Model Name: GA-X58A-UD3R

rev 2.0 1

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02	BOM & PCB MODIFY HISTORY
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04	BLOCK DIAGRAM
05-06	LGA1366-A CPU_DDRA_B_C
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08	LGA1366-D CPU_GND
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37	-PROHOT, DYNAMIC OC +12V保護線路
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SHEET	TITLE
39-40	CODEC 889 & AUDIO JACK
41-44	VCORE PWM_ISL6336A
45-46	DISCRETE POWER
47	ISL6322_DDRII
48	ISL6322_IOH_CORE
49	ATX,OTHERS POWER
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52	FP,FUSB,FDD
53	HWM,KB/MS, FAN CTRL
54	REALTEK RTL8111E
55	TI TSB43AB23 1394
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57	ESATA JMB362
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Title: Cover Sheet

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GA-X58A-UD3R

Component value change history

Data	Change Item	Reason
	2.01B	
2010.04.08	First PBOM release	

Circuit or PCB layout change for next version

DATE	Change Item	Reason

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Title: BOM & PCB MODIFY HISTORY2

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LOW

ICH9 GPIO LIST TABLE

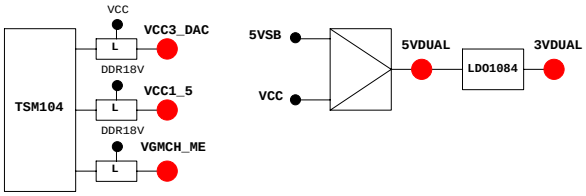
PIN NAME	PWR WELL		AFTER/ PLTRST	USAGE	NOTE
GP0	MAIN		IN	VTT_GMCH_OV3	
GP1/TACH1	MAIN		IN	ICH_FAN_TACH1	P/U 8.2K VCC3
GP2/PIRQE#	MAIN		IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		IN	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		IN	ICH_FAN_TACH2	P/U 8.2K VCC3
GP7/TACH3	MAIN		IN	ICH_FAN_TACH3	P/U 8.2K VCC3
GP8	STBY		IN	DDR18V_OV4	
GP9	STBY		H-Z	GPIO9(DUALBIOS_INPUT)	
GP10	STBY		H-Z	DDR18V_OV5	P/D 100K GND/X
GP11/SMBALERT#	STBY		NATIVE	-SMBALRT	P/U 8.2K 3VDUAL
GP12	STBY	L	OUT	AUDIO DETECT	P/U 8.2K VCC3
GP13	STBY	L	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14	STBY		H-Z	DDR18V_OV2	P/U 8.2K 3VDUAL
GP15	STBY		H-Z	SPI_WP	STP_PCI#
GP16	MAIN	L	OUT	DUAL BIOS CONTROL	N/A
GP17/TACH0	MAIN		IN	ICH_FAN_TACH0	P/U 8.2K VCC3
GP18	MAIN	H	OUT	MB_ID1	P/U 8.2K VCC3
GP19	MAIN		IN	VCC15_OV1	P/U 8.2K VCC3/X
GP20	MAIN		OUT	-SPI_WP0	P/U 1K 3VCL
GP21	MAIN		IN	VCC15_OV3	P/U 8.2K VCC3
GP22	MAIN		IN	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		OUT	-LDRQ1	P/U 8.2K VCC3
GP24	STBY		OUT	TLS	P/U 8.2K 3VDUAL
GP25	STBY		IN	MB_ID2(STP_CPU-)	P/U 8.2K 3VDUAL
GP26/S4_STATE#	STBY		OUT	MB_ID0	P/U 8.2K 3VDUAL
GP27	STBY		OUT/LOW	GPIO27(EL_STATE0)	P/U 8.2K 3VDUAL
GP28	STBY		OUT/LOW	DUAL BIOS CONTROL	N/A
GP29/OC5#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP30/OC6#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP31/OC7#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP32	MAIN		OUT	DUAL_BIOS	P/U 100K+1M VCC3
GP33	MAIN		OUT		
GP34	MAIN		OUT/LOW		N/A
GP35	MAIN	L	OUT	400K FS CONTROL	N/A
GP36	MAIN		IN	DUAL BIOS CONTROL	P/U 8.2K VCC3
GP37	MAIN		IN	150K FS CONTROL	P/U 8.2K VCC3
GP38	MAIN		IN	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN		IN	GPIO39	P/D 8.2K GND
GP48	MAIN		IN	VCORE_OV1	P/U 8.2K VCC3
GP49	MAIN		IN	STARPPING	P/D 8.2K

PIN NAME	PWR WELL	AFTER/ PLTRST	USAGE	NOTE
GP50	MAIN	IN	REQ1#	
GP51	MAIN	IN	GNT1#	P/U 8.2K VCC3
GP52	MAIN	IN	REQ2#	P/U 8.2K VCC3
GP53	MAIN	IN	GNT2#	P/U 8.2K VCC3
GP54	MAIN	IN	REQ3#	P/U 8.2K VCC3
GP55	MAIN	IN	GNT3#	P/U 8.2K VCC3
GP56	STBY	IN	VCORE_OV5	
GP57	STBY	IN	VCORE_OV4	
GP58	STBY	IN	SPI_CS1#	
GP59	STBY		-USBOC_R	
GP60	STBY		LINKALRT#	

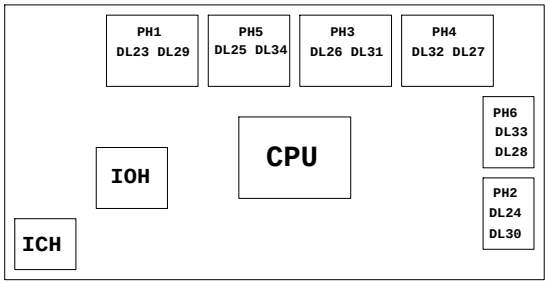
Super I/O GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSSO0	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBC_R	空 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
VTT_REF	DRAM Terminatio
CHAC~CHCC	address
DDR15V	DRAM voltage
VCC18_PLL	CPU PLL
VCCA1_1	CSI PLL
CPU Vcore	CPU Vcore
VCC15	ICH I/O
VCC1_1	IOH core
MCH_RAMVREF	MCH/DRAM Reference(不開放)
VTTD	CPU Termination
VCCA1_5	PCIE
CHA~CHC	Date
VCC1_1_ICH	ICH core

散熱模組料號：

EX58-EXTREME:
1.12SP2-01A001-Y1R/Y2R
2.12SP2-01A001-Z1R/Z2R
(HIBRID模組)包材階

EX58-UD4&UD4P(TPM Function差異):
12SP2-01A001-U1R/U2R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8718
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	ICH8
SYS FAN	FANPWM2	N/A	FANIO2	IT8718
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	ICH8
PWR FAN	N/A	N/A	FANIO3	IT8718
			ICH_FAN_TACH2	ICH8

