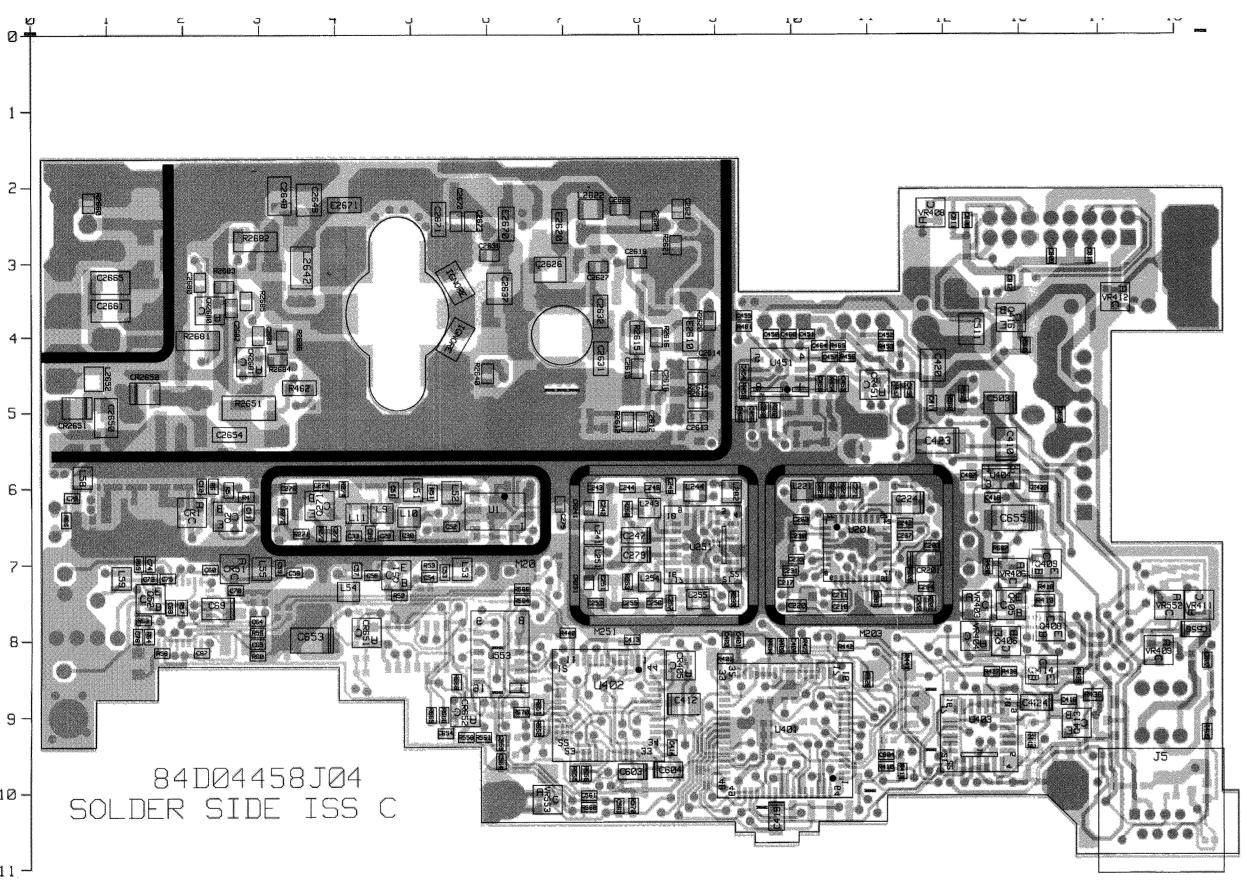


84D04458J04 COMPONENT SIDE ISS C RCB-95127-A RCB-95128-A COMPONENT SIDE INNER LAYER (GRAY)
SOLDER SIDE INNER LAYER (PINK) RCB-95130-A OVERLAY ----

COMPONENT SIDE VIEW

Circuit Board Details for UHF Main Boards, 450-470 MHz, 12.5 & 20-25 kHz, 40 W (Part of PMUE1039B, PMUE1040B, PMUE1056B, and PMUE1057B Radios)



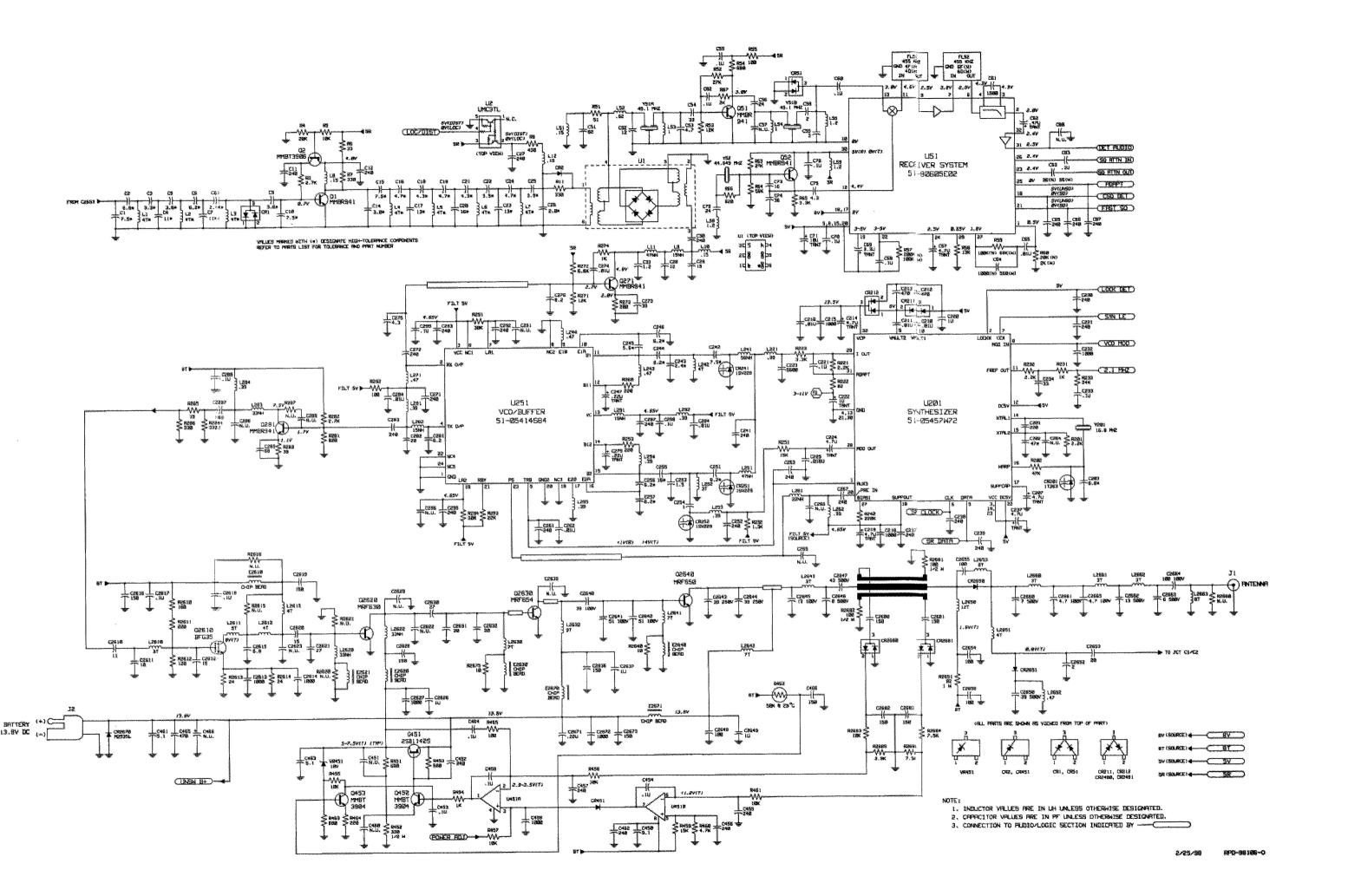
COMPONENT SIDE (GRAY)
SOLDER SIDE (PINK)
OVERLAY -----UHF Main Boards, 450-470 MHz, 12.5 & 20-25 kHz, 40 W (Part of PMUE1039B, PMUE1040B, PMUE1056B, and PMUE1057B Radios)

RCB-95126-A (REV) RCB-95129-A (REV) RCB-95131-A (REV)

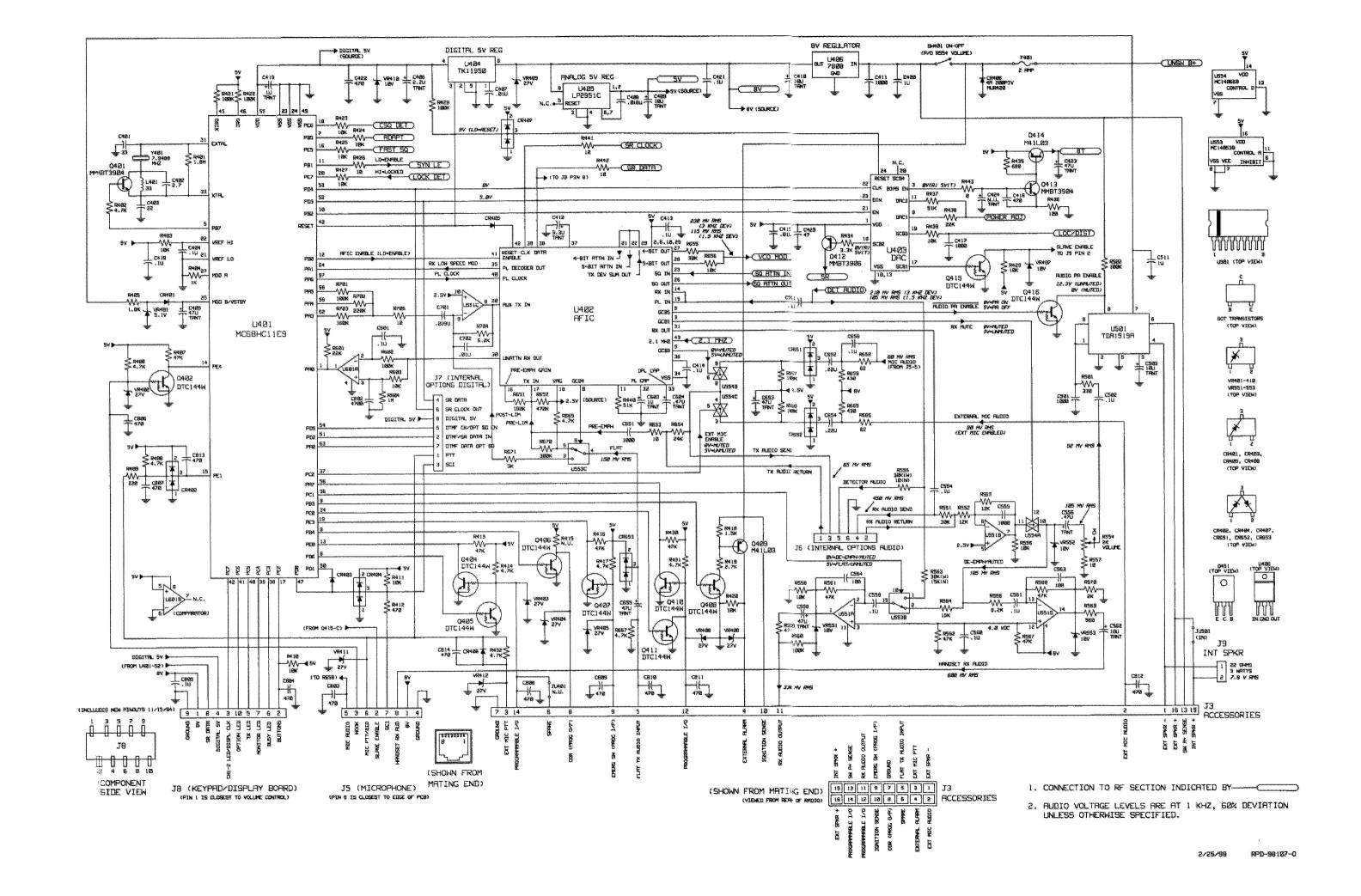
SOLDER SIDE VIEW

84D04458J04 SOLDER SIDE ISS C COMPONENT SIDE INNER LAYER (GRAY)
SOLDER SIDE INNER LAYER (PINK)
OVERLAY -----SOLDER SIDE VIEW

RCB-95127-A (REV) RCB-95128-A (REV) RCB-95131-A (REV)



Schematic Diagram for UHF Main Boards, 450-470 MHz, 12.5 & 20-25 kHz, 40 W (Part of PMUE1039B, PMUE1040B, PMUE1056B, and PMUE1057B Radios) (Sheet 1 of 2)



Schematic Diagram for UHF Main Boards, 450-470 MHz, 12.5 & 20-25 kHz, 40 W (Part of PMUE1039B, PMUE1040B, PMUE1056B, and PMUE1057B Radios) (Sheet 2 of 2)

40

6880903Z45-A

March, 1998

## **Parts List**

SM50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUE1039 & PMUE1056)

SM50/SM120 UHF Main Board, 450-470 MHz 40 W, 20/25/30 kHz (W) (later version) (used in PMUE1040 & PMUE1057) REFERENCE MOTOROLA

23-11049.111 tantalum 4.7 uF 10%- 16 V

21-13743E05 .018 uF 10%; 16 V

21-13743E20 0.1 pF 10%: 16 V

21-13741F17 470 pF

21-13741F25 1000 oF

C230, 231

SM50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUF1039 & PMUF1056) M50/SM120 UHF Main Board, 450-470 MHz 40 W, 20/25/30 kHz (W

