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# Scala3-14CRV

CPU : IVY Bridge PGA

Chip Set : Intel Panther Point

GFX : NVIDIA N13M-GS/GE

Remarks : Chief River Platform

Model Name : Scala3-14CRV

PBA Name : MAIN\_Dual

PCB Code : BA41-01973A(GCE)  
BA41-01974A(GBM)  
BA41-01975A(PTC)  
BA41-02059A(HST)

Dev. Step : MP

Revision : 1.2

T.R. Date : 2012.07.02

Design	CHECK	APPROVAL
Tao Xiaofeng	Chu XF	BL LEE

Owner : SEC Mobile R & D Signature : X

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sheet46 : Power - EGFX\_CORE  
sheet47 : Power - Switched Power 1  
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DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.2	COVER		
MODULE CODE		LAST EDIT	July 02, 2012 09:58:14 AM			PAGE 1 OF 51



BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails		Active in
VDC P3.3V_MICOM P5.0V_STB P5.0V_ALW P3.3V_ALW P12.0V_ALW	Primary DC system power supply (7 to 21V) 3.3V always power rail (for Micom) 5.0V always power rail 5.0V always power rail 3.3V always power rail 12.0V always power rail	S4 - S5
P5.0V_AUX P3.3V_AUX P1.5V_AUX	5.0V switched on power rail (off in S4-S5) 3.3V switched on power rail (off in S4-S5) 1.5V power rail for DDR3 (off in S4-S5)	
P5.0V P3.3V P1.8V P1.5V P0.75V P0.8V	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) 0.75V power rail for DDR3 (off in S3-S5) 0.8V switched power rail (off in S3-S5)	
VCC_CORE EGFX_CORE P1.05V (VCCP)	Core Voltage for CPU Core Voltage for GPU VCC for COUGARPOINT	
P3.3V_D P1.5V_D P1.05V_D	3.3V discrete power rail for N12X 1.5V discrete power rail for N12X 1.05V discrete power rail for N12X	
		S3
		S0
		S0

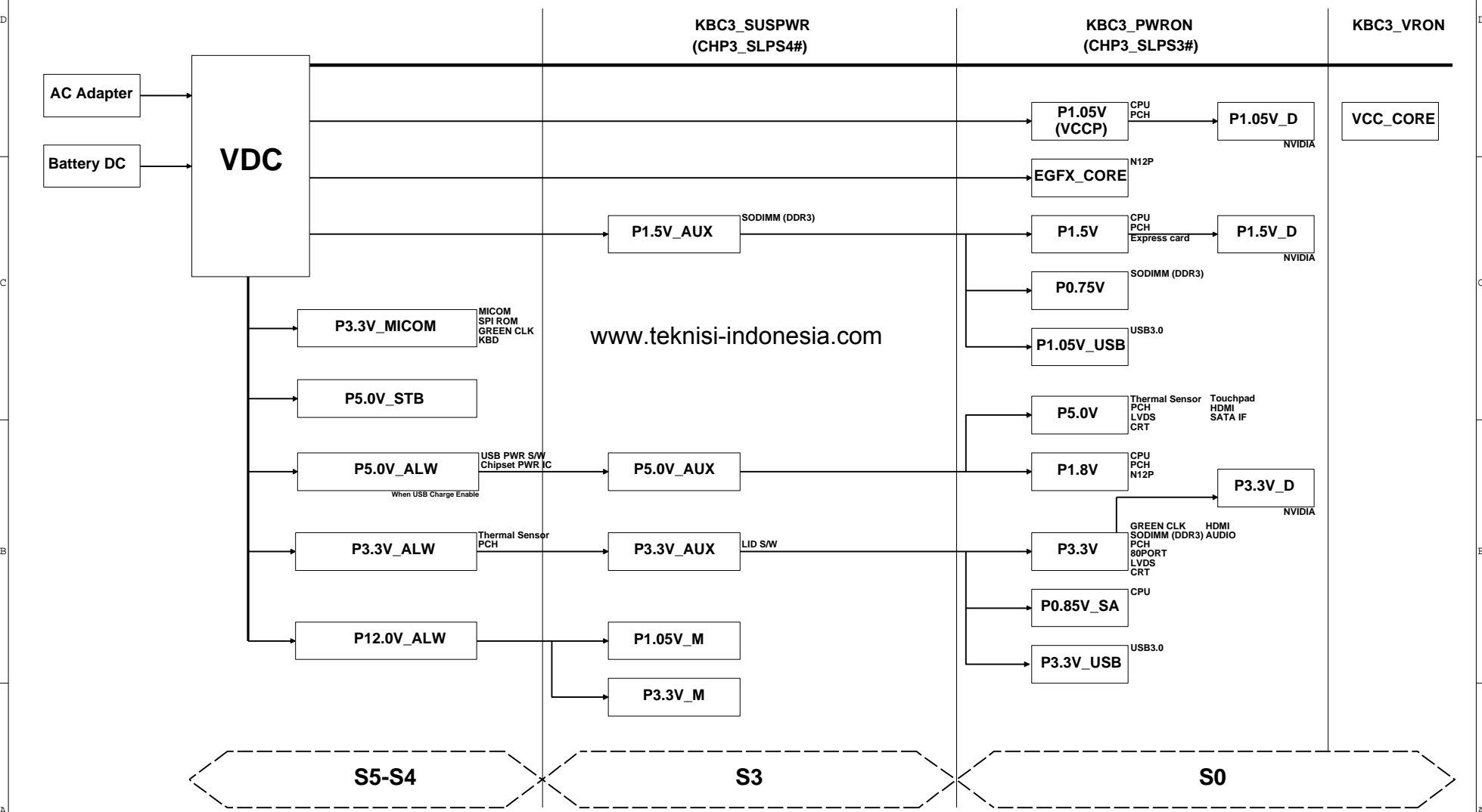
USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	SYSTEM PORT 0	1	Mini Card 1 (WLAN)
1	SYSTEM PORT 1	2	NC
2	Mini PCI Express	3	NC
3	Multi Memory Card Controller	4	LAN CONTROLLER
4	SYSTEM PORT 2	5	NC
5	NC	6	NC
6	NC	7	NC
7	NC	8	NC
8	NC		
9	NC		
10	BLUETOOTH		
11	Camera(LCD Cable)		
12	NC		
13	NC		

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	NC
2	ODD
3	NC
4	NC
5	NC

Crystal / Oscillator			
TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	HM65	Real Time Clock
Crystal	25MHz	LAN	Intel LAN
Crystal	25MHz	GREENCLK	GREENCLK
Crystal	25MHz	HM65	INTEL
Crystal	27MHz	N12P-GVR	NVIDIA

LCD Pannel Detect (TBD)		
Devices	Resolution	PANNEL_DETECT_0

I <sup>2</sup> C / SMB Address			
Devices	Address	Hex	Bus
HM65	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	Thermal Sensor
SODIMM0	1010 000x	A0h	
SODIMM1	1010 010x	A4h	
Thermal Sensor on SODIMM0	0011 000x	30h	
Thermal Sensor on SODIMM1	0011 010x	34h	
Thermal Sensor on board	1101 100x	98h	
Power thermal management TS	1101 011x	96h	

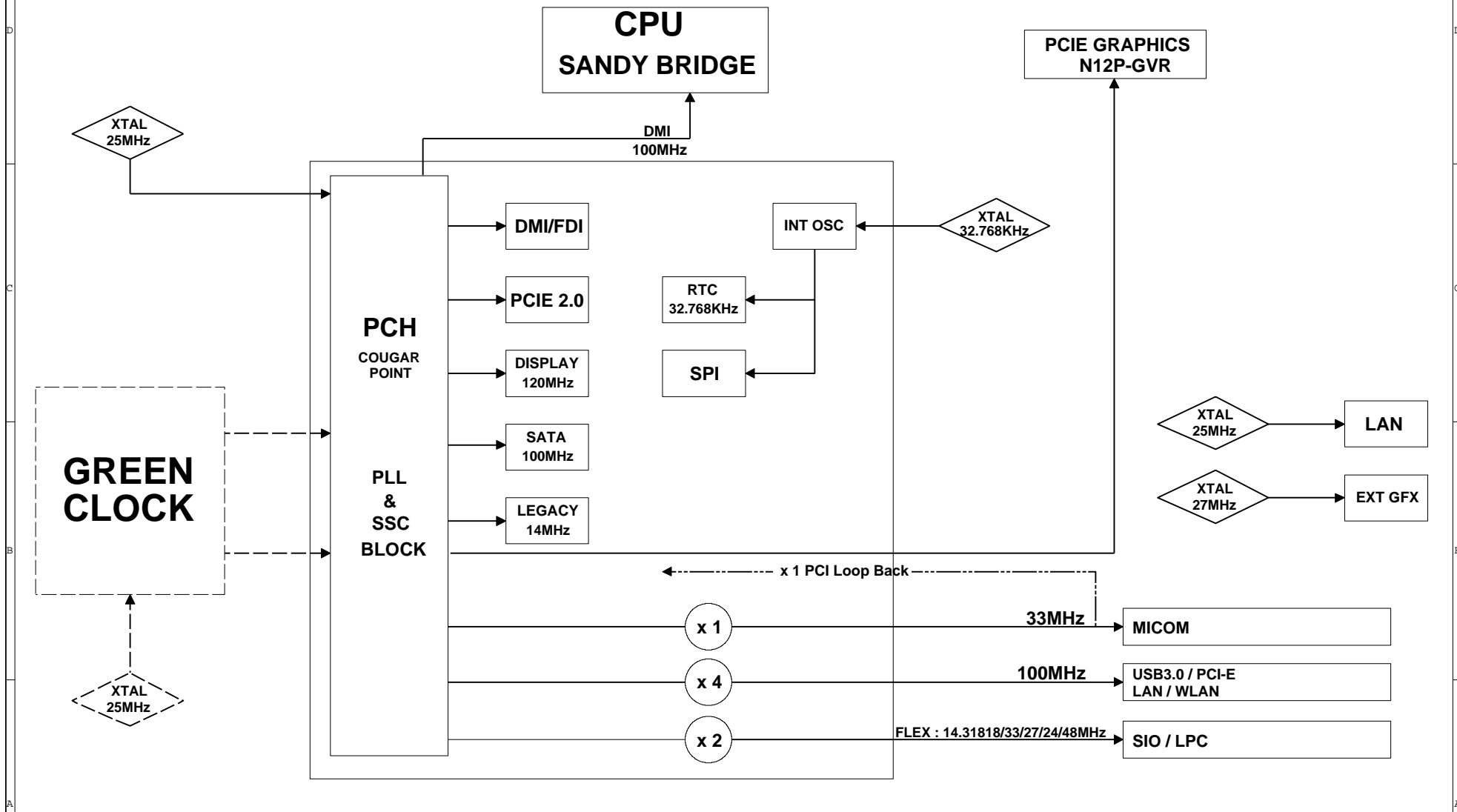


DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-01973-975A
CHECK	XF CHU	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.2	POWER DIAGRAM		
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	4 OF 51	

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# CLOCK DISTRIBUTION

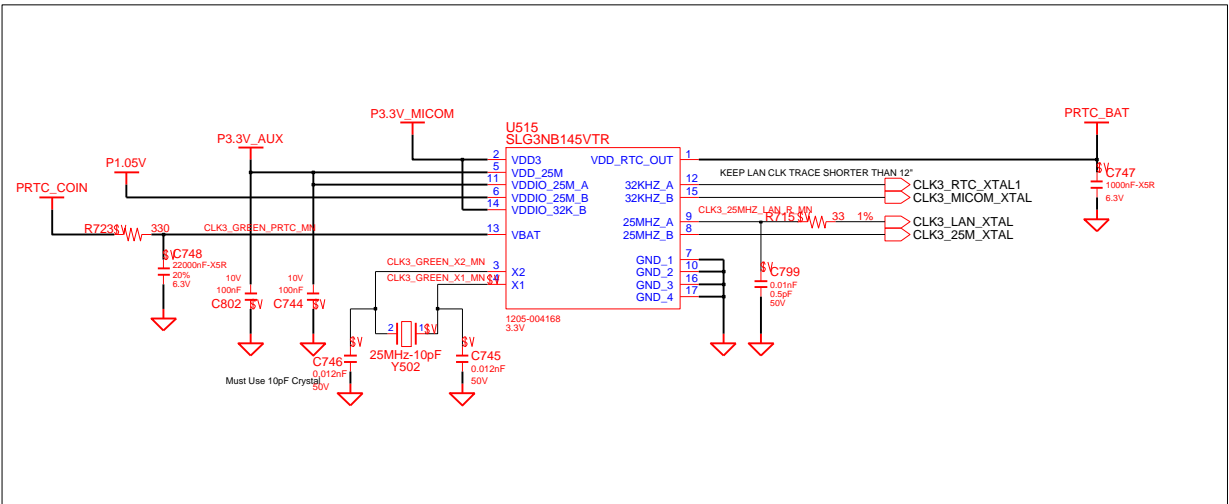
Rev. 0.8



DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.2	CLOCK DIAGRAM	PART NO. BA41-01973-975A	
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	5	OF 51

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# CLOCK DISTRIBUTOR



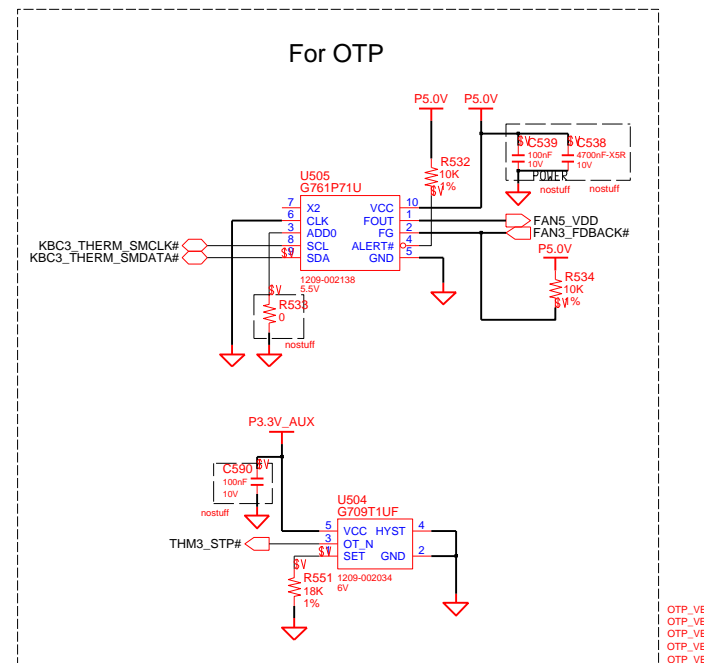
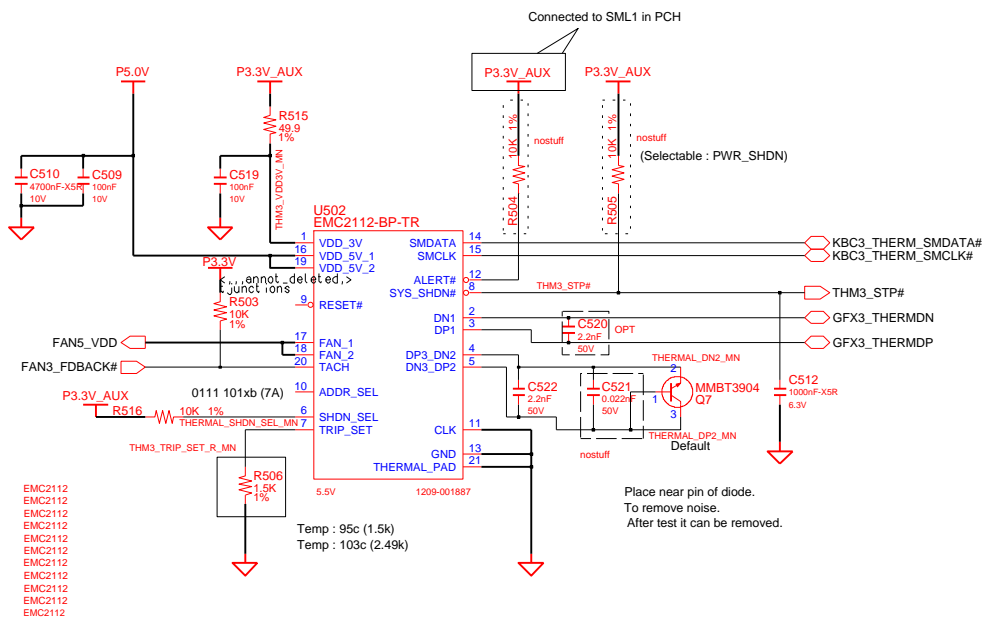
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK  
GREENCLK

DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP	CLOCK	CLOCK DISTRIBUTION	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2			PART NO.
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM			BA41-01973-975A
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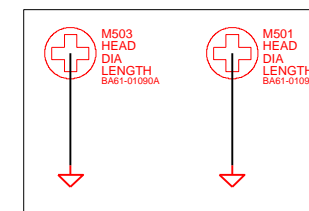
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## THERMAL SENSOR & FAN CONTROL

