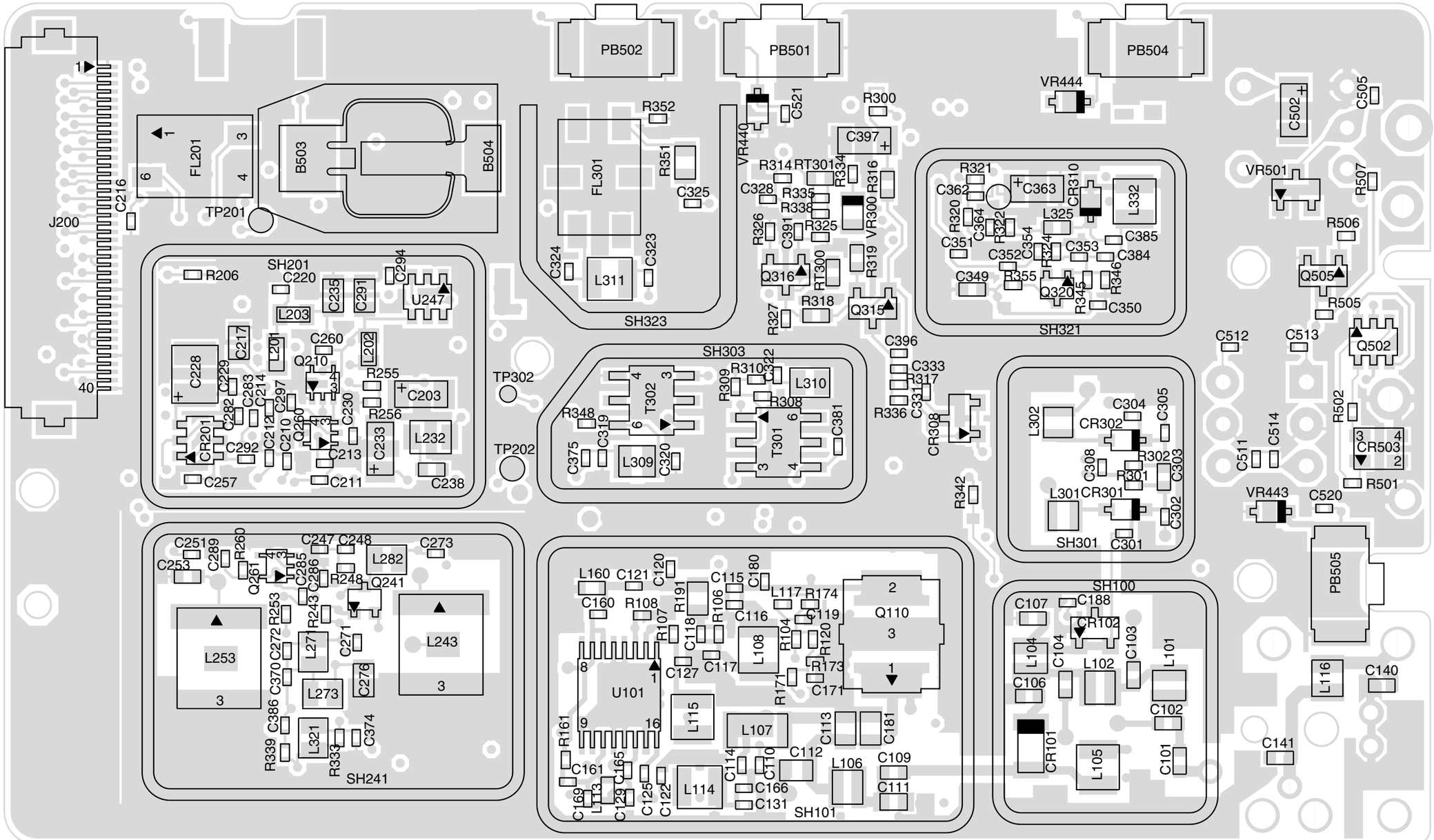
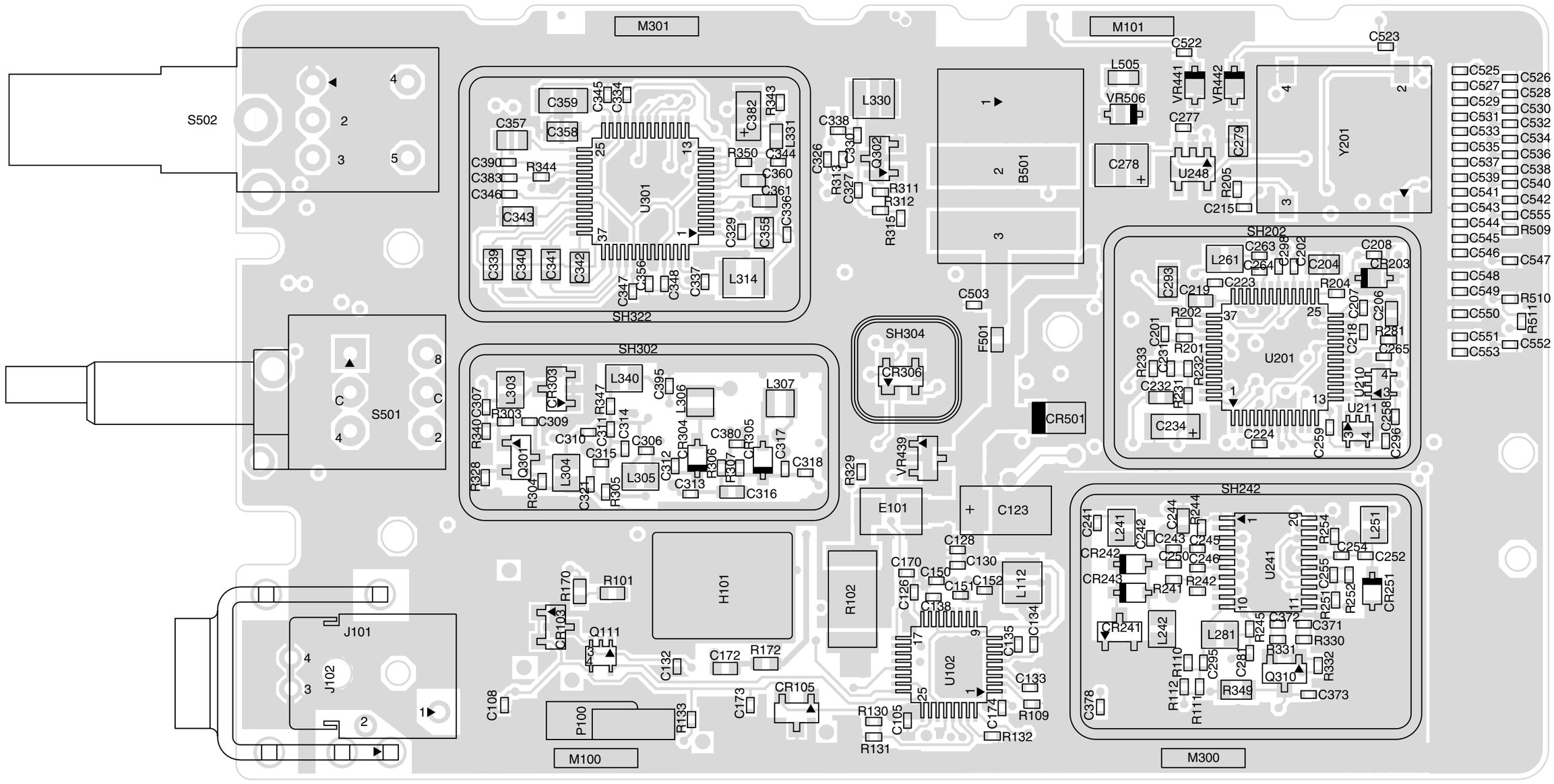
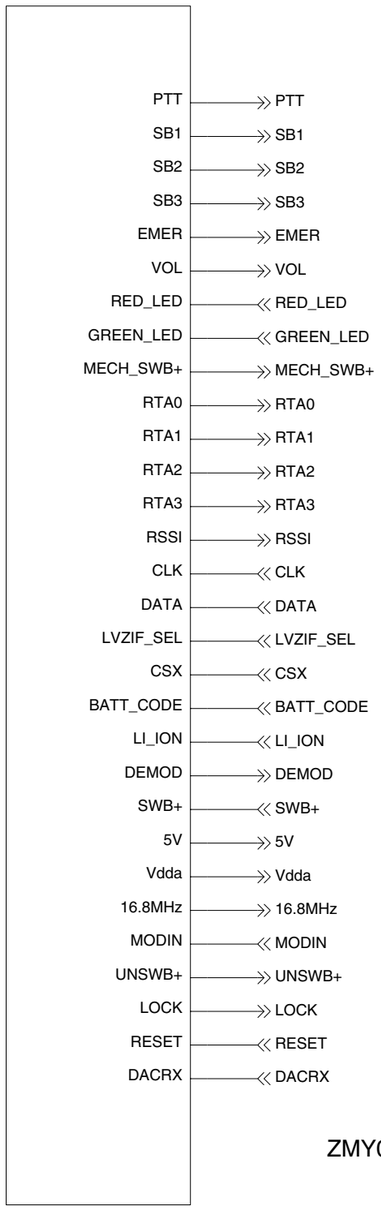
4.8 UHF Band 2, Circuit Board/Schematic Diagrams and Parts List



