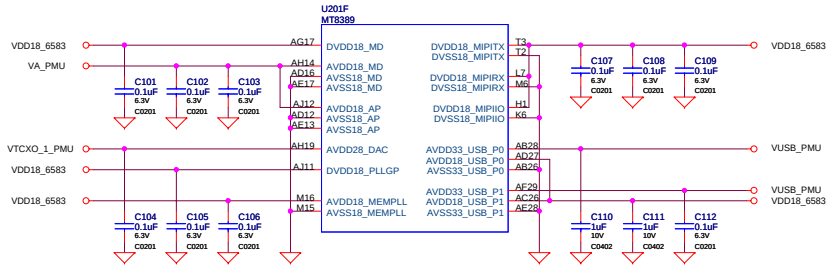
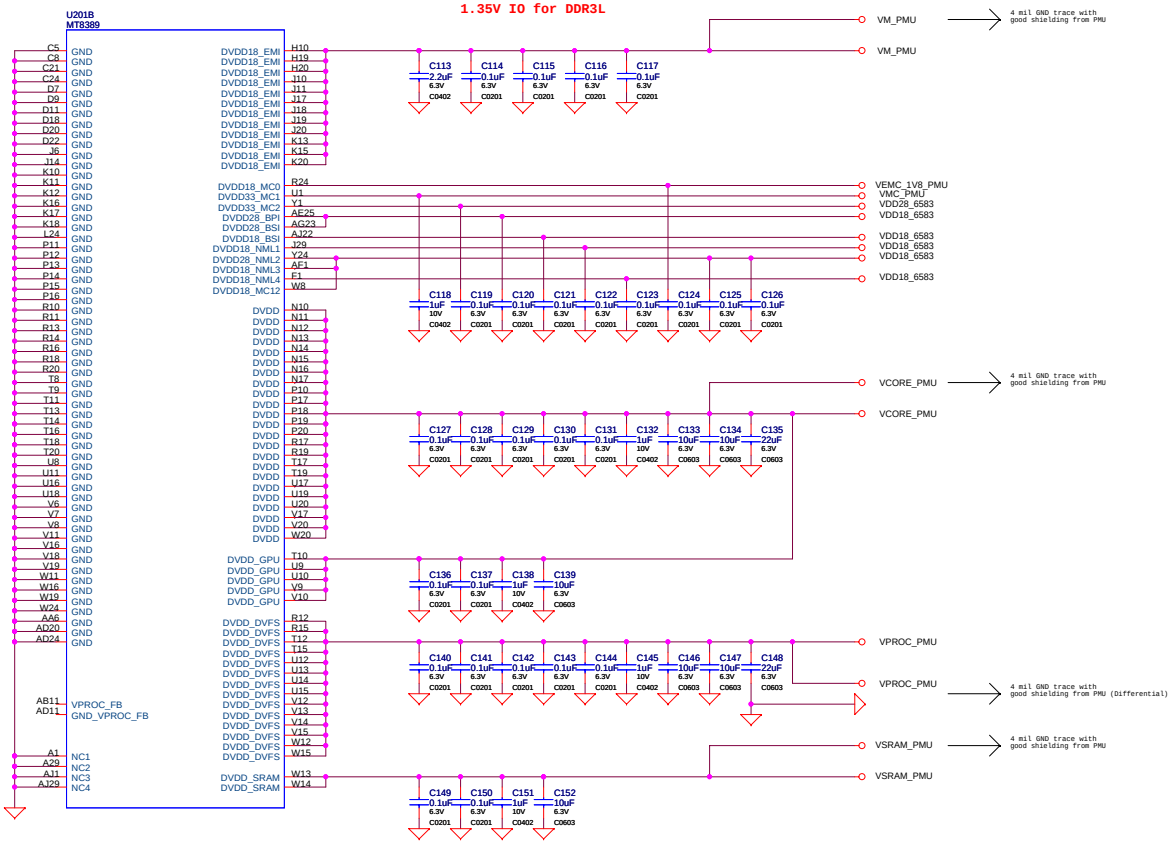
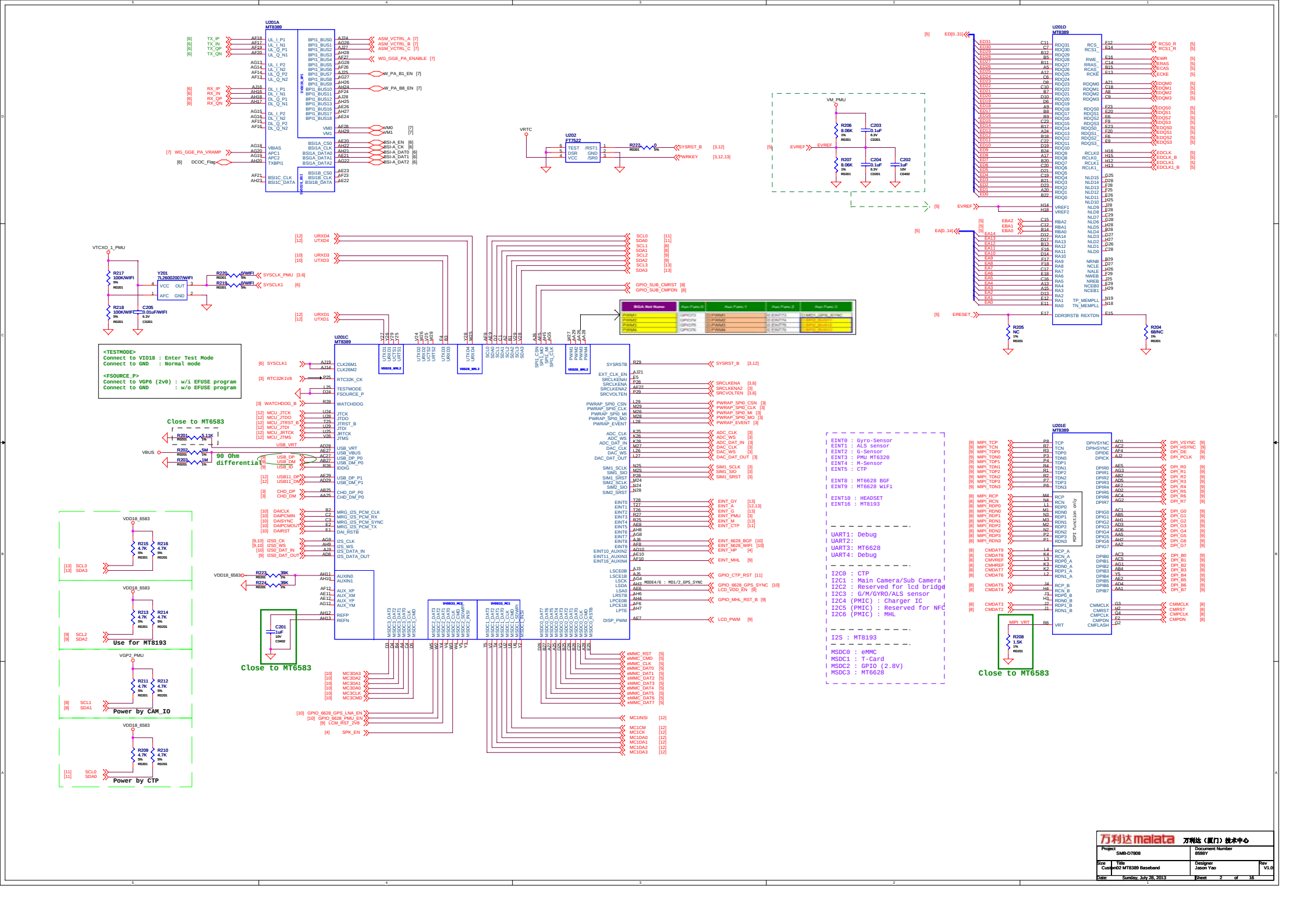
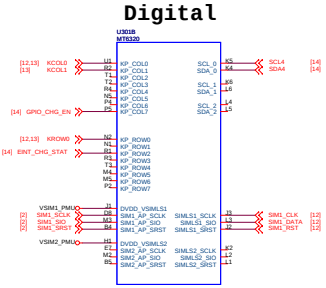


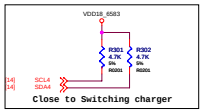
1.8V IO for DDR
1.2V IO for DDR2
1.5V IO for DDR3
1.35V IO for DDR3L

