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Radio Tuning Procedure

General

An IBM PC (personal computer) and RSS (Radio Service Software) are required to align the radio. Refer to the applicable RSS Manual for installation and setup procedures for the software.

To perform the alignment procedures, the radio must be connected to the PC, RIB (Radio Interface Box), and Test Set as shown in Figure 7-1.

All SERVICE screens read and program the radio codeplug directly; you do NOT have to use the RSS GET/SAVE functions to program new tuning values.

CAUTION

Do NOT switch radios in the middle of any SERVICE procedure. Always use the EXIT key to return to the MAIN menu screen before disconnecting the radio. Improper exits from the SERVICE screens may leave the radio in an improperly configured state and result in seriously degraded radio or system performance.

The SERVICE screens use the concept of the “Softpot”, an analog SOFTWARE controlled POTentiometer used for adjusting all transceiver alignment controls.

Each SERVICE screen provides the capability to increase or decrease the ‘softpot’ value with the

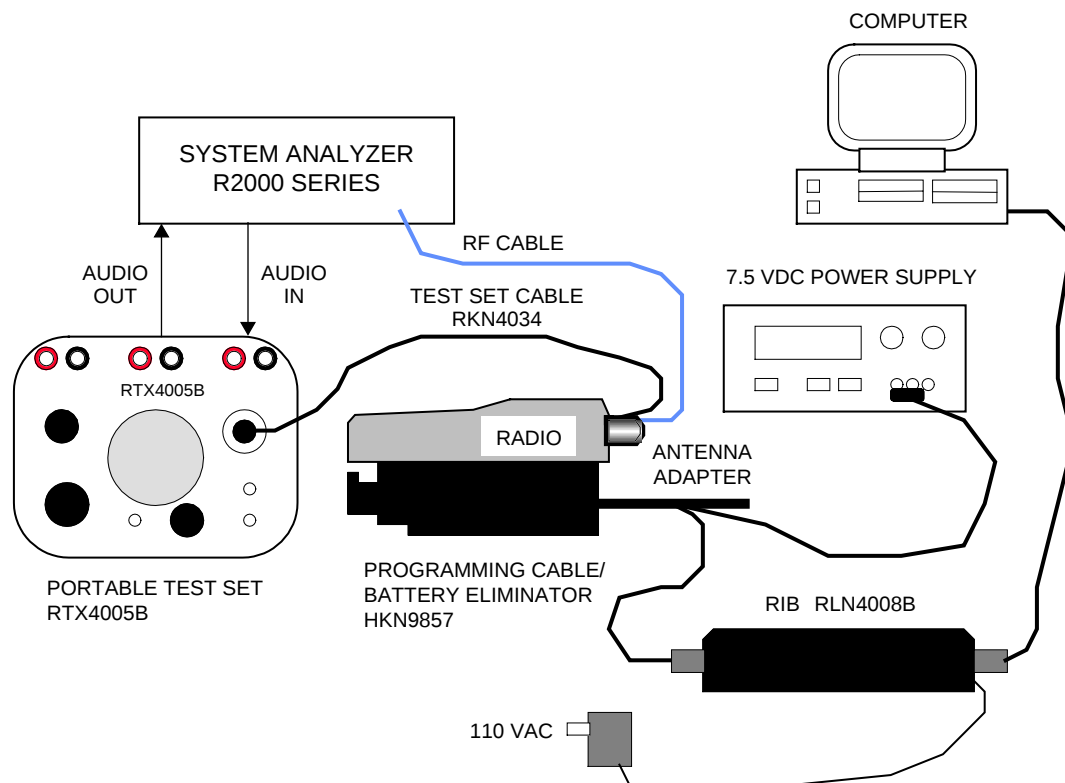


Figure 7-1. Radio Alignment Test Setup

keyboard UP/DOWN arrow keys respectively. A graphical scale is displayed indicating the minimum, maximum, and proposed value of the softpot, as shown in Figure 3.

Tuning Procedure

NOTE
Perform the following procedures in the sequence indicated.

Reference Oscillator Alignment

Adjustment of the reference oscillator is critical for proper radio operation. Improper adjustment will not only result in poor operation, but also a misaligned radio that will interfere with other users operating on adjacent channels. For this reason, the reference

oscillator should be checked every time the radio is serviced. The frequency counter used for this procedure must have a stability of 0.1 ppm (or better).

1. From the SERVICE menu, press F2 to select ALIGNMENT: TRANSMITTER & RECEIVER.
2. Press F5 to select the REFERENCE OSCILLATOR softpot.
3. Press F6 to key the radio. The screen will indicate that the radio is transmitting.
4. Measure the transmit frequency on your frequency counter.
5. Use the UP/DOWN arrow keys to adjust the reference oscillator.

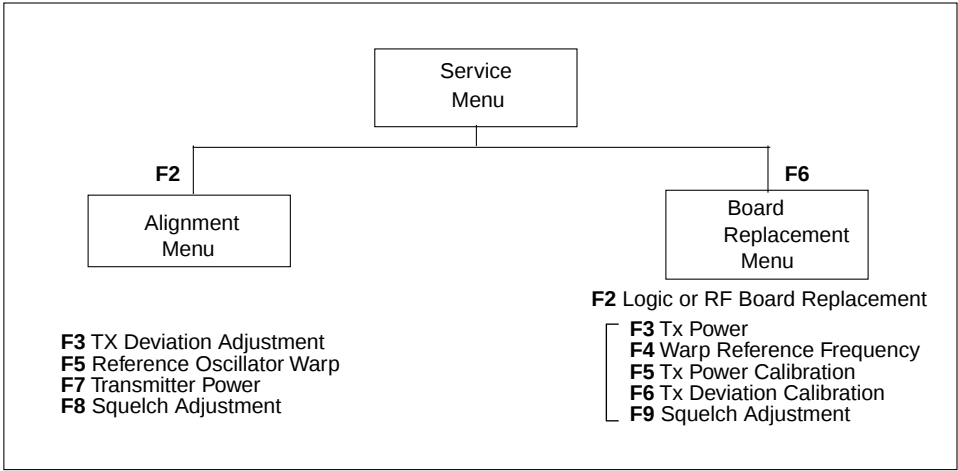


Figure 7-2. Service Menu Structure

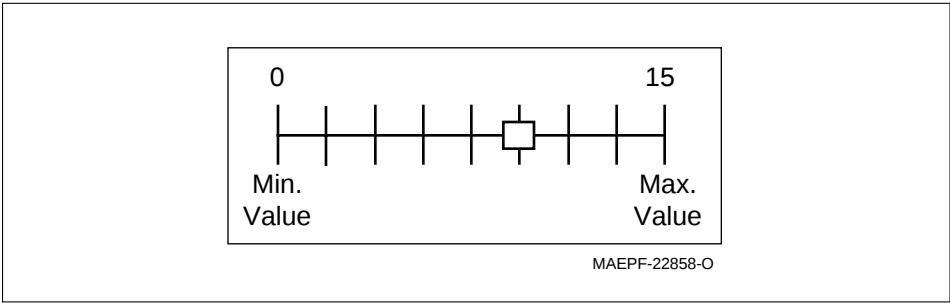


Figure 7-3. Softpot Concept

6. Press F6 again to dekey the radio and then press F8 to program the softpot value.
7. Press F10, F10 to return to the SERVICE menu.

Squelch

The squelch softpots set the signal to noise ratio at which the squelch opens.

1. From the SERVICE menu, press F2 to select ALIGNMENT: TRANSMITTER & RECEIVER.
2. Press F8 to select SQUELCH Adjustment.
3. Adjust the UP/DOWN arrow key to the minimum squelch value.
4. Set the RF test generator to the test frequency plus +500 Hz offset.
5. Adjust the UP/DOWN arrow key until the squelch just closes.
6. Monitor for squelch chatter; if chatter is present, continue to adjust the UP/DOWN arrow. Wait a few seconds and repeat step 7.
7. When no chatter is detected, press F8 to program this value. Press "ENTER" to select next softpot adjustment.
8. Press F10, F10 to return to the Service menu.

Transmitter Power

1. From the SERVICE menu, press F2 to select ALIGNMENT: TRANSMITTER & RECEIVER.
2. Press F7 to select the Tx POWER calibration softpot. The screen will indicate the transmit test frequencies to be used.
3. Press F6 to key the radio, and use the UP/DOWN arrow keys to adjust the transmit power value. Press F6 to dekey the radio. Press ENTER to select next softpot frequency.
4. Press F8 to program the value.
5. Press F10, F10 to return to the SERVICE menu.

