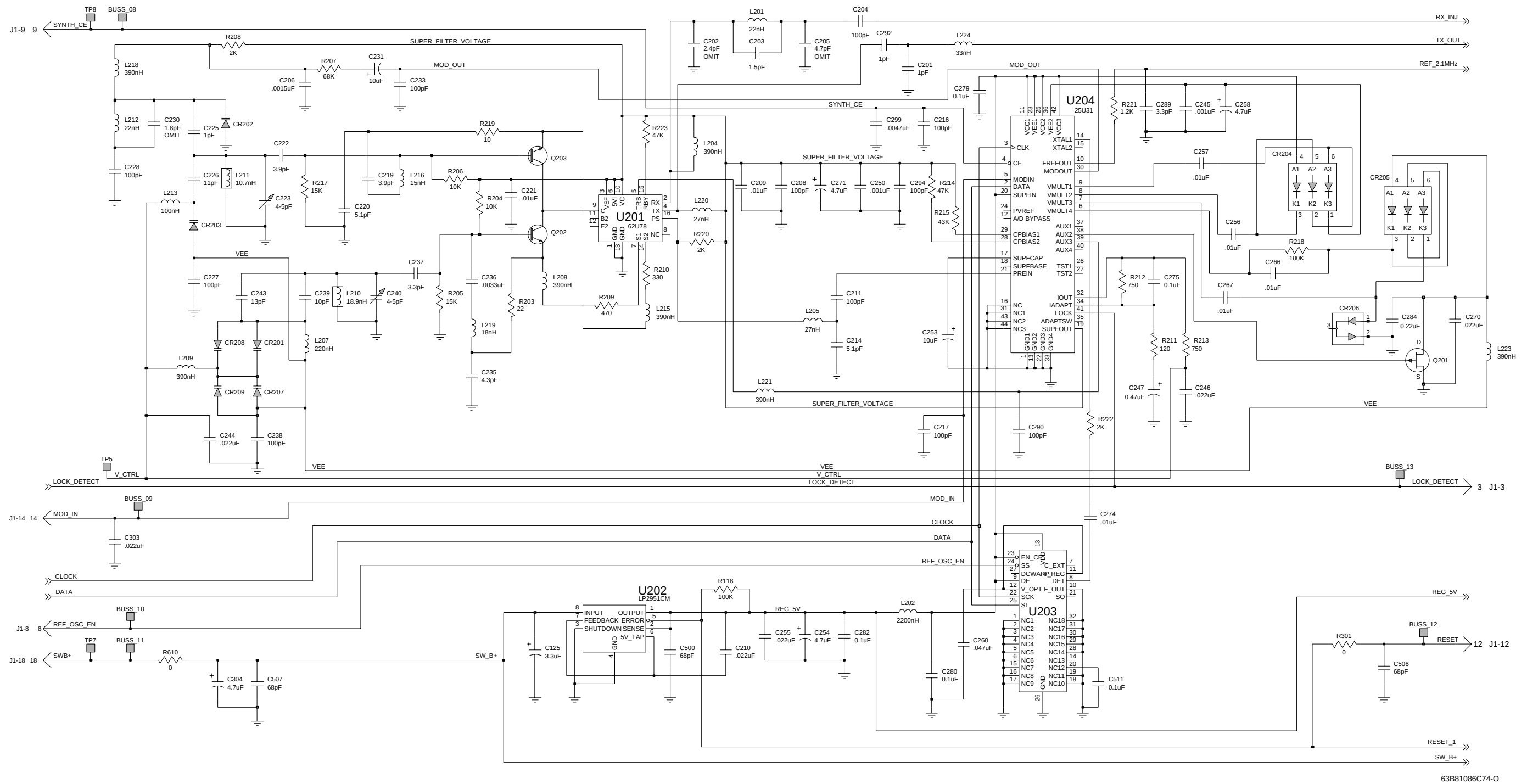
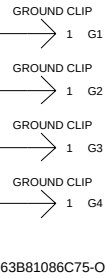




NLE4250B, NLE4250E UHF Range 2 RF Board Schematic Diagram, Sheet 2 of 3



NLE4250B, NLE4250E UHF Range 2 RF Board Component Location Detail and Parts List

NLE4250B UHF Range 2 RF Board

Electrical Parts List

ITEM	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITOR, Fixed: unless otherwise stated
C1	2113930F15	3.3 pF
C2, 3	2113930F12	2.4 pF
C4	2113930F36	24 pF
C5, 6	2113930F20	5.1 pF
C7	2113930F28	11 pF
C9	2113930F15	3.3 pF
C10	2113930F29	12 pF
C11	2113931F49	10 nF
C13	2311049A66	22 uF
C15	2113930F47	68 pF
C18	2113930F18	Not Placed
C19	2113930F19	4.7 pF
C31	2113931F49	10 nF
C72	2113930F51	100 pF
C82	2113931F49	10 nF
C83	2113930F51	100 pF
C84	2113931F49	10 nF
C85	2311049J23	10 uF
C86	2113930F47	68 pF
C87	2113930F51	100 pF
C88	2113930F45	56 pF
C89	2113930F19	4.7 pF
C90	2113930F26	9.1 pF
C91	2113930F28	11 pF
C92	2113930F09	1.8 pF
C93	2113930F17	3.9 pF
C94	2113930F27	10 pF
C98	2113930F51	100 pF
C99	2113930F21	5.6 pF
C101	2113930F51	100 pF
C102	2113930F51	Not Placed
C103	2311049J26	10 uF
C104, 105	2113930F51	100 pF
C106	2311049A56	4.7 uF
C107	2113930F51	100 pF
C108	2113930F51	Not Placed
C109	2311049A07	1 uF
C110	2113930F51	Not Placed
C111	2113930F51	100 pF
C112	2311049A07	1 uF
C113	2113930F51	100 pF
C115	2113932K07	.047 uF
C116	2113930F07	Not Placed
C117	2113930F51	100 pF
C119	2113930F51	100 pF
C120	2311049A42	Not Placed
C121	2113930F51	100 pF
C123	2113932K15	0.1 uF
C125, 126	2311049A54	3.3 uF
C127	2311049A54	Not Placed
C132	2113930F25	8.2 pF
C133	2113930F09	1.8 pF
C135	2113930F51	100 pF
C137, 138	2113930F51	100 pF
C140	2113931F41	CAP
C141	2113930F51	100 pF
C145	2113930F51	100 pF
C146	2113930F39	Not Placed
C147	2113930F51	100 pF
C148	2113930F11	2.2 pF
C149	2113930F27	10 pF

C150	2113930F25	8.2 pF
C151	2113930F18	4.3 pF
C152	2113932K15	0.1 uF
C153	2113930F47	68 pF
C201	2113930F41	Not Placed
C202	2113930F12	Not Placed
C203	2113930F07	1.5 pF
C204	2113930F51	100 pF
C205	2113930F19	Not Placed
C206	2113931F29	1.5 nF
C207	2113931F49	10 nF
C208	2113930F51	100 pF
C209	2113931F49	10 nF
C210	2113932E07	.022 uF
C211	2113930F51	100 pF
C214	2113930F14	3.0 pF
C216, 217	2113930F51	100 pF
C219	2113930F11	2.2 pF
C220	2113930F22	6.2 pF
C221	2113931F49	10 nF
C222	2113930F18	4.3 pF
C223	2113906C02	4 pF
C225	2113930F03	1 pF
C226	2113930F26	9.1 pF
C227, 228	2113930F51	100 pF
C230	2113930F09	Not Placed
C231	2311049A60	10 uF
C233	2113930F51	100 pF
C235	2113930F20	5.1 pF
C236	2113930F18	4.3 pF
C237	2113930F15	3.3 pF
C238	2113930F51	100 pF
C239	2113930F24	7.5 pF
C240	2113906C02	4 pF
C243	2113930F24	7.5 pF
C244	2109720D09	.022 uF
C245	2113931F25	1 nF
C246	2109720D09	.022 uF
C247	2311049A05	.47 uF
C250	2113931F25	1 nF
C253	2311049J23	10 uF
C254	2311049A56	4.7 uF
C255	2113932E07	.022 uF
C256, 257	2113931F49	10 nF
C258	2311049J11	4.7 uF
C260	2113932K07	.047 uF
C266, 267	2113931F49	10 nF
C270	2113932E07	.022 uF
C271	2311049A56	4.7 uF
C274	2113931F49	10 nF
C275	2113932K15	0.1 uF
C279, 280	2113932K15	0.1 uF
C282	2113932K15	0.1 uF
C284	2113743A23	.22 uF
C289, 290	2113930F51	100 pF
C292	2113930F51	100 pF
C294	2113930F51	100 pF
C299	2113931F41	4.7 nF
C303	2113932E07	.022 uF
C304	2311049J11	4.7 uF
C308	2113932E07	.022 uF
C309	2113932E07	.022 uF
C310	2311049J11	4.7 uF
C313	2113930F51	Not Placed
C314, 315	2113930F51	100 pF
C317	2113930F51	100 pF
C401	2113932K03	.033 uF
C402	2113930F39	33 pF