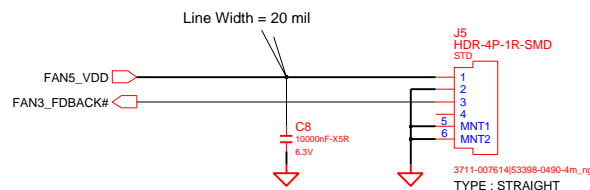


### FAN PEM



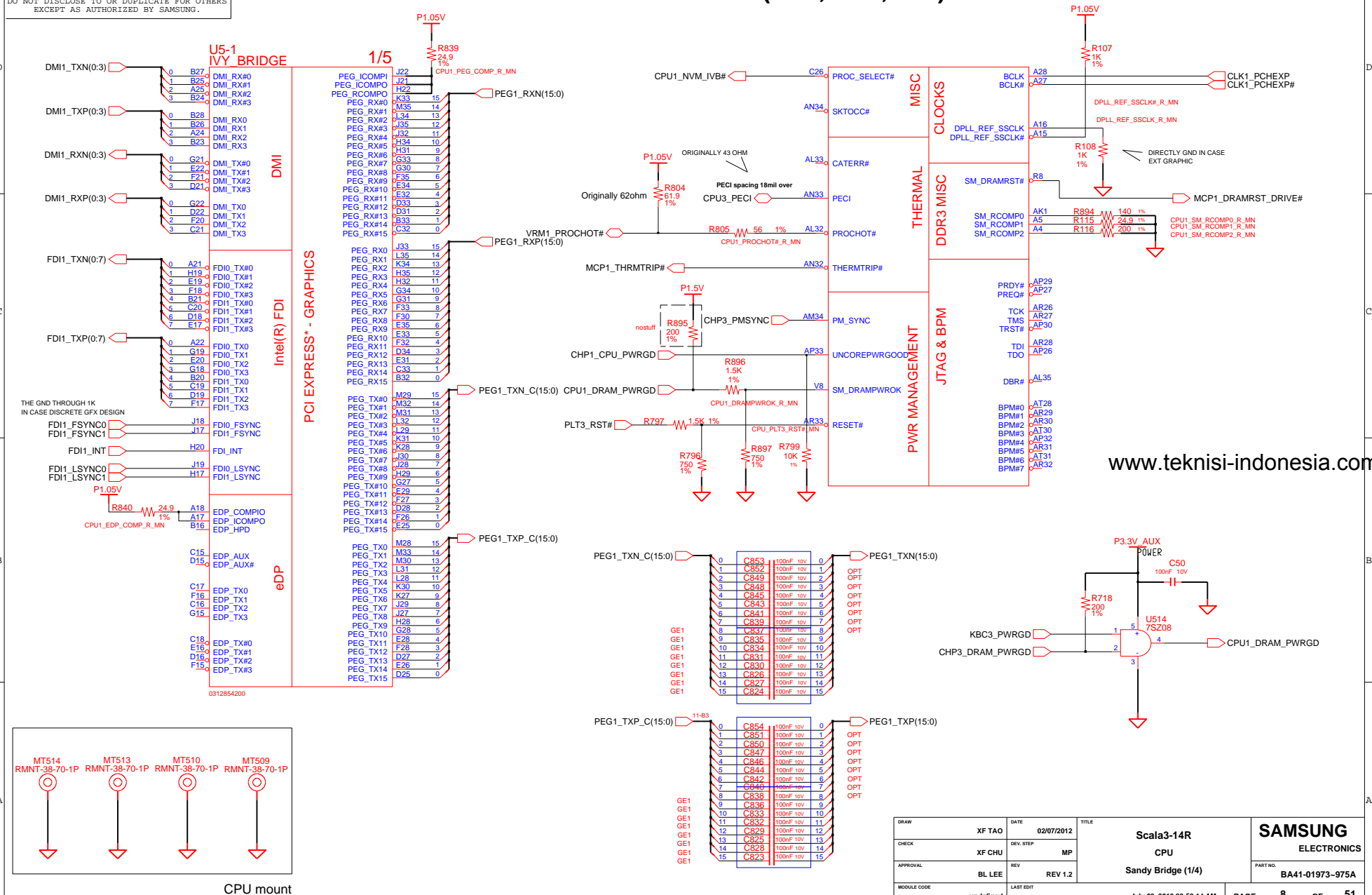
ADDRESSSEL MODE	
0	0101 111xb
✓ HIGH Z	0111 101xb (7A)
1	0101 110xb

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

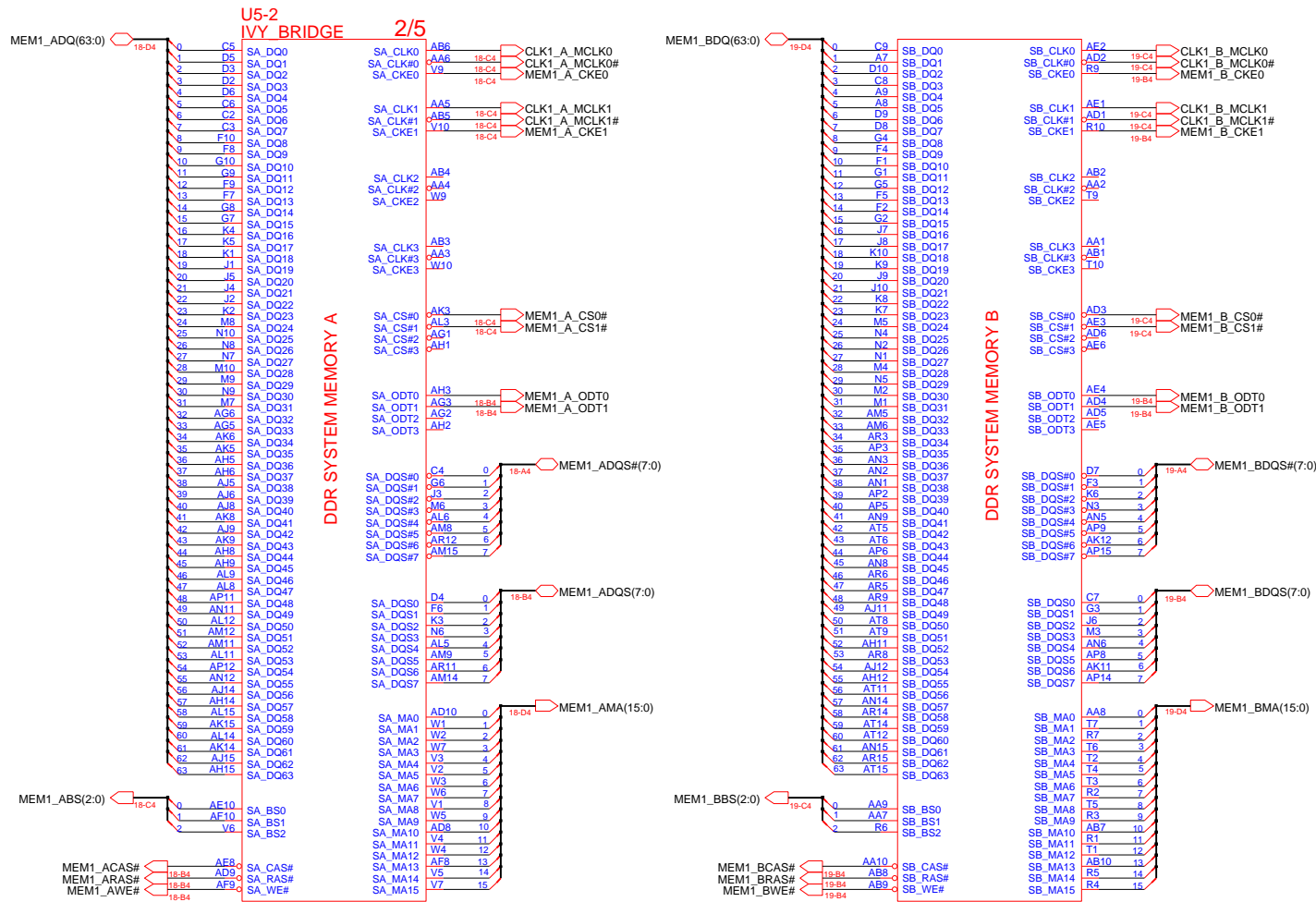


DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R
CHECK	XF CHU	DEV. STEP	MP		THERMAL SENSOR
APPROVAL	BL LEE	REV	REV 1.2		THERMAL SENSOR EMC2112
MODULE CODE		LAST EDIT			
				PAGE	7 OF 51

## IVY BRIDGE PROCESSOR (DMI,PEG, FDI)

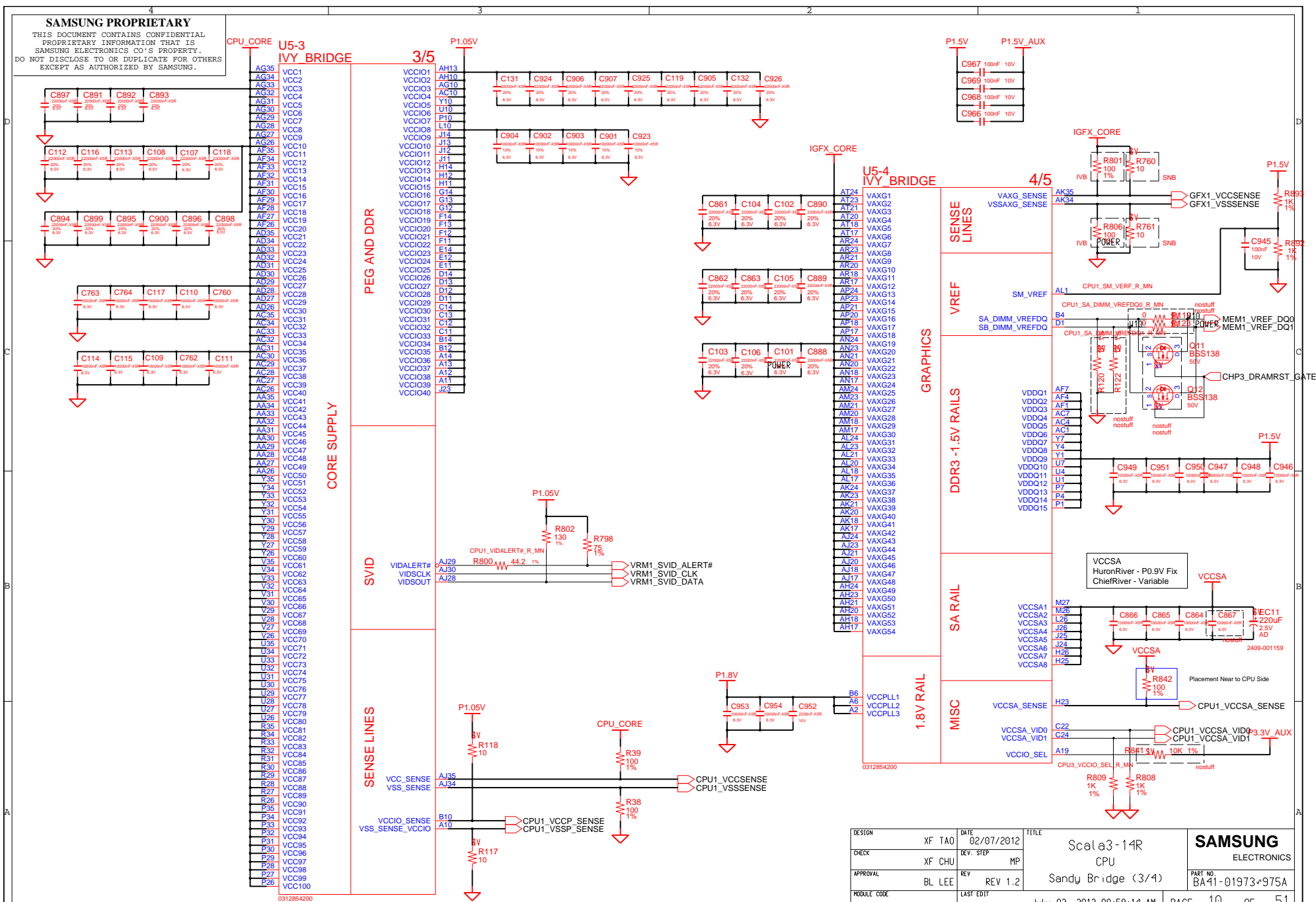






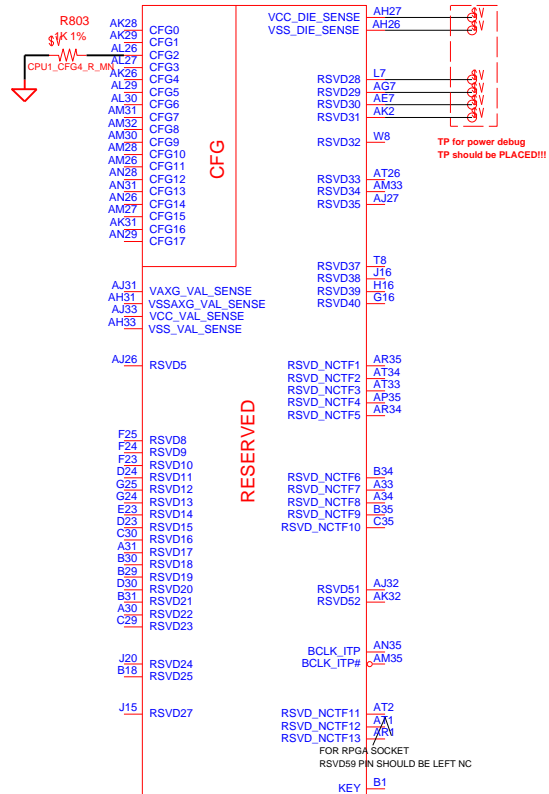
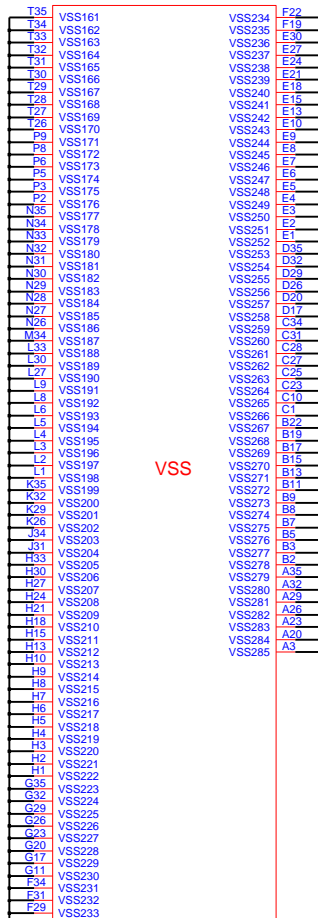
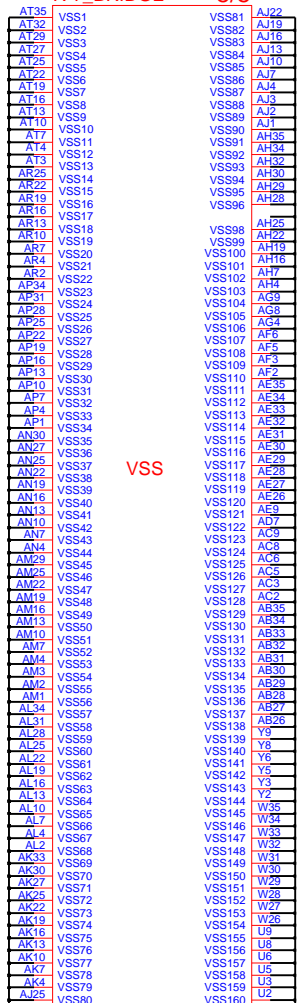
DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R CPU Sandy Bridge (2/4)	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP			PART NO. BA41-01973-975A
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	9	OF 51

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DESIGN	XF TAO	DATE	02/07/2012	TITLE		<b>SAMSUNG</b> ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2	Sandy Bridge (3/4)	PART NO.	
MODULE CODE		LAST EDIT		July 02, 2012 09:58:14 AM	BA41-01973-975A	
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PEG STATIC LANE REVERSAL - CFG2 IS FOR THE 16X	
CFG2	1 : (DEFAULT) NORMAL OPERATION 0 : LANE REVERSED


PCIe PORT BIFURCATION STRAPS	
CFG[6:5]	11: (DEFAULT) X16 - DEVICE 1 FUNCTIONS 1 AND 2 DISABLED 10: X8_X8 - DEVICE 1 FUNCTION 1 ENABLED; FUNCTION 2 DISABLED 01: RESERVED - (DEVICE 1 FUNCTION 1 DISABLED; FUNCTION 2 ENABLED) 00: X8_X4, X4 - DEVICE 1 FUNCTIONS 1 AND 2 ENABLED

Display Port Presence	
CFG4	1 : Disabled - No DP device is connected to eDP 0 : Enabled - (DP device is connected to eDP

PEG DEFER TRAINING	
CFG7	1 : (DEFAULT) PEG TRAIN IMMEDIATELY FOLLOWING XRES#B2 DEASSERTION 0 : PEG WAIT FOR BIOS FOR TRAINING

DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	
CHECK	XF CHU	DEV. STEP	MP	CPU		
APPROVAL	BL LEE	REV	REV 1.2	Sandy Bridge (4/4)		
MODULE CODE		LAST EDIT				
				July 02, 2012 09:58:14 AM	PAGE	11 OF 51