Transmit Deviation Balance (Compensation) & Deviation Limit

Compensation alignment balances the modulation sensitivity of the VCO and reference modulation (synthesizer low frequency port) lines. Compensation algorithm is critical to the operation of signaling schemes that have very low frequency components (e.g. DPL) and could result in distorted waveforms if improperly adjusted.

1. From the SERVICE menu, press F2 to select ALIGNMENT: TRANSMITTER & RECEIVER.
2. Press F3 to select the transmit deviation balance and deviation limit softpot. The screen will indicate the transmit test frequencies to be used.
3. Begin with the lowest test frequency shown on the screen.
4. Press F4 to select 60 Hz.
5. Press F6 to key the radio. Record this measurement.
6. Press F6 again to dekey the radio, and press F4 to select 2.5 kHz.
7. Press F6 to key the radio, then use the UP/DOWN arrow keys to adjust the deviation until the value in step 5 and the value in step 6 are equal.
8. Press F6 to dekey the radio. Press ENTER to move to next softpot value.
9. Press F8 to program the softpot value.

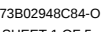
Transmit Deviation Limit

The transmit deviation limit softpot sets the maximum deviation of the carrier. Tuning is performed for 25 kHz channel spacing.

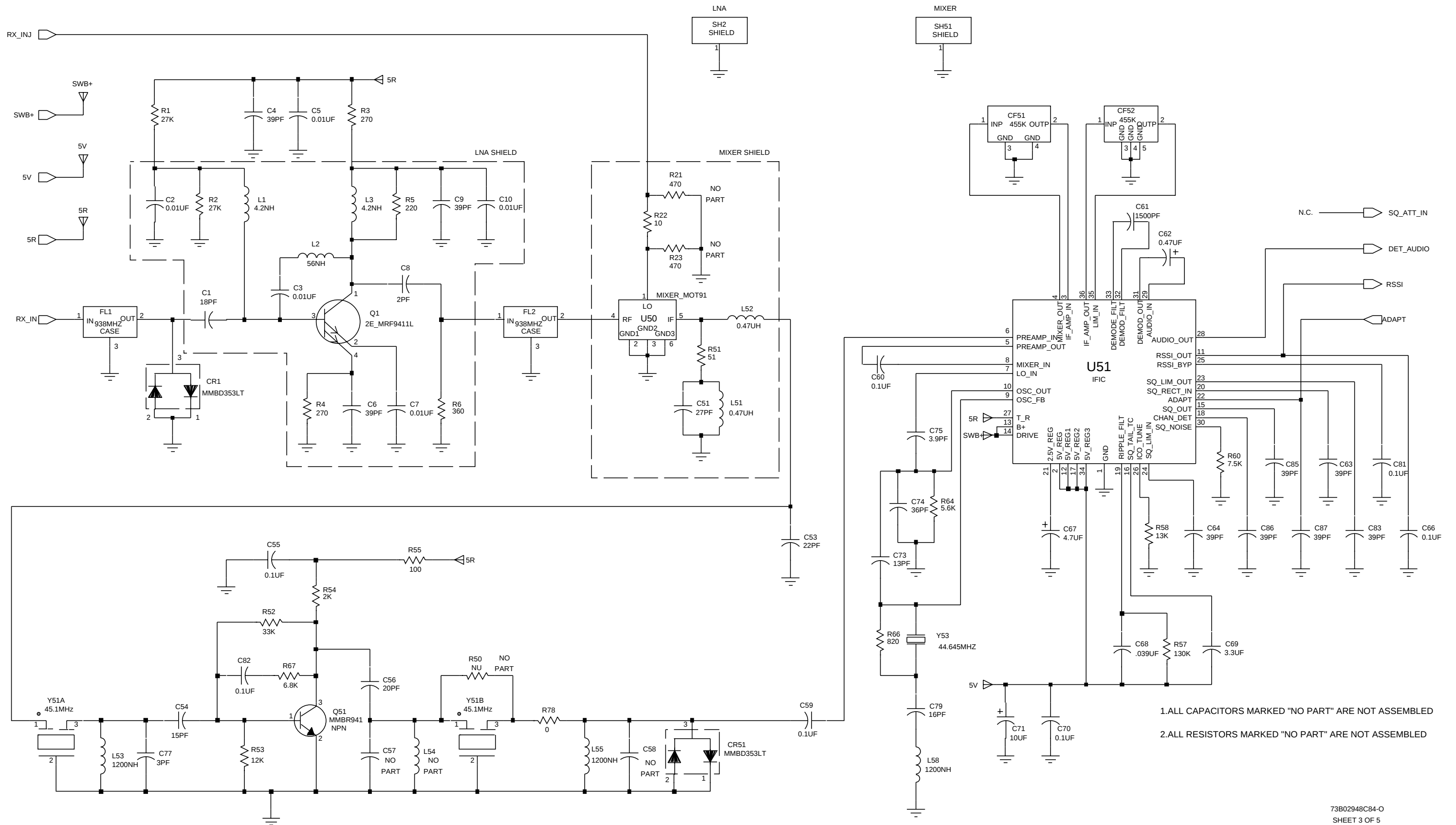
1. Press F10 to select the DEVIATION LIMIT ADJUSTMENT softpot. The screen will indicate the transmit test frequencies to be used.
2. Begin with the lowest test frequency shown on the screen.
3. With Test Box 4460A: inject a 1 kHz tone, 2000 mVrms.
4. Press F6 to key the radio, and use the UP/DOWN arrow keys to adjust the deviation between 2.1 kHz and 2.4 kHz for 900 MHz.
5. Press F6 to dekey the radio. Press ENTER to move to the next softpot value.
6. Press F8 to program the softpot value.
7. Press F10, F10 to return to the SERVICE menu.

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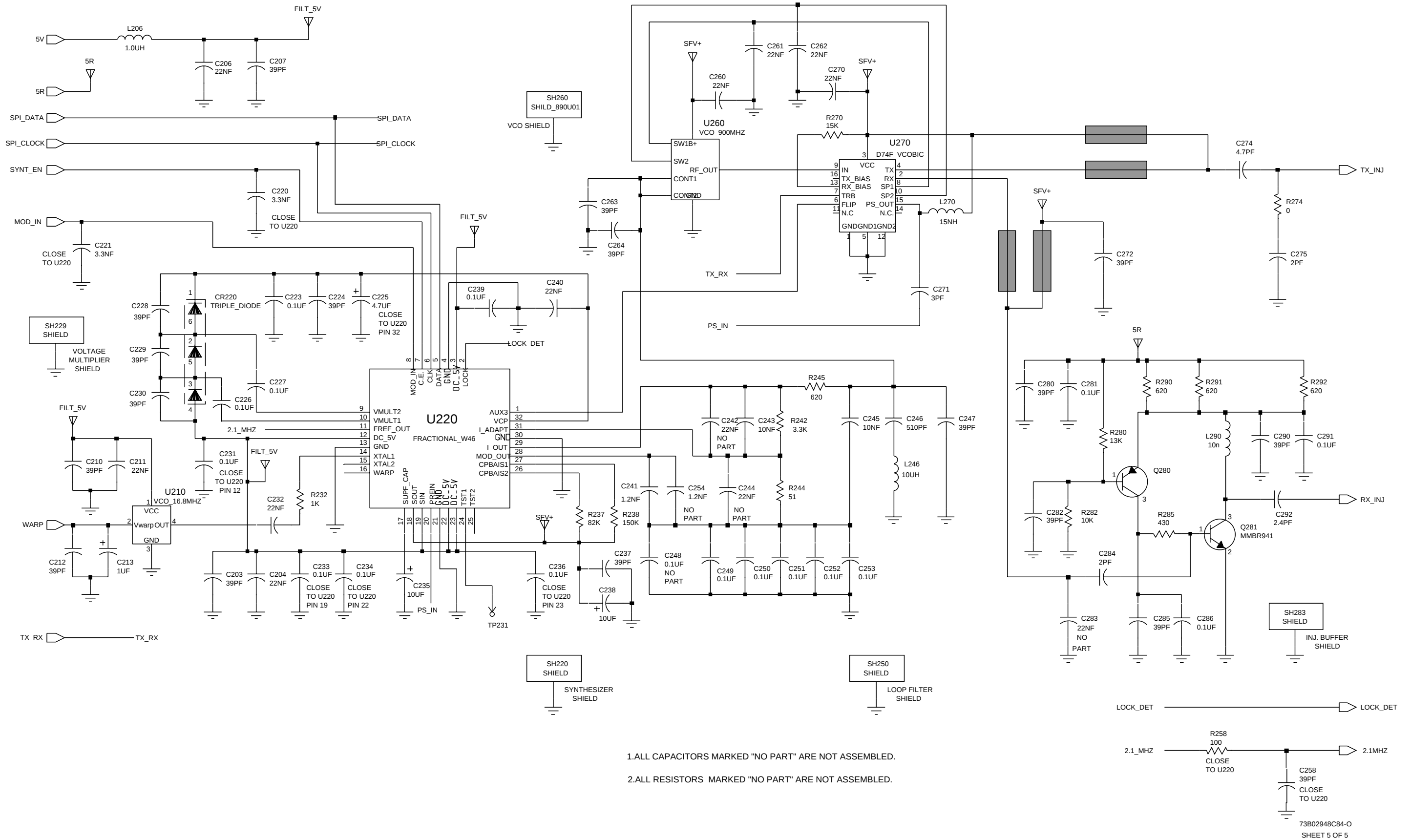
SCHEMATIC DIAGRAMS, CIRCUIT BOARD DETAILS, & PARTS LISTS