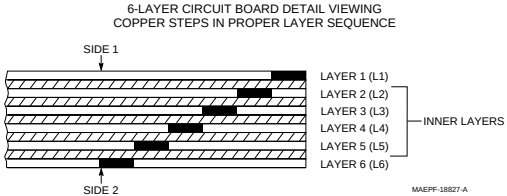
C403	2113743A13	.047 uF
C404	2113932K15	0.1 uF
C405	2311049A42	3.3 uF
C406, 407	2113931F49	10 nF
C408	2113931F25	1 nF
C409	2113931F21	680 pF
C410	2113930F48	75 pF
C413	2113931F49	10 nF
C414	2113931F45	6.8 nF
C415	2113932K15	0.1 uF
C416	2113931F49	10 nF
C417, 418	2311049A42	3.3 uF
C419	2113932K15	0.1 uF
C420	2113930F36	24 pF
C421	2113931F49	10 nF
C422	2113930F41	39 pF
C423, 424	2113930F42	43 pF
C425	2113930F11	2.2 pF
C426	2113743A23	.22 uF
C427	2113931F41	4.7 nF
C428	2311049A40	2.2 uF
C429	2113932K15	0.1 uF
C430	2311049J23	10 uF
C431, 432	2113930F39	33 pF
C433	2113932K15	0.1 uF
C434	2113931F49	10 nF
C438	2113932K15	0.1 uF
C442	2113930F42	Not Placed
C450	2311049J23	10 uF
C500 thru 504	2113930F47	68 pF
C505	2113931F41	4.7 nF
C506, 507	2113930F47	68 pF
C511, 512	2113932K15	0.1 uF
C513	2113930F51	100 pF
C514, 515	2113932K15	0.1 uF
C601, 602	2113932K15	0.1 uF
C604	2113930F10	2 pF
C605	2113930F17	3.9 pF
C606	2113930F27	10 pF
C609	2113930F18	4.3 pF
C610	2113930F33	18 pF
C611	2113930F34	20 pF
C614	2113930F14	3 pF
C702	2113932K15	0.1 uF
		DIODE: See Note 1.
CR5 thru 9	4862824C01	Varactor
CR101	4805129M67	Dual
CR103	4805129M67	Dual
CR108, 109	4802482J02	PIN
CR201	4802245J29	Varactor
CR202	4862824C01	Varactor
CR203	4862824C03	Varactor
CR204, 205	4802233J09	Triple
CR206	4805129M06	Triple
CR207 thru 209	4802245J29	Varactor
		CORE:
E1, 2	2484657R01	Ferrite Bead
E101	2484657R01	Ferrite Bead
E104	2484657R01	NOT PLACED
		FUSE:
F1	6505757V02	2 Amp

FL1, 2	4805245J33	FILTER: See Note 2.
FL401, 402	9105398W01	73.35 MHz
		450 kHz
J2	0905304Z01	JACK: Connector, RF Coax
		COIL, RF: unless otherwise stated
L6, 7	2462587T38	22 nH
L8	2462587T20	270 nH
L9	2462587T38	22 nH
L10	2462587T05	15 nH
L11	2460591B04	11.03 nH
L12	2460591M32	27.42 nH
L13	2460591B80	19. 61 nH
L14, 15	2460591B04	11.03 nH
L25	2462587Q48	1200 nH
L30, 31	2460591A01	4.22 nH
L32	2460591B04	11.03 nH
L34, 35	2460591A01	4.22 nH
L37	2460591B04	11.03 nH
L102	2462587T20	Not Placed
L103	2462587T20	270 nH
L105	2462587T20	270 nH
L107, 108	2462587T17	150 nH
L121, 122	2462587T20	270 nH
L123	2462587V38	220 nH
L126 thru 128	2460591B04	11.03 nH
L201	2462587T37	18 nH
L202	2462587Q20	2200 nH
L204	2462587Q42	390 nH
L205	2462587V26	22 nH
L207	2462587V36	150 nH
L208, 209	2462587T22	390 nH
L210	2405619V03	15.1 nH
L211	2405619V07	9 nH
L212	2462587V25	18 nH
L213	2462587T22	390 nH
L215	2462587T22	390 nH
L216	2462587T05	15 nH
L218	2462587T22	390 nH
L219	2462587T37	18 nH
L220	2462587T12	56 nH
L221	2462587T22	390 nH
L223	2462587Q42	390 nH
L224	2462587T42	47 nH
L302	2462587Q42	390 nH
L401	2462575A16	3900 nH
L402	2462587V37	180 nH
L600, 601	2405452C59	910 nH
L602	2405452C64	1500 nH
L603	2405452C61	1100 nH
L605	2462587N65	750 nH
		TRANSISTOR: See Note 1.
Q1	4805218N55	NPN
Q101	4805128M16	PNP
Q107	4805921T02	Switching
Q108	4802245J10	Dual NPN
Q110	4802245J12	PNP
Q111	4805128M16	PNP
Q201	4802245J15	JFET P-channel
Q202, 203	4805218N55	NPN

Q601	4882022N70	NPN
		RESISTOR; Ω:
R7	0662057A25	100
R22, 23	0662057A73	10K
R26	0662057A61	Not Placed
R27	0662057A01	10
R36	0662057A93	Not Placed
R100	0611077A68	560
R101	0662057A73	10K
R102	0662057A65	4.7K
R106	0662057A61	3.3K
R107	0662057A58	2.4K
R110	0662057A65	4.7K
R111, 112	0662057A49	1K
R113	0662057A73	10K
R114	0662057A77	15K
R115	0662057G27	182K
R116	0662057G19	130K
R118	0662057A97	100K
R125	0662057B22	1M
R126	0662057A18	51
R127	0662057A12	30
R128	0662057A89	47K
R129	0662057A65	4.7K
R130	0662057B47	0
R131	0662057B22	1M
R203	0662057A01	10
R204	0662057A73	10K
R205	0662057A77	15K
R206	0662057A73	10K
R207	0662057A93	68K
R208	0662057A58	2.4K
R209	0662057A41	470
R210	0662057A37	330
R211	0662057A27	120
R212, 213	0662057A46	750
R214	0662057A89	47K
R215	0662057A88	43K
R217	0662057A77	15K
R218	0662057A97	100K
R219	0662057A09	22
R220	0662057A56	2K
R221	0662057A51	1.2K
R222	0662057A56	2K
R223	0662057A89	47K
R301	0662057B47	0
R302	0662057C01	0
R401	0660079U18	5.1
R402	0662057B08	270K
R403	0662057A83	27K
R404	0662057A73	10K
R405	0662057A13	33
R406	0662057A69	6.8K
R407	0662057A17	47
R410	0662057A21	68
R411	0662057A21	68
R412	0662057A13	33
R413	0662057A35	270
R414	0662057A56	2K
R416	0662057A80	20K
R417	0662057A01	10
R418	0662057A53	1.5K
R419	0662057A89	47K
R420	0662057A80	20K
R421	0662057A56	2K
R510	0662057B47	0
R601	0662057A25	100

R602	0662057A56	2K
R603	0662057A85	33K
R604	0662057A75	12K
R605	0662057A61	3.3K
R610	0662057B47	0
		THERMISTOR:
RT501	0605621T02	50k
		TRANSFORMER:
T1	2505515V08	4:1
T2	2505515V11	16:1
		INTEGRATED CIRCUIT MODULE: See Note 1.
U1	5105329V20	RF Amplifier
U101	5105662U72	TX ALC
U102	5105662U70	D/A Converter
U104	5102001J68	Coupler
U105	5105385Y11	LDMOS RF PA
U106	5105469E71	5V Regulator
U2	5105329V26	Mixer
U201	5105662U78	VCO Buffer
U202	5105469E71	5V Regulator
U203	5102845C08	16.8 MHz Ref. Oscillator
U204	5105457W73	Frac-N Synthesizer
U401	5105457W20	ABACUS
		DIODE: See Note 1.
VR1	4813830A33	20V
VR3	4813830A33	20V
VR402	4805129M58	VARACTOR
		MISCELLANEOUS:
G1 thru 4	3905643V01	Ground Contact
S201	2602657J01	Shield, VCO
S202	2602674J02	Shield, VCO Back
S203	2602658J01	Shield, Pendulum
S204	2602675J01	Shield, Synthesizer
S205	2602660J01	Shield, Harmonic Filter
S206	2602686J01	Shield, Coil
S207	2605547X01	Shield, Varactor
	8405260Z02	PC Board

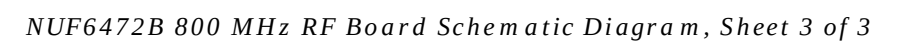
- Notes:
- For optimum performance, order replacement diodes, transistors, and circuit modules by Motorola part number only.
 - When ordering crystals, specify carrier frequency, crystal frequency, crystal type number, and Motorola part number.
 - Part value notations:
 $p=10^{-12}$
 $n=10^{-9}$
 $\mu=10^{-6}$
 $m=10^{-3}$
 $k=10^3$
 $M=10^6$
 - ITEM refers to the component reference designator. SIDE refers to the location of the component on the board; S1=Side 1, S2=Side 2.
 - The NLE4250 UHF Range 2 RF Kit uses a 6-layer printed circuit board.