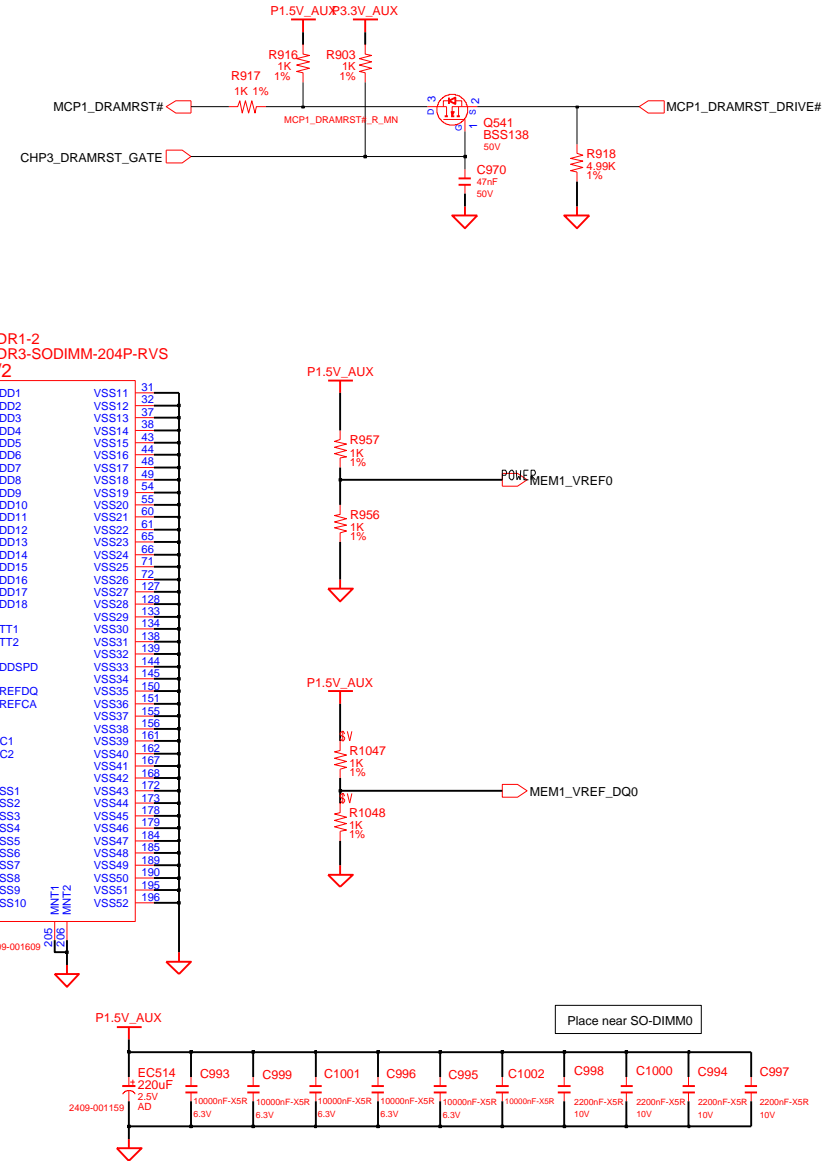
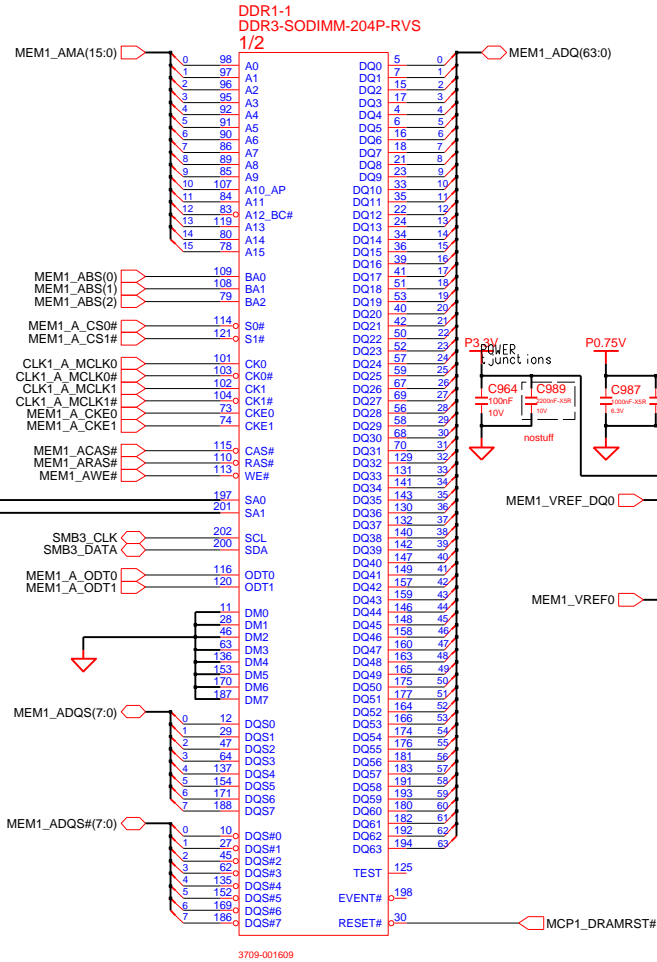
## SO-DIMM#0 : 2nd SO-DIMM

### DDR SO-DIMM #0

Height : 9.2 mm (REVERSE)

P/N : 3709-001656 (Foxconn)

P/N : 3709-001609 (Concraft)

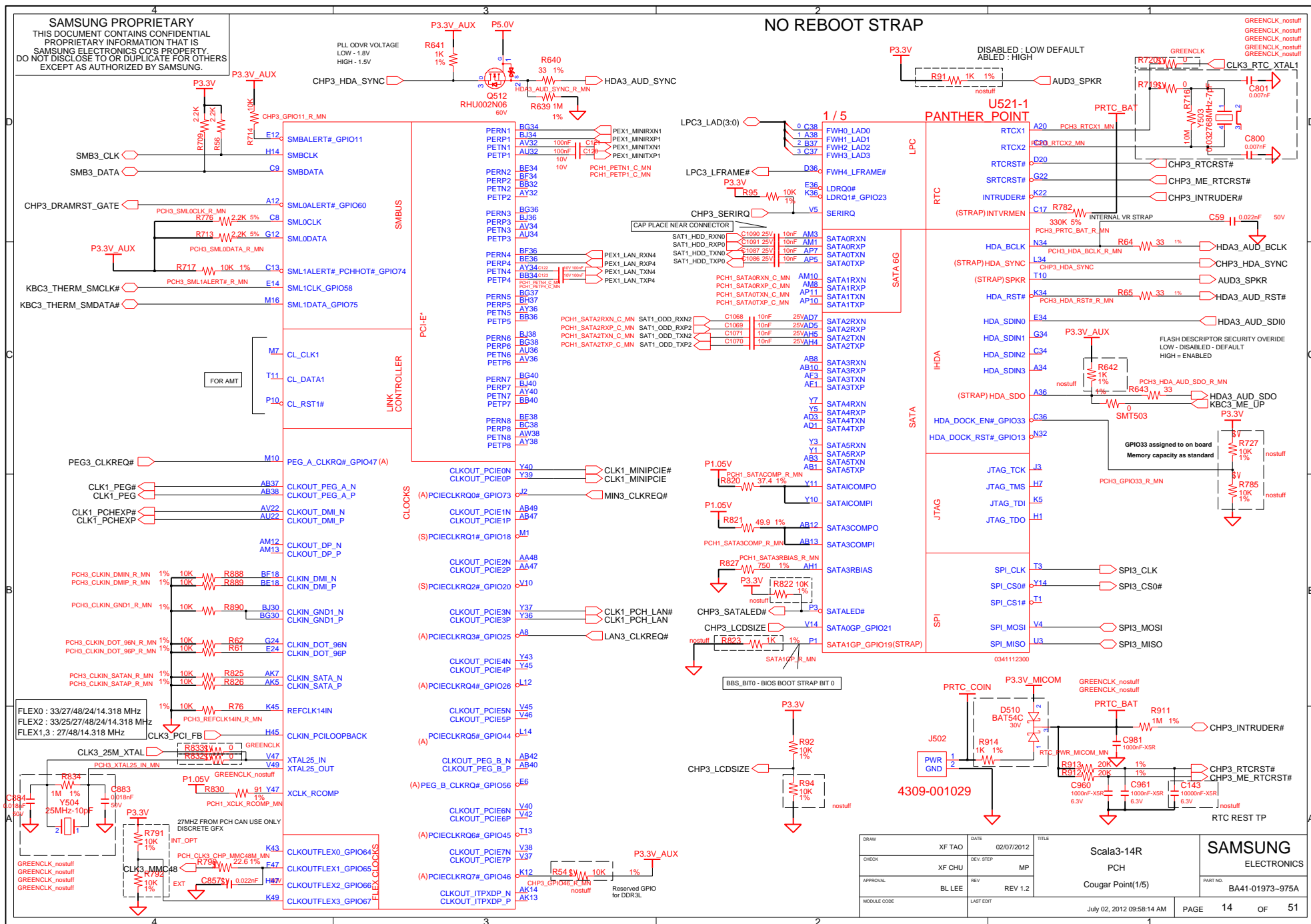


DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		SODIMM A	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		DDR3	PART NO.
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM			BA41-01973-975A
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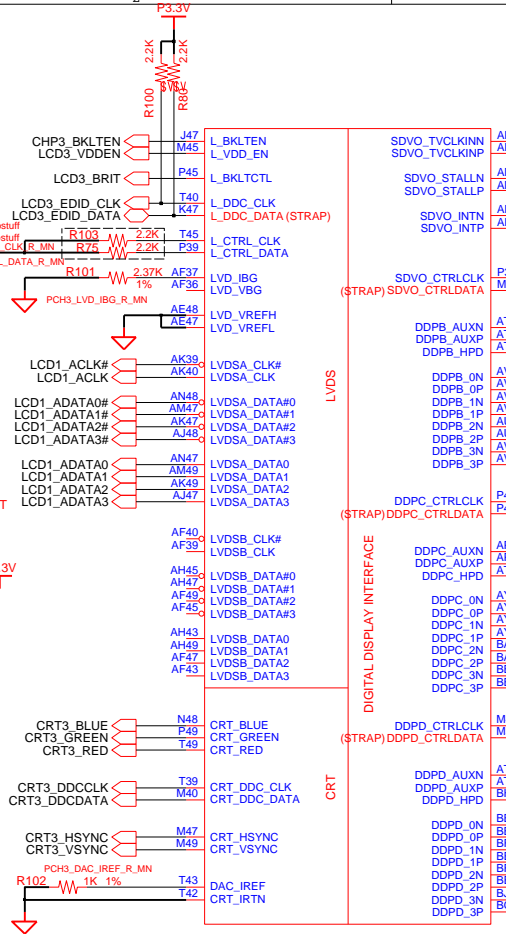
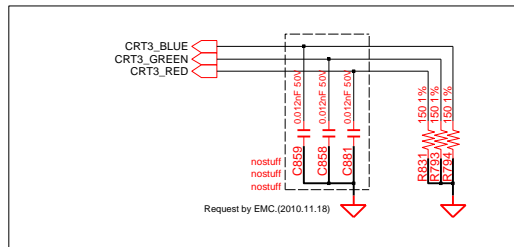
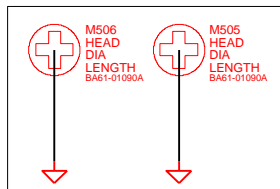
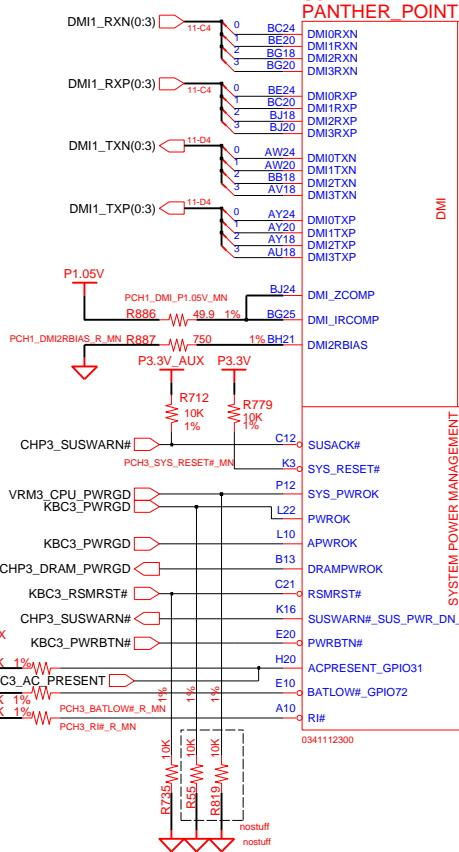
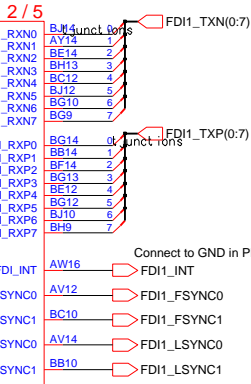


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NO REBOOT STRAP



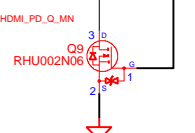
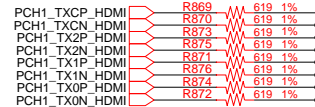
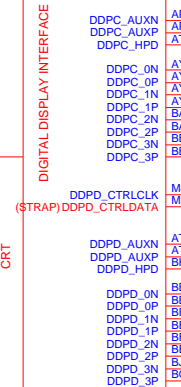
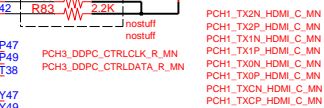
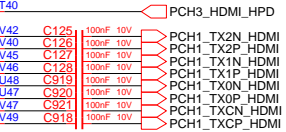
**U521-2  
PANTHER POINT**



DDI PORT B DETECT	
SDVO_CTRL_DATA	1 PORT B DETECTED 0 PORT B NOT DETECTED

Pull-up resistors (HDMI PORT page)

PCH3\_HDMI\_CLK  
PCH3\_HDMI\_DATA



DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R
CHECK	XF CHU	DEV. STEP	MP		PCH
APPROVAL	BL LEE	REV	REV 1.2		Cougar Point(2/5)
MODULE CODE		LAST EDIT			
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<b>SAMSUNG</b> ELECTRONICS	
PART NO.	BA41-01973-975A



[illegible]



