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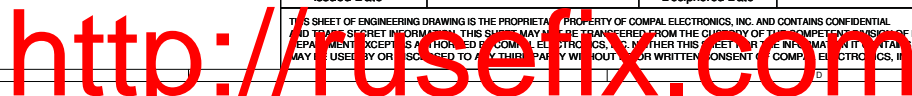
QIWY3 M/B Schematics Document

Intel IVY Bridge Processor with DDRIII + Panther Point PCH
 nVIDIA N13X

2011-12-23

REV: 1.0

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Voltage Rails

power plane	State	+B	+5VALW +3VALW	+1.5V	+5VS +3VS +1.5VS +VCCSA +V1.5S_VCCP +CPU_CORE +VGA_CORE +GFX_CORE +1.8VS +1.05VS +0.75VS +3.3VS_VGA +1.5VS_VGA +1.05VS_VGA
S0					
S3					
S5 S4/AC					
S5 S4/ Battery only					
S5 S4/AC & Battery don't exist					

STATE	SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1 (Power On Suspend)		LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)		LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

BOARD ID Table

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%					
Ra/Rc/Re	10K +/- 5%					
Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max	Project	
0	0	0 V	0 V	0 V	QIWI3	EVT
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	QIWI3	DVT
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	QIWI3	PVT
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	QIWI3	MP
4	56K +/- 5%	1.036 V	1.185 V	1.264 V	QIWI4	EVT
5	100K +/- 5%	1.453 V	1.650 V	1.759 V	QIWI4	DVT
6	200K +/- 5%	1.935 V	2.200 V	2.341 V	QIWI4	PVT
7	NC	2.500 V	3.300 V	3.300 V	QIWI4	MP

USB Port Table

USB 2.0	USB 3.0	Port	4 External USB Port
		1	0
		2	1
		3	2
		4	3
		5	4
		6	5
		7	6
		8	7
		9	8
		10	9
		11	10
		12	11
		13	12

BOM Structure Table

BOM Structure	BTO Item
OPTI@	OPTIMUS part
HDMI@	HDMI part
TV@	TV module part
CHG@	USB charger part
NOCHG@	No USB charger part
BT@	Blue Tooth part
CMOS@	CMOS Camera part
8161@	AR8161 LAN part
8151@	AR8151 LAN part
8161S@	AR8161 LAN surge part
8151S@	AR8151 LAN surge part
SURGE@	AR8151&8161 LAN surge part
61@	X76 P/N for AR8161
51@	X76 P/N for AR8151
X76@	X76 Level part for VRAM
S1G@	X76 P/N for Samsun VRAM 1G
S2G@	X76 P/N for Samsun VRAM 2G
H1G@	X76 P/N for Hynix VRAM 1G
H2G@	X76 P/N for Hynix VRAM 2G
GL@	N13P-GL part
GT@	N13P-GT part
GE@	N13E-GE part
GTGE@	N13P-GT&N13E-GE common part
GC6@	NV CG6 support part
NOGC6@	NV no CG6 support part
1403@	EMC1403 thermal part
2103@	EMC2103 thermal part
KBL@	K/B Light part
ME@	ME part
@	Unpop

PCIE PORT LIST

Port	Device
1	LAN
2	WLAN
3	TV
4	Card Reader
5	
6	
7	
8	

SMBUS Control Table

	SOURCE	VGA	BATT	KE9012	SODIMM	WLAN WWAN	Thermal Sensor	PCH
SMB_EC_CK1	KB9012	X	V	X	X	X	X	X
SMB_EC_DA1	+3VALW		+3VALW					
SMB_EC_CK2	KB9012	X	X	X	X	X	X	V
SMB_EC_DA2	+3VALW							+3VS
SMBCLK	PCH	X	X	X	+3VS	+3VS	X	X
SMBDATA	+3VALW							
SML0CLK	PCH	X	X	X	X	X	X	X
SML0DATA	+3VALW							
SML1CLK	PCH	X	X	X	X	X	X	X
SML1DATA	+3VALW							

EC SM Bus1 address EC SM Bus2 address

Device	Address	Device	Address
Smart Battery	0001 011X b	Thermal Sensor EMC1403-2	1001_101xb

PCH SM Bus address

Device	Address
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb


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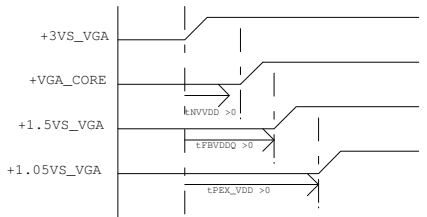
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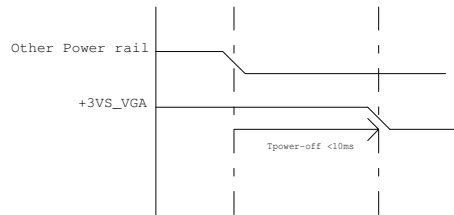
Hot plug detect for IFP link C

VGA and GDDR5 Voltage Rails (N13Px GPIO)

GPIO	I/O	ACTIVE	Function Description
GPIO0	OUT	-	GPU VID4
GPIO1	OUT	-	GPU VID3
GPIO2	OUT	N/A	
GPIO3	OUT	N/A	
GPIO4	OUT	N/A	
GPIO5	OUT	-	GPU VID1
GPIO6	OUT	-	GPU VID2
GPIO7	OUT	N/A	
GPIO8	I/O	-	Thermal Catastrophic Over Temperature
GPIO9	OUT	-	GC6 event
GPIO10	OUT	-	Memory VREF Control
GPIO11	OUT	-	GPU VID0
GPIO12	IN		AC Power Detect Input (10K pull High)
GPIO13	OUT	-	GPU VID5
GPIO14	OUT	N/A	
GPIO15	IN	N/A	(100K pull low)
GPIO16	OUT	N/A	
GPIO17	IN	N/A	
GPIO18	IN	N/A	
GPIO19	IN	N/A	



1. all power rail ramp up time should be larger than 40us



1. all GPU power rails should be turned off within 10ms
2. Optimus system VDD33 avoids drop down earlier than NVDD and FBVDDQ

Performance Mode P0 TDP at Tj = 102 C* (GDDR5)

	GPU (4)	Mem (1,5)	NVCLK /MCLK	NVVDD			FBVDD (1.35V)		FBVDDQ (GPU+Mem) (1.35V)		PCI Express (1.05V) (6)		I/O and PLLVDD (1.8V)		I/O and PLLVDD (1.05V)		Other (3.3V)	
Products	(W)	(W)	(MHz)	(V)	(A)	(W)	(A)	(W)	(A)	(W)	(mA)	(W)	(mA)	(W)	(mA)	(W)	(mA)	(W)
N13X 128bit 1GB GDDR5	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

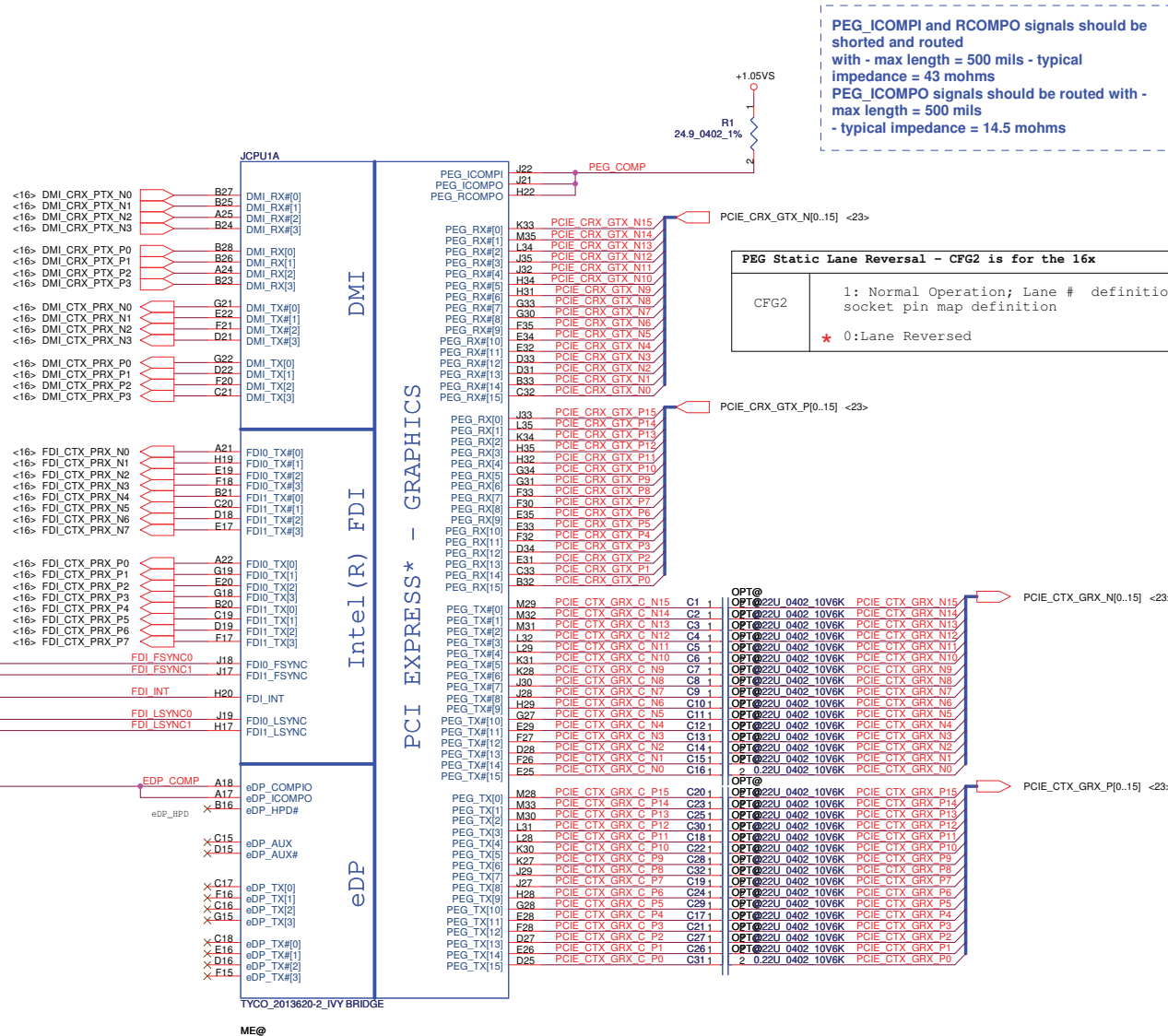
Physical Strapping pin	Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SCLK	+3VS_VGA	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM
ROM_SI	+3VS_VGA	RAM_CFG[3]	RAM_CFG[2]	RAM_CFG[1]	RAM_CFG[0]
ROM_SO	+3VS_VGA	FB[1]	FB[0]	SMB_ALT_ADDR	VGA_DEVICE
STRAP0	+3VS_VGA	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	+3VS_VGA	3GIO_PAD_CFG_ADR[3]	3GIO_PAD_CFG_ADR[2]	3GIO_PAD_CFG_ADR[1]	3GIO_PAD_CFG_ADR[0]
STRAP2	+3VS_VGA	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP3	+3VS_VGA	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	+3VS_VGA	RESERVED	PCIE_SPEED_CHANGE_GEN3	PCIE_MAX_SPEED	DP_FLL_VDD33V

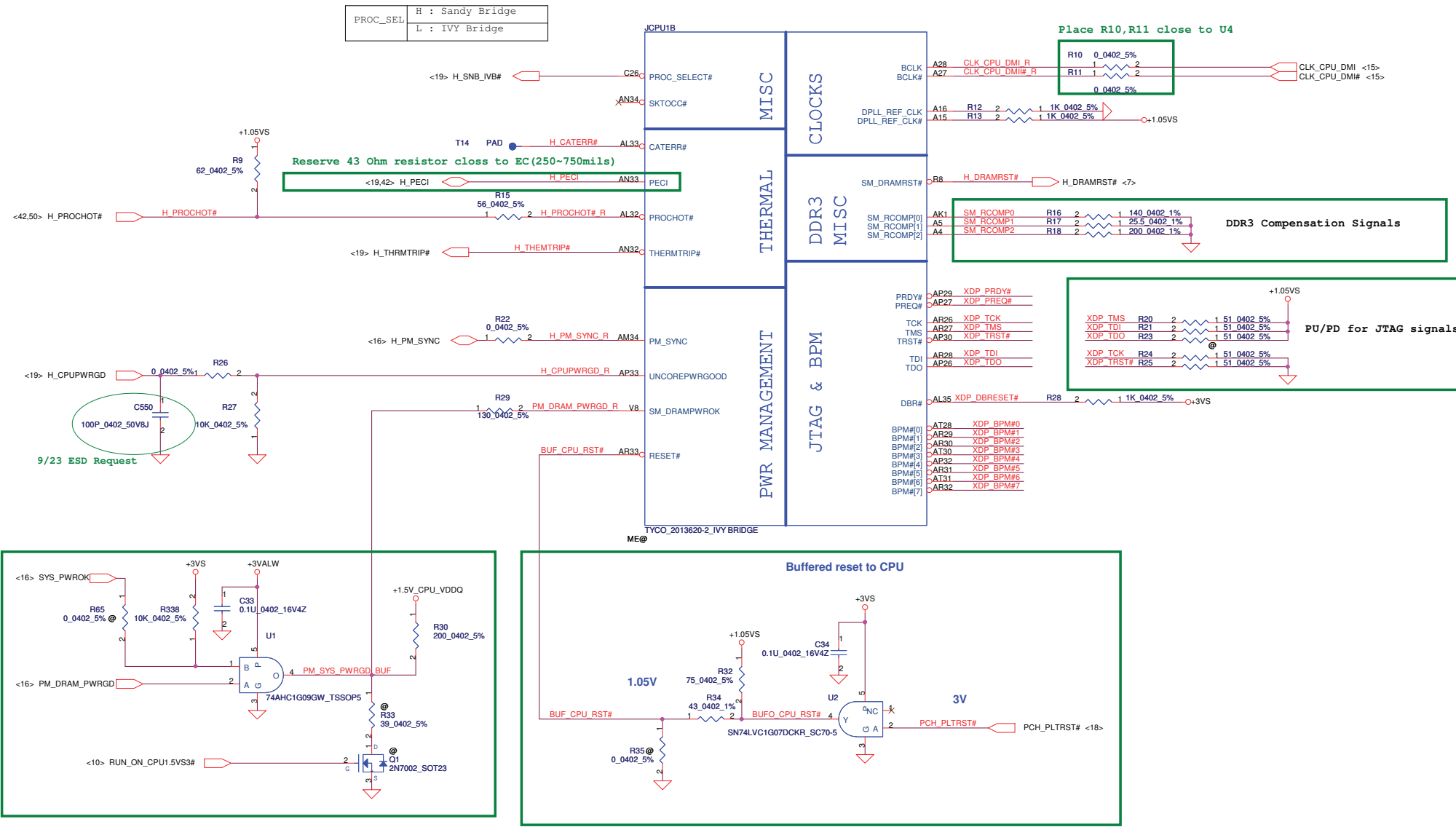
	Device ID
N13P-GT (28nm)	0x0FDB
N13E-GE (28nm)	0x0FDB
N13P-GL1 (40nm)	0x0DE9

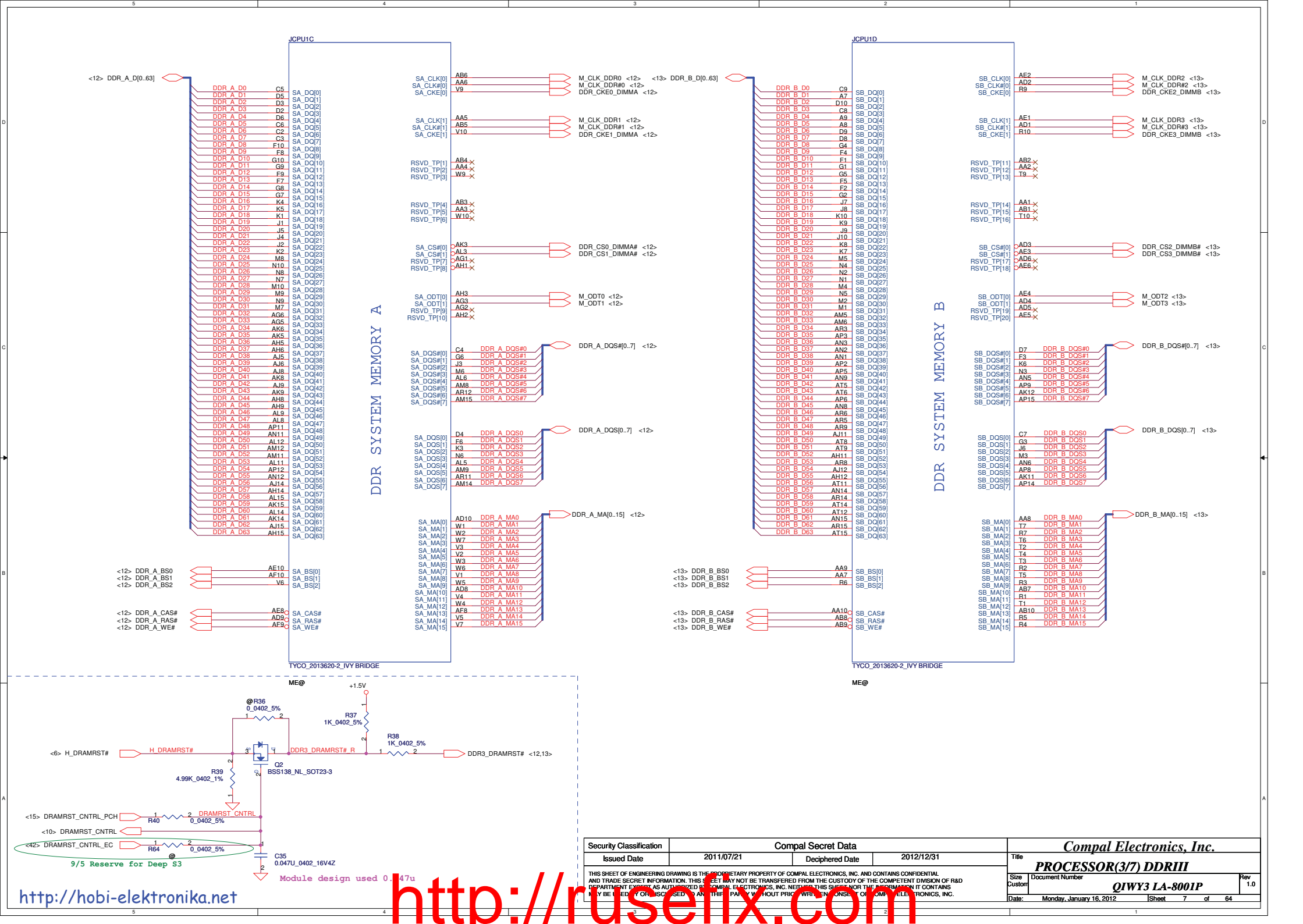
GPU	ROM_SO	ROM_SCLK	STRAP4	STRAP3	STRAP2	STRAP1	STRAP0
N13P-GT	PU 10K	PU 5K	PD 45K	PD 5K	PD 10K	PD 35K	PU 45K
N13E-GE	PU 10K	PU 5K	PD 45K	PD 5K	PD 25K	PD 35K	PU 45K
N13P-GL	PD 10K	PD 15K	NC	NC	PU 10K	PD 45K	PU 45K

GPU	N13P-GT	N13E-GE	N13P-GL
FB Memory (GDDR5)	ROM_SI	ROM_SI	ROM_SI
Samsung 2500MHz	K4G10325FG-HC04		
	32Mx32	PD 45K	PD 45K
Hynix 2500MHz	H5GQ1H24BFR-T2C		
	32Mx32	PD 35K	PD 35K
Samsung 2500MHz	K4G20325FD-FC04		
	64Mx32	PD 30K	PD 30K
Hynix 2500MHz	H5GQ2H24MFR-T2C		
	64Mx32	PD 25K	PD 25K

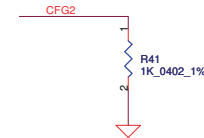
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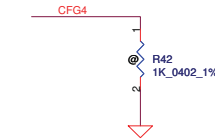




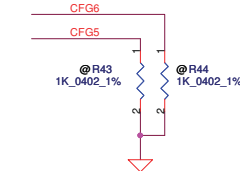
CFG Straps for Processor



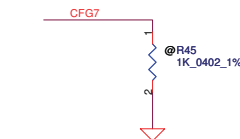
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1: Normal Operation; Lane # definition matches socket pin map definition * 0: Lane Reversed



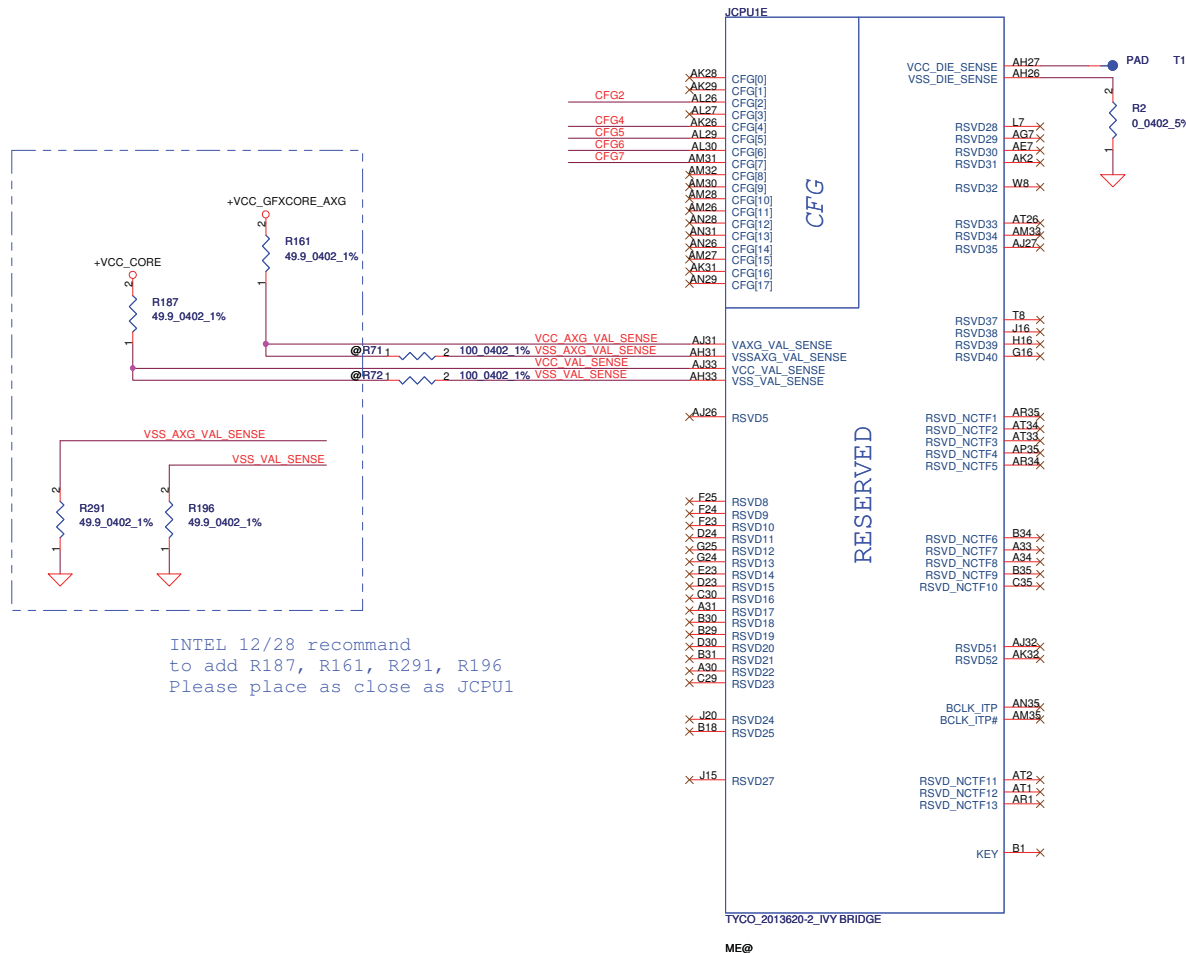
Display Port Presence Strap	
CFG4	* 1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port



