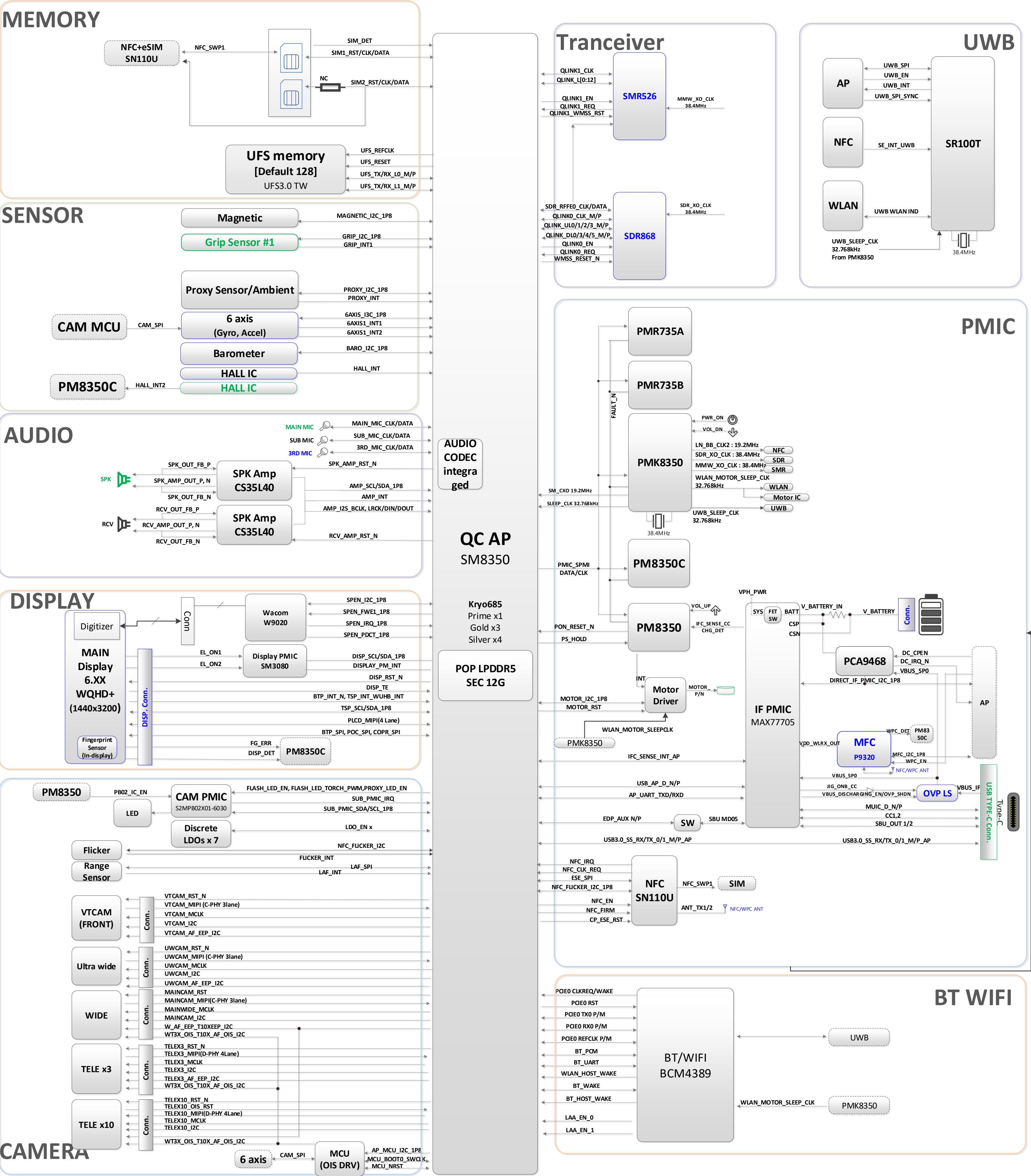


[h3] **Logic** Block Diagram (`20.11.26) – REV0.4 / REV0.5

USB PCB Slave



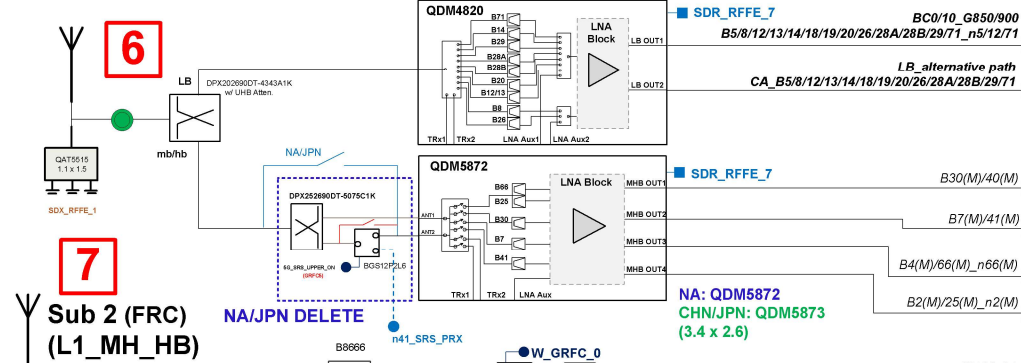


SM-G998U RF BLOCK DIAGRAM

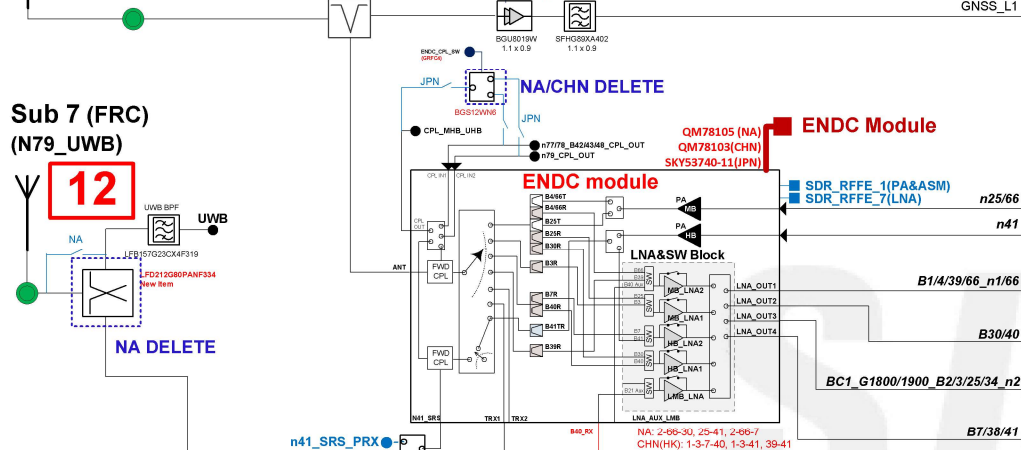
Big letter : PRX&TX, Big letter : PRX MIMO
small letter : drx, small letter : drx mimo

Confidential
2020.11.30

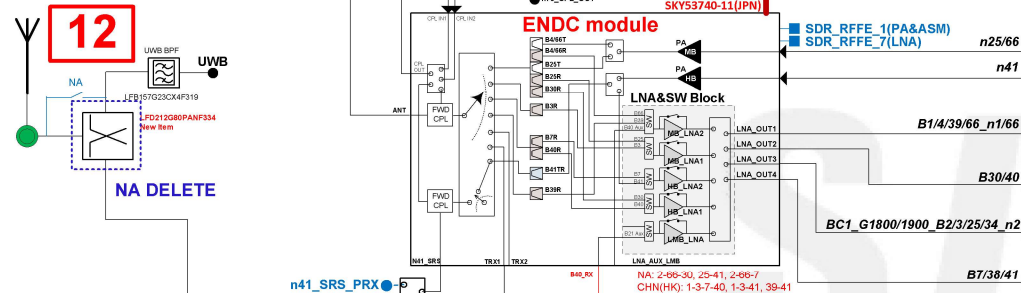
Sub 1 (FRC_no cal line)
(LB(sw)_mb/hb)



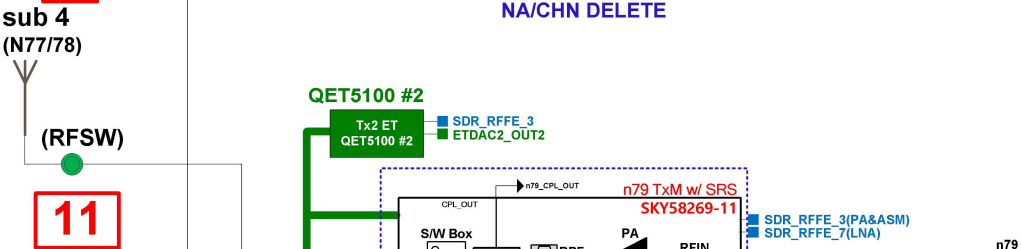
Sub 2 (FRC)
(L1_MH_HB)



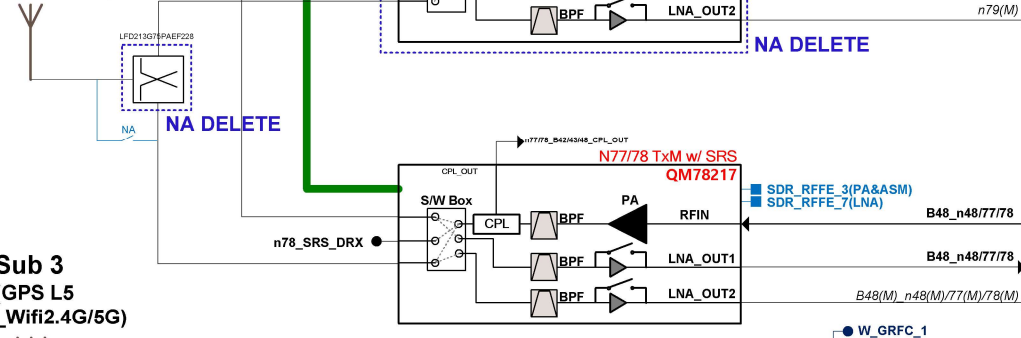
Sub 7 (FRC)
(N79_UWB)



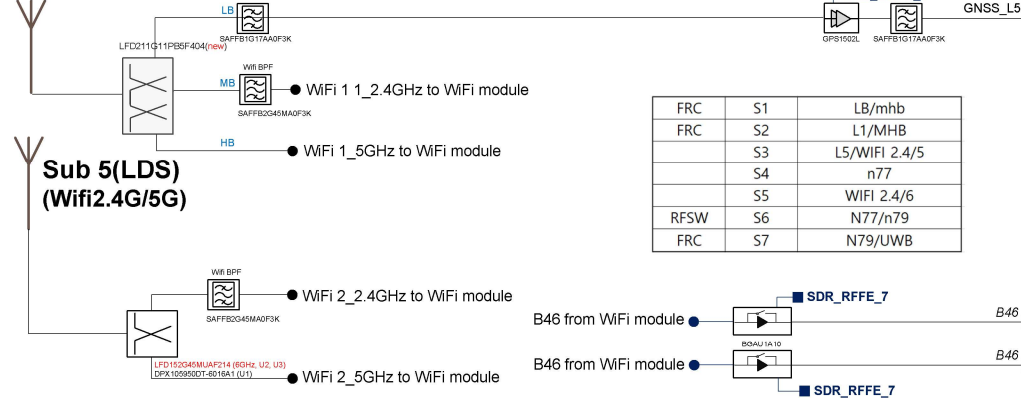
Sub 4 (N77/78)



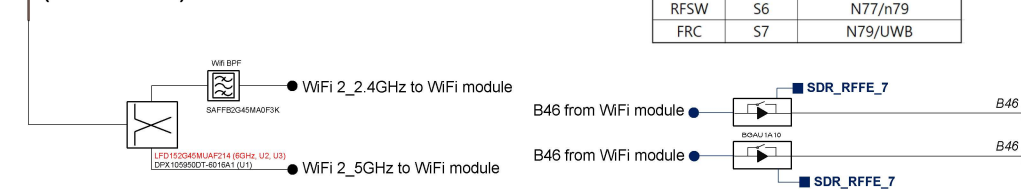
Sub 6 (LDS)
(n77/78/79)



Sub 3 (GPS L5
_Wifi2.4G/5G)



Sub 5 (LDS)
(Wifi2.4G/5G)



SDR868

CMH LPAMid	LB LPAMid	ENDC Module	n77/78 SRS Rx	n77/78 SRS Tx
QET	QET5100_#0	QET5100_#1	QET5100_#2	QET5100_#3
ETDAG	0	1	1	2
PL	0	0	1	1
Tx Chn	0	0	1	2

Band	Freq. Range
LB	600M ~ 1G
MLB	1.4G ~ 2.1G
MB	1.7G ~ 2.1G
HB	2.3G ~ 2.7G
UHB	3.4G ~ 3.8G
LAA	5.1G ~ 5.9G

Sep. 2018: Arduino in SD			
SD00035 Pin Chart			
Group	PIN	IO	Band
T40	PIL0	LH0, SD0M	CH0, AT7/AT8
		H0	H0
		LB1	LB
		LB2	LB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
T41	PIL1	LH0, SD0M	CH0, AT7/AT8
		H0	H0
		LB1	LB
		LB2	LB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
T42	PIL2	LH0, SD0M	CH0, AT7/AT8
		H0	H0
		LB1	LB
		LB2	LB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB
		MB1	MB

Signal	TX	RX
TX0_LB	1	1
TX1_LB_JB	1	1
TX0_JB	1	1
TX0_GSM_LB	1	1
TX0_GSM_MB	1	1
TX0_MB	1	1
TX0_HB	1	1
TX0_UHB_SGLM	1	1
TX1_UHB_SGLM	1	1
TX1_SG	1	1
TX1_MB1	1	1

Signal	TX	RX
TX1_MHB	1	1
TX1_HB1	1	1
DRX0_A	1	1
DRX0_B	1	1
DRX0_C	1	1
DRX0_D	1	1
DRX0_E	1	1
DRX0_F	1	1
DRX0_G	1	1
DRX0_H	1	1
DRX0_I	1	1
DRX0_J	1	1
DRX0_K	1	1
DRX0_L	1	1
DRX0_M	1	1
DRX0_N	1	1
DRX0_O	1	1
DRX0_P	1	1
DRX0_Q	1	1
DRX0_R	1	1
DRX0_S	1	1
DRX0_T	1	1
DRX0_U	1	1
DRX0_V	1	1
DRX0_W	1	1
DRX0_X	1	1
DRX0_Y	1	1
DRX0_Z	1	1

Signal	TX	RX
TX2_5GH	1	1
PRX14_A	1	1
PRX14_B	1	1
PRX15_B	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

Signal	TX	RX
TX2_UHB_SGLM	1	1
PRX16_A	1	1
PRX17_B	1	1
DRX12_A	1	1
DRX13_B	1	1
DRX15_B	1	1
DRX14_A	1	1

ENDC Module

SDR_RFFE_1
ETDAG1_OUT2

SDR_RFFE_2
ETDAG2_OUT2

SDR_RFFE_3
ETDAG3_OUT2

SDR_RFFE_4
ETDAG4_OUT2

SDR_RFFE_5
ETDAG5_OUT2

SDR_RFFE_6
ETDAG6_OUT2

SDR_RFFE_7
ETDAG7_OUT2

SDR_RFFE_8
ETDAG8_OUT2

SDR_RFFE_9
ETDAG9_OUT2

SDR_RFFE_10
ETDAG10_OUT2

SDR_RFFE_11
ETDAG11_OUT2

SDR_RFFE_12
ETDAG12_OUT2

SDR_RFFE_13
ETDAG13_OUT2

SDR_RFFE_14
ETDAG14_OUT2

SDR_RFFE_15
ETDAG15_OUT2

SDR_RFFE_16
ETDAG16_OUT2

SDR_RFFE_17
ETDAG17_OUT2

SDR_RFFE_18
ETDAG18_OUT2

SDR_RFFE_19
ETDAG19_OUT2

SDR_RFFE_20
ETDAG20_OUT2

SDR_RFFE_21
ETDAG21_OUT2

SDR_RFFE_22
ETDAG22_OUT2

SDR_RFFE_23
ETDAG23_OUT2

SDR_RFFE_24
ETDAG24_OUT2

SDR_RFFE_25
ETDAG25_OUT2

SDR_RFFE_26
ETDAG26_OUT2

SDR_RFFE_27
ETDAG27_OUT2

SDR_RFFE_28
ETDAG28_OUT2

SDR_RFFE_29
ETDAG29_OUT2

SDR_RFFE_30
ETDAG30_OUT2

Main 1
(LB/MB)
JPN B21

SDR_RFFE_5(LNA)
SDR_RFFE_1(PA&ASM)

SDR_RFFE_6(LNA)
SDR_RFFE_2(PA&ASM)

SDR_RFFE_7(LNA)
SDR_RFFE_3(PA&ASM)

SDR_RFFE_8(LNA)
SDR_RFFE_4(PA&ASM)

SDR_RFFE_9(LNA)
SDR_RFFE_5(PA&ASM)

SDR_RFFE_10(LNA)
SDR_RFFE_6(PA&ASM)

SDR_RFFE_11(LNA)
SDR_RFFE_7(PA&ASM)

SDR_RFFE_12(LNA)
SDR_RFFE_8(PA&ASM)

SDR_RFFE_13(LNA)
SDR_RFFE_9(PA&ASM)

SDR_RFFE_14(LNA)
SDR_RFFE_10(PA&ASM)

SDR_RFFE_15(LNA)
SDR_RFFE_11(PA&ASM)

SDR_RFFE_16(LNA)
SDR_RFFE_12(PA&ASM)

SDR_RFFE_17(LNA)
SDR_RFFE_13(PA&ASM)

SDR_RFFE_18(LNA)
SDR_RFFE_14(PA&ASM)

SDR_RFFE_19(LNA)
SDR_RFFE_15(PA&ASM)

SDR_RFFE_20(LNA)
SDR_RFFE_16(PA&ASM)

SDR_RFFE_21(LNA)
SDR_RFFE_17(PA&ASM)

SDR_RFFE_22(LNA)
SDR_RFFE_18(PA&ASM)

SDR_RFFE_23(LNA)
SDR_RFFE_19(PA&ASM)

SDR_RFFE_24(LNA)
SDR_RFFE_20(PA&ASM)

SDR_RFFE_25(LNA)
SDR_RFFE_21(PA&ASM)

SDR_RFFE_26(LNA)
SDR_RFFE_22(PA&ASM)

SDR_RFFE_27(LNA)
SDR_RFFE_23(PA&ASM)

SDR_RFFE_28(LNA)
SDR_RFFE_24(PA&ASM)

SDR_RFFE_29(LNA)
SDR_RFFE_25(PA&ASM)

SDR_RFFE_30(LNA)
SDR_RFFE_26(PA&ASM)

SDR_RFFE_31(LNA)
SDR_RFFE_27(PA&ASM)

SDR_RFFE_32(LNA)
SDR_RFFE_28(PA&ASM)

SDR_RFFE_33(LNA)
SDR_RFFE_29(PA&ASM)

SDR_RFFE_34(LNA)
SDR_RFFE_30(PA&ASM)

SDR_RFFE_35(LNA)
SDR_RFFE_31(PA&ASM)

SDR_RFFE_36(LNA)
SDR_RFFE_32(PA&ASM)

SDR_RFFE_37(LNA)
SDR_RFFE_33(PA&ASM)

SDR_RFFE_38(LNA)
SDR_RFFE_34(PA&ASM)

SDR_RFFE_39(LNA)
SDR_RFFE_35(PA&ASM)

SDR_RFFE_40(LNA)
SDR_RFFE_36(PA&ASM)

SDR_RFFE_41(LNA)
SDR_RFFE_37(PA&ASM)

SDR_RFFE_42(LNA)
SDR_RFFE_38(PA&ASM)

SDR_RFFE_43(LNA)
SDR_RFFE_39(PA&ASM)

SDR_RFFE_44(LNA)
SDR_RFFE_40(PA&ASM)

SDR_RFFE_45(LNA)
SDR_RFFE_41(PA&ASM)

SDR_RFFE_46(LNA)
SDR_RFFE_42(PA&ASM)

SDR_RFFE_47(LNA)
SDR_RFFE_43(PA&ASM)

SDR_RFFE_48(LNA)
SDR_RFFE_44(PA&ASM)

SDR_RFFE_49(LNA)
SDR_RFFE_45(PA&ASM)

SDR_RFFE_50(LNA)
SDR_RFFE_46(PA&ASM)

SDR_RFFE_51(LNA)
SDR_RFFE_47(PA&ASM)

SDR_RFFE_52(LNA)
SDR_RFFE_48(PA&ASM)

SDR_RFFE_53(LNA)
SDR_RFFE_49(PA&ASM)

SDR_RFFE_54(LNA)
SDR_RFFE_50(PA&ASM)

SDR_RFFE_55(LNA)
SDR_RFFE_51(PA&ASM)

SDR_RFFE_56(LNA)
SDR_RFFE_52(PA&ASM)

SDR_RFFE_57(LNA)
SDR_RFFE_53(PA&ASM)

SDR_RFFE_58(LNA)
SDR_RFFE_54(PA&ASM)

SDR_RFFE_59(LNA)
SDR_RFFE_55(PA&ASM)

SDR_RFFE_60(LNA)
SDR_RFFE_56(PA&ASM)

SDR_RFFE_61(LNA)
SDR_RFFE_57(PA&ASM)

SDR_RFFE_62(LNA)
SDR_RFFE_58(PA&ASM)

SDR_RFFE_63(LNA)
SDR_RFFE_59(PA&ASM)

SDR_RFFE_64(LNA)
SDR_RFFE_60(PA&ASM)

SDR_RFFE_65(LNA)
SDR_RFFE_61(PA&ASM)

SDR_RFFE_66(LNA)
SDR_RFFE_62(PA&ASM)

SDR_RFFE_67(LNA)
SDR_RFFE_63(PA&ASM)

SDR_RFFE_68(LNA)
SDR_RFFE_64(PA&ASM)

SDR_RFFE_69(LNA)
SDR_RFFE_65(PA&ASM)

SDR_RFFE_70(LNA)
SDR_RFFE_66(PA&ASM)

SDR_RFFE_71(LNA)
SDR_RFFE_67(PA&ASM)

SDR_RFFE_72(LNA)
SDR_RFFE_68(PA&ASM)

SDR_RFFE_73(LNA)
SDR_RFFE_69(PA&ASM)

SDR_RFFE_74(LNA)
SDR_RFFE_70(PA&ASM)

SDR_RFFE_75(LNA)
SDR_RFFE_71(PA&ASM)

SDR_RFFE_76(LNA)
SDR_RFFE_72(PA&ASM)

SDR_RFFE_77(LNA)
SDR_RFFE_73(PA&ASM)

SDR_RFFE_78(LNA)
SDR_RFFE_74(PA&ASM)

SDR_RFFE_79(LNA)
SDR_RFFE_75(PA&ASM)

SDR_RFFE_80(LNA)
SDR_RFFE_76(PA&ASM)

SDR_RFFE_81(LNA)
SDR_RFFE_77(PA&ASM)

SDR_RFFE_82(LNA)
SDR_RFFE_78(PA&ASM)

SDR_RFFE_83(LNA)
SDR_RFFE_79(PA&ASM)

SDR_RFFE_84(LNA)
SDR_RFFE_80(PA&ASM)

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SDR_RFFE_81(PA&ASM)

SDR_RFFE_86(LNA)
SDR_RFFE_82(PA&ASM)