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# U521-4 PANTHER POINT

AD49

VCCACLK

T16

VCCDSW3\_3

V12

DCPSUSBYP

T38

VCC3\_3\_5

BH23

VCCAPLLDM2

AL29

VCCIO\_14

AL24

DCPSUS\_3

AA19

VCCASW\_1

AA21

VCCASW\_2

AA24

VCCASW\_3

AA26

VCCASW\_4

AA27

VCCASW\_5

AA29

VCCASW\_6

AA31

VCCASW\_7

AC26

VCCASW\_8

AC27

VCCASW\_9

AC29

VCCASW\_10

AC31

VCCASW\_11

AD29

VCCASW\_12

AD31

VCCASW\_13

W21

VCCASW\_14

W23

VCCASW\_15

W24

VCCASW\_16

W26

VCCASW\_17

W29

VCCASW\_18

W31

VCCASW\_19

W33

VCCASW\_20

N16

DCPRTC

Y49

VCCVRM\_4

BD47

VCCADPLLA

BF47

VCCADPLLB

AF17

VCCIO\_7

AF33

VCCDIFFCLK\_N\_1

AF34

VCCDIFFCLK\_N\_2

AG34

VCCDIFFCLK\_N\_3

AG33

VCCSSC

C91

V16

DCPSST

T17

V19

DCPSUS\_1

DCPSUS\_2

BJ8

V\_PROC\_IO

A22

VCCRTC

0341112300

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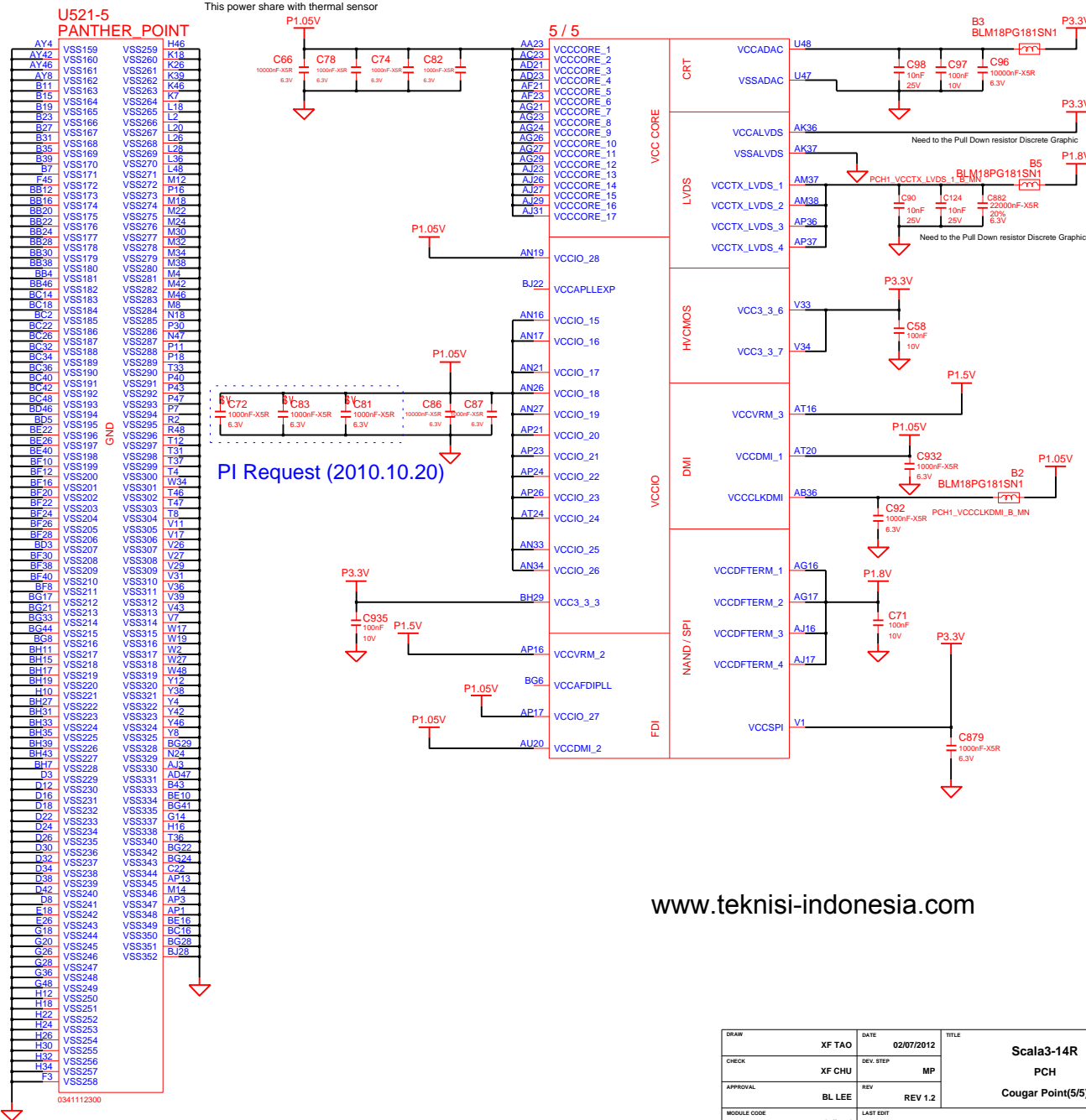
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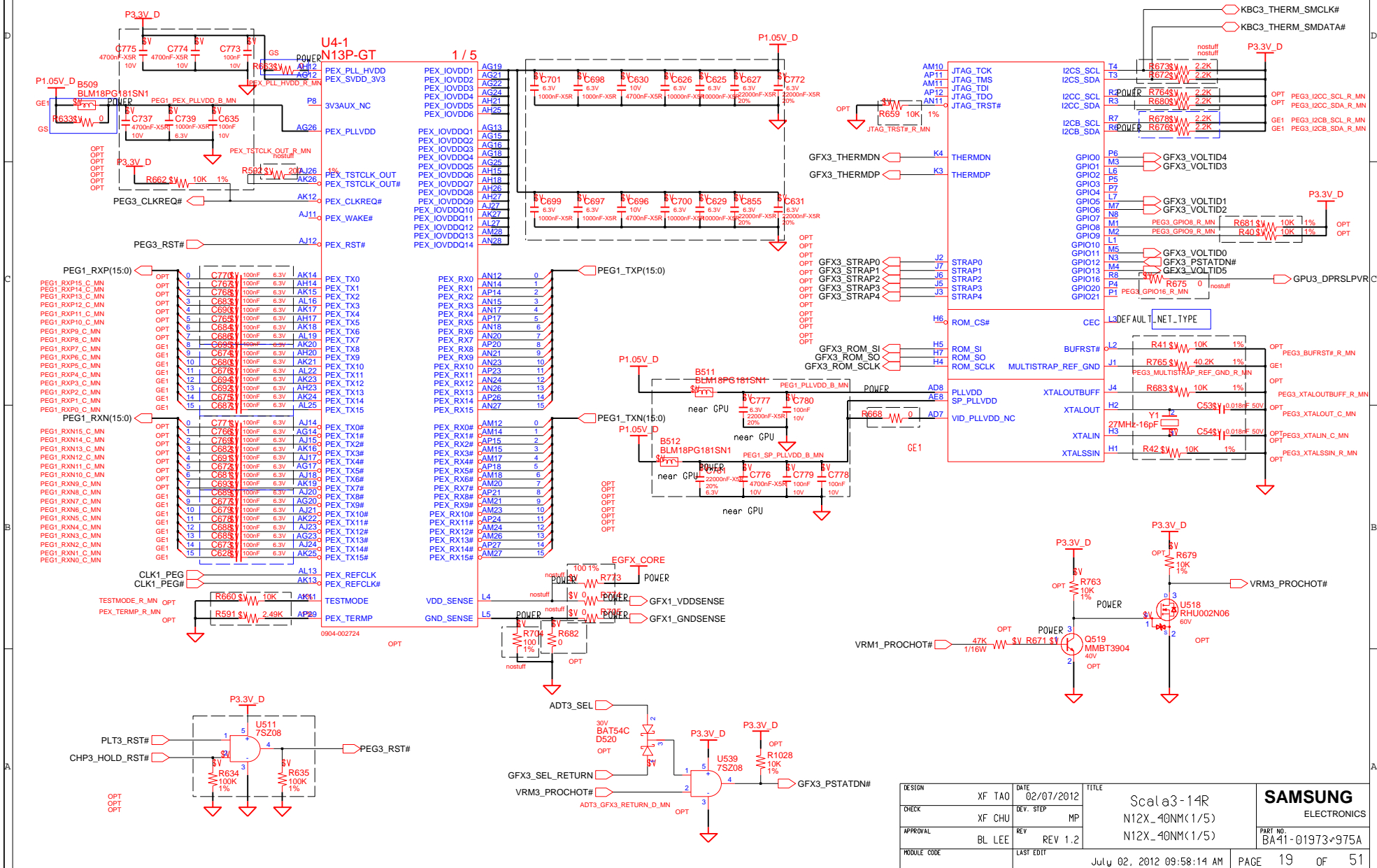
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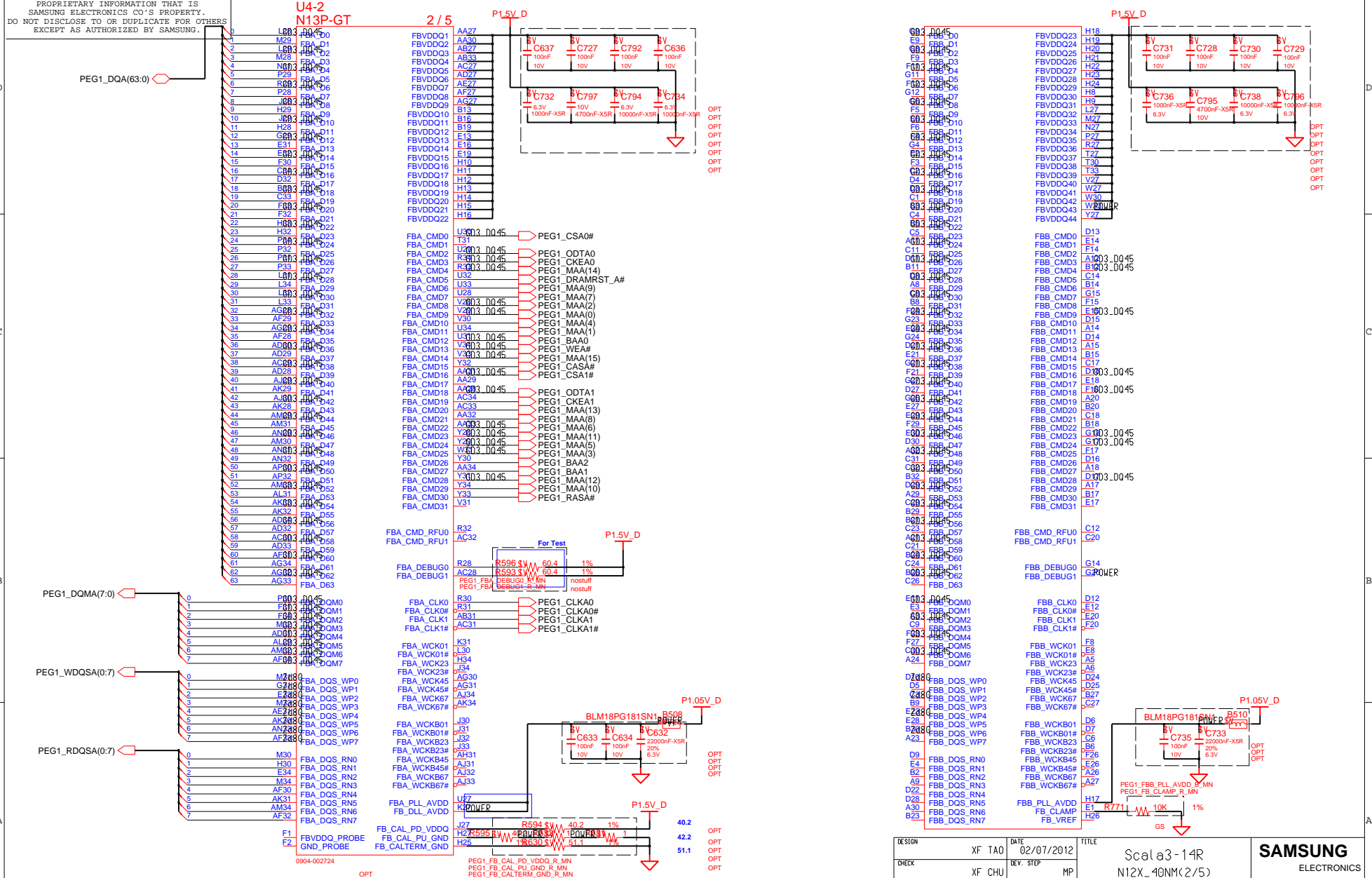


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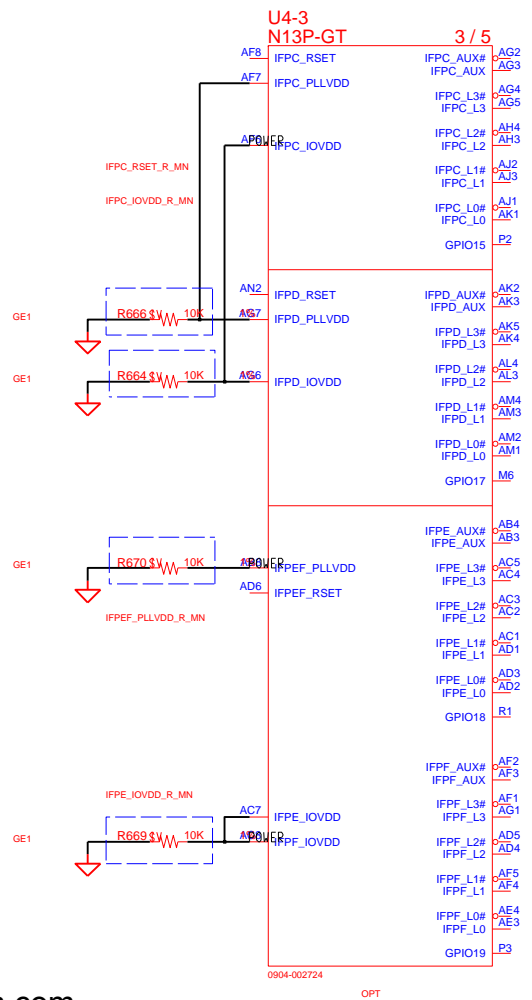
DRAW	XF TAO	DATE	02/07/2012	<b>Scala3-14R</b> <b>PCH</b> <b>Cougar Point(5/5)</b>	<b>SAMSUNG</b> <b>ELECTRONICS</b>
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.2		
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM		
				PAGE	18 OF 51

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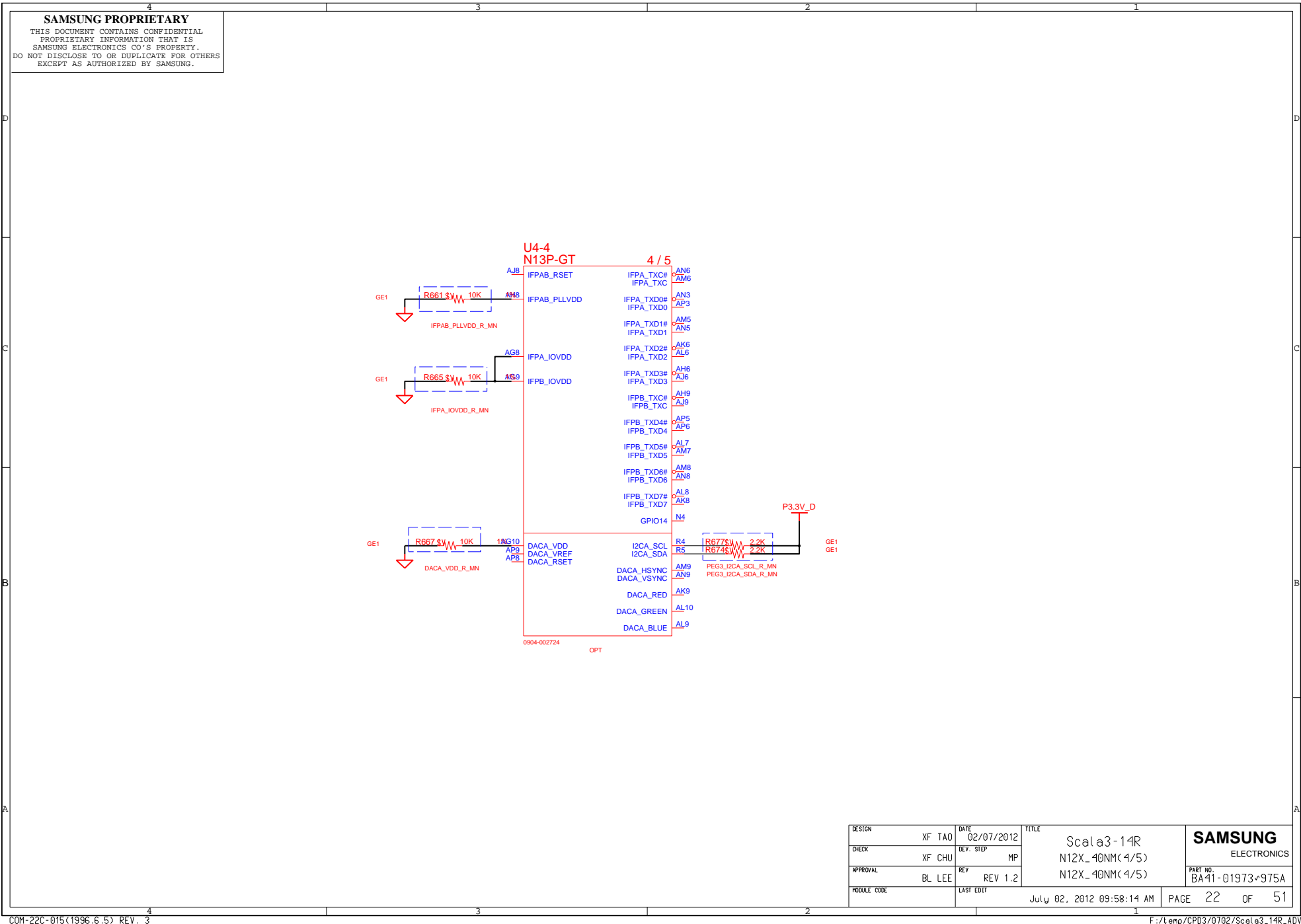


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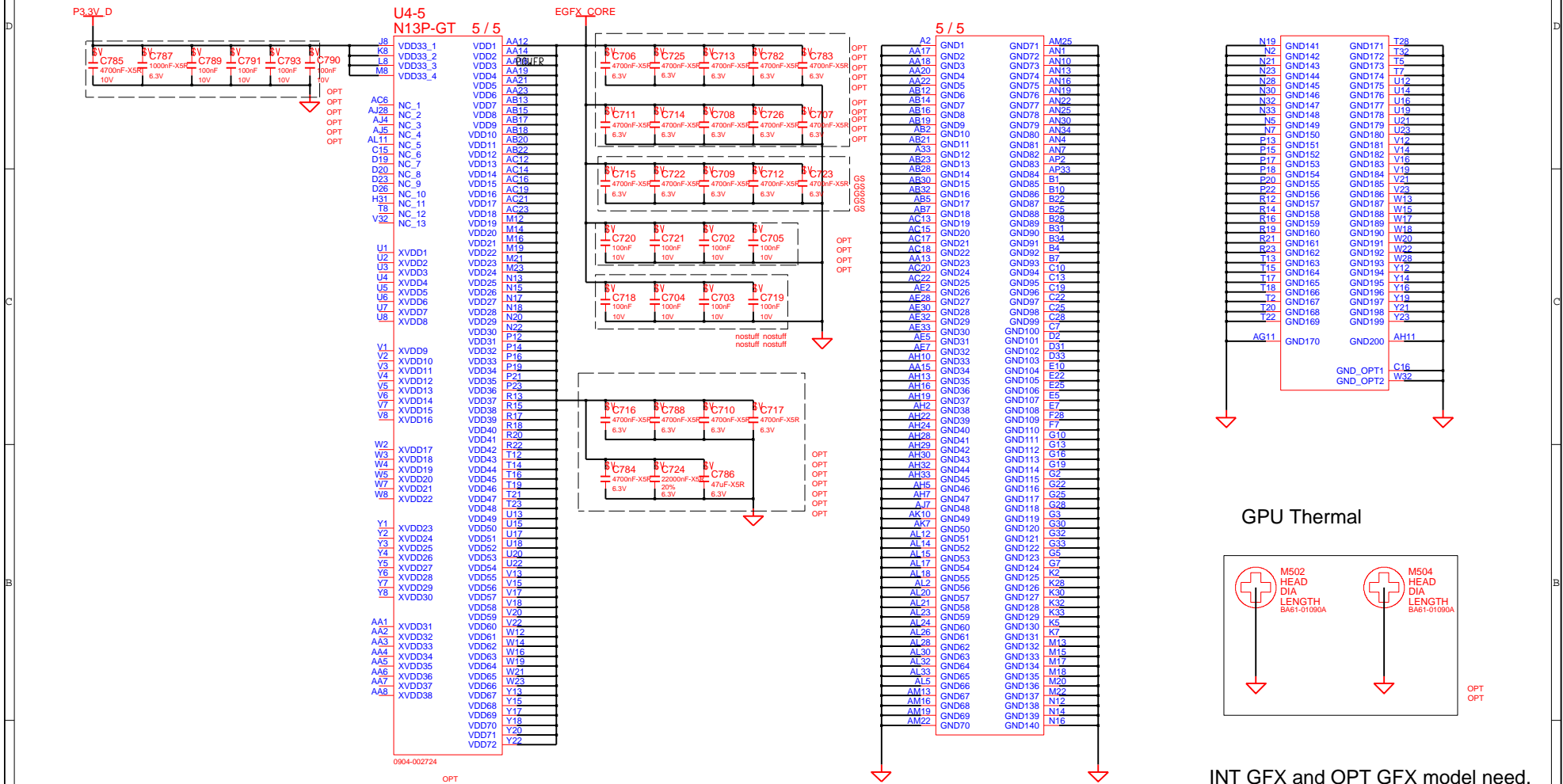


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DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-01973-975A
CHECK	XF CHU	DEV. STEP	MP		N12X_40NM(3/5)	
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(3/5)	
MODULE CODE		LAST EDIT		July 02, 2012 09:58:14 AM	PAGE 21 OF 51	



DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	<b>SAMSUNG</b> ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		N12X_40NM(4/5)	
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(4/5)	
MODULE CODE		LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	22	OF 51



INT GFX and OPT GFX model need.

DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		N12X_40NM(5/5)	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(5/5)	PART NO.
MODULE CODE		LAST EDIT	July 02, 2012 09:58:14 AM			BA41-01973-975A
				PAGE	23	OF
					51	

EG1\_CKEA0



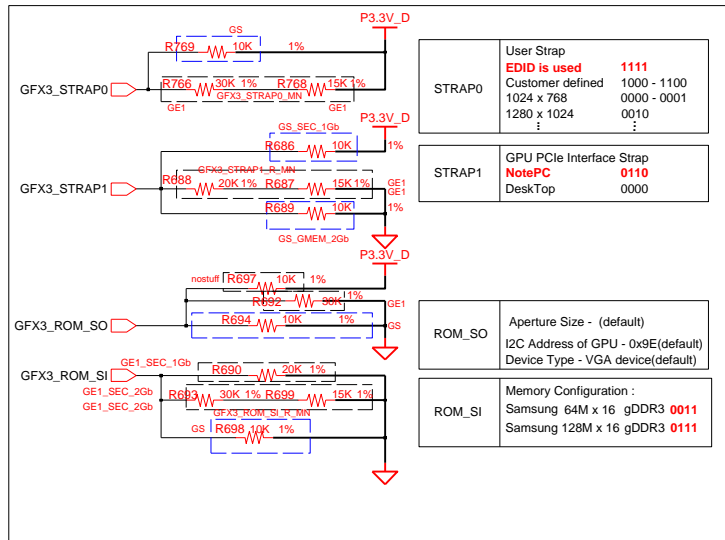
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2

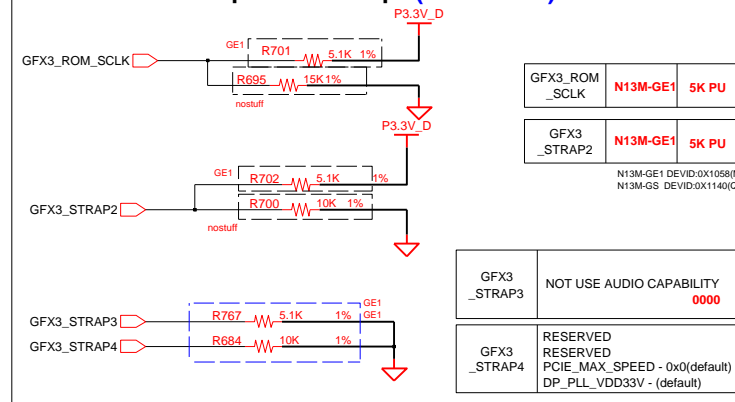
COM-22C-015(1996.6.5) REV. 3

# N13x STRAP

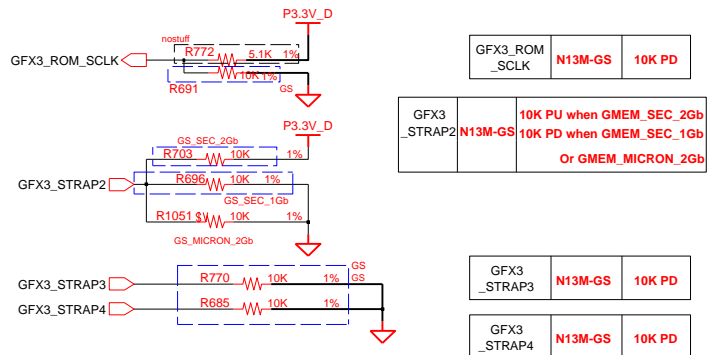
## Function Straps



## Chip Select Straps (N13M-GE1)



## Chip Select Straps (N13M-GS)



STRAP PIN	STRAP MAPPING	Resistance	Polarity
STRAP0	RAMCFG[0]	10K ohm	Pull-up to 3V3 for binary '1'
STRAP1	RAMCFG[1]	10K ohm	Pull-down to GND for binary '0'
STRAP2	RAMCFG[2]	10K ohm	Samsung 64M x 16 gDDR3 0011
STRAP3	RAMCFG[3]	10K ohm	Samsung 128M x 16 gDDR3 0101
STRAP4	RAMCFG[3]	10K ohm	Micron 128M x 16 gDDR3 0001
ROM_SO	VGA_DEVICE	10K ohm	Pull-down to GND(no display)
ROM_SI	SUB_VENDOR	10K ohm	Pull-up to 3V3 if VBIOS ROM exists
ROM_SCLK	SMB_ALT_ADDR	10K ohm	Pull-down to GND if no VBIOROM
STRAP4	PCI_MAX_SPEED	10K ohm	Pull-down to GND

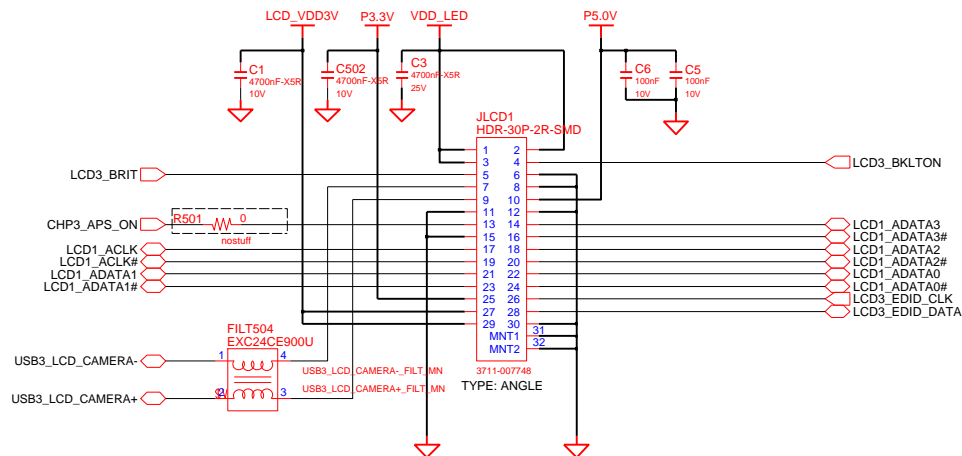
RESISTOR	PULL UP	PULL DOWN
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

STRAP PIN	BIT 3	BIT 2	BIT 1	BIT 0
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3GIO_PAD_CFG_ADR[3]	3GIO_PAD_CFG_ADR[2]	3GIO_PAD_CFG_ADR[1]	3GIO_PAD_CFG_ADR[0]
ROM_SO	FB[1]	FB[0]	SMB_ALT_ADDR	VGA_DEVICE
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM
STRAP3	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	RESERVED	RESERVED	PCIE_MAX_SPEED	DP_PLL_VDD33V

DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		GRAPHIC_MEM C#0	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		GRAPHIC_MEM C#0	PART NO.
MODULE CODE		LAST EDIT				BA41-01973-975A
				July 02, 2012 09:58:14 AM	PAGE	26 OF 51

# LVDS LOGIC

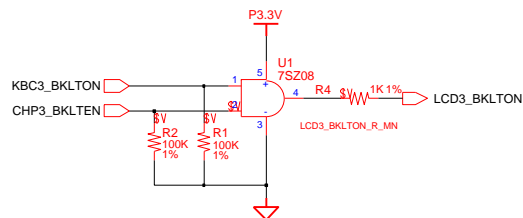
## 1Ch. LCD Connector + CAMERA



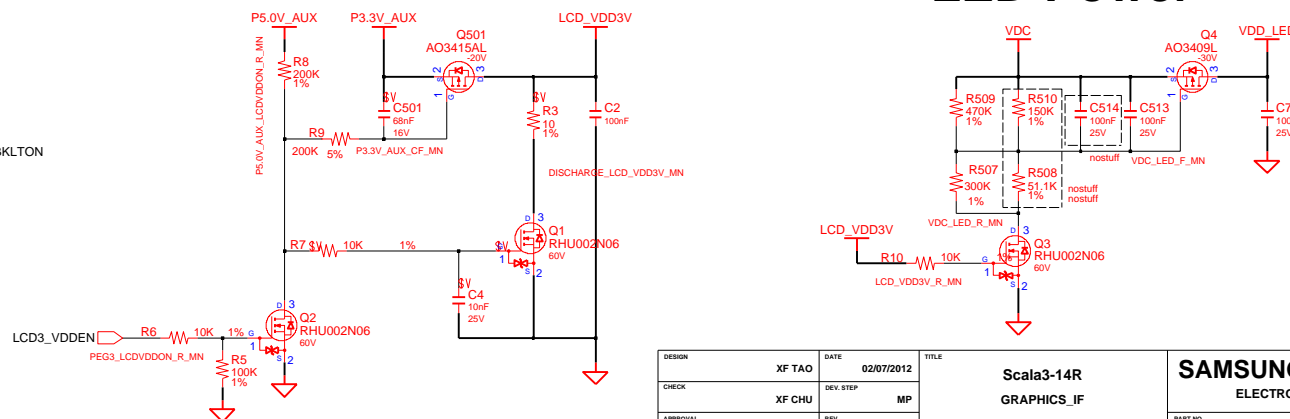
## LCD Power

### EBL Purpose

## Backlight On



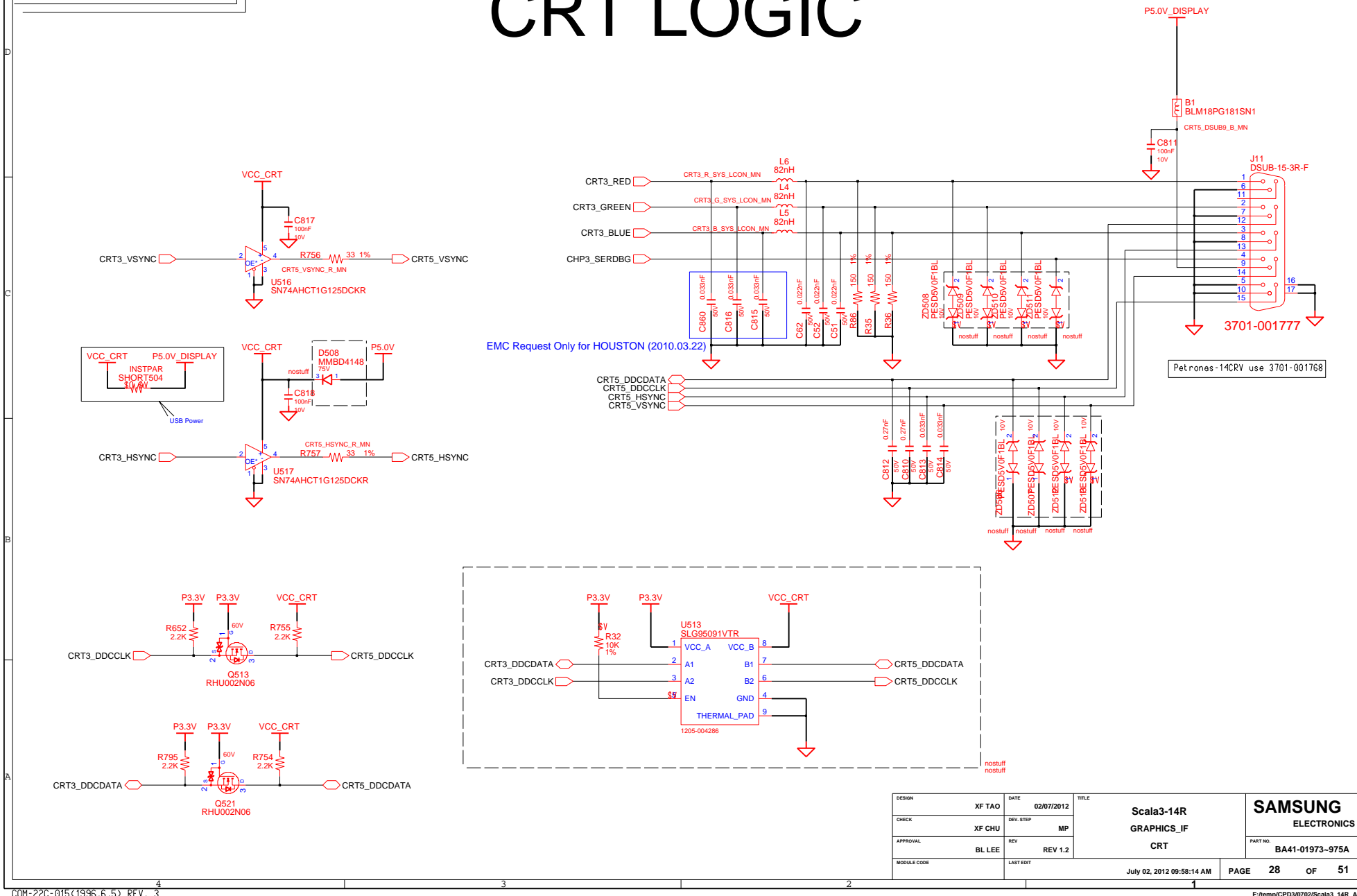
## LED Power



DESIGN	XF TAO	DATE	02/07/2012	<div>Scala3-14R</div> <div>GRAPHICS_IF</div> <div>LVDs</div>	<div><b>SAMSUNG</b></div> <div>ELECTRONICS</div>	
CHECK	XF CHU	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE	LAST EDIT			July 02, 2012 09:58:14 AM	PAGE	27 OF 51

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# CRT LOGIC



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# HDMI Graphic

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

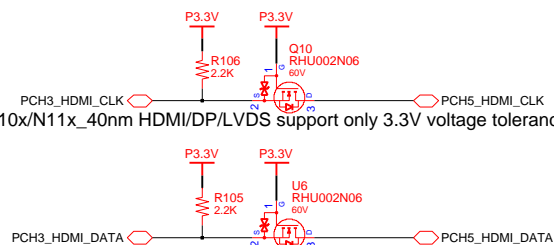
(EMC request at 2010.04.15)

After checking, Veyron\_R don't need to use CMC for each signal.

(EMC request at 2010.12.03)

FOR HDMI VERIFICATION TEST

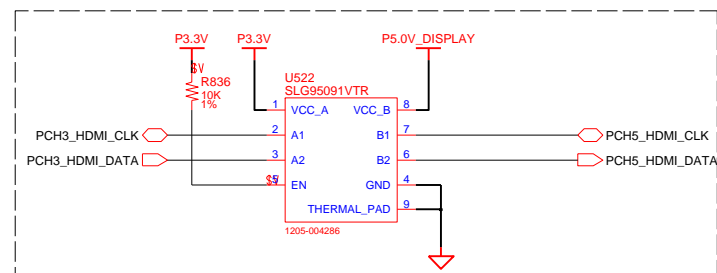
PCH3\_HDMI\_CLK PCH5\_HDMI\_CLK  
N10x/N11x\_40nm HDMI/DP/LVDS support only 3.3V voltage tolerance



Petrones-14CRV use 3701-001785

J12  
HDMI-19P-FEMALE

3701-001782

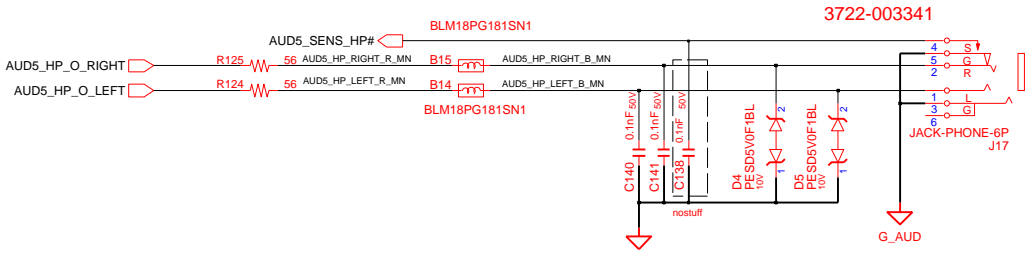


DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		GRAPHICS_IF	
APPROVAL	BL LEE	REV	REV 1.2		HDMI	
MODULE CODE		LAST EDIT			July 02, 2012 09:58:14 AM	PAGE 29 OF 51



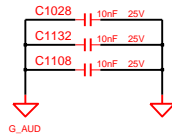
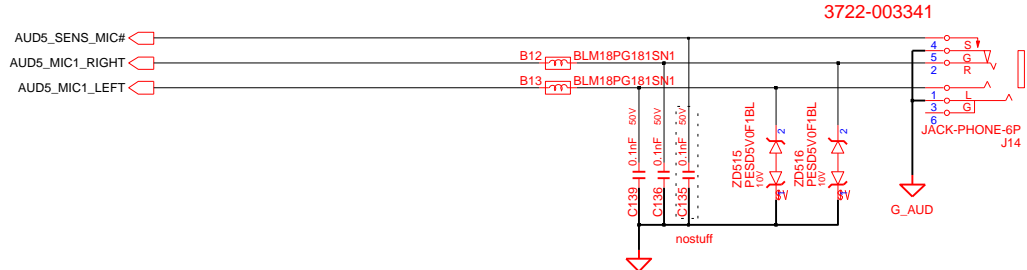
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HEADPHONE

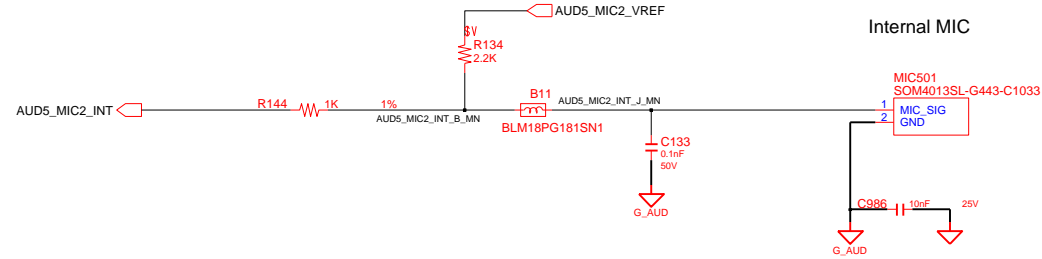


Petrones-14CRV J14 J17 use 3722-003324

MIC JACK

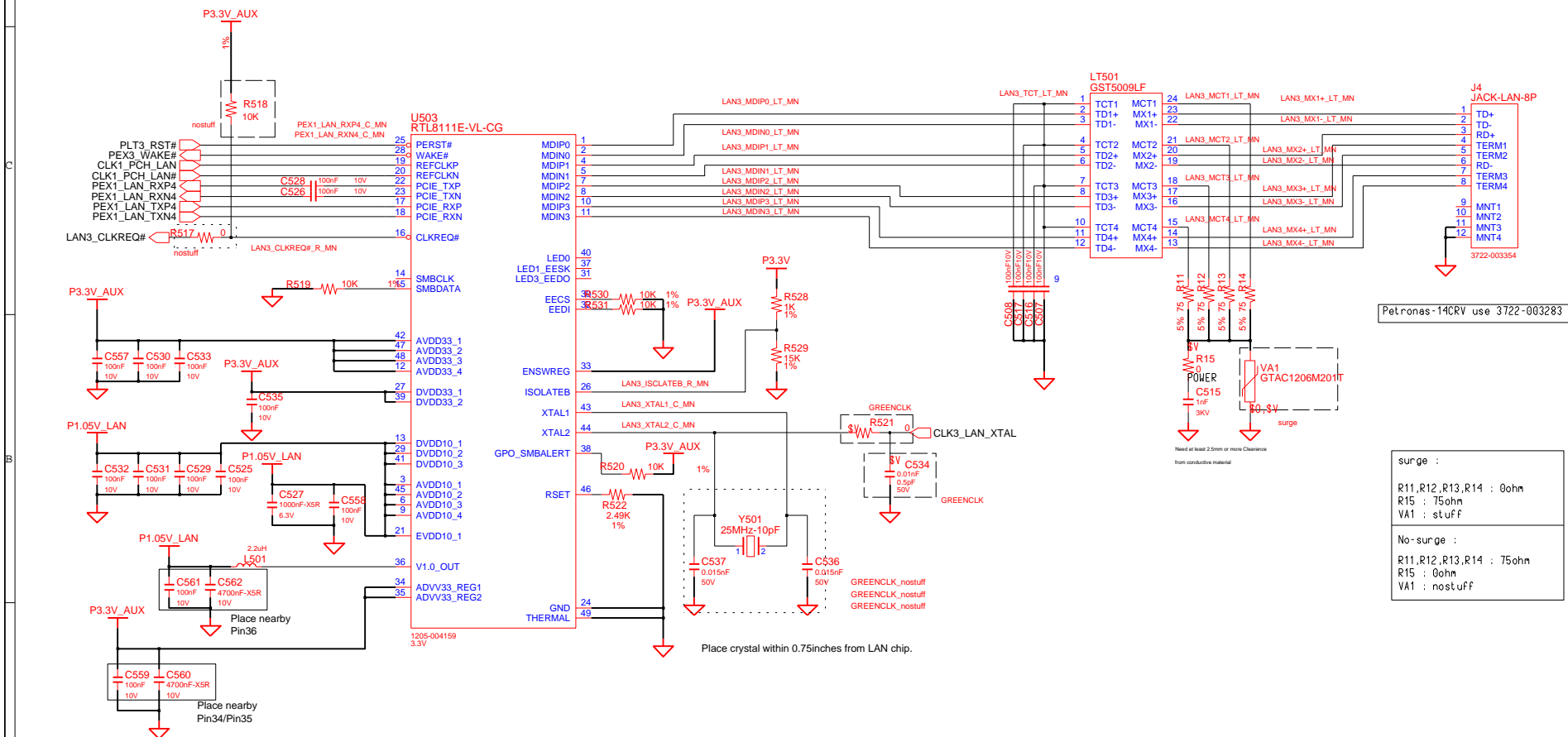


Internal MIC



DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		HDA_CODEC	
APPROVAL	BL LEE	REV	REV 1.2		AUDIO JACK	
MODULE CODE		LAST EDIT		July 02, 2012 09:58:14 AM	PAGE	31 OF 51

