%
R181	06-11077F91	10.0k 1%
R182	06-11077G28	23.7k 1%
R207	06-11077A44	56
R208	06-11077A38	33
R209	06-11077A38	33
R210	06-11077A98	10k
R212	06-11077A84	2.7k
R213	06-11077A72	820
R214	06-11077A50	100
R215	06-11077A84	2.7k
R216	06-11077A72	820
R217	06-11077A50	100
R218	06-11077A53	130
R219	06-11077A41	43
R220	06-11077A53	130
R222	06-11077A88	3.9k
R223	06-11077A94	6.8k
R224	06-11077B23	100k
R225	06-11077A88	3.9k
R226	06-11077A44	56
R227	06-11077A38	33
R228	06-11077A38	33
R229	06-11077A98	10k
R231	06-11077A84	2.7k
R232	06-11077A72	820
R233	06-11077A50	100
R234	06-11077A84	2.7k
R235	06-11077A72	820
R236	06-11077A50	100
R237	06-11077A61	300
R238	06-11077A32	18
R239	06-11077A61	300
R240		not used
R243	06-11077B23	100k
R244	06-11077A74	1k
R245	06-11077A74	1k
R246	06-11077B09	27k
R276	06-11077A98	10k
R277	06-11077A60	270
R278	06-11077A26	10
R279	06-11077A90	4.7k
R280	06-11077A98	10k
R281	06-11077A90	4.7k
R301(N)	06-11077B03	15k
R301(W)	06-11077A82	2.2k
R302	18-05500L08	variable 22k
R303	06-11077A94	6.8k

## Transformers

T1	25-80163M02	balun
T2	25-80163M02	balun

## Integrated circuits and modules (see note)

U1	48-80174R01	quad Schottky ring SOIC
U51	51-05479G05	receiver system
U101	51-84704M75	synthesizer
U102	51-83977M45	prescaler
U176	51-80932W01	dual op-amp

## Voltage regulators (see note)

VR176	48-82256C11	zener diode 10V 5%
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## Crystals

Y51(N)	91-80022M03	filter 45.1 MHz 12.5 kHz
Y51(W)	91-80022M02	filter 45.1 MHz 25 kHz
Y52	48-80008K02	44.645 MHz
Y151	48-80174D05	14.4 MHz

## Non-referenced items

26-80097M01	shield coil can (for L151)
26-80098M01	shield coil can (17 used)
26-80228L01	shield can (for J4)
26-80229L03	shield VCO frame
26-80256L02	shield image
42-80957X01	ground clip
75-05295B02	insulator (for Y151)
75-05295B07	insulator (3 used, for Y51A/B, Y52)

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Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

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12/14/92

PL-921021-O

HLE8301A RF Board, 438-470 MHz, 12.5 kHz (N)  
HLE8300A RF Board, 438-470 MHz, 25 kHz (W)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C1	21-13740G21	5.6 +/- .1 pF
C2	21-13740G18	4.3 +/- .1 pF
C3	21-13740G18	4.3 +/- .1 pF
C4	21-13740G33	15 pF 2%
C5	21-13740G18	4.3 +/- .1 pF
C6	21-13740G15	3.3 +/- .1 pF
C7	21-13740G28	9.1 +/- .1 pF
C8	21-13740G17	3.9 +/- .1 pF
C9	21-13740G17	3.9 +/- .1 pF
C10	21-13740G24	6.8 +/- .1 pF
C11	21-13740G29	10 pF 2%
C12	21-13740B45	68 pF
C13	21-13740G31	12 pF 2%
C14	21-13740G29	10 pF 2%
C15	21-13740G18	4.3 +/- .1 pF
C16	21-13740G15	3.3 +/- .1 pF
C17	21-13740G31	12 pF 2%
C18	21-13740G16	3.6 +/- .1 pF
C19	21-13740G16	3.6 +/- .1 pF
C20	21-13740G35	18 pF 2%
C21	21-13740G16	3.6 +/- .1 pF
C22	21-13740G16	3.6 +/- .1 pF
C23	21-13740G33	15 pF 2%
C24	21-13740G15	3.3 +/- .1 pF
C25	21-13740G19	4.7 +/- .1 pF
C26	21-13740G31	12 pF 2%
C27	21-11032B15	.22 uF +80/-20%
C28	21-13740B45	68 pF
C29		not used
C30	21-13740B34	24 pF
C33		not used
C51	21-13740B55	180 pF
C52	21-13740B27	12 pF
C53	21-13740B47	82 pF
C54	21-13740B61	330 pF
C55	21-13741B45	.01 uF
C56	21-13741B45	.01 uF
C57(N)	21-13740B29	15 pF
C57(W)	21-13740B31	18 pF
C58(N)	21-13740B25	10 pF
C58(W)	21-13740B27	12 pF
C59(N)	21-13740B29	15 pF
C59(W)	21-13740B31	18 pF
C60	21-13741B45	.01 uF
C61	21-13741B45	.01 uF
C65	21-11032B15	.22 uF +80/-20%
C66	21-13741B45	.01 uF
C67	23-13749C39	tantalum 10 uF 10% 20V
C68	21-13740B29	15 pF
C69	21-13740B39	39 pF
C70	21-13740B29	15 pF
C71	21-11032B15	.22 uF +80/-20%
C72	21-11032B15	.22 uF +80/-20%
C73	23-13749C39	tantalum 10 uF 10% 20V
C74	23-11048B13	lytic 10 uF 20% 16V
C75	21-13741B69	.1 uF
C76	23-11048B05	lytic 1 uF 20% 50V
C77	21-11032B15	.22 uF +80/-20%
C78	21-11032B15	.22 uF +80/-20%
C79	21-13741B29	.0022 uF
C80	21-11032B15	.22 uF +80/-20%
C81	21-13740B55	180 pF
C82	21-11032B15	.22 uF +80/-20%
C83	21-11032B15	.22 uF +80/-20%
C84	21-13740B09	2.2 +/- .25 pF
C85	21-13740B25	10 pF
C86		not used
C87	21-11032B15	.22 uF +80/-20%
C90	21-11032B15	.22 uF +80/-20%
C91	21-13740B49	100 pF

C101	23-11048B13	lytic 10 uF 20% 16V
C102	08-11051A13	poly .1 uF 63V
C103	21-11032B15	.22 uF +80/-20%
C104	21-13741B45	.01 uF
C105	23-11048B13	lytic 10 uF 20% 16V
C106	21-13740B29	15 pF
C107	21-13741B69	.1 uF
C108	21-13741B69	.1 uF
C109	08-11051A13	poly .1 uF 63V
C110	08-11051A19	poly 1 uF 63V
C111	08-11051A09	poly .022 uF 63V
C112	08-11051A01	poly .001 uF 63V
C113	21-13741B45	.01 uF
C114	21-13740B45	68 pF
C115	21-13741B45	.01 uF
C116	21-13740B49	100 pF
C117	21-13741B69	.1 uF
C118	21-13740B45	68 pF
C119	21-13740B45	68 pF
C120	21-13740B45	68 pF
C121	21-13740B19	5.6 +/- .25 pF
C122	21-13740B49	100 pF
C123	21-13740B45	68 pF
C124	21-13740B25	10 pF
C125	21-13740B73	1000 pF
C126		not used
C127	21-11032B15	.22 uF +80/-20%
C128	21-11032B15	.22 uF +80/-20%
C129	21-11032B15	.22 uF +80/-20%
C130	21-11032B15	.22 uF +80/-20%
C131	21-11032B15	.22 uF +80/-20%
C132	21-11032B15	.22 uF +80/-20%
C133	21-13740B45	68 pF
C151	21-13740B73	1000 pF
C152	21-13740B47	82 pF
C153	21-13740B25	10 pF
C154	21-13741B45	.01 uF
C155	21-13740B55	180 pF
C156	21-13740B55	180 pF
C157		not used
C158	08-11051A15	poly .22 uF 63V
C159	21-13740B35	27 pF
C160	21-13740B29	15 pF
C161	21-13740B73	1000 pF
C162	23-11048B13	lytic 10 uF 20% 16V
C163	08-11051A17	poly .47 uF 63V
C164		not used
C165	21-13741B33	.0033 uF
C176	21-13740B73	1000 pF
C201	23-11048B13	lytic 10 uF 20% 16V
C205	21-13740B45	68 pF
C206	21-13740B11	2.7 +/- .25 pF
C207	21-13740B21	6.8 +/- .25 pF
C208	21-13740B14	3.6 +/- .25 pF
C209	21-13740B09	2.2 +/- .25 pF
C210	21-13740B49	100 pF
C212	21-13740B49	100 pF
C213	21-13740B01	1 +/- .25 pF
C214	21-13740B13	3.3 +/- .25 pF
C215	21-13740B49	100 pF
C216	21-13740B09	2.2 +/- .25 pF
C218	21-13740B49	100 pF
C220	21-13740B23	8.2 +/- .25 pF
C221	21-13740B13	3.3 +/- .25 pF
C222	21-13740B49	100 pF
C224	21-13740B49	100 pF
C225	21-13740B49	100 pF
C228	21-13741B29	.0022 uF
C230	21-13740B01	1 +/- .25 pF
C231	21-13740B01	1 +/- .25 pF
C233	21-13740B17	4.7 +/- .25 pF
C234	21-13740B21	6.8 +/- .25 pF
C235	21-13740B17	4.7 +/- .25 pF
C236	21-13740B15	3.9 +/- .25 pF
C237	21-13740B45	68 pF
C239	21-13740B45	68 pF
C240	21-13740B01	1 +/- .25 pF
C242	21-13740B45	68 pF

C243	21-13740B09	2.2 +/- .25 pF
C244	21-11032B15	.22 uF +80/-20%
C245	21-13740B45	68 pF
C247	21-13740B32	20 pF
C248	21-13740B19	5.6 +/- .25 pF
C249	21-13740B45	68 pF
C251	21-13740B45	68 pF
C252	21-13740B45	68 pF
C253	21-13740B45	68 pF
C255		not used
C256	21-13741B45	.01 uF
C257	21-13741B45	.01 uF
C258	08-11051A07	poly .01 uF 63V
C259	21-13740B22	7.5 +/- .25 pF
C260		not used
C261	21-13741B45	.01 uF
C262		not used
C263	21-13740B19	5.6 +/- .25 pF
C264		not used
C265		not used
C266	21-13740B03	1.2 +/- .25 pF
C267	21-13740B01	1 +/- .25 pF
C268	21-13740B09	2.2 +/- .25 pF
C269	21-13740B09	2.2 +/- .25 pF
C270		not used
C271		not used
C272	21-13740B45	68 pF
C273	21-13740B49	100 pF
C274	21-13740B49	100 pF
C275		not used
C276	21-13741B45	.01 uF
C277	23-11048B19	lytic 47 uF 20% 16V
C278	23-11048B19	lytic 47 uF 20% 16V
C279	21-13740B45	68 pF
C280	21-11032B15	.22 uF +80/-20%
C301	21-13741B45	.01 uF
C302	21-13740B45	68 pF
C303	21-13740B45	68 pF
C304	21-13740B45	68 pF
C305	21-13740B45	68 pF
C306	21-13740B45	68 pF
C307	21-13740B45	68 pF
C308	21-13740B45	68 pF
C309	21-13740B45	68 pF
C310	21-13740B45	68 pF
C311	21-13740B45	68 pF
C312	21-13740B45	68 pF
C313	21-13740B45	68 pF
C314	21-13740B49	100 pF

## Diodes (see note)

CR2	48-80154K03	dual Schottky SOT
CR3	48-80939T01	Schottky SOT
CR5	48-80142L01	silicon PIN SOT MMBV3401
CR51	48-05129M76	silicon SOT
CR52	48-05129M76	silicon SOT
CR101	48-05129M76	silicon SOT
CR102	48-05129M76	silicon SOT
CR151	48-80006E10	silicon varactor SOT
CR152	48-80006E10	silicon varactor SOT
CR153	48-84336R03	dual silicon SOT MMBD7000
CR203	48-84534N02	silicon varactor SOT
CR205	48-84534N02	silicon varactor SOT
CR206	48-80154K02	dual Schottky SOT
CR209	48-84534N02	silicon varactor SOT
CR211	48-84534N02	silicon varactor SOT
CR213	48-84534N02	silicon varactor SOT
CR214	48-80939T01	Schottky SOT

## Filters

FL51(N)	91-80097D04	455 kHz 6F
FL51(W)	91-80097D06	455 kHz 6D
FL52(N)	91-80098D04	455 kHz 4F
FL52(W)	91-80098D06	455 kHz 4D

## Connector, receptacle

J4	09-80135M01	coaxial (RX)
J5	09-80135M01	coaxial (TX)
J6	09-80130M03	14-pin, RF board

## Jumpers

JU1	06-11077A01	jumper
JU2		not used
JU3		not used
JU51		not used
JU52		not used
JU201		not used
JU202		not used

## Coils

L1	24-84562T04	4 turns airwound
L2	24-84562T04	4 turns airwound
L3	24-84562T04	4 turns airwound
L4	24-84562T04	4 turns airwound
L5	24-84562T04	4 turns airwound
L6	24-84562T04	4 turns airwound
L7	24-84562T04	4 turns airwound
L8	24-11030B04	1-1/2 turns YEL
L9	24-11030B04	1-1/2 turns YEL
L10	24-62587N54	chip .12 uH 5%
L51	24-11030B12	7-1/2 turns YEL
L52	24-62587N68	chip 1 uH 5%
L53	24-62587N56	chip .18 uH 5%
L54	24-62587N76	chip 4.7 uH 5%
L55	24-80164M02	tunable .7 uH E715
L56	24-80164M01	tunable .7 uH E713
L57	24-80164M04	tunable .7 uH E714
L58	24-62587N76	chip 4.7 uH 5%
L59	24-80164M03	tunable .7 uH E716
L60	24-62587N69	chip 1.2 uH 5%
L61	25-80000E01	tunable 455 kHz with cap
L101	24-62587N56	chip .18 uH 5%
L102	24-62587N47	chip 33 nH 5%
L151	24-80299D01	tunable 17-3/4 turns
L152	24-11087A35	chip 5.6 uH 10%
L202	24-80148M02	tunable 2-1/2 turns RED
L203	24-62587N55	chip .15 uH 5%
L204	24-11030B07	3-1/2 turns WHT
L205	24-62587N55	chip .15 uH 5%
L206	24-62587N55	chip .15 uH 5%
L207	24-62587N57	chip .22 uH 5%
L209	24-11030B05	2-1/2 turns GRN
L210	24-11030B08	4-1/2 turns BRN
L211	24-62587N57	chip .22 uH 5%
L213	24-80148M01	tunable 1-1/2 turns BRN
L214	24-62587N54	chip .12 uH 5%
L215	24-11030B08	4-1/2 turns BRN
L216	24-62587N54	chip .12 uH 5%
L217	24-62587N54	chip .12 uH 5%
L218	24-62587N56	chip .18 uH 5%
L220	24-11030B05	2-1/2 turns GRN
L221	24-11030B08	4-1/2 turns BRN
L222	24-62587N56	chip .18 uH 5%
L223		not used

## Transistors (see note)

Q1	48-80950X01	NPN; type M50X01
Q2	48-05128M67	PNP; type MMBT3906
Q3	48-05128M67	PNP; type MMBT3906
Q4	48-05128M67	PNP; type MMBT3906
Q5	48-05128M67	PNP; type MMBT3906
Q6	48-80214G02	NPN; type MMBT3904
Q51	48-05128M66	field effect; type MMBFU310
Q52	48-05128M66	field effect; type MMBFU310
Q53	48-80214G02	NPN; type MMBT3904
Q101	48-05128M67	PNP; type MMBT3906
Q102	48-80182D20	NPN; type M82D20/M9987
Q103	48-80182D20	NPN; type M82D20/M9987
Q104	48-05128M67	PNP; type MMBT3906



Q105	48-80214G02	NPN; type MMBT3904
Q106	48-80214G02	NPN; type MMBT3904
Q107	48-11043C19	NPN; type M43C19/M9658
Q151	48-11043C19	NPN; type M43C19/M9658
Q152	48-11043C06	PNP; type M43C06/M9643
Q203	48-05128M66	field effect; type MMBFU310
Q204	48-80950X01	NPN; type M50X01
Q205	48-80950X01	NPN; type M50X01
Q206	48-05128M66	field effect; type MMBFU310
Q207	48-80950X01	NPN; type M50X01
Q208	48-80950X01	NPN; type M50X01
Q276	48-80214G02	NPN; type MMBT3904
Q277	48-05128M67	PNP; type MMBT3906
Q278	48-05128M67	PNP; type MMBT3906
Q279	48-05128M67	PNP; type MMBT3906

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1	06-11077A84	2.7k
R2	06-11077A54	150
R3	06-11077A60	270
R4	06-11077B01	12k
R5	06-11077B03	15k
R6	06-11077A90	4.7k
R7	06-11077A98	10k
R8	06-11077A98	10k
R9	06-11077A90	4.7k
R10	06-11077B07	22k
R11	06-11077B15	47k
R12	06-11077A45	62
R13	06-11077A65	430
R51	06-11077A44	56
R52	06-11077A54	150
R53	06-11077A88	3.9k
R54	06-11077A54	150
R56	06-11077B45	820k
R57	06-11077A72	820
R58	06-11077B23	100k
R59	06-11077B27	150k
R60	18-05500L08	variable 22k
R61(N)	06-11077B07	22k
R61(W)	06-11077B19	68k
R62(N)	06-11077A26	10
R62(W)	06-11077B09	27k
R63	06-11077B21	82k
R102	06-11077A62	330
R103	06-11077A98	10k
R104	06-11077A98	10k
R105	06-11077B11	33k
R106	06-11077A73	910
R107	06-11077A78	1.5k
R108	06-11077A26	10
R109	06-11077A26	10
R110	06-11077B03	15k
R111	06-11077A54	150
R112	06-11077A72	820
R113	06-11077A58	220
R114	06-11077A54	150
R115	06-11077A70	680
R116	06-11077A92	5.6k
R118	06-11077A70	680
R119	06-11077A88	3.9k
R120	06-11077A88	3.9k
R121	06-11077A84	2.7k
R122	06-11077A88	3.9k
R123	06-11077A74	1k
R124	06-11077A78	1.5k
R125	06-11077A44	56
R126	06-11077A50	100
R127	06-11077A84	2.7k
R128	06-11077A72	820
R151	06-11077B15	47k
R152	06-11077B11	33k
R153	06-11077B15	47k
R154	06-11077A34	22
R155	06-11077A98	10k
R156	06-11077B03	15k
R157	06-11077A78	1.5k

