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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 : BA41-02092A (GCE)
BA41-02093A (HST)
BA41-02094A (PTC)
BA41-02098A (GBM)

Dev. Step : MP

Revision : 1.1

T.R. Date : 2012.06.14

Design	CHECK	APPROVAL
Tao Xiaofeng	Chu XF	BL LEE

Owner : SEC Mobile R & D Signature : X

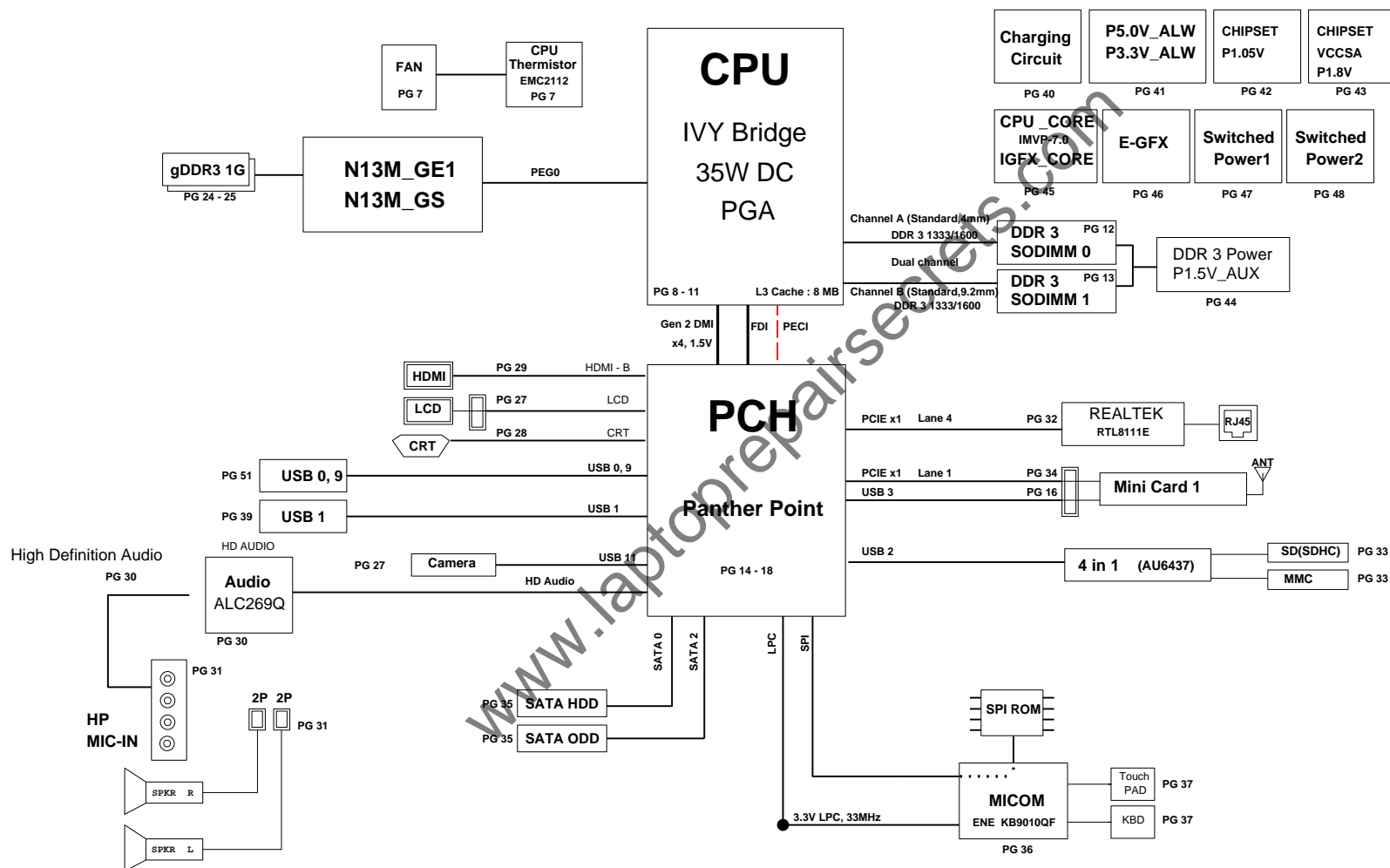
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sheet27 : LVDS/CAMERA
sheet28 : CRT
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sheet31 : Audio - HP/MIC
sheet32 : LAN (Realtek RTL8111E)
sheet33 : 4-in-1 card (AU6437)
sheet34 : WLAN
sheet35 : SATA interface
sheet36 : MICOM / BIOS
sheet37 : MICOM Glue Logic (KBD / TP)
sheet38 : LED for 14" & for 15"
sheet39 : USB connector
sheet40 : Power - charger
sheet41 : Power - P3.3V_AUX / P5.0V_AUX
sheet42 : Power - P1.05V (Chipset Power)
sheet43 : Power - P0.8V (Chipset Power)
sheet44 : Power - DDR3
sheet45 : Power - CPU VRM
sheet46 : Power - EGFX_CORE
sheet47 : Power - Switched Power 1
sheet48 : Power - Switched Power 2
sheet49 : Power - Power Discharge
sheet50 : Mount Hole / Thermal Hole
sheet51 : USB Sub B'D

DRAW	XF TAO	DATE	11/06/2012	Scala3-14R			SAMSUNG ELECTRONICS	
CHECK	XF CHU	DEV. STEP	MP					
APPROVAL	BL LEE	REV	REV 1.1	MAIN				
				COVER				
							PART NO.	BA41-02092-94A
MODULE CODE		LAST EDIT		May 23, 2012 08:40:30 AM			PAGE	1 OF 51

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BLOCK DIAGRAM



DRAW	XF TAO	DATE	23/05/2012	Scala3-14R MAIN BLOCK DIAGRAM			SAMSUNG ELECTRONICS		
CHECK	XF CHU	DEV. STEP	MP						
APPROVAL	BL LEE	REV	REV 1.0				PART NO.	BA41-02092-94A	
MODULE CODE		undefined		LAST EDIT			May 23, 2012 08:40:30 AM		
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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	NT2P-GVR	NVIDIA

LCD Pannel Detect (TBD)

Devices	Resolution	PANNEL_DETECT_0
---------	------------	-----------------

I²C / 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	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-02092-94A
CHECK	XF CHU	DEV. STEP	MP		MAIN	
APPROVAL	BL LEE	REV	REV 1.0		BOARD INFO	
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	3	OF 51

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POWER DIAGRAM

Rev 0.8

KBC3_SUSPWR
(CHP3_SLPS4#)

KBC3_PWRON
(CHP3_SLPS3#)

KBC3_VRON

AC Adapter

Battery DC

VDC

P3.3V_MICOM

MICOM
SPI ROM
GREEN CLK
KBD

P5.0V_STB

P5.0V_ALW

USB PWR S/W
Chipset PWR IC
When USB Charge Enable

P3.3V_ALW

Thermal Sensor
PCH

P12.0V_ALW

P1.5V_AUX

SODIMM (DDR3)

P5.0V_AUX

P3.3V_AUX

LID S/W

P1.05V_M

P3.3V_M

P1.05V
(VCCP)

CPU
PCH

P1.05V_D

NVIDIA

EGFX_CORE

N12P

P1.5V

CPU
PCH

Express card

P1.5V_D

NVIDIA

P0.75V

SODIMM (DDR3)

P1.05V_USB

USB3.0

P5.0V

Thermal Sensor
PCH

LVDS

CRT

Touchpad
HDMI
SATA IF

P1.8V

CPU
PCH

N12P

P3.3V_D

NVIDIA

P3.3V

GREEN CLK

SODIMM (DDR3)

AUDIO

HDMI

PCH

80PORT

LVDS

CRT

P0.85V_SA

CPU

P3.3V_USB

USB3.0

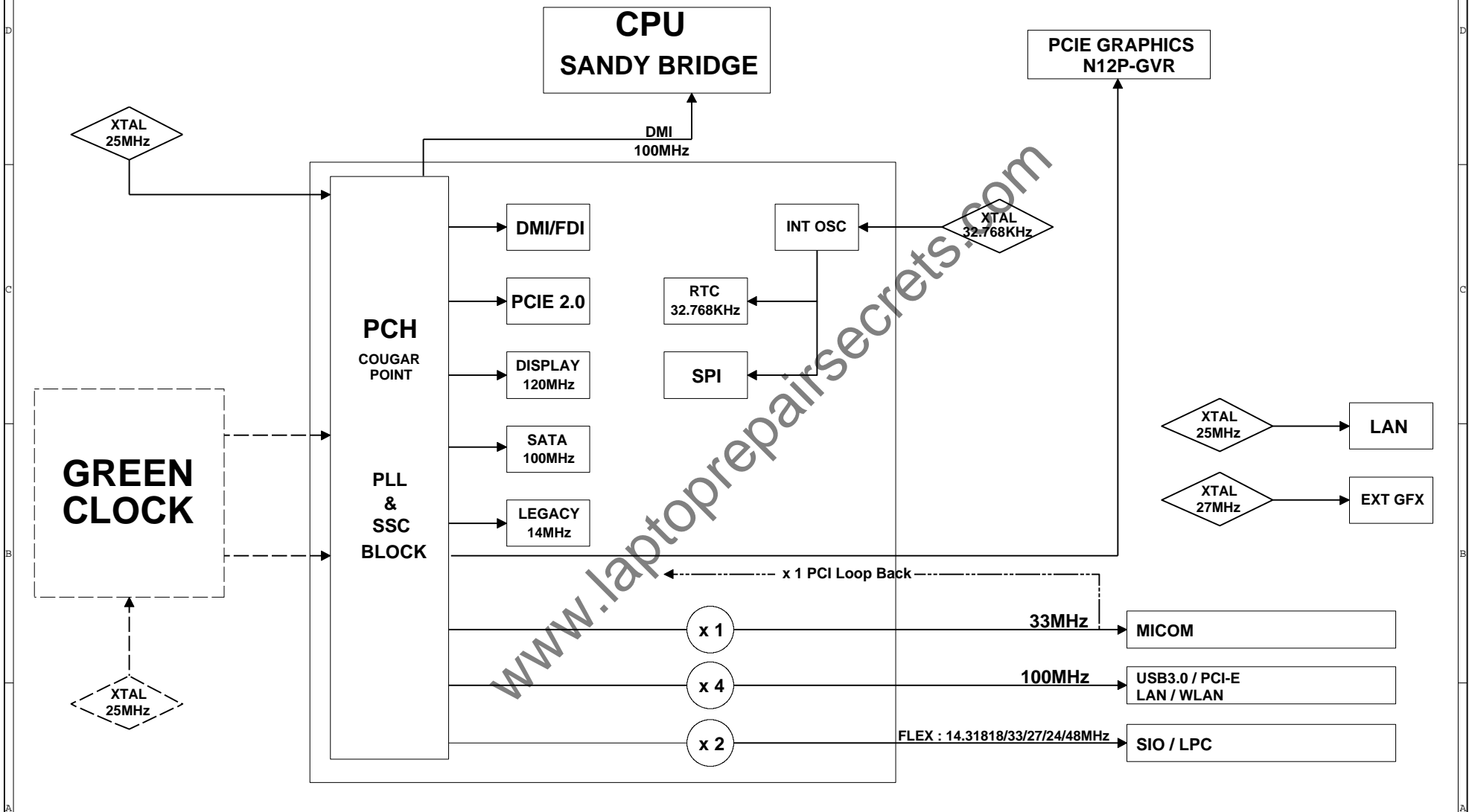
S5-S4

S3

S0

DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-02092-94A
CHECK	XF CHU	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.0	POWER DIAGRAM		
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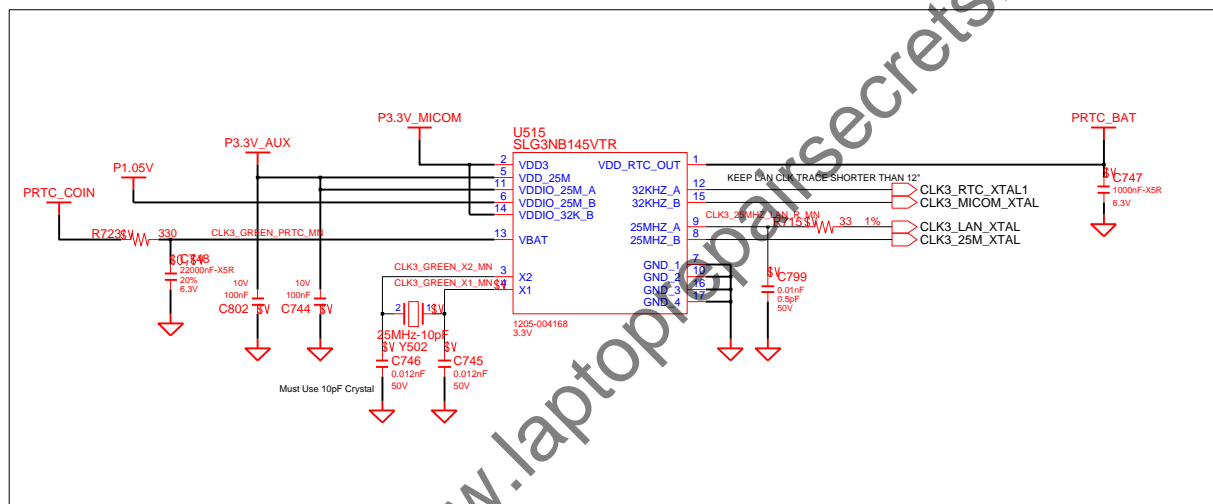
CLOCK DISTRIBUTION Rev. 0.8



DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.0	CLOCK DIAGRAM	PART NO. BA41-02092-94A	
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CLOCK DISTRIBUTOR

GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK

DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R CLOCK CLOCK DISTRIBUTION	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP			PART NO. BA41-02092-94A
APPROVAL	BL LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	6	OF 51

P3.3V_AUX

10K 1%

nostuff
(Selectable : PWR_SHDN)

KBC3_THERM_SMDATA#
KBC3_THERM_SMCLK#

THM3_STP#

GFX3_THERMDN

GFX3_THERMDP

520pF OPT

THERMAL_DN2_MN

C521 0.022uF 60V

MMBT3904 Q7

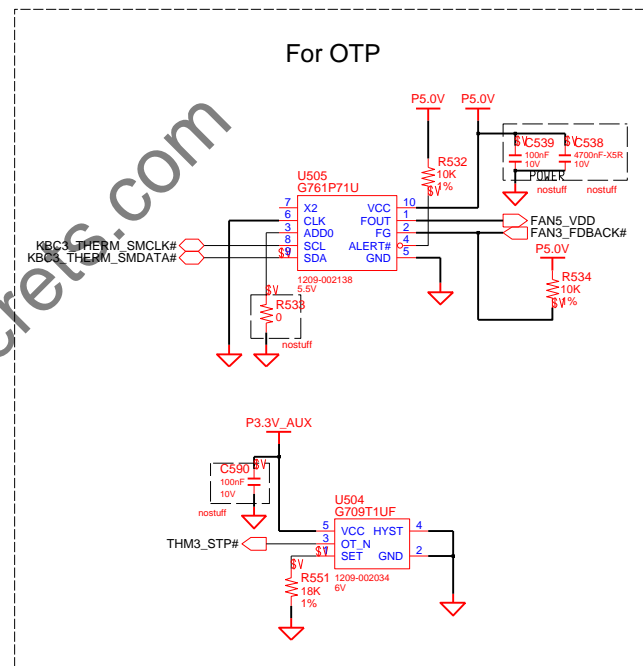
C512 1000uF-35V 6.3V

THERMAL_DP2_MN
Default

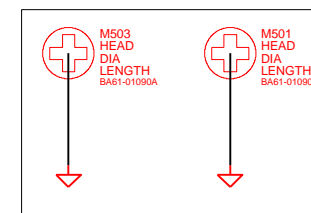
Place near pin of diode.
To remove noise.
After test it can be removed.

Temperature : 95.78c
confirmed by thermal charger
(2011.05.02)
 $R_{\text{th}} \text{ (kohm)} = 0.0012T^{\circ} - 0.9308T + 96.1$

