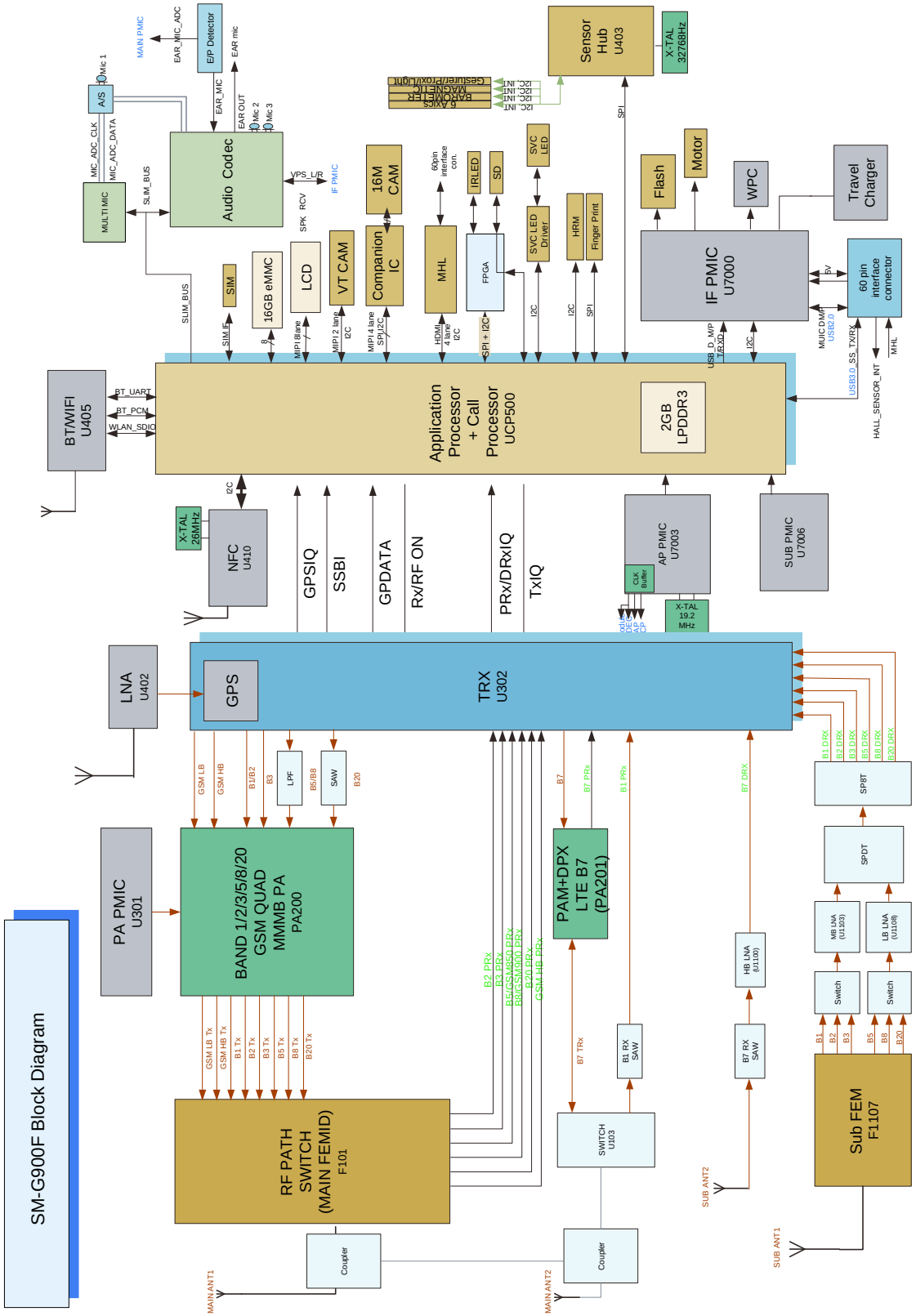
8. Level 3 Repair

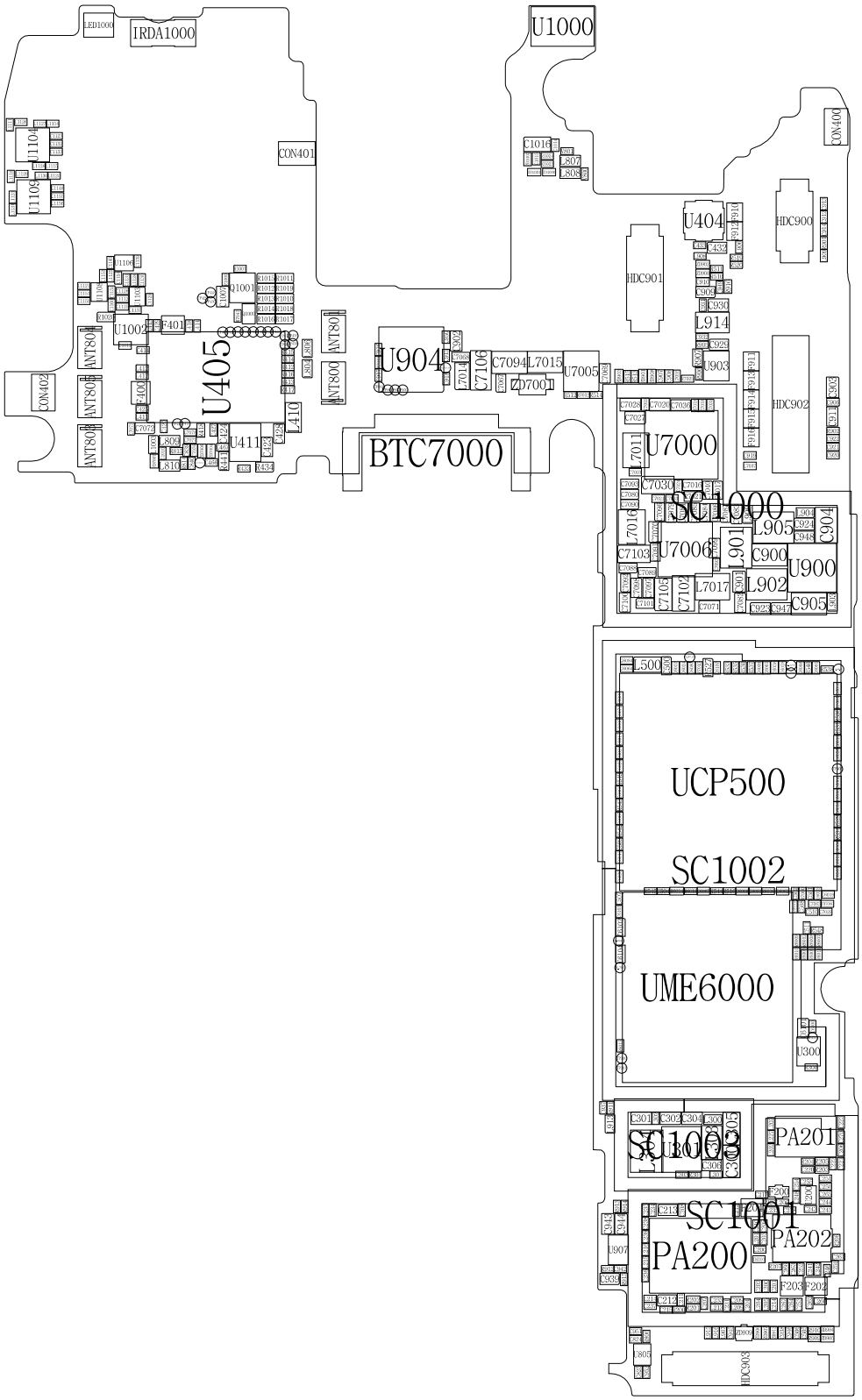
8-1. Block Diagram



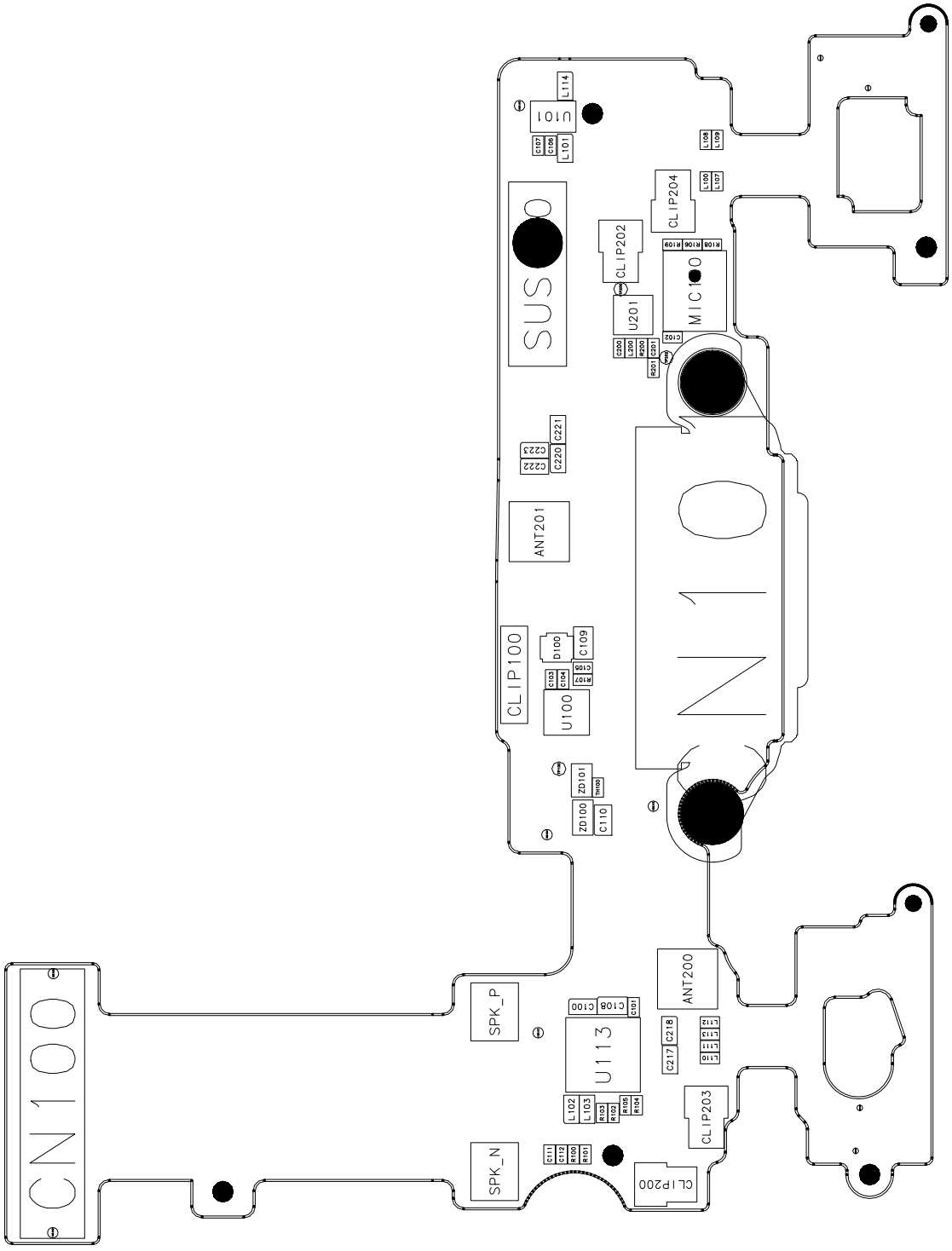
8-2. PCB Diagrams

8-2-1. Main PCB Top

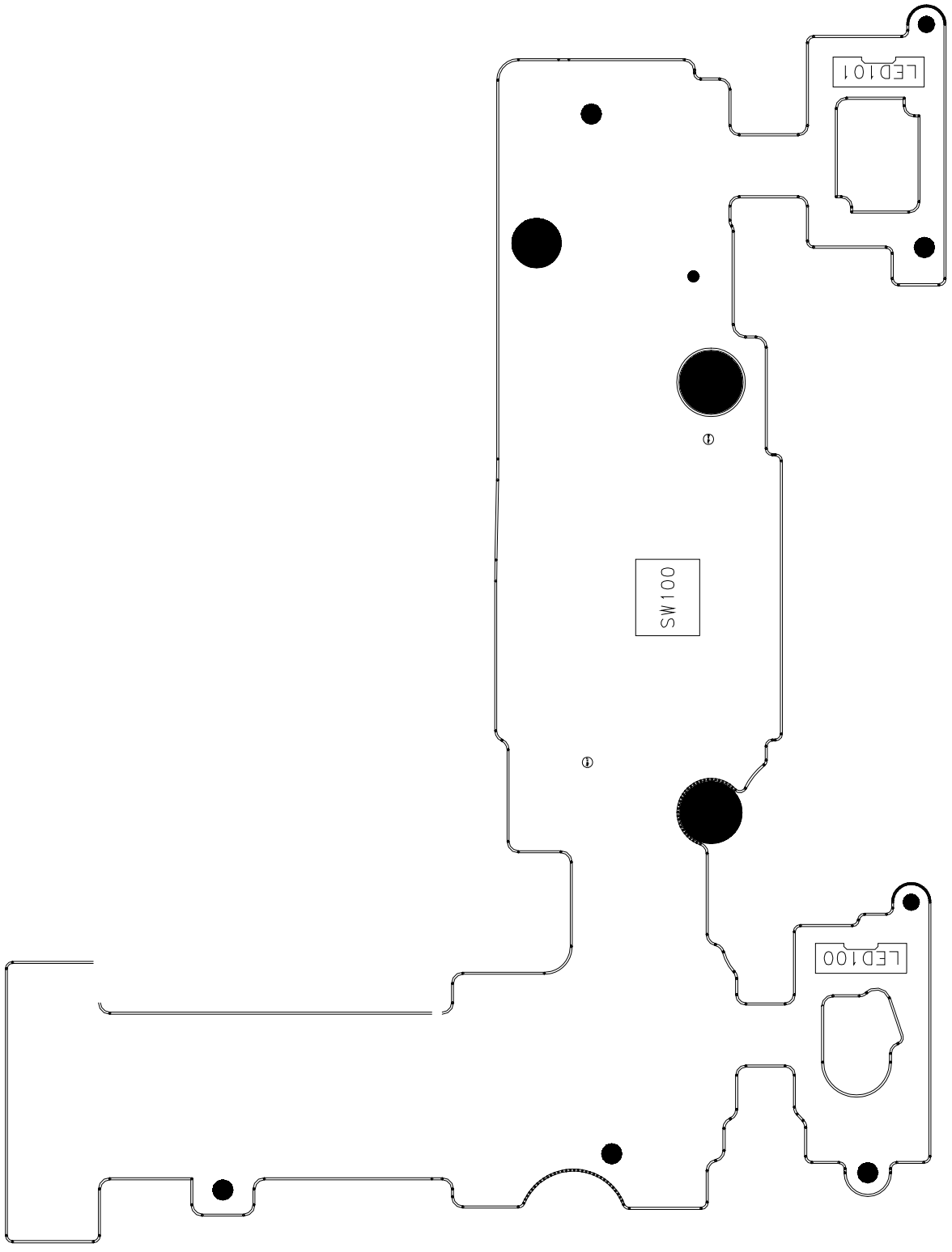
8-2-2. Bottom



8-2-3. Sub PCB Top

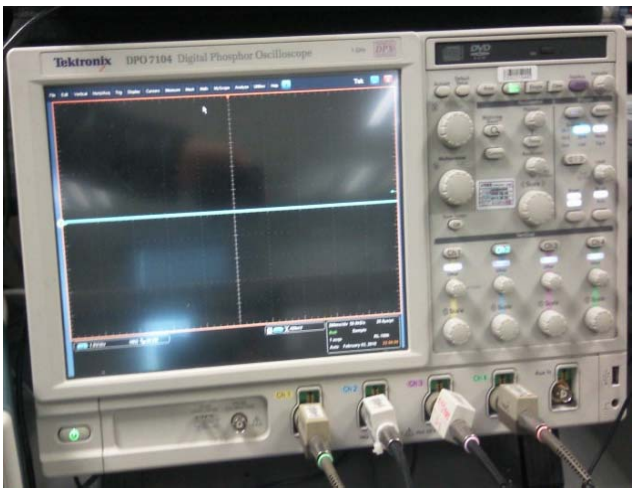


8-2-4. Sub PCB Bottom



8-3. Flow Chart of Troubleshooting

Equipments

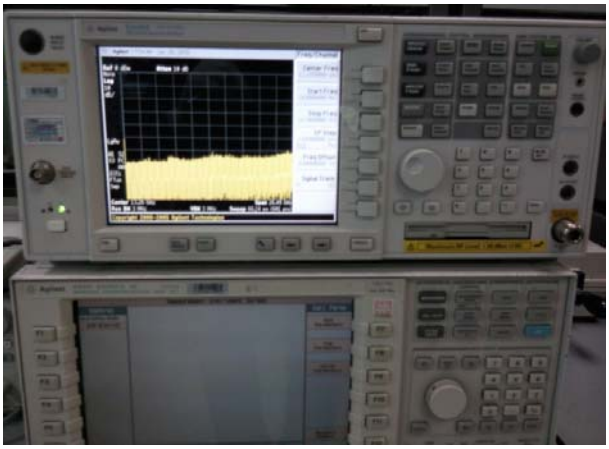


↑ Oscilloscope

↑ Digital Multimeter

↑ Power Supply

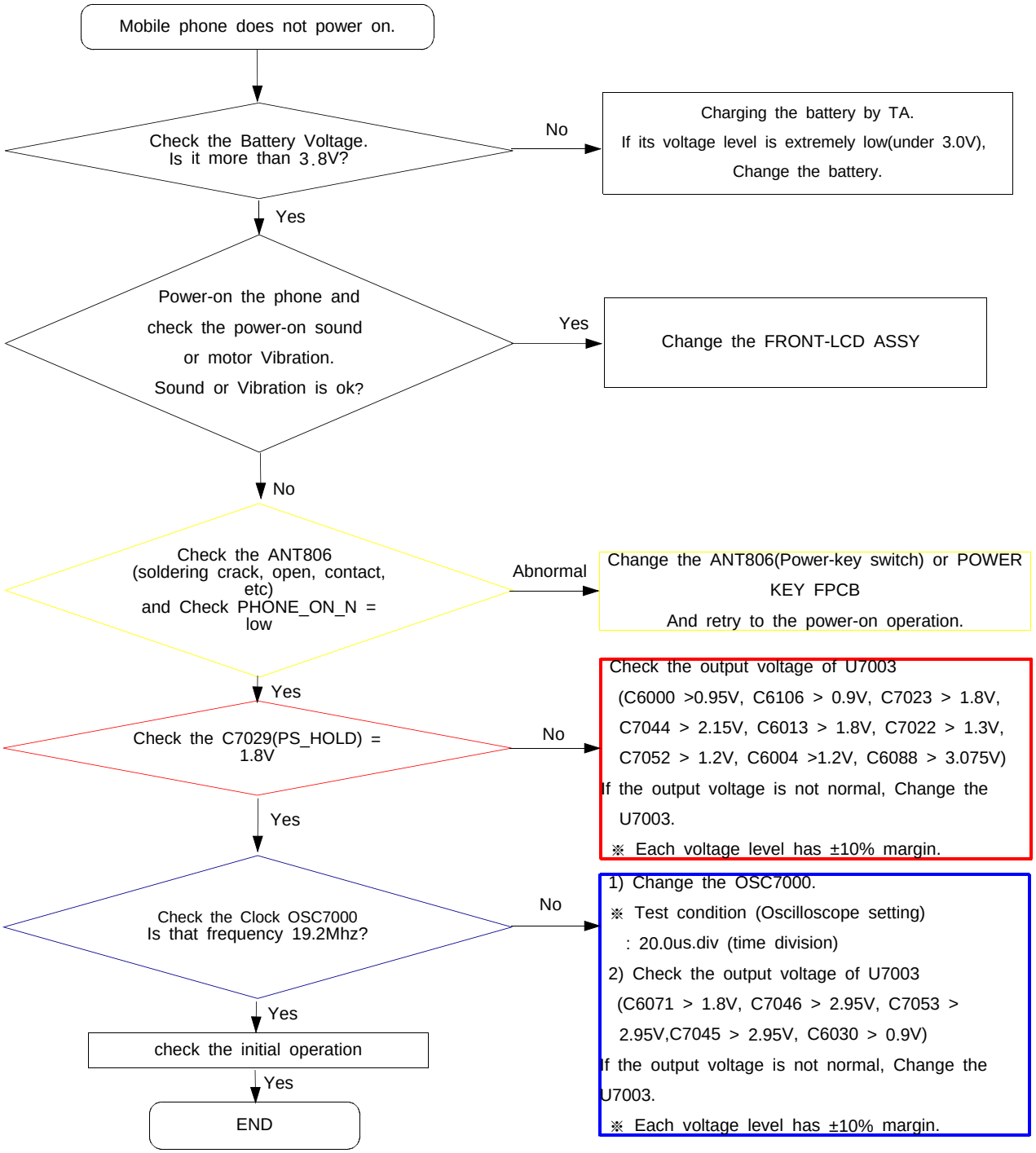
↑ + driver, ESD Safe Tweezer

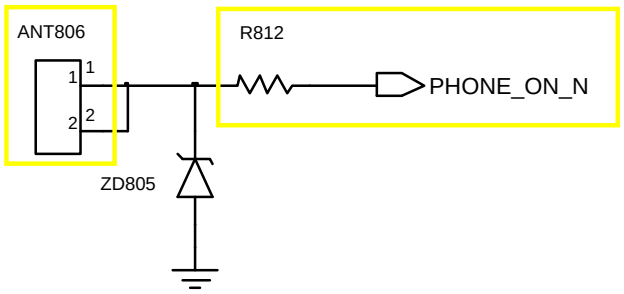


↑ 8960 & Spectrum Analyzer

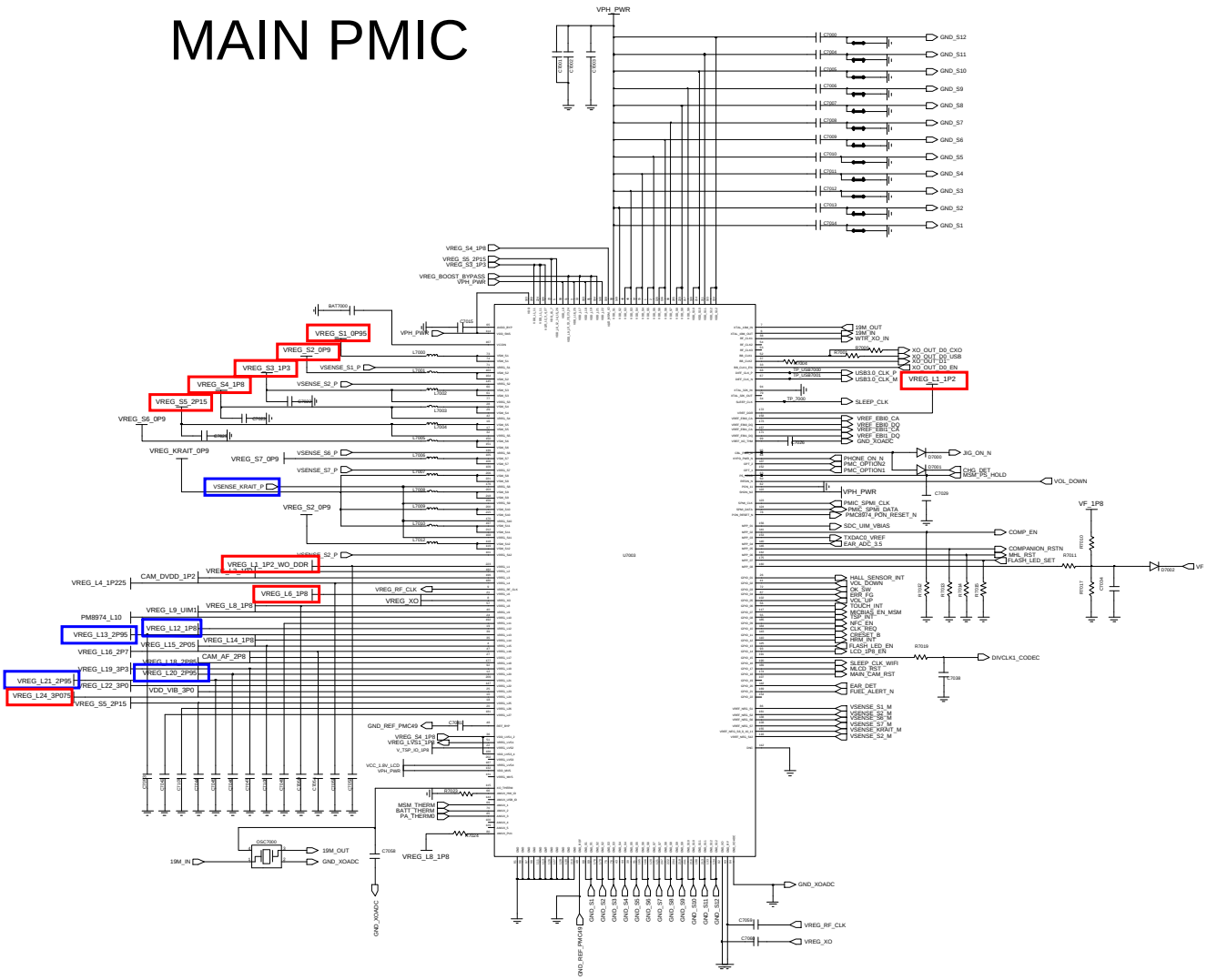
↑ Soldering iron

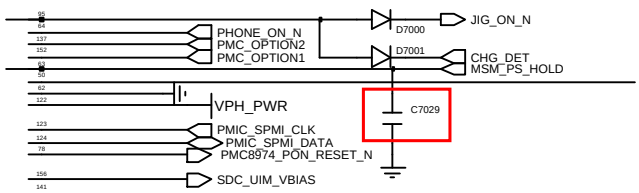
8-3-1. Power On

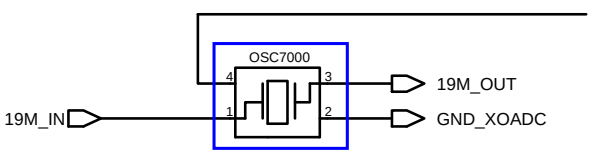




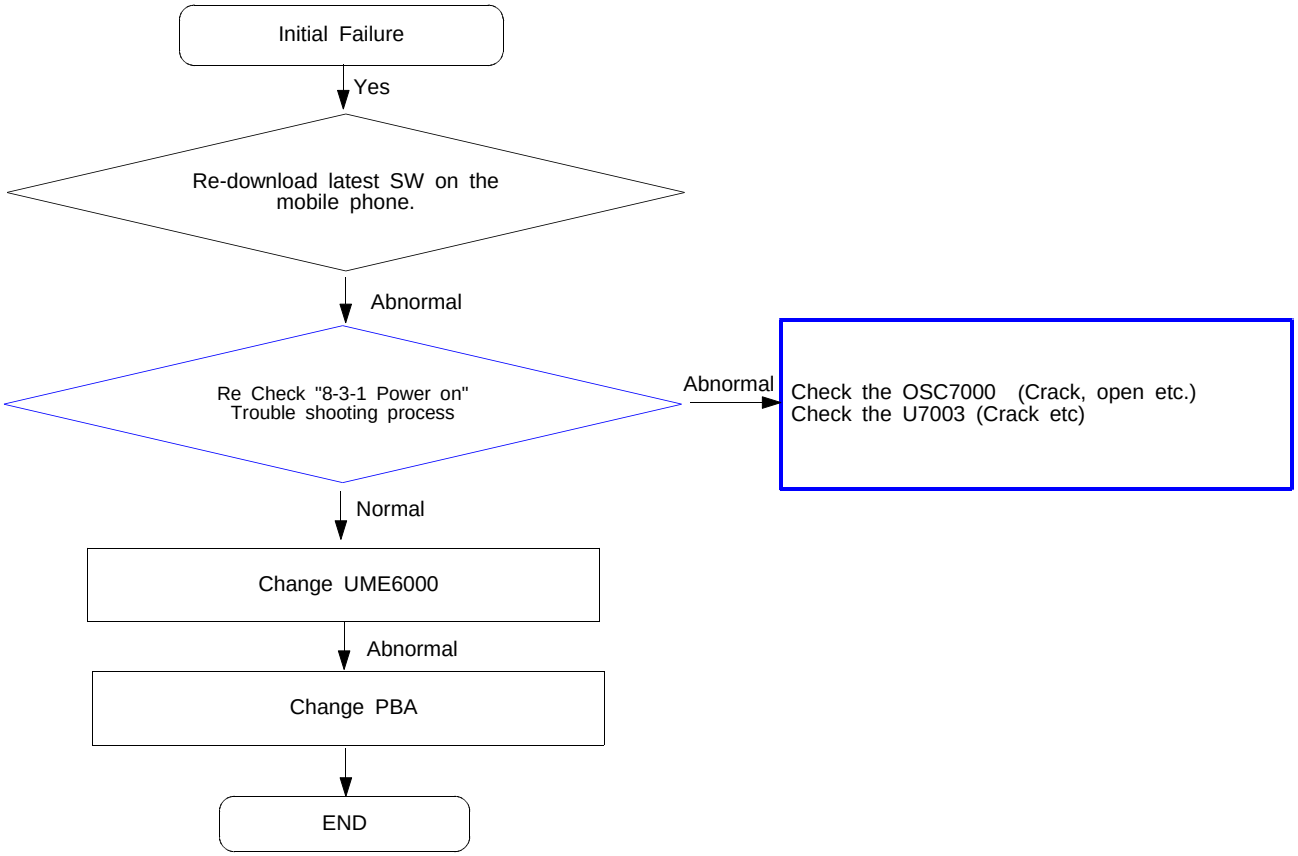
MAIN PMIC

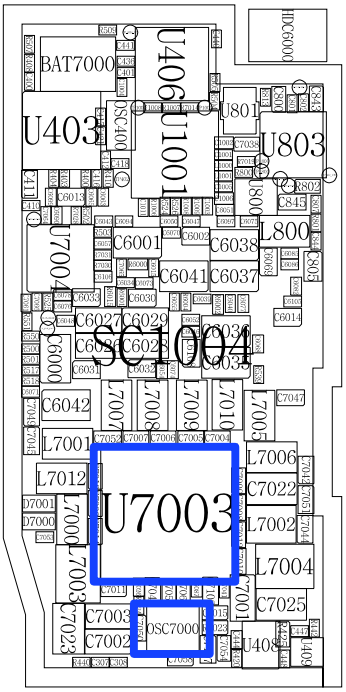


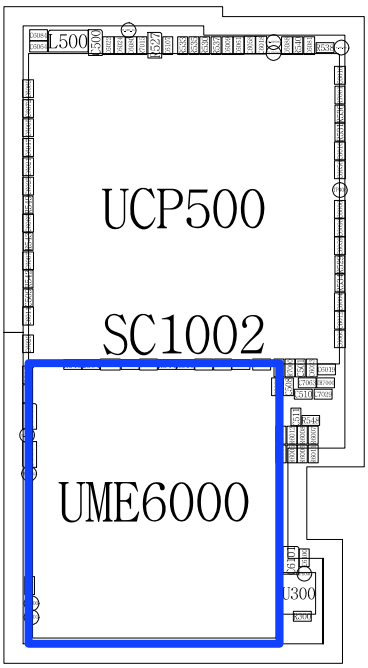




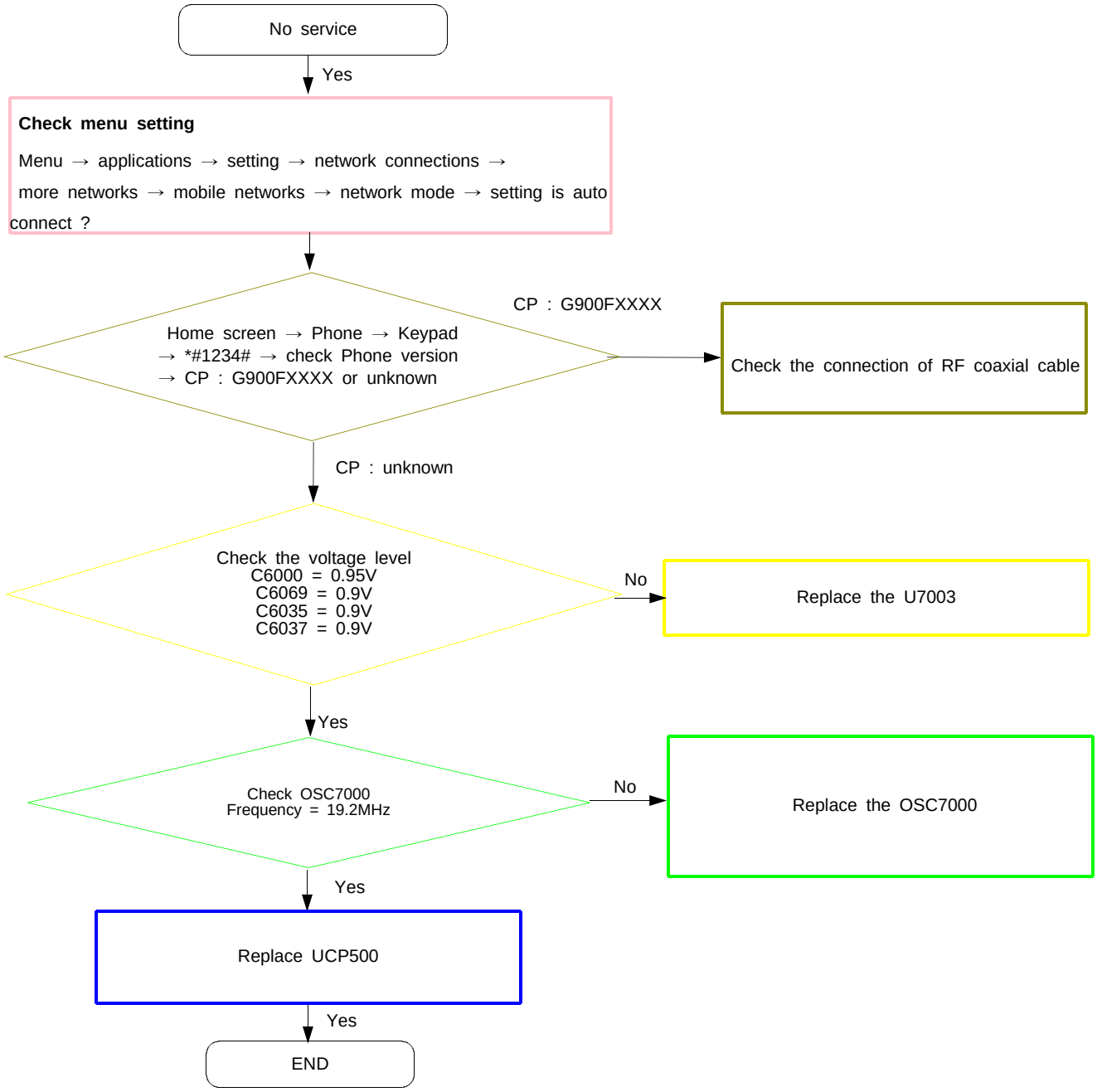
8-3-2. Initial







8-3-3. No Service



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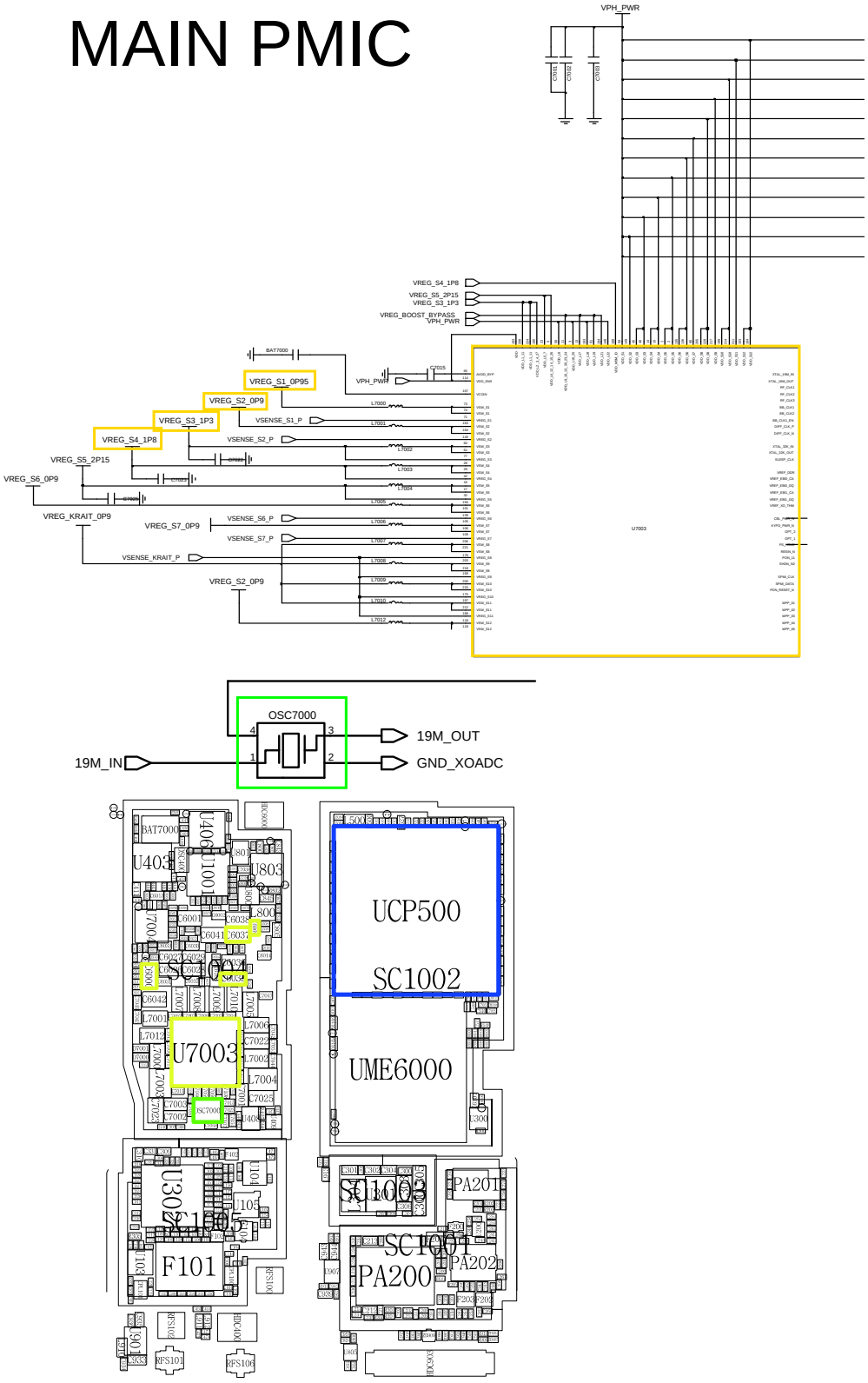
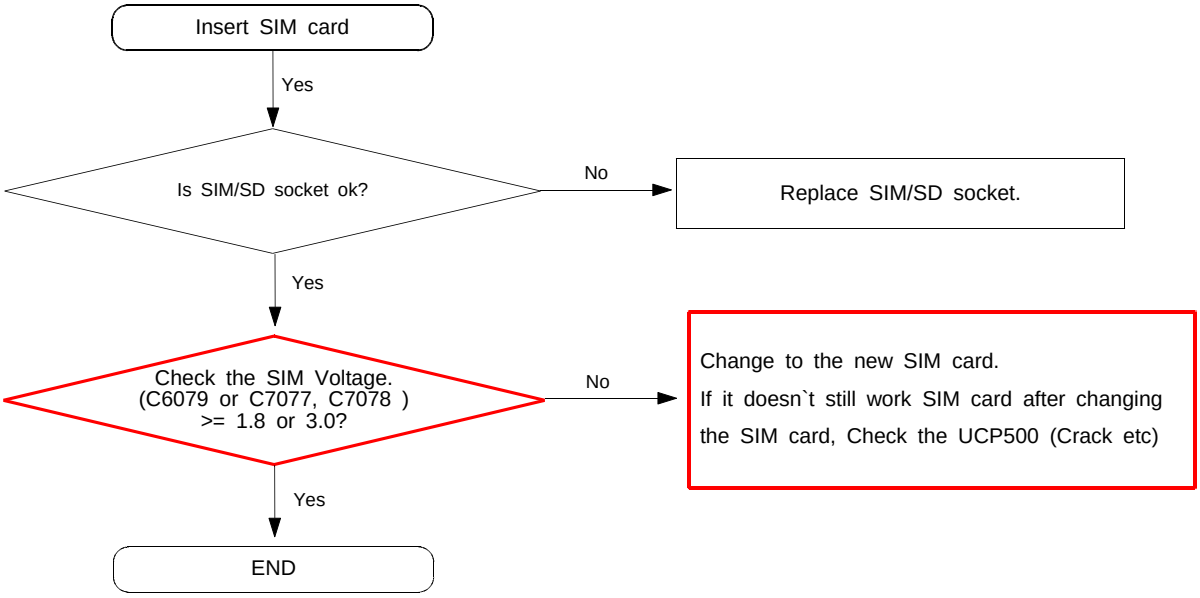
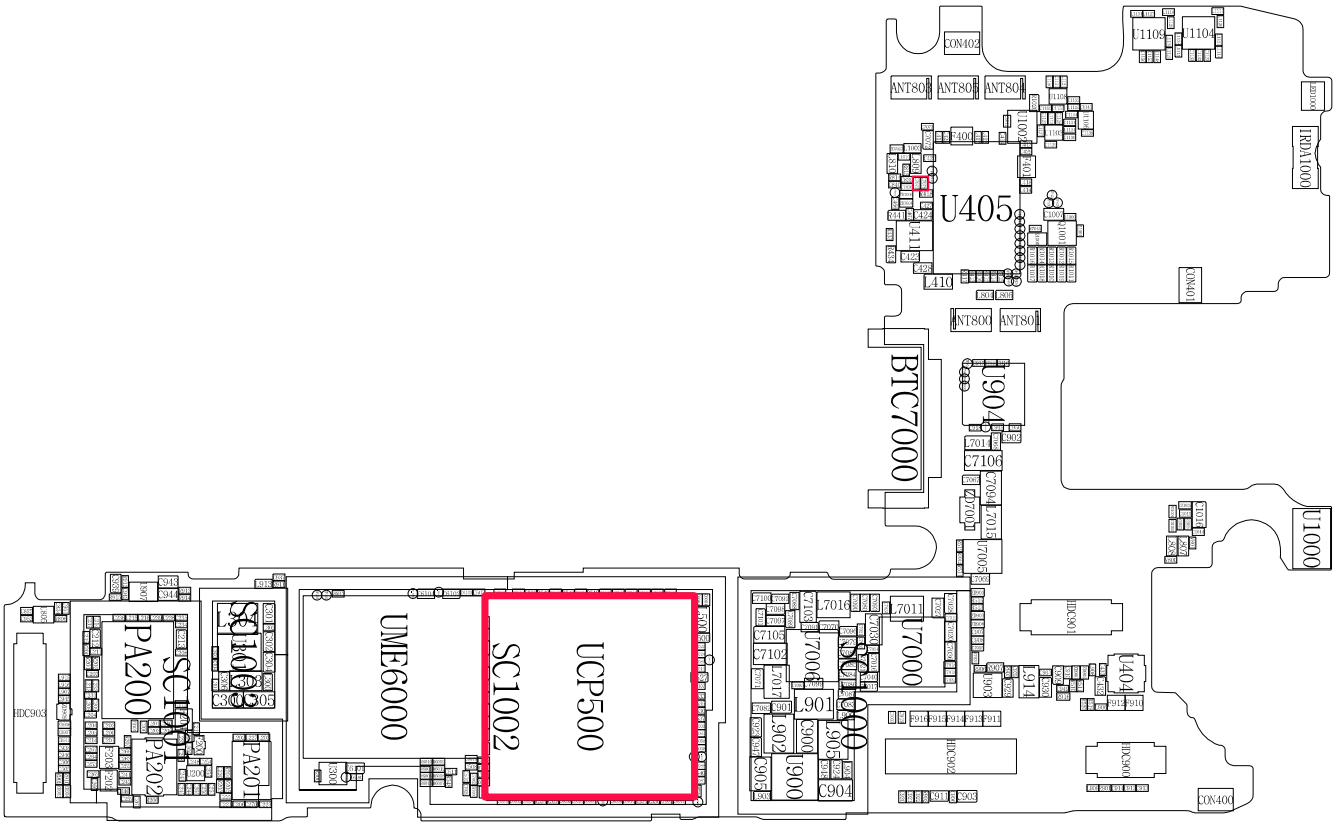
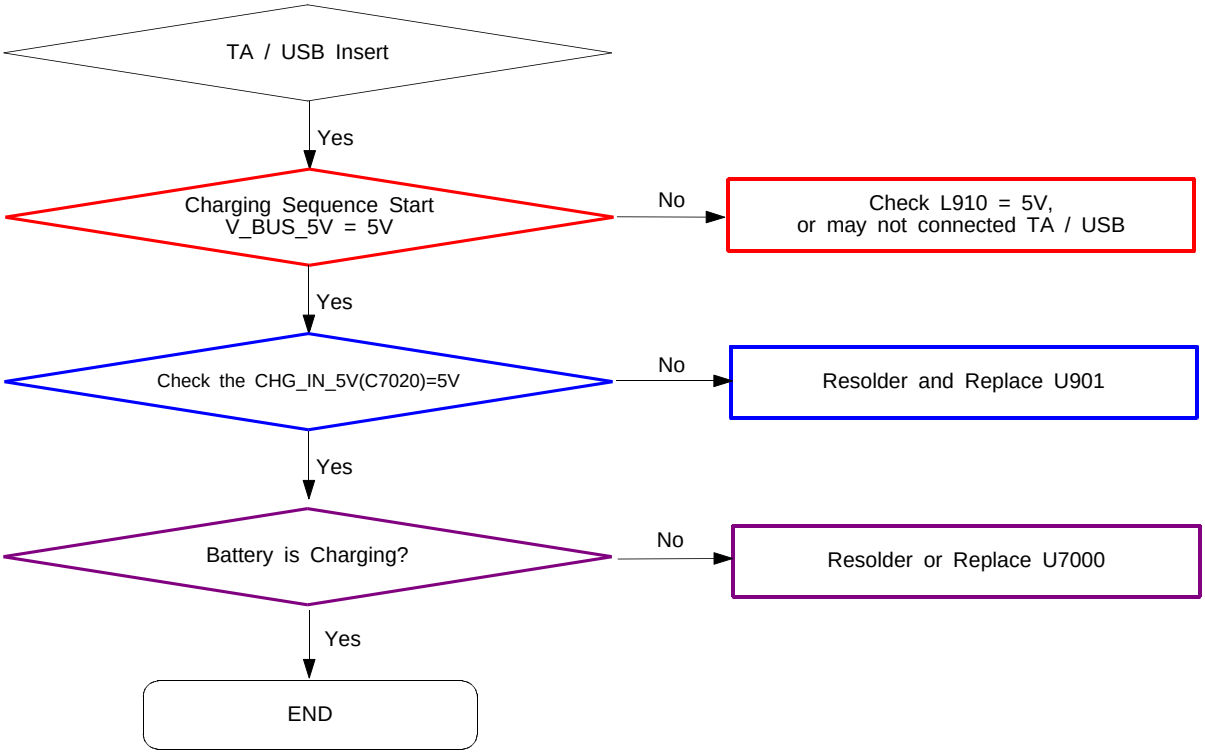


