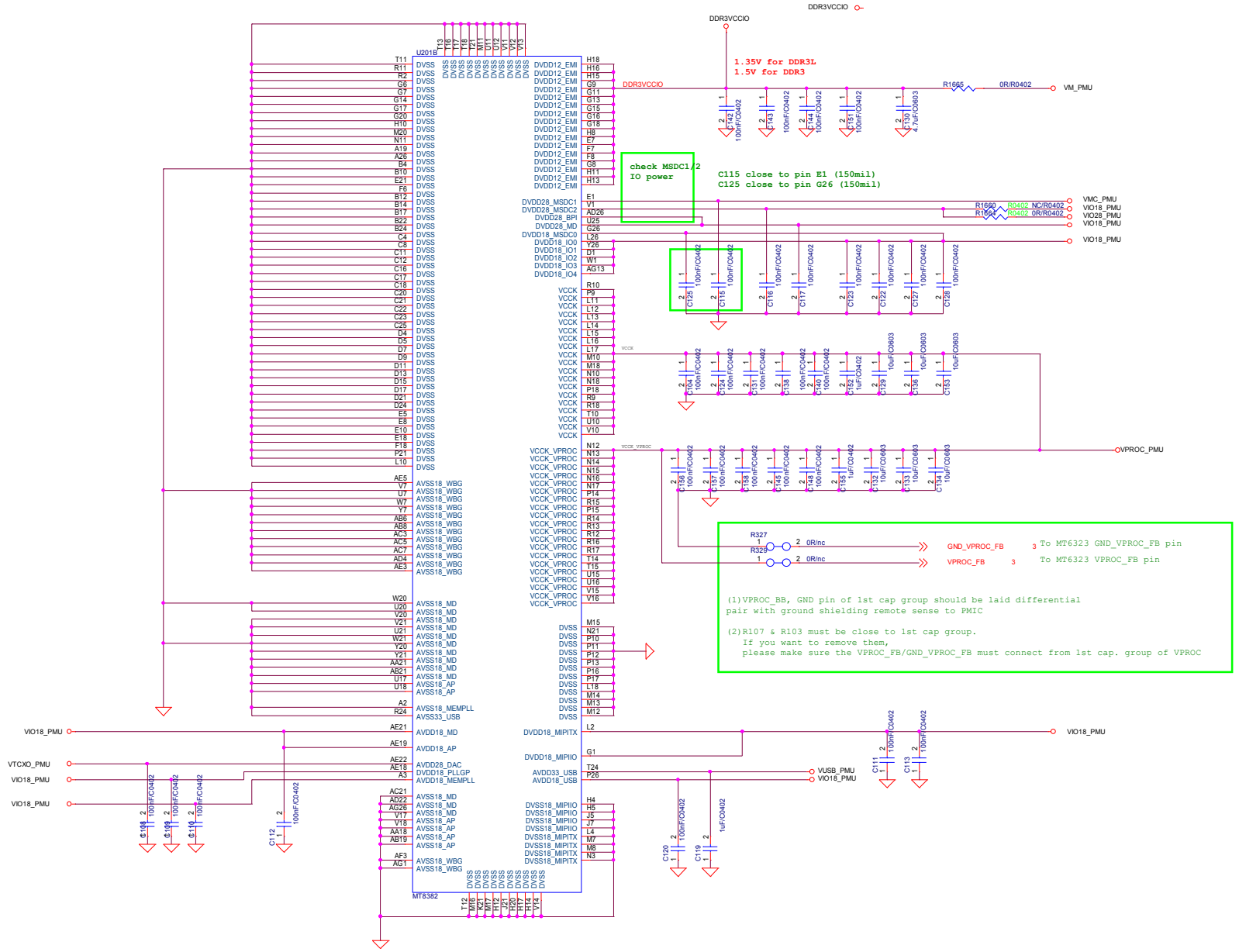
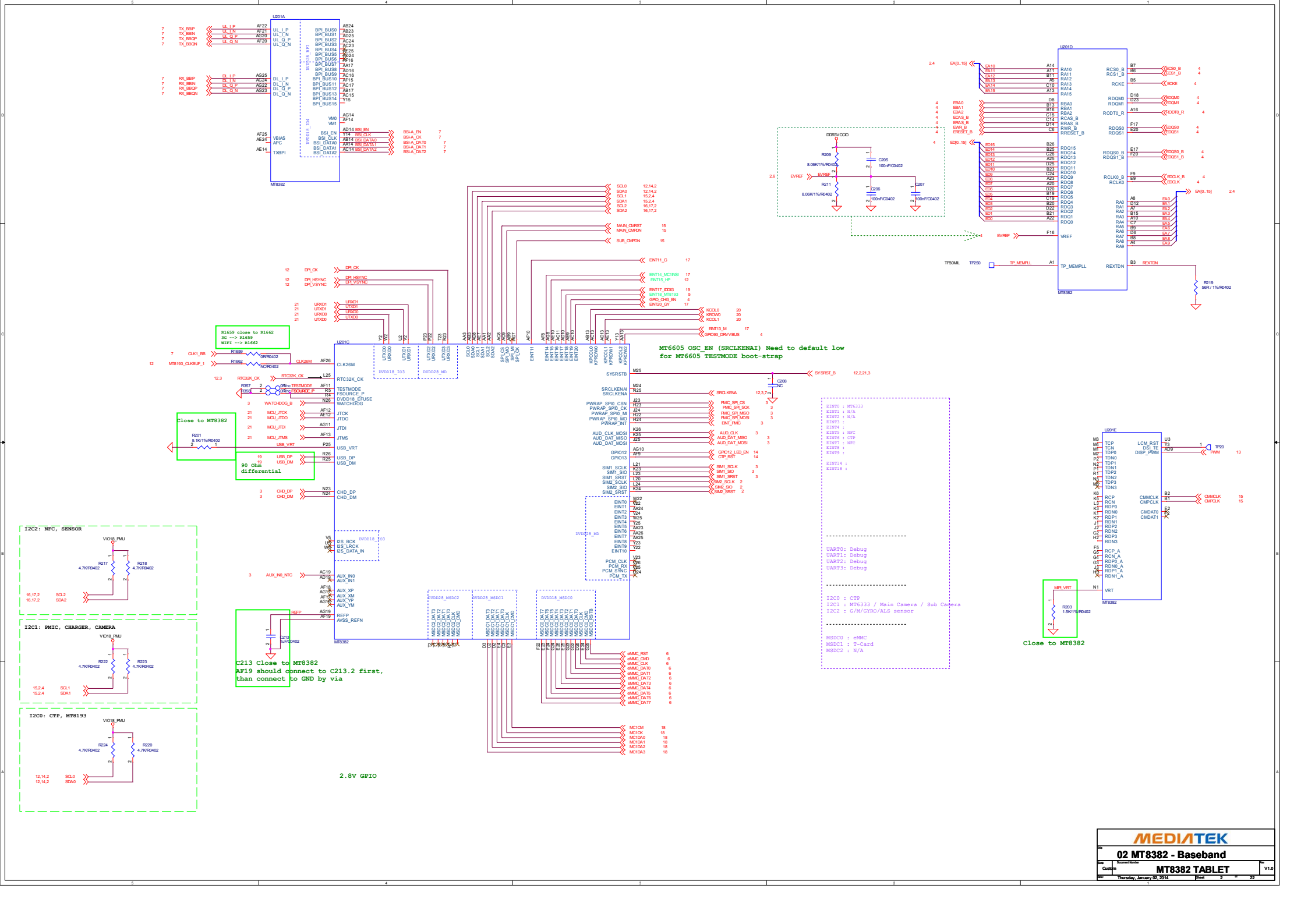
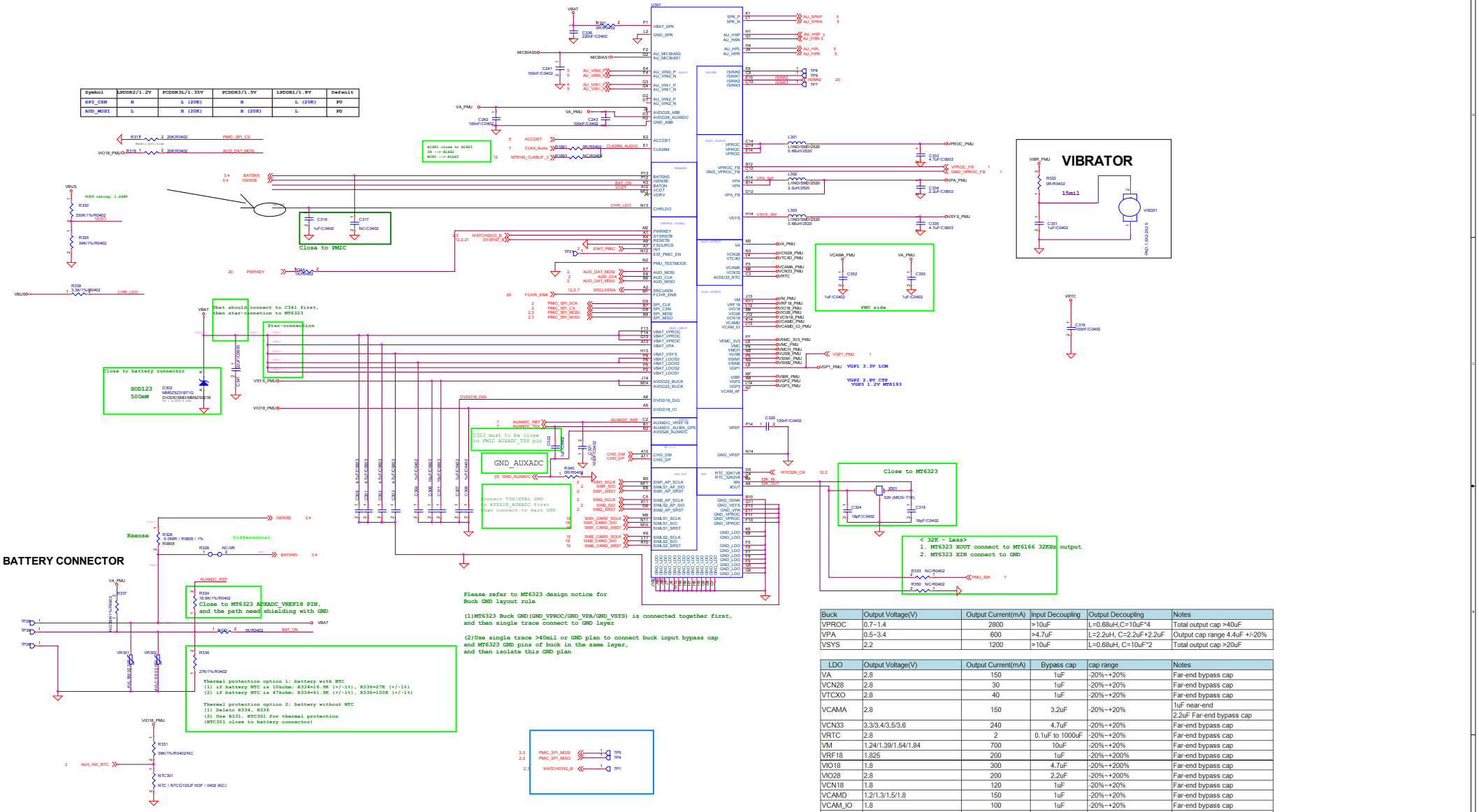