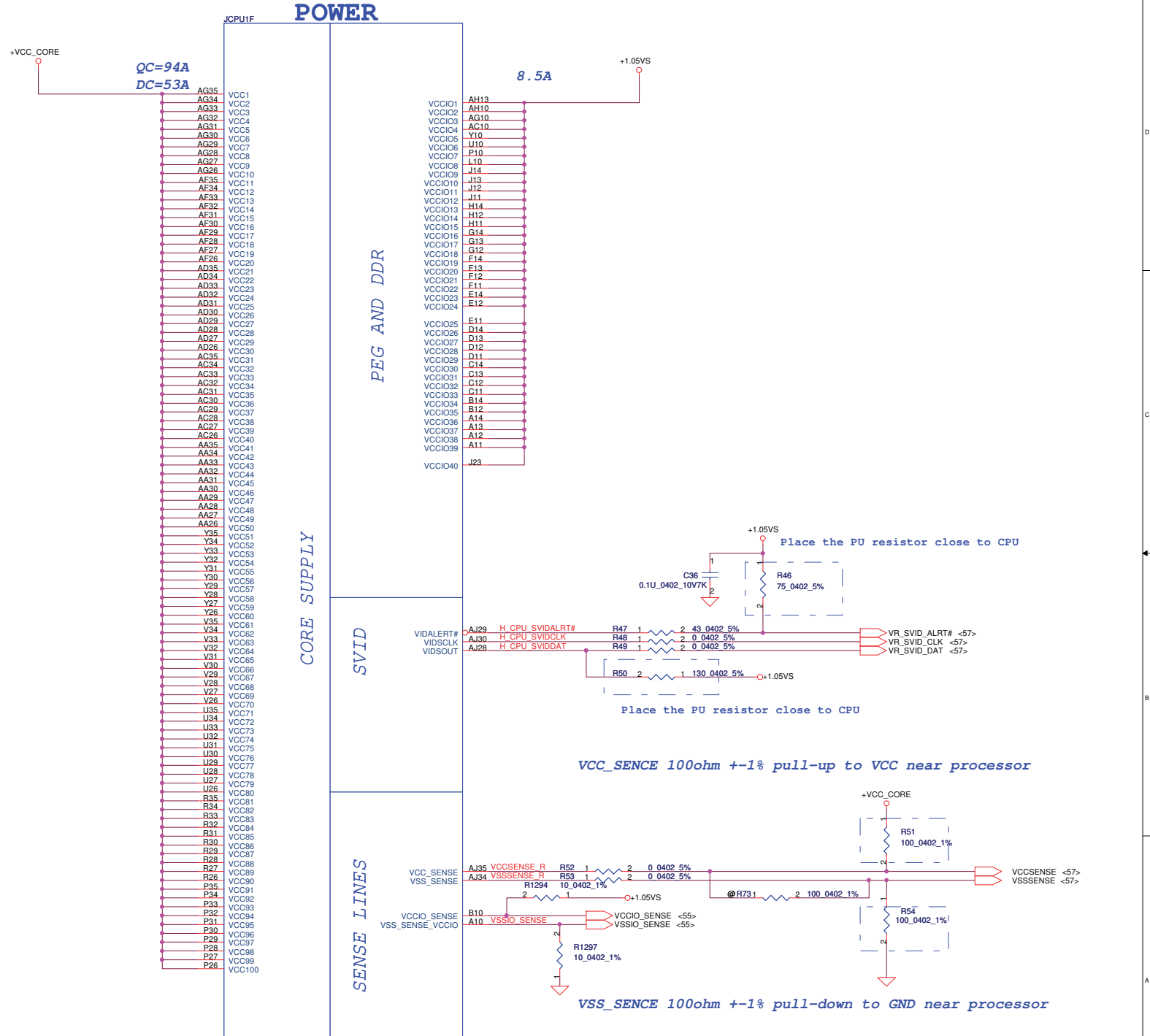
PCIe Port Bifurcation Straps	
CFG[6:5]	* 11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

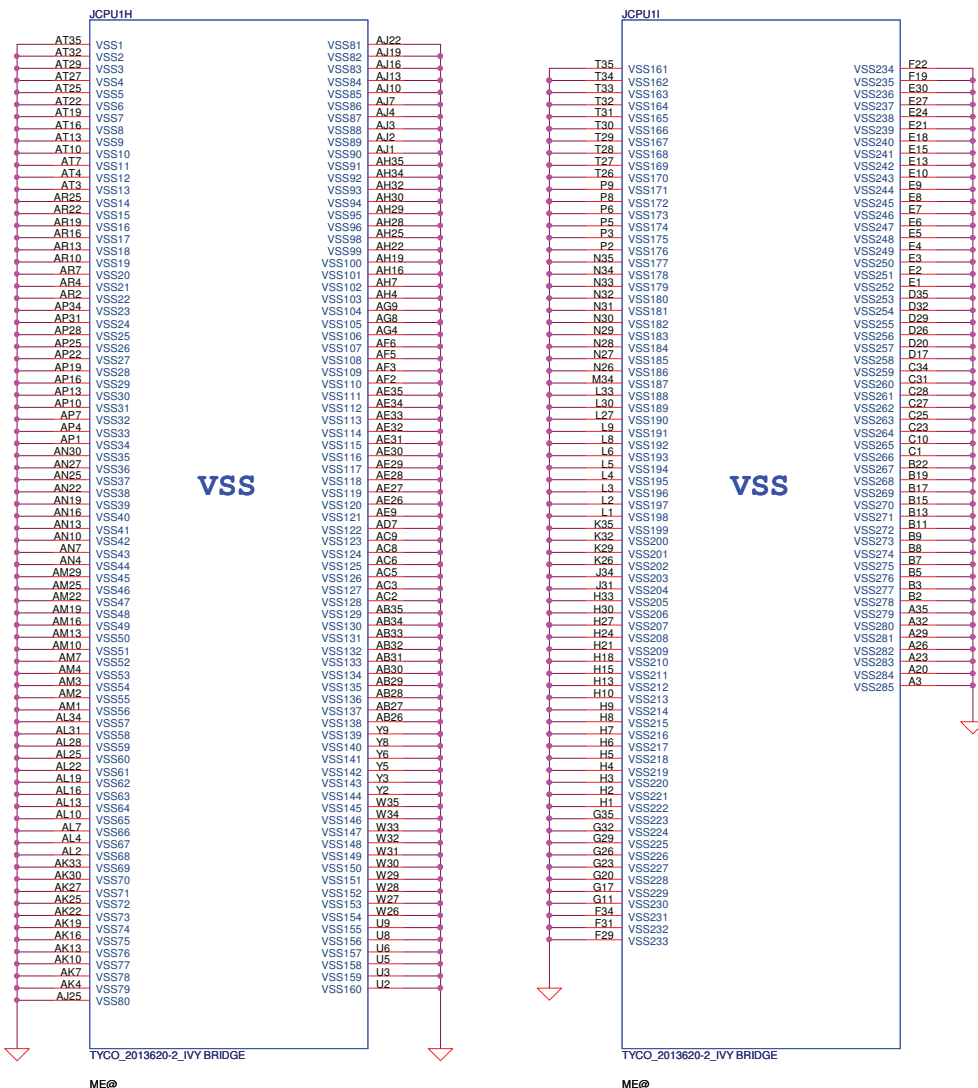


PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training



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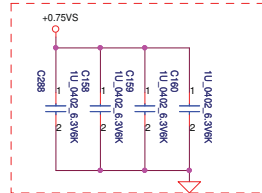


<7> DDR_A_D[0..63]
 <7> DDR_A_DQS[0..7]
 <7> DDR_A_DQS[0..7]
 <7> DDR_A_MA[0..15]

Layout Note:
Place near DIMM

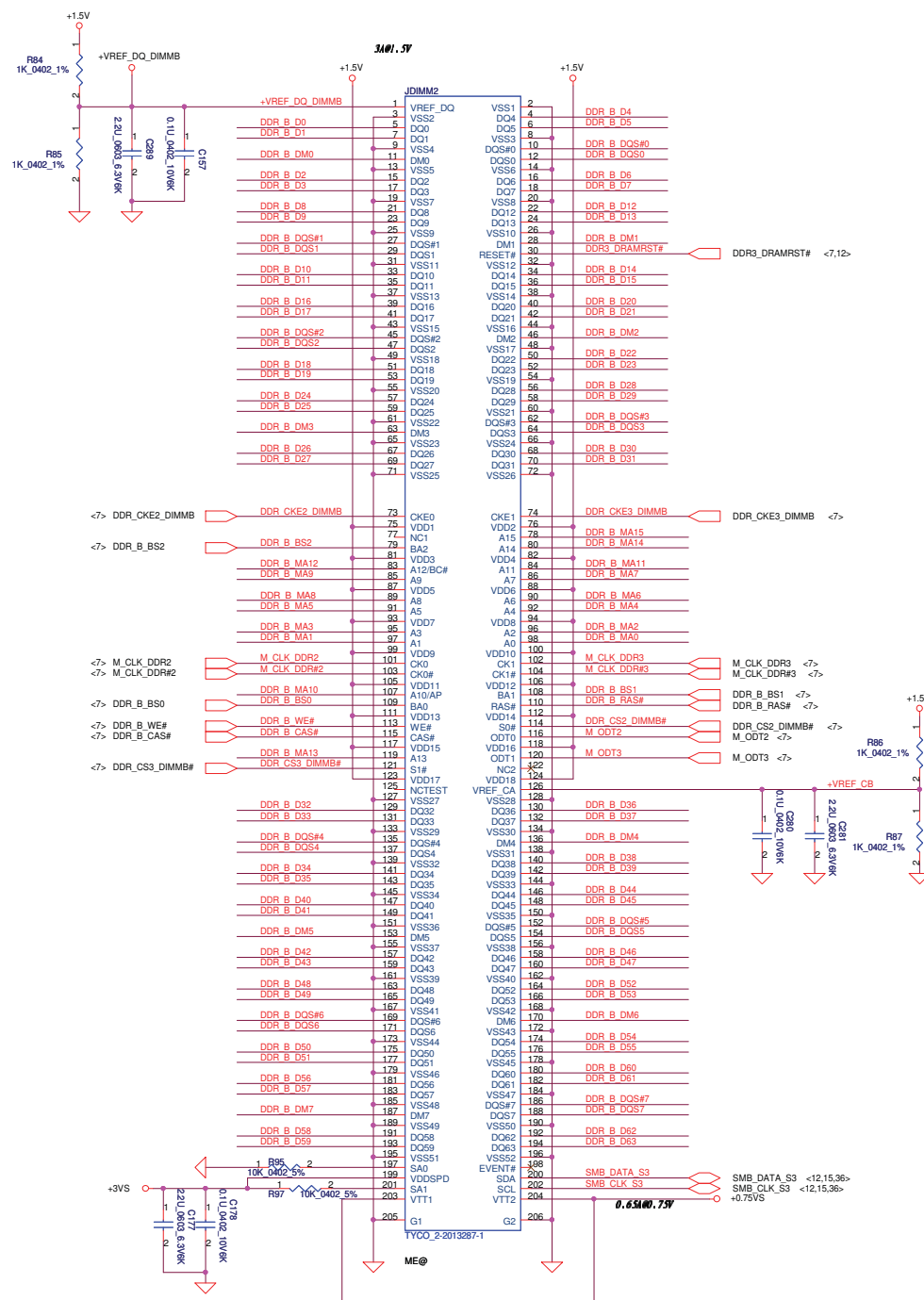
OSCON (220uF_6.3V_4.2L_ESR17m)*1=(SF000002Y00)
 (10uF_0603_6.3V)*8
 (0.1uF_402_10V)*4

Layout Note:
Place near DIMM



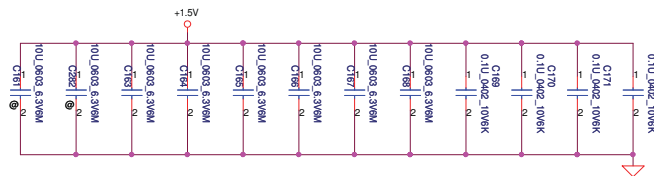
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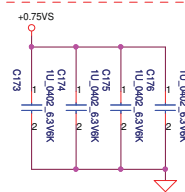


Layout Note:
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(10uF_0603_6.3V) *8
(0.1uF_402_10V) *4

