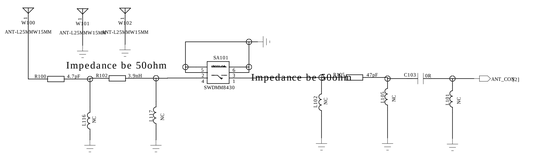
BLOCK DIAGRAM

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

		TITLE & REV: SP8825A-1_SCH_V1.0.0
		DOCUMENT NO.:
DESIGNER: Hanan.Qiu	DATED: 2012-08-14	DEPARTMENT: Hardware DEPT.
EQA: Vincent.Gao	DATED: 2012-08-14	COMPANY: Spreadtrum communications, Inc.
APPROVED: Gang.Xu	DATED: 2012-08-14	CONFIDENTIAL AND PROPRIETARY — SHEET: 1 OF 26

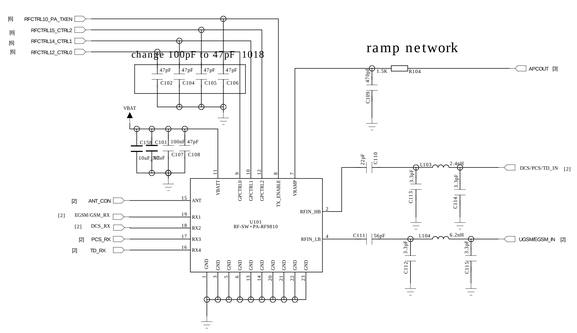
LTR	ECO NO:	APPROVED:	DATE:

RF ANT

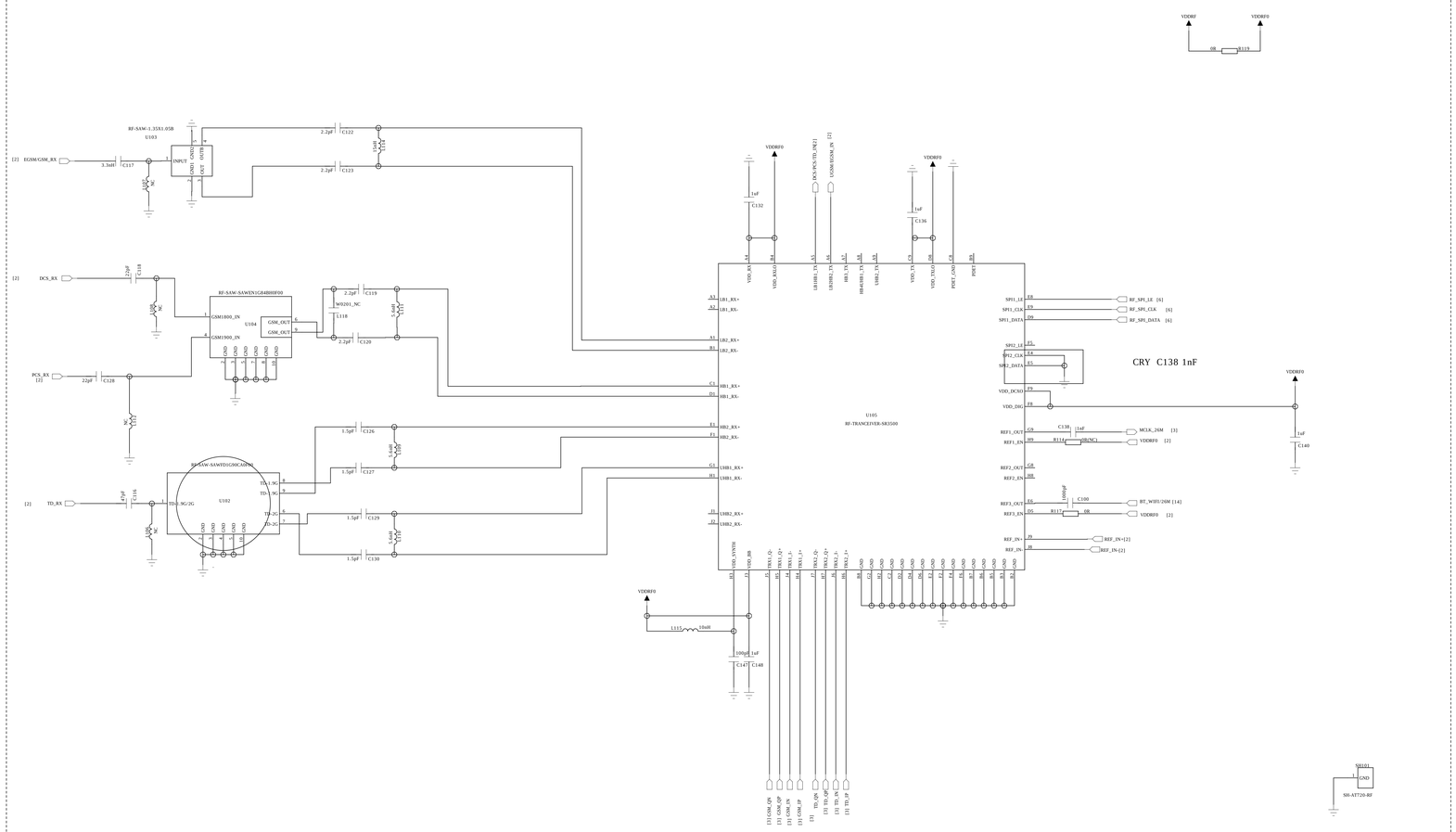


PA MODULE

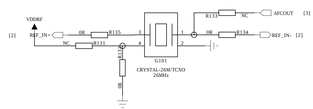
	VRAMP	TXEN	Ctrl_2	Ctrl_1	Ctrl_0	SWITCH
RX1 NC	0	0	1	0	0	0
RX2 UGSM/EGSM	0	0	0	1	0	0
RX3 DCS/PCS	0	0	0	1	1	0
RX4 TD_RX	0	0	0	0	1	0
TX LB GSM	RAMP	1	0	1	0	0
TX HB GSM	RAMP	1	0	1	1	1
TX LB EDGE	1	1	0	0	0	0
TX HB EDGE	1	1	0	0	1	1
TD_TX	0	1	0	0	1	0