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Title: TABLE LIST

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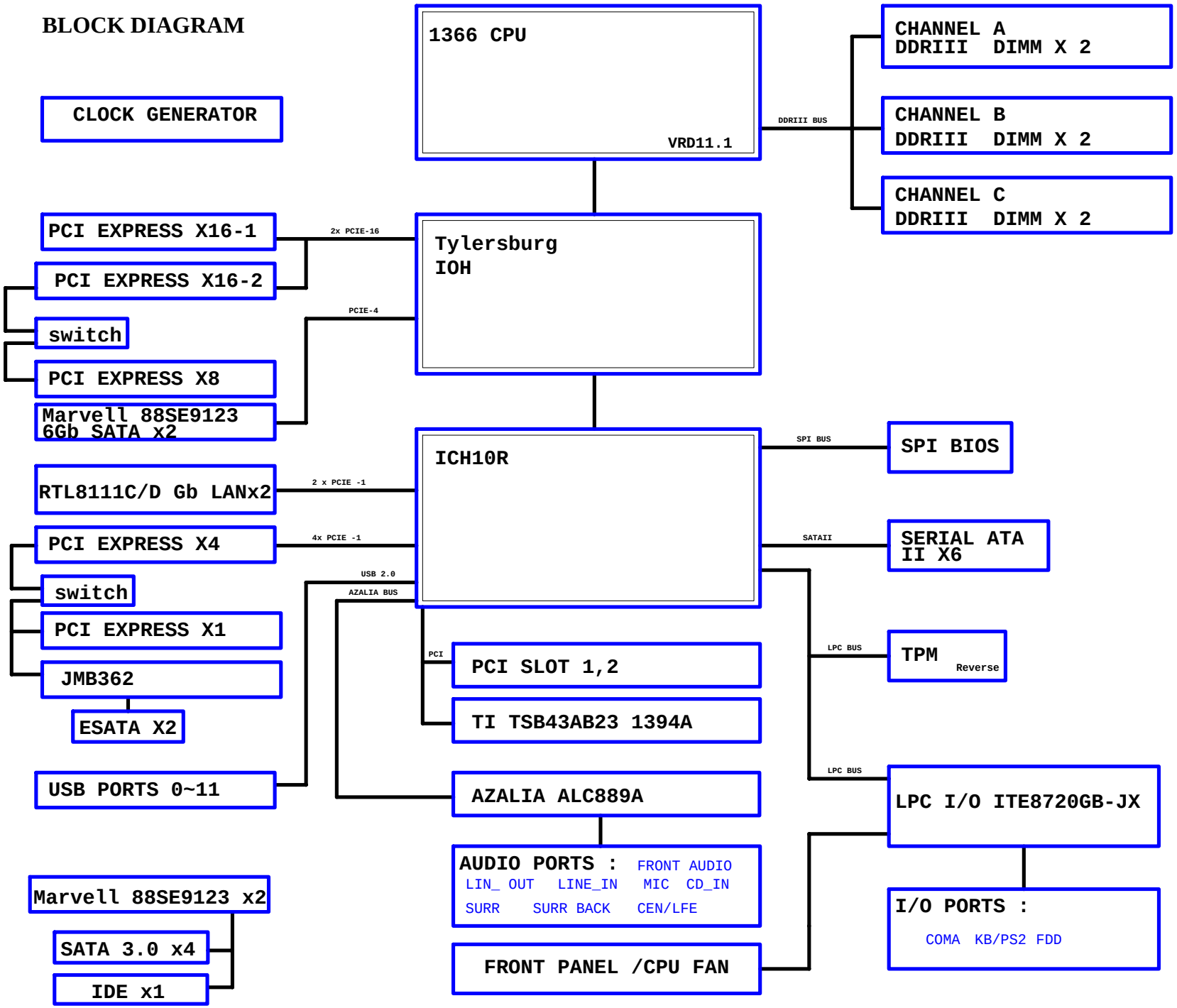
BLOCK DIAGRAM



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Title: BLOCK DIAGRAM		
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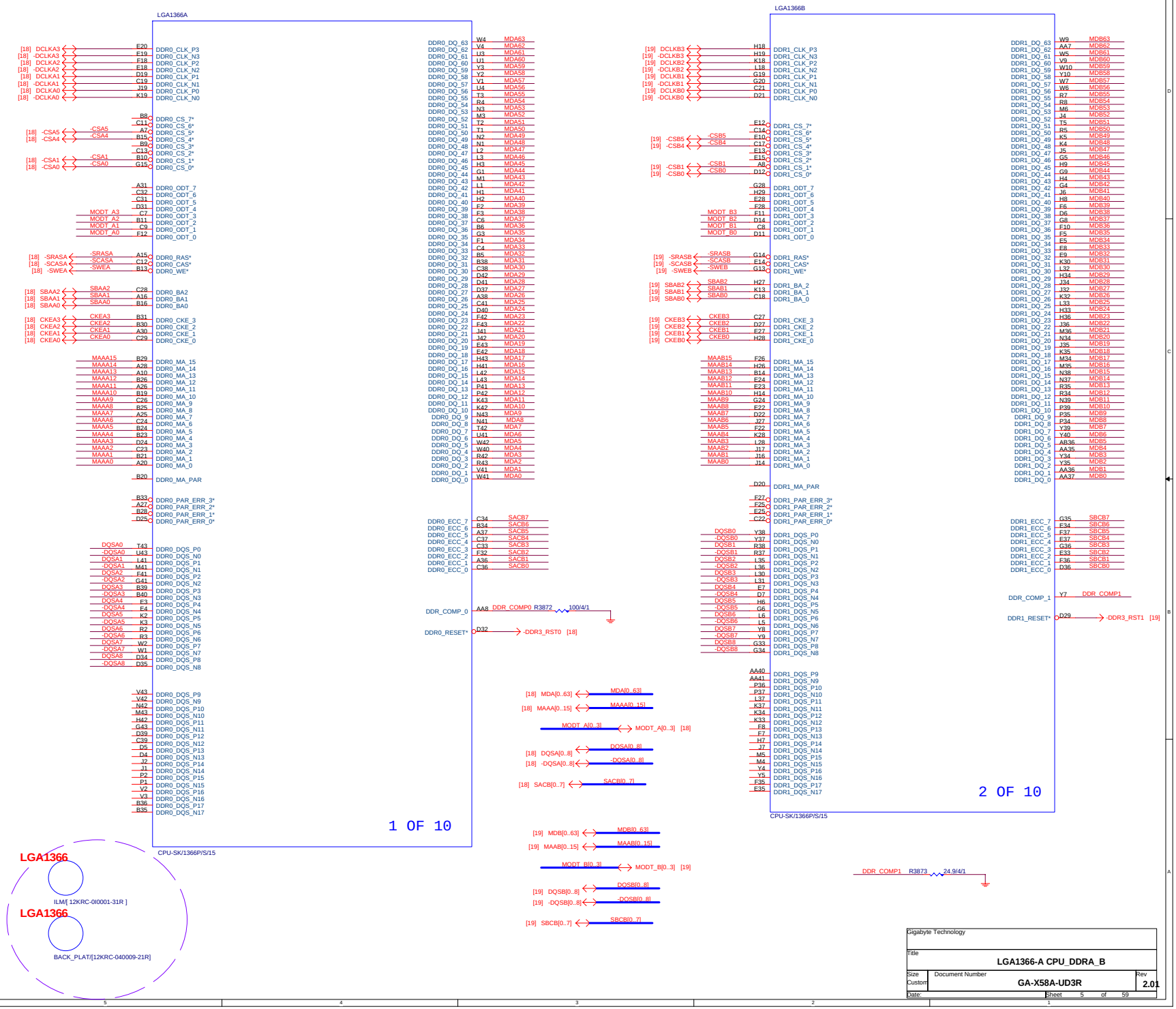
LGA1366A
LGA1366B
1 OF 10
2 OF 10
CPU-SK/1366P/S/15
LGA1366
ILM[12KRC-0I0001-31R]
BACK_PLAT/[12KRC-040009-21R]
DDR_COMP_0 AA8 DDR_COMP0 R3872 100/4/1
DDR0_RESET* D32 -DDR3_RST0 [18]
DDR_COMP_1 Y7 DDR_COMP1
DDR1_RESET* D29 -DDR3_RST1 [19]
DDR_COMP1 R3873 24.9/4/1
[18] MDA[0..63] MDA[0..63]
[18] MAAA[0..15] MAAA[0..15]
MODT_A[0..3] MODT_A[0..3] [18]
[18] DQSA[0..8] DQSA[0..8]
[18] -DQSA[0..8] -DQSA[0..8]
[18] SACB[0..7] SACB[0..7]
[19] MDB[0..63] MDB[0..63]
[19] MAAB[0..15] MAAB[0..15]
MODT_B[0..3] MODT_B[0..3] [19]
[19] DQSB[0..8] DQSB[0..8]
[19] -DQSB[0..8] -DQSB[0..8]
[19] SBCB[0..7] SBCB[0..7]
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Title
LGA1366-A CPU_DDRA_B
Size Custom
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Date:
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LGA1366C