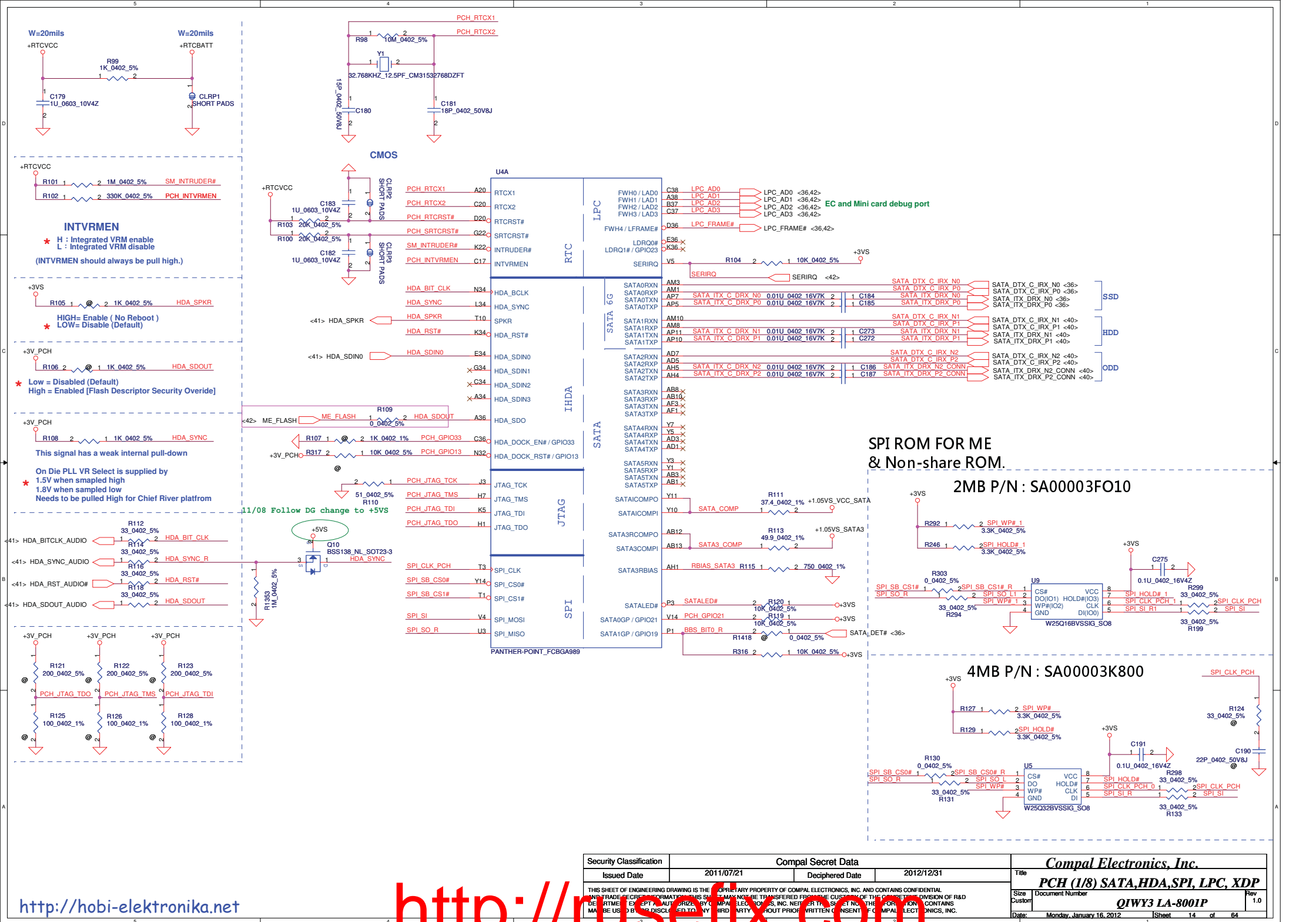


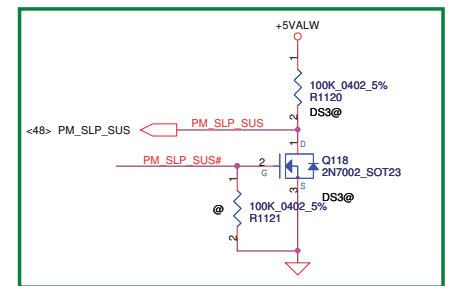
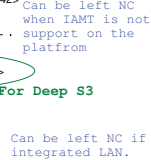
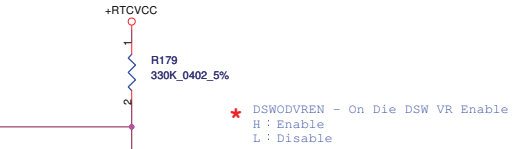
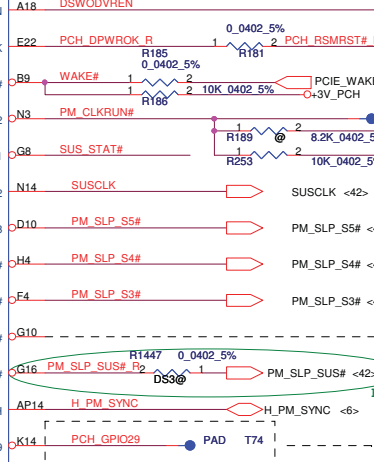
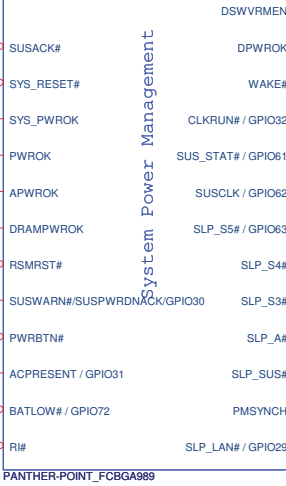
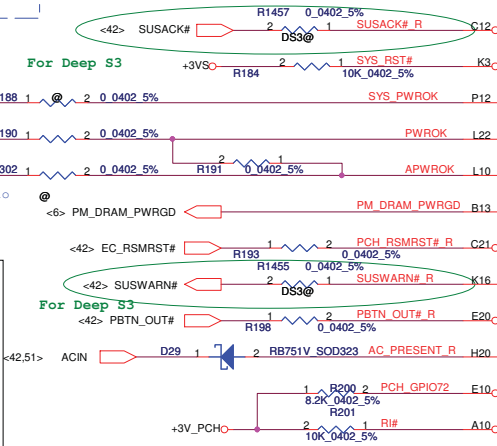
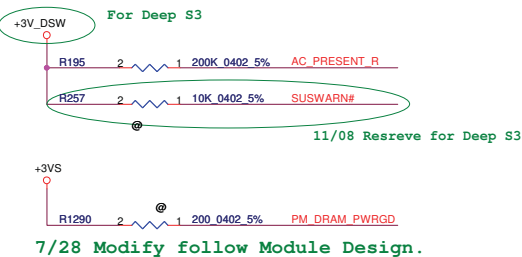
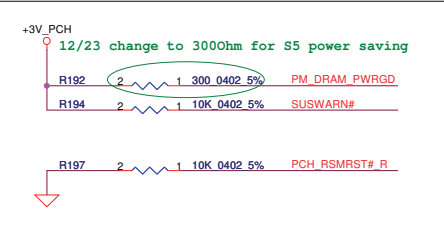
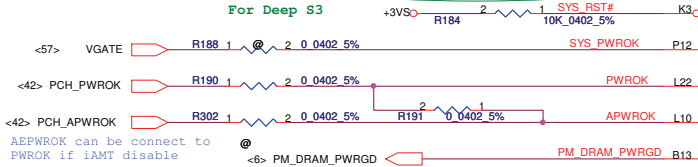
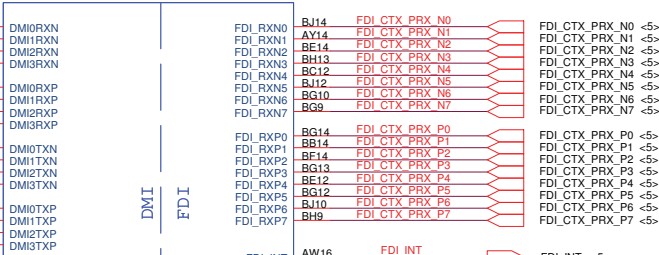
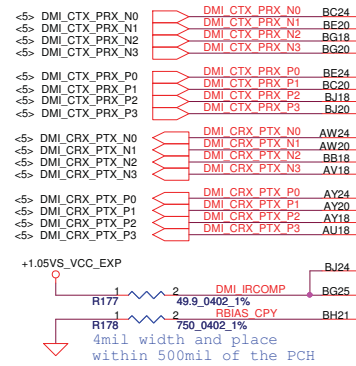
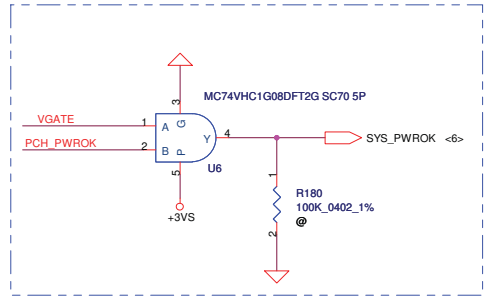
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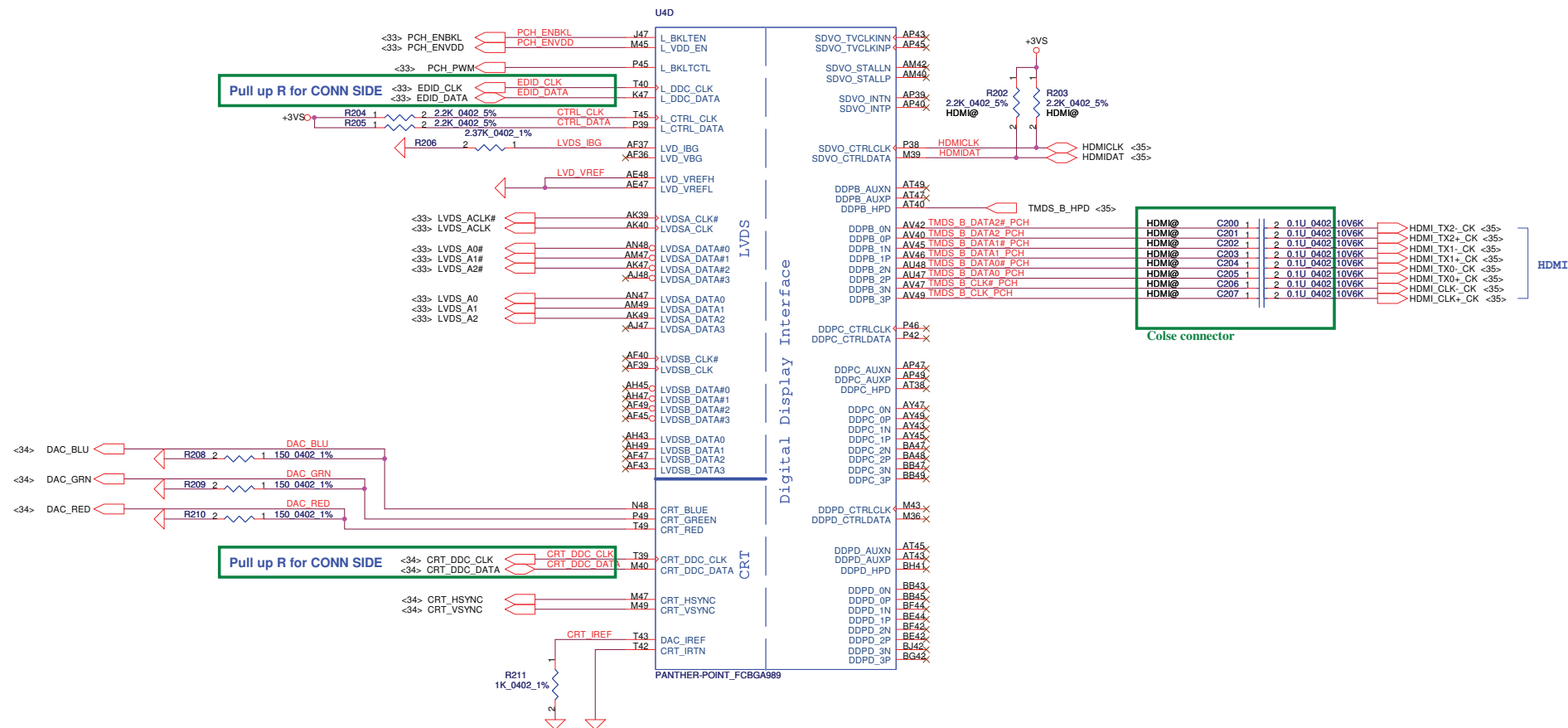
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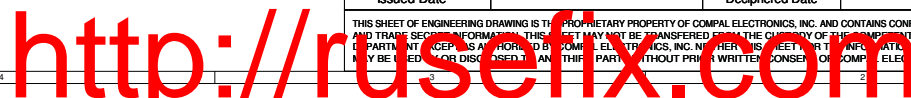
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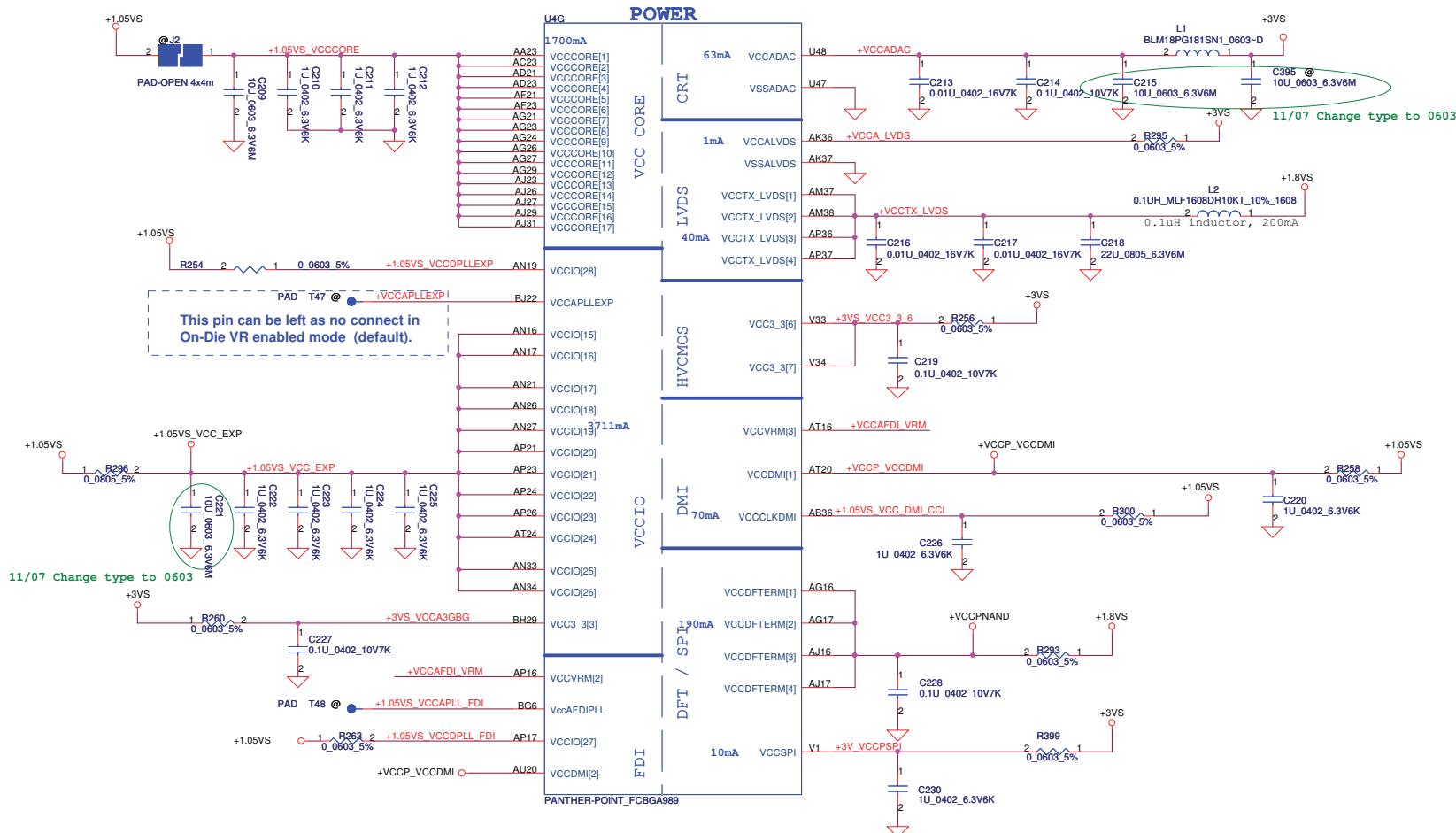


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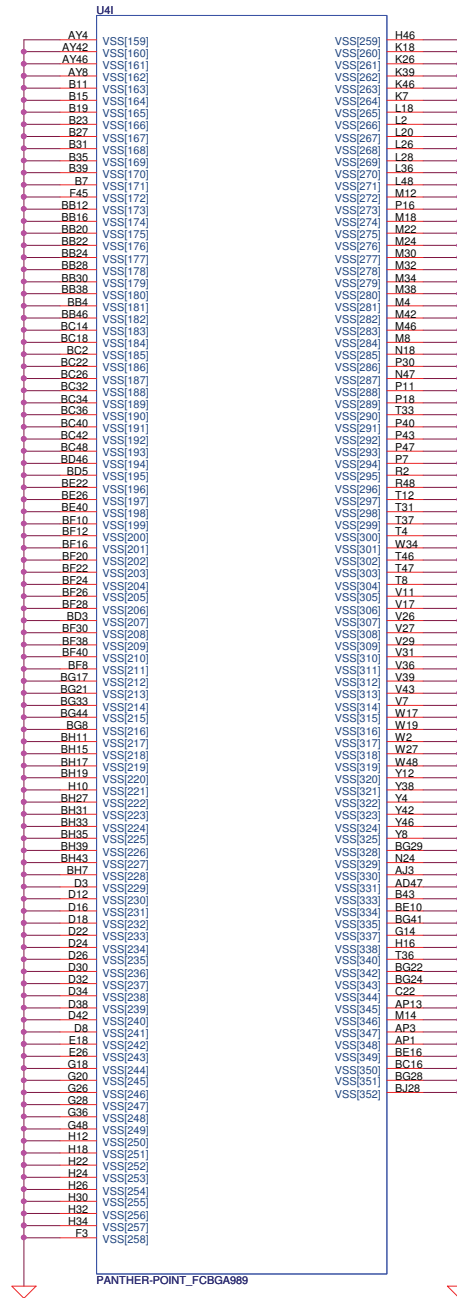
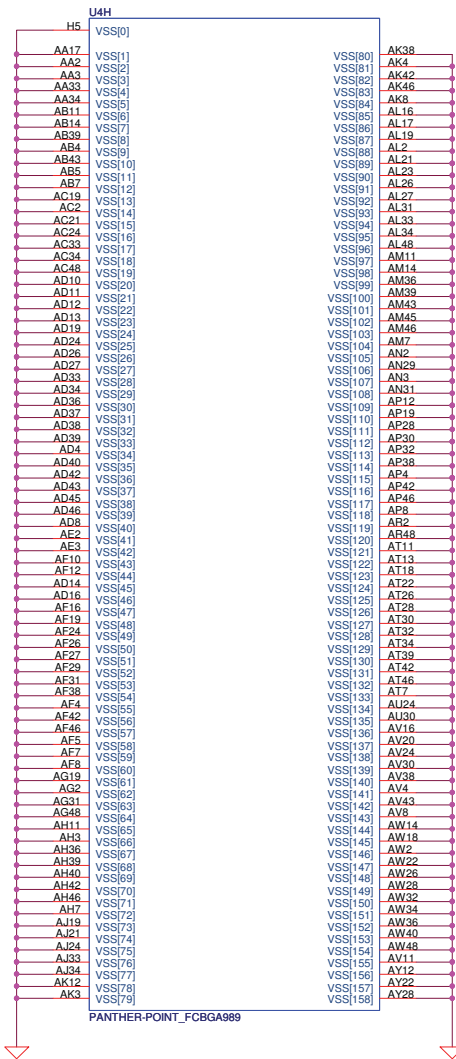
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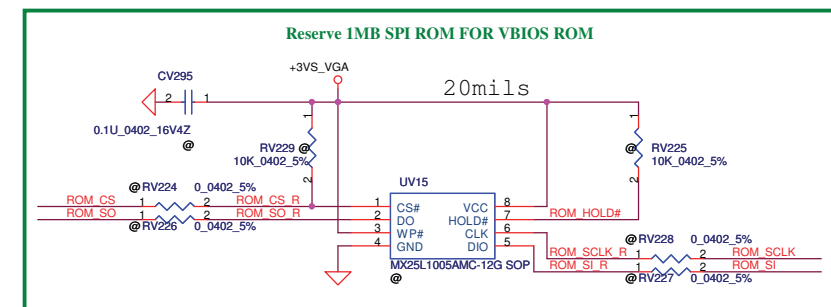
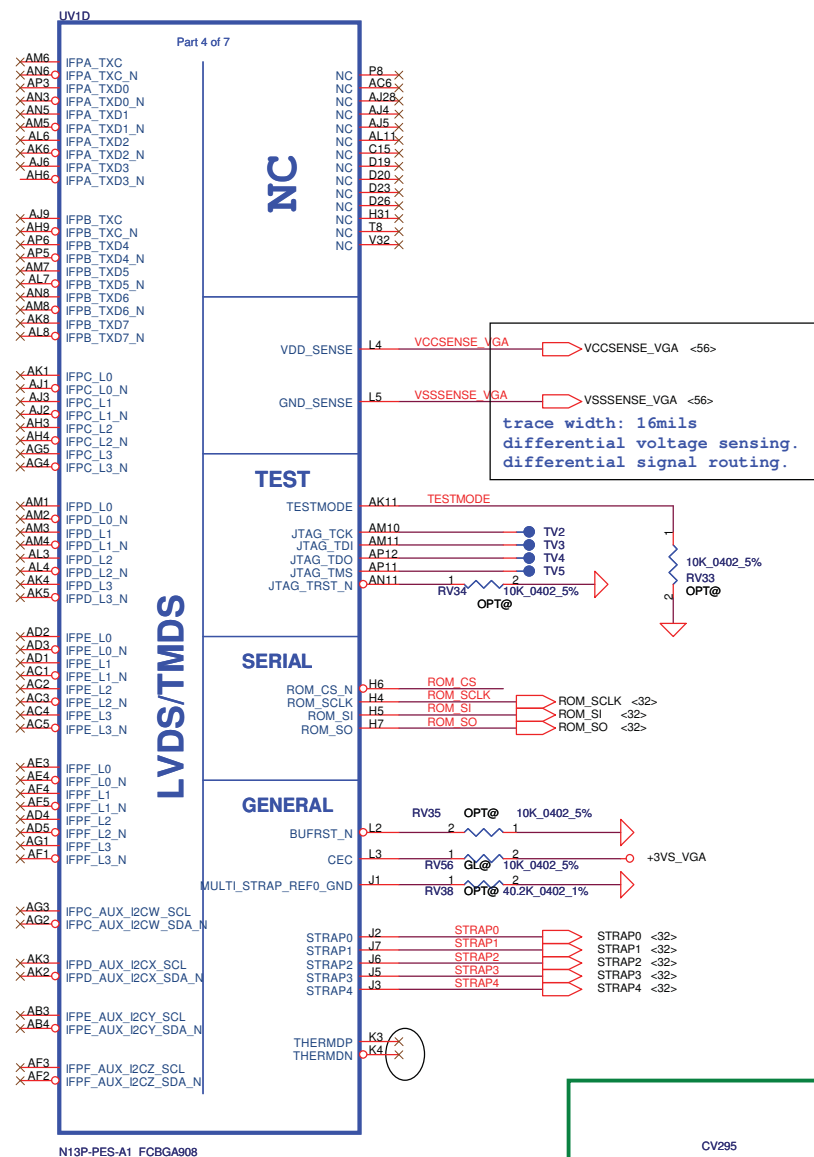


PCH Power Rail Table Refer to CPU EDS R1.5		
Voltage Rail	Voltage	S0 Iccmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.228
VccADAC	3.3	0.063
VccADPLLA	1.05	0.08
VccADPLLB	1.05	0.08
VccCore	1.05	1.7
VccDMI	1.05	0.047
VccIO	1.05	3.711
VccASW	1.05	0.903
VccSPI	3.3	0.01
VccDSW	3.3	0.001
VccDFTerm	1.8	0.002
VccRTC	3.3	6 uA
VccSus3_3	3.3	0.095
VccSusHDA	3.3 / 1.5	0.01
VccVRM	1.8 / 1.5	0.167
VccCLKDMI	1.05	0.07
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.04

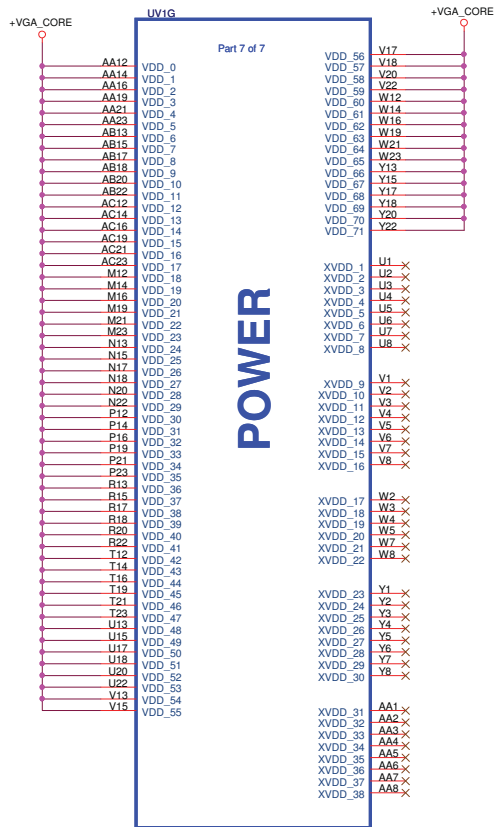
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/07/21	Deciphered Date	2012/12/31	Title	PCH (7/9) PWR
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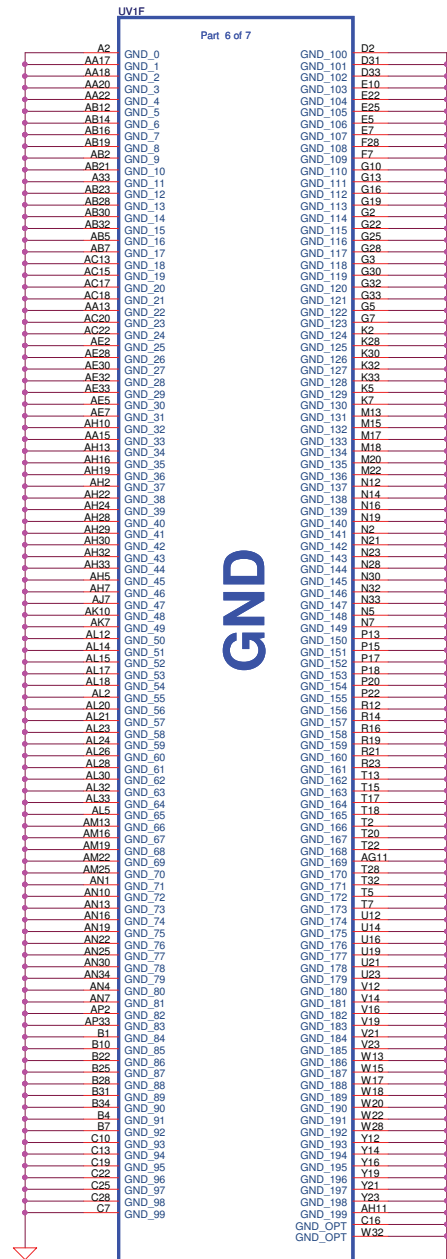
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Issued Date		2011/07/21		Deciphered Date		2012/12/31		Title			
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								Customer	QIWIY3 LA-8001P	1.0	
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Size	Document Number	QIYW3 LA-8001P		Rev	1.0
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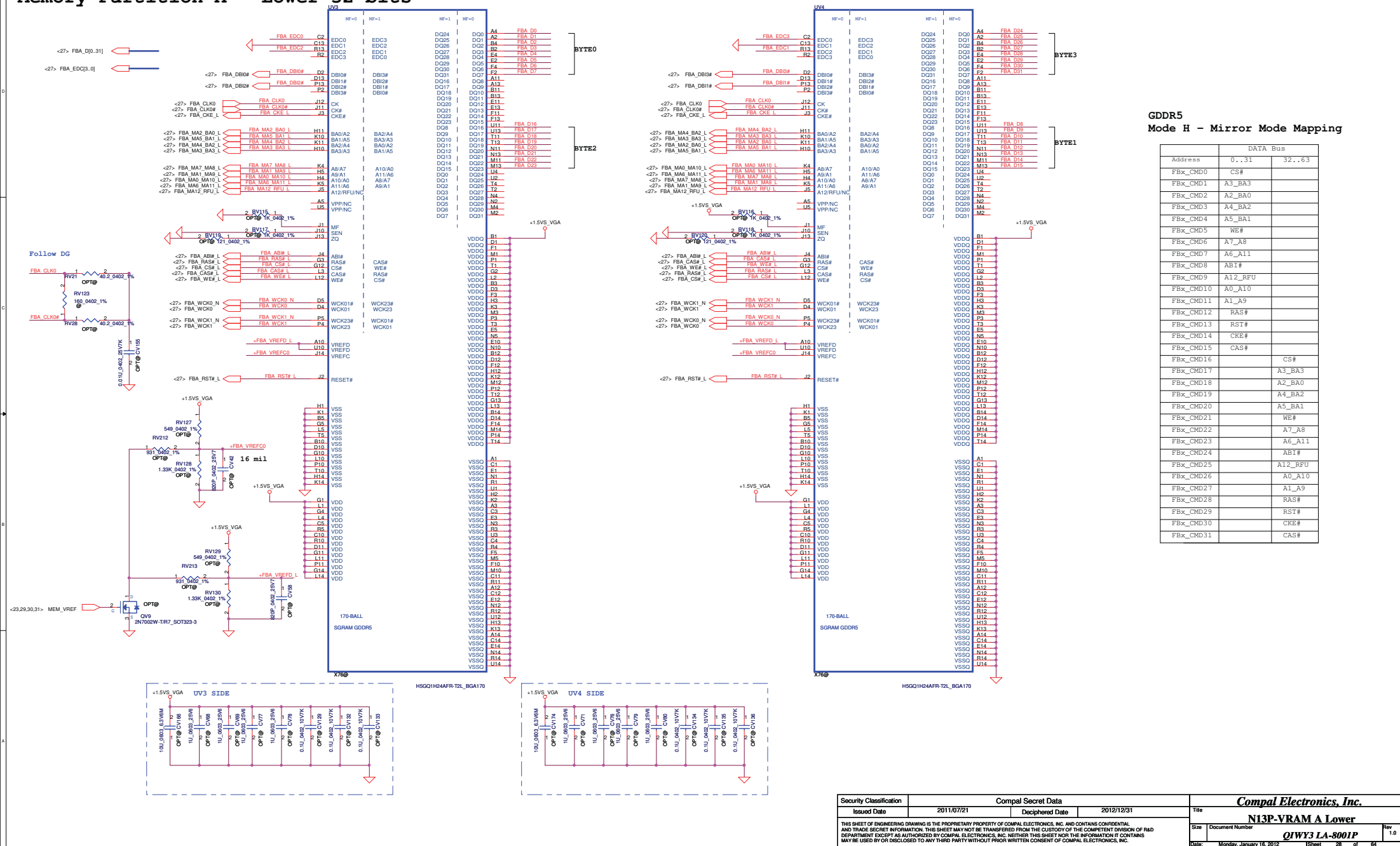