13-29





NUF6472B 800 MHz RF Board Component Location Detail and Parts List

NUF6472B 800 MHz Transceiver Board

Electrical Parts List

ITEM	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITOR, Fixed: unless otherwise stated
C1	2311049J12	4.7 uF
C2	2113932E07	22 nF
C5	2113930F39	33 pF
C12	2113930F39	Not Placed
C14	2113930F39	33 pF
C15	2113932E07	22 nF
C16	2311049A07	1 uF
C17	2113932E07	22 nF
C20	2311049J11	4.7 uF
C21	2113930F39	33 pF
C30	2113930F39	33 pF
C101	2113930F22	6.2 pF
C102	2113930F12	Not Placed
C103	2113930F39	33 pF
C104	2113930F34	20 pF
C105	2113930F39	33 pF
C106	2113930F14	3.0 pF
C107	2113930F12	2.4 pF
C108	2113930F39	33 pF
C110	2113930F15	3.3 pF
C114	2113930F39	33 pF
C201	2311049J23	10 uF
C202	2113930F41	39 pF
C203	2113930F51	100 pF
C204	2113932E07	22 nF
C206	2113930F39	33 pF
C207	2113930F14	3.0 pF
C208	2113930F41	39 pF
C209	2113932E07	22 nF
C210	2311049J23	10 uF
C211	2113932E07	22 nF
C212	2113930F41	39 pF
C213	2113932E07	22 nF
C216	2311049J23	10 uF
C218	2113932E07	22 nF
C221	2113932E07	22 nF
C222	2113930F22	6.2 pF
C223	2113930F20	5.1 pF
C226	2113930F41	39 pF
C227	2113931F13	330 pF
C230	2113932E07	22 nF
C300	2113931F41	4.7 nF
C301	2113932K15	.1 uF
C302	2113932K15	.1 uF
C303	2113930F51	100 pF
C304	2113930F39	33 pF

C305	2113930F51	100 pF
C306	2113930F39	33 pF
C307	2311049J12	4.7 uF
C309	2113932E07	22 nF
C310	2311049J23	10 uF
C311	2113930F39	33 pF
C312, 313	2113932K15	.1 uF
C314	2113932E07	22 nF
C315	2105248W02	????????
C316	2113932E07	22 nF
C317	2109720D14	.1 uF
C318	2109720D14	.1 uF
C319	2311049J23	10 uF
C320	2113930F39	33 pF
C321	2113932E07	22 nF
C322	2109720D14	.1 uF
C323	2113932E07	22 nF
C324	2113743A13	.047 uF
C325	2113931F21	680 pF
C328	2113930F51	100 pF
C329, 330	2109720D14	.1 uF
C339	2113930F29	12 pF
C340	2113932K15	.1 uF
C341	2113932E07	22 nF
C342	2113930F19	4.7 pF
C344	2113932E07	22 nF
C345	2113932K15	.1 uF
C347	2113932E07	22 nF
C348	2311049J23	10 uF
C349	2113932E07	22 nF
C350	2113932K15	.1 uF
C351	2113932K07	47 nF
C352	2113930F39	33 pF
C353	2113932E07	22 nF
C354	2113930F39	33 pF
C370	2113930F18	4.3 pF
C372	2113932K15	.1 uF
C373	2113932E07	22 nF
C377	2113930F14	3.0 pF
C401	2113932K03	33 nF
C403	2113743A13	.047 uF
C404	2113932K15	.1 uF
C405	2311049A42	3.3 uF
C406, 407	2113931F49	10 nF
C408	2113931F25	1 nF
C409	2113931F21	680 pF
C410	2113930F48	75 pF
C413	2113931F49	10 nF
C414	2113931F45	6.8 nF
C415	2113932K15	.1 uF
C416	2113931F49	10 nF
C417, 418	2311049A42	3.3 uF

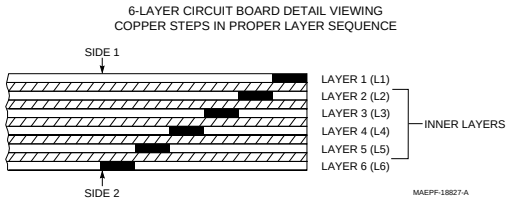
C419	2113932K15	.1 uF
C420	2113930F34	20 pF
C421	2113931F49	10 nF
C422	2113930F41	39 pF
C423, 424	2113930F45	56 pF
C425	2113930F11	2.2 pF
C426	2113743A23	.22 uF
C427	2113931F41	4.7 nF
C428	2311049A40	2.2 uF
C429	2113932K15	.1 uF
C430	2311049J23	10 uF
C431, 432	2113930F39	33 pF
C433	2113932K15	.1 uF
C434	2113931F49	10 nF
C438	2113932K15	.1 uF
C440	2113930F42	Not Placed
C441	2113931F49	10 nF
C450	2311049J23	10 uF
C503 thru 507	2113930F39	33 pF
C509	2113930F39	33 pF
C510	2113932E07	22 nF
C511	2113930F39	33 pF
C512	2113932E07	22 nF
C513	2311049A13	4.7 uF
C514	2113932E07	22 nF
C517	2113930F39	33 pF
C518	2113932K15	.1 uF
C519	2113930F39	33 pF
C520	2311049J23	10 uF
C521	2113932E07	22 nF
C522	2113932K15	.1 uF
C523 thru 525	2113930F39	33 pF
C527	2113932E07	22 nF
C600	2113930F12	2.4 pF
C601	2113930F17	3.9 pF
C601, 602	2113932K15	.1 uF
C603	2113930F15	3.3 pF
C604	2113930F22	6.2 pF
C606	2113930F20	5.1 pF
C609	2113930F16	3.6 pF
C610	2113930F29	12 pF
C612	2113930F23	6.8 pF
C613	2113932K15	.1 uF
C614	2113930F21	5.6 pF
		DIODE: See Note 1.
CR102	4805129M96	Dual
CR104	4805129M96	Dual
CR301	4802233J09	Triple
CR501, 502	4805218N57	Dual

E1 thru 4	2484657R01	CORE: Ferrite Bead
F1	6505757V02	FUSE: 2 Amp
FL1, 2 FL401, 402	4805245J33 9105398W01	FILTER: See Note 2. 73.35MHz 450kHz
J2	0905304Z01	JACK: RF Coax Connector
		COIL, RF: unless otherwise stated
L101	2462587V37	180 nH
L102	2462587V24	15 nH
L103	2462587V37	180 nH
L104, 105	2460591A11	7.66 nH
L106	2462587V37	180 nH
L108	2462587V37	180 nH
L201	2460591C40	17.02 nH
L202	2460591E24	23.75 nH
L203	2462587V37	180 nH
L204	2460591E24	23.75 nH
L301	2462587V24	15 nH
L302	2462587Q59	10 uH
L401	2462575A16	3900 nH
L402	2462587N56	180 nH
L600, 601	2405452C59	910 nH
L602	2405452C64	1500 nH
L603	2405452C61	1100 nH
L605	2462587N65	750 nH
		TRANSISTOR: See Note 1.
Q1	4805218N55	NPN
Q501	4805218N45	NPN
Q502	4805128M27	PNP
Q503	4805921T06	Dual PNP
Q601	4882022N70	NPN
		RESISTOR; Ω :
R101	0662057A90	51K
R202	0662057A01	10
R204	0662057A25	100
R304	0662057A90	51K
R305	0662057A56	2K
R306	0662057A65	4.7K
R307	0662057A49	1K
R309	0662057A90	51K
R310	0662057A49	1K