RF TRANSCEIVER



26MHz DCXO or TCXO



DCXO,TCXO selection

VALUE	R131	R133	R134	R132	R132
DCXO	NF	NF	0ohm	0ohm	0ohm
TCXO	0ohm	0ohm	NF	0.1uF	1nF

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REVISION RECORD			
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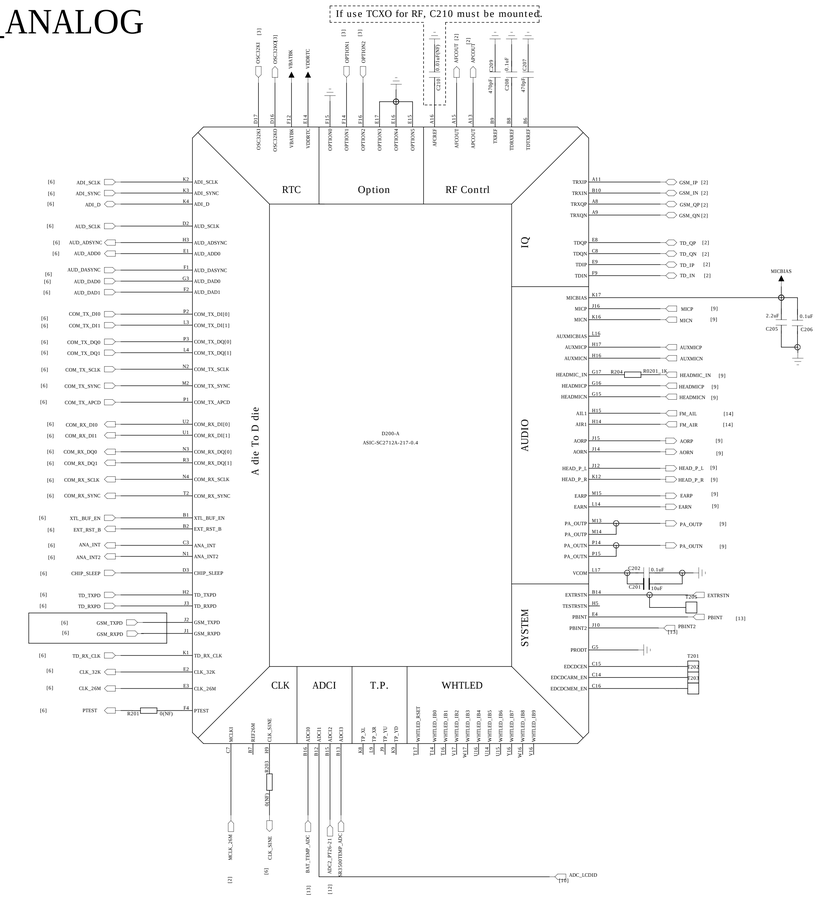
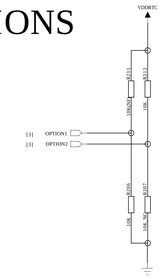
ABB_ANALOG

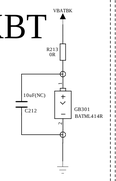


OPTIONS

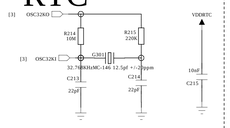


Option	Function	L	H
Option0	DCDC CORE OPTION OUTPUT	Internal DCDC	External DCDC
Option1	LDO POWER ON OPTION OUTPUT	LDO POWER ON BY SEQ	LDO POWER ON TOGETHER
Option2	NEW POWER ON RST OPTION OUTPUT	NEW POWER ON RST SCHEME(DIGITAL POR)	OLD POWER ON RST SCHEME(ANALOG POR)
Option3	DCDC ARM OPTION OUTPUT	Internal DCDC	External DCDC
Option4	DCDC MEM OPTION OUTPUT	Internal DCDC	External DCDC
Option5	DCDC MEM OUTPUT SELECT	DDR2 application (1.2V)	DDR1 application (1.8V)