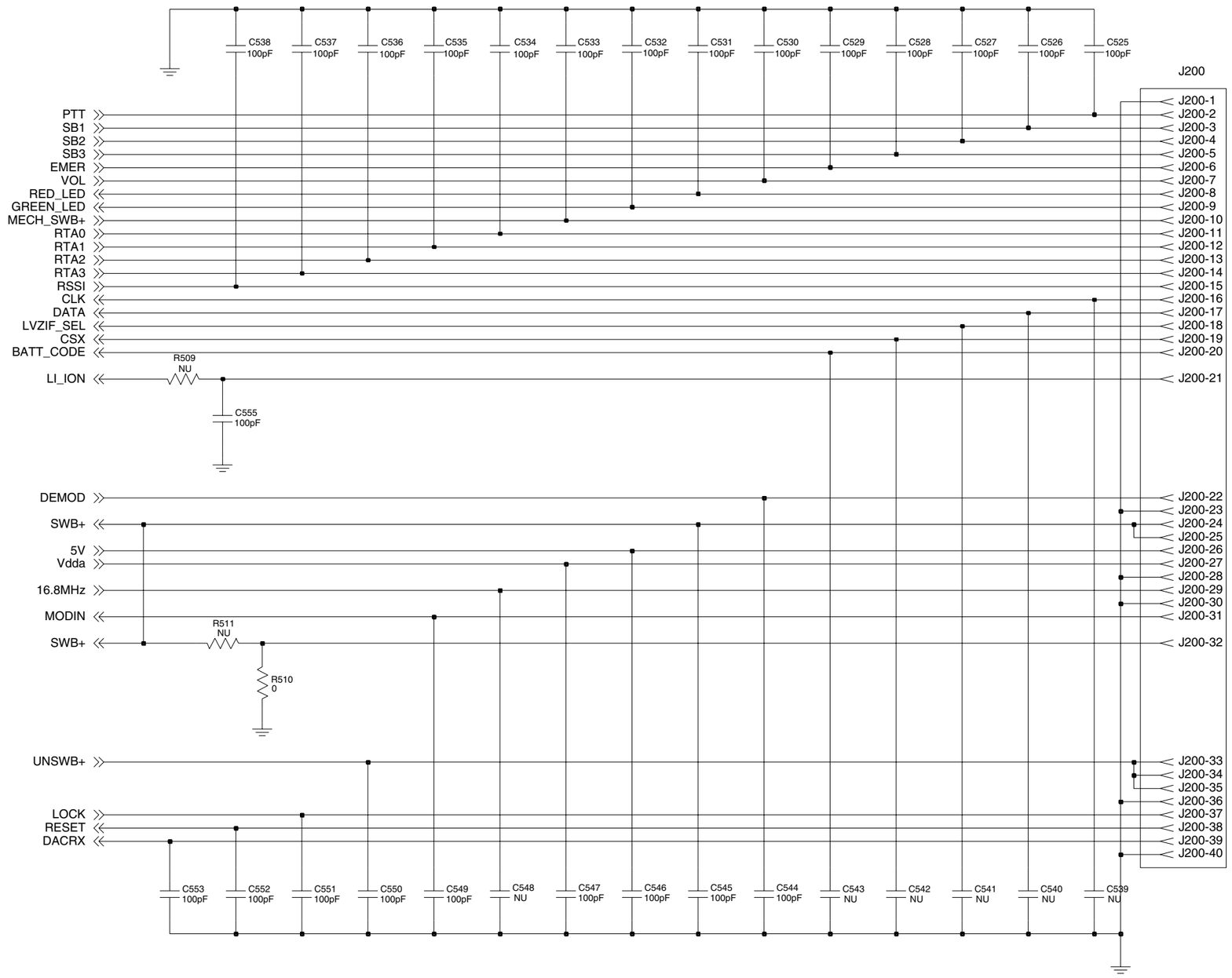
UHF2 (450-527MHz) Main Board Top Side PCB No. 8404102G03/G04/G05



