

Service Manual

LG-D405

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1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of this model.

1.2 Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services.

System users are responsible for the security of own system. There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common carrier telecommunication service of facilities accessed through or connected to it. The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the phones or compatibility with the net work, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

D. Maintenance Limitations

Maintenance limitations on the phones must be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs expect as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

F. Pictures

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

A phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated by the  sign.

Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

2. PERFORMANCE

2.1 Product Name

LG- D405 : WCDMA900/1900/2100+EGSM/GSM850/DCS1800/PCS1900(HSPA + / GPRS Class 12 / EDGE Class 12)

2.2 Supporting Standard

Item	Feature	Comment
Supporting Standard	WCDMA(FDD1,2,8)/ EGSM/GSM850/DCS1800/PCS1900	
Frequency Range	WCDMA(FDD1) TX: 1920 – 1980 MHz WCDMA(FDD1) RX: 2110 – 2170 MHz WCDMA(FDD2) TX: 1850– 1910 MHz WCDMA(FDD2) RX: 1930 – 1990 MHz WCDMA(FDD8) TX: 880–915 MHz WCDMA(FDD8) RX: 925 – 960 MHz EGSM TX : 880 – 915 MHz EGSM RX : 925 – 960 MHz GSM850 TX : 824 – 849 MHz GSM850 RX : 869 – 894 MHz DCS1800 TX : 1710 – 1785 MHz DCS1800 RX : 1805 – 1880 MHz PCS1900 TX : 1850 – 1910 MHz PCS1900 RX : 1930 – 1990 MHz	
Application Standard	WAP 2.0	

2.3 Main Parts : GSM Solution

Item	Part Name	Comment
Digital Baseband	MSM8226: Qualcomm	
Analog Baseband	MSM8226 : Qualcomm	
RF Chip	WTR2605 : Qualcomm	

2.4 HW Features

Item		Part Name	Comment
Form Factor		DOP type	
Battery		1) Capacity Standard : Li-Ion, 2540mAh	
		2) Packing Type : Changeable	
Size		Standard :131.55 x 66.02 x 9.6	
Weight		124g	With Battery
PCB		10Any Layers , 0.8t	
Charging time		4.3hrs	@ Power Off / 2540mAh
RX sensitivity		WCDMA(FDD1) : -106.7dBm WCDMA(FDD2) : -106.7dBm WCDMA(FDD8) : -103.7dBm EGSM : -105dBm GSM850 : -105dBm DCS 1800 : -105dBm PCS 1900 : -105dBm	
TX output power	WCDMA/ GSM/ GPRS	WCDMA : 24dBm/3.84MHz,+1/-3dBm EGSM : 33 dBm GSM850 : 33dBm DCS 1800 : 30dBm PCS 1900 : 30dBm	Class3(WCDMA) Class4 (EGSM) Class4 (GSM850) Class1 (PCS) Class1 (DCS)
	EDGE	GSM850 : 27dBm GSM 900 : 27 dBm DCS 1800 : 26 dBm PCS 1900 : 26 dBm	E2 (GSM900) E2 (PCS) E2 (DCS)
GPRS compatibility		GPRS Class 33	
EDGE compatibility		EDGE Class 33	
SIM card type		Plug-In SIM 3V /1.8V	
Display		Main LCD(qHD) TFT Main LCD(4. 7",960 x 540)	
Built-in Camera		8M AF / VGA VT	
Status Indicator		N/A	

2. PERFORMANCE

Keypad	Function Key : 3 Side Key : 2	Function Key: Home,Back, menu Side Key : Volume key, power key
ANT	Main : Internal Fixed Type	
System connector	5 Pin	micro USB
Ear Phone Jack	3.5Phi, 4 Pole, Stereo	
PC synchronization	Yes	
Memory	eMMC : 8GByte SDRAM : 1GByte	
Speech coding	FR, EFR, HR,AMR	
Data & Fax	Built in Data & Fax support	
Vibrator	Built in Vibrator	
BlueTooth	V4.0	
MIDI(for Buzzer Function)	128 Poly	
Music Player	MP3,AAC,(e)AAC+,WMA,RA,WAV	
Video Player	Playback : 30fps 1080p (H.264/263, MPEG4/2, WMV9, VC1, VP8, DivX, XVID)	
	Recording : 30fps 1080p (H.264/263, MPEG4/8) 30fps 720p (Wi-Fi display)	
Camcorder	MPEG4/8	
Voice Recording	Yes	
Speaker Phone mode Support	Yes	
Travel Adapter	Yes	In-box item
CDROM	No	
Stereo Headset	Yes	In-box item
Data Cable	Yes	In-box item
T-Flash(External Memory)	No	

2. PERFORMANCE

	Specification	
	GSM	WCDMA
Stand by current (Sleep & Idle Avg.)	Under 4.5mA@ P.P 5	Under 4.5mA @ DRX 7
Talk current	Under 400 mA @GSM Level 5	Under 600mA @ Max Power Avg. Under 400 mA @ Tx10dBm Avg.

2.5 SW Features

Item	Feature	Comment
RSSI	0 ~ 5 Levels	
Battery Charging	0 ~ 20 Levels	
Key Volume	0 ~ 7 Level	
Audio Volume	1 ~ 15 Level	
Time / Date Display	Yes	
Multi-Language	Yes	English/Spanish/French/Korean/Chinese, etc...
Quick Access Mode	Phone / Messaging / Email/ Camera	
PC Sync	No	
Speed Dial	Yes	Voice mail -> 1 key
Profile	Yes	not same with feature phone setting
CLIP / CLIR	Yes	
Phone Book	Name/Number/Cose save mode/Email/Address/Groups/Ringtone/Organization/IM/Notes/Nickname/website/Events	There is no limitation on the number of items. It depends on available memory amount.
Last Dial Number	Yes	
Last ReceivedNumber	Yes	
Last Missed Number	Yes	
Search by Number/Name	Yes	
Group	Yes	
Fixed Dial Number	Yes	
Service Dial Number	Yes	
Own Number	Yes	
Voice Memo	Yes	
Call Reminder	No	
Network Selection	Automatic	

2. PERFORMANCE

Mute	Yes	
Call Divert	Yes	
Call Barring	No	
Call Charge (AoC)	No	
Call Duration	No	
SMS (EMS)	There is no limitation on the number of items. It depends on available memory amount.	EMS is not supported.
SMS Over GPRS	Yes	
EMS Melody / Picture Send / Receive / Save	No	
MMS MPEG4 Send /Receive / Save	Yes	
Long Message	Yes	
Cell Broadcast	Yes	
Download	Yes	
Game	Yes	
Calendar	Yes	
Memo	No	
World Clock	Yes	
Unit Convert	No	
Stop Watch	Yes	
Wall Paper	Yes	
WAP Browser	Yes	WAP stack and wml are not supported.
Download Melody / Wallpaper	Yes	Over web browser or Google Play
SIM Lock	No	
SIM Toolkit	Class 1,2,3,C,E	
MMS	Yes	
EONS	Yes	
CPHS	Yes	
ENS	No	

2. PERFORMANCE

Camera	Yes	Main : 8M AF VT : VGA
JAVA	No	Android don't support JAVA
Voice Dial	No	
IrDa	Yes	
Bluetooth	Yes	Ver. 4.0
FM radio	Yes	
GPRS	Yes	Class 12
EDGE	Yes	Class 12
Hold / Retrieve	Yes	
Conference Call	Yes	Max. 7
DTMF	Yes	
Memo pad	No	
TTY	No	
AMR	Yes	Both NB and WB
SyncML	No	
IM	Yes	Hangouts
Email	Yes	

2.6 HW SPEC.

1) GSM transceiverspecification

Item	Specification
Phase Error	Rms : 5°/ Peak : 20 °
Frequency Error	GSM : 0.1 ppm DCS/PCS : 0.1 ppm
EMC(Radiated Spurious Emission Disturbance)	GSM/DCS : < -28dBm
Transmitter Output power and Burst Timing	GSM : 5dBm – 33dBm ± 2dB DCS/PCS : 0dBm – 30dBm ± 2dB
Burst Timing	<3.69us
Spectrum due to modulation out to less than 1800kHz offset	200kHz : -36dBm 600kHz : -51dBm/-56dBm
Spectrum due to modulation out to larger than 1800kHz offset to the edge of the transmit band	GSM : 1800-3000kHz : < -63dBc(-46dBm) 3000kHz-6000kHz : < -65dBc(-46dBm) 6000kHz < : < -71dBc(-46dBm) DCS : 1800-3000kHz : < -65dBc(-51dBm) 6000kHz < : < -73dBc(-51dBm)
Spectrum due to switching transient	400kHz : -19dBm/-22dBm(5/0), 600kHz : -21dBm/-24dBm(5/0),
Reference Sensitivity – TCH/FS	Class II(RBER) : -105dBm(2.439%)
Usable receiver input level range	0.012(-15 - -40dBm)
Intermodulation rejection – Speech channels	± 800kHz, ± 1600kHz : -98dBm/-96dBm (2.439%)
AM Suppression – GSM : -31dBm - DCS : -29dBm	-98dBm/-96dBm (2.439%)
Timing Advance	± 0.5T

2) WCDMA transmitter specification

Item	Specification
Transmit Frequency	Band1 : 1920 MHz ~ 1980 MHz Band2 : 1850 MHz ~ 1910 MHz Band8 : 880MHz ~ 915MHz
Maximum Output Power	+24dBm / 3.84 MHz, +1 / -3 dB
Frequency Error	within ± 0.1 PPM
Open Loop Power Control	Normal Conditions : within ± 9 dB, Extreme Conditions : within ± 12 dB
Minimum Transmit Power	< -50 dBm / 3.84 MHz
Occupied Bandwidth	< 5 MHz at 3.84 Mcps (99% of power)
Adjacent Channel Leakage Power Ratio (ACLR)	> 33 dB @ ± 5 MHz, > 43 dB @ ± 10 MHz
Spurious Emissions $ f-f_c > 12.5$ MHz	< -36 dBm / 1 kHz RW @ $9 \text{ kHz} \leq f < 150 \text{ kHz}$ < -36 dBm / 10 kHz RW @ $150 \text{ kHz} \leq f < 30 \text{ MHz}$ < -36 dBm / 100 kHz RW @ $30 \text{ MHz} \leq f < 1 \text{ GHz}$ < -30 dBm / 1 MHz RW @ $1 \text{ GHz} \leq f < 12.75 \text{ GHz}$ < -60 dBm / 3.84 MHz RW @ $880 \text{ MHz} \leq f \leq 915 \text{ MHz}$ < -60 dBm / 3.84 MHz RW @ $1920 \text{ MHz} \leq f \leq 1980 \text{ MHz}$ < -67 dBm / 100 kHz RW @ $925 \text{ MHz} \leq f \leq 935 \text{ MHz}$ < -79 dBm / 100 kHz RW @ $935 \text{ MHz} < f \leq 960 \text{ GHz}$ < -71 dBm / 100 kHz RW @ $1805 \text{ MHz} \leq f \leq 1880 \text{ MHz}$ < -41 dBm / 300 kHz RW @ $1884.5 \text{ MHz} < f < 1919.6 \text{ MHz}$
Transmit Intermodulation	< -31 dBc @ 5 MHz & < -41 dBc @ 10 MHz when Interference CW Signal Level = -40 dBc
Error Vector Magnitude	< 17.5 %, when $P_{out} \geq -20$ dBm
Peak Code Domain Error	< -15 dB at $P_{out} \geq -20$ dBm

3) WCDMA receiver specification

Item	Specification																			
Receive Frequency	Band1 : 2110 MHz ~ 2170 MHz Band2 : 1930 MHz ~ 1990 MHz Band8 :925MHz ~ 960MHz																			
Reference Sensitivity Level	Band1 : BER < 0.001 when Îor = -106.7 dBm / 3.84 MHz Band8 : BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz																			
Maximum Input Level	BER < 0.001 when Îor = -25 dBm / 3.84 MHz																			
Adjacent Channel Selectivity (ACS)	ACS > 33 dB where BER < 0.001 when Îor = -92.7 dBm / 3.84 MHz &loac = -52 dBm / 3.84 MHz @ ±5 MHz																			
Blocking Characteristic	BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz &lblocking = -56 dBm / 3.84 MHz @ Fuw(offset) = ±10 MHz orlblocking = -44 dBm / 3.84 MHz @ Fuw(offset) = ±15 MHz																			
Spurious Response	BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz &lblocking = -44 dBm																			
Intermodulation	BER < 0.001 when Îor= -103.7 dBm / 3.84 MHz & louw1 = -46 dBm @ Fuw1(offset) = ±10 MHz & louw2 = -46 dBm / 3.84 MHz @ Fuw2(offset) = ±20 MHz																			
Spurious Emissions	< -57 dBm / 100 kHz BW @ 9 kHz ≤ f < 1 GHz < -47 dBm / 1 MHz BW @ 1 GHz ≤ f ≤ 12.75 GHz																			
Inner Loop Power Control In Uplink	Adjust output(TPC command) <table><tr><td>cmd</td><td>1dB</td><td>2dB</td><td>3dB</td></tr><tr><td>+1</td><td>+0.5/1.5</td><td>+1/3</td><td>+1.5/4</td></tr><tr><td>0</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td></tr><tr><td>-1</td><td>-0.5/-1.5</td><td>-1/-3</td><td>-1.5/-4</td></tr></table> group(10equal command group) <table><tr><td>+1</td><td>+8/+12</td><td>+16/+24</td></tr></table>	cmd	1dB	2dB	3dB	+1	+0.5/1.5	+1/3	+1.5/4	0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5	-1	-0.5/-1.5	-1/-3	-1.5/-4	+1	+8/+12	+16/+24
cmd	1dB	2dB	3dB																	
+1	+0.5/1.5	+1/3	+1.5/4																	
0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5																	
-1	-0.5/-1.5	-1/-3	-1.5/-4																	
+1	+8/+12	+16/+24																		

4) HSDPA transmitter specification

Item	Specification				
Transmit Frequency	Band1 : 1920 MHz ~ 1980 MHz Band2 : 1850 MHz ~ 1910 MHz Band8 : 880MHz ~ 915MHz				
Maximum Output Power	Sub-Test 1=1/15, 2=12/15 21~25dBm / 3.84 MHz 3=13/15 4=15/8 20~25dBm / 3.84 MHz 5=15/7 6=15/0 19~25dBm / 3.84 MHz				
HS-DPCCH	Sub-test in table C.10.1.4	Power step	Power step slot boundary	Power step size, P [dB]	Transmitter power step tolerance [dB]
	5	1	Start of Ack/Nack	6	+/- 2.3
		2	Start of CQI	1	+/- 0.6
		3	Middle of CQI	0	+/- 0.6
		4	End of CQI	5	+/- 2.3
Spectrum Emission Mask	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0				
	Frequency offset from carrier Δf		Minimum requirement	Measurement Bandwidth	
	2.5 ~ 3.5 MHz		-35-15 $\times(\Delta f-2.5)$ dBc	30 kHz	
	3.5 ~ 7.5 MHz		-35-1 $\times(\Delta f-3.5)$ dBc	1 MHz	
	7.5 ~ 8.5 MHz		-35-10 $\times(\Delta f-7.5)$ dBc	1 MHz	
	8.5 ~ 12.5 MHz		-49dBc	1 MHz	
Adjacent Channel Leakage Power Ratio (ACLR)	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 				

5) HSDPA receiver specification

Item	Specification
Receive Frequency	Band1 : 2110 MHz ~ 2170 MHz Band2 : 1930 MHz ~ 1990 MHz Band8 : 925 MHz ~ 960MHz
Maximum Input Level (BLER or R), 16QAM Only	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 BLER < 10% or R >= 700kbps

6) WLAN 802.11b transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	$\leq 20\text{dBm}$ under
Frequency Tolerance	within ± 25 PPM
Chip clock Frequency Tolerance	within ± 25 PPM
Spectrum Mask	≤ -30 @ $f_c - 22\text{MHz} < f < f_c - 11\text{MHz}$ and $f_c + 11\text{MHz} < f < f_c + 22\text{MHz}$ ≤ -50 @ $f < f_c - 22\text{MHz}$ and $f > f_c + 22\text{MHz}$
Power ramp on/off time	$\leq 2\mu\text{s}$
Carrier Suppression	$\geq 15\text{dB}$
Modulation Accuracy (Peak EVM)	$\leq 35\%$
Spurious Emissions	$< -36\text{ dBm}$ @ 30MHz ~ 1GHz $< -30\text{ dBm}$ above @ 1GHz ~ 12.75GHz $< -47\text{ dBm}$ @ 1.8GHz ~ 1.9GHz $< -47\text{ dBm}$ @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	$\leq -80\text{ dBm}$ (2Mbps DQPSK) @ FER $\leq 8\%$ $\leq -76\text{ dBm}$ (11Mbps CCK) @ FER $\leq 8\%$
Rx Max input Sensitivity	$\leq -4\text{ dBm}$ (2Mbps DQPSK) @ FER $\leq 8\%$ $\leq -10\text{ dBm}$ (11Mbps CCK) @ FER $\leq 8\%$
Rx Adjacent Channel Rejection	$\geq 35\text{dB}$ @ FER $\leq 8\%$, interference input signal $-70\text{dBm}@f_c \pm 30\text{MHz}$ (2Mbps DQPSK) interference input signal $-70\text{dBm}@f_c \pm 25\text{MHz}$ (11Mbps CCK)

7) WLAN 802.11g transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	≤ 20dBm
Frequency Tolerance	within ±25 PPM
Chip clock Frequency Tolerance	within ±25 PPM
Spectrum Mask	≤ -20 @ ±11MHz offset (9Mhz ~ 11MHz) ≤ -28 @ ±20MHz offset (11MHz ~ 20Mhz) ≤ -40 @ ±30MHz offset (20MHz ~ 30Mhz)
Transmitter constellation error (rms EVM)	≤ -5dB @ 6Mbps, ≤ -8dB @ 9Mbps, ≤ -10dB @ 12Mbps, ≤ -13dB @ 18Mbps, ≤ -16dB @ 24Mbps, ≤ -19dB @ 36Mbps, ≤ -22dB @ 48Mbps, ≤ -25dB @ 54Mbps
Spurious Emissions	< -36 dBm @ 30MHz ~ 1GHz < -30 dBm above @ 1GHz ~ 12.75GHz < -47 dBm @ 1.8GHz ~ 1.9GHz < -47 dBm @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	PER ≤ 10% -82dBm@6Mbps, -81dBm@9Mbps, -79dBm@12Mbps -77dBm@18Mbps, -74dBm@24Mbps, -70dBm@36Mbps -66dBm@48Mbps, -65dBm@54Mbps
Rx Max input Sensitivity	≥ -20dBm (6,9,12,18,24,36,48,54Mbps) @ PER ≤ 10%
Rx Adjacent Channel Rejection	PER ≤ 10%, ≥ 16dB@6Mbps, ≥ 15dB@9Mbps, ≥ 13dB@12Mbps, ≥ 11dB@18Mbps, ≥ 8dB@24Mbps, ≥ 4dB@36Mbps, ≥ 0dB@48Mbps, ≥ -1dB@54Mbps ※ ACR shall be measured by setting the desired signal's strength 3 dB above the rate-dependent sensitivity specified in min input sensitivity

8) WLAN 802.11n transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	≤ 20dBm
Frequency Tolerance	within ±25 PPM
Chip clock Frequency Tolerance	within ±25 PPM
Spectrum Mask	≤ -20 @ ±11MHz offset (9Mhz ~ 11MHz) ≤ -28 @ ±20MHz offset (11MHz ~ 20Mhz) ≤ -45 @ ±30MHz offset (20MHz ~ 30Mhz)
Transmitter constellation error (rms EVM)	≤ -5dB @ 6.5Mbps, ≤ -10dB @ 13Mbps, ≤ -13dB @ 19.5Mbps, ≤ -16dB @ 26Mbps, ≤ -19dB @ 39Mbps, ≤ -22dB @ 52Mbps, ≤ -22dB @ 58.5Mbps, ≤ -28dB @ 65Mbps
Spurious Emissions	< -36 dBm @ 30MHz ~ 1GHz < -30 dBm above @ 1GHz ~ 12.75GHz < -47 dBm @ 1.8GHz ~ 1.9GHz < -47 dBm @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	PER ≤ 10% -82dBm@6.5Mbps, -79dBm@13Mbps, -77dBm@19.5Mbps -74dBm@26Mbps, -70dBm@39Mbps, -66dBm@52Mbps -65dBm@58.5Mbps, -64dBm@65Mbps
Rx Max input Sensitivity	≥ -20dBm (6.5,13,19.5,26,39,52,58.5,65Mbps) @ PER ≤ 10%
Rx Adjacent Channel Rejection	PER ≤ 10%, ≥ 16dB@6.5Mbps, ≥ 13dB@13Mbps, ≥ 11dB@19.5Mbps, ≥ 8dB@26Mbps, ≥ 4dB@39Mbps, ≥ 0dB@52Mbps, ≥ -1dB@58.5Mbps, ≥ -2dB@65Mbps ※ ACR shall be measured by setting the desired signal's strength 3 dB above the rate-dependent sensitivity specified in min input sensitivity

9) GPS receiver specification

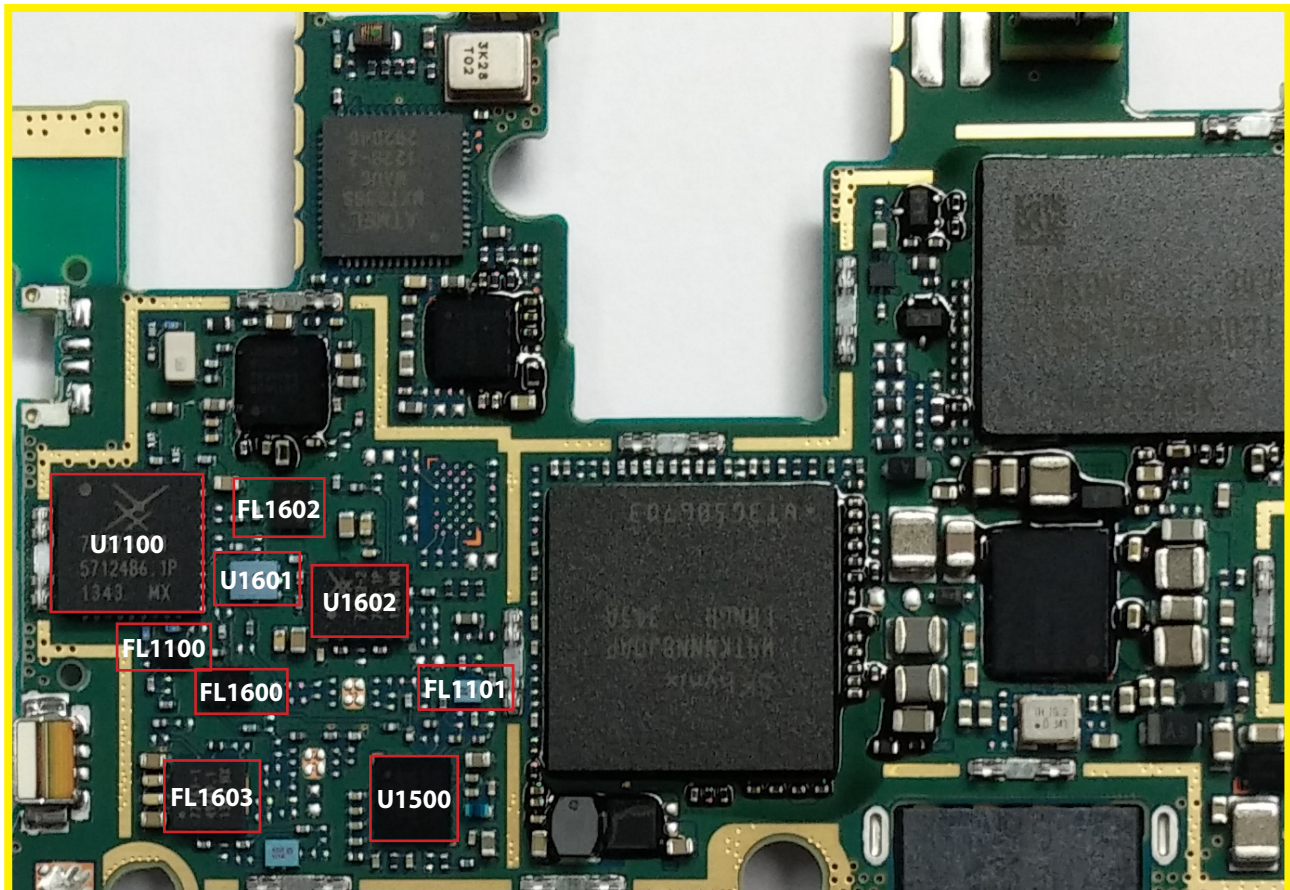
Item	Specification
Receive Frequency	1574.42 MHz ~ 1576.42 MHz
Minimum Sensitivity	1 satellite $\geq -142\text{dBm}$, 7 satellites $\geq -147\text{dBm}$ at coarse time aiding

10) Signal Bar

Antenna BAR	Specification(dBm)		Comment
	WCDMA(RSCP)	GSM(RSSI)	
5→4	-89 ± 2	-91 ± 2	1. Call Connected & CIPH Level=-3.3
4→3	-94 ± 2	-96 ± 2	
3→2	-100 ± 2	-99 ± 2	
2→1	-104 ± 2	-103 ± 2	
1→0	-110 ± 2	-105 ± 2	

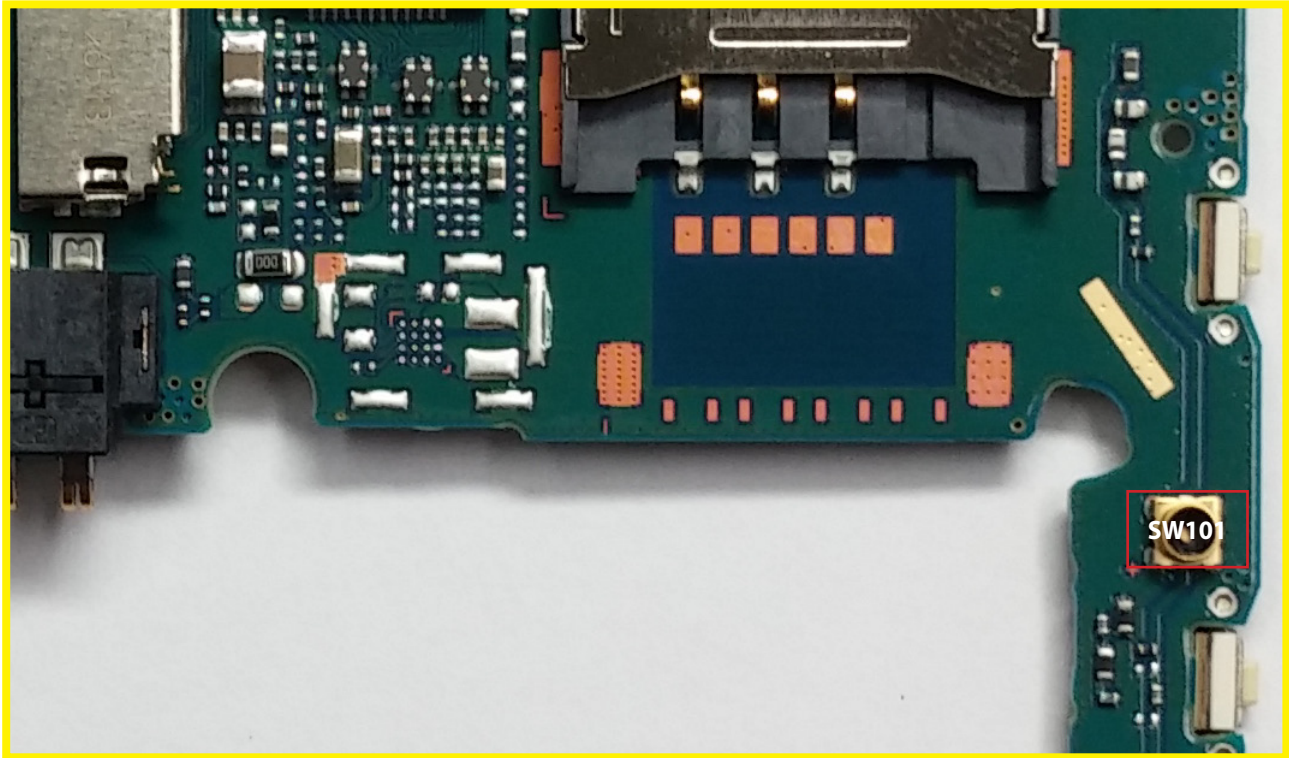
3. TROUBLE SHOOTING

3.1 RF Component



<Main Top>

3. TROUBLE SHOOTING

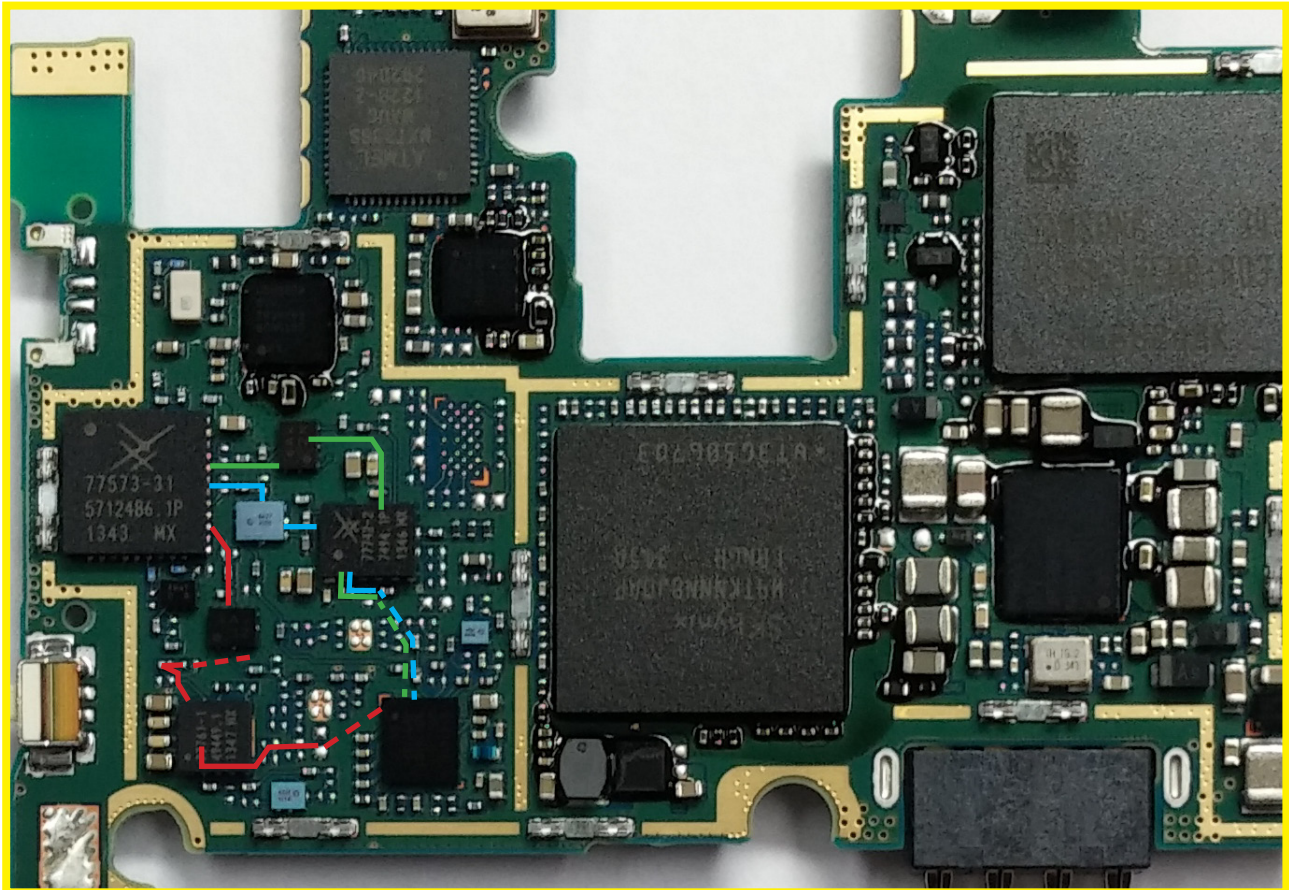


<Main Bot>

RF component

Reference	Description	Reference	Description
U1100	FEM + GSM PAM	U1101	Front-End module
U1500	WTR2605	U1600	WCDMA B1 PAM
U1602	WCDMA B2/B5 Dual PAM	U1603	WCDMA B1 LNA
U1604	WCDMA B2 LNA	FL1100	DCS/PCS Dual Saw Filter
FL1101	GSM 850 Rx SAW Filter	FL1600	WCDMA B1 Duplexer
FL1601	WCDMA B5 Duplexer	FL1602	WCDMA B2 Duplexer
FL1603	WCDMA B1 TX SAW	SW101	MOBILE S/W

3.2 SIGNAL PATH

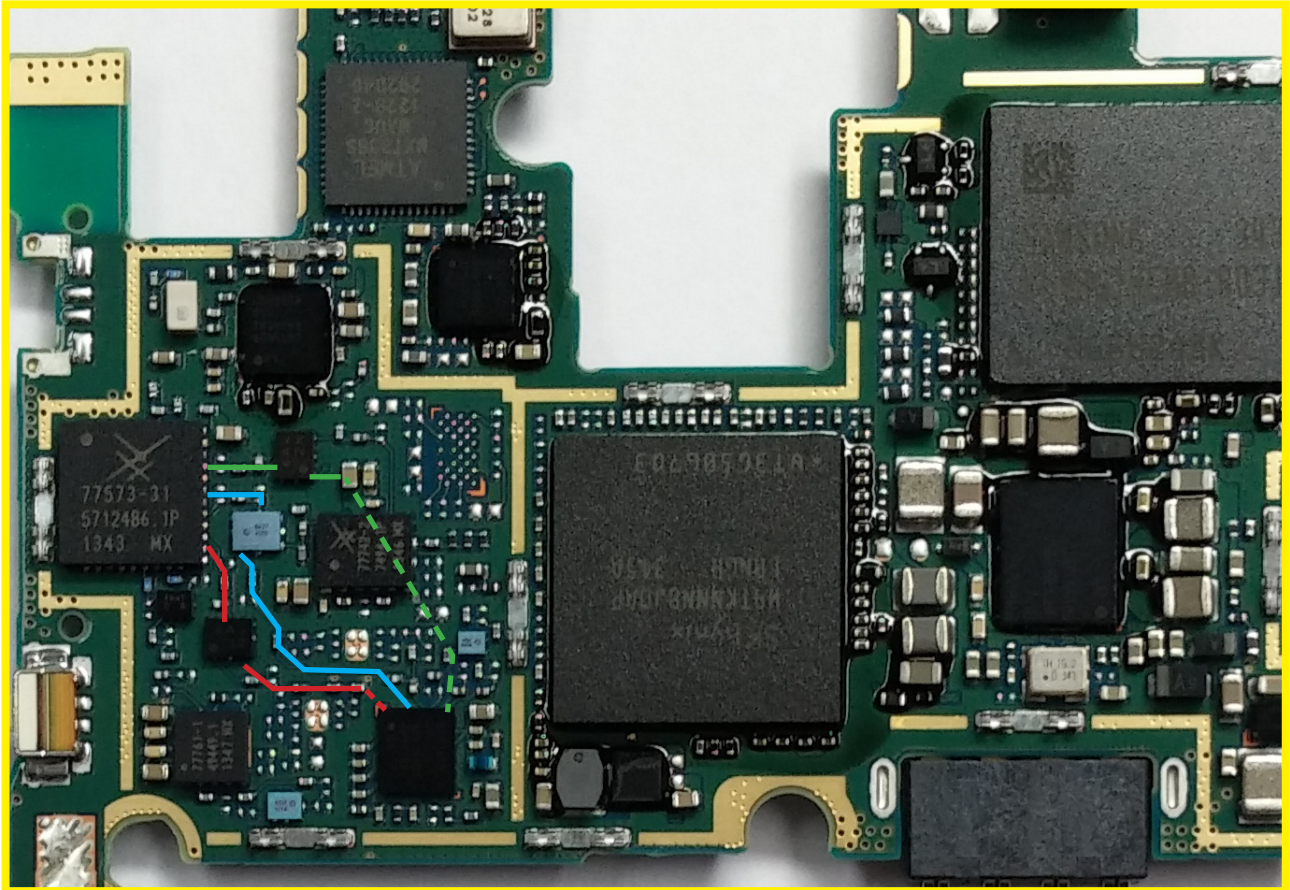


WCDMA B1, B8 and B2 TX Signal PATH

1. WCDMA B1 TX PATH

2. WCDMA B8 TX PATH

3. WCDMA B2 TX PATH

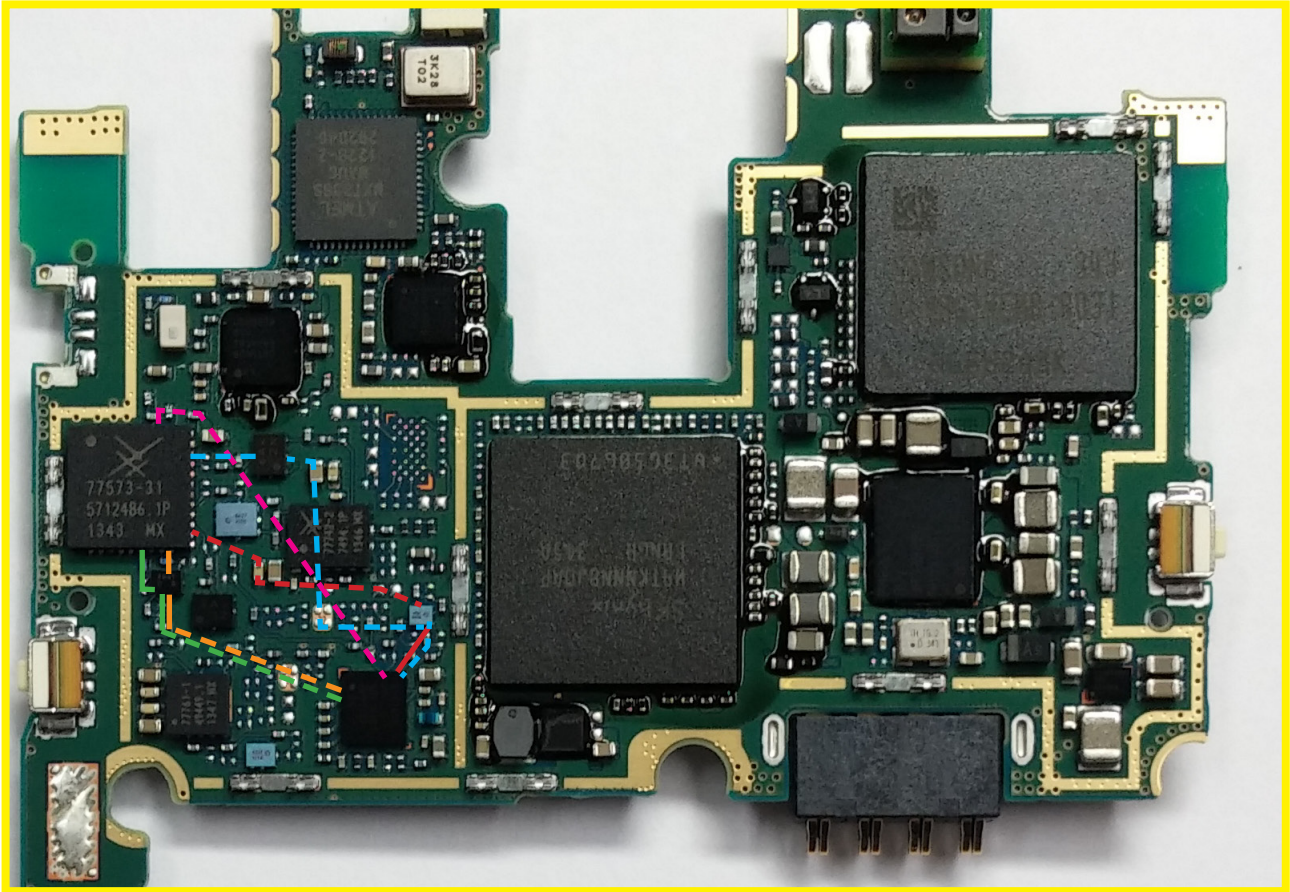


WCDMA B1, B2 and B8 RX Signal PATH

1. WCDMA B1 RX PATH

2. WCDMA B8 RX PATH

3. WCDMA B2 RX PATH

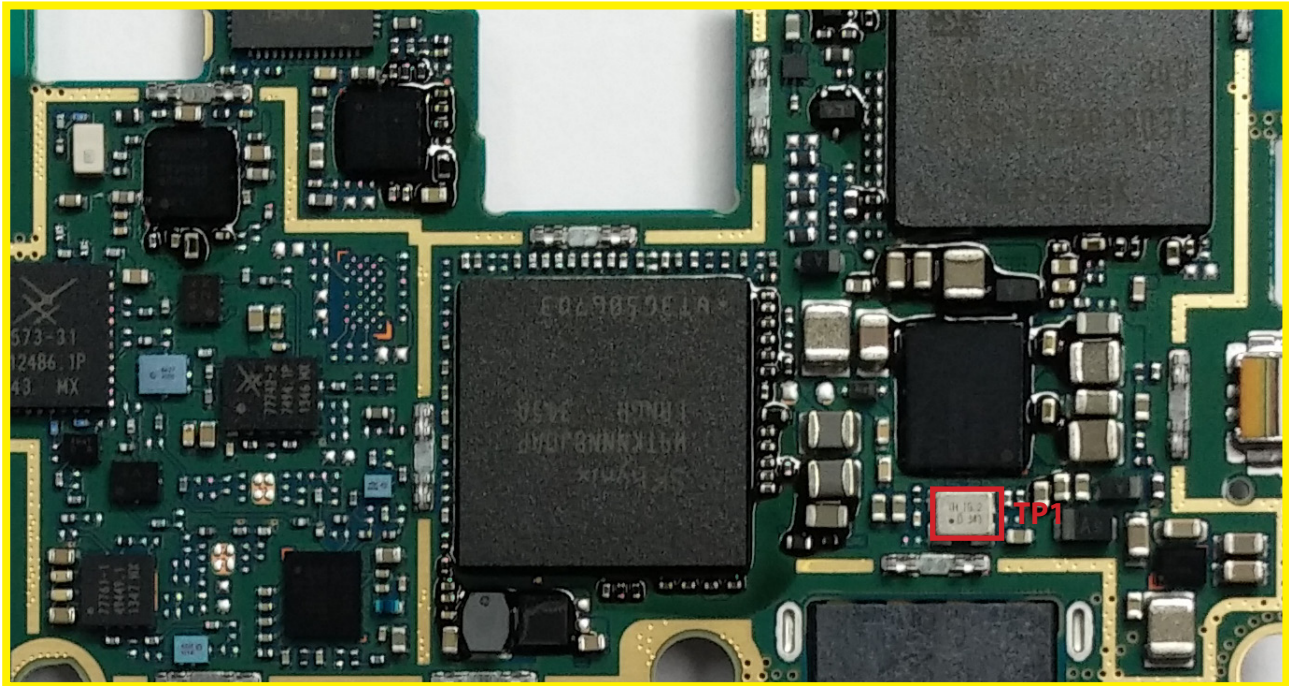


GSM850/GSM900/DCS1800/PCS1900 RX/TX Signal PATH

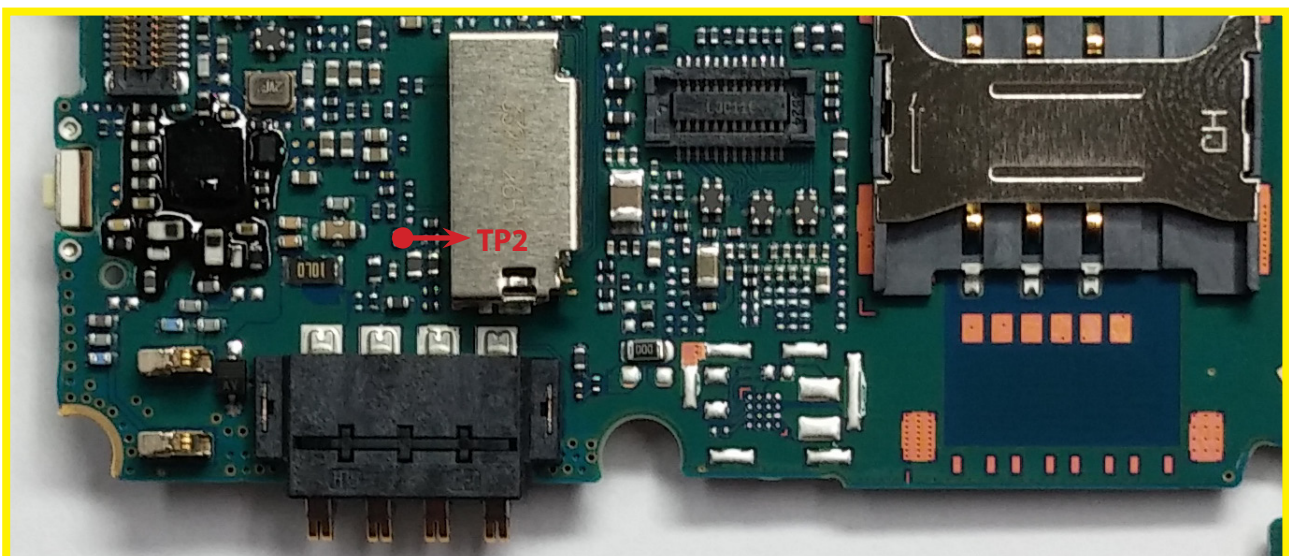
1. GSM900 RX PATH
2. GSM850 RX PATH
3. GSM1900 RX PATH
4. GSM1800 RX PATH
5. GSM COMMON TX PATH

3.3 Checking XO Block

The output frequency (19.2MHz) of XO (X4100) is used as the reference one of WTR2605 and PM8226 internal VCO.

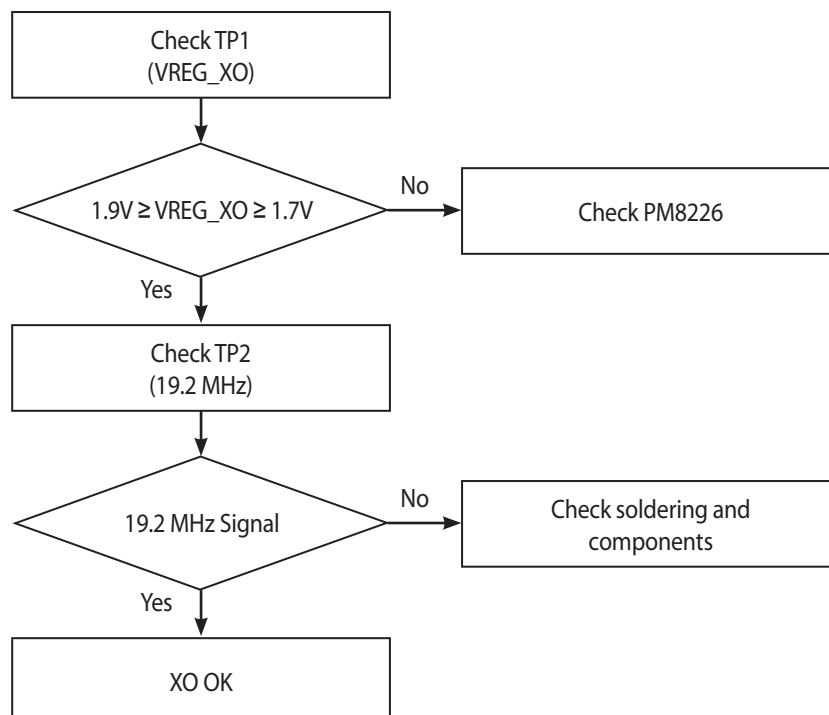
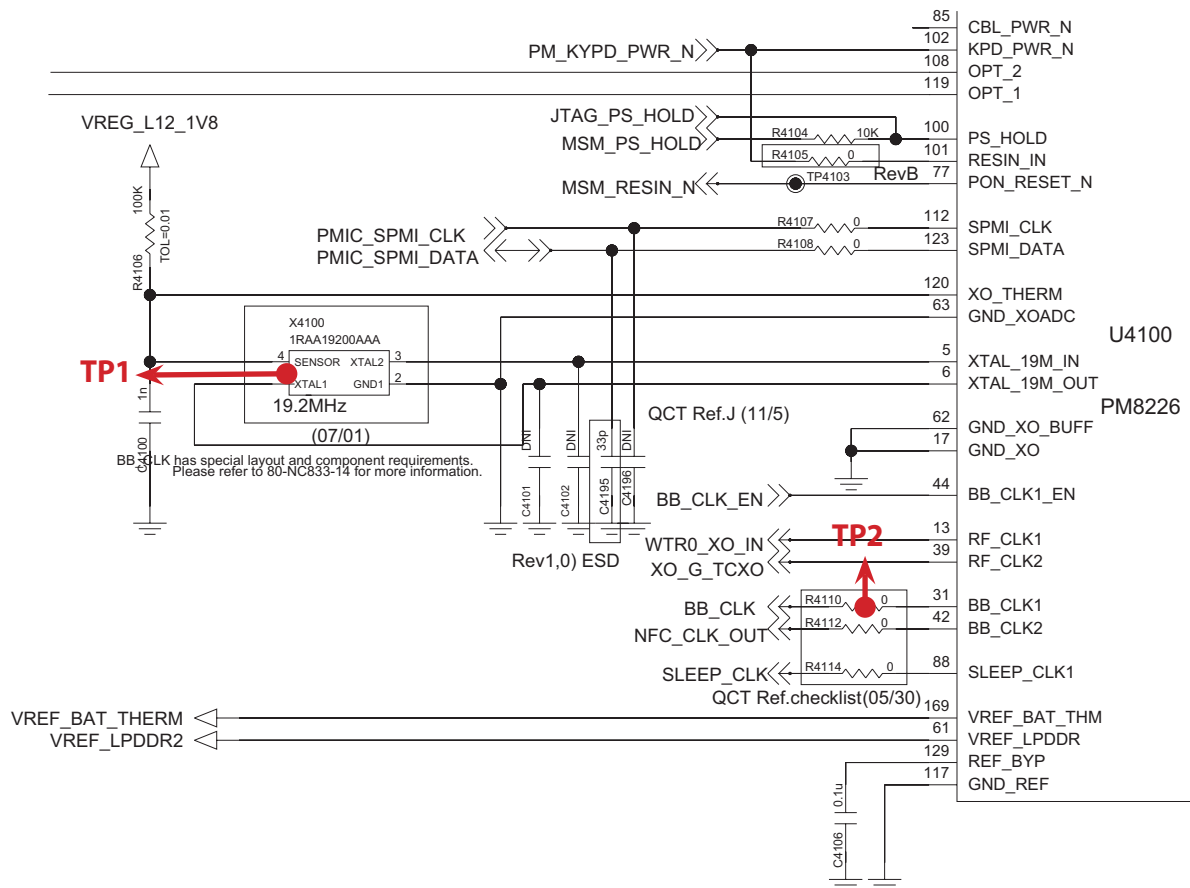


<Main Top>

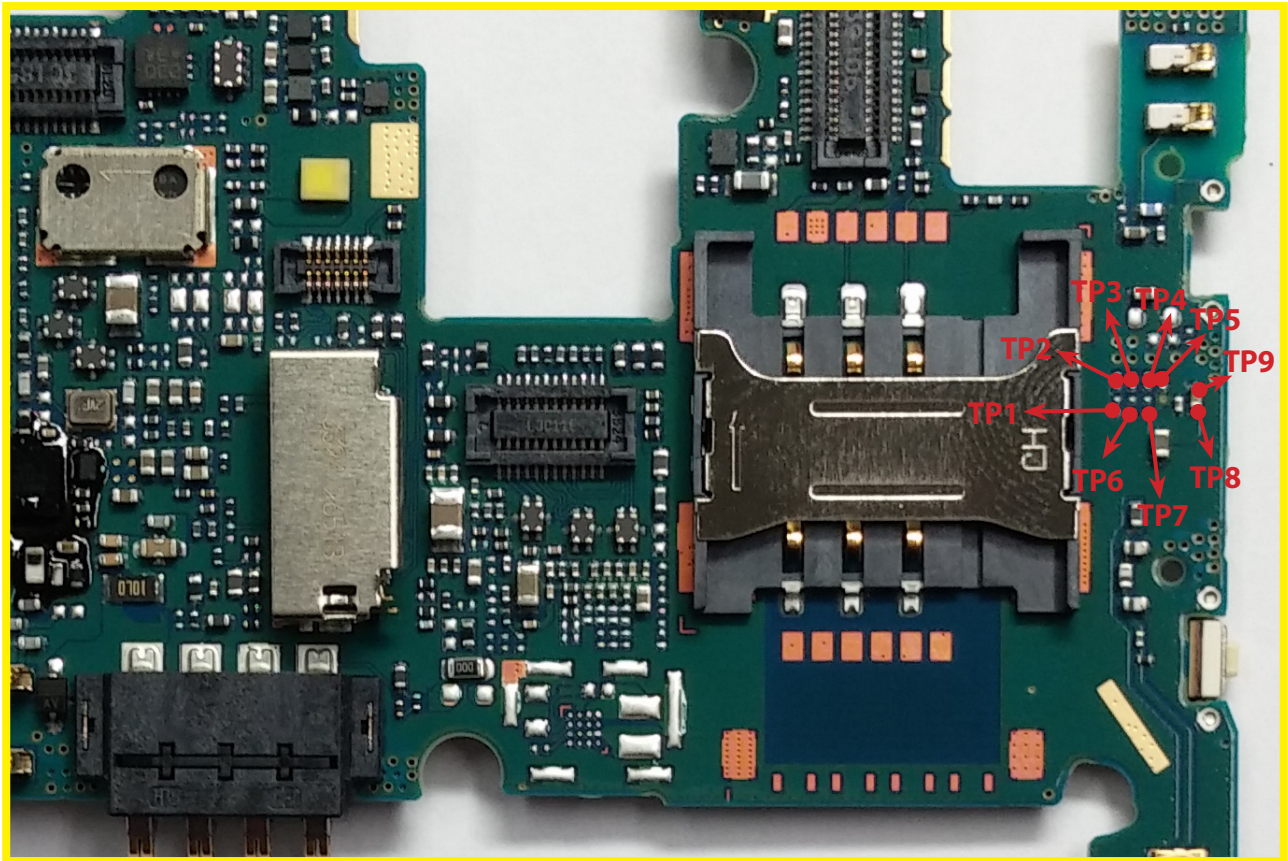


<Main Bot>

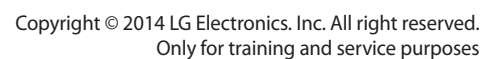
Schematic of the Crystal Part (19.2MHz)



3.4 Checking FEMID (GSM, W B1/B2/B8) Block



<Main Bot>

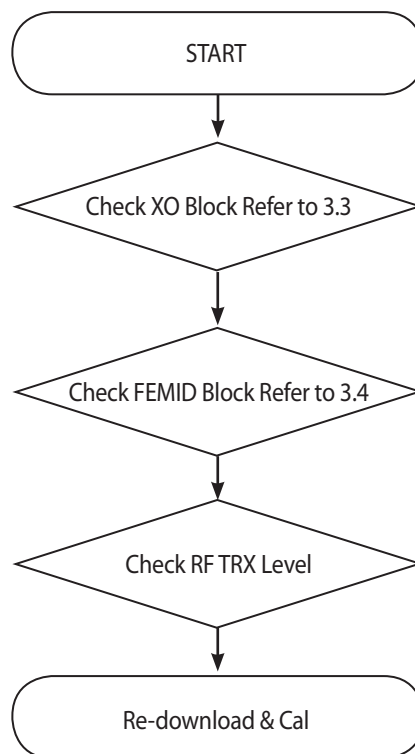


3. TROUBLE SHOOTING

TXM LOGIC(SPDT OFF)

		TP1	TP2	TP3	TP4	TP5	TP6	TP7
	Band	SPDT_SEL	ANTO_SW_SELO	ANTO_SW_SEL1	ANTO_SW_SEL2	ANTO_SW_SEL3	PA0_R0	PA0_R1
LB_HPM	G850/900 TX	L	L	H	L	L	L	L
LB_MPM	G850/900 TX	L	L	H	L	L	L	H
LB_LPM	G850/900 TX	L	L	H	L	L	H	L
LB_ULPM	G850/900 TX	L	L	H	L	L	H	H
HB_HPM	G1800/1900 TX	L	H	L	L	L	L	L
HB_MPM	G1800/1900 TX	L	H	L	L	L	L	H
HB_LPM	G1800/1900 TX	L	H	L	L	L	H	L
HB_ULPM	G1800/1900 TX	L	H	L	L	L	H	H
TRX1	W B1/B4 TRX	H	L	L	L	L	-	-
TRX2	W B2 TRX	H	L	L	H	L	-	-
TRX3	G900/850 RX	H	L	H	L	L	-	-
TRX4	WB5/B8 TRX, G850/900 RX	H	L	H	H	L	-	-
RX1	G1900 RX	H	H	H	H	L	-	-
RX2	G1800 RX	H	H	H	H	H	-	-

3.5 Checking WCDMA Block



3.5.1 Checking XO (19.2MHz) Block

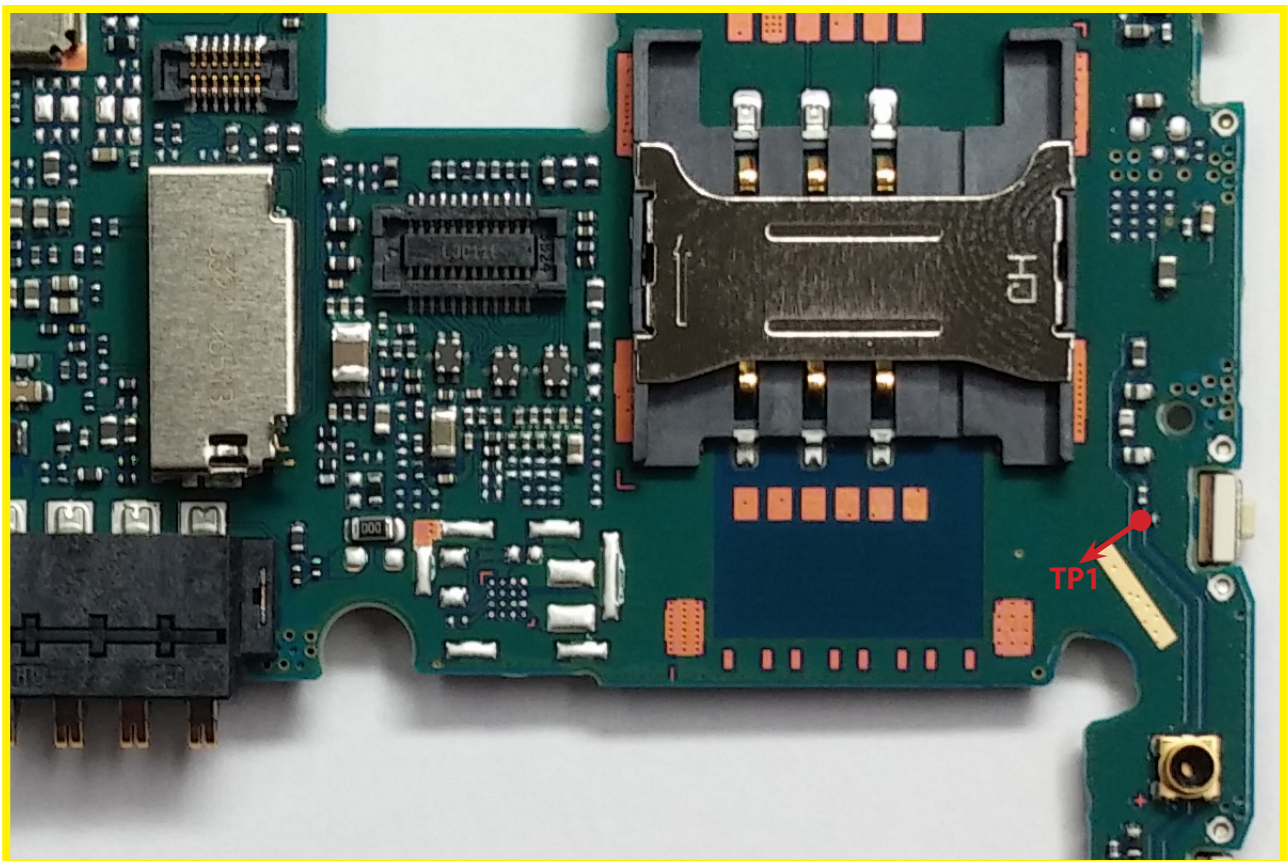
Refer to 3.3

3.5.2 Checking FEMID Block

Refer to 3.4

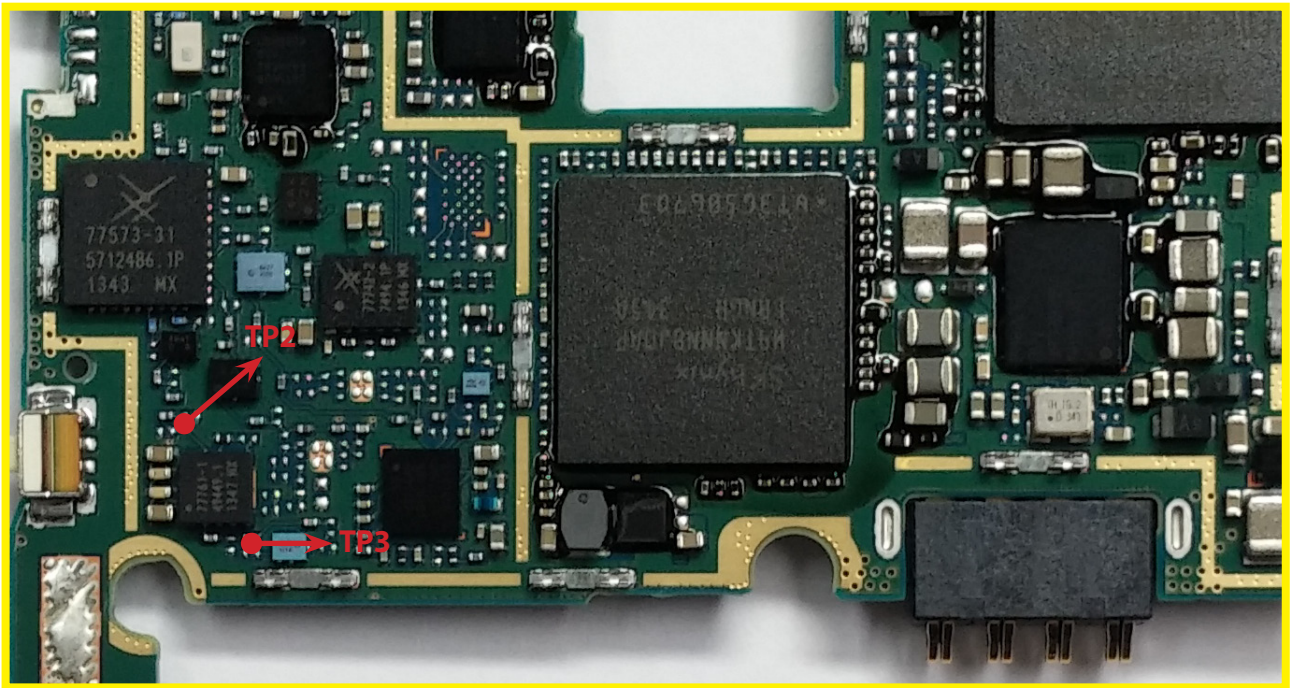
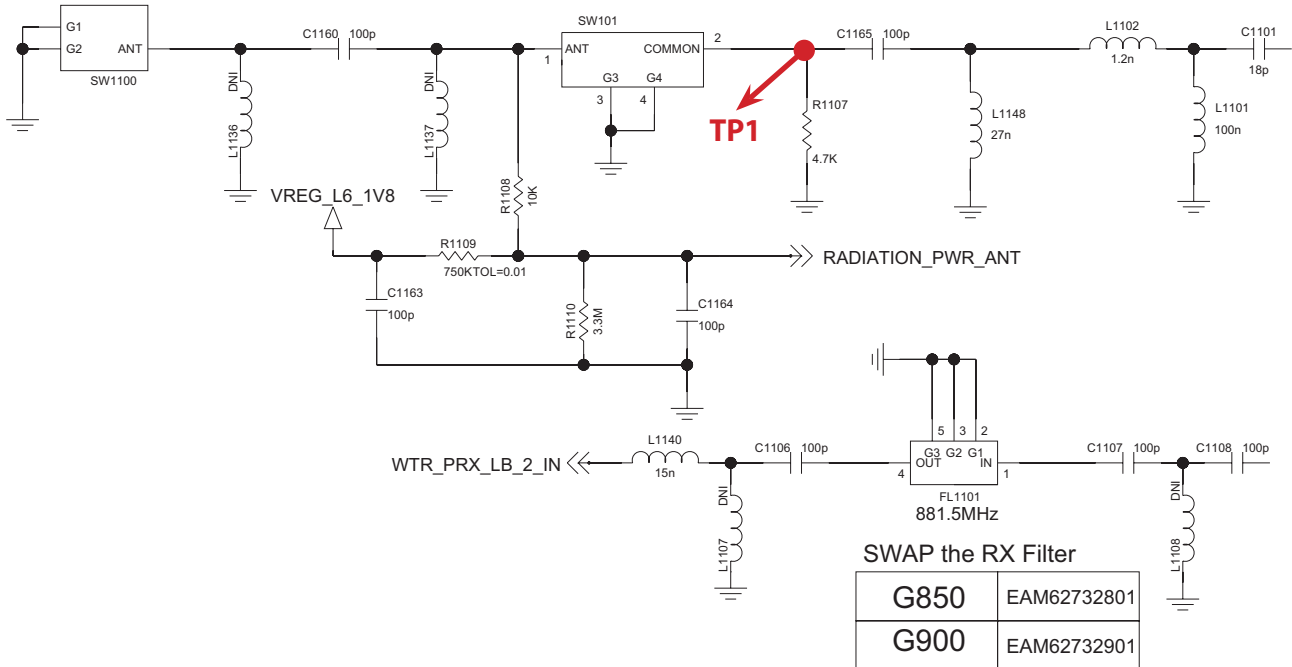
3.5.3 Checking RF TX Level

{WCDMA B1}

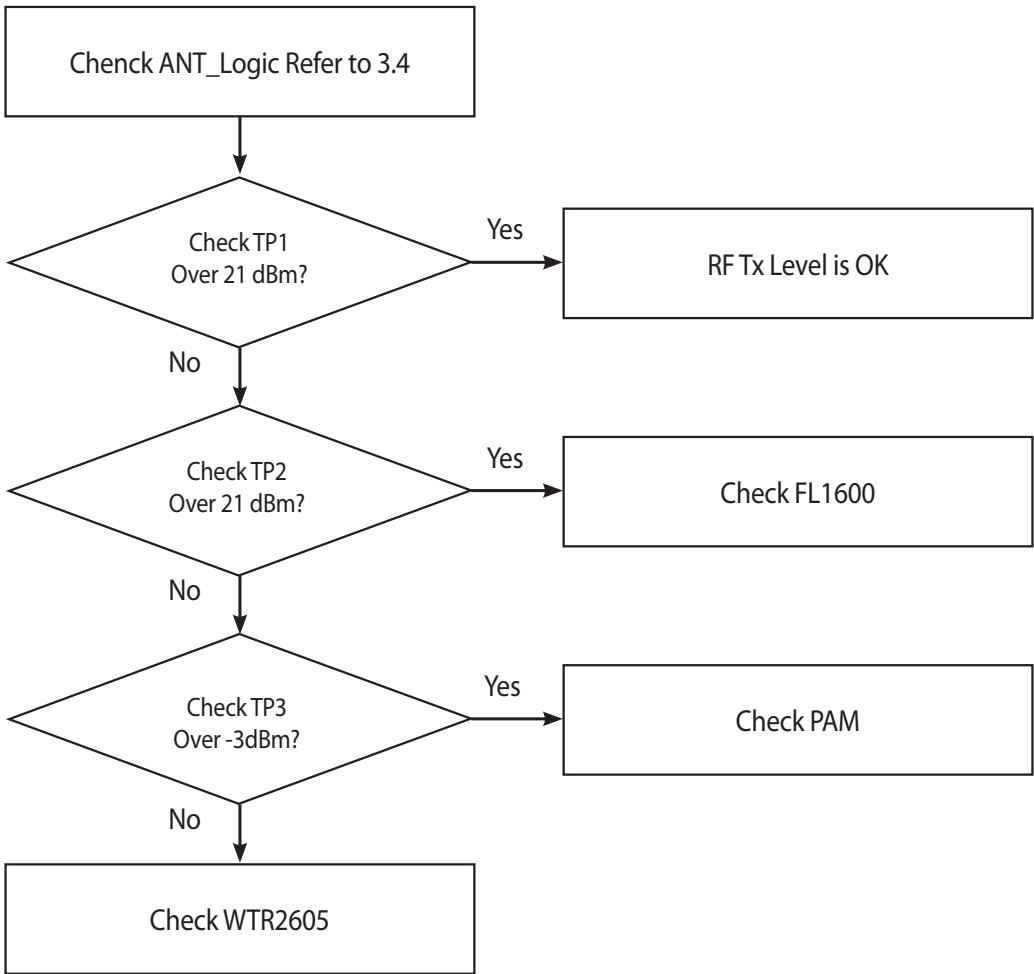


<Main Bot>

3. TROUBLE SHOOTING



<Main Top>

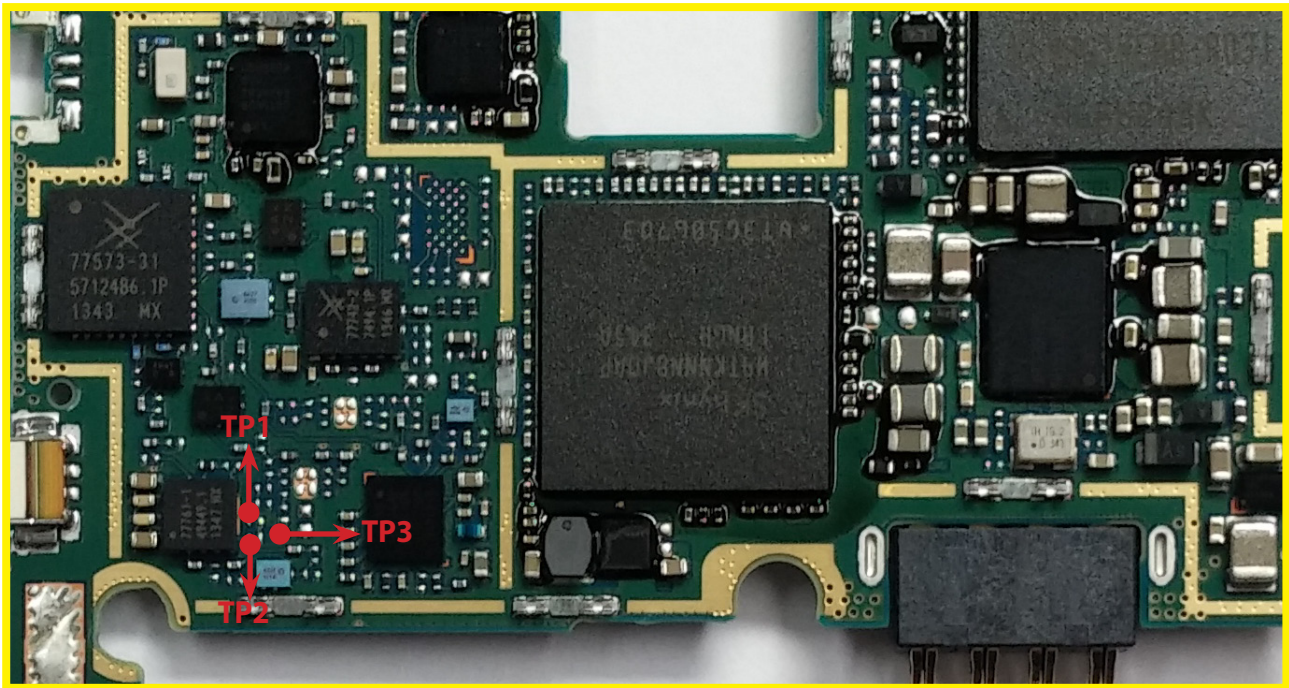


PAM control signal

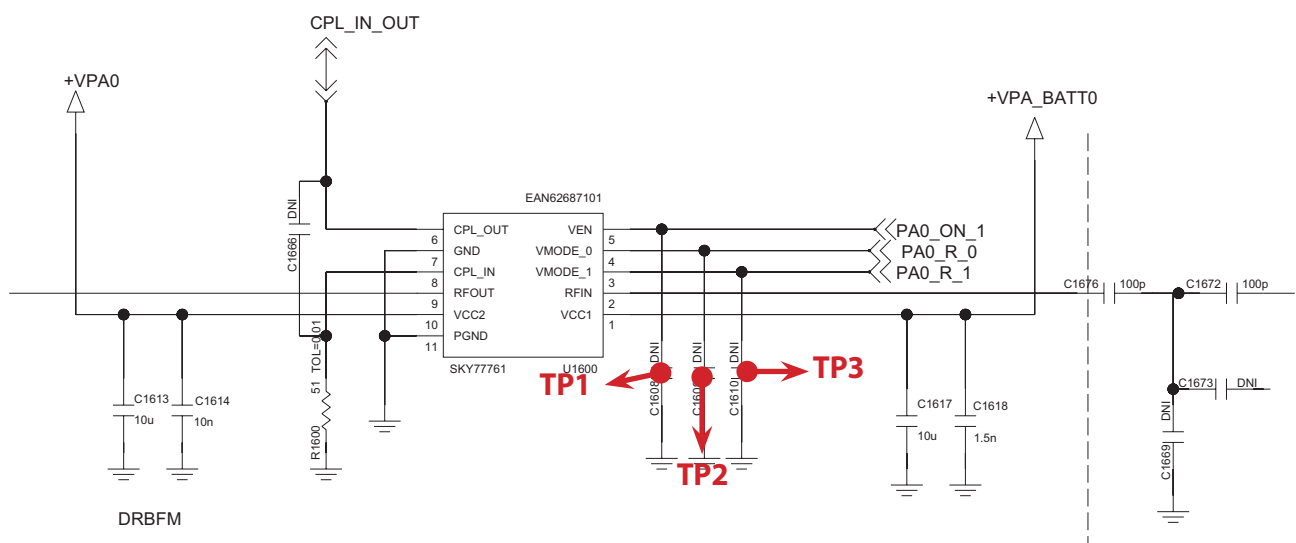
PA0_ON_1 (C1608): PAM Enable

PA0_R0 (C1609) : PAM Gain Control

PA0_R1 (C1610) : PAM Gain Control



[<Main Top>](#)

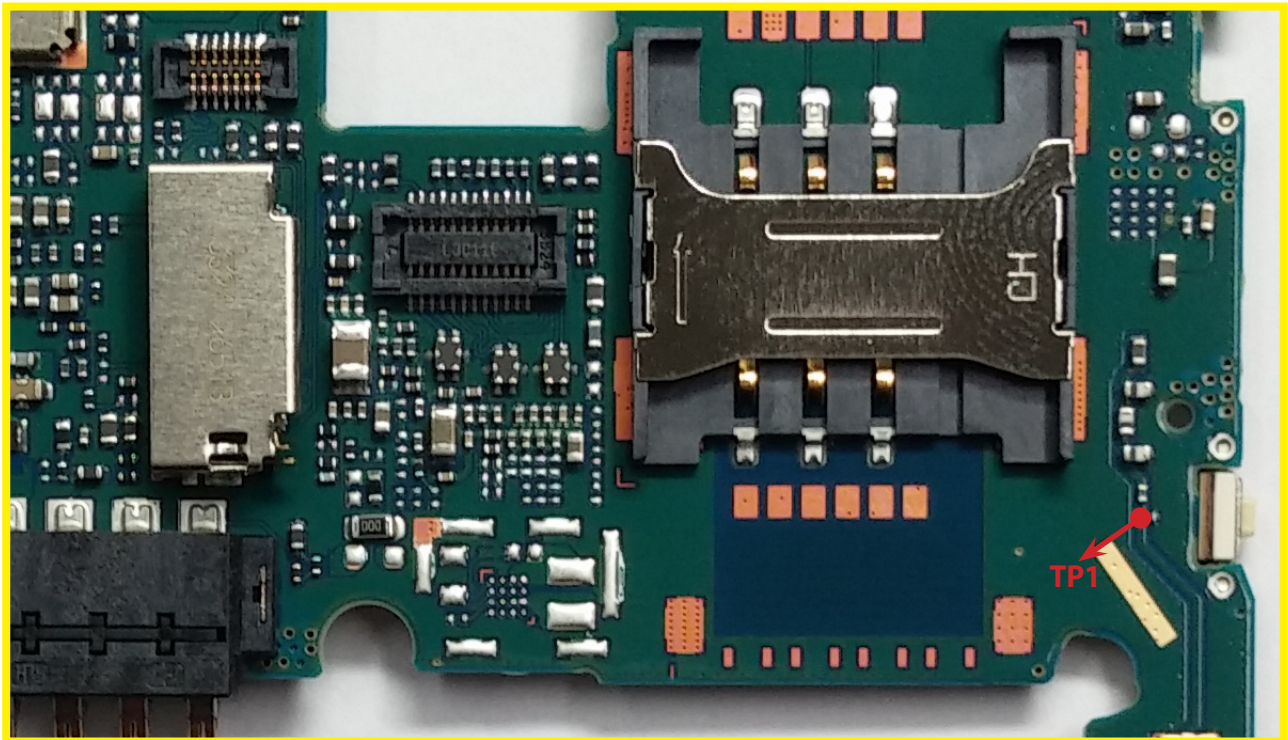


PA LOGIC B1/B4

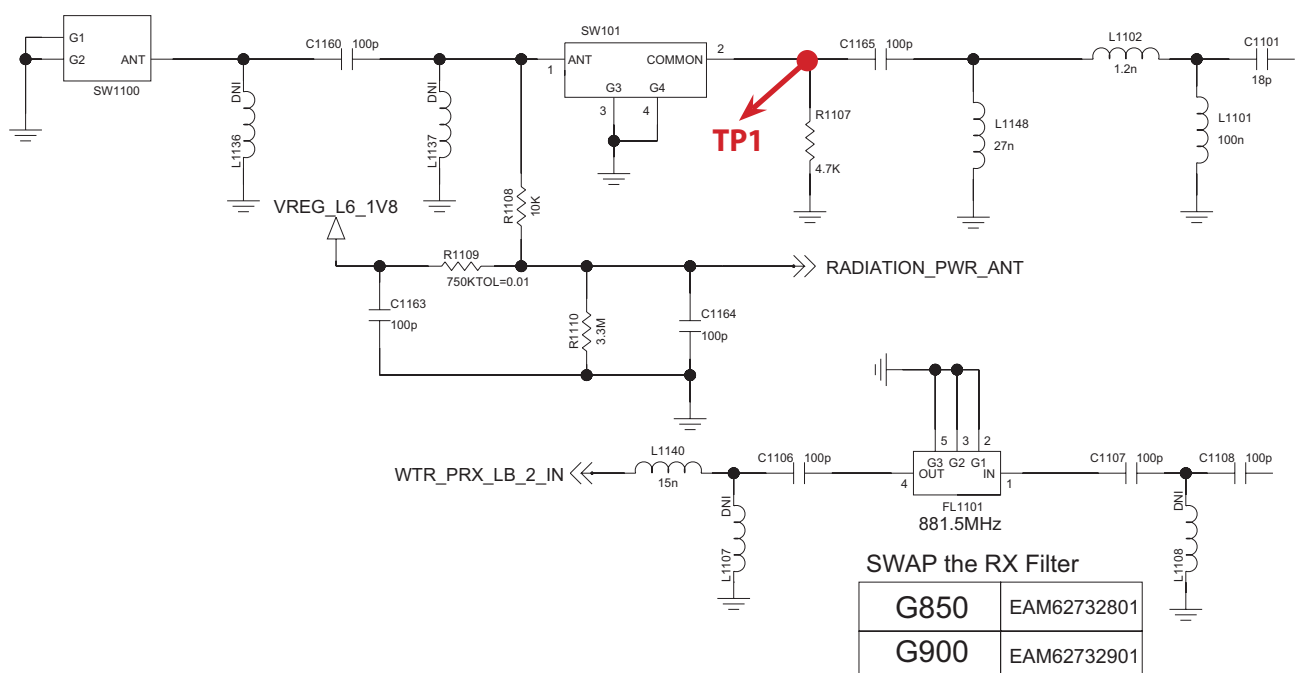
POWER MODE	PA0_ON_1	PA0_R0	PA0_R1
SHUT DOWN	L	L	L
STAND-BY	L	-	-
HP MODE	H	L	L
MP MODE	H	H	L
LP MODE	H	H	H

3. TROUBLE SHOOTING

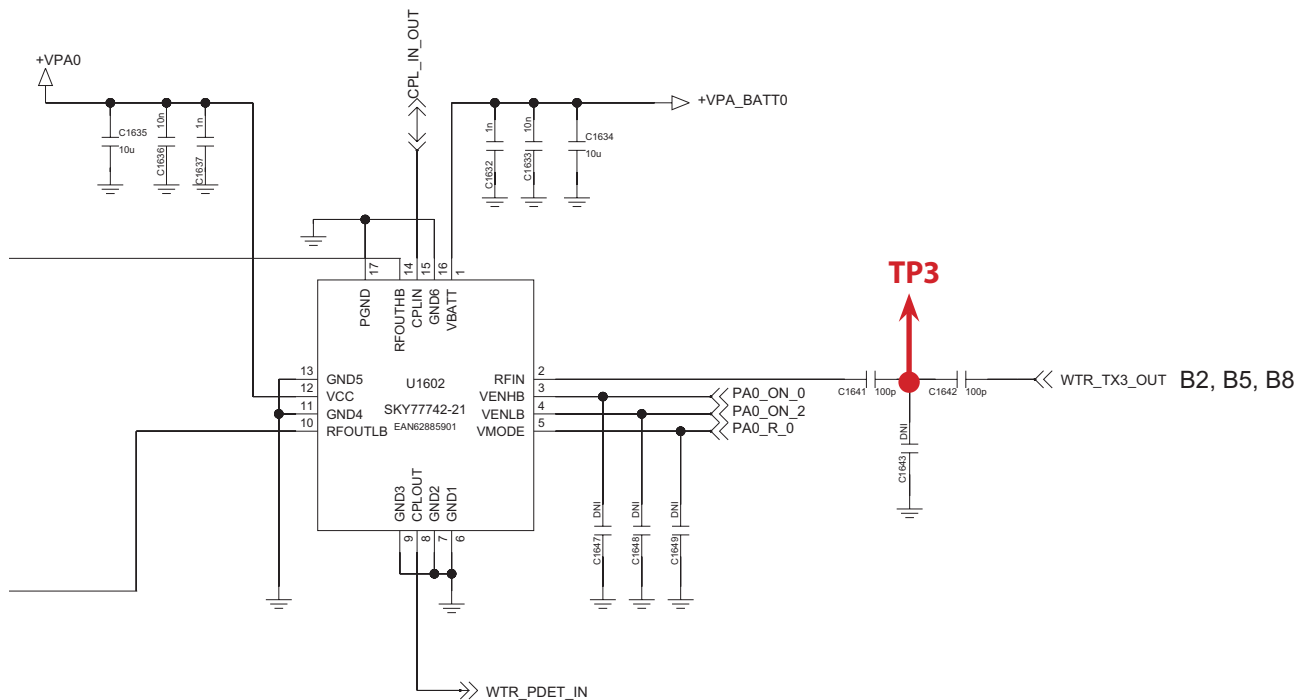
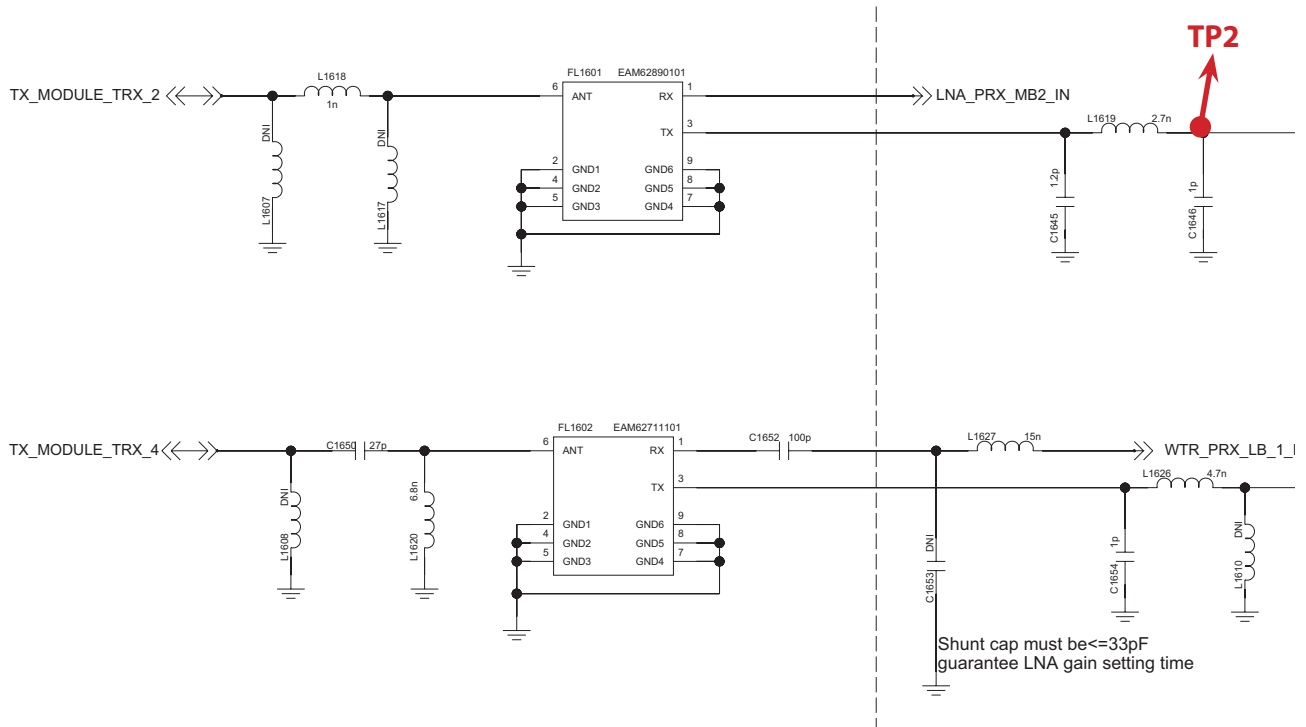
[WCDMA B2]