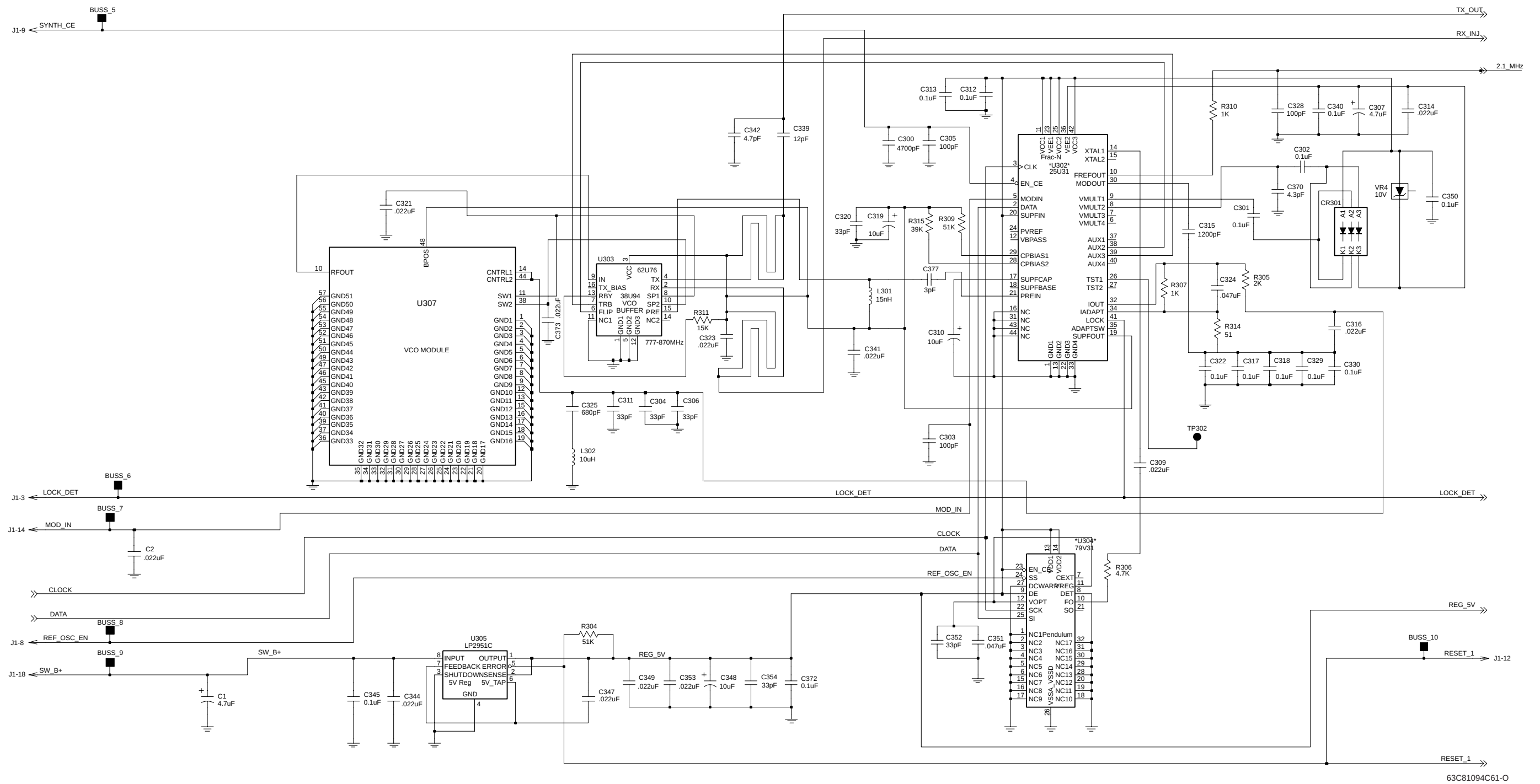
R311	0662057A77	15K
R314	0662057A18	51
R315	0662057A87	39K
R326, 327	0662057C01	0
R401	0660079U18	5.1
R402	0662057B08	270K
R403	0662057A83	27K
R404	0662057A73	10K
R405	0662057A13	33
R406	0662057A69	6.8K
R407	0662057A17	47
R410, 411	0662057A21	68
R412	0662057A13	33
R413	0662057A35	270
R414	0662057A56	2K
R416	0662057A80	20K
R417	0662057A01	10
R418	0662057A53	1.5K
R419, 420	0662057A89	47K
R421	0662057A58	2.4K
R501	0662057A73	10K
R503	0662057A73	10K
R505	0662057A77	15K
R506	0662057A69	6.8K
R507	0662057A61	3.3K
R508	0662057A49	1K
R509	0662057C75	1K
R511	0662057A56	2K
R514	0662057A73	10K
R601	0662057A25	100
R602	0662057A56	2K
R603	0662057A85	33K
R604	0662057A75	12K
R605	0662057A61	3.3K
RT501	0605621T02	THERMISTOR: 50k
		TRANSFORMER:
T201	2505515V07	25:1
T202	2505515V04	5:1
		INTEGRATED CIRCUIT MODULE: See Note 1.
U201	5105279V15	3-Pole Filter
U202	5105329V21	RF Amp
U203	5105279V15	3-Pole Filter
U205	5105329V26	Mixer
U302	5105457W73	Fractional-N-Synthesizer
U303	5105662U76	VCO Buffer
U304	5105279V31	16.8 MHz Reference Oscillator
U305	5105469E65	5 Volt Regulator

U307	5105238U94	VCO
U401	5105457W20	ABACUS
U501	5105279V26	RF Coupler
U502	5105385Y12	LDMOS RF PA
U503	5105662U70	D/A Converter
U504	5105662U72	TX ALC
		DIODE: See Note 1.
VR1	4813830A33	Zener, 20V
VR2	4813830A33	Not Placed
VR3	4813830A33	Zener, 20V
VR4	4813830A23	Not Placed
VR401	4862824C01	Varactor
VR402	4805129M58	Varactor
		MISCELLANEOUS:
G1 thru 4	3905643V01	Ground Contact
G6	3905643V01	Ground Contact
SH1	2605258V01	Synthesizer Shield
SH2	2605259V01	Diode Shield
SH3	2605260V01	RF Switch Shield
SH4	2605418V01	Transformer Shield
SH5	2605263V01	3 Pole Filter Shield
SH6	2605634V01	Antenna Shield
SH7	2605890U01	VCO Shield
	3985661A01	VCO Metal Strip Contact
	8405431Z02	PC Board (prior to 4/1997)
	or 8405431Z03	PC Board (after 3/1997)