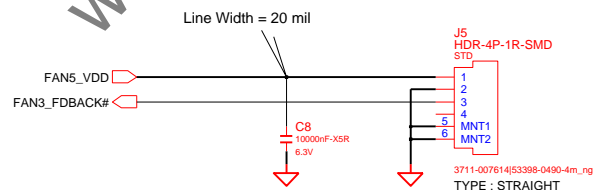
Line Width = 20 mil



FAN PEM

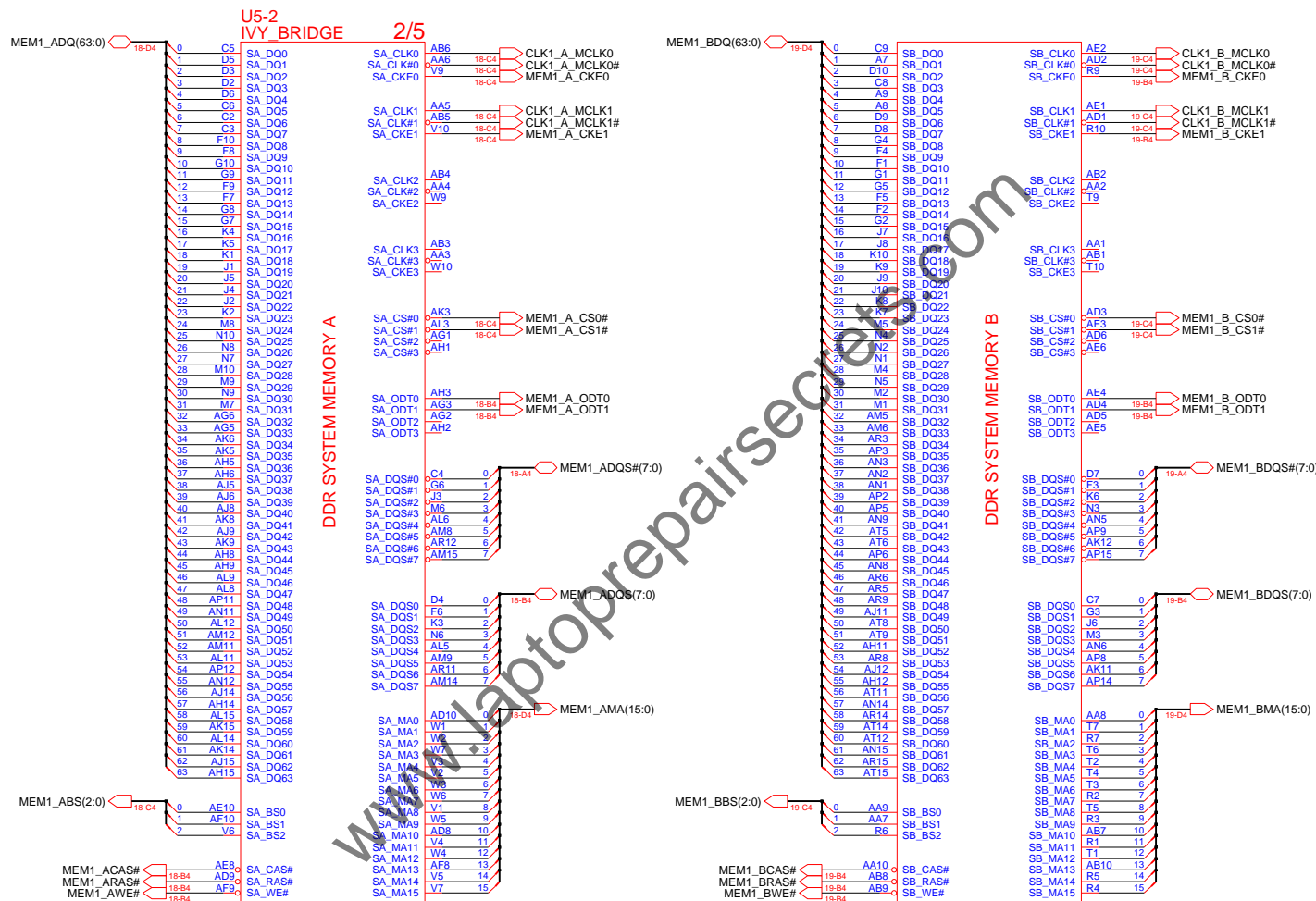


SHDN_SEL MODE	
0 HIGH Z	INTEL TR MODE AMD CPU/DIODE MODE
✓ 1	EXT.DIODE 2 MODE



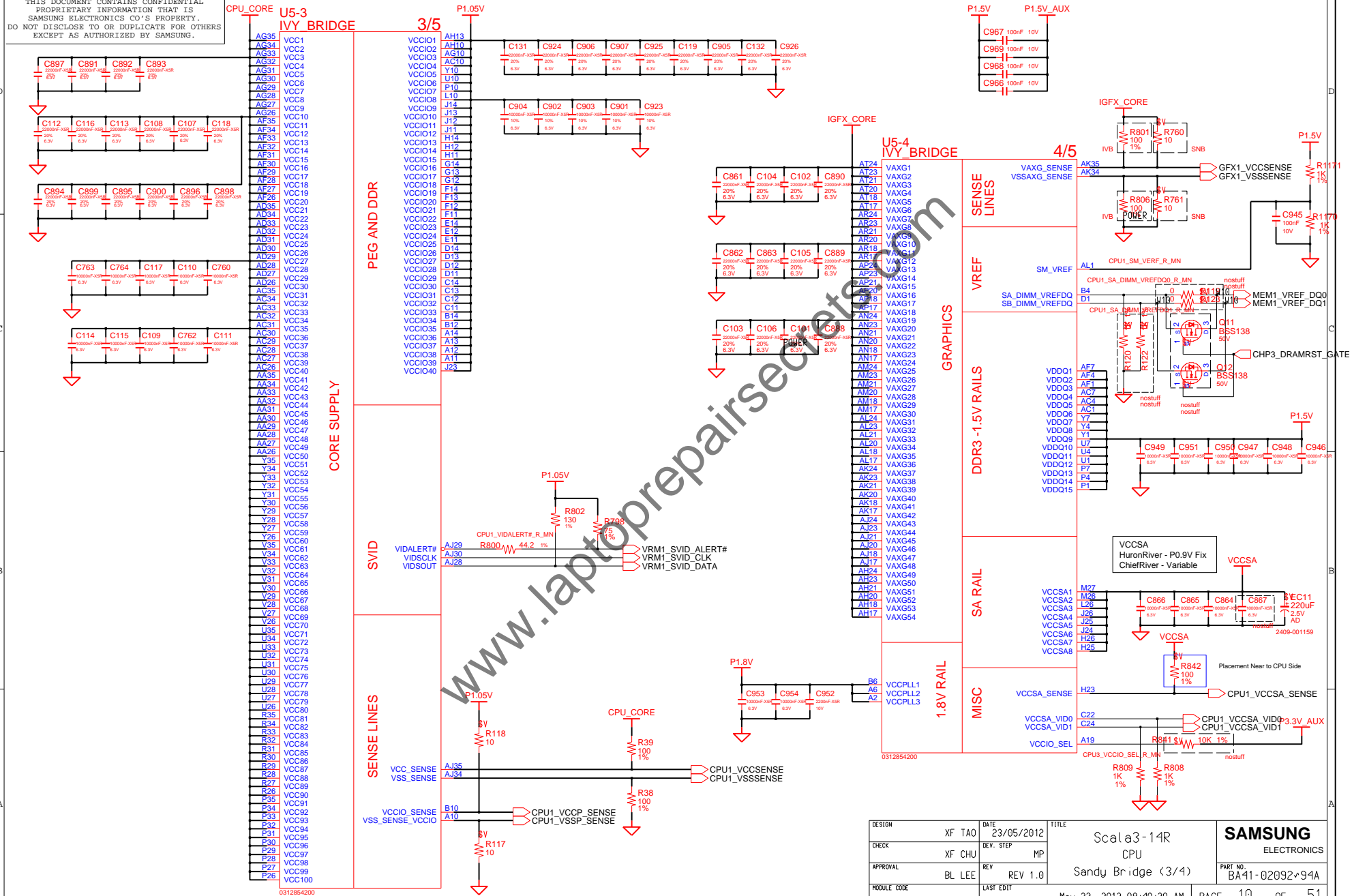
DESIGN	XF TAO	DATE	23/05/2012	Scala3-14R THERMAL SENSOR		SAMSUNG ELECTRONICS	
CHECK	XF CHU	DEV. STEP	MP				
APPROVAL	BL LEE	REV	REV 1.0	THERMAL SENSOR EMC2112		PART NO.	BA41-02092-94A
MODULE CODE	LAST EDIT		May 23, 2012 08:40:30 AM			PAGE	7 OF 51

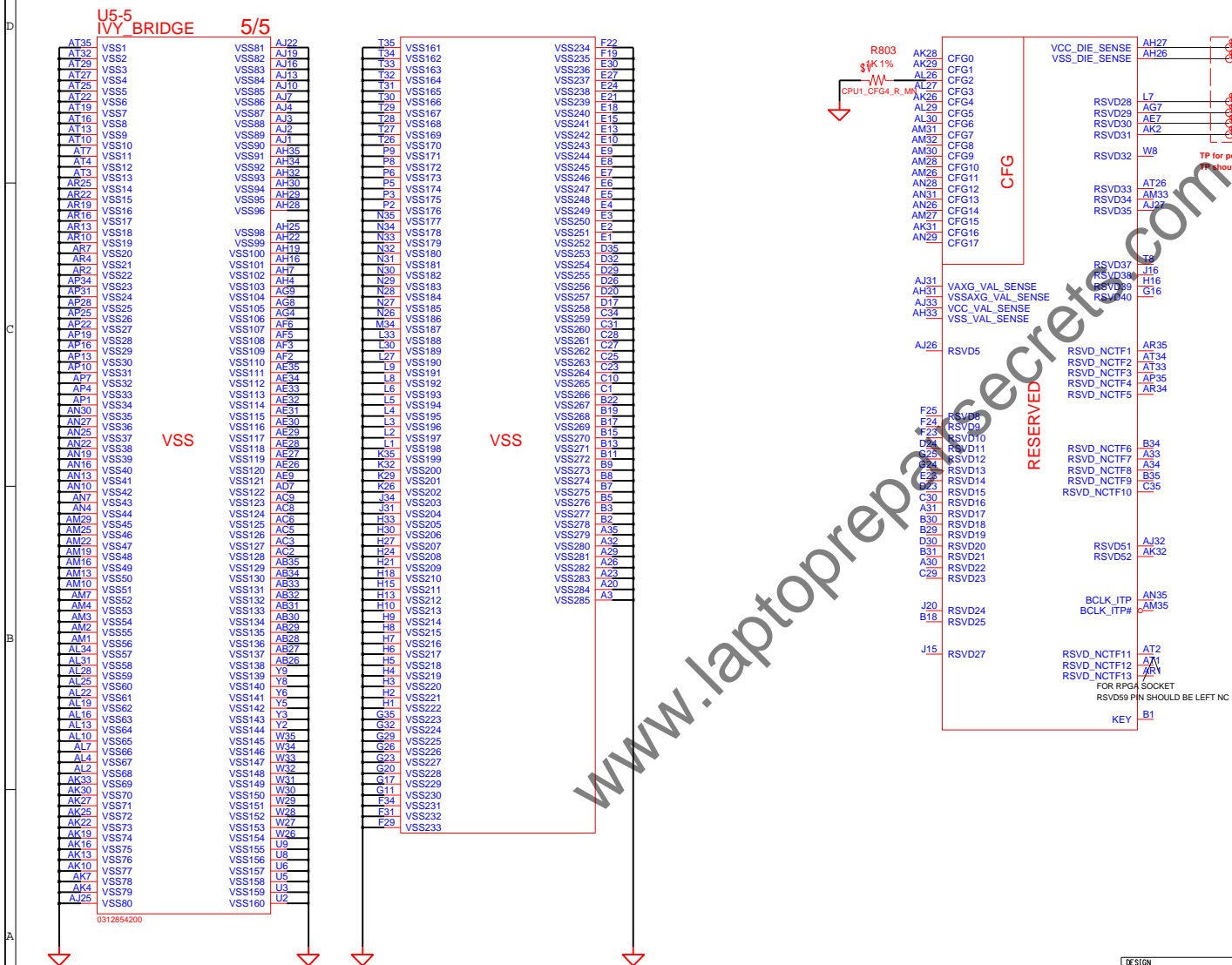
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DRAW	XF TAO	DATE	23/05/2012	Scala3-14R CPU Sandy Bridge (2/4)	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.0		
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CFG Straps for Processor

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 XXRESETB DEASSERTION 0 : PEG WAIT FOR BIOS FOR TRAINING

DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		CPU	
APPROVAL	BL LEE	REV	REV 1.0		Sandy Bridge (4/4)	PART NO. BA41-02092*94A
MODULE CODE		LAST EDIT			May 23, 2012 08:40:30 AM	PAGE 11 OF 51

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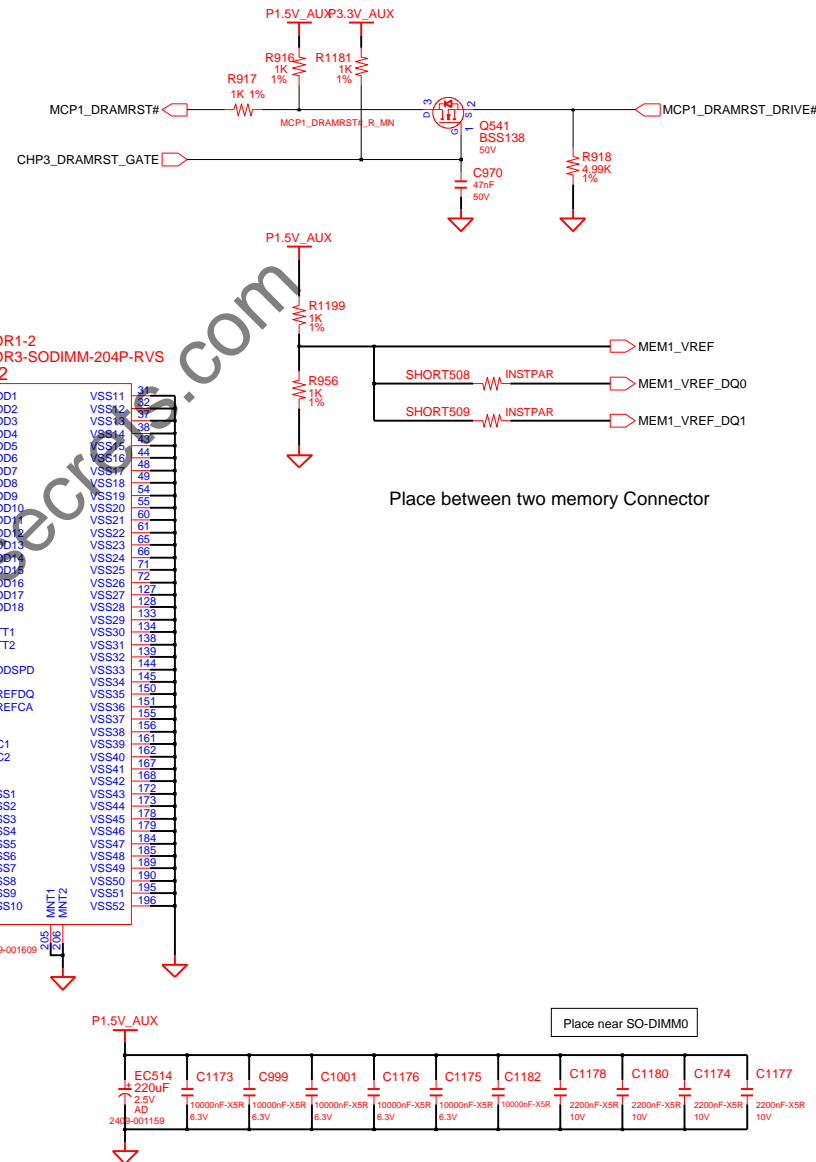
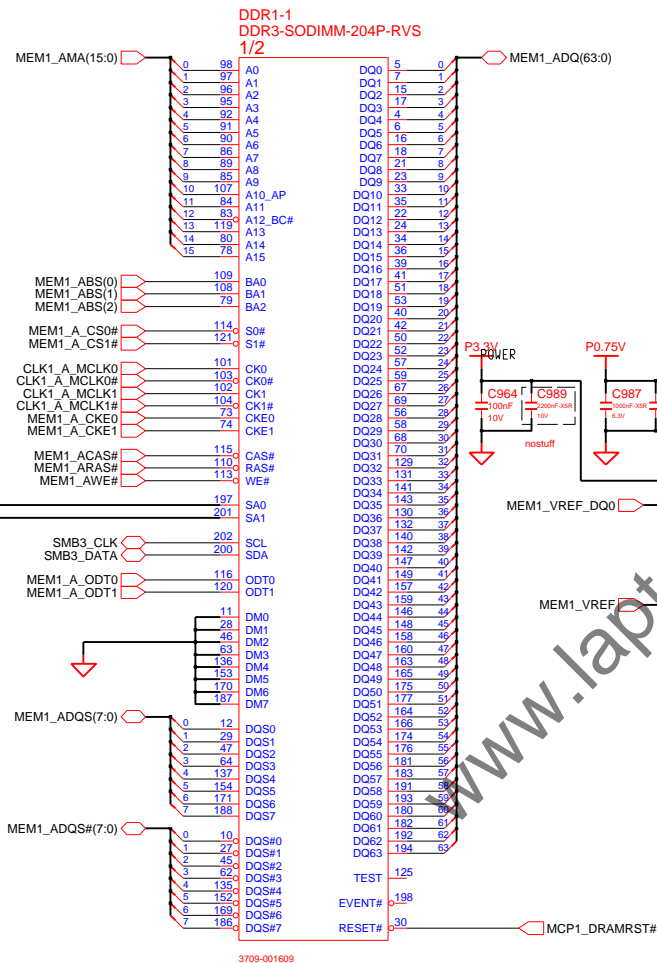
SO-DIMM#0 : 2nd SO-DIMM

DDR SO-DIMM #0

Height : 9.2 mm (REVERSE)

P/N : 3709-001656 (Foxconn)

P/N : 3709-001609 (Concraft)



DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		SODIMM A	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.0		DDR3	PART NO.
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM			BA41-02092-94A
				PAGE	12	OF 51

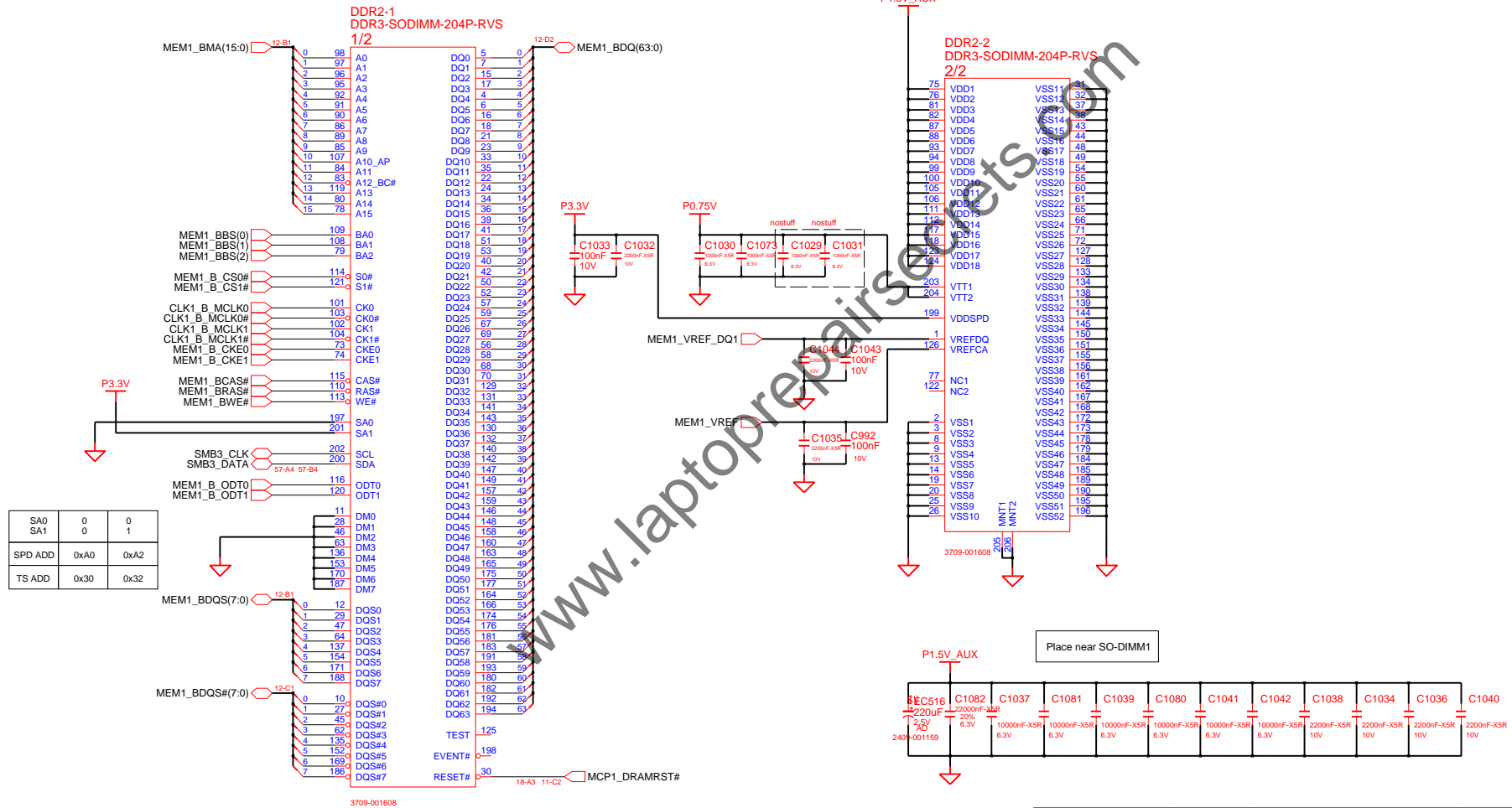
SO-DIMM#1 : 1st SO-DIMM

DDR SO-DIMM #1

Height : 4.0 mm (REVERSE)