MEDIATEK

Title	01 MT8382 - Power	
Size: C	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 1 of 22	


MT6605 OSC_EN (SRCLKENAI) Need to default low for MT6605 TESTMODE boot-strap
R1659 close to R1662
3G --> R1659
WIFI --> R1662
Close to MT8382
90 ohm differential
C213 Close to MT8382
AF19 should connect to GND by via
2.8V GPIO
I2C2: NFC, SENSOR
I2C1: PMIC, CHARGER, CAMERA
I2C0: CTP, MT8193
UART0: Debug
UART1: Debug
UART2: Debug
UART3: Debug
I2C0 : CTP
I2C1 : MT6333 / Main Camera / Sub Camera
I2C2 : G/M/GYRO/ALS sensor
MSDC0 : eMMC
MSDC1 : T-Card
MSDC2 : N/A
Close to MT8382
02 MT8382 - Baseband
MT8382 TABLET
V1.0
Thursday, January 02, 2014



Symbol	LPDDR2/1.2V	PCDDR3L/1.35V	PCDDR3/1.5V	LPDDR1/1.8V	Default
SPI_CSN	H	L (20K)	H	L (20K)	PU
ADD_MOSI	L	H (20K)	H (20K)	L	PD

Buck	Output Voltage(V)	Output Current(mA)	Input Decoupling	Output Decoupling	Notes
VPROC	0.7~1.4	2800	>10uF	L=0.68uH,C=10uF*4	Total output cap >40uF
VPA	0.5~3.4	600	>4.7uF	L=2.2uH, C=2.2uF+2.2uF	Output cap range 4.4uF +/-20%
VSYS	2.2	1200	>10uF	L=0.68uH, C=10uF*2	Total output cap >20uF

LDO	Output Voltage(V)	Output Current(mA)	Bypass cap	cap range	Notes
VA	2.8	150	1uF	-20%~+20%	Far-end bypass cap
VCN28	2.8	30	1uF	-20%~+20%	Far-end bypass cap
VTCXO	2.8	40	1uF	-20%~+20%	Far-end bypass cap
VCAMA	2.8	150	3.2uF	-20%~+20%	1uF near-end 2.2uF Far-end bypass cap
VCN33	3.3/3.4/3.5/3.6	240	4.7uF	-20%~+20%	Far-end bypass cap
VRTC	2.8	2	0.1uF to 1000uF	-20%~+20%	Far-end bypass cap
VM	1.24/1.39/1.54/1.84	700	10uF	-20%~+20%	Far-end bypass cap
VRF18	1.825	200	1uF	-20%~+200%	Far-end bypass cap
VIO18	1.8	300	4.7uF	-20%~+200%	Far-end bypass cap
VIO28	2.8	200	2.2uF	-20%~+200%	Far-end bypass cap
VCN18	1.8	120	1uF	-20%~+20%	Far-end bypass cap
VCAMD	1.2/1.3/1.5/1.8	150	1uF	-20%~+20%	Far-end bypass cap
VCAM_IO	1.8	100	1uF	-20%~+20%	Far-end bypass cap
VEMC_3V3	3.0/3.3	400	4.7uF	-20%~+20%	Far-end bypass cap
VMC	1.8/3.3	100	1uF	-20%~+20%	Far-end bypass cap
VMCH	3.0/3.3	400	2.2uF	-20%~+20%	Far-end bypass cap
VUSB	3.3	20	1uF	-20%~+20%	Far-end bypass cap
VSIM1	1.8/3.0	50	1uF	-20%~+20%	Far-end bypass cap
VSIM2	1.8/3.0	50	1uF	-20%~+20%	Far-end bypass cap
VGP1	1.2/1.3/1.5/1.8/2.0/2.8/3.0/3.3	100	1uF	-20%~+20%	Far-end bypass cap
VIBR	1.2/1.3/1.5/1.8/2.0/2.8/3.0/3.3	100	1uF	-20%~+20%	Far-end bypass cap
VGP2	1.2/1.3/1.5/1.8/2.0/2.5/2.8/3.0	100	1uF	-20%~+20%	Far-end bypass cap
VGP3	1.2/1.3/1.5/1.8	200	1uF	-20%~+20%	Far-end bypass cap
VCAM_AF	1.2/1.3/1.5/1.8/2.0/2.8/3.0/3.3	100	1uF	-20%~+20%	Far-end bypass cap
VDIG18	1.8	20	1uF	-20%~+20%	Far-end bypass cap

MEDIATEK
03 MT6582 - Power & MT6323
Custom: MT8382 TABLET
Thursday, January 02, 2014

SKY77590 control logic table

Enable	VctC	VctB	VctA
LB_GMSK_TX	H	L	L
HB_GMSK_TX	H	L	H
LB_EDGE_TX	H	H	L
HB_EDGE_TX	H	H	H
TRX1	L	H	L
TRX2	L	H	L
TRX3	L	H	H
TRX4	L	H	H
TRX5	L	L	H
TRX6	L	L	H
TDSCDMA	H	H	H

BPI0~4 and 10~11 are 2G+3G mode both
BPI5~9 and 12~14 are 3G mode only (suggest BPI5~9 = 1.8V)

EDGE TXM

U616
PA / AP6690

TX: GSM 850: 824~849MHz, PCS 1900: 1850~1910MHz
RX: GSM 850: 869~894MHz, PCS 1900: 1930~1990MHz

MT6166

MT6166/TMP/SMD

Route AUXADC_REF with 4mil trace width
[3] AUXADC_REF

Route AUXADC_TSX with 4mil trace width
[3] AUXADC_TSX

Route AUXADC_GND with 24mil trace width under AUXADC_REF/AUXADC_TSX trace
[3] GND_AUXADC

connect to main GND

Connect TSX/XTAL GND to GND_AUXADC first than connect to main GND

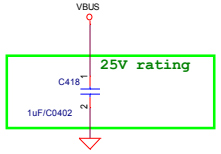
Route AUXADC_REF/AUXADC_TSX as differential trace with well GND shielding and route AUXADC_GND with 24mil trace width under AUXADC_TSX/AUXADC_REF trace to provide return current path.