(later version) (used in PMUE1040 & PMUE1057) REFERENCE MOTOROLA SYMBOL PART NO. SYMBOL PART NO. capacitor, fixed: uF +/-10%; 100 V: 21-13740F39 33 pF C234 C237 23-11049J11 tantalum 4.7 uF 10%; 16 V 21-13740F39 C238, 239 21-13740F55 150 pF 21-13740F52 21-13741F29 1500 nF C242 C243 21-13740F50 91 pF 21-13740L22 15 pF 2% 21-13740F38 30 pF 21-13740F03 1 ±.025 pF C244 C245 21-13740L19 11 pF 2% 21-13740F20 5.1 ±0.25 pF 21-13740L16 8.2 ±0.1 pF C246 21-13740L18 10 pF 2% 23-11049A03 tantalum 0.22 uF 10%; 35 V 21-13740F38 30 pF C247 C251 21-13740L26 22 pF 2% 21-13740F50 91 pF 21-13740F51 100 pF 21-13741F29 1500 pF C253 C254 C255 C256 C257 C261 21-13740F41 39 pF 21-13740F05 1.2 ±0.25 pF 21-13740F08 1.6 ±0.25 pF 21-13741F29 1500 p 21-13740F41 39 pF 21-13740L22 15 pF 2% 21-13740L16 8.2 ±0.1 pF 21-13740F54 130 p 21-13740L18 10 pF 2% 21-13740F50 91 pF 21-13740F43 47 pF 21-13741F49 .01 uF 21-13740F50 91 pF 21-13741F29 1500 pF 21-13740F54 130 p 21-13740F40 36 pF 21-13740F30 13 pF 21-13741F29 1500 p C20 thru 22 21-13740F24 7.5 ±0.25 pF 21-13743E20 0.1 uF 10%; 16 V 21-13741F25 1000 pF 21-13741F29 1500 of C271 thru 273 21-13741F29 1500 pF 21-13740L03 2.4 ±0.1 pF 21-13741F49 .01 uF C274 21-13741F29 1500 p C275 21-13740F29 12 pF 21-13740F37 27 pF C276 21-13740F30 13 p8 C279 23-11049A03 tantalum 0.22 uF 10%; 35 V 21-13741F29 1500 p C281 C282 C283 21-13740F25 8.2 ±0.25 pF 21-13740F30 13 pF 21-13740F31 15 pF 21-13740F49 82 pF 21-13741F29 1500 pf 21-13740F29 12 nF C284 C285 C286 21-13740F19 4.7 ±0.25 pF 21-13741F29 1500 pF 21-13740F39 33 nF 21-13743E20 0.1 uF 10%; 16 V 21-13740F27 10 pF C287 C288 21-13741F25 1000 pl 21-13740F36 24 pF 21-13743E20 0.1 uF 10%: 16 V C289 C291 C292 C293 C294 C295 21-13740F10 2±0.25 pF 21-13740F14 3+0.25 bF 21-13743E20 0.1 uF 10%; 16 V 21-13743E20 0.1 uF 10%: 16 V 21-13741F29 1500 pF 21-13741F29 1500 pF 23-11049A05 tantalum 0.47 uF 10%; 25 V 21-13741F49 .01 uF 21-13740F40 36 pF C295 C296 C297 C298 C299 C401 C402 C403 C404 C405 21-13743E20 0.1 uF 10%; 16 V 21-13740F45 56 pF 21-13741F25 1000 pl 21-13741F29 1500 pF 21-13740F69 560 pF 21-13743E20 0.1 uF 10%; 16 V 21-13741F49 0.01 uF 23-11049J11 tantalum 4.7 uF 10%; 16 V 21-13740F39 33 pF 21-13740F13 2.7±0.25 pF 21-13743E20 0.1 uF 10% 16V 23-11049J07 tantalum 3.3 uF 10%; 20 V 21-13740F35 22 nF 21-13743E20 0.1 uF 10%; 16 V 21-13743E20 0.1 uF 10%: 16 V 23-11049A57 tantalum 10 uF 10%; 16 V 23-11049J43 tantalum 47 uF 10%: 10 V 21-13740F32 16 pF C406 23-11049A40 tantalum 2.2 uF 10%: 10 V 21-13740F40 36 pF C407 21-13741F49 .01 uF 21-13740F18 4.3 ±0.25 pF 21-13743E05 .018 uF 10%; 16 V 21-13743E20 0.1 uF 10%; 16 V C409, 410 23-11049A57 tantalum 10 uF 10%; 16 V 21-13740F36 24 pF 21-13741F25 1000 pF 23-11049J07 tantalum 3.3 uF 10%; 20 V 21-13743E20 0.1 uF 10%; 16 V C413, 414 21-13743E20 0.1 uF 10%; 16 V 21-13741F49 .01 uF 21-13740F60 240 pF 21-13741F17 470 pF 21-13740F59 220 bl 21-13741F25 1000 pF 21-13740L34 47 pF 2% 21-13743E20 0.1 uF 10%; 16 V 21-13740L14 6.8 ±0.1 pF 23-11049J11 tantalum 4.7 uF 10%; 16 V 23-11049A07 tantalum 1 uF 10%; 16 V C210, 211 21-13741F49 .01 uF 21-13741W01 1 uF 10%; 25 V C421 C422 C423 21-13741F17 470 pF 21-13743E20 0.1 uF 10%; 16 V C212, 213 21-13741F17 470 pF 23-11049J11 tantalum 4.7 uF 10%: 16 V 23-11049J43 tantalum 47 uF 10%; 10 V C215 21-13741F29 1500 pF C424 C425 21-13741F49 .01 uF 21-13740F43 47 pF 21-13741F29 1500 pF 21-13740F26 9.1 ±.025 pF 21-13743F20 0.1 HF 10%: 16 V 23-11049J11 tantalum 4.7 uF 10%: 16 V 21-13743K16 0.22 uF +80/-20%: 16 V C219 21-13741F29 1500 pF C452 C453, 454 21-13928E01 1 uF 10%: 10 V 21-13743E20 0.1 uF 10%; 16 V 21-13743F20 0.1 pF 10%: 16 V 21-13741F29 1500 pF C455 thru 458 23-11049A07 tantalum 1 uF 10%; 16 V 21-13743E20 0.1 uF 10%; 16 V 21-13741F43 5600 pF

C460 C461

C462 C463

21-13740F20 5.1 ±0.25 pF

21-13740F20 5.1 +0.25 nF

21-13743E20 0.1 uF 10%: 16 V

21-13741F29 1500 pF

SM50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUE1039 & PMUE1056) 150/SM120 UHF Main Board, 450-470 MHz 40 W, 20/25/30 kHz (W) (later version) (used in PMUE1040 & PMUE1057) REFERENCE MOTOROLA

C559 thru 561

CROS thru 814

C2429 C2430

C2432

C2433 C2434

C2435 C2436

C2472

C2473

C2474

PART NO.

1-13741F29 1500 p

21-13740A71 470 pF

21-13741F25 1000 pF

21-13741F25 1000 pF

21-13740F51 100 pF

21-13741F41 4700 pF

21-13741F25 1000 pF

11-13741F49 01 uF

21-13741F17 470 nF

21-13741F17 470 pF

21-13740A71 470 pF

21-13740A40 30 pF

21-13740A71 470 pF

21-13740A71 470 pF

21-13740A79 1000 pF

21-13740A71 470 pF

21-13740A42 36 pF

21-13740A57 120 pF

21-13740A71 470 pF

21-13740A62 200 pF

21-13740A61 180 pF

21-13740A52 75 pF

21-13740B36 30 of

21-13740A48 51 pF

21-13740A71 470 pF

21-11032B15 0.22 uF +80/-20%

21-11078B43 110 pF 100 V 21-11078B55 330 pF 100 V

21-11078B53 270 pF 100 V

21-11078B52 240 pF 100 V 1-11078B39 75 pF 100 V

91-11079R39 75 nF 100 V

21-80060M32 36 pF 500 V

21-11078B59 470 pF 100 V

21-11078B55 330 pF 100 V

21-80060M24 16 pF 500 V

21-13740A35 18 pF

21-13740A71 470 pF

21-13740A71 470 pF

21-80060M25 18 pF 500 V

21-11078B18 15 pF 100 V

21-80060M30 30 pF 500 V

21-11078B59 470 pF 100 \

21-11078B18 15 pF 100 V

21-13740A71 470 pF

21-13740A71 470 pF

21-13741W01 1 uF 10%; 25 V

21-13743A19 0.1 uF 10%: 16 V

Not Used

21-13741W01 1 nF 10%: 25 \

21-13743E20 0.1 uF 10%; 16 V

21-13741W01 1 uF 10%; 25 V

21-13743E20 0.1 uF 10%; 16 V

21-13743E20 0.1 uF 10%; 16 V

21-13743E20 0.1 uF 10%: 16 V

21-13743E20 0.1 uF 10%: 16 V

23-11049A57 tantalum 10 uF 10%; 16 V

23-11049A05 tantalum 0.47 uF 10%; 25 V

23-11049J43 tantalum 47 uF 10%; 10 V

23-11049A57 tantalum 10 uF 10%; 16 V

23-11049A07 tantalum 1 uF 10%: 16 V

21-13743K16 0.22 uF +80/-20%: 16 V

21-13743K16 0.22 HF +80/-20%: 16 V

21-13743E20 0.1 uF 10%: 16 V

1-13743E11 .039 uF 10%; 16 V

1-13743E20 0 1 uF 10%: 16 V

21-13743A19 0.1 uF 10%: 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13741W01 1 uF 10%; 25 V

23-11049.I43 tantalum 47 uF 10%: 10 \

23-11049J43 tantalum 47 uF 10%; 10 V

23-11049A05 tantalum 0.47 uF 10%; 25 V

PL-981004-O DESCRIPTION

S3M50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (tater version) (used in PMUE1039 & PMUE1056) SM50/SM120 UHF Main Board, 450-470 MHz 40 W, 20/25/30 kHz (W) (liater version) (used in PMUE1040 & PMUE1057) SYMBOL PART NO.

48-80154K03 dual Schottky SOT

48-80154K03 dual Schottky SOT

48-05218N57 dual silicon SOT

48-05129M76 silicon SOT

48-80939T01 Schottky SOT

48-05129M76 silicon SOT

48-05129M76 silicon SOT

48-05129M76 silicon SOT

CR2480, 2481 48-82290T02 dual Schottky SOT H\$MS-2802

24-84657R01 ferrite bead

24-84657R01 ferrite bead

24-84657R01 ferrite bead

65-05214E04 2 amp axial lead

24-84657R01 ferrite bead

91-80098D04 455 kHz 4F

91-80098D06 455 kHz 4D

91-80097D06 455 kHz 6D

09-80627E01 mini UHF coax

28-04503J01 16-pin, accessories

09-04422J01 10-pin, display board

28-04423J01 2-pin, internal speake

jumper: Not Used

iumper

09-04424J01 6-pin, internal options audio

09-04424J03 8-pin, internal options digital

30-04510J01 power cable assembly (includes J2)

09-04426J01 telephone type, 8 contact, microphone

91-80097D04 455 kHz 6F

24-84657R01

06-62057B47

24-60591G24 9 turns

24-62587X69 chip 1.2 uH 59

24-62587X50 chip 56 nH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X50 chip 56 nH 5%

24-62587N72 chip 2.2 uH 5%

24-62587X63 chip .62 uH 5%

24-62587X68 chip 1 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X49 chip 47 nH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X51 chip 68 nH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X53 chip 0.1 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X69 chip 1.2 uH 5%

24-62587X52 chip 82 nH 5%

24-62587V36 chip 0.15 uH 5%

24-62587V37 chip 0.18 uH 5%

24-62587X55 chip 0.15 uH 5%

CR651 thru 653 48-13833C07 dual silicon SOT MMED7000

diode: (see note)

48-80142L01 silicon PIN SOT MMBV3401

48-02245J22 silicon varactor SOT 1T363

48-13833C07 dual silicon SOT MMRD7000

48-62824C03 silicon varactor SOT 1SV232

48-62824C03 silicon varactor SOT 1SV232

48-62824C03 silicon varactor SOT 1SV232

48-13833C07 dual silicon SOT MMBD7000

48-13833C07 dual silicon SOT MMBD7000

48-13833C07 dual silicon SOT MMBD7000

ferrite beads:

ferrite bead

48-83553T02 4A 200 PIV MUR420

48-02482J02 silicon PIN MA4P1250

48-80236E07 transient suppressor

C2485, 2486 21-80464E52 clamped mica 60 pF 250V

C2481 thru 2483 21-13740A71 470 pF

CR212 CR241 CR251 CR252 CR401

CR402 CR403 CR404 CR405 CR406 CR407

CR2450, 2451

E2420, 2421

E2470, 2471

E2430

FL51(N) FL51(W) FL52(N) FL52(W)

L1 thru 7

SM50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUE1039 & PMUE1056) VENTON LINE Main Board ASOLATO MHT AN W DOISEIGN KHT IN