P/N : 3709-001654 (Foxconn)

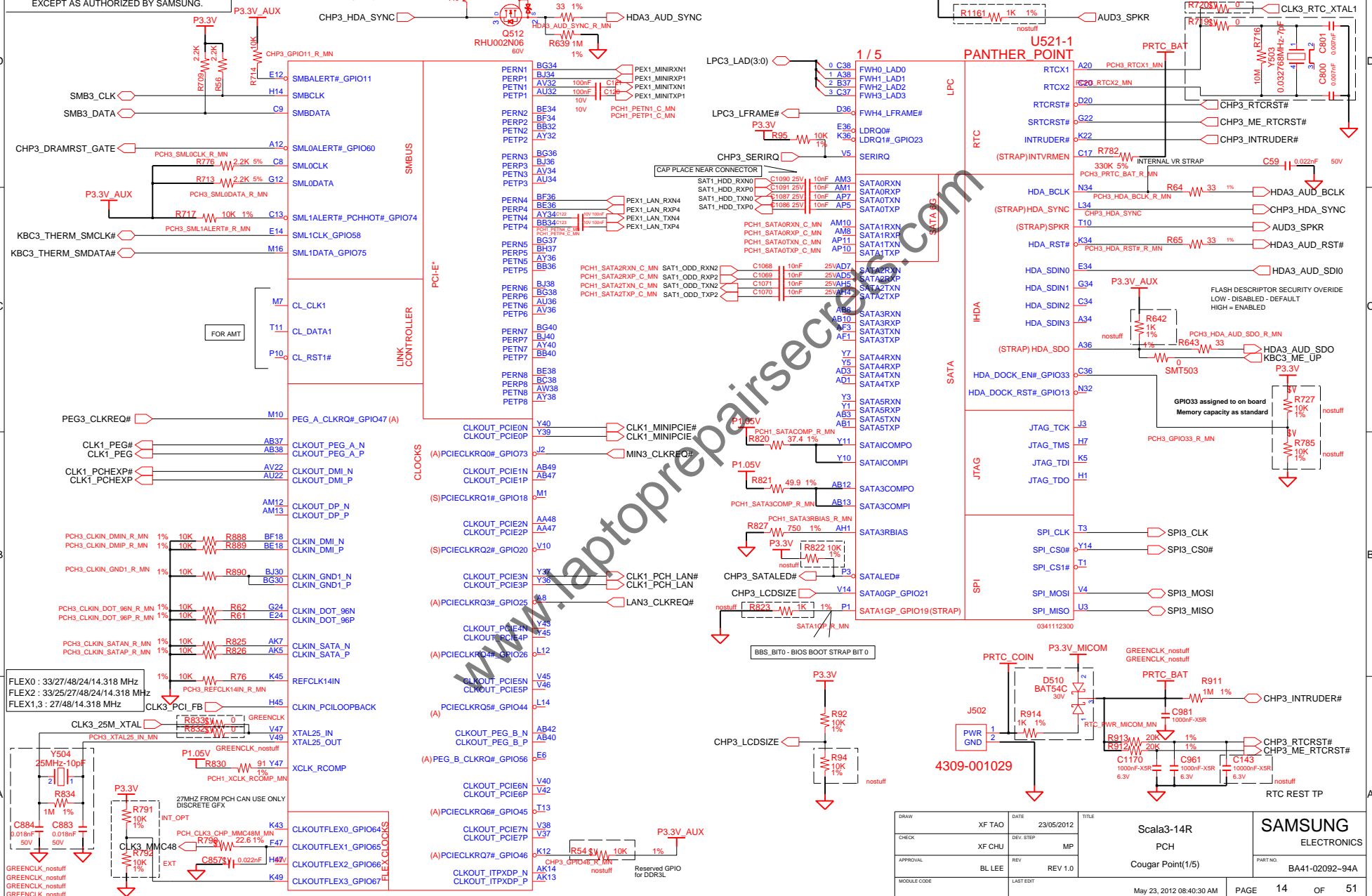
P/N : 3709-001608 (Concraft)



DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		SODIMM B	
APPROVAL	BL LEE	REV	REV 1.0		DDR3	
MODULE CODE		LAST ENT				PART NO. BA41-02092-94A
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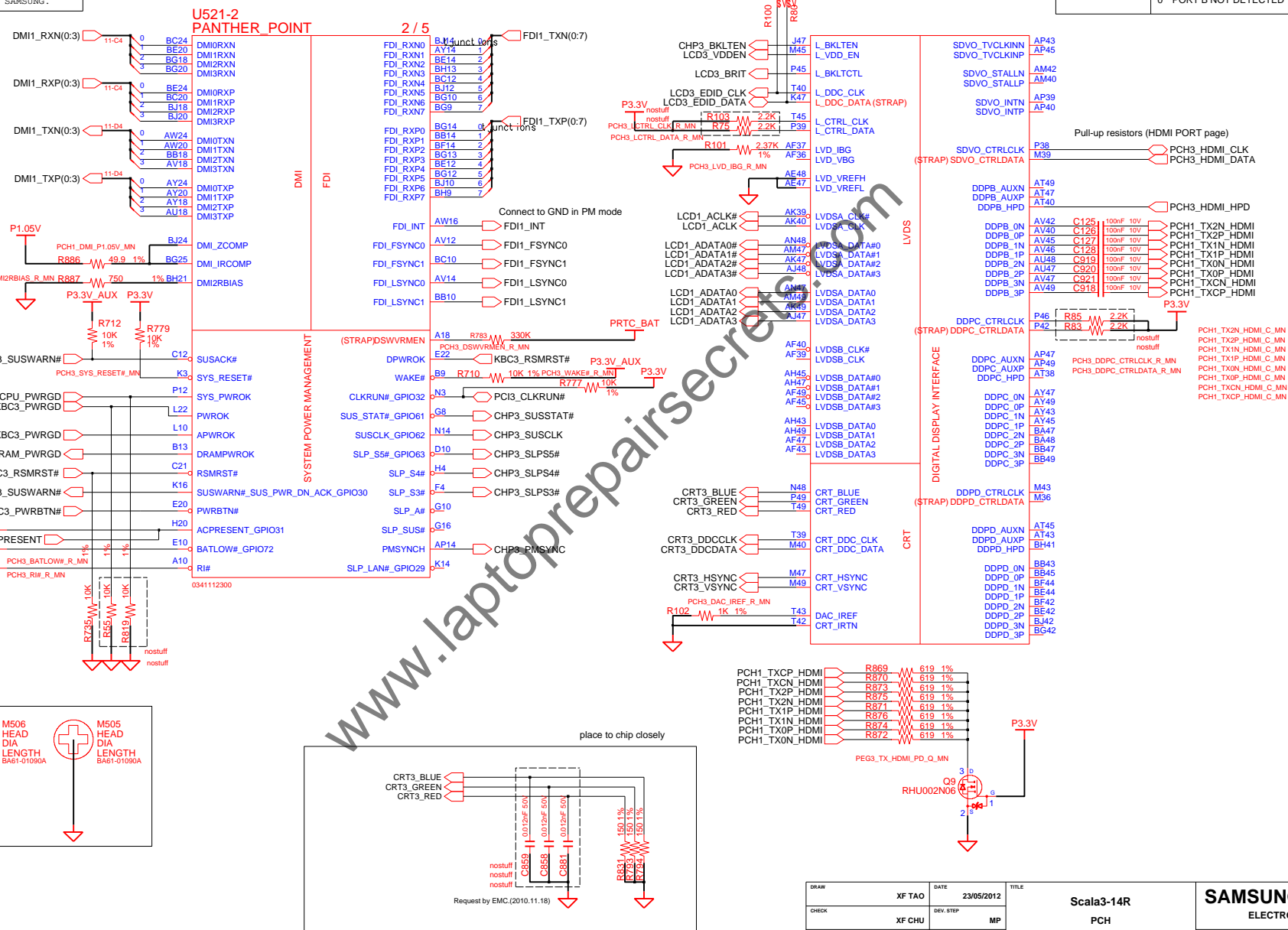
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NO REBOOT STRAP



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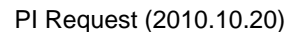



DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R
CHECK	XF CHU	DEV. STEP	MP		PCH
APPROVAL	BL LEE	REV	REV 1.0		Cougar Point(2/5)
MODULE CODE		LAST EDIT			
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SAMSUNG
 ELECTRONICS
 PART NO. BA41-02092-94A

[illegible]

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DRAM	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	
CHECK	XF CHU	DEV. STEP	MP	PCH		
APPROVAL	BL LEE	REV	REV 1.0	Cougar Point (4/5)		
MODULE CODE		LAST EDIT				
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**U521-5
PANTHER POINT**

This power share with thermal sensor

5 / 5

AY4	VSS159	VSS259	H46
AY2	VSS160	VSS260	K18
AY46	VSS161	VSS261	K26
AY8	VSS162	VSS262	K30
B11	VSS163	VSS263	K46
B15	VSS164	VSS264	K7
B19	VSS165	VSS265	L2
B23	VSS166	VSS266	L20
B27	VSS167	VSS267	L26
B31	VSS168	VSS268	L26
B35	VSS169	VSS269	L28
B39	VSS170	VSS270	L36
B7	VSS171	VSS271	L48
F45	VSS172	VSS272	M12
BB12	VSS173	VSS273	P16
BB16	VSS174	VSS274	M18
BB20	VSS175	VSS275	M22
BB22	VSS176	VSS276	M24
BB24	VSS177	VSS277	M30
BB28	VSS178	VSS278	M32
BB30	VSS179	VSS279	M34
BB38	VSS180	VSS280	M36
BB4	VSS181	VSS281	M4
BB46	VSS182	VSS282	M42
BC14	VSS183	VSS283	M46
BC18	VSS184	VSS284	N18
BC2	VSS185	VSS285	N18
BC22	VSS186	VSS286	P30
BC26	VSS187	VSS287	N47
BC32	VSS188	VSS288	P16
BC34	VSS189	VSS289	T33
BC36	VSS190	VSS290	P40
BC40	VSS191	VSS291	P40
BC42	VSS192	VSS292	P47
BC48	VSS193	VSS293	P7
BD46	VSS194	VSS294	R2
BD5	VSS195	VSS295	R48
BE22	VSS196	VSS296	T12
BE26	VSS197	VSS297	T31
BE40	VSS198	VSS298	T37
BF10	VSS199	VSS299	T4
BF12	VSS200	VSS300	W34
BF16	VSS201	VSS301	T46
BF20	VSS202	VSS302	T47
BF22	VSS203	VSS303	T8
BF24	VSS204	VSS304	V17
BF26	VSS205	VSS305	V26
BF28	VSS206	VSS306	V27
BF3	VSS207	VSS307	V29
BF38	VSS208	VSS308	V36
BF40	VSS209	VSS309	V38
BF9	VSS210	VSS310	V39
BG18	VSS211	VSS311	V43
BG21	VSS212	VSS312	V7
BG23	VSS213	VSS313	W17
BG33	VSS214	VSS314	W2
BG44	VSS215	VSS315	W27
CG8	VSS216	VSS316	W48
BH11	VSS217	VSS317	Y12
BH15	VSS218	VSS318	Y38
BH17	VSS219	VSS319	Y42
BH19	VSS220	VSS320	Y46
BH27	VSS221	VSS321	Y8
BH31	VSS222	VSS322	BG29
BH33	VSS223	VSS323	N24
BH36	VSS224	VSS324	AJ3
BH38	VSS225	VSS325	AD47
BH43	VSS226	VSS326	B43
BH7	VSS227	VSS327	BE10
D3	VSS228	VSS328	BG41
D12	VSS229	VSS329	G14
D16	VSS230	VSS330	H16
D18	VSS231	VSS331	T36
D22	VSS232	VSS332	BG22
D24	VSS233	VSS333	BG24
D26	VSS234	VSS334	C22
D30	VSS235	VSS335	AP13
D32	VSS236	VSS336	M14
D34	VSS237	VSS337	AP3
D38	VSS238	VSS338	AP1
D42	VSS239	VSS339	BE18
D8	VSS240	VSS340	BC16
E18	VSS241	VSS341	BG28
E26	VSS242	VSS342	BJ28
E19	VSS243	VSS343	
G20	VSS244	VSS344	
G26	VSS245	VSS345	
G28	VSS246	VSS346	
G36	VSS247	VSS347	
G48	VSS248	VSS348	
H12	VSS249	VSS349	
H18	VSS250	VSS350	
H22	VSS251	VSS351	
H24	VSS252	VSS352	
H26	VSS253		
H30	VSS254		
H32	VSS255		
H34	VSS256		
H36	VSS257		
F3	VSS258		

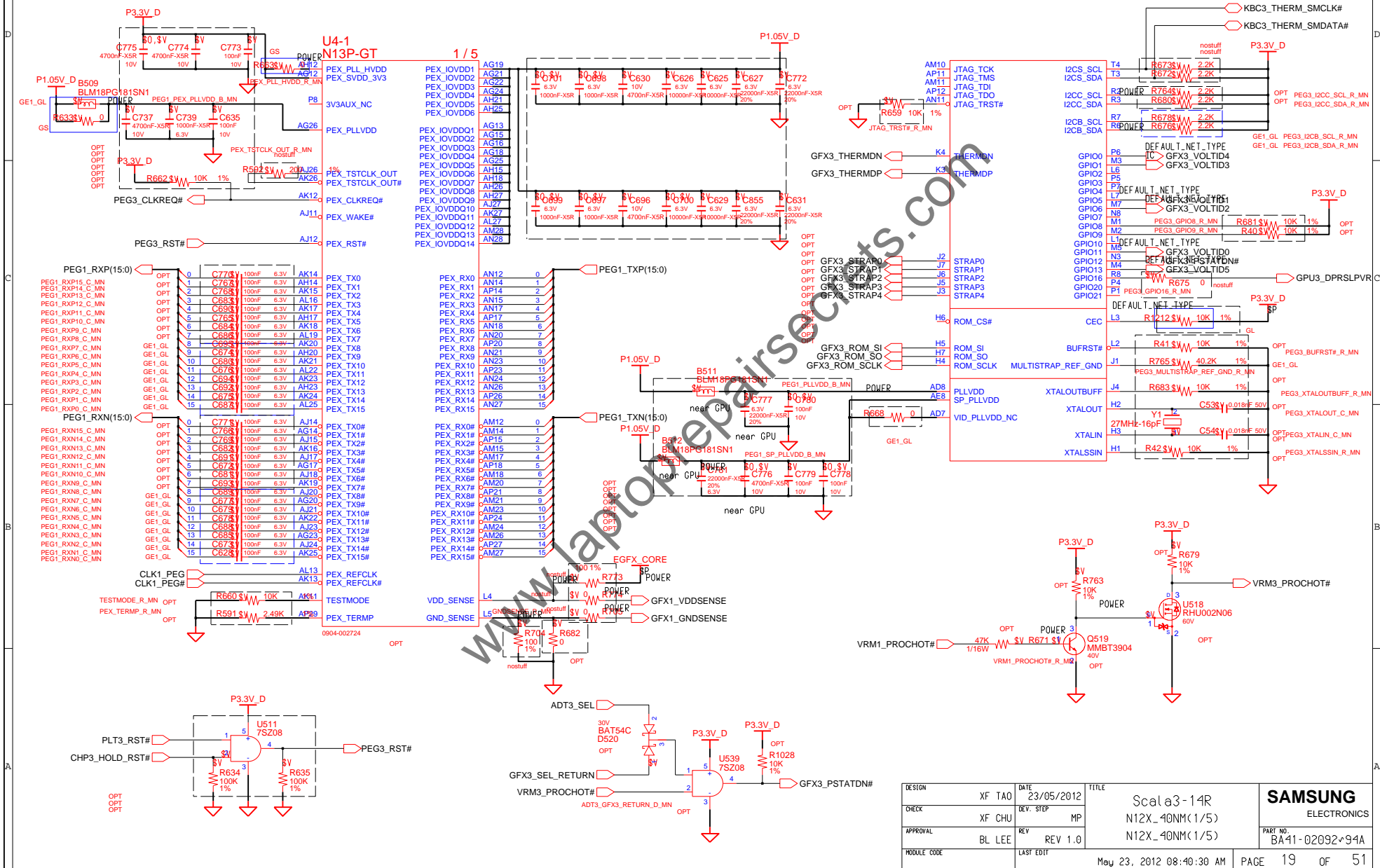
0341112300

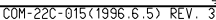
PI Request (2010.10.20)

www.laptoprepairsecrets.com

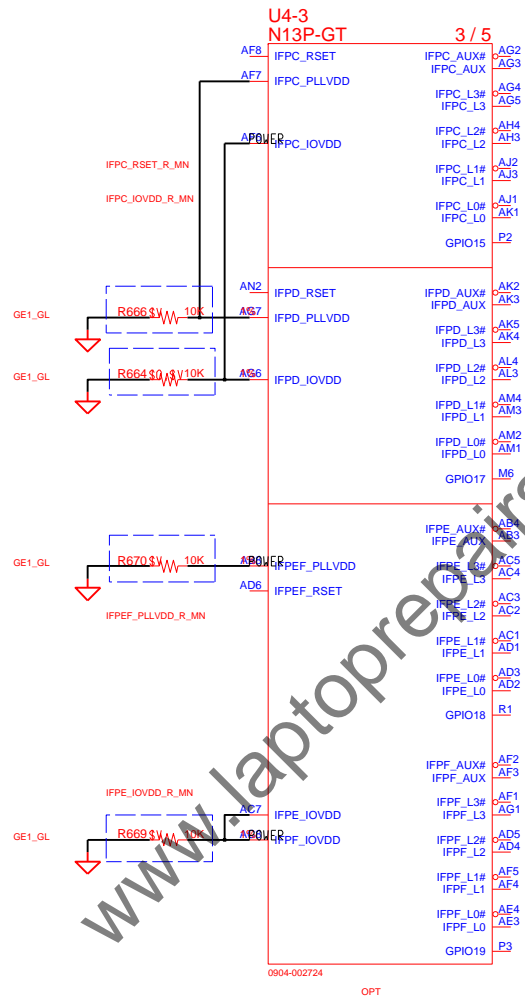
DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		PCH	
APPROVAL	BL LEE	REV	REV 1.0		Cougar Point(5/5)	
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	18	OF 51