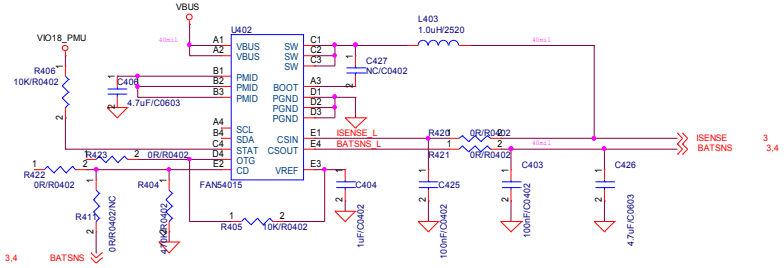
MODE \ Logic	DCXO_32K_EN	XMODE	VXODIG
DCXO + 32K XO	0 (GND)	1 (VIO18)	1 (VIO18)
DCXO + 32K-Less	1 (VTXCO28)	1 (VTXCO28)	1 (VTXCO28)

MEDIATEK

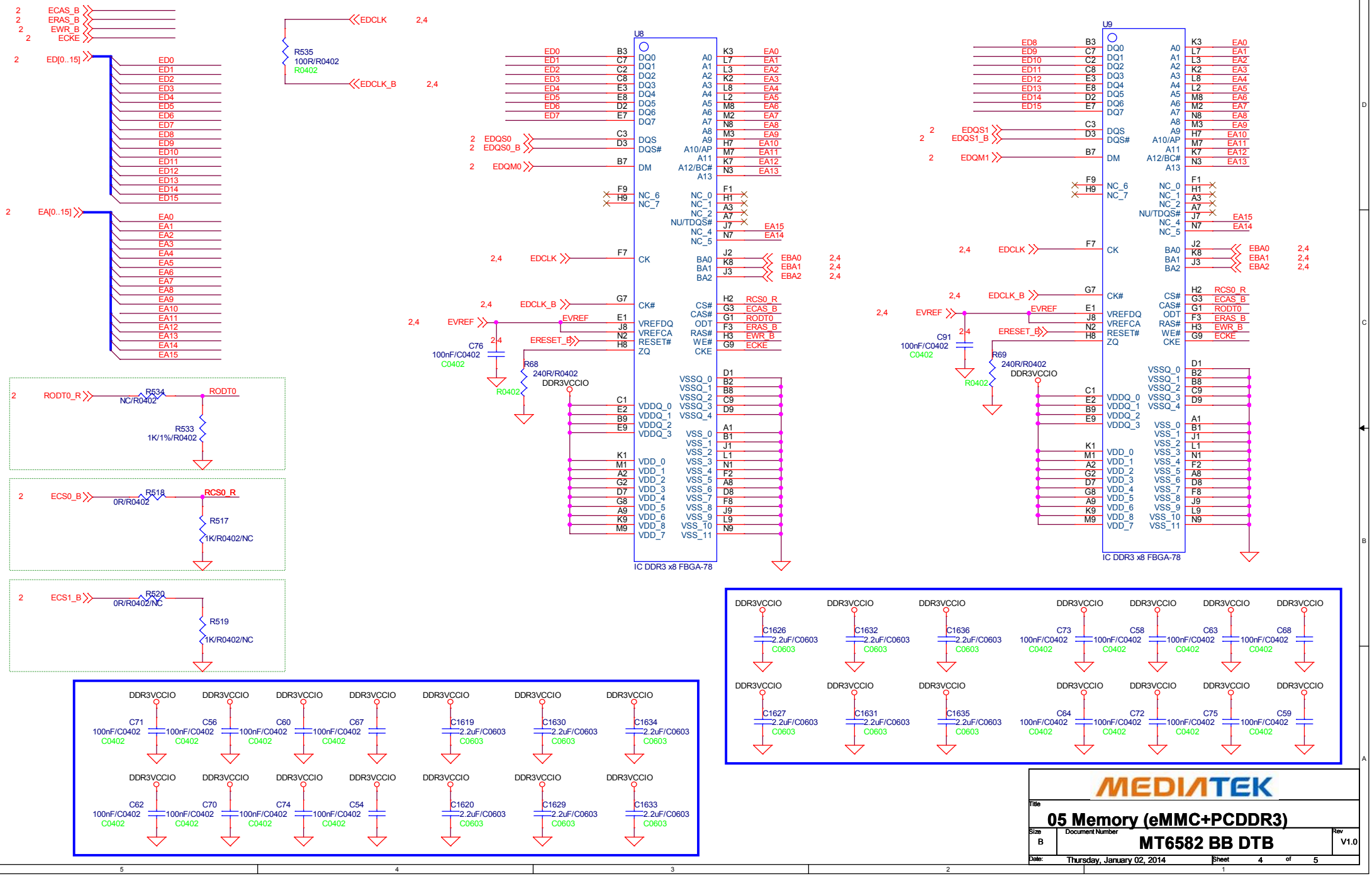
Title	RF-2G	
Size A3	Document Number MT8312	Rev V1.0
Date: Thursday, January 02, 2014	Sheet 4 of 11	

Switching Charger





MEDIATEK			
File: 04 SWCHR & BL Driver			
Size: C	Document Number: MT8382 TABLET		Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 4 of 22		



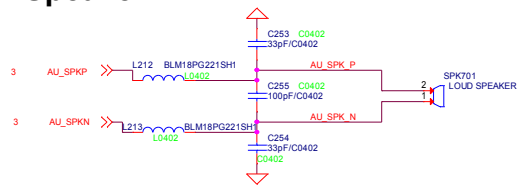
MEDIATEK

Title: 05 Memory (eMMC+PCDDR3)

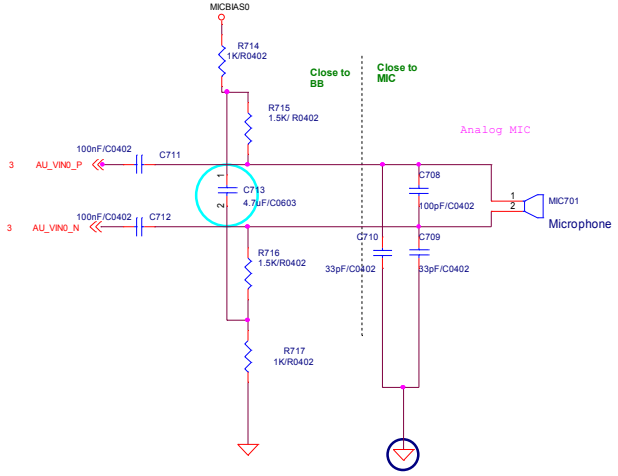
Size	Document Number	Rev
B	MT6582 BB DTB	V1.0