# Reatek RTL8111E



Petronas-14CRV use 3722-003283

surge :  
R11,R12,R13,R14 : 0ohm  
R15 : 75ohm  
VA1 : stuff

No-surge :  
R11,R12,R13,R14 : 75ohm  
R15 : 0ohm  
VA1 : nostuff

DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		LAN	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		LAN Reatek RTL8111E	PART NO.
MODULE CODE		LAST EDIT				BA41-01973-975A
July 02, 2012 09:58:14 AM						PAGE 32 OF 51



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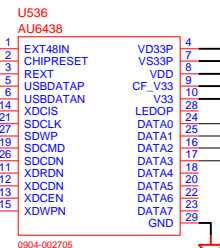
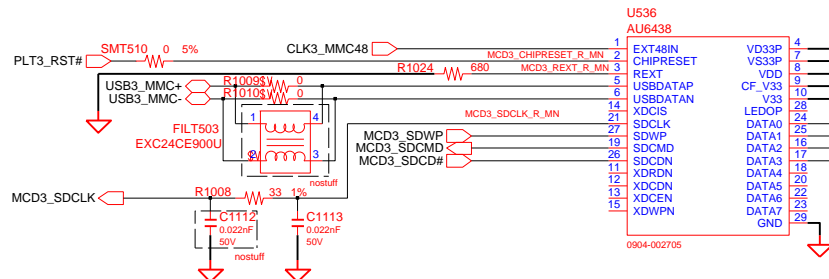
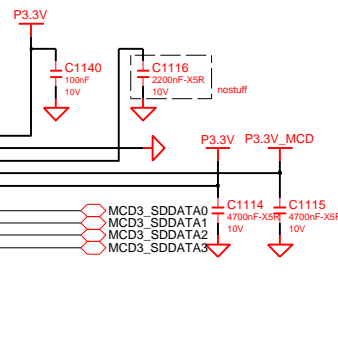
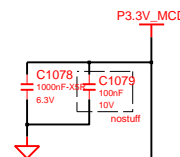
## 4 IN 1 CARD

40mil pattern

J503  
EDGE-SD-11P

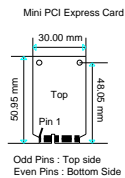
4 VDD  
2 CMD  
5 CLK  
7 DATA0  
8 DATA1  
9 DATA2  
1 CD\_DATA3  
10 CD  
11 WP  
3 VSS1  
6 VSS2  
12 MNT1  
13 MNT2  
14 MNT3  
15 MNT4  
3709-001661

MCD3\_SDCMD  
MCD3\_SDCLK  
MCD3\_SDDATA0  
MCD3\_SDDATA1  
MCD3\_SDDATA2  
MCD3\_SDDATA3  
MCD3\_SDCD#  
MCD3\_SDWP



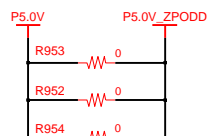
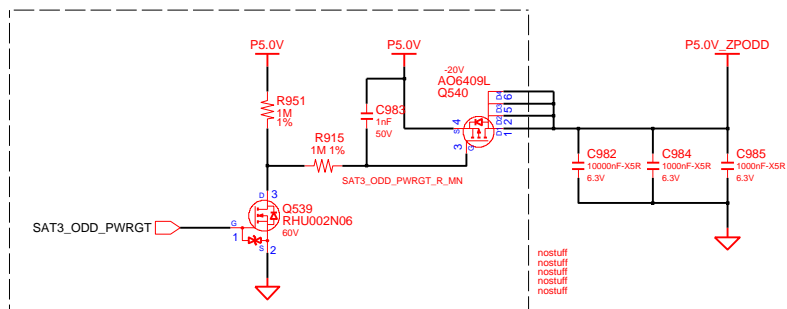
DESIGN	XF TAO	DATE	02/07/2012	Scala3-14R MULTICARD 4 IN 1 CARD(AU6438)		<b>SAMSUNG</b> ELECTRONICS	
CHECK	XF CHU	DEV. STEP	MP				
APPROVAL	BL LEE	REV	REV 1.2			PART NO.	BA41-01973-975A
MODULE CODE	LAST EDIT		July 02, 2012 09:58:14 AM			PAGE	33 OF 51

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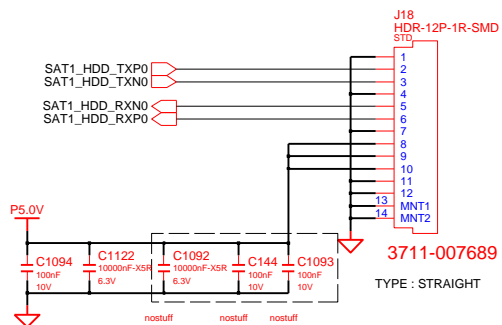


COM-22C-015(1996.6.5) REV. 3

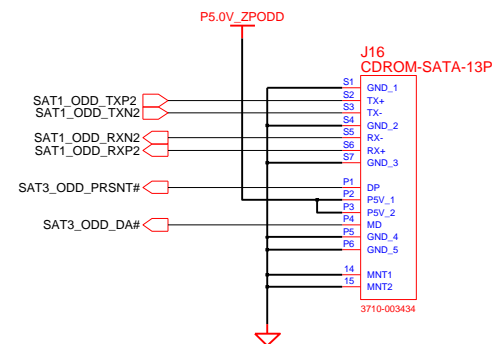
# SATA I/F CONN



## SATA HDD CONN



## SATA ODD CONN 14"



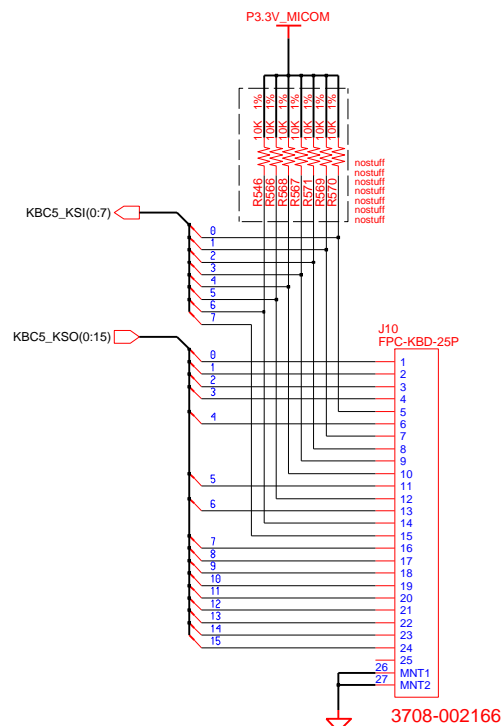
Petrones-14CRV use 3710-002796

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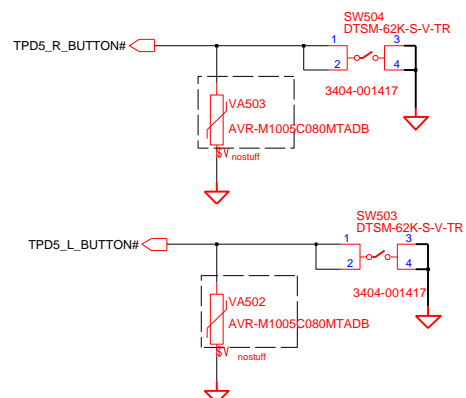
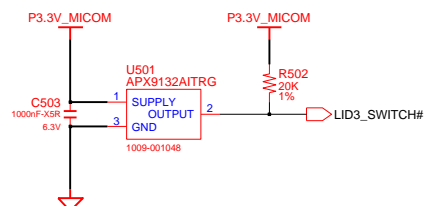
DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		SATA_DEVICES	
APPROVAL	BL LEE	REV	REV 1.2		HDD & ODD SUB CONNECTOR	
MODULE CODE		LAST EDIT				
				July 02, 2012 09:58:14 AM	PAGE	35 OF 51



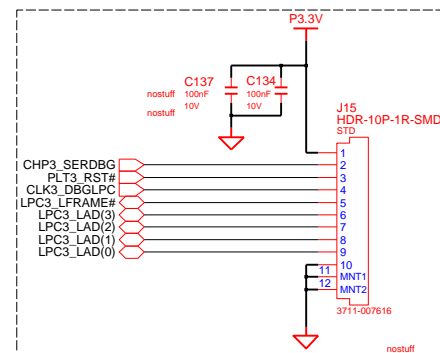
## KEYBOARD



## LID\_SWITCH



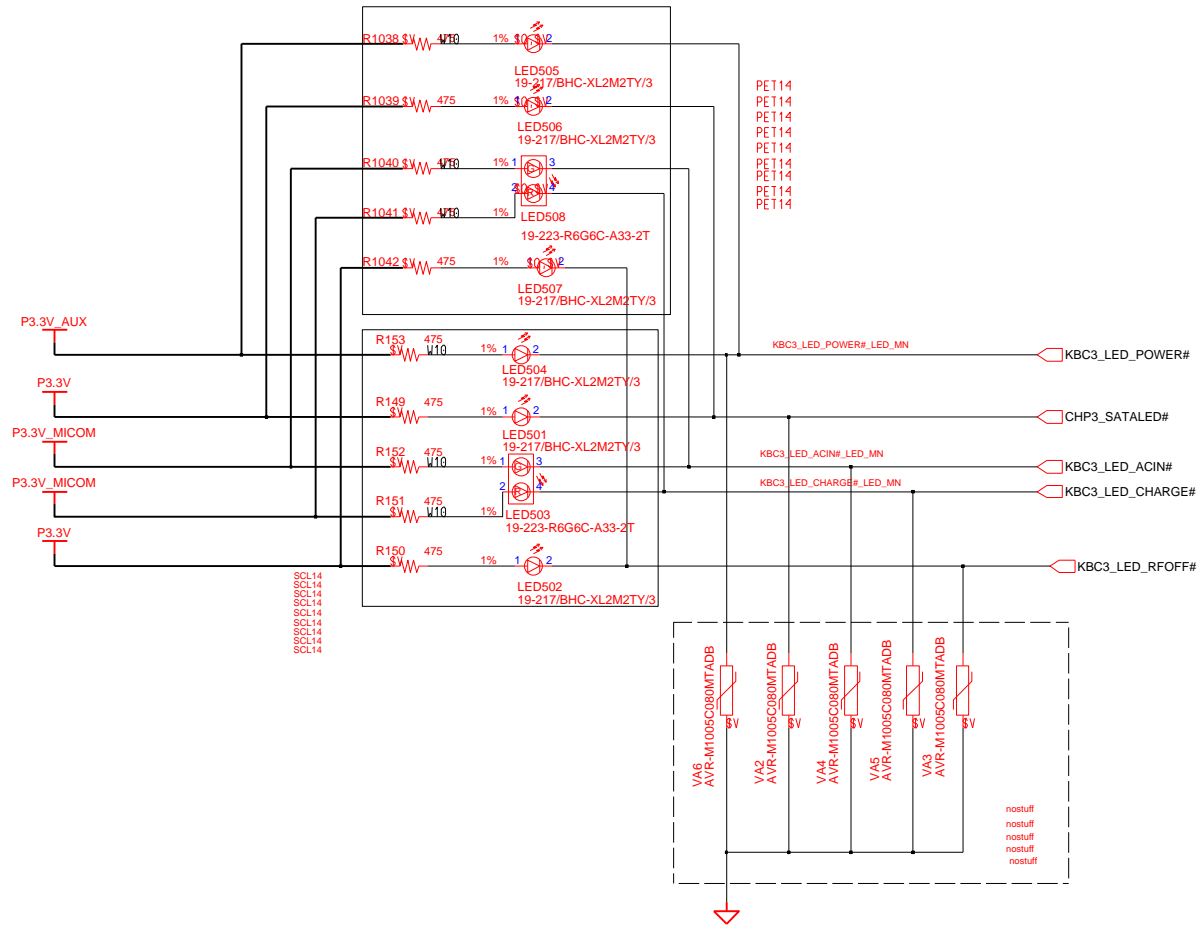
## 80H PORT DEBUG



DESIGN	XF TAO	DATE	02/07/2012	<b>Scala3-14R</b> <b>MICOM GLUE LOGIC</b> <b>KETBOARD &amp; TOUCHPAD</b>	<b>SAMSUNG</b> ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.2		
MODULE CODE	LAST EDIT				
				July 02, 2012 09:58:14 AM	PAGE 37 OF 51

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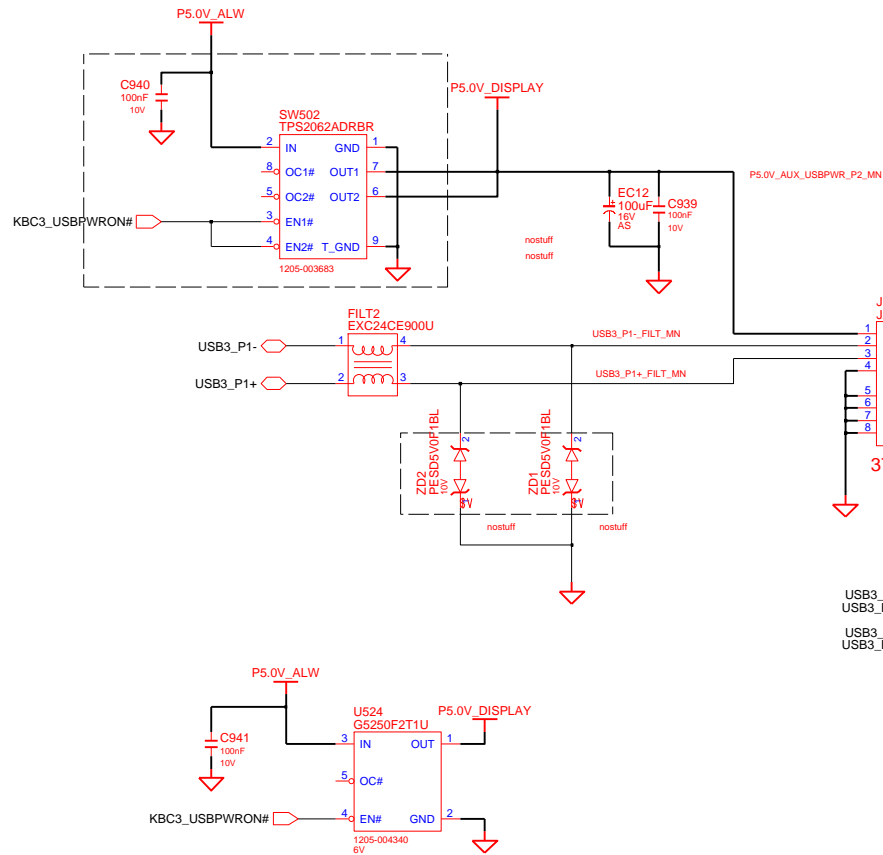
## LED for 14"



DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP	LED_SWITCH	LED_SWITCH	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2	LED_SWITCH	PART NO.	BA41-01973-975A
MODULE CODE		LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	38	OF 51

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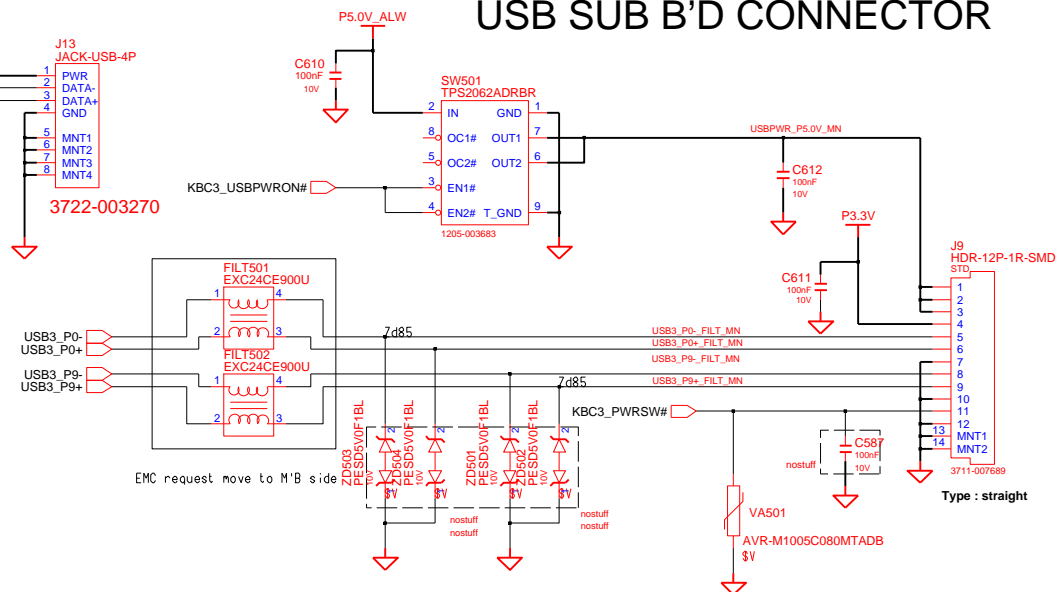
## USB Single connector