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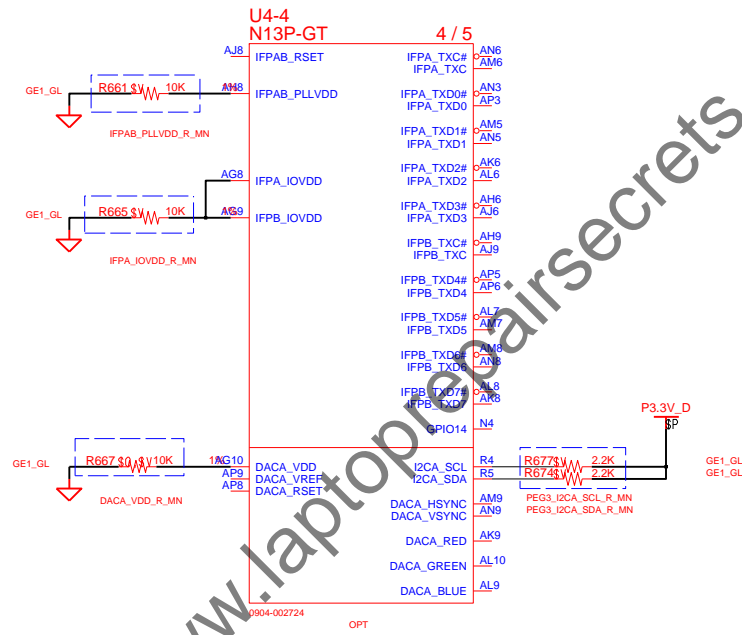


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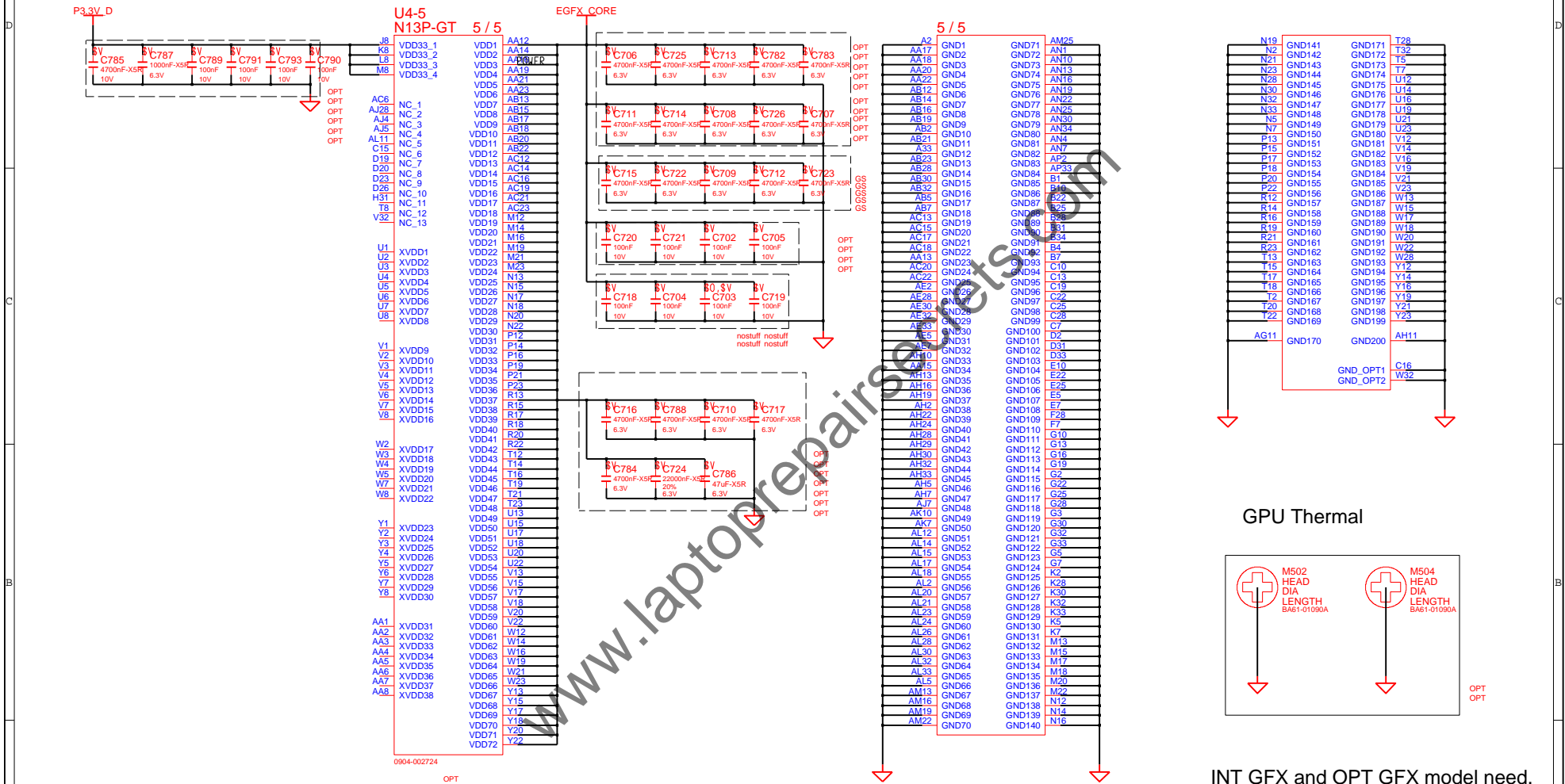


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA11-02092-94A
CHECK	XF CHU	DEV. STEP	MP		N12X_40NM(3/5)	
APPROVAL	BL LEE	REV	REV 1.0		N12X_40NM(3/5)	
MODULE CODE		LAST EDIT				
				May 23, 2012 08:40:30 AM	PAGE 21 OF 51	

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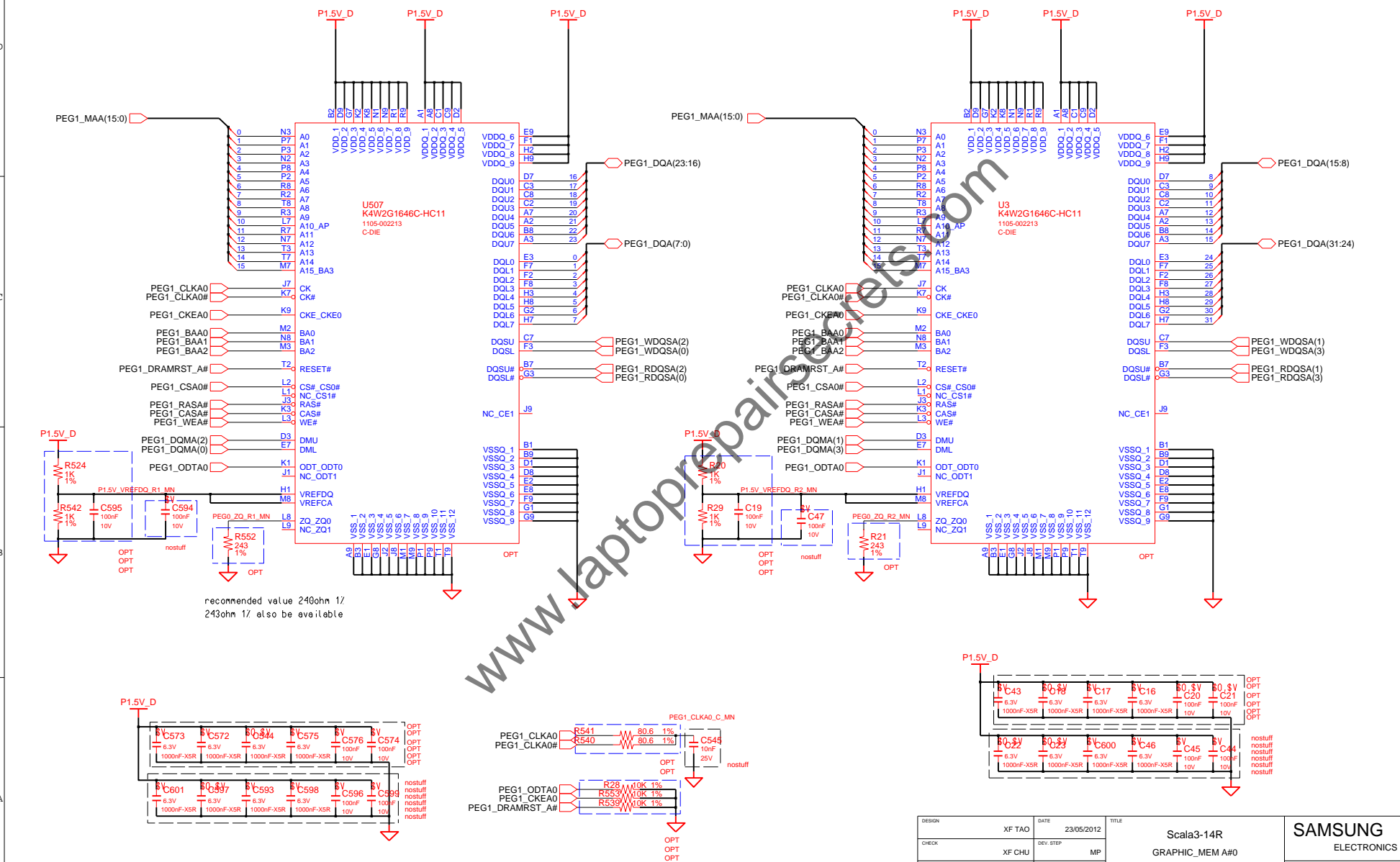
DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-02092-94A
CHECK	XF CHU	DEV. STEP	MP		N12X-40NM(4/5)	
APPROVAL	BL LEE	REV	REV 1.0		N12X-40NM(4/5)	
MODULE CODE		LAST EDIT				
				May 23, 2012 08:40:30 AM	PAGE 22 OF 51	




INT GFX and OPT GFX model need.

DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		N12X_40NM(5/5)	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.0		N12X_40NM(5/5)	PART NO.
MODULE CODE		LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	23	BA41-02092-94A
				OF	51	

A-Channel #0 (D-mode)

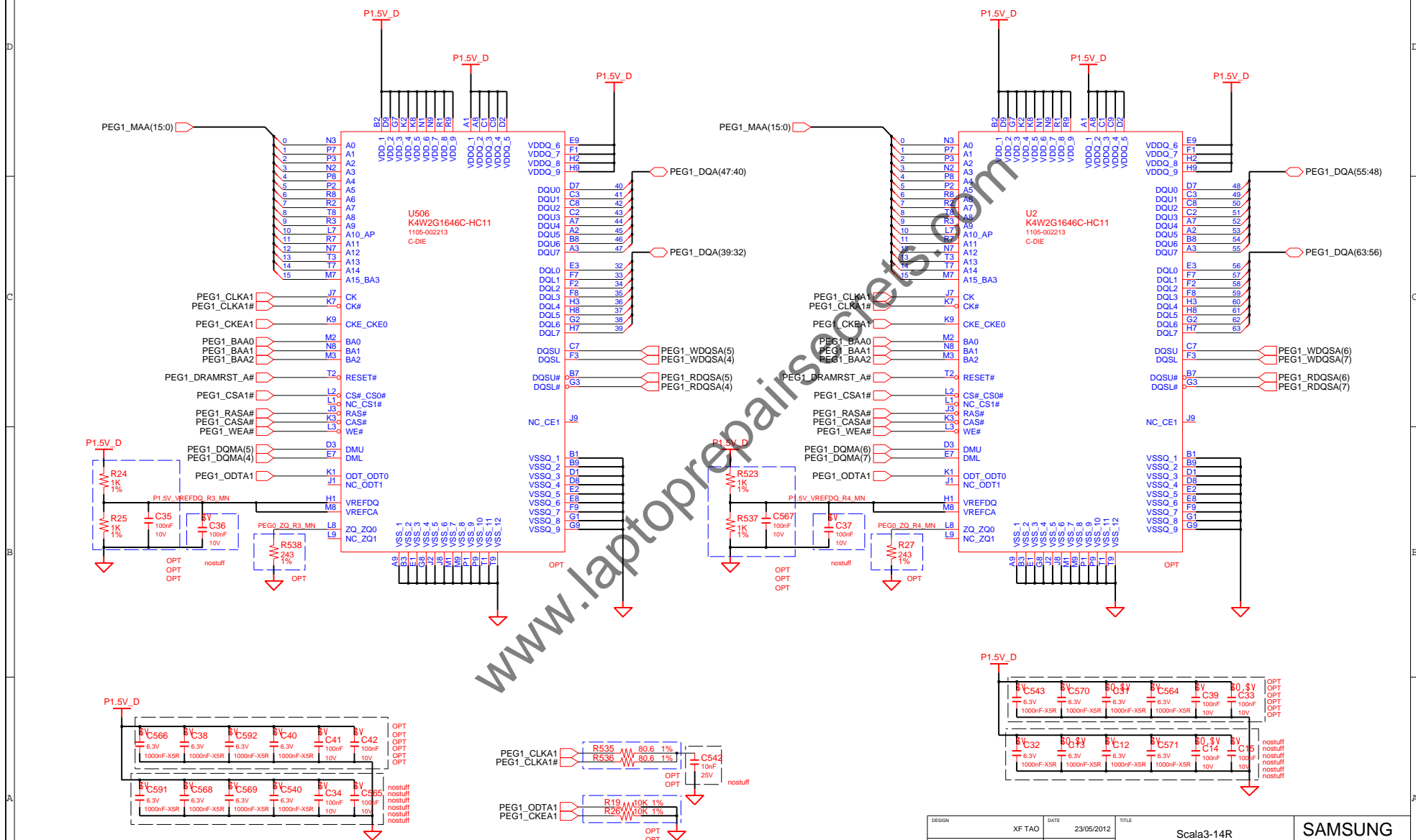


DESIGN	XF TAO	DATE	23/05/2012	TITLE Scala3-14R GRAPHIC_MEM A#0 GRAPHIC_MEM A#0	
CHECK	XF CHU	DEV. STEP	MP		
APPROVAL	BL LEE	REV	REV 1.0		
MODULE CODE	LAST EDIT			May 23, 2012 08:40:30 AM	PART NO. BA41-02092-94A
					PAGE 24 OF 51

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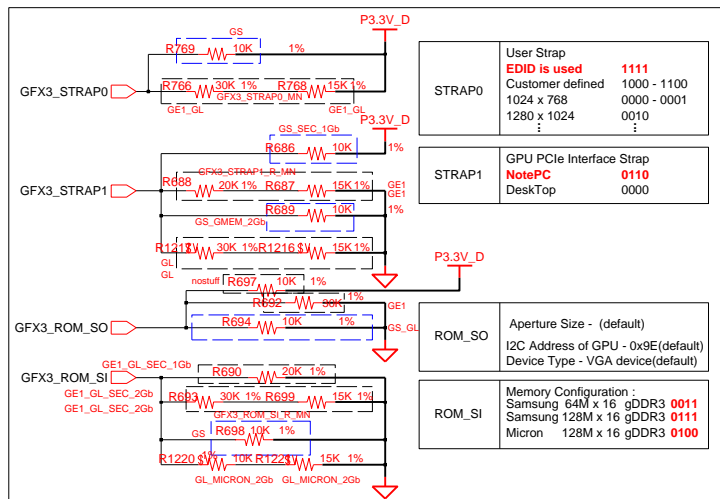
A-Channel #1 (D-mode)



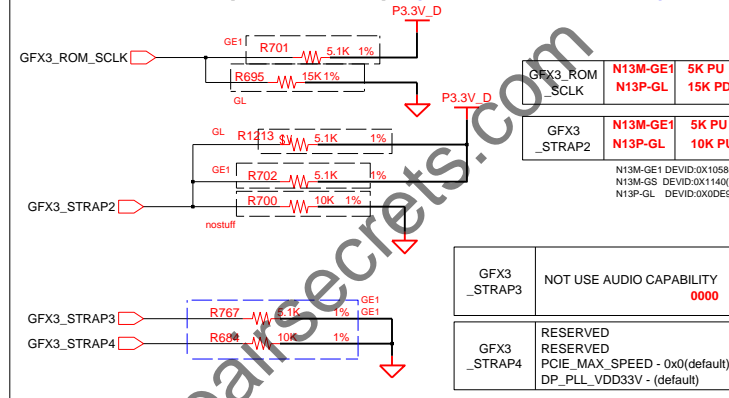
DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
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APPROVAL	BL LEE	REV	REV 1.0		GRAPHIC_MEM A#1	
MODULE CODE		LAST EDIT				PART NO. BA41-02092-94A
				May 23, 2012 08:40:30 AM	PAGE	25 OF 51

N13x STRAP

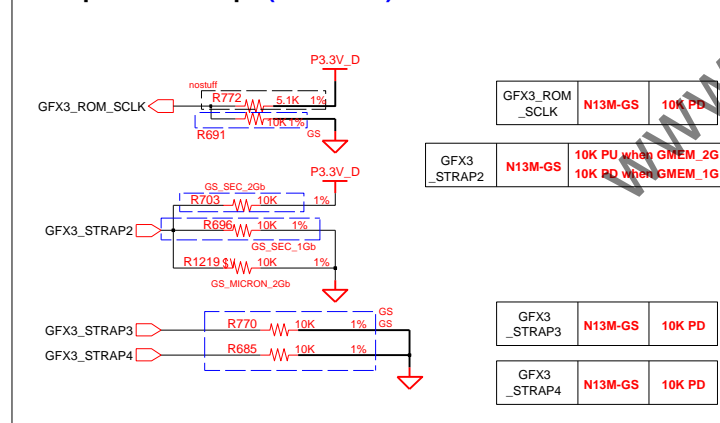
Function Straps



Chip Select Straps (N13M-GE1/N13P-GL)



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
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

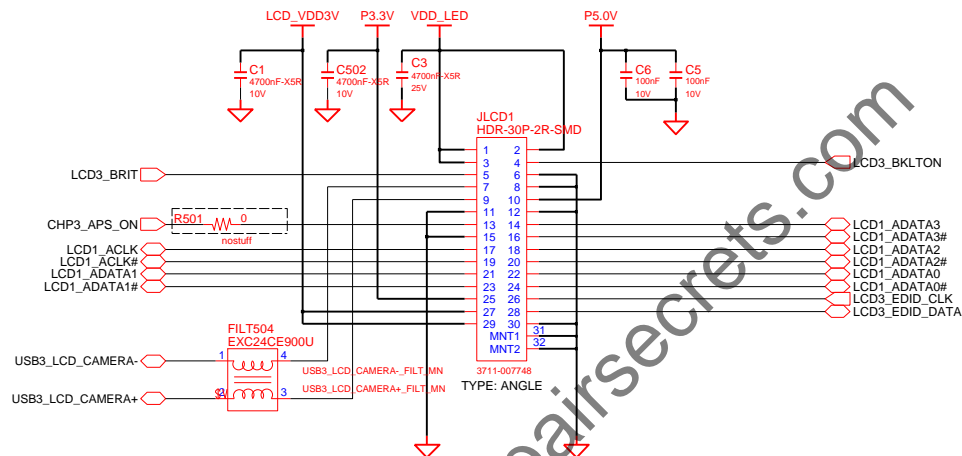
STRAP PIN	BIT 3	BIT 2	BIT 1	BIT 0
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3GIO_PAD_CFG_ADR[3]	3GIO_PAD_CFG_ADR[2]	3GIO_PAD_CFG_ADR[1]	3GIO_PAD_CFG_ADR[0]
ROM_SO	FB[1] (GE1)	FB[0] (GE1)	SMB_ALT_ADDR	VGA_DEVICE
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG (GE1)	PEX_PLL_EN_TERM
STRAP3	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	RESERVED	RESERVED	PCIE_MAX_SPEED	DP_PLL_VDD33V