Date: Thursday, January 02, 2014 Sheet 4 of 5

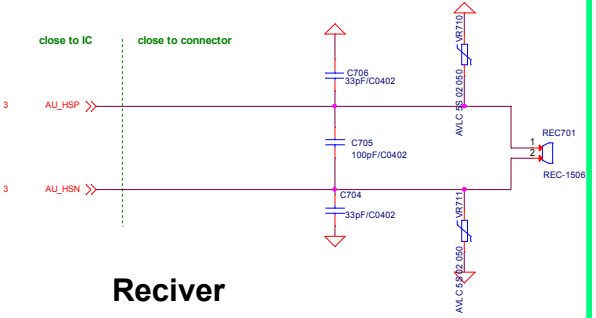
Speaker



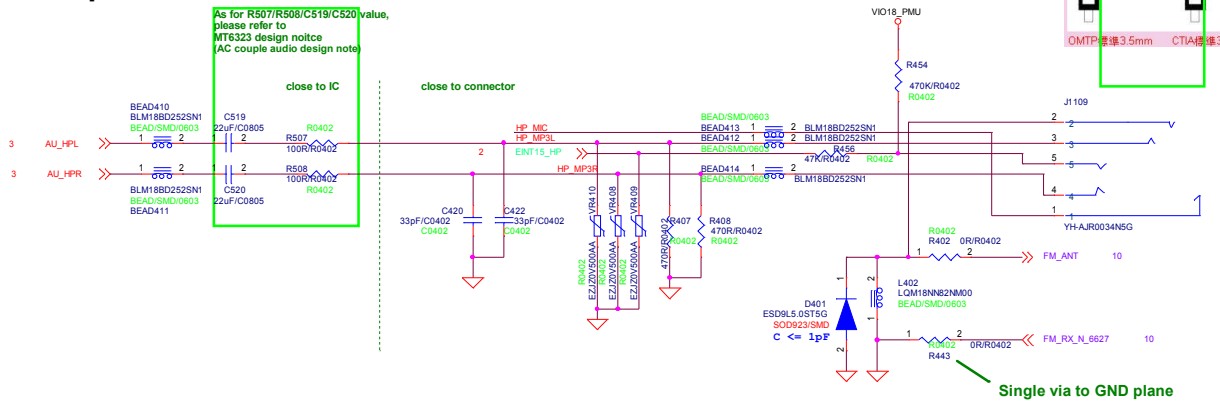
Microphone

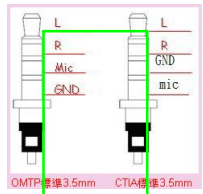


Reciver

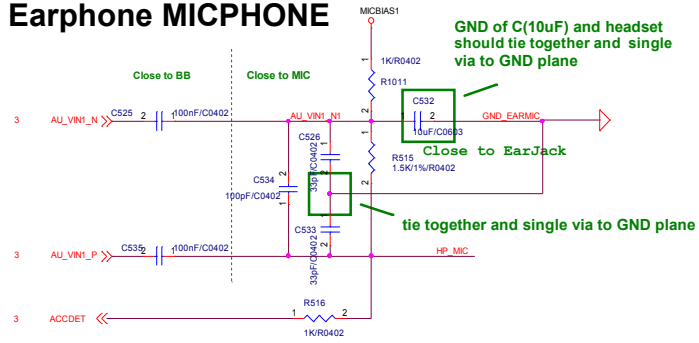


Earphone Audio





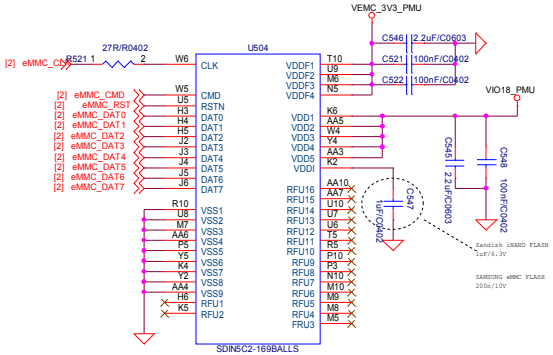
Earphone MICPHONE



MEDIATEK

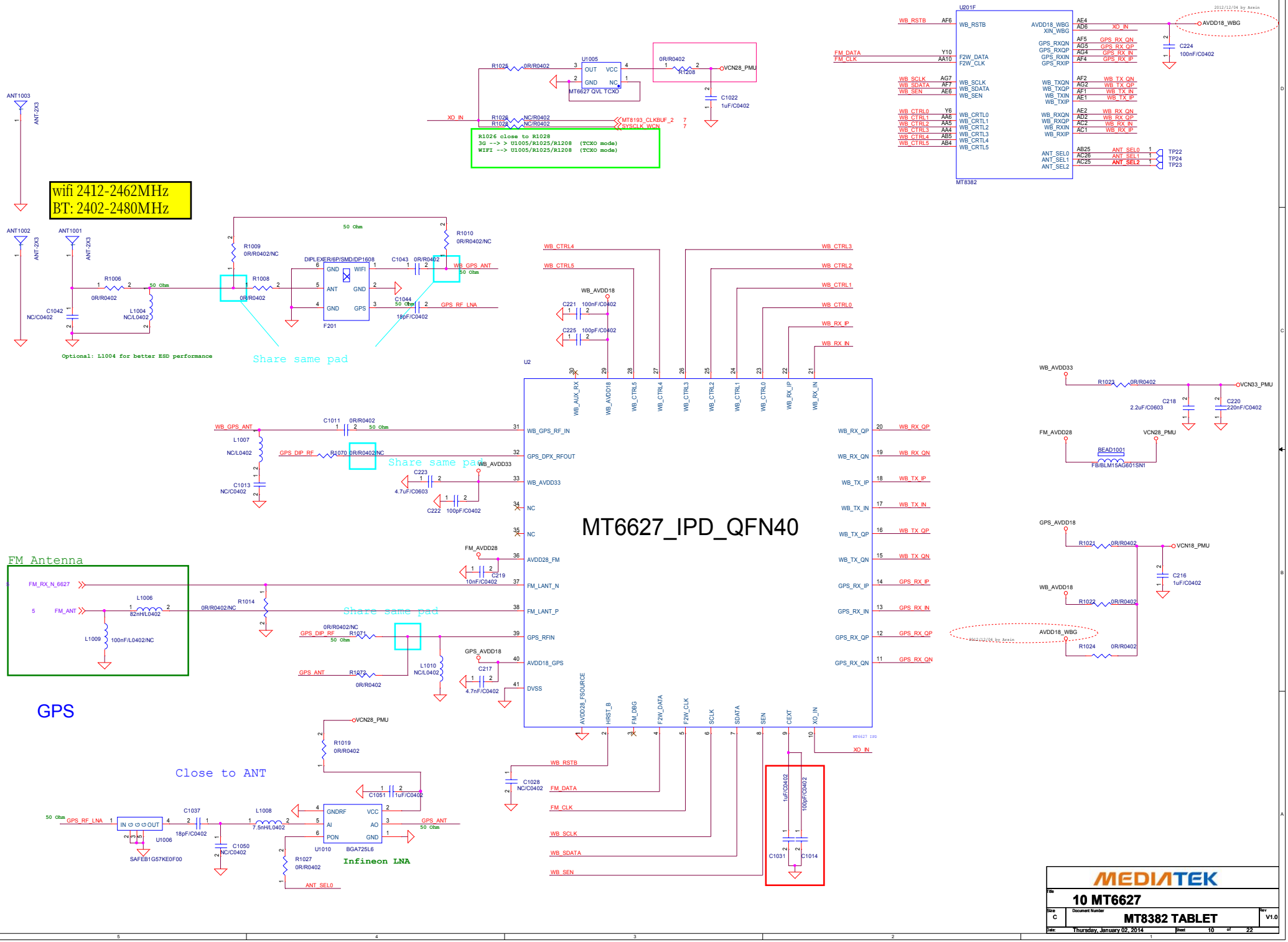
Title	05 MT6582 - Audio	
Size: C	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 5 of 22	