N13P-PES-A1_FCBGA908

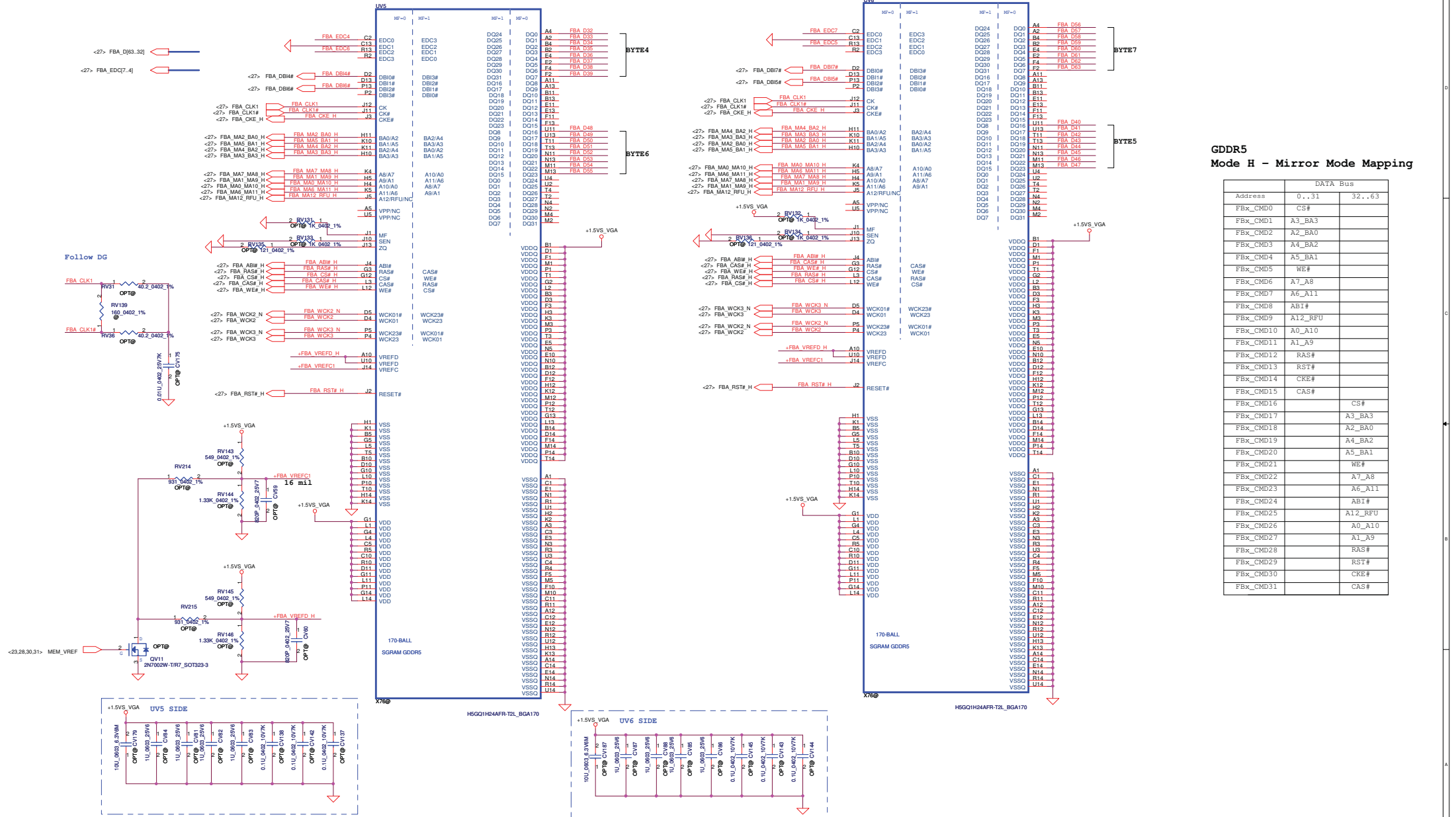


Security Classification		Compal Secret Data		N13P-PES-A1_FCBGA908		Compal Electronics, Inc.	
Issued Date		Deciphered Date		Title		N13P-VGA CORE, GND	
2011/07/21		2012/12/31		Size		Document Number	
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Memory Partition A - Lower 32 bits



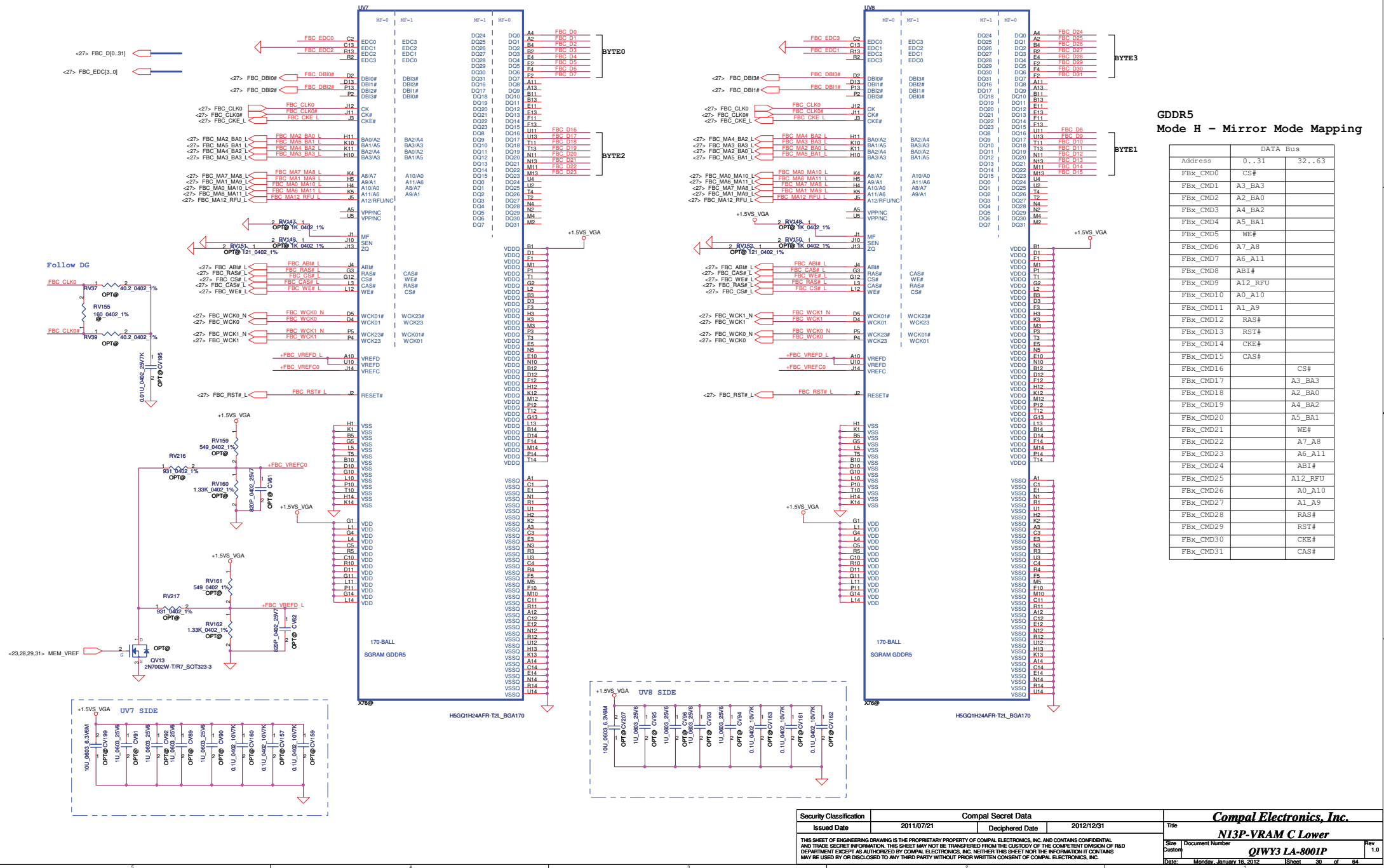
Memory Partition A - Upper 32 bits



GDDR5 Mode H - Mirror Mode Mapping

Address	DATA Bus
FbX_CMD0	CS#
FbX_CMD1	A3_BA3
FbX_CMD2	A2_BA0
FbX_CMD3	A2_BA2
FbX_CMD4	A5_BA1
FbX_CMD5	WE#
FbX_CMD6	A7_A8
FbX_CMD7	A6_A11
FbX_CMD8	AB1#
FbX_CMD9	A12_RFU
FbX_CMD10	A0_A10
FbX_CMD11	A1_A9
FbX_CMD12	RAS#
FbX_CMD13	RST#
FbX_CMD14	CKE#
FbX_CMD15	CAS#
FbX_CMD16	CS#
FbX_CMD17	A3_BA3
FbX_CMD18	A2_BA0
FbX_CMD19	A4_BA2
FbX_CMD20	A5_BA1
FbX_CMD21	WE#
FbX_CMD22	A7_A8
FbX_CMD23	A6_A11
FbX_CMD24	AB1#
FbX_CMD25	A12_RFU
FbX_CMD26	A0_A10
FbX_CMD27	A1_A9
FbX_CMD28	RAS#
FbX_CMD29	RST#
FbX_CMD30	CKE#
FbX_CMD31	CAS#

Memory Partition C - Lower 32 bits

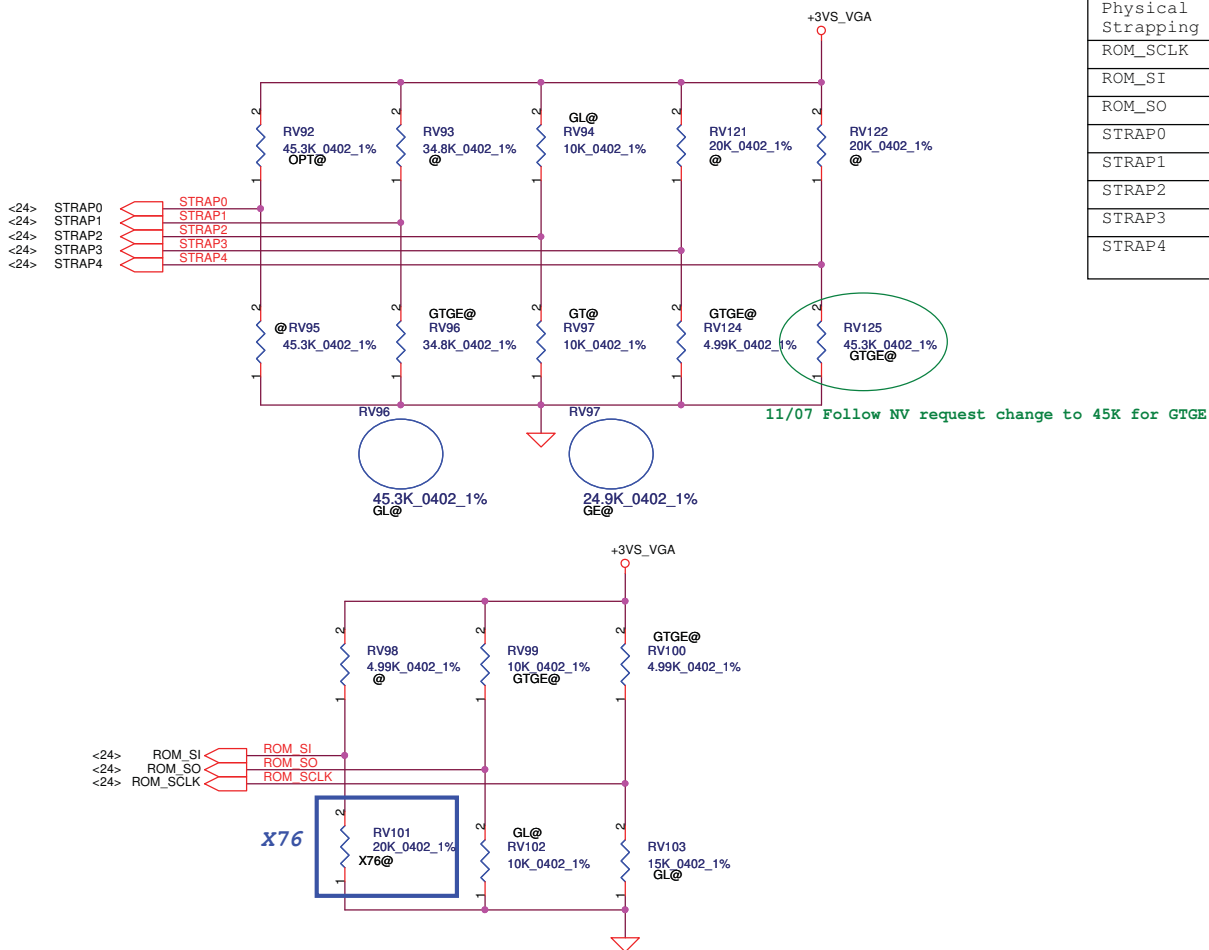


<http://hobi-elektronika.net>



	DATA Bus	
Address	0..31	32..63
FbX_CMD0	CS#	
FbX_CMD1	A3_BA3	
FbX_CMD2	A2_BA0	
FbX_CMD3	A4_BA2	
FbX_CMD4	A5_BA1	
FbX_CMD5	WE#	
FbX_CMD6	A7_A8	
FbX_CMD7	A6_A11	
FbX_CMD8	AB1#	
FbX_CMD9	A12_RFU	
FbX_CMD10	A0_A10	
FbX_CMD11	A1_A9	
FbX_CMD12	RAS#	
FbX_CMD13	RST#	
FbX_CMD14	CKE#	
FbX_CMD15	CAS#	
FbX_CMD16		CS#
FbX_CMD17		A3_BA3
FbX_CMD18		A2_BA0
FbX_CMD19		A4_BA2
FbX_CMD20		A5_BA1
FbX_CMD21		WE#
FbX_CMD22		A7_A8
FbX_CMD23		A6_A11
FbX_CMD24		AB1#
FbX_CMD25		A12_RFU
FbX_CMD26		A0_A10
FbX_CMD27		A1_A9
FbX_CMD28		RAS#
FbX_CMD29		RST#
FbX_CMD30		CKE#
FbX_CMD31		CAS#

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Physical Strapping pin	Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SCLK	+3VS_VGA	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM
ROM_SI	+3VS_VGA	RAM_CFG[3]	RAM_CFG[2]	RAM_CFG[1]	RAM_CFG[0]
ROM_SO	+3VS_VGA	FB[1]	FB[0]	SMB_ALT_ADDR	VGA_DEVICE
STRAP0	+3VS_VGA	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	+3VS_VGA	3GIO_PAD_CFG_ADR[3]	3GIO_PAD_CFG_ADR[2]	3GIO_PAD_CFG_ADR[1]	3GIO_PAD_CFG_ADR[0]
STRAP2	+3VS_VGA	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP3	+3VS_VGA	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	+3VS_VGA	RESERVED	PCIE_SPEED_CHANGE_GEN3	PCIE_MAX_SPEED	DP_PLL_VDD33V

Resistor Values	Pull-up to +3VS_VGA	Pull-down to Gnd
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

3GIO_PADCFG		XCLK_417	
3GIO_PADCFG[3:0]		0	277MHz (Default)
0110	Notebook Default	1	Reserved
SLOT_CLK_CFG			
0	GPU and MCH don't share a common reference clock		
1	GPU and MCH share a common reference clock (Default)		
SMBUS_ALT_ADDR		VGA_DEVICE	
0	0x9E (Default)	0	3D Device (Class Code 302h)
1	0x9C (Multi-GPU usage)	1	VGA Device (Default)
SUB_VENDOR		USER Straps	
0	No VBIOS ROM	User[3:0]	
1	BIOS ROM is present (Default)	1000-1100	Customer defined
FB_0_BAR_SIZE		PEX_PLL_EN_TERM	
0	Reserved	0	Disable (Default)
1	Reserved	1	Enable
2	256MB (Default)	PCIE_MAX_SPEED	
3	Reserved	0	Limit to PCIE Gen1
		1	PCIE Gen 2/3 Capable

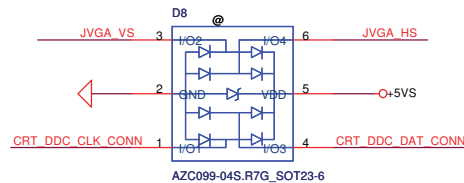
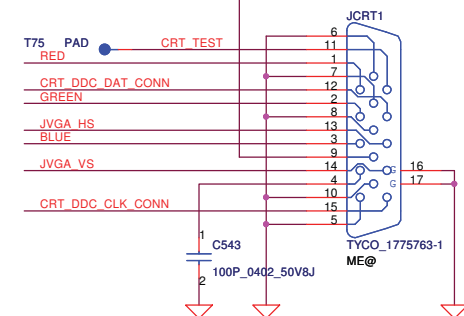
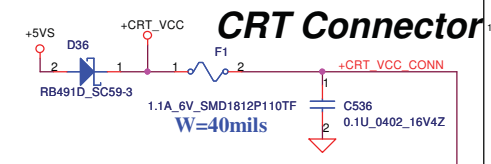
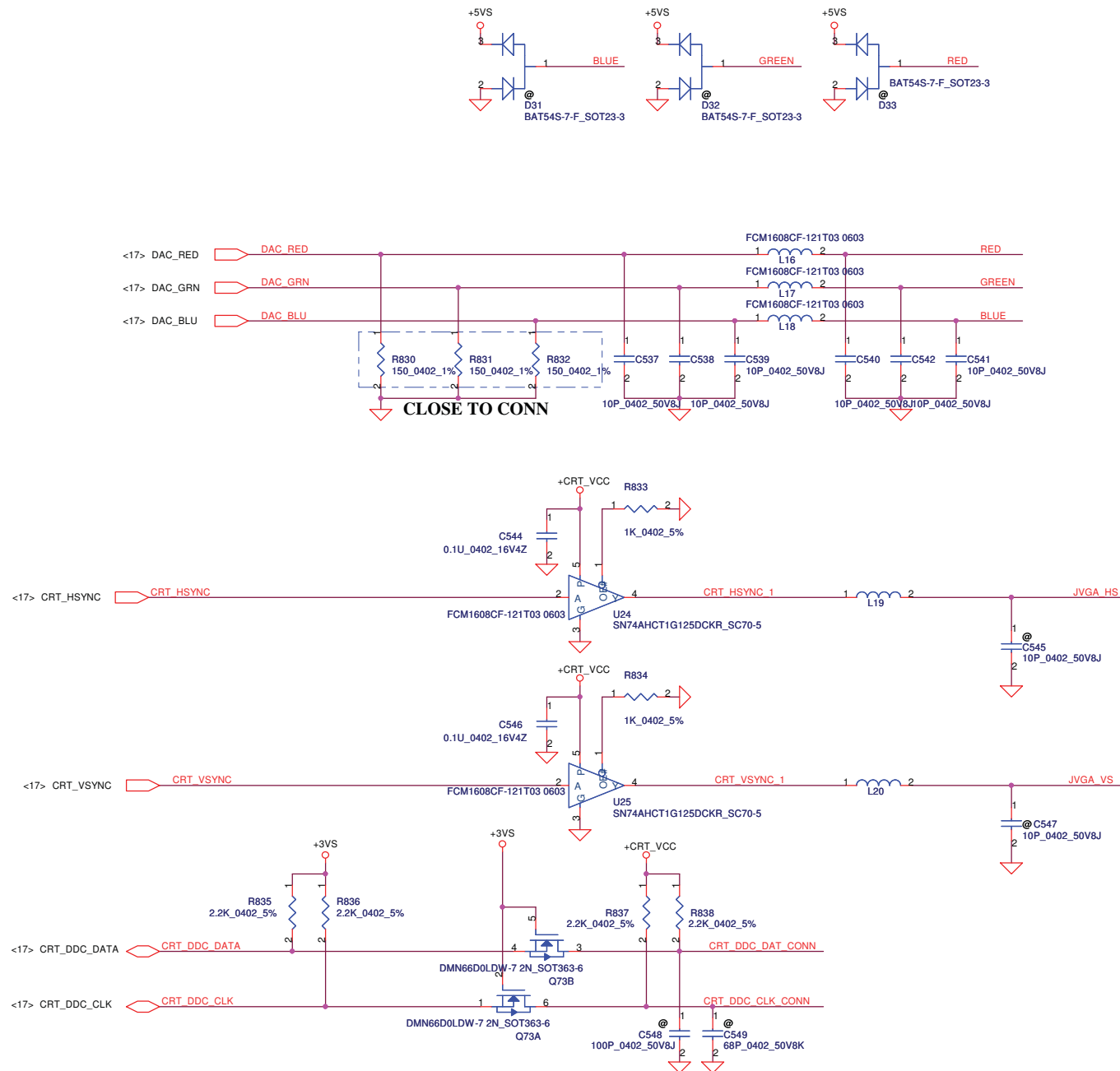
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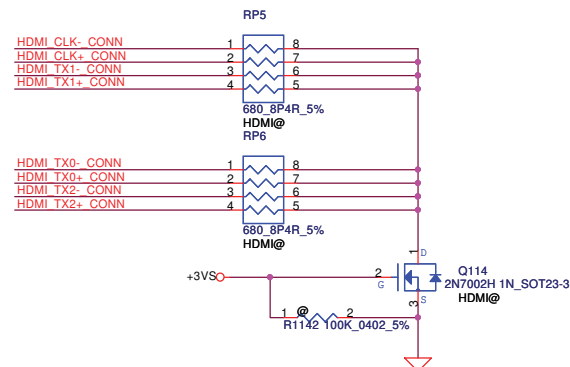
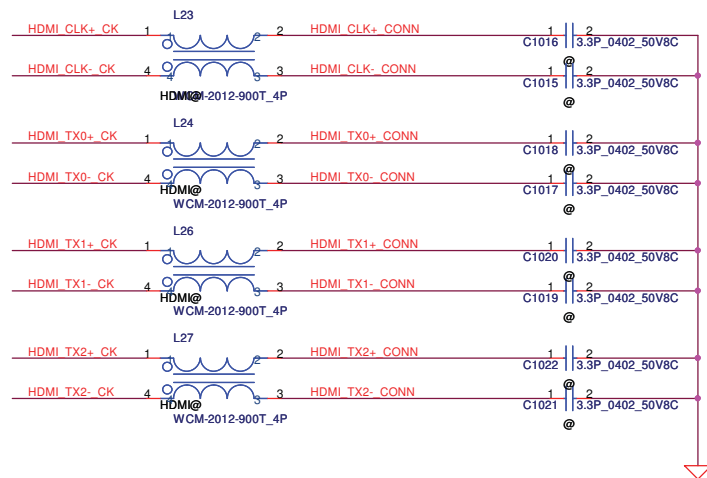
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QIWIY3 LA-8001P

