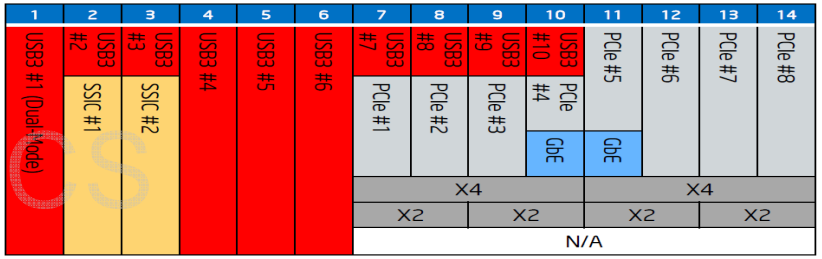
H110M4-C43 V:1.0

ECS CONFIDENTIAL

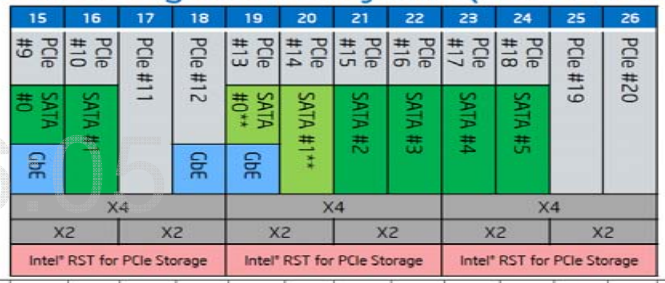
SCHEMATICS TABLE:

HSIO Lane Assignements by SKU (Lanes 1-14)



sku	1	2	3	4	5	6	7	8	9	10	11	12	13	14
H110	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	N/A	N/A	N/A	N/A	N/A	LAN Only	PCIe/ LAN	PCIe	PCIe	PCIe
B150	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	USB3	USB3	N/A	N/A	N/A	LAN Only	PCIe/ LAN	PCIe	PCIe	PCIe
Q150	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	USB3	USB3	USB3	USB3	N/A	LAN Only	PCIe/ LAN	PCIe	PCIe	PCIe
H170	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	USB3	USB3	USB3	USB3	PCIe	PCIe/ LAN	PCIe/ LAN	PCIe	PCIe	PCIe
Z170	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	USB3	USB3	USB3/ PCIe	USB3/ PCIe	USB3/ PCIe	USB3/ PCIe/ LAN	PCIe/ LAN	PCIe	PCIe	PCIe
Q170	USB3/ OTG	USB3/ SSIC	USB3/ SSIC	USB3	USB3	USB3	USB3/ PCIe	USB3/ PCIe	USB3/ PCIe	USB3/ PCIe/ LAN	PCIe /LAN	PCIe	PCIe	PCIe

HSIO Lane Assignements by SKU (Lanes 15-26)



Sku	15	16	17	18	19	20	21	22	23	24	25	26	RST for PCIe Ports
H110	PCIe/ LAN	PCIe	N/A	LAN Only	SATA*/ LAN	SATA*	SATA	SATA	N/A	N/A	N/A	N/A	0
B150	PCIe/LAN SATA*	PCIe/ SATA*	PCIe	PCIe/ LAN	SATA* /LAN	SATA*	SATA	SATA	SATA	SATA	N/A	N/A	0
Q150	PCIe/LAN SATA	PCIe/ SATA	PCIe	PCIe/ LAN	PCIe/LAN SATA	PCIe/ SATA	SATA	SATA	SATA	SATA	N/A	N/A	0
H170	PCIe/LAN SATA	PCIe/ SATA	PCIe	PCIe/ LAN	PCIe/LAN SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	SATA	SATA	PCIe	PCIe	2
Z170	PCIe/LAN SATA	PCIe/ SATA	PCIe	PCIe/ LAN	PCIe/LAN SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe	PCIe	3
Q170	PCIe/LAN SATA	PCIe/ SATA	PCIe	PCIe/ LAN	PCIe/LAN SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe/ SATA	PCIe	PCIe	3

Elitegroup Computer Systems

Title: Cover Page

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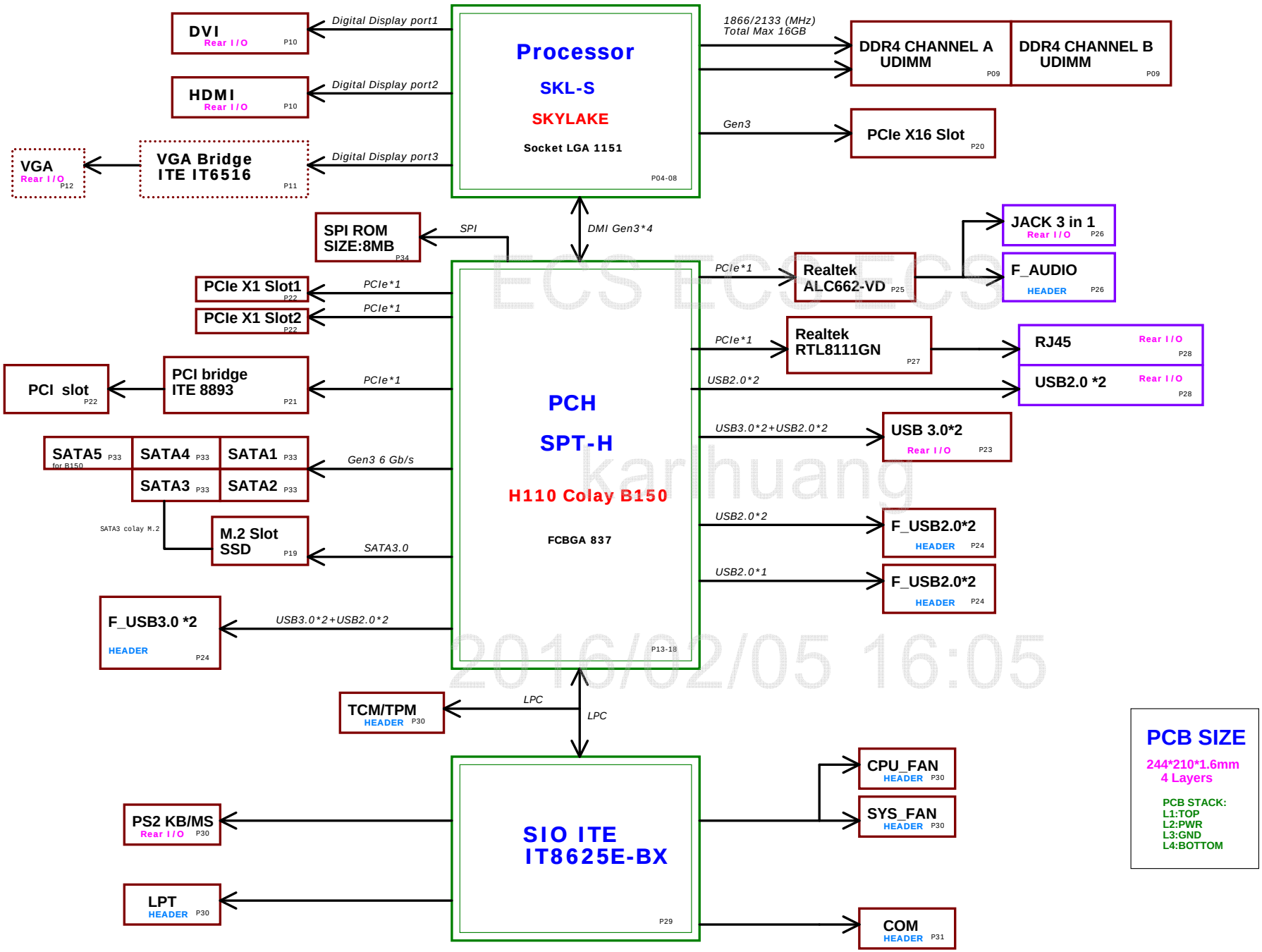
Skylake-S Desktop Platform



PCB SIZE

244*210*1.6mm
4 Layers

PCB STACK:
L1:TOP
L2:PWR
L3:GND
L4:BOTTOM

Elitegroup Computer Systems			
Title: Block Diagram			
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PCH-GPIO function

Pin Name	Power Well	Usage	Boot Set
GPP_A11	3VSB	LPC_PME_L	PME#
GPP_B13	3VSB	PCH_PLTRST_L	PLTRST#
GPP_G13	VCC3	HDPANEL_DETECT	GPI
GPP_E8	VCC3	SATALED_L	SATALED#
GPP_B14	VCC3	PCH_SPKR	SPKR
GPP_A14	3VSB	LPCPD_L	SUS_STAT#
GPP_C6	3VSB	SML1_CLK	SML1CLK
GPP_C7	3VSB	SML1_DATA	SML1DATA

SIO-GPIO function

Pin Name	Power Well	Usage	Default SET
PCH_D0B/GP22	+ATX3VSB	SIO_LED0	GPO
PCIRST3#/GP10/CIRRX1	+ATX3VSB	SIO_LED1	GPO
GP92/GP93/GP94	+ATX3VSB	BOM selection	GPI

Interrupt mapping

Function	INT# port	PCIe*1 port	Device
LAN	INTB#	Port 6	RTL8111GN
SATA	INTA#	NA	SATA3.0
PCIeX1 slot1	INTA#	Port 5	PCIE device
PCIeX1 slot2	INTC#	Port 7	PCIE device
PCI	INTB#	Port 8	PCI device

Change List

P07 CPU-PWR
chabged TP ref. name form +VCORE1 to VCCIO_SENSE

P14 SIO-IT8625E
removed TP10 & connected SIO_SLP_SUS# to PCH_SLP_SUS#

P23 USB3.0 CONN
removed C50

P24 USB2.0/USB3.0 Header
removed C488,C508,C644

P31 LPT/COM/PS2
added R1,R2,R3,R4 short pad for EMI request

P38 DC/DC VCCIO
added LDO_VCCIO
connected VR_ENABLE to VCORE & VCCSA

P39 DC/DC VDIMM/VTT/VPP
removed C547
connected VDDQ_PWRGD to LDO_VCCIO

P40 DC/DC 5VDUAL/SEQUENCE
removed C298,C299,C561,C581,C593,R658,

Elitegroup Computer Systems			
Title: GPIO Function/INT# Mapping			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
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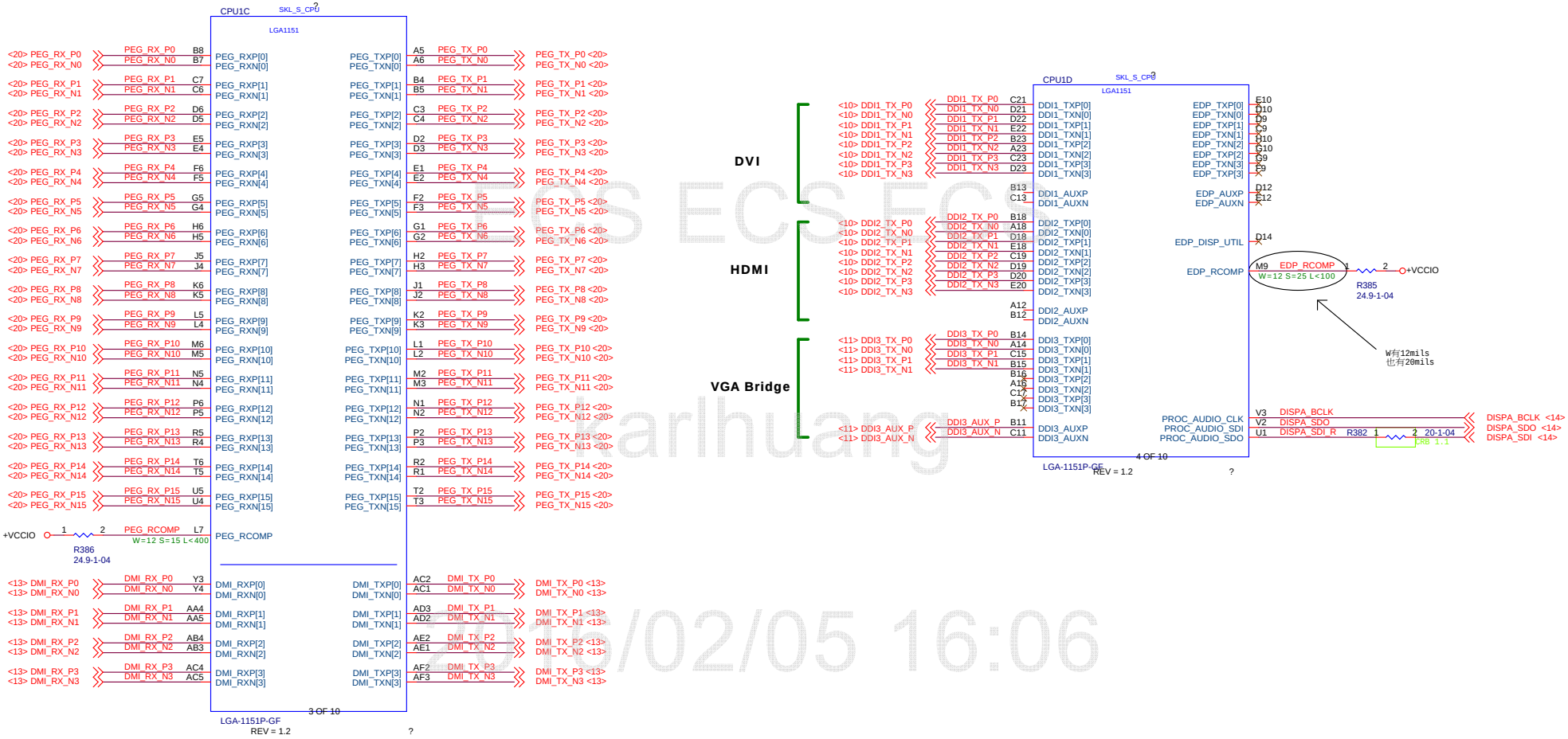

Elitegroup Computer Systems		
Title: CPU-PEG/DMI/DDI/EDP		
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Follow DDR4 RVP8 CRB

**Attention

CPU1A

SKL_S_CPU

LGA1151

DDR4 CH.A

<9> M_DQS_A_P[0..8]
<9> M_DQS_A_N[0..8]
M_DQS_A_P[0..8]
M_DQS_A_N[0..8]

<9> M_DATA_A[0..63]
M_DATA_A[0..63]

<9> M_DATA_A_CB[0..7]
M_DATA_A_CB[0..7]

<9> M_ODT_A[0..1]
M_ODT_A[0..1]

<9> M_CKE_A[0..1]
M_CKE_A[0..1]

<9> M_CS_A_L[0..1]
M_CS_A_L[0..1]

<9> M_CLK_A_P[0..1]
<9> M_CLK_A_N[0..1]
M_CLK_A_P[0..1]
M_CLK_A_N[0..1]

<9> M_MA_A[0..16]
M_MA_A[0..16]

M_DATA_A5	AE38	DDR0_DQ[0]	DDR0_CKP[0]	AW18	M_CLK_A_P0
M_DATA_A1	AE37	DDR0_DQ[1]	DDR0_CKN[0]	AV18	M_CLK_A_N0
M_DATA_A2	AG38	DDR0_DQ[2]	DDR0_CKP[1]	AW17	M_CLK_A_P1
M_DATA_A3	AG37	DDR0_DQ[3]	DDR0_CKN[1]	AY17	M_CLK_A_N1
M_DATA_A4	AE39	DDR0_DQ[4]	DDR0_CKP[2]	AW16	
M_DATA_A0	AE40	DDR0_DQ[5]	DDR0_CKN[2]	AV16	
M_DATA_A6	AG39	DDR0_DQ[6]	DDR0_CKP[3]	AT16	
M_DATA_A7	AG40	DDR0_DQ[7]	DDR0_CKN[3]	AU16	
M_DATA_A13	AJ38	DDR0_DQ[8]			
M_DATA_A9	AJ37	DDR0_DQ[9]	DDR0_CKE[0]	AY24	M_CKE_A0
M_DATA_A10	AL38	DDR0_DQ[10]	DDR0_CKE[1]	AW24	M_CKE_A1
M_DATA_A11	AL37	DDR0_DQ[11]	DDR0_CKE[2]	AV24	
M_DATA_A8	AJ40	DDR0_DQ[12]	DDR0_CKE[3]	AV25	
M_DATA_A12	AJ39	DDR0_DQ[13]			
M_DATA_A14	AL39	DDR0_DQ[14]	DDR0_CS#[0]	AW12	M_CS_A_L0
M_DATA_A15	AL40	DDR0_DQ[15]	DDR0_CS#[1]	AU11	M_CS_A_L1
M_DATA_A21	AN38	DDR0_DQ[16]/DDR0_DQ[32]	DDR0_CS#[2]	AV13	
M_DATA_A16	AN40	DDR0_DQ[17]/DDR0_DQ[33]	DDR0_CS#[3]	AV10	
M_DATA_A18	AR38	DDR0_DQ[18]/DDR0_DQ[34]			
M_DATA_A19	AR37	DDR0_DQ[19]/DDR0_DQ[35]	DDR0_ODT[0]	AW11	M_ODT_A0
M_DATA_A20	AN39	DDR0_DQ[20]/DDR0_DQ[36]	DDR0_ODT[1]	AU14	M_ODT_A1
M_DATA_A17	AN37	DDR0_DQ[21]/DDR0_DQ[37]	DDR0_ODT[2]	AU12	
M_DATA_A22	AR39	DDR0_DQ[22]/DDR0_DQ[38]	DDR0_ODT[3]	AY10	
M_DATA_A23	AR40	DDR0_DQ[23]/DDR0_DQ[39]			
M_DATA_A25	AW37	DDR0_DQ[24]/DDR0_DQ[40]	DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]	AY13	M_BA_A0
M_DATA_A28	AU38	DDR0_DQ[25]/DDR0_DQ[41]	DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]	AV15	M_BA_A1
M_DATA_A27	AV35	DDR0_DQ[26]/DDR0_DQ[42]	DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]	AW23	M_BG_A0
M_DATA_A31	AW35	DDR0_DQ[27]/DDR0_DQ[43]			
M_DATA_A29	AU37	DDR0_DQ[28]/DDR0_DQ[44]	DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]	AW13	M_MA_A16
M_DATA_A24	AV37	DDR0_DQ[29]/DDR0_DQ[45]	DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]	AV14	M_MA_A14
M_DATA_A30	AT35	DDR0_DQ[30]/DDR0_DQ[46]	DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]	AY11	M_MA_A15
M_DATA_A26	AU35	DDR0_DQ[31]/DDR0_DQ[47]		AW15	M_MA_A0
M_DATA_A32	AY8	DDR0_DQ[32]/DDR1_DQ[0]	DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]	AU18	M_MA_A1
M_DATA_A36	AW8	DDR0_DQ[33]/DDR1_DQ[1]	DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]	AU17	M_MA_A2
M_DATA_A34	AV6	DDR0_DQ[34]/DDR1_DQ[2]	DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]	AV19	M_MA_A3
M_DATA_A35	AU6	DDR0_DQ[35]/DDR1_DQ[3]	DDR0_MA[3]	AT19	M_MA_A4
M_DATA_A33	AU8	DDR0_DQ[36]/DDR1_DQ[4]	DDR0_MA[4]	AU20	M_MA_A5
M_DATA_A37	AV8	DDR0_DQ[37]/DDR1_DQ[5]	DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]	AV20	M_MA_A6
M_DATA_A39	AW6	DDR0_DQ[38]/DDR1_DQ[6]	DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]	AU21	M_MA_A7
M_DATA_A38	AY6	DDR0_DQ[39]/DDR1_DQ[7]	DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]	AT20	M_MA_A8
M_DATA_A44	AY4	DDR0_DQ[40]/DDR1_DQ[8]	DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]	AT22	M_MA_A9
M_DATA_A40	AV4	DDR0_DQ[41]/DDR1_DQ[9]	DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]	AY14	M_MA_A10
M_DATA_A47	AT1	DDR0_DQ[42]/DDR1_DQ[10]	DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]	AU22	M_MA_A11
M_DATA_A43	AT2	DDR0_DQ[43]/DDR1_DQ[11]	DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]	AV22	M_MA_A12
M_DATA_A41	AV3	DDR0_DQ[44]/DDR1_DQ[12]	DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]	AV12	M_MA_A13
M_DATA_A45	AW4	DDR0_DQ[45]/DDR1_DQ[13]	DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]	AV23	M_BG_A1
M_DATA_A46	AT4	DDR0_DQ[46]/DDR1_DQ[14]	DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]	AU24	M_ACT_A_L
M_DATA_A42	AT3	DDR0_DQ[47]/DDR1_DQ[15]	DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#		
M_DATA_A49	AP2	DDR0_DQ[48]/DDR1_DQ[32]		AY15	M_PAR_A
M_DATA_A54	AM4	DDR0_DQ[49]/DDR1_DQ[33]	DDR0_PAR	AT23	M_ALT_A_L
M_DATA_A53	AP3	DDR0_DQ[50]/DDR1_DQ[34]	DDR0_ALERT#		
M_DATA_A50	AM3	DDR0_DQ[51]/DDR1_DQ[35]			
M_DATA_A52	AP4	DDR0_DQ[52]/DDR1_DQ[36]			
M_DATA_A51	AM2	DDR0_DQ[53]/DDR1_DQ[37]	DDR0_DQSN[0]	AF39	M_DQS_A_N0
M_DATA_A48	AP1	DDR0_DQ[54]/DDR1_DQ[38]	DDR0_DQSN[1]	AK39	M_DQS_A_N1
M_DATA_A55	AM1	DDR0_DQ[55]/DDR1_DQ[39]	DDR0_DQSN[2]/DDR0_DQSN[4]	AP39	M_DQS_A_N2
M_DATA_A61	AK3	DDR0_DQ[56]/DDR1_DQ[40]	DDR0_DQSN[3]/DDR0_DQSN[5]	AU36	M_DQS_A_N3
M_DATA_A63	AH1	DDR0_DQ[57]/DDR1_DQ[41]	DDR0_DQSN[4]/DDR1_DQSN[0]	AW7	M_DQS_A_N4
M_DATA_A60	AK4	DDR0_DQ[58]/DDR1_DQ[42]	DDR0_DQSN[5]/DDR1_DQSN[1]	AU3	M_DQS_A_N5
M_DATA_A59	AH2	DDR0_DQ[59]/DDR1_DQ[43]	DDR0_DQSN[6]/DDR1_DQSN[4]	AN3	M_DQS_A_N6
M_DATA_A62	AH4	DDR0_DQ[60]/DDR1_DQ[44]	DDR0_DQSN[7]/DDR1_DQSN[5]	AJ3	M_DQS_A_N7
M_DATA_A57	AK2	DDR0_DQ[61]/DDR1_DQ[45]			
M_DATA_A58	AH3	DDR0_DQ[62]/DDR1_DQ[46]	DDR0_DQSP[0]	AF38	M_DQS_A_P0
M_DATA_A56	AK1	DDR0_DQ[63]/DDR1_DQ[47]	DDR0_DQSP[1]	AK38	M_DQS_A_P1
			DDR0_DQSP[2]/DDR0_DQSP[4]	AP38	M_DQS_A_P2
M_DATA_A_CB5	AU33	DDR0_ECC[0]	DDR0_DQSP[3]/DDR0_DQSP[5]	AV36	M_DQS_A_P3
M_DATA_A_CB4	AT33	DDR0_ECC[1]	DDR0_DQSP[4]/DDR1_DQSP[0]	AV7	M_DQS_A_P4
M_DATA_A_CB0	AW33	DDR0_ECC[2]	DDR0_DQSP[5]/DDR1_DQSP[1]	AU2	M_DQS_A_P5
M_DATA_A_CB3	AV31	DDR0_ECC[3]	DDR0_DQSP[6]/DDR1_DQSP[4]	AN2	M_DQS_A_P6
M_DATA_A_CB2	AU31	DDR0_ECC[4]	DDR0_DQSP[7]/DDR1_DQSP[5]	AJ2	M_DQS_A_P7
M_DATA_A_CB1	AV33	DDR0_ECC[5]			
M_DATA_A_CB6	AW31	DDR0_ECC[6]	DDR0_DQSP[8]	AV32	M_DQS_A_P8
M_DATA_A_CB7	AY31	DDR0_ECC[7]	DDR0_DQSN[8]	AU32	M_DQS_A_N8

LEFT: IL, RIGHT: NIL

LEFT TO RIGHT: DDR3L/LPDDR3/DDR4

DDR CHANNEL A

LGA-1151P-GF

1 OF 10

REV = 1.2

Follow DDR4 RVP8 CRB

**Attention

CPU1B

SKL_S_CPU

LGA1151

DDR4 CH.B

<9> M_DQS_B_P[0..8]
<9> M_DQS_B_N[0..8]
M_DQS_B_P[0..8]
M_DQS_B_N[0..8]

<9> M_DATA_B[0..63]
M_DATA_B[0..63]

<9> M_DATA_B_CB[0..7]
M_DATA_B_CB[0..7]

<9> M_ODT_B[0..1]
M_ODT_B[0..1]

<9> M_CKE_B[0..1]
M_CKE_B[0..1]

<9> M_CS_B_L[0..1]
M_CS_B_L[0..1]

<9> M_CLK_B_P[0..1]
<9> M_CLK_B_N[0..1]
M_CLK_B_P[0..1]
M_CLK_B_N[0..1]

<9> M_MA_B[0..16]
M_MA_B[0..16]