SDR_RFFE_87(LNA)
SDR_RFFE_83(PA&ASM)

SDR_RFFE_88(LNA)
SDR_RFFE_84(PA&ASM)

SDR_RFFE_89(LNA)
SDR_RFFE_85(PA&ASM)

SDR_RFFE_90(LNA)
SDR_RFFE_86(PA&ASM)

SDR_RFFE_91(LNA)
SDR_RFFE_87(PA&ASM)

SDR_RFFE_92(LNA)
SDR_RFFE_88(PA&ASM)

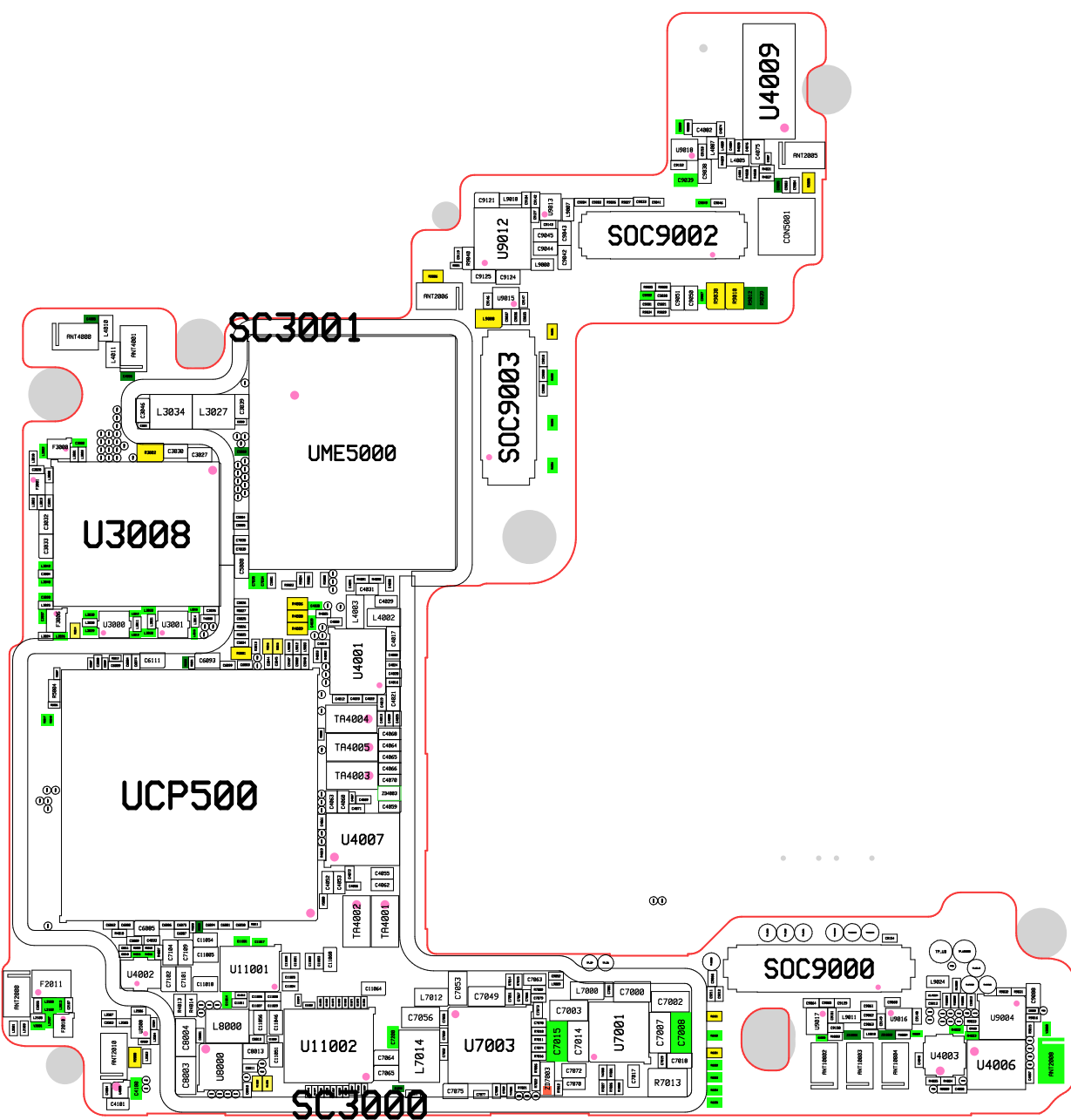
SDR_RFFE_93(LNA)
SDR_RFFE_89(PA&ASM)

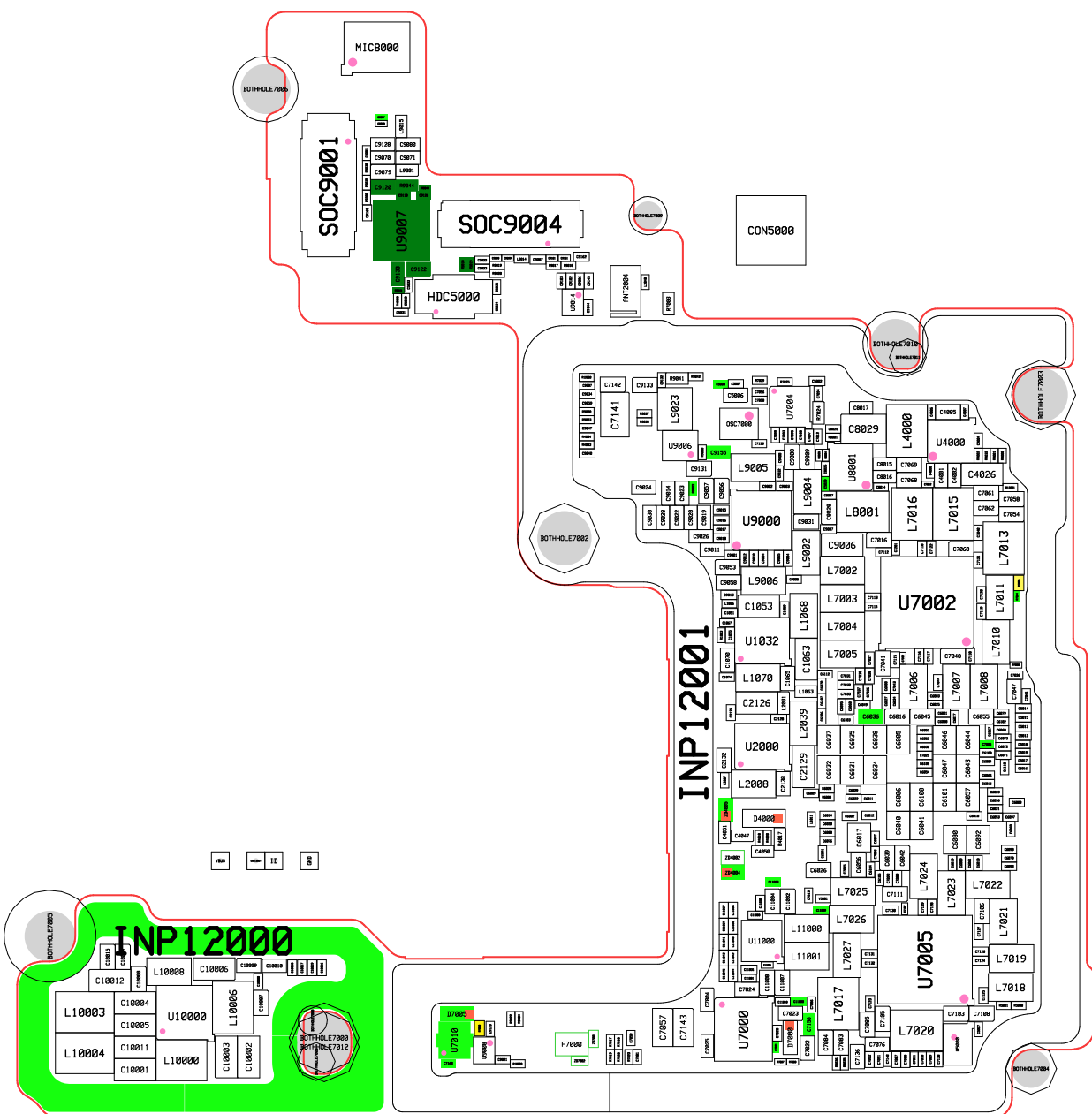
SDR_RFFE_94(LNA)
SDR_RFFE_90(PA&ASM)

SDR_RFFE_95(LNA)
SDR_RFFE_91(PA&ASM)

SDR_RFFE_96(LNA)
SDR_RFFE_92(PA&ASM)

SDR_RFFE_97(LNA)
SDR_RFFE_93(PA&ASM)





INP25000

SC23002

U23001

CN23004

CN2004

CN23000

CN23002

SC23005

U24000

OSC24000

SC23004

U22001

SC23003

U21002

C21065

U21008

L21057

C21068

L21055

SUS23001

CN23003

INP25001

TPA23000

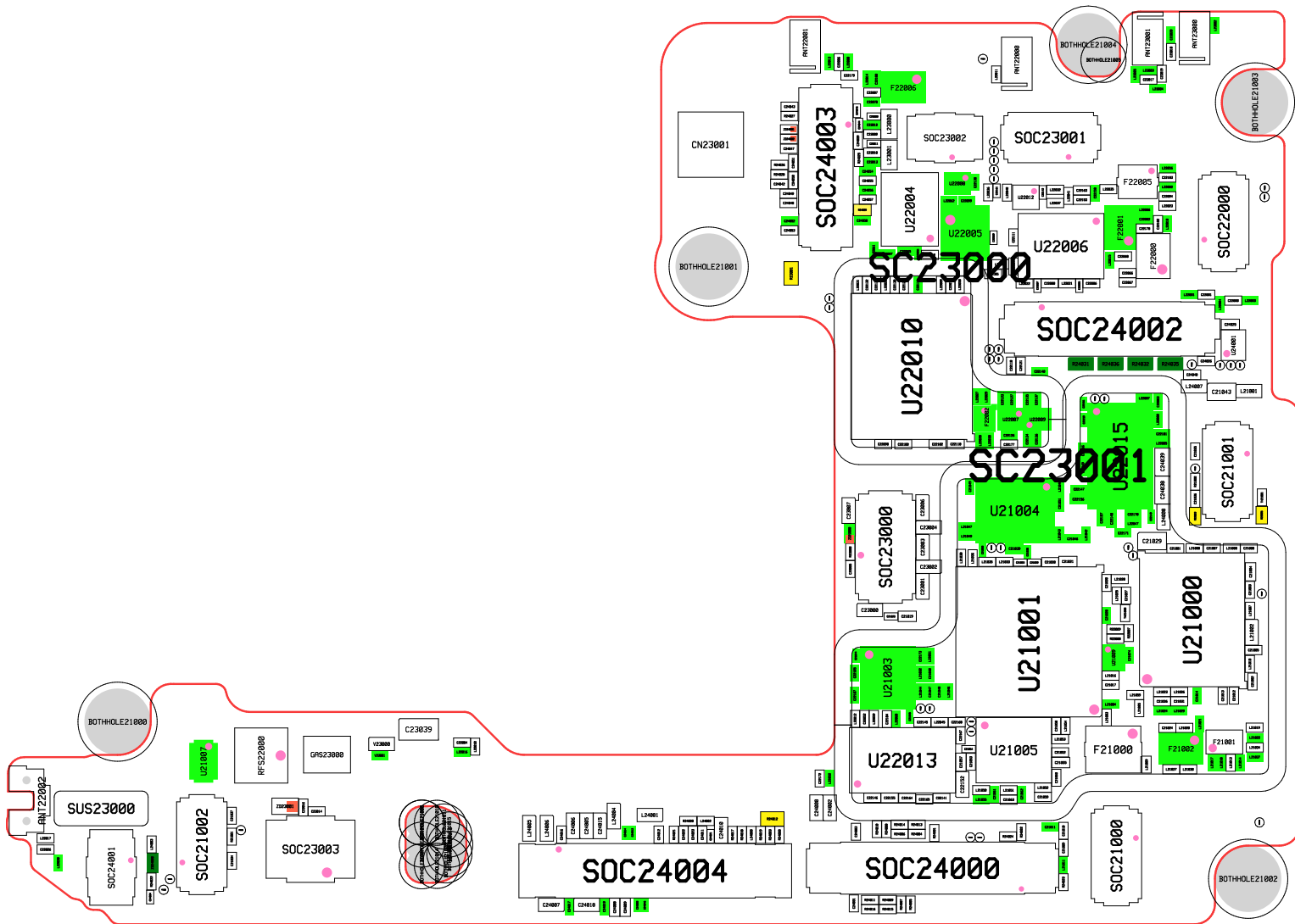
CN23005

C23015

C23018

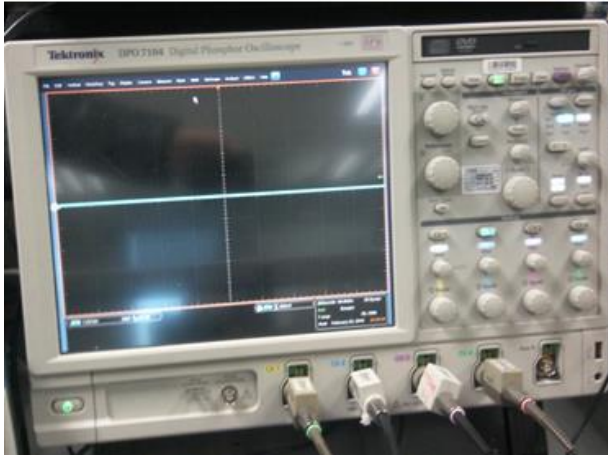
L23008

U23000



8. Level 3 Repair

8-3. Flow chart of Troubleshooting.