REFERENCE	MOTOROLA	
SYMBOL	PART NO.	DESCRIPTION
L283	24-62587X49	chip 47 nH 5%
L284	24-62587X69 24-62587X46	chip 1.2 uH 5% chip 27 nH 5%
L291 L292	24-62587X69	chip 1.2 uH 5%
L401	24-60578C43	chip 33 uH
L2410	24-60591H77	10 turns
L2413	24-62587N76	chip 4.7 uH 5%
L2420	24-60591C73	5 turns
L2421	01 00504440	Not Used
L2422, 2423 L2424	24-60591A49 24-62587X45	3 turns chip 22 nH 5%
L2431	24-02001A40	Not Used
L2432	24-60591F77	8 turns
2433	24-60591E77	7 turns
2441	24-60591E77	7 turns
2442	24-60591F77	8 turns
L2443	24-60591X01	3 turns
.2450 .2451	24-60591V77 24-60591J77	12 turns 11 turns
.2452	24-11087B30	chip 2.2 uH
2453	24-11007000	Not Used
2460 thru 2462	24-60591X04	6 turns
2463	24-60591S77	9 turns
		transistar, (e.st-)
21	48-13827A07	transistor: (see note) NPN: type MMBR941
بار 22	48-13824A17	PNP; type MMBT3906
251, 52	48-13827A07	NPN; type MMBR941
2271	48-13827A07	NPN; type MMBR941
2281	48-13827A07	NPN; type MMBR941
2401	48-80214G02	NPN; type MMBT3904
2402	48-80947V01	digital NPN; type DTC144W
2404 thru 408	48-80947V01	digital NPN; type DTC144W
)409 N410 411	48-80141L03	PNP; type BCW68G
2410, 411 3412	48-80947V01 48-13824A17	digital NPN; type DTC144W PNP; type MMBT3906
2412 2413	48-13824A17 48-80214G02	NPN; type MMBT3904
2413 2414	48-80141L03	PNP; type BCW68G
2415, 416	48-80947V01	digital NPN; type DTC144W
2451	48-02245J25	PNP; type 2SB1142S
2452, 453	48-80214G02	NPN; type MMBT3904
22410	48-02245J24	NPN; type BFG35
Q2420	48-02245J28	NPN; type BFQ43S
22430	48-80225C18	NPN; type MRF2628
Q2440	48-84411L04	NPN; type M1104
		resistor, fixed: +/-5%; 1/16 W:
		unless otherwise stated
31, 2	06-62057B47	0
33	06-62057A58	2.4k
34	06-62057A80	20k
35 36	06-62057A73 06-62057A13	10k 33
R6 R7	06-62057A23	82
7/ 78	06-62057A47	820
310	06-62057A40	430
111	06-62057C59	220 1/10 W
351	06-62057A18	51
R52	06-62057A83	27k
R53	06-62057A75	12k
354	06-62057A45	680
355	06-62057A25	100
357(N)	06-62057B05	200k
R57(W) R58	06-62057A97 06-62057A76	100k 13k
138 359(N)	06-62057A97	100k
159(W)	06-62057A93	68k
R60(N)	06-62057A80	20k
R60(W)	06-62057A56	2k
R63	06-62057A83	27k
R64	06-62057A91	56k
R65	06-62057A61	3.3k
R66	06-62057A47	820
R67 R201	06-62057A56	2k
R202	06-62057A65 06-62057A89	4.7k 47k
R221	06-62057A49	1k
3222	06-62057A18	51
R223	06-62057A57	2.2k

06-62057A49 1k

06-62057A57 2.2k

SM50/SM120 U-IF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUE1039 & PMUE1056)

REFERENCE	MOTOROLA	
SYMBOL	PART NO.	DESCRIPTION
R233 R241	06-62057A82 06-62057A65	24k 4.7k
R242	06-62057B06	220k
R251	06-62057A73	10k
R252	06-62057A56	2k
R253	06-62057A33	220
R254	06-62057A65	4.7k
R260	06-62057A33	220
R271, 272	06-62057A75	12k
R273	06-62057A23	82
3274	06-62057A56	2k
R281 R282	06-62057A56	2k 2.7k
R283	06-62057A59 06-62057A15	39
3284	06-62057A33	220
7285	06-62057A15	39
7286	06-62057A33	220
3287		Not Used
R291	06-62057A92	62k
7292	06-62057A25	100
9293	06-62057A80	20k
R294	06-62057A91	56k
3401	06-62057B28	1.8 meg
3402	06-62057A65	4.7k
3403	06-62057A73	10k
3404	06-62057A49	1k
3405	06-62057C81	1.8k 1/10 W
3406 3407	06-62057A65	4.7k
7408	06-62057A89 06-62057A65	47k 4.7k
3409	06-62057A33	220
R410, 411	06-62057A73	10k
9412	06-62057A41	470
3413	06-62057A89	47k
1414	06-62057A65	4.7k
3415	<b></b>	Not Used
3416	06-62057A89	47k
7417	06-62057A65	4.7k
3418	06-62057A53	1.5k
1419	06-62057C85	2.7k 1/10 W
R420	06-62057A73	10k
1421, 422	06-62057A97	100k
3423 thru 425	06-62057A73	10k
3426	06-62057A01	10
3427 3428	06-62057A73	10k
1428 1429	06-62057A97 06-62057A73	100k
1429	06-62057A73	10k 47k
1431, 432	06-62057A65	4.7k
1434	06-62057A61	3.3k
1435	06-62057A45	680
1436	06-62057A27	120
3437	06-62057A90	51k
3438	06-62057A81	22k
1439	06-62057A73	10k
1440	06-62057A90	51k
1441, 442	06-62057A01	10
1443	06-62057B47	0
1451	06-62057A45	680
R452	06-80195M37	330 1/2 W
1453	06-62057A45	680
3454	06-62057A49	1k
1455 thru 457	06-62057A73	10k
1459 2460	06-62057A77 06-62057A65	15k
1460 1461		4.7k 10k
1461 1462	06-62057A73 06-05621T02	thermistor 50k @ 25 degrees C
1462 1463	06-62057A50	1.1k
7464 7464	06-62057A33	220
3465	06-62057A35	100
R501	06-62057A37	330
7502	06-62057A97	100k
R551	06-62057A84	30k
R552	06-62057A75	12k
R553	06-62057A75	12k
3554	18-04405J01	variable 2k with switch
R555(N)	06-62057A01	10
(555(W)	06-62057A84	30k
DEEC .		

06-62057A73 10k

06-62057A01 10

06-62057A73 10k

R557 R558

SM50/SM120 UHF Main Board, 450-470 MHz, 40 W, 12.5 kHz (N) (later version) (used in PMUE1039 & PMUE1056)

06-62057A17 47

06-62057A97 100k

06-62057A89 47k

06-62057A77 15k

06-62057A84 30k

06-62057A77 15k

06-62057A71 8.2k

06-62057A89 47k

06-62057A89 47k

06-62057A43 560

06-62057A56 2k

06-62057A81 22k

06-62057A97 100k

06-62057A73 10k

06-62057B04 180

06-62057B14 470k

06-62057A01 10

06-62057A82 24k

06-62057A84 30k

06-62057A73 10k

06-62057497 100

06-62057A20 62

06-62057A40 430

06-62057A40 430

06-62057A20 62

06-62057A65 4.7k

06-62057A65 4.7k

06-62057A60 3k

06-62057A97 100k

06-62057B09 300k

06-62057497 100

06-62057806 220

06-62057B03 160

06-62057A68 6.2k

06-62057A01 10

06-62057C57 180 1/10 W

06-62057C59 220 1/10 W

06-62057C53 120 1/10 W

Not Used

Not Used

Not Used

ntegrated circuit: (see note)

06-62057C36 24 1/10 W

06-62057C27 10 1/10 W

06-80195M25 100 1/2 W

06-62057C93 5.6k 1/10 W

06-62057C96 7.5k 1/10 W

06-62057D02 12k 1/10 W

06-62057C96 7.5k 1/10 W

51-80505D01 double-balanced mixer

51-80633C01 5 V regulator TK11950

51-05469E65 5 V regulator LP2951C

51-13816D03 8 V regulator MC7808BT

51-80932W01 dual op-amp LM2904 SOIC

51-80147R01 audio power amp TDA15190

51-02198J28 quad op-amp LM2902D SOIC

51-84704M60 triple 2-channel switch 4053B

51-02198J23 dual comparator LM2903 SOIC

51-05663U35 quad analog switch 4066B

48-80140L06 Zener diode 5.1 V SOT

48-80140L15 Zener diode 10 V SOT

48-80948V01 Zener diode 27 V SOT

48-80140I 15 Zener diode 10 V SOT

48-80948V01 Zener diode 27 V SOT

48-80140L05 Zener diode 4.7 V SOT

51-80605E02 receiver system

(see note) synthesizer

51-05414S84 VCO/buffer

51-80604F01 audio filter

51-05226P38 DAC

VR402 thru 406 48-80948V01 Zener diode 27 V SOT

VR551 thru 553 48-80140L15 Zener diode 10 V SOT

48-09939C04 dual transistor switch UMC3TL

51-99010D01 microcomputer MC68HC11E9

06-80194M23 82 1 W

06-62057B22 1 meg.

SYMBOL PART NO.

R561, 562

R563(N)

R563(W)

R566

R604

R654

R656

R658

R701

R703

R704 R705

R2410

R2420 R2430, 2431

R2481, 2482

R2440

R2451

R2460

R2484

R2485 R2486

U201\*

U251

U401

U402

U403 U404

U405

U406

U451

U551

U554

VR408, 409

VR411, 412

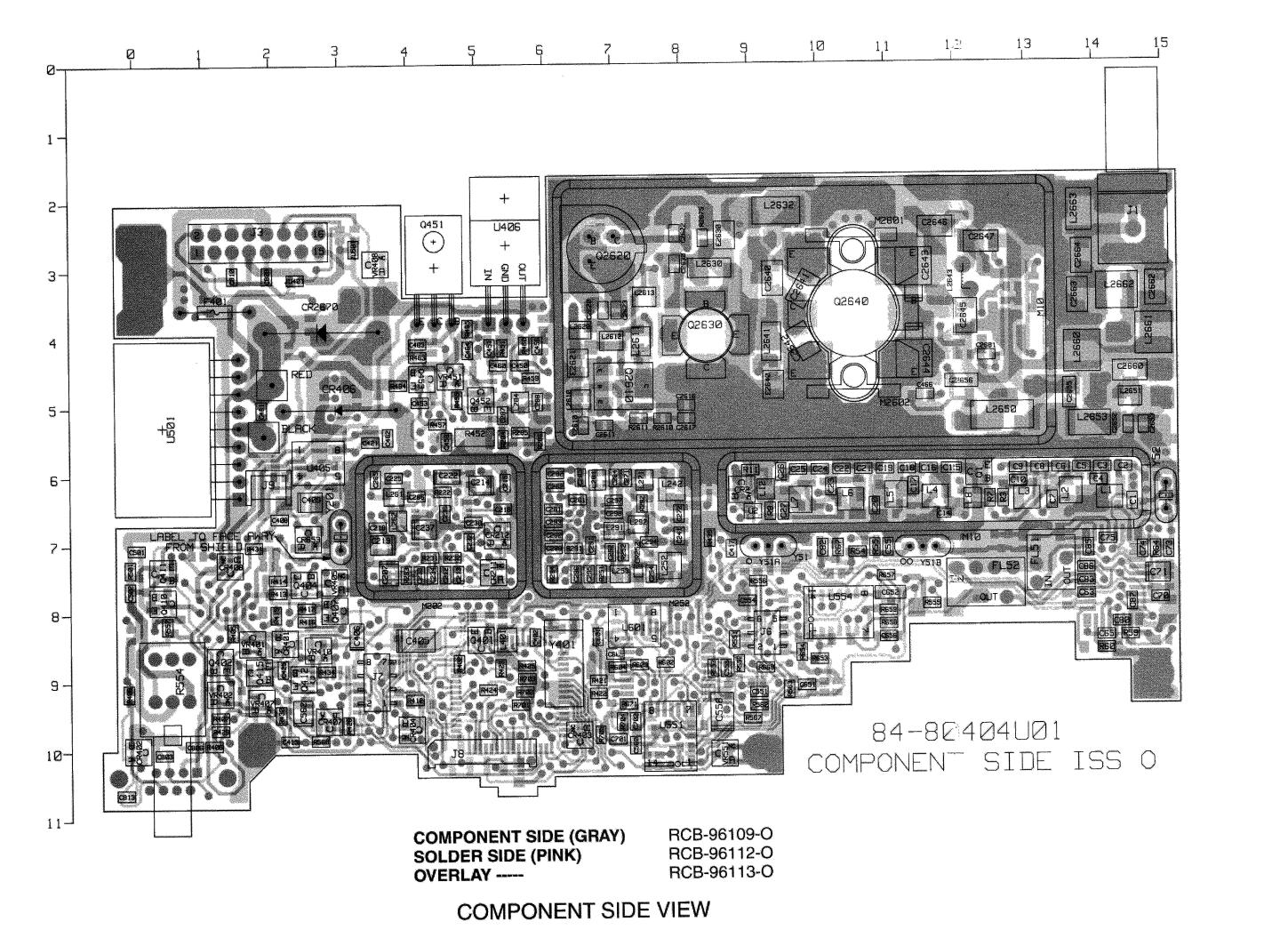
VR410

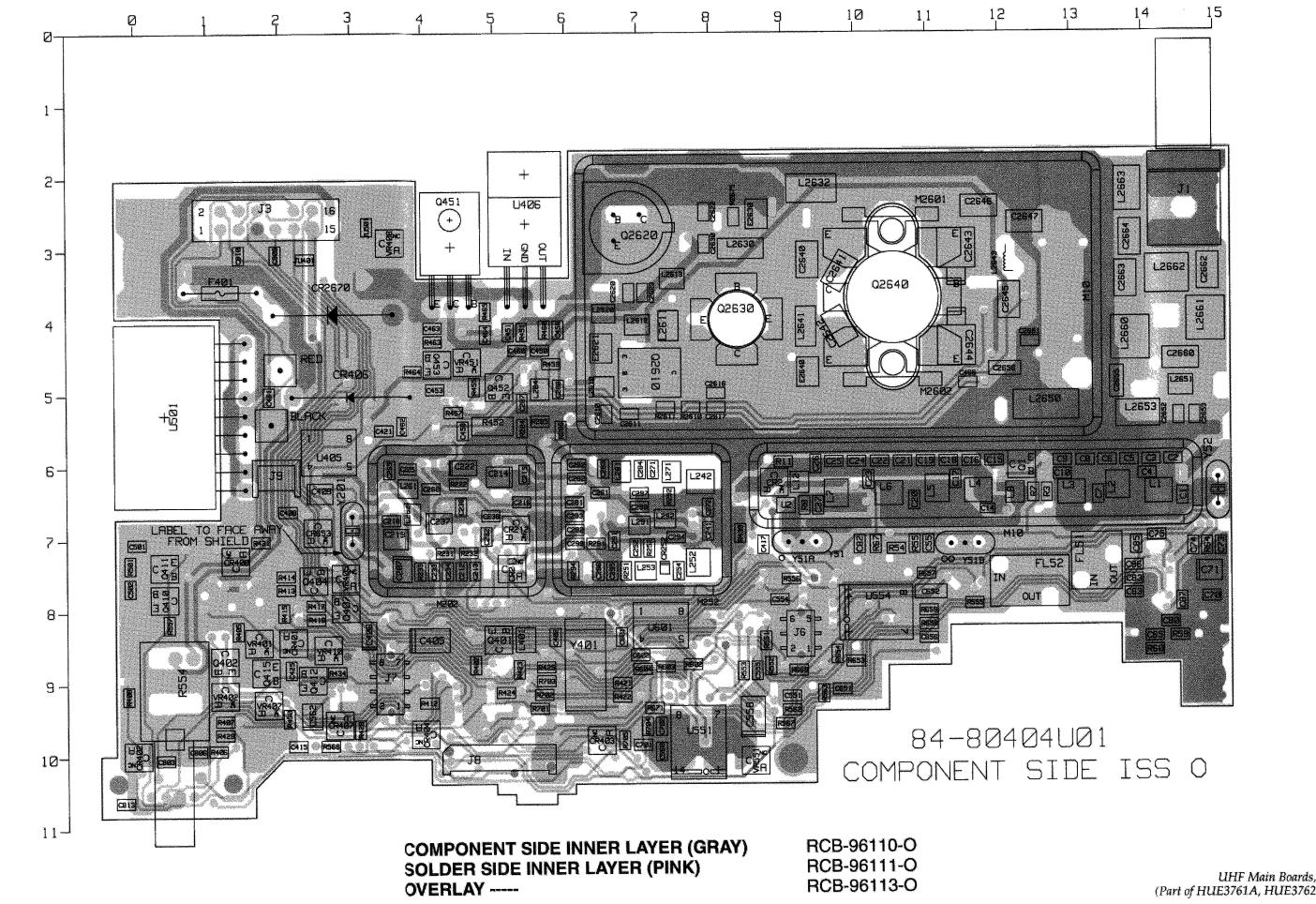
SM50/SM120 UHF Main Board, 450-470 MHz 40 W, 20/25/30 kHz (W) later version) (used in PMUE1040 & PMUE1057) REFERENCE MOTOROLA

