

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Petra-13A

CPU : Temash FT3

GFX :

Remarks :

Model Name : Petra-13

PBA Name : MAIN

PCB Code : BA41-XXXXXX (PTC)
BA41-XXXXXX (HST)
BA41-XXXXXX (GCE)

Dev. Step : PR

Revision : 0.1

T.R. Date : 2013.05.28

Design	CHECK	APPROVAL
Ye Feng	Bin Xie	Lei Guo

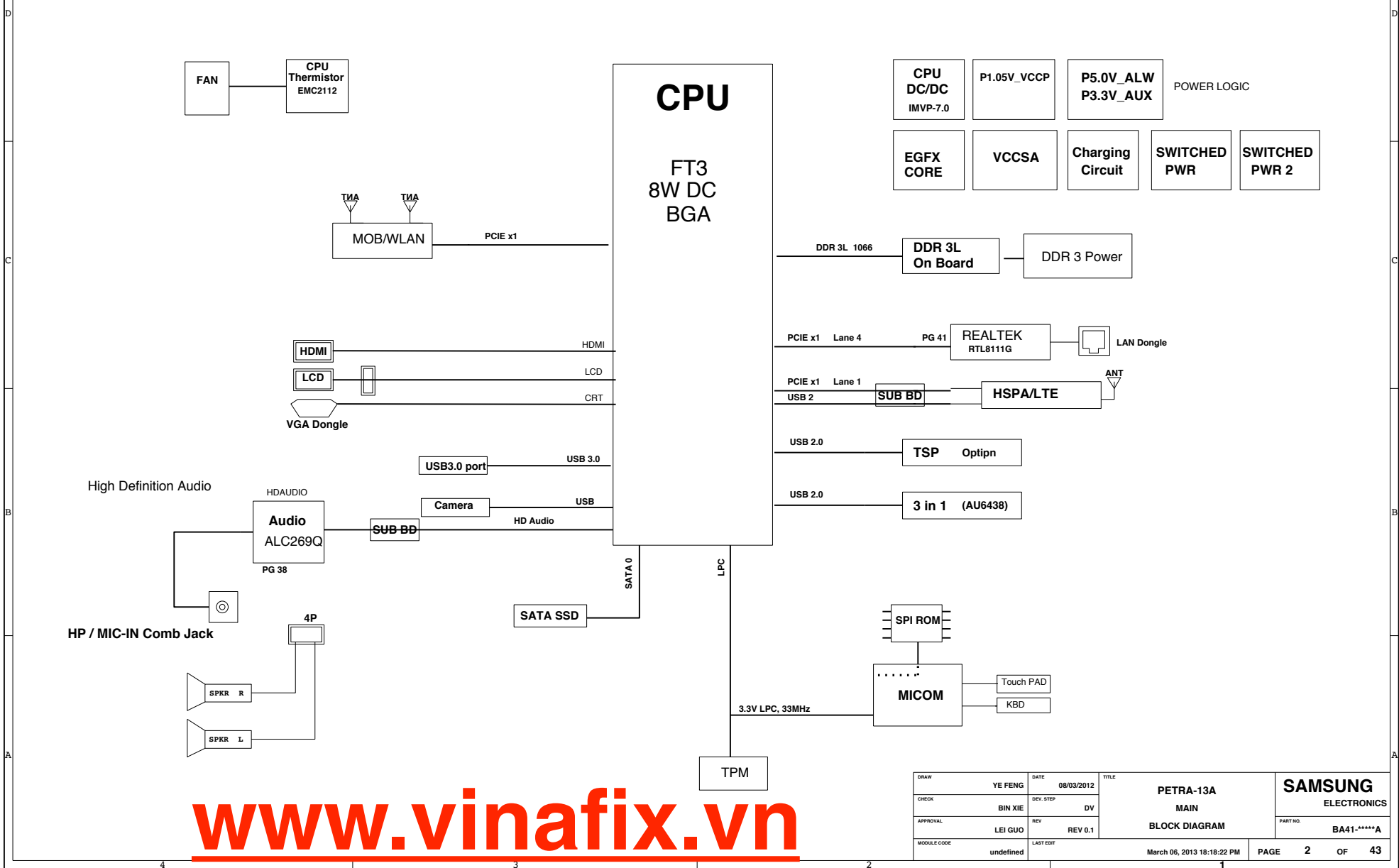
Owner : SEC Mobile R & D Signature : X

sheet01 : Cover
sheet02 : BLOCK DIAGRAM
sheet03 : BOARD INFORMATION
sheet04 : POWER DIAGRAM
sheet05 : CLOCK DISTRIBUTION
sheet06 : Thermal Sensor
sheet07 : Temash APU FT3
sheet08 : Temash APU FT3
sheet09 : Temash APU FT3
sheet10 : Temash APU FT3
sheet11 : Temash APU FT3
sheet12 : Temash APU FT3
sheet13 : STRAP
sheet14 : DDR3 Onboard
sheet15 : DDR3 Onboard
sheet16 : DDR3 Onboard
sheet17 : DDR3 Onboard
sheet18 : Main to Sub Conn
sheet19 : Sub USB S/W SIM
sheet20 : WLAN(MOB)
sheet21 : MICOM / BIOS(MEC1310)
sheet22 : LVDS
sheet23 : HSPA-NGFF SUB
sheet24 : HDMI
sheet25 : Audio
sheet26 : Audio - Combo Jack
sheet27 : 3IN1/TPM
sheet28 : LAN (Realtek RTL8111G)
sheet29 : SATA interface (HDD I/F)
sheet30 : VGA SUB
sheet31 : MICOM GLUE LOGIC
sheet32 : USB3.0 connector
sheet33 : USB2.0 SUB
sheet34 : Power - charger
sheet35 : Power - P3.3V_AUX / P5.0V_ALW
sheet36 : Power - P1.8V_AUX
sheet37 : Power - P0.95V_AUX(Chipset Power)
sheet38 : Power - DDR3
sheet39 : Power - CPU VRM
sheet40 : Power - Switched Power
sheet41 : Power - Power Discharge
sheet42 : Mount Hole
sheet43 : TOUCHPAD/LED

DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		MAIN	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		COVER	PART NO. BA41-*****A
MODULE CODE		LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	1	OF 43

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

BLOCK DIAGRAM



www.vinafix.vn

DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A MAIN BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	2 OF 43	

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails	Active in
VDC P3.3V_MICOM Primary DC system power supply (7 to 21V) 3.3V always power rail (for Micom)	S4 - S5
P5.0V_ALW P5.0V_AUX P3.3V_AUX P1.35V_AUX P5.0V_LDO P1.8V_AUX P0.95V_AUX 5.0V switched on power rail (off in S4-S5) 5.0V switched on power rail (off in S4-S5) 3.3V switched on power rail (off in S4-S5) 1.35V power rail for DDR3L (off in S4-S5) 5.0V switched on power rail (off in S4-S5) 1.8V_AUX switched on power rail (off in S4-S5) P0.95V_AUX switched on power rail (off in S4-S5)	S3
P5.0V P3.3V P1.8V P1.5V P0.67V P0.95V 5.0V switched power rail (off in S3-S5) 3.3V switched power rail (off in S3-S5) 1.8V switched power rail (off in S3-S5) 1.5V switched power rail (off in S3-S5) 0.67V power rail for DDR3 (off in S3-S5) 0.95V switched power rail (off in S3-S5)	S0
VCC_CORE CPU_VDDNB Core Voltage for CPU VCC for APU	S0

USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	USB2.0 PORT	1	LAN CONTROLLER
1	TSP	2	WLAN
2	Multi Memory Card Controller		
3	NC		
4	HSPA		
5	Mini PCI Express (WLAN)		
6	Camera 1		
7	NC		
8	USB3.0 Port		
9	NC		
-0	USB3.0 port		
-1	NC		

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD/SSD
1	
2	
3	
4	
5	

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	Temash APU	Real Time Clock
Crystal	25MHz	LAN	REALTEK
Crystal	48MHz	Temash APU	

LCD Pannel Detect (TBD)

Devices	Resolution	PANNEL_DETECT_0

I²C / SMB Address

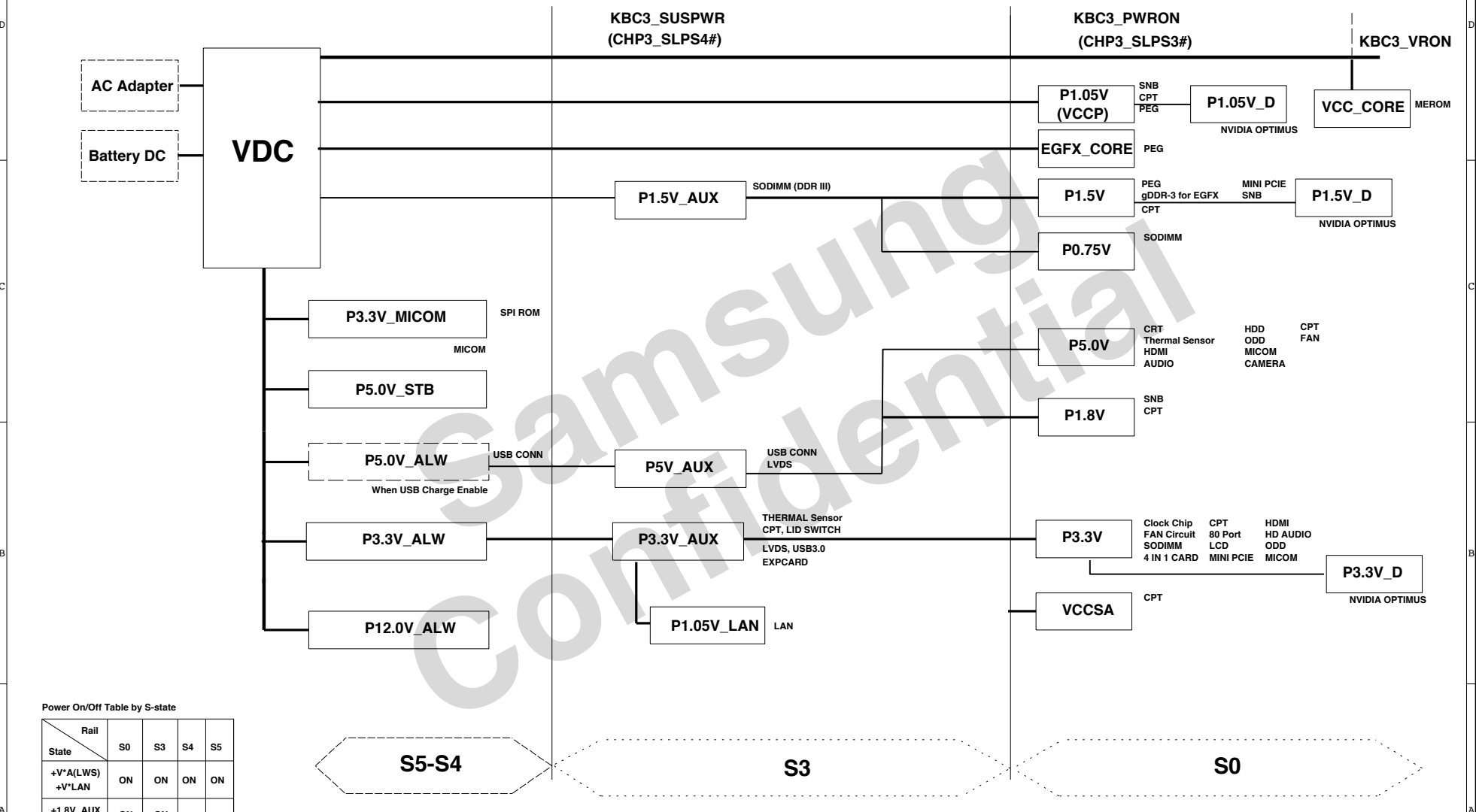
Devices	Address	Hex	Bus
PANTHERPOINT	Master	-	SMBUS Master
CPU Thermal Sensor	0011 000X	30h	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
on board DDR3 thermal Sensor	1001 100x	98h	
Platform thermal management TS	1001 011x	96h	

DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		MAIN	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		BOARD INFO	PART NO. BA41-*****A
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	3	OF 43

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

POWER DIAGRAM

Rev 0.7

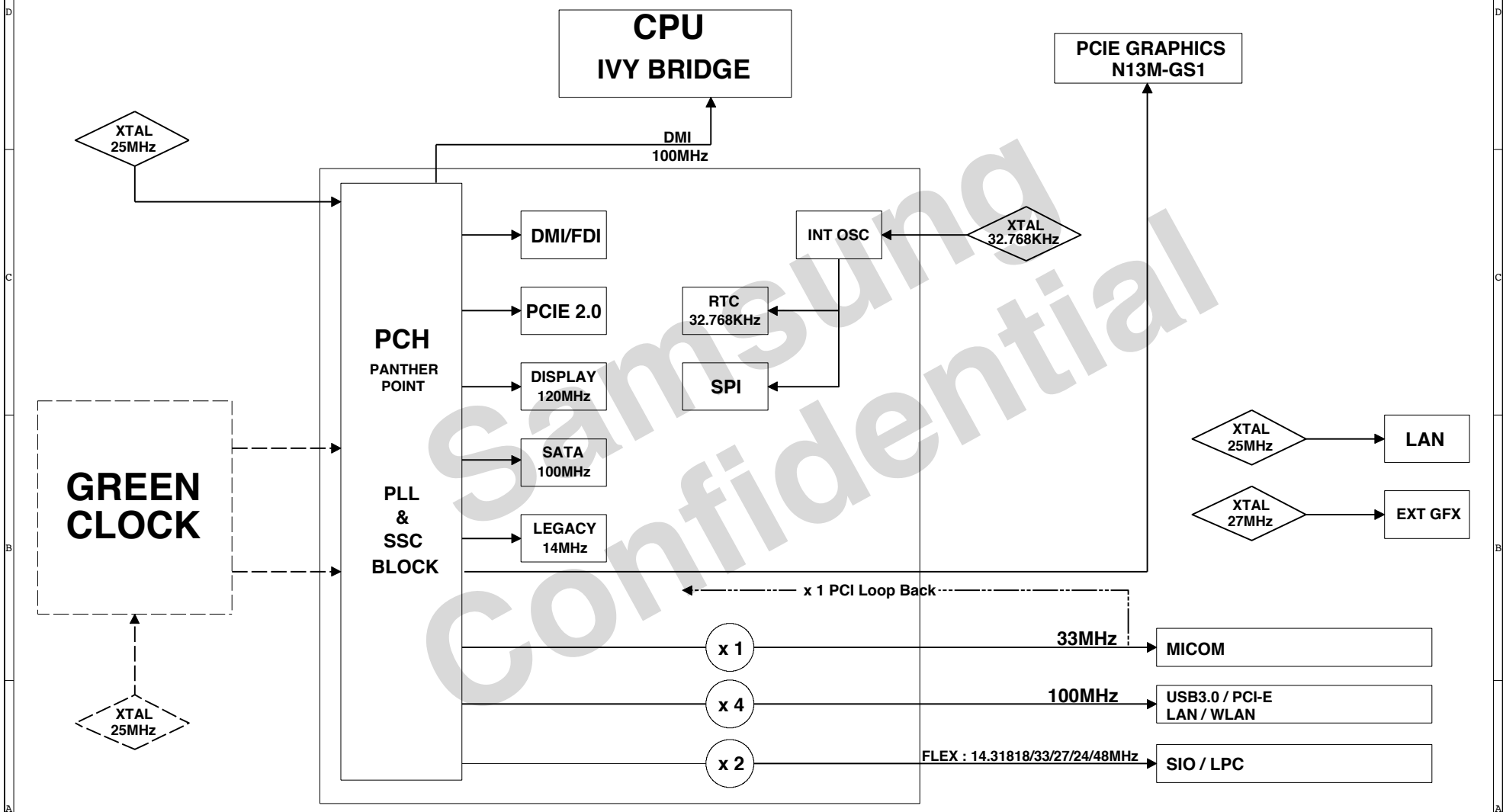


Power On/Off Table by S-state

Rail	S0	S3	S4	S5
State				
+V*A(LWS)	ON	ON	ON	ON
+V*LAN	ON	ON	ON	ON
+1.8V_AUX	ON	ON	ON	ON
+0.9V	ON	ON	ON	ON
+V*AUX	ON	ON	ON	ON
+V	ON	ON	ON	ON
+V* (CORE)	ON	ON	ON	ON

DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	MAIN	POWER DIAGRAM	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1			PART NO.
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:22 PM	PAGE	4	BA41-*****A
				OF	43	

CLOCK DISTRIBUTION Rev. 0.8

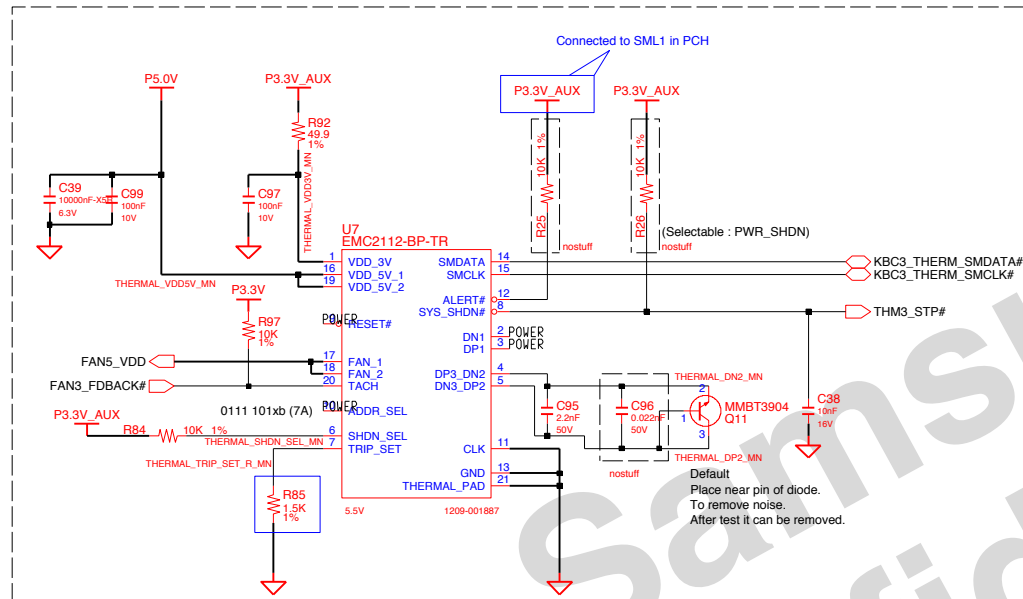


DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	MAIN	MAIN	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1	CLOCK DIAGRAM	PART NO.	BA41-*****A
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:22 PM	PAGE	5	OF 43

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

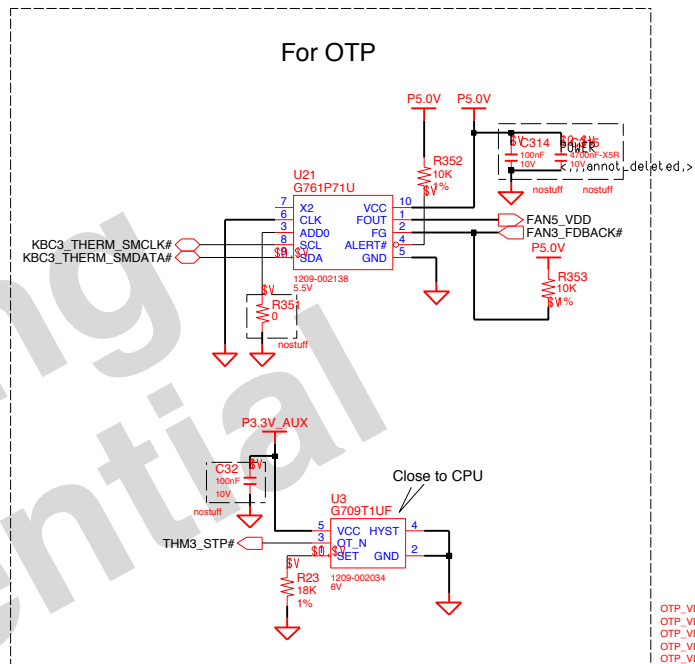
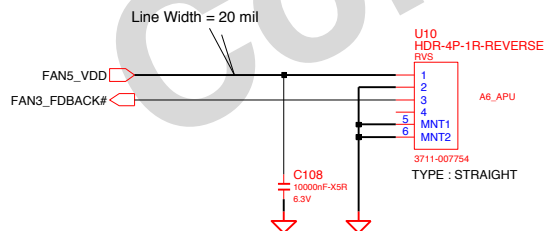
THERMAL SENSOR & FAN CONTROL



TEMPERATURE	103c	99c	95c
TRIP_SET resistor value	2.49K	2.0K	1.5K

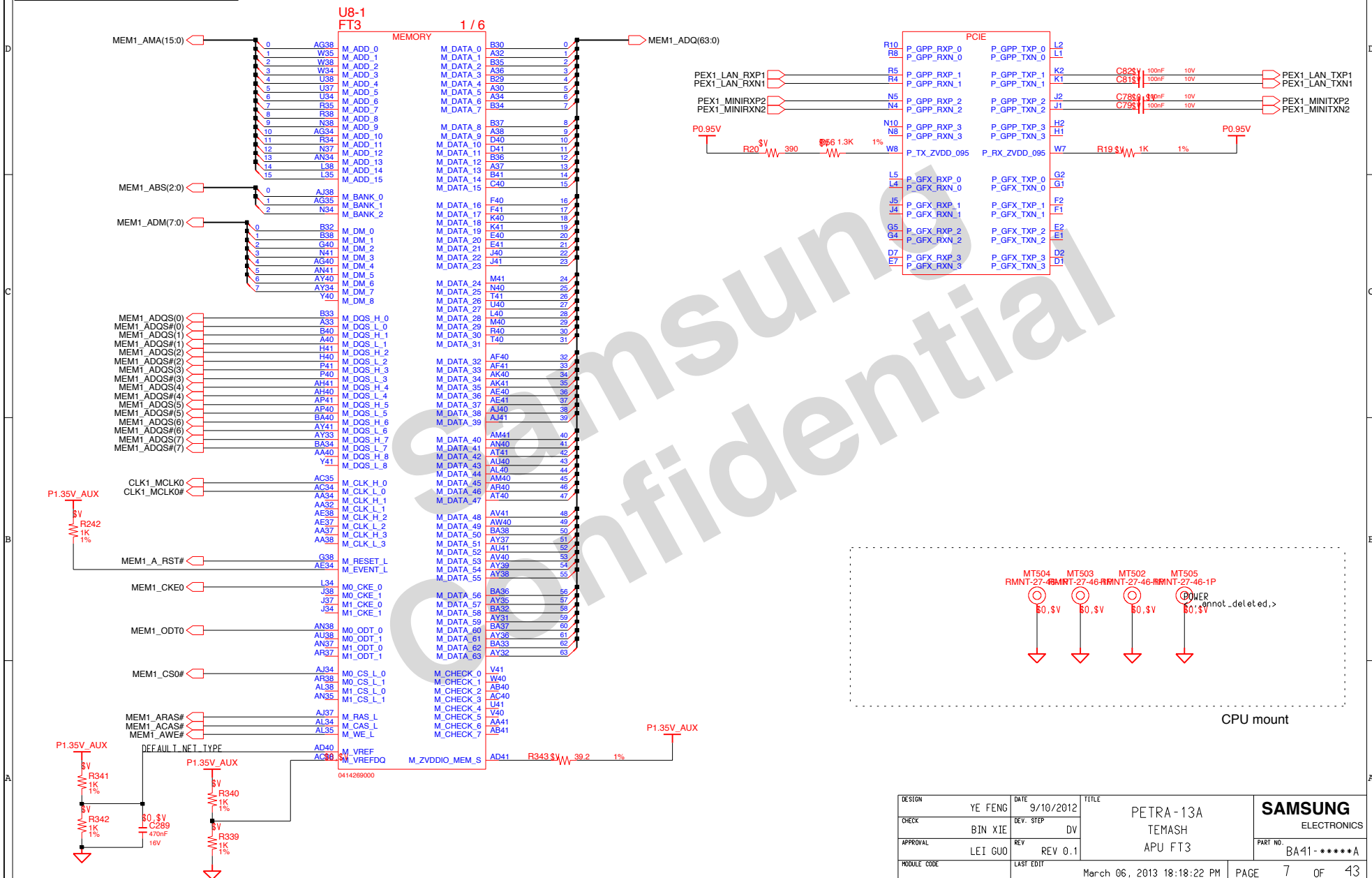
ADDRESSSEL MODE	
0	0101 111xb
✓ HIGH Z	0111 101xb (7A)
1	0101 110xb

SHDN_SEL MODE	
0	INTEL TR MODE
✓ HIGH Z	AMD CPU/DIODE MODE
1	EXT.DIODE 2 MODE

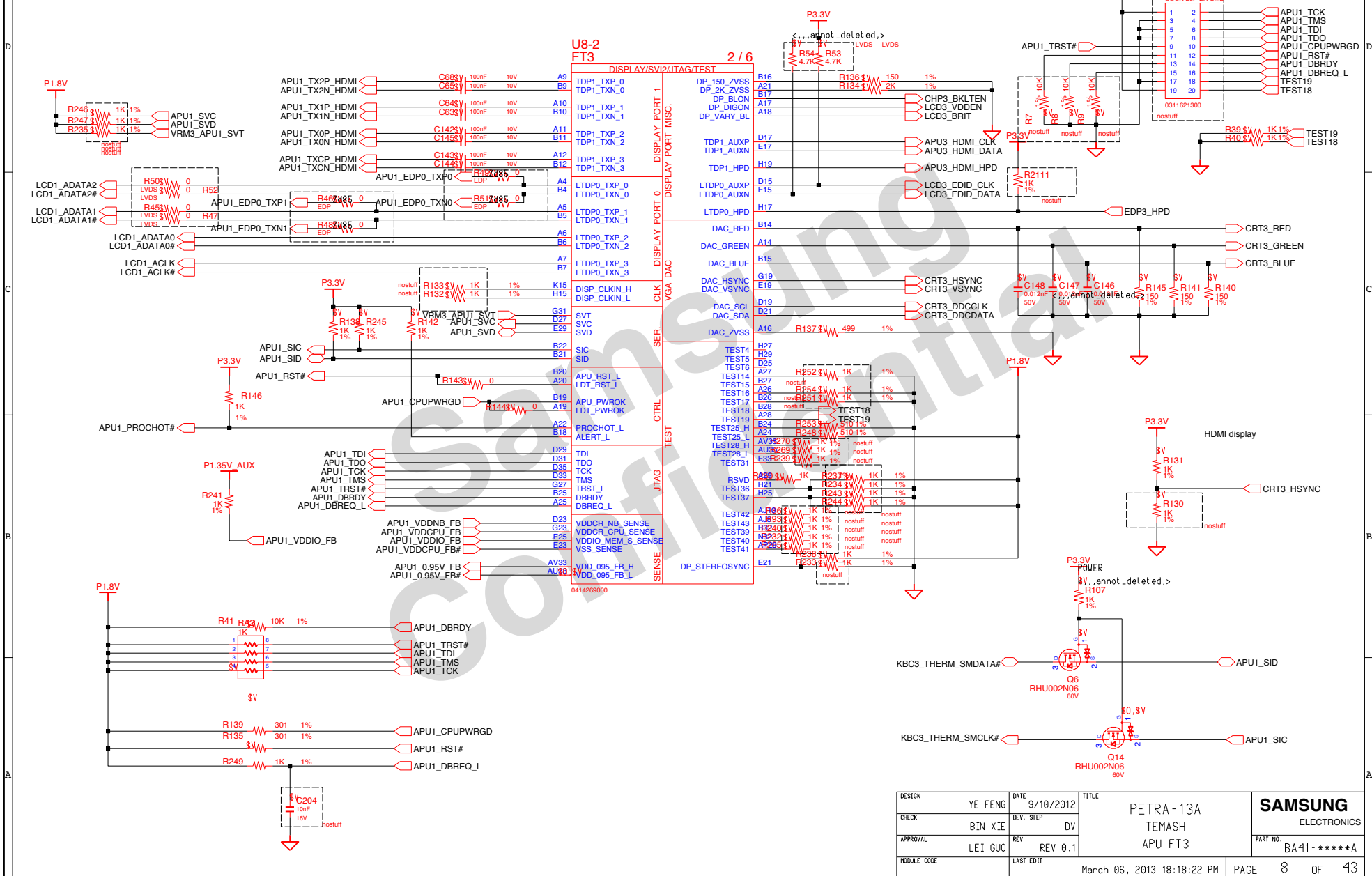


DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		THERMAL SENSOR	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		THERMAL SENSOR EMC2112	PART NO.
MODULE CODE		LAST EDIT				BA41-*****A
				March 06, 2013 18:22 PM	PAGE	6 OF 43