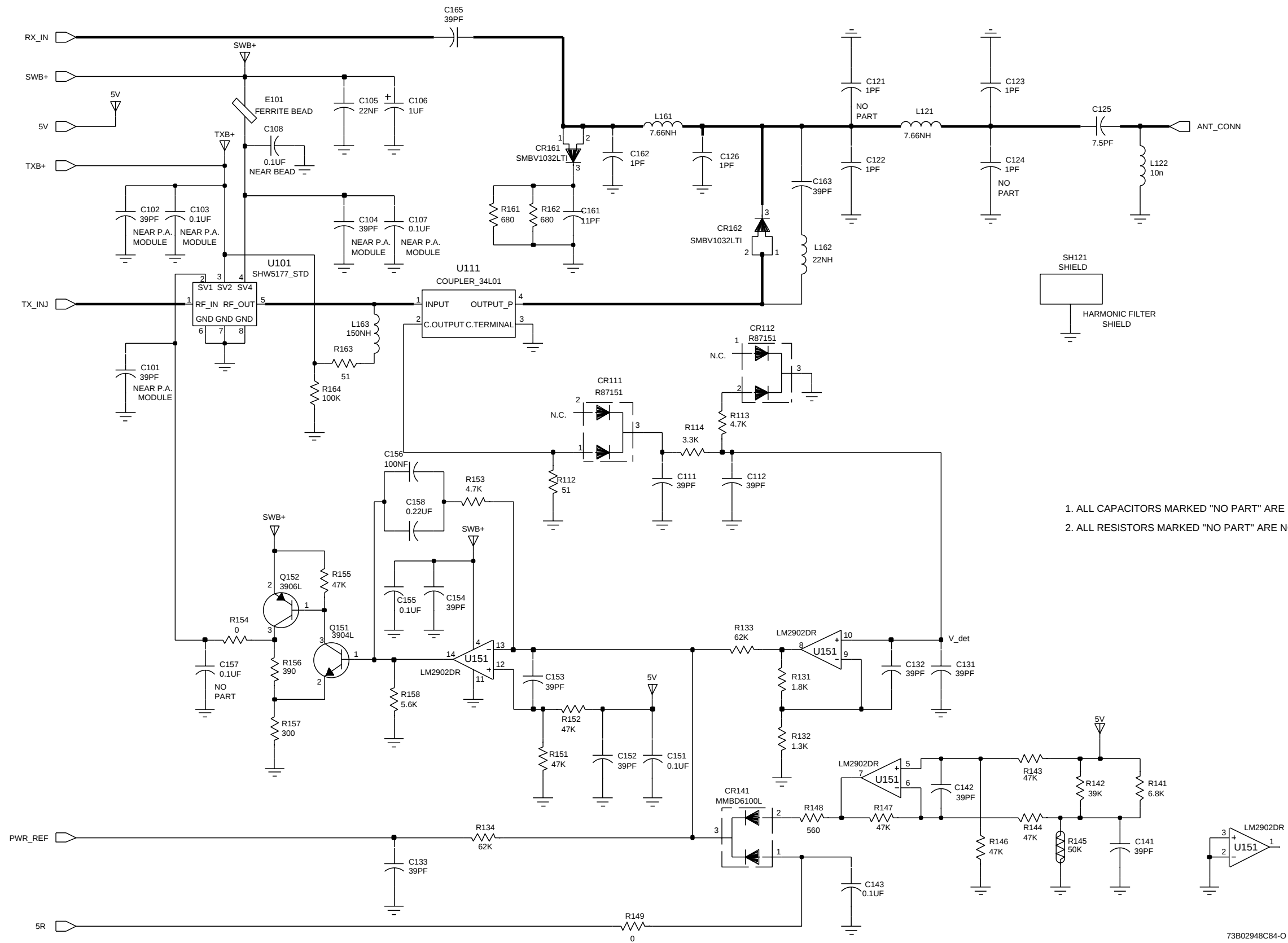
2 68P02948C90-O February 1997



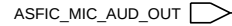
Schematic Diagram for FUF5690A/RF Board Receiver Module



Schematic Diagram for FUF5690A RF Board, Synthesizer Module



**Schematic Diagram for FUF 5690A RF Board,
Transmitter Module**



6

FUF5690A RF Board

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitors: pF, $\pm 5\%$ 50V, unless otherwise specified
C1	2103689A08	18
C2-3	2113741F49	0.01 μ F
C4	2113740F41	39
C5	2113741F49	0.01 μ F
C6	2113740F41	39
C7	2113741F49	0.01 μ F
C8	2113740F10	2
C9	2113740F41	39
C10	2113741F49	0.01 μ F
C51	2113740F37	27
C53	2113740F35	22
C54	2113740F31	15
C55	2113743K15	0.1 μ F
C56	2113740F34	20
C59-60	2113743K15	0.1 μ F
C61	2113741F29	1500
C62	2311049A05	0.47 μ F
C63-64	2113740F41	39
C66	2113743K15	0.1 μ F
C67	2311049J11	4.7 μ F
C68	2113743K05	0.039 μ F
C69	2311049A11	3.3 μ F
C70	2113743K15	0.1 μ F
C71	2311049A63	10 μ F
C73	2113740F30	13
C74	2113740F40	36
C75	2113740F17	3.9
C77	2113740F14	3
C79	2113740F32	16
C81-82	2113743K15	0.1 μ F
C83	2113740F41	39
C85-87	2113740F41	39
C101-102	2113740F41	39
C103	2113743K15	0.1 μ F
C104	2113740F41	39
C105	2113743E07	22 nF
C106	2311049A07	1 μ F
C107-108	2113743K15	0.1 μ F
C111-112	2113740F41	39
C122-123	2103689A15	1
C125	2113740F24	7.5
C126	2110368A15	1
C131-133	2113740F41	39
C141-142	2113740F41	39
C143	2113743K15	0.1 μ F
C151	2113743K15	0.1 μ F
C152-154	2113740F41	39
C155	2113743K15	0.1 μ F
C156	2113743E20	100 nF
C158	2113743A23	0.220 μ F
C161	2113740F28	11
C162	2103689A15	1

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C163	2113740F41	39
C165	2113740F41	39
C203	2113740F41	39
C204	2113743E07	22 nF
C206	2113743E07	22 nF
C207	2113740F41	39
C210	2113740F41	39
C211	2113743E07	22 nF
C212	2113740F41	39
C213	2311049A07	1 μF
C220-221	2113741F37	3.3 nF
C223	2113743K15	0.1 μF
C224	2113740F41	39
C225	2311049J12	4.7 μF
C226-227	2113743K15	0.1 μF
C228-230	2113740F41	39
C231	2113743K15	0.1 μF
C232	2113743E07	22 nF
C233-234	2113743K15	0.1 μF
C235	2311049A63	10 μF
C236	2113743K15	0.1 μF
C237	2113740F41	39
C238	2311049A63	10 μF
C239	2113743K15	0.1 μF
C240	2113743E07	22 nF
C241	2105248W01	1 nF
C243	2109720D01	0.1 μF
C245	2109720D01	0.1 μF
C246	2113741F18	510
C247	2113740F41	39
C249-253	2109720D14	0.1 μF
C258	2113740F41	39
C260-262	2113743E07	22 nF
C263-264	2113740F41	39
C270	2113743E07	22 nF
C271	2113740F14	3
C272	2113740F41	39
C274	2113740F19	4.7
C275	2113740F10	2.0
C280	2113740F41	39
C281	2113743K15	0.1 μF
C282	2113740F41	39
C284	2113740F10	2.0
C285	2113740F41	39
C286	2113743K15	0.1 μF
C290	2113740F41	39
C291	2113743K15	0.1 μF
C292	2113740F12	2.4
C401-402	2113740F41	39
C408-409	2113740F41	39
C418	2311049C09	10 μF
C419	2113743E05	18 nF
C421	2311049A05	0.47 μF
C424	2113740F59	220
C425	2113743E12	47 nF
C426-427	2113743E05	18 nF
C428	2113740F41	39
C429	2113741F41	4700
C430	2113740F41	39
C436	2113740F41	39

