Internal Use Only

Service Manual

Model : KT610

Service Manual

KT610

Date: June, 2008 / Issue 1.0

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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 System Overview

Item	Specification
Shape	GSM900/1800/1900 and WCDMA Communicator Handset
Size	108.9 X 53.9 X 17.2 mm
Weight	124 g (with 950mAh Battery)
Power	3.7V normal, 950 mAh Li-Polymer
Talk Time (with 950mAh)	Over 170 min (TX = 12dBm,Low Power mode) Over 180 min (TX Level = Max)
Standby Time (with 950mAh)	Over 220 hours (DRX = 1.28) Over 290 hours (Paging Period = 5)
Antenna	Internal type and Antenna
LCD	TFT LCD (Main : 2.4', 320 x 240, Sub :1.45" 160X64)
LCD Backlight	LED Back Light (Main, Sub)
Camera	Dual Camera ; 2 Mega pixel (CMOS), VGA Camera (CMOS)
Vibrator	Yes (Cylinder Type)
LED Indicator	No
MIC	Yes
Receiver	Yes
Earphone Jack	Yes
Connectivity	Bluetooth, USB
Volume Key	Push Type (+, -)
External Memory	Micro-SD
I/O Connect	18 Pin

2.2 Usable environment

2.2.1 Environment

Item	Specification
Voltage	3.7 V(Typ), [Shut Down : 3.22 V]
Operation Temp	-20 ~ +60 °C
Storage Temp	-20 ~ +70 °C
Humidity	85 % (Max)

2.2.2 Environment (Accessory)

Reference	Spec.	Min	Typ.	Max	Unit
TA Power	Available power	100	220	240	Vac

* CLA : 12~24V(DC).

2.3 Radio Performance

2.3.1 Transmitter - GSM Mode

No	Item		GSM		DCS & PCS	
1	Conducted Spurious Emission	MS allocated Channel	100k~1GHz	-39dBm	9k ~ 1GHz	-39dBm
					1G~[A]MHz	-33dBm
			1G~12.75GHz	-33dBm	[A]M~[B]MHz	-39dBm
					[B]M~12.75GHz	-33dBm
		Idle Mode	100k~880MHz	-60dBm	100k~880MHz	-60dBm
			880M~915MHz	-62dBm	880M~915MHz	-62dBm
			915M~1GHz	-60dBm	915M~1GHz	-60dBm
			1G~[A]MHz	-50dBm	1G~[A]MHz	-50dBm
			[A]M~[B]MHz	-56dBm	[A]M~[B]MHz	-56dBm
			[B]M~12.5GHz	-50dBm	[B]M~12.5GHz	-50dBm
2	Radiated Spurious Emission	MS allocated Channel	30M ~ 1GHz	-36dBm	30M~1GHz	36dBm
					1G~[A]MHz	-30dBm
			1G ~ 4GHz	-30dBm	[A]M~[B]MHz	-36dBm
					[B]M~4GHz	-30dBm
		Idle Mode	30M ~ 880MHz	-57dBm	30M~880MHz	-57dBm
			880M ~ 915MHz	-59dBm	880M~915MHz	-59dBm
			915M~1GHz	-57dBm	915M~1GHz	-57dBm
			1G~[A]MHz	-47dBm	1G~[A]MHz	-47dBm
			[A]M~[B]MHz	-53dBm	[A]M~[B]MHz	-53dBm
			[B]M~4GHz	-47dBm	[B]M~4GHz	-47dBm

* In case of DCS : [A] -> 1710, [B] -> 1785* In case of PCS : [A] -> 1850, [B] -> 1910

2. PERFORMANCE

No	Item		GSM		DCS & PCS	
3	Frequency Error		± 0.1ppm		± 0.1ppm	
4	Phase Error		± 5(RMS)		± 5(RMS)	
			± 20(PEAK)		± 20(PEAK)	
5	Frequency Error		3dB below reference sensitivity		3dB below reference sensitivity	
	Under Multipath and		RA250 : ± 200Hz		RA250: ± 250Hz	
	Interference Condition		HT100 : ± 100Hz		HT100: ± 250Hz	
			TU50 : ± 100Hz		TU50: ± 150Hz	
			TU3 : ± 150Hz		TU1.5: ± 200Hz	
6	Output RF	Due to	0 ~ 100kHz	+0.5dB	0 ~ 100kHz	+0.5dB
	Spectrum	modulation	200kHz	-30dB	200kHz	-30dB
			250kHz	-33dB	250kHz	-33dB
			400kHz	-60dB	400kHz	-60dB
			600 ~ 1800kHz	-60dB	600 ~ 1800kHz	-60dB
			1800 ~ 3000kHz	-63dB	1800 ~ 6000kHz	-65dB
			3000 ~ 6000kHz	-65dB	≥ 6000kHz	-73dB
			≥ 6000kHz	-71dB		
		Due to	400kHz	-19dB	400kHz	-22dB
		Switching	600kHz	-21dB	600kHz	-24dB
		transient	1200kHz	-21dB	1200kHz	-24dB
			1800kHz	-24dB	1800kHz	-27dB
7	Intermodulation attenuation		-		Frequency offset	800kHz
					Intermodulation product should be Less than 55dB below the level of Wanted signal	

* In case of DCS : [A] -> 1710, [B] -> 1785* In case of PCS : [A] -> 1850, [B] -> 1910

No	Item	GSM			DCS & PCS		
8	Transmitter Output Power	Level	Power	Toler.	Level	Power	Toler.
		5	33	±3	0	30	±3
		6	31	±3	1	28	±3
		7	29	±3	2	26	±3
		8	27	±3	3	24	±3
		9	25	±3	4	22	±3
		10	23	±3	5	20	±3
		11	21	±3	6	18	±3
		12	19	±3	7	16	±3
		13	17	±3	8	14	±3
		14	15	±3	9	12	±4
		15	13	±3	10	10	±4
		16	11	±5	11	8	±4
		17	9	±5	12	6	±4
		18	7	±5	13	4	±4
		19	5	±5	14	2	±5
					15	0	±5
9	Burst timing	Mask IN			Mask IN		

2.3.2 Transmitter - WCDMA Mode

No	Item	Specification
1	Maximum Output Power	Class3: +24dBm(+1/-3dB) Class 4 : +21dBm(± 2dB)
2	Frequency Error	± 0.1ppm
3	Open Loop Power control in uplink	± 9dB@normal, ± 12dB@extreme
4	Inner Loop Power control in uplink	Adjust output(TPC command)

cmd	1dB	2dB	3dB
+1	+0.5/1.5	+1/3	+1.5/4.5
0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5
-1	-0.5/-1.5	-1/-3	-1.5/-4.5
Group	(10 equel command group)		
+1	+8/+12	+16/+24	

5	Out-band Blocking	-50dBm(3.84MHz)
6	Out-of-synchronization handling of output power	Qin/Qout : PCCH quality levels Toff@DPCCH/Ior : -22 -> -28dB Ton@DPCCH/Ior : -24 -> -18dB
7	Transmit OFF Power	-56dBm(3.84MHz)
8	Transmit ON/OFF Time Mask	± 25us PRACH,CPCH,uplinlk compressed mode
9	Change of TFC	± 25us Power varies according to the data rate DTX : DPCH off (minimize interference between UE)
10	Power setting in uplink compressed	± 3dB(after 14slots transmission gap)
11	Occupied Bandwidth(OBW)	5MHz(99%)
12	Spectrum emission Mask	-35-15*(∆f-2.5)dBc@∆f=2.5~3.5MHz,30k -35-1*(∆f-3.5)dBc@∆f=3.5~7.5MHz,1M -39- 10*(∆f-7.5)dBc@∆f=7.5~8.5MHz,1M -49dBc@∆f=8.5~12.5MHz,1M
13	Adjacent Channel Leakage Ratio(ACLR)	33dB@5MHz, ACP>-50dBm 43dB@10MHz, ACP>-50dBm

No	Item	Specification
14	Spurious Emissions (*: additional requirement)	-36dBm@f=9~150KHz, 1K BW -36dBm@f=50KHz~30MHz, 10K BW -36dBm@f=30MHz~1000MHz, 100K BW -30dBm@f=1~12.5GHz, 1M BW (*)-41dBm@f=1893.5~1919.6MHz, 300K (*)-67dBm@f=925~935MHz, 100K BW (*)-79dBm@f=935~960MHz, 100K BW (*)-71dBm@f=1805~1880MHz, 100K BW
15	Transmit Intermodulation	-31dBc@5MHz,Interferer -40dBc -41dBc@10MHz, Interferer -40dBc
16	Error Vector Magnitude (EVM)	17.5%(>-20dBm) (@12.2K, 1DPDCH+1DPCCH)
17	Transmit OFF Power	-15dB@SF=4.768Kbps, Multi-code transmission

2.3.3 Receiver - GSM Mode

No	Item		GSM	DCS & PCS
1	Sensitivity (TCH/FS Class II)		-105dBm	-105dBm
2	Co-Channel Rejection (TCH/FS Class II, RBER, TU high/FH)		C/Ic=7dB	Storage -30 ~ +85
3	Adjacent Channel Rejection	200kHz	C/Ia1=-12dB	C/Ia1=-12dB
		400kHz	C/Ia2=-44dB	C/Ia2=-44dB
4	Intermodulation Rejection		Wanted Signal :-98dBm 1st interferer :-44dBm 2nd interferer :-45dBm	Wanted Signal :-96dBm 1st interferer :-44dBm 2nd interferer :-44dBm
5	Blocking Response (TCH/FS Class II, RBER)		Wanted Signal :-101dBm Unwanted : Depend on Frequency	Wanted Signal :-101dBm Unwanted : Depend on Frequency

2.3.4 Receiver - WCDMA Mode

No	Item	Specification
1	Reference Sensitivity Level	-106.7 dBm(3.84 MHz)
2	Maximum Input Level	-25dBm(3.84MHz) -44dBm/3.84MHz(DPCH_Ec) UE@+20dBm output power(Class3)
3	Adjacent Channel Selectivity (ACS)	33dB UE@+20dBm output power(Class3)
4	In-band Blocking	-56dBm/3.84MHz@10MHz UE@+20dBm output power(Class3)
		-44dBm/3.84MHz@15MHz UE@+20dBm output power(Class3)
5	Out-band Blocking	-44dBm/3.84MHz@f=2050~2095 and 2185~2230MHz UE@+20dBm output power(Class3)
		-30dBm/3.84MHz@f=2025~2050 and 2230~2255MHz UE@+20dBm output power(Class3)
		-15dBm/3.84MHz@f=1~2025 and 2255~12500MHz UE@+20dBm output power(Class3)
6	Spurious Response	-44dBm CW UE@+20dBm output power(Class3)
7	Intermodulation Characteristic	-46dBm CW@10MHz -46dBm/3.84MHz@20MHz UE@+20dBm output power(Class3)
8	Spurious Emissions	-57dBm@f=9KHz~1GHz, 100K BW -47dBm@f=1~12.5GHz, 1M BW -60dBm@f=1850 MHz ≤ f ≤ 1910 MHz, 3.84M BW -60dBm@f=824 MHz ≤ f ≤ 849 MHz, 3.84M BW

2.4 Current Consumption

	Stand by(BT Off condition)	Voice Call	VT
WCDMA	Under 4.32 mA (DRX=1.28)	Under 335 mA (Tx=10dBm) -Low power)	Under 569mA (Tx=10dBm -Low power)
GSM	Under 4.32 mA (Paging=5period)	Under 380 mA (Tx=Max power)	

(Stand by and Voice Call Test Condition : LCD backlight Off)
(VT Test Condition : Speaker off, LCD backlight On,0dBm Tx power)

2.5 RSSI BAR

Level Change	CDMA	GSM
7 → 6	-86 ± 2dBm	-82 ± 2dBm
6 → 5	-90 ± 2dBm	-86 ± 2dBm
5 → 4	-94 ± 2dBm	-90 ± 2dBm
4 → 3	-98 ± 2dBm	-94 ± 2dBm
3 → 2	-102 ± 2dBm	-98 ± 2dBm
2 → 1	-106 ± 2dBm	-102 ± 2dBm
1 → 0	-110 ± 2dBm	-106 ± 2dBm

2.6 Battery BAR

Indication	Standby
Bar 7	3.96 ± 0.05V
Bar 7 → 6	3.95 ± 0.05V
Bar 6 → 5	3.86 ± 0.05V
Bar 5 → 4	3.78 ± 0.05V
Bar 4 → 3	3.74 ± 0.05V
Bar 3 → 2	3.69 ± 0.05V
Bar 2 → 1	3.63 ± 0.05V
Bar 1 → Empty	3.50 ± 0.05V
Low Voltage, Warning message + tone	3.63,3.50 ± 0.05V (Stand-by) / 3.63, 3.50 ± 0.05V (Talk) Bar 2 → 1 / Bar 1 → Empty
Power Off	3.20 ± 0.05V

2.7 Sound Pressure Level

No	Test Item		Specification	
1	Sending Loudness Rating (SLR)	MS	8 ± 3 dB	
2	Receiving Loudness Rating (RLR)		Nor	-4 ± 3 dB
			Max	-15 ± 3 dB
3	Side Tone Masking Rating (STMR)		Min	17 dB
4	Echo Loss (EL)		Min	40 dB
5	Sending Distortion (SD)		Refer to Table 30.3	
6	Receiving Distortion (RD)		Refer to Table 30.4	
7	Idle Noise-Sending (INS)		Max	-64 dBm0p
8	Idle Noise-Receiving (INR)		Nor	Under -47 dBPA
			Max	Under -36 dBPA
9	Sending Loudness Rating (SLR)	Headset	8 ± 3 dB	
10	Receiving Loudness Rating (RLR)		Nor	-1 ± 3 dB
			Max	-12 ± 3 dB
11	Side Tone Masking Rating (STMR)		Min	25 dB
12	Echo Loss (EL)		Min	40 dB
13	Sending Distortion (SD)		Refer to Table 30.3	
14	Receiving Distortion (RD)		Refer to Table 30.4	
15	Idle Noise-Sending (INS)		Max	-55 dBm0p
16	Idle Noise-Receiving (INR) 16		Nor	Under -45 dBPA
			Max	Under -40 dBPA
17	TDMA Noise -. GSM : Power Level : 5 DCS/PCS : Power Level : 0 (Cell Power : -90 ~ -105 dBm) -. Acoustic (Max Vol.) MS/Headset SLR : 8 ± 3dB MS/Headset RLR : -15 ± 3dB / -12dB (SLR/RLR : Mid-value setting)	MS and Headset	Max	-62 dBm

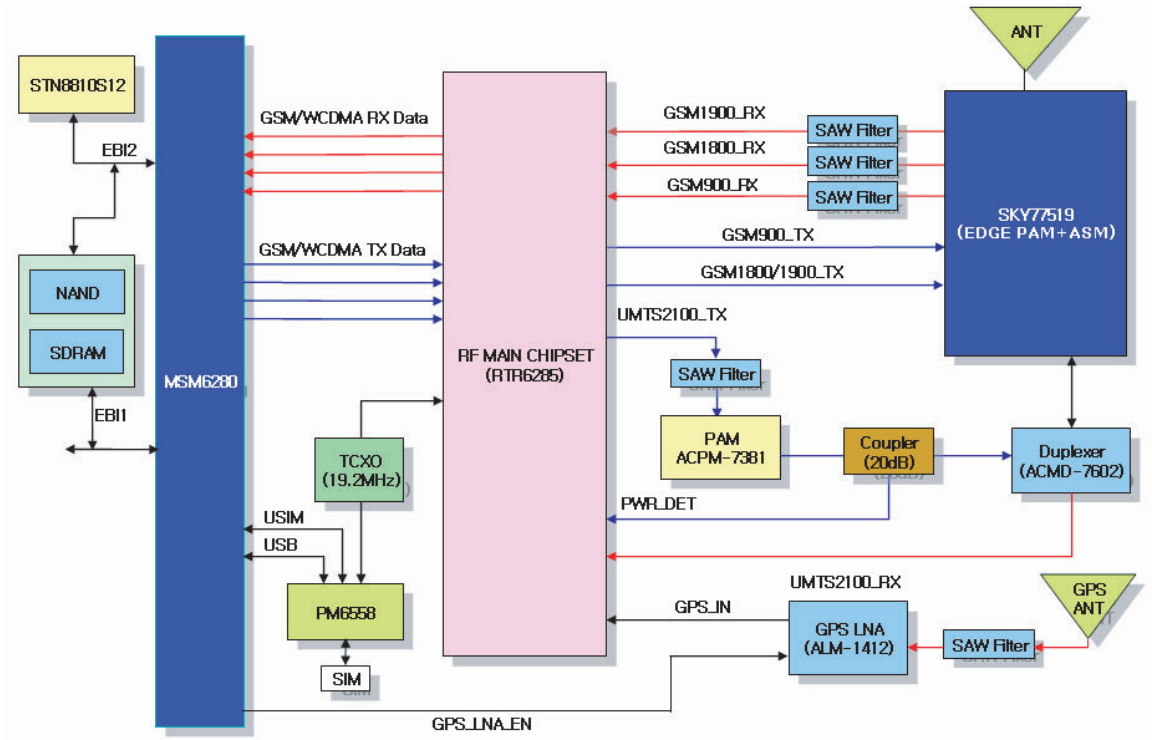
2.8 Charging

- **Charging Method :** CC & CV (Constant Current & Constant Voltage)
- **Maximum Charging Voltage :** 4.2 V
- **Maximum Charging Current :** 650mA
- **Normal Battery Capacity :** 950 mAh
- **Charger Voltage :** 4.8V
- **Charging Time :** Max 3 h (Except time trickle charging)
- **Full charging indication current (charging icon stop current) :** 60mA
- **Low battery POP UP :** 3.48V
- **Low battery alarm interval :** Idle - 3 min, Dedicated - 1min
- **Cut-off voltage :** 3.22V

3. TECHNICAL BRIEF

3.1 GENERAL DESCRIPTION

The KT610 supports UMTS-2100, GSM-900, GSM-1800, and GSM-1900 based GSM/GPRS/EDGE/UMTS. All receivers and the UMTS transmitter use the radioOne[1] Zero-IF architecture to eliminate intermediate frequencies, directly converting signals between RF and baseband. The quad-band GSM transmitters use a baseband-to-IF upconversion followed by an offset phase-locked loop that translates the GMSK-modulated or 8-PSK-modulated signal to RF.



[Fig. 3.1] Block diagram of RF part

A generic, high-level functional block diagram of KT610 is shown in Figure 3-1. One antenna collects base station forward link signals and radiates handset reverse link signals. The antenna connects with receive and transmit paths through a SKY77519(EDGE PAM+ASM). The UMTS receive paths each include an LNA, an RF band-pass filter, and a downconverter that translate the signal directly from RF-to-baseband using radioOne ZIF techniques.

The RFIC's Rx analog baseband outputs, for the receive chains, connect to the MSM IC. The UMTS and GSM Rx baseband outputs share the same inputs to the MSM IC.

[1] QUALCOMM's branded chipset that implements a Zero-IF radio architecture.

3. TECHNICAL BRIEF

For the transmit chains, the RTR6285 IC directly translates the Tx baseband signals (from the MSM device) to an RF signal using an internal LO generated by integrated on-chip PLL and VCO. The RTR6285 IC outputs deliver fairly high-level RF signals that are first filtered by Tx SAWs and then amplified by their respective UMTS PAs.

In the GSM receive path, the received RF signals are applied through their bandpass filters and down-converted directly to baseband in the RTR6285 transceiver IC.

These baseband outputs are shared with the UMTS receiver and routed to the MSM IC for further signal processing.

The GSM/EDGE transmit path employs one stage of up-conversion and, in order to improve efficiency, is divided into phase and amplitude components to produce an open-loop Polar topology:

1. The on-chip quadrature up-converter translates the GMSK-modulated signal or 8- PSK modulated signal, to a constant envelope phase signal at RF;
2. The amplitude-modulated (AM) component is applied to the ramping control pin of Polar power amplifier from a DAC within the MSM

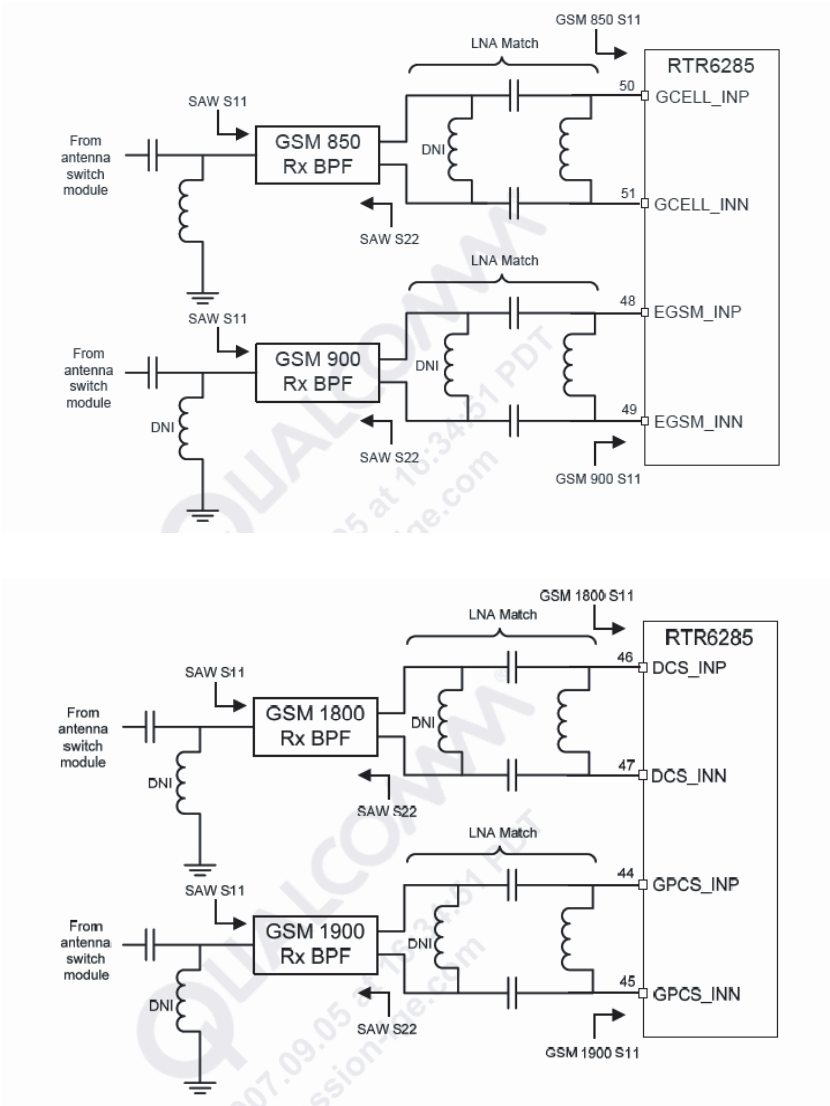
KT610 power supply voltages are managed and regulated by the PM6658 Power Management IC. This versatile device integrates all wireless handset power management, general housekeeping, and user interface support functions into a single mixed signal IC. It monitors and controls the external power source and coordinates battery recharging while maintaining the handset supply voltages using low dropout, programmable regulators.

The device's general housekeeping functions include an ADC and analog multiplexer circuit for monitoring on-chip voltage sources, charging status, and current flow, as well as user-defined off-chip variables such as temperature, RF output power, and battery ID. Various oscillator, clock, and counter circuits support IC and higher-level handset functions. Key parameters such as under-voltage lockout and crystal oscillator signal presence are monitored to protect against detrimental conditions.

3.2 GSM MODE

3.2.1 GSM RECEIVER

The GSM-900, GSM-1800, and GSM-1900 receiver inputs of RTR6285 are connected directly to the transceiver front-end circuits(filters and antenna switch module). GSM-900, GSM-1800, and GSM-1900 receiver inputs use differential configurations to improve common-mode rejection and second-order non-linearity performance as shown in Figure 3-2. The balance between the complementary signals is critical and must be maintained from the RF filter outputs all the way into the IC pins



[Figure 3-2] GSM Receiver Inputs Topologies

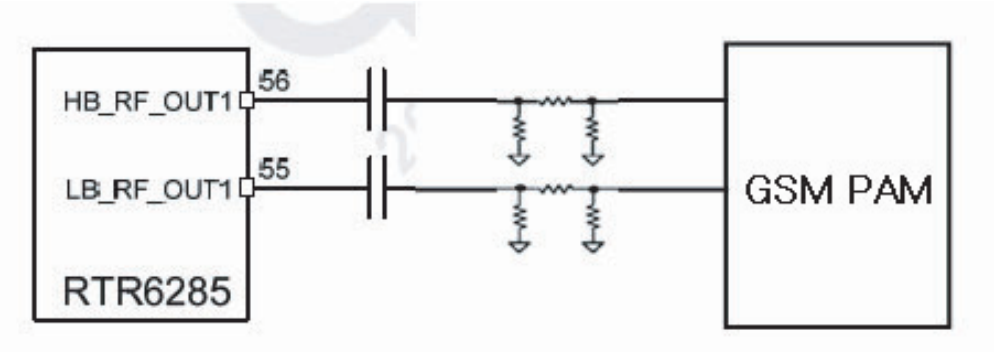
Since GSM-900, GSM-1800, and GSM-1900 signals are time-division duplex (the handset can only receive or transmit at one time), switches are used to separate Rx and Tx signals in place of frequency duplexers - this is accomplished in the switch module. The GSM-900, GSM-1800, and GSM-1900 receive signals are routed to the RTR6285 through band selection filters and matching networks that transform singleended 50-Ω sources to differential impedances optimized for gain and noise figure.

The RTR input uses a differential configuration to improve second-order intermodulation and common mode rejection performance. The RTR6285 input stages include MSM-controlled gain adjustments that maximize receiver dynamic range.

The amplifier outputs drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted baseband outputs are multiplexed and routed to lowpass filters (one I and one Q) having passband and stopband characteristics suitable for GMSK or 8-PSK processing. These filter circuits include DC offset corrections. The filter outputs are buffered and passed on to the MSM6280 IC for further processing as shown in Figure 3-4.

3.2.2 GSM TRANSMITTER

The RTR6285 transmitter outputs(HB_RF_OUT1 and LB_RF_OUT1) include on-chip output matching inductors. 50ohm output impedance is achieved by adding a series capacitor at the output pins. The capacitor value may be optimized for specific applications and PCB characteristics based on pass-band symmetry about the band center frequency as shown in Figure 3-3.



[Figure 3-3] GSM Transmitter Outputs Topologies

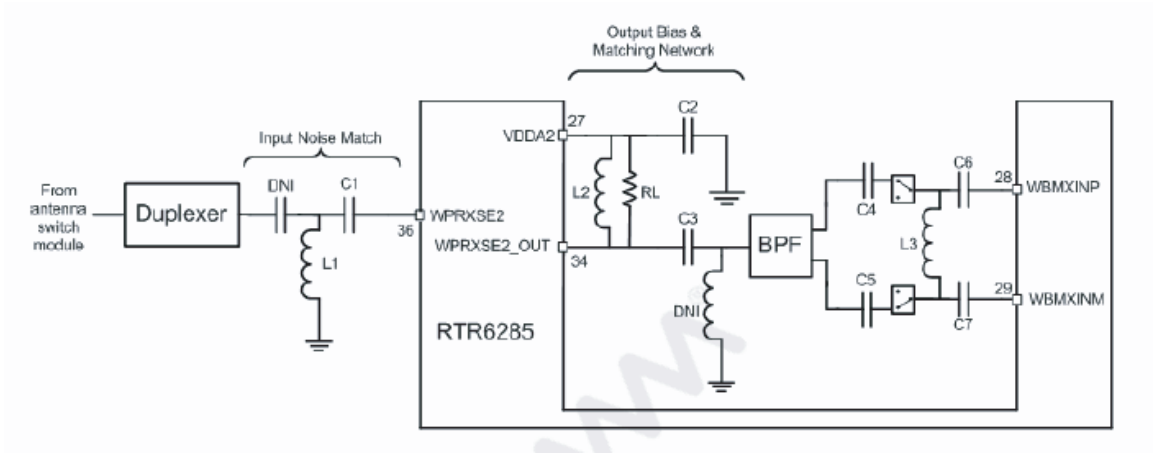
The RTR6285 IC is able to support GSM 900 and GSM 1800/1900 mode transmitting.

This design guideline shows a tri-band GSM application. Both high-band and low band outputs are followed by resistive pads to ensure that the load presented to the outputs remains close to 50ohm.

3.3 UMTS MODE

3.3.1 UMTS RECEIVER

The UMTS duplexer receiver output is routed to LNA circuits within the RTR6285 device as shown in Figure 3-4. The UMTS Rx input is provided with an on-chip LNA that amplifies the signal before a second stage filter that provides differential downconverter as shown in Figure 3-5. This second stage input is configured differentially to optimize second-order intermodulation and common mode rejection performance. The gain of the UMTS frontend amplifier and the UMTS second stage differential amplifier are adjustable, under MSM control, to extend the dynamic range of the receivers. The second stage UMTS Rx amplifiers drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted UMTS Rx baseband outputs are routed to lowpass filters having passband and stopband characteristics suitable for UMTS Rx processing. These filter circuits allow DC offset corrections, and their differential outputs are buffered to interface shared with GSM Rx to the MSM IC. The UMTS baseband outputs are turned off when the RTR6285 is downconverting GSM signals and on when the UMTS is operating.



[Figure 3-4] UMTS Receiver Inputs Topologies

3.3.2 UMTS TRANSMITTER

The UMTS Tx path begins with differential baseband signals (I and Q) from the MSM device.

These analog input signals are amplified, filtered, and applied to the quadrature upconverter mixers. The up-converter output is amplified by multiple variable gain stages that provide transmit AGC control. The AGC output is filtered and applied to the driver amplifier; this output stage includes an integrated matching inductor that simplifies the external matching network to a single series capacitor to achieve the desired 50-Ω interface.

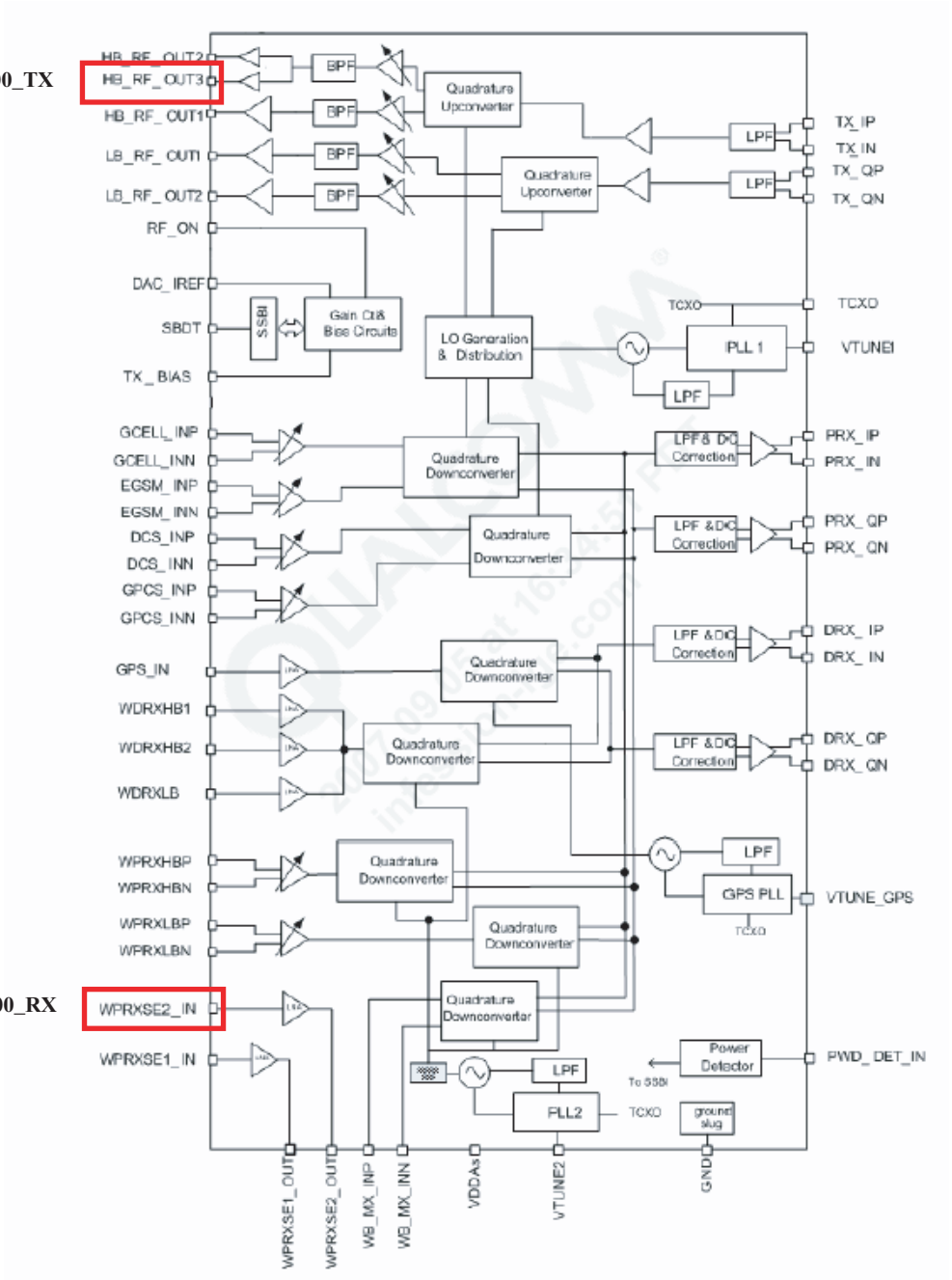
The RTR6285 UMTS output is routed to its power amplifier through a bandpass filter, and delivers fairly high-level signals that are filtered and applied to the PA. Transmit power is delivered from the duplexer to the antenna through the switch module.

The transceiver LO synthesizer is contained within the RTR6285 IC with the exception of the off-chip loop filter components and the VC-TCXO. This provides a simplified design for multimode applications. The PLL circuits include a reference divider, phase detector, charge pump, feedback divider, and digital logic generator.

UMTS Tx. Using only PLL1, the LO generation and distribution circuits create the necessary LO signals for nine different frequency converters. The UMTS transmitter also employs the ZIF architecture to translate the signal directly from baseband to RF.

This requires FLO to equal FRF, and the RTR6285 IC design achieves this without allowing FVCO to equal FRF.

The RTR6285 IC is able to support UMTS 2100/1900/1800/1700 and 850 mode transmitting. This design guideline shows only UMTS 2100 applications.

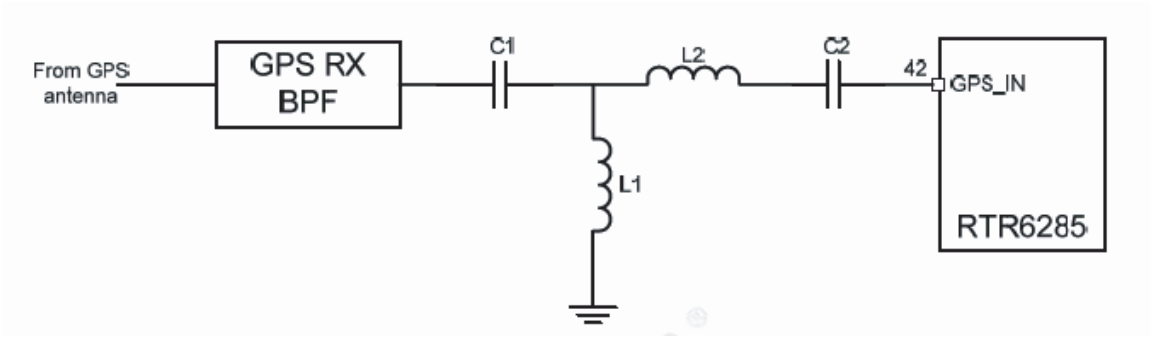


[Figure 3.5] RTR6285 IC Functional Block Diagram

3.4 GPS MODE

3.4.1 GPS RECEIVER

The GPS receicer input employs a single-ended connection realized by this pin. The GPS input is routed from the GPS antenna switch, through a bandpass filter and then an impedance transformer circuit that optimally matches the impedance looking into the GPS LNA. The impedance transformer circuit topology is shown in Figure 3-6.



[Figure 3.6] GPS Input Network Topology

3.5 LO GENERATION and DISTRIBUTION CIRCUIT

The integrated LO generation and distribution circuits are driven by internal VCOs to support various modes to yield highly flexible quadrature LO outputs that drive all GSM/EDGE, UMTS band and GPS upconverters and downconverters; with the help of these LO generation and distribution circuits, true zero-IF architecture is employed in all GSM and UMTS band receivers and transmitters to translate the signal directly from RF-to-baseband and from baseband-to-RF. Two fully functional fraction-N synthesizers, including VCOs and loop filters, are integrated within the RTR6285 IC. In addition, the RTR6285 has a third synthesizer used for GPS operation. The first synthesizer (PLL1) in the RTR6285 creates the transceiver Los that support the UMTS transmitter, and all four GSM band receivers and transmitters including:

GSM850, GSM900, GSM1800, and GSM1900. The second synthesizer (PLL2) in the RTR6285 IC provides the LO for the UMTS primary receiver. For the RTR6285 IC only, the second synthesizer also provides the LO for the secondary UMTS receiver.

The third synthesizer (PLL3), only in the RTR6285 IC, provides the LO for the GPS receiver. An external TCXO input signal is required to provide the synthesizer frequency reference to which the PLL is phase and frequency locked. The RTR6285 ICs integrate most of the PLL loop filter components on-chip except for three off-chip loop filter-series capacitors, which significantly reduces off-chip component requirement. With the integrated fractional-N PLL synthesizers, the RTR6285 ICs have the advantage of more flexible loop bandwidth control, fast lock time, and lowintegrated phase error.

3.6 OFF-CHIP RF COMPONENTS

3.6.1 ALM-1412(U603:GPS LNA)

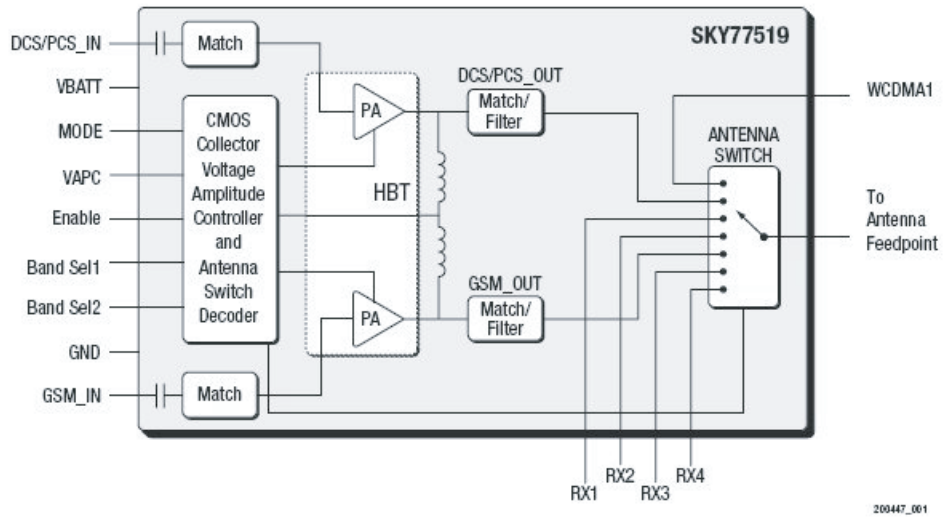
The ALM-1412 is an LNA module, with integrated filter, designed for GPS band applications at 1.575GHz. The LNA uses AVAGO Technologies' proprietary GaAs Enhancement-mode pHEMT process to achieve high gain with very low noise figure and high linearity Noise figure distribution is very tightly controlled. A CMOScompatible shutdown pin is included either for turning the LNA on/off, or for current adjustment. The integrated filter utilizes an Avago Technologies' leading edge FBAR filter for exceptional rejection at Cell/PCS Band frequencies. The ALM-1412 is useable down to 1V operation. It achieves low noise figure, high gain and linearity even at 1V, making it suitable for use in critical low-power GPS applications or during low-battery situations.

3.6.2 SKY77519(U601:GSM FEM)

RF Front end consists of antenna, antenna switch module (SKY77519) which includes EDGE PAM. The antenna switch module allows multiple operating bands and modes to share the same antenna. In KT610, a common antenna connects to one of six paths: 1) UMTS-2100 Rx/Tx, 2) GSM-900 Rx, 3) GSM-900 Tx, 4) GSM- 1800 Rx, and 5) GSM-1800, GSM-1900 Tx(High Band Tx's share the same path), 6) GSM-1900 Rx. UMTS operation requires simultaneous reception and transmission, so the UMTS Rx/Tx connection is routed to a duplexer that separates receive and transmit signals. GSM-900, GSM-1800, and GSM-1900 operation is time division duplexed, so only the receiver or transmitter is active at any time and a frequency duplexer is not required. The active connection is MSM-selected by three control lines (GPIO[9], GPIO[10] and GPIO[11]). These GPIOs are programmed to be ANT_SEL0 , ANT_SEL1 and ANT_SEL2 respectively.

	TXEN	BS1	BS2
GSM 900 TX	LOW	LOW	HIGH
GSM 1800/GSM 1900 TX	LOW	HIGH	HIGH
GSM 900 RX	HIGH	HIGH	LOW
GSM 1800 RX	HIGH	HIGH	HIGH
GSM 1900 RX	HIGH	LOW	HIGH
WCDMA	LOW	HIGH	LOW

Table 1. Antenna Switch Module Logic

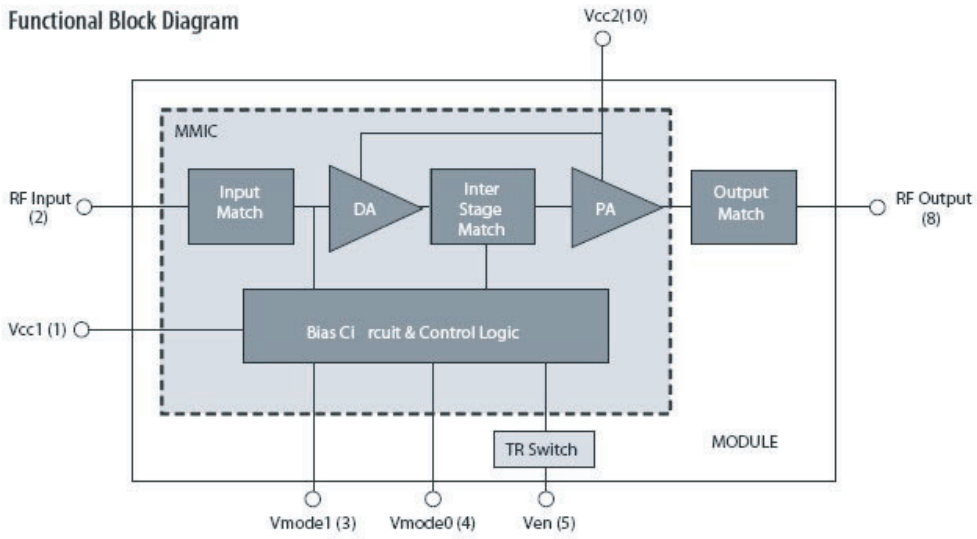


[Figure 3.5] SKY77519 Functional Block Diagram.

3.6.3 W-CDMA POWER AMPLIFIER (U604: ACPM-7381)

The ACPM-7381, a Wide-band Code Division Multiple Access(WCDMA) Power Amplifier(PA), is a fully matched 10-pin surface mount module developed for WCDMA handset applications. This power amplifier module is developed to cover 1920- 1980MHz bandwidth. The ACPM-7381 meets the stringent WCDMA linearity requirements for output power of up to 28dBm. The ACPM-7381 is also developed to meet HSDPA specs.

The ACPM-7381 is designed to enhance the efficiency at low and medium output power range by using 3-mode control scheme with 2 mode control pins. This provides extended talk time. The ACPM-7381 is self contained, incorporating 50ohm input and output matching networks.



[Figure 3.6] ACPM-7381 Functional Block Diagram.

3.6.4 W-CDMA DUPLXER (FL605: ACMD-7602)

The ACMD-7602 is a miniature duplexer designed for use in UMTS Band I handsets and enhances the sensitivity and dynamic range of WCDMA receivers by providing more than 53dB attenuation of the transmitted signal at the receiver input and more than 43dB rejection of transmit-generated noise in the receiver band. The ACMD-7602 is designed with FBAR technology, which makes possible ultra-small, high-Q filters at a fraction of their usual size. The excellent power handling capability of the FBAR bulk-mode resonators supports the high output power levels needed in handsets while adding virtually no distortion.

3.7 Digital Baseband (Stn8810 / MSM6280)

3.7.1 General features of Stn8810 device

■ Support for Peripheral Device & multimedia function

■ Minimal support for high-level operating system such as Symbian™, Linux and WinCE® operating systems (OSs).

■ 1-Gbit NAND Flash memory, 512-Mbit DDR mobile RAM Stacked in Package

■ Two DSP implementation for multimedia function

- Smart video accelerator : Programmable DSP (MMDSP+) for intermediate level processing, clocked at 66 MHz,
- Smart audio accelerator : High-performance block, flexible sophisticated audio accelerator based on the MMDSP+ programmable audio DSP, clocked at 133 MHz,

■ ARM926EJ 32-bit RISC CPU at 350MHz

- 32-Kbyte instruction cache, 16-Kbyte data cache

■ MultiMedia Card/SD Card/SDIO host controller

■ 96 general-purpose I/Os (muxed with peripheral I/Os)

■ amera interfaces

- Supports high-resolution camera modules up to 4 Mpixels
- Serial camera interface up to 416 Mbit/s (MIPI legacy CSI)
- Parallel camera CCIR-656 interface up to 66 MHz (MIPI legacy CPI)

■ Color LCD controller for STN or TFT panels or display interface for display module

- 24-bpp true color
- MIPI legacy DBI and DPI

■ Host port interface (HPI)

- 16-bit parallel data bus,
- Multiplexed and non-multiplexed address/data bus,
- Indirect host access,
- Direct host access to a segment of STn8810 memory in multiplexed mode.
- Interface to modem for data communication

■ I/O peripherals

- 3 autobaud UARTs (one with modem control signals) up to 3.692 Mbit/s
- 1 synchronous serial port (SSP) up to 24 Mbit/s
- 3 multichannel serial ports (MSP) up to 48 Mbit/s
- 2 I^2C multi-master/slave interfaces
- One 8-channel, full-duplex high-speed serial interface, 108 Mbit/s
- Host port interface
- JTAG

3.7.2 General features of MSM6280 device

- Support for multimode operation - HSDPA, tri-band WCDMA (UMTS), quad GSM/ GPRS/ EDGE, and GPS
- Support for HSDPA downlink up to 7.2 Mbps (initial commercial release will support 3.6 Mbps HSDPA. Later releases will have support for 7.2 Mbps HSDPA)
- Support for WCDMA (UMTS) uplink data rate up to 384 kbps
- High-performance ARM926EJ-S running at up to 270 MHz
- ARM Jazelle Java hardware acceleration for faster Java-based games and other applets
- QDSP4000 high-performance DSP cores
- ntegrated gpsOne position location technology functionality
- Integrated Bluetooth 1.2 baseband processor for wireless connectivity to peripherals
- Qcamera¢, with 15 fps QVGA viewfinder resolution, and support for 4 MP camera sensors
- Direct interface to digital camera module with video front end (VFE) image processing
- True 3D graphics for advanced wireless gaming
- SecureMSM v2.0 includes support for Open Mobile Alliance (OMA) DRM v2.0, SIM-lock and IMEI integrity, and Q-fuse
- Audio on par with portable music players
- Vocoder support (AMR, FR, EFR, HR)
- Advanced 14x14 mm, 0.5 mm pitch, 409-pin lead-free CSP packaging technology and 11x11 mm, 0.4 mm pitch, 432-pin lead free NSP technology
- SD/SDIO hardware support

3.8 Hardware Architecture

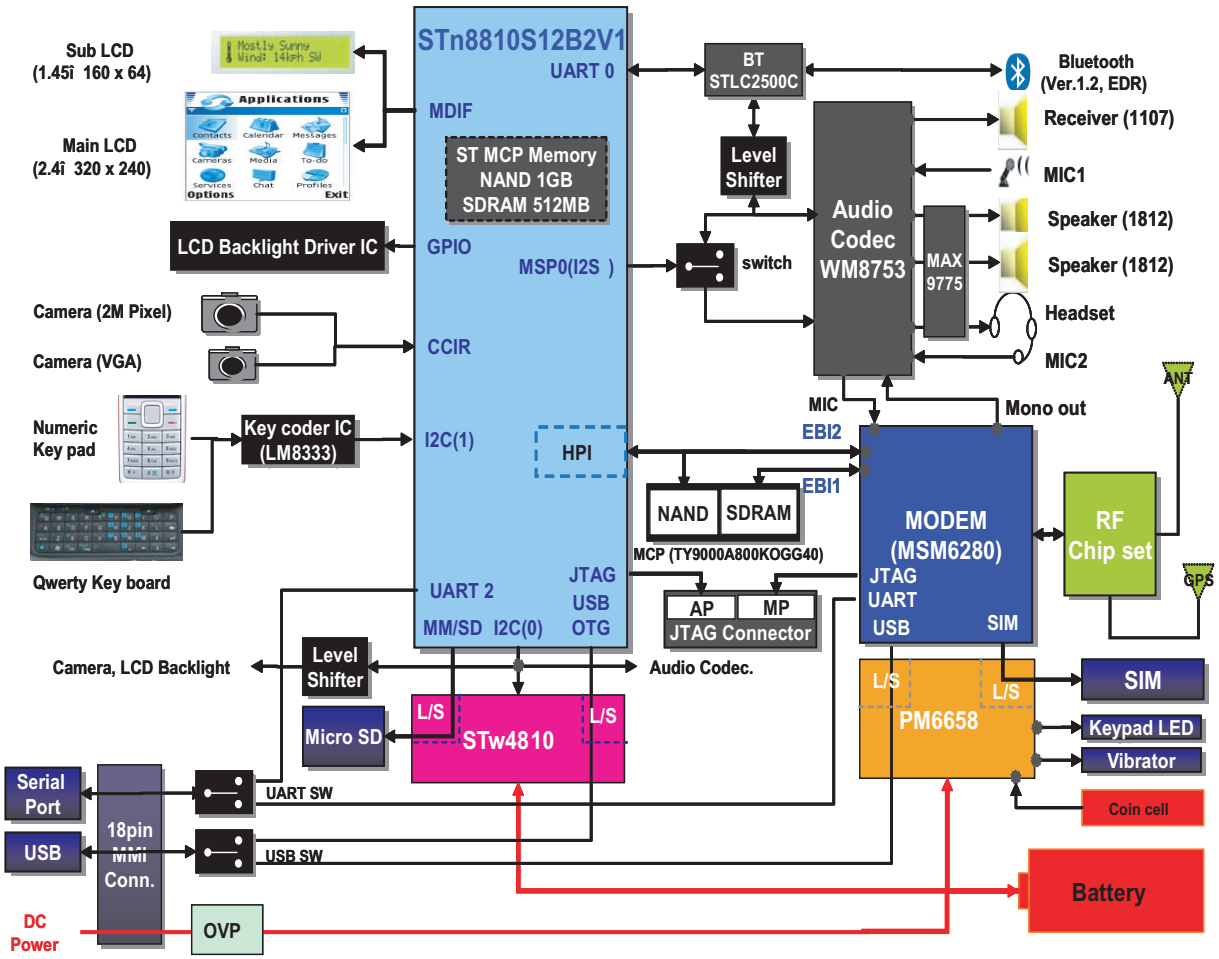


Figure. Simplified Block Diagram

3.8.1 STn8810 and supported peripherals

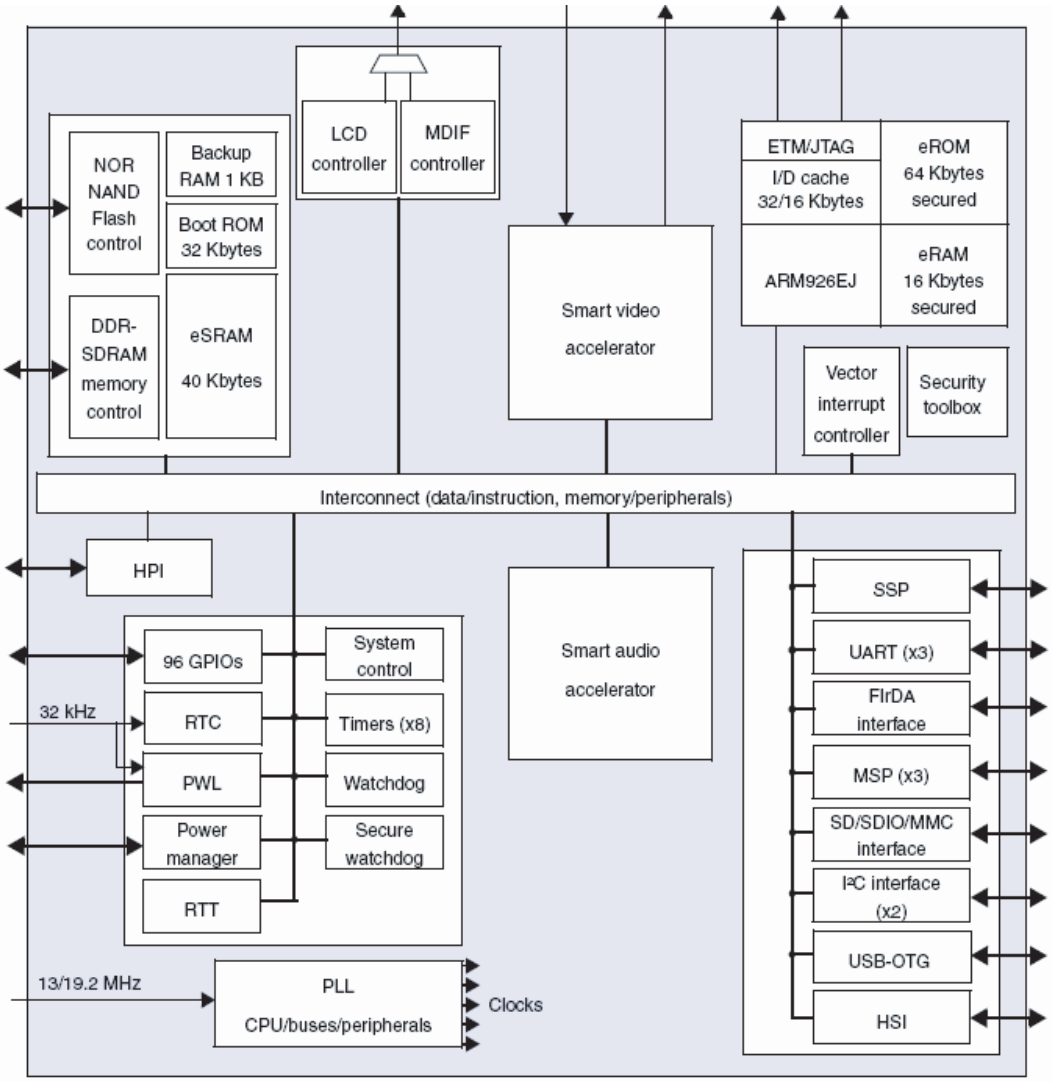


Figure. STn8810 and supported peripherals

3.8.2 MSM6280 and supported peripherals

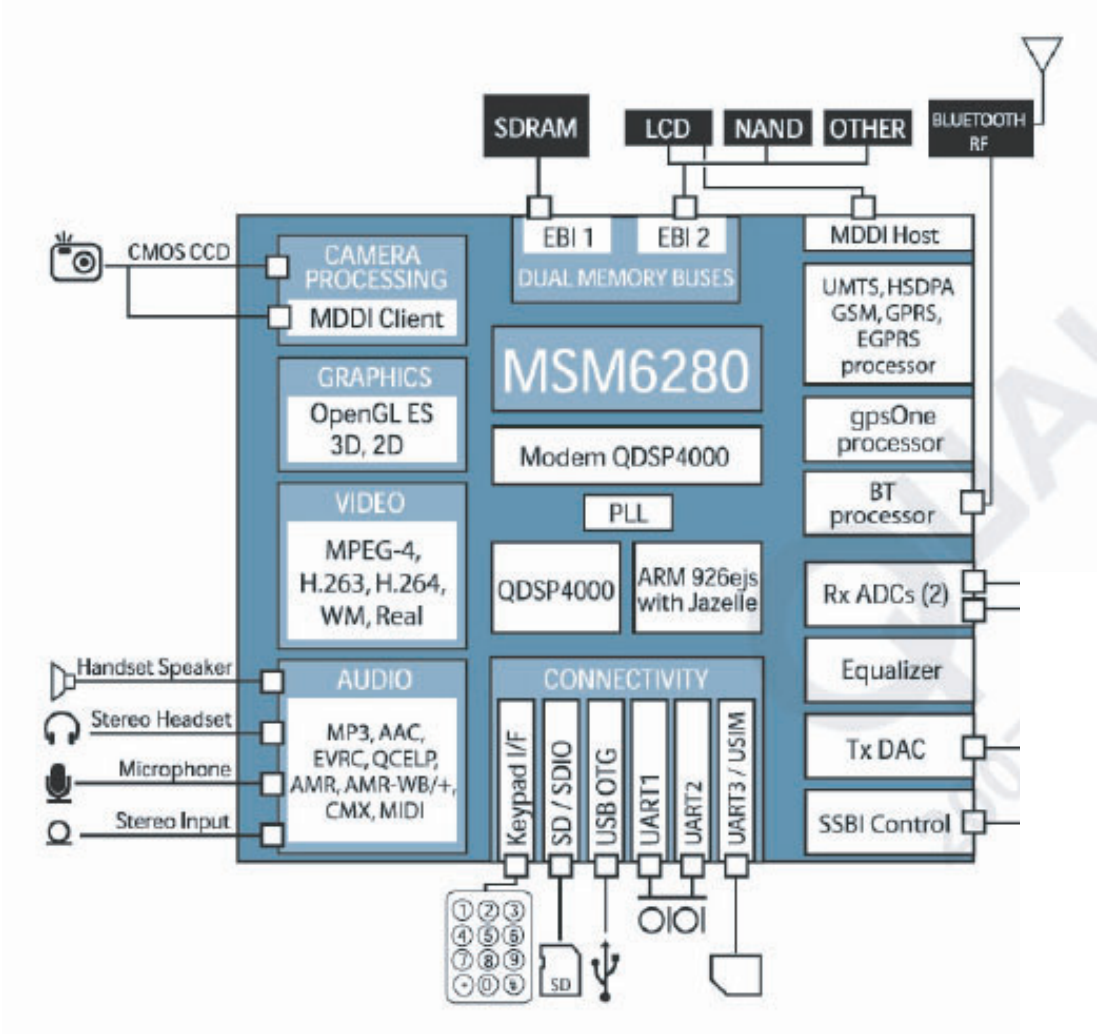


Figure. MSM6280 and supported peripherals

3.9 Subsystem of STn8810

3.9.1 ARM926EJ processor

The STn8810 CPU is an ARM926EJ reduced instruction set computer (RISC) processor.

This 32-bit processor core supports 32-bit ARM® and 16-bit Thumb instruction sets, enabling the user to trade off between high performance and high code density.

The cached ARM CPU features a memory management unit (MMU) and is clocked at 264 MHz.

It has a 32-Kbyte instruction cache and a 16-Kbyte data cache, and supports the Jazelle¢, extensions for Java acceleration. It also includes an embedded trace module (ETM Medium+) for real-time CPU activity tracing and debugging. It supports 4-bit and 8-bit normal trace mode and 4-bit demultiplexed trace mode, with normal or half-rate clock.

3.9.2 Smart video accelerator (SVA)

Using leading-edge technology, this block is a low-power, high-performance video accelerator that supports the following features:

- MPEG-4 simple profile level 3 video encoder and decoder; real time up to VGA 30 fps encode only or decode only)
- H.263 profile 3 level 10 video codec; real time subQCIF or QCIF 15 fps for videoconferencing
- H.263 profile 3 level 30 video encoder or decoder; real-time up to CIF 30 fps
- JPEG baseline accelerated encoder or decoder, up to 4080 x 4080 pixels
- Programmable DSP (MMDSP+) for intermediate level processing, clocked at 66 MHz
- Picture pre-/post-processing
- Low-power implementation

3.9.3 Smart audio accelerator (SAA)

This high-performance block is a flexible sophisticated audio accelerator based on the MMDSP+ programmable audio DSP, clocked at 133 MHz, and features:

- 24-bit data path
- Ultra-low power implementation

The audio accelerator features:

- MP3, AAC, AAC+ (SBR) decoding, Midi synthesis, and more
- Speech codecs: AMR (WB, NB), and more
- Audio sample rates of 32 kHz, 44.1 kHz and 48 kHz
- Noise reduction and echo cancelling
- Stereo enhancements and surround effects

3.9.4 Advanced power management unit (PMU)

The dynamic PMU optimizes power consumption of the STn8810. It delivers all the platform clocks, and handles reset management. It also manages GPIO levels during sleep mode and emergency self-refresh of SDRAM.

The PMU controls the external voltage regulator, in order to change its settings in different modes.

In deep-sleep mode, only GPIOs, the real-time clock (RTC), system and reset controller (SRC), PMU and secured RAM remain in operation. The PMU also controls the embedded 1.2 V voltage switch that switches off the logic supply after the platform has entered sleep mode.

The family of power manager ICs, STw481x companion chips, seamlessly interface with the Nomadik STn8810 and optimize global system power consumption leveraging on the PMU.

3.9.5 Host port interface (HPI)

The host port interface features:

- 16-bit parallel data bus
- Multiplexed and non-multiplexed address/data bus
- Indirect host access
- Direct host access to a segment of STn8810 memory in multiplexed mode

3.9.6 General purpose inputs/outputs (GPIOs)

The STn8810 provides 96 programmable inputs or outputs that have switchable pull-up and pull-down resistors and are controllable in two modes:

- Software mode through an APB bus interface
- Hardware mode through a hardware control interface

The GPIO interface provides the following individually programmable functions:

- Any number of pins may be configured as interrupt sources
- Debouncing logic can be enabled for each GPIO to filter out glitches on I/Os
- Any GPIO may be used to wake up the device from sleep mode independent of interrupt programming, and the input level that triggers wake-up is definable for each enabled GPIO

3.9.7 Universal asynchronous receivers-transmitters (UARTs)

The STn8810 provides three autobaud UARTs, one of which offers all modem control/status signals. They are enhanced versions of the industry-standard 16C550 UART with a high data rate up to 3.692 Mbit/s.

3.9.8 USB interface

The STn8810 USB interface is USB 2.0 compliant, with On-The-Go standard extension (rev 1.0) compliance. The USB-OTG features:

- Supports full-speed (12 Mbit/s) and low-speed (1.5 Mbit/s) signaling bit rate
- Supports session request protocol (SRP) and host negotiation protocol (HNP)
- 8 bidirectional endpoints plus control endpoint 0
- Digital interface to external PHY
- Fully compatible with STw4810 power manager companion chip

3.9.9 I²C bus interface

The STn8810 provides two I©˜C bus interfaces that support the following features:

- Slave transmitter/receiver and master transmitter/receiver modes
- Multi-master capability
- 10-bit addressing
- Standard (100 kHz) and fast (400 kHz) speeds
- Compliance with I²C and DDC standards

In addition to receiving and transmitting data, the interface converts data from serial to parallel format and vice-versa using an interrupt or polled handshake. The interrupts are enabled and disabled in software.

3.9.10 MultiMediaCard/secure data card interface (MMC/SD/SDIO)

This interface can directly control one SD card (without encryption/decryption logic) or SDIO card, or one MultiMediaCard. It also supports several of each card type using the GPIOs for card selection.

3.10 Hardware Peripheral system of Stn8810

3.10.1 Keypad

KS10 has 75 buttons, 19 keys in Folder, 54 keys in main and 2 side keys.

KT610 use key coder IC because Stn8810 has not enough GPIO.

Key coder IC use interrupt and I2C interface for communication with STn8810.

Figure shows the Keypad circuit.

'END' Key is connected to PM_ON_SW_N to PM6658

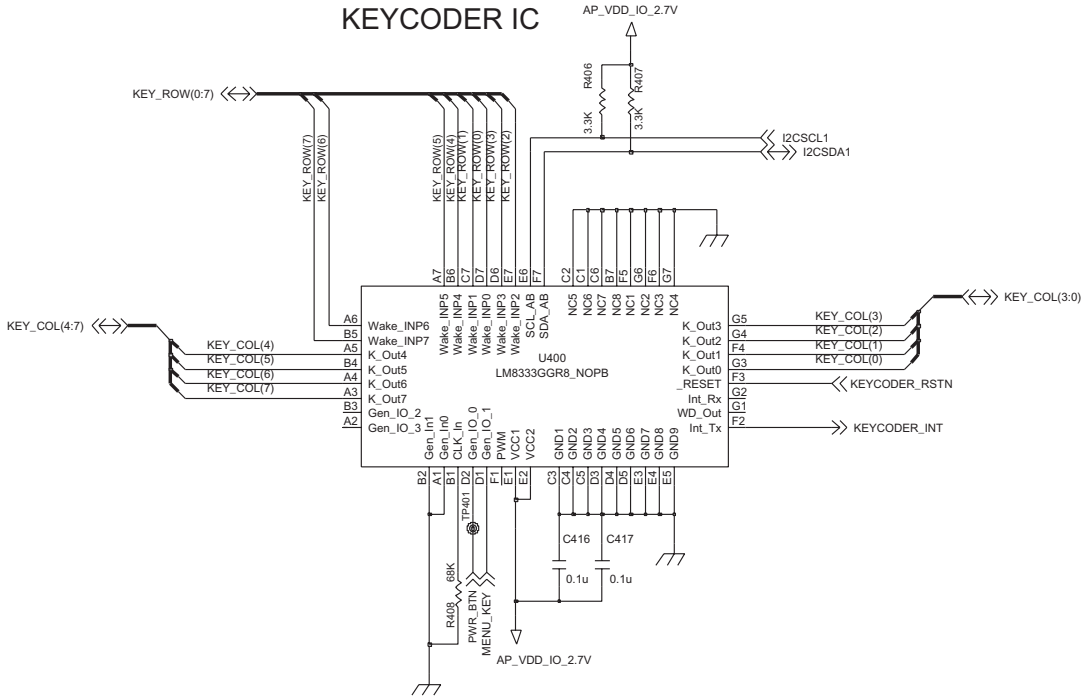


Figure. Schematic of key coder IC

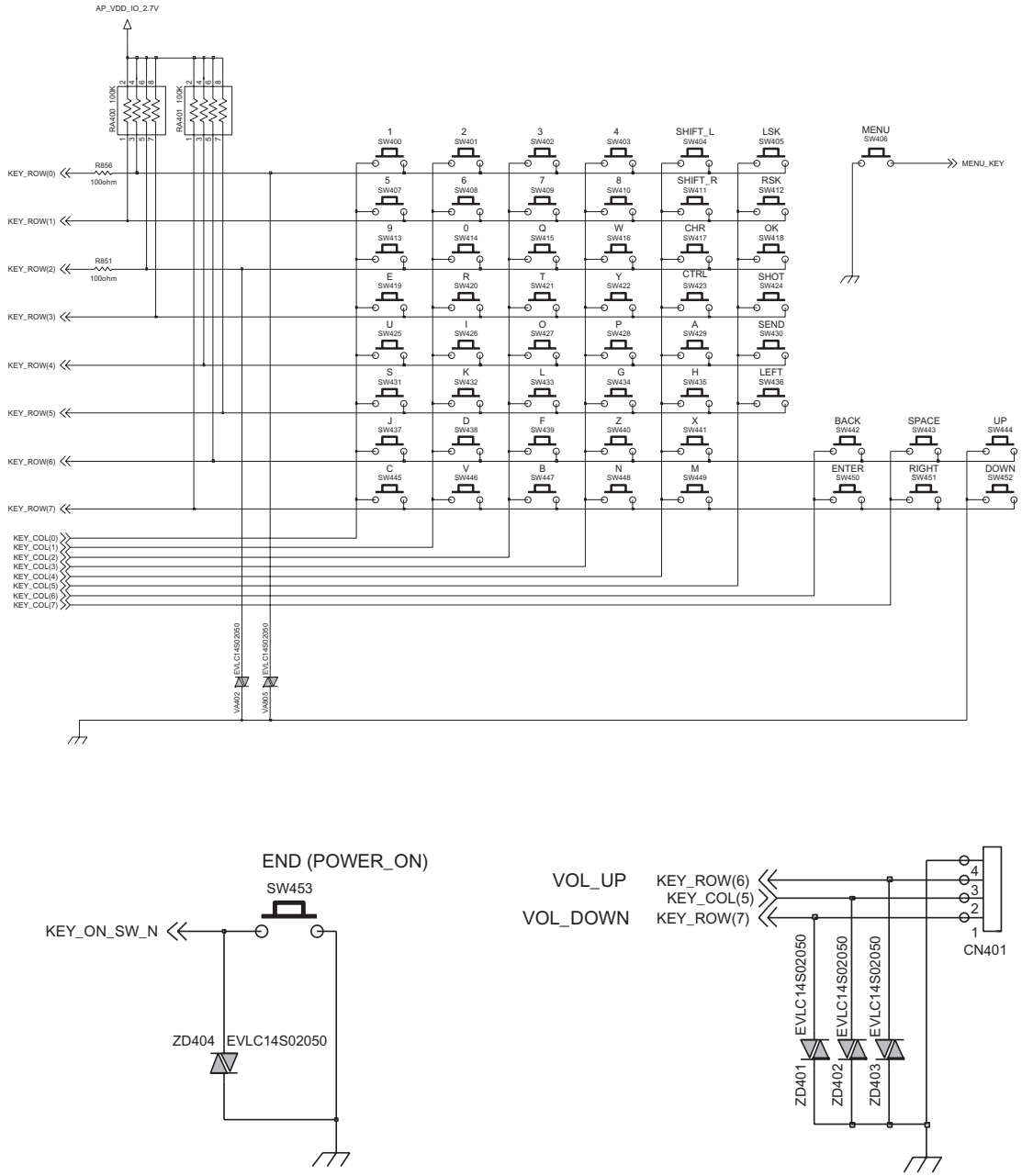


Figure. Schematic of keypad

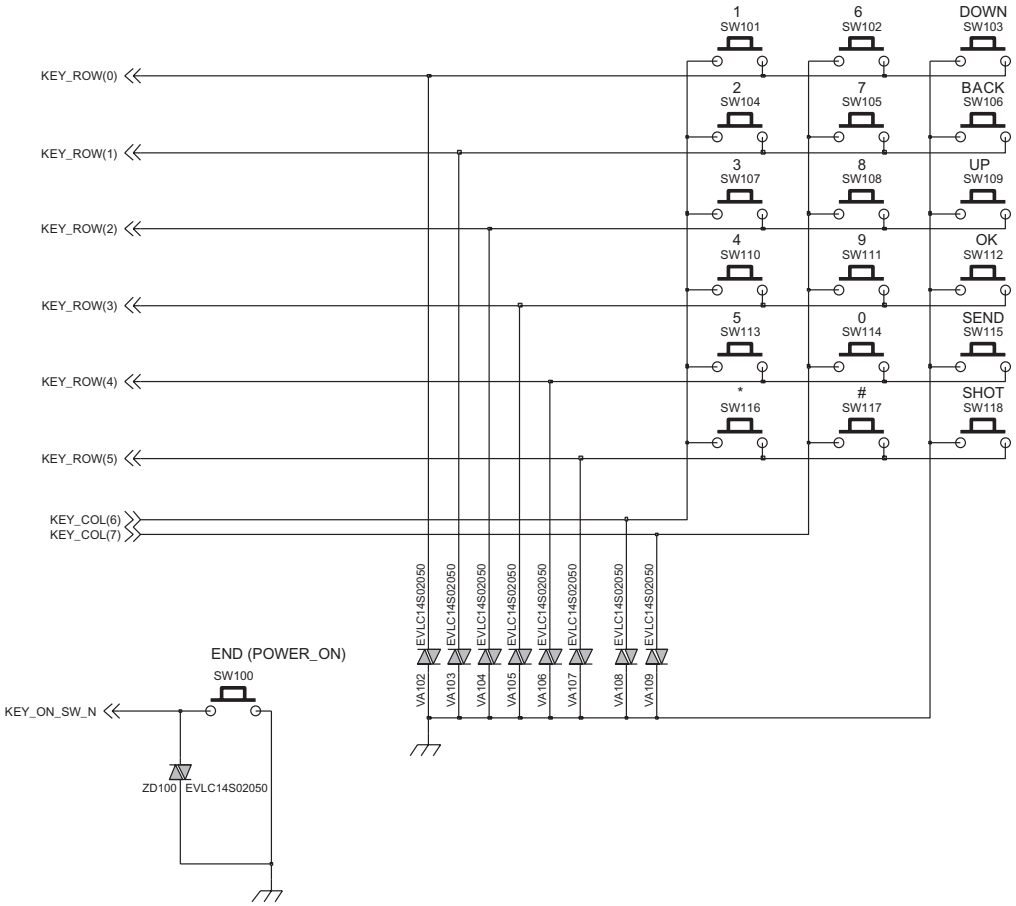


Figure. Schematic of keypad

3.10.2 Folder on/off operation

There is a magnet to detect the folder status, opened or closed.

If a magnet is close to the hall-effect switch, the voltage at pin1 of U402 goes to 0V.

This folder signal is delivered to GPIO5 of the Main CPU(U100) .

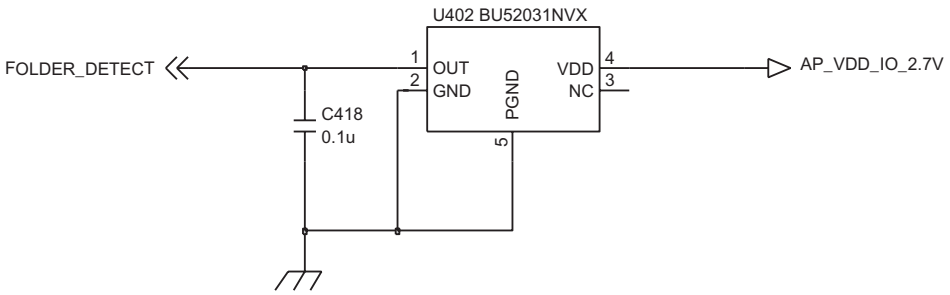


Figure. Schematic of folder on/off detection circuit

3.10.3 Keypad backlight

There are 4 White LEDs on Top side of Main PCB and 2 White LEDs on Top side of Key PCB in board backlight circuit.

Both of them are controlled by PM6658.

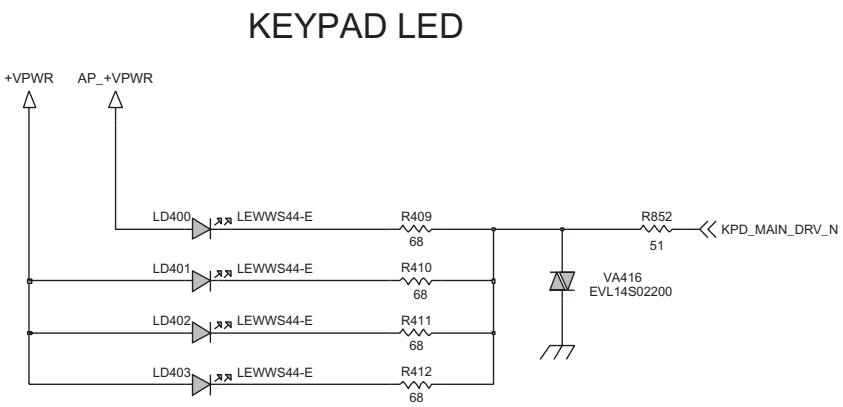


Figure. Schematic of main PCB keypad backlight circuit

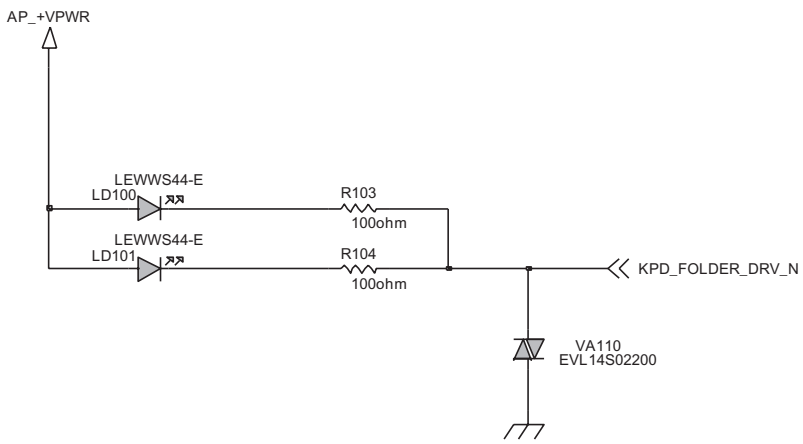
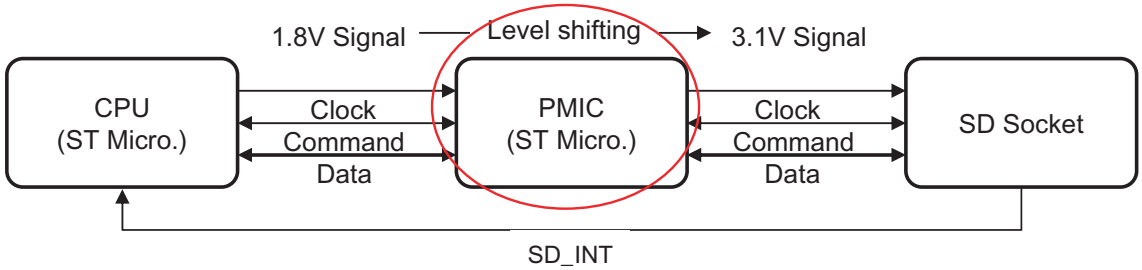
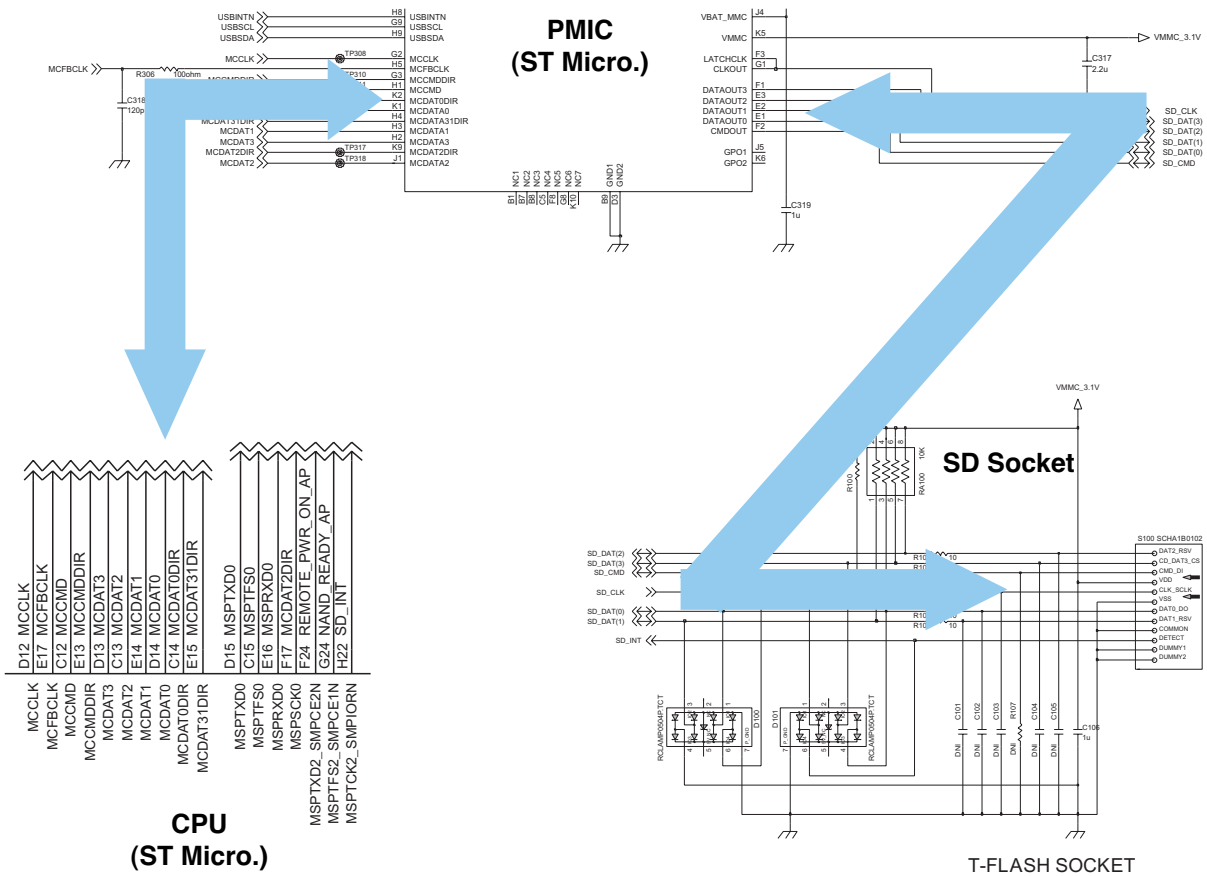


Figure. Schematic of key PCB keypad backlight circuit

3.10.4 Micro SD





3.11 Subsystem of MSM6280

3.11.1 ARM Microprocessor Subsystem

The MSM6280 device uses an embedded ARM926EJ-S microprocessor. This microprocessor, through the system software, controls most of the functionality for the MSM device, including control of the external peripherals such as the keypad, LCD, RAM, ROM, and EEPROM devices.