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

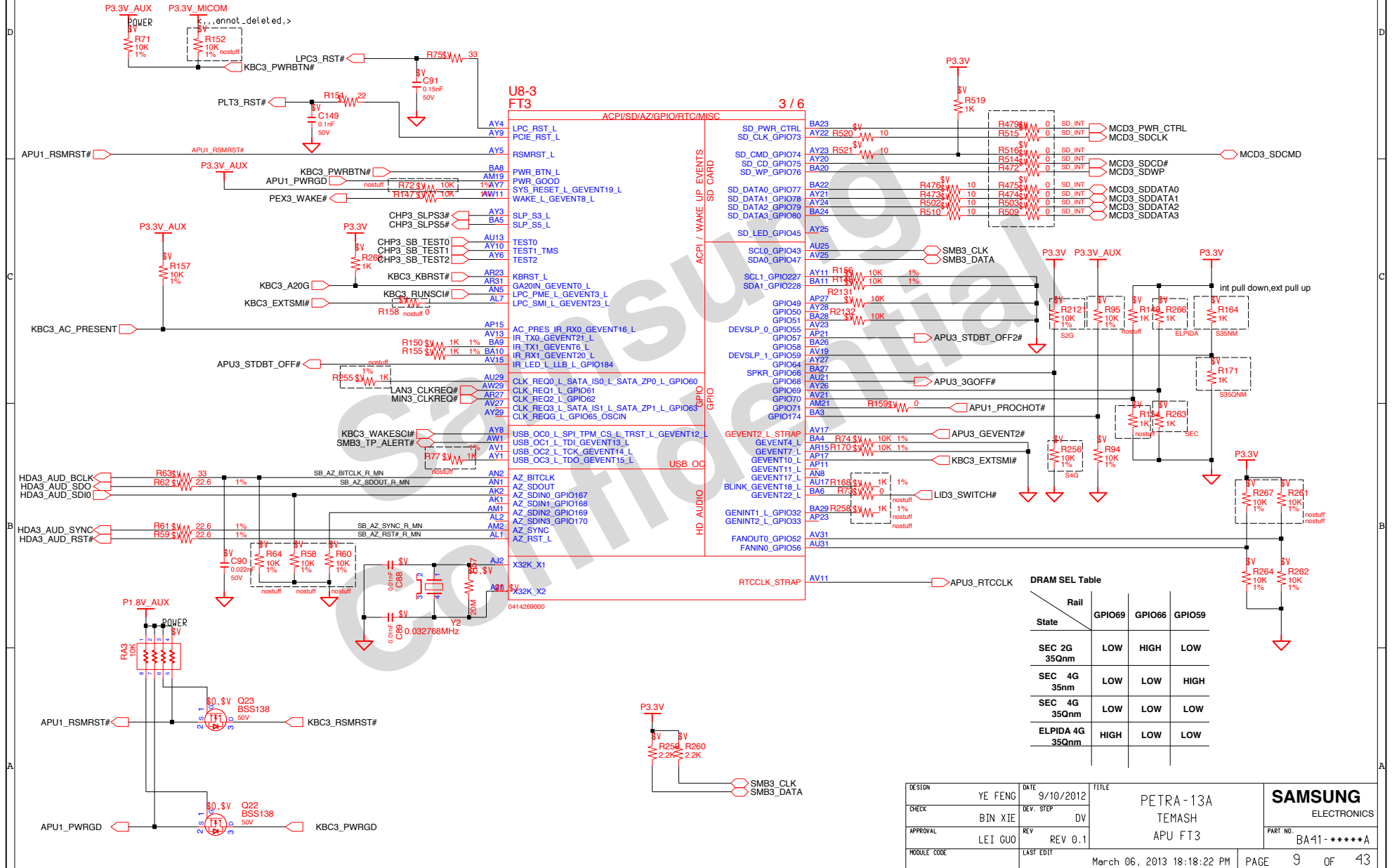


THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



SAMSUNG PROPRIETARY

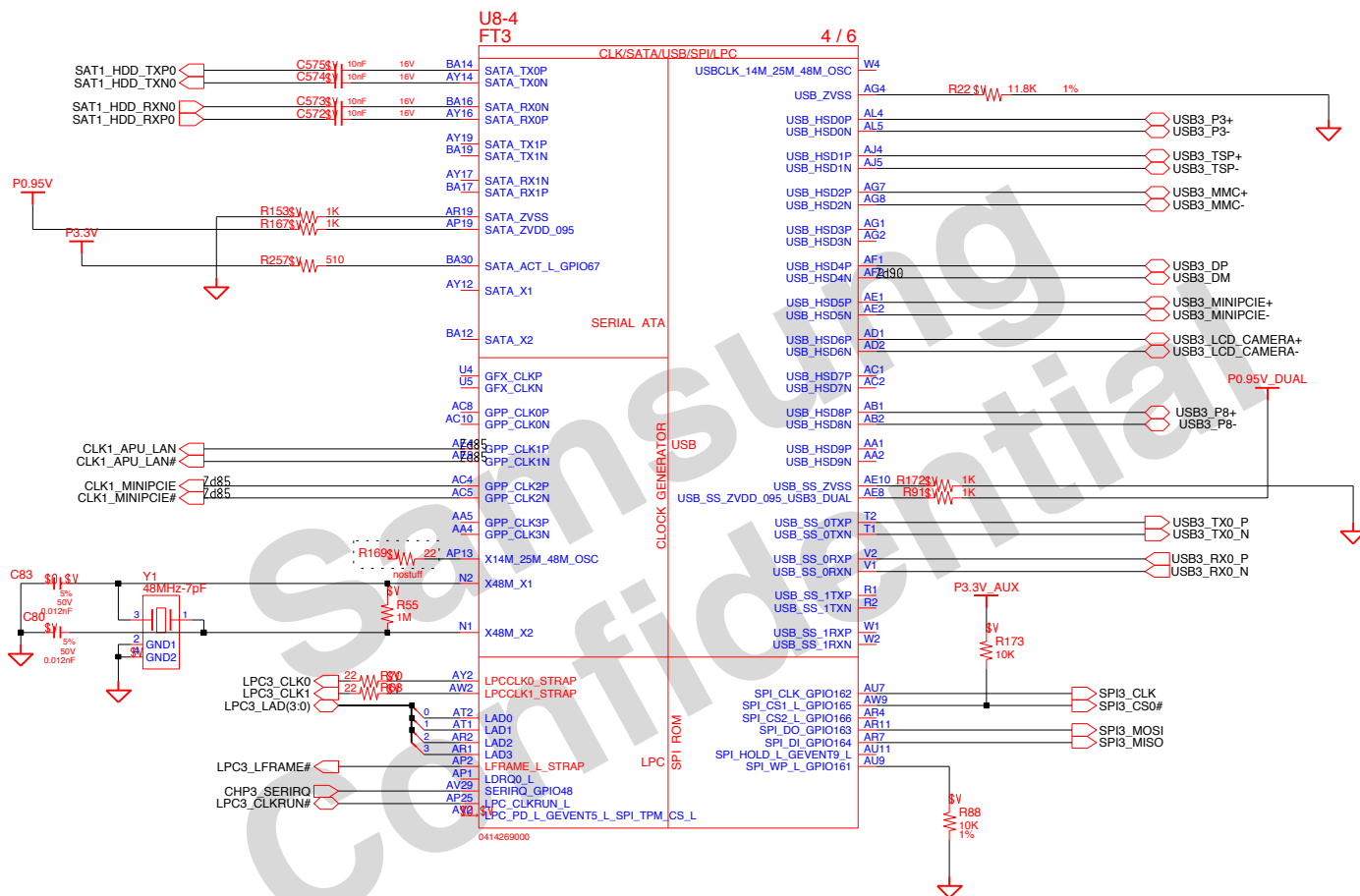
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DESIGN	YE FENG	DATE	9/10/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV	TEMASH		
APPROVAL	LEI GUO	REV	REV 0.1	APU FT3		
MODULE CODE		LAST EDIT	March 06, 2013 18:22:22 PM	PAGE	9 OF 43	

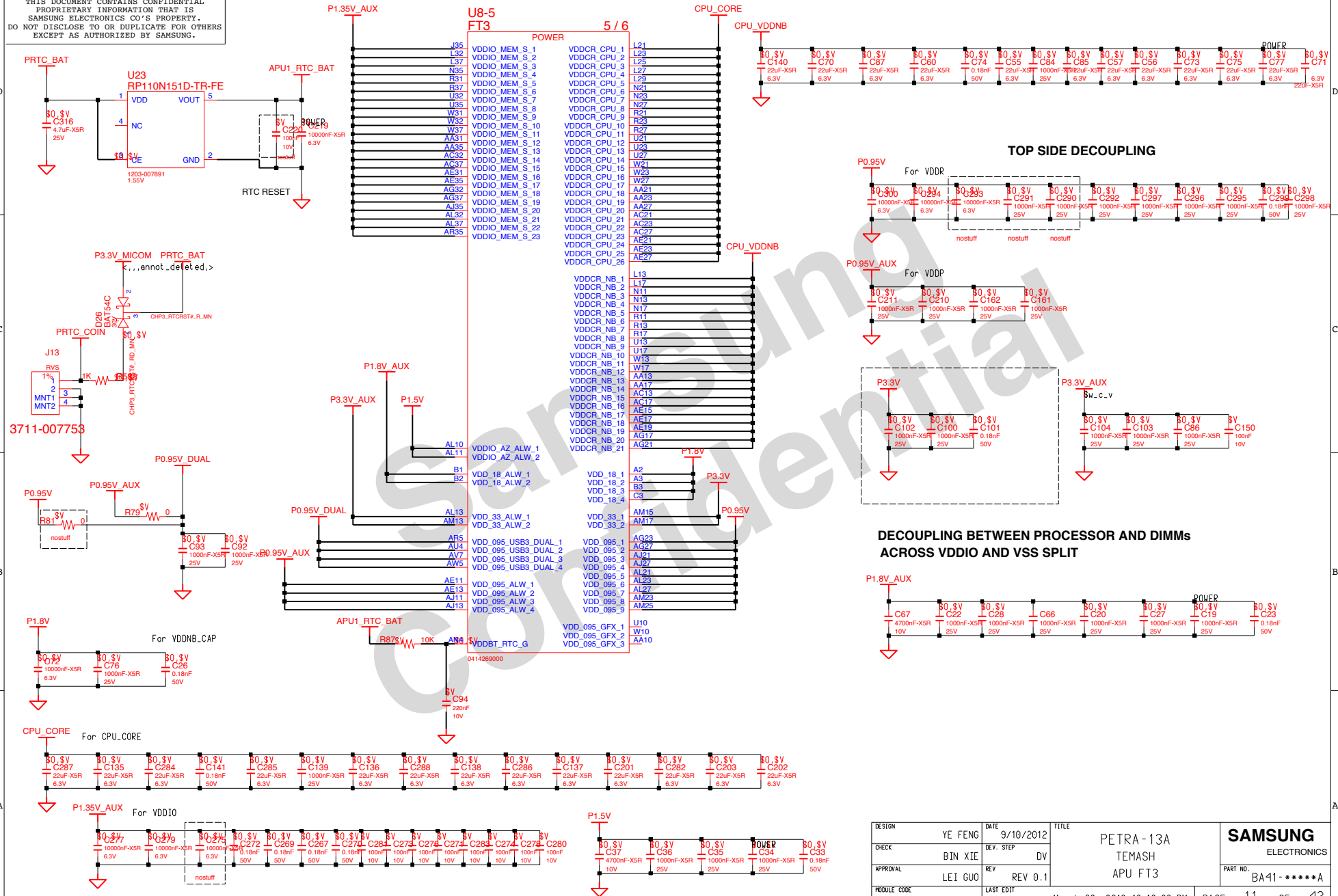
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.



DESIGN	YE FENG	DATE	9/12/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		TEMASH	
APPROVAL	LEI GUO	REV	REV 0.1		APU FT3	
MODULE CODE		LAST EDIT				
March 06, 2013 18:18:22 PM						PAGE 10 OF 43

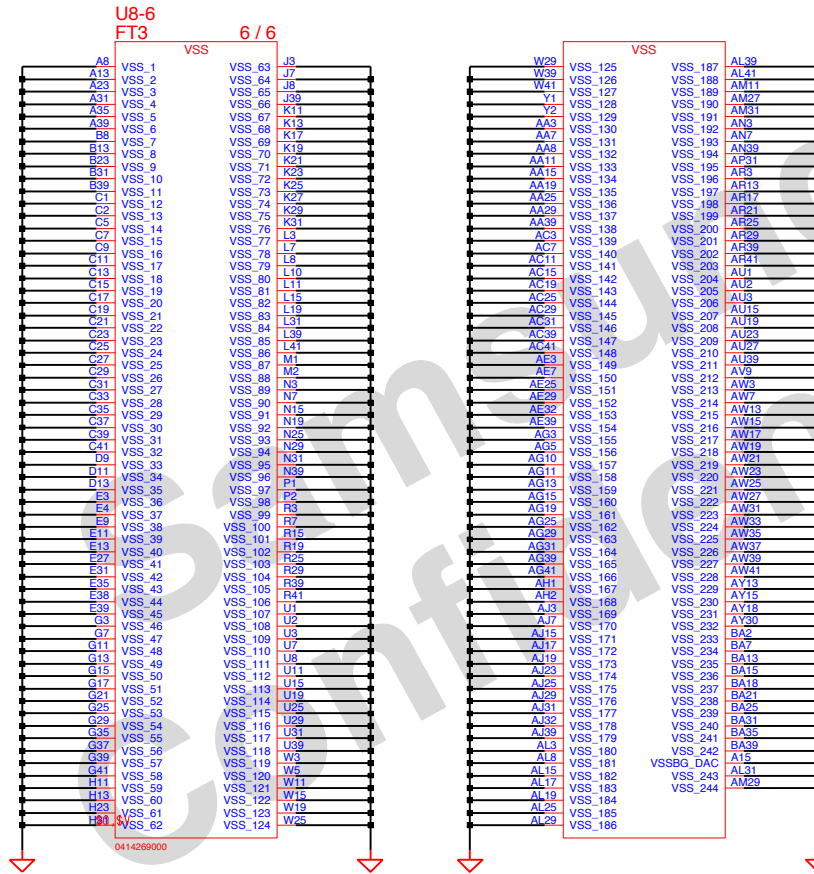
SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.



DESIGN	YE FENG	DATE	9/10/2012	TITLE	PETRA-13A TEMASH APU FT3	SAMSUNG ELECTRONICS PART NO. BA41-*****A
CHECK	BIN XIE	DEV. STEP	DV			
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE		LAST EDIT				
March 06, 2013 18:18:22 PM						PAGE 11 OF 43

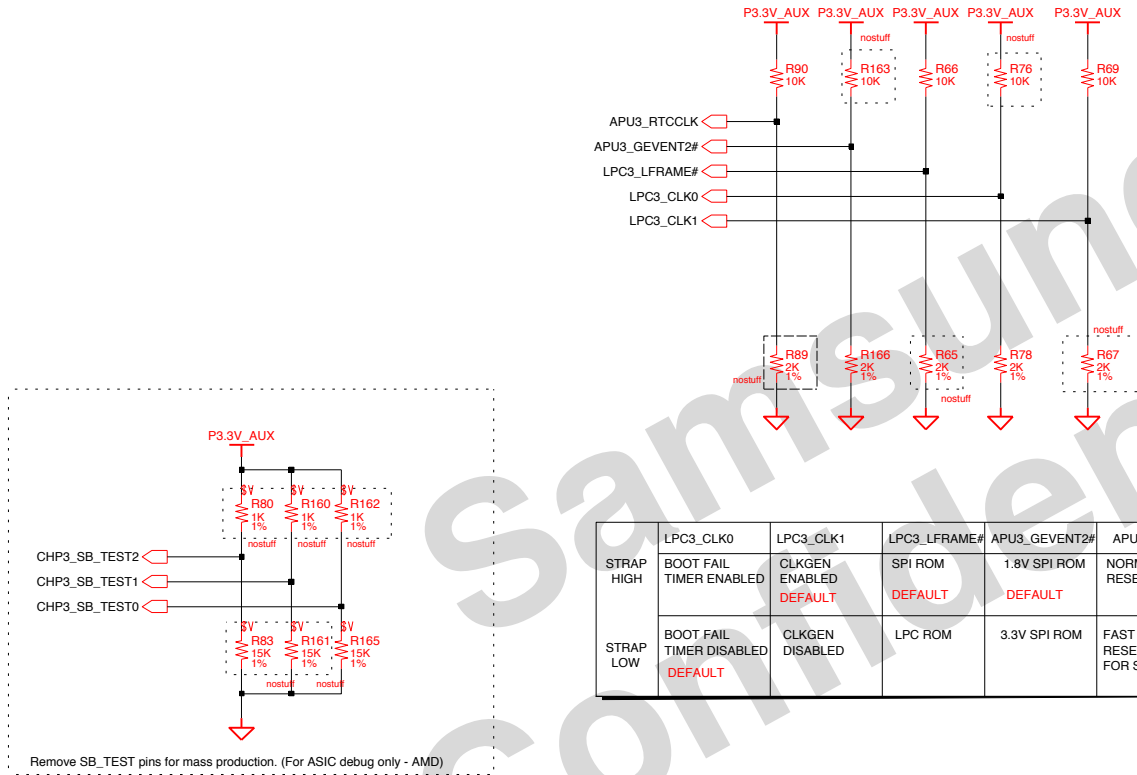
4

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DESIGN	YE FENG	DATE	9/12/2012	TITLE	PETRA-13A TEMASH APU FT3	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE		LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	12	OF 43