R158	06-11077A74	1k
R159	06-11077A74	1k
R161	06-11077A98	10k
R162		not used
R163(N)	06-11077B23	100k
R163(W)	06-11077B17	56k
R164	18-05500L08	variable 22k
R165(N)	06-11077A98	10k
R165(W)	06-11077B03	15k
R176	06-11077G26	22.6k 1%
R177	06-11077G18	18.7k 1%
R178	06-11077F91	10.0k 1%
R179	06-11077F91	10.0k 1%
R180	06-11077G52	42.2k 1%
R181	06-11077F91	10.0k 1%
R182	06-11077G28	23.7k 1%
R207	06-11077A44	56
R208	06-11077A44	56
R209	06-11077A34	22
R210	06-11077A98	10k
R212	06-11077A84	2.7k
R213	06-11077A72	820
R214	06-11077A50	100
R215	06-11077A84	2.7k
R216	06-11077A72	820
R217	06-11077A66	470
R218	06-11077A66	470
R219	06-11077A28	12
R220	06-11077A66	470
R222	06-11077A88	3.9k
R223	06-11077A94	6.8k
R224	06-11077B23	100k
R225	06-11077A90	4.7k
R226	06-11077A44	56
R227	06-11077A34	22
R228	06-11077A38	33
R229	06-11077A98	10k
R231	06-11077A84	2.7k
R232	06-11077A72	820
R233	06-11077A46	68
R234	06-11077A84	2.7k
R235	06-11077A72	820
R236	06-11077A46	68
R237	06-11077A58	220
R238	06-11077A34	22
R239	06-11077A58	220
R240		not used
R243	06-11077B23	100k
R244	06-11077A74	1k
R245	06-11077A74	1k
R246	06-11077B09	27k
R276	06-11077A98	10k
R277	06-11077A60	270
R278	06-11077A26	10
R279	06-11077A90	4.7k
R280	06-11077A98	10k
R281	06-11077A90	4.7k
R301(N)	06-11077B03	15k
R301(W)	06-11077A82	2.2k
R302	18-05500L08	variable 22k
R303	06-11077A94	6.8k

## Transformers

T1	25-80163M02	balun
T2	25-80163M02	balun

## Integrated circuits and modules (see note)

U1	48-80174R01	quad Schottky ring SOIC
U51	51-05479G05	receiver system
U101	51-84704M75	synthesizer
U102	51-83977M45	prescaler
U176	51-80932W01	dual op-amp

## Voltage regulators (see note)

VR176	48-82256C11	zener diode 10V 5%
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## Crystals

Y51(N)	91-80022M03	filter 45.1 MHz 12.5 kHz
Y51(W)	91-80022M02	filter 45.1 MHz 25 kHz
Y52	48-80008K02	44.645 MHz
Y151	48-80174D05	14.4 MHz

## Non-referenced items

26-80097M01	shield coil can (for L151)
26-80098M01	shield coil can (17 used)
26-80228L01	shield can (for J4)
26-80229L03	shield VCO frame
26-80256L02	shield image
42-80957X01	ground clip
75-05295B02	insulator (for Y151)
75-05295B07	insulator (3 used, for Y51A/B, Y52)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/14/92

PL-921025-O

HLE8264A RF Board, 465-495 MHz, 12.5 kHz (N)  
HLE8263A RF Board, 465-495 MHz, 25 kHz (W)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C1	21-13740G15	3.3 +/- .1 pF
C2	21-13740G17	3.9 +/- .1 pF
C3	21-13740G19	4.7 +/- .1 pF
C4	21-13740G29	10 pF 2%
C5	21-13740G14	3.0 +/- .1 pF
C6	21-13740G18	4.3 +/- .1 pF
C7	21-13740G29	10 pF 2%
C8	21-13740G13	2.7 +/- .1 pF
C9	21-13740G16	3.6 +/- .1 pF
C10	21-13740G29	10 pF 2%
C11	21-13740G31	12 pF 2%
C12	21-13740B45	68 pF
C13	21-13740G20	5.1 +/- .1 pF
C14	21-13740G19	4.7 +/- .1 pF
C15	21-13740G14	3.0 +/- .1 pF
C16	21-13740G15	3.3 +/- .1 pF
C17	21-13740G31	12 pF 2%
C18	21-13740G14	3.0 +/- .1 pF
C19	21-13740G15	3.3 +/- .1 pF
C20	21-13740G33	15 pF 2%
C21	21-13740G15	3.3 +/- .1 pF
C22	21-13740G15	3.3 +/- .1 pF
C23	21-13740G31	12 pF 2%
C24	21-13740G17	3.9 +/- .1 pF
C25	21-13740G15	3.3 +/- .1 pF
C26	21-13740G28	9.1 +/- .1 pF
C27	21-11032B15	.22 uF +80/-20%
C28	21-13740B45	68 pF
C29	21-13740B45	68 pF
C30	21-11032B15	.22 uF +80/-20%
C33		not used
C51	21-13740B55	180 pF
C52	21-13740B27	12 pF
C53	21-13740B47	82 pF
C54	21-13740B61	330 pF
C55	21-13741B45	.01 uF
C56	21-13741B45	.01 uF
C57(N)	21-13740B29	15 pF
C57(W)	21-13740B31	18 pF
C58(N)	21-13740B25	10 pF
C58(W)	21-13740B27	12 pF
C59(N)	21-13740B29	15 pF
C59(W)	21-13740B31	18 pF
C60	21-13741B45	.01 uF
C61	21-13741B45	.01 uF
C65	21-11032B15	.22 uF +80/-20%
C66	21-13741B45	.01 uF
C67	23-13749C39	tantalum 10 uF 10% 20V
C68	21-13740B33	22 pF
C69	21-13740B39	39 pF
C70	21-13740B29	15 pF
C71	21-11032B15	.22 uF +80/-20%
C72	21-11032B15	.22 uF +80/-20%
C73	23-13749C39	tantalum 10 uF 10% 20V
C74	23-11048B13	lytic 10 uF 20% 16V
C75	21-13741B69	.1 uF
C76	23-11048B05	lytic 1 uF 20% 50V
C77	21-11032B15	.22 uF +80/-20%
C78	21-11032B15	.22 uF +80/-20%
C79	21-13741B29	.0022 uF
C80	21-11032B15	.22 uF +80/-20%
C81	21-13740B55	180 pF
C82	21-11032B15	.22 uF +80/-20%
C83	21-11032B15	.22 uF +80/-20%
C84	21-13740B09	2.2 +/- .25 pF
C85	21-13740B27	12 pF
C86		not used
C87	21-11032B15	.22 uF +80/-20%
C90	21-11032B15	.22 uF +80/-20%
C91	21-13740B49	100 pF

C101	23-11048B13	lytic 10 uF 20% 16V
C102	08-11051A13	poly .1 uF 63V
C103	21-11032B15	.22 uF +80/-20%
C104	21-13741B45	.01 uF
C105	23-11048B13	lytic 10 uF 20% 16V
C106	21-13740B29	15 pF
C107	21-13741B69	.1 uF
C108	21-13741B69	.1 uF
C109	08-11051A13	poly .1 uF 63V
C110	08-11051A19	poly 1 uF 63V
C111	08-11051A09	poly .022 uF 63V
C112	08-11051A01	poly .001 uF 63V
C113	21-13741B45	.01 uF
C114	21-13740B45	68 pF
C115	21-13741B45	.01 uF
C116	21-13740B49	100 pF
C117	21-13741B69	.1 uF
C118	21-13740B45	68 pF
C119	21-13740B45	68 pF
C120	21-13740B45	68 pF
C121	21-13740B19	5.6 +/- .25 pF
C122	21-13740B49	100 pF
C123	21-13740B45	68 pF
C124	21-13740B25	10 pF
C125	21-13740B73	1000 pF
C126		not used
C127	21-11032B15	.22 uF +80/-20%
C128	21-11032B15	.22 uF +80/-20%
C129	21-11032B15	.22 uF +80/-20%
C130	21-11032B15	.22 uF +80/-20%
C131	21-11032B15	.22 uF +80/-20%
C132	21-11032B15	.22 uF +80/-20%
C133	21-13740B49	100 pF
C151	21-13740B73	1000 pF
C152	21-13740B47	82 pF
C153	21-13740B25	10 pF
C154	21-13741B45	.01 uF
C155	21-13740B55	180 pF
C156	21-13740B55	180 pF
C157		not used
C158	08-11051A15	poly .22 uF 63V
C159	21-13740B35	27 pF
C160	21-13740B29	15 pF
C161	21-13740B73	1000 pF
C162	23-11048B13	lytic 10 uF 20% 16V
C163	08-11051A17	poly .47 uF 63V
C164		not used
C165	21-13741B33	.0033 uF
C176	21-13740B73	1000 pF
C201	23-11048B13	lytic 10 uF 20% 16V
C205	21-13740B45	68 pF
C206	21-13740B19	5.6 +/- .25 pF
C207	21-13740B23	8.2 +/- .25 pF
C208	21-13740B19	5.6 +/- .25 pF
C209	21-13740B19	5.6 +/- .25 pF
C210	21-13740B49	100 pF
C212	21-13740B49	100 pF
C213	21-13740B01	1 +/- .25 pF
C214		not used
C215	21-13740B49	100 pF
C216	21-13740B13	3.3 +/- .25 pF
C218	21-13740B49	100 pF
C220	21-13740B17	4.7 +/- .25 pF
C221	21-13740B05	1.5 +/- .25 pF
C222	21-13740B49	100 pF
C224	21-13740B49	100 pF
C225	21-13740B49	100 pF
C228	21-13741B29	.0022 uF
C230	21-13740B01	1 +/- .25 pF
C231	21-13740B01	1 +/- .25 pF
C233	21-13740B11	2.7 +/- .25 pF
C234	21-13740B21	6.8 +/- .25 pF
C235	21-13740B13	3.3 +/- .25 pF
C236	21-13740B18	5.1 +/- .25 pF
C237	21-13740B45	68 pF
C239	21-13740B45	68 pF
C240	21-13740B01	1 +/- .25 pF
C242	21-13740B45	68 pF

C243	21-13740B09	2.2 +/- .25 pF
C244	21-11032B15	.22 uF +80/-20%
C245	21-13740B45	68 pF
C247	21-13740B27	12 pF
C248	21-13740B17	4.7 +/- .25 pF
C249	21-13740B45	68 pF
C251	21-13740B45	68 pF
C252	21-13740B45	68 pF
C253	21-13740B45	68 pF
C255		not used
C256	21-13741B45	.01 uF
C257	21-13741B45	.01 uF
C258	08-11051A07	poly .01 uF 63V
C259	21-13740B22	7.5 +/- .25 pF
C260		not used
C261	21-13741B45	.01 uF
C262		not used
C263		not used
C264		not used
C265		not used
C266	21-13740B03	1.2 +/- .25 pF
C267	21-13740B01	1 +/- .25 pF
C268	21-13740B13	3.3 +/- .25 pF
C269	21-13740B09	2.2 +/- .25 pF
C270		not used
C271	21-13740B45	68 pF
C272	21-13740B45	68 pF
C273	21-13740B49	100 pF
C274	21-13740B49	100 pF
C275		not used
C276	21-13741B45	.01 uF
C277	23-11048B19	lytic 47 uF 20% 16V
C278	23-11048B19	lytic 47 uF 20% 16V
C279	21-13740B45	68 pF
C280	21-11032B15	.22 uF +80/-20%
C301	21-13741B45	.01 uF
C302	21-13740B45	68 pF
C303	21-13740B45	68 pF
C304	21-13740B45	68 pF
C305	21-13740B45	68 pF
C306	21-13740B45	68 pF
C307	21-13740B45	68 pF
C308	21-13740B45	68 pF
C309	21-13740B45	68 pF
C310	21-13740B45	68 pF
C311	21-13740B45	68 pF
C312	21-13740B45	68 pF
C313	21-13740B45	68 pF
C314		not used

## Diodes (see note)

CR2	48-80154K03	dual Schottky SOT
CR3	48-80939T01	Schottky SOT
CR5	48-80142L01	silicon PIN SOT MMBV3401
CR51	48-05129M76	silicon SOT
CR52	48-05129M76	silicon SOT
CR101	48-05129M76	silicon SOT
CR102	48-05129M76	silicon SOT
CR151	48-80006E10	silicon varactor SOT
CR152	48-80006E10	silicon varactor SOT
CR153	48-84336R03	dual silicon SOT MMBD7000
CR203	48-84534N02	silicon varactor SOT
CR205	48-84534N02	silicon varactor SOT
CR206	48-80154K02	dual Schottky SOT
CR209	48-84534N02	silicon varactor SOT
CR211	48-84534N02	silicon varactor SOT
CR213	48-84534N02	silicon varactor SOT
CR214	48-80939T01	Schottky SOT

## Filters

FL51(N)	91-80097D04	455 kHz 6F
FL51(W)	91-80097D06	455 kHz 6D
FL52(N)	91-80098D04	455 kHz 4F
FL52(W)	91-80098D06	455 kHz 4D

## Connector, receptacle

J4	09-80135M01	coaxial (RX)
J5	09-80135M01	coaxial (TX)
J6	09-80130M03	14-pin, RF board

## Jumpers

JU1		not used
JU2		not used
JU3		not used
JU51		not used
JU52		not used
JU201	06-11077A01	jumper
JU202	06-11077A01	jumper

## Coils

L1	24-84562T04	4 turns airwound
L2	24-84562T04	4 turns airwound
L3	24-84562T04	4 turns airwound
L4	24-84562T04	4 turns airwound
L5	24-84562T04	4 turns airwound
L6	24-84562T04	4 turns airwound
L7	24-84562T04	4 turns airwound
L8	24-11030B04	1-1/2 turns YEL
L9	24-11030B04	1-1/2 turns YEL
L10	24-62587N53	chip .1 uH 5%
L51	24-11030B12	7-1/2 turns YEL
L52	24-62587N68	chip 1 uH 5%
L53	24-62587N56	chip .18 uH 5%
L54	24-62587N76	chip 4.7 uH 5%
L55	24-80164M02	tunable .7 uH E715
L56	24-80164M01	tunable .7 uH E713
L57	24-80164M04	tunable .7 uH E714
L58	24-62587N76	chip 4.7 uH 5%
L59	24-80164M03	tunable .7 uH E716
L60	24-62587N69	chip 1.2 uH 5%
L61	25-80000E01	tunable 455 kHz with cap
L101	24-62587N56	chip .18 uH 5%
L102	24-62587N47	chip 33 nH 5%
L151	24-80299D01	tunable 17-3/4 turns
L152	24-11087A35	chip 5.6 uH 10%
L202	24-80148M01	tunable 1-1/2 turns BRN
L203	24-62587N55	chip .15 uH 5%
L204	24-11030B09	4-1/2 turns BRN
L205	24-62587N55	chip .15 uH 5%
L206	24-62587N55	chip .15 uH 5%
L207	24-62587N57	chip .22 uH 5%
L209	24-11030B05	2-1/2 turns GRN
L210	24-11030B08	4-1/2 turns BRN
L211	24-62587N57	chip .22 uH 5%
L213	24-80148M01	tunable 1-1/2 turns BRN
L214	24-62587N61	chip .47 uH 5%
L215	24-11030B06	2-1/2 turns BLU
L216	24-62587N54	chip .12 uH 5%
L217	24-62587N54	chip .12 uH 5%
L218	24-62587N56	chip .18 uH 5%
L220	24-11030B05	2-1/2 turns GRN
L221	24-11030B01	1-1/2 turns BRN
L222	24-62587N56	chip .18 uH 5%
L223		not used

## Transistors (see note)

Q1	48-80950X01	NPN; type M50X01
Q2	48-05128M67	PNP; type MMBT3906
Q3	48-05128M67	PNP; type MMBT3906
Q4	48-05128M67	PNP; type MMBT3906
Q5	48-05128M67	PNP; type MMBT3906
Q6	48-80214G02	NPN; type MMBT3904
Q51	48-05128M66	field effect; type MMBFU310
Q52	48-05128M66	field effect; type MMBFU310
Q53	48-80214G02	NPN; type MMBT3904
Q101	48-05128M67	PNP; type MMBT3906
Q102	48-80182D20	NPN; type M82D20/M9987
Q103	48-80182D20	NPN; type M82D20/M9987
Q104	48-05128M67	PNP; type MMBT3906

Q105	48-80214G02	NPN; type MMBT3904
Q106	48-80214G02	NPN; type MMBT3904
Q107	48-11043C19	NPN; type M43C19/M9658
Q151	48-11043C19	NPN; type M43C19/M9658
Q152	48-11043C06	PNP; type M43C06/M9643
Q203	48-05128M66	field effect; type MMBFU310
Q204	48-80950X01	NPN; type M50X01
Q205	48-80950X01	NPN; type M50X01
Q206	48-05128M66	field effect; type MMBFU310
Q207	48-80950X01	NPN; type M50X01
Q208	48-80950X01	NPN; type M50X01
Q276	48-80214G02	NPN; type MMBT3904
Q277	48-05128M67	PNP; type MMBT3906
Q278	48-05128M67	PNP; type MMBT3906
Q279	48-05128M67	PNP; type MMBT3906

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1	06-11077A84	2.7k
R2	06-11077A54	150
R3	06-11077A60	270
R4	06-11077B01	12k
R5	06-11077B03	15k
R6	06-11077A90	4.7k
R7	06-11077A98	10k
R8	06-11077A98	10k
R9	06-11077A90	4.7k
R10	06-11077B07	22k
R11	06-11077B15	47k
R12	06-11077A45	62
R13	06-11077A65	430
R51	06-11077A44	56
R52	06-11077A54	150
R53	06-11077A88	3.9k
R54	06-11077A54	150
R56	06-11077B45	820k
R57	06-11077A72	820
R58	06-11077B23	100k
R59	06-11077B27	150k
R60	18-05500L08	variable 22k
R61(N)	06-11077B07	22k
R61(W)	06-11077B19	68k
R62(N)	06-11077A26	10
R62(W)	06-11077B09	27k
R63	06-11077B21	82k
R102	06-11077A62	330
R103	06-11077A98	10k
R104	06-11077A98	10k
R105	06-11077B11	33k
R106	06-11077A73	910
R107	06-11077A78	1.5k
R108	06-11077A26	10
R109	06-11077A26	10
R110	06-11077B03	15k
R111	06-11077A54	150
R112	06-11077A72	820
R113	06-11077A58	220
R114	06-11077A54	150
R115	06-11077A70	680
R116	06-11077A92	5.6k
R118	06-11077A70	680
R119	06-11077A88	3.9k
R120	06-11077A88	3.9k
R121	06-11077A84	2.7k
R122	06-11077A88	3.9k
R123	06-11077A74	1k
R124	06-11077A78	1.5k
R125	06-11077A44	56
R126	06-11077A50	100
R127	06-11077A84	2.7k
R128	06-11077A72	820
R151	06-11077B15	47k
R152	06-11077B11	33k
R153	06-11077B15	47k
R154	06-11077A34	22
R155	06-11077A98	10k
R156	06-11077B03	15k
R157	06-11077A78	1.5k