Through a generic serial bus interface (SBI), the ARM926EJ-S configures and controls the functionality of the RFR6220, RTR6250, RFR6250, and PM6650-2 devices.

For the RFCMOS platform (RTR6285 and PM6658), SSBI (single-wire SBI) will be supported.

3.11.2 UMTS/HSDPA Subsystem

The UMTS/HSDPA subsystem performs the digital release 99 June 2004 of the WCDMA FDD standard and release 5 specifications of HSDPA signal processing. See Section 1.3.2 for more details.

■ Demodulating fingers

3.11.3 GSM/GPRS Subsystem

The GSM/GPRS/EGPRS subsystem reuses the MSM6250® GSM core. It performs the digital GSM signal processing and PA gain controls for GPRS support. The PA output level is controlled by an analog signal generated on the MSM device. In GSM mode, the power profile ramps up before the burst and ramps down after the burst. In GPRS mode, at the beginning of each burst (up to Four active transmit slots), PA must be smoothly ramped up to some desired output power level, held at that level for the current slot, smoothly ramped down/up during the transition period and held to the new level for the next slot until the last slot. Then it must be smoothly ramped down to near-zero level. The MSM6280 support differential GSM PA power control output.

3.11.4 RF Interface

The RF interface communicates with the mobile station external RF circuits. Signals to these Circuits control signal gain in the Rx and Tx signal path, control DC offset errors, and maintain the system frequency reference.

3.11.5 HKADC

The MSM6280 device has an on-chip 8-bit analog-to-digital converter (ADC) that is available for digitizing analog signals representing parameters such as battery voltage, temperature, and RF power levels. These parameters support handset-level housekeeping functions - various tasks that must be performed to keep the “house” or handset, in order. Thus the term housekeeping ADC (HKADC) is used.

3.11.6 Mode select and JTAG interfaces

The mode pins to the MSM6280 device determine the overall operating mode of the ASIC. The options under the control of the mode inputs are native mode, which is the normal subscriber unit operation, ETM mode, which enables the built-in trace mode, and test mode for factory testing.

The MSM6280 device meets the intent of the ANSI/IEEE 1149.1A-1993 feature list. The JTAG interface can be used to test digital interconnects between devices within the handset during manufacture.

3.11.7 Stereo Wideband CODEC

The MSM6280 device integrates a wideband voice/audio codec into the MSM. The codec supports two differential microphone inputs, one differential earphone output, one single-ended earphone output, and a differential analog auxiliary interface. The codec integrates the microphone and earphone amplifiers into the MSM6280 device, reducing the external component count to just a few passive components. The microphone (Tx) audio path consists of a two-stage amplifier with the gain of the second stage set externally. The Rx/Tx paths are designed to meet the ITU-G.712 requirements for digital transmission systems.

3.11.8 Vocoder Subsystem

The MSM6280 QDSP4000 supports AMR, FR, EFR, and HR. In addition, the QDSP4000 has modules to support the following audio functions: DTMF tone generation, DTMF tone detection, Tx/Rx volume controls, Tx/Rx automatic gain control (AGC), Rx automatic volume control (AVC), ear seal echo canceller (ESEC), acoustic echo canceller (AEC), noise suppression (NS), and programmable, 13-tap, Type-I, FIR, Tx/Rx compensation filters. The MSM6280 device's integrated ARM926EJ-S processor downloads the firmware into the QDSP4000 and configures the QDSP4000 to support the desired functionality.

3.11.9 General-Purpose Input/Output Interface

The MSM6280 device has general-purpose bidirectional input/output pins. Some of the GPIO pins have alternate functions supported on them. The alternate functions include a USB interface, additional RAM, ROM, and general-purpose chip-selects, a parallel LCD interface, and a UART interface. The function of these pins is documented in the various software releases.

3.11.10 UART

The MSM6280 device employs three UARTs. UART1 has dedicated pins while UART2 and UART3 share multiplexed pins.

3.11.11 USB

The MSM6280 device integrates a universal serial bus (USB) controller that supports both unidirectional and bidirectional transceiver interfaces. The USB controller acts as a USB peripheral communicating with the USB host. MSM6280 supports the 3-wire USB functionality.

3.12 External memory interface

The MSM6280 device was designed to provide two distinct memory interfaces. EBI1is used to support high-speed synchronous memory devices. EBI2 is used to support slower asynchronous devices such as LCD and NAND Flash.

■ EBI1 Features

- 32-bit SDRAM (low power SDRAM)
- The MSM6280 device supports only 32-bit SDRAM. NOR/PSRAM configurations are not supported. The reason that only 32-bit SDRAM is supported on the MSM6280 device is that when higher speed HSDPA (7.2 Mbps) is implemented, the ARM will be clocked at 270 MHz and the bus at 90 MHz. QUALCOMM at this time guarantees 3.6 and 7.2 Mbps HSDPA performance with this memory configuration. HSDPA performance on the MSM6280 device with NOR/PSRAM parts cannot be guaranteed at this time. There could also be potential MIPs issues for HSDPA with NOR/PSRAM and 16-bit SDRAM. Therefore, we strongly recommend customers to use 32-bit SDRAM in their designs.

■ EBI2 Features

- Support for asynchronous flash (16-bit and 8-bit). Page mode is not supported. Programmable wait states for access, hold, and recovery for all chip-selects.
- Interface support for byte addressable 16-bit devices (UB_N and LB_N signals)
- Support for 8-bit and 16-bit wide NAND Flash
- Support of four general-purpose chip-selects. Two of these chip-selects can be configured as NAND chip-selects.
- Support for parallel, port-mapped LCD interfaces (Intel and Motorola timing), (18- bit, 16-bit, and 8-bit)
- Support for system word, Hword, and byte accesses to 16-bit and 8-bit wide devices on all chip-selects (bus sizing supported for all interfaces with the exception of NAND)
- Support for memory accesses (with exception of NAND) by SYS AHB and DMA AHB bus. NAND is accessed through a special controller

- Support for any generic external peripheral whose interface timing is the same as that of asynchronous memories
- SW controllable write protect feature (against user mode writes)
- NAND controller change to allow a software programmable command that can be issued to the NAND device.
- Support for an EBI2 pin interface for either 1.8 V or 2.6 V pad power supply voltage
- EBI2 boot-up from a 16-bit non-multiplexed NOR interface type device with special support added to handle the latency associated with fetching the first page from a NAND device.

■ 512Mb NAND flash memory + 512Mb SDRAM (1die)

Interface Spec				
Device	Part Name	Maker	Read Access Time	Write Access Time
FLASH	TYA000BC00DOGG	Toshiba	35 ns/Bytes	50 ns/Bytes
SDRAM	TYA000BC00DOGG	Toshiba	107 ns/4Double Word	53 ns/4Double Word

Table. External memory interface for KT610

3.13 Hardware sub system of MSM6280

3.13.1 RF Interface

The MSM6280 device interfaces with all MSM6280-series radioOne ICs. There will be three RF platforms supported within the MSM6280 chipset, schedules of which are available in the software and product release documents. The MSM6280 radioOne chipset includes

■ MSM6280 chipset with Platform 3U
- RFR6250 UMTS high-band receiver IC + GPS receiver IC
- RTR6250 WCDMA Tx/GSM/GPRS/EDGE transceiver IC
- RFR6220 UMTS low-band receiver IC
- PM6650-2 power management IC
- MSM6280 Mobile Station Modem IC

■ MSM6280 chipset with Platform B/E (RFCMOS)
- RTR6275 WCDMA Tx/GSM/GPRS/EDGE transceiver IC
- RFR6275 WCDMA RF-to-baseband receiver IC
- PM6650-2 power management IC
- MSM6280 Mobile Station Modem IC
- MSM6280 chipset with Platform D:
- RTR6275 WCDMA Tx/GSM/GPRS/EDGE transceiver IC
- RFR6500/6525 WCDMA RF-to-baseband receiver IC
- PM6650-2 power management IC
- MSM6280 Mobile Station Modem IC

■ MSM6280 chipset with Platform F
- RTR6285 WCDMA Tx/GSM/GPRS/EDGE transceiver IC
- PM6658 power management IC
- MSM6280 Mobile Station Modem IC

■ Platform 3U Lite is Platform 3U minus the RFR6220 IC, and it is also supported by the MSM6280 device. Platform 3U Lite supports the following bands/modes
- UMTS/HSDPA 2100/1900 MHz and GSM/GPRS/EDGE 850/900/1800/1900 MHz

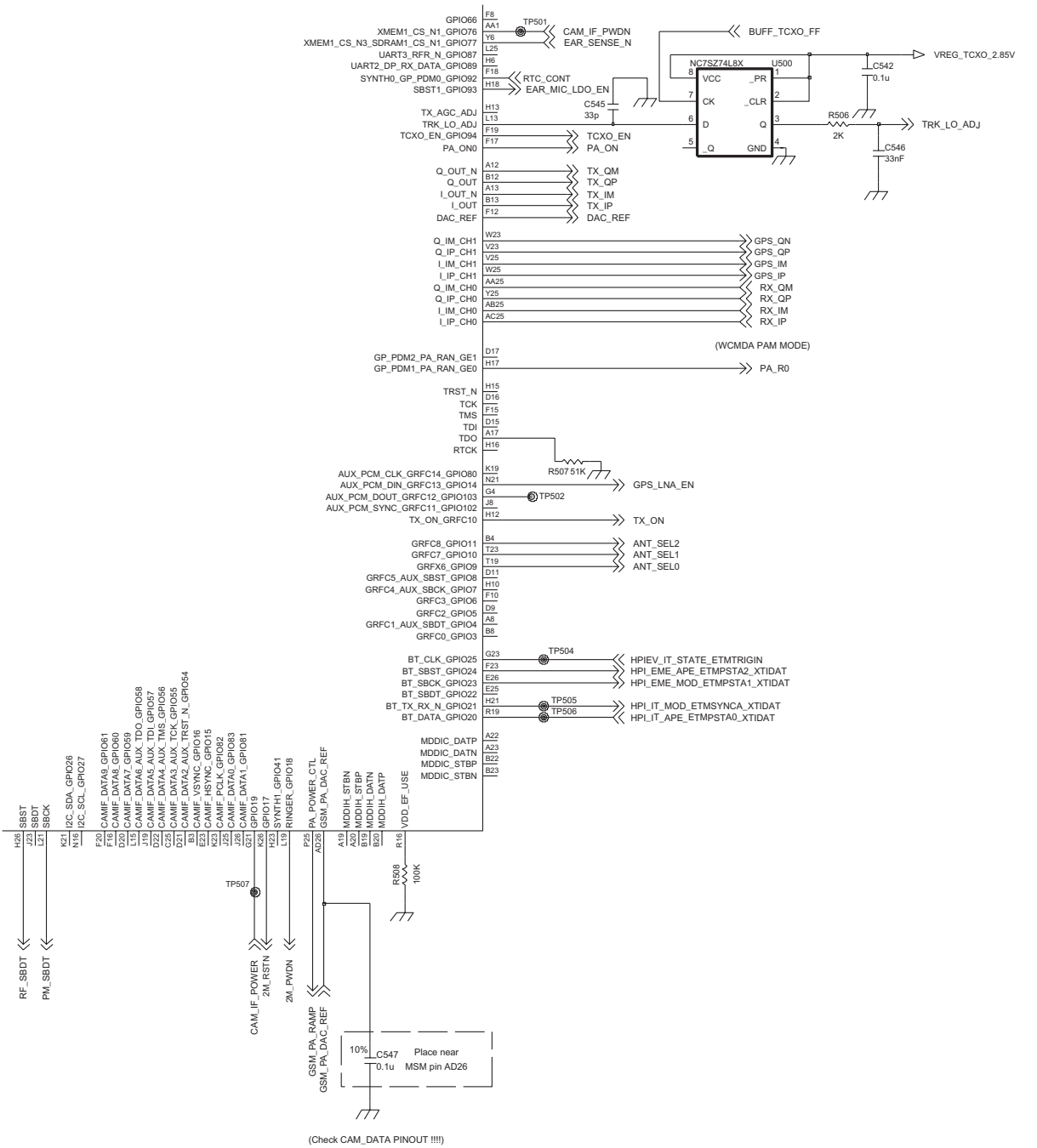


Figure. Schematic of RF Interface of MSM6280`

3.13.2 MSM sub system

3.13.2.1 SIM interface

SIM interface scheme is shown in Figure.

And, there control signals are followed

■ USIM_CLK : USIM Clock

■ USIM_Reset : USIM Reset

■ USIM_Data : USIM Data T/Rx

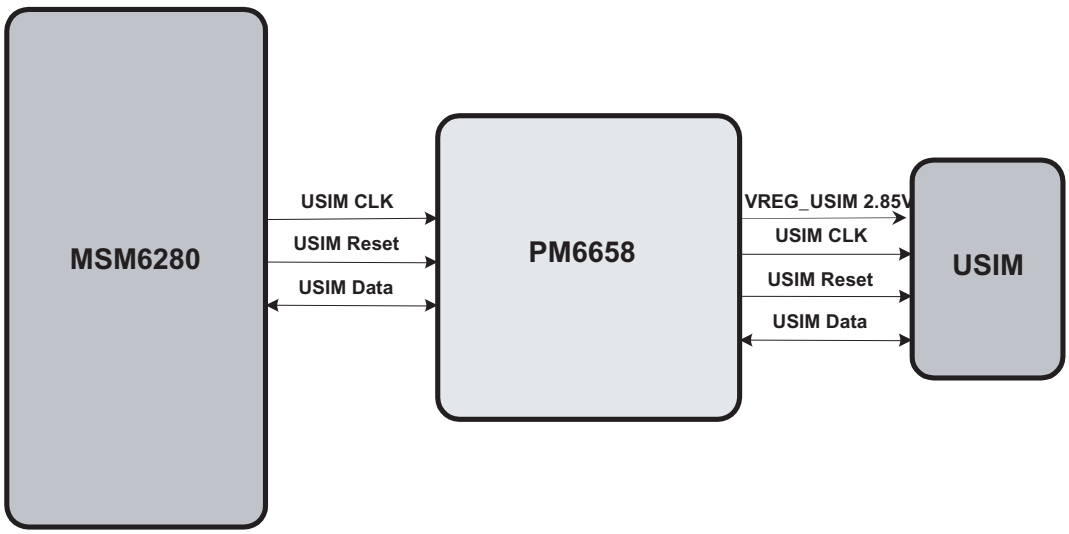


Figure. SIM Interface

3.13.2.2 UART interface

UART signals are connected to MSM GPIO through IO connector with 115.2kbps speed. And, used for RF calibration and Data download.

GPIO_Map	Name	Note
GPIO_96	UART_RXD	Data_Rx
GPIO_95	UART_TXD	Data_Tx

Table. UART interface

3.13.2.3 USB

The MSM6280 device contains a Universal Serial Bus (USB) interface to provide an efficient interconnect between the mobile phone and a personal computer (PC). The USB interface of the MSM6280 was designed to comply with the definition of a peripheral as specified in USB Specification, Revision 2.0.

The USB 2.0 specification requires hosts such as PCs to support all three USB speeds, namely low-speed (1.5 Mbps), full-speed (12 Mbps) and hi-speed (480 Mbps). The USB 2.0 specification allows peripherals to support any one or more of these speeds.

KT610's USB interface uses the PM6658 internal logic for USB Transceiver.

Name	Note
USB_DAT	Data to/from MSM
USB_SE0	Data to/from MSM
USB_OE_N	Out-Put Enable of Transceiver
USB_VBUS	USB_Power From Host(PC)
USB_D+	USB Data+ to Host
USB_D-	USB Data- to Host

Table. USB signal interface

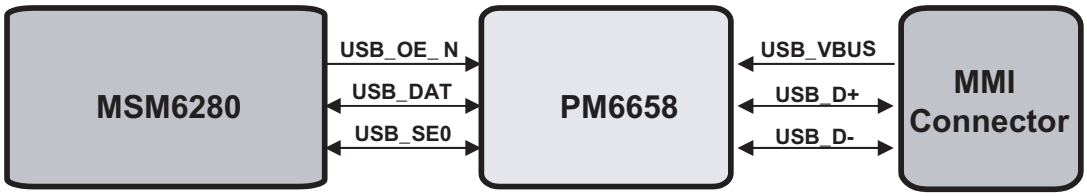


Figure. USB Interface

MSM6280_USB Block **PM6658_USB Block**

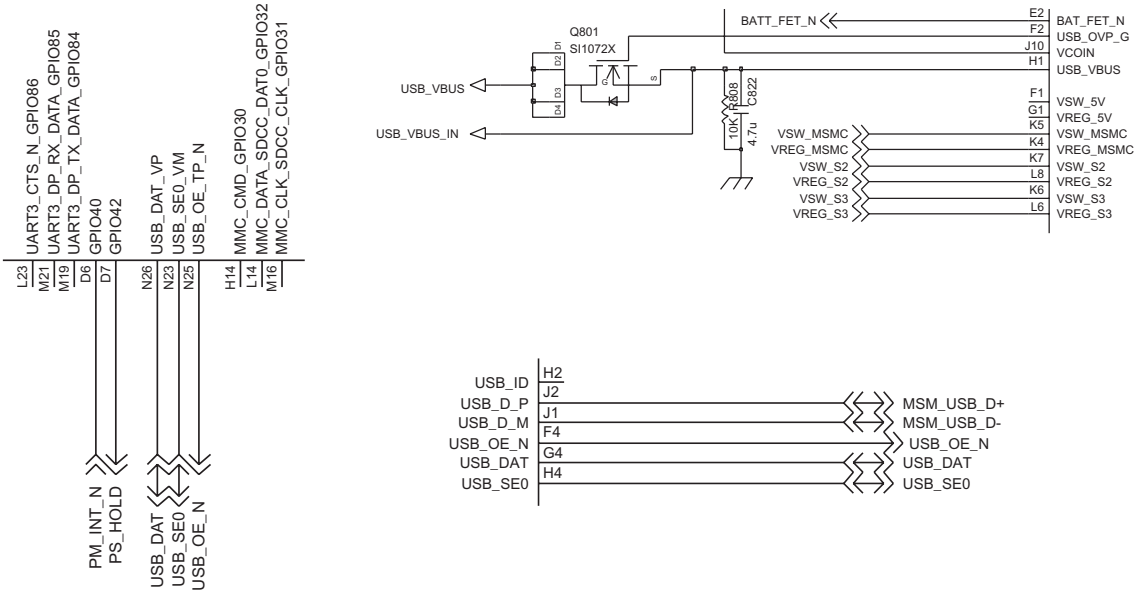


Figure. Schematic of USB block (MSM6280 Side & PM6658 Side)

3.13.2.4 HKADC (House Keeping ADC)

The MSM6280 TS/HKADC is an 8-bit successive-approximation circuit. The resolution of the ADC is 8-bit. The TS/HKADC block diagram is shown in Figure. The TS/HKADC contains four main subblocks: a 6- channel MUX, a sample and hold circuit, a digital-to-analog converter, and a comparator latch block.

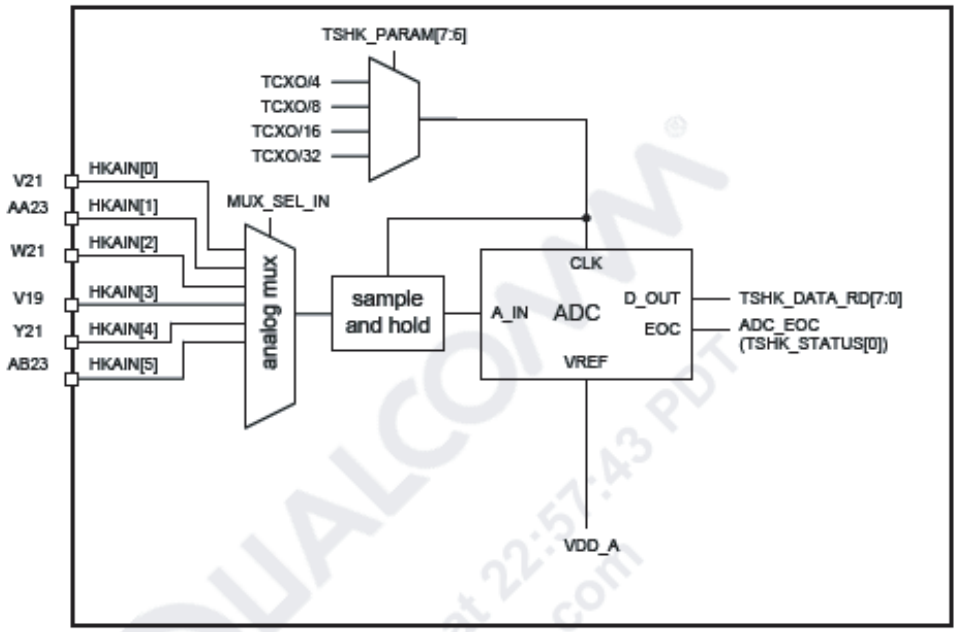


Figure. MSM6280 HKADC Block diagram

Channel	Signal	Note
HKADC0	AMUX_OUT	RF PAM Temperature sensing
HKADC1	VBATT_SENSE	Battery voltage level sensing
HKADC2	-	-
HKADC3	VBAT_TEMP	Battery Temperature sensing
HKADC4	PCB_Rev_ADC	PCB Revision Checking
HKADC5	-	-

Table. HKADC channel table

3.13.3 Power Block

3.13.3.1 General

MSM6280A, included RF, is fully covered by PM6658(Qualcomm PMIC). PM6658 cover the power of MSM6280, MSM memory, RF block, 2M Camera, USB, USIM and TCXO.

Major power components are :

PM6658 (U801) : Phone power supply

SIA411DJ (Q800) : External charger supply switching & Main Battery charging control

3.13.3.2 PM6658

A functional block diagram for the PM6658 device is shown in Figure.

The input power management portion accepts power from common sources°™battery, external charger, adapter, USB_VBUS, coin cell backup°™and generates all the regulated voltages needed to power the appropriate handset electronics. It monitors and controls the power sources, detecting which sources are applied, verifying that they are within acceptable operational limits, and coordinates battery and coin cell recharging while maintaining the handset electronics supply voltages.

The device's general housekeeping functions include a sixteen-position analog multiplexer that Has 5 internal connections, 6 hardwired external connections, and supports an additional 12 External connections via the multipurpose pins (MPPs). The internal connections are used to monitor on-chip functions, such as the die temperature and bandgap reference voltage. The hardwired external connections access input power nodes, such as VCHG, VBAT, etc. The 12 multipurpose pins can be configured as analog inputs that are routed through switch circuits to create 5 multiplexer inputs; these are available to monitor system parameters, such as temperatures and battery ID. The multiplexer output signal's offset and gain is adjusted, then buffered and routed to the MSM device for analog-to-digital conversion.

IC-level interfaces include the configurable serial bus interface (SBI) used by the MSM device to control and status the PM6658 IC. This bus is supplemented by an interrupt manager for time- Critical information. Another dedicated IC interface circuit monitors multiple trigger events and controls the power-on/power-off sequences.

On-chip voltage regulators generate 19 programmable output voltages using a combination of 4 switched-mode power supplies and 15 low-dropout linear regulators, all derived from a Common trimmed voltage reference. Two externally controlled bits allow selection of the default MSM core voltage (VREG_MSMC = 1.200 or 1.375 V) and determine whether a buck regulator (VREG_S3) is enabled or not upon power up.

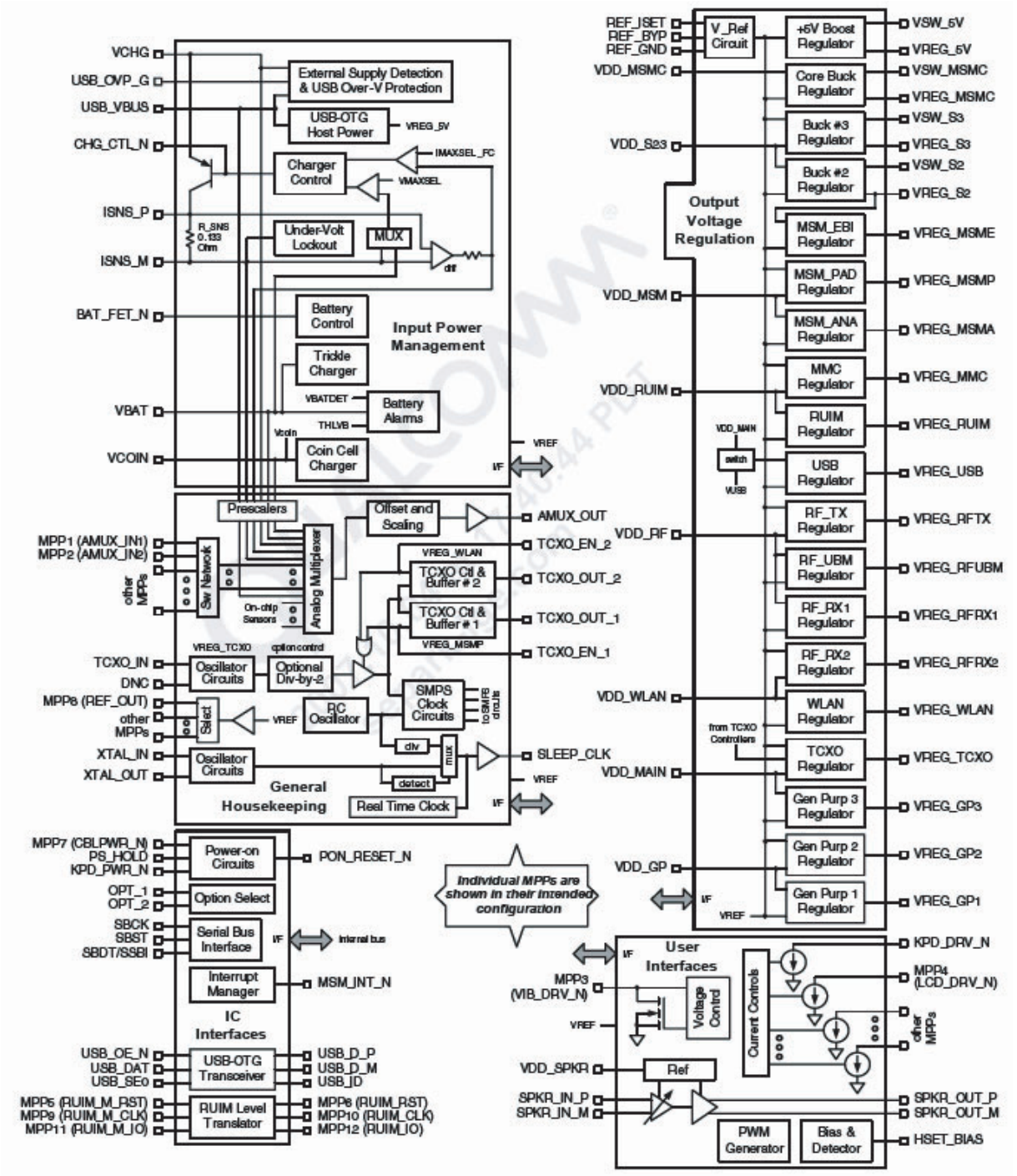


Figure. PM6658 Functional Block Diagram

3.13.3.3 Charging control

The PM6658 IC provides support circuitry for charging Li-ion batteries, utilizing as many as four MSM-enabled charging techniques: trickle, constant current, constant voltage, and pulse. Battery voltage, external supply voltage, and total detected current measurements are available to the MSM device through the analog multiplexer. This allows the MSM device to monitor charging parameters, make decisions, and control the charging process.

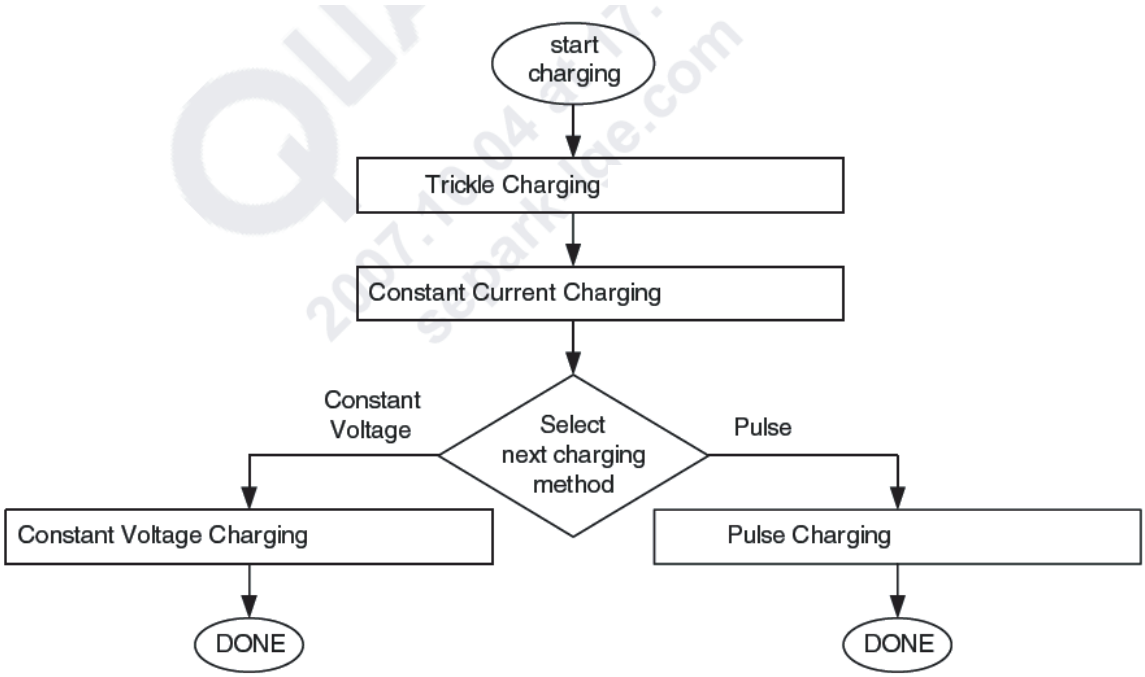


Figure. Charging sequence for a severely depleted battery

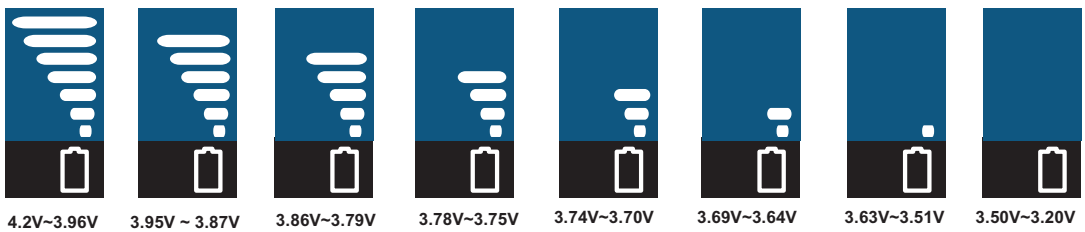


Figure. KT610 Battery Bar Display (Standby condition)

Trickle charging

Trickle charging of the main battery, enabled through software and powered from VDD, is provided by the PM6658 device. This mode is used to raise a severely depleted battery's voltage to a level sufficient to begin fast charging. If fast charging is enabled while the battery is below 2.55 V (the UVLO threshold), the battery pulls VDD down and causes the phone to turn off. Even if the battery voltage is between 2.55 and 3.10 V, fast charging is still not recommended because the regulators can fail. Trickle charging avoids these two potential problems by getting the battery voltage to about 3.1 V or more before attempting fast charging.

The trickle charger is an on-chip programmable current source that supplies current from VDD to the VBAT pin; pertinent performance specifications are given in Tabl. Software must terminate trickle charging based upon battery voltage measurements at the MSM device's HKADC (routed through the PM analog multiplexer) and the battery type - there is no preset termination threshold.

Parameter	Comments	Min	Typ	Max	Units
Trickle current range	Programmable[2]	0		80	mA
Trickle charger gain error[1]		-10		+10	%
Trickle charger offset error [2]	Trickle current setting = TBD	TBD		TBD	mA

1. Test conditions: at least 1 V of headroom for accurate current settings ($V_{DD} > V_{BAT} + 1$ V).
2. Valid current settings are: 0, 20, 30, 40, 50, 60, 70, and 80 mA. A value of 0 mA disables trickle charging.

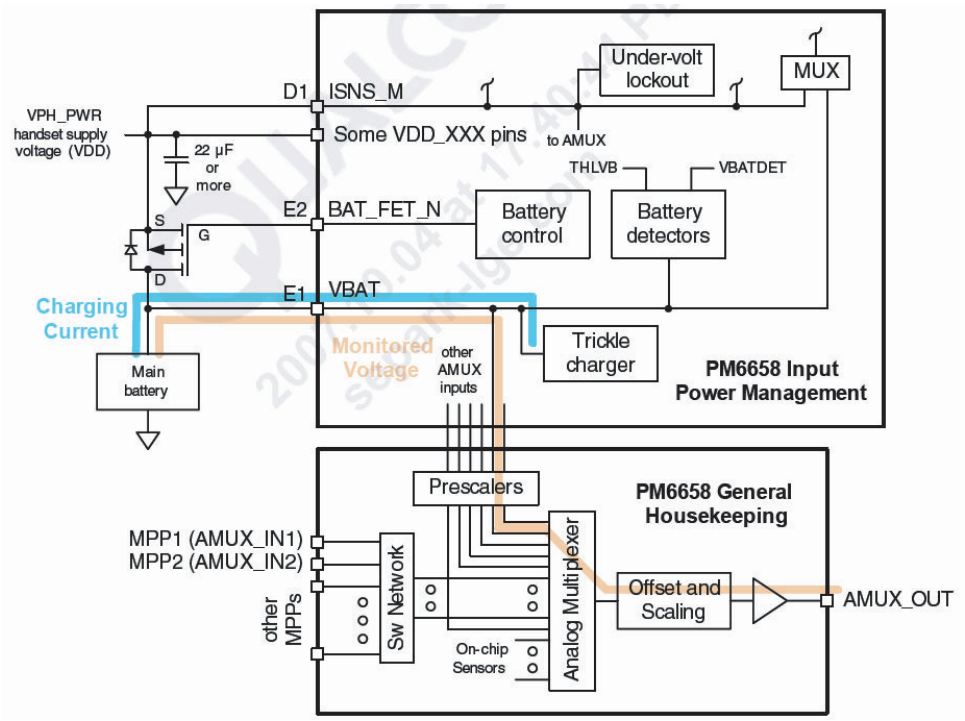


Figure. Trickle Charging

Constant current charging

The PM6658 device supports constant current charging of the main battery by closing the battery MOSFET (connecting the battery to VDD), and closed-loop controlling the pass transistor. The closed-loop control regulates the total current (handset electronics plus charging current) to match the programmed value (IMAXSEL). The MSM device monitors the charging process as described earlier, and continues the constant current mode until the battery reaches its target voltage. Lithiumion batteries require further charging using constant voltage or pulsed techniques.

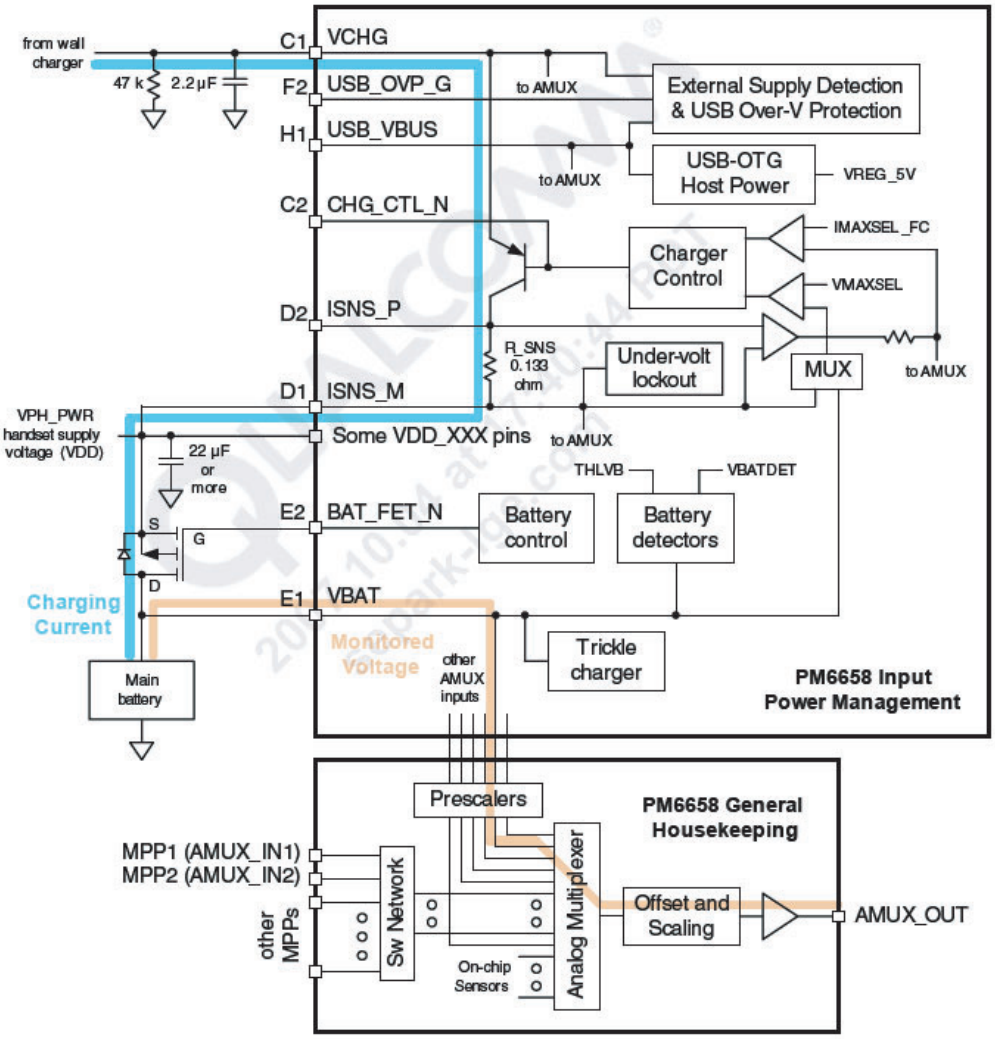


Figure. Constant current charging

Constant voltage charging

Once constant current charging of a Li-ion battery is finished, the charging continues using Either constant voltage or pulse techniques. Discussion of constant voltage charging is presented here; pulse charging is covered in the next subsection.

The MSM device and its software determines if and when it is appropriate to begin the constant voltage mode within the charging process. When the battery voltage reaches a target value, a Timer is started; when that time expires, charging is complete.

The PM6658 support of constant voltage charging is very similar to its constant current mode:

The battery MOSFET is closed and the pass transistor is closed-loop controlled. However, in this case, the closed-loop control regulates the voltage at VBAT to match the programmed Value VMAXSEL. This ensures the most accurate final battery voltage - lithium-ion battery manufacturers recommend a voltage accuracy of 1% or better at the end of charge.

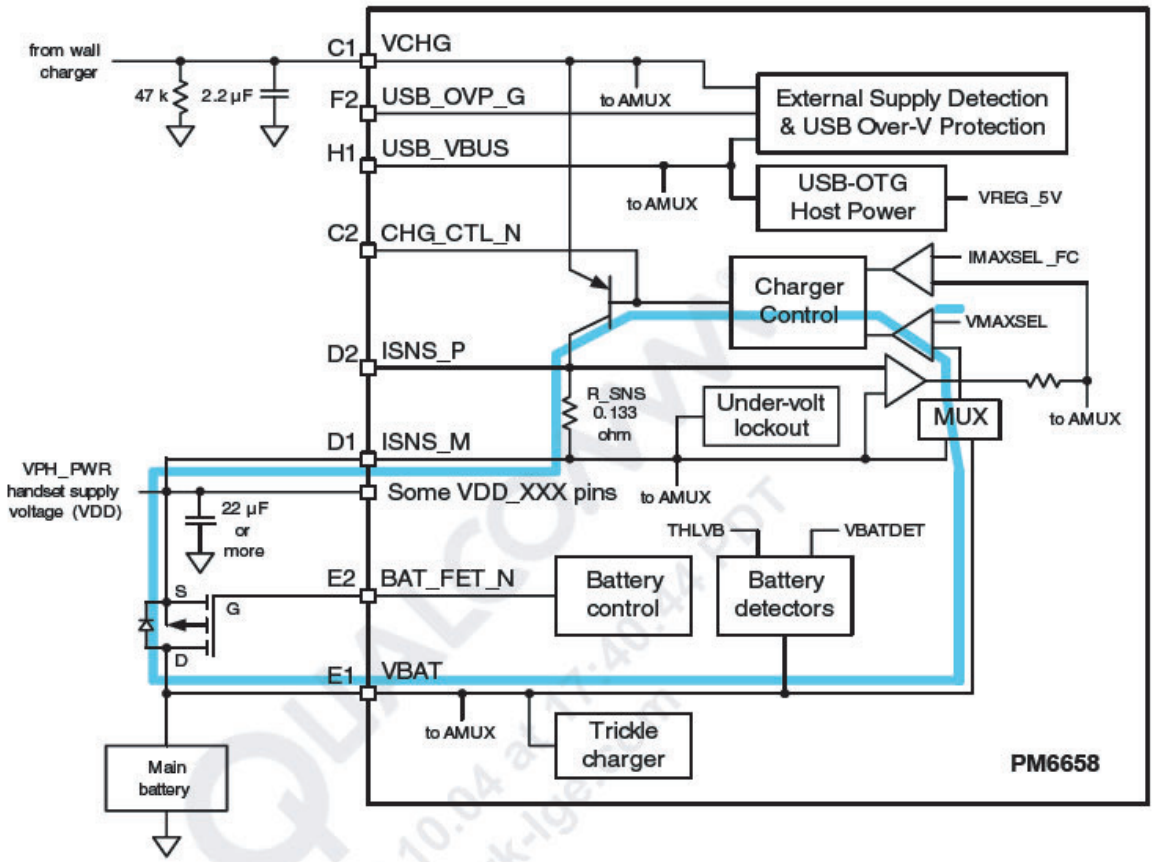


Figure. VBAT regulation during constant voltage charging

3.14 Audio and sound

3.14.1 Overview of Audio & Sound & BT path

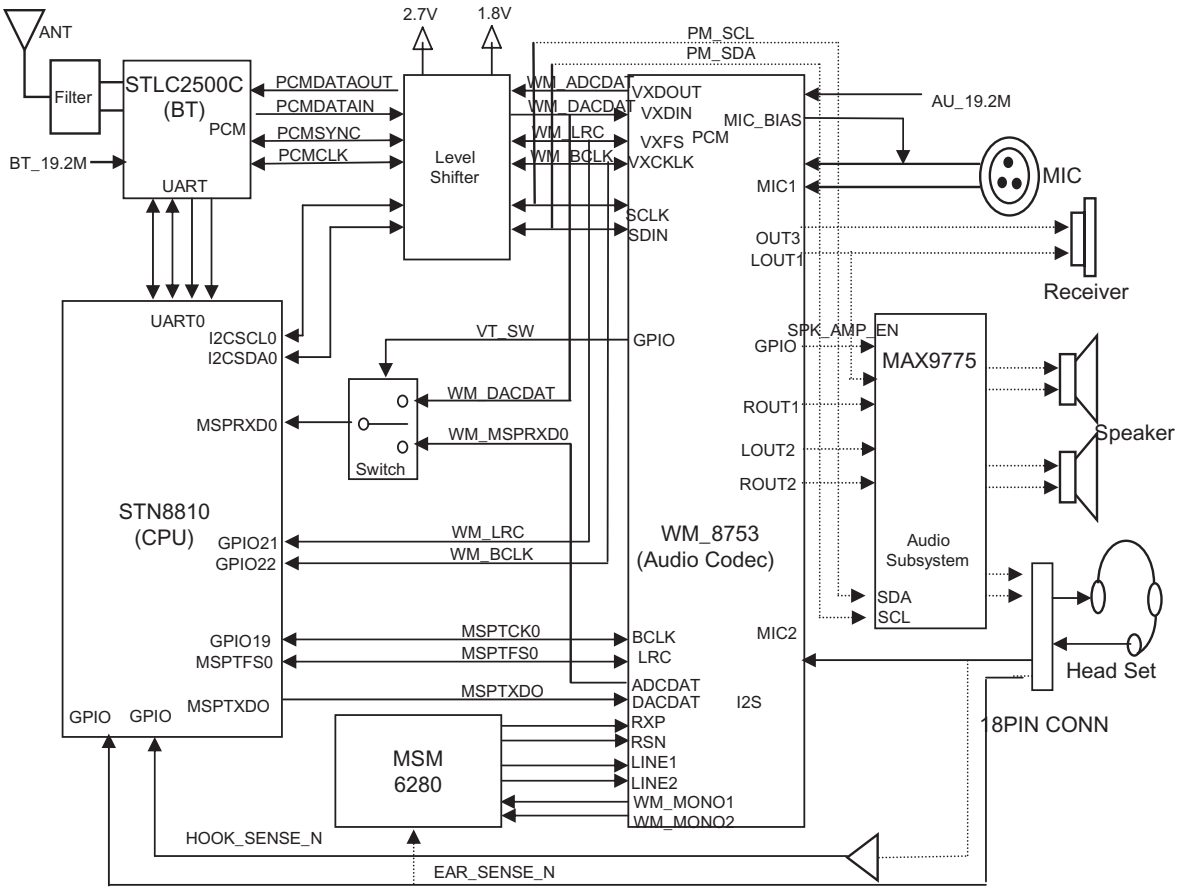


Figure. Block diagram of Audio & Sound path

3.14.2 Audio signal processing & interface

3.14.2.1 MSM6280 audio interface

The MSM6280 audio front end is comprised of the stereo wideband codec, PCM interface, and additional DSP audio processing.

The stereo wideband codec allows the MSM6280 device to support stereo music/ringer melody applications in addition to the 8 kHz voice band applications on the forward link. In the audio transmit path, the device operates as 13-bit linear converter with software-selectable 8 kHz and 16kHz sampling rate. In the audio receive path, the device operates as a software selectable 13-bit or 16-bit linear converter with software selectable 8 kHz, 16 kHz, 22.05 kHz, 24 kHz,32 kHz, 44.1 kHz, or 48 kHz sampling rate. Through software, the Rx path can be configured as either a mono or stereo output.

New to the MSM6280 device is a transmit (Tx) ADC path that now supports stereo wideband sampling.The integrated codec contains all of the required conversion and amplification stages for the audio front end. The codec operates as a 13-bit linear codec with the transmit (Tx) and receive (Rx) filters designed to meet ITU-T G.712 requirements. The codec includes a programmable sidetone path for summing a portion of the Tx audio into the Rx path. An on-chip voltage/current reference is provided to generate the precise voltages and currents required by the codec. This circuit requires a single capacitor of 0.1 uF to be connected between the CCOMP and GND pins.

The on-chip voltage reference also provides a microphone bias voltage required for electret condenser microphones typically used in handset applications. The MICBIAS output pin is designed to provide 1.8 volts DC while delivering as much as 1 mA of current. Audio decoder summing and headset switch detection are included.

The codec interface includes the amplification stages for both the microphone and earphone.

On the transmit (Tx) path the interface supports two differential microphone inputs, a differential auxiliary input, and a stereo line input. On the receive (Rx) path the interface supports one differential earphone output, a stereo single-ended headphone output, one differential auxiliary output and stereo single-ended line outputs.

The codec is configured by the codec SBI Registers. Also part of the audio front end is the PCM interface. The PCM interface allows for an external codec to be used instead of the internal codec. This interface can be used in I2S mode which will allow for an external stereo DAC to be used.

The audio front end includes additional DSP audio processing that does gains, filtering and other audio processing. The DSP audio processing is configured through the QDSP4000 command types, and is not directly controlled by the microprocessor.

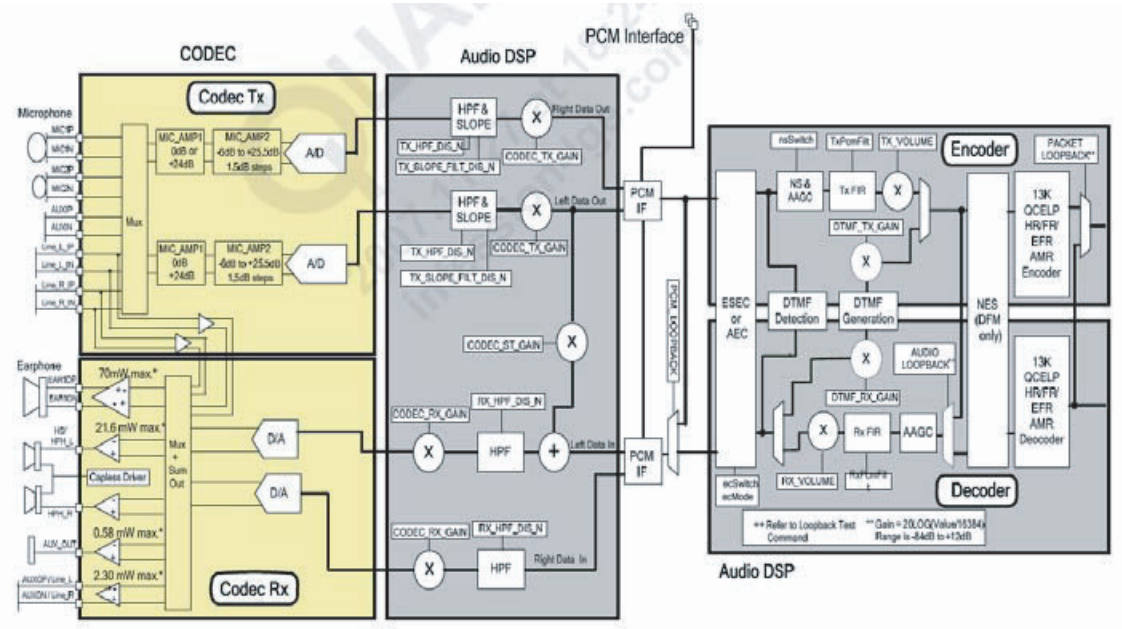


Figure. Detailed diagram of MSM6275 audio interface

3.14.2.2 STn8810 audio interface

- Smart Audio Accelerator (SAA)

This high-performance block performs an audio hardware accelerator based on a programmable audio DSP with 24-bit data path and ultra low power implementation.

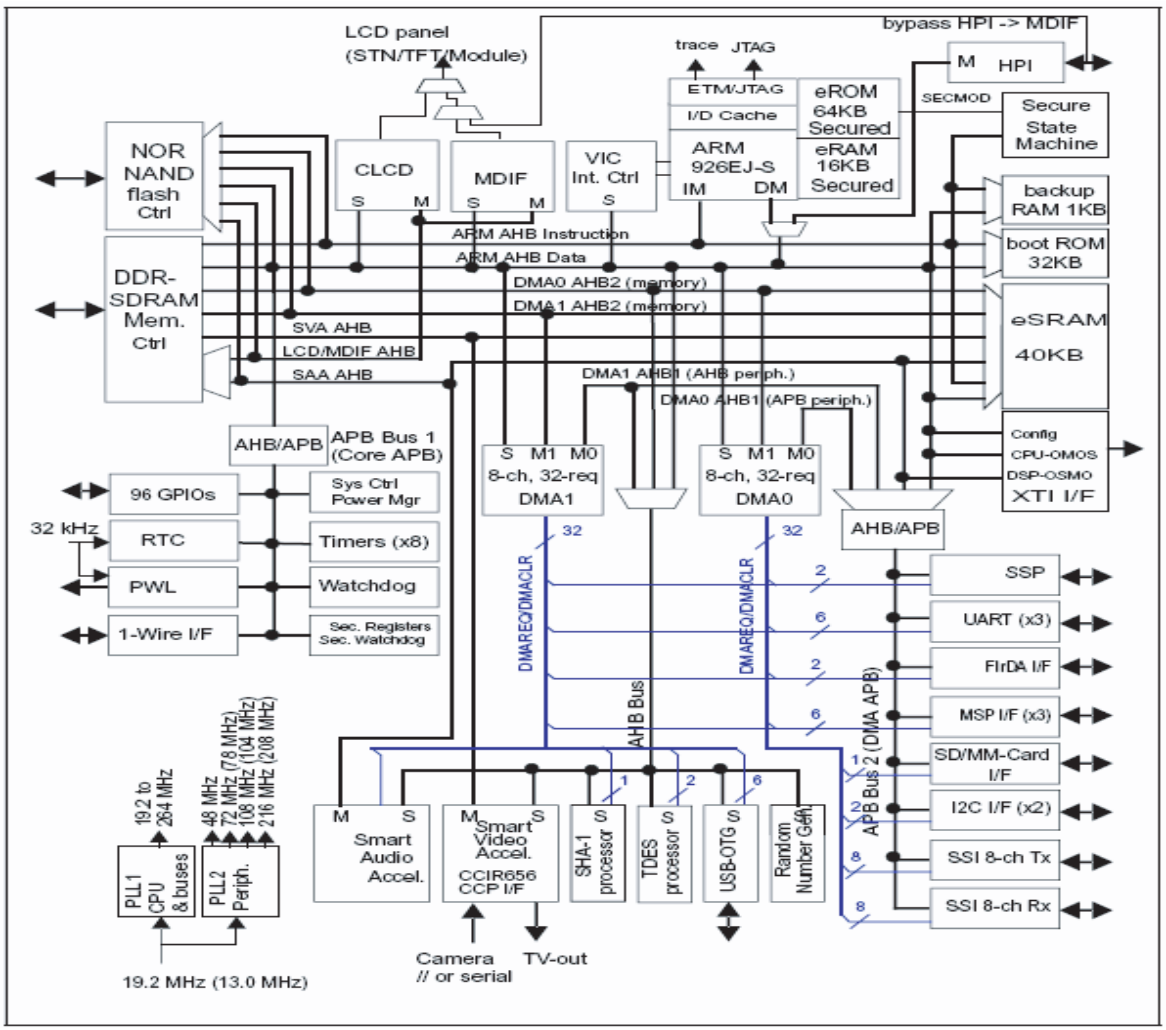


Figure. Detailed diagram of STn8810 audio interface

3.14.2.3 WM8753L audio interface

The WM8753L is a low Power, high quality stereo Codec with integrated Voice CODEC designed for portable digital telephony applications such as mobile phone, or headset with Hi-Fi playback capability. The device integrates dual interfaces to two differentially connected microphones, and includes drivers for speakers, headphone and earpiece. External component requirements are reduced as no separate microphone or headphone amplifiers are required. Advanced on-chip digital signal processing performs tone control, Bass Boost and automatic level control for the microphone or line input through the ADC.

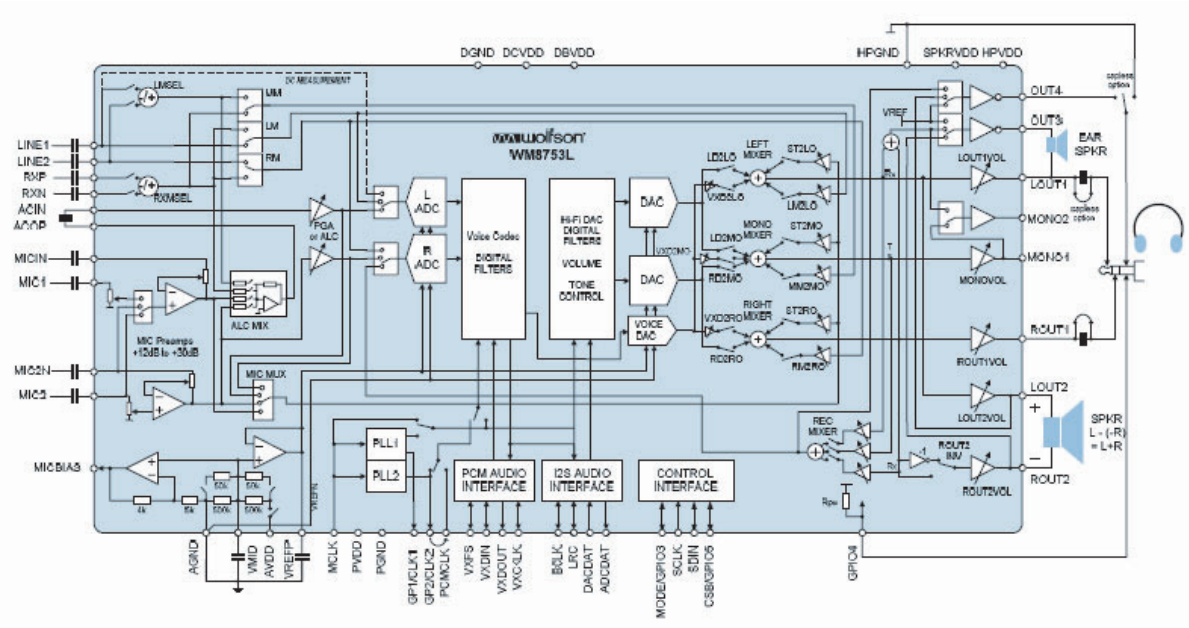
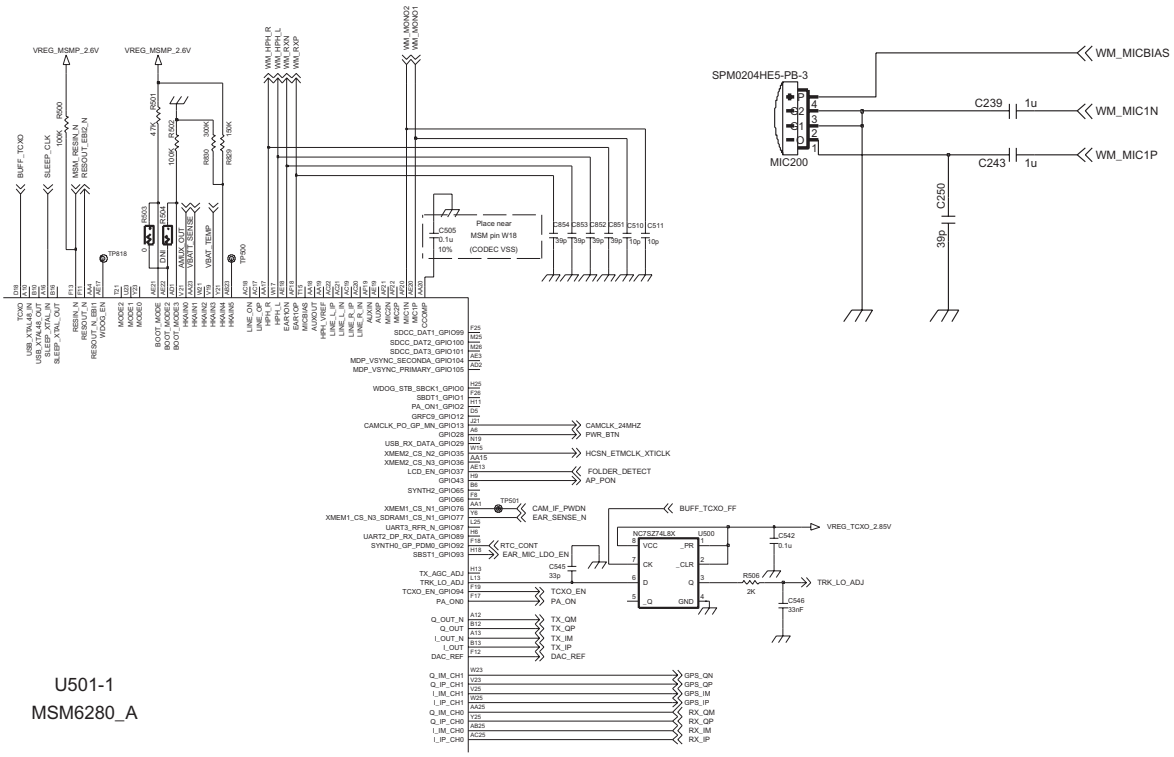


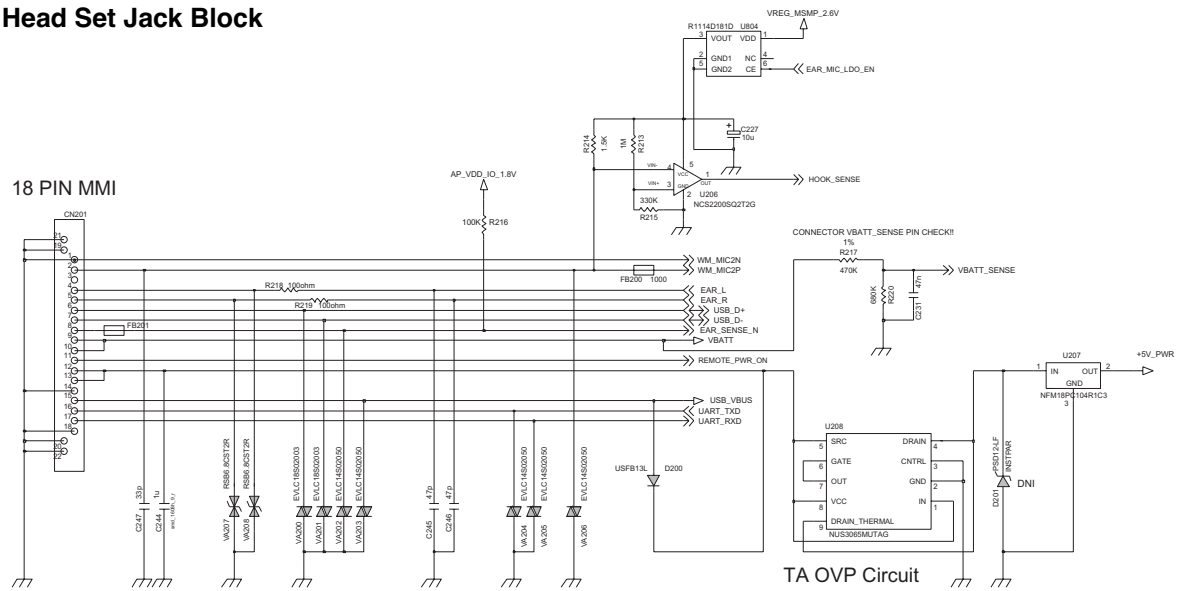
Figure. Detailed diagram of WM8753L audio interface

MSM6280 Block



Handset main MIC Block

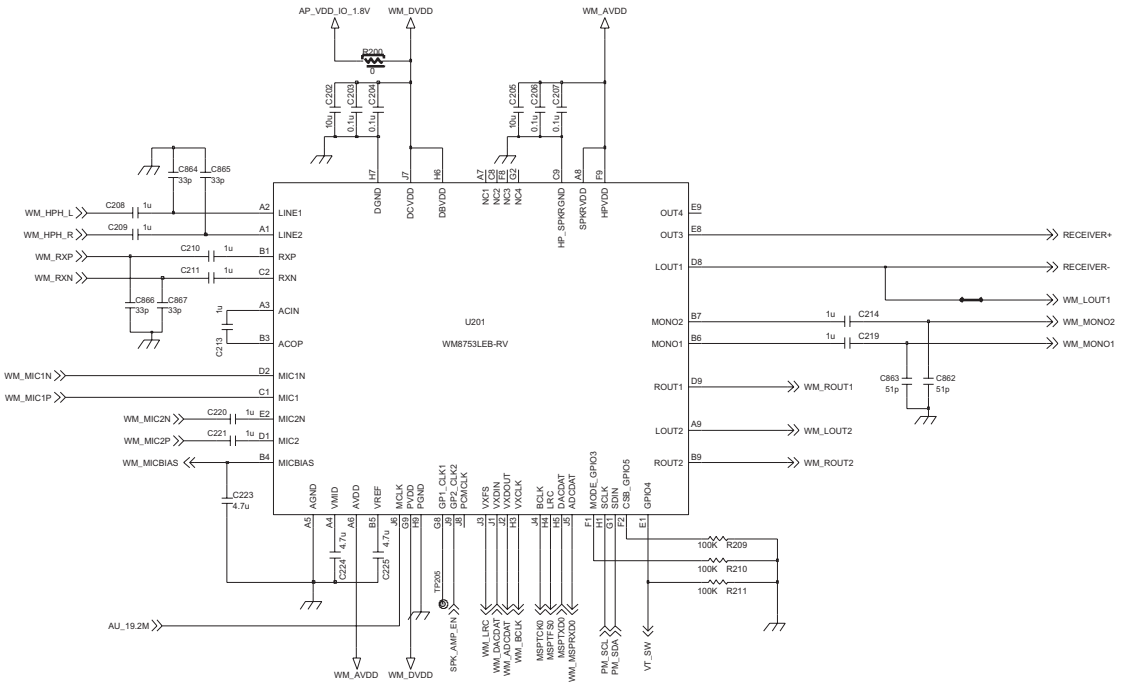
Head Set Jack Block



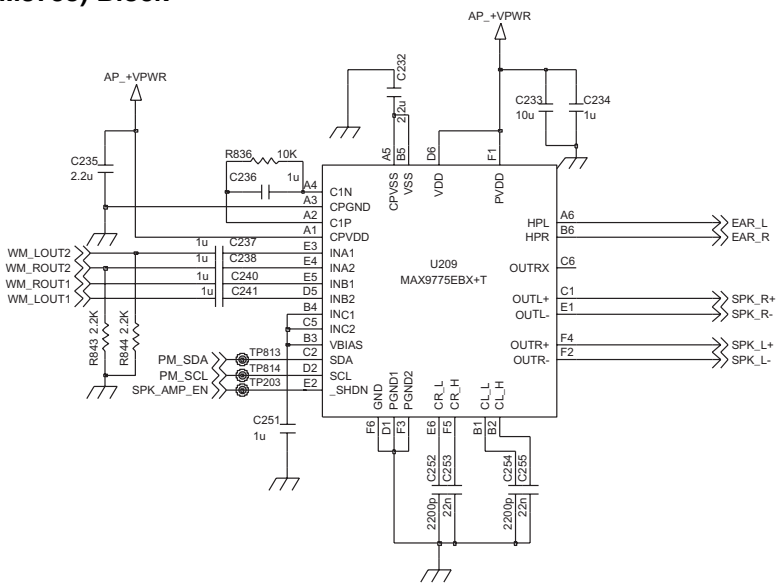
3. TECHNICAL BRIEF

Audio Codec(WM8753) Block

Audio Codec.



Audio Codec(WM8753) Block



AUDIO SUBSYSTEM

3.15 Camera interface

KT610 has two cameras : 2M Pixel CMOS and VGA Pixel CMOS Camera Below figures shows the camera board to board connector and camera I/F signal.

3.15.1 2 Mega Camera Interface

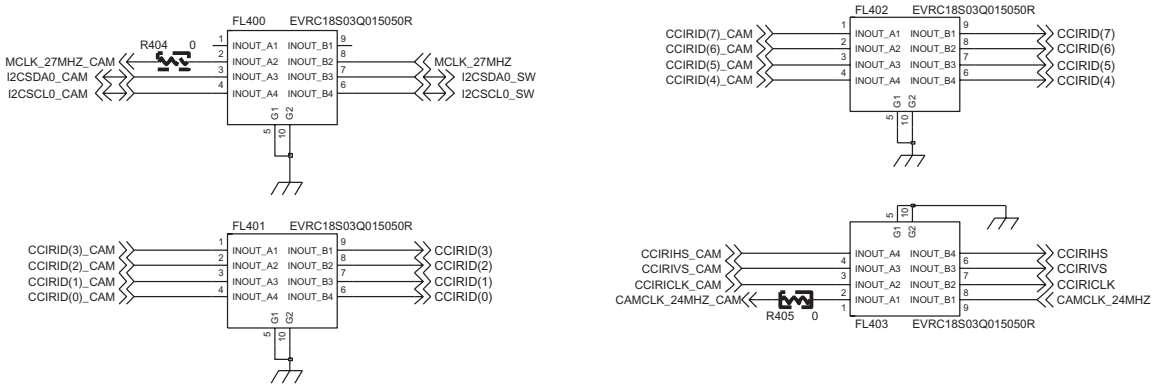


Figure. Schematic of 2 Mega Camera EMI/ESD filter I/F

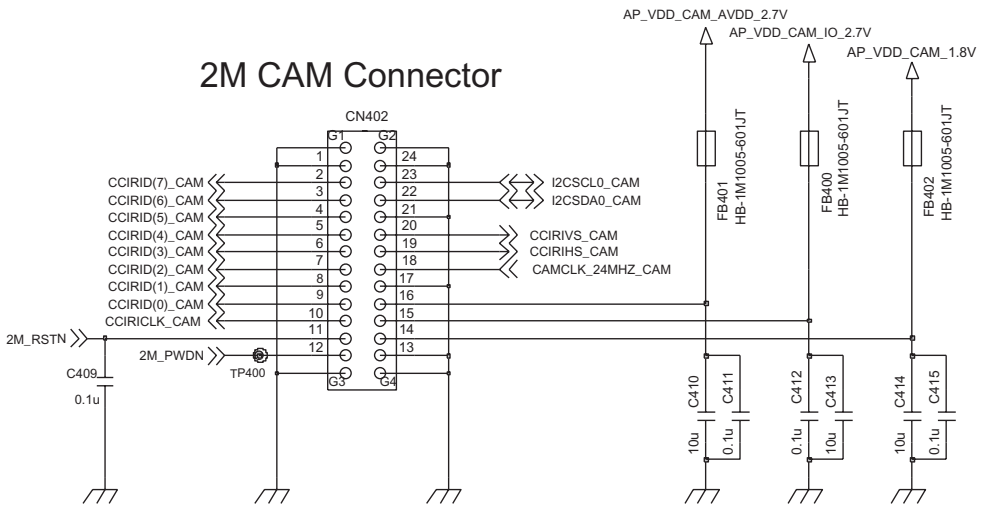


Figure. Schematic of 2 Mega Camera Board to Board Connector

No	Pin Name	I/O	Description
1	GND	GND	GND
2	D7	O	Pixel Clock
3	D6	O	Ground
4	D5	O	Ground
5	D4	O	Initializes sensor, Active Low
6	D3	O	Ground
7	D2	O	Non-connection
8	D1	O	Data for two-wire serial interface
9	D0	O	Clock for two-wire serial interface
10	PCLK	O	Non-connection
11	RSTN	I	Non-connection
12	PWDN	I	Ground
13	GND	GND	Power down mode, active High
14	VDDD 1.8V	P	Actuator Voltage
15	VDDIO 2.8V	P	Actuator Voltage
16	VDDA 2.8V	P	Analog Voltage
17	GND	GND	Analog Voltage
18	MCLK	I	Horizontal Synchronous signal
19	HSYNC	O	Vertical Synchronous signal
20	VSYNC	O	Ground
21	GND	GND	Master clock
22	SDA	I/O	Ground
23	SCK	I	Image data output
24	GND	I	Image data output

Table. Interface between 2M Camera Module and Main Board (in camera module)

The 2M Camera module is connected to main board with 34pin Board to Board connector (AXK8L34125). Its interface is dedicated camera interface port in STN8810 and MSM6280.

The camera port supply 24MHz master clock to camera module and receive 40.078MHz pixel clock (max.15fps), vertical sync signal, horizontal sync signal, reset signal and 8bits data from camera module. The camera module is controlled by I2C port from STN8810.

3.15.2 VGA Camera Interface

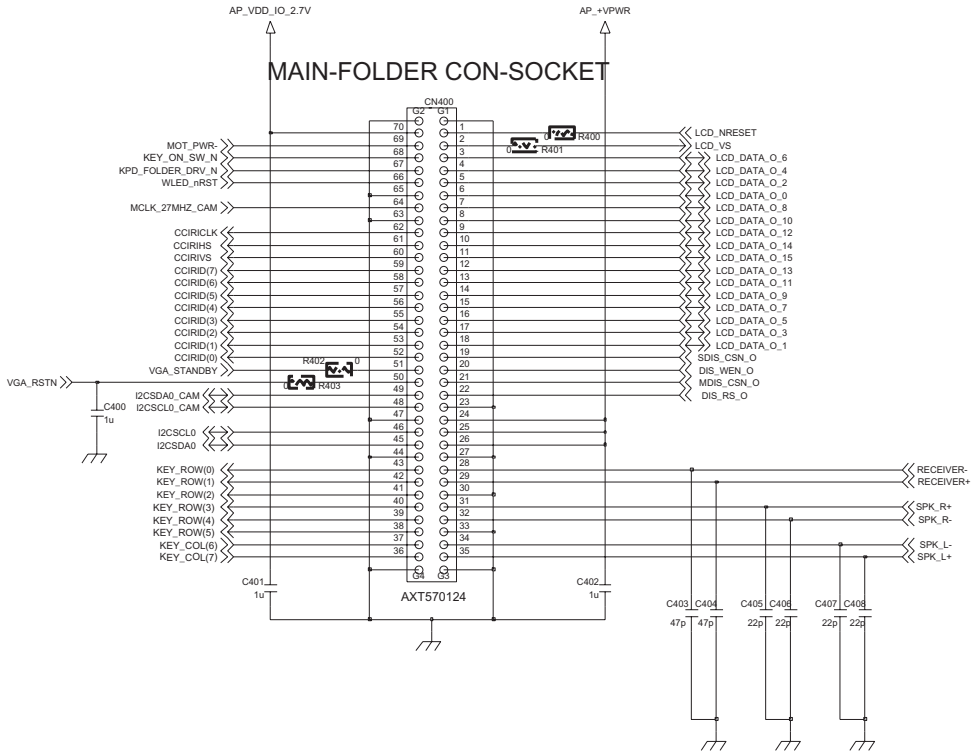


Figure. Schematic of Main-Folder B to B connector (in main BD)

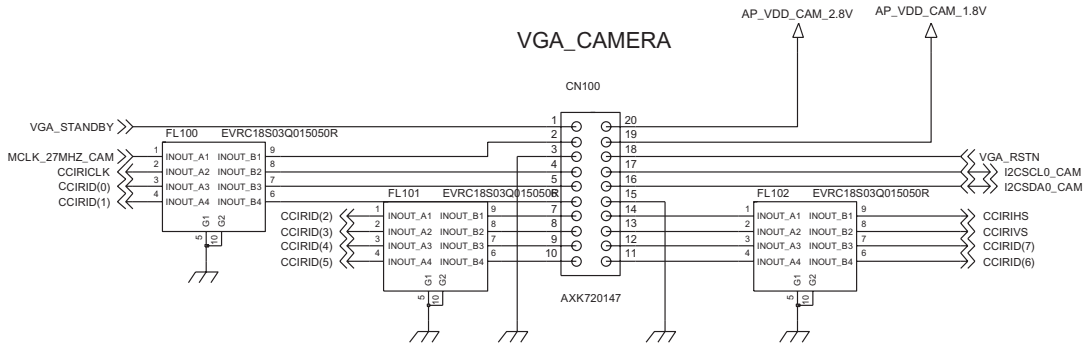


Figure. Schematic of VGA Camera Board to Board Connector (in Main-Folder FPCB)

The VGA Camera module is connected to main slider FPCB with 20pin Board to Board connector(AXK820145). The main slider FPCB is connected to main board with 70pin board to board connector.

Its interface is dedicated camera interface port in STN8810. The camera port supply 27MHz master clock to camera module and receive 13.5MHz pixel clock (max. 15fps), vertical sync signal, horizontal sync signal, reset signal and 8bits data from camera module.

The camera module is controlled by I2C port from STN8810.

No	Name	Type	Description
1	ENABLE	I	Active 'High'
2	MCLK	I	Master Clock
3	GND	GND	Ground
4	PCLK	O	Video Output Clock D [0:7]
5	D0	O	Imaga Data [0]
6	D1	O	Imaga Data [1]
7	D2	O	Imaga Data [2]
8	D3	O	Imaga Data [3]
9	D4	O	Imaga Data [4]
10	D5	O	Imaga Data [5]
11	D6	O	Imaga Data [6]
12	D7	O	Imaga Data [7]
13	VSYNC	O	Vertical Synchronization
14	HSYNC	O	Horizontal Synchronization
15	GND	GND	Ground
16	SDA	I/O	Data for two wire serial interface
17	SCL	I	Clock for two wire serial interface
18	RESET	I	Reset initializes sensor Active Low
19	DVDD	P	Digital core circuit power supply voltage
20	AVDD &IOVDD	P	Analog core circuit power supply voltage & Digital I/O circuit power supply voltage

Table. Interface between Camera Module and Main Board (in camera module)

3.15.3 LCD backlight / Power of VGA Camera

U100(in Key PCB) is a charge pump. This module supply the 1.8V and 2.8V power to VGA camera. This part is controlled by I2C of STN8810.

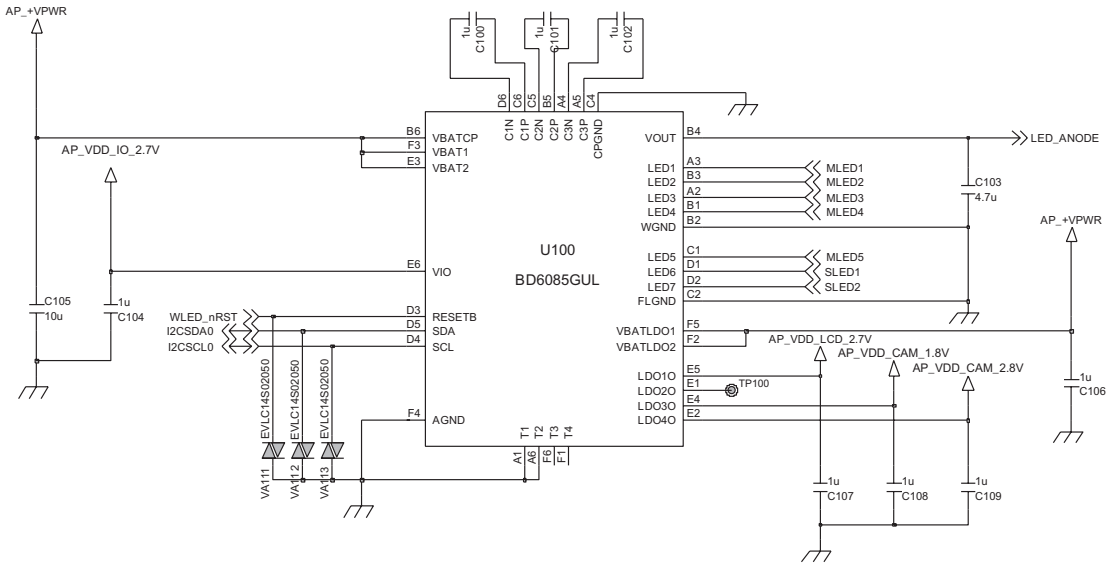


Figure. Schematic of charge pump

3.15.4 LCD module

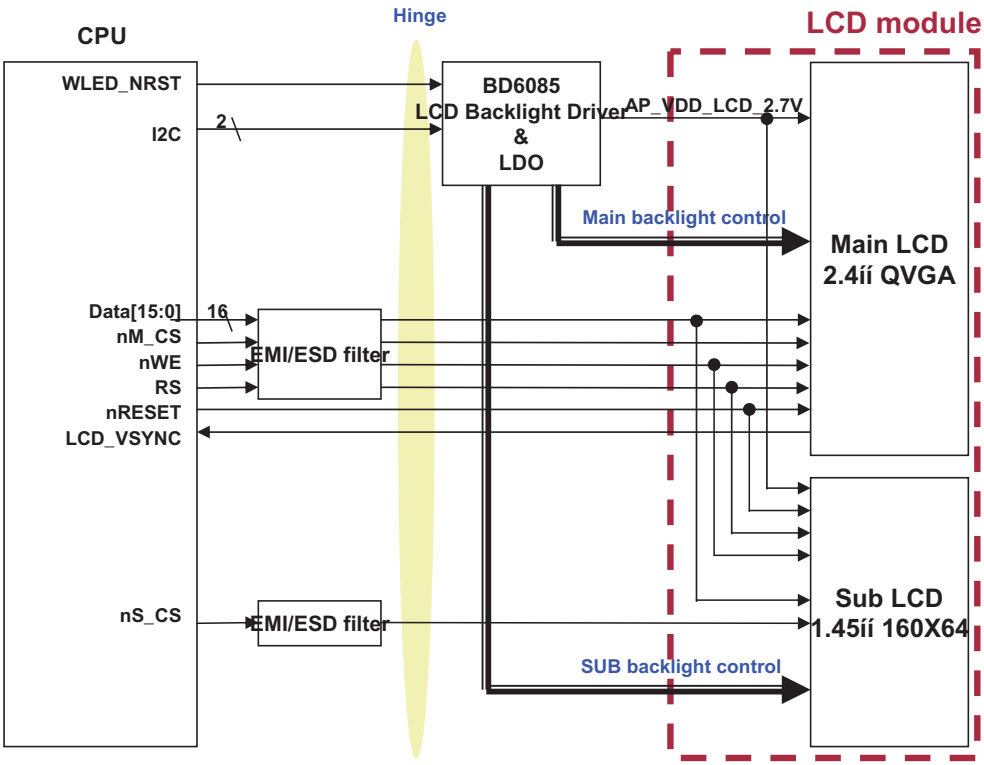


Figure. LCD I/F Block Diagram

3.15.5 Display

LCD module (With Main and Sub LCD)) is connected to FPCB with 50-pin connector(AXK8L50125). The LCD is controlled by 16-bit in STN8810.