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LVDS LOGIC

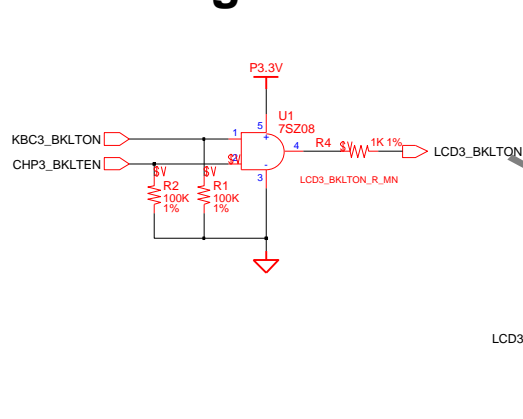
1Ch. LCD Connector + CAMERA



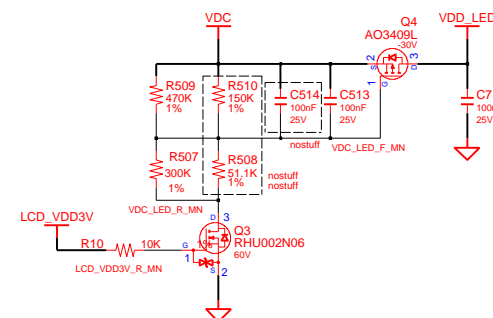
LCD Power

EBL Purpose

Backlight On



LED Power

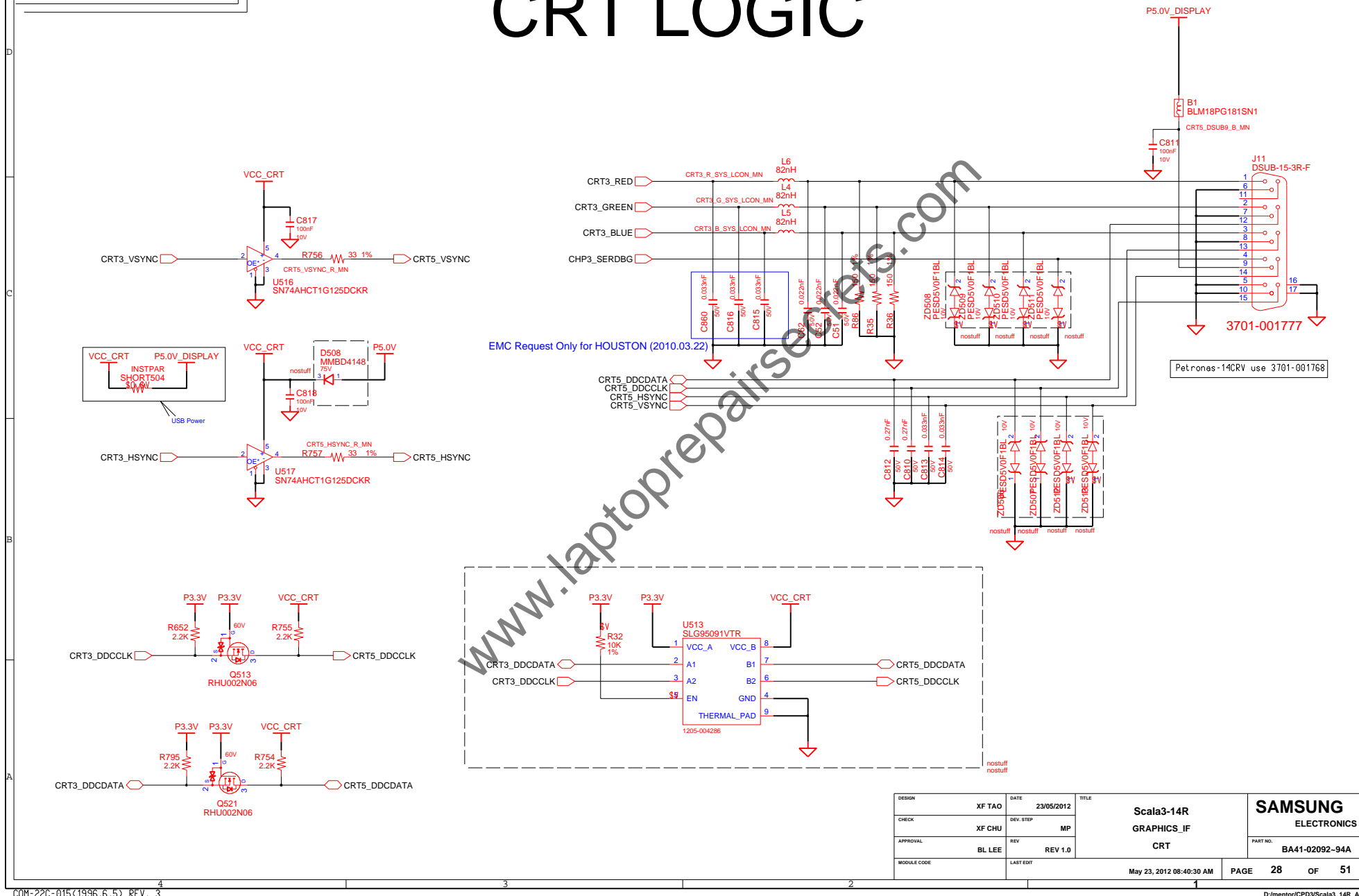


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-02092-94A
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APPROVAL	BL LEE	REV	REV 1.0		LVDS	
MODULE CODE		LAST EDIT				
May 23, 2012 08:40:30 AM						PAGE 27 OF 51

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CRT LOGIC



DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		GRAPHICS_IF	
APPROVAL	BL LEE	REV	REV 1.0		CRT	
MODULE CODE		LAST EDIT				PART NO. BA41-02092-94A
				May 23, 2012 08:40:30 AM	PAGE	28 OF 51

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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

PCH3_HDMI_DATA PCH5_HDMI_DATA

Petrones-14CRV use 3701-001785

3701-001782

DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		GRAPHICS_IF	
APPROVAL	BL LEE	REV	REV 1.0		HDMI	
MODULE CODE		LAST EDIT			May 23, 2012 08:40:30 AM	PAGE 29 OF 51

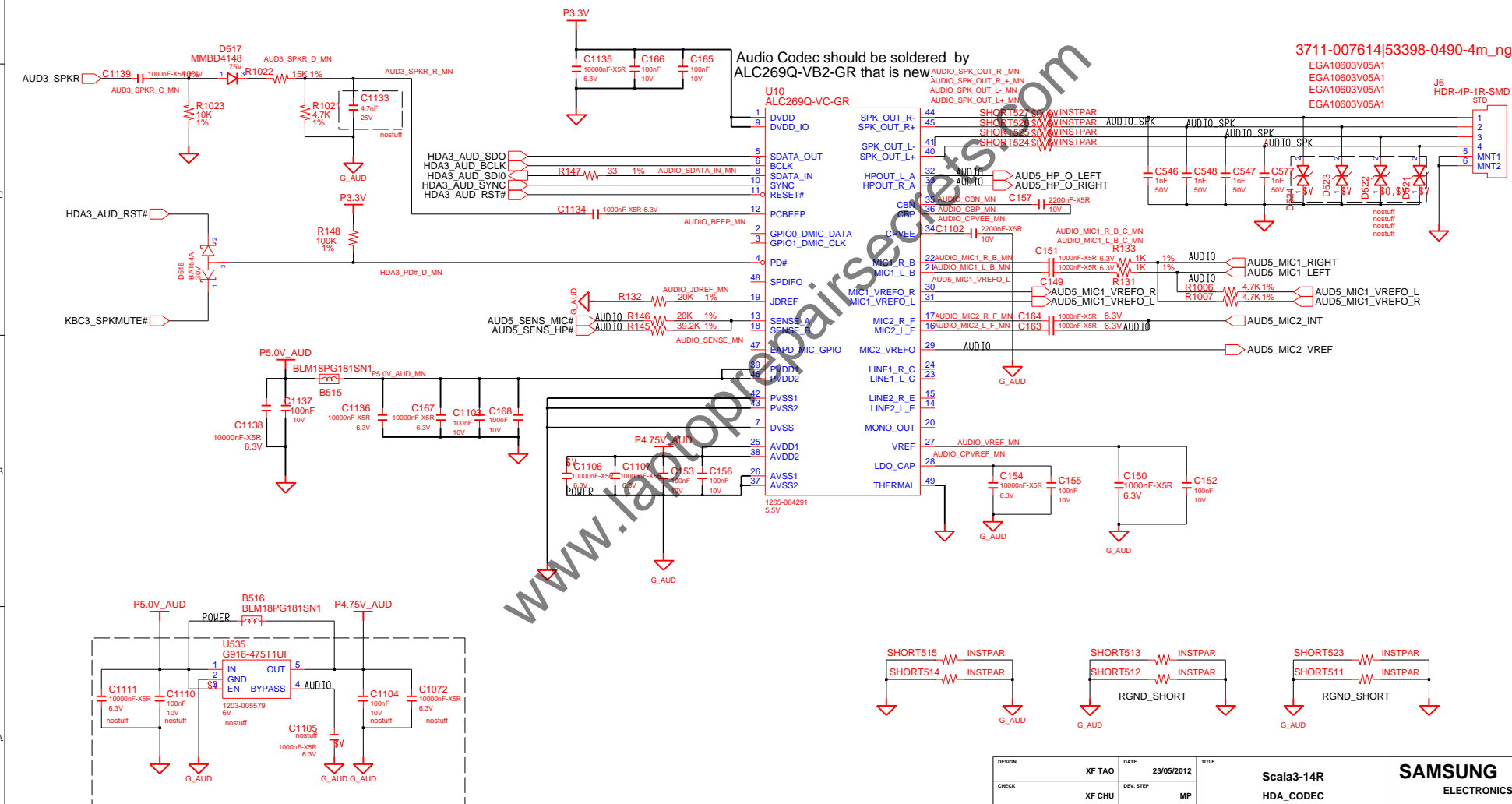
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HD AUDIO

Codec Pin9 Setting	
S/B with Low Voltage IO	S/B without Low Voltage IO
Pin9 : 1.5V	Pin9 : 3.3V

Audio Codec should be soldered by
ALC269Q-VB2-GR that is new.

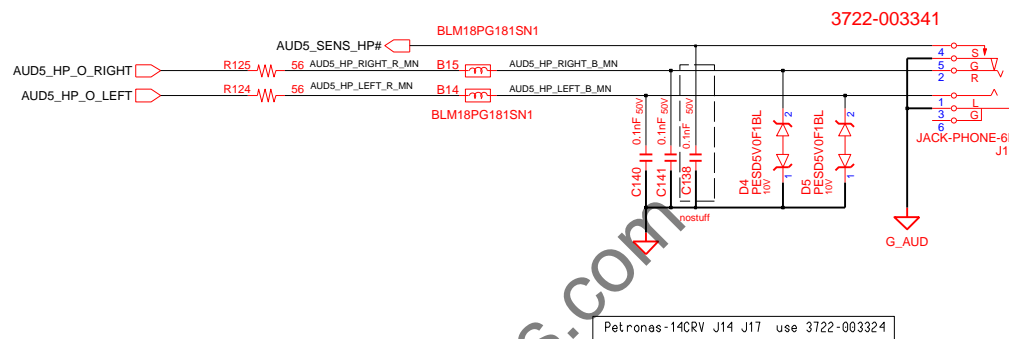
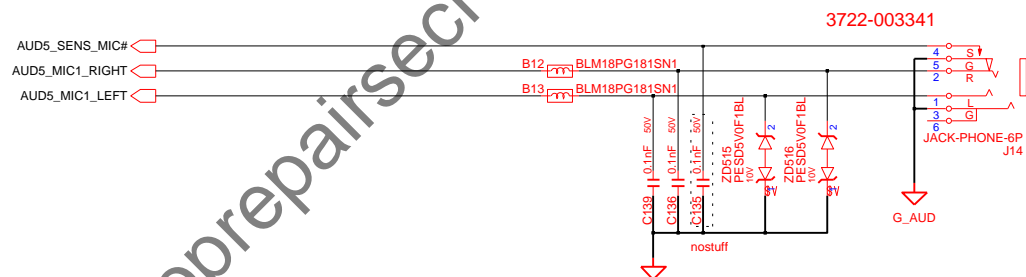
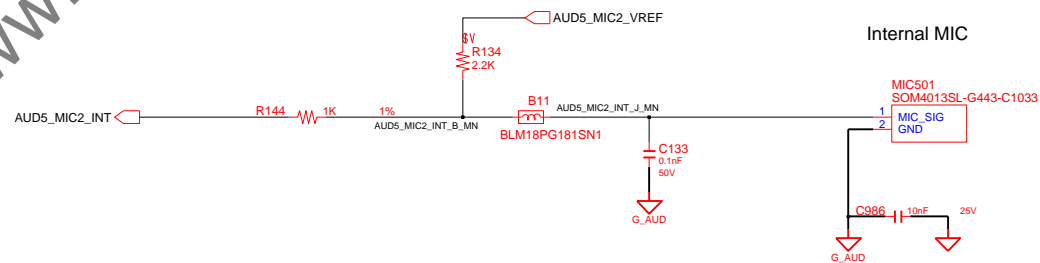


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R
CHECK	XF CHU	DEV. STEP	MP		HDA_CODEC
APPROVAL	BL LEE	REV	REV 1.0		AUDIO CODEC ALC269
MODULE CODE		LAST EDIT			
				May 23, 2012 08:40:30 AM	PAGE 30 OF 51

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ELECTRONICS
PART NO.
BA41-02092-94A

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HEADPHONE**MIC JACK****Internal MIC**

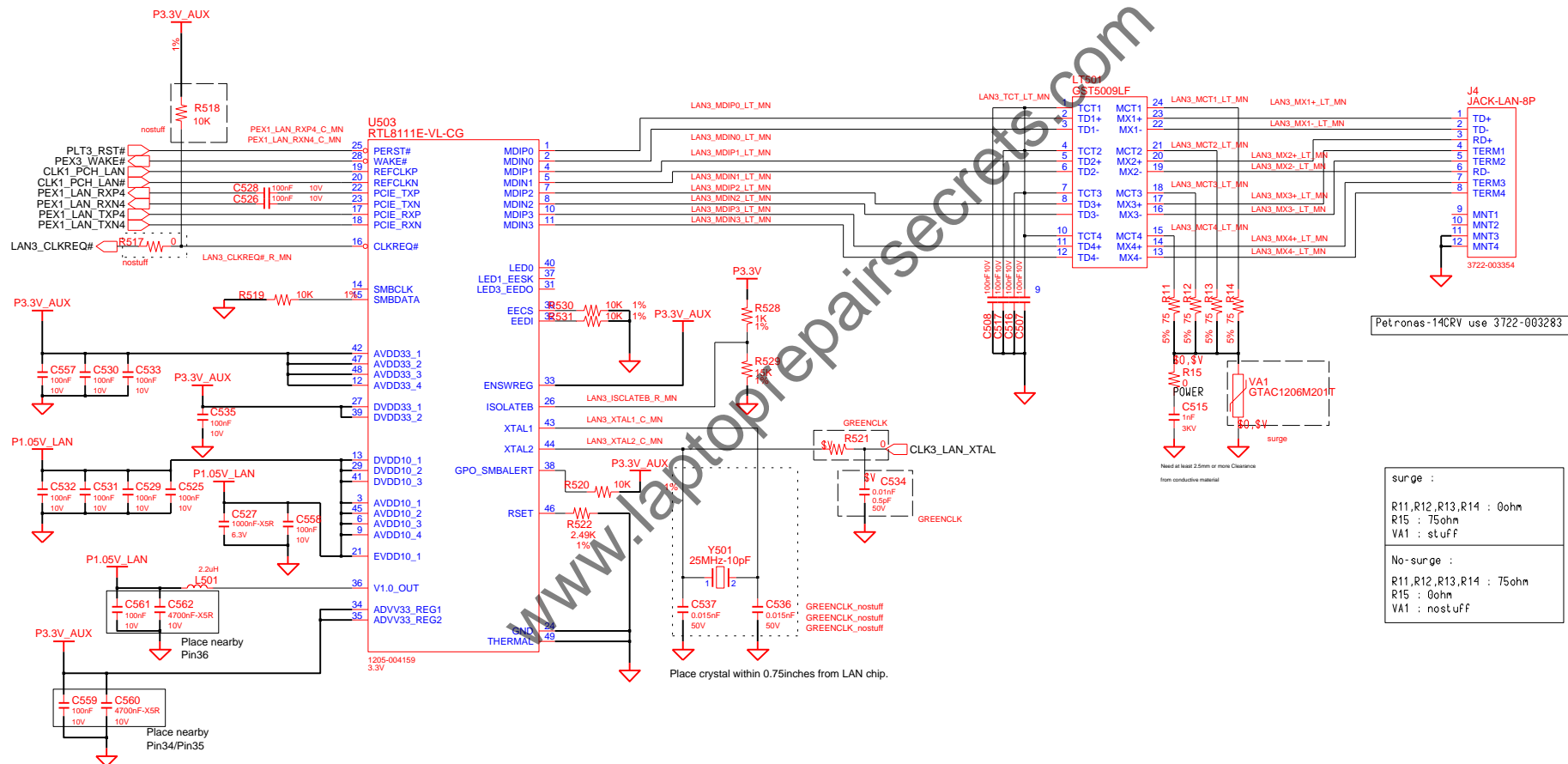
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CHECK	XF CHU	DEV. STEP	MP		HDA_CODEC
APPROVAL	BL LEE	REV	REV 1.0		AUDIO JACK
MODULE CODE		LAST EDIT			