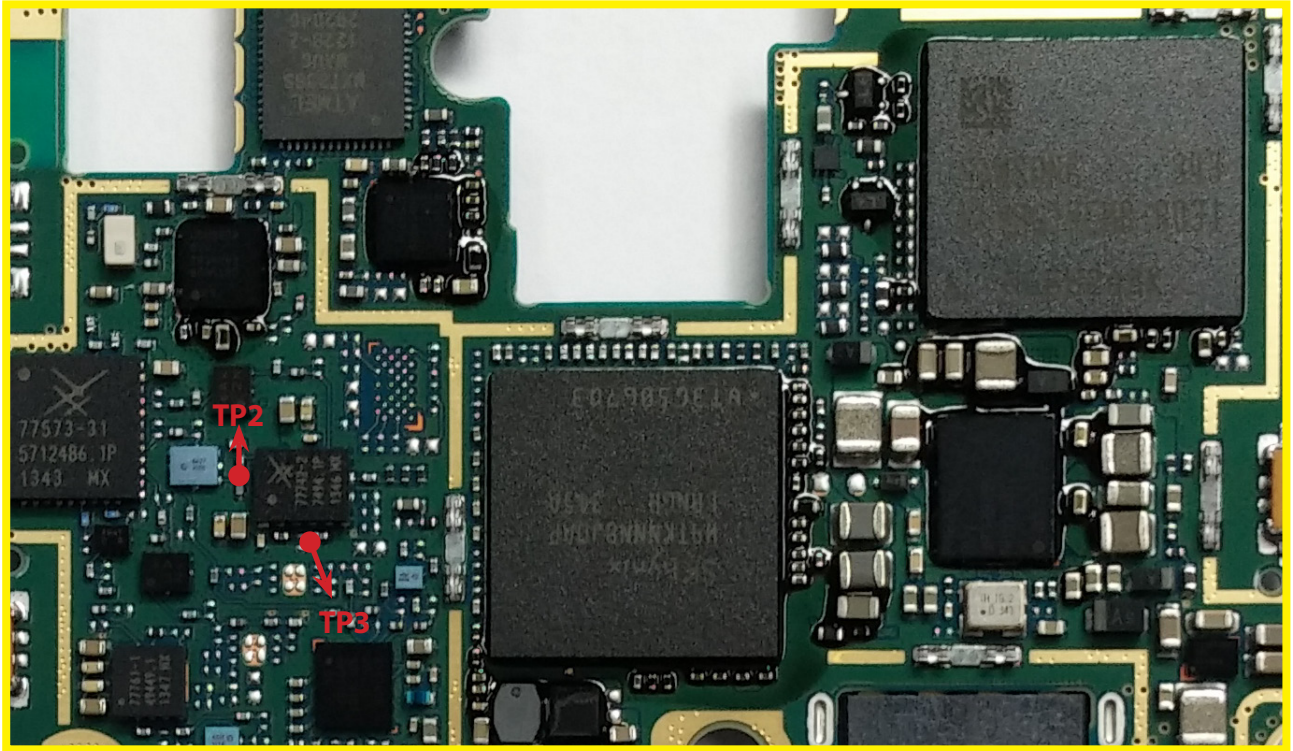
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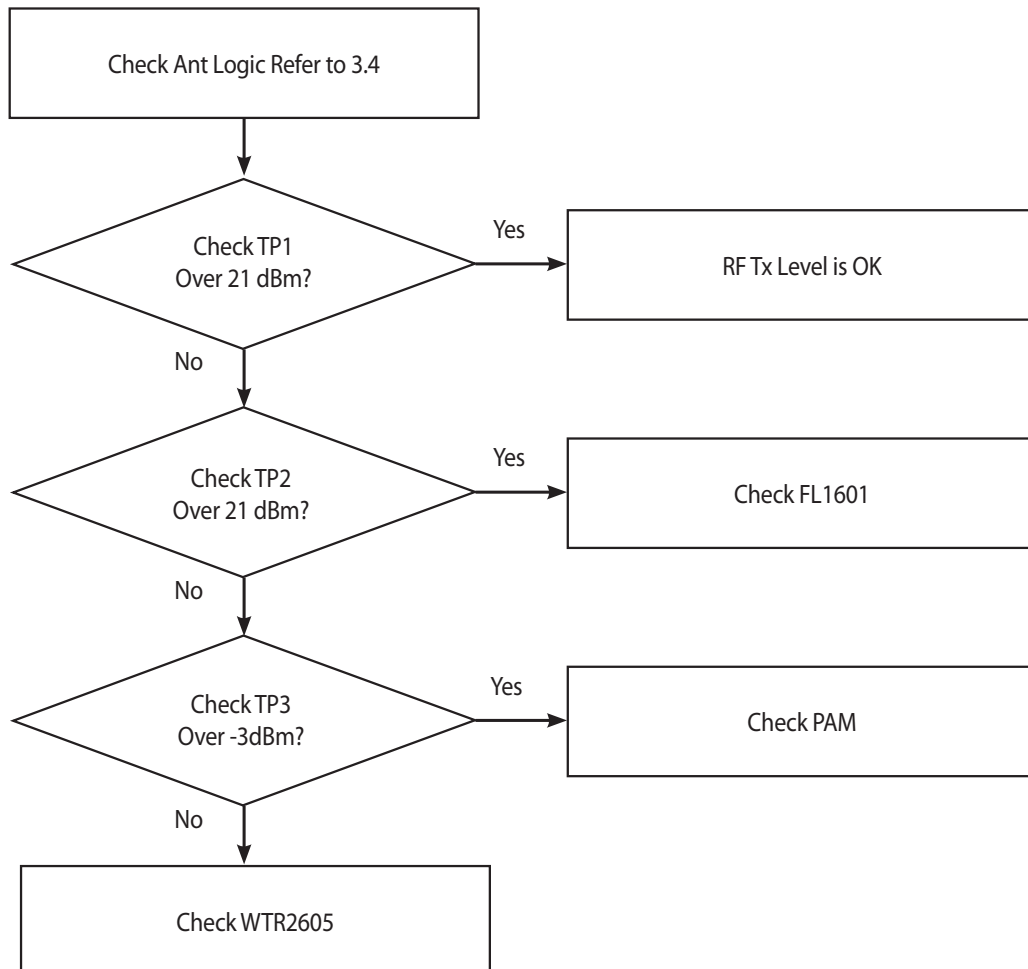
3. TROUBLE SHOOTING



3. TROUBLE SHOOTING



<Main Top>

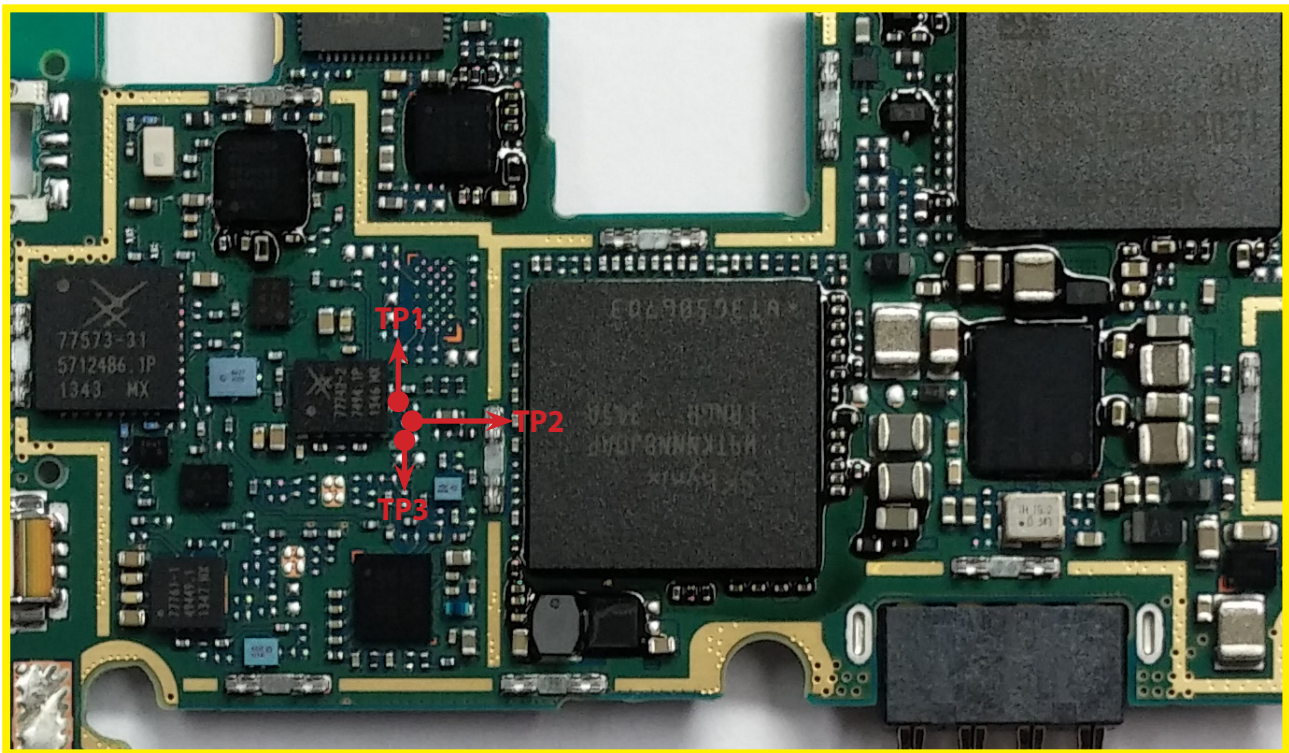


PAM control signal

PA0_ON_0 (C1647) : PAM Enable & Band Select

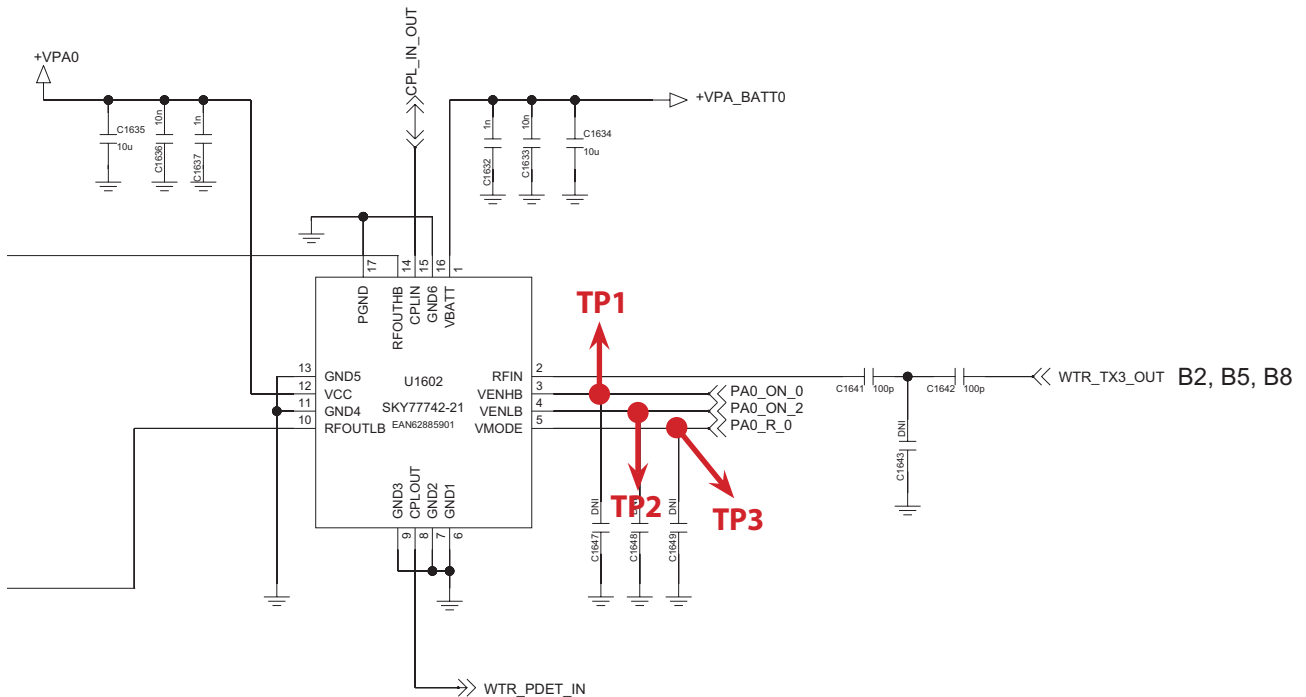
PA0_ON_2 (C1648) : PAM Enable & Band Select

PA0_R_0 (C1648) : Gain Control



<Main Top>

3. TROUBLE SHOOTING

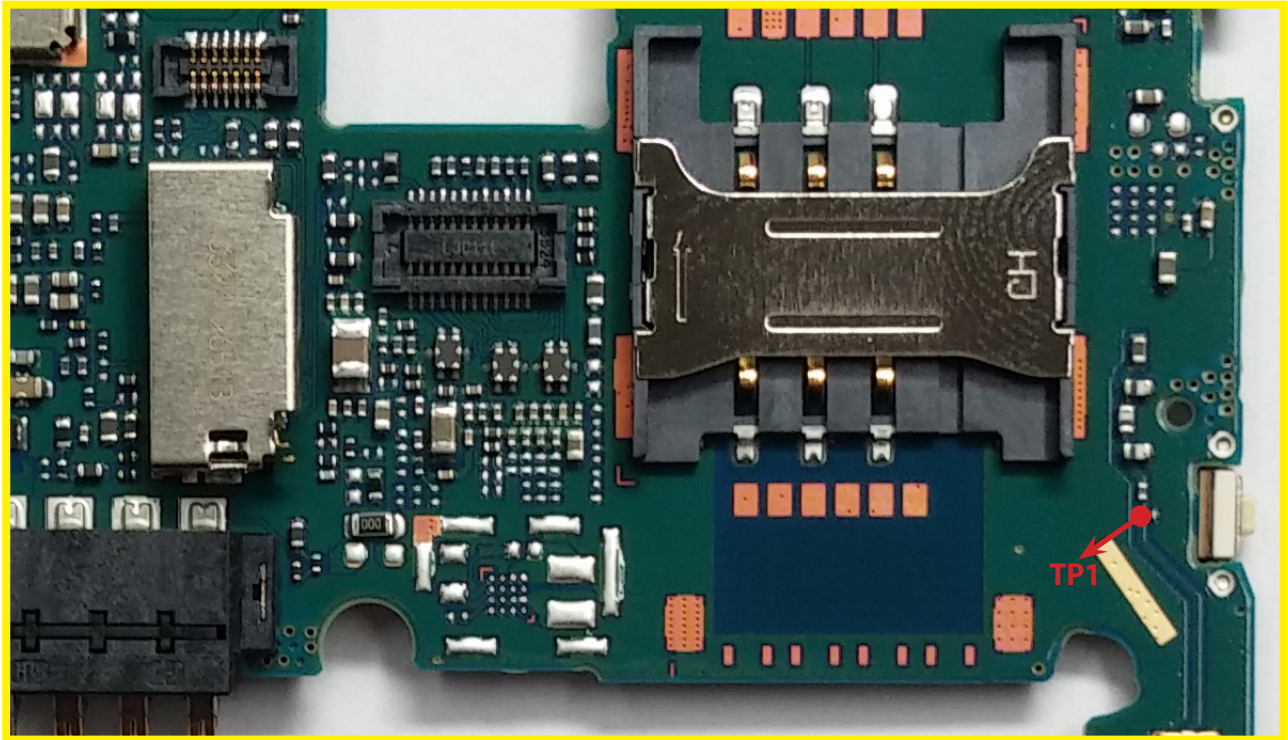


PA LOGIC B2/B5

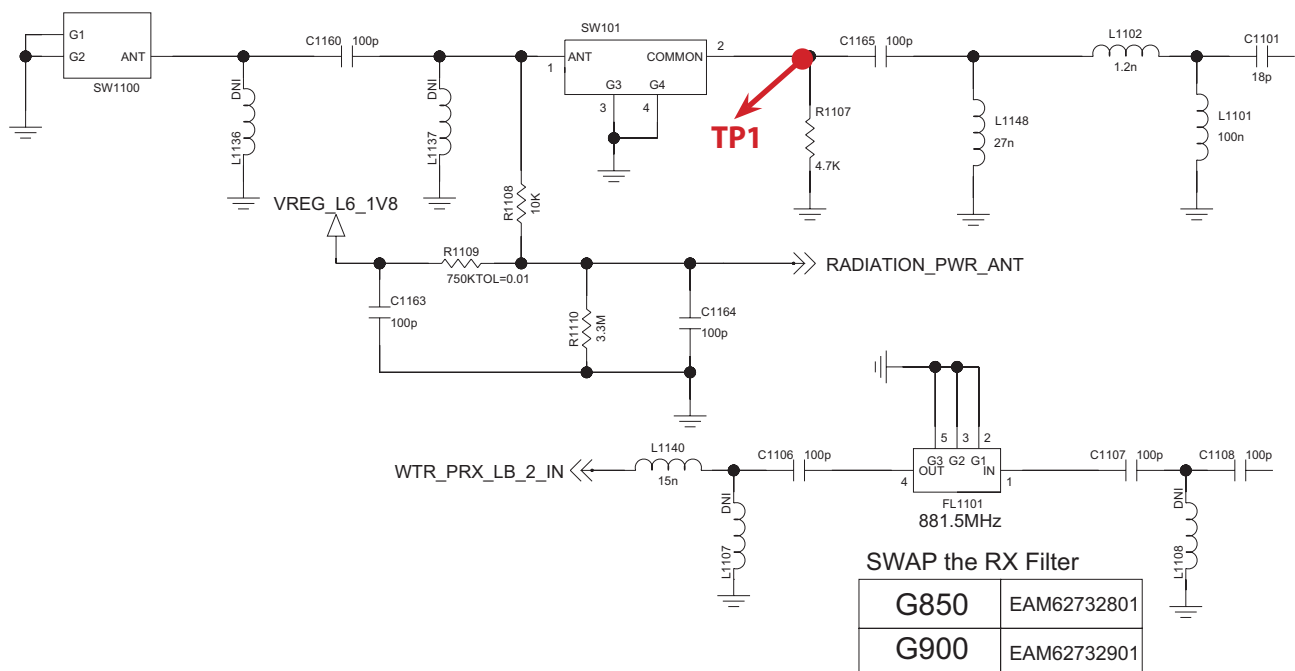
POWER MODE	PA_ON_0	PA_ON_2	PA0_R0
SHUT DOWN	L	L	L
STAND-BY	L	L	-
B1/B2 HPM	H	L	L
B1/B2 LPM	H	L	H
B5/B8 HPM	L	H	L
B5/B8 LPM	L	H	H

3. TROUBLE SHOOTING

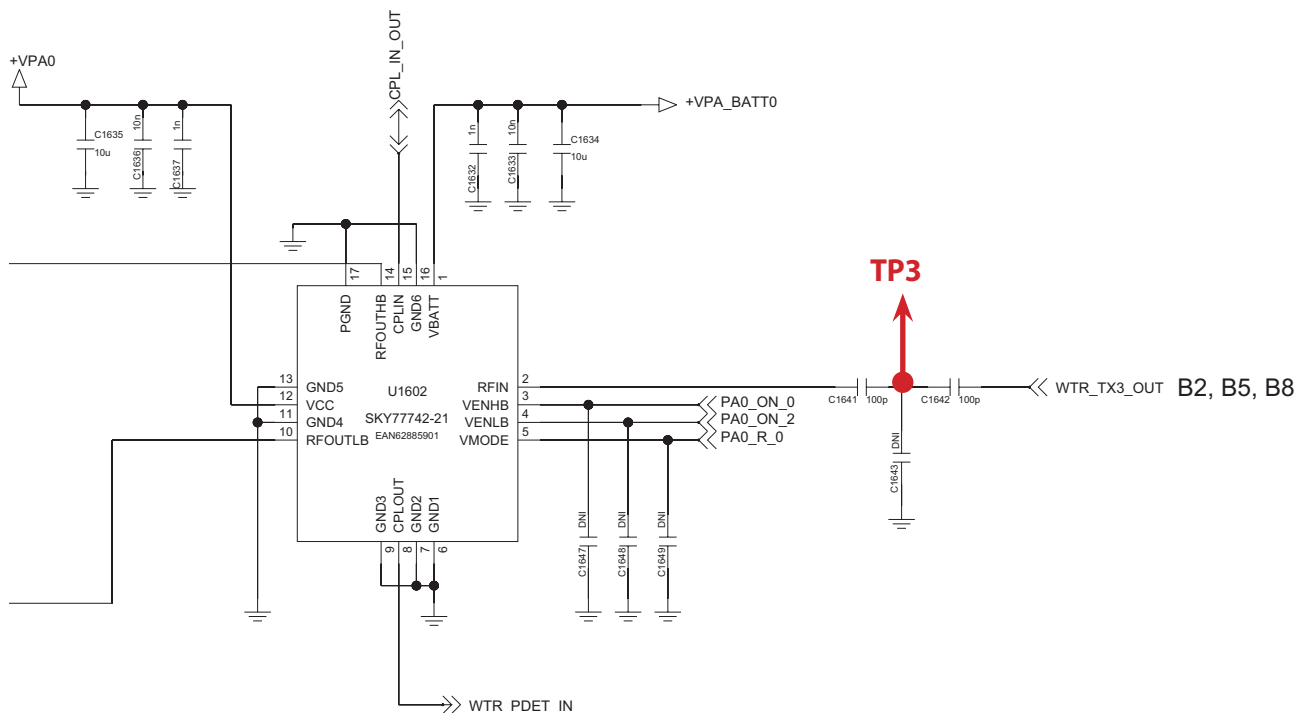
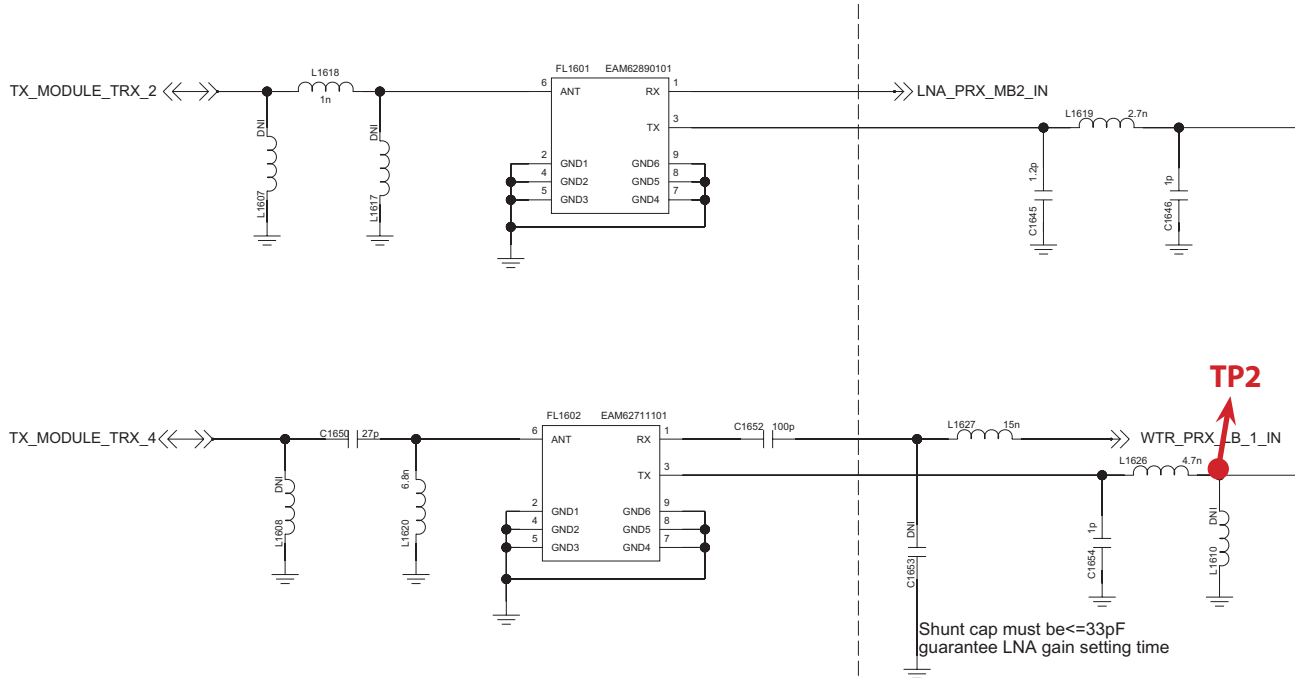
[WCDMA B8]



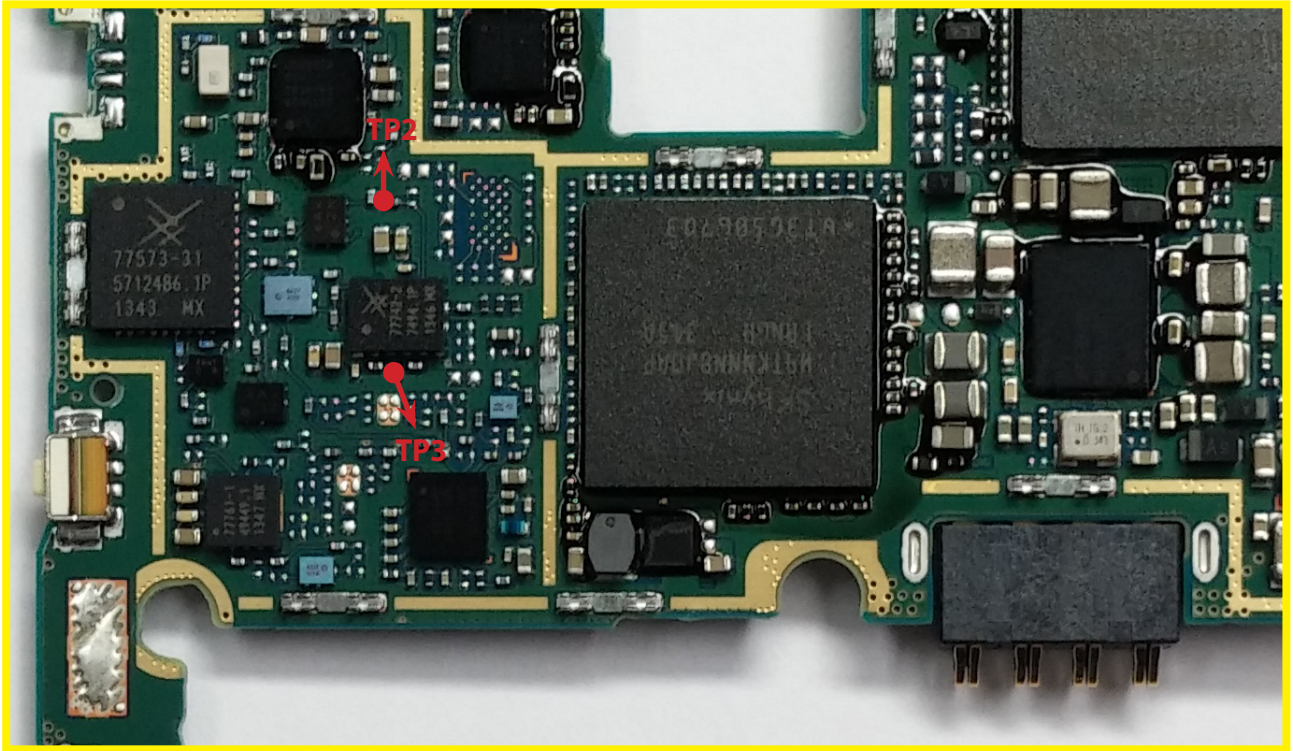
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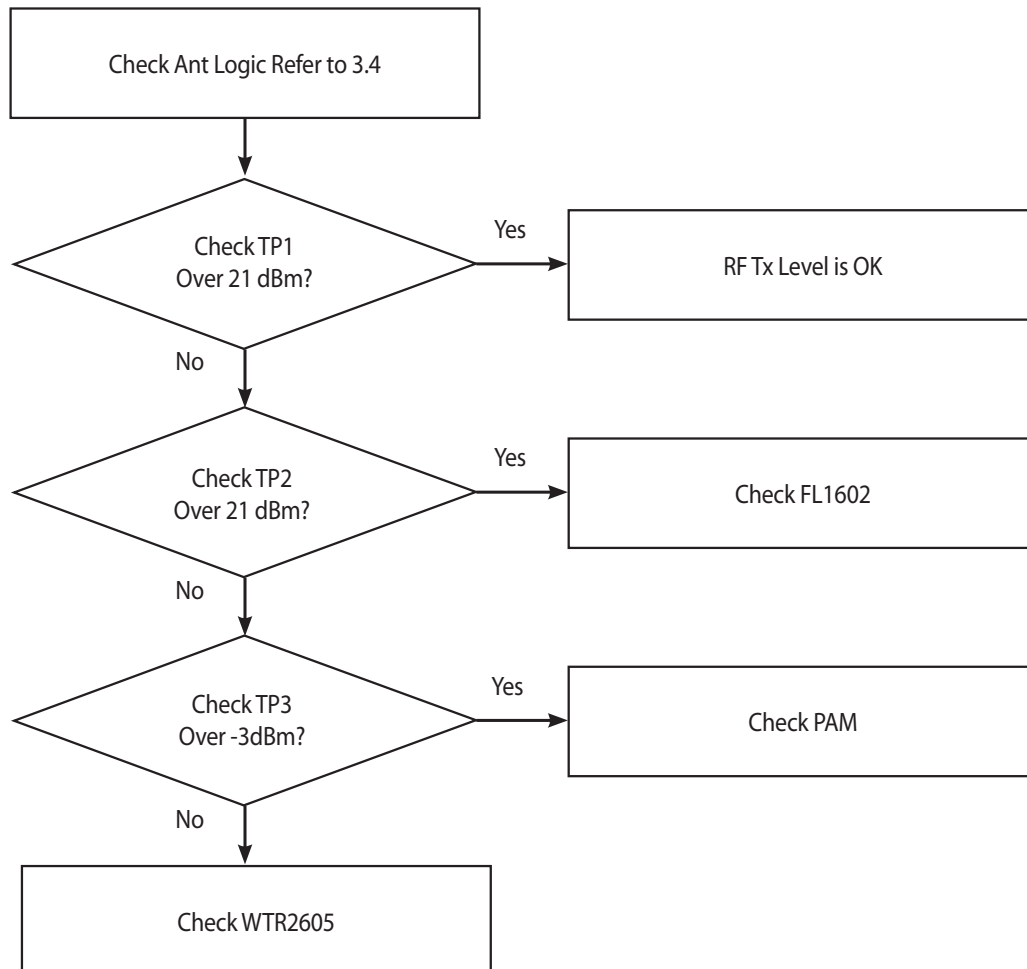
3. TROUBLE SHOOTING



3. TROUBLE SHOOTING



<Main Top>



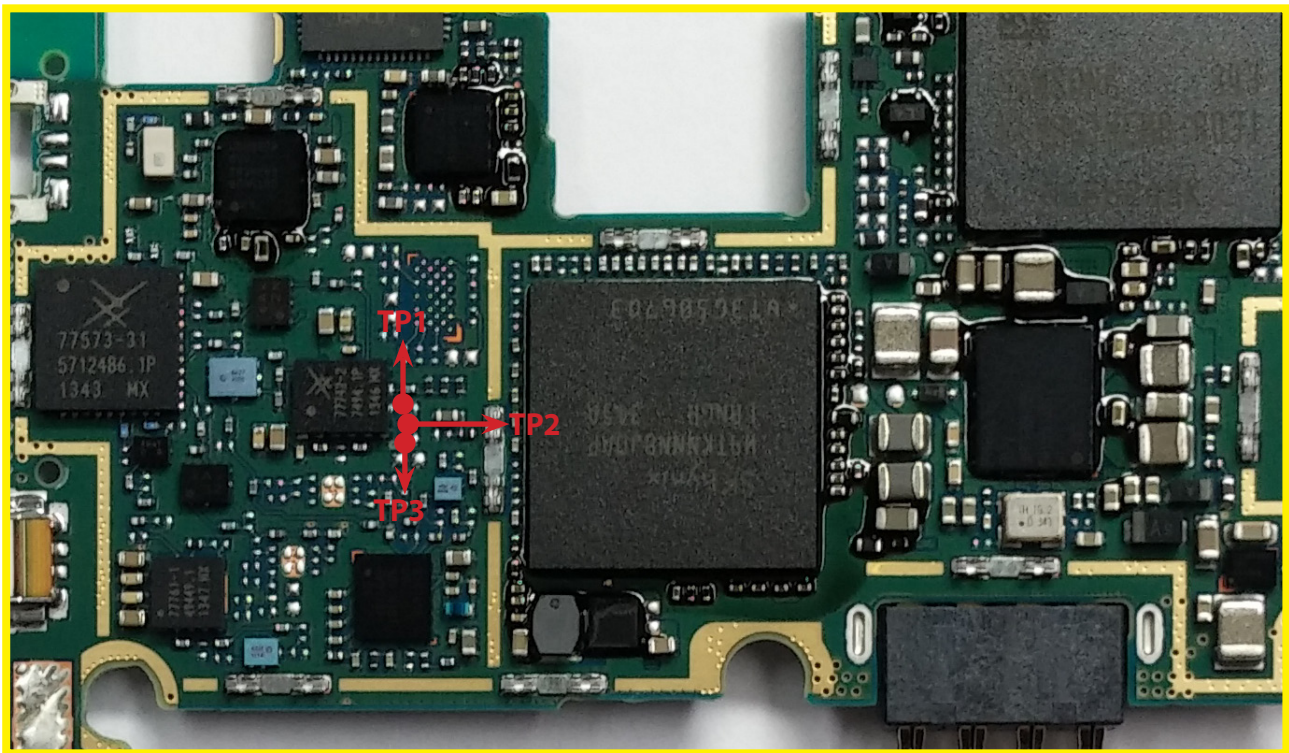
3. TROUBLE SHOOTING

PAM control signal

PA0_ON_0 (C1647) : PAM Enable & Band Select

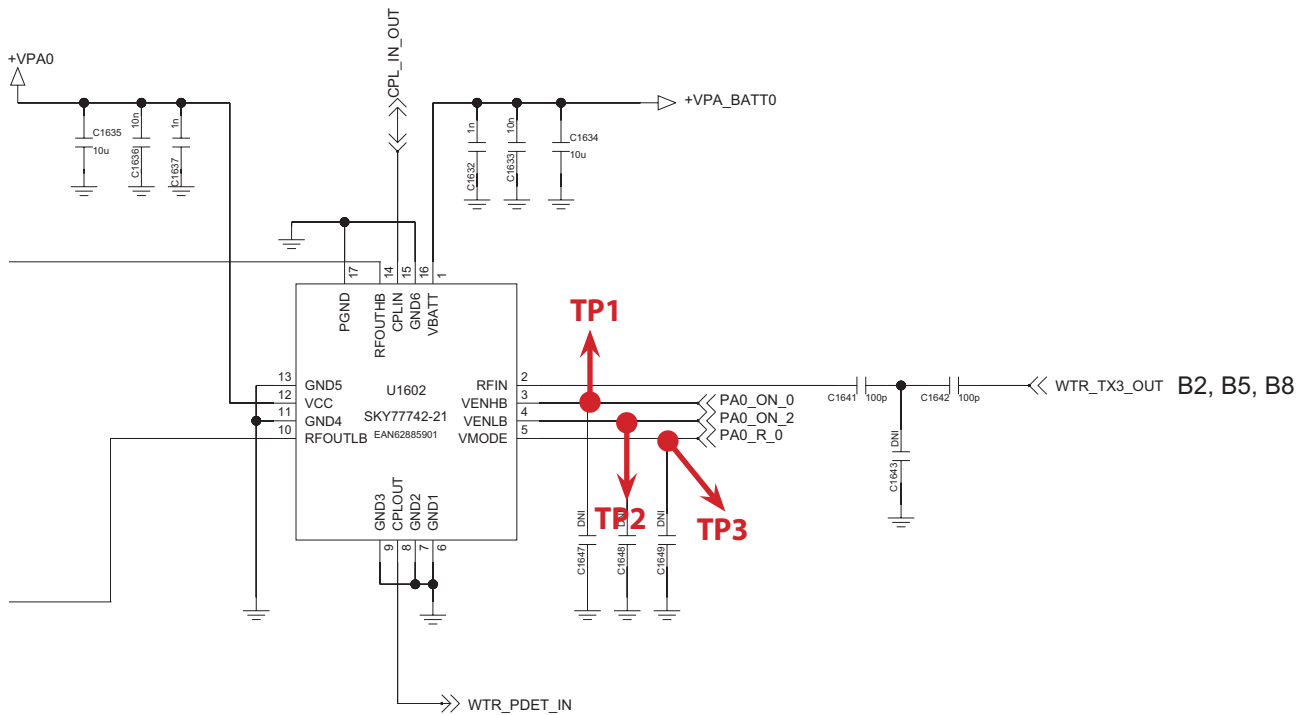
PA0_ON_2 (C1648) : Gain Control

PA0_R_0 (C1648) : Gain Control



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3. TROUBLE SHOOTING



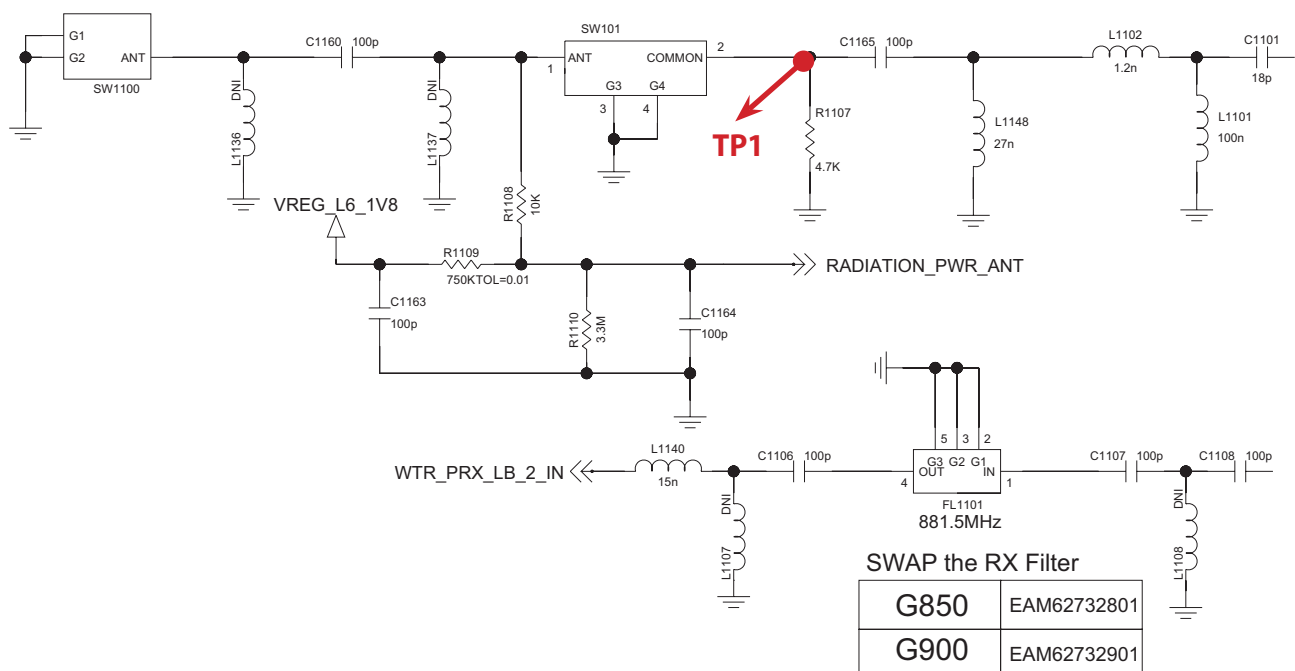
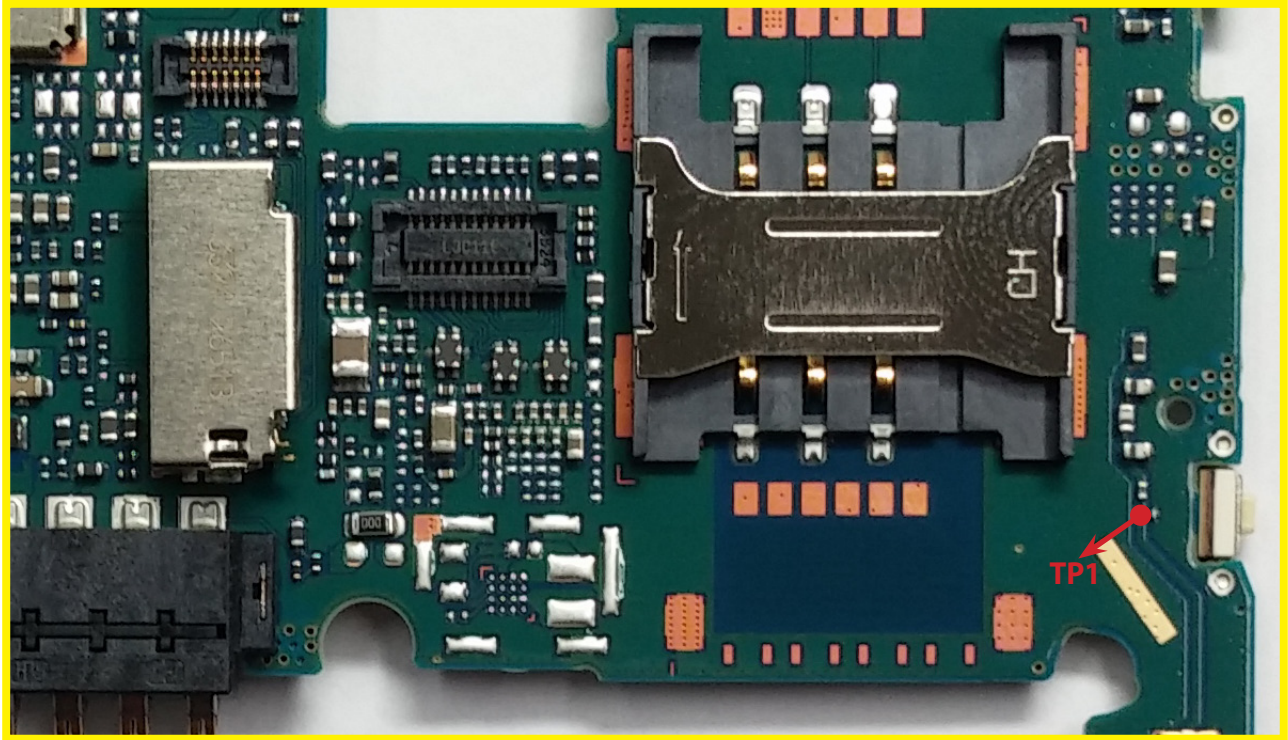
PA LOGIC B2/B5

POWER MODE	PA_ON_0	PA_ON_2	PA0_R0
SHUT DOWN	L	L	L
STAND-BY	L	L	-
B1/B2 HPM	H	L	L
B1/B2 LPM	H	L	H
B5/B8 HPM	L	H	L
B5/B8 LPM	L	H	H

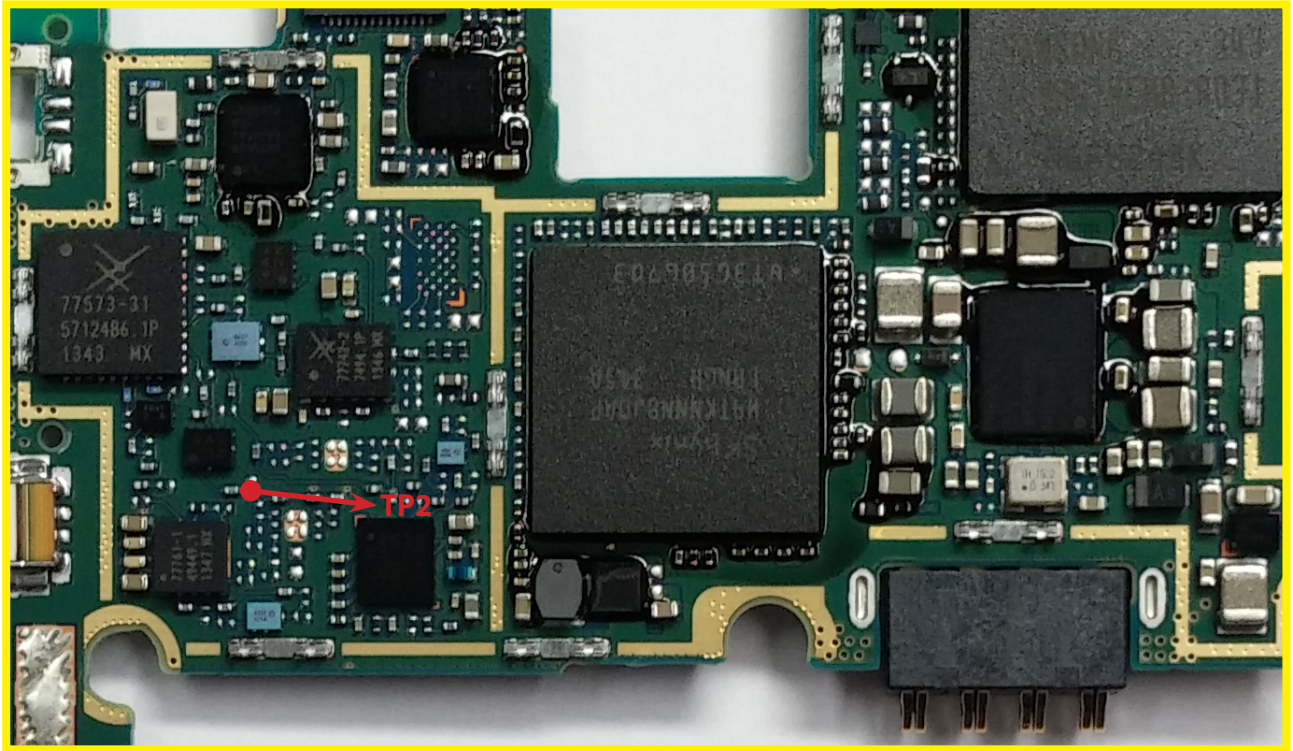
3.5.4 Checking RF Rx Level

[WCDMA B1]

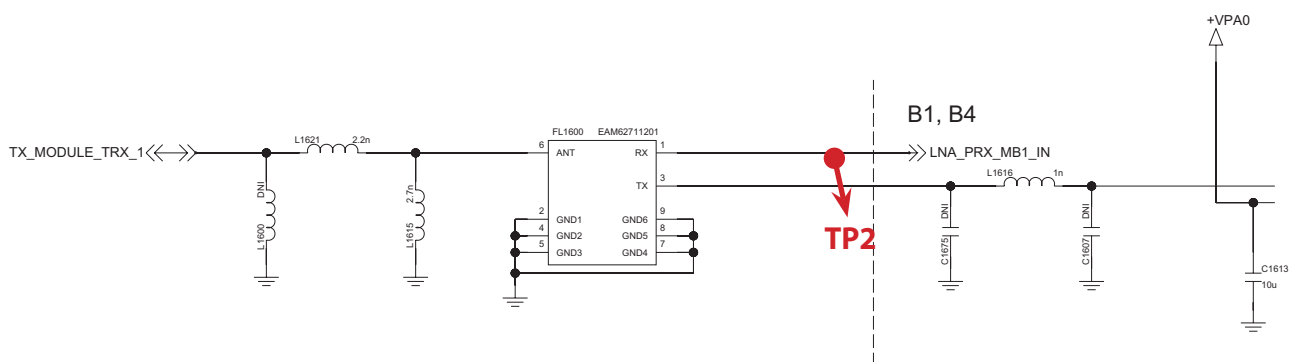
Test Point (WCDMA B1 RF Rx Level)

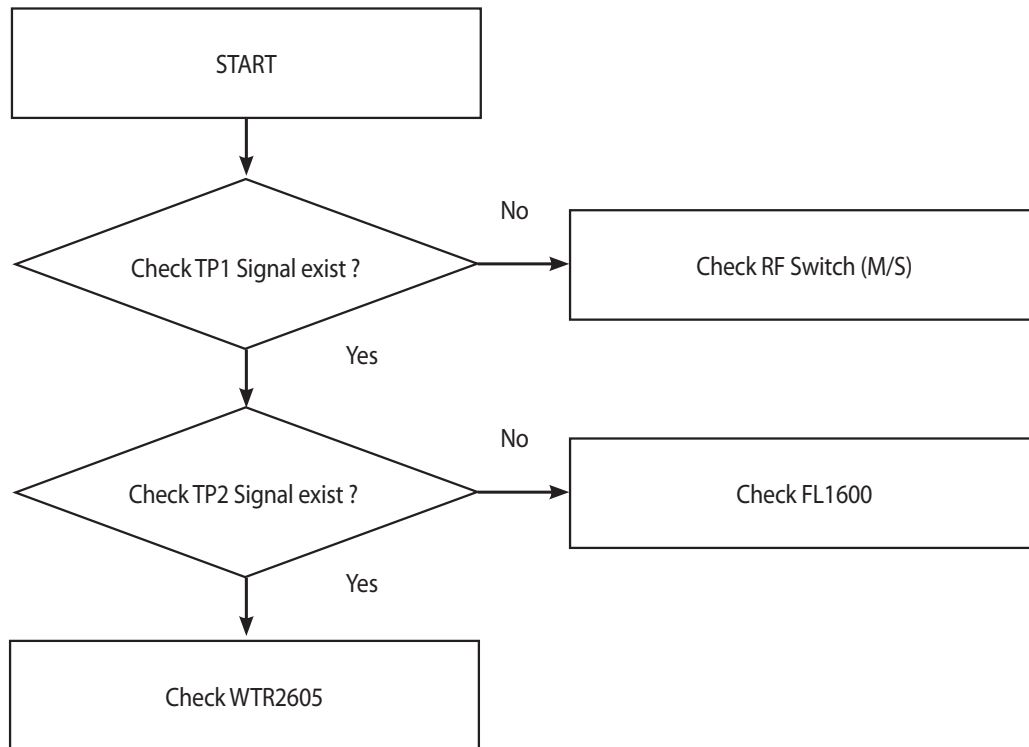


3. TROUBLE SHOOTING



<Main Top>

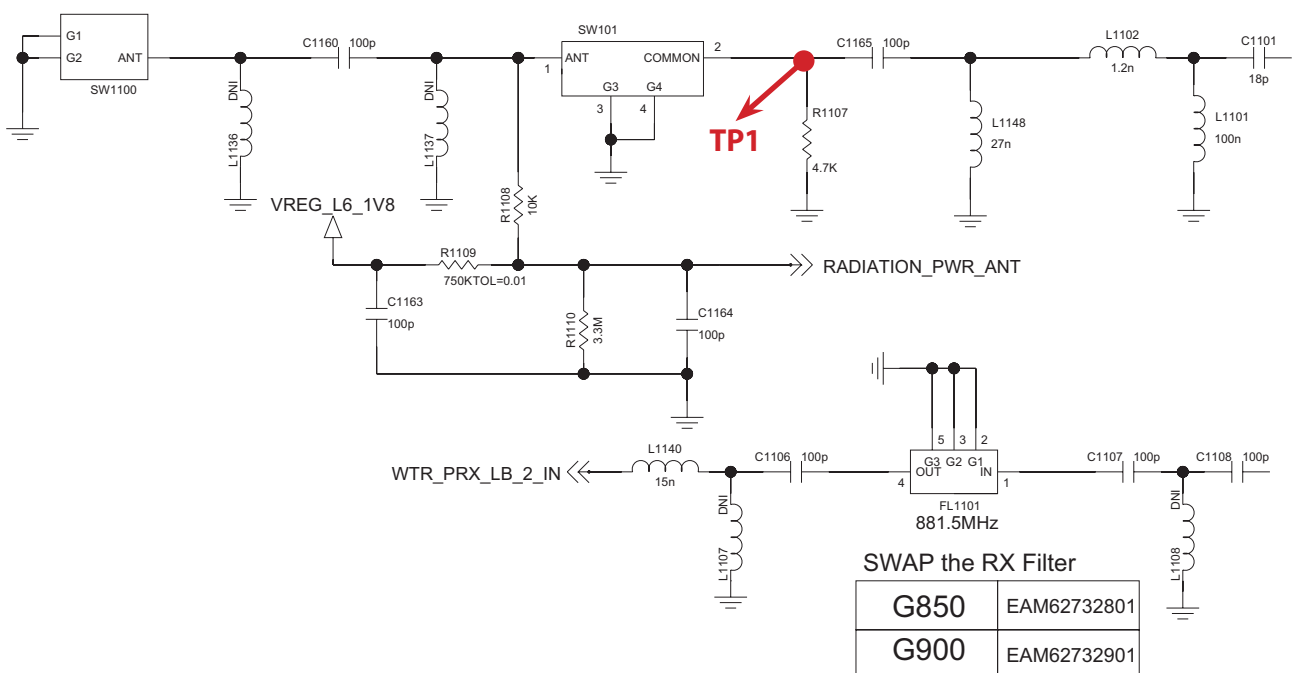
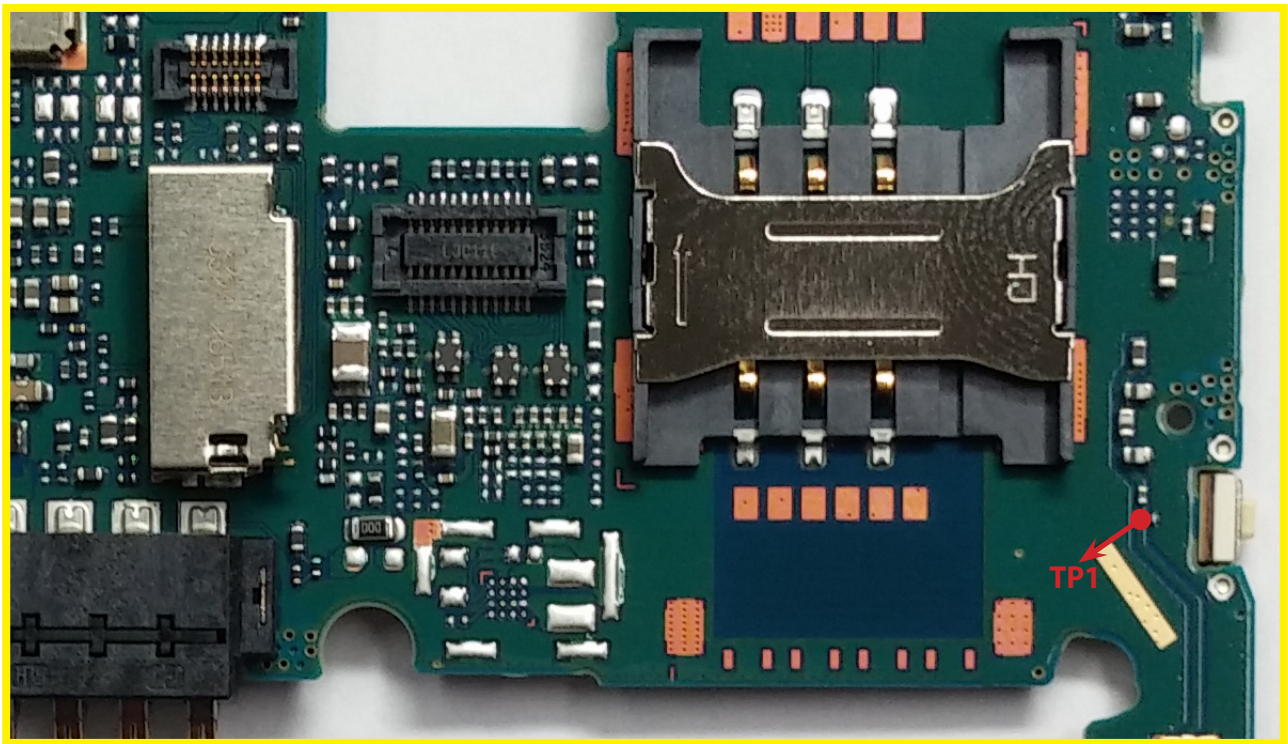




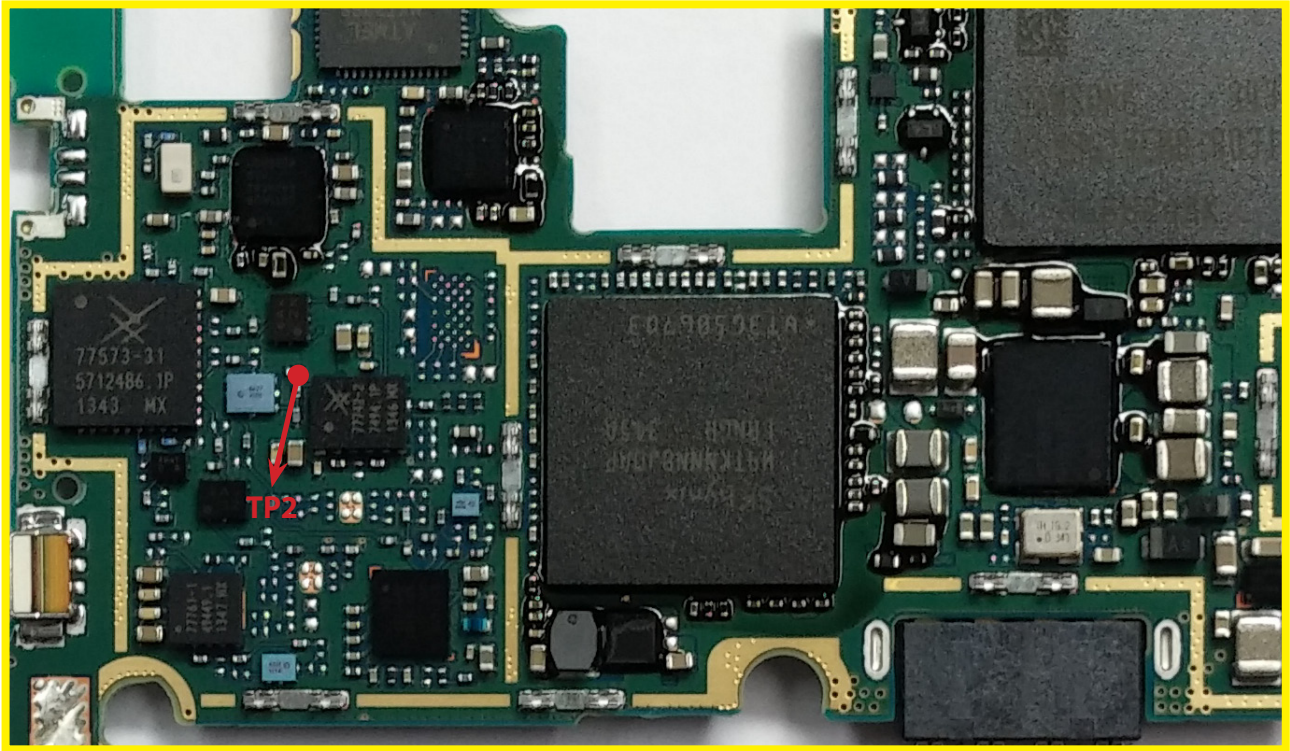
3. TROUBLE SHOOTING

[WCDMA B2]

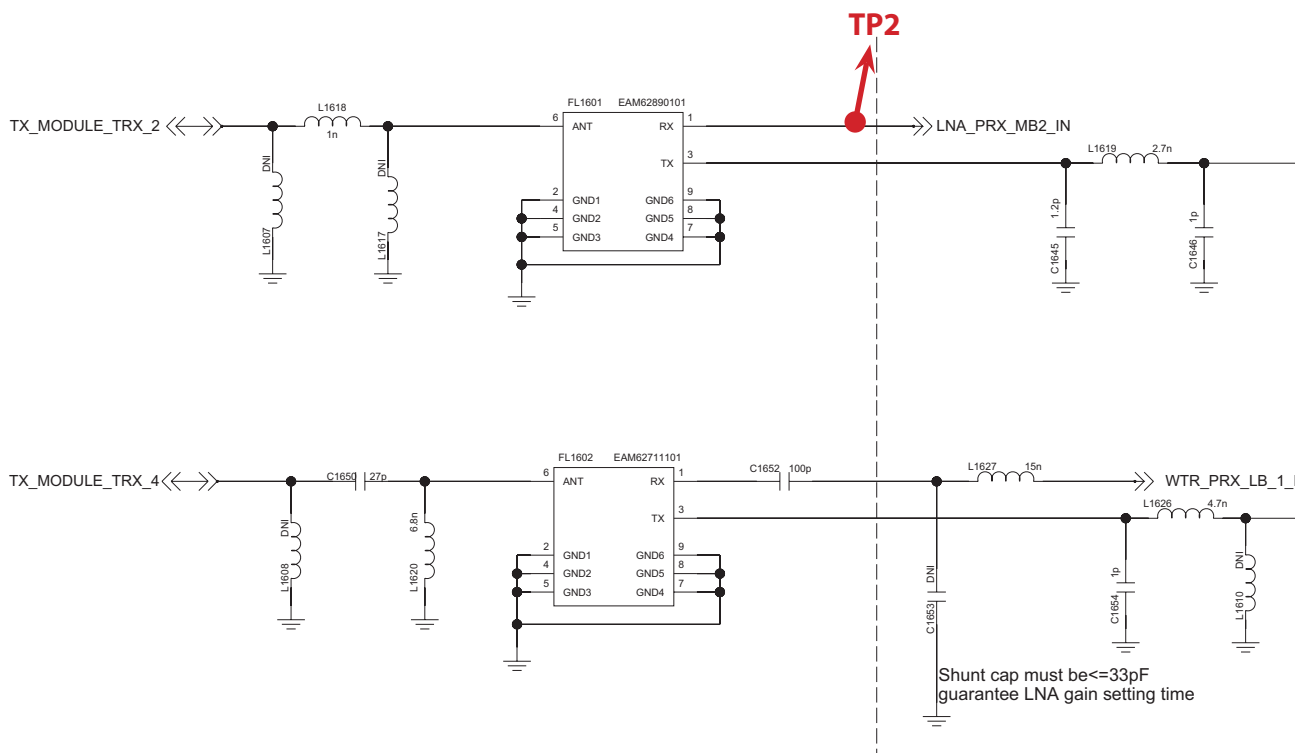
Test Point (WCDMA B2 RF Rx Level)

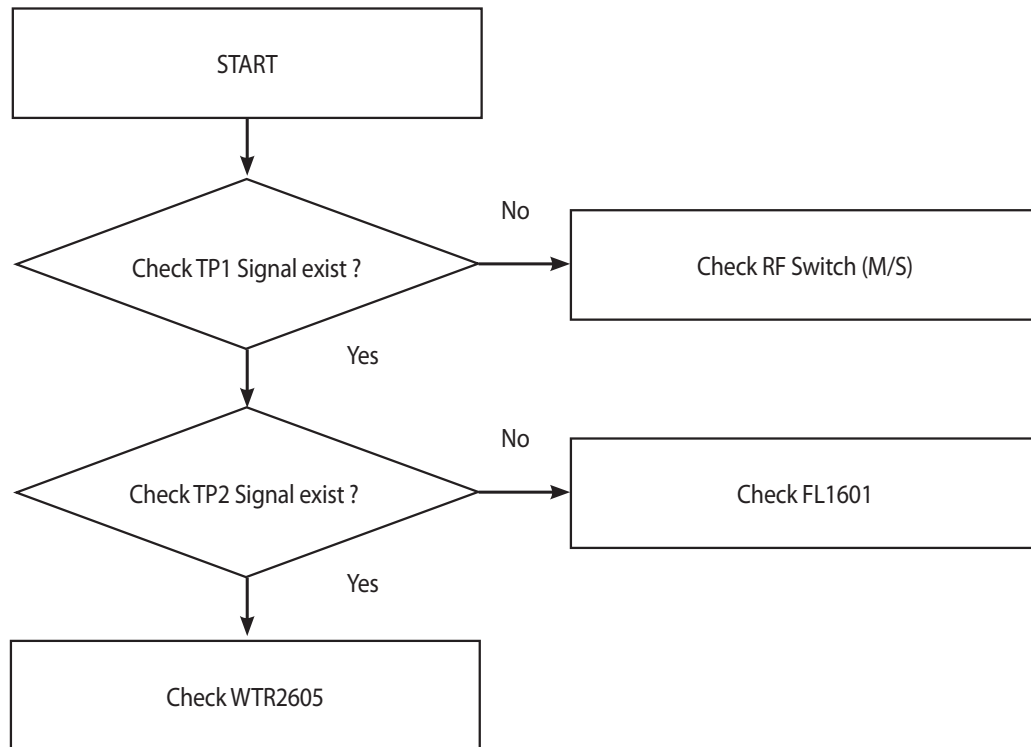


3. TROUBLE SHOOTING



<Main Top>

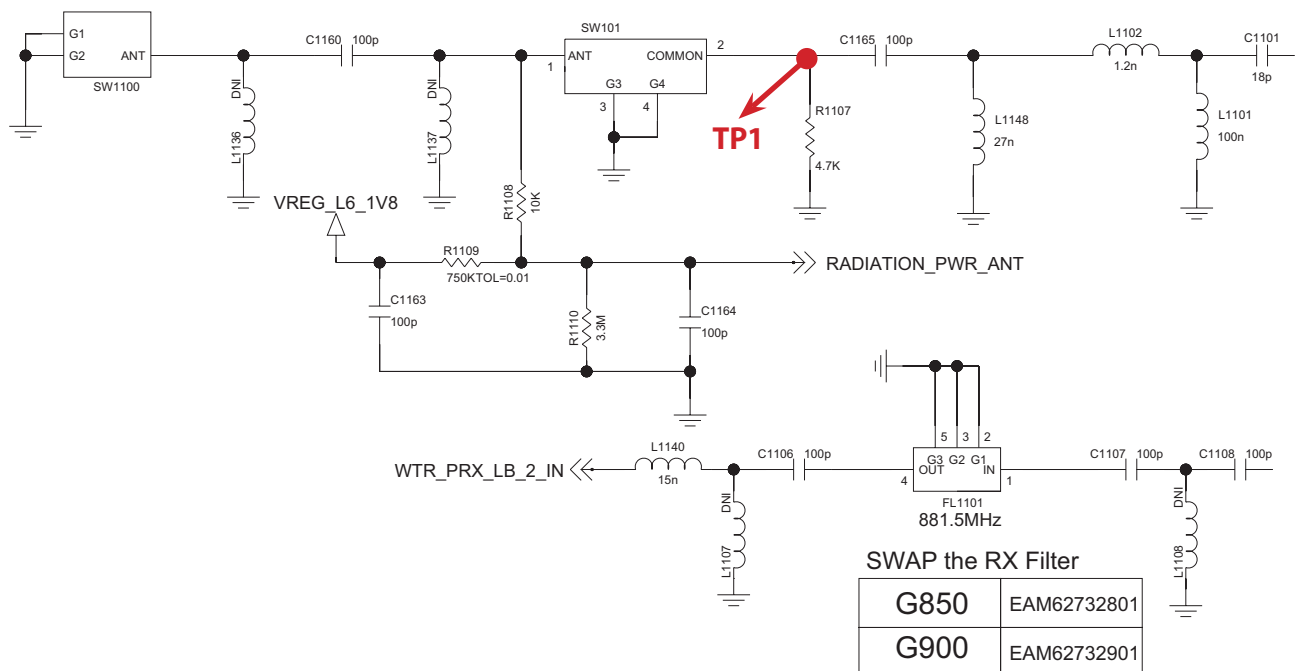
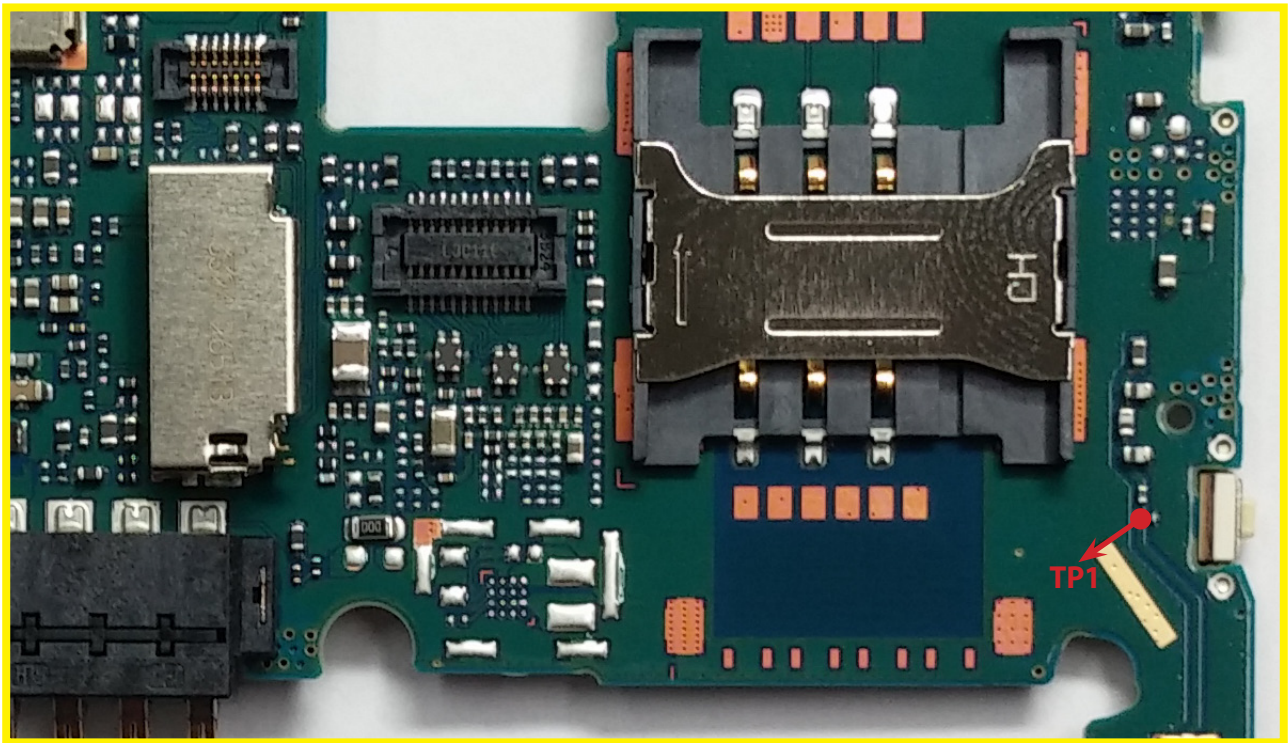




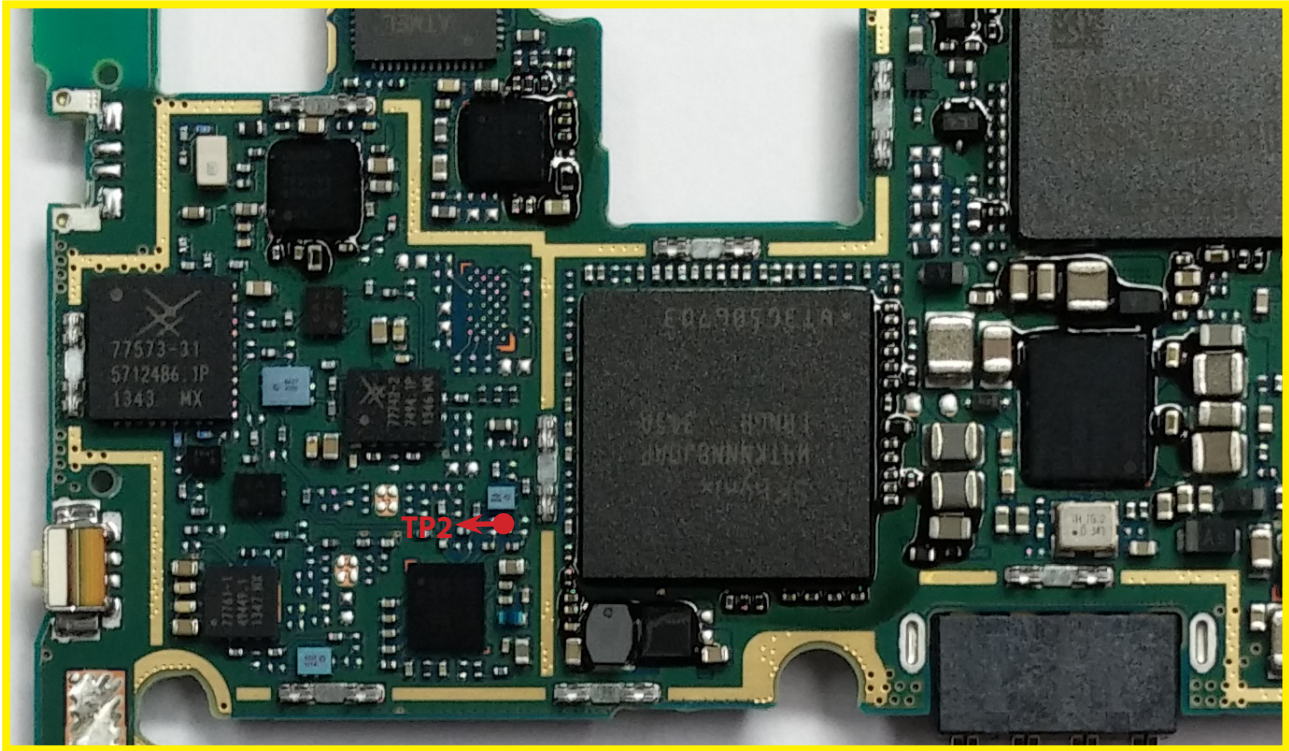
3. TROUBLE SHOOTING

[WCDMA B8]

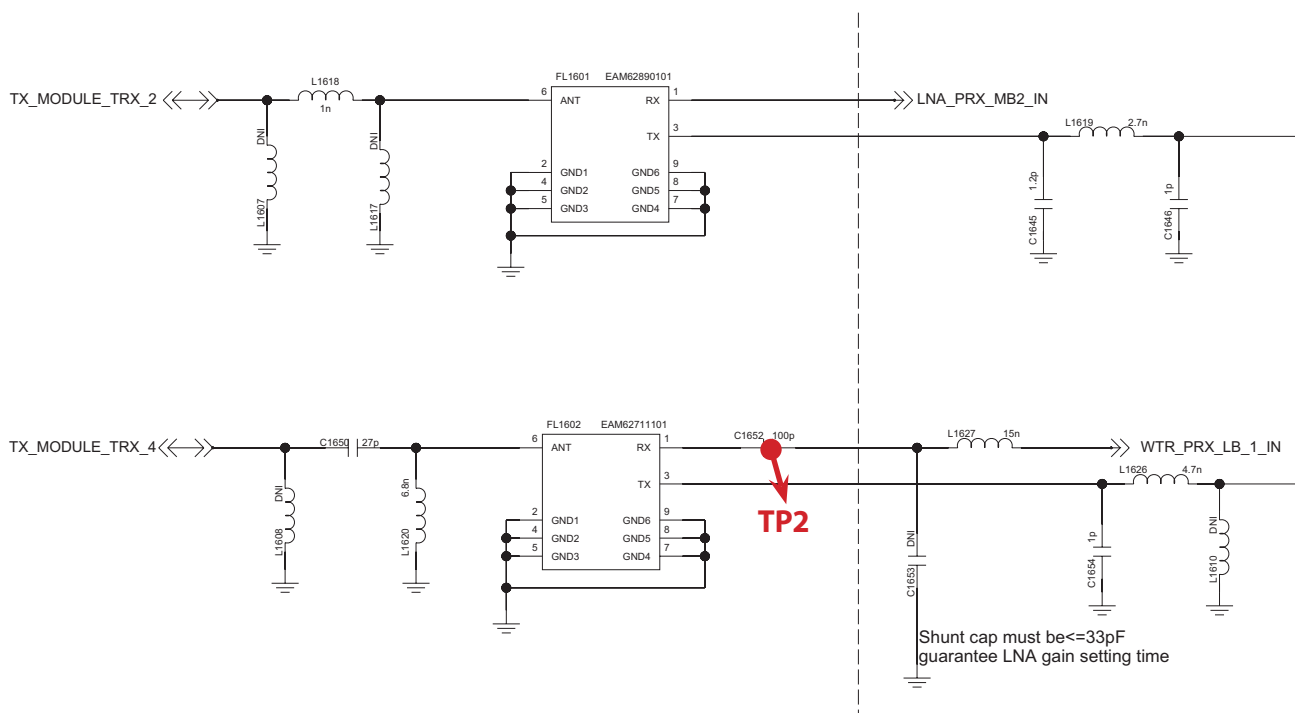
Test Point (WCDMA B8 RF Rx Level)



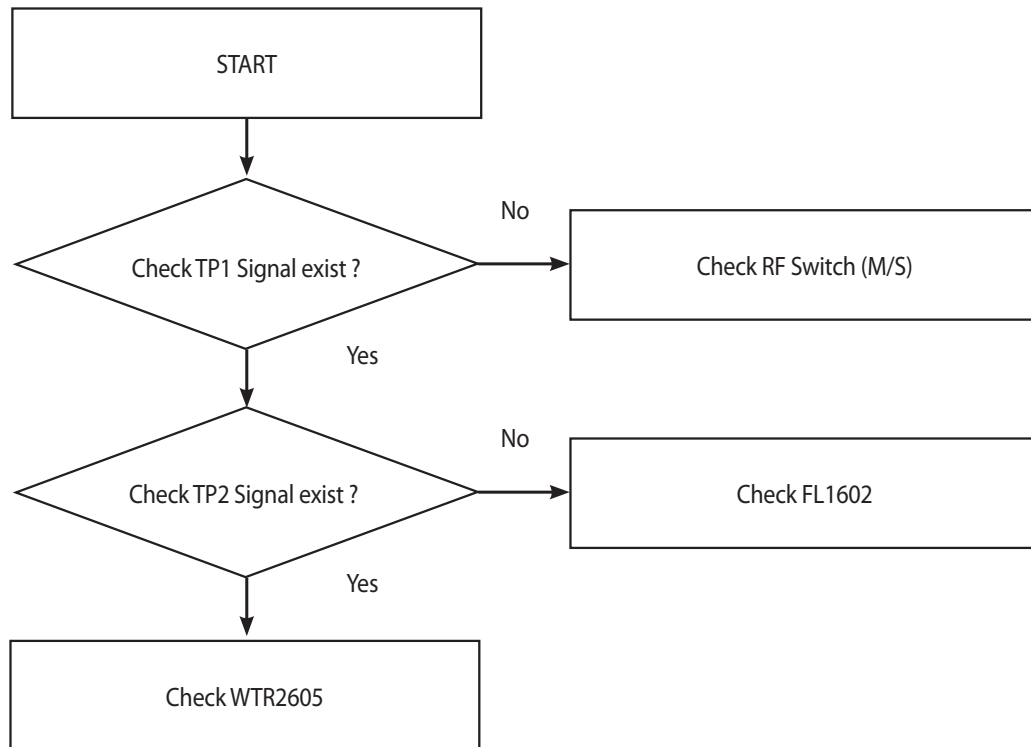
3. TROUBLE SHOOTING



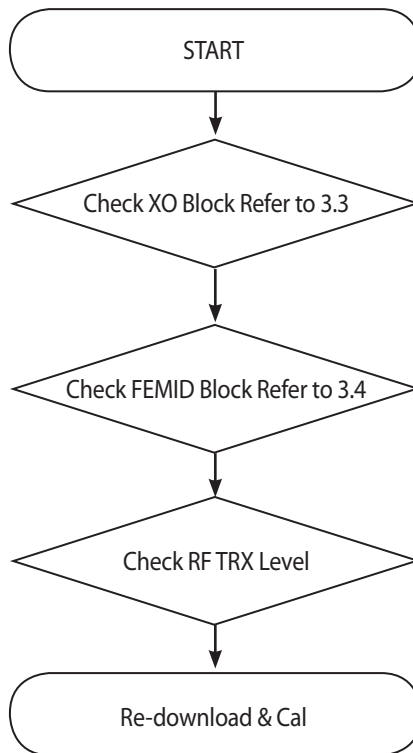
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3. TROUBLE SHOOTING