R158	06-11077A74	1k
R159	06-11077A74	1k
R161	06-11077A98	10k
R162		not used
R163(N)	06-11077B23	100k
R163(W)	06-11077B17	56k
R164	18-05500L08	variable 22k
R165(N)	06-11077A98	10k
R165(W)	06-11077B03	15k
R176	06-11077G26	22.6k 1%
R177	06-11077G18	18.7k 1%
R178	06-11077F91	10.0k 1%
R179	06-11077F91	10.0k 1%
R180	06-11077G52	42.2k 1%
R181	06-11077F91	10.0k 1%
R182	06-11077G28	23.7k 1%
R207	06-11077A44	56
R208	06-11077A44	56
R209	06-11077A34	22
R210	06-11077A98	10k
R212	06-11077A84	2.7k
R213	06-11077A72	820
R214	06-11077A54	150
R215	06-11077A84	2.7k
R216	06-11077A72	820
R217	06-11077A64	390
R218	06-11077A65	430
R219	06-11077A34	22
R220	06-11077A65	430
R222	06-11077A88	3.9k
R223	06-11077A94	6.8k
R224	06-11077B23	100k
R225	06-11077A90	4.7k
R226	06-11077A44	56
R227	06-11077A34	22
R228	06-11077A38	33
R229	06-11077A98	10k
R231	06-11077A84	2.7k
R232	06-11077A72	820
R233	06-11077A44	56
R234	06-11077A84	2.7k
R235	06-11077A72	820
R236	06-11077A44	56
R237	06-11077A66	470
R238	06-11077A28	12
R239	06-11077A66	470
R240		not used
R243	06-11077B23	100k
R244	06-11077A74	1k
R245	06-11077A74	1k
R246	06-11077B09	27k
R276	06-11077A98	10k
R277	06-11077A60	270
R278	06-11077A26	10
R279	06-11077A90	4.7k
R280	06-11077A98	10k
R281	06-11077A90	4.7k
R301(N)	06-11077B03	15k
R301(W)	06-11077A82	2.2k
R302	18-05500L08	variable 22k
R303	06-11077A94	6.8k

## Transformers

T1	25-80163M02	balun
T2	25-80163M02	balun

## Integrated circuits and modules (see note)

U1	48-80174R01	quad Schottky ring SOIC
U51	51-05479G05	receiver system
U101	51-84704M75	synthesizer
U102	51-83977M45	prescaler
U176	51-80932W01	dual op-amp

## Voltage regulators (see note)

VR176	48-82256C11	zener diode 10V 5%
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## Crystals

Y51(N)	91-80022M03	filter 45.1 MHz 12.5 kHz
Y51(W)	91-80022M02	filter 45.1 MHz 25 kHz
Y52	48-80008K02	44.645 MHz
Y151	48-80174D05	14.4 MHz

## Non-referenced items

26-80097M01	shield coil can (for L151)
26-80098M01	shield coil can (17 used)
26-80228L01	shield can (for J4)
26-80229L03	shield VCO frame
26-80256L02	shield image
42-80915V01	ground clip
42-80957X01	ground clip
75-05295B02	insulator (for Y151)
75-05295B07	insulator (3 used, for Y51A/B, Y52)

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Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

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11/30/92

PL-921034-O

HLE8228A RF Board, 490-520 MHz, 12.5 kHz (N)  
HLE8227A RF Board, 490-520 MHz, 25 kHz (W)

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C1	21-13740G21	5.6 +/-1 pF
C2	21-13740G17	3.9 +/-1 pF
C3	21-13740G15	3.3 +/-1 pF
C4	21-13740G28	9.1 +/-1 pF
C5	21-13740G14	3.0 +/-1 pF
C6	21-13740G14	3.0 +/-1 pF
C7	21-13740G28	9.1 +/-1 pF
C8	21-13740G13	2.7 +/-1 pF
C9	21-13740G13	2.7 +/-1 pF
C10	21-13740G24	6.8 +/-1 pF
C11	21-13740G36	20 pF 2%
C12	21-13740B45	68 pF
C13	21-13740G17	3.9 +/-1 pF
C14	21-13740G12	2.4 +/-1 pF
C15	21-13740G13	2.7 +/-1 pF
C16	21-13740G14	3.0 +/-1 pF
C17	21-13740G31	12 pF 2%
C18	21-13740G14	3.0 +/-1 pF
C19	21-13740G13	2.7 +/-1 pF
C20	21-13740G31	12 pF 2%
C21	21-13740G11	2.2 +/-1 pF
C22	21-13740G14	3.0 +/-1 pF
C23	21-13740G33	15 pF 2%
C24	21-13740G13	2.7 +/-1 pF
C25	21-13740G16	3.6 +/-1 pF
C26	21-13740G30	11 pF 2%
C27	21-11032B15	.22 uF +80/-20%
C28	21-13740B45	68 pF
C29	21-13740B45	68 pF
C30	21-11032B15	.22 uF +80/-20%
C33		not used
C51	21-13740B55	180 pF
C52	21-13740B27	12 pF
C53	21-13740B47	82 pF
C54	21-13740B61	330 pF
C55	21-13741B45	.01 uF
C56	21-13741B45	.01 uF
C57(N)	21-13740B29	15 pF
C57(W)	21-13740B31	18 pF
C58(N)	21-13740B25	10 pF
C58(W)	21-13740B27	12 pF
C59(N)	21-13740B29	15 pF
C59(W)	21-13740B31	18 pF
C60	21-13741B45	.01 uF
C61	21-13741B45	.01 uF
C65	21-11032B15	.22 uF +80/-20%
C66	21-13741B45	.01 uF
C67	23-13749C39	tantalum 10 uF 10% 20V
C68	21-13740B33	22 pF
C69	21-13740B39	39 pF
C70	21-13740B29	15 pF
C71	21-11032B15	.22 uF +80/-20%
C72	21-11032B15	.22 uF +80/-20%
C73	23-13749C39	tantalum 10 uF 10% 20V
C74	23-11048B13	lytic 10 uF 20% 16V
C75	21-13741B69	.1 uF
C76	23-11048B05	lytic 1 uF 20% 50V
C77	21-11032B15	.22 uF +80/-20%
C78	21-11032B15	.22 uF +80/-20%
C79	21-13741B29	.0022 uF
C80	21-11032B15	.22 uF +80/-20%
C81	21-13740B55	180 pF
C82	21-11032B15	.22 uF +80/-20%
C83	21-11032B15	.22 uF +80/-20%
C84	21-13740B09	2.2 +/--.25 pF
C85	21-13740B27	12 pF
C86		not used
C87	21-11032B15	.22 uF +80/-20%
C90	21-11032B15	.22 uF +80/-20%
C91	21-13740B49	100 pF

C101	23-11048B13	lytic 10 uF 20% 16V
C102	08-11051A13	poly .1 uF 63V
C103	21-11032B15	.22 uF +80/-20%
C104	21-13741B45	.01 uF
C105	23-11048B13	lytic 10 uF 20% 16V
C106	21-13740B29	15 pF
C107	21-13741B69	.1 uF
C108	21-13741B69	.1 uF
C109	08-11051A13	poly .1 uF 63V
C110	08-11051A19	poly 1 uF 63V
C111	08-11051A09	poly .022 uF 63V
C112	08-11051A01	poly .001 uF 63V
C113	21-13741B45	.01 uF
C114	21-13740B45	68 pF
C115	21-13741B45	.01 uF
C116	21-13740B49	100 pF
C117	21-13741B69	.1 uF
C118	21-13740B45	68 pF
C119	21-13740B45	68 pF
C120	21-13740B45	68 pF
C121	21-13740B15	3.9 +/--.25 pF
C122	21-13740B49	100 pF
C123	21-13740B45	68 pF
C124	21-13740B25	10 pF
C125	21-13740B73	1000 pF
C126		not used
C127	21-11032B15	.22 uF +80/-20%
C128	21-11032B15	.22 uF +80/-20%
C129	21-11032B15	.22 uF +80/-20%
C130	21-11032B15	.22 uF +80/-20%
C131	21-11032B15	.22 uF +80/-20%
C132	21-11032B15	.22 uF +80/-20%
C133	21-13740B49	100 pF
C151	21-13740B73	1000 pF
C152	21-13740B47	82 pF
C153	21-13740B25	10 pF
C154	21-13741B45	.01 uF
C155	21-13740B55	180 pF
C156	21-13740B55	180 pF
C157		not used
C158	08-11051A15	poly .22 uF 63V
C159	21-13740B35	27 pF
C160	21-13740B29	15 pF
C161	21-13740B73	1000 pF
C162	23-11048B13	lytic 10 uF 20% 16V
C163	08-11051A17	poly .47 uF 63V
C164		not used
C165	21-13741B33	.0033 uF
C176	21-13740B73	1000 pF
C201	23-11048B13	lytic 10 uF 20% 16V
C205	21-13740B45	68 pF
C206	21-13740B15	3.9 +/--.25 pF
C207	21-13740B24	9.1 +/--.25 pF
C208	21-13740B19	5.6 +/--.25 pF
C209	21-13740B19	5.6 +/--.25 pF
C210	21-13740B49	100 pF
C212	21-13740B49	100 pF
C213	21-13740B01	1 +/--.25 pF
C214	21-13740B13	3.3 +/--.25 pF
C215	21-13740B49	100 pF
C216	21-13740B13	3.3 +/--.25 pF
C218	21-13740B49	100 pF
C220	21-13740B23	8.2 +/--.25 pF
C221	21-13740B05	1.5 +/--.25 pF
C222	21-13740B49	100 pF
C224	21-13740B49	100 pF
C225	21-13740B49	100 pF
C228	21-13741B29	.0022 uF
C230	21-13740B01	1 +/--.25 pF
C231	21-13740B01	1 +/--.25 pF
C233	21-13740B11	2.7 +/--.25 pF
C234	21-13740B18	5.1 +/--.25 pF
C235	21-13740B09	2.2 +/--.25 pF
C236	21-13740B09	2.2 +/--.25 pF
C237	21-13740B45	68 pF
C239	21-13740B45	68 pF
C240	21-13740B01	1 +/--.25 pF
C242	21-13740B45	68 pF

C243	21-13740B09	2.2 +/- .25 pF
C244	21-11032B15	.22 uF +80/-20%
C245	21-13740B45	68 pF
C247	21-13740B16	4.3 +/- .25 pF
C248	21-13740B09	2.2 +/- .25 pF
C249	21-13740B45	68 pF
C251	21-13740B45	68 pF
C252	21-13740B45	68 pF
C253	21-13740B45	68 pF
C255		not used
C256	21-13741B45	.01 uF
C257	21-13741B45	.01 uF
C258	08-11051A07	poly .01 uF 63V
C259	21-13740B22	7.5 +/- .25 pF
C260		not used
C261	21-13741B45	.01 uF
C262		not used
C263		not used
C264		not used
C265		not used
C266	21-13740B03	1.2 +/- .25 pF
C267	21-13740B01	1 +/- .25 pF
C268	21-13740B13	3.3 +/- .25 pF
C269	21-13740B09	2.2 +/- .25 pF
C270		not used
C271		not used
C272	21-13740B45	68 pF
C273	21-13740B49	100 pF
C274	21-13740B49	100 pF
C275		not used
C276	21-13741B45	.01 uF
C277	23-11048B19	lytic 47 uF 20% 16V
C278	23-11048B19	lytic 47 uF 20% 16V
C279	21-13740B45	68 pF
C280	21-11032B15	.22 uF +80/-20%
C301	21-13741B45	.01 uF
C302	21-13740B45	68 pF
C303	21-13740B45	68 pF
C304	21-13740B45	68 pF
C305	21-13740B45	68 pF
C306	21-13740B45	68 pF
C307	21-13740B45	68 pF
C308	21-13740B45	68 pF
C309	21-13740B45	68 pF
C310	21-13740B45	68 pF
C311	21-13740B45	68 pF
C312	21-13740B45	68 pF
C313	21-13740B45	68 pF
C314		not used

## Diodes (see note)

CR2	48-80154K03	dual Schottky SOT
CR3	48-80939T01	Schottky SOT
CR5	48-80142L01	silicon PIN SOT MMBV3401
CR51	48-05129M76	silicon SOT
CR52	48-05129M76	silicon SOT
CR101	48-05129M76	silicon SOT
CR102	48-05129M76	silicon SOT
CR151	48-80006E10	silicon varactor SOT
CR152	48-80006E10	silicon varactor SOT
CR153	48-84336R03	dual silicon SOT MMBD7000
CR203	48-84534N02	silicon varactor SOT
CR205	48-84534N02	silicon varactor SOT
CR206	48-80154K02	dual Schottky SOT
CR209	48-84534N02	silicon varactor SOT
CR211	48-84534N02	silicon varactor SOT
CR213	48-84534N02	silicon varactor SOT
CR214	48-80939T01	Schottky SOT

## Filters

FL51(N)	91-80097D04	455 kHz 6F
FL51(W)	91-80097D06	455 kHz 6D
FL52(N)	91-80098D04	455 kHz 4F
FL52(W)	91-80098D06	455 kHz 4D

## Connector, receptacle

J4	09-80135M01	coaxial (RX)
J5	09-80135M01	coaxial (TX)
J6	09-80130M03	14-pin, RF board

## Jumpers

JU1		not used
JU2		not used
JU3	06-11077A01	jumper
JU51		not used
JU52		not used
JU201	06-11077A01	jumper
JU202	06-11077A01	jumper

## Coils

L1	24-84562T04	4 turns airwound
L2	24-84562T04	4 turns airwound
L3	24-84562T04	4 turns airwound
L4	24-84562T04	4 turns airwound
L5	24-84562T04	4 turns airwound
L6	24-84562T04	4 turns airwound
L7	24-84562T04	4 turns airwound
L8	24-11030B07	3-1/2 turns WHT
L9	24-11030B07	3-1/2 turns WHT
L10	24-62587N53	chip .1 uH 5%
L51	24-11030B12	7-1/2 turns YEL
L52	24-62587N68	chip 1 uH 5%
L53	24-62587N56	chip .18 uH 5%
L54	24-62587N76	chip 4.7 uH 5%
L55	24-80164M02	tunable .7 uH E715
L56	24-80164M01	tunable .7 uH E713
L57	24-80164M04	tunable .7 uH E714
L58	24-62587N76	chip 4.7 uH 5%
L59	24-80164M03	tunable .7 uH E716
L60	24-62587N69	chip 1.2 uH 5%
L61	25-80000E01	tunable 455 kHz with cap
L101	24-62587N56	chip .18 uH 5%
L102	24-62587N47	chip 33 nH 5%
L151	24-80299D01	tunable 17-3/4 turns
L152	24-11087A35	chip 5.6 uH 10%
L202	24-80148M01	tunable 1-1/2 turns BRN
L203	24-62587N55	chip .15 uH 5%
L204	24-11030B07	3-1/2 turns WHT
L205	24-62587N55	chip .15 uH 5%
L206	24-62587N55	chip .15 uH 5%
L207	24-62587N57	chip .22 uH 5%
L209	24-11030B05	2-1/2 turns GRN
L210	24-11030B08	4-1/2 turns BRN
L211	24-62587N57	chip .22 uH 5%
L213	24-80148M01	tunable 1-1/2 turns BRN
L214	24-62587N60	chip .39 uH 5%
L215	24-11030B06	2-1/2 turns BLU
L216	24-62587N54	chip .12 uH 5%
L217	24-62587N54	chip .12 uH 5%
L218	24-62587N56	chip .18 uH 5%
L220	24-11030B05	2-1/2 turns GRN
L221	24-11030B01	1-1/2 turns BRN
L222	24-62587N56	chip .18 uH 5%
L223		not used

## Transistors (see note)

Q1	48-80950X01	NPN; type M50X01
Q2	48-05128M67	PNP; type MMBT3906
Q3	48-05128M67	PNP; type MMBT3906
Q4	48-05128M67	PNP; type MMBT3906
Q5	48-05128M67	PNP; type MMBT3906
Q6	48-80214G02	NPN; type MMBT3904
Q51	48-05128M66	field effect; type MMBFU310
Q52	48-05128M66	field effect; type MMBFU310
Q53	48-80214G02	NPN; type MMBT3904
Q101	48-05128M67	PNP; type MMBT3906
Q102	48-80182D20	NPN; type M82D20/M9987
Q103	48-80182D20	NPN; type M82D20/M9987
Q104	48-05128M67	PNP; type MMBT3906



Q105	48-80214G02	NPN; type MMBT3904
Q106	48-80214G02	NPN; type MMBT3904
Q107	48-11043C19	NPN; type M43C19/M9658
Q151	48-11043C19	NPN; type M43C19/M9658
Q152	48-11043C06	PNP; type M43C06/M9643
Q203	48-05128M66	field effect; type MMBFU310
Q204	48-80950X01	NPN; type M50X01
Q205	48-80950X01	NPN; type M50X01
Q206	48-05128M66	field effect; type MMBFU310
Q207	48-80950X01	NPN; type M50X01
Q208	48-80950X01	NPN; type M50X01
Q276	48-80214G02	NPN; type MMBT3904
Q277	48-05128M67	PNP; type MMBT3906
Q278	48-05128M67	PNP; type MMBT3906
Q279	48-05128M67	PNP; type MMBT3906

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R1	06-11077A84	2.7k
R2	06-11077A54	150
R3	06-11077A60	270
R4	06-11077B01	12k
R5	06-11077B03	15k
R6	06-11077A90	4.7k
R7	06-11077A98	10k
R8	06-11077A98	10k
R9	06-11077A90	4.7k
R10	06-11077B07	22k
R11	06-11077B15	47k
R12	06-11077A45	62
R13	06-11077A65	430
R51	06-11077A44	56
R52	06-11077A54	150
R53	06-11077A88	3.9k
R54	06-11077A54	150
R56	06-11077B45	820k
R57	06-11077A72	820
R58	06-11077B23	100k
R59	06-11077B27	150k
R60	18-05500L08	variable 22k
R61(N)	06-11077B07	22k
R61(W)	06-11077B19	68k
R62(N)	06-11077A26	10
R62(W)	06-11077B09	27k
R63	06-11077B21	82k
R102	06-11077A62	330
R103	06-11077A98	10k
R104	06-11077A98	10k
R105	06-11077B11	33k
R106	06-11077A73	910
R107	06-11077A78	1.5k
R108	06-11077A26	10
R109	06-11077A26	10
R110	06-11077B03	15k
R111	06-11077A54	150
R112	06-11077A72	820
R113	06-11077A58	220
R114	06-11077A54	150
R115	06-11077A70	680
R116	06-11077A92	5.6k
R118	06-11077A70	680
R119	06-11077A88	3.9k
R120	06-11077A88	3.9k
R121	06-11077A84	2.7k
R122	06-11077A88	3.9k
R123	06-11077A74	1k
R124	06-11077A78	1.5k
R125	06-11077A44	56
R126	06-11077A50	100
R127	06-11077A84	2.7k
R128	06-11077A72	820
R151	06-11077B15	47k
R152	06-11077B11	33k
R153	06-11077B15	47k
R154	06-11077A34	22
R155	06-11077A98	10k
R156	06-11077B03	15k
R157	06-11077A78	1.5k