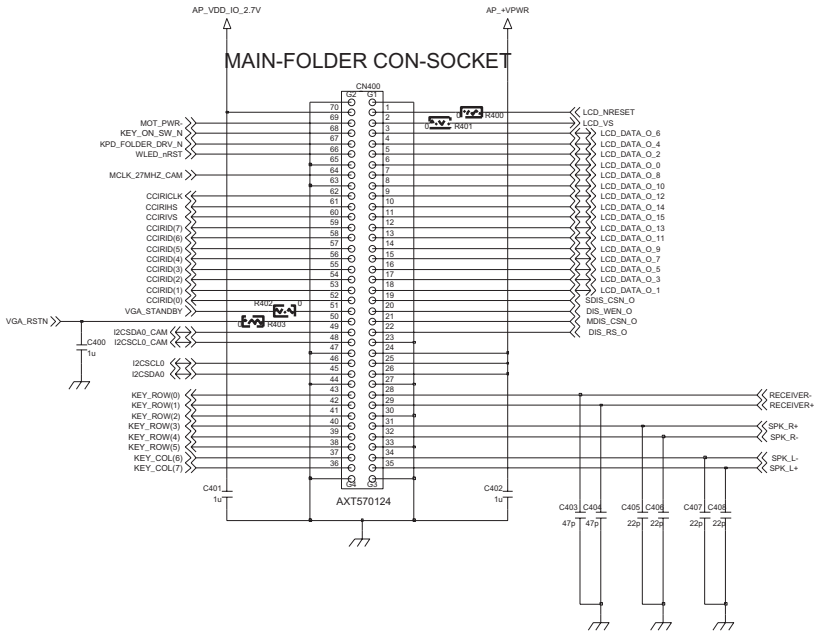


Figure. Schematic of Main-Folder FPCB B to B connector (in main BD)

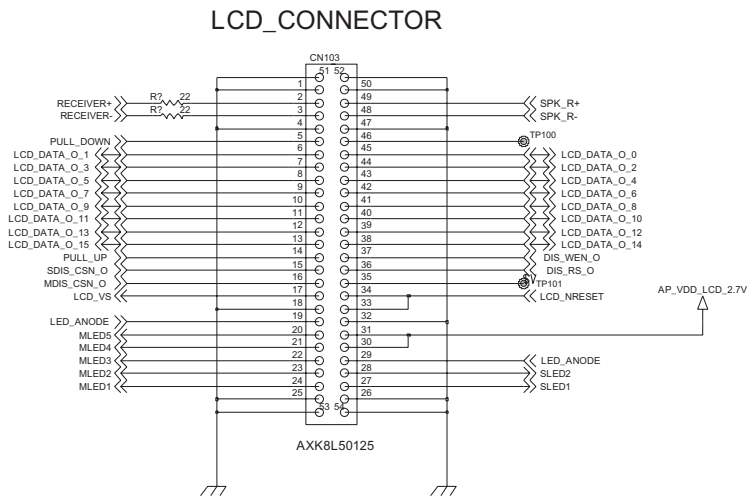


Figure. Schematic of LCD connector (in Key PCB)

Pin No.	Signal	I/O	Function	Driver's Signal Name	Pin No.	Signal	I/O	Function	Driver's Signal Name
1	GND	-	Ground	-	50	GND	-	Ground	-
2	R +	-		-	49	S +	-		-
3	R -	-		-	48	S -	-		-
4	GND	-	Ground	-	47	GND	-	Ground	-
5	IF-MODE	I	Interface mode Select	IM0	46	S/Vsync-O	O	Frame Head Pulse Signal (Sub)	FLM
6	D1	I/O	Data Bus (Instruction & Display Data)	DB2	45	D0	I/O	Data Bus (Instruction & Display Data)	DB1
7	D3	I/O	Data Bus (Instruction & Display Data)	DB4	44	D2	I/O	Data Bus (Instruction & Display Data)	DB3
8	D5	I/O	Data Bus (Instruction & Display Data)	DB6	43	D4	I/O	Data Bus (Instruction & Display Data)	DB5
9	D7	I/O	Data Bus (Instruction & Display Data)	DB8	42	D6	I/O	Data Bus (Instruction & Display Data)	DB7
10	D9	I/O	Data Bus (Instruction & Display Data)	DB10	41	D8	I/O	Data Bus (Instruction & Display Data)	DB9
11	D11	I/O	Data Bus (Instruction & Display Data)	DB12	40	D10	I/O	Data Bus (Instruction & Display Data)	DB11
12	D13	I/O	Data Bus (Instruction & Display Data)	DB14	39	D12	I/O	Data Bus (Instruction & Display Data)	DB13
13	D15	I/O	Data Bus (Instruction & Display Data)	DB16	38	D14	I/O	Data Bus (Instruction & Display Data)	DB15
14	RD	I	Read Strobe	RD*	37	WR	I	Write Strobe	WR*
15	S/CS	I	Chip Select (Sub)	CSB	36	RS	I	Register Select	RS
16	M/CS	I	Chip Select (Main)	CS*	35	M-ID(Low)	O	Maker ID (Low: GND level)	-
17	M/Vsync-O	O	Frame Head Pulse Signal (Main)	FMARK	34	S/RESET	I	Reset (Sub)	RESETB
18	GND	-	Ground	-	33	M/RESET	I	Reset (Main)	RESET*
19	M/AN	-	Power Supply for LED (Main)	-	32	GND	-	Ground	-
20	M/CA5	-	Ground for LED (Main)	-	31	VCC2	I	Power Supply for Interface	IOVcc
21	M/CA4	-	Ground for LED (Main)	-	30	VCC1	I	Power Supply for Logic and Analog	Vci
22	M/CA3	-	Ground for LED (Main)	-	29	S/AN	-	Power Supply for LED (Sub)	-
23	M/CA2	-	Ground for LED (Main)	-	28	S/CA2	-	Ground for LED (Sub)	-
24	M/CA1	-	Ground for LED (Main)	-	27	S/CA1	-	Ground for LED (Sub)	-
25	GND	-	Ground	-	26	GND	-	Ground	-

Table. Interface between LCD Module and Main Board (in camera module)

3.16 Bluetooth

KT610 supported bluetooth, which is possible to data file transfer, BT headset call.

CPU (STn8810) interfaces with bluetooth one chip module (U100 in Sub) which includes RF and baseband.

The STLC2500C is a single chip ROM-based Bluetooth solution for applications requiring integration up to HCI level.

The STLC2500C's main interfaces are UART for HCI transport between CPU (STn8810) and bluetooth module, PCM for voice between audio codec.(WM8753) and bluetooth module and GPIOs for control purposes . Voice data is transferred to CPU(STn8810) through audio codec.(WM8753).

The radio has been designed specifically for single chip requirements and for low power consumption. Radio signal from bluetooth antenna (ANT100 in Sub) is transferred to bluetooth module through BALUN filter (FL100). Bluetooth module has its' own oscillator (X100,27MHz) for normal operation and use sleep clock(32.768KHz) from PM6658 (PMIC of MSM 6280).

■ Bluetooth™, specification compliance: V2.0

■ Transmit Power : Power Class2

■ Ultra low power architecture with 3 different low power levels:

- Sleep Mode
- Deep Sleep Mode
- Complete Power Down Mode

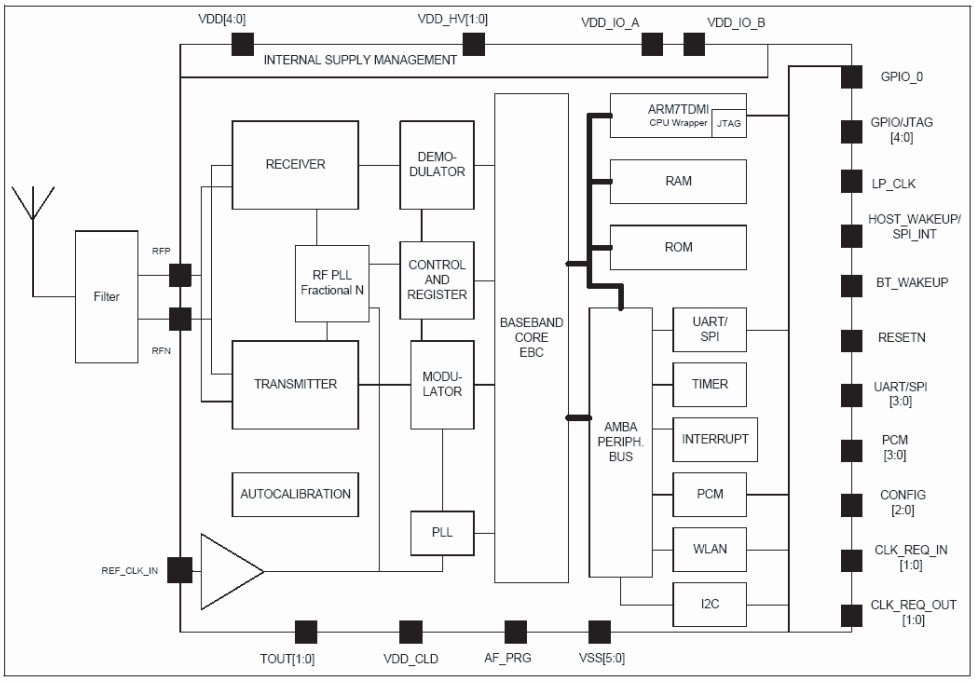


Figure. Diagram of STLC2500C

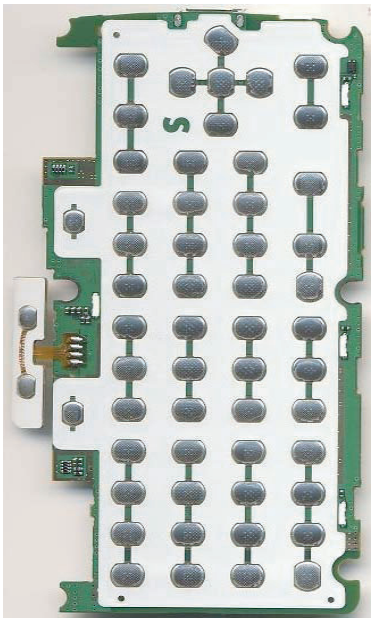
3.17 Main Features

3.17.1 Main features of KT610

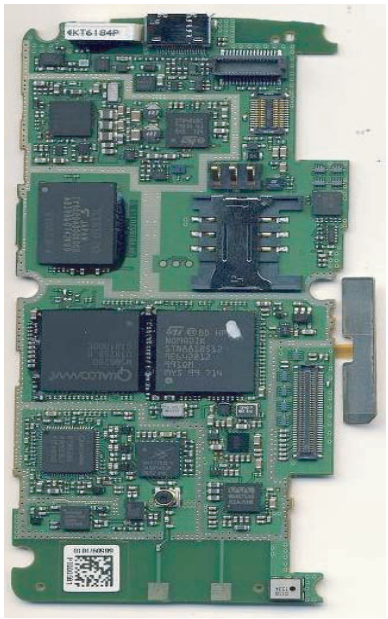
- Communicator Type
- WCDMA(2100) + GSM(900,1800) + PCS(1900) Triple mode
- Main LCD: 320 x 240, 65K (2.4”)
- Sub LCD : 160 x 64, (1.45”)
- 2.0M Pixel CMOS Camera
- VGA CMOS Camera
- 10 x 18 ϕ speaker (2ea)
- Stereo Headset
- Video telephony in WCDMA with camera
- HSDPA up to 3.6Mbps
- Loud Speaker phone (in GSM and WCDMA)
- 64 Poly Sound
- MP3/AAC/WMA decoder and play
- MPEG4 encoder/decoder and play/save
- H.263 decoder
- JPEG en/decoder
- Support Bluetooth, USB
- 108.9 x 53.9 x 17.2 mm
- 950mAh hard pack

3.18 Main Component

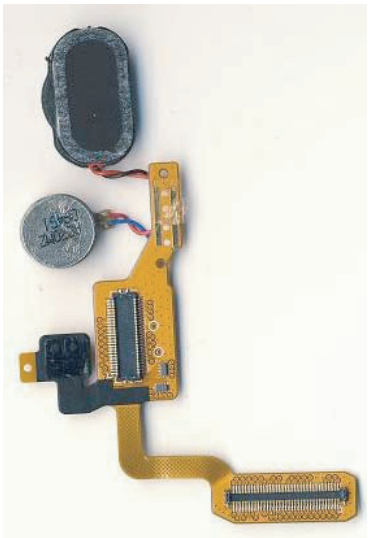
3.18.1 Main Components of KT610



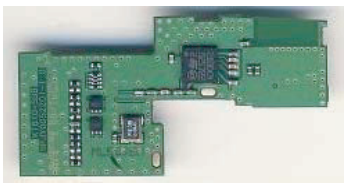
MAIN Top Side



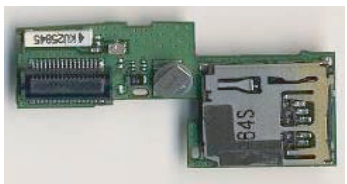
MAIN Bottom Side



LCD FPCB,
L Speaker,
Vibrator

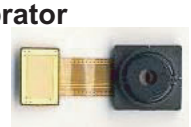


SUB Bottom Side



SUB Top Side

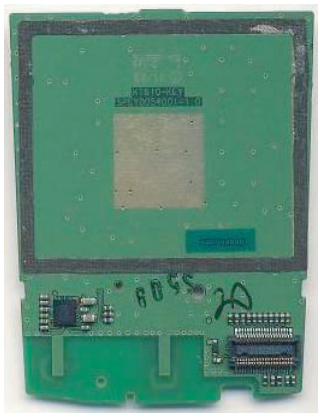
VGA camera



2M camera

Internal Antenna

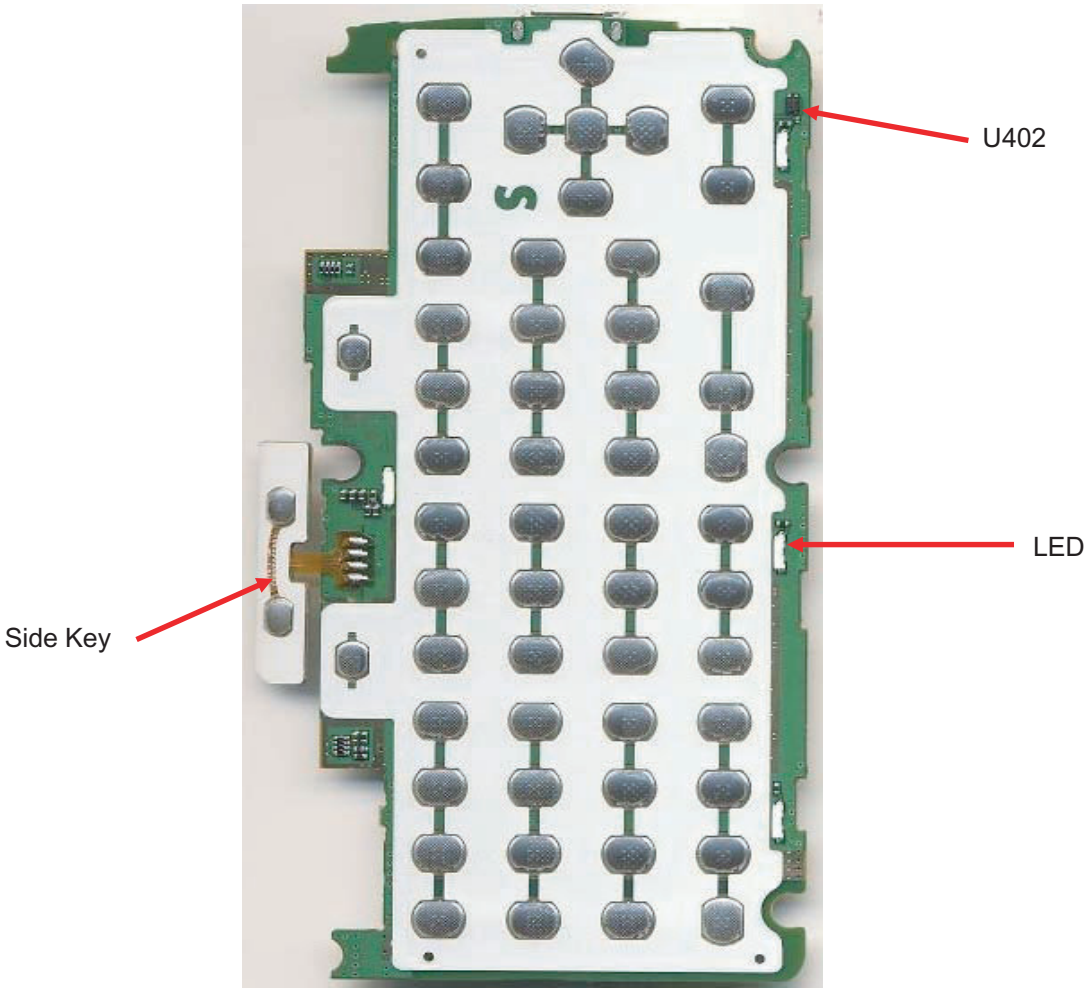
KEY Top Side



KEY Bottom Side

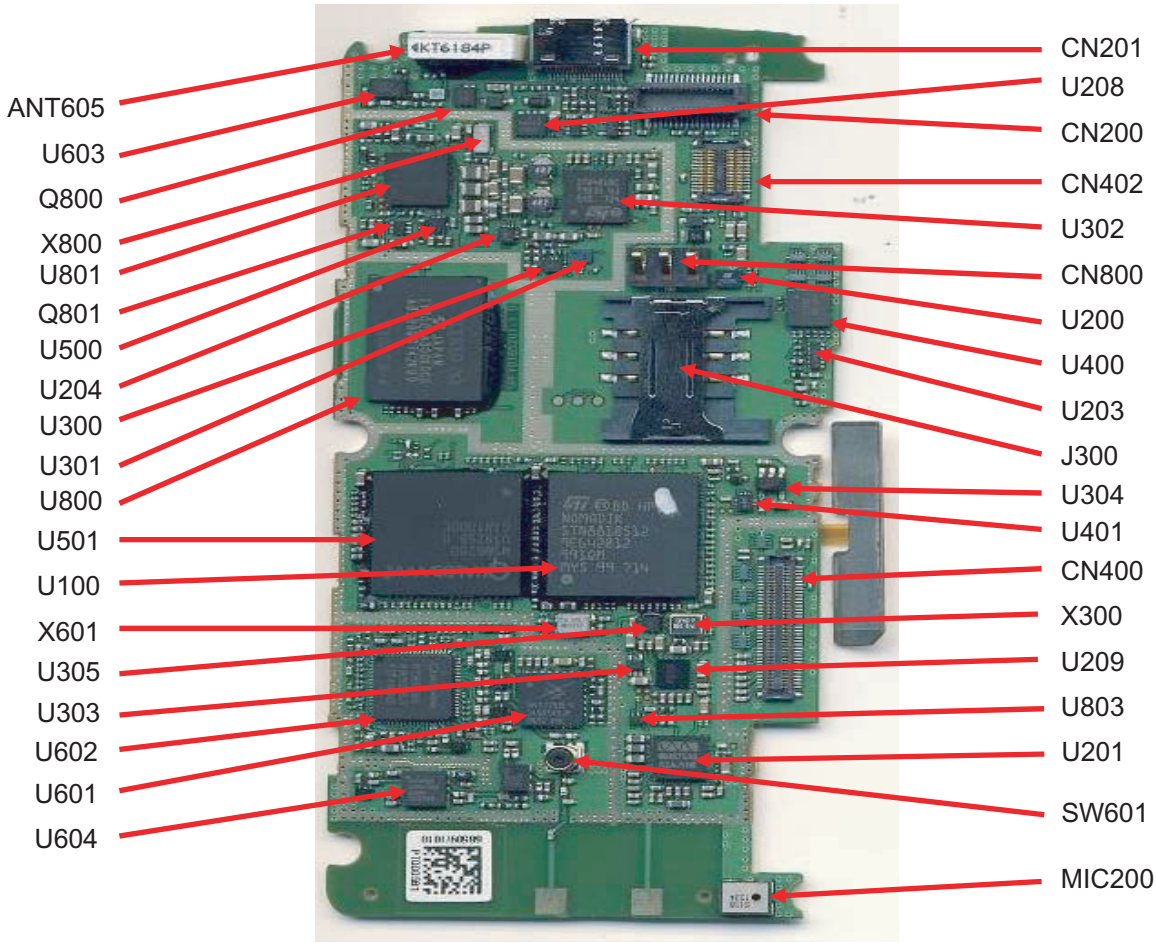
LCD, R Speaker, Receiver

3.18.1.1 Main Top Side



Reference	Description
U402	Folder_Sense IC

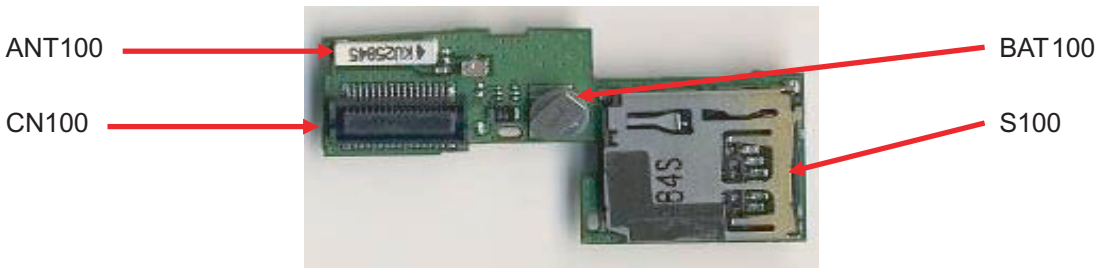
3.18.1.2 Main Bottom Side



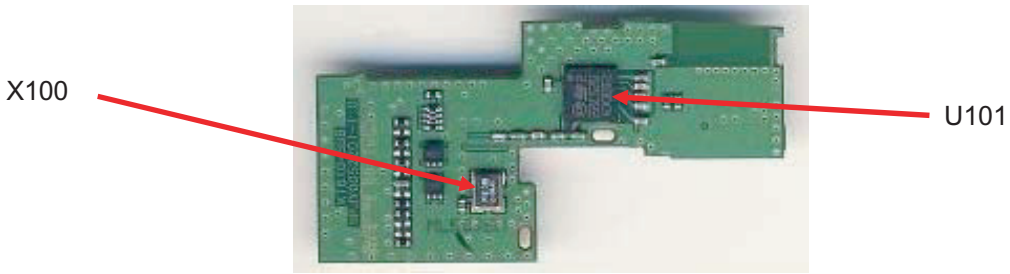
3. TECHNICAL BRIEF

Reference	Description	Reference	Description
ANT605	GPS Antenna	CN201	Connector (I/O, Ear jack, Power)
U603	RF LNA Module	U208	FET (OVP)
Q800	FET (OVP)	CN200	B To B Connector
X800	32.768KHz Oscillator	CN402	2M CAM Connector
U801	PM6658	U302	AP PMIC
Q801	FET (OVP)	CN800	Main Battery Connector
U500	D Flip-Flip	U200	Level Shifter
U204	U204	U400	Key Scan Controller
U300	Dual SPDT analog Switch	U203	UART Switch
U301	Level Shifter	J300	USIM Connector
U800	MP Memory	U304	LDO Regulator
U501	MSM6280	U401	Power Inductor
X601	19.2M TCXO	CN400	70 Pin Connector
U100	STN8810	X300	19.2MHz Oscillator
U305	Dual 2 Input And Gate	U209	Audio Subsystem
U303	LDO Regulator	U803	Single SPDT Analog Switch
U602	RTR6285	U201	Audio Codec.
U601	RF Tx Module	SW601	RF ADAPTER
U604	RF PAM	MIC200	Microphone

3.18.1.3 SUB Top Side

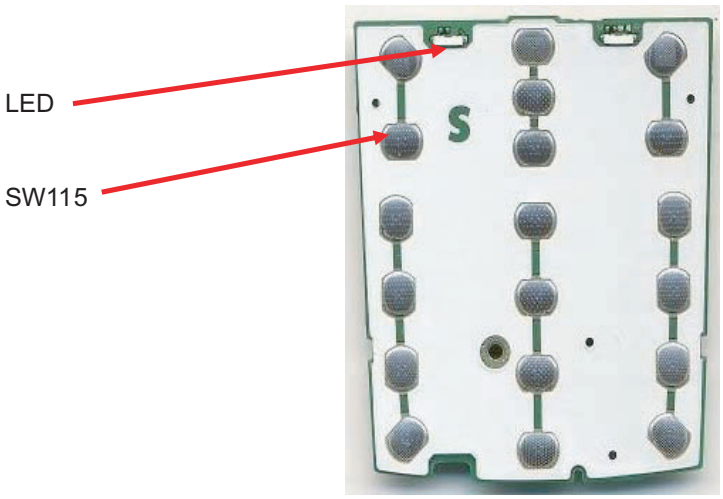


3.18.1.4 SUB Bottom Side

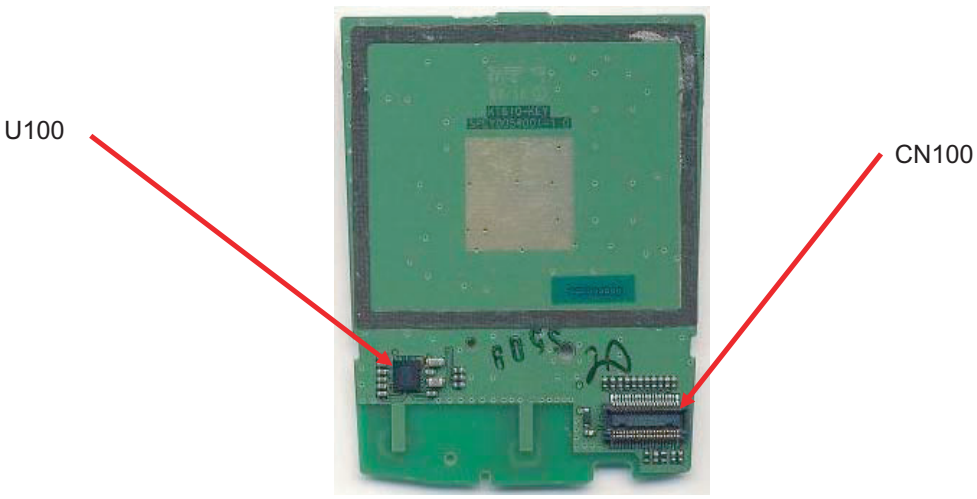


Reference	Description	Reference	Description
ANT100	Bluetooth Ant.	BAT100	Back Up Battery
CN100	SUB to MAIN Connector	S100	Micro-SD Card Socket
X100	19.2MHz Oscillator	U101	Bluetooth Module

3.18.1.5 KEY Top Side

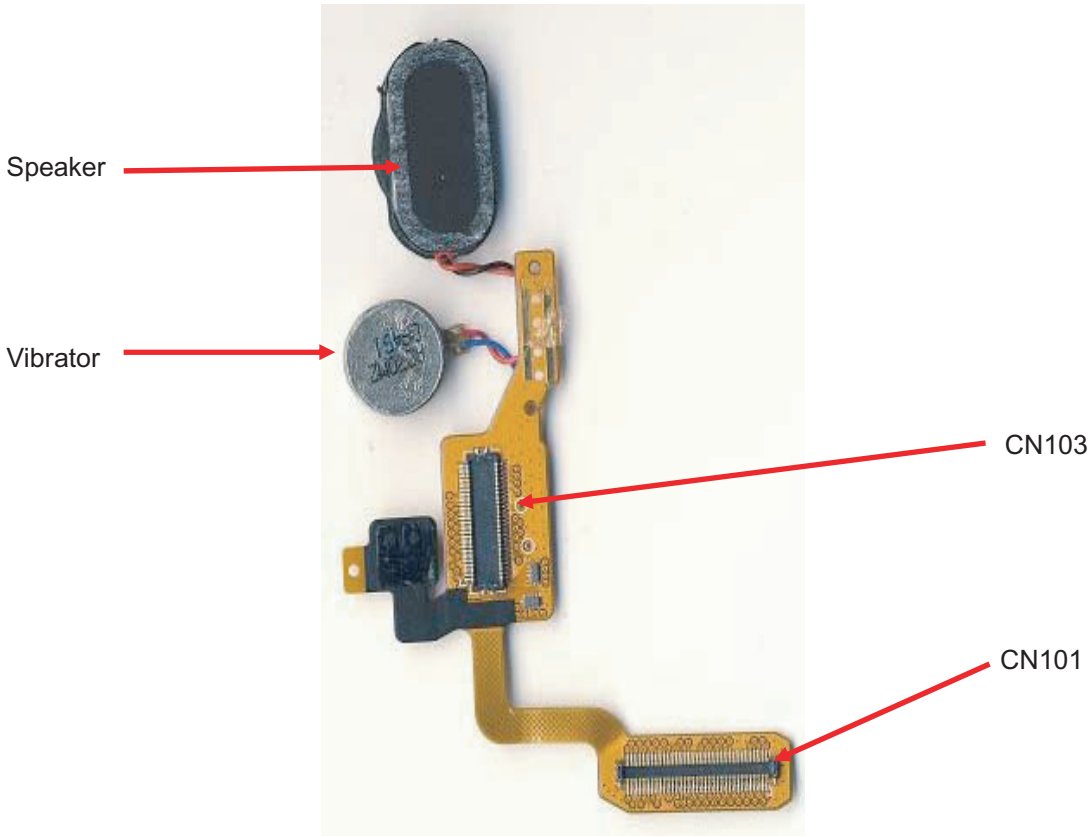


3.18.1.6 KEY Bottom Side



Reference	Description	Reference	Description
SW115	Dome Switch	CN100	FCPB to Key PCB Connector
U100	LCD Backlight Driver	LED	Back light LED

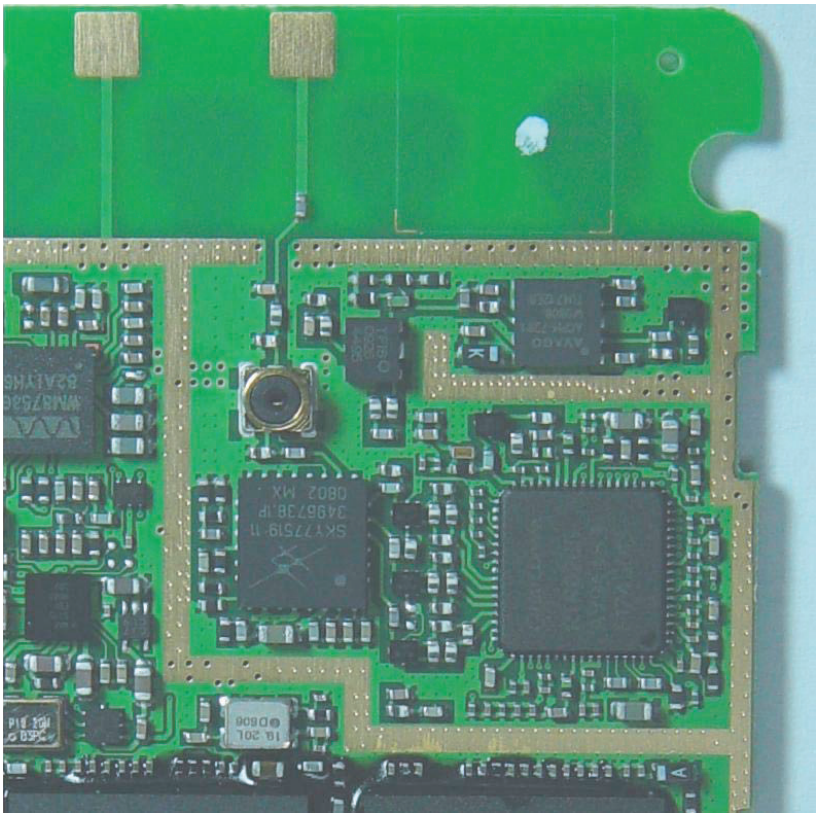
3.18.1.7 LCD FPCB



Reference	Description	Reference	Description
Speaker	Speaker	CN103	FPCB to LCD Connector
Vibrator	Vibrator	CN101	MAIN-SLIDER CON-SOCKET

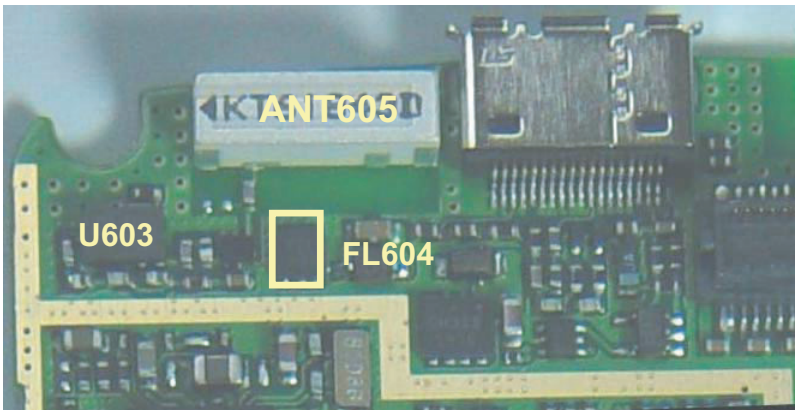
4. TROUBLE SHOOTING

4.1 RF Component



RF component (WCDMA / GSM)

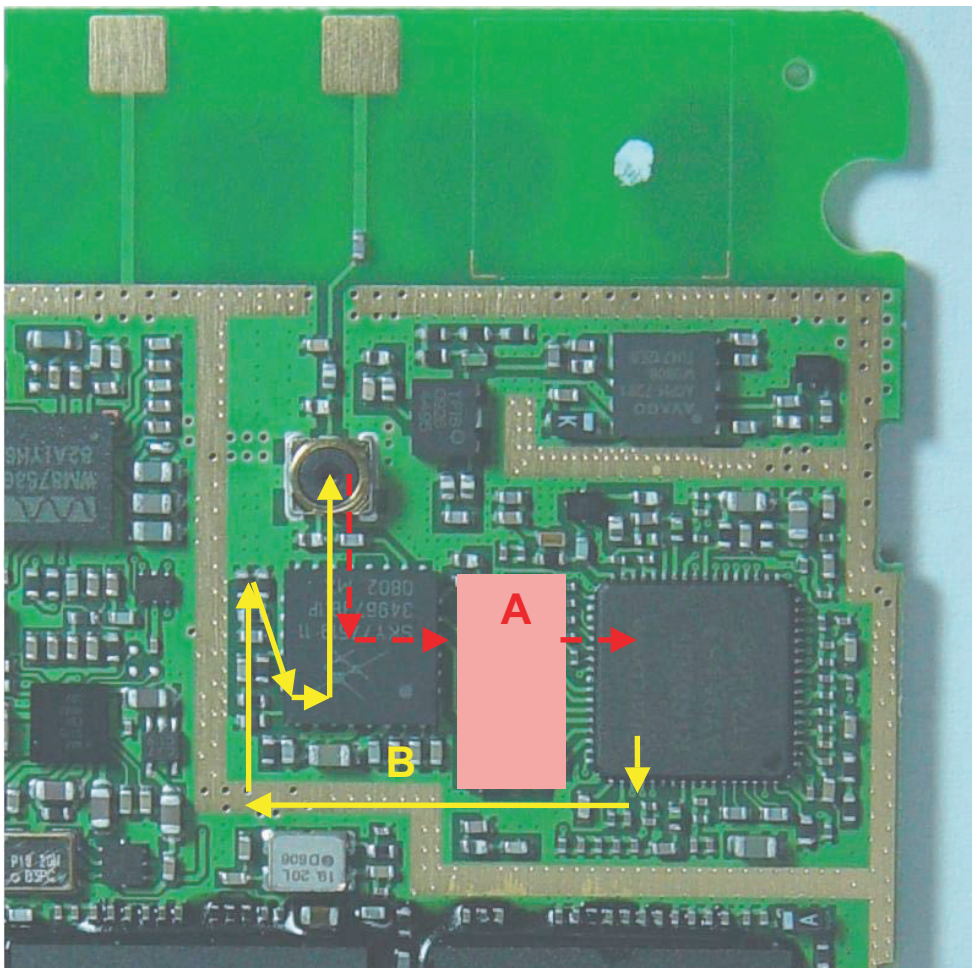
Reference	Description	Reference	Description
U601	EDGE PAM(2G PAM+ASM)	FL603	PCS RX SAW
U602	GSM/WCDMA Transceiver	FL605	WCDMA Duplexer
U604	WCDMA PAM	FL606	WCDMA RX SAW
U802	Coupler	FL607	WCDMA TX SAW
FL601	GSM RX SAW	SW601	RF Antenna Connector
FL602	DCS RX SAW		



RF component (GPS)

Reference	Description
ANT605	GPS ANTENNA
U603	GPS LNA
FL604	GPS SAW FILTER

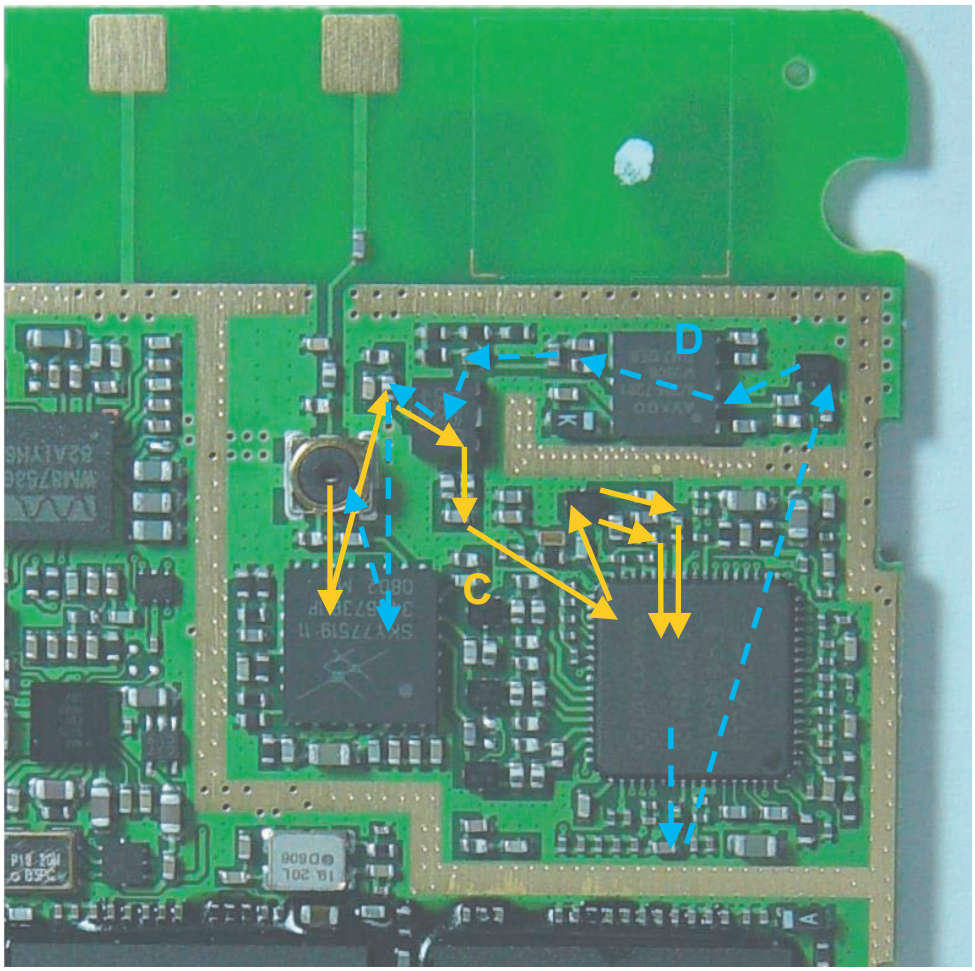
4.2 SIGNAL PATH



GSM/DCS/PCS Rx Tx PATH

A. GSM/DCS/PCS Rx PATH

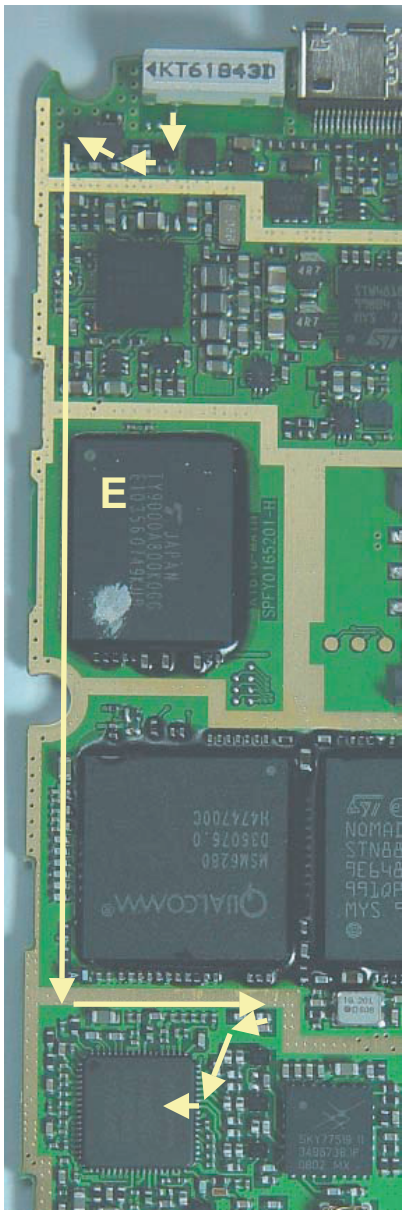
B. GSM/DCS/PCS Tx PATH



WCDMA RX/ TX PATH

C. WCDMA Rx PATH

D. WCDMA Tx PATH

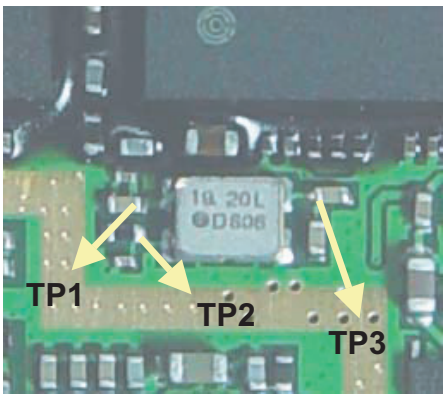


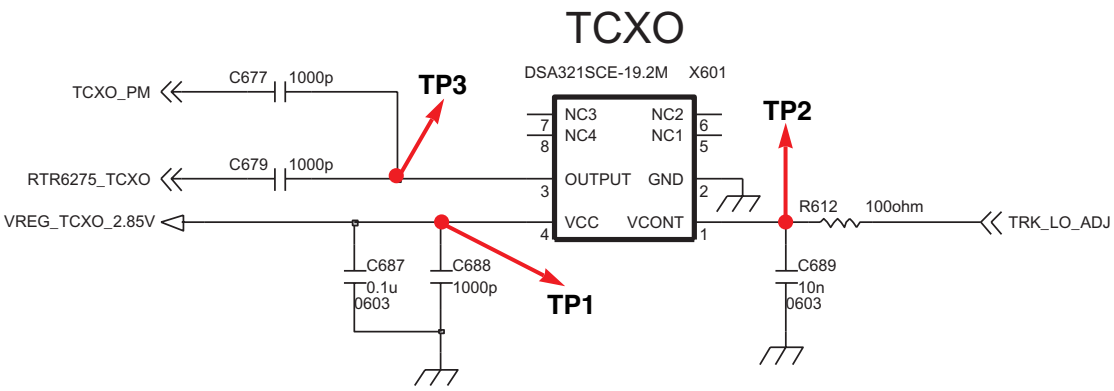
GPS Signal PATH

E. GPS Rx PATH

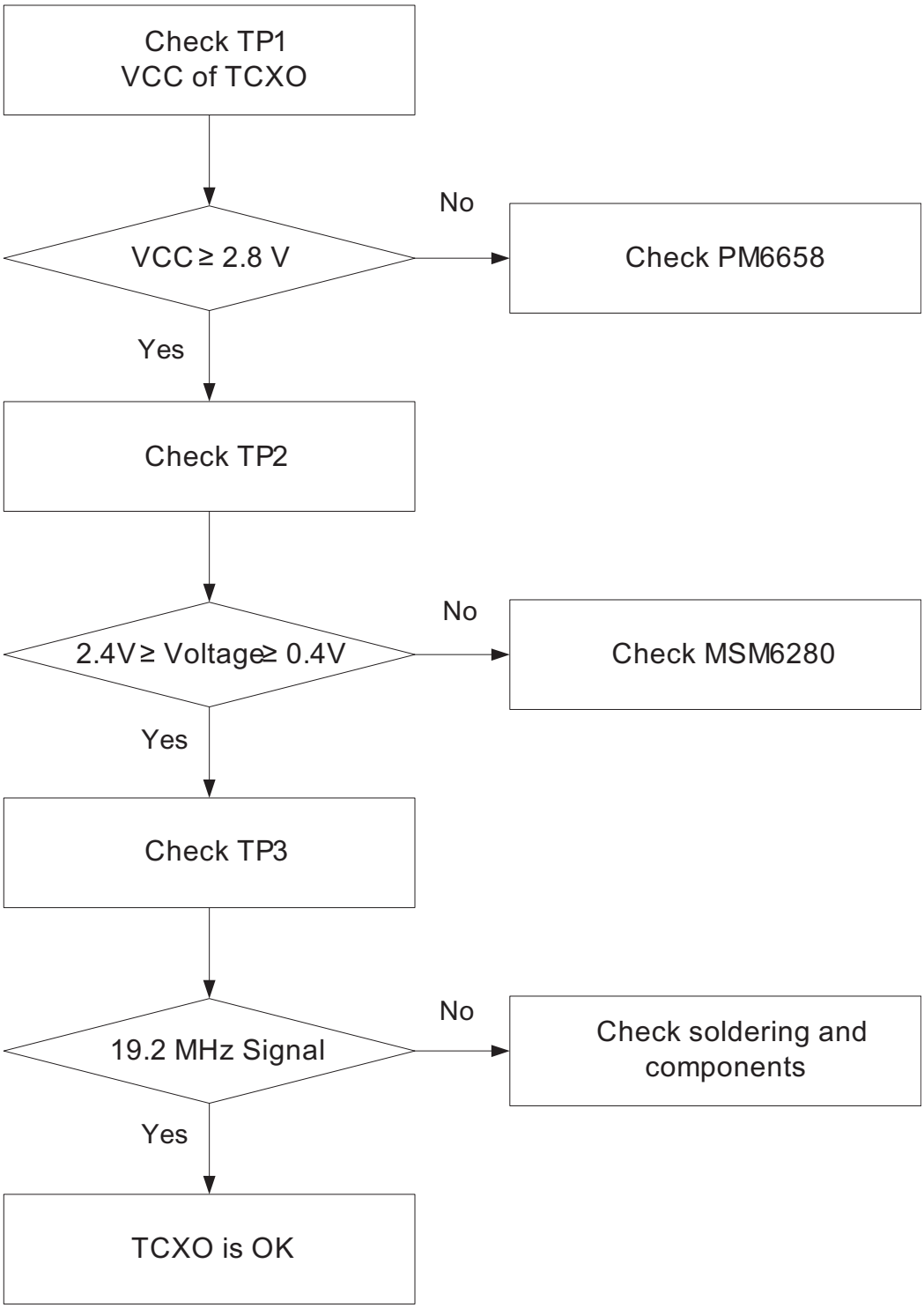
4.3 Checking TCXO Block

The output frequency (19.2MHz) of TCXO (X601) is used as the reference one of RTR6285 and PM6658 internal VCO.

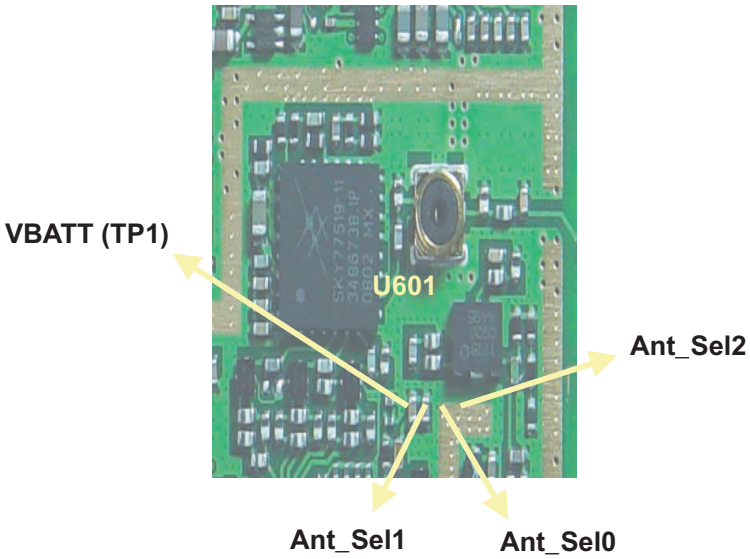


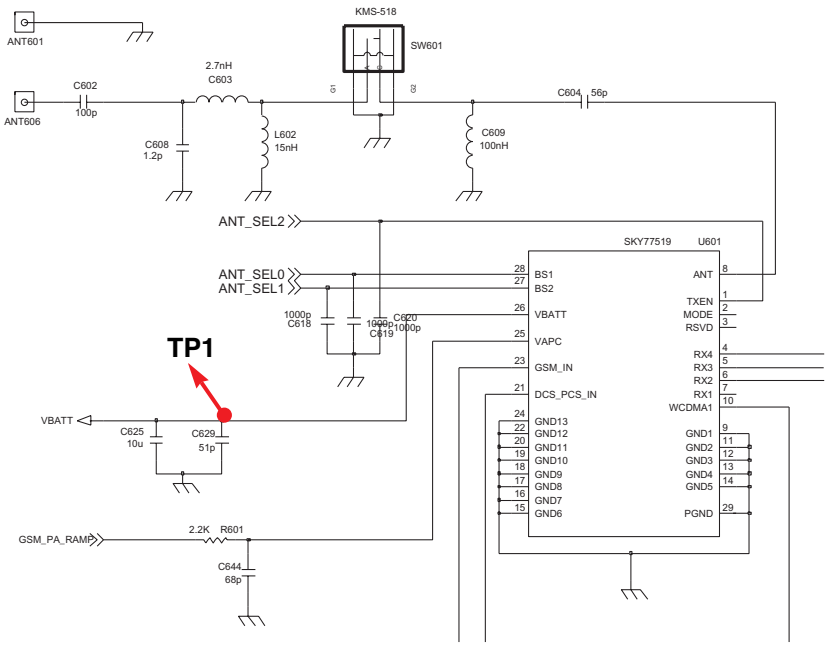


Schematic of the Crystal Part (19.2MHz)



4.4 Checking Ant. Switch Module Block



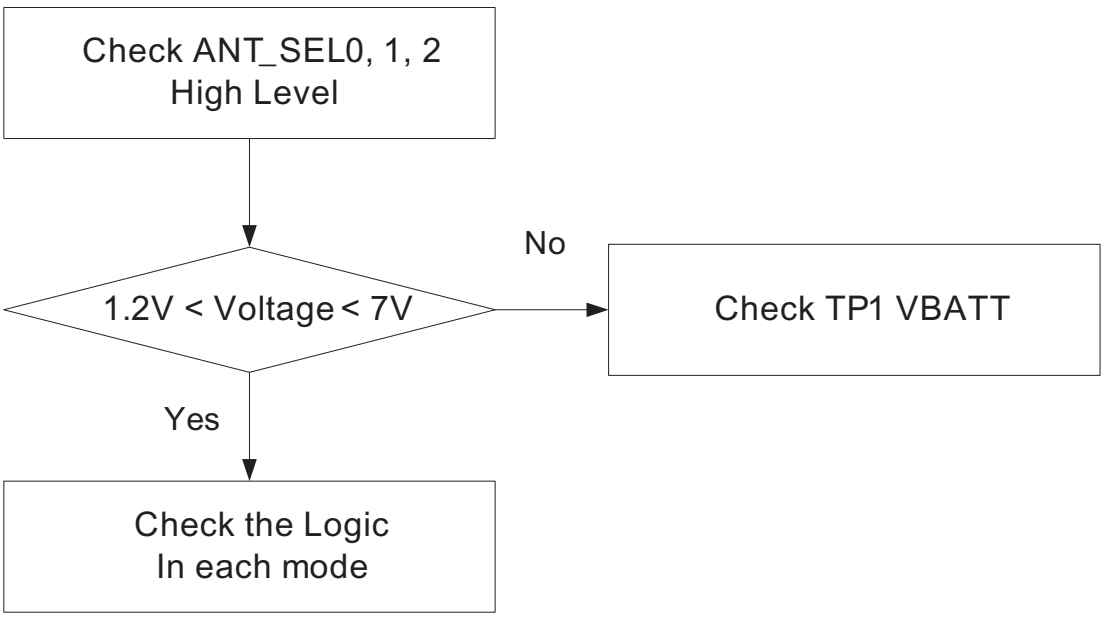


Schematic of the Antenna Switch Block

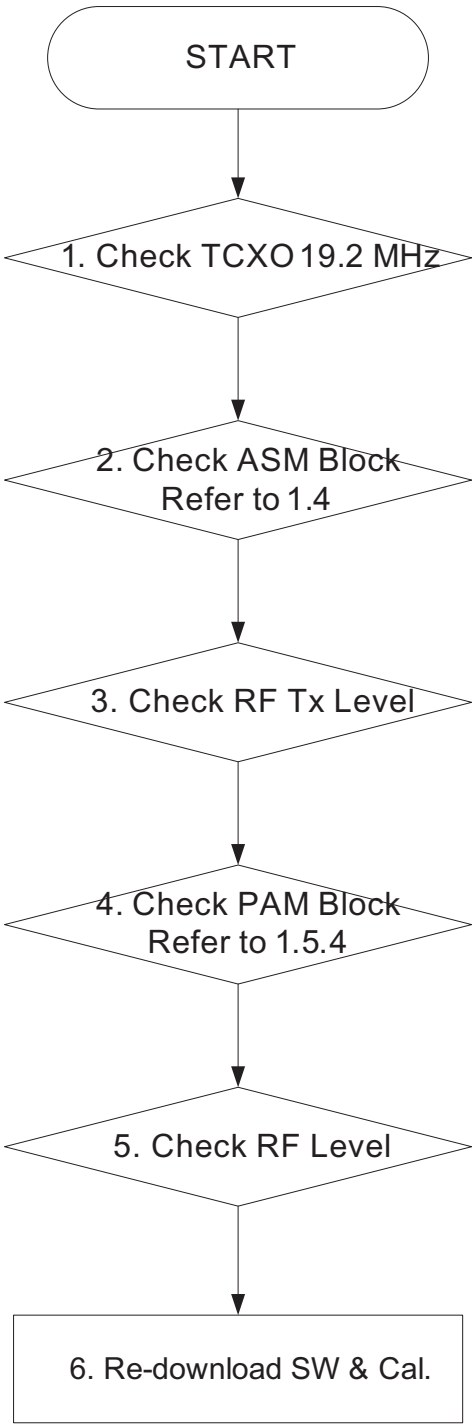
Logic Table of the Antenna Switch

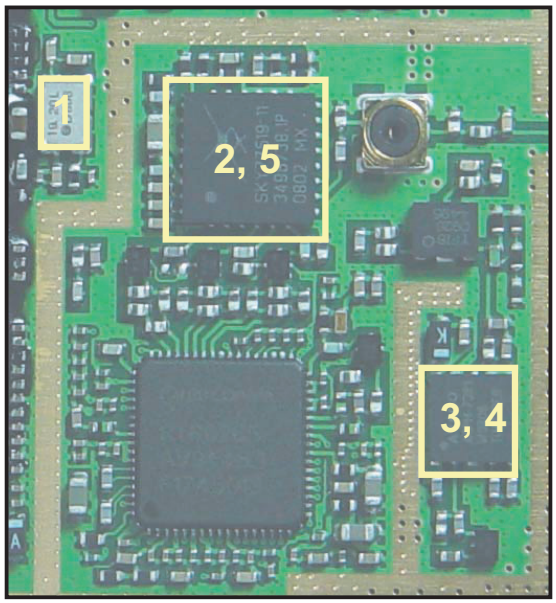
Switch Mode	ANT_SEL0	ANT_SEL1	ANT_SEL2
GSM900 TX	LOW	LOW	LOW
GSM1800/1900 TX	LOW	LOW	LOW
GSM900 RX	LOW	LOW	LOW
GSM1800 RX	LOW	LOW	LOW
GSM1900 RX	LOW	LOW	LOW
WCDMA	LOW	LOW	LOW

Checking Switch Block Power Source



4.5 Checking WCDMA Block





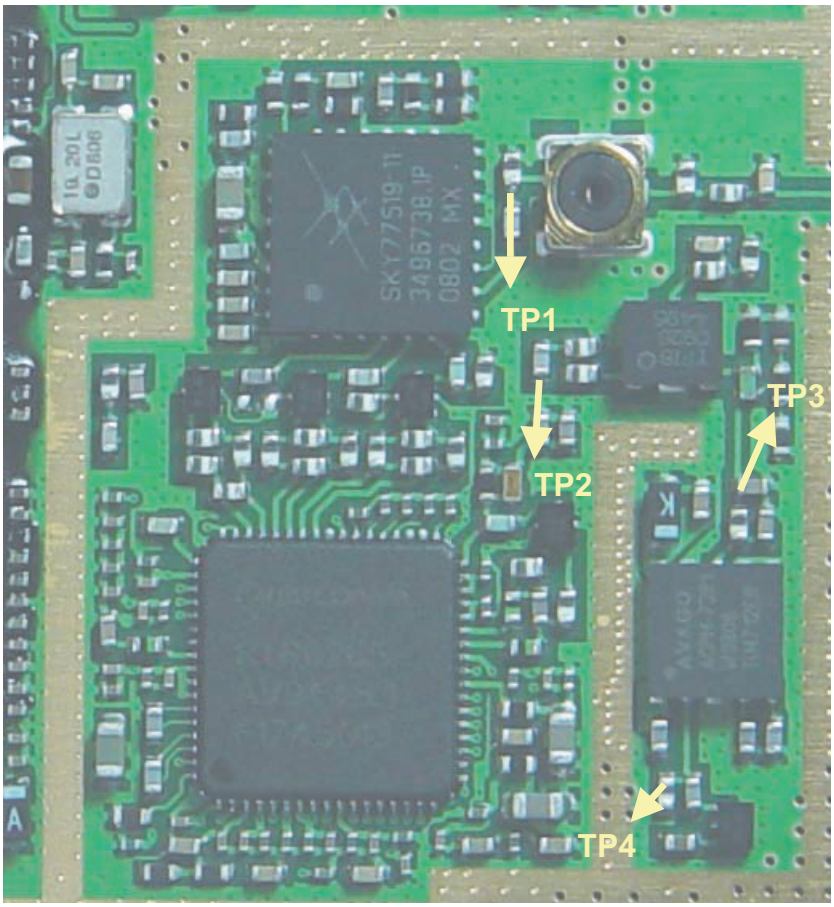
4.5.1 Checking TCXO Block

Refer to 1.3

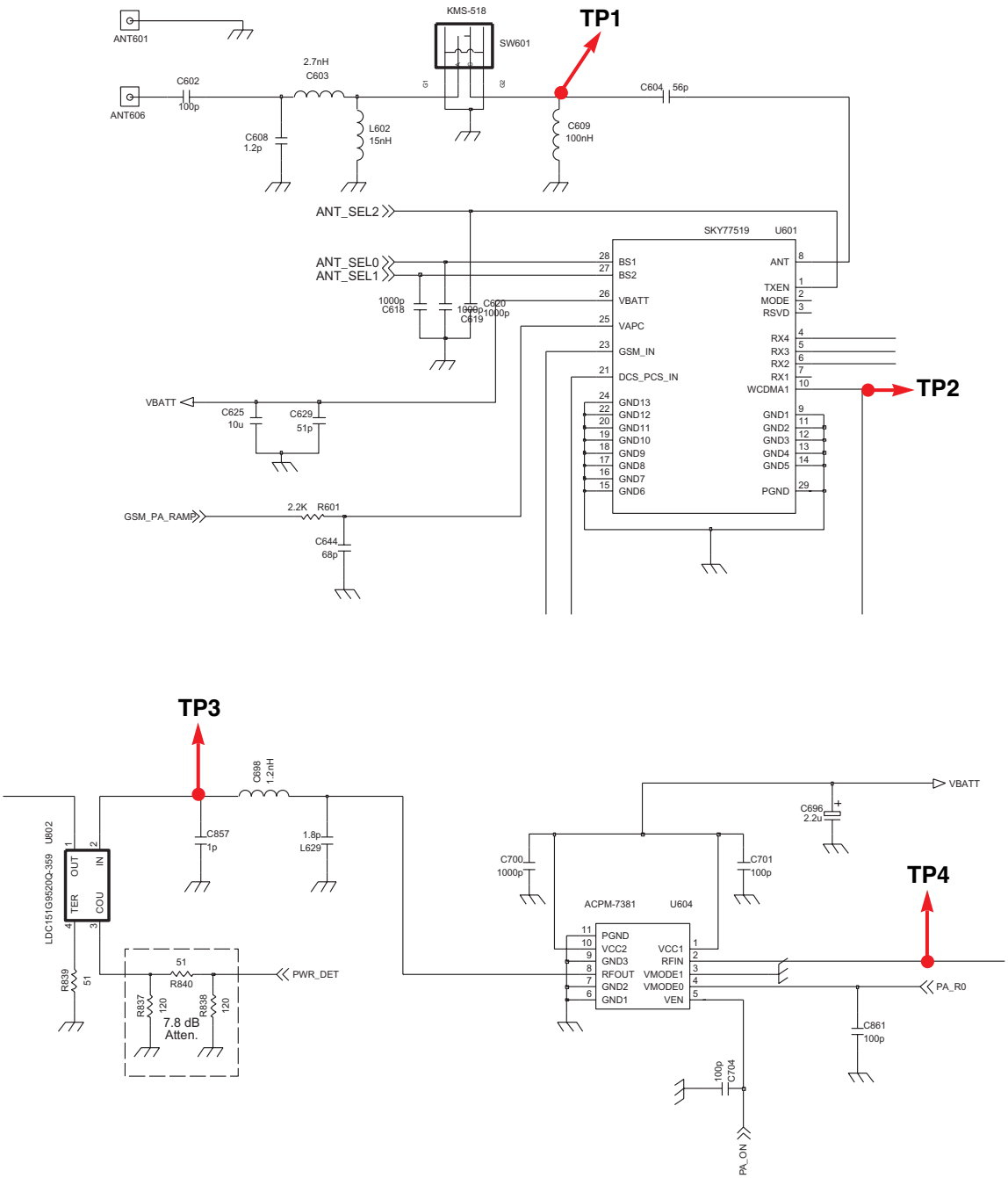
4.5.2 Checking ASM Block

Refer to 1.4

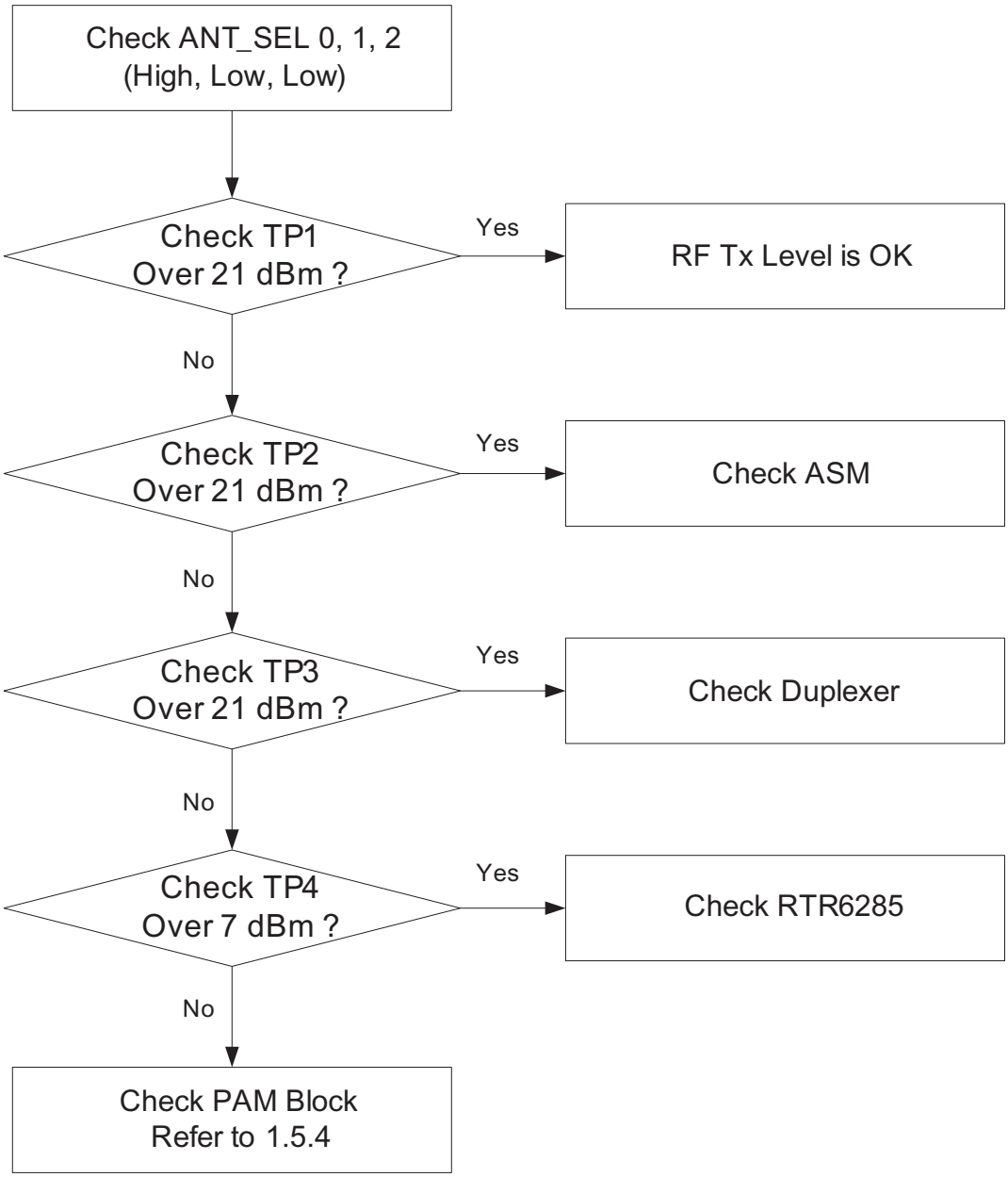
4.5.3 Checking RF TX Level



Test Point (TX Level)



For testing, Max power output is needed.



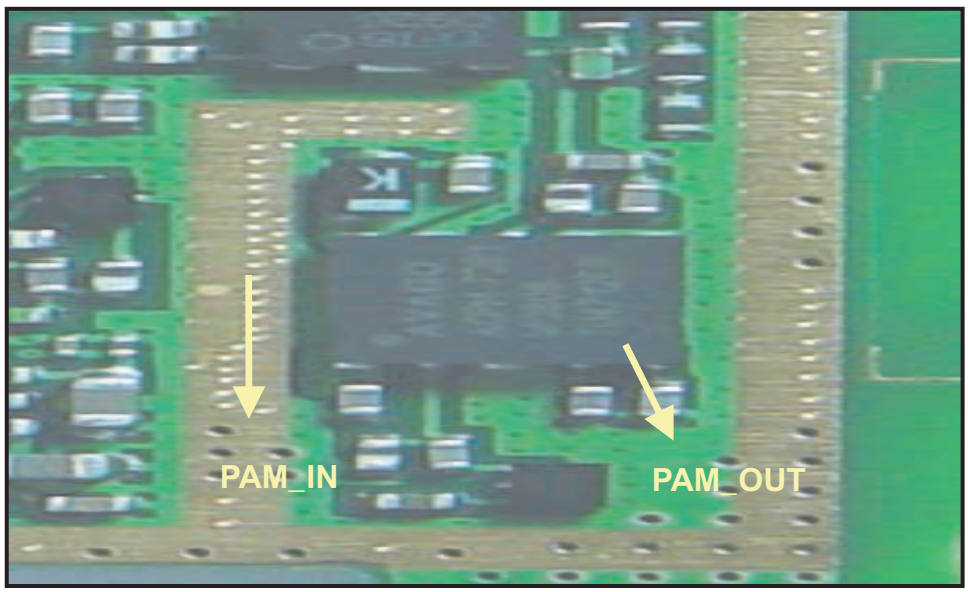
RTR6285 Maximum output Power = 7 dBm
RTR6285 minimum output Power = -80 dBm
PAM(ACPM-7381) = Maximum input Power = 10 dBm

4.5.4 Checking PAM Block

PAM control signal

PA_ON : PAM Enable

PA_RO: PAM Gain Control



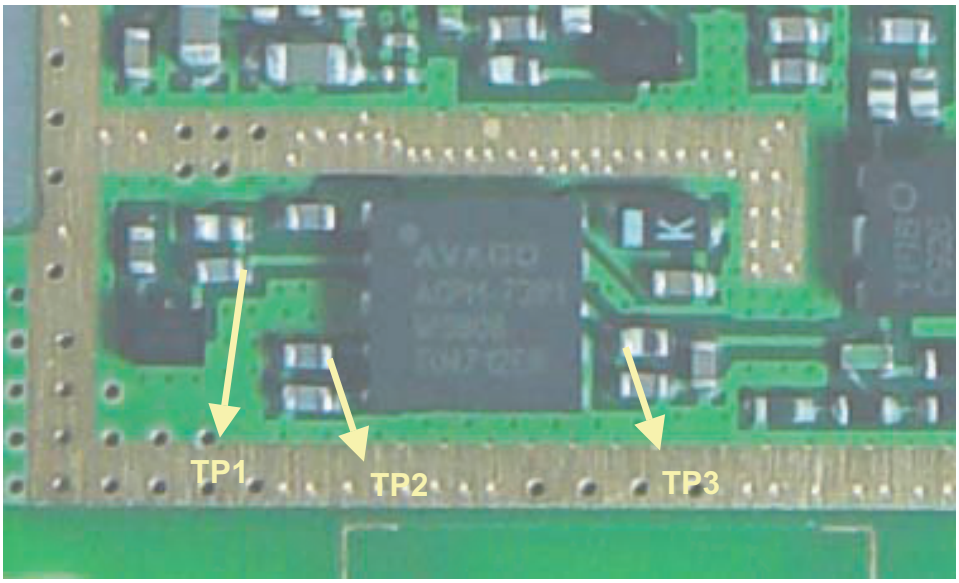
PA_ON must be HIGH (over 2.6V)

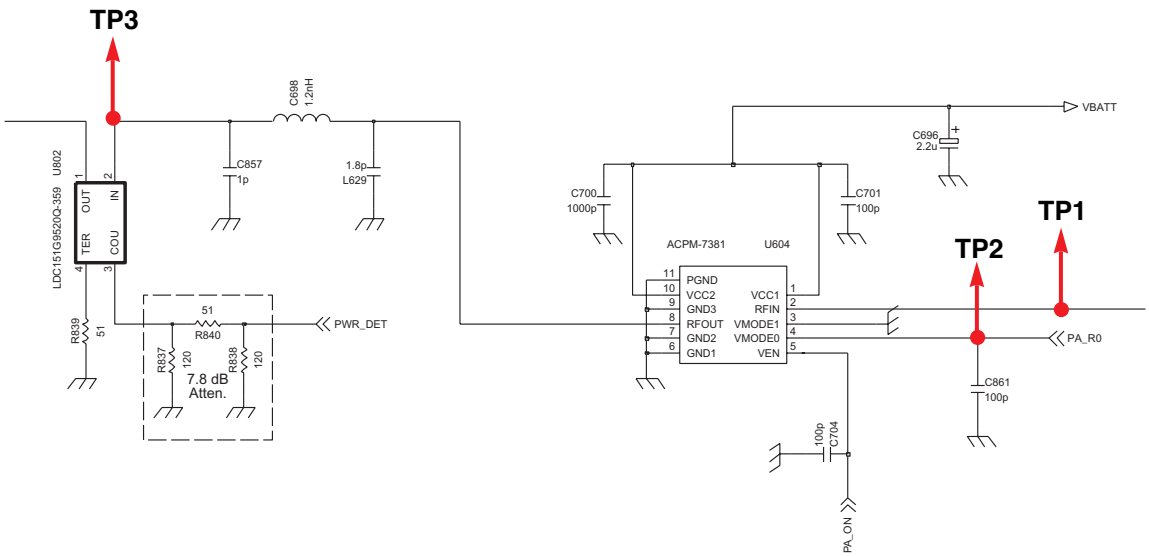
PAM IN/OUT Signal :

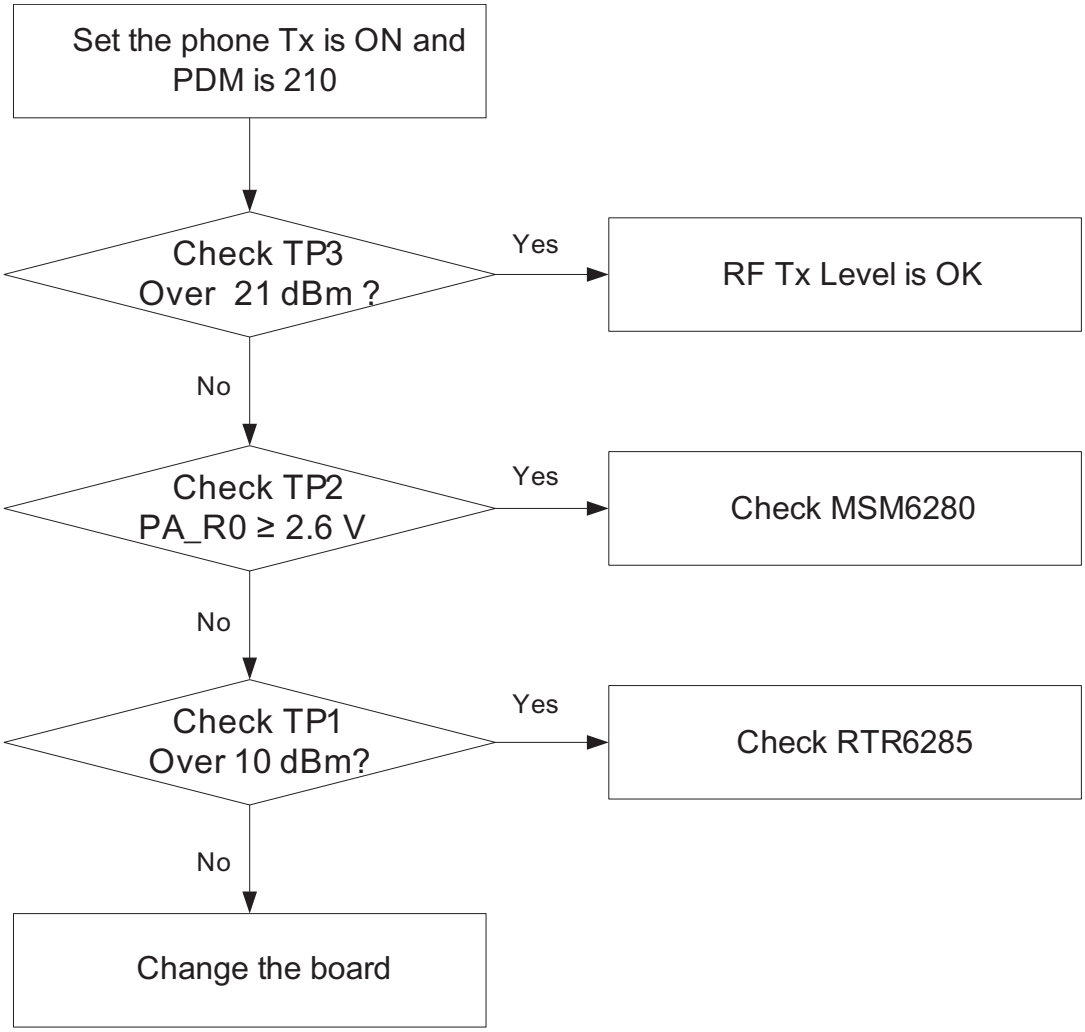
When PAM is under the operation of high power mode (PA_R0:Low),

PAM OUT power must be over 21 dBm

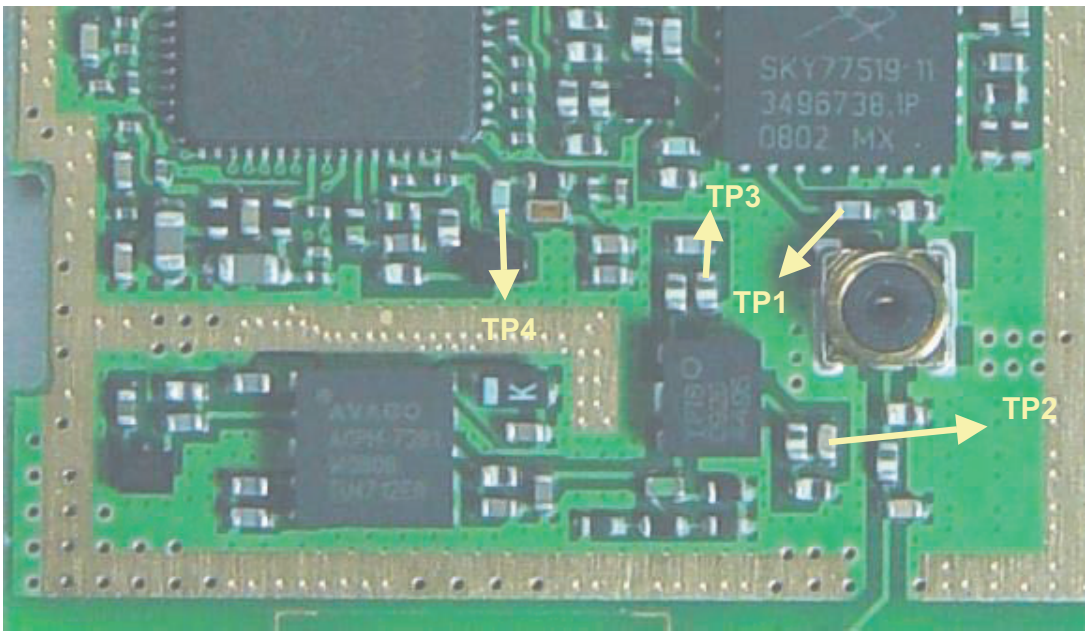
PAM IN power must be under 10 dBm



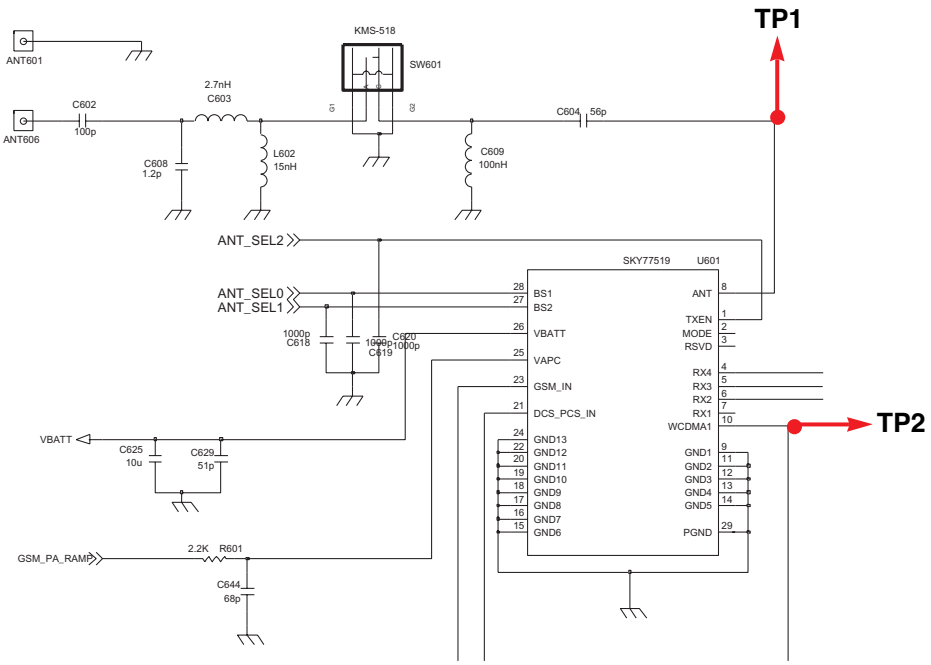


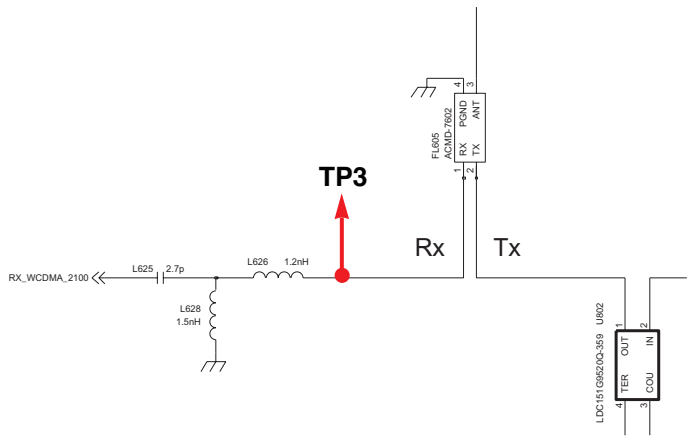


4.5.5 Checking RF Rx Level

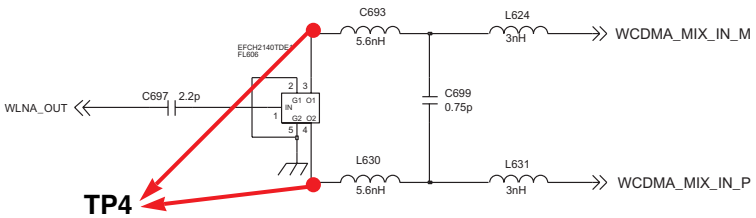


Test Point (RF Rx Level)