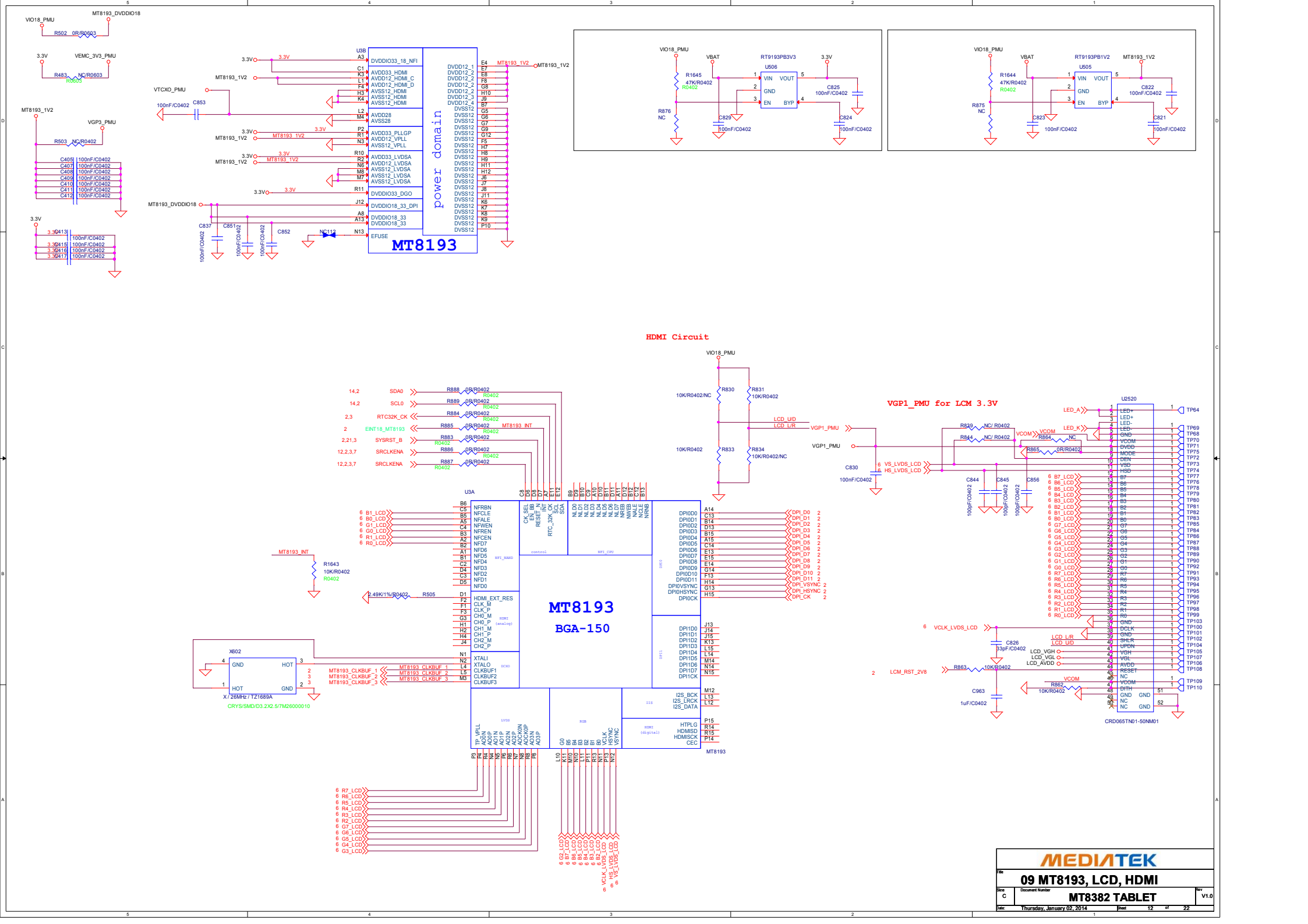
eMMC

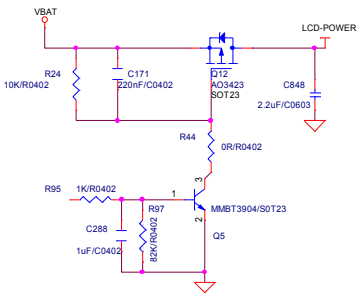


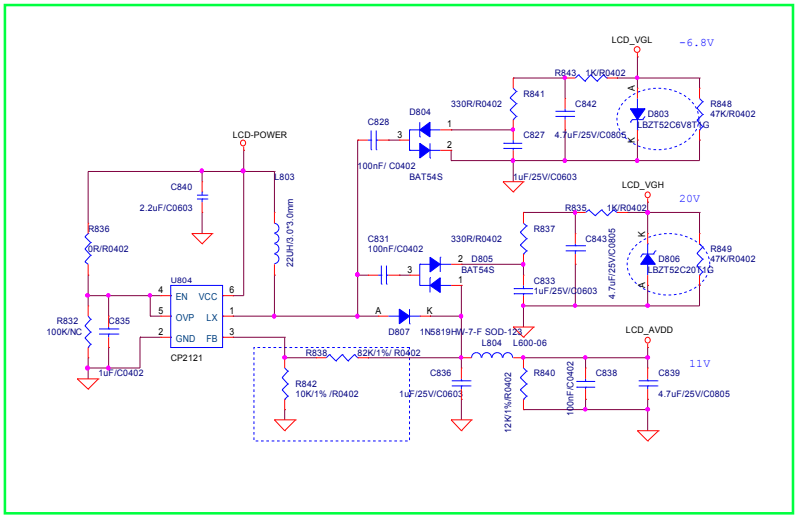
MEDIATEK

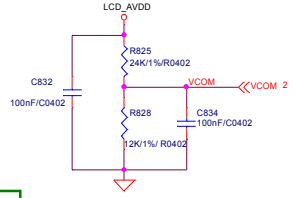
Title	06 Memory (eMMC + x32LPDDR2)	
Size: C	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 6 of 22	


wifi 2412-2462MHz
BT: 2402-2480MHz
MT6627_IPD_QFN40
FM Antenna
GPS
Close to ANT
Infineon LNA
Share same pad
Optional: L1004 for better ESD performance
R1026 close to R1028
3G --> > U1005/R1025/R1208 (TCXO mode)
WIFI --> U1005/R1025/R1208 (TCXO mode)
MT6627 QVL TCXO
MT8382
MEDIATEK
10 MT6627
MT8382 TABLET
Thursday, January 02, 2014

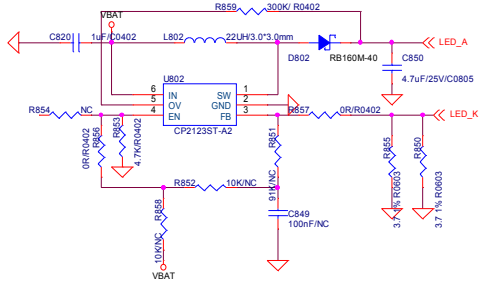

MT8193
power domain
HDMI Circuit
VGP1_PMU for LCM 3.3V
MT8193
BGA-150
MEDIATEK
09 MT8193, LCD, HDMI
MT8382 TABLET
V1.0
Thursday, January 02, 2014
12
22







DVDD	3.0 ~	3.6v	(typ. 3.3v)
AVDD	10.8 ~	11.2v	(typ. 11.0v)
VGH	19.7 ~	20.3v	(typ. 20.0v)
VGL	-7.1 ~	-6.5v	(typ. -6.8v)
VCOM	3.46 ~	3.86v	(typ. 3.66v)

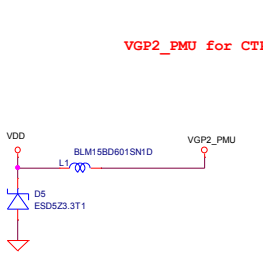


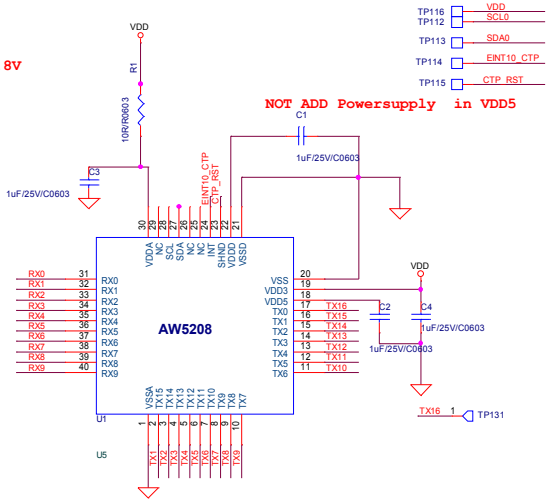
LED Backlight Driver

MEDIATEK

Title	08 Camera, LCM power	
Size: C	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 13 of 22	