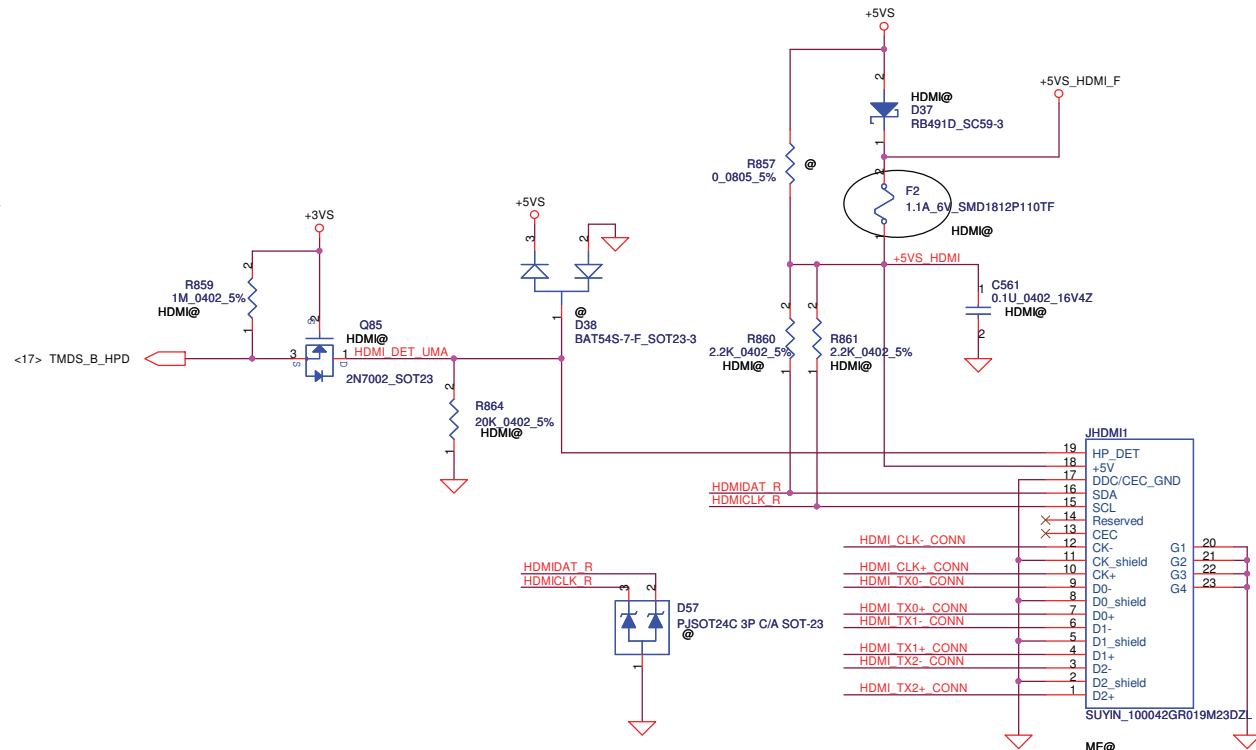
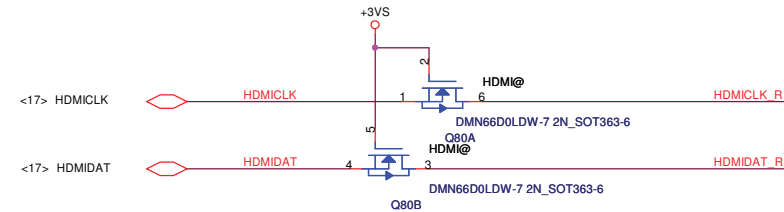
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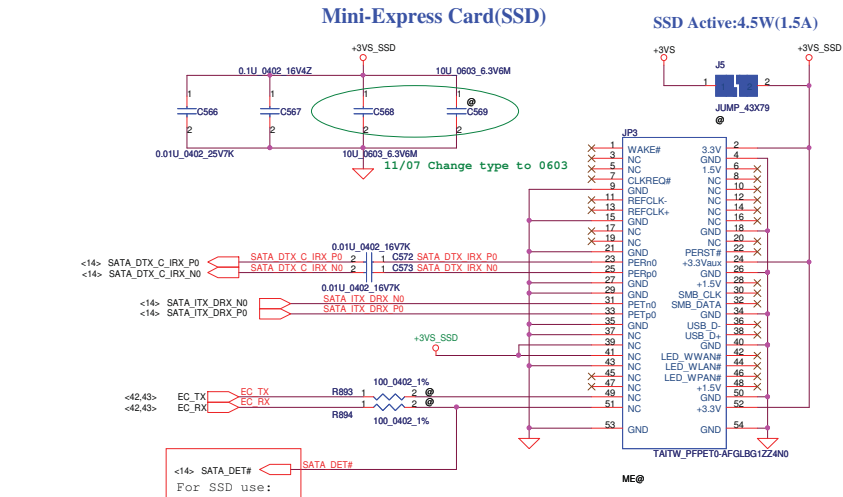
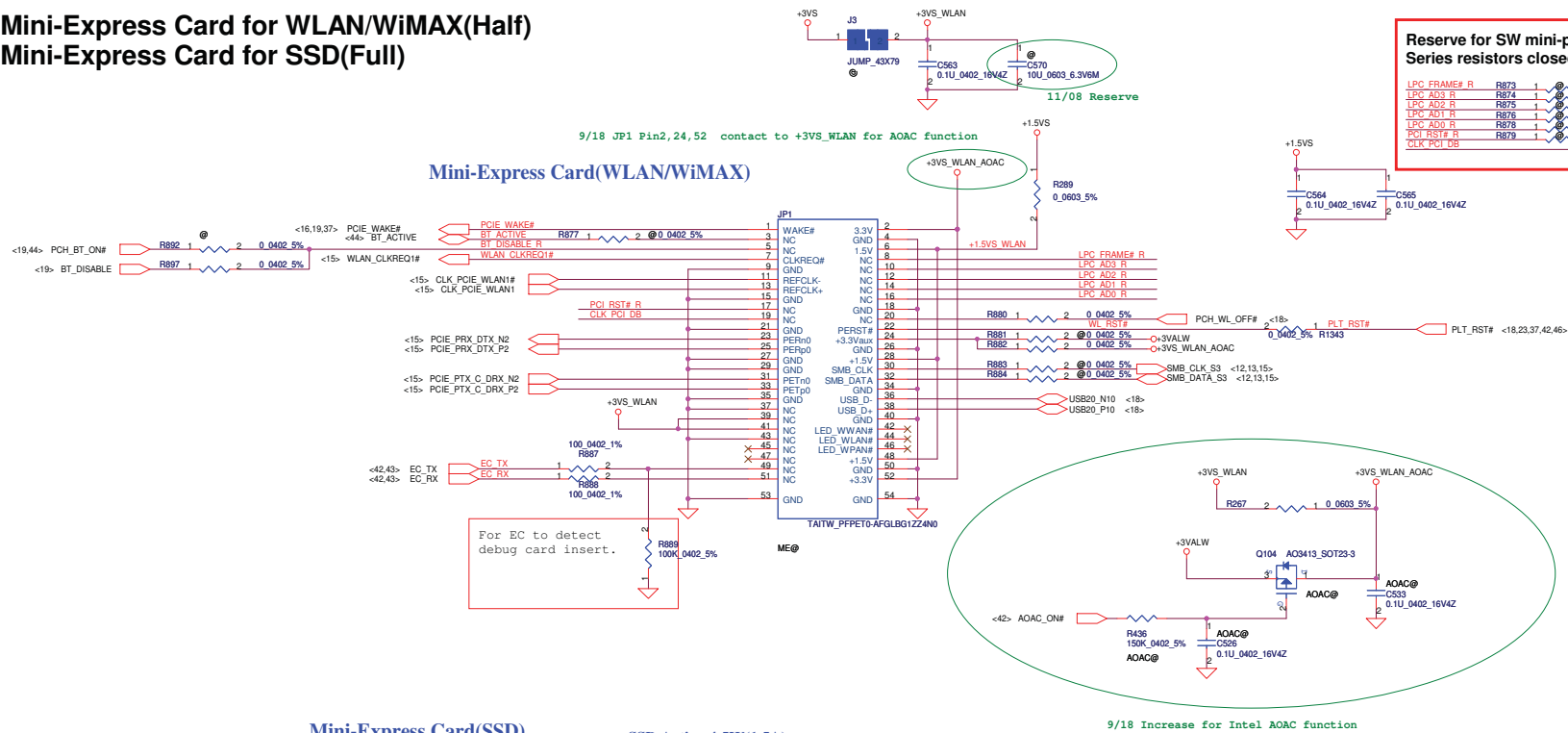


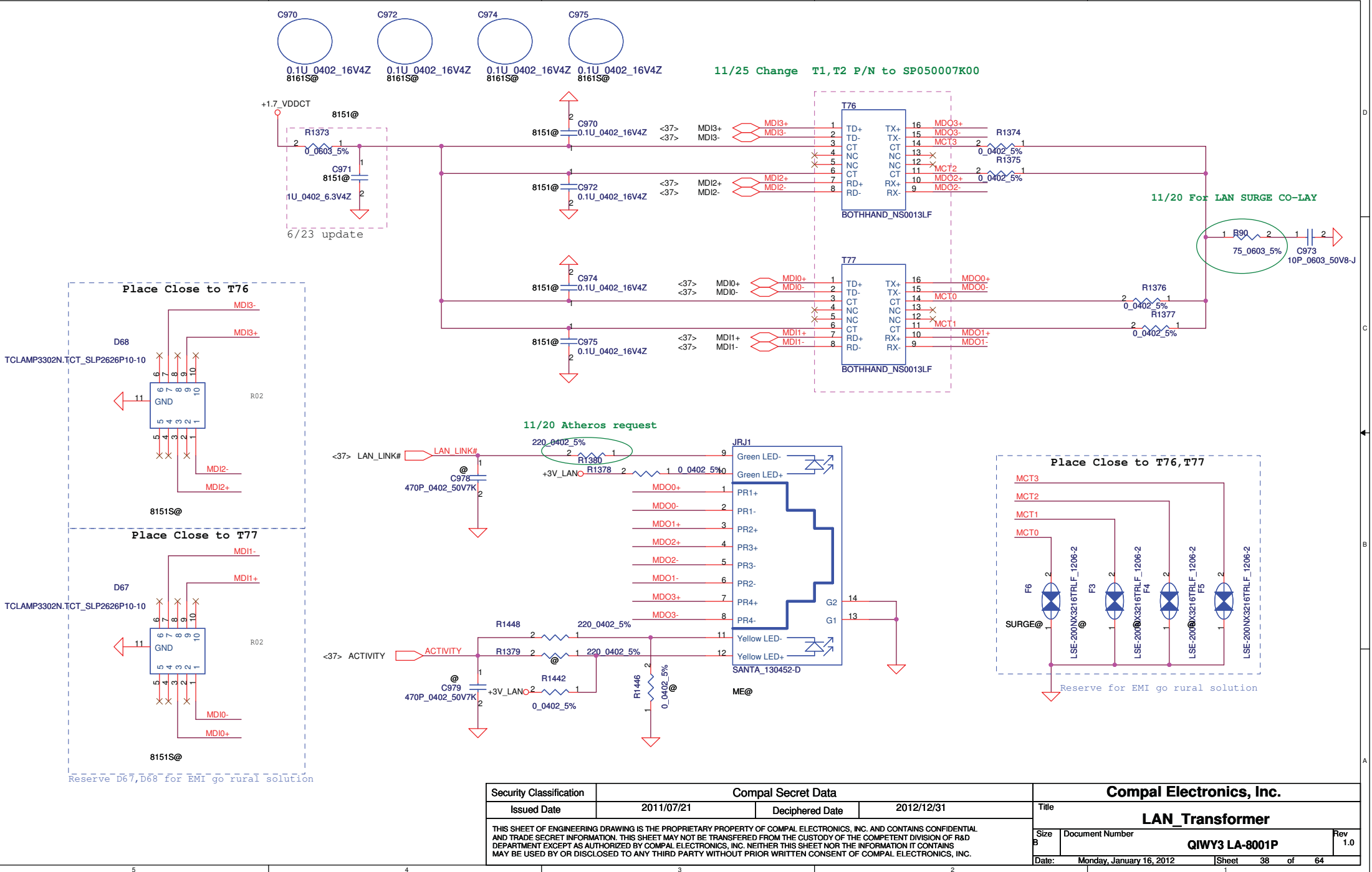
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<17>	HDMI_TX0+_CK	HDMI_TX0+_CK	R867	1	2	0.0402	5%	HDMI_TX0+_CONN
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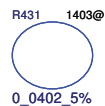
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Mini-Express Card for WLAN/WiMAX(Half)
Mini-Express Card for SSD(Full)

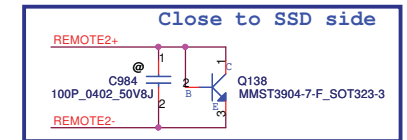
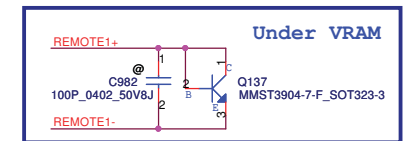
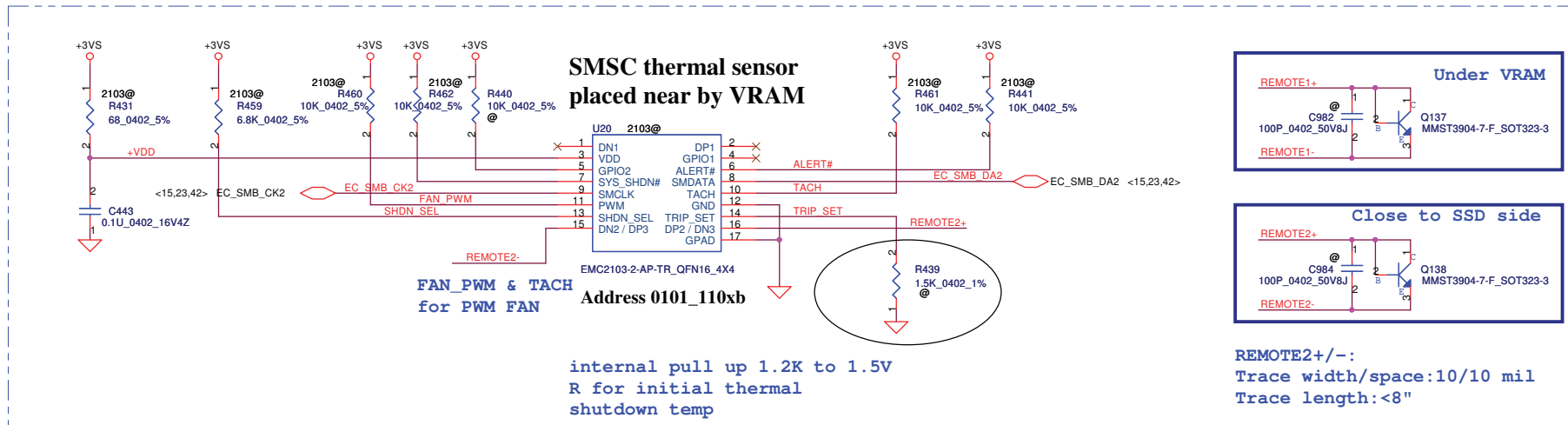




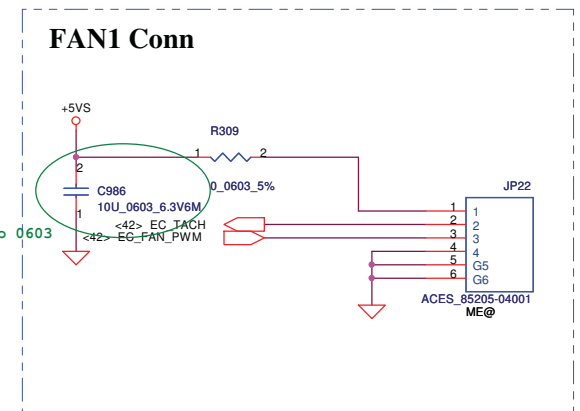
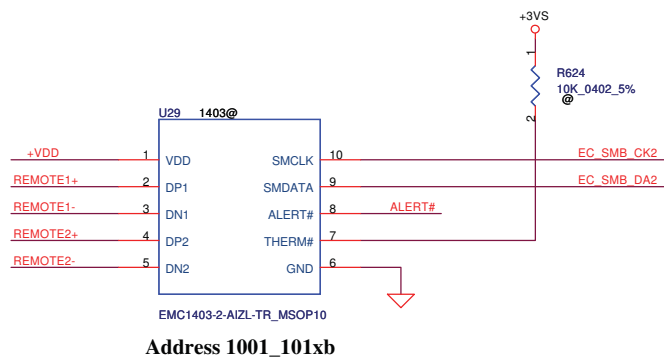
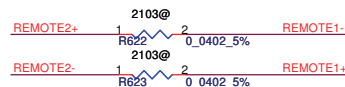
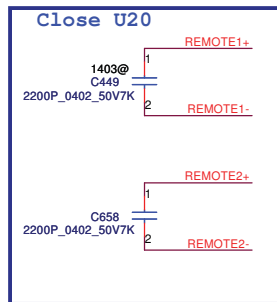
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B	QIWIY3 LA-8001P			1.0	
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1403:
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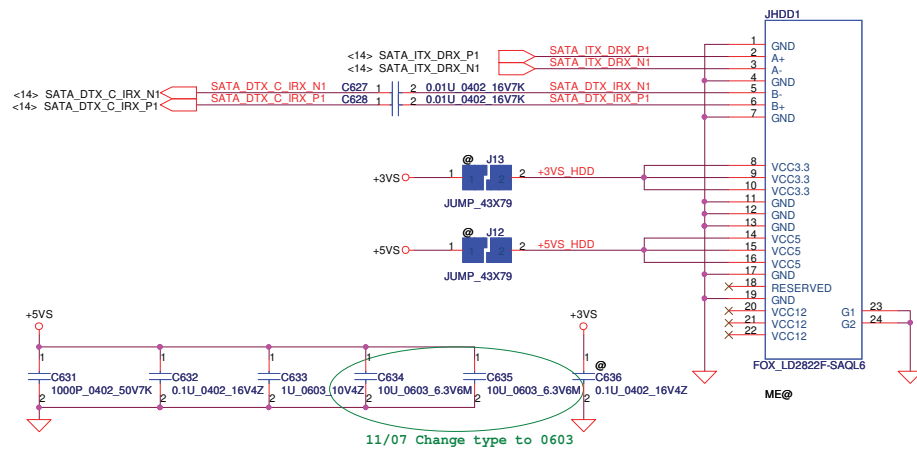
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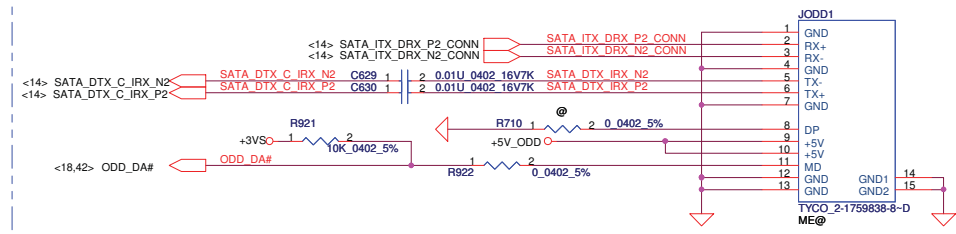
Shutdown Temp	TRIP_SET R1387 (1%)
93	953ohm
94	1020ohm
95	1100ohm
96	1150ohm
97	1240ohm
98	1330ohm
99	1400ohm
100	1500ohm
101	1580ohm
102	1690ohm
103	1820ohm
104	1960ohm
105	2050ohm

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2011/07/21				2012/12/31				Title			
2012/12/31				EMC1403/2103 Thermal sensor/FAN				Size			
Document Number				QIWIY3 LA-8001P				Date			
Monday, January 16, 2012				Sheet 39 of 64				Rev			
1.0											

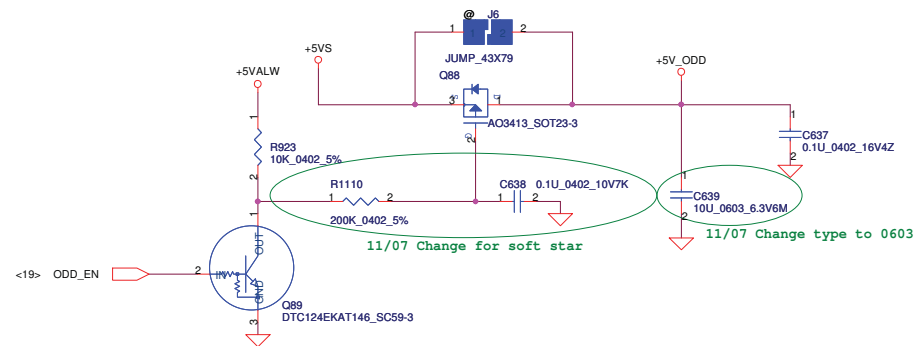
SATA HDD Conn.



SATA ODD Conn.



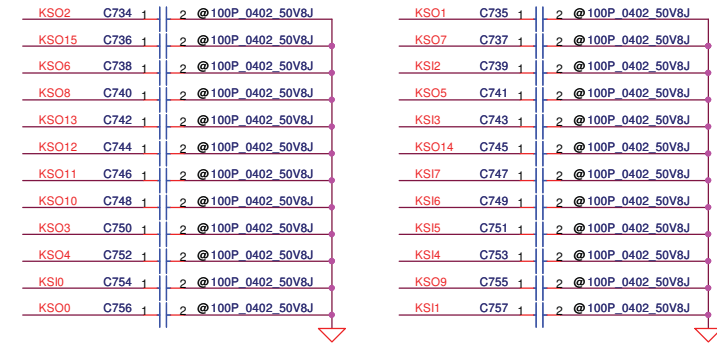
ODD Power Control



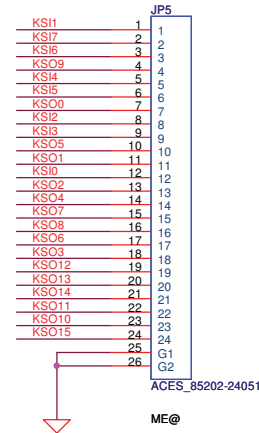
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Size B	Document Number	QIWIY3 LA-8001P		Rev	1.0
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INT_KBD Conn.

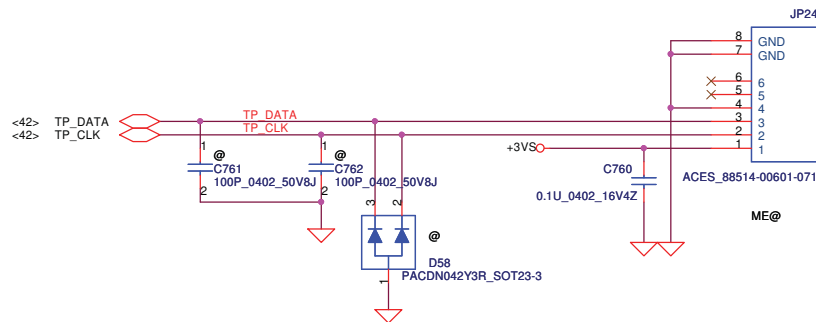
KS[0..7] <42>
KSO[0..15] <42>



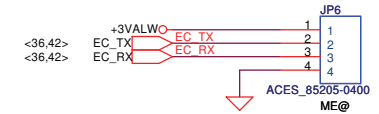
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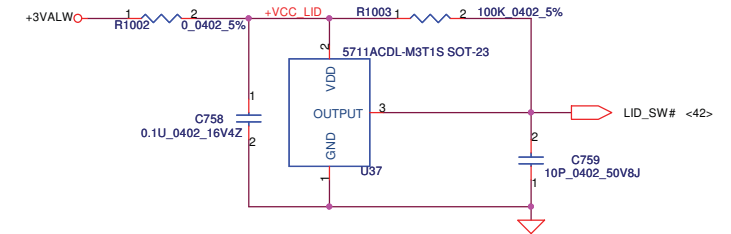
To TP/B Conn.