3.6 Checking GSM Block

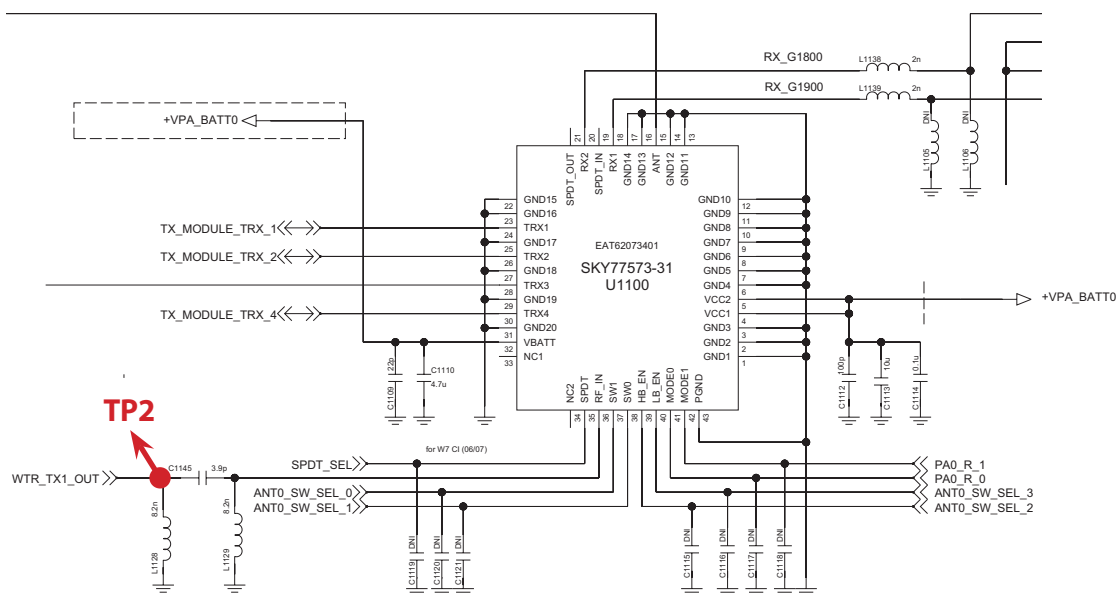


Refer to 3.3

Refer to 3.4

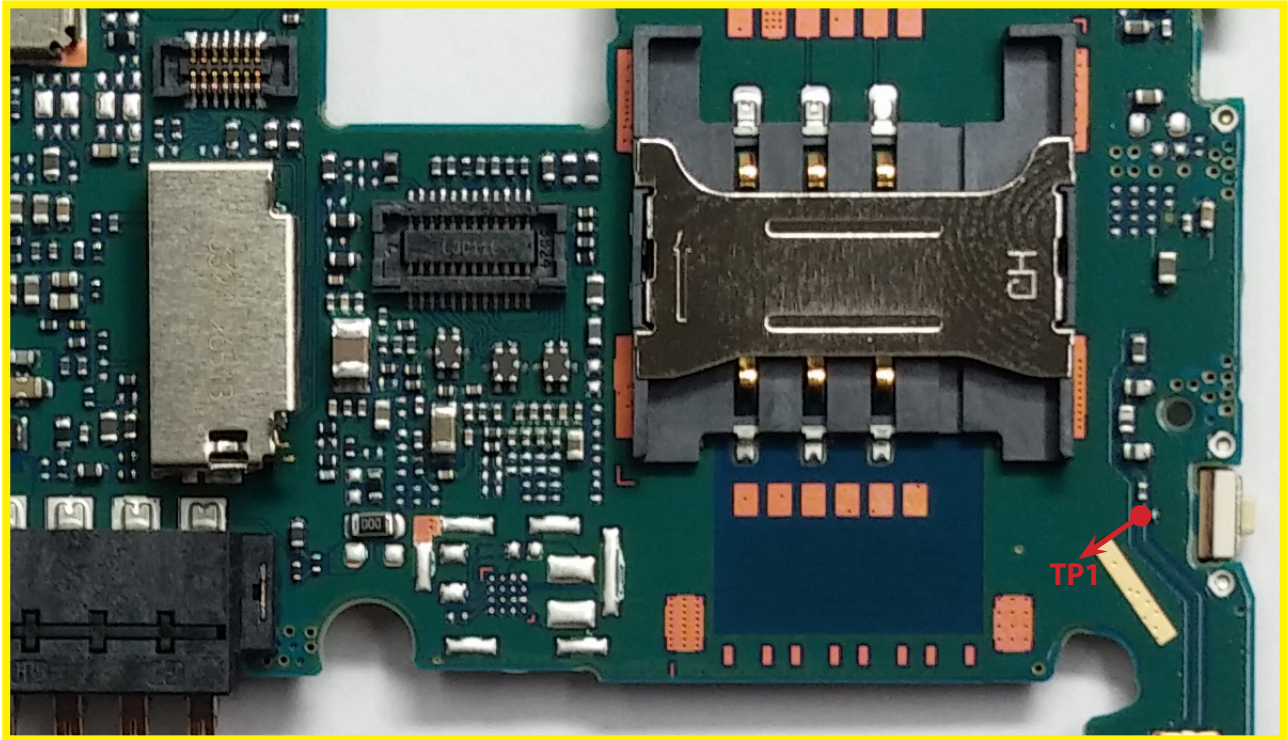
SWAP the RX Filter

G850	EAM62732801
G900	EAM62732901

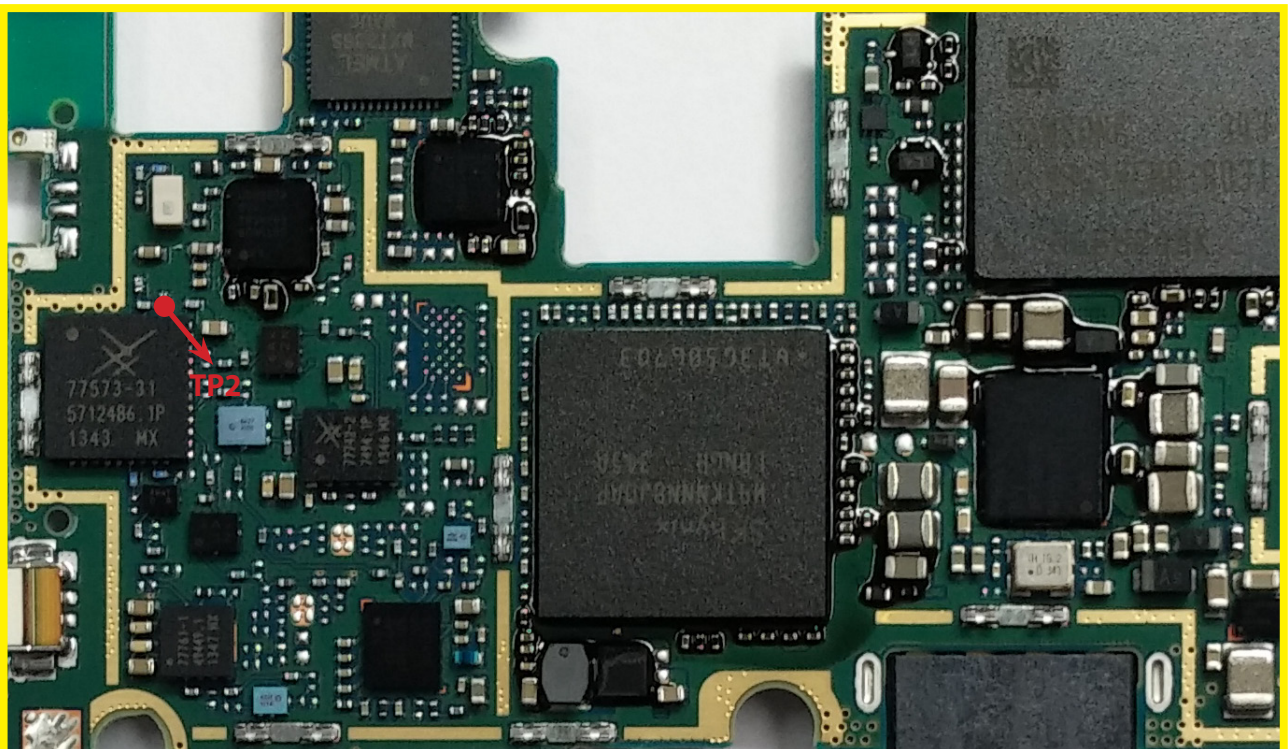


LGE Internal Use Only

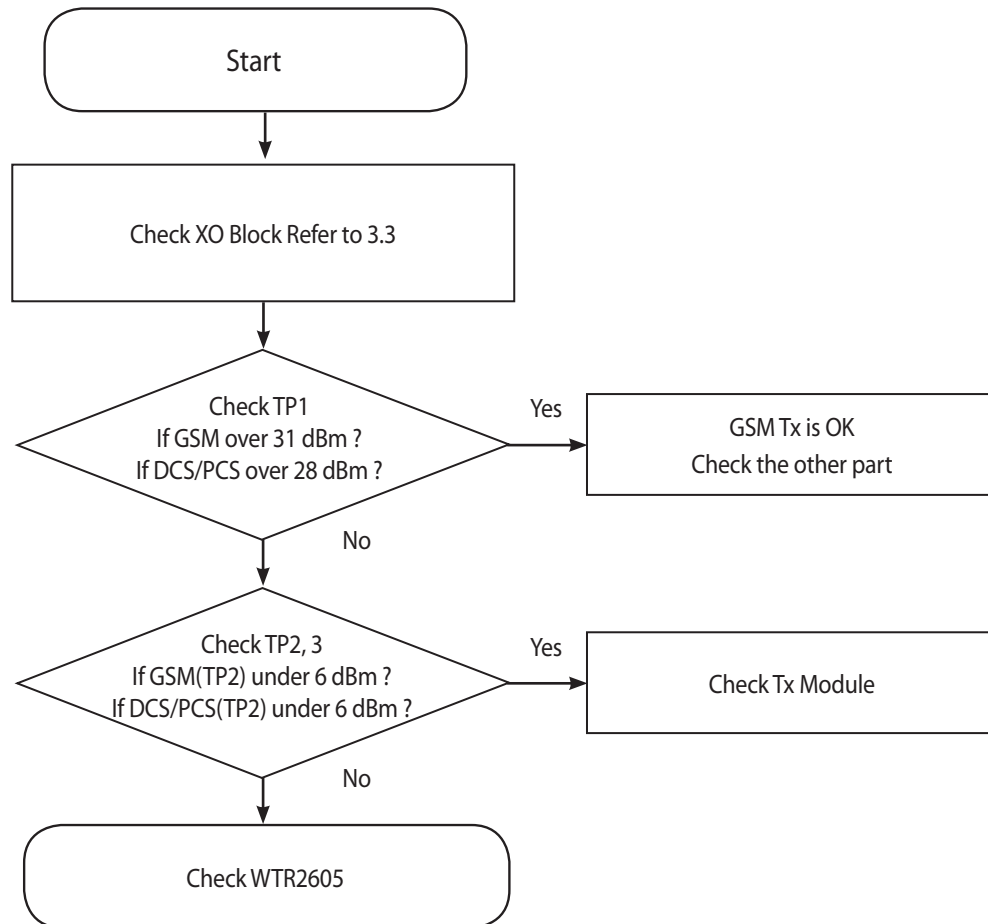
3. TROUBLE SHOOTING



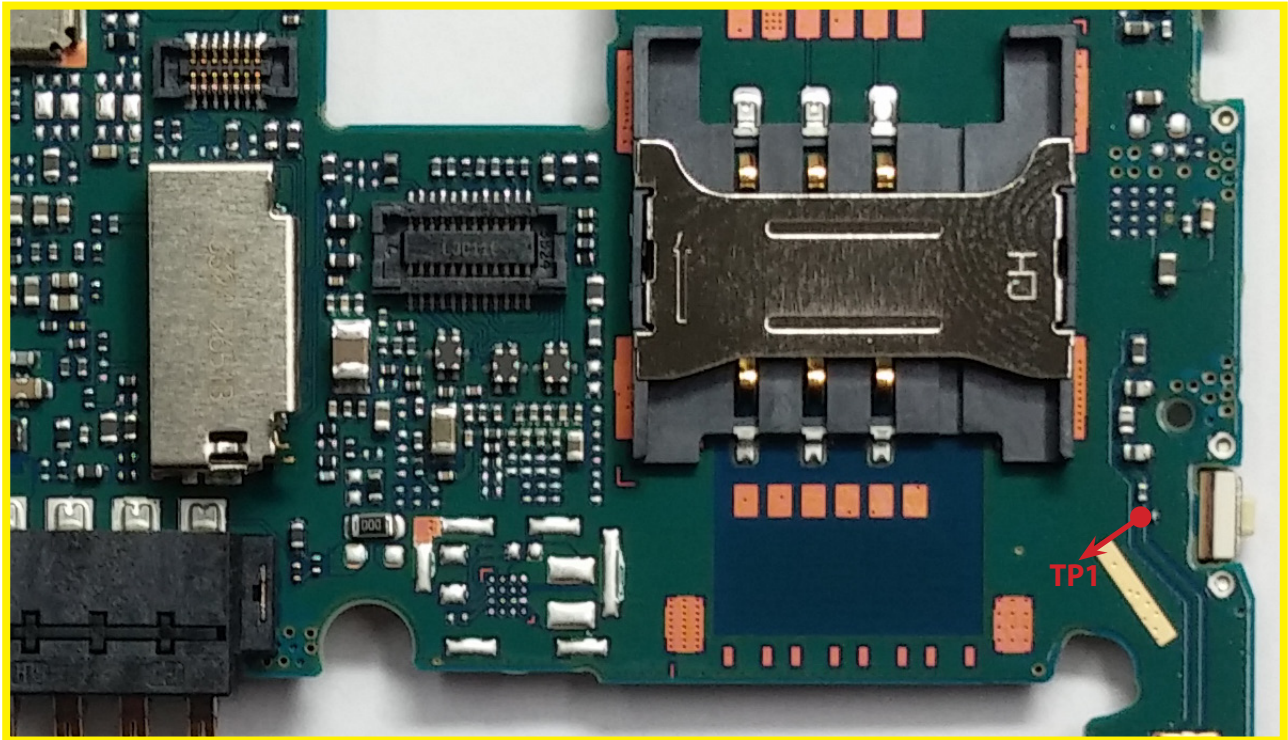
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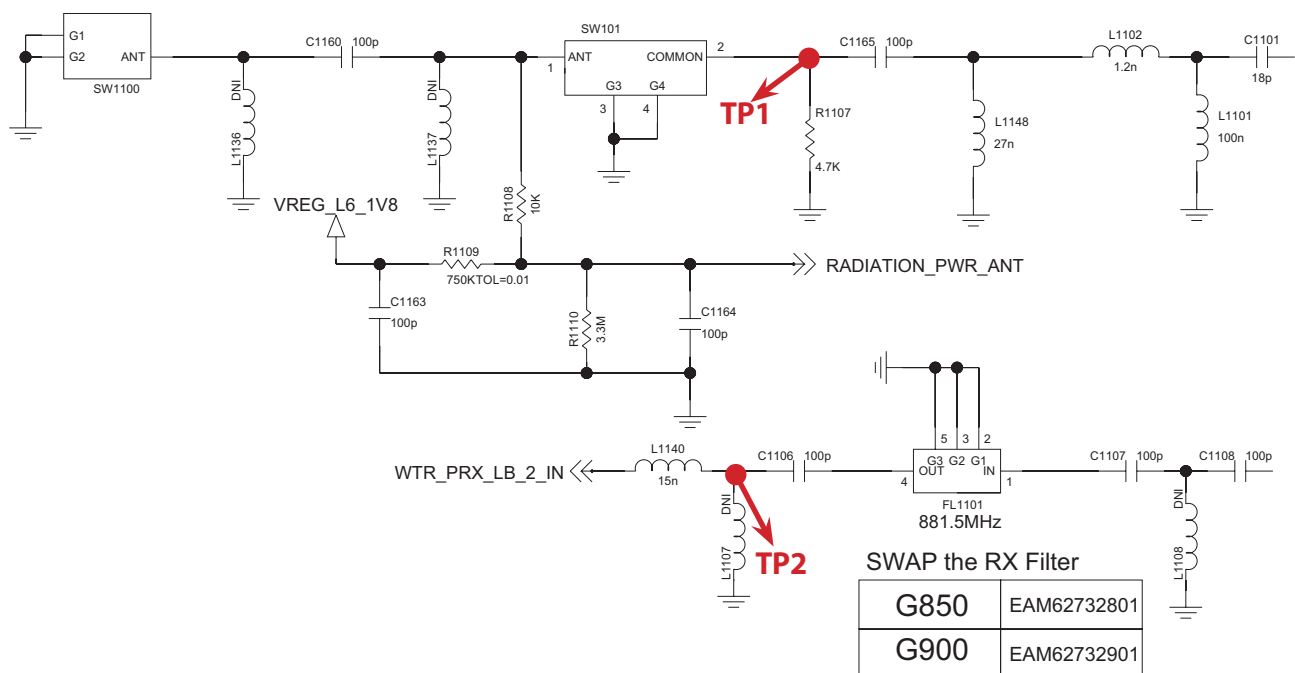
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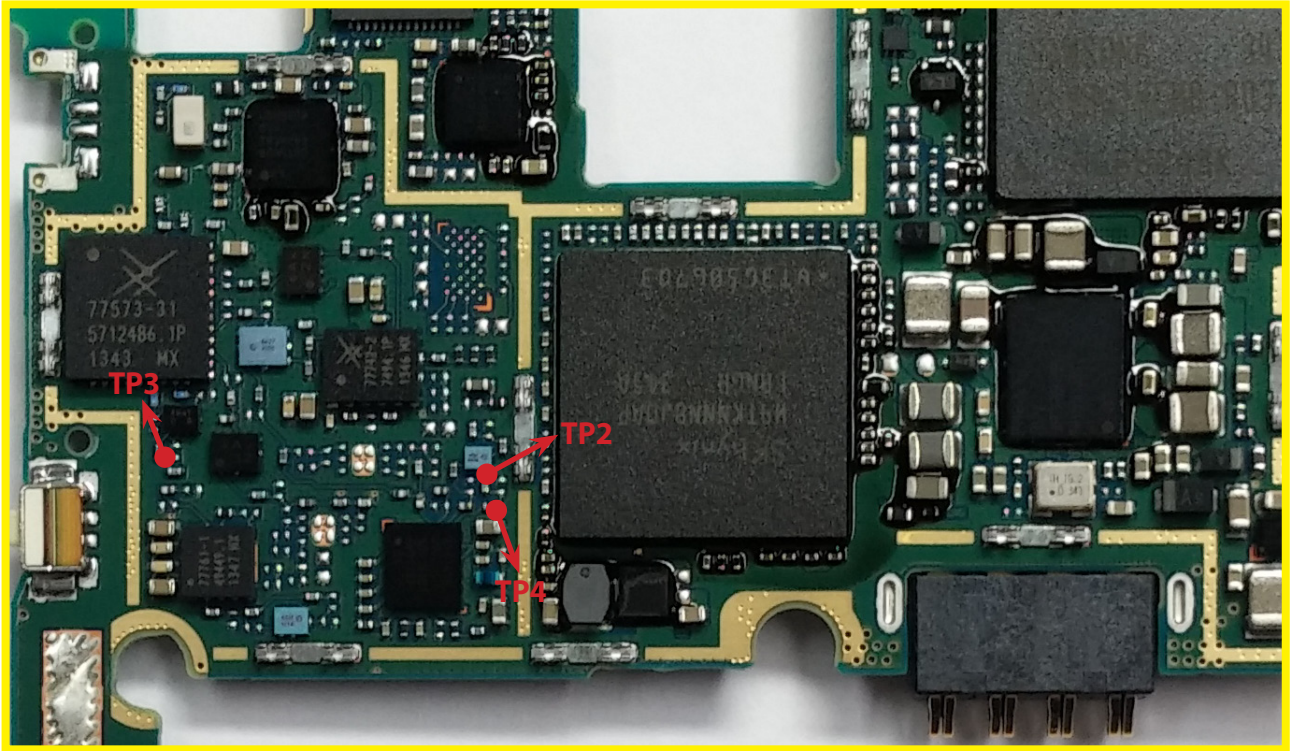
3.6.4 Checking RF Rx Block



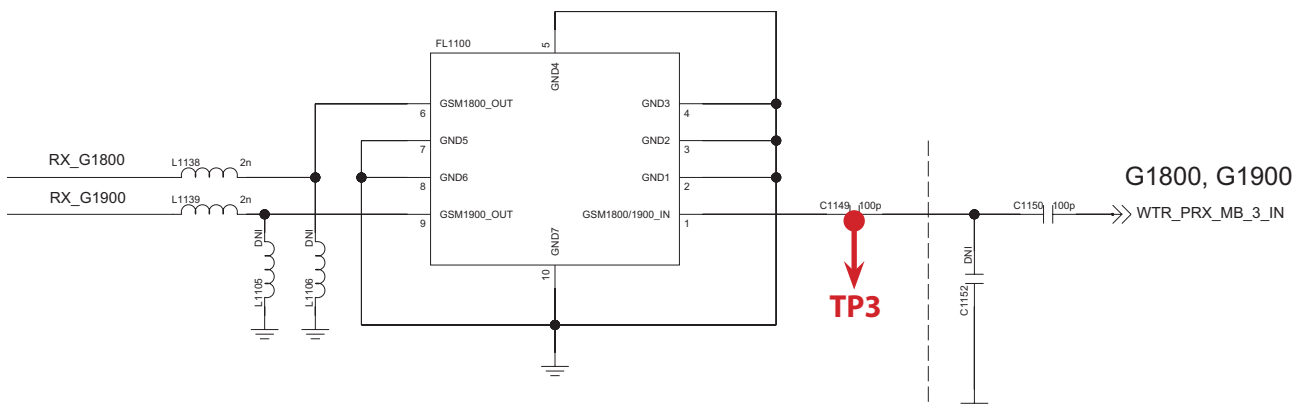
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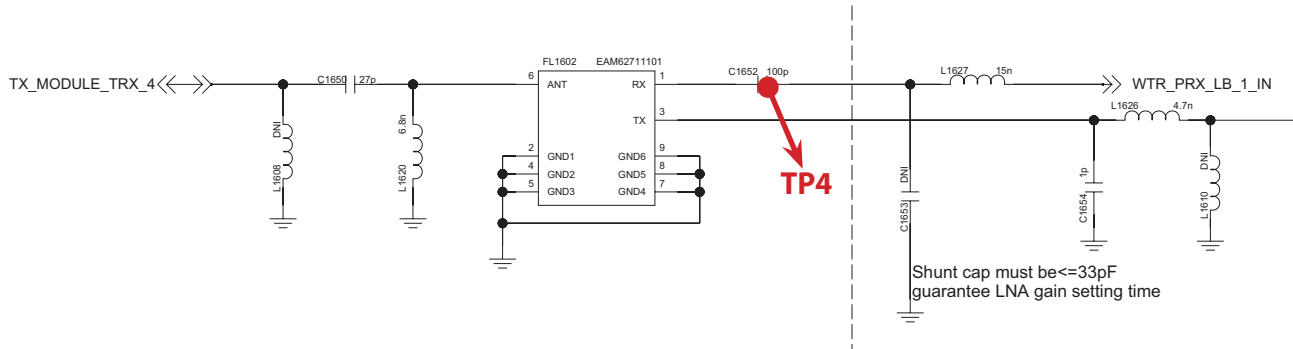
3. TROUBLE SHOOTING



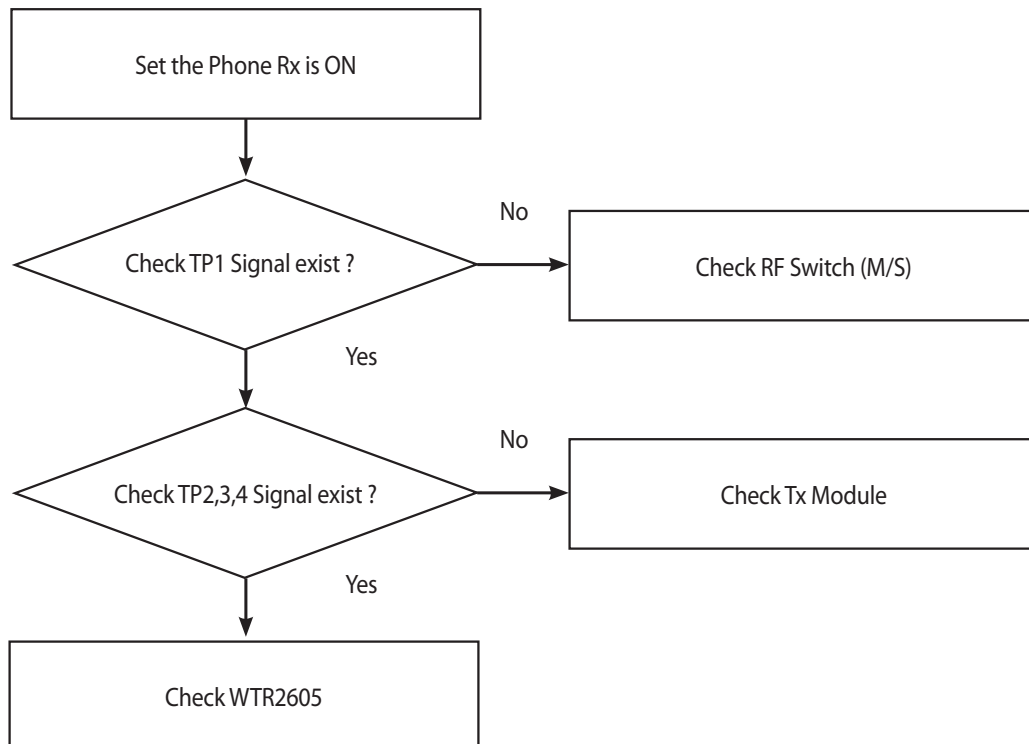
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3. TROUBLE SHOOTING

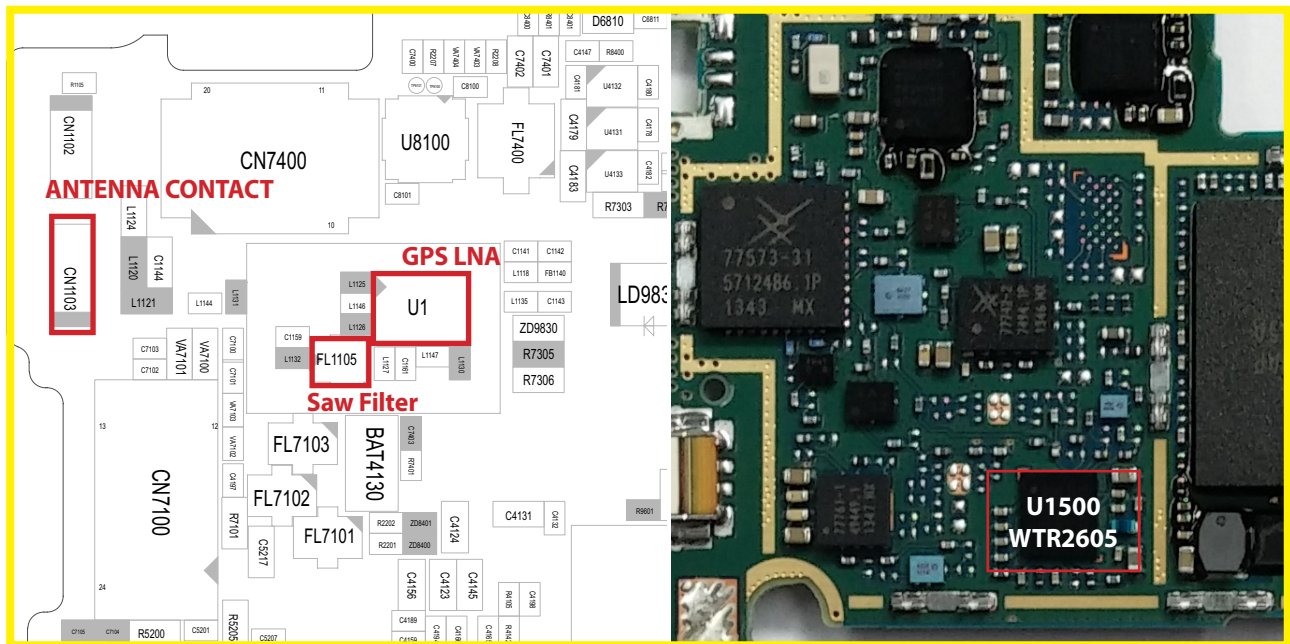


Schematic of GSM(850/900)/DCS/PCS Rx Block



3.7 GPS Trouble Shooting

3.7.1 GPS IC Component



<Min Bot>

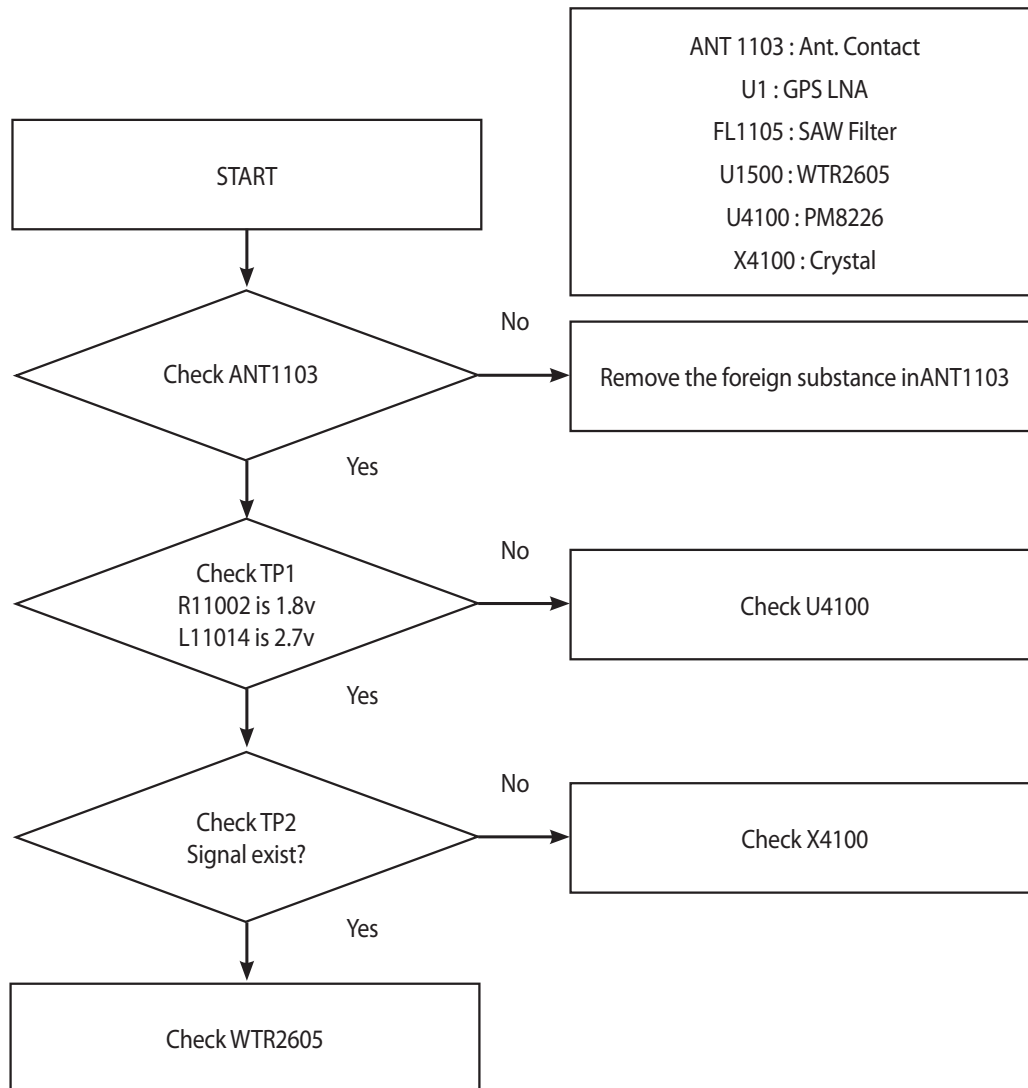
<Min Top>

Reference	Description
CN1103	ANTENNA CONTACT
FL1105	Saw Filter
U1	GPS LNA
U1500	WTR2605

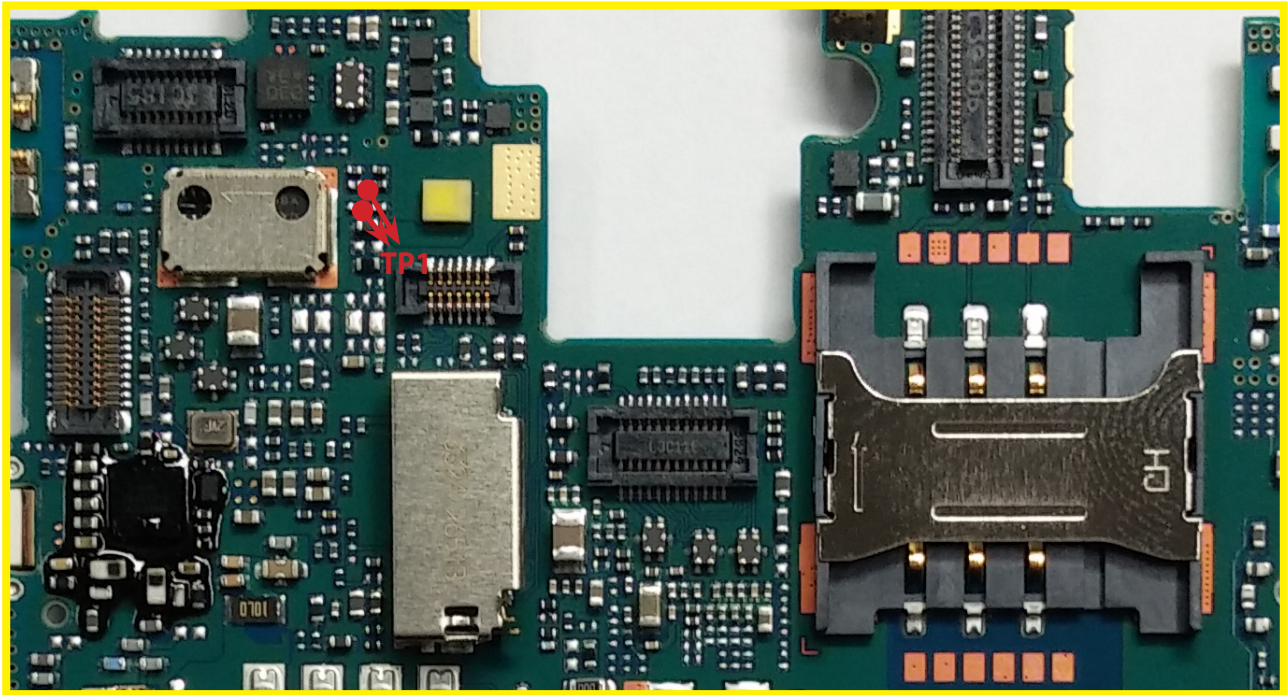


— **GPS Signal**

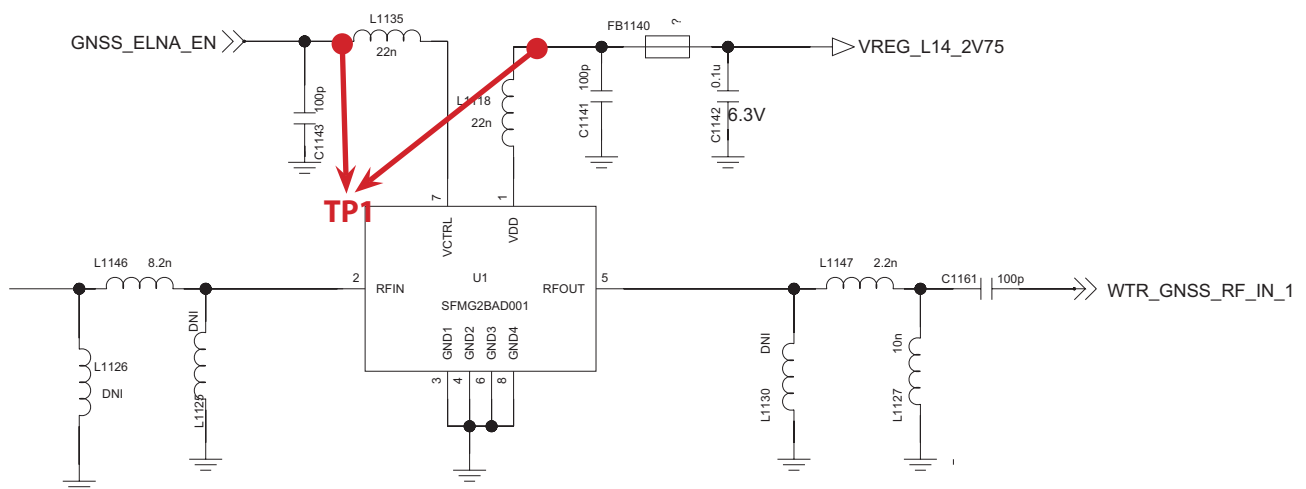
3.7.2 Checking GPS



3.7.3 Photo/Circuit

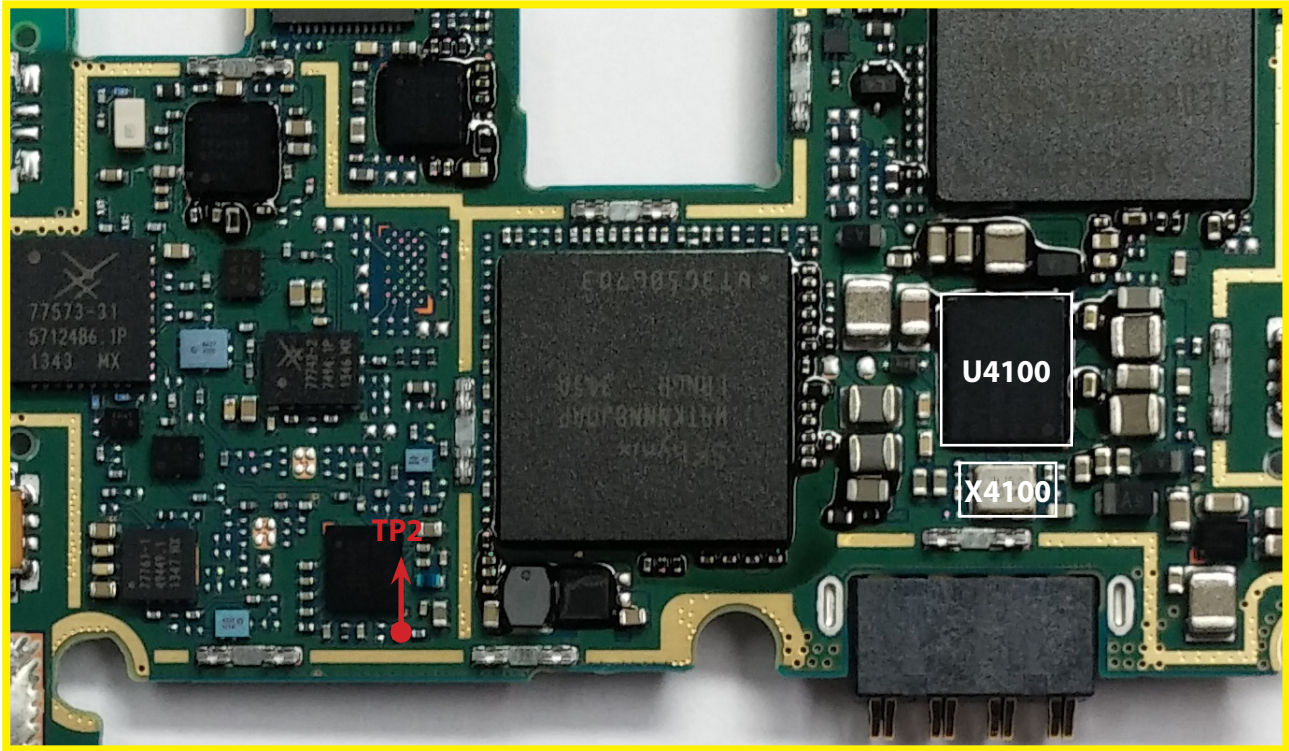


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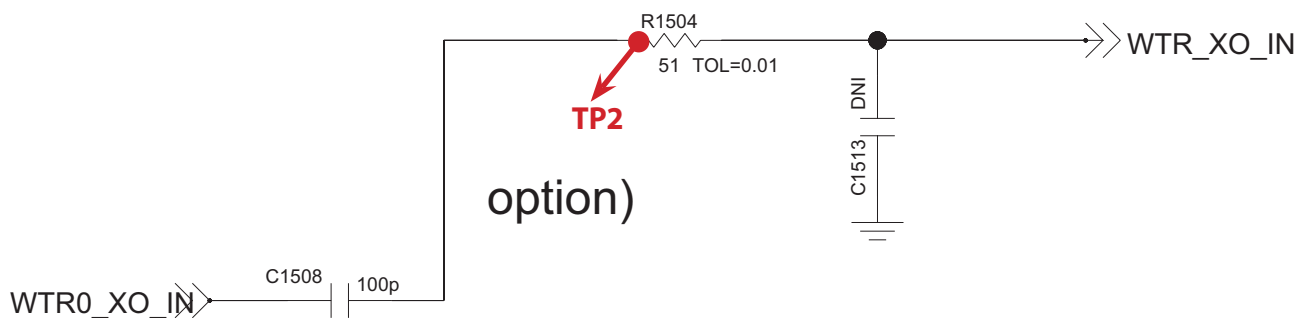


Schematic of GPS LNA Block

3. TROUBLE SHOOTING

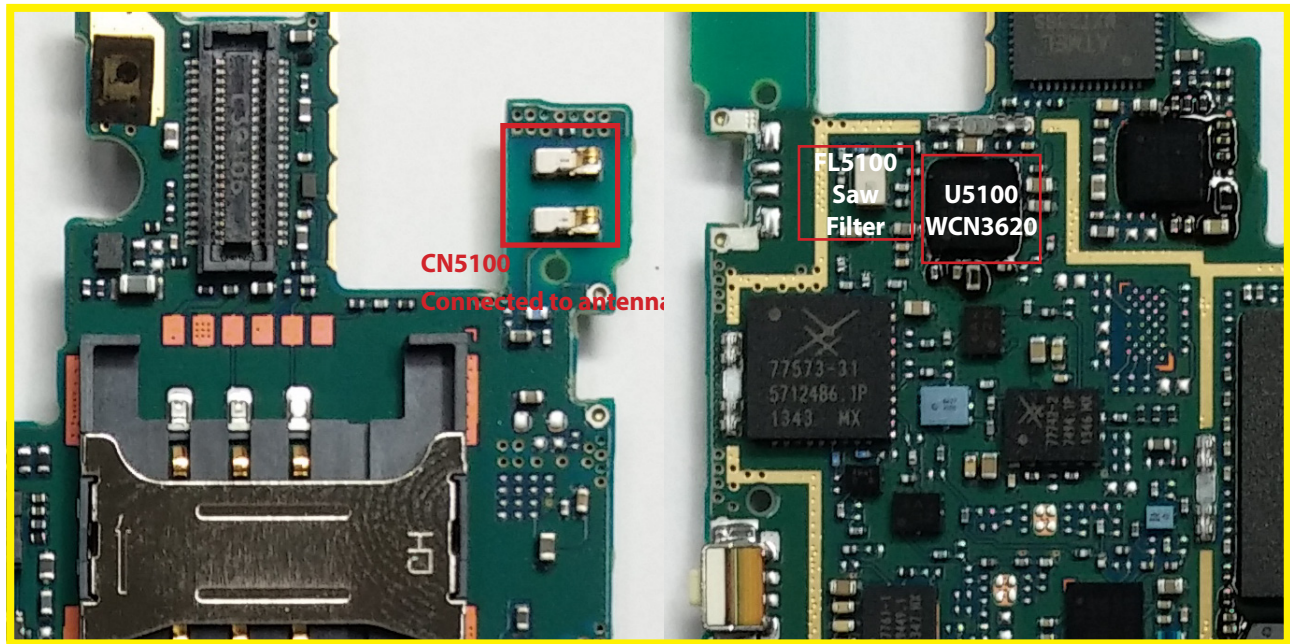


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3.8 WIFI/BT Trouble Shooting

3.8.1 WIFI/BT IC Component

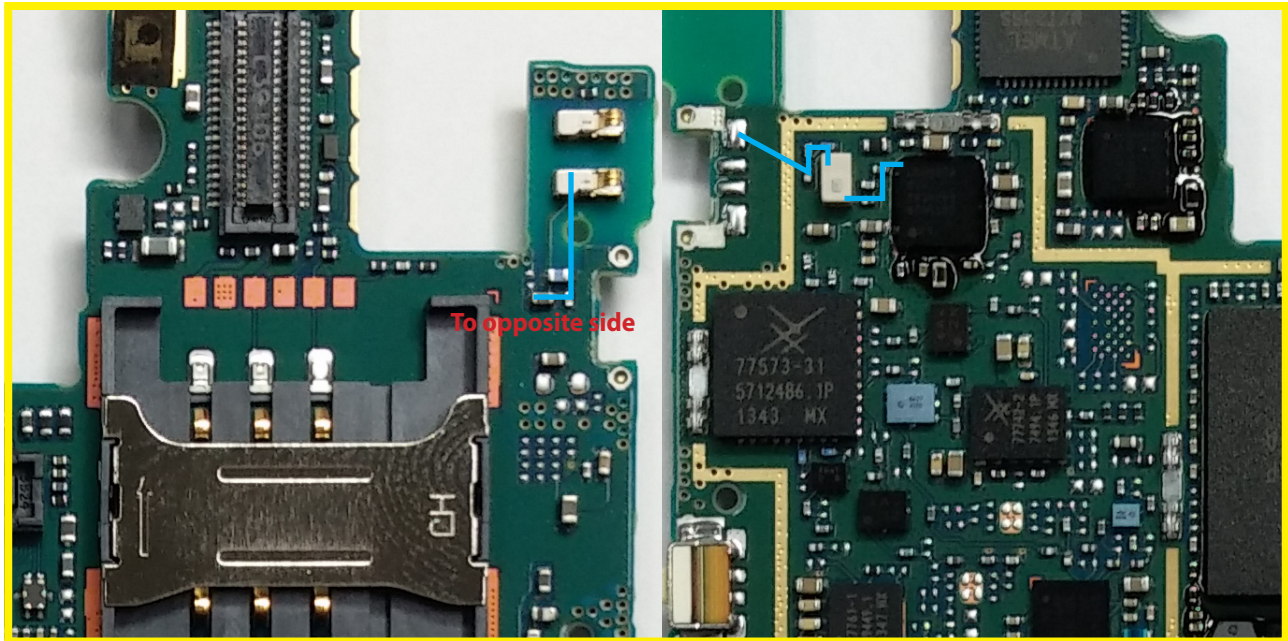


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Reference	Description
CN5100	C-Clip Connected to antenna
FL5100	Saw Filter
U5100	WCN3620

3.8.2 WIFI/BT Signal Path Tx/Rx

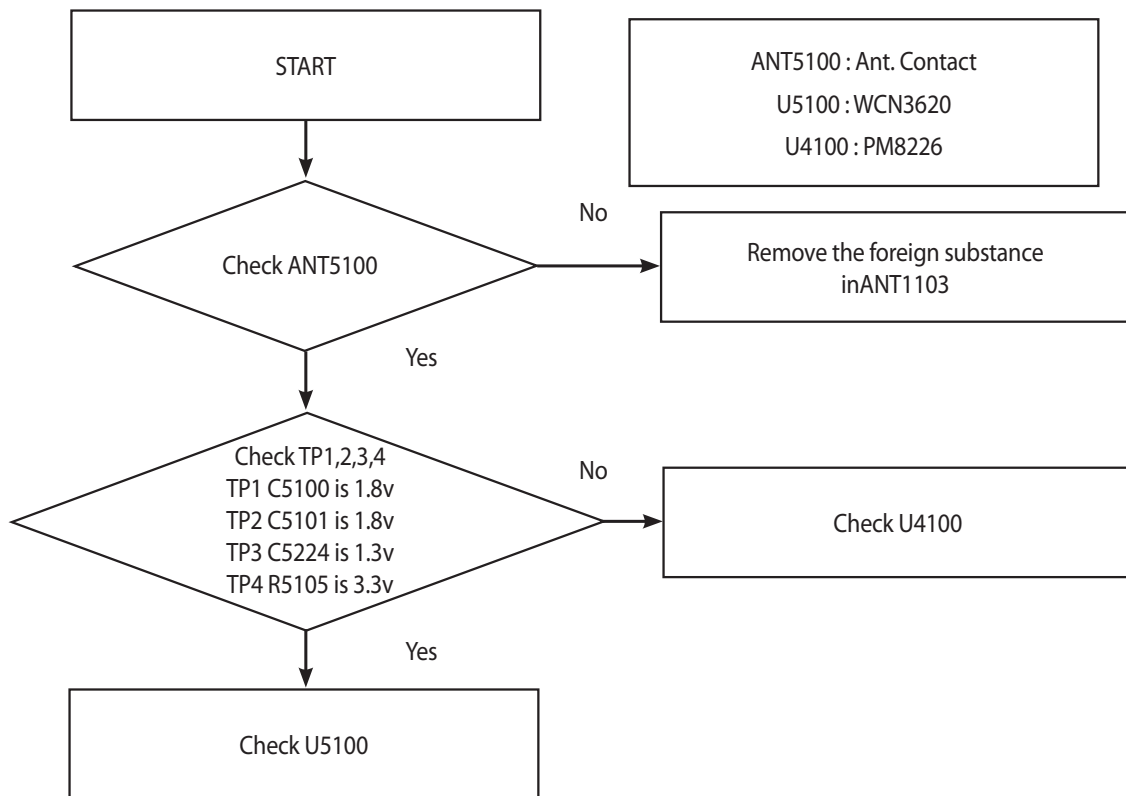


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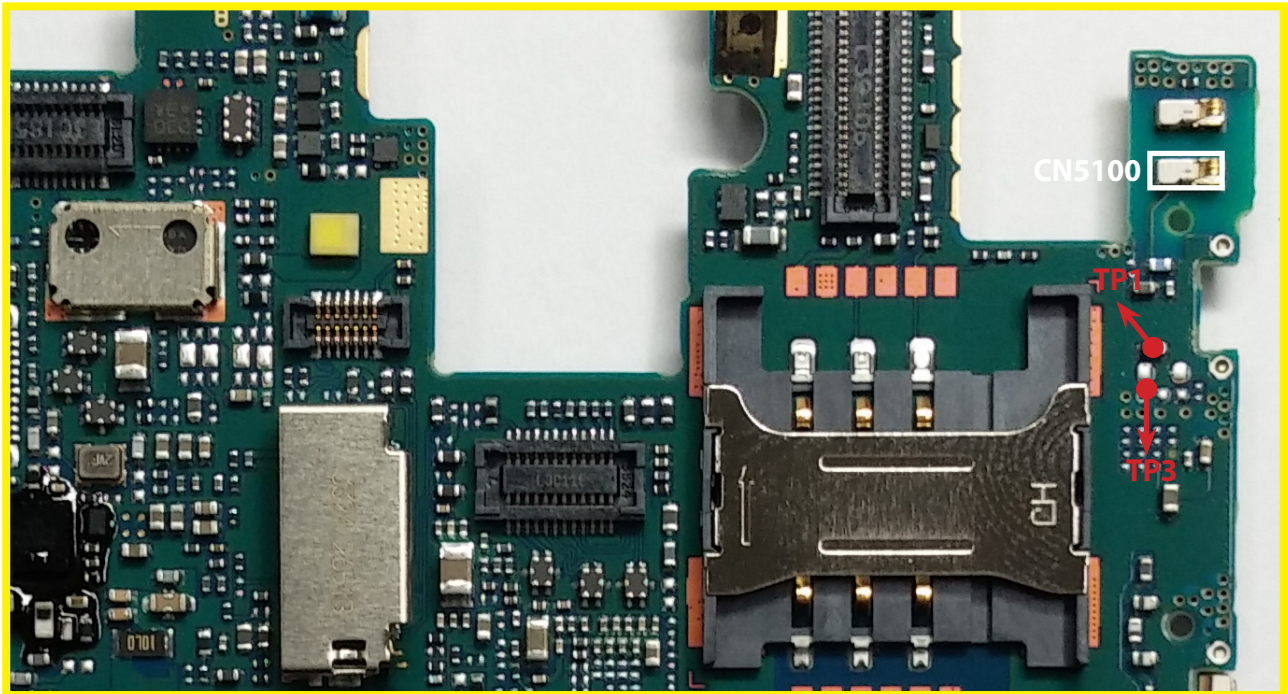
— WIFI,BTSignal

3.8.3 WIFI/BT Signal Path Tx

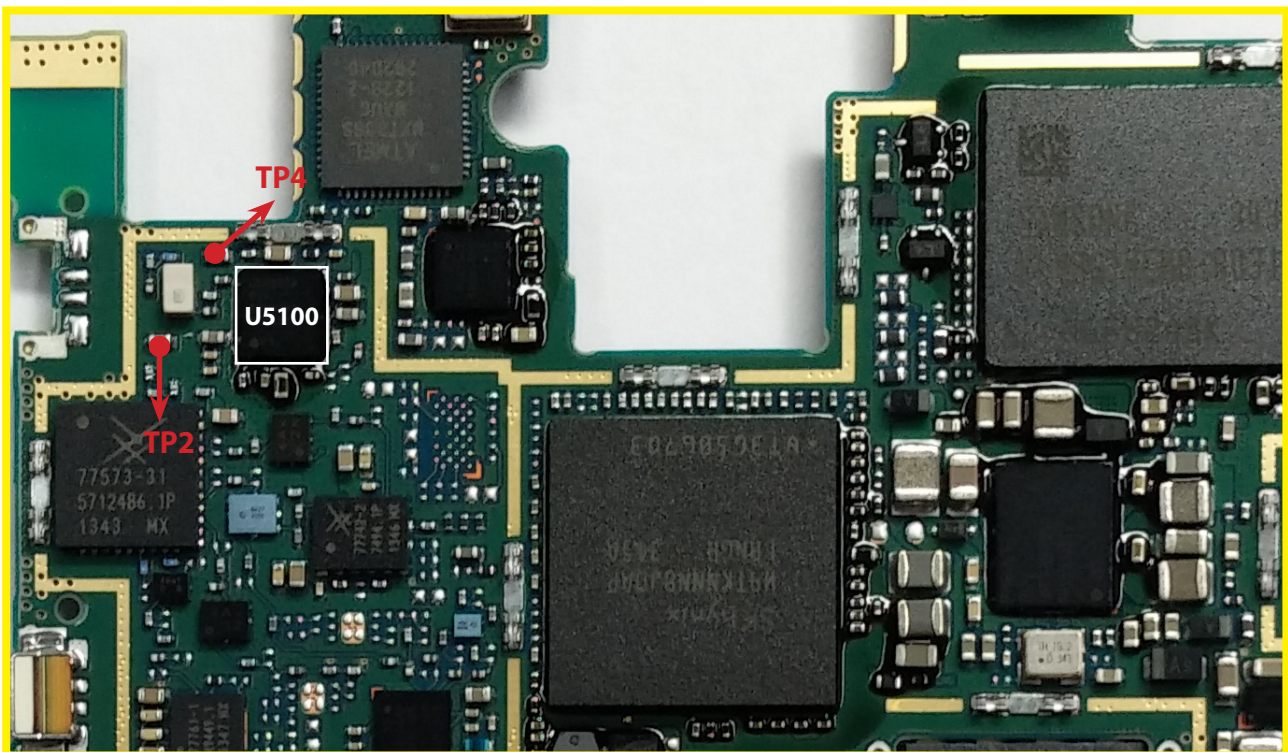


Test point	Net name	Description
TP1	VREG_L6_1V8	Power for WCN Digital I/O circuits
TP2	VREG_L10_1V8	Power for XO circuit input voltage.
TP3	VREG_L24_1V3	Power for WCN analog, digital, and RF core circuits. Power for WLAN driver amplifier circuits
TP4	VREG_L16_3V3	Power for WLAN 2.4GHz PA circuits

3. TROUBLE SHOOTING

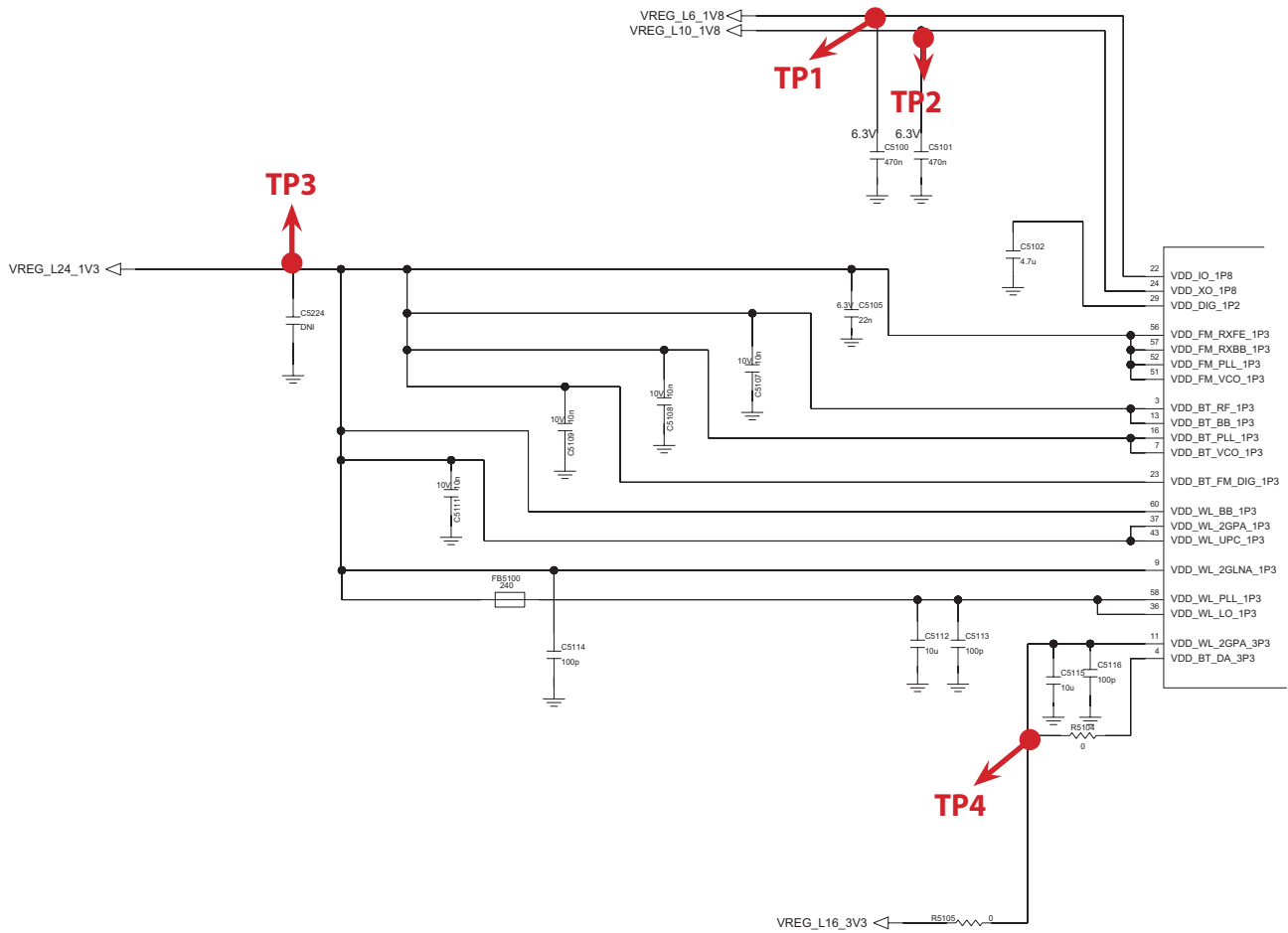


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3. TROUBLE SHOOTING



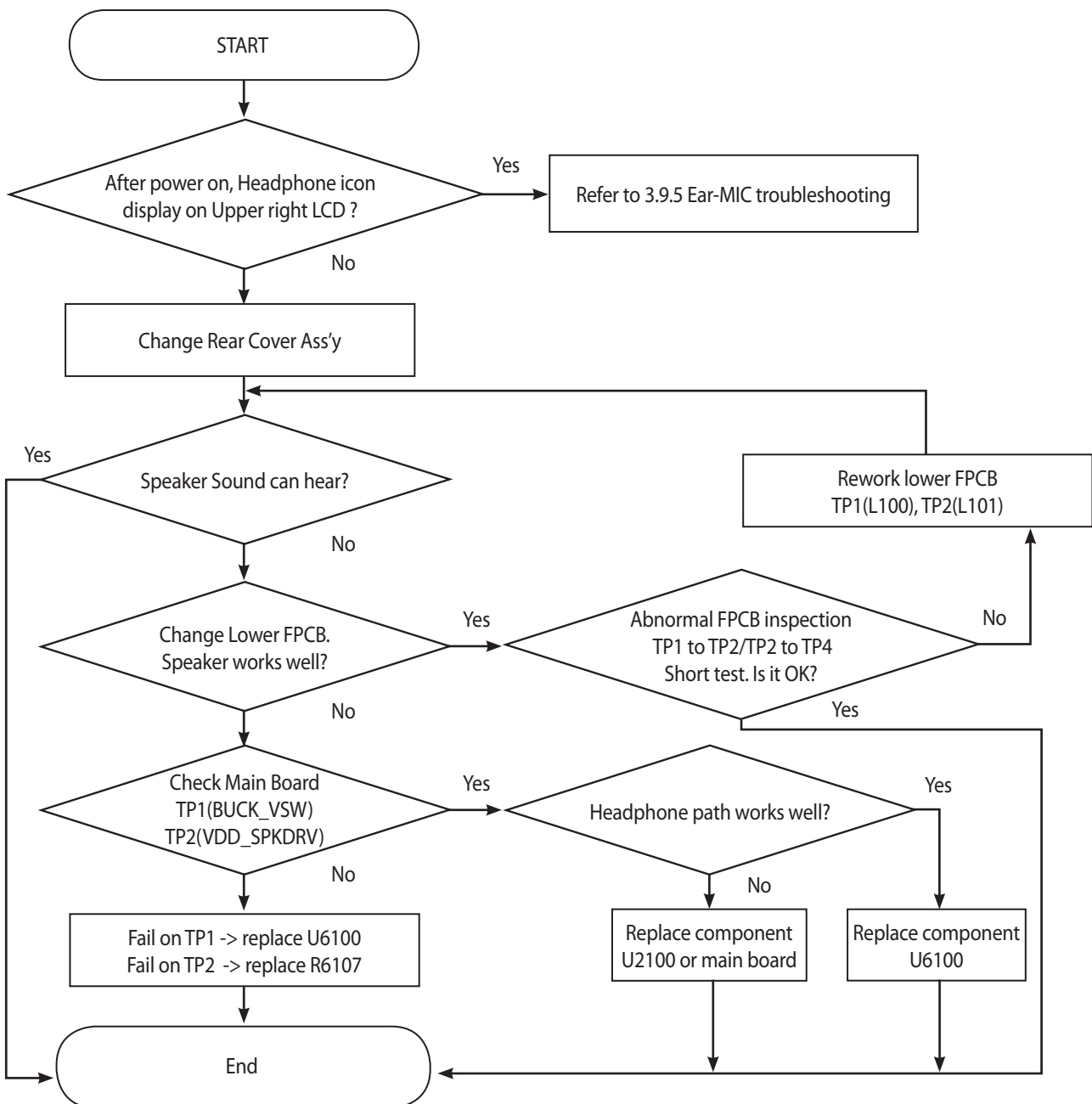
Schematic of WCN3620

3.9 Audio Trouble

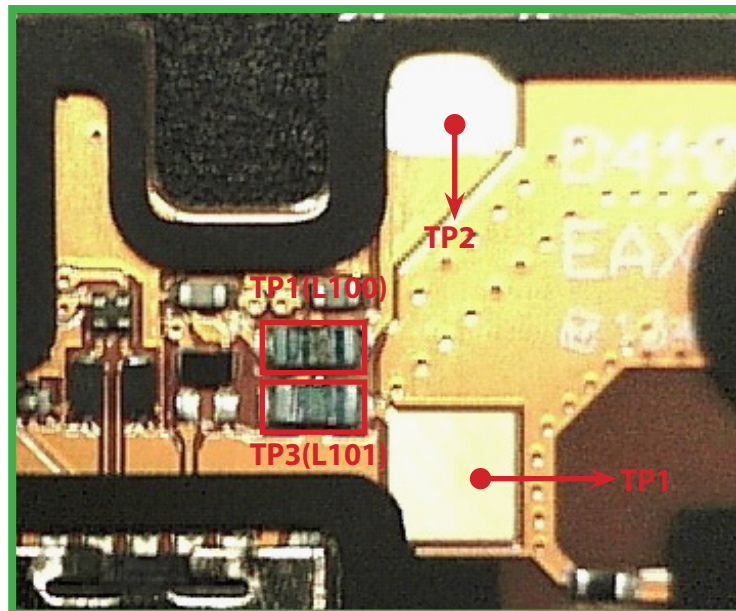
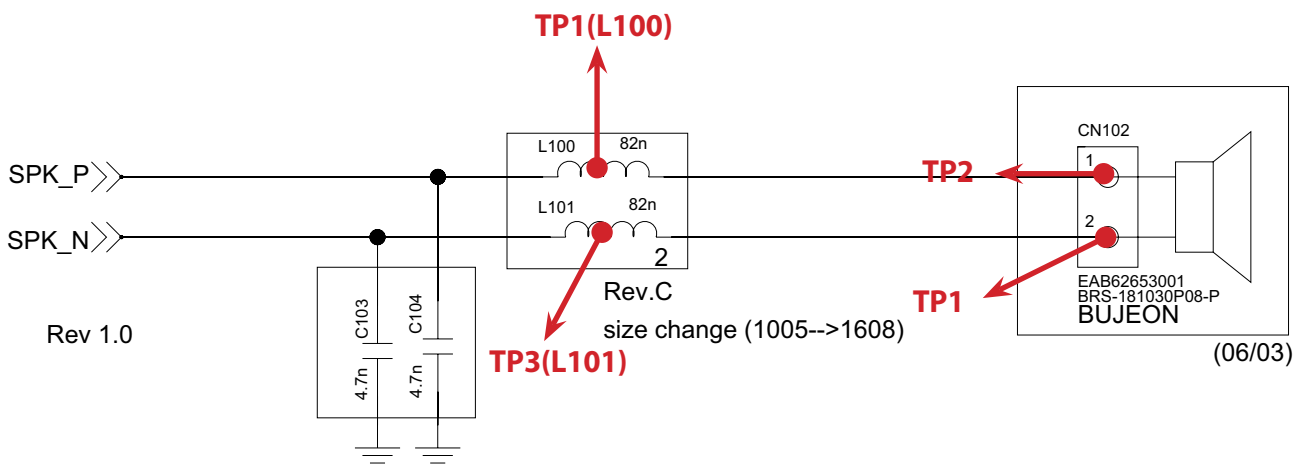
3.9.1 Speaker troubleshooting

Speaker path as below :

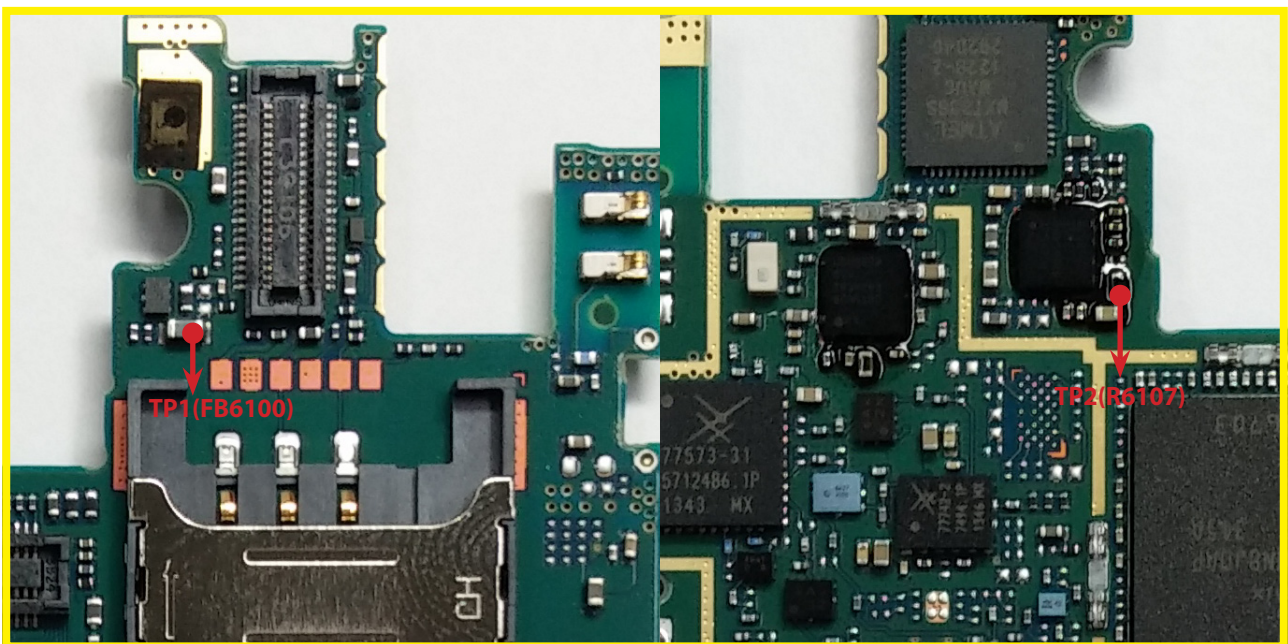
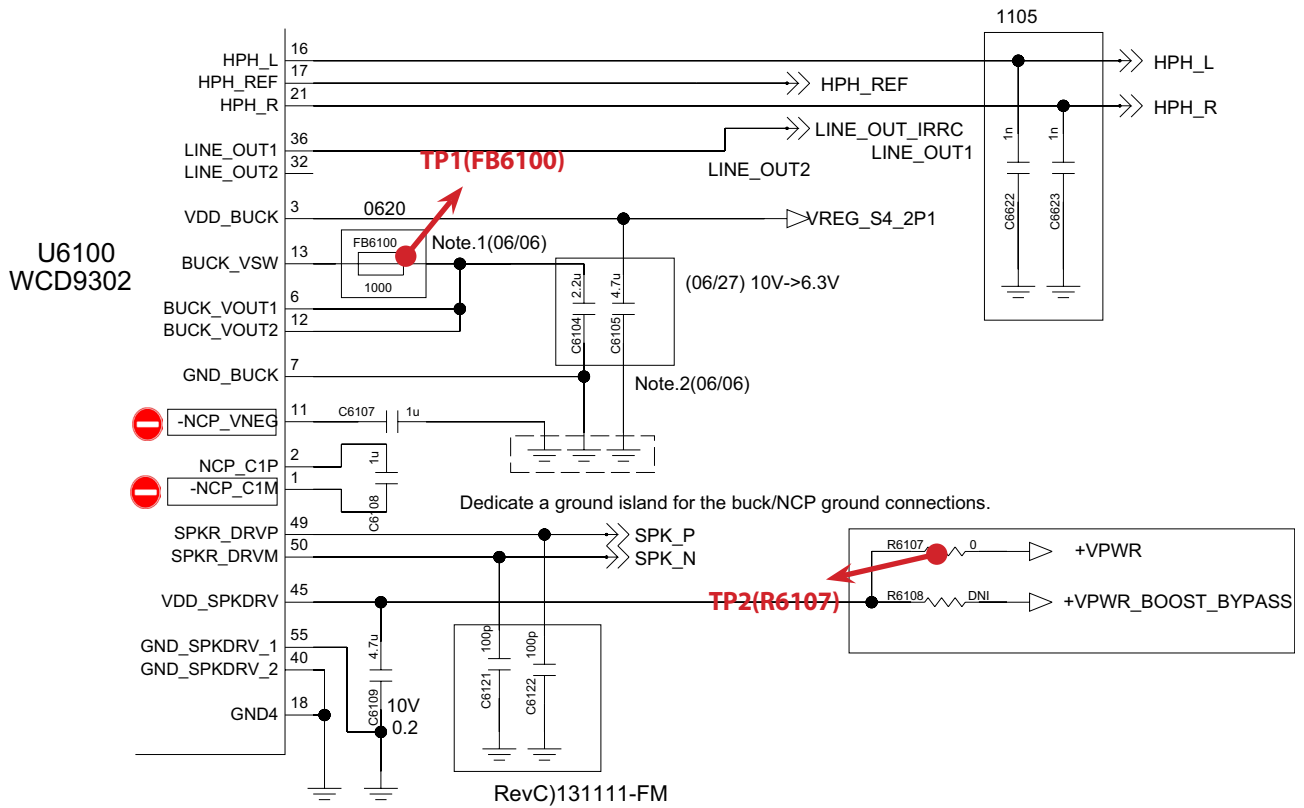
MSM8226 -> WCD9302 SPKR_DRV / SPKR_DRV -> Speaker



SPEAKER



3. TROUBLE SHOOTING



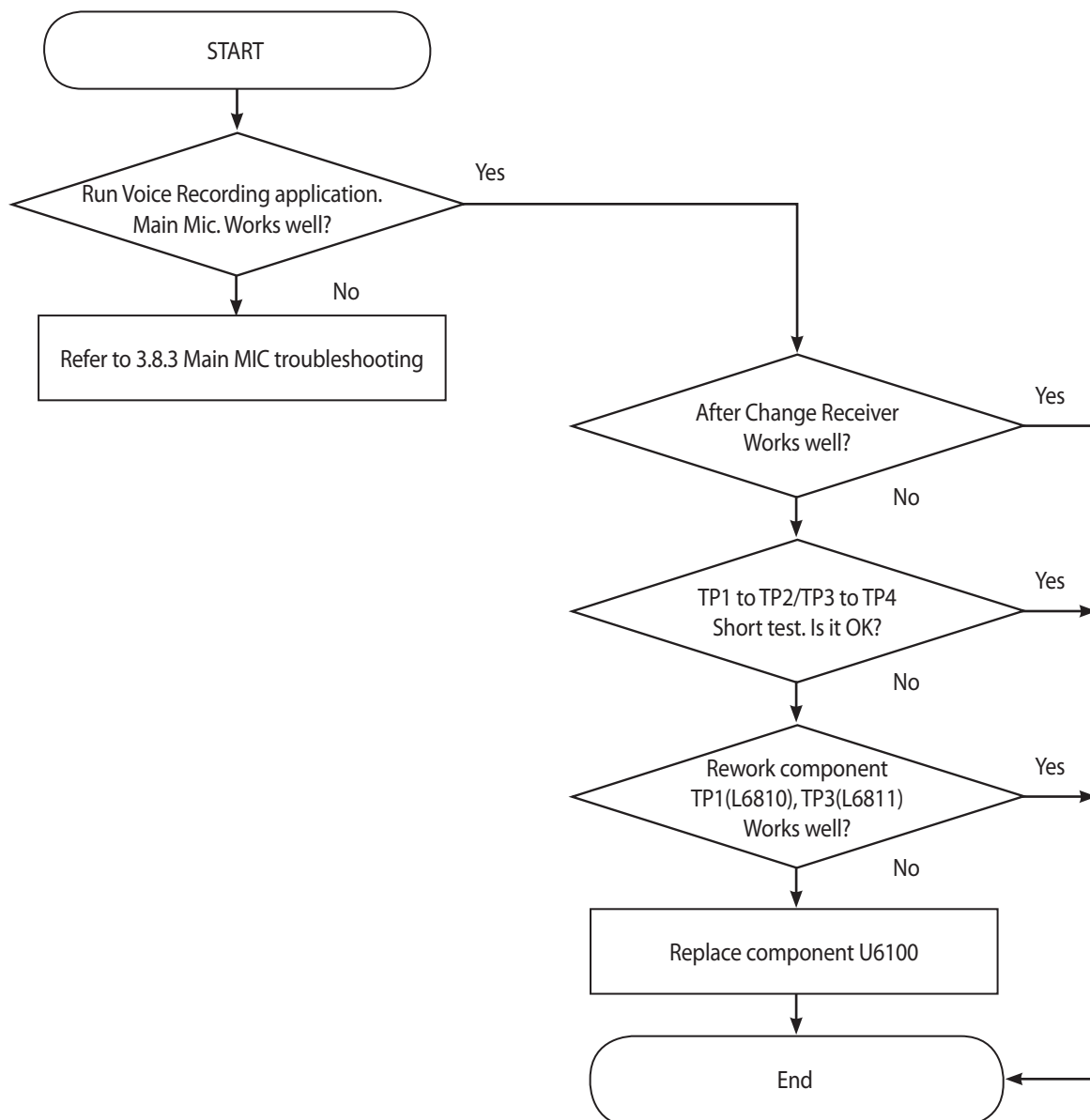
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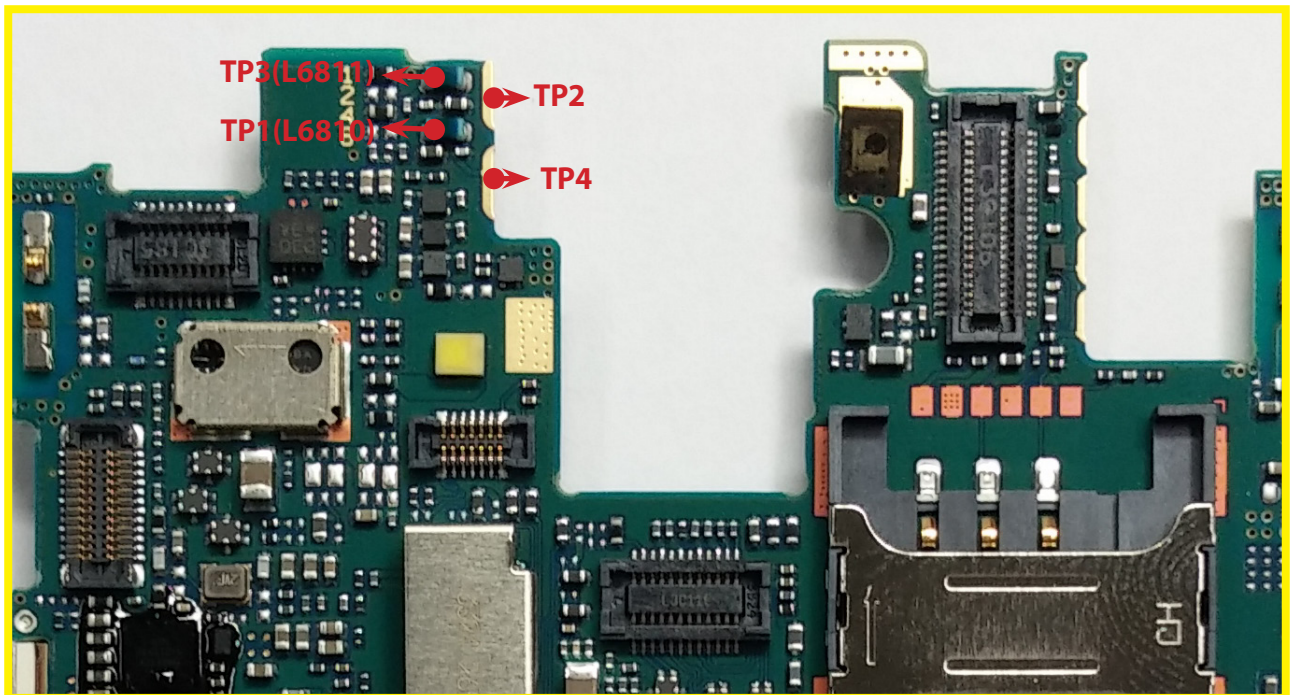
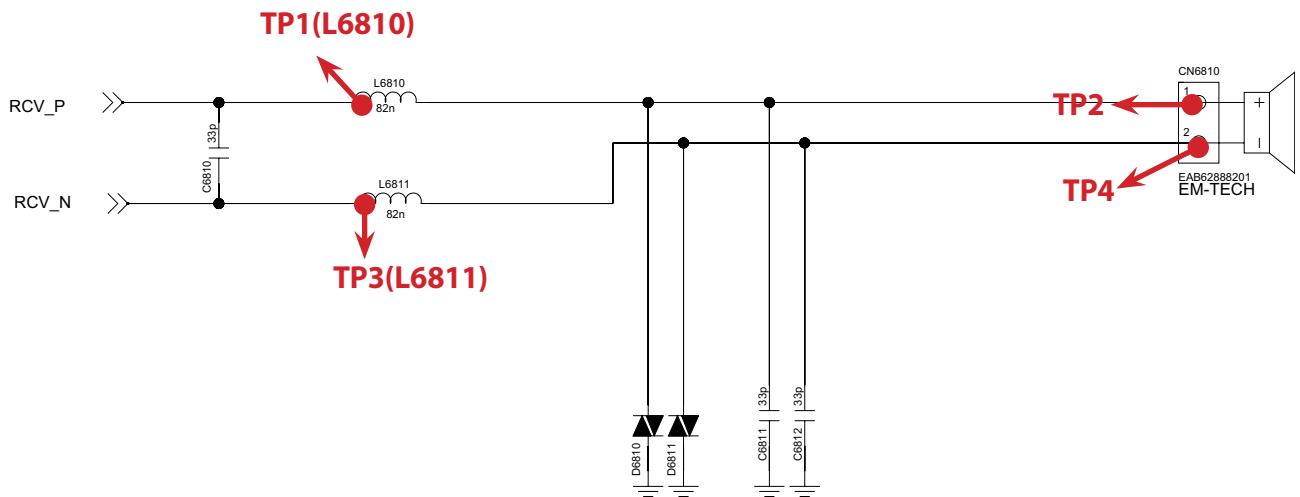
3.9.2 Receiver troubleshooting

Receiver path as below :

MSM8226 -> WCD9302 EAROP/ EAROM -> Receiver



3. TROUBLE SHOOTING

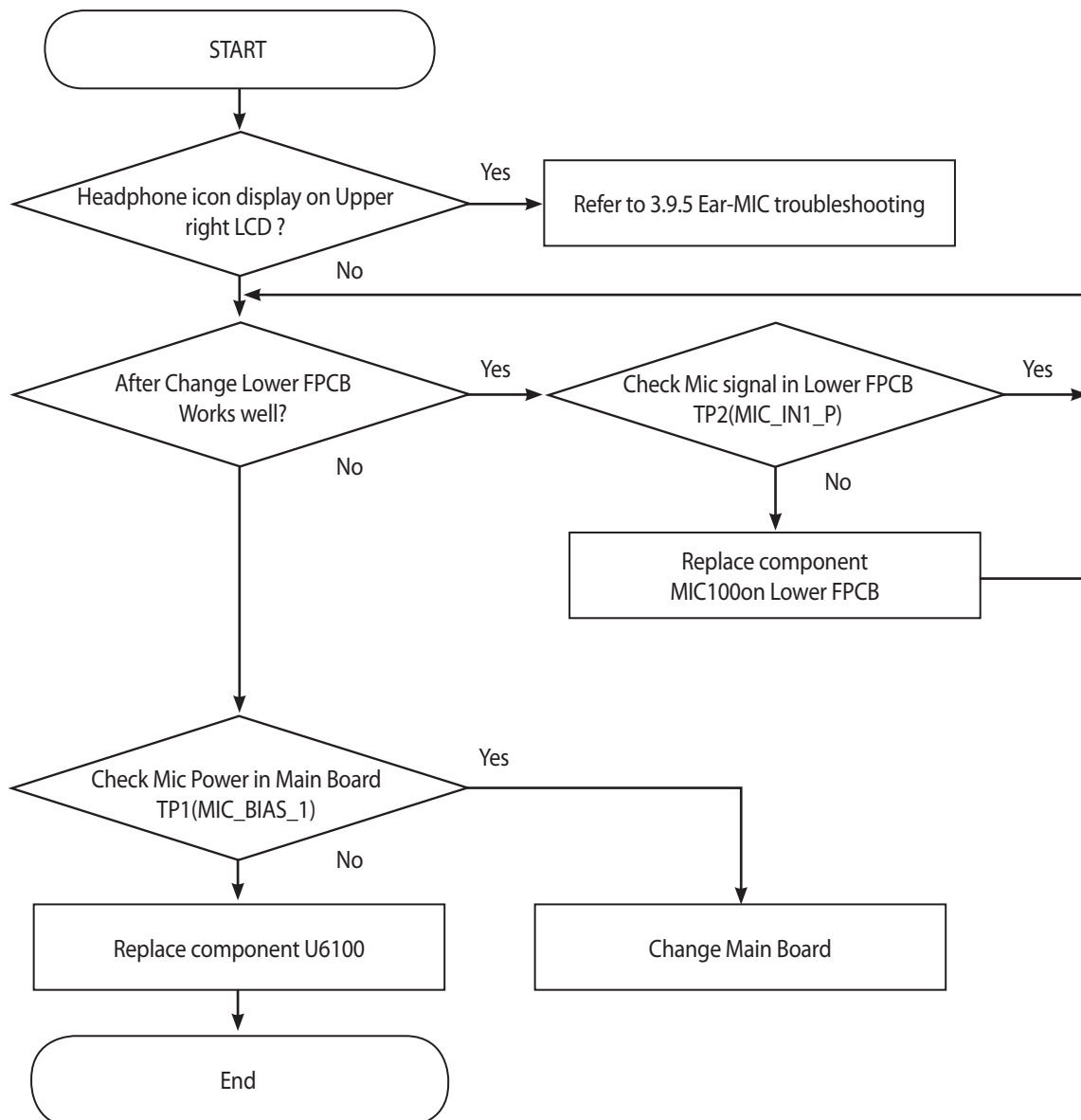


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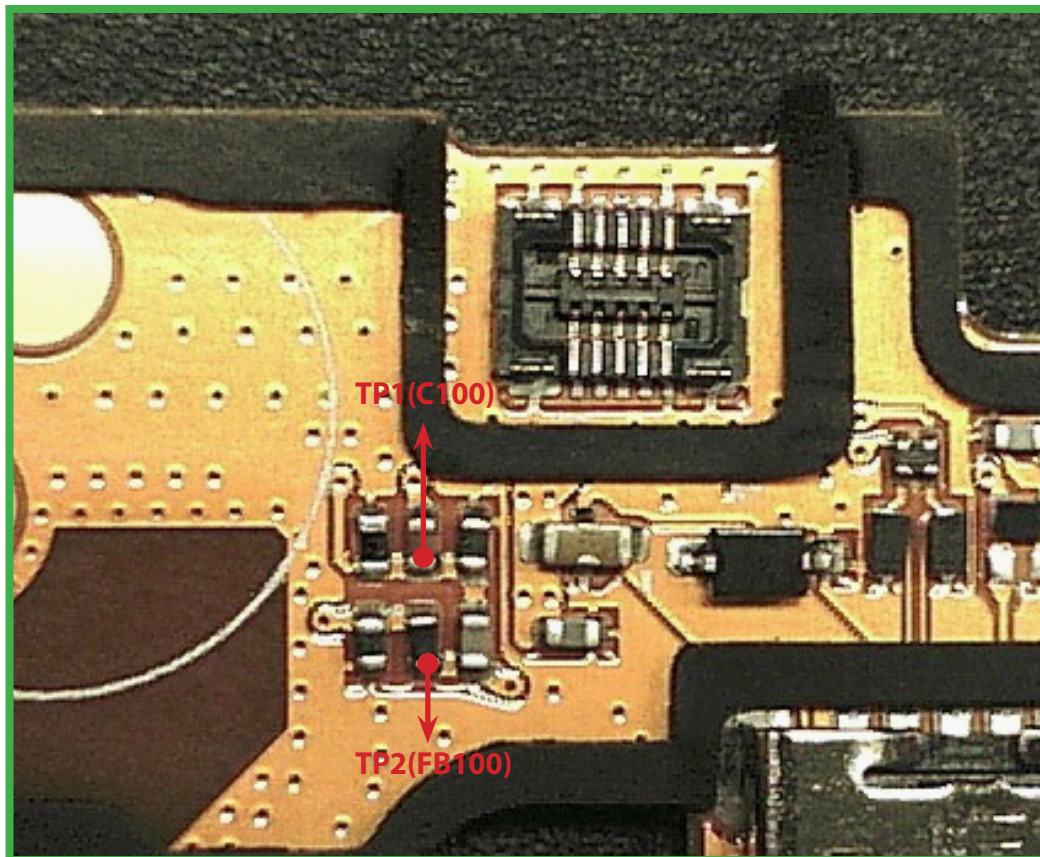
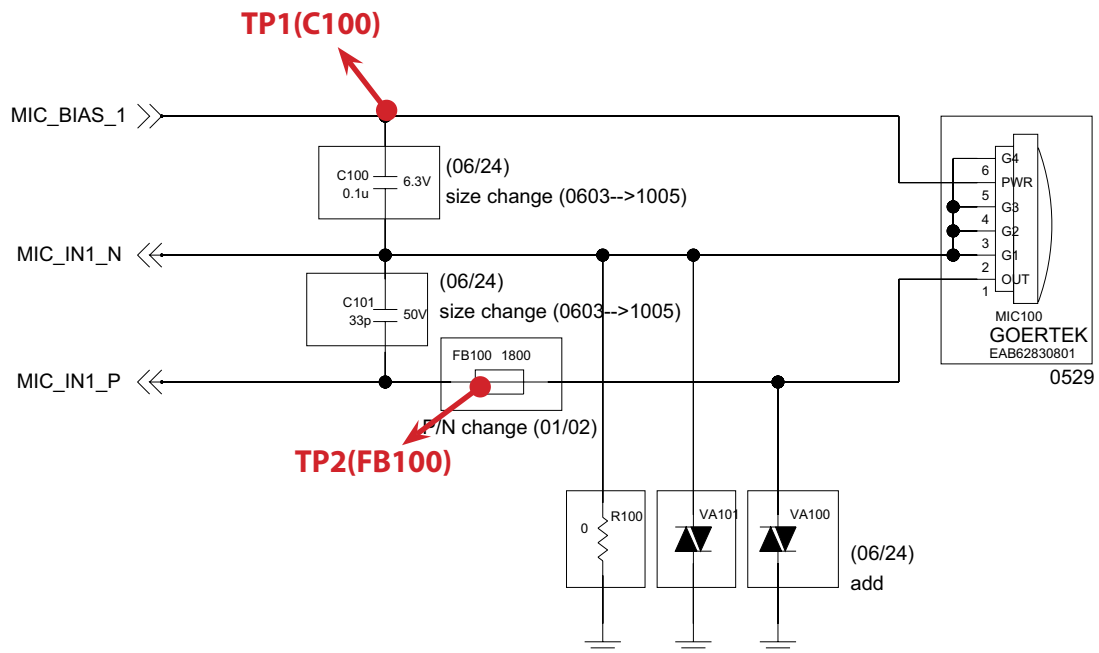
3.9.3 Main MIC troubleshooting

Main Mic. path as below :

MSM8226 -> WCD9302 MIC1_INP/ MIC1_INM -> Mic



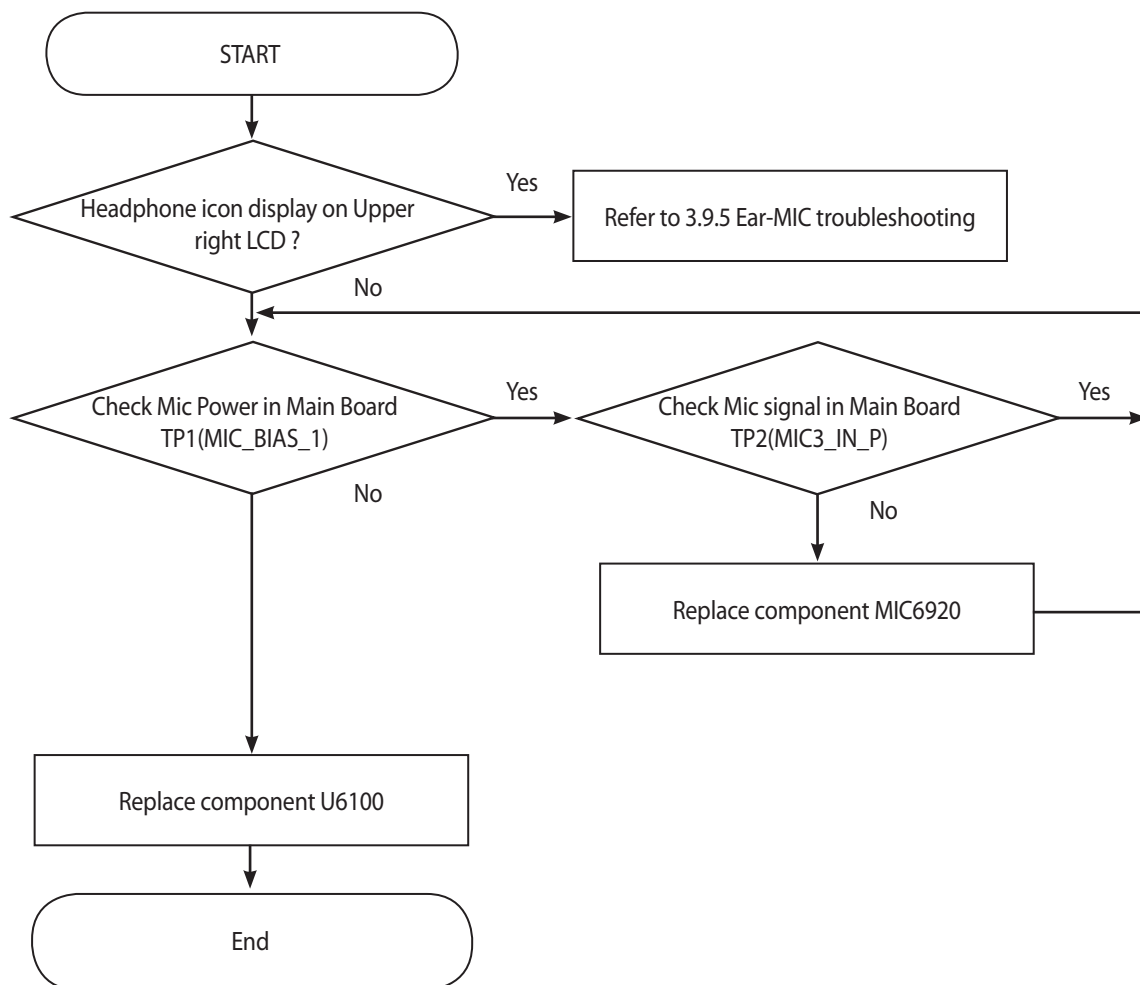
Main_MIC



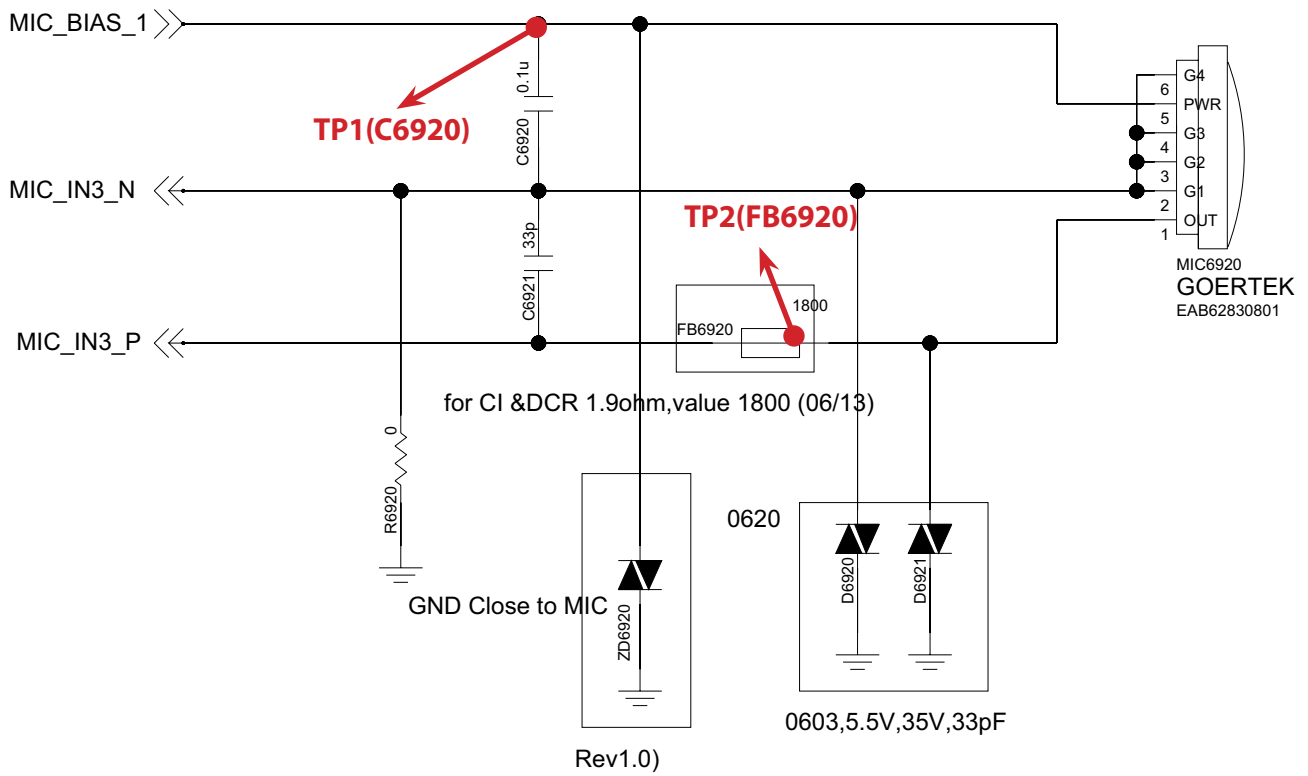
3.9.4 SUB MIC troubleshooting

Sub Mic. path as below :