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C437	2311049A05	0.47 μ F
C438	2311049J11	4.7 μ F
C439	2113741F49	0.01 μ F
C441	2113743K15	0.1 μ F
C442-443	2113741F25	1000
C444	2113740F41	39
C445	2113741F49	0.01 μ F
C446	2113740F41	39
C449	2113740F41	39
C451	2113740F41	39
C452	2311049J11	4.7 μ F
C453	2113740F41	39
C454	2113741F49	0.01 μ F
C455	2113740F41	39
C456	2113741F49	0.01 μ F
C457	2113740F41	39
C460	2113740F41	39
C461	2113743K15	0.1 μ F
C464-465	2113743K15	0.1 μ F
C466-468	2113740F41	39
C469	2113743E12	47 nF
C470	2113741F17	470
C471	2113740F43	47
C472-475	2113740F41	39
C476	2113741F49	0.01 μ F
C477	2113740F41	39
C478	2113741F49	0.01 μ F
C479	2113740F41	39
C480	2113740F57	180
C481	2113740F41	39
C500	2113743A23	0.22 μ F
C550	2113743A19	0.1 μ F
C551-552	2113741F17	470
C553	2311049A04	0.33 μ F
C554	2113741F49	0.01 μ F
C555-556	2311049A42	6
C557	2113741F49	0.01 μ F
C558	2311049A04	0.33 μ F
C560-561	2113743K15	0.1 μ F
C562	2113743A19	0.1 μ F
C563-564	2113741A33	3.3 nF
C565	2113743K15	0.1 μ F
C567	2113741A33	3.3 nF
C574	2113741A33	0.01 μ F
diodes: (see note)		
CR1	4880154K03	353L
CR51	4880154K03	353L
CR111-112	4805218N57	Schottky R87151
CR141	4813833C02	MMBD6100L
CR161-162	4805129M96	SMBV1032LTl
CR220	4802233J09	triple diode
CR405	4880107R01	BYD17D
filters, ceramic:		
CF51	9180453B04	filter, 455 KHz
CF52	9180454B04	filter, 455 KHz

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
LEDs:		
DS401	4805729G49	LED Red/Yel
ferrite bead:		
E101	2484657R01	ferrite bead
filters:		
FL1-2	9102603S25	938
connectors, receptacle:		
J3	0180417C01	External microphone/speaker jack
J5	0180159R03	Speaker/mic header
J6	0180965Z01	connector, B+
J200	0904358J02	edge
coils:		
L1	2460591A01	4.2 nH
L2	2462587T12	56 nH
L3	2460591A01	4.22 nH
L51, L52	2483411T69	0.47 μH
L53	2462587M19	1200 nH
L55	2483411T74	1.2 μH
L58	2483411T74	1.2 μH
L121	2460591A11	7.66 nH
L122	2413926E11	10.0 nH
L161	2460591A11	7.66 nH
L162	2462587V26	22 nH
L163	2462587V36	150 nH
L206	2462587T30	1.0 μH
L246	2462587P24	10 μH
L270	2462587V24	15 nH
L290	2413926E11	10.0 nH
L404-407	2462587T17	150 nH
L420	2462587T17	150 nH
L460	2462587T17	150 nH
pushbutton switches:		
PB1-PB3	4080485C05	pushbutton switch
transistors: (see note 1)		
Q1	4813827A18	NPN, 2E_MRF9411L
Q51	4813827A07	NPN, MMB7941
Q151	4813824A10	NPN, 3904L
Q152	4813824A17	PNP, 3906L
Q280	4813824A17	PNP, 3906L
Q281	4813827A07	NPN, MMBR941
Q400	4880141L03	PNP, BCW68GLT1
Q401	4813824A10	NPN, 3904L
Q405	4813824A17	PNP, 3906L
Q408	4813824A17	PNP, 3906L
Q410	4880141L03	PNP, BCW68GLT1
Q411	4813824A06	NPN, Darlington BTA13
Q412	4813824A17	PNP, 3906L
Q413	4882033T01	NPN DTC 144YK

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REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		resistors: Ω, 5%, 1/16 W unless otherwise stated
R1	0662057A83	27K
R2	0662057A83	27K
R3	0662057A35	270
R4	0662057A35	270
R5	0662057A33	220
R6	0662057A38	360
R21	0662057A41	470
R22	0662057A01	10
R23	0662057A41	470
R51	0662057A18	51
R52	0662057A85	33K
R53	0662057A75	12K
R54	0662057A56	2K
R55	0662057A25	100
R57	0662057B01	130K
R58	0662057A76	13K
R60	0662057A70	7.5K
R64	0662057A67	5.6K
R66	0662057A47	820
R67	0662057A69	6.8K
R78	0662057B47	0
R112	0662057A18	51
R113	0662057A65	4.7K
R114	0662057A61	3.3K
R131	0662057A55	1.8K
R132	0662057A52	1.3K
R133	0662057A92	62K
R134	0662057A92	62K
R141	0662057A69	6.8K
R142	0662057A87	39K
R143	0662057A89	47K
R144	0662057A89	47K
R145	0605621T02	thermistor, 50K
R146	0662057A89	47K
R147	0662057A89	47K
R148	0662057A43	560
R149	0662057B47	0
R151-152	0662057A89	47K
R153	0662057A65	4.7K
R154	0662057B47	0
R155	0662057A89	47K
R156	0662057A39	390
R157	0662057A36	300
R158	0662057A67	5.6K
R161-162	0662057A45	680
R163	0662057A18	51
R164	0662057A97	100K
R232	0662057A49	1K
R237	0662057A95	82K
R238	0662057B02	150K
R242	0662057A61	3.3K
R244	0662057A18	51
R245	0662057A44	620
R258	0662057A25	100
R270	0662057A77	15K
R274	0662057B47	0
R280	0662057A76	13K
R282	0662057A73	10K

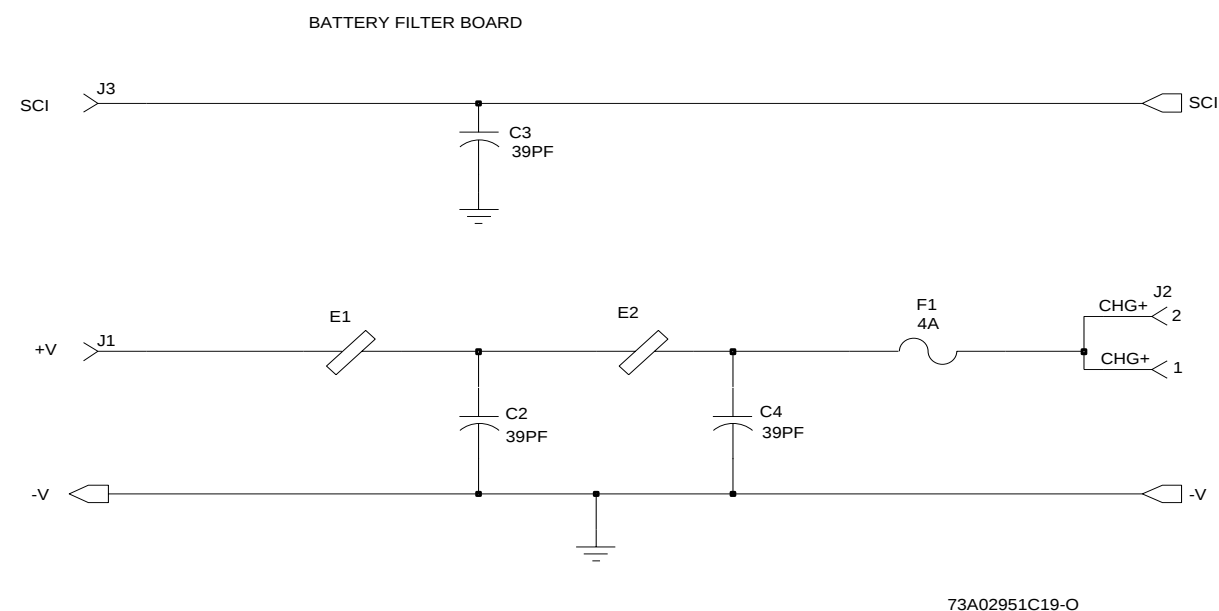
Parts List for FUF5690A RF Board (Cont)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R285	0662057A40	430
R290-292	0662057A44	620
R400	0662057A45	680
R401	0662057A27	120
R402	0662057B47	0
R404-407	0662057A73	10K
R408	0662057A80	20K
R409	0662057A88	43K
R410	0662057A80	20K
R411	0662057A88	43K
R412	0662057A52	1.3K
R413	0662057A39	390
R414-415	0662057B14	470K
R416	0662057A88	43K
R417	0662057A80	20K
R418	0662057A25	100
R419-420	0662057A73	10K
R421	0662057A81	22K
R422	0662057A52	1.3K
R423	0662057A39	390
R424	0662057B05	200K
R438	0662057A61	3.3K
R447	0662057A67	5.6K
R448	0662057A90	51K
R449	0662057A97	100K
R450	0662057A73	10K
R451	0662057A57	2.2K
R452	0662057B05	200K
R453	0662057A37	330
R454	0662057A56	2K
R460	1880143S03	potentiometer, 50.0K
R467	0662057A01	10
R486	0662057A65	4.7K
R487	0662057A55	1.8K
R488	0662057A49	1K
R489	0611077A12	2.7
R490	0611077A12	2.7
R491	0662057A99	120K
R492	0662057A97	100K
R494	0662057A97	100K
R496	0662057A37	330
R497	0662057A41	470
R550	0662057G13	100K
R551	0662057A81	22K
R552	0662057R92	47.5K
R553	0662057A53	1500
R554	0662057G13	100K
R555	0662057R30	1000
R556	0662057R60	10K
R557	0662057A97	100K
		shields:
SH2	2680456K01	LNA shield
SH51	2605417V01	mixer shield
SH121	2680471K01	harmonic filter shield
SH220	2680510K01	synthesizer shield
SH229	2605259V01	voltage multiplier shield
SH250	2680470K01	loop filter shield
SH260	2605890U01	VCO shield
SH283	2680456K01	RX injection buffer shield