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

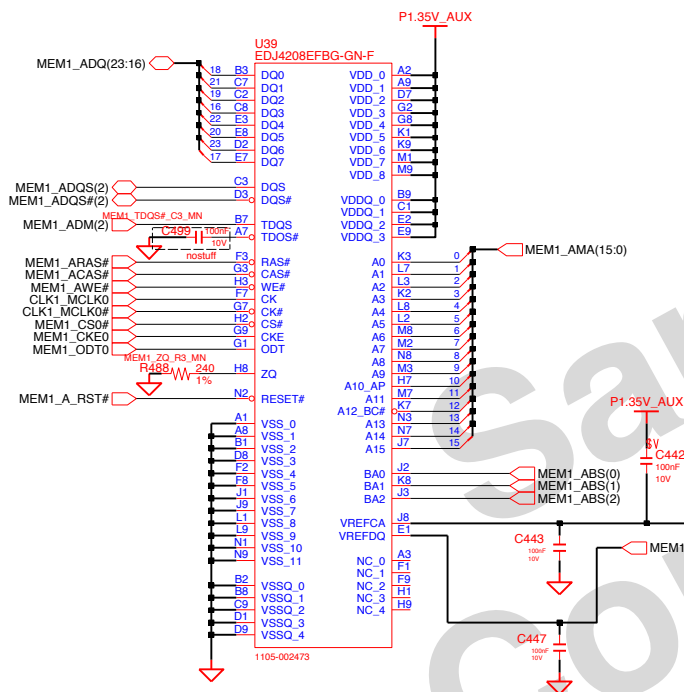


	LPC3_CLK0	LPC3_CLK1	LPC3_LFRAME#	APU3_GEVENT2#	APU3_RTCCCLK
STRAP HIGH	BOOT FAIL TIMER ENABLED	CLKGEN ENABLED DEFAULT	SPI ROM DEFAULT	1.8V SPI ROM DEFAULT	NORMAL POWER UP RESET TIMING
STRAP LOW	BOOT FAIL TIMER DISABLED DEFAULT	CLKGEN DISABLED	LPC ROM	3.3V SPI ROM	FAST POWER UP RESET TIMING FOR SIMULATION

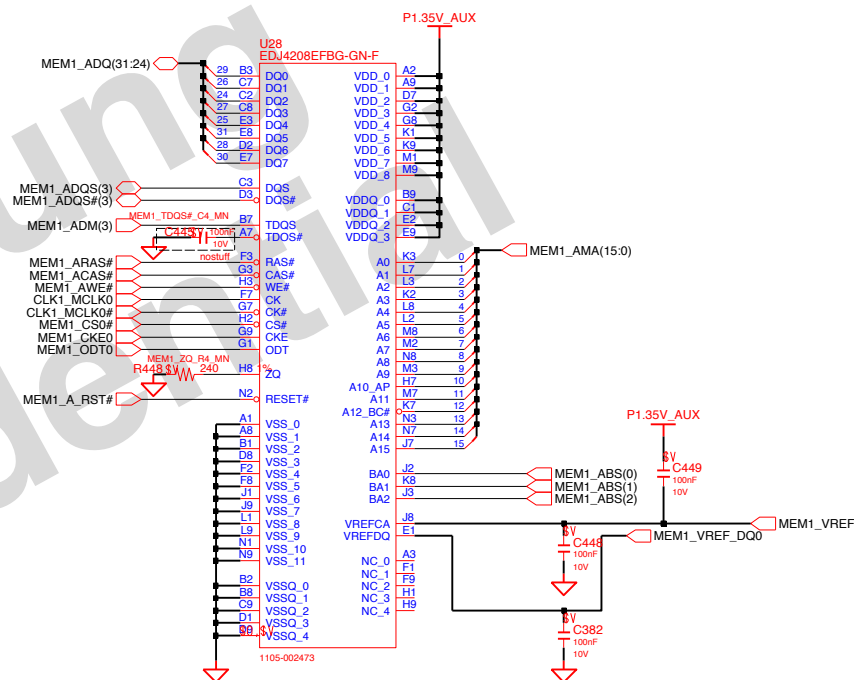
DESIGN	YE FENG	DATE	9/12/2012	TITLE	PETRA-13A TEMASH STRAP	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE		LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	13	OF 43

DDR3 on board #0 (2/4)

1 RANK



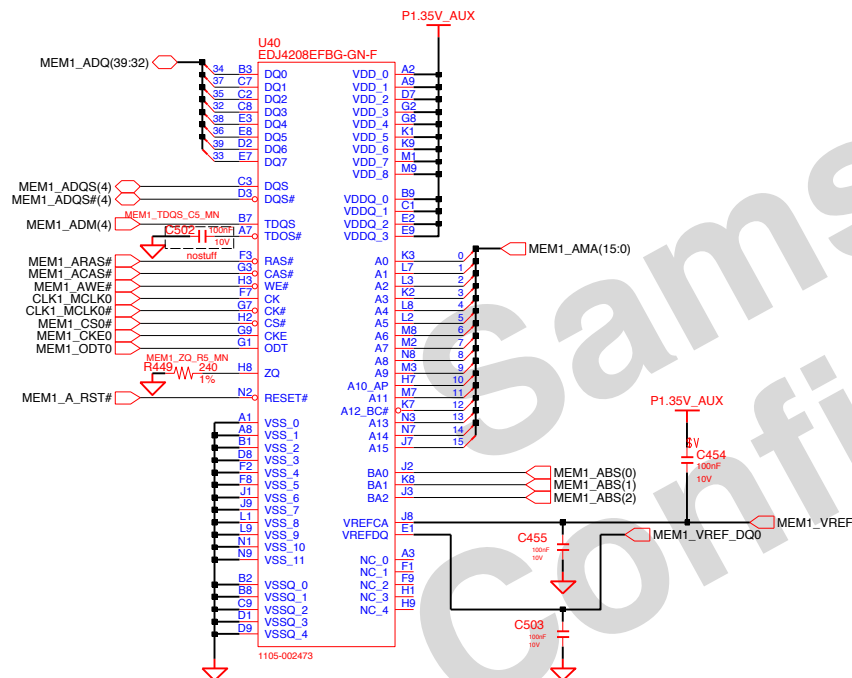
1 RANK



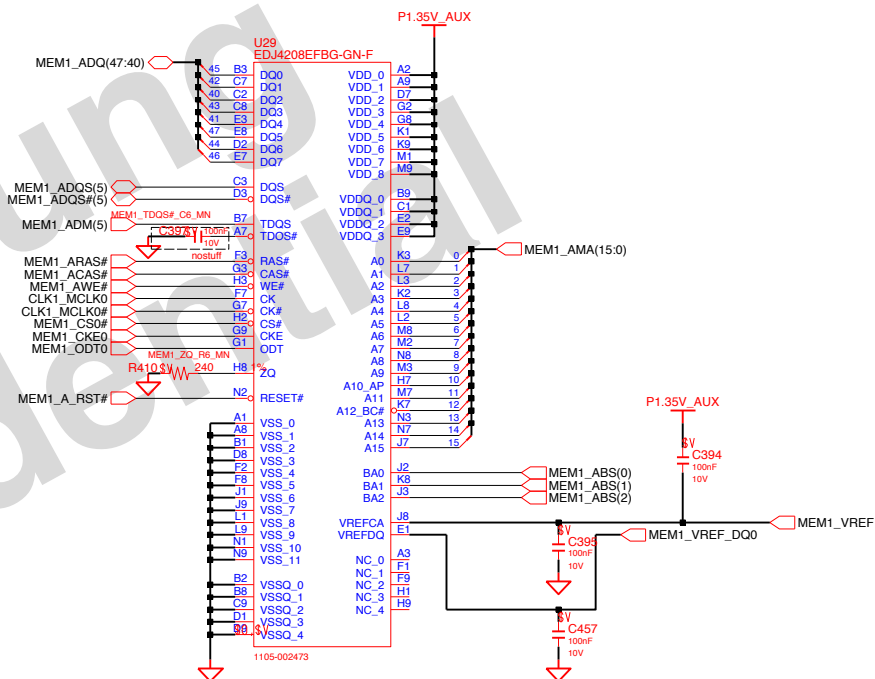
DRAW	YE FENG	DATE	10/02/2010	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	MEMORY #0 (2/4)	ELECTRONICS	
APPROVAL	LEI GUO	REV	REV 0.1	DDR3 ONBOARD	PART NO.	BA41-*****A
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:22 PM	PAGE	15	OF 43

DDR3 on board #0 (3/4)

1 RANK



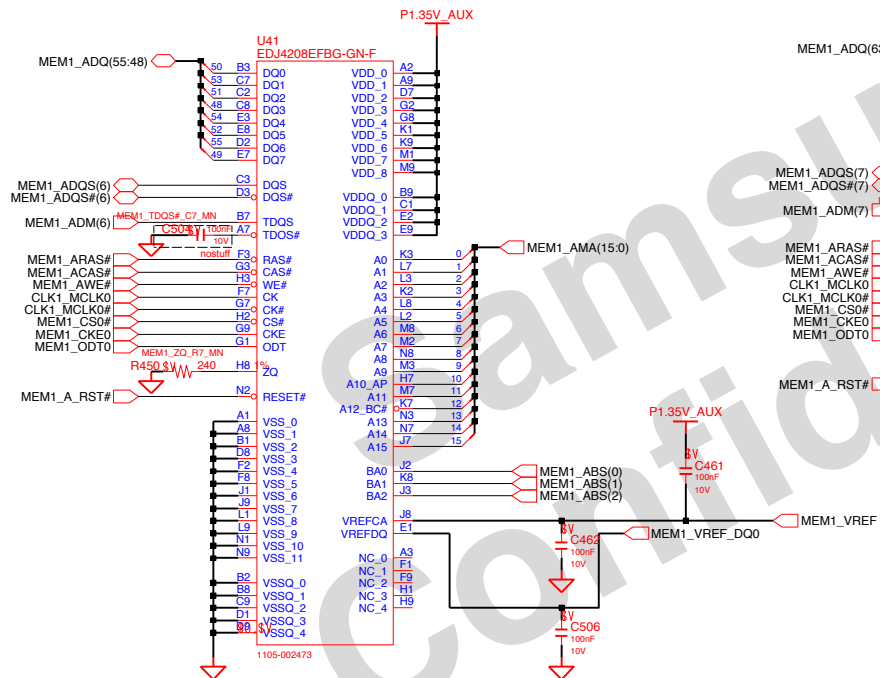
1 RANK



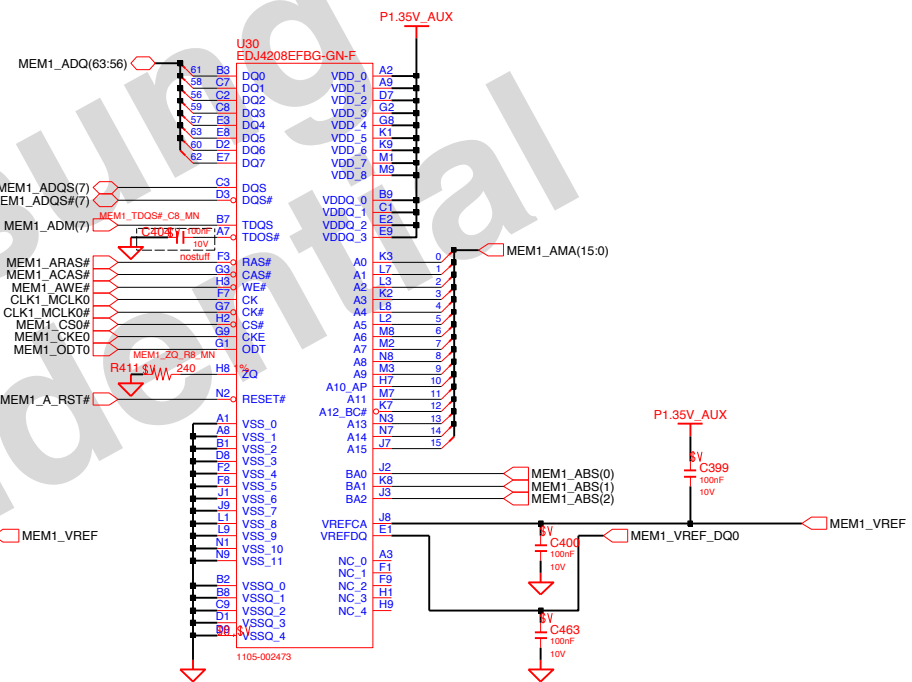
DRAW	YE FENG	DATE	10/02/2010	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		MEMORY #0 (3/4)	
APPROVAL	LEI GUO	REV	REV 0.1		DDR3 ONBOARD	
MODULE CODE	undefined	LAST EDIT				
				March 06, 2013 18:22 PM	PAGE 16 OF 43	BA41-*****A

DDR3 on board #0 (4/4)

1 RANK



1 RANK

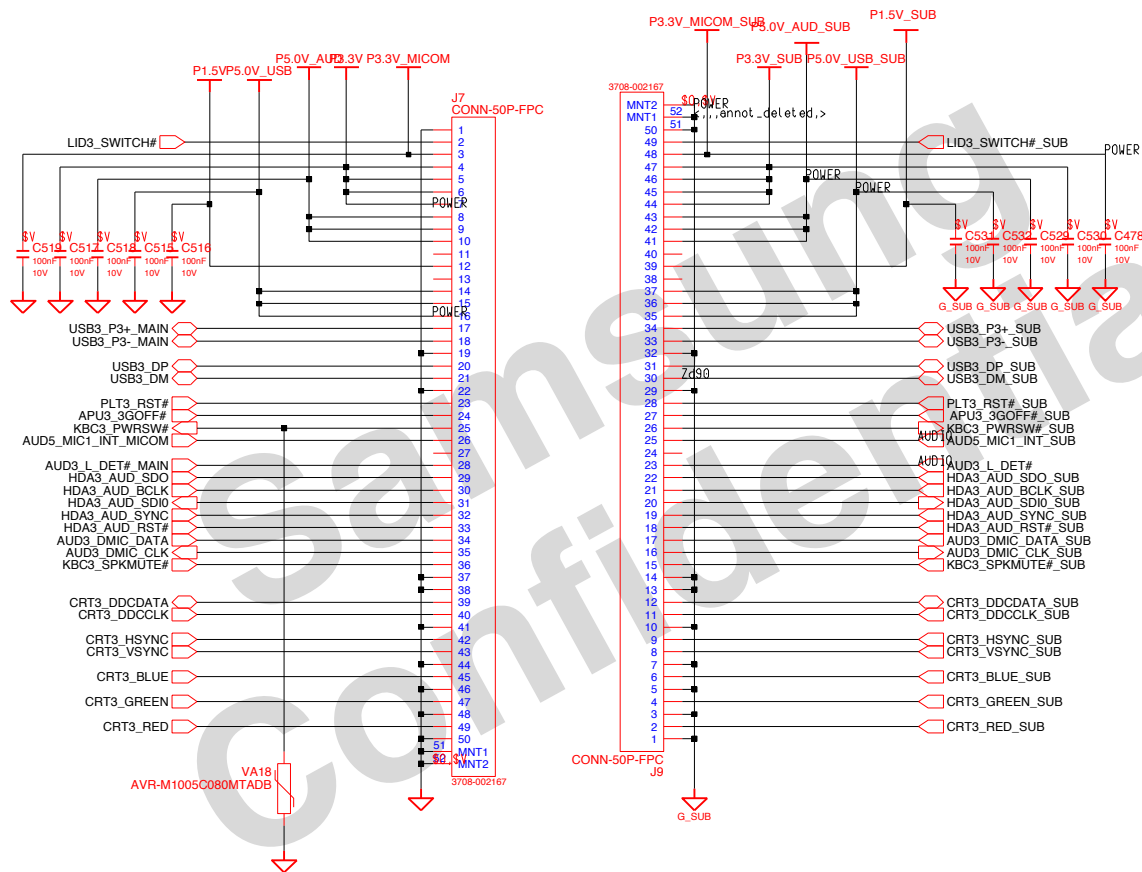


DRAW	YE FENG	DATE	10/02/2010	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	MEMORY #0 (4/4)	MEM1	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1	DDR3 ONBOARD	BA41-*****A	
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:22 PM	PAGE	17	OF 43