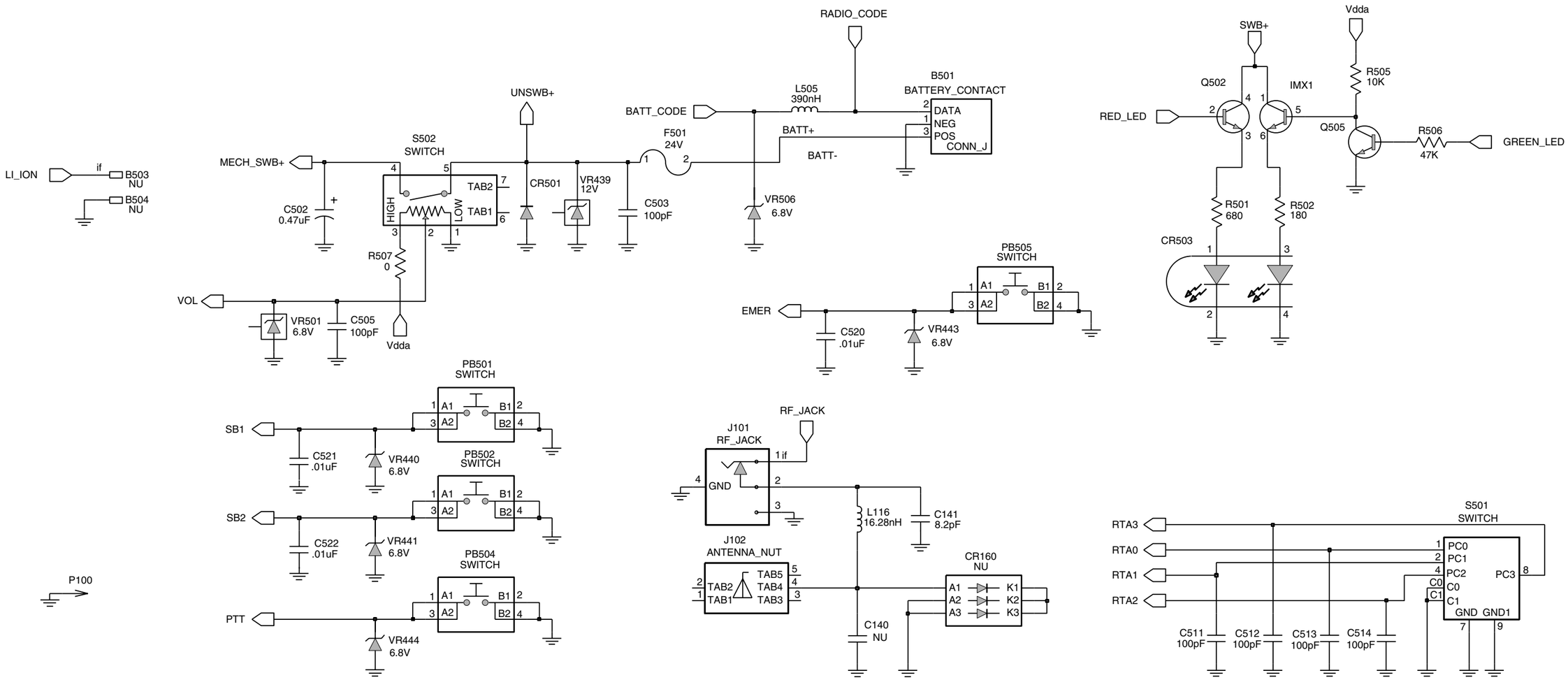
UHF2 (450-527MHz) Main Board Bottom Side PCB No. 8404102G03/G04/G05