M_DATA_B4	AD34	DDR1_DQ[0]/DDR0_DQ[16]	DDR1_CKP[0]	AM20	M_CLK_B_P0
M_DATA_B5	AD35	DDR1_DQ[1]/DDR0_DQ[17]	DDR1_CKN[0]	AM21	M_CLK_B_N0
M_DATA_B7	AG35	DDR1_DQ[2]/DDR0_DQ[18]	DDR1_CKP[1]	AP22	M_CLK_B_P1
M_DATA_B3	AH35	DDR1_DQ[3]/DDR0_DQ[19]	DDR1_CKN[1]	AP21	M_CLK_B_N1
M_DATA_B1	AE35	DDR1_DQ[4]/DDR0_DQ[20]	DDR1_CKP[2]	AN20	
M_DATA_B0	AE34	DDR1_DQ[5]/DDR0_DQ[21]	DDR1_CKN[2]	AN21	
M_DATA_B6	AG34	DDR1_DQ[6]/DDR0_DQ[22]	DDR1_CKP[3]	AP19	
M_DATA_B2	AH34	DDR1_DQ[7]/DDR0_DQ[23]	DDR1_CKN[3]	AP20	
M_DATA_B13	AK35	DDR1_DQ[8]/DDR0_DQ[24]			
M_DATA_B9	AL35	DDR1_DQ[9]/DDR0_DQ[25]	DDR1_CKE[0]	AY29	M_CKE_B0
M_DATA_B14	AK32	DDR1_DQ[10]/DDR0_DQ[26]	DDR1_CKE[1]	AV29	M_CKE_B1
M_DATA_B15	AL32	DDR1_DQ[11]/DDR0_DQ[27]	DDR1_CKE[2]	AW29	
M_DATA_B12	AK34	DDR1_DQ[12]/DDR0_DQ[28]	DDR1_CKE[3]	AU29	
M_DATA_B8	AL34	DDR1_DQ[13]/DDR0_DQ[29]			
M_DATA_B10	AK31	DDR1_DQ[14]/DDR0_DQ[30]	DDR1_CS#[0]	AP17	M_CS_B_L0
M_DATA_B11	AL31	DDR1_DQ[15]/DDR0_DQ[31]	DDR1_CS#[1]	AN15	M_CS_B_L1
M_DATA_B16	AP35	DDR1_DQ[16]/DDR0_DQ[48]	DDR1_CS#[2]	AN17	
M_DATA_B20	AN35	DDR1_DQ[17]/DDR0_DQ[49]	DDR1_CS#[3]	AM15	
M_DATA_B22	AN32	DDR1_DQ[18]/DDR0_DQ[50]			
M_DATA_B23	AP32	DDR1_DQ[19]/DDR0_DQ[51]	DDR1_ODT[0]	AM16	M_ODT_B0
M_DATA_B17	AN34	DDR1_DQ[20]/DDR0_DQ[52]	DDR1_ODT[1]	AL16	M_ODT_B1
M_DATA_B21	AP34	DDR1_DQ[21]/DDR0_DQ[53]	DDR1_ODT[2]	AP15	
M_DATA_B18	AN31	DDR1_DQ[22]/DDR0_DQ[54]	DDR1_ODT[3]	AL15	
M_DATA_B19	AP31	DDR1_DQ[23]/DDR0_DQ[55]			
M_DATA_B28	AL29	DDR1_DQ[24]/DDR0_DQ[56]	DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]	AN18	M_MA_B16
M_DATA_B24	AM29	DDR1_DQ[25]/DDR0_DQ[57]	DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]	AL17	M_MA_B14
M_DATA_B30	AP29	DDR1_DQ[26]/DDR0_DQ[58]	DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]	AP16	M_MA_B15
M_DATA_B26	AR29	DDR1_DQ[27]/DDR0_DQ[59]			
M_DATA_B25	AM28	DDR1_DQ[28]/DDR0_DQ[60]	DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]	AL18	M_BA_B0
M_DATA_B29	AL28	DDR1_DQ[29]/DDR0_DQ[61]	DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]	AM18	M_BA_B1
M_DATA_B27	AR28	DDR1_DQ[30]/DDR0_DQ[62]	DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]	AW28	M_BG_B0
M_DATA_B31	AP28	DDR1_DQ[31]/DDR0_DQ[63]			
M_DATA_B32	AR12	DDR1_DQ[32]/DDR1_DQ[16]	DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]	AL19	M_MA_B0
M_DATA_B33	AP12	DDR1_DQ[33]/DDR1_DQ[17]	DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]	AL22	M_MA_B1
M_DATA_B38	AM13	DDR1_DQ[34]/DDR1_DQ[18]	DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]	AM22	M_MA_B2
M_DATA_B34	AL13	DDR1_DQ[35]/DDR1_DQ[19]	DDR1_MA[3]	AM23	M_MA_B3
M_DATA_B36	AR13	DDR1_DQ[36]/DDR1_DQ[20]	DDR1_MA[4]	AP23	M_MA_B4
M_DATA_B37	AP13	DDR1_DQ[37]/DDR1_DQ[21]	DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]	AL23	M_MA_B5
M_DATA_B39	AM12	DDR1_DQ[38]/DDR1_DQ[22]	DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]	AW26	M_MA_B6
M_DATA_B35	AL12	DDR1_DQ[39]/DDR1_DQ[23]	DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]	AY26	M_MA_B7
M_DATA_B44	AP10	DDR1_DQ[40]/DDR1_DQ[24]	DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]	AU26	M_MA_B8
M_DATA_B45	AR10	DDR1_DQ[41]/DDR1_DQ[25]	DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]	AW27	M_MA_B9
M_DATA_B46	AR7	DDR1_DQ[42]/DDR1_DQ[26]	DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]	AP18	M_MA_B10
M_DATA_B42	AP7	DDR1_DQ[43]/DDR1_DQ[27]	DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]	AU27	M_MA_B11
M_DATA_B41	AR9	DDR1_DQ[44]/DDR1_DQ[28]	DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]	AV27	M_MA_B12
M_DATA_B40	AP9	DDR1_DQ[45]/DDR1_DQ[29]	DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]	AR15	M_MA_B13
M_DATA_B47	AR6	DDR1_DQ[46]/DDR1_DQ[30]	DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]	AY28	M_BG_B1
M_DATA_B43	AP6	DDR1_DQ[47]/DDR1_DQ[31]	DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#	AU28	M_ACT_B_L
M_DATA_B52	AM10	DDR1_DQ[48]			
M_DATA_B53	AL10	DDR1_DQ[49]	DDR1_PAR	AL20	M_PAR_B
M_DATA_B55	AM7	DDR1_DQ[50]	DDR1_ALERT#	AY25	M_ALT_B_L
M_DATA_B51	AL7	DDR1_DQ[51]			
M_DATA_B48	AM9	DDR1_DQ[52]			
M_DATA_B49	AL9	DDR1_DQ[53]	DDR1_DQSN[0]/DDR0_DQSN[2]	AF34	M_DQS_B_N0
M_DATA_B54	AM6	DDR1_DQ[54]	DDR1_DQSN[1]/DDR0_DQSN[3]	AK33	M_DQS_B_N1
M_DATA_B50	AL6	DDR1_DQ[55]	DDR1_DQSN[2]/DDR0_DQSN[6]	AN33	M_DQS_B_N2
M_DATA_B61	AJ6	DDR1_DQ[56]	DDR1_DQSN[3]/DDR0_DQSN[7]	AP29	M_DQS_B_N3
M_DATA_B56	AJ7	DDR1_DQ[57]	DDR1_DQSN[4]/DDR1_DQSN[2]	AN13	M_DQS_B_N4
M_DATA_B63	AE6	DDR1_DQ[58]	DDR1_DQSN[5]/DDR1_DQSN[3]	AR8	M_DQS_B_N5
M_DATA_B58	AF7	DDR1_DQ[59]	DDR1_DQSN[6]	AM8	M_DQS_B_N6
M_DATA_B60	AH7	DDR1_DQ[60]	DDR1_DQSN[7]	AG6	M_DQS_B_N7
M_DATA_B57	AH6	DDR1_DQ[61]			
M_DATA_B59	AE7	DDR1_DQ[62]	DDR1_DQSP[0]/DDR0_DQSP[2]	AF35	M_DQS_B_P0
M_DATA_B62	AF6	DDR1_DQ[63]	DDR1_DQSP[1]/DDR0_DQSP[3]	AL33	M_DQS_B_P1
			DDR1_DQSP[2]/DDR0_DQSP[6]	AP33	M_DQS_B_P2
M_DATA_B_CB5	AR25	DDR1_ECC[0]	DDR1_DQSP[3]/DDR0_DQSP[7]	AN28	M_DQS_B_P3
M_DATA_B_CB6	AR26	DDR1_ECC[1]	DDR1_DQSP[4]/DDR1_DQSP[2]	AN12	M_DQS_B_P4
M_DATA_B_CB5	AM26	DDR1_ECC[2]	DDR1_DQSP[5]/DDR1_DQSP[3]	AP8	M_DQS_B_P5
M_DATA_B_CB1	AM25	DDR1_ECC[3]	DDR1_DQSP[6]	AL8	M_DQS_B_P6
M_DATA_B_CB3	AP26	DDR1_ECC[4]	DDR1_DQSP[7]	AG7	M_DQS_B_P7
M_DATA_B_CB7	AP25	DDR1_ECC[5]			
M_DATA_B_CB0	AL25	DDR1_ECC[6]	DDR1_DQSP[8]	AN25	M_DQS_B_P8
M_DATA_B_CB4	AL26	DDR1_ECC[7]	DDR1_DQSN[8]	AN26	M_DQS_B_N8

LEFT: IL, RIGHT: NIL

LEFT TO RIGHT: DDR3L/LPDDR3/DDR4

DDR CHANNEL B

LGA-1151P-GF

2 OF 10

REV = 1.2

DDR_VREF_CA
DDR0_VREF_DQ
DDR1_VREF_DQ

AB40
AC40 DDR0_VREF_DQ 1
AC39

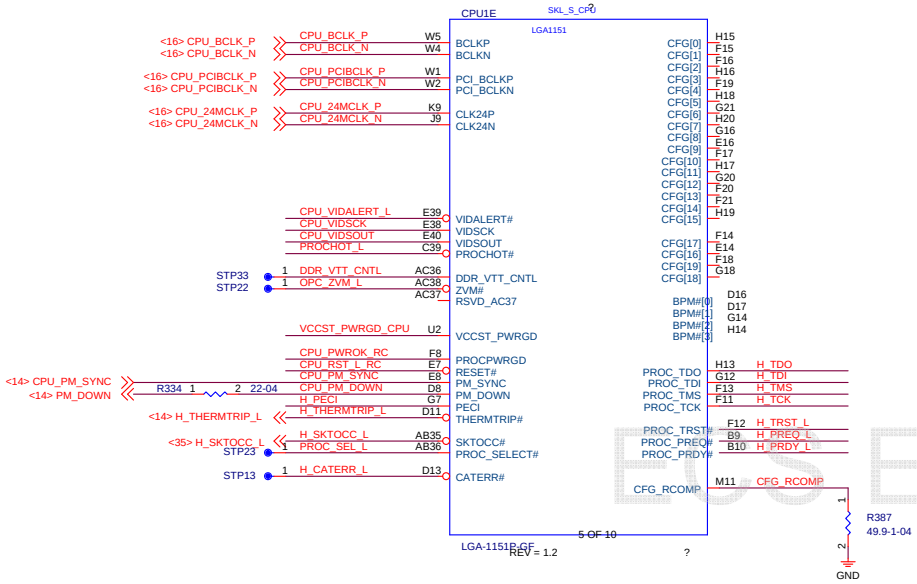
DDR_VREF_CA <9>
TP5
DDR1_VREF_DQ <9>

Elitegroup Computer Systems

Title: CPU-DDR4

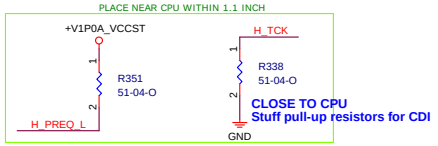
Size: Custom | Document Number: H110M4-C43 | Rev: V1.0

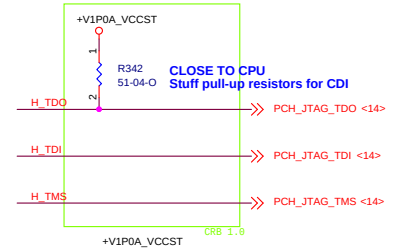
Date: Friday, February 05, 2016 | Sheet 5 of 44

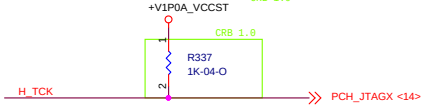


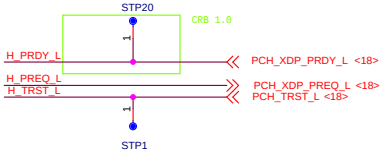
CFG[0:15] Configuration note

- **CFG[0]**: Stall reset sequence after PCU PLL lock until de-asserted:
  - 1 = (Default) Normal Operation; No stall.
  - 0 = Stall.
- **CFG[1]**: Reserved configuration lane.
- **CFG[2]**: PCI Express* Static x16 Lane Numbering Reversal.
  - 1 = Normal operation
  - 0 = Lane numbers reversed.
- **CFG[3]**: Reserved configuration lane.
- **CFG[4]**: eDP enable:
  - 1 = Disabled.
  - 0 = Enabled.
- **CFG[6:5]**: PCI Express* Bifurcation
  - 00 = 1 x8, 2 x4 PCI Express*
  - 01 = reserved
  - 10 = 2 x8 PCI Express*
  - 11 = 1 x16 PCI Express*
- **CFG[7]**: PEG Training:
  - 1 = (default) PEG Train immediately following RESET# de assertion.
  - 0 = PEG Wait for BIOS for training.
- **CFG[19:8]**: Reserved configuration lanes.

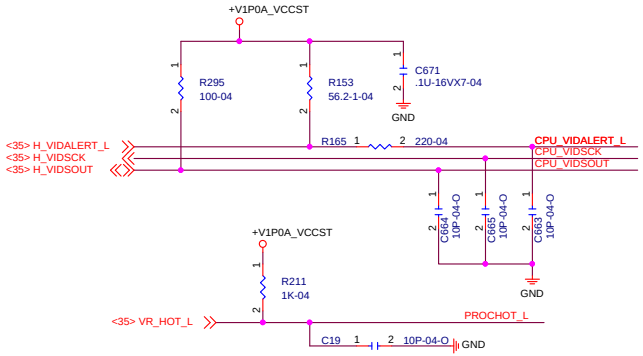




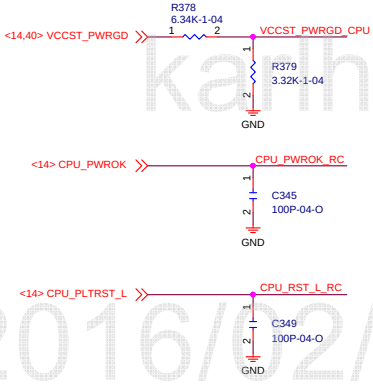




Asynchronous & Sideband Signal

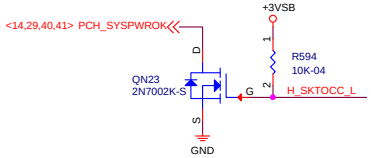


Processor Power Good

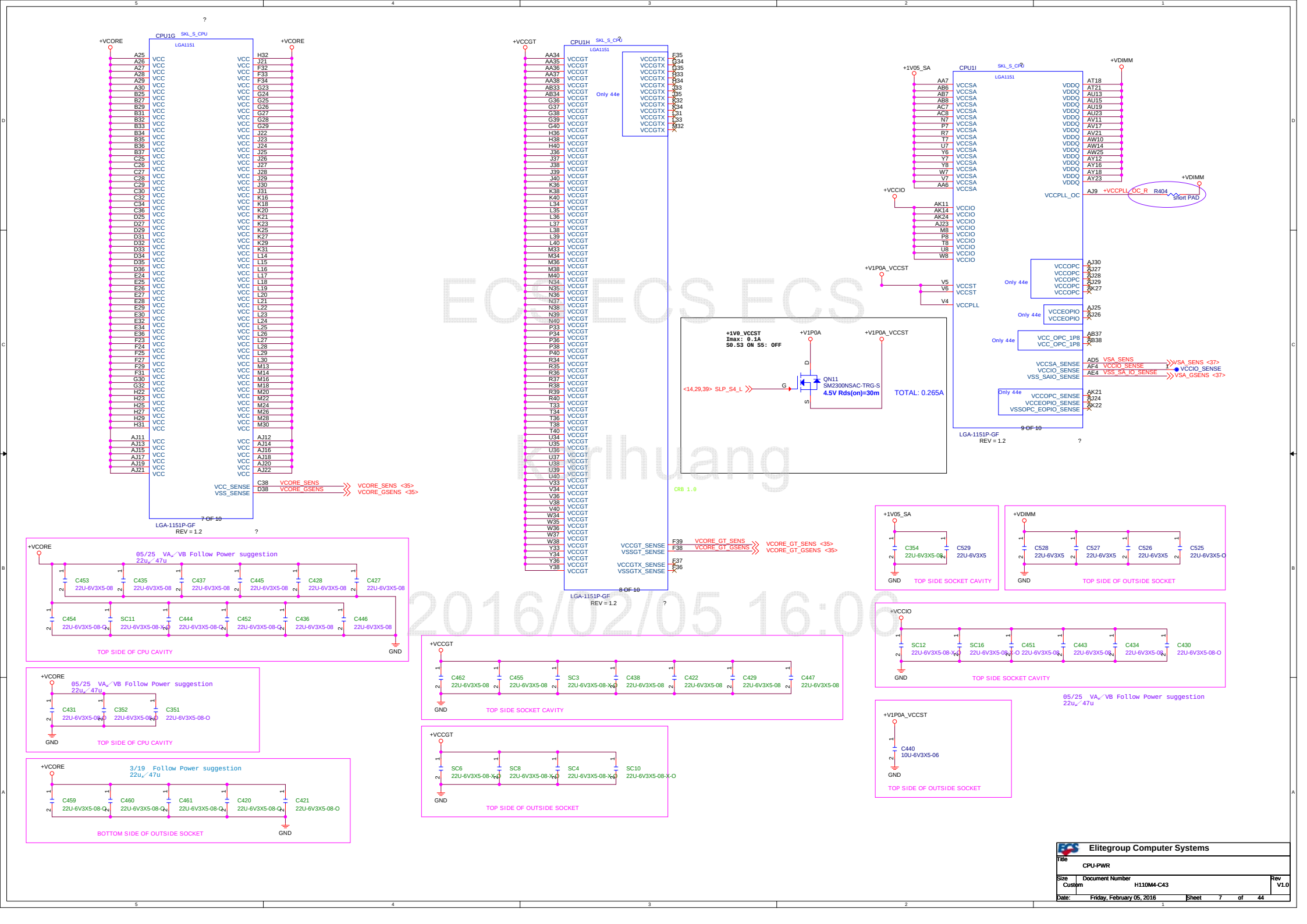


PECI

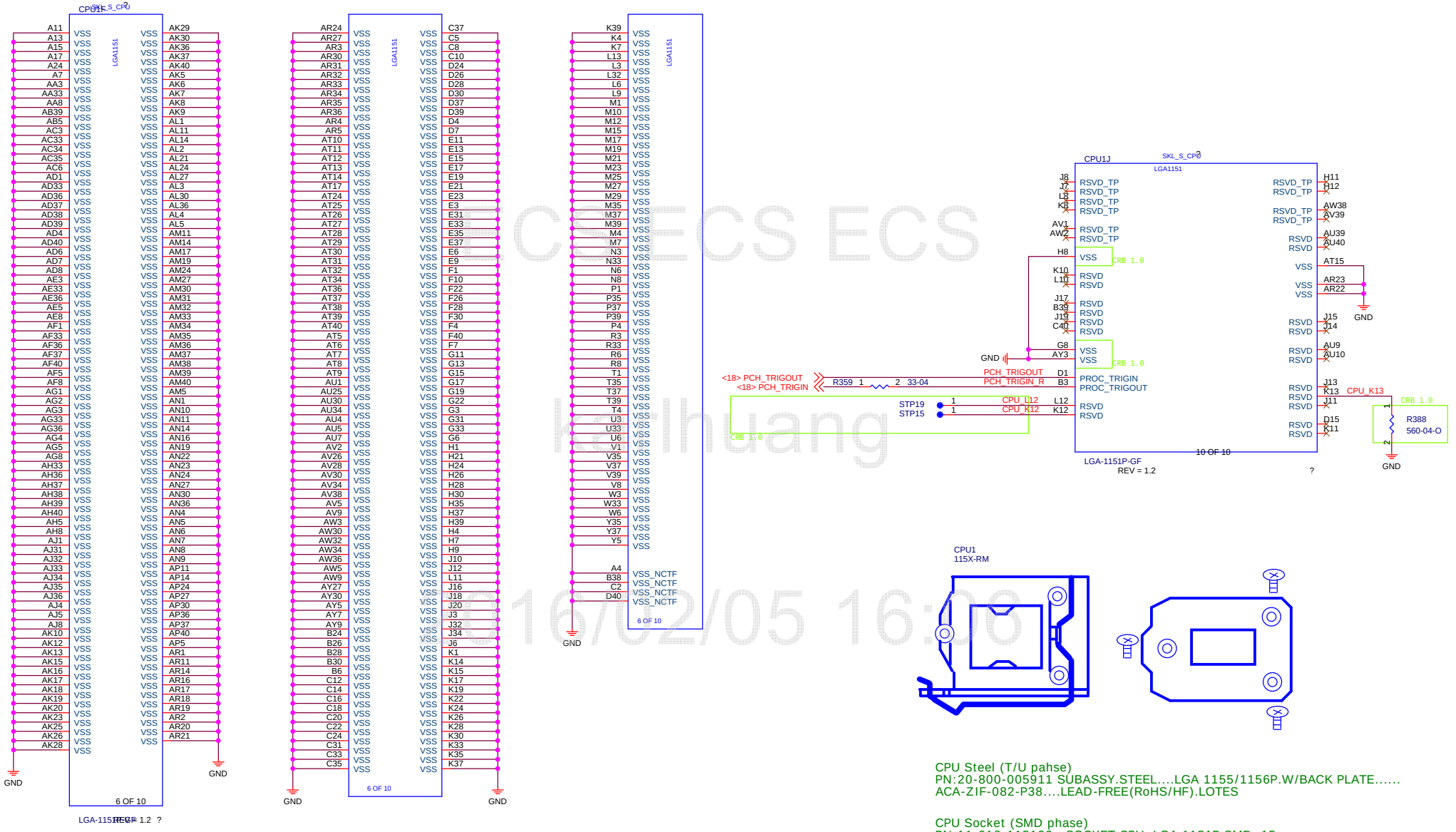
SKTOCC#



Elitegroup Computer Systems		
Title: CPU-MISC		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 6 of 44	



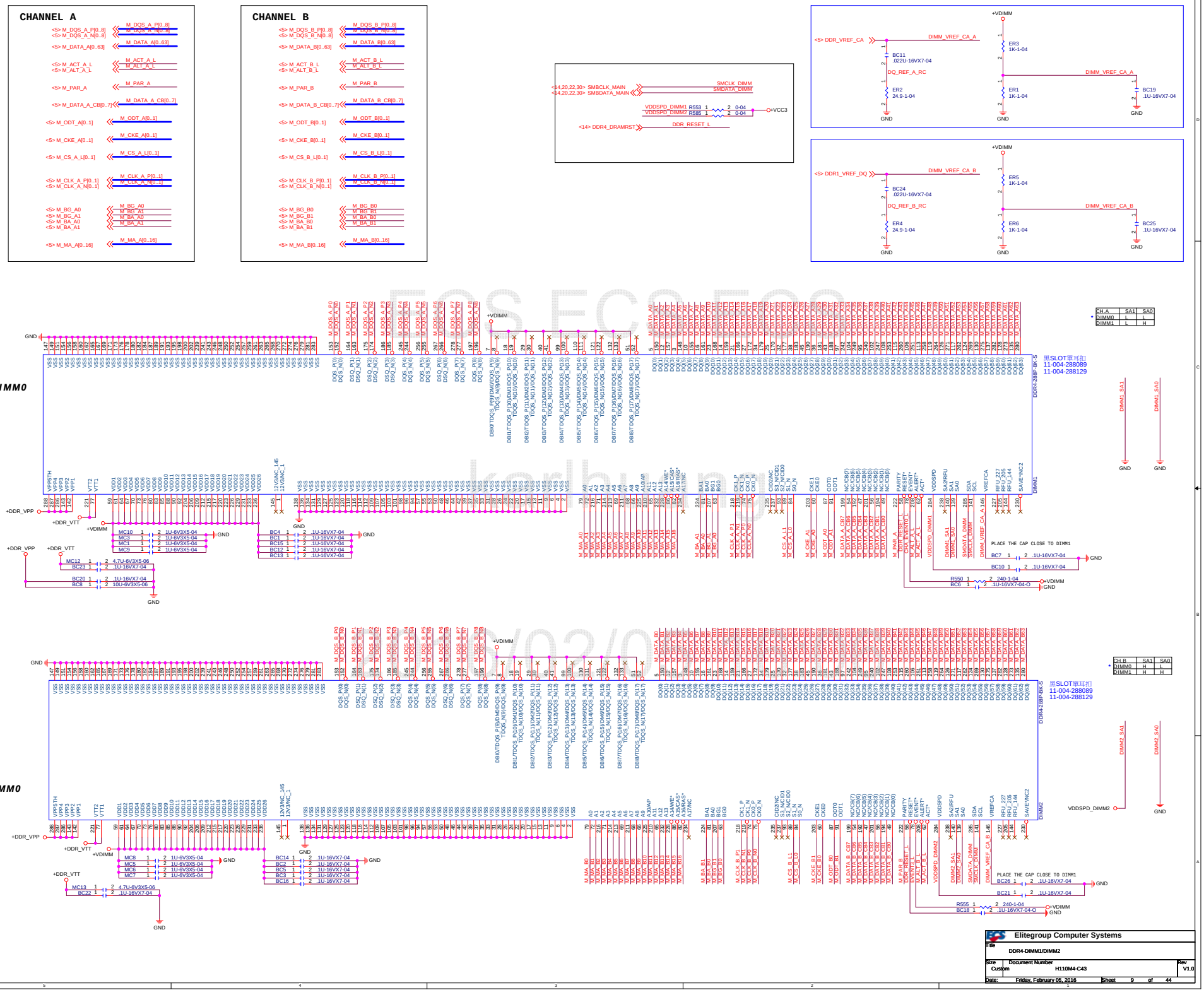
Elitegroup Computer Systems			
Title: CPU-PWR			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 7 of 44		



CPU Steel (T/U pahse)
PN:20-800-005911 SUBASSY.STEEL....LGA 1155/1156P.W/BACK PLATE.....
ACA-ZIF-082-P38....LEAD-FREE(RoHS/HF).LOTES