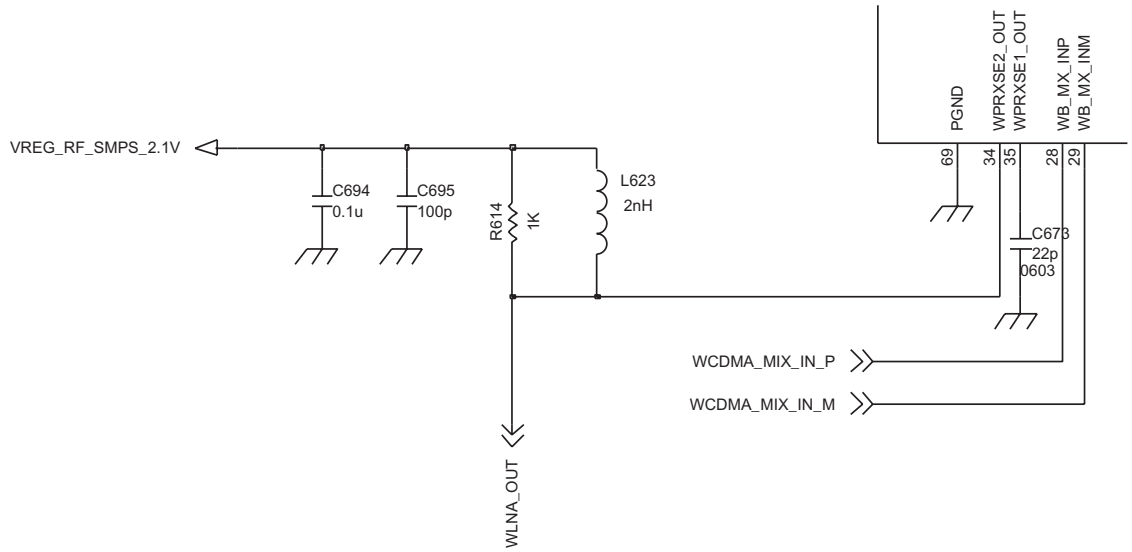


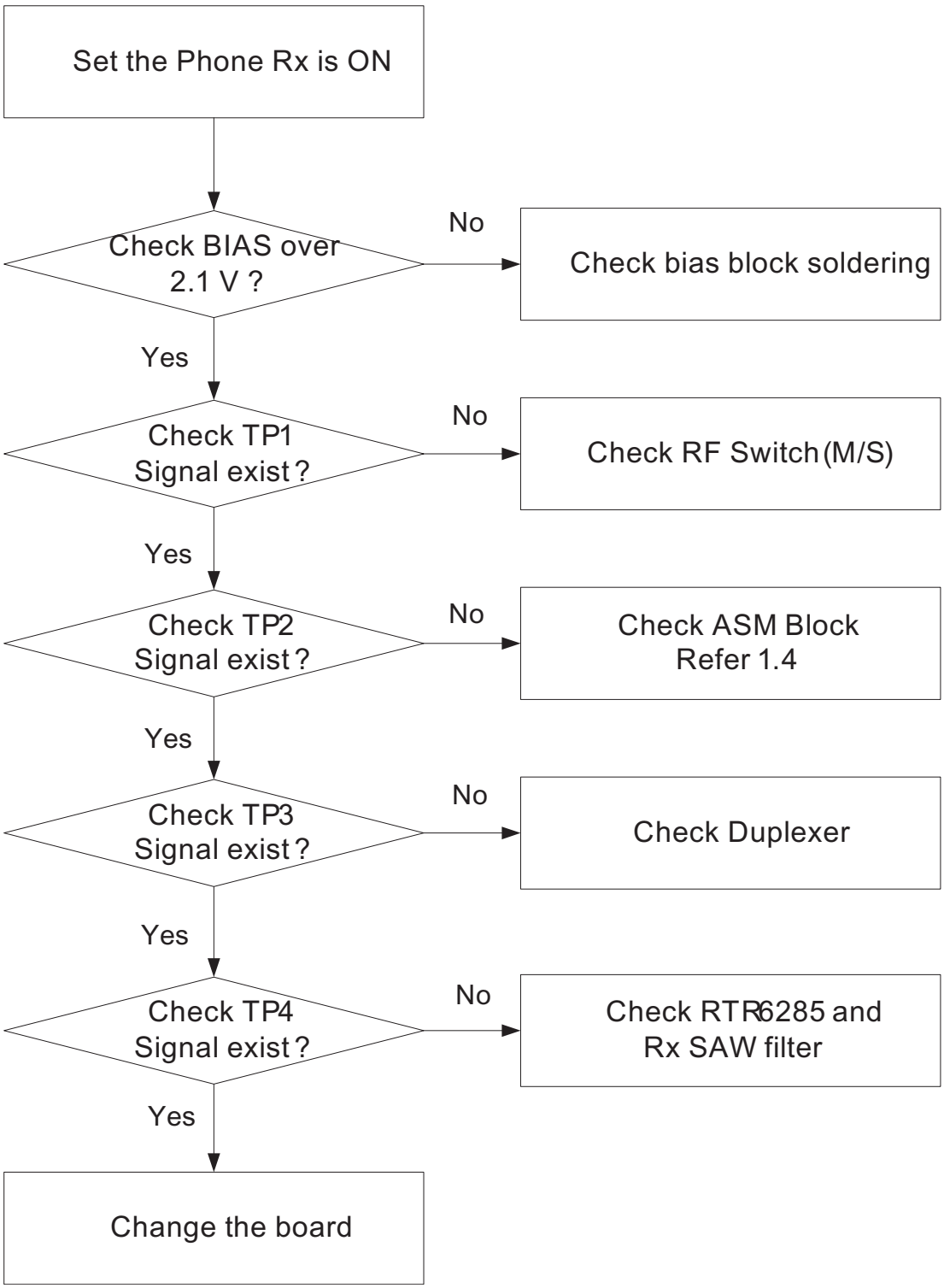


WCDMA LNA CIRCUIT

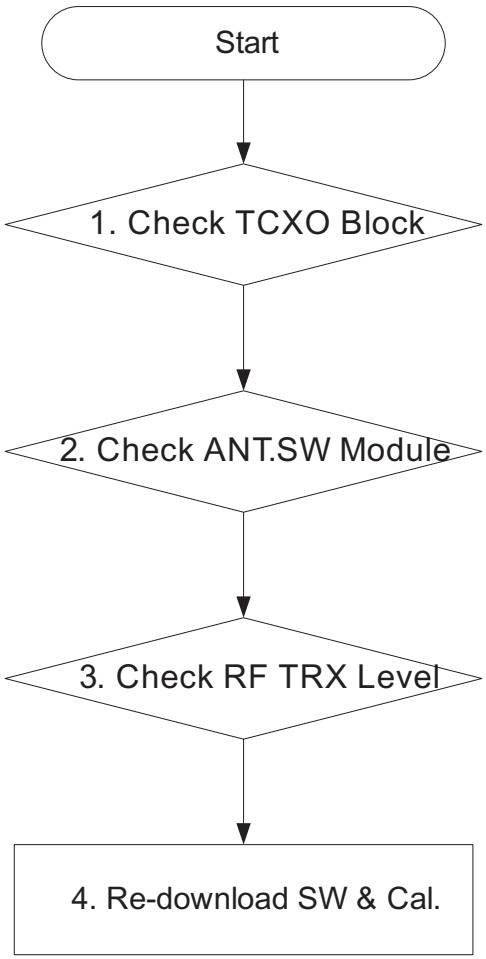


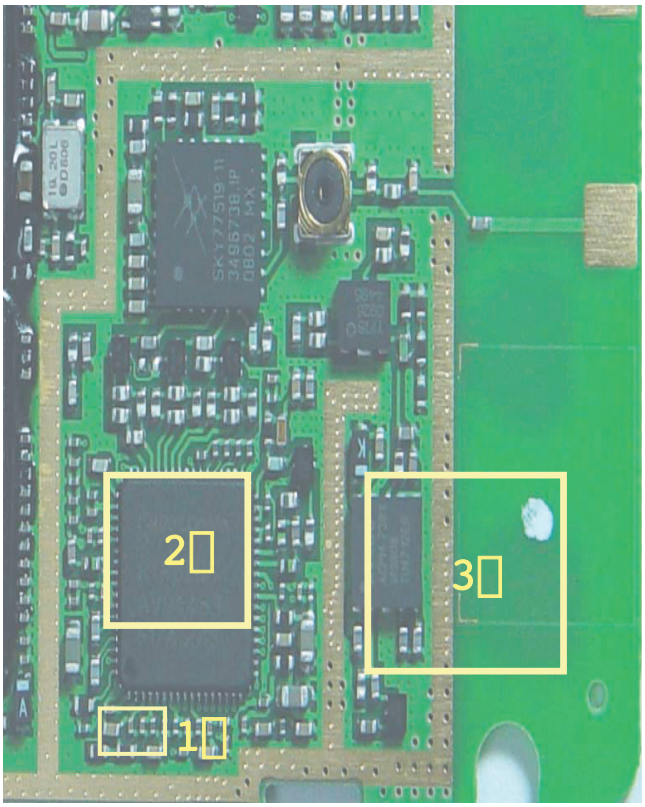
Bias Block





4.6 Checking GSM Block





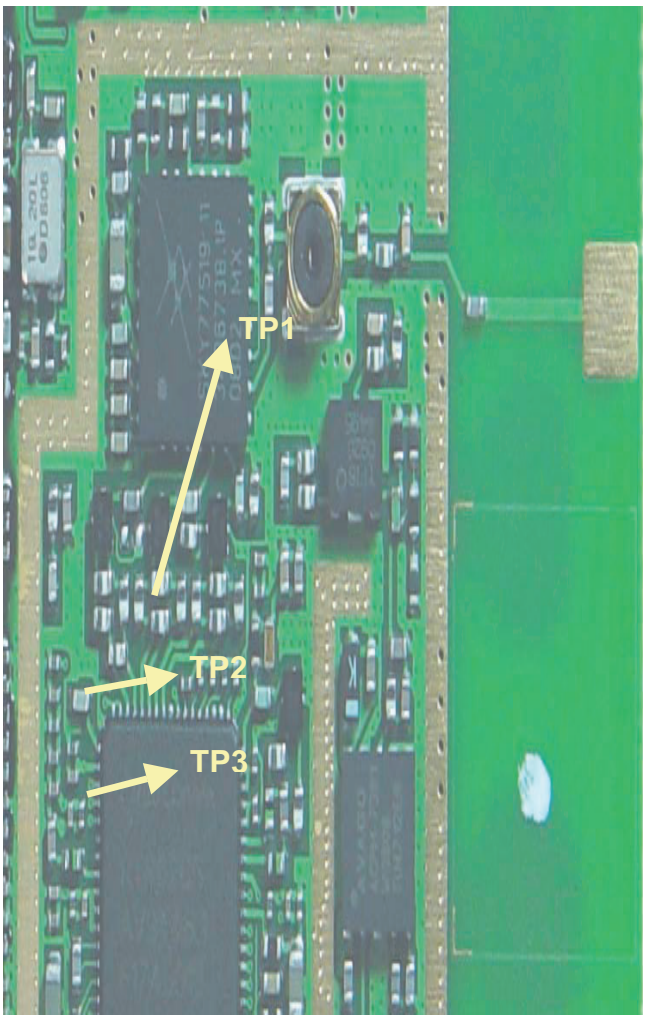
4.6.1 Checking TCXO Block

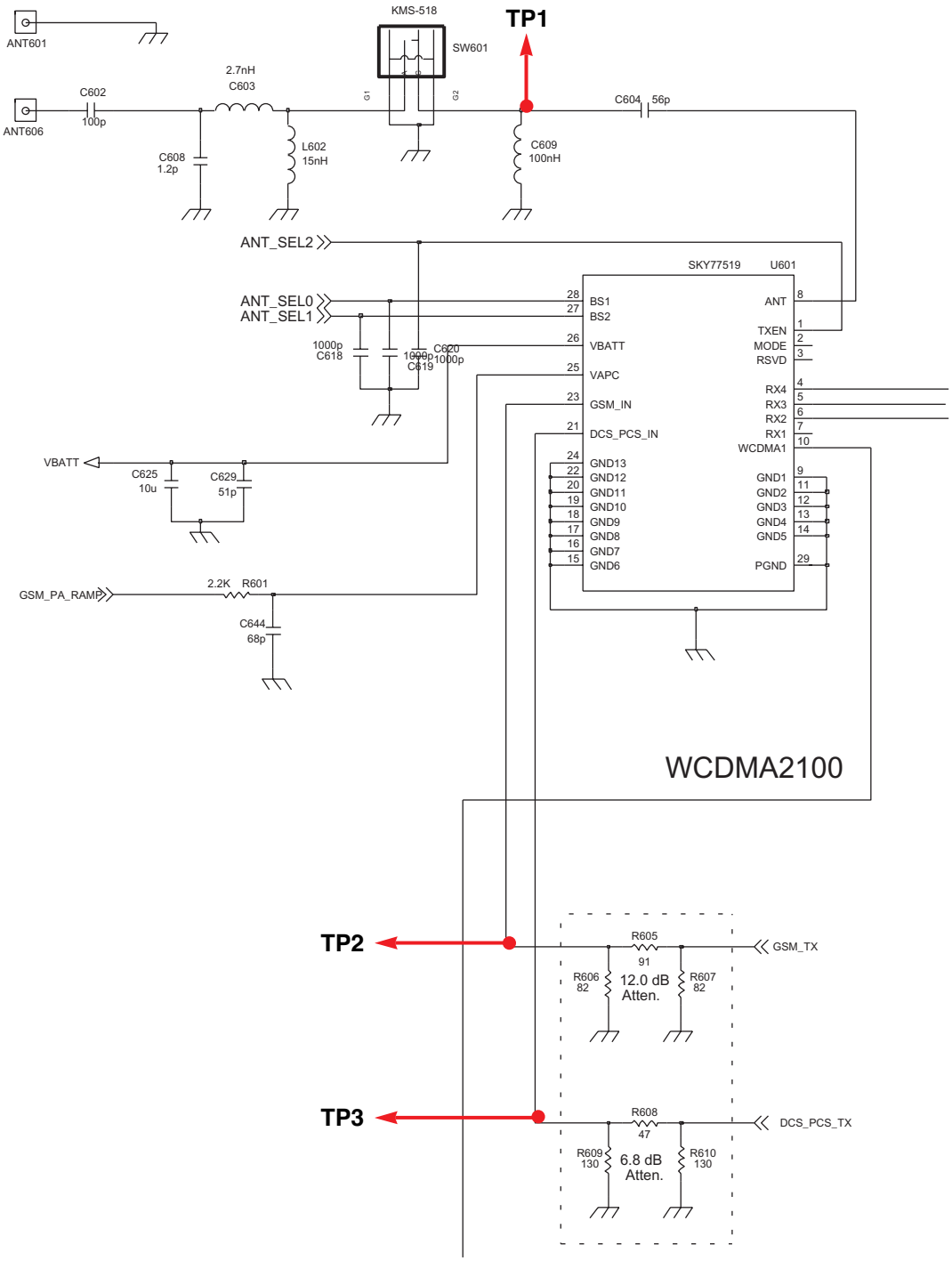
Refer to 1.3

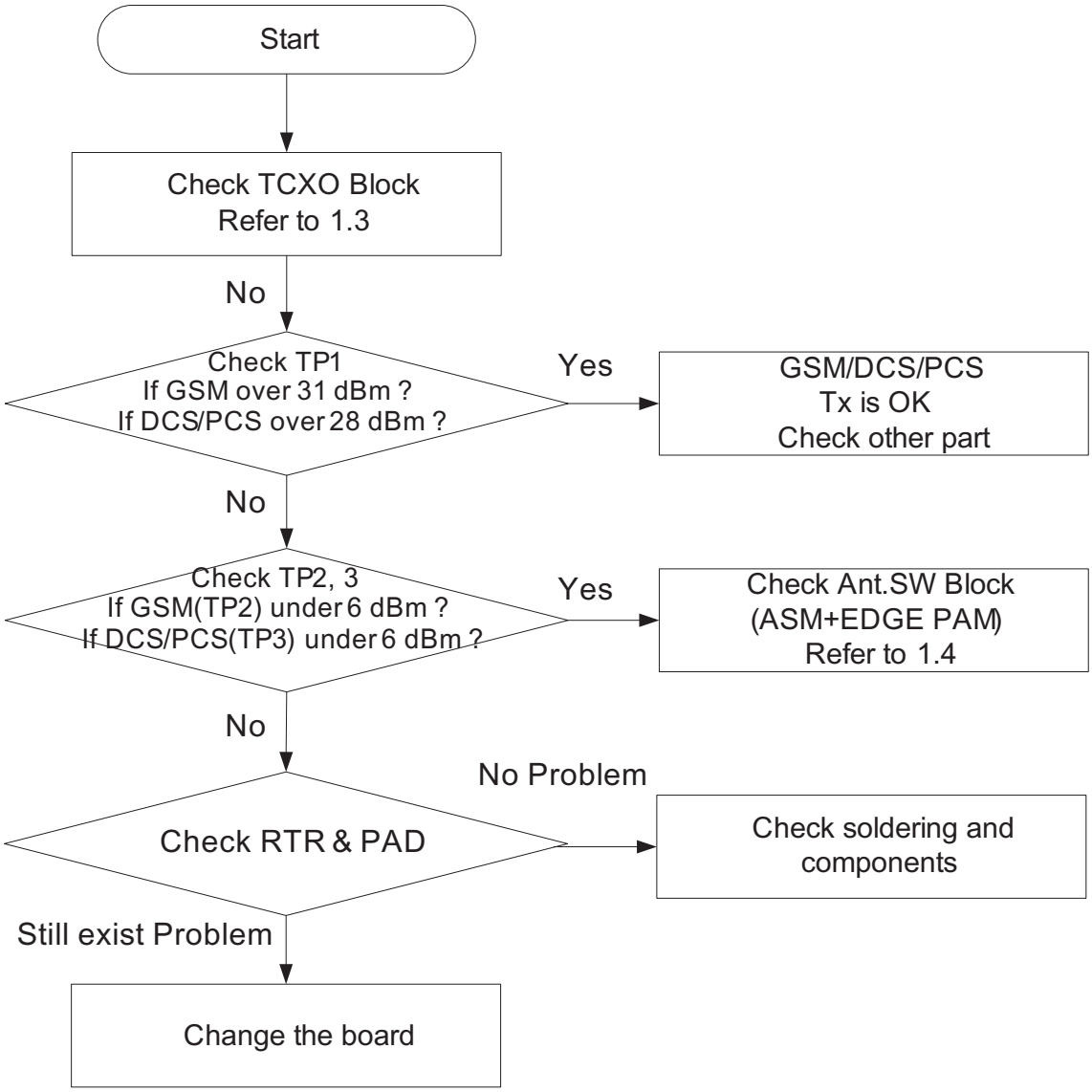
4.6.2 Checking ASM Block

Refer to 1.4

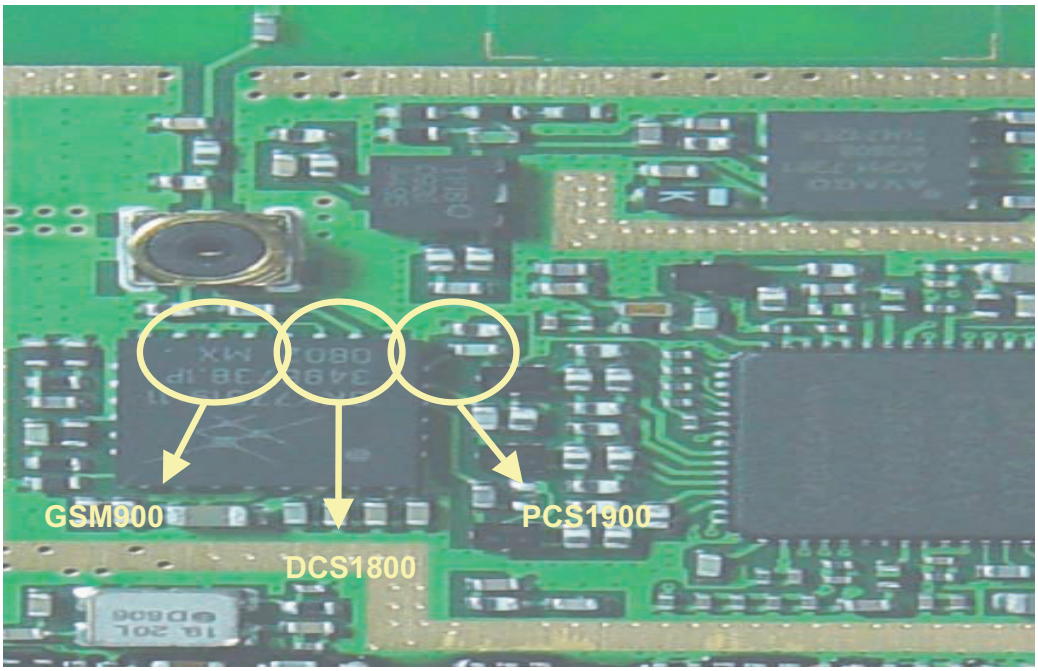
4.6.3 Checking RF TX Level

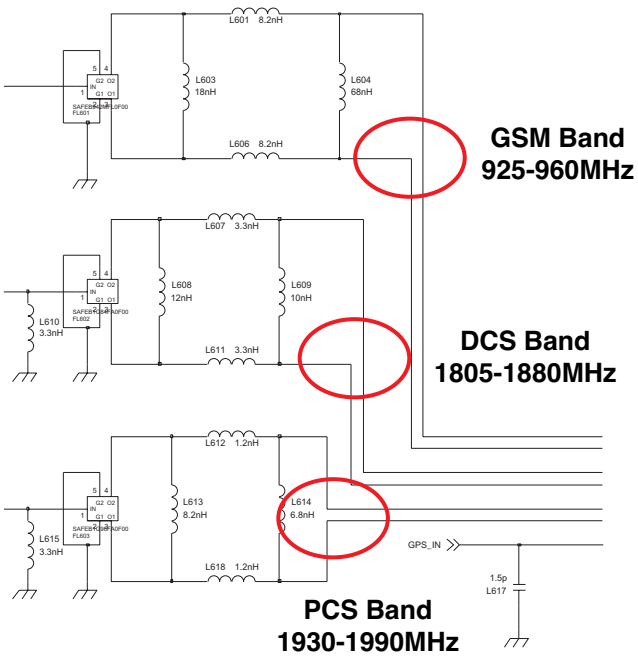




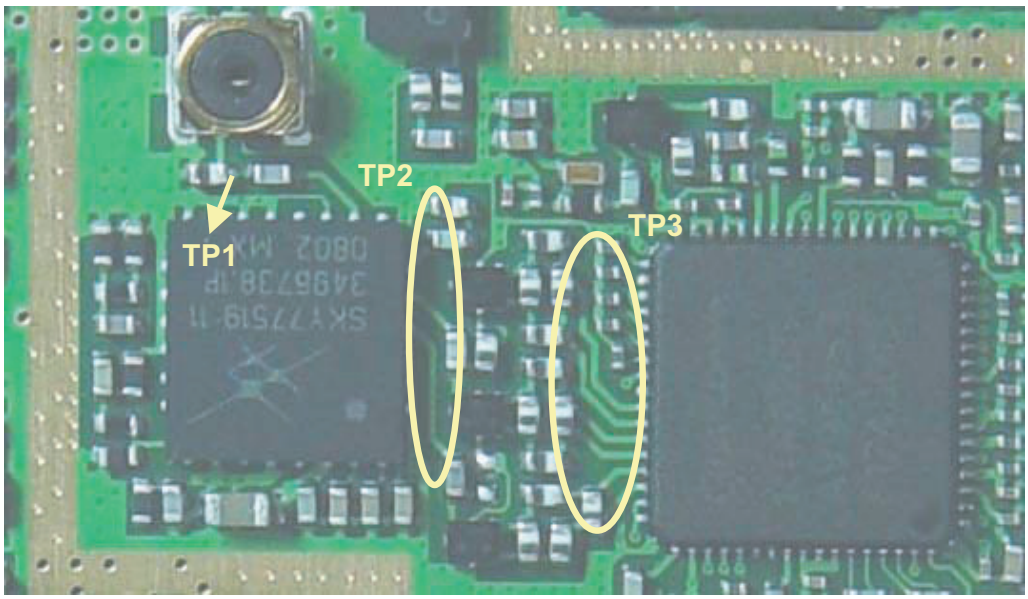


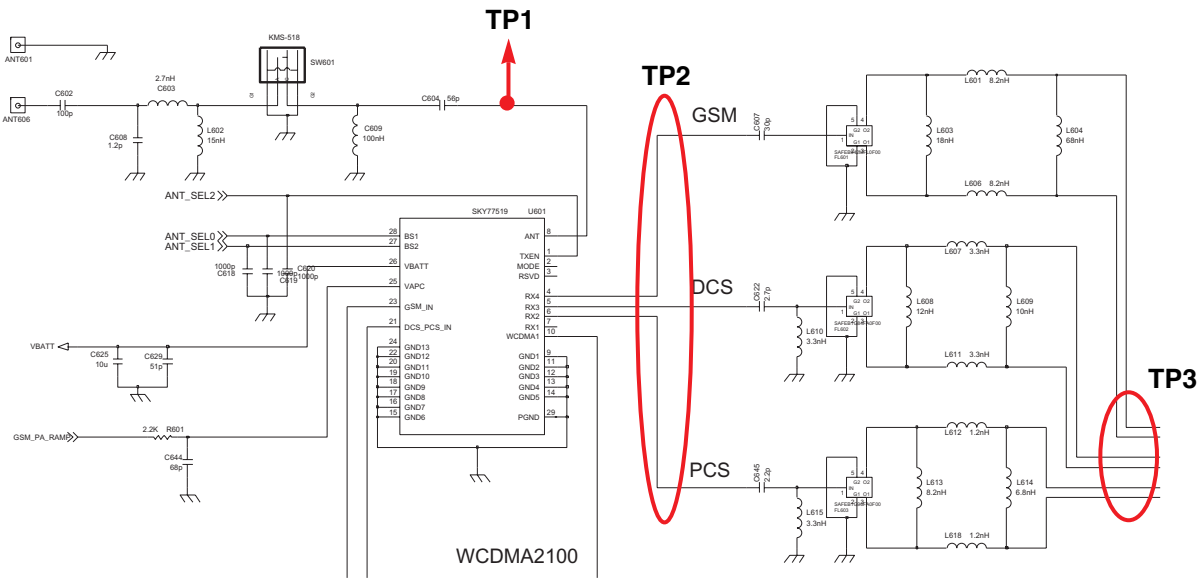
4.6.4 Checking RF Rx Block



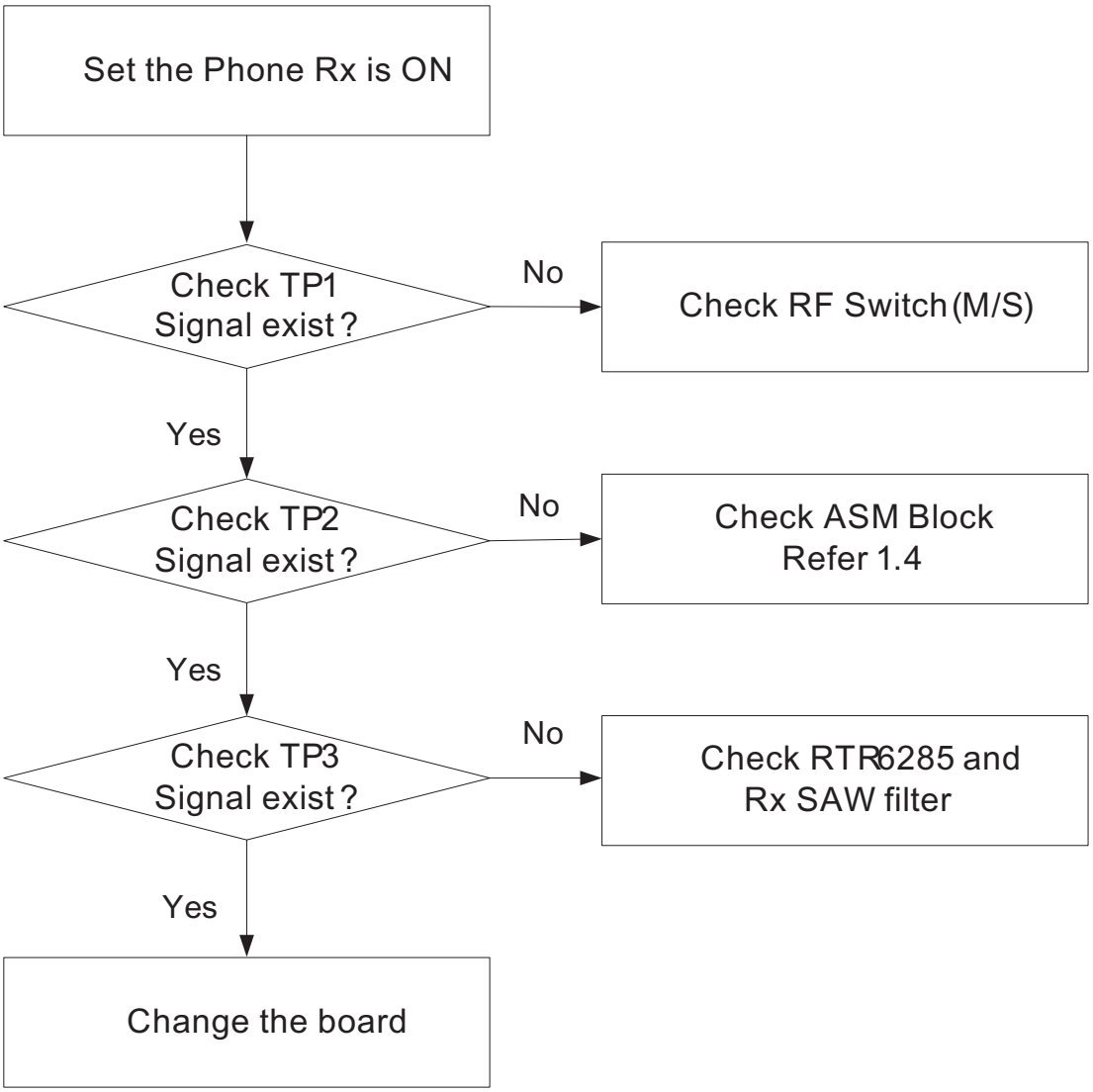


Schematic of GSM/DCS/PCS Rx Block





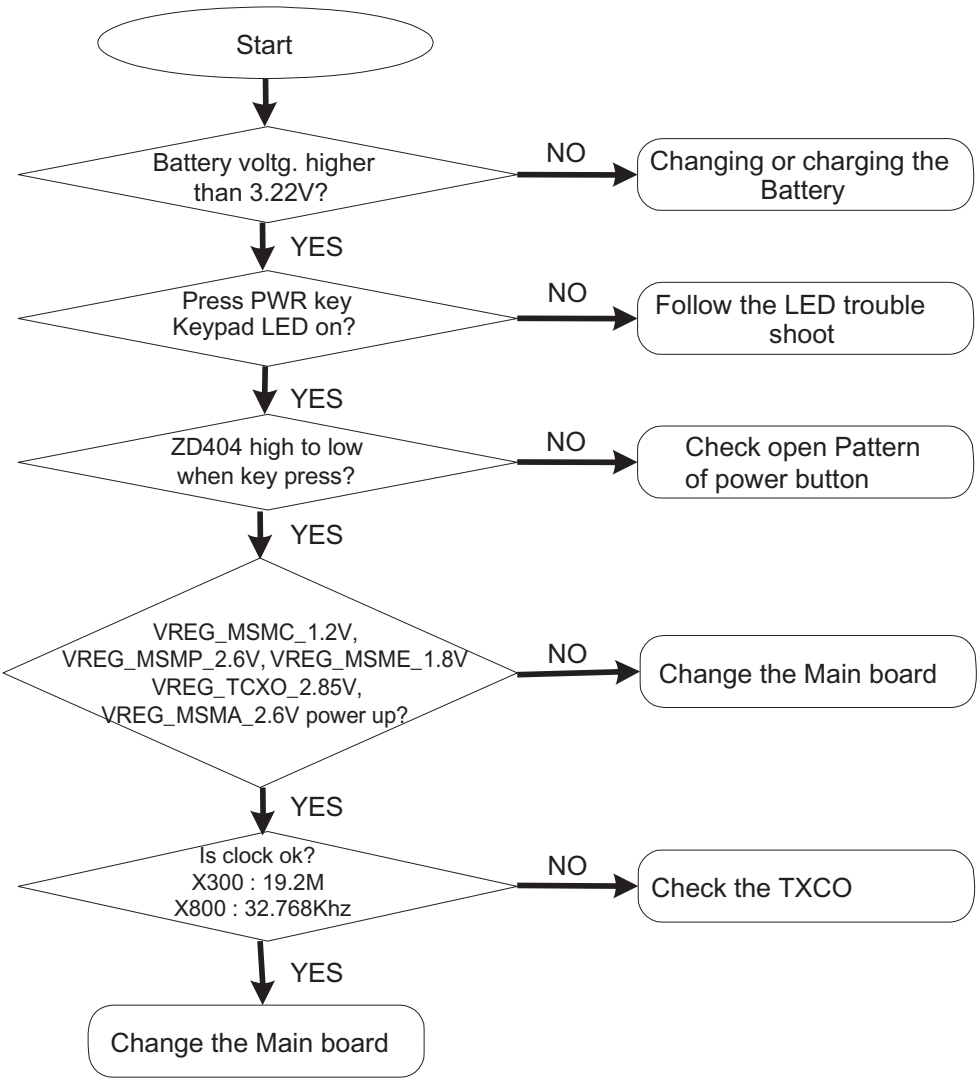
Schematic of GSM/DCS/PCS Rx Block



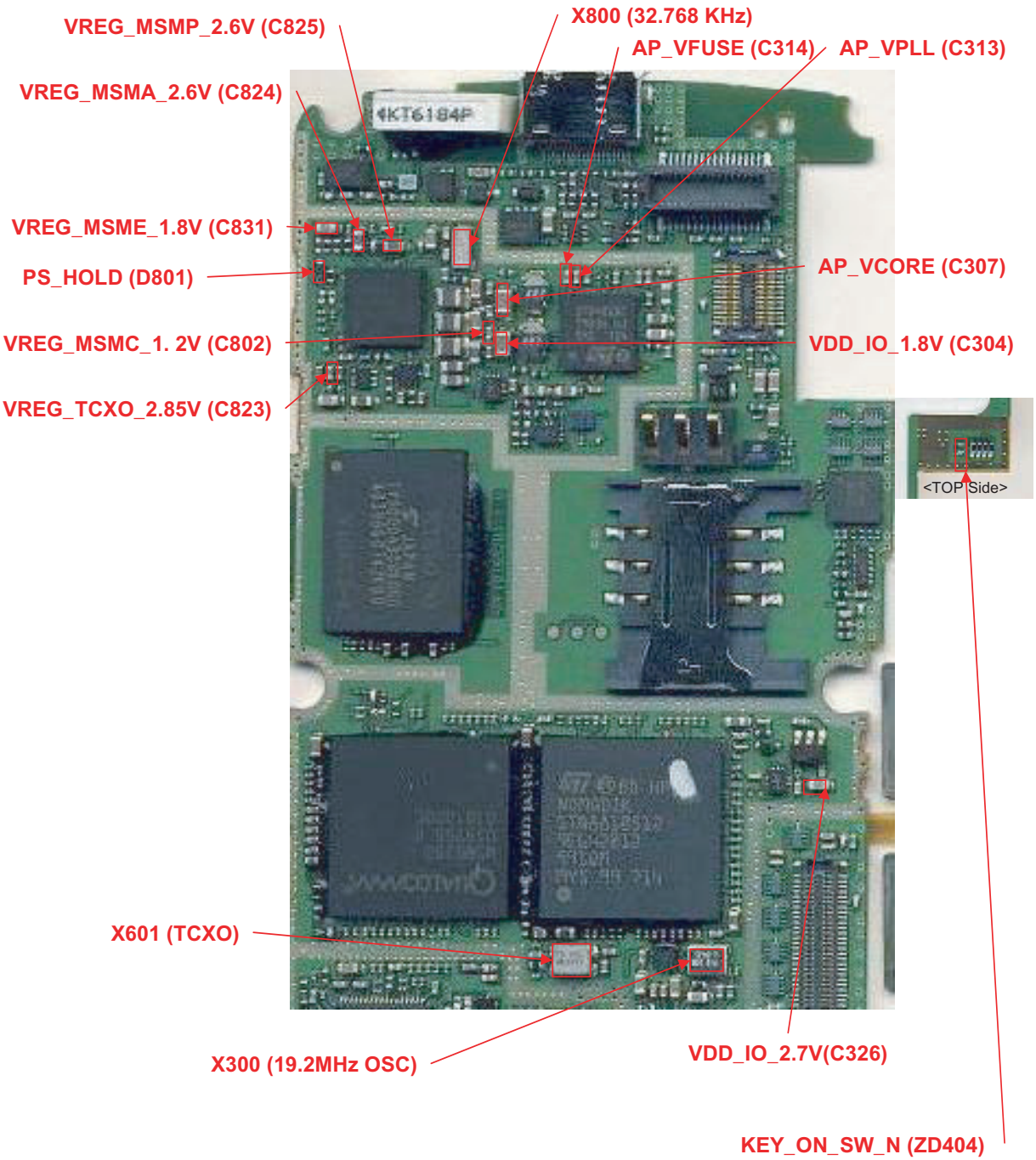
4.7 Power on trouble

Power on sequence of KT610 is :

PWR key press → KEY_ON_SW_N go to low (D405, PM6658 KPD_PWR_N) → PM6658 Power Up → VREG_MSMC_1.2V(C802), VREG_MSME_1.8V(C831), VREG_MSMP_2.6V(C825), VREG_MSMA_2.6V(C824), VREG_TCXO_2.85V(C823) power up → PON_RESET_N assert to MSM and assert to STn8810 → AP_VDD_IO_2.7V(C326), AP_VDD_IO_1.8V(C304), AP_VCORE(C307), AP_VPLL(C313), AP_VFUSE(C314) power up → CPU and Phone booting & PS_HOLD(D801) assert High to PMIC(PM6658)



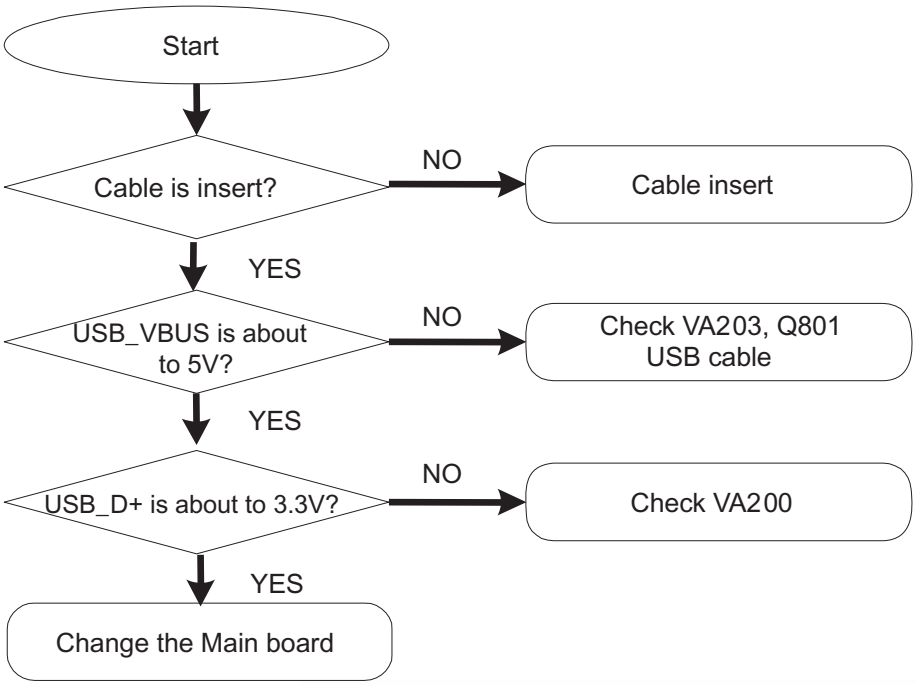
4. TROUBLE SHOOTING

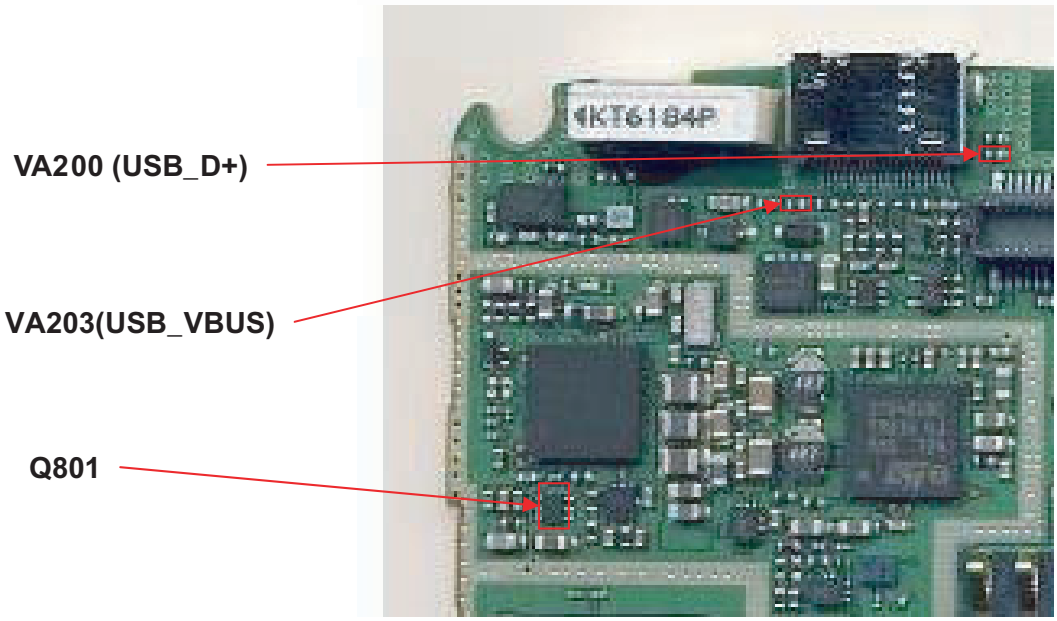


4.8 USB trouble

USB Initial sequence of KT610 is :

USB connected to KT610 → USB_VBUS(VA203) go to 5V → USB_OVP_G enable(Q801 Pin#3 high) USB_VBUS_IN go to 5V (Q801 Pin#4) → USB_D+(VA200) go to 3.3V → USB_DATA is triggered → USB work

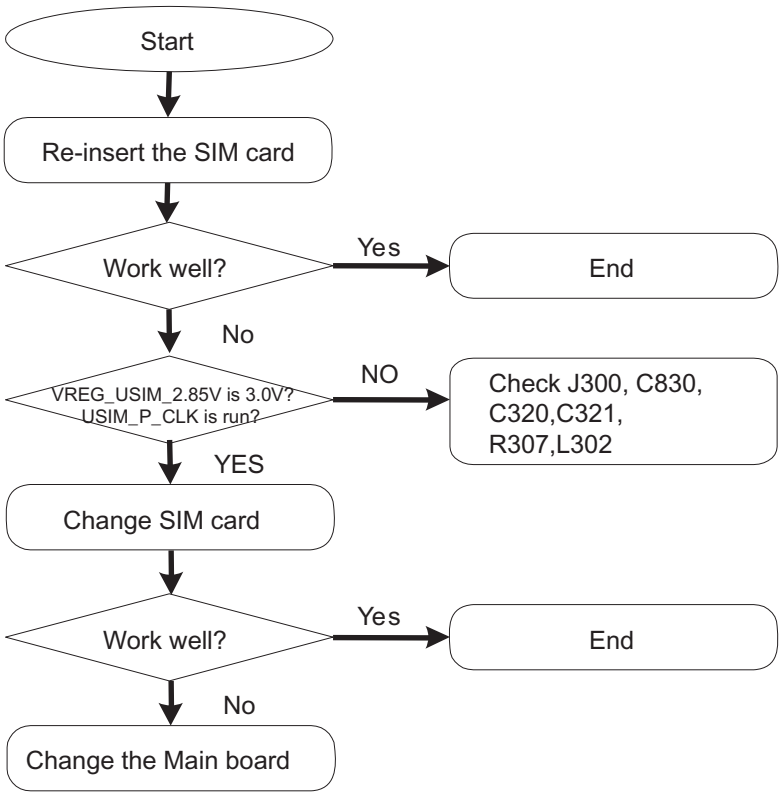


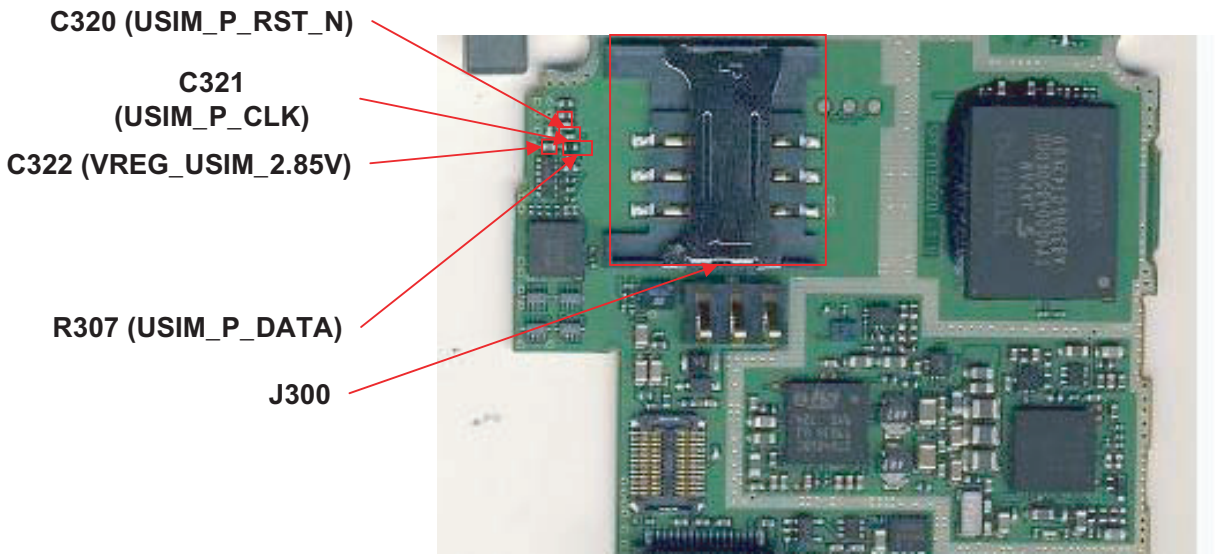


4.9 SIM detect trouble

USB Initial sequence of KT610 is :

VREG_USIM_2.85V(C830 of PM6658) go to 3.0V → USIM clock, reset and data triggered → USIM IF work (Schematic and place are refer to SIM technical brief)

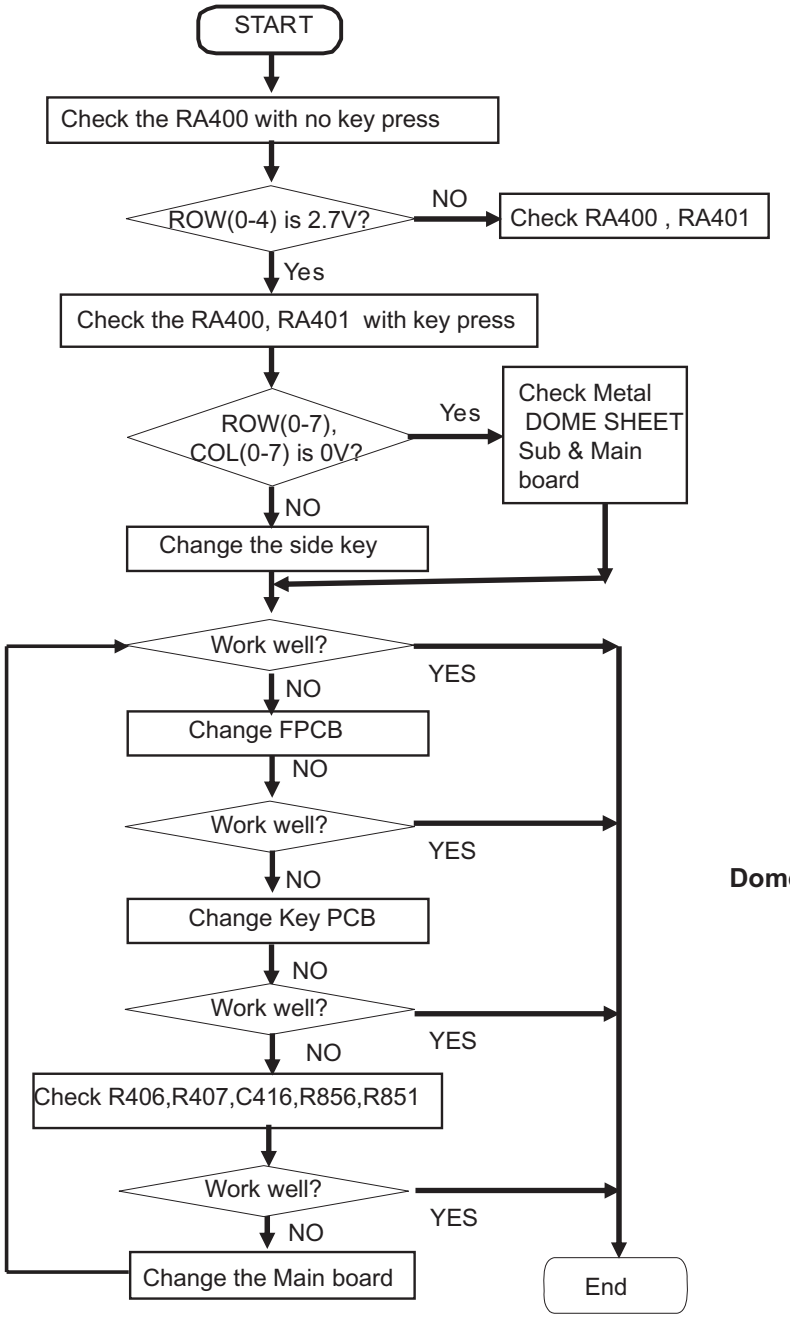


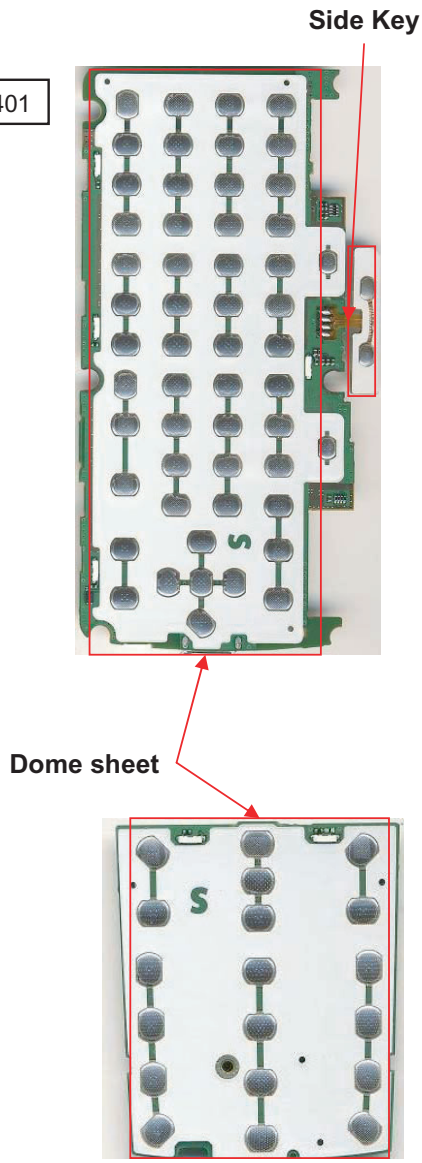


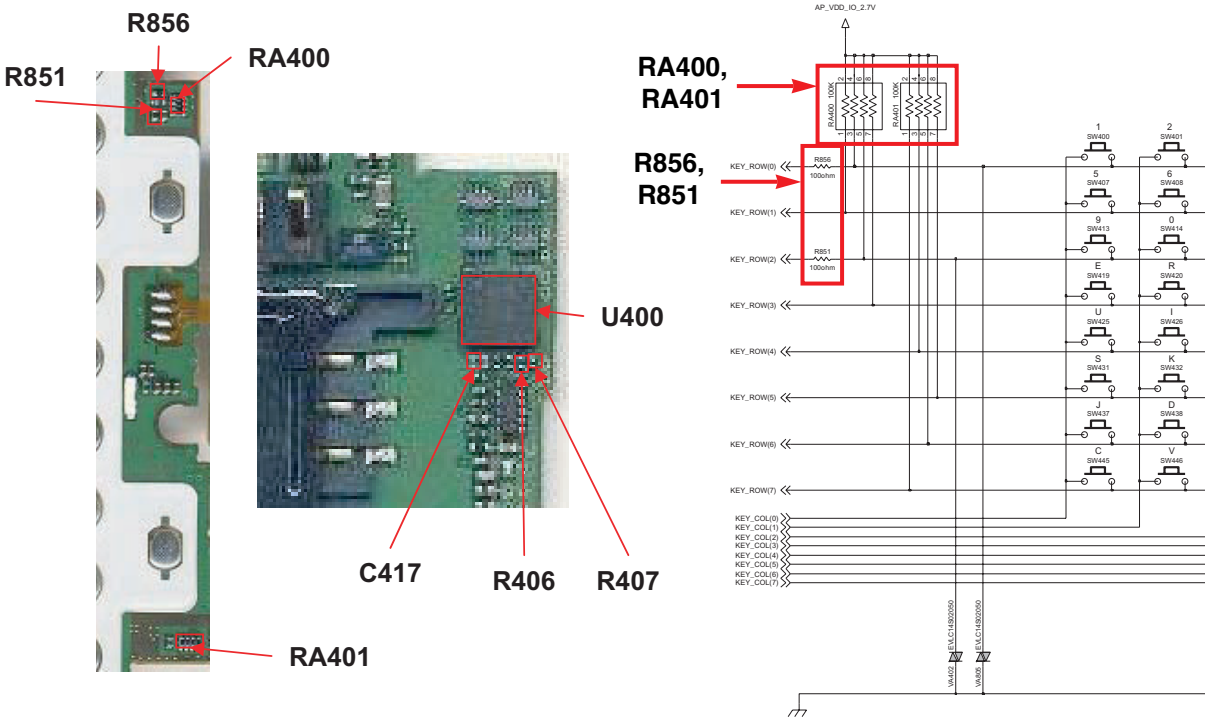
4.10 Key sense trouble

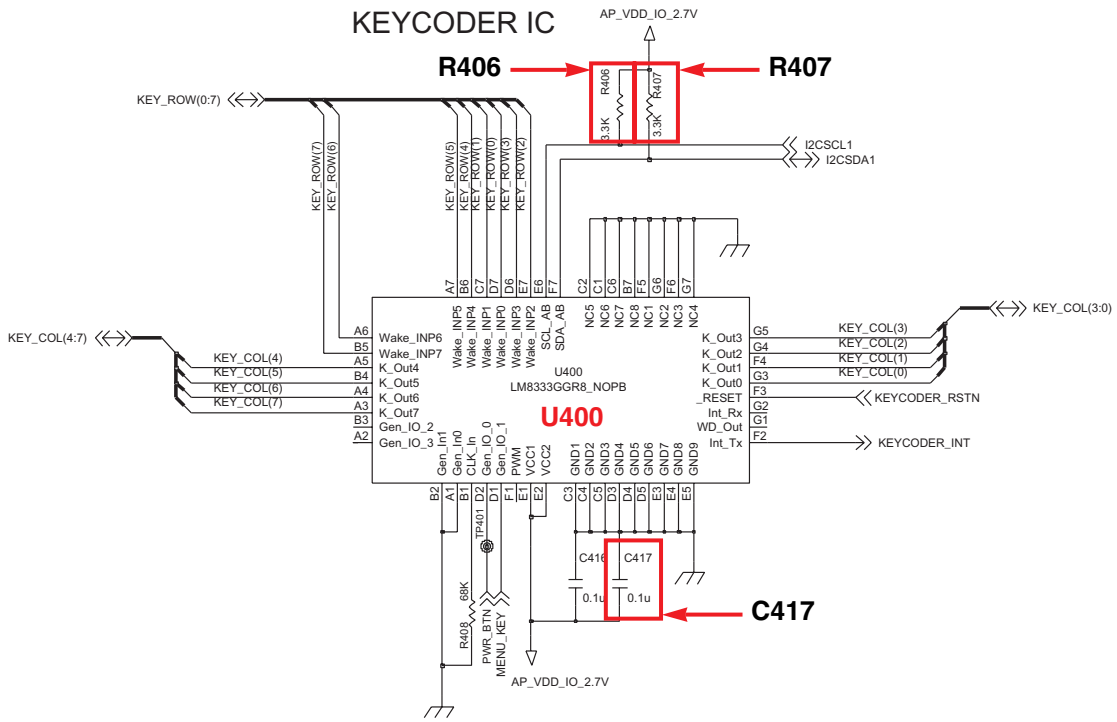
Key Sense sequence of KT610 is :

Default condition ROW(0-7) is 2.7V → Press the key → Corresponding ROW(x) and COL(x) go to 0V → Key sensing by key coder IC (U400) → Key coder IC send the key information to CPU by I2C interface







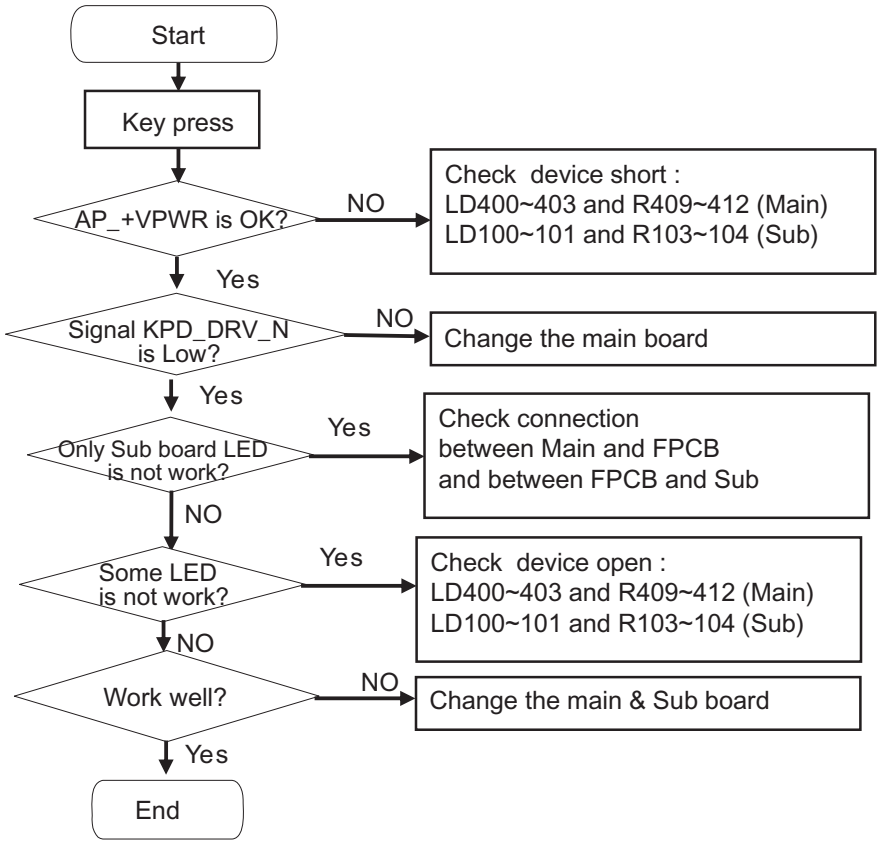


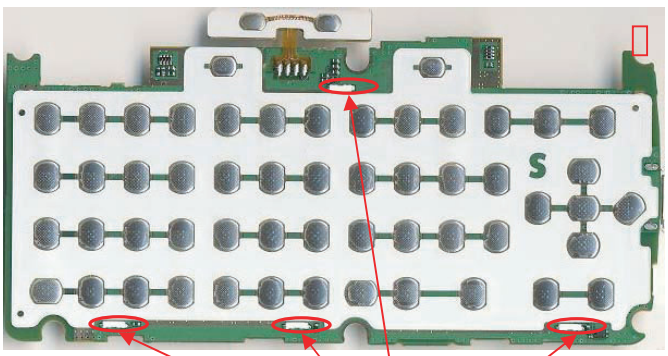
Schematic of key sense part

4.11 Keypad backlight trouble

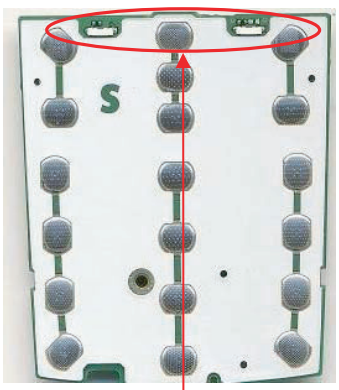
Key Pad Back Light is on as below :

Key pressing → STn8810 commend MSM6275 lighting the Key LED → MSM 6280 let KPD_DRV_N of PM6658 to go to Low → LED On (Key Pad LED controlled by PM6658)

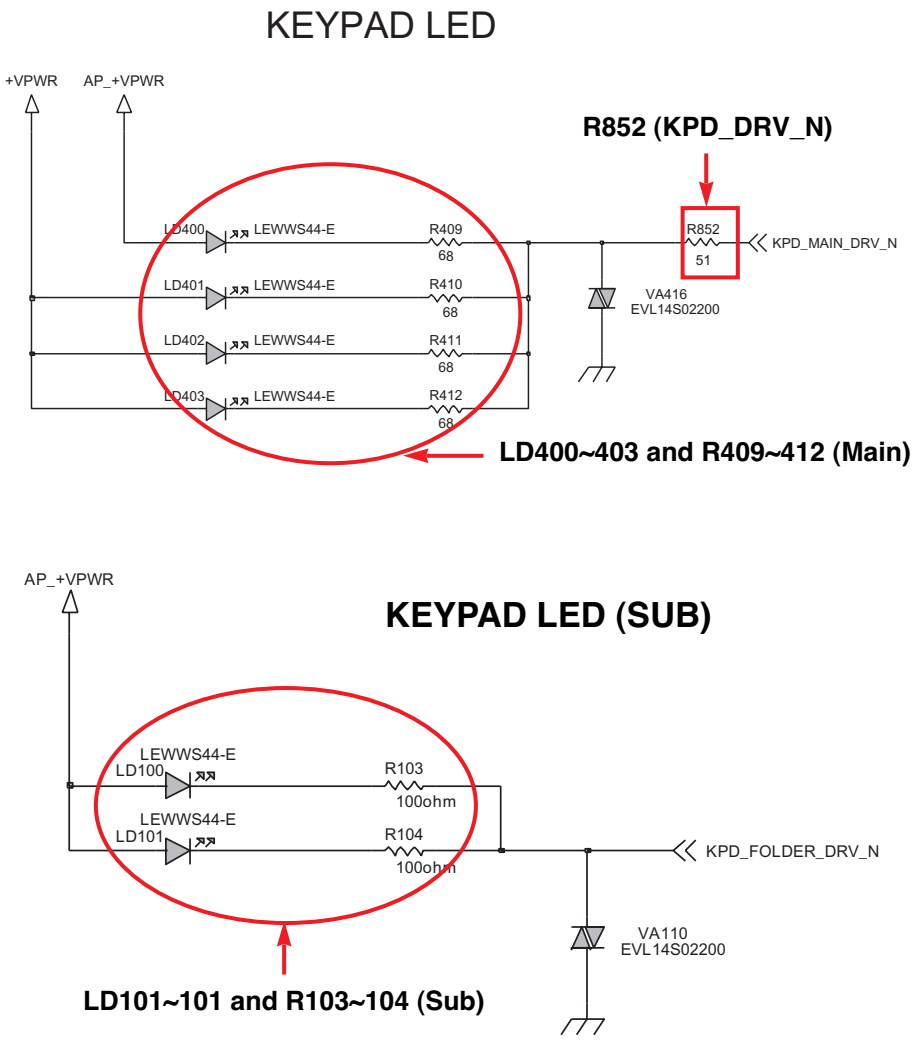




LD400~403 and R409 ~412



LD100~101 and R103~104 (Sub)

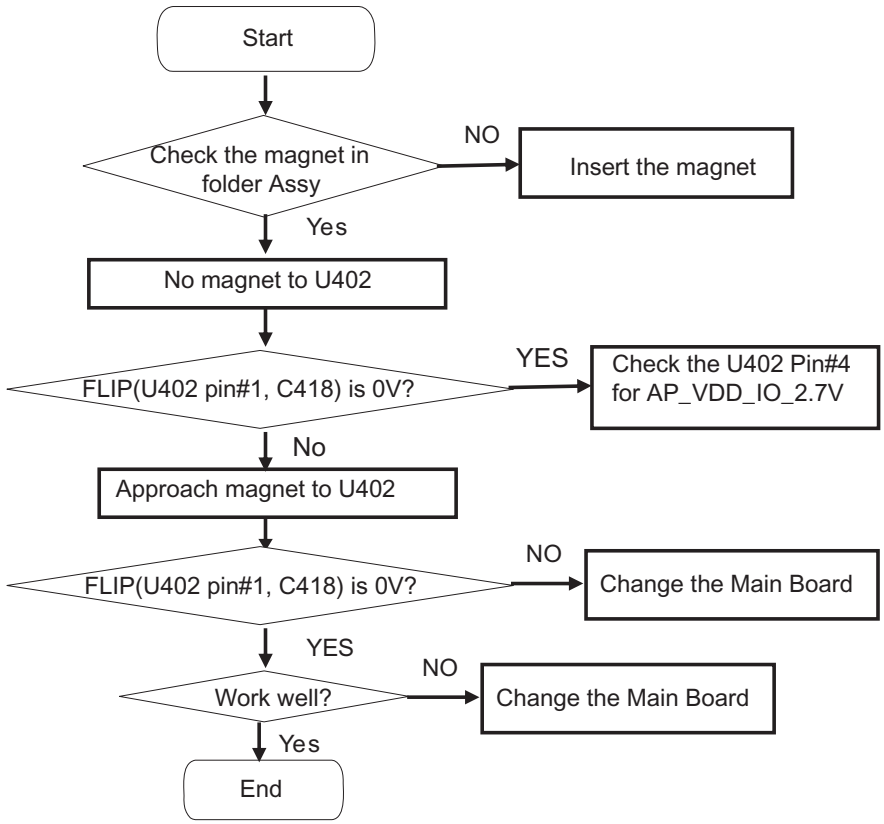


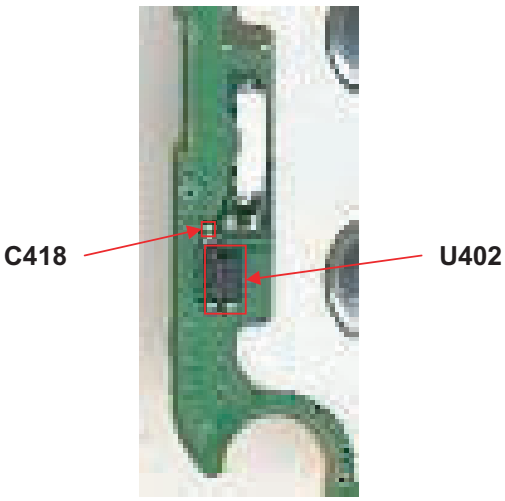
Schematic of keypad backlight part

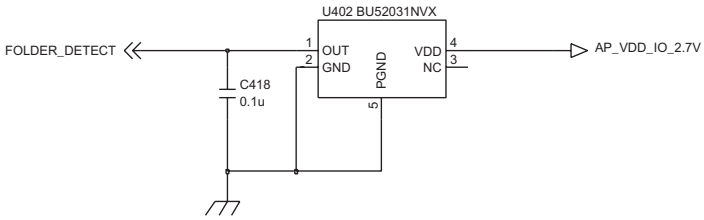
4.12 Folder on/off trouble

Folder On/Off(Close/Open) is worked as below :

Folder On/Off Event → Flip(U402 pin 1,key board) is triggered(Open : about 2.7V, Close : 0V) → Folder event transfer to GPIO5 of STn8810 and GPIO37 of MSM6280 directly



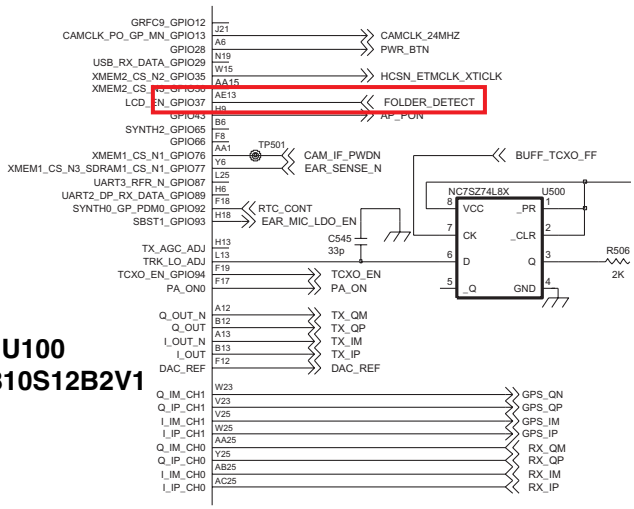




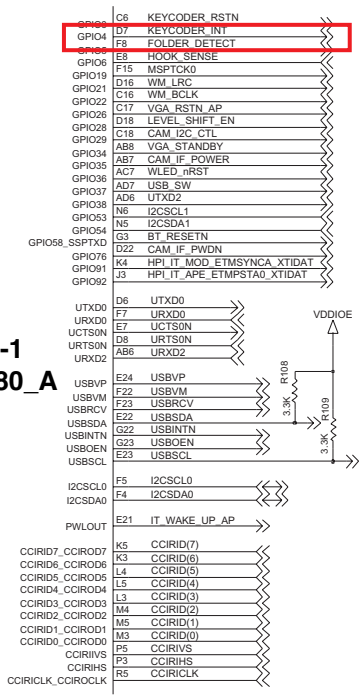
FOLDER_SENSE

[FOLDER_DETECT = H : Folder Open , L : Folder Close]

U100
STN8810S12B2V1



U501-1
MSM6280_A

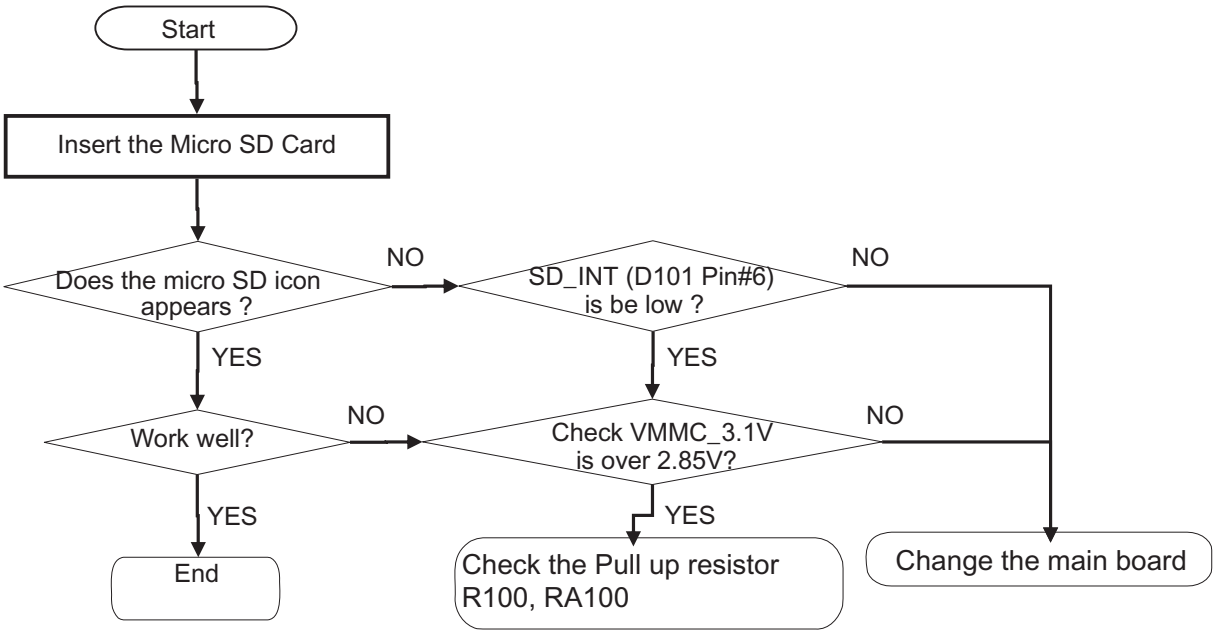


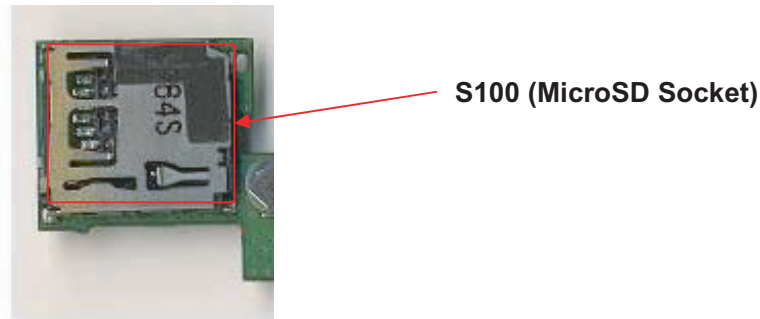
Schematic of Folder on/off part

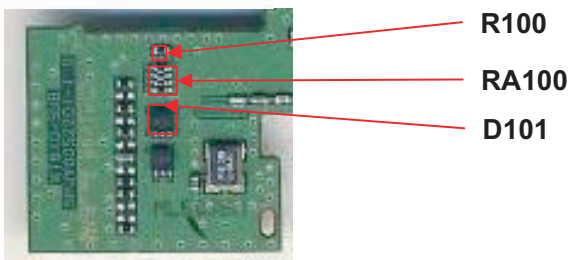
4.13 Micro SD trouble

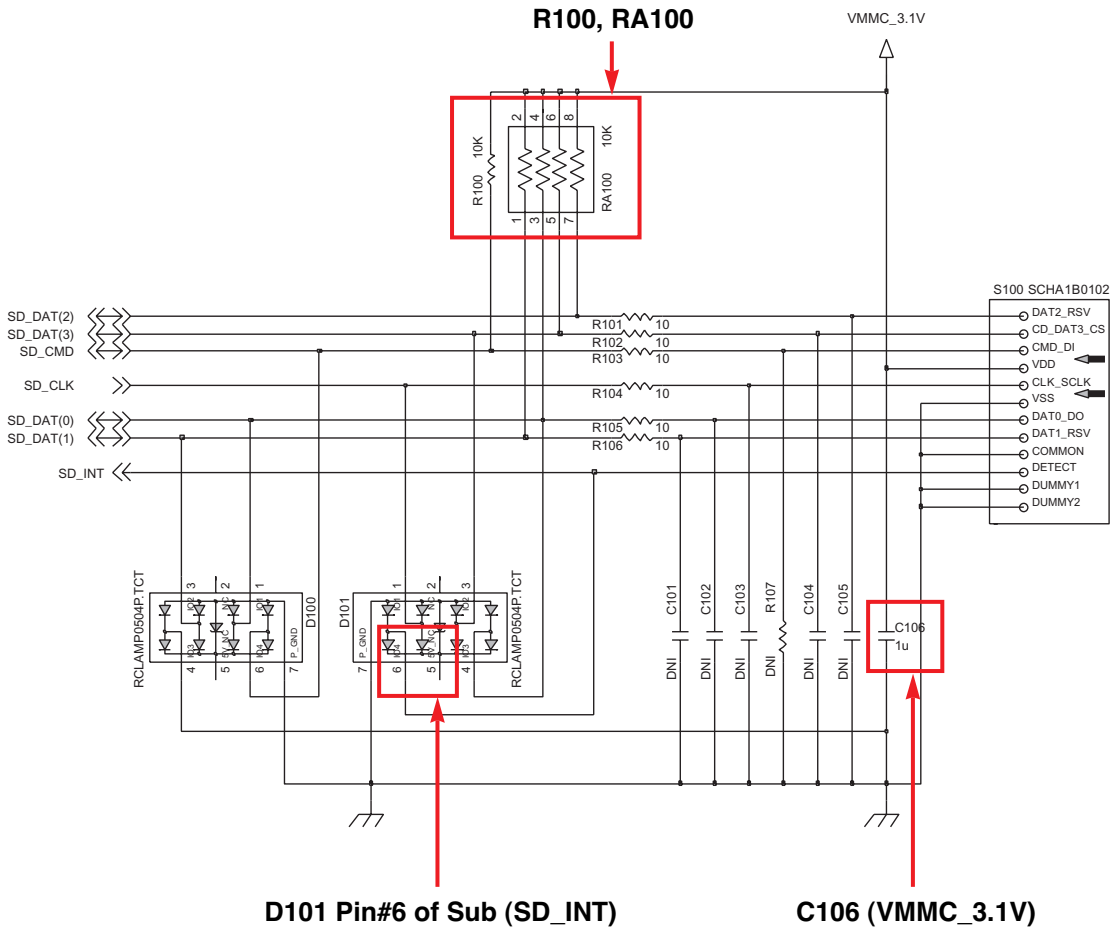
Micro SD is worked as below :

Micro SD insertion → Card Detect (SD_INT) goes to low → STn8810 detect SD_INT and assert VMMC_3.1V by STw4810 → go working