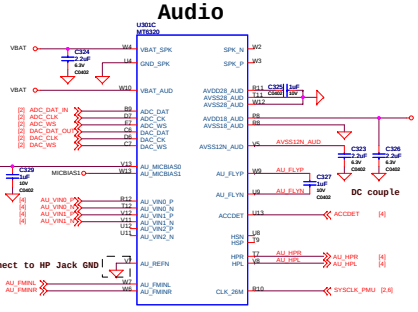


万利达 malata 万利达（厦门）技术中心			
Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 01 MT8389 Power	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 1 of 16	

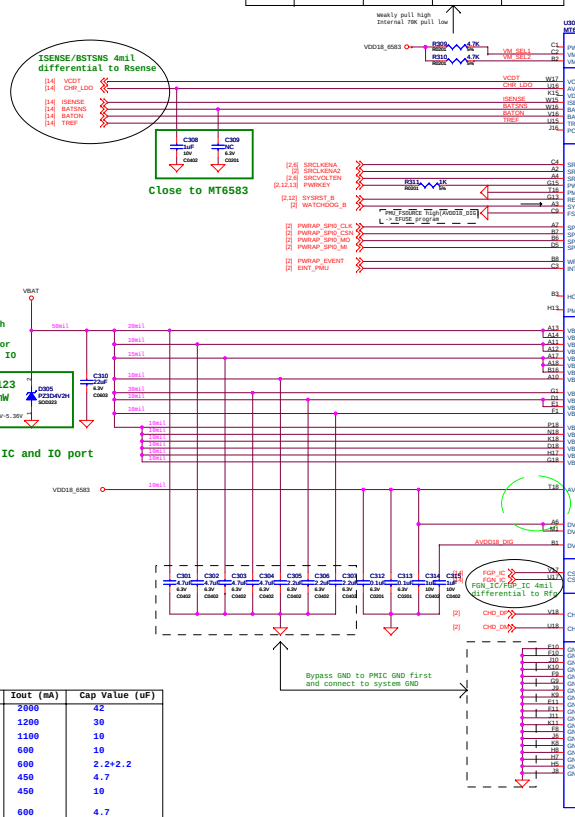

U201A
MT8389
U201D
MT8389
U201E
MT8389
U201C
MT8389
U202
FT7522
VM_PMU
VRTC
VTCXO_1_PMU
Y201
7L26002007/WIFI
<TESTMODE>
Connect to VIO18 : Enter Test Mode
Connect to GND : Normal mode
<FSOURCE_P>
Connect to VGP6 (2v0) : w/i EFUSE program
Connect to GND : w/o EFUSE program
Close to MT6583
90 Ohm differential
Close to MT6583
Use for MT8193
Power by CAM_IO
Power by CTP
Close to MT6583
EINT0 : Gyro-Sensor
EINT1 : ALS sensor
EINT2 : G-Sensor
EINT3 : PMU MT6320
EINT4 : M-Sensor
EINT5 : CTP
EINT8 : MT6628 BGF
EINT9 : MT6628 WiFi
EINT10 : HEADSET
EINT16 : MT8193
UART1: Debug
UART2:
UART3: MT6628
UART4: Debug
I2C0 : CTP
I2C1 : Main Camera/Sub Camera
I2C2 : Reserved for lcd bridge
I2C3 : G/M/GYRO/ALS sensor
I2C4 (PMIC) : Charger IC
I2C5 (PMIC) : Reserved for NFC
I2C6 (PMIC) : MHL
I2S : MT8193
MSDC0 : eMMC
MSDC1 : T-Card
MSDC2 : GPIO (2.8V)
MSDC3 : MT6628
Close to MT6583
万利达 (厦门) 技术中心
Project
SMB-D7808
Document Number
8598Y
Size
Custom
Title
02 MT8389 Baseband
Designer
Jason Yao
Rev
V1.0
Date:
Sunday, July 28, 2013
Sheet
2
of
16







Symbol	LPDDR2/1.2V	DDR3U/1.25V	DDR3L/1.35V	DDR3/1.5V
VM_SEL2	L	L	H	H
VM_SEL1	L	H	L	H

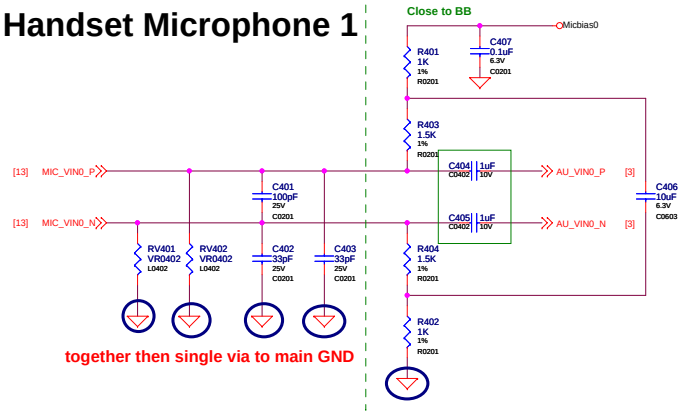


	Symbol	Application	Vout (V)	Iout (mA)	Cap Value (uF)
Buck	VPROC	CPU	0.7~1.25 (DC/DC)	2000	42
	VCORE	MDSYS/Infra	0.7~1.25 (DC/DC)	1200	30
	VM	VM	1.2/1.25/1.35/1.5	1100	10
	VSRAM	Memory	0.7~1.25 (DC/DC)	600	10
	VPA	3GPA	0.5~3.4 (100mV/step)	600	2.2+2.2
	VRF18	1st RF	1.825	450	4.7
	VRF18_2	2nd RF GPU OD	1.825 1.05~1.25 (50mV/step)	450	10
	VIO18	IO App.	1.8	600	4.7
Analog LDO	VA		1.8/2.5	100	
	VRF28_1	MDSYS	2.85	200	2.2
	VRF28_2	General	1.8/2.85	200	2.2
	VTCXO_1	MDSYS	2.8	40	1
	VTCXO_2	MDSYS	1.8/2.8	40	1
	VCAMA	VCAMA	1.5/1.8/2.5/2.8	200	2.2
Digital LDO	VIO28		2.8	400	2.2
	VAST	MT6168	0.9/1.0/1.1/1.2	300	2.2
	VUSB		3.3	200	1
	VMC	T-Card	1.8/3.3	200	1
	VMCH	T-Card	3.0/3.3	800	4.7
	VEMC_3V3	eMMC (Core)	3.0/3.3	800	4.7
	VEMC_1V8	eMMC	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	2.2
	VGP1	VCAMD	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	400	2.2
	VGP2	VCAM_IO	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VGP3	VCAM_AF	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VGP4	CTP/CMMB	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VGP5	CTP/CMMB	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VGP6	CTP/CMMB	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VSIM1	VSIM1	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
	VSIM2	VSIM2	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
Vibrator	VIBR	Vibrator	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1
RTC	VRTC	RTC Block	2.8	2	1~22

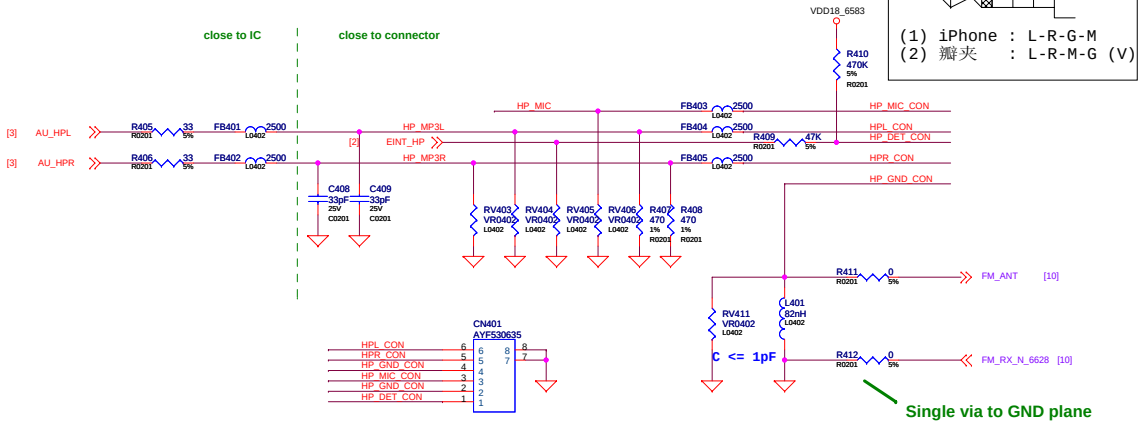
万利达malata 万利达（厦门）技术中心

Project	SMB-D7808	Document Number	8SMY
Size D	Title 03 MT6320	Designer Jason Yao	Rev V1.0
Date: Sunday, July 28, 2013		Sheet 3 of 16	