BKBT



RTC



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REVISION RECORD			
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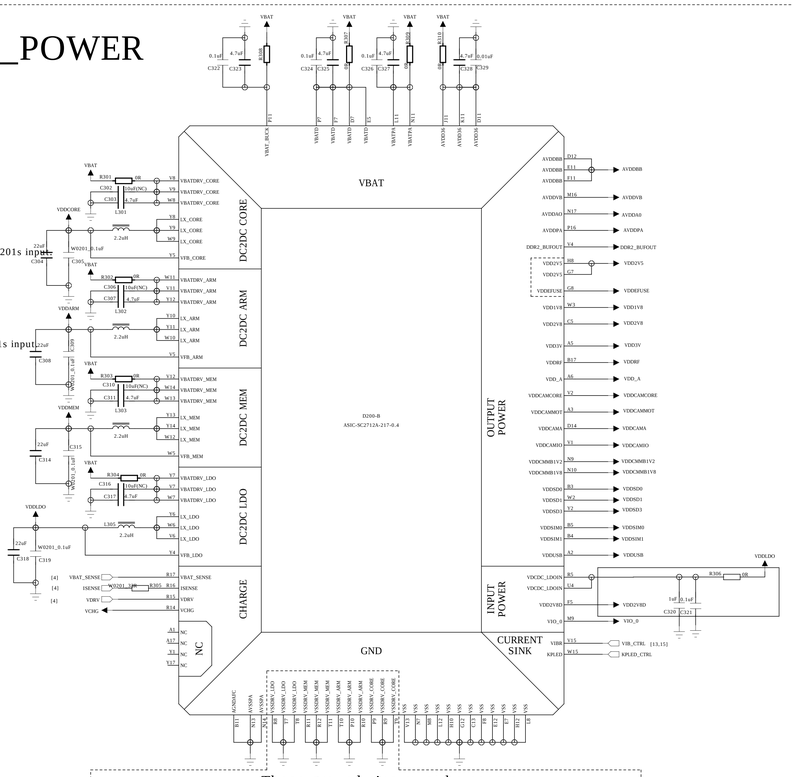
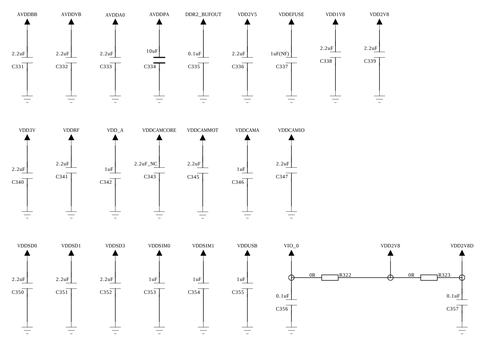
ABB_POWER

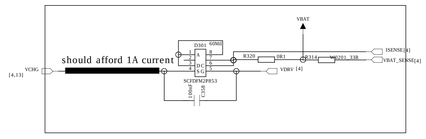


LDO ouput



All capacitors must be close to ABB.
DDR2_BUFOUT must be protected.
If do not use internal Audio PA, C334 can be not mounted.

Power	Output Voltage (V)	Output Current	Used Voltage	Default
VDD1V8	1.2/1.3/1.5/1.8	250mA	1.8V	ON
VDD2V5	2.5/2.75/2.9/3.0	110mA	2.5V	ON
VDD2V8	1.8/2.65/2.8/3.0	250mA	2.8V	ON
VDDSIM0	1.8/2.9/3.0/3.1	80mA	1.8/3.0V	OFF
VDDSIM1	1.8/2.9/3.0/3.1	80mA	1.8/3.0V	OFF
VDDCMMB1V8	1.2/1.3/1.5/1.8	250mA	1.8V	OFF
VDDCMMB1V2	1.2/1.3/1.5/1.8	200mA	1.2V	OFF
VDDRF	1.8/2.5/2.85/2.95	250mA	2.85V	ON
VDD3V	1.8/2.5/2.8/3.0	200mA	3.0V	OFF
VDDSD0	1.8/2.5/2.8/3.0	150mA	2.8V	OFF
VDDSD1	1.2/1.3/1.5/1.8	100mA	1.8V	OFF
VDDSD3	1.2/1.3/1.5/1.8	100mA	1.8V	OFF
VDDCAMCORE	1.2/1.3/1.5/1.8	200mA	1.5V	OFF
VDDCAMIO	1.2/1.3/1.5/1.8	200mA	1.8V	OFF
VDDCAMA	1.8/2.5/2.8/3.0	100mA	2.8V	OFF
VDDCAMMOT	1.8/2.8/3.0/3.3	150mA	2.8V	OFF
VDDUSB	3.1/3.2/3.3/3.4	60mA	3.3V	OFF
VDD_A	1.8	80mA	1.8V	ON
AVDDBB	2.8/2.9/3.0/3.1	60mA	3.0V	ON
AVDDVB	2.9/3.1/3.2/3.3 3.4/3.5/3.6/3.8	20mA	3.3V	OFF
AVDDAO	2.9/3.1/3.2/3.3 3.4/3.5/3.6/3.8	100mA	3.3V	OFF
VDDRTC	1.5/1.6/1.7/1.8	0.5mA	1.8V	ON
VBATBK	2.6/2.8/3.0/3.2		2.8V	ON
MICBIAS	1.9/2.1/2.3/2.5		2.1V	OFF
AUXMICBIAS	1.9/2.1/2.3/2.5		2.1V	OFF
VDDMEM	1.7/1.8/1.9/2.0 1.1/1.2/1.3/1.4	800mA	1.8V(DDR1) 1.2V(DDR2)	ON
VDDARM	0.65/0.7/0.8/0.9 1.0/1.1/1.2/1.3	1100mA	1.2V	ON
VDDCORE	0.65/0.7/0.8/0.9 1.0/1.1/1.2/1.3	800mA	1.1V	ON
VDDLDO	1.8/1.9/2.0/2.1 2.2/2.3/2.4/2.5	800mA	2.2V	ON