ZMY0130797-O

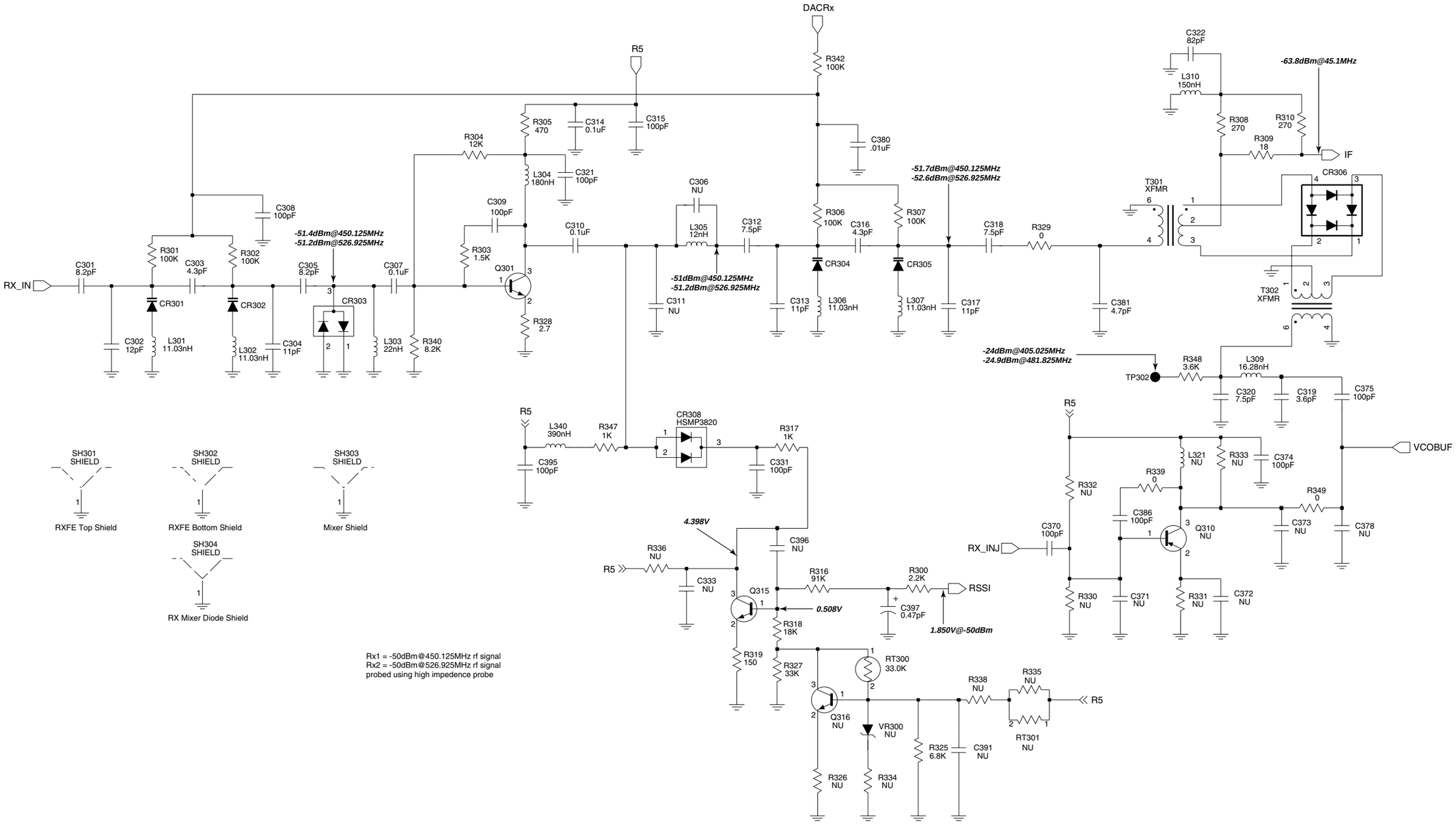


UHF2 Controls and Switches Schematic Diagram



ZWG0130946-O

UHF2 Battery Contact C(ontrols and Switches) Schematic Diagram



SH301 SHIELD — RXFE Top Shield

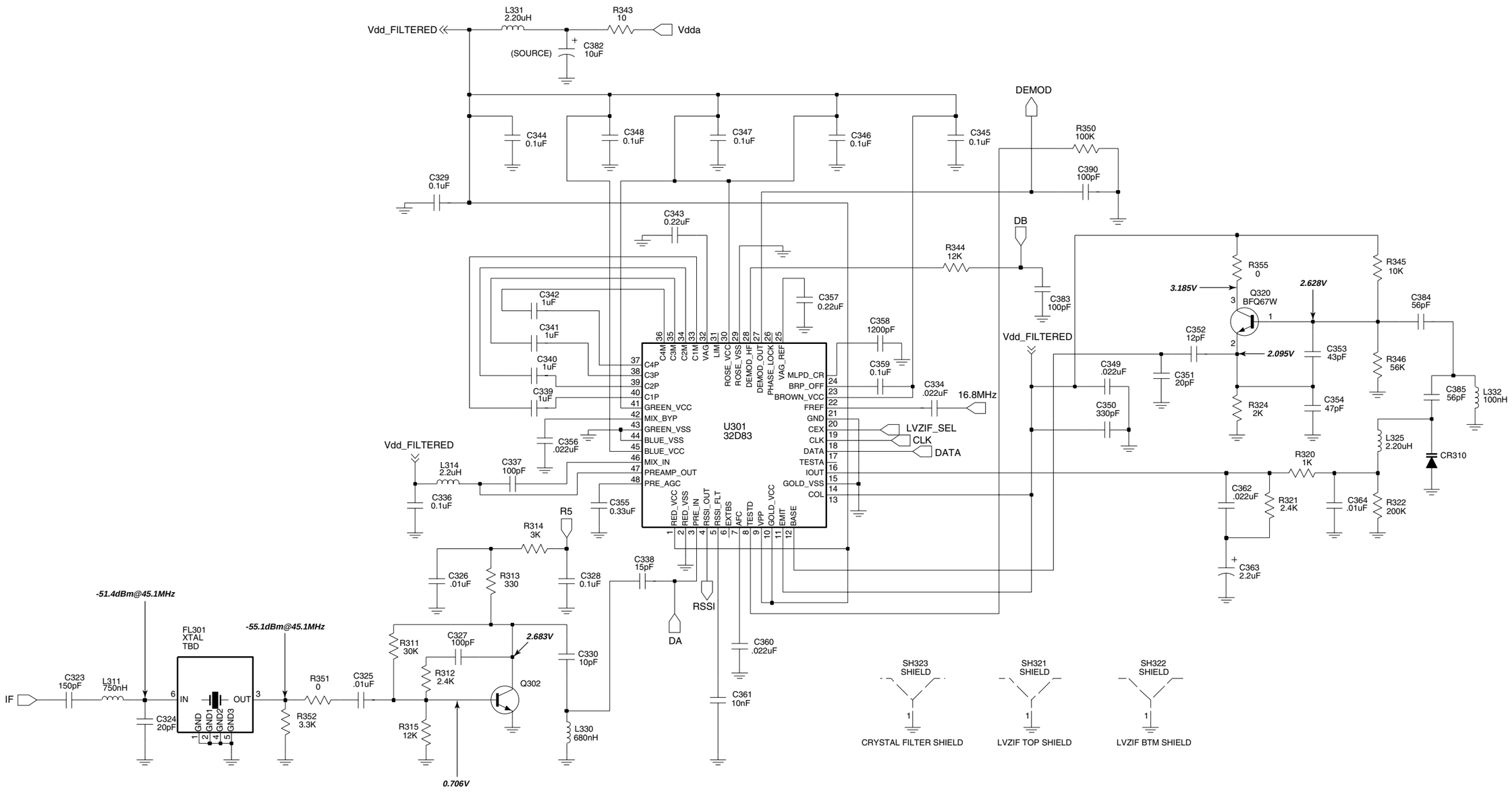