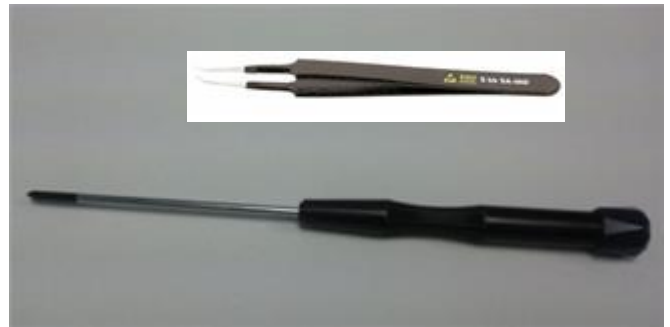
Oscilloscope



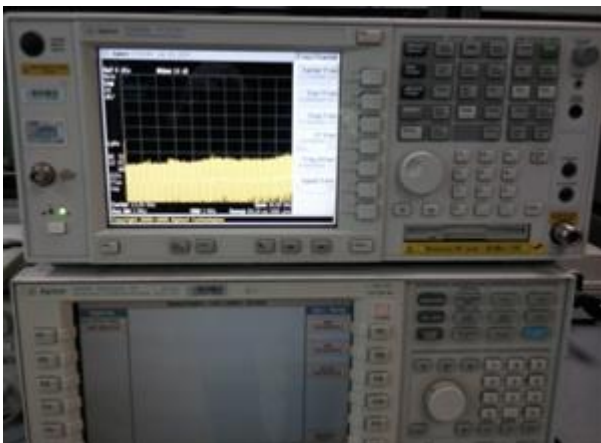
Digital Multimeter



Power Supply



+ driver, ESD Safe Tweezer



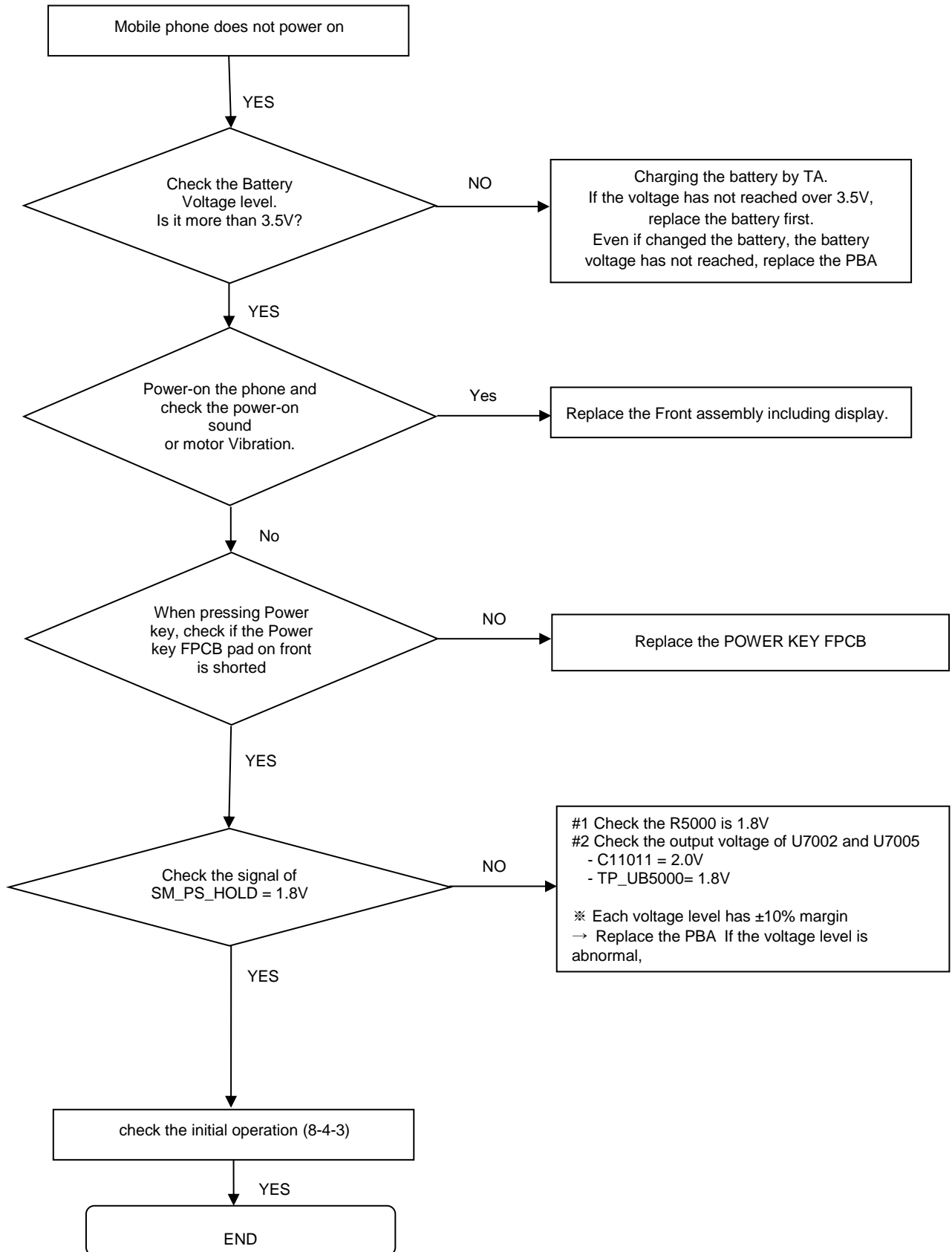
8960 & Spectrum Analyzer



Soldering iron

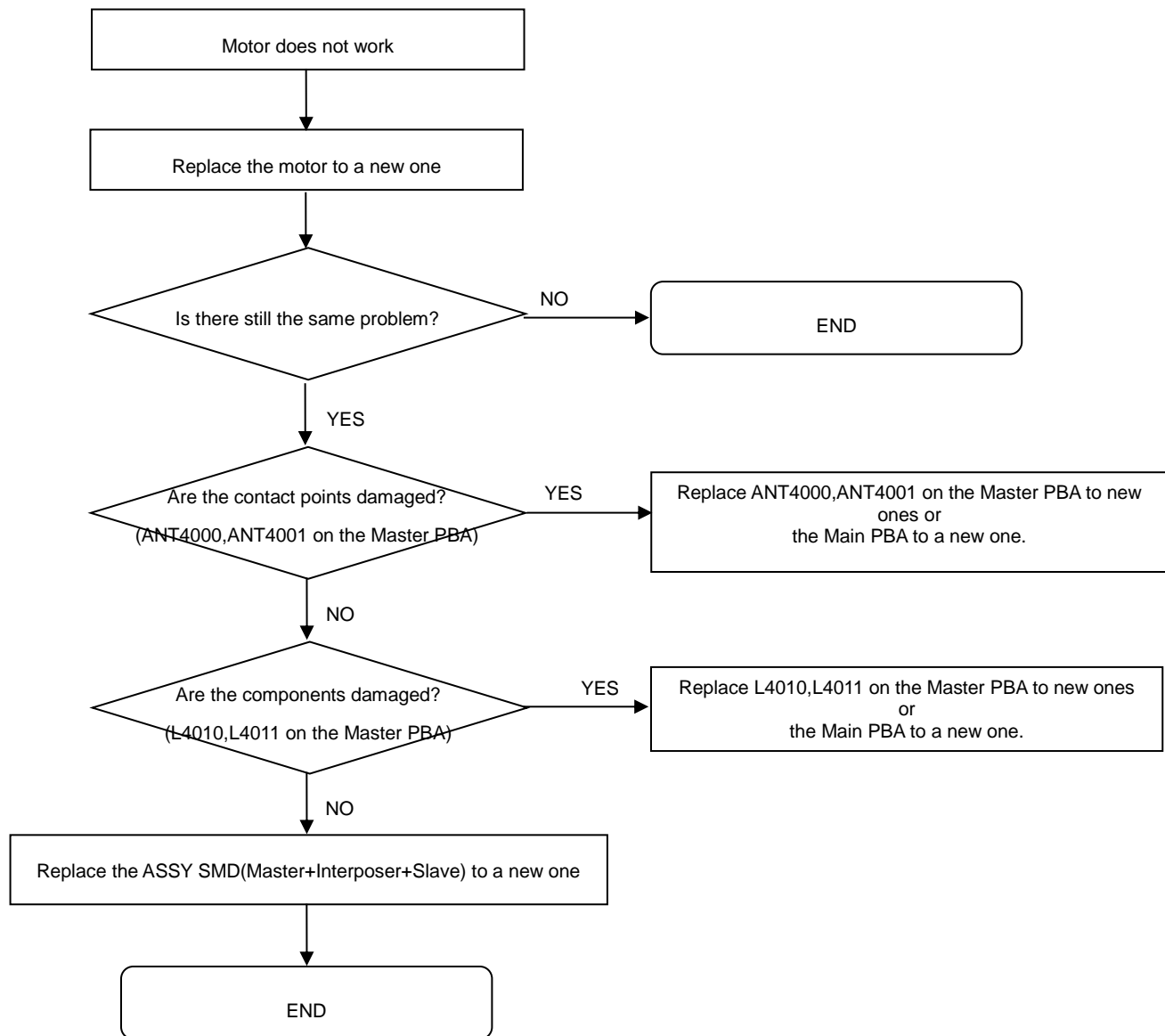
8. Level 3 Repair

8-4-1. Power on



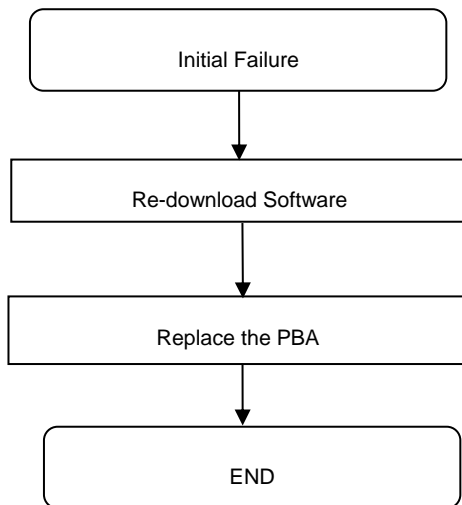
8. Level 3 Repair

8-4-2. Motor

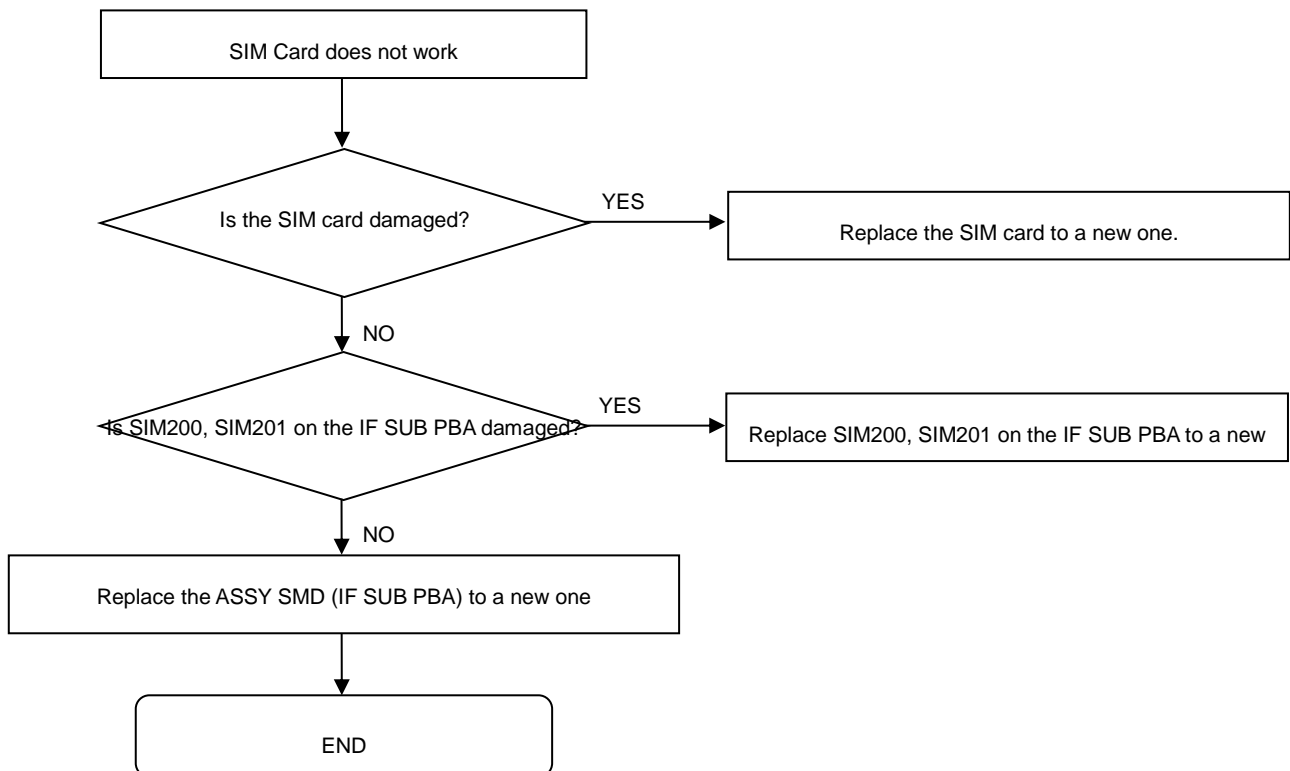


8. Level 3 Repair

8-4-3. initial

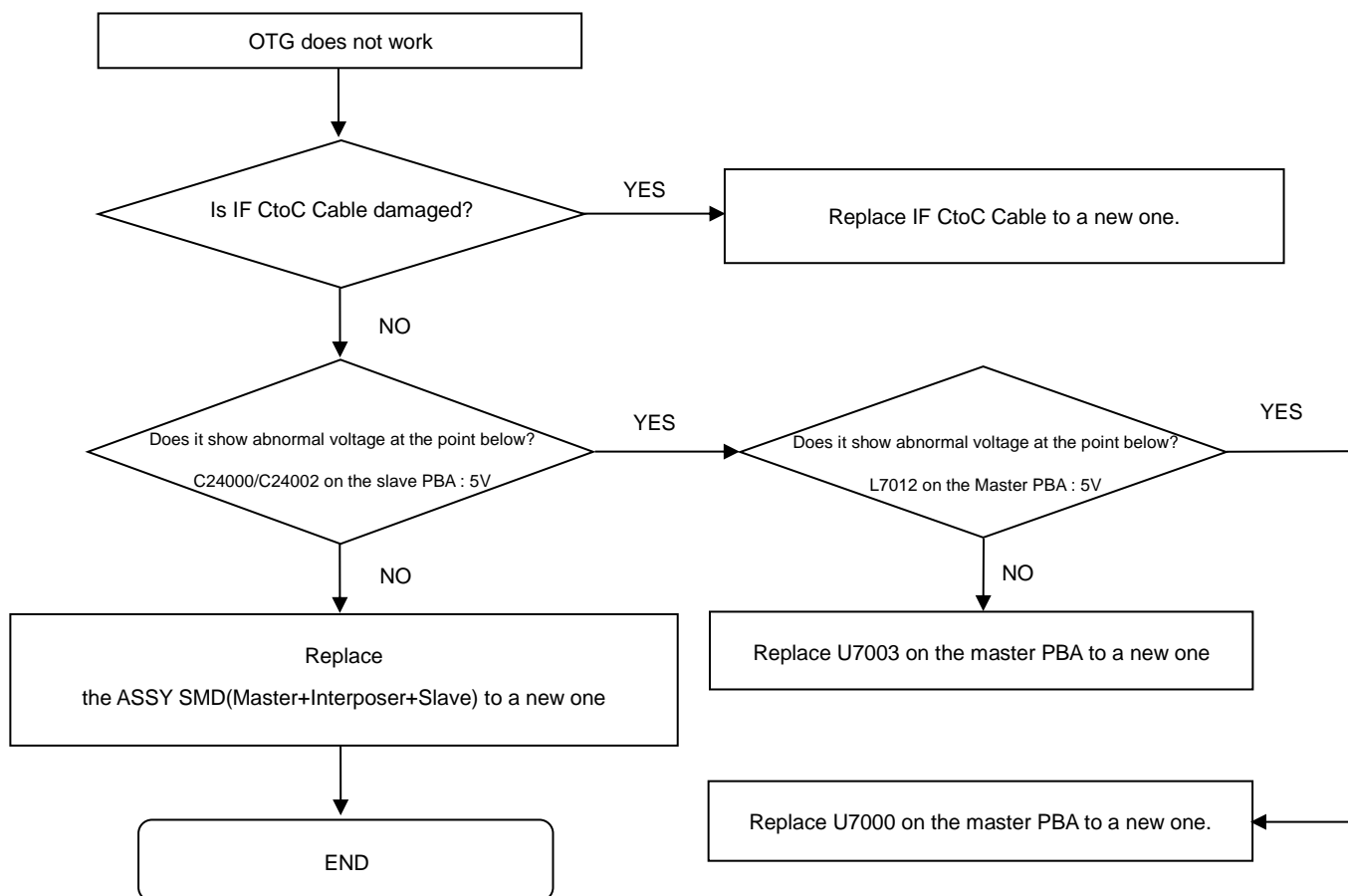


8-4-4. SIM PART



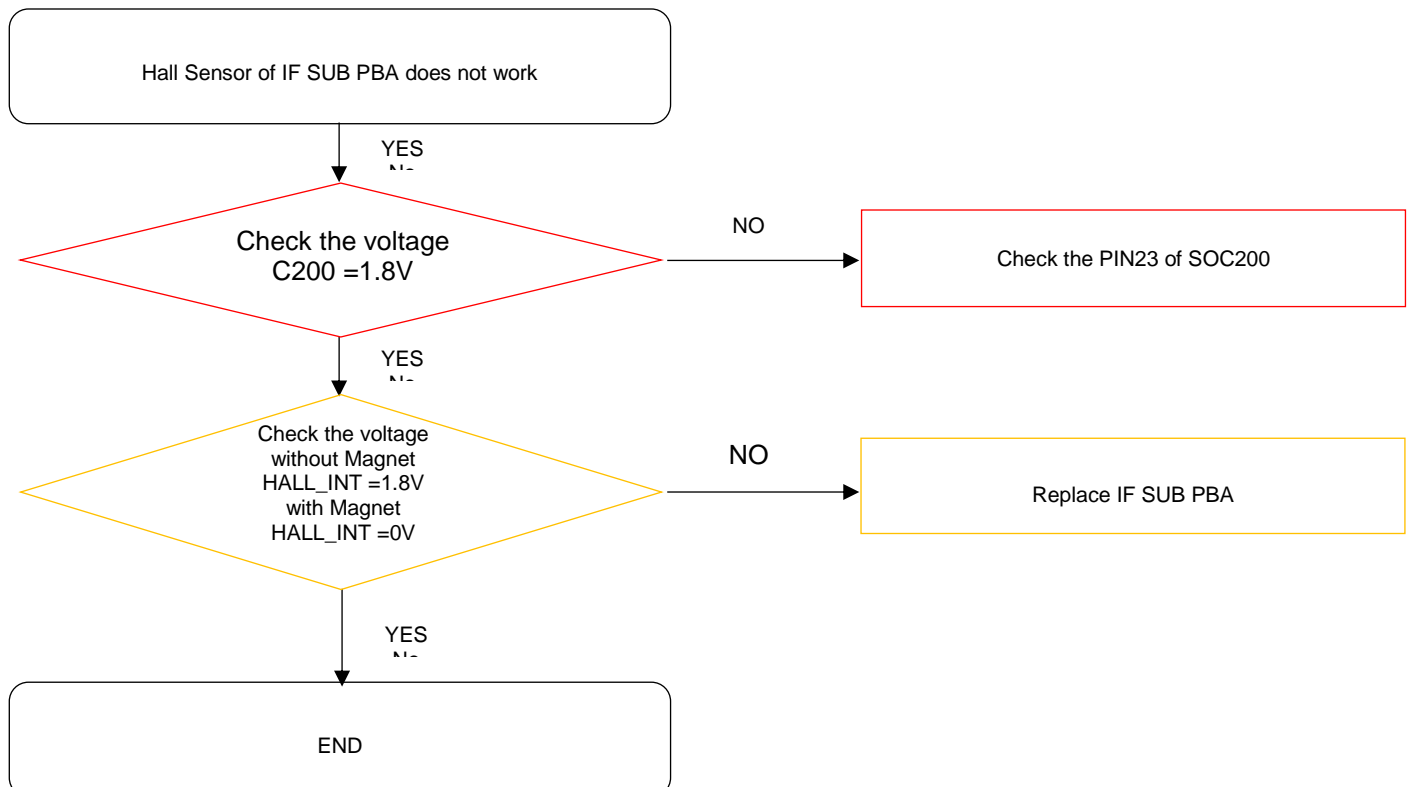
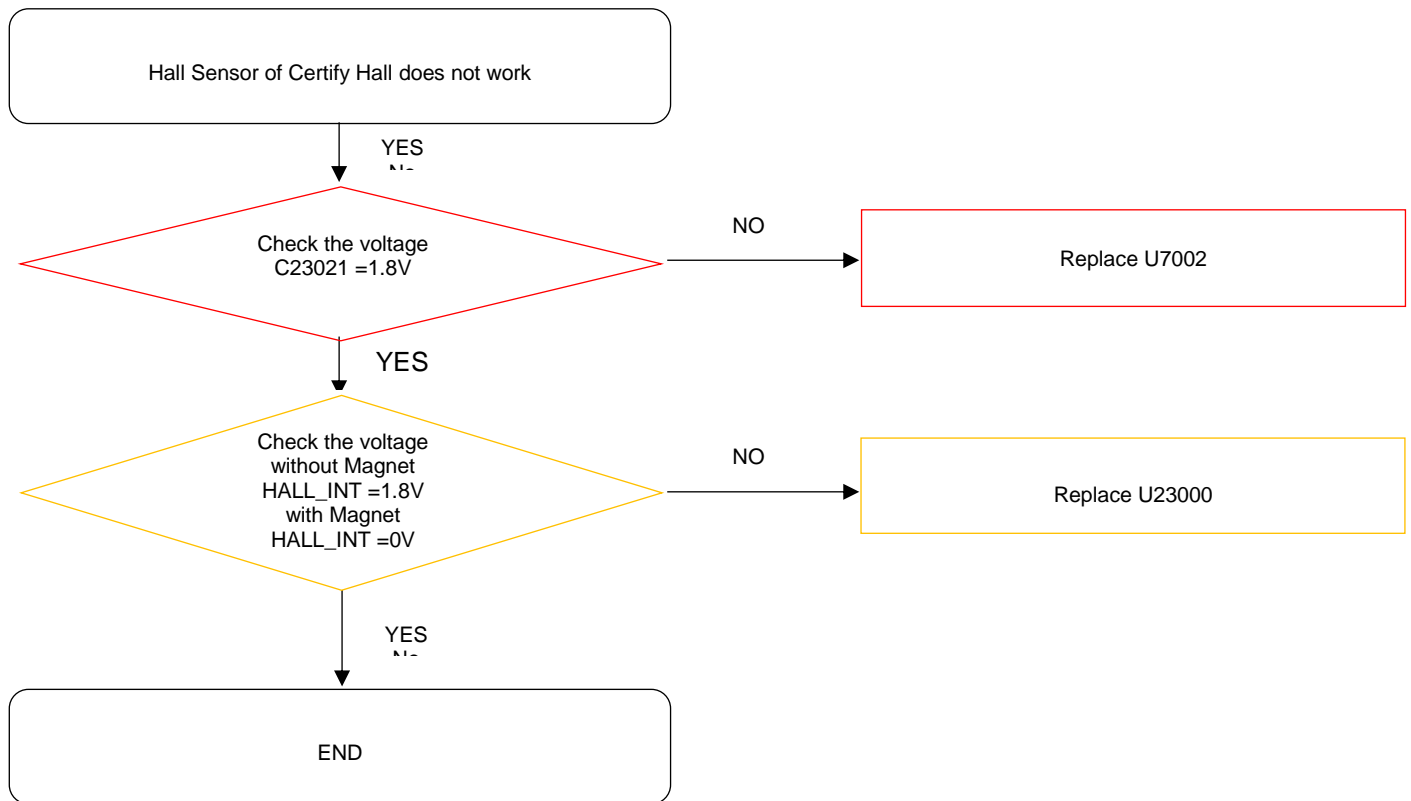
8. Level 3 Repair