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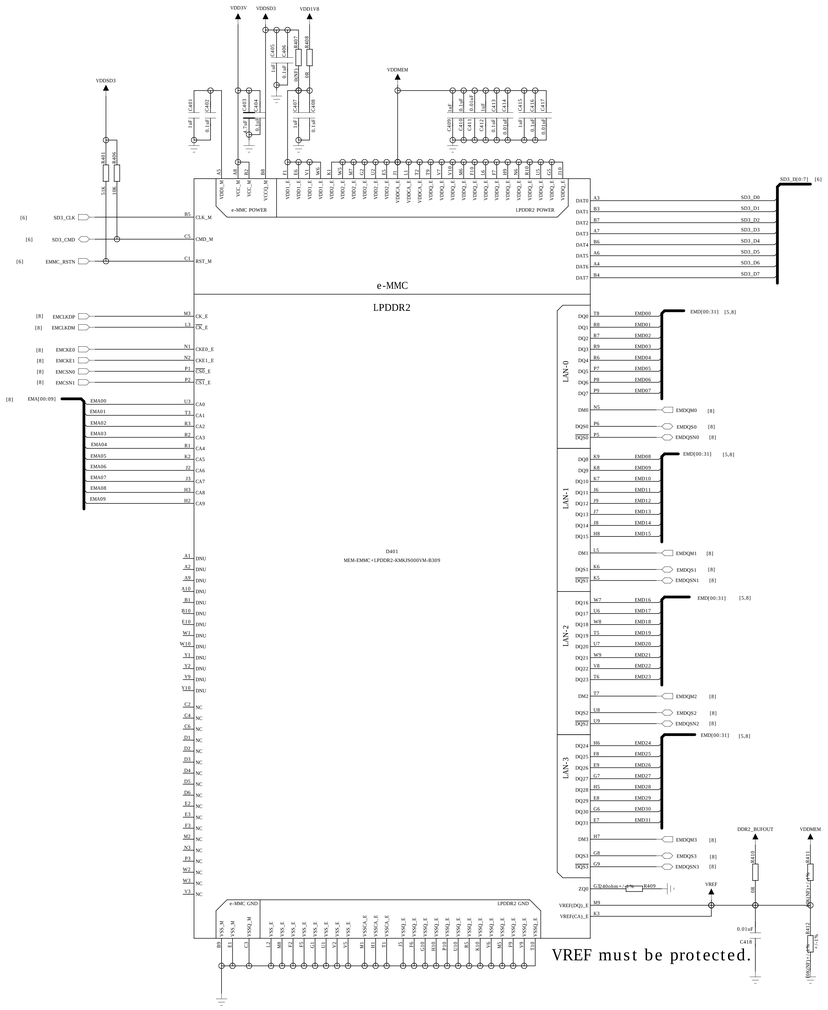
APPROVED: Gang.Xu	DATED: 2012-08-14	CONFIDENTIAL AND PROPRIETARY	SHEET: 3 OF 26

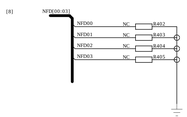
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

MCP

DDR1 Voltage is 1.8V, DDR2 Voltage is 1.2V.
EMMC Voltage is 3V, IO is 1.8V.



Strapping Pin



	0	1
NFD00	NAND:Small Page eMMC:VDD3V=1.8V	NAND:Large Page eMMC:VDD3V=3V
NFD01	NAND	eMMC
NFD02	eMMC IO 1.2V	eMMC IO 1.8V
NFD03	USB1.1 Download	USB2.0 Download

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REVISION RECORD			
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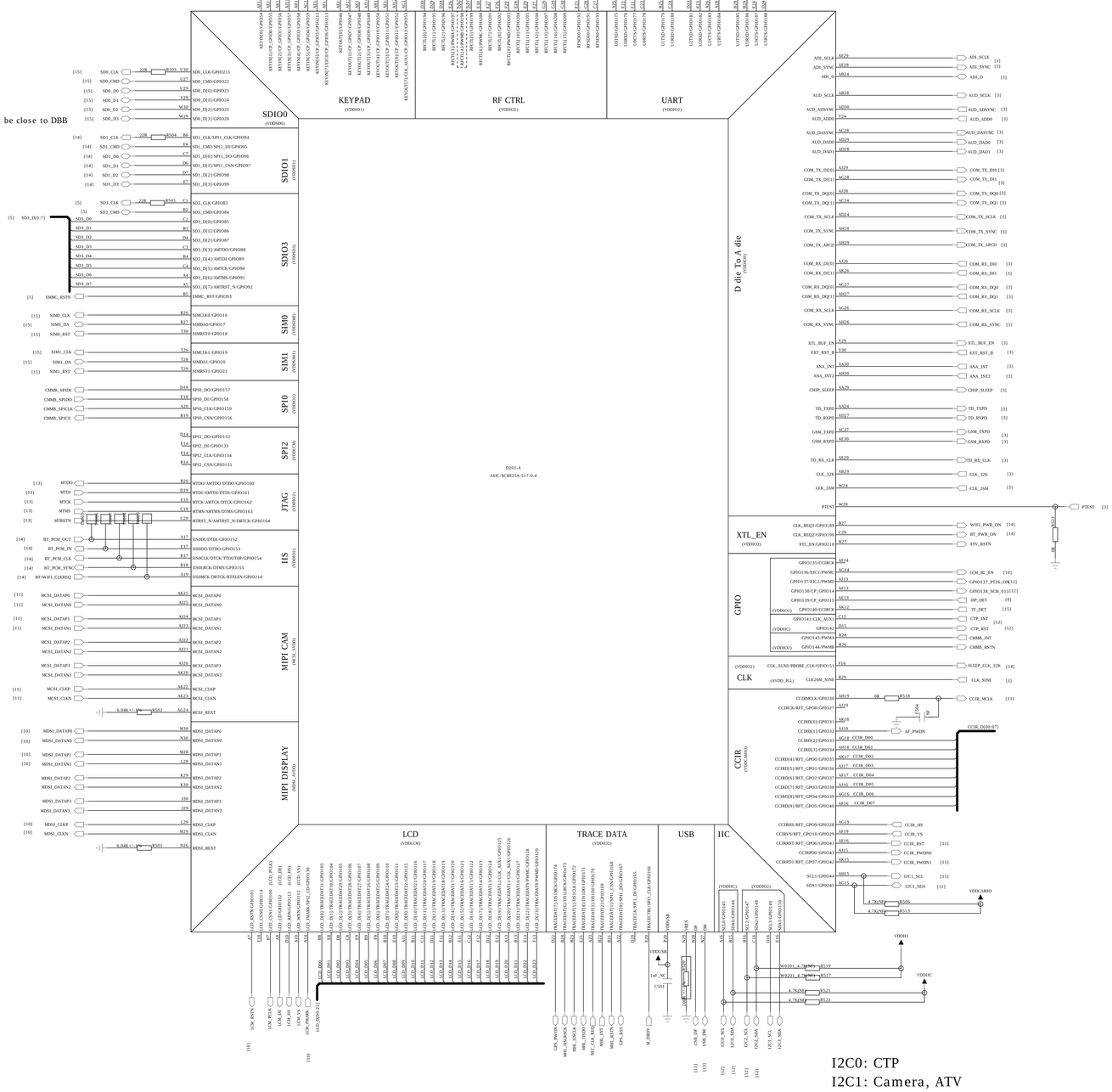
DBB_DIGITAL