MSM8226 -> WCD9302 MIC1_INP/ MIC1_INM -> Mic



3. TROUBLE SHOOTING



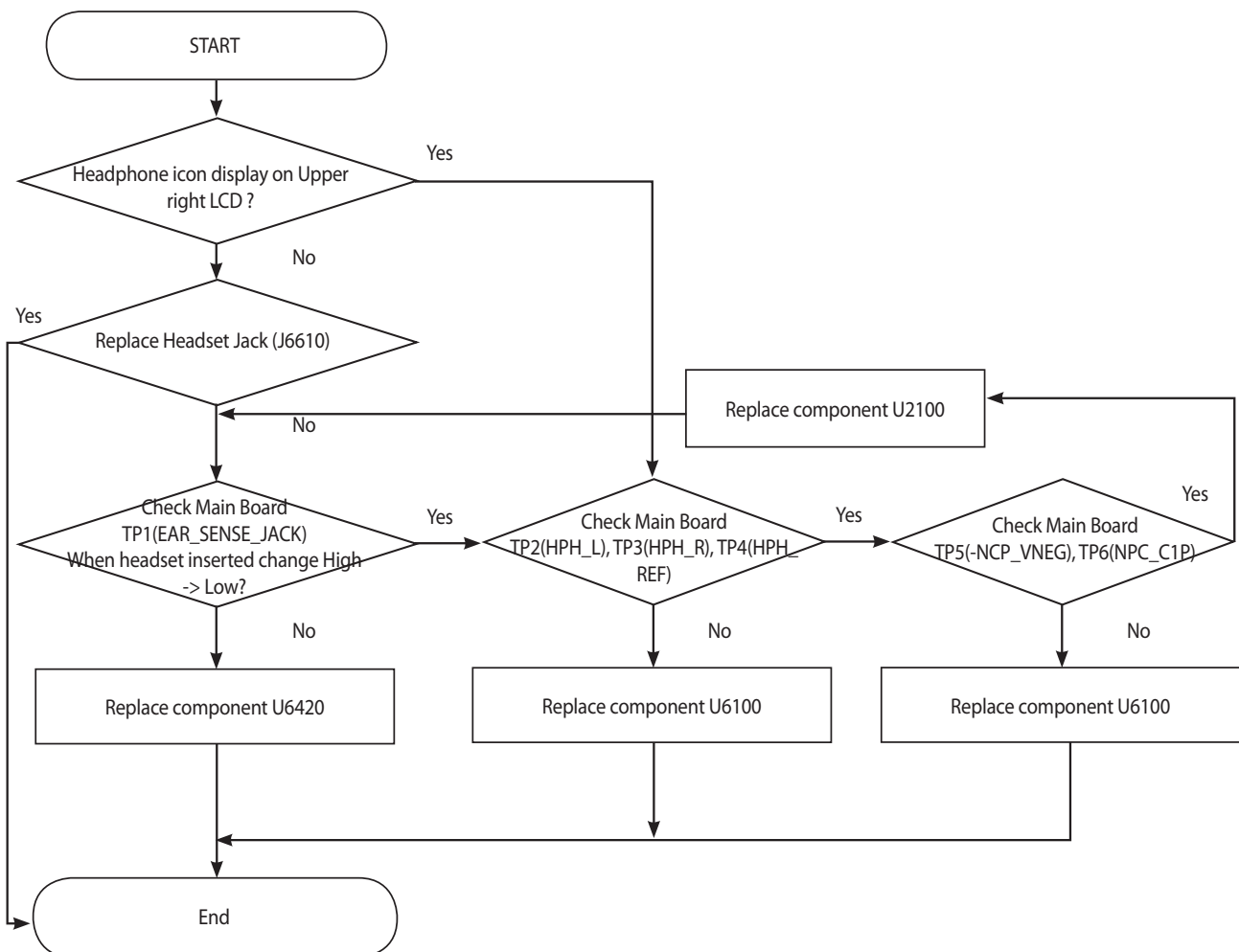
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3.9.5 Ear-MIC troubleshooting

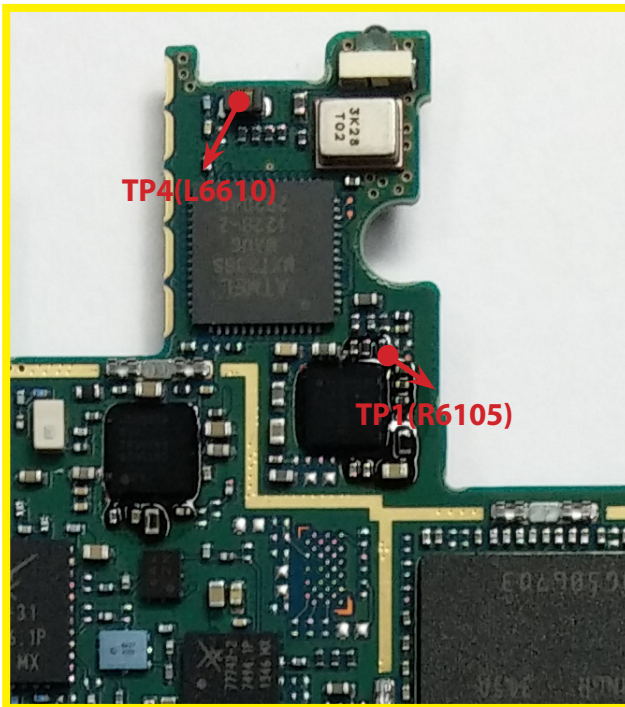
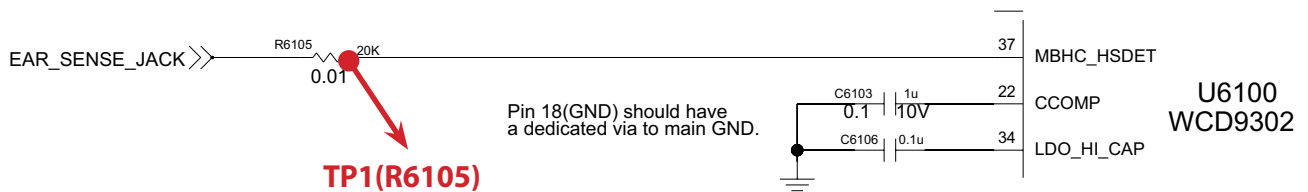
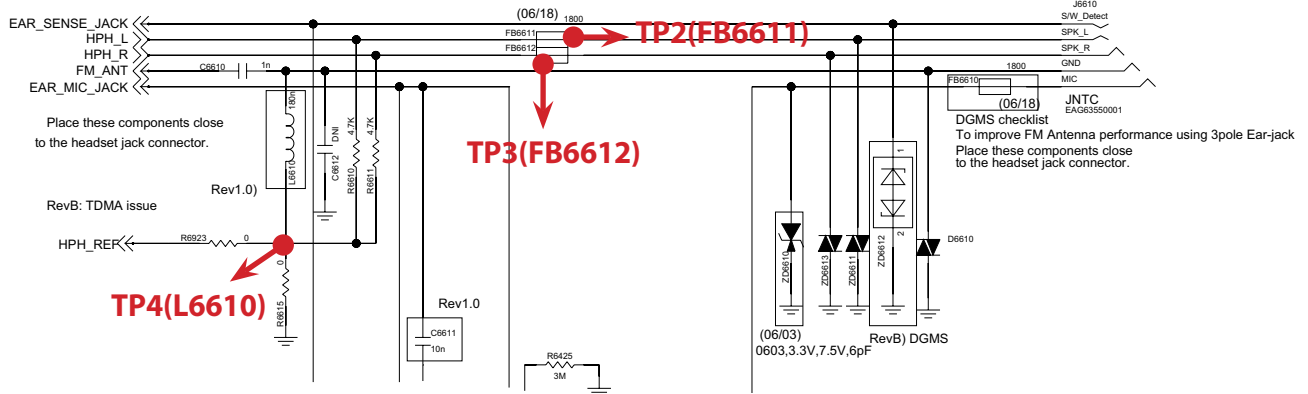
3.9.5.1 Headset Sound trouble

Ear-Mic. path as below :

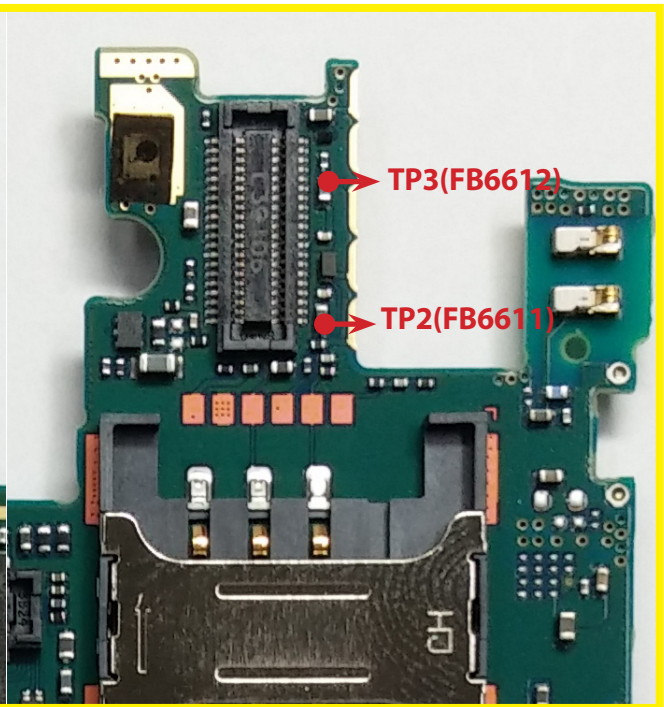
MSM8226 -> WCD9302 HPH_L / HPH_R -> Headset



3. TROUBLE SHOOTING



<Main Top>

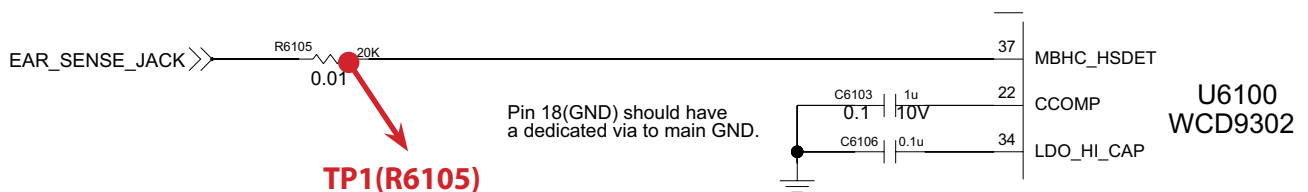
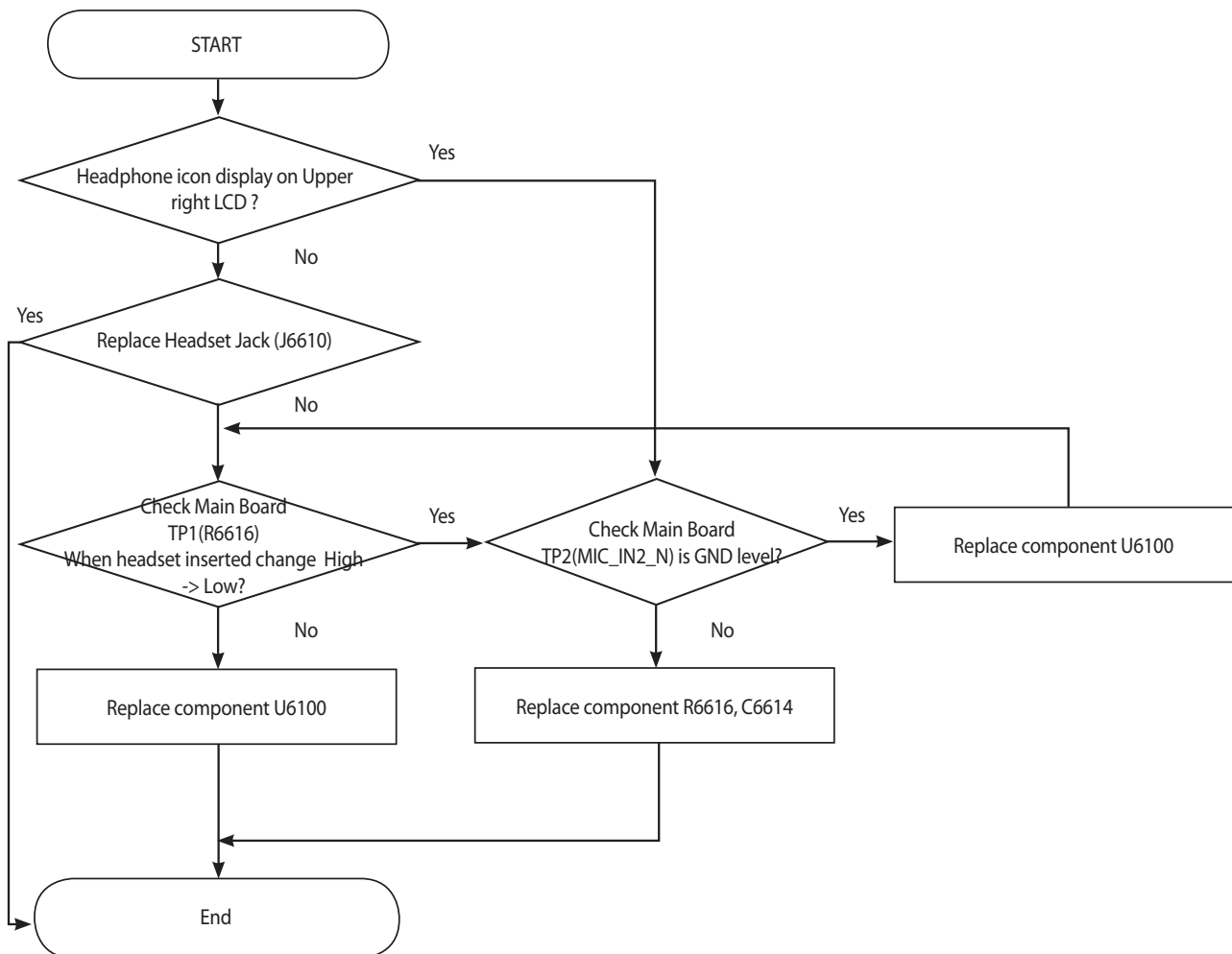


<Main Bot>

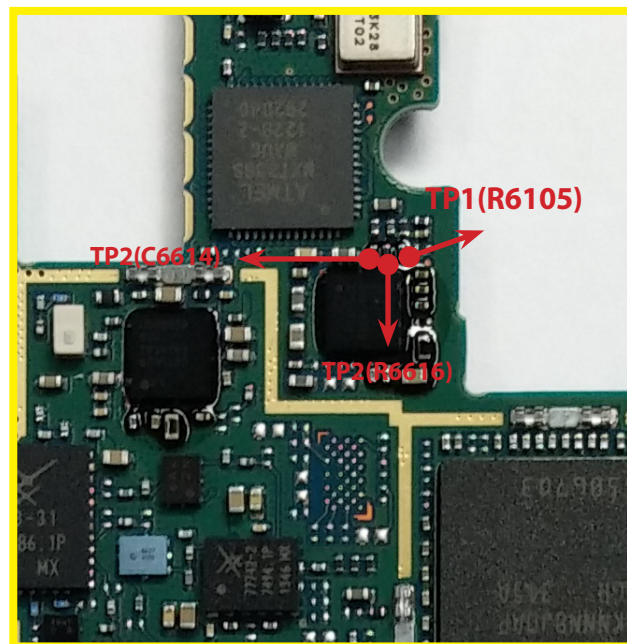
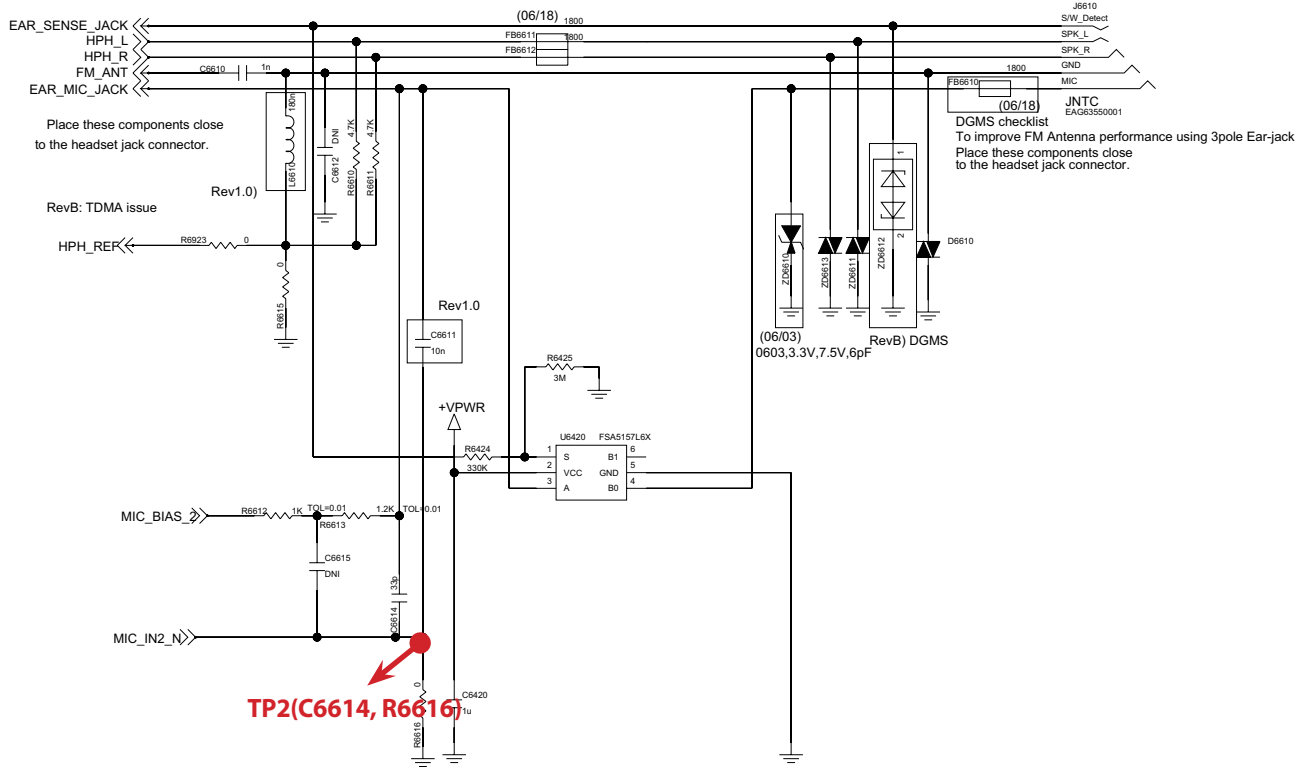
3.9.5.2 Headset Mic trouble

Ear-Mic. path as below :

MSM8226 -> WCD9302 HPH_L / HPH_R -> Headset



3. TROUBLE SHOOTING

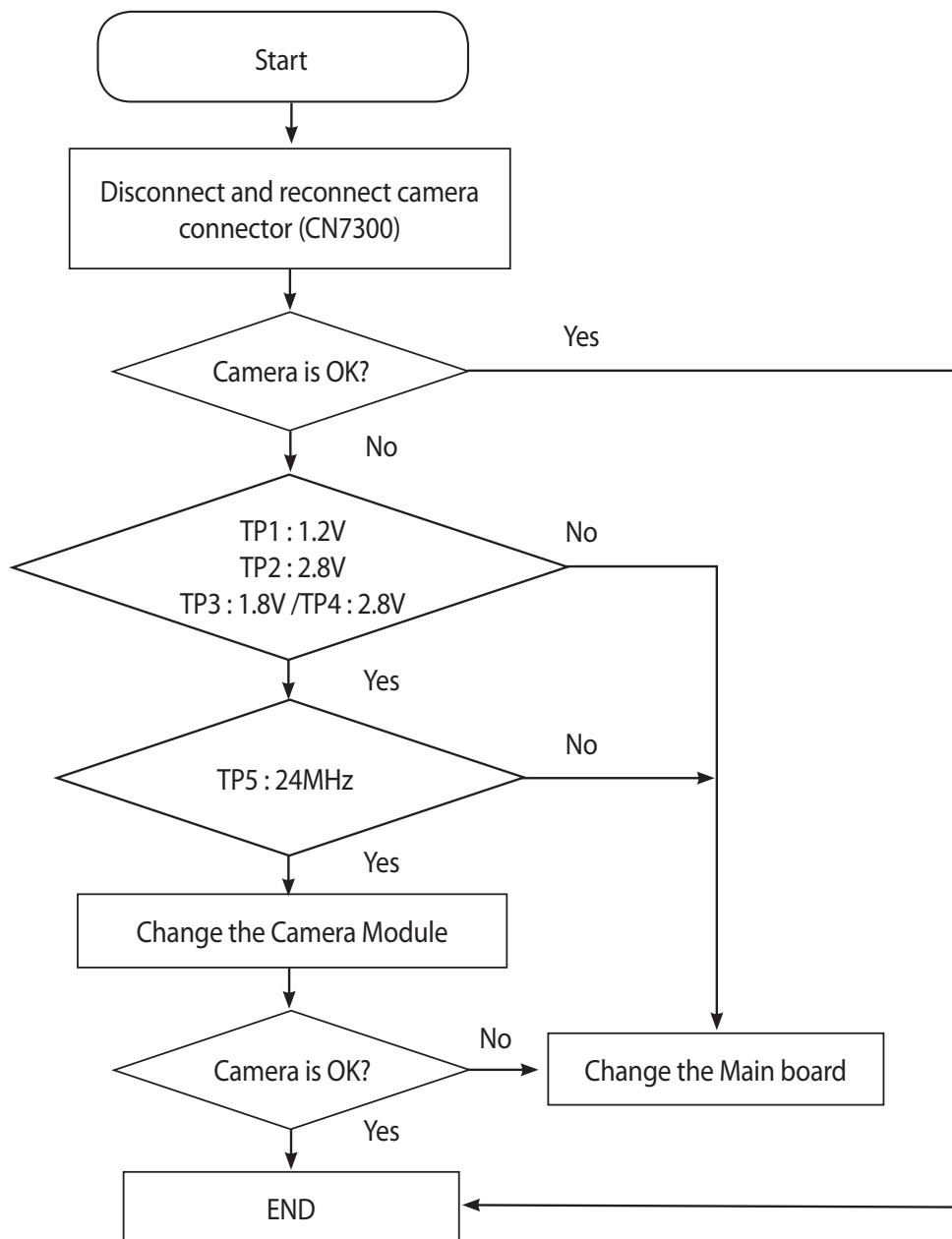


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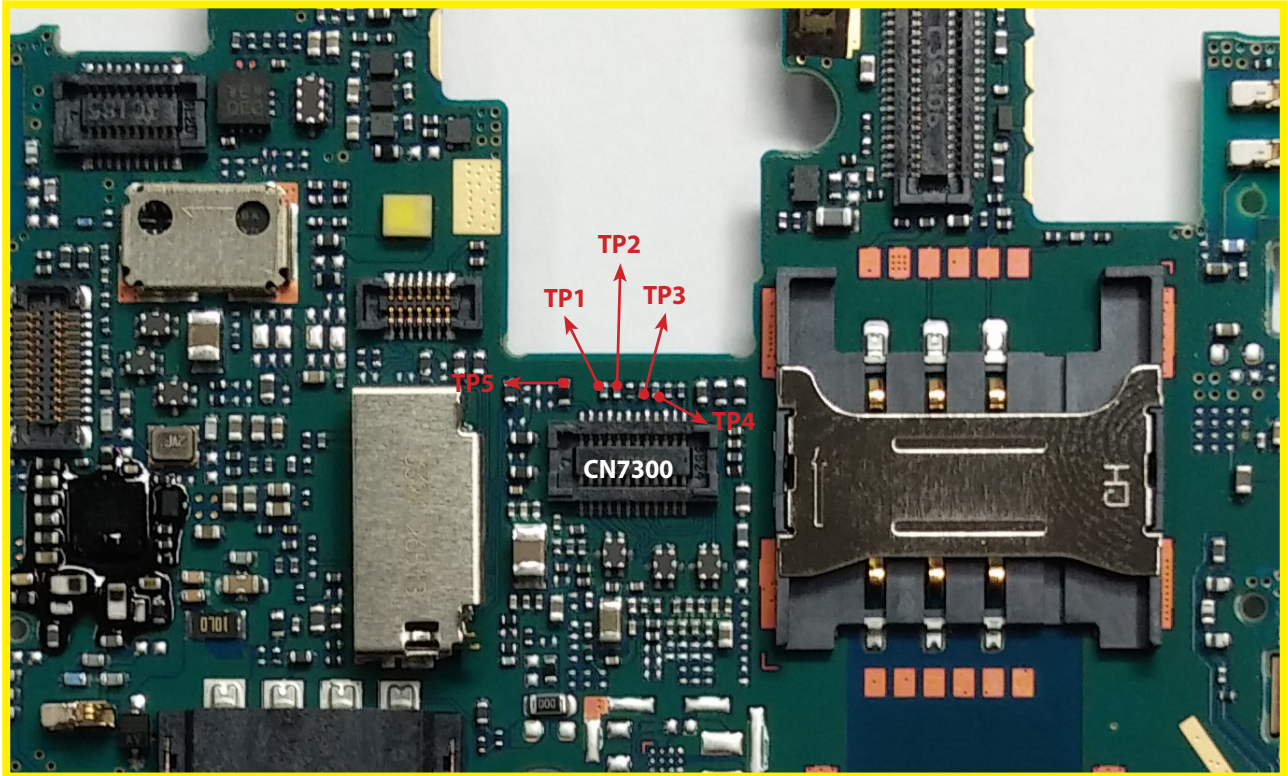
3.10 Camera

3.10.1 8M Camera Trouble Shooting

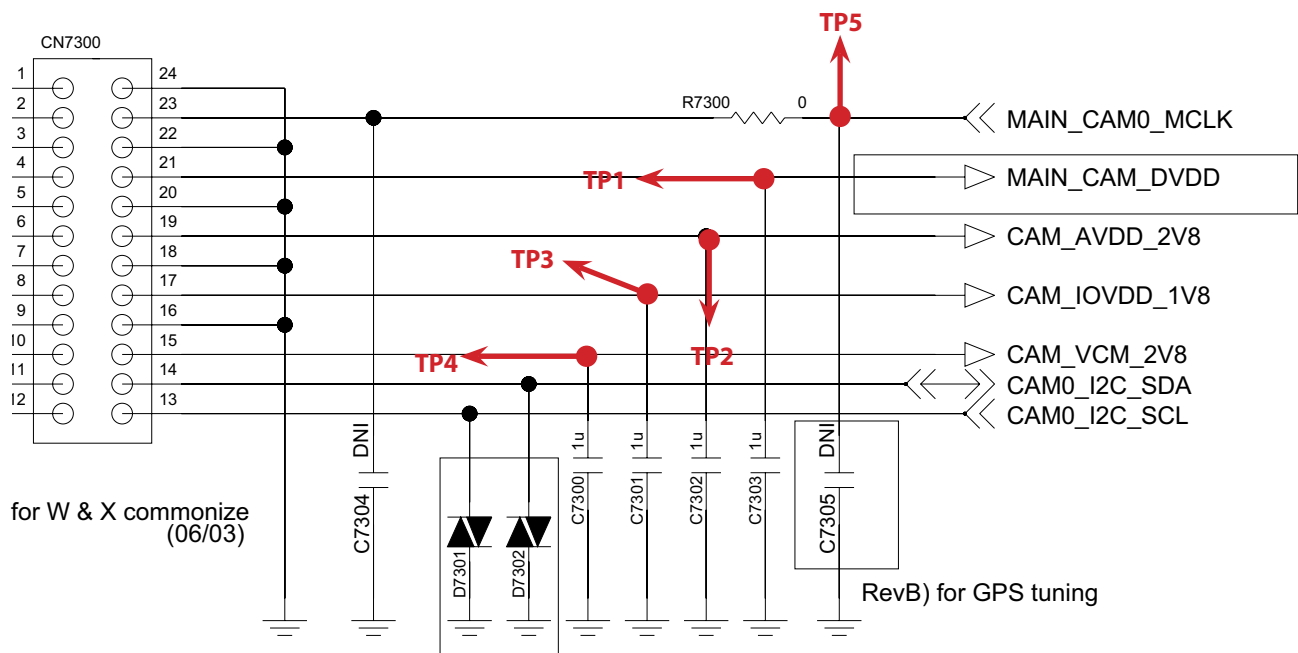
8M camera control signals are generated by MSM8226



3. TROUBLE SHOOTING

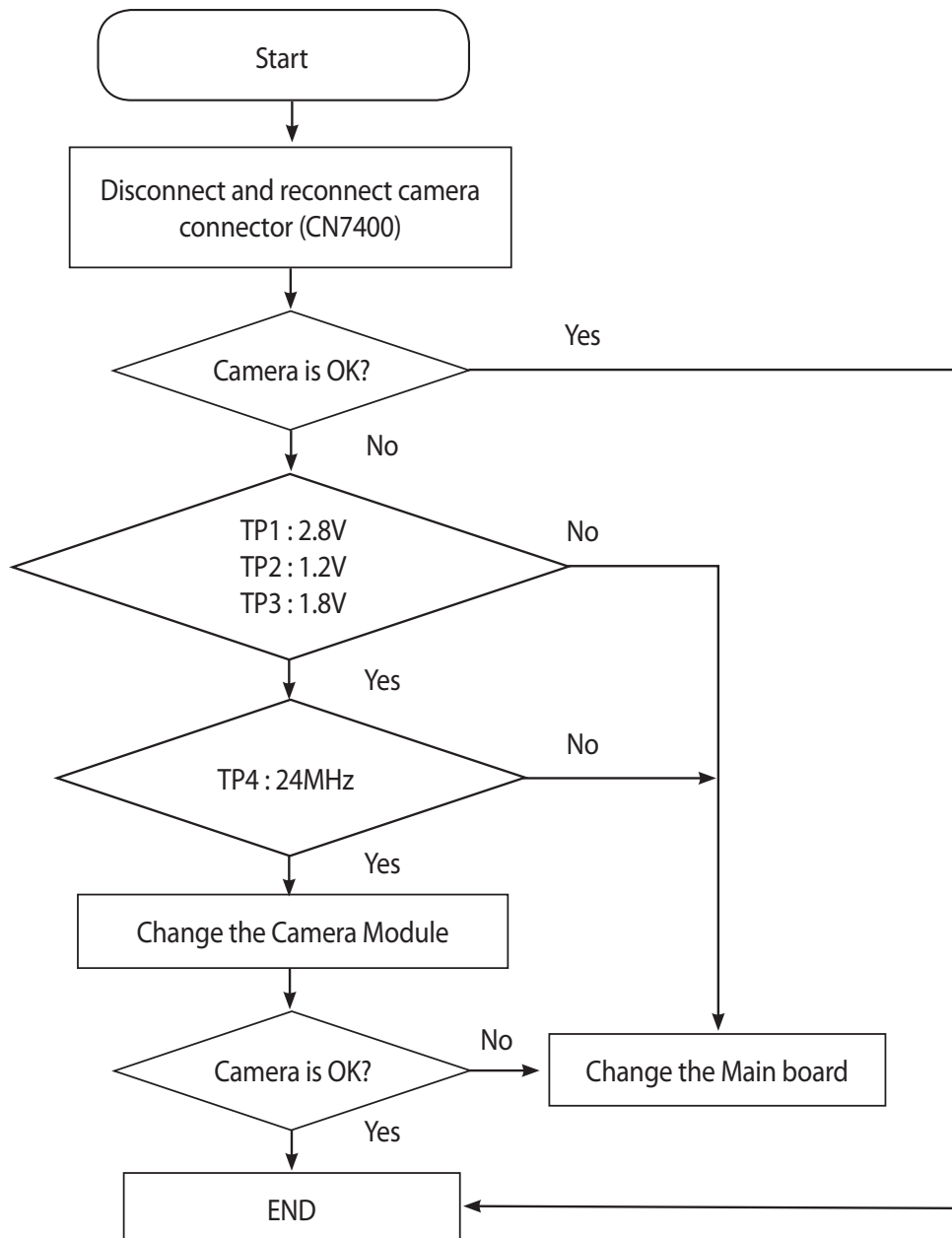


<Main Bot>

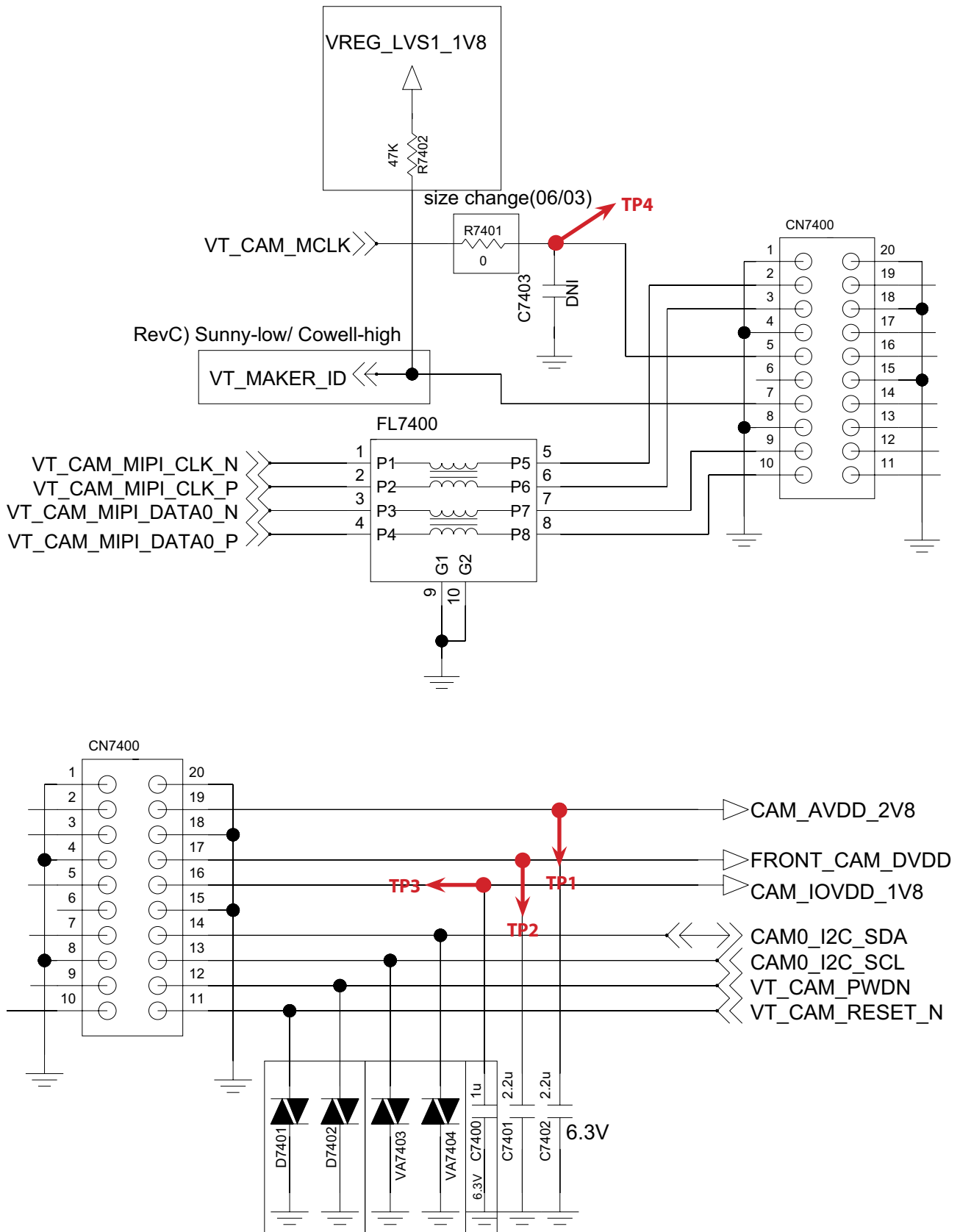


3.10.2 VGA Camera Trouble Shooting

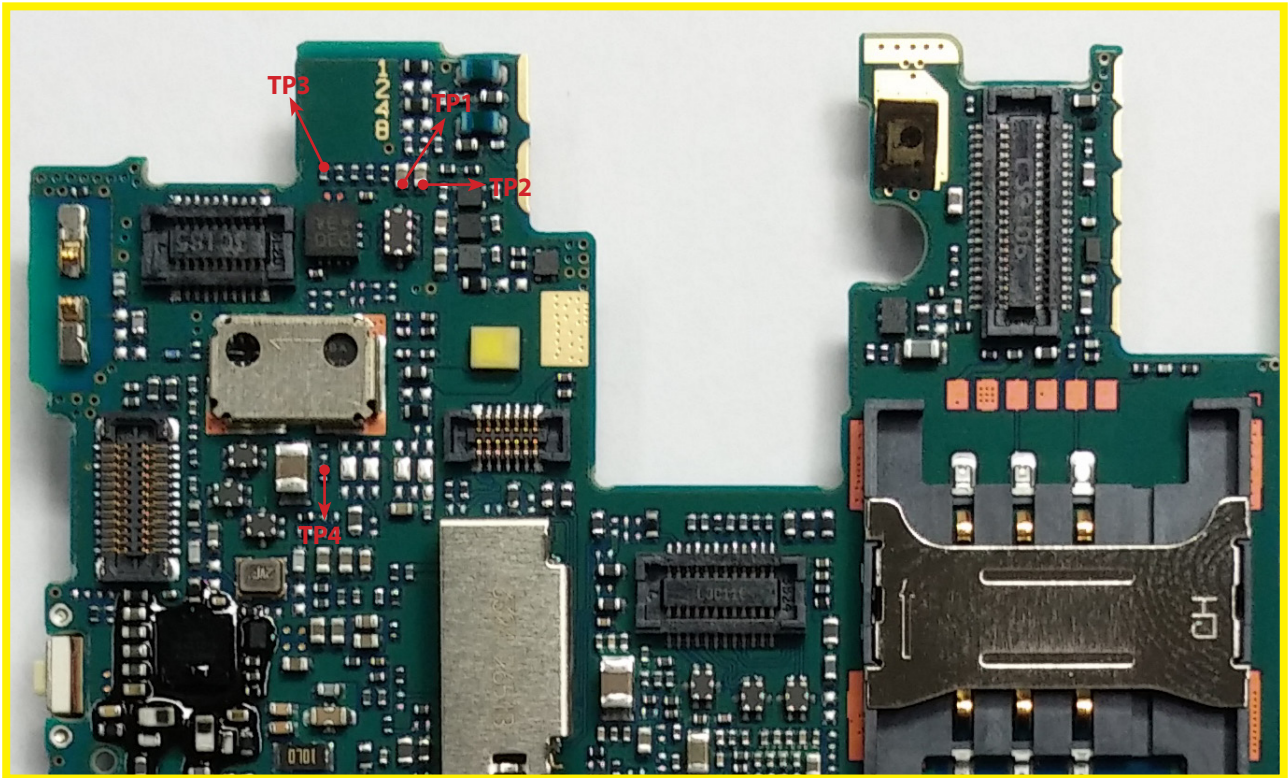
VGA camera control signals are generated by MSM8226



3. TROUBLE SHOOTING



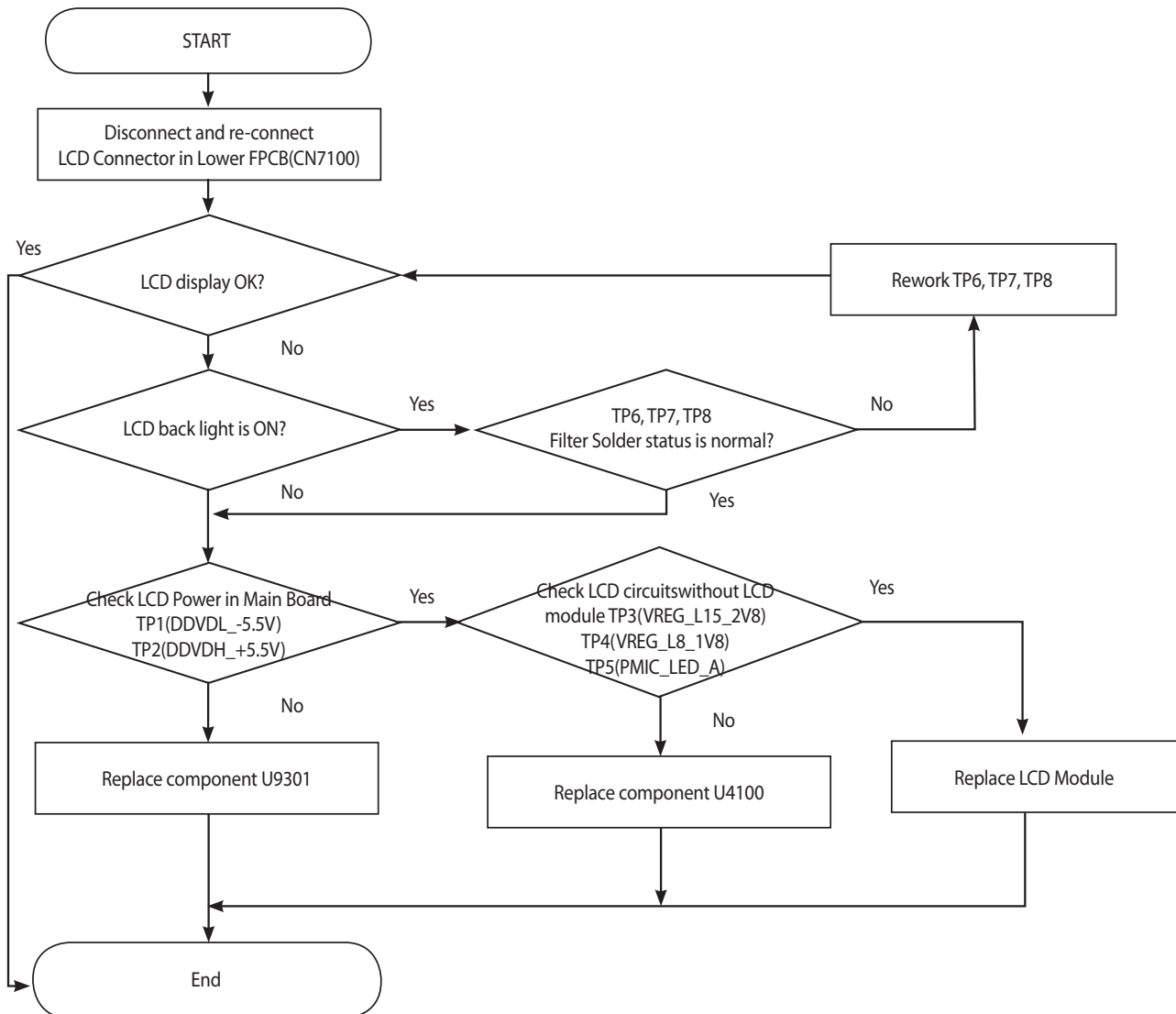
3. TROUBLE SHOOTING



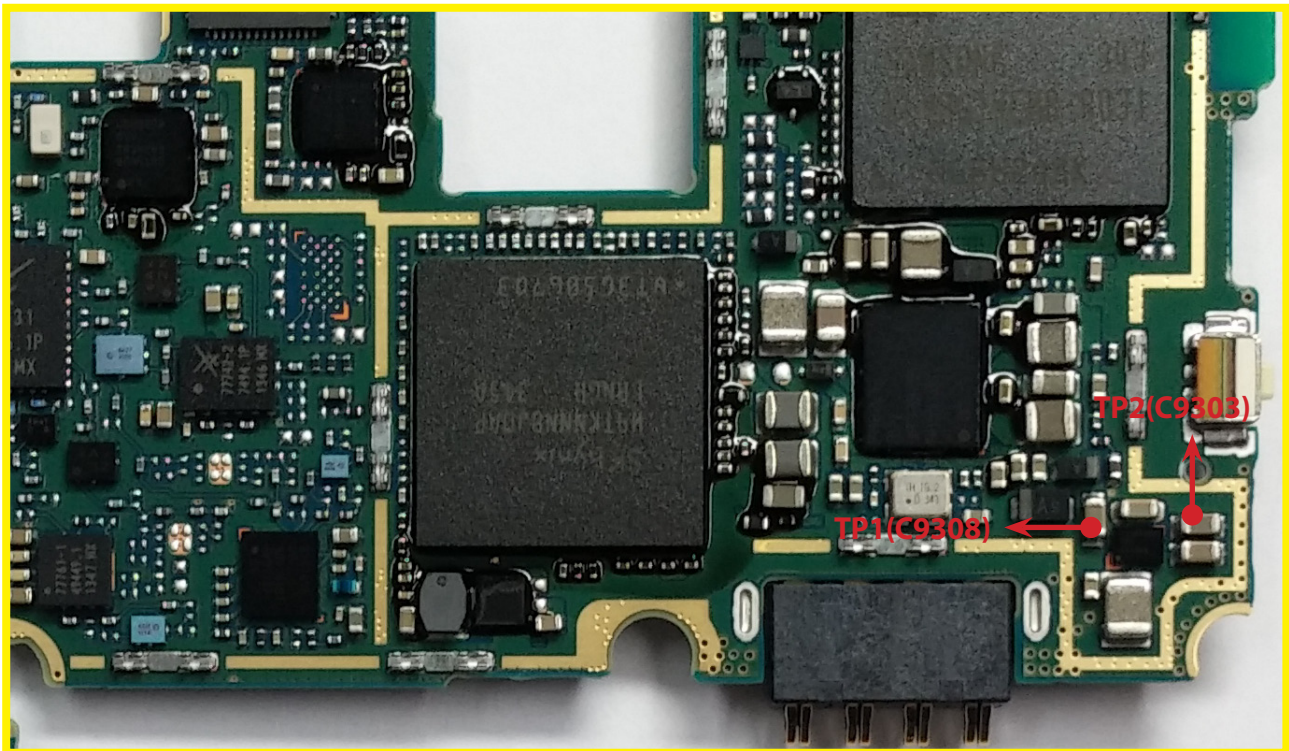
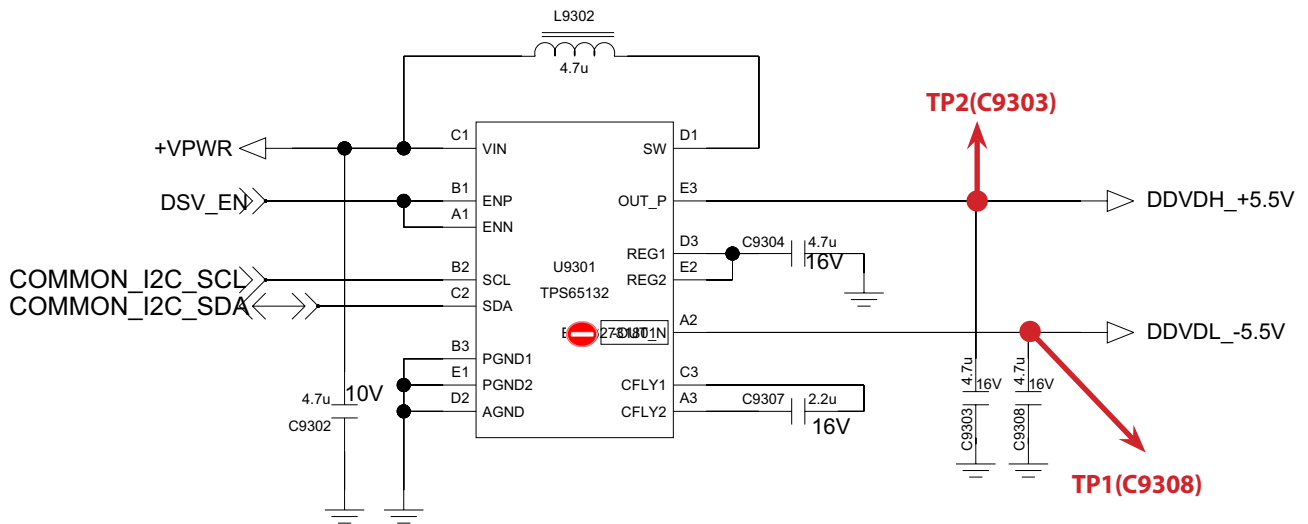
<Main Bot>

3.11 Main LCD Trouble Shooting

Main LCD control signals are generated by MSM8226

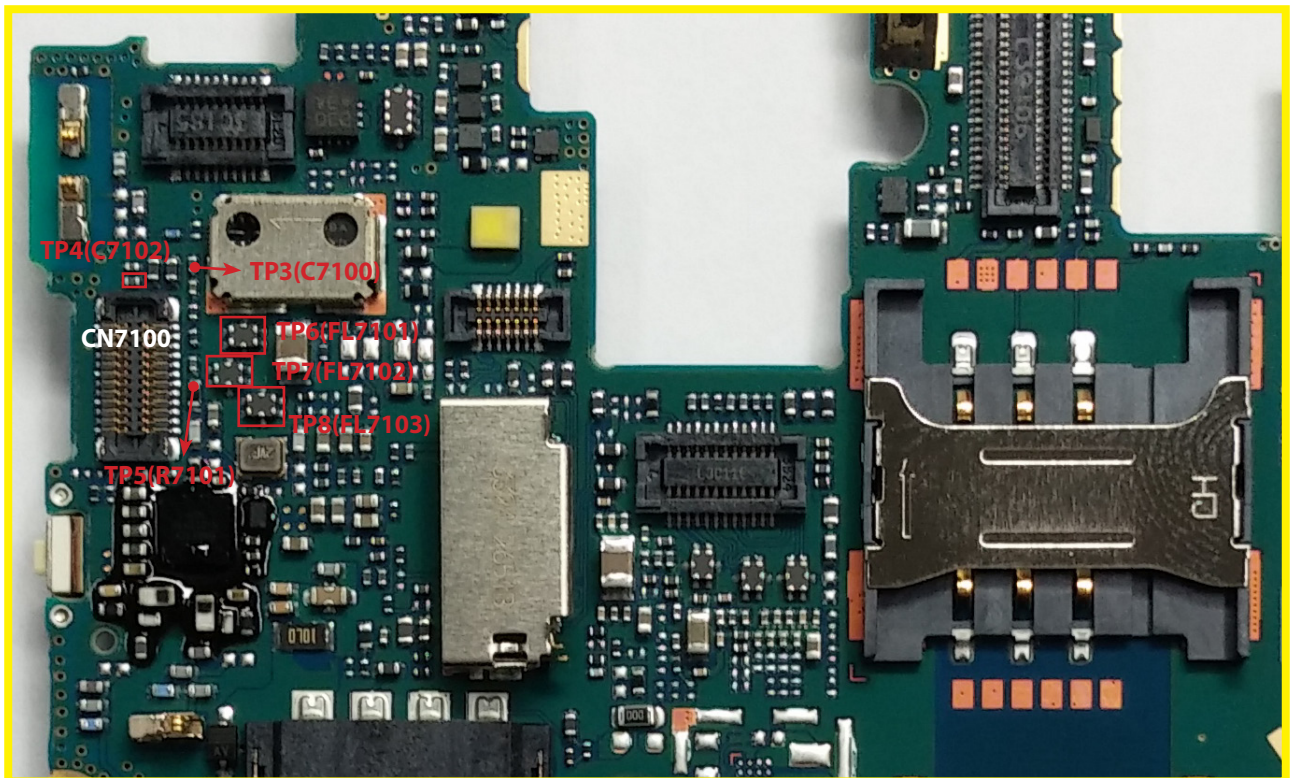
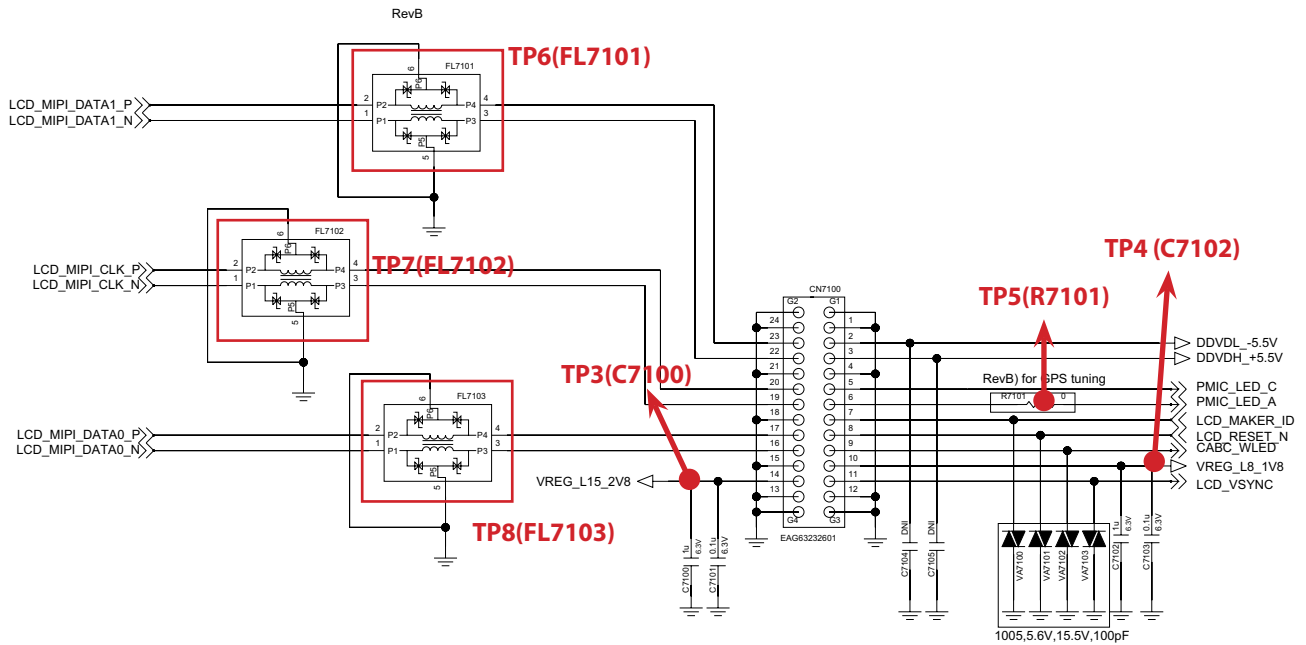


3. TROUBLE SHOOTING



<Main Top>

3. TROUBLE SHOOTING



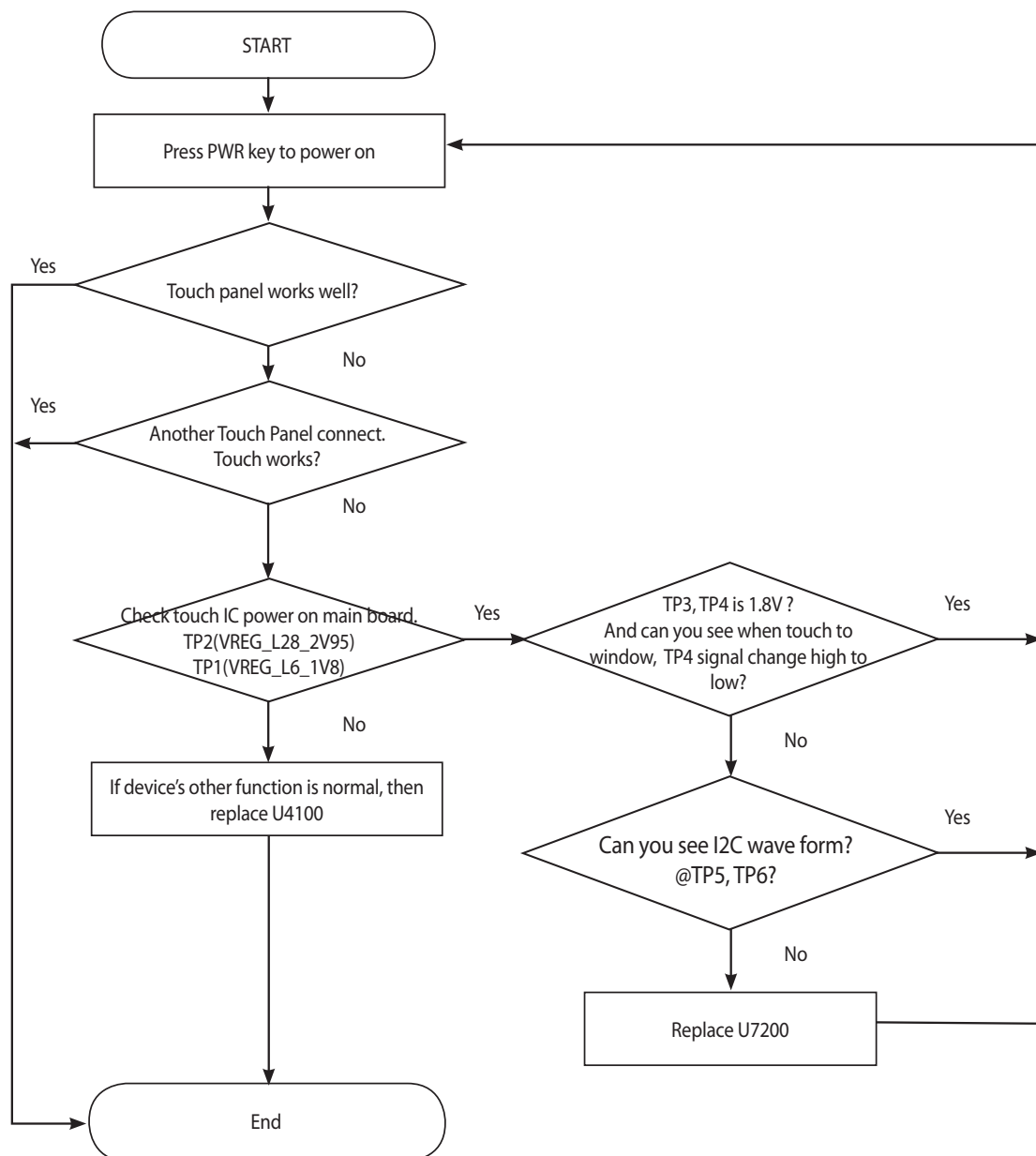
<Main Bot>

3.12 Touch troubleshooting

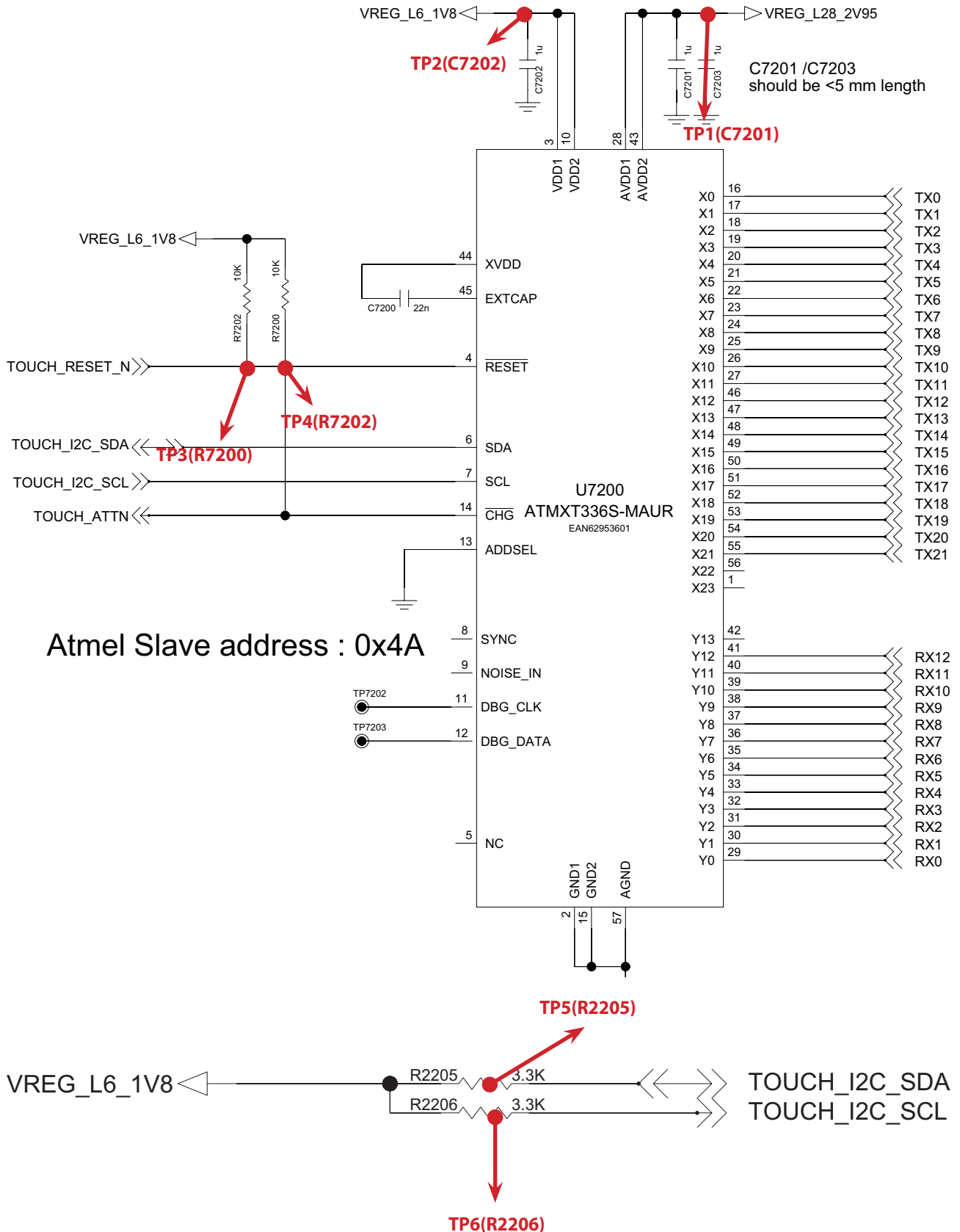
Touch screen is a capacitive sensor with an attached flexible PCB.

Touch connector has only sensor line (Touch IC located on Main PCB)

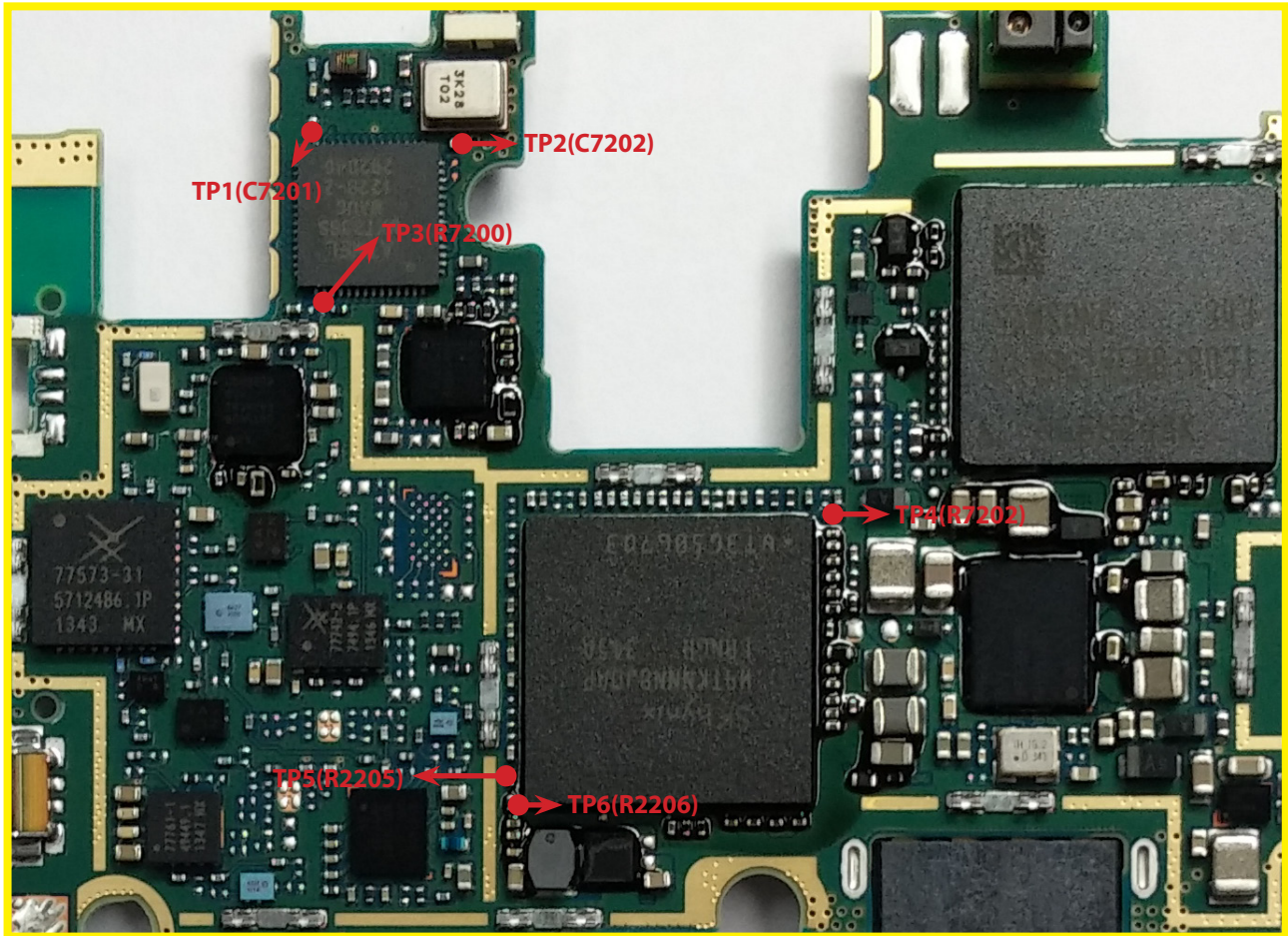
Touch control signals are generated by MSM8226.



3. TROUBLE SHOOTING



3. TROUBLE SHOOTING

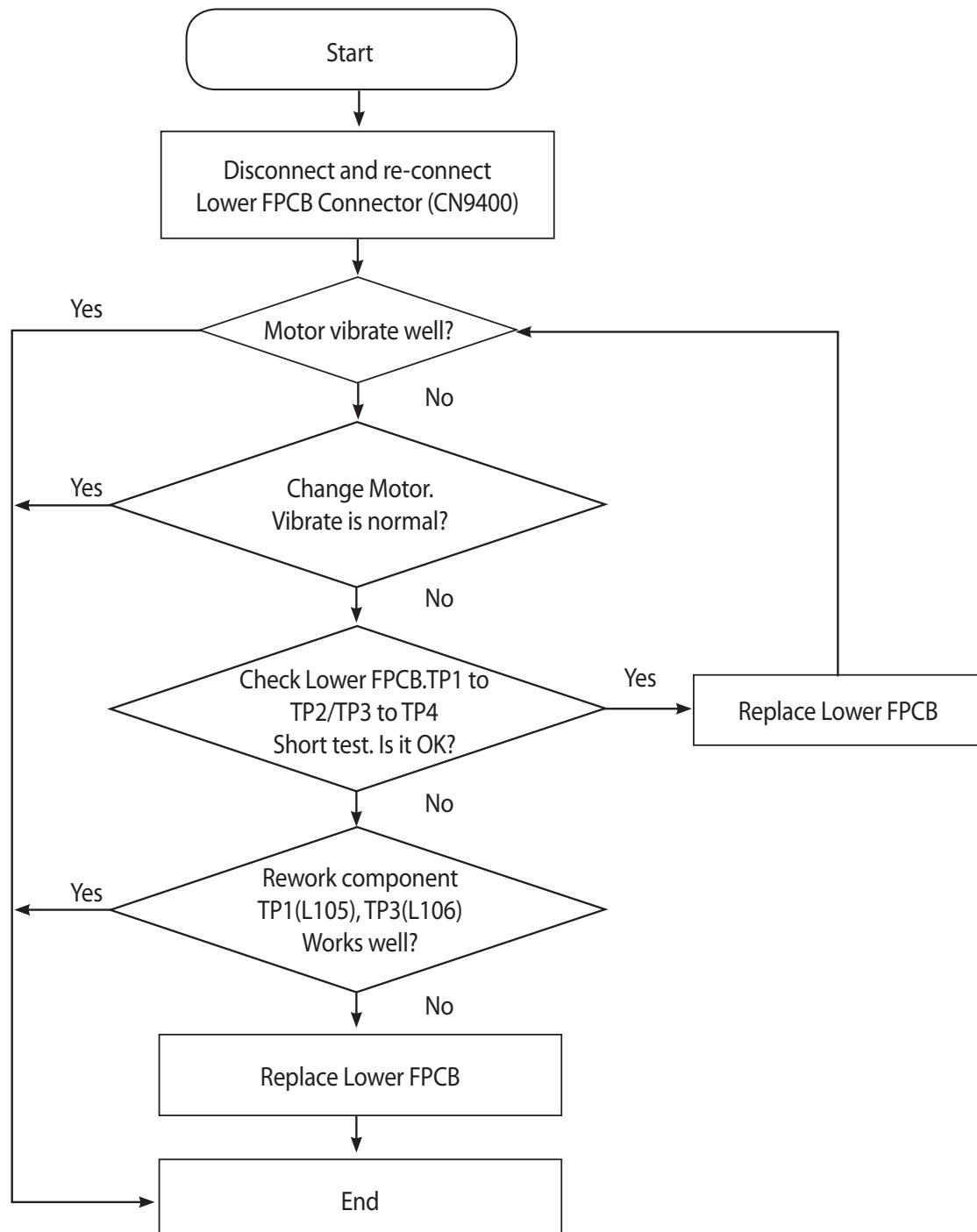


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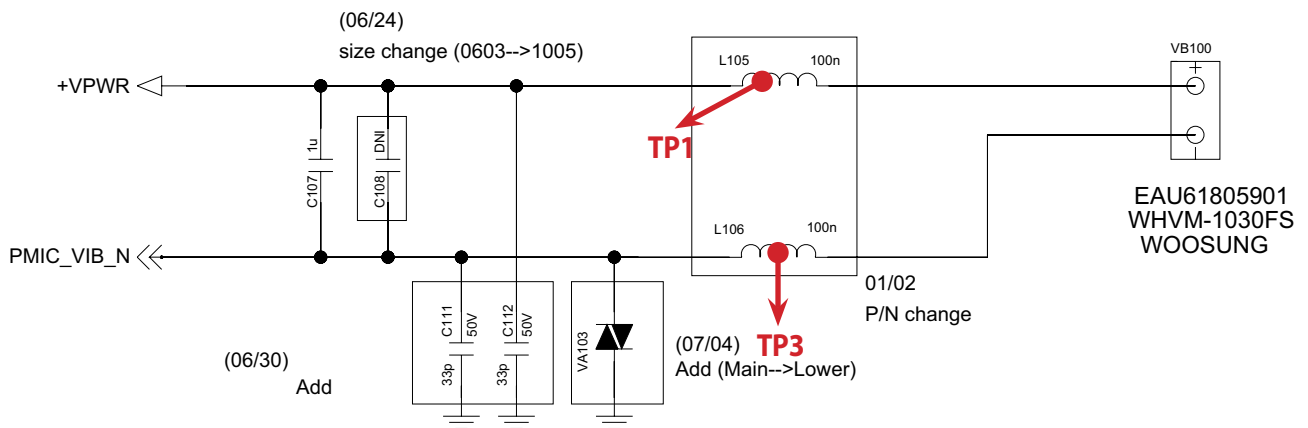
3.13 Vibrator Trouble Shooting

Vibrator signal's path is PM8226 -> VB100

DC Motor controlled by PM8226 PMIC_VIB_N voltage level.

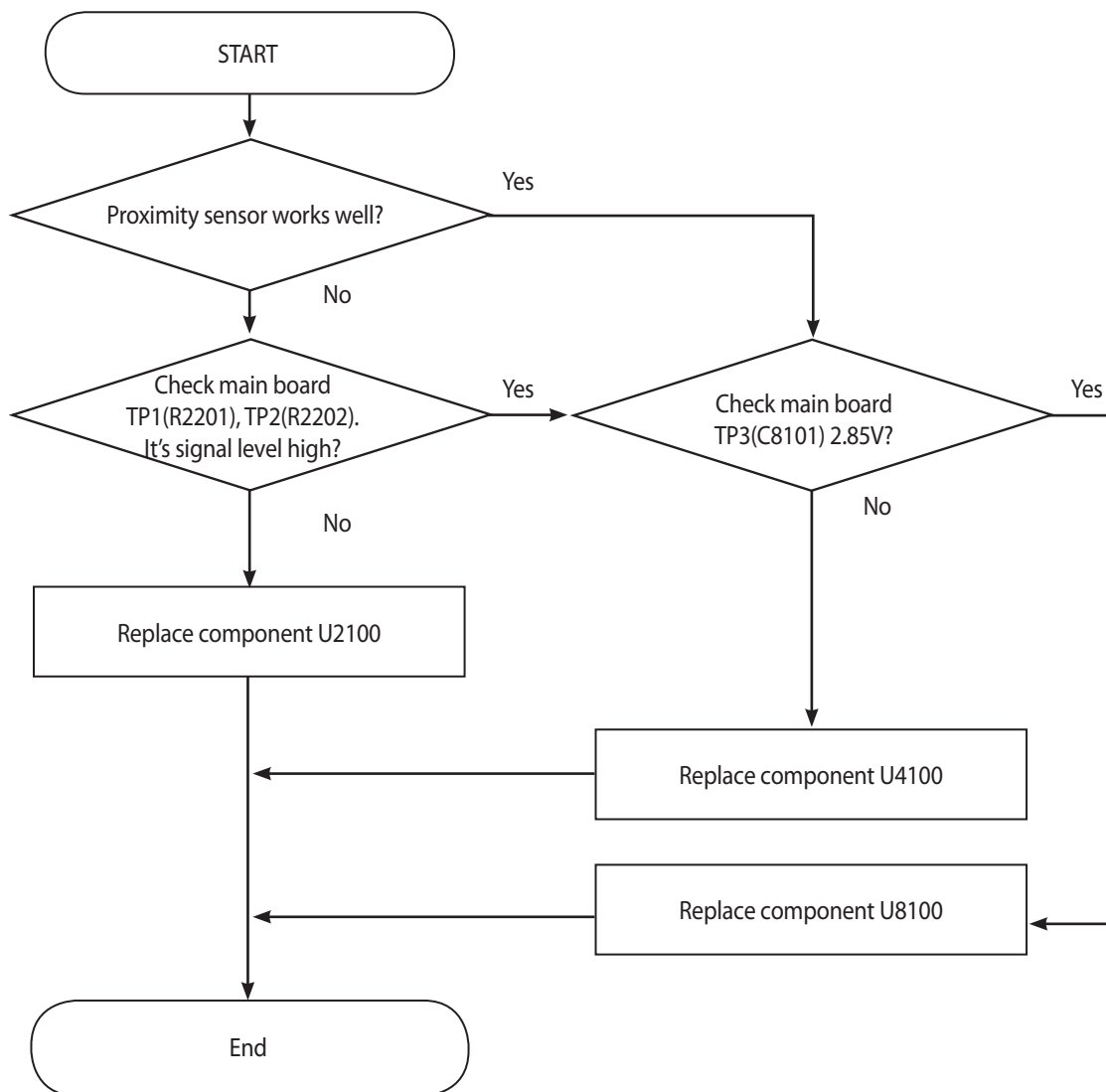


MOTOR

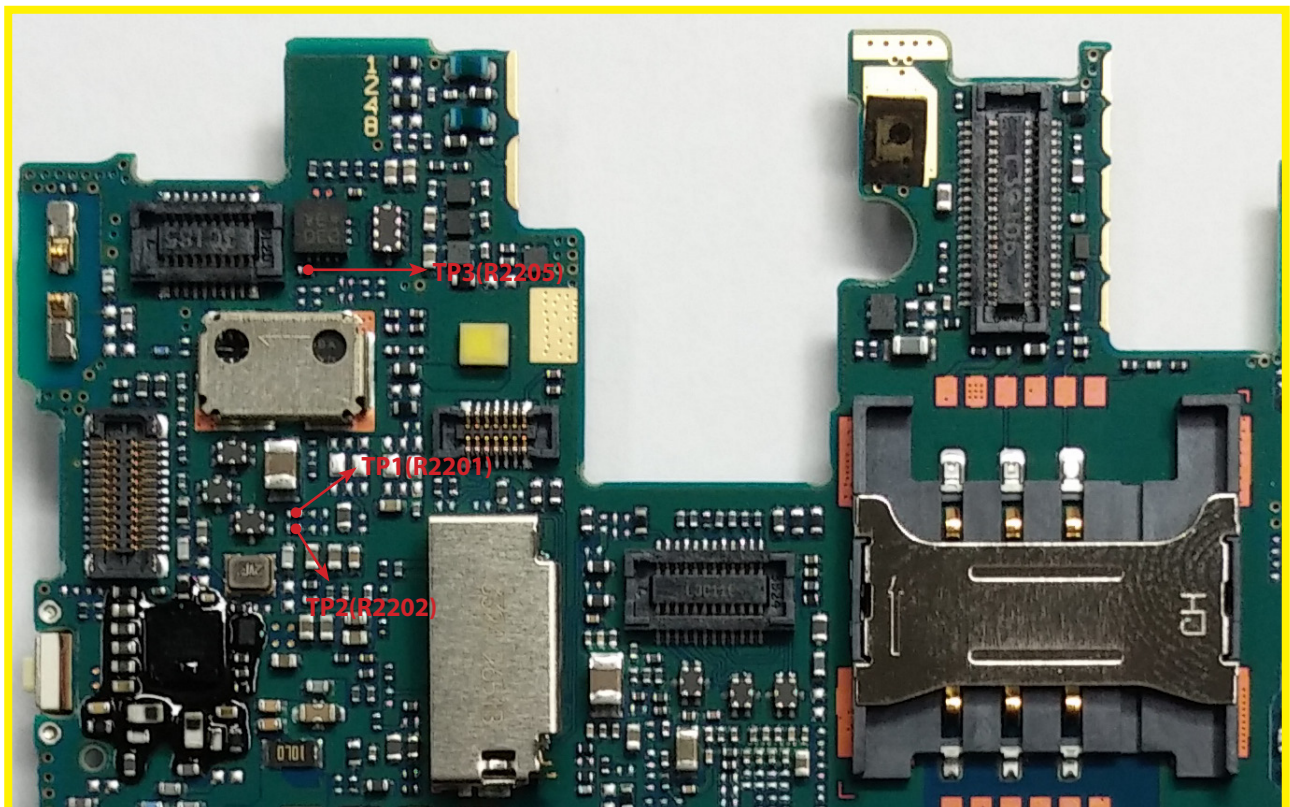
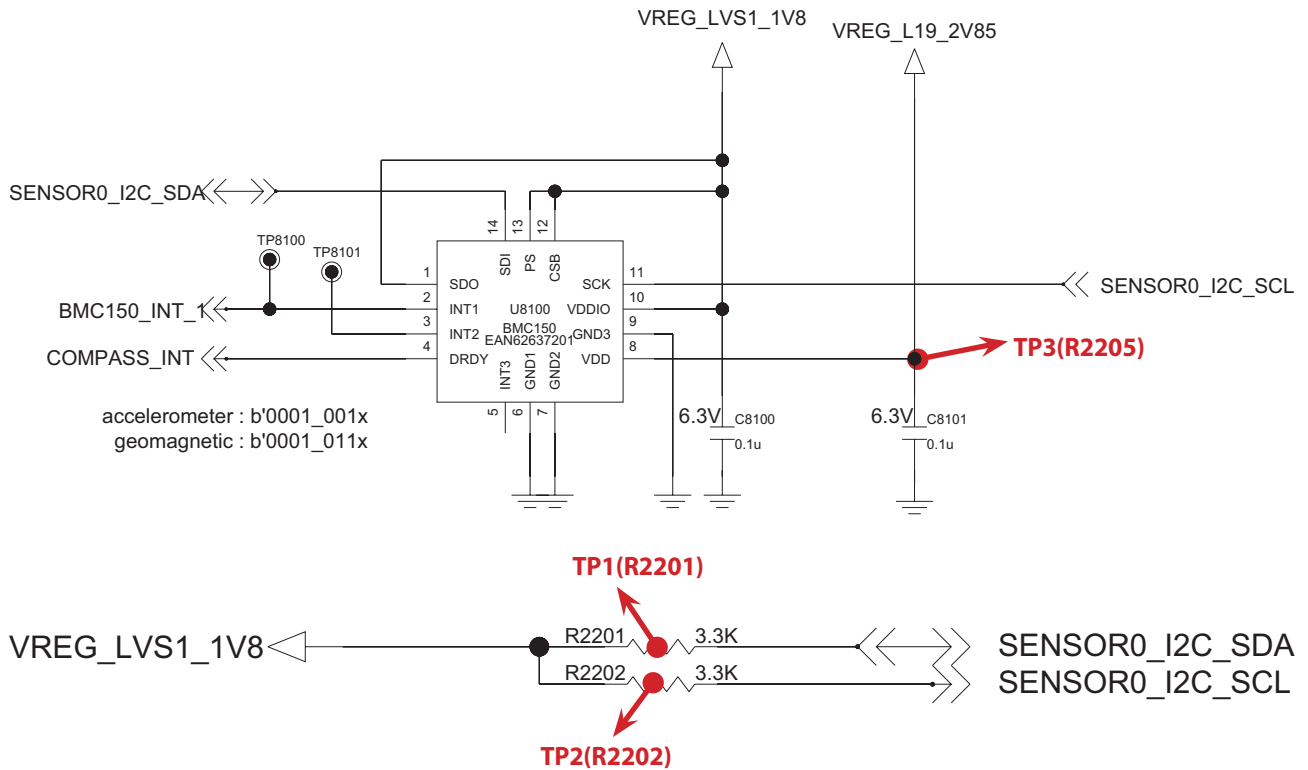


3.14 Gyro/Accel Trouble Shooting

Accel. /Compass Sensor signal path is MSM8226 -> BMC150 It communicate via SENSOR0_I2C



3. TROUBLE SHOOTING

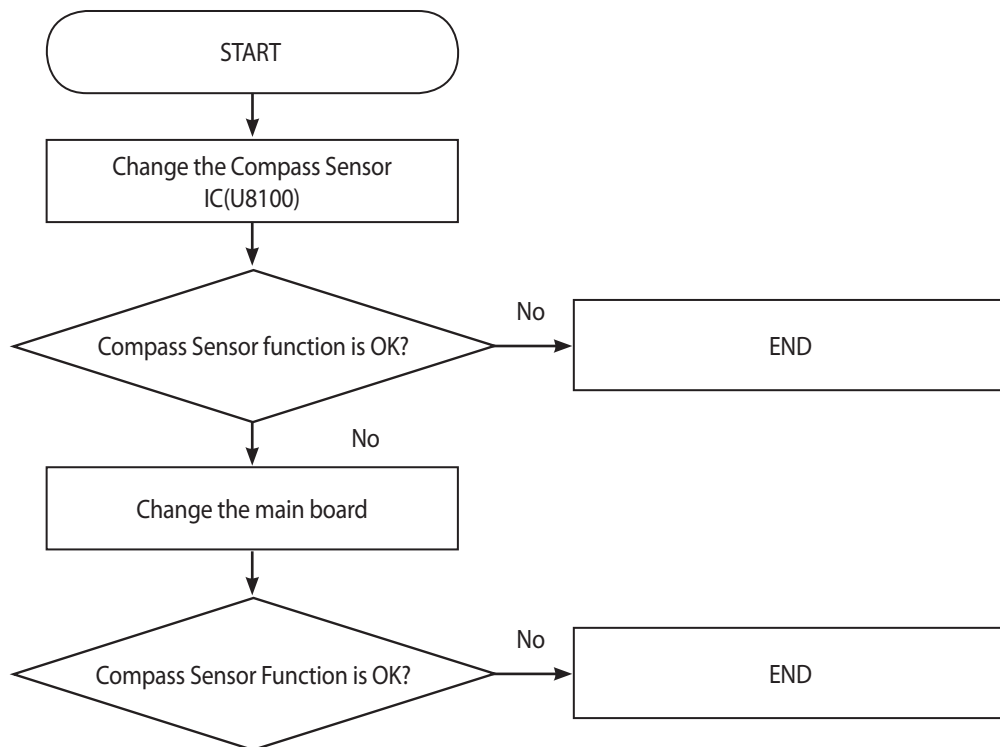


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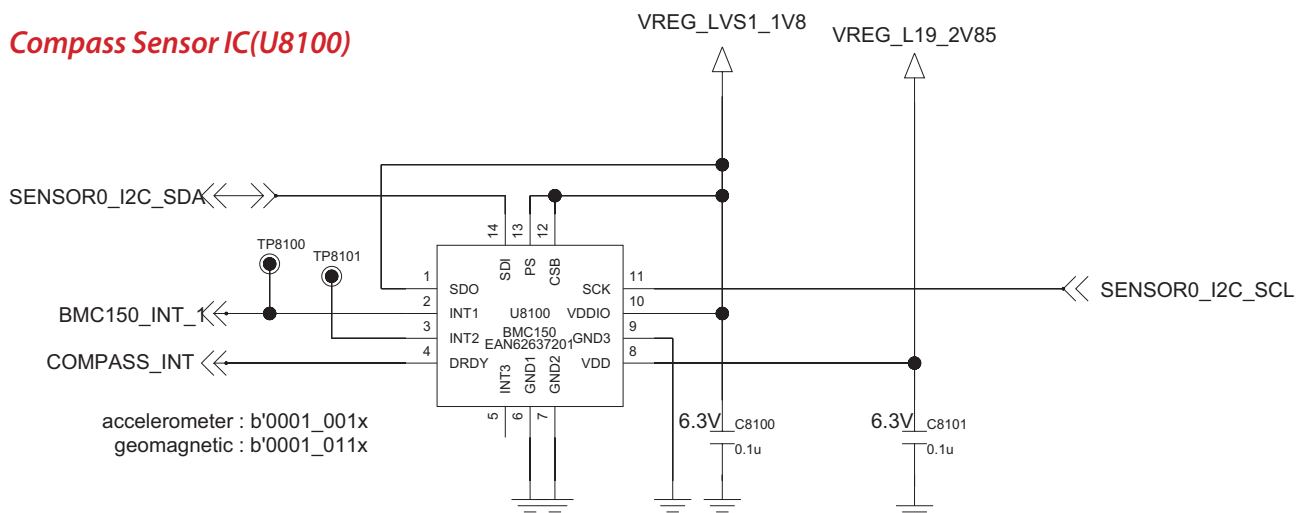
3.15 Compass sensor troubleshooting

Proximity sensor signal path is MSM8226 -> BMC150

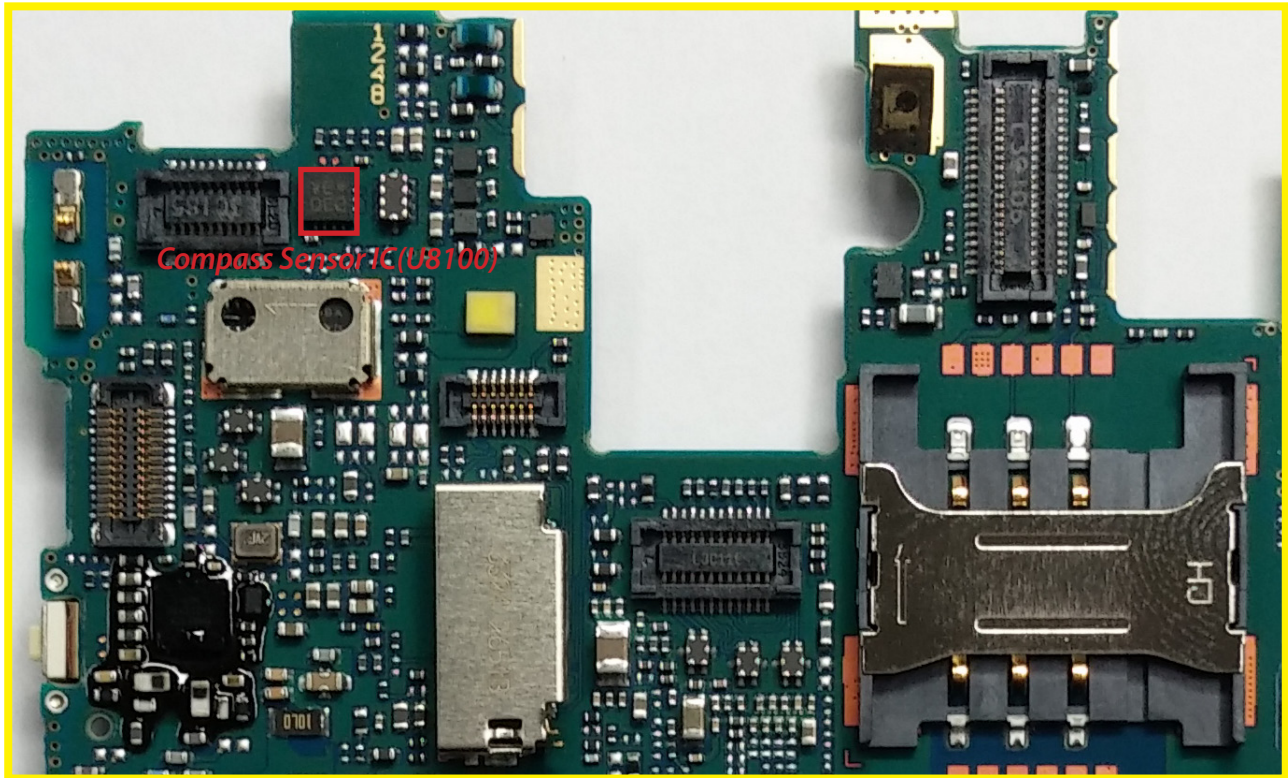
It communicate via SENSOR0_I2C



Compass Sensor IC(U8100)