VGP2_PMU for CTP 2.8V

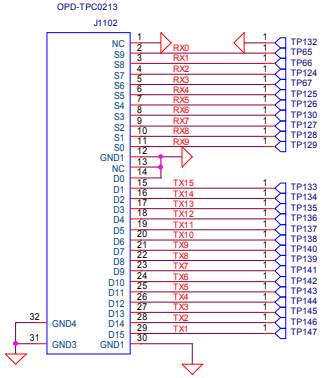


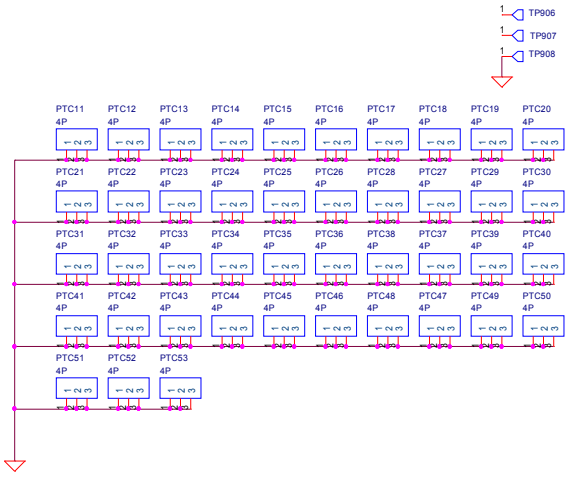


NOT ADD Powersupply in VDD5

Touch Panel IC circuit

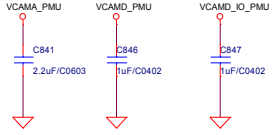
Touch Panel Connector1

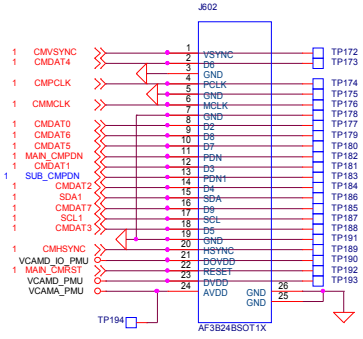


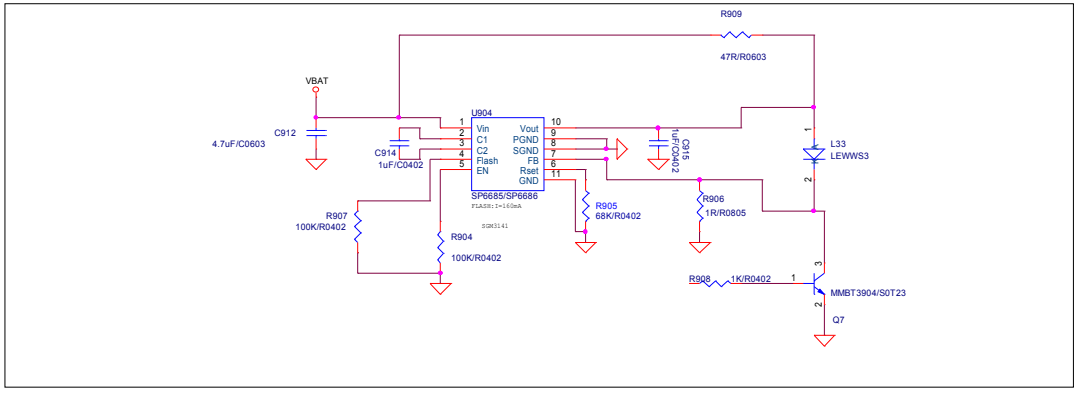


MEDIATEK			
Title: 11 CTP			
Size: C	Document Number: MT8382 TABLET		Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 14 of 22		

Main/Sub Camera



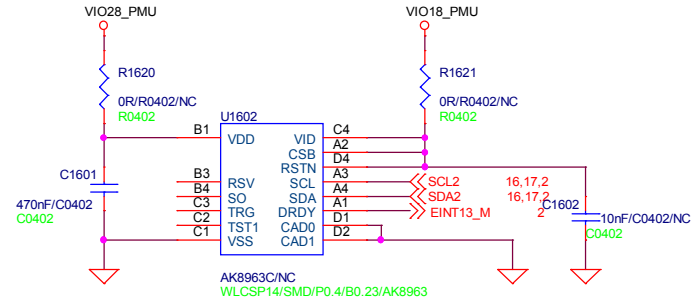




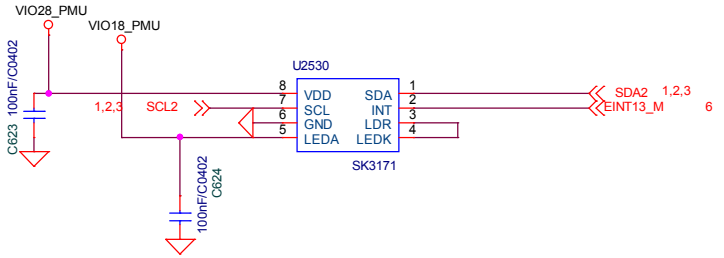
MEDIATEK

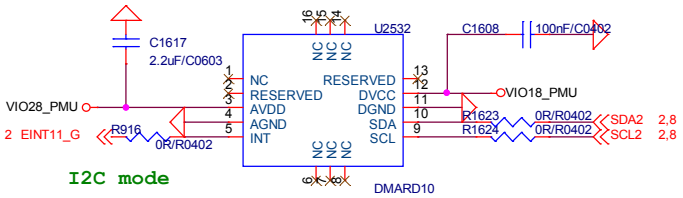
Title	13 Sub Camera	
Size: C	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 15 of 22	

M-Sensor



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

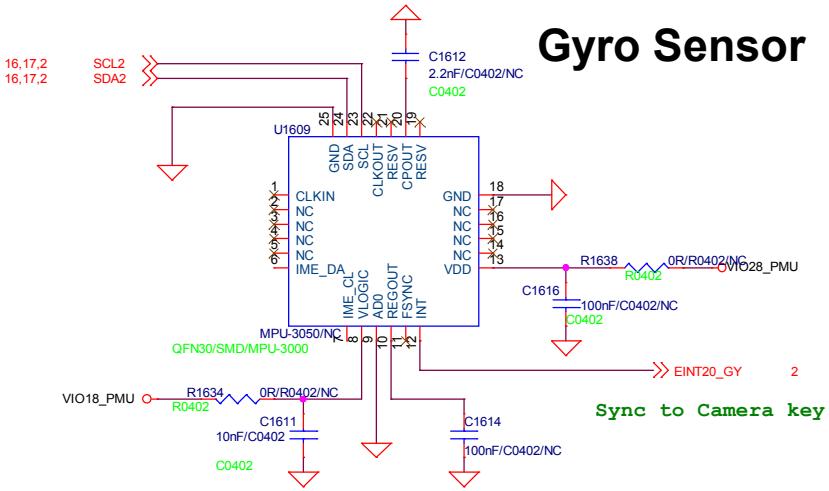




I2C mode

I2C Address: 0x4C (Write:0x98, Read:0x99)

Gyro Sensor



Sync to Camera key

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

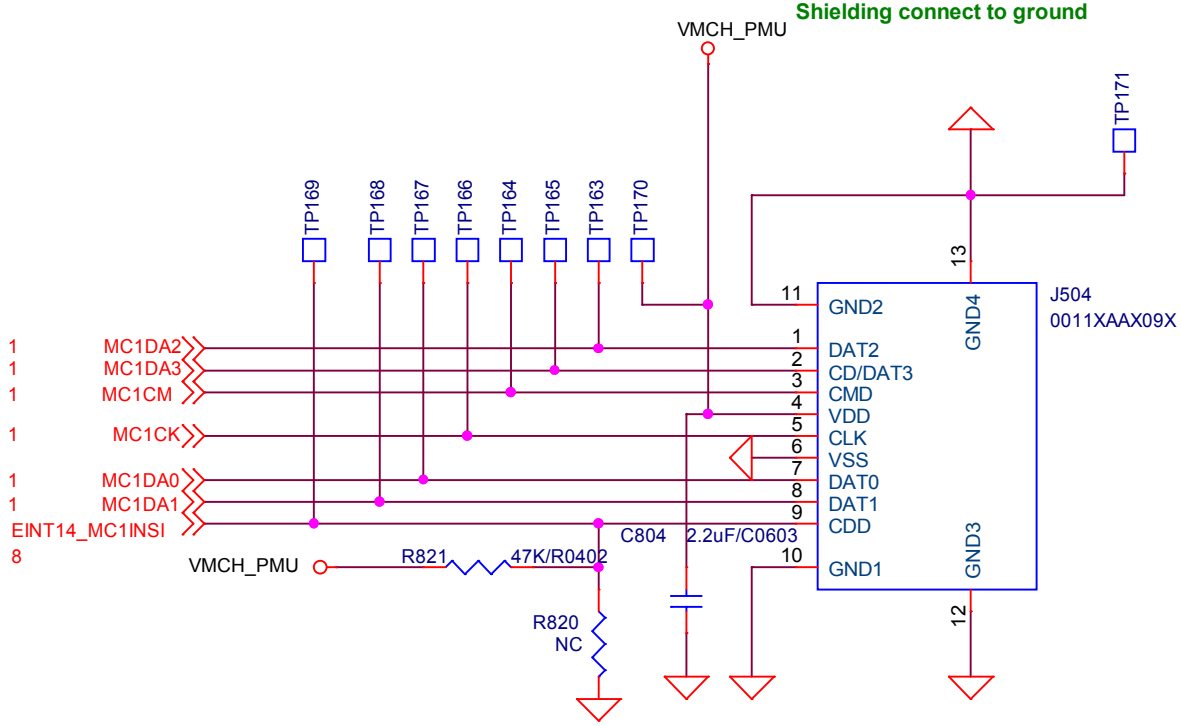
MEDIATEK

Title: 21 Sensors, OFN (Key)		
Size: B	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 17 of 22	