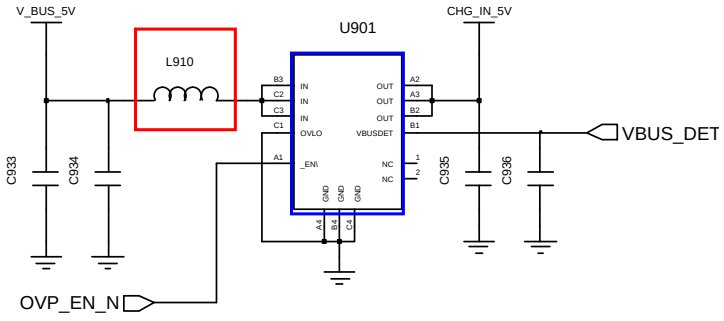
8-3-4. Sim Part

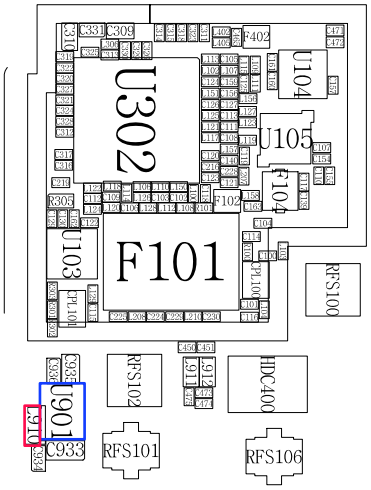


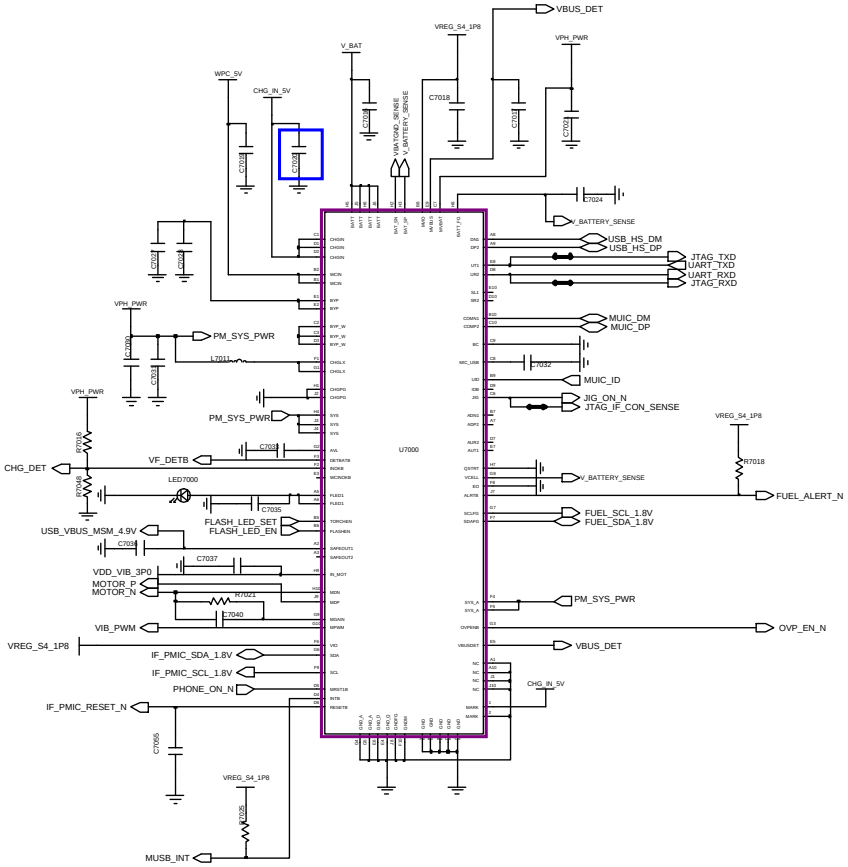


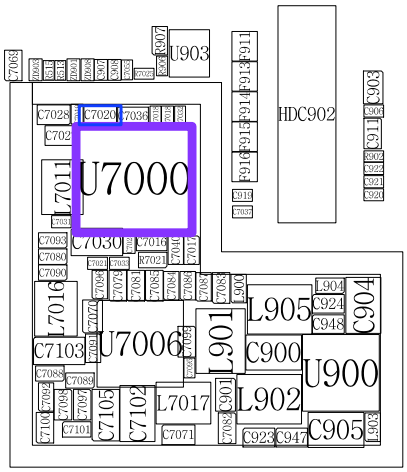
8-3-5. Charging Part



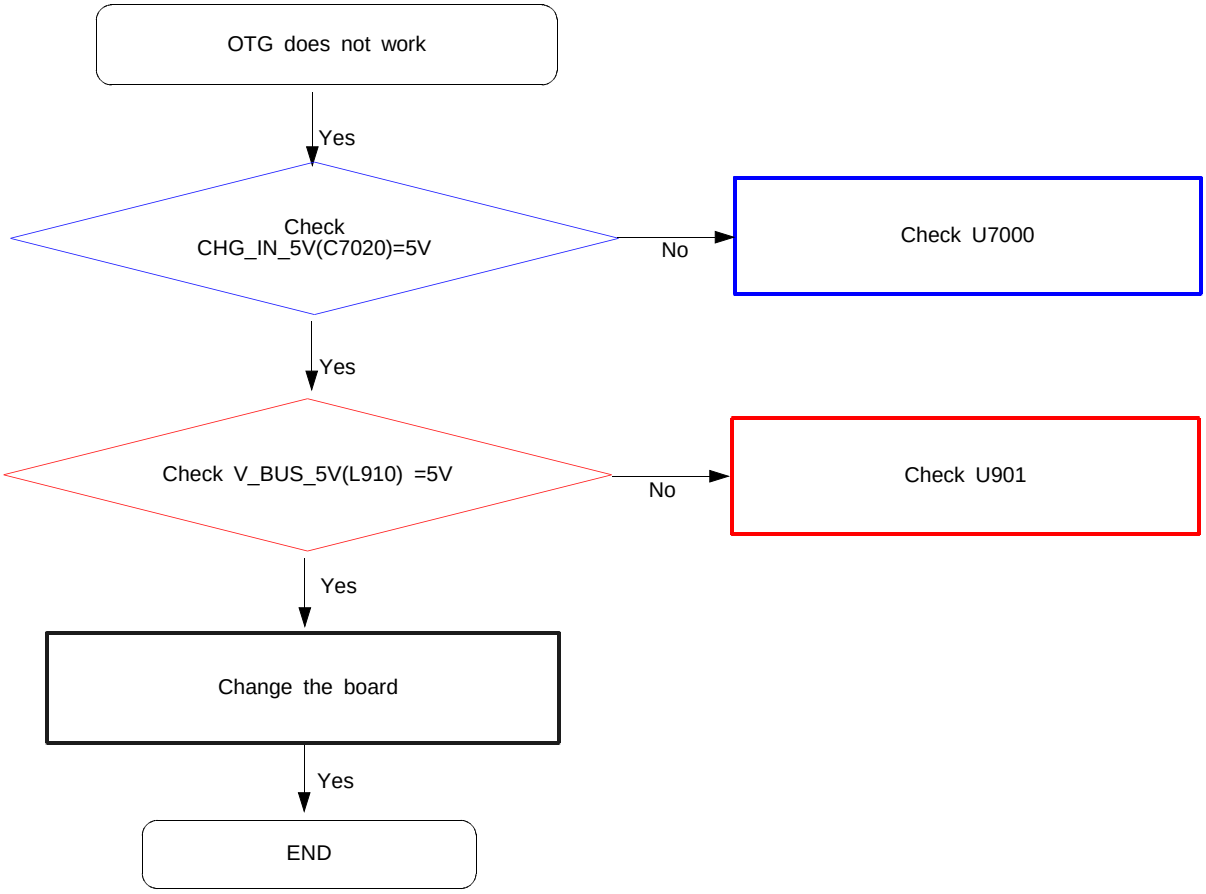


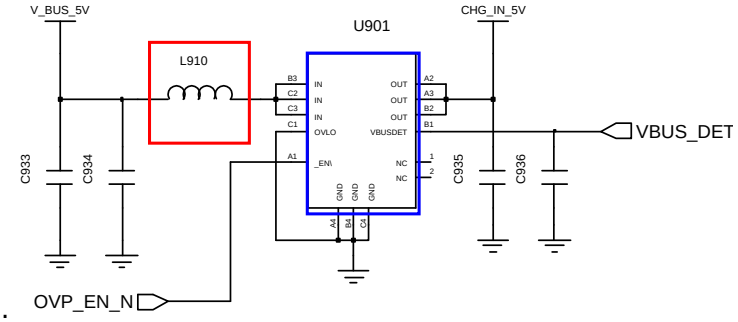


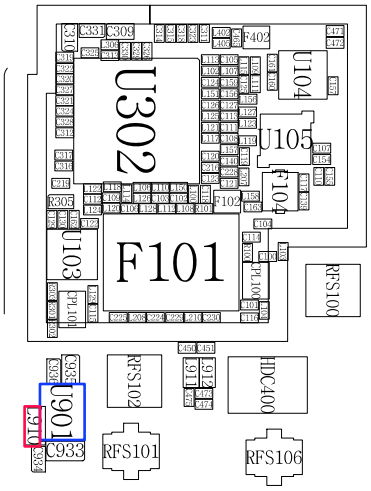


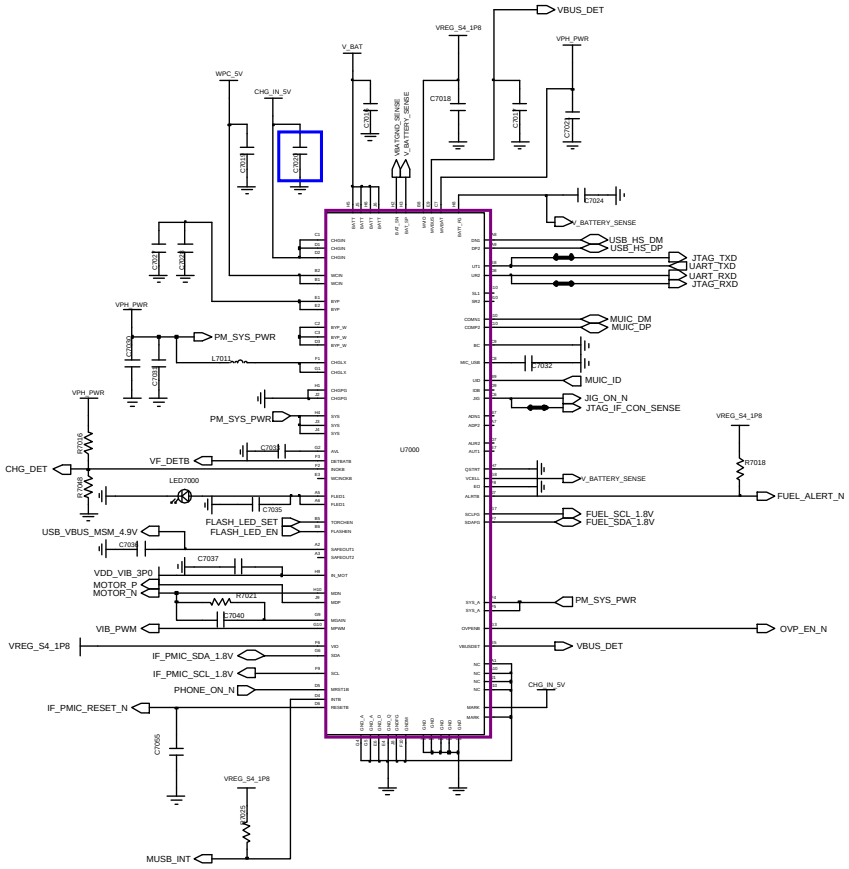


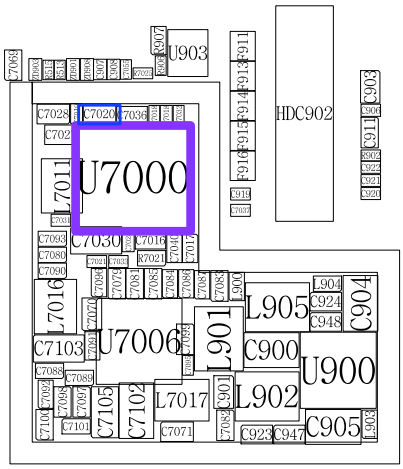
8-3-6. OTG



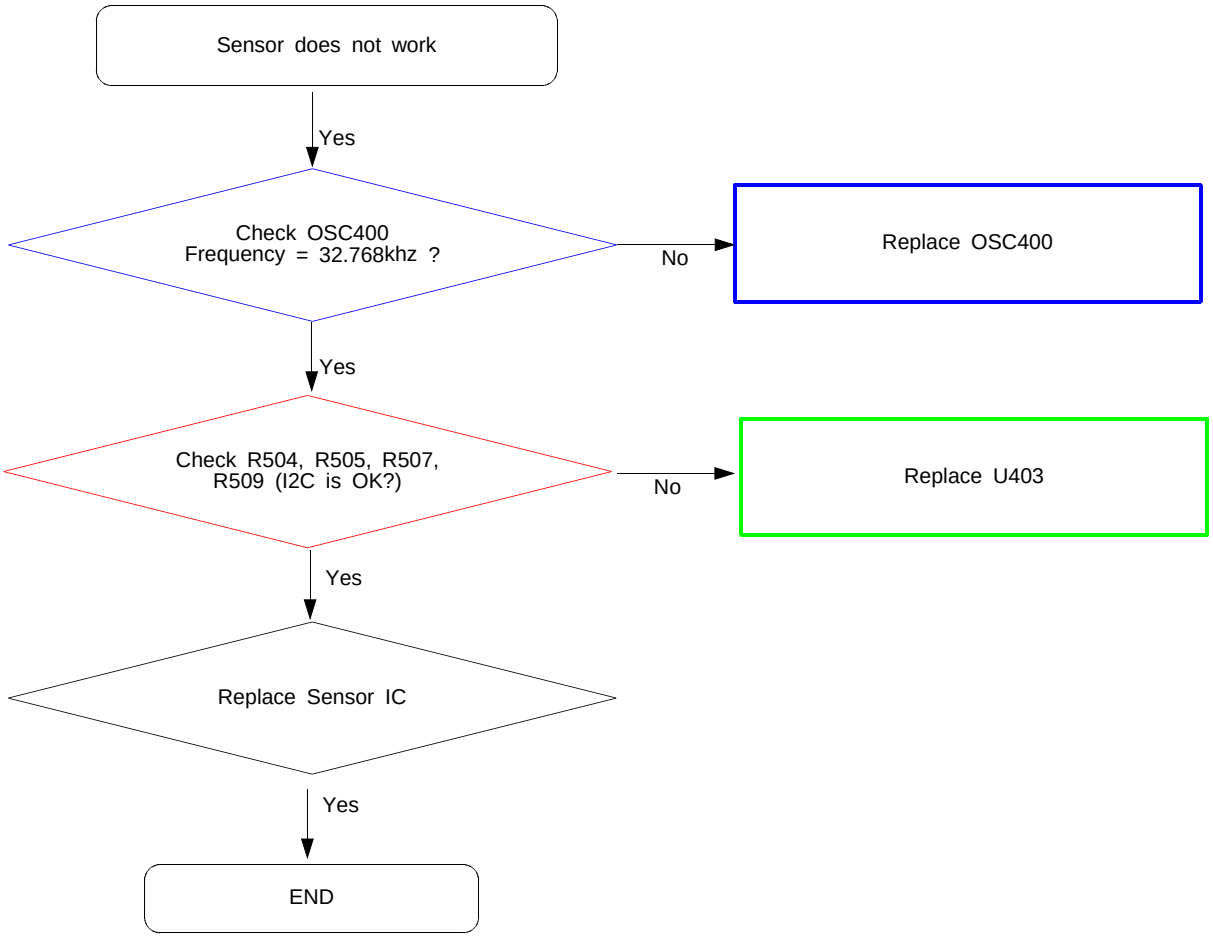


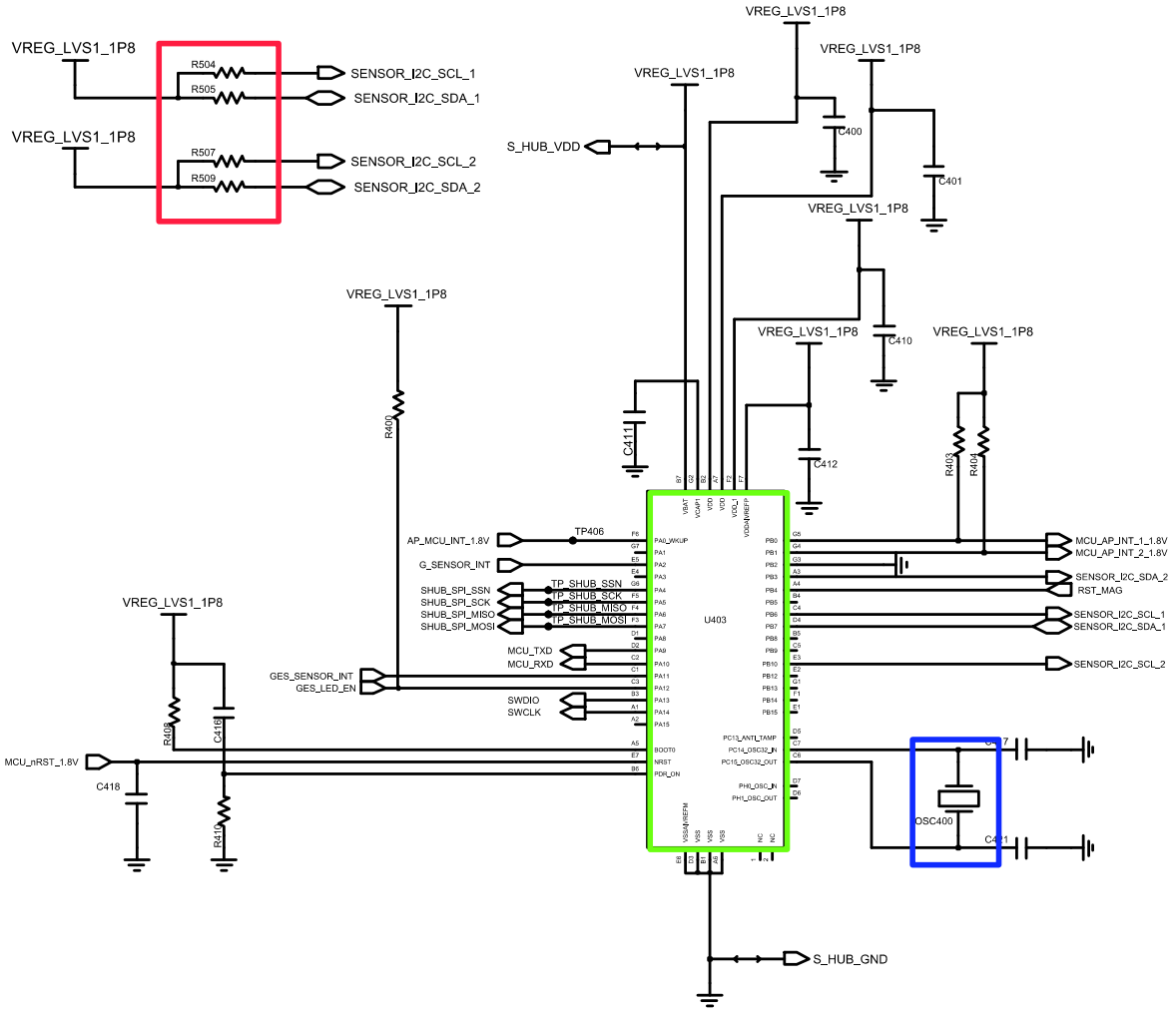


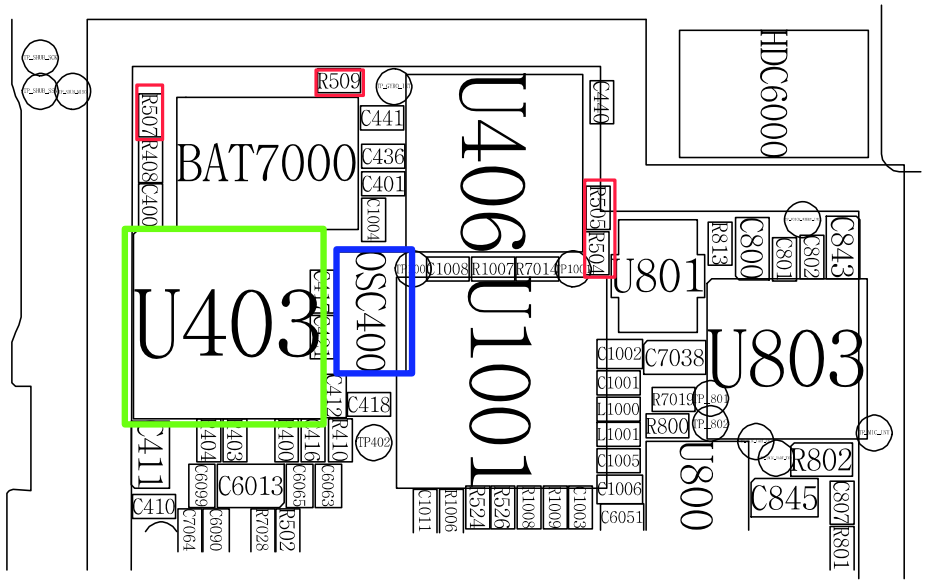




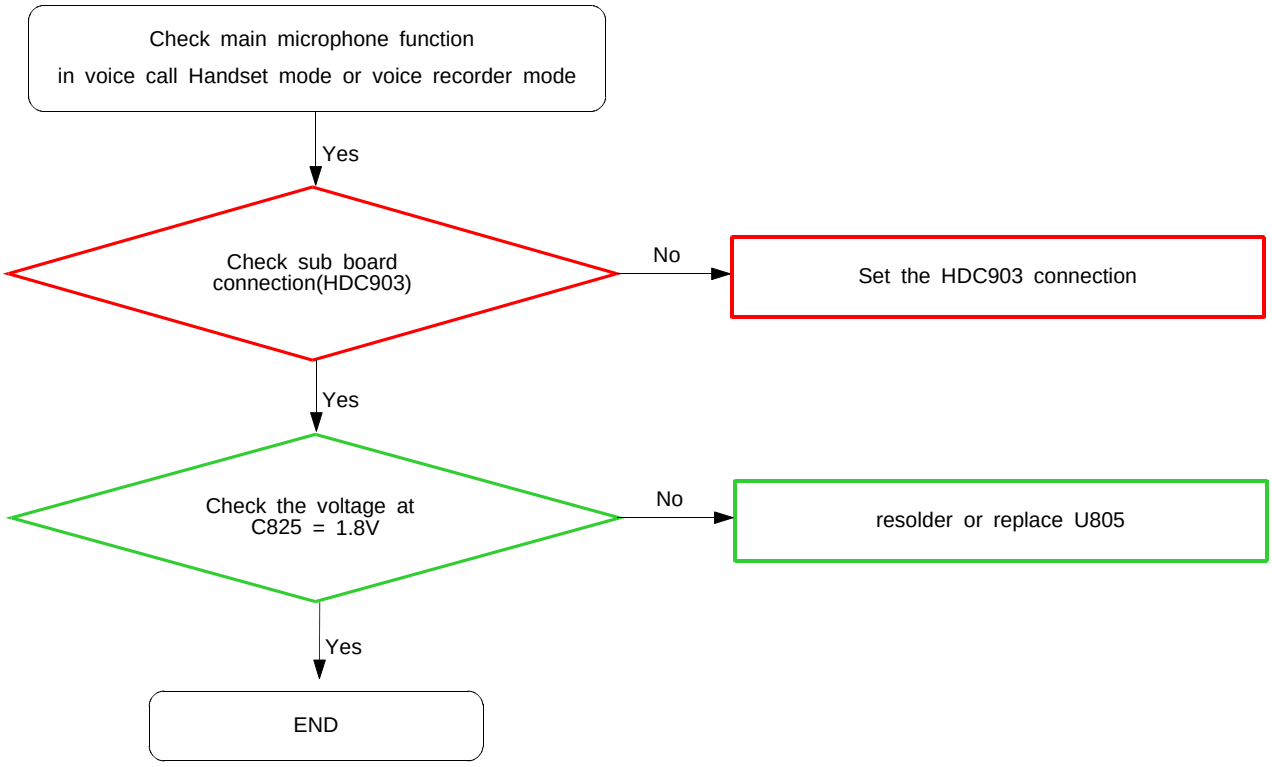
8-3-7. Sensor

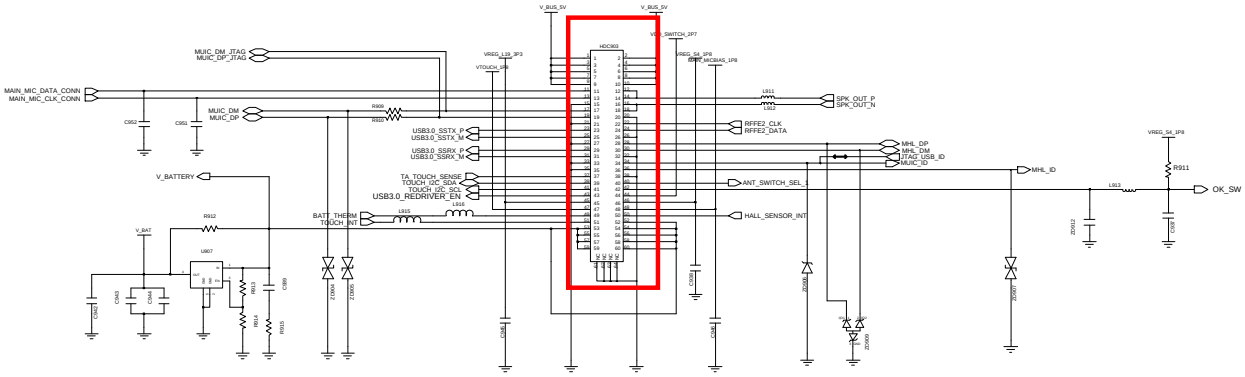


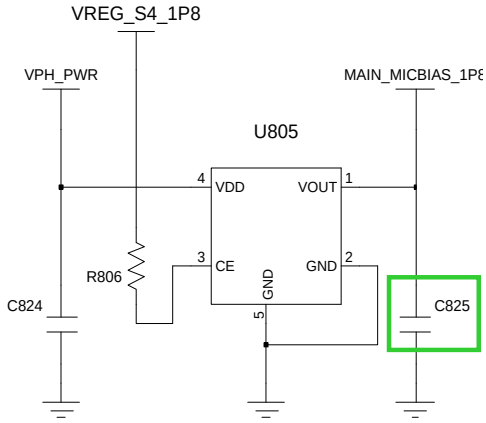


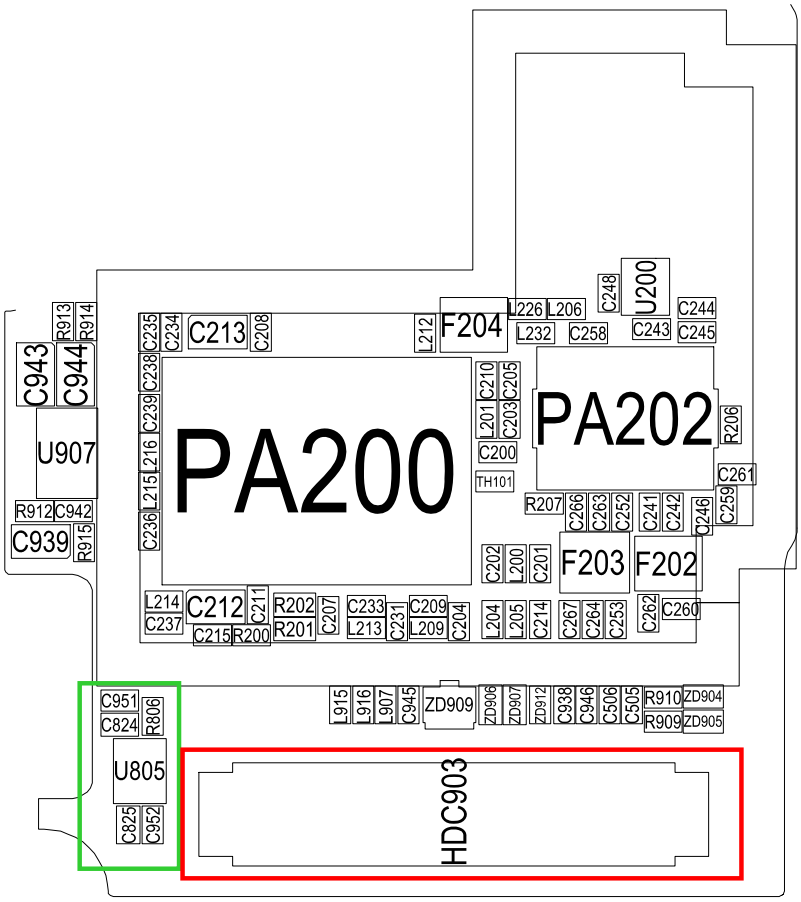


8-3-8-1 Microphone Part - Main MIC

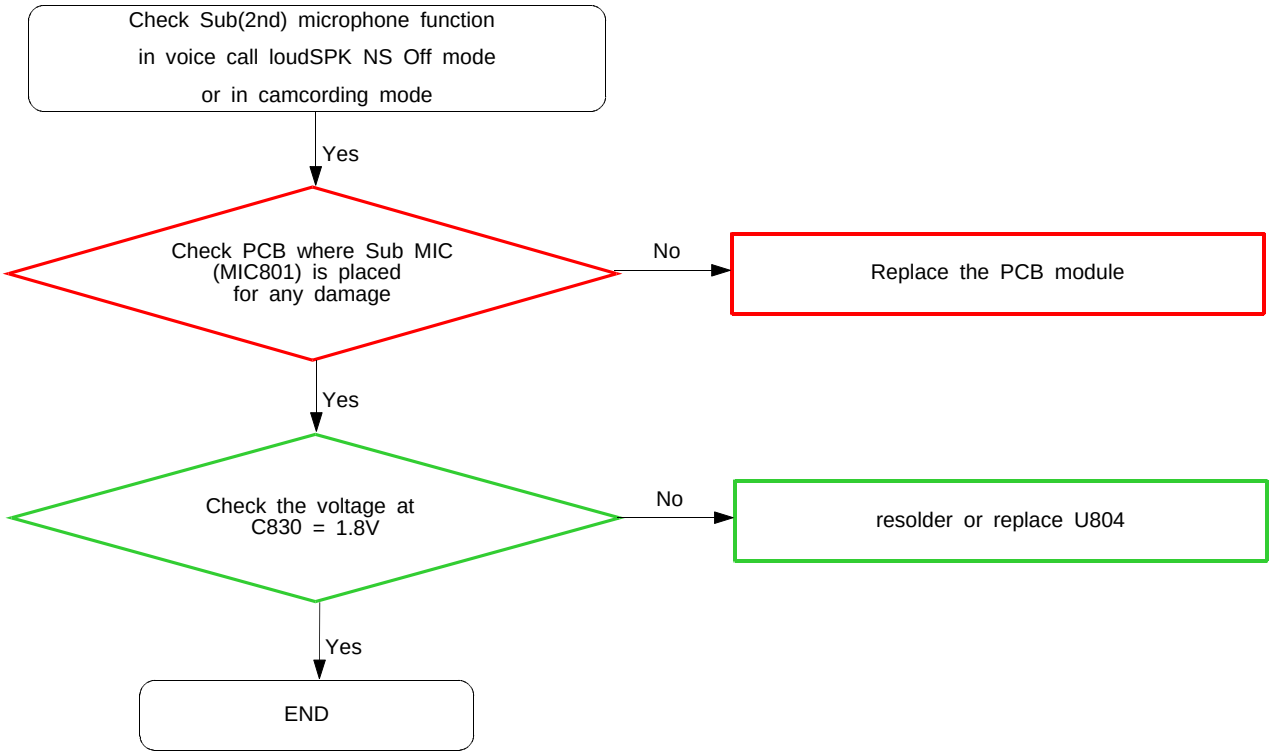


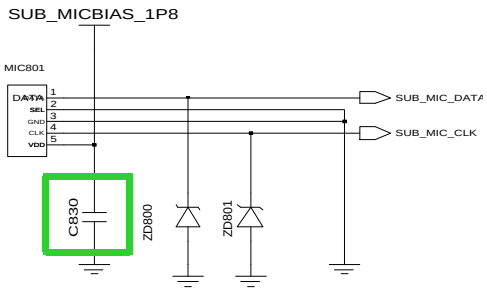


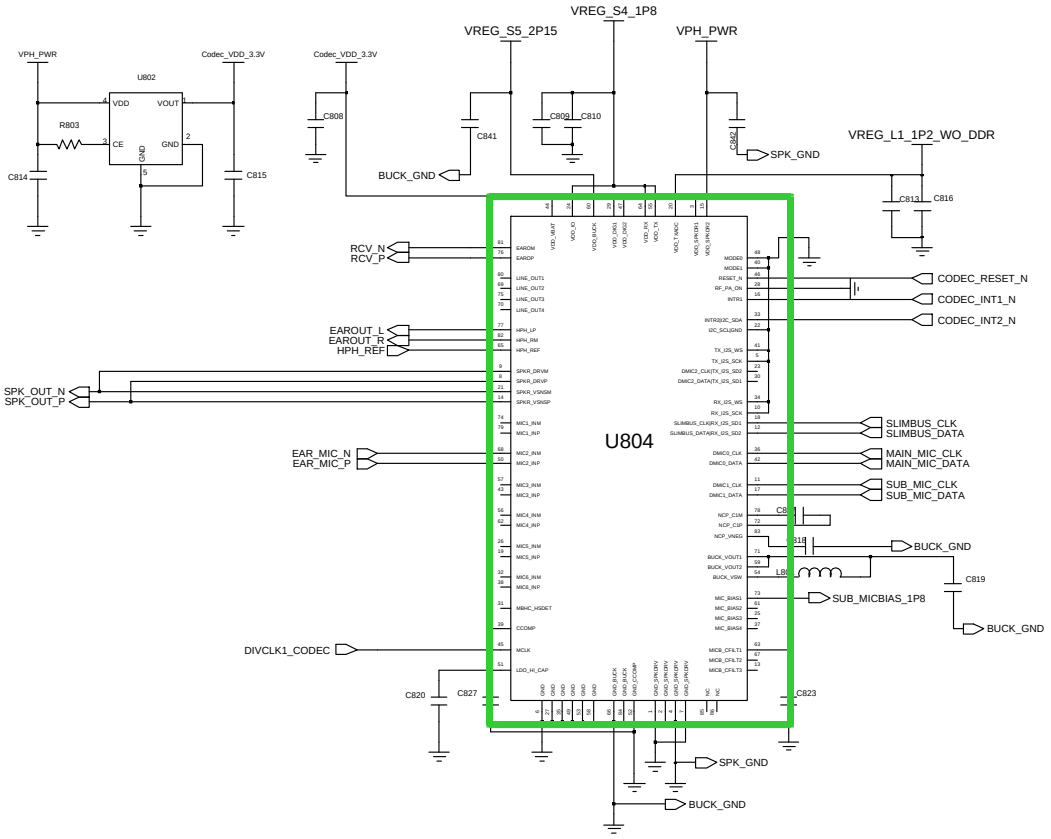


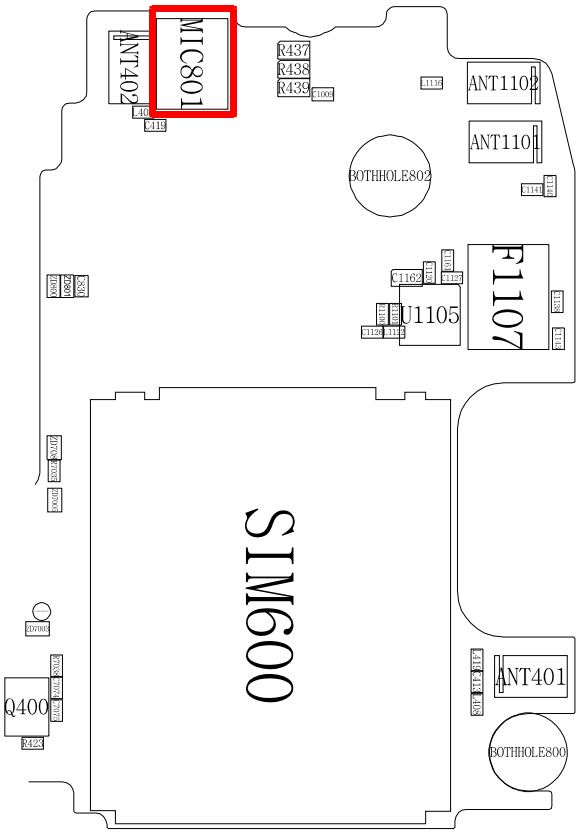


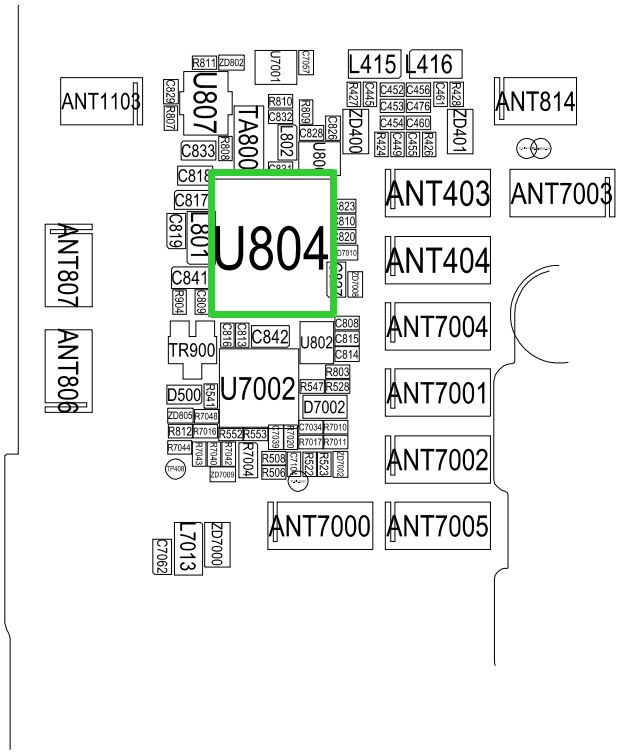
8-3-8-2. Microphone Part - Sub(2nd) MIC