DESCRIPTION

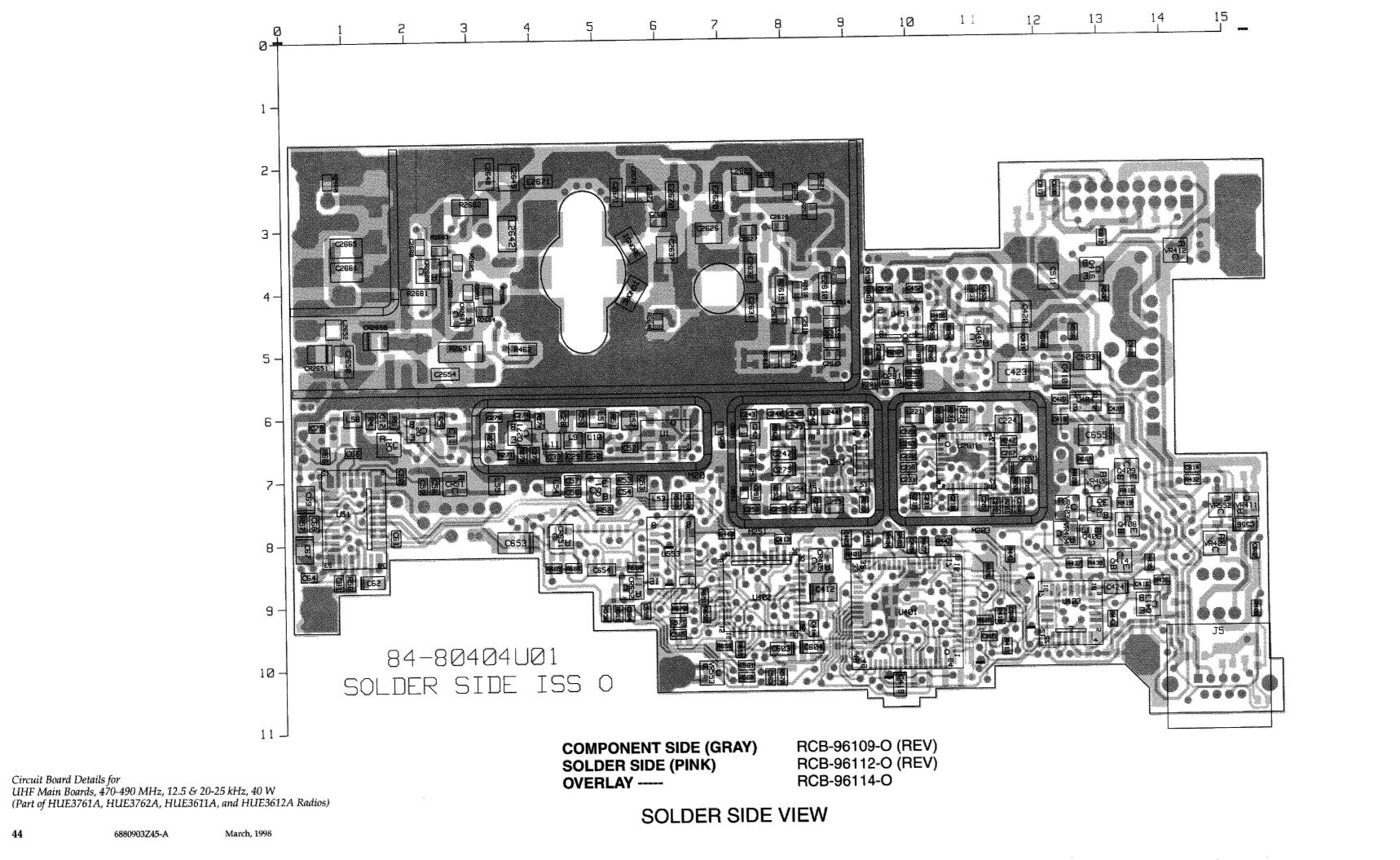
Y51(N) 91-80112R06 filter 45.1 MHz 12.5 kHz (includes Y51A and Y51B) Y51(W) 91-80112R05 filter 45.1 MHz 25 kHz (includes Y51A and Y51B) Y52 48-80606B02 44.645 MHz Y201* (see note) 16.8 MHz Y401 48-80113R01 7.9488 MHz	Y51(N) 91-80112R06 filter- (inclu- Y51(W) 91-80112R05 filter- (inclu- Y51(W) 91-80112R05 filter- (inclu- Y52 48-80606B02 44.64 Y201* (see note) 16.8 Y401 48-80113R01 7.946	tal: (see note) 45.1 MHz 12.5 kHz udes Y51A and Y51E 45.1 MHz 25 kHz udes Y51A and Y51E 45 MHz MHz 88 MHz  Items al insulator (for Y201 /synthesizer shield (ver mixer bottom shi ver front end top shi hield cover nd clip (2 used for Q2 unsistors, and integra
Y51(W) 91-80112R05 filter 45.1 MHz 25 kHz (includes Y51A and Y51B) filter 45.1 MHz 25 kHz (includes Y51A and Y51B) 48-80606B02 44.645 MHz (includes Y51A and Y51B) 45.041 MHz (includes Y51A and Y51B) 44.645 MHz	Y51(W) 91-80112R05 filter. Y52 48-80606B02 44.64 Y201* (see note) 16.8 Y401 48-80113R01 7.946	udes Y51A and Y51E 45.1 MHz 25 kHz udes Y51A and Y51E 45 MHz MHz MHz B8 MHz  Items al insulator (for Y201 /synthesizer shield (ver mixer bottom shi ver front end top shi hield cover and clip (2 used for Q2 unsistors, and integra tts which are not field d factory equipment ander to guarantee the
Y51(W) 91-80112R05 filter 45.1 MHz 25 kHz (includes Y51A and Y51B) Y52 48-80606B02 44.645 MHz Y201* (see note) 16.8 MHz Y401 48-80113R01 7.9488 MHz	Y51(W) 91-80112R05 filter- (inclu- Y52 48-80606B02 44.64 Y201* (see note) 16.8 Y401 48-80113R01 7.946  non-referenced  14-05160A02 cryst 26-04398J01 VCO. 26-04398J01 recei 26-04400J01 recei 26-04419J01 PA st 26-04420J01 PA st 42-80281L01 grour  note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	45.1 MHz 25 kHz  rdes Y51A and Y51E  45 MHz  MHz  88 MHz  Items  al insulator (for Y201 /synthesizer shield (rem shield frame hield frame hield cover and clip (2 used for Qi  unsistors, and integra  tts which are not field d factory equipment rder to guarantee the
Y52 Y201* (see note) 44.645 MHz Y401 48-80113R01 7.9488 MHz  non-referenced items  14-05160A02 crystal insulator (for Y201) 26-04398J01 VCO/synthesizer shield (4 used to part with the content of the co	Y52 Y201* (see note) Y4.64 Y401  48-80113R01 7.946  non-referenced  14-05160A02 26-04399J01 26-04499J01 26-0440J01 26-04419J01 PA st 26-0442J01 PA st 26-0442J0	45 MHz MHz 88 MHz Items al insulator (for Y201 /synthesizer shield ( ver mixer bottom shi ver front end top shi hield frame hield cover nd clip (2 used for Oz misistors, and integra ts which are not field d factory equipment irder to guarantee the
Y201* (see note) 16.8 MHz Y401 48-80113R01 7.9488 MHz  non-referenced items  14-05160A02 crystal insulator (for Y201) VCO/synthesizer shield (4 us receiver mixer bottom shield 26-04400J01 receiver front end top shield receiver mixer by shiel	Y201* (see note) 16.8 Y401 48-80113R01 7.948  non-referenced  14-05160A02 cryst 26-04398J01 VCO. 26-04399J01 recei 26-0440J01 recei 26-04419J01 PA st 26-0442J01 PA st 42-80281L01 grour  note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specialized when these components are replaced in o	MHz 88 MHz Items al insulator (for Y201/synthesizer shield (ver mixer bottom shiver front end top shinled cover and clip (2 used for Quasistors, and integrates which are not field diactory equipment order to guarantee the
y401  48-80113R01  7.9488 MHz  non-referenced items  14-05160A02 26-04398J01 26-04399J01 26-04400J01 26-04419J01 26-04419J01 26-04420J01 26-04420J01 PA shield frame 26-04420J01 PA shield frame 26-0420J01 PA shield cover ground clip (2 used for Q244 note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is number these components are replaced in order to guarantee the specialized factory equipment is number to guarantee the specializ	y401 48-80113R01 7.946  non-referenced  14-05160A02 cryst 26-04398J01 VCO. 26-04399J01 recei 26-04400J01 recei 26-04420J01 PA st 26-04420J01 PA st 42-80281L01 grour  note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	Items  al insulator (for Y201/synthesizer shield (ver mixer bottom shiver front end top shimled frame hield cover and clip (2 used for Quasistors, and integrants which are not field diactory equipment order to guarantee the
14-05160A02 26-04398J01 26-04399J01 26-04400J01 26-04419J01 26-04420J01 26-04420J01 26-04419J01 26-04419J01 26-04419J01 26-04419J01 PA shield cover ground clip (2 used for Q244 note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is n when these components are replaced in order to guarantee the specialized factory.	14-05160A02 cryst 26-04398J01 VCO. 26-04399J01 recei 26-04400J01 recei 26-04419J01 PA st 26-04420J01 PA st 42-80281L01 grour note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	al insulator (for Y201/synthesizer shield (ver mixer bottom shi ver front end top shinield frame hield cover nd clip (2 used for Quasistors, and integrates which are not field diactory equipment rider to guarantee the
26-04398J01 26-04399J01 26-04400J01 26-04419J01 26-04419J01 PA shield frame 26-04420J01 PA shield frame 26-04420J01 PA shield cover ground clip (2 used for Q244 note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is n when these components are replaced in order to guarantee the sp	26-04398J01 VCO. 26-04399J01 recei 26-04400J01 recei 26-04419J01 PA st 26-04420J01 PA st 26-04420J01 PA st 42-80281L01 grour note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	/synthesizer shield (ver mixer bottom shiver front end top shinield frame hield cover and clip (2 used for Quasistors, and integral ts which are not field diactory equipment order to guarantee the
26-04399J01 26-0440J01 26-04419J01 26-04420J01 26-04420J01 26-04420J01 PA shield cover ground clip (2 used for Q244 note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is a when these components are replaced in order to guarantee the specialized.	26-04399J01 receil 26-04400J01 receil 26-04400J01 receil 26-04419J01 PA st 26-04420J01 PA st 42-80281L01 groun note: For optimum performance, diodes, tramust be ordered by Motorola part numbers.  Designators marked with an (*) denote part Recalibration of the radio using specialized when these components are replaced in o	ver mixer bottom shi ver front end top shi hield frame hield cover nd clip (2 used for Qi misistors, and integra tts which are not field d factory equipment rider to guarantee th
26-0440J01 receiver front end top shield 26-04419J01 PA shield frame 26-04420J01 PA shield cover 42-80281L01 ground clip (2 used for Q244  note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is n when these components are replaced in order to guarantee the sp	26-04400J01 recei 26-04419J01 PA st 26-04420J01 PA st 26-04420J01 PA st 42-80281L01 grour note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	ver front end top shinield frame hield cover nd clip (2 used for Quasistors, and integral ints which are not field d factory equipment arder to guarantee the
26-04419J01 PA shield frame 26-04420J01 PA shield cover 42-80281L01 ground clip (2 used for Q244  note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is n when these components are replaced in order to guarantee the sp	26-04419J01 PA st 26-04420J01 PA st 26-04420J01 PA st 42-80281L01 grour note: For optimum performance, diodes, tramust be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	hield frame hield cover nd clip (2 used for Ci insistors, and integra ts which are not field d factory equipment inder to guarantee th
42-80281L01 ground clip (2 used for Q244 note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is much these components are replaced in order to guarantee the st	42-80281L01 groun note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specialized when these components are replaced in o	nd clip (2 used for Quantities, and integral int
note: For optimum performance, diodes, transistors, and integrated must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is n when these components are replaced in order to guarantee the specialized.	note: For optimum performance, diodes, tra must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specializer when these components are replaced in o	insistors, and integra ints which are not field d factory equipment arder to guarantee the
must be ordered by Motorola part numbers.  Designators marked with an (*) denote parts which are not field se Recalibration of the radio using specialized factory equipment is a when these components are replaced in order to guarantee the st	must be ordered by Motorola part numbers.  Designators marked with an (*) denote par Recalibration of the radio using specialized when these components are replaced in o	rts which are not field d factory equipment order to guarantee th