8-4-5. OTG



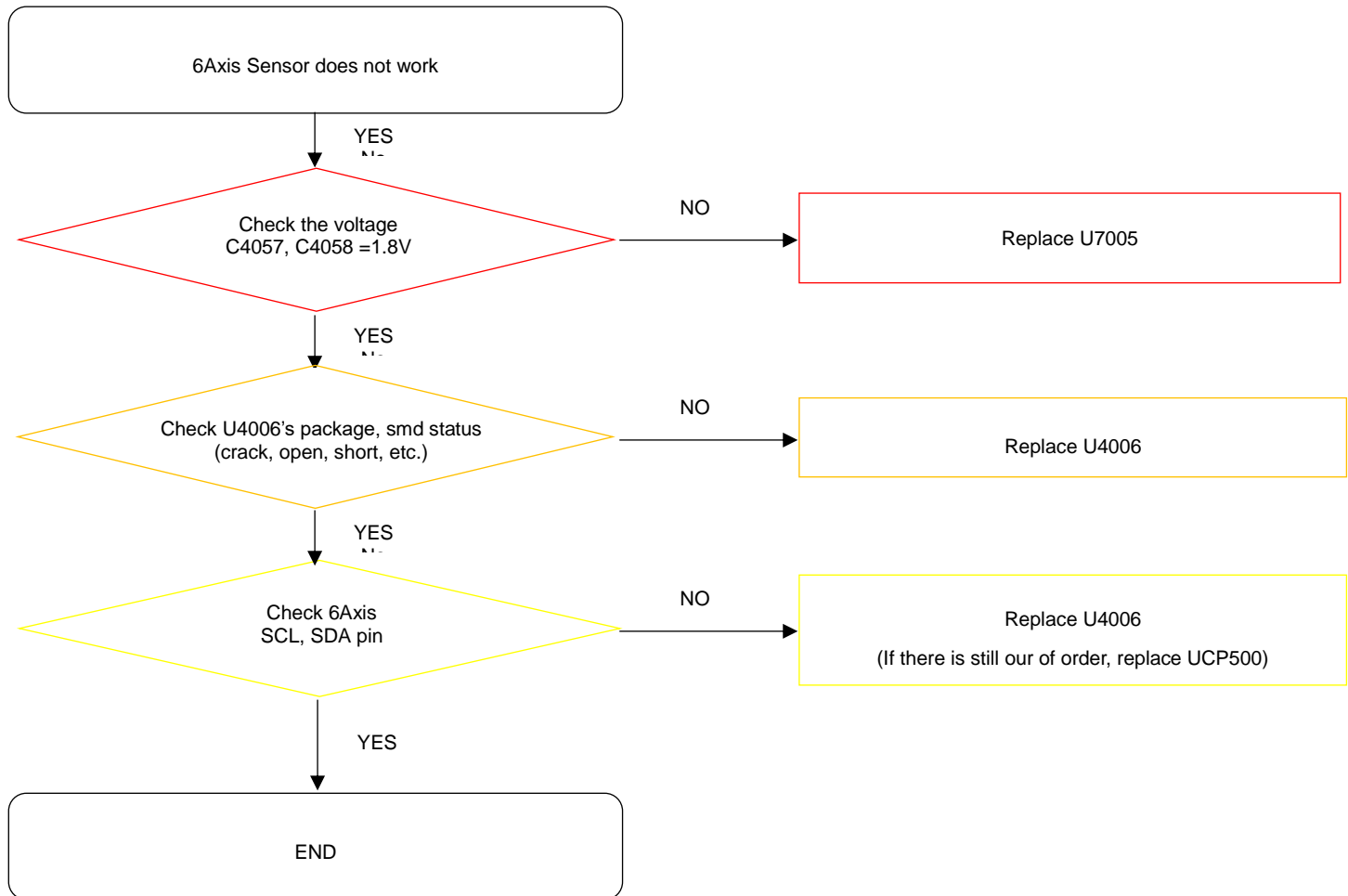
8. Level 3 Repair

8-4-6. Hall IC



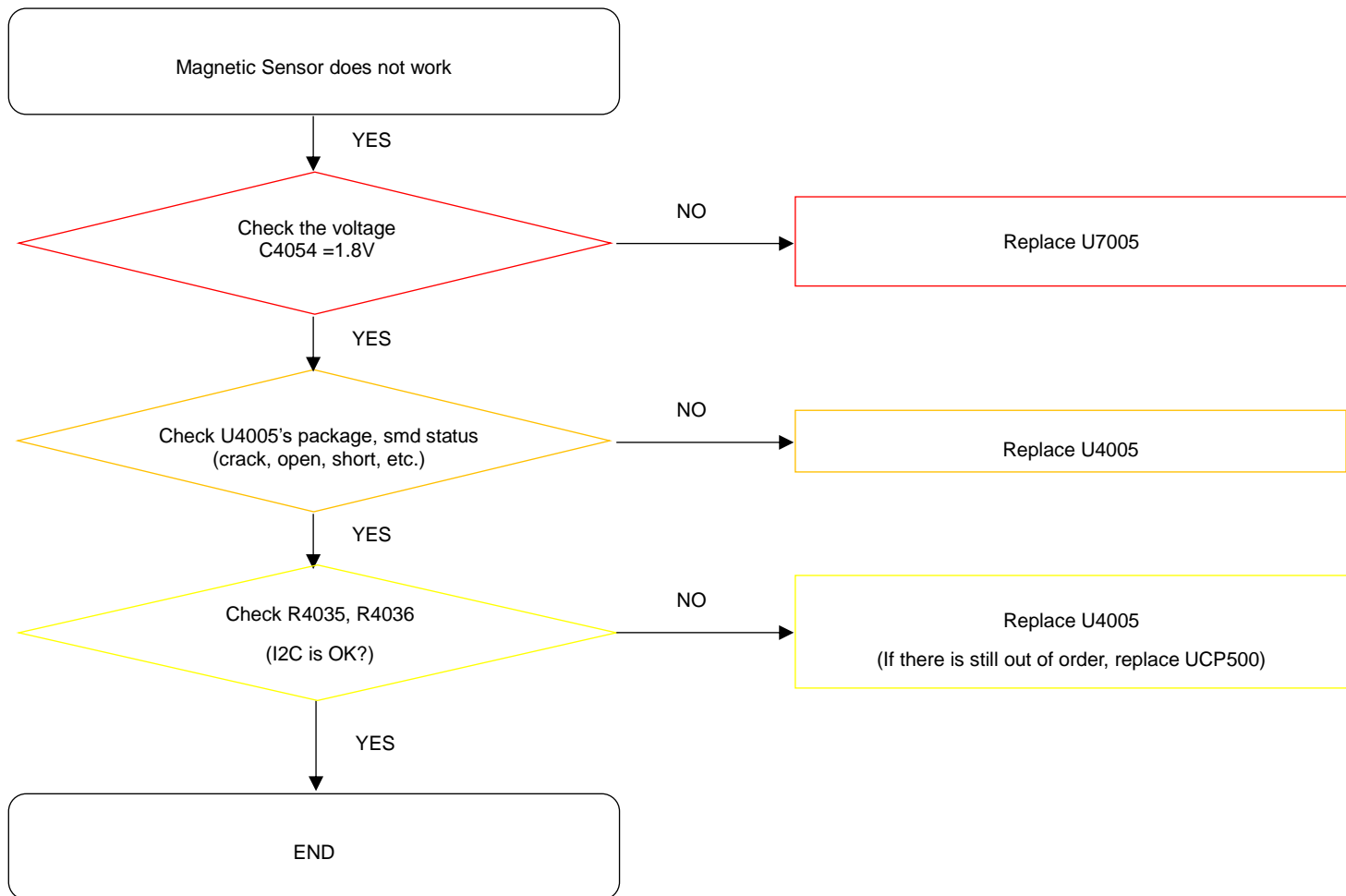
8. Level 3 Repair

8-4-7. 6-Axis sensor



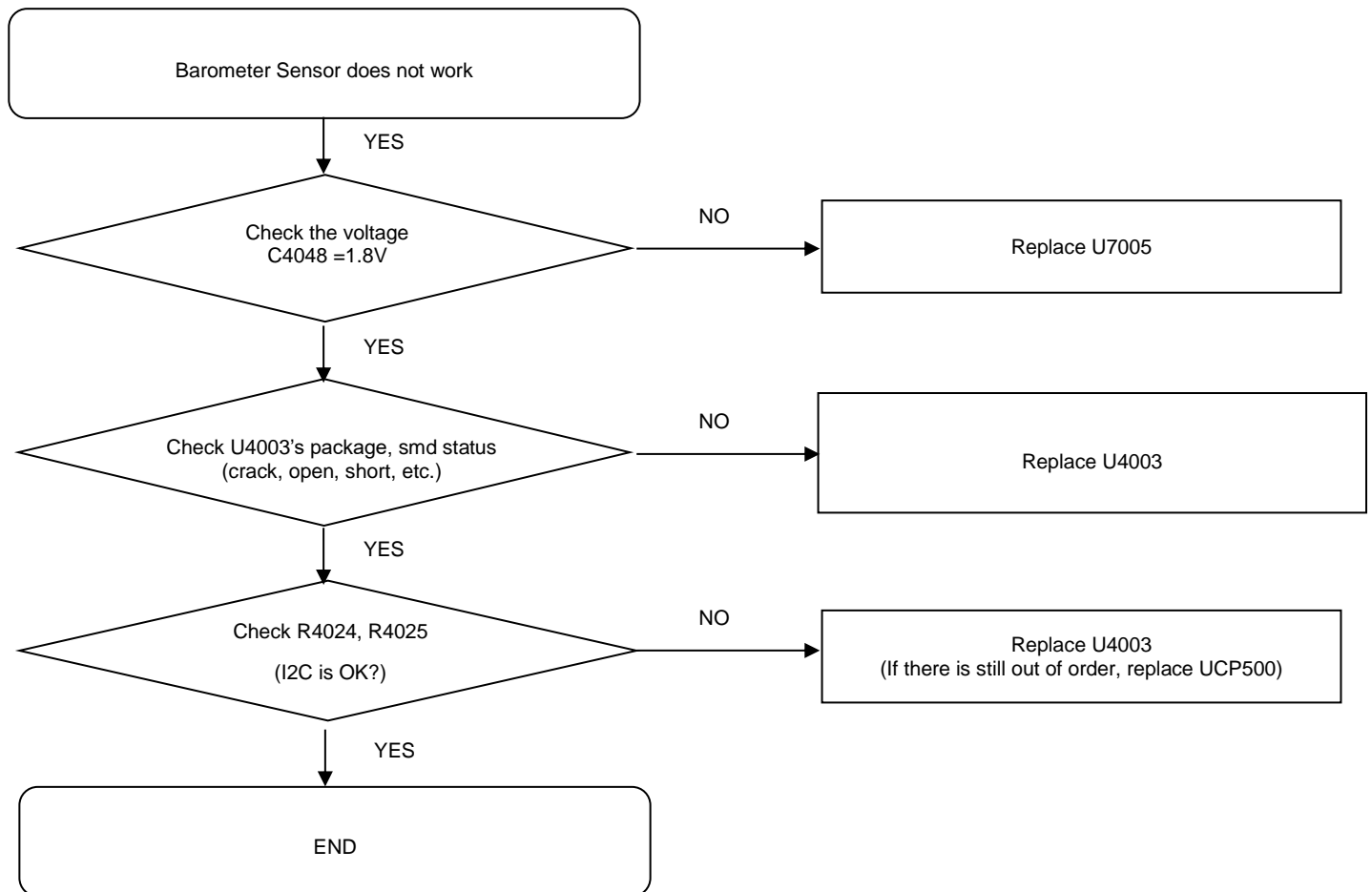
8. Level 3 Repair

8-4-8. Magnetic sensor



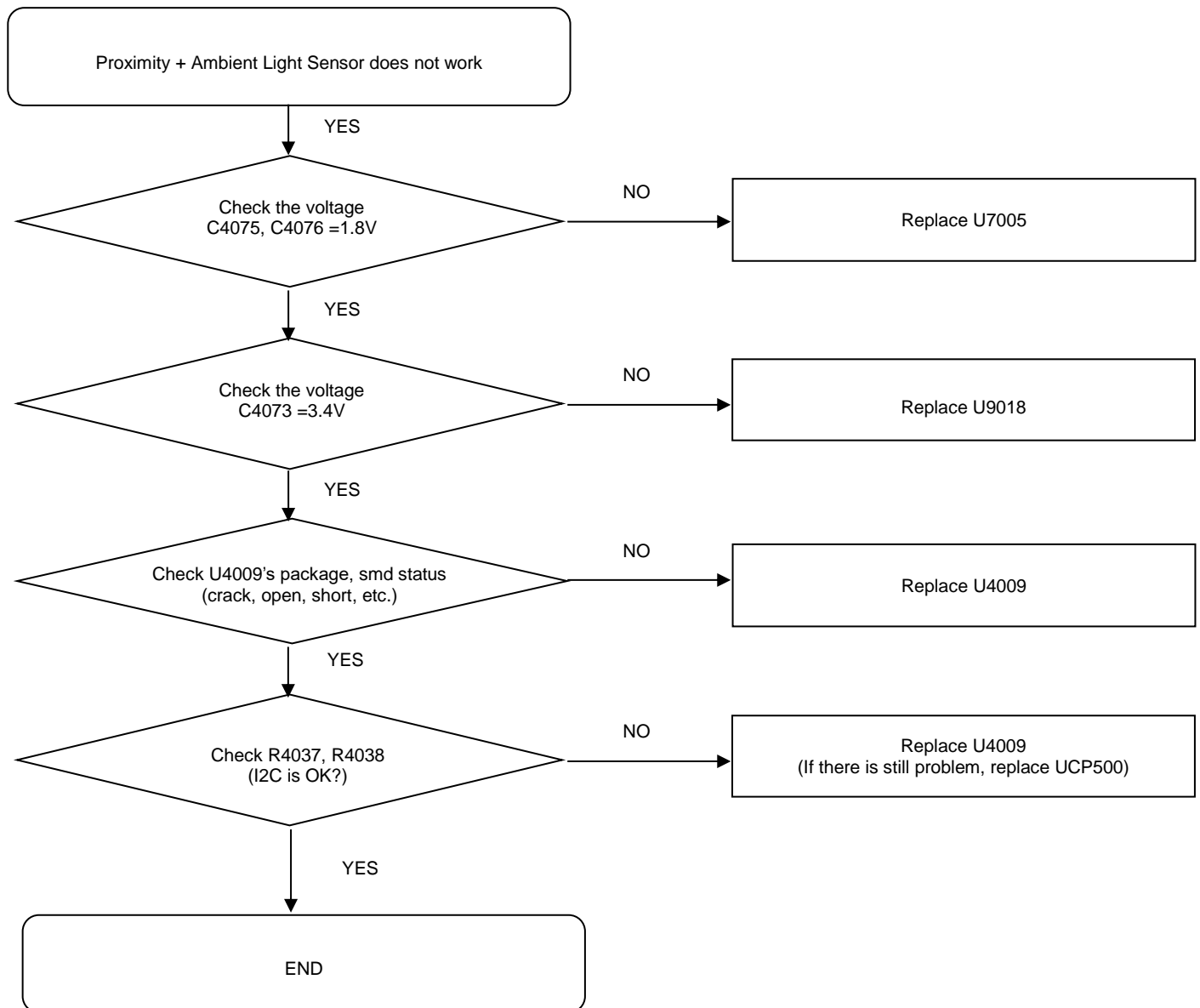
8. Level 3 Repair

8-4-9. Barometer sensor



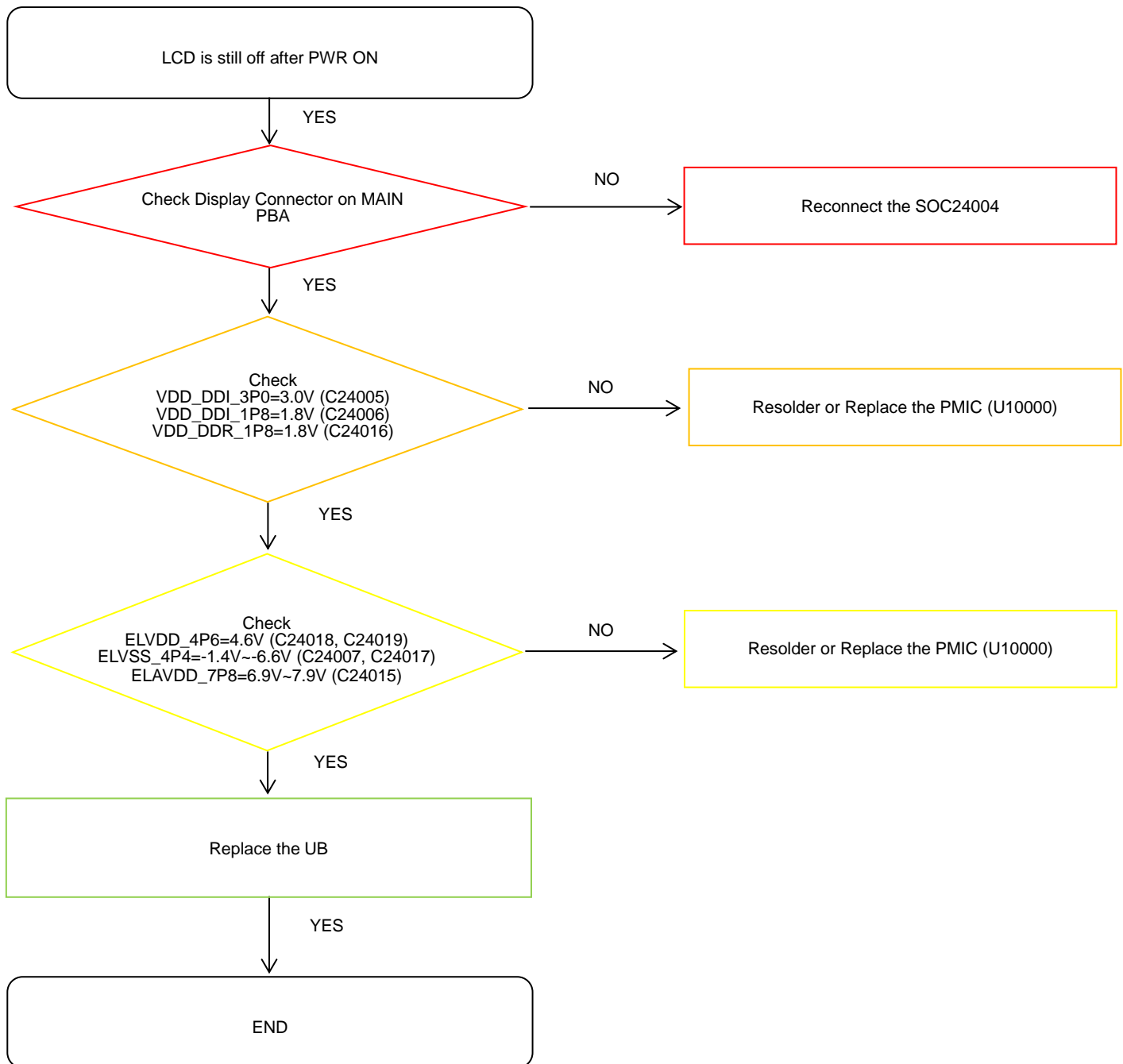
8. Level 3 Repair

8-4-10. Proximity/Ambient Light sensor



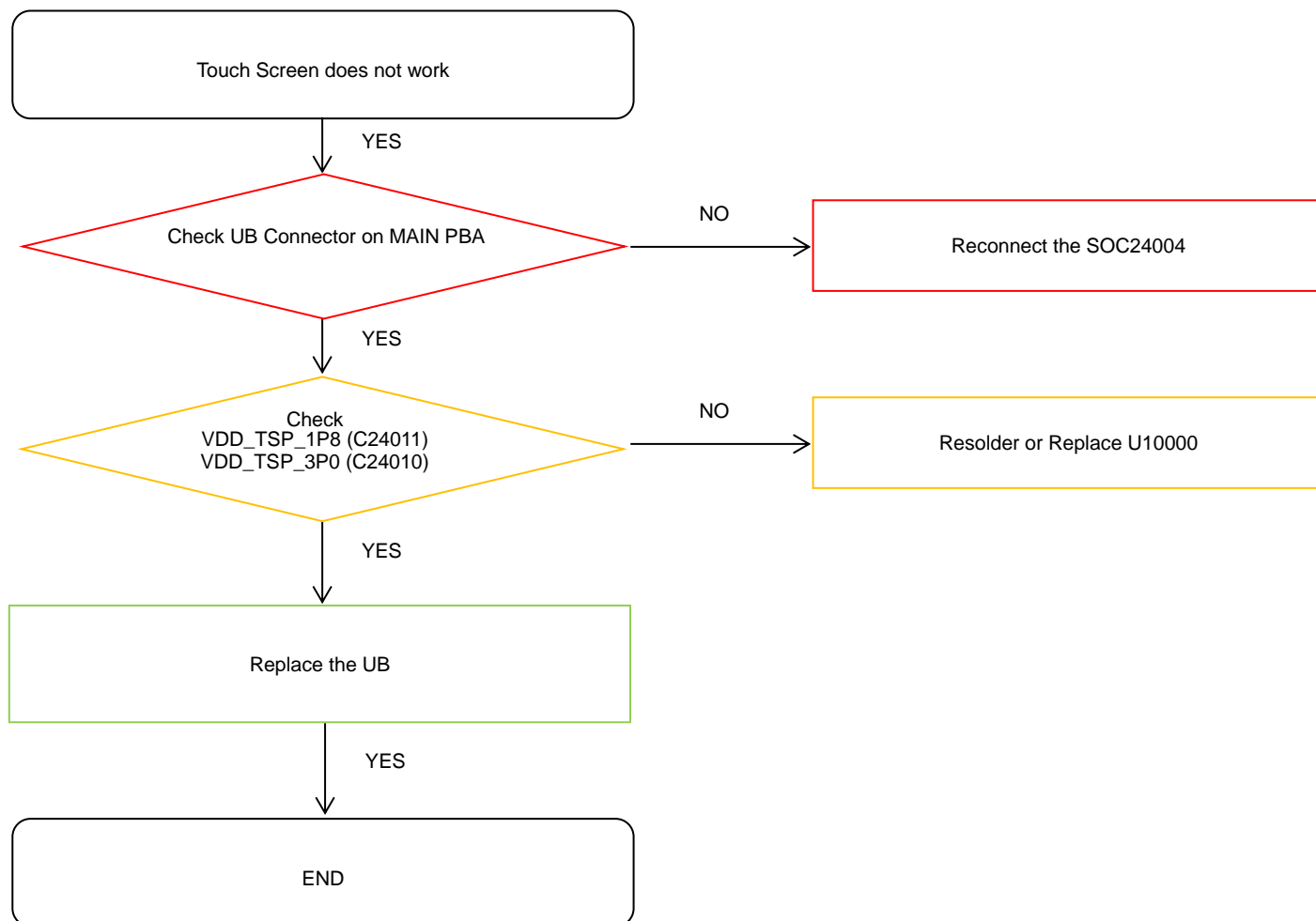
8. Level 3 Repair

8-4-11. Display



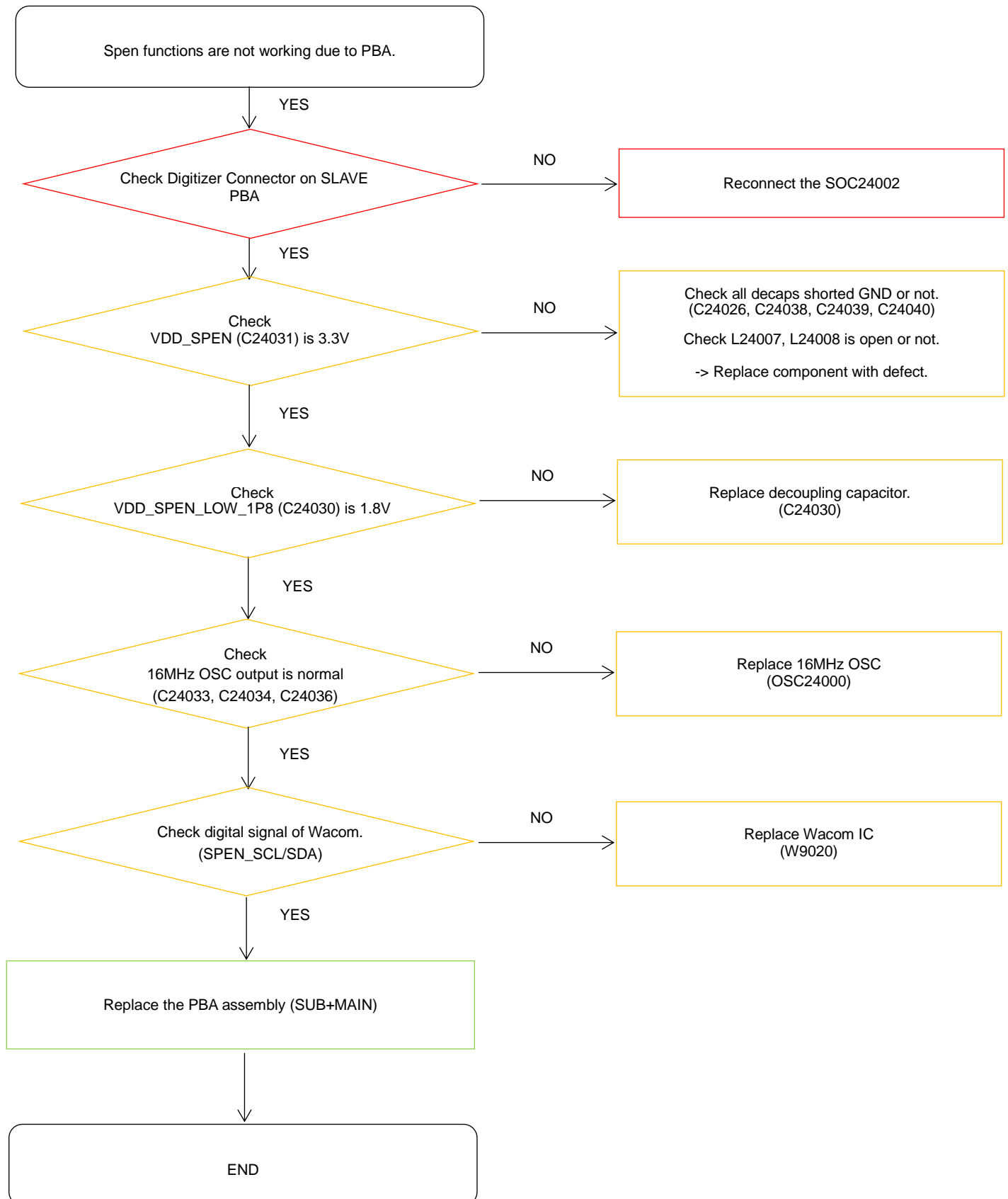
8. Level 3 Repair

8-4-12-1. TSP