SH302 SHIELD — RXFE Bottom Shield

SH303 SHIELD — Mixer Shield

SH304 SHIELD — RX Mixer Diode Shield

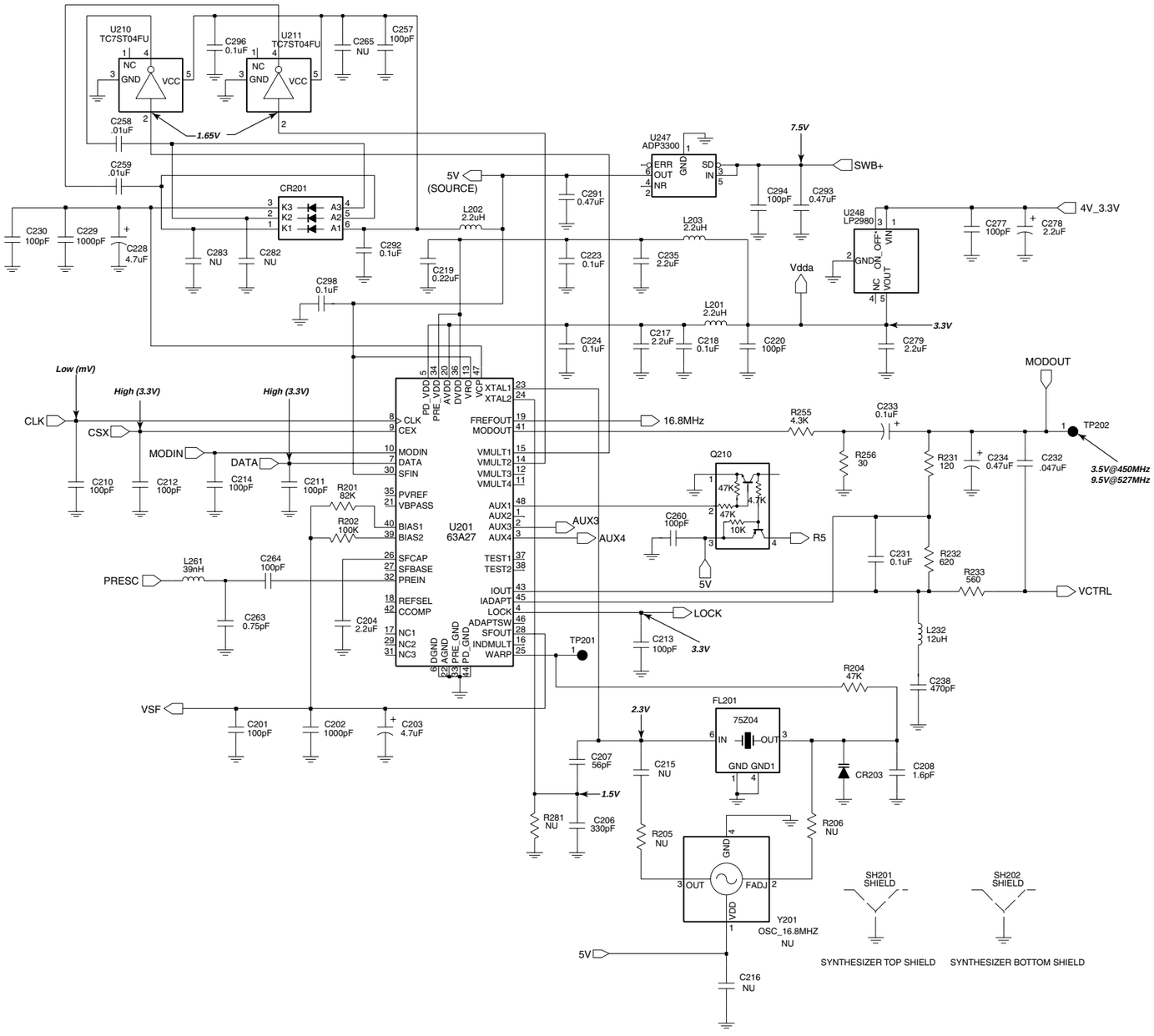
Rx1 = -50dBm@450.125MHz rf signal
Rx2 = -50dBm@526.925MHz rf signal
probed using high impedence probe