R524 NF: Crystal for RF 26M
R524 Mounted: TCXO for RF 26M

R503¡«R505 must be close to DBB



I2C0: CTP
I2C1: Camera, ATV
I2C2: G Sensor, M Sensor, L+P Sensor, Gyroscope, FM
I2C3: LCM, NFC, MHL

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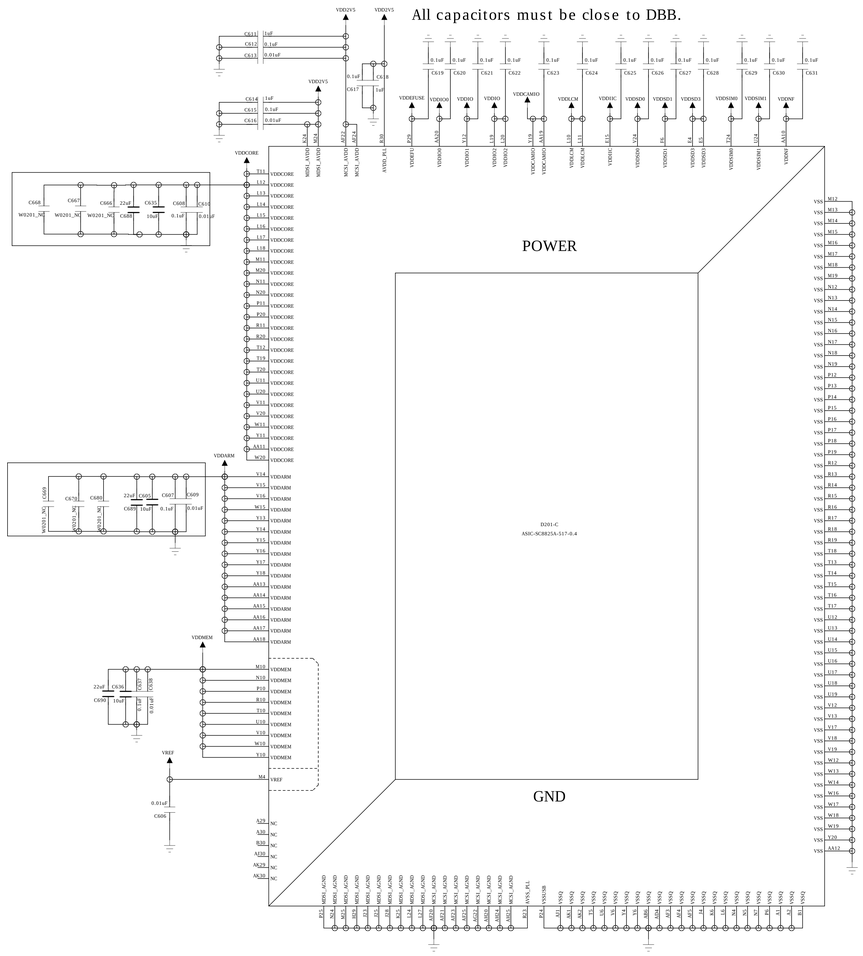
DBB_POWER



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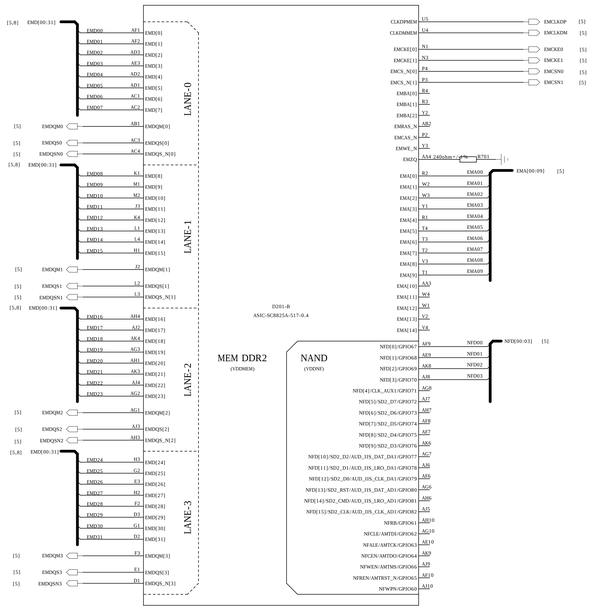
DBB_MEMORY