EC DEBUG PORT

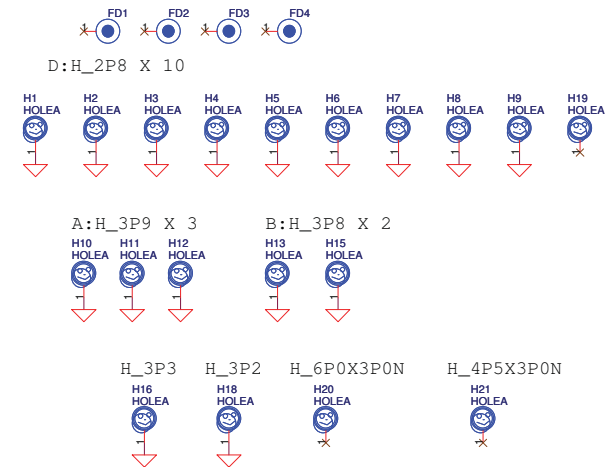
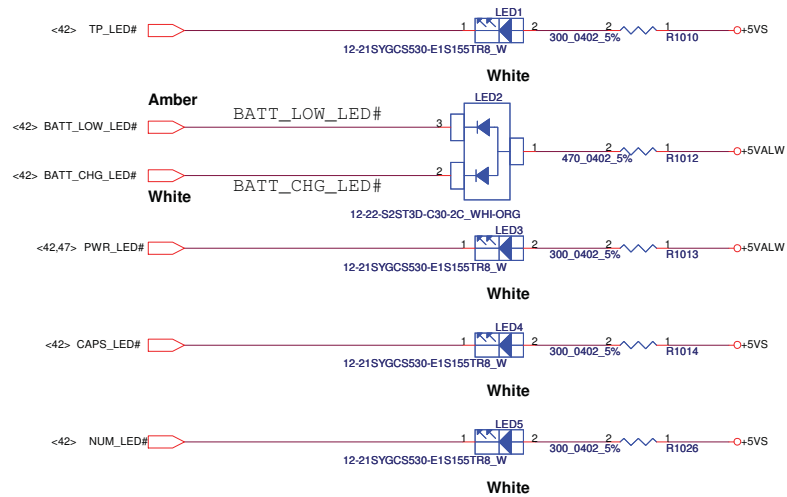


Lid Switch

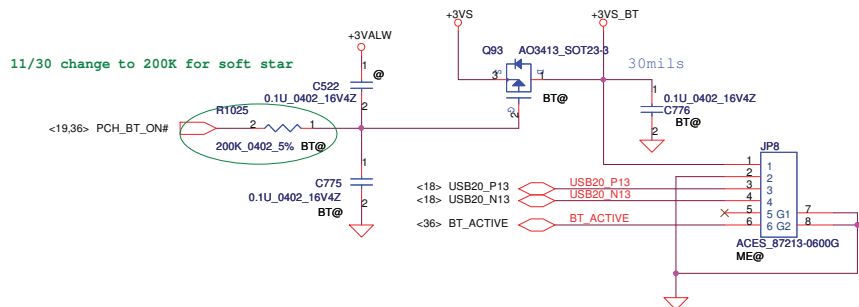


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LED

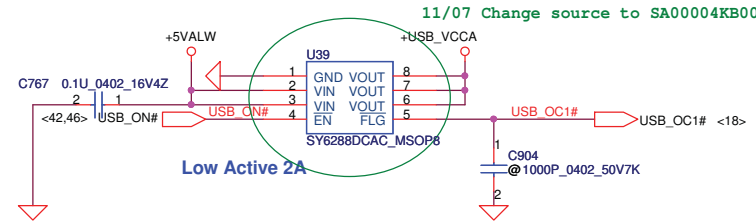


BT MODULE CONN

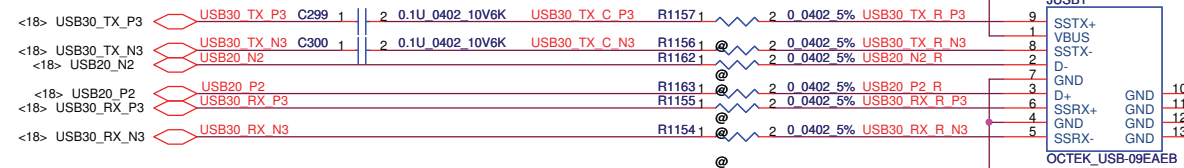
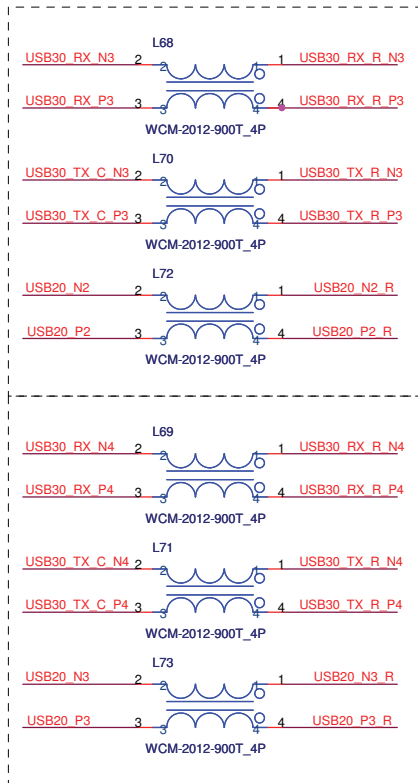


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Deciphered Date				2012/12/31				LED/EC SPI ROM/BT			
Size B				Document Number				QIWIY3 LA-8001P			
Date				Monday, January 16, 2012				Sheet 44 of 64			
Rev				1.0							

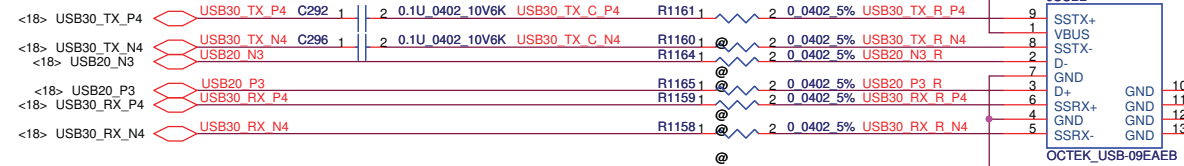
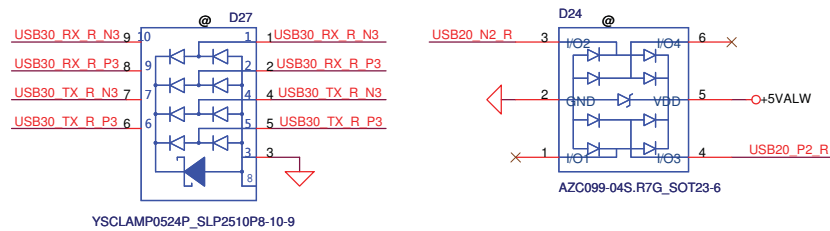
LEFT SIDE USB3.0 PORT X2



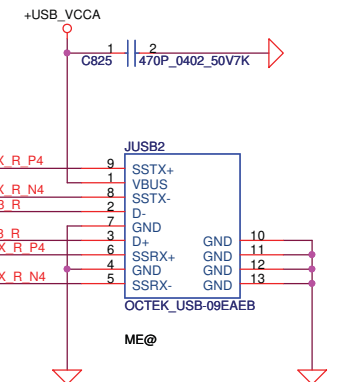
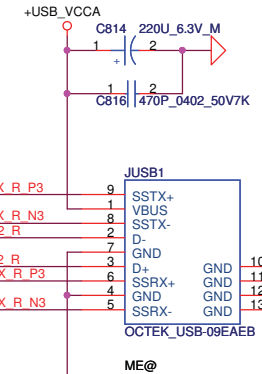
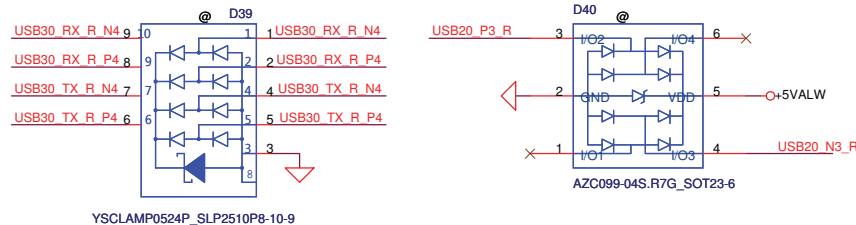
For EMI request
USB2.0 choke --> SM070000I00
USB3.0 Choke --> SM070001U00



For ESD request

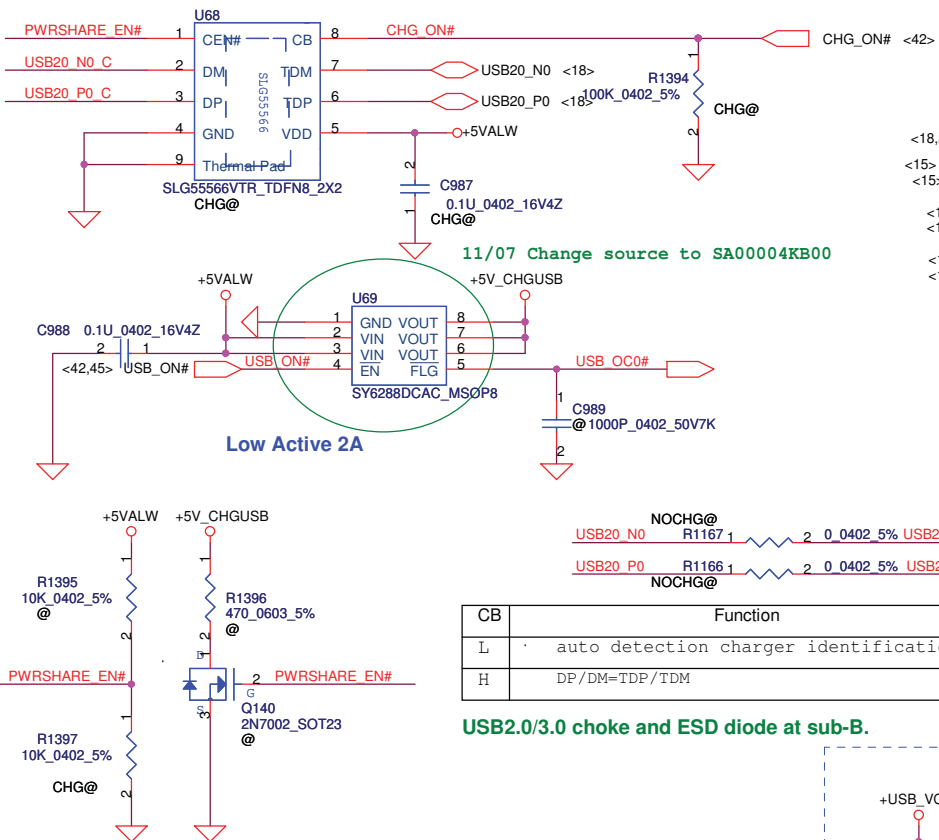


For ESD request



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Size		Document Number		Rev	
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Right side USB Charger



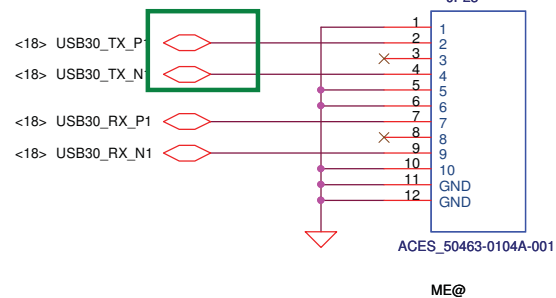
<18,23,36,37,42> PLT_RST#
 <15> CLK_PCIE_CARD_PCH#
 <15> CLK_PCIE_CARD_PCH#
 <15> PCIE_PTX_C_DRX_N4
 <15> PCIE_PTX_C_DRX_P4
 <15> PCIE_PRX_DTX_N4
 <15> PCIE_PRX_DTX_P4
 <15> CPPE#
 <41> EXT_MIC_L
 <41> EXT_MIC_R
 <41> MIC_JD
 <41> HP_OUTR
 <41> HP_OUTL
 <41> SPDIF_OUT
 <41> PLUG_IN

PLT_RST#
 CLK_PCIE_CARD_PCH#
 CLK_PCIE_CARD_PCH#
 PCIE_PTX_C_DRX_N4
 PCIE_PTX_C_DRX_P4
 PCIE_PRX_DTX_N4
 PCIE_PRX_DTX_P4
 USB20_P0_C
 USB20_N0_C
 EXT_MIC_L
 EXT_MIC_R
 MIC_JD
 HP_OUTR
 HP_OUTL
 SPDIF_OUT
 PLUG_IN

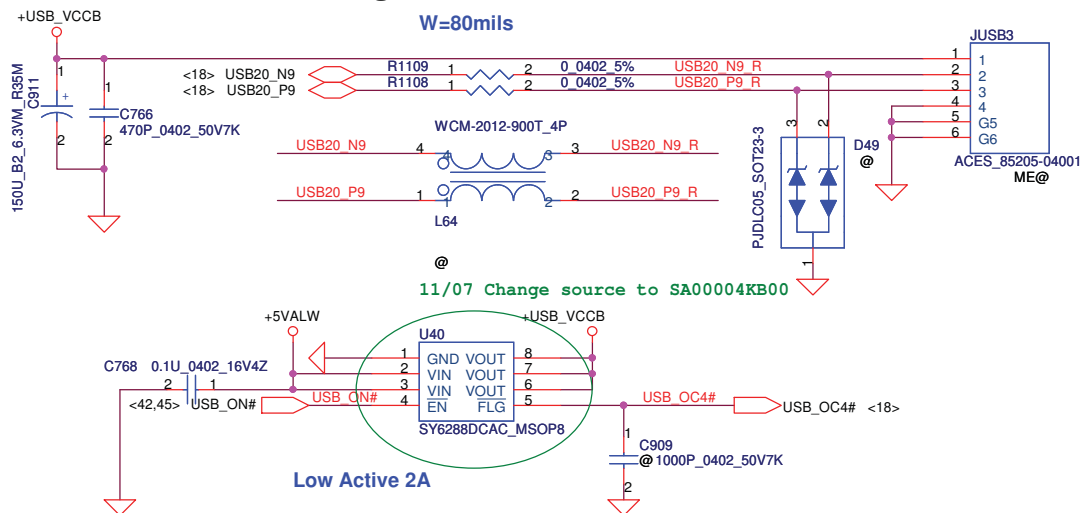
12/23 Change to SP010011A00 for ASSY issue

Right side USB3.0 port (Option)

AC CAP reserve on SUB/B

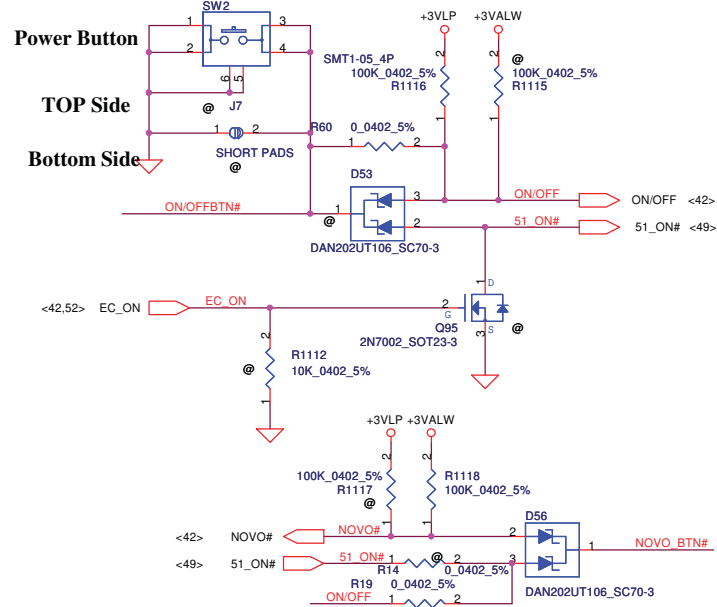


Right USB Conn.(Cable)

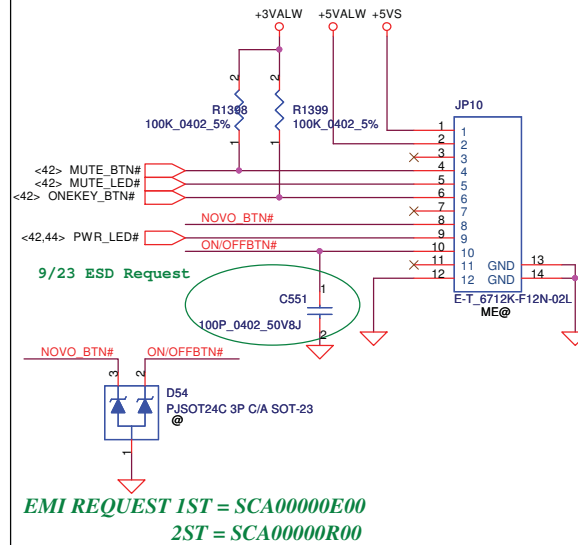


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http://hobi-elektronika.net				Size Document Number
http://rusefix.com				QIWIY3 LA-8001P
Monday, January 16, 2012				Rev 1.0
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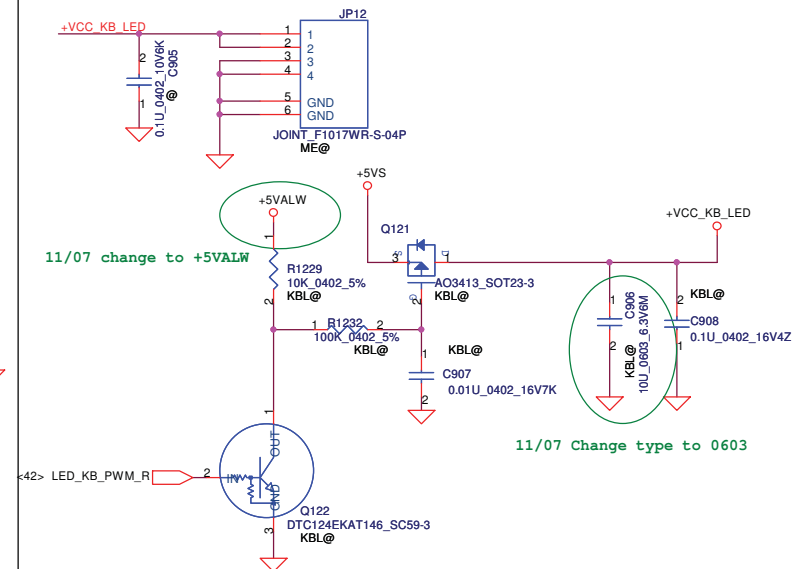
Bottom Side



Power Button/B link to Function/B Conn. 10pin



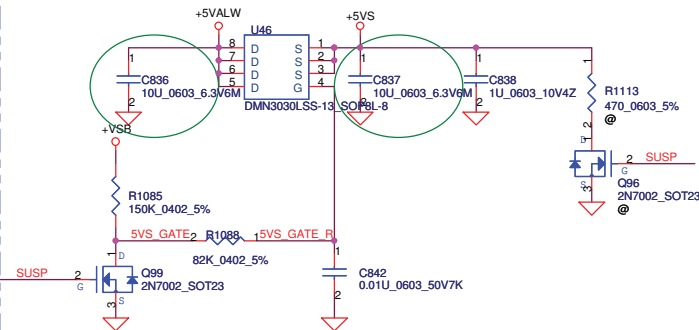
KB Lighting CONN.4pin



Security Classification		Compal Secret Data		Compal Electronics, Ltd. other IO connector	
Issued Date	2011/07/21	Deciphered Date	2012/12/31	Title	
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				Date: Monday, January 16, 2012	Rev 1.0 ISheet 47 of 64

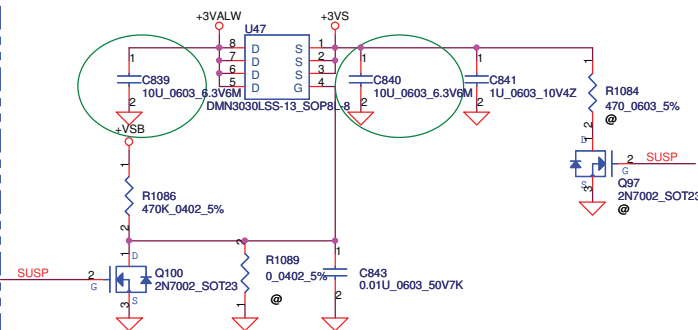
+5VALW TO +5VS

11/07 Change type to 0603



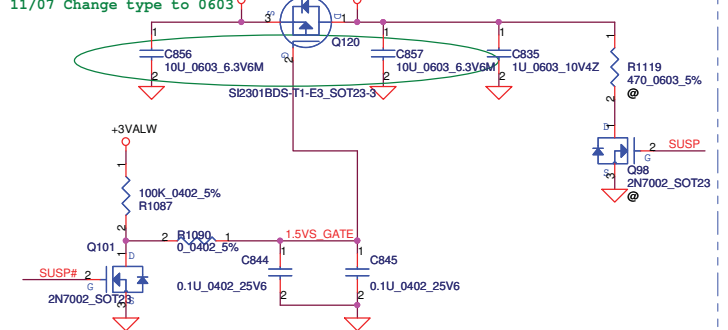
+3VALW TO +3VS

11/07 Change type to 0603



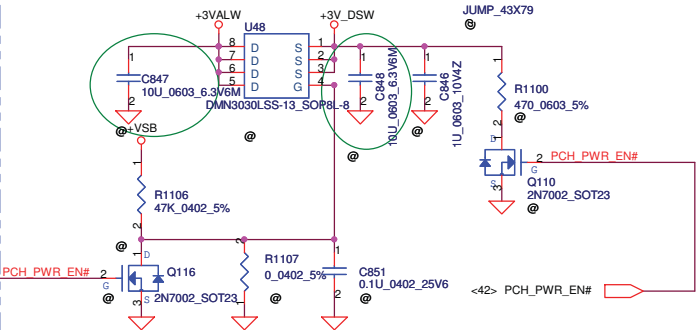
+1.5V to +1.5VS

11/07 Change type to 0603



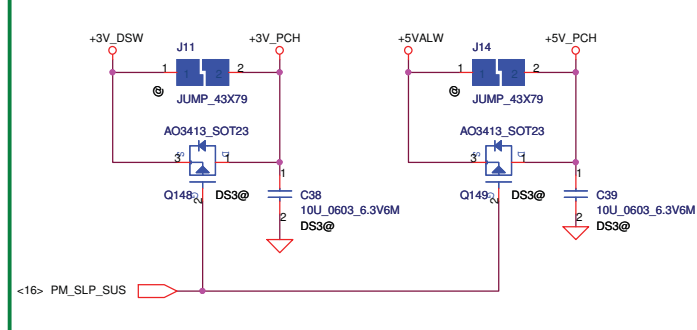
+3VALW TO +3V_DSW

11/07 Change type to 0603

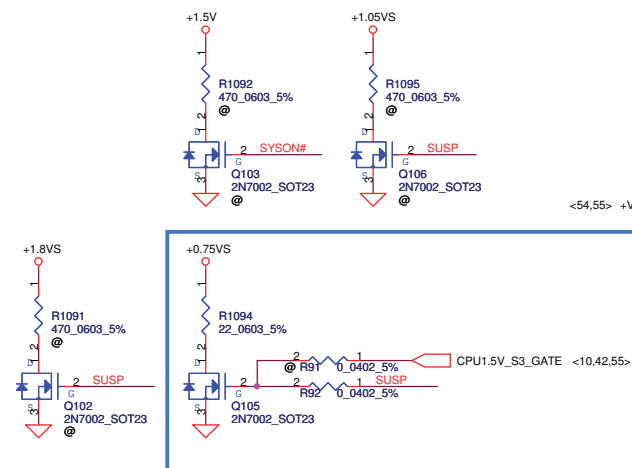
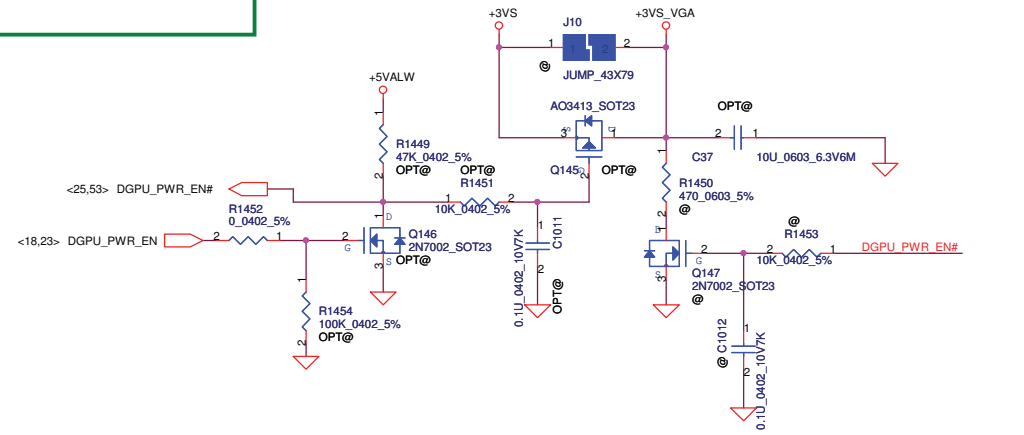