[20] DCLKC3 L22 DDR2_CLK_P3
[20] -DCLKC3 L21 DDR2_CLK_N3
[20] DCLKC2 H21 DDR2_CLK_P2
[20] -DCLKC2 G21 DDR2_CLK_N2
[20] DCLKC1 L20 DDR2_CLK_P1
[20] -DCLKC1 K20 DDR2_CLK_N1
[20] DCLKC0 J22 DDR2_CLK_P0
[20] -DCLKC0 J21 DDR2_CLK_N0

J15 DDR2_CS_7*
L17 DDR2_CS_6*
-CSC5 D9 DDR2_CS_5*
[20] -CSC5
[20] -CSC4 -CSC4 E17 DDR2_CS_4*
H16 DDR2_CS_3*
D16 DDR2_CS_2*
[20] -CSC1 -CSC1 K14 DDR2_CS_1*
[20] -CSC0 -CSC0 G16 DDR2_CS_0*

K27 DDR2_DOT_7
D30 DDR2_DOT_6
K29 DDR2_DOT_5
J29 DDR2_DOT_4
MODT_C3 D10 DDR2_DOT_3
MODT_C2 D15 DDR2_DOT_2
MODT_C1 F13 DDR2_DOT_1
MODT_C0 L16 DDR2_DOT_0

[20] -SRASC -SRASC D17 DDR2_RAS*
[20] -SCASC -SCASC F16 DDR2_CAS*
[20] -SWEC -SWEC C16 DDR2_WE*

[20] SBAC2 SBAC2 L26 DDR2_BA_2
[20] SBAC1 SBAC1 F17 DDR2_BA_1
[20] SBAC0 SBAC0 A17 DDR2_BA_0

[20] CKEC3 CKEC3 L27 DDR2_CKE_3
[20] CKEC2 CKEC2 D26 DDR2_CKE_2
[20] CKEC1 CKEC1 G26 DDR2_CKE_1
[20] CKEC0 CKEC0 J26 DDR2_CKE_0

MAAC15 G25 DDR2_MA_15
MAAC14 H24 DDR2_MA_14
MAAC13 F15 DDR2_MA_13
MAAC12 G23 DDR2_MA_12
MAAC11 H23 DDR2_MA_11
MAAC10 H17 DDR2_MA_10
MAAC9 H22 DDR2_MA_9
MAAC8 L25 DDR2_MA_8
MAAC7 J24 DDR2_MA_7
MAAC6 K22 DDR2_MA_6
MAAC5 K23 DDR2_MA_5
MAAC4 E20 DDR2_MA_4
MAAC3 J20 DDR2_MA_3
MAAC2 G18 DDR2_MA_2
MAAC1 K17 DDR2_MA_1
MAAC0 A18 DDR2_MA_0

B18 DDR2_MA_PAR

K25 DDR2_PAR_ERR_3*
F23 DDR2_PAR_ERR_2*
J25 DDR2_PAR_ERR_1*
F21 DDR2_PAR_ERR_0*

DQSC0 W37 DDR2_DQS_P0
-DQSC0 W36 DDR2_DQS_N0
DQSC1 T37 DDR2_DQS_P1
-DQSC1 T38 DDR2_DQS_N1
DQSC2 K40 DDR2_DQS_P2
-DQSC2 K39 DDR2_DQS_N2
DQSC3 E39 DDR2_DQS_P3
-DQSC3 E40 DDR2_DQS_N3
DQSC4 J10 DDR2_DQS_P4
-DQSC4 J9 DDR2_DQS_N4
DQSC5 L7 DDR2_DQS_P5
-DQSC5 K7 DDR2_DQS_N5
DQSC6 P6 DDR2_DQS_P6
-DQSC6 P5 DDR2_DQS_N6
DQSC7 U8 DDR2_DQS_P7
-DQSC7 T8 DDR2_DQS_N7
DQSC8 G29 DDR2_DQS_P8
-DQSC8 G30 DDR2_DQS_N8

U35 DDR2_DQS_P9
T35 DDR2_DQS_N9
U40 DDR2_DQS_P10
T40 DDR2_DQS_N10
M38 DDR2_DQS_P11
L38 DDR2_DQS_N11
H38 DDR2_DQS_P12
G38 DDR2_DQS_N12
H11 DDR2_DQS_P13
J11 DDR2_DQS_N13
K9 DDR2_DQS_P14
K8 DDR2_DQS_N14
N4 DDR2_DQS_P15
P4 DDR2_DQS_N15
V6 DDR2_DQS_P16
V7 DDR2_DQS_N16
H31 DDR2_DQS_P17
G31 DDR2_DQS_N17

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CPU-SK/1366P/S/15

DDR2_DQ_63 U9 MDC63
DDR2_DQ_62 V8 MDC62
DDR2_DQ_61 T7 MDC61
DDR2_DQ_60 T6 MDC60
DDR2_DQ_59 U10 MDC59
DDR2_DQ_58 T10 MDC58
DDR2_DQ_57 U6 MDC57
DDR2_DQ_56 U5 MDC56
DDR2_DQ_55 R9 MDC55
DDR2_DQ_54 R10 MDC54
DDR2_DQ_53 N7 MDC53
DDR2_DQ_52 N8 MDC52
DDR2_DQ_51 P10 MDC51
DDR2_DQ_50 P9 MDC50
DDR2_DQ_49 N6 MDC49
DDR2_DQ_48 P7 MDC48
DDR2_DQ_47 M8 MDC47
DDR2_DQ_46 L8 MDC46
DDR2_DQ_45 M10 MDC45
DDR2_DQ_44 L11 MDC44
DDR2_DQ_43 N9 MDC43
DDR2_DQ_42 M9 MDC42
DDR2_DQ_41 K10 MDC41
DDR2_DQ_40 L10 MDC40
DDR2_DQ_39 L12 MDC39
DDR2_DQ_38 H12 MDC38
DDR2_DQ_37 G10 MDC37
DDR2_DQ_36 G11 MDC36
DDR2_DQ_35 L13 MDC35
DDR2_DQ_34 H13 MDC34
DDR2_DQ_33 J12 MDC33
DDR2_DQ_32 K12 MDC32
DDR2_DQ_31 E38 MDC31
DDR2_DQ_30 F38 MDC30
DDR2_DQ_29 G39 MDC29
DDR2_DQ_28 H39 MDC28
DDR2_DQ_27 H37 MDC27
DDR2_DQ_26 J37 MDC26
DDR2_DQ_25 F40 MDC25
DDR2_DQ_24 G40 MDC24
DDR2_DQ_23 K38 MDC23
DDR2_DQ_22 L40 MDC22
DDR2_DQ_21 N36 MDC21
DDR2_DQ_20 P40 MDC20
DDR2_DQ_19 J39 MDC19
DDR2_DQ_18 J40 MDC18
DDR2_DQ_17 M40 MDC17
DDR2_DQ_16 M39 MDC16
DDR2_DQ_15 R40 MDC15
DDR2_DQ_14 T41 MDC14
DDR2_DQ_13 V39 MDC13
DDR2_DQ_12 W39 MDC12
DDR2_DQ_11 T36 MDC11
DDR2_DQ_10 R39 MDC10
DDR2_DQ_9 U39 MDC9
DDR2_DQ_8 U38 MDC8
DDR2_DQ_7 V38 MDC7
DDR2_DQ_6 V37 MDC6
DDR2_DQ_5 V34 MDC5
DDR2_DQ_4 U34 MDC4
DDR2_DQ_3 U36 MDC3
DDR2_DQ_2 V36 MDC2
DDR2_DQ_1 W35 MDC1
DDR2_DQ_0 W34 MDC0