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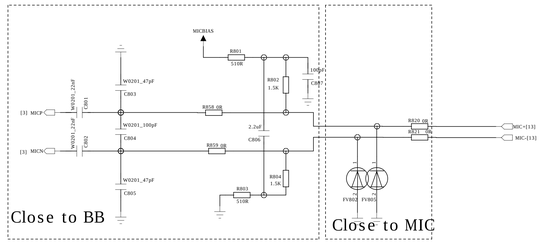
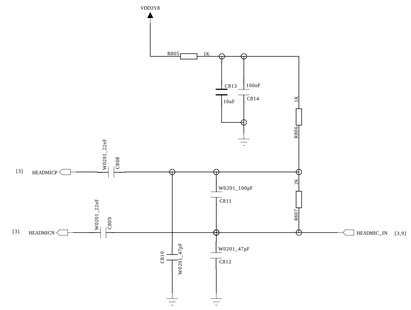
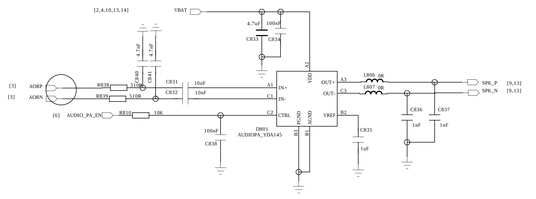
MIC CIRCUIT



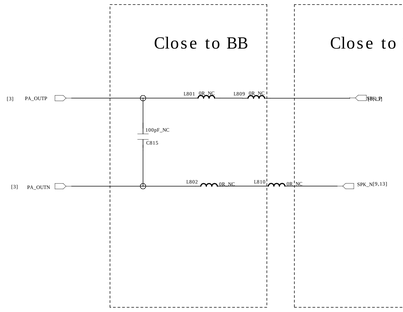
HEAD MIC



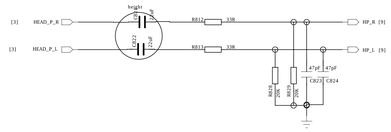
AUDIO PA



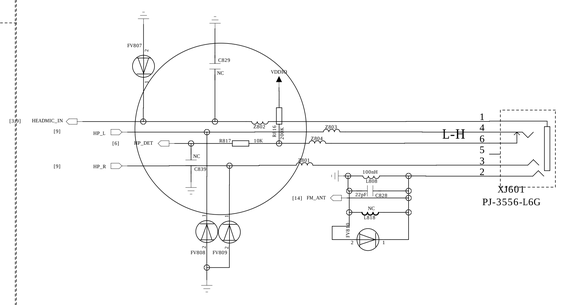
SPEAKER CIRCUIT



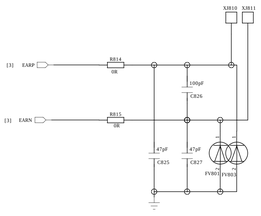
HEAD EAR



3.5mm Headphone Jack



RECEIVER CIRCUIT



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REVISION RECORD			
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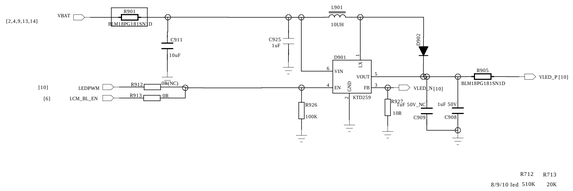
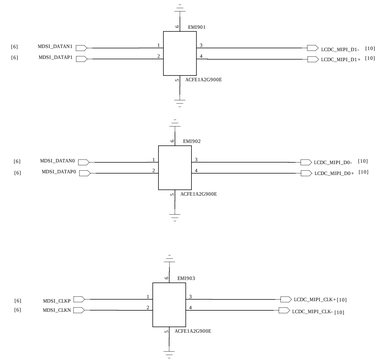
BLACK LIGHT

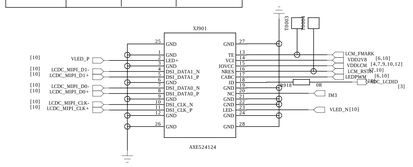


BS12 BS13
8/9/10 led 510K 20K

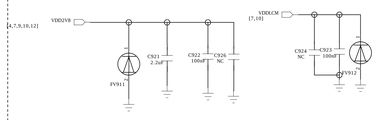
LCD

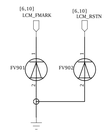


VENDOR	PART NUM	DRIVR IC	BL LIGHT
YAHSI	YT40F17A6	ILI9805-E1	8 LED
BLD	BT040TN02	OTM8009A	8 LED



LCD CAMERA /LCD EMI(Ê Ê º Ï MIPI½Ó ¿ Ú £ © capacitance should be low





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CAMERA

300W

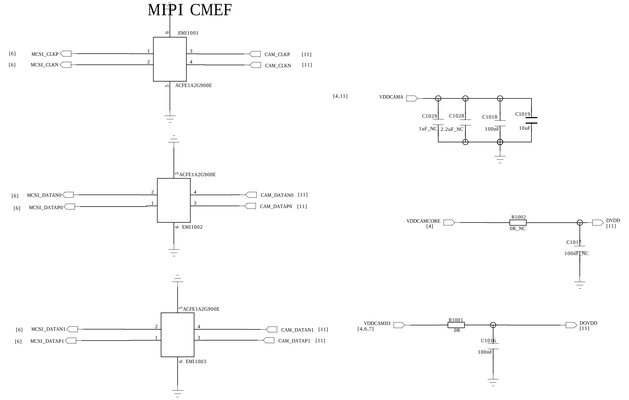
DRIVR IC	SEN_DVDD	SEN_DOVDD	SEN_AVDD
	1.2V	2.8V/1.8V	2.8V