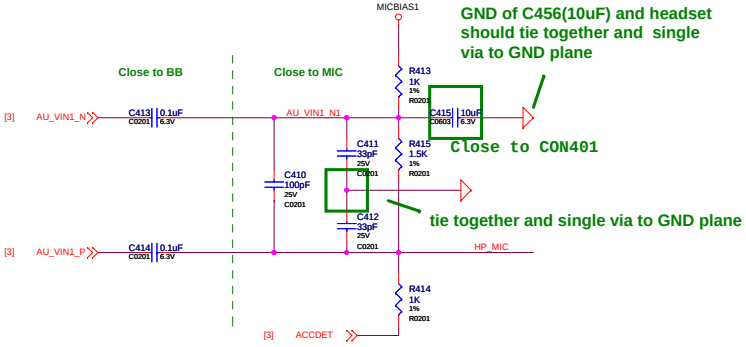
Handset Microphone 1



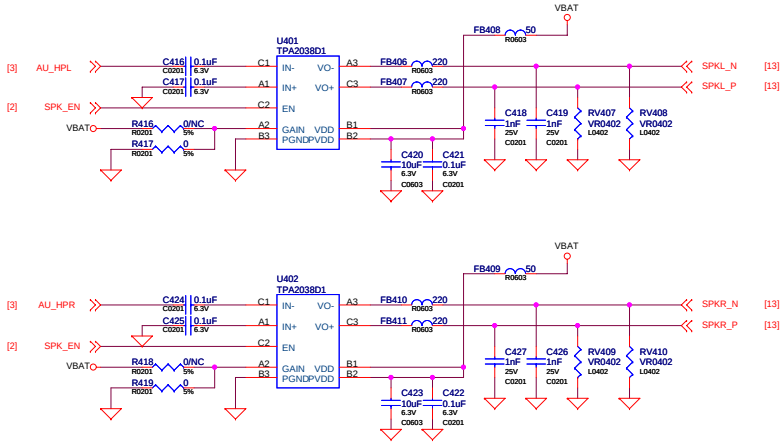
Earphone Audio



Earphone MICPHONE

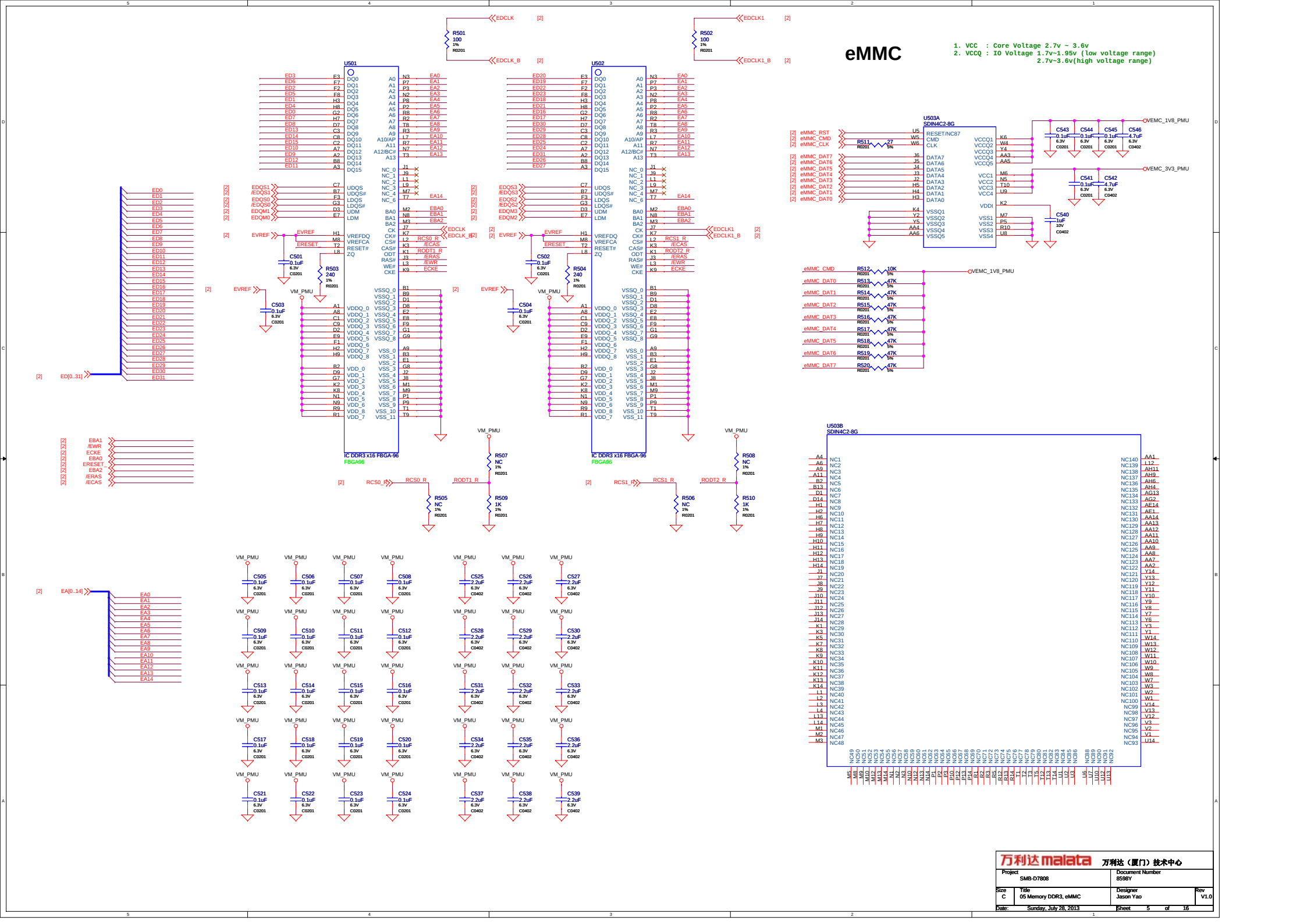


Speaker

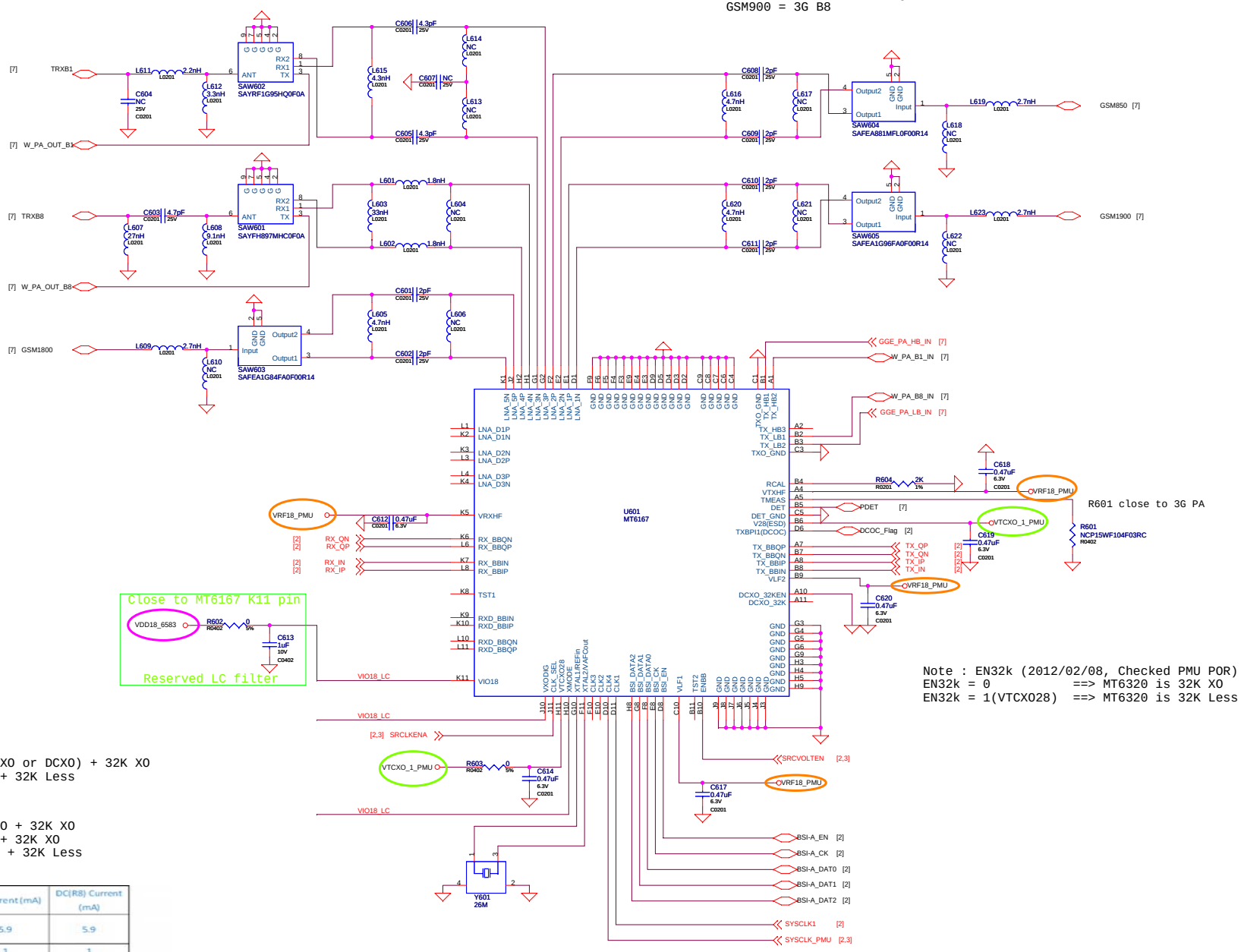


万利达 malata 万利达（厦门）技术中心

Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 04 Audio	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 4 of 16	


eMMC
1. VCC : Core Voltage 2.7v ~ 3.6v
2. VCCQ : IO Voltage 1.7v~1.95v (low voltage range)
2.7v~3.6v(high voltage range)
U501
U502
U503A
SDIN4C2-8G
U503B
SDIN4C2-8G
IC DDR3 x16 FBGA-96
FBGA96
VEMC_1V8_PMU
VEMC_3V3_PMU
万利达 malata
万利达（厦门）技术中心
Project
SMB-D7808
Document Number
8598Y
Size
C
Title
05 Memory DDR3, eMMC
Designer
Jason Yao
Rev
V1.0
Date:
Sunday, July 28, 2013
Sheet
5
of
16

Note : Use RX Co-banding
GSM900 = 3G B8



Note : EN32k (2012/02/08, Checked PMU POR)
EN32k = 0 ==> MT6320 is 32K XO
EN32k = 1(VTCXO28) ==> MT6320 is 32K Less

Note : VXODIG
VXODIG = VIO18 ==> (VCTCXO or DCXO) + 32K XO
VXODIG = VTCXO28 ==> DCXO + 32K Less

Note : Xmode
Xmode = 0 ==> VCTCXO + 32K XO
Xmode = 1(VIO18) ==> DCXO + 32K XO