DDR2_ECC_7 F30 SCBC7
DDR2_ECC_6 F31 SCBC6
DDR2_ECC_5 J30 SCBC5
DDR2_ECC_4 J31 SCBC4
DDR2_ECC_3 E30 SCBC3
DDR2_ECC_2 E29 SCBC2
DDR2_ECC_1 F33 SCBC1
DDR2_ECC_0 H32 SCBC0

DDR_COMP_2 AC1 DDR_COMP2 R3874 130/4/1

DDR2_RESET* E32 -DDR3_RST2 [20]

[20] MDC[0..63] MDC[0..63]
[20] MAAC[0..15] MAAC[0..15]
[20] MDC[0..63] MDC[0..63]
[20] DQSC[0..8] DQSC[0..8]
[20] -DQSC[0..8] -DQSA[0..8]
[20] SCBC[0..7] SCBC[0..7]
MODT_C[0..3] MODT_C[0..3] [20]

LGA1366F

AM8 AL8 AM6 AM7 AN5 AN6 AM4 AN4 AP3 AP4 AM2 AM3 AN1 AM1 AP2 AN2 AR4 AR5 AT1 AR1 AT3 AT2 AU4 AU3 AW4 AW3 AU7 AU6 AV6 AV5 BA7 BA6 AV5 AW5 AY8 BA8 AV7 AW7 AU8 AV8 RSVD

AT6 AR6 AF6 AE6 RSVD

AC8 AD8 AD5 AE5 AD6 AD7 AB6 AC6 AC4 AD4 AE3 AE4 AC3 AB3 AD2 AD3 AE1 AD1 AF2 AE3 AH2 AG2 AH3 AH4 AK1 AJ1 AJ3 AJ2 AG7 AG6 AJ4 AK4 AK6 AK5 AH6 AJ6 AJ7 AJ8 AG8 AH8 RSVD

AL6 RSVD

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CPU-SK/1366P/S/15

TOP

CPU下電容 Vcore 24顆
DDR15V 3 顆
VTTD 5 顆
VCC18_PLL 1 顆
VTTA 1 顆

VTTD
BC44 BC45 BC48 BC50
BC49 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M

DDR15V
BC41 BC42
BC43 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M

VCORE
BC28 BC25 BC21 BC19 BC13 BC11 BC5 BC7 BC34 BC14 BC16
BC22 BC27 BC18 BC20 BC10 BC12 BC6 BC8 BC17 BC15
22u/8/X5R/6.3V/M

VTTD VCC18_PLL
BC39 BC40
22u/8/X5R/6.3V/M 22u/8/X5R/6.3V/M

VTTD
SBC2 SBC4 SBC3 SBC5
SBC1 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X

DDR15V
SBC7 SBC8
SBC6 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X

VCORE
SBC9 SBC11 SBC13 SBC15 SBC17 SBC19 SBC21 SBC23 SBC25 SBC27 SBC29
SBC10 SBC12 SBC14 SBC16 SBC18 SBC20 SBC22 SBC24 SBC26 SBC28
22u/8/X5R/6.3V/M