May 23, 2012 08:40:30 AM

SAMSUNG
ELECTRONICSPART NO.
BA41-02092-94A

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Reatek RTL8111E



Petronas-14CRV use 3722-003283

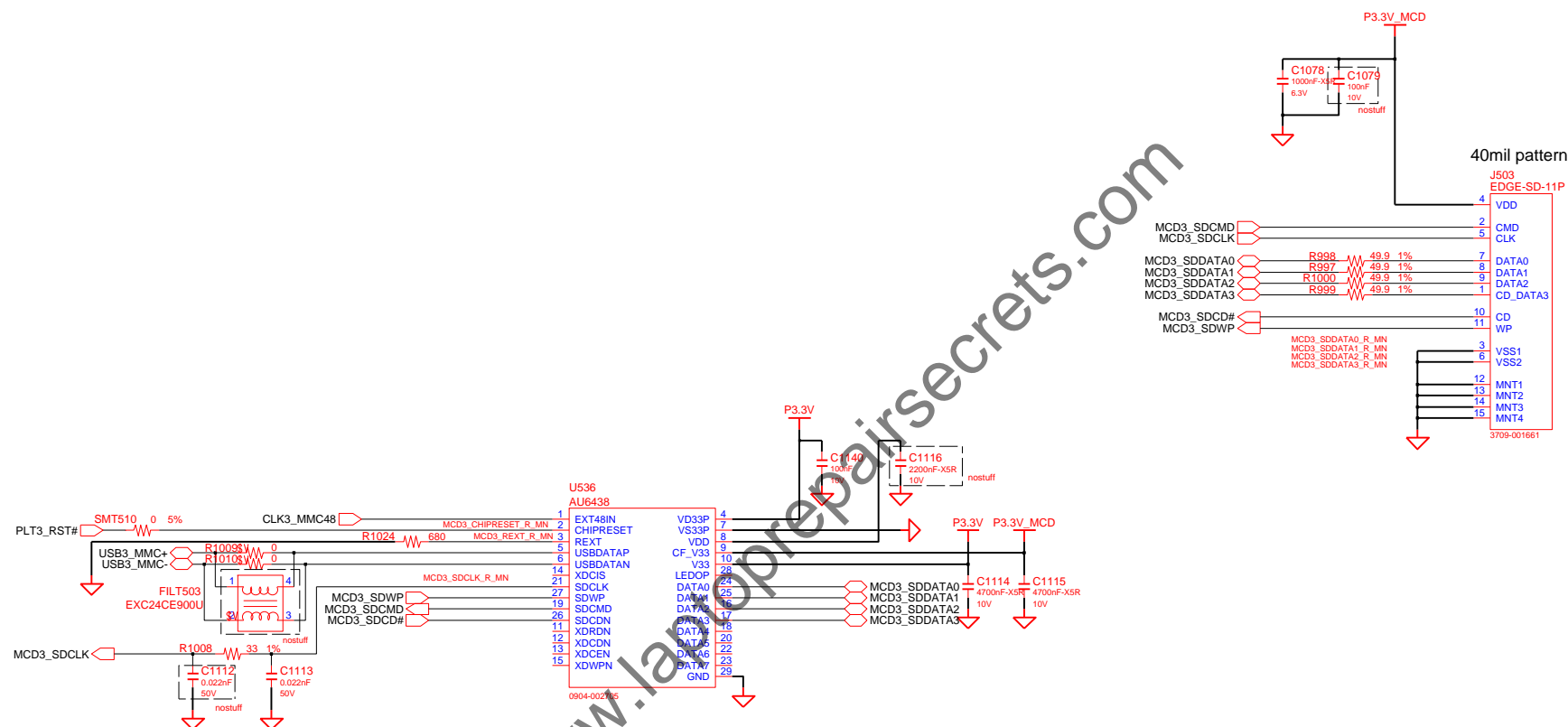
surge :
R11,R12,R13,R14 : 0ohm
R15 : 75ohm
VA1 : stuff

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

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4 IN 1 CARD

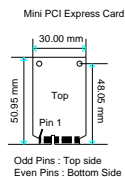
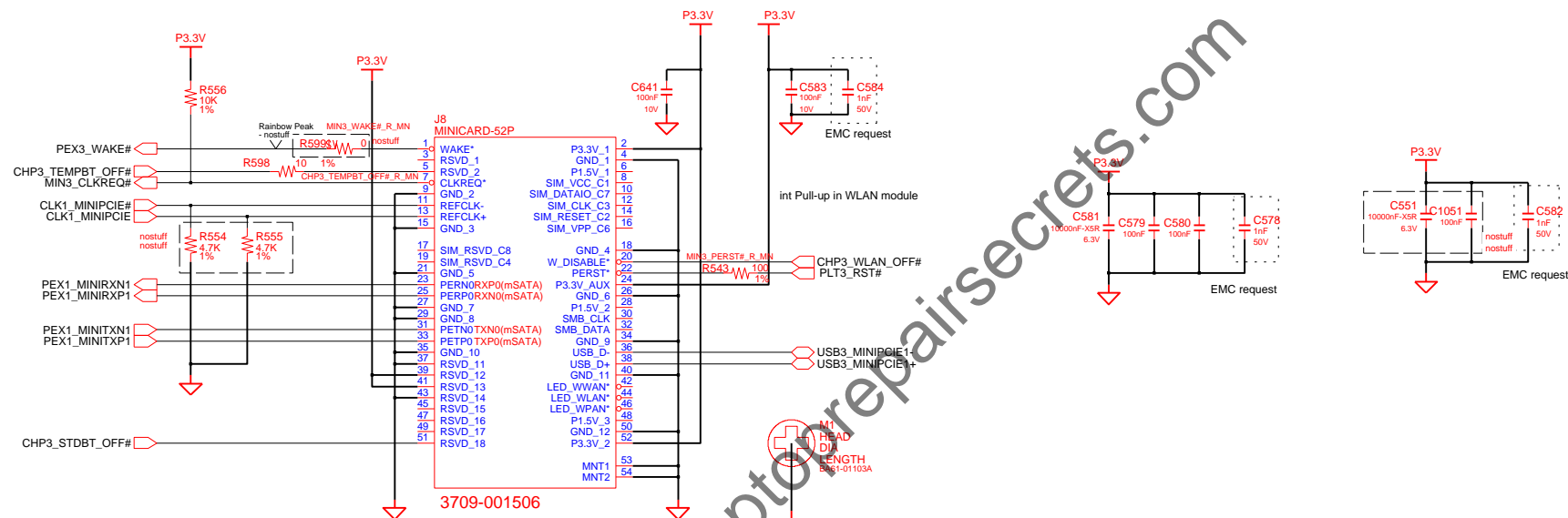


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		MULTICARD	
APPROVAL	BL LEE	REV	REV 1.0		4 IN 1 CARD(AU6438)	
MODULE CODE		LAST EDIT		May 23, 2012 08:40:30 AM	PAGE	33 OF 51

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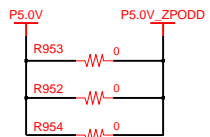
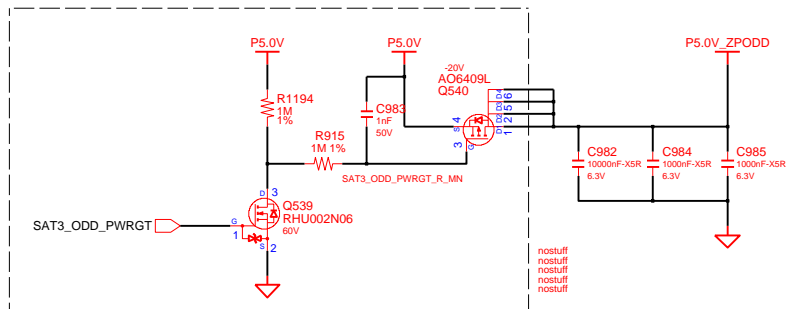
WLAN, 7mm



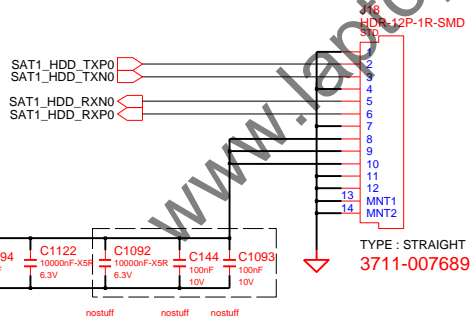
DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		MINI_PCIE_CONN	
APPROVAL	BL LEE	REV	REV 1.0		WLAN	
MODULE CODE		LAST EDIT				PART NO. BA41-02092-94A
						PAGE 34 OF 51

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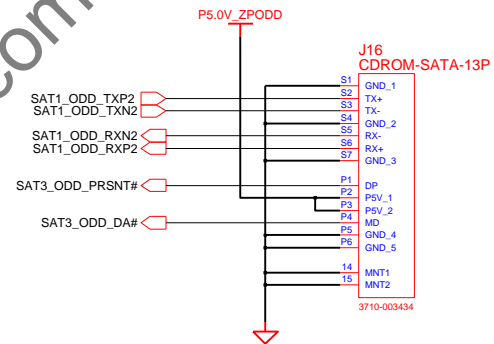
SATA I/F CONN



SATA HDD CONN



SATA ODD CONN 14"



Petronas-14CRV use 3710-002796

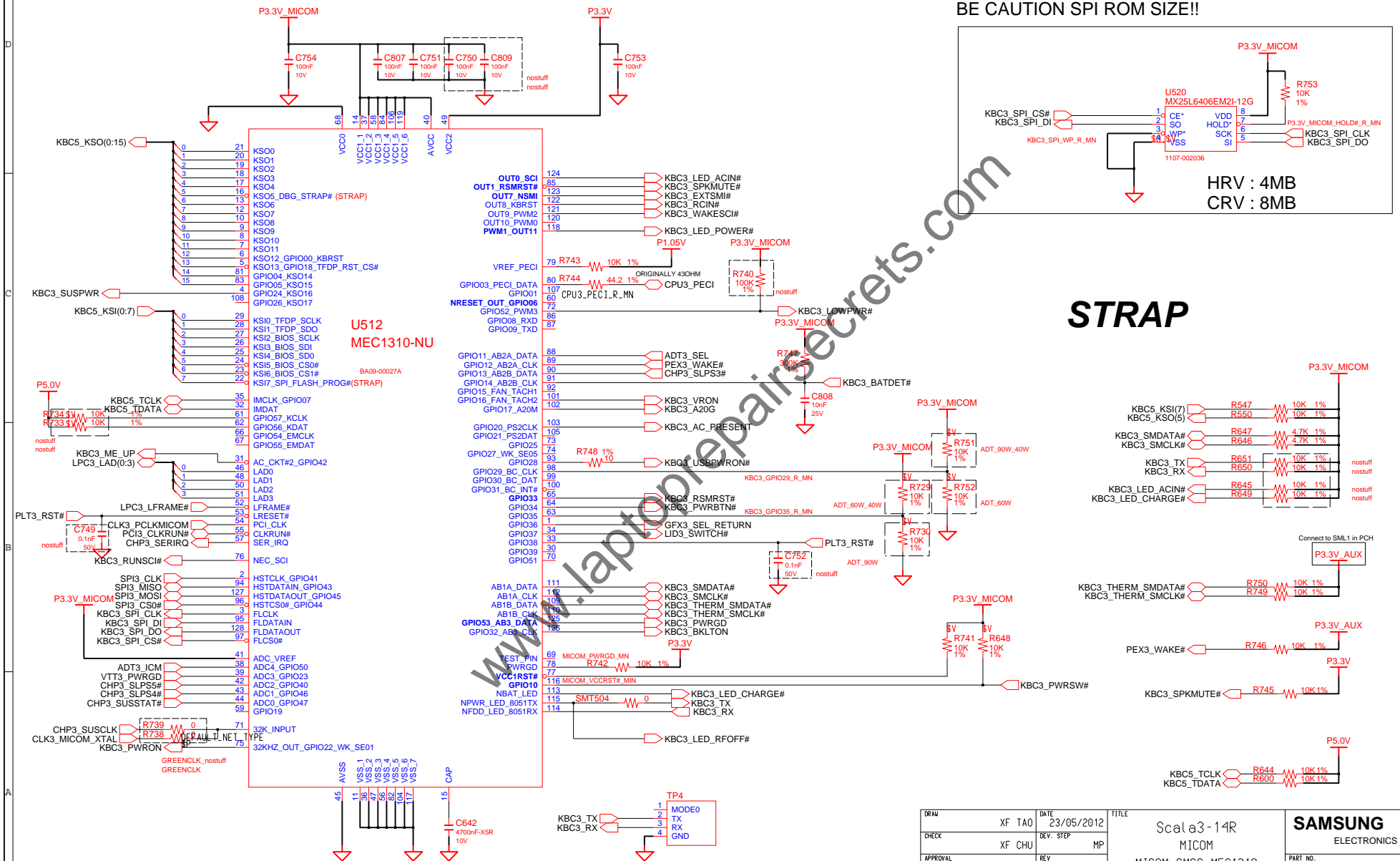
DESIGN	XF TAO	DATE	23/05/2012	TITLE Scala3-14R SATA DEVICES HDD & ODD SUB CONNECTOR	SAMSUNG ELECTRONICS		
CHECK	XF CHU	REV. STEP	MP				
APPROVAL	BL LEE	REV	REV 1.0		PART NO.	BA41-02092-94A	
MODULE CODE	LAST EDIT		May 23, 2012 08:40:30 AM		PAGE	35 OF 51	

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MAIN BOARD (MICOM)

BE CAUTION SPI ROM SIZE!!

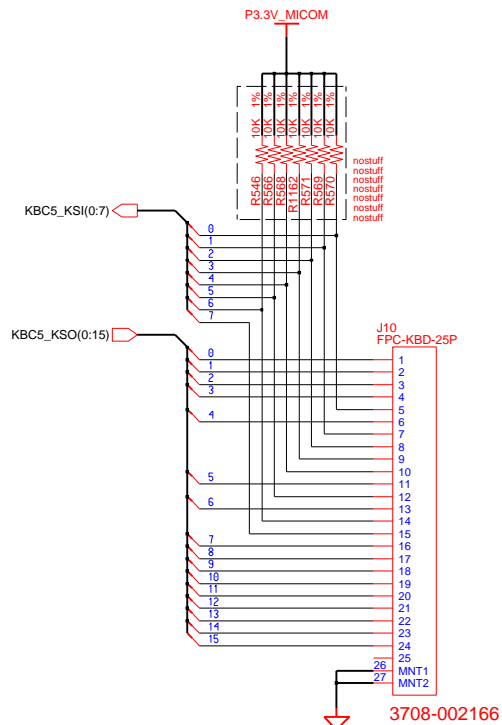


STRAP

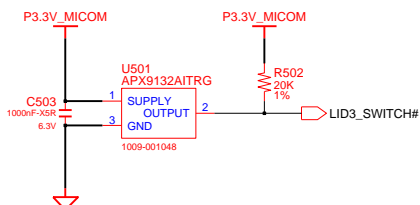
DATE	23/05/2012	TITLE	Scala3-14R
CHECK	XF CHU	DEV. STEP	MP
APPROVAL	BL LEE	REV	REV 1.0
MODULE CODE		LAST EDIT	May 23, 2012 08:40:30 AM
		PAGE	36 OF 51

Micom Glue Logic

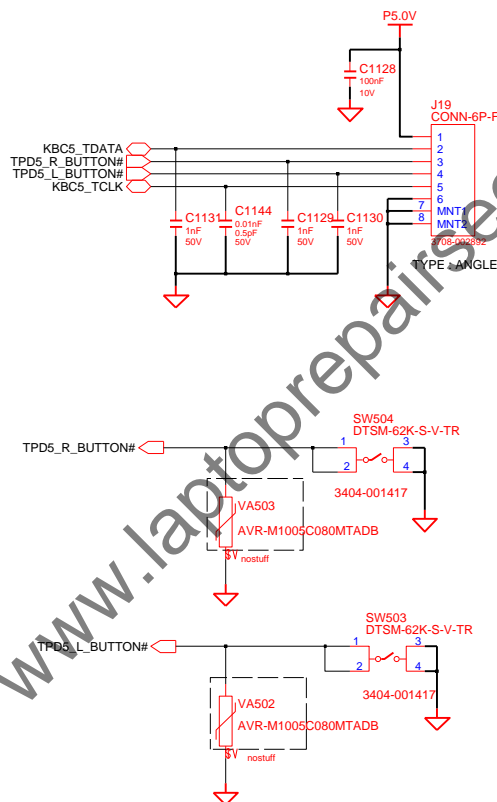
KEYBOARD



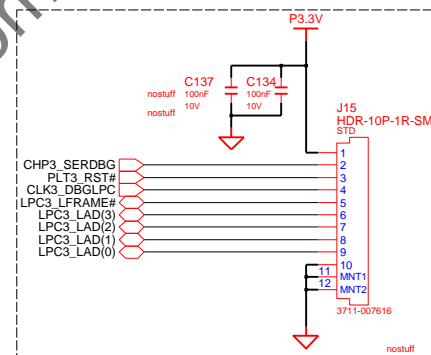
LID_SWITCH



TOUCHPAD



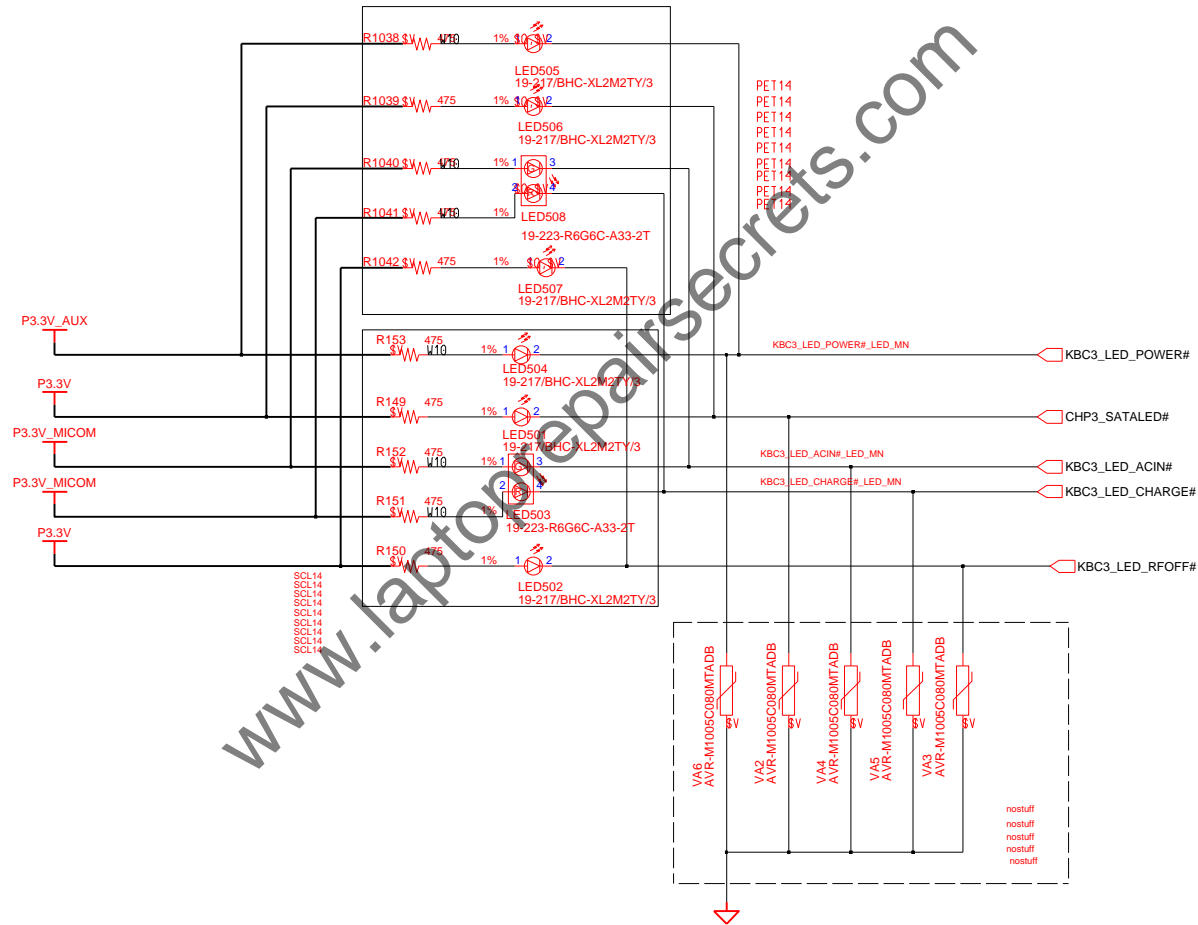
80H PORT DEBUG



DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		MICOM GLUE LOGIC	
APPROVAL	BL LEE	REV	REV 1.0		KETBOARD & TOUCHPAD	
MODULE CODE		LAST EDIT				
					May 23, 2012 08:40:30 AM	PAGE 37 OF 51