UHF Main Boards, 450-470 MHz, 12.5 & 20-25 kHz, 40 W (Part of PMUE1039B, PMUE1040B, PMUE1056B, and PMUE1057B Radios)

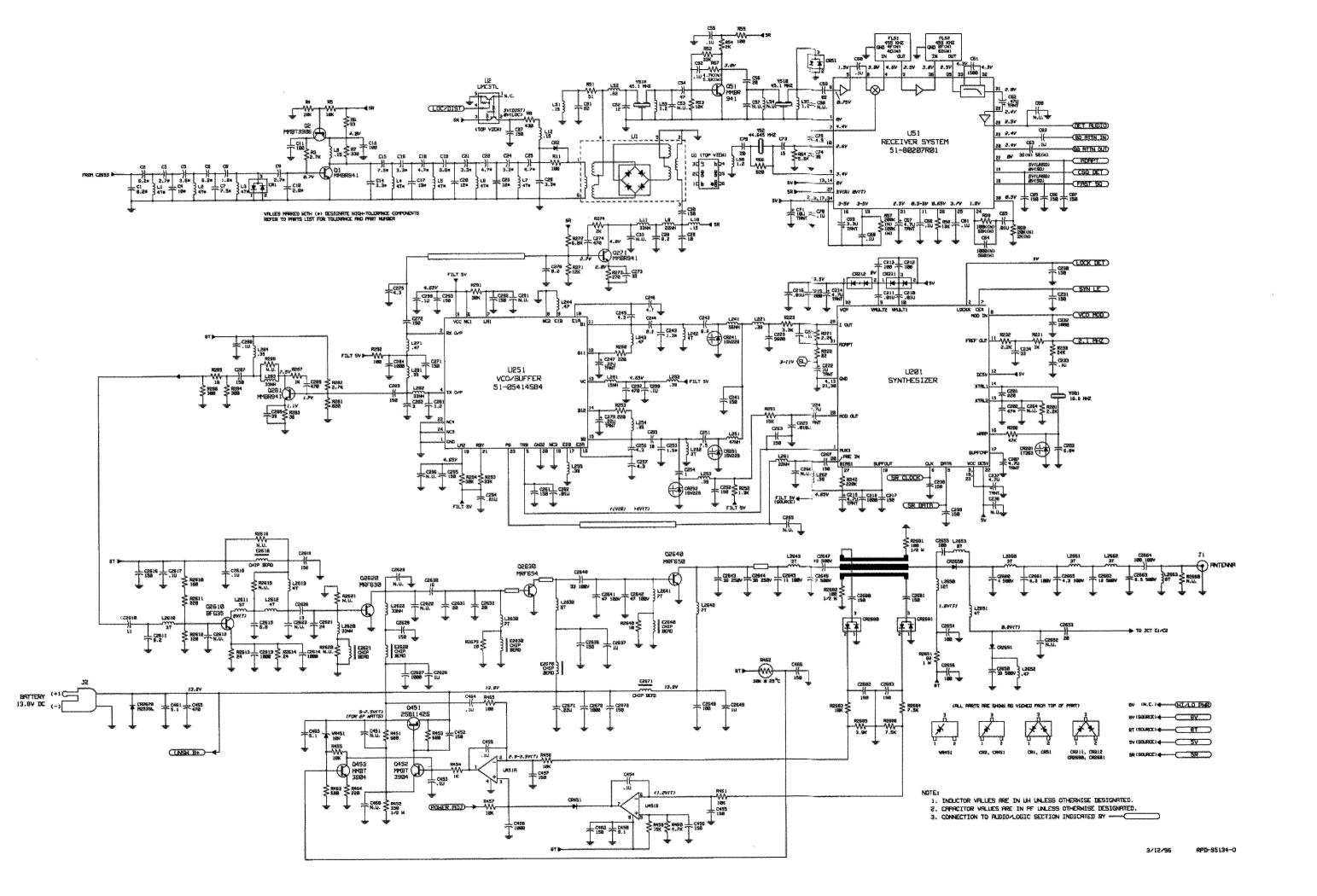




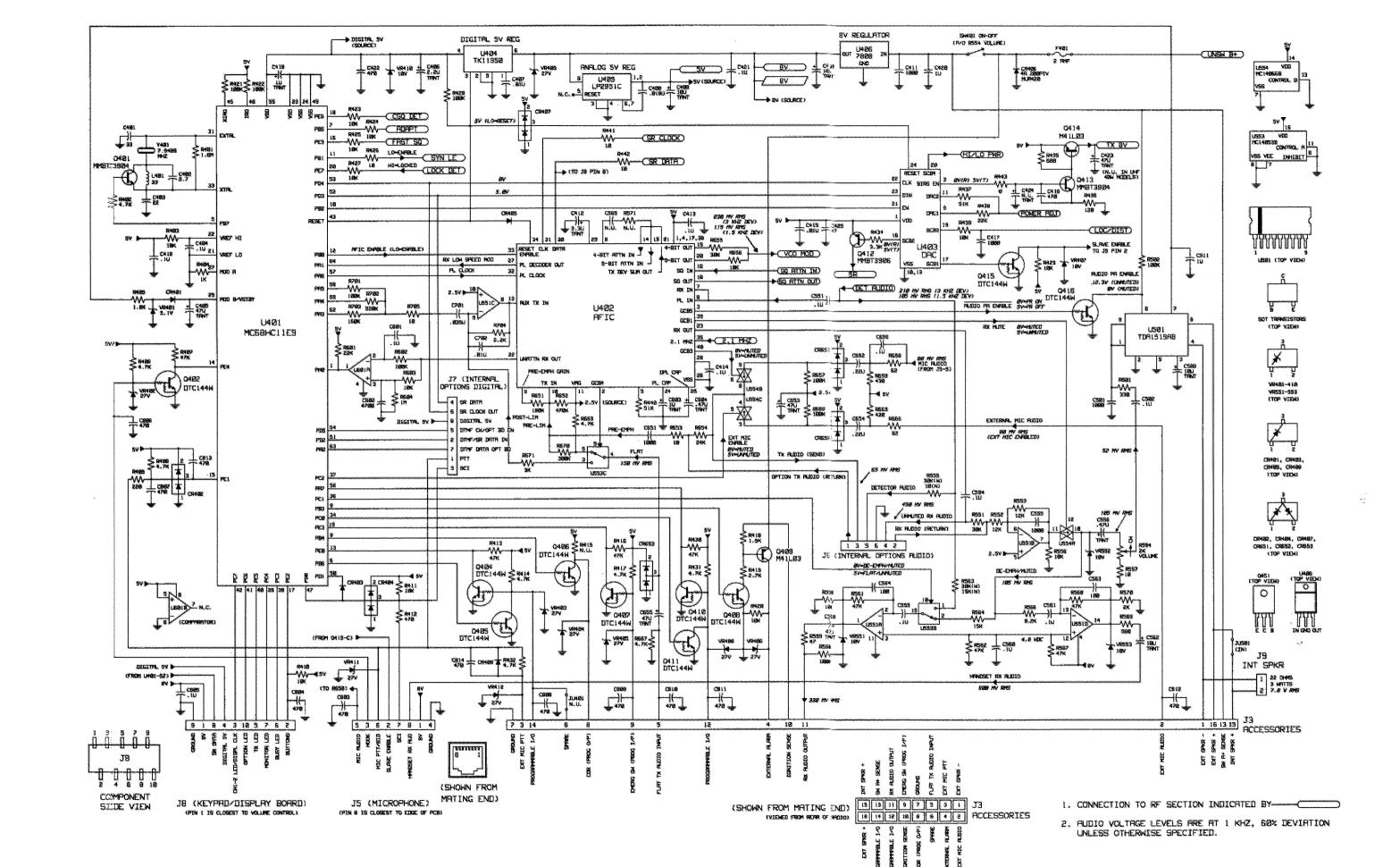
Circuit Board Details for UHF Main Boards, 470-490 MHz, 12.5 & 20-25 kHz, 40 W (Part of HUE3761A, HUE3762A, HUE3611A, and HUE3612A Radios)



84-80404U01 SOLDER SIDE ISS 0 RCB-96110-O (REV) RCB-96111-O (REV) RCB-96114-O COMPONENT SIDE INNER LAYER (GRAY)
SOLDER SIDE INNER LAYER (PINK)
OVERLAY -----SOLDER SIDE VIEW



Schematic Diagram for UHF Main Boards, 470-490 MHz, 12.5 & 20-25 kHz, 40 W (Part of HUE3761A, HUE3762A, HUE3611A, and HUE3612A Radios) (Sheet 1 of 2)



4/15/96

Schematic Diagram for UHF Main Boards, 470-490 MHz, 12.5 & 20-25 kHz, 40 W (Part of HUE3761A, HUE3762A, HUE3611A, and HUE3612A Radios) (Sheet 2 of 2)

46

6880903Z45-A

March, 1998

# **Parts List**

REFERENCE MOTOROL

SYMBOL PART NO.

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 12.5 kHz (N) (used in HUE3761 & HUE3611)

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 20/25 kHz (W) (used in HUE3762 & HUE36121)

21-13740G27 8 2+0 1 nF

91-19740G09 69+01 nF

21-13740G13 2.7 ±0.1 p

21-13740G29 10 pF 2%

21-13740G16 3.6 ±0.1 pF

21-13740G23 6.2 ±0.1 pF

21-13740G25 7.5 ±0.1 pF

21-13740G09 1.8 ±0.1 p

21-13740G10 2.0 ±0.1 p

21-13740L06 3.3 ±0.1 pF

21-13740G15 3.3 ±0.1 p

21-13740G19 4.7 ±0.1 pF

21-13740G16 3.6±0.1 n

21-13740G31 12 pF 2%

21-13740G15 3.3 ±0.1 p

21-19740019 47+011

21-13740G31 12 pF 2%

21-13740G19 4.7 +0.1 nl

21-19740G15 3.3 ±0.1 p

21-13740A27 8.2 ±0.25 pF

2.7 ±0.1 p

7.5 ±0.1 pl

13 pF 2%

3.3 +0.1 pl

0.1 uF 10%; 16 V

tantalum 0.47 uF 10%; 25 V

21-13740G13

21-13740A55

21-13740G25

21-13740G32

21-197400:15

21-13740A59

21-13740A29

21-13740A59

21-13740A53

21-13740A31

21-13740A46

21-13740A36

23-11049A05

21-13740A42

21-13740A53 82 pF

21-13741A25 1500 pF

21-13740A49 56 oF

21-13740A79 1000 pF

21-13740A73 560 oF

21-13741A45 01 nF

21-13740A33 15 nF

21-13740A42

21-13740A18

21-13740A36

21-13740A59

21-13740A63

21-13743A19 0.1 uF 10%; 16 V

21-13743A19 0 1 uF 10%: 16 V

21-13743A19 0.1 (F 10%: 16 V

21-13743A19 0.1 HF 10%: 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13740G46 47 pF 2%

21-13740G24 6.8 ±0.1 pl

21-13741A45 .01 uF

21-13740A55 100 pF

21-13740A79 1000 pF

21-13741A45 .01 uF

21-13740A59 150 nF

21-13740A79 1000 nF

21-13741A39 5600 nF

21-13741A51 .018 uF

21-13740A79 1000 pF

21-13740A59 150 pF

21-13743A19 0.1 uF 10%: 16V

21-13743A19 0.1 uF 10%: 16 V

23-11049.111 tantalum 4.7 uF 10%: 16 V

23-11049J07 tantalum 3.3 uF 10%; 20 V

23-11049A57 tantalum 10 uF 10%: 16 \

4.3 ±0.25 pF

23-11049J11 tantalum 4.7 uF 10%: 16 V

23-11049J11 tantalum 4.7 uF 10%: 16 V

23-11049J11 tantalum 4.7 uF 10%: 16 V

23-11049J11 tantalum 4.7 uF 10%; 16 V

23-11049A07 tantalum 1 uF 10%; 16 V

21-13743A19

C57, 58

C62

C63(W)

C64(N) C64(W)

C212, 21

C216

C218

C219

C221

C223

C224

C230, 231

capacitor, fixed: uF +/-5%; 50 V:

inless otherwise stated

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 12.5 kHz (N) (used in HUE3761 & HUE3611) SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 20/25 kHz (W) (used in HUE3762 & HUE36121)

23-11049J11

21-13740A59

1-13740A59

21-13740/309

1-13740425

21-13740A18

23-11049A03

1-13740A25

21-13740A59

21-13740403

21-13740A29

21-13740A18

21-13740450

21-13741445

21-13740A59

21-13740A59

21-13740450

21.12740443

21-19740A05

21-13740A59

21-13740A79

21-13740443

21-13740459

21-13740A59

21-13741A45

21-13740A41

23-11049A40

21-13741A45

21-13740A71 470 pF

21-13740F18 4.3 ±0.25 pt

21-13740A27 8.2 ±0.25 pf

21-13740A14 3+0.25 pl

21-13740A71 470 pF

21-13740A59 150 pF

21-13740A59 150 pF

21-13740A37 22 pF

21-13741A51 .018 uF

21-13740A79 1000 pF

21-13741A45 .01 uF

21-13740A71 470 pF

21-13740A79 1000 pF

21-13740A71 470 pF

21-13740A46 47 pF

21-13740A79 1000 pF

21-13740A59 150 pF

21-13740A59 150 nF

21-13740A79 1000 nF

21-13740A20 5.1 ±0.25 pF

21-13740A20 5.1 ±0.25 pF

21-13740A59

21-13740A59

21-13740A71

21-13740A28 9.1 ±0.25 pF

21-13743A19 0.1 uF 10%; 16 V

21-13741W01 1 uF 10%: 25 V

21-13743A19 0.1 uF 10%; 16 V

150 pF

21-13743A19 0.1 uF 10%: 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13743A19 0.1 uF 10%: 16 V

470 nF

23-11049A07 tantalum 1 uF 10%; 16 V

23-11049A57 tantalum 10 uF 10%; 16 V

23-11049J07 tantalum 3.3 uF 10%; 20 V

tantalum 47 uF 10%; 10 V

tantalum 2.2 uF 10%: 10 V

21-13740A13 2.7 ±0.25 pF

150 pF

21-13740A41 33 pF

21-13740A24 6.8 +0.25 pl

21-13740A19 4 7 +0 25 of

21-13740G05 1.2 ±0.1 nl

150 pF

18+016

7.5 ±0.25 pF

4.3 ±0.25 of

7.5 ±0.25 of

1 +0 25 0

4.3 ±0.25 pF

23-11049A03 tantalum 0.22 uF 10%; 35 V

1.2 ±0.25 pf

150 pF

150 nF

REFERENCE MOTOROLA

C238, 239

C256, 257

C264 thru 266

C271, 272

C283 C284 C285

C288 C289 C291

C295 C296

C405 C406

C409, 410

C413, 414

C418

C419

C420

C421

C422

C450

C452

C459 C460

C461

C465

C501 C502

C453, 454

C455 thru 457

C423, 424

C292, 293

C298, 299

SYMBOL PART NO.