Schematic of Micro SD

4.14 Charging trouble

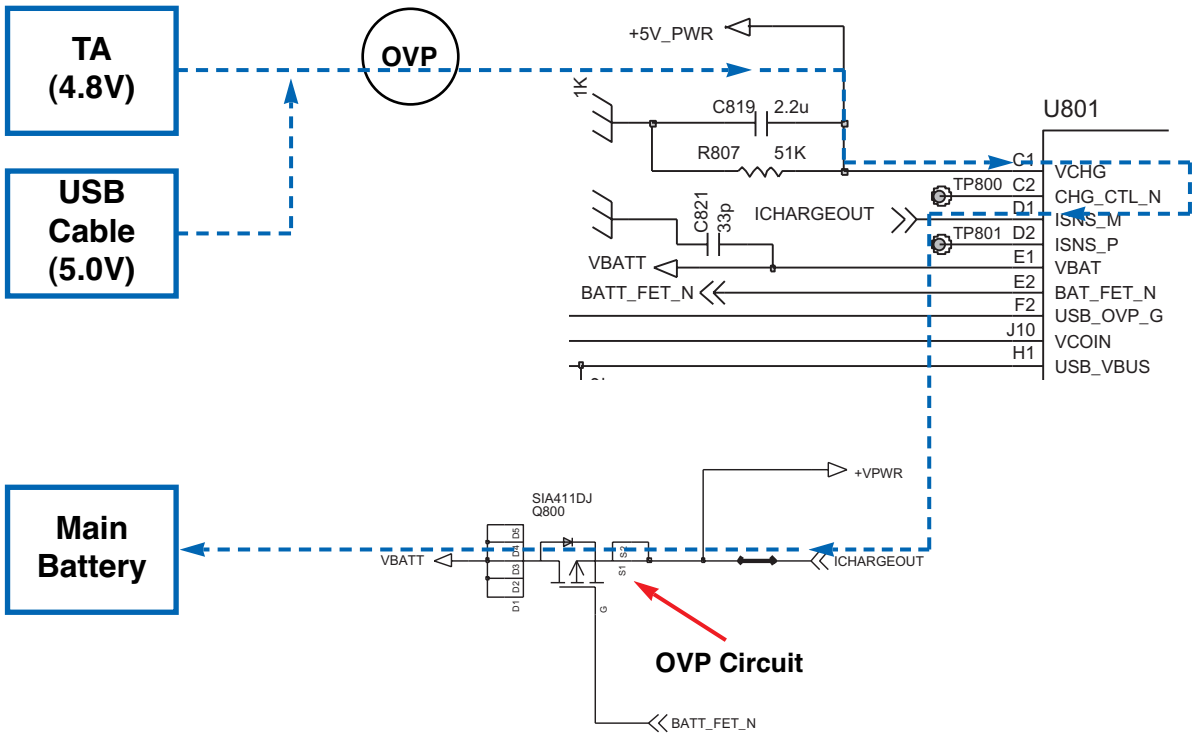


Fig. Charging Pass

■ Charging Procedure

- Connecting TA or USB Cable → +5V PWR Line PM6658(VCHG) → PM6658(ICHARGEOUT) → OVP Circuit (between PM6658 and Main Battery) → Main Battery

■ Check Point

- Connection of TA or USB Cable
- Charging current path
- Battery

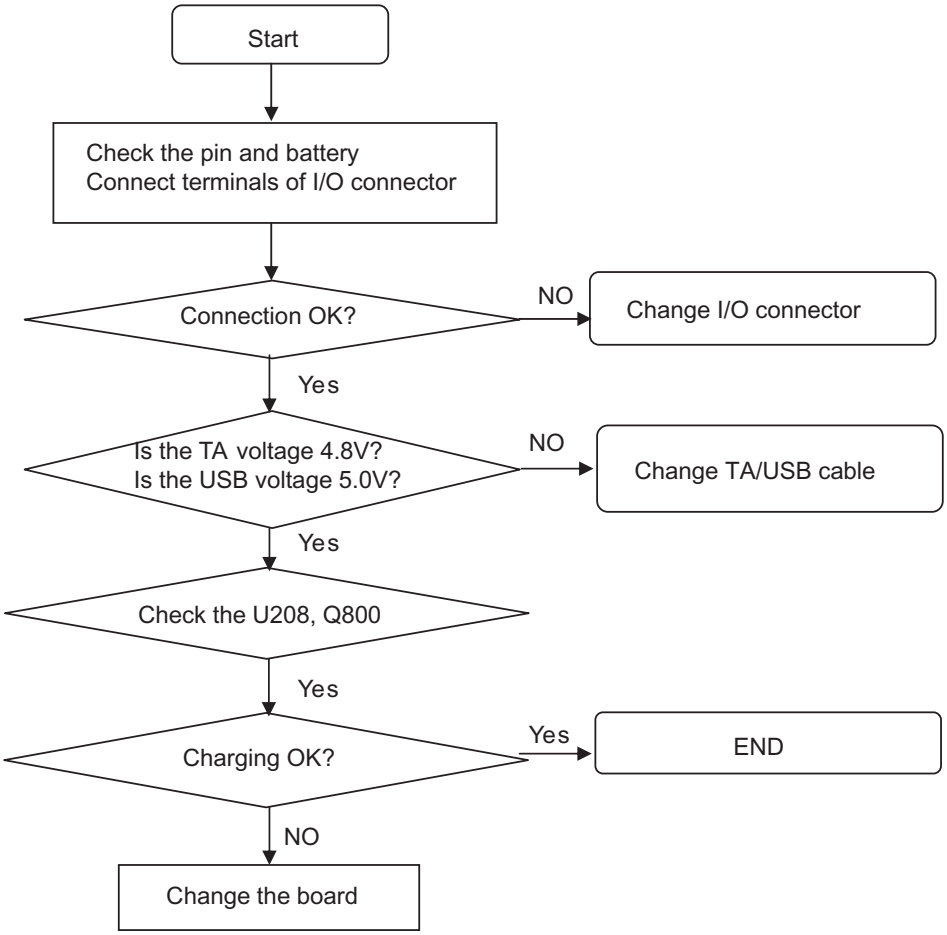
■ Trouble Shooting Setup

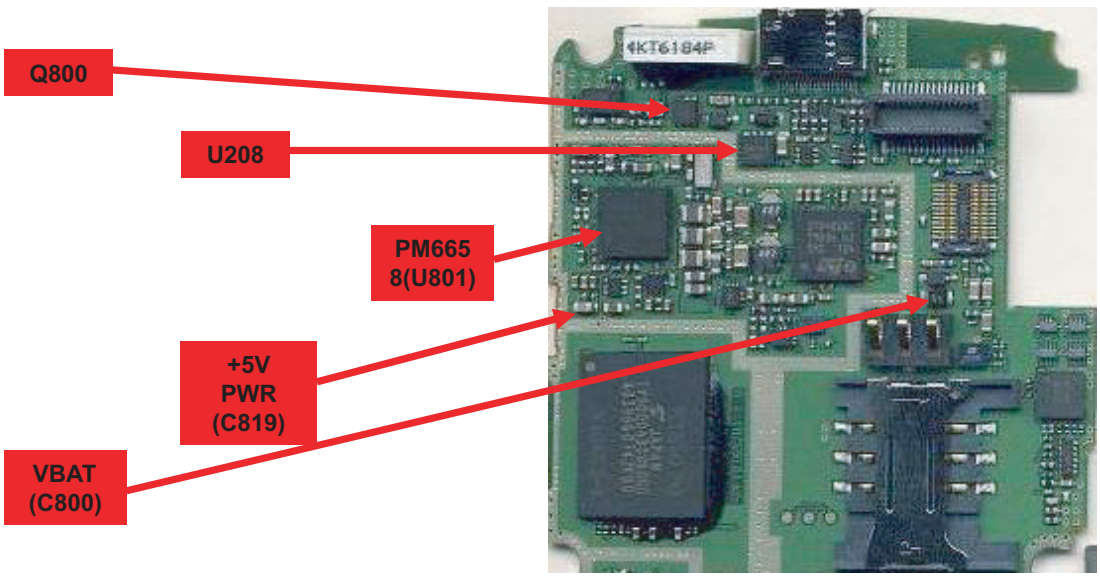
- Connect TA or USB Cable and battery to the phone

■ Trouble Shooting Procedure

- Check the charger connector
- Check the charging current path
- Check the battery

4. TROUBLE SHOOTING



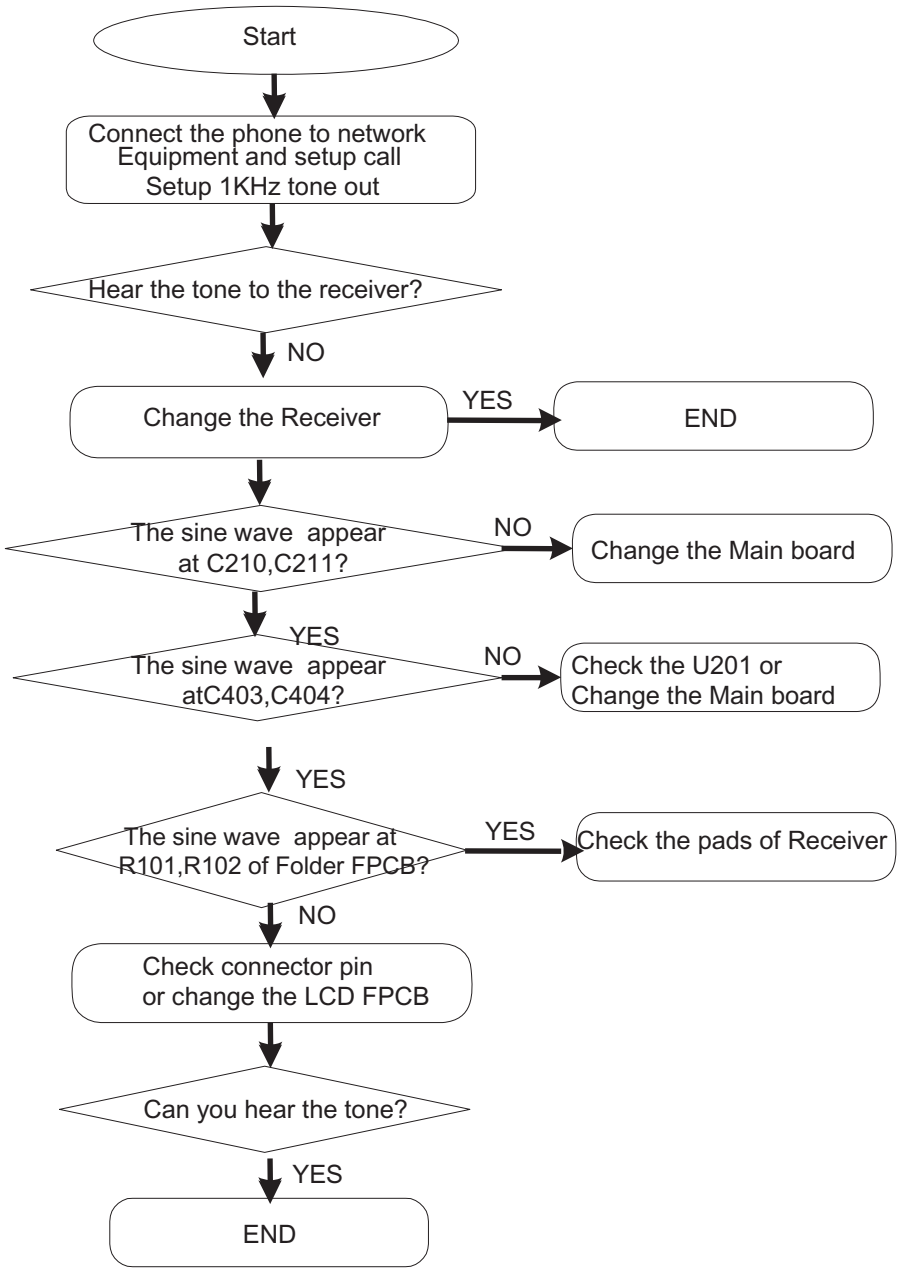


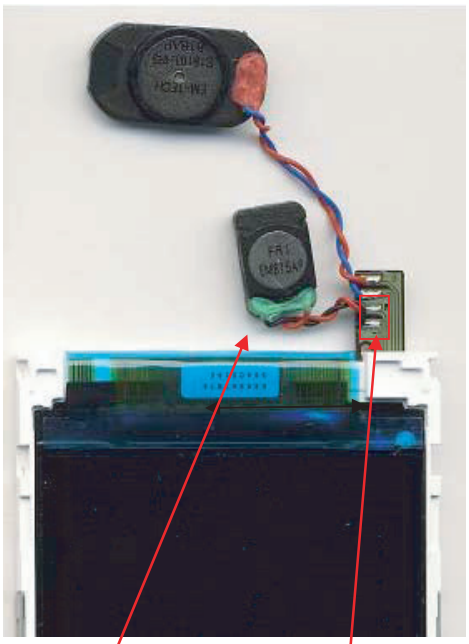
4.15 Audio trouble

4.15.1 Receiver path

Voice Receiver path as below:

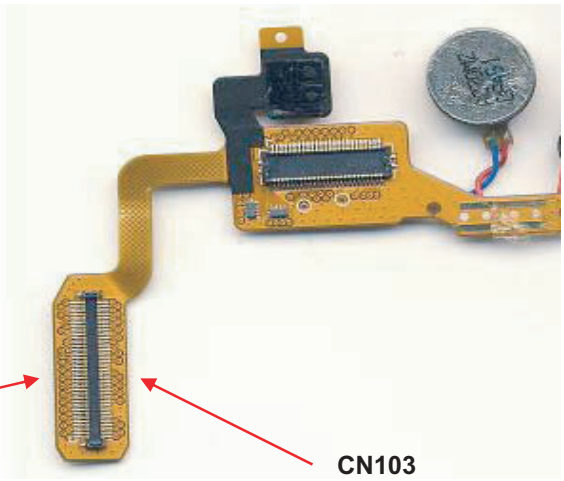
MSM6280 Ear1ON/Ear1OP → U201(audio codec) → CN400 (B to B connector between Main and Folder) → CN103 (B to B connector to LCD FPCB) → receiver solder PAD included in LCD Module → Receiver



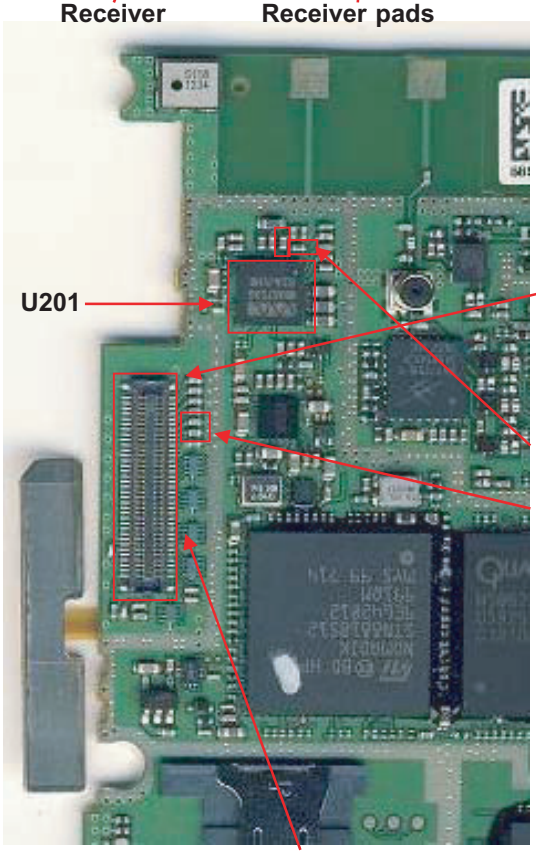


Receiver Receiver pads

LCD connector



CN103
(B to B connector to LCD FPCB



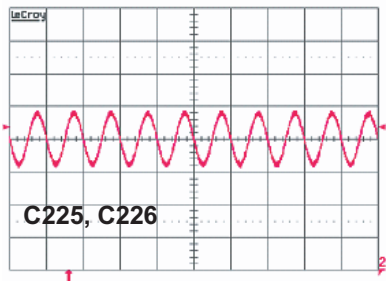
U201

C210,C211

C403,C404

CN400

(B to B connector between Main and Folder)

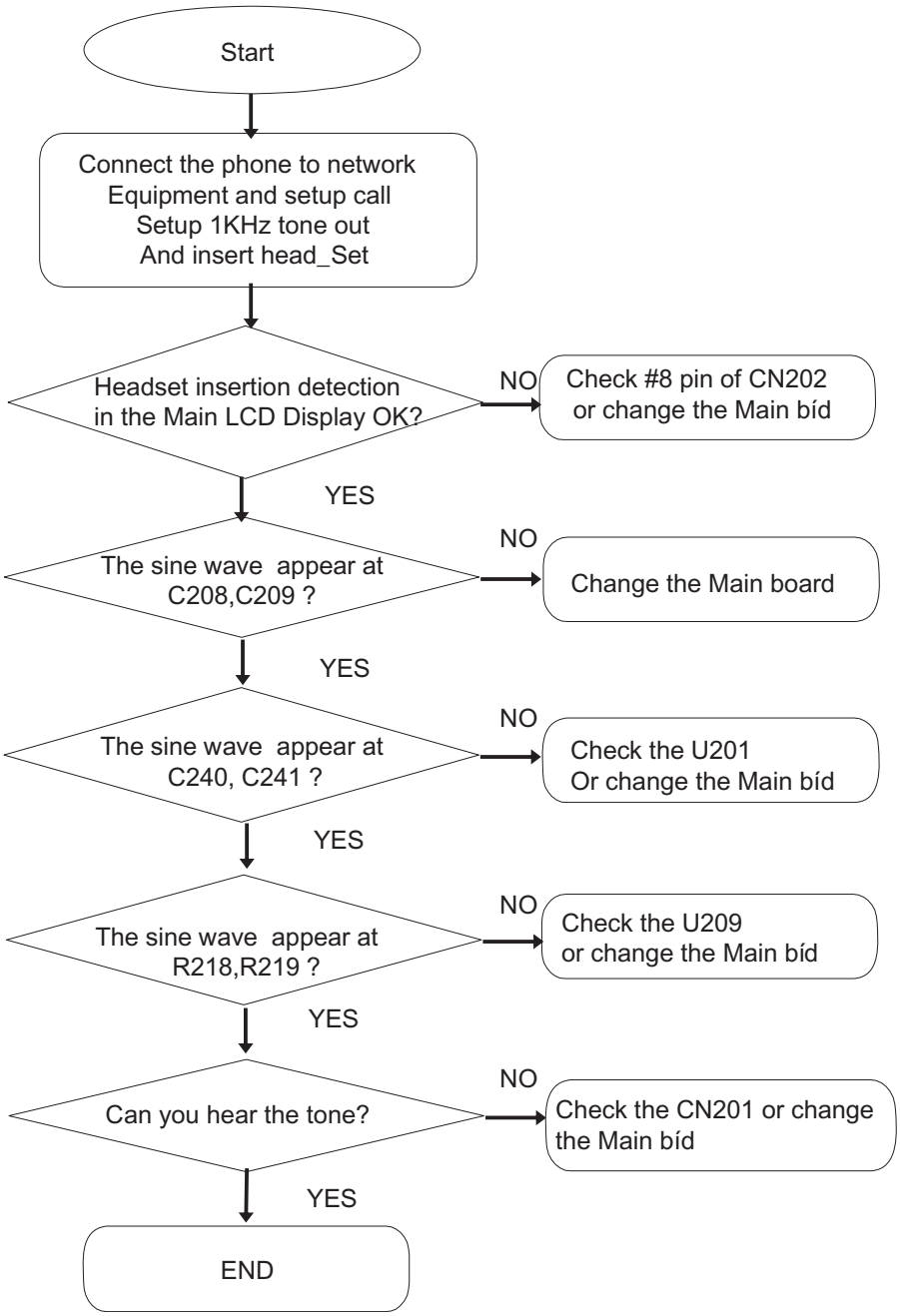


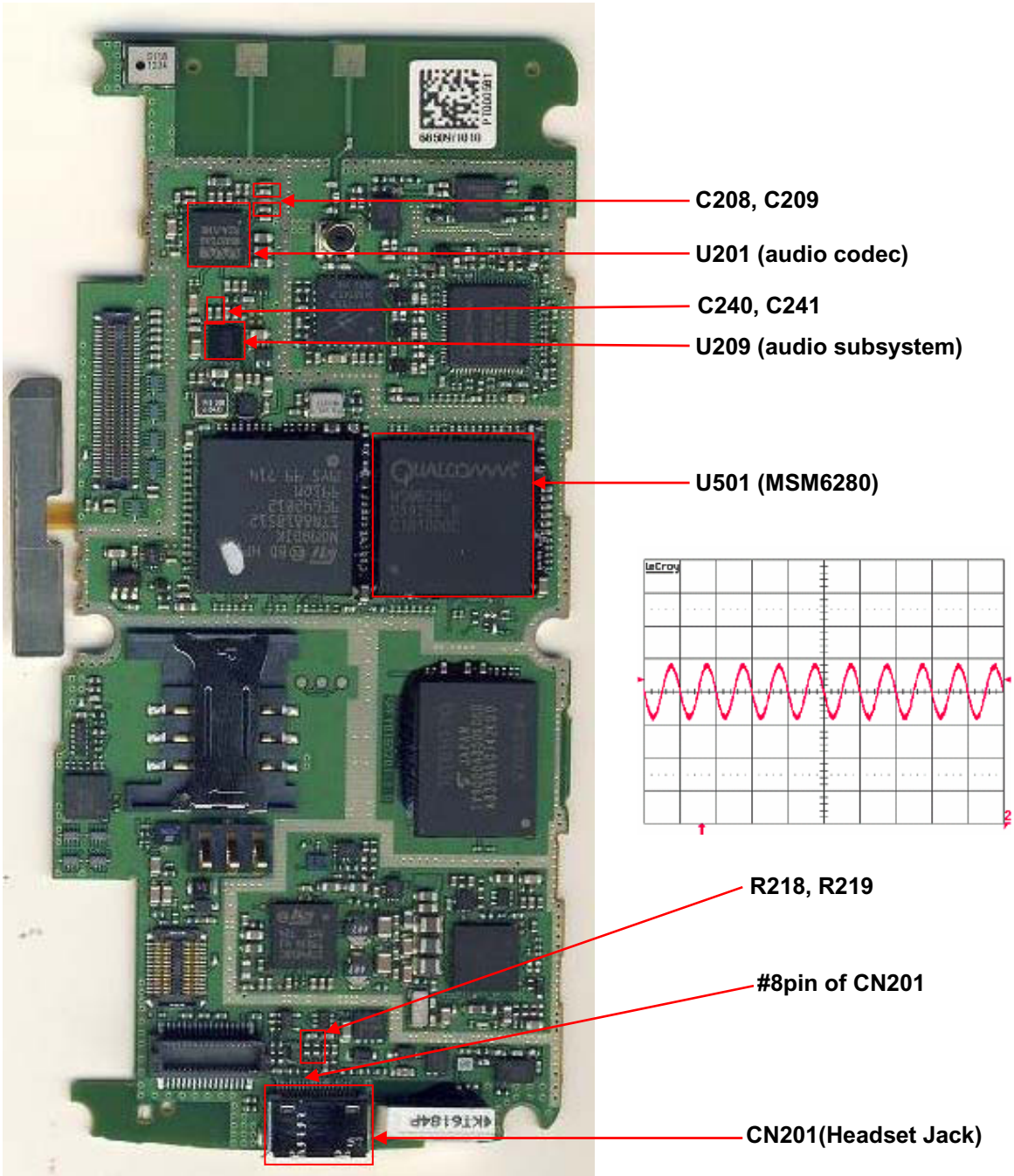
C225, C226

4.15.2 Voice path for headset

Voice path for Head_Set as below:

MSM6280 HPH_R, HPH_L → C208,C209 → U201 (audio codec) → C240,C241 → U209 (audio subsystem) → R218,R219 #4, #5 pin of CN201 headset Jack



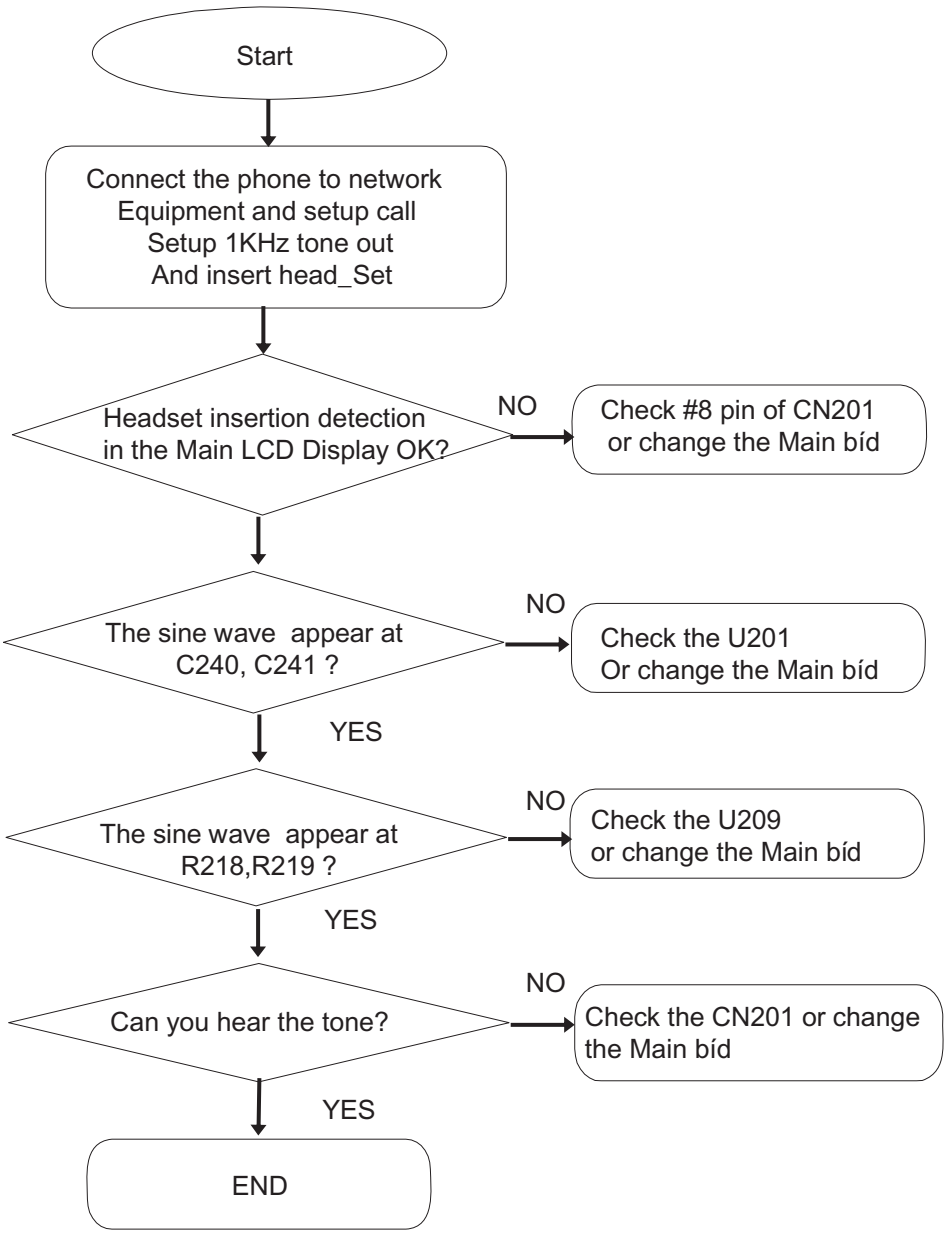


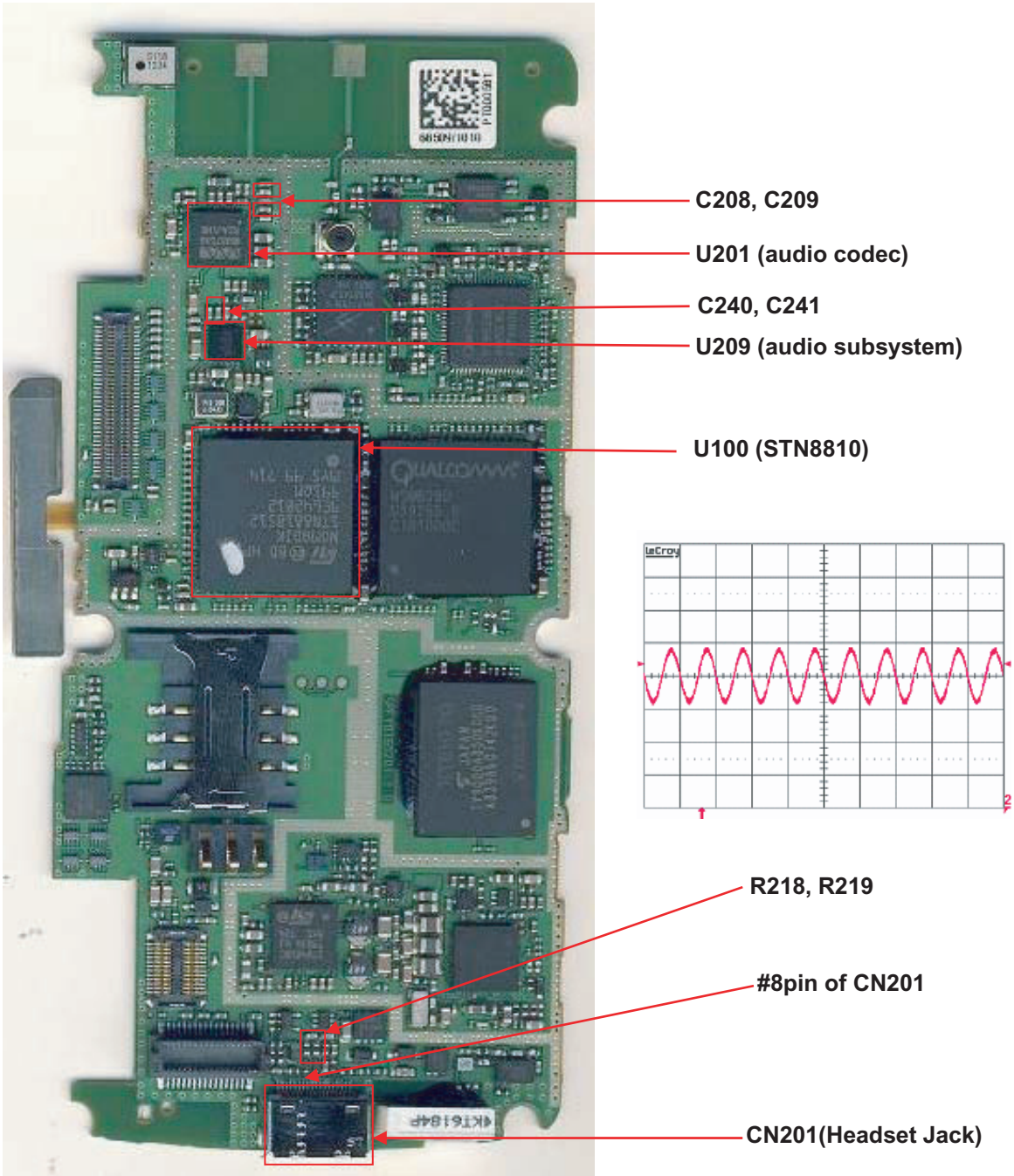
Main PCB

4.15.3 Sound path for headset

Multimedia Sound path for Head_Set as below:

STN8810 (msptxd0) → U201 (audio codec) → C240, C241 → U209 (Audio Subsystem, WM_LOUT1,WM_ROUT1) → R218, R219 → #4,#5 pin of CN201 headset Jack



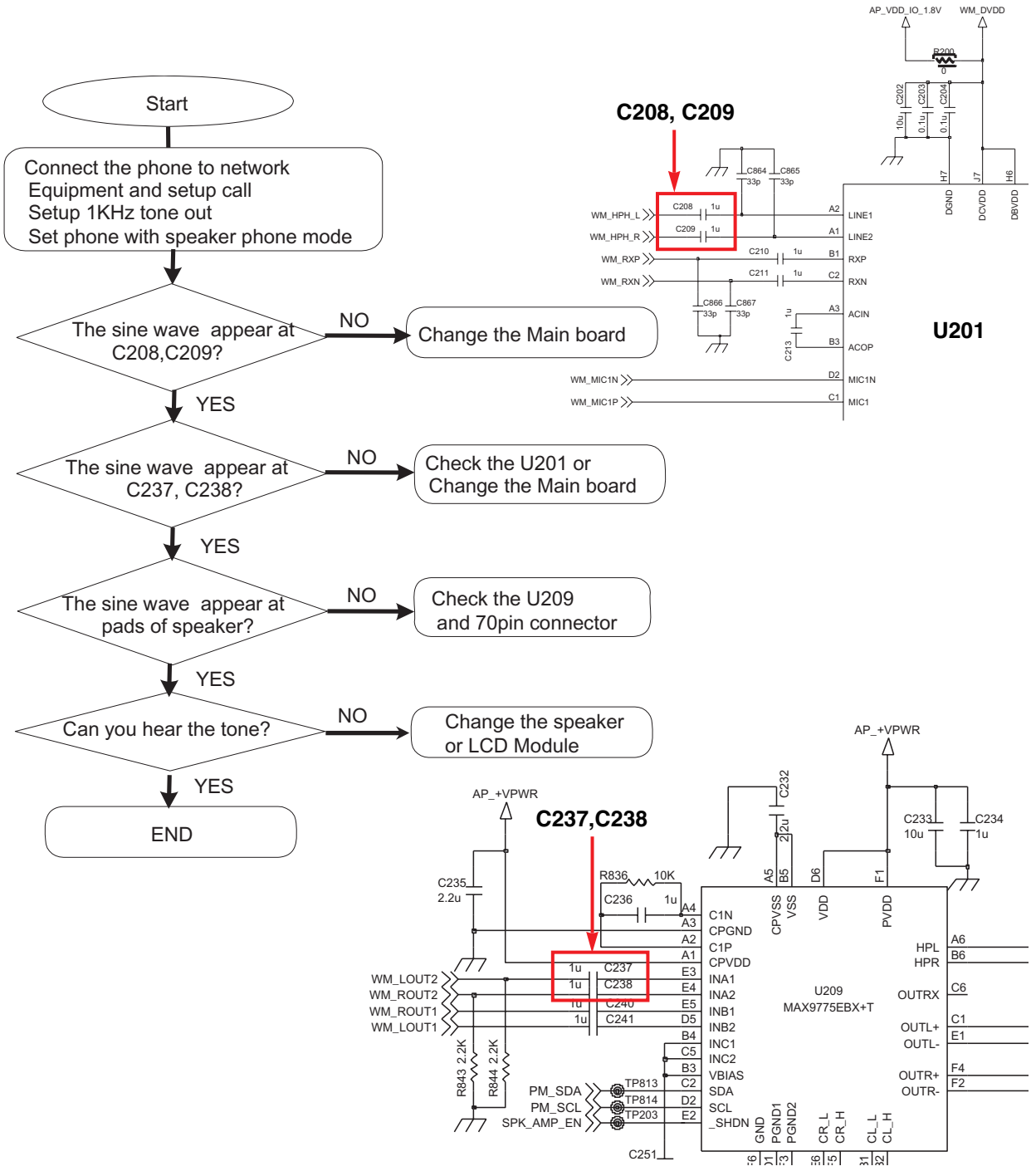


Main PCB

4.15.4 Loud speaker path (voice speaker phone)

Loud speaker path as below:

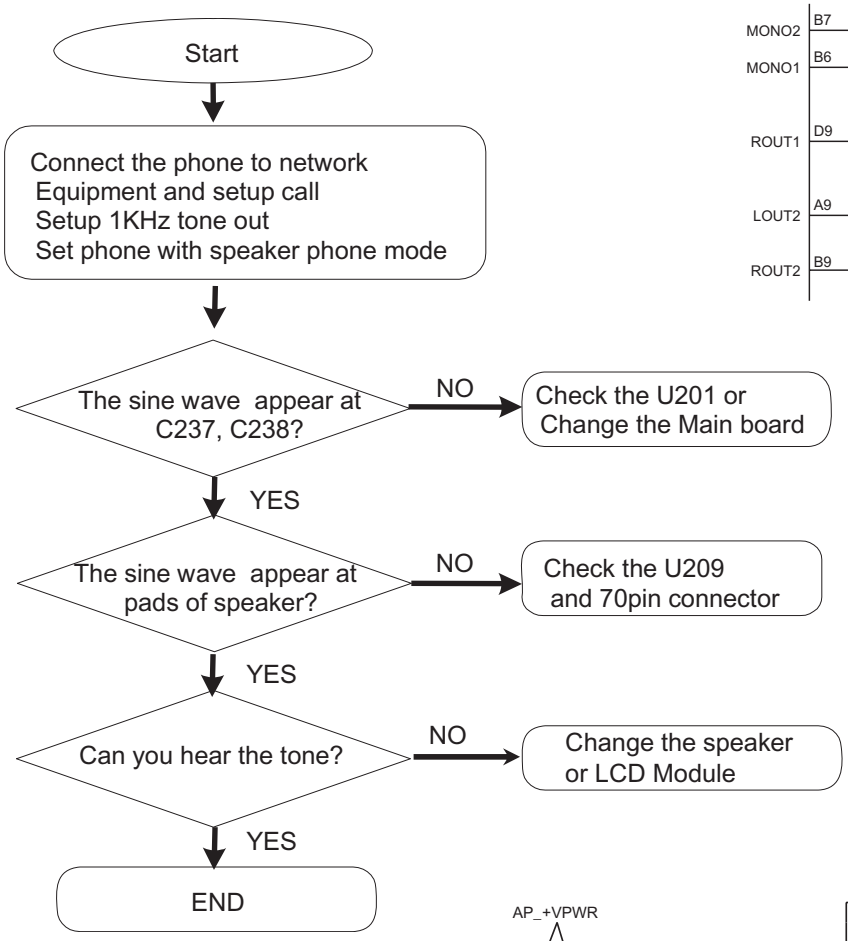
MSM62780 HPH_R, HPH_L → C208,C209 → U201 (audio codec) → C237,C238 → U209 (Audio Syb system) → 70 Pin BtoB Connector → FPCB pads for Left speaker, PAD of LCD Module for Right speaker

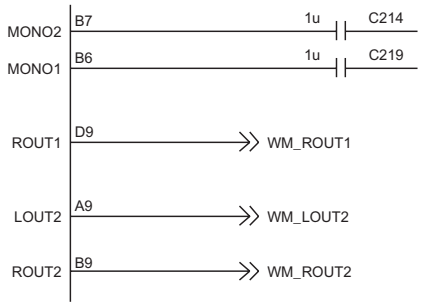


4.15.5 Loud speaker path (VT, multimedia play, etc)

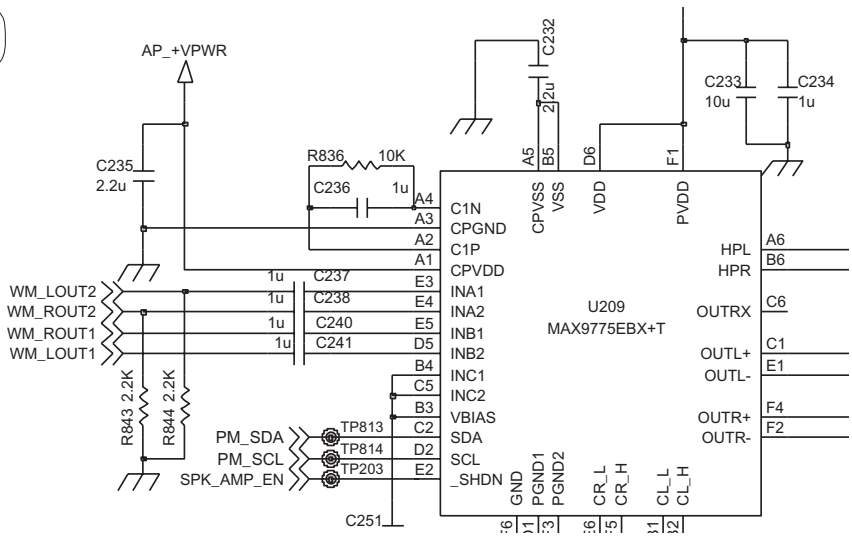
Loud speaker path (VT, multimedia play) as below:

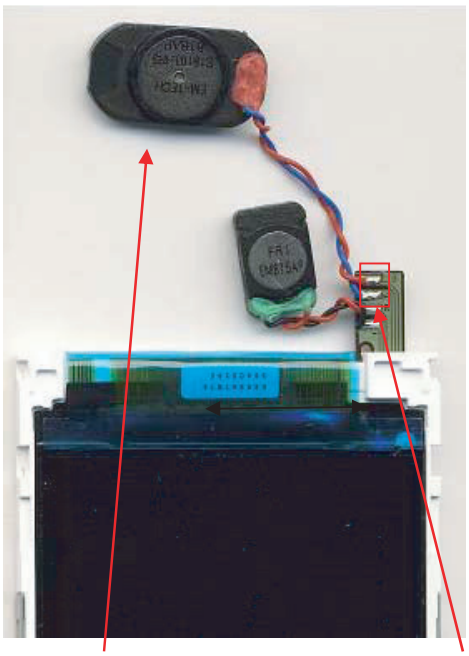
STN8810(msptxd0) → U201 (audio codec) → C237,C238 → U209 (Audio Syb system) → 70 Pin BtoB Connector → FPCB pads for Left speaker, PAD of LCD Module for Right speaker

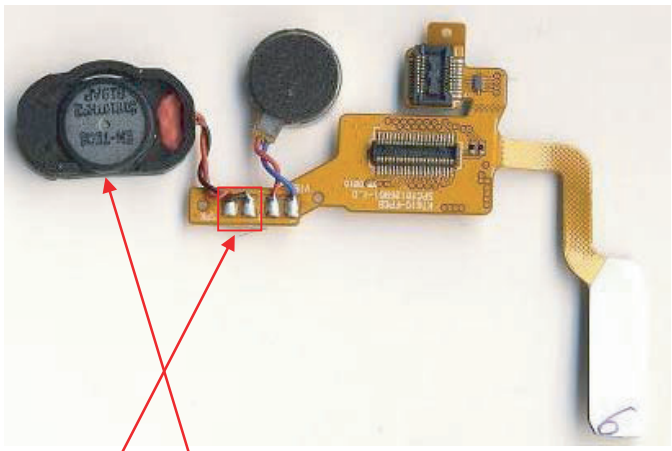




Audio Codec



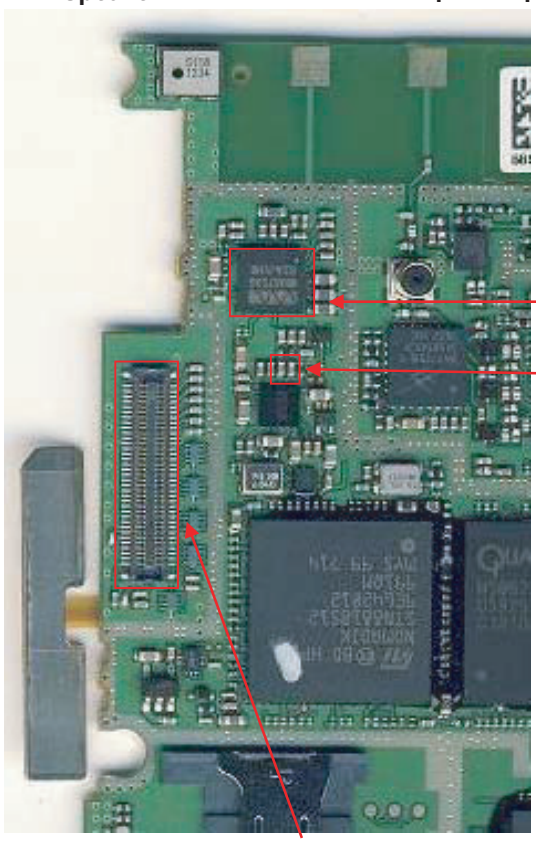




Speaker R

Speaker pads

Speaker L



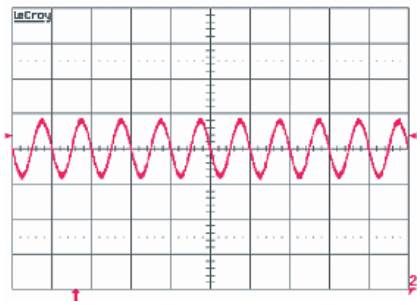
U201

C237,C238

C210,C211

C403,C404

CN400

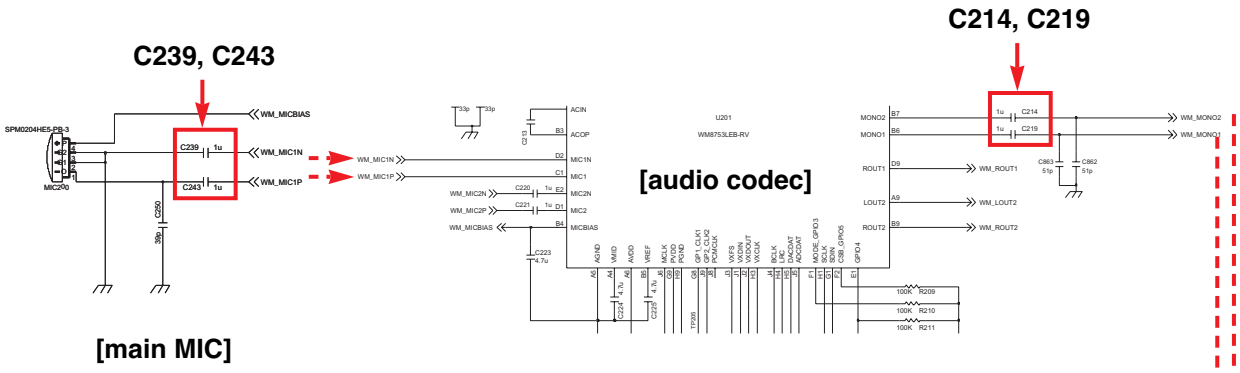


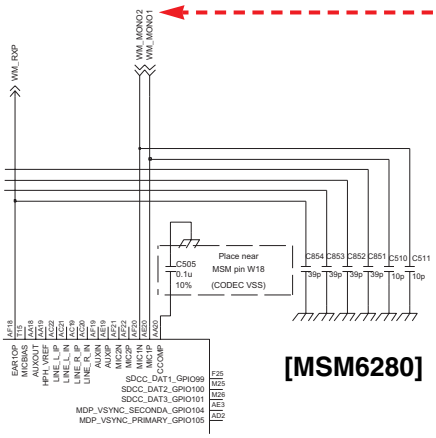
(B to B connector between Main and Folder)

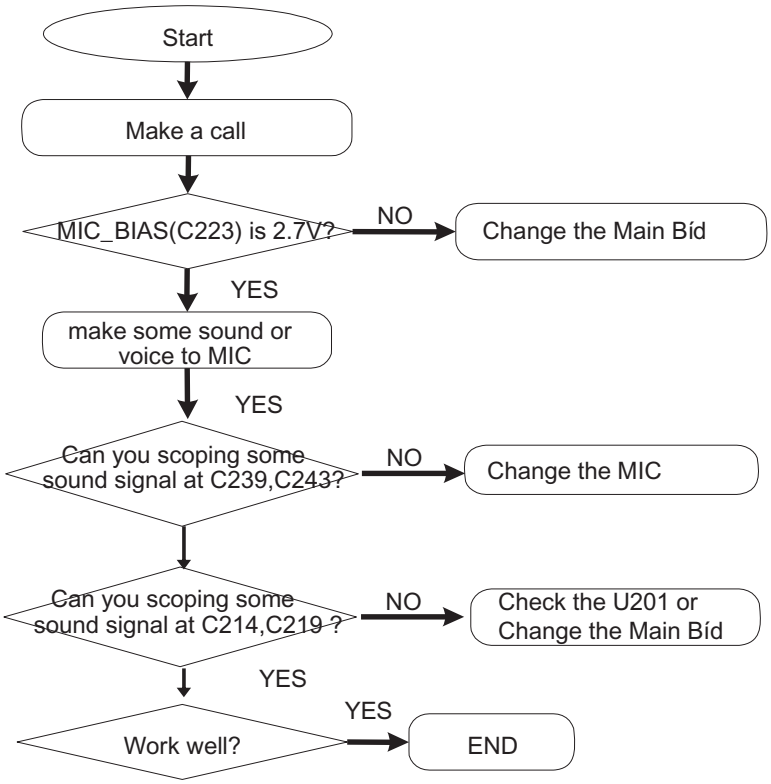
4.15.6 Microphone for main MIC

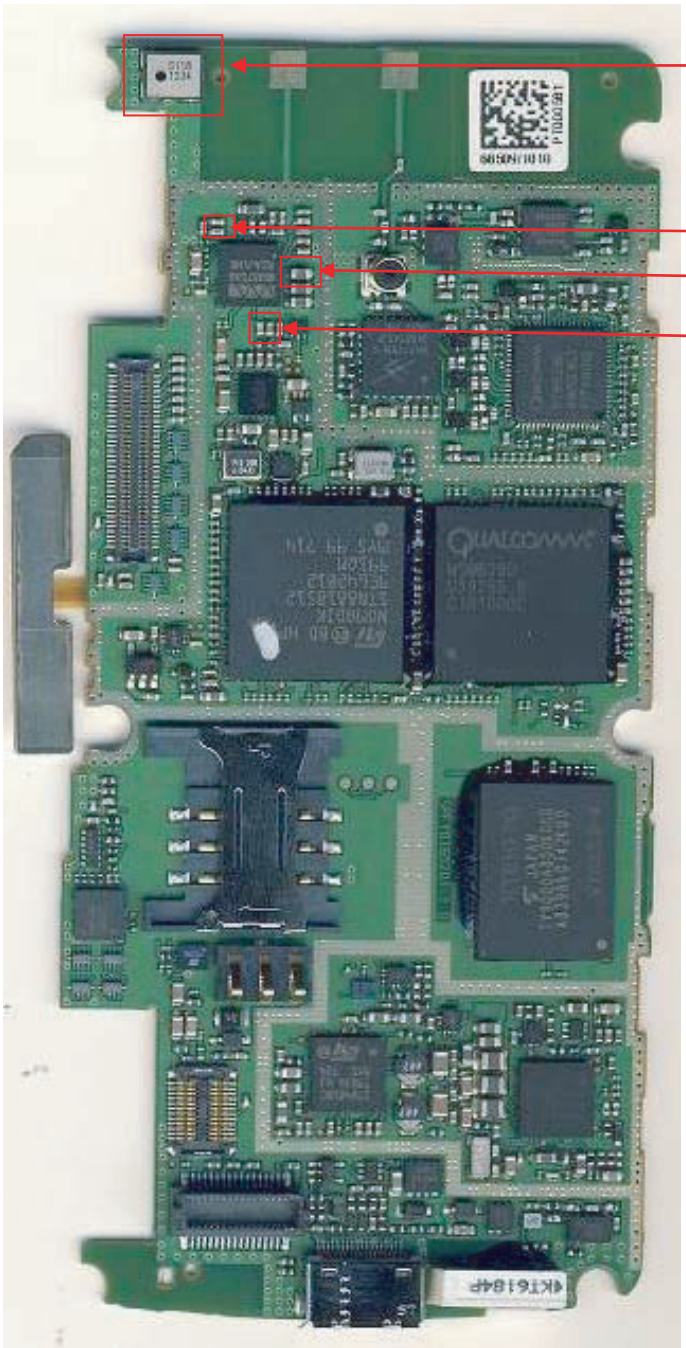
Main Microphone path as below:

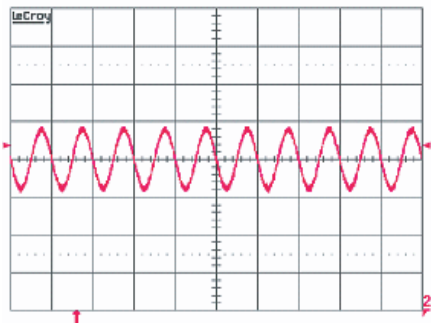
MIC → C239,C243 → U201(audio codec) → C214, C219 → MSM62780 → MIC feed back gain logic MSM internal CODEC







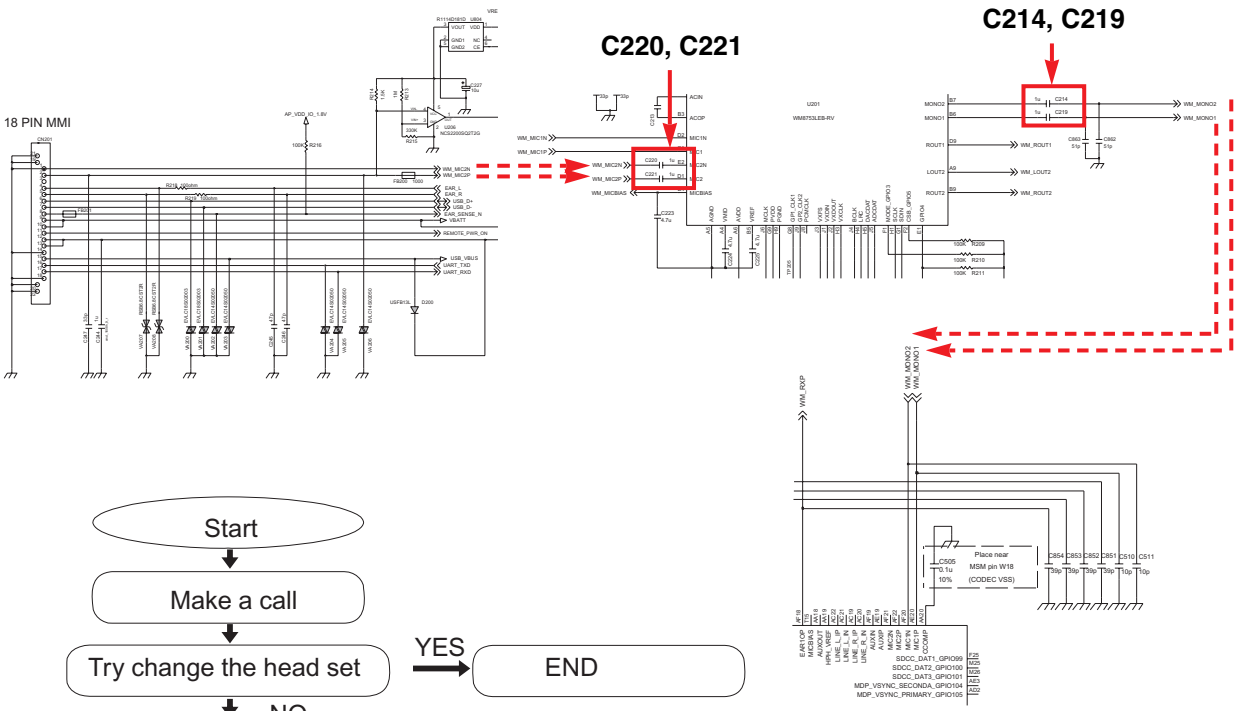


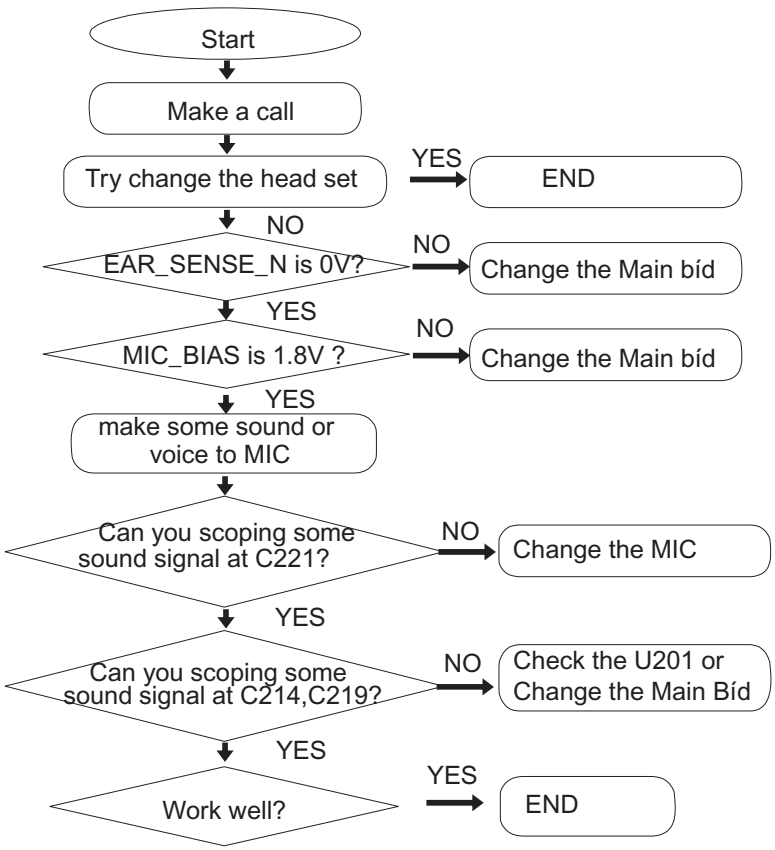


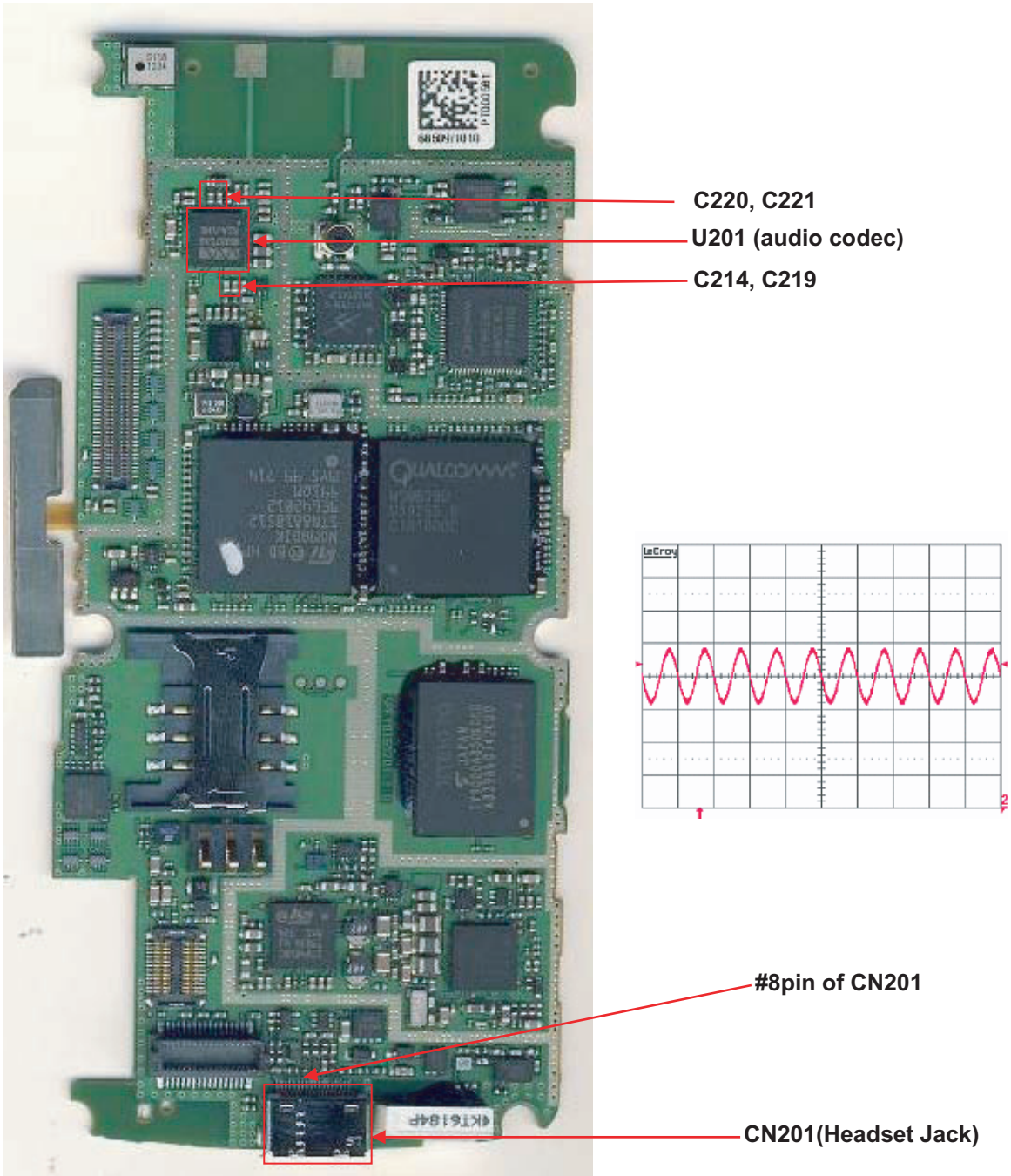
4.15.7 Microphone for headset

MIC for Head_Set path as below:

Insert Headset → EAR_SENSE_N(pin8) go 0V → MSM62780 and STN8810 sense Head_Set insertion → MIC signal → U201(audio codec) → MSM6280.





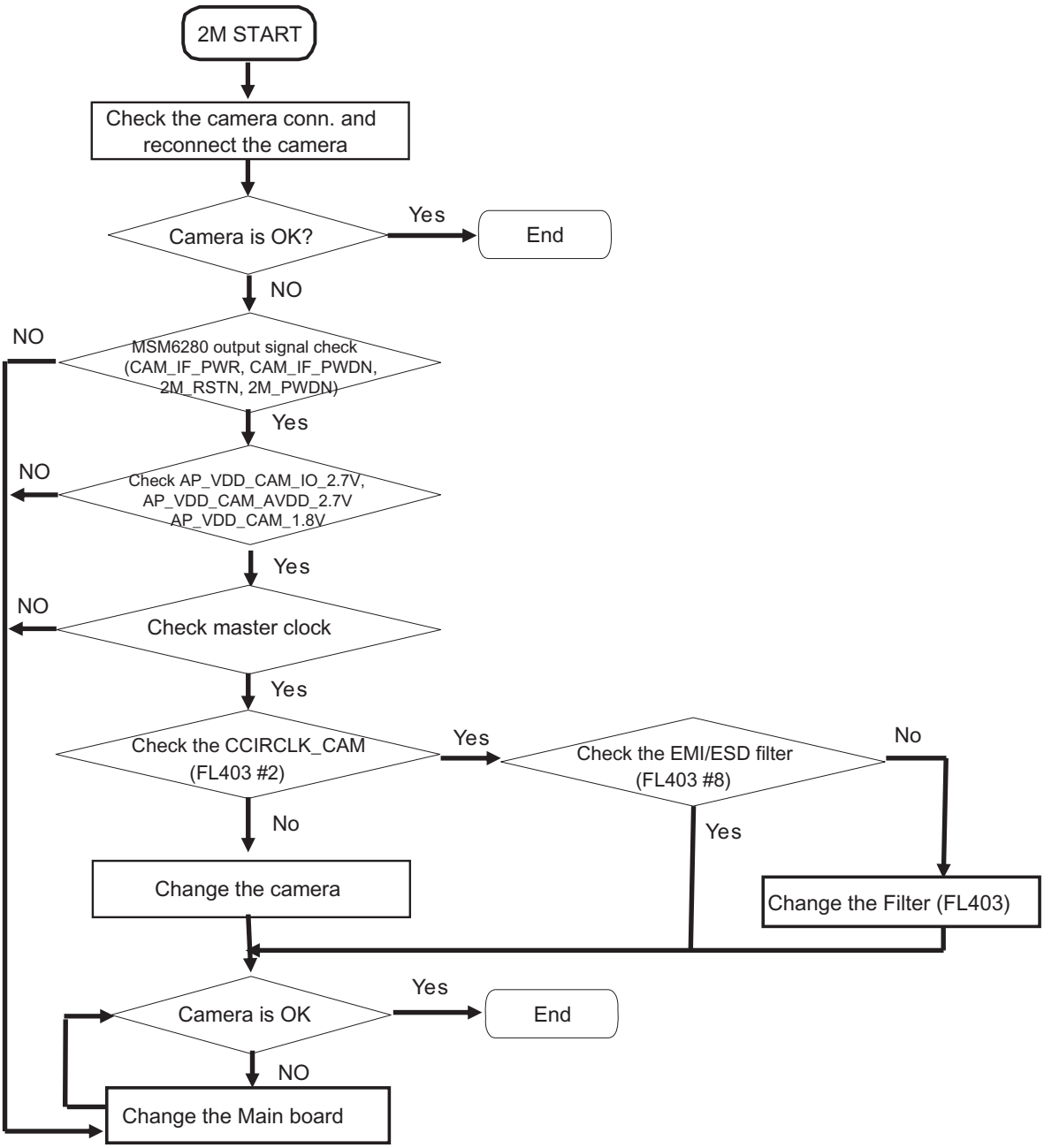


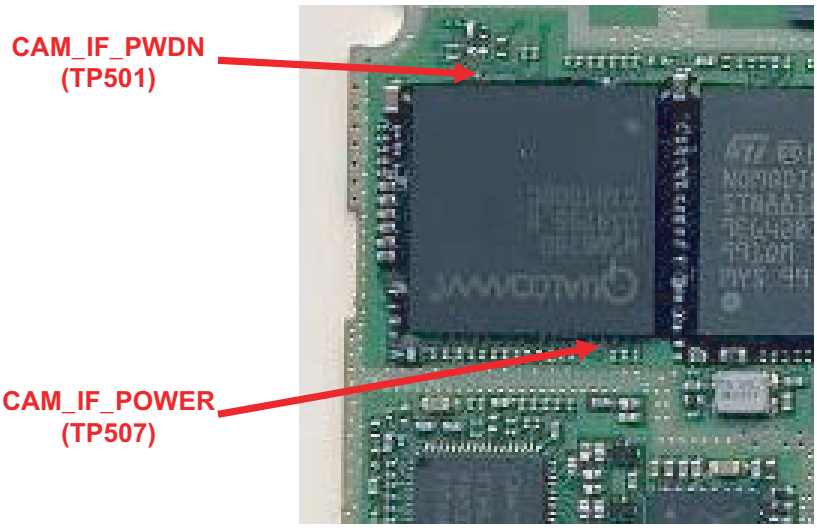
Main PCB

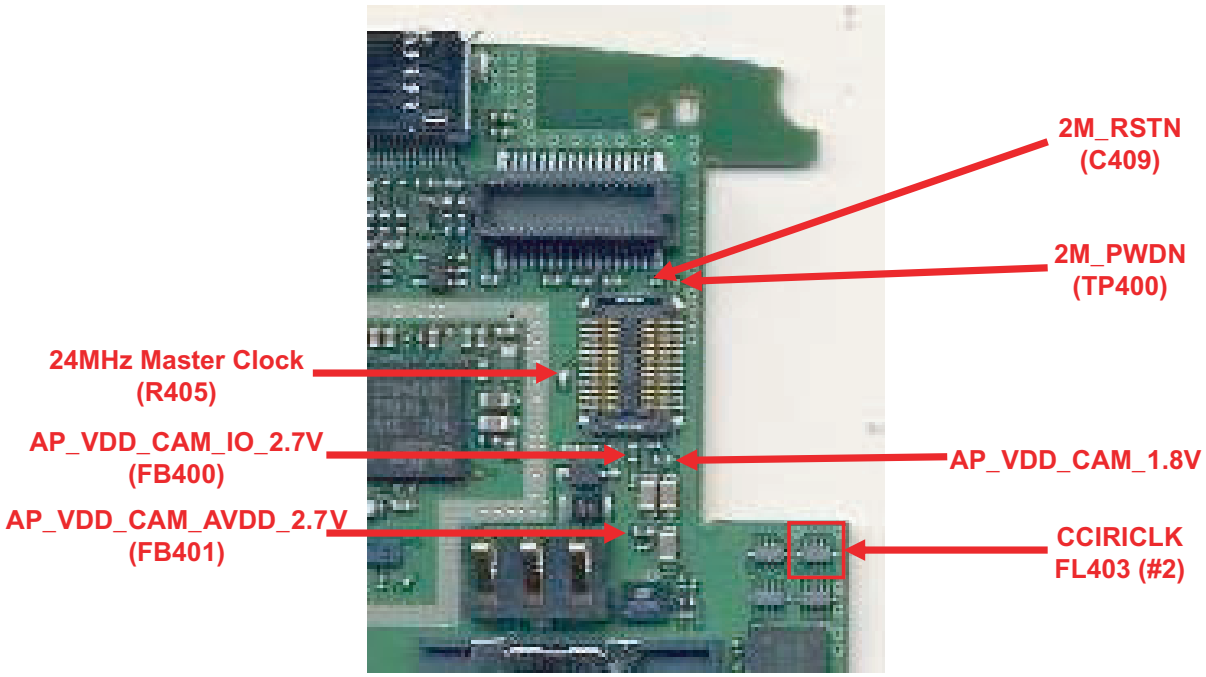
4.16 Camera trouble

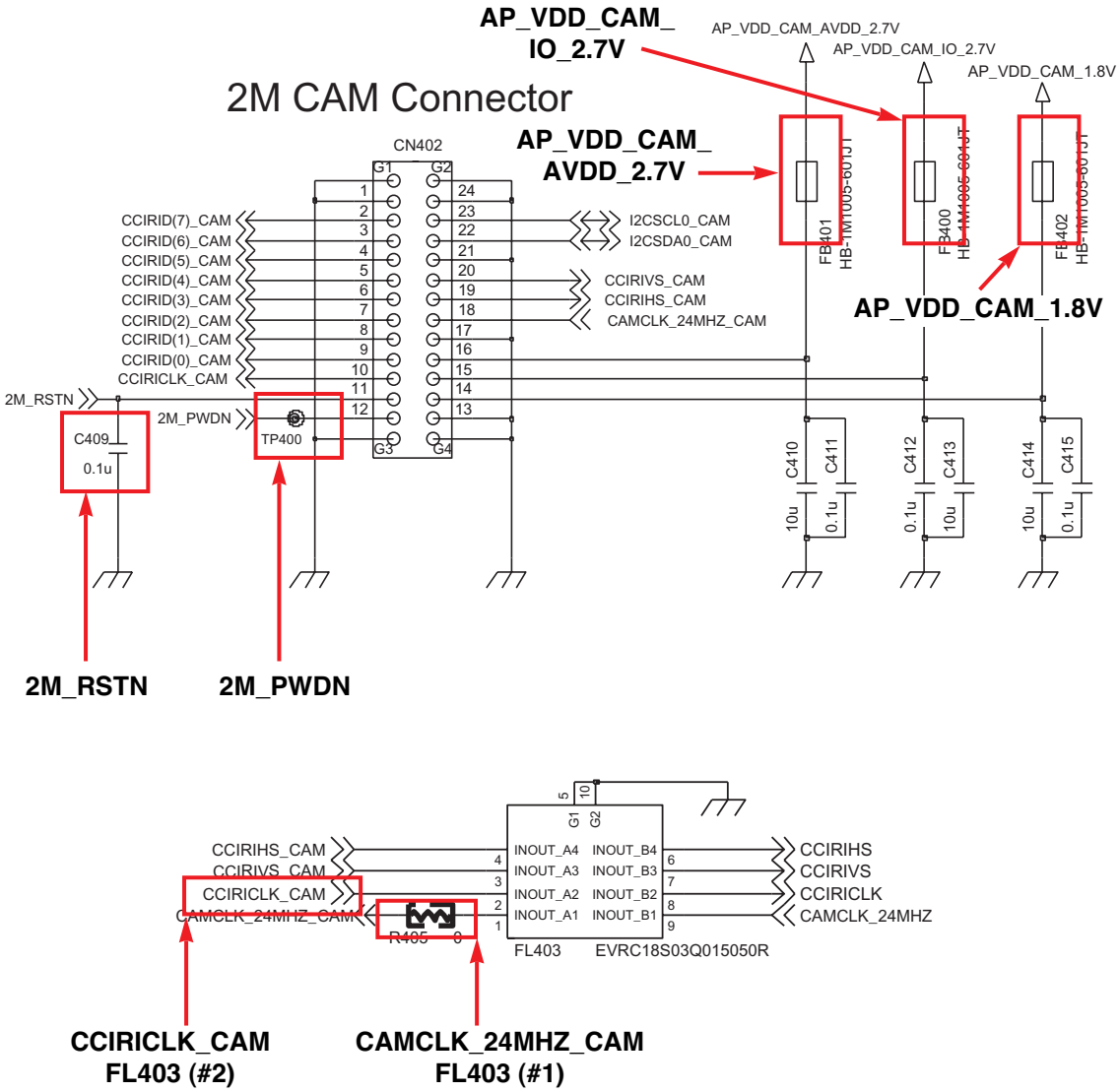
2M camera control signals are generated by STN8810 and MSM6280. VGA camera control signals are generated by STN8810. Data signals are processed by STN8810.

KT610 has two cameras. The one is a 2 Mega Camera, the other is VGA camera.