3. TROUBLE SHOOTING

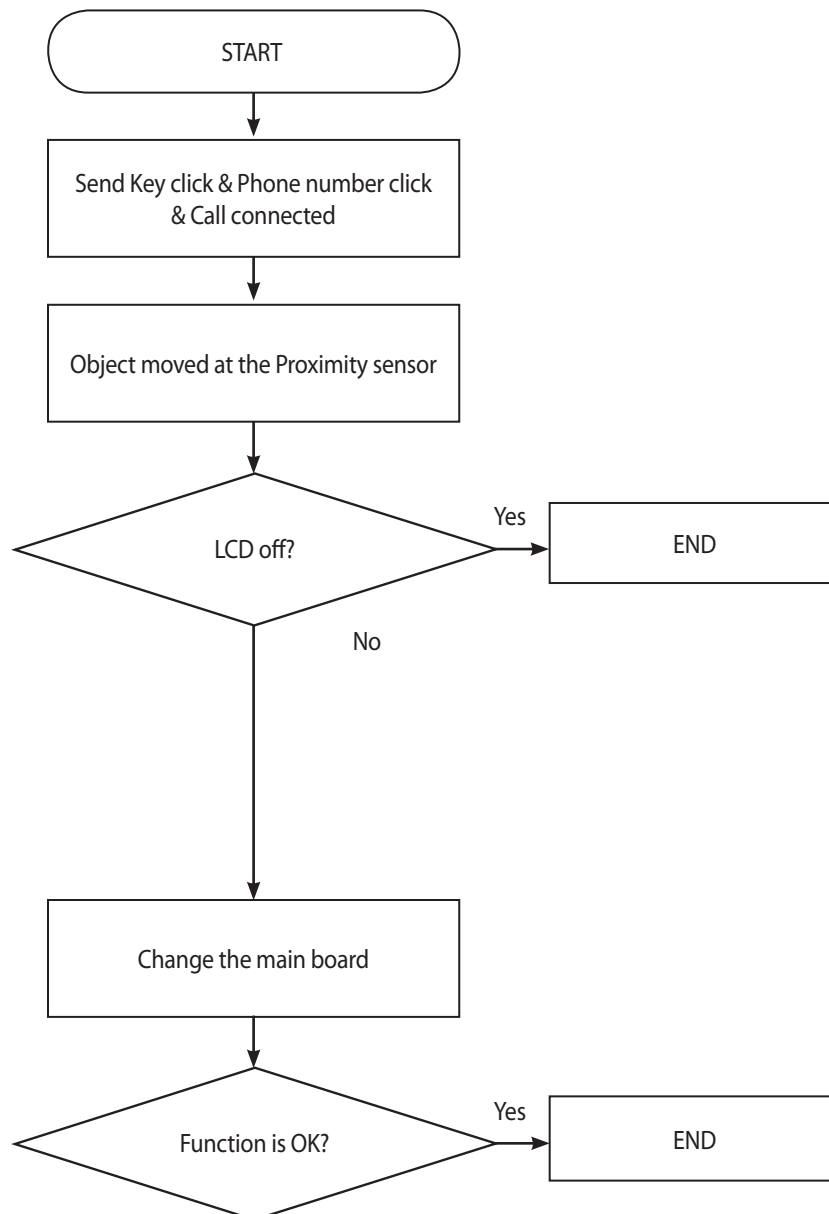


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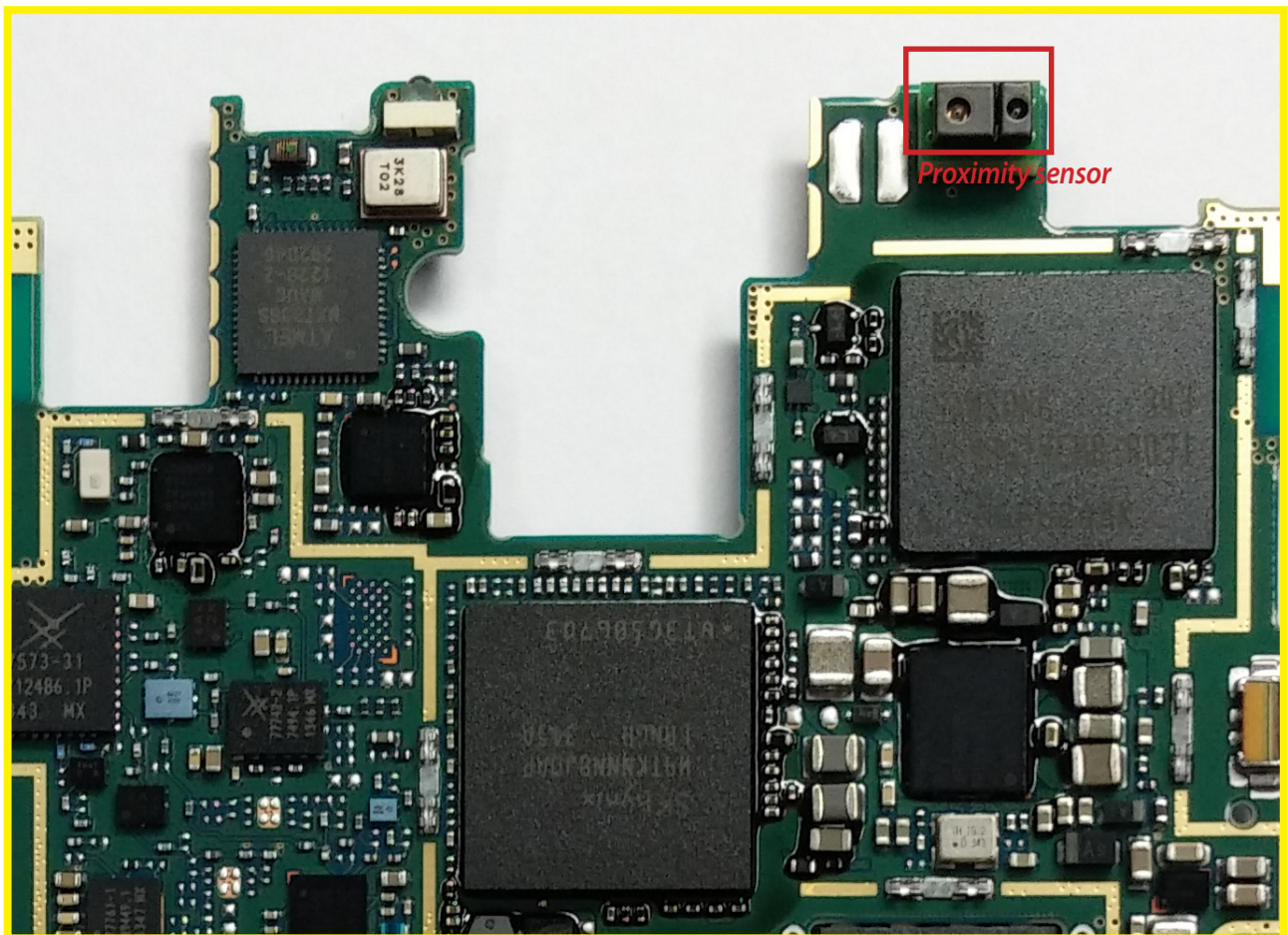
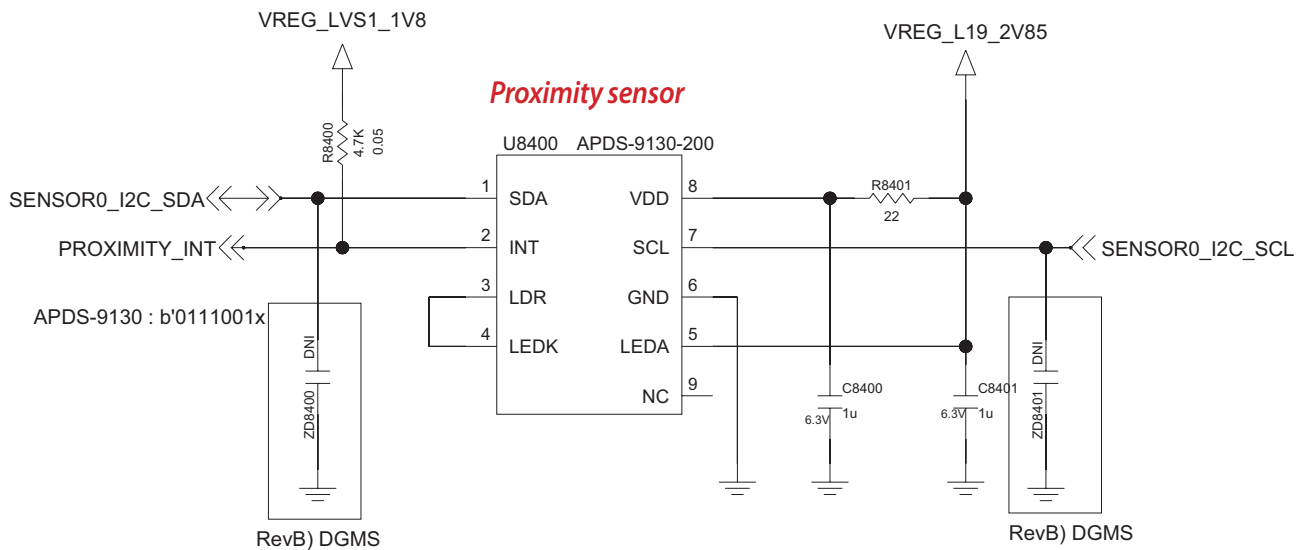
3.16 Proximity Sensor troubleshooting

Proximity Sensor is worked as below:

Send Key click -> Phone number click -> Call connected -> Object moved at the sensor -> Control the screen's on/off operation automatically



3. TROUBLE SHOOTING



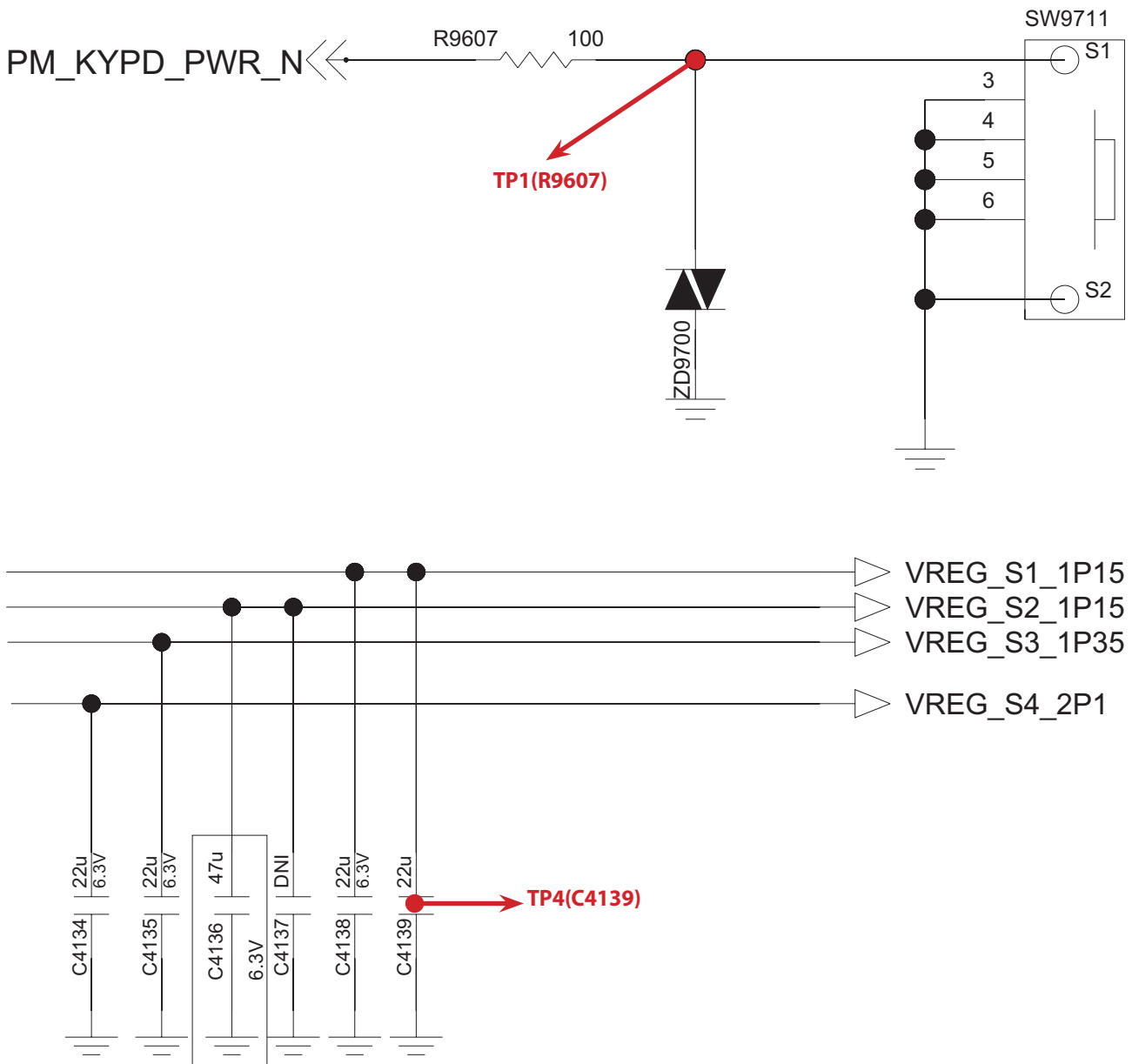
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3.17 Power ON Troubleshooting

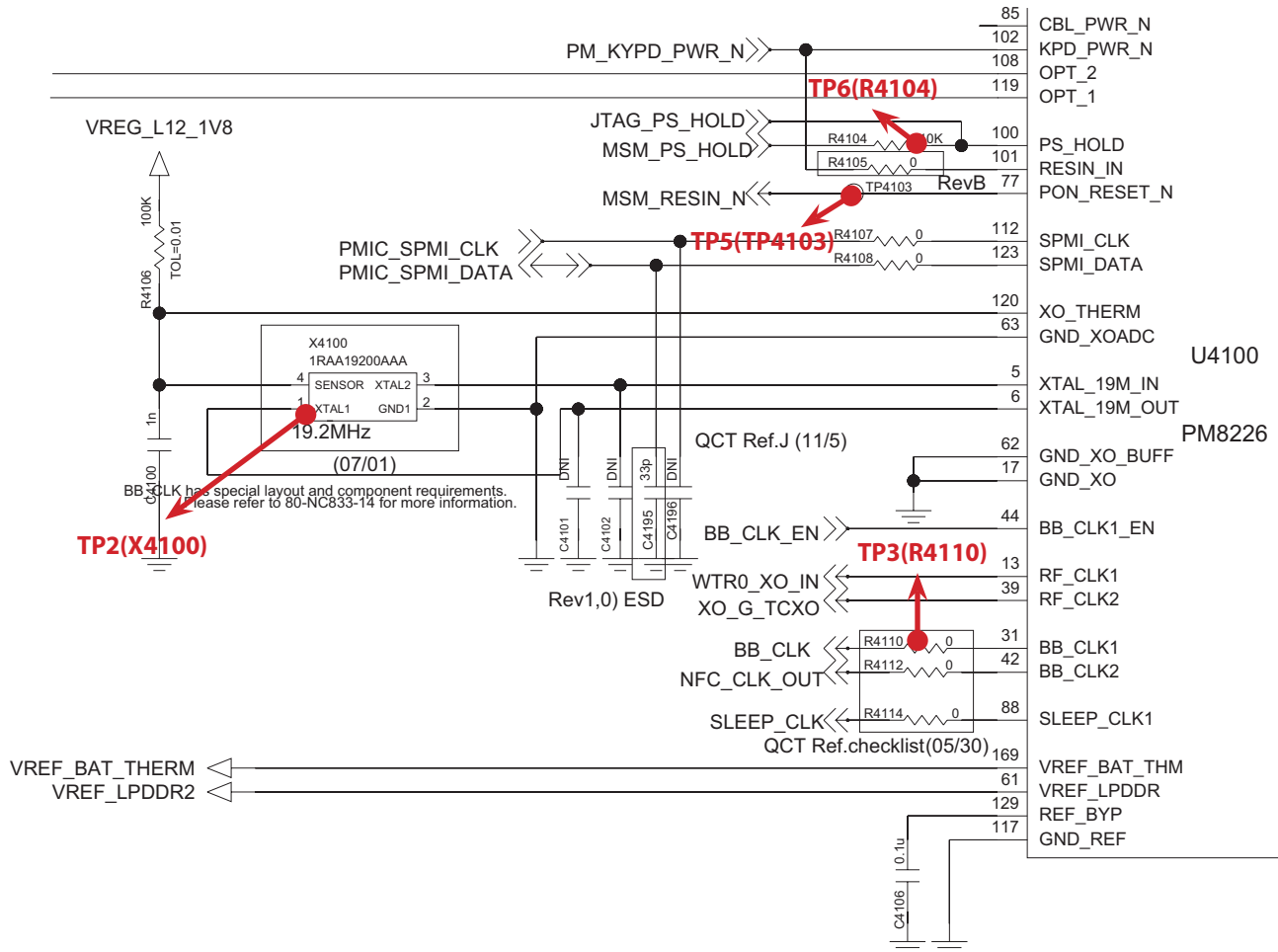
The main power source of LGD405 is provided by 1 chip which is PM8226. Since MSM8226 only powers up normally when MSM8226 is properly powered therefore, PM8226 is the actual one to take look at.

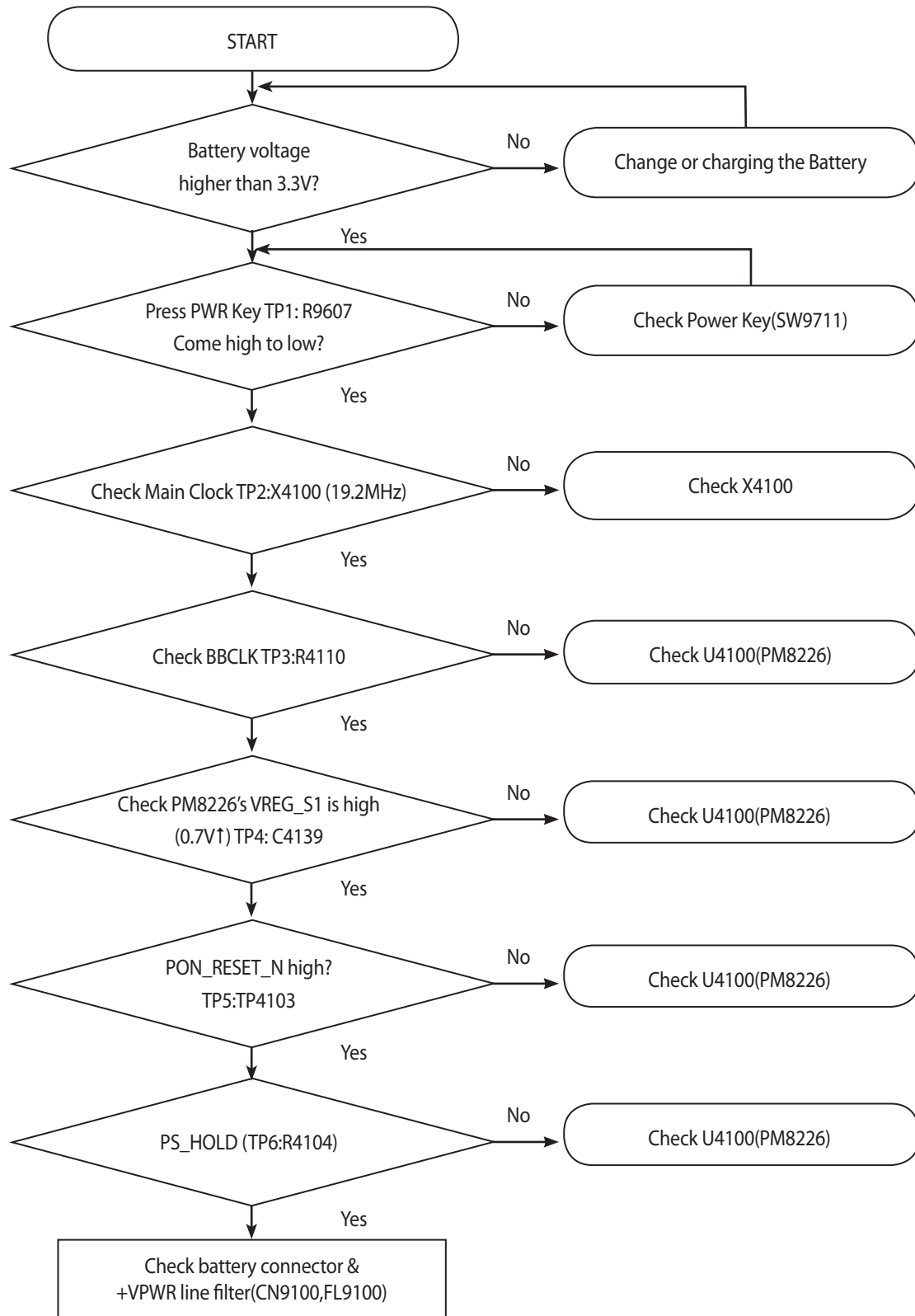
Power ON sequence of LGD405 is,

PWR key press -> BAT_FET_N goes low -> GPIO8 High -> VREG_S3 High -> VREG_L6 High -> VREG_L12 High -> BB_CLK -> PON_RESET_N goes high -> PS_HOLD High.

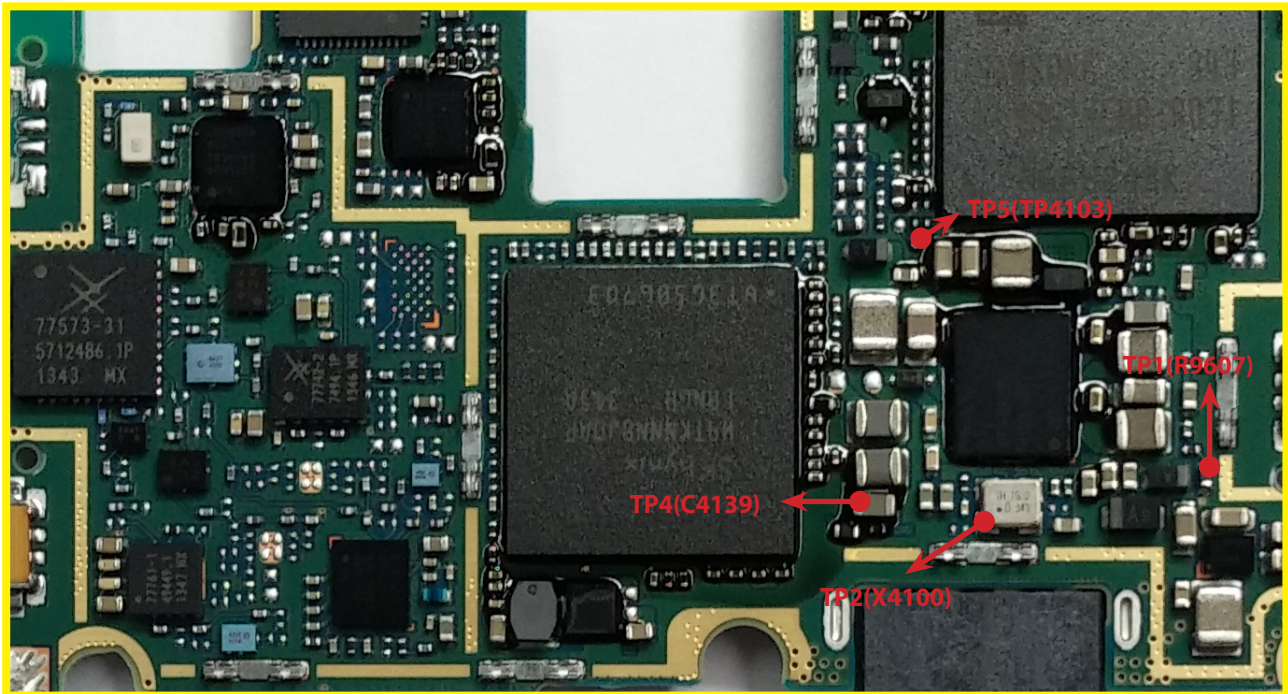


3. TROUBLE SHOOTING

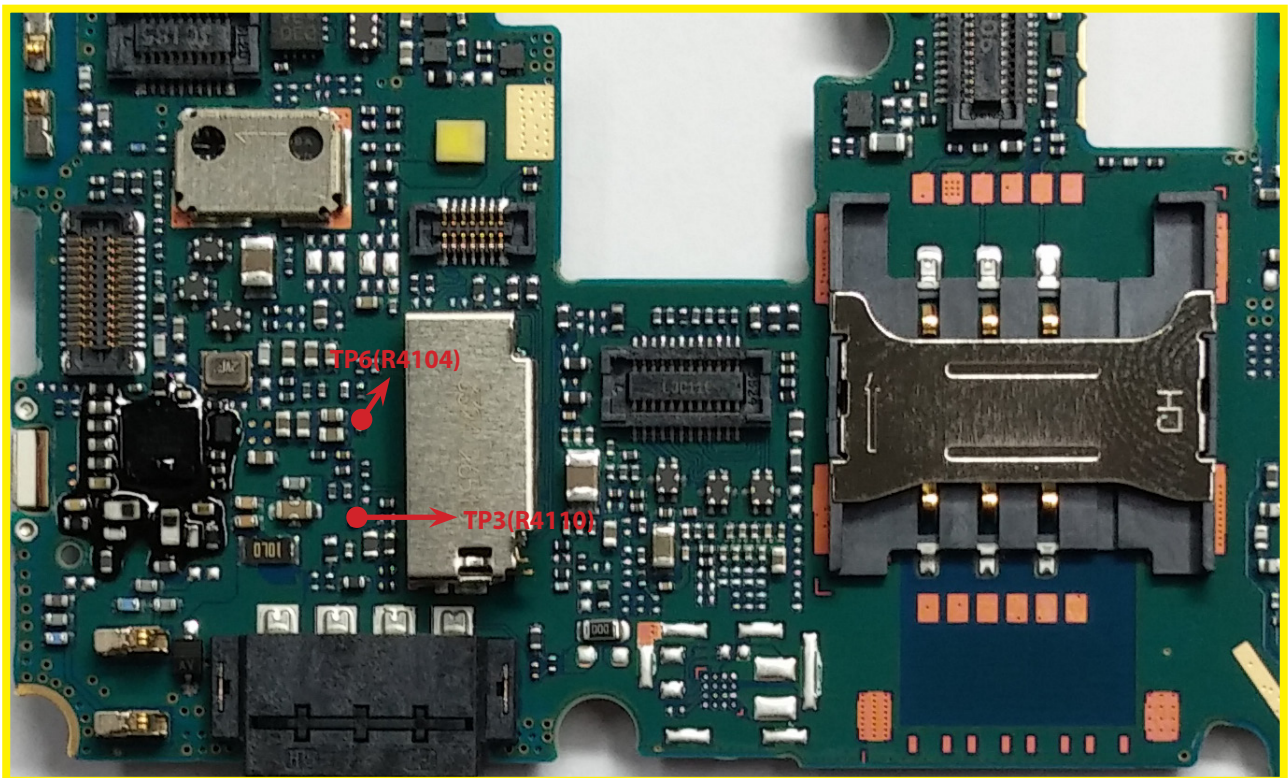




3. TROUBLE SHOOTING



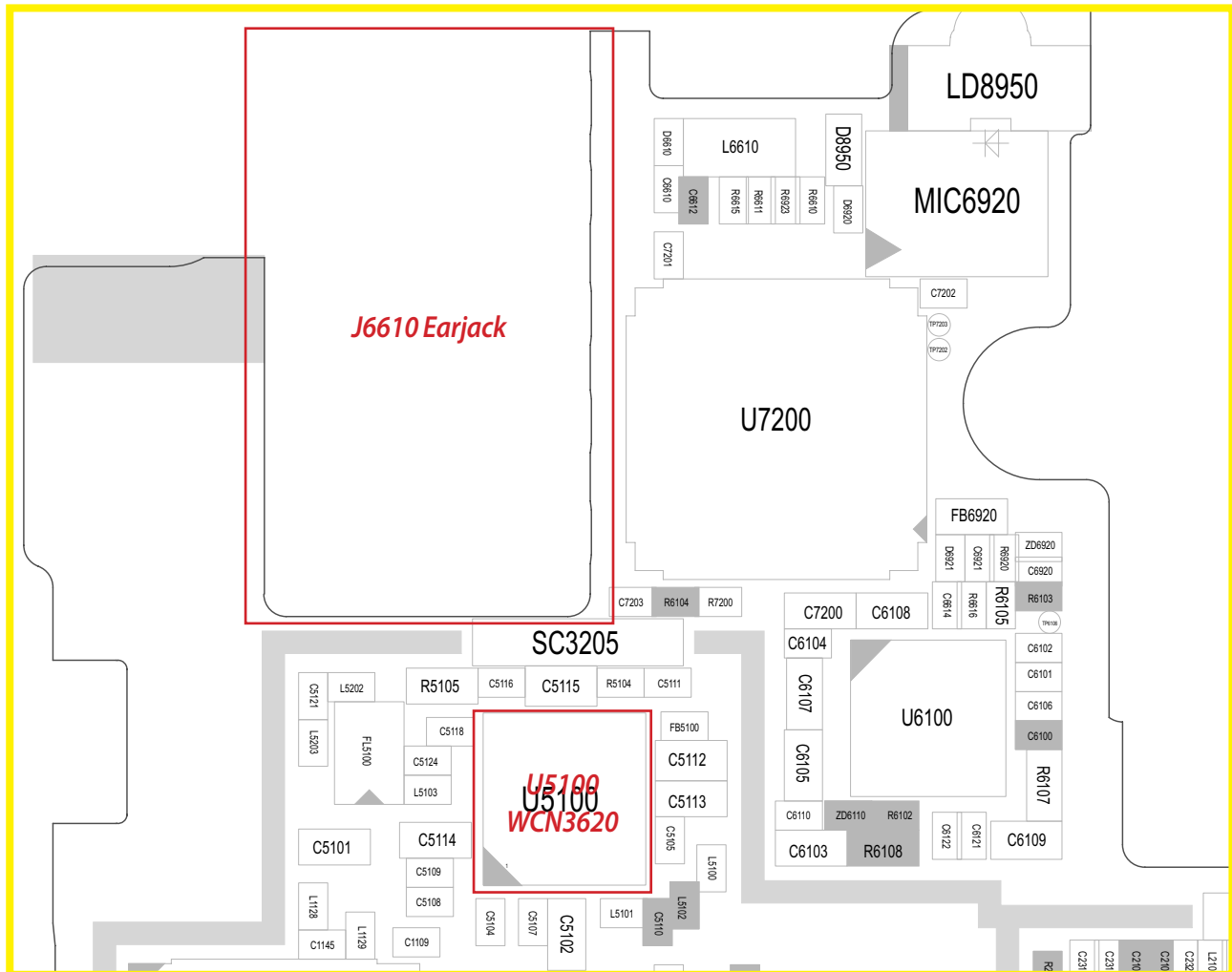
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<Main Bot>

3.18 FM Trouble Shooting

3.18.1 FM Component

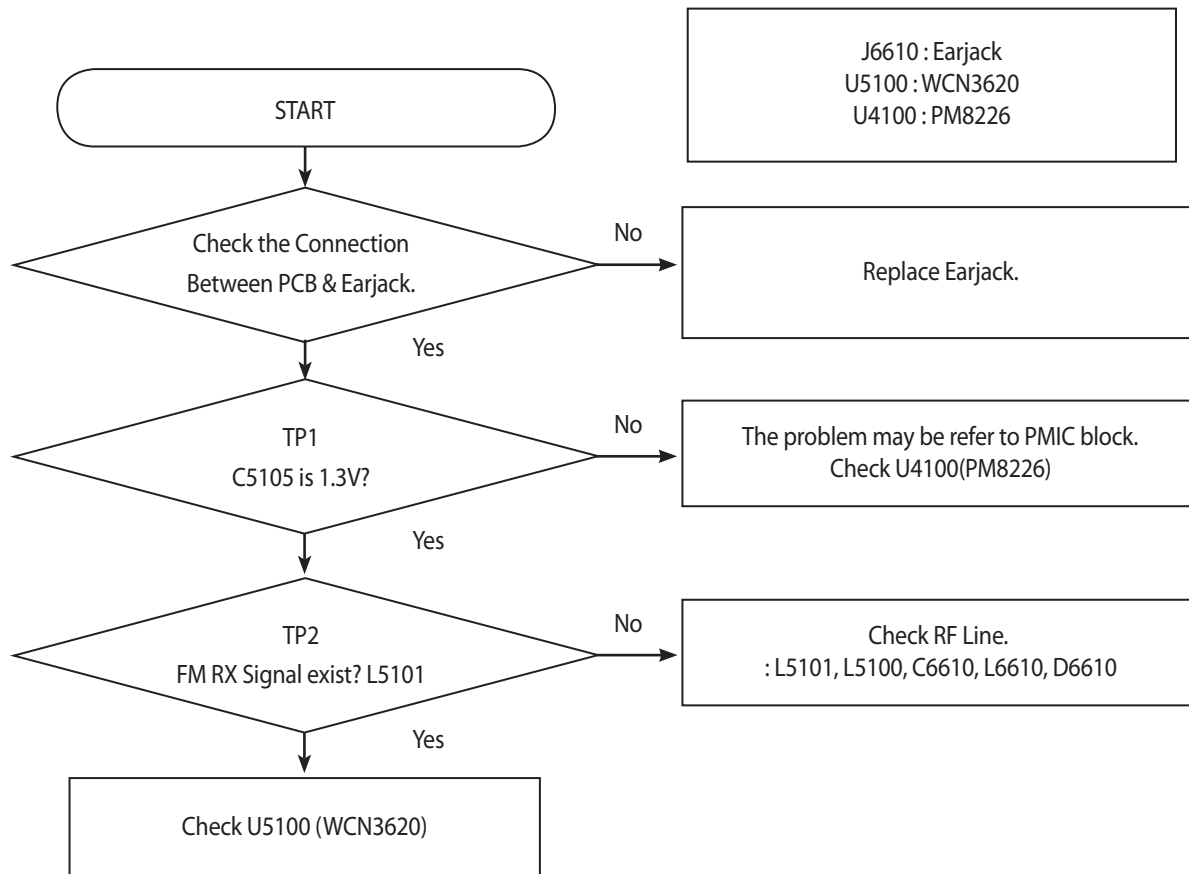


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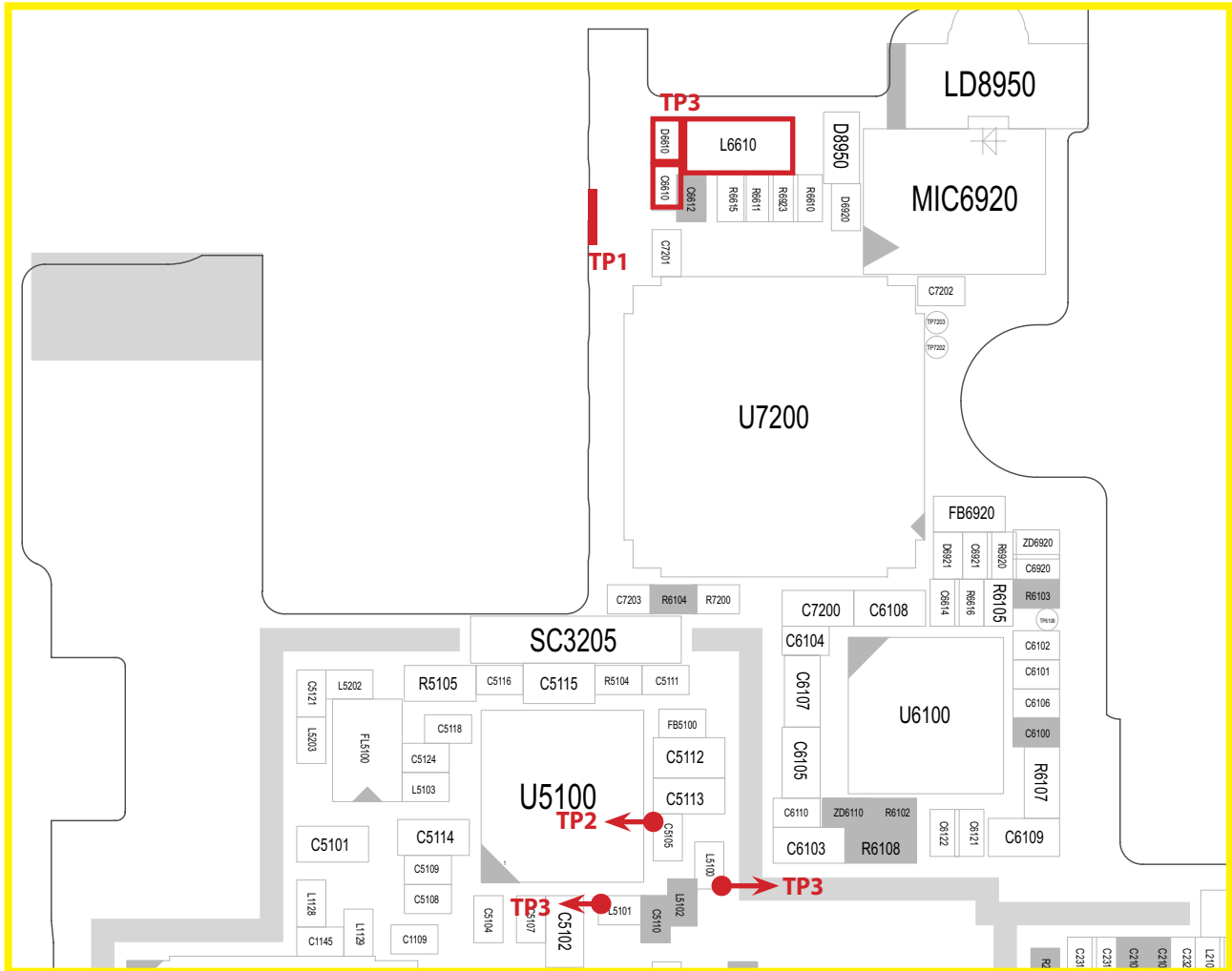
Reference	Description
U5100	WCN3620
J6610	Earjack



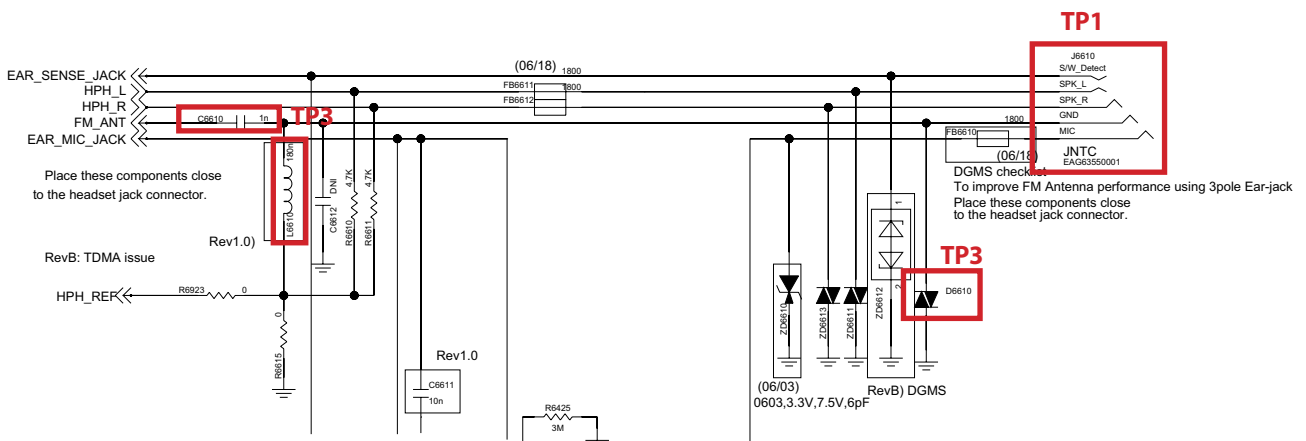
3. TROUBLE SHOOTING

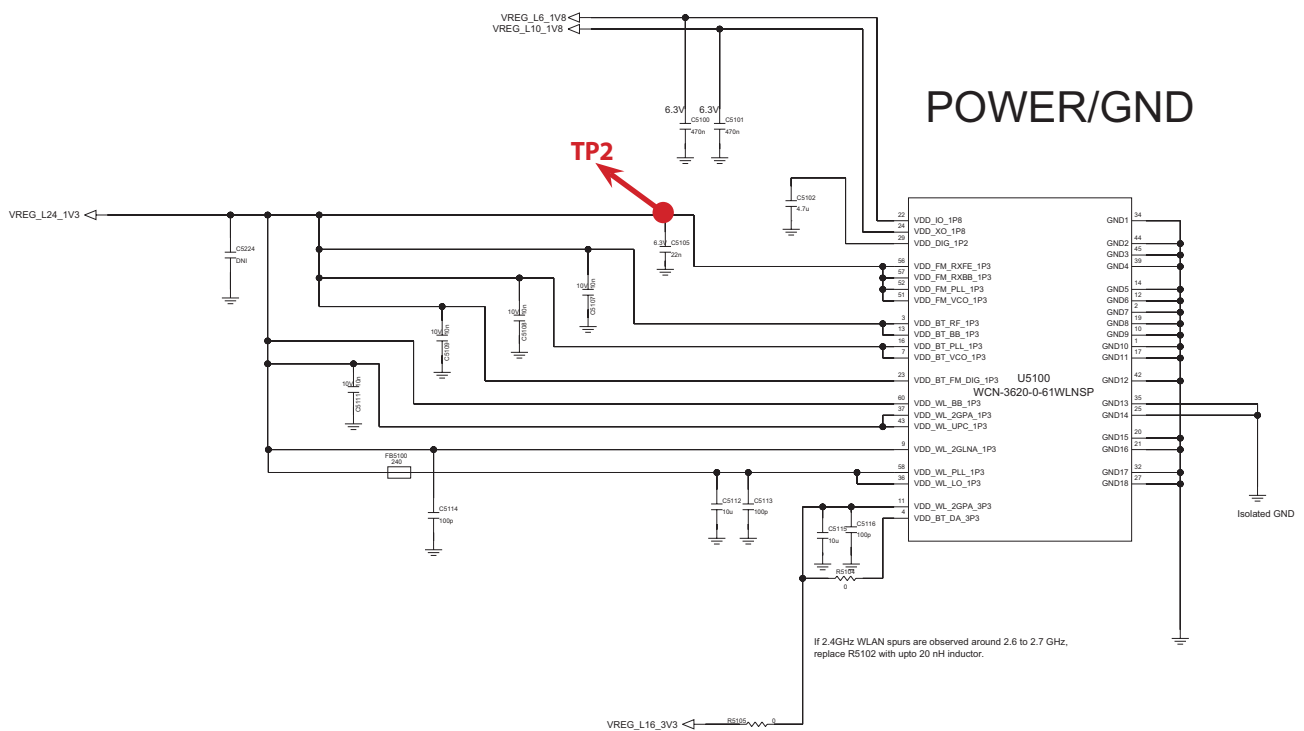
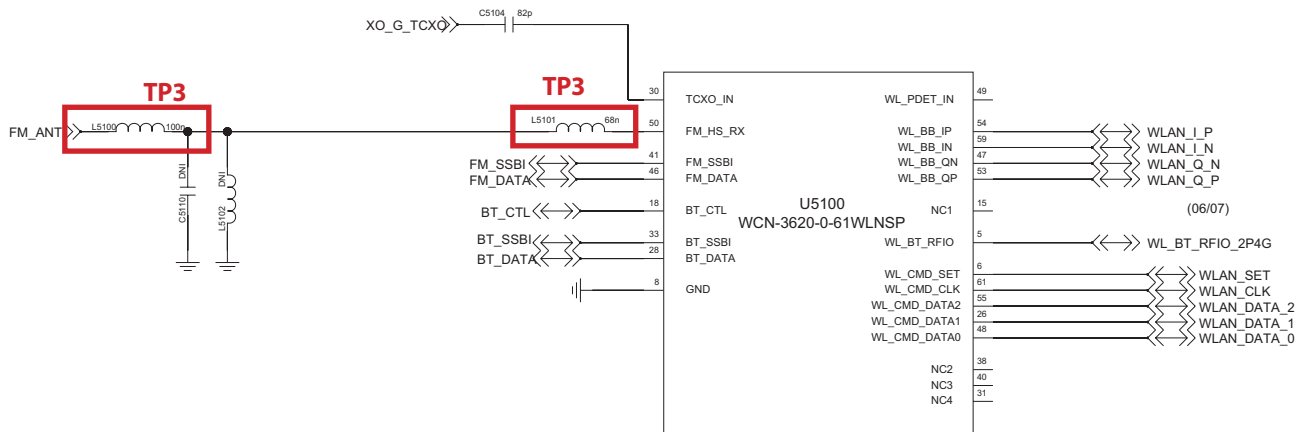


3. TROUBLE SHOOTING



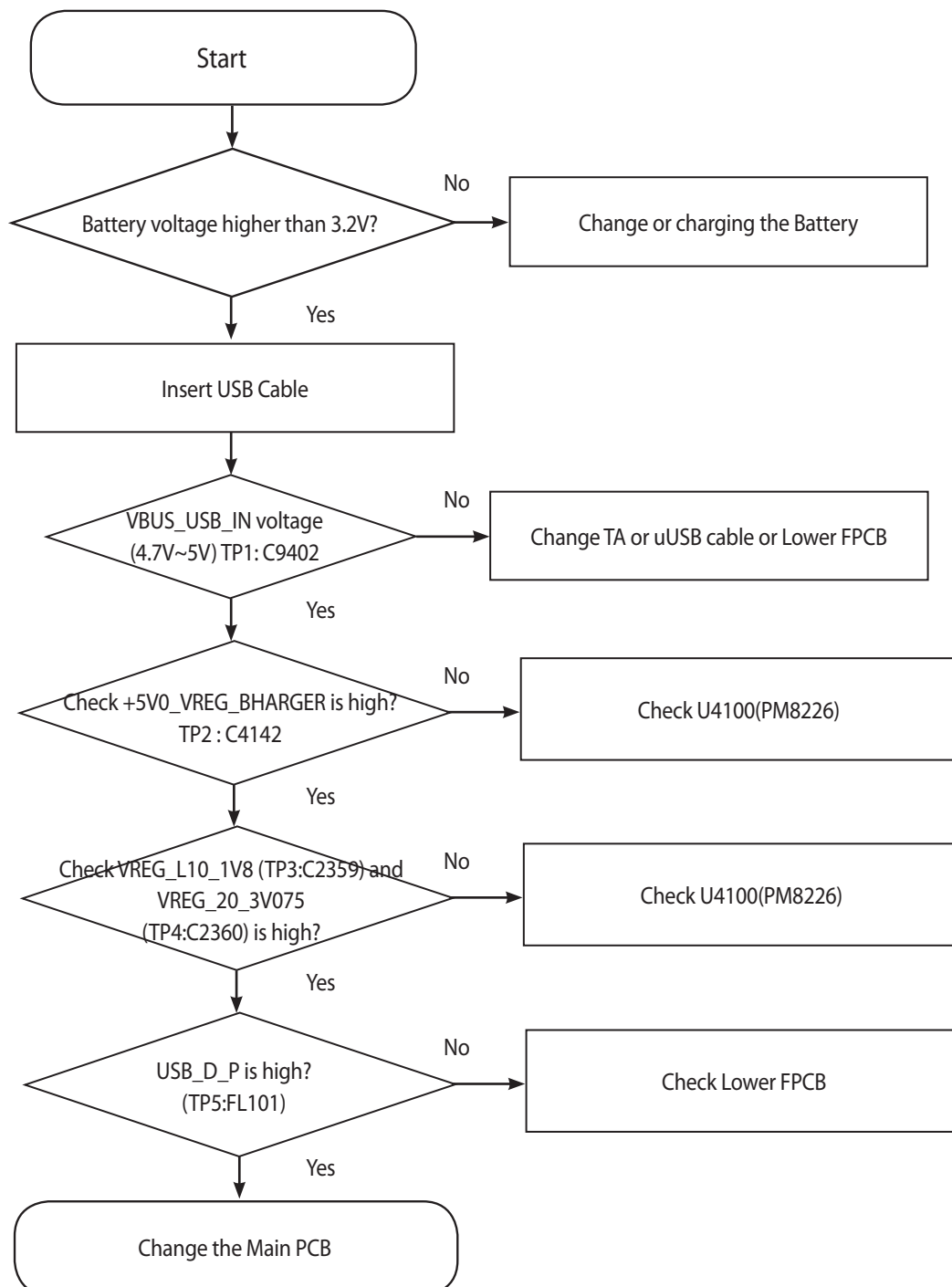
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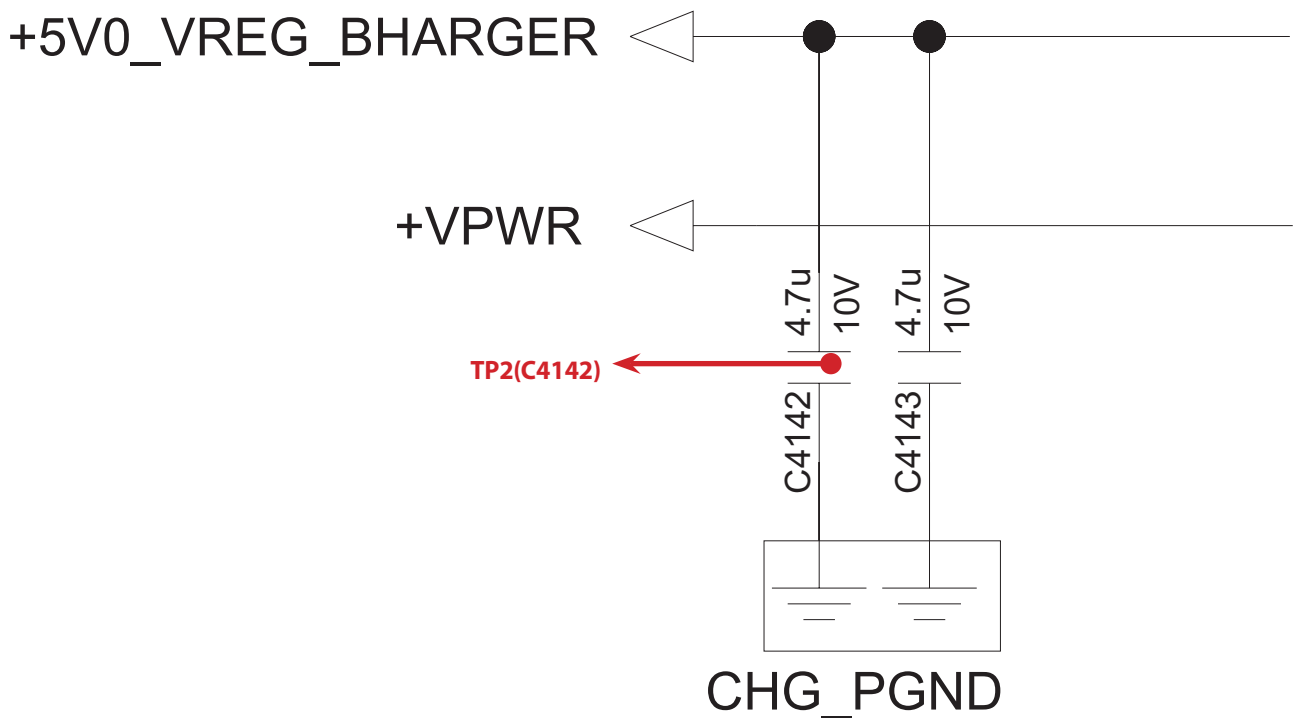
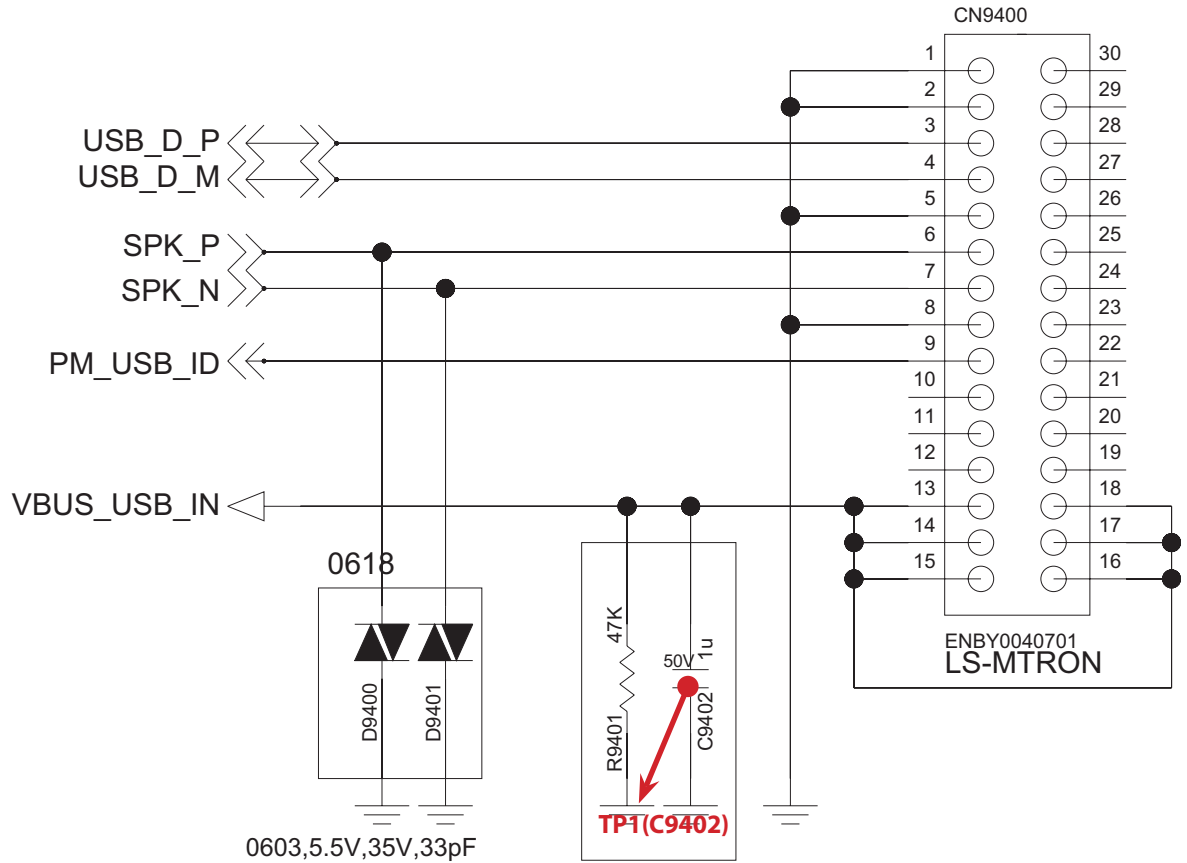


3.19 USB Trouble Shooting

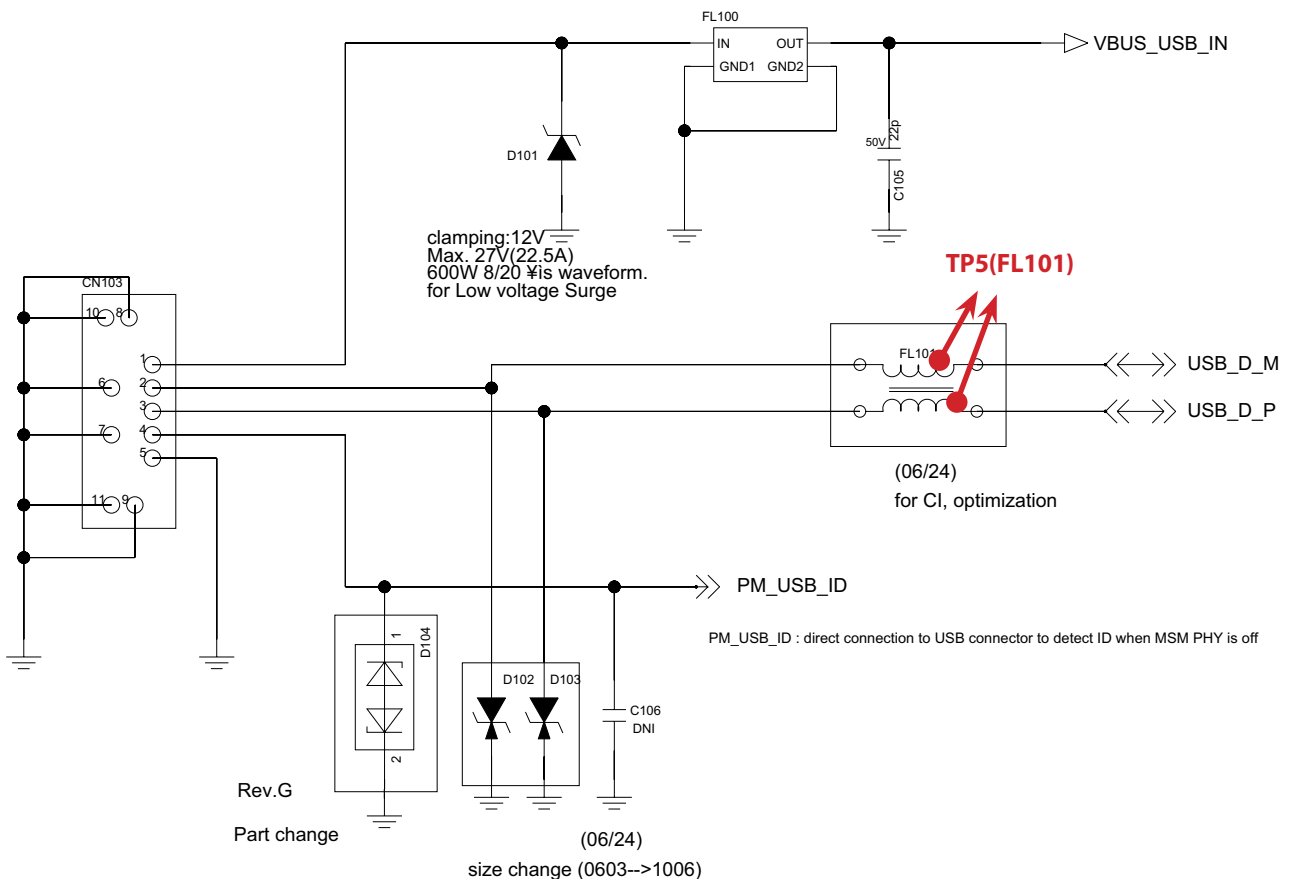
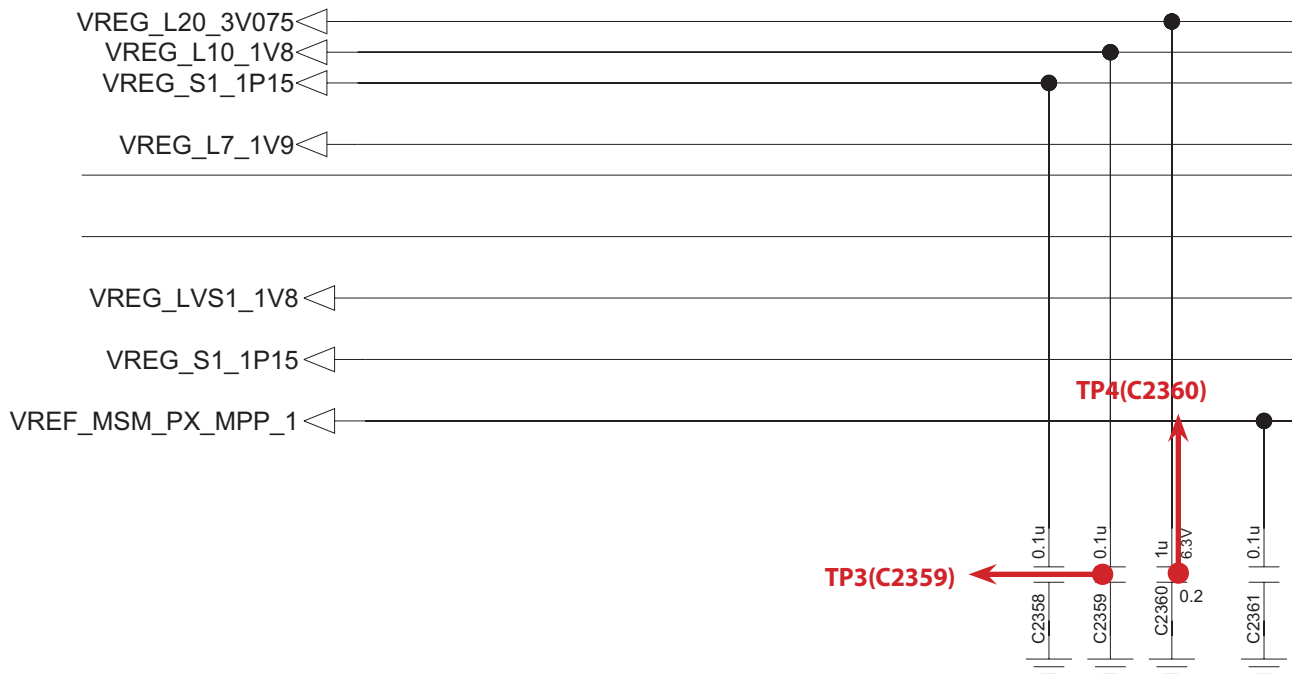
The sequence of LGD405 USB is, USB connected to LGD405 -> VBUS_USB_IN(C816) goes to 5V -> USB_D+ go to 3.3V -> USB_DATA is triggered -> USB work USB Trouble shooting is shown below.



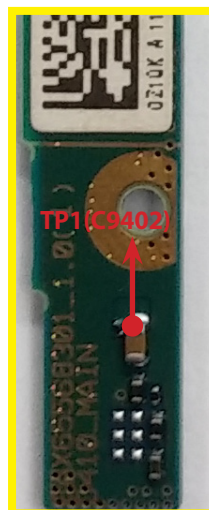
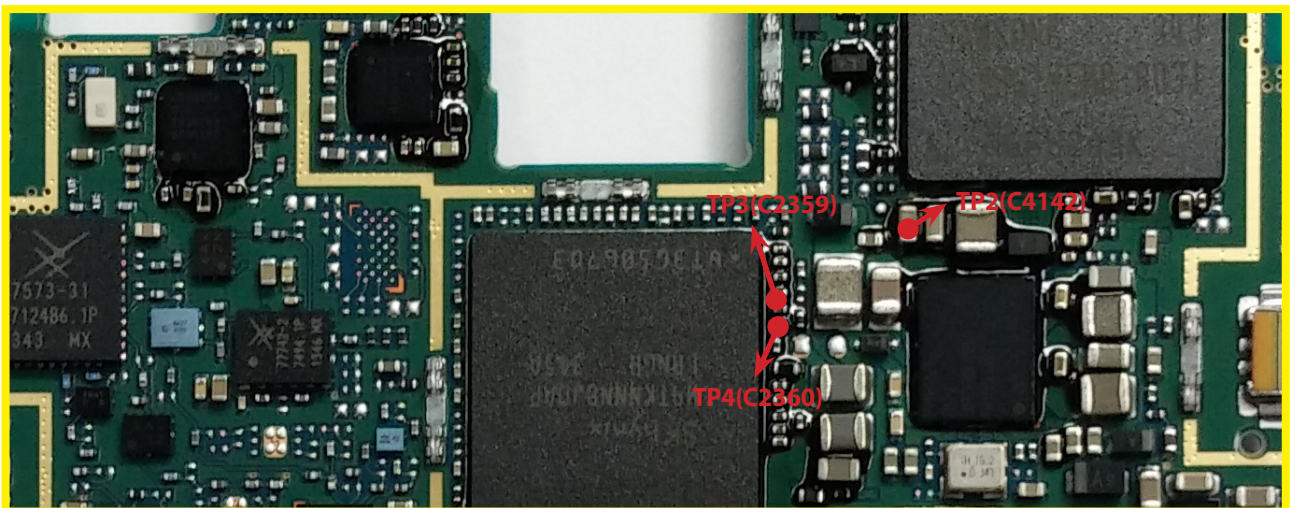
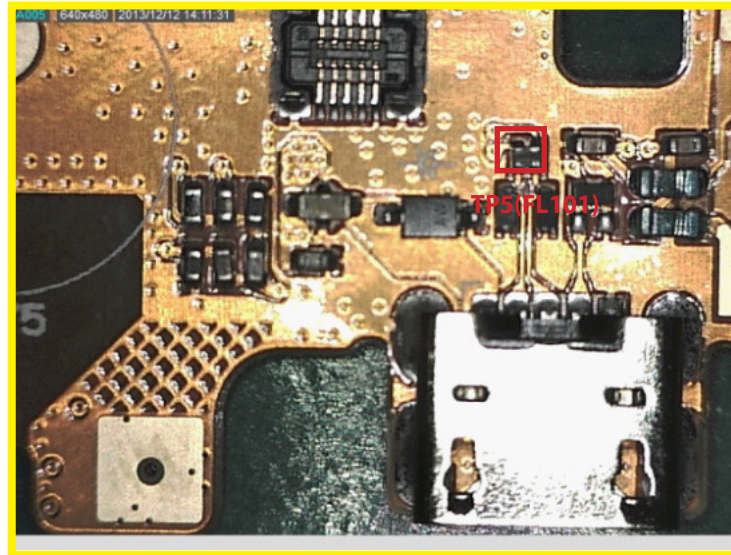
3. TROUBLE SHOOTING



3. TROUBLE SHOOTING



3. TROUBLE SHOOTING



<Main Top>

4. DOWNLOAD

This document is draft version, so the contents will be updated after registering the final one.

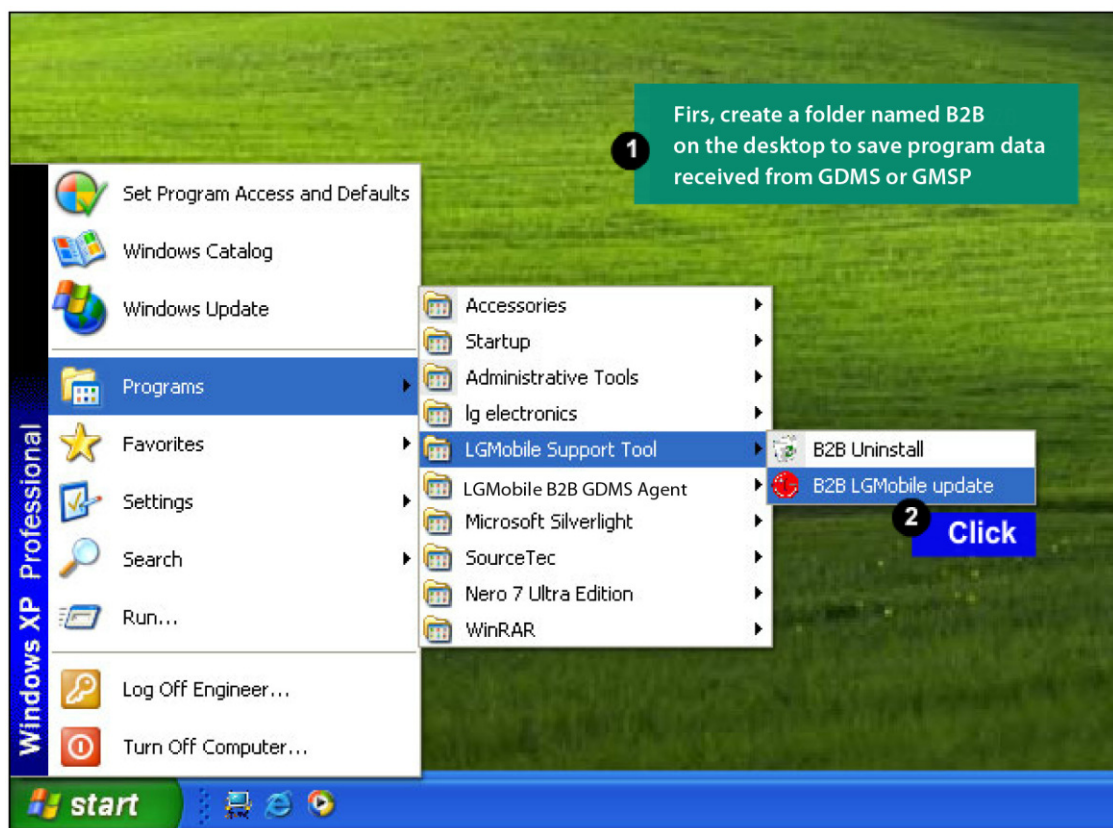
TOOL INFORMATION

TOOL VERSION	DLL NAME	USB DRIVER

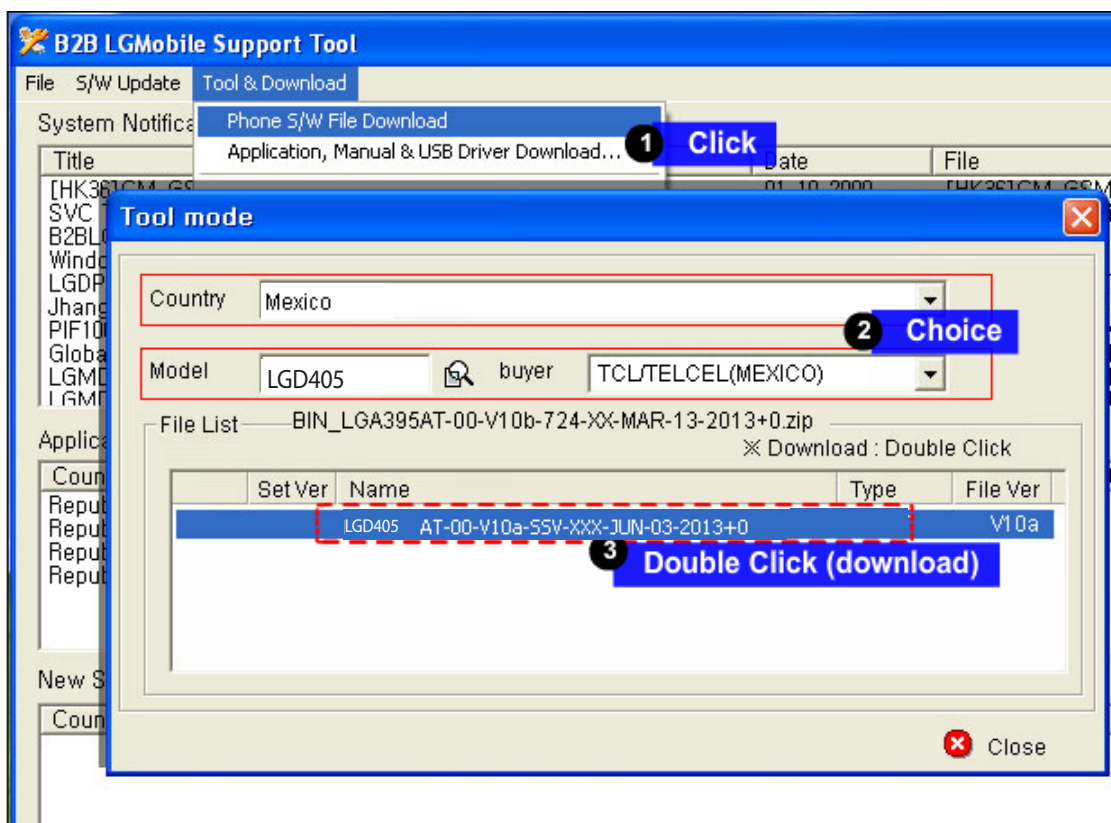
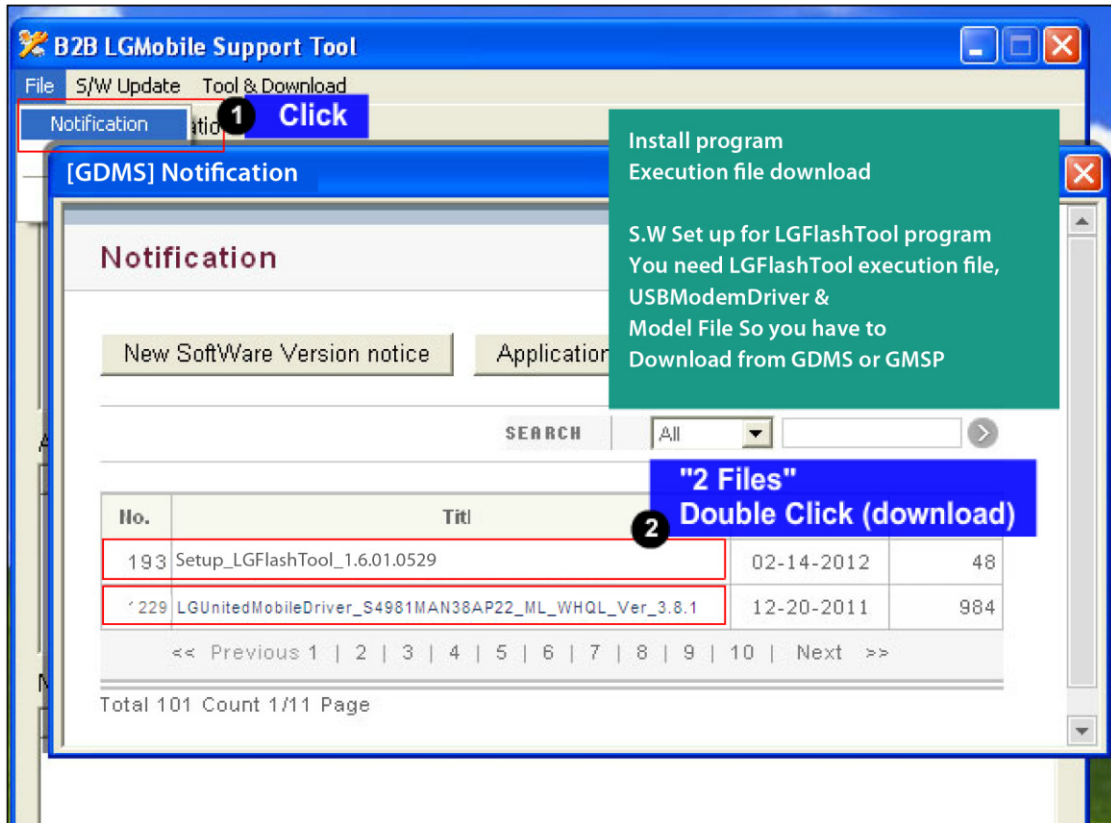
Please Check the Version to "B2B"

H/W

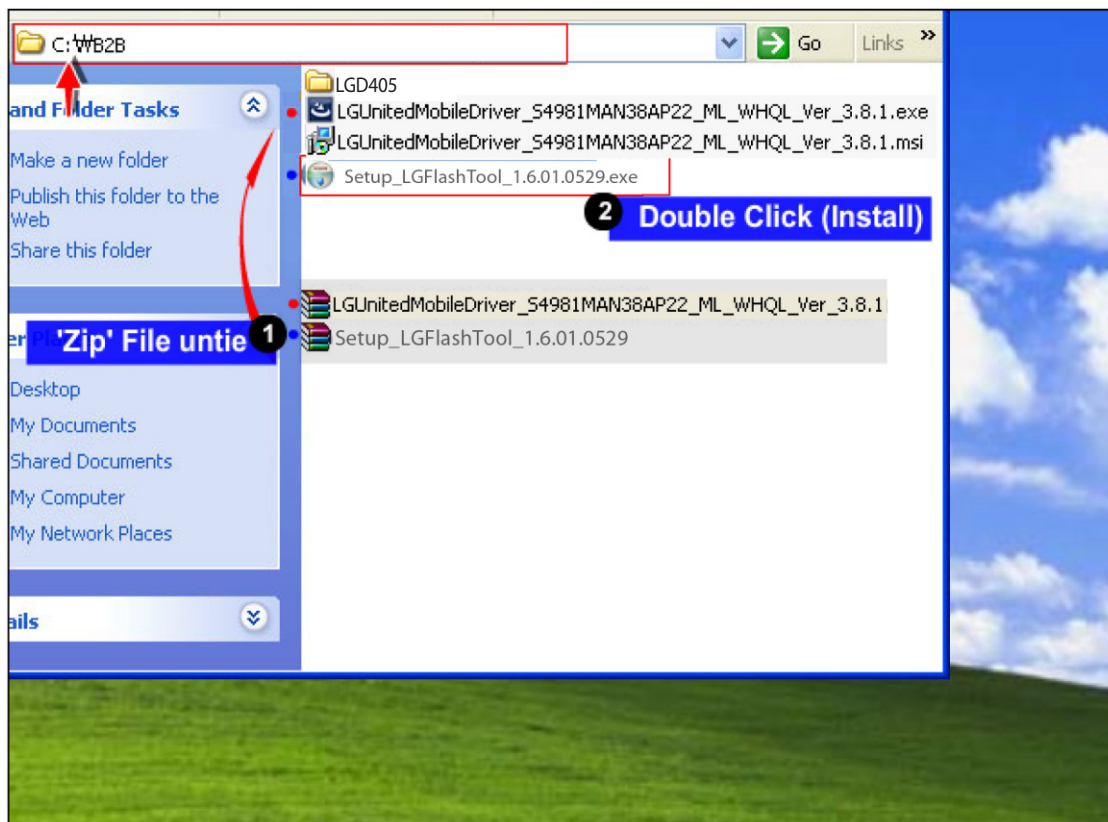
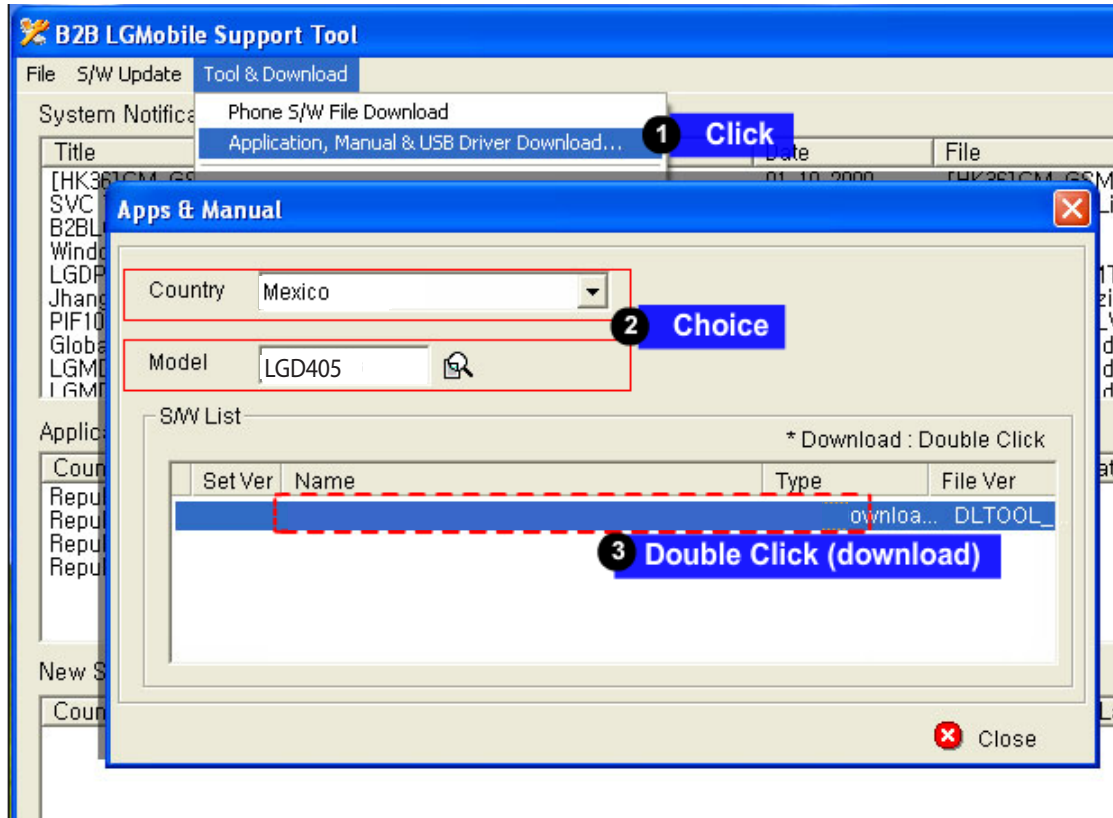
	Name	Part No.	Software
D/L Cable			