Xmode = 1(VTCX28) ==> DCXO + 32K Less

	Block	SC Current (mA)	DC(R8) Current (mA)
VTCXO28	DCXO, DCXO internal and 4 external buffers	5.9	5.9
VIO18	GPIO, LSF LDO	1	1
VXODIG	GSDLDO, DCXODLDO	1	1
VRXHF	RF Front-end, RX IF, RX output buffer, RX VCO, and VCO LO buffer	61.7	96.8
VLF1	TTG/CKG, RX PLL, RX DYN	12	12
VTXHF	TX Front-end	125	125
VLF2	TX IF, and TX DYN	35	35
V28	ESD, TXBG	1	1

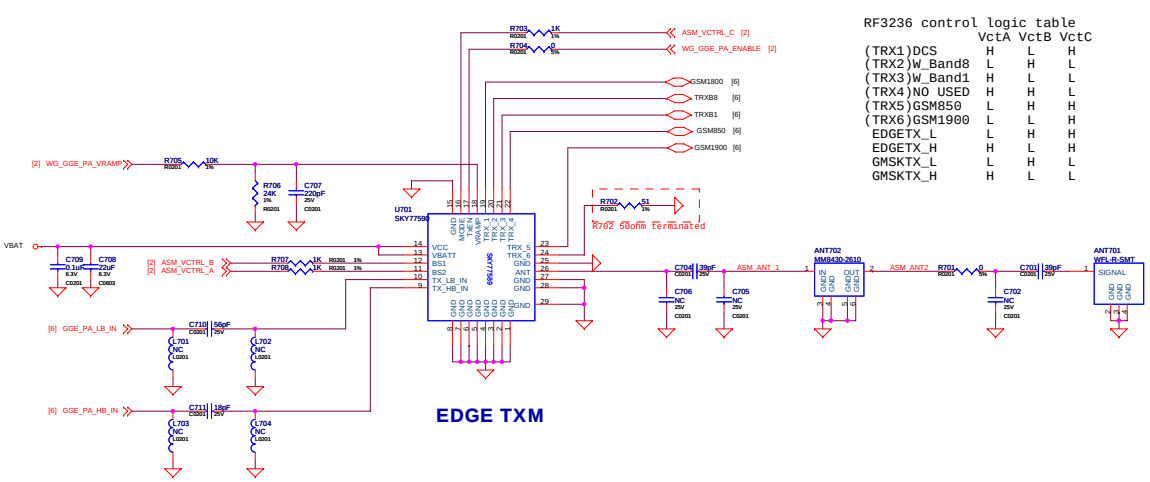
clock source component SMT selection must follow note,
if not follow, it will cause tool calibration issue!!

万利达 malata 万利达（厦门）技术中心

Project: SMB-D7808		Document Number: 8598Y
Size: C	Title: 06 RF_MT6167_RX_B1B8	Designer: Jason Yao / Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 6 of 16

RF3236 control logic table

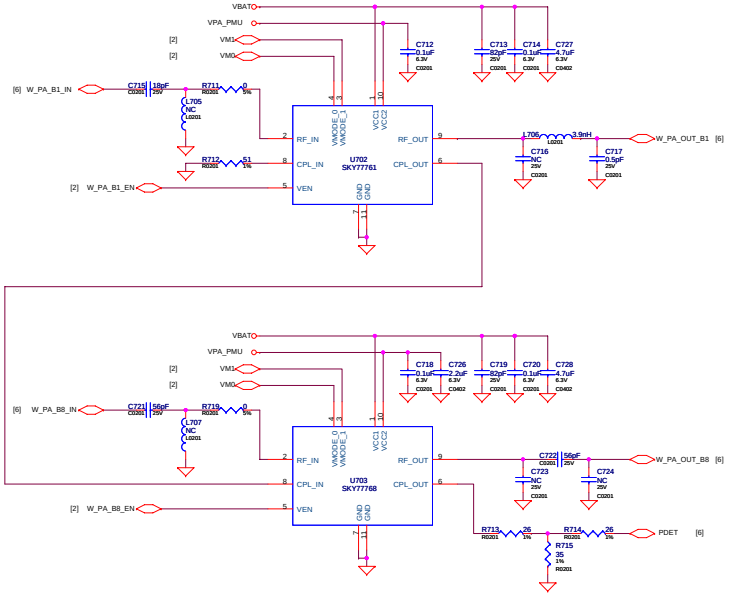
	VctA	VctB	VctC
(TRX1)DCS	H	L	H
(TRX2)W_Band8	L	H	L
(TRX3)W_Band1	H	L	L
(TRX4)NO USED	H	H	L
(TRX5)GSM850	L	H	H
(TRX6)GSM1900	L	L	H
EDGETX_L	L	H	H
EDGETX_H	H	L	H
GMSKTX_L	L	H	L
GMSKTX_H	H	L	L



EDGE TXM

WCDMA PA control logic table

	HB_EN	B1_EN	B2_EN	B5_EN	LB_EN
W_Band1	H	H	L	L	L
W_Band2	H	L	H	L	L
W_Band4	H	L	L	L	L
W_Band5	L	L	L	H	H
W_Band8	L	L	L	L	H