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

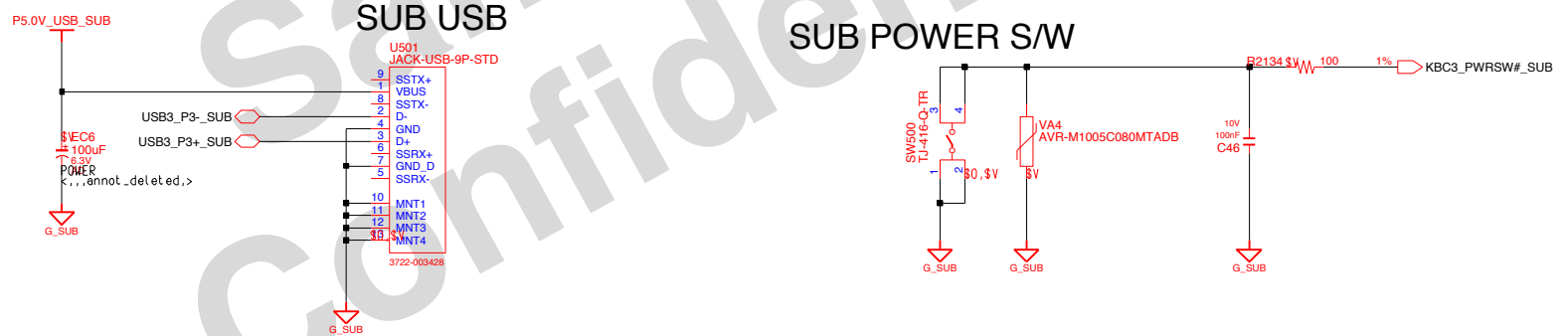
Main to Sub



DESIGN	YE FENG	DATE	8/5/2011	TITLE	PETRA-13A SUB SUB TO MAIN CONNECTOR	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE		LAST EDIT		March 06, 2013 18:22 PM	PAGE 18 OF 43	

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

SUB BOARD



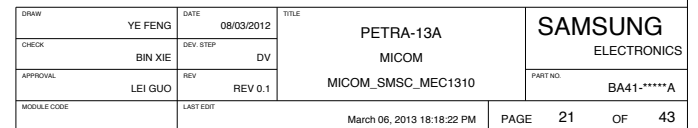
DESIGN	YE FENG	DATE	8/5/2011	TITLE	PETRA-13A
CHECK	BIN XIE	DEV. STEP	DV		SUB
APPROVAL	LEI GUO	REV	REV 0.1		SUB USB/SW/SIM
MODULE CODE		LAST EDIT		March 06, 2013 18:18:22 PM	
					PAGE 19 OF 43

SAMSUNG	
ELECTRONICS	
PART NO.	BA41-*****A

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

DESIGN	YE FENG	DATE	3/12/2011	TITLE	PETRA-13A	SAMSUNG ELECTRONICS	
CHECK	BIN XIE	DEV. STEP	DV				
APPROVAL	LEI GUO	REV	REV 0.1				
MODULE CODE	LAST EDIT		March 06, 2013 18:18:22 PM				PAGE
					Wlan (MOB)	PART NO.	BA41-*****A

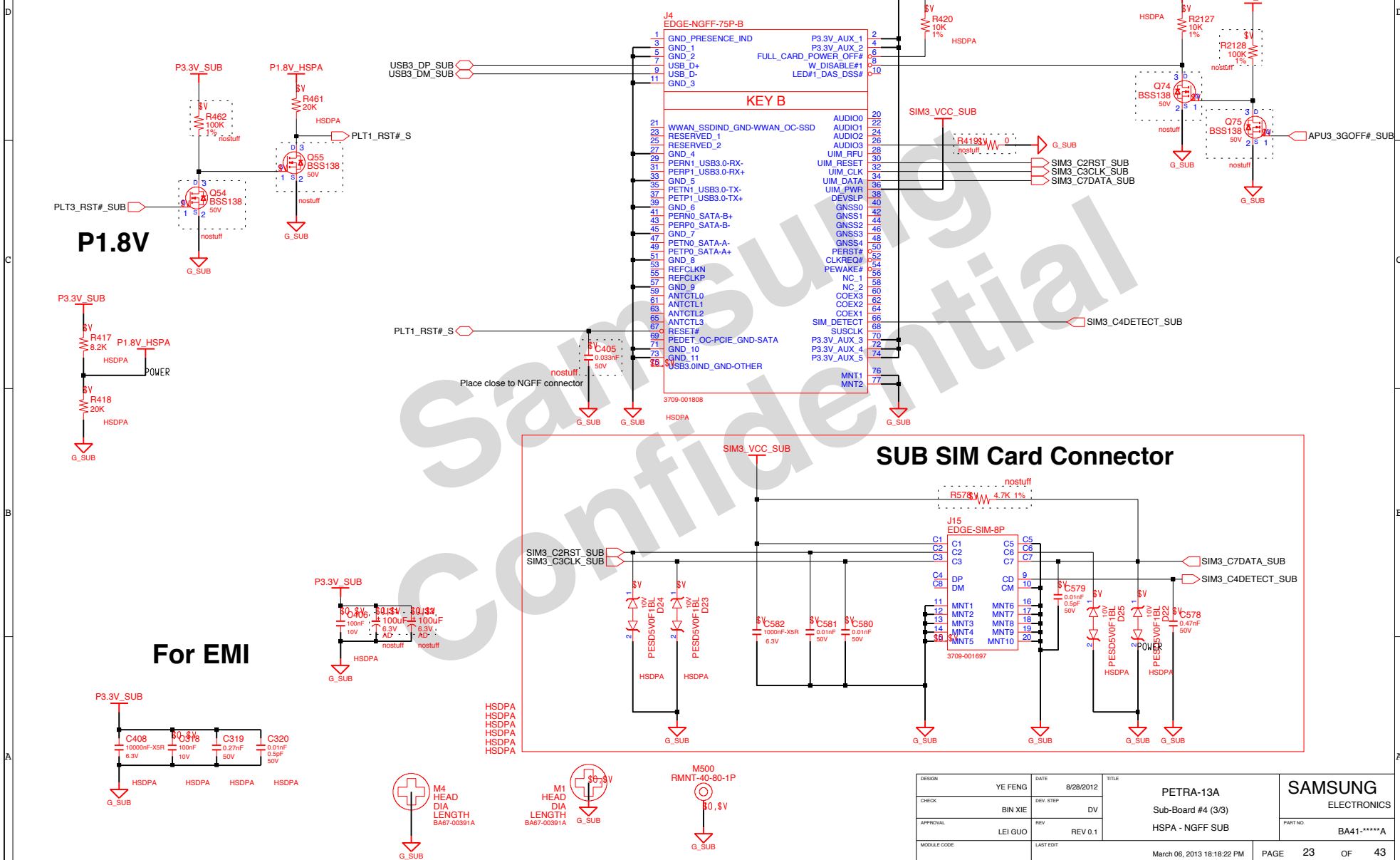
MAIN BOARD (MICOM)



SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

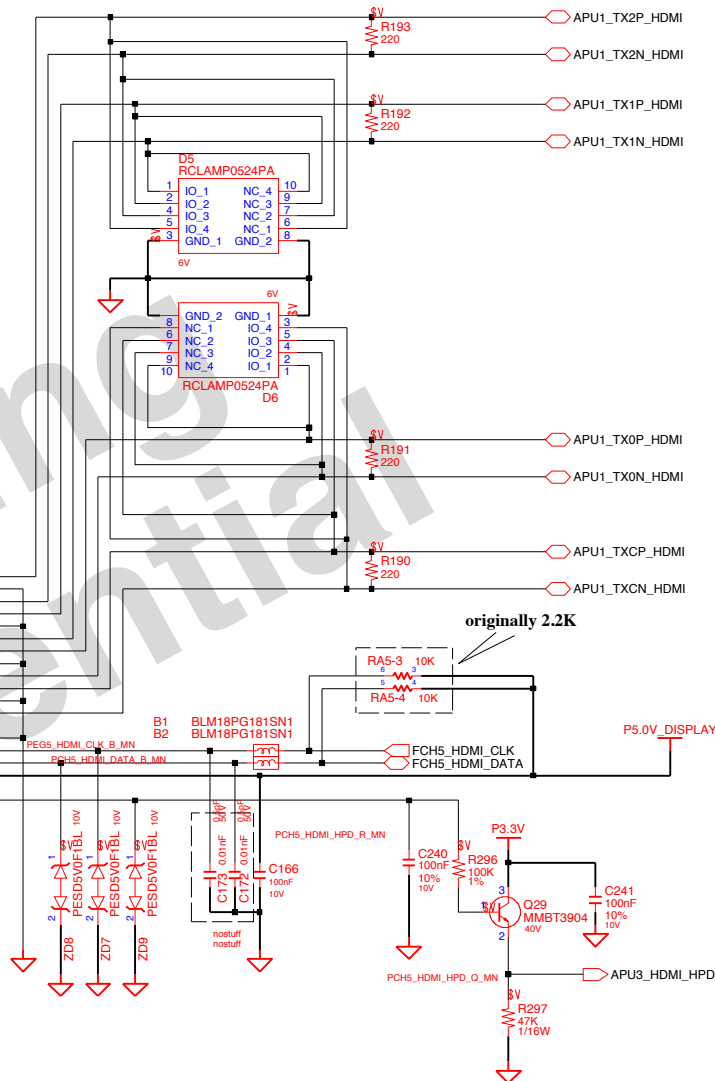
SUB HSPA / LTE NGFF Type



DESIGN	YE FENG	DATE	8/28/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		Sub-Board #4 (3/3)	
APPROVAL	LEI GUO	REV	REV 0.1		HSPA - NGFF SUB	
MODULE CODE		LAST EDIT				
March 06, 2013 18:18:22 PM						PAGE 23 OF 43

HDMI

After checking, Houston need to use CMC for each signal.



originally 2.2K

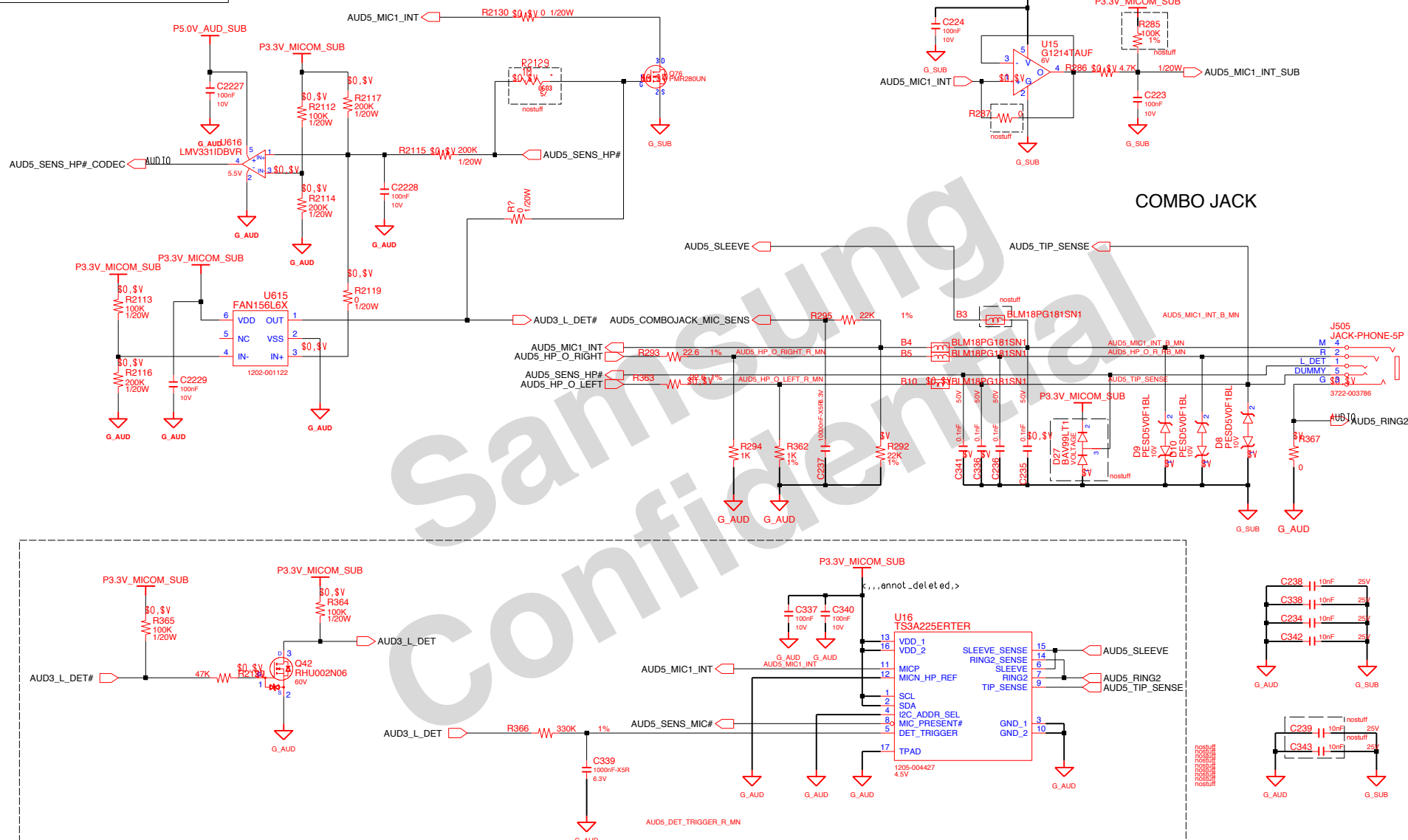
N10x/N11x_40nm HDMI/DP/LVDS support only 3.3V voltage tolerance