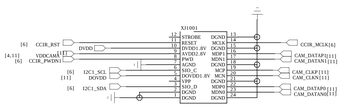
500W 1.2/1.3/1.5/1.8 1.2/1.3/1.5/1.8 1.8/2.5/2.8/3.0

DRIVR IC	SEN_DVDD	SEN_DOVDD	SEN_AVDD
AR0543	NC	1.8V	2.8V
	200mA	200mA	100mA

F0543AG CAMERA MODULE 20121008
P5M27A-0JG

MIPI CMEF



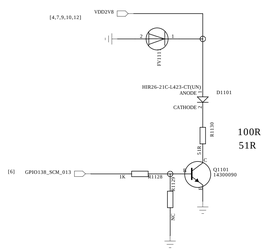


		COMPANY:			
		TITLE:			
DRAWN:	DATED:				
CHECKED:	DATED:	CODE:	SIZE:	DRAWING NO:	REV:
QUALITY CONTROL:	DATED:				
RELEASED:	DATED:	SCALE:		SHEET: 16 of 16	

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

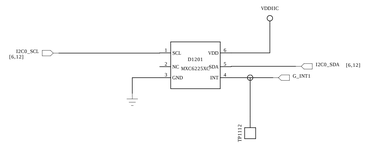
G-Sensor

T

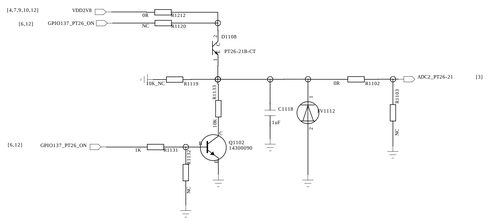


100R I=(2.8V-1.7)/100R=10mA 3cm
51R I=(2.8V-1.7)/51R=20mA 5cm

G-Sensor

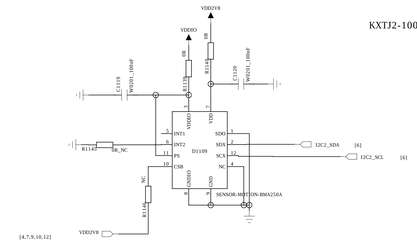


R



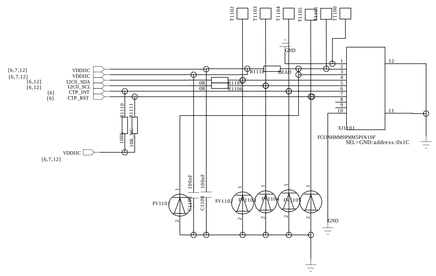
G-Sensor

KXTJ2-1009



PS=1: IIC
IIC ADDRRSS is 0x18H
power down(communicating), I = 0.5uA

Capacitive Touch Panel



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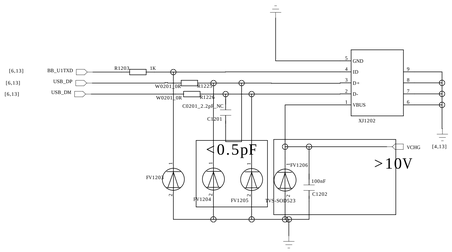
QUALITY CONTROL: <QC By>	DATED: <QC Date>				
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 12 OF 16	