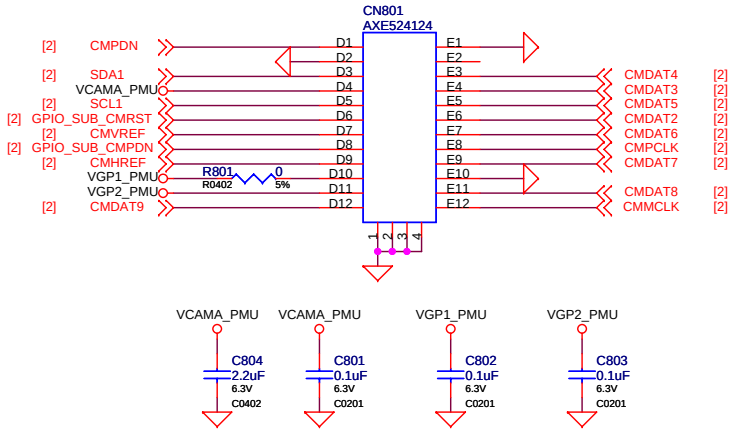
A

A

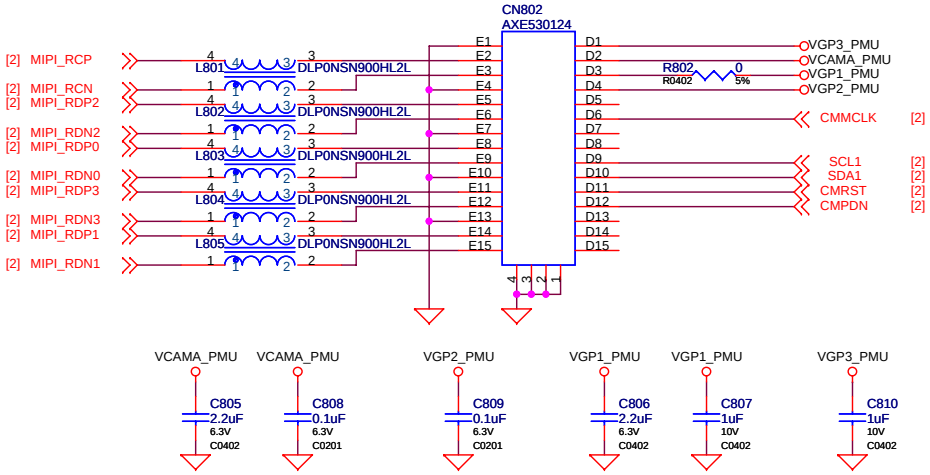
万利达 malata 万利达（厦门）技术中心

Project: SMB-D7808		Document Number: 859BY	
Size: C	Title: 07 RF_TX_ASM_B1B8	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 7 of 16	

Sub Camera

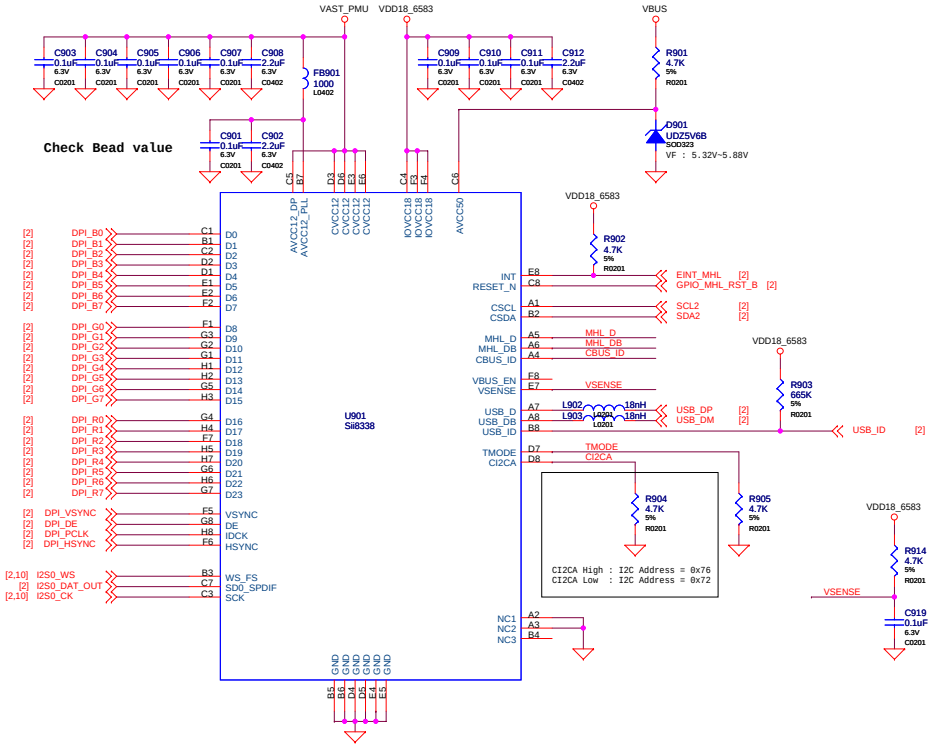


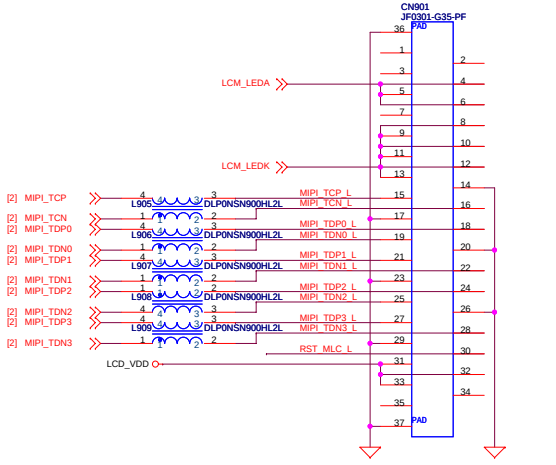
Main Camera



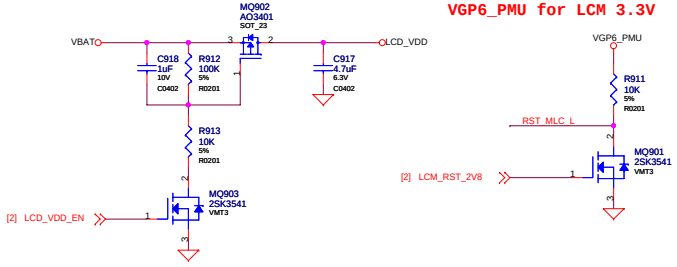
Main Camera / Sub Camera share power domain design
should double check the voltage level is compatible

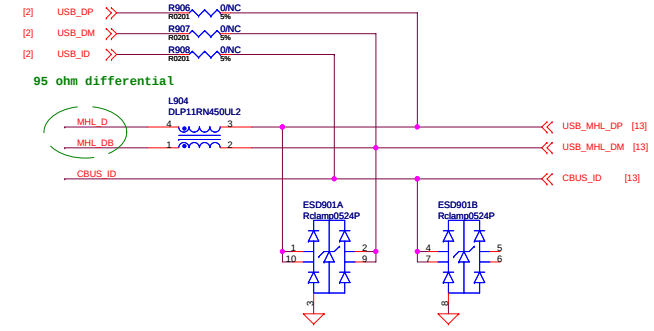
万利达malata 万利达（厦门）技术中心		
Project: SMB-D7808		Document Number: 8598Y
Size: B	Title: 08 Camera	Designer: Jason Yao / Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 8 of 16