VTTD VCC18_PLL
SBC30 SBC31
22u/8/X5R/6.3V/M/X 22u/8/X5R/6.3V/M/X

BOTTOM 預留

CPU下電容 Vcore 24顆
DDR15V 3 顆
VTTD 5 顆
VCC18_PLL 1 顆
VTTA 1 顆

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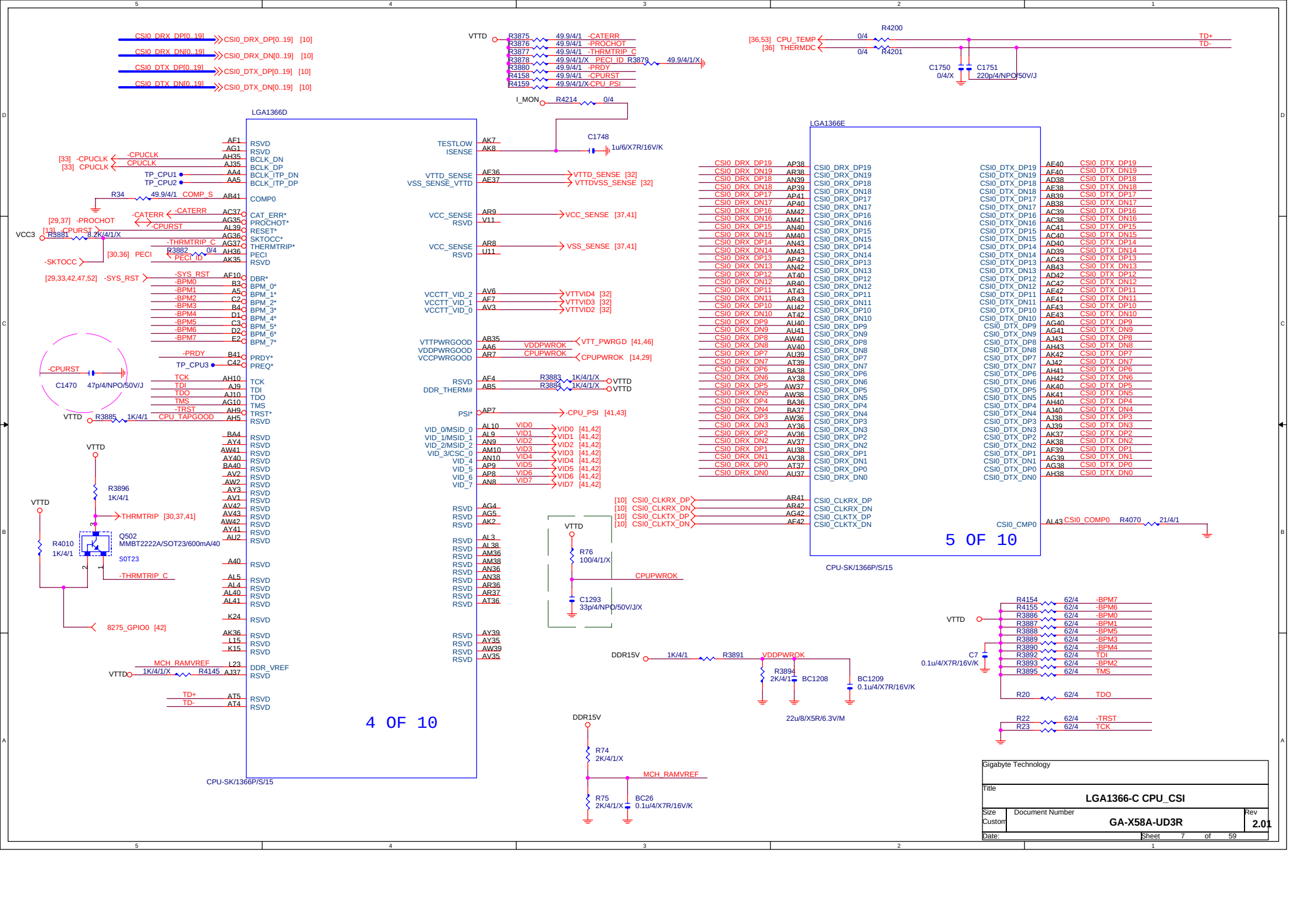
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VTTD
R3875 49.9/4/1 -CATERR
R3876 49.9/4/1 -PROCHOT
R3877 49.9/4/1 -THRMTRIP_C
R3878 49.9/4/1/X PECI_ID R3879 49.9/4/1/X
R3880 49.9/4/1 -PRDY
R4158 49.9/4/1 -CPURST
R4159 49.9/4/1/X CPU_PSI
I_MON R4214 0/4
[36,53] CPU_TEMP
[36] THERMDC
R4200 0/4
R4201 0/4
TD+
TD-
C1750 0/4/X
C1751 220p/4/NPO/50V/J
LGA1366D
AF1 RSVD
AG1 RSVD
[33] -CPUCLK -CPUCLK
[33] CPUCLK CPUCLK
AH35 BCLK_DN
AJ35 BCLK_DP
TP_CPU1 AA4 BCLK_ITP_DN
TP_CPU2 AA5 BCLK_ITP_DP
R34 49.9/4/1 COMP_S AB41 COMP0
-CATERR AC37 CAT_ERR*
[29,37] -PROCHOT AG35 PROCHOT*
-CPURST AL39 RESET*
VCC3 R3881 8.2K/4/1/X AG36 SKTOCC*
-THRMTRIP_C AG37 THERMTRIP*
[30,36] PECI R3882 0/4 AH36 PECI
PECI_ID AK35 RSVD
-SKTOCC
[29,33,42,47,52] -SYS_RST -SYS_RST AE10 DBR*
-BPM0 B3 BPM_0*
-BPM1 A5 BPM_1*
-BPM2 C2 BPM_2*
-BPM3 B4 BPM_3*
-BPM4 D1 BPM_4*
-BPM5 C3 BPM_5*
-BPM6 D2 BPM_6*
-BPM7 E2 BPM_7*
-PRDY B41 PRDY*
TP_CPU3 C42 PREQ*
-CPURST
C1470 47p/4/NPO/50V/J
TCK AH10 TCK
TDI AJ9 TDI
TDO AJ10 TDO
TMS AG10 TMS
-TRST AH9 TRST*
VTTD R3885 1K/4/1 CPU_TAPGOOD AH5 RSVD
TESTLOW AK7
ISENSE AK8
C1748 1u/6/X7R/16V/K
VTTD_SENSE AE36 VTTD_SENSE [32]
VSS_SENSE_VTTD AE37 VTTDVSS_SENSE [32]
VCC_SENSE AR9 VCC_SENSE [37,41]
RSVD V11
VCC_SENSE AR8 VSS_SENSE [37,41]
RSVD U11
VCCTT_VID_2 AV6 VTTVID4 [32]
VCCTT_VID_1 AF7 VTTVID3 [32]
VCCTT_VID_0 AV3 VTTVID2 [32]
VTTPWRGOOD AB35
VDDPWRGOOD AA6 VDDPWROK
VCCPWRGOOD AR7 CPUPWROK VTT_PWRGD [41,46] CPUPWROK [14,29]
RSVD AF4 R3883 1K/4/1/X VTTD
DDR_THERM# AB5 R3884 1K/4/1/X VTTD
PSI* AP7 -CPU_PSI [41,43]
VID_0/MSID_0 AL10 VID0 VID0 [41,42]
VID_1/MSID_1 AL9 VID1 VID1 [41,42]
VID_2/MSID_2 AN9 VID2 VID2 [41,42]
VID_3/CSC_0 AM10 VID3 VID3 [41,42]
VID_4 AN10 VID4 VID4 [41,42]
VID_5 AP9 VID5 VID5 [41,42]
VID_6 AP8 VID6 VID6 [41,42]
VID_7 AN8 VID7 VID7 [41,42]
RSVD AG4
RSVD AC5
RSVD AK2
RSVD AL3
RSVD AL38
RSVD AM36
RSVD AM38
RSVD AN36
RSVD AN38
RSVD AR36
RSVD AR37
RSVD AT36
RSVD AY39
RSVD AY35
RSVD AW39
RSVD AV35
BA4 RSVD
AY4 RSVD
AW41 RSVD
AY40 RSVD
BA40 RSVD
AV2 RSVD
AW2 RSVD
AY3 RSVD
AV1 RSVD
AV42 RSVD
AV43 RSVD
AW42 RSVD
AY41 RSVD
AU2 RSVD
A40 RSVD
AL5 RSVD
AL4 RSVD
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AL41 RSVD
K24 RSVD
AK36 RSVD
L15 RSVD
K15 RSVD
MCH_RAMVREF L23 DDR_VREF
VTTD R4145 AJ37 RSVD
TD+ AT5 RSVD
TD- AT4 RSVD
4 OF 10
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VTTD
R3896 1K/4/1
THRMTRIP [30,37,41]
R4010 1K/4/1
Q502 MMBT2222A/SOT23/600mA/40
S0T23
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8275_GPIO0 [42]
VTTD
R76 100/4/1/X
CPUPWROK
C1293 33p/4/NPO/50V/J/X
DDR15V
1K/4/1 R3891 VDDPWROK
R3894 2K/4/1
BC1208
BC1209 0.1u/4/X7R/16V/K
22u/8/X5R/6.3V/M
DDR15V
R74 2K/4/1/X
MCH_RAMVREF
R75 2K/4/1/X
BC26 0.1u/4/X7R/16V/K
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CSI0_DRX_DN19 AR38 CSI0_DRX_DN19
CSI0_DRX_DP18 AN39 CSI0_DRX_DP18
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CSI0_DTX_DP0 AG38 CSI0_DTX_DP0
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CSI0_CMP0 AL43 CSI0_COMP0 R4070 21/4/1
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VTTD
C7 0.1u/4/X7R/16V/K
R4154 62/4 -BPM7
R4155 62/4 -BPM6
R3886 62/4 -BPM0
R3887 62/4 -BPM1
R3888 62/4 -BPM5
R3889 62/4 -BPM3
R3890 62/4 -BPM4
R3892 62/4 TDI
R3893 62/4 -BPM2
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R22 62/4 -TRST
R23 62/4 TCK
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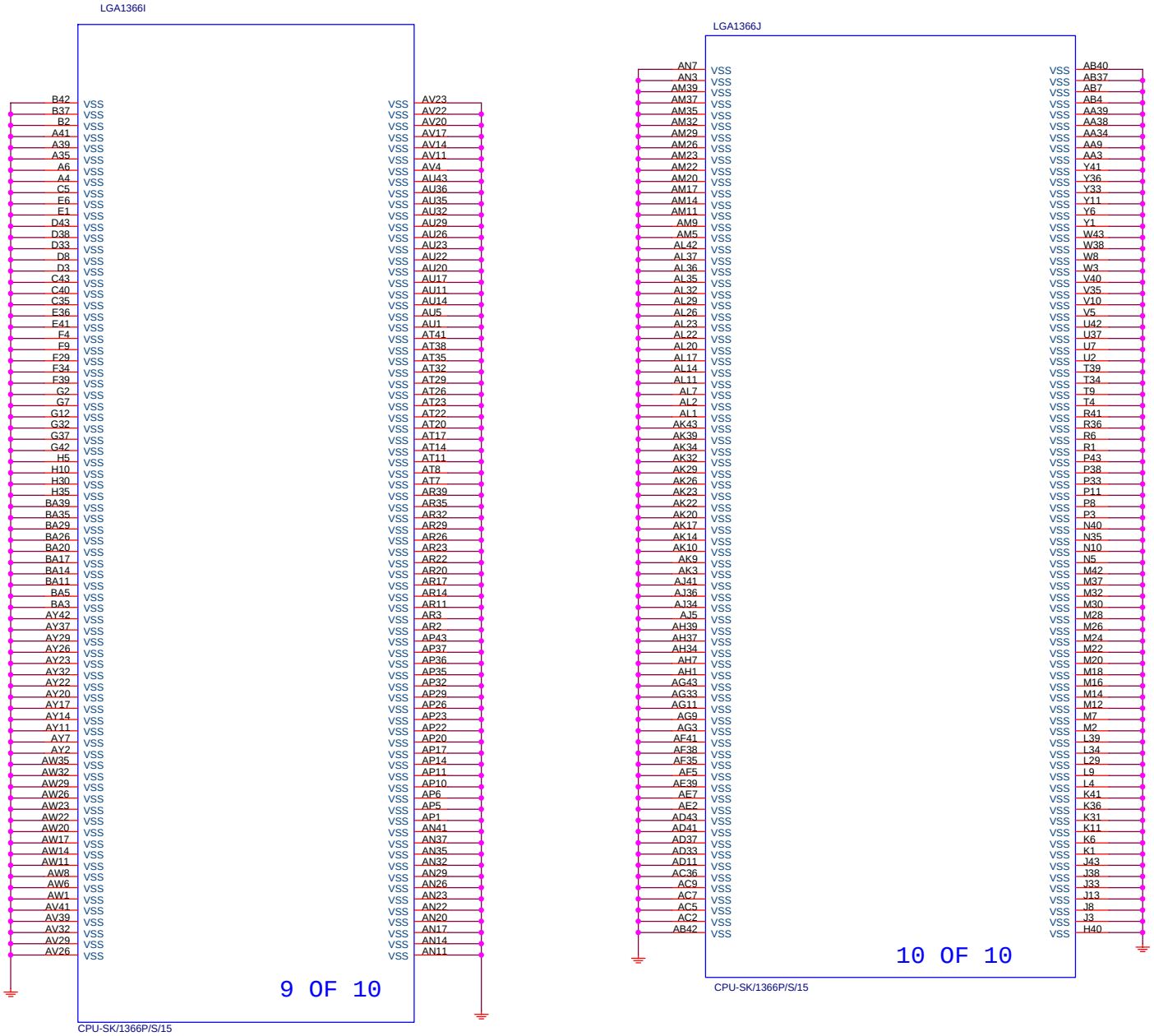