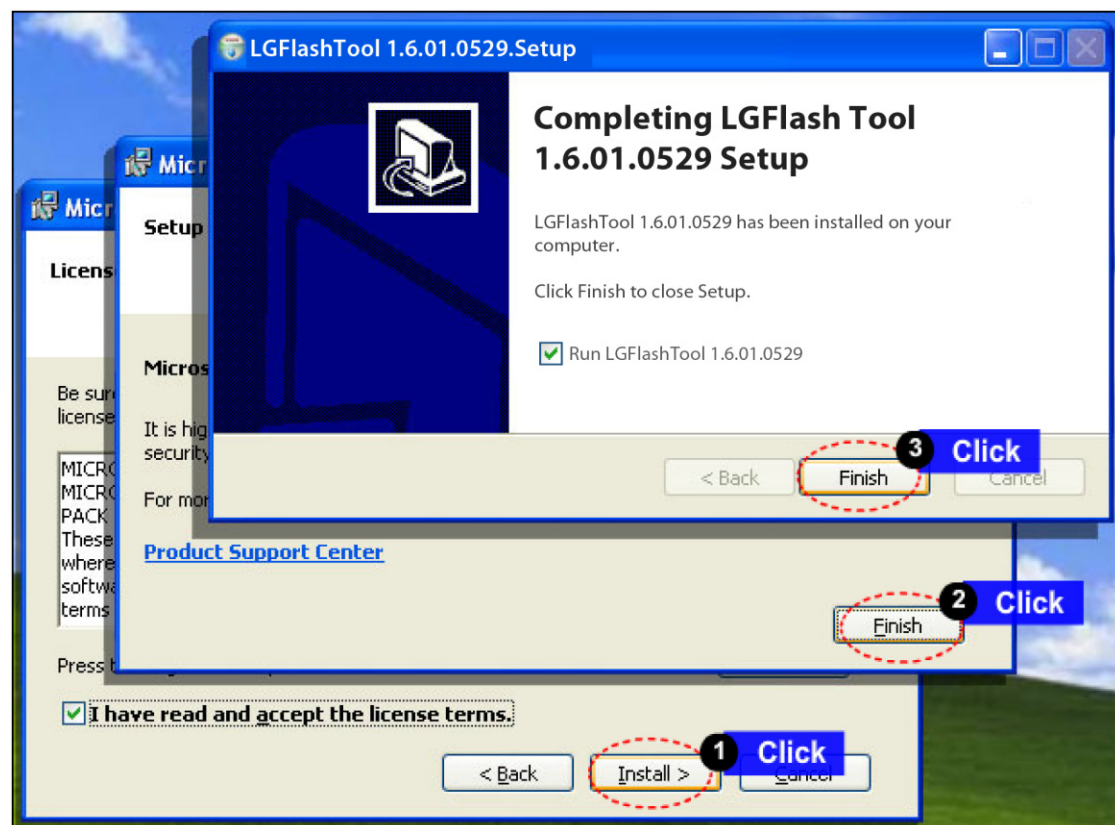
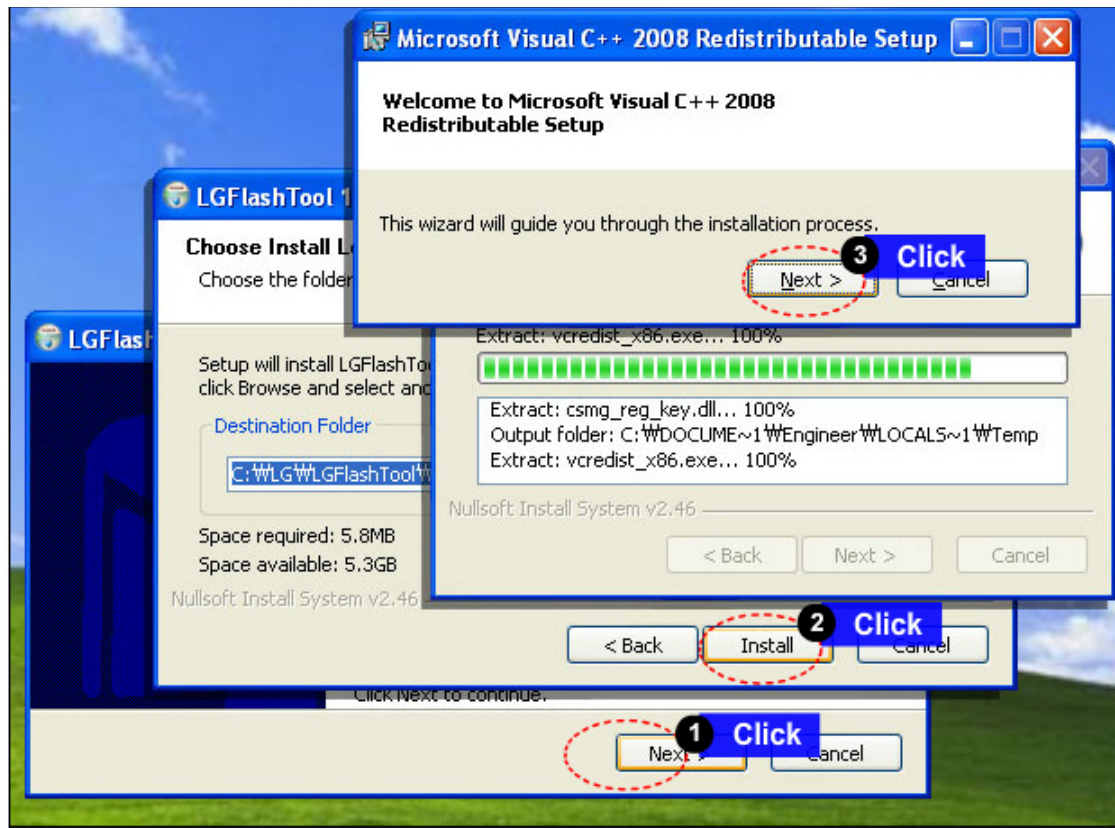
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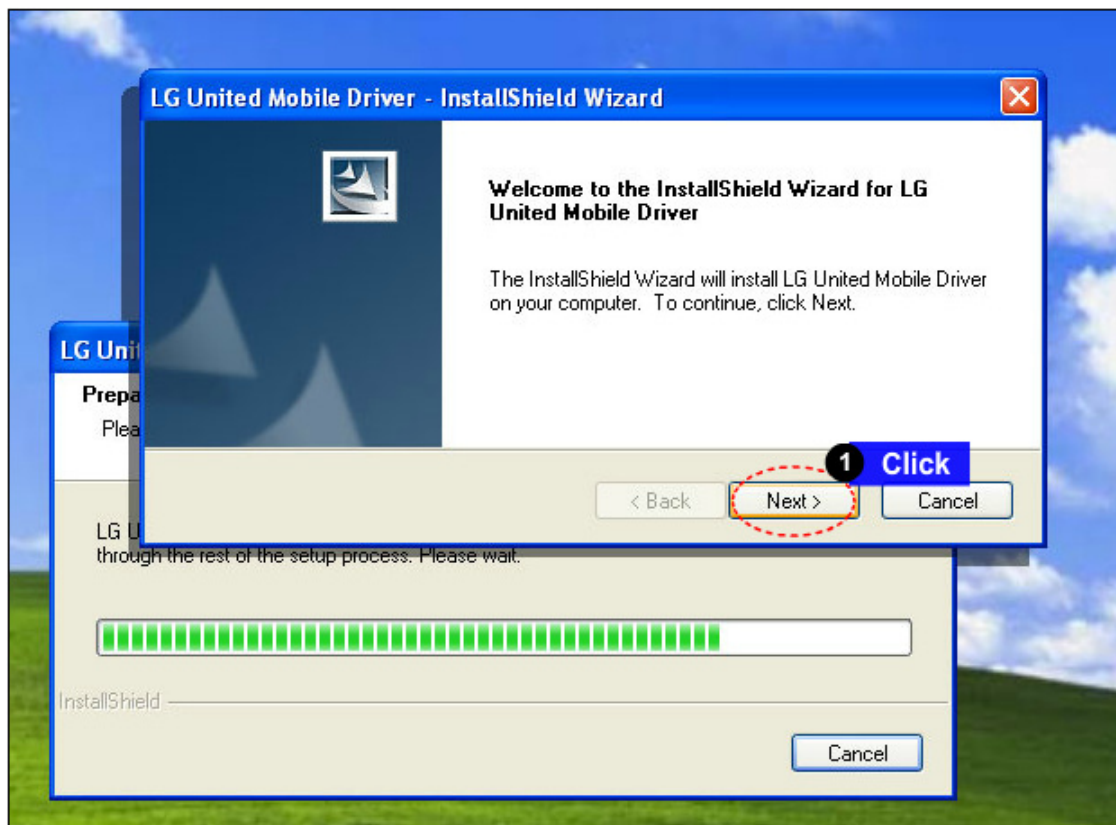
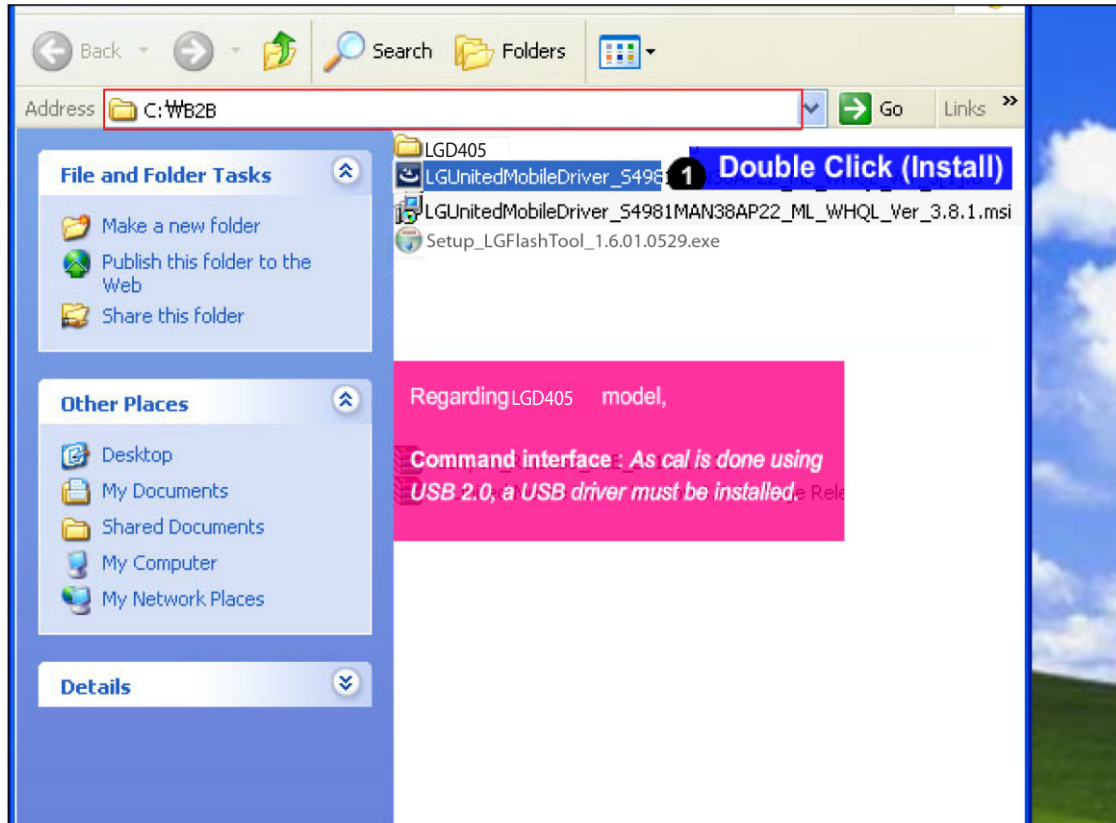
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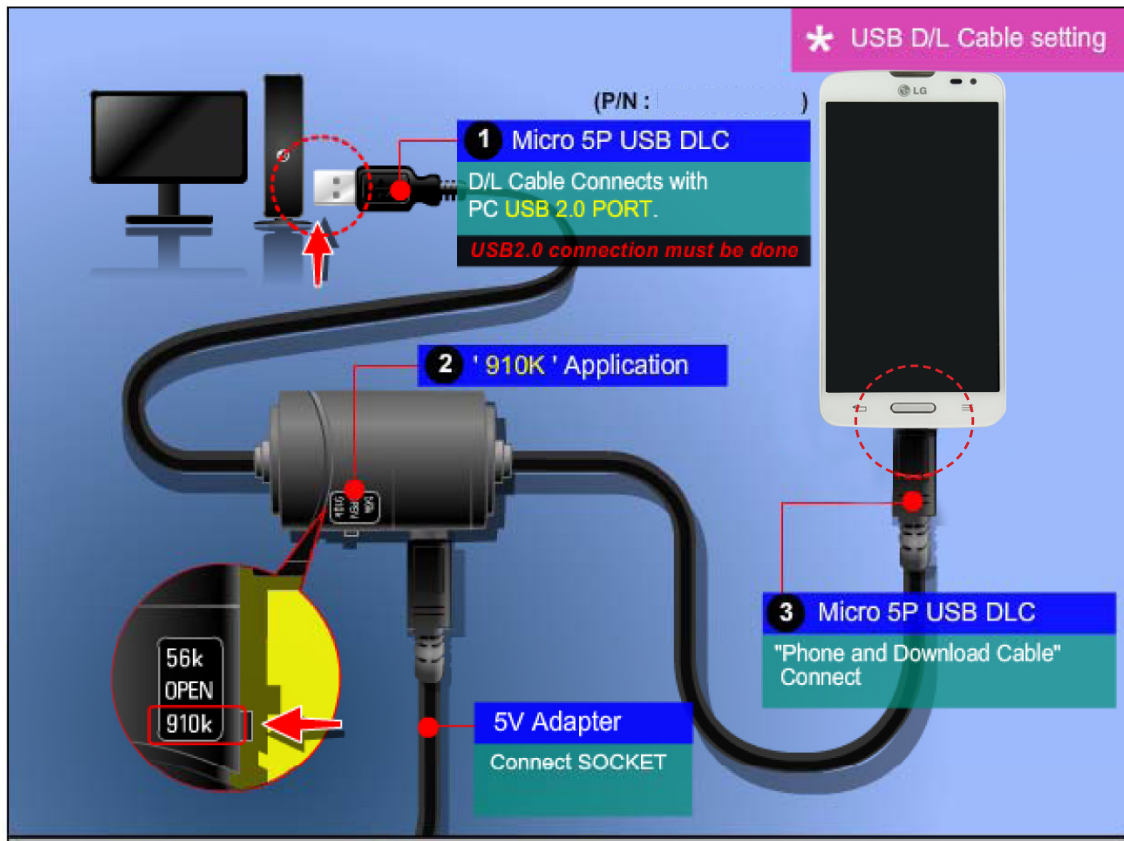
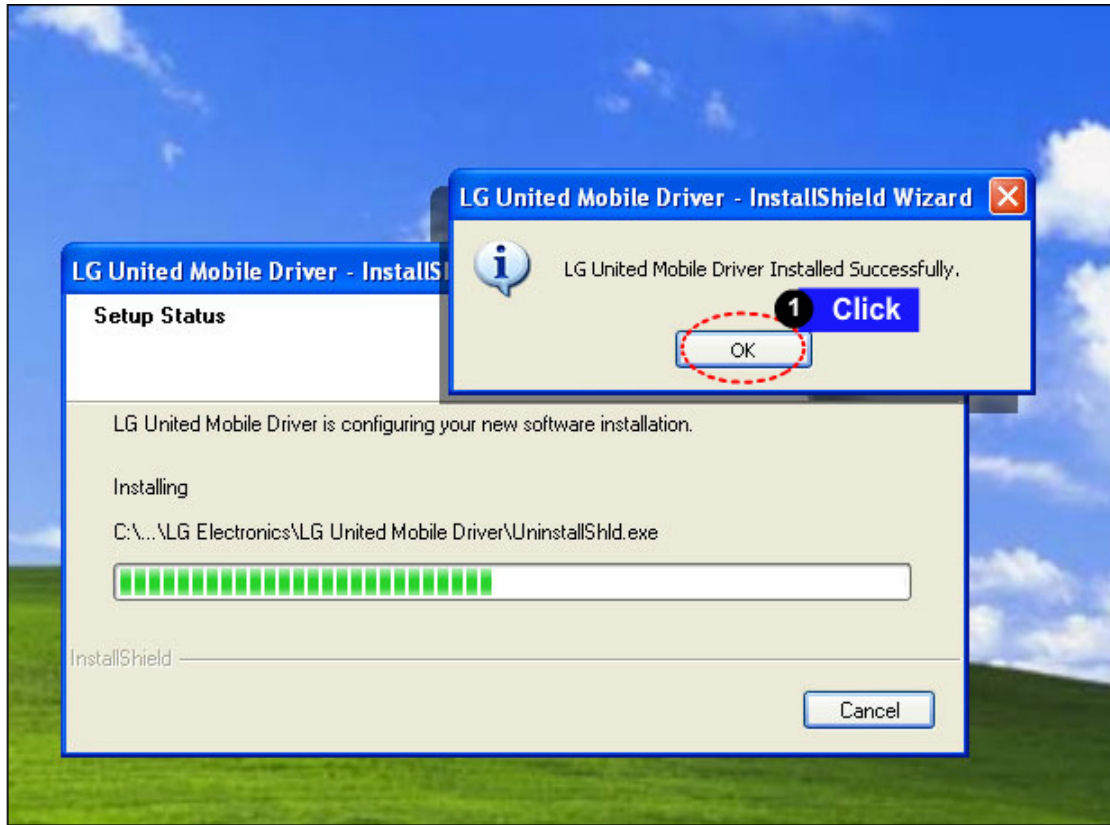


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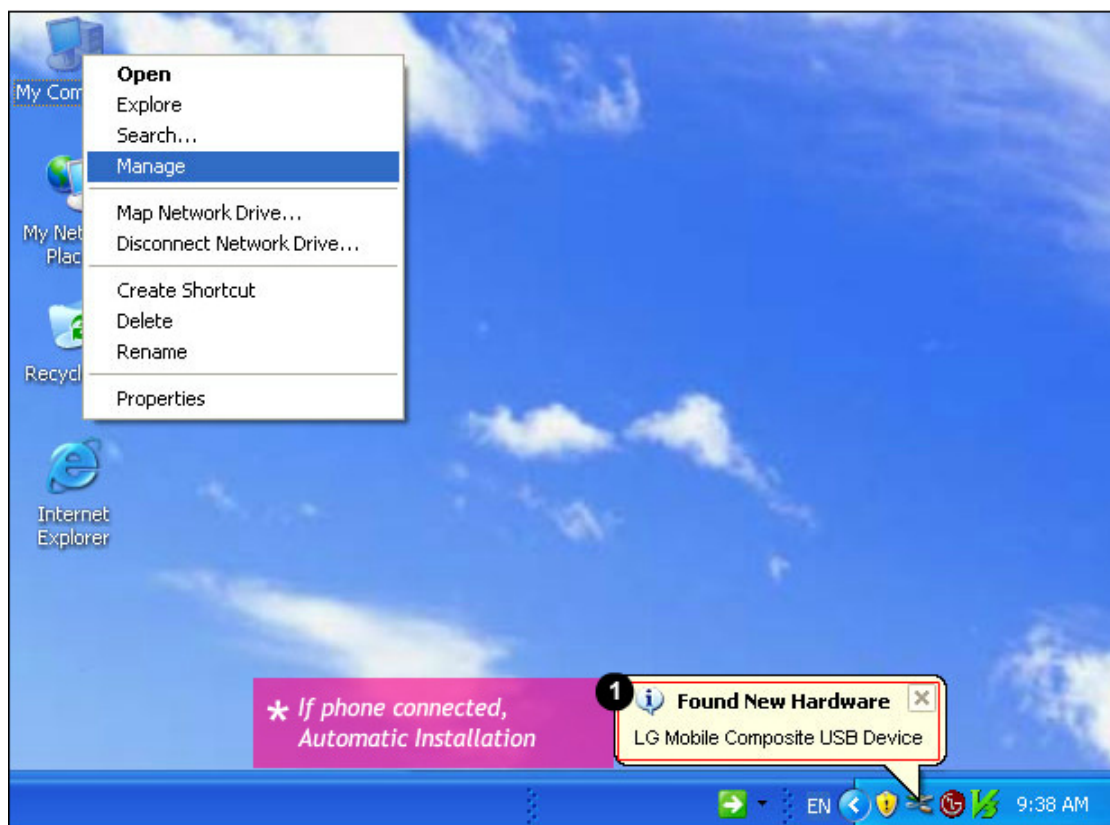
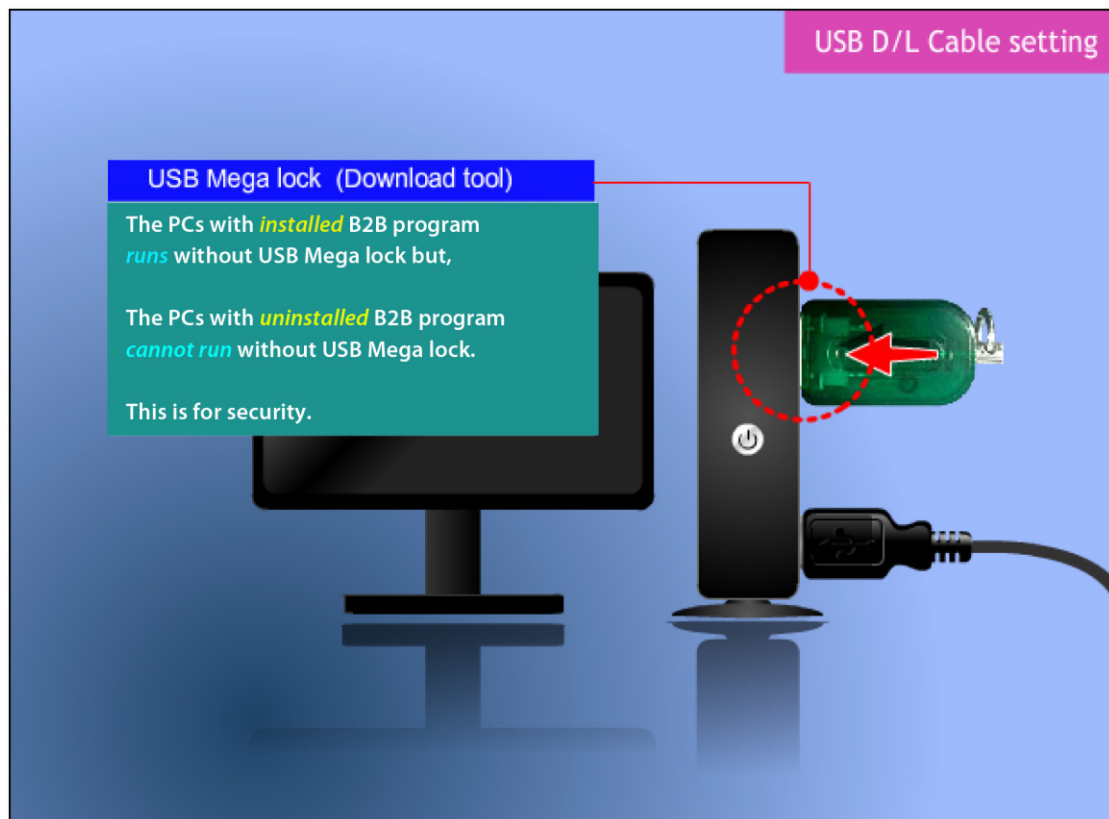


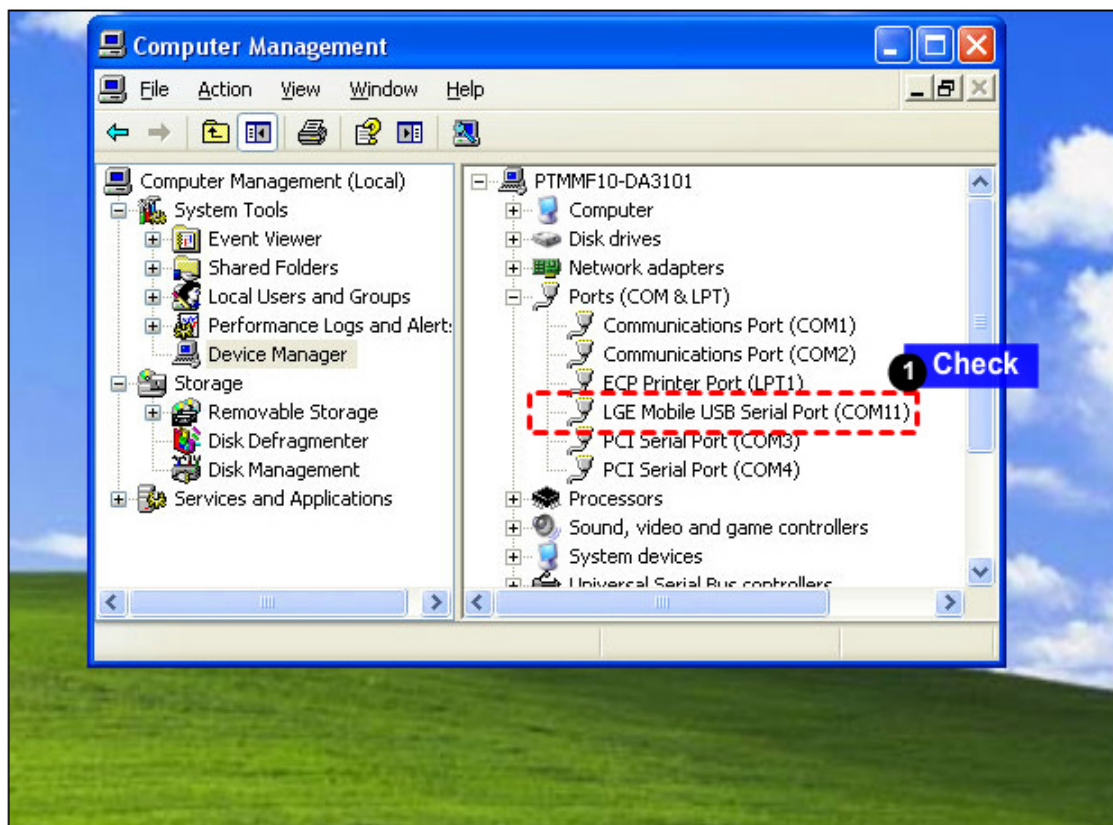
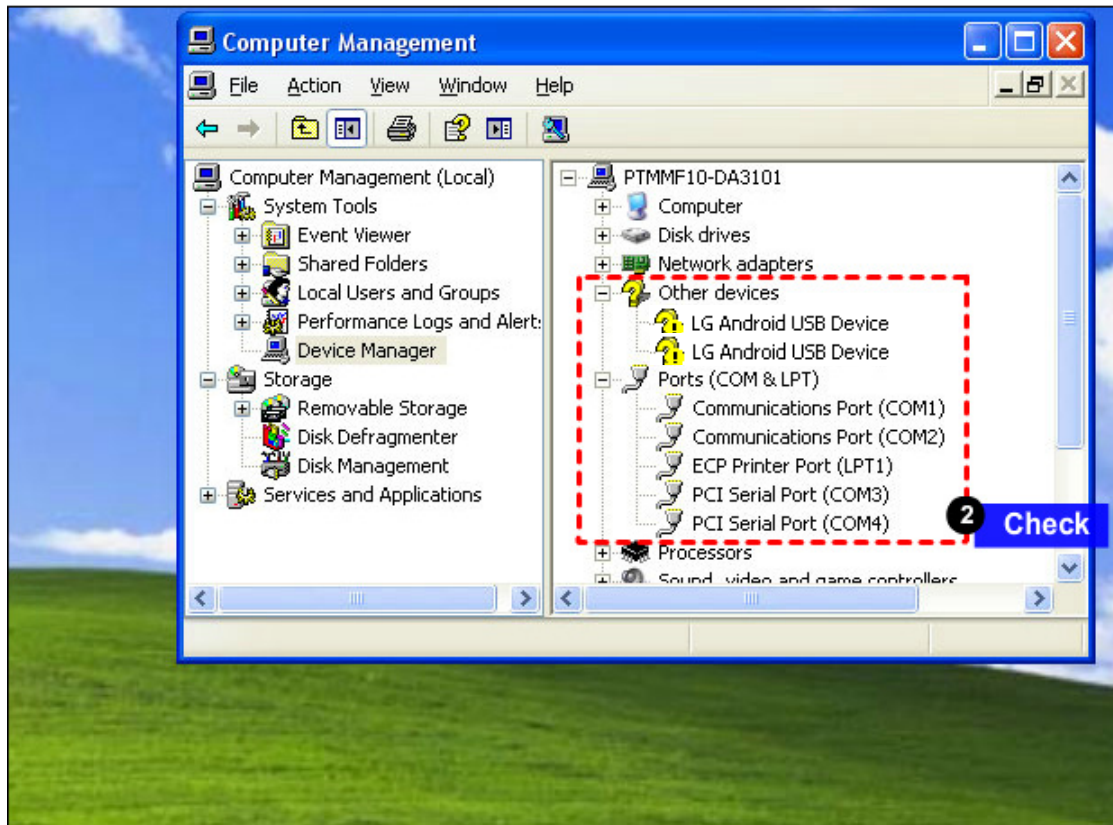
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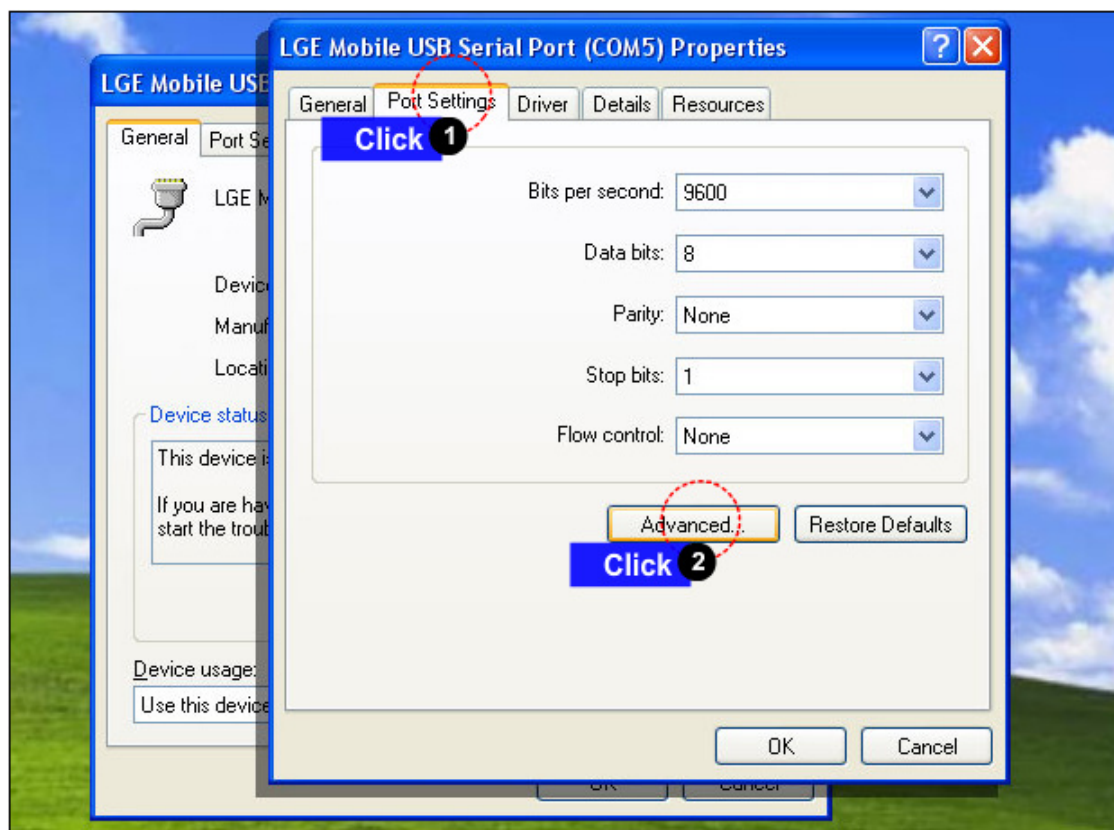
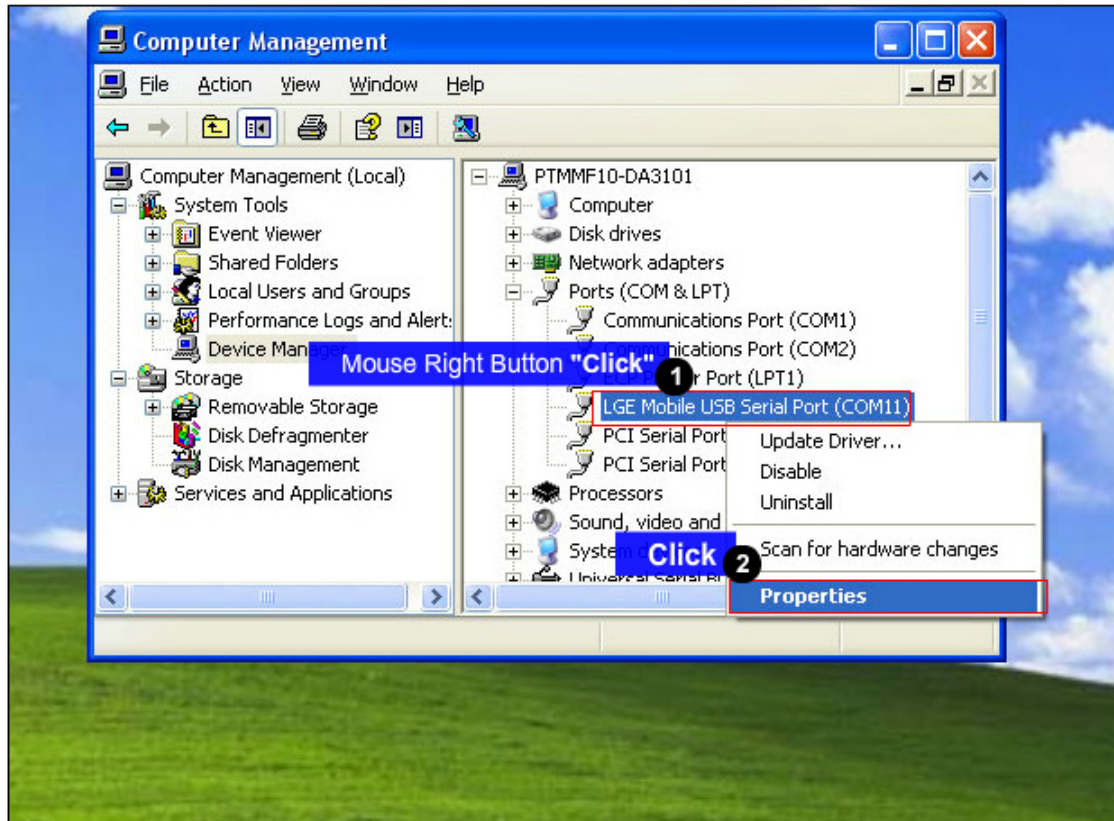


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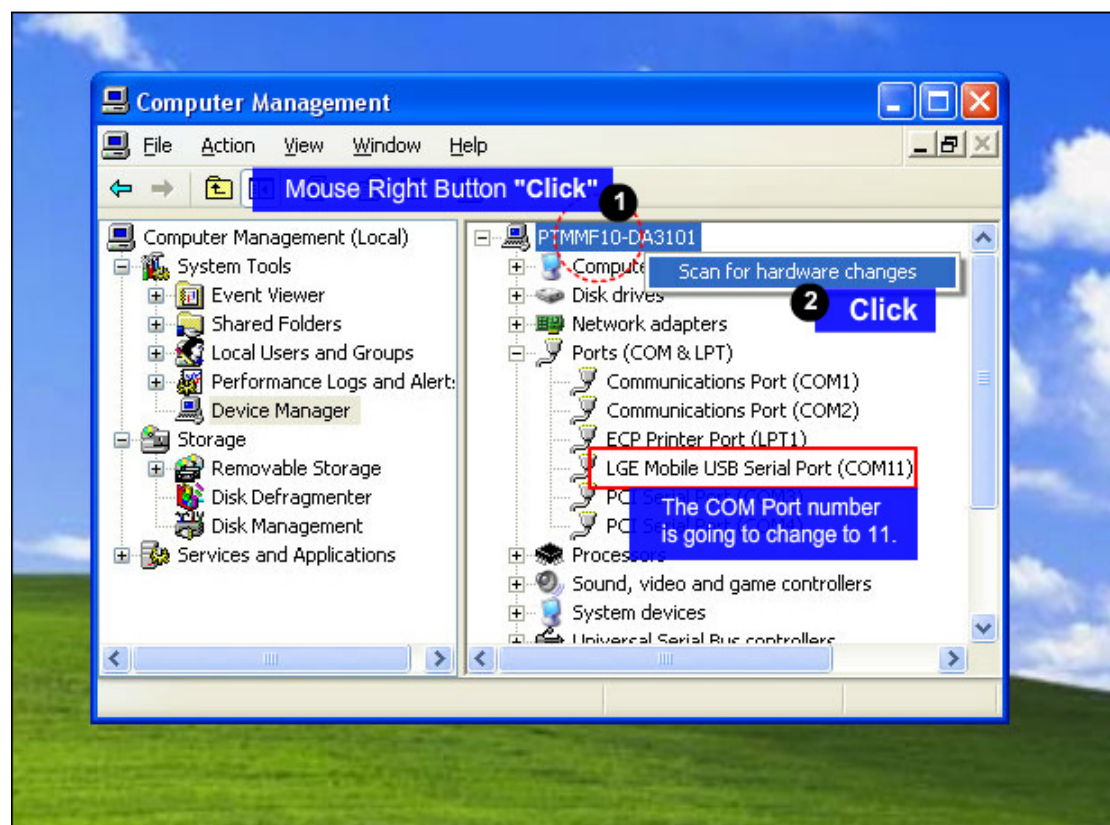
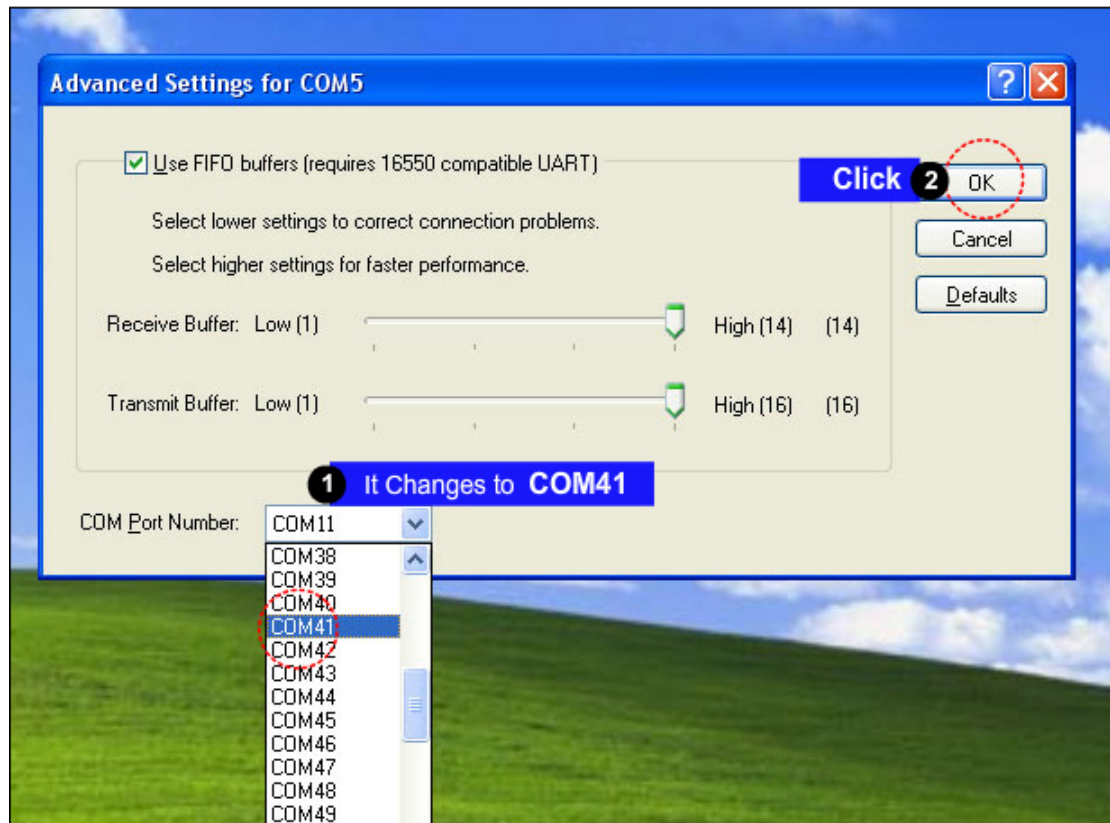




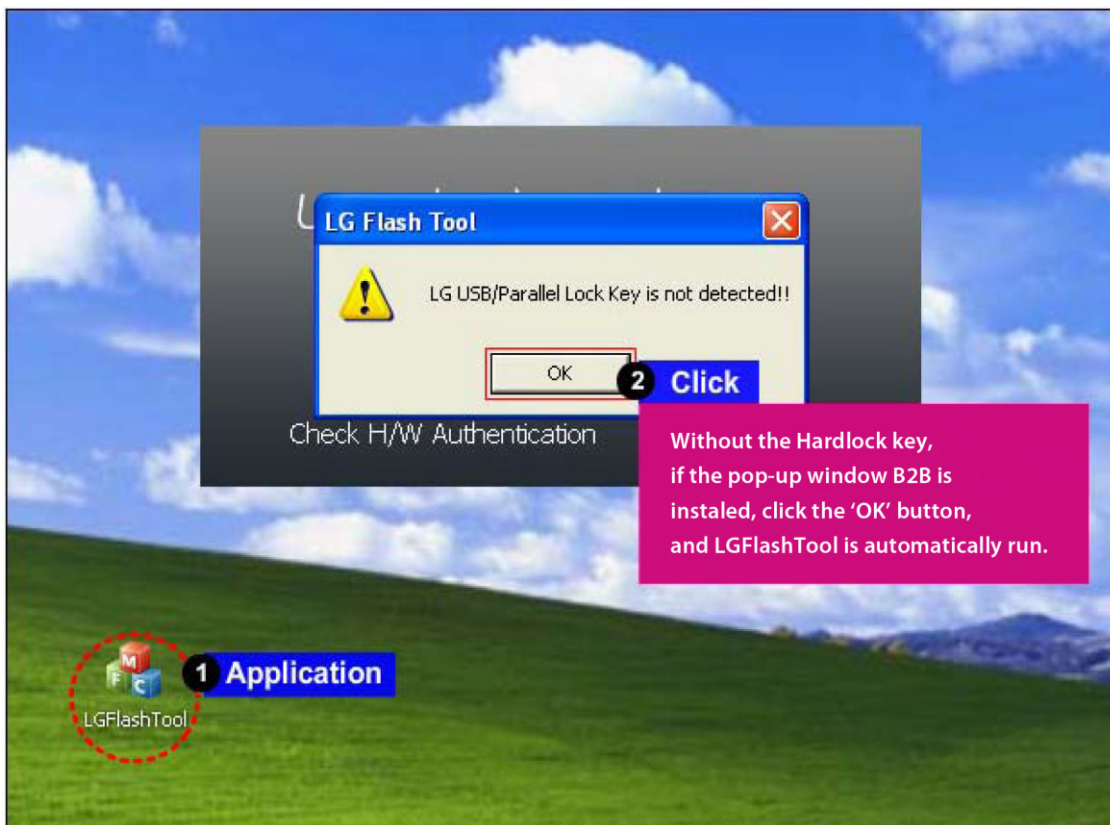
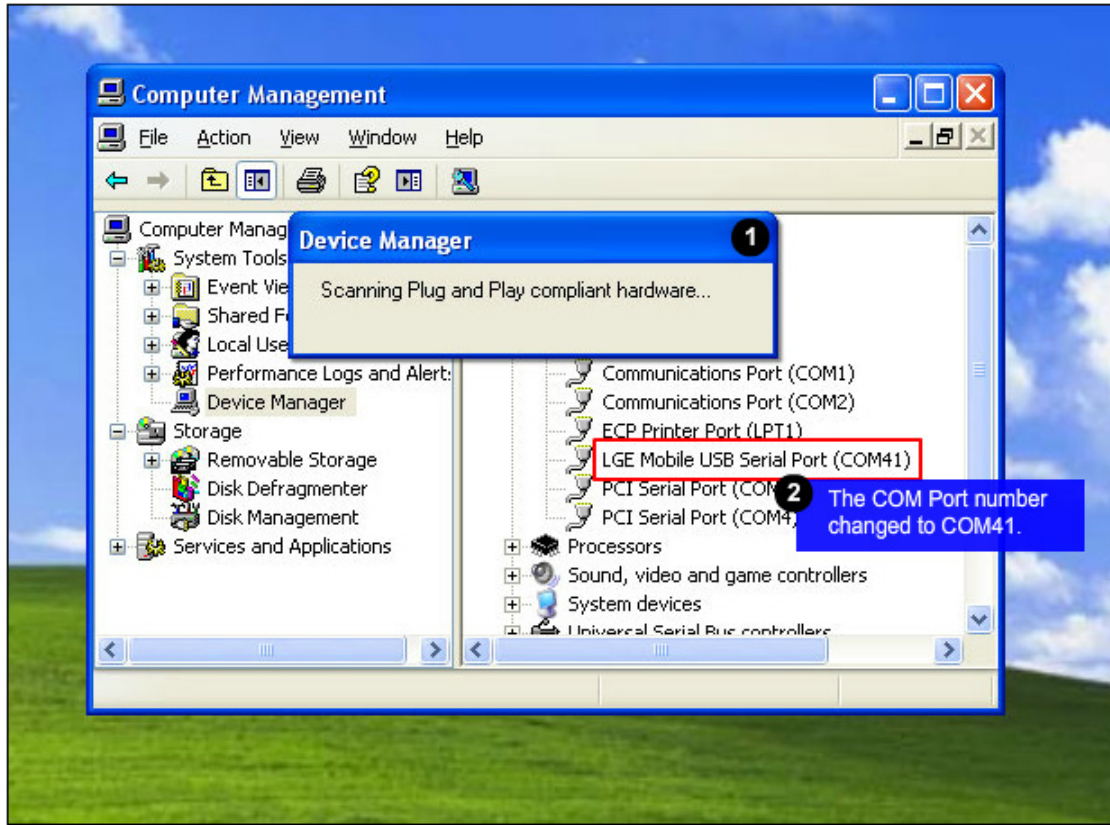
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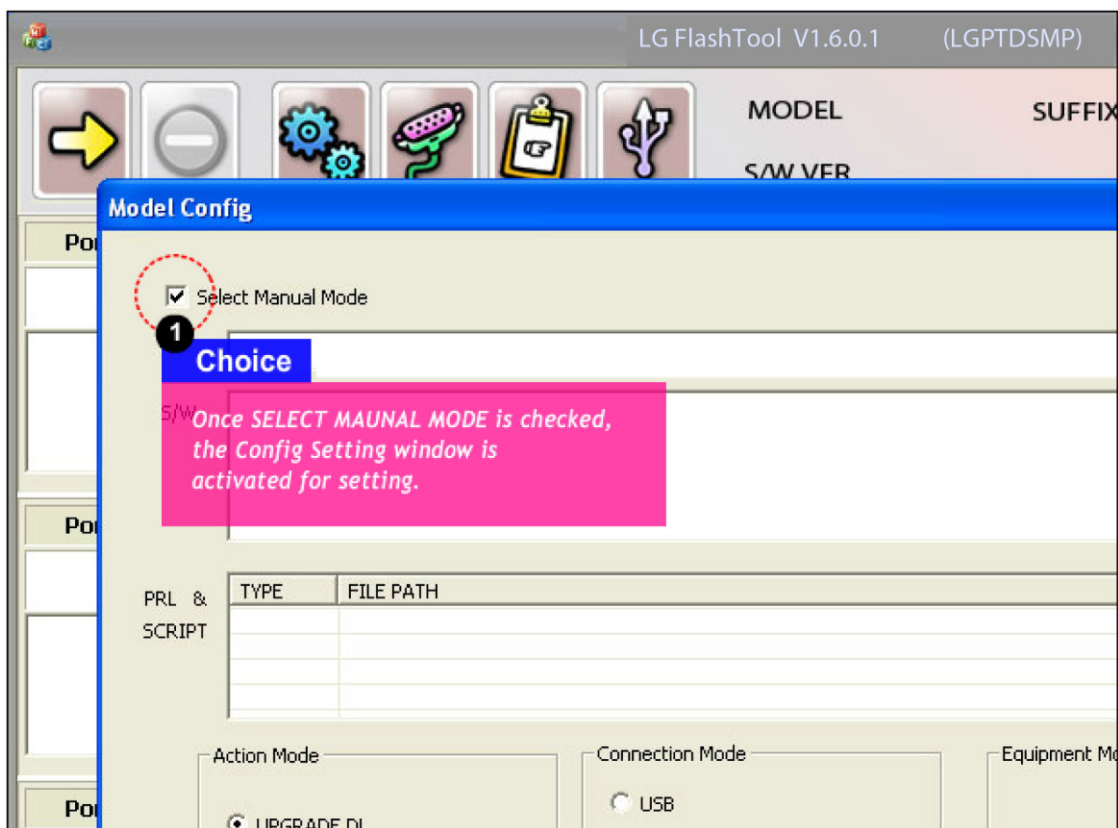
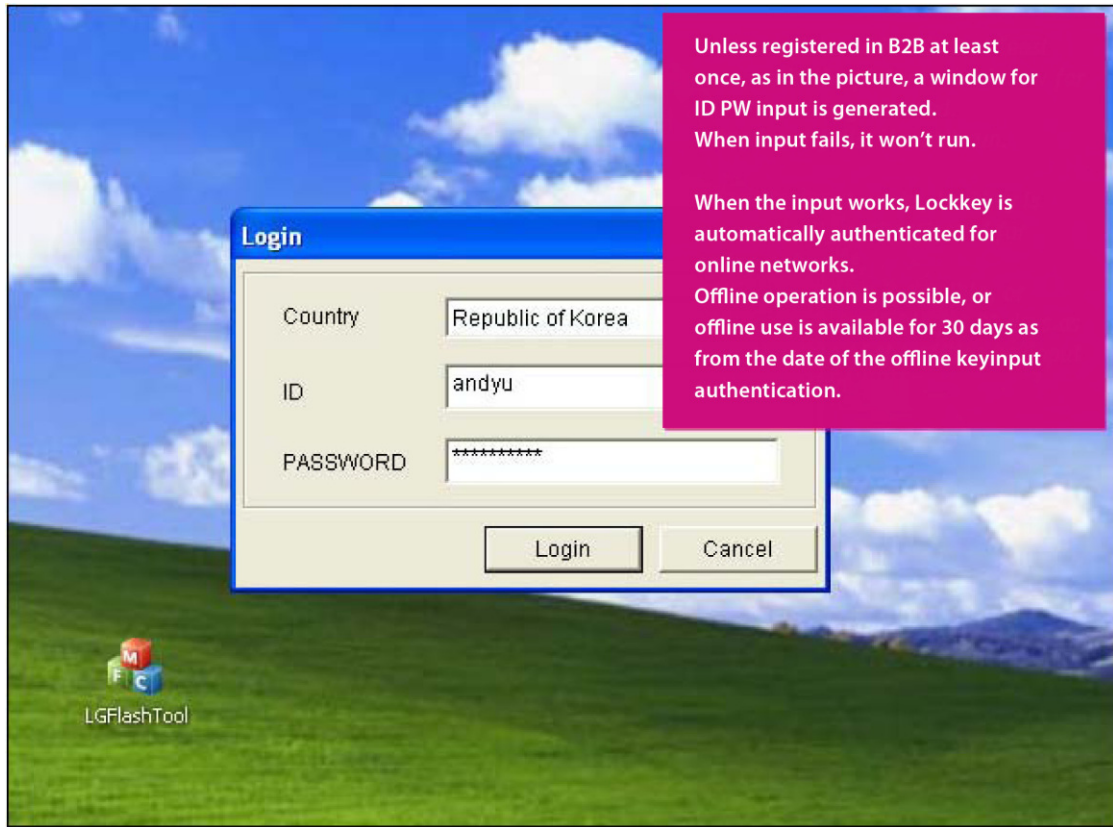
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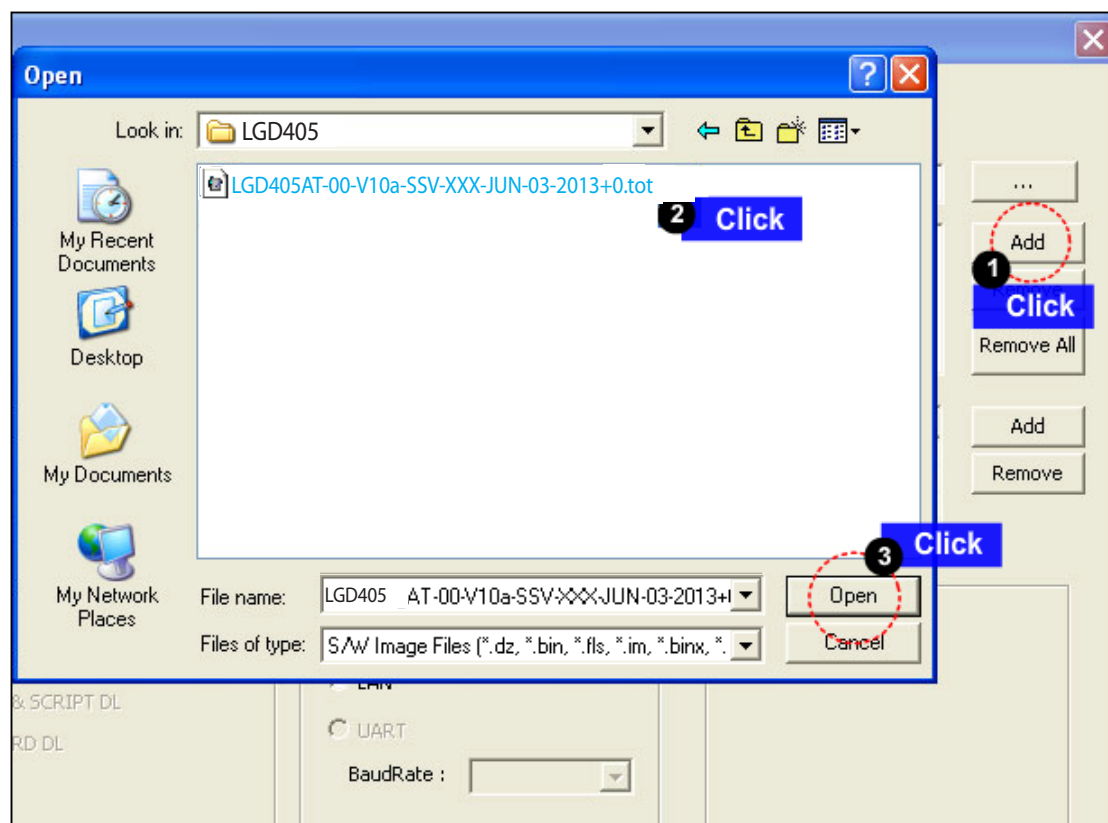
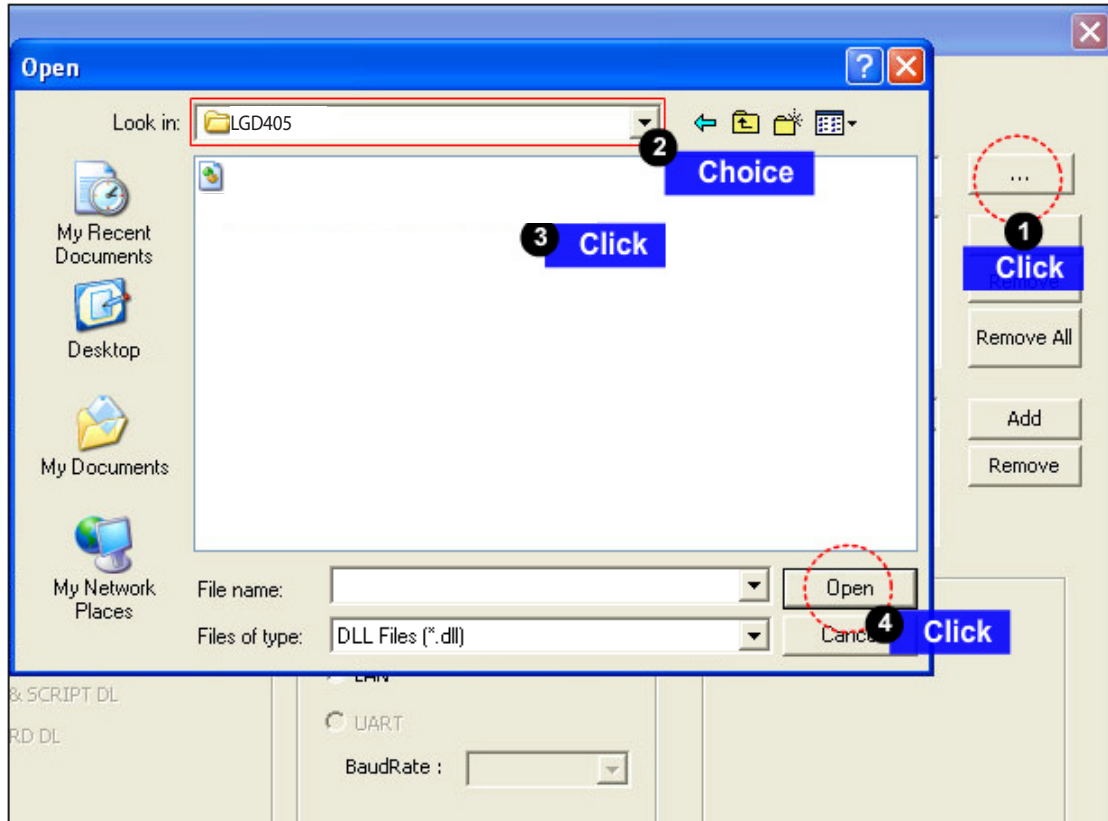
4. DOWNLOAD



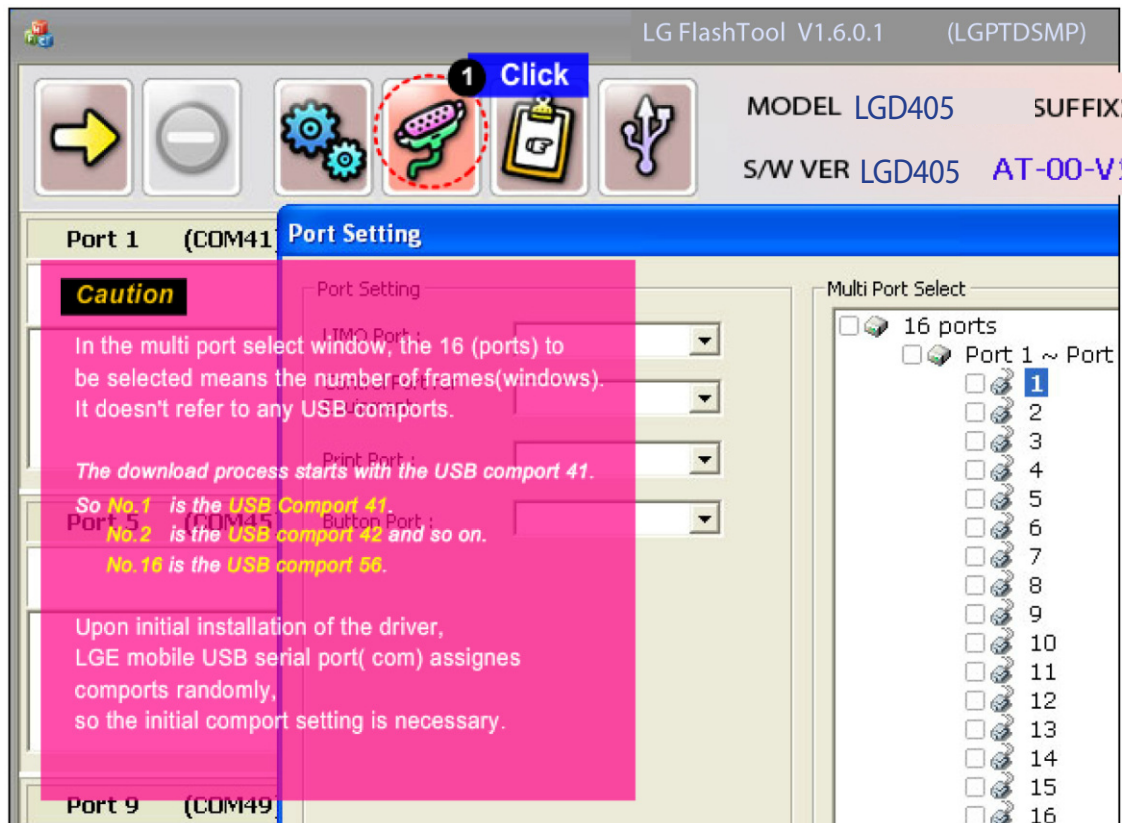
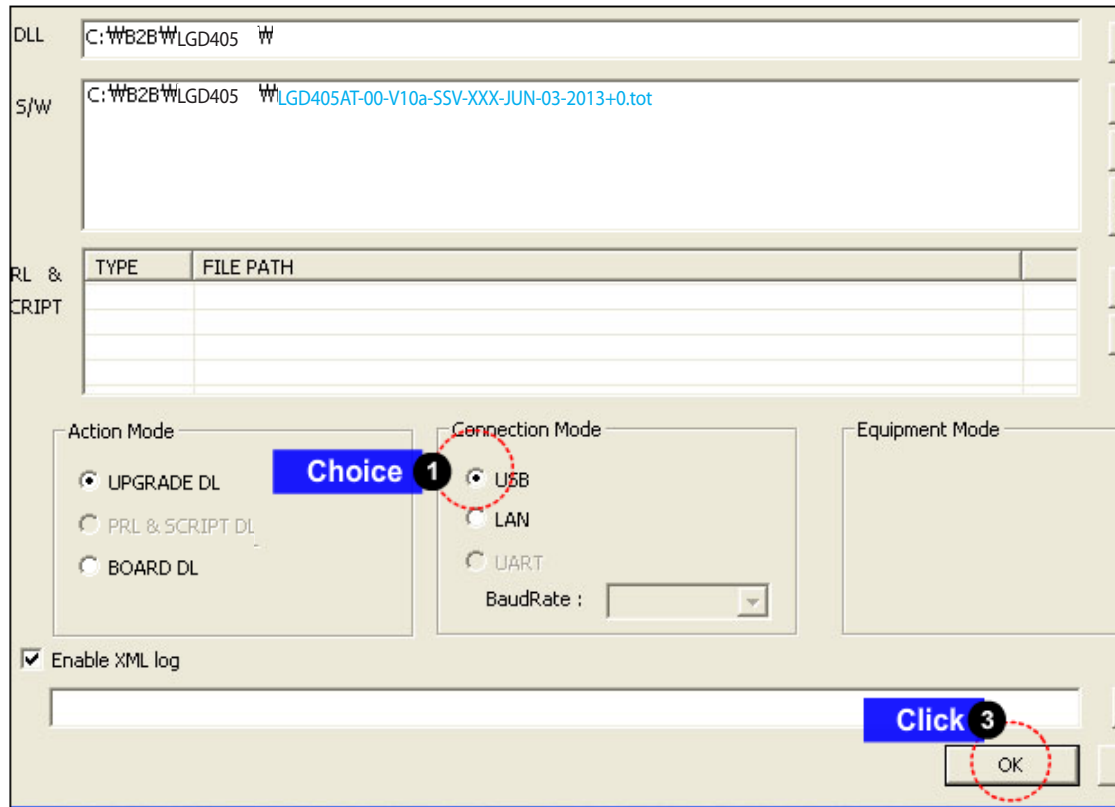
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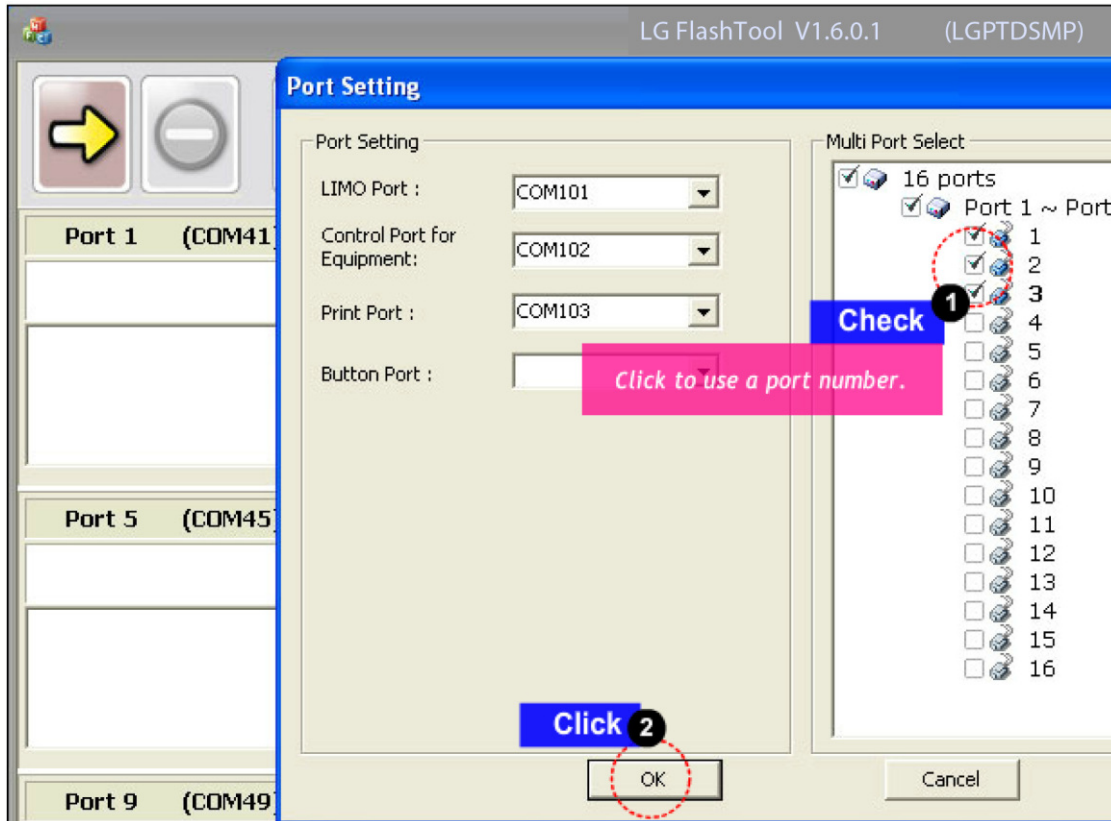
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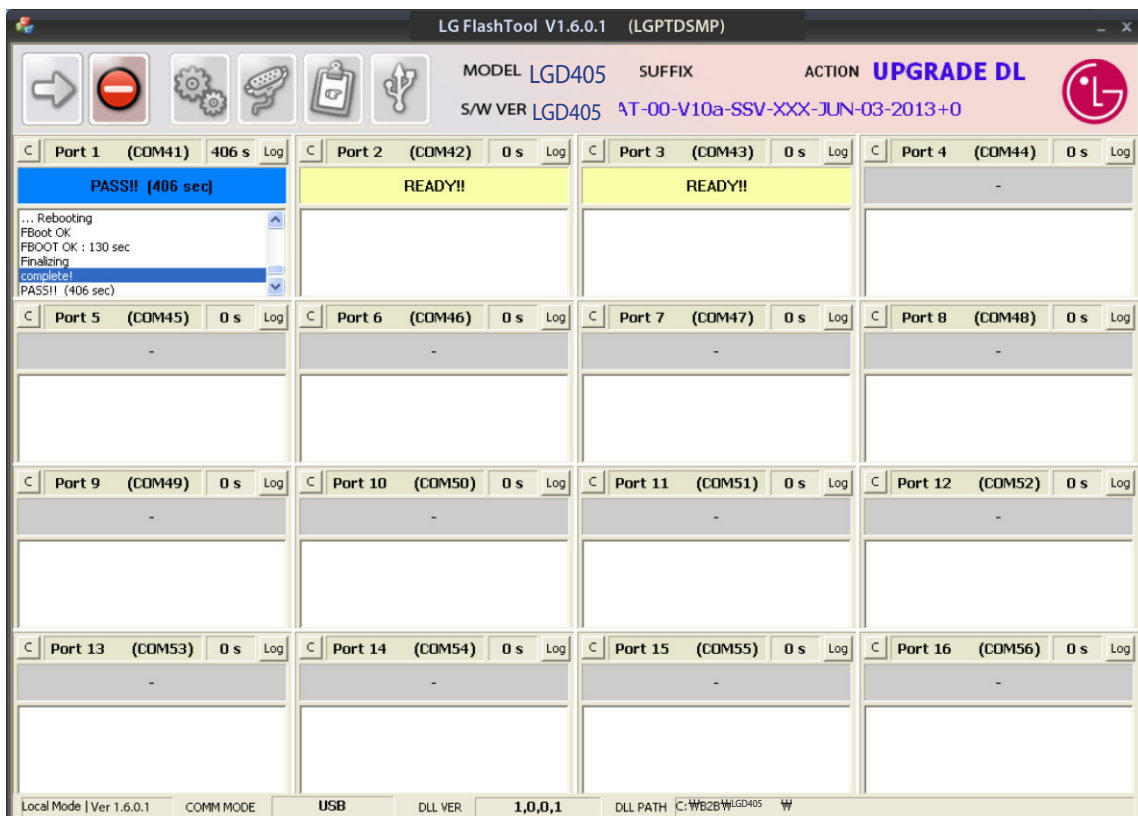
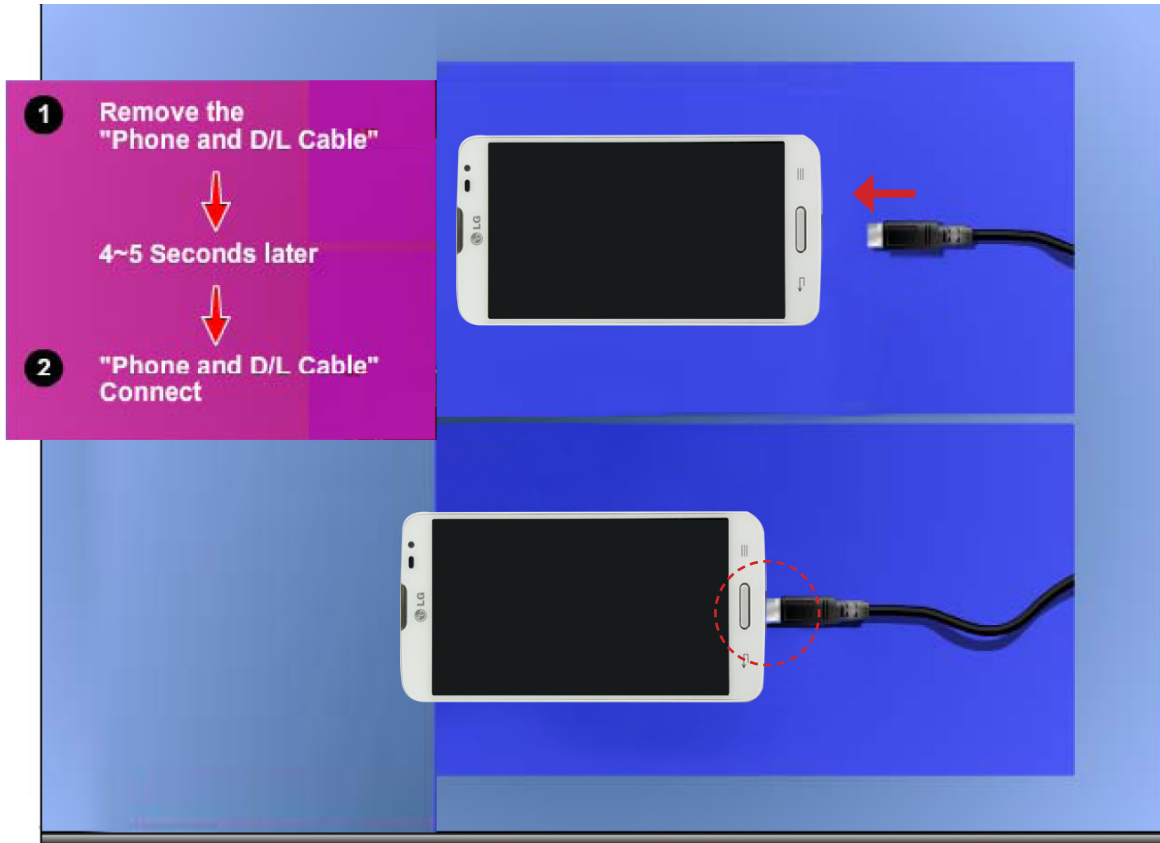
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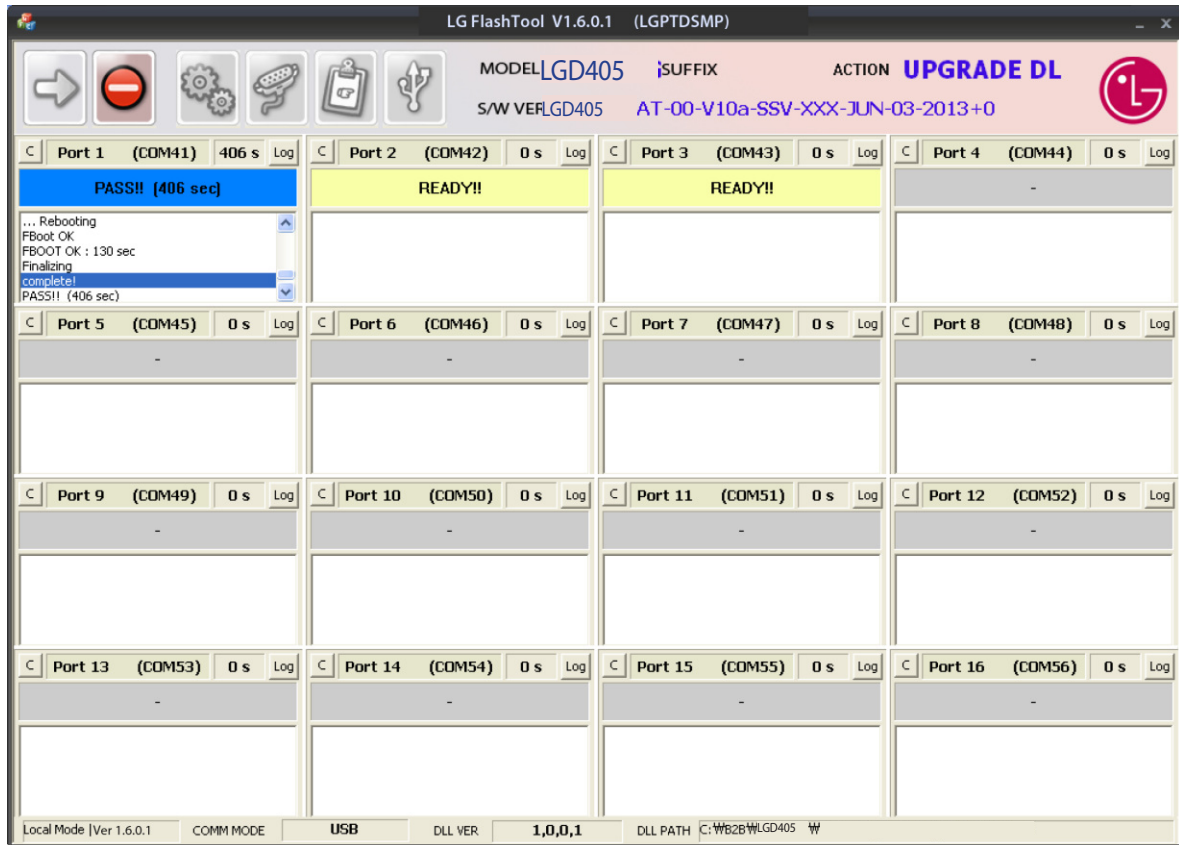
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4. DOWNLOAD

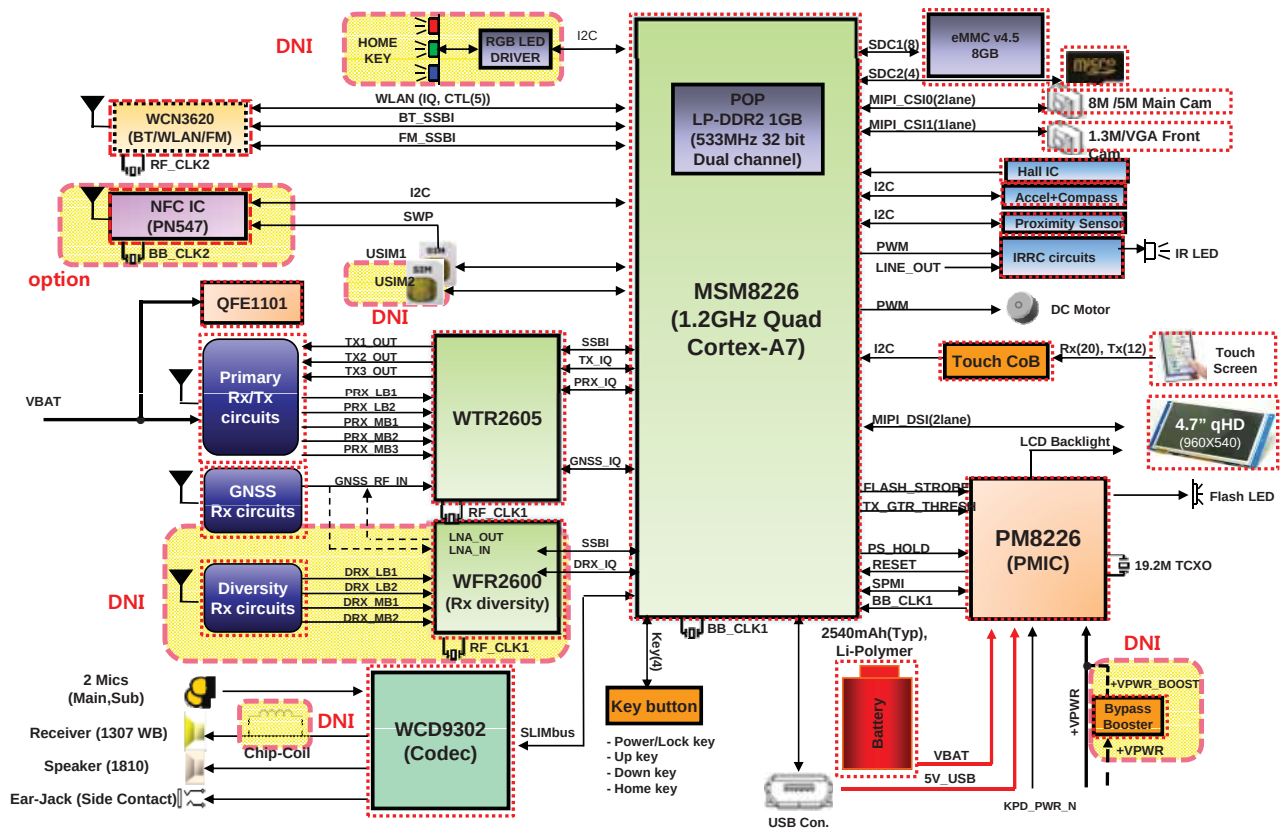


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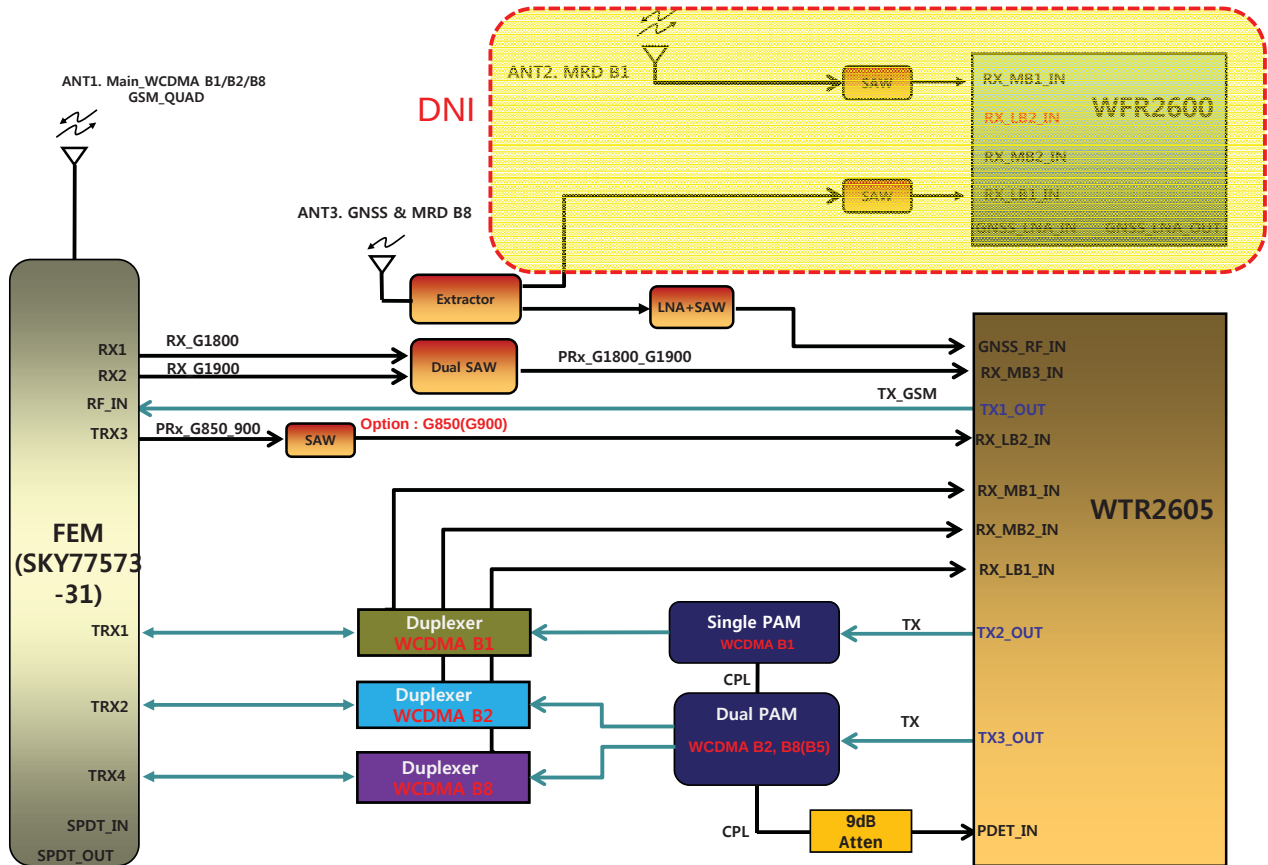
5. BLOCK DIAGRAM

[LGD405] System HW Block Diagram



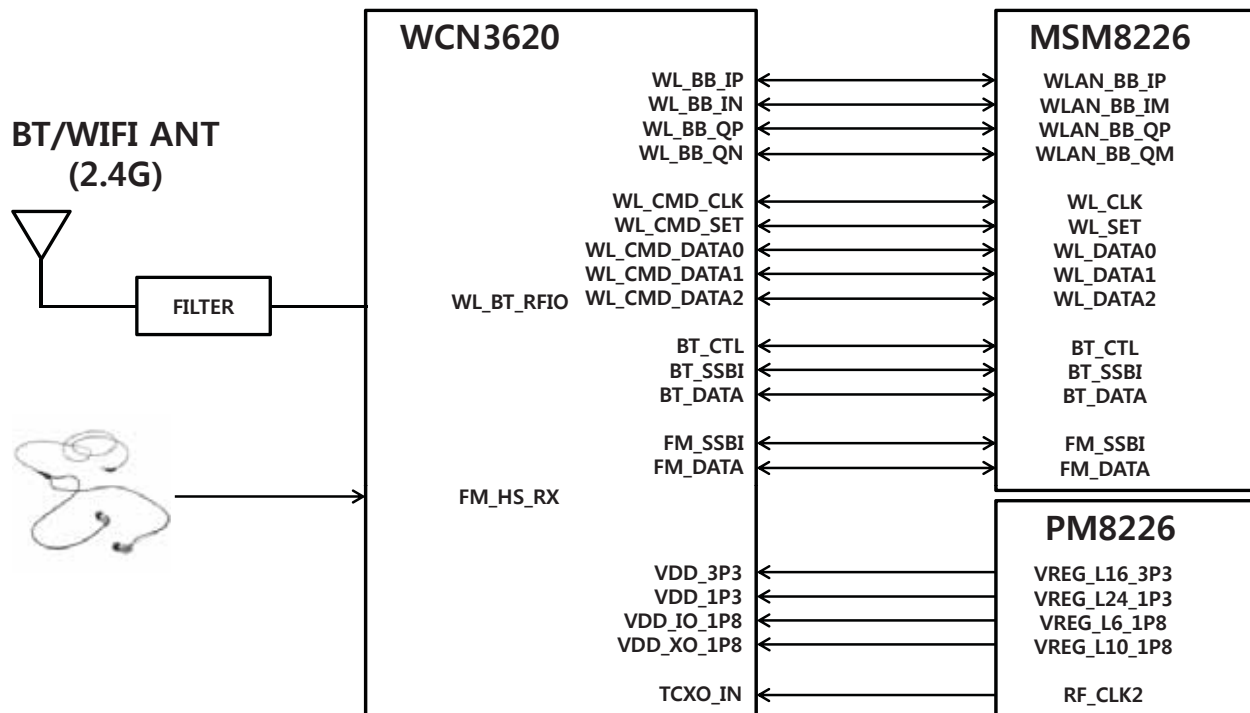
5. BLOCK DIAGRAM

[LGD405] RF -Main



5. BLOCK DIAGRAM

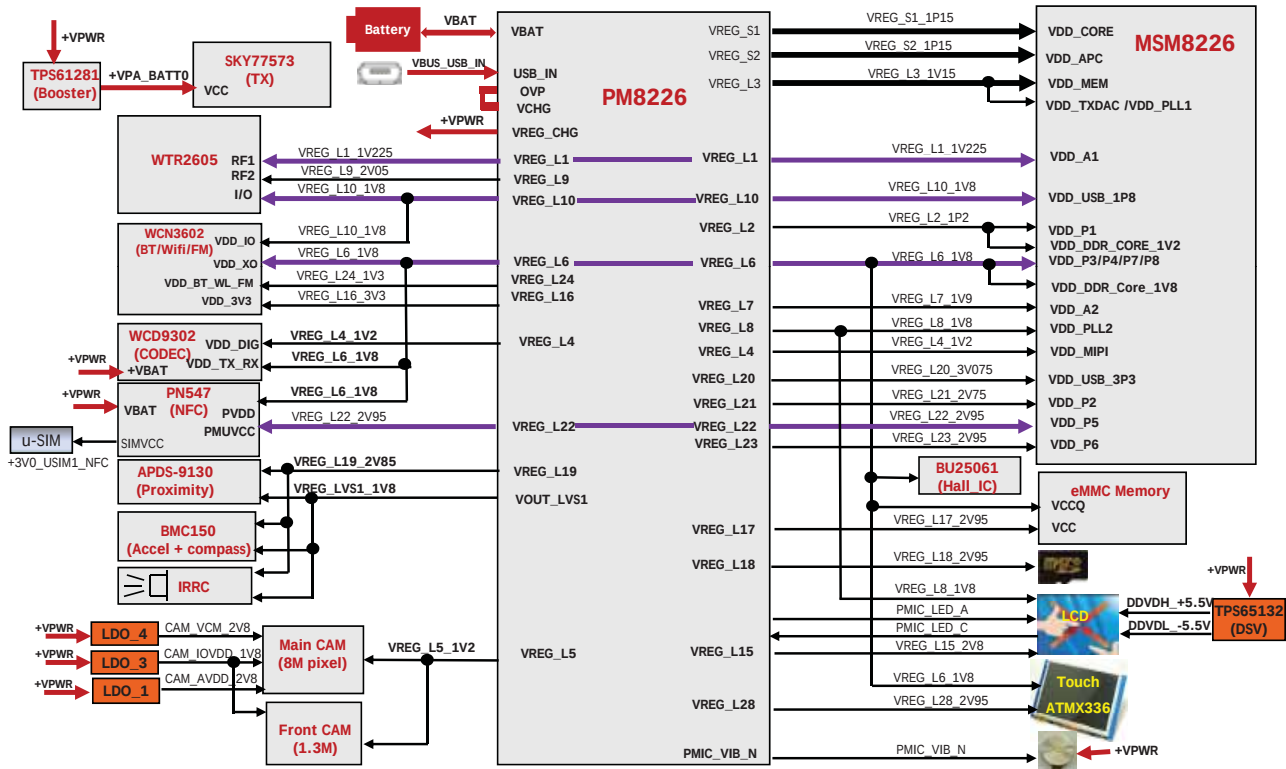
[LGD405] BT/WIFI/FM



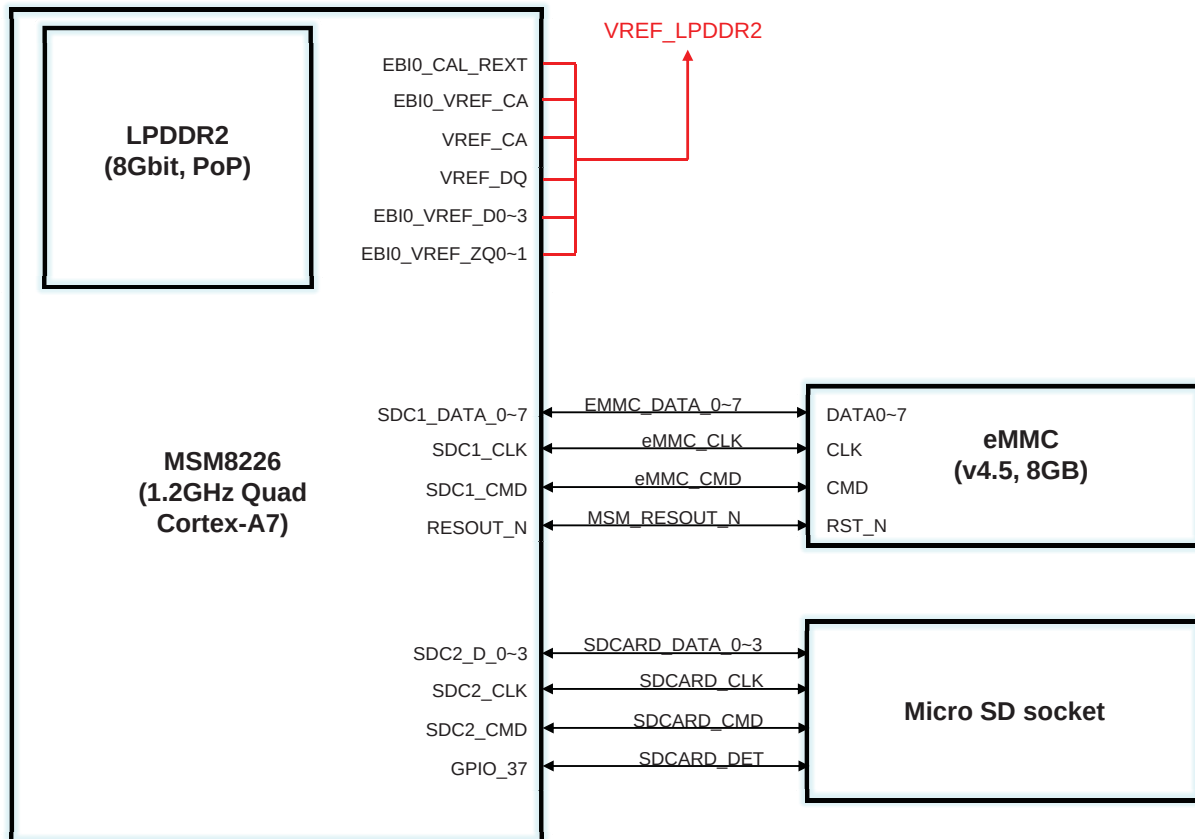
LGD405 supports 2.4G WiFi (802.11 b/g/n), WiFi Direct, Bluetooth 4.0, NFC and FM Rx.