R158	06-11077A74	1k
R159	06-11077A74	1k
R161	06-11077A98	10k
R162		not used
R163(N)	06-11077B23	100k
R163(W)	06-11077B17	56k
R164	18-05500L08	variable 22k
R165(N)	06-11077A98	10k
R165(W)	06-11077B03	15k
R176	06-11077G26	22.6k 1%
R177	06-11077G18	18.7k 1%
R178	06-11077F91	10.0k 1%
R179	06-11077F91	10.0k 1%
R180	06-11077G52	42.2k 1%
R181	06-11077F91	10.0k 1%
R182	06-11077G28	23.7k 1%
R207	06-11077A44	56
R208	06-11077A44	56
R209	06-11077A34	22
R210	06-11077A98	10k
R212	06-11077A84	2.7k
R213	06-11077A72	820
R214	06-11077A50	100
R215	06-11077A84	2.7k
R216	06-11077A72	820
R217	06-11077A66	470
R218	06-11077A56	180
R219	06-11077A38	33
R220	06-11077A56	180
R222	06-11077A88	3.9k
R223	06-11077A94	6.8k
R224	06-11077B23	100k
R225	06-11077A90	4.7k
R226	06-11077A44	56
R227	06-11077A34	22
R228	06-11077A38	33
R229	06-11077A98	10k
R231	06-11077A84	2.7k
R232	06-11077A72	820
R233	06-11077A46	68
R234	06-11077A84	2.7k
R235	06-11077A72	820
R236	06-11077A46	68
R237	06-11077A66	470
R238	06-11077A28	12
R239	06-11077A66	470
R240		not used
R243	06-11077B23	100k
R244	06-11077A74	1k
R245	06-11077A74	1k
R246	06-11077B09	27k
R276	06-11077A98	10k
R277	06-11077A60	270
R278	06-11077A26	10
R279	06-11077A90	4.7k
R280	06-11077A98	10k
R281	06-11077A90	4.7k
R301(N)	06-11077B03	15k
R301(W)	06-11077A82	2.2k
R302	18-05500L08	variable 22k
R303	06-11077A94	6.8k

## Transformers

T1	25-80163M02	balun
T2	25-80163M02	balun

## Integrated circuits and modules (see note)

U1	48-80174R01	quad Schottky ring SOIC
U51	51-05479G05	receiver system
U101	51-84704M75	synthesizer
U102	51-83977M45	prescaler
U176	51-80932W01	dual op-amp

## Voltage regulators (see note)

VR176	48-82256C11	zener diode 10V 5%
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## Crystals

Y51(N)	91-80022M03	filter 45.1 MHz 12.5 kHz
Y51(W)	91-80022M02	filter 45.1 MHz 25 kHz
Y52	48-80008K02	44.645 MHz
Y151	48-80174D05	14.4 MHz

## Non-referenced items

26-80097M01	shield coil can (for L151)
26-80098M01	shield coil can (17 used)
26-80228L01	shield can (for J4)
26-80229L03	shield VCO frame
26-80256L02	shield image
42-80915V01	ground clip (2 used)
42-80957X01	ground clip
75-05295B02	insulator (for Y151)
75-05295B07	insulator (3 used, for Y51A/B, Y52)

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Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921022-O

## 2-LAYER LOGIC

### HLN8074A Logic Board 2-Layer Masked

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C401	21-13741B45	.01 uF
C402	08-11051A09	poly .022 uF 63V
C403	21-13741B45	.01 uF
C404	23-11048B19	lytic 47 uF 20% 16V
C405	23-11048B13	lytic 10 uF 20% 16V
C406	08-11051A15	poly .22 uF 63V
C407	23-11013A56	tantalum 47 uF 20% 6V
C408	23-11048B19	lytic 47 uF 20% 16V
C409	08-11051A17	poly .47 uF 63V
C451	23-11048B19	lytic 47 uF 20% 16V
C452	21-13741B45	.01 uF
C453	21-11032B14	.15 uF +80/-20%
C454	21-13741B45	.01 uF
C455	08-11051A15	poly .22 uF 63V
C458	21-13740B36	30 pF
C459	21-13740B36	30 pF
C460	21-13741B45	.01 uF
C461	21-13741B45	.01 uF
C463	21-13740B36	30 pF
C464	21-13740B36	30 pF
C465	21-13740B36	30 pF
C466		not used
C501	08-11051A22	poly .039 uF 63V
C502	21-13740B76	1500 pF
C503	21-13741B69	.1 uF
C504	23-11048B13	lytic 10 uF 20% 16V
C505	08-11051A17	poly .47 uF 63V
C506	08-11051A17	poly .47 uF 63V
C507		not used
C551	23-11048B13	lytic 10 uF 20% 16V
C552	21-13740B36	30 pF
C553	21-13740B71	820 pF
C554	08-11051A03	poly .0022 uF 63V
C555	21-13740B51	120 pF
C556	08-11051A12	poly .068 uF 63V
C557	08-11051A12	poly .068 uF 63V
C558	08-11051A12	poly .068 uF 63V
C559	08-11051A13	poly .1 uF 63V
C560	08-11051A13	poly .1 uF 63V
C561	08-11051A15	poly .22 uF 63V
C562	08-11051A09	poly .022 uF 63V
C563	21-13741B69	.1 uF
C564	21-13740B49	100 pF
C565	23-11048B13	lytic 10 uF 20% 16V
C566	21-13741B45	.01 uF
C567	21-13741B45	.01 uF
C568	23-11048B19	lytic 47 uF 20% 16V
C601	23-11048B05	lytic 1 uF 20% 50V
C604		not used
C605		not used
C606	08-11051A22	poly .039 uF 63V
C607	08-11051A13	poly .1 uF 63V
C608	08-11051A05	poly .0047 uF 63V
C609	21-13740B60	300 pF
C610	08-11051A16	poly .33 uF 63V
C611	21-13740B49	100 pF
C612	23-11048B19	lytic 47 uF 20% 16V
C651	23-11048B19	lytic 47 uF 20% 16V
C652	08-11051A06	poly .0068 uF 63V
C653	08-11051A15	poly .22 uF 63V
C656	23-11048B13	lytic 10 uF 20% 16V
C657	21-13741B69	.1 uF
C658	21-13741B45	.01 uF
C659	23-11013A56	tantalum 47 uF 20% 6V
C660	23-11048B13	lytic 10 uF 20% 16V
C661	21-13740B74	1200 pF
C662	08-11051A07	poly .01 uF 63V
C663	21-13740B50	110 pF
C664	23-11048B09	lytic 4.7 uF 20% 35V
C665	21-13740B36	30 pF

C666	21-13740B74	1200 pF
C667	08-11051A08	poly .015 uF 63V
C668	08-11051A13	poly .1 uF 63V
C701	21-13740B78	1800 pF
C703	23-11048B05	lytic 1 uF 20% 50V
C704	08-11051A12	poly .068 uF 63V
C705	08-11051A16	poly .33 uF 63V
C706	08-11051A03	poly .0022 uF 63V
C707	21-13740B69	680 pF
C801	21-13740B49	100 pF
C802	21-13740B49	100 pF
C803		not used
C804		not used
C805	21-13740B73	1000 pF
C808	21-13740B49	100 pF
C809	21-13740B49	100 pF
C819	21-13740B73	1000 pF
C824	21-13740B49	100 pF
C827	23-11048B05	lytic 1 uF 20% 50V
C828	21-13741B69	.1 uF
C829	21-13741B45	.01 uF
C830	21-13740B31	18pF
C831	21-13740B21	6.8 +/- .25 pF
C832	21-13740B30	16 pF
C834	21-13741B69	.1 uF
C835	21-13741B69	.1 uF
C836	21-13740B73	1000 pF
C841	21-13740B73	1000 pF
C843	21-13740B73	1000 pF
C844	21-13740B73	1000 pF
C845	21-13740B73	1000 pF
C846	21-13740B73	1000 pF
C847	21-13740B73	1000 pF
C851	21-13740B73	1000 pF
C854	21-13740B73	1000 pF
C855	23-11013A56	tantalum 47 uF 20% 6V
C856	21-13740B49	100 pF
C857	21-13740B73	1000 pF
C858	21-13740B73	1000 pF
C869	21-13740B73	1000 pF
C870	21-13740B49	100 pF
C914		not used
C915		not used
C916		not used
C917		not used
C918		not used
C919		not used
C920		not used
C922		not used

#### Diodes (see note)

CR401	48-05129M76	silicon SOT
CR402	48-83654H02	silicon
CR403	48-05129M76	silicon SOT
CR451	48-05129M76	silicon SOT
CR551	48-05129M76	silicon SOT
CR603	48-84336R03	dual silicon SOT MMBD7000
CR651	48-05129M76	silicon SOT
CR801	48-05129M76	silicon SOT

#### Fuse

F801	65-05214E04	2 amp axial lead
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#### Connector, receptacle

J3	28-80923V01	16-pin, accessories
J6	09-80130M03	14-pin, RF board
J7	28-80128M03	6 pin, RF power amplifier
J8	28-80600B01	27-pin, includes J8 and J9

#### Jumpers

JU551	09-80601B01	push-on jumper, 2-pin
JU601	09-80601B01	push-on jumper, 2-pin
JU651	09-80601B01	push-on jumper, 2-pin
JU809	09-80601B01	push-on jumper, 2-pin

## Coils

L801	24-11087A42	chip 22 uH ferrite
L802	24-11087A42	chip 22 uH ferrite
L803	24-11087A42	chip 22 uH ferrite

## Connector, Plug

P551	28-80002R03	3-pin header
P601	28-80002R03	3-pin header
P651	28-80002R03	3-pin header
P809	28-80002R03	3-pin header

## Transistors (see note)

Q401	48-00869619	PNP, type M9619
Q402	48-80214G02	NPN; type MMBT3904
Q403	48-05128M67	PNP; type MMBT3906
Q404	48-80214G02	NPN; type MMBT3904
Q452	48-00869619	PNP, type M9619
Q453	48-80214G02	NPN; type MMBT3904
Q454	48-80214G02	NPN; type MMBT3904
Q455	48-80141L03	PNP, type M41L03
Q501	48-80214G02	NPN; type MMBT3904
Q551	48-80949V01	field effect; type MMBF5484
Q651	48-05128M67	PNP; type MMBT3906
Q652	48-80214G02	NPN; type MMBT3904
Q801	48-80214G02	NPN; type MMBT3904
Q802	48-80141L03	PNP, type M41L03
Q803	48-80947V01	digital NPN; type DTC144W
Q804	48-80214G02	NPN; type MMBT3904
Q805	48-80947V01	digital NPN; type DTC144W
Q806	48-80947V01	digital NPN; type DTC144W
Q807	48-80214G02	NPN; type MMBT3904
Q808	48-80214G02	NPN; type MMBT3904
Q809	48-80214G02	NPN; type MMBT3904
Q810	48-80214G02	NPN; type MMBT3904
Q811	48-80947V01	digital NPN; type DTC144W
Q812	48-80947V01	digital NPN; type DTC144W
Q821	48-80214G02	NPN; type MMBT3904

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R401	06-11077A70	680
R402	06-80195M37	330 1/2 watt
R403	06-11077A70	680
R404	06-11077F18	1.74k 1%
R405	06-11077F28	2.21k 1%
R406	06-11077A98	10k
R407	06-11077A76	1.2k
R408	06-11077F91	10.0k 1%
R409	06-11077F91	10.0k 1%
R410	06-11077A80	1.8k
R411	06-11077A78	1.5k
R412	06-11077A84	2.7k
R413	06-11077A98	10k
R414	06-11077A98	10k
R453	06-11077A70	680
R454	06-80195M37	330 1/2 watt
R455	06-11077A70	680
R456	06-11077A82	2.2k
R457	06-11077A76	1.2k
R458	06-11077A90	4.7k
R459	06-11077A90	4.7k
R460	06-11077B01	12k
R461	06-11077A70	680
R462	06-11077B29	180k
R463	06-11077B25	120k
R464	06-11077G88	100k 1%
R465	06-11077G88	100k 1%
R466	06-11077F91	10.0k 1%
R467	06-11077F91	10.0k 1%
R468	06-11077A60	270
R469	06-11077A74	1k
R470	06-11077A98	10k
R471	06-11077B07	22k
R472	06-11077A92	5.6k
R473	06-11077B09	27k

R474	06-11077A98	10k
R501	06-11077B23	100k
R502	06-11077A90	4.7k
R503	06-11077A78	1.5k
R551	06-11077A94	6.8k
R552	06-11077B37	390k
R553	06-11077B18	62k
R554	06-11077B18	62k
R555	06-11077B18	62k
R556	06-11077F53	4.02k 1%
R557	06-11077F20	1.82k 1%
R558	06-11077G42	33.2k 1%
R559	06-11077G88	100k 1%
R560	06-11077E77	665 1%
R561	06-11077G88	100k 1%
R562	06-11077B16	51k
R563	06-11077B15	47k
R567	06-11077A86	3.3k
R568	06-11077B07	22k
R569	06-11077A42	47
R570	06-11077B23	100k
R573	06-11077B09	27k
R574	06-11077A98	10k
R575	06-11077B10	30k
R576	06-11077B10	30k
R577	06-11077B23	100k
R578	06-11077A42	47
R581	06-11077A68	560
R601	06-11077A98	10k
R602	06-11077B47	1 meg
R603	06-11077A74	1k
R607		not used
R608		not used
R609	06-11077B11	33k
R610	06-11077B15	47k
R611	06-11077G42	33.2k 1%
R612	06-11077G42	33.2k 1%
R613	06-11077G42	33.2k 1%
R615	06-11077G95	118k 1%
R616	06-11077G31	25.5k 1%
R617	06-11077A82	2.2k
R620	06-11077A98	10k
R622	06-11077B31	220k
R651	06-11077A68	560
R652	06-11077A50	100
R653	06-11077A98	10k
R654	06-11077A98	10k
R655	06-11077A90	4.7k
R656	06-11077B39	470k
R657	06-11077B42	620k
R658	06-11077H65	619k 1%
R659	06-11077A82	2.2k
R660	06-11077B19	68k
R661	06-11077B03	15k
R662	06-11077B17	56k
R663	06-11077B18	62k
R664	06-11077B07	22k
R665	06-11077A84	2.7k
R666	06-11077B23	100k
R667	06-11077B23	100k
R668	06-11077G56	46.4k 1%
R669	06-11077G42	33.2k 1%
R670	06-11077G42	33.2k 1%
R671	06-11077A61	300
R672	06-11077B17	56k
R673	06-11077B23	100k
R674	06-11077A82	2.2k
R701	06-11077G88	100k 1%
R702	06-11077H13	178k 1%
R703	06-11077G31	25.5k 1%
R705	06-11077H13	178k 1%
R706	06-11077G56	46.4k 1%
R707	06-11077G95	118k 1%
R708	06-11077B15	47k
R709	06-11077B19	68k
R710	06-11077G13	16.5k 1%
R711	06-11077G13	16.5k 1%
R714	06-11077B10	30k

## 2-LAYER LOGIC

R715	06-11077B05	18k
R716	06-11077A86	3.3k
R801	06-11077A78	1.5k
R802	06-11077A84	2.7k
R803	06-11077A98	10k
R804	06-11077A90	4.7k
R807	06-11077B15	47k
R808	06-11077A90	4.7k
R809	06-11077A90	4.7k
R810	06-11077B17	56k
R811	06-11077B17	56k
R812	06-11077A90	4.7k
R813	06-11077A90	4.7k
R814	06-11077A90	4.7k
R815	06-11077A90	4.7k
R816	06-11077B23	100k
R817	06-11077B23	100k
R818	06-11077B23	100k
R822	06-11077B15	47k
R825	06-11077B15	47k
R826	06-11077A90	4.7k
R827	06-11077A98	10k
R828	06-11077A98	10k
R831	06-11077A74	1k
R832	06-11077A74	1k
R833	06-11077A98	10k
R836	06-11077A98	10k
R842	06-11077A74	1k
R845	06-11077A74	1k
R846	06-11077A98	10k
R847	06-11077A74	1k
R849	06-11077A98	10k
R850	06-11077A74	1k
R851	06-11077B15	47k
R852	06-11077B15	47k
R853	06-11077B45	820k
R854	06-11077A90	4.7k
R857	06-11077A98	10k
R858	06-11077A98	10k
R859	06-11077A98	10k
R860	06-11077A98	10k
R862	06-11077F95	11.0k 1%
R863	06-11077F91	10.0k 1%
R864	06-11077F20	1.82k 1%
R865	06-11077A98	10k
R866	06-11077A98	10k
R867	06-11077A98	10k
R868	06-11077A98	10k
R869	06-11077A98	10k
R870	06-11077A98	10k
R871	06-11077A98	10k
R872	06-11077A98	10k
R876	06-11077A98	10k
R877	06-11077B23	100k
R878	06-11077B23	100k
R879	06-11077B23	100k
R880	06-11077B15	47k
R883	06-11077A90	4.7k
R884	06-11077B15	47k
R887	06-11077A90	4.7k
R889	06-11077A68	560
R890	06-11077A98	10k
R918	06-11077A98	10k
R919	06-11077A98	10k

### Integrated circuits and modules (see note)

U401	51-02198J22	dual op-amp 4558 SOIC
U402	51-80942T01	regulator, 5V with reset
U451	51-02198J22	dual op-amp 4558 SOIC
U501	51-80147R01	audio power amp TDA1519A
U551	51-02198J22	dual op-amp 4558 SOIC
U552	51-02198J22	dual op-amp 4558 SOIC
U553	51-02198J22	dual op-amp 4558 SOIC
U601	51-02198J23	dual comparator 2903 SOIC
U602	51-02198J22	dual op-amp 4558 SOIC
U603	51-02198J22	dual op-amp 4558 SOIC
U651	51-02198J22	dual op-amp 4558 SOIC