+3V_DSW to +3V_PCH +5VALW to +5V_PCH

09/05 add for Deep S3



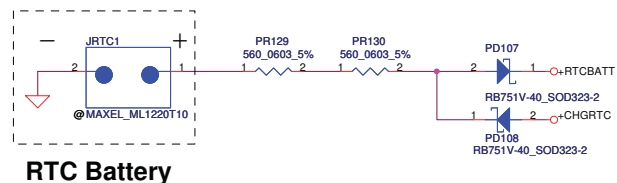
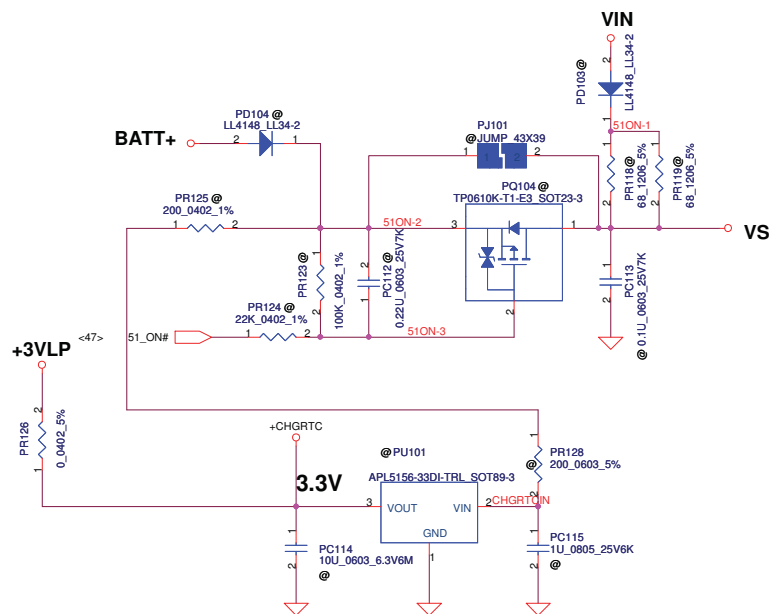
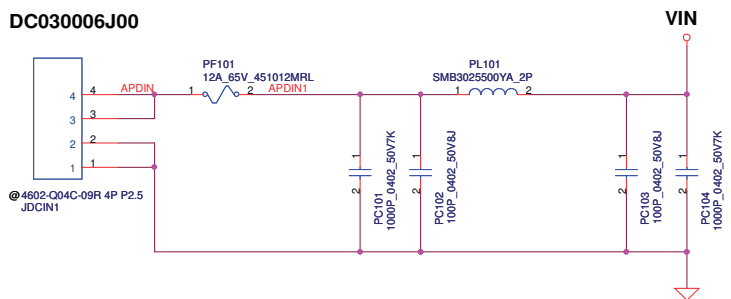
+3VS to +3VS_VGA



For Intel S3 Power Reduction.

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Size	Document Number	Rev		QIWI3 LA-8001P	
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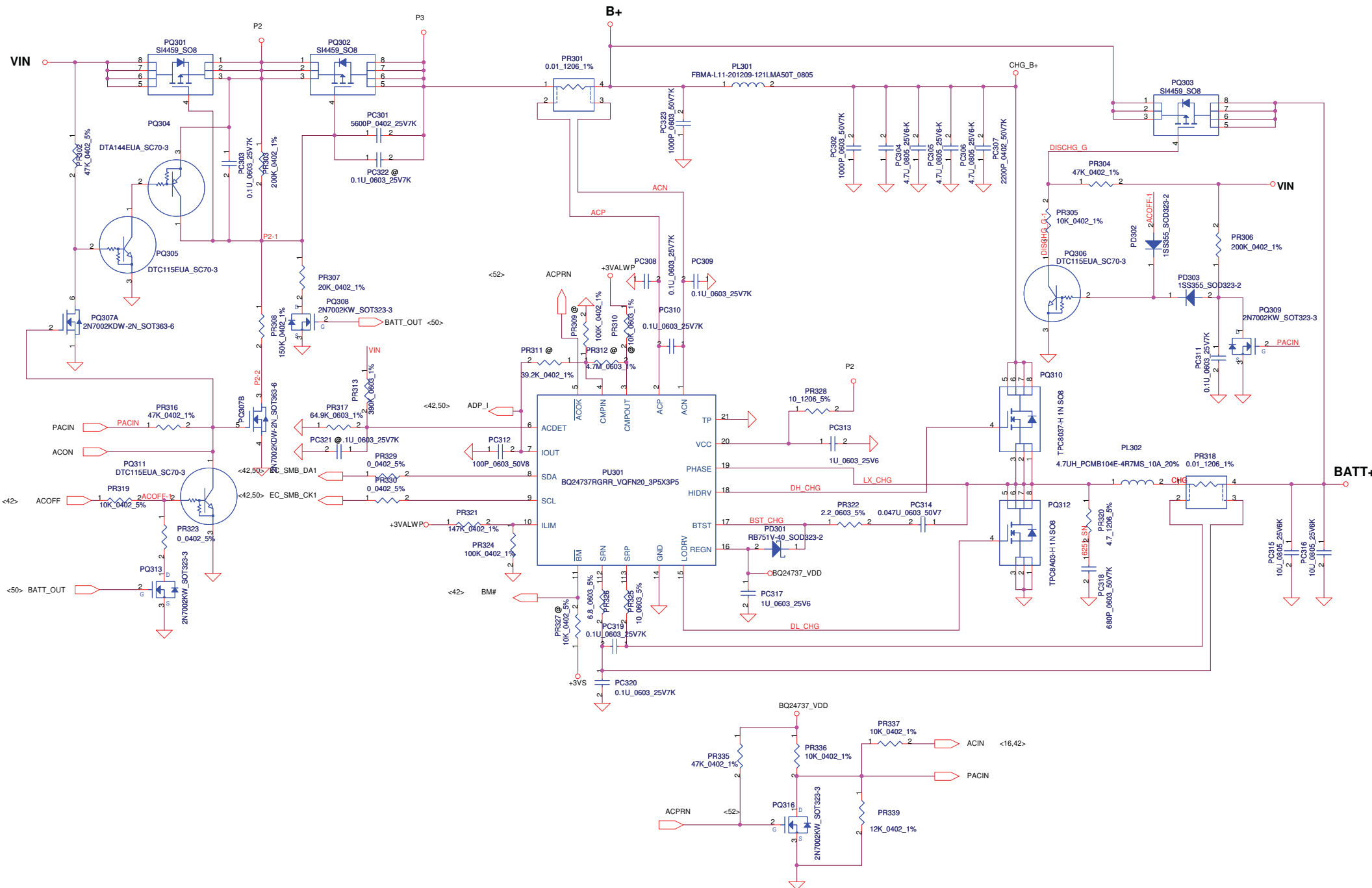
DC030006J00



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Issued Date				2011/06/30				Deciphered Date			
2012/12/31				Title				Vin Detector			
Size				Document Number				Rev			
Custom				QIWI3				1.0			
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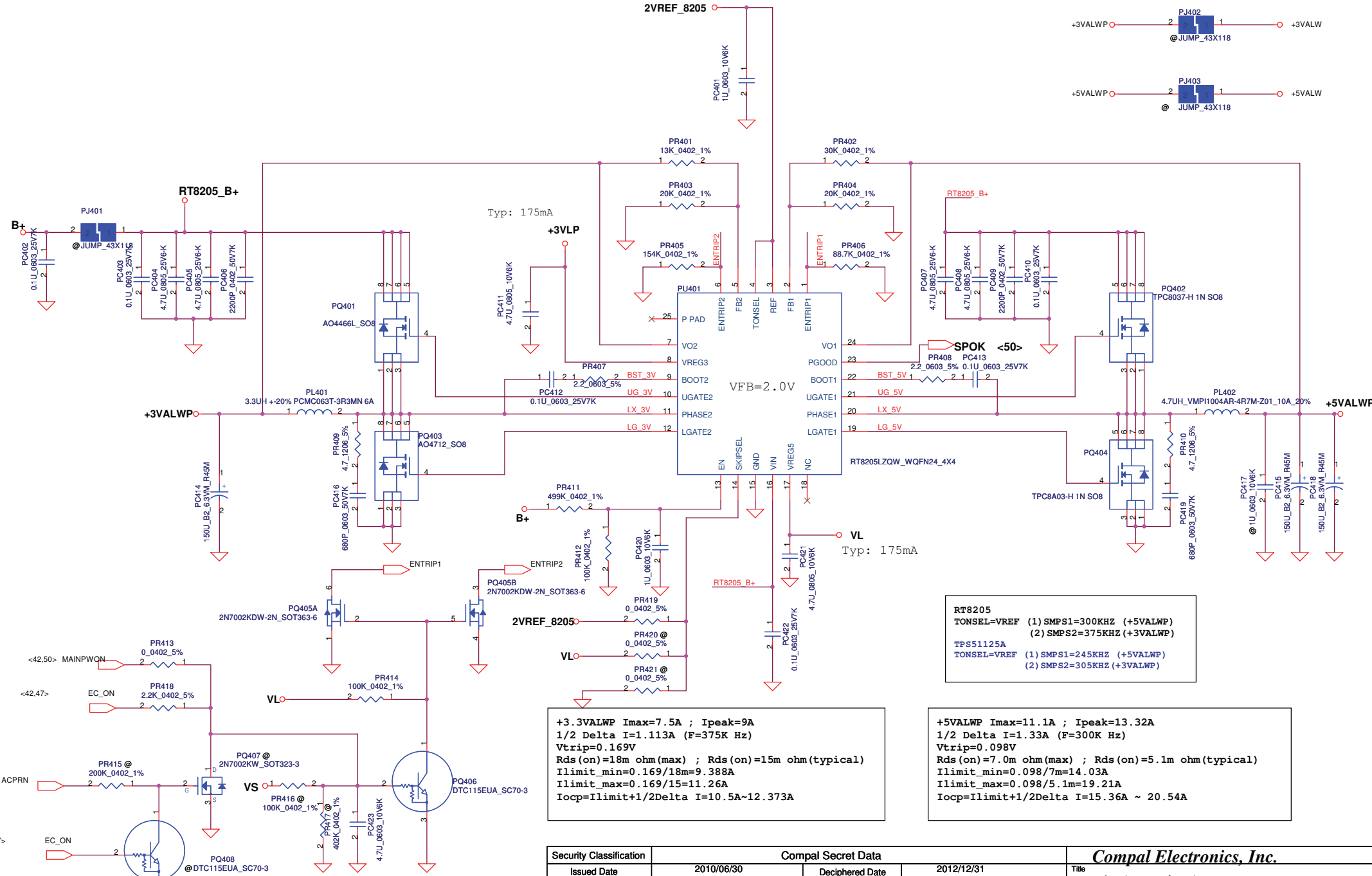


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Note:
Use TPS51125 IC can remove RTC refernece LDO
Use TPS51427 IC must keep RTC refernece LDO



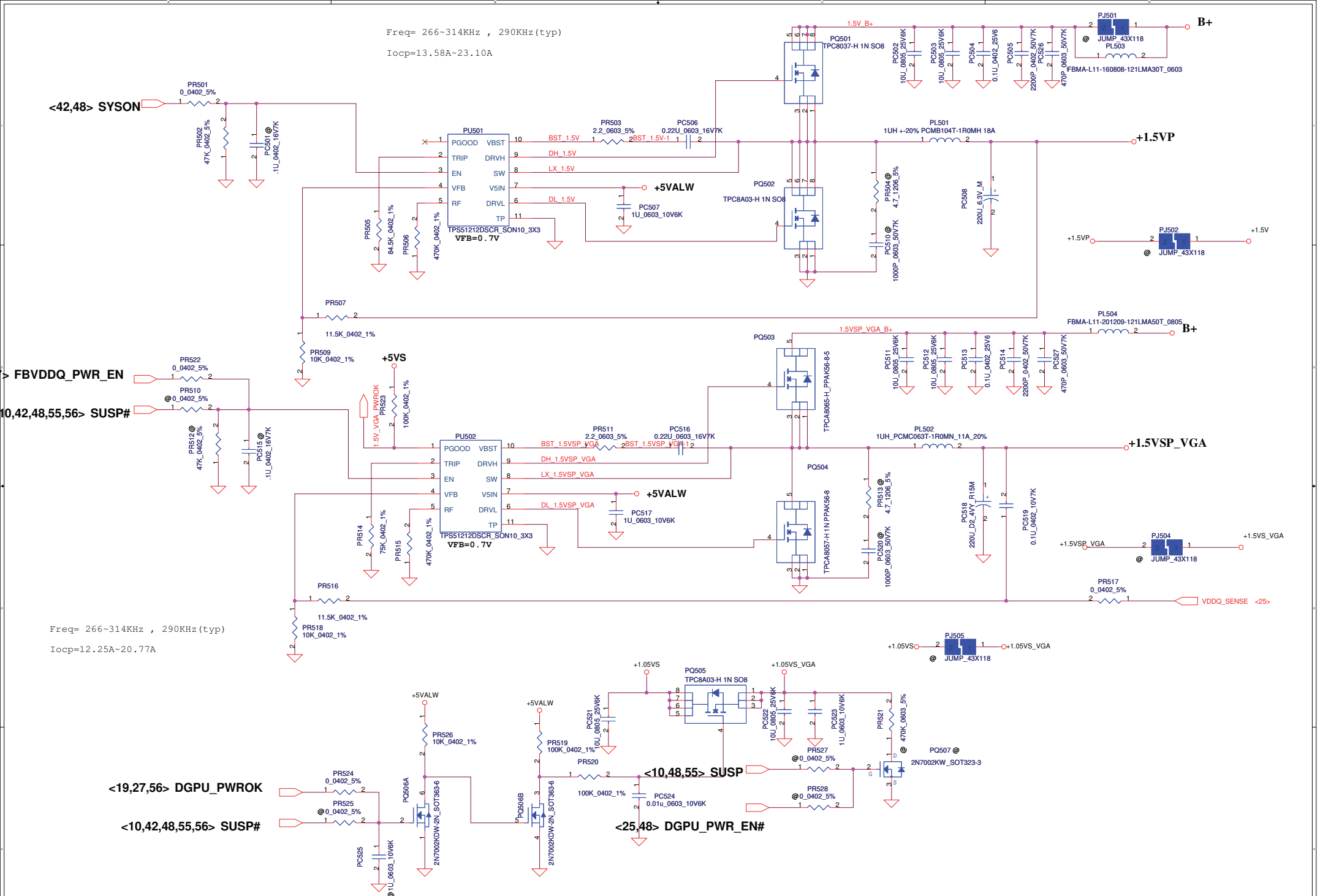
RT8205
TENSEL=VREF (1) SMPS1=300KHZ (+5VALWP)
(2) SMPS2=375KHZ (+3VALWP)
TPS51125A
TENSEL=VREF (1) SMPS1=245KHZ (+5VALWP)
(2) SMPS2=305KHZ (+3VALWP)

+3.3VALWP Imax=7.5A ; Ipeak=9A
1/2 Delta I=1.113A (F=375K Hz)
Vtrip=0.169V
Rds(on)=18m ohm(max) ; Rds(on)=15m ohm(typical)
Ilimit_min=0.169/18m=9.388A
Ilimit_max=0.169/15=11.26A
Iocp=Ilimit+1/2Delta I=10.5A~12.373A

+5VALWP Imax=11.1A ; Ipeak=13.32A
1/2 Delta I=1.33A (F=300K Hz)
Vtrip=0.098V
Rds(on)=7.0m ohm(max) ; Rds(on)=5.1m ohm(typical)
Ilimit_min=0.098/7m=14.03A
Ilimit_max=0.098/5.1m=19.21A
Iocp=Ilimit+1/2Delta I=15.36A ~ 20.54A

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Freq= 266~314KHz , 290KHz(typ)
Iocp=13.58A~23.10A

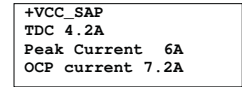


Freq= 266~314KHz , 290KHz(typ)
Iocp=12.25A~20.77A

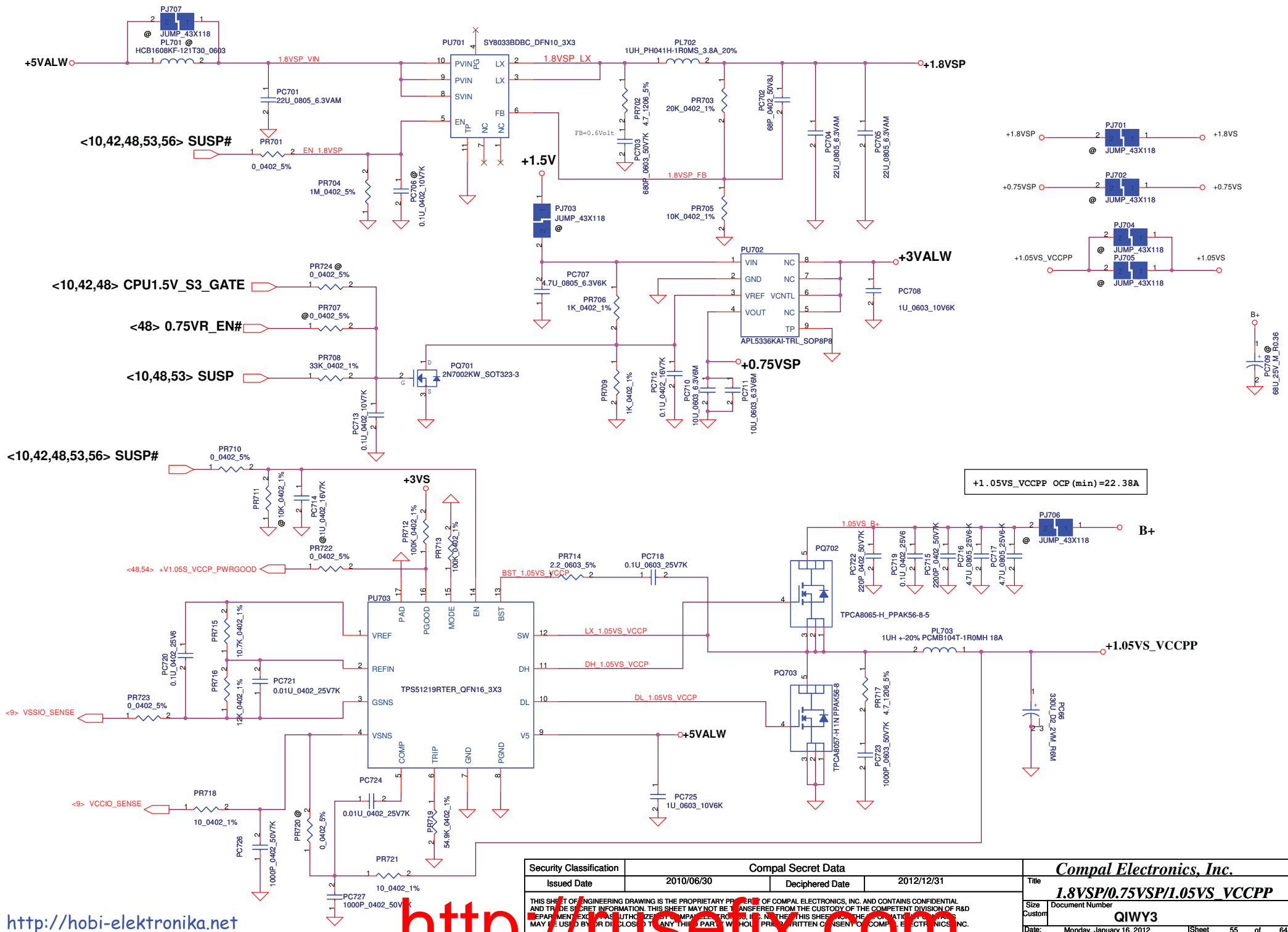
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Issued Date	2010/06/30	Deciphered Date
		2012/12/31

Compal Electronics, Inc.		
Title	1.5VP/1.5VSP_VGA/1.05VSP_VGA	
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output voltage adjustable network

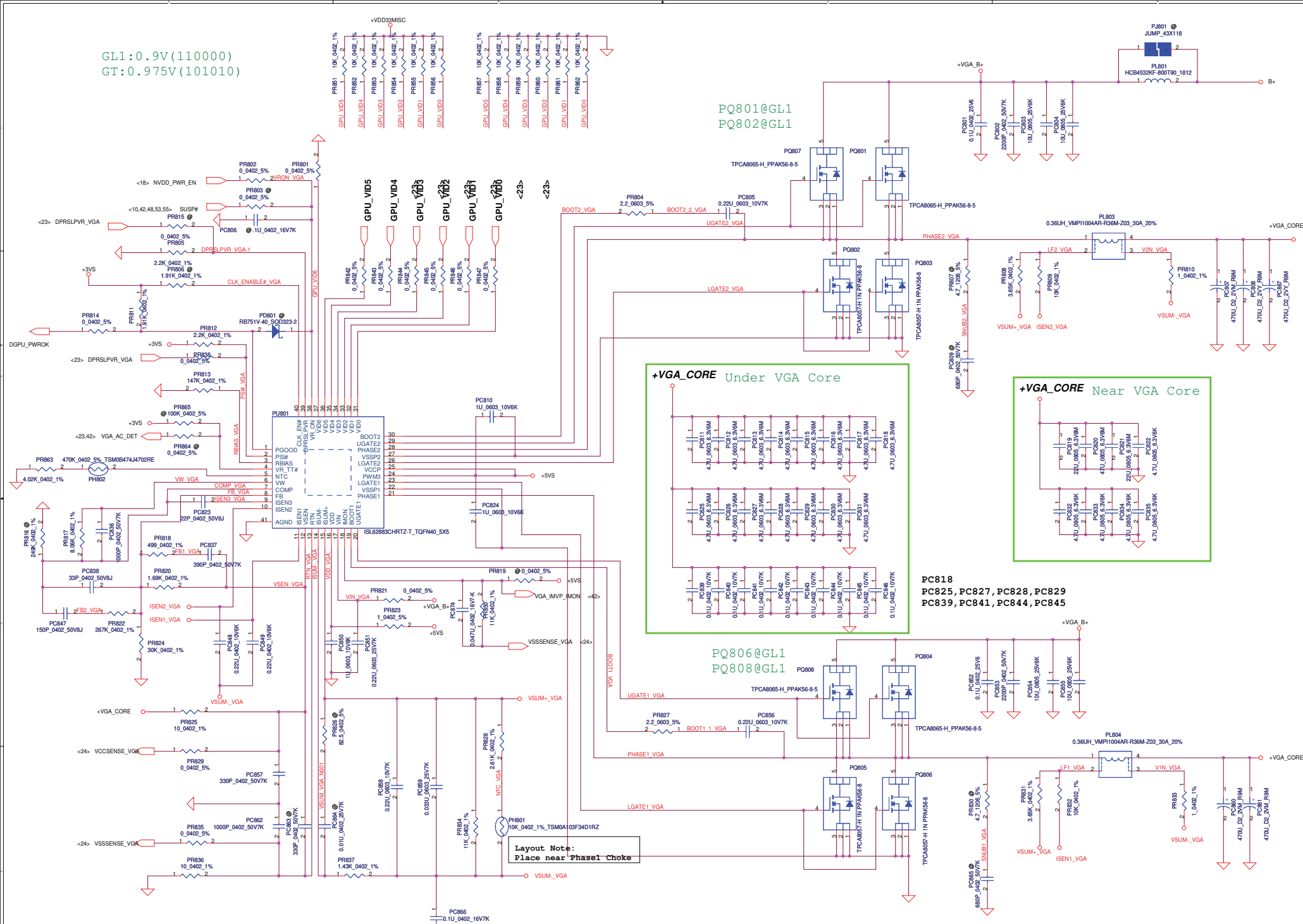


- The 1k PD on the VCCSA VIDs are empty.
- These should be stuffed to ensure that VCCSA VID is 00 prior to VCCIO stability.