12.5 kHz (N) (used in HUE3761 & HUE3611) M50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 0/25 kHz (W) (used in HUE3762 & HUE36121)

SYMBOL

C803, 804

C806 thru 814

C2613, 2614

C2617, 2618

C2620 C2621 C2622, 2623

C2626 C2627 C2628 C2629 C2630 C2631, 2632 C2636 C2637 C2640 C2641, 2642 C2643, 2644

C2653 C2654 th

CR251, 252

CR402 CR403 CR404 CR405

C2619

REFERENCE MOTOROLA

PL-951030-A

DESCRIPTION

tantalum 4.7 uF 10%; 16 V

tantalum 0.22 uF 10%: 35 V

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts

PART NO.

21-13741W01

21-13743A19

21-13743A19

21-13740A79

23-11049A05

23-11049A57 21-13740A55

23-11049A07

21-13740A79

23-11049J43

21-13741A59

21-13741445

21-13740A71

21-13740A71

21-13740A30

21-13740A27

21-13740A79

1-13740A59

21-13743A19

21-13740459

21-13740A32

21-13740A38

21-13740A79

21-13740A59

21-13740A34

21-13740B32

21-13740A59

21-13741W01

21-11078B29

21-11078B34

21-80964X37

21-11078B14

1-80060M13

21-80060M34

21-13740B49

1-13741W01

21-80060M33

21-13740A36

1-13740B49

1-11078B04

1-80060M21

21-80060M12

21-11078B04

21-11032B15

21-13740A79

1-13740A59

21-13740A59

48-80142L01

48-13833C07

48-62824C01

48-05129M76

48-13833C07

48-80939T01

48-05129M76 silicon SOT

48-62824C01

DESCRIPTION

1 HF 10%- 25 V

0.1 uF 10%: 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13743A19 0.1 uF 10%: 16 V

21-11032B15 0.22 uF +80/-20%

21-11032B15 0.22 uF +80/-20%

21-13743A19 0.1 uF 10%; 16 V

21-13743A19 0.1 uF 10%; 16 V

21-13741A37 4700 pF

100 pF

23-11049A05 tantalum 0.47 uF 10%; 25 V

23-11049J43 tantalum 47 uF 10%: 10 V

8.2 ±0.25 pF

0.1 uF 10%: 16 V

1000 bl

13 pF

150 pF

1 uF 10%: 25 \

7 +0.5 nF 500 \

1 uF 10%; 25 V

4.3 ±0.25 pF 100 \

6.5 ±0.5 pF 500 V

4.3 ±0.25 pF 100 V

diode: (see note)

dual Schottky SOT

silicon SOT

Schottky SOT

48-13833C07 dual silicon SOT MMBD7000

silicon PIN SOT MMBV340

silicon varactor SOT 1T363

dual silicon SOT MMBD700

silicon varactor SOT 1SV229

dual silicon SOT MMBD7000

silicon varactor SOT 1SV22

dual Schottky SO

0.22 uF +80/-20%

43 pF 500 V

1-80060M07 4 ±0.5 pF 500 V

21-80060M43 100 pF 100 V

clamped mica 36 pF 250 V

47 pF 100V

21-13741W01 1 uF 10%; 25 V

21-13740A24 68+0.25 n

0.1 uF 10%: 16 V

tantalum .47 uF 10%; 25 \

tantalum 47 uF 10%: 10 V

tantalum 10 uF 10%; 16 V

tantalum 1 uF 10%; 16 V

tantalum 47 uF 10%; 10 V

20/25 kHz (W) (used in HUE3762 & HUE36121)

SYMBOL

CR2650, 2651

F401

FL51(W)

FL52(N)

FL52(W)

JU401

JU501

L1 thru 7

L2610

L2612

L2613 L2620 L2622 L2630

L2632 L2641

L2642 L2643

L2650

12 5 kHz (N) forced in HEE2761 & HEE3611) SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts REFERENCE MOTOROLA

48-05129M76 silicon SOT

48-05129M76 silicon SOT

24-84657R01 ferrite bead

24-84657R01 ferrite bead

91-80098D04 455 kHz 4F

91-80097D04 455 kHz 6F

91-80097D06 455 kHz 6D

09-80627E01 mini UHF coax

28-04503.I01 16-pin accessories

09-04424J05 6-oin, internal options audio

09-04424J06 8-pin, internal options digital

09-04422.J02 10-pin display board

28-04423J01 2-pin, internal speake

24-62587X55 chip 0.15 uH 5%

24-83411T63 0.15 uH 5% shielded

24-62587X45 chip 22 nH 5%

24-62587X47 chip 33 nH 5%

24-62587X55 chip 0.15 uH 5%

24-62587X55 chip 0.15 uH 59

24-62587X63 chip 0.62 uH 59

24-62587X69 chip 1.2 uH 5%

24-62587X69 chip 1.2 uH 59

24-84562T13 3 turns airwound 2%

24-62587X60 chip 0.39 uH 5%

24-62587X60 chip 0.39 uH 5%

24-62587X61 chip 0.47 uH 5%

24-62587X60 chip 0.39 uH 59

24-62587X60 chip 0.39 uH 59

24-62587X47 chip 33 nH 59

24-62587X43 chip 15 nH 59

24-60578C43 chip 33 uH

24-60591A01 3 turns

24-60591C73 5 turns

24-60591B17 4 turns

24-60591B73 4 turns

24-60591E73 7 turns

24-60591G73 9 turns

24-60591F73 7 turns

24-60591E69 7 turns

24-60591V77 12 turns

24-60591B73 4 turns

24-62587T40 chip 33 nH 59

24-80908T03 1-1/2 turns RED

24-62587X49 chip 47 nH 5%

Not Used

4 turns airwound 2%

chip 1.2 uH 5%

chip 0.39 uH 59

chip 47 nH 5%

chip 0.39 uH 5%

chip 33 nH 5%

4 turns airwound 2%

91-80098D06 455 kHz 4D

65-05214E04 2 amp axial lead

24-84657R01 ferrite bead

24-84657R01

24-84657R01

09-04426.101

06-62057C01

24-84562T11

24-62587X69

24-62587X60

24-62587X50

24-84562T11

24-62587X49

24-62587X60

24-62587T40

CR651 thru 653 48-13833C07 dual silicon SOT MMBD7000

48-83553T02 4A 200 PIV MUR420

48-02482J02 silicon PIN MA4P1250

48-80236E07 transient suppressor

48-13833C07 dual silicon SOT MMBD7000

48-82290T02 dual Schottky SOT HSMS-2802

ferrite bead

onnector, receptacle:

telephone type. 8 contact, microphone

30-04510.101 nower cable assembly (includes 42)

ferrite bead

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts

PART NO

PL-951030-A

DESCRIPTION

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 20/25 kHz (W) (used in HUE3762 & HUE36121)

24-11087B22 chip 0.47 uH

3 turns

48-80214G02 NPN: type MMBT3904

48-80225C09 NPN; type MRF630

48-80225C19 NPN; type MRF654

NPN: type MMBR94

PNP: type MMRT390

NPN: type MMBR94

NPN: type MMRR94

NPN: type MMBR94

PNP type M41I 03

PNP: type MMBT3906

NPN: time MMRT3902

PNP: N/ne 25811425

NPN: type MMBT3904

unless otherwise stated

NPN; type BFG35

PNP type M41L03

digital NPN: type DTC144\

digital NPN: type DTC144V

digital NPN: type DTC144W

digital NPN; type DTC144W

resistor, fixed: +/-5%; 1/10 W:

24-60591R53 8 turns

24-60591R53 8 turns

48-13827407

48-13894A17

48-13827A07

48-13827A07

48-13827A07

48-80947V01

48-R0947V01

48-801411.03

48-80947V01

48-13824A17

48-80914609

48-80141L03

48-80947\/01

48-02245-125

48-80214G02

AR DODA'S IDA

48-80225C24

06-62057C85

06-62057C63

06-62057C66

06-62057D12

06-62057D02

06-62057C51

06-62057D24

06-62057D24

06-62057D20

06-62057D07

06-62057C82

06-62057C93

06-62057C73

06-62057C93

06-62057C83

06-62057D16

06-62057C49

06-62057C75

06-62057C83

06-62057D09

06-62057D32

06-62057078

06-62057C59

06-62057059

06-62057D02

06-62057095

06-62057C82

06-62057C73

06-62057C85

06-62057C40

06-62057062

06-62057C62

06-62057C75

06-62057D11

06-62057C51

06-62057D12

06-62057D11

06-62057C33

06-62057C61

R271 R272

06-62057D04

06-62057C87

06-62057C83

06-62057C91 4.7k

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts

12.5 kHz (N) (used in HUE3761 & HUE3611)

SYMBOL PART NO.

L2660 thru 2662 24-60591X01

Q281 Q401 Q402 Q404 thru 408

Q409 Q410, 411

Q415, 416

12.5 kHz (N) (used in HUE3761 & HUE3611) SM50/SM120 LHF Main Board, 470-490 MHz, 40 Watts 20/25 kHz (W) used in HUE3762 & HUE36121)

SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts

PL-951030-A SYMBOL PART NO DESCRIPTION 06-62057D54 1.8 med 06-62057C91 4.7k 06-62057C99 10k 06-62057075 R405 R406 06-62057C81 1.8k 06-62057C91 4.7k R407 R408 R409 06-62057D16 47k 06-62057C91 4.7k 06-62057C59 220 R410, 411 06-62057C99 R412 R413 06-62057C67 470 06-62057D16 47k R414 R415 06-62057C91 4.7k R416 R417 06-62057D16 47k 06-62057C91 R418 R419 06-62057C79 06-62057C85 06-62057C99 R421, 422 R423 thru 4 06-62057D24 06-62057C99 R426 06-62057C27 R427 R428 06-62057C99 06-62057D24 R429 R430 06-62057C99 10k 06-62057D16 47k R431, 432 06-62057C91 4.7k 06-62057C87 3.3k 06-62057C71 680 06-62057C53 120 R437 R438 06-62057D17 51k 06-62057D08 22k R439 R440 06-62057C99 10k 06-62057D17 51k R441, 44 R443 06-62057C27 06-62057C01 R451 R452 R453 06-62057C71 06-80195M37 330 1/2 wat 06-62057C71 06-62057C75 1k R455 thi 06-62057C99 10k 06-62057D04 15k 06-62057C91 4.7k 06-62057C99 10k 06-05621T02 thermistor 50k @ 25oC 06-62057C71 06-62057C59 220 06-62057051 100 06-62057C63 330 06-62057D24 100k 06-62057D11 30k 06-62057D02 12k R554 R555(N) R555(W) 18-04405J02 variable 2k with switch 06-62057C27 06-62057D11 30F R556 R557 R558 R559 R560 R561, 562 06-62057C99 10k 06-62057C27 06-62057C99 06-62057C43 06-62057D24 06-62057D16 47k R563(N) R563(W) 06-62057D04 06-62057D11 30k R564 R566 R567, 56 R569 06-62057D04 06-62057C97 8.2k 06-62057D16 47k R570 R571 06-62057C82 2k R601 R602 R603 R604 06-62057D08 06-62057D24 06-62057C99 R651, 65 R653 06-62057D30 06-62057C27 R654 06-62057D09 R655 R656 R657 06-62057D11 30k 06-62057C99 10k

06-62057D24 100k

06-62057C46 62

06-62057C66 430

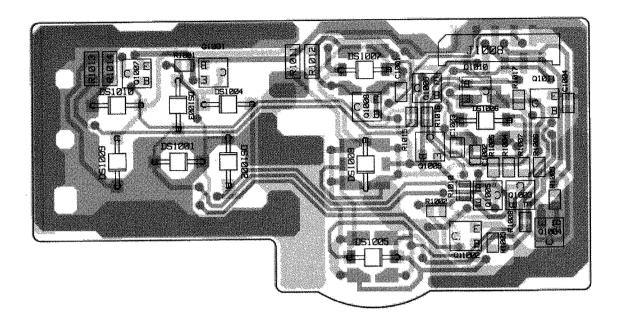
SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 12.5 kHz (N) (used in HUE3761 & HUE3611) SM50/SM120 UHF Main Board, 470-490 MHz, 40 Watts 20/25 kHz (W) (used in HUE3762 & HUE36121)