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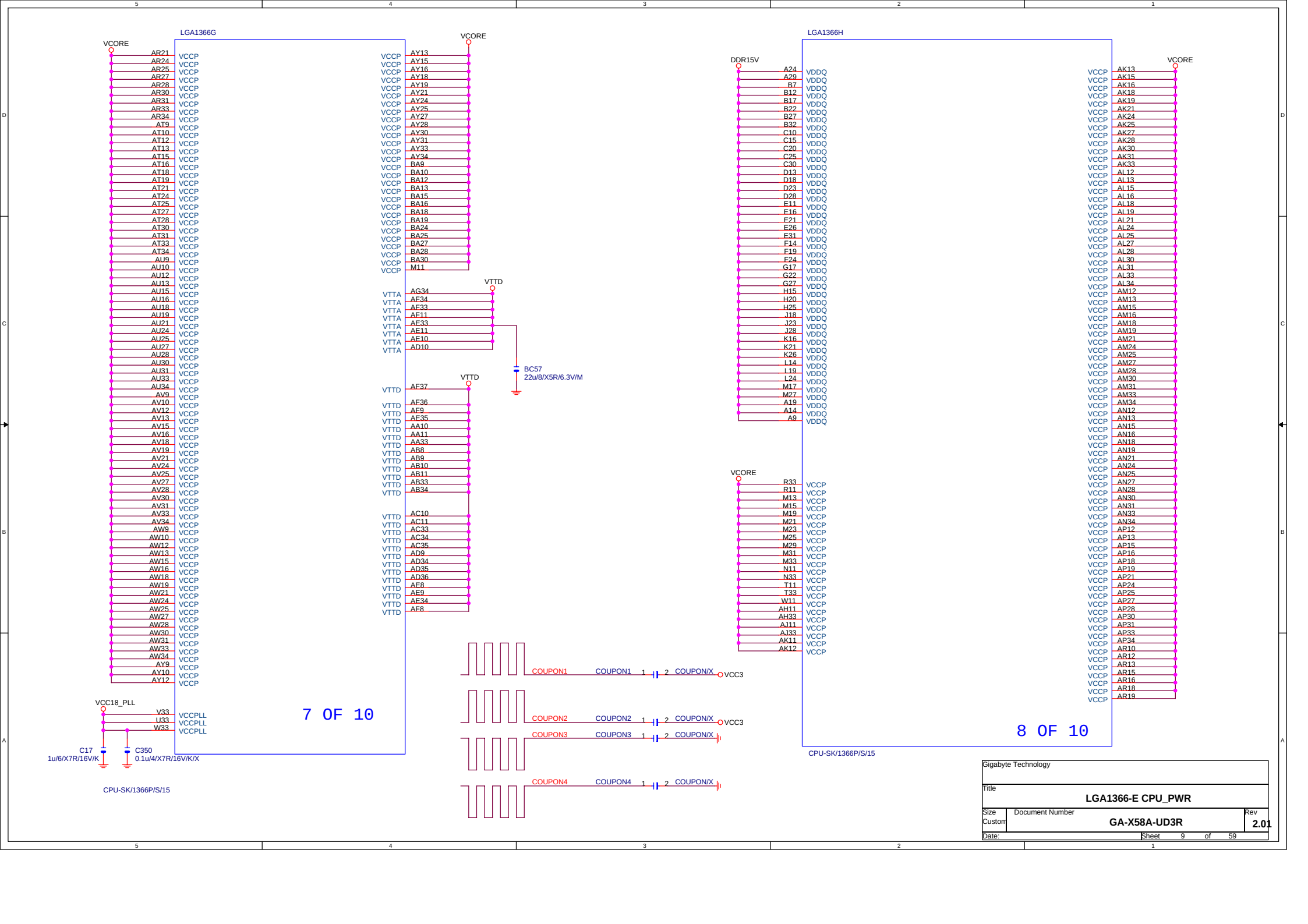
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VCORE
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VTTD
VTTA
AG34 AF34 AF33 AF11 AE33 AE11 AE10 AD10
BC57
22u/8/X5R/6.3V/M
VTTD
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VCC18_PLL
V33 U33 W33
VCCPLL
C17
1u/6/X7R/16V/K
C350
0.1u/4/X7R/16V/K/X
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CPU-SK/1366P/S/15
COUPON1 COUPON2 COUPON3 COUPON4
COUPON1 COUPON2 COUPON3 COUPON4
1 2
COUPON/X
VCC3
LGA1366H
DDR15V
A24 A29 B7 B12 B17 B22 B27 B32 C10 C15 C20 C25 C30 D13 D18 D23 D28 E11 E16 E21 E26 E31 F14 F19 F24 G17 G22 G27 H15 H20 H25 J18 J23 J28 K16 K21 K26 L14 L19 L24 M17 M27 A19 A14 A9
VDDQ
VCORE
R33 R11 M13 M15 M19 M21 M23 M25 M29 M31 M33 N11 N33 T11 T33 W11 AH11 AH33 AJ11 AJ33 AK11 AK12
VCCP
AK13 AK15 AK16 AK18 AK19 AK21 AK24 AK25 AK27 AK28 AK30 AK31 AK33 AL12 AL13 AL15 AL16 AL18 AL19 AL21 AL24 AL25 AL27 AL28 AL30 AL31 AL33 AL34 AM12 AM13 AM15 AM16 AM18 AM19 AM21 AM24 AM25 AM27 AM28 AM30 AM31 AM33 AM34 AN12 AN13 AN15 AN16 AN18 AN19 AN21 AN24 AN25 AN27 AN28 AN30 AN31 AN33 AN34 AP12 AP13 AP15 AP16 AP18 AP19 AP21 AP24 AP25 AP27 AP28 AP30 AP31 AP33 AP34 AR10 AR12 AR13 AR15 AR16 AR18 AR19
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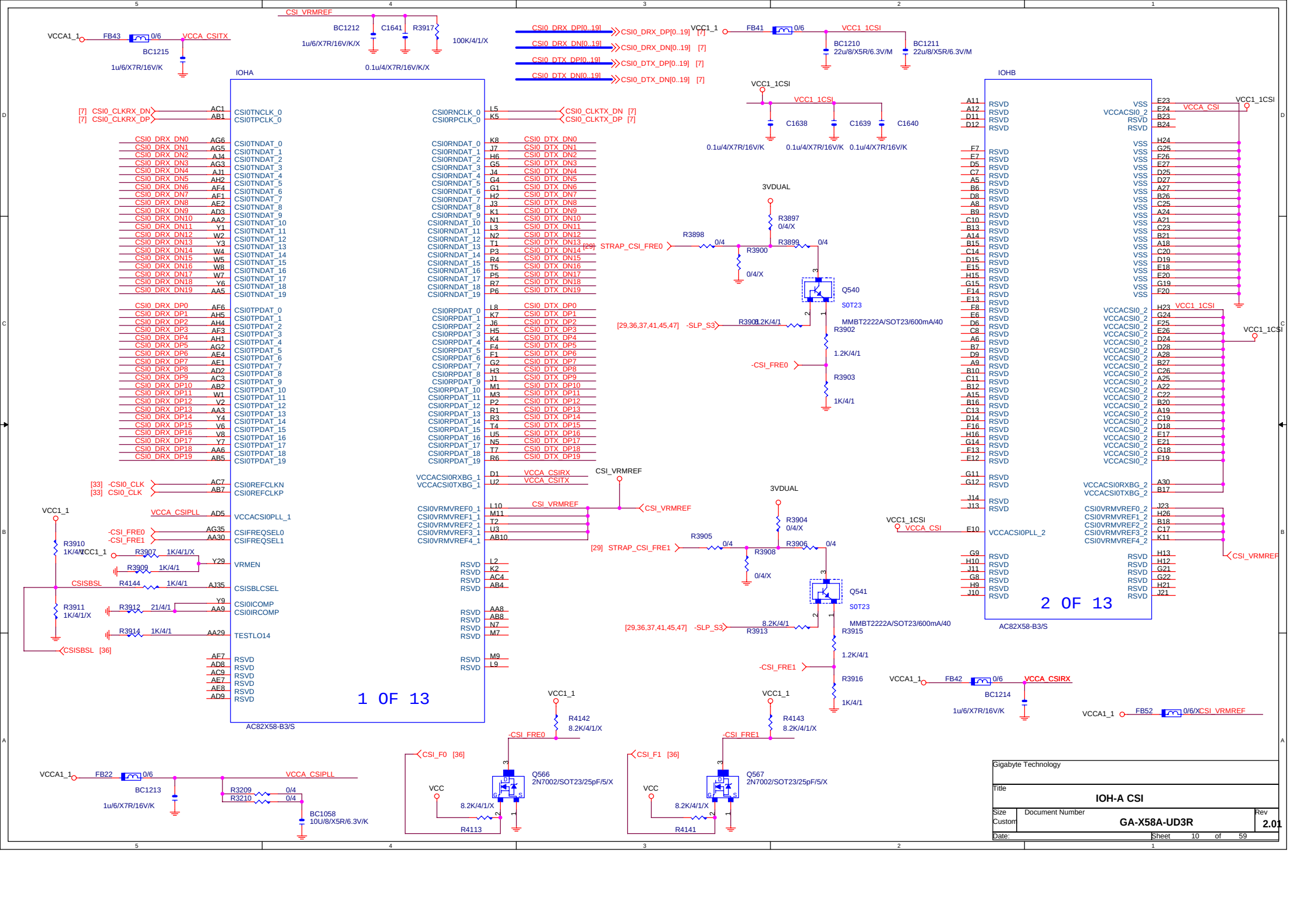
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IOHB
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2 OF 13
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AC82X58-B3/S
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3VDUAL
Q540
Q541
Q566
Q567
2N7002/SOT23/25pF/5/X
MMBT2222A/SOT23/600mA/40
S0T23
VCCA_CSITX
VCCA_CSIRX
VCCA_CSIPLL
VCCA_CSI
CSI_VRMREF
VCC1_1CSI
VCC1_1
VCCA1_1
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STRAP_CSI_FRE1
-SLP_S3
-CSI_FRE0
-CSI_FRE1
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VRMEN
CSISBLCSEL
CSI0ICOMP
CSI0IRCOMP
TESTLO14
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VCCACSI0TXBG_1
VCCACSI0RXBG_2
VCCACSI0TXBG_2
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RSVD
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BC1210
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BC1211
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BC1212
BC1214
BC1215
BC1213
BC1058
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EXP_A_RXP[0..7] >> EXP_A_RXP[0..7] [23]
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IOHC