5. BLOCK DIAGRAM

[LGD405] Power

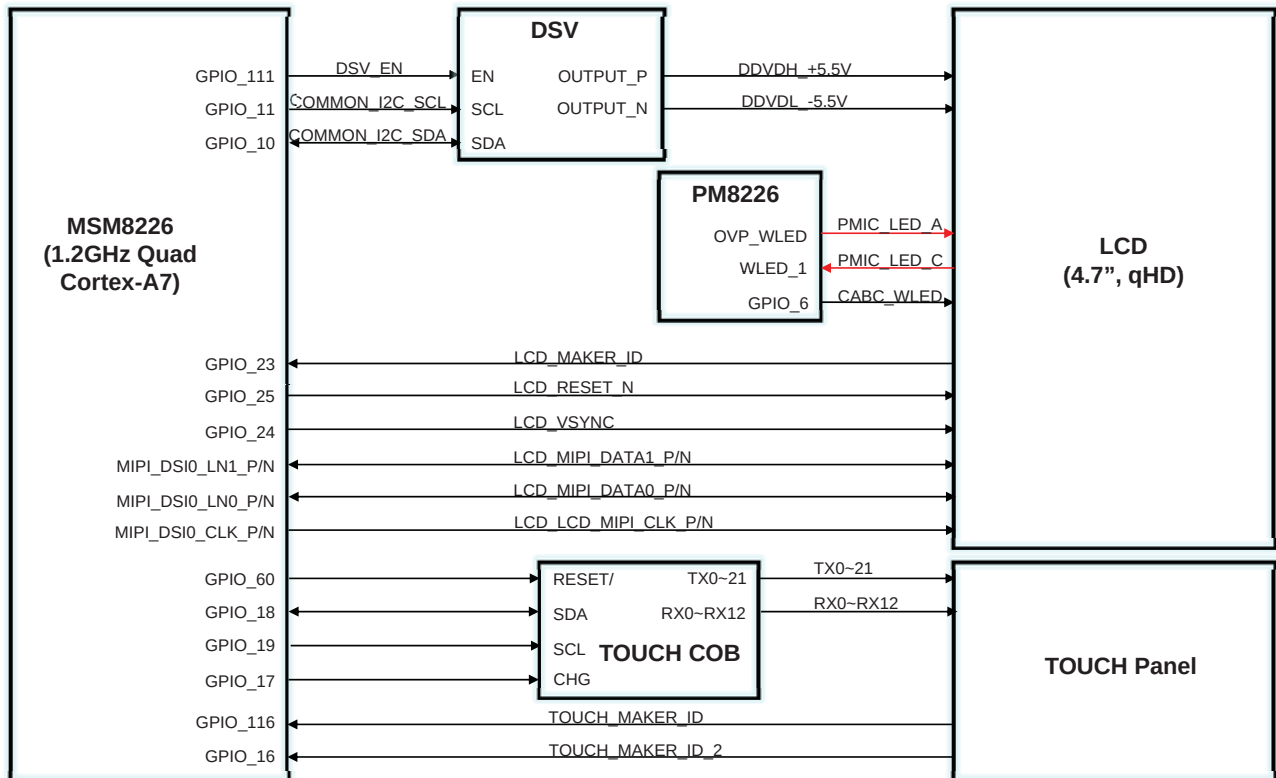


[LGD405] Memory Interface



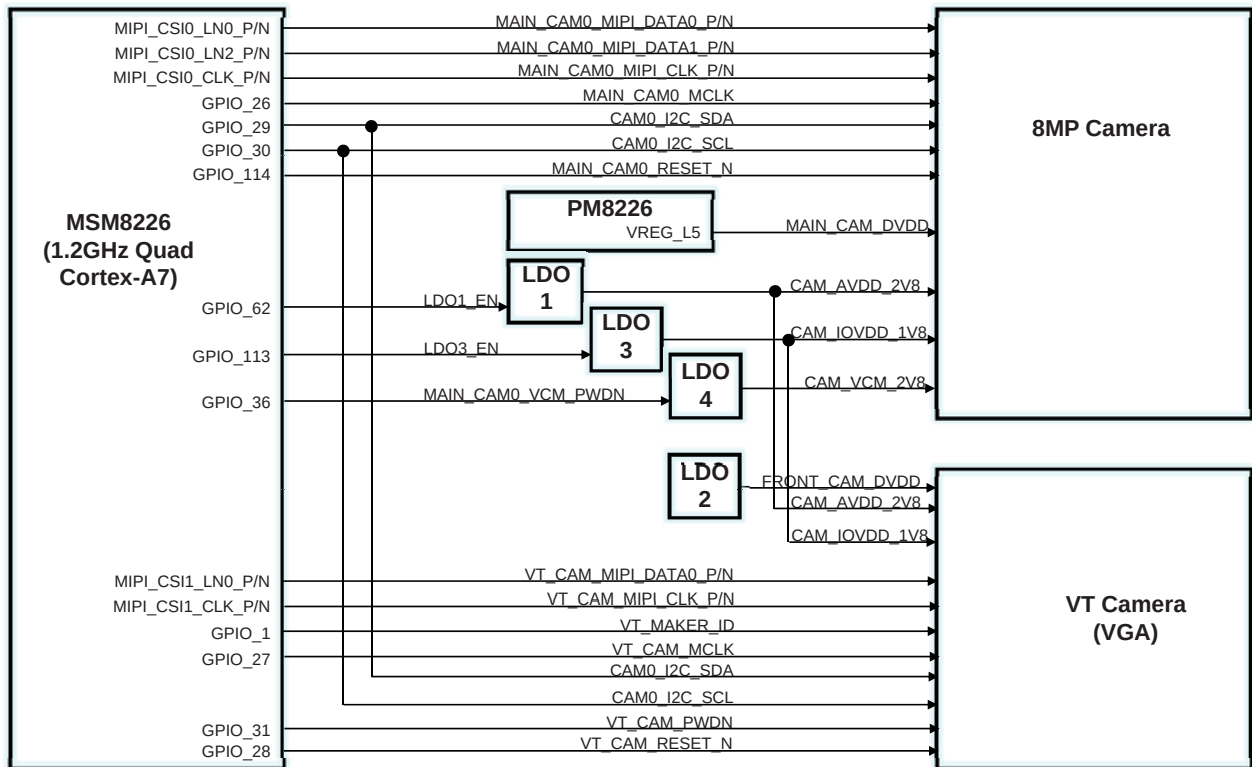
5. BLOCK DIAGRAM

[LGD405] Display & Touch



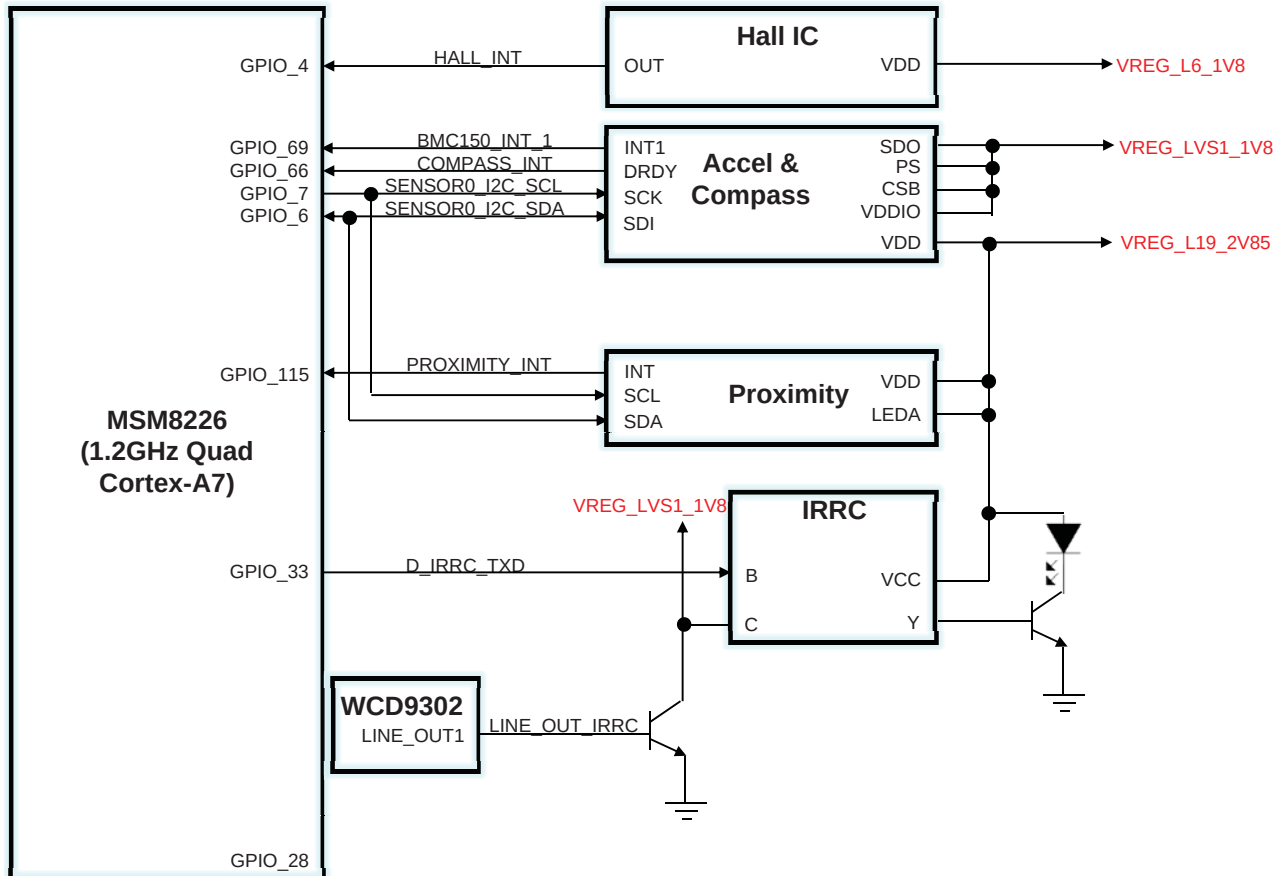
5. BLOCK DIAGRAM

[LGD405] Camera Interface



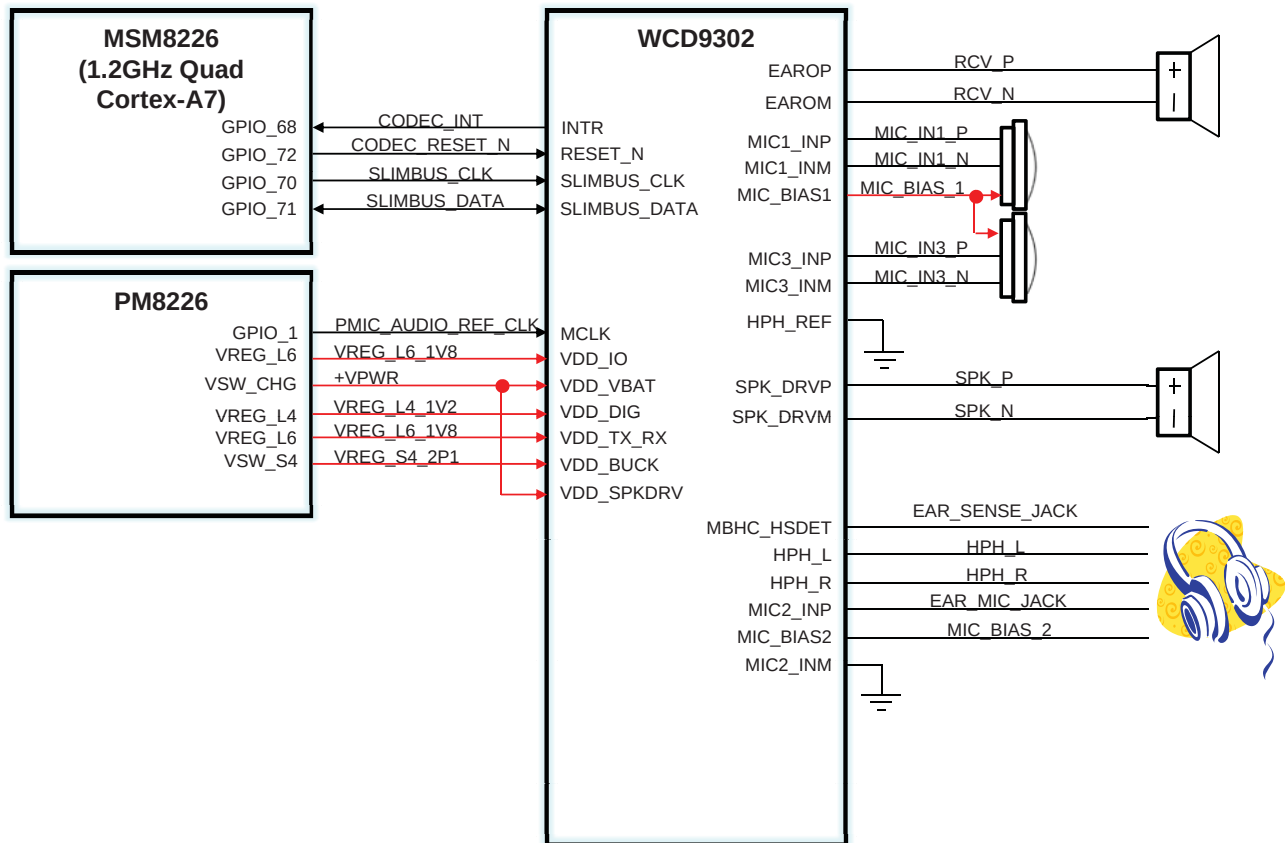
5. BLOCK DIAGRAM

[LGD405] Sensor Interface



5. BLOCK DIAGRAM

[LGD405] Audio



7. BGA PIN MAP

U1500-WTR2605

	1 TX2_OUT		2 TX_BB_IP		3 RX_MB3_IN		4 RX_MB1_IN		5 RX_LB1_IN	
6 TX3_OUT		7 TX1_OUT		8 SSBI_RX		9 RX_MB2_IN		10 RX_LB2_IN		11 GNSS_RF_IN
			12 TX_BB_IM		13 RF_ON		14 GND		15 GND	
16 VDD_RF2_T_DA		17 GND		18 TX_BB_QP		19 VDD_RF2_R_BB		20 VDD_RF1_LNA		21 VDD_RF1_G_PLL
	22 PDET_RFFB_IN		23 TX_BB_QM		24 DAC_REF				25 GND	
26 VDD_RF1_T_LO		27 GND		28 GND		29 GND		30 VDD_RF1_R_LO		31 VDD_RF1_G_LO
	32 GND		33 GND		34 GND				35 GND	
36 DNC		37 VDD_RF2_T_VCO		38 GND		39 VDD_RF1_R_VCO		40 VDD_RF2_R_PLL		41 GNSS_BB_QM
			42 GND		43 RX_BB_QM		44 GND		45 GNSS_BB_QP	
46 VDD_RF1_T_PLL		47 GND		48 VDD_RF1_DIG		49 RX_BB_QP		50 GND		51 GNSS_BB_IM
	52 VDD_RF2_T_PLL		53 GP_DATA0		54 VDD_RF2_XO		55 RX_BB_IM		56 SSBI_TX_GNSS	
57 GND		58 GP_DATA1		59 VDD_RF3_IO		60 XO_IN		61 RX_BB_IP		62 GNSS_BB_IP
Rx RF Rx BB Tx RF Tx BB Support DNC Power Ground										

 Not Used

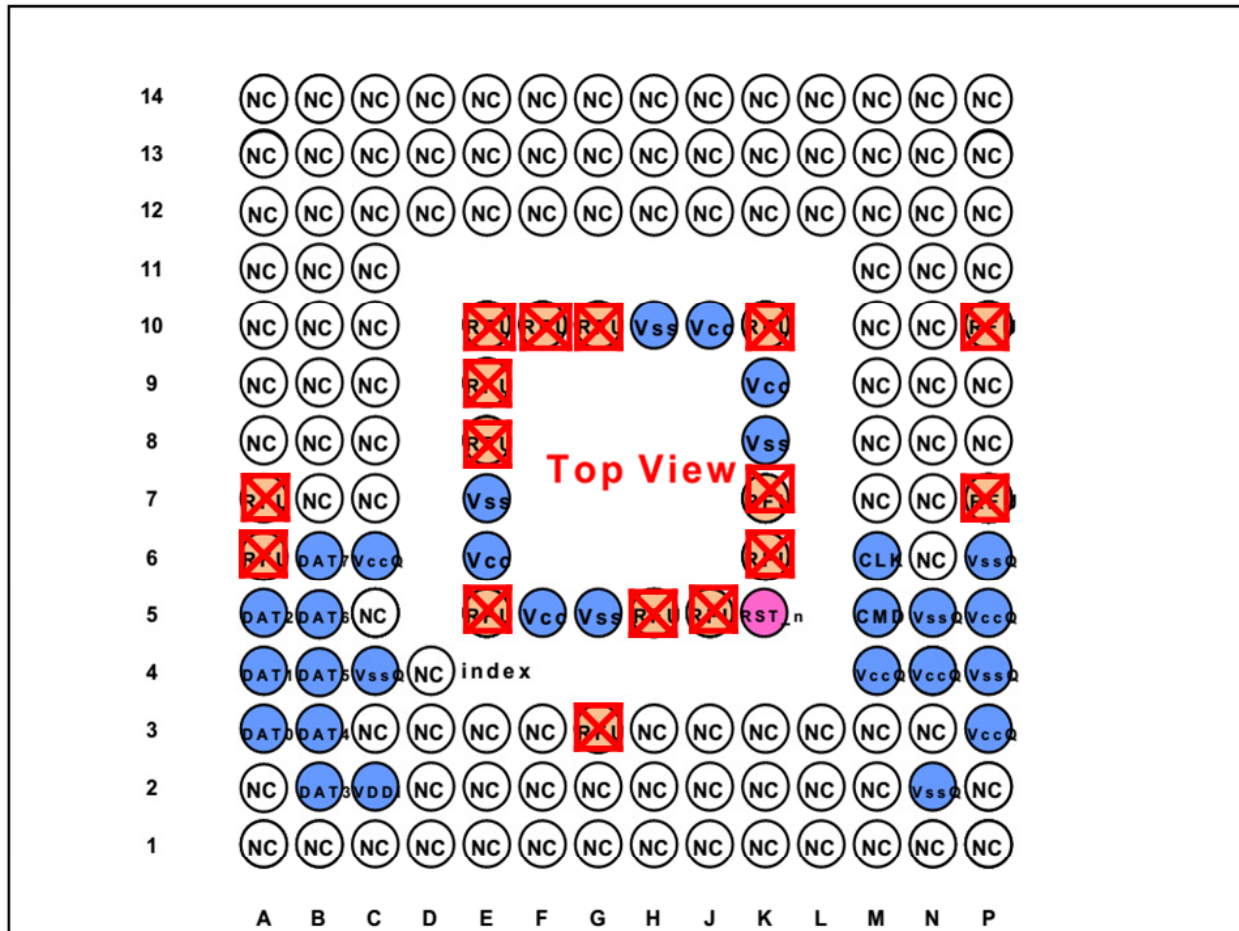
7. BGA PIN MAP

U2100-MSM8226

			GPIO_36	GPIO_37	GPIO_38	GPIO_39	GPIO_40	GPIO_41	GPIO_42	GPIO_43	GPIO_44	GPIO_45	GPIO_46	GPIO_47	GPIO_48	GPIO_49	GPIO_50	GPIO_51	GPIO_52	GPIO_53	GPIO_54	GPIO_55	GPIO_56	GPIO_57	GPIO_58	GPIO_59	GPIO_60	GPIO_61	GPIO_62	GPIO_63	GPIO_64	GPIO_65	GPIO_66	GPIO_67	GPIO_68	GPIO_69	GPIO_70	GPIO_71	GPIO_72	GPIO_73	GPIO_74	GPIO_75	GPIO_76	GPIO_77	GPIO_78	GPIO_79	GPIO_80	GPIO_81	GPIO_82	GPIO_83	GPIO_84	GPIO_85	GPIO_86	GPIO_87	GPIO_88	GPIO_89	GPIO_90	GPIO_91	GPIO_92	GPIO_93	GPIO_94	GPIO_95	GPIO_96	GPIO_97	GPIO_98	GPIO_99	GPIO_100	GPIO_101	GPIO_102	GPIO_103	GPIO_104	GPIO_105	GPIO_106	GPIO_107	GPIO_108	GPIO_109	GPIO_110	GPIO_111	GPIO_112	GPIO_113	GPIO_114	GPIO_115	GPIO_116	GPIO_117	GPIO_118	GPIO_119	GPIO_120	GPIO_121	GPIO_122	GPIO_123	GPIO_124	GPIO_125	GPIO_126	GPIO_127	GPIO_128	GPIO_129	GPIO_130	GPIO_131	GPIO_132	GPIO_133	GPIO_134	GPIO_135	GPIO_136	GPIO_137	GPIO_138	GPIO_139	GPIO_140	GPIO_141	GPIO_142	GPIO_143	GPIO_144	GPIO_145	GPIO_146	GPIO_147	GPIO_148	GPIO_149	GPIO_150	GPIO_151	GPIO_152	GPIO_153	GPIO_154	GPIO_155	GPIO_156	GPIO_157	GPIO_158	GPIO_159	GPIO_160	GPIO_161	GPIO_162	GPIO_163	GPIO_164	GPIO_165	GPIO_166	GPIO_167	GPIO_168	GPIO_169	GPIO_170	GPIO_171	GPIO_172	GPIO_173	GPIO_174	GPIO_175	GPIO_176	GPIO_177	GPIO_178	GPIO_179	GPIO_180	GPIO_181	GPIO_182	GPIO_183	GPIO_184	GPIO_185	GPIO_186	GPIO_187	GPIO_188	GPIO_189	GPIO_190	GPIO_191	GPIO_192	GPIO_193	GPIO_194	GPIO_195	GPIO_196	GPIO_197	GPIO_198	GPIO_199	GPIO_200	GPIO_201	GPIO_202	GPIO_203	GPIO_204	GPIO_205	GPIO_206	GPIO_207	GPIO_208	GPIO_209	GPIO_210	GPIO_211	GPIO_212	GPIO_213	GPIO_214	GPIO_215	GPIO_216	GPIO_217	GPIO_218	GPIO_219	GPIO_220	GPIO_221	GPIO_222	GPIO_223	GPIO_224	GPIO_225	GPIO_226	GPIO_227	GPIO_228	GPIO_229	GPIO_230	GPIO_231	GPIO_232	GPIO_233	GPIO_234	GPIO_235	GPIO_236	GPIO_237	GPIO_238	GPIO_239	GPIO_240	GPIO_241	GPIO_242	GPIO_243	GPIO_244	GPIO_245	GPIO_246	GPIO_247	GPIO_248	GPIO_249	GPIO_250	GPIO_251	GPIO_252	GPIO_253	GPIO_254	GPIO_255	GPIO_256	GPIO_257	GPIO_258	GPIO_259	GPIO_260	GPIO_261	GPIO_262	GPIO_263	GPIO_264	GPIO_265	GPIO_266	GPIO_267	GPIO_268	GPIO_269	GPIO_270	GPIO_271	GPIO_272	GPIO_273	GPIO_274	GPIO_275	GPIO_276	GPIO_277	GPIO_278	GPIO_279	GPIO_280	GPIO_281	GPIO_282	GPIO_283	GPIO_284	GPIO_285	GPIO_286	GPIO_287	GPIO_288	GPIO_289	GPIO_290	GPIO_291	GPIO_292	GPIO_293	GPIO_294	GPIO_295	GPIO_296	GPIO_297	GPIO_298	GPIO_299	GPIO_300	GPIO_301	GPIO_302	GPIO_303	GPIO_304	GPIO_305	GPIO_306	GPIO_307	GPIO_308	GPIO_309	GPIO_310	GPIO_311	GPIO_312	GPIO_313	GPIO_314	GPIO_315	GPIO_316	GPIO_317	GPIO_318	GPIO_319	GPIO_320	GPIO_321	GPIO_322	GPIO_323	GPIO_324	GPIO_325	GPIO_326	GPIO_327	GPIO_328	GPIO_329	GPIO_330	GPIO_331	GPIO_332	GPIO_333	GPIO_334	GPIO_335	GPIO_336	GPIO_337	GPIO_338	GPIO_339	GPIO_340	GPIO_341	GPIO_342	GPIO_343	GPIO_344	GPIO_345	GPIO_346	GPIO_347	GPIO_348	GPIO_349	GPIO_350	GPIO_351	GPIO_352	GPIO_353	GPIO_354	GPIO_355	GPIO_356	GPIO_357	GPIO_358	GPIO_359	GPIO_360	GPIO_361	GPIO_362	GPIO_363	GPIO_364	GPIO_365	GPIO_366	GPIO_367	GPIO_368	GPIO_369	GPIO_370	GPIO_371	GPIO_372	GPIO_373	GPIO_374	GPIO_375	GPIO_376	GPIO_377	GPIO_378	GPIO_379	GPIO_380	GPIO_381	GPIO_382	GPIO_383	GPIO_384	GPIO_385	GPIO_386	GPIO_387	GPIO_388	GPIO_389	GPIO_390	GPIO_391	GPIO_392	GPIO_393	GPIO_394	GPIO_395	GPIO_396	GPIO_397	GPIO_398	GPIO_399	GPIO_400	GPIO_401	GPIO_402	GPIO_403	GPIO_404	GPIO_405	GPIO_406	GPIO_407	GPIO_408	GPIO_409	GPIO_410	GPIO_411	GPIO_412	GPIO_413	GPIO_414	GPIO_415	GPIO_416	GPIO_417	GPIO_418	GPIO_419	GPIO_420	GPIO_421	GPIO_422	GPIO_423	GPIO_424	GPIO_425	GPIO_426	GPIO_427	GPIO_428	GPIO_429	GPIO_430	GPIO_431	GPIO_432	GPIO_433	GPIO_434	GPIO_435	GPIO_436	GPIO_437	GPIO_438	GPIO_439	GPIO_440	GPIO_441	GPIO_442	GPIO_443	GPIO_444	GPIO_445	GPIO_446	GPIO_447	GPIO_448	GPIO_449	GPIO_450	GPIO_451	GPIO_452	GPIO_453	GPIO_454	GPIO_455	GPIO_456	GPIO_457	GPIO_458	GPIO_459	GPIO_460	GPIO_461	GPIO_462	GPIO_463	GPIO_464	GPIO_465	GPIO_466	GPIO_467	GPIO_468	GPIO_469	GPIO_470	GPIO_471	GPIO_472	GPIO_473	GPIO_474	GPIO_475	GPIO_476	GPIO_477	GPIO_478	GPIO_479	GPIO_480	GPIO_481	GPIO_482	GPIO_483	GPIO_484	GPIO_485	GPIO_486	GPIO_487	GPIO_488	GPIO_489	GPIO_490	GPIO_491	GPIO_492	GPIO_493	GPIO_494	GPIO_495	GPIO_496	GPIO_497	GPIO_498	GPIO_499	GPIO_500	GPIO_501	GPIO_502	GPIO_503	GPIO_504	GPIO_505	GPIO_506	GPIO_507	GPIO_508	GPIO_509	GPIO_510	GPIO_511	GPIO_512	GPIO_513	GPIO_514	GPIO_515	GPIO_516	GPIO_517	GPIO_518	GPIO_519	GPIO_520	GPIO_521	GPIO_522	GPIO_523	GPIO_524	GPIO_525	GPIO_526	GPIO_527	GPIO_528	GPIO_529	GPIO_530	GPIO_531	GPIO_532	GPIO_533	GPIO_534	GPIO_535	GPIO_536	GPIO_537	GPIO_538	GPIO_539	GPIO_540	GPIO_541	GPIO_542	GPIO_543	GPIO_544	GPIO_545	GPIO_546	GPIO_547	GPIO_548	GPIO_549	GPIO_550	GPIO_551	GPIO_552	GPIO_553	GPIO_554	GPIO_555	GPIO_556	GPIO_557	GPIO_558	GPIO_559	GPIO_560	GPIO_561	GPIO_562	GPIO_563	GPIO_564	GPIO_565	GPIO_566	GPIO_567	GPIO_568	GPIO_569	GPIO_570	GPIO_571	GPIO_572	GPIO_573	GPIO_574	GPIO_575	GPIO_576	GPIO_577	GPIO_578	GPIO_579	GPIO_580	GPIO_581	GPIO_582	GPIO_583	GPIO_584	GPIO_585	GPIO_586	GPIO_587	GPIO_588	GPIO_589	GPIO_590	GPIO_591	GPIO_592	GPIO_593	GPIO_594	GPIO_595	GPIO_596	GPIO_597	GPIO_598	GPIO_599	GPIO_600	GPIO_601	GPIO_602	GPIO_603	GPIO_604	GPIO_605	GPIO_606	GPIO_607	GPIO_608	GPIO_609	GPIO_610	GPIO_611	GPIO_612	GPIO_613	GPIO_614	GPIO_615	GPIO_616	GPIO_617	GPIO_618	GPIO_619	GPIO_620	GPIO_621	GPIO_622	GPIO_623	GPIO_624	GPIO_625	GPIO_626	GPIO_627	GPIO_628	GPIO_629	GPIO_630	GPIO_631	GPIO_632	GPIO_633	GPIO_634	GPIO_635	GPIO_636	GPIO_637	GPIO_638	GPIO_639	GPIO_640	GPIO_641	GPIO_642	GPIO_643	GPIO_644	GPIO_645	GPIO_646	GPIO_647	GPIO_648	GPIO_649	GPIO_650	GPIO_651	GPIO_652	GPIO_653	GPIO_654	GPIO_655	GPIO_656	GPIO_657	GPIO_658	GPIO_659	GPIO_660	GPIO_661	GPIO_662	GPIO_663	GPIO_664	GPIO_665	GPIO_666	GPIO_667	GPIO_668	GPIO_669	GPIO_670	GPIO_671	GPIO_672	GPIO_673	GPIO_674	GPIO_675	GPIO_676	GPIO_677	GPIO_678	GPIO_679	GPIO_680	GPIO_681	GPIO_682	GPIO_683	GPIO_684	GPIO_685	GPIO_686	GPIO_687	GPIO_688	GPIO_689	GPIO_690	GPIO_691	GPIO_692	GPIO_693	GPIO_694	GPIO_695	GPIO_696	GPIO_697	GPIO_698	GPIO_699	GPIO_700	GPIO_701	GPIO_702	GPIO_703	GPIO_704	GPIO_705	GPIO_706	GPIO_707	GPIO_708	GPIO_709	GPIO_710	GPIO_711	GPIO_712	GPIO_713	GPIO_714	GPIO_715	GPIO_716	GPIO_717	GPIO_718	GPIO_719	GPIO_720	GPIO_721	GPIO_722	GPIO_723	GPIO_724	GPIO_725	GPIO_726	GPIO_727	GPIO_728	GPIO_729	GPIO_730	GPIO_731	GPIO_732	GPIO_733	GPIO_734	GPIO_735	GPIO_736	GPIO_737	GPIO_738	GPIO_739	GPIO_740	GPIO_741	GPIO_742	GPIO_743	GPIO_744	GPIO_745	GPIO_746	GPIO_747	GPIO_748	GPIO_749	GPIO_750	GPIO_751	GPIO_752	GPIO_753	GPIO_754	GPIO_755	GPIO_756	GPIO_757	GPIO_758	GPIO_759	GPIO_760	GPIO_761	GPIO_762	GPIO_763	GPIO_764	GPIO_765	GPIO_766	GPIO_767	GPIO_768	GPIO_769	GPIO_770	GPIO_771	GPIO_772	GPIO_773	GPIO_774	GPIO_775	GPIO_776	GPIO_777	GPIO_778	GPIO_779	GPIO_780	GPIO_781	GPIO_782	GPIO_783	GPIO_784	GPIO_785	GPIO_786	GPIO_787	GPIO_788	GPIO_789	GPIO_790	GPIO_791	GPIO_792	GPIO_793	GPIO_794	GPIO_795	GPIO_796	GPIO_797	GPIO_798	GPIO_799	GPIO_800	GPIO_801	GPIO_802	GPIO_803	GPIO_804	GPIO_805	GPIO_806	GPIO_807	GPIO_808	GPIO_809	GPIO_810	GPIO_811	GPIO_812	GPIO_813	GPIO_814	GPIO_815	GPIO_816	GPIO_817	GPIO_818	GPIO_819	GPIO_820	GPIO_821	GPIO_822	GPIO_823	GPIO_824	GPIO_825	GPIO_826	GPIO_827	GPIO_828	GPIO_829	GPIO_830	GPIO_831	GPIO_832	GPIO_833	GPIO_834	GPIO_835	GPIO_836	GPIO_837	GPIO_838	GPIO_839	GPIO_840	GPIO_841	GPIO_842	GPIO_843	GPIO_844	GPIO_845	GPIO_846	GPIO_847	GPIO_848	GPIO_849	GPIO_850	GPIO_851	GPIO_852	GPIO_853	GPIO_854	GPIO_855	GPIO_856	GPIO_857	GPIO_858	GPIO_859	GPIO_860	GPIO_861	GPIO_862	GPIO_863	GPIO_864	GPIO_865	GPIO_866	GPIO_867	GPIO_868	GPIO_869	GPIO_870	GPIO_871	GPIO_872	GPIO_873	GPIO_874	GPIO_875	GPIO_876	GPIO_877	GPIO_878	GPIO_879	GPIO_880	GPIO_881	GPIO_882	GPIO_883	GPIO_884	GPIO_885	GPIO_886	GPIO_887	GPIO_888	GPIO_889	GPIO_890	GPIO_891	GPIO_892	GPIO_893	GPIO_894	GPIO_895	GPIO_896	GPIO_897	GPIO_898	GPIO_899	GPIO_900	GPIO_901	GPIO_902	GPIO_903	GPIO_904	GPIO_905	GPIO_906	GPIO_907	GPIO_908	GPIO_909	GPIO_910	GPIO_911	GPIO_912	GPIO_913	GPIO_914	GPIO_915	GPIO_916	GPIO_917	GPIO_918	GPIO_919	GPIO_920	GPIO_921	GPIO_922	GPIO_923	GPIO_924	GPIO_925	GPIO_926	GPIO_927	GPIO_928	GPIO_929	GPIO_930	GPIO_931	GPIO_932	GPIO_933	GPIO_934	GPIO_935	GPIO_936	GPIO_937	GPIO_938	GPIO_939	GPIO_940	GPIO_941	GPIO_942	GPIO_943	GPIO_944	GPIO_945	GPIO_946	GPIO_947	GPIO_948	GPIO_949	GPIO_950	GPIO_951	GPIO_952	GPIO_953	GPIO_954	GPIO_955	GPIO_956	GPIO_957	GPIO_958	GPIO_959	GPIO_960	GPIO_961	GPIO_962	GPIO_963	GPIO_964	GPIO_965	GPIO_966	GPIO_967	GPIO_968	GPIO_969	GPIO_970	GPIO_971	GPIO_972	GPIO_973	GPIO_974	GPIO_975	GPIO_976	GPIO_977	GPIO_978	GPIO_979	GPIO_980	GPIO_981	GPIO_982	GPIO_983	GPIO_984	GPIO_985	GPIO_986	GPIO_987	GPIO_988	GPIO_989	GPIO_990	GPIO_991	GPIO_992	GPIO_993	GPIO_994	GPIO_995	GPIO_996	GPIO_997	GPIO_998	GPIO_999	GPIO_1000	GPIO_1001	GPIO_1002	GPIO_1003	GPIO_1004	GPIO_1005	GPIO_1006	GPIO_1007	GPIO_1008	GPIO_1009	GPIO_1010	GPIO_1011	GPIO_1012	GPIO_1013	GPIO_1014	GPIO_1015	GPIO_1016	GPIO_1017	GPIO_1018	GPIO_1019	GPIO_1020	GPIO_1021	GPIO_1022	GPIO_1023	GPIO_1024	GPIO_1025	GPIO_1026	GPIO_1027	GPIO_1028	GPIO_1029	GPIO_1030	GPIO_1031	GPIO_1032	GPIO_1033	GPIO_1034	GPIO_1035	GPIO_1036	GPIO_1037	GPIO_1038	GPIO_1039	GPIO_1040	GPIO_1041	GPIO_1042	GPIO_1043	GPIO_1044	GPIO_1045	GPIO_1046	GPIO_1047	GPIO_1048	GPIO_1049	GPIO_1050	GPIO_1051	GPIO_1052	GPIO_1053	GPIO_1054	GPIO_1055	GPIO_1056	GPIO_1057	GPIO_1058	GPIO_1059	GPIO_1060	GPIO_1061	GPIO_1062	GPIO_1063	GPIO_1064	GPIO_1065	GPIO_1066	GPIO_1067	GPIO_1068	GPIO_1069	GPIO_1070	GPIO_1071	GPIO_1072	GPIO_1073	GPIO_1074	GPIO_1075	GPIO_1076	GPIO_1077	GPIO_1078	GPIO_1079	GPIO_1080	GPIO_1081	GPIO_1082	GPIO_1083	GPIO_1084	GPIO_1085	GPIO_1086	GPIO_1087	GPIO_1088	GPIO_1089	GPIO_1090	GPIO_1091	GPIO_1092	GPIO_1093	GPIO_1094	GPIO_1095	GPIO_1096	GPIO_1097	GPIO_1098	GPIO_1099	GPIO_1100	GPIO_1101	GPIO_1102	GPIO_1103	GPIO_1104	GPIO_1105	GPIO_1106	GPIO_1107	GPIO_1108	GPIO_1109	GPIO_1110	GPIO_1111	GPIO_1112	GPIO_1113	GPIO_1114	GPIO_1115	GPIO_1116	GPIO_1117	GPIO_1118	GPIO_1119	GPIO_1120	GPIO_1121	GPIO_1122	GPIO_1123	GPIO_1124	GPIO_1125	GPIO_1126	GPIO_1127	GPIO_1128	GPIO_1129	GPIO_1130	GPIO_1131	GPIO_1132	GPIO_1133	GPIO_1134	GPIO_1135	GPIO_1136	GPIO_1137	GPIO_1138	GPIO_1139	GPIO_1140	GPIO_1141	GPIO_1142	GPIO_1143	GPIO_1144	GPIO_1145	GPIO_1146	GPIO_1147	GPIO_1148	GPIO_1149	GPIO_1150	GPIO_1151	GPIO_1152	GPIO_1153	GPIO_1154	GPIO_1155	GPIO_1156	GPIO_1157	GPIO_1158	GPIO_1159	GPIO_1160	GPIO_1161	GPIO_1162	GPIO_1163	GPIO_1164	GPIO_1165	GPIO_1166	GPIO_1167	GPIO_1168	GPIO_1169	GPIO_1170	GPIO_1171	GPIO_1172	GPIO_1173	GPIO_1174	GPIO_1175	GPIO_1176	GPIO_1177	GPIO_1178	GPIO_1179	GPIO_1180	GPIO_1181	GPIO_1182	GPIO_1183	GPIO_1184	GPIO_1185	GPIO_1186	GPIO_1187	GPIO_1188	GPIO_1189	GPIO_1190	GPIO_1191	GPIO_1192	GPIO_1193	GPIO_1194	GPIO_1195	GPIO_1196	GPIO_1197	GPIO_1198	GPIO_1199	GPIO_1200	GPIO_1201	GPIO_1202	GPIO_1203	GPIO_1204	GPIO_1205	GPIO_1206	GPIO_1207	GPIO_1208	GPIO_1209	GPIO_1210	GPIO_1211	GPIO_1212	GPIO_1213	GPIO_1214	GPIO_1215	GPIO_1216	GPIO_1217	GPIO_1218	GPIO_1219	GPIO_1220	GPIO_1221	GPIO_1222	GPIO_1223	GPIO_1224	GPIO_1225	GPIO_1226	GPIO_1227	GPIO_1228	GPIO_1229	GPIO_1230	GPIO_1231	GPIO_1232	GPIO_1233	GPIO_1234	GPIO_1235	GPIO_1236	GPIO_1237	GPIO_1238	GPIO_1239	GPIO_1240	GPIO_1241	GPIO_1242	GPIO_1243	GPIO_1244	GPIO_1245	GPIO_1246	GPIO_1247	GPIO_1248	GPIO_1249	GPIO_1250	GPIO_1251	GPIO_1252	GPIO_1253</
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☐ Not Used

U3200-eMMC



Not Used

7. BGA PIN MAP

U4100-PM8226

1 VDD_ GR2	2 VREG_ _L3	3 VREG_ _L2	4 VDD_ GR1	5 XTAL_ 19M_IN	6 XTAL_ 19M_OUT	7 VDD_ GR6	8 VSW_ _S1	9 VDD_ _S1	10 VDD_ _S1		
11 VDD_ GR2	12 VREG_ _L24	13 RF_CLK1	14 VREG_ _L13	15 VREG_ _L1	16 VREG_ _L11	17 GND_ _XO	18 VREG_ _L17	19 VREG_ _L16	20 VREG_ _S1	21 VSW_ _S1	22 GND_ _S1
23 GND_ _S3	24 VREG_ _L26	25 VREG_ _L5	26 NC	27 VDD_ GR4	28 NC	29 VREG_ _L19	30 VREG_ _L17	31 BB_CLK1	32 VREG_ _L18	33 GND_ _S1	34 VDD_ _S2
35 VSW_ _S3	36 VREG_ _S3	37 VREG_ _L4	38 VREG_ _L10	39 RF_CLK2	40 NC	41 VDD_ GR7	42 BB_CLK2	43 VREG_ _L15	44 BB_CLK1 _EN	45 VSW_ _S2	46 VSW_ _S2
47 VDD_ _S3	48 VDD_ _L25	49 VREG_ _L14	50 VREG_ _L28	51 VREG_ _L23	52 VREG_ _L22	53 VREG_ _L21	54 NC	55 VREG_ _L20	56 VREG_ _S2	57 GND_ _S2	58 VSW_ _S2
	59 VDD_ GR5	60 VDD_ GR5	61 VREF_ _LPDDR	62 GND_ XO_BUFF	63 GND_ XOADC	64 GND	65 GND_ DRV	66 VIB_ DRV_N	67 GND_ _S2	68 GND_ _S2	
69 GND_ _S4	70 VREG_ _L25	71 VREG_ _L12	72 AMUX_1	73 AMUX_2	74 GND	75 GND	76 VCOIN	77 PON_ RESET_N	78 GND	79 VDD_ _GP	80 DNC
81 VSW_ _S4	82 NC	83 DNC	84 NC	85 CBL_ PWR_N	86 GND	87 GND	88 SLEEP_ _CLK1	89 NC	90 NC	91 NC	92 GND
93 VDD_ _S4	94 VOUT_ _LVS1	95 VREG_ _S4	96 BMS_ _CSN	97 USB_ ID_IN	98 GND	99 GND	100 PS_HOLD	101 RESIN_ _IN	102 KPD_ PWR_N	103 VLED_ _FLASH	104 VDD_ _FLASH
	105 VREG_ _L6	106 VREG_ _L6	107 BMS_ _CSP	108 OPT_2	109 GND_CHG_ _PSUB	110 GND_ OVP	111 GND	112 SPMI_ _CLK	113 GND_ WLEDI	114 GND_ WLEDI	
115 VDD_ GR3	116 VREG_ _L7	117 GND_ _REF	118 VREG_ _L8	119 OPT_1	120 XO_ THERM	121 AVDD_ _BYP	122 GPIO_8	123 SPMI_ _DATA	124 GPIO_1	125 WLED_1	126 VDD_ _WLED
127 VREG_ _L27	128 VREG_ _L9	129 REF_ _BYP	130 MPP_7	131 BMS_ _BYP	132 MPP_5	133 NC	134 GPIO_7	135 GPIO_4	136 GPIO_2	137 OVP_ _WLED	138 VSW_ _WLED
139 VBAT	140 BATFET_ _CP_DRV	141 MPP_6	142 GND_ _CHG	143 VCHG	144 MPP_8	145 NC	146 MPP_2	147 NC	148 GPIO_5	149 GPIO_3	150 GND_ _WLED
151 VBAT	152 VPH_ PWR	153 GND_ CHG_HP	154 VSW_ _CHG	155 VCHG	156 VBAT_ _SNS	157 MPP_9	158 MPP_3	159 MPP_1	160 GPIO_6	161 USB_IN	162 OVP_ _OUT
163 VBAT	164 VPH_ PWR	165 GND_ CHG_HP	166 VSW_ _CHG		167 VDRV_P	168 LED_ _CHG		169 VREF_ BAT_THM	170 VPRE_ _BYP	171 OVP_CP_ _DRV	172 USB_IN
Input power management	Output power management	General housekeeping		User interfaces	IC-level interfaces	MPPs and GPIOs	No connection	Power	Ground		

Input power management	Output power management	General housekeeping	User interfaces	IC-level interfaces	MPPs and GPIOs	No connection	Power	Ground
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 Not Used

7. BGA PIN MAP

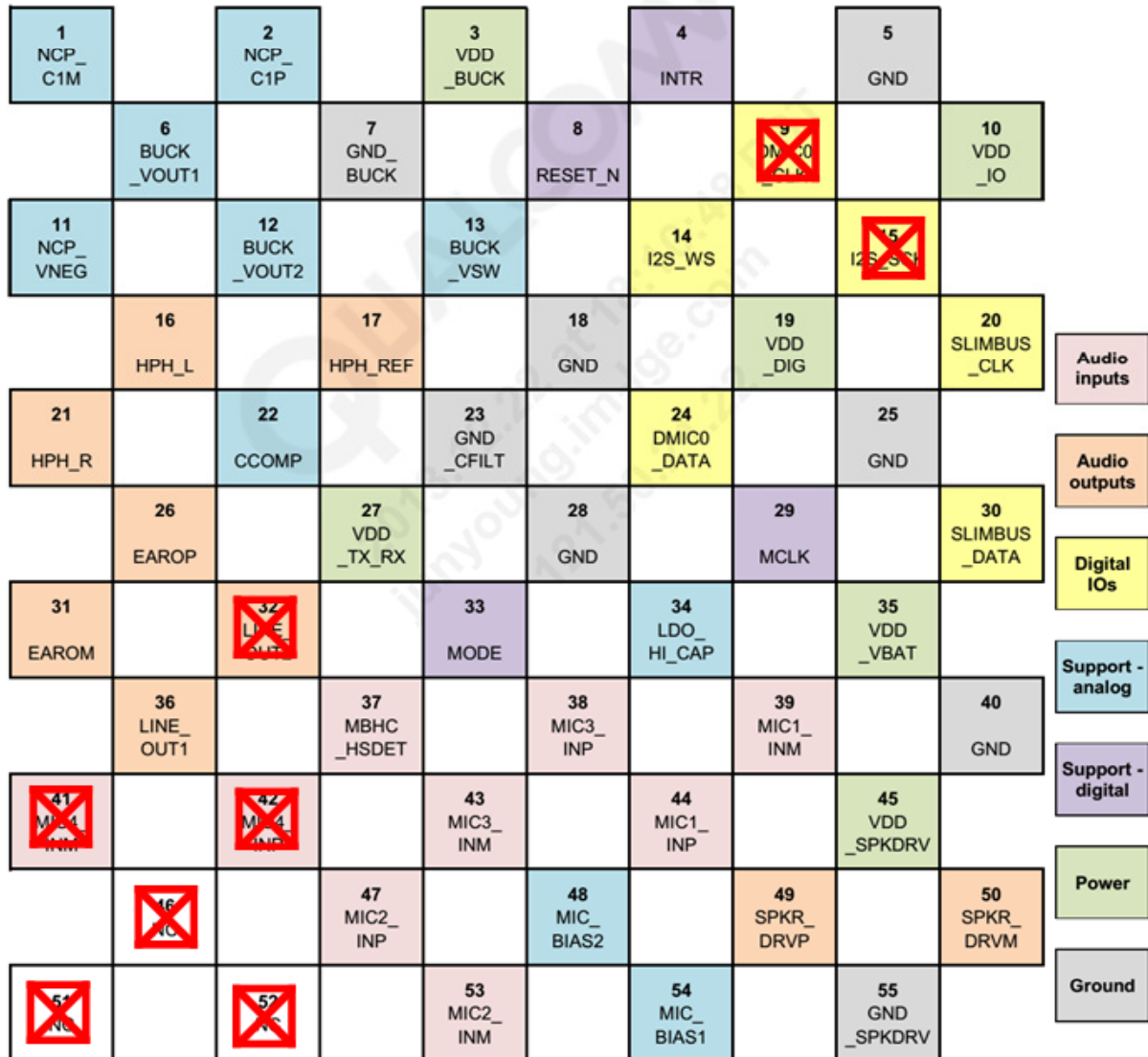
U5100-WCN3620

	1 GND		2 GND		3 VDD_BT_RF_1P3		4 VDD_BT_DA_3P3		5 WL_BT_RFIO		6 WL_CMD_SET
7 VDD_BT_VCO_1P3		8 GND			9 VDD_WL_2GLNA_1P3		10 GND		11 VDD_WL_2GPA_3P3		
	12 GND		13 VDD_BT_BB_1P3		14 GND						15 NC
16 VDD_BT_PLL_1P3		17 GND		18 BT_CTL		19 GND		20 GND		21 GND	
	22 VDD_IO_1P8		23 VDD_BT_FM_DIG_1P3		24 VDD_XO_1P8		25 GND		26 WL_CMD_DATA1		27 GND
28 BT_DATA		29 VDD_DIG_1P2		30 TCXO_IN			31 NC		32 GND		
	33 BT_SSBI		34 GND		35 GND		36 VDD_WL_LO_1P3				37 VDD_WL_2GPA_1P3
38 NC		39 GND		40 NC		41 FM_SSBI		42 GND		43 VDD_WL_UPC_1P3	
	44 GND		45 GND		46 FM_DATA		47 WL_BB_QN		48 WL_CMD_DATA0		49 NC
50 FM_HS_RX		51 VDD_FM_VCO_1P3		52 VDD_FM_PLL_1P3		53 WL_BB_OP		54 WL_BB_IP		55 WL_CMD_DATA2	
	56 VDD_FM_RXFE_1P3		57 VDD_FM_RXBB_1P3		58 VDD_WL_PLL_1P3		59 WL_BB_IN		60 VDD_WL_BB_1P3		61 WL_CMD_CLK
WLAN		FM		BT		Shared functions		Top level		Power	
										Ground	
										No Connect	

 Not Used

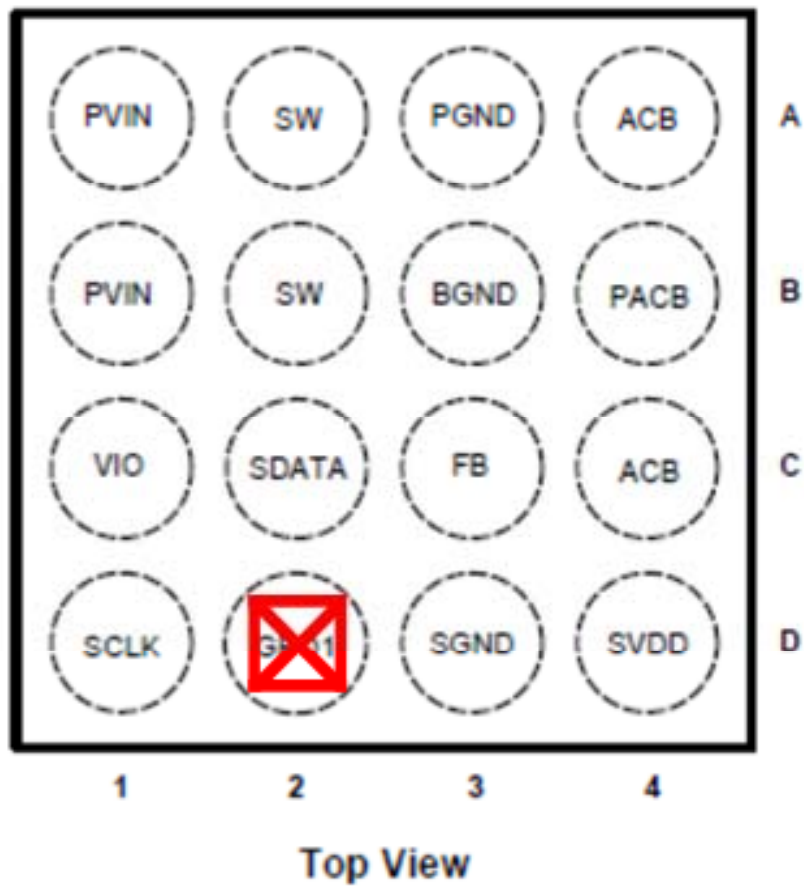
7. BGA PIN MAP

U6100-CODEC IC(WCD9302)

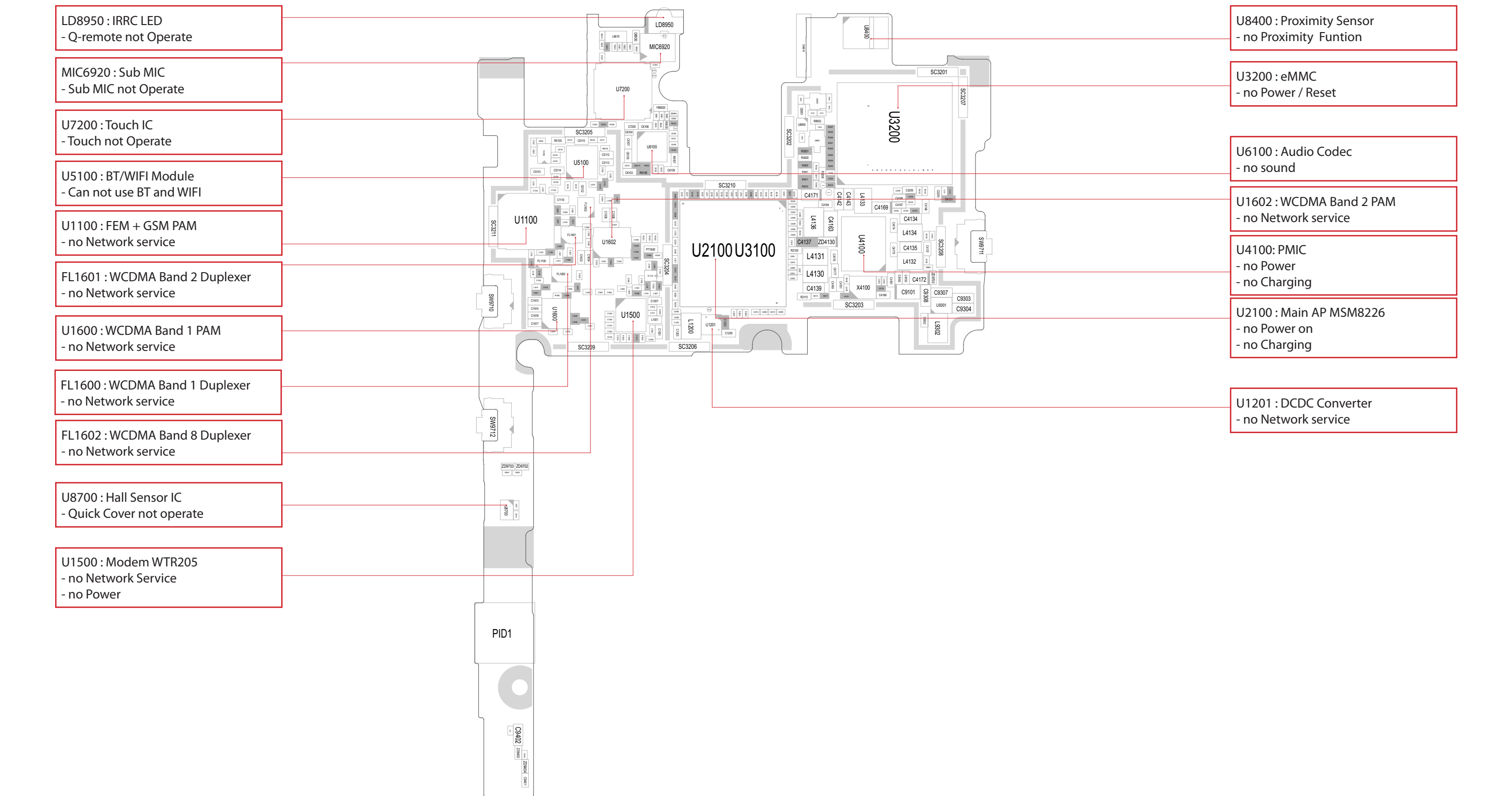


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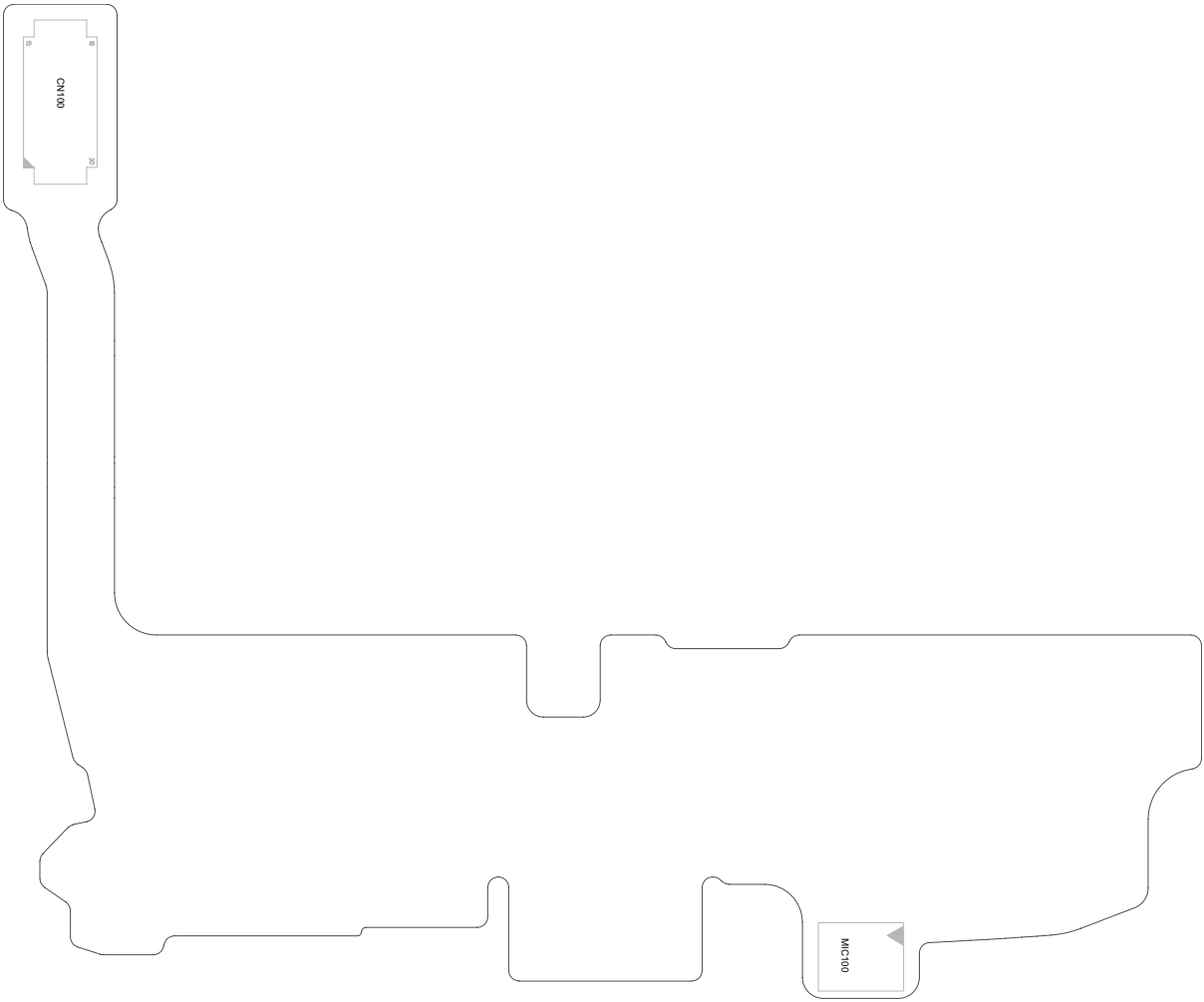
U1201-DCDC Converter(LM3263)



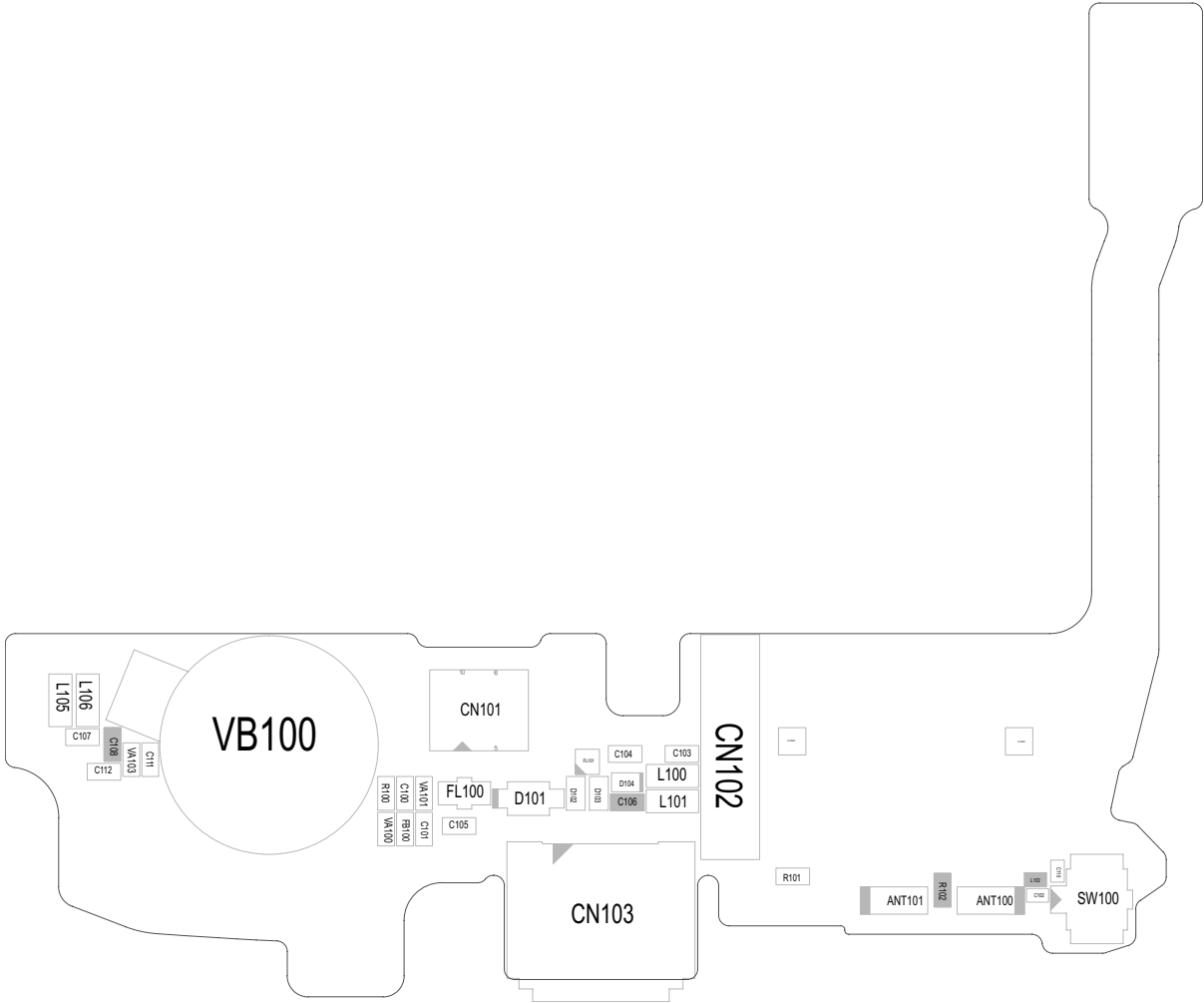
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LG-D405_EAX65671801_F_LOWE_1.0_TOP



LG-D405_EAX65671801_F_LOWE_1.0_BOT

9. CALIBRATION

This document is draft version, so the contents will be updated after registering the final one.

CAL INFORMATION

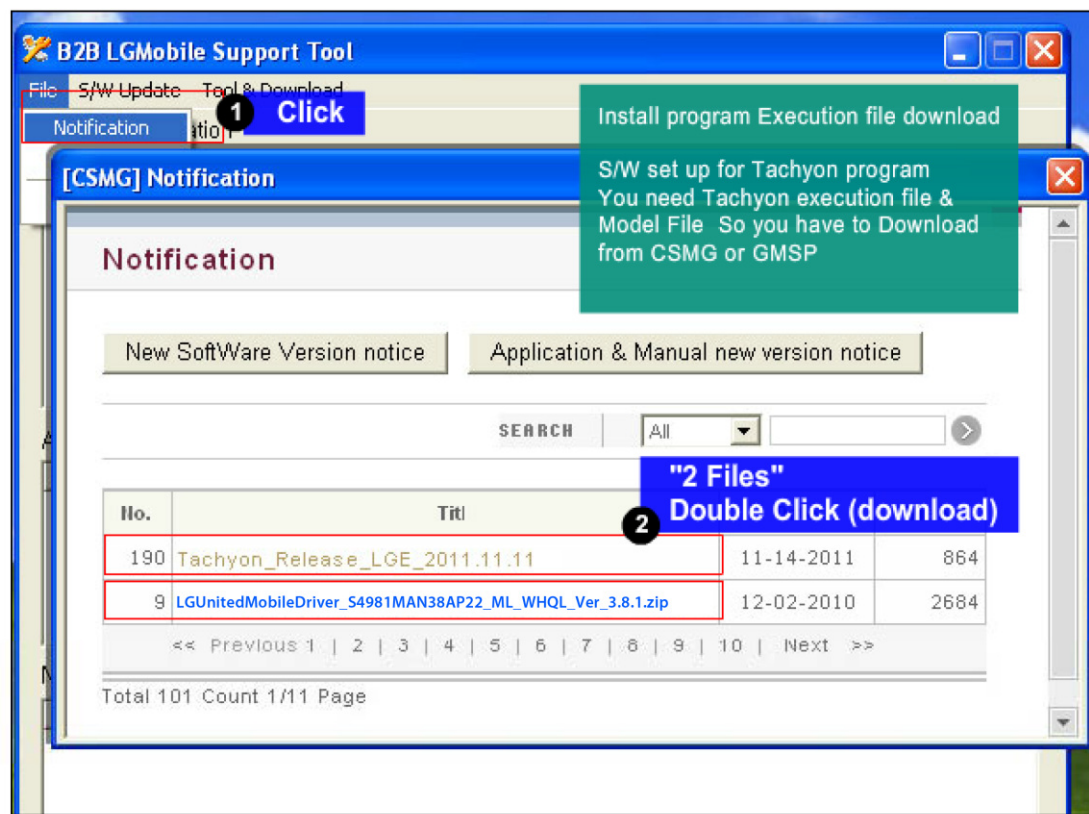
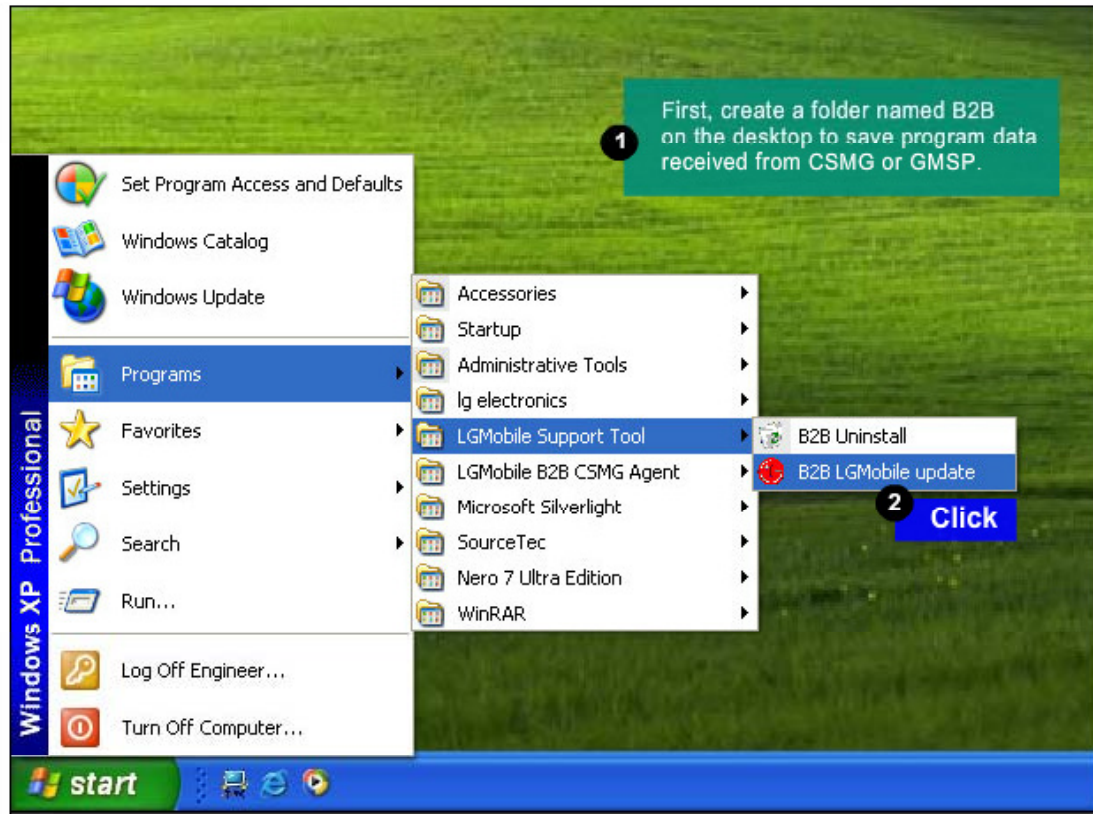
S/W VERSION

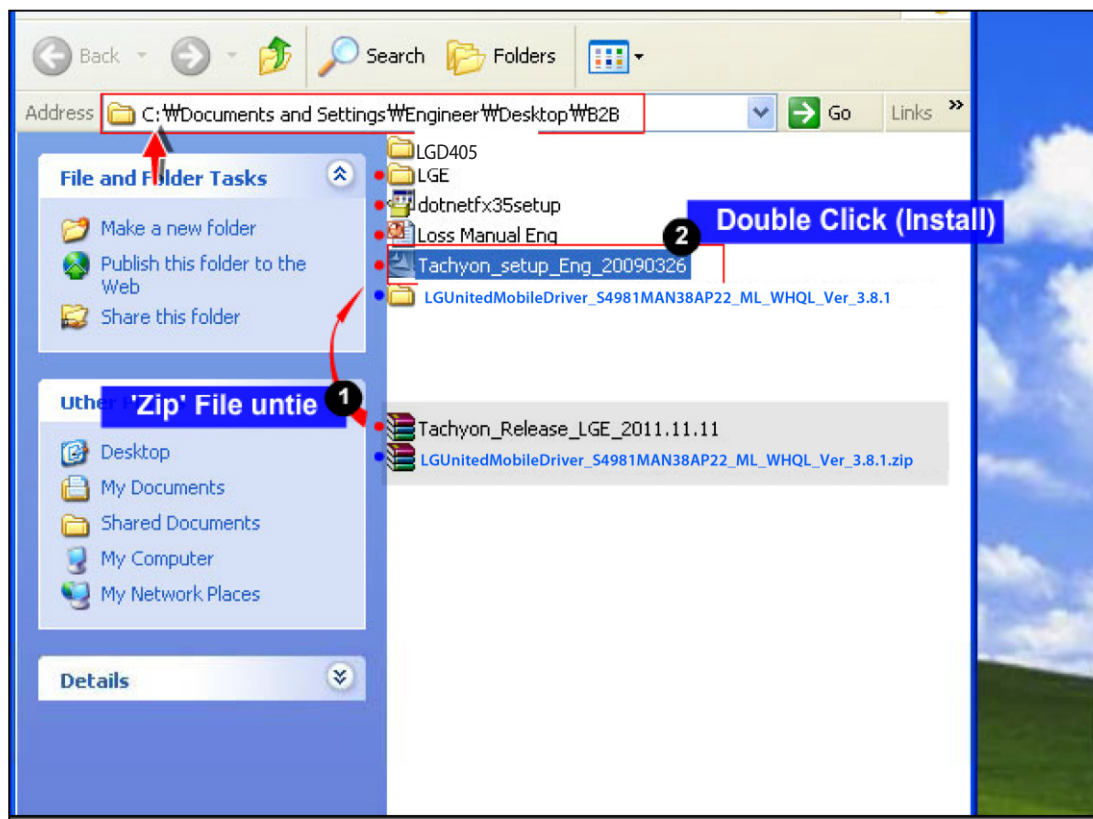
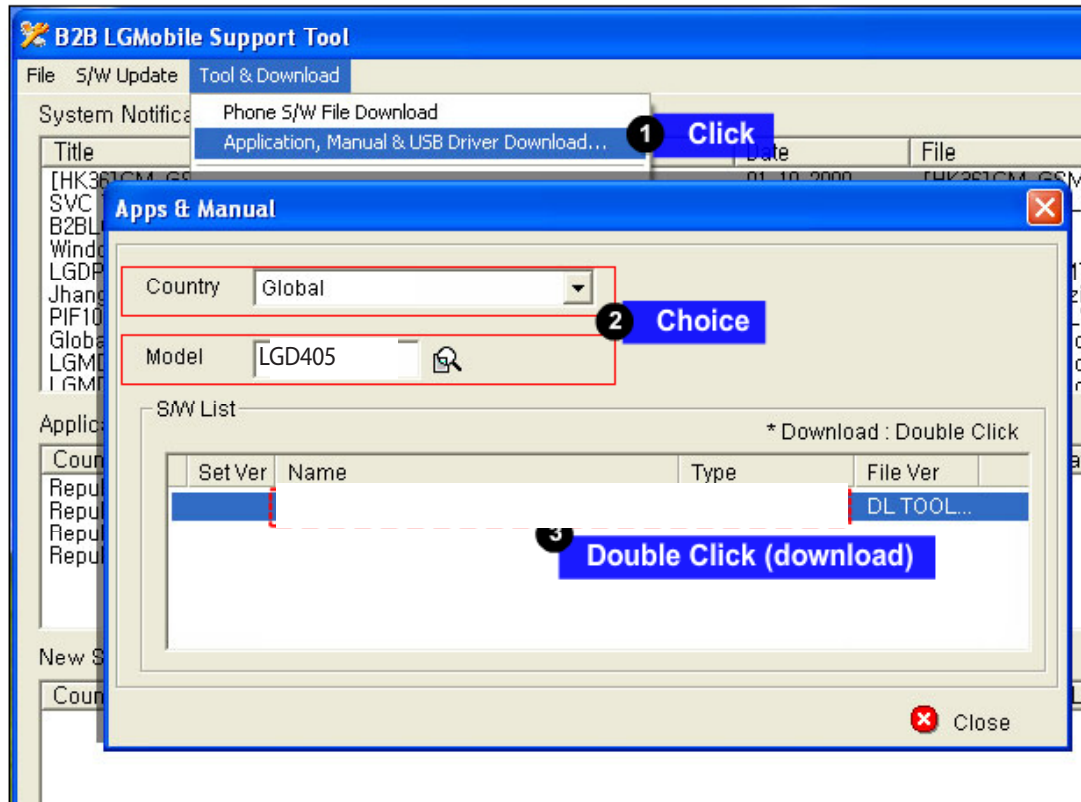
Please Check the Version to "B2B"

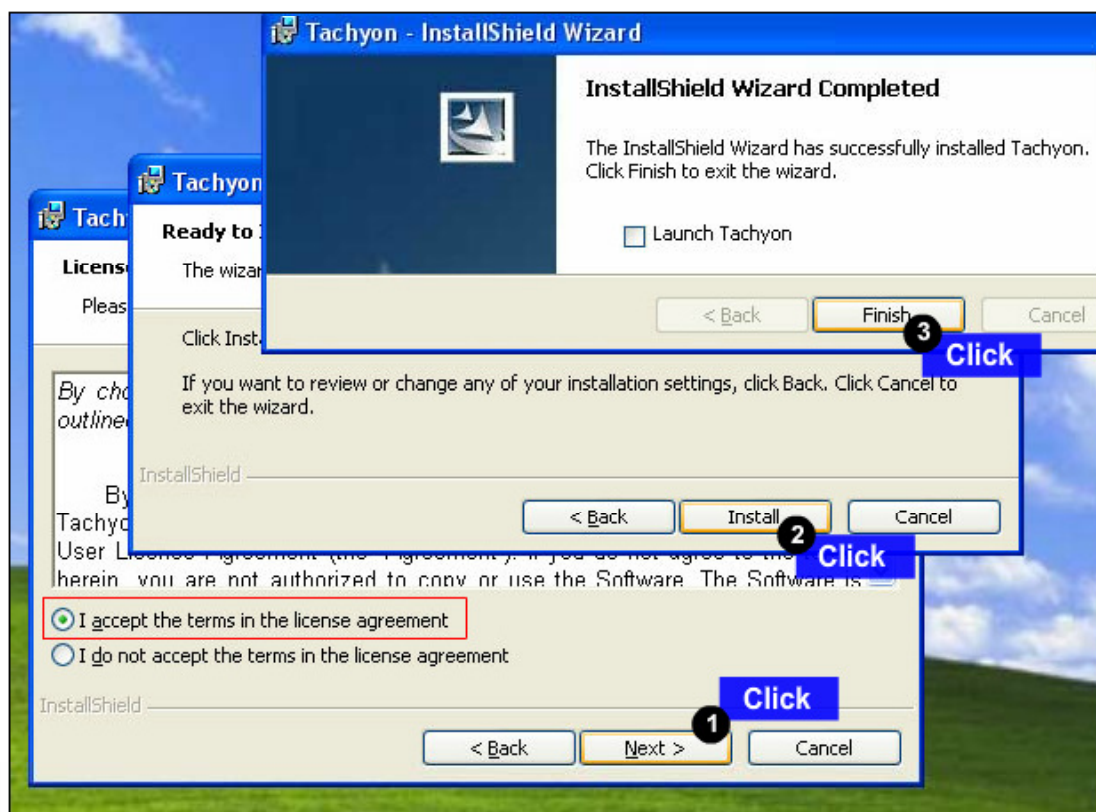
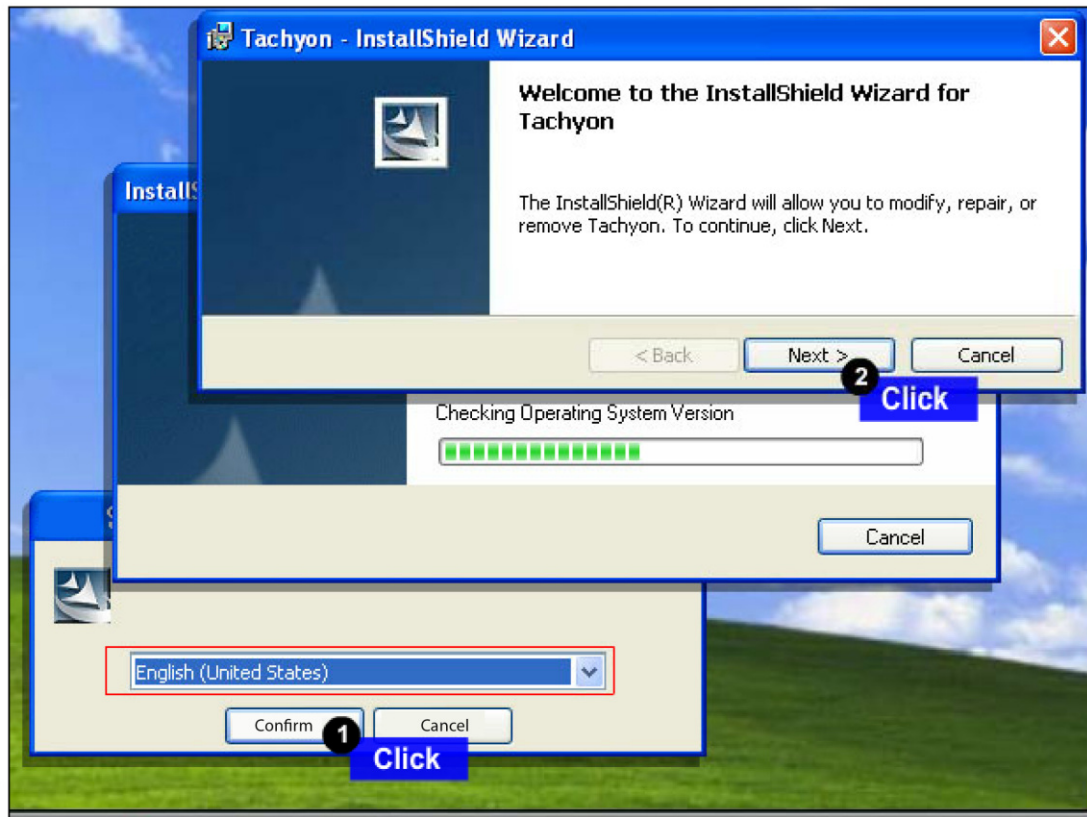
H/W

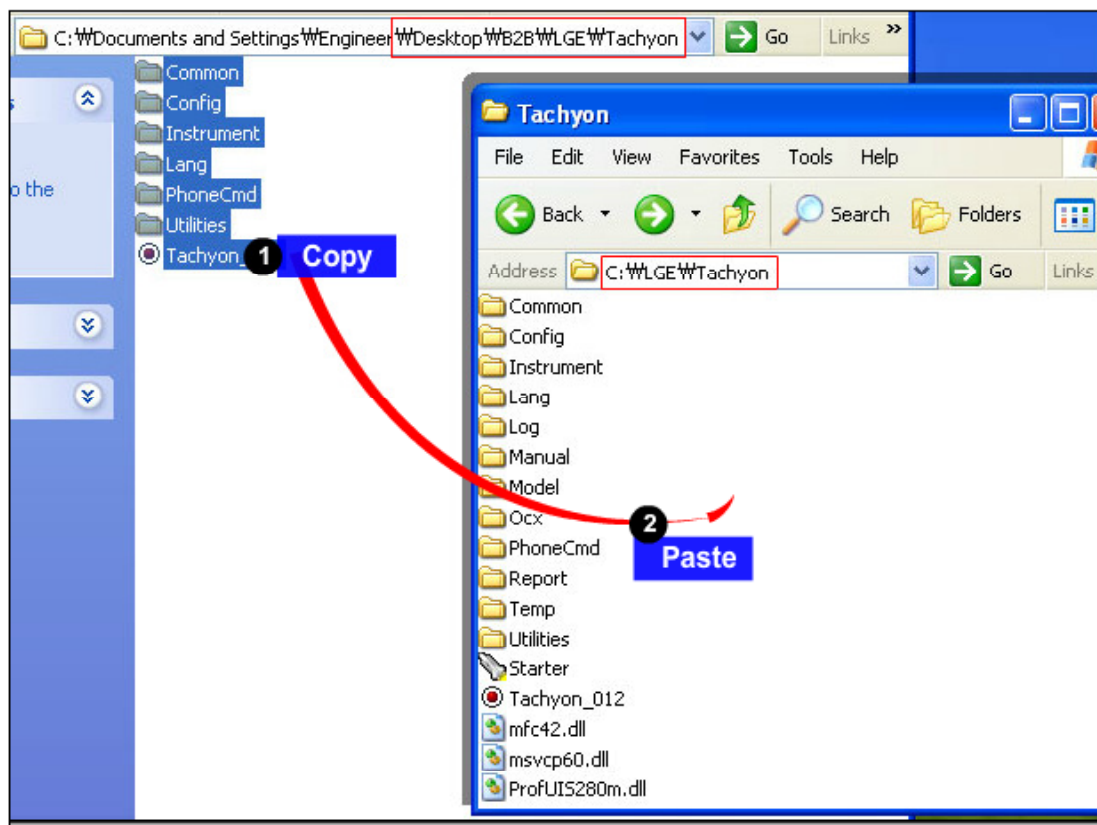
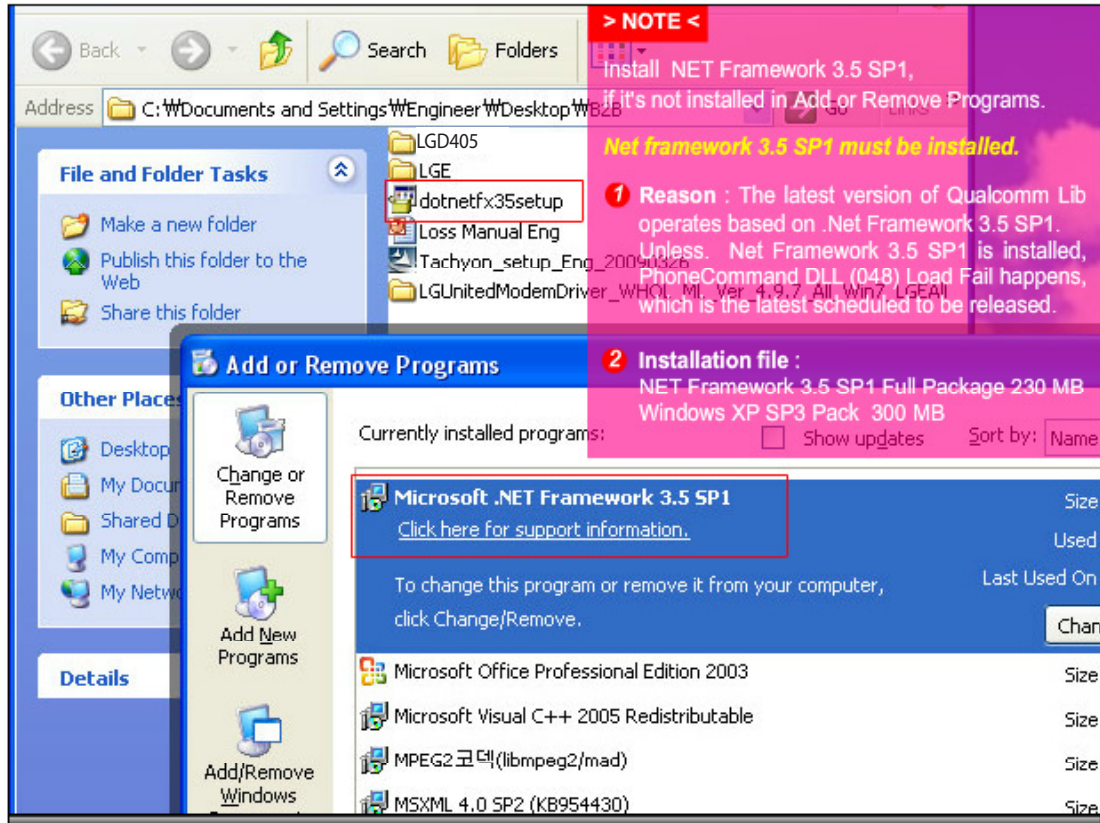
	Name	Part No.
PIF	PIF200(All Type)	BJAY0024021
USB Cable	USB Cable	RAD32247898
Power Cable	DC Power Cable	RAD32247878
I/O Cable		
RF Cable_Main		
Power Supply_PIF	Power Supply 5.3V	
Power Supply_Phone	Power Supply 5.0V	
RF Test Equipment	E5515C(8960)	
NOTICE		

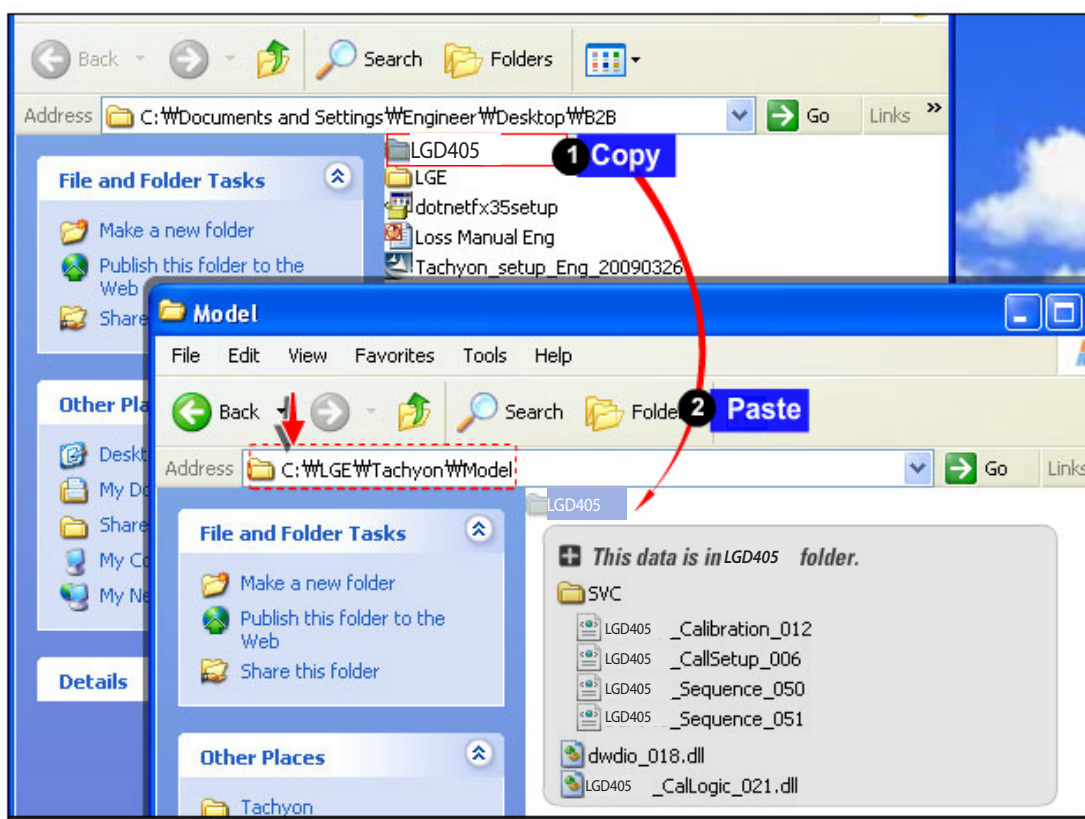
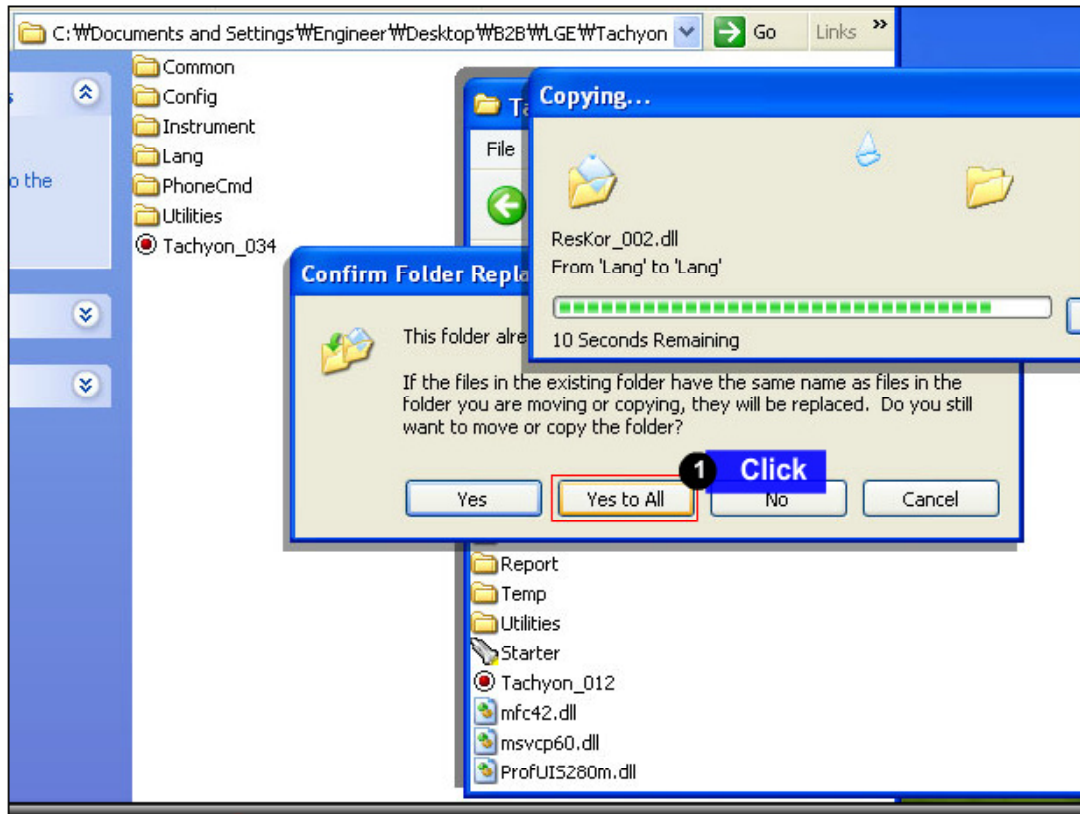
9. CALIBRATION