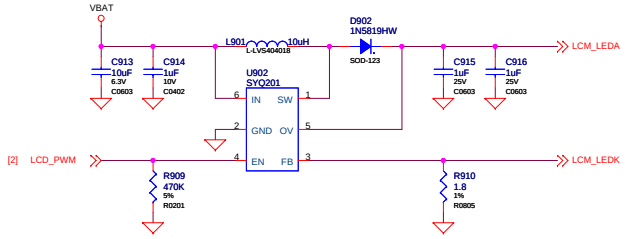


VGP6_PMU for LCM 3.3V



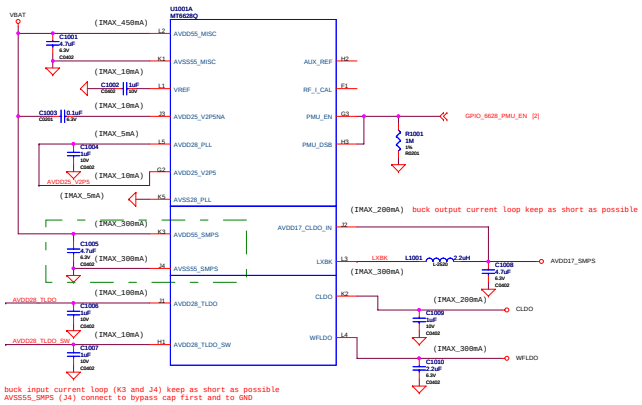


LED Backlight Driver

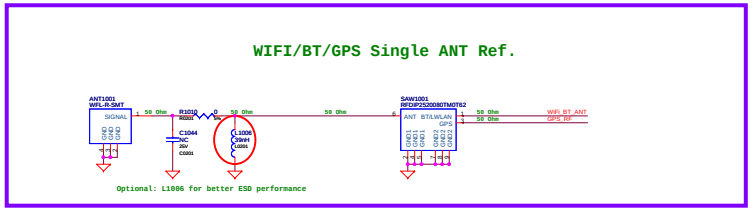


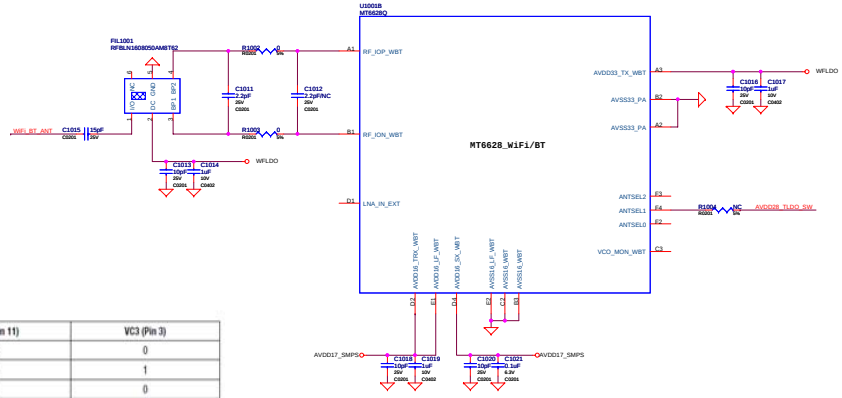
万利达 malata 万利达（厦门）技术中心			
Project SMB-D7808		Document Number 8598Y	
Size C	Title 09 MHL, LCD	Designer Jason Yao	Rev V1.0
Date: Sunday, July 28, 2013		Sheet 9 of 16	

MT6628_PMU



MT6628_BT/WiFi





MT6628_GPIO

WIFI_Host ANTSEL-2	0	SDIO	
	1	SPI	

Xtal/OCS ANTSEL-1 (b`0)	00	TCXO	
	01	Xtal	
	10	EXTCK	
	11	RESERVERD	

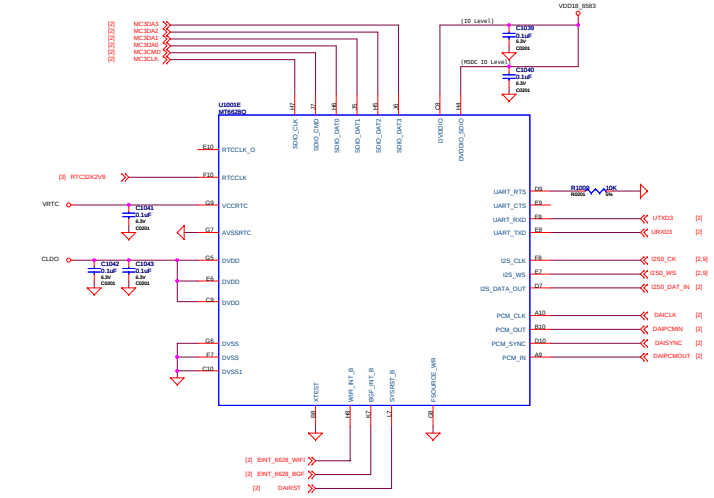
BT/COM Host UART_RTS	0	UART	MT6628E2
	1	SDIO	MT6628E2

BT/COM Host ANTSEL-0	0	SDIO	MT6628E1
	1	UART	MT6628E1

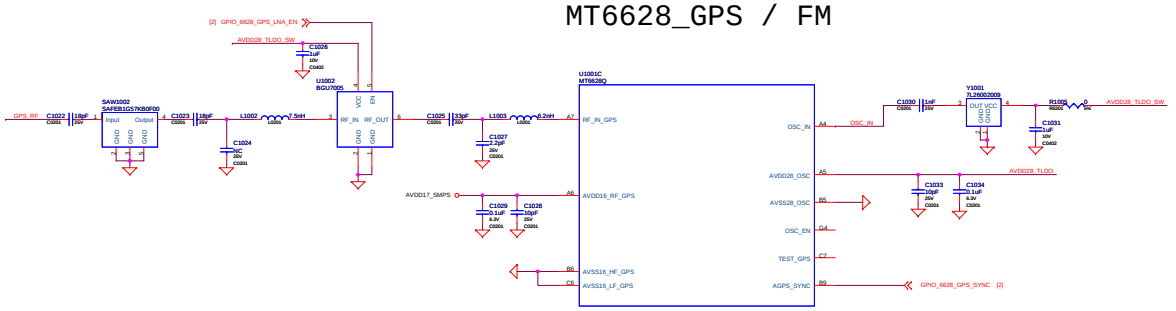
Table 5. SKY65523-11 Truth Table

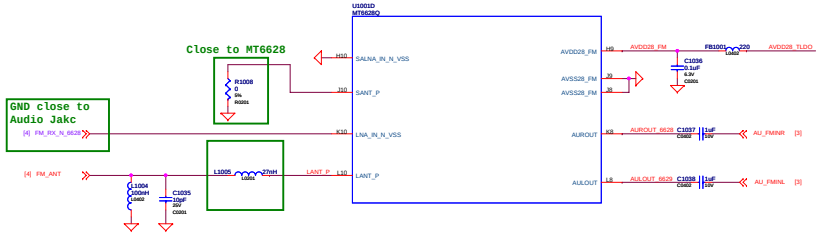
Mode	VC1 (Pin 1)	VC2 (Pin 11)	VC3 (Pin 3)
Bypass	0	0	0
Transmit	0	0	1
Receive	0	1	0
Bluetooth	1	0	0

Note: "0" = 0 V to +0.25 V, "1" = +2.7 V to +2.9 V. Any state other than described in this Table places the switch into an undefined state. An undefined state will not damage the device.