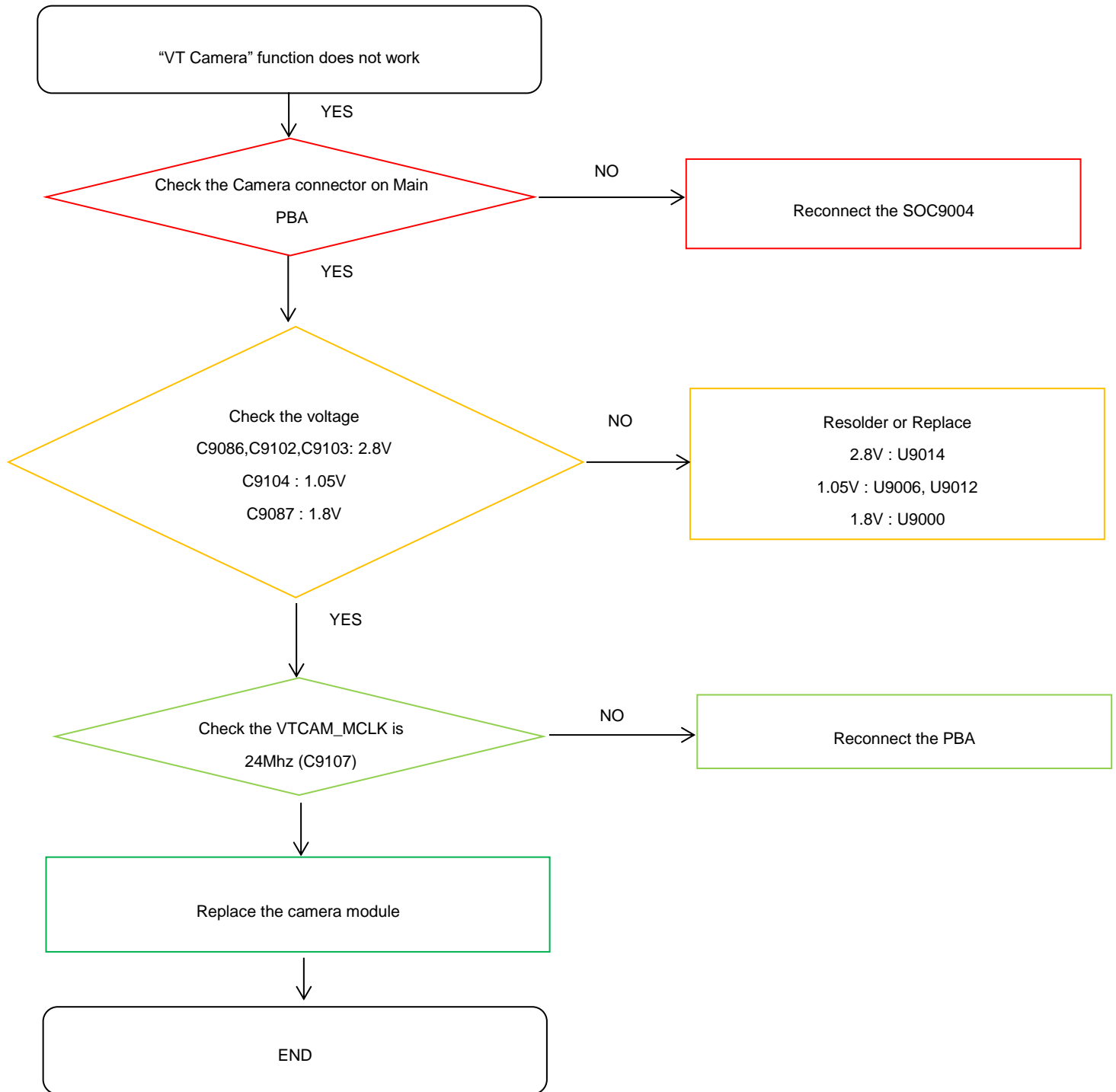
8. Level 3 Repair

8-4-12-2. DIGITIZER



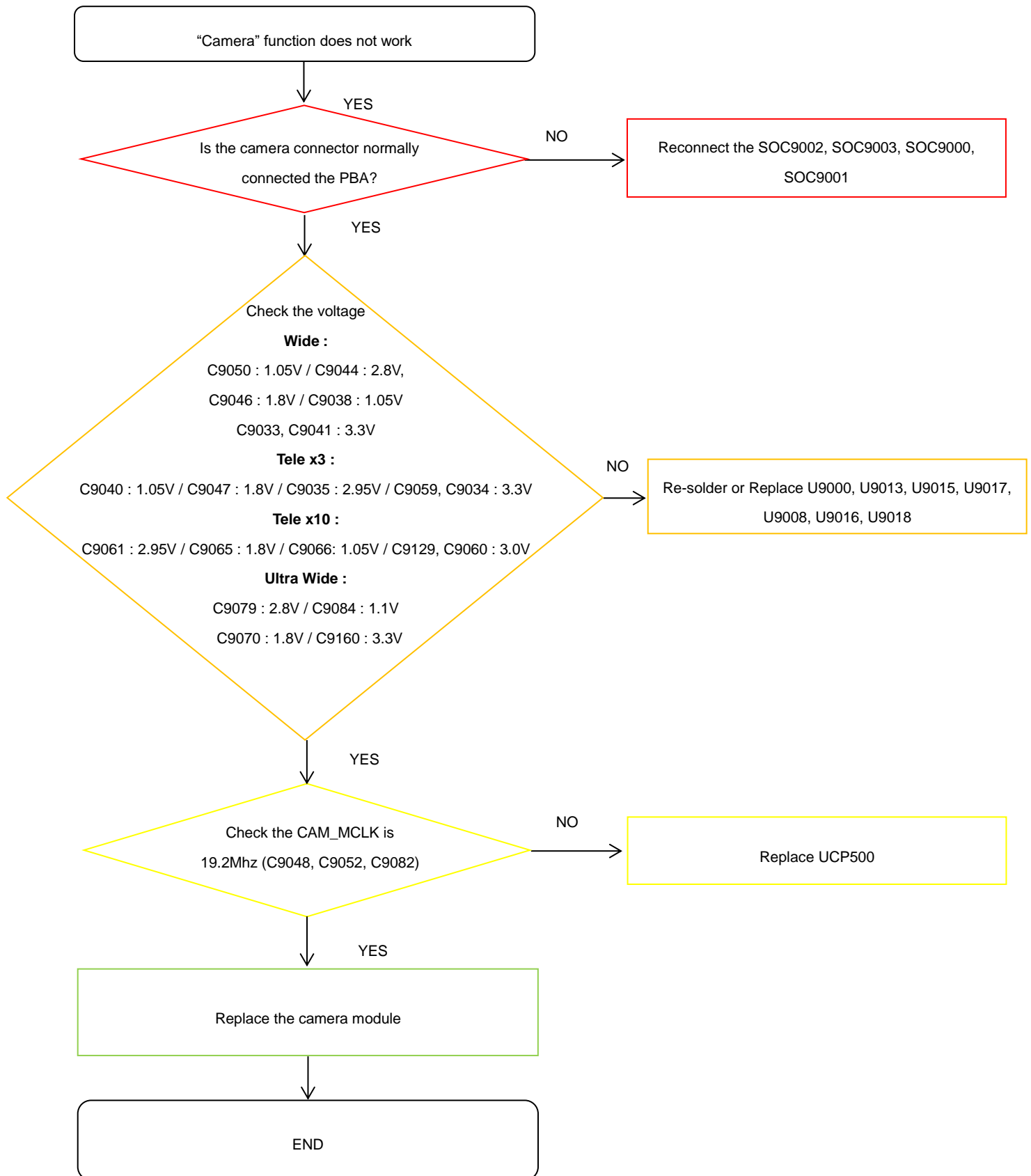
8. Level 3 Repair

8-4-13. VT CAMERA



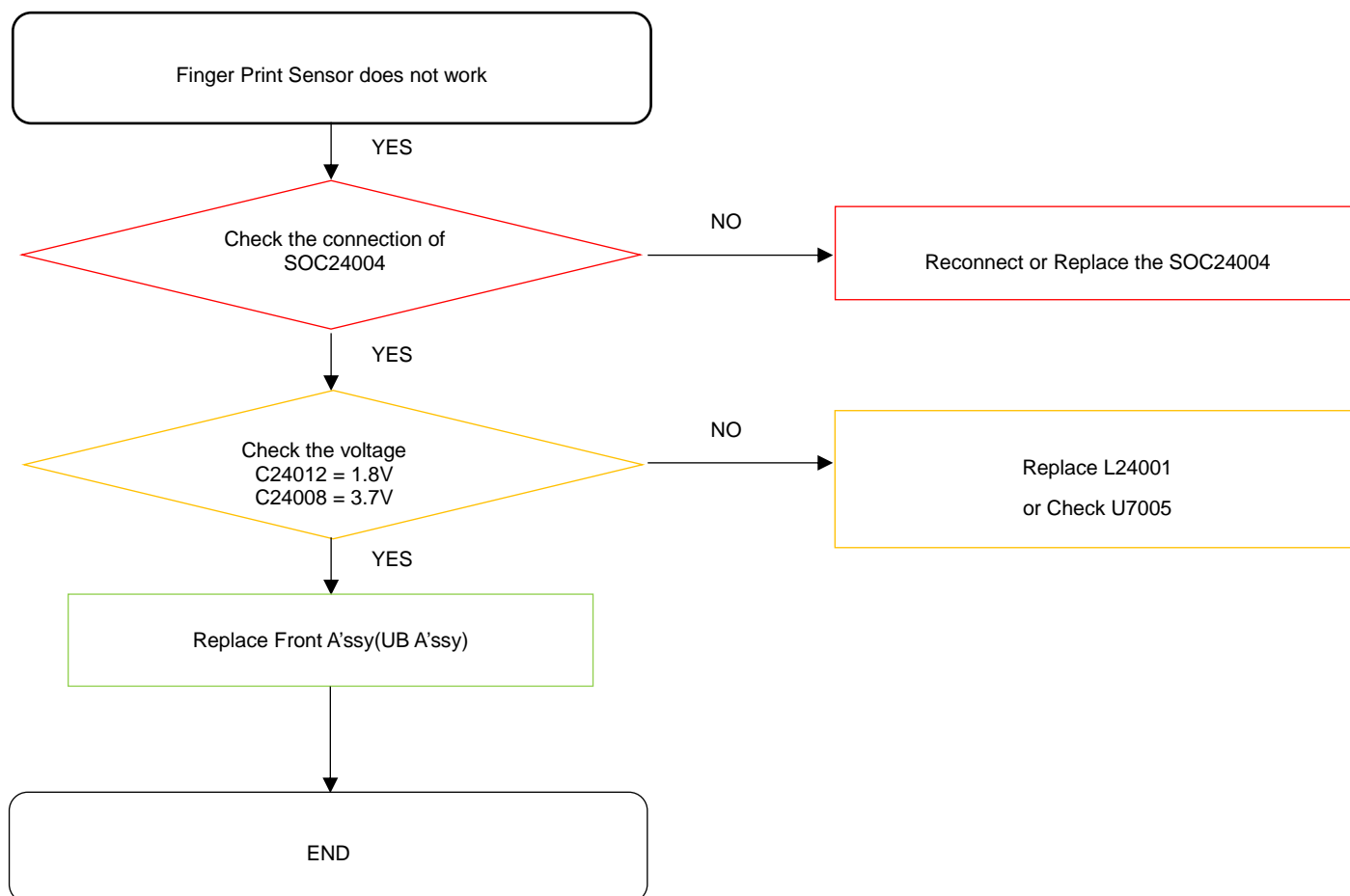
8. Level 3 Repair

8-4-14. Rear CAMERA



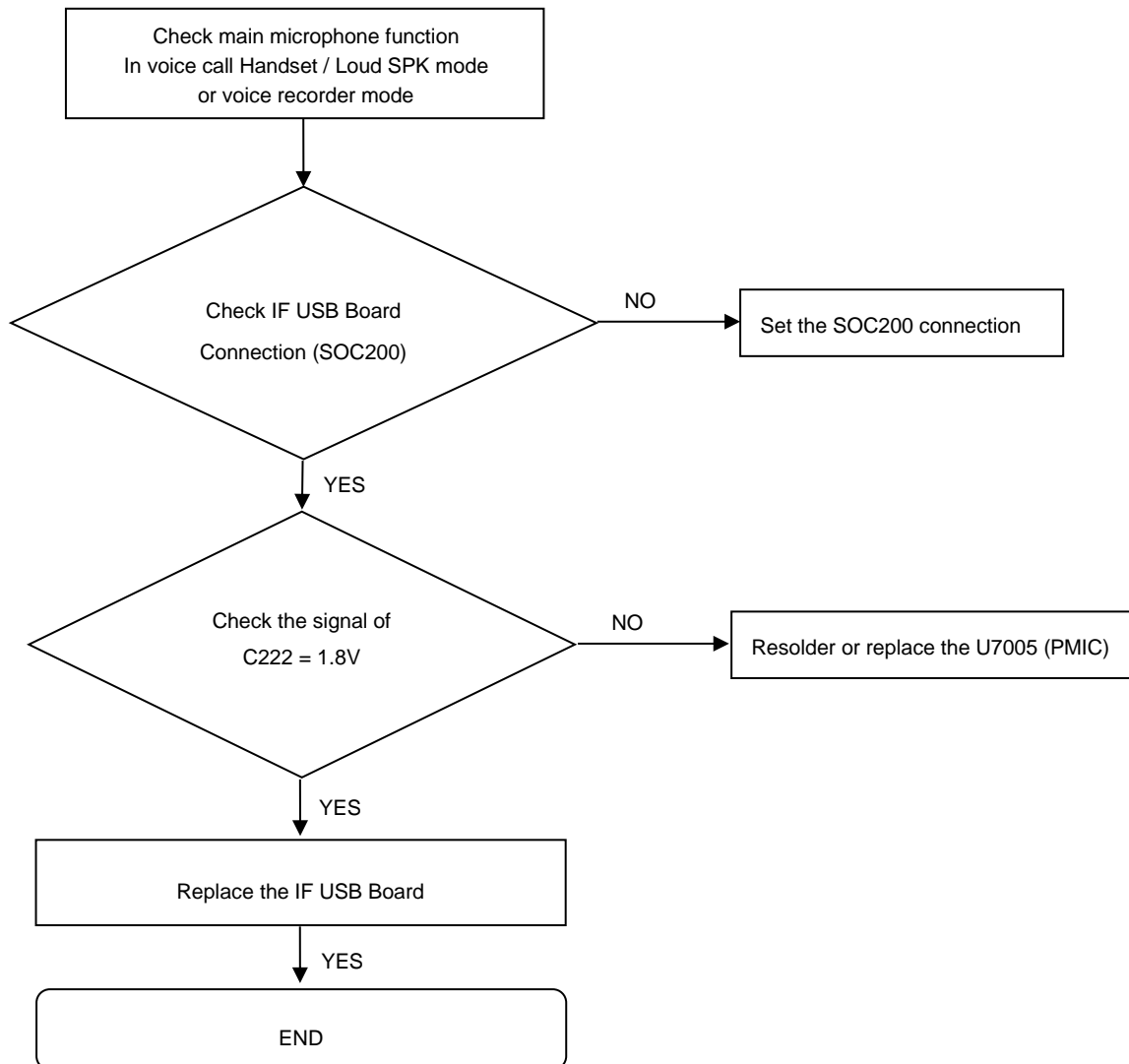
8. Level 3 Repair

8-4-15. Finger Print



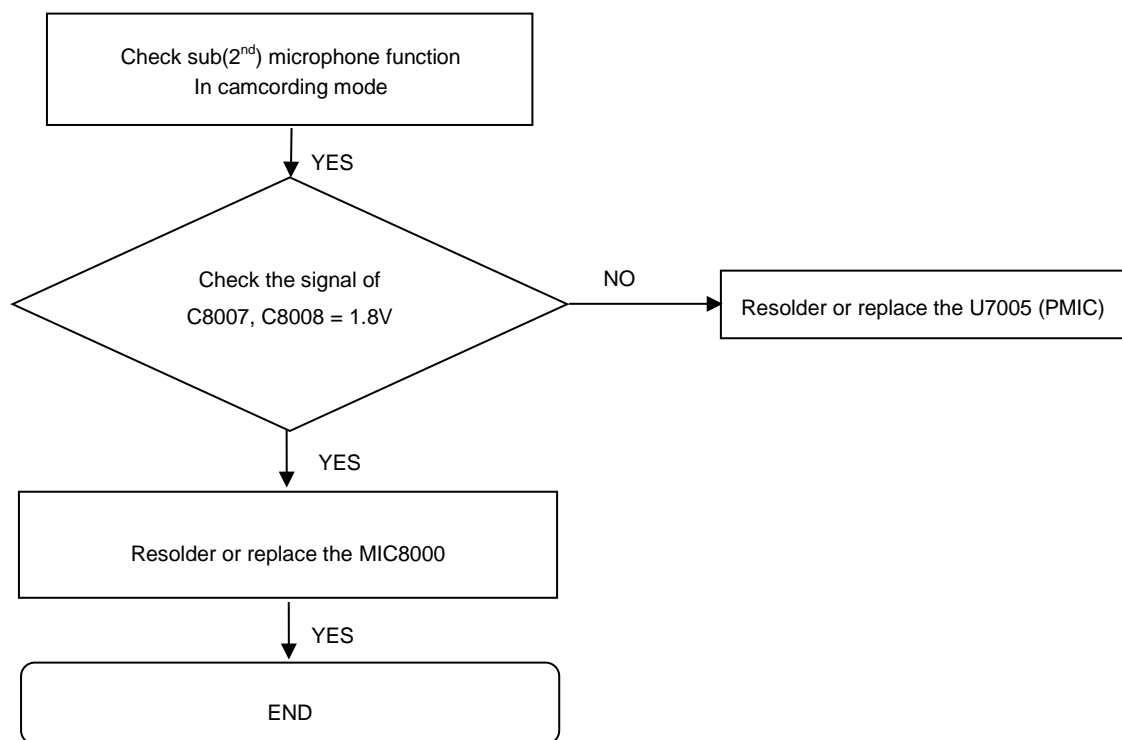
8. Level 3 Repair

8-4-16-1. Main MIC



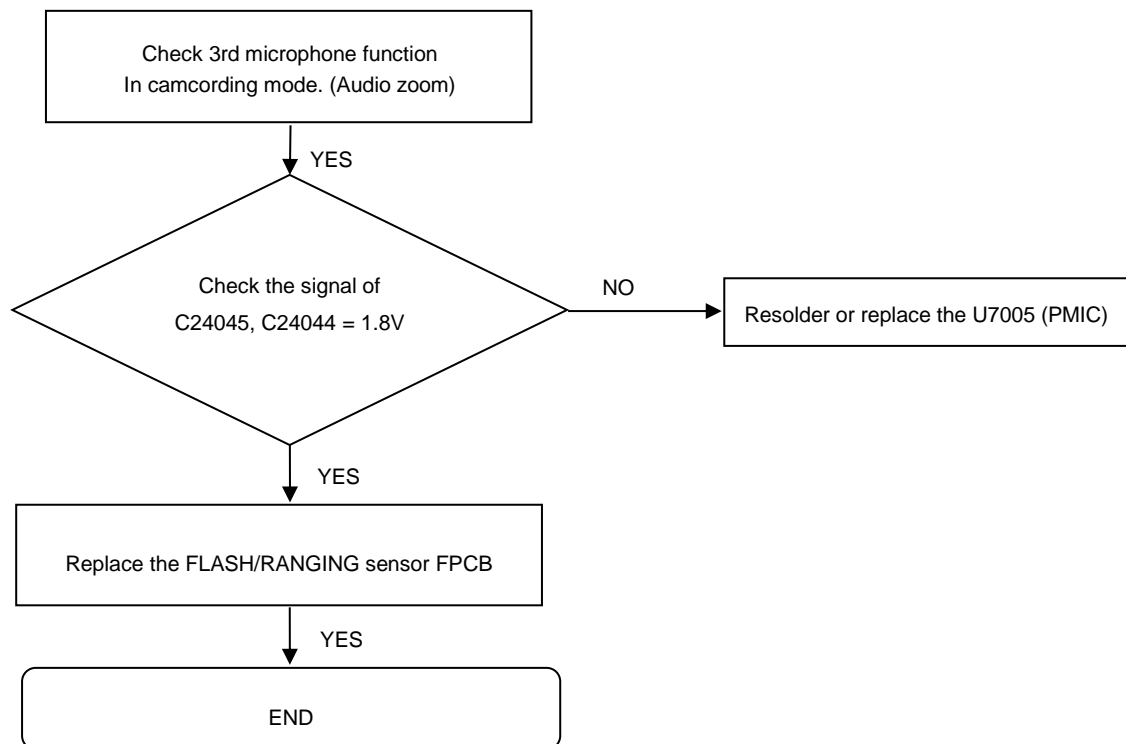
8. Level 3 Repair

8-4-16-2. Sub(2nd) MIC



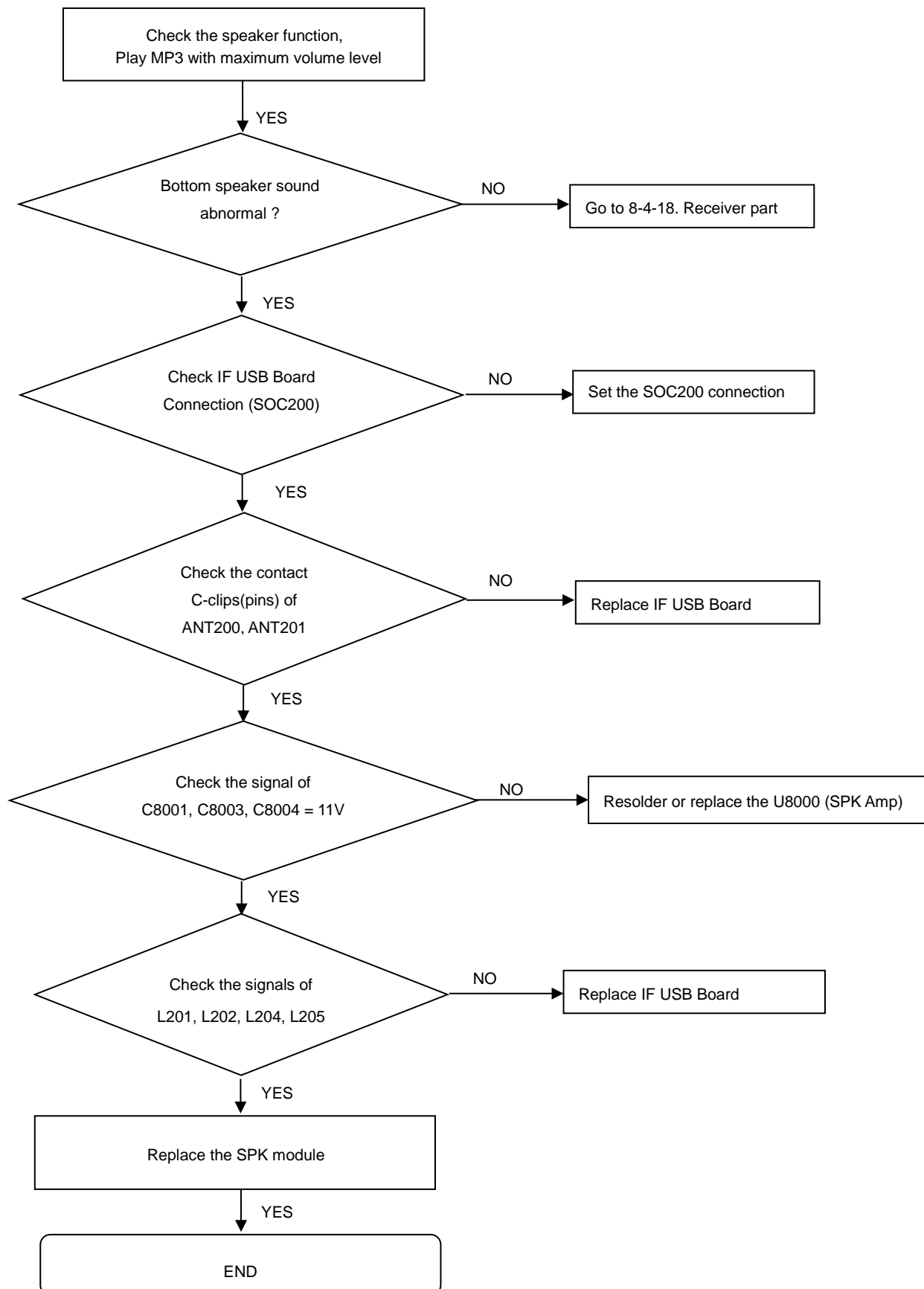
8. Level 3 Repair

8-4-16-3. 3rd MIC