CPU Socket (SMD phase)
PN:11-018-115132 SOCKET.CPU..LGA 1151P SMD..15u...
BLACK.AZIF0049-P001C...HF.LEAD-FREE.LOTES

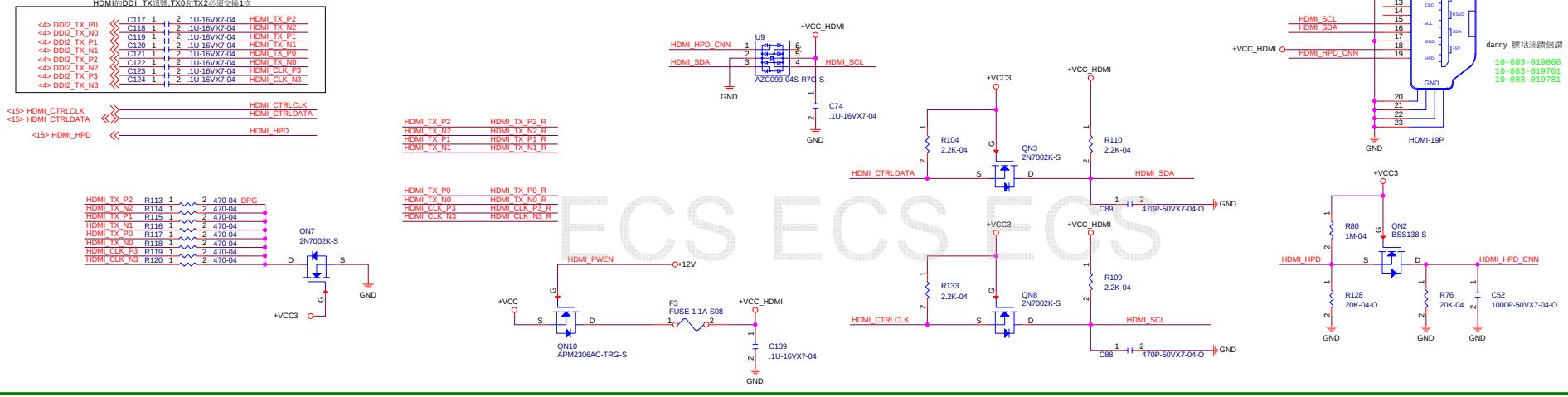
Elitegroup Computer Systems		
Title: CPU-GND		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 8 of 44	


CHANNEL A
CHANNEL B
DIMM1----
CHANNEL A DIMM0
DIMM2---
CHANNEL B DIMM0
DDR4-288P-8K-S
11-004-288089
11-004-288129
PLACE THE CAP CLOSE TO DIMM1
PLACE THE CAP CLOSE TO DIMM1
Elitegroup Computer Systems
DDR4-DIMM1/DIMM2
H110M4-C43
Friday, February 05, 2016

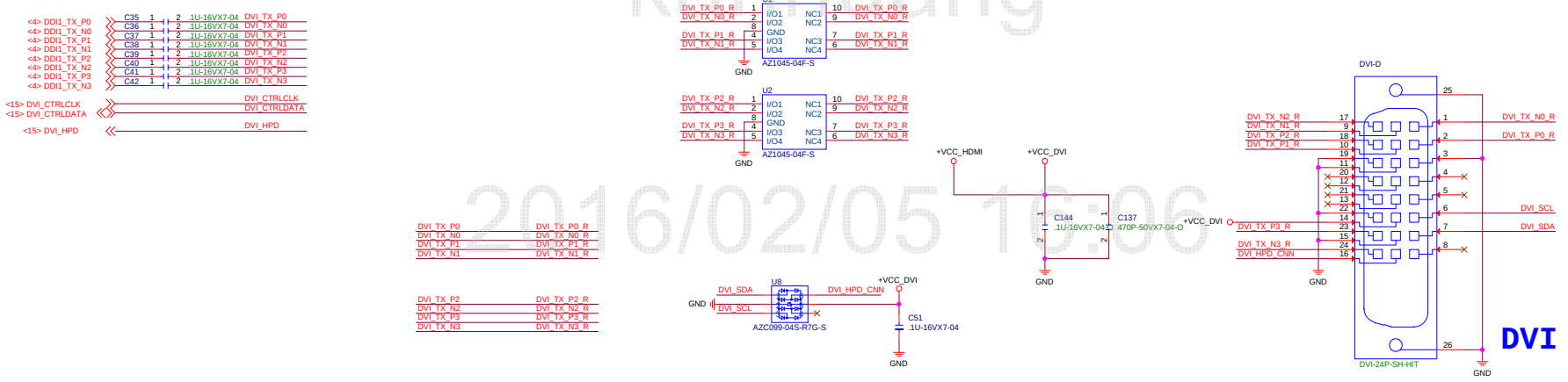
Port 2			
	DDI2_TXP[0]	DDI2_LANE0_DP	HDMIx_TX2_DP
	DDI2_TXN[0]	DDI2_LANE0_DN	HDMIx_TX2_DN
	DDI2_TXP[1]	DDI2_LANE1_DP	HDMIx_TX1_DP
	DDI2_TXN[1]	DDI2_LANE1_DN	HDMIx_TX1_DN
	DDI2_TXP[2]	DDI2_LANE2_DP	HDMIx_TX0_DP
	DDI2_TXN[2]	DDI2_LANE2_DN	HDMIx_TX0_DN
	DDI2_TXP[3]	DDI2_LANE3_DP	HDMIx_CLK_DP
	DDI2_TXN[3]	DDI2_LANE3_DN	HDMIx_CLK_DN

HDMI

HDMI的DDI_TX訊號,TX0和TX2必須交換1次



DVI



Elitegroup Computer Systems			
Title: HDMI/DVI			
Size: C	Document Number: H110M4-C43		Rev: V1.0
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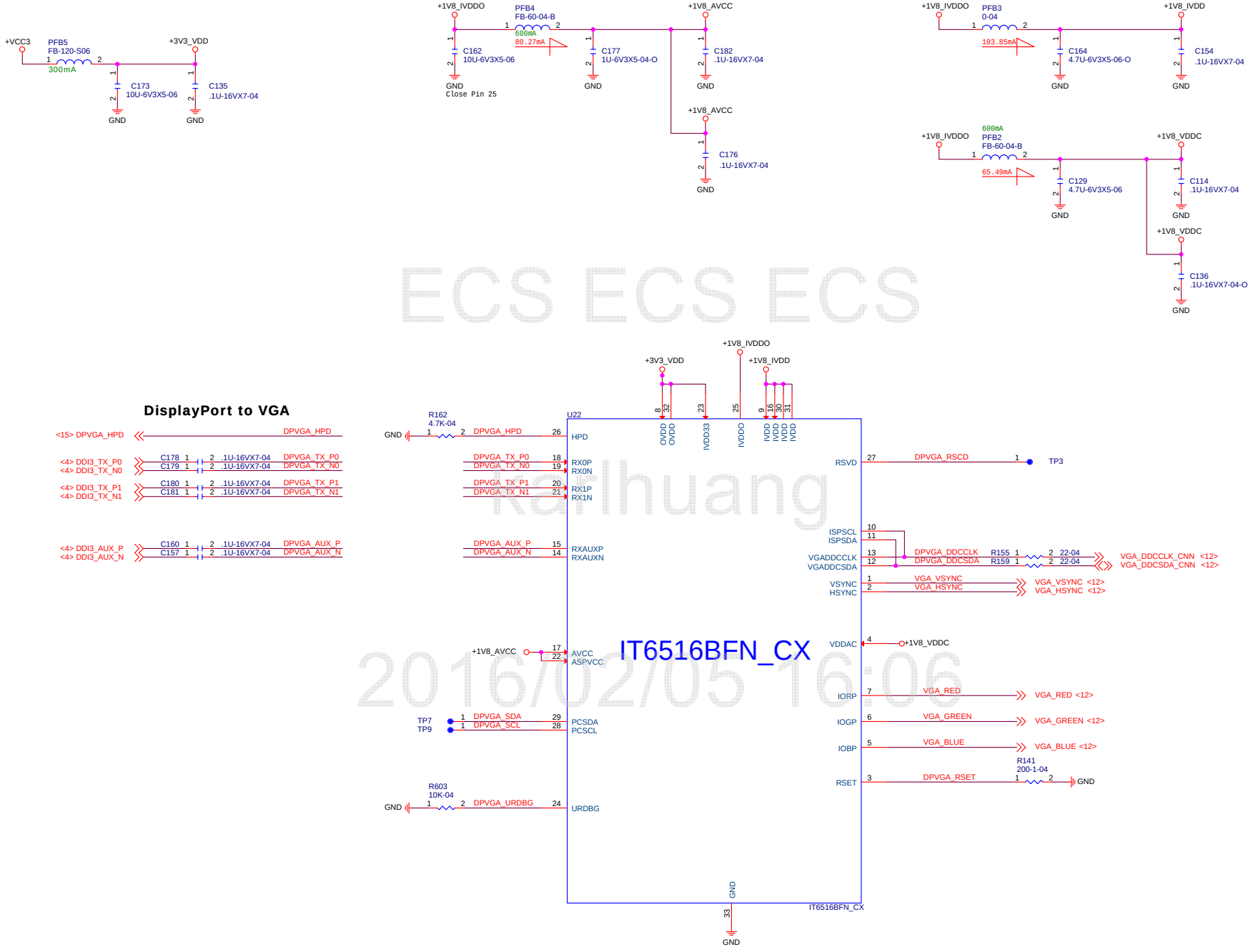
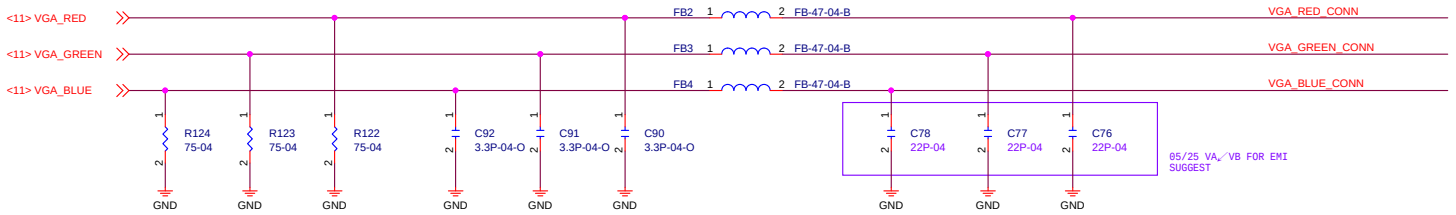
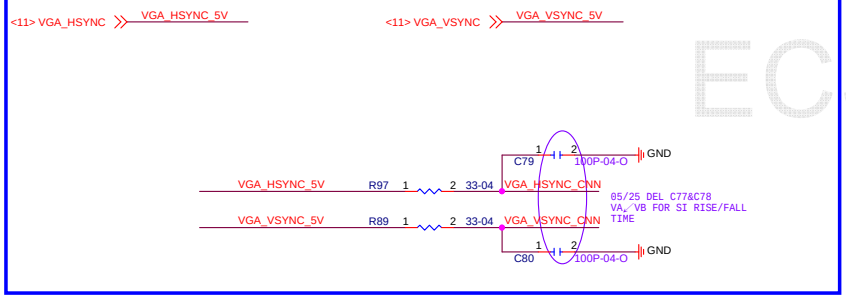


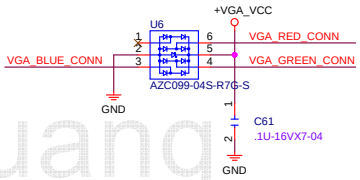
Elitegroup Computer Systems		
Title: VGA Bridge(IT6515)		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 11 of 44	

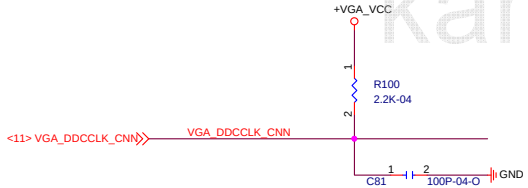
VGA

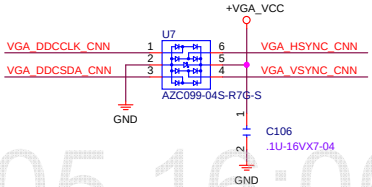


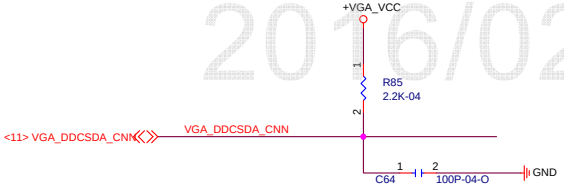
Level shifter,default 0 ohm

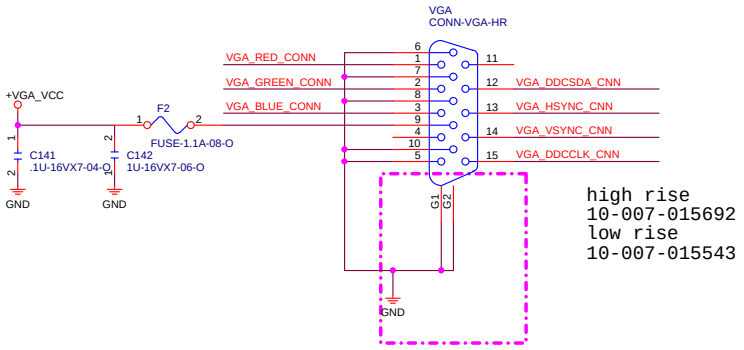












high rise
10-007-015692
low rise
10-007-015543

Elitegroup Computer Systems		
Title: VGA		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
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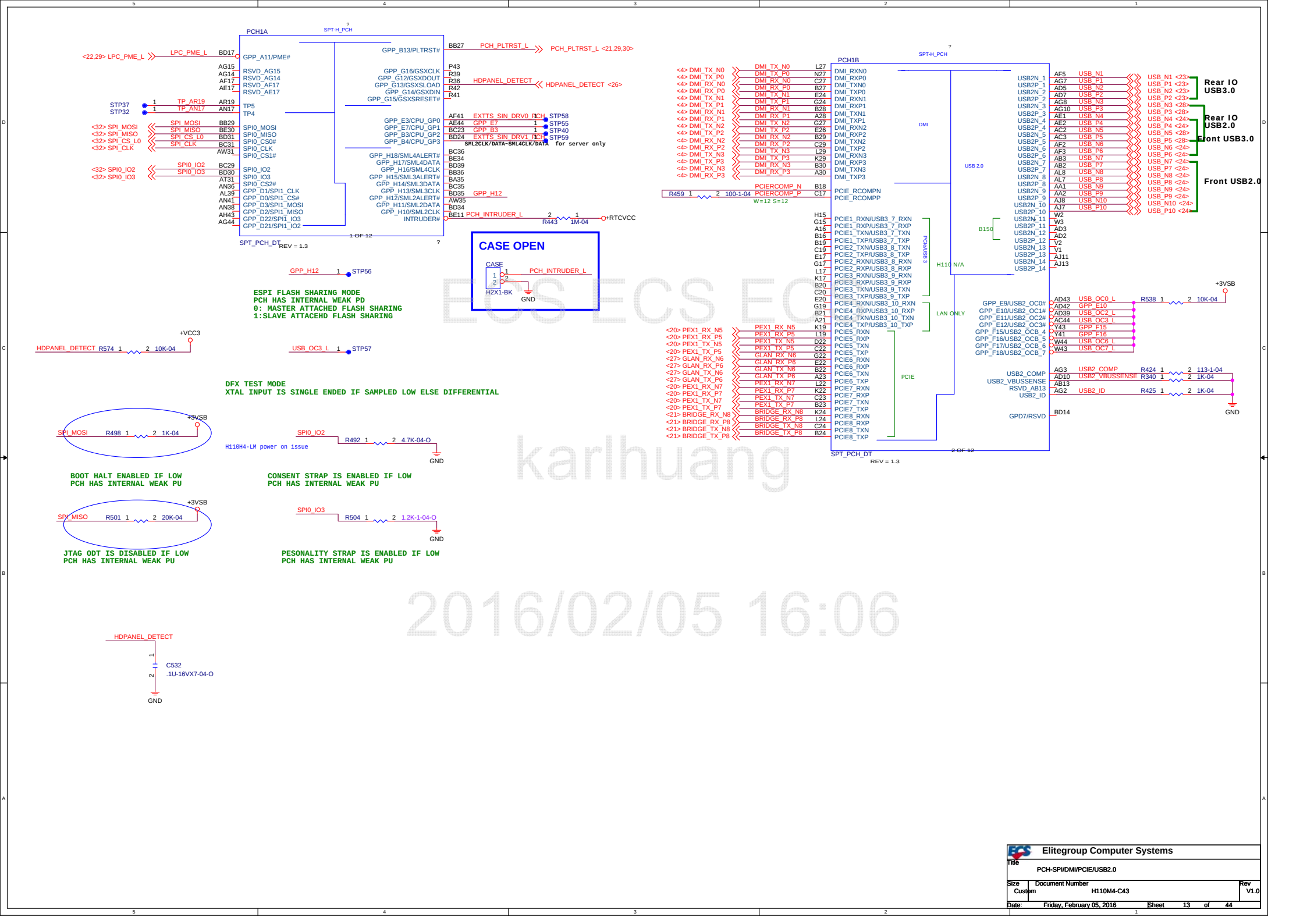
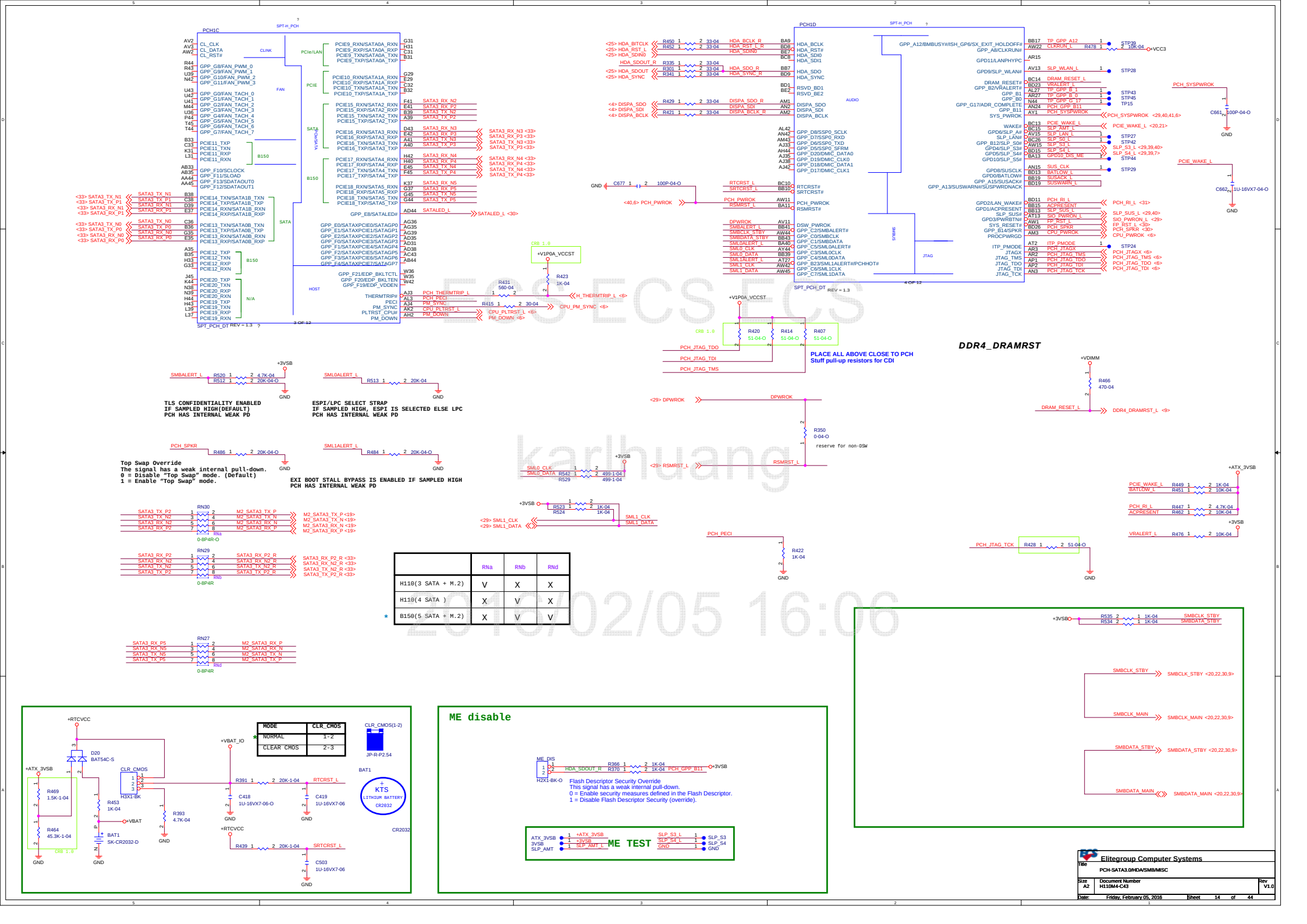
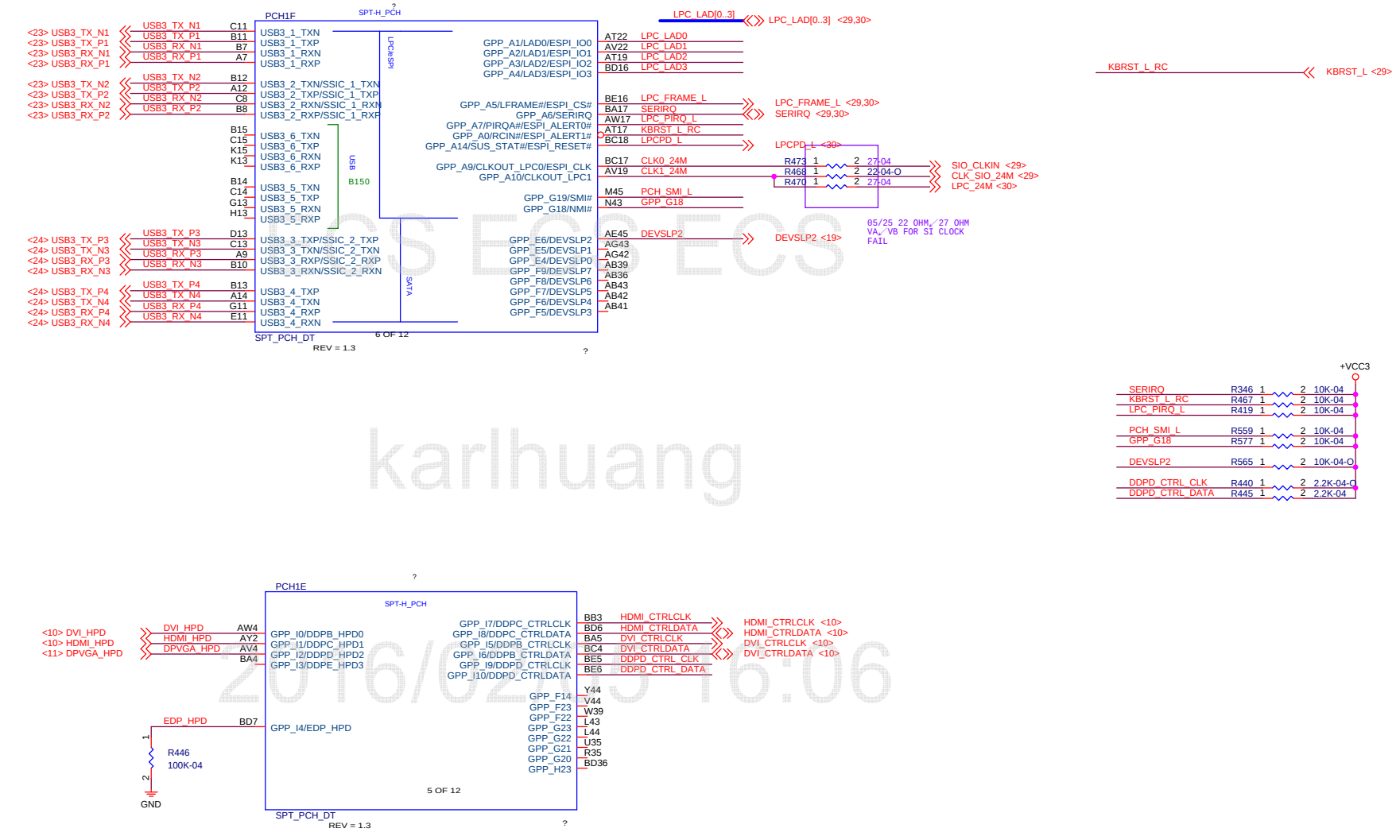


Elitegroup Computer Systems			
Title: PCH-SPI/DMI/PCIE/USB2.0			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 13 of 44		