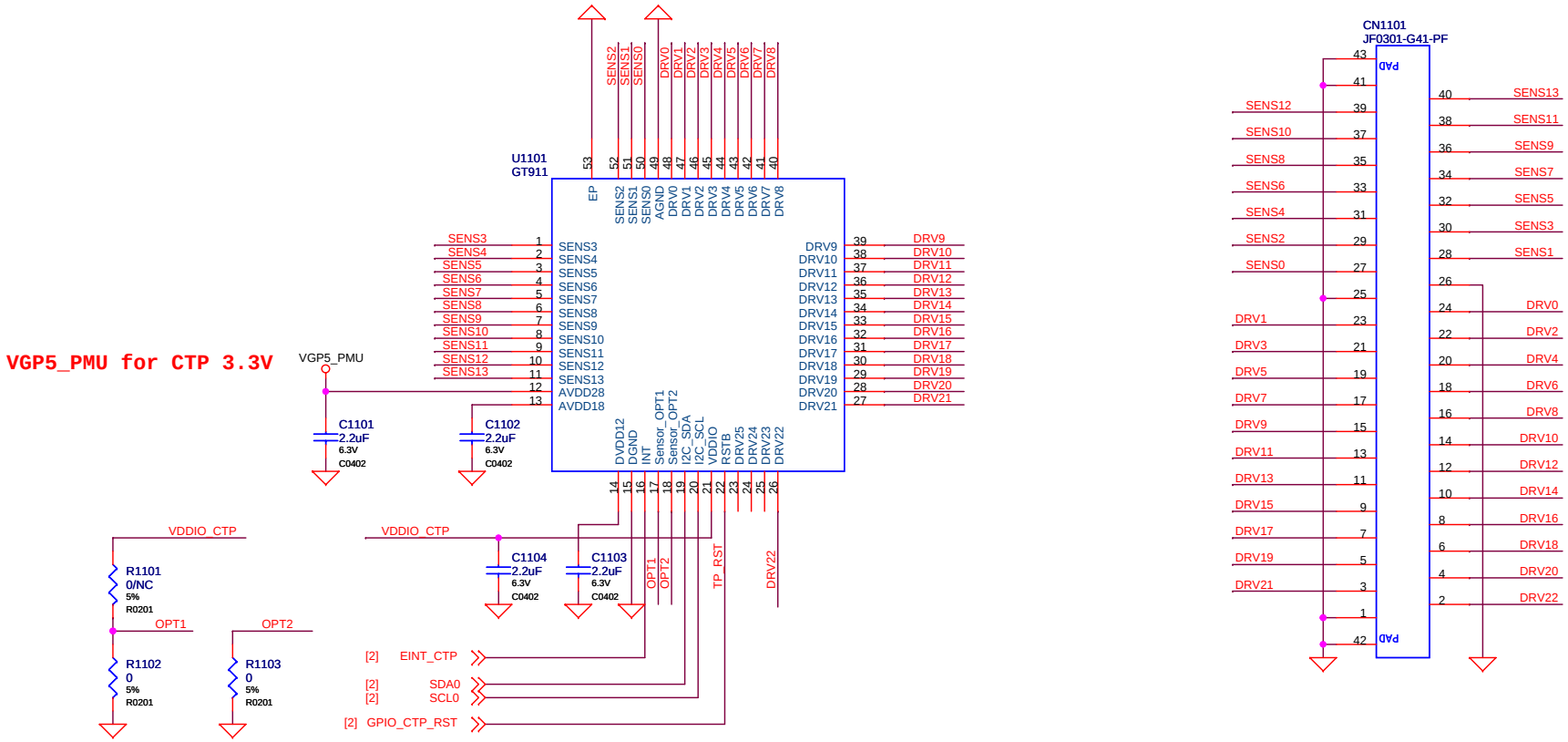


MT6628_GPS / FM





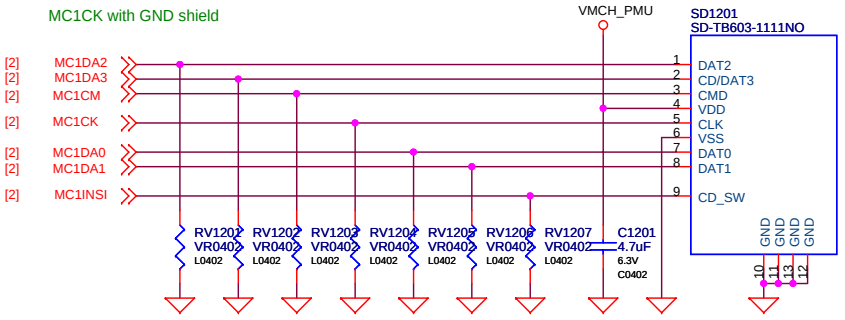
Project: SMB-D7808		Document Number: 6589Y	
Size: D	Title: 10 BT, FM, GPS, WiFi (MT6628)	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 10 of 16	



万利达malata 万利达（厦门）技术中心			
Project SMB-D7808		Document Number 8598Y	
Size B	Title 11 CTP	Designer Jason Yao	Rev V1.0
Date: Sunday, July 28, 2013		Sheet 11 of 16	

SD CARD

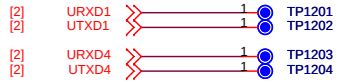
Shielding connect to ground



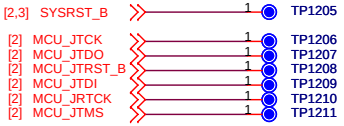
T-card ESD protection is optional depends on
T-card's type and position

SW:
H: Card remove
L: Card insert

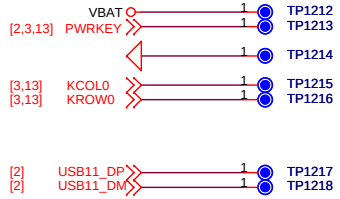
Common Debug



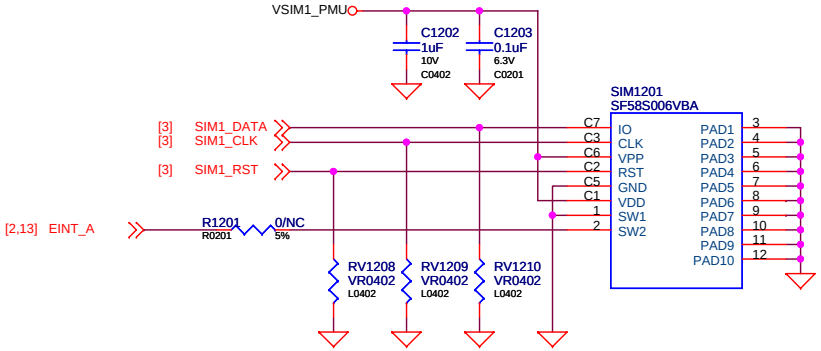
JTAG



MP Test Points

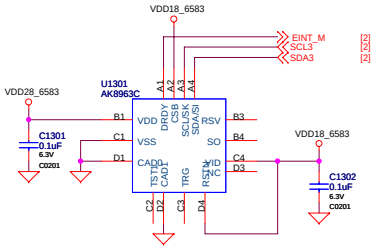


SIM1



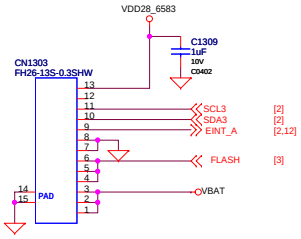
万利达 malata 万利达（厦门）技术中心			
Project SMB-D7808		Document Number 8598Y	
Size B	Title 12 SD CARD, SIM, DEBUG	Designer Jason Yao	Rev V1.0
Date: Sunday, July 28, 2013		Sheet 12 of 16	

M-Sensor



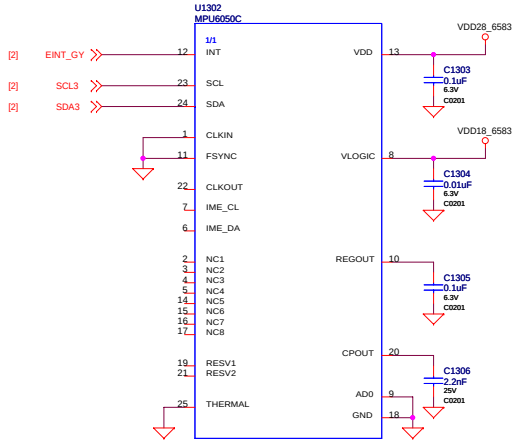
I2C Address: 0x0C (Write:0x18, Read:0x19)

ALS Sensor



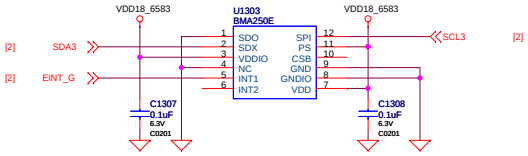
I2C Address: 0x10 (Write:0x20, Read:0x21)

Gyro Sensor



I2C Address: 0x68 (Write:0xD0, Read:0xD1)

G-Sensor

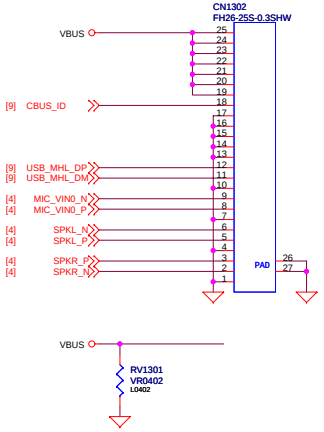


I2C Address: 0x18 (Write:0x30, Read:0x31)

USB HS IF

If mini-A connector insert => CID < 0V => Low
If mini-B connector insert => CID > 1.2V => High

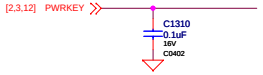
IDPULLUP pin is replaced by 1.2V power source.