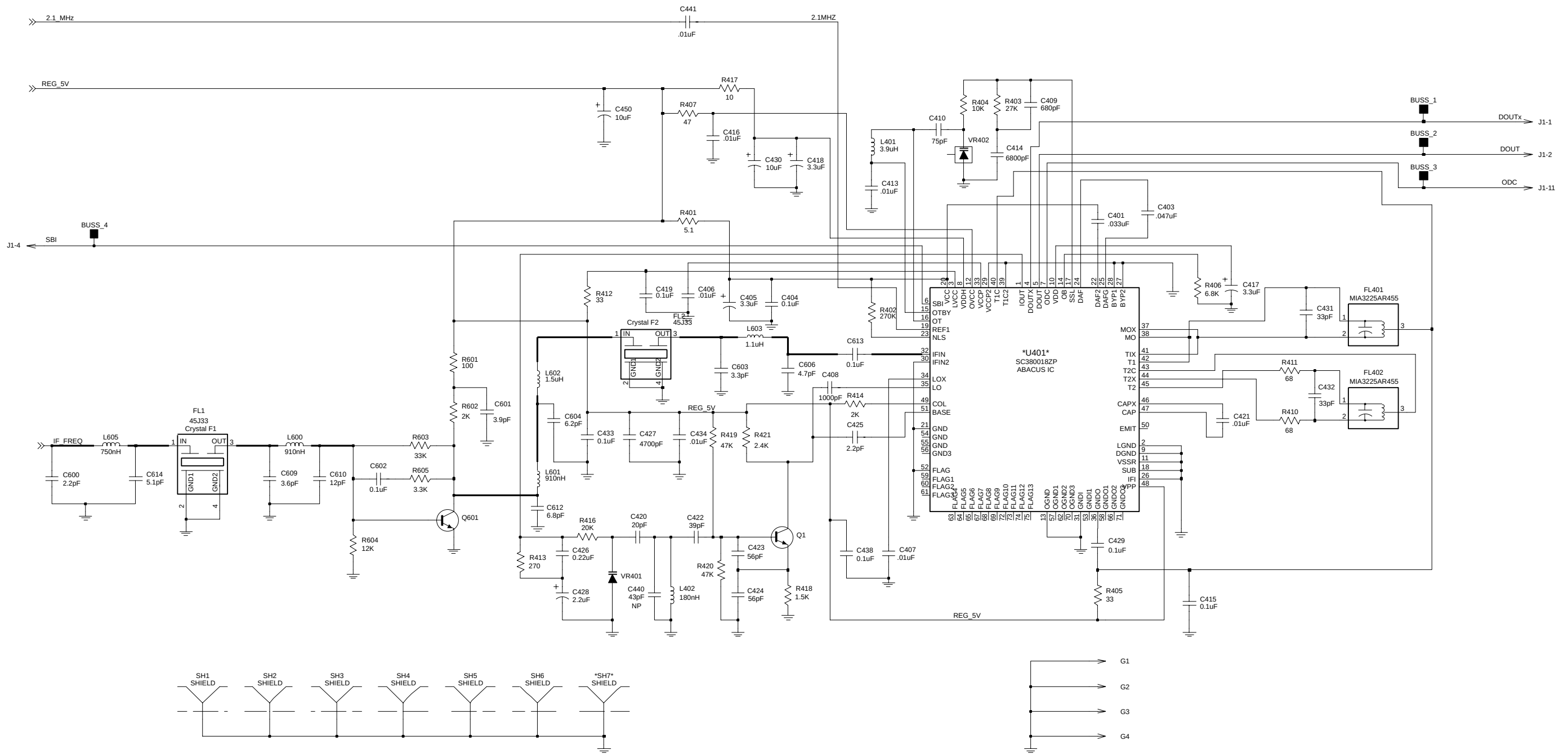
- Notes:
- For optimum performance, order replacement diodes, transistors, and circuit modules by Motorola part number only.
 - When ordering crystals, specify carrier frequency, crystal frequency, crystal type number, and Motorola part number.
 - Part value notations:
 $p=10^{-12}$
 $n=10^{-9}$
 $\mu=10^{-6}$
 $m=10^{-3}$
 $k=10^3$
 $M=10^6$
 - ITEM refers to the component reference designator. SIDE refers to the location of the component on the board; S1=Side 1, S2=Side 2.
 - The NUF6472 800MHz Transceiver Kit uses a 6-layer printed circuit board.







NUF6472D 800 MHz RF Board Schematic Diagram, Sheet 2 of 3



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The floor plan shows a building with several main sections. At the top left is a large area labeled U502. Below it is a large rectangular area labeled U307, which contains a grid of numbers from 1 to 57. To the right of U307 is a large area labeled U304. In the center is a large area labeled U203, which contains a grid of numbers from 1 to 13. To the right of U203 is a large area labeled U201, which contains a grid of numbers from 1 to 13. The plan also includes many smaller rooms labeled with codes such as R401, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C808, C809, C810, C811, C812, C813, C814, C815, C816, C817, C818, C819, C820, C821, C822, C823, C824, C825, C826, C827, C828, C829, C830, C831, C832, C833, C834, C835, C836, C837, C838, C839, C840, C841, C842, C843, C844, C845, C846, C847, C848, C849, C850, C851, C852, C853, C854, C855, C856, C857, C858, C859, C860, C861, C862, C863, C864, C865, C866, C867, C868, C869, C870, C871, C872, C873, C874, C875, C876, C877, C878, C879, C880, C881, C882, C883, C884, C885, C886, C887, C888, C889, C890, C891, C892, C893, C894, C895, C896, C897, C898, C899, C900, C901, C902, C903, C904, C905, C906, C907, C908, C909, C910, C911, C912, C913, C914, C915, C916, C917, C918, C919, C920, C921, C922, C923, C924, C925, C926, C927, C928, C929, C930, C931, C932, C933, C934, C935, C936, C937, C938, C939, C940, C941, C942, C943, C944, C945, C946, C947, C948, C949, C950, C951, C952, C953, C954, C955, C956, C957, C958, C959, C960, C961, C962, C963, C964, C965, C966, C967, C968, C969, C970, C971, C972, C973, C974, C975, C976, C977, C978, C979, C980, C981, C982, C983, C984, C985, C986, C987, C988, C989, C990, C991, C992, C993, C994, C995, C996, C997, C998, C999, C1000, C1001, C1002, C1003, C1004, C1005, C1006, C1007, C1008, C1009, C1010, C1011, C1012, C1013, C1014, C1015, C1016, C1017, C1018, C1019, C1020, C1021, C1022, C1023, C1024, C1025, C1026, C1027, C1028, C1029, C1030, C1031, C1032, C1033, C1034, C1035, C1036, C1037, C1038, C1039, C1040, C1041, C1042, C1043, C1044, C1045, C1046, C1047, C1048, C1049, C1050, C1051, C1052, C1053, C1054, C1055, C1056, C1057, C1058, C1059, C1060, C1061, C1062, C1063, C1064, C1065, C1066, C1067, C1068, C1069, C1070, C1071, C1072, C1073, C1074, C1075, C1076, C1077, C1078, C1079, C1080, C1081, C1082, C1083, C1084, C1085, C1086, C1087, C1088, C1089, C1090, C1091, C1092, C1093, C1094, C1095, C1096, C1097, C1098, C1099, C1100, C1101, C1102, C1103, C1104, C1105, C1106, C1107, C1108, C1109, C1110, C1111, C1112, C1113, C1114, C1115, C1116, C1117, C1118, C1119, C1120, C1121, C1122, C1123, C1124, C1125, C1126, C1127, C1128, C1129, C1130, C1131, C1132, C1133, C1134, C1135, C1136, C1137, C1138, C1139, C1140, C1141, C1142, C1143, C1144, C1145, C1146, C1147, C1148, C1149, C1150, C1151, C1152, C1153, C1154, C1155, C1156, C1157, C1158, C1159, C1160, C1161, C1162, C1163, C116

ITEM	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITOR, Fixed: pF ±5%; 50V unless otherwise stated
C1	2311049J12	4.7 µF
C2	2113932E07	22 nF 10% 16V
C5	2113930F39	33 PF 50V 5%
C12	-----	Not Placed
C14	2113930F39	33
C15	2113932E07	22 nF 10% 16V
C16	2311049A07	1 µF
C17	2113932E07	22 nF 10% 16V
C20	2311049J11	4.7 µF
C21	2113930F39	33
C30	2113930F39	33
C101	2113930F22	6.2 pF 50V ±0.25 pF 50V
C102	-----	Not Placed
C103	2113930F39	33
C104	2113930F34	20
C105	2113930F39	33
C106	2113930F14	3 pF 50V ±0.25 pF 50V
C107	-----	Not Placed
C108	2113930F39	33
C110	2113930F15	3.3 pF 50V ±0.25 pF 50V
C114	2113930F39	33
C201	2311049J23	10 µF
C202	2113930F41	39
C203	2113930F51	100
C204	2113932E07	22 nF 10% 16V
C206	2113930F39	33
C207	2113930F14	3 pF 50V ±0.25 pF 50V
C208	2113930F41	39
C209	2113932E07	22 nF 10% 16V
C210	2311049J23	10 µF
C211	2113932E07	22 nF 10% 16V
C212	2113930F41	39
C213	2113932E07	22 nF 10% 16V
C216	2311049J23	10 µF
C218	2113932E07	22 nF 10% 16V
C221	2113932E07	22 nF 10% 16V
C222	2113930F22	6.2 pF 50V ±0.25 pF 50V
C223	2113930F20	5.1 pF 50V ±0.25 pF 50V
C226	2113930F41	39
C227	2113931F13	330 pF
C230	-----	Not Placed
C300	2113931F41	4.7 nF
C301, C302	2113932K15	0.1 µF +80/-20% 16V
C303	2113930F51	100
C304	2113930F39	33
C305	2113930F51	100
C306	2113930F39	33
C307	2311049J12	4.7 µF
C309	2113932E07	22 nF 10% 16V
C310	2311049J23	10 µF