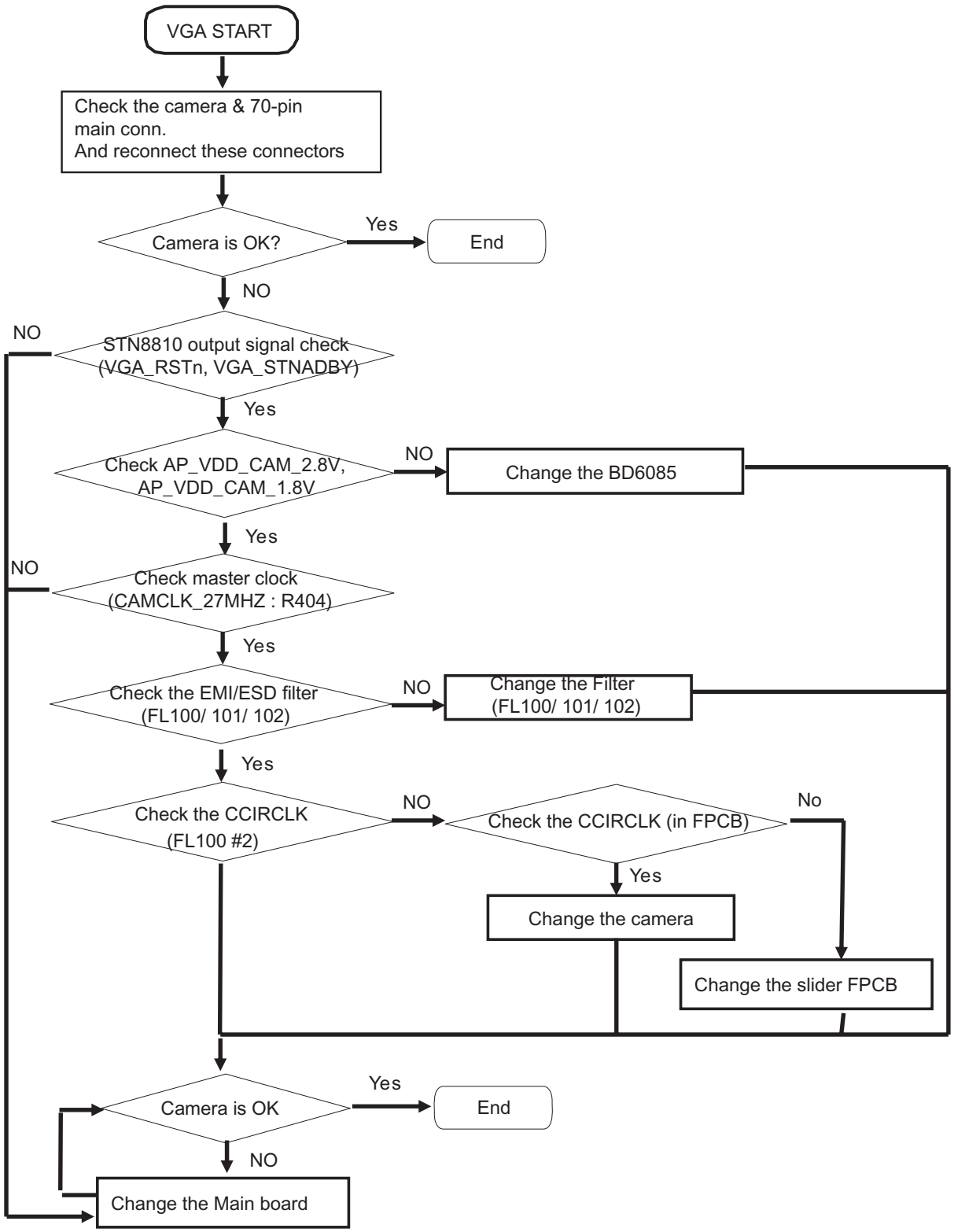


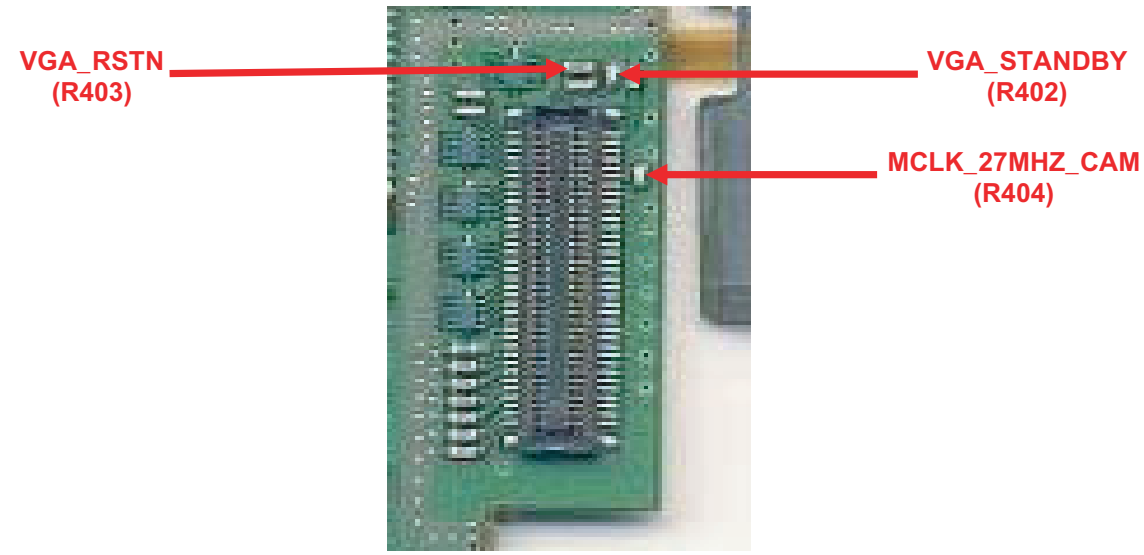


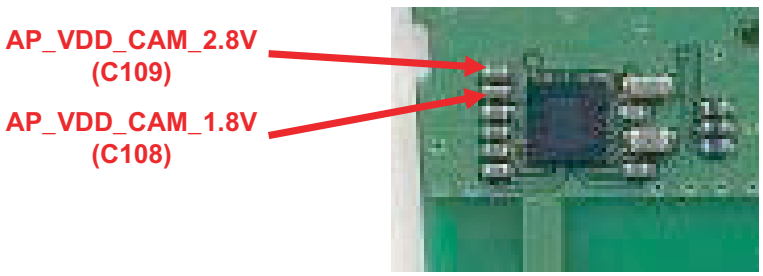


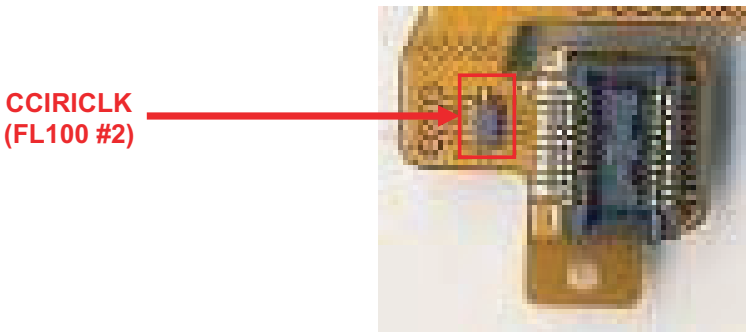


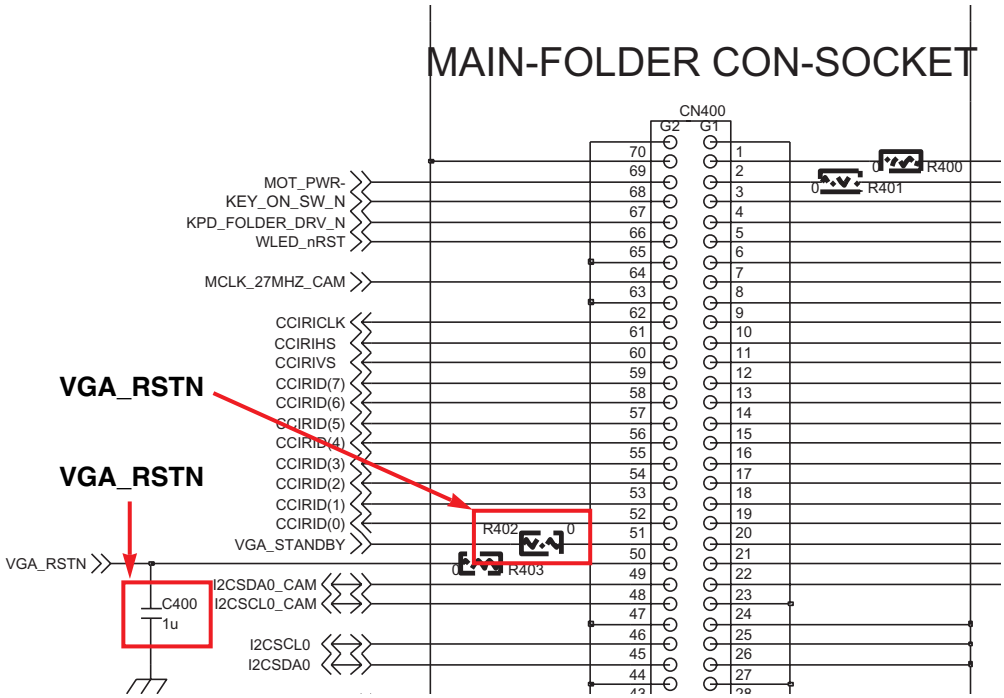
Schematic of 2M camera part

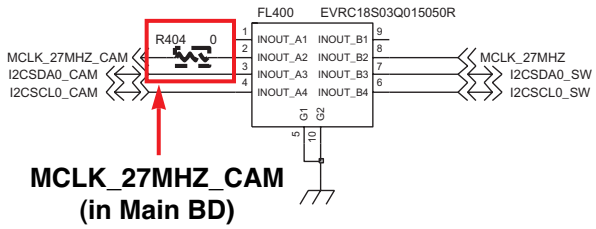


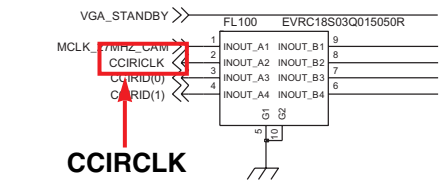


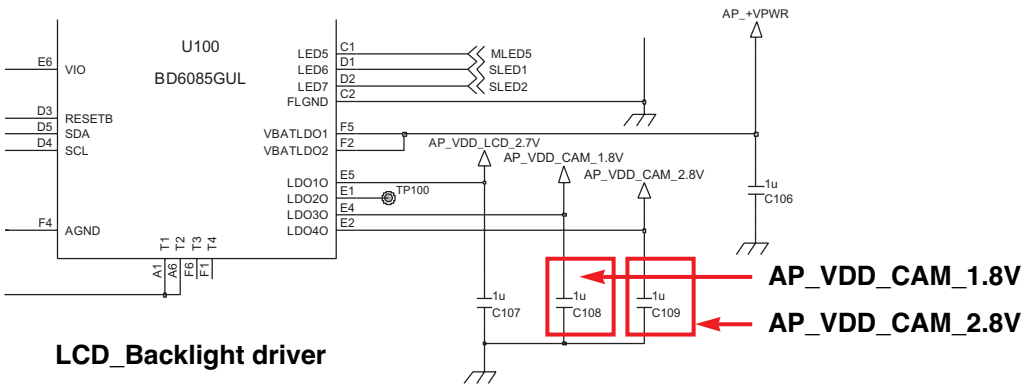










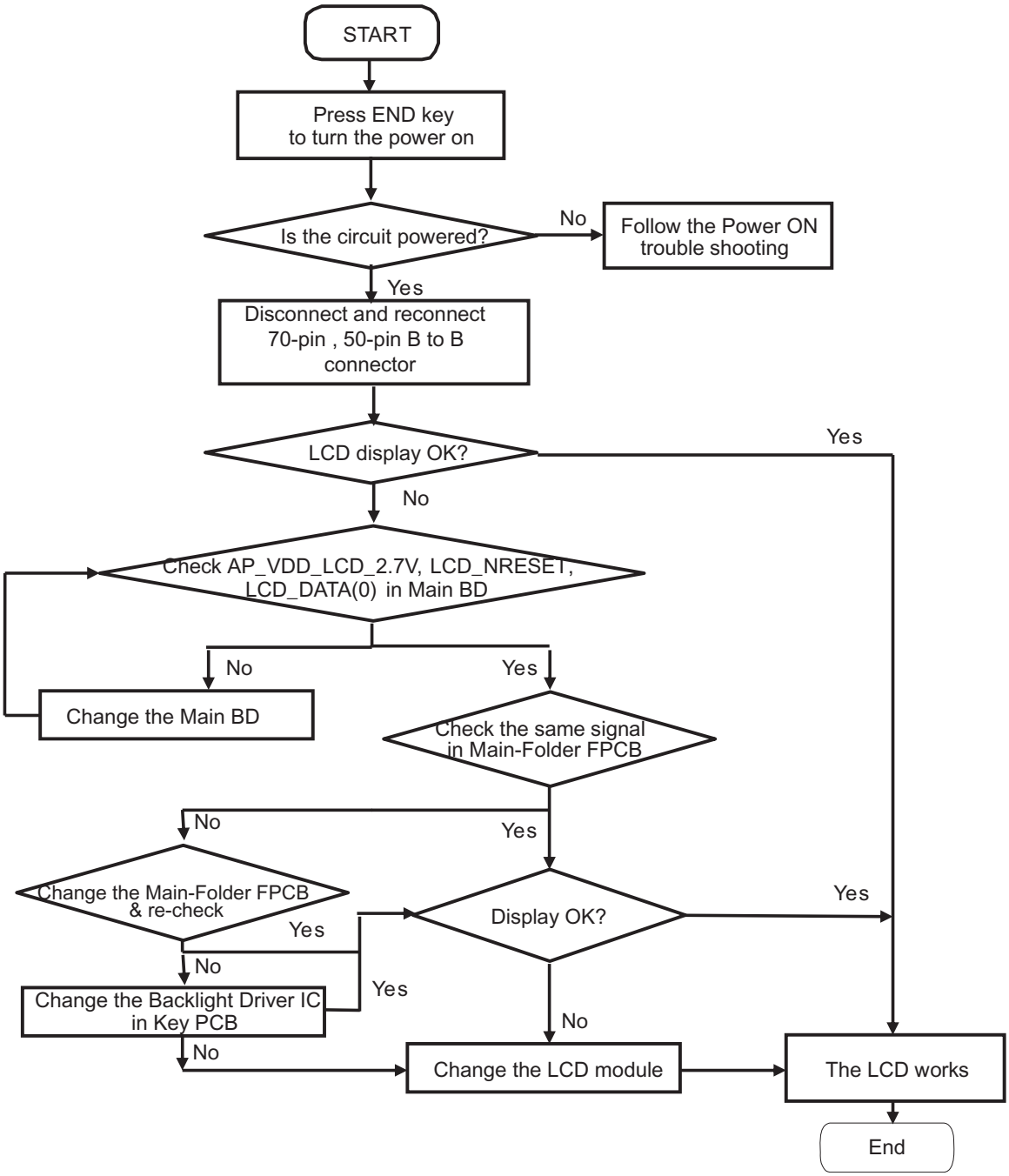


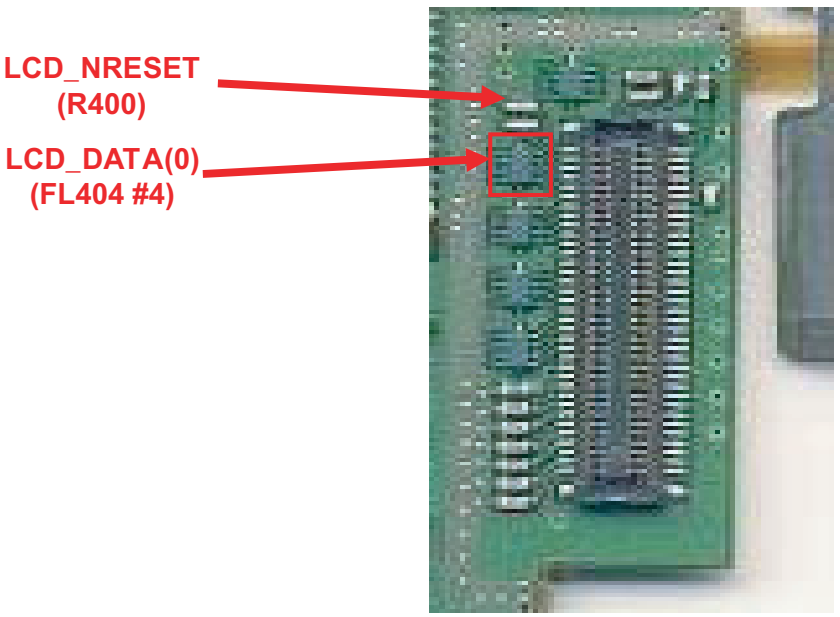
Schematic of VGA camera part

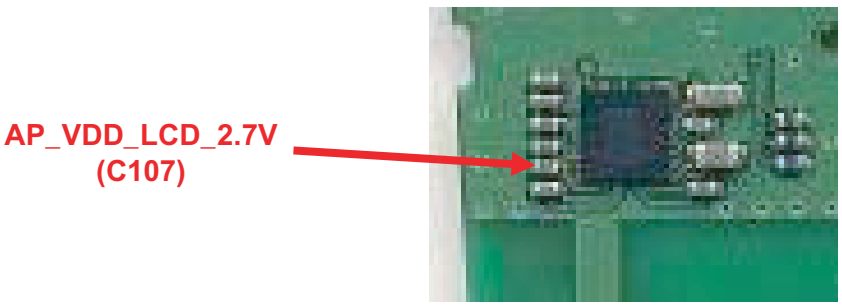
4.17 Main LCD trouble

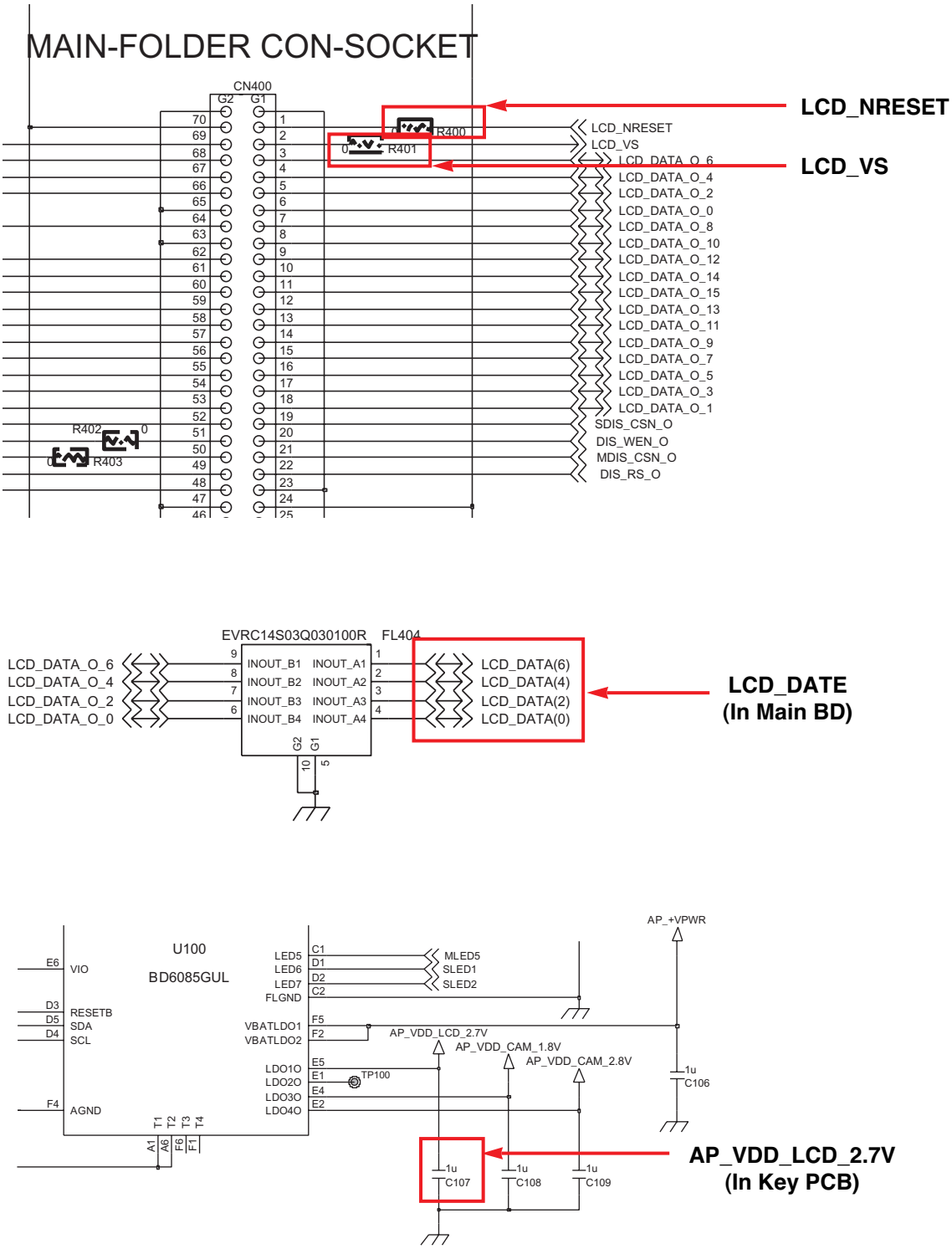
Main LCD control signals are generated by STN8810. Those signal's path are :

STN8810 → 70-pin main connector (CN400 in main PCB) → 70-pin connector (CN400 in Main-Folder FPCB) → 50-pin connector (CN103 in Main-Folder FPCB) → LCD Module









Schematic of LCD part

4.18 Bluetooth trouble

Bluetooth control signals are generated by STN8810.

Bluetooth Chip (STLC2500) and peripherals are mounted in Sub Board which is connected by B-to-B connector.

Those signal's path are : STN8810 → AP_VDD_IO_1.8V and AP_VDD_IO_2.7V is asserted → CLK32K is asserted → Bluetooth ON → BT_RESETN is High → CLK_REQ_OUT_1 is High → REF_CLK_IN is asserted → transmit/receive data/control through UART → transmit/receive voice data through PCM I/F AP_VDD_IO_2.7V is same with AP_VDD_BT_2.7V which are just connected through 0 ohm resistor

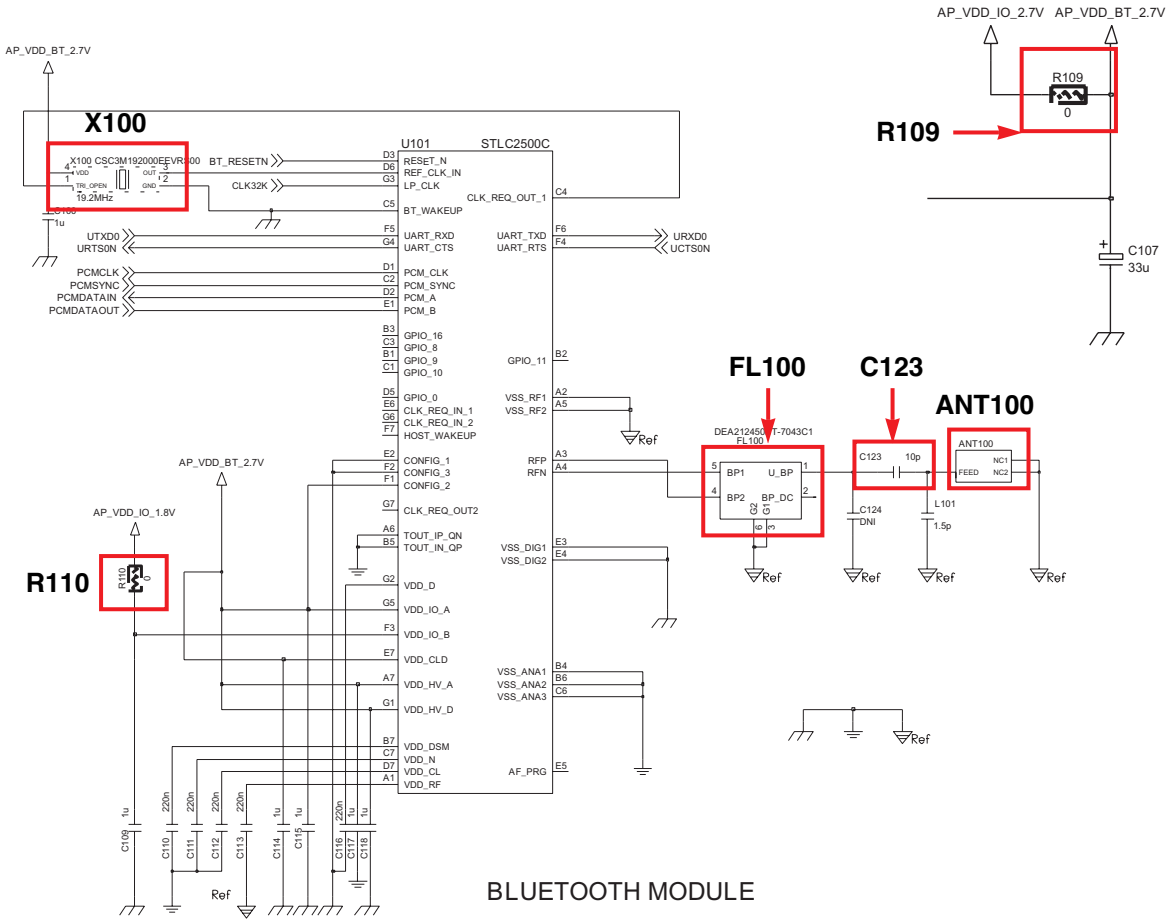


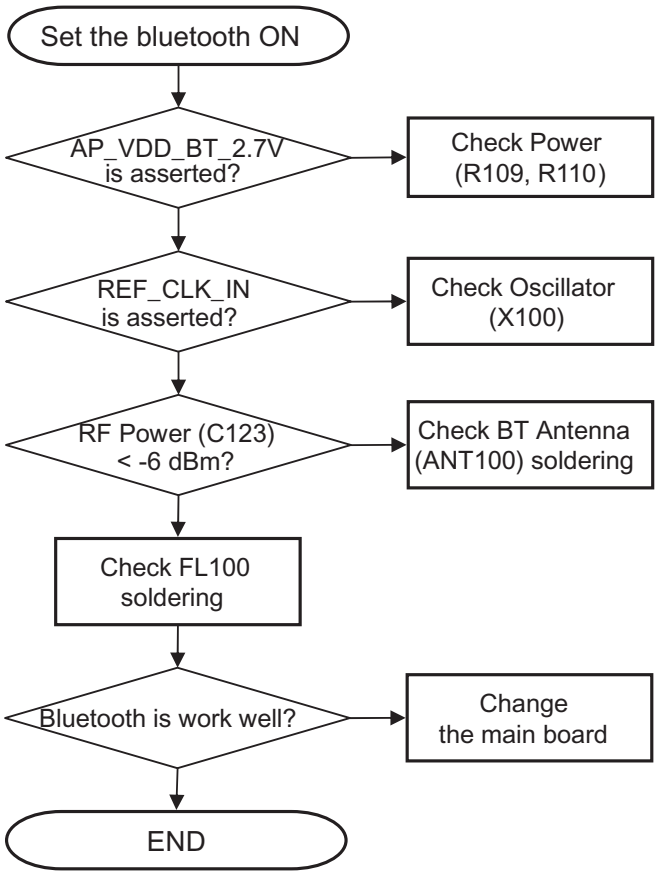
Figure. Schematic of Bluetooth Interface

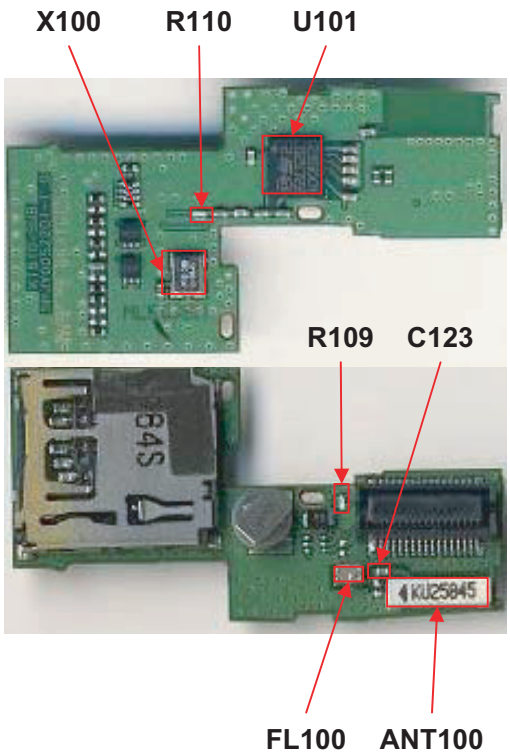
Bluetooth RF Test

TC-3000A (Bluetooth Tester)

TC-3000A (Bluetooth Tester)

1. Set phone to bluetooth test-mode:
   Enter Test Mode(*#32*36907#) → Module Test Set → BT DUT → BT DUT ON
2. Connect phone to bluetooth tester
3. Set channel to 39
4. Measure output-power
5. Check TP1 : output-power > -6 dBm

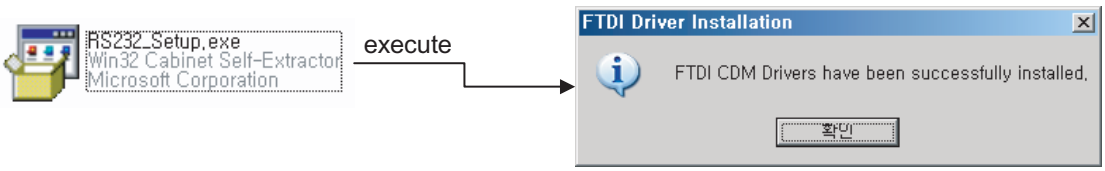




5. DOWNLOAD

5.1 COM PORT setting method when using USB Download

5.1.1 Install NEXUS3 Driver Serial Port Driver)

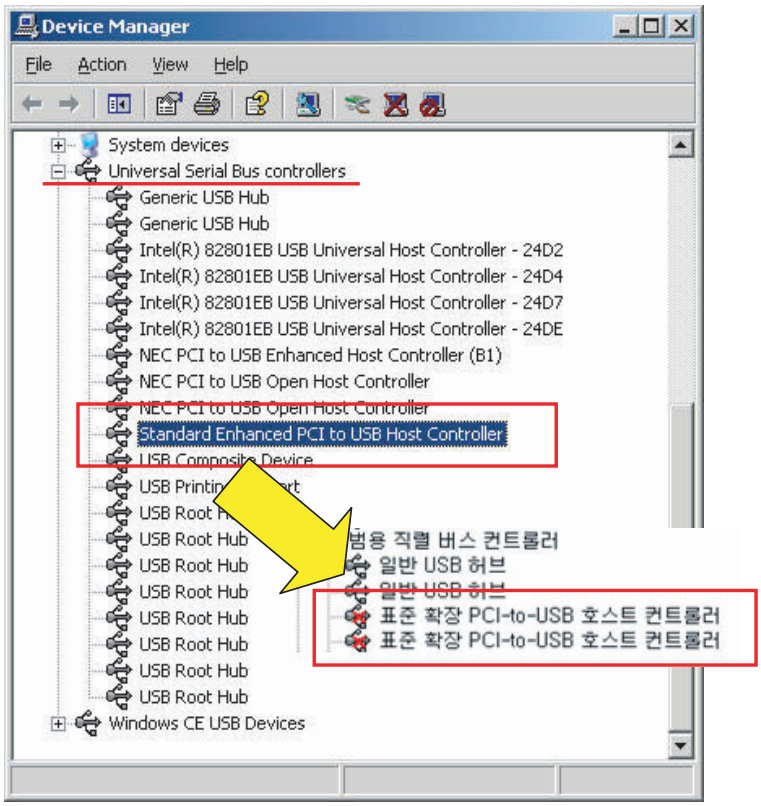


5.5.2 Device Manager setting about USB device

- Open 'Universal Serial Bus controllers' in Device Manager on your PC
- Make 'Standard Enhanced PCI to USB Host Controller' all disabled.
- You need to get connection USB Cable of Nexus 3 with PC step by step: USB1, USB2, etc.

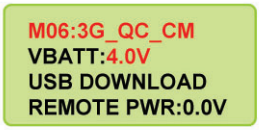
  cf. If you connect USB1 to PC, there will be appeared USB2 port automatically.
  (You can see the list in Device Manager window on your PC)

※ Reference Setting manual - NEXUS-III Manual_Kor_8P_080115_주의 .ppt (Page 9~)



5.5.3 NEXUS III → M06: 3G_QC_CM, VBATT : 4.0

Select 'Mode', move Up and Down to set M06 then press SET

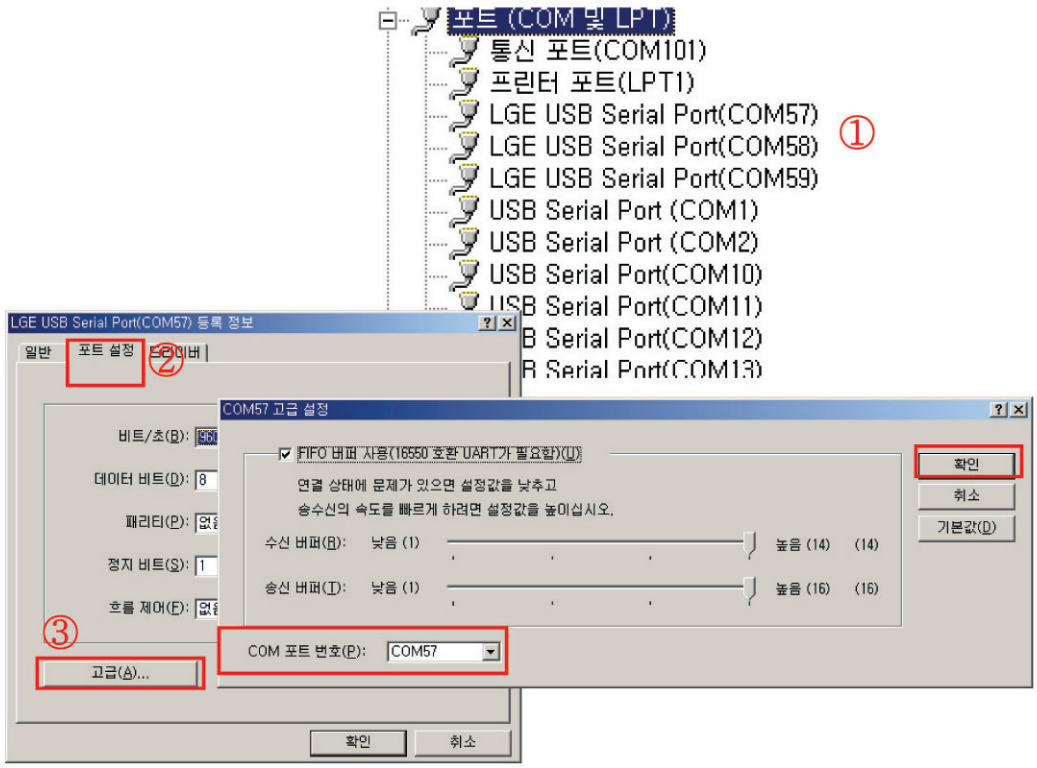


Use standard 18 pin-Cable
MMI18P-COMM
(MRO 1671570)

5.5.4 Com Port Setting method about USB

- KT610 Model USB Driver is just same as KT610 Model which is not working as normal Qualcomm 3G chipset.
- After connecting USB1, USB2, etc. to Phone,
- f you find new HW device in Device Manager and click Folder which contains above file 'lgjoyusb.sys', then it will be installed.
- You need to follow the following steps:
  In your Device Manager window,
  1) Select 'PORT' menu and highlight LGE USB Serial Port(COMXX).
  2) Press the right button on you Mouse(①) and move to PORT Setting tab(②), and press Advanced(③).
  3) You need to select Port number start from COM57.

     cf. KT610 use Port number 57 to 72 for USB Download.
     (It's possible Port number 41 to 56 for USB Download as well)
- Please make sure that you need to reboot your PC after USB Com Port Setting.



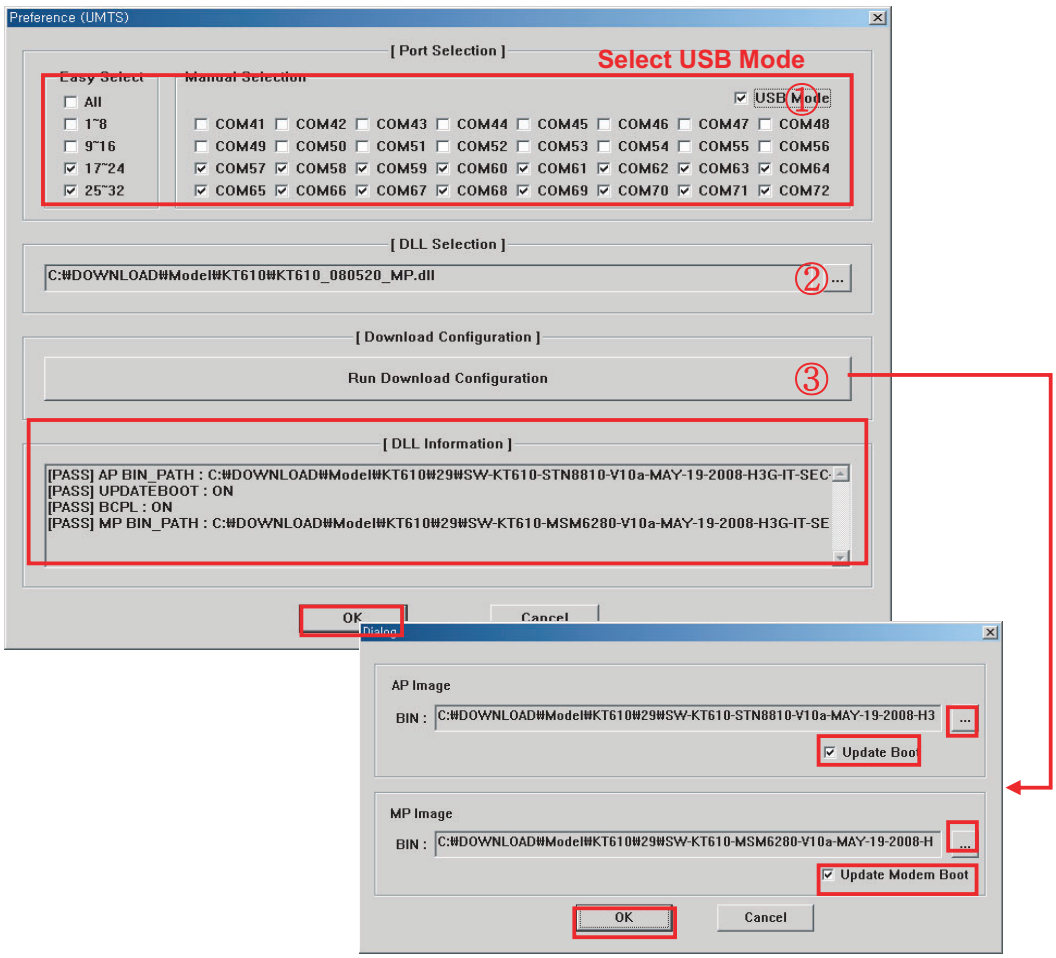
5.2 How to KT610 Download

5.2.1 How to set the position of Download files [dll,S/W]

- Copy KT610 Model Dll [KT610_Date_MP.dll] to C:\DOWNLOAD\Model\KT610
- Phone SW for download: Copy the BIN Image[APP], DZ Image[Modem] To C:\DOWNLOAD\Model\KT610

5.2.2 After running LGDP2, how to initial Setting

- Run LGDP2_V34_UMTS.exe
- In the window of Model Buyer Choice, Select OK key after checking the UMTS in Division Selection
- Press the OK after the following setting.
- Port Selection : After checking the USB Mode , it should be checked for the download port from COM57 to COM72.
- DLL Selection : Selecting the DLL file in C:\DOWNLOAD\Model\KT610
- Run Download Configuration :
  - AP Image : Select the BIN file in C:\DOWNLOAD\Model\KT610
  - MP Image : Select the DZ file in C:\DOWNLOAD\Model\KT610
  - Select the Update Boot, Update Modem Boot when changing the buyer.
    → Exception for Update Modem Boot in CS version.
- DLL Information : Display Download Configuration information.



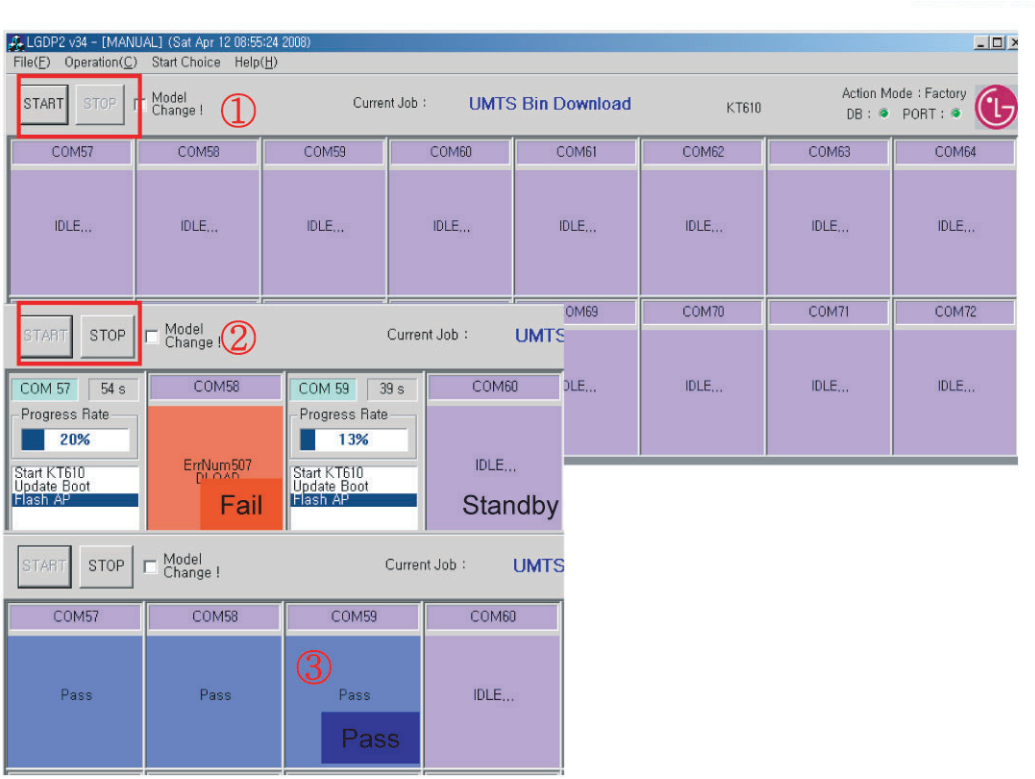
5.2.3 How to Download

- Click the START button : Select before Download

cf. Before click the START button, Though connecting phone, it can not be processed.

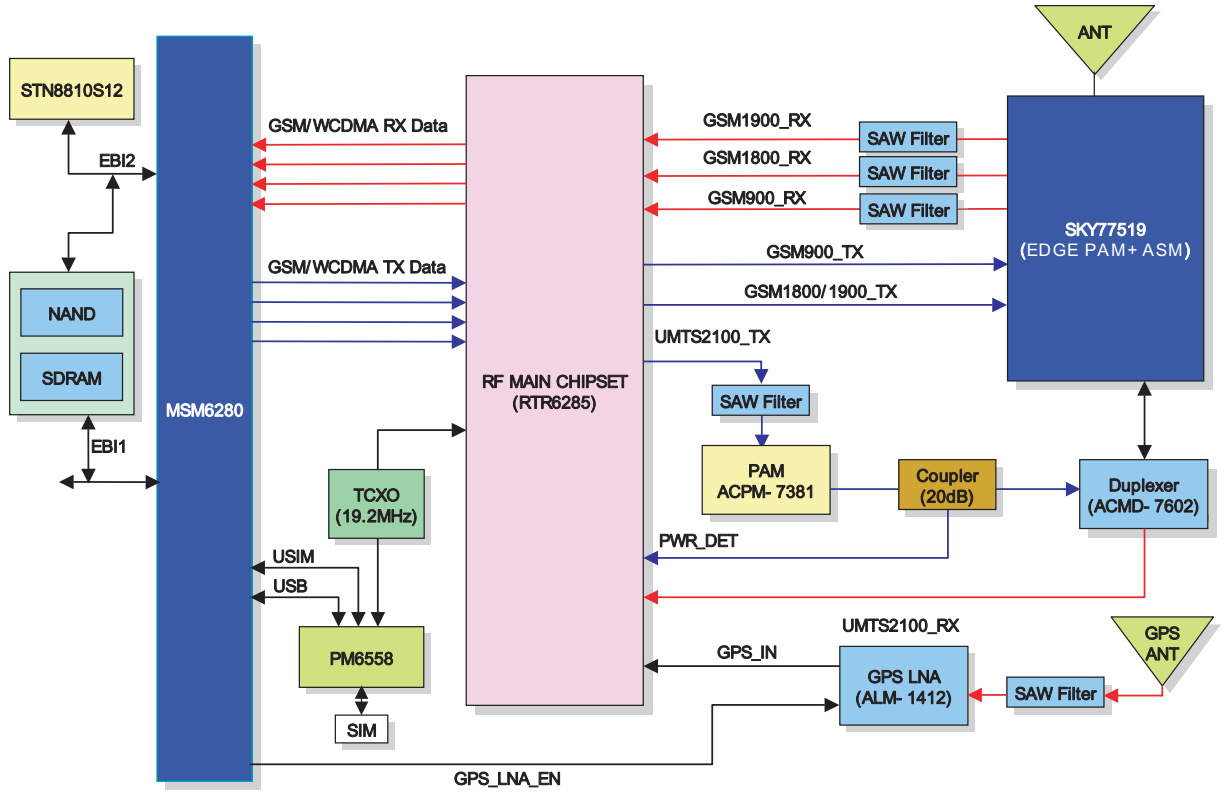
- Click the STOP button : selection for no more download.
- ② Before connecting the Phone, it is standby mode for Download. After connecting Phone, the download will be processed.

  cf. If cannot be process when connecting to Phone, check the USB LED and displaying the port in device management of NEXUS II
- During the D/Load : Displaying the message about port
- D/Load Error : Font color turn to red and display the 'Fail'
- D/Load PASS : Font color turn to blue and display the 'Pass'
- ③ In case of Fail, it will be reconnected. In case of 'Pass', connect the new phone.



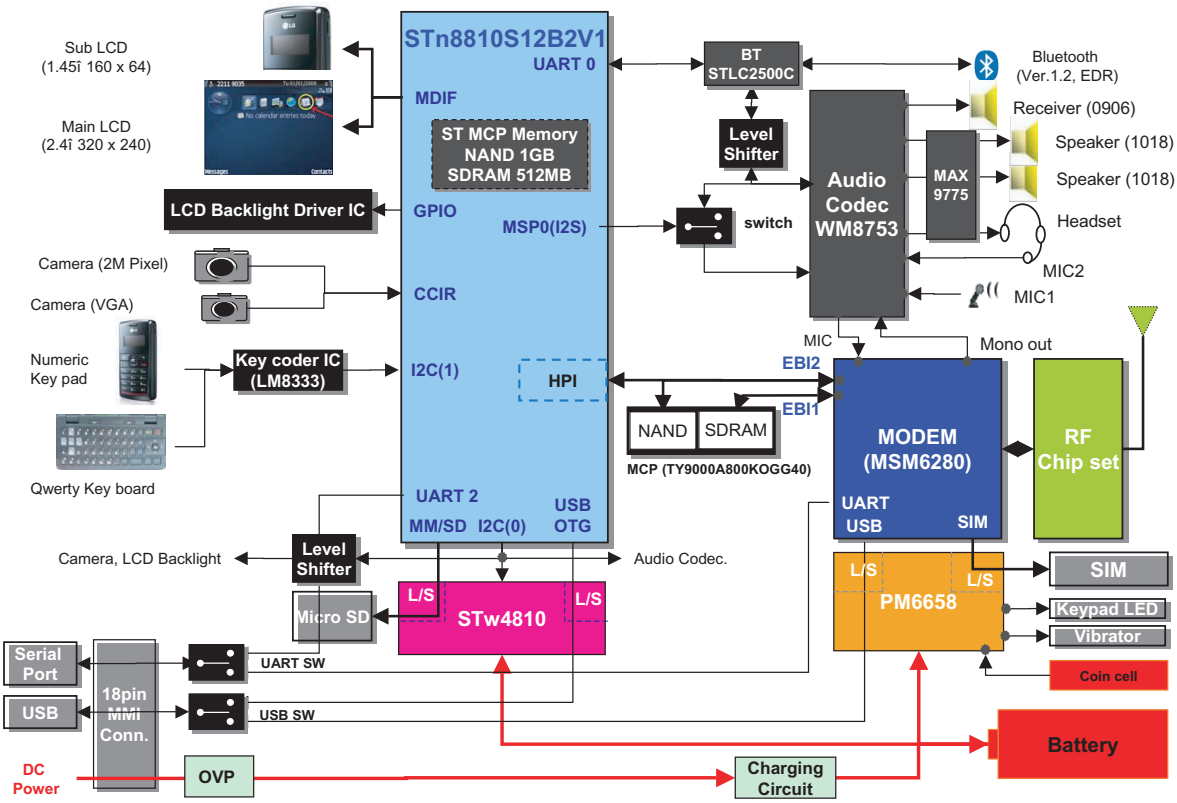
6. BLOCK DIAGRAM

PYXIS RF Block Diagram

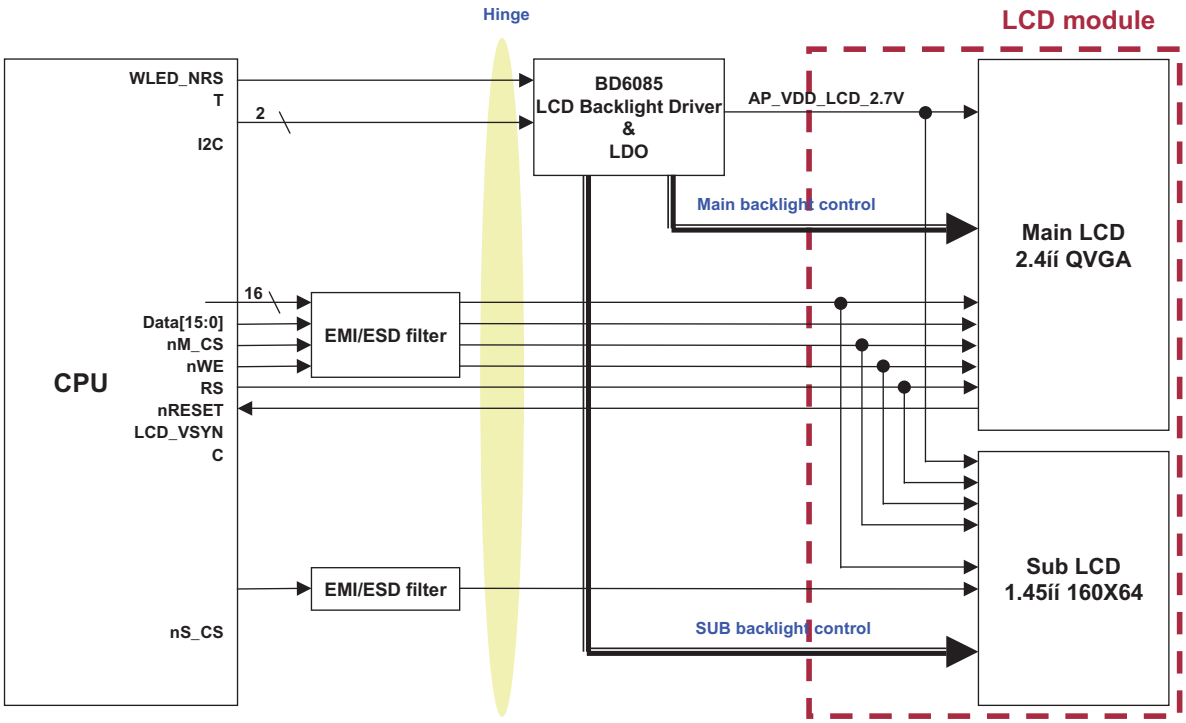


6. BLOCK DIAGRAM

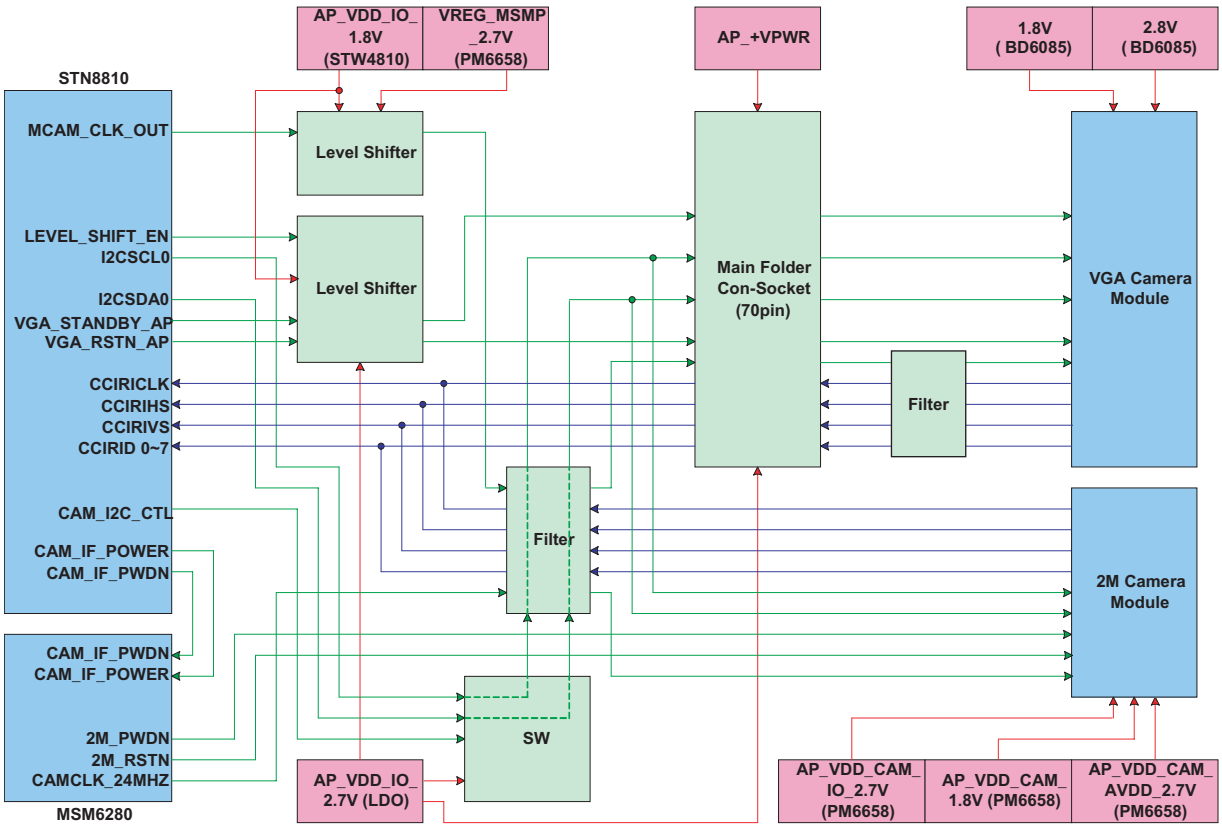
PYXIS Application Processor Block Diagram