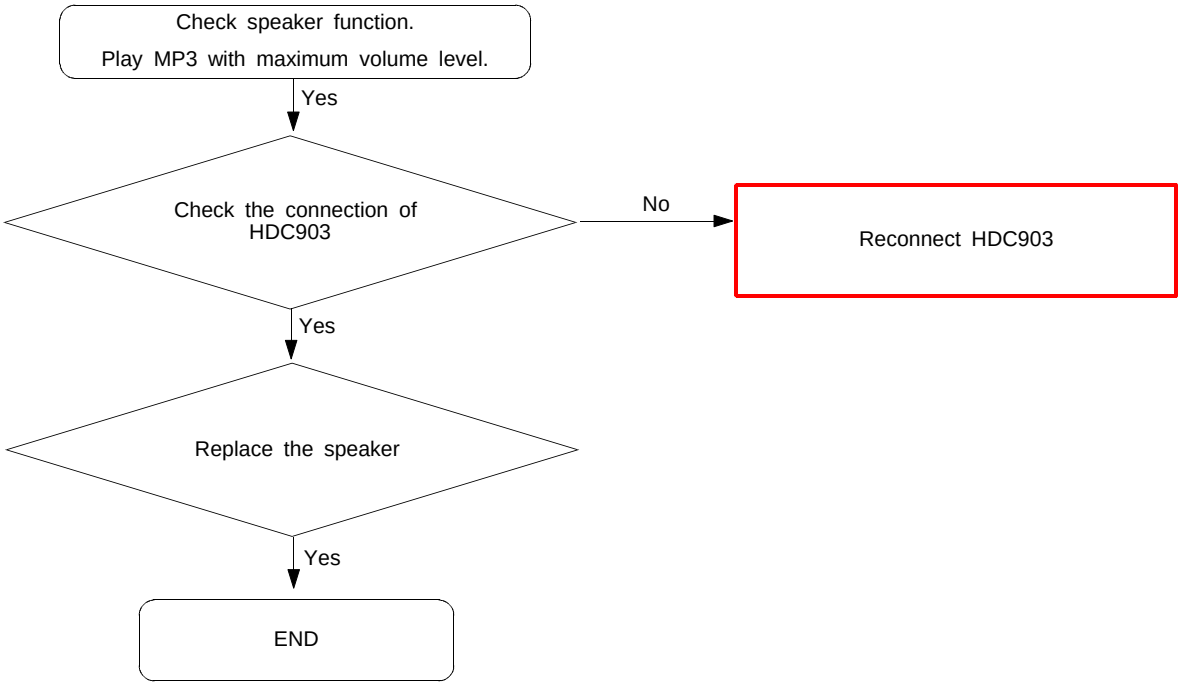


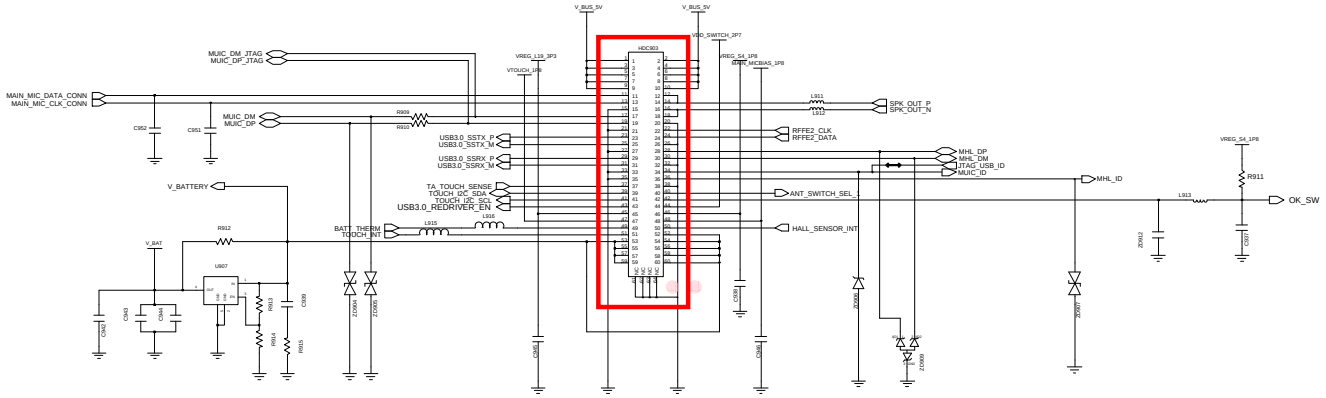


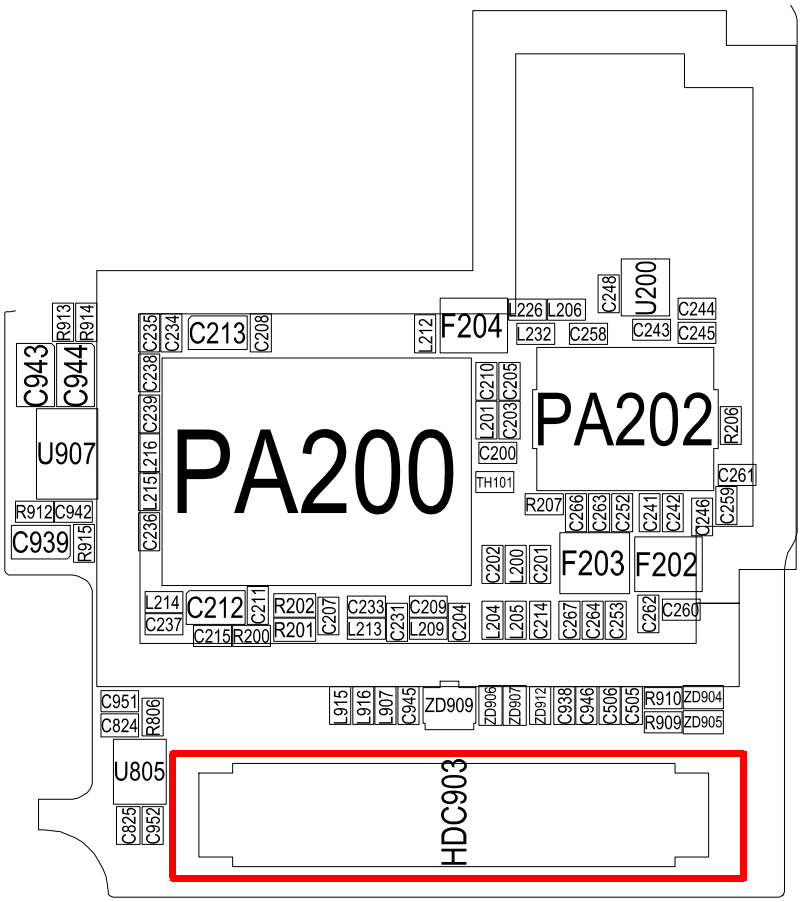




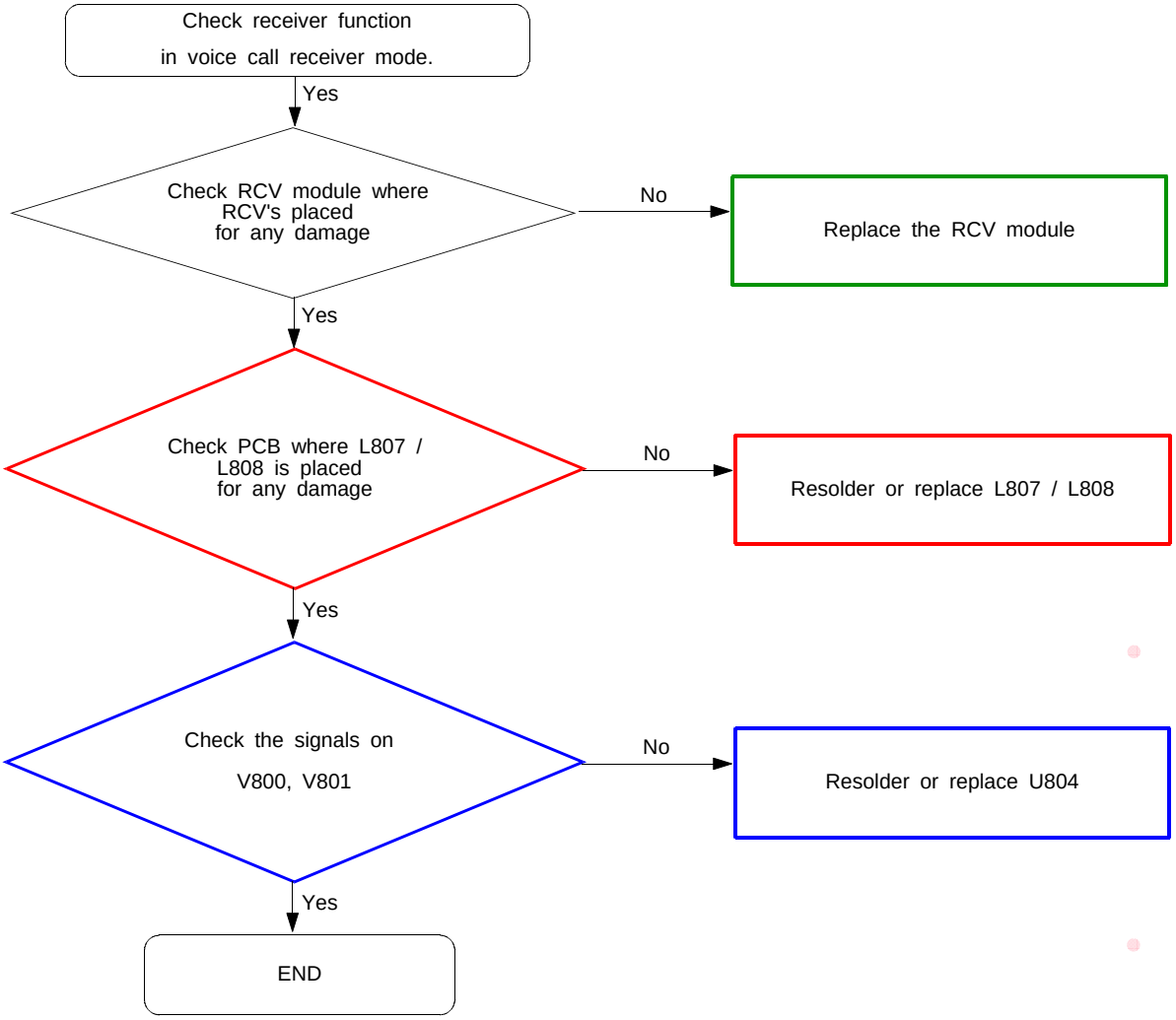
8-3-9. Speaker Part

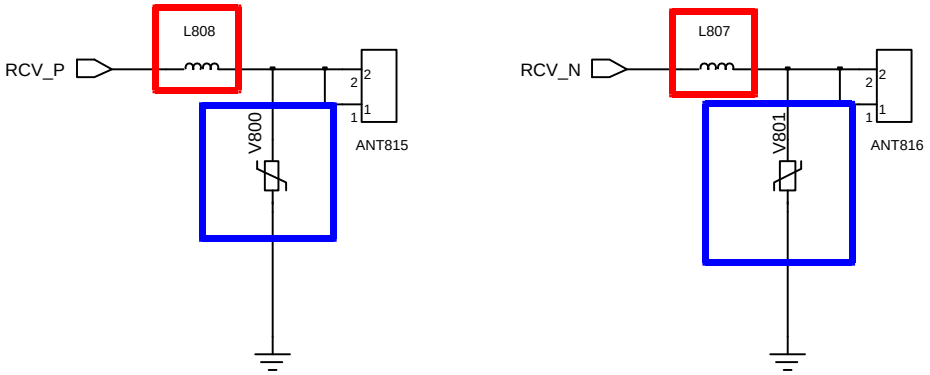


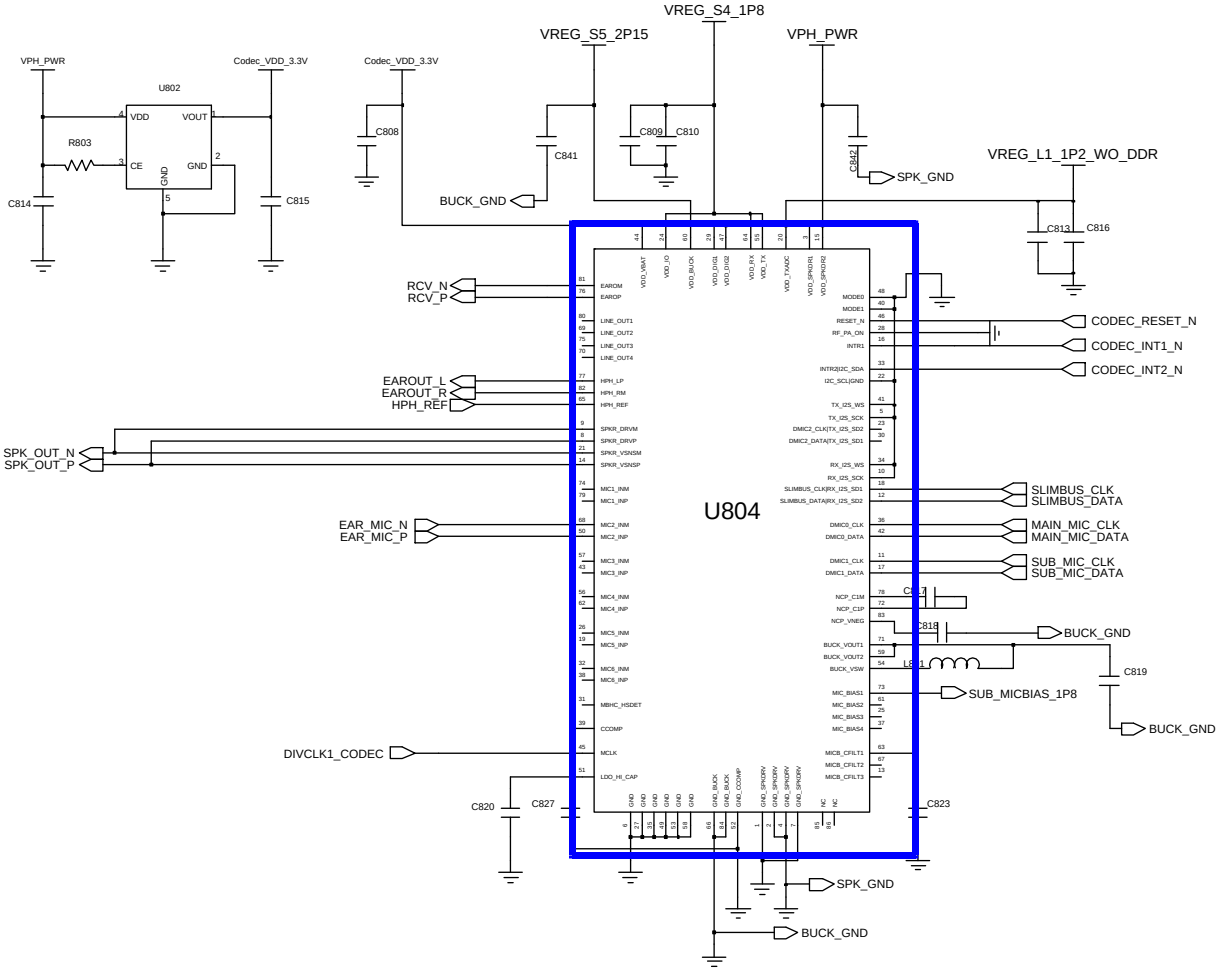


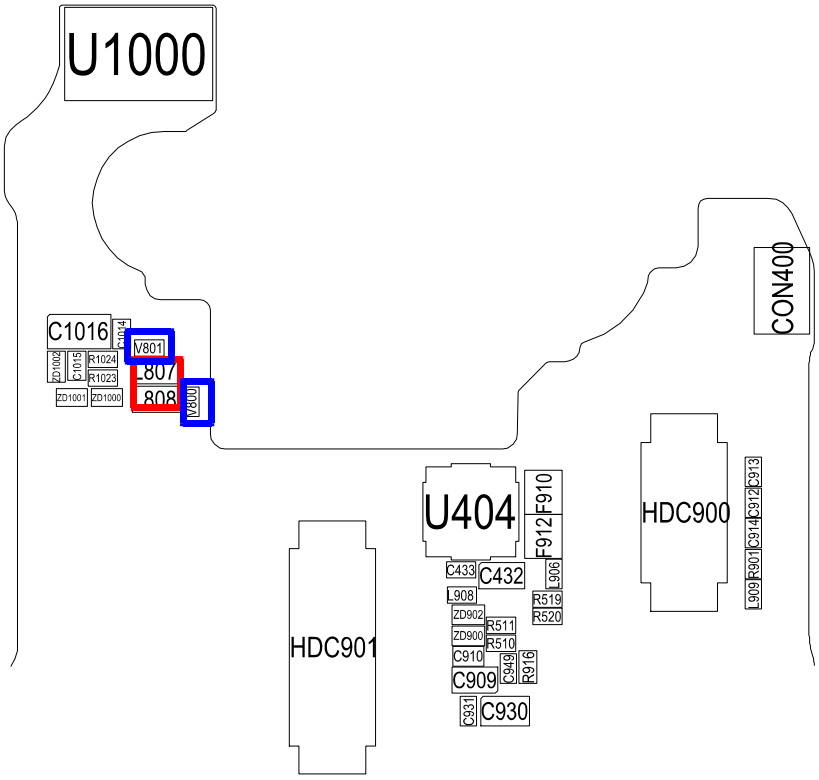


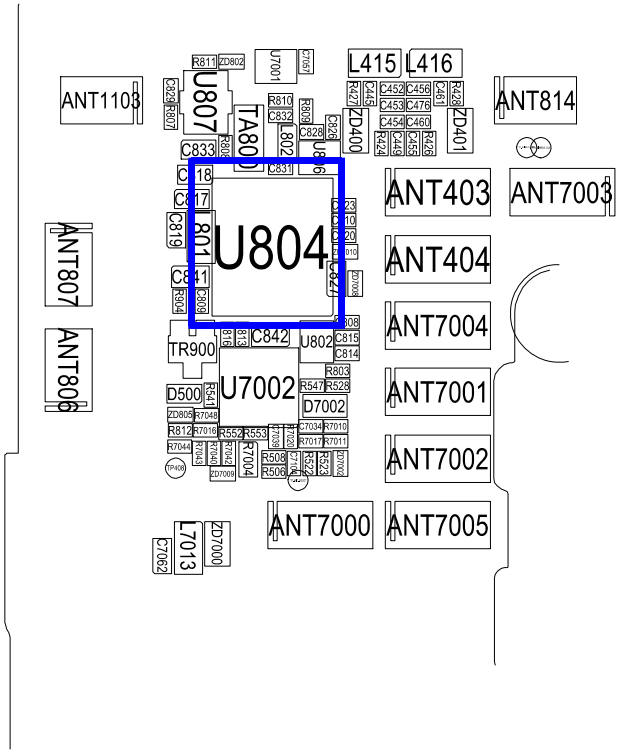
8-3-10. Receiver Part



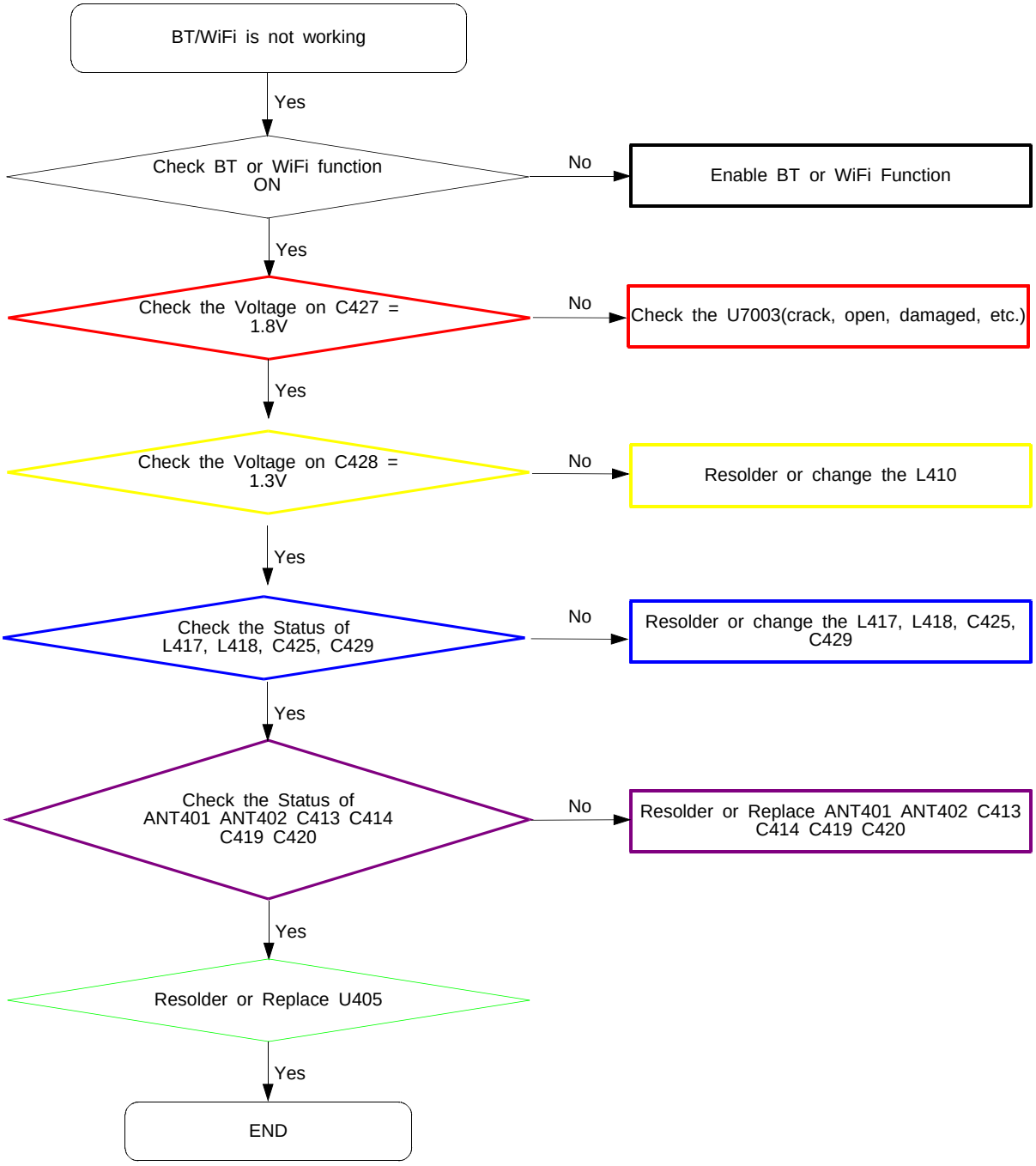


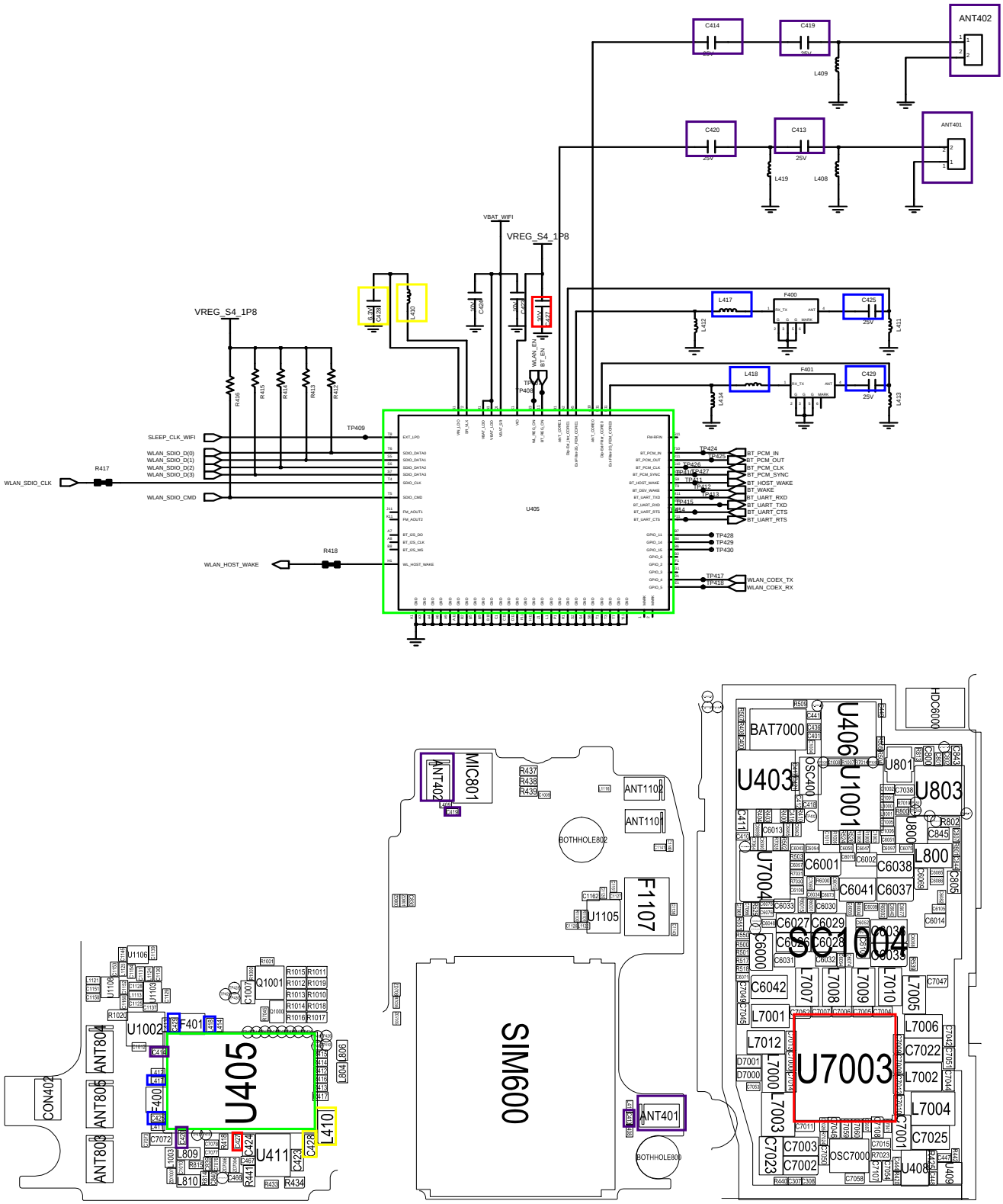




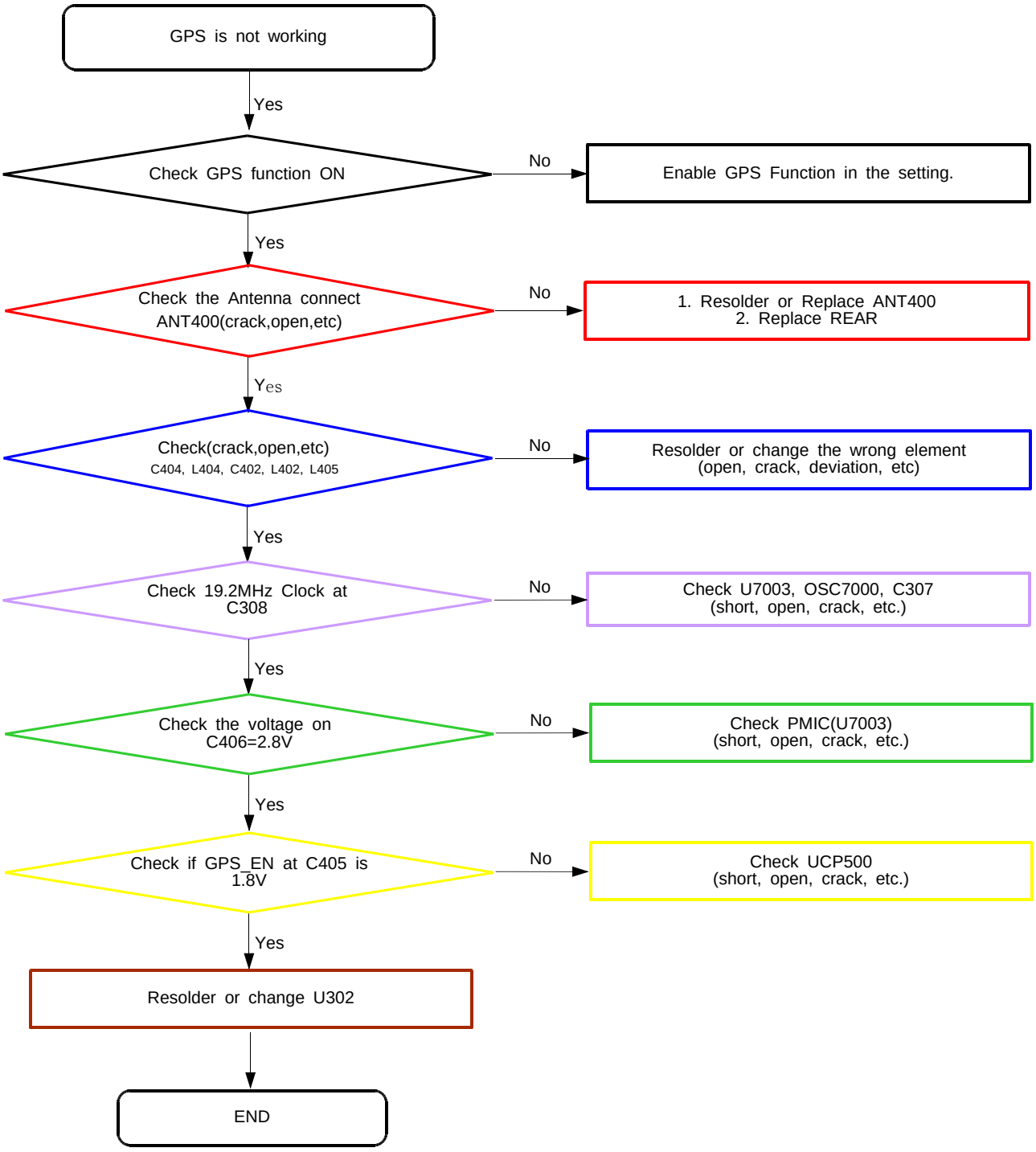


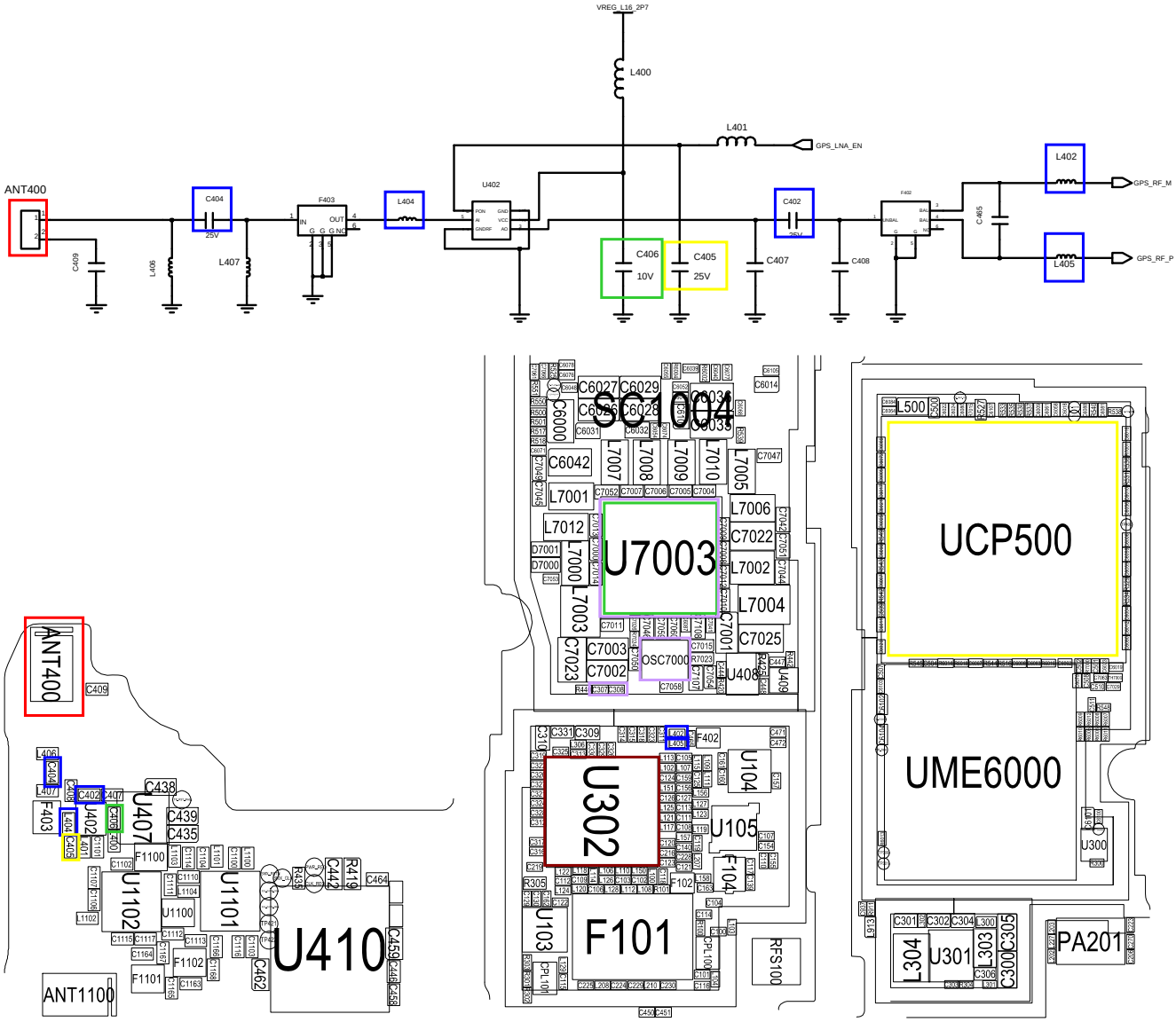
8-3-11. BT/WIFI



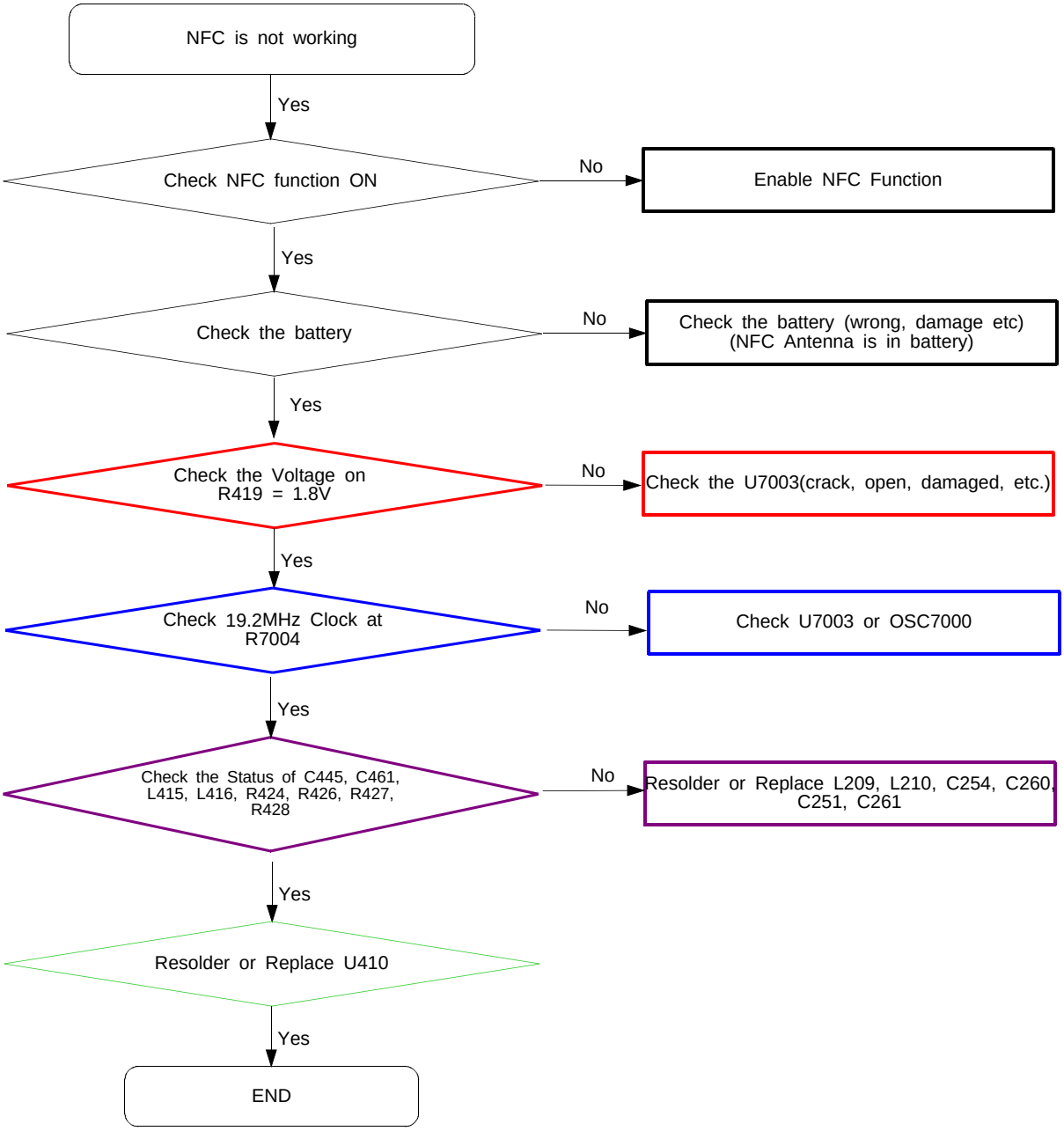


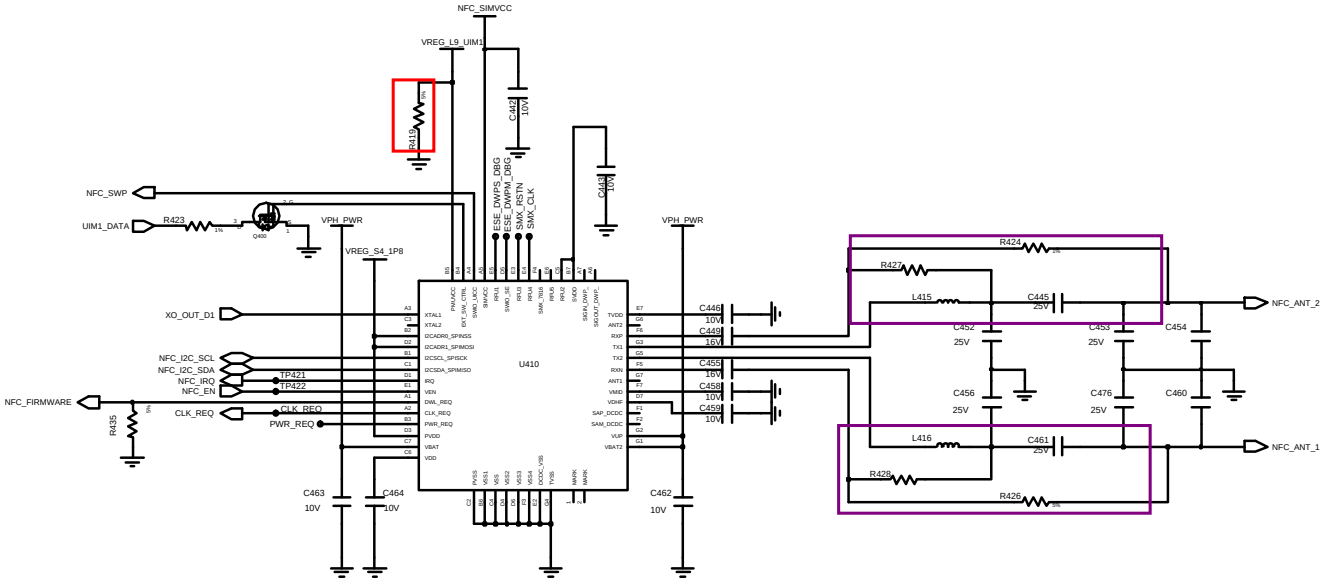
8-3-12. GPS

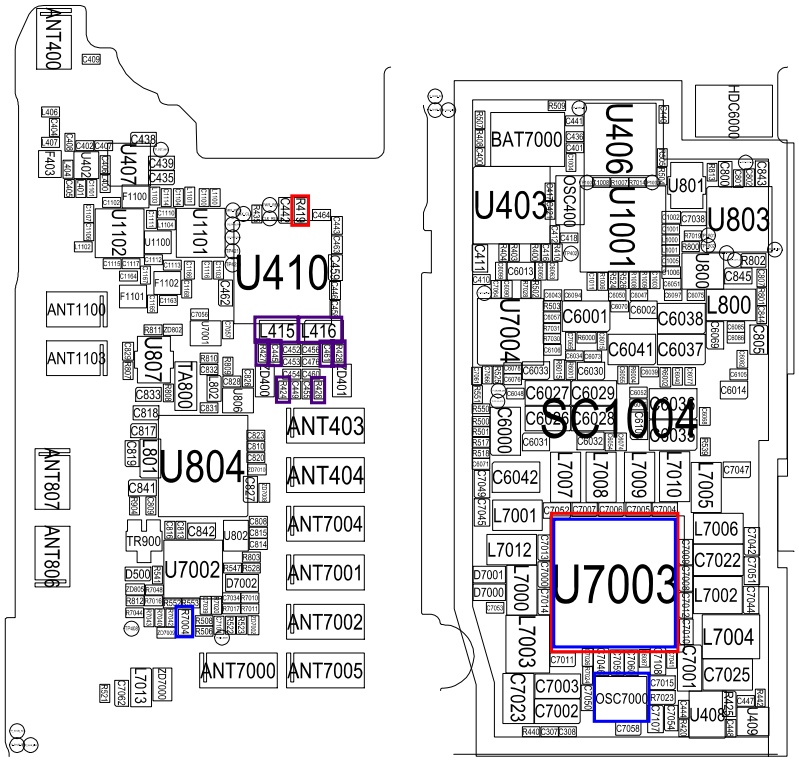




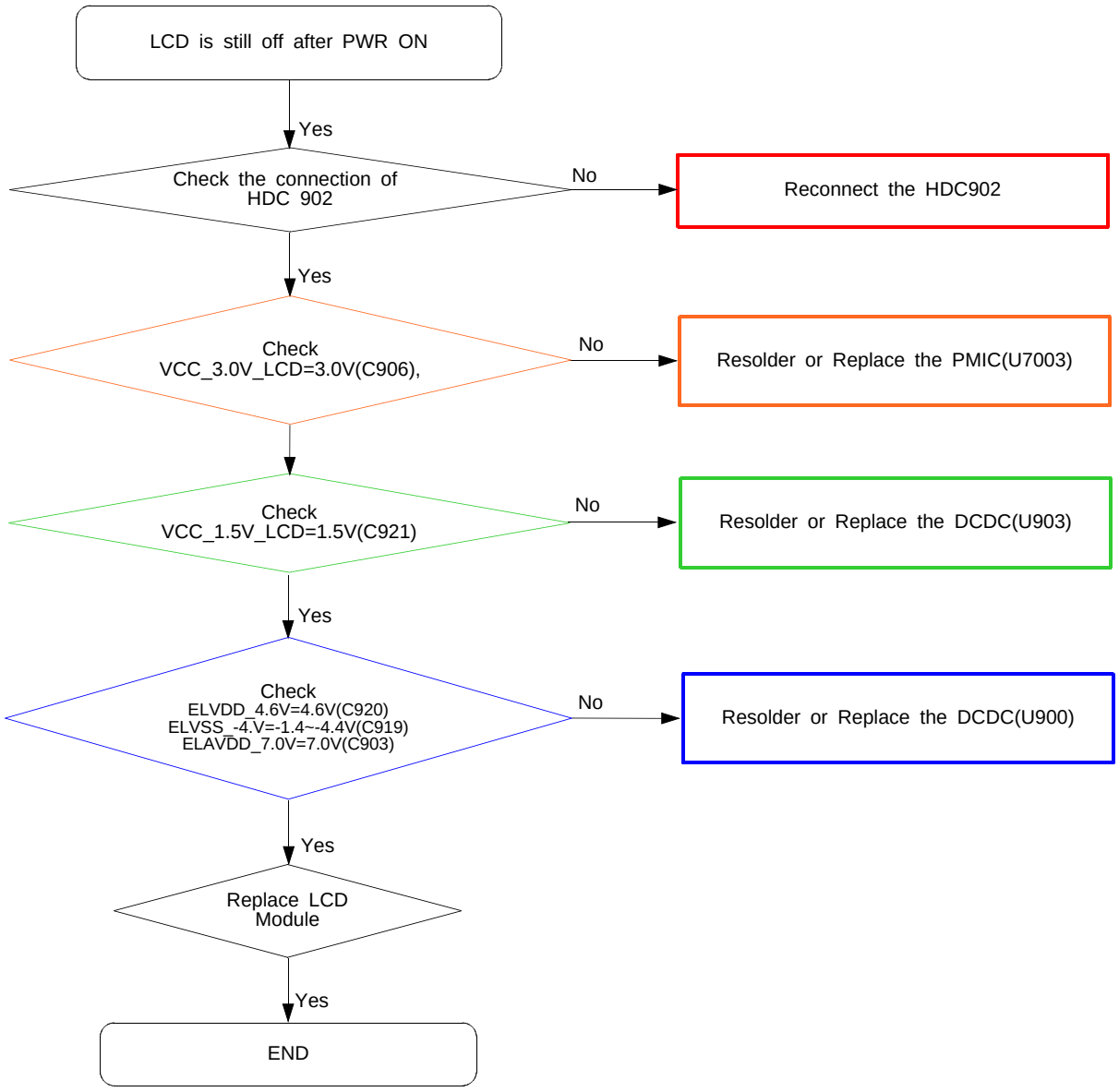
8-3-13. NFC

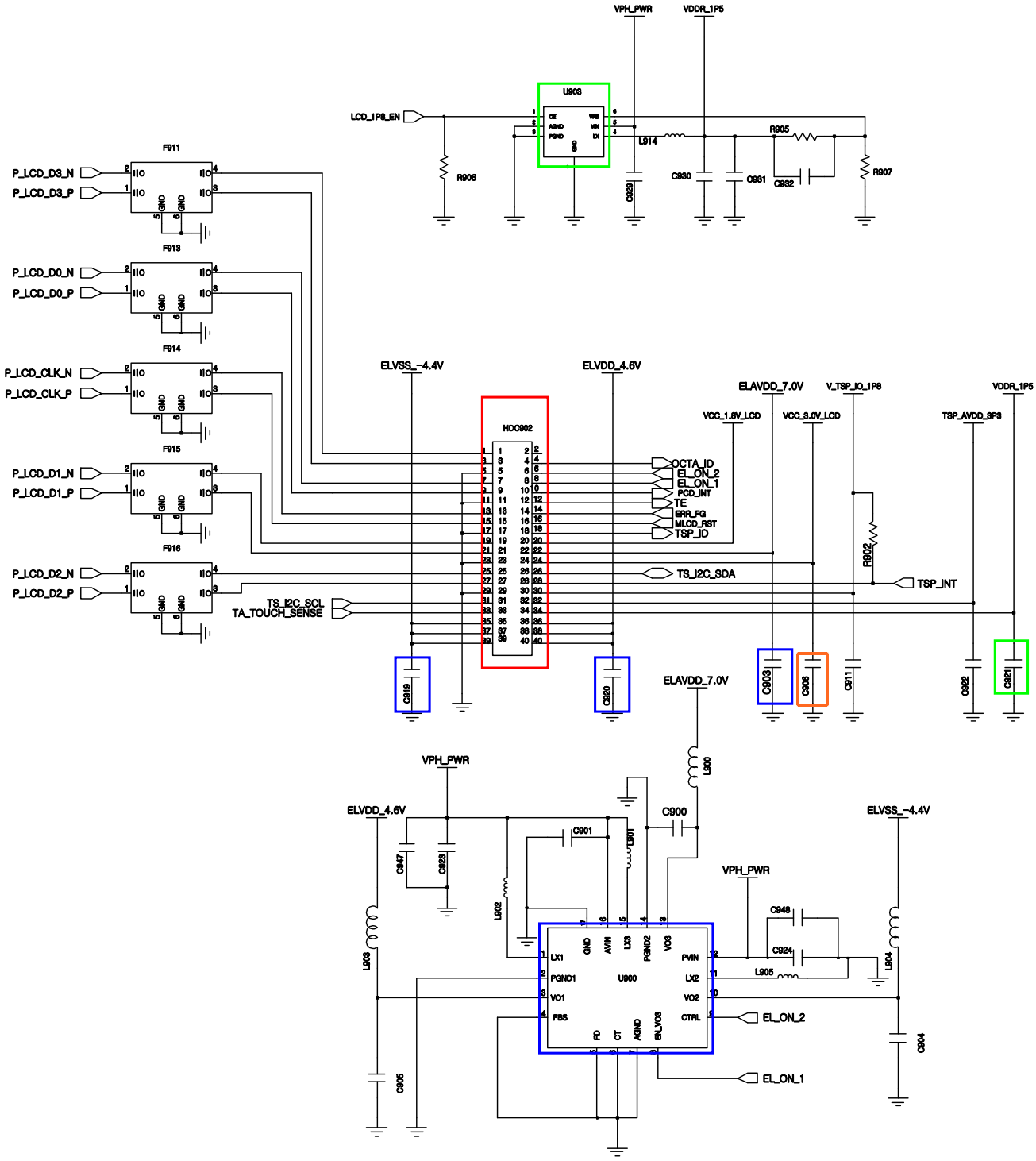


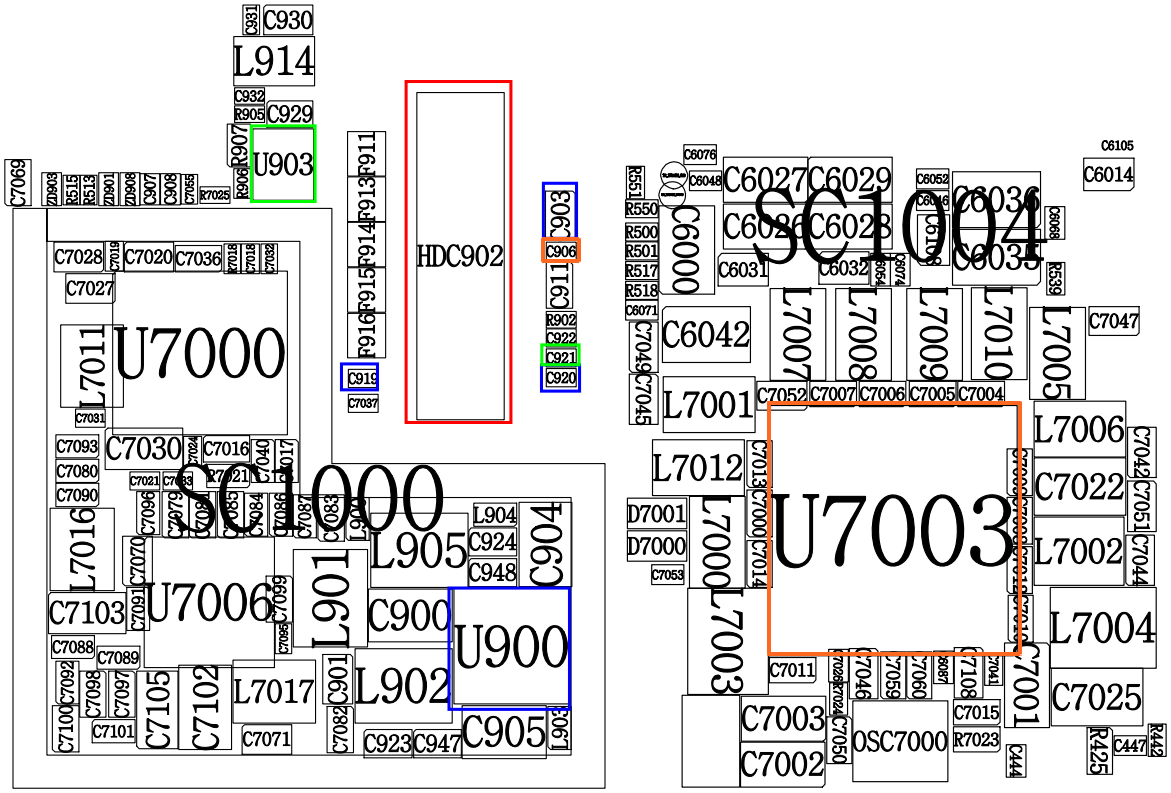




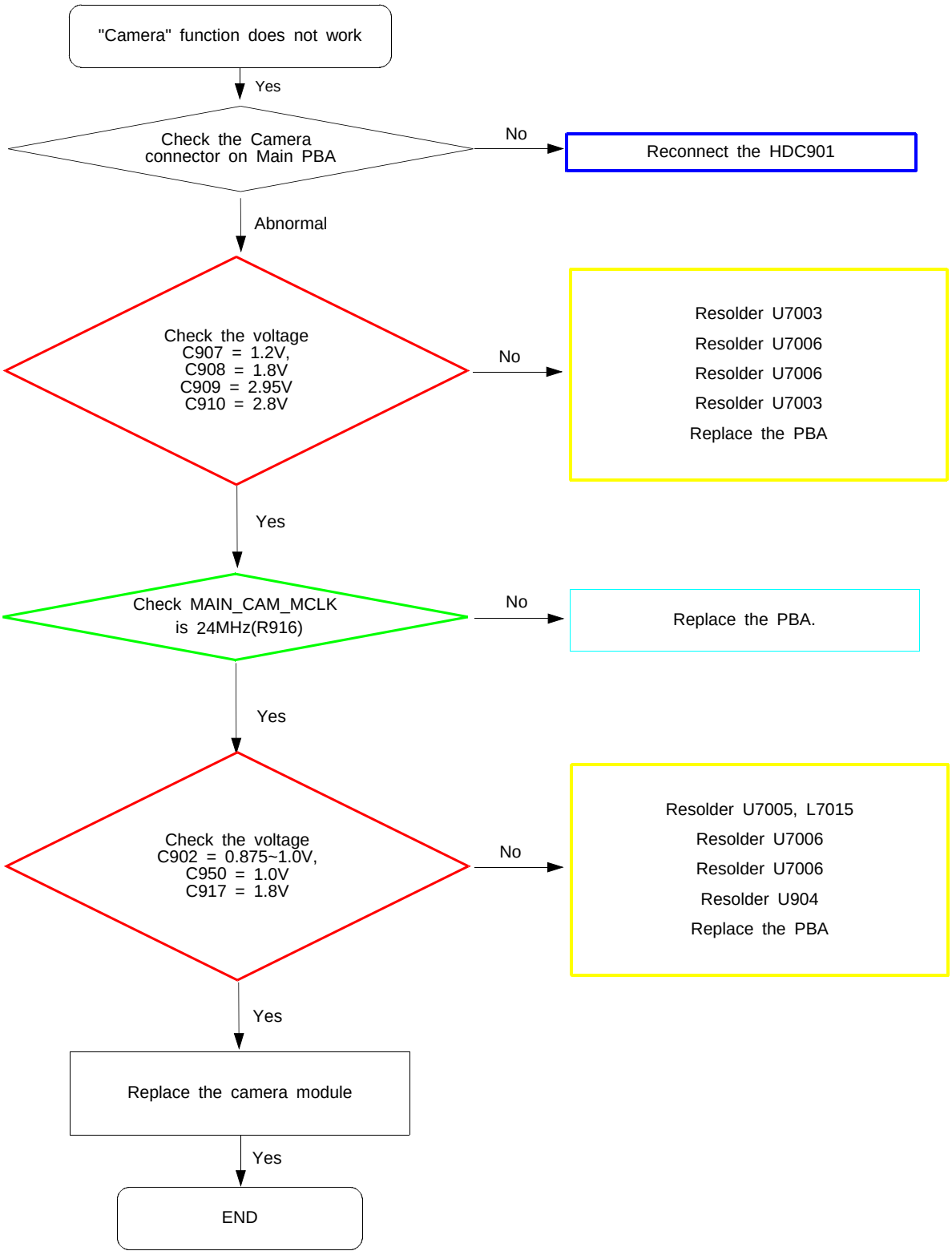
8-3-14. LCD

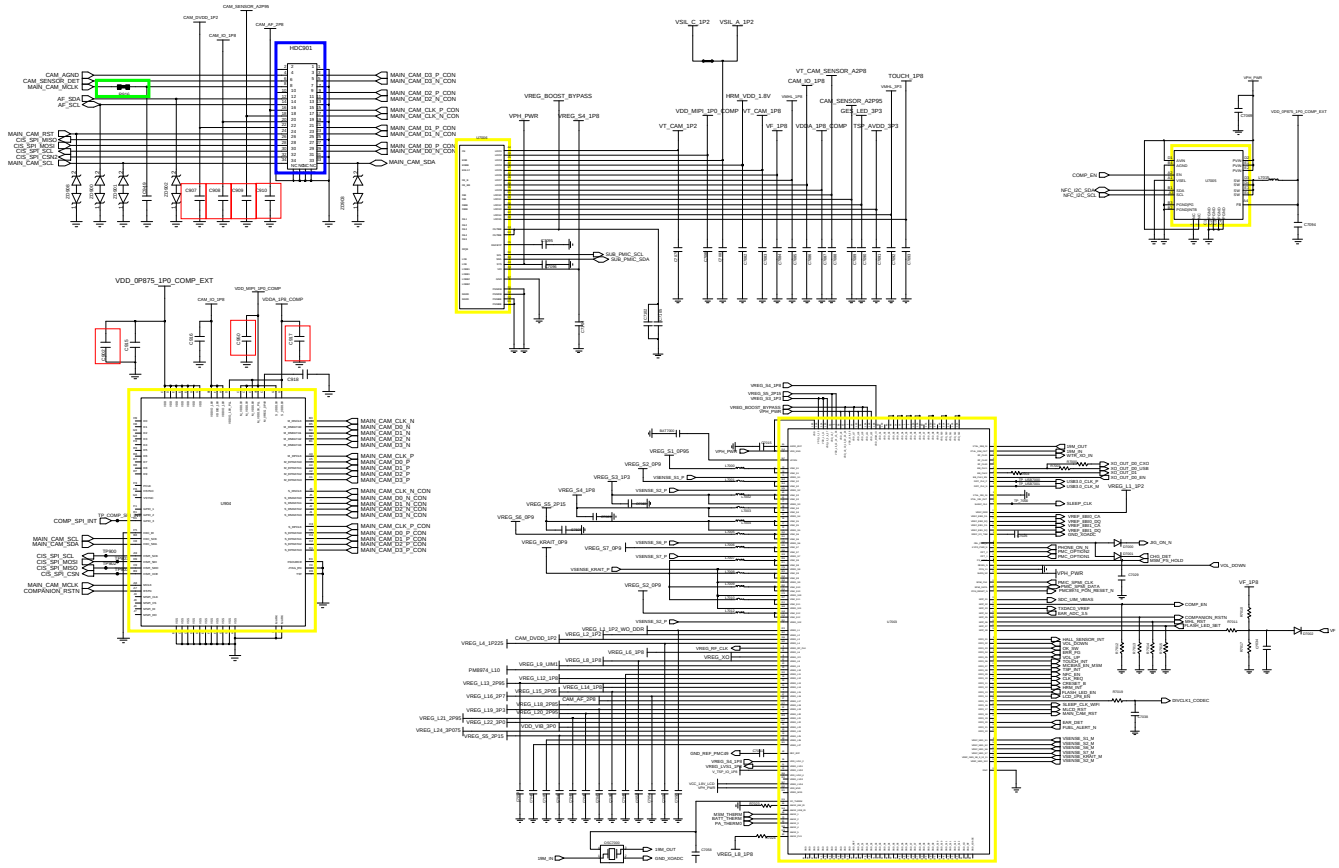




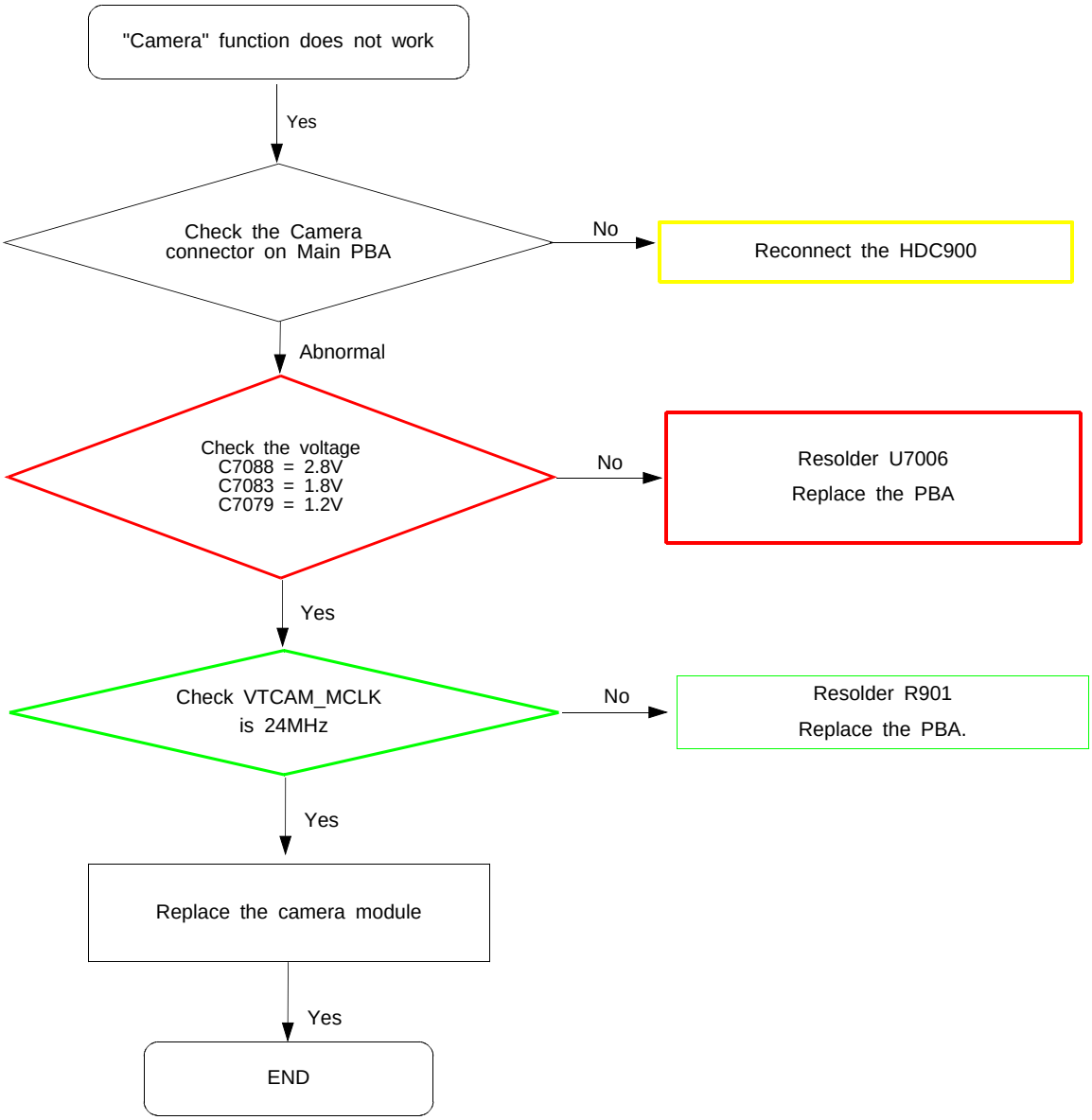


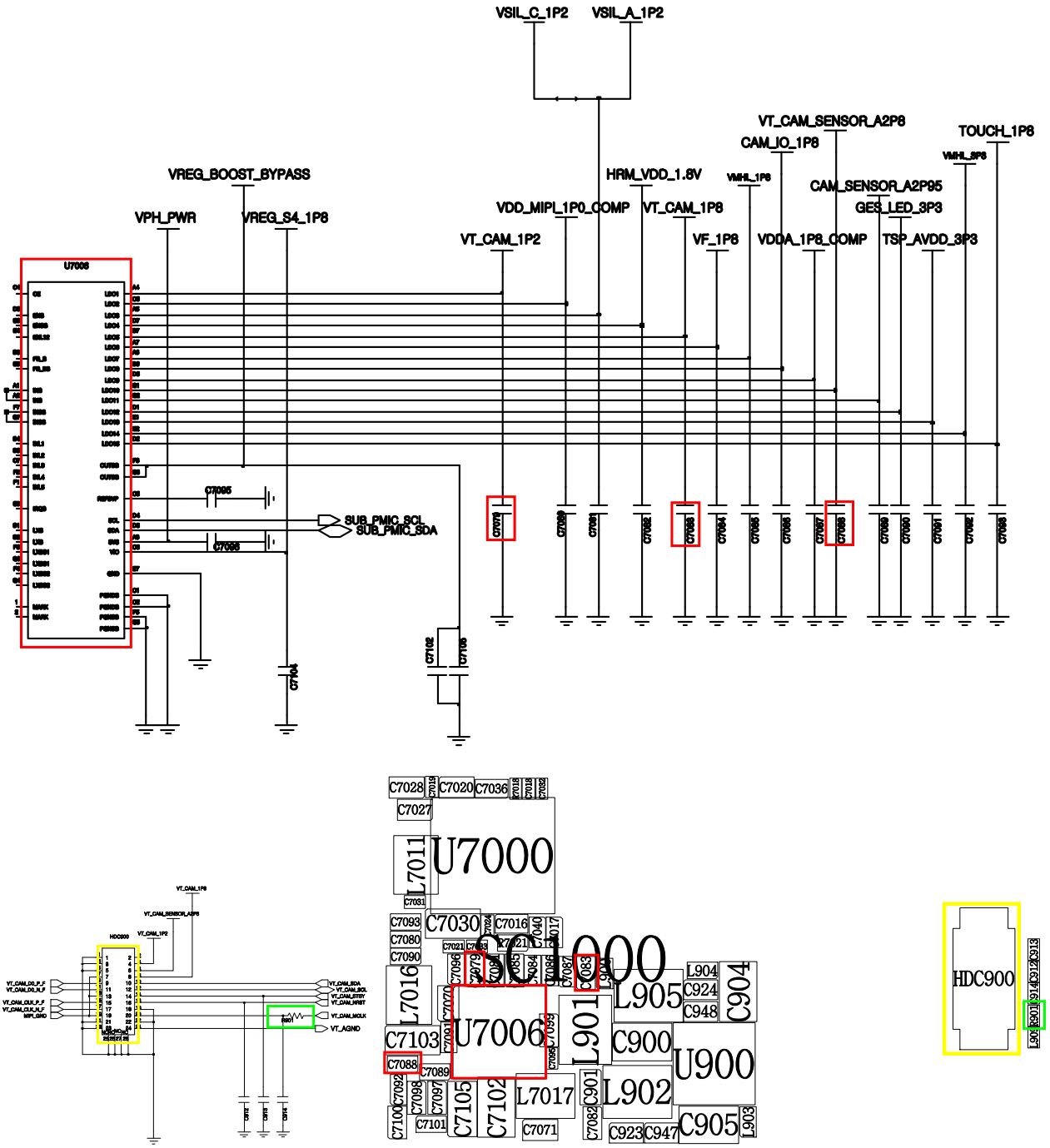
8-3-15. 16M CAM