UHF2 Receiver Front End Schematic Diagram

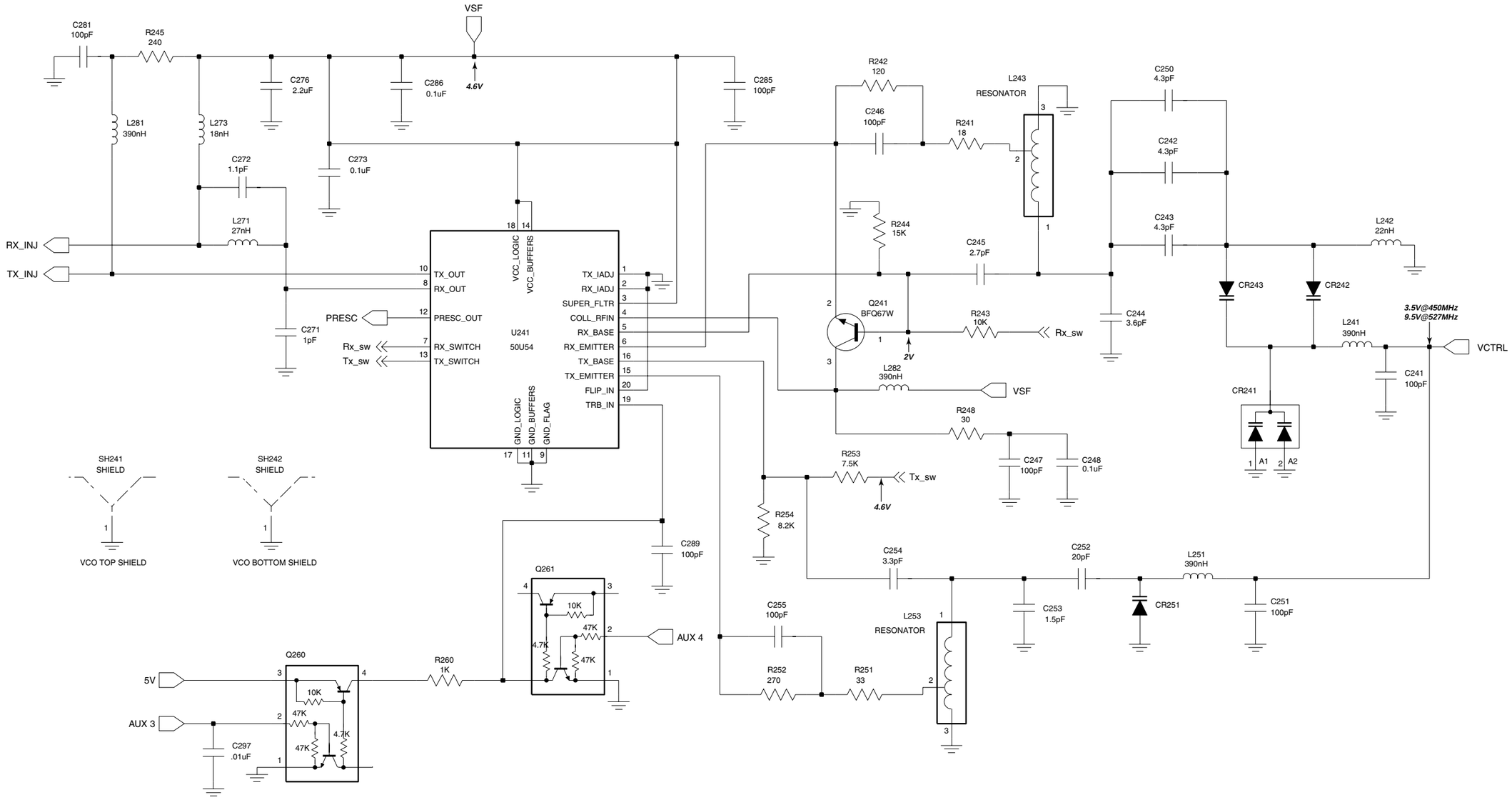


UHF2 Receiver Back End Schematic Diagram

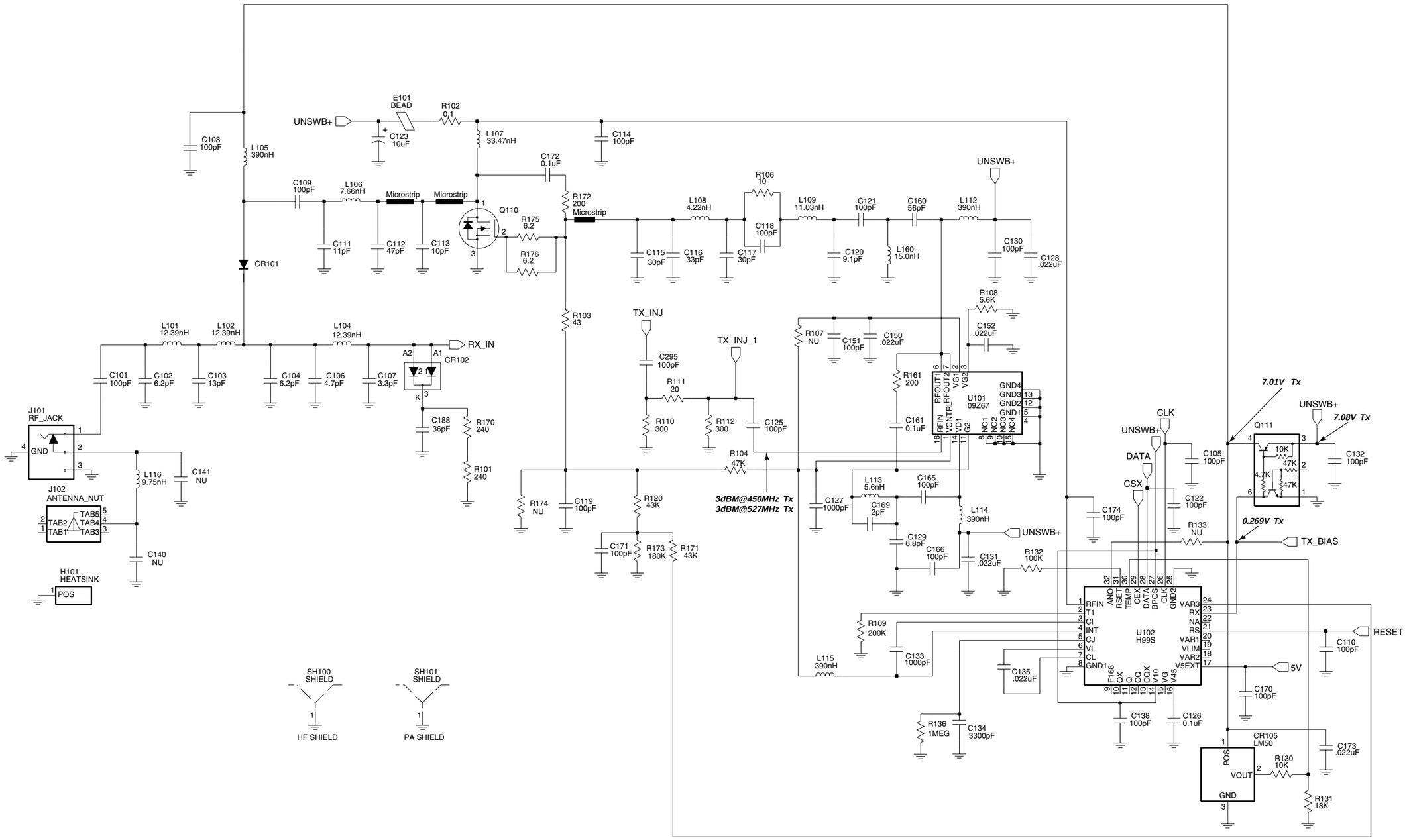
	Rx	Tx
39 Bias2	3.7V	1.6V
40 Bias1	1.6V	3.7V