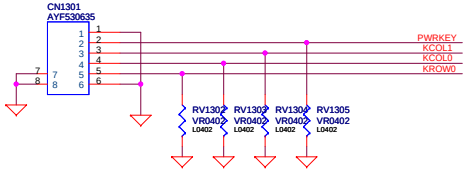
for ESD protection, recommend mount VR406, VR411, VR404, VR408 on PCB

Power Key

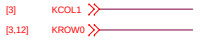
DO NOT put pull-up resistor on PWRKEY



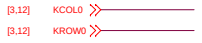
Function Key



Volume Down

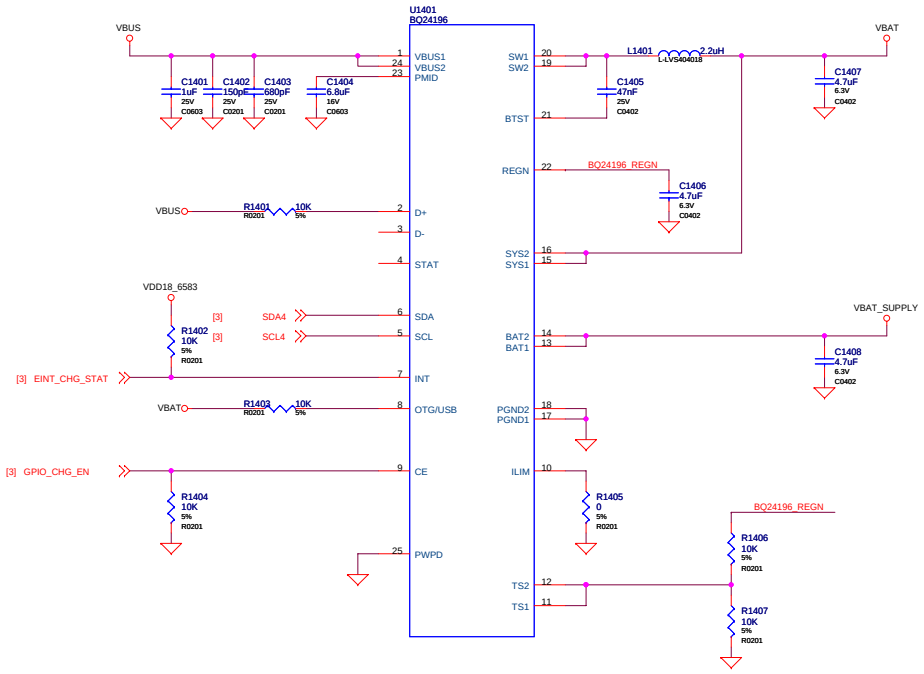


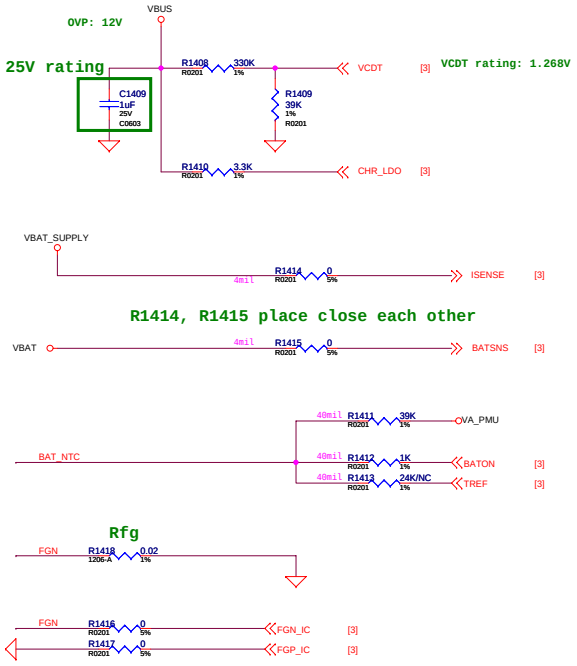
Volume Up



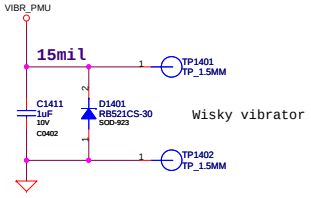
USB Download Mode

万利达 malata 万利达（厦门）技术中心			
Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 13 SENSORS, USB, Side Key	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 13 of 16	

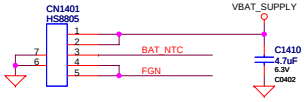


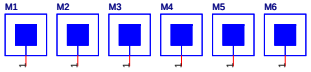


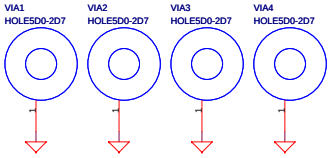
VIBRATOR

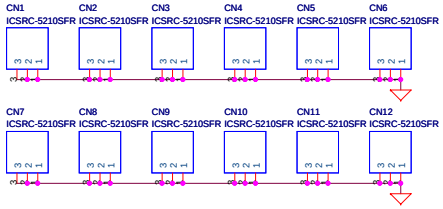


BATTERY CONNECTOR









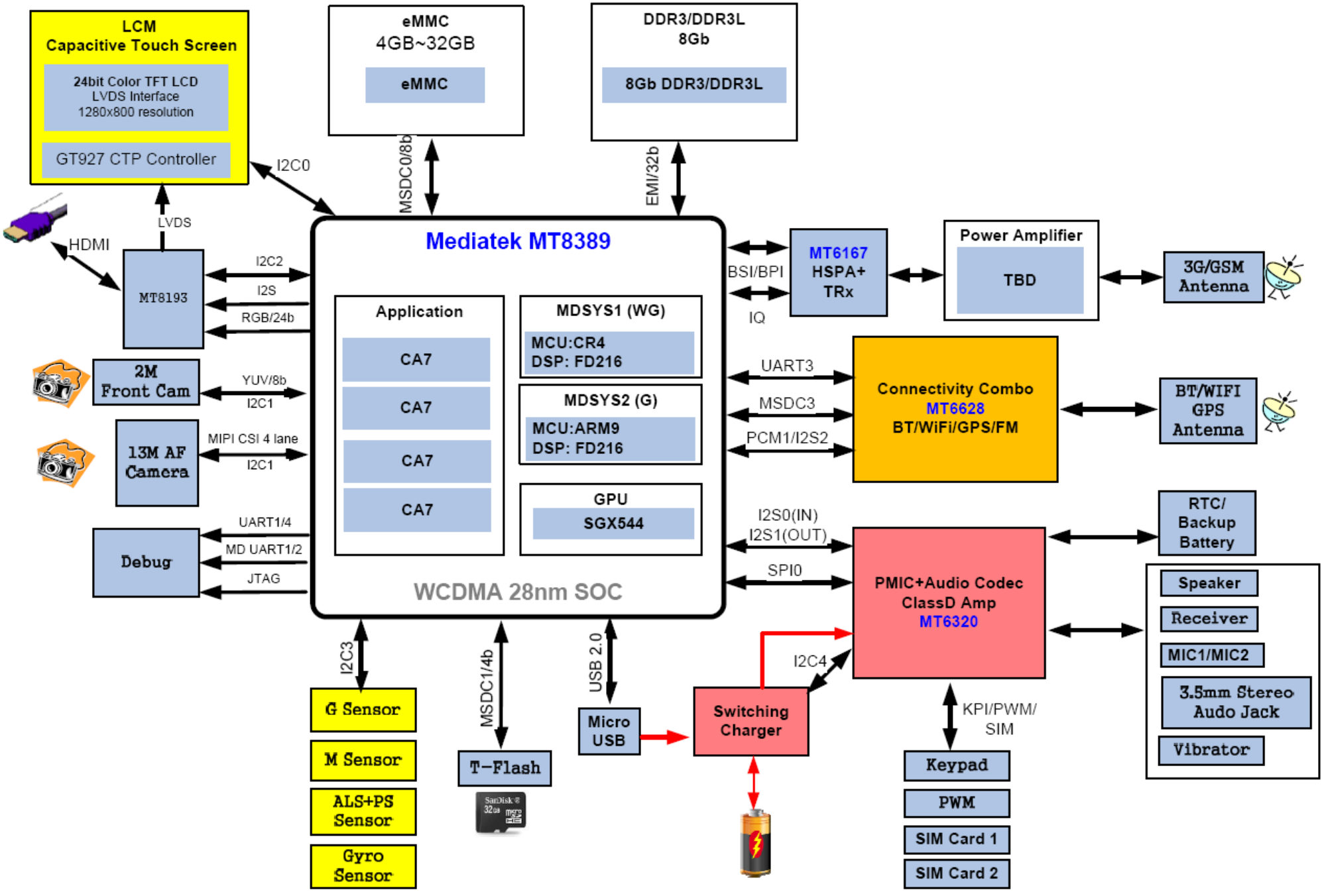
万利达 malata 万利达（厦门）技术中心

Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 14 Charger, VIBRATOR	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 14 of 16	

Change List Table

Item	Page	Description	Item	Page	Description

万利达 malata 万利达（厦门）技术中心			
Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 15 Change List Table	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 15 of 16	



万利达 malata 万利达（厦门）技术中心			
Project: SMB-D7808		Document Number: 8598Y	
Size: C	Title: 16 Block Diagram	Designer: Jason Yao	Rev: V1.0
Date: Sunday, July 28, 2013		Sheet 16 of 16	