U652	51-02198J22	dual op-amp 4558 SOIC
U653	51-80059M01	voltage-controlled attenuator
U801	51-80135C10	D/A converter MC144110
U802	51-80649B01	microcomputer MC68HC11E9

### Voltage regulators (see note)

VR401	48-83461E40	zener diode 5.1V 1%
VR402	48-80140L06	zener diode 5.1V SOT
VR551	48-80140L15	zener diode 10V SOT
VR552	48-80140L15	zener diode 10V SOT
VR801	48-80948V01	zener diode 27V SOT
VR802	48-80948V01	zener diode 27V SOT
VR803		not used
VR804		not used
VR805		not used
VR807		not used
VR811	48-80948V01	zener diode 27V SOT
VR812	48-82256C20	zener diode 27V
VR813	48-80948V01	zener diode 27V SOT
VR814	48-80948V01	zener diode 27V SOT

### Crystals

Y801	48-80173D09	7.776 MHz
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### Non-referenced items

03-10943M04	screw M2.5 X 8 (2 used, for Q401 and Q452)
03-80271L01	screw (2 used for U501)
04-00136334	washer flat (2 used for U501)
14-83820M05	insulator (2 used, for Q401 and Q452)
26-80497B01	heatsink
01-80701Y58	connector assembly (mates with J3)
09-82071K09	14 pin socket (2 used for U804)
26-80123M02	logic shield frame

**Note:** For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

3/13/92

PL-92011-O

## HLN8070A Logic Board 4-Layer Expanded

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C401	21-13741B45	.01 uF
C402	08-11051A09	poly .022 uF 63V
C403	21-13741B45	.01 uF
C404	23-11048B19	lytic 47 uF 20% 16V
C405	23-11048B13	lytic 10 uF 20% 16V
C406	08-11051A15	poly .22 uF 63V
C407	23-11013A56	tantalum 47 uF 20% 6V
C408	23-11048B19	lytic 47 uF 20% 16V
C409	08-11051A17	poly .47 uF 63V
C451	23-11048B19	lytic 47 uF 20% 16V
C452	21-13741B45	.01 uF
C453	21-11032B14	.15 uF + 80/-20%
C454	21-13741B45	.01 uF
C455	08-11051A15	poly .22 uF 63V
C458	21-13740B36	30 pF
C459	21-13740B36	30 pF
C460	21-13741B45	.01 uF
C461	21-13741B45	.01 uF
C462	21-11032B15	.22 uF + 80/-20%
C463	21-13740B36	30 pF
C464	21-13740B36	30 pF
C465	21-13740B36	30 pF
C466		not used
C501	08-11051A22	poly .039 uF 63V
C502	21-13740B76	1500 pF
C503	21-13741B69	.1 uF
C504	23-11048B13	lytic 10 uF 20% 16V
C505	08-11051A17	poly .47 uF 63V
C507		not used
C551	23-11048B13	lytic 10 uF 20% 16V
C552	21-13740B36	30 pF
C553	21-13740B71	820 pF
C554	08-11051A03	poly .0022 uF 63V
C555	21-13740B51	120 pF
C556	08-11051A12	poly .068 uF 63V
C557	08-11051A12	poly .068 uF 63V
C558	08-11051A12	poly .068 uF 63V
C559	08-11051A13	poly .1 uF 63V
C560	08-11051A13	poly .1 uF 63V
C561	08-11051A15	poly .22 uF 63V
C562	08-11051A09	poly .022 uF 63V
C563	21-13741B69	.1 uF
C564	21-13740B49	100 pF
C565	23-11048B13	lytic 10 uF 20% 16V
C566	21-13741B45	.01 uF
C567	21-13741B45	.01 uF
C568	23-11048B19	lytic 47 uF 20% 16V
C569	21-13740B33	22 pF
C601	23-11048B05	lytic 1 uF 20% 50V
C604		not used
C605		not used
C606	08-11051A22	poly .039 uF 63V
C607	08-11051A13	poly .1 uF 63V
C608	08-11051A05	poly .0047 uF 63V
C609	21-13740B60	300 pF
C610	08-11051A16	poly .33 uF 63V
C611	21-13740B49	100 pF
C612	23-11048B19	lytic 47 uF 20% 16V
C651	23-11048B19	lytic 47 uF 20% 16V
C652	08-11051A06	poly .0068 uF 63V
C653	08-11051A15	poly .22 uF 63V
C656	23-11048B13	lytic 10 uF 20% 16V
C657	21-13741B69	.1 uF
C658	21-13741B45	.01 uF
C659	23-11013A56	tantalum 47 uF 20% 6V
C660	23-11048B13	lytic 10 uF 20% 16V
C661	21-13740B74	1200 pF
C662	08-11051A07	poly .01 uF 63V
C663	21-13740B50	110 pF
C664	23-11048B09	lytic 4.7 uF 20% 35V
C665		

C666	21-13740B36	30 pF
C667	21-13740B74	1200 pF
C668	08-11051A08	poly .015 uF 63V
C668	08-11051A13	poly .33 uF 63V
C701	21-13740B78	1800 pF
C703	23-11048B05	lytic 1 uF 20% 50V
C704	08-11051A12	poly .068 uF 63V
C705	08-11051A16	poly .33 uF 63V
C706	08-11051A03	poly .0022 uF 63V
C707	21-13740B69	680 pF
C801	21-13740B49	100 pF
C802	21-13740B49	100 pF
C803	21-13740B73	1000 pF
C804	21-13740B73	1000 pF
C805	21-13740B73	1000 pF
C806	21-13740B73	1000 pF
C807	21-13740B73	1000 pF
C808	21-13740B49	100 pF
C809	21-13740B49	100 pF
C810	21-13740B73	1000 pF
C811	21-13740B73	1000 pF
C812	21-13740B73	1000 pF
C813	21-13740B73	1000 pF
C814	21-13740B73	1000 pF
C815	21-13740B73	1000 pF
C816	21-13740B73	1000 pF
C817	21-13740B73	1000 pF
C818	21-13740B73	1000 pF
C819	21-13740B73	1000 pF
C820	21-13740B73	1000 pF
C821	21-13740B73	1000 pF
C822	21-13740B73	1000 pF
C823	21-13740B73	1000 pF
C824	21-13740B49	100 pF
C825	21-13740B49	100 pF
C826	21-13740B73	1000 pF
C827	23-11048B05	lytic 1 uF 20% 50V
C828	21-13741B69	.1 uF
C829	21-13741B45	.01 uF
C830	21-13740B25	10 pF
C831	21-13740B19	5.6 +/- .25 pF
C832	21-13740B25	10 pF
C833	21-13740B73	1000 pF
C834	21-13741B69	.1 uF
C835	21-13741B69	.1 uF
C836	21-13740B73	1000 pF
C837	21-13741B45	.01 uF
C838	21-13741B45	.01 uF
C839	21-13741B45	.01 uF
C840	21-13741B45	.01 uF
C841	21-13740B73	1000 pF
C842	21-13740B73	1000 pF
C843	21-13740B73	1000 pF
C844	21-13740B73	1000 pF
C845	21-13740B73	1000 pF
C846	21-13740B73	1000 pF
C847	21-13740B73	1000 pF
C848	21-13740B73	1000 pF
C849	21-13740B49	100 pF
C850	21-13740B73	1000 pF
C851		not used
C852	21-13741B45	.01 uF
C853	21-13741B45	.01 uF
C854	21-13740B73	1000 pF
C855	23-11013A56	tantalum 47 uF 20% 6V
C856	21-13740B49	100 pF
C857	21-13740B73	1000 pF
C858	21-13740B73	1000 pF
C860	21-13741B53	.022 uF
C861	21-13740B73	1000 pF
C862	21-13741B53	.022 uF
C863	21-13740B73	1000 pF
C864	21-13740B49	100 pF
C865	21-13740B73	1000 pF
C866	21-13740B49	100 pF
C867	21-13740B73	1000 pF
C868	21-13740B73	1000 pF
C869	21-13740B73	1000 pF

# 4-LAYER LOGIC

## Diodes (see note)

CR401	48-05129M76	silicon SOT
CR402	48-83654H02	silicon
CR403	48-05129M76	silicon SOT
CR451	48-05129M76	silicon SOT
CR551	48-05129M76	silicon SOT
CR603	48-84336R03	dual silicon SOT MMBD7000
CR651	48-05129M76	silicon SOT

## Fuse

F801	65-05214E04	2 amp axial lead
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## Connector, receptacle

J3	28-80923V01	16-pin, accessories
J6	09-80130M03	14-pin, RF board
J7	28-80128M03	6 pin, RF power amplifier
J8/J9	28-80600B01	27-pin, includes J8 and J9

## Jumpers

JU551	09-80601B01	push-on jumper, 2-pin
JU601	09-80601B01	push-on jumper, 2-pin
JU651	09-80601B01	push-on jumper, 2-pin
JU701	09-80601B01	push-on jumper, 2-pin
JU802	06-11077A01	jumper
JU803		not used
JU804	06-11077A01	jumper
JU805		not used
JU806	06-11077A01	jumper
JU807	06-11009B23	jumper
JU808	09-80601B01	push-on jumper, 2-pin
JU810		not used
JU811	06-11077A01	jumper

## Coils

L801	24-11087A42	chip 22 uH ferrite
L802	24-83961B02	5 turns GRN
L803	24-83961B02	5 turns GRN

## Connector, Plug

P551	28-80002R03	3-pin header
P601	28-80002R03	3-pin header
P651	28-80002R03	3-pin header
P701	28-80002R03	3-pin header
P808	28-80002R03	3-pin header
P810	28-80002R03	3-pin header
P811	28-80002R03	3-pin header

## Transistors (see note)

Q401	48-00869619	PNP, type M9619
Q402	48-80214G02	NPN; type MMBT3904
Q403	48-80516C01	TMOS; type MTD4P06
Q404	48-80214G02	NPN; type MMBT3904
Q452	48-00869619	PNP, type M9619
Q453	48-80214G02	NPN; type MMBT3904
Q454	48-80214G02	NPN; type MMBT3904
Q455	48-80141L03	PNP, type M41L03
Q456	48-80214G02	NPN; type MMBT3904
Q501	48-80214G02	NPN; type MMBT3904
Q551	48-80949V01	field effect; type MMBF5484
Q601	48-80214G02	NPN; type MMBT3904
Q651	48-05128M67	PNP; type MMBT3906
Q652	48-80214G02	NPN; type MMBT3904
Q801	48-80214G02	NPN; type MMBT3904
Q802	48-80141L03	PNP, type M41L03
Q803	48-80947V01	digital NPN; type DTC144W
Q804	48-80214G02	NPN; type MMBT3904
Q805	48-80947V01	digital NPN; type DTC144W
Q806	48-80947V01	digital NPN; type DTC144W
Q807	48-80214G02	NPN; type MMBT3904
Q808	48-05128M67	PNP; type MMBT3906
Q809	48-05128M67	PNP; type MMBT3906

Q810	48-80214G02	NPN; type MMBT3904
Q811	48-80947V01	digital NPN; type DTC144W
Q812	48-80947V01	digital NPN; type DTC144W
Q813	48-80947V01	digital NPN; type DTC144W
Q814	48-80214G02	NPN; type MMBT3904
Q815	48-80947V01	digital NPN; type DTC144W
Q816	48-80214G02	NPN; type MMBT3904
Q817	48-80947V01	digital NPN; type DTC144W
Q818	48-80214G02	NPN; type MMBT3904
Q819	48-80214G02	NPN; type MMBT3904
Q820	48-80947V01	digital NPN; type DTC144W

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R401	06-11077A70	680
R402	06-80195M37	330 1/2 watt
R403	06-11077A70	680
R404	06-11077F18	1.74k 1%
R405	06-11077F28	2.21k 1%
R406	06-11077A98	10k
R407	06-11077A76	1.2k
R408	06-11077F91	10.0k 1%
R409	06-11077F91	10.0k 1%
R410	06-11077A80	1.8k
R411	06-11077A98	10k
R412	06-11077A74	1k
R413	06-11077A98	10k
R414	06-11077A98	10k
R453	06-11077A70	680
R454	06-80195M37	330 1/2 watt
R455	06-11077A70	680
R456	06-11077A82	2.2k
R457	06-11077A76	1.2k
R458	06-11077A90	4.7k
R459	06-11077A90	4.7k
R460	06-11077B01	12k
R461	06-11077A70	680
R462	06-11077B29	180k
R463	06-11077B25	120k
R464	06-11077G88	100k 1%
R465	06-11077G88	100k 1%
R466	06-11077F91	10.0k 1%
R467	06-11077F91	10.0k 1%
R468	06-11077A60	270
R469	06-11077A74	1k
R470	06-11077A98	10k
R471	06-11077B07	22k
R472	06-11077A92	5.6k
R473	06-11077B09	27k
R474	06-11077A98	10k
R475	06-11077G88	100k 1%
R476	06-11077G57	47.5k 1%
R477	06-11077A90	4.7k
R501	06-11077B23	100k
R502	06-11077A90	4.7k
R503	06-11077A78	1.5k
R551	06-11077A94	6.8k
R552	06-11077B37	390k
R553	06-11077B18	62k
R554	06-11077B18	62k
R555	06-11077B18	62k
R556	06-11077F53	4.02k 1%
R557	06-11077F20	1.82k 1%
R558	06-11077G42	33.2k 1%
R559	06-11077G88	100k 1%
R560	06-11077E77	665 1%
R561	06-11077G88	100k 1%
R562	06-11077B16	51k
R563	06-11077B15	47k
R567	06-11077A86	3.3k
R568	06-11077B07	22k
R569	06-11077A42	47
R570	06-11077B23	100k
R573	06-11077B09	27k
R574	06-11077A98	10k
R575	06-11077B10	30k
R576	06-11077B10	30k
R577	06-11077B23	100k

R578	06-11077A42	47	R828	06-11077A98	10k
R579	06-11077B37	390k	R829	06-11077A74	1k
R580	06-11077B09	27k	R830	06-11077A74	1k
R581	06-11077A68	560	R831	06-11077A50	100
R601	06-11077A98	10k	R832	06-11077A50	100
R602	06-11077B47	1 meg	R833	06-11077A98	10k
R603	06-11077A74	1k	R834	06-11077F91	10.0k 1%
R607		not used	R835	06-11077B05	18k
R608		not used	R836	06-11077A98	10k
R609	06-11077B11	33k	R837	06-11077B05	18k
R610	06-11077B15	47k	R838	06-11077F91	10.0k 1%
R611	06-11077G42	33.2k 1%	R839	06-11077A98	10k
R612	06-11077G42	33.2k 1%	R840	06-11077A98	10k
R613	06-11077G42	33.2k 1%	R841	06-11077A98	10k
R615	06-11077G95	118k 1%	R842	06-11077A74	1k
R616	06-11077G31	25.5k 1%	R843	06-11077A98	10k
R617	06-11077A82	2.2k	R844	06-11077A98	10k
R618	06-11077B23	100k	R845	06-11077A74	1k
R619	06-11077A98	10k	R846	06-11077A98	10k
R620	06-11077A98	10k	R847	06-11077A50	100
R622	06-11077B31	220k	R848	06-11077A74	1k
R651	06-11077A68	560	R849	06-11077A98	10k
R652	06-11077A50	100	R850	06-11077A74	1k
R653	06-11077A98	10k	R851	06-11077B15	47k
R654	06-11077A98	10k	R852	06-11077B15	47k
R655	06-11077A90	4.7k	R853	06-11077B45	820k
R656	06-11077B39	470k	R854	06-11077A90	4.7k
R657	06-11077B42	620k	R855	06-11077B15	47k
R658	06-11077H65	619k 1%	R856	06-11077A74	1k
R659	06-11077A82	2.2k	R857	06-11077A98	10k
R660	06-11077B19	68k	R858	06-11077A98	10k
R661	06-11077B03	15k	R859	06-11077A98	10k
R662	06-11077B17	56k	R860	06-11077A98	10k
R663	06-11077B18	62k	R861	06-11077B23	100k
R664	06-11077B07	22k	R862	06-11077F95	11.0k 1%
R665	06-11077A84	2.7k	R863	06-11077F91	10.0k 1%
R666	06-11077B23	100k	R864	06-11077F20	1.82k 1%
R667	06-11077B23	100k	R865	06-11077A98	10k
R668	06-11077G56	46.4k 1%	R866	06-11077A98	10k
R669	06-11077G42	33.2k 1%	R867	06-11077A98	10k
R670	06-11077G42	33.2k 1%	R868	06-11077A98	10k
R671	06-11077A61	300	R869	06-11077A98	10k
R672	06-11077B17	56k	R870	06-11077A98	10k
R673	06-11077B23	100k	R871	06-11077A98	10k
R674	06-11077A82	2.2k	R872	06-11077A98	10k
R701	06-11077G88	100k 1%	R873	06-11077A98	10k
R702	06-11077H13	178k 1%	R874	06-11077A74	1k
R703	06-11077G31	25.5k 1%	R875	06-11077A98	10k
R705	06-11077H13	178k 1%	R876	06-11077A98	10k
R706	06-11077G56	46.4k 1%	R877	06-11077B23	100k
R707	06-11077G95	118k 1%	R878	06-11077B23	100k
R708	06-11077B15	47k	R879	06-11077B23	100k
R709	06-11077B19	68k	R880	06-11077B15	47k
R710	06-11077G13	16.5k 1%	R883	06-11077A90	4.7k
R711	06-11077G13	16.5k 1%	R884	06-11077B15	47k
R714	06-11077B10	30k	R887	06-11077A90	4.7k
R715	06-11077B05	18k	R888		not used
R716	06-11077A86	3.3k	R889	06-11077A68	560
R801	06-11077A78	1.5k	R890	06-11077A98	10k
R802	06-11077A84	2.7k	R899	06-11077A98	10k
R803	06-11077A98	10k	R901	06-11077A90	4.7k
R804	06-11077A90	4.7k	R902	06-11077B15	47k
R807	06-11077B15	47k	R903	06-11077A98	10k
R808	06-11077A90	4.7k	R904	06-11077A98	10k
R809	06-11077A90	4.7k	R905	06-11077A90	4.7k
R810	06-11077B17	56k	R906	06-11077B15	47k
R811	06-11077B17	56k	R907	06-11077A98	10k
R812	06-11077A90	4.7k	R908	06-11077A98	10k
R813	06-11077A90	4.7k	R909	06-11077A90	4.7k
R814	06-11077A90	4.7k	R910	06-11077B15	47k
R815	06-11077A90	4.7k	R911	06-11077A98	10k
R816	06-11077B23	100k	R912	06-11077A98	10k
R817	06-11077B23	100k	R913	06-11077A98	10k
R818	06-11077B23	100k	R914	06-11077A90	4.7k
R822	06-11077B15	47k	R915	06-11077B15	47k
R825	06-11077B15	47k	R916	06-11077A98	10k
R826	06-11077A90	4.7k	R917	06-11077A74	1k
R827	06-11077A98	10k	R918	06-11077A98	10k