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EXP_C_RXP10	AJ27	PE8RP_1	PE8TP_1	AR24	EXP_C_TXP10
EXP_C_RXP9	AL28	PE8RP_2	PE8TP_2	AP26	EXP_C_TXP9
EXP_C_RXP8	AJ25	PE8RP_3	PE8TP_3	AT26	EXP_C_TXP8
EXP_C_RXN7	AL29	PE9RN_0	PE9TN_0	AN29	EXP_C_TXN7
EXP_C_RXN6	AK30	PE9RN_1	PE9TN_1	AT29	EXP_C_TXN6
EXP_C_RXN5	AL31	PE9RN_2	PE9TN_2	AR30	EXP_C_TXN5
EXP_C_RXN4	AK28	PE9RN_3	PE9TN_3	AN30	EXP_C_TXN4
EXP_C_RXP7	AK29	PE9RP_0	PE9TP_0	AN28	EXP_C_TXP7
EXP_C_RXP6	AK31	PE9RP_1	PE9TP_1	AT28	EXP_C_TXP6
EXP_C_RXP5	AL32	PE9RP_2	PE9TP_2	AR29	EXP_C_TXP5
EXP_C_RXP4	AJ28	PE9RP_3	PE9TP_3	AP30	EXP_C_TXP4
EXP_C_RXN3	AK33	PE10RN_0	PE10TN_0	AT32	EXP_C_TXN3
EXP_C_RXN2	AL34	PE10RN_1	PE10TN_1	AR31	EXP_C_TXN2
EXP_C_RXN1	AK32	PE10RN_2	PE10TN_2	AP33	EXP_C_TXN1
EXP_C_RXN0	AH30	PE10RN_3	PE10TN_3	AN32	EXP_C_TXN0
EXP_C_RXP3	AL33	PE10RP_0	PE10TP_0	AT31	EXP_C_TXP3
EXP_C_RXP2	AM34	PE10RP_1	PE10TP_1	AP31	EXP_C_TXP2
EXP_C_RXP1	AJ32	PE10RP_2	PE10TP_2	AR33	EXP_C_TXP1
EXP_C_RXP0	AJ30	PE10RP_3	PE10TP_3	AP32	EXP_C_TXP0
[33] -SRCCLK_MCH	AG29	PE1CLKN	VCCDPE1PLL	AT22	VCC1_1PLLD
[33] SRCCLK_MCH1	AF29	PE1CLKP	VCCAPE1PLL	AT20	VCC1_1PLLA
			VCCAPE1BG	AT19	VCC1_5PEG1
	AP35	PE1COMP			
	AN35	PE1ICOMPI			
	AN36	PE1ICOMPO			
	AN34	PE1RBIAS			