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		switch:
SW401	4080650D01	rotary switch
		test points, contacts:
TP401	3980442K02	antenna ground
TP402	3980443K02	antenna contact
		integrated circuits: (see note 1)
U50	0108106L10	MIXER_MOT91
U51	5180207R01	IFIC
U101	5108038H16	Module PA for 900 MHz
U111	5880334L01	COUPLER 900 MHz
U151	5113819A02	LM2902DR
U210	5102845C11	VCO, 16.8 MHz
U220	5105457W46	SCW39129ZP
U260	5105279V01	VCO, 900MHZ
U270	5105662U76	D74F_VCOBIC
U400	5105226P38	D/A
U405	5113818A01	LM2904DR
U409	5180175R01	TDA7052
U410	5180159R01	POLARITY_IMX1
U420	5113816A23	LP2951ACDR2
U550	5105662U60	Hear Clear

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		Zener diodes: (see note 1)
VR436	4813830A23	MMBZ5240BL
VR460	4813830A18	MMBZ5235L
		crystals: (see note 2)
Y51A, Y51B	9180112R06	filter, 45.1 MHz (Set of 2)
Y53	4880008K02	crystal, 44.645 MHz
		non-referenced items:
Qty		
9	4280138R03	butterfly clip
1	1405160A02	crystal insulator
1	5404977P01	Label Board Serial Number
1	7505295B07	Pad XTAL base
1	4280429K01	PA clip

- Notes:**
- For optimum performance, diodes, transistors and integrated circuits must be ordered by MOTOROLA part numbers.
 - When ordering quartz crystal units or ceramic resonators, specify carrier frequency, crystal (or resonator) frequency, and crystal (or resonator) type number.

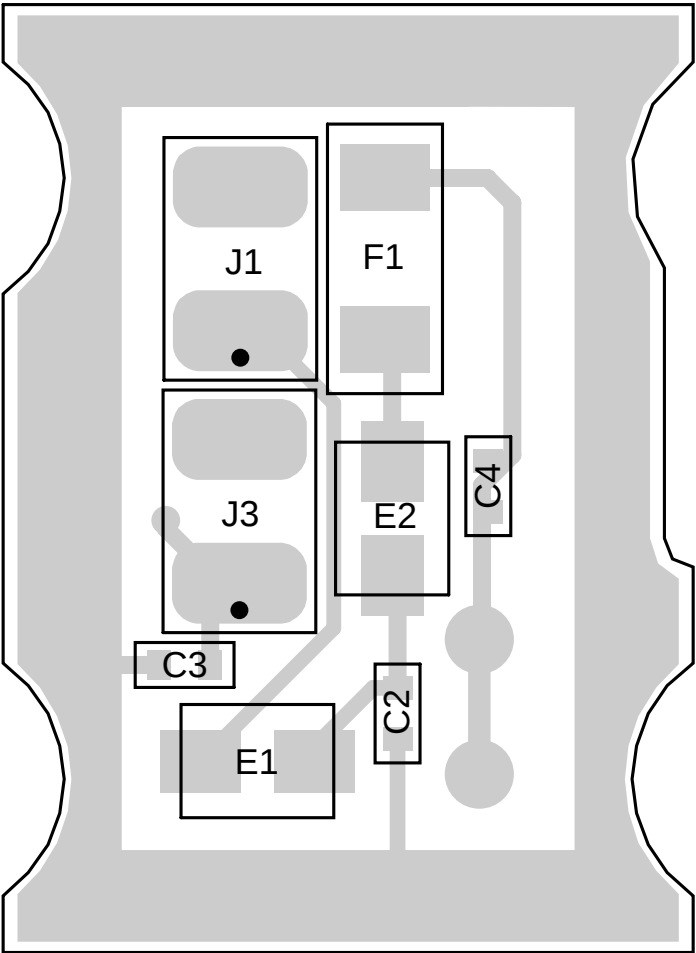


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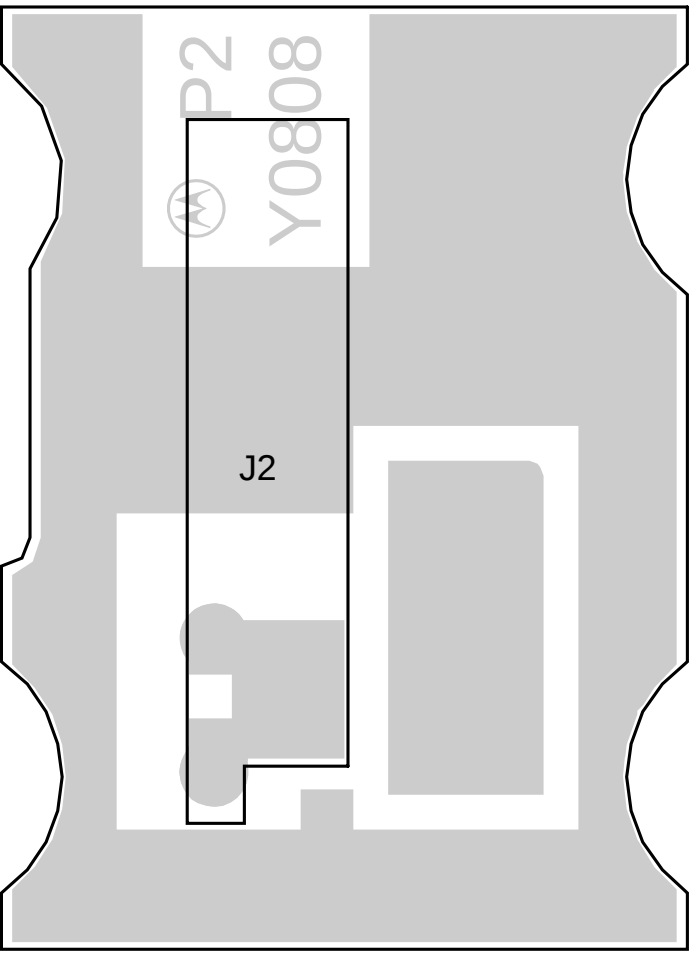
FLN8517A Battery Filter Board