Title	Elitegroup Computer Systems PCH-USB3.0/LPC
Size	Custom
Document Number	H110M4-C43
Rev	V1.0
Date:	Friday, February 05, 2016
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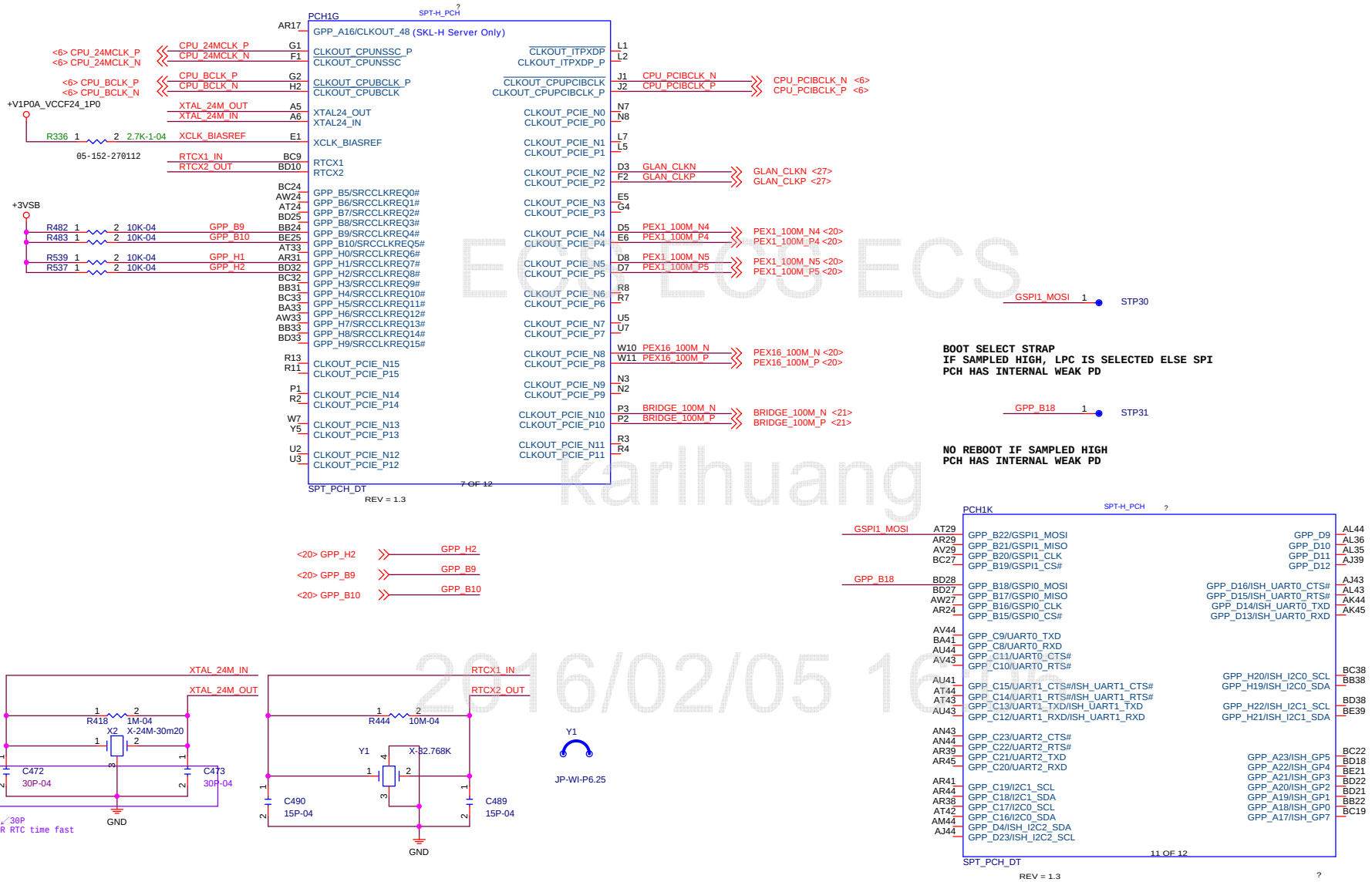
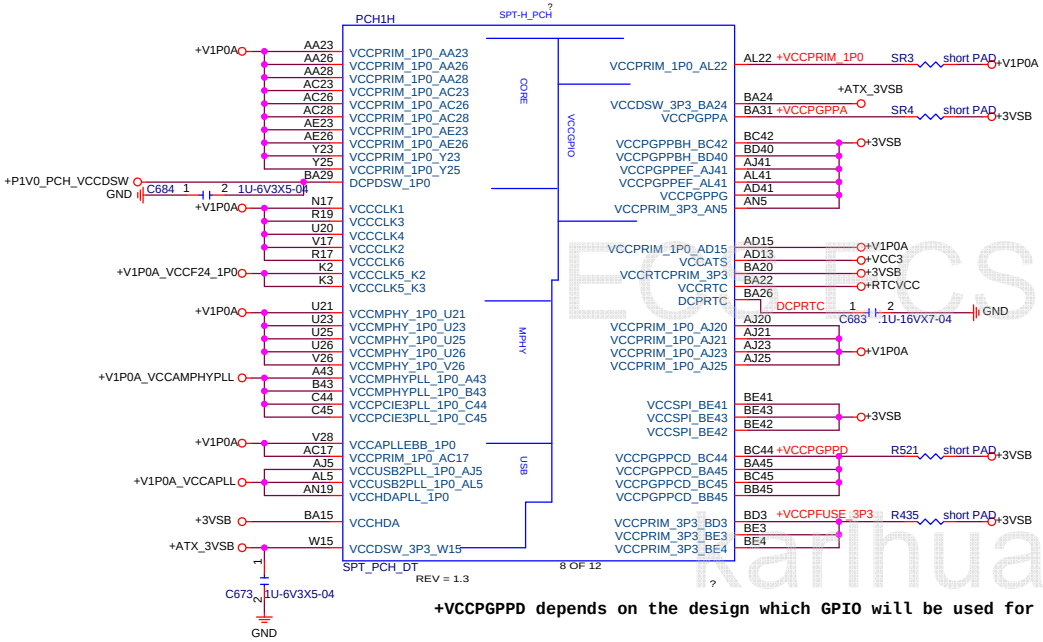
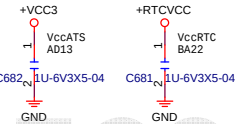
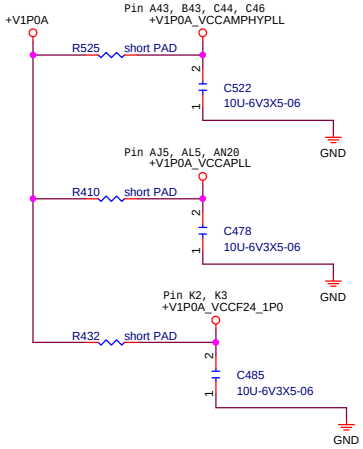
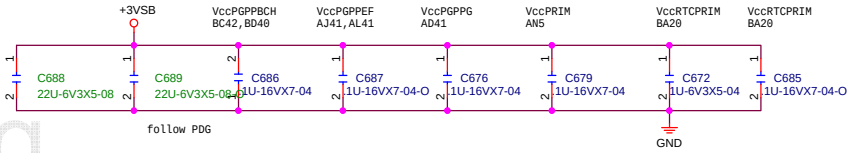


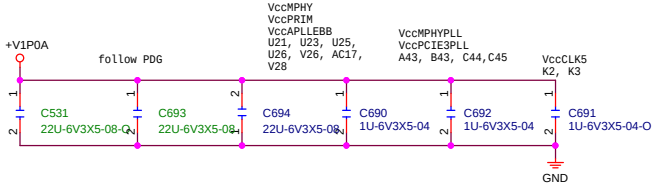
Elitegroup Computer Systems		
Title: PCH-CLK		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 16 of 44	



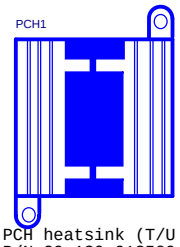






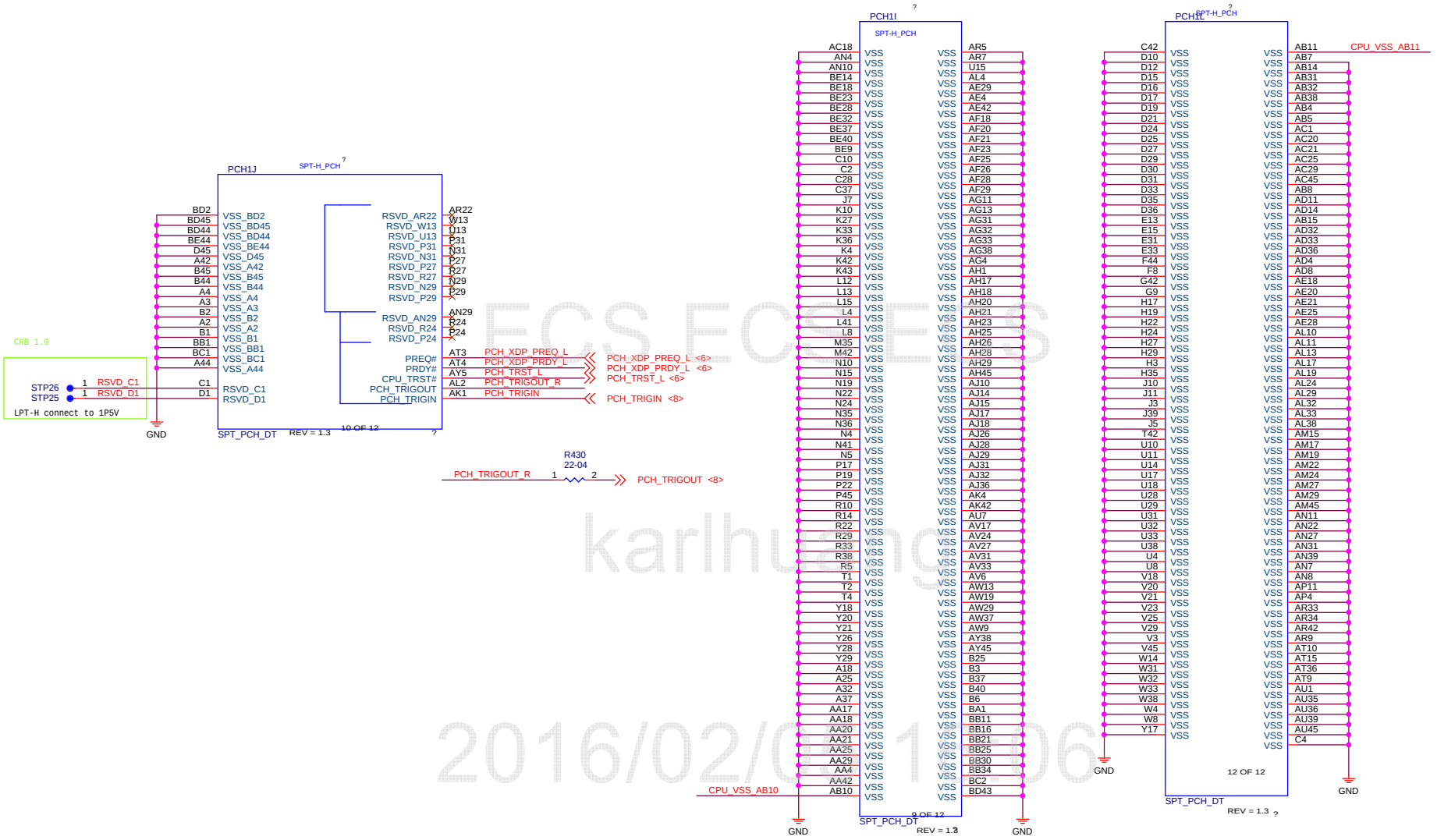


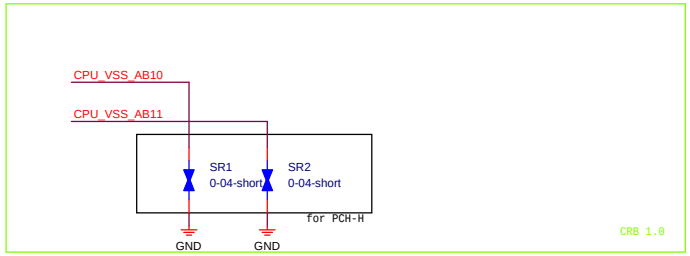
+VCCPGPPD depends on the design which GPIO will be used for 3.3V or 1.8V.



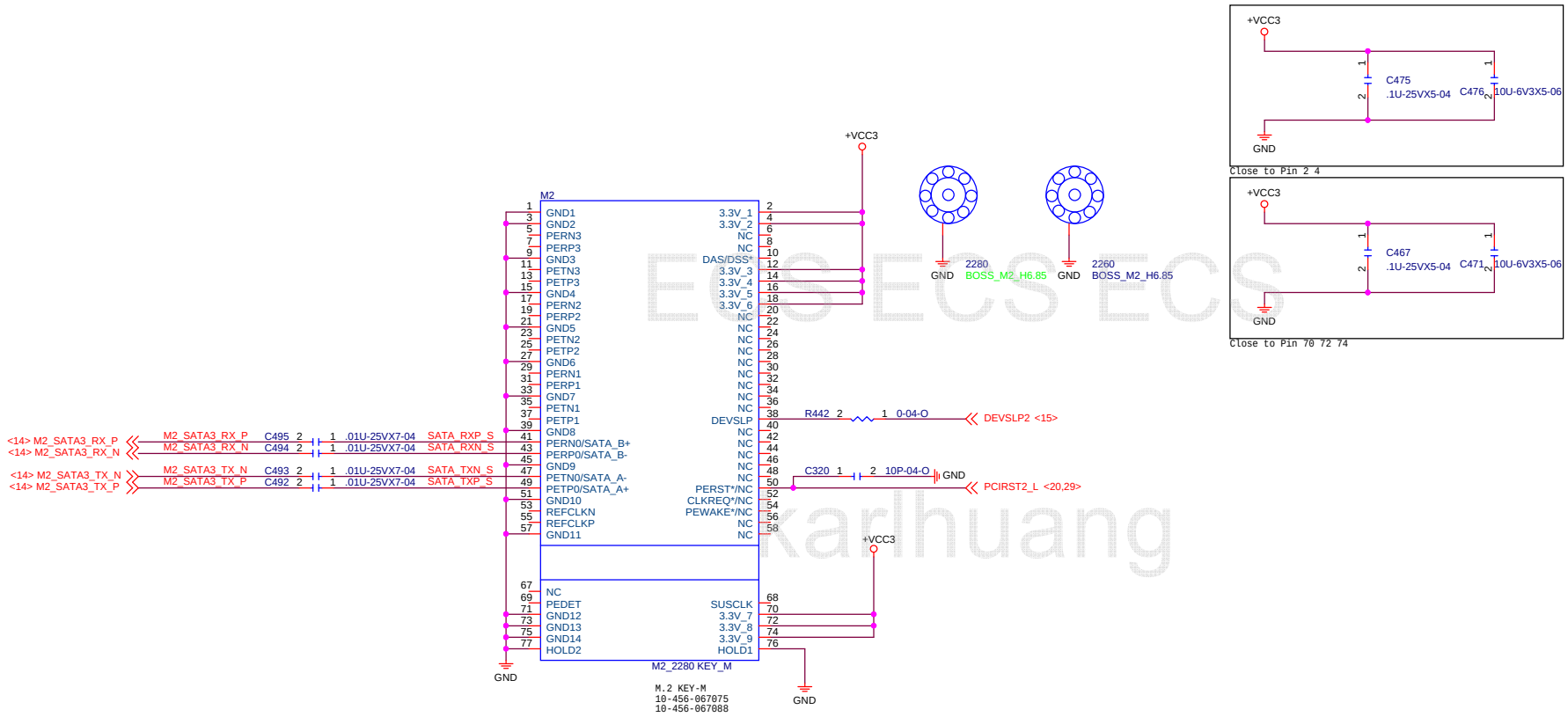
PCH heatsink (T/U phase)
P/N:20-120-013580

Elitegroup Computer Systems		
Title: PCH-PWR		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 17 of 44	

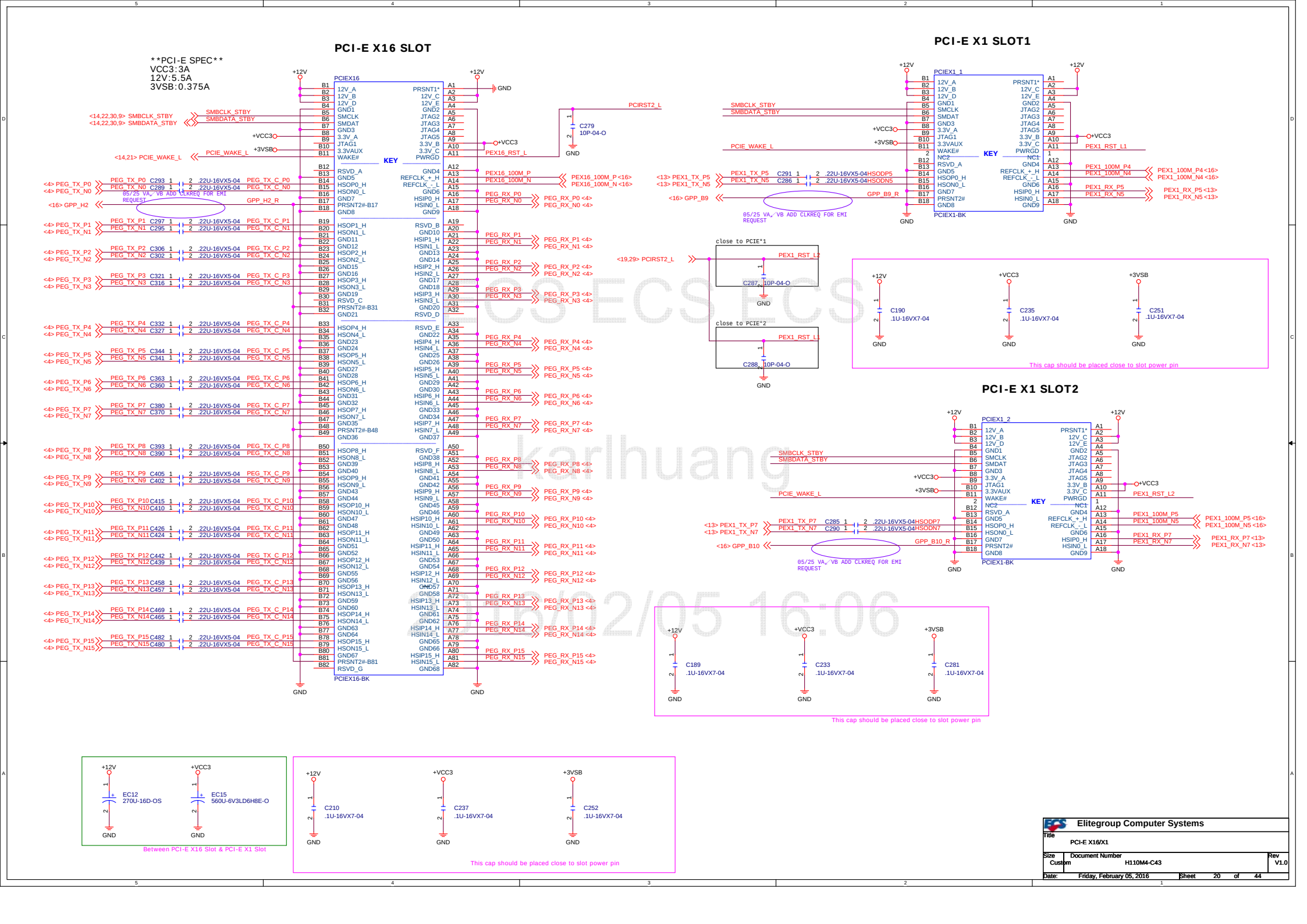


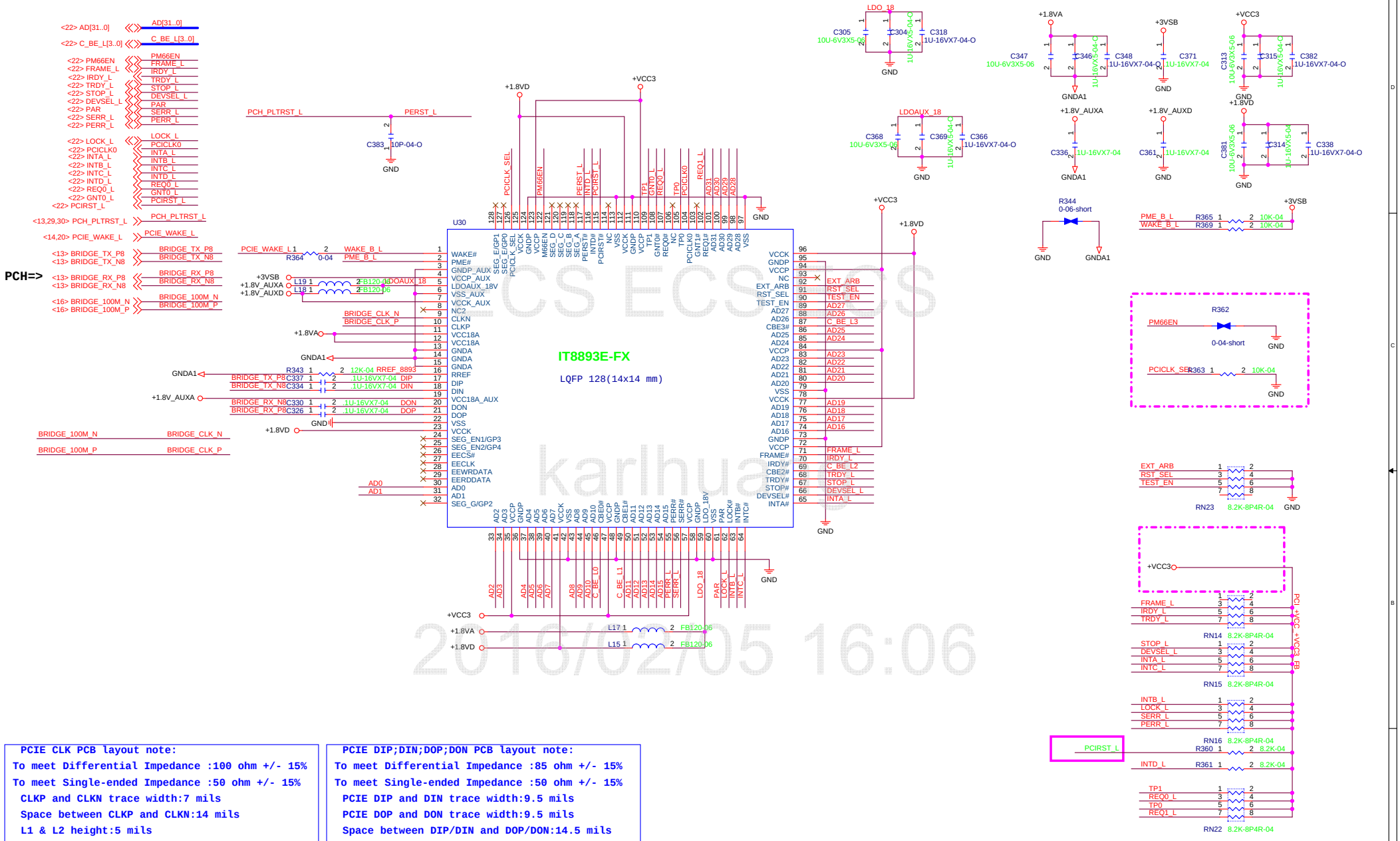


Elitegroup Computer Systems			
Title: PCH-GND			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 18 of 44		



Elitegroup Computer Systems		
Title: PCI Bridge(IT8893)		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 19 of 44	


PCI-E X16 SLOT
PCI-E SPEC
VCC3:3A
12V:5.5A
3VSB:0.375A
PCIEX16
PCIEX16-BK
KEY
PCIRST2_L
C279 10P-04-O
PCI-E X1 SLOT1
PCIEX1_1
PCIEX1-BK
PEX1_RST_L1
PEX1_100M_P4
PEX1_100M_N4
PEX1_RX_P5
PEX1_RX_N5
C291 .22U-16VX5-04HSODP5
C286 .22U-16VX5-04HSODN5
close to PCIE*1
close to PCIE*2
C287 .10P-04-O
C288 .10P-04-O
C190 .1U-16VX7-04
C235 .1U-16VX7-04
C251 .1U-16VX7-04
This cap should be placed close to slot power pin
PCI-E X1 SLOT2
PCIEX1_2
PCIEX1-BK
PEX1_RST_L2
PEX1_100M_P5
PEX1_100M_N5
PEX1_RX_P7
PEX1_RX_N7
C285 .22U-16VX5-04HSODP7
C290 .22U-16VX5-04HSODN7
C189 .1U-16VX7-04
C233 .1U-16VX7-04
C281 .1U-16VX7-04
This cap should be placed close to slot power pin
EC12 270U-16D-OS
EC15 560U-6V3LD6H8E-O
Between PCI-E X16 Slot & PCI-E X1 Slot
C210 .1U-16VX7-04
C237 .1U-16VX7-04
C252 .1U-16VX7-04
This cap should be placed close to slot power pin
Elitegroup Computer Systems
PCI-E X16/X1
Custom
H110M4-C43
V1.0
Friday, February 05, 2016
Sheet 20 of 44


PCH=>
IT8893E-FX
LQFP 128(14x14 mm)
U30
PCIE CLK PCB layout note:
To meet Differential Impedance :100 ohm +/- 15%
To meet Single-ended Impedance :50 ohm +/- 15%
CLKP and CLKN trace width:7 mils
Space between CLKP and CLKN:14 mils
L1 & L2 height:5 mils
The signal traces Number of vias: 4 (Max.)
The signal trace above analog GND plane
Spacing from other groups:>25 mils
Total trace length: 12 inchs (Max.)
The size of R4;R5 is "0402"
The size of R6;R7 is "0402"
PCIE DIP;DIN;DOP;DON PCB layout note:
To meet Differential Impedance :85 ohm +/- 15%
To meet Single-ended Impedance :50 ohm +/- 15%
PCIE DIP and DIN trace width:9.5 mils
PCIE DOP and DON trace width:9.5 mils
Space between DIP/DIN and DOP/DON:14.5 mils
L1 & L2 height:5 mils
The signal traces Number of vias: 2 (Max.)
The signal trace above analog GND plane
Spacing from other groups:>25 mils
Total trace length: 12 inchs (Max.)
The size of C24;C25 is "0402"
Elitegroup Computer Systems
PCI Bridge(IT8893)
H110M4-C43
V1.0
Friday, February 05, 2016
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PCI Slot
+VCC/S0/5A
+VCC3/S0/7.6A
+V12/S0/0.5A
+3VSB/0.375A

<21> AD[31..0] — AD[31..0]
<21> C_BE_L[3..0] — C_BE_L[3..0]

<21> GNT0_L — GNT0_L
<21> REQ0_L — REQ0_L

<21> INTA_L — INTA_L
<21> INTB_L — INTB_L
<21> INTC_L — INTC_L
<21> INTD_L — INTD_L

<21> PAR — PAR
<21> DEVSEL_L — DEVSEL_L
<21> IRDY_L — IRDY_L
<13,29> LPC_PME_L — LPC_PME_L
<21> SERR_L — SERR_L
<21> STOP_L — STOP_L
<21> LOCK_L — LOCK_L
<21> TRDY_L — TRDY_L
<21> PERR_L — PERR_L
<21> FRAME_L — FRAME_L

<21> PCIRST_L — PCIRST_L

<21> PCICLK0 — PCICLK0

<21> PM66EN — PM66EN

<14,20,30,9> SMBCLK_STBY — SMBCLK_STBY
<14,20,30,9> SMBDATA_STBY — SMBDATA_STBY

+VCC3 — R398 1 — 2 8.2K-04 — PACK64_1_L
R401 1 — 2 8.2K-04 — PREQ64_1_L

PCI

B1	-12V		TRST	A1	
B2	TCK		+12V	A2	
B3	GND		TMS	A3	
B4	TDO		TDI	A4	
B5	+5V		+5V	A5	
B6	+5V		INTA	A6	INTA_L
B7	INTB		INTC	A7	INTC_L
B8	INTD		+5V	A8	
B9	PRSNT1		NC1	A9	
B10	NC3		+5V	A10	
B11	PRSNT2		NC2	A11	
B12	GND		GND	A12	
B13	GND		GND	A13	
B14	NC4		3VAUX	A14	
B15	GND		RST	A15	PCIRST_L
B16	CLK	PCICLK0_R	+5V	A16	
B17	GND		GNT	A17	GNT0_L
B18	REQ	REQ0_L	GND	A18	
B19	+5V		PME	A19	LPC_PME_L
B20	AD31	AD31	AD30	A20	AD30
B21	AD29	AD29	+3.3V	A21	
B22	GND		AD28	A22	AD28
B23	AD27	AD27	AD26	A23	AD26
B24	AD25	AD25	GND	A24	
B25	+3.3V		AD24	A25	AD24
B26	C/BE3	C_BE_L3	IDSEL	A26	IDSEL1
B27	AD23	AD23	+3.3V	A27	
B28	GND		AD22	A28	AD22
B29	AD21	AD21	AD20	A29	AD20
B30	AD19	AD19	GND	A30	
B31	+3.3V		AD18	A31	AD18
B32	AD17	AD17	AD16	A32	AD16
B33	C/BE2	C_BE_L2	+3.3V	A33	
B34	GND		FRAME	A34	FRAME_L
B35	IRDY	IRDY_L	GND	A35	
B36	+3.3V		TRDY	A36	TRDY_L
B37	DEVSEL	DEVSEL_L	GND	A37	
B38	GND		STOP	A38	STOP_L
B39	LOCK	LOCK_L	+3.3V	A39	
B40	PERR	PERR_L	SDONE	A40	SMBCLK_STBY
B41	+3.3V		SBO	A41	SMBDATA_STBY
B42	SERR	SERR_L	GND	A42	
B43	+3.3V		PAR	A43	
B44	C/BE1	C_BE_L1	AD15	A44	PAR
B45	AD14	AD14	+3.3V	A45	AD15
B46	GND		AD13	A46	
B47	AD12	AD12	AD11	A47	AD13
B48	AD10	AD10	GND	A48	AD11
B49	GND	PM66EN	AD9	A49	AD9
B52	AD8	AD8	C/BE0	A52	C_BE_L0
B53	AD7	AD7	+3.3V	A53	
B54	+3.3V		AD6	A54	AD6
B55	AD5	AD5	AD4	A55	AD4
B56	AD3	AD3	GND	A56	
B57	GND		AD2	A57	AD2
B58	AD1	AD1	AD0	A58	AD0
B59	+5V		+5V	A59	
B60	ACK64	PACK64_1_L	REQ64	A60	PREQ64_1_L
B61	+5V		+5V	A61	
B62	+5V		+5V	A62	