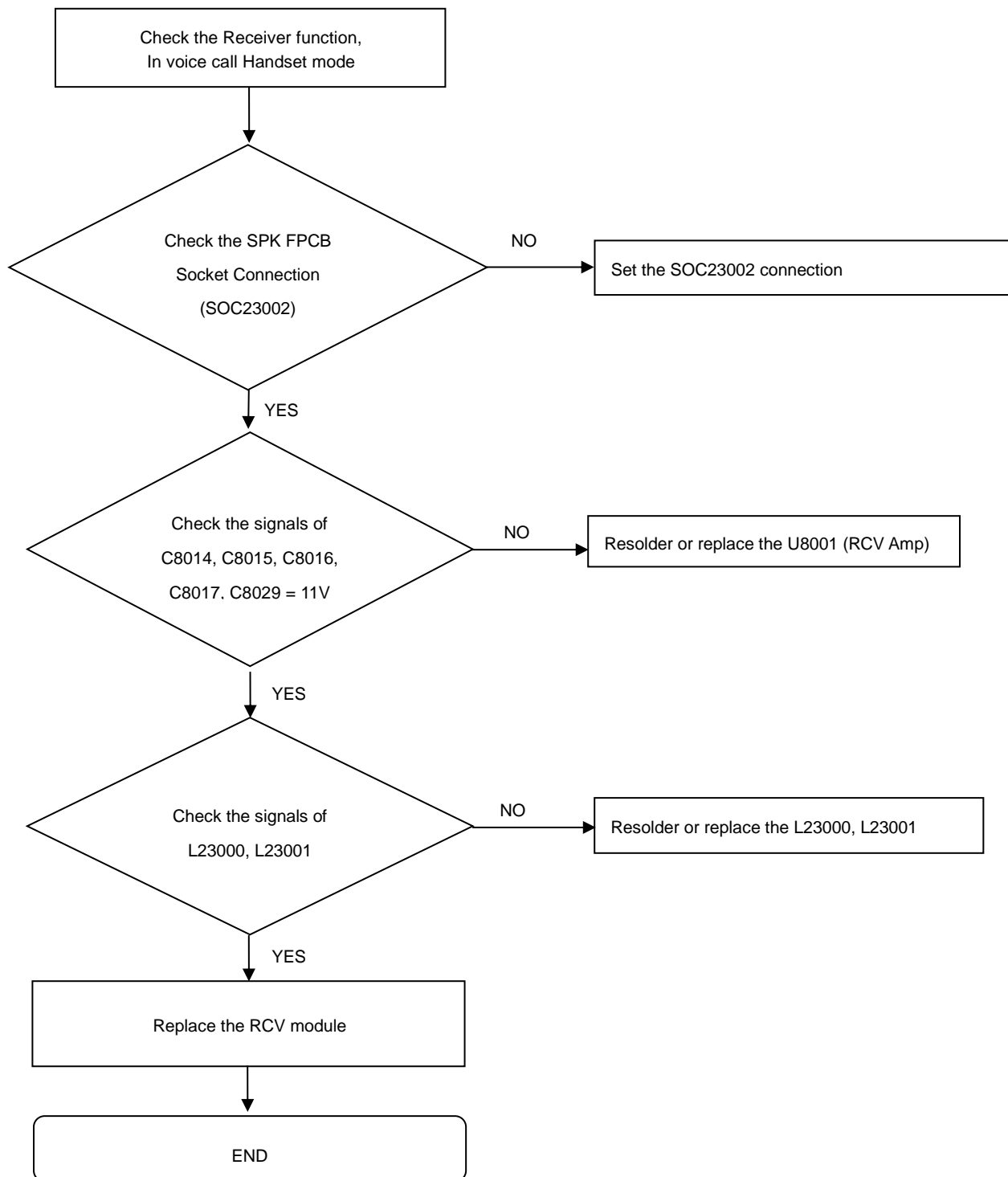
8. Level 3 Repair

8-4-17. Speaker part



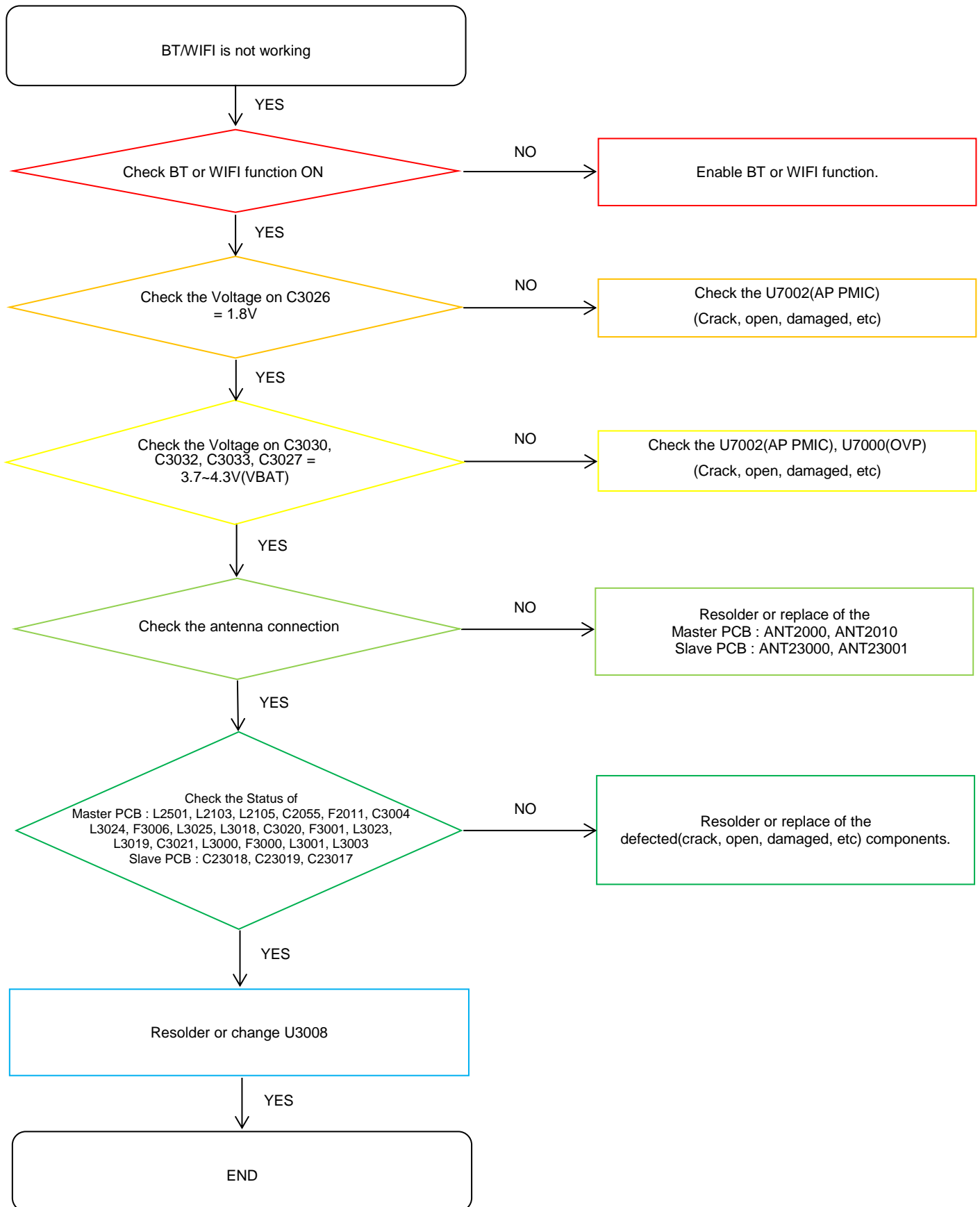
8. Level 3 Repair

8-4-18. Receiver part



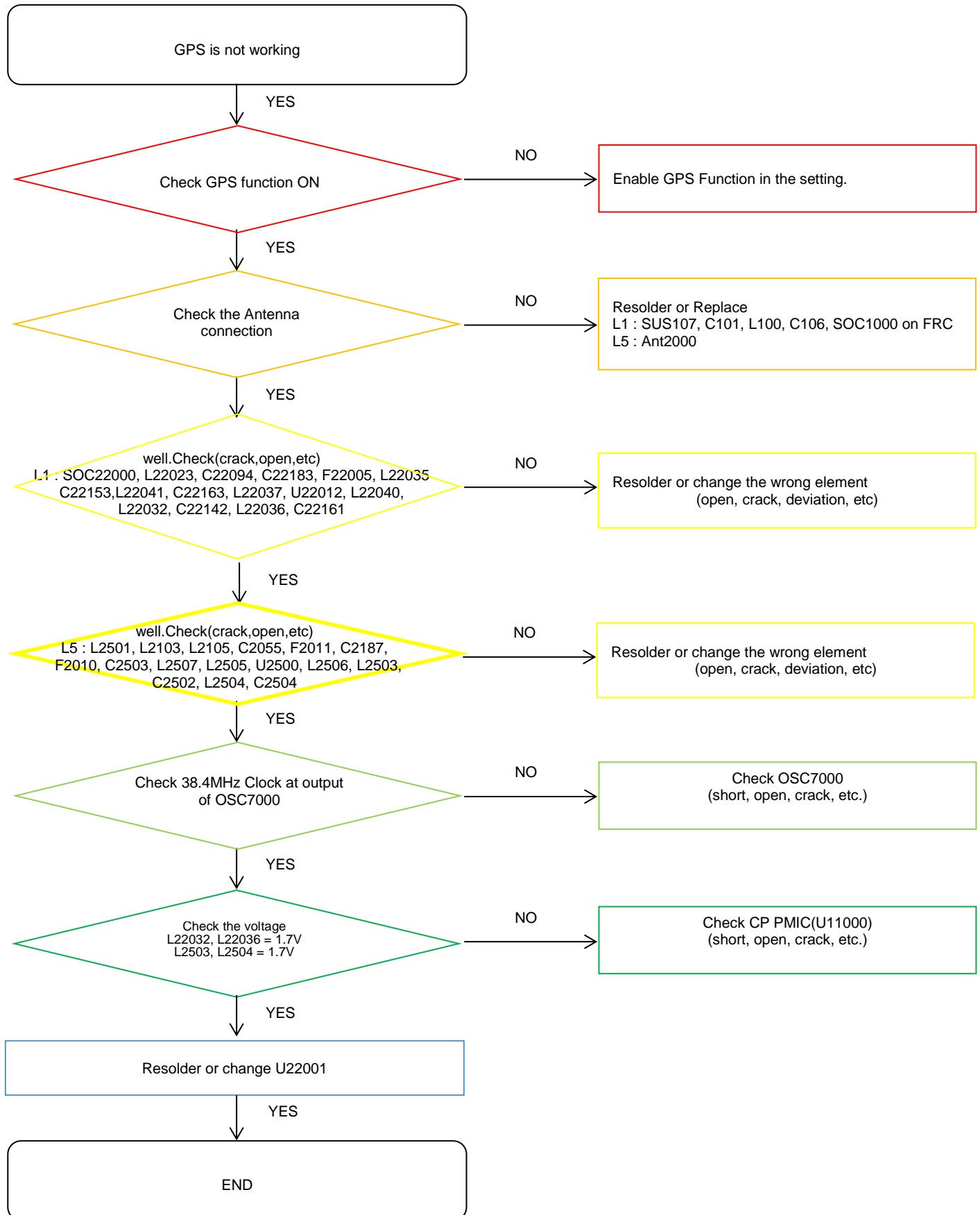
8. Level 3 Repair

8-4-19. BT/WIFI



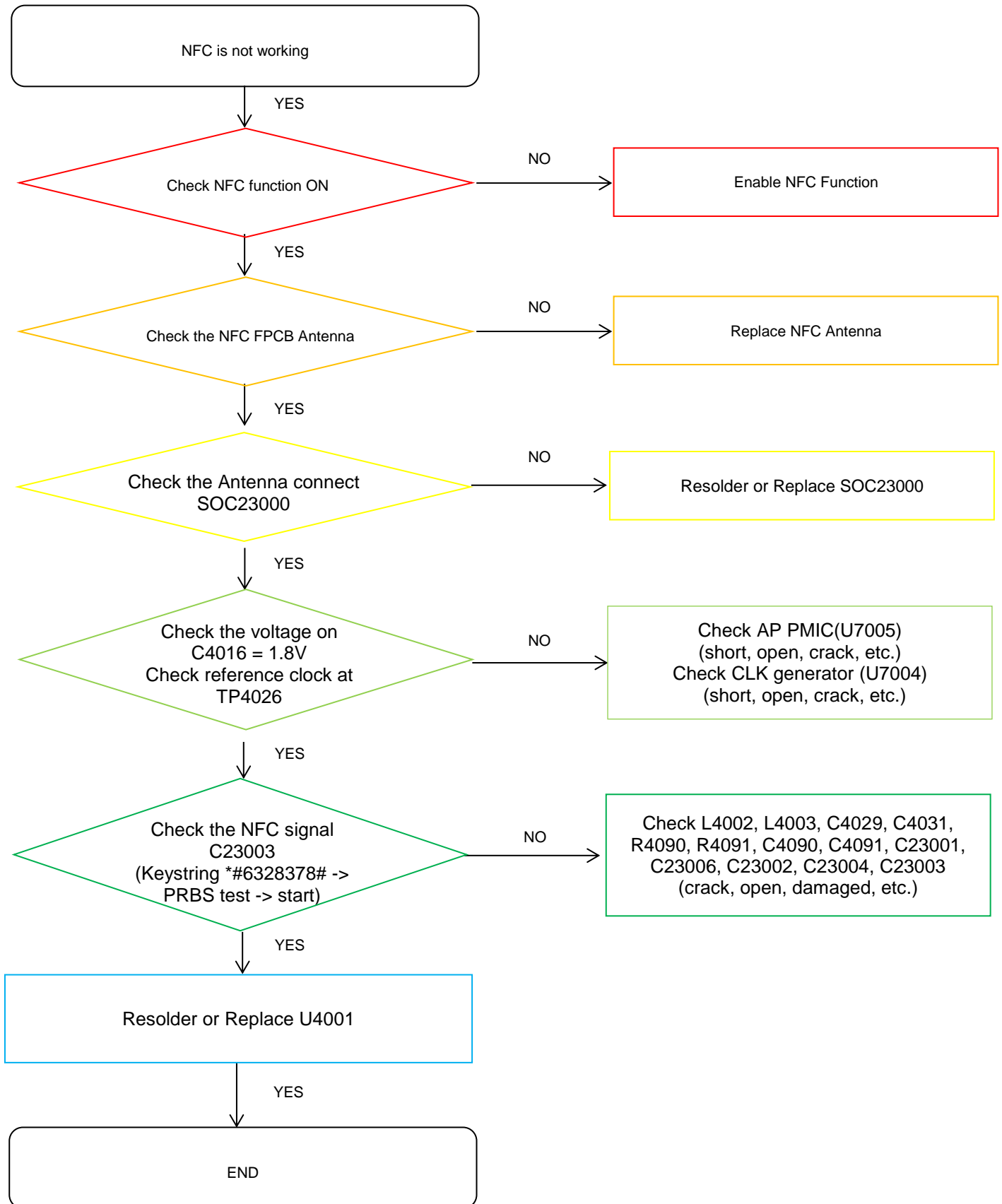
8. Level 3 Repair

8-4-20. GPS



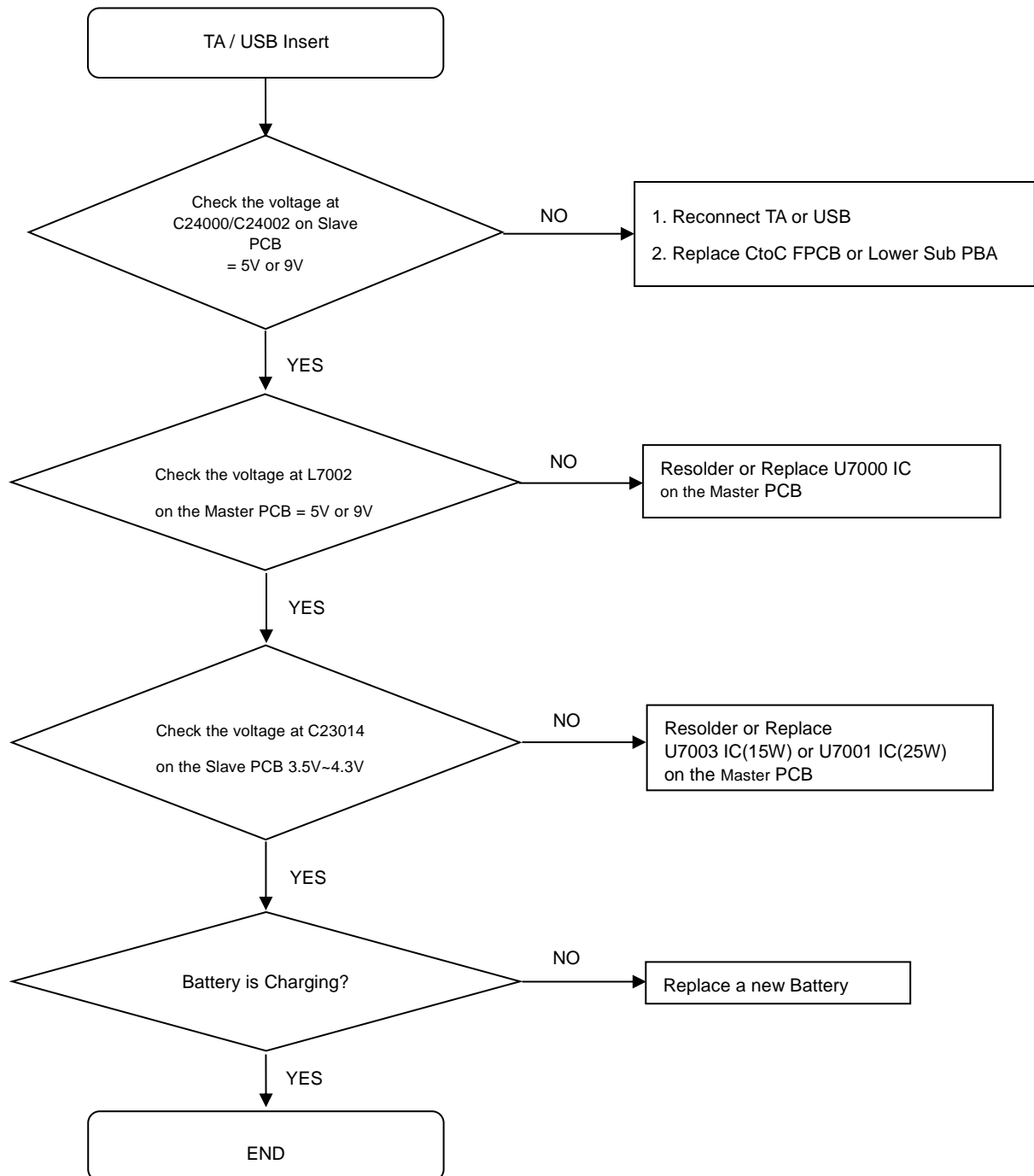
8. Level 3 Repair

8-4-21. NFC



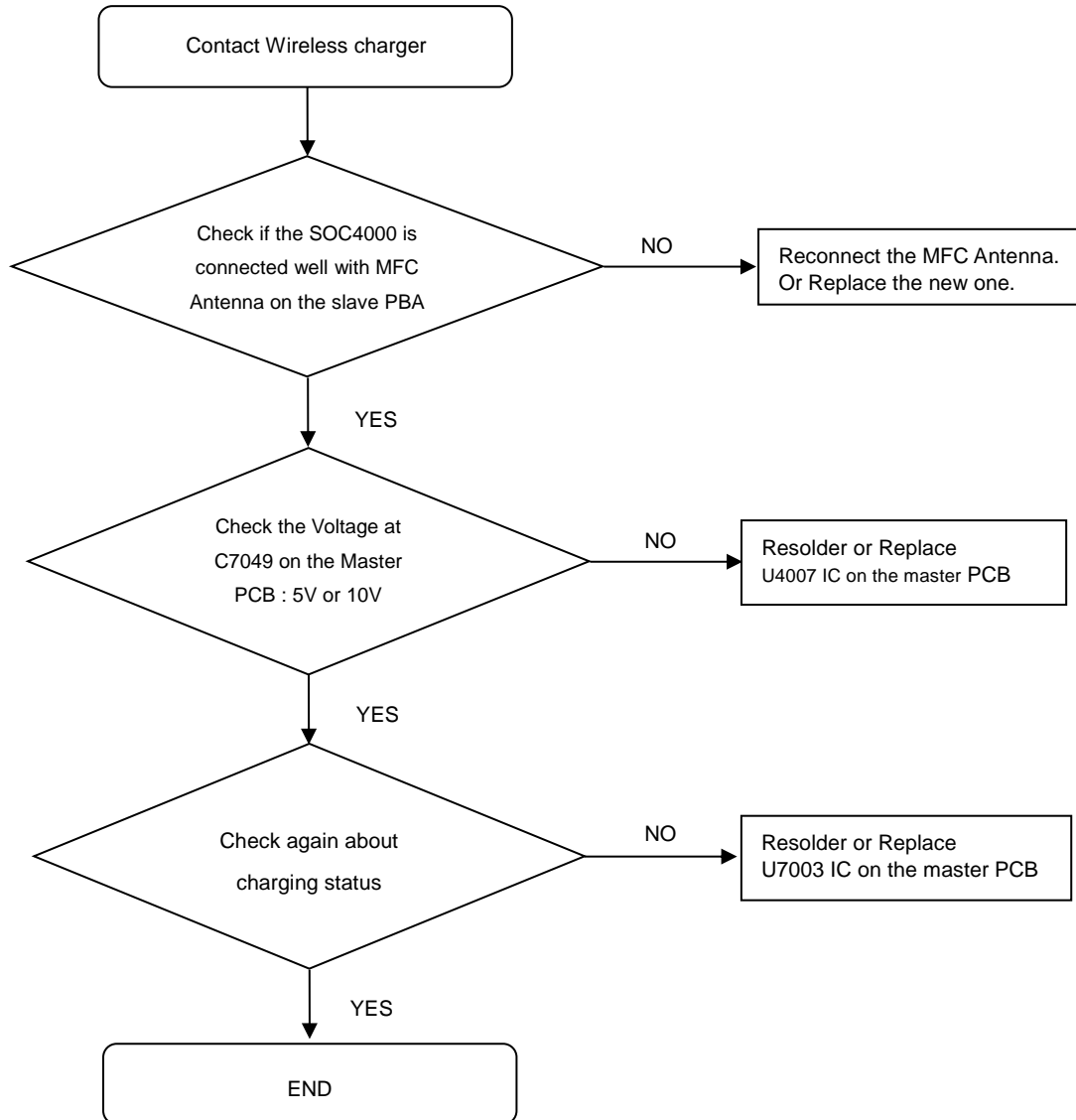
8. Level 3 Repair

8-4-22. Charging Part Charging (Normal/Fast)



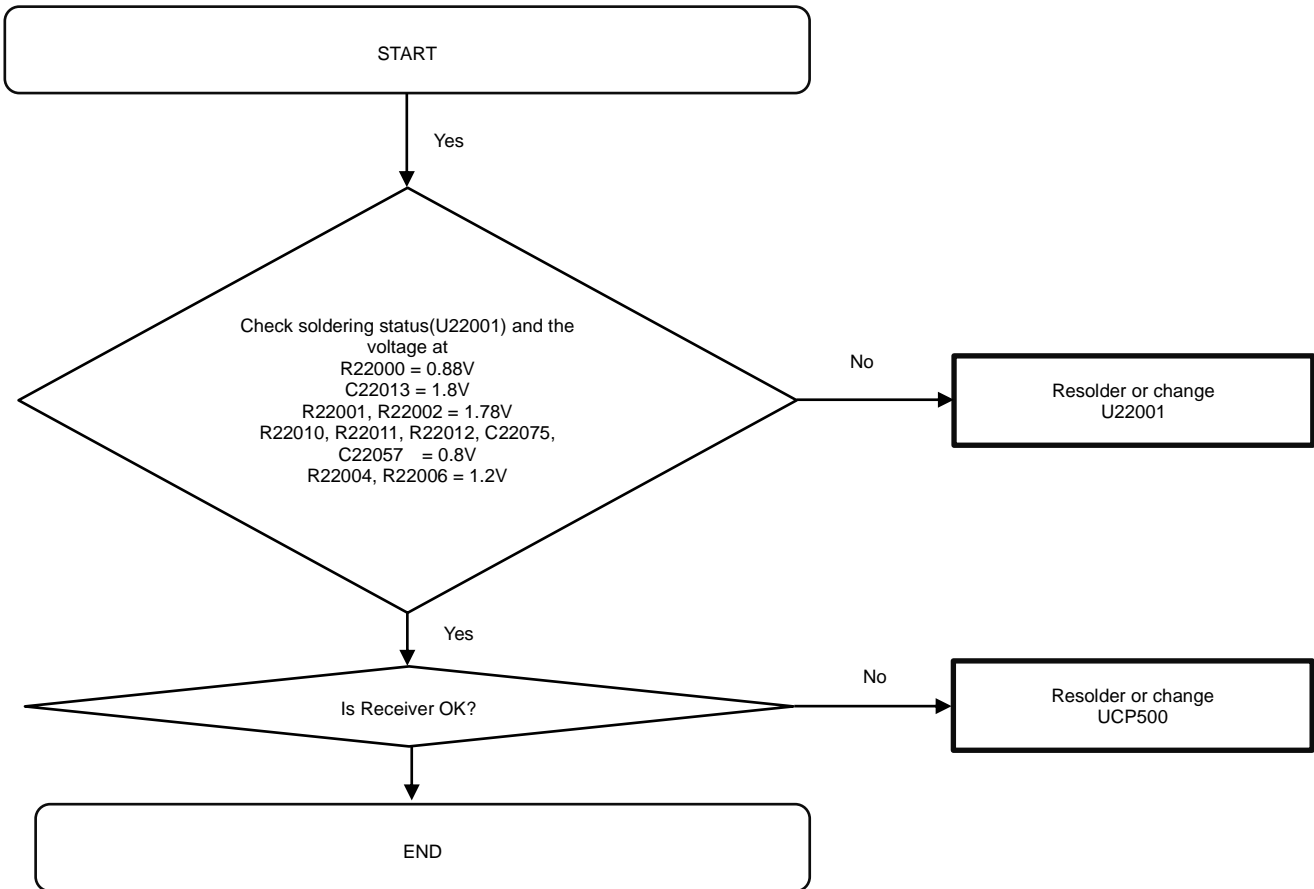
8. Level 3 Repair

8-4-23. Charging Part Wireless Charging (Normal/Fast)