UHF2 Synthesizer Schematic Diagram



UHF2 Voltage Controlled Oscillator Schematic Diagram



UHF2 Transmitter Schematic Diagram

UHF Band 2 Radio Parts List

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Battery Contact, B+ (not used in GP344)
B504	3980501Z01	Backup Battery Contact, B- (not used in GP344)
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F28	11pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2103689A22	11pF
C112	2180605Z28	33pF
C113	2180605Z22	18pF
C114	2113743N50	100pF
C115	2113743N31	16pF
C116	2113743N27	11.0pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N23	7.5pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF
C125	2113743N50	100pF
C126	2113743M24	0.1uF
C127	2113743L17	1000pF
C128	2113743M08	0.022uF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	0.022uF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	0.022uF
C138	2113743N50	100pF
C140	0662057A67	Chip Res 5600 ohms (not used in GP344)
C141	2113740F25	8.2pF
C150	2113743M08	0.022uF
C151	2113743N50	100pF
C152	2113743M08	0.022uF
C160	2113743N44	56.0pF
C161	2113743M24	0.1uF
C165	2113743N44	56pF
C166	2113743N50	100pF
C169	2113743N09	2.0pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113743E20	0.10uF
C173	2113743M08	0.022uF
C174	2113743N50	100pF
C188	2113743N39	36.0pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7 uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39.0 pF
C210 - C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	0.1uF
C224	2113743M24	0.1uF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	0.1uF
C232	2113743E12	0.047uF
C233	2311049A01	0 .1 uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N17	4.3 pF
C243	2113743N17	4.3 pF
C244	2113740F14	3.0pF
C245	2113743N12	2.7 pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF
C250	2113743N17	4.3 pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F07	1.5pF
C254	2113743N26	10pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	0.01uF
C259	2113743L41	0.01uF
C260	2113743N50	100pF
C263	2113743N02	0.75 pF
C264	2113743N50	100pF
C271	2113743N03	1.0 PF
C272	2113743N04	1.1pF
C273	2113743M24	0.1uF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A09	2.2 uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	0.1uF
C289	2113743N50	100pF
C291	2311049A69	10.0 uF
C292	2113743M24	0.1uF
C293	2113743A27	0.470uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF
C297	2113743L41	0.01uF
C298	2113743M24	0.1uF
C301	2113743N24	8.2 pF
C302	2113743N28	12.0pF
C303	2113740L09	4.3pF
C304	2113743N27	11.0pF
C305	2113743N24	8.2pF
C307	2113743M24	0.1uF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	0.1uF
C312	2113743N23	7.5 pF
C313	2113743N27	11.0pF
C314	2113743M24	0.1uF
C315	2113743N50	100pF
C316	2113740L09	4.3pF
C317	2113743N27	11.0pF
C318	2113743N23	7.5pF
C319	2113743N15	3.6 pF
C320	2113743N23	7.5pF
C321	2113743N50	100pF
C322	2113743N48	82.0 pF
C323	2113743N54	150 pF
C324	2113743N33	20.0pF
C325	2113743L41	0.01uF
C326	2113743L41	0.01uF
C327	2113743N50	100pF
C328	2113743M24	0.1uF
C329	2113743M24	0.1uF
C330	2113743N26	10.0pF
C331	2113743N50	100pF
C334	2113743M08	0.022uF
C336	2113743M24	0.1uF
C337	2113743N50	100pF
C338	2113743N30	15.0pF
C339	2180478Z20	1.0uF
C340	2180478Z20	1.0uF
C341	2180478Z20	1.0uF
C342	2180478Z20	1.0uF
C343	2113743A23	0 .220uF
C344 - C348	2113743M24	0.1uF
C349	2113743E07	0.022uF
C350	2113743L05	330pF
C351	2113743N33	20.0pF
C352	2113743N28	12.0pF
C353	2113743N41	43.0 pF
C354	2113743N42	47.0pF
C355	2113743A24	0.330uF
C356	2113743M08	0.022uF
C357	2113743A23	0.220uF
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	0.022uF
C361	2113741F49	10nF
C362	2113743M08	0.022uF
C363	2311049A40	2.2 uF
C364	2113743L41	0.01uF
C370	2113743N50	100pF
C374	2113743N50	100pF
C375	2113743N50	100pF
C380	2113743L41	0.01uF
C381	2113743N18	4.7 pF
C382	2311049A59	10uF
C383	2113743N50	100pF
C384	2113743N44	56.0 pF
C385	2113743N44	56.0 pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C395	2113743N50	100pF
C397	2311049A07	1.0uF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C530	2113743N50	100pF
C531	2113743N50	100pF
C532	2113743N50	100pF
C533	2113743N50	100pF
C534	2113743N50	100pF
C535	2113743N50	100pF
C536	2113743N50	100pF
C537	2113743N50	100pF
C538	2113743N50	100pF
C544	2113743N50	100pF
C545	2113743N50	100pF
C546	2113743N50	100pF
C547	2113743N50	100pF
C549	2113743N50	100pF
C550	2113743N50	100pF
C551	2113743N50	100pF
C552	2113743N50	100pF
C553	2113743N50	100pF
C555	2113743N50	100pF
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diode
CR103	4802245J41	Pin Diode
CR105	5185963A15	Temperature Sense
CR201	4802233J09	Triple Diode
CR203	4862824C03	Varactor
CR241	4805649Q13	Dual Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Diode Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual Comm Anode-Cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR308	4802245J41	Pin Diode
CR310	4862824C01	Varactor
CR501	4880107R01	Rectifier
CR503	4805729G49	Led Red/Yel
E101	2484657R01	Ferrite Bead
F501	6580542Z01	FUSE 3A
FL201	4805875Z04	16.8Mhz Xtal
FL301	9186153B01	Xtal Filter
H101	2680499Z01	Heat Spreader
J101	0985613Z01	JACK,RF
J102	0280519Z02	NUT, ANTENNA
J200	0905505Y04	20 PINS CONNECTOR
L101	2460591B28	13.37nH
L102	2460591B28	13.37nH
L104	2460591B48	15.22nH
L105	2462587N22	390 nH
L106	2460591A19	8.71nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L112	2462587N45	22 nH
L113	2413926H09	5.6nH
L114	2462587N45	22nH
L115	2462587N22	391 nH
L116	2479990C02	16.28nH
L117	2409154M17	22.0nH
L160	2413926H14	15.0nH
L201	2462587Q20	2.2uH
L202	2462587Q20	2.2uH
L203	2462587Q20	2.2uH
L232	2462587P25	12uH
L241	2462587V41	390 nH
L242	2462587V26	22 nH
L243	2460593C03	Teflon Resonator
L251	2462587V41	390 nH
L253	2460593C03	Teflon Resonator
L261	2462587V29	39 nH
L271	2462587V27	27 nH
L273	2462587V25	18 nH
L281	2462587V41	390 nH
L282	2462587V41	393 nH
L301	2479990B01	11.03nH
L302	2479990B01	11.03nH
L303	2462587V26	23 nH
L304	2462587V37	180 nH
L305	2462587V23	12 nH
L306	2479990B01	11.03nH
L307	2479990B01	11.03nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2462587N65	750 nH
L314	2462587N72	2.2 uH
L325	2480646Z20	2.20uH
L330	2462587N64	680 nH
L331	2480646Z20	2.20uH
L332	2462587N53	100 nH
L340	2462587V41	394 nH
L505	2462587Q42	390nH
P100	3905643V01	Gnd Contact Finger
PB501	4070354A01	Tactile,Pushbutton
PB502	4070354A01	Tactile,Pushbutton
PB504	4070354A01	Tactile,Pushbutton
PB505	4070354A01	Tactile,Pushbutton
Q110	4813828A09	RF Power FET
Q111	4809939C05	Dual NPN/PNP
Q210	4809939C05	Dual NPN/PNP
Q241	4805218N63	NPN
Q260	4809939C05	Dual NPN/PNP
Q261	4809939C05	Dual NPN/PNP
Q301	4802245J44	NPN
Q302	4802245J44	NPN
Q315	4880214G02	NPN
Q320	4805218N63	NPN
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	POWER METAL STRIP RES
R104	0662057N15	47K
R106	0662057M26	10
R108	0662057M92	5.6K
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R136	0662057N47	1M
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R174	0662057N15	47K
R175	0662057B59	3
R176	0662057B59	3
R191	0662057C01	0
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M52	120
R243	0662057M98	10K
R244	0662057N03	15K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M38	33
R252	0662057M60	270
R253	0662057M95	7.5K
R254	0662057M96	8.2K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R300	0662057M82	2.2K
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M78	1.5K
R304	0662057N01	12K
R305	0662057M66	470
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2.4K
R313	0662057M62	330
R314	0662057M85	3K
R315	0662057N01	12K
R316	0662057A96	91K
R317	0662057M74	1K
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M74	1K
R321	0662057M83	2.4K
R322	0662057N30	200K
R324	0662057M81	2K
R325	0662057M94	6.8K
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R339	0662057M01	0
R340	0662057M96	8.2K
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3.3K
R355	0662057M01	0
R501	0662057M70	680
R502	0662057N56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
R509	0662057M01	0 (not used in GP344)
R510	0662057M01	0
RT300	0680590Z01	THERMISTOR_33K
RT400	0680590Z01	Thermistor 33K
S501	4080710Z01	Channel Switch (used in GP344)