PCI-120P-BK

+VCC3 +VCC -12V +12V +VCC +VCC3 +3VSB

PCICLK0 — C294 10P-04-O — GND

C283 10P-04-O — GND

R318 22-04

GND GND

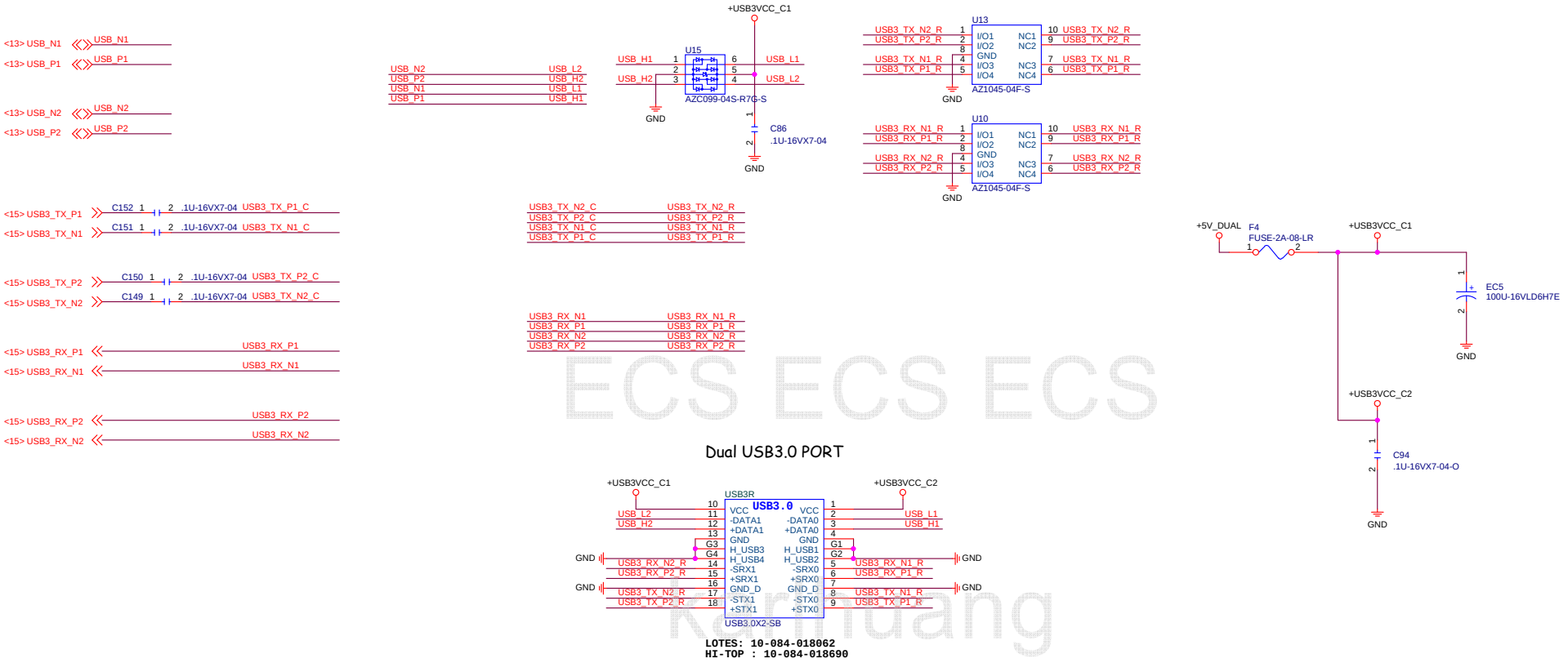
IDSEL=AD16
INT[A,B,C,D]

+VCC3 — C423 .1U-16VX7-04-O — GND
+VCC — C229 .1U-16VX7-04-O — GND
-12V — C171 .1U-16VX7-04-O — GND
+12V — C186 .1U-16VX7-04-O — GND
+3VSB — C275 .1U-16VX7-04-O — GND

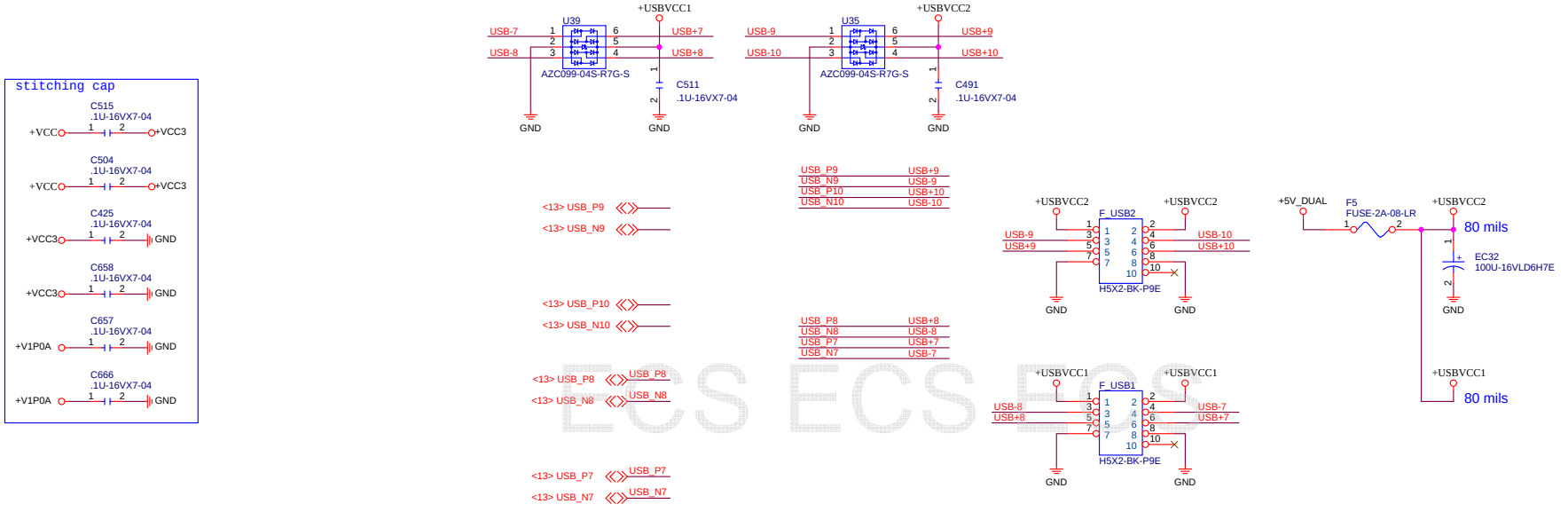
+VCC — EC43 470U-6V3D6H11E-O — GND

Between PCIEX1 & PCI

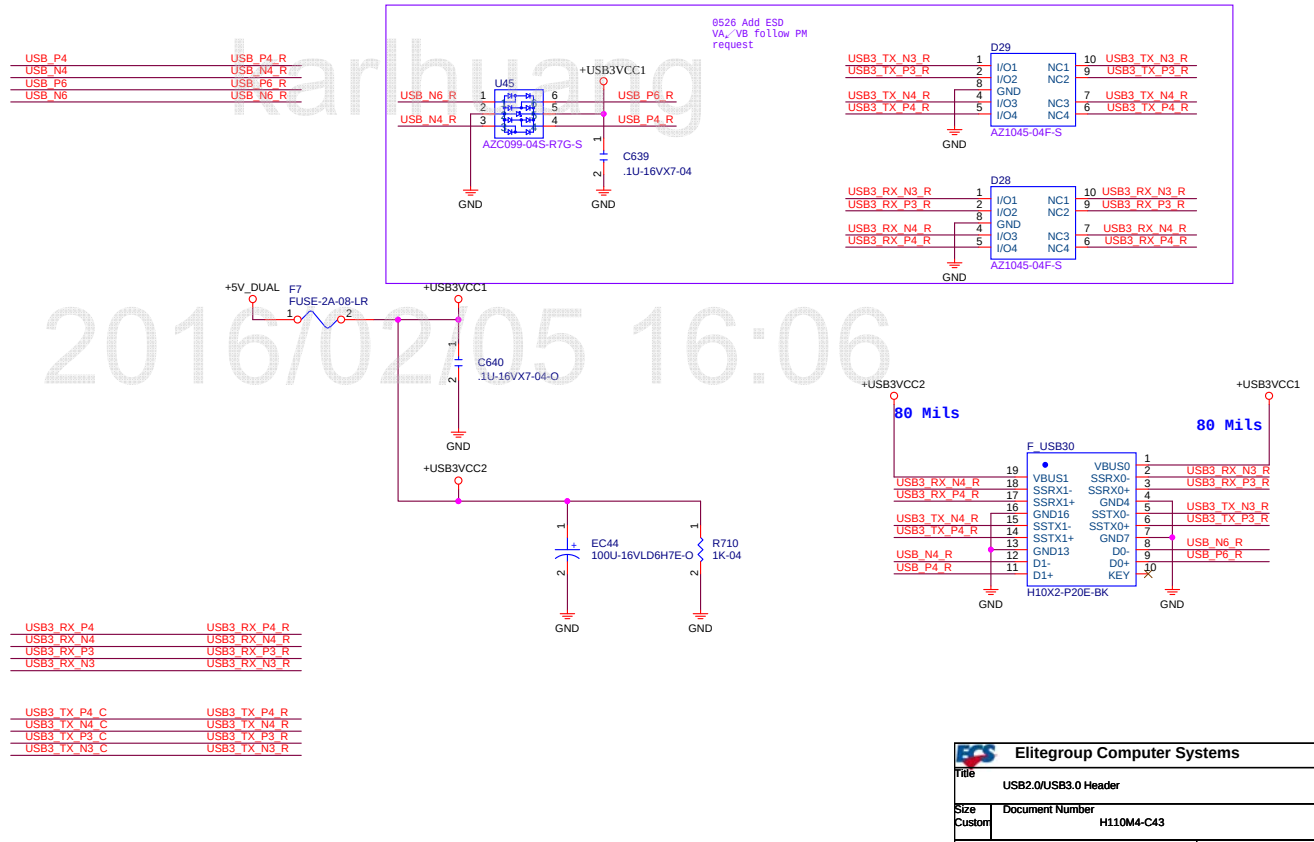
Elitegroup Computer Systems			
Title: PCI Slot			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 22 of 44		



Elitegroup Computer Systems			
Title: USB3.0 Connector			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 23 of 44		

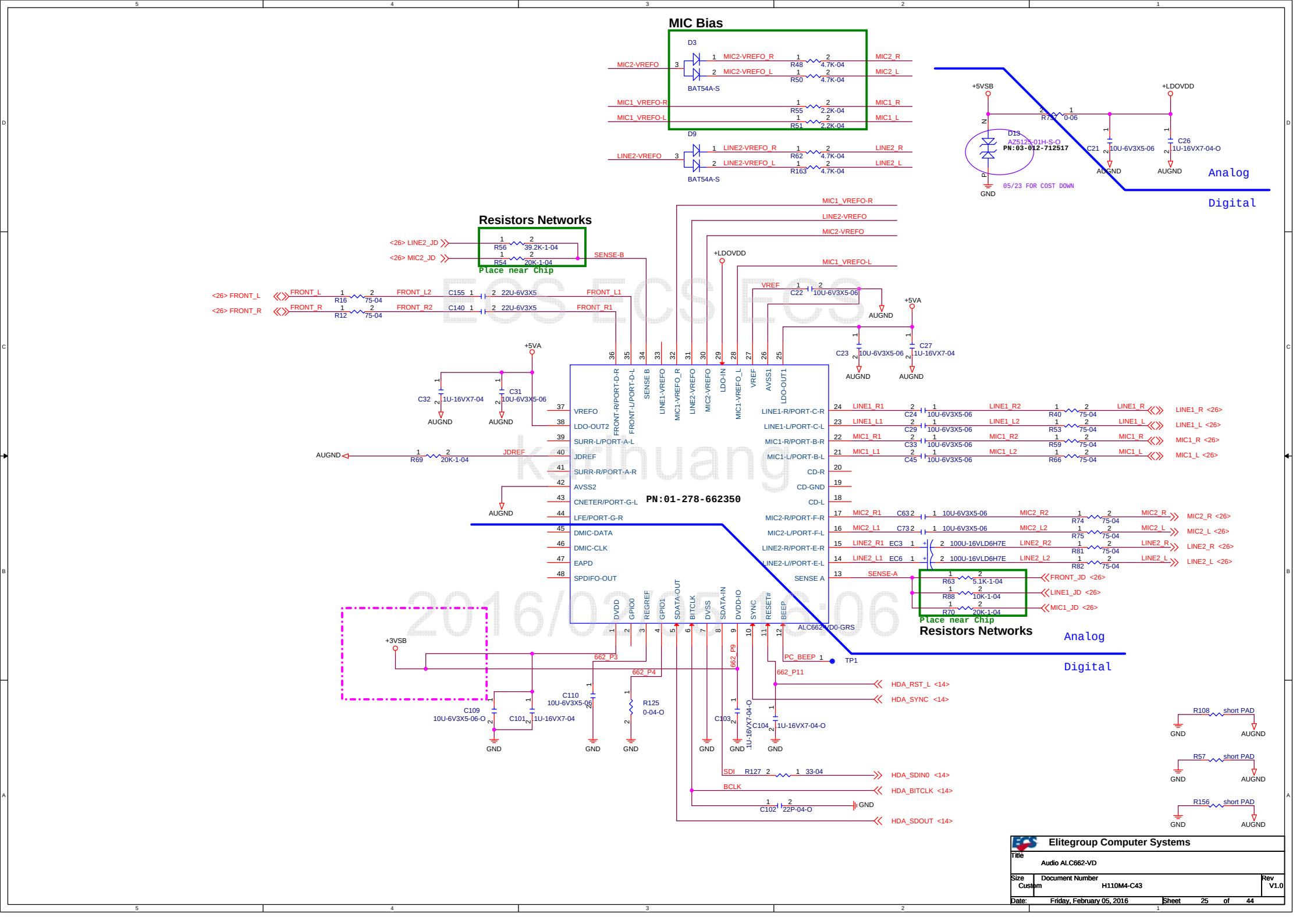


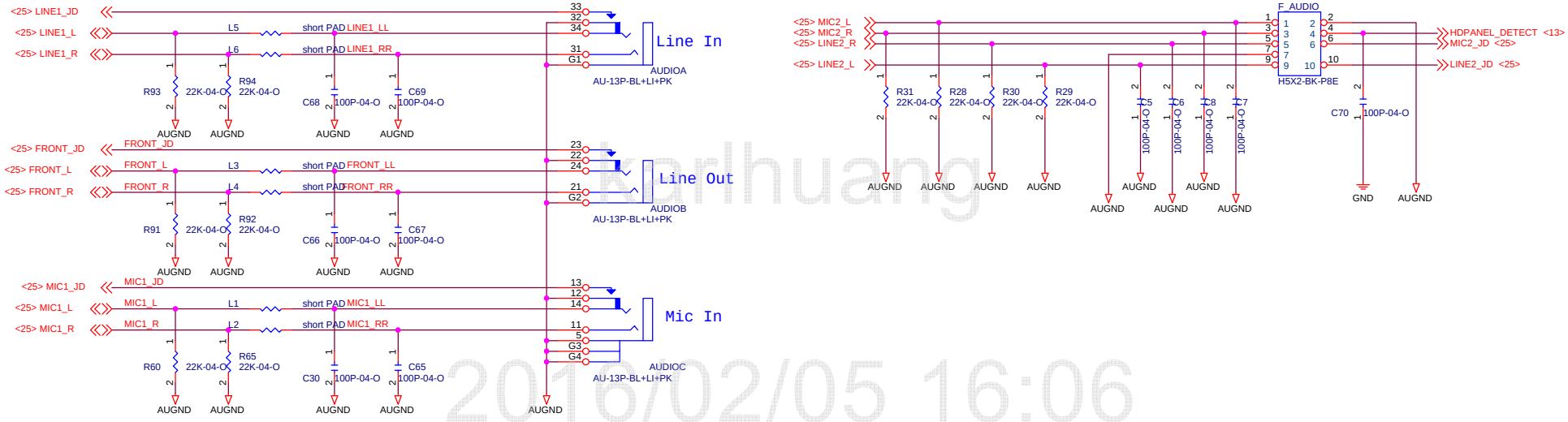
USB2.0 header



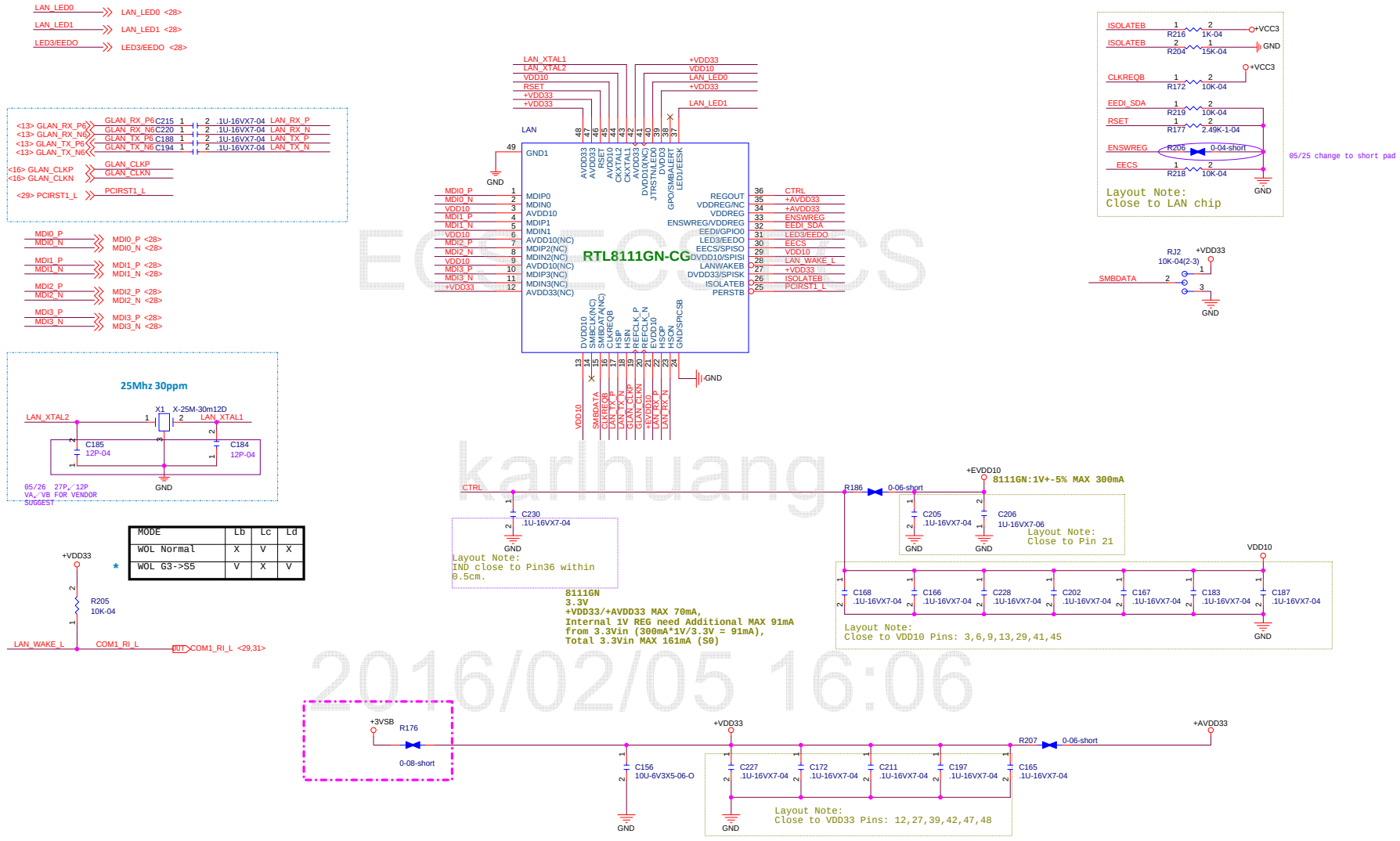
USB3.0 header

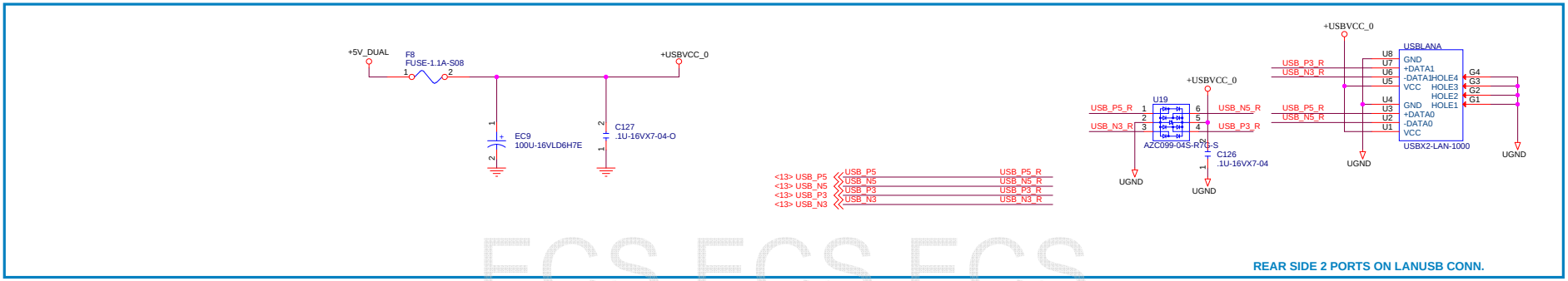
Elitegroup Computer Systems	
Title: USB2.0/USB3.0 Header	
Size: Custom	Document Number: H110M4-C43
Rev: V1.0	
Date: Friday, February 05, 2016	Sheet 24 of 44

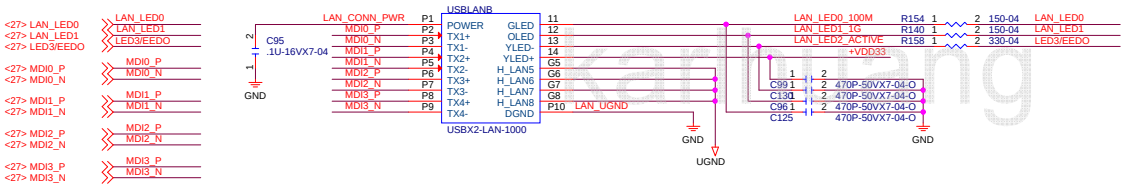

MIC Bias
D3
MIC2-VREFO
MIC2-VREFO_R
MIC2-VREFO_L
MIC2_R
MIC2_L
R48 4.7K-04
R50 4.7K-04
BAT54A-S
MIC1_VREFO-R
MIC1_VREFO-L
MIC1_R
MIC1_L
R55 2.2K-04
R51 2.2K-04
D9
LINE2-VREFO
LINE2_VREFO_R
LINE2_VREFO_L
LINE2_R
LINE2_L
R62 4.7K-04
R163 4.7K-04
BAT54A-S
+5VSB
+LDOVDD
R77 0-06
D13
AZ5125-01H-S-O
PN:03-012-712517
C21 10U-6V3X5-06
C26 1U-16VX7-04-O
AUGND
GND
05/23 FOR COST DOWN
Analog
Digital
Resistors Networks
<26> LINE2_JD
<26> MIC2_JD
R56 39.2K-1-04
R54 20K-1-04
SENSE-B
Place near Chip
<26> FRONT_L
<26> FRONT_R
FRONT_L
FRONT_R
FRONT_L2
FRONT_R2
R16 75-04
R12 75-04
C155 22U-6V3X5
C140 22U-6V3X5
FRONT_L1
FRONT_R1
MIC1_VREFO-R
LINE2-VREFO
MIC2-VREFO
MIC1_VREFO-L
+LDOVDD
VREF
C22 10U-6V3X5-06
+5VA
AUGND
C23 10U-6V3X5-06
C27 1U-16VX7-04
+5VA
C32 1U-16VX7-04
C31 10U-6V3X5-06
AUGND
AUGND
JDREF
R69 20K-1-04
AUGND
PN:01-278-662350
VREFO
LDO-OUT2
SURR-L/PORT-A-L
JDREF
SURR-R/PORT-A-R
AVSS2
CNETER/PORT-G-L
LFE/PORT-G-R
DMIC-DATA
DMIC-CLK
EAPD
SPDIFO-OUT
FRONT-R/PORT-D-R
FRONT-L/PORT-D-L
SENSE B
LINE1-VREFO
MIC1-VREFO_R
LINE2-VREFO
MIC2-VREFO
LDO-IN
MIC1-VREFO_L
VREF
AVSS1
LDO-OUT1
LINE1-R/PORT-C-R
LINE1-L/PORT-C-L
MIC1-R/PORT-B-R
MIC1-L/PORT-B-L
CD-R
CD-GND
CD-L
MIC2-R/PORT-F-R
MIC2-L/PORT-F-L
LINE2-R/PORT-E-R
LINE2-L//PORT-E-L
SENSE A
DVDD
GPIO0
REGREF
GPIO1
SDATA-OUT
BITCLK
DVSS
SDATA-IN
DVDD-IO
SYNC
RESET#
BEEP
ALC662-VD0-GRS
LINE1_R1
LINE1_L1
MIC1_R1
MIC1_L1
MIC2_R1
MIC2_L1
LINE2_R1
LINE2_L1
C24 10U-6V3X5-06
C29 10U-6V3X5-06
C33 10U-6V3X5-06
C45 10U-6V3X5-06
C63 10U-6V3X5-06
C73 10U-6V3X5-06
EC3 100U-16VLD6H7E
EC6 100U-16VLD6H7E
LINE1_R2
LINE1_L2
MIC1_R2
MIC1_L2
MIC2_R2
MIC2_L2
LINE2_R2
LINE2_L2
R40 75-04
R53 75-04
R59 75-04
R66 75-04
R74 75-04
R75 75-04
R81 75-04
R82 75-04
LINE1_R <26>
LINE1_L <26>
MIC1_R <26>
MIC1_L <26>
MIC2_R <26>
MIC2_L <26>
LINE2_R <26>
LINE2_L <26>
SENSE-A
R63 5.1K-1-04
R88 10K-1-04
R70 20K-1-04
FRONT_JD <26>
LINE1_JD <26>
MIC1_JD <26>
Place near Chip
Resistors Networks
Analog
Digital
+3VSB
662_P3
662_P4
662_P9
662_P11
PC_BEEP
TP1
HDA_RST_L <14>
HDA_SYNC <14>
C109 10U-6V3X5-06-O
C101 1U-16VX7-04
C110 10U-6V3X5-06
R125 0-04-O
C103 1U-16VX7-04-O
C104 1U-16VX7-04-O
SDI
R127 33-04
HDA_SDIN0 <14>
BCLK
HDA_BITCLK <14>
C102 22P-04-O
HDA_SDOUT <14>
R108 short PAD
R57 short PAD
R156 short PAD
Elitegroup Computer Systems
Title
Audio ALC662-VD
Size Custom
Document Number H110M4-C43
Rev V1.0
Date: Friday, February 05, 2016
Sheet 25 of 44

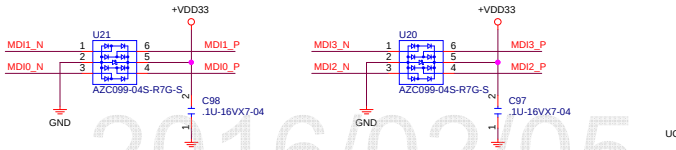


Elitegroup Computer Systems		
Title: Audio Jack/Header		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 26 of 44	

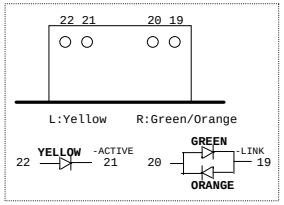








REAR SIDE 2 PORTS ON LANUSB CONN.