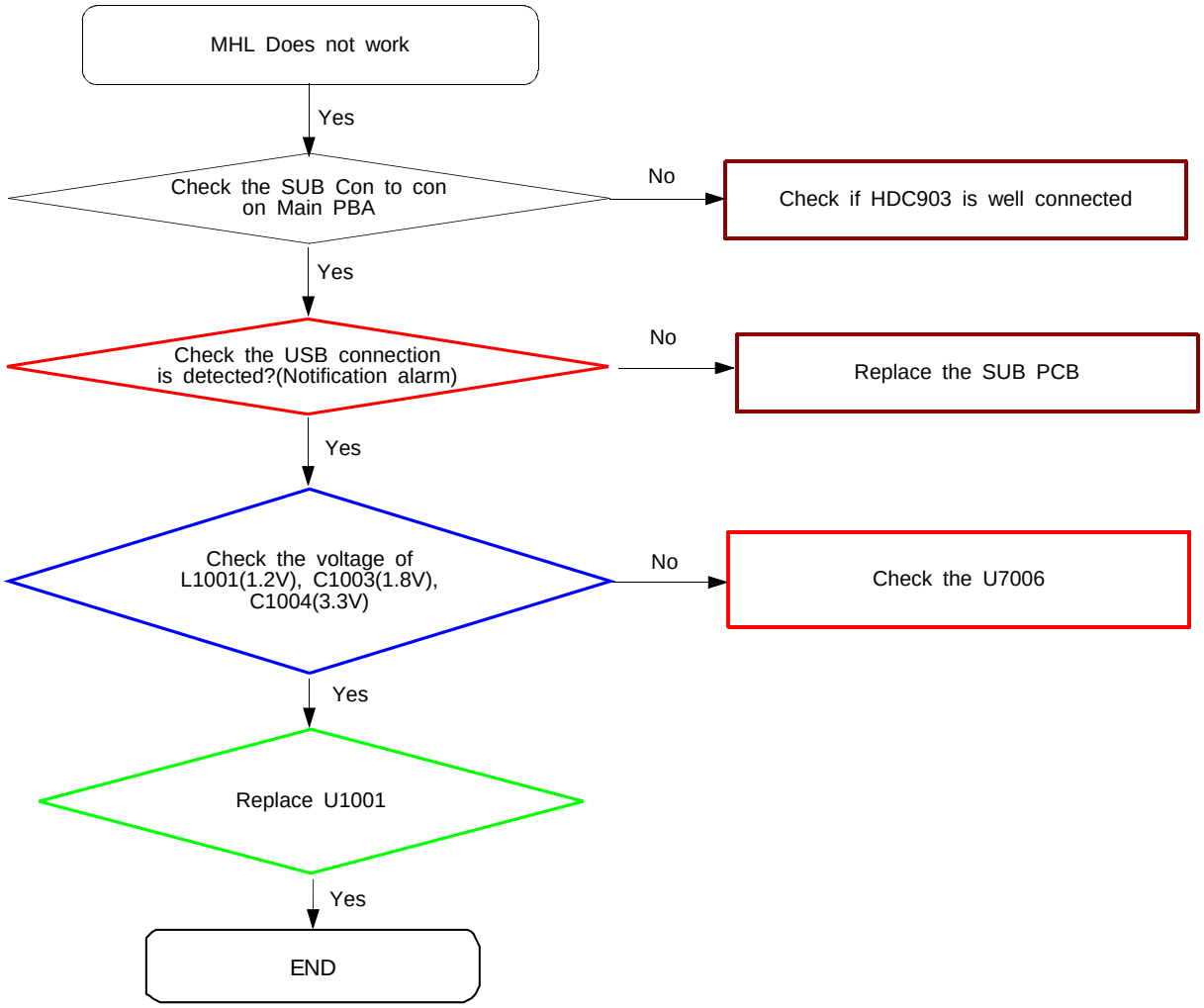


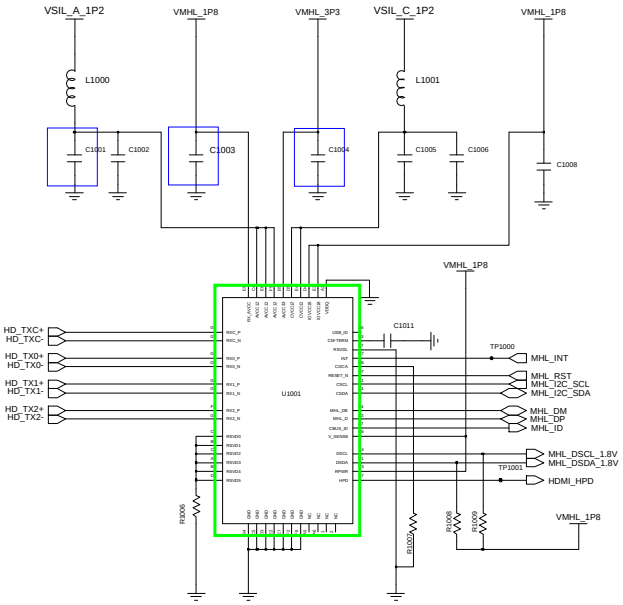
8-3-16. VT CAM

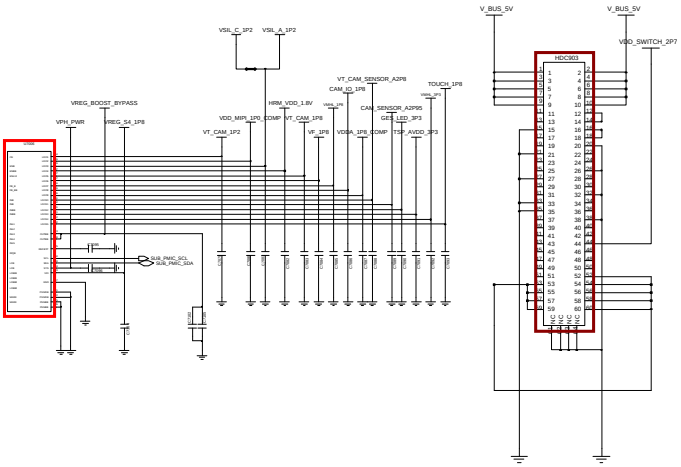


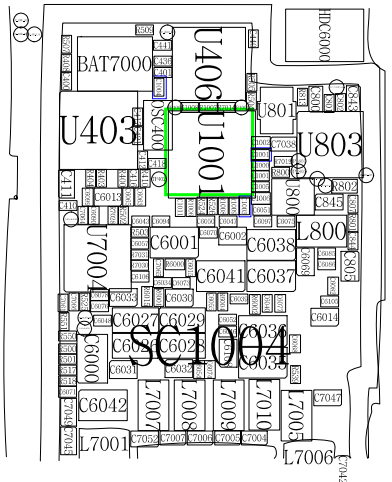


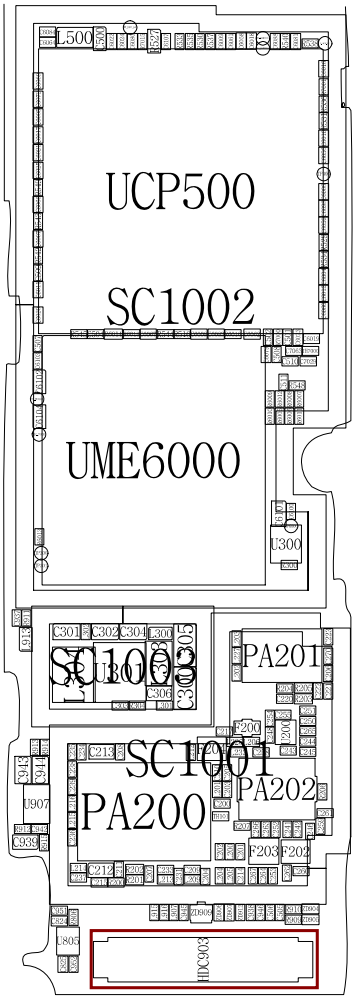
8-3-17. MHL

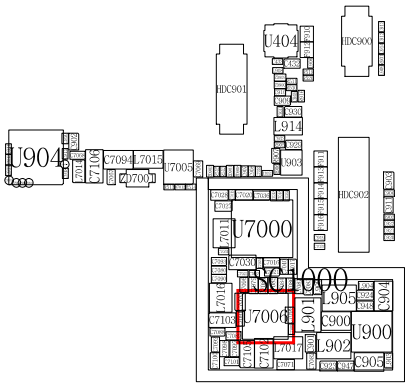




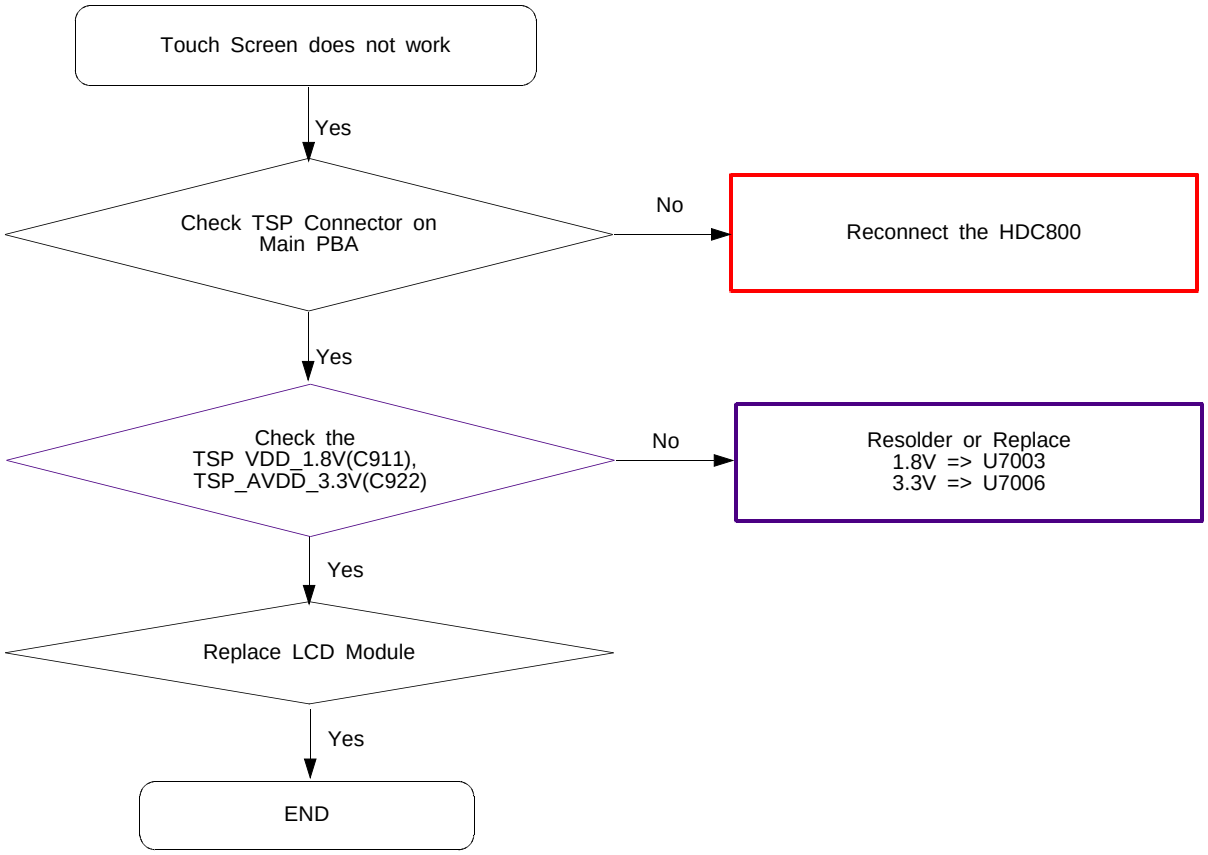


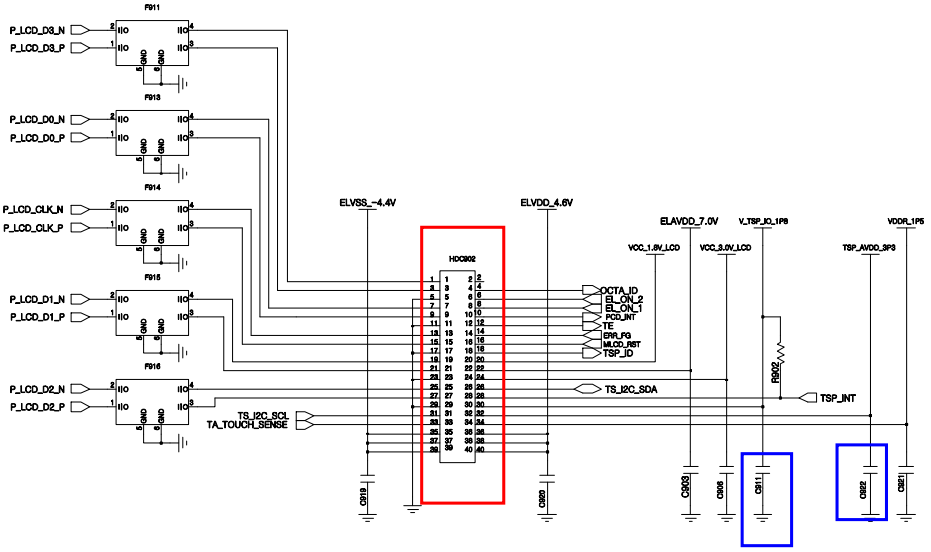


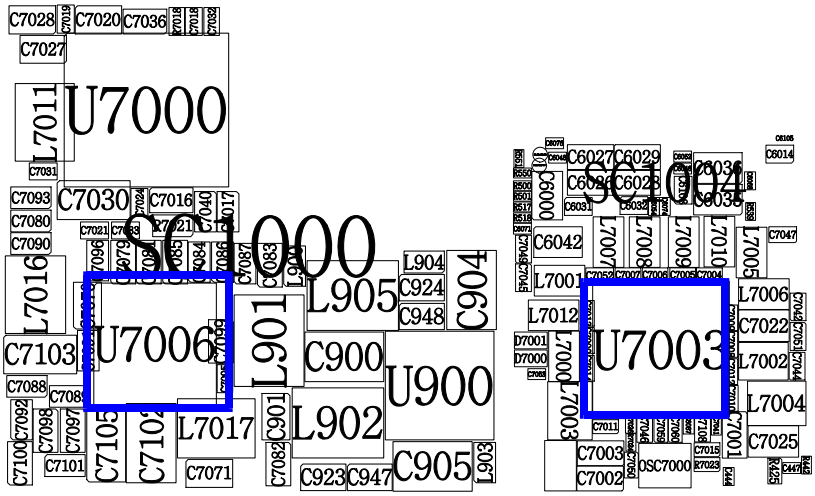




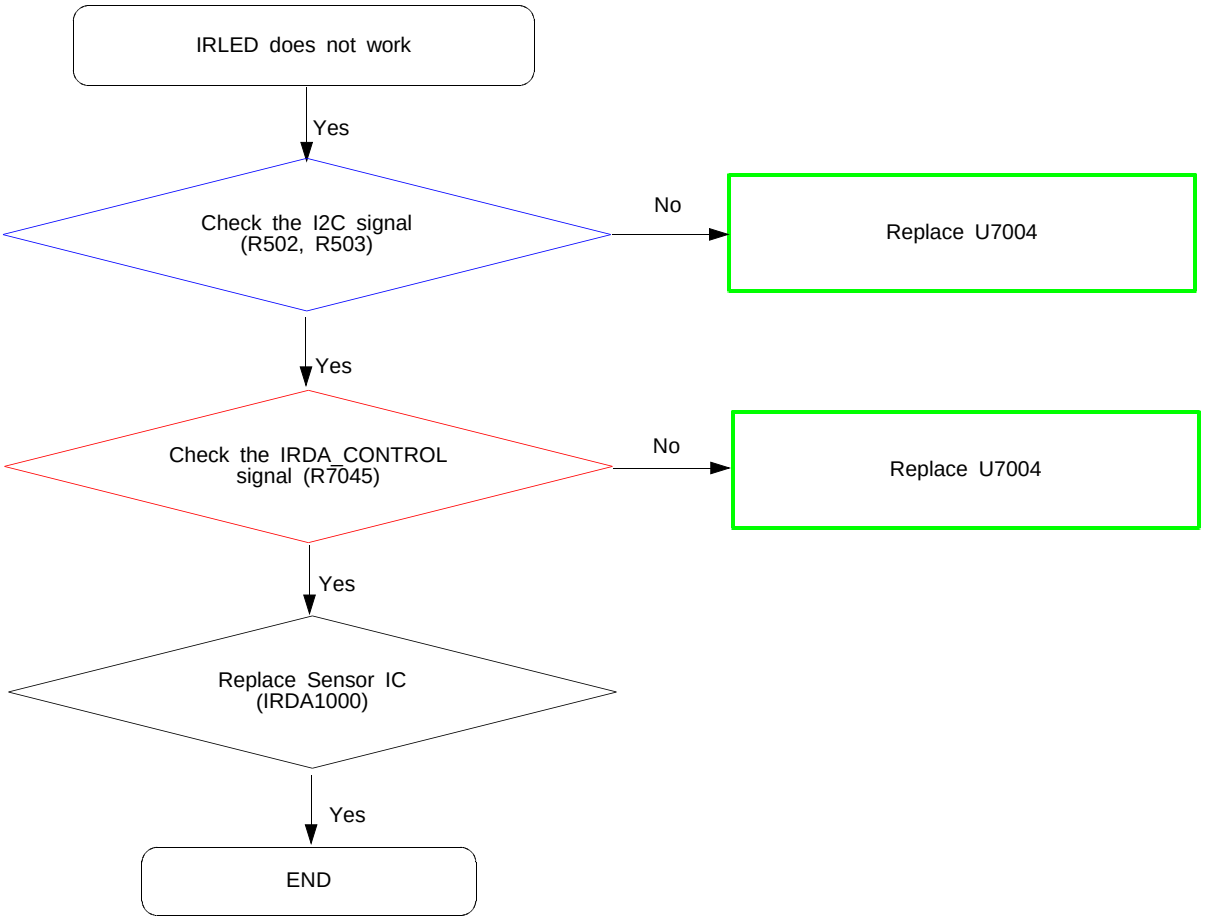
8-3-18. TSP

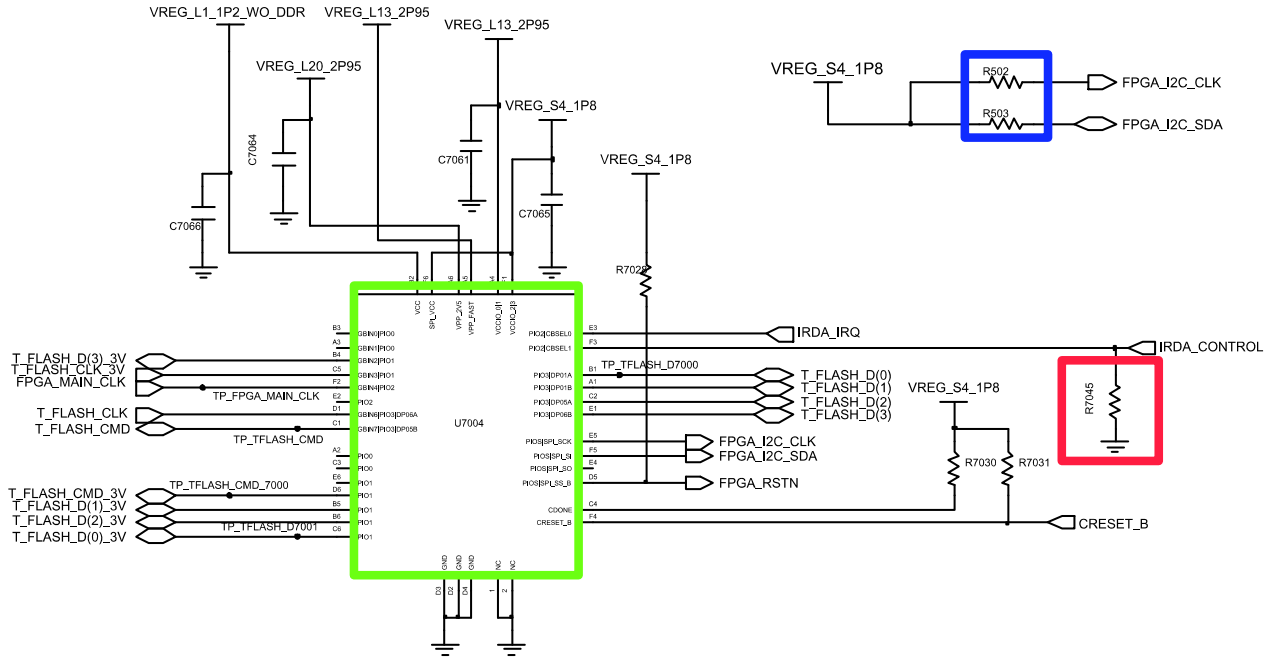


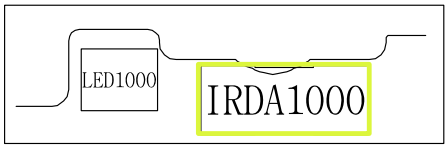


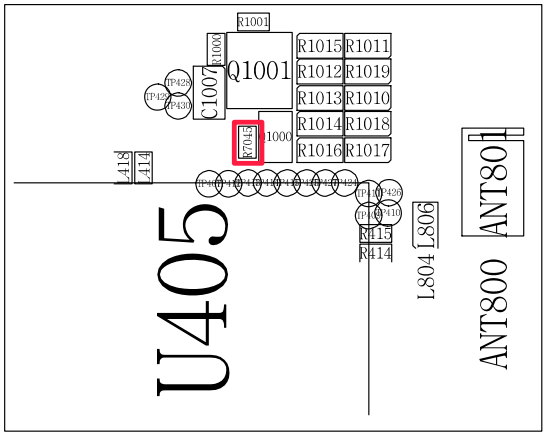


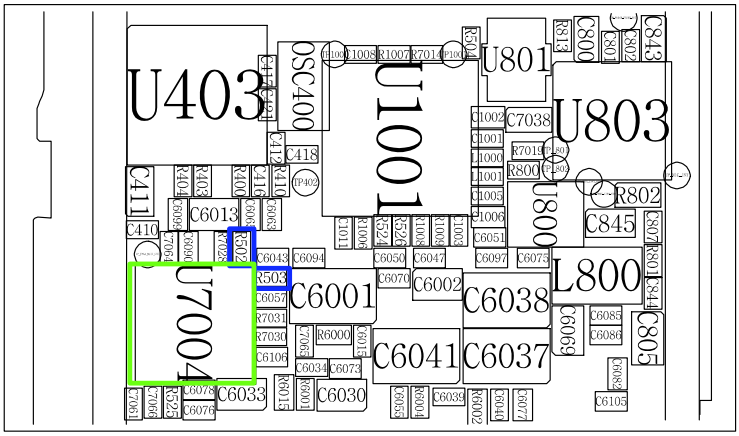
8-3-19. IRLED



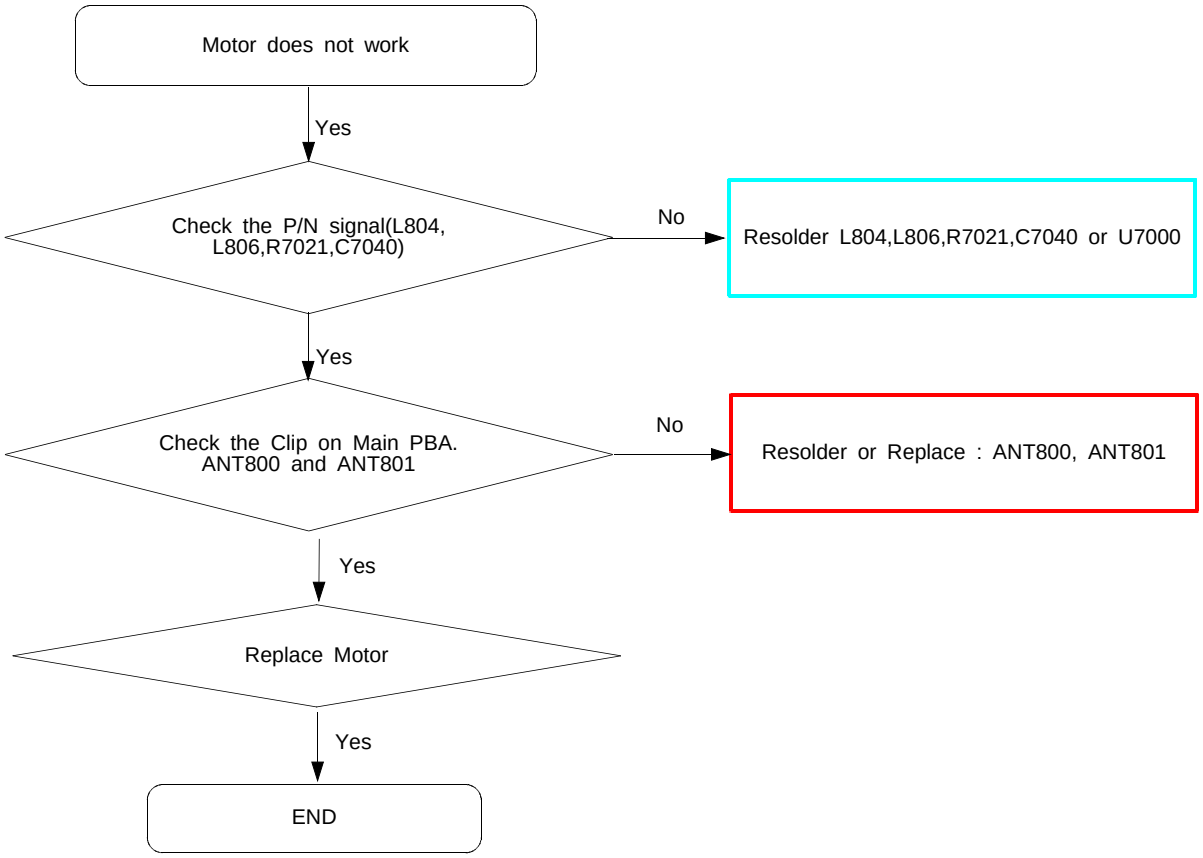


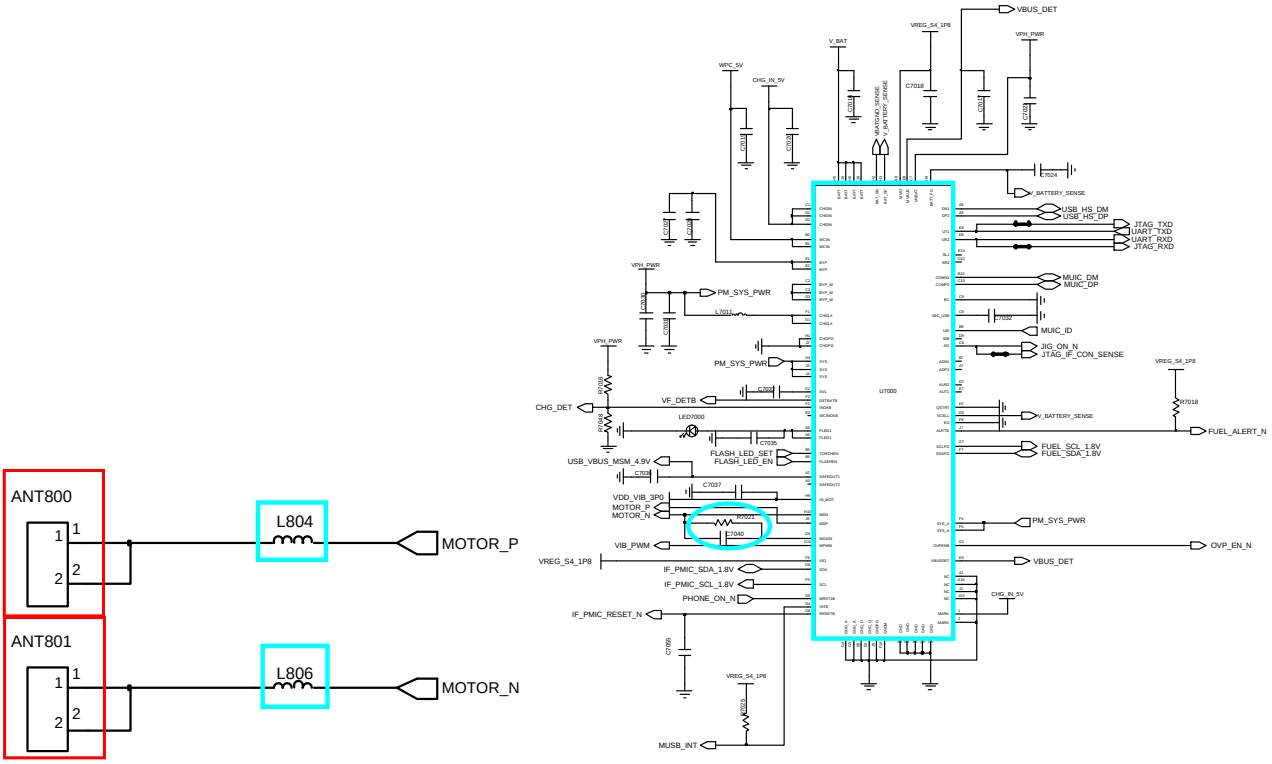


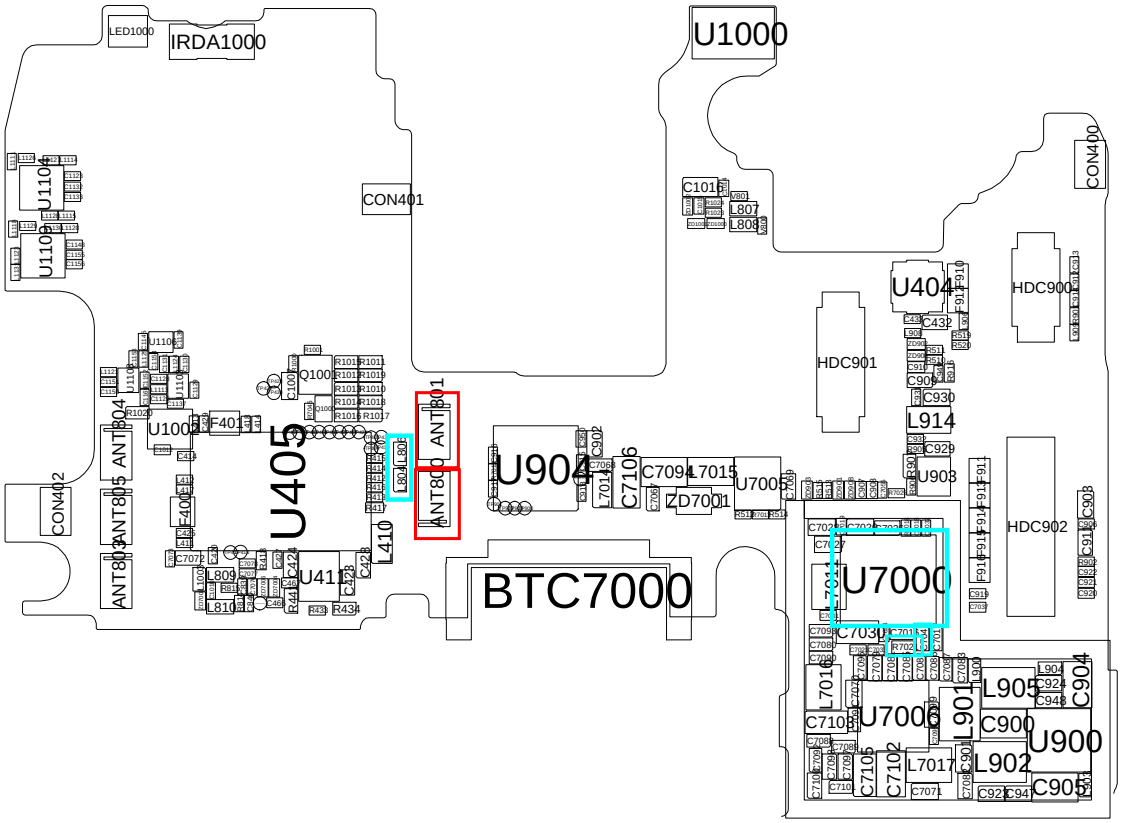




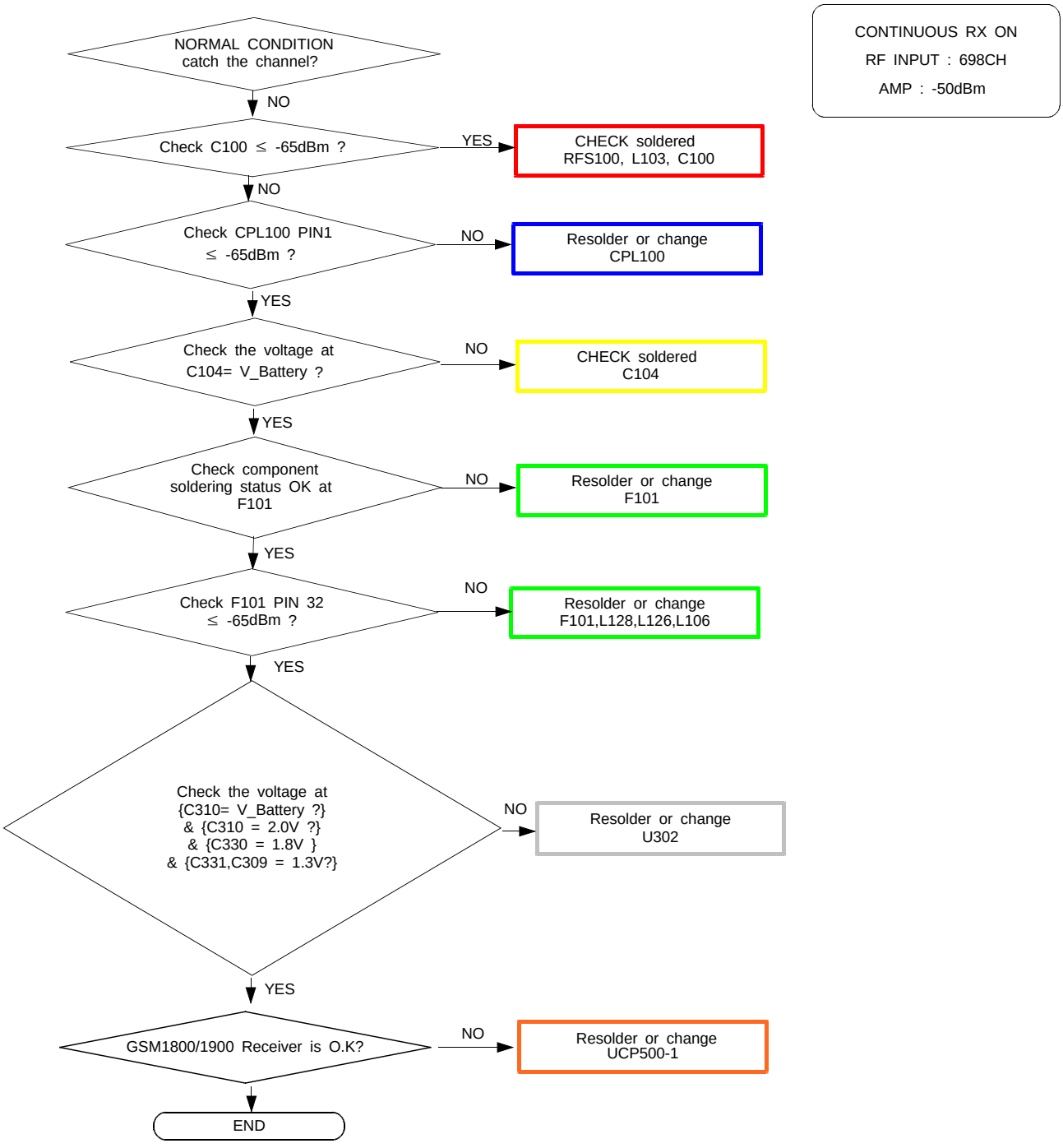
8-3-20. Motor

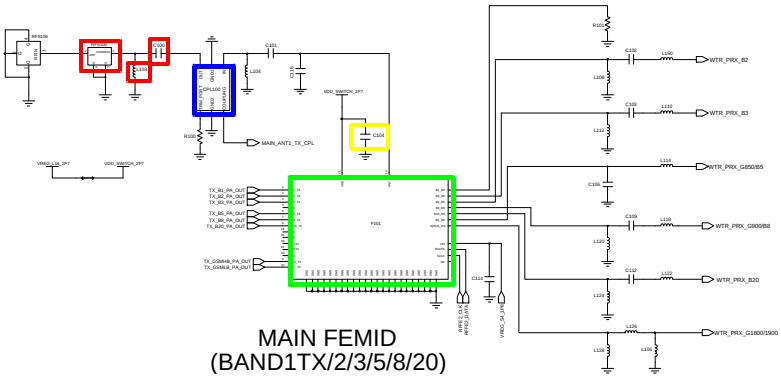




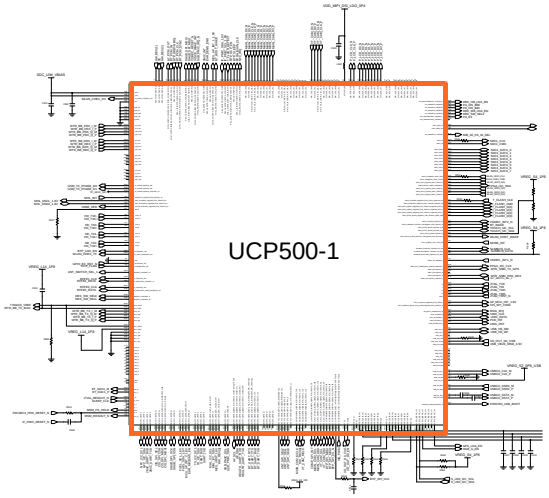


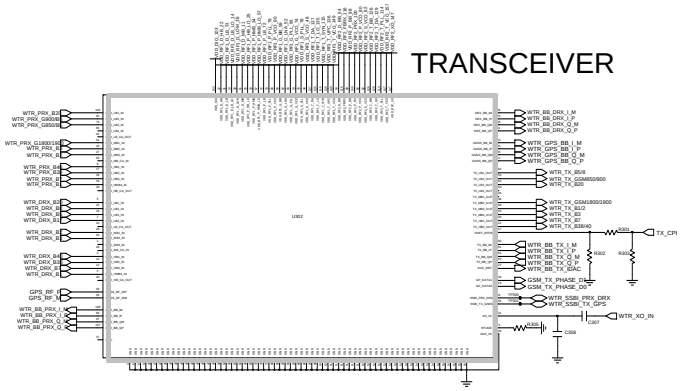
8-3-21. GSM1800/GSM1900 RX

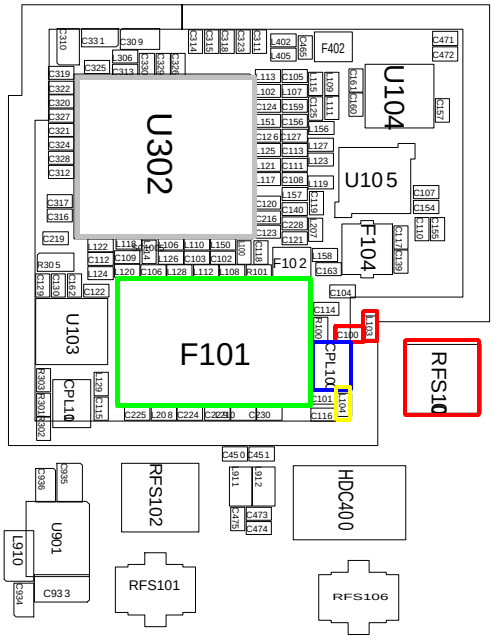


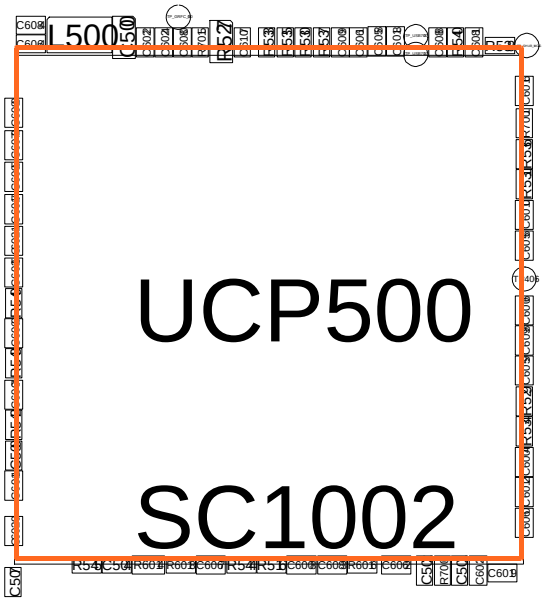