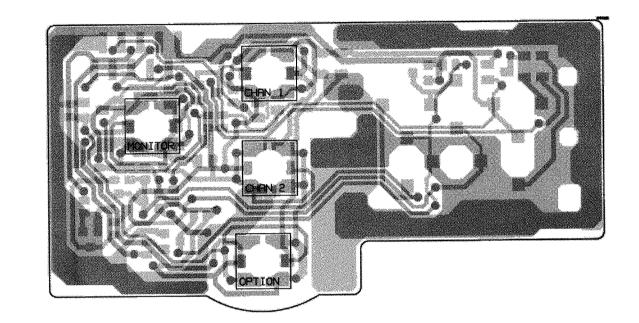
SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R665	06-62057C66	430
R666	06-62057C46	62
R667	06-62057C91	4.7k
R668	06-62057D24	100k
R669	06-62057C91	4.7k
R670	06-62057D35	300k
R671	06-62057C86	3k
R701	06-62057D24	161011
44		100k
R702	06-62057D32	220k
R703	06-62057D29	160k
R704	06-62057C94	6.2k
R705	06-62057C27	10
R2610	06-62057C57	180
R2611	06-62057C59	220
R2612	06-62057C53	120
R2613, 2614	06-62057C36	24
R2615, 2616	+	Not Used
R2620, 2621		Not Used
R2640	06-62057C27	10
R2651	06-80194M23	82 1 watt
R2660	***	Not Used
R2675	06-62057C27	10
R2681, 2682	06-80195M25	100 1/2 watt
R2683	06-62057C99	10k
R2684	06-62057C96	7.5k
R2685	06-62057C89	3.9k
R2686	06-62057C96	7.5k
		Intercepted atomatic face actal
1 14	E4 GOEGEDOA	integrated circuit: (see note)
U1	51-80505D01	double-balanced mixer
U2	48-09939C04	dual transistor switch UMC3TL
U51	51-80207R01	receiver system
U201*	(see note)	synthesizer
U251	51-05414S84	VCO/buffer
U401	51-99010D01	microcomputer MC68HC711E9
U402	51-02227J35	audio filter
U403	51-05226P38	DAC
U404	51-80633C01	5 V regulator TK11950
U405	51-05469E65	5 V regulator LP2951C
U406	51-13816D03	8 V regulator MC7808BT
U451	51-80932W01	dual op-amp LM2904 SOIC
U501	51-80147R01	audio power amp TDA1519C
U551	51-02198J28	quad op-amp LM2902D SOIC
U553	51-84704M60	triple 2-channel switch 4053B
U554	51-05663U35	quad bilateral switch 4066B
U601	51-02198J23	dual comparator LM2903 SOIC
		voltage regulator: (see note)
VR401	48-80140L06	zener diode 5.1 V SOT
	A M A A	
VR402 thru 406	48-80948V01	zener diode 27 V SOT
VR407	48-80140L15	zener diode 10 V SOT
VR408, 409	48-80948V01	zener diode 27 V SOT
VR410	48-80140L15	zener diode 10 V SOT
VR411, 412	48-80948V01	zener diode 27 V SOT
VR451	48-80140L15	zener diode 10 V SOT
VR551 thru 553	48-80140L15	zener diode 10 V SOT
VE+/NI	04.00446065	crystal: (see note)
Y51(N)	91-80112R06	filter 45.1 MHz 12.5 kHz
W#4 715 K	Ma Massamma-	(includes Y51A and Y51B)
Y51(W)	91-80112R05	filter 45.1 MHz 25 kHz
	a and an an an an an	(includes Y51A and Y51B)
Y52	48-80606B02	44.645 MHz
Y201*	(see note)	16.8 MHz
Y401	48-80113R01	7.9488 MHz
1401	non-refe	enced items
1901	.,	crystal insulator (for Y201)
1401	14-80168801	STREET BESTERN ING \$2011
1701	14-80168501	
1701	26-04398J01	VCO/synthesizer shield (4 used
1-01	26-04398J01 26-04399J01	VCO/synthesizer shield (4 used receiver mixer bottom shield
1701	26-04398J01 26-04399J01 26-04400J01	VCO/synthesizer shield (4 used receiver mixer bottom shield receiver front end top shield
1401	26-04398J01 26-04399J01 26-04400J01 26-04419J01	VCO/synthesizer shield (4 used receiver mixer bottom shield receiver front end top shield PA shield frame
1401	26-04398J01 26-04399J01 26-04400J01 26-04419J01 26-04420J01	VCO/synthesizer shield (4 used receiver mixer bottom shield receiver front end top shield PA shield frame PA shield cover
1701	26-04398J01 26-04399J01 26-04400J01 26-04419J01	VCO/synthesizer shield (4 used receiver mixer bottom shield receiver front end top shield PA shield frame

Designators marked with an (\*) denote parts which are not field serviceable Recalibration of the radio using specialized factory equipment is mandatory when these components are replaced in order to guarantee the specified

frequency stability of the radio at temperature extremes.

UHF Main Boards, 470-490 MHz, 12.5 & 20-25 kHz, 40 W (Part of HUE3761A, HUE3762A, HUE3611A, and HUE3612A Radios)





COMPONENT SIDE 84-04430J03 ISS B

COMPONENT SIDE (GRAY) RCB-95132-O SOLDER SIDE (PINK) RCB-95133-O OVERLAY ----- RCB-95134-O

COMPONENT SIDE VIEW

SOLDER SIDE 84-04430J03 ISS B

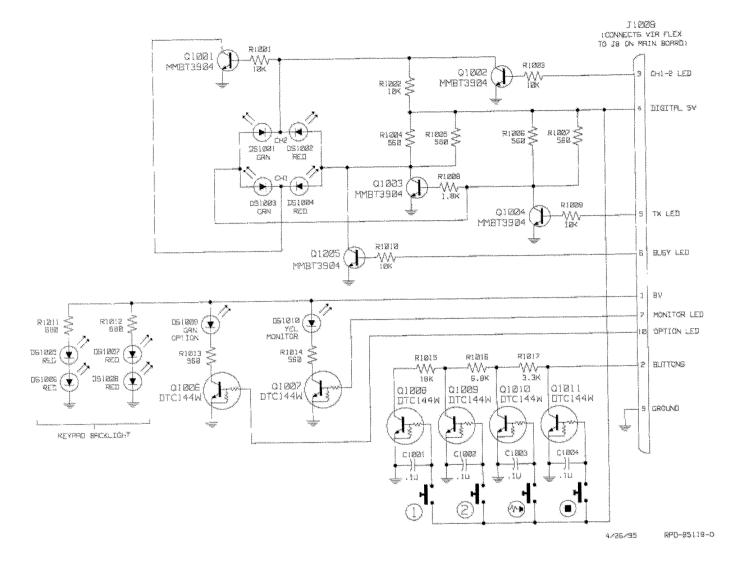
COMPONENT SIDE (GRAY)
SOLDER SIDE (PINK)
OVERLAY ----

**SOLDER SIDE VIEW** 

RCB-95132-O (REV)

RCB-95133-O (REV)

RCB-95135-O (REV)



### Parts List

PMLN4022 SM50 Display Board, 2-Frequency

PL-951013-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitor, fixed: uF +/-5%; 50 V:
		unless otherwise stated
C1001 thru 1004	21-13743A19	0.1 uF 10%; 16 V
		displays and indicators:
DS1001	48-82565T07	diode LED GRN
DS1002	48-82565T05	diode LED RED
DS1003	48-82565T07	diode LED GRN
DS1004 thru 1008	48-82565T05	diode LED RED
DS1009	48-82565T07	diode LED GRN
DS1010	48-82565T06	diode LED YEL
		connector, receptacle:
J1008	09-04422J01	10 pin, main board
		transistor: (see note)
Q1001 thru 1005	48-80214G02	NPN; type MMBT3904
Q1006 thru 1011	48-80947V01	digital NPN; type DTC144W
		resistor, fixed: +/-5%; 1/10 W:
		unless otherwise stated
mamma ak ammö	00.000FF000	10k
R1001 thru 1003	06-62057C99	560
R1004 thru 1007	06-62057C69	1.8k
R1008	06-62057C81	
R1009, 1010	06-62057C99	10k
R1011, 1012	06-11077A70	680
R1013, 1014	06-11077A68	560
R1015	06-62057D06	18k
R1016	06-62057C95	6.8k
R1017	06-62057C87	3.3k
non	-referenced item	sNon-referenced items
***************************************	61-04731J01	Assembly, lightpipe
	28-04431J01	Cable, flat flexible, 10-position

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

Circuit Board Details, Schematic Diagram, and Parts List for PMLN4022A Display Board, 2-Frequency

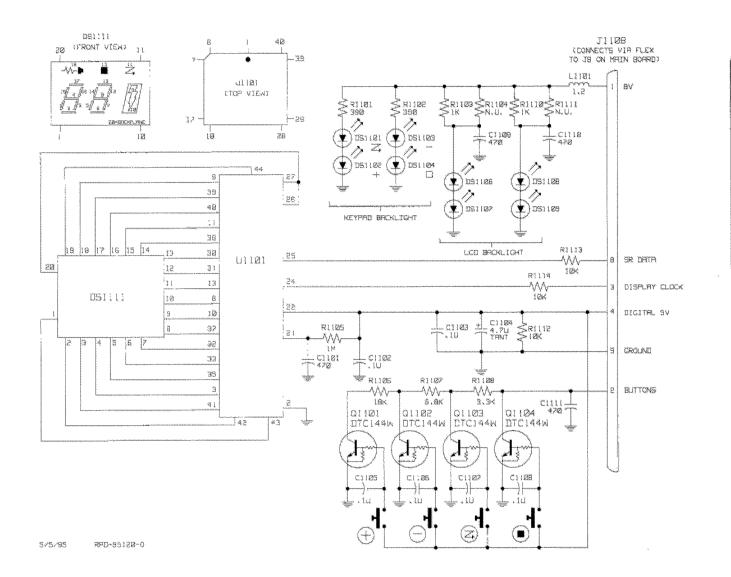
n 1998 6880903*74*!

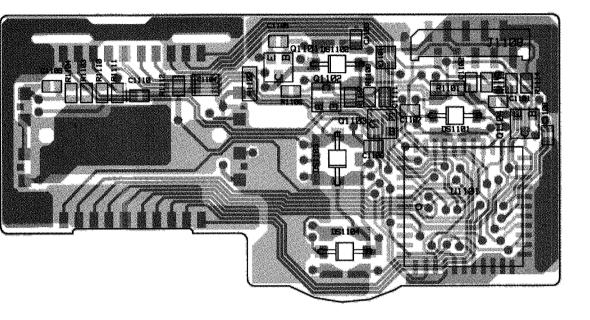
49

Parts List

PMLN4023 SM120 Display Board, 16-Frequency REFERENCE MOTOROLA SYMBOL PART NO. DESCRIPTION capacitor, fixed: uF +/-5%; 50 V: unless otherwise stated 21-13740A71 470 pF C1101 21-13740A71 470 pF C1102, 1103 21-13743A19 0.1 uF 10%; 16 V C1104 23-11049J11 tantalum 4.7 uF 10%; 16 V C1105 thru 1108 21-13743A19 0.1 uF 10%; 16 V C1109 thru 1111 21-13740A71 470 pF DS1101 thru 1104 48-82565T05 diode LED RED right-angle 48-80947V01 digital NPN; type DTC144W 06-11077A64 R1103 R1104 R1105 R1106 R1107 R1108 R1110 06-62057D48 1 meg. 06-62057D06 18k 06-62057C95 6.8k 06-62057C87 3.3k 06-62057C75 06-62057C99 10k 07-04435J02 BRACKET, display bezel 28-04431J01 Cable, flat flexible, 10-position

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

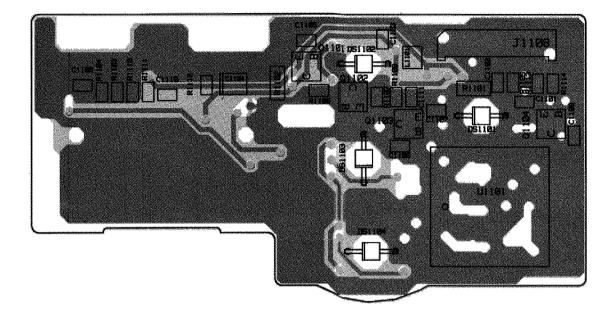




COMPONENT SIDE 84-04429J03 ISS B

COMPONENT SIDE (GRAY)
SOLDER SIDE (PINK)
OVERLAY ---RCB-95136-O
RCB-95139-O
RCB-95140-O

COMPONENT SIDE VIEW



COMPONENT SIDE 84-04429J03 ISS B

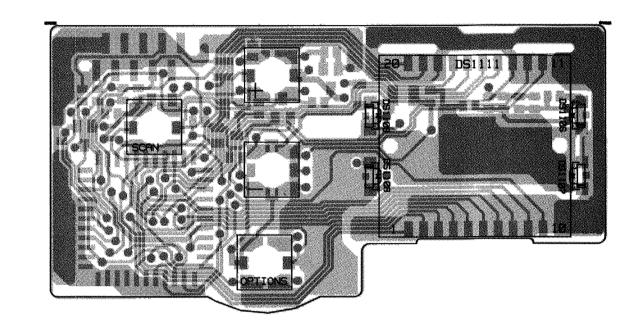
COMPONENT SIDE INNER LAYER (GRAY)
SOLDER SIDE INNER LAYER (PINK)
OVERLAY -----

**COMPONENT SIDE VIEW** 

RCB-95137-O

RCB-95138-O

RCB-95140-O



SOLDER SIDE 84-04429J03 ISS B

COMPONENT SIDE (GRAY)
SOLDER SIDE (PINK)
OVERLAY -----

RCB-95136-O (REV) RCB-95139-O (REV) RCB-95141-O (REV)