For China-one LED Light:

LAN LED Behavior		
Status	Yellow	Grn/Org
No Link	Off	Off
S3/S4/S5	Off	Off
10M, inactive	Off	Off
10M, active		Off
100M, inactive	Off	
100M, active		
1G, inactive	Off	
1G, active		
Blinking		

Elitegroup Computer Systems		
Title: LAN+USB2.0 Connecter		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
Date: Friday, February 05, 2016	Sheet 28 of 44	

7. Power On Strapping Options and Special Pin Routings

Table 7-1. Power On Strapping Options

	Symbol	Strapping Event	Value	Description
JP1 Pin 45	DSW_EUP_SEL	Internal 3VSB_OK	1	EUP
			0	DSW [Note1]
JP2 Pin 119	WDT_EN	Internal VCC-OK/ LRESET#	1	Disable WDT to rest PWROK
			0	Enable WDT to rest PWROK
JP3 Pin 121	FAN_CTL_SEL	Internal VCC-OK	1	The default value of EC Index 63h/6Bh/73h/7Bh/A3h/ABh is 80h.
			0	The default value of EC Index 63h/6Bh/73h/7Bh/A3h/ABh is 00h.
JP4 Pin 123	K8PWR_EN	Internal VCC-OK	1	Disable K8 power sequence function
			0	Enable K8 power sequence function
JP5 Pin 26	UOVMODE_SEL	Internal VCC-OK	1	Notice Type [Note2]
			0	Force Type
JP6 Pin 46	Vih/Vil_SEL	Internal VCC_OK	1	Bay-Trail Platform [Note3]
			0	Not Bay-Trail Platform [Note4]

Note:
1. Pull-down with 8.2k ohm recommended
2. This function must be pulled up to 3VSB.
3. 1.8V input threshold voltage for SUSB#/SUSC#/LRESET#/SERIRQ#/GP2x signals
4. 3.3V input threshold voltage for SUSB#/SUSC#/LRESET#/SERIRQ#/GP2x signals

Power-On Strapping

JP2 COM1_RTS_L R79 1K-04
JP3 COM1_SOUT R105 1K-04
JP4 COM1_DTR_L R111 1K-04
JP5 COM2_DTR_L R145 1K-04
JP1 GPIO50_JP1 R84 1K-04-O
JP6 GPOA0_JP6 R83 8.2K-04
R71 8.2K-04
+VCC3
+ATX_3VSB
GND

COM1_RTS_L R86 1K-04-O
COM1_SOUT R90 1K-04-O
GPOA0_JP6 R77 1K-04-O
For CX

Thermal Sense

SIO_VREF C18 1U-16VX7-06-O
R17 10K-1-04
RT1 NTC-10K-1-04
close to SIO
C4 .1U-16VX7-04-O
SYS_THERMDA
SIO_GND

COM1

<31> COM1_SIN
<31> COM1_SOUT
<31> COM1_DSR_L
<31> COM1_RTS_L
<31> COM1_DCD_L
<31> COM1_CTS_L
<27,31> COM1_RI_L
<31> COM1_DTR_L

COM2

<31> COM2_SIN
<31> COM2_SOUT
<31> COM2_DSR_L
<31> COM2_RTS_L
<31> COM2_DCD_L
<31> COM2_CTS_L
<31> COM2_RI_L
<31> COM2_DTR_L

FAN

<30> FAN_TAC1
<30> FAN_CTL1
<30> FAN_TAC2
<30> FAN_CTL2

Intel DSW

<14,40> SLP_SUS_L
<14> DPWROK
<14> RSMRST_L

PWRCTRL

<34,38> ATX_PWRGD
<14,39,40> SLP_S3_L
<14,39,7> SLP_S4_L
<14> SIO_PWRON_L
<30> FP_PWRBTN_L
<34> ATX_PSON_L
<14,40,41,6> PCH_SYSPWROK

RESET

<13,21,30> PCH_PLTRST_L
<27> PCIRST1_L
<19,20> PCIRST2_L

LPC

<15,30> SERIRQ
<15,30> LPC_FRAME_L
<15,30> LPC_LAD0
<15,30> LPC_LAD1
<15,30> LPC_LAD2
<15,30> LPC_LAD3
<13,22> LPC_PME_L
<15> KBRST_L
<15> SIO_CLKIN
<15> CLK_SIO_24M

SMBUS

<14> SML1_CLK
<14> SML1_DATA

PS2

<31> KB_CLK
<31> KB_DATA
<31> MS_CLK
<31> MS_DATA

LPT

<31> LPT_D[0..7]
<31> LPT_SLIN_L
<31> LPT_INIT_L
<31> LPT_AFD_L
<31> LPT_STB_L
<31> LPT_ERR_L
<31> LPT_ACK_L
<31> LPT_BUSY
<31> LPT_PE
<31> LPT_SLCT

GPIO

<30> SIO_LED0
<30> SIO_LED1
<40> 3VSBSW_L

IT8625E 128-LQFP

U3
IT8625E

BIOS SELECTION

RJ6 10K-04(2-3) GP92
RJ7 10K-04(2-3) GP93
RJ4 10K-04(2-3) GP94
+ATX_3VSB
GND

BIOS 設定SIO時鐘為24MHz
R72 1K-04
2015-03-11
Add 1k ohm pull down while use internal oscillating clock follow ITE TOM suggest

V2.0: 10k, 8.87k for SI SEQUENCE tPCH16 FAIL
R9 16.2K-04
R10 6.49K-1-04
R8 15K-1-04
R7 10K-1-04
R21 8.87K-1-04
R22 10K-1-04
R20 10K-1-04
R19 2K-1-04
R18 1K-1-04
R14 1K-1-04
C16 .1U-16VX7-04-O
C17 .1U-16VX7-04-O
C15 .1U-16VX7-04-O
C14 .1U-16VX7-04-O
C13 .1U-16VX7-04
C12 .1U-16VX7-04
HM_5VSB
HM_3.3V
HM_5V
HM_12V
HM_VDIMM
HM_VCORE
+ATX_5VSB
+VCC3
+VCC
+12V
+VDIMM
+VCORE
SIO_GND

PFB1 FB-600-S06
C11 1U-6V3X5-04-O
C10 22U-6V3X5
C131 .1U-16VX7-04
C112 .1U-16VX7-04
C105 .1U-16VX7-04
C28 .1U-16VX7-04
C25 22U-6V3X5
C20 1U-16VX7-06
C276 100P-04-O
FB1 FB-120-04-B
R61 43.2-1-04
SIO_PECI <6>

PCIRSTIN_L R129 1K-04
CIRTX1 R146 10K-04-O
GA20 R96 10K-04
PCH_SYSPWROK R23 1K-04
LPC_DRQ_L R106 10K-04-O
COPEN_L R52 1K-04
H_SIO_PECI C34 10P-04-O
SIO_CLKIN C75 10P-04-O
SIO_24M C44 10P-04-O
ATX_PSON_L R43 4.7K-04
RSTCONIN R150 4.7K-04
SIO_PWRON_L R45 10K-04
DPWROK R144 1K-04
FP_PWRBTN_L R26 4.7K-04
LPC_PME_L R44 10K-04
RSMRST_L R41 10K-04
SYS_3VSB R58 100-04
PCH_SYSPWROK R42 33-04 PWRGD3
GFX_SLECT R27 10K-04

TP_VGA	Display Type
LOW	onboard VGA
* High	default BIOS

Elitegroup Computer Systems	
Title	IT8625E
Size: Custom	Document Number: H110M4-C43
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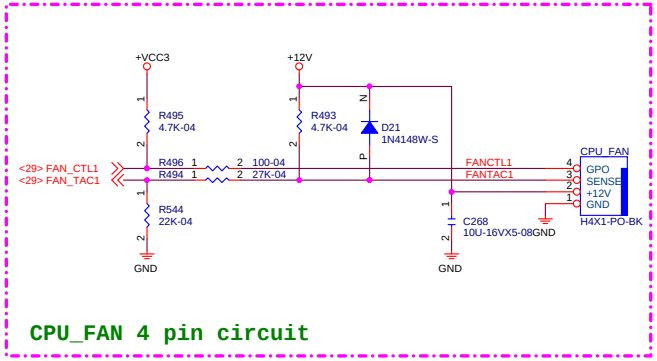
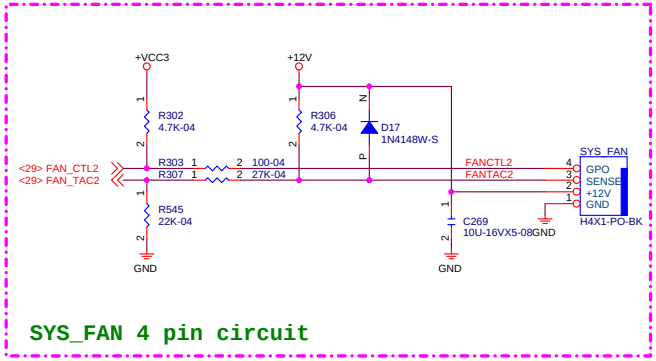
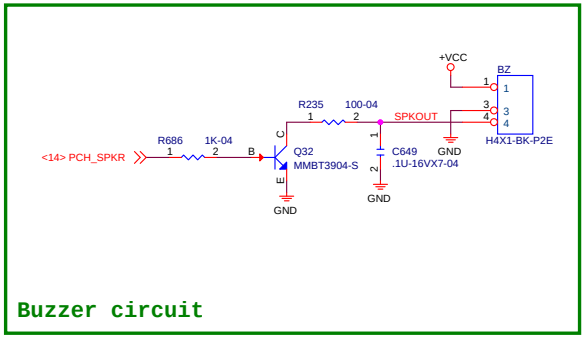
Date: Friday, February 05, 2016	Sheet 29 of 44



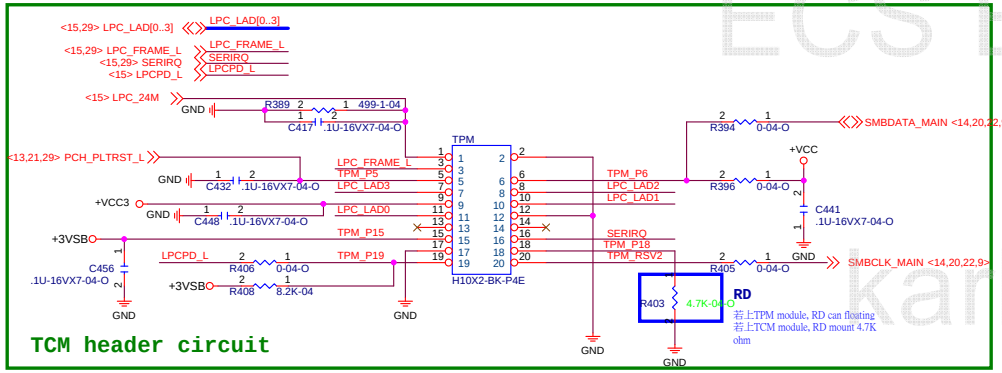
CPU_FAN 4 pin circuit



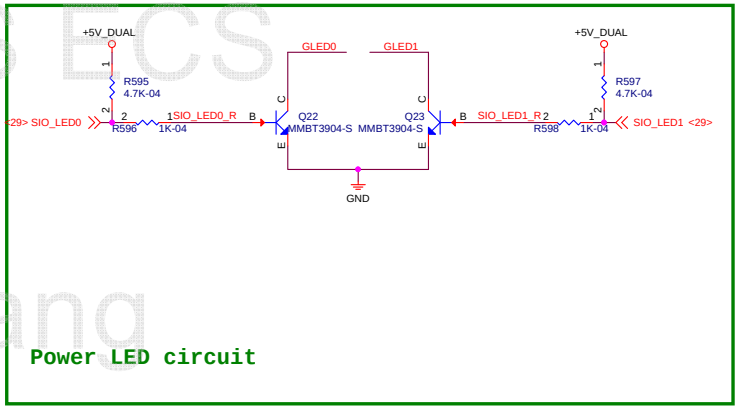
SYS_FAN 4 pin circuit



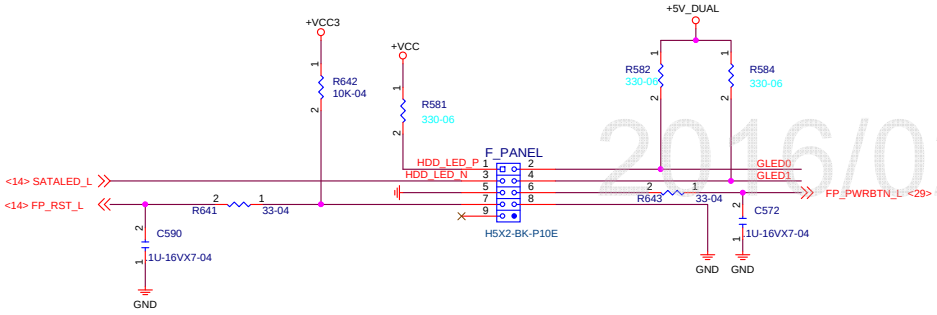
Buzzer circuit



TCM header circuit



Power LED circuit



Elitegroup Computer Systems		
Title: FAN/Buzzer/TCM/Front Panel		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
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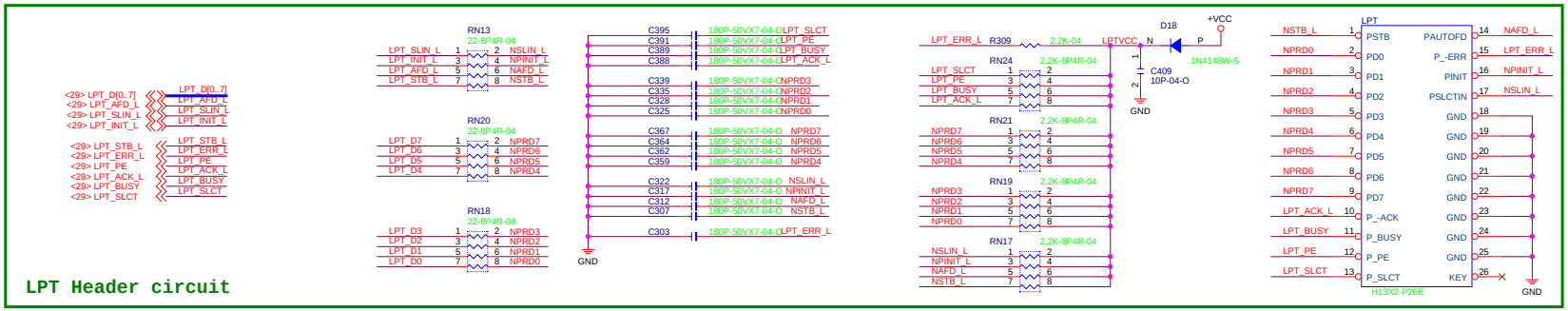

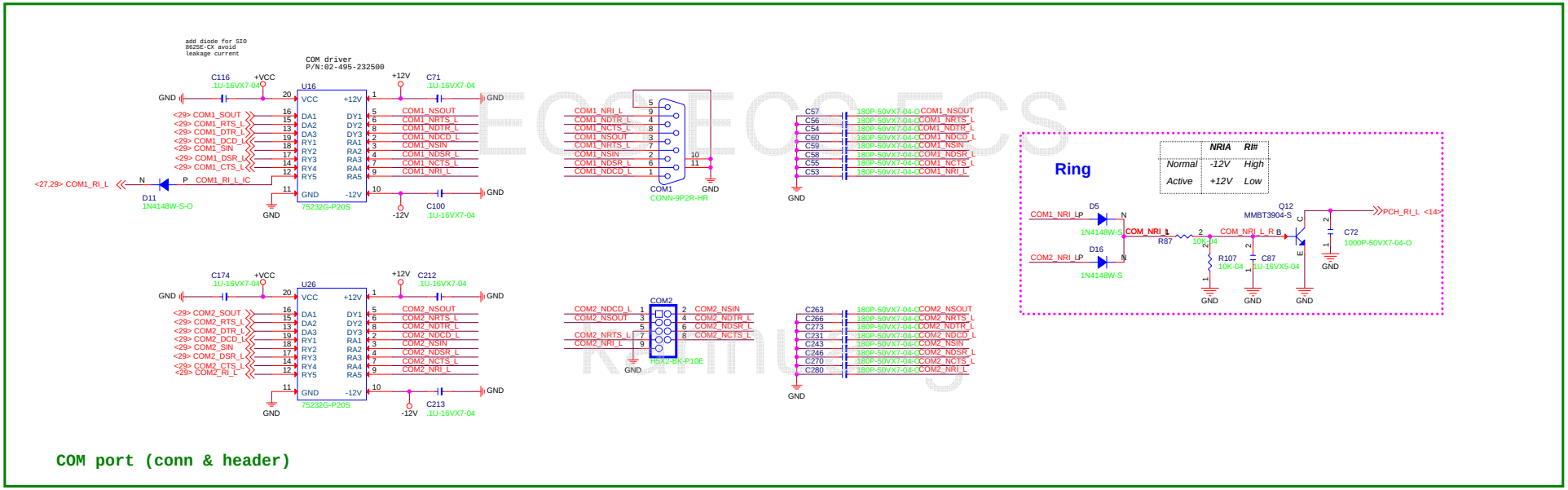

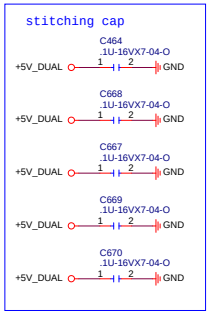

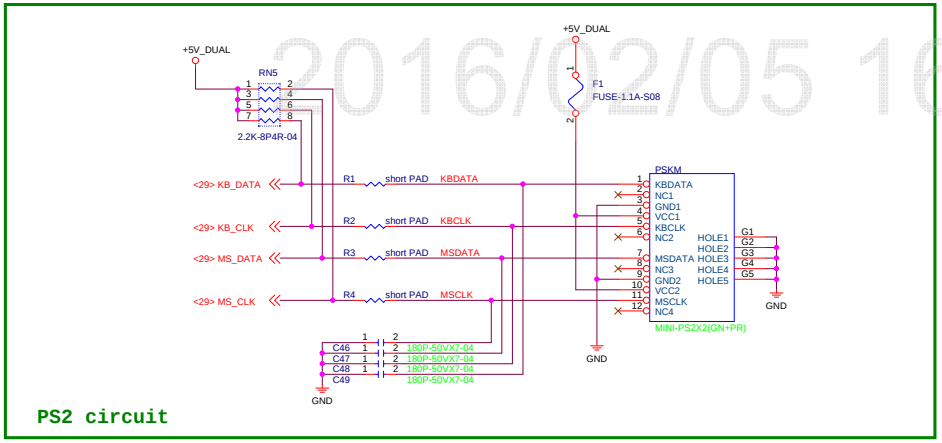

Elitegroup Computer Systems			
Title: LPT/COM/PS2			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
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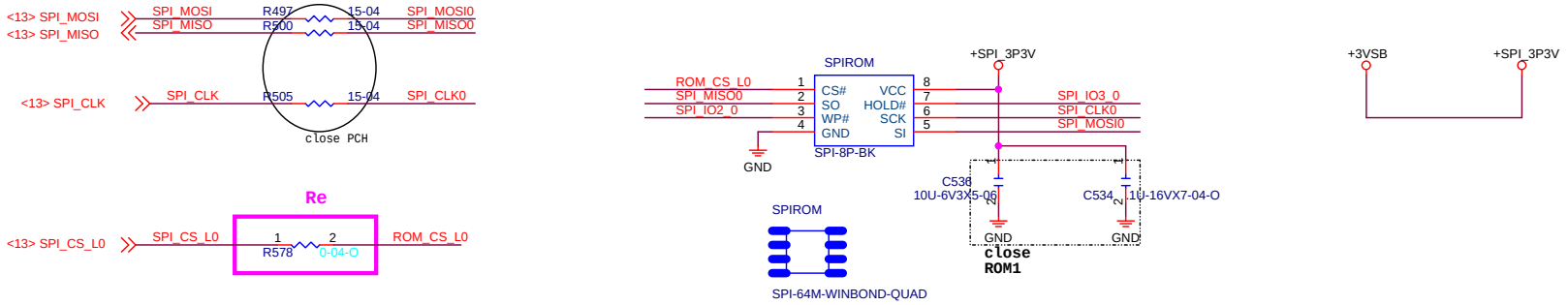


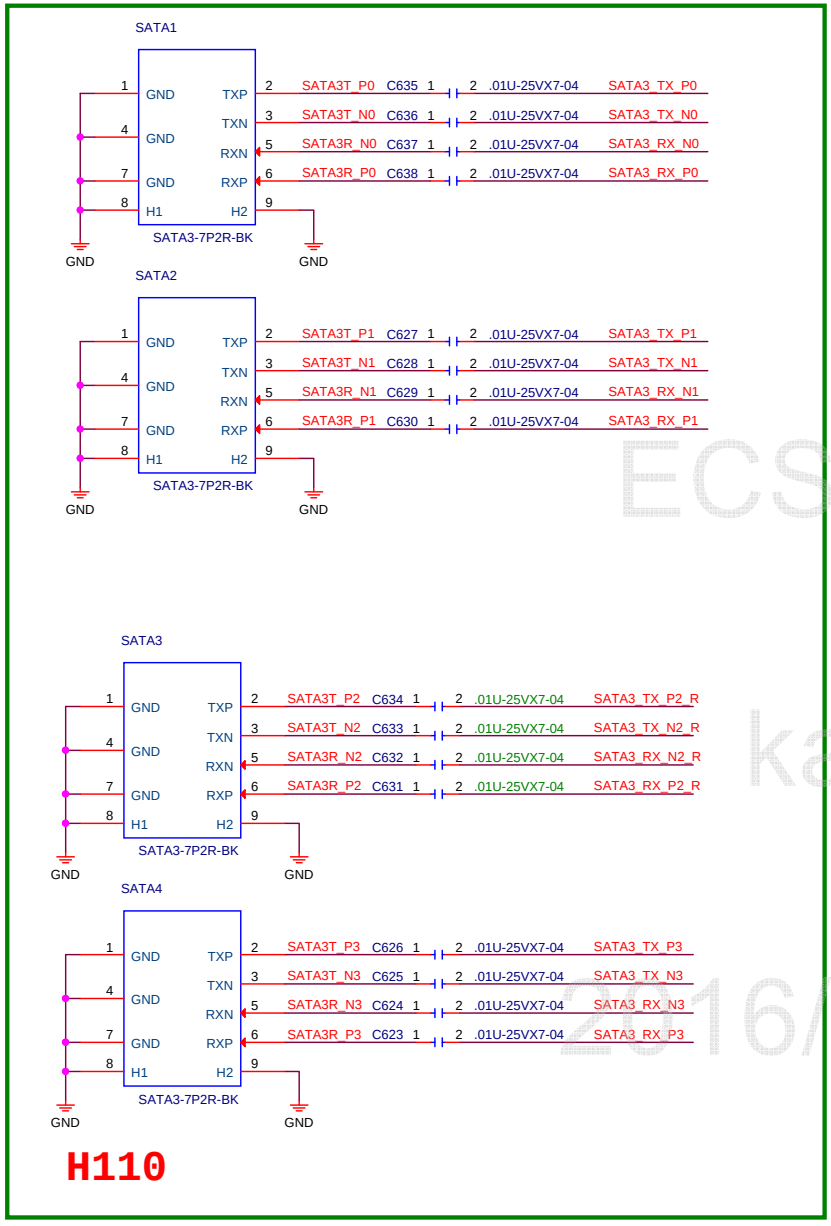
	Ra	Rd	Re
A3~A5	0	0	X
MP	X	X	0

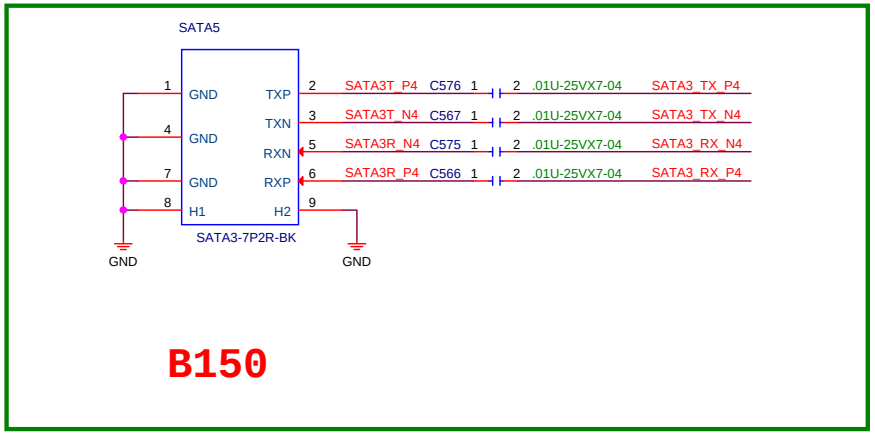
SPI mode selection:

MODE	BIOS WP	A	B
Standard/Dual	NA	10K	X
* Quad	NA	1K	V

Note.Quad SPI not support WP

Elitegroup Computer Systems			
Title: SPI ROM			
Size: B	Document Number: H110M4-C43		Rev: V1.0
Date: Friday, February 05, 2016	Sheet 32 of 44		





SATA3_TX_N0 → SATA3_TX_N0 <14>
SATA3_TX_P0 → SATA3_TX_P0 <14>
SATA3_RX_N0 → SATA3_RX_N0 <14>
SATA3_RX_P0 → SATA3_RX_P0 <14>
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SATA3_TX_P1 → SATA3_TX_P1 <14>
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SATA3_RX_P2_R → SATA3_RX_P2_R <14>
SATA3_TX_N2_R → SATA3_TX_N2_R <14>
SATA3_TX_P2_R → SATA3_TX_P2_R <14>
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SATA3_RX_P3 → SATA3_RX_P3 <14>
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SATA3_TX_P3 → SATA3_TX_P3 <14>
SATA3_RX_N4 → SATA3_RX_N4 <14>
SATA3_RX_P4 → SATA3_RX_P4 <14>
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SATA3_TX_P4 → SATA3_TX_P4 <14>

Elitegroup Computer Systems		
Title: SATA3.0		
Size: B	Document Number: H110M4-C43	Rev: V1.0
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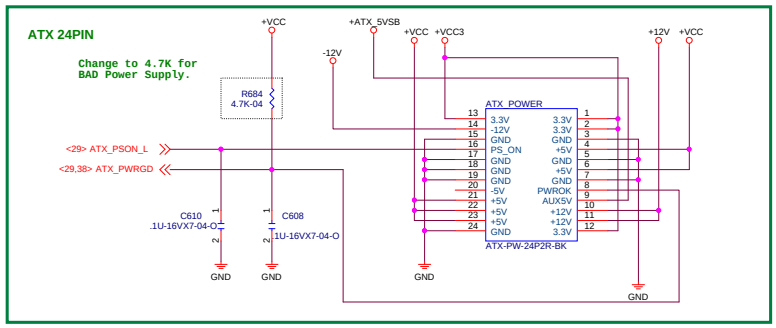

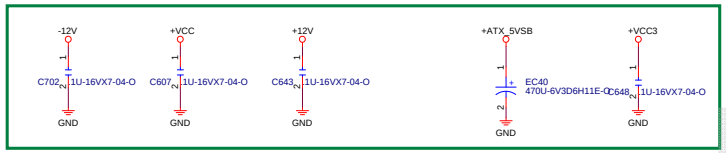

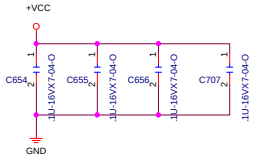

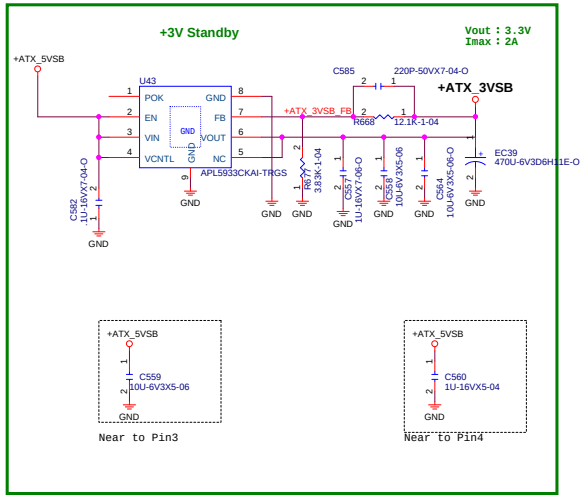

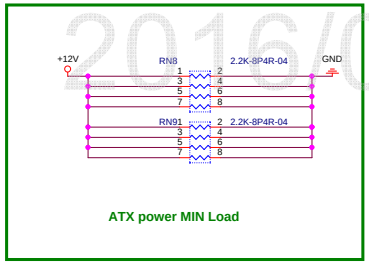

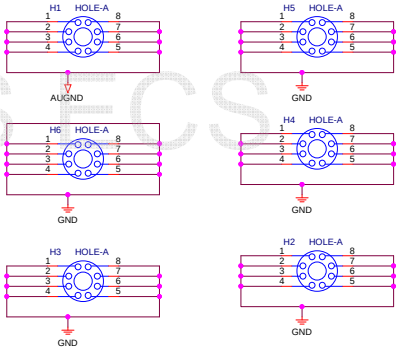

Elitegroup Computer Systems		
Title: ATX_24P/ATX_3VSB		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
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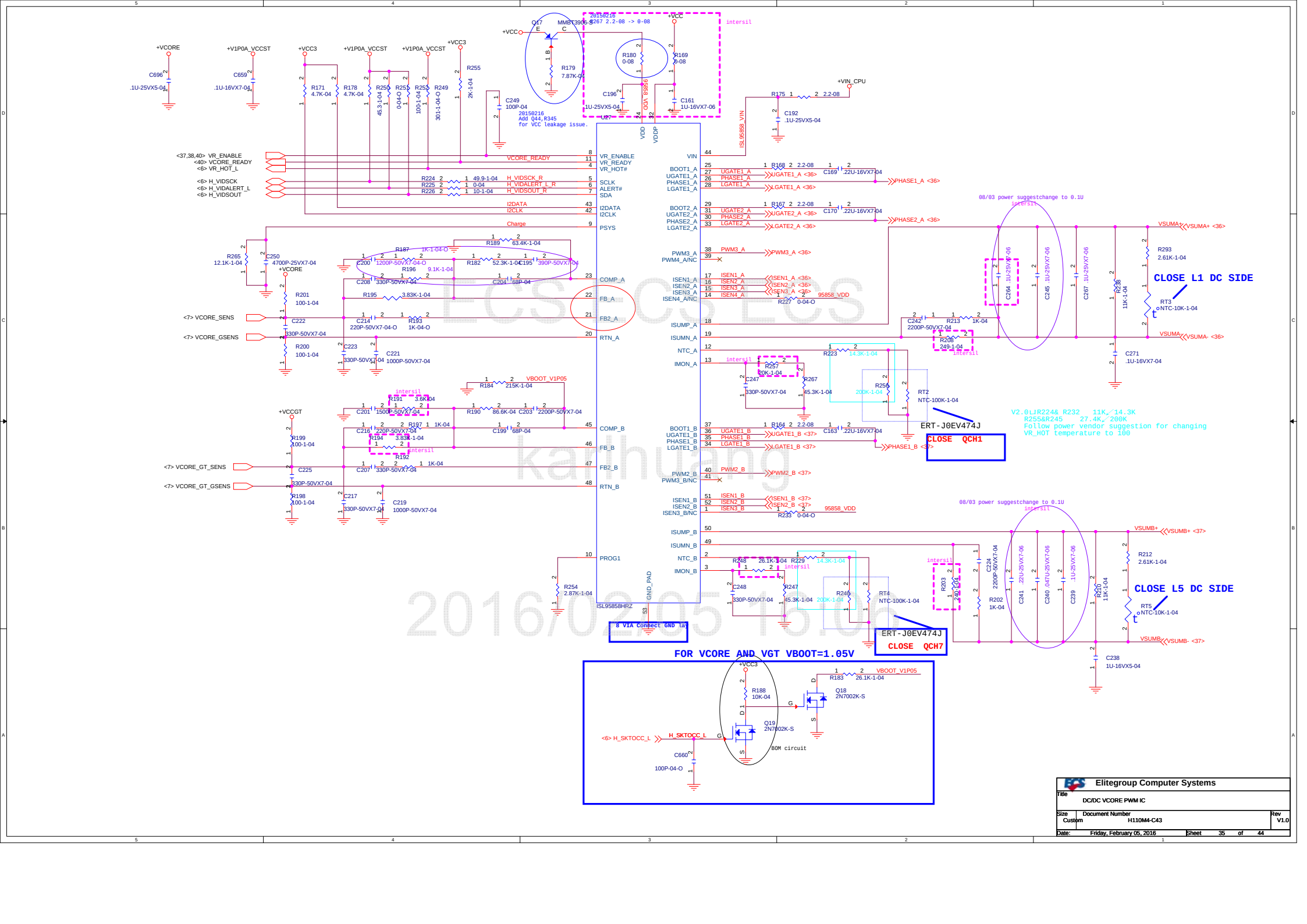
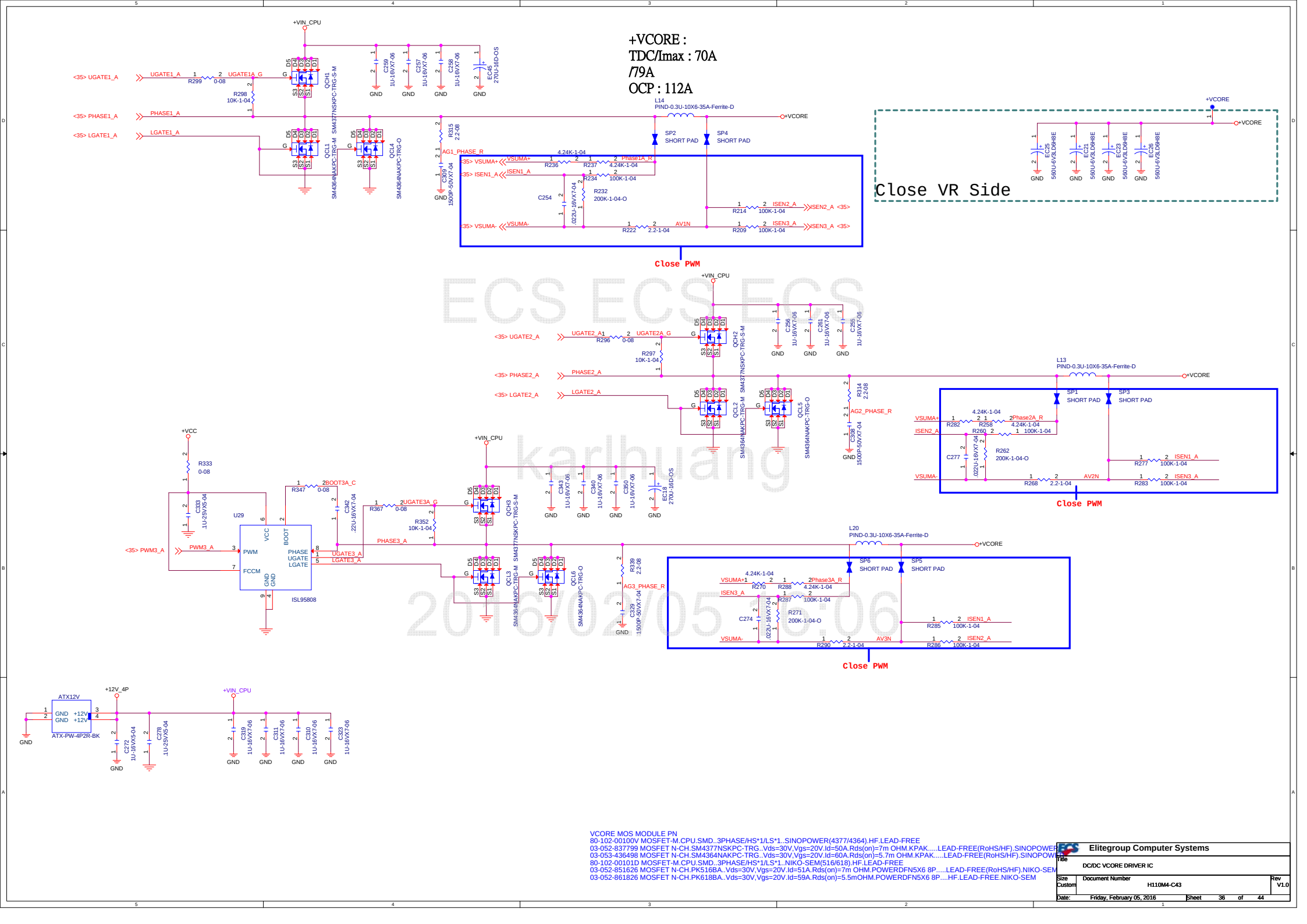

FOR VCORE AND VGT VBOOT=1.05V
CLOSE L1 DC SIDE
CLOSE L5 DC SIDE
CLOSE QCH1
CLOSE QCH7
ERT-J0EV474J
ISL95858HRZ
Elitegroup Computer Systems
DC/DC VCORE PWM IC
H110M4-C43
Friday, February 05, 2016



VCORE MOS MODULE PN
80-102-00100V MOSFET-M.CPU.SMD..3PHASE/HS*1/LS*1..SINOPOWER(4377/4364).HF.LEAD-FREE
03-052-837799 MOSFET N-CH.SM4377NSKPC-TRG..Vds=30V,Vgs=20V.Id=50A.Rds(on)=7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
03-053-436498 MOSFET N-CH.SM4364NAKPC-TRG..Vds=30V,Vgs=20V.Id=60A.Rds(on)=5.7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
80-102-00101D MOSFET-M.CPU.SMD..3PHASE/HS*1/LS*1..NIKO-SEM(516/618).HF.LEAD-FREE
03-052-851626 MOSFET N-CH.PK516BA..Vds=30V,Vgs=20V.Id=51A.Rds(on)=7m OHM.POWERDFN5X6 8P.....LEAD-FREE(RoHS/HF).NIKO-SEM
03-052-861826 MOSFET N-CH.PK618BA..Vds=30V,Vgs=20V.Id=59A.Rds(on)=5.5mOHM.POWERDFN5X6 8P....HF.LEAD-FREE.NIKO-SEM

Elitegroup Computer Systems			
Title: DC/DC VCORE DRIVER IC			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
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+VCORE_GT :
TDC/Imax :
37A/51A
OCP : 70A

Close VR Side

Close PWM

VCCGT MOS MODULE PN
80D102-000285 MOSFET-M.MEMORY.SMD..1PHASE/HS*2/LS*2..SINOPOWER(4377NS/4364NA).HF.LEAD-FREE
03-052-837799 MOSFET N-CH.SM4377NSKPC-TRG..Vds=30V,Vgs=20V.Id=50A.Rds(on)=7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
03-053-436498 MOSFET N-CH.SM4364NAKPC-TRG..Vds=30V,Vgs=20V.Id=60A.Rds(on)=5.7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
80D102-000286 MOSFET-M.MEMORY.SMD..1PHASE/HS*2/LS*2..NIKO-SEM(516BA/618BA).HF.LEAD-FREE
03-052-851626 MOSFET N-CH.PK516BA..Vds=30V,Vgs=20V.Id=51A.Rds(on)=7m OHM.POWERDFN5X6 8P.....LEAD-FREE(RoHS/HF).NIKO-SEM
03-052-861826 MOSFET N-CH.PK618BA..Vds=30V,Vgs=20V.Id=59A.Rds(on)=5.5m OHM.POWERDFN5X6 8P.....LEAD-FREE(RoHS/HF).NIKO-SEM

+VSA :1.05V
Imax : 11.1A
OCP : 33.33A

Close VR Side

pin to pin
APW8828QBI-TRG 02-433-828060
UP1537PDDA-B1 02-433-537750

Vout=(1+R1/R2) X 0.7

VCCIO, VCCSA must ramp after VccST and VDDQ have completed their ramps

VCCSA MOS MODULE PN
80D102-00104Z MOSFET-M.CPU_SA.SMD..1PHASE/HS*1/LS*1..SINOPOWER(4377NS/4364NA).HF.LEAD-FREE
03-052-837799 MOSFET N-CH.SM4377NSKPC-TRG..Vds=30V,Vgs=20V.Id=50A.Rds(on)=7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
03-053-436498 MOSFET N-CH.SM4364NAKPC-TRG..Vds=30V,Vgs=20V.Id=60A.Rds(on)=5.7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
80D102-00105A MOSFET-M.CPU_SA.SMD..1PHASE/HS*1/LS*1..NIKO-SEM(516BA/618BA).HF.LEAD-FREE
03-052-851626 MOSFET N-CH.PK516BA..Vds=30V,Vgs=20V.Id=51A.Rds(on)=7m OHM.POWERDFN5X6 8P.....LEAD-FREE(RoHS/HF).NIKO-SEM
03-052-861826 MOSFET N-CH.PK618BA..Vds=30V,Vgs=20V.Id=59A.Rds(on)=5.5m OHM.POWERDFN5X6 8P....HF.LEAD-FREE.NIKO-SEM

Elitegroup Computer Systems	
Title	DC/DC VCCGT&VSA
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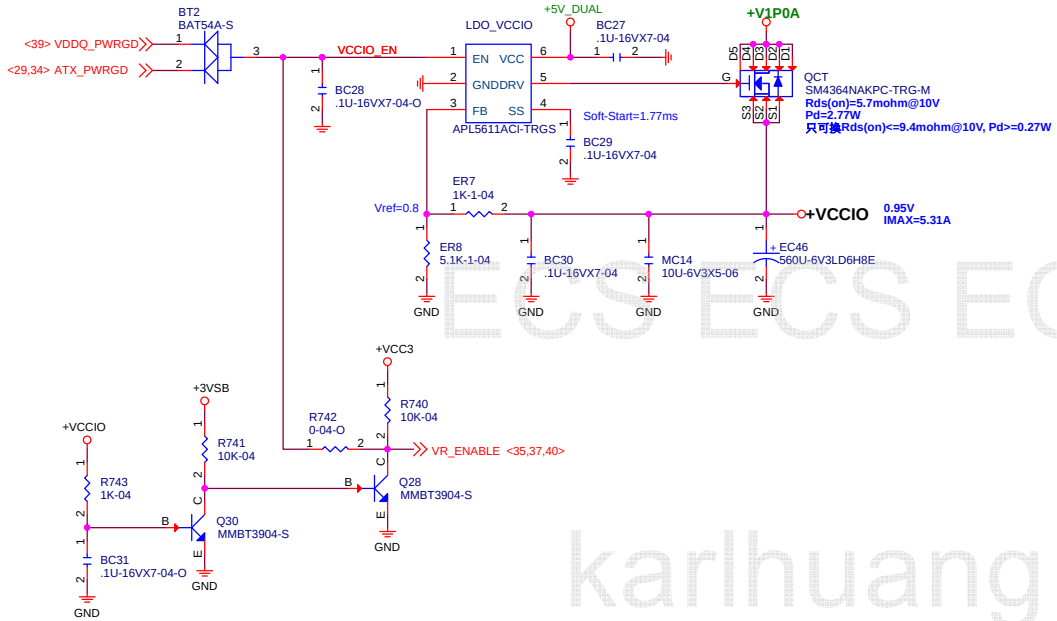

Elitegroup Computer Systems		
Title: DC/DC VCCIO		
Size: Custom	Document Number: H110M4-C43	Rev: V1.0
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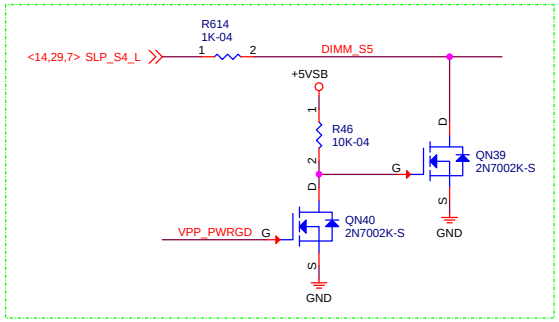
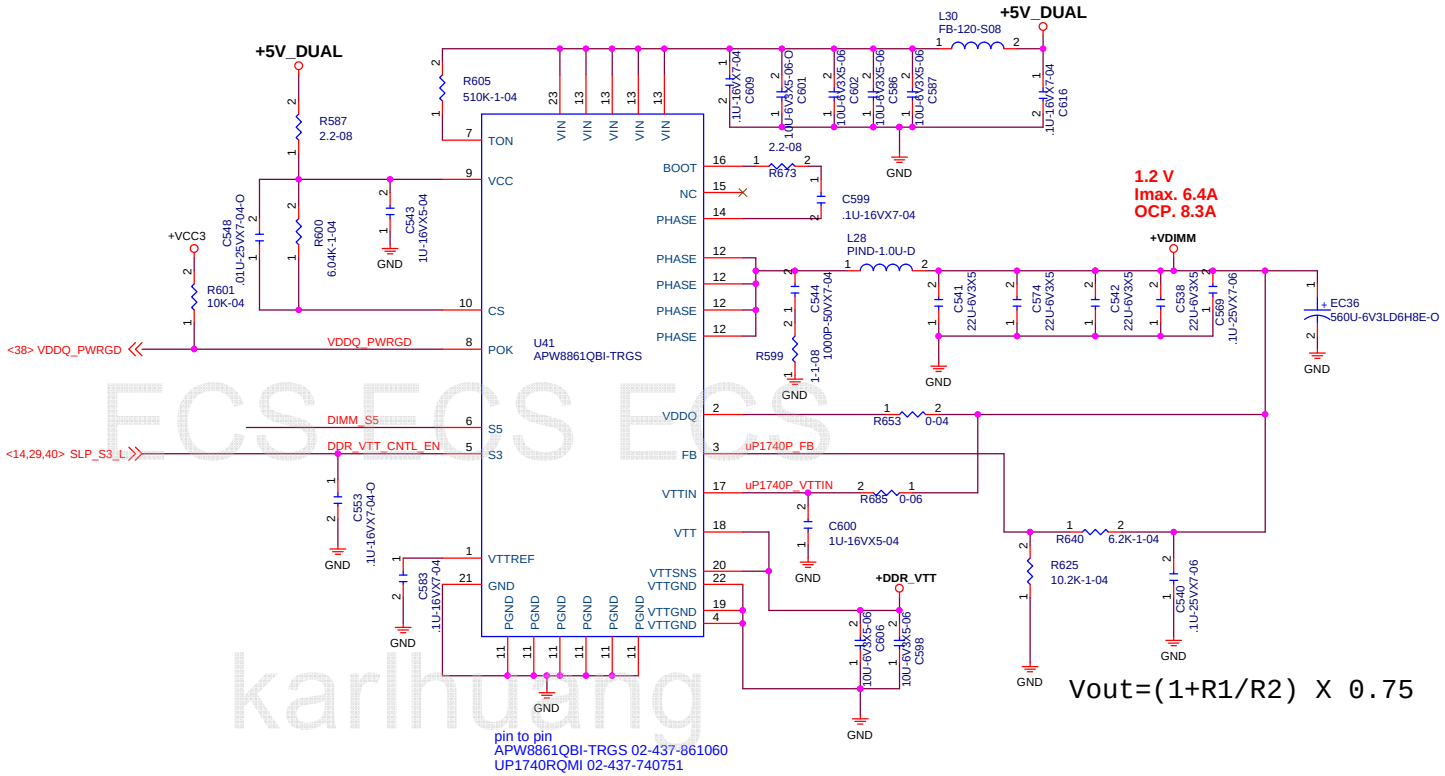
VDIMM

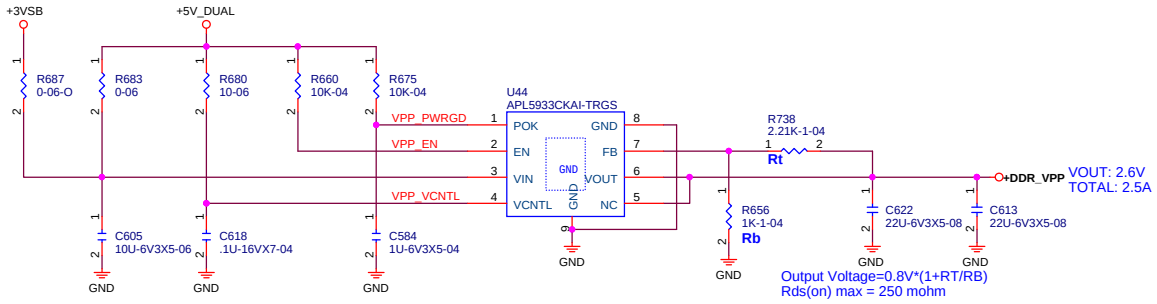
Table 1—EN1/EN2 Control

State	EN1	EN2	VDDQ	VTTREF	VTT
S0	High	High	ON	ON	ON
S3	Low	High	ON	ON	OFF(High-Z)
S4/S5	Low	Low	OFF	OFF	OFF
Others	High	Low	OFF	OFF	OFF





DDR_VPP



Elitegroup Computer Systems			
Title: DC/DC VDIMM & VTT & VPP			
Size: Custom	Document Number: H110M4-C43		Rev: V1.0
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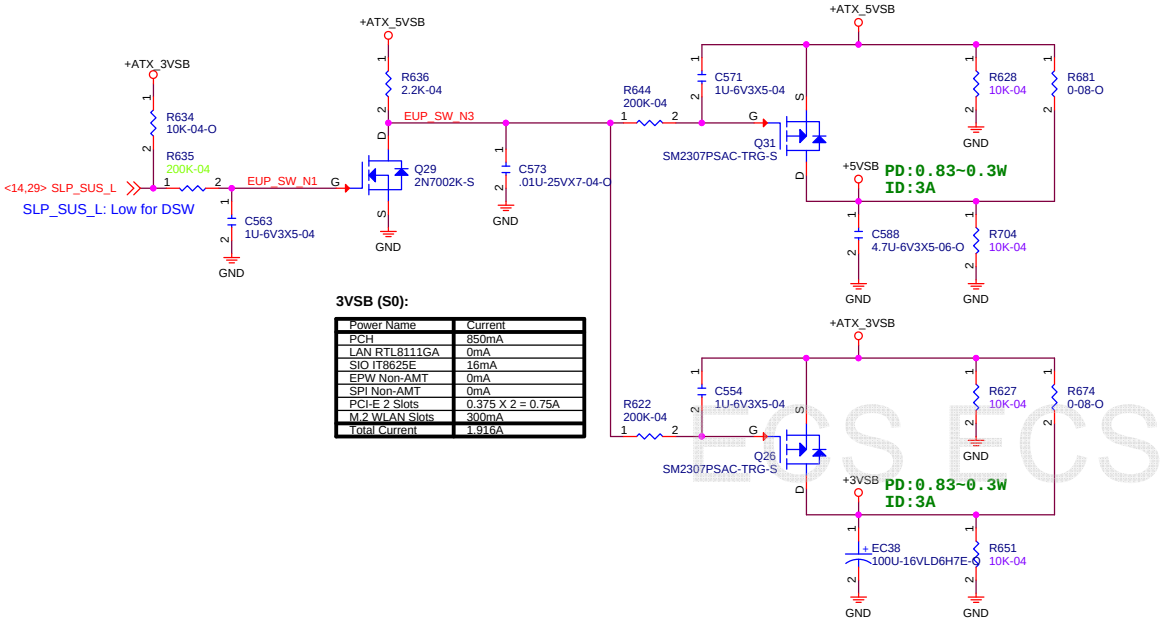
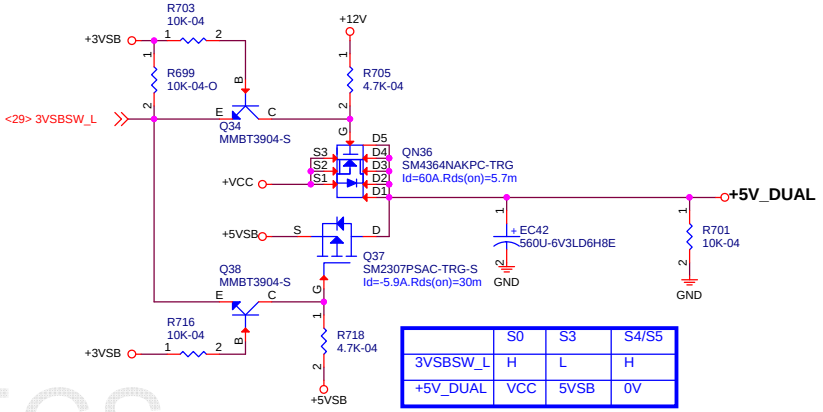
EuP Lot6 Power Saving Circuit