MAIN FEMID
(BAND1TX/2/3/5/8/20)

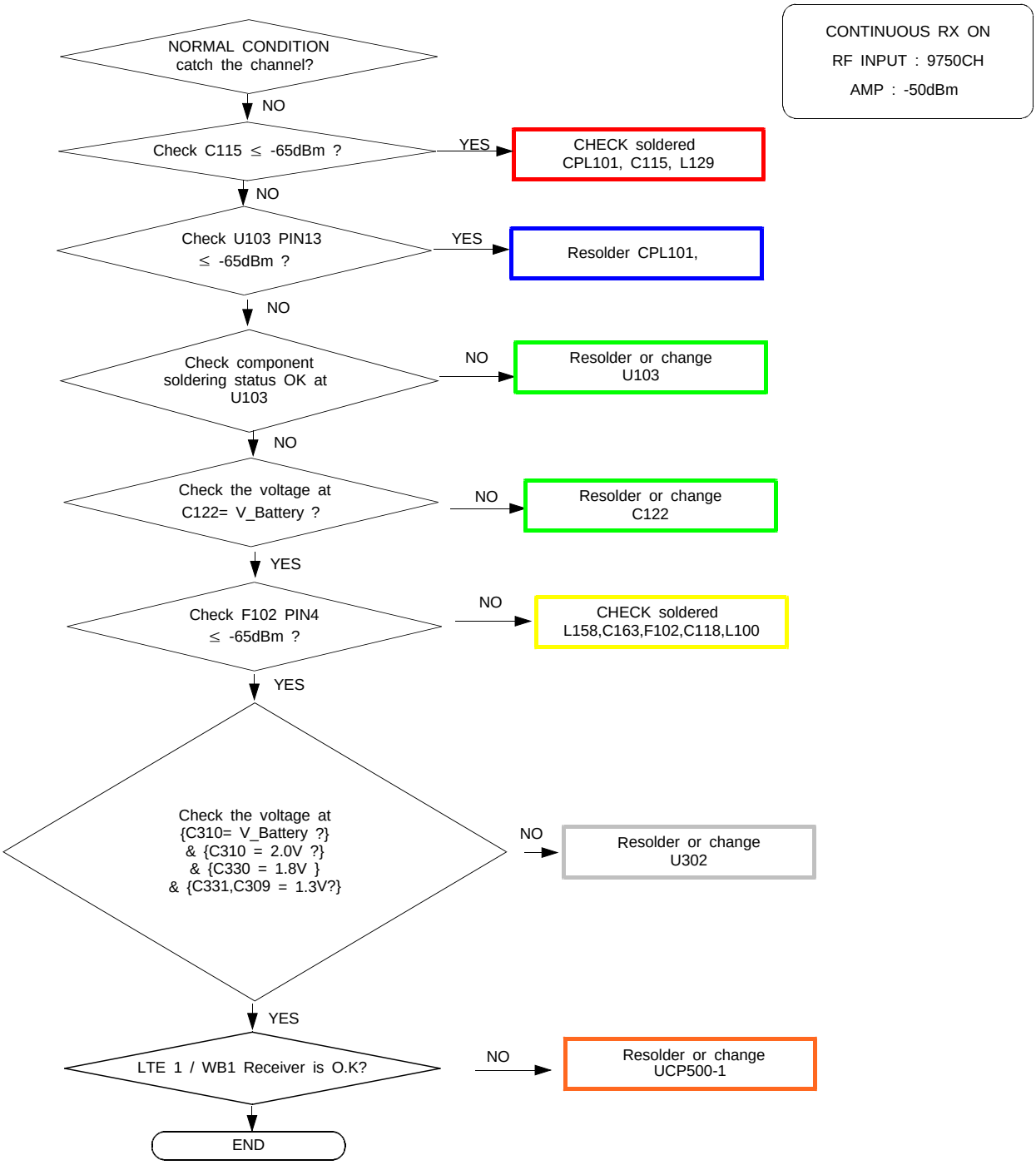


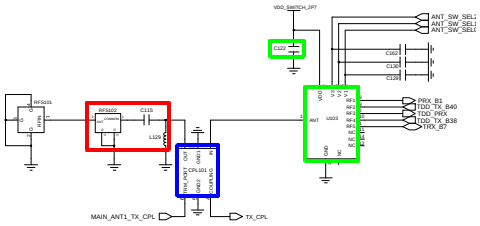




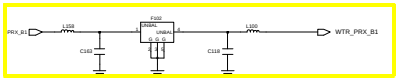


8-3-22. LTE Band1 / WCDMA Band1 RX

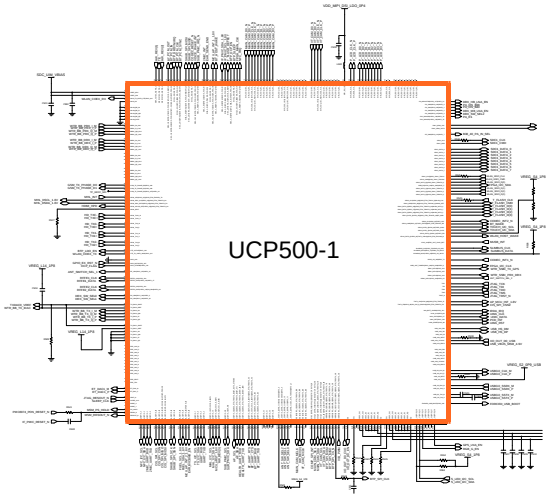


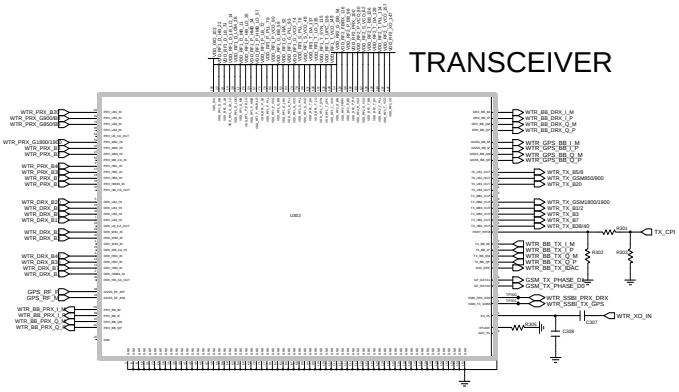


MAIN SWITCH (BAND7/B1 PRX)

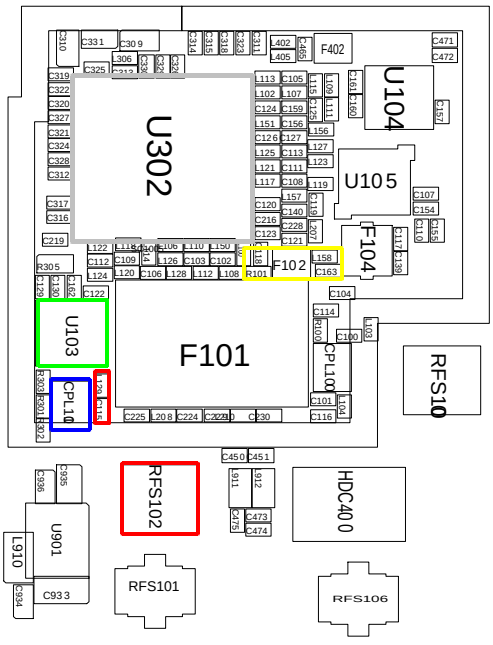


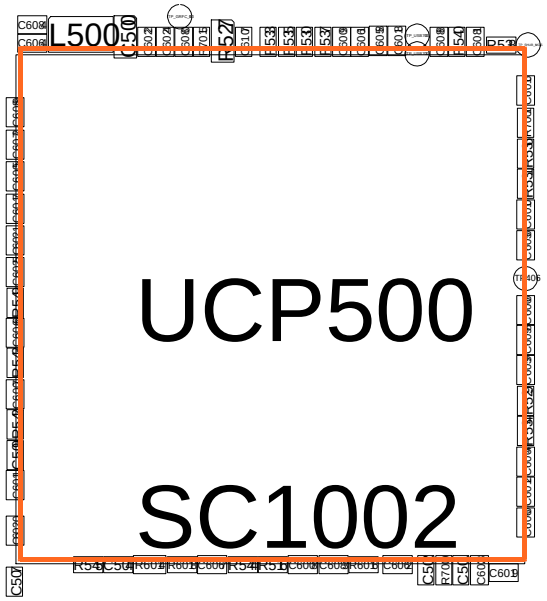
BAND1 PRX



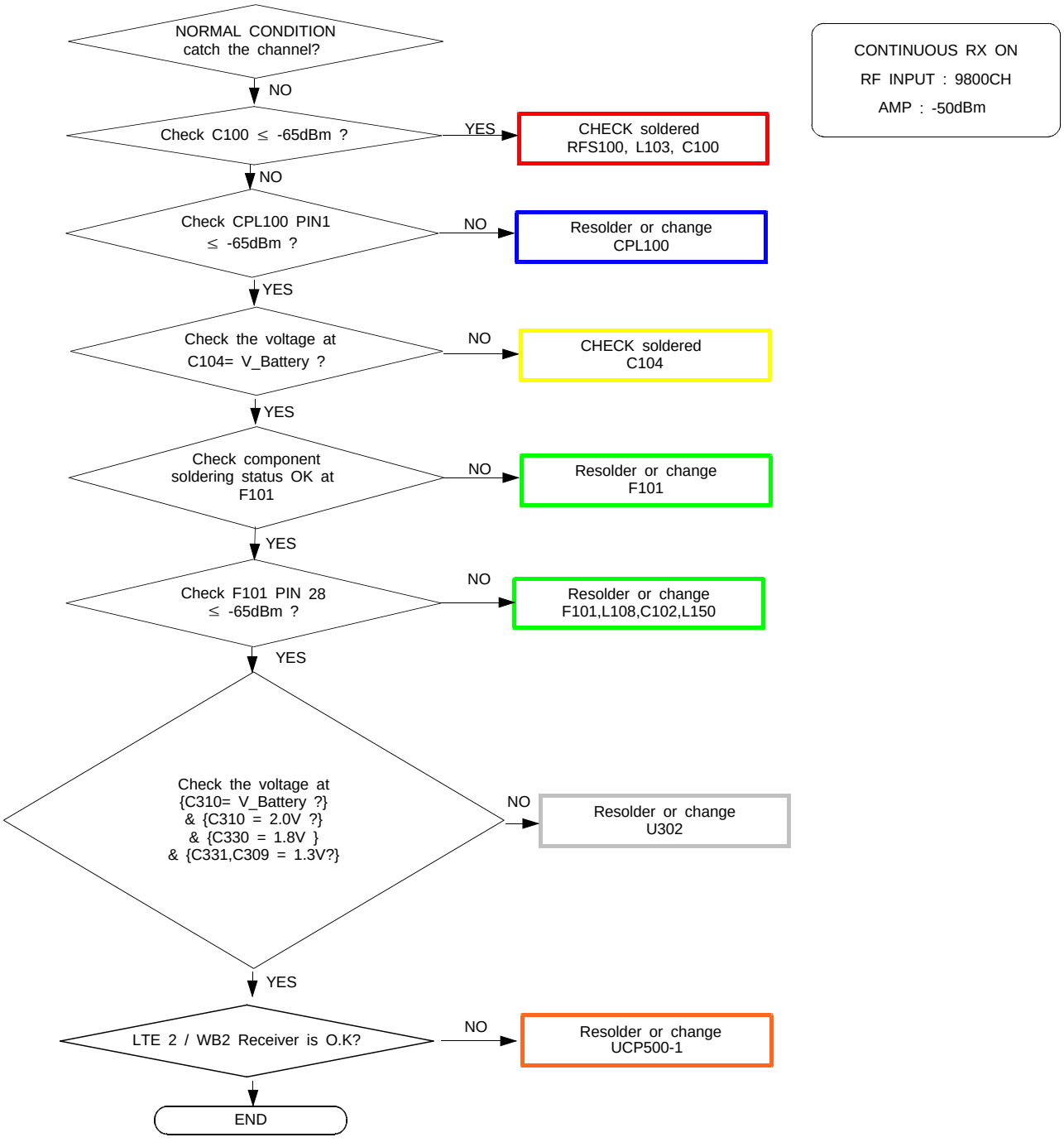


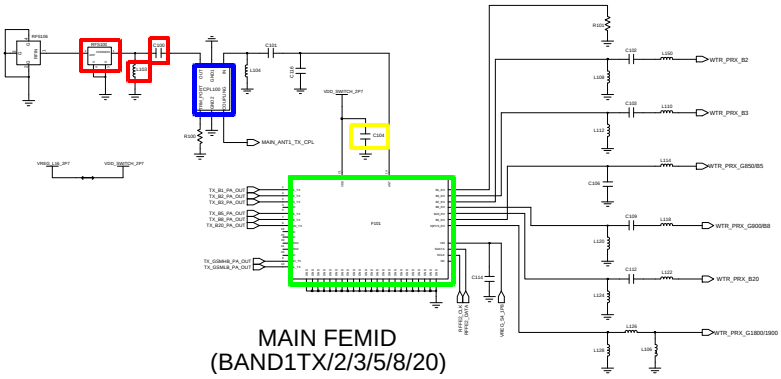
TRANSCEIVER



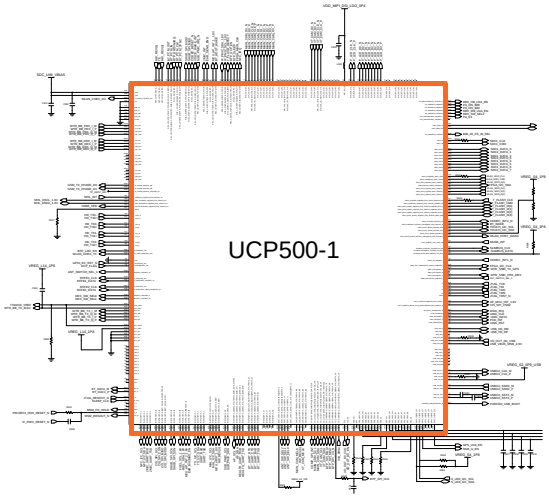


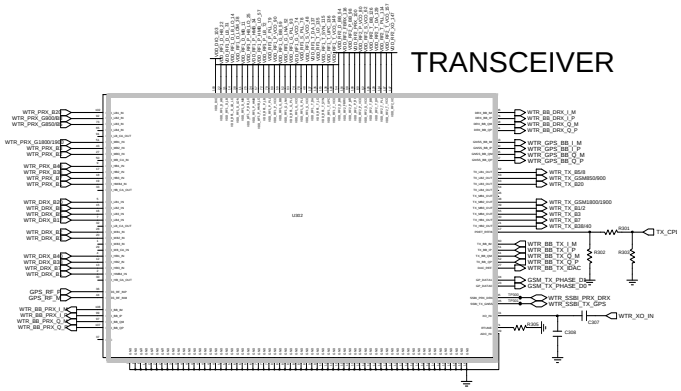
8-3-23. LTE Band2 / WCDMA Band2 RX

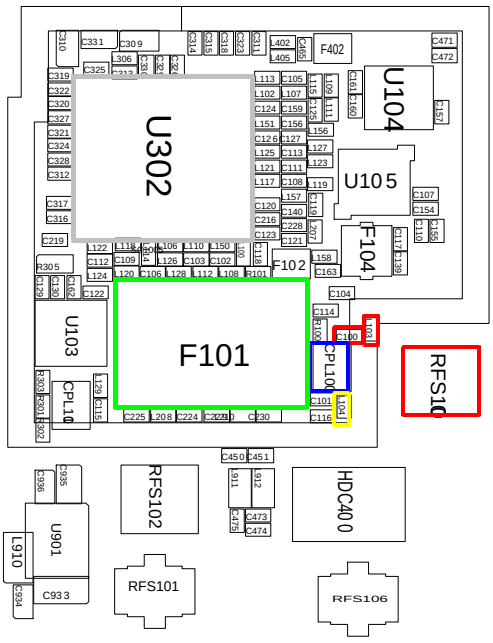


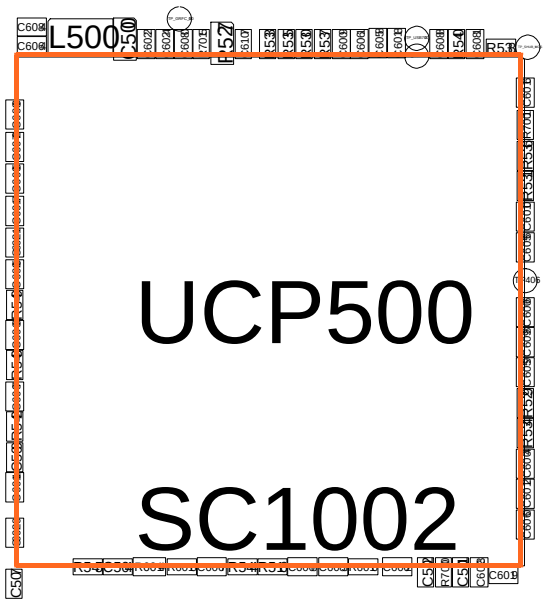


MAIN FEMID
(BAND1TX/2/3/5/8/20)

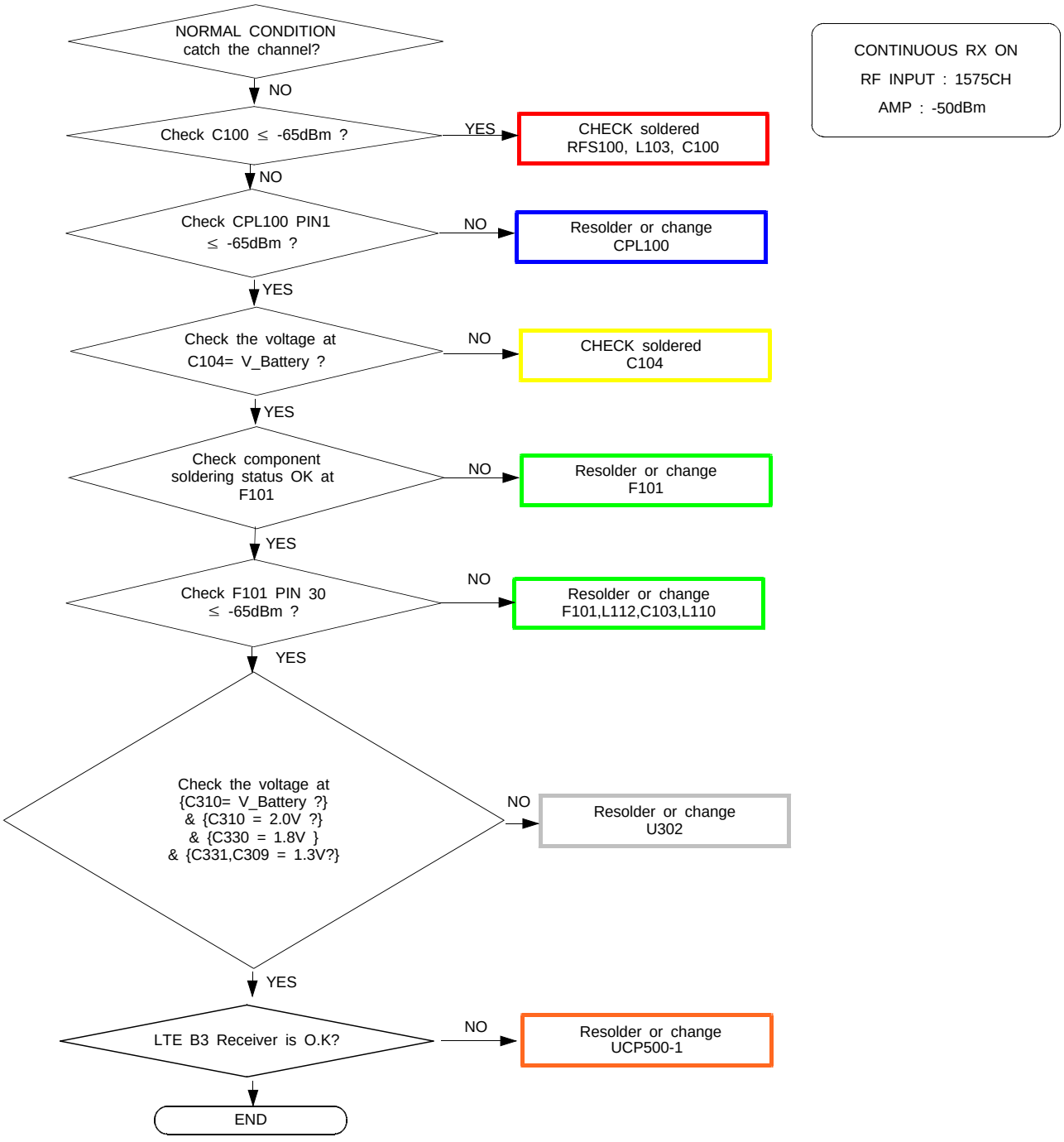


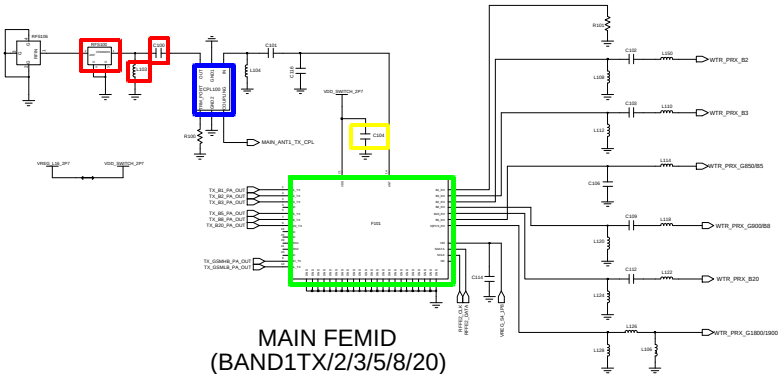




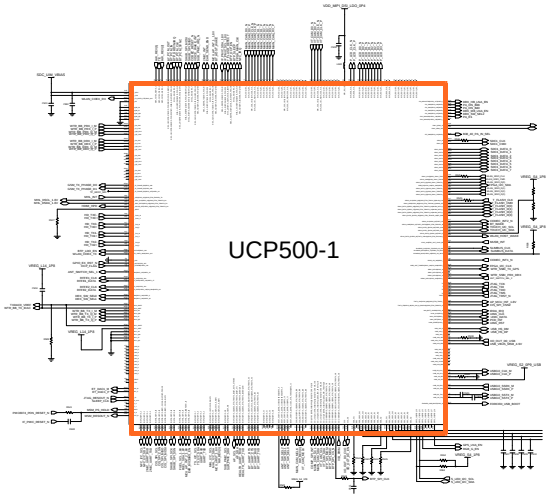


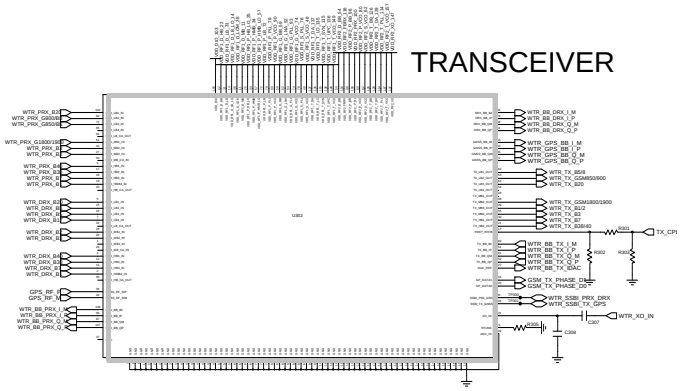
8-3-24. LTE Band3 RX

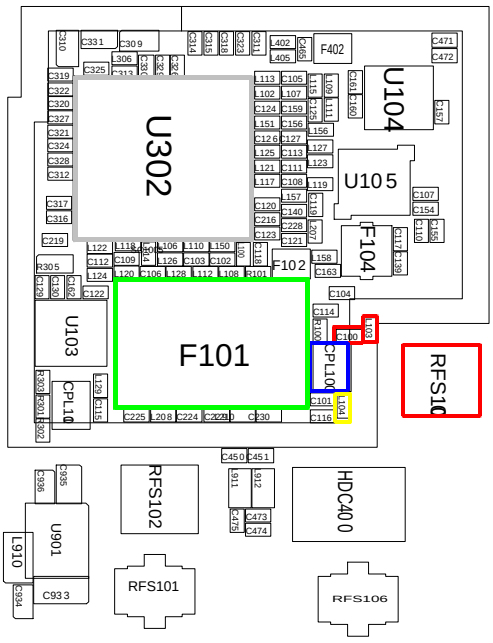


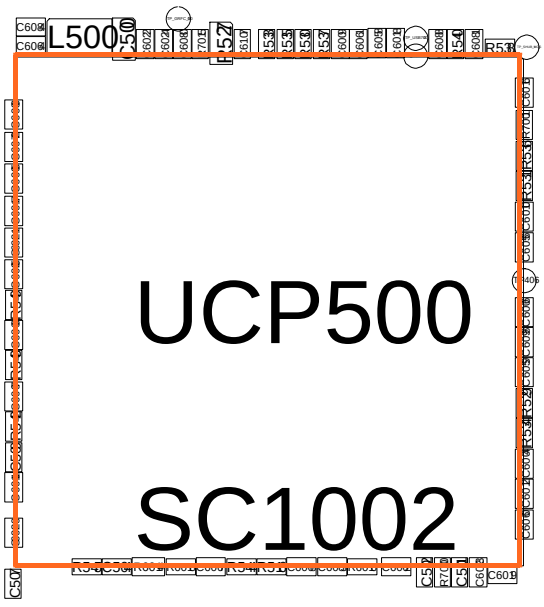


MAIN FEMID
(BAND1TX/2/3/5/8/20)