# 4-LAYER LOGIC

## Integrated circuits and modules (see note)

U401	51-02198J22	dual op-amp 4558 SOIC
U402	51-80942T01	regulator, 5V with reset
U451	51-02198J22	dual op-amp 4558 SOIC
U501	51-80147R01	audio power amp TDA1519A
U551	51-02198J22	dual op-amp 4558 SOIC
U552	51-02198J22	dual op-amp 4558 SOIC
U553	51-02198J22	dual op-amp 4558 SOIC
U601	51-02198J23	dual comparator 2903 SOIC
U602	51-02198J22	dual op-amp 4558 SOIC
U603	51-02198J22	dual op-amp 4558 SOIC
U651	51-02198J22	dual op-amp 4558 SOIC
U652	51-02198J22	dual op-amp 4558 SOIC
U653	51-80059M01	voltage-controlled attenuator
U701	51-02198J22	dual op-amp 4558 SOIC
U801	51-80135C10	D/A converter MC144110
U802	51-80960T01	microcomputer
U803	51-82862N09	gate array
U804	HLN8121A	ROM kit
U805	51-80901W01	EEPROM
U806	51-80914V01	static RAM

## Voltage regulators (see note)

VR401	48-83461E40	zener diode 5.1V 1%
VR402	48-80140L06	zener diode 5.1V
VR403	48-80948V01	zener diode 27V SOT
VR551	48-80140L15	zener diode 10V SOT
VR552	48-80140L15	zener diode 10V SOT
VR801	48-80948V01	zener diode 27V SOT
VR802	48-80948V01	zener diode 27V SOT
VR803		not used
VR804	48-80948V01	zener diode 27V SOT
VR805		not used
VR806		not used
VR807		not used
VR808	48-80948V01	zener diode 27V SOT
VR809	48-80948V01	zener diode 27V SOT
VR810	48-80948V01	zener diode 27V SOT
VR811	48-80948V01	zener diode 27V SOT
VR812	48-82256C20	zener diode 27V

## Crystals

Y801	48-80173D09	7.776 MHz
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## Non-referenced items

03-10943M04	screw M2.5 X 8 (2 used, for Q401 and Q452)
03-80271L01	screw (2 used for U501)
04-00136334	washer flat (2 used for U501)
14-83820M05	insulator (2 used, for Q401 and Q452)
26-80497B01	heatsink
01-80701Y58	connector assembly (mates with J3)
09-82071K09	14 pin socket (2 used for U804)
26-80123M02	logic shield frame

**Note:** For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/24/92

PL-921012-A

## HLD8299A PA Board, 146-174 MHz, 1-10 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2210	21-13740B49	100 pF
C2211	21-13740B34	24 pF
C2212		not used
C2213	21-13740B65	470 pF
C2214	21-13740B65	470 pF
C2215	21-13740B47	82 pF
C2216	21-13741B69	.1 uF
C2217	21-13740B73	1000 pF
C2218	21-13740B65	470 pF
C2219	21-13741B69	.1 uF
C2220		not used
C2221	21-13740B65	470 pF
C2223	21-13740B65	470 pF
C2224		not used
C2225		not used
C2226	21-13741B69	.1 uF
C2227	21-13740B65	470 pF
C2229	21-13740B73	1000 pF
C2230	21-13740B53	150 pF
C2231	21-13740B47	82 pF
C2234	21-13741B69	.1 uF
C2235	21-13740B65	470 pF
C2236	21-13741B69	.1 uF
C2240		not used
C2241		not used
C2242		not used
C2243	21-13740B46	75 pF
C2244	21-13740B34	24 pF
C2245	21-13740B40	43 pF
C2250	21-13740B65	470 pF
C2251	21-13740B19	5.6 +/- .25 pF
C2252	21-13740B40	43 pF
C2253	21-13740B65	470 pF
C2260	21-13740B33	22 pF
C2261	21-13740B34	24 pF
C2262	21-13740B35	27 pF
C2263	21-13740B34	24 pF
C2264	21-13740B30	16 pF
C2265	21-13740B65	470 pF
C2270	21-13740B65	470 pF
C2271	21-13740B49	100 pF
C2272	21-13740B73	1000 pF
C2273	21-13741B69	.1 uF
C2274	21-13740B65	470 pF
C2275	21-13740B65	470 pF
C2276	21-13740B65	470 pF
C2277	21-13741B69	.1 uF
C2278	21-13740B49	100 pF
C2279	21-13740B65	470 pF
C2280	21-13740B49	100 pF
C2281	21-13741B69	.1 uF
C2282	08-11051A17	poly .47 uF 63V
C2283		not used

## Diodes (see note)

CR2250	48-80010E01	PIN UM9401
CR2251	48-80010E01	PIN UM9401
CR2270	48-80236E07	transient suppressor diode

## Ferrite Beads

E2210	24-84657R01	ferrite bead
E2211	24-84657R01	ferrite bead
E2230	24-84657R01	ferrite bead
E2270	24-84657R01	ferrite bead
E2271	24-84657R01	ferrite bead

## Coils

L2210	24-11030B10	5-1/2 turn RED
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L2211	24-11030A03	4 turns YEL
L2212	24-11030E05	1/2 turn GRN
L2213	24-11030B15	10-1/2 turns WHT
L2214	24-11030B11	6-1/2 turns ORN
L2215	24-11030B10	5-1/2 turns RED
L2223	24-82723H46	.2 uH
L2230	24-11030B15	10-1/2 turns WHT
L2231	24-11030B07	3-1/2 turns WHT
L2240	24-11030B07	3-1/2 turns WHT
L2250	24-11087B28	chip 1.5 uH
L2251	24-11030B10	5-1/2 turns RED
L2252	24-11087B28	chip 1.5 uH
L2260	24-11030B11	6-1/2 turns ORN
L2261	24-11030B12	7-1/2 turns YEL
L2262	24-11030B12	7-1/2 turns YEL
L2263	24-11030B11	6-1/2 turns ORN
L2264	24-11030B15	10-1/2 turns WHT

## Transistors (see note)

Q2210	48-82233P39	NPN; type MRF559
Q2220	48-80225C23	NPN; type MRF237

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2210	06-11077A60	270
R2211	06-11077A58	220
R2212	06-11077A52	120
R2213	06-11077A38	33
R2214	06-11077A40	39
R2215	06-11077A26	10
R2216		not used
R2217	06-11077A43	51
R2218	06-11077A33	20
R2219	06-11077A26	10
R2220	06-11077A38	33
R2230	06-11077A26	10
R2233	06-11077A26	10
R2250	06-80194M15	39 1 watt
R2251	06-80194M15	39 1 watt
R2270	06-11077B11	33k
R2271	06-11077A80	1.8k
R2272	06-05621T02	thermistor 50k
R2273	06-11077A44	56
R2274	06-11086D01	0.2 2 watt

## Non-referenced items

26-80158L01	heat sink (for Q2220)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

1/7/93

PL-921028-O

# PA 146-174 MHz (1-10W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2201 through C2206, 470 pF feedthru capacitors, 6 used)

## HLN8274A PA Hardware Kit, 146-174 MHz, 1-10 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Capacitor, chip

C2238	21-11078B25	27 pF 100V
C2239	21-11078B25	27 pF 100V

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Transistors

Q2230	48-80225C18	NPN; type MRF2628
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### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (6 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
42-80520B01	ground clip, pc board (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

1/7/93

PL-921029-O

## HLD8033A PA Board, 146-174 MHz, 10-25 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2308		not used
C2309		not used
C2310	21-13740B65	470 pF
C2311	21-13740B27	12 pF
C2312	21-13740B65	470 pF
C2313	21-13740B65	470 pF
C2314	21-13741B69	.1 uF
C2315	21-13740B51	120 pF
C2316	21-13740B65	470 pF
C2317	21-13740B41	47 pF
C2318	21-13740B49	100 pF
C2319	21-13740B65	470 pF
C2320	21-13740B65	470 pF
C2321	21-11032B15	.22 uF + 80/-20%
C2322	21-13741B69	.1 uF
C2323	21-13740B65	470 pF
C2324	21-13740B32	20 pF
C2325	21-13740B35	27 pF
C2326	21-13740B41	47 pF
C2327	21-13740B65	470 pF
C2330	21-13740B41	47 pF
C2331	21-13740B47	82 pF
C2332		not used
C2334		not used
C2336	21-80060M43	100 pF 100V
C2337	21-80060M39	68 pF 500V
C2338	21-80060M25	18 pF 500V
C2339	21-11032B15	.22 uF + 80/-20%
C2340	21-80060M19	10 pF 500V
C2341	21-13740B53	150 pF
C2342		not used
C2343	21-80060M43	100 pF 100V
C2351	21-13740B29	15 pF
C2352	21-13740B53	150 pF
C2353	21-13740B59	270 pF
C2354	21-13740B65	470 pF
C2360	21-80060M29	27 pF 500V
C2361	21-80060M29	27 pF 500V
C2362	21-80060M29	27 pF 500V
C2363	21-80060M30	30 pF 500V
C2364	21-80060M27	22 pF 500V
C2365	21-13740B73	1000 pF
C2370	21-13740B65	470 pF
C2371	21-13741B69	.1 uF
C2372	21-13740B51	120 pF
C2373	21-13740B65	470 pF
C2374	21-13740B65	470 pF
C2375	21-13740B65	470 pF
C2376	21-13741B69	.1 uF
C2378	23-11048A17	lytic 33 uF 20% 25V
C2379	21-13740B65	470 pF
C2380	21-13740B65	470 pF

## Diodes (see note)

CR2350	48-80010E01	silicon PIN UM9401
CR2351	48-80010E01	silicon PIN UM9401
CR2370	48-80236E07	transient suppressor diode

## Ferrite Beads

E2370	76-83960B01	ferrite bead 1/2 turn
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## Coils

L2310	24-11030A04	5 turns GRN
L2311	24-11030B07	3-1/2 turns WHT
L2312	24-11030E01	1/2 turn BRN
L2313	24-11030B15	10-1/2 turns WHT
L2321	24-80036A01	ferrite bead 1/2 turn
L2322	24-11030B07	3-1/2 turns WHT

L2323	24-80036A01	ferrite bead 1/2 turn
L2324	24-82723H46	.2 uH
L2325	24-11030B02	1-1/2 turns RED
L2330	24-11030E04	1/2 turn YEL
L2331	24-11030B07	3-1/2 turn WHT
L2332	24-80036A01	ferrite bead 1/2 turn
L2333	24-11030B07	3-1/2 turns WHT
L2334	24-11030E04	1/2 turn YEL
L2335	24-11030A02	3 turns ORG
L2336	24-11030A03	4 turns YEL
L2350	24-82723H49	1.2 uH
L2351	24-11030B10	5-1/2 turns RED
L2352	24-82723H44	.039 uH
L2353	24-82723H49	1.2 uH
L2360	24-11030A05	6 turns BLU
L2361	24-11030B12	7-1/2 turns YEL
L2362	24-11030B12	7-1/2 turns YEL
L2363	24-11030A05	6 turns BLU
L2364	24-11030B15	10-1/2 turns WHT
L2370	24-84346A02	.23 uH

## Transistors (see note)

Q2310	48-82233P39	NPN; type 33P39
Q2320	48-80225C23	NPN; type MRF237

## Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2307	06-11077A62	330
R2310	06-11077A46	68
R2311	06-11077A58	220
R2312	06-11077A60	270
R2313	06-11077A26	10
R2314	06-11077A26	10
R2320	06-11077A26	10
R2321	06-11077A50	100
R2329		not used
R2331	06-80279M01	metal film 82 3 watt
R2332	06-11077A26	10
R2350	06-11009A39	390 1/4 watt
R2351	06-11077A66	470
R2352	06-11077A66	470
R2353	06-11077A50	100
R2370	06-11077A38	33
R2371	06-80147M01	metal plate .05 2 watt
R2372	06-05621T02	thermistor 50k
R2373	06-11077B11	33k
R2374	06-11077A74	1k

## Non-referenced items

26-80158L01	heat sink (for Q2320)
26-80275M01	heat sink, diode (2 used for CR2350 and CR2351)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

8/20/92

PL-921015-A

# PA 146-174 MHz (10-25W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2301 through C2306, 470 pF feedthru capacitors, 6 used)

## HLN8069A PA Hardware Kit, VHF 25 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Capacitors, chip

C2329		not used
C2333	21-11078B52	240 pF 100V
C2335	21-11078B34	47 pF 100V

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Transistors

Q2330	48-80225C22	NPN; type MRF1946
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### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (8 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
38-80014N01	plug button
42-80281L01	ground clip (2 used for Q2330)
42-80520B01	ground clip, pc board (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

8/20/92

PL-921016-A

## HLD8287A PA Board, 146-174 MHz, 25-45 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2410	21-13740B65	470 pF
C2411	21-13740B29	15 pF
C2412	21-13740B61	330 pF
C2413	21-13740B45	68 pF
C2414	21-13740B65	470 pF
C2415	21-13740B65	470 pF
C2420	21-13740B37	33 pF
C2421	21-13740B41	47 pF
C2422	08-11051A17	poly .47 uF 63V
C2423	21-13740B52	130 pF
C2424	21-13740B37	33 pF
C2430	21-13740B49	100 pF
C2431	21-13740B36	30 pF
C2432	21-13740B65	470 pF
C2433	21-13740B65	470 pF
C2434	21-13741B69	.1 uF
C2435	08-11051A19	poly 1 uF 63V
C2440	21-11078B59	470 pF 100V
C2443	21-13740B65	470 pF
C2444	08-11051A17	poly .47 uF 63V
C2447	21-11078B38	68 pF 100V
C2448	21-11078B38	68 pF 100V
C2449	21-80060M42	91 pF 500V
C2450	21-80060M34	43 pF 500V
C2451	21-11078B59	470 pF 100V
C2452		not used
C2453	21-11078B44	120 pF 100V
C2454	21-13740B25	10 pF
C2455	21-13740B65	470 pF
C2456		not used
C2460	21-80060M30	30 pF 500V
C2461	21-80060M30	30 pF 500V
C2462	21-80060M30	30 pF 500V
C2463	21-80060M27	22 pF 500V
C2464	21-11078B59	470 pF 100V
C2468	21-11078B38	68 pF 100V
C2469	21-11078B38	68 pF 100V
C2470	21-13740B65	470 pF
C2471	21-13740B65	470 pF
C2472	21-13740B65	470 pF
C2473	21-13740B65	470 pF
C2474	21-13740B65	470 pF
C2475	21-13740B51	120 pF
C2476	21-13740B65	470 pF
C2477	21-13741B69	.1 uF
C2478	21-13741B69	.1 uF
C2479	21-13740B65	470 pF
C2480	21-13741B69	.1 uF
C2481	21-13740B65	470 pF
C2482	21-13740B65	470 pF

## Diodes (see note)

CR2450	48-80010E01	silicon PIN
CR2451	48-80010E01	silicon PIN
CR2470	48-80236E07	transient suppressor diode

## Ferrite Beads

E2410	24-80036A01	ferrite bead 1/2 turn
E2420	24-80036A01	ferrite bead 1/2 turn
E2430	24-80036A01	ferrite bead 1/2 turn
E2440	24-80036A01	ferrite bead 1/2 turn
E2470	76-83960B01	ferrite bead 1/2 turn
E2471	76-83960B01	ferrite bead 1/2 turn

## Coils

L2410	24-11030A01	2 turns RED
L2411	24-11030B07	3-1/2 turns WHT
L2412	24-11030B15	10-1/2 turns WHT

L2413	24-11030A06	7 turns VIO
L2420	24-11030E06	1/2 turn BLU
L2421	24-82723H49	1.2 uH
L2422	24-11030E01	1/2 turn BRN
L2423	24-11030E04	1/2 turn YEL
L2430	24-11030B07	3-1/2 turns WHT
L2431	24-11030D03	4 turns YEL
L2440	24-11030D03	4 turns YEL
L2441	24-80908T25	3-1/2 turns RED
L2443	24-80908T09	1-1/2 turns RED
L2450	24-82835G25	1.5 uH 5%
L2451		not used
L2452	24-80908T23	3-1/2 turns RED
L2453	24-82723H44	39 nH
L2460	24-80908T22	3-1/2 turns GRN
L2461	24-80908T23	3-1/2 turns RED
L2462	24-80908T22	3-1/2 turns GRN
L2463	24-11030B15	10-1/2 turns WHT
L2470	24-82723H46	.2 uH
L2471	24-84346A02	.23 uH

## Transistors (see note)

Q2410	48-82233P39	NPN; type MRF559
Q2420	48-80225C23	NPN; type MRF237

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2410	06-11077A60	270
R2411	06-11077A58	220
R2412	06-11077A46	68
R2413	06-11077A26	10
R2414	06-11077A26	10
R2415	06-11077A44	56
R2420	06-11077A50	100
R2430	06-11009C37	330 1/4 watt FCF
R2431	06-11077A46	68
R2440	06-11086A27	47 1 watt FMO
R2450	06-80194M15	39 1 watt
R2451	06-80194M15	39 1 watt
R2470	06-11077A30	15
R2471	06-80147M02	metal plate .01 10% 2 watt
R2472	06-05621T02	thermistor 50k
R2473	06-11077B11	33k
R2474	06-11077A76	1.2k

## Non-referenced items

26-80158L01	heat sink (for Q2420)
26-80275M01	heat sink (2 used for CR2450 and CR2451)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/2/92

PL-921035-O

# PA 146-174 MHz (25-45W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Non-referenced items		
	01-80556B01	6-wire cable assembly (includes P7)
	01-80634B01	feedthru bracket assembly (includes C2401 through C2406, 470 pF feedthru capacitors, 6 used)

## HLN8289A PA Hardware Kit, 146-174 MHz, 25-45 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Capacitors, chip		
C2436	21-11078B38	68 pF 100V
C2441	21-11078B54	300 pF 100V
C2442	21-11078B54	300 pF 100V
C2445	21-11078B25	27 pF 100V
C2446	21-11078B25	27 pF 100V
C2466	21-11078B25	27 pF 100V
C2467	21-11078B25	27 pF 100V

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Transistors

Q2430	48-80225C18	NPN; type MRF2628
Q2440	48-84411L04	NPN; type M1104

### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (8 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
42-80281L01	ground clip (2 used for Q2440)
42-80520B01	ground clip, pc board (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/2/92