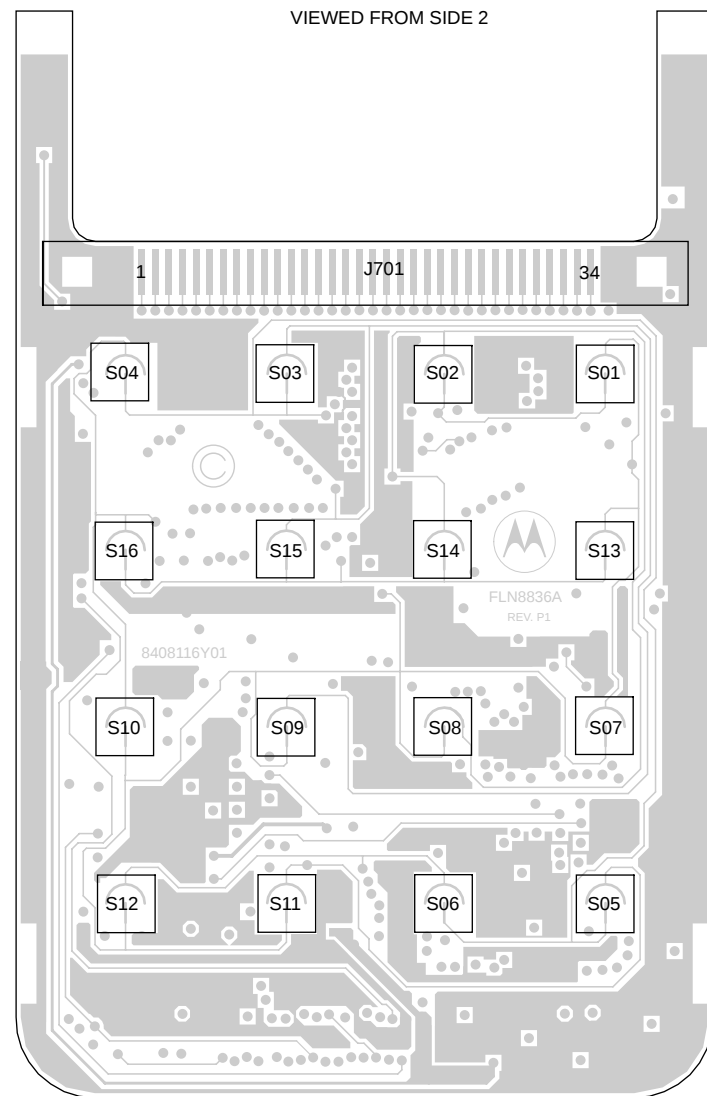
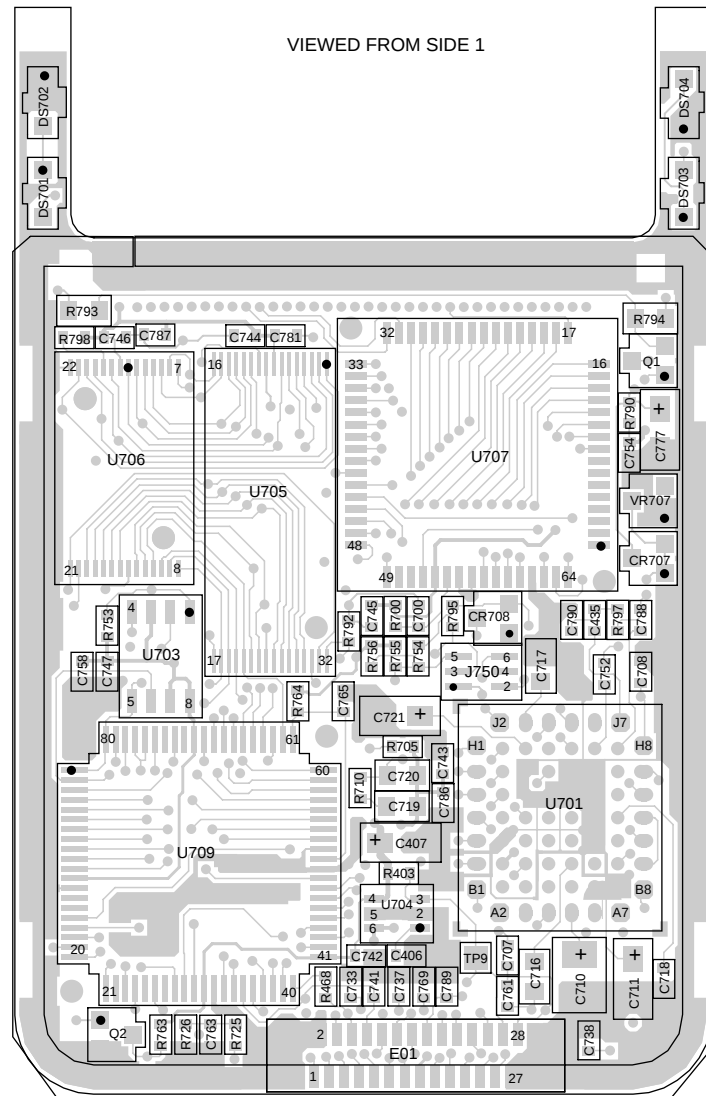
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
capacitors, fixed: pF, $\pm 5\%$ 50 V, unless otherwise specified		
C2-C4	2113740F41	39
coils, RF:		
L1, L2	2484657R01	ferrite bead
fuse:		
F1	6580561D01	fuse
non-referenced item:		
Qty		
1	3980165S02	contact, B+

VIEWED FROM SIDE 1



VIEWED FROM SIDE 2





parts list

FLN8836A Logic Board

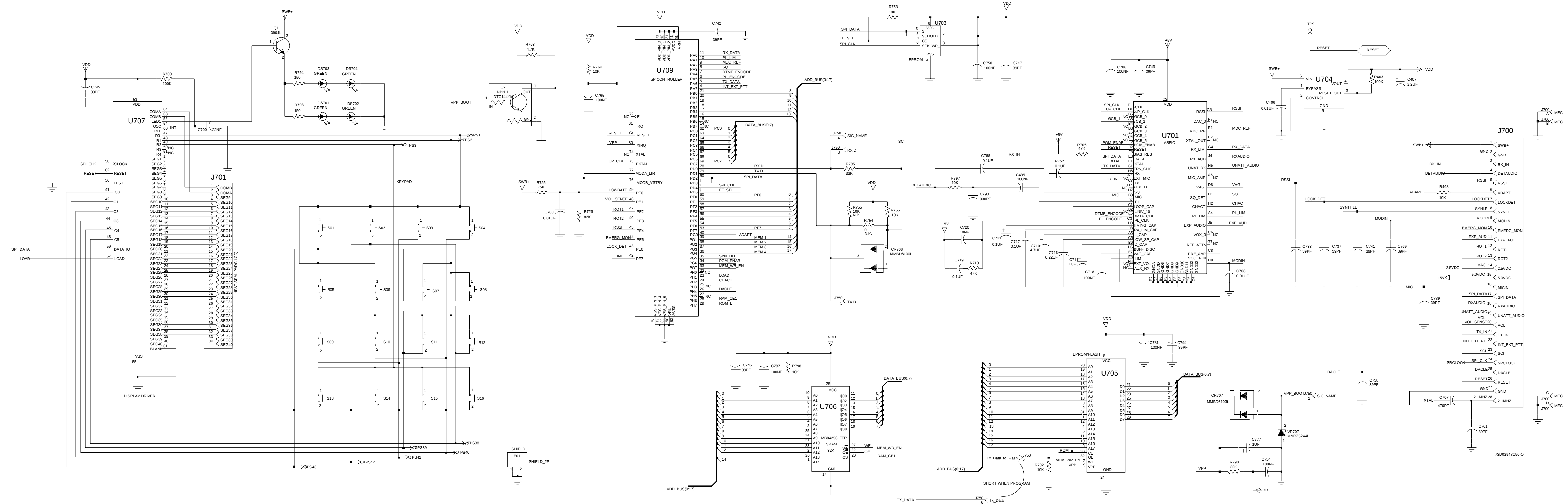
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
capacitors: $\pm 5\%$, 50 V unless otherwise stated		
C406	2113741F49	0.01 μ F
C407	2311049A40	2.2 μ F
C435	2113743E20	100 nF
C700	2113743E07	22 nF
C707	2113741F17	470 pF
C708	2113741F49	0.01 μ F
C710	2311049J11	4.7 μ F
C711	2311049A07	1 μ F
C716	2113743F08	0.22 μ F
C717	2113741A45	10 nF
C718	2113743E20	100 nF
C719	2113743F01	0.1 μ F
C720	2113741A45	10 nF
C721	2311049A01	0.1 μ F
C733	2113740F41	39 pF
C737	2113740F41	39 pF
C738	2113740F41	39 pF
C741-747	2113740F41	39 pF
C752	2113743K15	0.1 μ F
C754	2113743E20	100 nF
C758	2113743E20	100 nF
C761	2113740F41	39 pF
C763	2113741F49	0.01 μ F
C765	2113743E20	100 nF
C769	2113740F41	39 pF
C777	2311049A07	1 μ F
C781	2113743E20	100 nF
C786-787	2113743E20	100 nF
C788	2113743K15	0.1 μ F
C789	2113740F41	39 pF
C790	2113741F13	330 pF
diodes: (see note)		
CR707-708	4813833C02	MMBD6100L
LEDs:		
DS701-704	4805729G92	GREEN
shield:		
E01	2683423K03	423K03
connectors, receptacle:		
J700	0904658J02	edge
J750	0980332L01	edge
transistors: (see note 1)		
Q1	4813824A10	NPN, 3904L
Q2	4882033T01	NPN, 1_DTC144YK
resistors: Ω, 5%, 1/16 W unless otherwise stated		
R403	0662057A97	100K
R468	0662057A73	10K
R700	0662057A97	100K