## MAIN TO SUB USB CONN

### Right 2USB Port

## USB SUB B'D CONNECTOR



EMC request move to M'B side

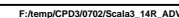
PLACE CLOSE TO USB SUB B'D Conenctor

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DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		USB_CONN	
APPROVAL	BL LEE	REV	REV 1.2		USB Port	
MODULE CODE		LAST EDIT		July 02, 2012 09:58:14 AM	PAGE	39 OF 51

PART NO.  
BA41-01973-975A

## CHARGER & POWER MANAGEMENT





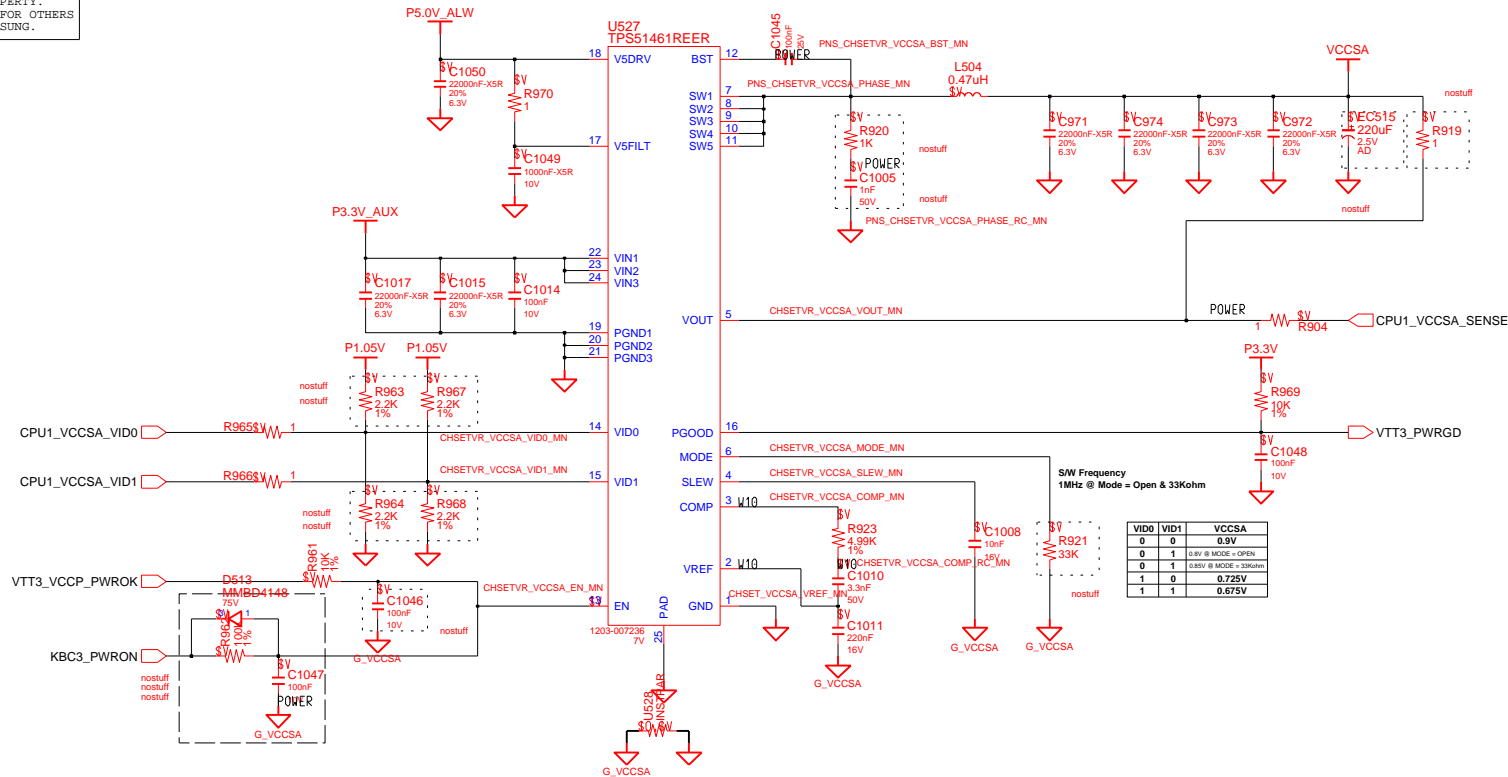
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DESIGN	XF TAO	DATE	02/07/2012	TITLE  Scala3-14R P3.3V_AUX / P5.0V_ALW TI TP551125		<b>SAMSUNG</b> ELECTRONICS	
CHECK	XF CHU	DEV. STEP	MP				
APPROVAL	BL LEE	REV	REV 1.2				
MODULE CODE		LAST EDIT	July 02, 2012 09:58:14 AM				
				PART NO.		BA41-01973-975A	

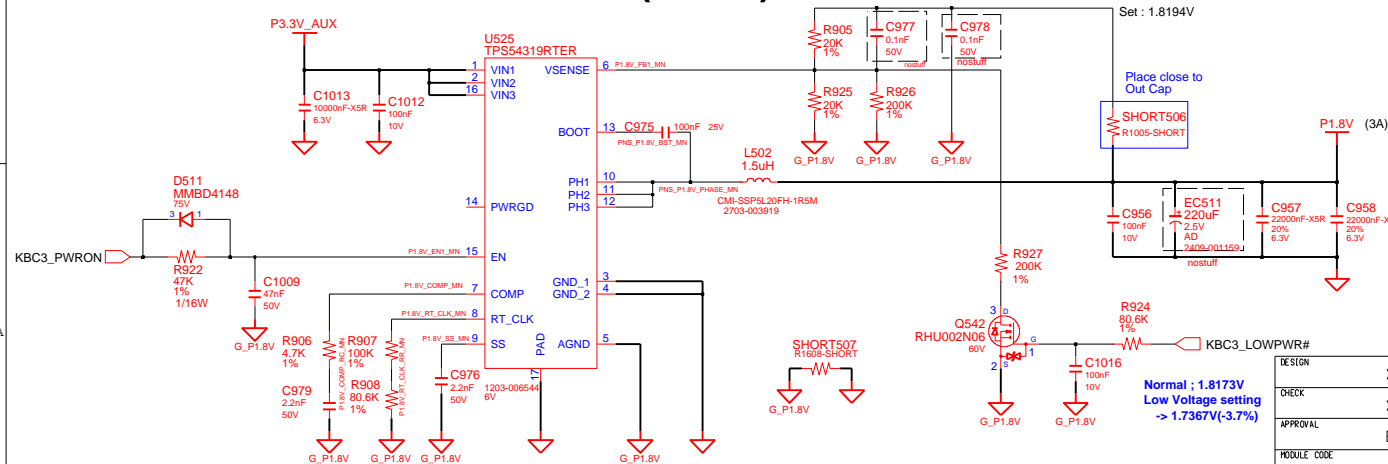


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## CHIPSET POWER(VCCSA)

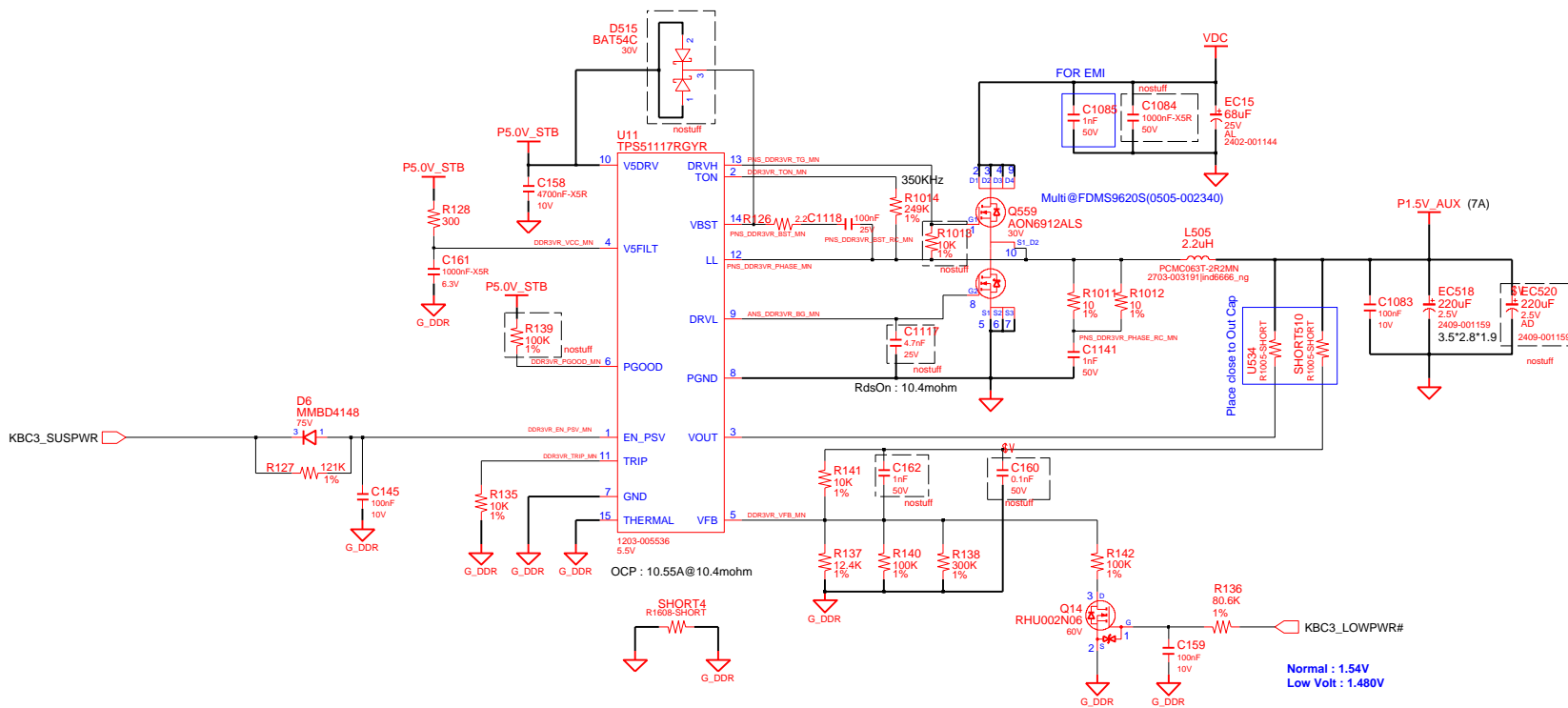


## CHIPSET POWER(P1.8V)

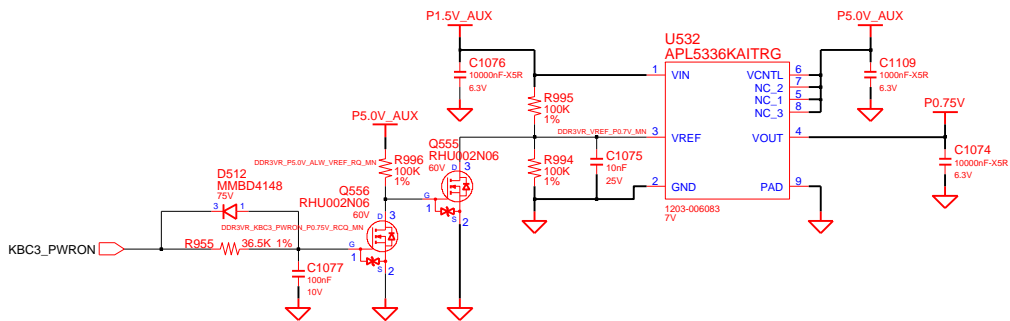


DESIGN	XF TAO	DATE	02/07/2012	TITLE Scala3-14R P1.1V_VTT	<b>SAMSUNG</b> ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.2		
MODULE CODE		LAST EDIT			
				July 02, 2012 09:58:14 AM	PAGE 43 OF 51

## DDR3 Power



## DDR3 VTT(0.75V)



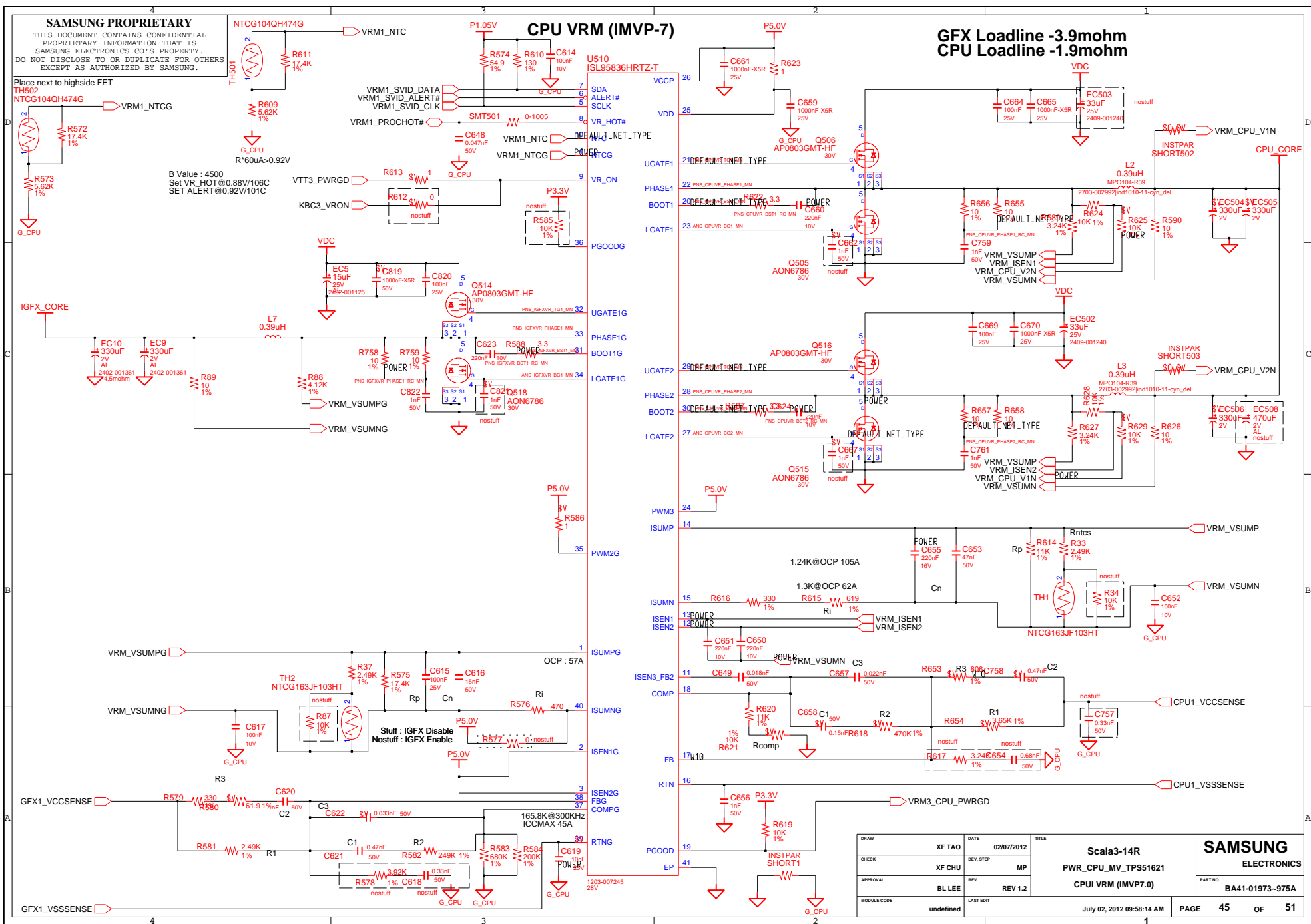
www.teknisi-indonesia.com

DESIGN	XF TAO	DATE	02/07/2012	Scala3-14R  PWR_MEMORY  DDR3 POWER	SAMSUNG  ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.2		
MODULE CODE		LAST EDIT			
undefined				July 02, 2012 09:58:14 AM	PAGE 44 OF 51