USB

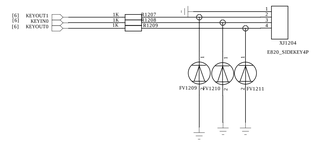
USB BOOT CONTROL

NBOOT = Float----->NAND BOOT

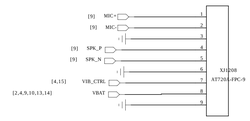
NBOOT = 0 ----->USB BOOT



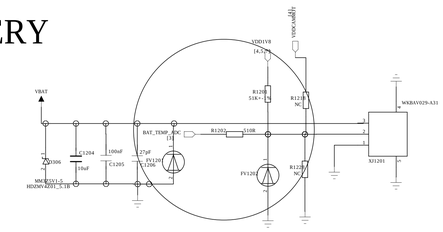
SIDE KEY



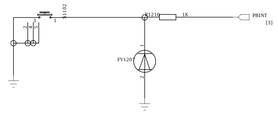
FPC CNN



BATTERY

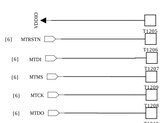


POWER KEY

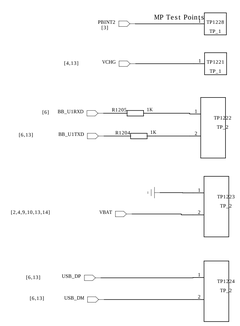


MARK POINT

ARM JTAG

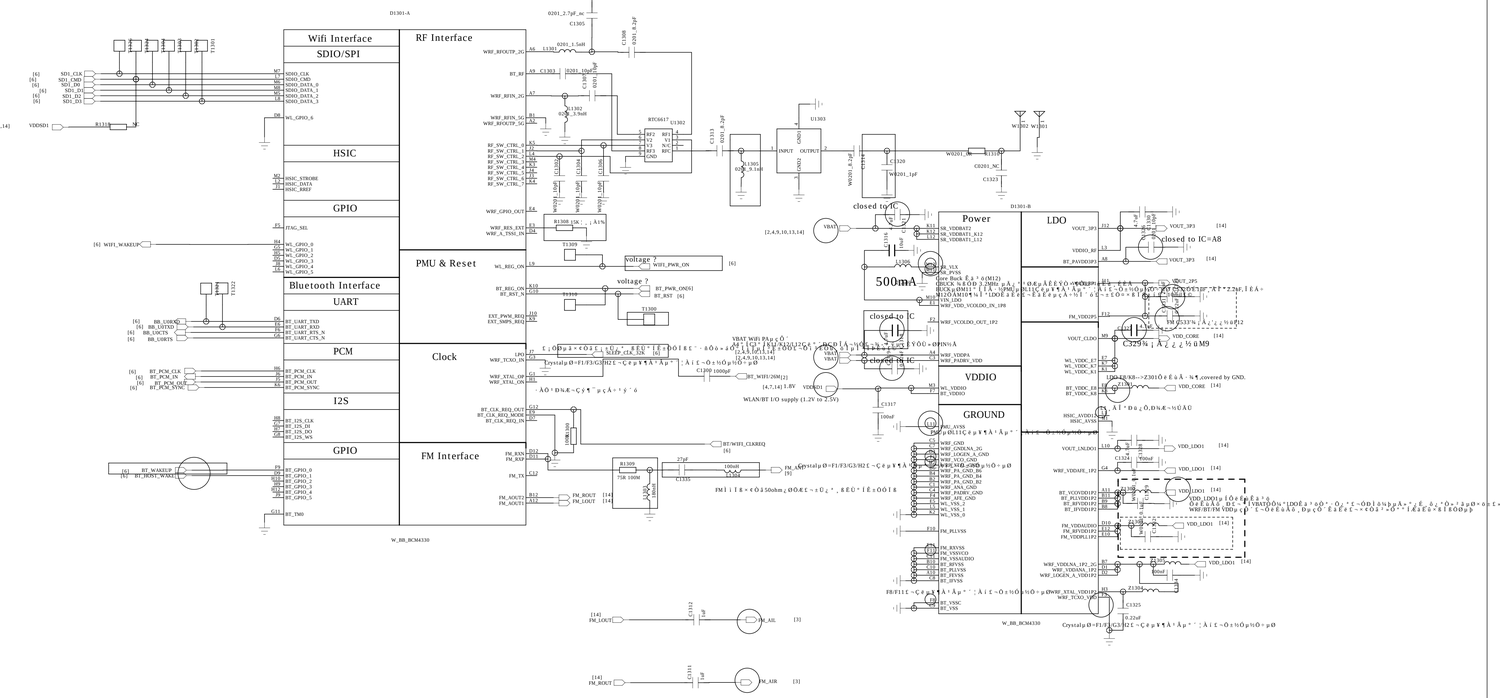


MP Test Points



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

BT+WIFI+FM



Note1

32K level shift

BCM4330_CLKÖ ª Ç ó 1.8V · ù Ö µ ² ¯ Ð Î

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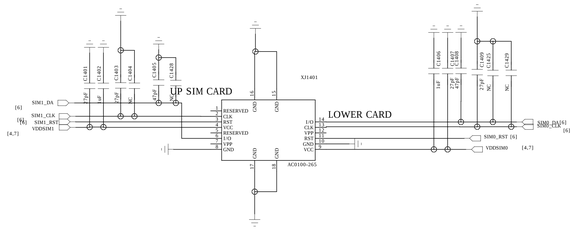
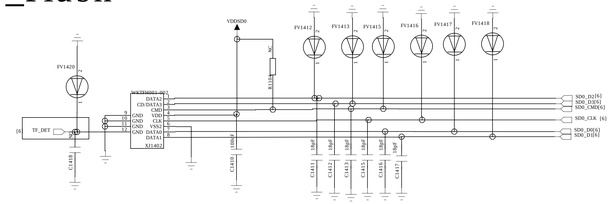
		DOCUMENT NO.:
DESIGNER:	DATED:	DEPARTMENT:
EQA:	DATED:	COMPANY:
APPROVED:	DATED:	CONFIDENTIAL AND PROPRIETARY — SHEET: 20 OF 22

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

SIM CARD



T_Flash



VIBRATOR

		TITLE & REV: SP8825A-1_SCH_V1.0.0
		DOCUMENT NO.:
DESIGNER: Hanan.Qiu	DATED: 2012-08-14	DEPARTMENT: Hardware DEPT.
EQA: Vincent.Gao	DATED: 2012-08-14	COMPANY: Spreadtrum communications, Inc.
APPROVED: Gang.Xu	DATED: 2012-08-14	CONFIDENTIAL AND PROPRIETARY — SHEET: 17 OF 26

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

Change_Note

V1.0.0

		TITLE & REV: AT720A
		DOCUMENT NO.:
DESIGNER: xiaofeng.yuan	DATED: 2012-09-03	DEPARTMENT: Hardware DEPT.
EQA:	DATED: 2012-08-14	COMPANY: LQ, Inc.
APPROVED:	DATED: 2012-08-14	CONFIDENTIAL AND PROPRIETARY — SHEET: 26 OF 26