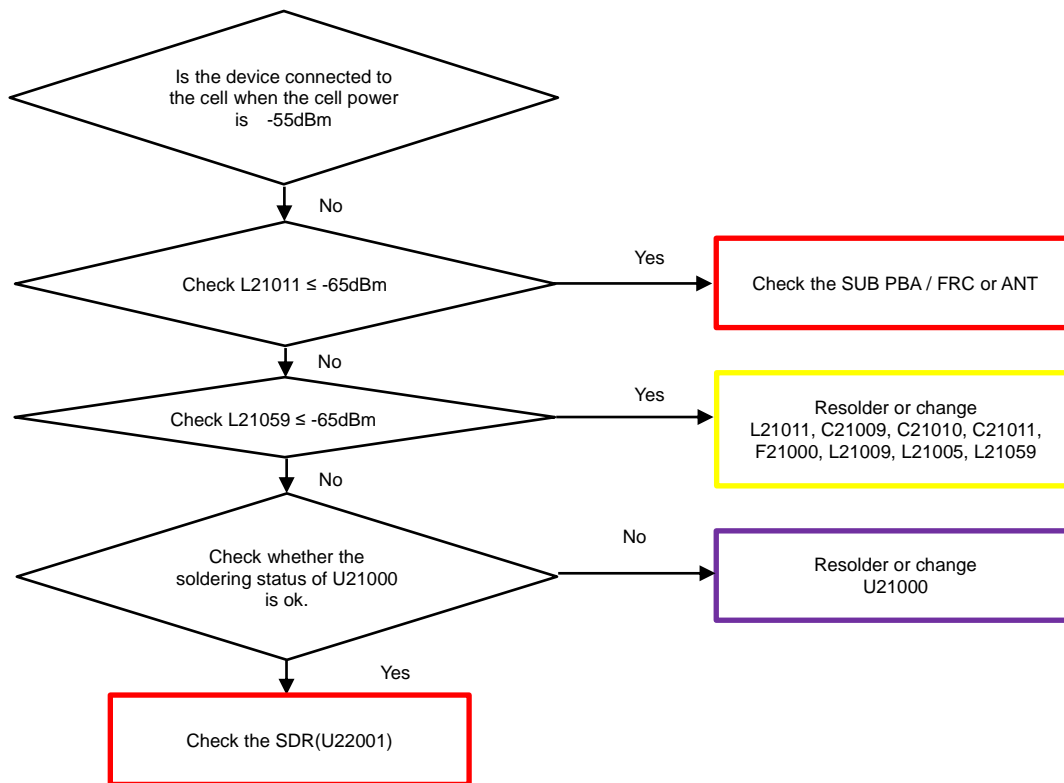
8. Level 3 Repair

8-4-24. Check the SDR (U22001)