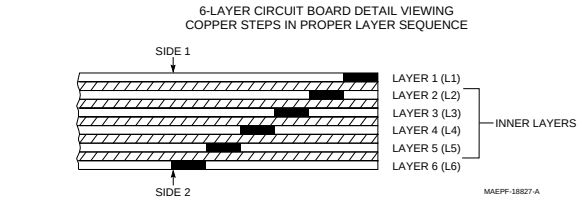
13-37

C431, C432	2113930F39	33
C433	2113932K15	0.1 μF +80/-20% 16V
C434	2113931F49	10 nF
C438	2113932K15	0.1 μF +80/-20% 16V
C440	-----	Not Placed
C441	2113931F49	10 nF
C450	2311049J23	10 μF
C503 thru C507	2113930F39	33
C509	2113930F39	33
C510	2113932E07	22 nF 10% 16V
C511	2113930F39	33
C512	2113932E07	22 nF 10% 16V
C513	2311049A13	4.7 μF
C514	2113932E07	22 nF 10% 16V
C517	2113930F39	33
C518	2113932K15	0.1 μF +80/-20% 16V
C519	2113930F39	33
C520	2311049J23	10 μF
C521	2113932E07	22 nF 10% 16V
C522	2113932K15	0.1 μF +80/-20% 16V
C523 thru C525	2113930F39	33
C527	2113932E07	22 nF 10% 16V
C600	2113930F11	2.2 pF 50V ±0.25 pF 50V
C601	2113930F17	3.9 pF 50V ±0.25 pF 50V
C602	2113932K15	0.1 μF +80/-20% 16V
C603	2113930F15	3.3 pF 50V ±0.25 pF 50V
C604	2113930F22	6.2 pF 50V ±0.25 pF 50V
C606	2113930F19	4.7 pF 50V ±0.25 pF 50V
C609	2113930F16	3.6 pF 50V ±0.25 pF 50V
C610	2113930F29	12
C612	2113930F23	6.8 pF 50V ±0.25 pF 50V
C613	2113932K15	0.1 μF +80/-20% 16V
C614	2113930F20	5.1 pF 50V ±0.25 pF 50V
		DIODE: See Note 1.
CR102	4805129M96	Dual
CR104	4805129M96	Dual
CR301	4802233J09	Triple
CR501, CR502	4805218N57	Dual
		CORE:
E1 thru E4	2484657R01	Bead, Ferrite
		FUSE:
F1	6505757V02	2 Amp
		FILTER: See Note 2.
FL1, FL2	4805245J33	73.35 MHz
FL401, FL402	9105398W01	450 kHz
		CONTACT:
G1 thru G4	3905643V01	Ground
G6	3905643V01	Ground
		JACK:
J1	-----	Not Placed
J2	0905304Z01	RF Coaxial Connector
J3	-----	Not Placed
		COIL, RF:

L101	2462587V37	180 nH
L102	2462587V24	15 nH
L103	2462587V37	180 nH
L104, L105	2460591A11	7.66 nH
L106	2462587V37	180 nH
L108	2462587V37	180 nH
L201	2460591C40	17.02 nH
L202	2460591E24	23.75 nH
L203	2462587V37	180 nH
L204	2460591E24	23.75 nH
L301	2462587V24	15 nH
L302	2462587Q59	10 μH
L401	2462575A16	3.9 μH 10 MHz
L402	2462587N56	180 nH
L600, L601	2405452C59	910 nH
L602	2405452C64	1.5 μH
L603	2405452C61	1.1 μH
L605	2462587N65	750 nH
		TRANSISTOR: See Note 1
Q1	4805218N55	NPN
Q501	4805218N45	NPN
Q502	4805128M27	PNP
Q503	4805921T06	Dual PNP
Q601	4882022N70	NPN
		RESISTOR, Fixed: Ω ±5%; 1/8W Unless otherwise stated
R101	0662057A90	51k
R202	0662057A01	10
R204	0662057A25	100
R304	0662057A90	51k
R305	0662057A56	2k
R306	0662057A65	4.7k
R307	0662057A49	1k
R309	0662057A90	51k
R310	0662057A49	1k
R311	0662057A77	15k
R314	0662057A18	51
R315	0662057A87	39k
R326, R327	0662057C01	0
R401	0660079U18	5.1
R402	0662057B08	270k
R403	0662057A83	27k
R404	0662057A73	10k
R405	0662057A13	33
R406	0662057A69	6800
R407	0662057A17	47
R410, R411	0662057A21	68
R412	0662057A13	33
R413	0662057A35	270
R414	0662057A56	2k
R416	0662057A80	20k
R417	0662057A01	10
R418	0662057A53	1.5k
R419, R420	0662057A89	47k
R421	0662057A58	2.4k
R501	0662057A73	10k
R503	0662057A73	10k

R505	0662057A77	15k
R506	0662057A69	6.8k
R507	0662057A61	3.3k
R508	0662057A49	1k
R509	0662057C75	1k
R511	0662057A56	2k
R514	0662057A73	10k
R601	0662057A25	100
R602	0662057A56	2k
R603	0662057A85	33k
R604	0662057A75	12k
R605	0662057A61	3.3k
R700	0662057B22	1 M
		THERMISTOR;
RT501	0605621T02	50K
		SHIELD:
SH001	2605258V01	SYNTHESIZER
SH002	2605259V01	DIODE
SH003	2605260V01	RF SW
SH004	2605418V01	TRANSFORMER
SH005	2605263V01	3-POLE FILTER
SH006	2605634V01	ANTENNA
SH007	2605890U03	VCO
		TRANSFORMER:
T201	2505515V07	25:1
T202	2505515V04	5:1
		INTEGRATED CIRCUIT MODULE: See Note 1.
U201	5105279V15	3-Pole Filter
U202	5105329V21	RF Amp
U203	5105279V15	3-Pole Filter
U205	5105329V26	Mixer
U302	5105457W81	Fractional-N Synthesizer
U303	5105662U76	VCO Buffer
U304	5105385Y61	16.8 MHz Reference Oscillator
U305	5105469E65	5 Volt Regulator
U307	5105238U94	VCO
U401	5105835U90	ABACUS
U501	5105279V26	RF Coupler
U502	5105385Y83	LDMOS 800 RF PA
U503	5105835U51	D/A Converter
U504	5105835U52	TX ALC
		DIODE: See Note 1:
VR1	4813830A33	Zener, 20V
VR2	-----	Not Placed
VR3	4813830A33	Zener, 20V
VR4	-----	Not Placed
VR401	4862824C01	Varactor
VR402	4805129M58	Varactor

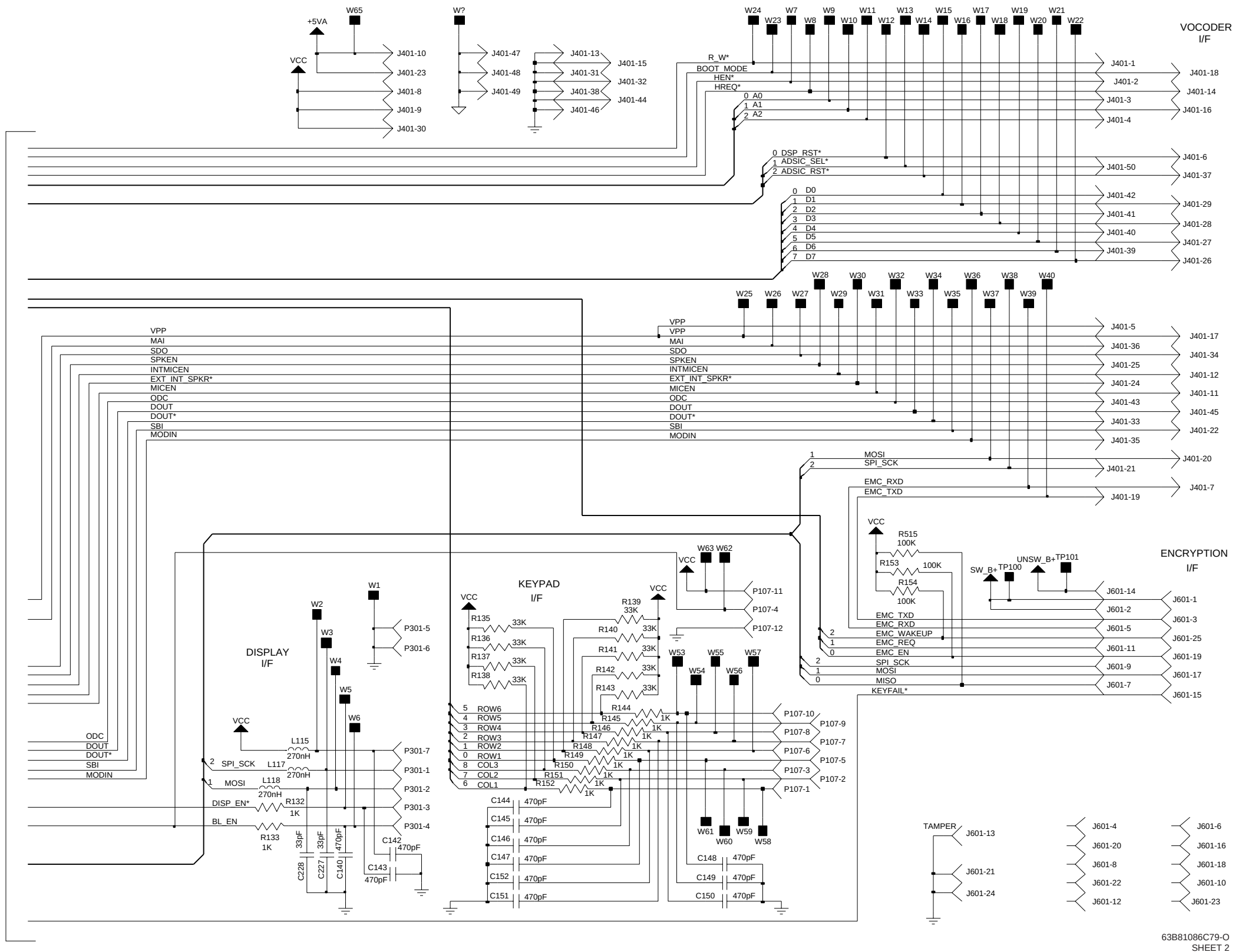
- Notes:
- For optimum performance, order replacement diodes, transistors, and circuit modules by Motorola part number only.
 - When ordering crystals, specify carrier frequency, crystal frequency, crystal type number, and Motorola part number.
 - Part value notations:
 $p=10^{-12}$
 $n=10^{-9}$
 $\mu=10^{-6}$
 $m=10^{-3}$
 $k=10^3$
 $M=10^6$
 - ITEM refers to the component reference designator. SIDE refers to the location of the component on the board; S1=Side 1, S2=Side 2.
The NUF6472 800MHz Transceiver Kit uses a 6-layer printed circuit board.