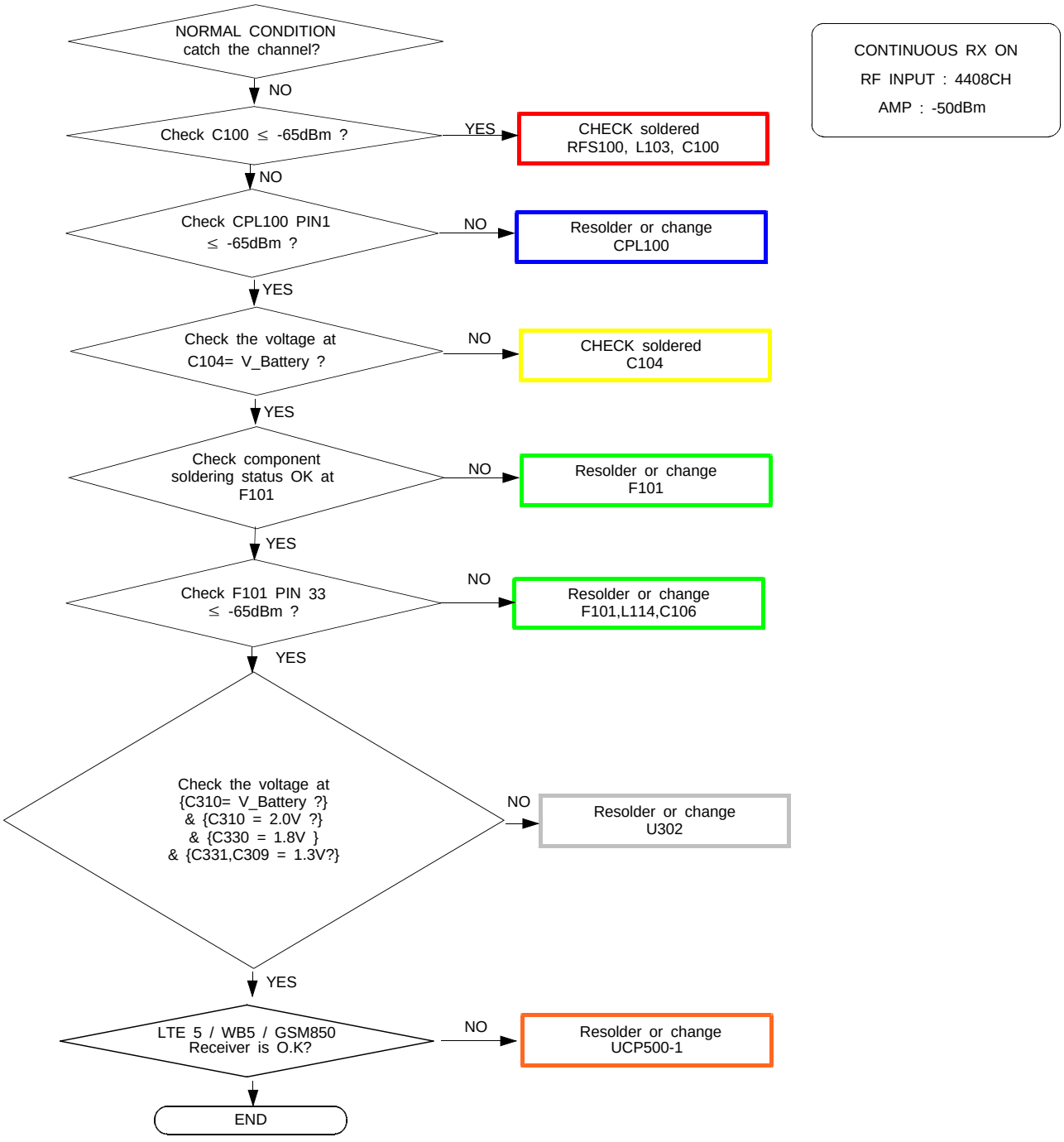


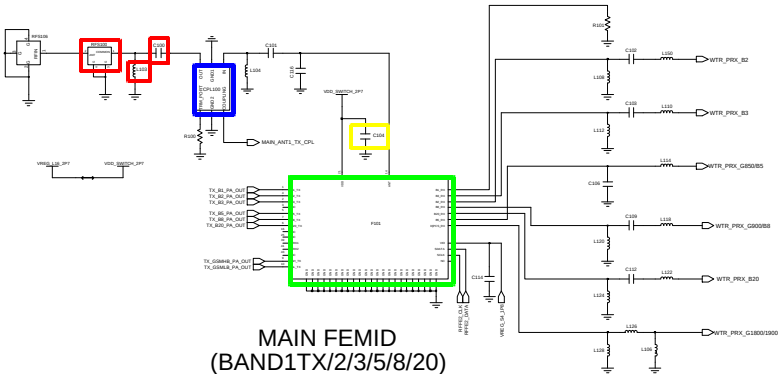




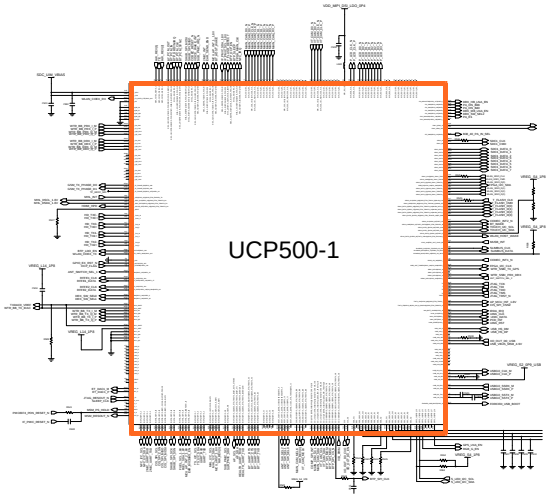


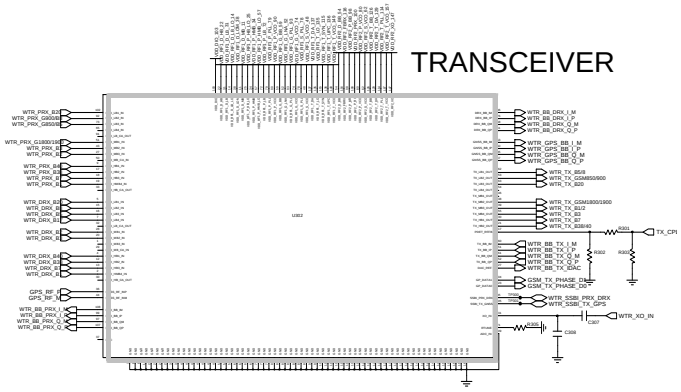
8-3-25. LTE Band5 / WCDMA Band5 / GSM 850 RX

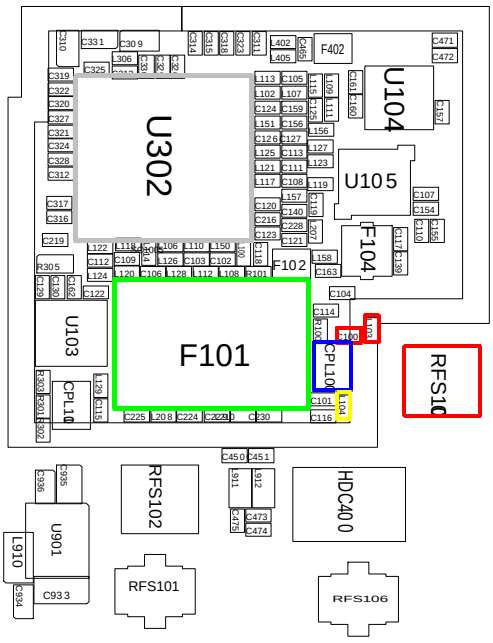


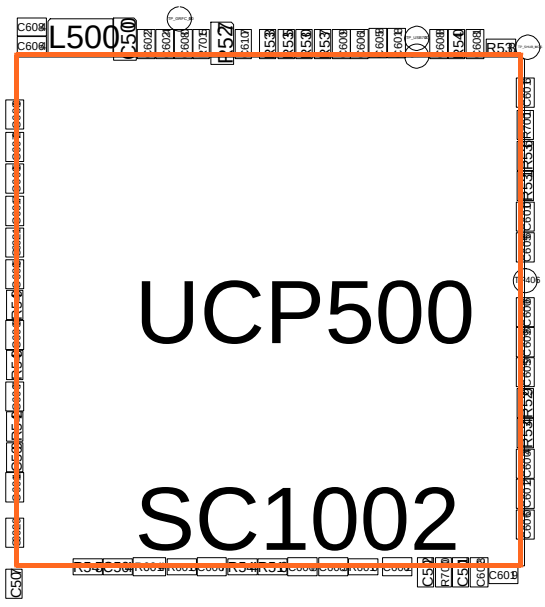


MAIN FEMID
(BAND1TX/2/3/5/8/20)

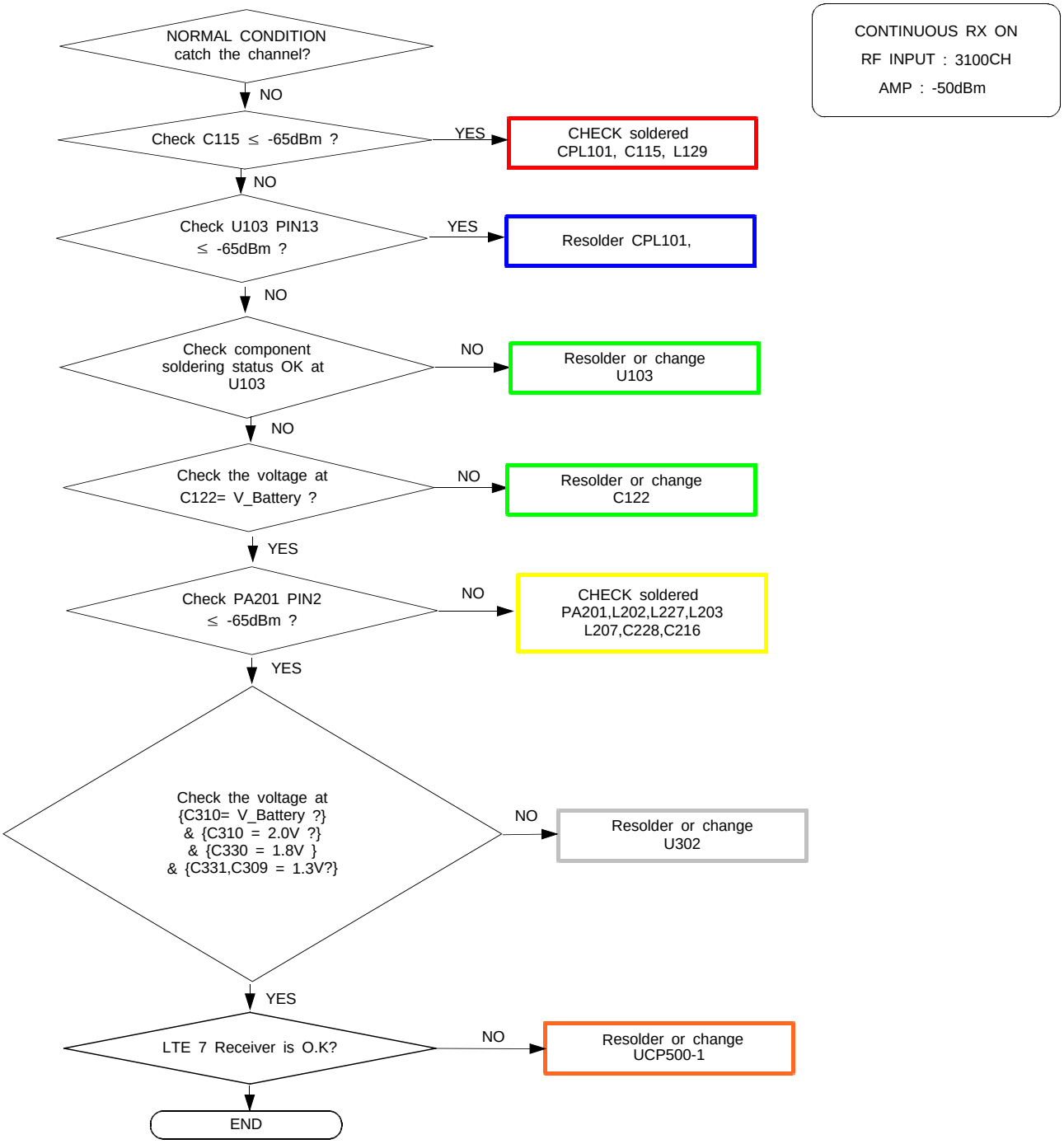


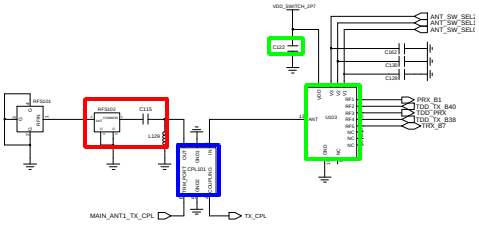




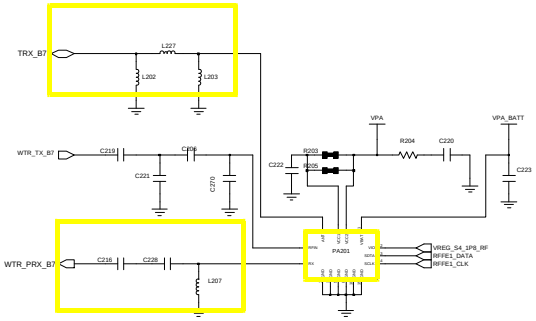


8-3-26. LTE Band7 RX

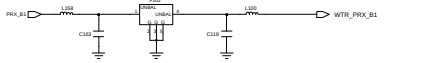




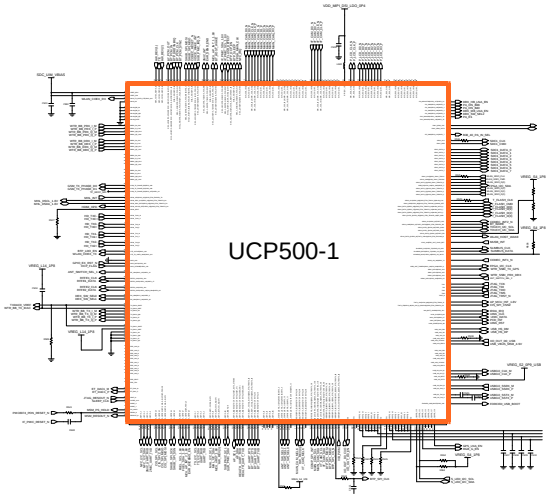
MAIN SWITCH (BAND7/B1 PRX)

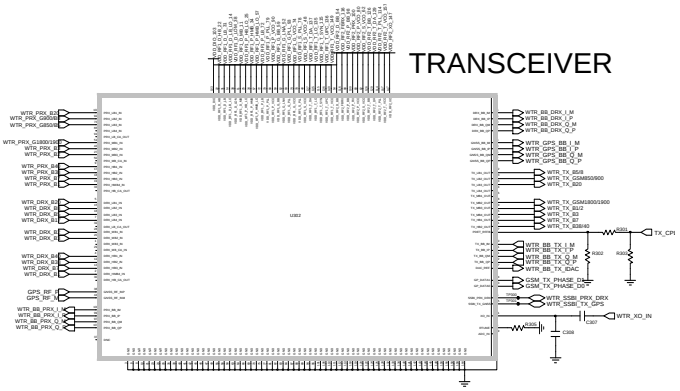


BAND7 PAD (PA + DPX)

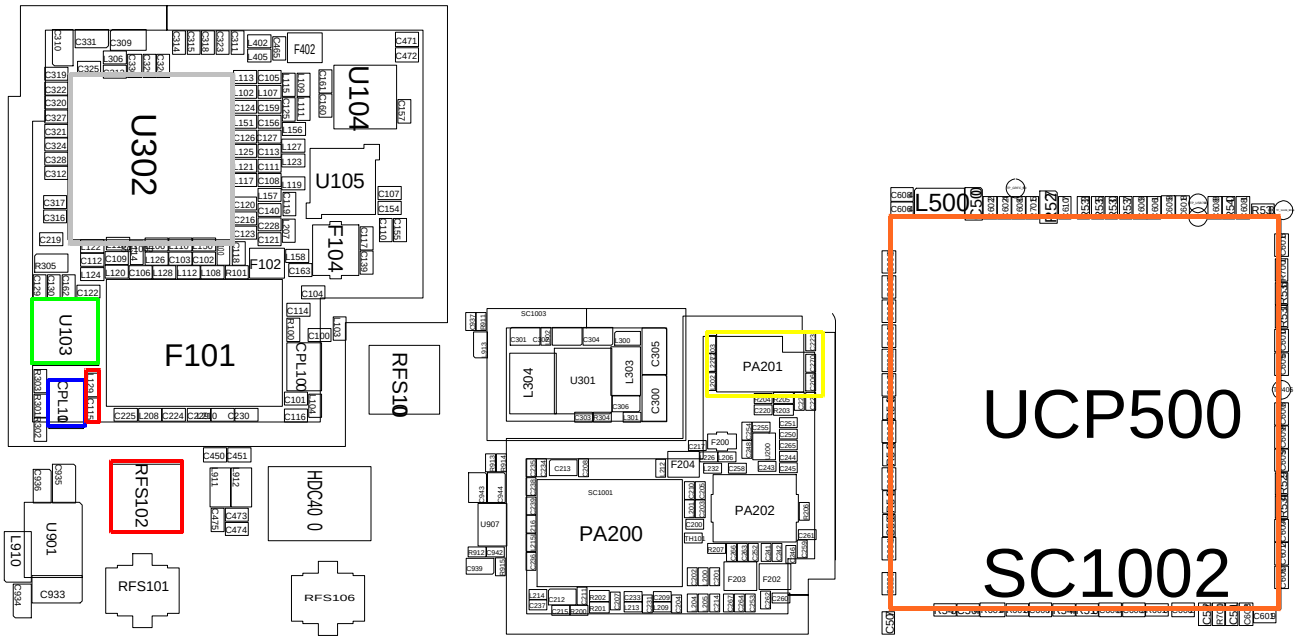


BAND1 PRX

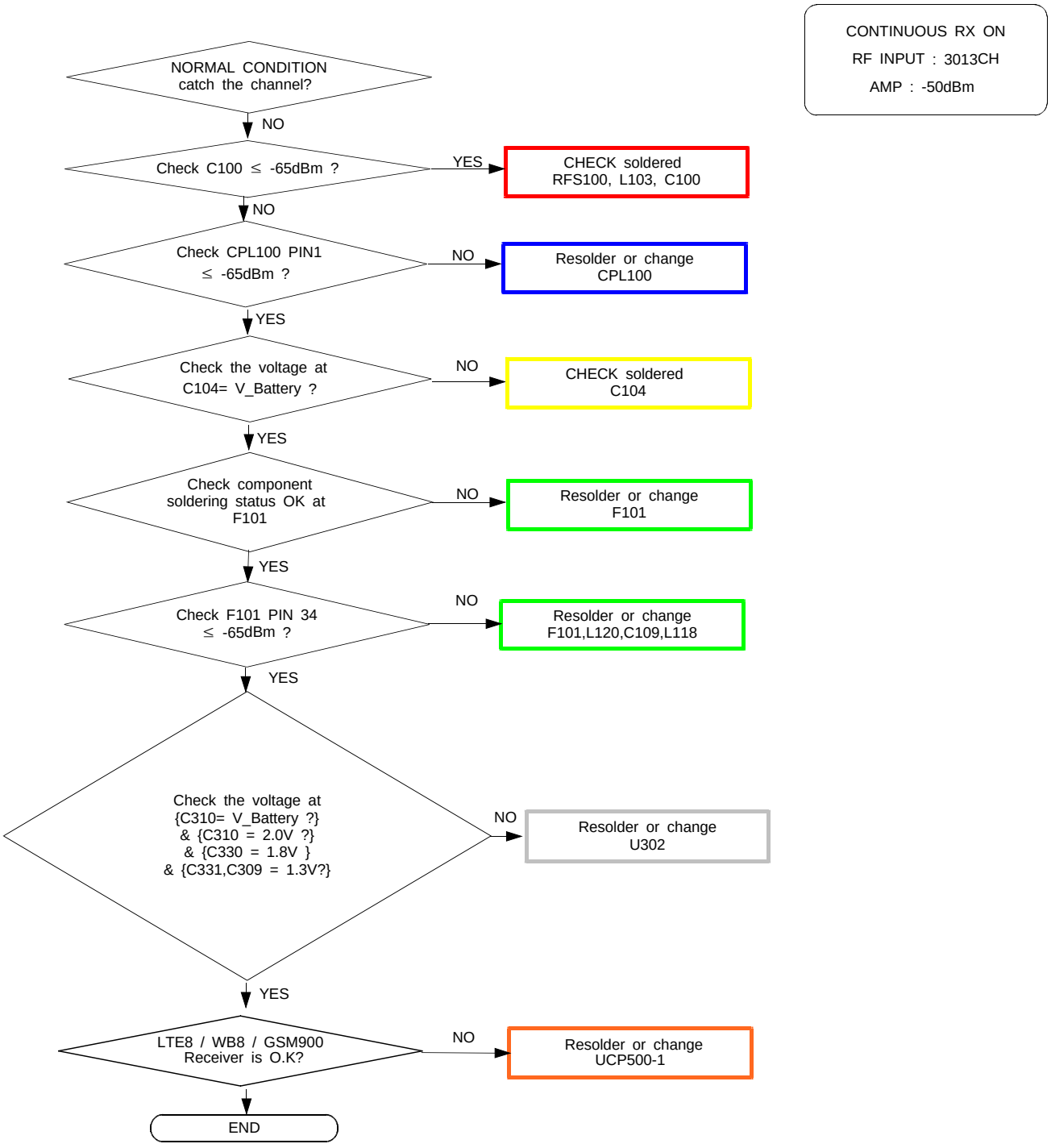


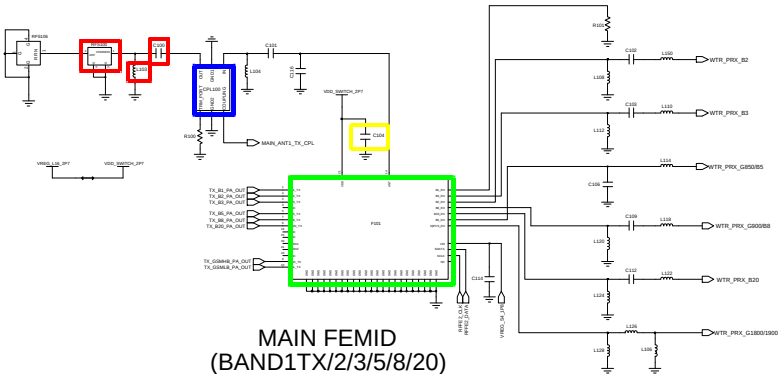


TRANSCEIVER

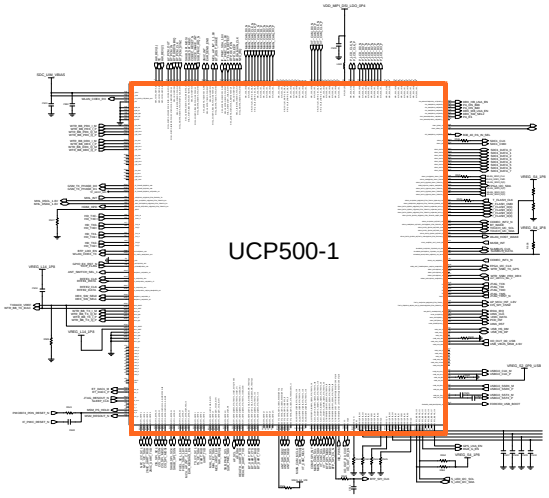


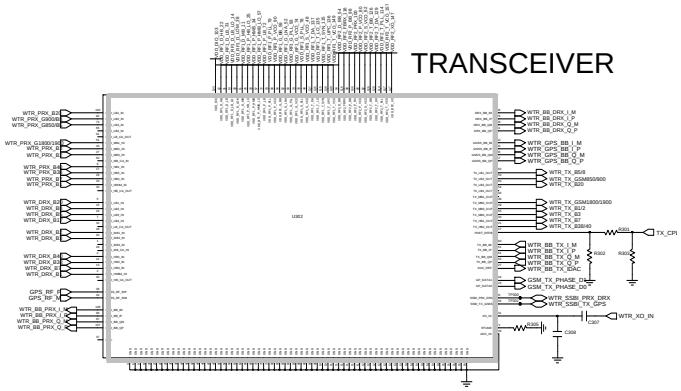
8-3-27. LTE Band8 / WCDMA Band8 / GSM900 RX

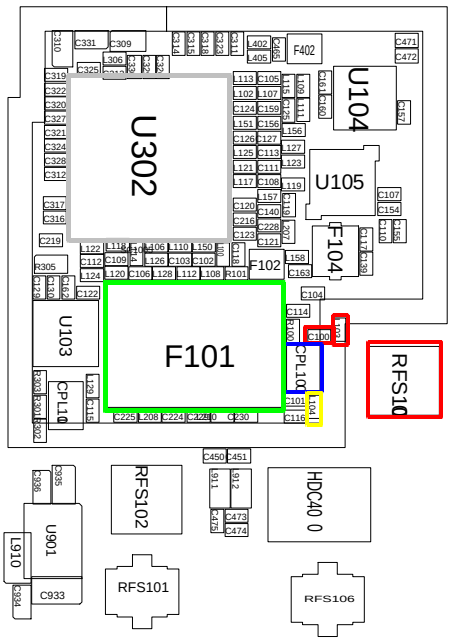


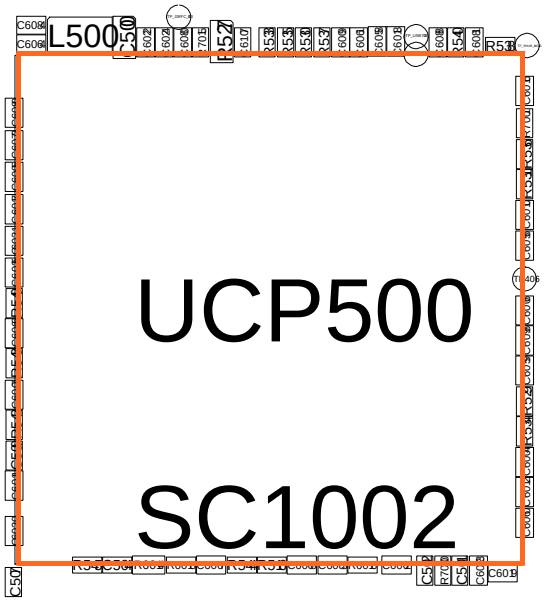


MAIN FEMID
(BAND1TX/2/3/5/8/20)

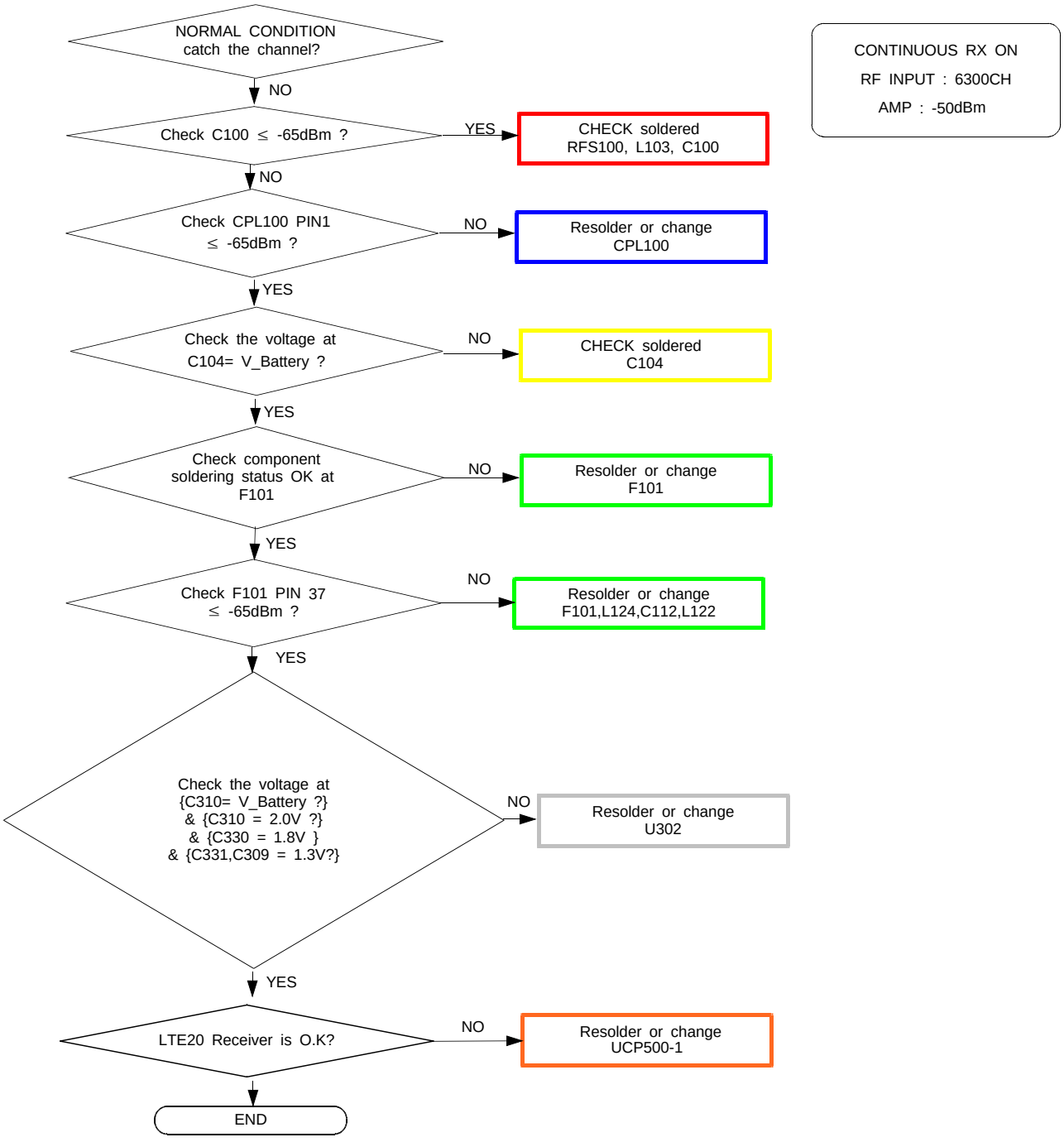


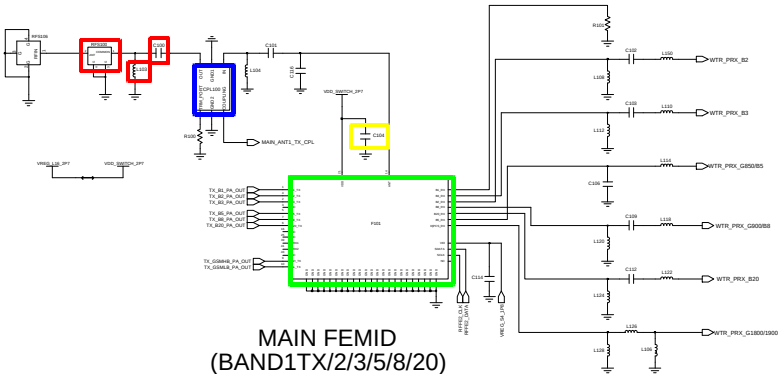




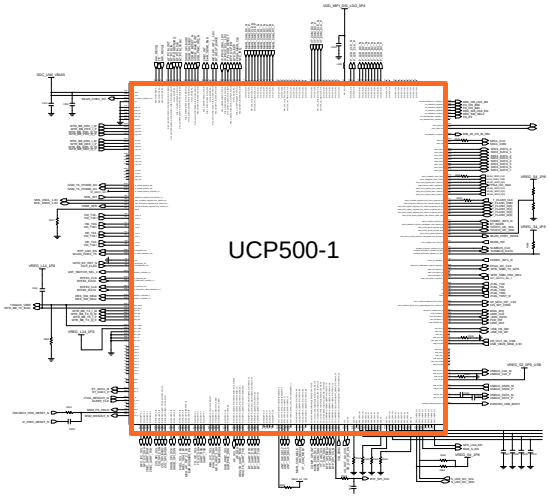


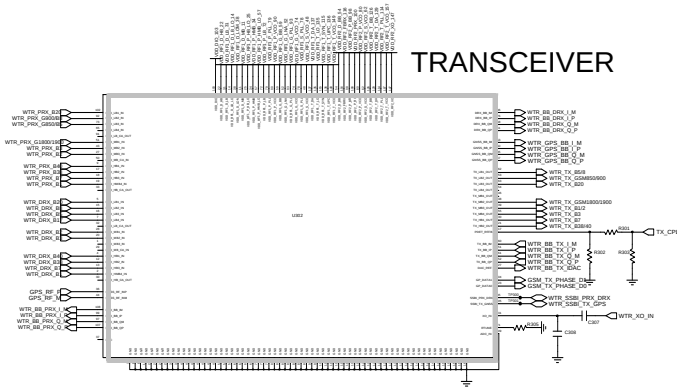
8-3-28. LTE Band20 RX

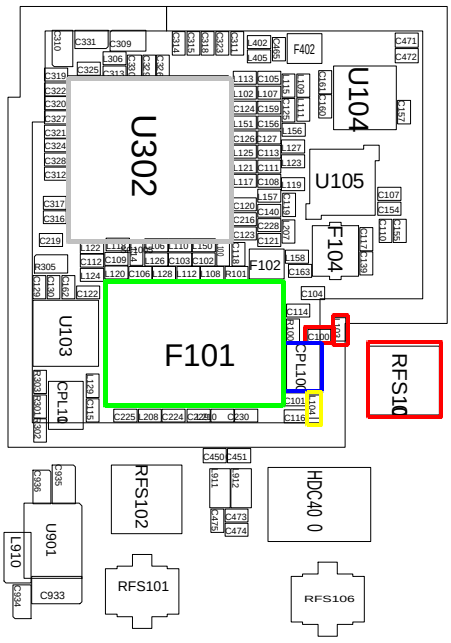


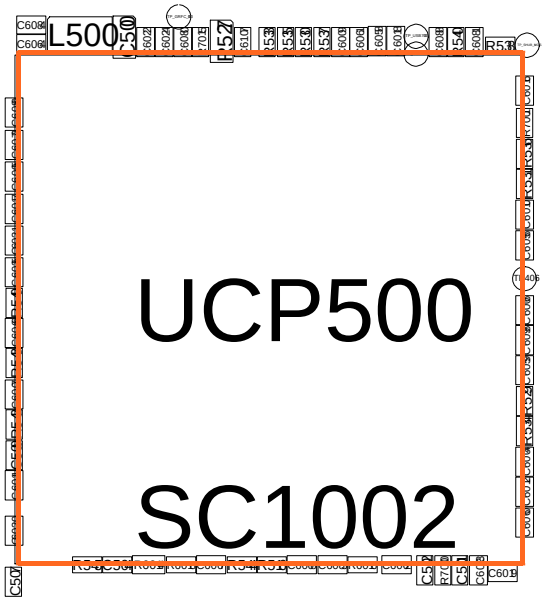


MAIN FEMID
(BAND1TX/2/3/5/8/20)



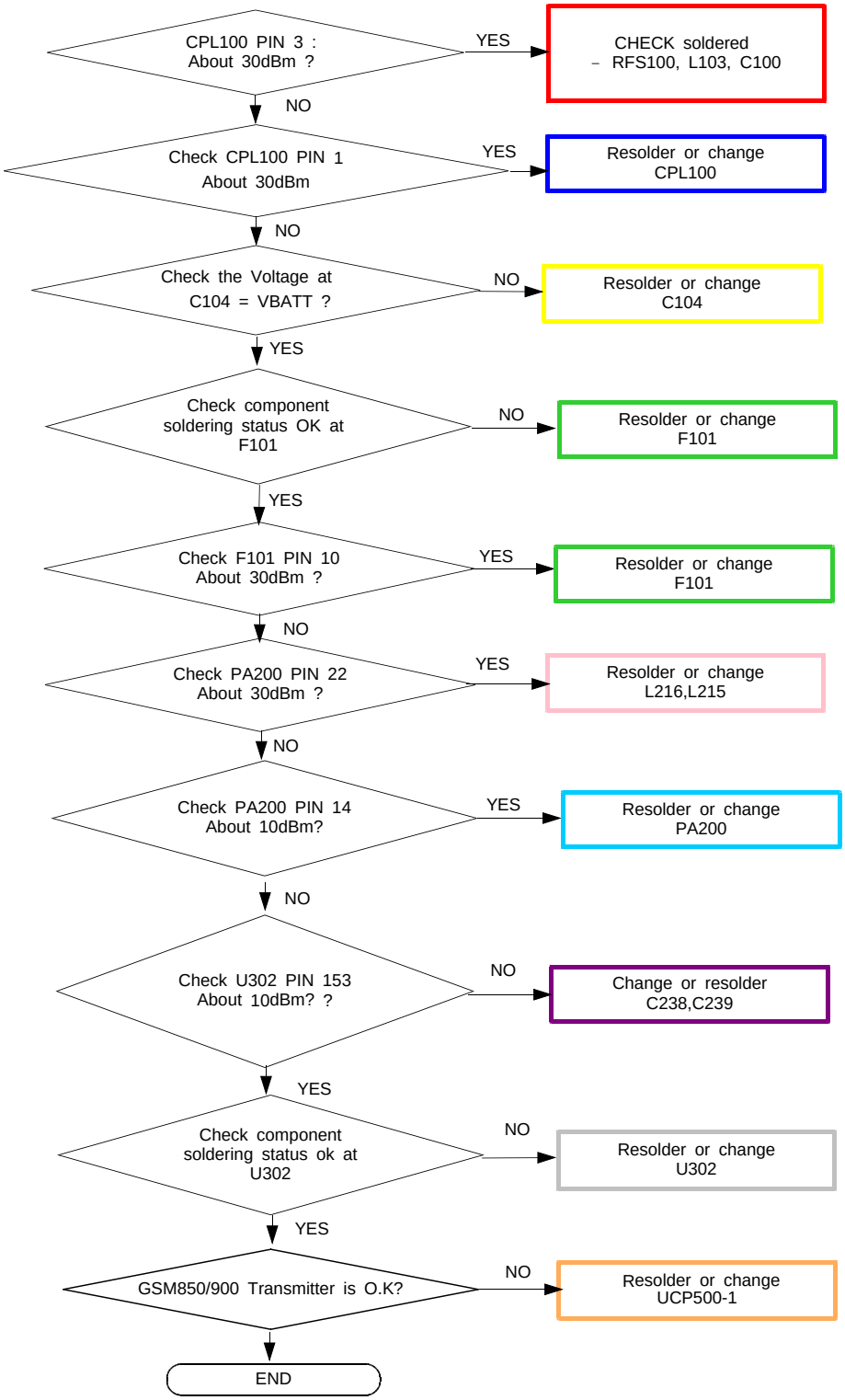


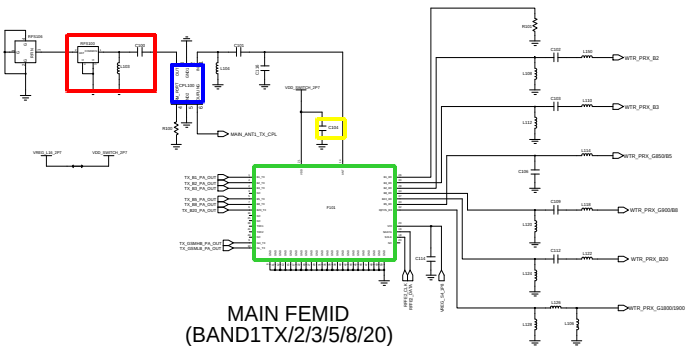




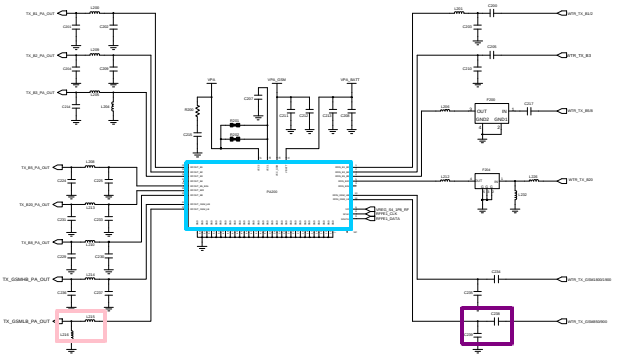
8-3-29. GSM850/GSM900 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
GSM850 CH : 190
GSM900 CH : 62
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

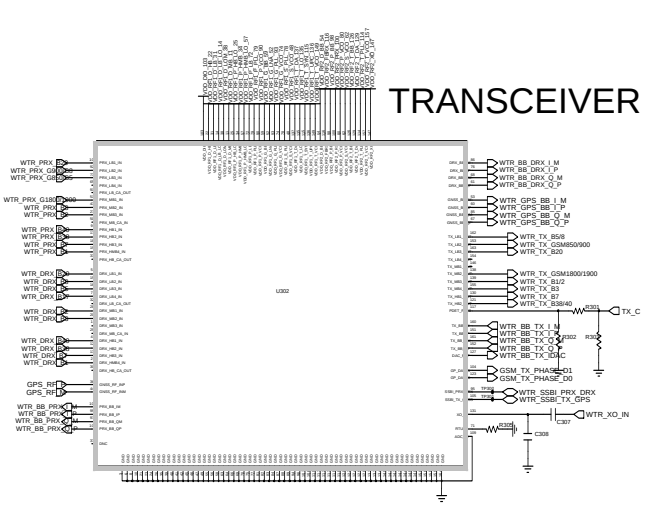


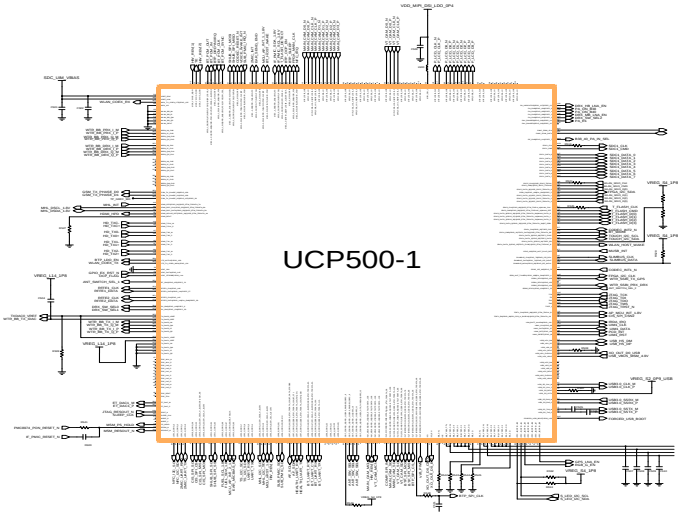


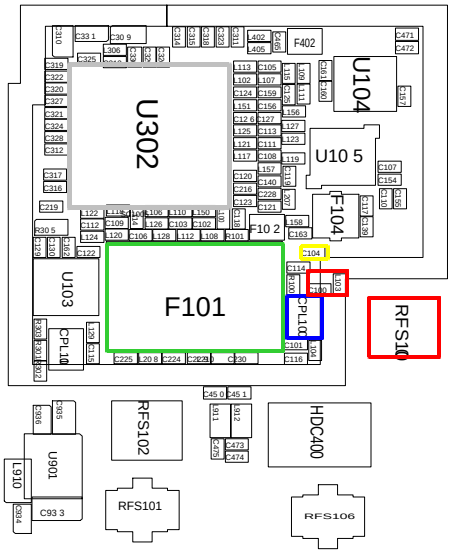
MAIN FEMID
(BAND1TX/2/3/5/8/20)