PL-921036-O

## HLE8275A PA Board, 403-433 MHz, 25/40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2710	21-13740B49	100 pF
C2711	21-13740B27	12 pF
C2712	21-13740B34	24 pF
C2713	21-13740B73	1000 pF
C2714	21-13740B73	1000 pF
C2715	21-13740B21	6.8 +/- .25 pF
C2716	21-13741B69	.1 uF
C2717	21-13740B36	30 pF
C2718	21-13740B49	100 pF
C2719		not used
C2720	21-13740B32	20 pF
C2721	21-13740B32	20 pF
C2722		not used
C2723		not used
C2724		not used
C2725		not used
C2726	21-13740B49	100 pF
C2727	21-13740B73	1000 pF
C2728	21-11032B15	.22 uF +80/-20%
C2729	21-13740B36	30 pF
C2730	21-13740B32	20 pF
C2731	21-11078B25	27 pF 100V
C2732	21-11078B25	27 pF 100V
C2733	21-11032B15	.22 uF +80/-20%
C2735		not used
C2736	21-13740B49	100 pF
C2737	21-13740B73	1000 pF
C2738	21-13741B69	.1 uF
C2739	23-11048A17	lytic 33 uF 20% 25V
C2740	21-11078B35	51 pF 100V
C2745	21-80060M20	11 pF 500V
C2746	21-80060M13	7 +/- .25 pF 500V
C2747	21-80060M31	33 pF 500V
C2748	21-11032B15	.22 uF +80/-20%
C2749	21-13740B49	100 pF
C2750	21-80060M26	20 pF 500V
C2751	21-13740B17	4.7 +/- .25 pF
C2752		not used
C2753	21-13740B27	12 pF
C2754	21-13740B49	100 pF
C2755	21-13740B49	100 pF
C2756	21-80060M20	11 pF 500V
C2757	21-80060M13	7 +/- .25 pF 500V
C2758		not used
C2760	21-80060M19	10 pF 500V
C2761	21-80060M15	8 +/- .25 pF 500V
C2762	21-80060M17	9 +/- .25 pF 500V
C2763	21-80060M11	6 +/- .25 pF 500V
C2764	21-80060M43	100 pF 100V
C2765	23-11048A17	lytic 33 uF 20% 25V
C2768		not used
C2770	21-13740B36	30 pF
C2771	21-13740B36	30 pF
C2772	21-13740B73	1000 pF
C2773	21-13741B69	.1 uF
C2774	21-13740B36	30 pF
C2775	08-11051A17	poly .47 uF 63V
C2776	21-13740B36	30 pF
C2777	21-13740B73	1000 pF
C2778	21-13741B69	.1 uF
C2779	21-13740B36	30 pF
C2780	21-13740B36	30 pF
C2781		not used
C2782		not used

## Diodes (see note)

CR2750	48-80010E01	silicon PIN UM9401
CR2751	48-80010E01	silicon PIN UM9401
CR2770	48-80236E07	transient suppressor diode

## Ferrite Beads

E2722	76-83960B01	ferrite bead 1/2 turn
E2770	76-83960B01	ferrite bead 1/2 turn
E2771	76-83960B01	ferrite bead 1/2 turn

## Coils

L2710	24-11030E02	1/2 turn RED
L2711	24-11030B04	1-1/2 turns YEL
L2712	24-11030E04	1/2 turn YEL
L2713	24-11030B01	1-1/2 turns BRN
L2714	24-80036A01	ferrite bead 1/2 turn
L2720	24-11030E01	1/2 turn BRN
L2721		not used
L2722	24-82723H44	.039 uH
L2730	24-11030A03	4 turns YEL
L2731	24-80036A01	ferrite bead 1/2 turn
L2732	24-11030A06	7 turns VIO
L2740	24-80036A01	ferrite bead 1/2 turn
L2741	24-11030A02	3 turns ORN
L2742	24-80908T11	1-1/2 turns RED
L2743	24-80908T01	1-1/2 turns RED
L2744		not used
L2750	24-82723H40	.29 uH
L2751	24-11030B04	1-1/2 turns YEL
L2752	24-82723H40	.29 uH
L2753	24-11030B11	6-1/2 turns ORN
L2760	24-80908T08	1-1/2 turns GRN
L2761	24-80908T10	1-1/2 turns GRN
L2762	24-80908T11	1-1/2 turns RED
L2763	24-11030B11	6-1/2 turns ORN
L2770	24-82723H46	.2 uH
L2771	24-84346A02	.23 uH

## Transistors (see note)

Q2710	48-82233P39	NPN; type MRF559
Q2720	48-80225C09	NPN; type MRF630

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2710	06-11077A60	270
R2711	06-11077A58	220
R2712	06-11077A52	120
R2713	06-11077A38	33
R2714	06-11077A38	33
R2715	06-11077A62	330
R2720	06-11077A26	10
R2740		not used
R2741	06-02369M10	metal film 5.6 0.6 watt
R2750	06-80194M15	39 1 watt
R2751	06-80194M15	39 1 watt
R2770	06-80147M02	metal plate .01 10% 2 watt
R2771	06-11077A28	12
R2772	06-05621T02	thermistor 50k
R2773	06-11077B11	33k
R2774	06-11077A76	1.2k
R2775	06-11077A26	10

## Non-referenced items

26-80158L01	heat sink (for Q2720)
26-80275M01	heat sink (2 used for CR2750 and CR2751)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921030-O



## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Non-referenced items		
	01-80556B01	6-wire cable assembly (includes P7)
	01-80634B01	feedthru bracket assembly (includes C2701 through C2706, 470 pF feedthru capacitors, 6 used)

## HLN8277A PA Hardware Kit, 403-433 MHz, 25/40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Capacitors, chip		
C2741	21-11078B36	56 pF 100V
C2742	21-11078B37	62 pF 100V
C2743	21-11078B35	51 pF 100V
C2744	21-11078B35	51 pF 100V
C2766		not used
C2767		not used
Connector, receptacle		
J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)
Connector, plug		
P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug
Transistors		
Q2730	48-80225C19	NPN; type MRF654
Q2740	48-80225C24	NPN; type MRF650
Non-referenced items		
	02-00007003	nut 8-32x5/16x1/8 (for J1)
	03-10943M10	screw M3x.5x8 (8 used)
	03-10943M11	screw M3x.5x10 (2 used for J2)
	04-00131974	washer (2 used for J2)
	04-05587G01	washer nylon (for J2)
	04-80943V01	lockwasher (for J1)
	26-80124L03	heat sink
	26-80223M07	PA shield
	26-80514C01	filter shield
	26-80551C01	antenna connector shield
	32-80014N03	gasket, accessory connector
	42-80281L01	ground clip (2 used for Q2740)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921031-O

## HLE8267A PA Board, 438-470 MHz, 1-10 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2510	21-13740B49	100 pF
C2511	21-13740B27	12 pF
C2512	21-13740B29	15 pF
C2513	21-13740B73	1000 pF
C2514	21-13740B73	1000 pF
C2515	21-13740B21	6.8 +/- .25 pF
C2516	21-13741B69	.1 uF
C2517	21-13740B36	30 pF
C2518	21-13740B49	100 pF
C2519	21-13740B73	1000 pF
C2520	21-13740B29	15 pF
C2521	21-13740B35	27 pF
C2522		not used
C2523		not used
C2526	21-13740B49	100 pF
C2527	21-13740B73	1000 pF
C2528	21-11032B15	.22 uF +80/-20%
C2529	21-13740B36	30 pF
C2530	21-13740B37	33 pF
C2531	21-13740B31	18 pF
C2532	21-13740B31	18 pF
C2536	21-13740B49	100 pF
C2537	21-13740B73	1000 pF
C2538	21-13741B69	.1 uF
C2539		not used
C2540	21-13740B09	2.2 +/- .25 pF
C2541	21-13740B31	18 pF
C2542	21-13740B21	6.8 +/- .25 pF
C2543	21-13740B29	15 pF
C2547	21-13740B49	100 pF
C2548	21-11032B15	.22 uF +80/-20%
C2549	21-13740B49	100 pF
C2550		not used
C2551	21-13740B29	15 pF
C2552		not used
C2553	21-13740B49	100 pF
C2554	21-13740B49	100 pF
C2555	21-13740B49	100 pF
C2560	21-13740B19	5.6 +/- .25 pF
C2561	21-13740B22	7.5 +/- .25 pF
C2562	21-13740B22	7.5 +/- .25 pF
C2563	21-13740B15	3.9 +/- .25 pF
C2564	21-13740B49	100 pF
C2570	21-13740B36	30 pF
C2574	21-13740B36	30 pF
C2575	08-11051A17	poly .47 uF 63V
C2576	21-13740B49	100 pF
C2577	21-13740B73	1000 pF
C2578	21-13741B69	.1 uF
C2579	21-13740B36	30 pF
C2580	21-13740B49	100 pF

Diodes (see note)

CR2550	48-80010E01	silicon PIN UM9401
CR2551	48-80010E01	silicon PIN UM9401
CR2570	48-80236E07	transient suppressor diode

Ferrite Beads

E2520	24-84657R01	ferrite bead
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Coils

L2510	24-11030E01	1/2 turn BRN
L2511	24-11030B04	1-1/2 turns YEL
L2512	24-11030E02	1/2 turn RED
L2513	24-11030B01	1-1/2 turns BRN
L2515	24-80036A01	ferrite bead 1/2 turn
L2520	24-11030E01	1/2 turn BRN
L2522	24-82723H44	39 nH

L2530	24-11030B03	1-1/2 turns ORN
L2531	24-80036A01	ferrite bead 1/2 turn
L2532	24-11030B03	1-1/2 turns ORN
L2540	24-11030E02	1/2 turn RED
L2550	24-82723H40	.29 uH
L2551	24-11030B03	1-1/2 turns ORN
L2552	24-82723H40	.29 uH
L2553	24-11030B11	6-1/2 turns ORN
L2560	24-11030B02	1-1/2 turns RED
L2561	24-11030B03	1-1/2 turns ORN
L2562	24-11030B02	1-1/2 turns RED
L2563	24-11030B11	6-1/2 turns ORN
L2570	24-80036A01	ferrite bead 1/2 turn

Transistors (see note)

Q2510	48-82233P39	NPN; type MRF559
Q2520	48-80225C09	NPN; type MRF630
Q2530	48-80225C19	NPN; type MRF654

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2510	06-11077A58	220
R2511	06-11077A60	270
R2512	06-11077A52	120
R2513	06-11077A40	39
R2514	06-11077A40	39
R2520	06-11077A26	10
R2550	06-80194M15	39 1 watt
R2551	06-80194M15	39 1 watt
R2570	06-11086D01	0.2 2 watt FMO
R2571	06-11077A44	56
R2572	06-05621T02	thermistor 50k
R2573	06-11077B11	33k
R2574	06-11077A80	1.8k
R2575	06-11077A26	10

Non-referenced items

26-80158L01	heat sink (for Q2520)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/31/92

PL-921026-O

# PA 438-470 MHz (1-10W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2501 through C2506, 470 pF feedthru capacitors, 6 used)

## HLN8268A PA Hardware Kit, 438-470 MHz, 1-10 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Capacitors, chip, 5%, 50V

C2533	21-13740B31	18 pF
C2534	21-13740B31	18 pF

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (6 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
26-80514C01	filter shield
26-80551C01	antenna connector shield
32-80014N03	gasket, accessory connector

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

12/31/92

PL-921027-O

## HLE8034A PA Board, 438-470 MHz, 10-25 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2610	21-13740B49	100 pF
C2611	21-13740B27	12 pF
C2612	21-13740B29	15 pF
C2613	21-13740B73	1000 pF
C2614	21-13740B73	1000 pF
C2615	21-13740B21	6.8 +/- .25 pF
C2616	21-13741B69	.1 uF
C2617	21-13740B36	30 pF
C2618	21-13740B49	100 pF
C2619		not used
C2620	21-13740B31	18 pF
C2621	21-13740B34	24 pF
C2622		not used
C2623		not used
C2626	21-13740B49	100 pF
C2627	21-13740B73	1000 pF
C2628	21-11032B15	.22 uF +80/-20%
C2629	21-13740B36	30 pF
C2630	21-13740B37	33 pF
C2631	21-11078B23	24 pF 100V
C2632	21-11078B23	24 pF 100V
C2636	21-13740B49	100 pF
C2637	21-13740B73	1000 pF
C2638	21-13741B69	.1 uF
C2639	08-11051A17	poly .47 uF 63V
C2640	21-80060M33	39 pF 500V
C2645	21-80060M25	18 pF 500V
C2646	21-80060M19	10 pF 500V
C2647	21-80060M31	33 pF 500V
C2648	21-11032B15	.22 uF +80/-20%
C2649	21-13740B49	100 pF
C2650	21-80060M20	11 pF 500V
C2651	21-13740B09	2.2 +/- .25 pF
C2652	21-13740B17	4.7 +/- .25 pF
C2653	21-13740B49	100 pF
C2654	21-13740B49	100 pF
C2655	21-13740B49	100 pF
C2660	21-80060M17	9 +/- .5 pF 500V
C2661	21-80060M19	10 pF 500V
C2662	21-80060M17	9 +/- .5 pF 500V
C2663	21-80060M11	6 +/- .5 pF 500V
C2664	21-80060M43	100 pF 500V
C2670	21-13740B36	30 pF
C2671	21-13740B36	30 pF
C2672	21-13740B73	1000 pF
C2673	21-13741B69	.1 uF
C2674	21-13740B36	30 pF
C2675	08-11051A17	.47 uF 63V
C2676	21-13740B36	30 pF
C2677	21-13740B73	1000 pF
C2678	21-13741B69	.1 uF
C2679	21-13740B36	30 pF
C2680	21-13740B36	30 pF

Diodes (see note)

CR2650	48-80010E01	silicon PIN
CR2651	48-80010E01	silicon PIN
CR2670	48-80236E07	transient suppressor diode

Ferrite Beads

E2620	76-83960B01	ferrite bead 1/2 turn
E2670	76-83960B01	ferrite bead 1/2 turn
E2671	76-83960B01	ferrite bead 1/2 turn

Coils

L2610	24-11030E01	1/2 turn BRN
L2611	24-11030B04	1-1/2 turns YEL
L2612	24-11030E03	1/2 turn ORN

L2613	24-11030B01	1-1/2 turns BRN
L2614	24-80036A01	ferrite bead 1/2 turn
L2620	24-11030E01	1/2 turn BRN
L2621		not used
L2622	24-82723H44	.039 uH
L2630	24-11030A03	4 turns YEL
L2631	24-80036A01	ferrite bead 1/2 turn
L2632	24-80030A06	7 turns VIO
L2640	24-80036A01	ferrite bead 1/2 turn
L2641	24-11030A03	4 turns YEL
L2642	24-11030A02	3 turns ORG
L2643	24-11030E05	1/2 turn GRN
L2650	24-82723H40	.29 uH
L2651	24-11030B05	2 1/2 turns GRN
L2652	24-82723H40	.29 uH
L2653	24-11030B11	6-1/2 turns ORN
L2660	24-11030B04	1-1/2 turns YEL
L2661	24-11030B06	2-1/2 turns BLU
L2662	24-11030B06	2-1/2 turns BLU
L2663	24-11030B11	6-1/2 turns ORN
L2670	24-82723H46	.2 uH
L2671	24-84346A02	.23 uH

Transistors (see note)

Q2610	48-82233P39	NPN; type MRF559
Q2620	48-80225C09	NPN; type MRF630

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2610	06-11077A60	270
R2611	06-11077A58	220
R2612	06-11077A52	120
R2613	06-11077A40	39
R2614	06-11077A40	39
R2620	06-11077A26	10
R2640		not used
R2650	06-11009A39	390 1/4 watt
R2651	06-11077A66	470
R2652	06-11077A66	470
R2653	06-11077A50	100
R2670	06-80147M01	metal plate .05 10% 2 watt
R2671	06-11077A40	39
R2672	06-05621T02	thermistor 50k
R2673	06-11077B11	33k
R2674	06-11077A76	1.2k
R2675	06-11077A26	10

Non-referenced items

26-80158L01	heat sink (for Q2620)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

8/20/92

PL-921017-A

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Non-referenced items		
	01-80556B01	6-wire cable assembly (includes P7)
	01-80634B01	feedthru bracket assembly (includes C2601 through C2606, 470 pF feedthru capacitors, 6 used)

## HLN8068A PA Hardware Kit, 438-470 MHz, 10-25 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
Capacitors, chip		
C2641	21-80060M34	43 pF 500V
C2642	21-80060M34	43 pF 500V
C2643	21-80060M33	39 pF 500V
C2644	21-80060M33	39 pF 500V
Connector, receptacle		
J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)
Connector, plug		
P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug
Transistors		
Q2630	48-80225C19	NPN; type MRF654
Q2640	48-84411L07	NPN; type M1107
Non-referenced items		
	02-00007003	nut 8-32x5/16x1/8 (for J1)
	03-10943M10	screw M3x.5x8 (8 used)
	03-10943M11	screw M3x.5x10 (2 used for J2)
	04-00131974	washer (2 used for J2)
	04-05587G01	washer nylon (for J2)
	04-80943V01	lockwasher (for J1)
	26-80124L01	heat sink
	26-80223M07	PA shield
	32-80014N03	gasket, accessory connector
	42-80281L01	ground clip (2 used for Q2640)
	42-80520B01	ground clip, pc board (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