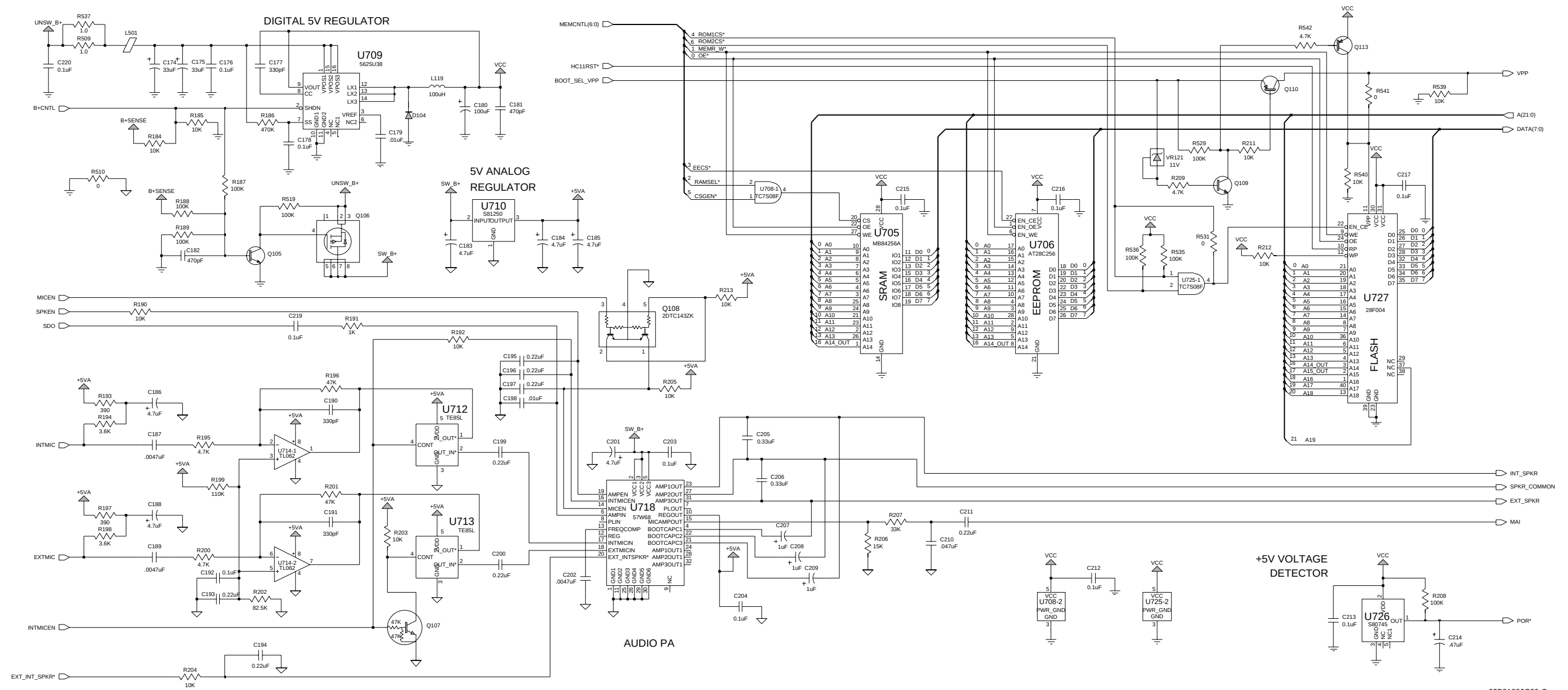


NCN6128B Controller Board Schematic Diagram, Sheet 1 of 4

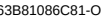
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NCN6128B Controller Board Schematic Diagram, Sheet 2 of 4