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R705	0662057A89	47K
R710	0662057A89	47K
R725	0662057A94	75K
R726	0662057A95	82K
R753	0662057A73	10K
R756	0662057A73	10K
R763	0662057A65	4.7K
R764	0662057A73	10K
R790	0662057A81	22K
R792	0662057A73	10K
R793	0662057C55	150
R794	0662057C55	150
R795	0662057A85	33K
R797-798	0662057A73	10K
integrated circuits: (see note 1)		
U701	5105835U45	ASFIC_F83-1
U703	5108444S49	X25320
U704	5180633C01	TK11950
U705	5105662U54	Hybrid 32K x 8 SRAM
U706	5108444S41	SRAM 32Kx8
U707	5102463J21	MSM6606
U709	5102463J20	MC68HC11K1
Zener diodes: (see note 1)		
VR707	4813830A27	MMBZ5244L

Notes:

1. For optimum performance, diodes, transistors and integrated circuits must be ordered by MOTOROLA part numbers.

2. When ordering quartz crystal units or ceramic resonators, specify carrier frequency, crystal (or resonator) frequency, and crystal (or resonator) type number.



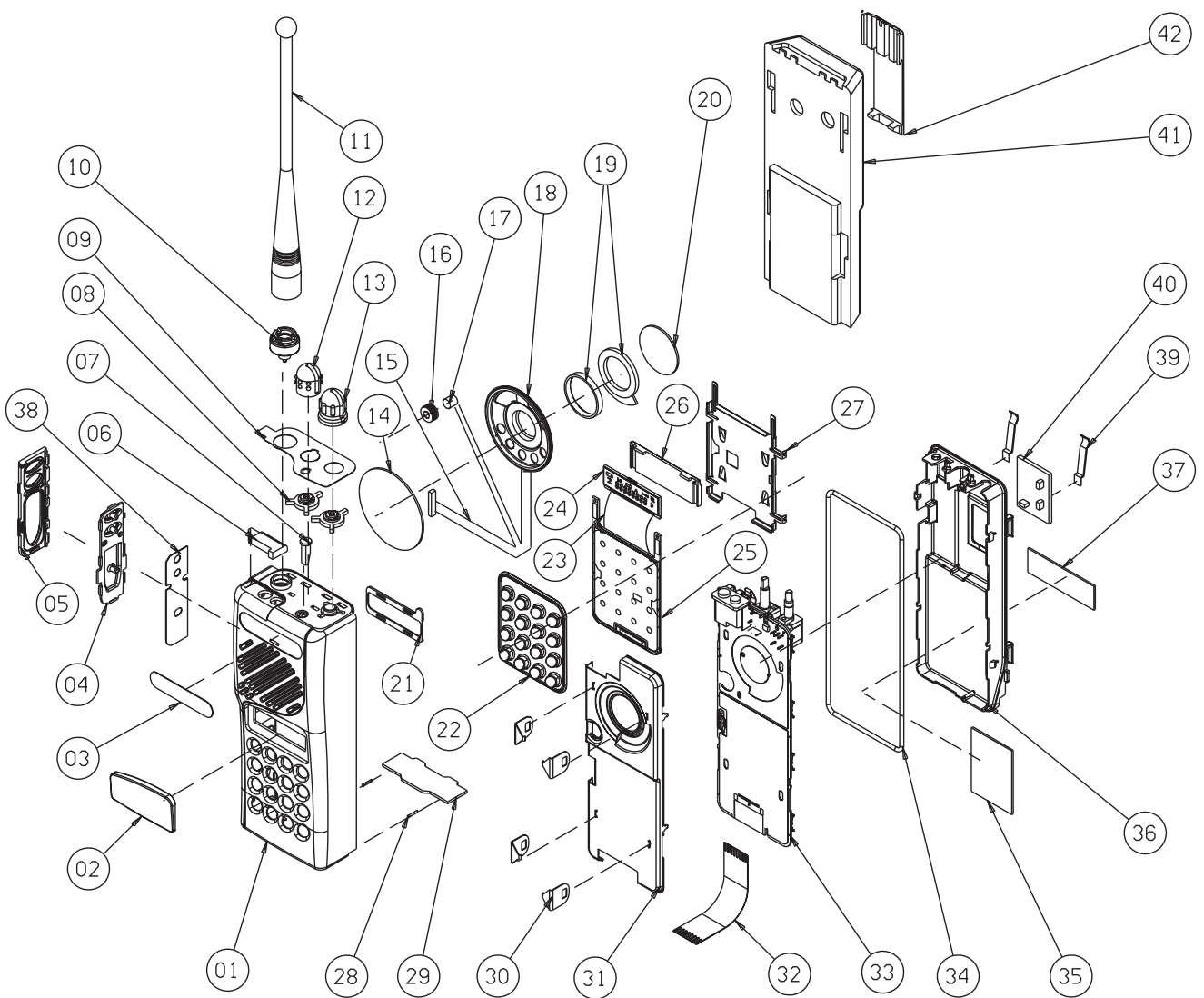
Schematic Diagram
for FLN8836A Logic Board

GTX/GTX LTR Mechanical Parts List

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	1580421K01	front housing
2	-----	LCD cover, part of 1580421K01 (cannot be ordered separately)
3	3380425K01	name plate
4	3286074C01	PTT keypad
5	1380159S01	PTT bezel
6	3880428C01	dust cap
7	6180687Y01	light pipe
8	3280960Y01	seal, 2 used
9	1386080C01	escutcheon
10	5880376L01	antenna adapter
11	8505241U03	antenna whip
12	3680448K01	frequency knob
13	3680447K01	volume knob
14	3580998Z04	speaker felt
15	3080560D01	speaker/mic cable
16	1480577C01	microphone boot
17	5013920A03	microphone
18	5005589U05	speaker
19	7580506C02	speaker pad
20	3980546B02	front-shield ground contact
21	7580685K01	pad
22	7580427K01	keypad
23*	-----	heat-sealed flexible cable
24*	-----	LCD, 7 segments, 8 characters, 8 annunciators
25	FLN8514A	logic board, assembled
26	6180687K01	light pipe
27	2680402K01	logic board shield
28	4105944K01	battery latch spring, 2 used
29	5580438B01	latch
30	4280190R04	shield clip, 4 used
31	2680532C01	front shield
32	8408051Y01	RF-to-Logic flexible circuit
33	FUF5690A	RF board, assembled
34	3286063C01	O-ring gasket
35	1480610B01	chassis insulator
36	2780549B01	chassis
37	5480673K02	FCC label
38	3286074C01	Pad PTT
39	3980188R01	contact, B+/B-
40	FLN8517A	battery filter board, assembled
41	HNN9628	battery
42	HLN9724/ HLN8255	standard belt clip