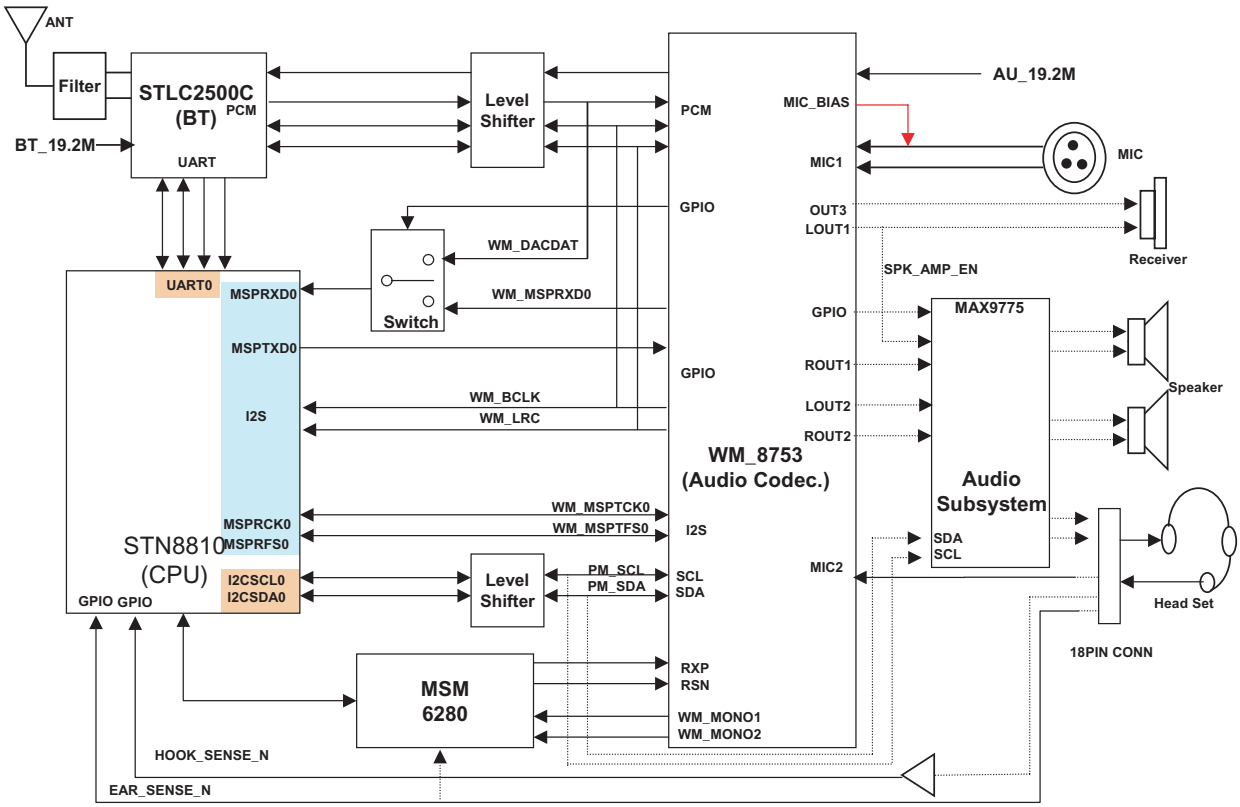
PYXIS LCD Block Diagram



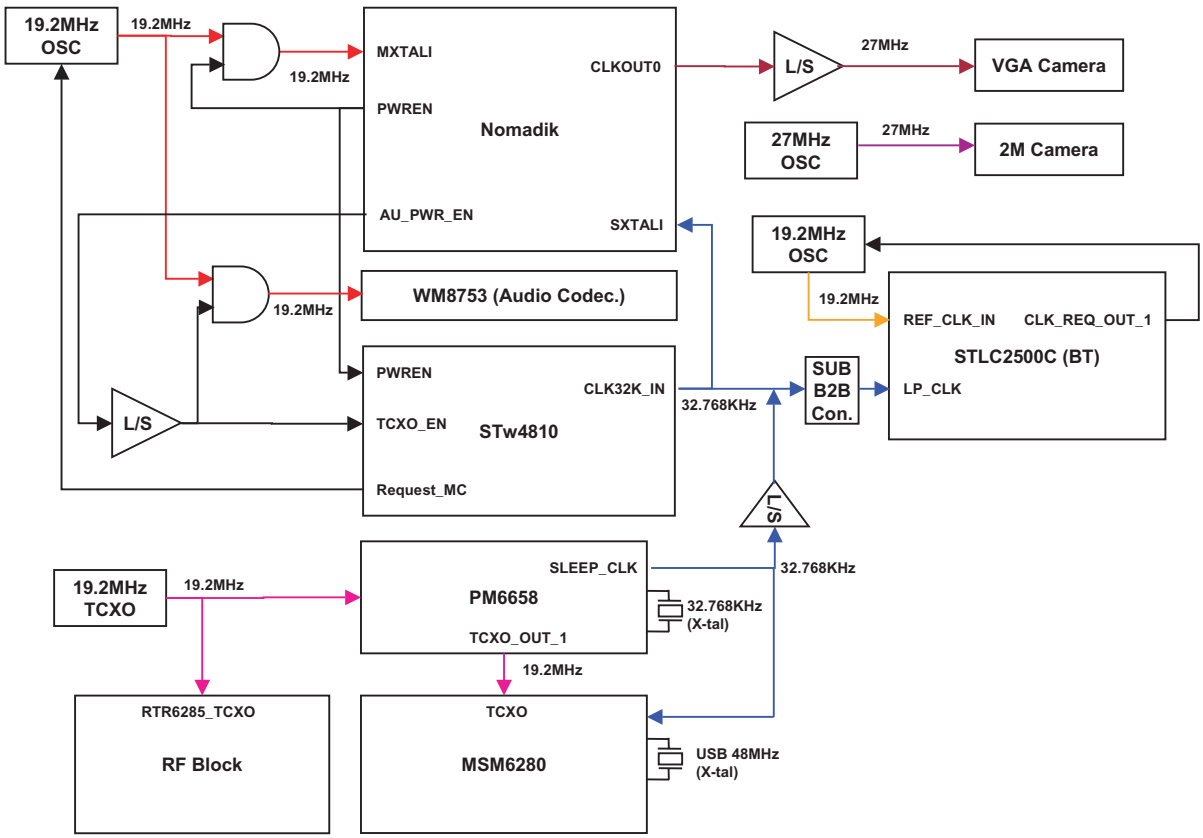
PYXIS Camera Block Diagram



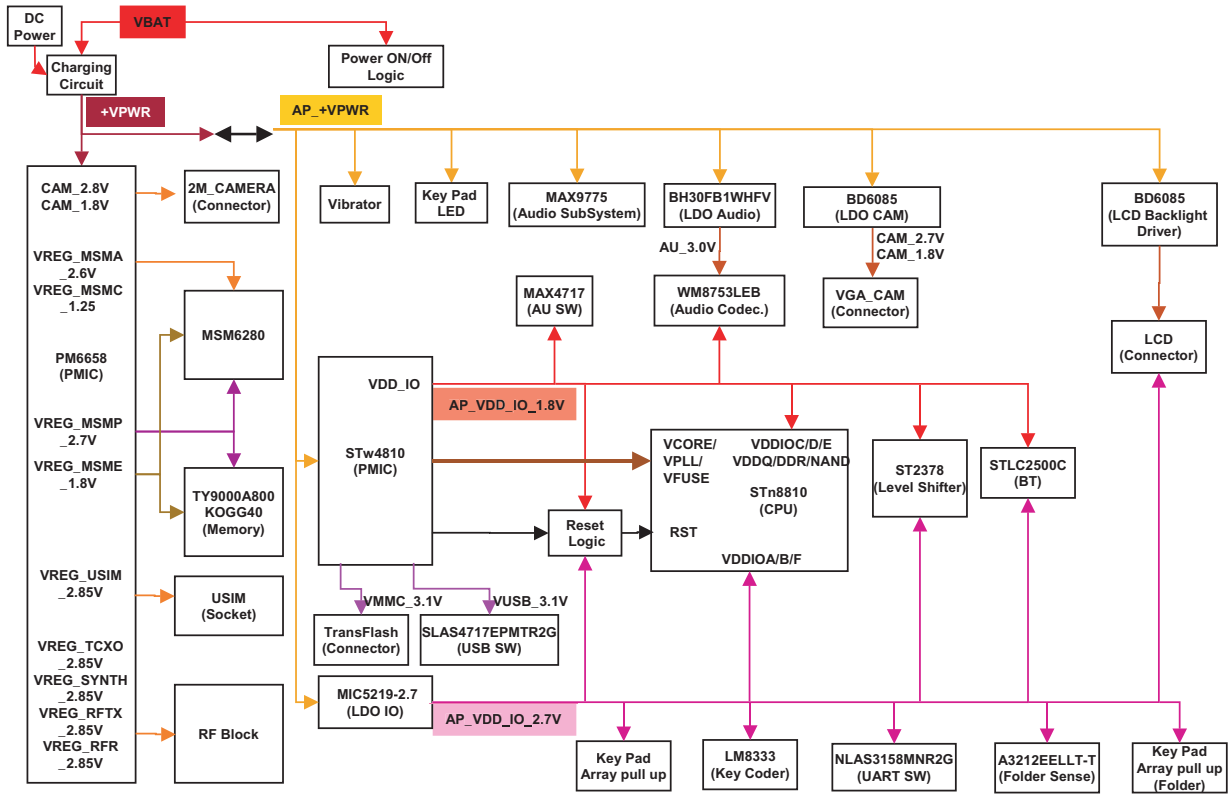
PYXIS Audio Block



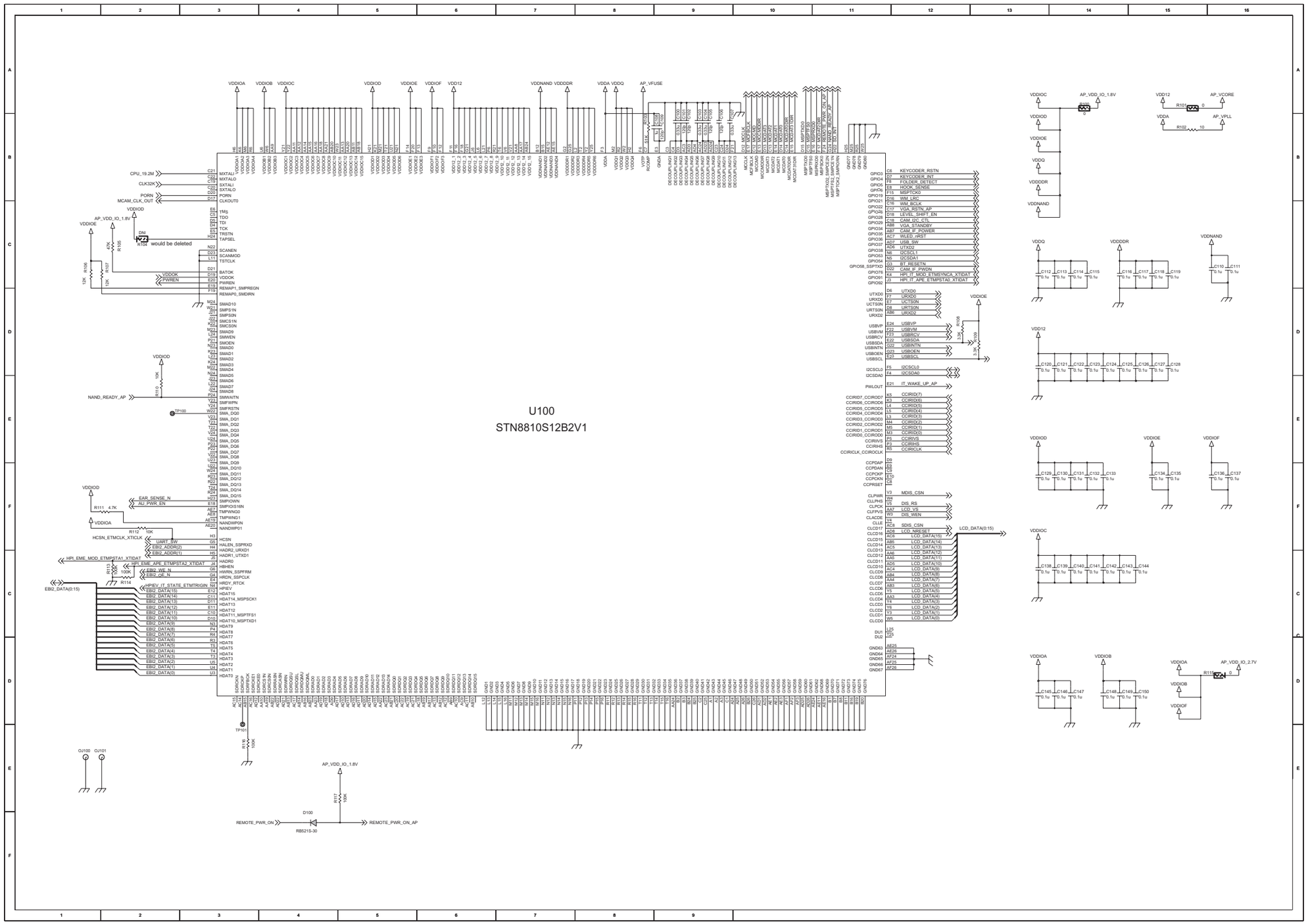
PYXIS Clock Distribution Diagram



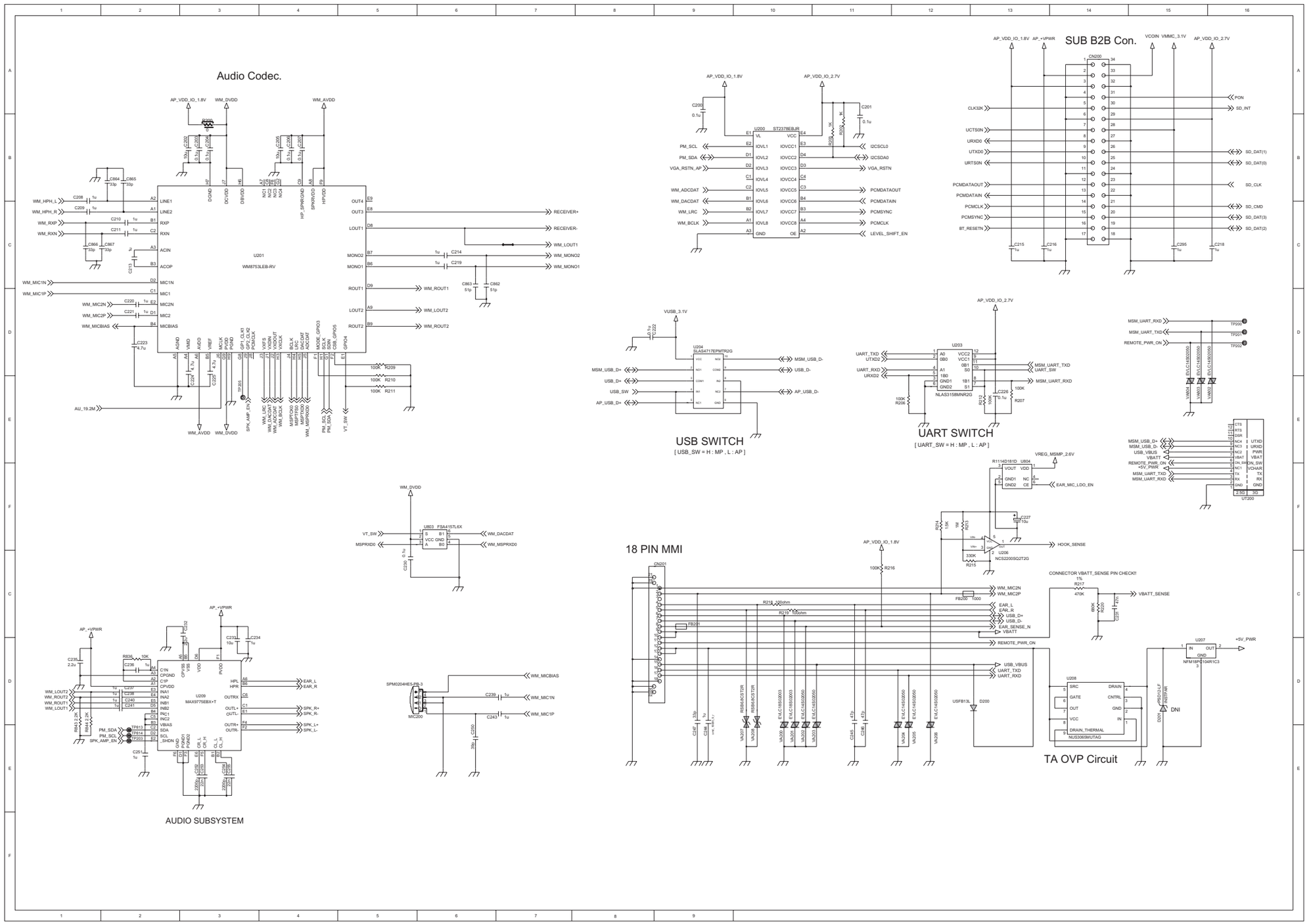
PYXIS Power Distribution Diagram



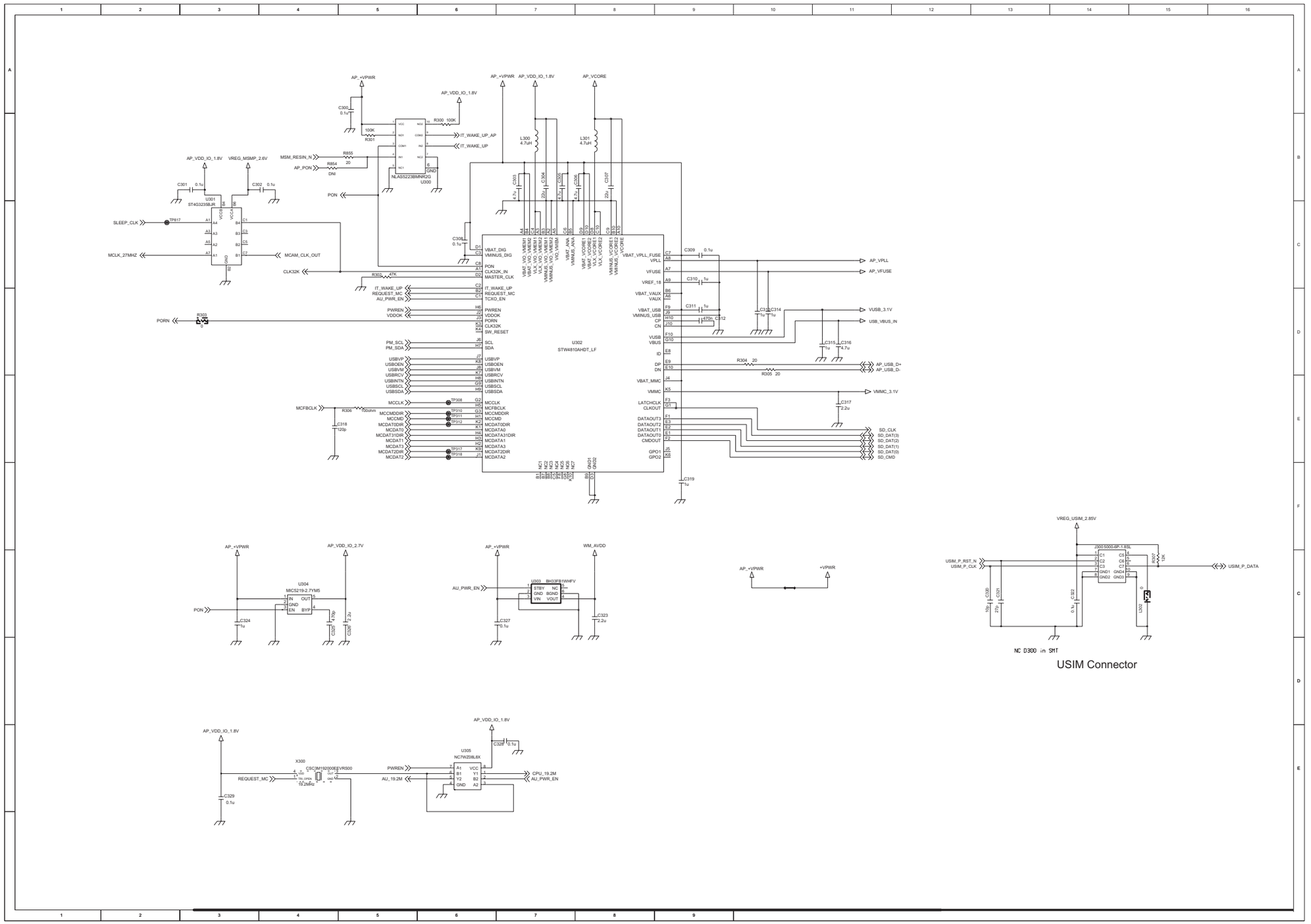
7. CIRCUIT DIAGRAM



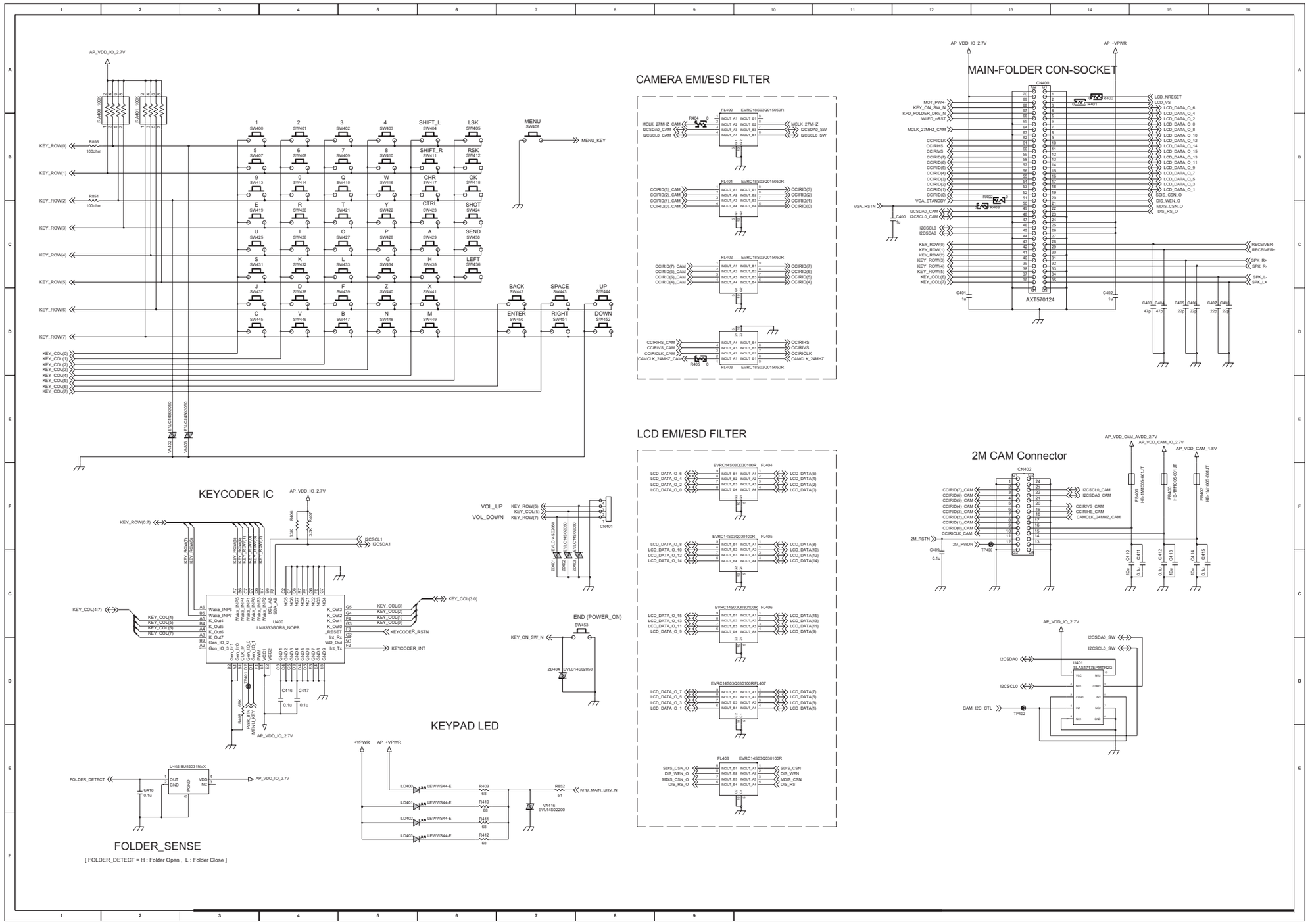
7. CIRCUIT DIAGRAM



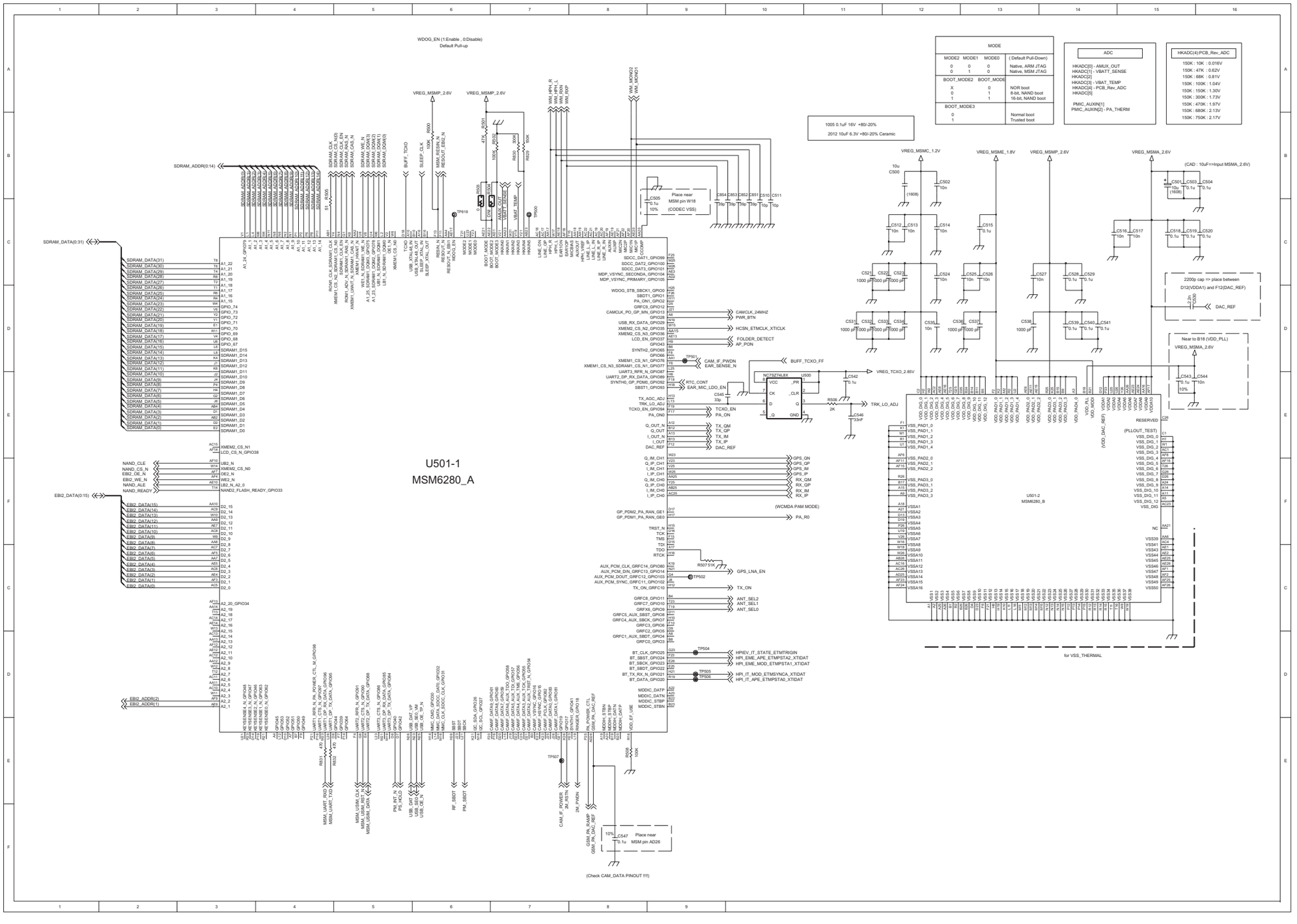
7. CIRCUIT DIAGRAM



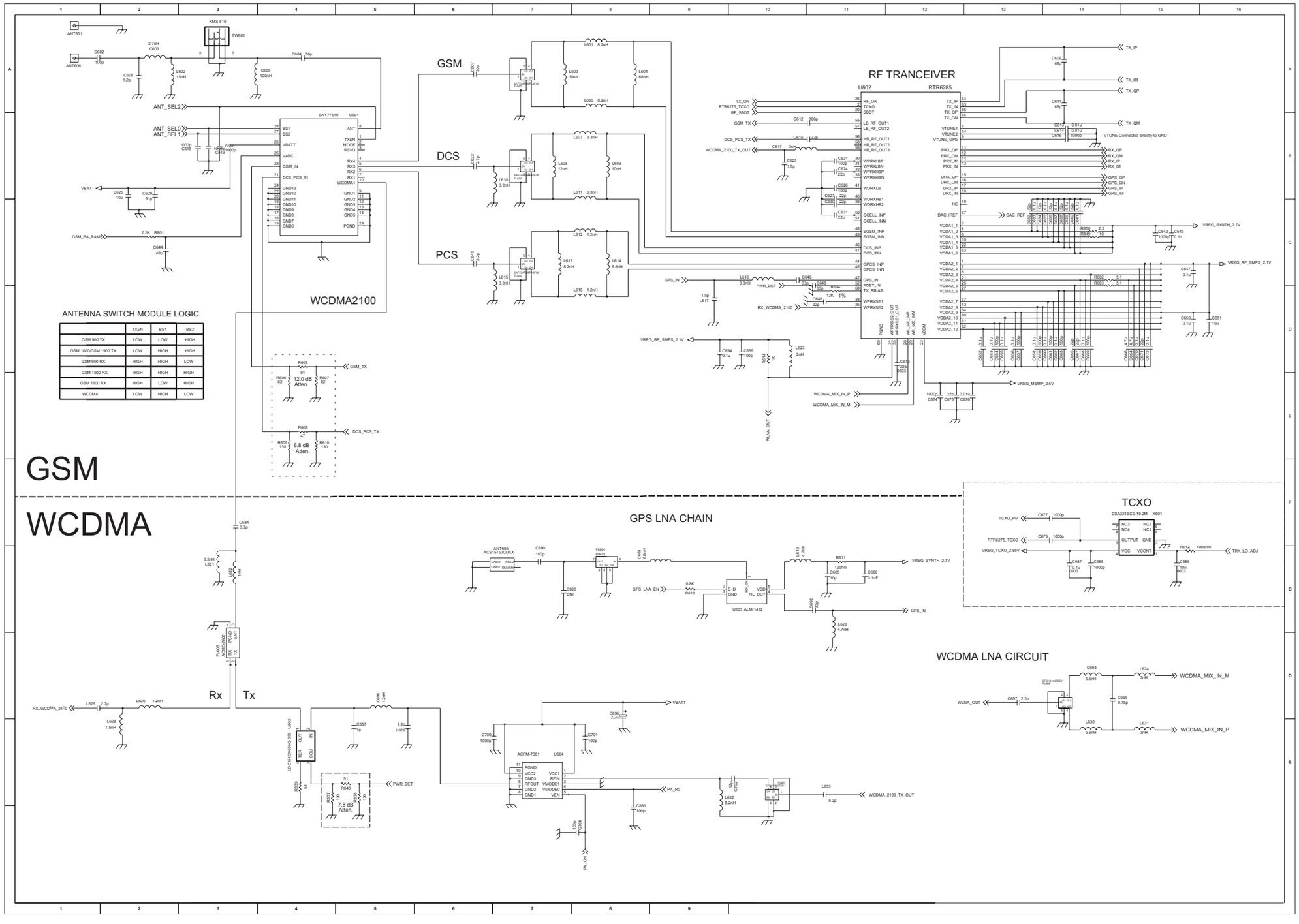
7. CIRCUIT DIAGRAM



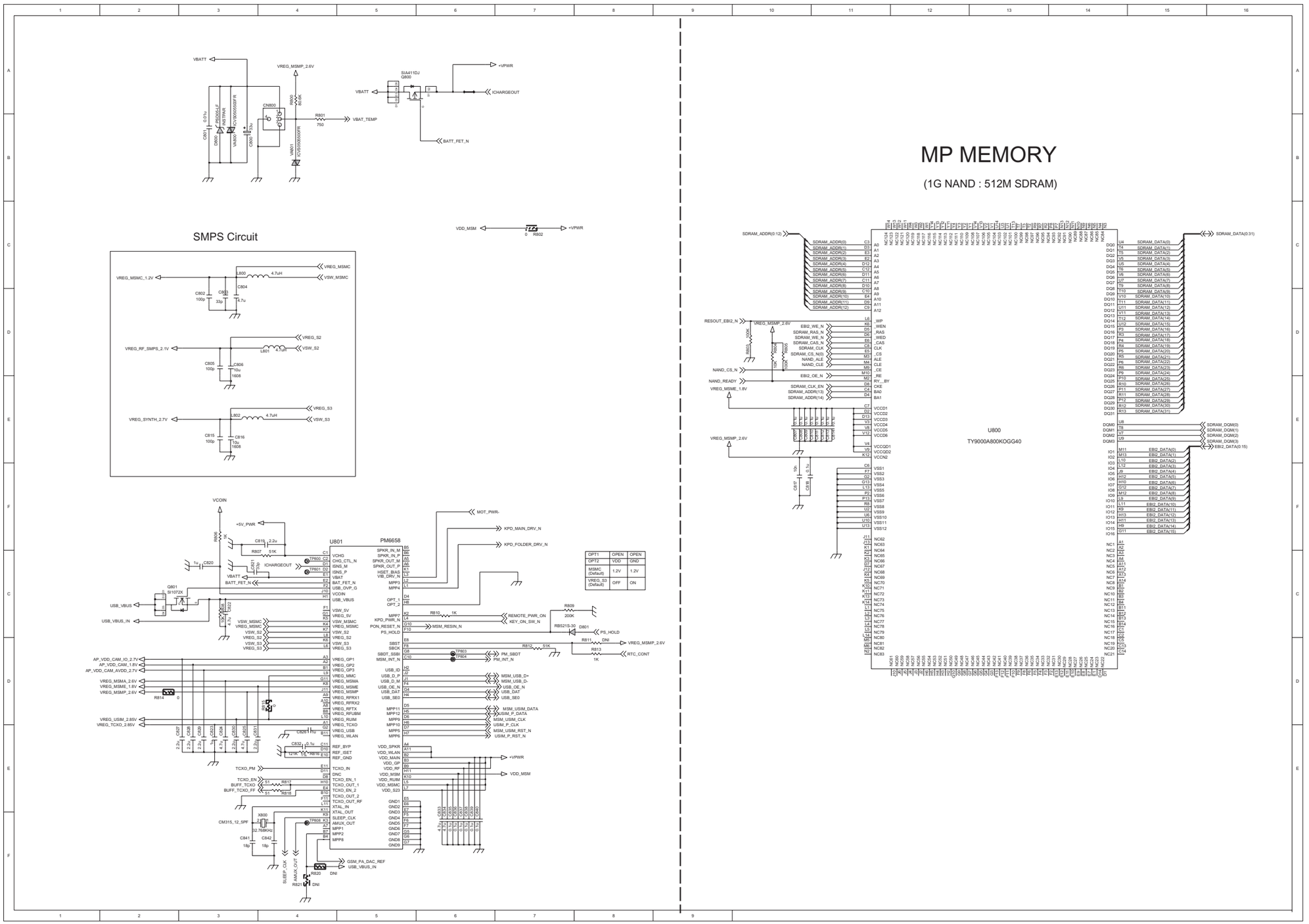
7. CIRCUIT DIAGRAM



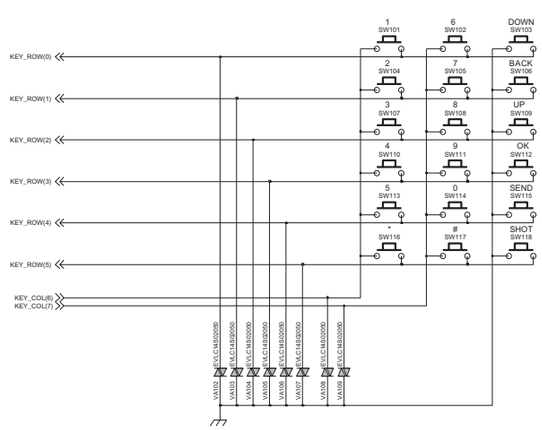
7. CIRCUIT DIAGRAM

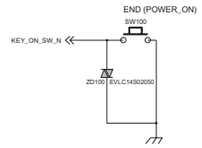


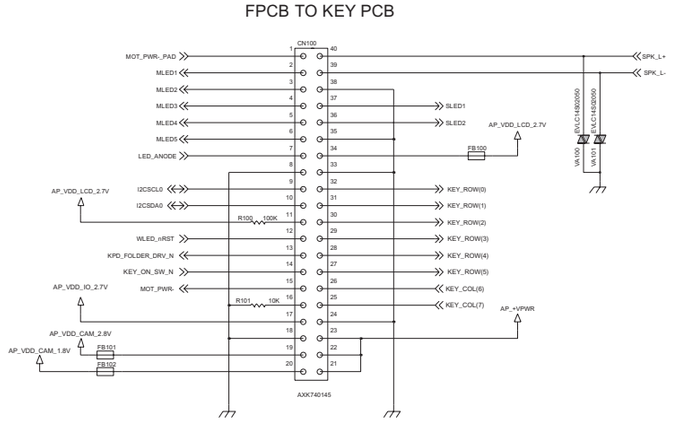
7. CIRCUIT DIAGRAM

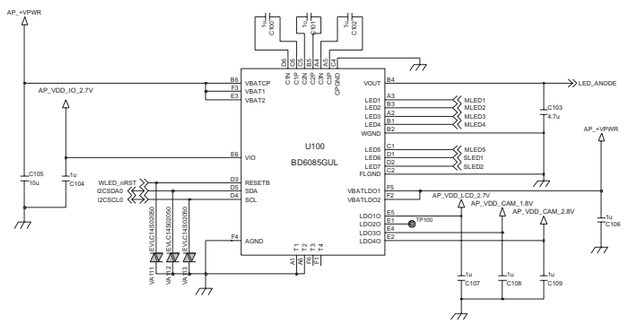


7. CIRCUIT DIAGRAM

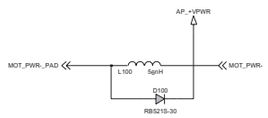




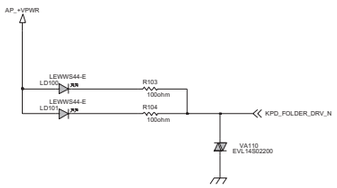




LCD_Backlight driver

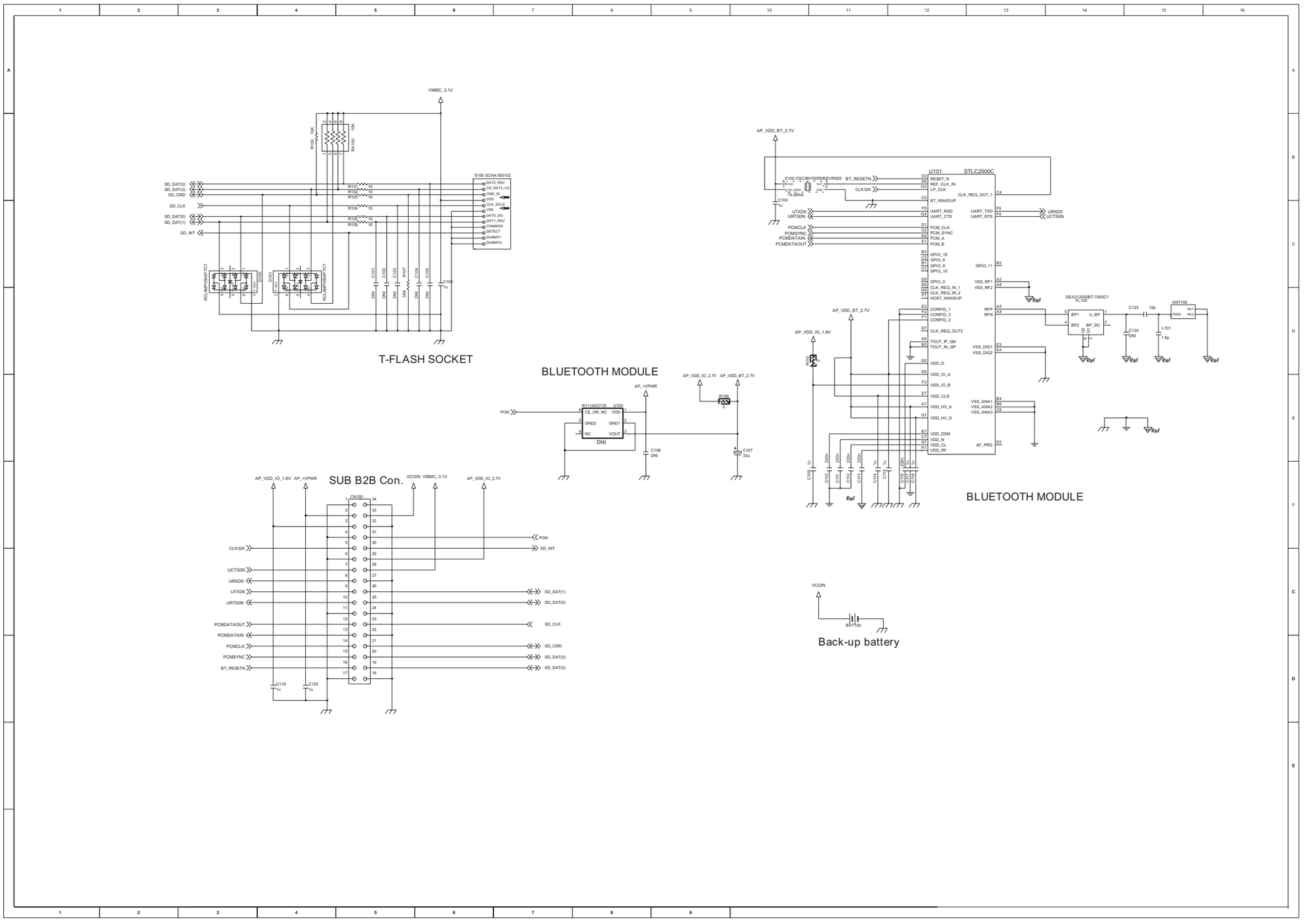


Vibrator

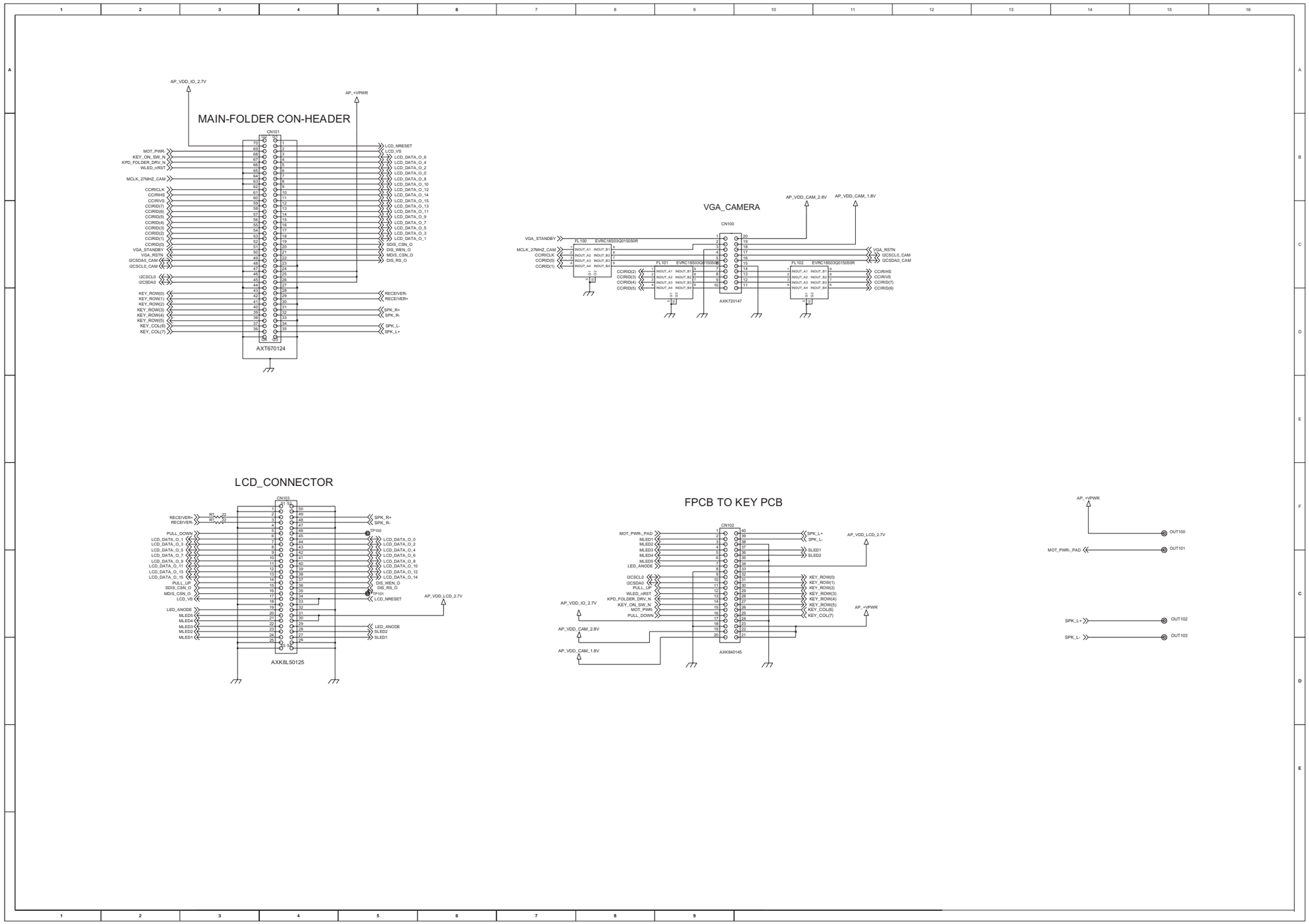


KEYPAD LED

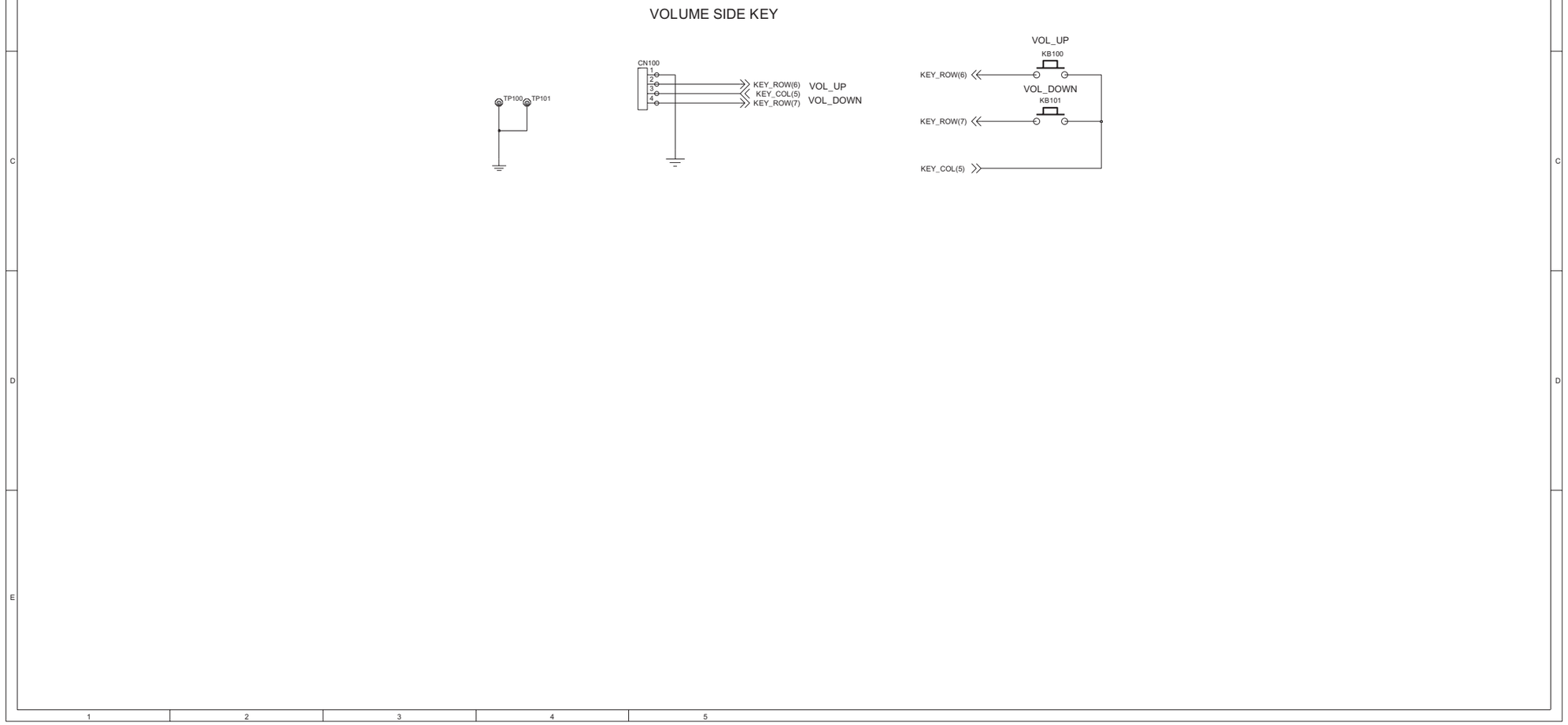
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM

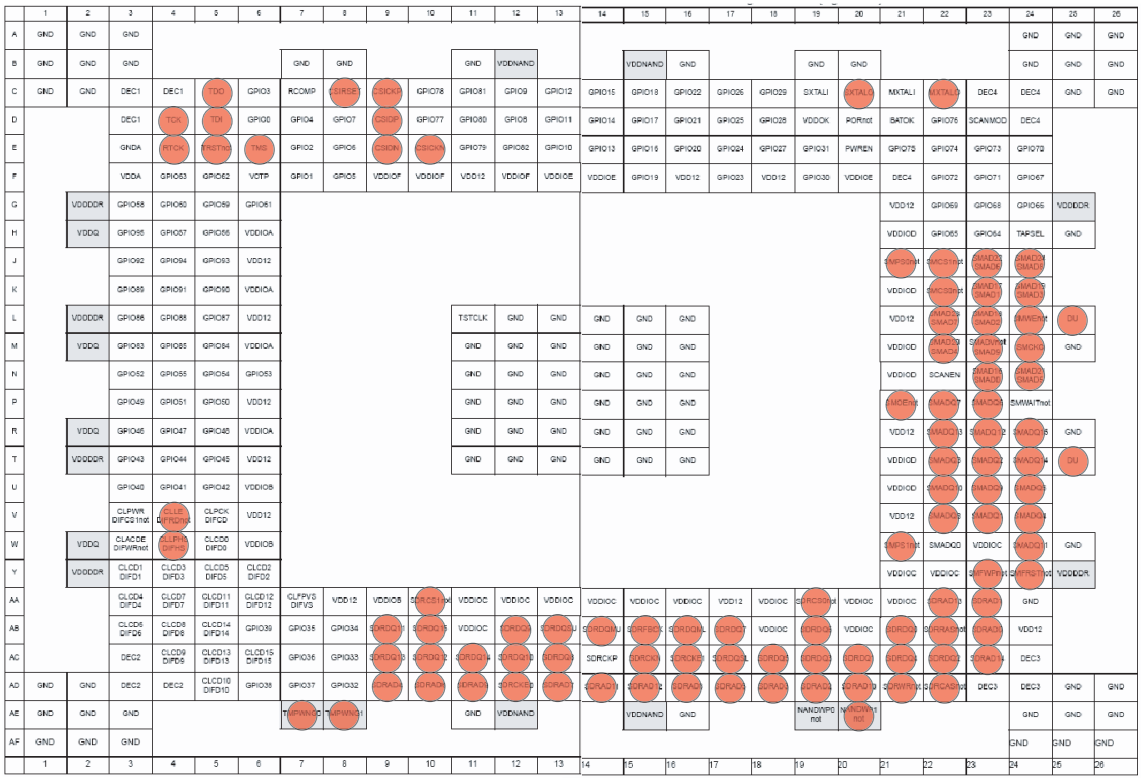


7. CIRCUIT DIAGRAM



8. BGA IC PIN CHECK

CPU : STn8810 (U100)

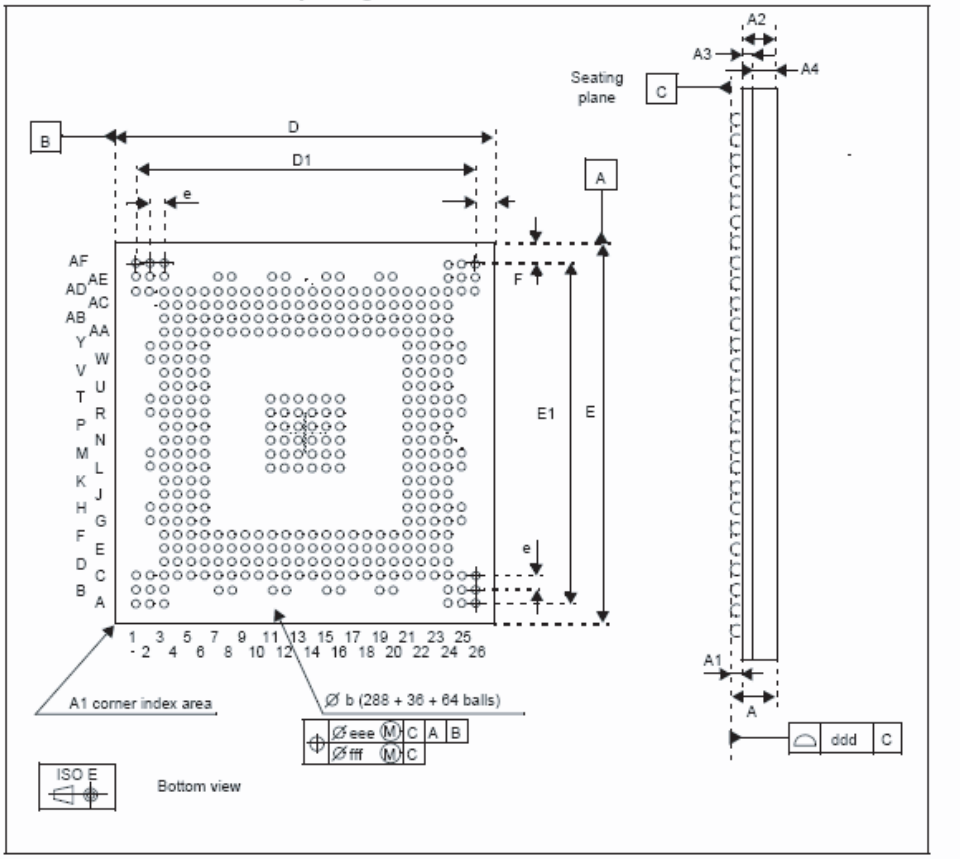


N/C : Do Not Connect

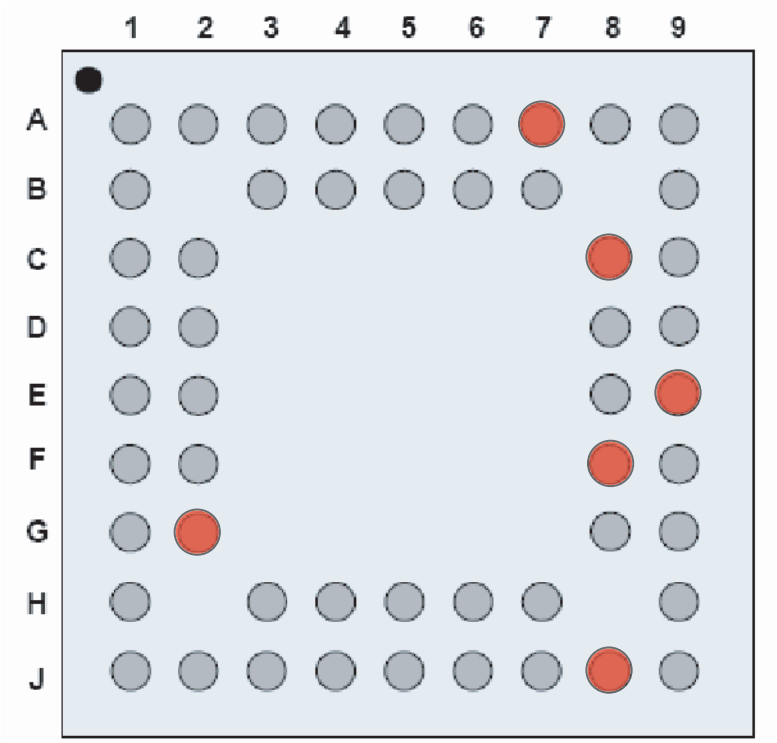
8. BGA IC PIN CHECK

CPU : STn8810 (U100)

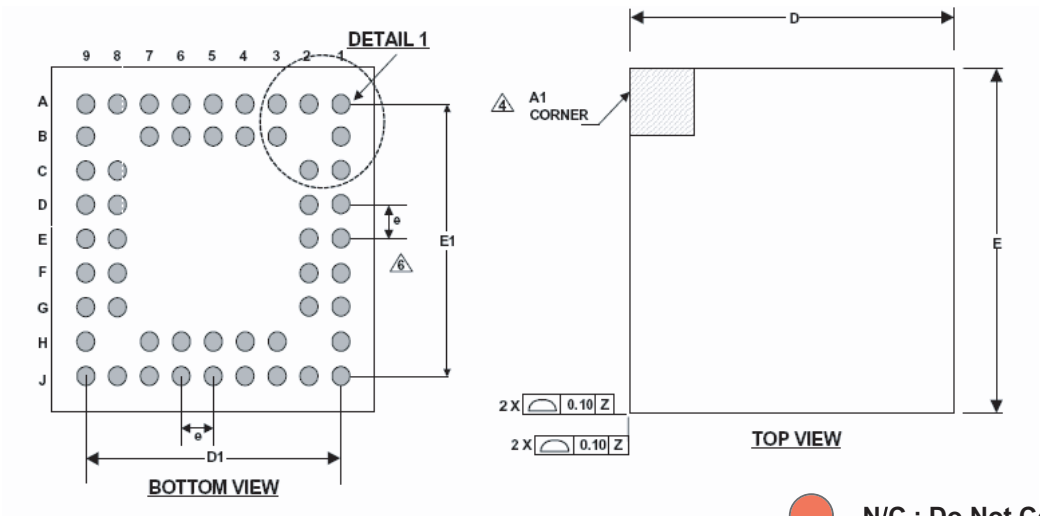
Figure 5. LFBGA 14 x 14 x 1.4 mm package outline



Audio Codec. : WM8753 (U201)



(TOP VIEW)



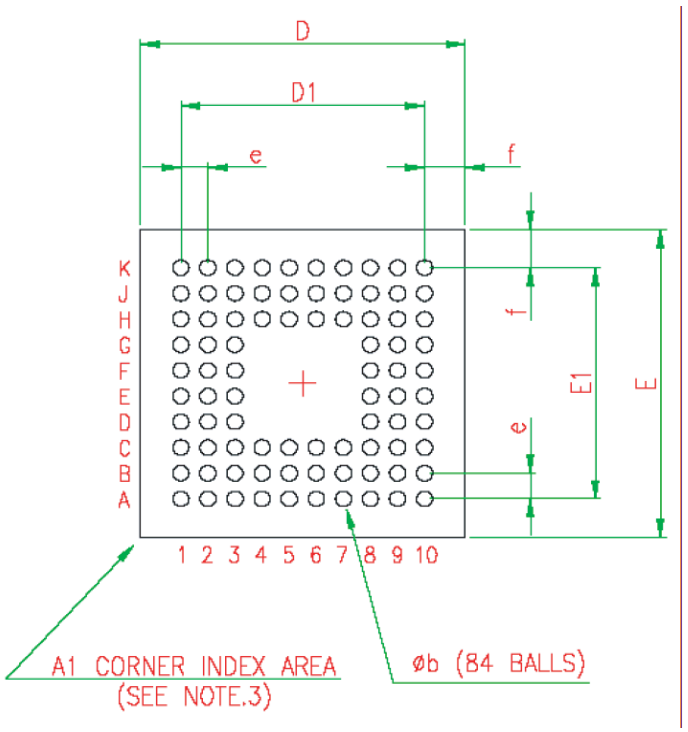
N/C : Do Not Connect

8. BGA IC PIN CHECK

ST PMIC : STw4810 (U302)

Table 1. STw4810 ball connections

	1	2	3	4	5	6	7	8	9	10
A	CLK32K_IN	VMINUS_ VIO_VMEM	VLX_VIO_ VMEM	VBAT_VIO_ VMEM	VIO_VMEM	VAUX	VFUSE	VPLL	VREF_18	VCORE
B	"Reserved"	REQUEST_ MC	VMINUS_ VIO_VMEM	VBAT_VIO_ VMEM	VMINUS_ ANA	VBAT_ VAUX	"Reserved"	"Reserved"	"Reserved"	VMINUS_ VCORE
C	TCXO_EN	IT_WAKE_ UP	VMINUS_ DIG	VLX_VIO_ VMEM	"Reserved"	VBAT_ANA	VBAT_VPL L_FUSE	PON	VMINUS_ VCORE	VLX_ VCORE
D	VBAT_DIG	MASTER_ CLK	"reserved"					VLX_ VCORE	VBAT_ VCORE	VBAT_ VCORE
E	DATAOUT0	DATAOUT <1>	DATAOUT <2>					ID	DP	DN
F	DATAOUT <3>	CMDOUT	LATCHCLK					"Reserved"	VBAT_USB	VUSB
G	CLKOUT	MCCLK	MCCMD DIR					"Reserved"	USBSCL	VBUS
H	MCCMD	MCDATA <3>	MCDATA <1>	MCDATA31 DIR	MCFBCLK	PWREN	SDA	USBINTn	USBSDA	CP
J	MCDATA <2>	VDDOK	PORN	VBAT_ MMC	GPO1	SCL	USBVP	USBVM	VMINUS_ USB	CN
K	MCDATA0	MCDAT0 DIR	CLK32K	SW_ RESET	VMMC	GPO2	USBRCV	USBOEn	MCDAT2 DIR	"Reserved"



N/C : Do Not Connect

Key Coder IC : LM8333 (U400)

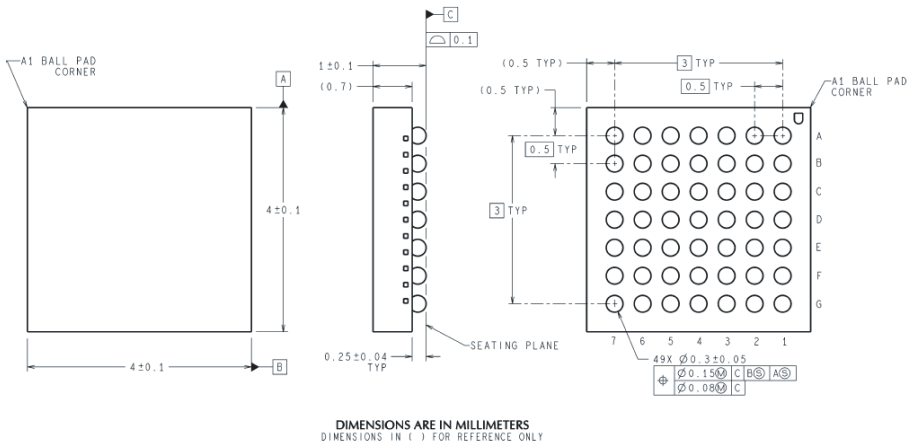
LM8333

Microarray Package

	1	2	3	4	5	6	7
A	Gen_In_0	Gen_IO_3	K_OUT7	K_OUT6	K_OUT4	Wk_IN6	Wk_IN5
B	CKI	Gen_In_1	Gen_IO_2	K_OUT5	Wk_IN7	Wk_IN4	NC
C	NC	NC	GND	GND	GND	NC	Wk_IN1
D	Gen_IO_1	Gen_IO_0	GND	GND	GND	Wk_IN3	Wk_IN0
E	IOV_{CC}	V_{CC}	GND	GND	GND	SCL_AB	Wk_IN2
F	PWM	Int_Tx	$\overline{RESET}$	K_OUT1	NC	NC	SDA_AB
G	WD_Out	Int_Rx	K_OUT0	K_OUT2	K_OUT3	NC	NC

Top View

See NS Package Number GRA49A



N/C : Do Not Connect

8. BGA IC PIN CHECK

Modem : MSM6280 (U501)

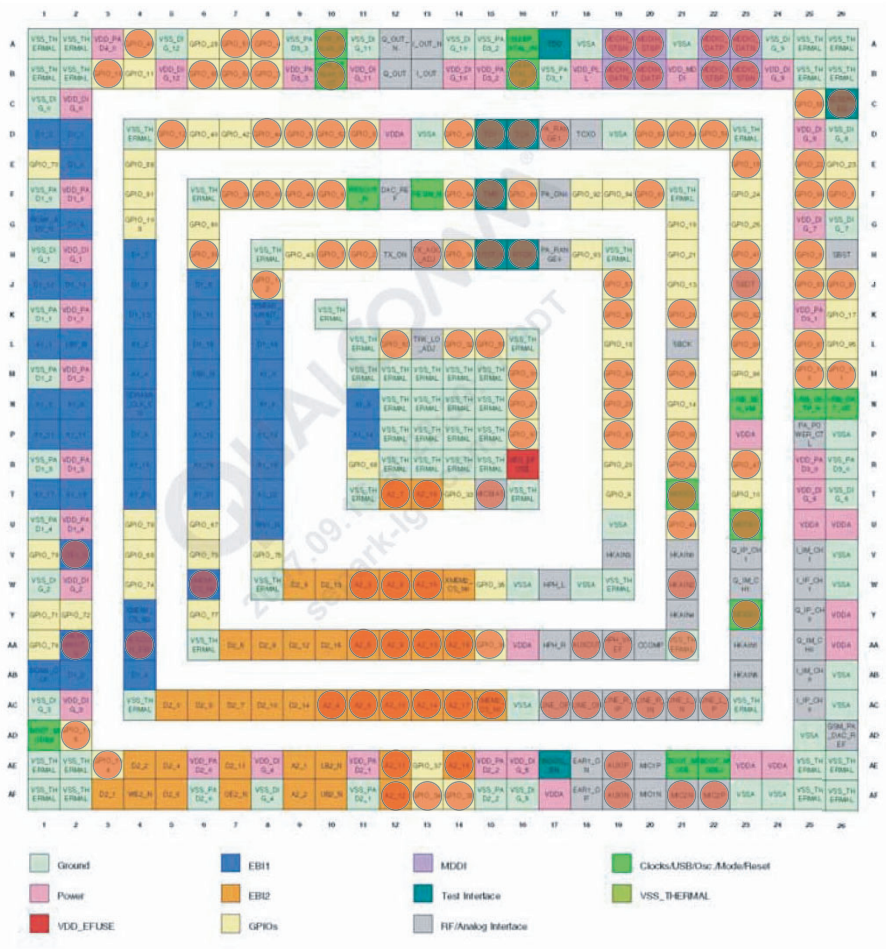
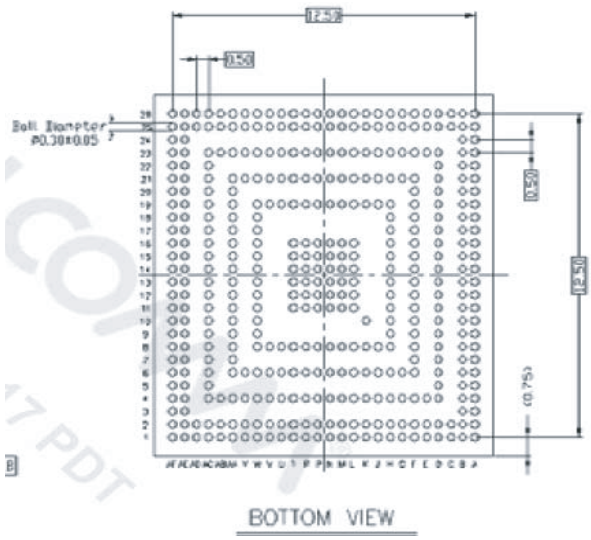


Figure 2-1 409-ball CSP pinout for the MSM6280 device

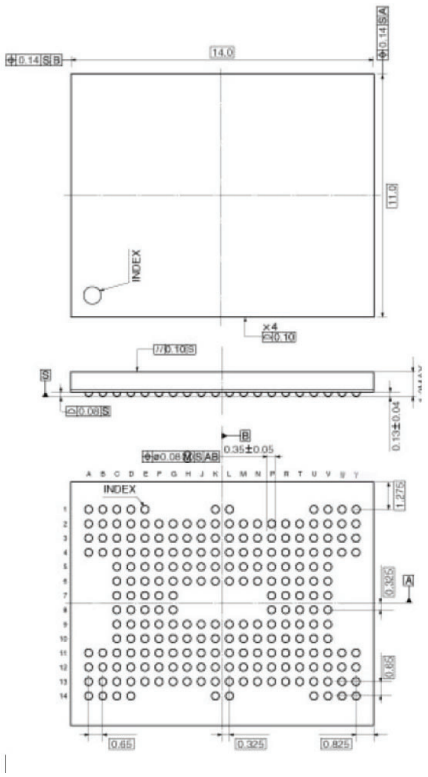


N/C : Do Not Connect

MCP (Memory) : TY9000A800KOGG40 (U800)

PIN ASSIGNMENT (TOP VIEW)

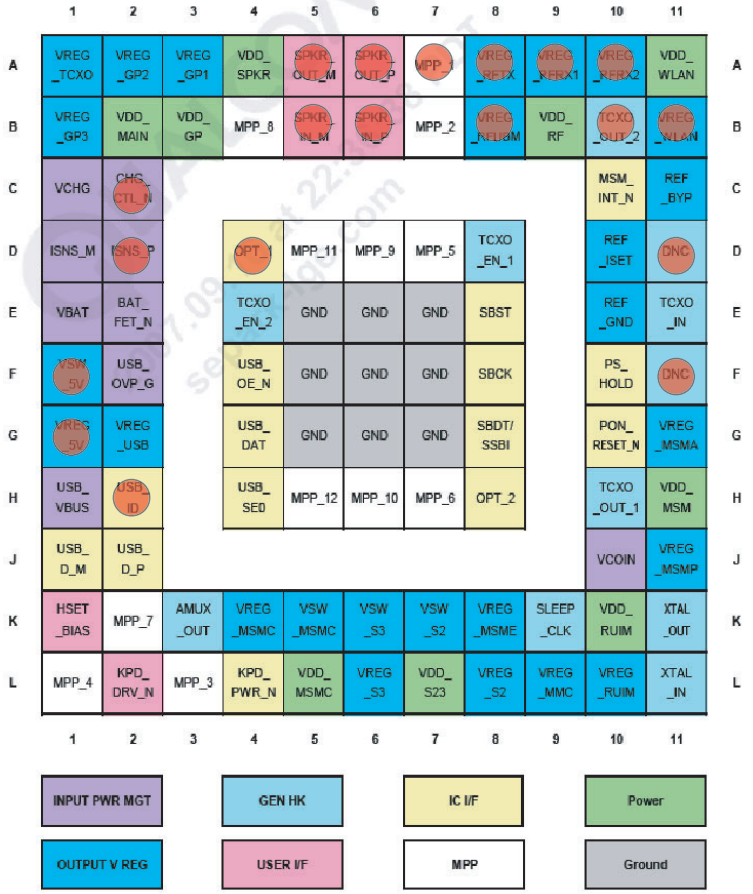
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	NC	NC	NC	NC							NC	NC	NC	NC
B	NC	NC	NC	NC							NC	NC	NC	NC
C	NC	NC	A0	BA0	NC	V_{SS}	V_{CCd}	CLK	A12	A9	A7	A5	NC	NC
D	NC	V_{CCd}	A1	BA1	$\overline{RAS}$	$\overline{WEd}$	NC	CKE	A11	A8	A6	A4	V_{CCd}	NC
E	NC	A3	A2	A10	$\overline{CS}$	$\overline{CAS}$	NC	NC	NC	NC	NC	NC	NC	
F		NC	NC	NC	NC	NC	V_{SS}	NC	NC	NC	NC	NC	NC	
G		V_{SS}	NC	NC	NC	NC	NC	NC	NC	NC	I/O16	I/O8	V_{SS}	
H		NC	NC	NC	NC	NC			I/O15	I/O7	I/O14	I/O6	I/O13	
J		NC	NC	NC	NC	NC			I/O5	NC	NC	NC	NC	
K	NC	NC	NC	NC	NC	$\overline{WEn}$			I/O12	NC	NC	V_{CCn}	NC	NC
L	NC	NC	NC	NC	NC	$\overline{WP}$			I/O10	I/O3	I/O11	I/O4	V_{SS}	NC
M		RY/$\overline{BY}$	ALE	CLE	NC	NC			$\overline{CE}$	$\overline{RE}$	I/O1	I/O9	I/O2	
N		NC	NC	NC	NC	NC			NC	NC	NC	NC	NC	
P		V_{SS}	DQ16	DQ18	DQ20	DQ22	NC	NC	DQ24	DQ25	DQ27	DQ29	V_{SS}	
R		NC	DQ17	DQ19	DQ21	DQ23	NC	V_{SS}	NC	DQ26	DQ28	DQ30	DQ31	
T		NC	NC	DQ1	DQ2	DQ5	NC	DQM1	DQ8	DQ9	DQ11	DQ14	NC	
U	NC	V_{SS}	NC	DQ0	DQ4	V_{SS}	DQ7	DQM0	DQM3	V_{SS}	DQ12	DQ15	V_{SS}	NC
V	NC	NC	V_{CCd}	V_{CCQd}	DQ3	DQ6	DQM2	V_{CCd}	V_{CCQd}	DQ10	DQ13	V_{CCd}	NC	NC
W	NC	NC	NC	NC							NC	NC	NC	NC
Y	NC	NC	NC	NC							NC	NC	NC	NC

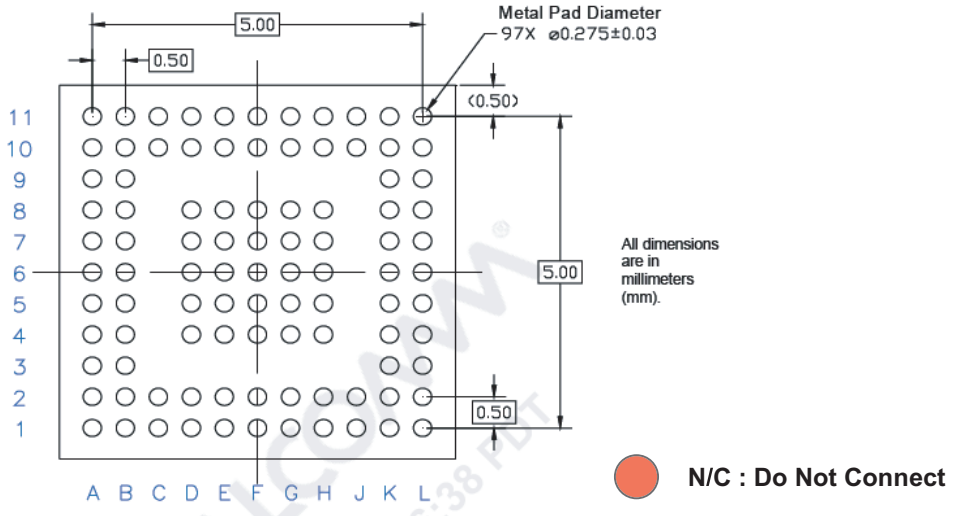


NC : Do Not Connect

8. BGA IC PIN CHECK

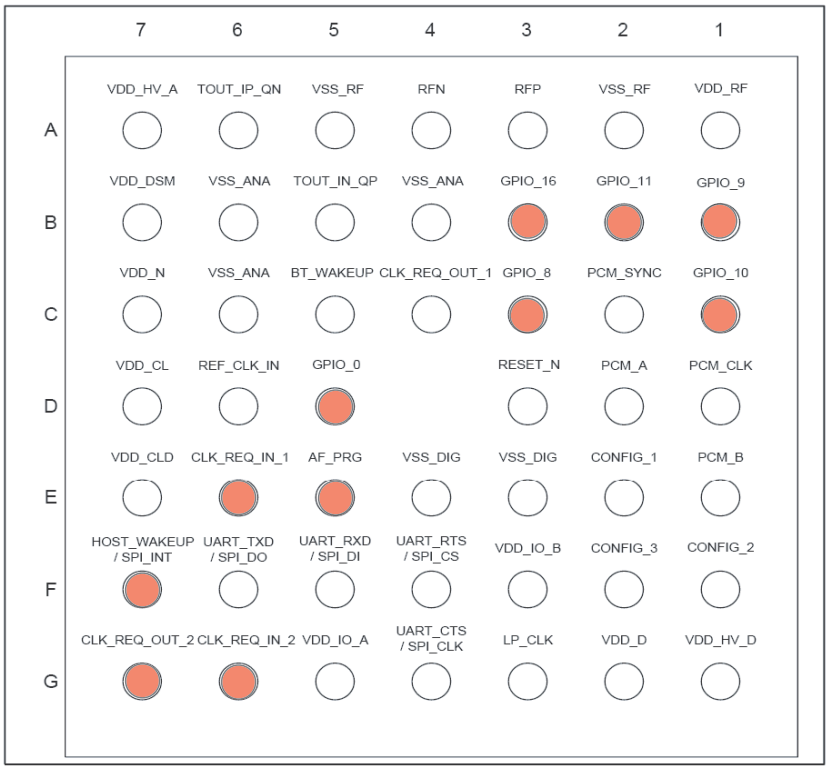
MSM PMIC : PM6658 (U801)

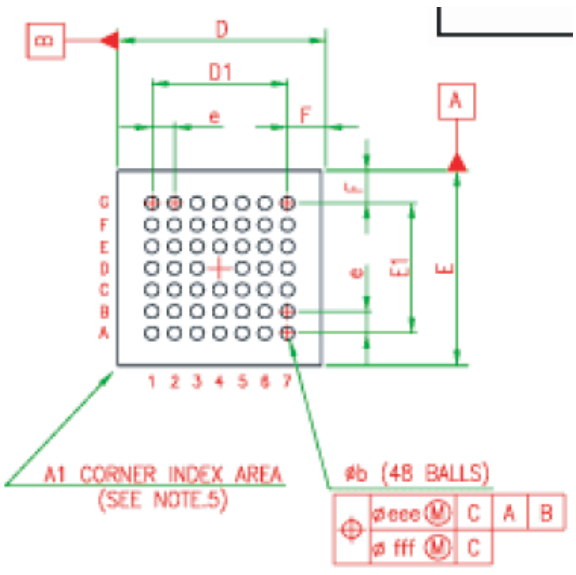




BT : STLC2500C (U101, Sub)

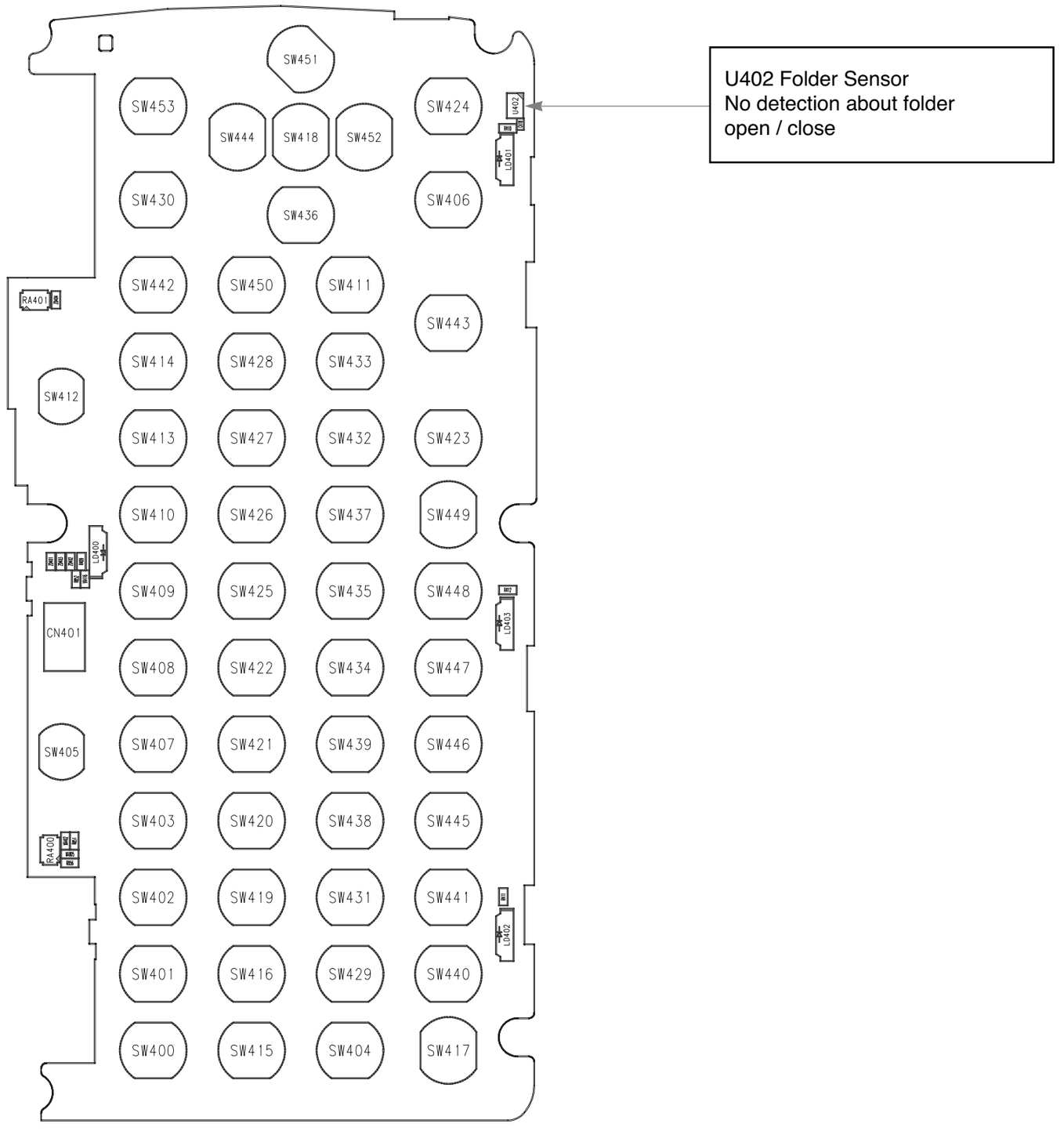
Figure 3. Pin out bottom view





N/C : Do Not Connect

9. PCB LAYOUT



U402 Folder Sensor
No detection about folder
open / close

KT610-MAIN-SPFY0165201-1.0-TOP

9. PCB LAYOUT

U603 LNA for GPS
No Service(GPS)

FL604 GPS RX Sawfilter.
No Service(GPS)

U801 Modem PMIC
No Power
No Booting
No Service

U800 Memory
No Booting

U100 Application CPU STn8810
No Booting
No Display

U501 MSM 6280 Modem BB Chip
No Booting
No Service

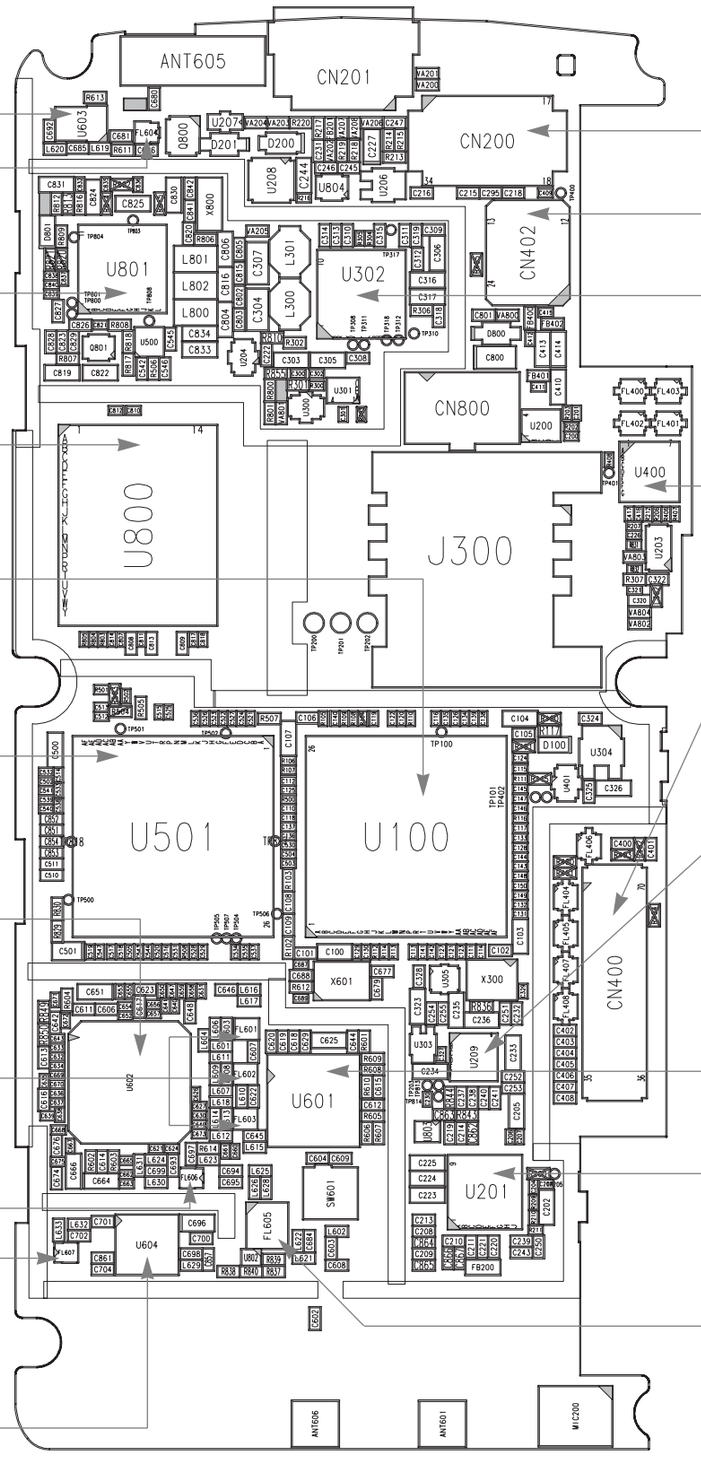
U602 RTR6285 Transciver.
GSM, DCS,PCS,WCDMA
RX Sensitivity.
No Service.

FL601(GSM),FL602(DCS),
FL603(PCS) RX Sawfilter.
RX Sensitivity.
No Service.

FL606 WCDMA2100 RX Sawfilter.
RX Sensitivity.
No Service.

LGMC
FL607 WCDMA2100 TX Sawfilter.
No Service.

U604 WCDMA2100 Power amplifier.
TX power.
No Service.



KT610-MAIN-SPFY0165201-1.0-BTM

CN200 SUB BtoB Conn
No BT
No Micro-SD
No RTC

CN402 Camera Conn.
No 2M Camera

U302 ST CPU PMIC
No Power
No Booting
No Display

U400 Key Coder IC
No Key Recognization

CN400 Main-Folder BtoB Conn.
No Display
No Sound
No Vibrator
No VGA Camera
No Call Voice

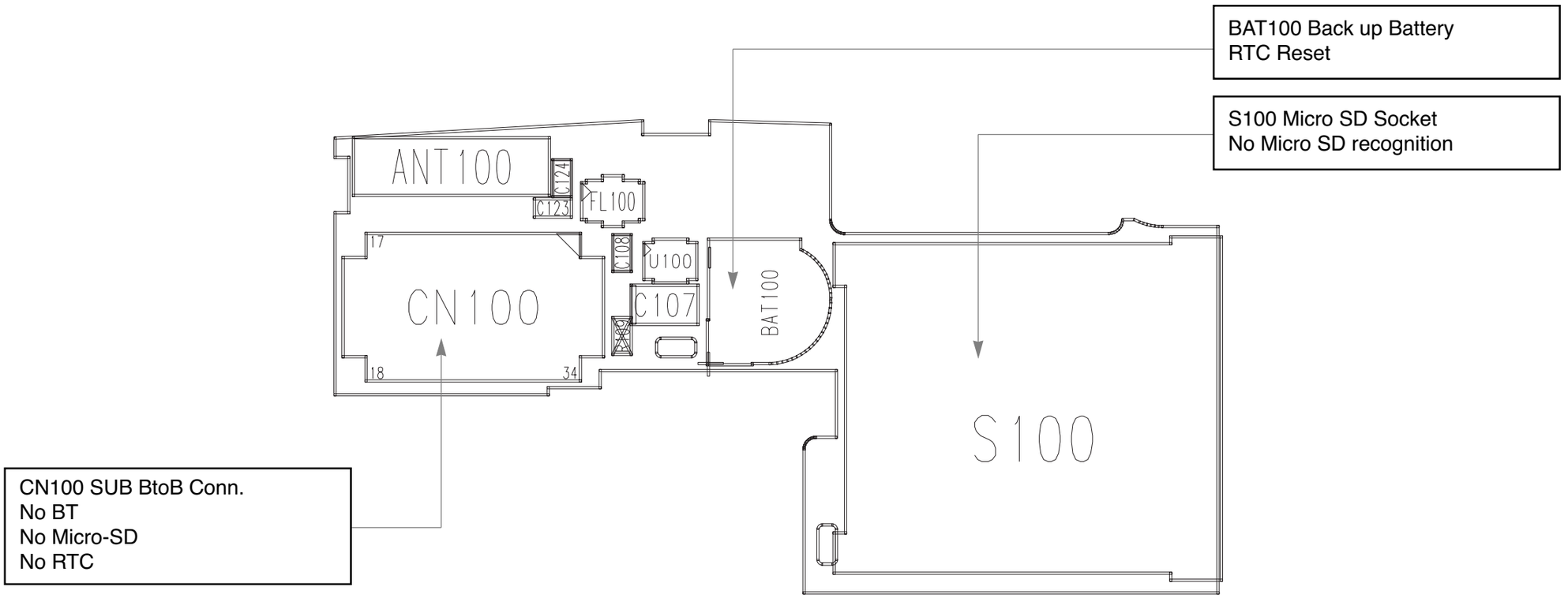
U209 Audio Sub System
No Speaker Sound
No Ear Jack Sound

U601 GSM Power amplifier &
Antenna switch module.
GSM, DCS,PCS,WCDMA
RX Sensitivity.
TX Power.
No Service.

U201 Audio Codec.
No Sound & Voice
No Mic.

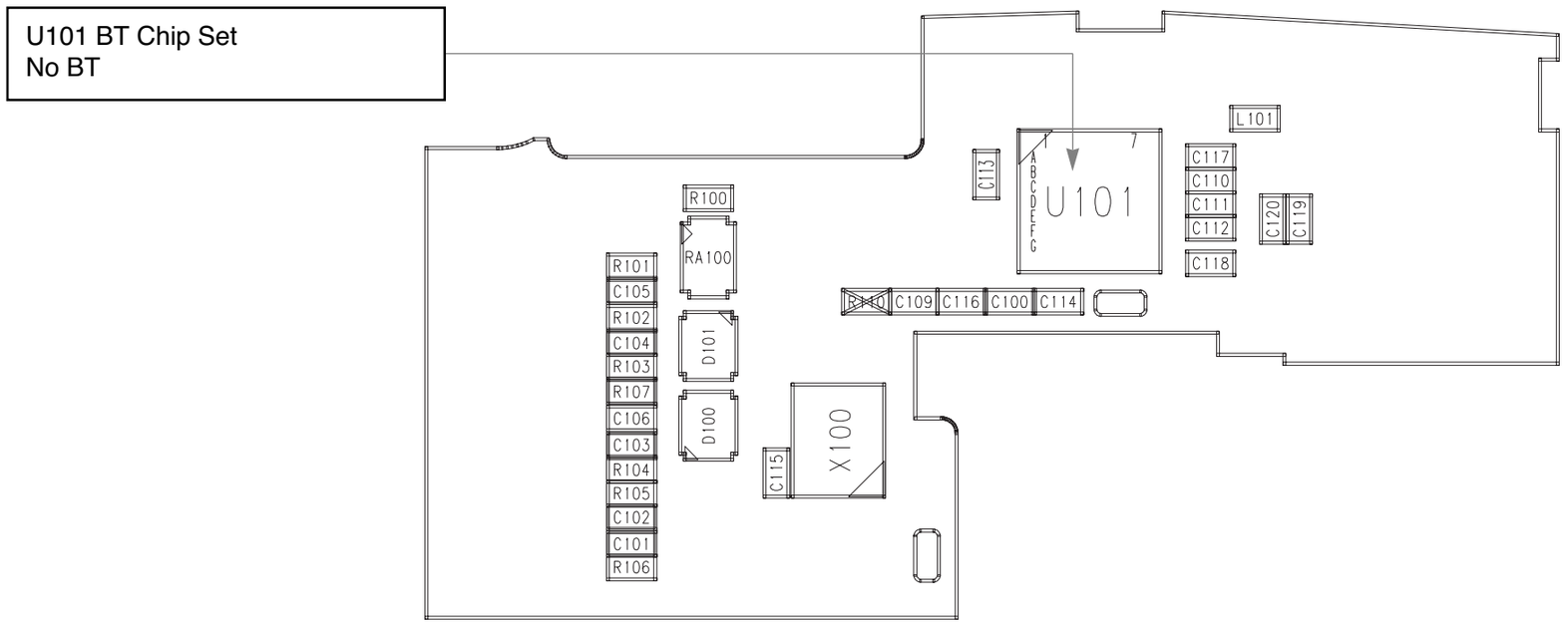
FL605 WCDMA2100 Duplexer.
RX Sensitivity.
TX Power.
No Service.

9. PCB LAYOUT



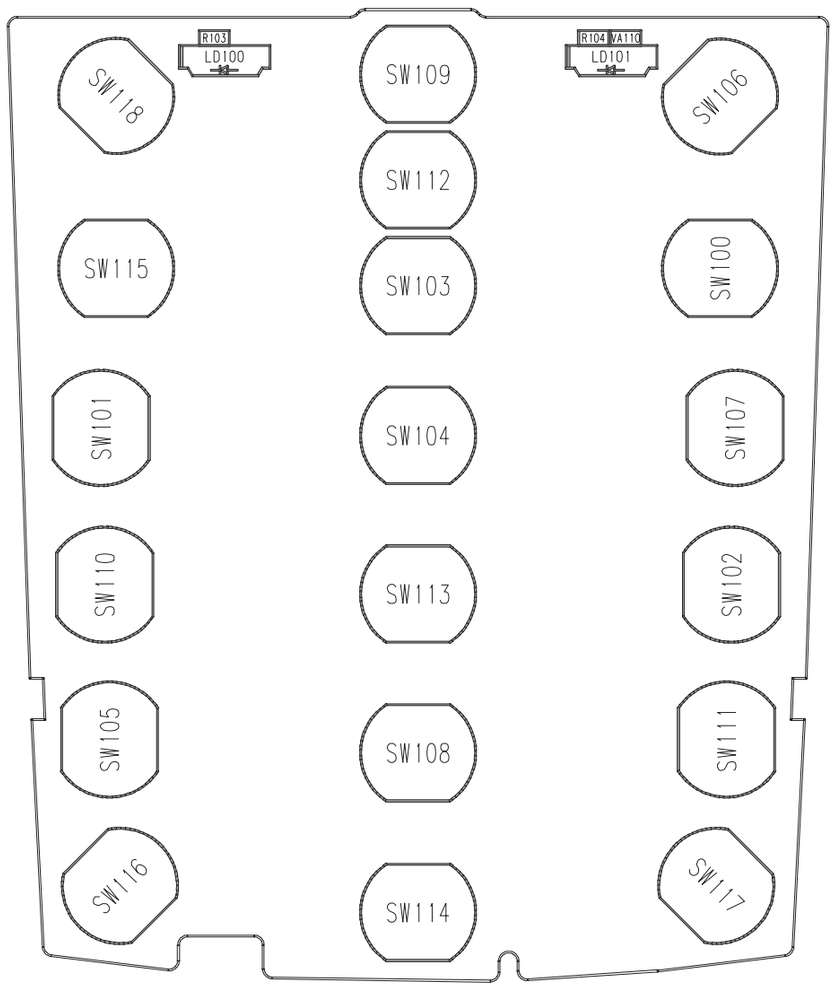
KT610-SUB-SPJY0052201-1.0-TOP

9. PCB LAYOUT



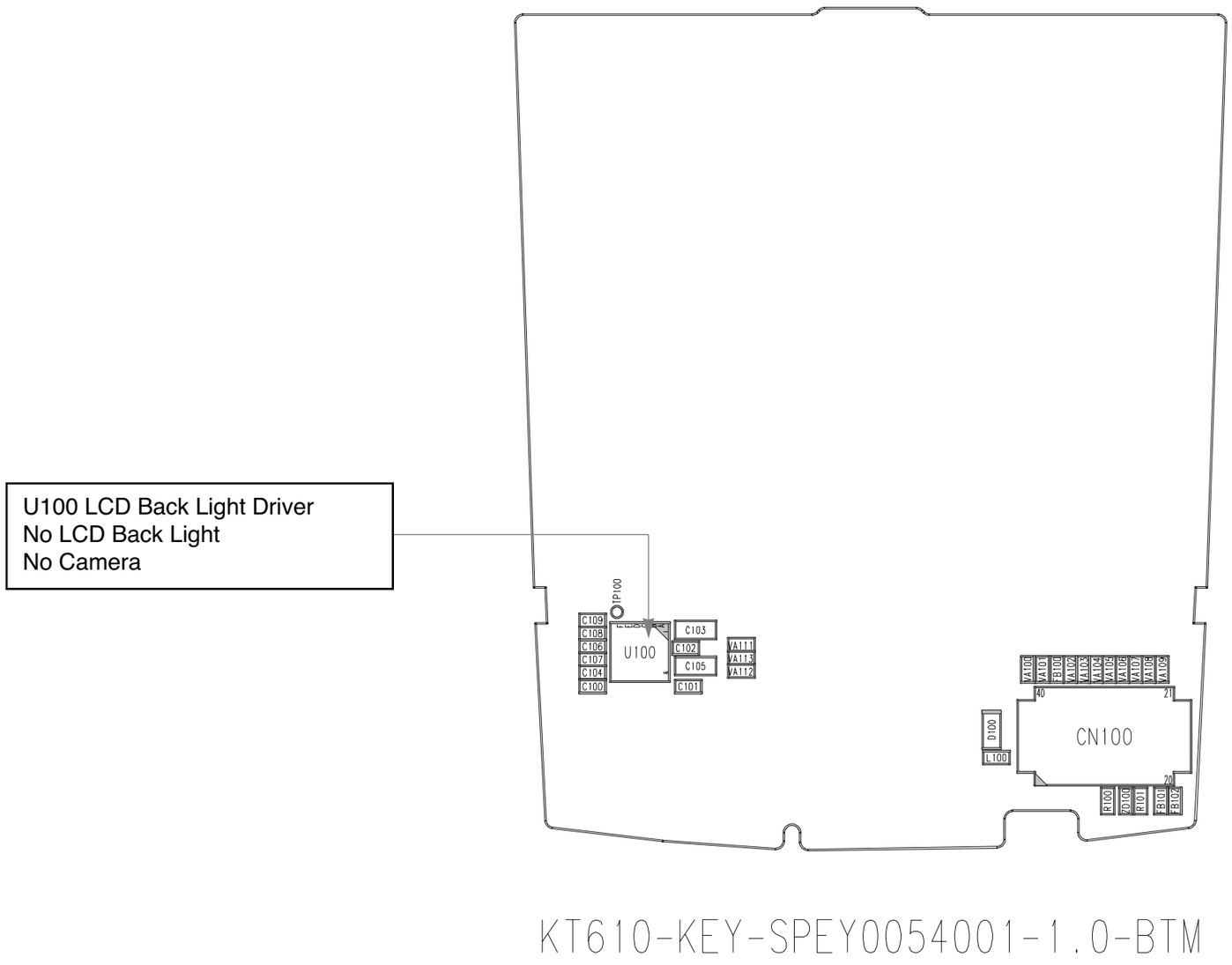
KT610-SUB-SPJY0052201-1.0-BTM

9. PCB LAYOUT

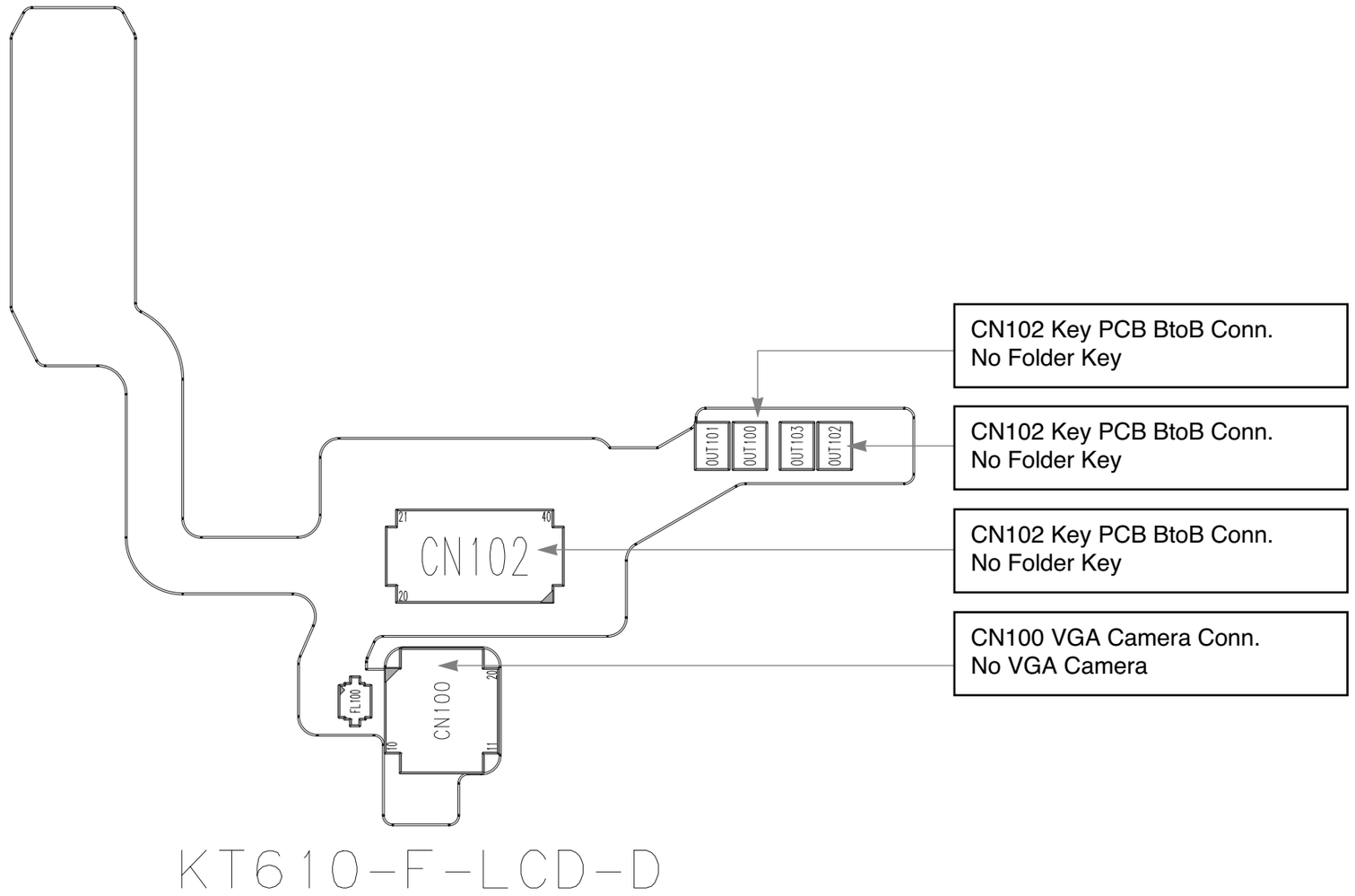


KT610-KEY-SPEY0054001-1.0-TOP

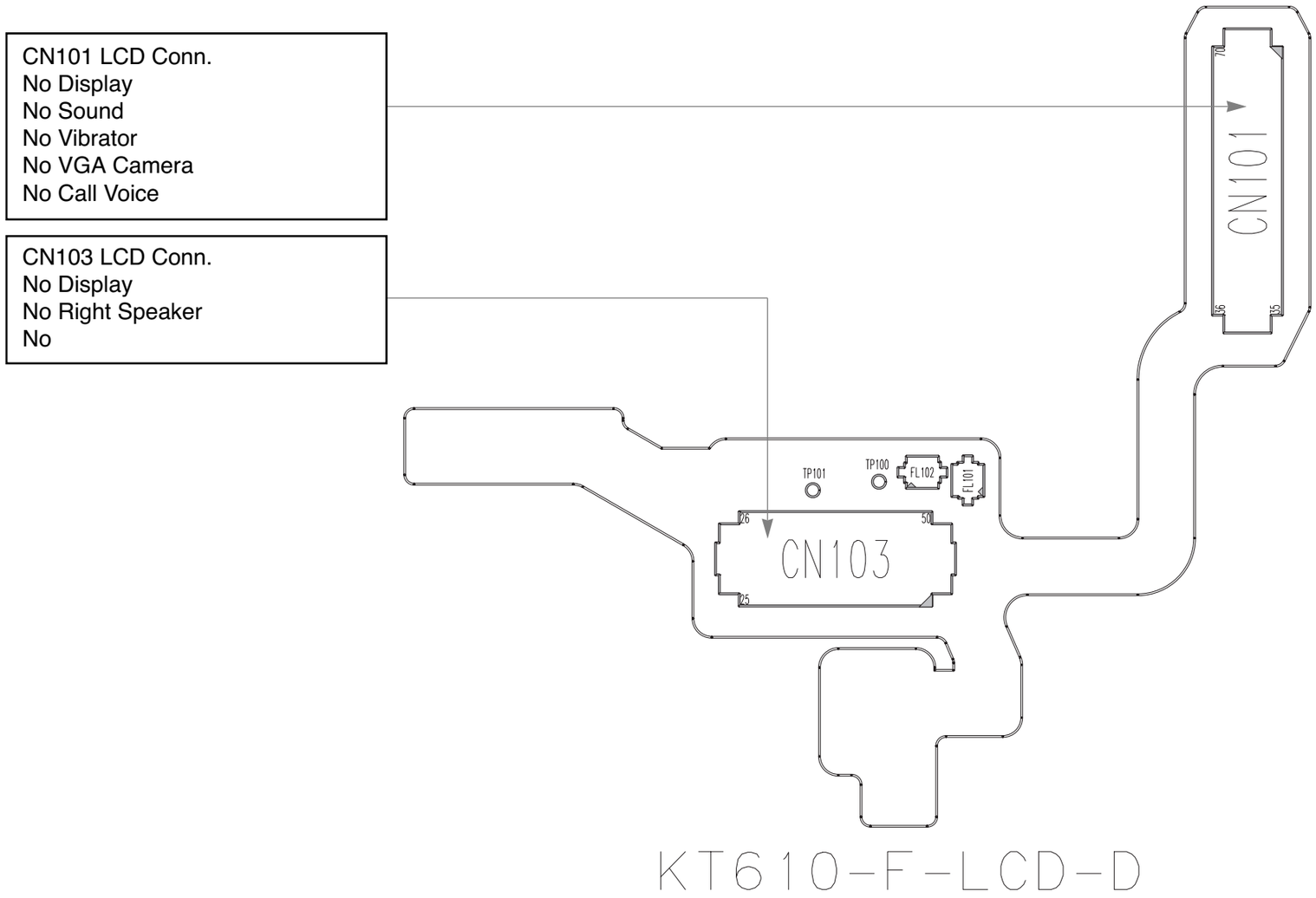
9. PCB LAYOUT



9. PCB LAYOUT



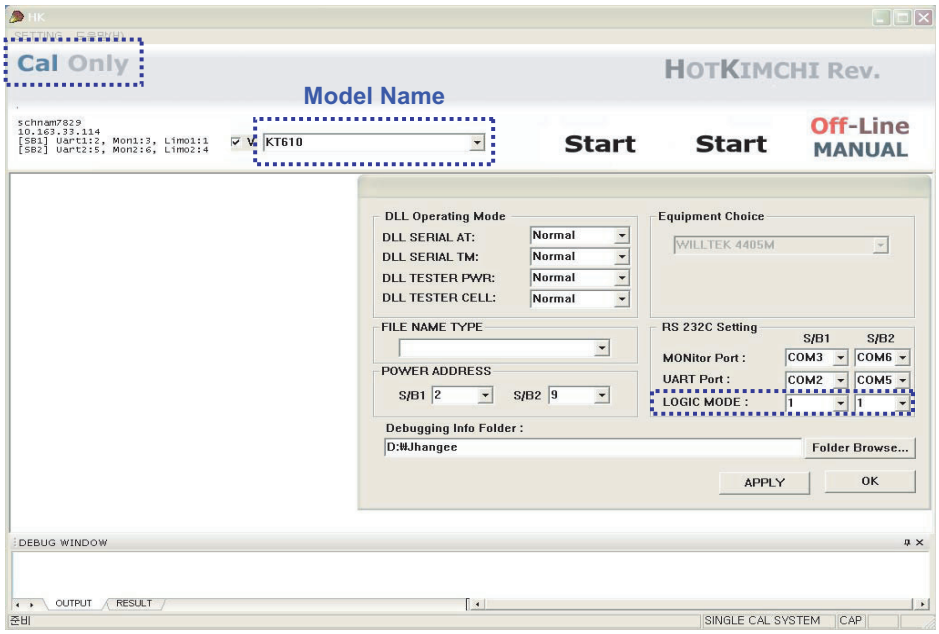
9. PCB LAYOUT



10. CALIBRATION & RF AUTO TEST (HOT KIMCHI)

10.1 Usage of Hot-Kimchi

10.1.1 Calibration

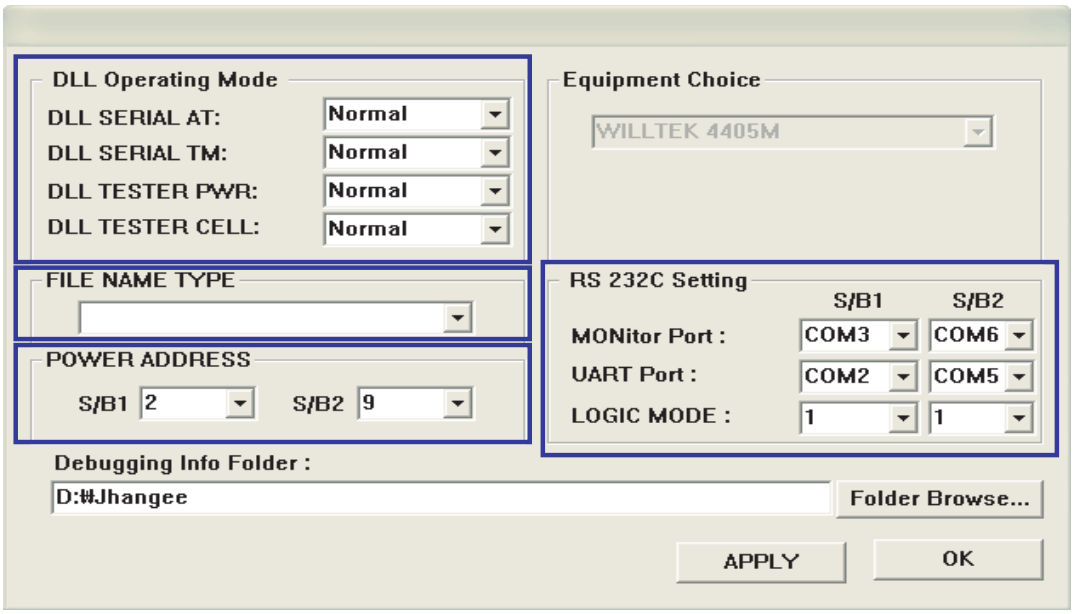


Calibration Only

* **Procedure**

1. Click SETTING in menu, and logic operation in sub-menu.
   Choose “1” in LOGIC MODE (means calibration alone)
2. Select the model name which you want in list box
3. Click Start button to calibrate a phone

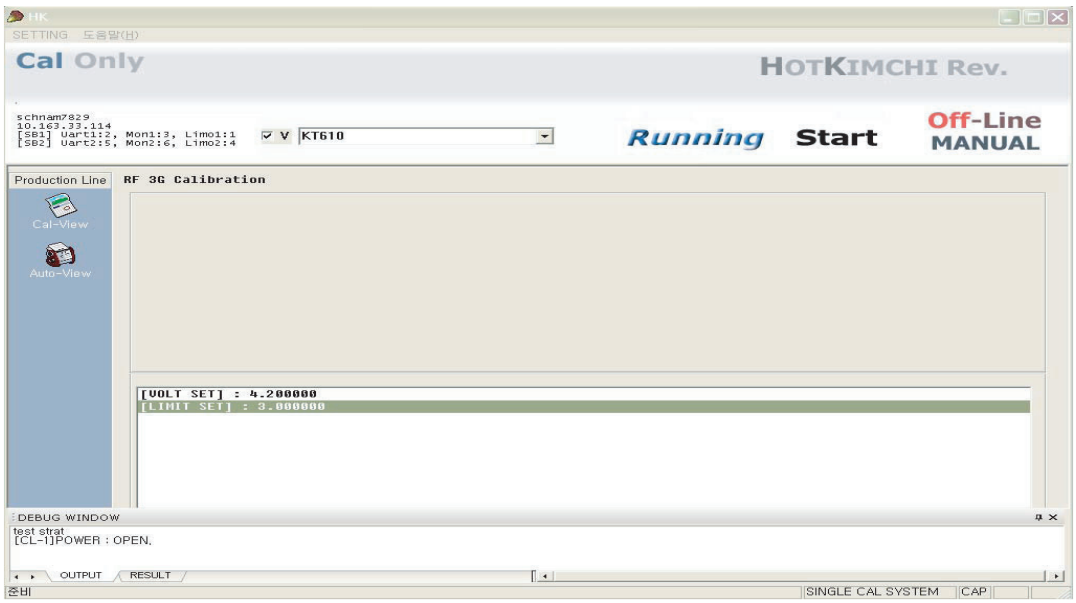
10.1.2 Basic Setting



*** Contents**

- Click SETTING in menu, and logic operation in sub-menu.
- You can select how to control AT comm, Testset, and Power supply in DLL Operating Mode.
- You can set UART Port and logic mode. (mode 1 : Calibration alone)
- You can set Result File's name type. If you choose "TIME", the saved files' name is saved in a run - time.
- You can run the multi mode (S/B1,S/B2 : You can use S/B1 for only one port.)
- You can set the path of HOTKIMCHI program.