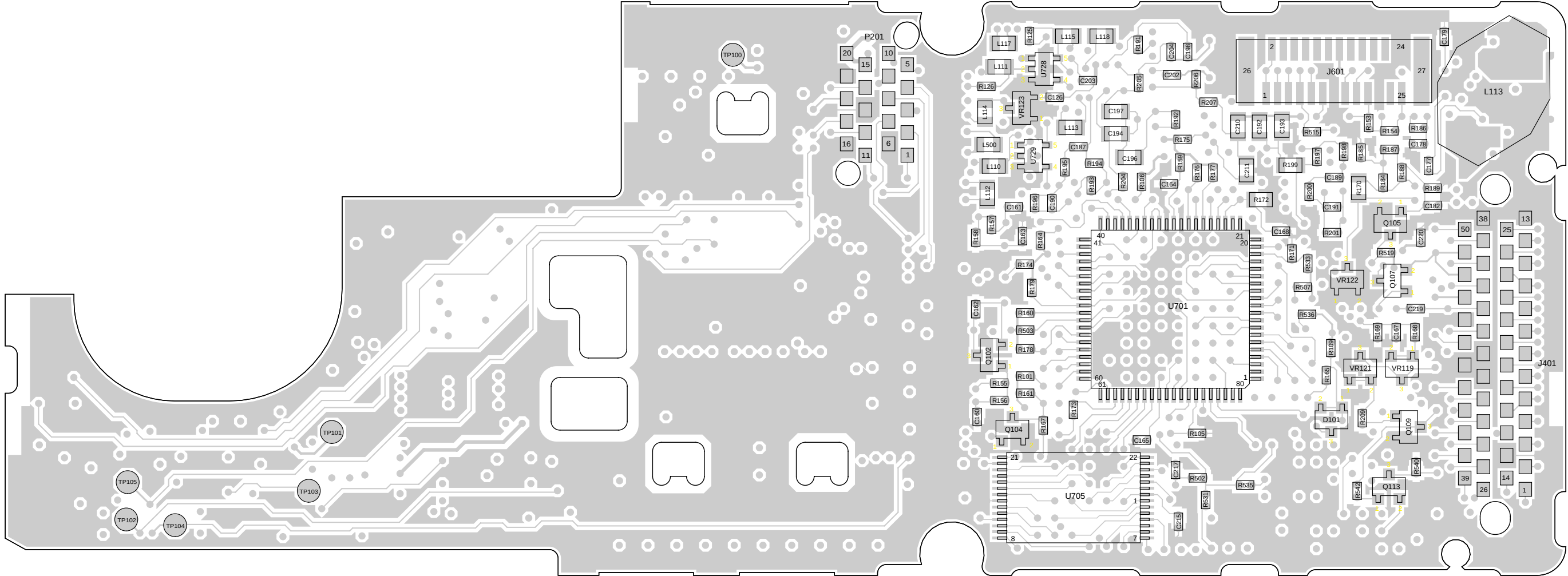


63B81086C80-O



MBEPF-26069-O

VIEWED FROM SIDE 2



MBEPF-26070-O

NCN6128B Controller Board
Electrical Parts List

ITEM	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITOR, Fixed: unless otherwise stated
C100 thru 106	2113931F17	470 pF
C108	2113930F39	33 pF
C109 thru 111	2113931F17	470 pF
C112	2113930F39	33 pF
C113, 114	2113931F17	470 pF
C116	2113930F39	33 pF
C117	2113931F17	470 pF
C118	2113930F39	33 pF
C120, 121	2113930F39	33 pF
C122	2113931F17	470 pF
C123, 124	2113930F39	33 pF
C125 thru 138	2113931F17	470 pF
C140	2113931F17	470 pF
C142 thru 152	2113931F17	470 pF
C160	2113932K15	.1 µF
C161	2113930F27	10 pF
C162	2113930F13	Not Placed
C163	2113930F27	10 pF
C164, 165	2113932K15	.1 µF
C167	2113931F17	470 pF
C168 thru 172	2113932K15	.1 µF
C174, 175	2311049A97	33 µF
C176	2113932K15	.1 µF
C177	2113931F13	330 pF
C178	2113932K15	.1 µF
C179	2113931F49	.01 µF
C180	2311049C07	100 µF
C181, 182	2113931F17	470 pF
C183 thru 186	2311049J12	4.7 µF
C187	2113931F41	4700 pF
C188	2311049J12	4.7 µF
C189	2113931F41	4700 pF
C190, 191	2113931F13	33 pF
C192	2113743A19	.1 µF
C193 thru 197	2113743A23	.22 µF
C198	2113931F49	.01 µF
C199, 200	2113743A23	.22 µF
C201	2311049J12	4.7 µF
C202	2113931F41	4700 pF
C203, 204	2113932K15	.1 µF
C205, 206	2113743F12	.33 µF
C207 thru 209	2311049A07	1 µF
C210	2113743A13	.047 µF
C211	2113743A23	.22 µF
C212, 213	2113932K15	.1 µF
C214	2311049A05	.47 µF
C215 thru 217	2113932K15	.1 µF
C219, 220	2113932K15	.1 µF
C223	2113931F17	470 pF
C224	2113930F39	33 pF
C225, 226	2113931F17	470 pF
C227, 288	2113930F39	33 pF
		DIODE: See Note 1.
D100	4884939C35	Hot Carrier, 4V

D101	4884939C35	Hot Carrier, 4V
D104	4813833B09	Schottky, 30V
		JACK:
J101	0913915A15	Controls Flex Assembly Con- nector
J601	0913915A11	Encryption Board Connector
		COIL, RF: unless otherwise stated
L100 thru 115	2462587Q40	270 nH
L117, 118	2462587Q40	270 nH
L119	2405528W04	100 uH
L120	2460578C43	33 uH
L500	2462587Q40	270 nH
L501	2405688Z01	Ferrite Bead
		TRANSISTOR: See Note 1.
Q102	4805128M12	NPN
Q104, 105	4805128M12	NPN
Q106	4805718V01	MOSFET Switch
Q107	4880048M01	NPN
Q108	4805921T09	Dual NPN
Q109	4805128M12	NPN
Q110	4805128M40	PNP
Q111, 112	4805921T09	Dual NPN
Q113	4805128M40	Not Placed
		RESISTOR:
R100	0662057A65	4.7K
R101	0662057A89	47K
R102	0662057A36	300
R103	0662057A35	270
R105	0662057A62	3.6K
R106	0662057A97	100K
R108	0662057A97	100K
R109	0662057A73	10K
R110 thru 112	0662057A39	390
R114	0662057A49	1K
R115	0662057A39	390
R116 thru 118	0662057A97	100K
R119 thru 123	0662057A49	1K
R124	0662057A85	33K
R125, 126	0662057A97	100K
R127 thru 133	0662057A49	1K
R135 thru 143	0662057A85	33K
R144 thru 152	0662057A49	1K
R153 thru 155	0662057A97	100K
R156	0662057A73	10K
R157	0662057B47	0
R158	0662057B22	1M
R159, 160	0662057A65	4.7K
R161	0662057A73	10K
R163	0683962T45	68
R164	0662057A73	10K
R165	0662057A57	2.2K
R167	0662057A97	100K
R168	0662057A65	4.7K
R169	0662057A97	100K
R170	0662057G08	82.5K
R171	0662057A97	100K
R172	0662057R92	47.5K
R173	0662057B47	0

R174, 175	0662057A73	10K
R176, 177	0662057A97	100K
R178	0662057A85	33K
R179	0662057A65	4.7K
R180	0662057A97	100K
R181	0662057B47	0
R182, 183	0662057A97	100K
R184, 185	0662057A73	10K
R186	0662057B14	470K
R187 thru 189	0662057A97	100K
R190	0662057A73	10K
R191	0662057A49	1K
R192	0662057A73	10K
R193	0662057A39	390
R194	0662057A62	3.6K
R195	0662057A65	4.7K
R196	0662057A89	47K
R197	0662057A39	390
R198	0662057A62	3.6K
R199	0662057G14	110K
R200	0662057A65	4.7K
R201	0662057A89	47K
R202	0662057G08	82.5K
R203 thru 205	0662057A73	10K
R206	0662057A77	15K
R207	0662057A85	33K
R208	0662057A97	100K
R209	0662057A65	4.7K
R211 thru 213	0662057A73	10K
R502	0662057A97	100K
R503	0662057A65	4.7K
R504	0662057A97	100K
R507, 208	0662057A97	100K
R509	0662057C03	1
R510	0662057B47	0
R513, 514	0662057A39	390
R515	0662057A97	100K
R516	0662057A49	1K
R517	0662057A23	82
R518	0662057A39	390
R519, 520	0662057A97	100K
R521	0662057A25	100
R529	0662057A97	100K
R531	0662057B47	Not Placed
R533	0662057B47	Not Placed
R535, 536	0662057A97	100K
R537	0662057C03	1
R538	0662057B47	Not Placed
R539	0662057A73	10K
R540	0662057A73	Not Placed
R541	0662057B47	0
R542	0662057A65	Not Placed
		INTEGRATED CIRCUIT MOD- ULE: See Note 1.
U701	5113802A33	HC11F1 MCU (QFP)
U702	5105457W33	SLIC 5 (OMPAC)
U704	5105750U28	CMOS Switch (MUX)
U705	5105662U54	32K X 8 SRAM
U706	5105625U33	32K X 8 EEPROM
U708	5105279V65	AND GATE

U709	5105625U38	5V Digital Switching Regula- tor
U710	5105625U41	5V Analog Regulator
U712, 713	5105750U28	CMOS Switch (MUX)
U714	5105364W01	DUAL OP-AMP
U717	5105750U28	CMOS Switch (MUX)
U718	5105457W68	AUDIO PA (QFP)
U725	5105279V65	AND GATE
U726	5105492X73	4.2V Voltage Detector
U727	5105109Z25	1M X 8 FLASH ROM
U728, 729	5105750U28	CMOS Switch (MUX)
		DIODE: See Note 1.
VR100 thru 102	4813830A24	Zener, 11V
VR104	4805117Y01	Dual Zener, 6.2V
VR105	4813830A15	Zener, 5.6V
VR107 thru 109	4813830A24	Zener, 11V
VR110	4805117Y01	Dual Zener, 6.2V
VR111	4813830A31	Zener, 18V
VR112	4813830A24	Zener, 11V
VR113	4813830A31	Zener, 18V
VR117	4813830A24	Zener, 11V
VR119	4813830A22	Zener, 9.1V
VR121	4813830A24	Zener, 11V
VR122, 123	4813830A15	Zener, 5.6V
VR124	4805117Y01	Dual Zener, 6.2V
VR300	4805117Y01	Dual Zener, 6.2V
		CRYSTAL: See Note 2
Y100	4805574W01	7.3728 MHz CRYSTAL
		MISCELLANEOUS:
	8405259Z03	PC Board

- Notes:
- For optimum performance, order replacement diodes, transistors, and circuit modules by Motorola part number only.
 - When ordering crystals, specify carrier frequency, crystal frequency, crystal type number, and Motorola part number.
 - Part value notations:
p=10⁻¹²
n=10⁻⁹
µ=10⁻⁶
m=10⁻³
k=10³
M=10⁶
 - ITEM refers to the component reference designator. SIDE refers to the location of the component on the board; S1=Side 1, S2=Side 2.
 - The NCN6128 Controller Kit uses an 8-layer printed circuit board.