D:/users/mentor/Petra/Petra_0306

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

SUB HD AUDIO



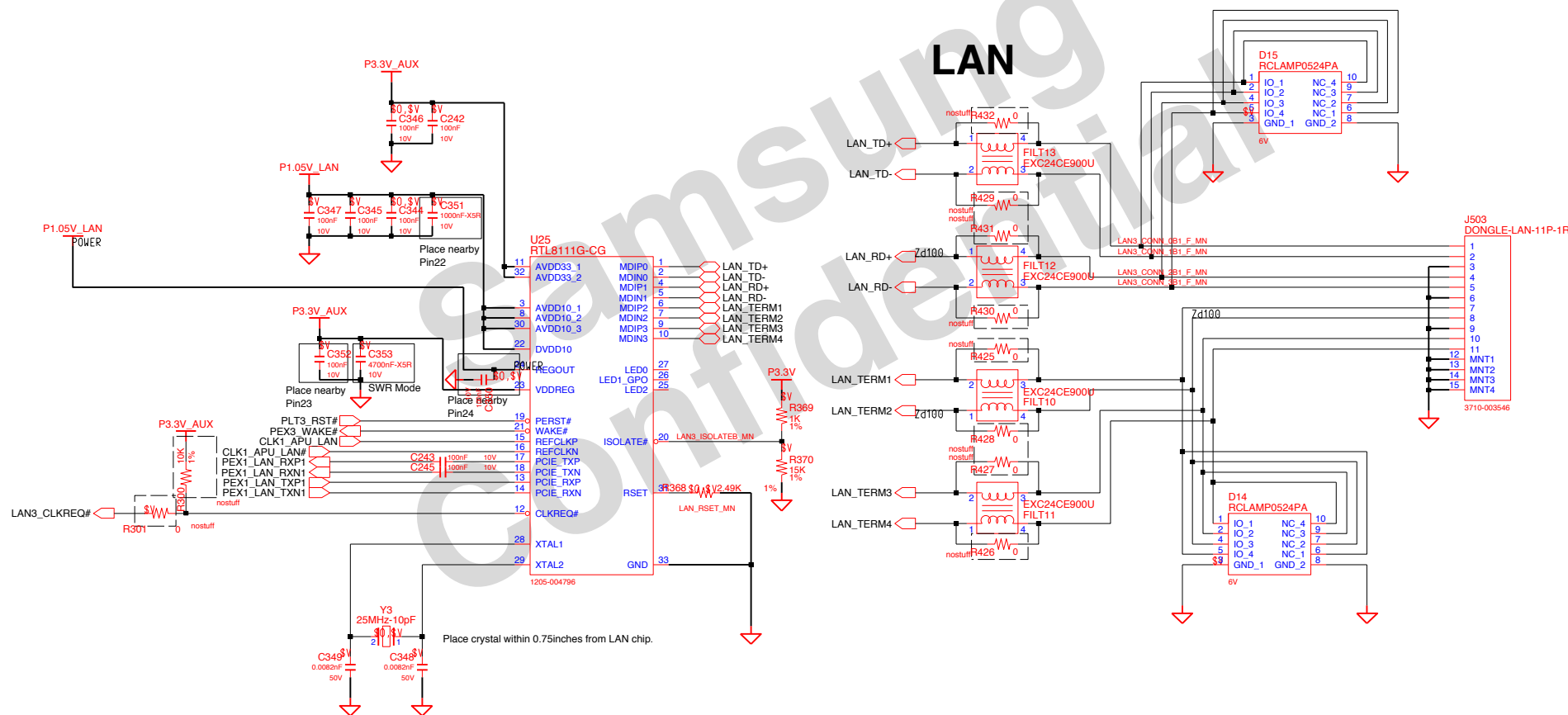
DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A
CHECK	BIN XIE	DEV. STEP	DV		AUDIO
APPROVAL	LEI GUO	REV	REV 0.1		AUDIO COMBO JACK
MODULE CODE		LAST EDIT			
				January 24, 2013 11:00:38 AM	PAGE 26 OF 44

SAMSUNG
ELECTRONICS
PART NO. BA41-*****A

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Reatek RTL8111G

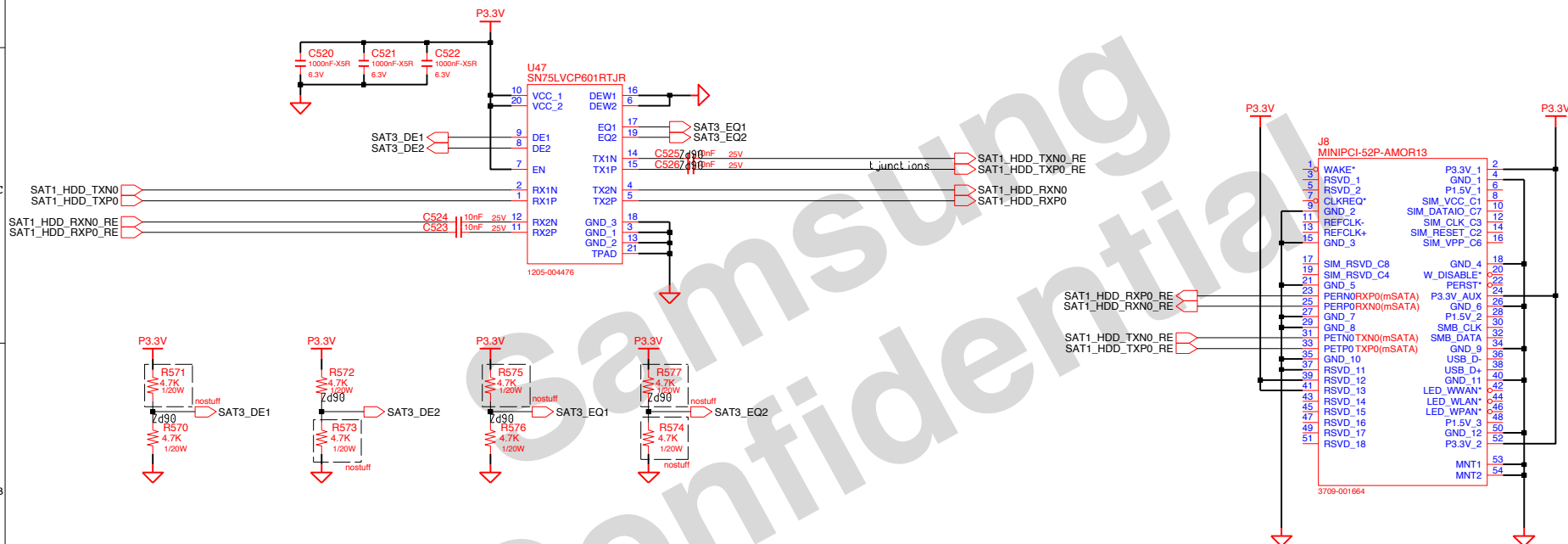


DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		LAN	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		LAN_Reatek_RTL8105E	PART NO. BA41-*****A
MODULE CODE		LAST EDIT			March 06, 2013 18:22 PM	PAGE 28 OF 43

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

SSD CONN (HDD)



Output de-emphasis selection is set at -2dB, EQ at 7dB, and DE duration for SATA I/II operation for both channels.

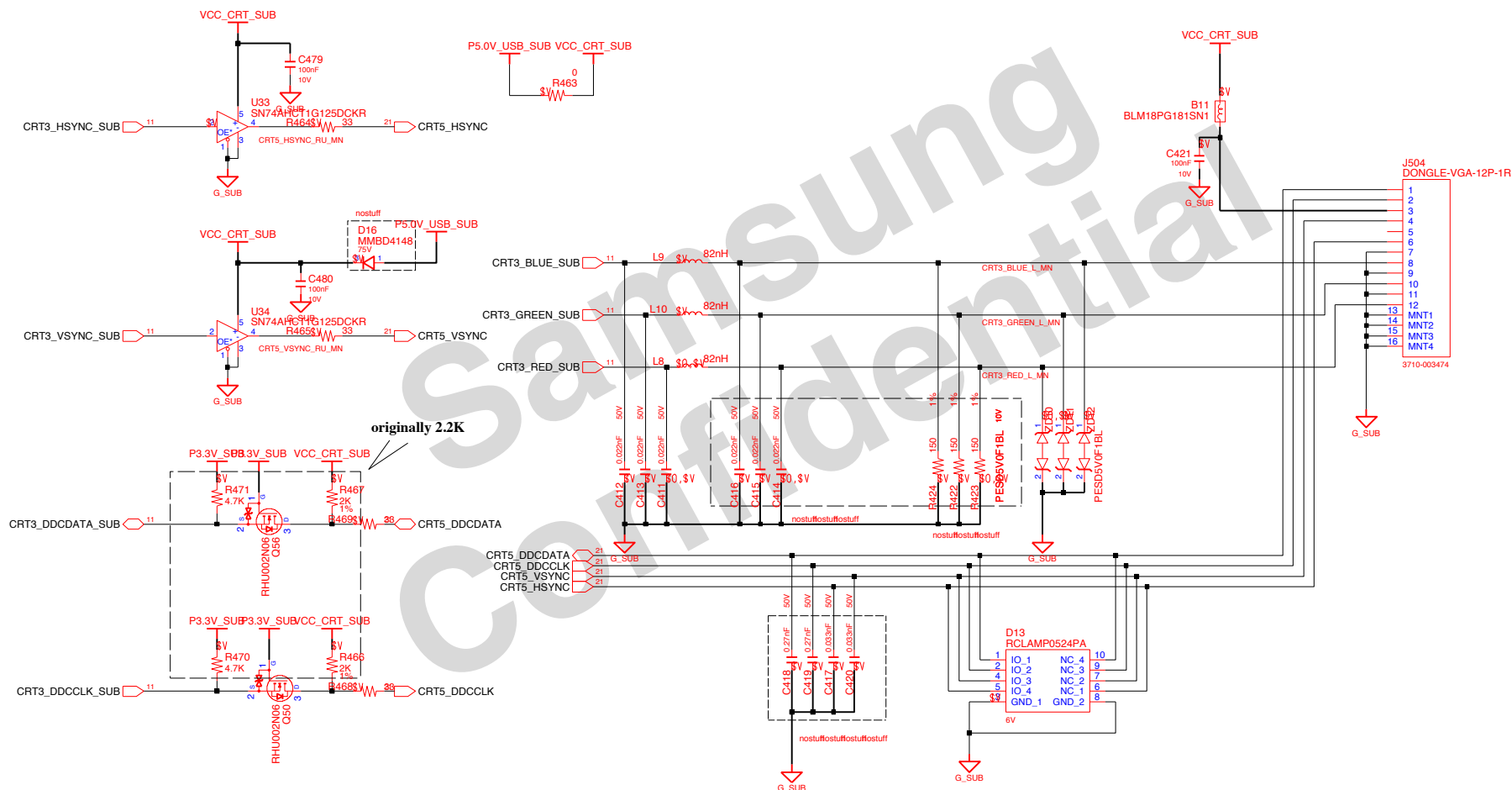
TX/RX EQ AND DE PULSE-DURATION SETTINGS			
DE1/DE2	CH1/CH2 DE-EMPHASIS dB (at 6Gbps)	EQ1/EQ2	CH1/CH2 Equalization dB (at 6Gbps)
NC(default)	-4	NC(default)	0
0	0	0	7
1	-2	1	14
DEW1/DEW2	Device Function -> DE Width for CH1/CH2		
0	De-emphasis pulse duration, short (recommended setting SATA 1.5/3/6Gbps)		
1	De-emphasis pulse duration, long (recommended setting SATA1.5/3 Gbps speed only)		
EN	Device Function -> Standby Mode		
0	Device in standby mode		
1	Device enabled		

DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		SATA I/F	
APPROVAL	LEI GUO	REV	REV 0.1		SATA I/F	
MODULE CODE		LAST EDIT				
March 06, 2013 18:18:22 PM						PAGE 29 OF 43

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

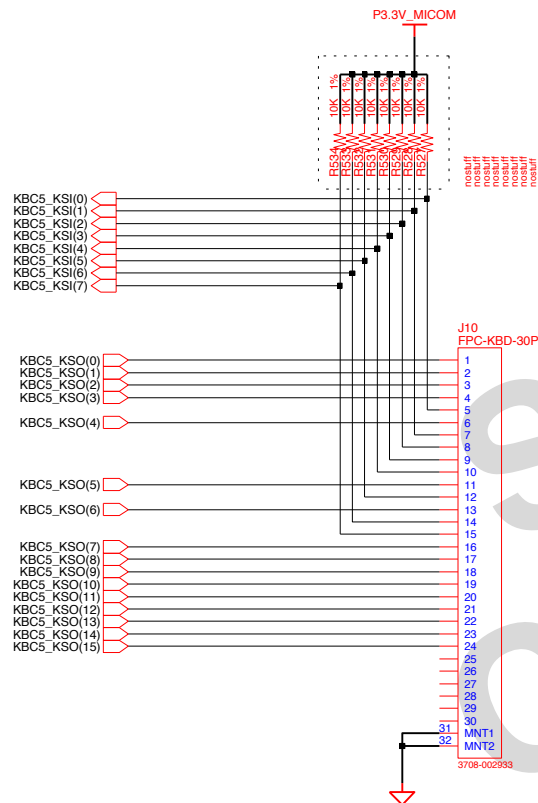
SUB VGA



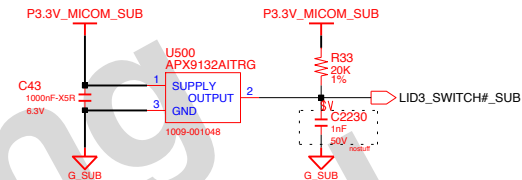
DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A GRAPHIC_IF CRT SUB	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE		LAST EDIT		March 06, 2013 18:18:22 PM	PAGE	30 OF 43

Micom Glue

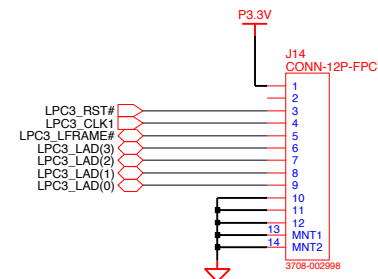
KEYBOARD



LID3_SWITCH



80H PORT DEBUG

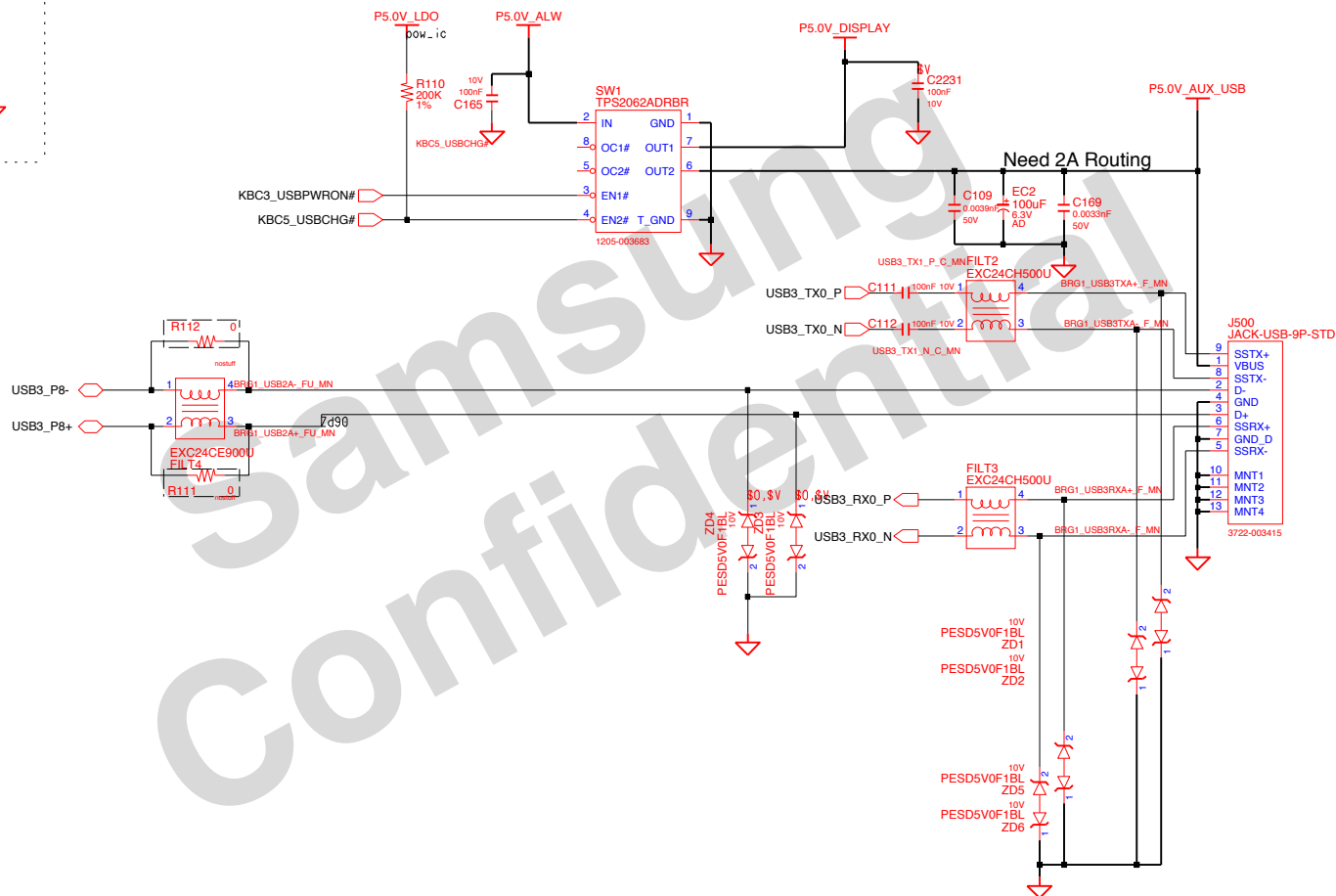
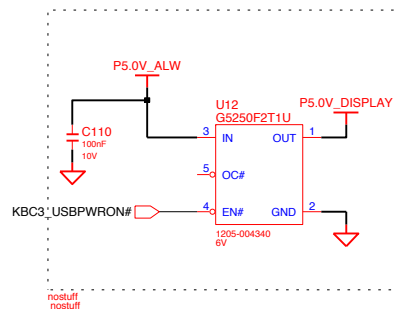


DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		MICOM	
APPROVAL	LEI GUO	REV	REV 0.1		MICOM GLUE LOGIC	
MODULE CODE		LAST EDIT		March 06, 2013 18:18:22 PM	PAGE 31 OF 43	PART NO. BA41-*****A

SAMSUNG PROPRIETARY

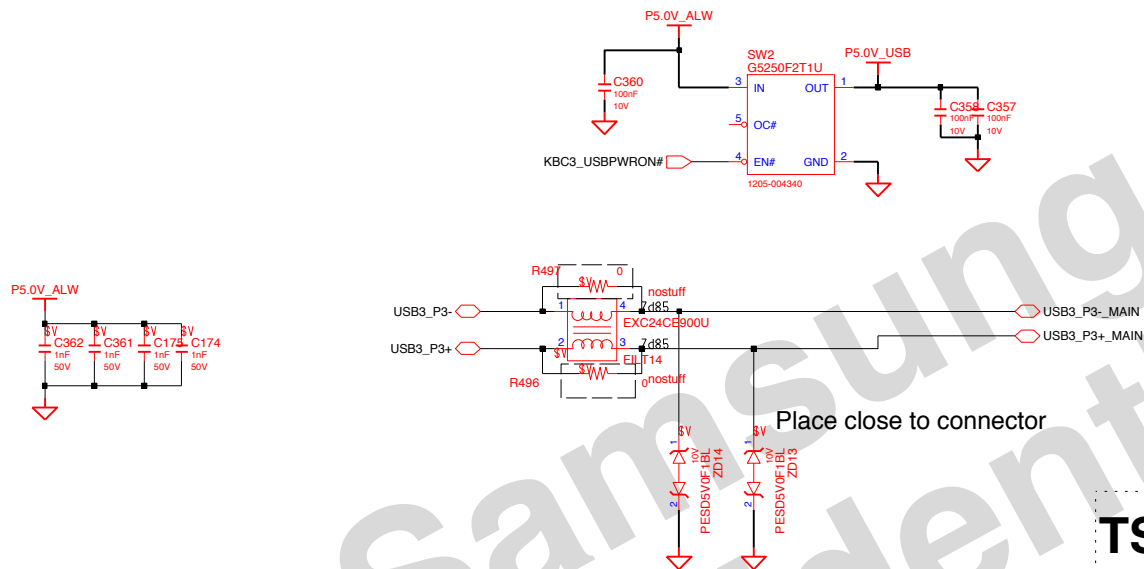
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

USB 3.0 CONNECTOR

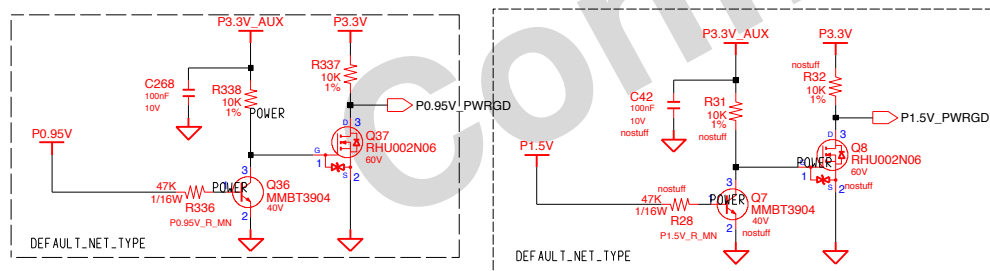


DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG ELECTRONICS
CHECK	BIN XIE	DEV. STEP	DV		USB3.0	
APPROVAL	LEI GUO	REV	REV 0.1		USB 3.0 CONNECTOR	
MODULE CODE		LAST EDIT			March 06, 2013 18:22 PM	PAGE 32 OF 43

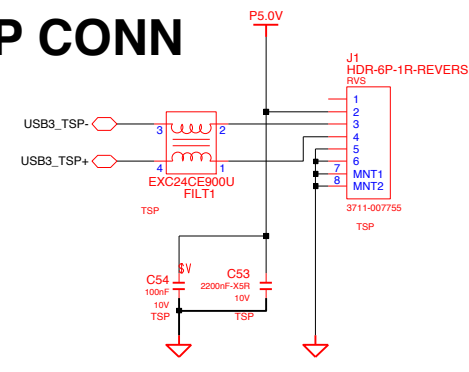
USB POWER



FOR AMD SEQUENCE SPEC



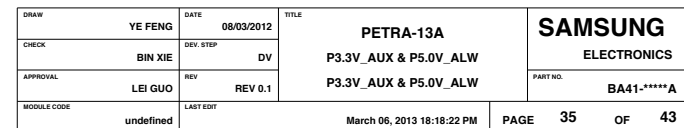
TSP CONN



DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		SUB BOARD CONNECTOR	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		USB 2.0 SUB	PART NO. BA41-*****A
MODULE CODE		LAST EDIT		March 06, 2013 18:22 PM	PAGE 33	OF 43

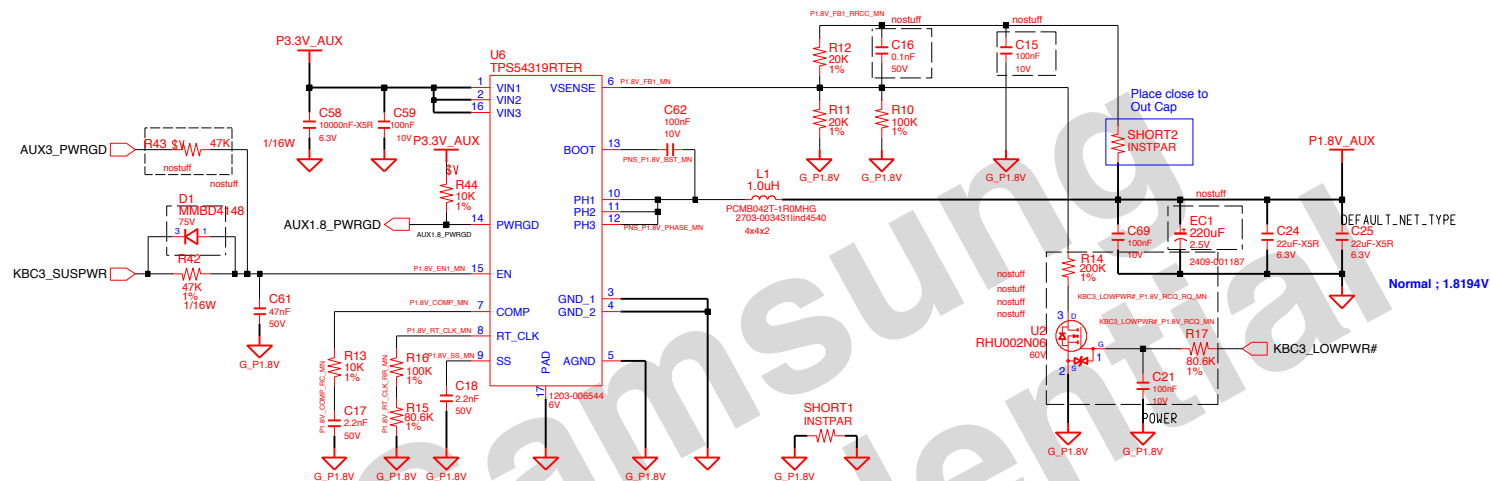
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

P3.3V_AUX & P5.0V_ALW



SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

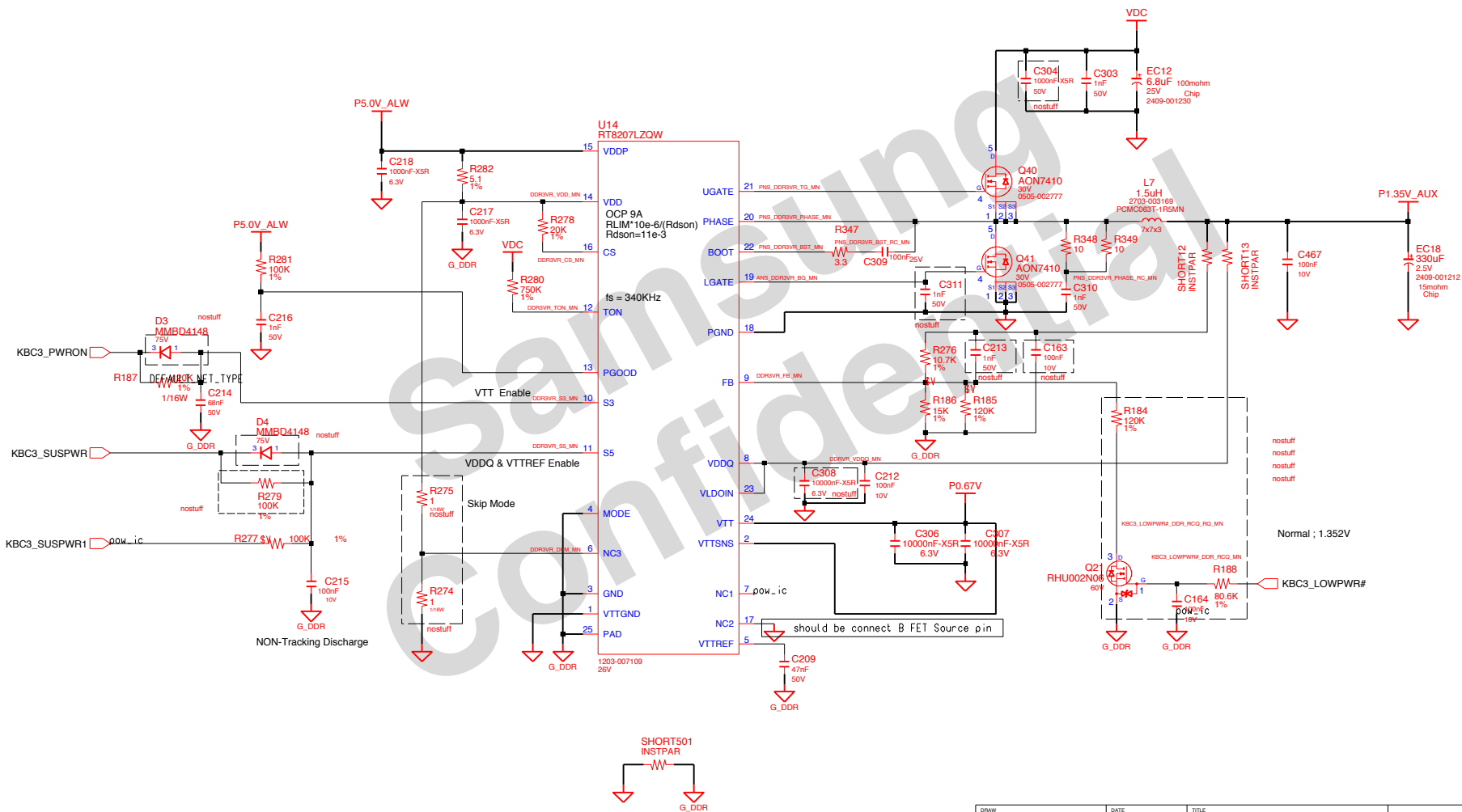
P1.8V_AUX (LVDS,PCH Core,LAN , ME IO)

DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		VCCSA	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		VCCSA	PART NO.
MODULE CODE		LAST EDIT				BA41-*****A
				March 06, 2013 18:22 PM	PAGE	36 OF

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

DDR3 Power



DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		P1.05V	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		VT386FCX	PART NO.
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:22 PM	PAGE	38	BA41-*****A
				OF	43	

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

VRM1 NTC

U13
ISL62771HRTZ

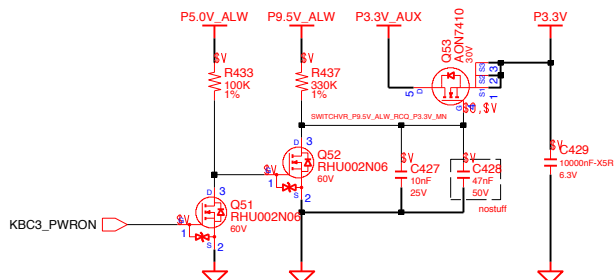
DRAW	YE FENG	DATE	10/22/2010	PETRA-13A PWR_CPU_MV_ISL6267 CPU1 VRM	SAMSUNG ELECTRONICS PART NO. BA41-*****A	
CHECK	BIN XIE	DEV. STEP	DV			
APPROVAL	LEI GUO	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT				

SAMSUNG PROPRIETARY

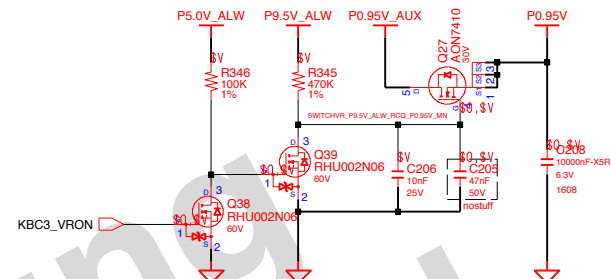
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Switched Power