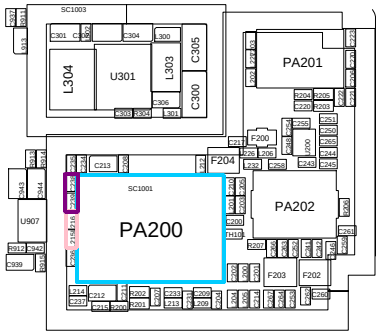


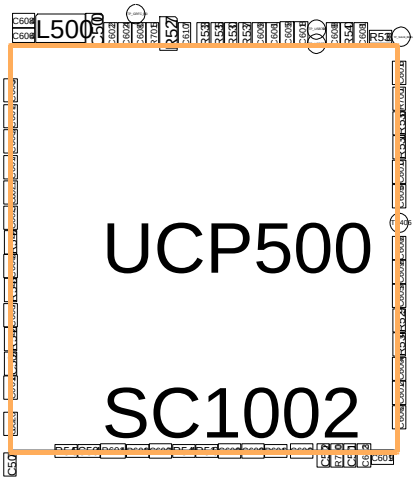
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





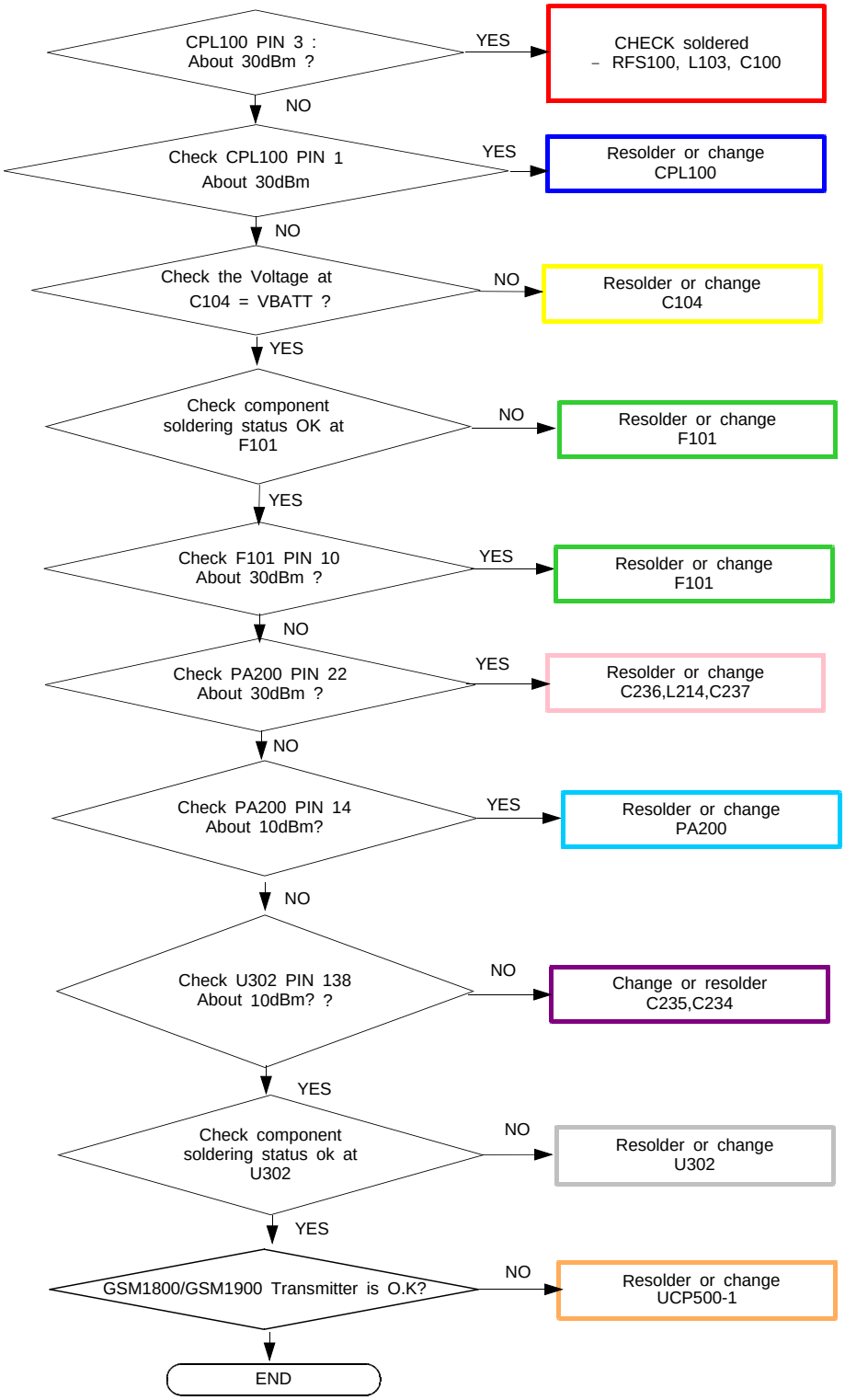


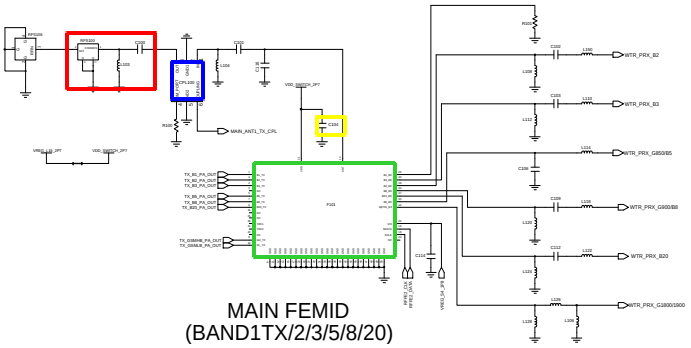




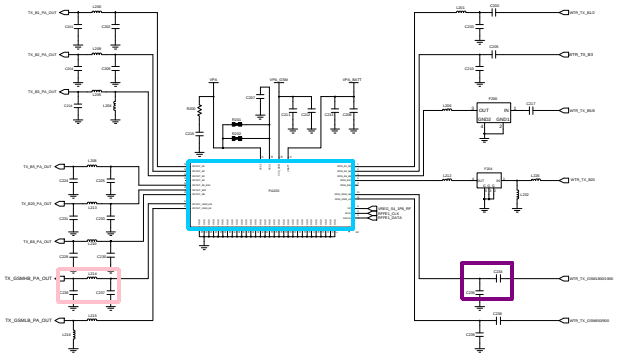
8-3-30. GSM1800/GSM1900 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
DCS CH : 698
PCS CH : 661
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

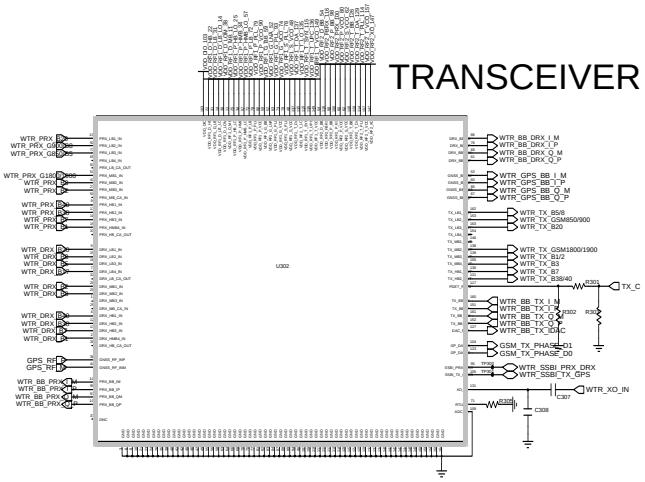


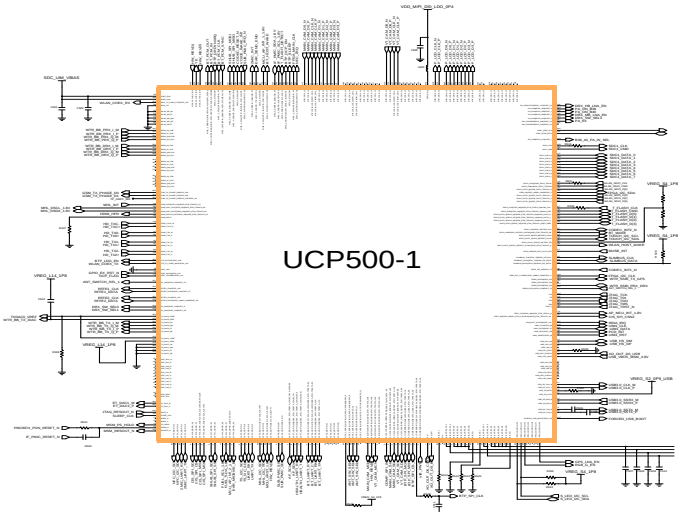


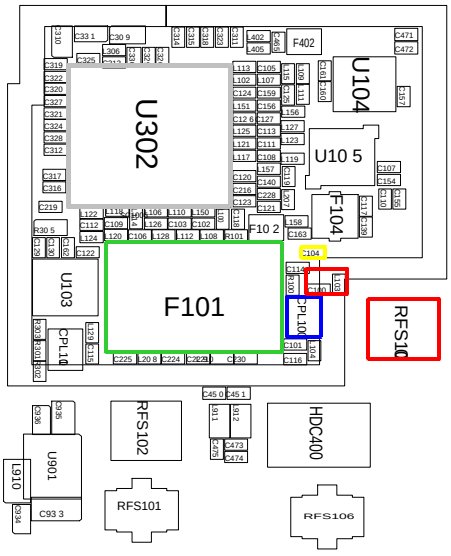
MAIN FEMID
(BAND1TX/2/3/5/8/20)

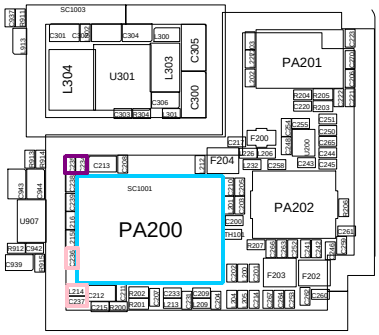


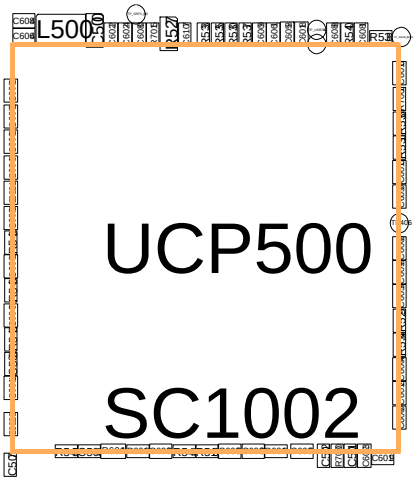
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





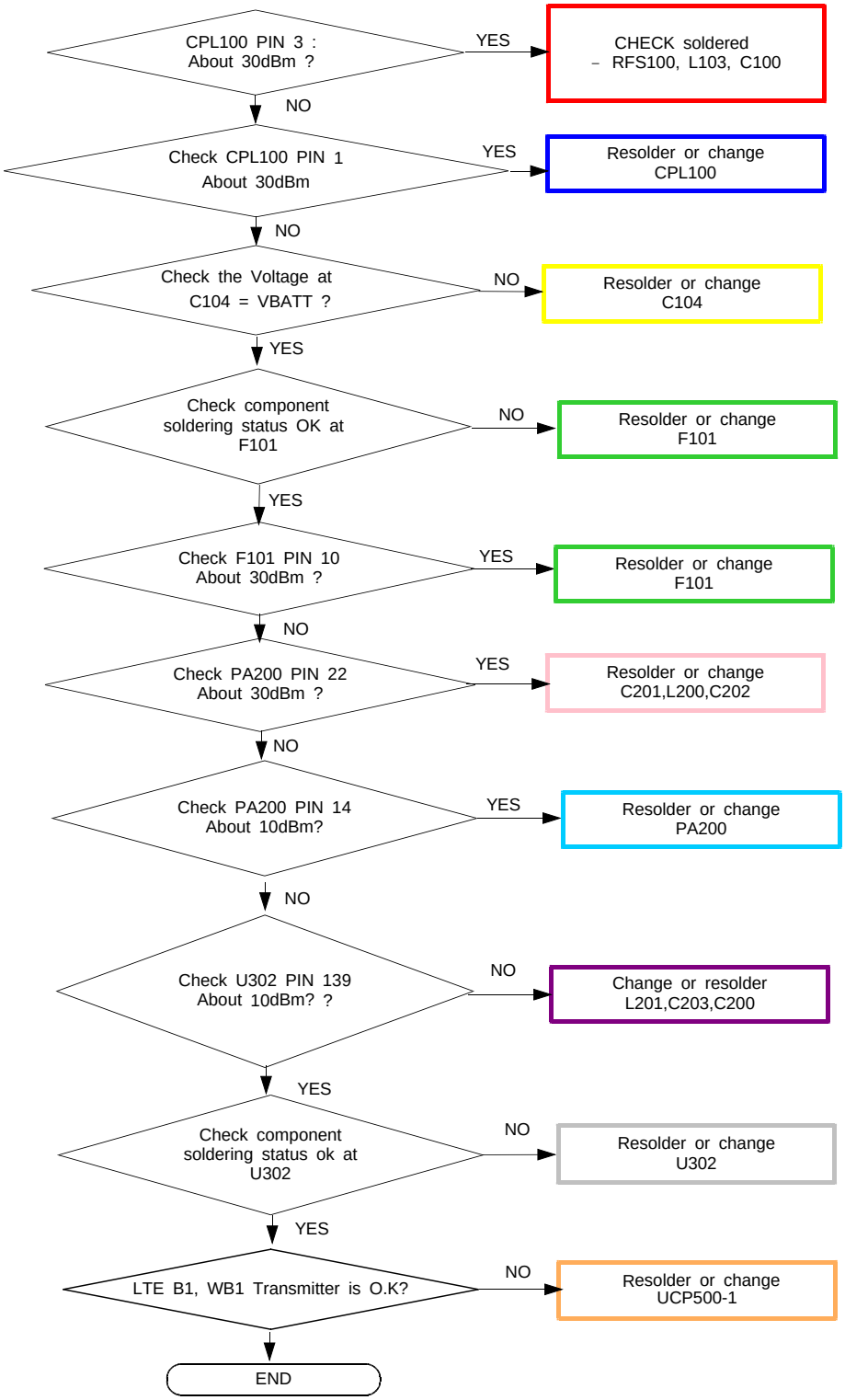


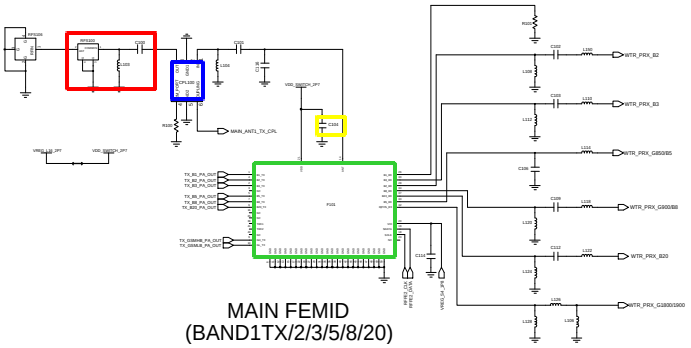




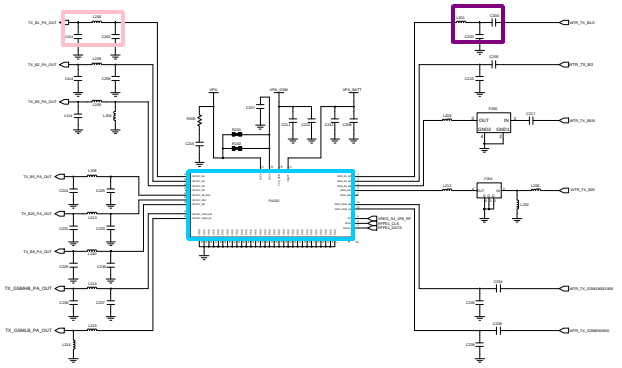
8-3-31. LTE BAND 1 / WCDMA BAND1 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
WB1 CH : 10700
LTE B1 CH : 300
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

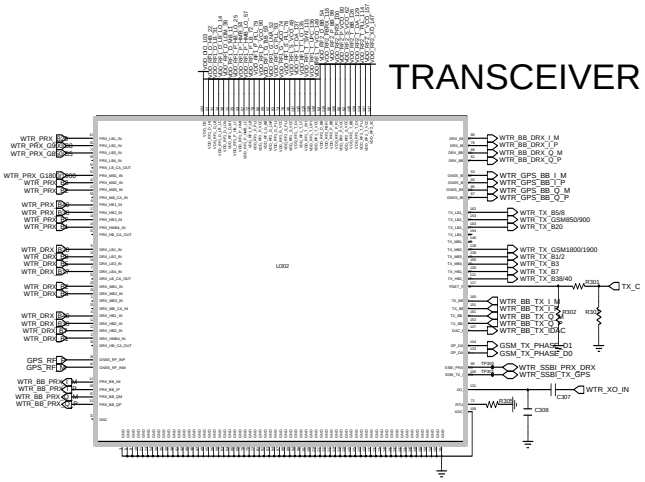


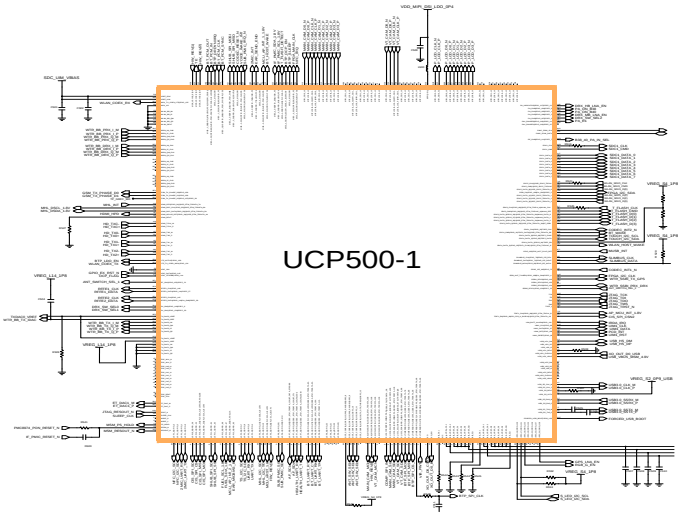


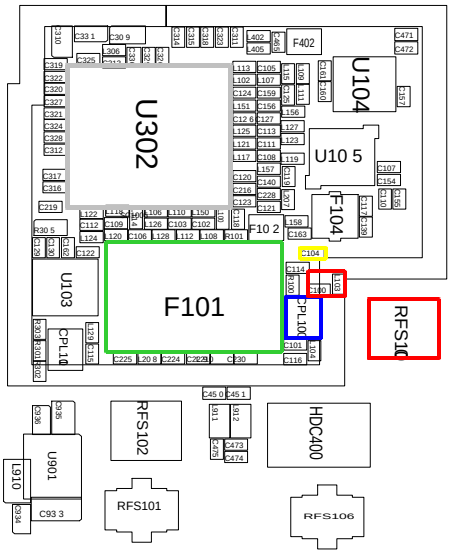
MAIN FEMID
(BAND1TX/2/3/5/8/20)

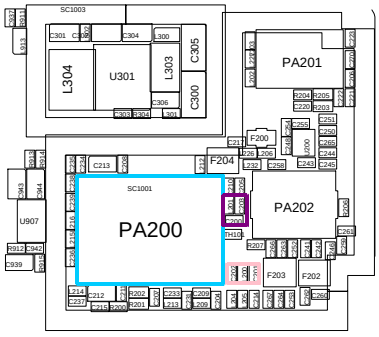


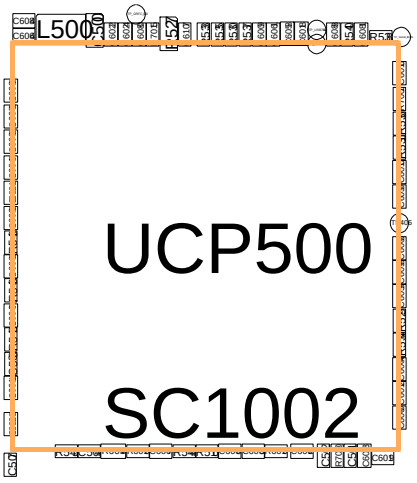
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





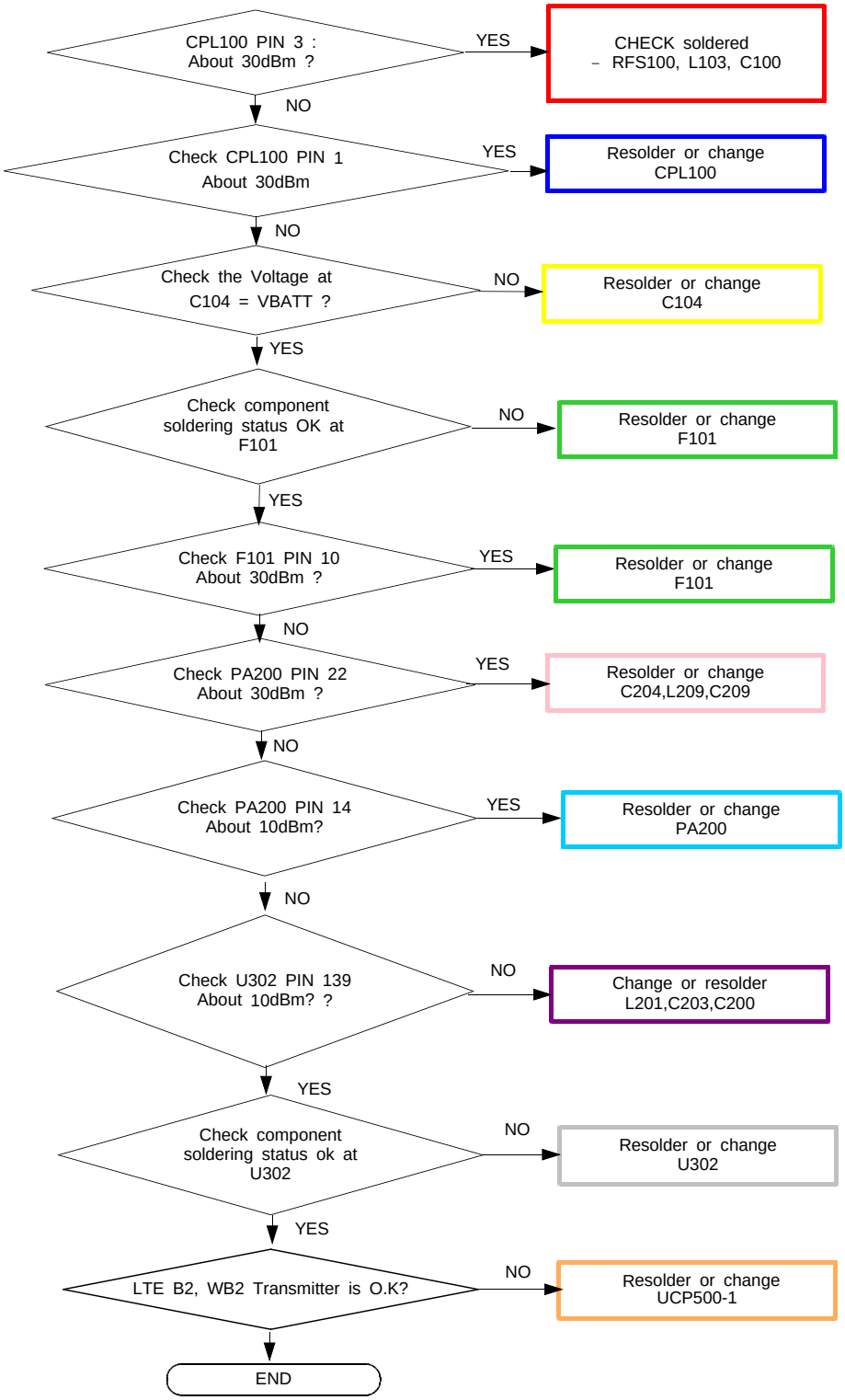


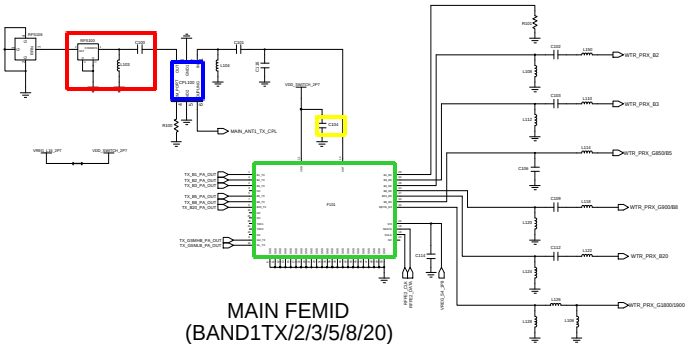




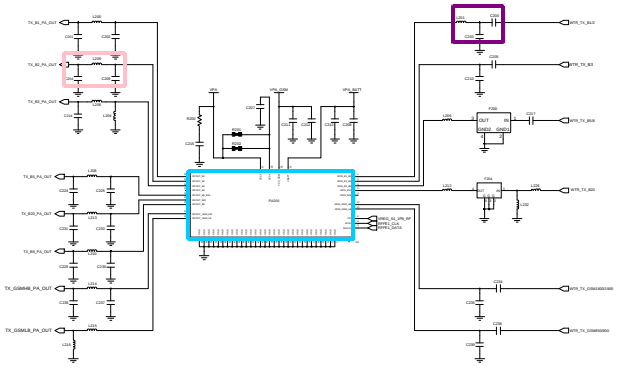
8-3-32. LTE BAND2 / WCDMA BAND2 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
WB2 CH : 9800
LTE B2 CH : 900
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

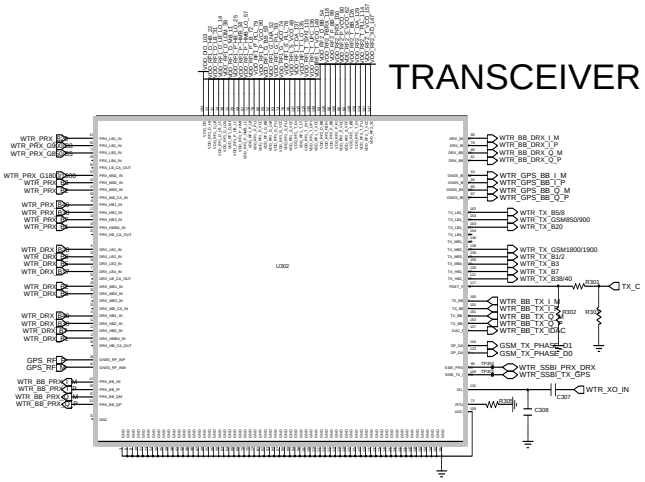


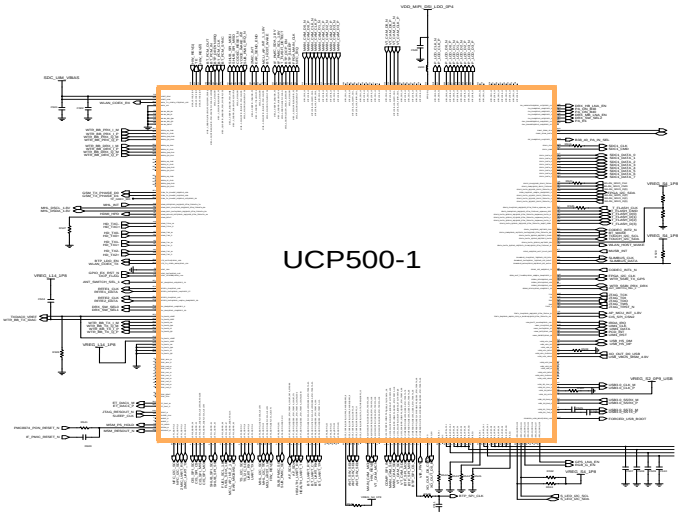


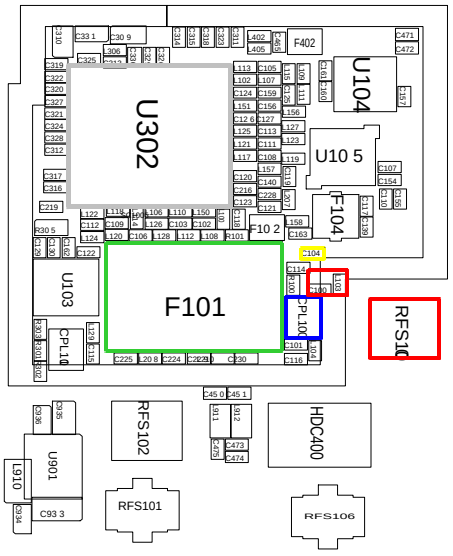
MAIN FEMID
(BAND1TX/2/3/5/8/20)

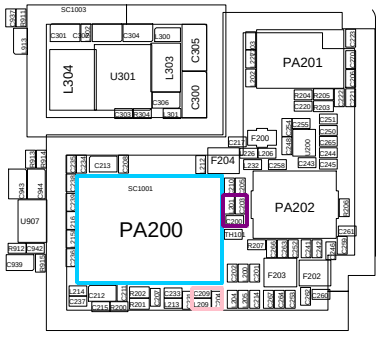


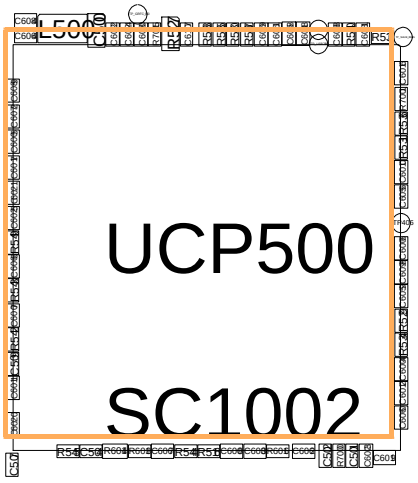
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





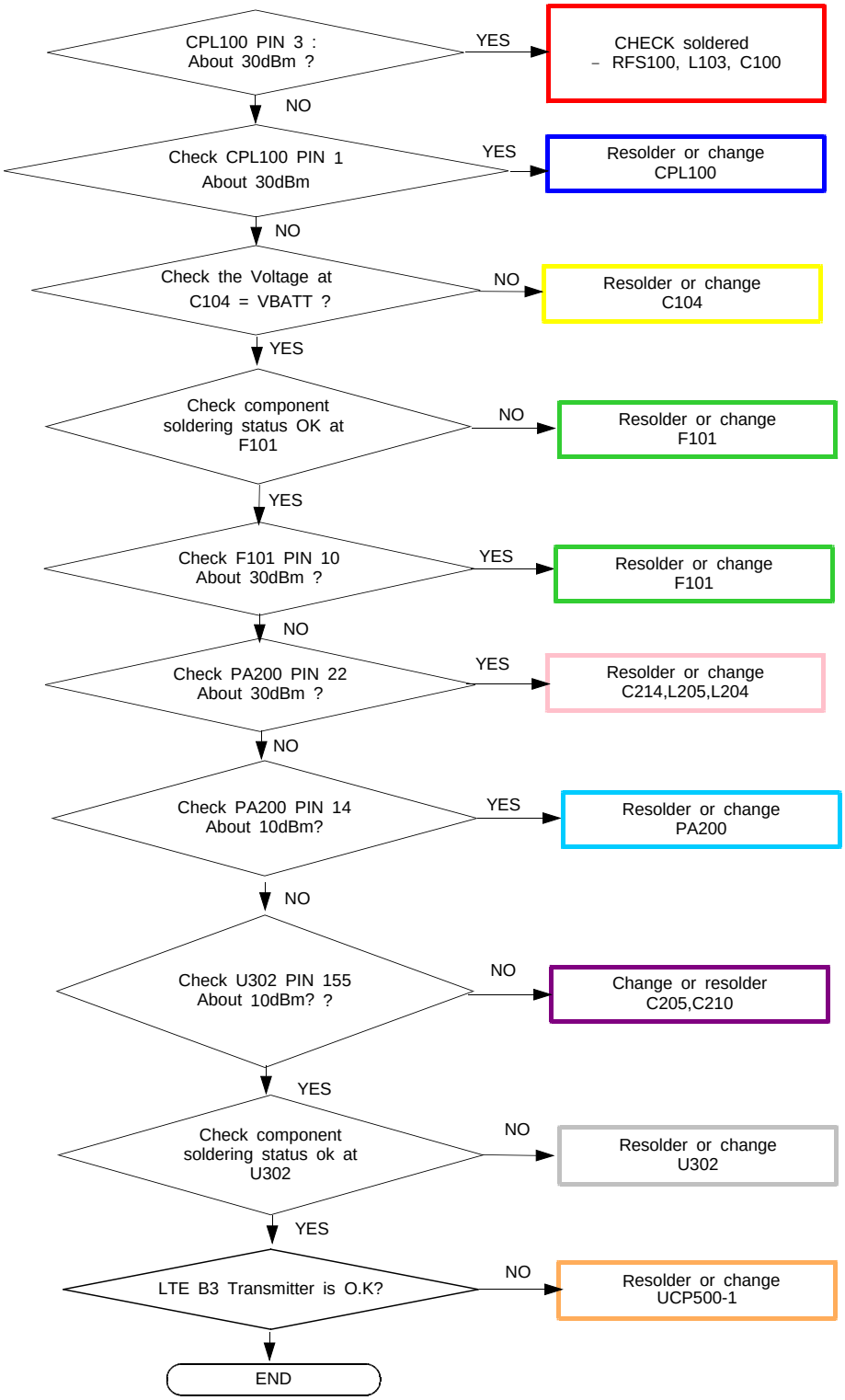


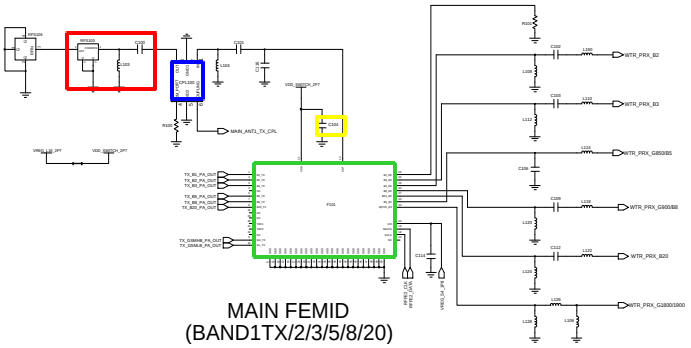




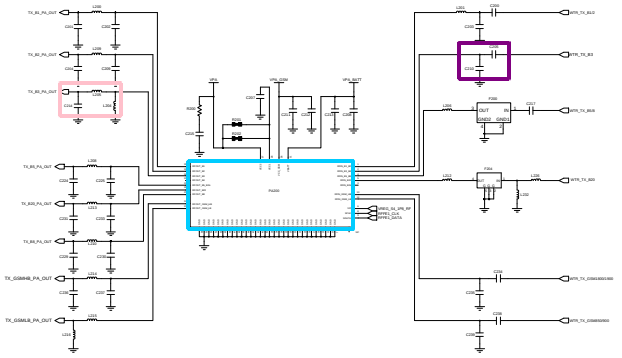
8-3-33. LTE BAND 3 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
LTEB3 CH : 1575
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

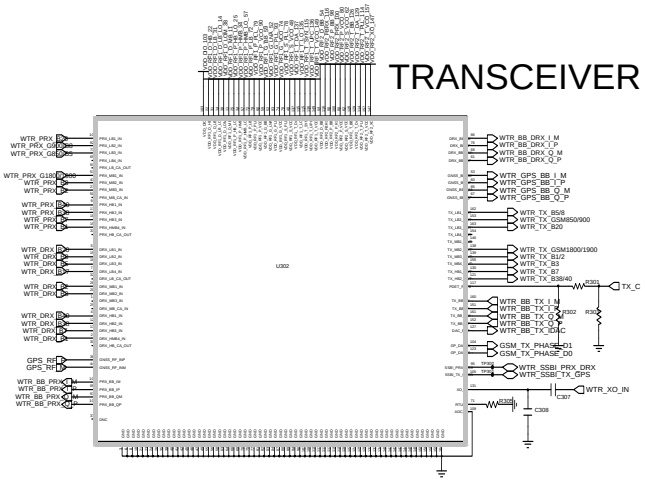


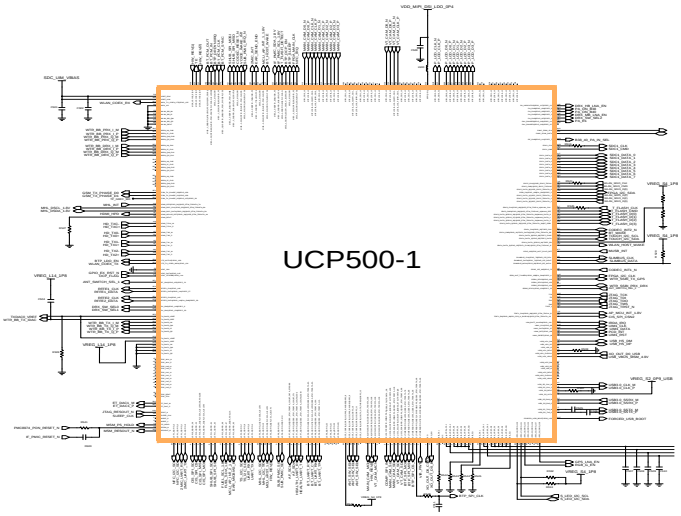


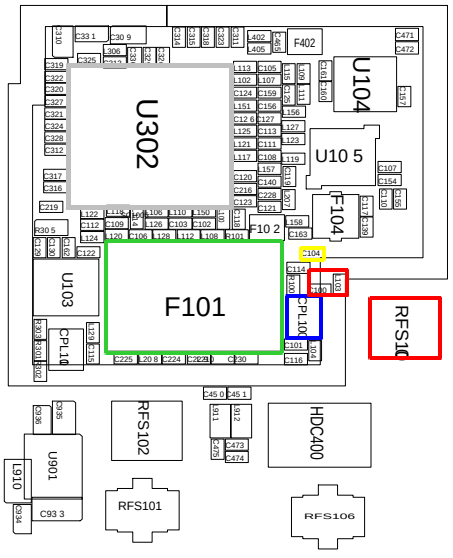
MAIN FEMID
(BAND1TX/2/3/5/8/20)

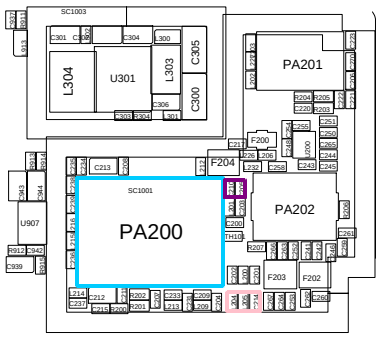


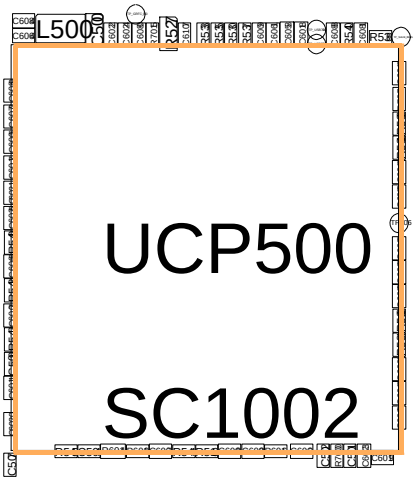
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





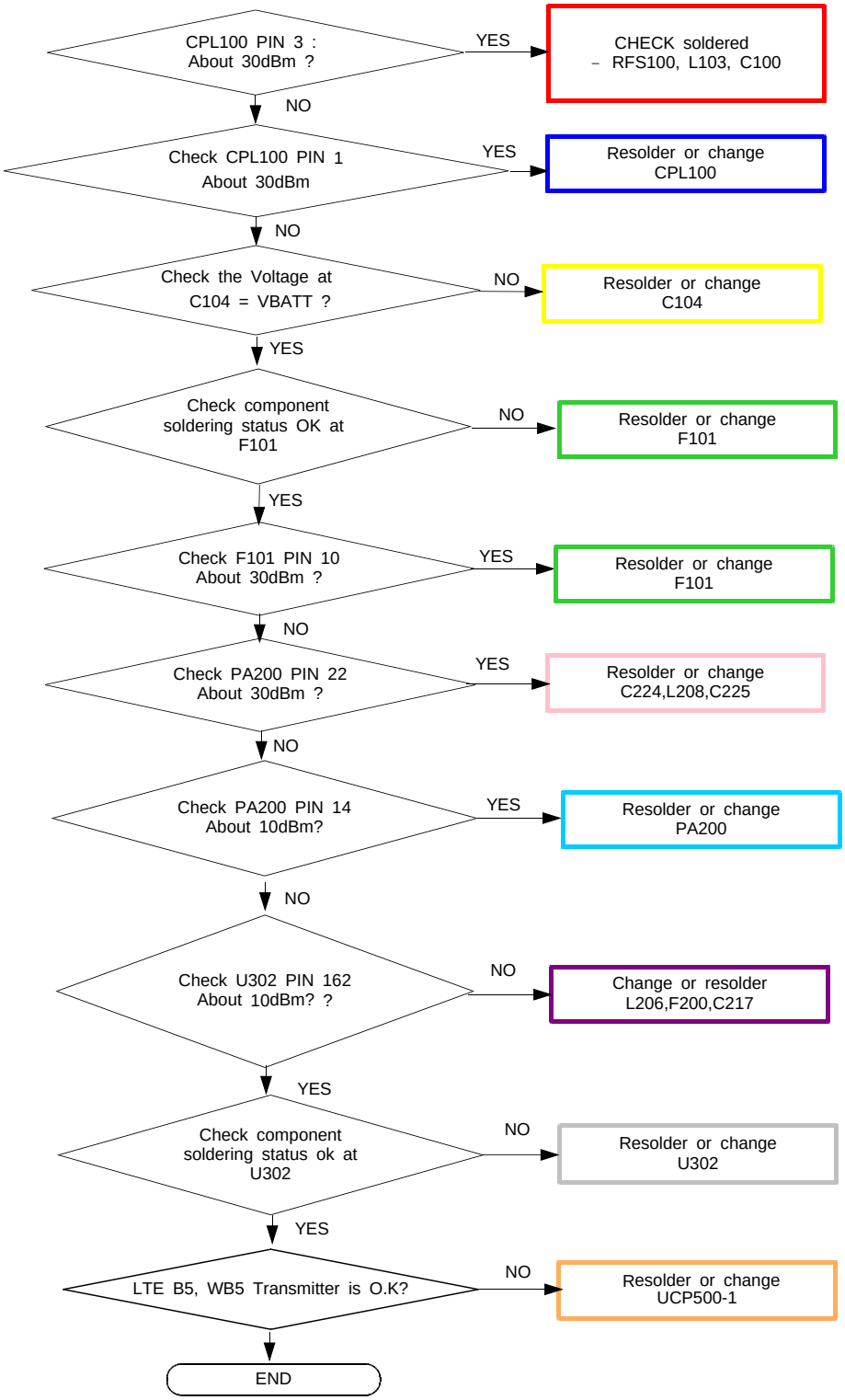


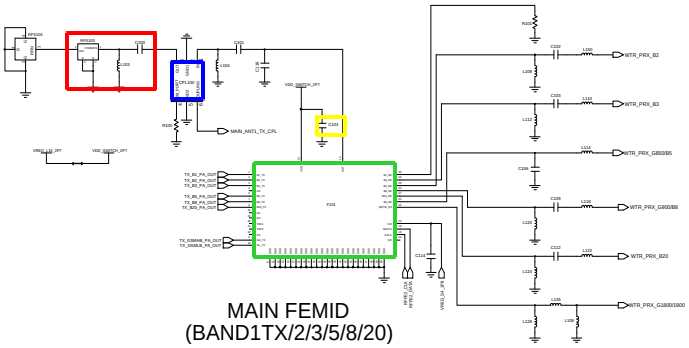




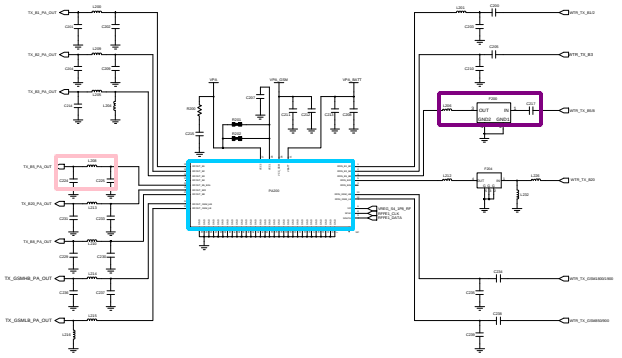
8-3-34. LTE BAND 5 / WCDMA BAND5 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
WB5 CH : 4408
LTE B5 CH : 2525
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