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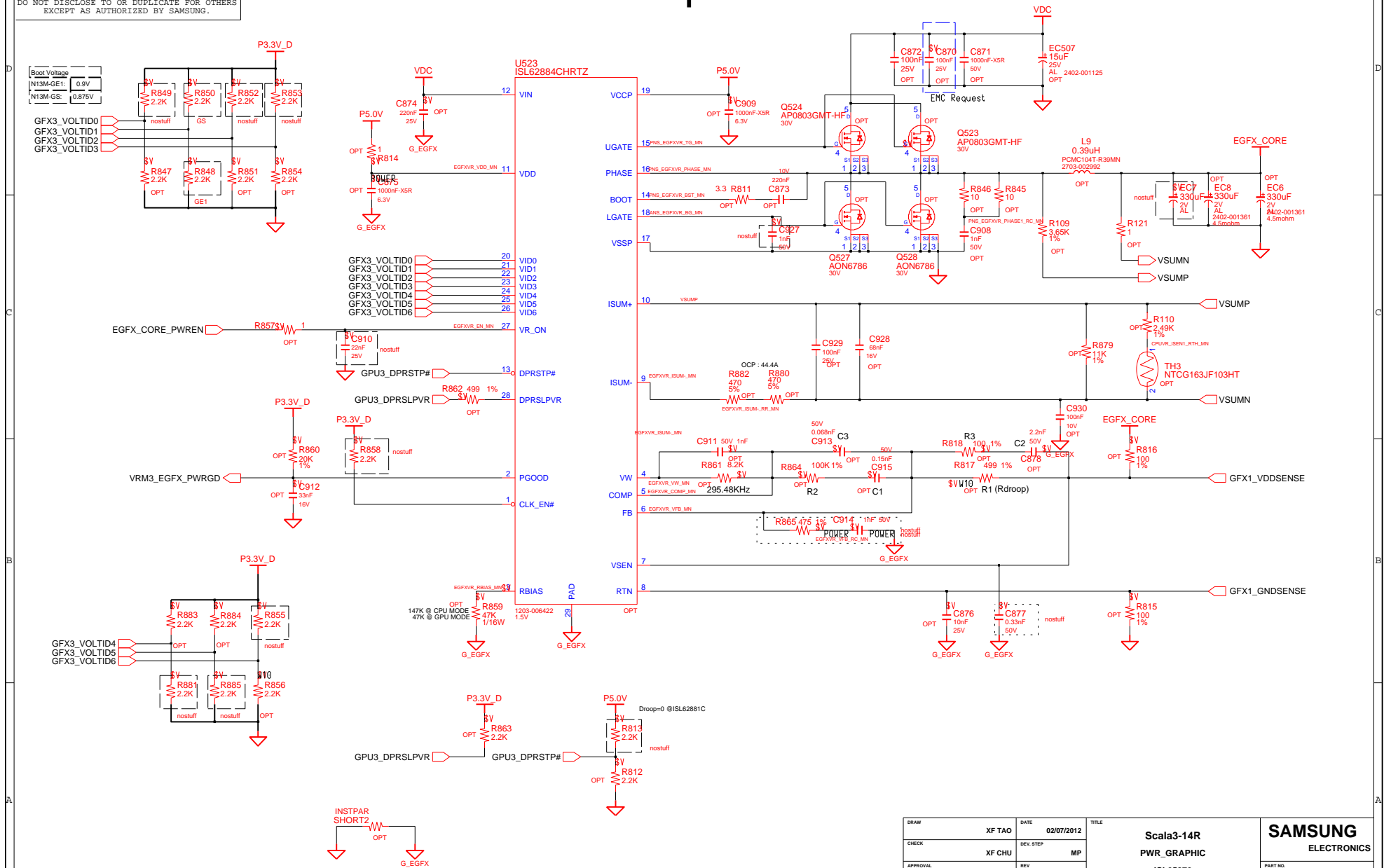
NTCG104QH474G VBM1 NTCG

B Value : 4500  
Set VR\_HOT@0.88V/106C  
SET ALERT@0.92V/101C



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# External Graphic Core Power



DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		PWR_GRAPHIC	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		ISL95870	PART NO.
MODULE CODE		LAST EDIT				BA41-01973-975A
				July 02, 2012 09:58:14 AM	PAGE	46 OF 51

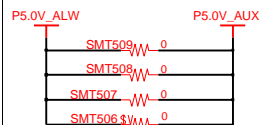
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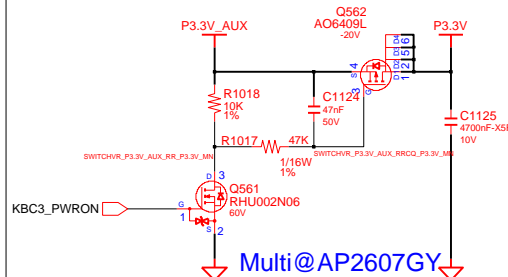
# Switched Power 1

(P5.0V -> P3.3V -> EGFX\_CORE -> P1.8V -> P1.5V -> P0.75V -> P1.05V -> P0.85V\_SA -> CPU\_CORE)

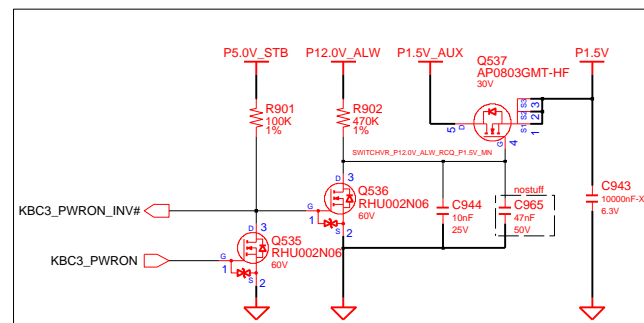
## P5.0V\_AUX



## Switched Power On (P3.3V)

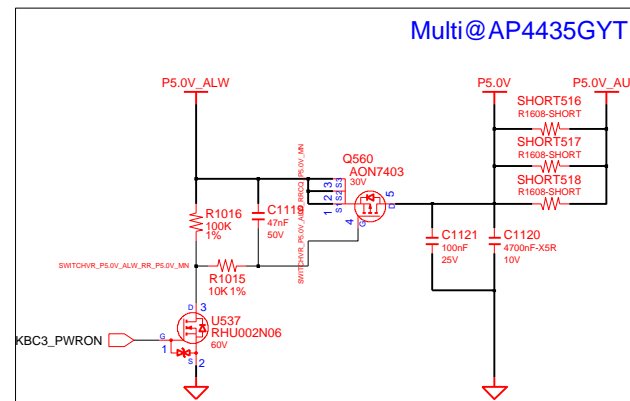


## Switched Power On (P1.5V)



For nVIDIA GFX PWR Sequence  
NVDD(EGFX\_CORE) first and then FBVDDQ(qDDR3)

## Switched Power On (P5.0V)



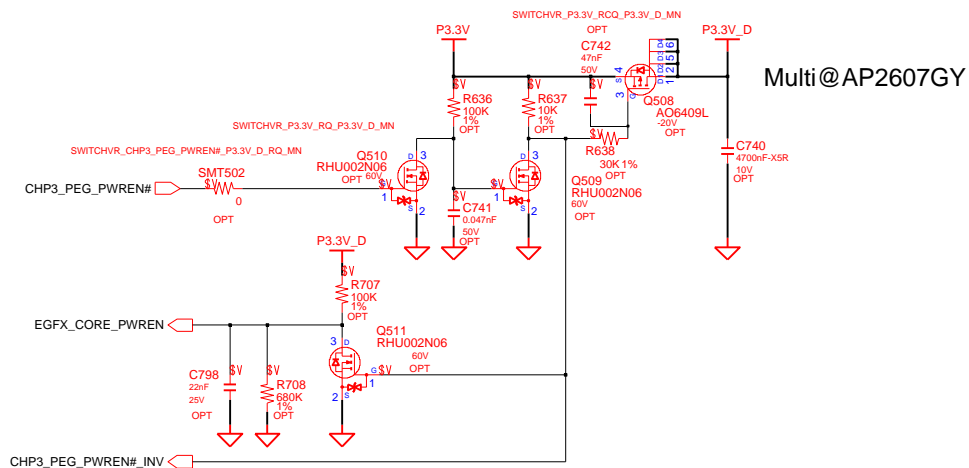
DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		Switched PWR 2	
APPROVAL	BL LEE	REV	REV 1.2		Switched Power	
MODULE CODE	undefined	LAST EDIT	July 02, 2012 09:58:14 AM	PAGE	47	OF 51

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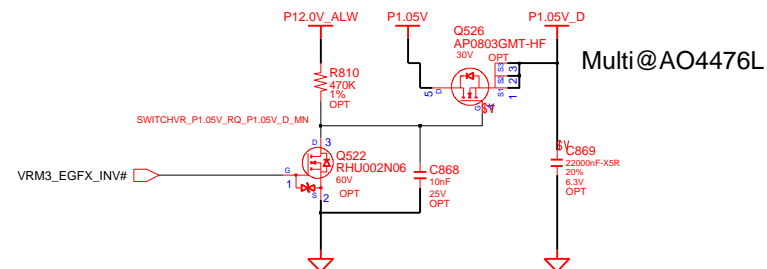
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## Switched Power 2 (For nVidia GFX Power Sequence)

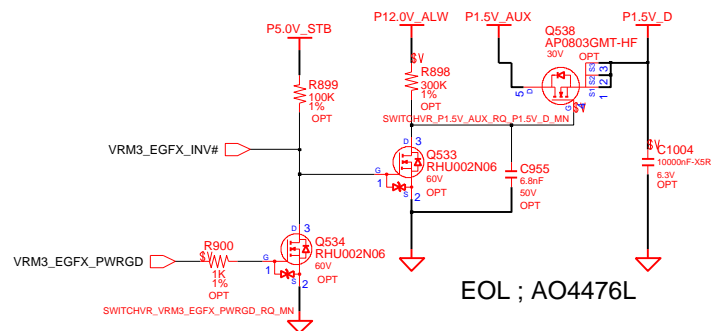
### Discrete Switched Power (D3.3V : Max\_1.2A)



### Discrete Switched Power (D1.05V : Max 3.6A)



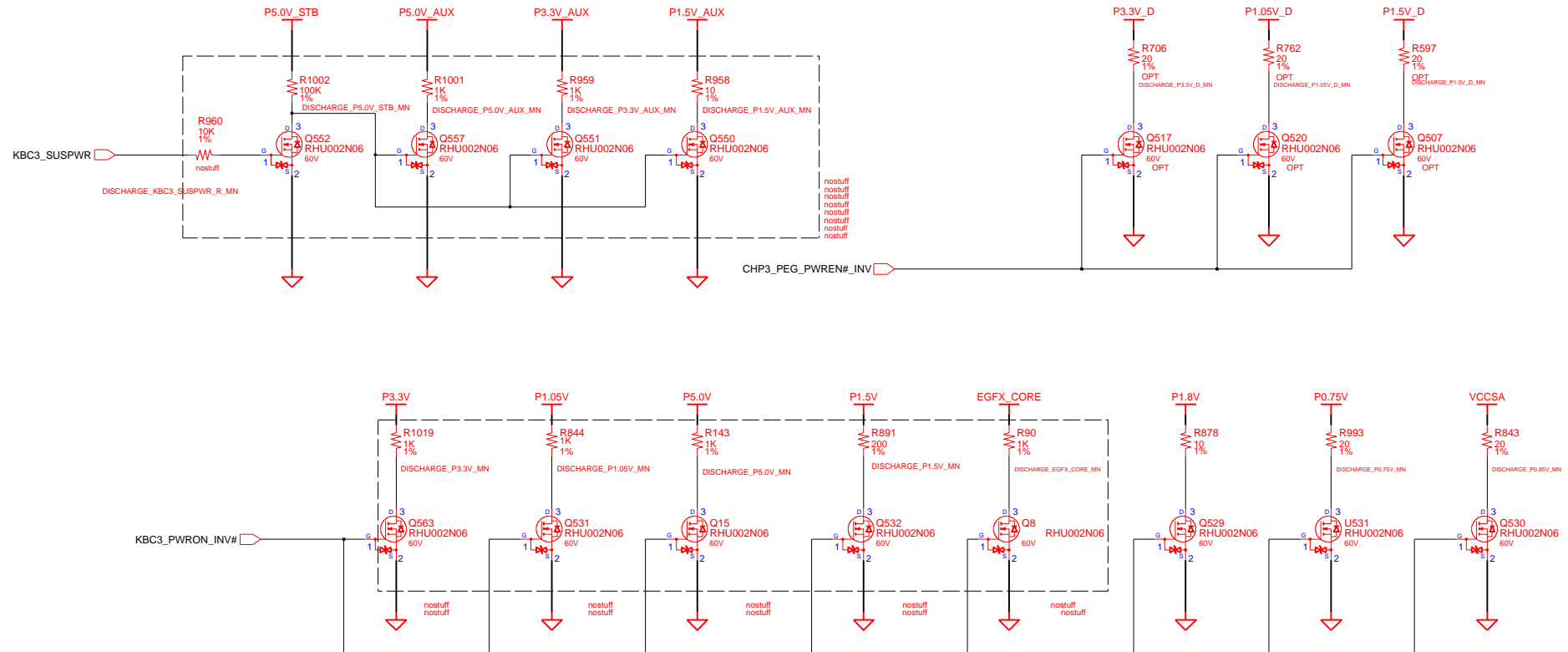
### Discrete Switched Power (D1.5V : Max 5.0A)



DRAW	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		Switched PWR	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		FOR OPTIMUS PWR	PART NO.
MODULE CODE		LAST EDIT				BA41-01973-975A
				July 02, 2012 09:58:14 AM	PAGE	48 OF 51



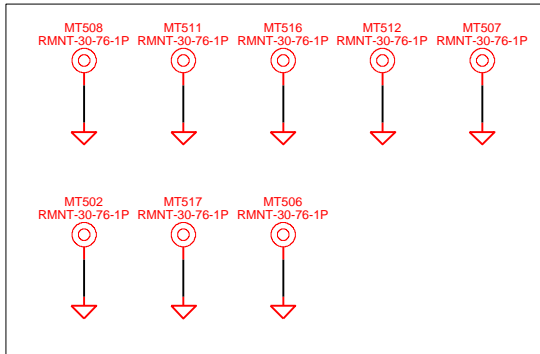
# POWER DISCHARGER



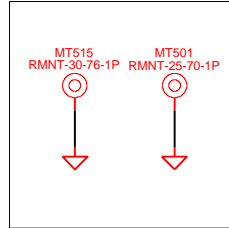
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CHECK	XF CHU	DEV. STEP	MP				
APPROVAL	BL LEE	REV	REV 1.2				
				PART NO.		BA41-01973-975A	
MODULE CODE	LAST EDIT			July 02, 2012 09:58:14 AM		PAGE	49 OF 51

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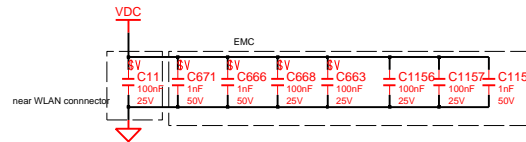
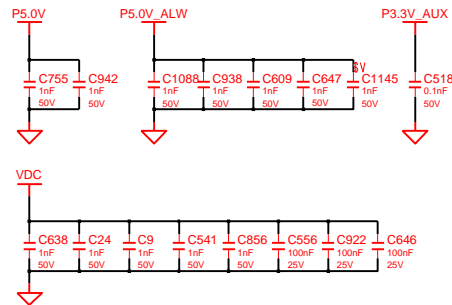
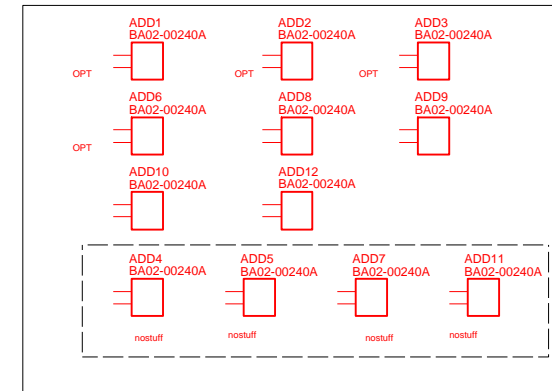
### Mainboard Mount ((30-76)X8EA)



### PCB FIX



### Corner Fill for GPU, PCH

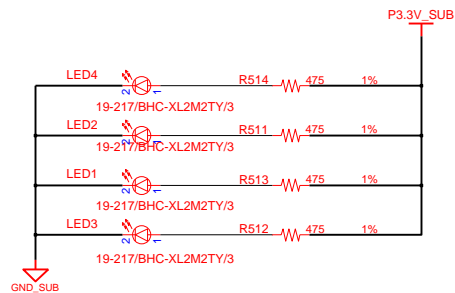


DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-01973-975A
CHECK	XF CHU	DEV. STEP	MP		MT Hole	
APPROVAL	BL LEE	REV	REV 1.2		MT Hole	
MODULE CODE		LAST EDIT		July 02, 2012 09:58:14 AM	PAGE 50 OF 51	

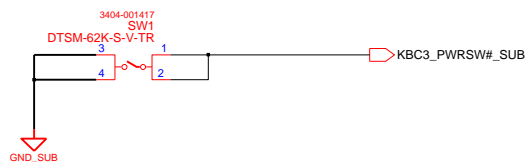
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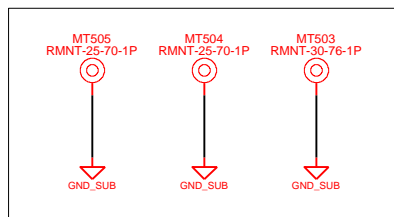
## USB SUB BOARD



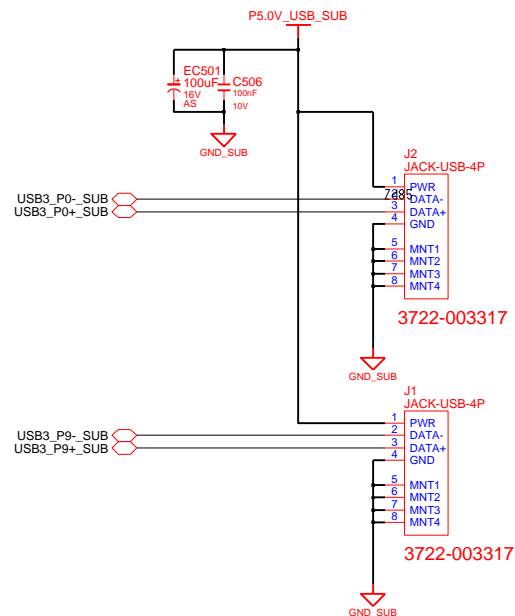
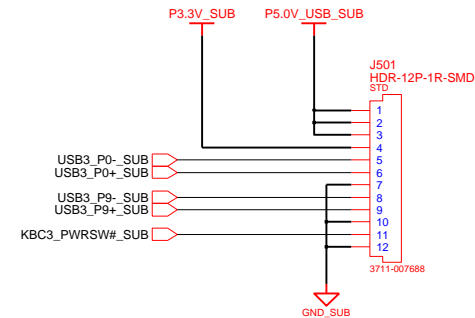
### Power Switch Button



### PCB Mount



### SUB TO MAIN



PLACE CLOSE TO USB SUB B'D Conenctor

DESIGN	XF TAO	DATE	02/07/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		SUB BOARD	
APPROVAL	BL LEE	REV	REV 1.2		SUB BOARD	
MODULE CODE		LAST EDIT				PART NO. BA41-01973-975A
					July 02, 2012 09:58:14 AM	PAGE 51 OF 51