* Not field repairable

GTX/GTX LTR Mechanical Parts List

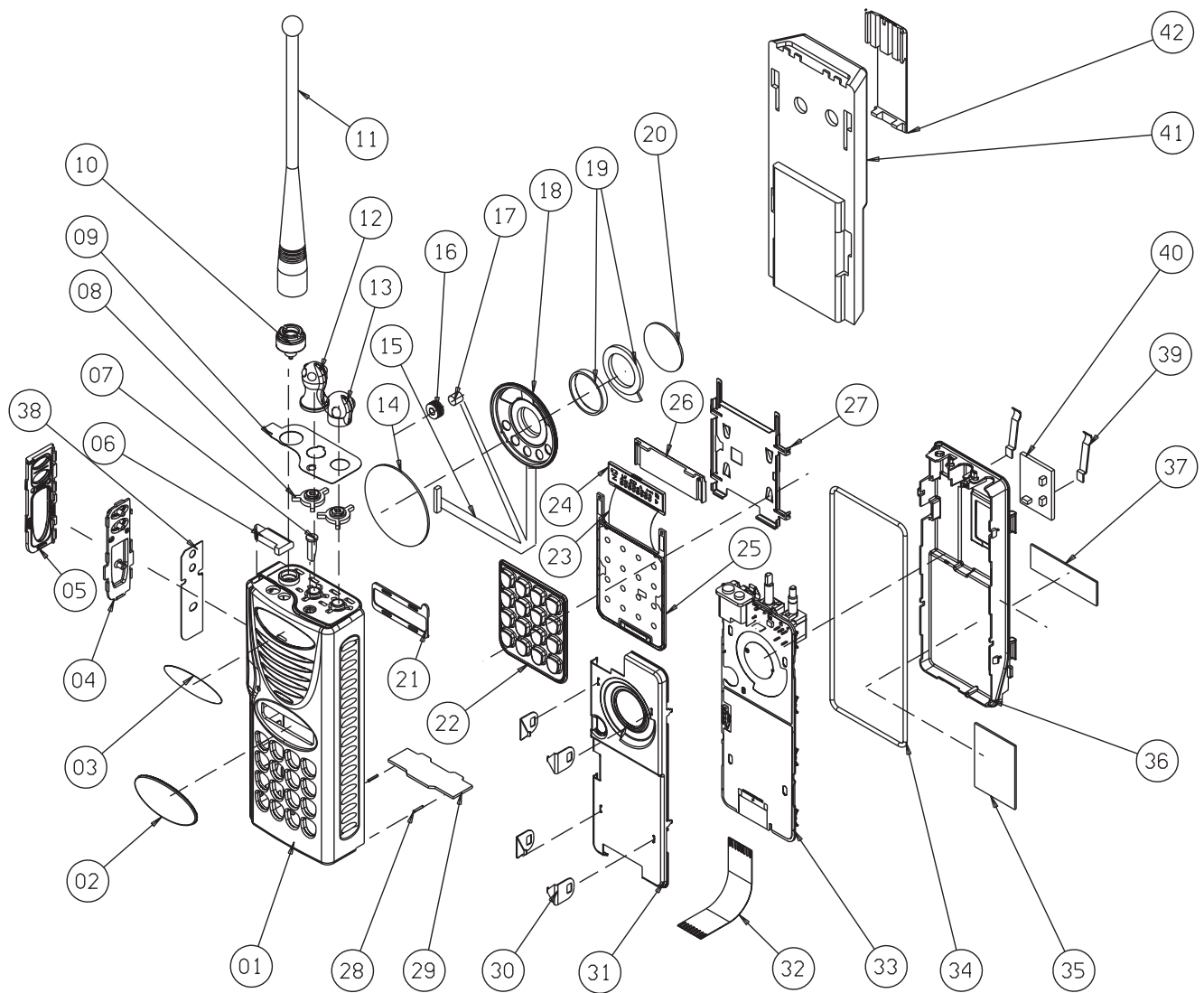


GTX/GTX LTR Exploded View

LTS 2000 Mechanical Parts List

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	1580422K01	front housing
2	-----	LCD cover, part of 1580422K01 (cannot be ordered separately)
3	3380455K01	name plate
4	7580430K01	PTT keypad
5	1380431K01	PTT bezel
6	3880428C01	dust cap
7	6180687K01	light pipe
8	3280960Y01	seal, 2 used
9	1380463K01	escutcheon
10	5880376L01	antenna adapter
11	8505241U03	antenna whip
12	3680433K01	frequency knob
13	3680432K01	volume knob
14	3580998Z04	speaker felt
15	3080560D01	speaker/mic cable
16	1480577C01	microphone boot
17	5013920A03	microphone
18	5005589U05	speaker
19	7580506C02	speaker pad
20	3980546B02	front-shield ground contact
21	7580685K01	pad
22	7580428K01	keypad
23*	-----	heat-sealed flexible cable
24*	-----	LCD, 7 segments, 8 characters, 8 annunciators
25	FLN8514A	logic board, assembled
26	6180687K01	light pipe
27	2680402K01	logic board shield
28	4105944K01	battery latch spring, 2 used
29	5580438B01	latch
30	4280190R04	shield clip, 4 used
31	2680532C01	front shield
32	8408051Y01	RF-to-logic flexible circuit
33	FUF5690A	RF board, assembled
34	3286063C01	O-ring gasket
35	1480610B01	chassis insulator
36	2780549B01	chassis
37	5480673K02	FCC label
38	3286074C01	Pad PTT
39	3980188R01	contact, B+/B-
40	FLN8517A	battery filter board
41	HNN9628	battery
42	HLN9724/ HLN8255	standard belt clip

* Not field repairable



LTS 2000 Exploded View

miscellaneous parts lists

FHN5873A Housing (GTX)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	1380159S01	PTT bezel, shadow black
1	1386080C01	escutcheon
1	1580421K01	housing
1	5880376K01	antenna nut
2	3280960Y01	seal
1	3286074C01	pad ptt
1	3380425K01	logo
1	3580998Z04	speaker felt
1	3880428C01	dust cap
2	4105944K01	battery latch spring
1	5580438B01	latch
1	5880376L01	adapter antenna
1	6180687K01	light pipe
1	7580427C01	PTT keypad

FHN5874A Housing (LTS 2000)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	1380431K01	PTT bezel
1	1380463K01	top escutcheon
1	1580422K01	housing
1	5880376K01	Antenna nut
1	3280960Y01	seal
1	3286074C01	pad ptt
1	3380455K01	logo
1	3580998Z04	speaker felt
1	3880428C01	dust cap
2	4105944K01	battery latch spring
1	5580438B01	latch
1	5880376L01	adapter antenna
1	6180687K01	light pipe
1	7580430K01	PTT keypad

FLN8515A I/O Hardware

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	8408050Y01	flexible circuit
1	7204616J01	LCD display

FLN8518A Chassis Hardware

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	1480610B01	insulator, chassis
1	2780549B01	chassis
1	3980188R01	Contact B+B-
1	5402498S01	label

FLN8574A Miscellaneous Parts (GTX)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	2680402K01	logic board shield
1	3202386L03	RFI shield
1	6180687K01	light reflector
1	7580427K01	main keypad
1	7580685K01	pad

FLN8576A Miscellaneous Parts (LTS 2000)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	2680402K01	logic board shield
1	3202386L03	RFI shield
1	6180687K01	light reflector
1	7580428K01	main keypad
1	7580685K01	pad

FLN8575A Shield & Parts

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	2680532C01	front shield
4	4280190R04	shield clip

FLN8577A Miscellaneous Parts (GTX)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	3286063C01	O-ring, rectangular
1	3680447K01	volume knob
1	3680448K01	frequency knob
1	5480673K02	FCC label
1	8408051Y01	rf-to-logic flexible circuit

FLN8665A Miscellaneous Parts (LTS 2000)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	3286063C01	O-ring, rectangular
1	3680432K01	volume knob
1	3680433K01	frequency knob
1	5480673K02	FCC label
1	8408051Y01	rf-to-logic flexible circuit

FSN5509A Speaker & Microphone Assembly

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced items:	
1	1480577C01	microphone boot
1	2113740F41	chip capacitor, 39 μ F $\pm$ 5% 50V
1	3080560D01	speaker mic cable
1	3980546B02	front shield ground contact
1	5005589U05	speaker
1	5013920A03	microphone
1	7580506C02	speaker pad

NAF5039A Antenna

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Qty	non-referenced item:	
1	8505241U03	whip antenna, 900 MHz

Notes

SERVICE MANUAL QUESTIONNAIRE

We believe that reports from users provide valuable information for producing quality manuals. By taking a few moments to answer the following questions as they relate to this specific manual, you can take an active role in the continuing effort to ensure that our manuals contain the most accurate and complete information of benefit to you. Thank you for your cooperation.

In reference to Manual Number: **68P02948C90-O**

GTX/GTX LTR/LTS 2000™ Portable Radios

1. Please check all the appropriate boxes:

	Complete	Incomplete	Correct	Incorrect	Self	Electrical	Assembly	Illustrations	Not Covered in this Manual
Disassembly Procedures									
Alignment Procedures									
Exploded Views									
Schematic Diagrams									
Circuit Board Details									
Electrical Parts Lists									
Exploded View Parts List									

2. How would you rate the overall organization of this manual?

☐excellent ☐very good ☐good ☐fair ☐poor

3. Did this Service manual provide you with the information necessary to service and maintain the specific equipment?

☐very much so ☐generally yes ☐to some extent ☐no

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5. We would appreciate any corrections or recommendations for improving this manual. Please include the specific page number(s) of the diagram or procedure in question.

a. Disassembly Procedures:(Page No. _____)

b. Alignment Procedures:(Page No. _____)

c. Exploded Views:(Page No. _____)



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Please specify the page number along with any corrections or recommendations for improvement.

- d. Schematic Diagrams: (Page No. _____)
- e. Component Location Details: (Page No. _____)
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- g. Exploded View Parts List: (Page No. _____)

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