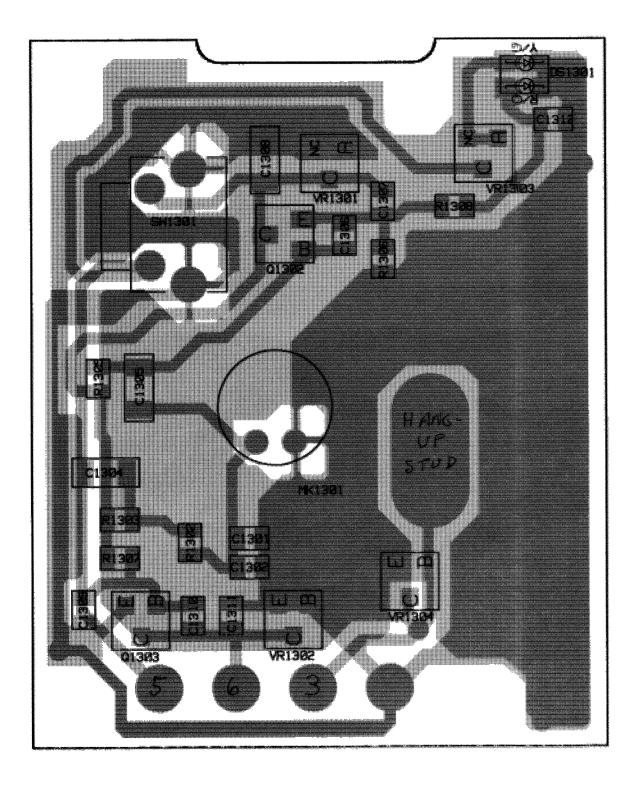
**SOLDER SIDE VIEW** 

Circuit Board Details Diagram, Schematic, and Parts List for PMLN4023A Display Board, 16-Frequency

**50** 688090

6880903Z45-A

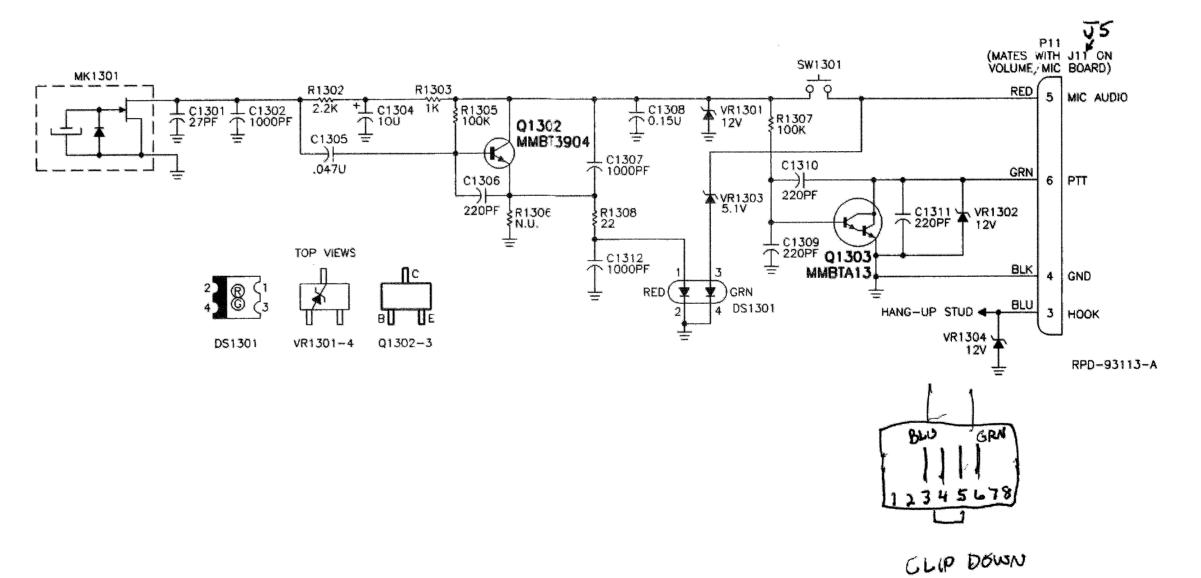
March, 199



**COMPONENT SIDE (GRAY)** SOLDER SIDE (PINK) OVERLAY ----

RCB-95101-O RCB-95102-O RCB-95103-0

COMPONENT SIDE VIEW



Parts List
01-80446E01 Microphone Board with Cord
(Used in HMN3174B Compact Microphone w

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPT	ION
		capacitor, chip, uF +/-	1 mar 12 m.
		unless otherwise stated	
C1301	21-13740A39	27 pF	
C1302	21-13740A79	1000 pF	
C1304	23-11049A59	tantalum 10 uF, ±10%; (	6 V
C1305	21-13741A61	.047 uF	
C1306	21-13740A59	150 pF	
C1307	21-13740A79	1000 pF	
C1308	21-11032B14	0.15 uF	
C1309 thru 1311	21-13740A59	150 pF	
C1312	21-13740A79	1000 pF	
		display:	
DS1301	48-05729G49	dual LED red/grn	
		microphone:	
MK1301	50-80258E04	cartridge electret	
		transistor: see note	
Q1302	48-80214G02	NPN; type MMBT3904	
Q1303	48-05128M19	NPN Darlington; type M	IMBTA13
		resistor, chip: uF +/-59	
		unless otherwise stated	
R1302	06-60076A57	2.2k	
R1303	06-60076A49	1k	
R1305	06-60076B01	100k	
R1306	444	Not Used	
R1307	06-60076801	100k	
R1308	06-60076A09	22	
		switch:	
SW1301	40-80164S01	momentary pushbutton	
		voltage regulator: see	
VR1301, 1302	48-80140L17	Zener diode SOT 12 V I	
VR1303	48-80140L06	Zener diode SOT 5.1 V	
VR1304	48-80140L17	Zener diode SOT 12 V I	MMBZ5242L
		renced items	
	30-80978Z03	coiled cord	

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

Circuit Board Details, Schematic Diagram, and Parts List for HMN3174B Compact Microphone

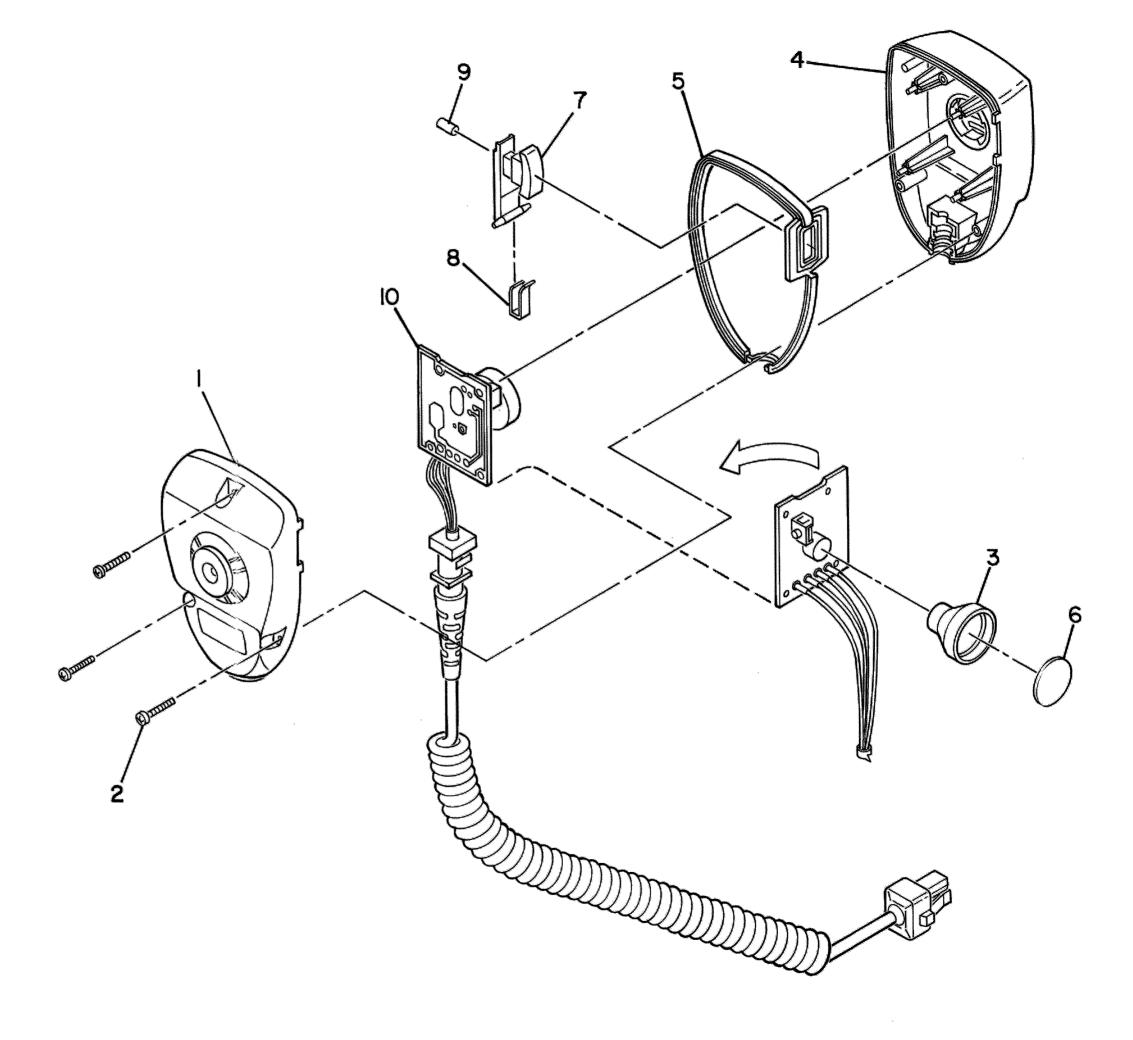
March, 1998 6880903Z45-A

51

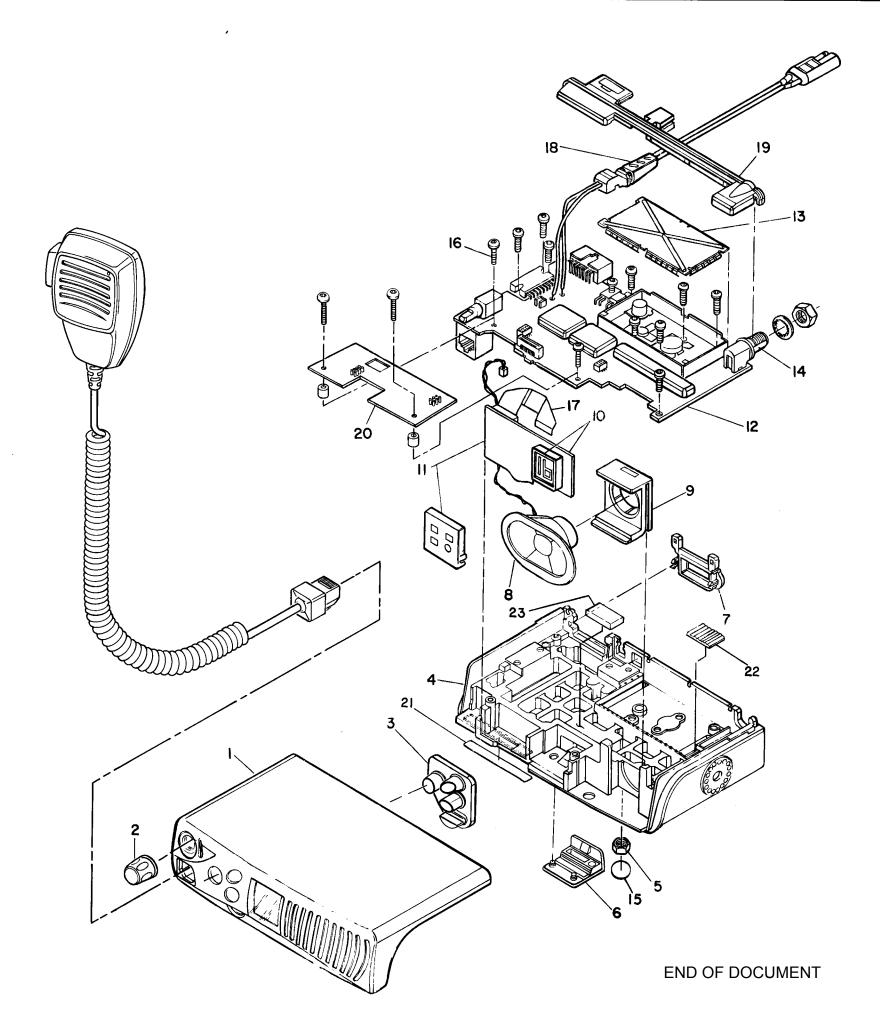
Parts List
HMN3174B Compact Microphone w/LED Indicator

PL-951005-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	0180669D01	Assembly, HOUSING, rear
2	03139959	SCREW, 5-20 x 5/8; 3 used
3	0580149R01	GROMMET, microphone
4	1580443E01	HOUSING, front
5	3280565B01	GASKET, microphone
6	3580132R02	BAFFLE, leit
7	3880654D01	BUTTON, PTT
8	4180658D01	SPRING, PTT
9	7580983Z01	RUBBER SPACER, switch



Exploded Mechanical View and Parts List for HMN3174B Compact Microphone



Parts List
SM Series Exploded View, Mechanical

PL-951001-A

REFERENCE	MOTOROLA	TOPOL A
SYMBOL	PART NO.	DESCRIPTION
1	1504606J01	HOUSING, cover assembly, SM50
	1504606J02	HOUSING, cover assembly, SM120
2	3604414J02	KNOB, volume control
3	7504436J03	KEYPAD, SM50
	7504436J02	KEYPAD, SM120
4	2680424U01	HEATSINK
5	0200007003	NUT, 8-32 x 5/16 x 1/8 hex, UHF
6	3204502J02	GASKET, release latch
7	1504501J01	SHROUD, spacer, snap-on
8	5004410J01	SPEAKER, w/wire assembly
9	3204411J01	GASKET, speaker retaining
10	PMLN4023	ASSY, front panel display, SM120
11	PMLN4022	ASSY, front panel display, SM50
12		Main Board
13	2604420J01	SHIELD, PA frame cover
14	0980627E01	CONNECTOR, Mini-U antenna
15	3880603U01	PLUG BUTTON, VHF 10-25 W
16	0310943J11	SCREW, 3mm x 10; 12 used
17	2804431J01	CABLE, folded; 10 position
18	3004510J01	CABLE, power w/strain relief
19	3204412J02	GASKET, rear
20		Option Board
21	5404605J01	LABEL, warning
22	3204416J01	GASKET, thermal conductive pad
23	7504682J01	PAD, pullout VCO
	non-refe	renced items
	4280654E01	CLIP, PA

SM Series Radio Exploded Mechanical View and Parts List