SW:
H: Card remove
L: Card insert

Shielding connect to ground

SD CARD

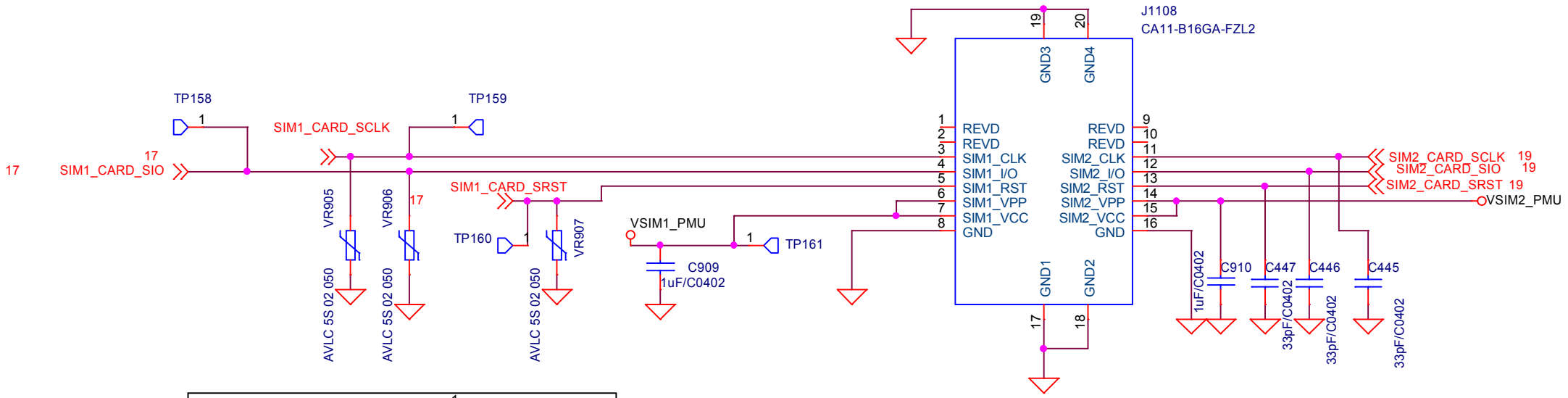


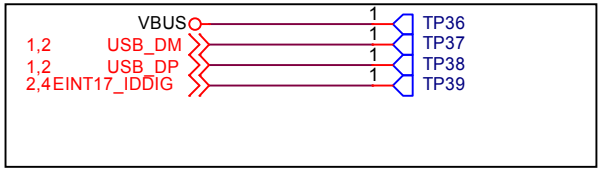
Shielding connect to ground

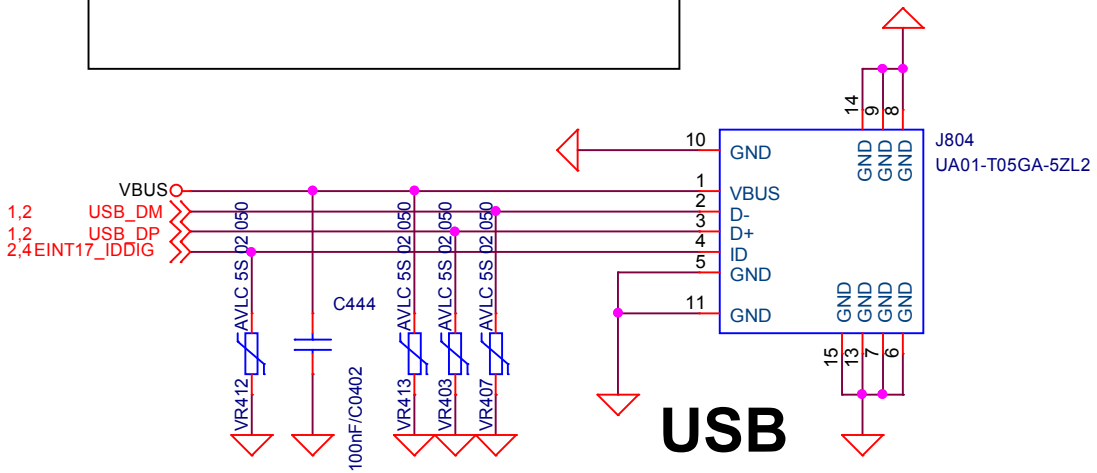
MEDIATEK

Title	18 Memory CARD	
Size: A	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 18 of 22	

SIM







USB

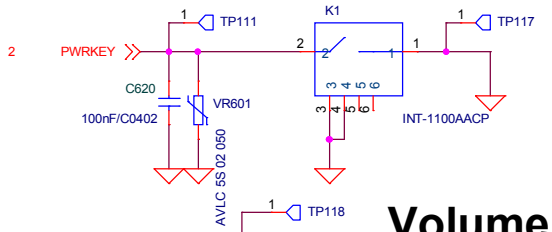
BIG_SIM

MEDIATEK

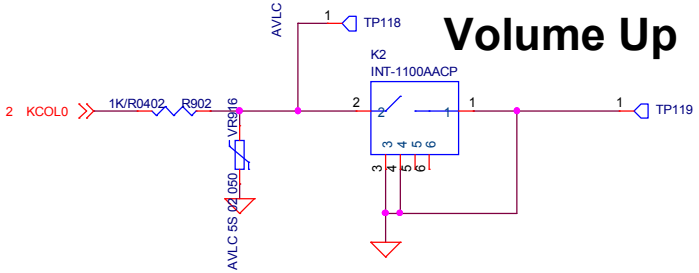
Title	19 Dual SIM, IC-USB	
Size: Custom	Document Number: MT8382 TABLET	Rev: V1.0
Date: Thursday, January 02, 2014	Sheet 19 of 22	