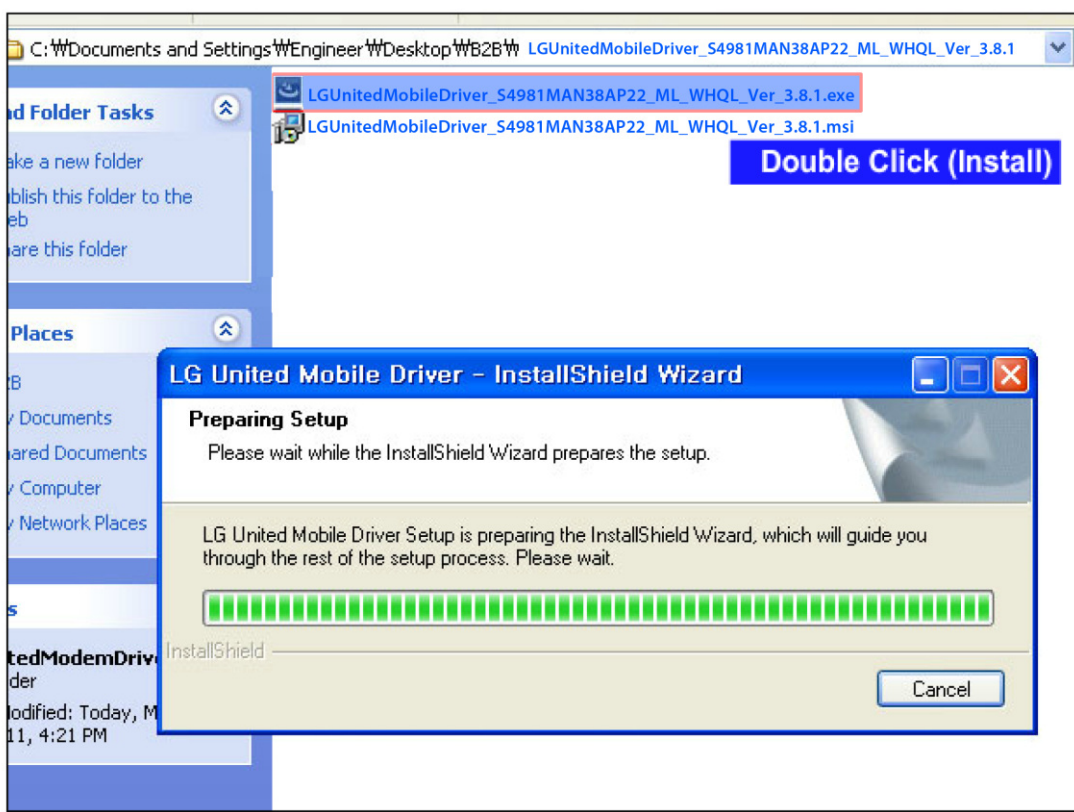
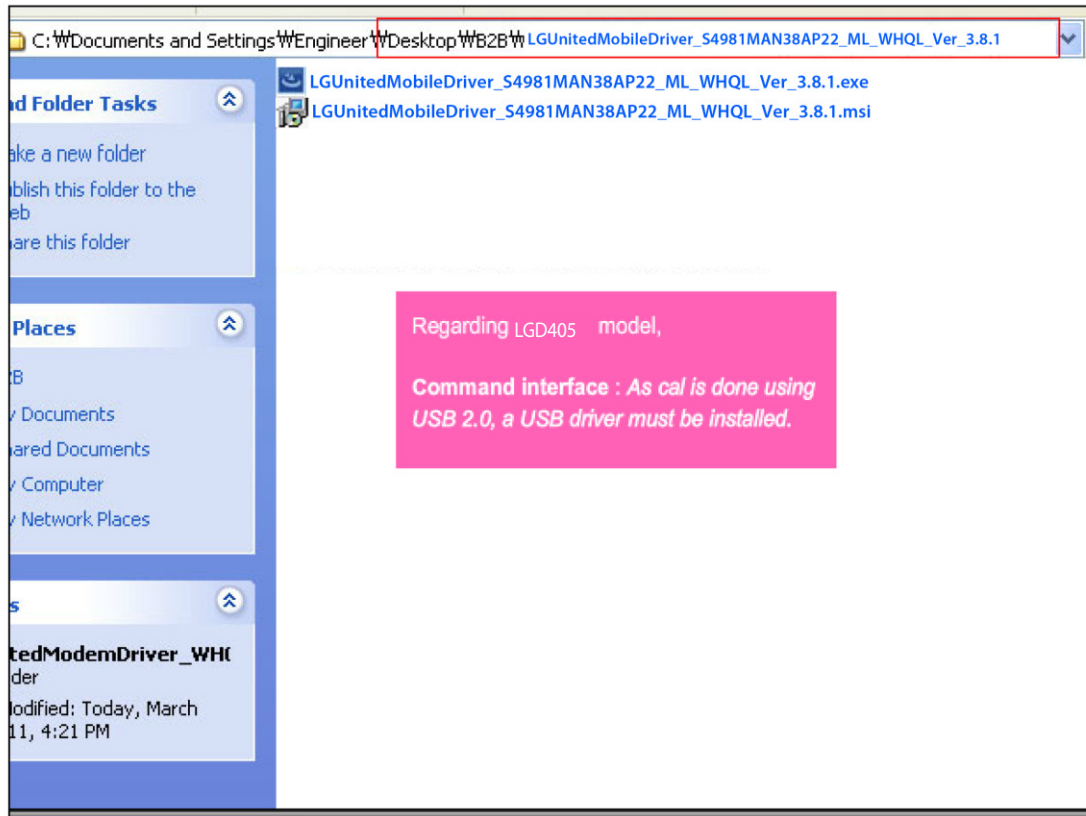




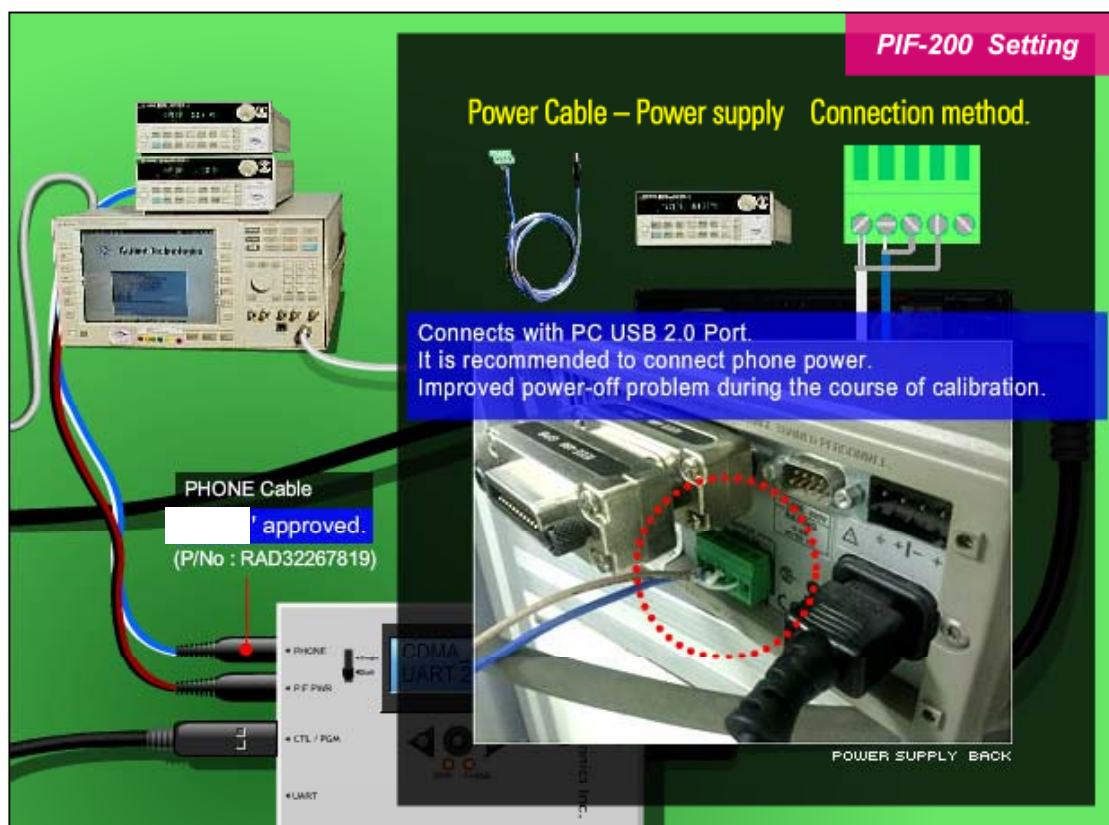
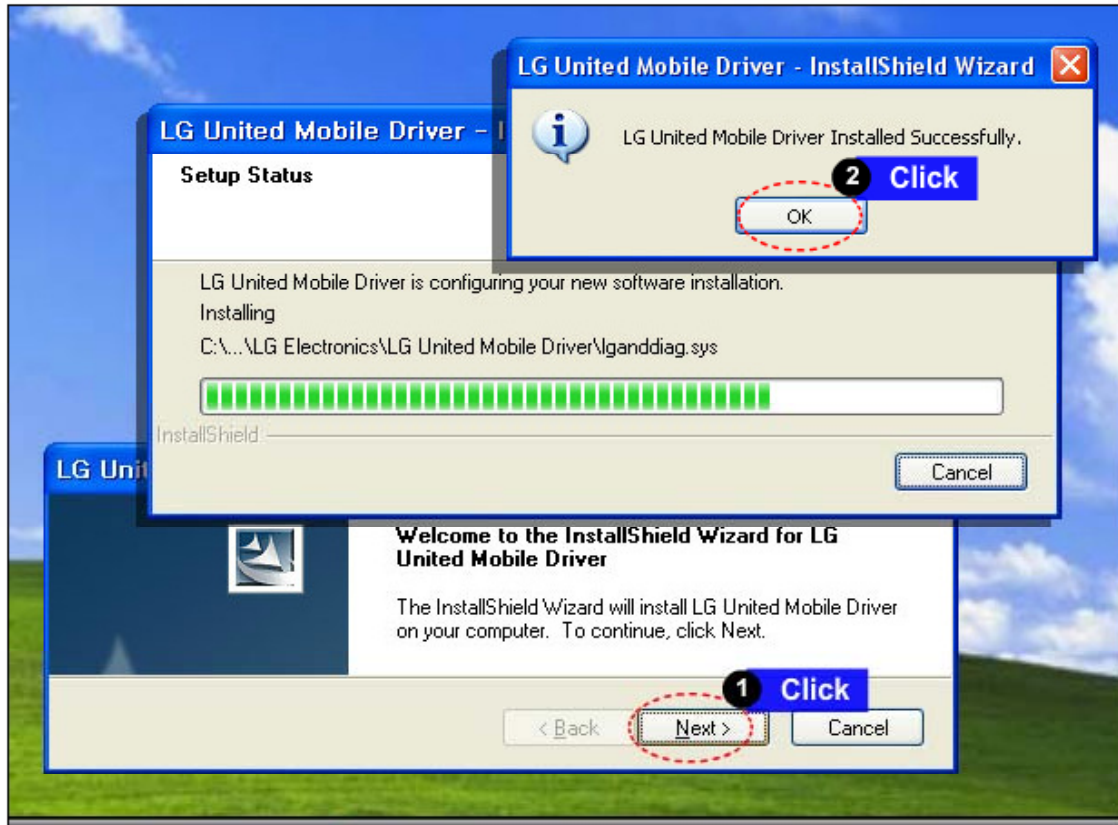




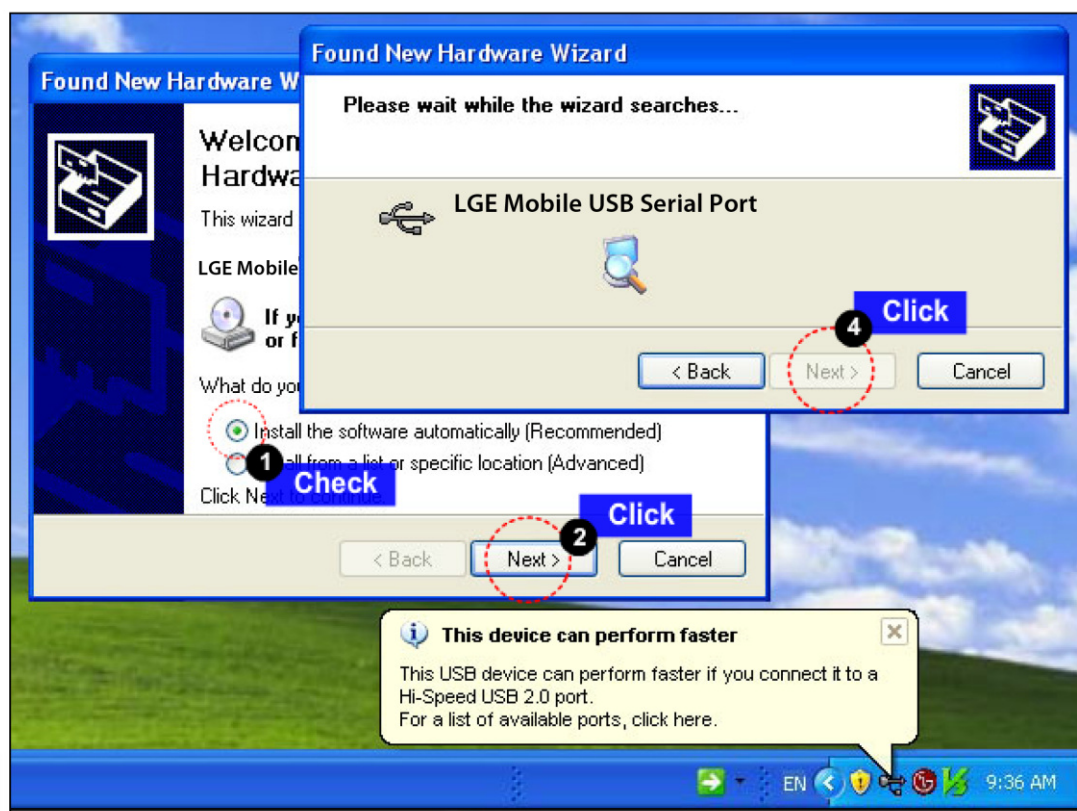
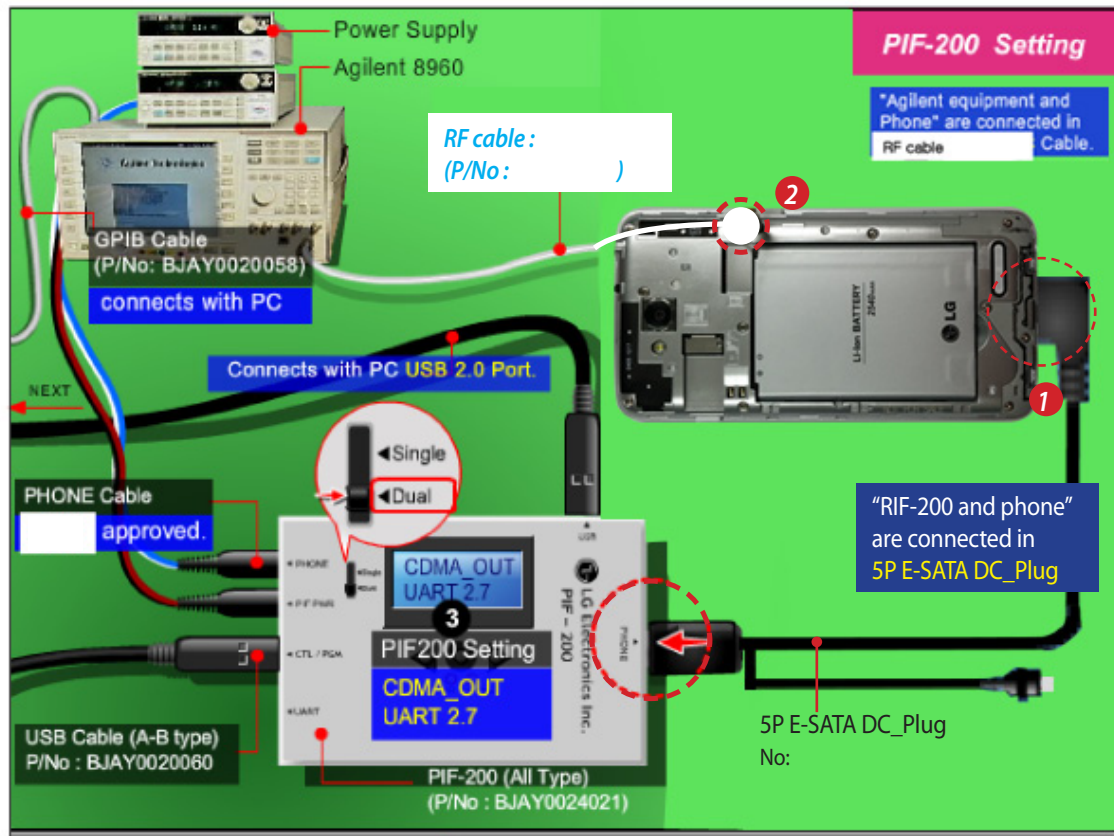


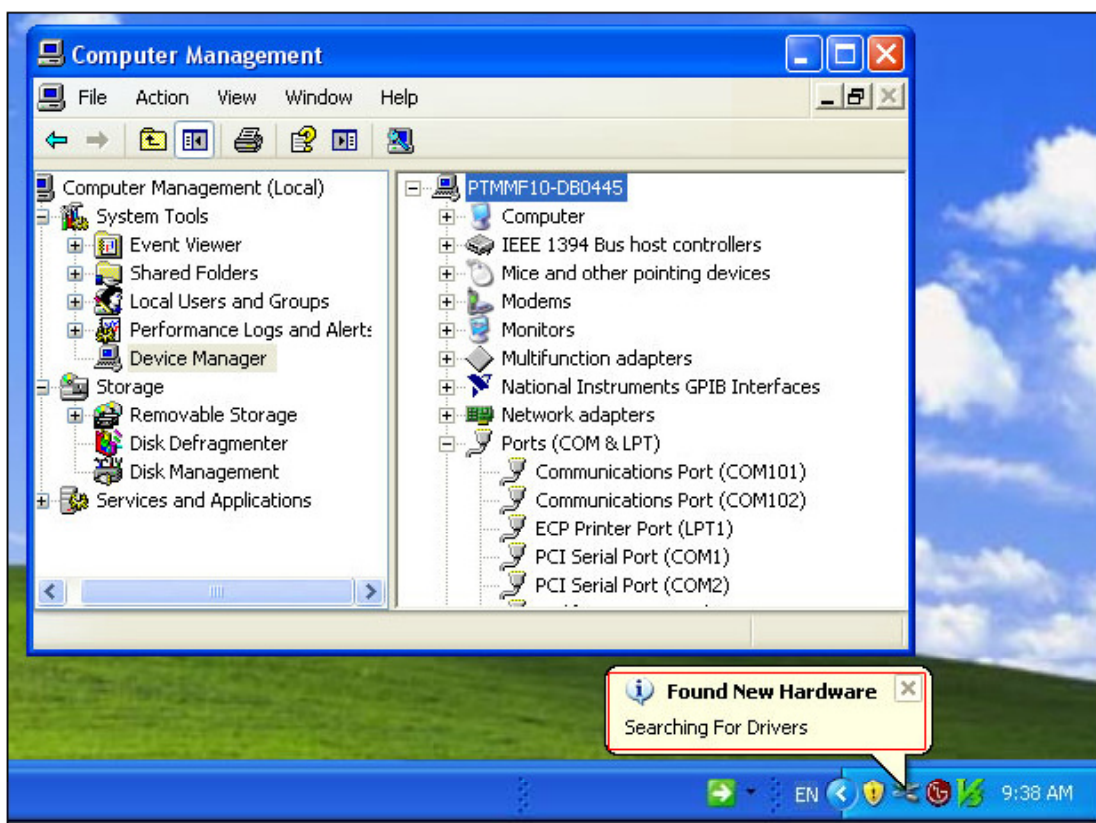
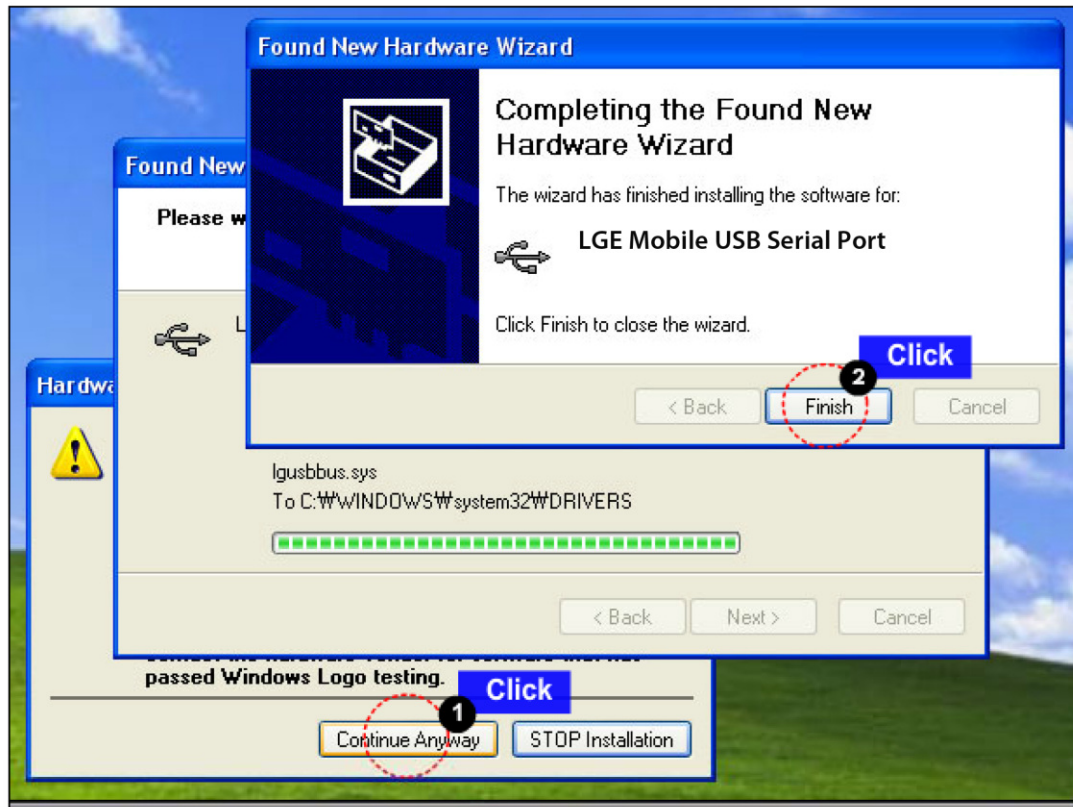


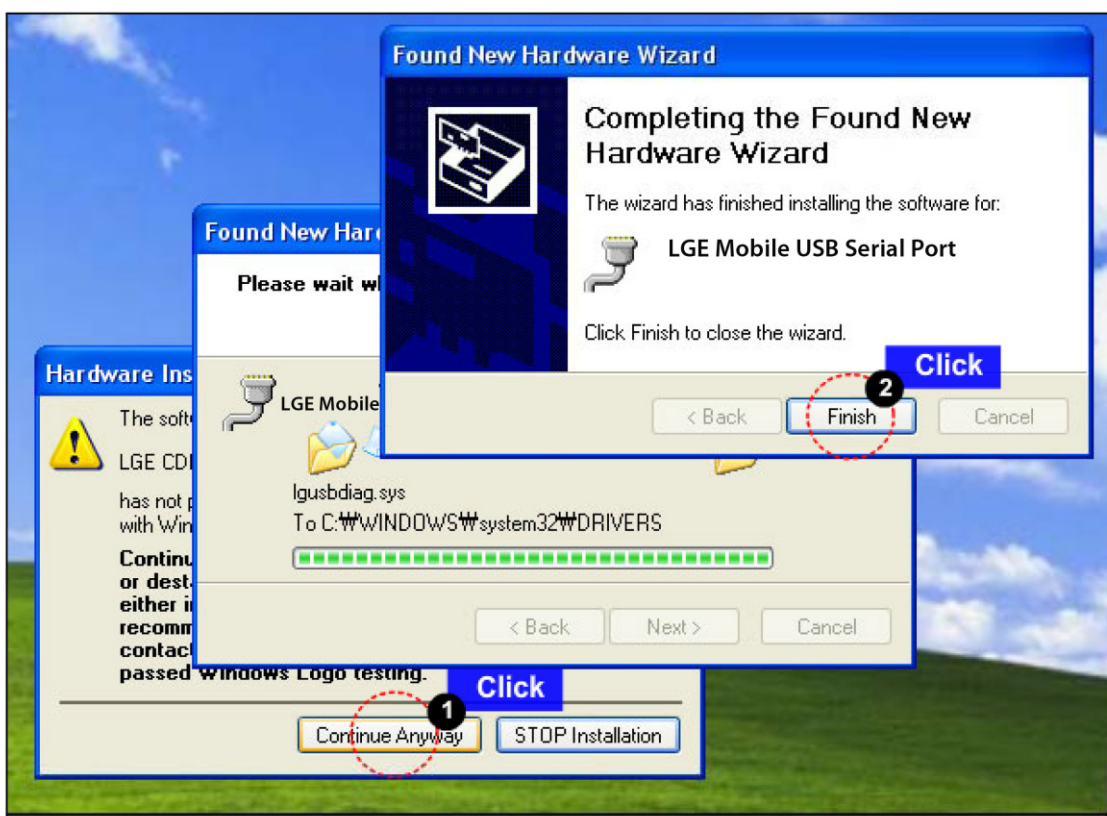
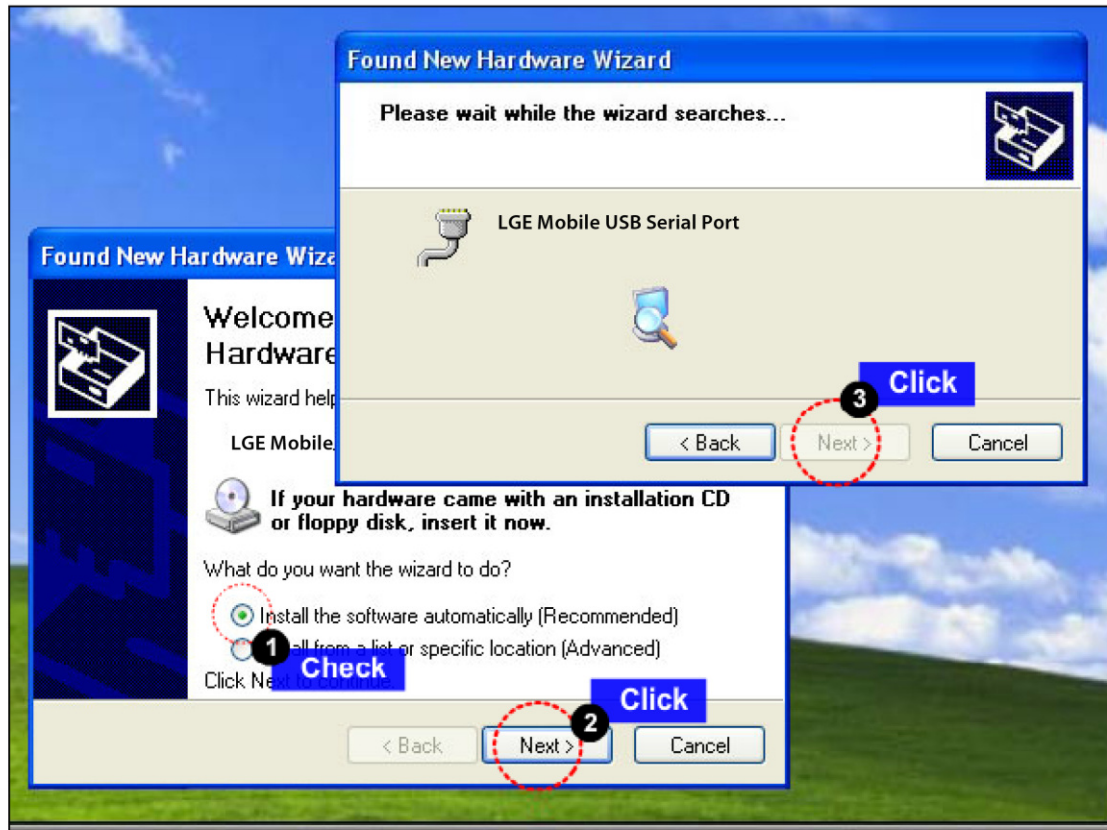
9. CALIBRATION

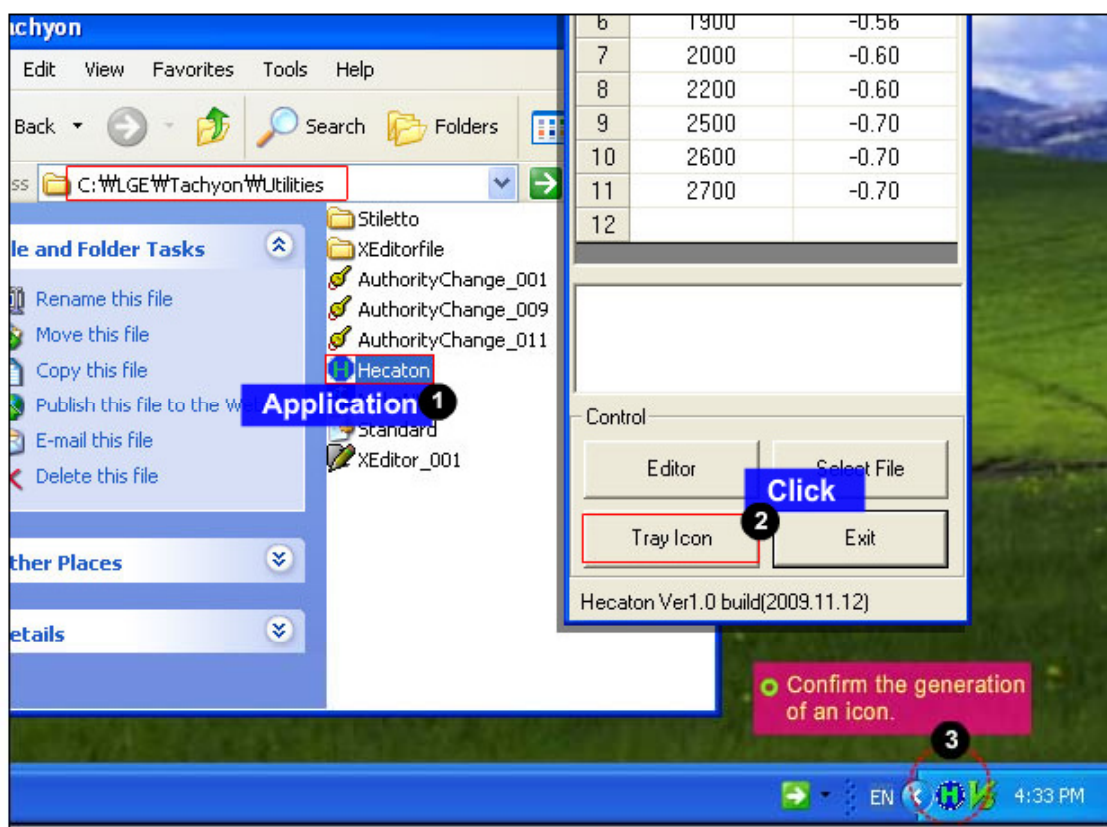
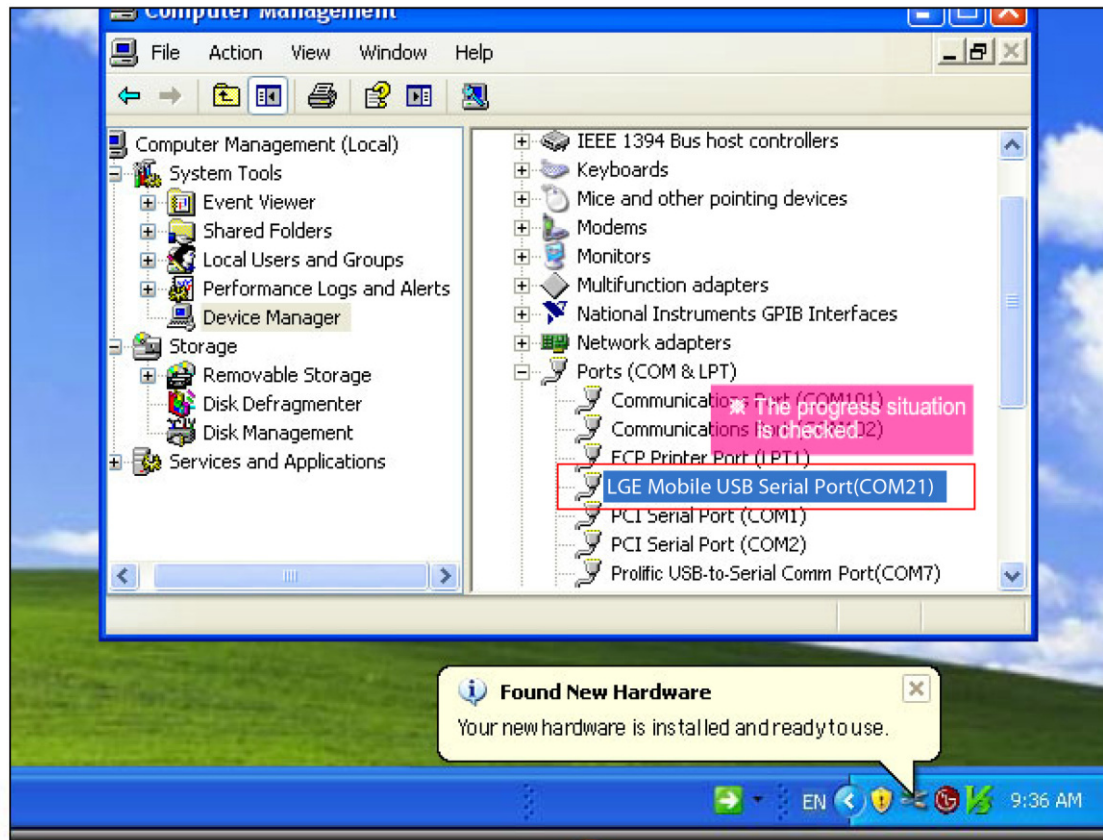


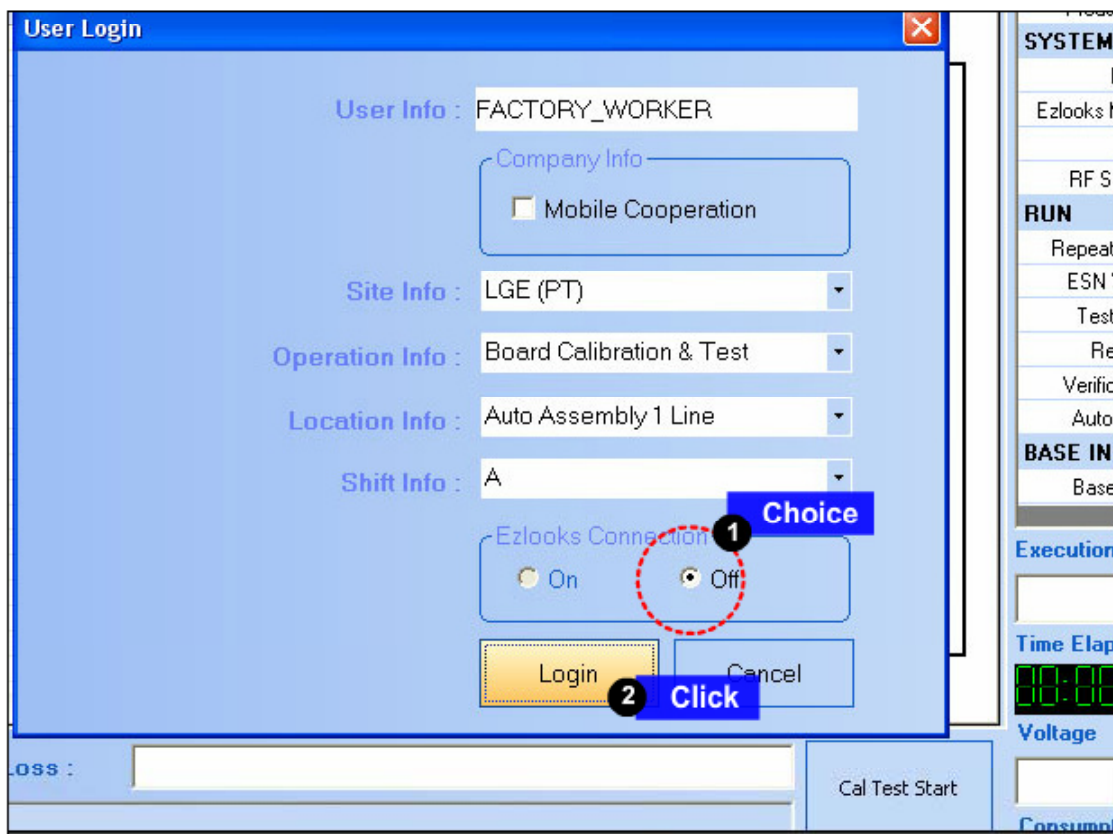
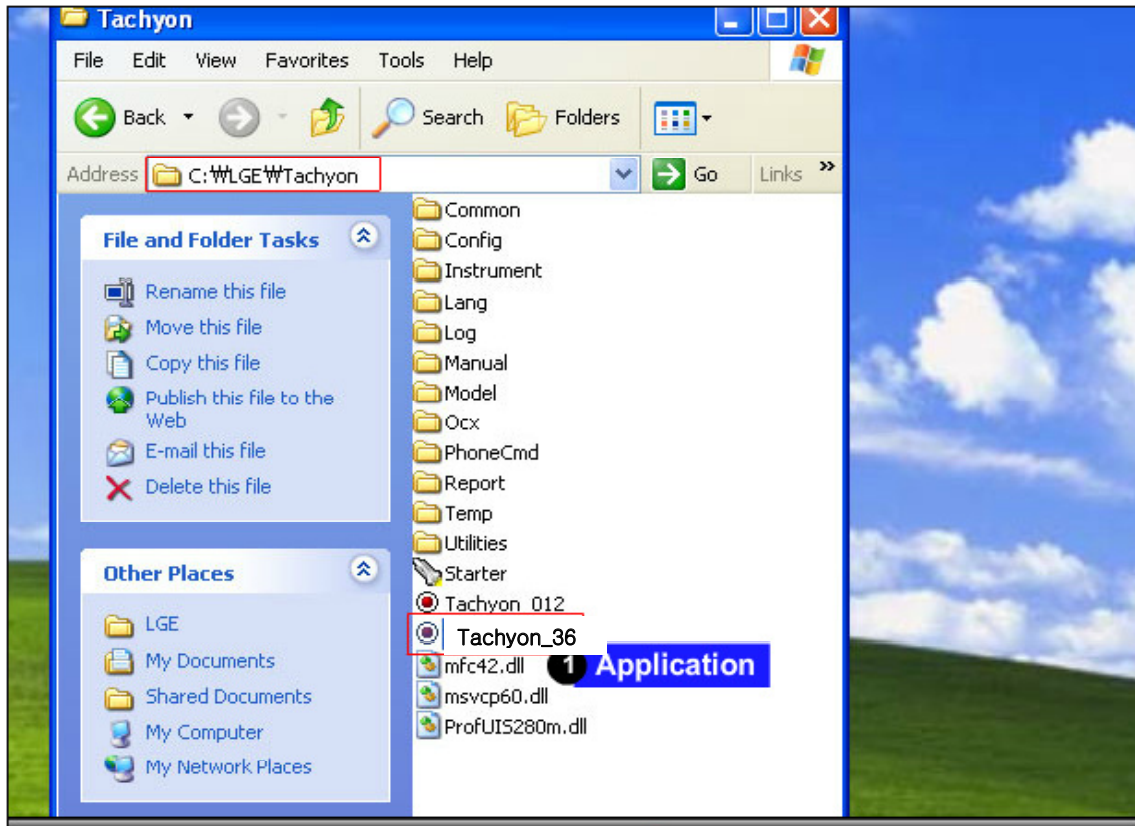
9. CALIBRATION

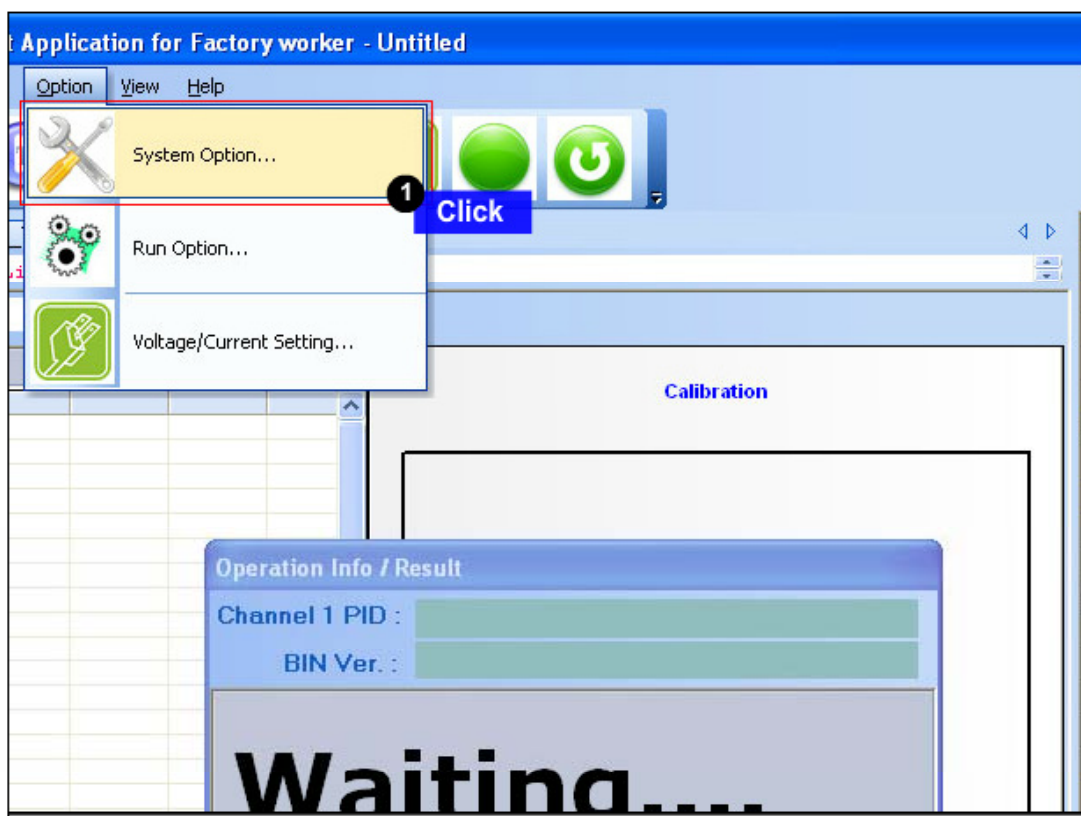
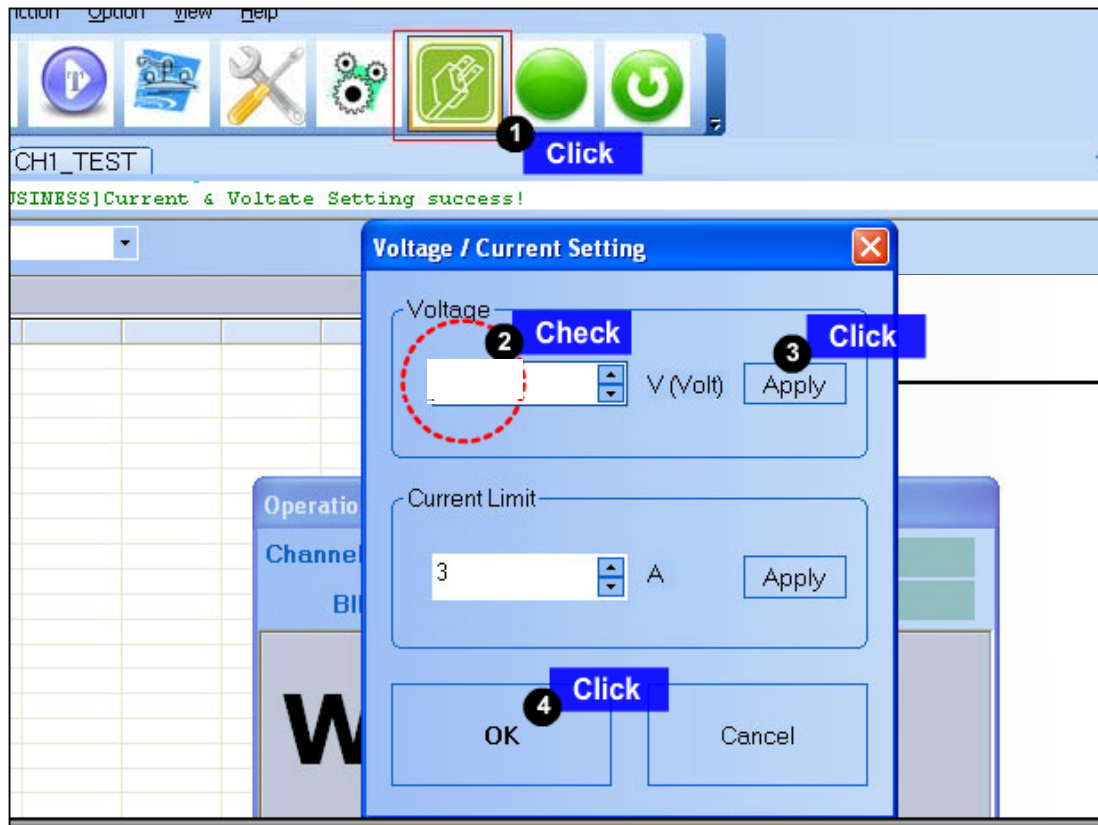


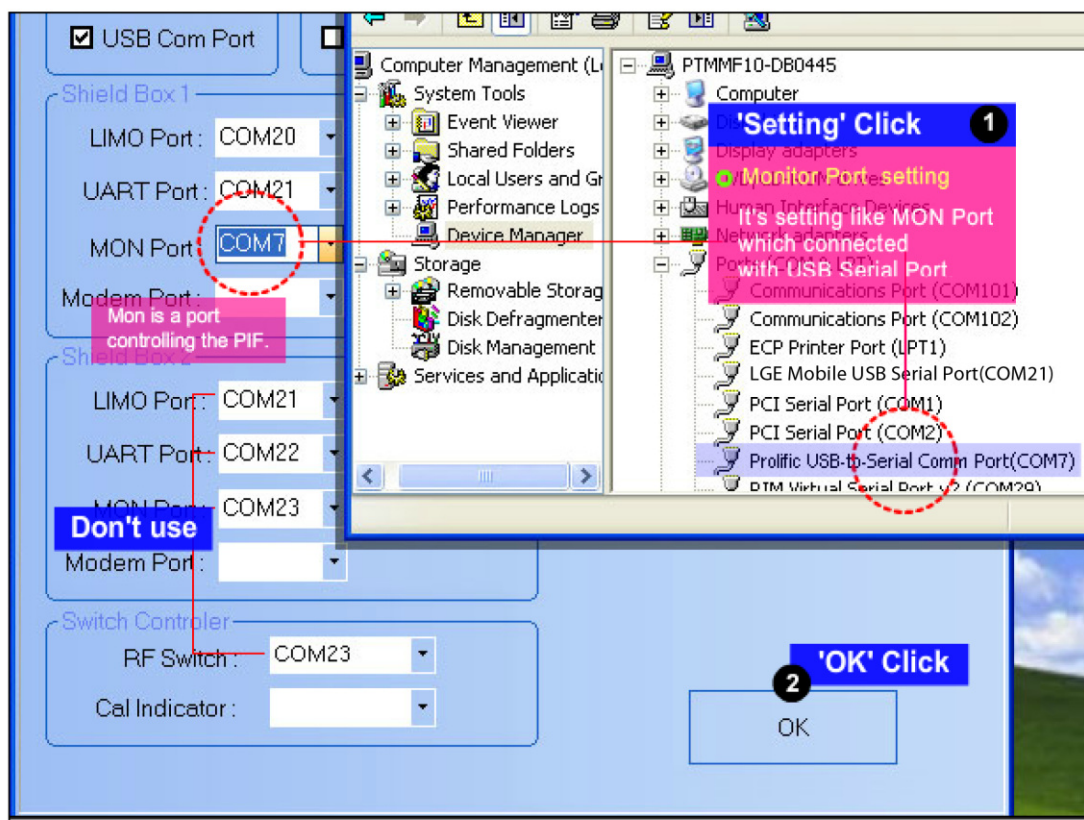
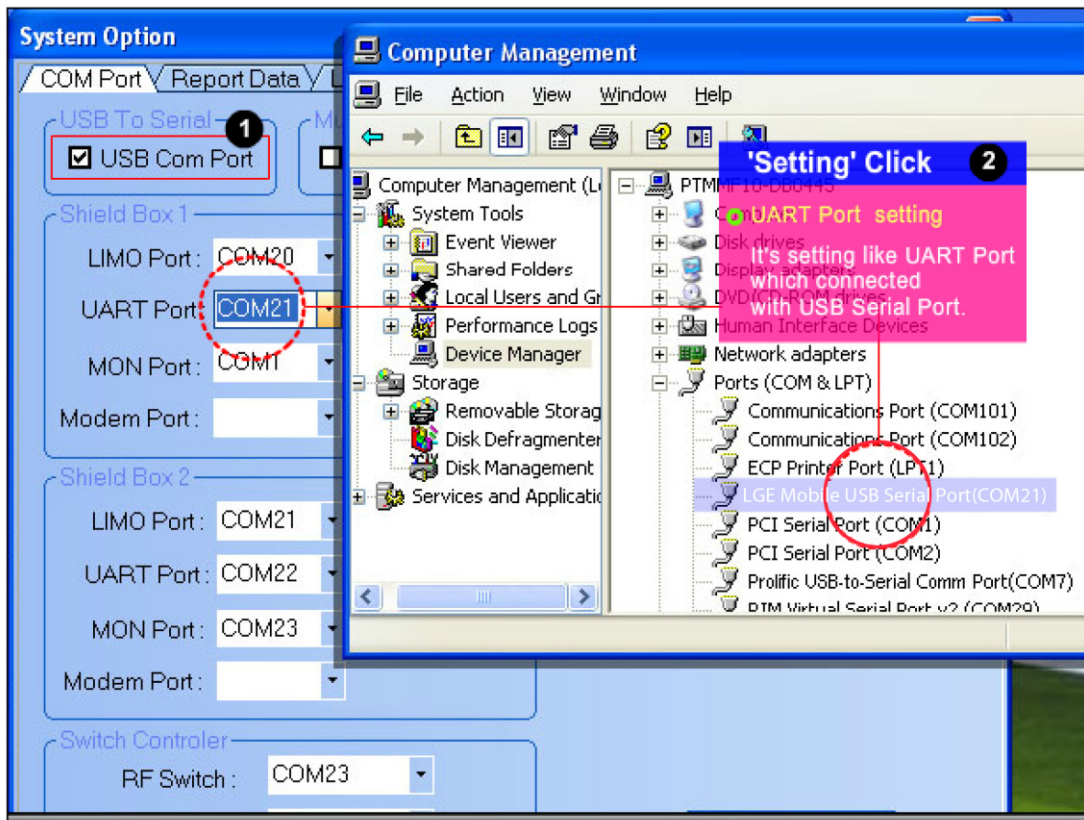


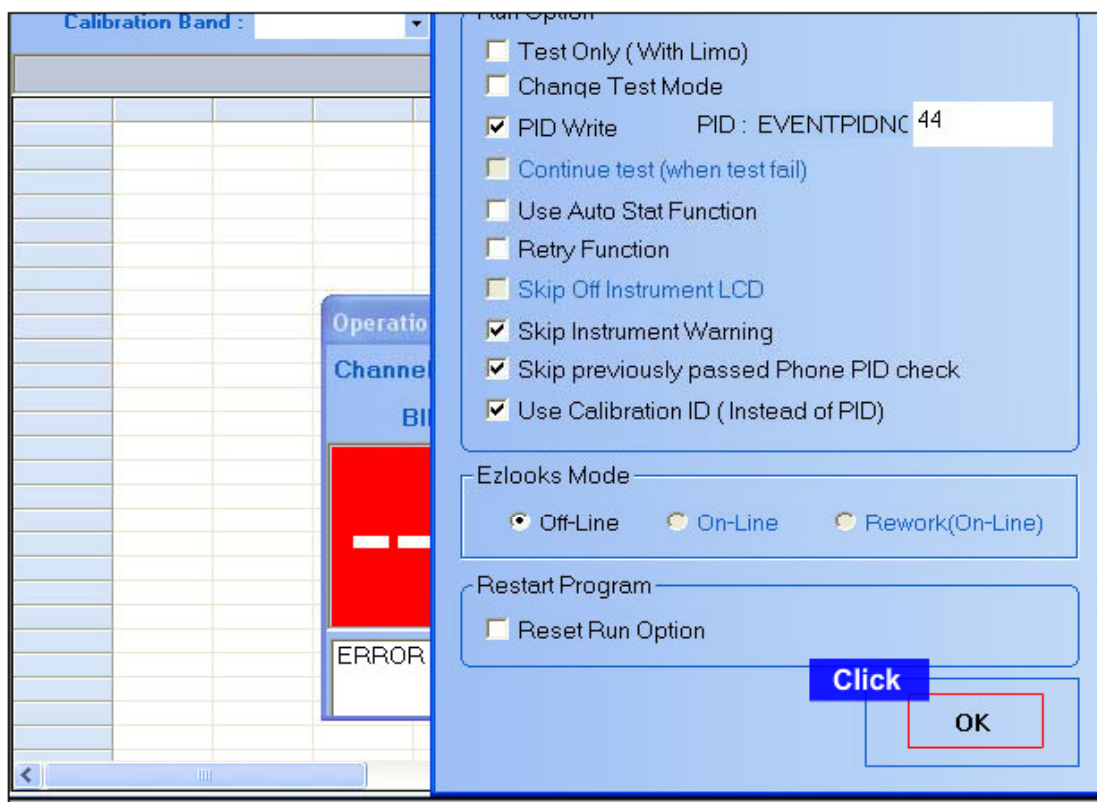
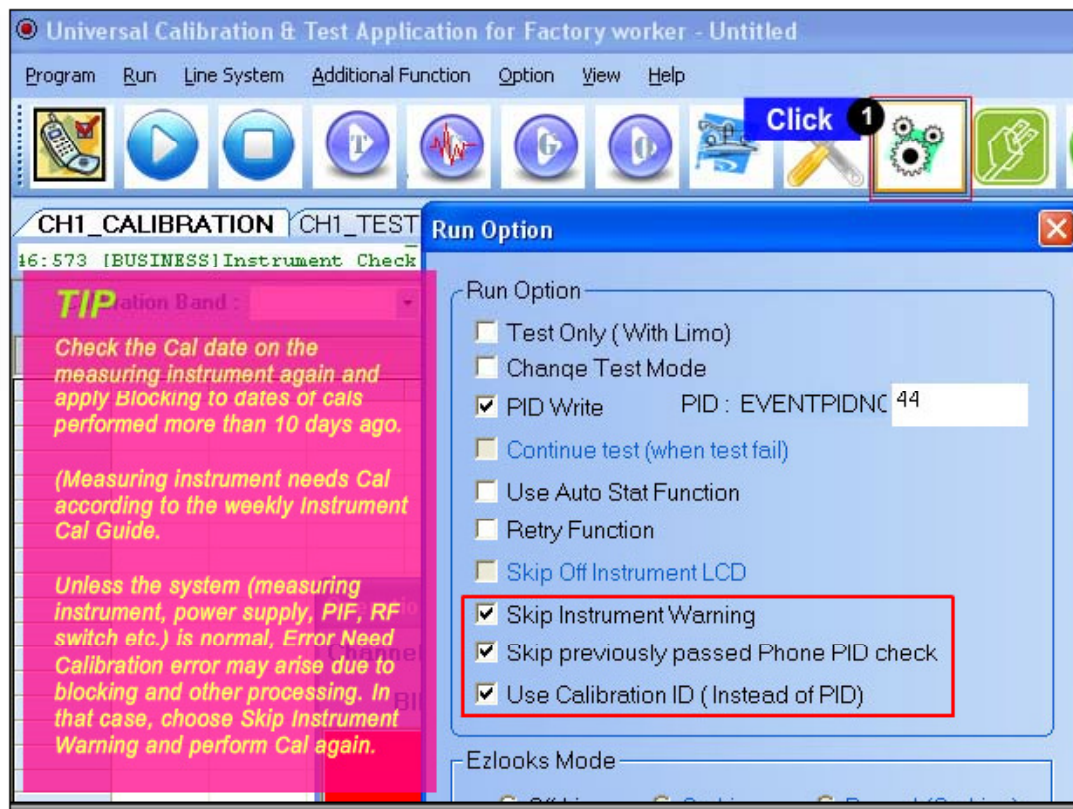


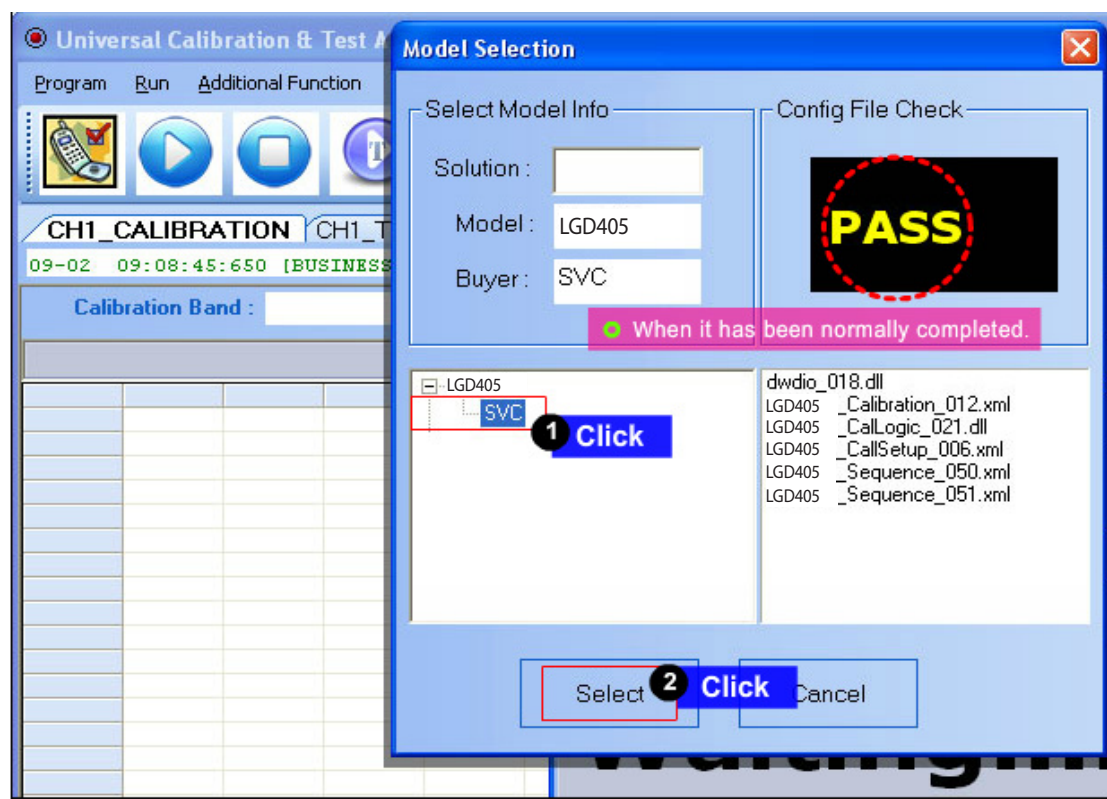
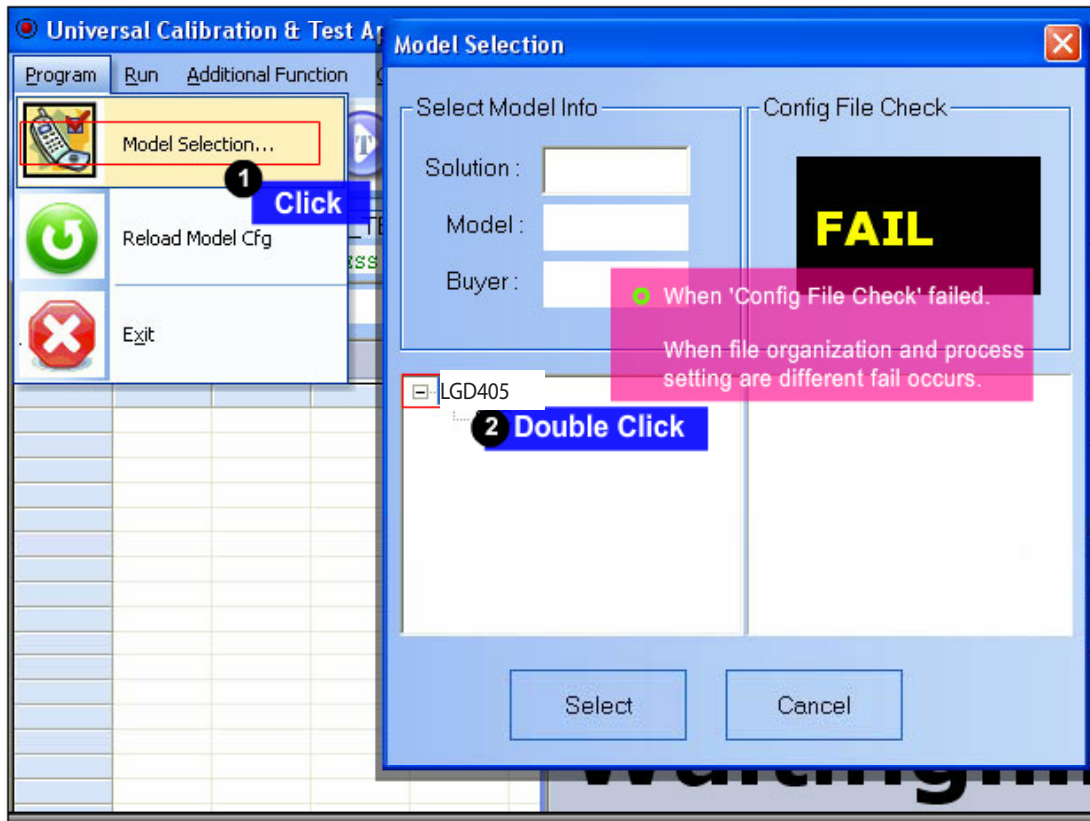


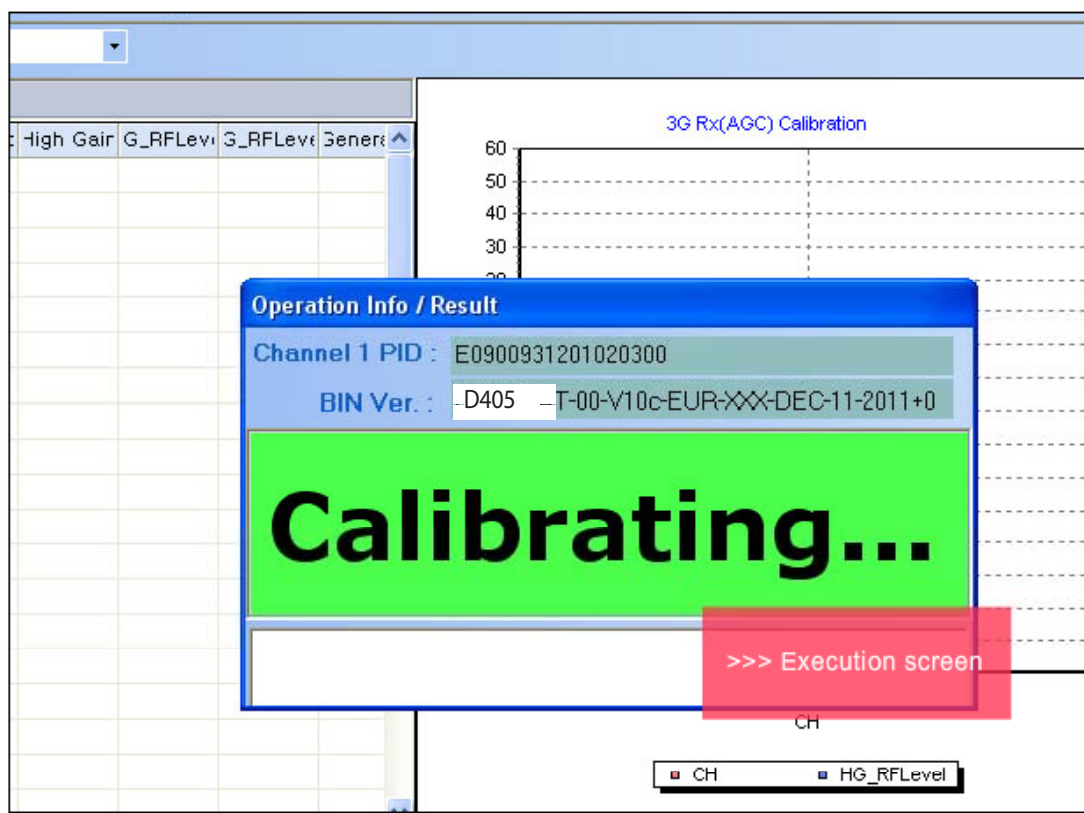
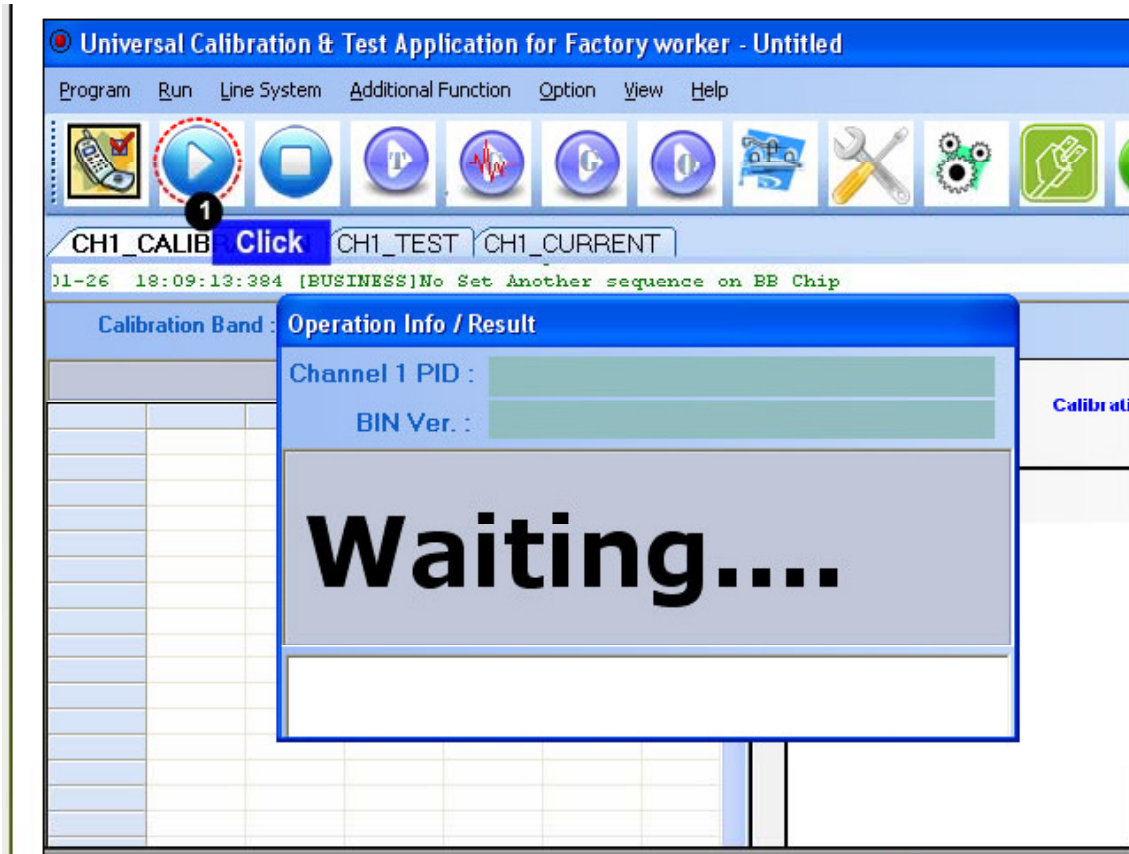












				CH01	CH02	CH03	
				10562	10700	10838	PASS
				☒	☒	☒	
	NC	23,7	22,3	23,000	22,963	22,976	
MARGIN				☐	☒	☐	
	SEGMENT-F	-0,4	-1,6		-1,148		
	SEGMENT						
	SEGMENT						
	SEGMENT						
H							
	NC						
LEAKAGE RAT							
	ACLR-5M						
	ACLR+5M						
	ACLR-10M						
	ACLR+10M						
MASK							
	NC			☐	☒	☐	
	EVM-20DBM	17,50	0,00		4,933		
	PCDE-20DBM	-15,00	0,00		-38,716		

Operation Info / Result

Channel 1 PID : E0900931201020302

BIN Ver. : D405 AT-00-V10c-EUR-XXX-DEC-11-2011+0

Auto Testing

>>> Execution screen

	Condition	USL	LSL	CH01	CH02	CH03	P/F
				10562	10700	10838	PASS
				☒	☒	☒	
	NC	23,7	22,3	23,065	22,983	23,013	
MARGIN				☐	☒	☐	
	SEGMENT						
	SEGMENT						
	SEGMENT						
	SEGMENT						
OTH							
	NC						
LEAKAGE RAT							
	ACLR-5M						
	ACLR+5M						
	ACLR-10M						
	ACLR+10M						
N MASK							
	NC	0,5	-0,5				
Y							
	EVM-20DBM	17,50	0,00		4,720		
	PCDE-20DBM	-15,00	0,00		-38,441		

Operation Info / Result

Channel 1 PID : F0900931201020299

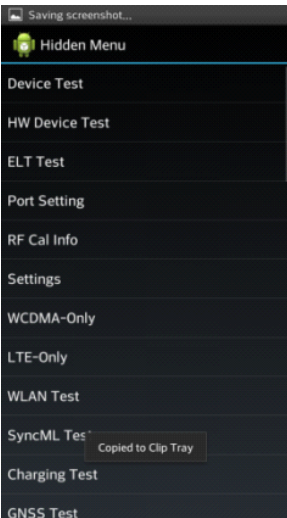
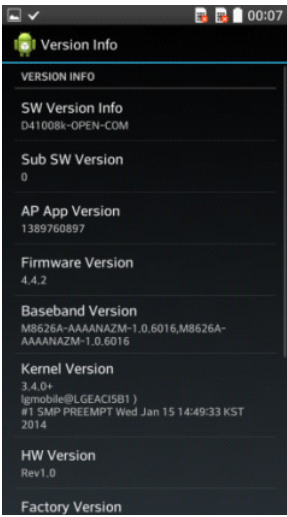
BIN Ver. : D405 AT-00-V10c-EUR-XXX-DEC-11-2011+0

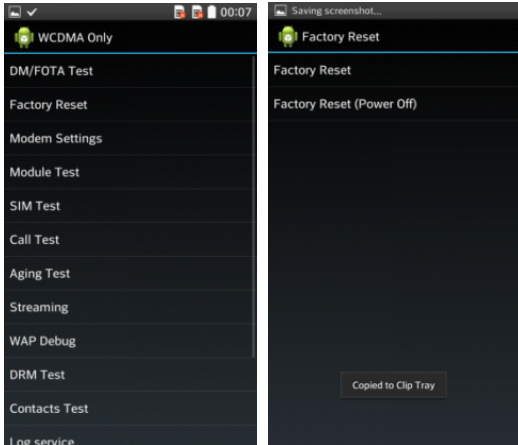
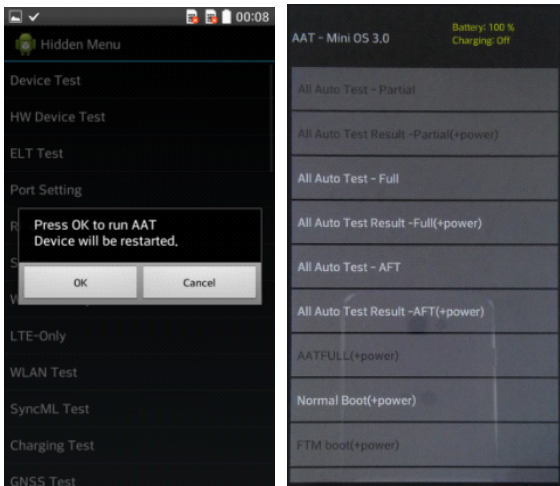
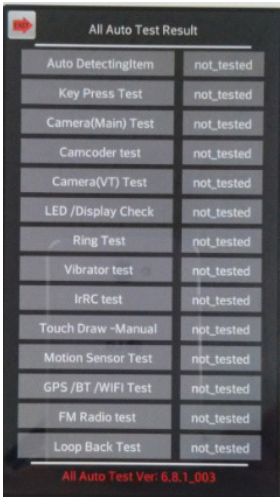
--- PASS ---

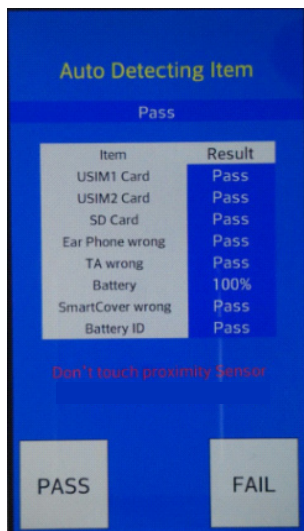
'PASS' The End

System Loss : MySystem(MS).gms RF900 6C.grf

10. HIDDEN MENU

	Hidden Menu Start Start shortcut keys: 3845#*405#
	Hidden Menu Start the desired menu: Menu, click
	Version Info Classified Information representation -> Hidden Menu -> Settings -> Version Info

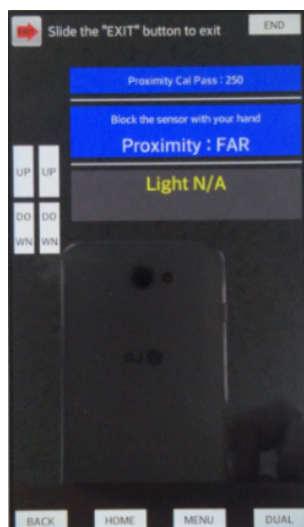
	Factory Reset Factory Reset : Reset as default Factory Settings Factory Reset(Power Off) : Reset as default Factory Settings and Power Off -> Hidden menu -> WCDMA-Only -> Factory Reset
	AAT Device Test All auto Test - Full : -> You can test all functions automatically
	All auto Test - Full (+Power) -> You can check Test Results When you touch the screen with pushing power key



Auto Detecting Item

Check below Items

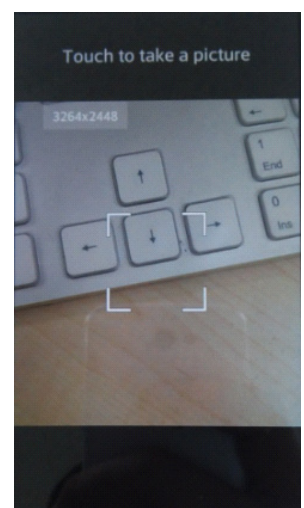
- > USIM Card1 : connecting is PASS
- > USIM Card2 : connecting is PASS
- > SD Card : connecting is PASS
- > Ear Phone : No connecting is PASS
- > TA wrong : No connecting is PASS
- > SmartCover : No connecting is PASS
- > battery ID : Right Battery ID is pass



Key Press Test

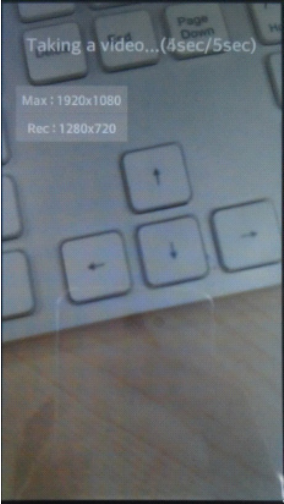
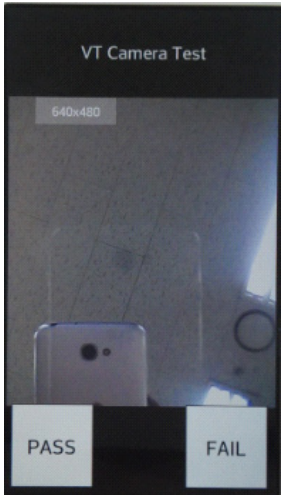
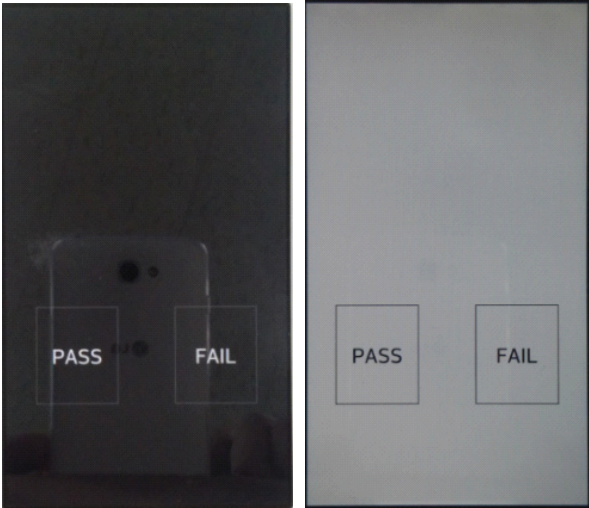
Check below Items

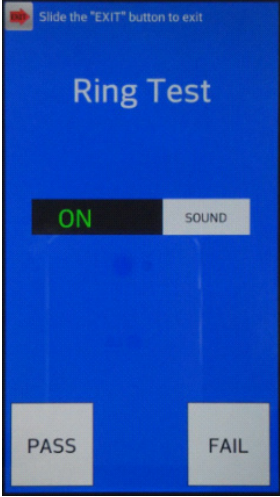
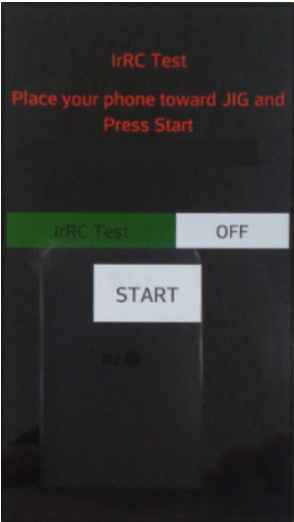
- Up/Down key : Hard Key
- Power key : Hard Key
- Memo key : Hard key
- Menu key : Touch Key
- Home key : Touch Key
- Back key : Touch Key
- SIM Switch key : touch key
- Proximity Sensor : Blind the Proximity sensor

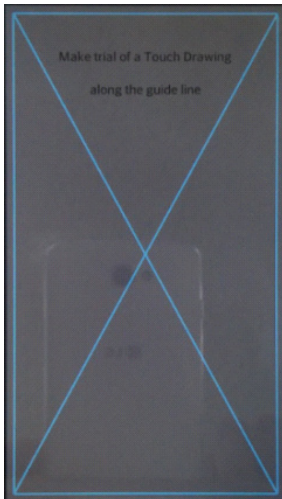


Camera Test – Snapshot

Touch screen to capture

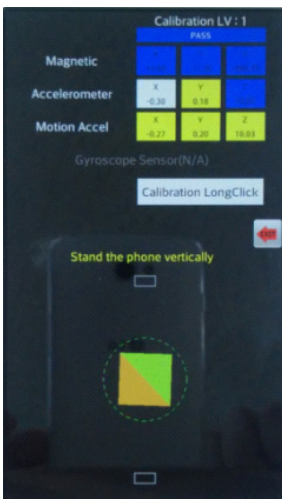
	Camcorder Test Camera is recoding for 5 seconds
	VT Camera Test Show the VT Camera image
	Display Check Test Check Black & White Color

	Sound Test Check the sound
	Vibrator Test Check the vibration
	IrRC Test Touch the 'Start' Button and check IrRC function through JIG



Touch Drawing Test

Draw a guide line



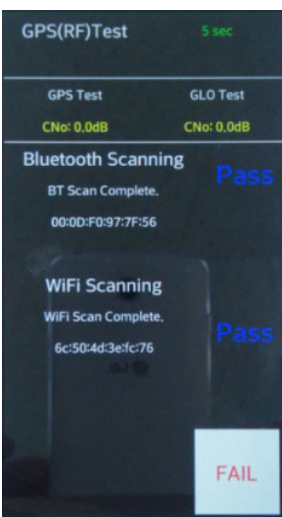
Motion Sensor Test

Check 3 positions & Magnetic sensor

-> Position horizontally

-> Position Vertically

-> Position side



GPS BT Wifi Test

GPS(RF) test : CNO is some value : OK

Bluetooth Scanning is PASS : OK

WiFi Scanning is PASS : OK

	FM Radio Test Connect wired headset Check the volume of FM radio
	Loopback Test Check the Audio loopback Check the Speaker loopback
	Individual item You can test only individual item

11. DISASSEMBLE GUIDE

1. Disassemble Battery Cover



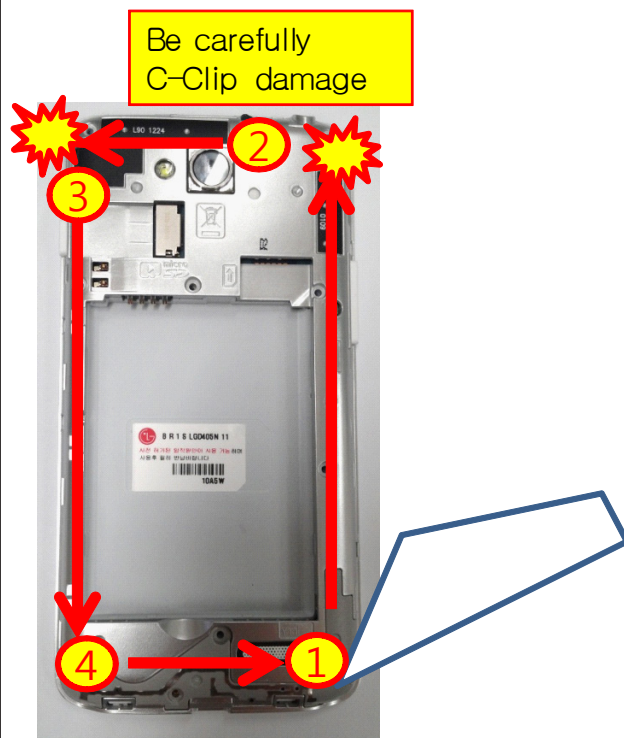
Take apart the battery cover using notch below

2. Disassemble Battery & Screw

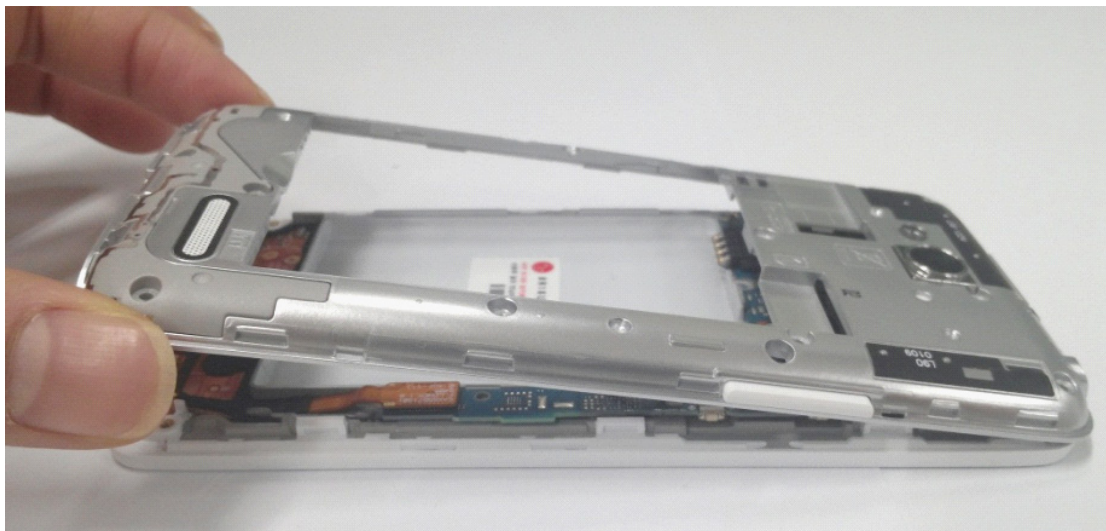


Take apart the battery and remove screw (11 point)

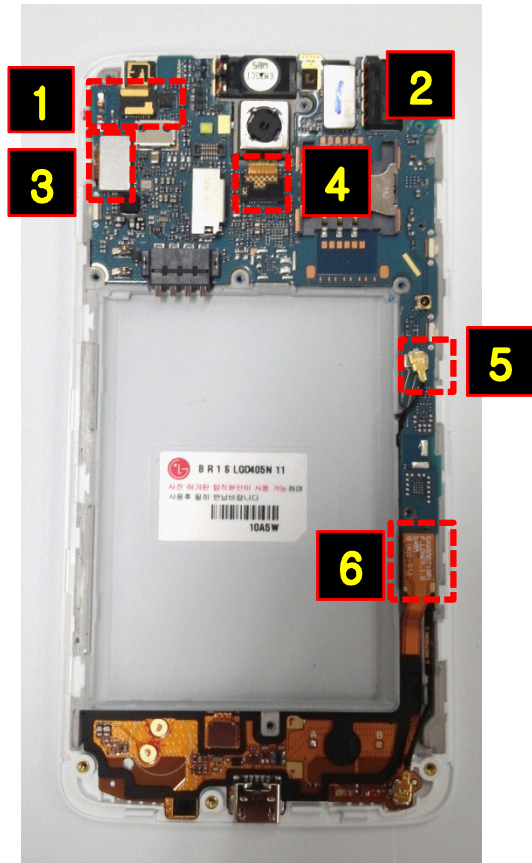
3. Disassemble Rear Cover



1. Using the tool or hand make gap between Rear Cover and Front Cover
2. Insert spatula, in the bottom right of the phone and unhook right, top and left (Back view)



4. Disassemble Main PCB



1. Take connectors and coaxial cable (1~6) out of the Main PCB



2. Take apart the Main PCB

9. Complete disassembling D405



12. EXPLODED VIEW & REPLACEMENT PART LIST

This document is draft version, so the contents will be updated after registering the final one.