3VSB (S0):

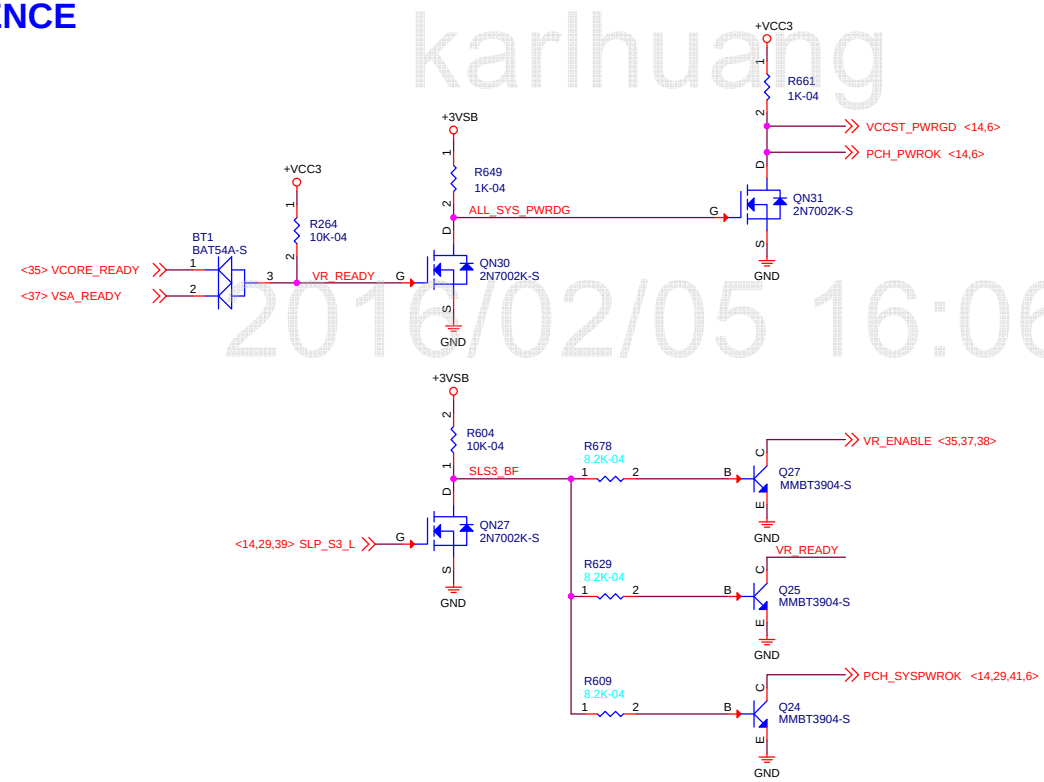
Power Name	Current
PCH	850mA
LAN RTL8111GA	0mA
SIO IT8625E	16mA
EPW Non-AMT	0mA
SPI Non-AMT	0mA
PCI-E 2 Slots	0.375 X 2 = 0.75A
M.2 WLAN Slots	300mA
Total Current	1.916A

5VDUAL



	S0	S3	S4/S5
3VSBSW_L	H	L	H
+5V_DUAL	VCC	5VSB	0V

POWER ON/DOWN SEQUENCE



Elitegroup Computer Systems

Title: DC/DC 5VDUAL & SEQUENCE

Size: Custom | Document Number: H110M4-C43 | Rev: V1.0

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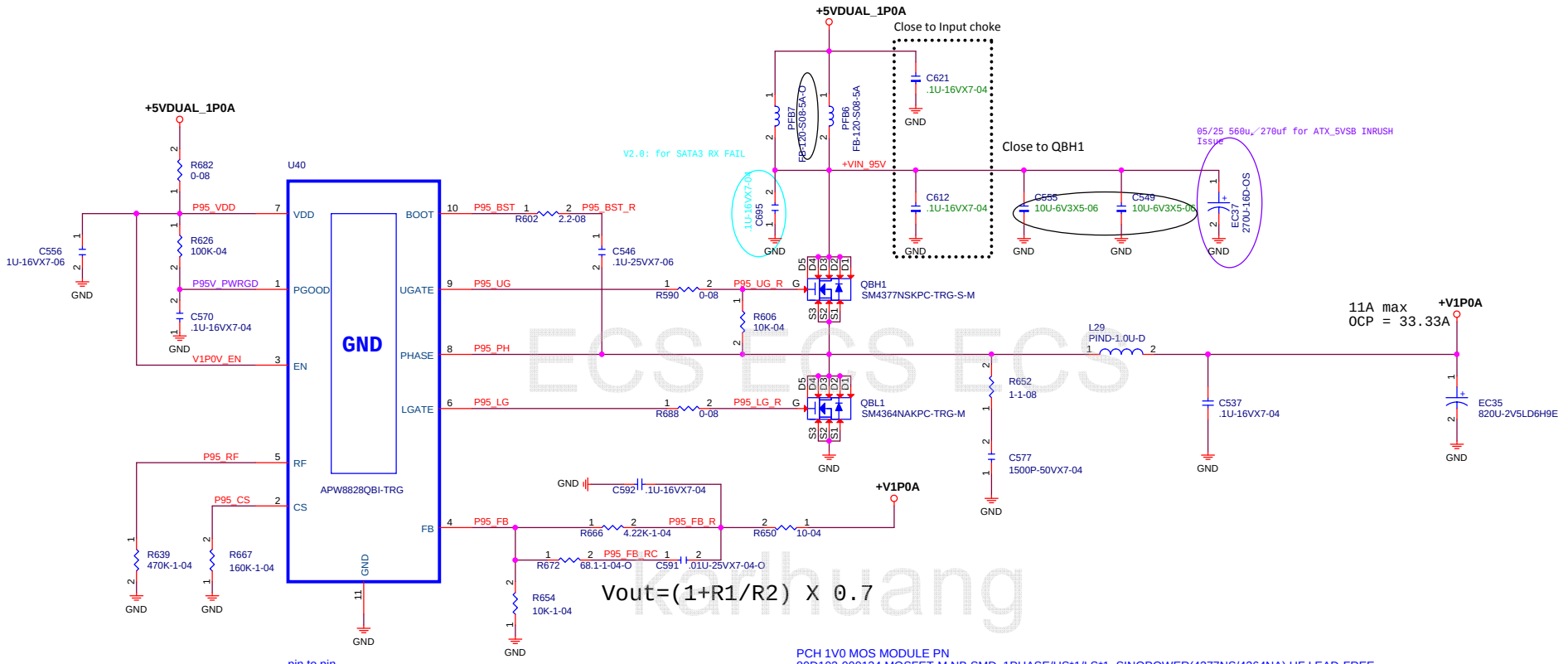
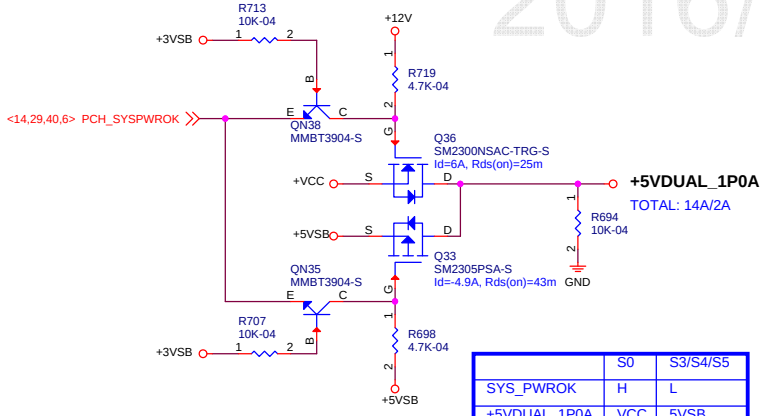
V1P0A



pin to pin
APW8828QBI-TRG 02-433-828060
UP1537PDDA-B1 02-433-537750

PCH 1V0 MOS MODULE PN
80D102-000134 MOSFET-M.NB.SMD..1PHASE/HS*1/LS*1..SINOPOWER(4377NS/4364NA).HF.LEAD-FREE
03-052-837799 MOSFET N-CH.SM4377NSKPC-TRG..Vds=30V,Vgs=20V.Id=50A.Rds(on)=7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
03-053-436498 MOSFET N-CH.SM4364NAKPC-TRG..Vds=30V,Vgs=20V.Id=60A.Rds(on)=5.7m OHM.KPAK.....LEAD-FREE(RoHS/HF).SINOPOWER
80D102-000135 MOSFET-M.NB.SMD..1PHASE/HS*1/LS*1..NIKO-SEM(516BA/618BA).HF.LEAD-FREE
03-052-851626 MOSFET N-CH.PK516BA..Vds=30V,Vgs=20V.Id=51A.Rds(on)=7m OHM.POWERDFN5X6 8P.....LEAD-FREE(RoHS/HF).NIKO-SEM
03-052-861826 MOSFET N-CH.PK618BA..Vds=30V,Vgs=20V.Id=59A.Rds(on)=5.5mOHM.POWERDFN5X6 8P....HF.LEAD-FREE.NIKO-SEM



	S0	S3/S4/S5
SYS_PWROK	H	L
+5VDUAL_1P0A	VCC	5VSB

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Figure 41-2. SKL S Flow Diagram for RSMRST_PWRGD# Generation

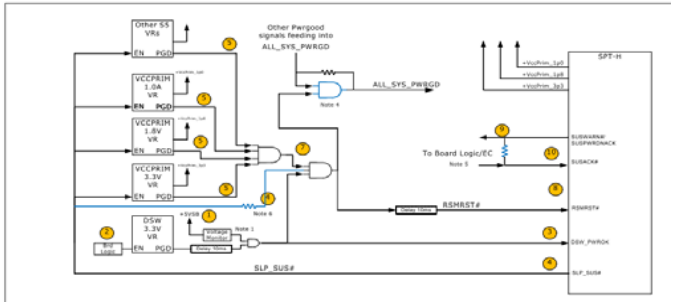
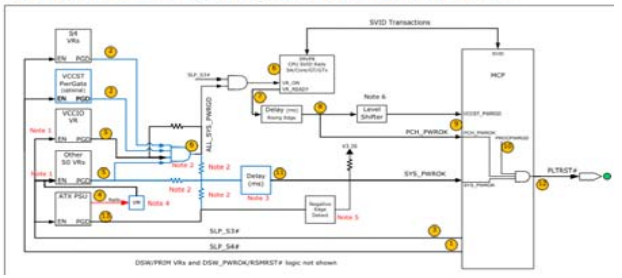
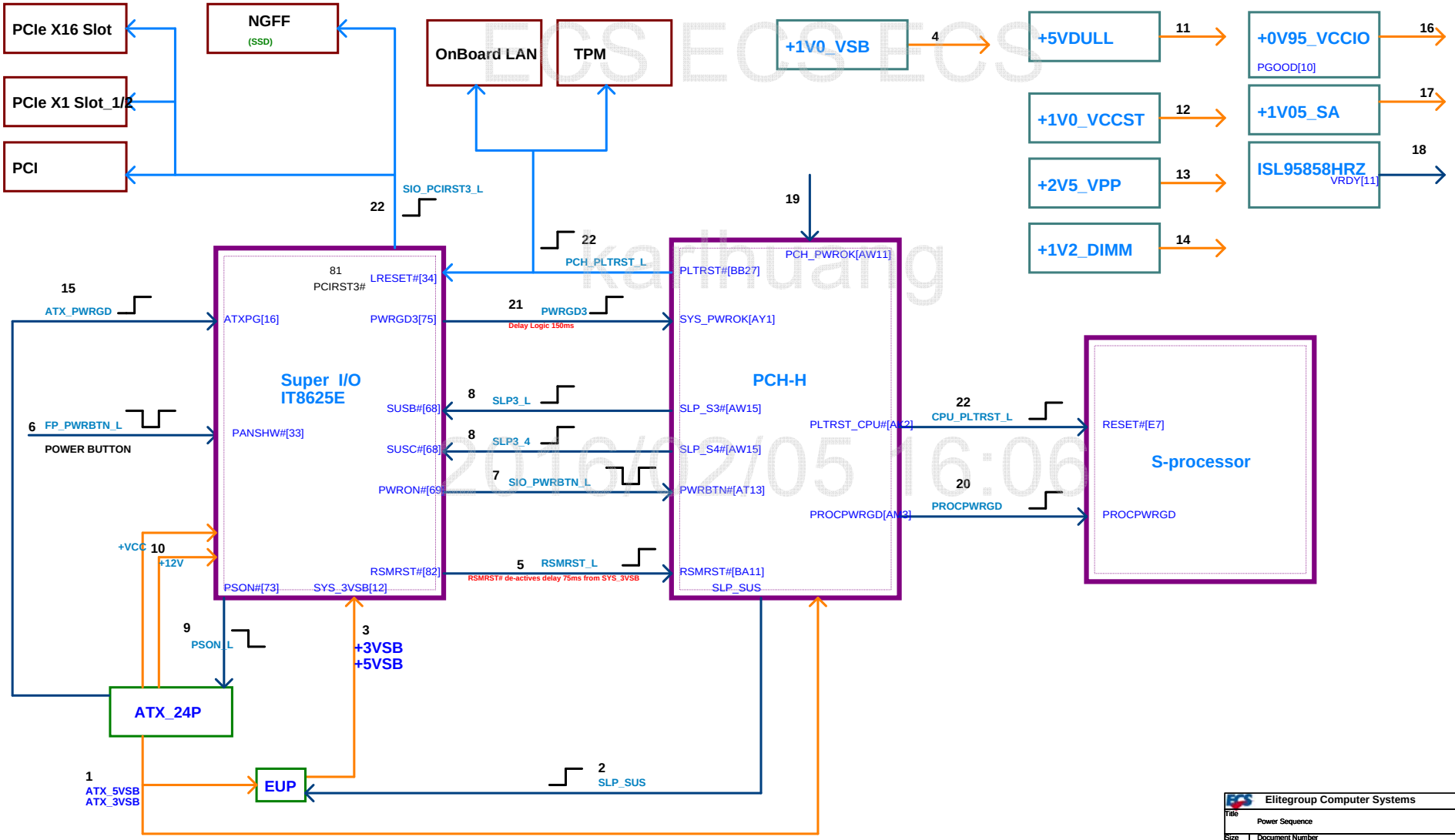


Figure 41-1. SKL S Flow Diagram for SYS_PWROK/PCH_PWROK Generation





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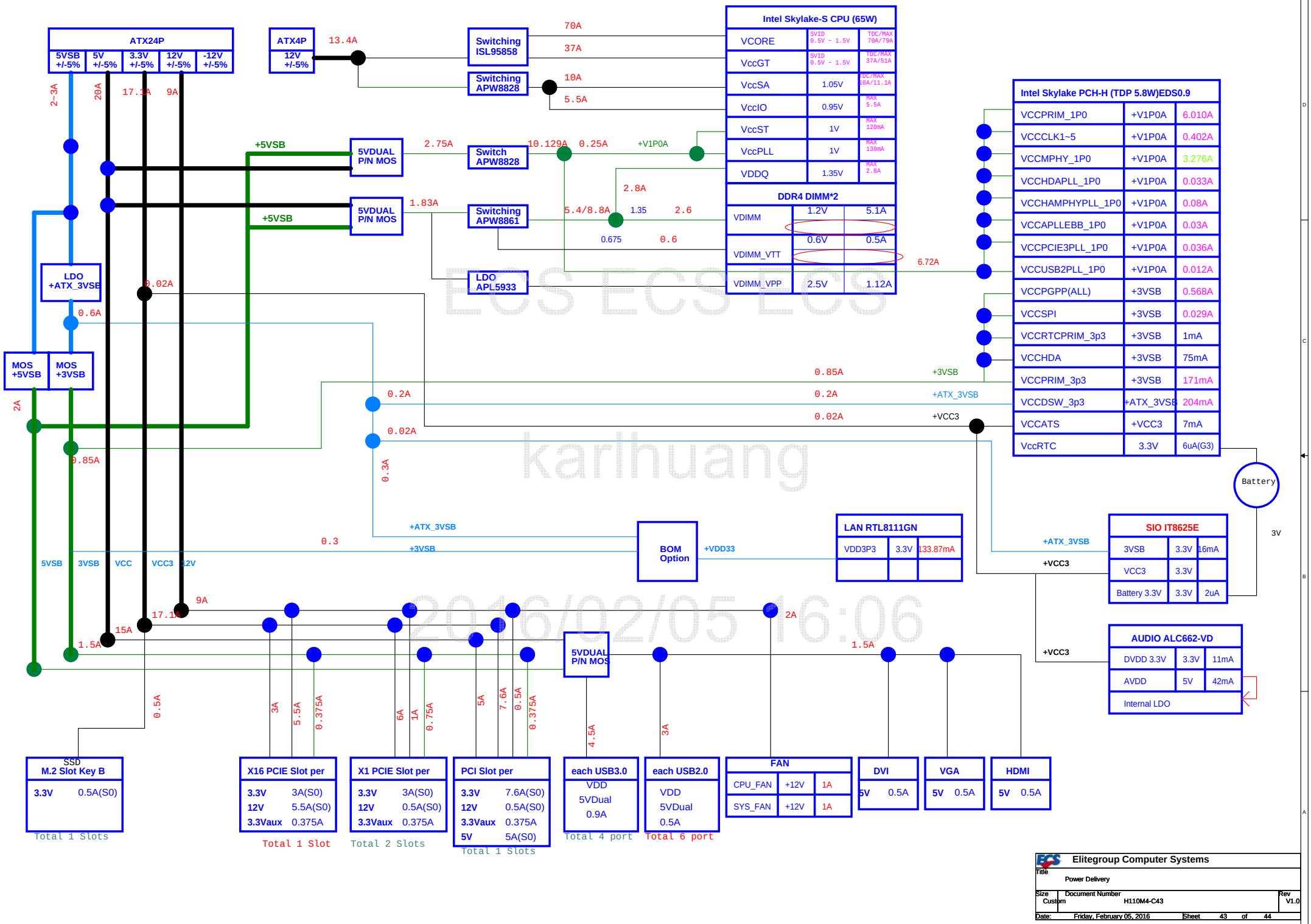
ATX24P
5VSB +/-5%
5V +/-5%
3.3V +/-5%
12V +/-5%
-12V +/-5%
ATX4P
12V +/-5%
13.4A
Switching ISL95858
Switching APW8828
70A
37A
10A
5.5A
Intel Skylake-S CPU (65W)
VCORE
VccGT
VccSA 1.05V
VccIO 0.95V
VccST 1V
VccPLL 1V
VDDQ 1.35V
DDR4 DIMM*2
VDIMM 1.2V 5.1A
VDIMM_VTT 0.6V 0.5A
VDIMM_VPP 2.5V 1.12A
Intel Skylake PCH-H (TDP 5.8W)EDS0.9
VCCPRIM_1P0 +V1P0A 6.010A
VCCCLK1~5 +V1P0A 0.402A
VCCMPHY_1P0 +V1P0A 3.276A
VCCHDAPLL_1P0 +V1P0A 0.033A
VCCHAMPHYPLL_1P0 +V1P0A 0.08A
VCCAPLLEBB_1P0 +V1P0A 0.03A
VCCPCIE3PLL_1P0 +V1P0A 0.036A
VCCUSB2PLL_1P0 +V1P0A 0.012A
VCCPGPP(ALL) +3VSB 0.568A
VCCSPI +3VSB 0.029A
VCCRTCPRIM_3p3 +3VSB 1mA
VCCHDA +3VSB 75mA
VCCPRIM_3p3 +3VSB 171mA
VCCDSW_3p3 +ATX_3VSB 204mA
VCCATS +VCC3 7mA
VccRTC 3.3V 6uA(G3)
6.72A
+5VSB
5VDUAL P/N MOS
2.75A
Switch APW8828
10.129A
0.25A
+V1P0A
2.8A
5.4/8.8A
1.35
2.6
0.675
0.6
1.83A
Switching APW8861
LDO APL5933
LDO +ATX_3VSB
0.02A
0.6A
MOS +5VSB
MOS +3VSB
2A
0.85A
0.2A
0.02A
0.3A
0.85A
+3VSB
+ATX_3VSB
+VCC3
Battery
3V
BOM Option
+VDD33
0.3
5VSB 3VSB VCC VCC3 12V
LAN RTL8111GN
VDD3P3 3.3V 133.87mA
SIO IT8625E
3VSB 3.3V 16mA
VCC3 3.3V
Battery 3.3V 3.3V 2uA
AUDIO ALC662-VD
DVDD 3.3V 3.3V 11mA
AVDD 5V 42mA
Internal LDO
9A
17.1A
15A
1.5A
2A
0.5A
3A
5.5A
0.375A
6A
1A
0.75A
5A
7.6A
0.5A
0.375A
4.5A
3A
SSD
M.2 Slot Key B
3.3V 0.5A(S0)
Total 1 Slots
X16 PCIE Slot per
3.3V 3A(S0)
12V 5.5A(S0)
3.3Vaux 0.375A
Total 1 Slot
X1 PCIE Slot per
3.3V 3A(S0)
12V 0.5A(S0)
3.3Vaux 0.375A
Total 2 Slots
PCI Slot per
3.3V 7.6A(S0)
12V 0.5A(S0)
3.3Vaux 0.375A
5V 5A(S0)
Total 1 Slots
each USB3.0
VDD
5VDual
0.9A
Total 4 port
each USB2.0
VDD
5VDual
0.5A
Total 6 port
FAN
CPU_FAN +12V 1A
SYS_FAN +12V 1A
DVI
5V 0.5A
VGA
5V 0.5A
HDMI
5V 0.5A
ECS ECS ECS
karlhuang
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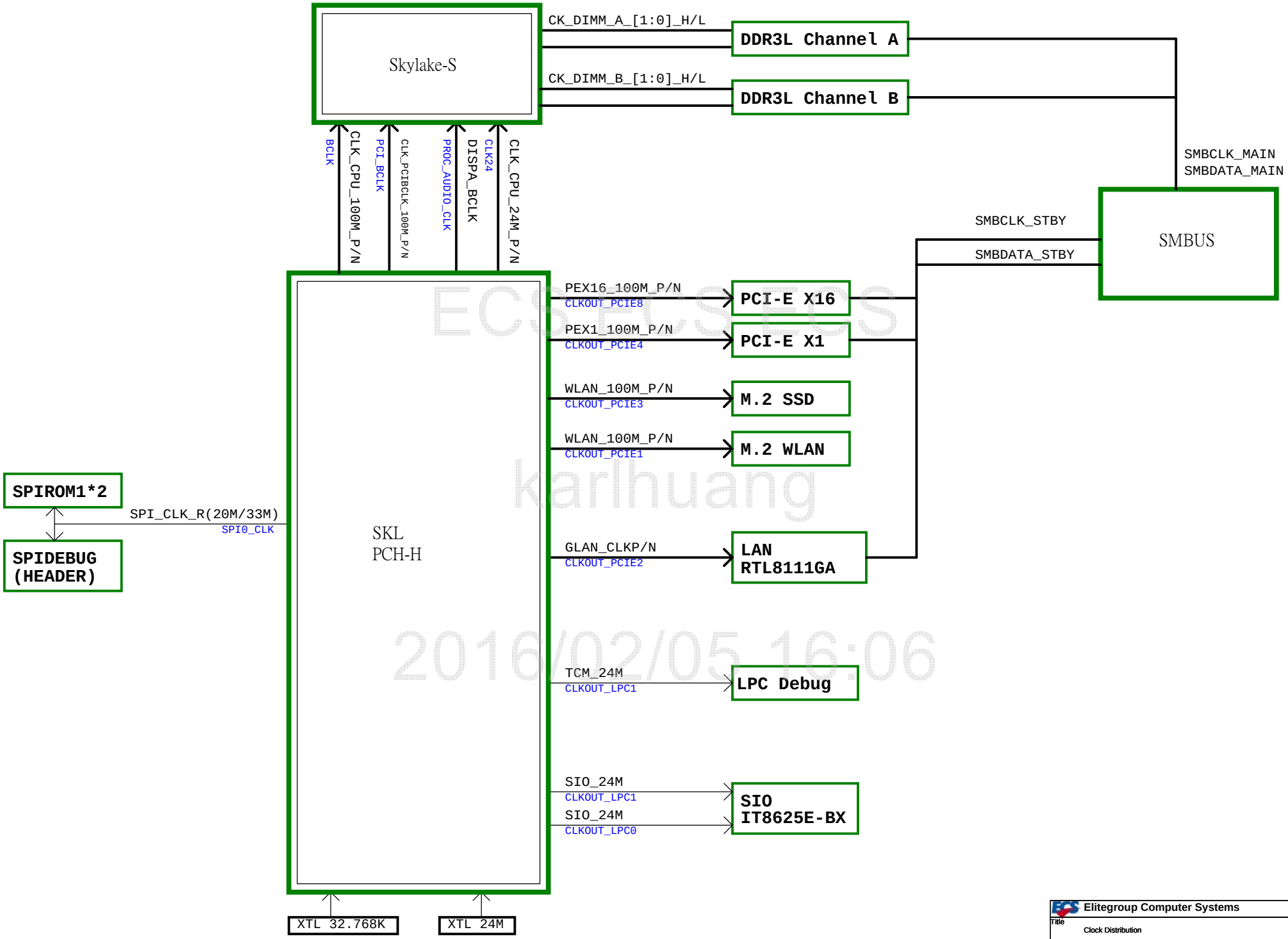

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