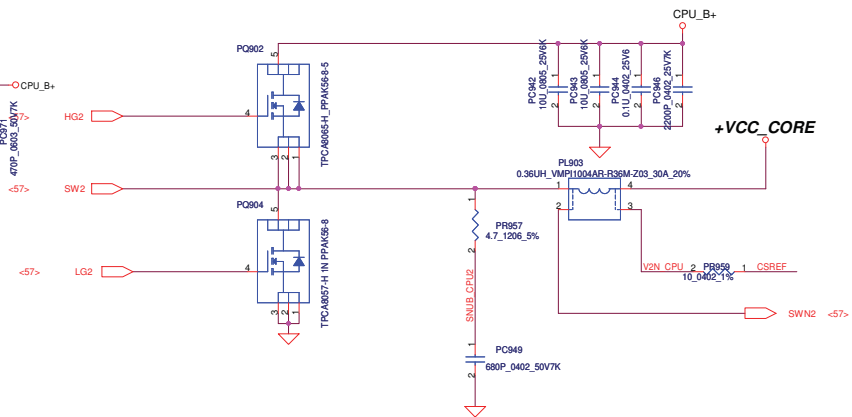
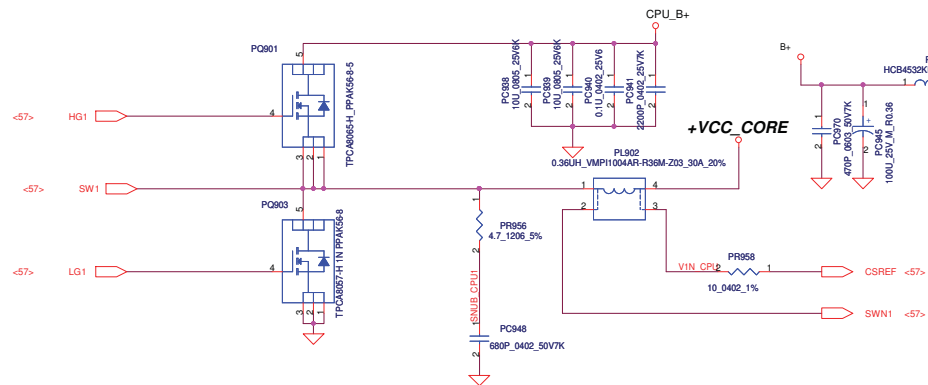


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GL1:0.9V(110000)
GT:0.975V(101010)

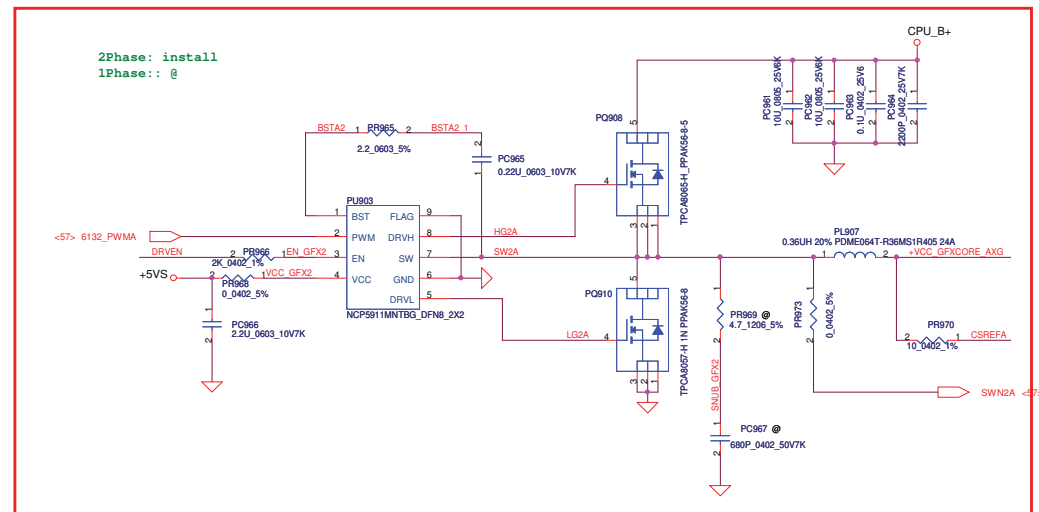
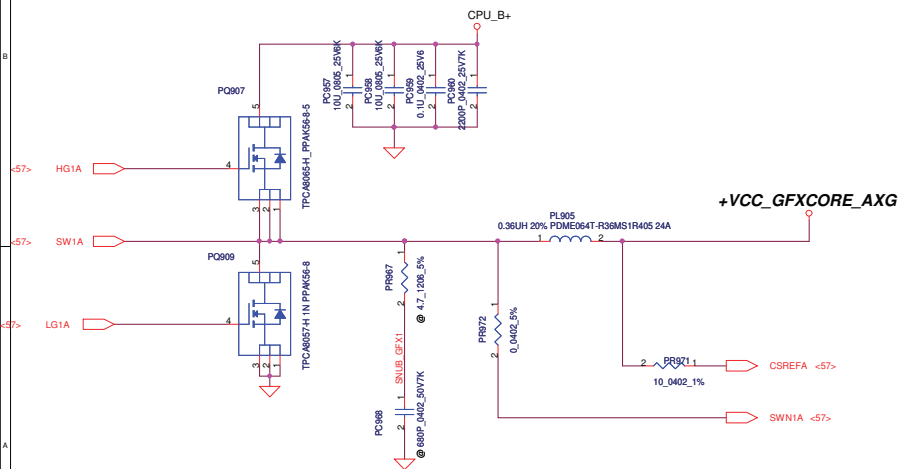


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Issued Date	2011/06/30	Deciphered Date	2012/12/31	VGA COREP	
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QC 45W CPU
VID1=0.9V
IccMax=94A
Icc_Dyn=66A
Icc_TDC=52A
R_LL=1.9m ohm
OCP-110A

DC 35W CPU
VID1=1.05V
IccMax=53A
Icc_Dyn=43A
Icc_TDC=36A
R_LL=1.9m ohm
OCP-65A



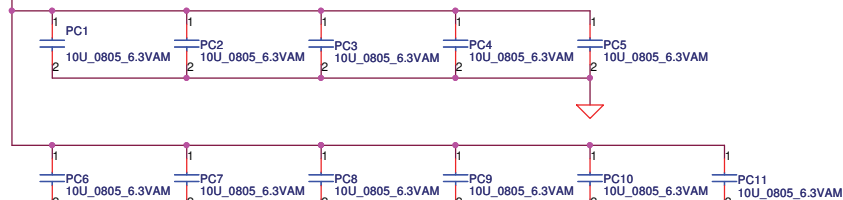
QC 45W GT2
VID1=1.23V
IccMax=46A
Icc_Dyn=37A
Icc_TDC=38A
R_LL=3.9m ohm
OCP-10A

DC 35W GT2
VID1=1.23V
IccMax=33A
Icc_Dyn=20.2A
Icc_TDC=21.5A
R_LL=3.9m ohm
OCP-4

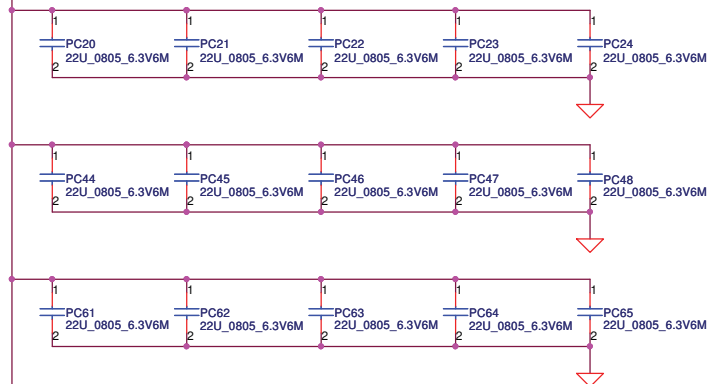
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Issued Date		Deciphered Date		Title	
2011/06/30		2012/12/31		CPU CORE	
2012/12/31		2012/12/31		Document Number	
2012/12/31		2012/12/31		QIWW3	
2012/12/31		2012/12/31		Date	
2012/12/31		2012/12/31		Monday, January 16, 2012	
2012/12/31		2012/12/31		Sheet 58 of 64	

+VCC_CORE

+CPU_CORE

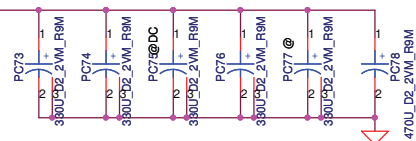


+VCC_CORE



+VCC_CORE

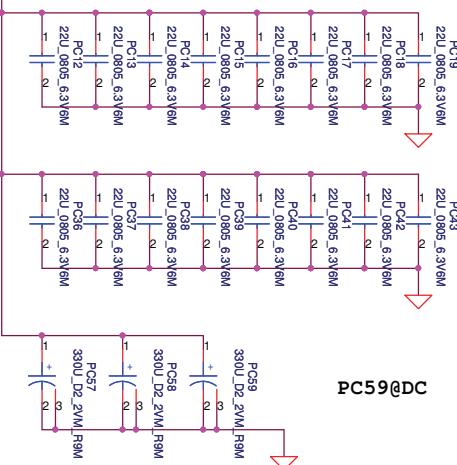
PC8, PC21, PC22, PC63



DC: PC73, PC74, PC76 (330uF/9m) + PC78 (330uF/6m)
QC: PC73, PC74, PC75, PC76 (330uF/9m) + PC78 (470uF/9m)

+VCC GFXCORE_AXG

+VCC GFXCORE_AXG



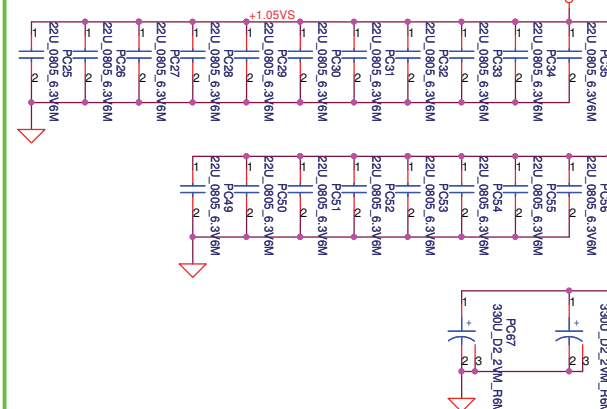
PC59@DC

PC38, PC39, PC40, PC41

Below is 458544_CRV_PDDG_0.5 Table 5-8.

Socket Bottom	5 x 22 μ F (0805) 5 x (0805) no-stuff sites
Socket Top	7 x 22 μ F (0805) 2 x (0805) no-stuff sites

+1.05VS



PC32, PC49, PC54, PC55, PC56

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Version change list (P.I.R. List)

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for PWR

Item	Reason for change	PG#	Modify List	Date	Phase
1	Reserve 0.1uF for Charger IC	51	Reserve PC321	2011/09/27	B test
2	EMI Request		change PR322,PR407,PR408,PR503,PR511,PR606,PR804,PR827 to 2.2 ohm add PC526,PC527,PC970,PC971(470pF)	2011/09/27	B test
3	Combine 1.05V	51	Remove one power rail +V1.05S_VCCPP Pop PR722,PR712,PR718	2011/09/27	B test
4	Discharge for +1.05VS_VGA by NV Request	53	Reserve PR528	2011/09/27	B test
5	Set VGA_CORE VBOOT voltage	56	unpop PR806 change PR813 to 147K ohm	2011/09/27	B test
6	For VGA_CORE power saving by NV Request	56	add PR838 0ohm	2011/09/27	B test
7	for CPU_CORE load line adjust	57	add PC969	2011/09/27	B test
8	to prevent MOS over temperature	55/58	change PQ702,PQ901,PQ902,PQ905 TPCA8065	2011/09/27	B test
9	for CPU_CORE test	59	Reserve PC77,PC78	2011/09/27	B test
10	for debug	51	add PR329,PR330	2011/11/30	C test
11	for VCCIO remote sense	55	add PR723	2011/11/30	C test
12	RC filter to reduce noise	55	add PR721,PC727	2011/11/30	C test
13	G718 for adapter and OTP	50	pop PC203,PQ201,PR209,PU201,PR213 unpop PR206	2011/11/30	C test
14	for CPU transient	58	change PR911,PR912 to 91K	2011/11/30	C test
15	for EMI Request		add PL301,PC503,PL504,PL801 add PC302,PC323,PC424,PC526,PC722,PC970,PC974	2011/11/30	C test
16	HW request	50 55	reserve connect PCH_PWR_EN for power sequence reserve connect CPU1.5V_S3_GATE for power sequence	2011/11/30	C test
17	for thermal request to reduce temperature	53	change PQ503,PQ504	2011/11/30	C test
18	adjust 1.5VSP_VGA OCP	53	change PR514 to 49.9K	2011/11/30	C test
19	For HW power sequence adjustment	50	change PR222,PR228 to NA change PR229 to 0 ohm	2011/12/02	C test
20	To adjust +5VALW by HW request	52	change PR404 to 19.6K	2011/12/16	C test
21	Using G718 to replace KB9012 function need to add or reserve resistor	50	Add PR232 and reserve PR233 pull high to +3VALW Add PR234 pull down	2011/12/28	Pre MP

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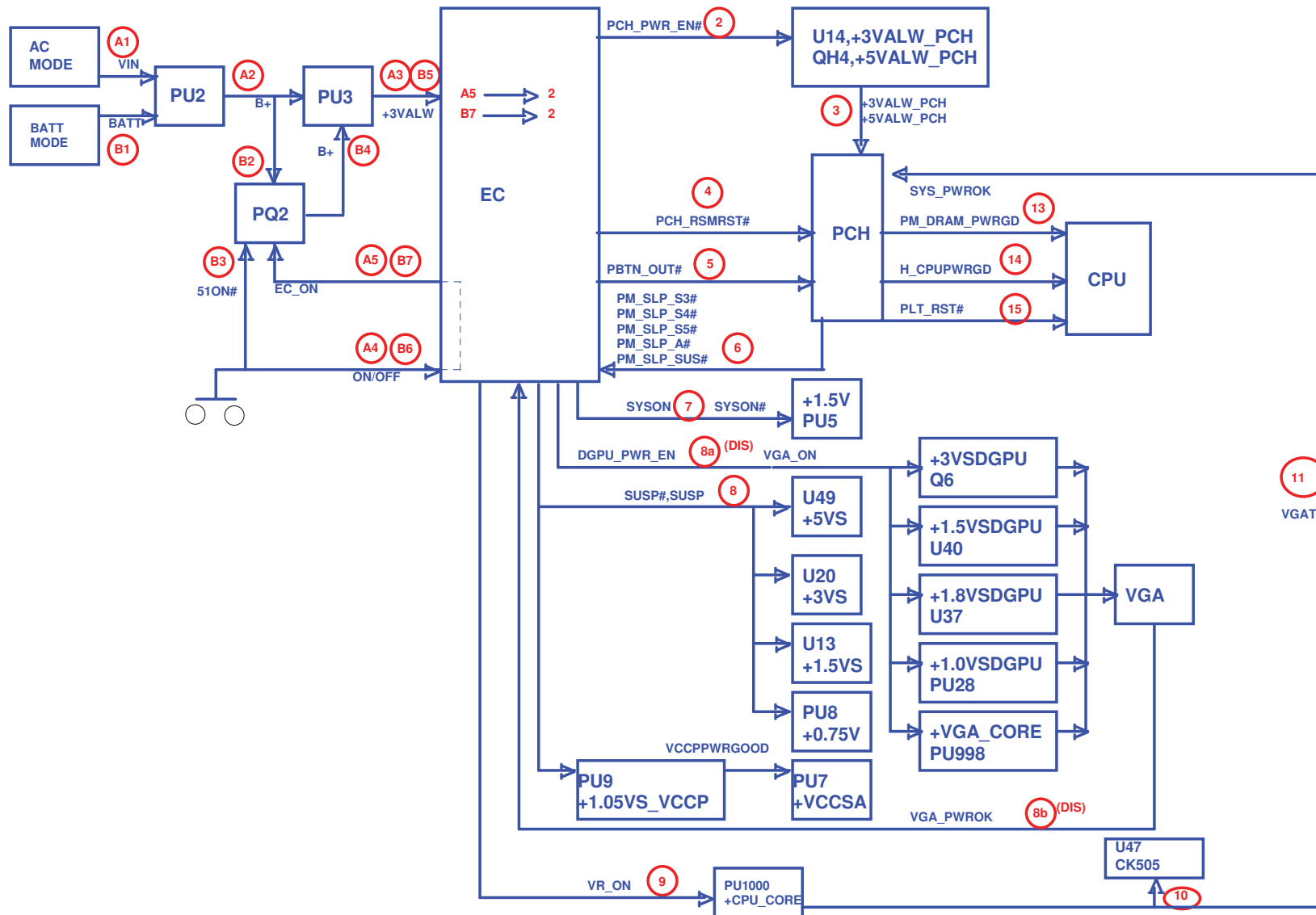
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QIWY3 HW PIR List

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
----- EVT TO DVT				
1		P7	Reserve R64	Reserve EC DRAMRST control pin for Deep S3
2		P16	Reserve R1457, R1455, R1447	Reserve SUSACK#, SUSWARN#, SLP_SUS# control signal for Deep S3
3		P16	Reserve Q118, R1120, R1121	Reverse SLP_SUS# to control +3V_PCH&+5V_PCH
4		P16	Change AC_PRESENT Pull high source to +3V_DSW	For Deep S3 function
5		P21	Remove R289	+5V_PCH control circuit change for Deep S3
6		P36	Reserve J8, Q104, C533, C526, R436	Reserve for AOAC function
7		P36	Change JP1 pin2, 24, 52 power source to +3VS_WLAN_AOAC	Reserve for AOAC function
8		P42	Change EC GPIO pin setting (Impact pin 18, 71, 72, 126, 128)	For DeepS3/AOAC function
9		P48	Reserve J11, J14, Q148, Q149, C38, C39	+3V_PCH&+5V_PCH control circuit for Deep S3
10		P45	change U49 symbol (without GND pad)	For DFx issue
11		P46	change U40, U69 symbol (without GND pad)	For DFx issue
12		P47	change JP10 type to SP01001B800	For DFx issue
13		P19	Reserve R207, R224 to contact WLAN wake even	Reserve for AOAC function
14		P41	Change JSPK1 type to SP02000H700	For DFx issue
14		P19	Reserve R704 and R706 for GPIO69 PU&PD	For SKU ID
15		P23	Change CV37, CV38 to 22P	For Crystal EA request
16		P37	Change C968, C969 to 33P	For Crystal EA request
----- DVT TO PVT				
1		P14	Change power source to +5VS (Q10 pin 2)	Follow intel Design Guide
2		P16	Reserve R257 PU 10K to +3V_DSW	For Deep S3 function
3		P40	Change R1110 to 200K, C638 to 0.1u	For ODD soft star
4		P10	Change C124, C125, C126, C127, C130 to 0603 type	For command design
5		P20	Change C215, C221, C395 to 0603 type	For command design
6		P21	Change C231 to 0603 type	For command design
7		P33	Change C519 to 0603 type	For command design
8		P36	Change C568, C569 to 0603 type	For command design
9		P37	Change C937, C954, C953 to 0603 type	For command design
10		P39	Change C986 to 0603 type	For command design
11		P40	Change C634, C635, C639 to 0603 type	For command design
12		P41	Change C655 to 0603 type	For command design
13		P48	Change C836, C837, C839, C840, C847 C848, C856, C857 to 0603 type	For command design
14		P47	Change C906 to 0603 type	For command design
15		P47	Modify gate powr rail of MOS to +5VALW	Avoid leakage issue.
16		P45	Change U39 source to SA00004KB00	For main source issue
17		P46	Change U40, U69 source to SA00004KB00	For main source issue
18		P37	Add Q150, R145, C976	For LAN power control
19		P42	Reserve LAN_PWR_ON# net on EC pin 89	For LAN power control
20		P41	Stuff R945, R481 for EAPD contact U8 pin29	For MUTE_LED issue
21		P38	Add R90	For LAN SURGE CO-LAY
22		P38	Add R1380	Atheros request

QIWEY3 HW PIR List

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1		P46	change JP21 type (SP010011A00)	For ASSY issue
2		P23	RV208 change to contact +VDD33MISC	For N13P-GT/N13E-GE shutdown issue
3		P23	Reserve RV14	For N13P-GT/N13E-GE +VDD33MISC leakage issue
4		P41	Swap HP R/L	For HP R/L reverse issue
5		P42	Add R1415, R1419	T/P SM BUS pull high voltage change



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