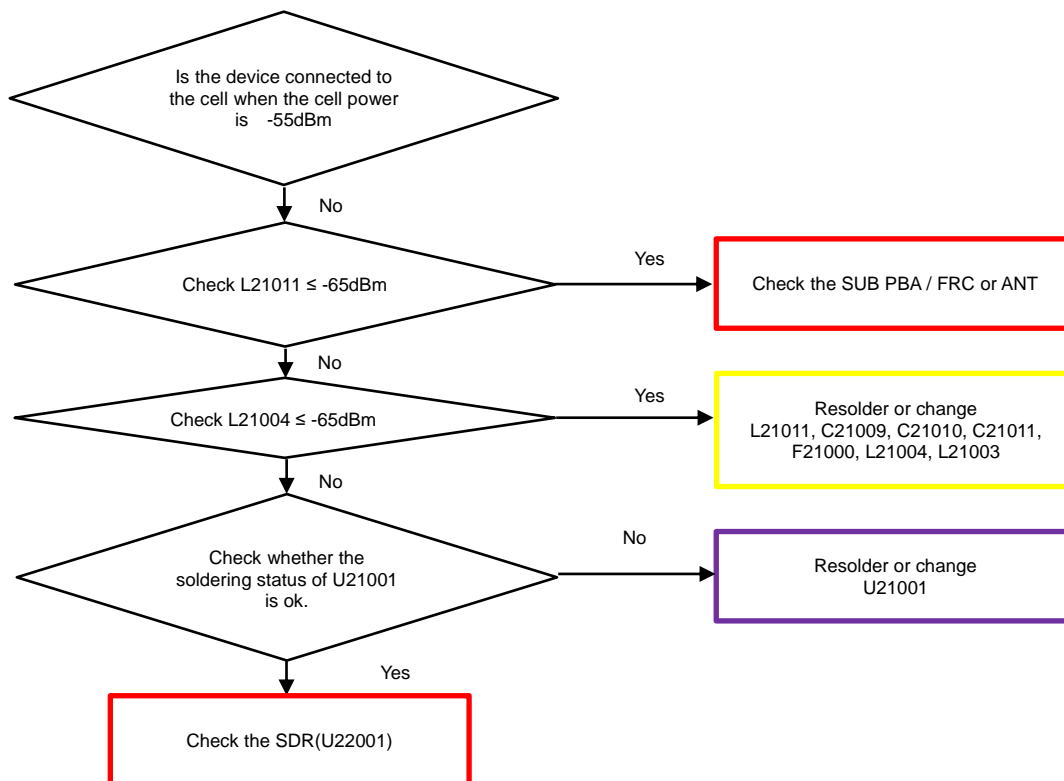
8. Level 3 Repair

8-4-25. GSM 850/900, CDMA BC0/10, WCDMA B5/8, LTE B5/8/12/13/14/18/19/20/26/28/29/71 NR N5/12/71 Rx



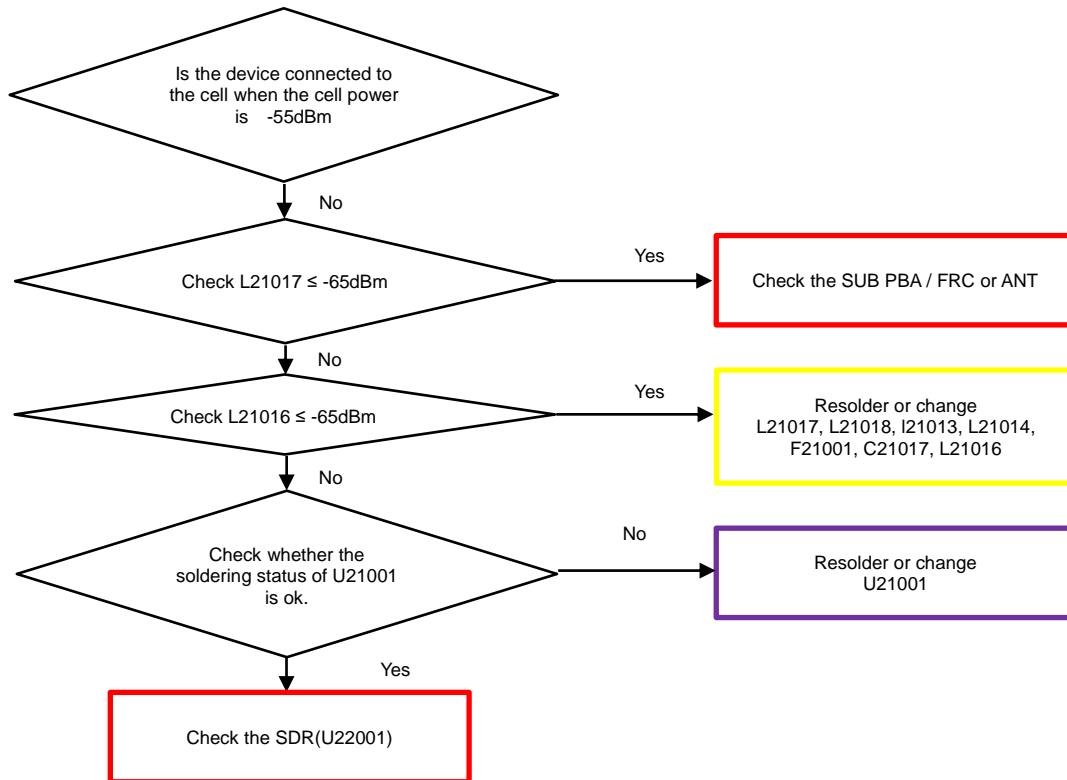
8. Level 3 Repair

8-4-26. GSM 1800/1900, CDMA BC1, WCDMA B1/2/4, LTE B1/2/3/4/25/39/66 NR N2/25/30/66 Rx



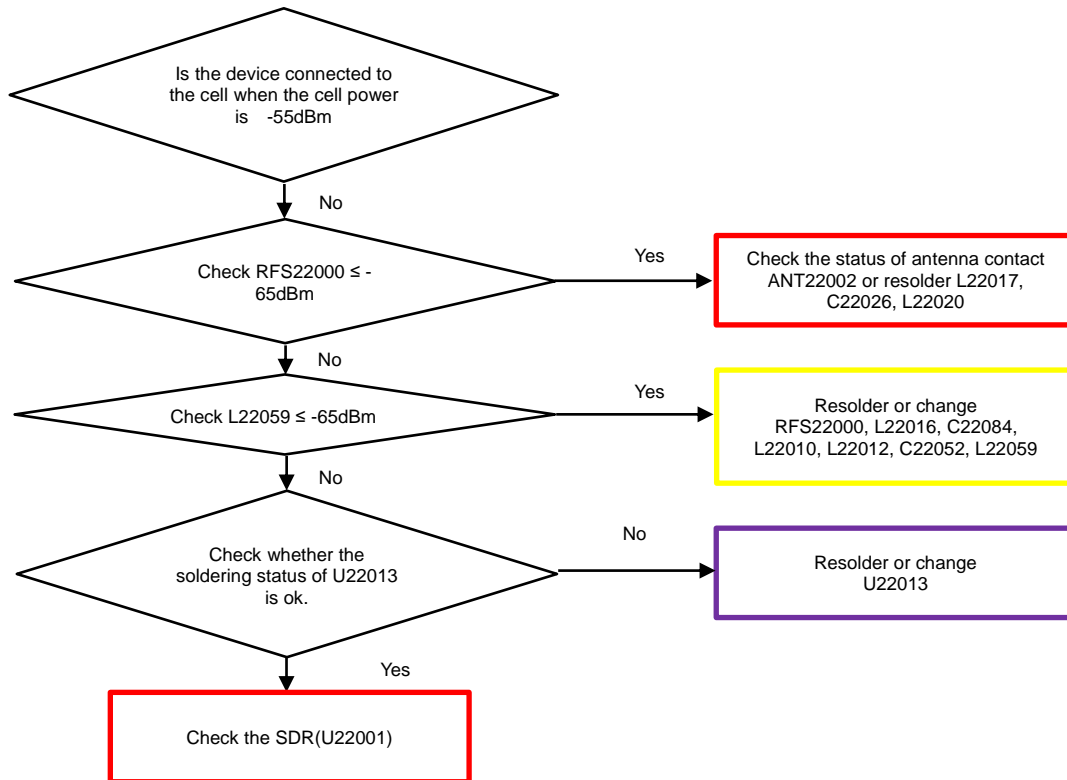
8. Level 3 Repair

8-4-27. LTE B7/38/41 Rx



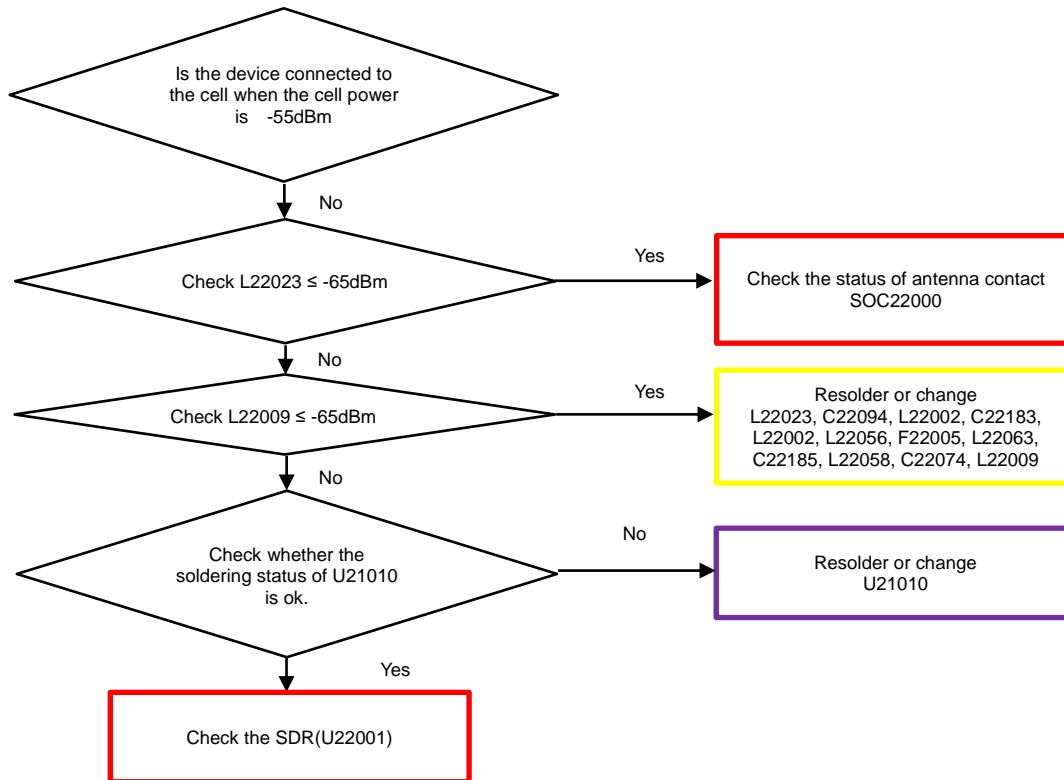
8. Level 3 Repair

8-4-28. LTE B48 NR N48/77/78 Rx



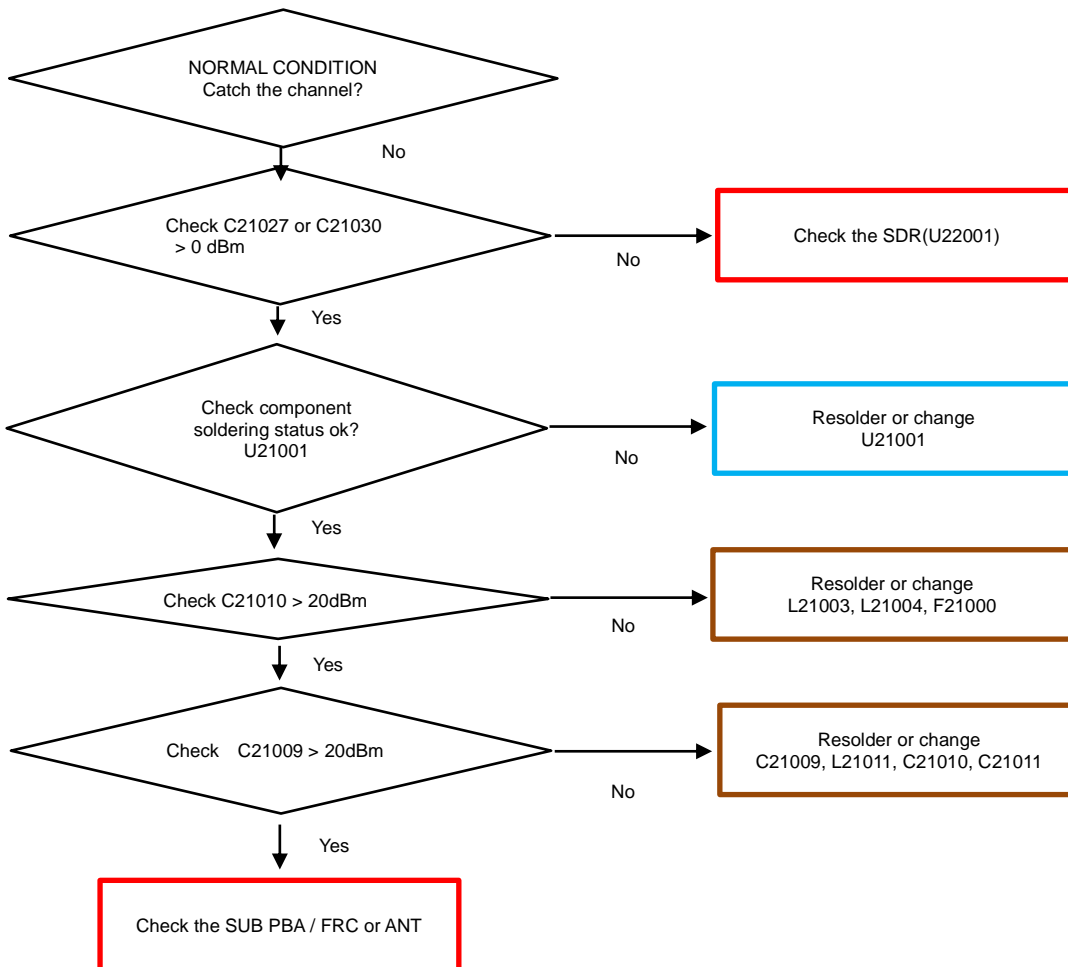
8. Level 3 Repair

8-4-29. NR N41 Rx



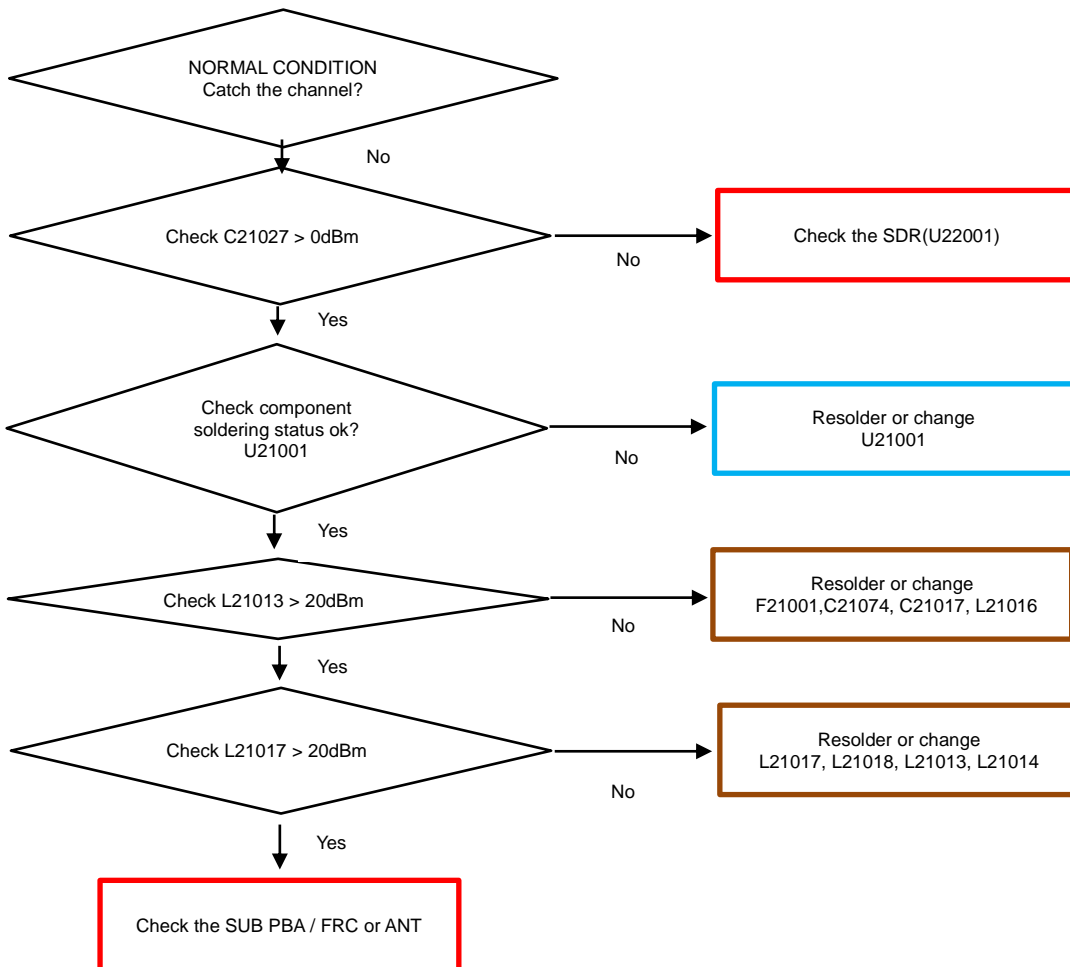
8. Level 3 Repair

8-4-30. CDMA BC1, WCDMA B1/2/4, TDSCDMA B34/39, LTE B1/2/3/4/25/66 B30/40 TX



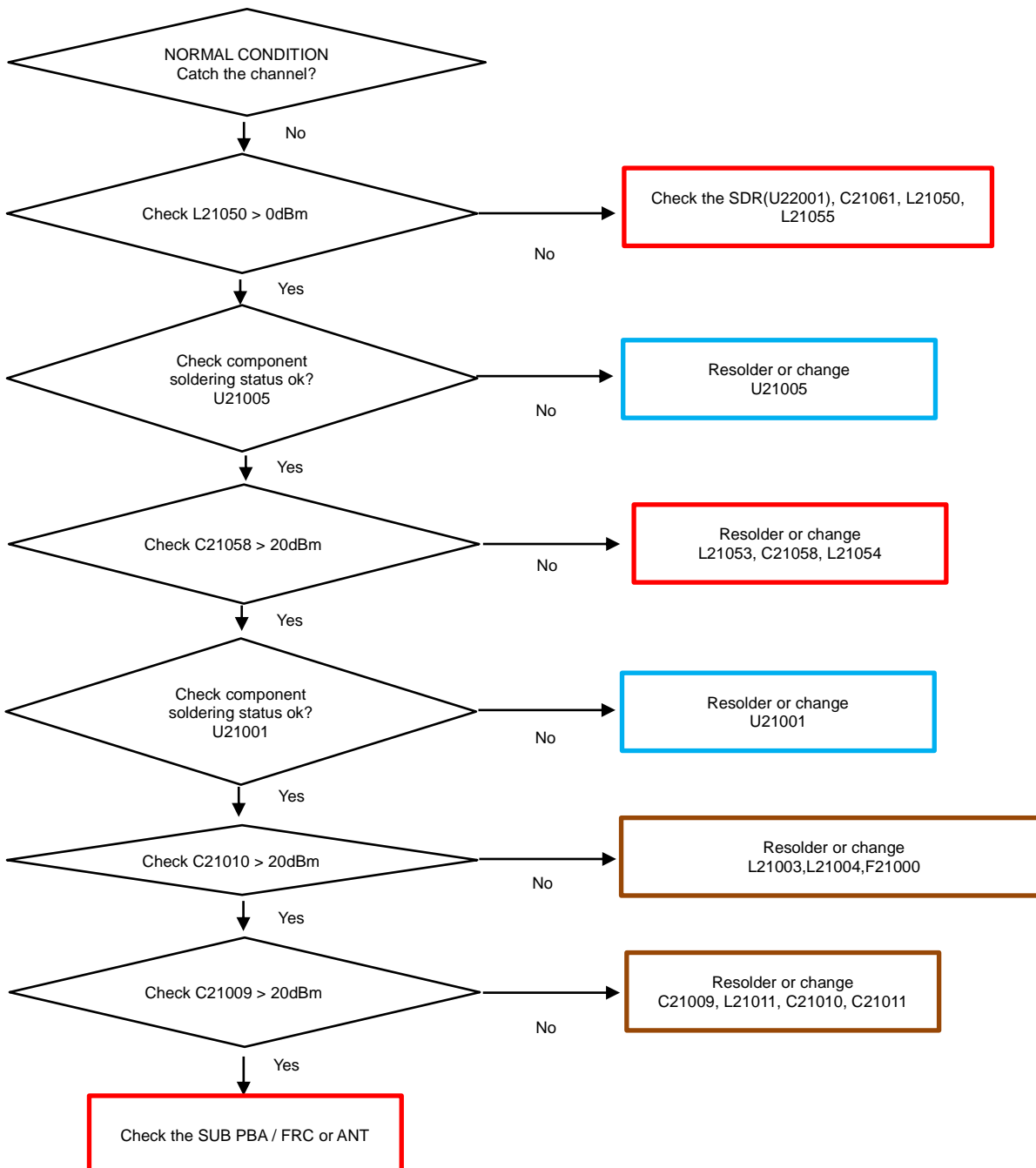
8. Level 3 Repair

8-4-31. LTE B7/38/41 TX



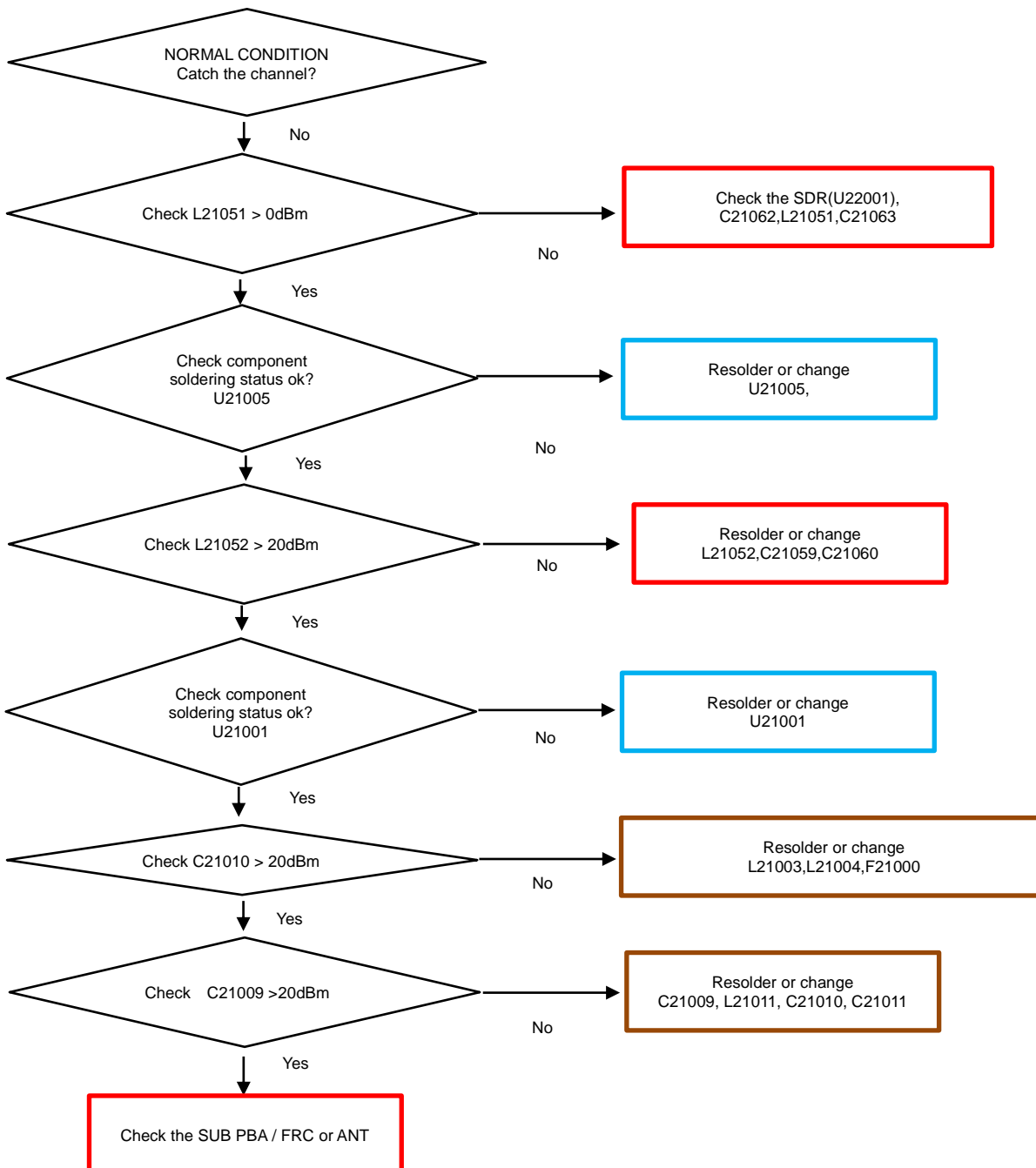
8. Level 3 Repair

8-4-32. GSM 1800/1900 TX



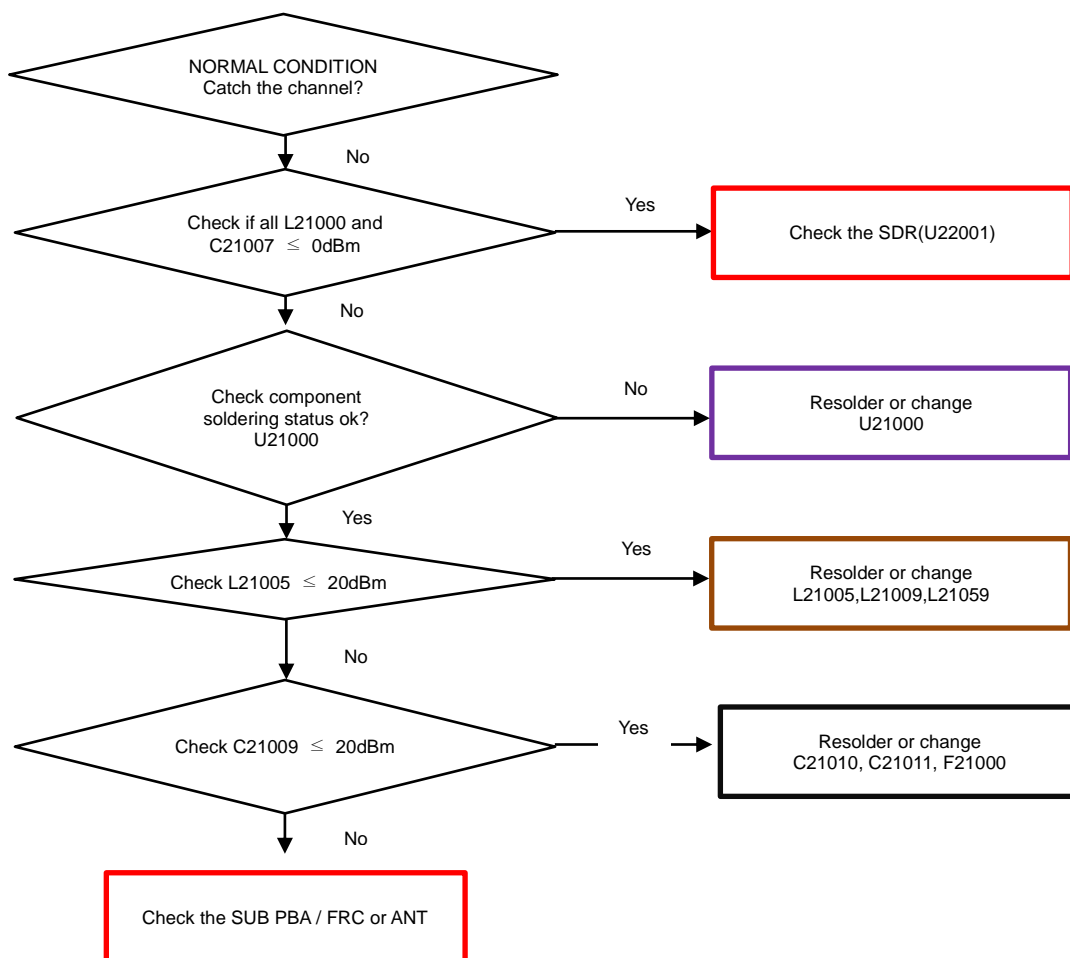
8. Level 3 Repair

8-4-33. GSM 850/900 TX



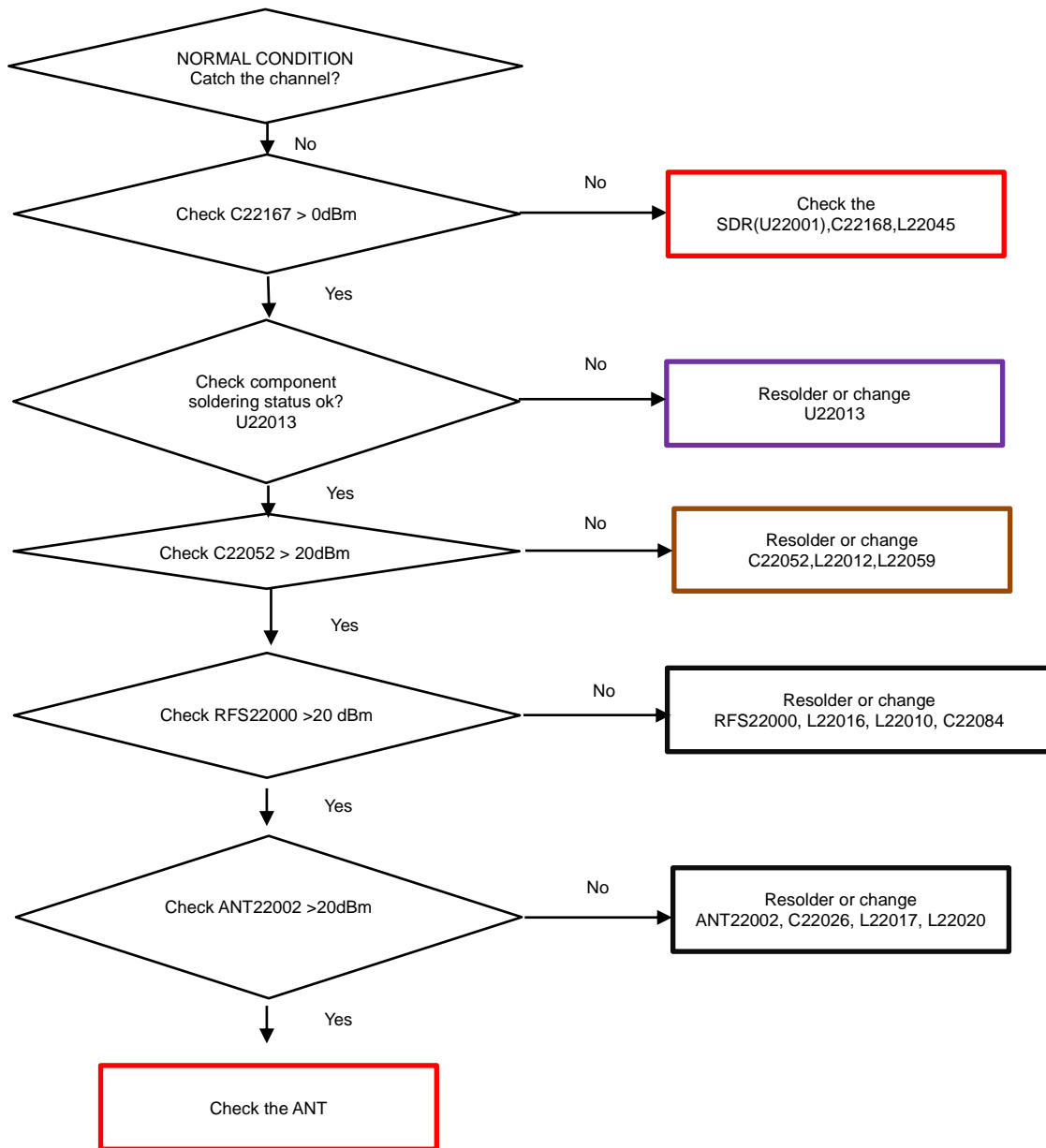
8. Level 3 Repair

8-4-34. CDMA BC0/10, WCDMA B5/8, LTE B5/8/12/13/14/18/19/ 20/26/28/29/71, NR n5/71 TX



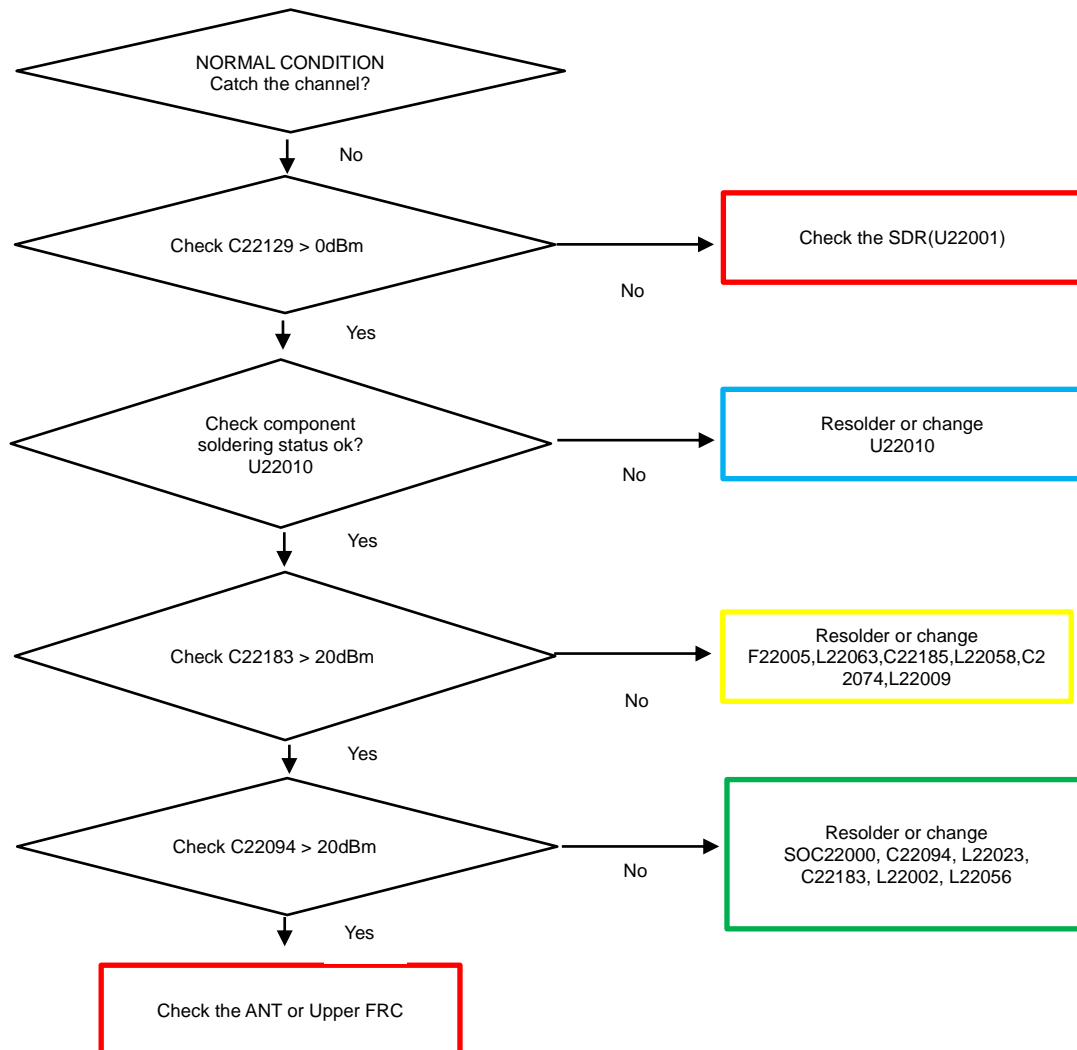
8. Level 3 Repair

8-4-35. B48 TX



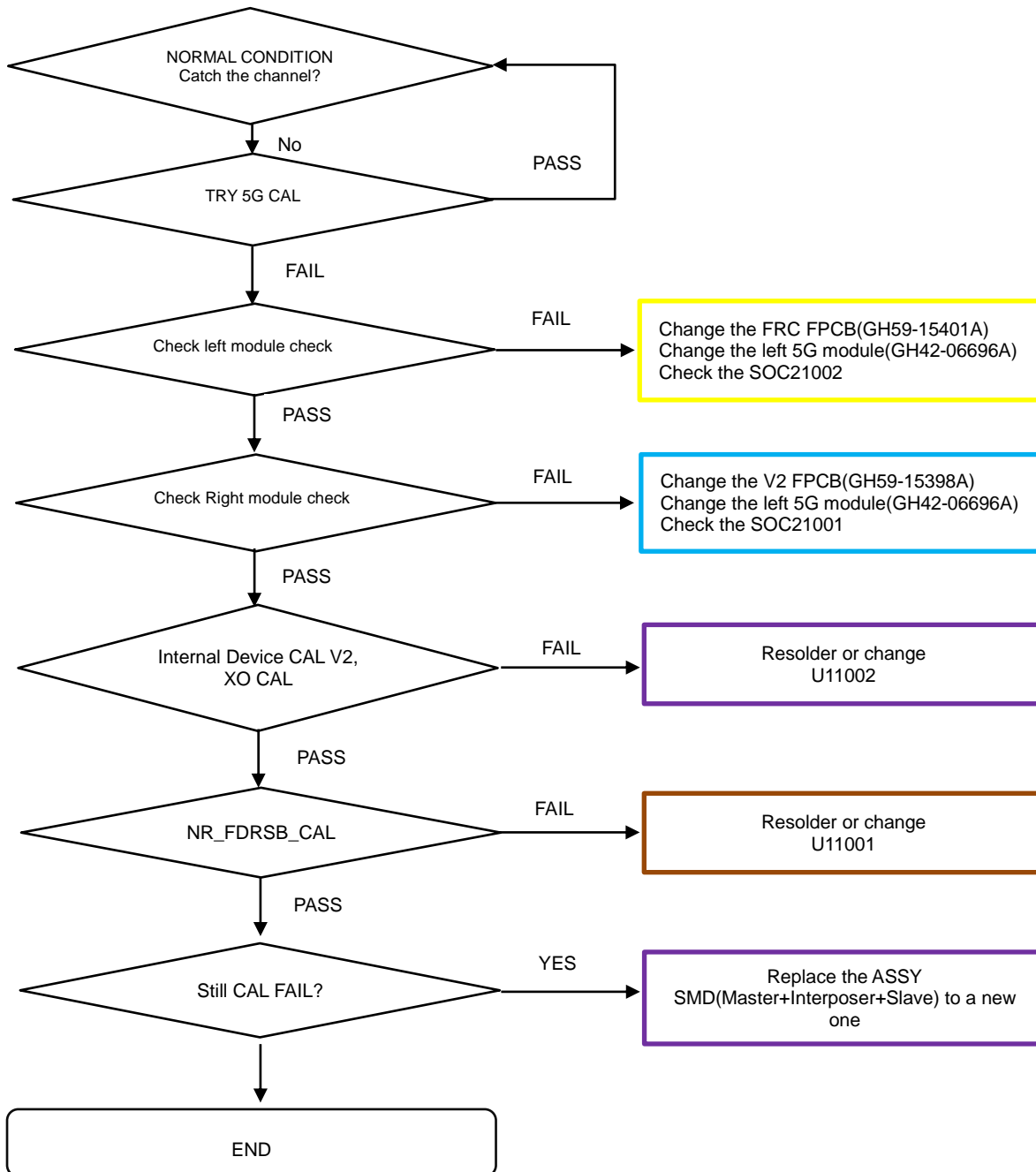
8. Level 3 Repair

8-4-36. NR n41 TX



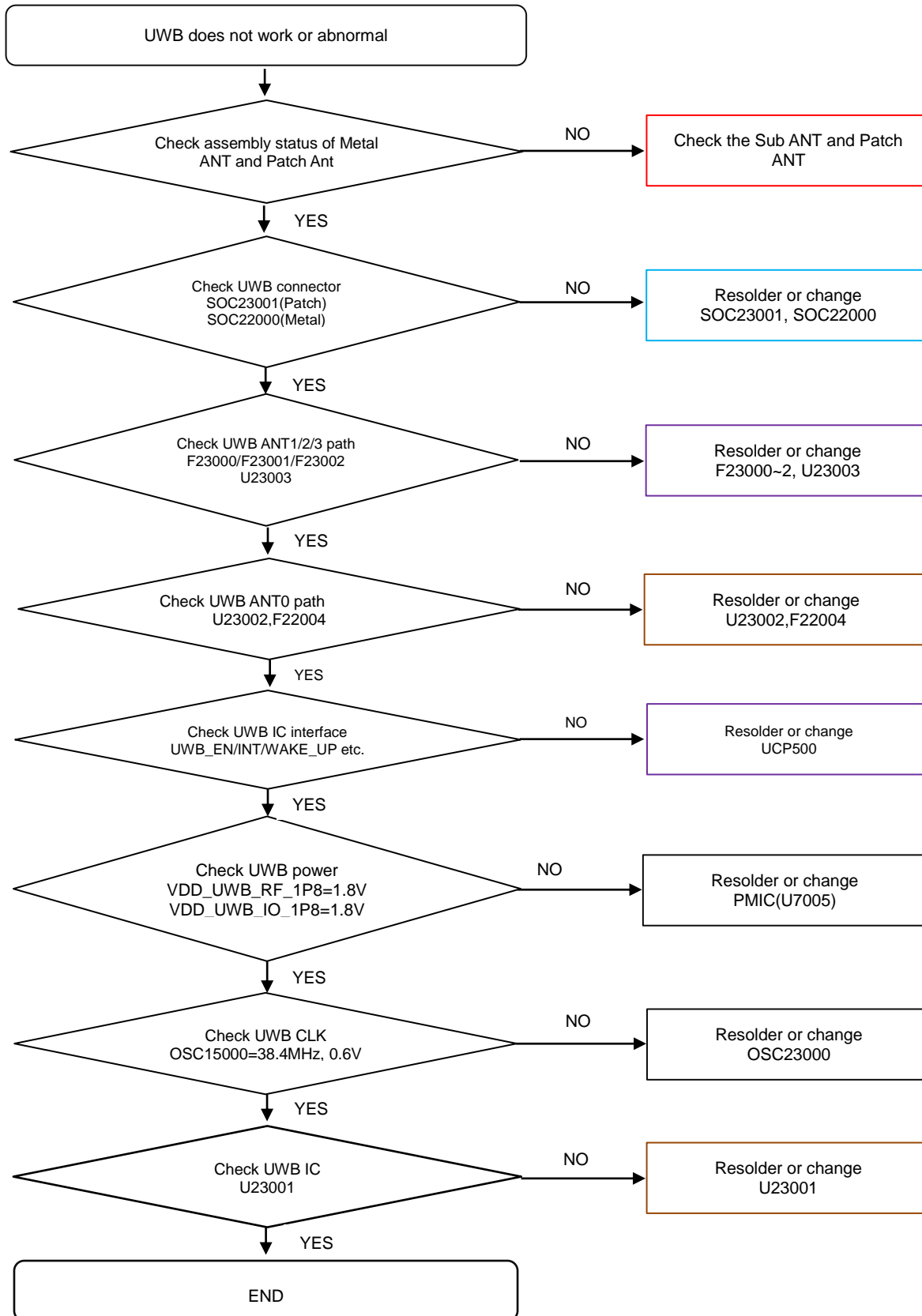
8. Level 3 Repair

8-4-37. 5G mmW



8. Level 3 Repair

8-4-38. UWB



8. Level 3 Repair

8-4-39. Dex Station