Circuit Ref	Motorola Part No.	Description
S501	4080710Z02	Channel Switch (used in GP388)
S502	1880619Z02	Volume Switch
SH100	2680507Z01	Harmonic Filter Shield
SH101	2680510Z01	PA Shield
SH201	2680511Z01	Synthesizer Shield
SH202	2680511Z01	Synthesizer Shield
SH241	2604120G01	VCO Top Shield
SH242	2680514Z01	VCO Bottom Shield
SH301	2680554Z01	Rx Pre-filter Shield
SH302	2680555Z01	RX Post-filter Shield
SH303	2680509Z01	Mixer Shield
SH304	2680624Z01	Mixer Diode Shield
SH321	2680508Z01	Zif 2nd LO
SH322	2680514Z01	Zif Shield
SH323	2604082P01	AOBA Xtal Filter Shield
T301	2580541Z02	XFMR Coil
T302	2580541Z02	XFMR Coil
U101	5185130C65	LDMOS Driver
U102	5185765B26	Power Control IC
U201	5185963A27	LVFRACN
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer
U247	5105739X05	Regulator Linear
U248	5102463J58	3.3V Regulator
U301	5109632D83	LVZIF
VR439	488014L17	ZENER 12V TAPE/REEL
VR440	4802245J73	ZENER 6.8V
VR441	4802245J73	ZENER 6.8V
VR443	4802245J73	ZENER 6.8V
VR444	4802245J73	ZENER 6.8V
VR501	4813830A18	ZENER 6.8V 5%
VR506	4802245J73	ZENER 6.8V
PCB RF	8404102G03/04/05	UHFB2 RF PCB
PCB Ctrl	8404051G07	UHFB2 Controller PCB

* Motorola Depot Servicing only