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LED for 14"

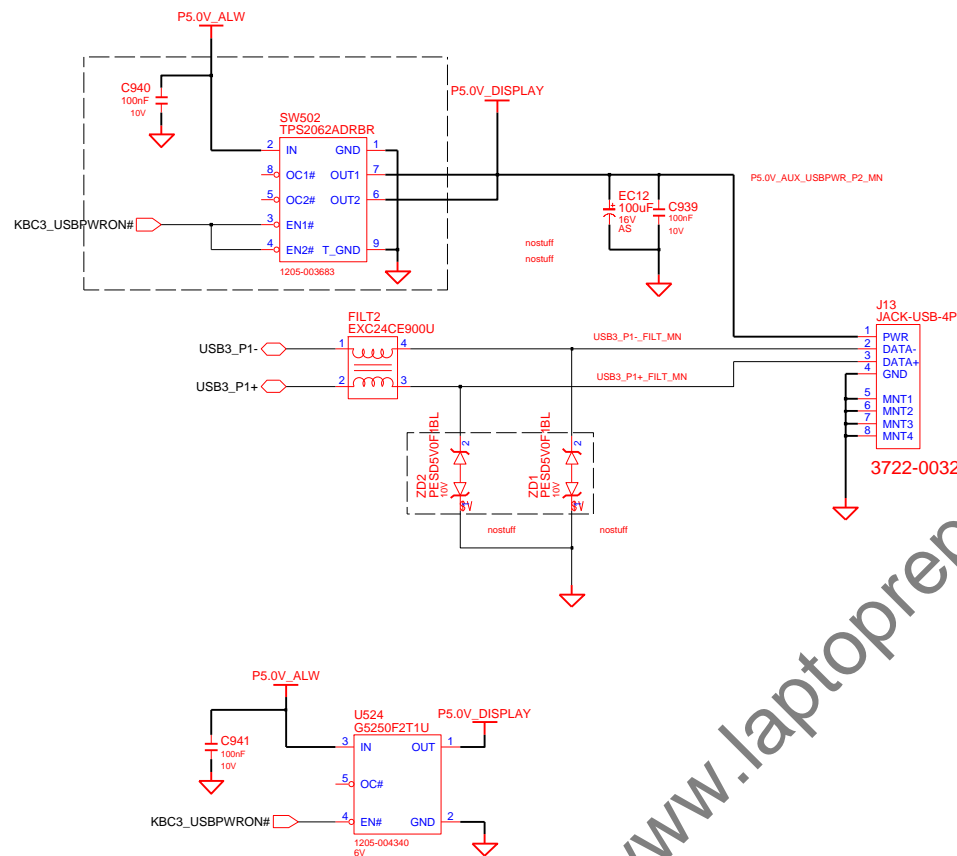


DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		LED_SWITCH	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.0		LED_SWITCH	PART NO.
MODULE CODE		LAST EDIT				BA41-02092-94A
				May 23, 2012 08:40:30 AM	PAGE	38 OF 51

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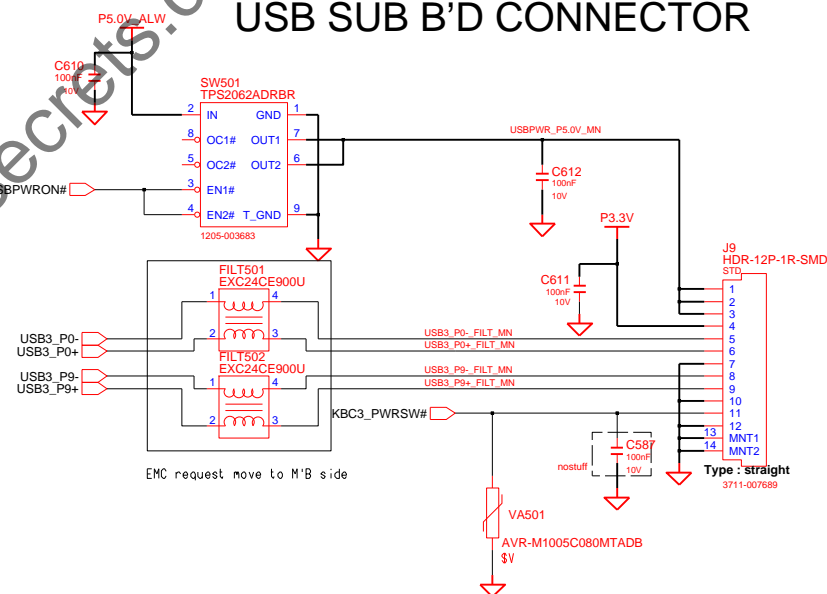
USB Single connector



MAIN TO SUB USB CONN

Right 2USB Port

USB SUB B'D CONNECTOR



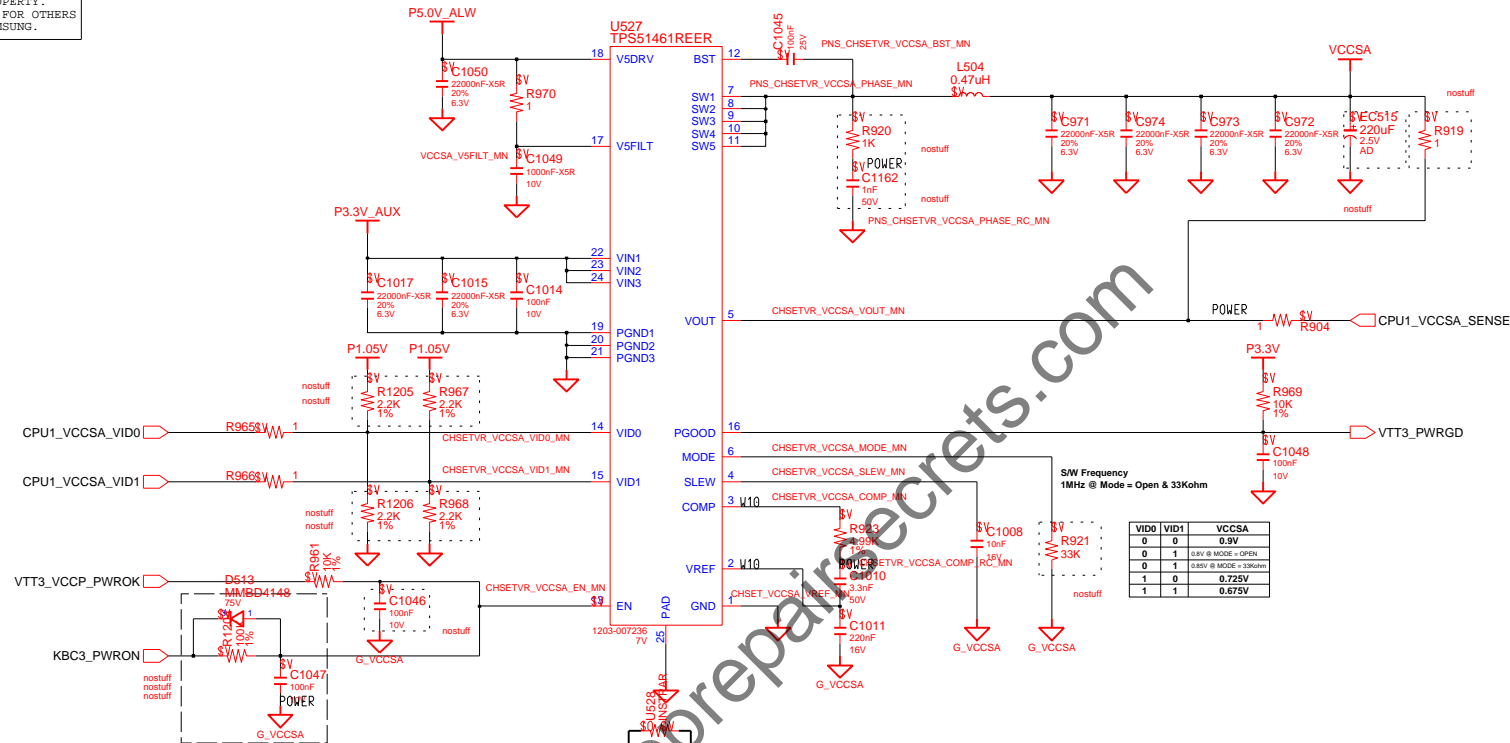
PLACE CLOSE TO USB SUB B'D Conenctor

DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG
CHECK	XF CHU	DEV. STEP	MP		USB_CONN	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.0		USB Port	PART NO.
MODULE CODE		LAST EDIT				BA41-02092-94A
				May 23, 2012 08:40:30 AM	PAGE	39 OF 51

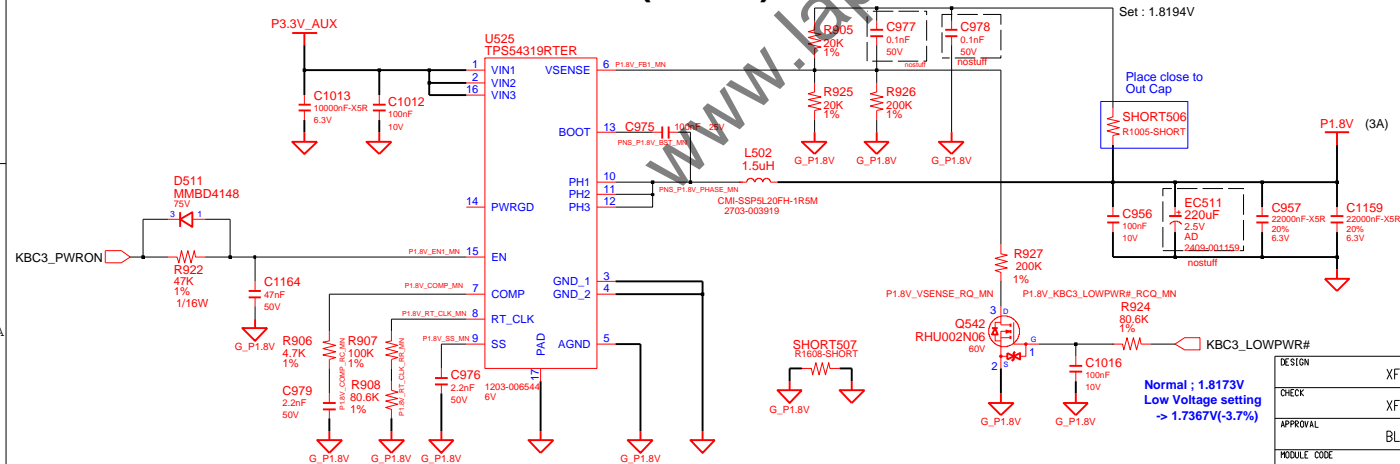
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CHIPSET POWER(VCCSA)



CHIPSET POWER(P1.8V)

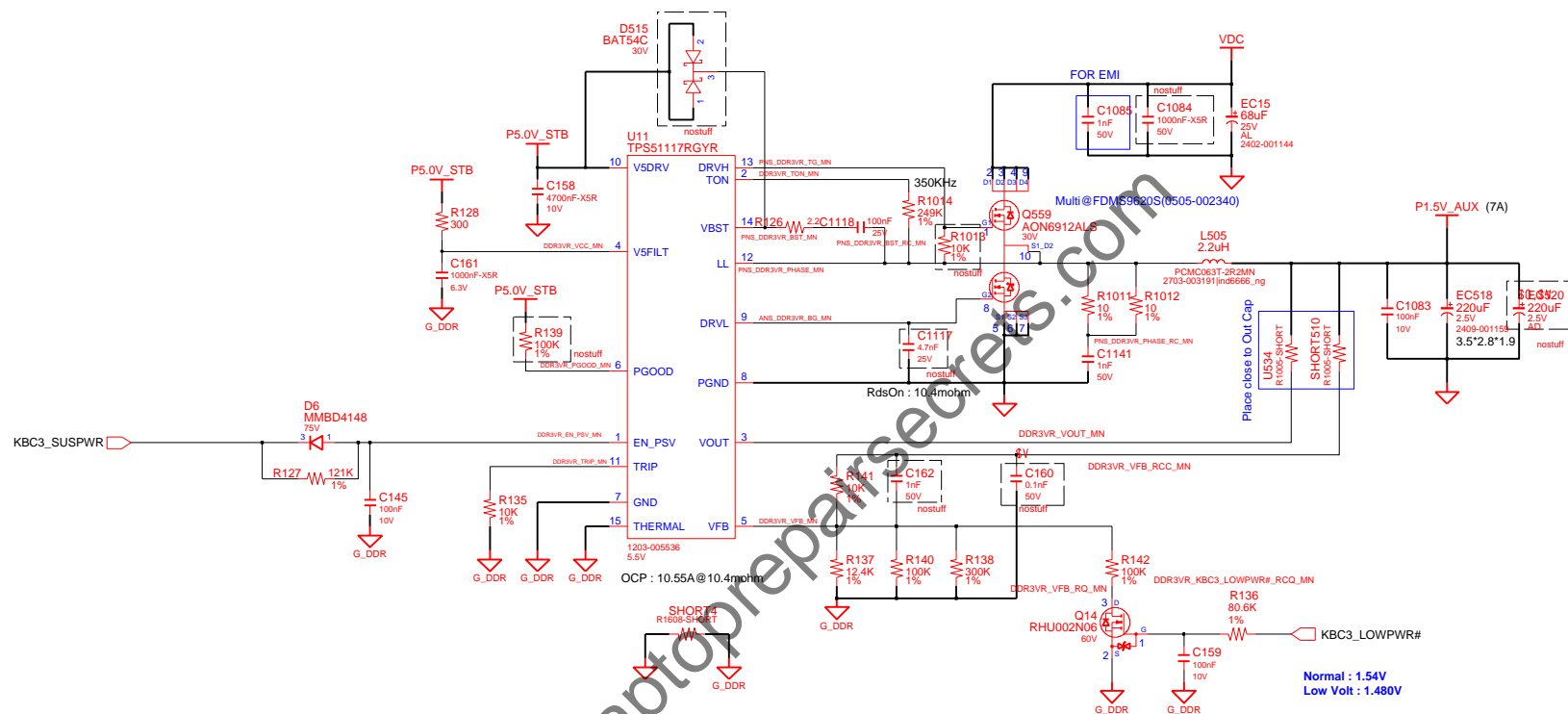


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		P1.1V_VTT	
APPROVAL	BL LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
May 23, 2012 08:40:30 AM						PAGE 43 OF 51

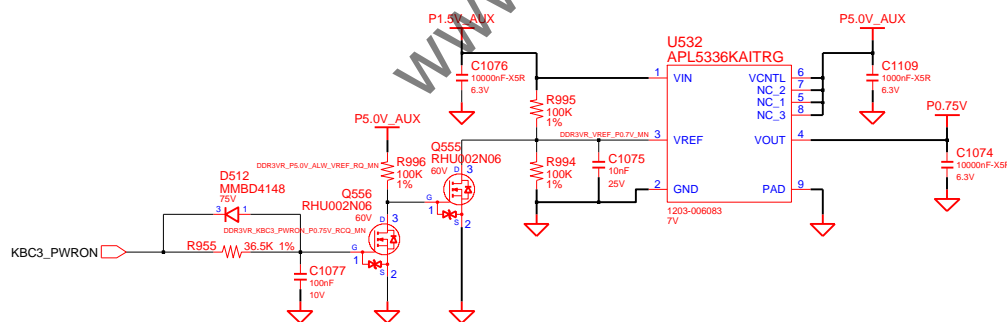
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DDR3 Power



DDR3 VTT(0.75V)