Power Key

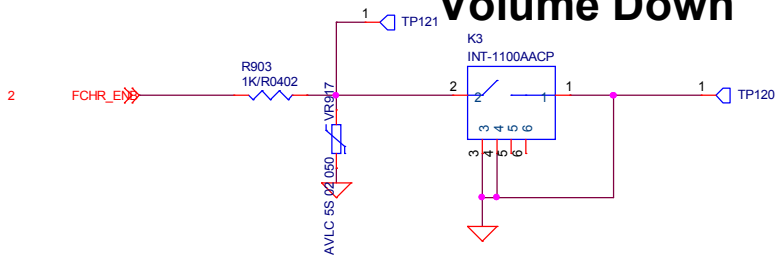
DO NOT put pull-up resistor on PWRKEY



Volume Up

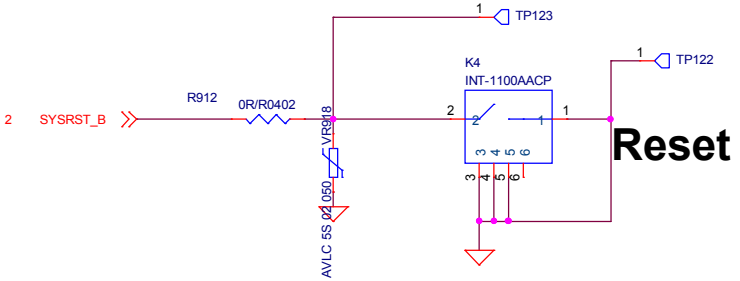


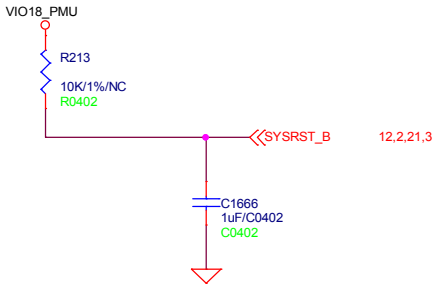
Volume Down



FCHR_ENB can be configured as a normal key function

Reset



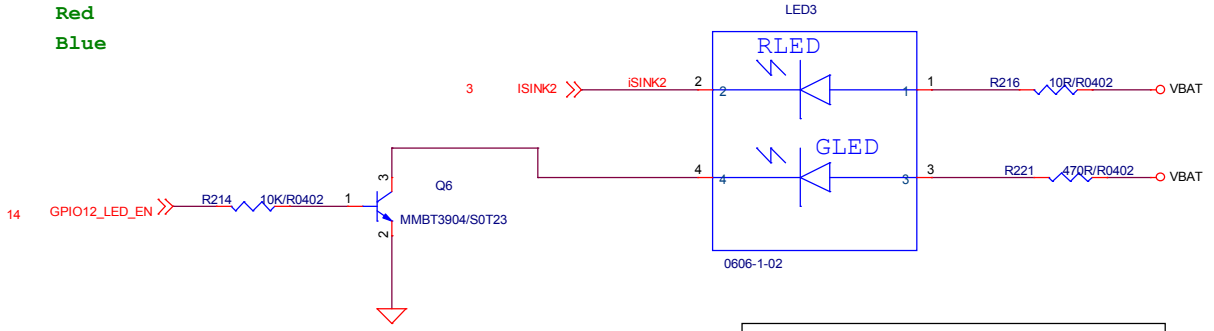


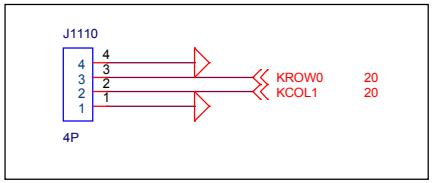
LED

Red

Blue

Indicator LED





Notice :
1. Due to KCOL0 & KROW0 reset mode = GPIO input mode, "Force USB download mode" will be fail in KCOL0+KROW0. So we change VolumeUp key=KCOL0+GND
2. Keypad matrix will become as (KEY1=KCOL0+GND)

	KCOL0	KCOL1	KCOL2
KROW0	KEY 1	KEY 2	KEY 5
KROW1		KEY 3	KEY 6
KROW2		KEY 4	KEY 7

Notice :
There are 3 options for "Long press to shutdown" function
1.PWRKEY + FCHR_ENB
2.PWERKEY only
3.FCHR_ENB only

During download mode, defalut = PWRKEY + FCHR_ENB
For other case (exclude download mode), defalut = PWERKEY only

MEDIATEK

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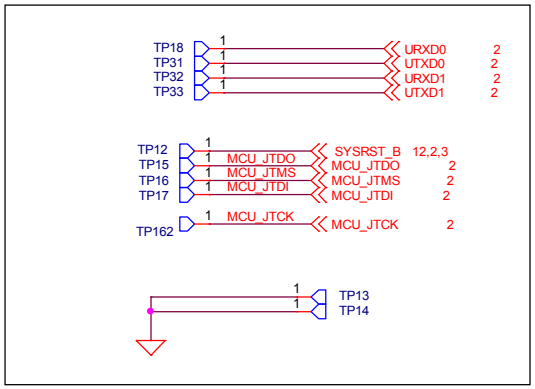

Net	Aux Func.0	Aux Func.1	Aux Func.2	Aux Func.3	Aux Func.4	Aux Func.5
JTMS	GPIO76	B1:JTMS	I1:CONN_MCU_TMS			
JTCK	GPIO77	I0:JTCK	I0:CONN_MCU_TCK1			
JTDI	GPIO78	I1:JTDI	I0:CONN_MCU_TDI			
JTDO	GPIO79	O:JTDO	O:CONN_MCU_TDO			
EINT1	GPIO1	O:PWM2	O:DPI_D5	I0:MD_EINT1	O: TDD_TDO	O:CONN_MCU_TDO
EINT2	GPIO2	O:CLKM0	O:DPI_D6	I0:MD_EINT2		O:CONN_MCU_DBGACK_N
EINT3	GPIO3	O:CLKM1	O:DPI_D7	I0:SPI_MI	I0:MD_EINT3	I1:CONN_MCU_DBGI_N
EINT4	GPIO4	O:CLKM2	O:DPI_D8	O:SPI_MO	I1:TDD_TCK	I0:CONN_MCU_TCK0
EINT5	GPIO5	I1:UCTS2	O:DPI_D9	O:SPI_CS	I1: TDD_TDI	I0:CONN_MCU_TDI
EINT6	GPIO6	O:URTS2	O:DPI_D10	O:SPI_CK	I0:TDD_TRSTN	I0:CONN_MCU_TRST_B
EINT7	GPIO7	I1:UCTS3	O:DPI_D11	B1:SDA1	I1: TDD_TMS	I1:CONN_MCU_TMS
ANT_SEL0	GPIO47	O:ANT_SEL0	O:PWM0	O:CONN_MCU_DBGACK_N		
ANT_SEL1	GPIO48	O:ANT_SEL1	O:PWM1	I1:CONN_MCU_DBGI_N		
ANT_SEL2	GPIO49	O:ANT_SEL2	O:PWM2	I0:CONN_MCU_TRST_B		

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5	4	3	2	1

4/11
1. Update MT6166 26M Xtal, X600 change to EPSON   X1E000021043400
2. U610 change to SAYRF1G88CA0B0A(B2)
3. U613 change to SAFEA2G34FA1F0A
4. Add C613 & C614 for RF request.
5. Reserve L636 for RF tuning.
6. Net: VDD18_6583 chage to VIO18_PMU.

4/14
1. Remove R1073, and let MT6627 pin#34 NC.
2. L1009 change to NC.
3. Update U2 new part, 锌セpin #36~38 ）踊T岿, pin#36~38钡絬 穩.
4. GPS default 叫ؤexternal LNA path
   R1010, R1009, R1070,R1071 --> NC
   R1072, R1019, R1027, C1043, R1008 --> 0 ohm
5. Up date F201 part/footprint to DIPLEXER/6P/SMD/DP1608
6. C1218, C1219 change to 22 pF ; C1214, C1215 change to 1.2 pF.
   C1216, C1217 change to 68 pF ; C1203 change to 4.7uF
7. C222 change to 4.7uF.

4/14
1. Add R101, R108, R106, R109, R102, R104, R116, R117, R118, R111,
R113, R114, R115 for low power break down. Customer can delet thiese
for cost down.
2. Add TP251 & TP252 for NFC debugging.
3. Change R1247 & R1246 connection net name.

4/15, Remove some RF components for cost down.
1. Remove U602, R615, R628, and delet PDET_ALL net.
2. Remove Page 11 all component, and delet Carket net.
3. Remove U108.

4/16,
1. Add C353, VA_PMU to GND power.
2. Update Page03, ISENSE &BATSNS connection for guage function.
3. Add R339 for CHR_LDO connection.

4/18,
1. Update page#19, SIM card to NFC circuit.
2. Update SIM to Micro-SIM footprint.

4/19,
1. C223 change to 2.2uF, and C222 change to 100 pF.
2. Add C220 and C218 for WCN tuning.
3. C1011 change to 0 ohm.
4. Add R1254 & R1255 for NFC antenna tuning.

5/6,
1. GPIO12 & GPIO13 can't be used as EINT function.
Exchange MT8382 GPIO12/GPIO13/KPROW1/KPCOL2

5/31,
1. Update MT8193 Power circuit.
2. Update MT8193 HDMI AVDD33 circuit.

6/3,
1. Add R104/R110/R112/R119/R120/R121/R122/R123 for low power measurement.

6/18,
1. R221 change to NC.
2. R404 change to 470K for battery low power performance.
3. Add C544 (please refer to vender datasheet to get recommand eMMC VDDI/VCC/VCCQ bypass cap value)
4. MT6166 pin C11 connect to GND. (SYNC with MT6572)
5. Update MT6166 co-clock/ Xtal mode table. (Page#7)
6. Add C321
7. Add notice for MT6323 Buck GND. (Page#3)
8. Change VolumeUp key = KCOL0+GND.
   Change Volume down key = FCHR_ENB+GND.
   Add Key notice. (Page #20)
9. C519 & C520 change to 22uF 0805 for audio HP.
10. Remove R1028, and modify MT6627 26M notice.
11. MT6627 26M default TCXO mode:
    R1206 --> NC
    R1205, R1208 --> 0 ohm
    U1005 --> 26M QVL TCXO with 0.5 ppm (2.8V)

6/20,
1. P7, MT6166 change to Xtal mode:
   R655, R678 --> 0 ohm.
   R340, R656, R677 --> NC
   X600 --> MT6166 QVL Xtal
2. Add R1643, MT8193 INT PD.

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