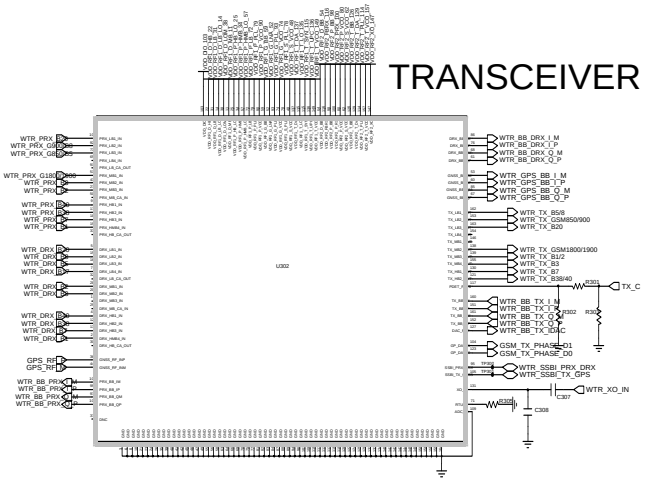


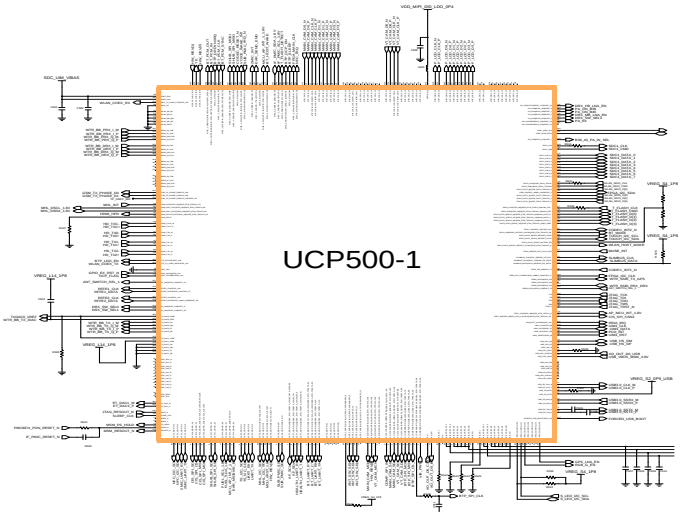


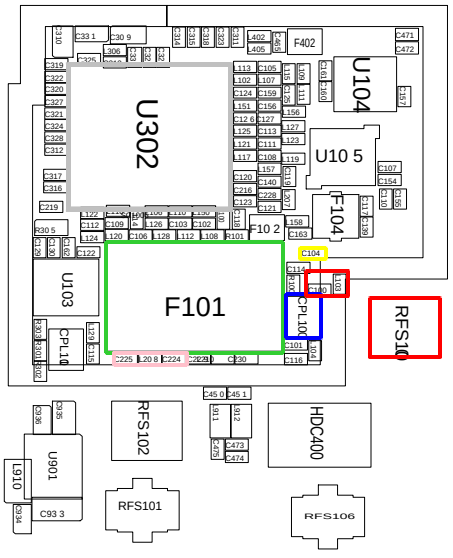
MAIN FEMID
(BAND1TX/2/3/5/8/20)

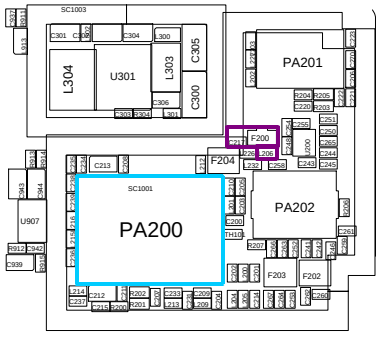


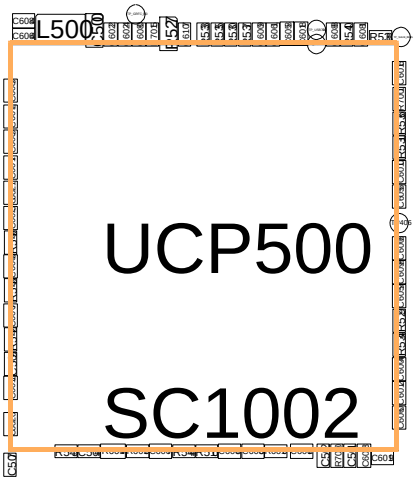
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





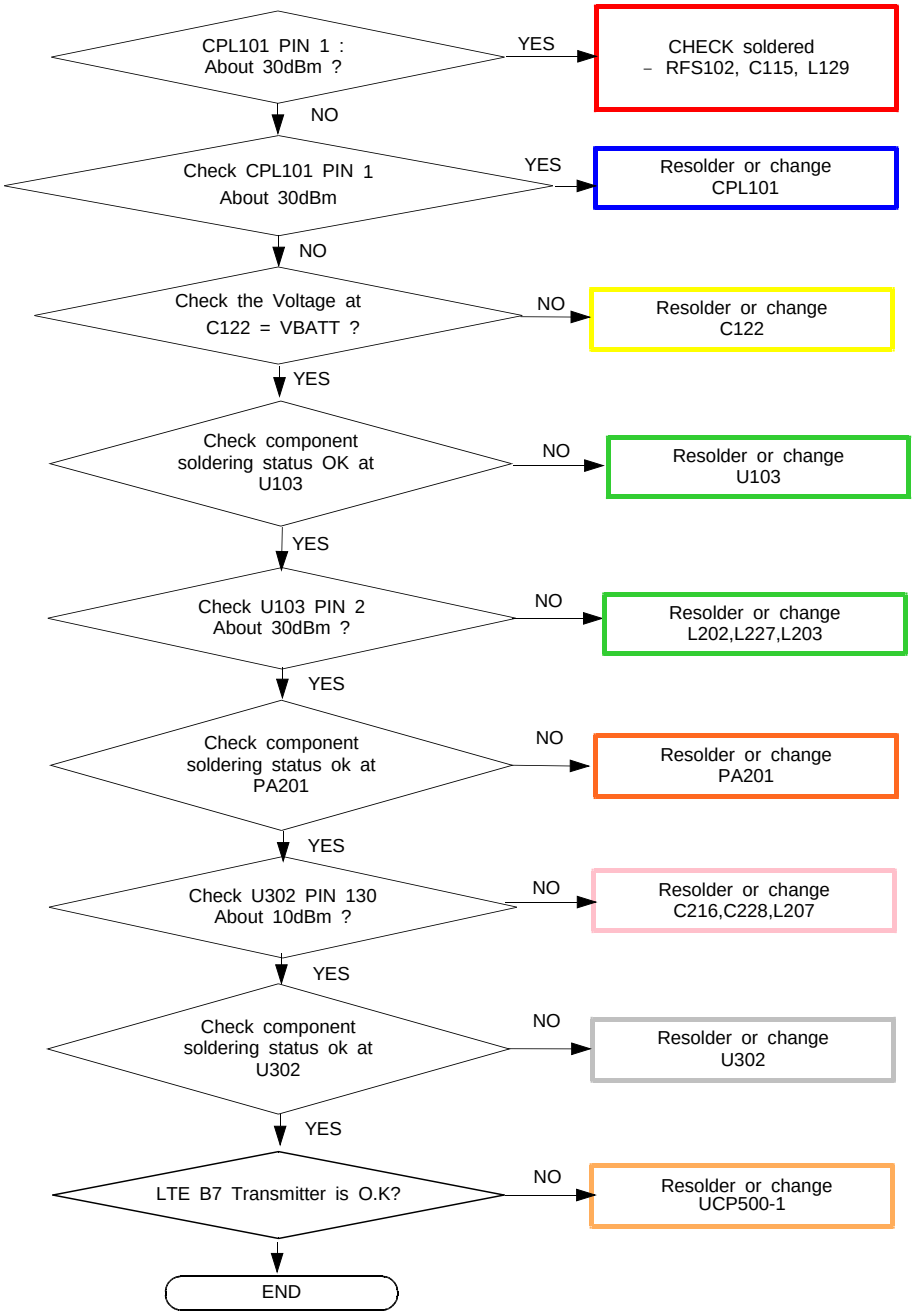


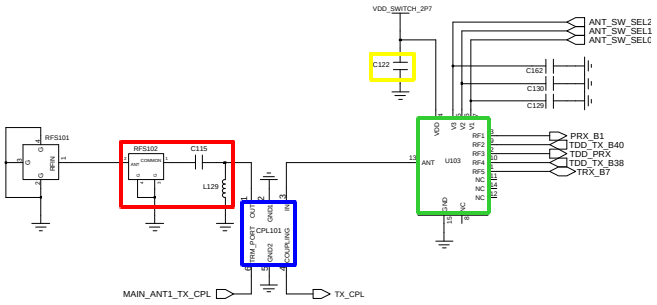




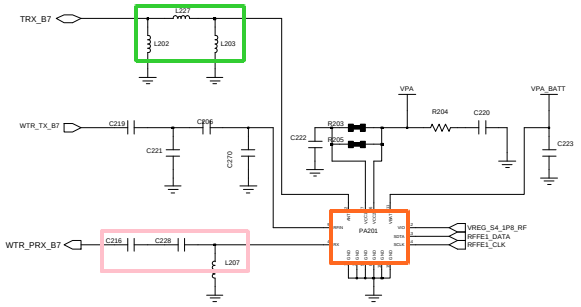
8-3-35. LTE BAND 7 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
LTE B7 CH : 3100
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

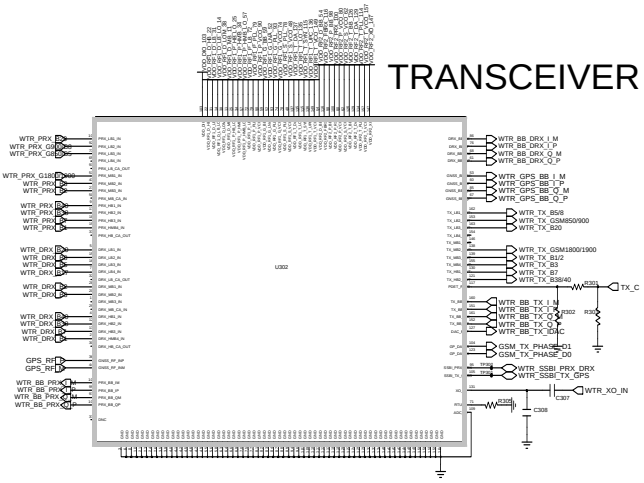


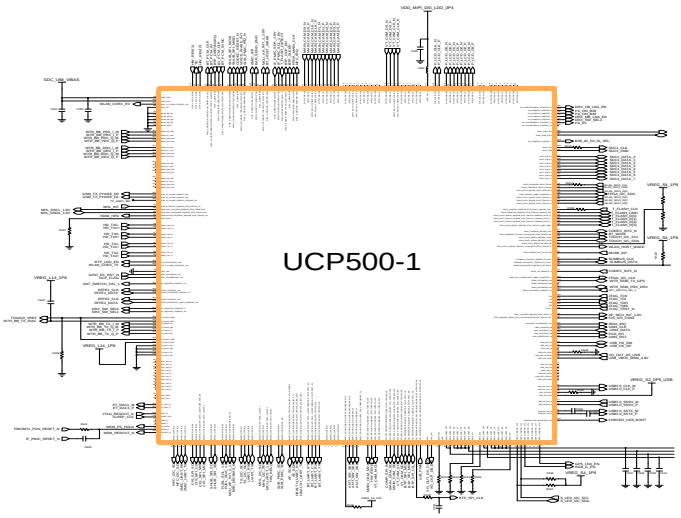


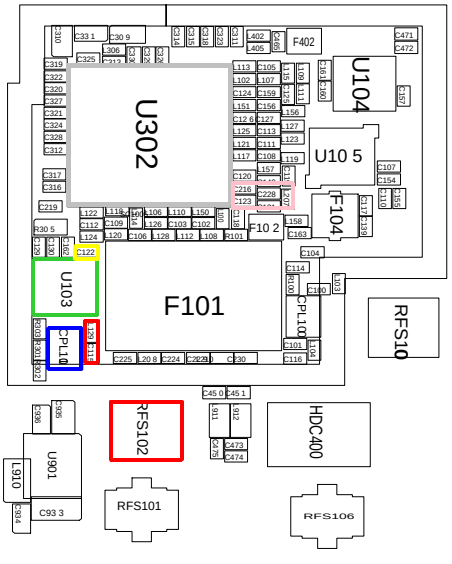
MAIN SWITCH (BAND7/B1 PRX)

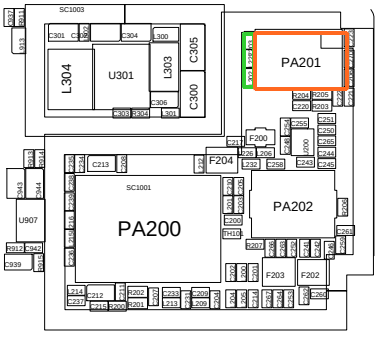


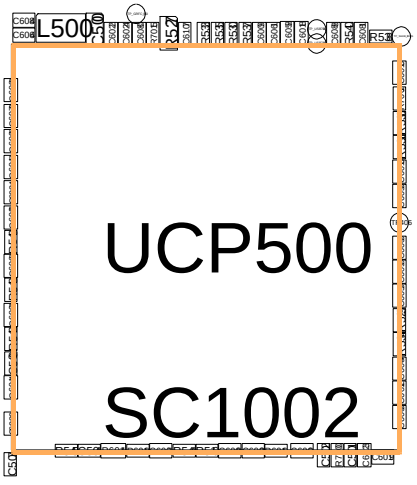
BAND7 PAD (PA + DPX)





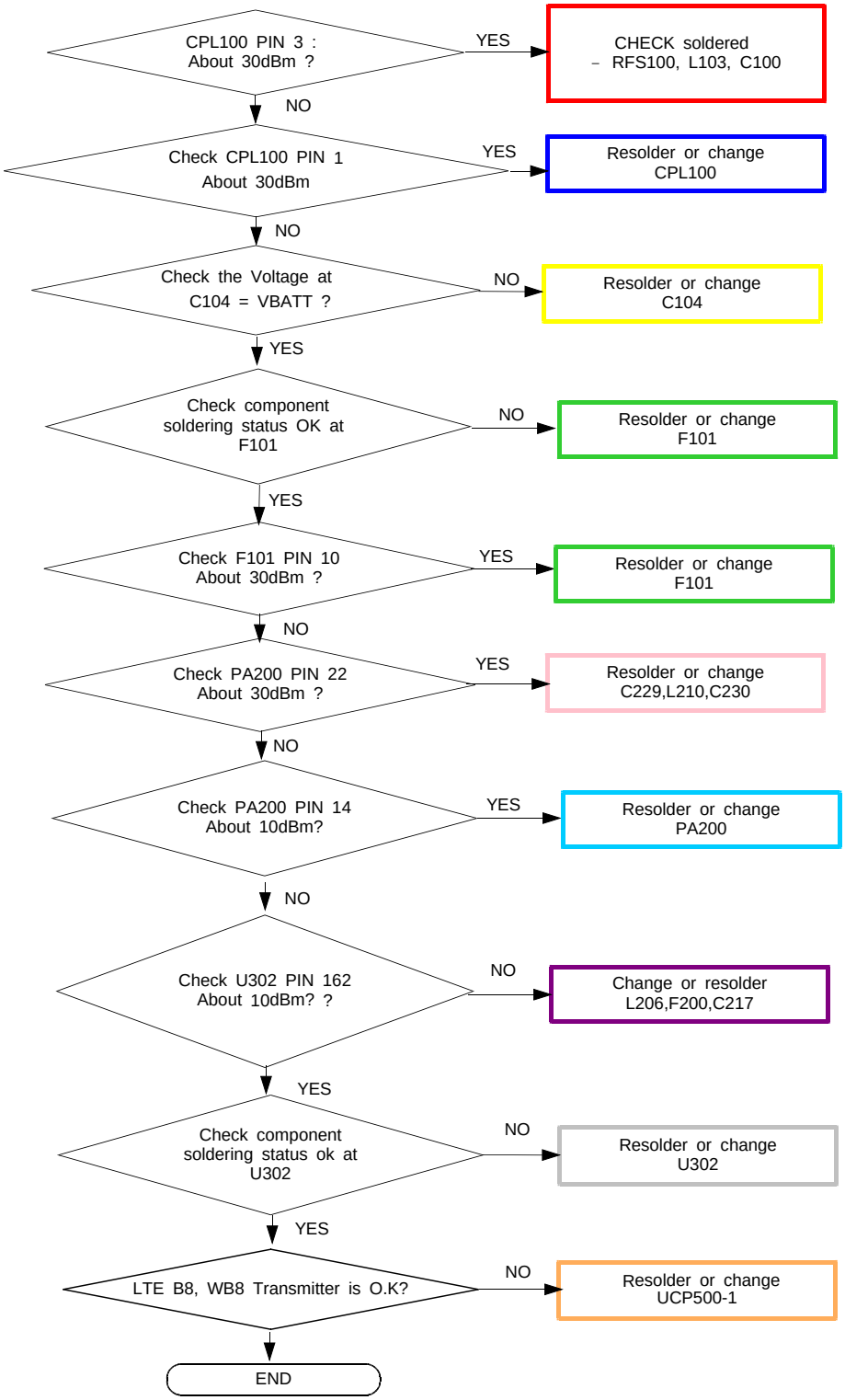


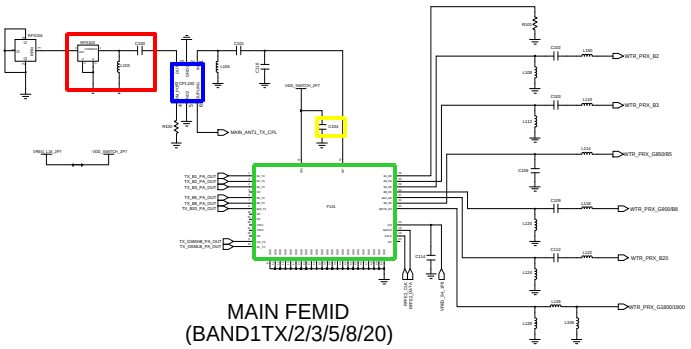




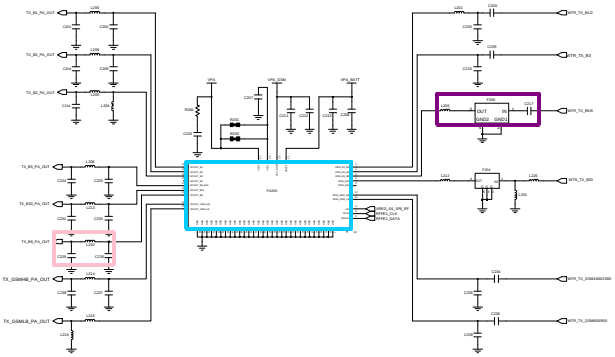
8-3-36. LTE BAND 8 / WCDMA BAND8 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
WB8 CH : 3013
LTE B8 CH : 3625
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

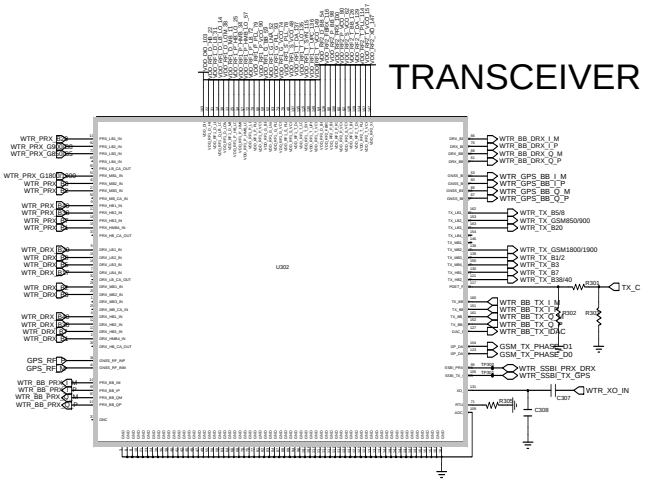


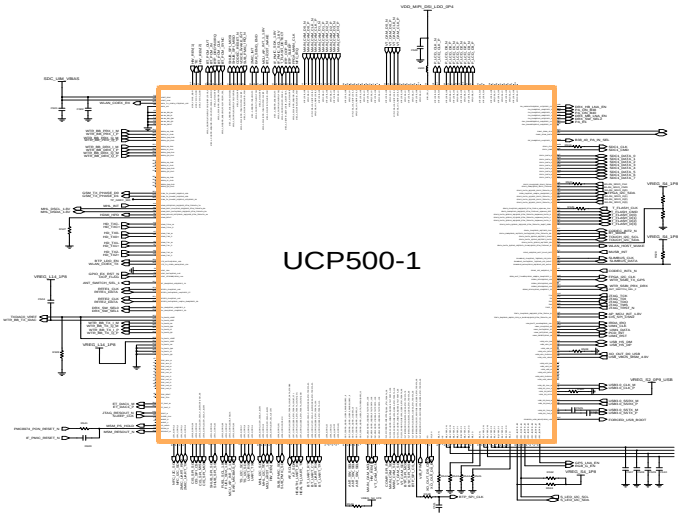


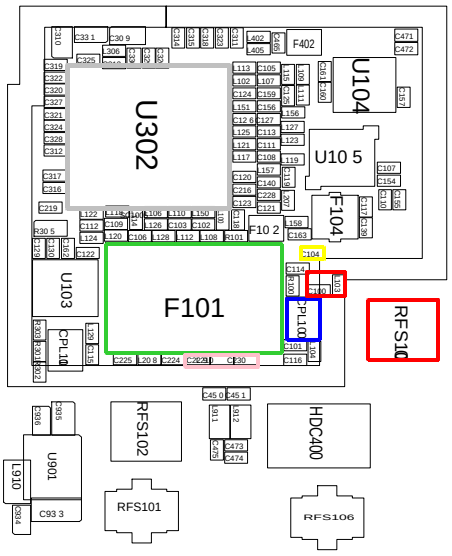
MAIN FEMID
(BAND1TX/2/3/5/8/20)

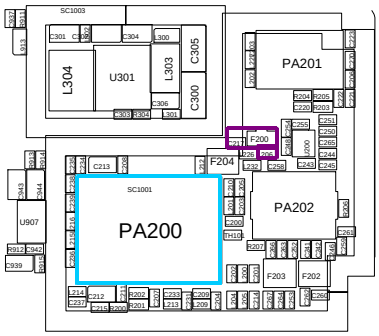


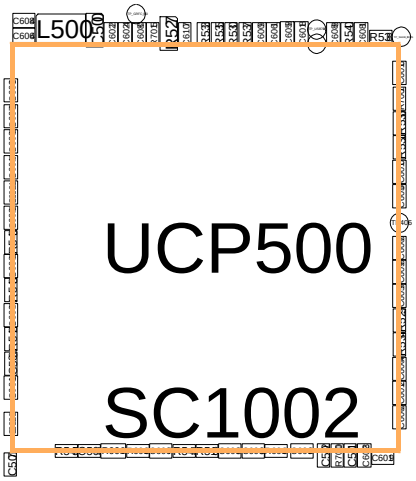
BAND1/2/3/5/8/20, GSM QUAD MMMB PA





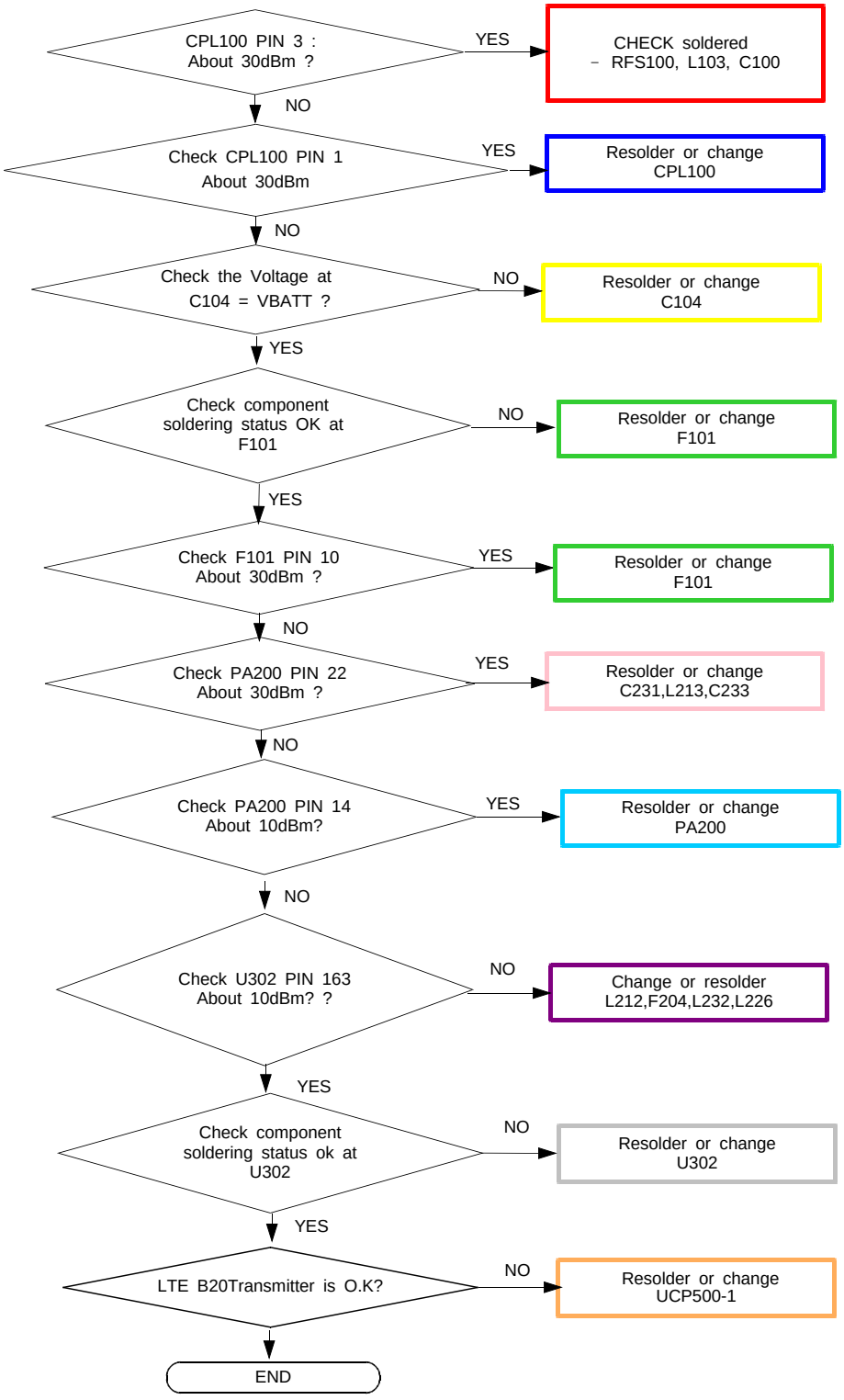


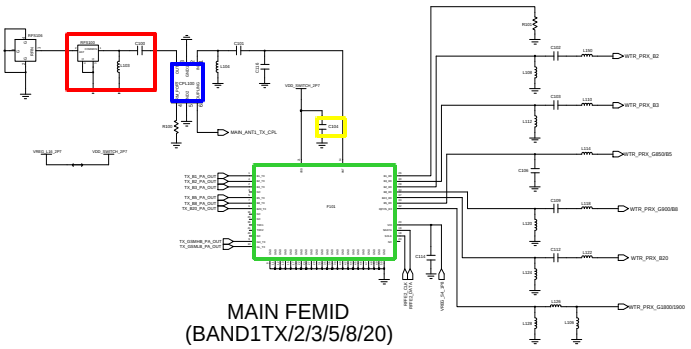




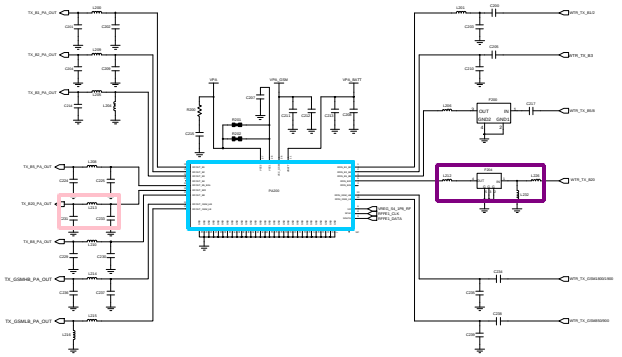
8-3-37. LTE BAND 20 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
LTE B20 CH : 6300
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

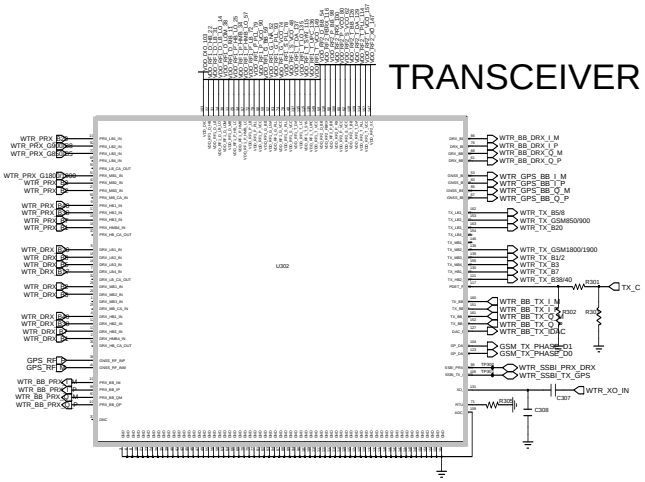


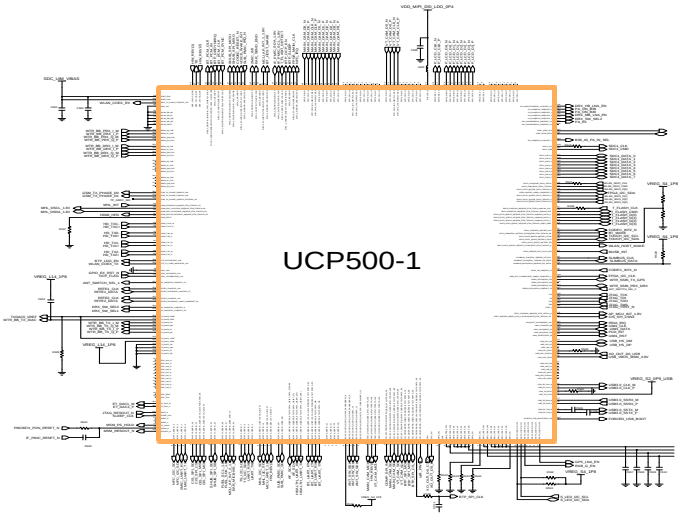


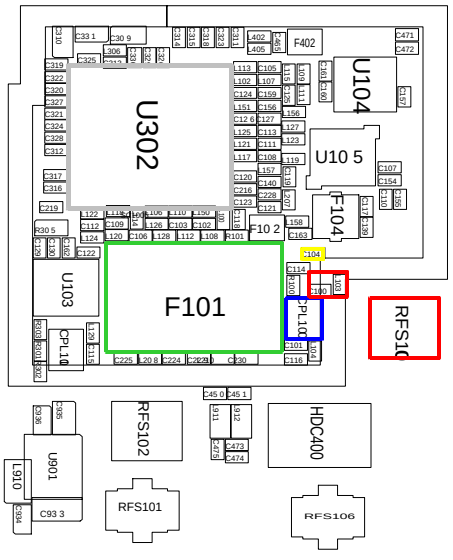
MAIN FEMID
(BAND1TX/2/3/5/8/20)

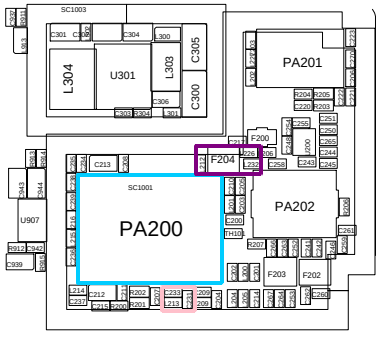


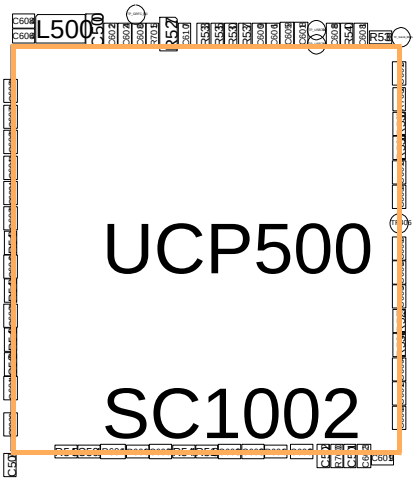
BAND1/2/3/5/8/20, GSM QUAD MMMB PA









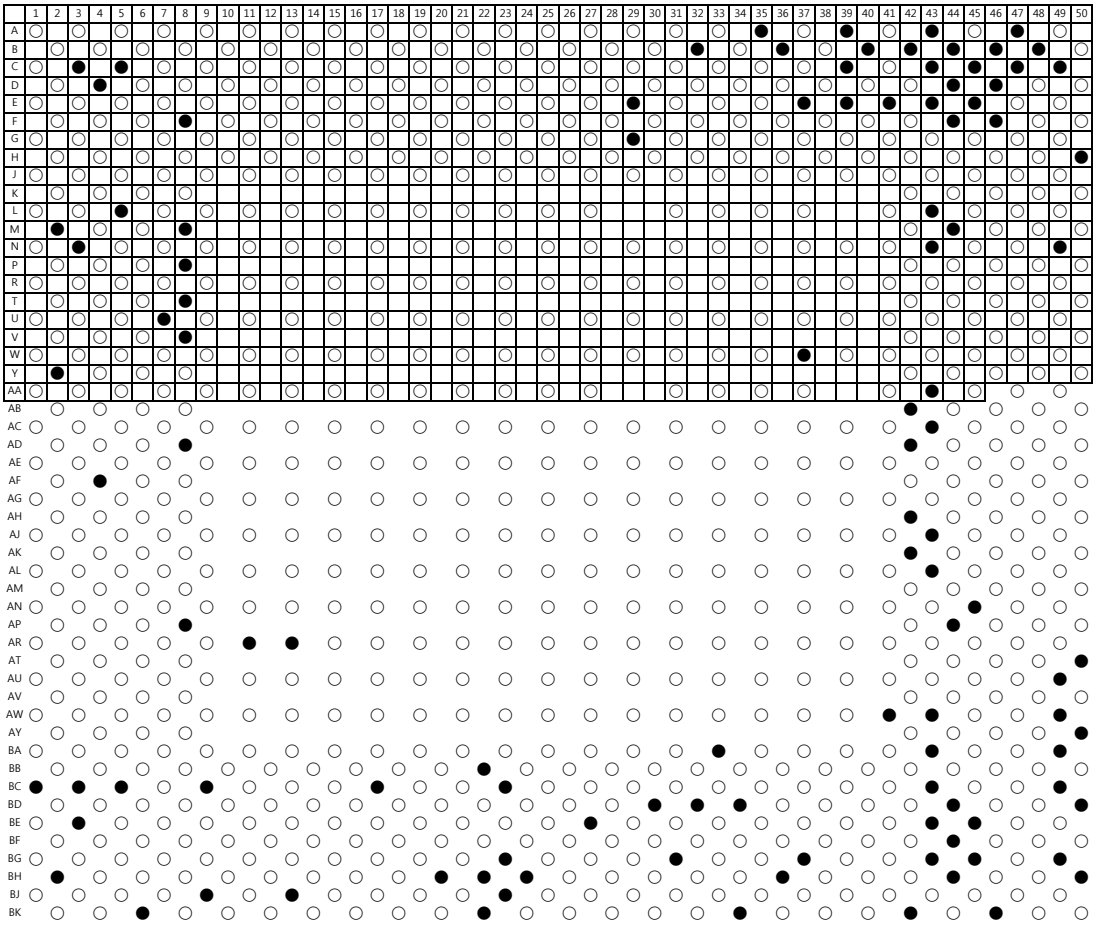


8-4. Service Schematics

- NC Point(Top View)

UCP500 (AP+CP)

●: NC



U7003(PMIC) PMIC

1 VDD_S5	2 VDD_S5	3 VDD_L16_25	4 VREG_L15	5 VDD_L6_12_14_15_2	6 XTAL_19M_OUT	7 XTAL_19M_IN	8 VREG_XO	9 VREG_RF_CLk	10 VREG_L24	11 VDD_L9_10_13_20_2	12 VREG_L20	13 VDD_L17	14 VDD_S4	15 VDD_S4
16 VSW_S5	17 VSW_S5	18 VREG_L25	19 VREG_L12	20 VREG_S26	21 VREG_L6	22 VREG_LVS2	[redacted]	23 VDD_L5_7	24 VREG_L10	25 VREG_L23	26 GPIO_01	27 VREG_L17	28 VSW_S4	29 VSW_S4
30 GND_S5	31 GND_S5	32 VREG_S5	33 BB_CLK1_EN	34 SLEEP_CLK	35 VREG_L14	36 VDD_LVS1_2	37 BB_CLK2	38 RF_CLK1	39 VREG_13	40 VREG_L9	41 GPIO_02	42 VREG_S4	43 GND_S4	44 GND_S4
45 VDD_S3	46 VDD_S3	47 VREG_L16	48 REF_BYP	49 GND_REF	50 RESIN_N	51 VREG_LVS1_1	52 BB_CLK1	53 RF_CLK3	54 RF_CLK2	55 GPIO_08	56 GPIO_06	57 VREG_L8	58 VDD_L8	59 VDD_S1
60 VSW_S3	61 VSW_S3	62 PON_1	63 PS_HOLD	64 KYPD_PWR_N	65 AVDD_BYP	66 AMUX_HW_ID	67 DIFF_CLK_N	68 DIFF_CLK_P	69 AMUX_1	70 AMUX_2	71 VREG_S1	72 GPIO_03	73 VSW_S1	74 VSW_S1
75 GND_S3	76 GND_S3	77 VREG_S3	78 PON_RESET_N	79 XTAL_32K_OUT	80 AMUX_PU1	81 GND	82 GND_XO	83 GND_RF	84 GND_XOADC	85 AMUX_3	86 VREF_NEGS1	87 GPIO_04	88 GND_S1	89 GND_S1
90 VDD_S7	91 VDD_L19	92 VREG_L19	93 GPIO_14	94 XTAL_32K_IN	95 CBL_PWR_N	96 GND	97 GND	98 GND	99 VREF_XO_THM	100 AMUX_4	101 VREG_S12	102 GPIO_05	103 VDD_S12	103 VDD_S12
105 VSW_S7	106 VSW_S7	107 GPIO_19	108 VREF_NEGS7	109 VREG_S7	110 GPIO_12	111 GND	[redacted]	113 GND	114 VDD_SNS	115 XO_THERM	116 VREF_NEGS12	117 GPIO_07	118 VSW_S12	119 VSW_S12
120 GND_S7	121 GND_S7	122 SHDN_N	123 SPMI_CLK	124 SPMI_DATA	125 GPIO_13	126 GND	127 GND	128 GND	129 AMUX_5	130 GND	131 VREG_MVS	132 VDD_MVS	133 GND_S12	134 GND_S12
135 VDD_S6	136 VDD_S6	137 OPT_2	138 VREF_NEGS6	139 VREG_S6	140 MPP_04	141 MPP_02	142 GPIO_20	143 GPIO_11	144 AMUX_USB_ID	145 VREG_S2	146 MPP_05	147 VREG_L22	148 VDD_L22	149 VDD_S2
150 VSW_S6	151 VSW_S6	152 OPT_1	153 MPP_03	154 GPIO_22	155 VREF_NEGS89_10	156 MPP_01	157 VREF_EBI1CA	158 VREF_EBI0CA	159 VREG_S9	160 MPP_08	161 VREF_NEGS2	162 MPP_06	163 VSW_S2	164 VSW_S2
165 GND_S6	166 GND_S6	167 VCOIN	168 VREG_S11	169 GPIO_21	170 VREG_S10	171 VREF_EBI1CA	172 VREF_DDR	173 VREF_EBI0DQ	174 GPIO_18	175 MPP_07	176 VREG_S8	177 VREG_L18	178 GND_S2	179 GND_S2
180 VREG_L4	181 VREG_L27	182 VREG_L2	183 VDD	184 GPIO_10	185 GPIO_09	186 VDD_LVS3_4	187 VREG_LVS4	188 VDD_MSM_IO	189 GPIO_17	190 GPIO_16	191 GPIO_15	192 VREG_L11	193 VDD_L18	194 VDD_L21
195 VDD_L2_3_4_27	196 VREG_L3	197 VSW_S11	198 GND_S11	199 VDD_S10	200 VSW_S10	201 GND_S10	202 VREG_LVS3	203 VSW_S9	204 GND_S9	205 VDD_S8	206 VSW_S8	207 GND_S8	208 VDD_L1_1_1	209 VREG_L21
210 GND	211 VDD_S11	212 VSW_S11	213 GND_S11	214 VDD_S10	215 VSW_S10	216 GND_S10	217 VDD_S9	218 VSW_S9	219 GND_S9	220 VDD_S8	221 VSW_S8	222 GND_S8	223 VREG_L1	224 VDD_L1_1_1