8/20/92

PL-921018-A

HLE8271A PA Board, 438-470 MHz, 25-40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2710	21-13740B49	100 pF
C2711	21-13740B27	12 pF
C2712	21-13740B29	15 pF
C2713	21-13740B73	1000 pF
C2714	21-13740B73	1000 pF
C2715	21-13740B21	6.8 +/- .25 pF
C2716	21-13741B69	.1 uF
C2717	21-13740B36	30 pF
C2718	21-13740B49	100 pF
C2719		not used
C2720	21-13740B31	18 pF
C2721	21-13740B34	24 pF
C2722		not used
C2723		not used
C2724		not used
C2725		not used
C2726	21-13740B49	100 pF
C2727	21-13740B73	1000 pF
C2728	21-11032B15	.22 uF + 80/-20%
C2729	21-13740B36	30 pF
C2730	21-13740B37	33 pF
C2731	21-11078B23	24 pF 100V
C2732	21-11078B23	24 pF 100V
C2733		not used
C2734		not used
C2735		not used
C2736	21-13740B49	100 pF
C2737	21-13740B73	1000 pF
C2738	21-13741B69	.1 uF
C2739	08-11051A17	poly .47 uF 63V
C2740	21-11078B31	36 pF 100V
C2745	21-80060M11	6 +/- .25 pF 500V
C2746	21-80060M09	5 +/- .25 pF 500V
C2747	21-80060M43	100 pF 500V
C2748	21-11032B15	.22 uF + 80/-20%
C2749	21-13740B49	100 pF
C2750	21-80060M20	11 pF 500V
C2751		not used
C2752	21-13740B19	5.6 +/- .25 pF
C2753	21-13740B49	100 pF
C2754	21-13740B65	470 pF
C2755		not used
C2756	21-80060M11	6 +/- .25 pF 500V
C2757	21-80060M09	5 +/- .25 pF 500V
C2758		not used
C2760	21-80060M15	8 +/- .25 pF 500V
C2761	21-80060M19	10 pF 500V
C2762	21-80060M19	10 pF 500V
C2763	21-80060M10	5.5 +/- .25 pF 500V
C2764	21-80060M43	100 pF 100V
C2765	23-11048A17	lytic 35 uF 20% 25V
C2768		not used
C2770	21-13740B36	30 pF
C2771	21-13740B36	30 pF
C2772	21-13740B73	1000 pF
C2773	21-13741B69	.1 uF
C2774	21-13740B36	30 pF
C2775	08-11051A17	poly .47 uF 63V
C2776	21-13740B36	30 pF
C2777	21-13740B73	1000 pF
C2778	21-13741B69	.1 uF
C2779	21-13740B36	30 pF
C2780	21-13740B36	30 pF
C2781		not used
C2782		not used

Diodes (see note)

CR2750	48-80010E01	silicon PIN UM9401
CR2751	48-80010E01	silicon PIN UM9401
CR2752		not used

CR2770 48-80236E07 transient suppressor diode

Ferrite Beads

E2720	76-83960B01	ferrite bead 1/2 turn
E2770	76-83960B01	ferrite bead 1/2 turn
E2771	76-83960B01	ferrite bead 1/2 turn

Coils

L2710	24-11030E01	1/2 turn BRN
L2711	24-11030B04	1-1/2 turns YEL
L2712	24-11030E03	1/2 turn ORN
L2713	24-11030B01	1-1/2 turns BRN
L2714	24-80036A01	ferrite bead 1/2 turn
L2720	24-11030E01	1/2 turn BRN
L2721		not used
L2722	24-82723H44	39 nH
L2730	24-11030D03	4 turns YEL
L2731	24-80036A01	ferrite bead 1/2 turn
L2732	24-11030A06	7 turns VIO
L2740	24-11030D03	4 turns YEL
L2741	24-80036A01	ferrite bead 1/2 turn
L2742	24-80908T17	2-1/2 turns RED
L2743	24-80908T01	1-1/2 turns RED
L2750	24-82723H40	.29 uH
L2751	24-11030B04	1-1/2 turns YEL
L2752	24-82723H40	.29 uH
L2753		not used
L2760	24-80908T06	1-1/2 turns GRN
L2761	24-80908T10	1-1/2 turns GRN
L2762	24-80908T10	1-1/2 turns GRN
L2763	24-11030B11	6-1/2 turns ORN
L2770	24-82723H46	.2 uH
L2771	24-84346A02	.23 uH

Transistors (see note)

Q2710	48-82233P39	NPN; type MRF559
Q2720	48-80225C09	NPN; type MRF630

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2710	06-11077A60	270
R2711	06-11077A58	220
R2712	06-11077A52	120
R2713	06-11077A40	39
R2714	06-11077A40	39
R2720	06-11077A26	10
R2721		not used
R2722		not used
R2723		not used
R2740		not used
R2741		not used
R2750	06-80194M15	39 1 watt
R2751	06-80194M15	39 1 watt
R2770	06-80147M02	metal plate .01 10% 2 watt
R2771	06-11077A28	12
R2772	06-05621T02	thermistor 50k
R2773	06-11077B11	33k
R2774	06-11077A76	1.2k
R2775		not used

Non-referenced items

26-80158L01	heat sink (for Q2720)
26-80275M01	heat sink (2 used for CR2750 and CR2751)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

9/14/92

PL-921032-O

# PA 438-470 MHz (25/40W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2701 through C2706, 470 pF feedthru capacitors, 6 used)

## HLN8272A PA Hardware Kit, 438-470 MHz, 25-40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Capacitors, chip

C2741	21-11078B35	51 pF 100V
C2742	21-11078B35	51 pF 100V
C2743	21-11078B21	20 pF 100V
C2744	21-11078B21	20 pF 100V
C2766	21-11078B21	20 pF 100V
C2767	21-11078B21	20 pF 100V

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Transistors

Q2730	48-80225C19	NPN; type MRF654
Q2740	48-80225C24	NPN; type MRF650

### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (8 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
42-80281L01	ground clip (2 used for Q2740)
42-80520B01	ground clip, pc board (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

9/14/92

PL-921033-O

## HLE8284A PA Board, 465-495 MHz, 25/40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2710	21-13740B49	100 pF
C2711	21-13740B27	12 pF
C2712	21-13740B32	20 pF
C2713	21-13740B49	100 pF
C2714	21-13740B49	100 pF
C2715	21-13740B14	3.6 +/- .25 pF
C2716	21-13741B69	.1 uF
C2717	21-13740B36	30 pF
C2718	21-13740B49	100 pF
C2719	21-13740B73	1000 pF
C2720	21-13740B33	22 pF
C2721	21-11078B27	30 pF 100V
C2722	21-11078B09	6.8 +/- .25 pF 100V
C2723		not used
C2724		not used
C2725	23-11048B13	lytic 10 uF 20% 16V
C2726	21-13740B49	100 pF
C2727	21-13740B73	1000 pF
C2728	21-11032B15	.22 uF +80/-20%
C2729	21-13740B36	30 pF
C2730	21-11078B25	27 pF 100V
C2731	21-11078B21	20 pF 100V
C2732	21-11078B21	20 pF 100V
C2733	21-13740B36	30 pF
C2734		not used
C2735		not used
C2736	21-13740B49	100 pF
C2737	21-13740B73	1000 pF
C2738	21-11032B15	.22 uF +80/-20%
C2739	23-11048A17	lytic 33 uF 20% 25V
C2740	21-11078B31	36 pF 100V
C2745	21-80060M09	5 +/- .25 pF 500V
C2746		not used
C2747	21-80060M21	12 pF 500V
C2748	21-11032B15	.22 uF +80/-20%
C2749	21-13740B49	100 pF
C2750	21-80060M13	7 +/- .25 pF 500V
C2751	21-13740B11	2.7 +/- .25 pF
C2752		not used
C2753	21-13740B22	7.5 +/- .25 pF
C2754	21-13740B49	100 pF
C2755		not used
C2756	21-80060M09	5 +/- .25 pF 500V
C2757	21-80060M07	4 +/- .25 pF 500V
C2758	21-13740B73	1000 pF
C2760	21-80060M12	6.5 +/- .25 pF 500V
C2761	21-80060M14	7.5 +/- .25 pF 500V
C2762	21-80060M14	7.5 +/- .25 pF 500V
C2763	21-80060M09	5 +/- .25 pF 500V
C2764	21-80060M43	100 pF 100V
C2765		not used
C2768		not used
C2770	21-13740B36	30 pF
C2771	21-13740B36	30 pF
C2772	21-13740B73	1000 pF
C2773	21-13741B69	.1 uF
C2774	21-13740B36	30 pF
C2775	23-11048A17	lytic 33 uF 20% 25V
C2776	21-13740B36	30 pF
C2777	21-13740B73	1000 pF
C2778	21-13741B69	.1 uF
C2779	21-11032B15	.22 uF +80/-20%
C2780	21-13740B36	30 pF
C2781	21-11032B15	.22 uF +80/-20%
C2782	21-13740B49	100 pF

## Diodes (see note)

CR2750	48-80010E01	silicon PIN UM9401
CR2751	48-80010E01	silicon PIN UM9401
CR2752		not used

CR2770	48-80236E07	transient suppressor diode
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## Ferrite Beads

E2720	76-83960B01	ferrite bead 1/2 turn
E2770	76-83960B01	ferrite bead 1/2 turn
E2771	76-83960B01	ferrite bead 1/2 turn

## Coils

L2710	24-11030E01	1/2 turn BRN
L2711	24-11030B02	1-1/2 turns RED
L2712	24-11030E02	1/2 turn RED
L2713	24-11030B01	1-1/2 turns BRN
L2714	24-80036A01	ferrite bead 1/2 turn
L2720	24-11030E03	1/2 turn ORN
L2721		not used
L2722	24-82723H44	39 nH
L2730	24-11030A03	4 turns YEL
L2731	24-80036A01	ferrite bead 1/2 turn
L2732	24-11030A03	4 turns YEL
L2733	24-80036A01	ferrite bead 1/2 turn
L2740	24-11030A03	4 turns YEL
L2741	24-80036A01	ferrite bead 1/2 turn
L2742	24-80908T12	1-1/2 turns GRN
L2743		jumper
L2750	24-82723H40	.29 uH
L2751	24-11030B05	2-1/2 turns GRN
L2752	24-82723H40	.29 uH
L2753		not used
L2760	24-80908T08	1-1/2 turns GRN
L2761	24-80908T09	1-1/2 turns RED
L2762	24-80908T08	1-1/2 turns GRN
L2763	24-11030B11	6-1/2 turns ORN
L2770	24-82723H46	.2 uH
L2771	24-84346A02	.23 uH

## Transistors (see note)

Q2710	48-82233P39	NPN; type MRF559
Q2720	48-80225C09	NPN; type MRF630

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2710	06-11077A60	270
R2711	06-11077A58	220
R2712	06-11077A52	120
R2713	06-11077A40	39
R2714	06-11077A40	39
R2720	06-11077A26	10
R2721		not used
R2722		not used
R2723	06-11077A26	10
R2740	06-11077A26	10
R2741		not used
R2750	06-80194M15	39 1 watt
R2751	06-80194M15	39 1 watt
R2770	06-80147M02	metal plate .01 10% 2 watt
R2771	06-11077A26	10
R2772	06-05621T02	thermistor 50k
R2773	06-11077B11	33k
R2774	06-11077A76	1.2k
R2775		not used

## Non-referenced items

26-80158L01	heat sink (for Q2720)
26-80275M01	heat sink (2 used for CR2750 and CR2751)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921037-O



# PA 465-495 MHz (25/40W)

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2701 through C2706, 470 pF feedthru capacitors, 6 used)

## HLN8286A PA Hardware Kit, 465-495 MHz, 25/40 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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### Capacitors, chip

C2741	21-11078B35	51 pF 100V
C2742	21-11078B35	51 pF 100V
C2743	21-11078B25	27 pF 100V
C2744	21-11078B25	27 pF 100V
C2766		not used
C2767		not used
C2784		

### Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

### Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

### Transistors

Q2730	48-80225C19	NPN; type MRF654
Q2740	48-80225C24	NPN; type MRF650

### Resistor, chip, 5%, 1/10 watt

R2724	not used
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### Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (8 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
42-80281L01	ground clip (2 used for Q2740)
42-80520B01	ground clip, pc board (2 used)
42-80915V01	ground clip, pc board

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921038-O

## HLE8269A PA Board, 490-520 MHz, 25/35 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated.

C2710	21-13740B49	100 pF
C2711	21-13740B24	9.1 +/- .25 pF
C2712	21-13740B32	20 pF
C2713	21-13740B49	100 pF
C2714	21-13740B49	100 pF
C2715	21-13740B17	4.7 +/- .25 pF
C2716	21-13741B69	.1 uF
C2717	21-13740B49	100 pF
C2718	21-13740B49	100 pF
C2719	21-13740B73	1000 pF
C2720	21-13740B31	18 pF
C2721	21-11078B27	30 pF 100V
C2722	21-11078B07	5.6 +/- .25 pF 100V
C2723		not used
C2724		not used
C2725	23-11048B05	lytic 1 uF 20% 50V
C2726	21-13740B49	100 pF
C2727	21-13740B73	1000 pF
C2728	21-11032B15	.22 uF + 80/-20%
C2729	21-13740B36	30 pF
C2730	21-11078B31	36 pF 100V
C2731	21-11078B22	22 pF 100V
C2732	21-11078B16	13 pF 100V
C2733	21-13740B36	30 pF
C2734		not used
C2735		not used
C2736	21-13740B49	100 pF
C2737	21-13740B73	1000 pF
C2738	21-11032B15	.22 uF + 80/-20%
C2739	23-11048A17	lytic 33 uF 20% 25V
C2740	21-11078B27	30 pF 100V
C2745	21-80060M05	3 +/- .25 pF 500V
C2746	21-80060M05	3 +/- .25 pF 500V
C2747	21-80060M21	12 pF 500V
C2748	21-13740B73	1000 pF
C2749	21-13740B49	100 pF
C2750	21-80060M13	7 +/- .25 pF 500V
C2751	21-13740B07	1.8 +/- .25 pF
C2752		not used
C2753	21-13740B21	6.8 +/- .25 pF
C2754	21-13740B49	100 pF
C2755		not used
C2756	21-80060M05	3 +/- .25 pF 500V
C2757	21-80060M05	3 +/- .25 pF 500V
C2758	21-11032B15	.22 uF + 80/-20%
C2760	21-80060M11	6 +/- .25 pF 500V
C2761	21-80060M13	7 +/- .25 pF 500V
C2762	21-80060M13	7 +/- .25 pF 500V
C2763	21-80060M09	5 +/- .25 pF 500V
C2764	21-80060M43	100 pF 100V
C2765	23-11048A17	lytic 33 uF 20% 25V
C2768	23-11048B05	lytic 1 uF 20% 50V
C2770	21-13740B36	30 pF
C2771	21-13740B36	30 pF
C2772	21-13740B73	1000 pF
C2773	21-13741B69	.1 uF
C2774	21-13740B36	30 pF
C2775	08-11051A17	poly .47 uF 63V
C2776	21-13740B36	30 pF
C2777	21-13740B73	1000 pF
C2778	21-13741B69	.1 uF
C2779	21-11032B15	.22 uF + 80/-20%
C2780	21-13740B36	30 pF
C2781	21-11032B15	.22 uF + 80/-20%
C2782	21-13740B49	100 pF

Diodes (see note)

CR2750	48-80010E01	silicon PIN UM9401
CR2751	48-80010E01	silicon PIN UM9401
CR2752		not used

CR2770 48-80236E07 transient suppressor diode

Ferrite Beads

E2720	76-83960B01	ferrite bead 1/2 turn
E2770	76-83960B01	ferrite bead 1/2 turn
E2771	76-83960B01	ferrite bead 1/2 turn

Coils

L2710	24-11030E01	1/2 turn BRN
L2711	24-11030B04	1-1/2 turns YEL
L2712	24-11030E03	1/2 turn ORN
L2713	24-11030B04	1-1/2 turns YEL
L2714	24-80036A01	ferrite bead 1/2 turn
L2720	24-11030E05	1/2 turn GRN
L2721		not used
L2722	24-82723H44	.039 uH
L2730	24-11030A03	4 turns YEL
L2731	24-80036A01	ferrite bead 1/2 turn
L2732	24-11030A03	4 turns YEL
L2733	24-80036A01	ferrite bead 1/2 turn
L2740	24-80036A01	ferrite bead 1/2 turn
L2741	24-11030A02	3 turns ORN
L2742	24-80908T11	1-1/2 turns RED
L2743		jumper wire
L2750	24-82723H40	.29 uH
L2751	24-11030B04	1-1/2 turns YEL
L2752	24-82723H40	.29 uH
L2753		not used
L2760	24-80908T08	1-1/2 turns GRN
L2761	24-80908T09	1-1/2 turns RED
L2762	24-80908T08	1-1/2 turns GRN
L2763	24-11030B11	6-1/2 turns ORN
L2770	24-82723H46	.2 uH
L2771	24-84346A02	.23 uH

Transistors (see note)

Q2710	48-82233P39	NPN; type MRF559
Q2720	48-80225C09	NPN; type MRF630

Resistors, chip, 5%, 1/10 watt, unless otherwise indicated.

R2710	06-11077A60	270
R2711	06-11077A58	220
R2712	06-11077A52	120
R2713	06-11077A40	39
R2714	06-11077A40	39
R2720	06-11077A26	10
R2721		not used
R2722		not used
R2723	06-11077A26	10
R2740		not used
R2741	06-11009B26	2.7 1/4 watt FCF
R2750	06-80194M15	39 1 watt
R2751	06-80194M15	39 1 watt
R2770	06-80147M02	metal plate .01 10% 2 watt
R2771	06-11077A26	10
R2772	06-05621T02	thermistor 50k
R2773	06-11077B11	33k
R2774	06-11077A76	1.2k
R2775		not used

Non-referenced items

26-80158L01	heat sink (for Q2720)
26-80275M01	heat sink (2 used for CR2750 and CR2751)
29-80014A03	clip coax terminal (2 used)

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921023-O

## 01-80704Y64 Feedthru Bracket and Cable Assembly

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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## Non-referenced items

01-80556B01	6-wire cable assembly (includes P7)
01-80634B01	feedthru bracket assembly (includes C2701 through C2706, 470 pF feedthru capacitors, 6 used)

## HLN8270A PA Hardware Kit, 490-520 MHz, 25/35 Watt

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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## Capacitors, chip

C2741	21-11078B34	47 pF 100V
C2742	21-11078B34	47 pF 100V
C2743	21-11078B27	30 pF 100V
C2744	21-11078B27	30 pF 100V
C2766		not used
C2767		not used
C2784	21-11078B16	13 pF 100V

## Connector, receptacle

J1	09-80131M01	mini UHF coax
J2	09-80255E01	power (includes feedthru)

## Connector, plug

P4	30-80138M08	coaxial cable 200 mm with plug
P5	30-80138M07	coaxial cable 150 mm with plug

## Transistors

Q2730	48-80225C19	NPN; type MRF654
Q2740	48-80225C24	NPN; type MRF650

## Resistor, chip, 5%, 1/10 watt

R2724	06-11077A36	27
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## Non-referenced items

02-00007003	nut 8-32x5/16x1/8 (for J1)
03-10943M10	screw M3x.5x8 (8 used)
03-10943M11	screw M3x.5x10 (2 used for J2)
04-00131974	washer (2 used for J2)
04-05587G01	washer nylon (for J2)
04-80943V01	lockwasher (for J1)
26-80124L01	heat sink
26-80223M07	PA shield
32-80014N03	gasket, accessory connector
42-80281L01	ground clip (2 used for Q2740)
42-80520B01	ground clip, pc board (2 used)
42-80915V01	ground clip, pc board

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

11/25/92

PL-921024-O