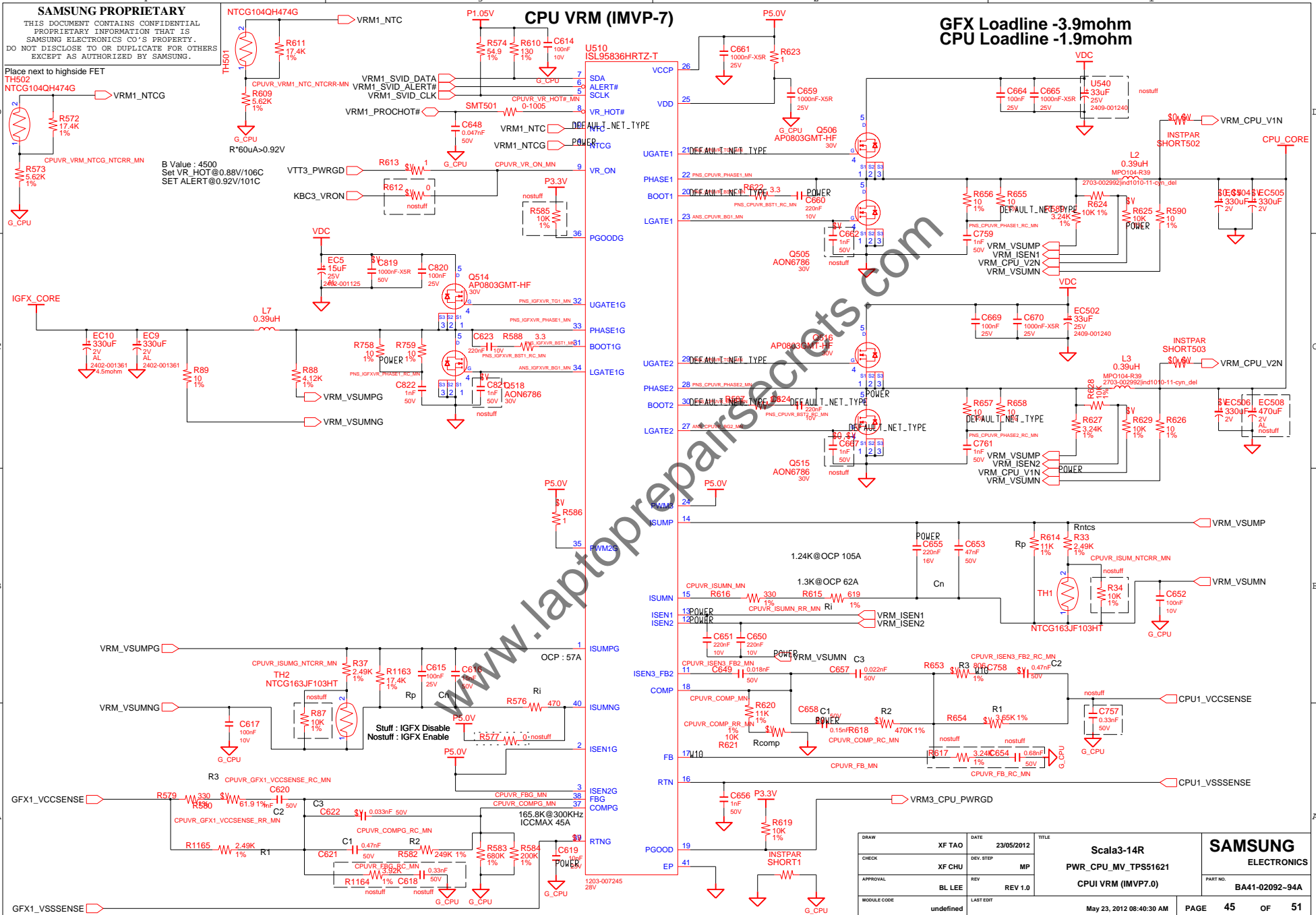


DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		PWR_MEMORY	
APPROVAL	BL LEE	REV	REV 1.0		DDR3 POWER	
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	44	OF 51

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NTCG104QH474G VRM1 NTCG

B Value : 4500
Set VR_HOT@0.88V/106C
SET ALERT@0.92V/101C



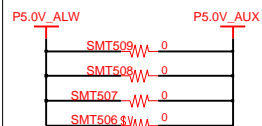
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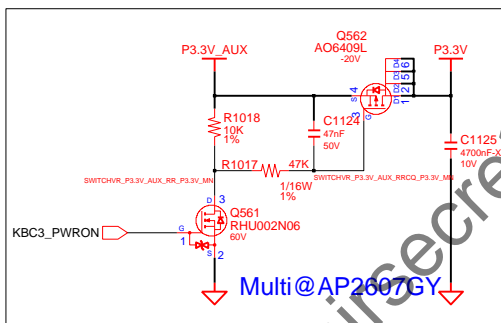
Switched Power 1

(P5.0V -> P3.3V -> EGFX_CORE -> P1.8V -> P1.5V -> P0.75V -> P1.05V -> P0.85V_SA -> CPU_CORE)

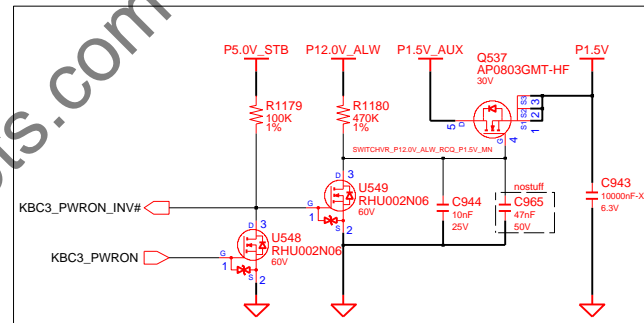
P5.0V_AUX



Switched Power On (P3.3V)

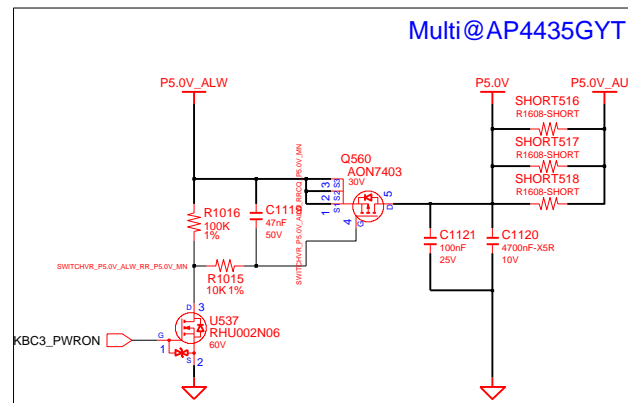


Switched Power On (P1.5V)



For nVIDIA GFX PWR Sequence
NVDD(EGFX_CORE) first and then FBVDDQ(gDDR3)

Switched Power On (P5.0V)



DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		Switched PWR 2	
APPROVAL	BL LEE	REV	REV 1.0		Switched Power	
MODULE CODE	undefined	LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	47	OF 51

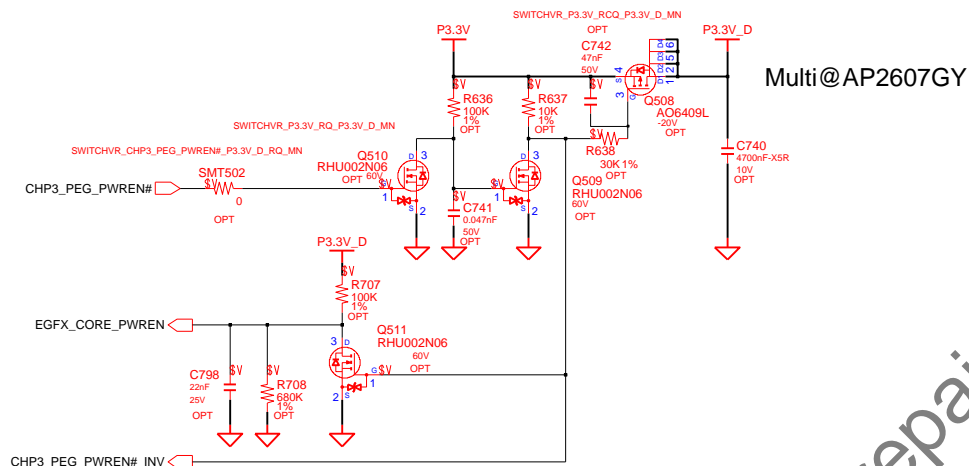
PART NO.
BA41-02092-94A

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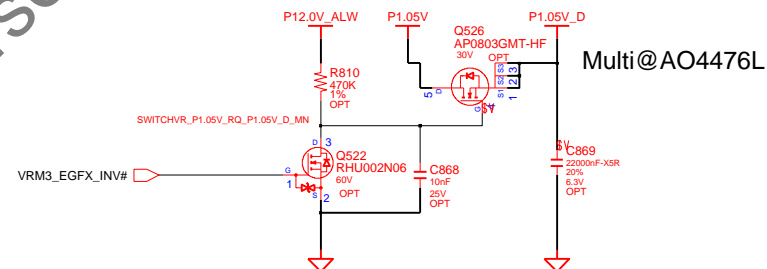
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Switched Power 2 (For nVidia GFX Power Sequence)

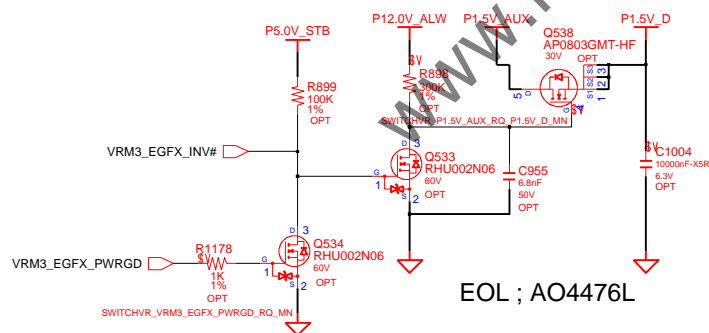
Discrete Switched Power (D3.3V : Max_1.2A)



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



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

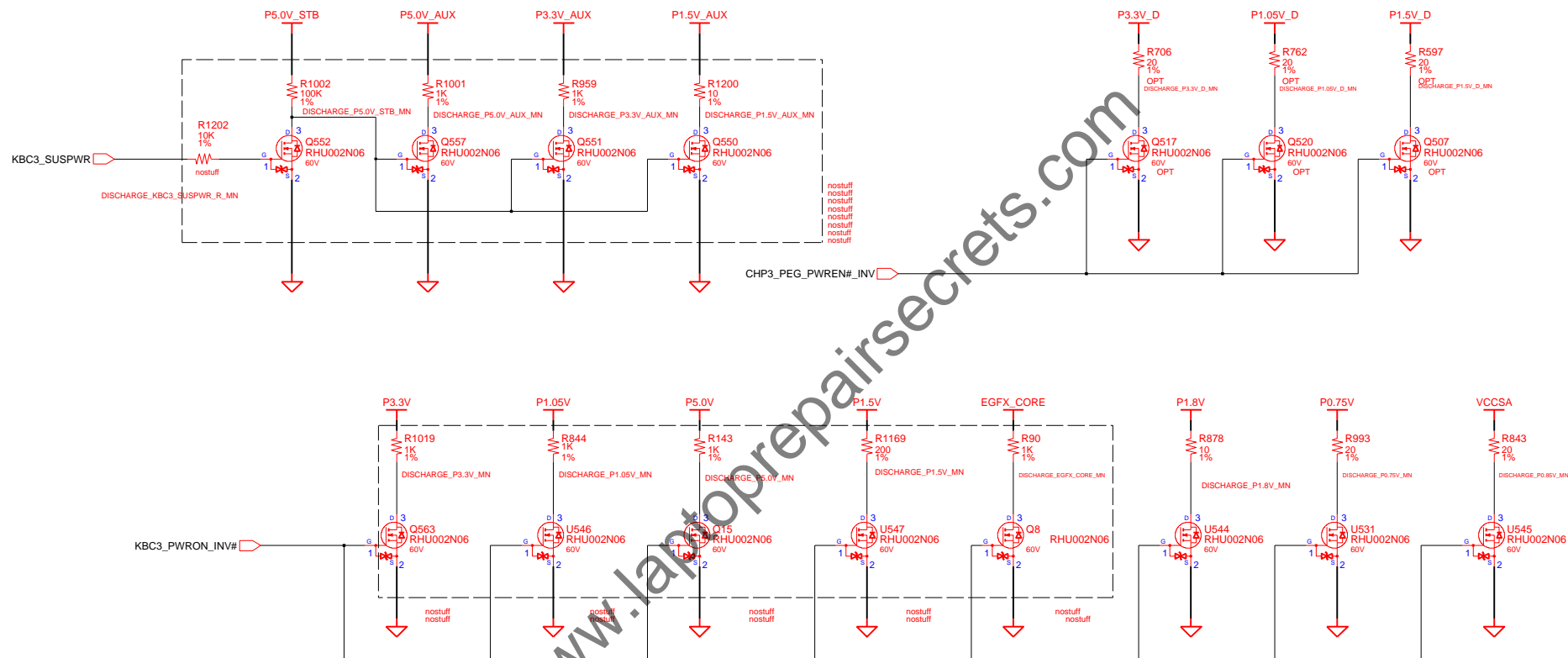


DRAW	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		Switched PWR	
APPROVAL	BL LEE	REV	REV 1.0		FOR OPTIMUS PWR	
MODULE CODE		LAST EDIT			May 23, 2012 08:40:30 AM	PART NO. BA41-02092-94A
					PAGE	48 OF 51

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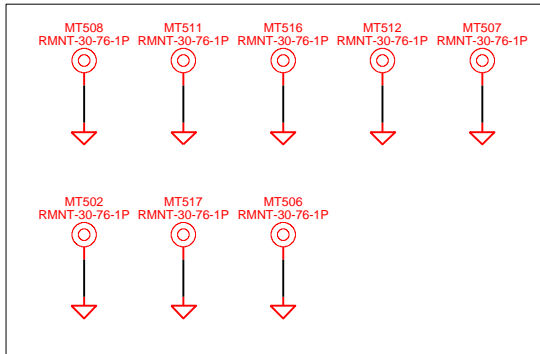
POWER DISCHARGER



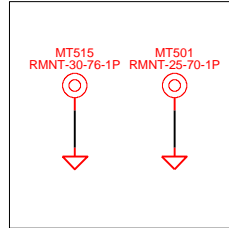
DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
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APPROVAL	BL LEE	REV	REV 1.0		DISCHARGING LOGIC	
MODULE CODE		LAST EDIT	May 23, 2012 08:40:30 AM	PAGE	49	OF 51

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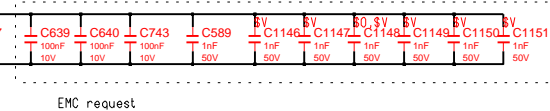
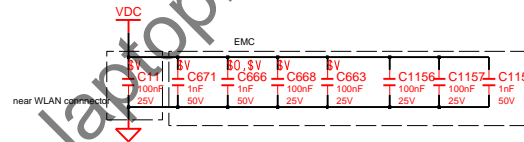
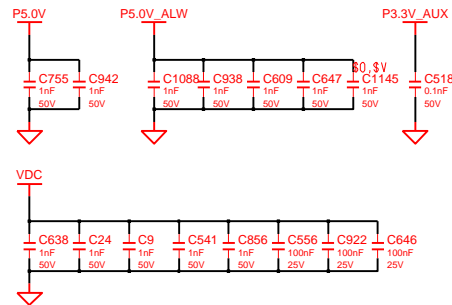
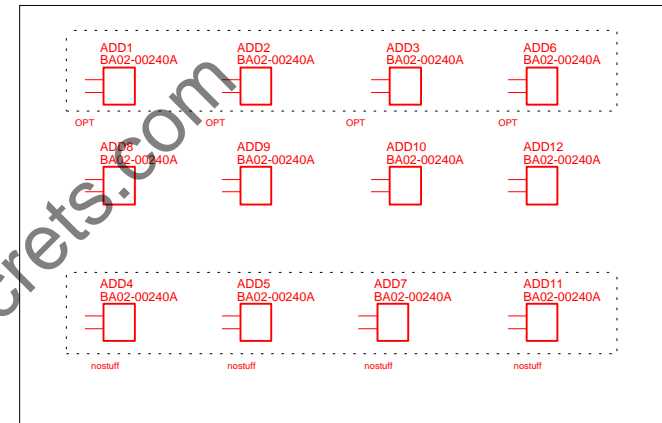
Mainboard Mount ((30-76)X8EA)



PCB FIX



Corner Fill for GPU, PCH

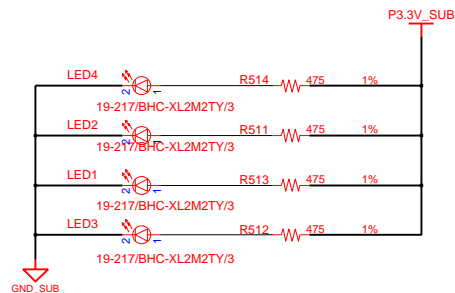


DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS PART NO. BA41-02092-94A
CHECK	XF CHU	DEV. STEP	MP		MT Hole	
APPROVAL	BL LEE	REV	REV 1.0		MT Hole	
MODULE CODE		LAST EDIT				
May 23, 2012 08:40:30 AM						PAGE 50 OF 51

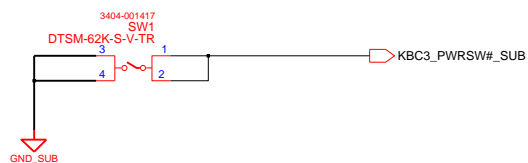
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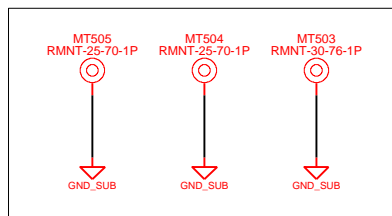
USB SUB BOARD



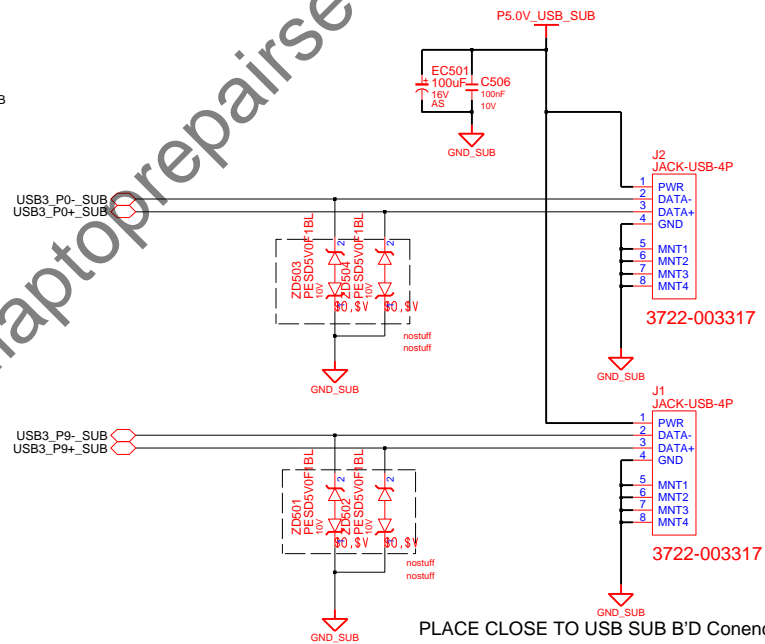
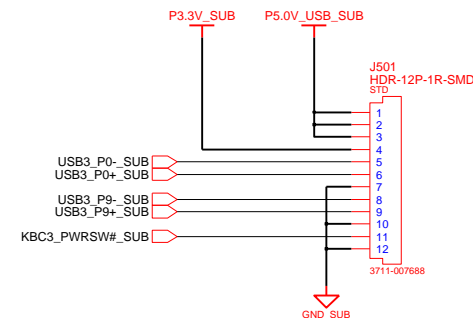
Power Switch Button



PCB Mount



SUB TO MAIN



PLACE CLOSE TO USB SUB B'D Conenctor

DESIGN	XF TAO	DATE	23/05/2012	TITLE	Scala3-14R	SAMSUNG ELECTRONICS
CHECK	XF CHU	DEV. STEP	MP		SUB BOARD	
APPROVAL	BL LEE	REV	REV 1.0		SUB BOARD	
MODULE CODE		LAST EDIT				

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