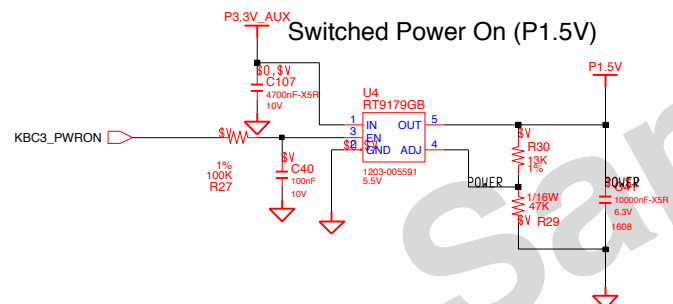
Switched Power On (P3.3V) Multi@AP2607GY



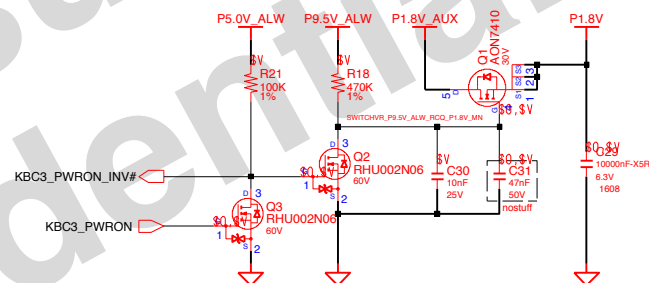
Switched Power On (P0.95V)



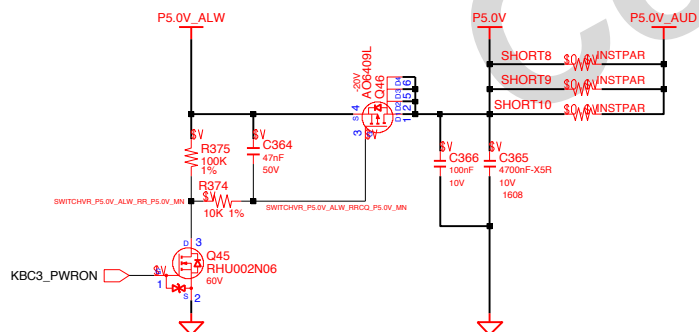
Switched Power On (P1.5V)



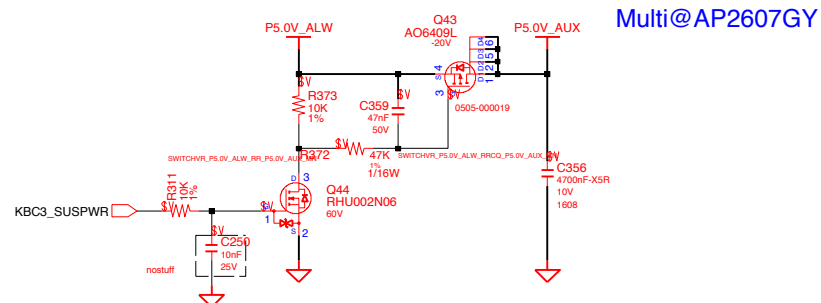
Switched Power On (P1.8V)



Switched Power On (P5.0V)

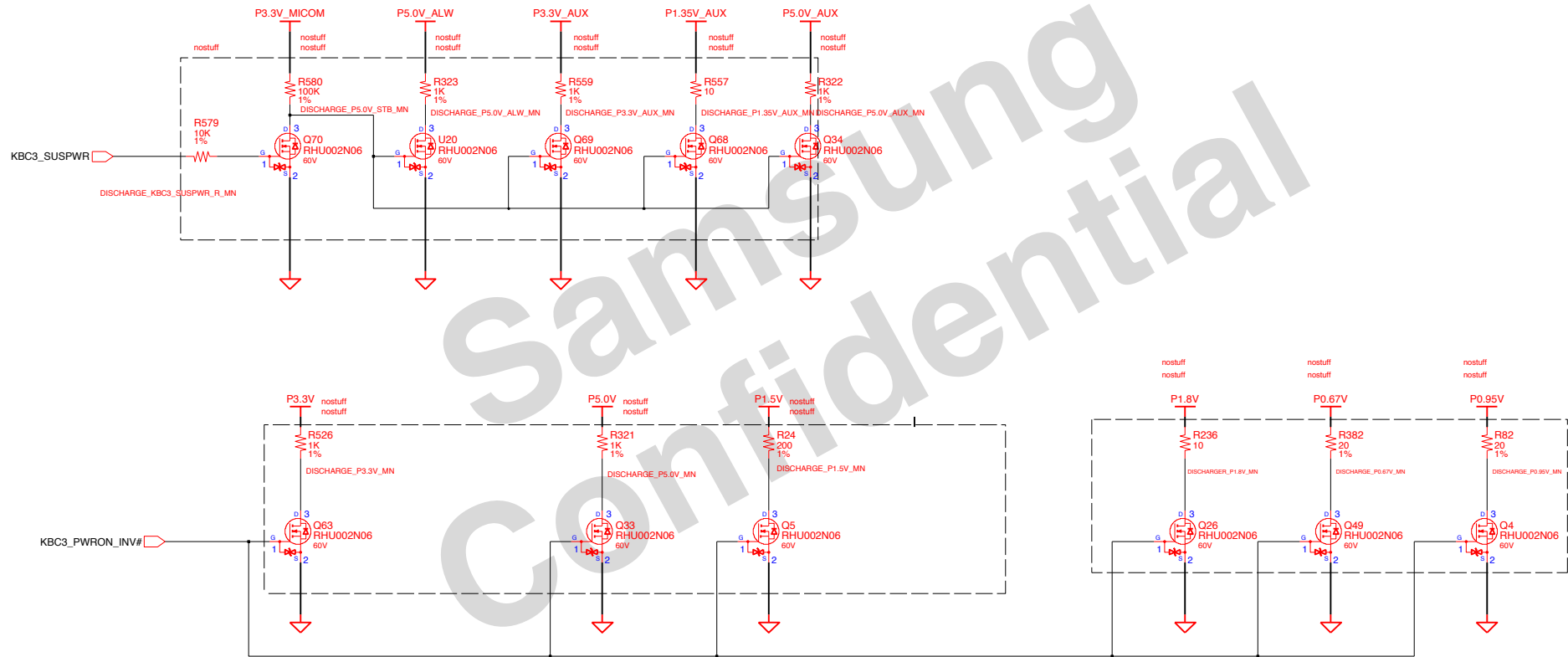


Switched Power On (P5.0V_AUX)



DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		PWR_MV_SWITCHED	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		SWITCHED POWER	PART NO.
MODULE CODE		LAST EDIT				BA41-*****A
				March 06, 2013 18:22 PM	PAGE	40 OF 43

POWER DISCHARGER

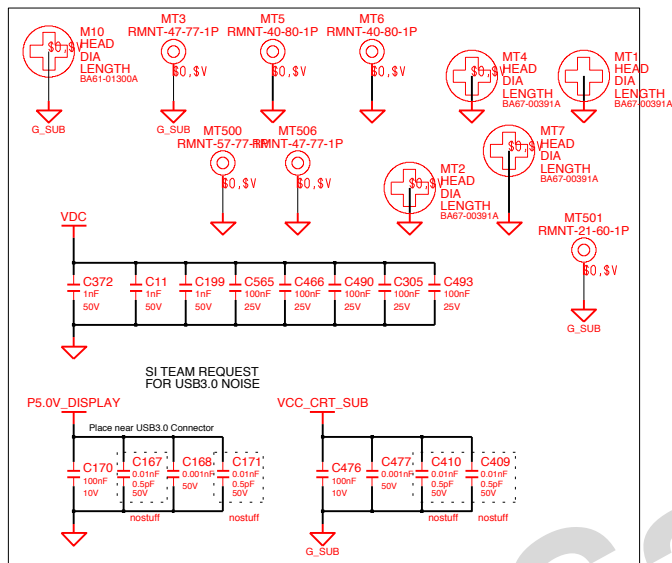


DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	PWR_MV_DISCHARGER	ELECTRONICS	
APPROVAL	LEI GUO	REV	REV 0.1	DISCHARGING LOGIC	PART NO.	BA41-*****A
MODULE CODE	undefined	LAST EDIT	March 06, 2013 18:18:22 PM	PAGE	41	OF 43

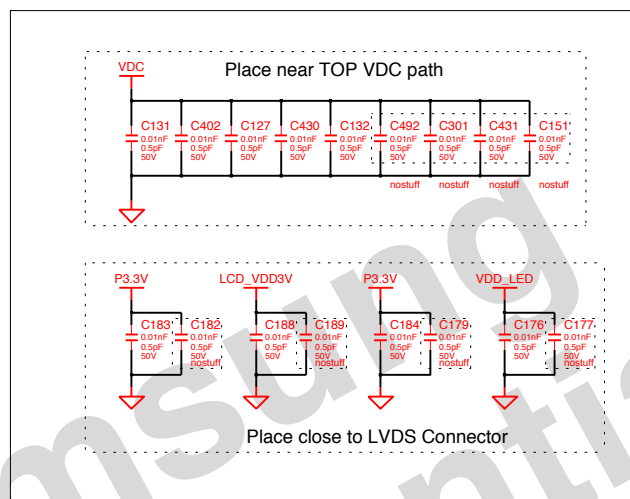
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

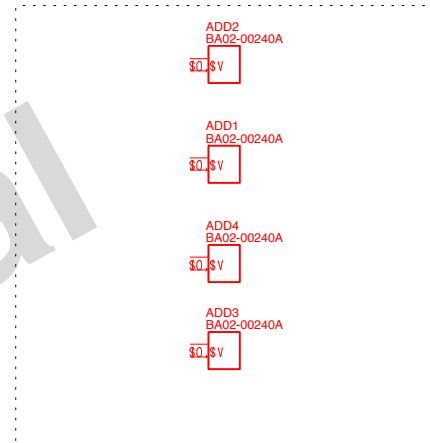
Mainboard Mount ((40-80)X2EA, (30-76)X5EA))



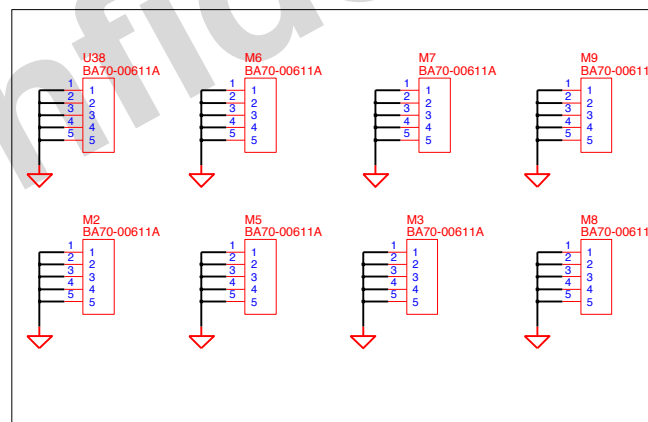
WLAN Performance issue



Corner Fill for CPU, PCH, GPU



Shield Can Clip

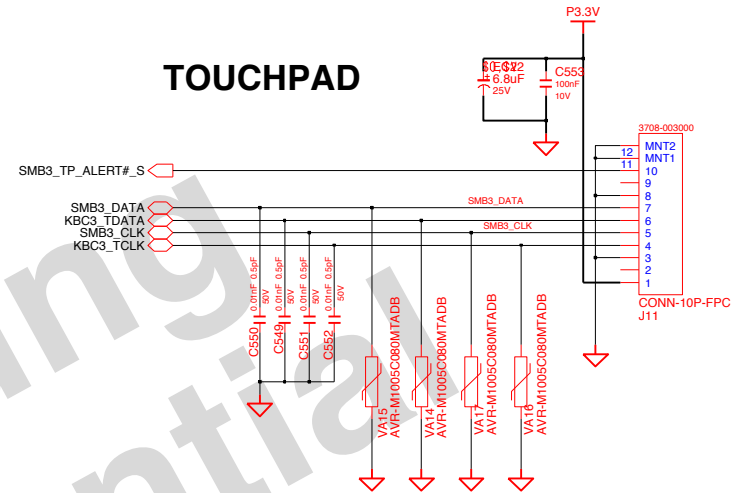


DESIGN	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV		MOUNT HOLE	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1		MOUNT HOLE	PART NO.
MODULE CODE		LAST EDIT				BA41-*****A
				March 06, 2013 18:22 PM	PAGE	42 OF 43

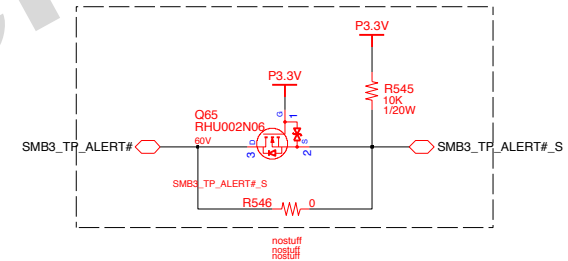
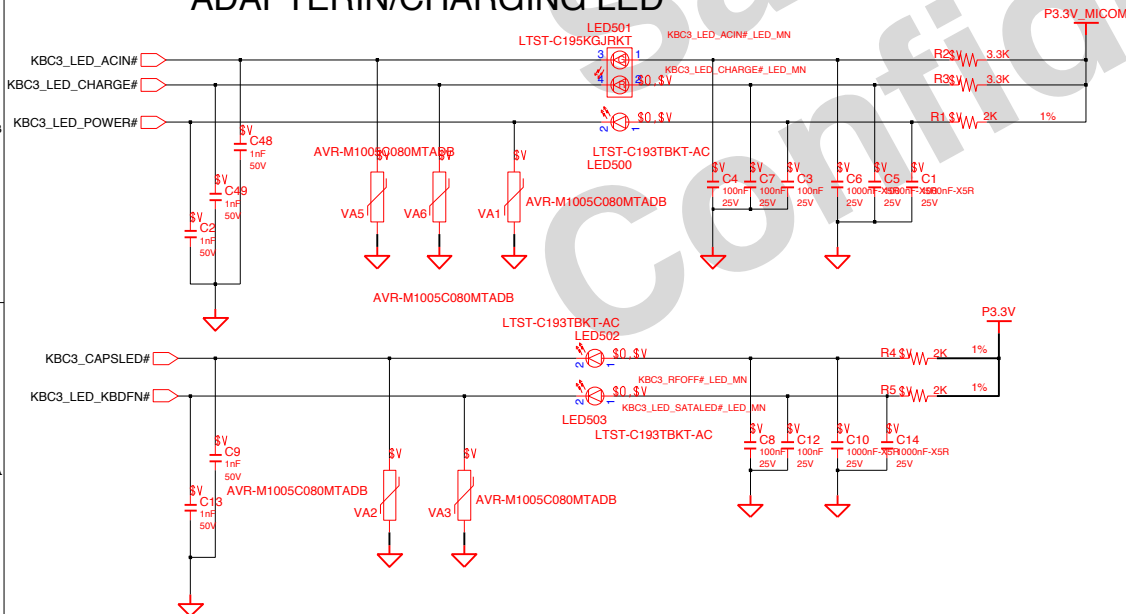
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

TP & LED

TOUCHPAD



ADAPTERIN/CHARGING LED



DRAW	YE FENG	DATE	08/03/2012	TITLE	PETRA-13A	SAMSUNG
CHECK	BIN XIE	DEV. STEP	DV	TP/LED	TP/LED	ELECTRONICS
APPROVAL	LEI GUO	REV	REV 0.1	TOUCHPAD & LED		PART NO.
MODULE CODE		LAST EDIT				BA41-*****A
				March 06, 2013 18:22 PM	PAGE	43 OF 43