10.1.3 Log of Calibration and Test



* **Contents**

- Running, Log window is created in center area. It displays logs of command, and measurements of Calibration or Autotest.
- The result files are saved in the directory “~janghee\debug\Cal”, “~janghee\debug\Auto”, or “~janghee\debug\CalAuto”.

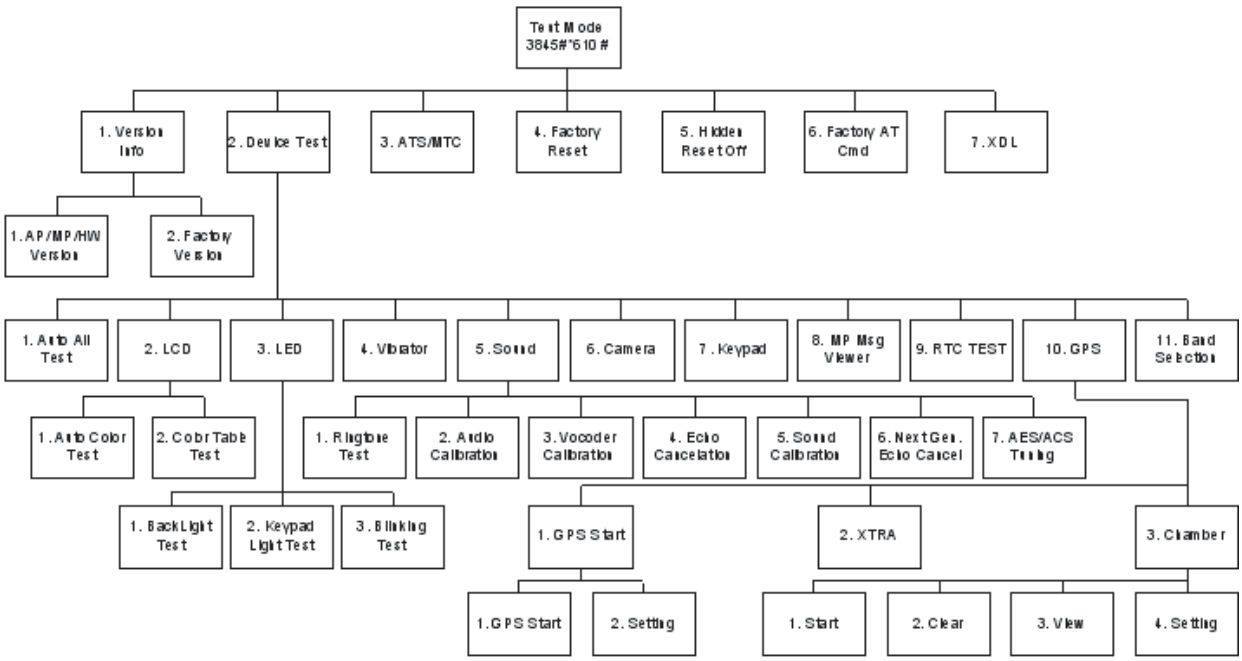
11. TEST MODE

A. About Test Mode

Test mode is designed to allow a service man/engineer to view and test the basic functions provided by a handset.

B. Access Codes

The key sequence for switching the test mode on is 3845#*610#. Pressing END will switch back to non-test mode operation.



1. Version Info

1.1 AP/MP/HW Version

1.2 Factory Version

2. Device Test

2.1 Auto All Test

2M&VGA Camera Test (Picture & Video) → External Memory Test → Vibrator Test → Keypad LED → Ringtone Test

2.2 LCD

2.2.1 Auto Color Test

Red → Green → Blue → Black → White

To exit test, press the right arrow key.

2.2.2 Color Table Test : display the RGB table

2.3 LED

2.3.1 Backlight Test

This controls brightness of Backlight. When entering into the menu, the present backlight-value in the phone is displayed. Use Left/Right key to adjust the level of brightness.

2.3.2 Keypad Light Test

This controls brightness of keypad light. When entering into the menu, the present keypad light-value in the phone is displayed.

Use Left/Right key to adjust the level of brightness of keypad.

2.3.3 Blinking Test

Keypad & LCD Backlight blinking test.

2.4 Vibrator

This menu is to test the vibration mode.

2.5 Sound

2.5.1 Ringtone Test

This menu is test ring tone.

2.5.2 Audio Calibration

This menu is to test db value of each volume level.

2.5.3 Vocoder Calibration

This menu is to test db value of each frequency of codec.

2.5.4 Echo Cancelation

This menu is to test echo cancellation parameter of codec.

2.5.5 Sound Calibration

This menu is to test volume gain of codec.

2.5.6 Next Gen. Echo Cancel Test

This menu is to test extended echo cancellation parameter of codec.

2.5.7 Loopback Test

This menu is to test the vibration mode.

2.5.8 AES/ACS Tunning

This menu is to test acoustic echo cancellation/suppression.

2.6 Camera

Camera application will be launched.

2.7 Keypad

This menu is to test all keys.

2.8 MP Msg Viewer

This menu is to display messages from MP.

2.9 RTC Test

This menu is to display current time.

2.10 GPS

This menu is to operate GPS module.

2.11 Band Selection

This menu is to select the operating band of phone.

3. ATS/MTC

This menu is used for verifying the system stability.

4. Factory Reset

This menu is to restore factory setting value.

5. Hidden Reset Off

When crash is occurred, phone will be changed to debug mode.

6. Factory AT CMD

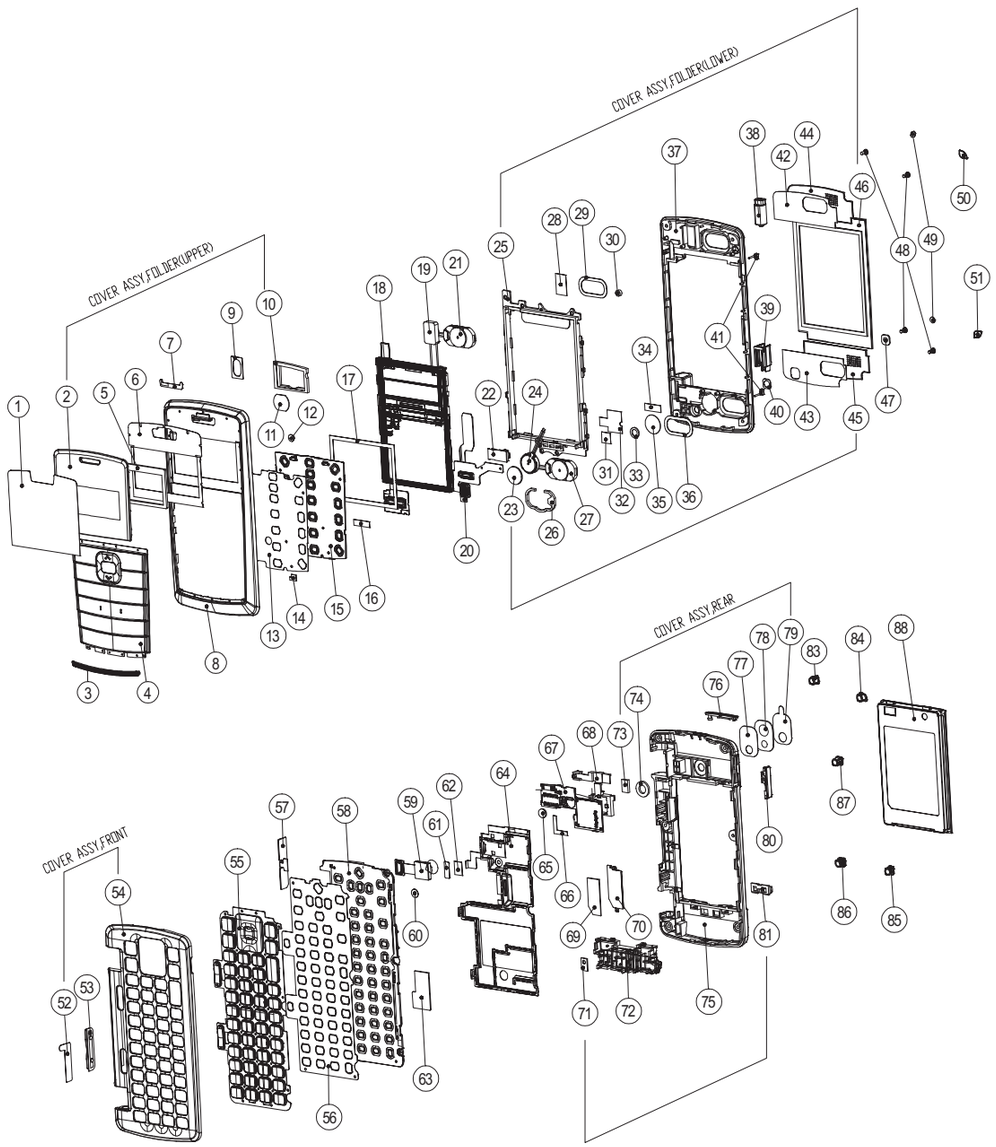
This menu is used for only mass production.

7. XDL

This menu is used for flashing AP and MP SW image using micro SD during mass production.

12. EXPLODED VIEW & REPLACEMENT PART LIST

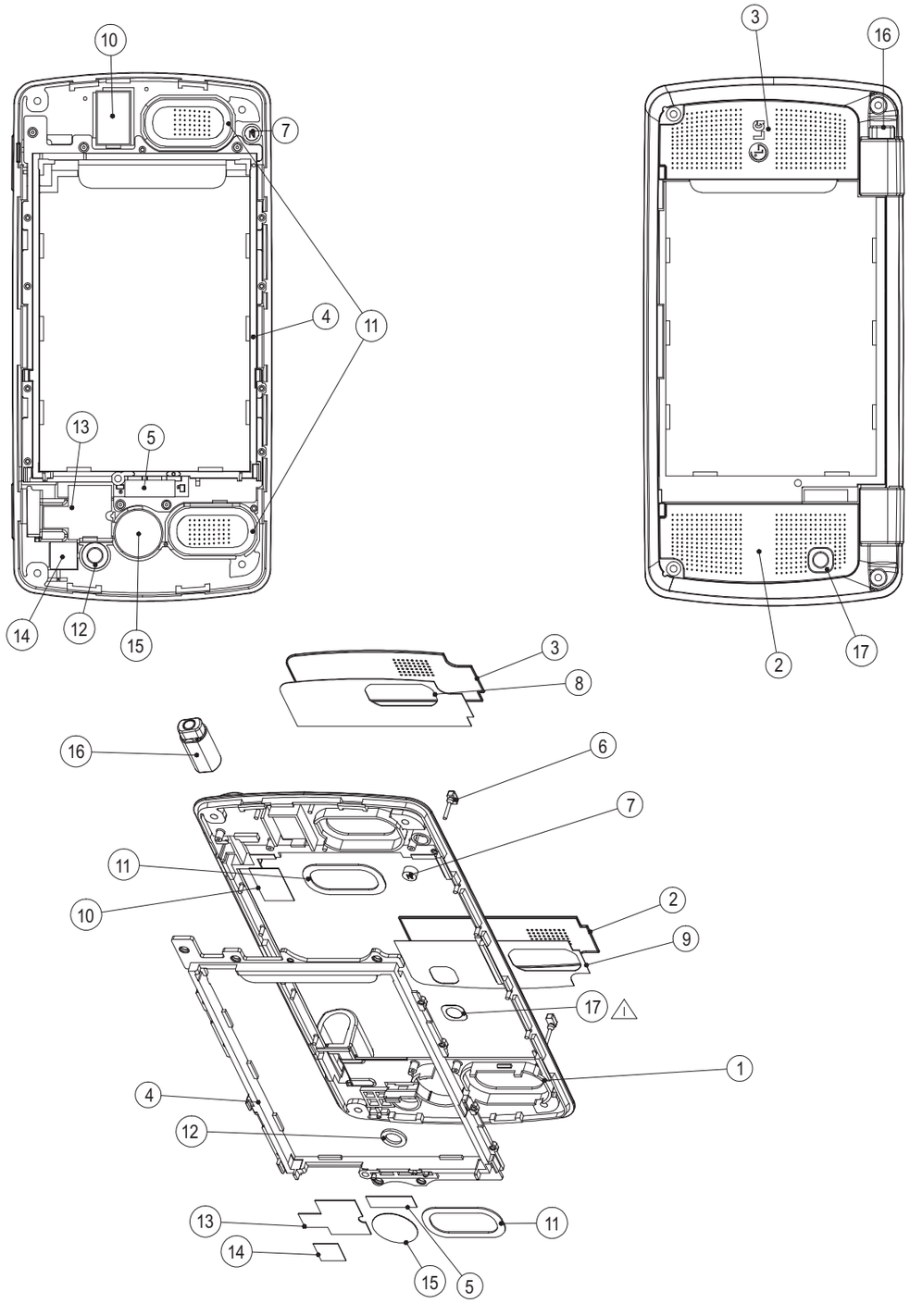
12.1 EXPLODED VIEW



NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK
44	DECO,SPEAKER	1	MDAN001380I	
43	TAPE,DECO	1	MTAA016230I	
42	TAPE,DECO	1	MTAA016220I	
41	STOPPER,FOLDER	2	MSGC000240I	
40	TAPE,CAMERA	1	MTAK001290I	
39	BUSHING,HINGE	1	MBIB000640I	
38	HINGE,FOLDER	1	MHFD001380I	
37	COVER,FOLDER(LOWER)	1	MCJH004220I	
36	PAD,SPEAKER	1	MPBN005740I	
35	TAPE,MOTOR	1	MTAF001950I	
34	TAPE,FLEXIBLE PCB	1	MTAJ000810I	
33	PAD,CAMERA	1	MPBT006000I	
32	PAD,CONNECTOR	1	MPBU003160I	
31	TAPE, FPCB CONNECTOR	1	MTAJ000790I	
30	MAGNET,SWITCH	1	MMAA000030I	
29	PAD,SPEAKER	1	MPBN005740I	
28	TAPE, RECEIVER	1	MTAZ021700I	
27	SPEAKER	1	SUSY0028002	
26	PAD,SPEAKER	1	MPBN005950I	
25	BRACKET,LCD	1	MBFF001690I	
24	VIBRATOR,MOTOR	1	SJMY0008404	
23	PAD,MOTOR	1	MPBJ005610I	
22	CAMERA	1	SVCY001400I	
21	SPEAKER	1	SUSY0028003	
20	PCB ASSY,FLEXIBLE	1	SACY006710I	
19	RECEIVER	1	SURY001340I	
18	LCD MODULE	1	SVLM002760I	
17	GASKET, KEYPCB	1	MGAZ006260I	
16	INSULATOR, KEYPCB	1	MIDZ017320I	
15	PCB ASSY,KEYPAD,SMT	1	SAEE002780I	
14	PAD,CAMERA	1	MPBT005970I	
13	DOME ASSY,METAL	1	ADCA007560I	
12	SCREW MACHINE	1	GMZZ002400I	
11	PAD,SPEAKER	1	MPBN005710I	
10	PAD, UPPER	1	MPBN005890I	
9	PAD,RECEIVER	1	MPBM002380I	
8	COVER,FOLDER(UPPER)	1	MCJJ005190I	
7	FILTER,RECEIVER	1	MFBB002690I	
6	TAPE,WINDOW(SUB)	1	MTAE003560I	
5	PAD,LCD(SUB)	1	MPBQ003660I	
4	BUTTON ASSY,SUB	1	ABGG000170I	
3	DECO,FOLDER(UPPER)	1	MDAE004200I	
2	WINDOW,LCD(SUB)	1	MWAF004000I	
1	TAPE,PROTECTION	1	MTAB024880I	

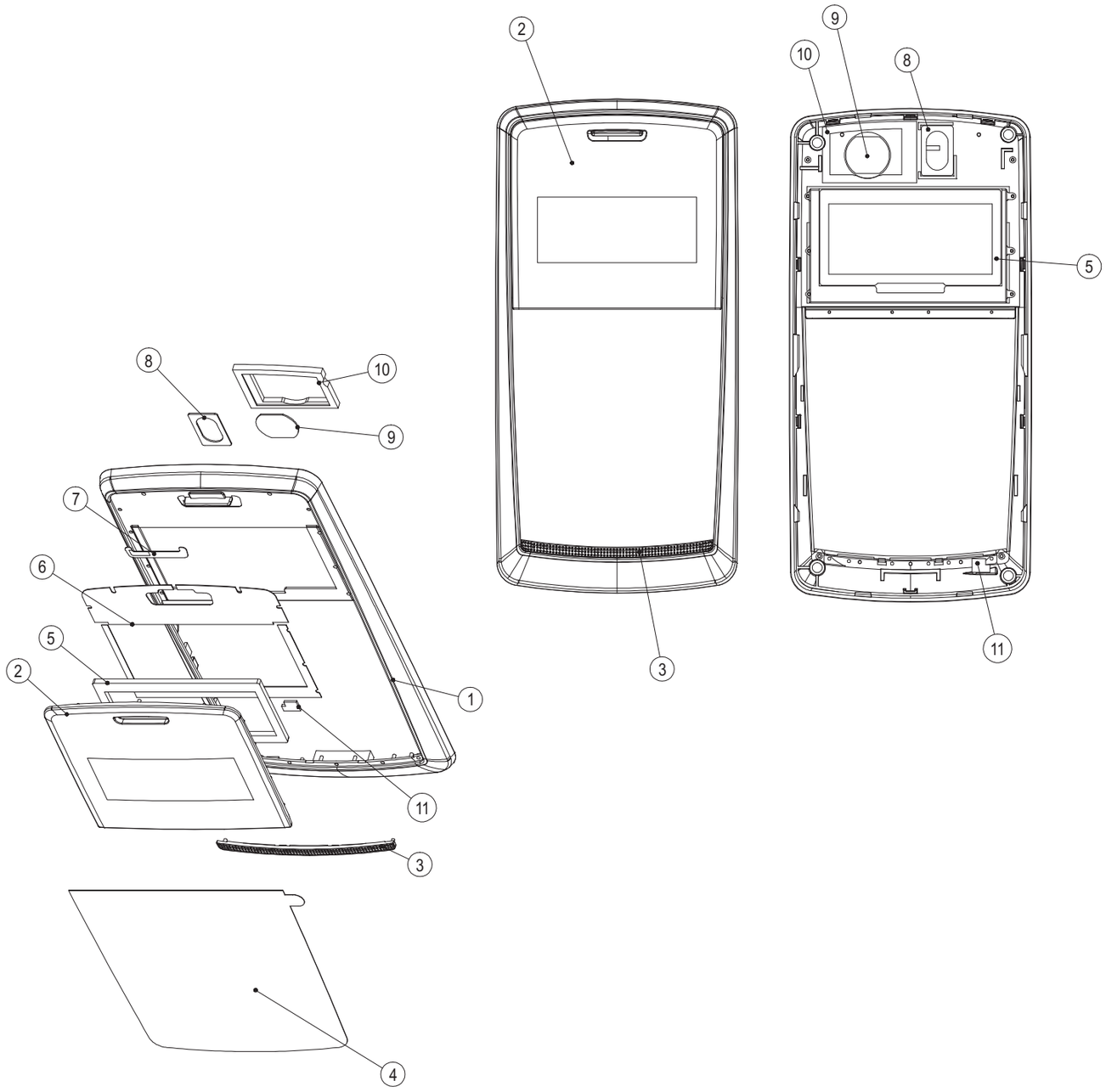
NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK
88	BATTERY PACK,LI-POLYMER	1	SBPP002590I	
87	CAP,SCREW 5	1	MCCH012290I	
86	CAP,SCREW 4	1	MCCH012280I	
85	CAP,SCREW 3	1	MCCH012260I	
84	CAP,SCREW 2	1	MCCH012250I	
83	CAP,SCREW 1	1	MCCH012240I	
82	SCREW MACHINE,BIND	6	GMEY0011201	
81	LOCKER,BATTERY	1	MLEA004430I	
80	CAP,MULTIMEDIA CARD	1	MCCG001080I	
79	TAPE,PROTECTION	1	MTAB024150I	
78	WINDOW,CAMERA	1	MWAE003220I	
77	TAPE,WINDOW	1	MTAD008960I	
76	CAP,RECEPTACLE	1	MCCE004190I	
75	COVER,REAR	1	MCJN008030I	
74	PAD,CAMERA	1	MPBT006010I	
73	PAD,CONNECTOR	1	MPBU003170I	
72	ANTENNA,GSM,FIXED	1	SNGF003440I	
71	PAD,MIKE	1	MPBH003900I	
70	PLATE	1	MPFZ003160I	
69	GASKET,SHIELD FORM	1	MGAD016720I	
68	BRACKET,CAMERA	1	MBFP000870I	
67	PCB ASSY,SUB,SMT	1	SAJE002420I	
66	TAPE,SHIELD	1	MTAC006720I	
65	PAD,BATTERY	1	MPBZ021370I	
64	CAN,SHIELD	1	MCBA002750I	
63	ABSORBER	1	MAAA000080I	
62	INSULATOR,CAN2	1	MIDZ017700I	
61	INSULATOR,CAN1	1	MIDZ017710I	
60	LABEL,A/S	1	MLAB000110 2	
59	CAMERA	1	SVCY001600I	
58	PCB ASSY,MAIN,SMT	1	SAFF016910I	
57	PCB,SIDEKEY	1	SPKY005580I	
56	DOME ASSY,METAL	1	ADCA007570I	
55	BUTTON ASSY,MAIN	1	ABGF000200I	
54	COVER,FRONT	1	MCJK008330I	
53	BUTTON,SIDE	1	MBJL005170I	
52	TAPE,PROTECTION	1	MTAB024140I	
51	CAP,SCREW	1	MCCH013200I	
50	CAP,SCREW	1	MCCH013190I	
49	CAP,SCREW	2	MCCH012230I	
48	SCREW MACHINE,BIND	4	GMEY001060I	
47	WINDOW,CAMERA	1	MWAE003210I	
46	WINDOW ASSY,LCD	1	AWAB003120I	
45	DECO,SPEAKER	1	MDAN001370I	

12. EXPLODED VIEW & REPLACEMENT PART LIST



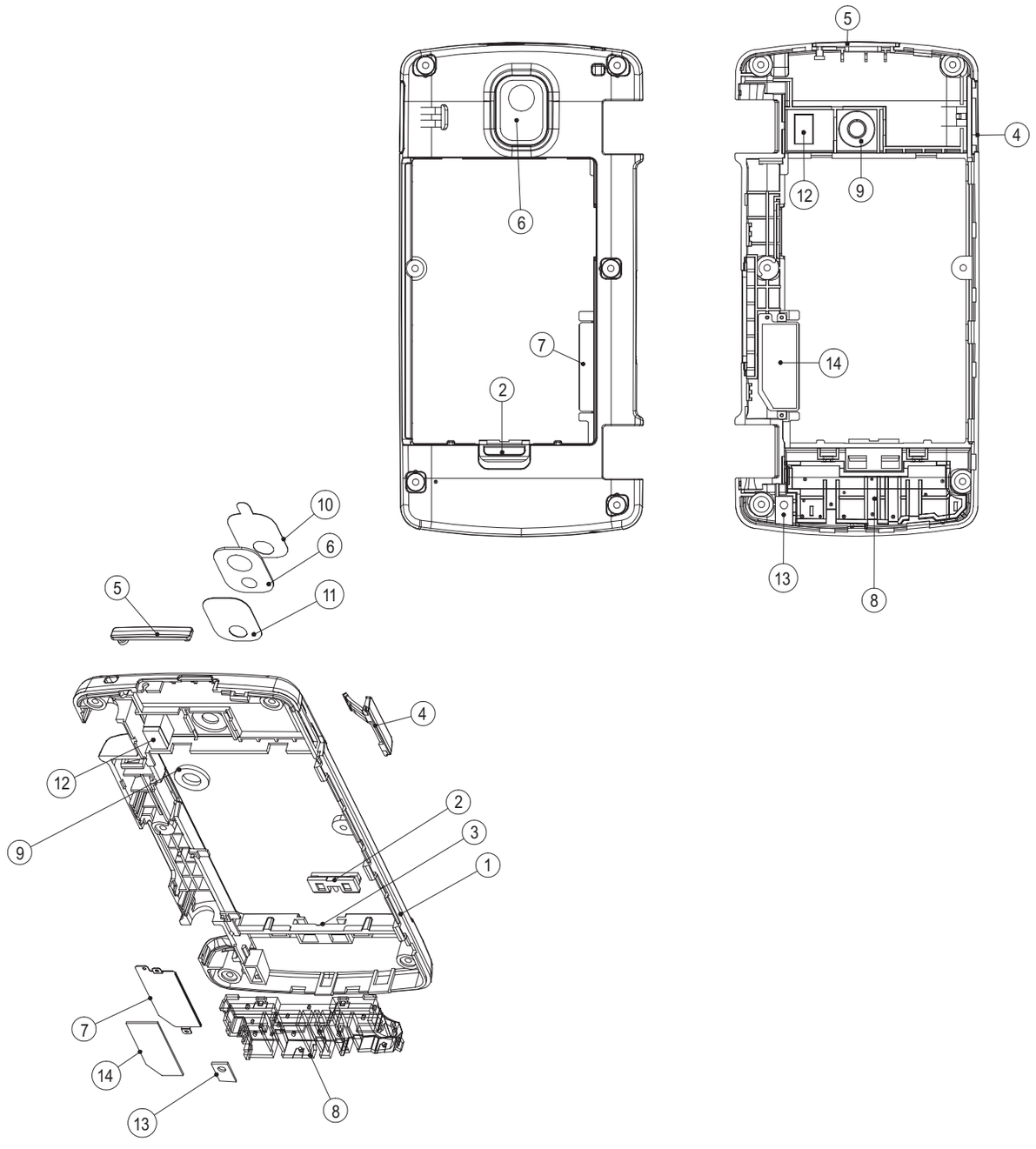
17	TAPE, CAMERA	1	MTAK0012901	
16	HINGE,FOLDER	1	MHFD0013801	
15	TAPE, MOTOR	1	MTAF0019501	
14	TAPE,FLEXIBLE PCB	1	MTAJ0007901	
13	PAD, CONNECTOR	1	MPBU0031601	
12	PAD, CAMERA	1	MPBT0060001	
11	PAD, SPEAKER	2	MPBN0057401	
10	TAPE, RECEIVER	1	MTAZ0217001	
9	TAPE, DECO	1	MTAA0162301	
8	TAPE, DECO	1	MTAA0162201	
7	MAGNET,SWITCH	1	MMAA0000301	
6	STOPPER,FOLDER	2	MSGC0002401	
5	TAPE,FLEXIBLE PCB	1	MTAJ0008101	
4	BRACKET,LCD	1	MBFF0016901	
3	DECO,SPEAKER	1	MDAN0013801	
2	DECO,SPEAKER	1	MDAN0013701	
1	COVER,FOLDER(LOWER)	1	MCJH0042201	
NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK

12. EXPLODED VIEW & REPLACEMENT PART LIST



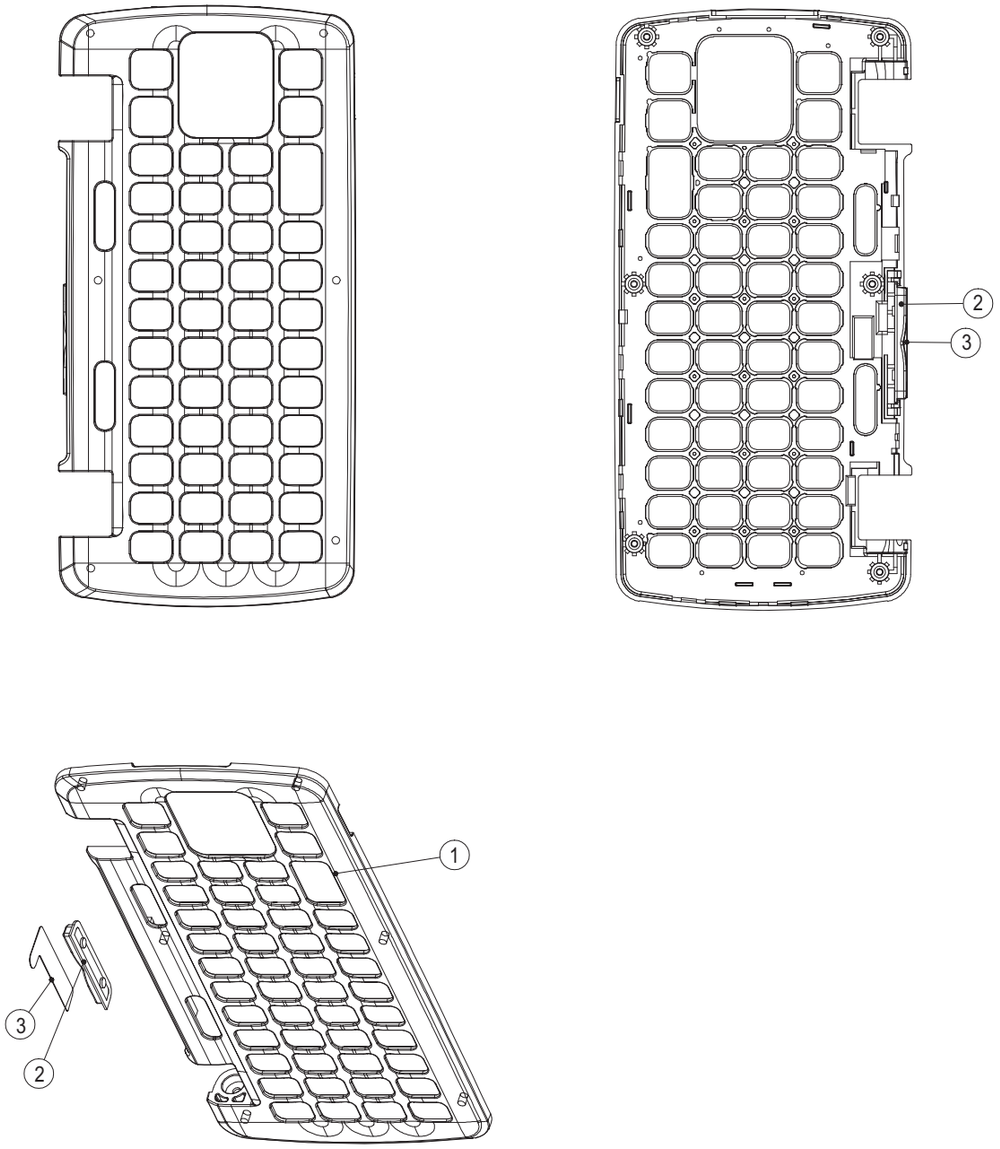
11	PAD,CAMERA	1	MPBT0059701	
10	PAD	1	MPBN0058901	
9	PAD, SPEAKER	1	MPBN0057101	
8	PAD, RECEIVER	1	MPBM0023801	
7	FILTER,RECEIVER	1	MFBB0026901	
6	TAPE,WINDOW(SUB)	1	MTAE0035601	
5	PAD,LCD(SUB)	1	MPBQ0036601	
4	TAPE,PROTECTION	1	MTAB0240501	
3	DECO,FOLDER(UPPER)	1	MDAE0042001	
2	WINDOW,LCD(SUB)	1	MWAF0040001	
1	COVER,FOLDER(UPPER)	1	MCJJ0051901	
NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK

12. EXPLODED VIEW & REPLACEMENT PART LIST



14	GASKET, CONNECTOR	1	MGAD0167201	
13	PAD, MIC	1	MPBH0039001	
12	PAD, CONNECTOR	1	MPBU0031701	
11	TAPE, WINDOW	1	MTAD0089601	
10	TAPE, PROTECTION	1	MTAB0241501	
9	PAD, CAMERA	1	MPBT0060101	
8	ANTENNA	1	SNGF0034401	
7	PLATE	1	MPFZ0031601	
6	WINDOW,CAMERA	1	MWAE0032201	
5	CAP,RECEPTACLE	1	MCCE0041901	
4	CAP,MULTIMEDIA CARD	1	MCCG0010801	
3	SPRING	1	MSDC0009201	
2	LOCKER,BATTERY	1	MLEA0044301	
1	COVER,REAR	1	MCJN0080301	
NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK

12. EXPLODED VIEW & REPLACEMENT PART LIST



NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK
3	TAPE, PROTECTION	1	MTAB0241401	
2	BUTTON,SIDE	1	MBJL0051701	
1	COVER,FRONT	1	MCJK0083301	

12.2 Replacement Parts <Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
1		IMT,FOLDER	TIFF0015911		Black	
4	ADEY00	DATA KIT	ADEY0015701	KT610 CD ASSY for H3G Italy	Without Color	
5	MCHZ00	COMPACT DISK	MCHZ0051001	COMPLEX, (empty), , , , ,	Black	
3	APLY00	PALLET ASSY	APLY0002510	Nyx Hutchison STD1(9501/Angle/3901 Bag/2401 Bag)	Without Color	
4	MPCY00	PALLET	MPCY0009501	PALLET(G7100 for Orange UK_EUR)	Black	
3	MBEE00	BOX,MASTER	MBEE0058701	BOX, TW, , , , ,	Without Color	
3	MCJZ00	COVER	MCJZ0053001	BOX, TW, , , , ,	Without Color	
3	MLAC00	LABEL,BARCODE	MLAC0004541	PRINTING, (empty), , , , ,	Without Color	
3	MLAJ00	LABEL,MASTER BOX	MLAJ0004401	LABEL,MASTER BOX(for C1300i NEW_CGR)	Without Color	
3	MPBA00	PAD,BOX	MPBA0006601	COMPLEX, (empty), , , , ,	Without Color	
2	APEY	PHONE	APEY0545702		Black	
3	ACGG00	COVER ASSY,FOLDER	ACGG0087601		Black	
4	ABGF00	BUTTON ASSY,MAIN	ABGF0002001		Black	55
4	ABGG00	BUTTON ASSY,SUB	ABGG0001701		Black	3
4	ACGH00	COVER ASSY,FOLDER(LOWER)	ACGH0052101		Black	
5	MBFF00	BRACKET,LCD	MBFF0016901	CASTING, Zn Alloy, , , , ,	Color Unfixed	D, 25
5	MCJH00	COVER,FOLDER(LOWER)	MCJH0042201	MOLD, PC LUPOY SC-2302, , , , ,	Black	A, 37
5	MDAN00	DECO,SPEAKER	MDAN0013801	PRESS, STS, , , , ,	Black	C, 44
5	MDAN01	DECO,SPEAKER	MDAN0013701	PRESS, STS, , , , ,	Black	B, 45
5	MHFD00	HINGE,FOLDER	MHFD0013801	COMPLEX, (empty), , , , ,	Metal Silver	P, 38
5	MMAA00	MAGNET,SWITCH	MMAA0000301			G, 30
5	MPBN00	PAD,SPEAKER	MPBN0057401	COMPLEX, (empty), , , , ,	Black	K, 29, 36
5	MPBT00	PAD,CAMERA	MPBT0060001	COMPLEX, (empty), , , , ,	Black	L, 33
5	MPBU00	PAD,CONNECTOR	MPBU0031601	COMPLEX, (empty), , , , ,	Black	M, 32
5	MSGC00	STOPPER,FOLDER	MSGC0002401	MOLD, Urethane Rubber S190A, , , , ,	Color Unfixed	F, 41
5	MTAA00	TAPE,DECO	MTAA0162201	COMPLEX, (empty), , , , ,	Black	H, 42
5	MTAA01	TAPE,DECO	MTAA0162301	COMPLEX, (empty), , , , ,	Black	I, 43
5	MTAF00	TAPE,MOTOR	MTAF0019501	COMPLEX, (empty), , , , ,	Black	O, 35
5	MTAJ00	TAPE,FLEXIBLE PCB	MTAJ0007901	COMPLEX, (empty), , , , ,	Black	N, 31

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MTAJ01	TAPE,FLEXIBLE PCB	MTAJ0008101	COMPLEX, (empty), , , , ,	Black	E, 34
5	MTAK00	TAPE,CAMERA	MTAK0012901	COMPLEX, (empty), , , , ,	Black	Q, 40
5	MTAZ00	TAPE	MTAZ0217001	COMPLEX, (empty), , , , ,	Black	J, 28
4	ACGJ00	COVER ASSY,FOLDER(UPPER)	ACGJ0068901		Black	
5	MCJJ00	COVER,FOLDER(UPPER)	MCJJ0051901	MOLD, PC LUPOY SC-1004A, , , , ,	Black	*1, 8
5	MDAE00	DECO,FOLDER(UPPER)	MDAE0042001	MOLD, PMMA HI835M, , , , ,	Black	*3, 3
5	MFBB00	FILTER,RECEIVER	MFBB0026901	COMPLEX, (empty), , , , ,	Black	*7, 7
5	MPBM00	PAD,RECEIVER	MPBM0023801	COMPLEX, (empty), , , , ,	Black	*8, 9
5	MPBN00	PAD,SPEAKER	MPBN0057101	COMPLEX, (empty), , , , ,	Black	*9, 11
5	MPBN01	PAD,SPEAKER	MPBN0058901	COMPLEX, (empty), , , , ,	Black	*10, 10
5	MPBQ00	PAD,LCD(SUB)	MPBQ0036601	COMPLEX, (empty), , , , ,	Black	*5, 5
5	MPBT00	PAD,CAMERA	MPBT0059701	COMPLEX, (empty), , , , ,	Black	*11, 14
5	MTAB00	TAPE,PROTECTION	MTAB0240501	COMPLEX, (empty), , , , ,	Black	*4
5	MTAE00	TAPE,WINDOW(SUB)	MTAE0035601	COMPLEX, (empty), , , , ,	Black	*6 ,6
5	MWAF00	WINDOW,LCD(SUB)	MWAF0040001	MOLD, PMMA HI835M, , , , ,	Black	*2, 2
4	ACGK00	COVER ASSY,FRONT	ACGK0105501		Black	
5	MBJL00	BUTTON,SIDE	MBJL0051701	COMPLEX, (empty), , , , ,	Without Color	<2>, 53
5	MCJK00	COVER,FRONT	MCJK0083301	MOLD, PC LUPOY SC-1004A, , , , ,	Color Unfixed	<1>, 54
5	MTAB00	TAPE,PROTECTION	MTAB0241401	COMPLEX, (empty), , , , ,	Black	<3>, 52
4	AWAB00	WINDOW ASSY,LCD	AWAB0031201		Black	46
4	GMEY00	SCREW MACHINE,BIND	GMEY0010601	1.4 mm,2.5 mm,MSWR3(BK) ,N ,+ ,NYLOK	Black	48
4	GMZZ01	SCREW MACHINE	GMZZ0024001	1.4 mm,1.5 mm,SWCH18A ,N ,+ ,- , ,; ,CH ,+ ,3.5 ,0.3 ,NYLON ,BLACK ,[empty] ,[empty]	Black	12
4	MBIB00	BUSHING,HINGE	MBIB0006401	CASTING, Zn Alloy, , , , ,	Color Unfixed	39
4	MCCH01	CAP,SCREW	MCCH0122301	MOLD, Silicone Rubber KE941-U, , , , ,	Color Unfixed	49
4	MCCH02	CAP,SCREW	MCCH0131901	PRESS, STS, , , , ,	Black	50
4	MCCH03	CAP,SCREW	MCCH0132001	PRESS, STS, , , , ,	Black	51
4	MIDZ00	INSULATOR	MIDZ0176701	COMPLEX, (empty), , , , ,	Black	
4	MIDZ01	INSULATOR	MIDZ0176801	COMPLEX, (empty), , , , ,	Black	
4	MPBJ00	PAD,MOTOR	MPBJ0056101	COMPLEX, (empty), , , , ,	Black	23
4	MPBN00	PAD,SPEAKER	MPBN0059501	COMPLEX, (empty), , , , ,	Black	26
4	MTAB00	TAPE,PROTECTION	MTAB0248801	COMPLEX, (empty), , , , ,	Black	1
4	MTAB01	TAPE,PROTECTION	MTAB0249001	COMPLEX, (empty), , , , ,	Black	
4	MWAE00	WINDOW,CAMERA	MWAE0032101	CUTTING, PMMA MR 200, , , , ,	Color Unfixed	47

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	ADCA00	DOME ASSY,METAL	ADCA0075601		Black	13
6	MGAZ00	GASKET	MGAZ0062601	COMPLEX, (empty), , , , ,	Black	17
6	MIDZ00	INSULATOR	MIDZ0173201	COMPLEX, (empty), , , , ,	Black	16
3	ACGM00	COVER ASSY,REAR	ACGM0106801		Black	
4	MCCE00	CAP,RECEPTACLE	MCCE0041901	COMPLEX, (empty), , , , ,	Color Unfixed	#5, 76
4	MCCG00	CAP,MULTIMEDIA CARD	MCCG0010801	COMPLEX, (empty), , , , ,	Color Unfixed	#4, 80
4	MCJN00	COVER,REAR	MCJN0080301	MOLD, PC LUPOY SC-1004A, , , , ,	Color Unfixed	#1, 75
4	MGAD00	GASKET,SHIELD FORM	MGAD0167201	COMPLEX, (empty), , , , ,	Black	#14, 69
4	MLEA00	LOCKER,BATTERY	MLEA0044301	MOLD, PC LUPOY SC-1004A, , , , ,	Color Unfixed	#2, 81
4	MPBH00	PAD,MIKE	MPBH0039001	COMPLEX, (empty), , , , ,	Black	#13, 71
4	MPBT00	PAD,CAMERA	MPBT0060101	COMPLEX, (empty), , , , ,	Black	#9, 74
4	MPBU00	PAD,CONNECTOR	MPBU0031701	COMPLEX, (empty), , , , ,	Black	#12, 73
4	MPFZ00	PLATE	MPFZ0031601	PRESS, STS, 0.15, , , ,	Color Unfixed	#7, 70-
4	MSDC00	SPRING,LOCKER	MSDC0009201		Black	#3
4	MTAB00	TAPE,PROTECTION	MTAB0241501	COMPLEX, (empty), , , , ,	Black	#10, 79
4	MTAD00	TAPE,WINDOW	MTAD0089601	COMPLEX, (empty), , , , ,	Black	#11, 77
4	MWAE00	WINDOW,CAMERA	MWAE0032201	CUTTING, PMMA MR 200, , , , ,	Color Unfixed	#6, 78
3	GMEY00	SCREW MACHINE,BIND	GMEY0011201	1.4 mm,3 mm,MSWR3(BK) ,N ,+ ,NYLOK	Without Color	82
3	MCCH00	CAP,SCREW	MCCH0122401	COMPLEX, (empty), , , , ,	Without Color	83
3	MCCH01	CAP,SCREW	MCCH0122501	COMPLEX, (empty), , , , ,	Without Color	84
3	MCCH02	CAP,SCREW	MCCH0122601	COMPLEX, (empty), , , , ,	Without Color	85
3	MCCH03	CAP,SCREW	MCCH0122801	COMPLEX, (empty), , , , ,	Without Color	86
3	MCCH04	CAP,SCREW	MCCH0122901	COMPLEX, (empty), , , , ,	Without Color	87
3	MLAK00	LABEL,MODEL	MLAK0006301	LG (30.5x21.5 4-1R)	Pearl White	
5	ACKA00	CAN ASSY,SHIELD	ACKA0004701		Black	
6	MAAA00	ABSORBER,ELECTROMAGNETIC WAVE	MAAA0000801	COMPLEX, (empty), , , , ,	Black	63
6	MCBA00	CAN,SHIELD	MCBA0027501	PRESS, STS, , , , ,	Color Unfixed	64
6	MIDZ00	INSULATOR	MIDZ0177001	COMPLEX, (empty), , , , ,	Black	62
6	MIDZ01	INSULATOR	MIDZ0177101	COMPLEX, (empty), , , , ,	Black	61
6	MLAB00	LABEL,A/S	MLAB0001102	C2000 USASV DIA 4.0	White	60
5	ADCA00	DOME ASSY,METAL	ADCA0075701		Black	56
5	MBFP00	BRACKET,CAMERA	MBFP0008701	MOLD, PC LUPOY SC-1004A, , , , ,	Black	68
5	MPBZ00	PAD	MPBZ0213701	COMPLEX, (empty), , , , ,	Black	65

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MTAC00	TAPE,SHIELD	MTAC0067201	COMPLEX, (empty), , , , ,	Black	66

12.2 Replacement Parts <Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	BSEA00	SUPPLEMENTARY PART	BSEA0003901	PACKING-LIST ENVELOPE		
6	BFAA00	FILM,INMOLD	BFAA0089301	; ,BLACK ,0.06 ,46.9 ,43.9	Black	
4	SACY00	PCB ASSY,FLEXIBLE	SACY0067101	Mian FPCB		20
5	SACB00	PCB ASSY,FLEXIBLE,INSERT	SACB0042201			
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0061501			
6	SACC00	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0039901			
7	CN101	CONNECTOR,BOARD TO BOARD	ENBY0043101	70 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,MALE ,SMD ,[empty] , ,		
7	CN103	CONNECTOR,BOARD TO BOARD	ENBY0022401	50 PIN,0.4 mm,ETC , ,H=0.9, Header		
7	FL101	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
7	FL102	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
6	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0051001			
7	CN100	CONNECTOR,BOARD TO BOARD	ENBY0019501	20 PIN,.4 mm,ETC , ,H=1.5, Socket		
7	CN102	CONNECTOR,BOARD TO BOARD	ENBY0016901	40 PIN,0.4 mm,STRAIGHT ,AU ,MALE		
7	FL100	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
7	R101	RES,CHIP,MAKER	ERHZ0000441	22 ohm,1/16W ,J ,1005 ,R/TP		
7	R102	RES,CHIP,MAKER	ERHZ0000441	22 ohm,1/16W ,J ,1005 ,R/TP		
6	SPCY	PCB,FLEXIBLE	SPCY0126901	POLYI ,0.4 mm,MULTI-6 ,PYXIS,50/50 ,; , , , , , , , , ,		
4	SAEY00	PCB ASSY,KEYPAD	SAEY0060601			
5	SAEB00	PCB ASSY,KEYPAD,INSERT	SAEB0022901			
5	SAEE00	PCB ASSY,KEYPAD,SMT	SAEE0027801			15
6	SAEC00	PCB ASSY,KEYPAD,SMT BOTTOM	SAEC0026301			
7	C100	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C101	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C102	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C104	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C105	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C106	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C107	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C108	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C109	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	CN100	CONNECTOR,BOARD TO BOARD	ENBY0016801	40 PIN,0.4 mm,STRAIGHT ,AU ,FEMALE		
7	D100	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
7	FB100	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	FB101	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	FB102	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	L100	INDUCTOR,CHIP	ELCH0005007	56 nH,J ,1005 ,R/TP ,		
7	R100	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R101	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	U100	IC	EUSY0230103	CSP ,35 PIN,R/TP ,CSP3.3x3.3,7Ch,4LDO ,; ,IC,Sub PMIC		
7	VA100	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA101	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA102	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA103	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA104	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA105	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA106	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA107	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA108	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA109	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA111	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA112	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA113	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	ZD100	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	SAED00	PCB ASSY,KEYPAD,SMT TOP	SAED0025901			
7	LD100	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	LD101	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		
7	R103	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R104	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	VA110	VARISTOR	SEVY0000701	14 V, ,SMD ,120pF, 1005		
6	SPEY00	PCB,KEYPAD	SPEY0054001	FR-4 ,0.5 mm,BUILD-UP 4 ,PYXIS ,; , , , , , , , , ,		
4	SJMY00	VIBRATOR,MOTOR	SJMY0008404	3 V,80 mA,10*2.7 , ,; ,3V ,55mA , ,12000 , , , ,		24
4	SURY00	RECEIVER	SURY0013401	ASSY ,107 dB,32 ohm,11*07 , ,; , , , , , ,CONNECTOR ,		19
4	SUSY00	SPEAKER	SUSY0028002	ASSY ,8 ohm,90 dB,1810 mm,15mm ,; , ,0.7W , , , , ,[empty]		27
4	SUSY01	SPEAKER	SUSY0028003	ASSY ,8 ohm,90 dB,1810 mm, ,; , , , , , , ,[empty]		21
4	SVCY00	CAMERA	SVCY0014001	CMOS ,VGA ,5.5x11.4x3.2t, Magna 1/7.4"		22
4	SVLM00	LCD MODULE	SVLM0027601	MAIN ,240*320(2.4") + 160*64(1.45") ,43*63.7*3.3t ,262k ,TFT ,TM ,M:R61505U,S:S6D0164 ,Qwerty		18
4	SNGF00	ANTENNA,GSM,FIXED	SNGF0034401	3.0 ,-2.0 dBd, ,EGSM+DCS+PCS+W-BAND I, INTERNAL ,; ,QUAD ,-2.0 ,50 ,3.0		#8, 72
3	SAFY00	PCB ASSY,MAIN	SAFY0252501			
4	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0081001			
5	SPKY00	PCB,SIDEKEY	SPKY0055801	POLYI ,0.2 mm,MULTI-2 ,PYXIS ,; , , , , , , , , ,		57
5	SVCY00	CAMERA	SVCY0016001	CMOS ,MEGA ,2M FF Toshiba 1/4" Sensor		59
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0169101			58
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0105701			
6	ANT605	ANTENNA,GSM,FIXED	SNGF0036601	3.0 ,-2.0 dBd, ,GPS, SMD, 10.0*3.0*4.1 ,; ,SINGLE ,-2.0 ,50 ,3.0		
6	C100	CAP,CERAMIC,CHIP	ECCH0002201	0.33 uF,16V ,Z ,NP0 ,TC ,1608 ,R/TP		
6	C101	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C102	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C103	CAP,CERAMIC,CHIP	ECCH0002201	0.33 uF,16V ,Z ,NP0 ,TC ,1608 ,R/TP		
6	C104	CAP,CERAMIC,CHIP	ECCH0002201	0.33 uF,16V ,Z ,NP0 ,TC ,1608 ,R/TP		
6	C105	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C107	CAP,CERAMIC,CHIP	ECCH0002201	0.33 uF,16V ,Z ,NP0 ,TC ,1608 ,R/TP		
6	C108	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C110	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C111	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C112	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C113	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C116	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C118	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C119	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C120	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C121	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C122	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C123	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C124	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C125	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C126	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C127	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C128	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C129	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C130	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C131	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C132	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C133	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C134	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C135	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C136	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C137	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C138	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C139	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C140	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C141	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C142	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C143	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C144	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C145	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C146	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C147	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C148	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C149	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C150	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C200	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C201	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C202	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C203	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C204	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C205	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C206	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C207	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C208	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C209	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C210	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C211	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C213	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C214	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C215	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C216	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C218	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C219	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C220	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C221	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C222	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C223	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C224	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C225	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C226	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C227	CAP,TANTAL,CHIP	ECTH0002201	10 uF,6.3V ,M ,STD ,1608 ,R/TP		
6	C230	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C231	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C232	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C233	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C234	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
6	C235	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C236	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
6	C237	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C238	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C239	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C240	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C241	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C243	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C244	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
6	C245	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C246	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C247	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C250	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C251	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C252	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
6	C253	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C254	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
6	C255	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C295	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C300	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C301	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C302	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C303	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C304	CAP,CERAMIC,CHIP	ECCH0000393	22000000 pF,6.3V ,M ,X5R ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C305	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C306	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C307	CAP,CERAMIC,CHIP	ECCH0000393	22000000 pF,6.3V ,M ,X5R ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C308	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C309	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C310	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C311	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C312	CAP,CHIP,MAKER	ECZH0001217	470 nF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C313	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C314	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C315	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C316	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C317	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C318	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C319	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C320	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C321	CAP,CERAMIC,CHIP	ECCH0009506	27 pF,25V ,J ,NP0 ,TC ,0603 ,R/TP		
6	C322	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C323	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C324	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C325	CAP,CHIP,MAKER	ECZH0001121	470 pF,50V ,K ,X7R ,HD ,1005 ,R/TP		
6	C326	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C327	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C328	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C329	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C400	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C401	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C402	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C403	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C404	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C405	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C406	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C407	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C408	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C410	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C411	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C412	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C413	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C414	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C415	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C416	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C417	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C500	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C501	CAP,TANTAL,CHIP	ECTH0003701	10 uF,6.3V ,M ,L_ESR ,1608 ,R/TP		
6	C502	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C503	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C504	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C505	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C512	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C513	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C514	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C515	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C516	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C517	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C518	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C519	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C520	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C521	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C522	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C523	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C524	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C525	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C526	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C527	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C528	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C529	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C530	CAP,CERAMIC,CHIP	ECCH0009230	2200 pF,10V ,K ,X5R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C531	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C532	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C533	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C534	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C535	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C536	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C537	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C538	CAP,CHIP,MAKER	ECZH0025920	1000 pF,16V ,K ,X7R ,HD ,0603 ,R/TP		
6	C539	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C540	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C541	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C542	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C543	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C544	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C545	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C546	CAP,CERAMIC,CHIP	ECCH0000161	33 nF,16V,K,X7R,HD,1005,R/TP		
6	C547	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C602	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C603	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	C604	CAP,CHIP,MAKER	ECZH0000841	56 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C606	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C607	CAP,CERAMIC,CHIP	ECCH0000118	30 pF,50V,J,NP0,TC,1005,R/TP		
6	C608	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C609	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
6	C611	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C612	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C613	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C614	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C615	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C616	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C617	INDUCTOR,CHIP	ELCH0003820	3 nH,S ,1005 ,R/TP ,PBFREE		
6	C618	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C619	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C620	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C621	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C622	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C623	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C624	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C625	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C626	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C627	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C629	CAP,CERAMIC,CHIP	ECCH0000123	51 pF,50V,J,NP0,TC,1005,R/TP		
6	C630	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C631	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C632	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C633	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C634	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C635	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C636	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C637	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C638	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C639	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C640	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C641	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C642	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C643	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C644	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C645	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C646	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C647	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C648	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C649	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C650	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C651	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C652	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C653	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C654	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C655	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C656	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C657	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C658	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C659	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C660	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C661	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C662	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C663	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C664	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C665	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C666	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C667	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C668	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C669	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C670	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C671	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C672	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C673	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C674	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C675	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
6	C676	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C677	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C679	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C680	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C681	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
6	C684	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C685	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C686	CAP,CHIP,MAKER	ECZH0004402	100000 pF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C687	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C688	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C689	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C692	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C693	INDUCTOR,CHIP	ELCH0004718	5.6 nH,S ,1005 ,R/TP ,		
6	C694	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C695	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C696	CAP,TANTAL,CHIP	ECTH0005101	2.2 uF,10V ,M ,STD ,1608 ,R/TP		
6	C697	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C698	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	C699	CAP,CERAMIC,CHIP	ECCH0000196	0.75 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C700	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C701	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C702	CAP,CHIP,MAKER	ECZH0000816	12 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C704	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C800	CAP,TANTAL,CHIP	ECTH0002002	33 uF,10V ,M ,L_ESR ,2012 ,R/TP ,; , ,[empty] ,[empty] , ,-55TO+125C , ,2.2X1.1X1.1MM ,[empty] ,[empty] ,[empty]		
6	C801	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C802	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C803	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C804	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C805	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C806	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C807	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C808	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C809	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C810	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C811	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C812	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C813	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C814	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C815	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C816	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C817	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
6	C818	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C819	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C820	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C821	CAP,CERAMIC,CHIP	ECCH0009104	33 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
6	C822	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C823	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C824	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C825	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C826	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C827	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C828	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C829	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C830	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C831	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C832	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C833	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C834	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C835	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C836	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C837	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C838	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C839	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C840	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C841	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C842	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C851	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C852	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C853	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C854	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C857	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C861	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C864	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C865	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C866	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C867	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	CN200	CONNECTOR,BOARD TO BOARD	ENBY0039301	34 PIN,0.5 mm,ETC , ,H=4.0, Plug		
6	CN201	CONNECTOR,I/O	ENRY0006801	18 PIN,0.4 mm,ETC , , ,; ,18 ,0.40MM ,ANGLE ,RECEPTACLE ,SMD ,R/TP ,		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	CN400	CONNECTOR,BOARD TO BOARD	ENBY0043001	70 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,[empty] , ,		
6	CN402	CONNECTOR,BOARD TO BOARD	ENBY0020401	24 PIN,0.4 mm,ETC , ,H=0.9, Socket		
6	CN800	CONNECTOR,ETC	ENZY0019801	3 PIN, mm,ETC , ,3 PIN, 1.9 mm, ETC , ,Battery Connector		
6	D100	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
6	D200	DIODE,SWITCHING	EDSY0017601	USF ,30 V,1 A,R/TP , ,; , , ,22A , , ,667mW ,[empty] ,[empty] ,[empty] ,1		
6	D201	DIODE,TVS	EDTY0008602	SOD-323 ,13.3 V,400 W,R/TP ,PB-FREE		
6	D800	DIODE,TVS	EDTY0008601	SOD-323 ,6 V,400 W,R/TP ,PB-FREE		
6	D801	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
6	FB200	FILTER,BEAD,CHIP	SFBH0009402	2500 ohm,1608 ,		
6	FB201	FILTER,BEAD,CHIP	SFBH0009304	1500 ohm,1005 ,Chip bead ,; ,1500ohm ,1x0. ,[empty] ,R/TP		
6	FB400	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FB401	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FB402	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FL400	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
6	FL401	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
6	FL402	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
6	FL403	FILTER,EMI/POWER	SFEY0013601	SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm, 7.5pF)		
6	FL404	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL405	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL406	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL407	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL408	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL601	FILTER,SAW	SFSY0024301	942.5 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
6	FL602	FILTER,SAW	SFSY0024302	1842.5 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
6	FL603	FILTER,SAW	SFSY0024303	1960 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
6	FL604	FILTER,SAW	SFSY0033403	1575.42 MHz,1.4*1.1*0.4 ,SMD ,1574.42M~1576.42M, IL 1.2, 5pin, U-U, 50-50, GPS HIGH ATTEN. ,; ,1575.42 ,1.4*1.1*0.4 ,SMD ,R/TP		
6	FL605	DUPLEXER,IMT	SDMY0001301	1950 MHz,2140 MHz,1.6 dB,2.0 dB,53 dB,44 dB,3.0*2.5*1.2 ,SMD ,FBAR, WCDMA duplexer ,; ,2140 ,44 ,1950 ,53 ,2.0 ,1.6 ,3.0X2.5X1.2 ,DUAL ,SMD ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	FL606	FILTER,SAW	SFSY0031201	2140 MHz,1.4*1.1*0.62 ,SMD ,2110M~2170M, IL 2.0, 5pin, U-B, 50-100_10, WCDMA BAND I Rx ,; ,2140 ,1.4*1.1*0.62 ,SMD ,R/TP		
6	FL607	FILTER,SAW	SFSY0031101	1950 MHz,1.4*1.1*0.62 ,SMD ,RF Filter for WCDMA 2Ghz ,; ,1950 ,1.4*1.1*0.62 ,SMD ,P/TR		
6	J300	CONN,SOCKET	ENSY0018701	6 PIN,ETC , ,2.54 mm,H=1.8		
6	L300	INDUCTOR,SMD,POWER	ELCP0009401	4.7 uH,M ,2.8*2.6*1.0 ,R/TP ,		
6	L301	INDUCTOR,SMD,POWER	ELCP0009401	4.7 uH,M ,2.8*2.6*1.0 ,R/TP ,		
6	L601	INDUCTOR,CHIP	ELCH0004705	8.2 nH,J ,1005 ,R/TP ,		
6	L602	INDUCTOR,CHIP	ELCH0004710	15 nH,J ,1005 ,R/TP ,		
6	L603	INDUCTOR,CHIP	ELCH0001052	18 nH,J ,1005 ,R/TP ,PBFREE		
6	L604	INDUCTOR,CHIP	ELCH0005019	68 nH,J ,1005 ,R/TP ,		
6	L606	INDUCTOR,CHIP	ELCH0004705	8.2 nH,J ,1005 ,R/TP ,		
6	L607	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L608	INDUCTOR,CHIP	ELCH0004701	12 nH,J ,1005 ,R/TP ,		
6	L609	INDUCTOR,CHIP	ELCH0004706	10 nH,J ,1005 ,R/TP ,		
6	L610	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L611	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L612	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	L613	INDUCTOR,CHIP	ELCH0004705	8.2 nH,J ,1005 ,R/TP ,		
6	L614	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
6	L615	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L616	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L617	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	L618	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	L619	INDUCTOR,CHIP	ELCH0001035	4.7 nH,S ,1005 ,R/TP ,PBFREE		
6	L620	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
6	L621	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L622	INDUCTOR,CHIP	ELCH0004703	1 nH,S ,1005 ,R/TP ,		
6	L623	INDUCTOR,CHIP	ELCH0012508	2 nH,S ,1005 ,R/TP ,Film chip, tolerance0.1nH		
6	L624	INDUCTOR,CHIP	ELCH0003820	3 nH,S ,1005 ,R/TP ,PBFREE		
6	L625	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	L626	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	L628	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		
6	L629	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	L630	INDUCTOR,CHIP	ELCH0004718	5.6 nH,S ,1005 ,R/TP ,		
6	L631	INDUCTOR,CHIP	ELCH0003820	3 nH,S ,1005 ,R/TP ,PBFREE		
6	L632	INDUCTOR,CHIP	ELCH0005016	8.2 nH,J ,1005 ,R/TP ,		
6	L633	CAP,CHIP,MAKER	ECZH0000846	8.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	L800	INDUCTOR,SMD,POWER	ELCP0008004	4.7 uH,M ,1 ,R/TP , ,; , ,0.3NH , , , , , ,NON SHIELD ,2.5X2X1MM ,11MM ,R/TP		
6	L801	INDUCTOR,SMD,POWER	ELCP0008004	4.7 uH,M ,1 ,R/TP , ,; , ,0.3NH , , , , , ,NON SHIELD ,2.5X2X1MM ,11MM ,R/TP		
6	L802	INDUCTOR,SMD,POWER	ELCP0008004	4.7 uH,M ,1 ,R/TP , ,; , ,0.3NH , , , , , ,NON SHIELD ,2.5X2X1MM ,11MM ,R/TP		
6	MIC200	MICROPHONE	SUMY0010603	PIN ,42 dB,4.72*3.76*1.25 ,MEMS MIC , , , ,OMNI ,1.5TO5V , ,SMD		
6	Q800	TR,FET,P-CHANNEL	EQFP0009401	SC75-6 ,19 W,-20 V,-12 A,R/TP ,P-Channel FET ,; ,P-CHANNEL ,MOSFET ,-20 ,8 ,-12 ,0.041 ,19 ,SC75 ,R/TP ,6P		
6	Q801	TR,FET,N-CHANNEL	EQFN0008501	SC-89 ,0.236 W,30 V,1.3 A,R/TP ,N-Channel FET ,; ,N-CHANNEL ,MOSFET ,30 ,20 ,1.3 ,0.129 ,1.3 ,SC89 ,R/TP ,6P		
6	R102	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R103	RES,CHIP,MAKER	ERHZ0000295	51 Kohm,1/16W ,F ,1005 ,R/TP		
6	R105	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R106	RES,CHIP	ERHY0009555	12 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R107	RES,CHIP	ERHY0009555	12 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R108	RES,CHIP	ERHY0009522	3.3 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R109	RES,CHIP	ERHY0009522	3.3 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R110	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R111	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R112	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R113	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R114	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R116	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R117	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R202	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R203	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R206	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R207	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R209	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R210	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R211	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R212	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R213	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
6	R214	RES,CHIP,MAKER	ERHZ0000220	1500 ohm,1/16W ,F ,1005 ,R/TP		
6	R215	RES,CHIP,MAKER	ERHZ0000467	330 Kohm,1/16W ,J ,1005 ,R/TP		
6	R216	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R217	RES,CHIP,MAKER	ERHZ0000288	470 Kohm,1/16W ,F ,1005 ,R/TP		
6	R218	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R219	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R220	RES,CHIP,MAKER	ERHZ0000537	680000 ohm,1/16W ,F ,1005 ,R/TP		
6	R300	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R301	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R302	RES,CHIP,MAKER	ERHZ0000287	47 Kohm,1/16W ,F ,1005 ,R/TP		
6	R304	RES,CHIP	ERHY0009539	20 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R305	RES,CHIP	ERHY0009539	20 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R306	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R307	RES,CHIP,MAKER	ERHZ0002401	12 Kohm,1/16W ,J ,1005 ,R/TP		
6	R406	RES,CHIP	ERHY0009522	3.3 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R407	RES,CHIP	ERHY0009522	3.3 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R408	RES,CHIP	ERHY0009558	68 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R500	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R501	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R502	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R505	RES,CHIP	ERHY0000105	51 ohm,1/16W,F,1005,R/TP		
6	R506	RES,CHIP,MAKER	ERHZ0000437	2 Kohm,1/16W ,J ,1005 ,R/TP		
6	R507	RES,CHIP,MAKER	ERHZ0000493	51 Kohm,1/16W ,J ,1005 ,R/TP		
6	R508	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R601	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R602	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
6	R603	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
6	R604	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
6	R605	RES,CHIP,MAKER	ERHZ0000517	91 ohm,1/16W ,J ,1005 ,R/TP		
6	R606	RES,CHIP,MAKER	ERHZ0000512	82 ohm,1/16W ,J ,1005 ,R/TP		
6	R607	RES,CHIP,MAKER	ERHZ0000512	82 ohm,1/16W ,J ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R608	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R609	RES,CHIP,MAKER	ERHZ0000415	130 ohm,1/16W ,J ,1005 ,R/TP		
6	R610	RES,CHIP,MAKER	ERHZ0000415	130 ohm,1/16W ,J ,1005 ,R/TP		
6	R611	RES,CHIP,MAKER	ERHZ0000348	12 ohm,1/16W ,F ,1005 ,R/TP		
6	R612	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R613	RES,CHIP,MAKER	ERHZ0000506	6800 ohm,1/16W ,J ,1005 ,R/TP		
6	R614	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R800	RES,CHIP,MAKER	ERHZ0000318	80.6 Kohm,1/16W ,F ,1005 ,R/TP		
6	R801	RES,CHIP,MAKER	ERHZ0000510	750 ohm,1/16W ,J ,1005 ,R/TP		
6	R803	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R804	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R805	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R806	RES,CHIP	ERHY0003201	1000 ohm,1/16W ,F ,1005 ,R/TP		
6	R807	RES,CHIP,MAKER	ERHZ0000493	51 Kohm,1/16W ,J ,1005 ,R/TP		
6	R808	RES,CHIP,MAKER	ERHZ0000203	10 Kohm,1/16W ,F ,1005 ,R/TP		
6	R809	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
6	R810	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R812	RES,CHIP,MAKER	ERHZ0000493	51 Kohm,1/16W ,J ,1005 ,R/TP		
6	R813	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R816	RES,CHIP,MAKER	ERHZ0004201	121000 ohm,1/16W ,F ,1005 ,R/TP		
6	R817	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R818	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R829	RES,CHIP,MAKER	ERHZ0000222	150 Kohm,1/16W ,F ,1005 ,R/TP		
6	R830	RES,CHIP,MAKER	ERHZ0000265	300 Kohm,1/16W ,F ,1005 ,R/TP		
6	R831	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R832	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
6	R836	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R837	RES,CHIP,MAKER	ERHZ0000411	120 ohm,1/16W ,J ,1005 ,R/TP		
6	R838	RES,CHIP,MAKER	ERHZ0000411	120 ohm,1/16W ,J ,1005 ,R/TP		
6	R839	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R840	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R843	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R844	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R849	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R850	RES,CHIP,MAKER	ERHZ0000456	2.2 ohm,1/16W ,J ,1005 ,R/TP		
6	R855	RES,CHIP,MAKER	ERHZ0000435	20 ohm,1/16W ,J ,1005 ,R/TP		
6	SW601	CONN,RF SWITCH	ENWY0005301	,SMD , dB,H=1.85 ,; ,3.00MM ,STRAIGHT ,RF ADAPTER ,SMD ,R/TP ,AU , ,		
6	U100	IC	EUSY0269702	BGA(14*14) ,355 PIN,R/TP ,1Gbit NAND+512Mbit DDR SDRAM, 3G Smart Phone for Open OS MAP		
6	U200	IC	EUSY0269201	Flip-Chip20 ,20 PIN,R/TP ,8 bit Level Translator, Pb Free		
6	U201	IC	EUSY0269401	I2C Dual Codec ,48 PIN,R/TP ,		
6	U203	IC	EUSY0254201	DFN ,12 PIN,R/TP ,Dual SPDT Analog Switch(Pb Free)		
6	U204	IC	EUSY0317101	WQFN ,10 PIN,R/TP ,1.8*1.4*0.75		
6	U206	IC	EUSY0250501	SC70 ,5 PIN,R/TP ,Comparator, pin compatible to EUSY0077701		
6	U207	FILTER,EMI/POWER	SFEY0015301	SMD ,Pb-free_Bais ,; ,Filter,LCR		
6	U208	IC	EUSY0333701	TLLGA ,8 PIN,R/TP ,OVP		
6	U209	IC	EUSY0339501	uCSP ,32 PIN,R/TP ,Audio Subsystem, Class D, Stereo, Capless ,; ,IC,Audio Sub System		
6	U300	IC	EUSY0300101	WQFN ,10 PIN,R/TP ,Small package Dual SPDT analog Switch, PB-Free		
6	U301	IC	EUSY0242101	FLIP-CHIP 11 ,11 PIN,R/TP ,4-BIT DUAL SUP. BUS BUFFER LEVEL TRANS / 26 OHM SERIES ON A		
6	U302	IC	EUSY0269501	TFBGA ,84 PIN,R/TP ,PMIC for Application Processor Engine of STM, Pb Free		
6	U303	IC	EUSY0223005	HVSOF5 ,5 PIN,R/TP ,150mA,3.0V,LDO		
6	U304	IC	EUSY0064501	SOT-23-5 ,5 PIN,R/TP ,2.7V LDO REGULATOR,PBFREE		
6	U305	IC	EUSY0102802	Micropak ,8 PIN,R/TP ,Daul 2 input AND gate,		
6	U400	IC	EUSY0270601	Microarray ,49 PIN,R/TP ,Key Scan Controller(up to 72 keys), Pb Free		
6	U401	IC	EUSY0317101	WQFN ,10 PIN,R/TP ,1.8*1.4*0.75		
6	U500	IC	EUSY0306201	Micro pak ,8 PIN,R/TP ,D Flip Flip		
6	U501	IC	EUSY0295601	CSP ,409 PIN,R/TP ,WCDMA/GSM/GPRS/EDGE/HSDPA Base Band		
6	U601	RF MODULE,HANDSET	SMRH0004201	MHz, MHz,QUAD EDGE 6x6 ,EMP U300 Tx Module		
6	U602	IC	EUSY0344001	QFN ,68 ,R/TP ,Quad GSM, Tri WCDMA RF Transceiver ,; ,IC,Tx/Rx		
6	U603	MODULE,ETC	SMZY0016501	LNA Module(GPS LNA+B/P Filter) ,: ,RF Module		
6	U604	PAM	SMPY0015501	28 dBm,40 %,90 mA,-40 dBc,26.5 dB,4x4x1.1 ,SMD ,MSM6280. Tr Switch Func included ,; , , , , , , , ,R/TP ,R/TP ,10		
6	U800	IC	EUSY0336902	FBGA ,225 PIN,ETC ,1G(LB/64Mx16/2.7V) NAND+512(4Mx32x4) SDRAM ,; ,IC,MCP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	U801	IC	EUSY0350001	CSP ,97 PIN,R/TP ,PMIC, CMOSRF RTR6285 reference ,; ,IC,PMIC		
6	U802	COUPLER,RF DIRECTIONAL	SCDY0004101	-20.2 dB,0.22 dB,34 dB,10*5*4 ,SMD ,Pb-free_WCDMA ,; ,[empty] ,1950MHz ,60MHz ,SMD ,R/TP		
6	U803	IC	EUSY0186502	Micropak ,6 PIN,R/TP ,Single SPDT Analog Switch, Pb Free		
6	U804	IC	EUSY0294701	SON1612-6 ,6 PIN,R/TP ,1.8V 150mA LDO Pb-Free		
6	VA200	VARISTOR	SEVY0004001	18 V, ,SMD ,3pF, 1005		
6	VA201	VARISTOR	SEVY0004001	18 V, ,SMD ,3pF, 1005		
6	VA202	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA203	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA204	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA205	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA206	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA207	DIODE,TVS	EDTY0009401	VMN2 ,5 V,10 W,R/TP ,1.0*0.6*0.4 ,; , ,7.82V , , ,100mW ,[empty] ,[empty] ,2P ,1		
6	VA208	DIODE,TVS	EDTY0009401	VMN2 ,5 V,10 W,R/TP ,1.0*0.6*0.4 ,; , ,7.82V , , ,100mW ,[empty] ,[empty] ,2P ,1		
6	VA800	VARISTOR	SEVY0005402	5.6 V, ,SMD ,1005 Siez , 50pF		
6	VA801	VARISTOR	SEVY0005402	5.6 V, ,SMD ,1005 Siez , 50pF		
6	VA802	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA803	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA804	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	X300	OSCILLATOR	EXSY0022201	19.2 MHz,20 PPM,15 pF,SMD ,3.2*2.5*1.0 ,1.71V ~ 1.89V, -20'C ~ +70'C ,; ,19.2MHz ,20PPM ,1.8V ,3.2 ,2.5 ,1.0 , ,SMD ,R/TP		
6	X601	VCTCXO	EXSK0005703	19.2 MHz,1.5 PPM,40 pF,SMD ,3.2*2.5*0.9 , ,; , ,1.5PPM ,2.8V ,3.2 ,2.5 ,0.9 , ,SMD ,P/TP		
6	X800	X-TAL	EXXY0024301	32.768 KHz,20 PPM,12.5 pF,70 Kohm,SMD ,3.2*1.5*0.9 ,-40'C ~ +85'C, C0 1.05pF, C1 fF ,; ,32.768 ,20PPM ,12.5 , , ,SMD ,R/TP		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0104301			
6	C418	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	LD400	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		
6	LD401	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		
6	LD402	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		
6	LD403	DIODE,LED,CHIP	EDLH0013701	WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R409	RES,CHIP,MAKER	ERHZ0000504	68 ohm,1/16W ,J ,1005 ,R/TP		
6	R410	RES,CHIP,MAKER	ERHZ0000504	68 ohm,1/16W ,J ,1005 ,R/TP		
6	R411	RES,CHIP,MAKER	ERHZ0000504	68 ohm,1/16W ,J ,1005 ,R/TP		
6	R412	RES,CHIP,MAKER	ERHZ0000504	68 ohm,1/16W ,J ,1005 ,R/TP		
6	R851	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R852	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R856	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	RA400	RES,ARRAY,R	ERNR0000404	100 Kohm,100 Kohm,8 PIN,J ,1/16W ,SMD ,R/TP		
6	RA401	RES,ARRAY,R	ERNR0000404	100 Kohm,100 Kohm,8 PIN,J ,1/16W ,SMD ,R/TP		
6	SPFY	PCB,MAIN	SPFY0165201	FR-4 ,0.8 mm,STAGGERED-10 ,3-8BVH,PYXIS ,; , , , , , , , , ,		
6	U402	IC	EUSY0362601	SSON004 ,4 ,R/TP ,Hall IC ,; ,IC,CMOS		
6	VA402	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA416	VARISTOR	SEVY0000701	14 V, ,SMD ,120pF, 1005		
6	VA805	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	ZD401	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	ZD402	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	ZD403	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	ZD404	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
5	WSYY00	SOFTWARE	WSYY0815401	SW-KT610-V10a-MAY-19-2008-H3G-IT-SEC-OFC		
3	SAJY00	PCB ASSY,SUB	SAJY0030501			
4	SAJB00	PCB ASSY,SUB,INSERT	SAJB0014001			
4	SAJE00	PCB ASSY,SUB,SMT	SAJE0024201			67
5	SAJC00	PCB ASSY,SUB,SMT BOTTOM	SAJC0023101			
6	C100	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C110	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C111	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C112	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C113	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C116	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C117	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C118	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C119	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C120	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	D100	DIODE,TVS	EDTY0009201	1.6*1.6*0.6 ,5 V,150 W,R/TP , ,; ,5 ,6 ,15 ,40 ,- ,[empty] ,R/TP ,6P ,4		
6	D101	DIODE,TVS	EDTY0009201	1.6*1.6*0.6 ,5 V,150 W,R/TP , ,; ,5 ,6 ,15 ,40 ,- ,[empty] ,R/TP ,6P ,4		
6	L101	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	R100	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R101	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R102	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R103	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R104	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R105	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R106	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	RA100	RES,ARRAY,R	ERNR0000403	10000 ohm, ohm,8 PIN,J ,1/32 W ,SMD ,R/TP		
6	U101	IC	EUSY0293401	VFBGA ,48 PIN,R/TP ,Bluetooth Single Chip(V2.0+EDR)		
6	X100	OSCILLATOR	EXSY0022201	19.2 MHz,20 PPM,15 pF,SMD ,3.2*2.5*1.0 ,1.71V ~ 1.89V, -20'C ~ +70'C ,; ,19.2MHz ,20PPM ,1.8V ,3.2 ,2.5 ,1.0 , ,SMD ,R/TP		
5	SAJD00	PCB ASSY,SUB,SMT TOP	SAJD0025701			
6	ANT100	ANTENNA,GSM,FIXED	SNGF0026001	3.0 ,-2.0 dBd, ,Bluetooth, SMD, 8.0*2.0*1.2 ,; ,SINGLE ,-2.0 ,50 ,3.0		
6	BAT100	BATTERY,CELL,LITHIUM	SBCL0001701	2 V,0.5 mAh,CYLINDER ,Reflow type BB, Max T 1.67, phi 4.8, Pb-Free		
6	C107	CAP,TANTAL,CHIP	ECTH0002002	33 uF,10V ,M ,L_ESR ,2012 ,R/TP ,; , ,[empty] ,[empty] , ,-55TO+125C , ,2.2X1.1X1.1MM ,[empty] ,[empty] ,[empty]		
6	C123	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	CN100	CONNECTOR,BOARD TO BOARD	ENBY0039401	34 PIN,0.5 mm,ETC , ,H=4.0, Socket		
6	FL100	FILTER,SAW	SFSY0027301	2450 MHz,2.0*1.5*1.0 ,SMD ,Pb-free_B/T_SAW		
6	S100	CONN,SOCKET	ENSY0015801	8 PIN,ETC , ,1.1 mm,H=1.9, Detect Pin		
5	SPJY00	PCB,SUB	SPJY0052201	FR-4 ,0.5 mm,BUILD-UP 6 ,PYXIS(T610) ,; , , , , , , , , ,		

12.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
3	SBPP00	BATTERY PACK,LI-POLYMER	SBPP0025901	3.7 V,950 mAh,1 CELL,PRISMATIC ,KT610 Europe BATT, Pb-Free ,; ,3.7V ,950mAh ,0.2C ,PRISMATIC ,59x37x38 , ,BLACK ,Hardpack ,Europe Label	Black	88
3	SGDY00	DATA CABLE	SGDY0010908	; ,[empty] ,[empty] ,[empty] ,18pin 6.2mm. NYX Box Package ,BLACK , ,N		
3	SGEY00	EAR PHONE/EAR MIKE SET	SGEY0003721	; ,RMS 20mW(0.56V,RMS) ,16Ohm+/-2.4Ohm 1KHZ ,116dB+/-3dB 1KHZ,3mW ,116dB 1KHZ ,96dB 100HZ ,[empty] ,BLACK ,18P MMI CONNECTOR , ,Earphone,Stereo		
3	SSAD00	ADAPTOR,AC-DC	SSAD0024506	100-240V ,5060 Hz,5.1 V,.7 A,CE ,18pin MMI, Nyx packing, Europe ,; , , , , , ,WALL 2P ,I/O CONNECTOR ,		
		ADAPTOR,AC-DC	SSAD0024507	100-240V ,5060 Hz,5.1 V,.7 A,CE ,18pin, Europe, Viewty packing ,; , ,5.1V ,0.7A , , ,WALL 2P ,I/O CONNECTOR ,		

Note