VCC1_1PE — R3919 49.9/4/1 — PE1COMP
R3921 750/4/1 PE1RBIAS

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AC82X58-B3/S

IOHD

EXP_A_RXN15	AJ6	PE3RN_0	PE3TN_0	AN4	EXP_A_TXN15
EXP_A_RXN14	AL4	PE3RN_1	PE3TN_1	AR4	EXP_A_TXN14
EXP_A_RXN13	AL5	PE3RN_2	PE3TN_2	AP6	EXP_A_TXN13
EXP_A_RXN12	AK7	PE3RN_3	PE3TN_3	AT5	EXP_A_TXN12
EXP_A_RXP15	AK6	PE3RP_0	PE3TP_0	AN5	EXP_A_TXP15
EXP_A_RXP14	AL3	PE3RP_1	PE3TP_1	AP4	EXP_A_TXP14
EXP_A_RXP13	AK5	PE3RP_2	PE3TP_2	AN6	EXP_A_TXP13
EXP_A_RXP12	AL7	PE3RP_3	PE3TP_3	AT4	EXP_A_TXP12
EXP_A_RXN11	AJ7	PE4RN_0	PE4TN_0	AR5	EXP_A_TXN11
EXP_A_RXN10	AM7	PE4RN_1	PE4TN_1	AR7	EXP_A_TXN10
EXP_A_RXN9	AL8	PE4RN_2	PE4TN_2	AP7	EXP_A_TXN9
EXP_A_RXN8	AJ9	PE4RN_3	PE4TN_3	AT9	EXP_A_TXN8
EXP_A_RXP11	AJ8	PE4RP_0	PE4TP_0	AR6	EXP_A_TXP11
EXP_A_RXP10	AM8	PE4RP_1	PE4TP_1	AT7	EXP_A_TXP10
EXP_A_RXP9	AL9	PE4RP_2	PE4TP_2	AP8	EXP_A_TXP9
EXP_A_RXP8	AK9	PE4RP_3	PE4TP_3	AT8	EXP_A_TXP8
EXP_A_RXN7	AK10	PE5RN_0	PE5TN_0	AR9	EXP_A_TXN7
EXP_A_RXN6	AK11	PE5RN_1	PE5TN_1	AT10	EXP_A_TXN6
EXP_A_RXN5	AM13	PE5RN_2	PE5TN_2	AP11	EXP_A_TXN5
EXP_A_RXN4	AL13	PE5RN_3	PE5TN_3	AP13	EXP_A_TXN4
EXP_A_RXP7	AL10	PE5RP_0	PE5TP_0	AP9	EXP_A_TXP7
EXP_A_RXP6	AJ11	PE5RP_1	PE5TP_1	AR10	EXP_A_TXP6
EXP_A_RXP5	AM12	PE5RP_2	PE5TP_2	AR11	EXP_A_TXP5
EXP_A_RXP4	AL14	PE5RP_3	PE5TP_3	AP12	EXP_A_TXP4
EXP_A_RXN3	AK12	PE6RN_0	PE6TN_0	AN15	EXP_A_TXN3
EXP_A_RXN2	AL15	PE6RN_1	PE6TN_1	AT15	EXP_A_TXN2
EXP_A_RXN1	AJ14	PE6RN_2	PE6TN_2	AR14	EXP_A_TXN1
EXP_A_RXN0	AJ12	PE6RN_3	PE6TN_3	AM16	EXP_A_TXN0
EXP_A_RXP3	AL12	PE6RP_0	PE6TP_0	AN14	EXP_A_TXP3
EXP_A_RXP2	AK15	PE6RP_1	PE6TP_1	AT14	EXP_A_TXP2
EXP_A_RXP1	AK14	PE6RP_2	PE6TP_2	AP14	EXP_A_TXP1
EXP_A_RXP0	AJ13	PE6RP_3	PE6TP_3	AM15	EXP_A_TXP0
[33] -SRCCLK_MCH	AN10	PE0CLKN	VCCDPEPLL	AP2	VCC1_1PLLD
[33] SRCCLK_MCH	AN11	PE0CLKP	VCCAPEPLL	AN1	VCC1_1PLLA
			VCCAPEBG	AN2	VCC1_5PEG0
	AM1	PE0RCOMPO			
	AP3	PE0ICOMPI			
	AL1	PE0ICOMPO			
	AN13	PE0RBIAS			

VCC1_1PE — R3918 49.9/4/1 — PE0COMP
R3920 750/4/1 PE0RBIAS

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AC82X58-B3/S

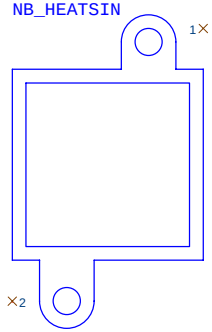
VCC1_1 — FB49 0/6/X — VCC1_1PLLD
BC1236 1u/6/X7R/16V/K
R4076 0/4, R4078 0/4
BC1238 10U/8/X5R/6.3V/K

VCC1_1 — FB51 0/6/X — VCC1_1PLLA
BC1240 1u/6/X7R/16V/K
R4080 0/4, R4082 0/4
BC1242 10U/8/X5R/6.3V/K

VCCA1_5 — FB48 0/6 — VCC1_5PEG1
BC1235 1u/6/X7R/16V/K
R4075 0/4, R4077 0/4
BC1237 10U/8/X5R/6.3V/K

VCCA1_5 — FB50 0/6 — VCC1_5PEG0
BC1239 1u/6/X7R/16V/K
R4079 0/4, R4081 0/4
BC1241 10U/8/X5R/6.3V/K

NB_HEATSIN



NB_HEATSINK/NEW

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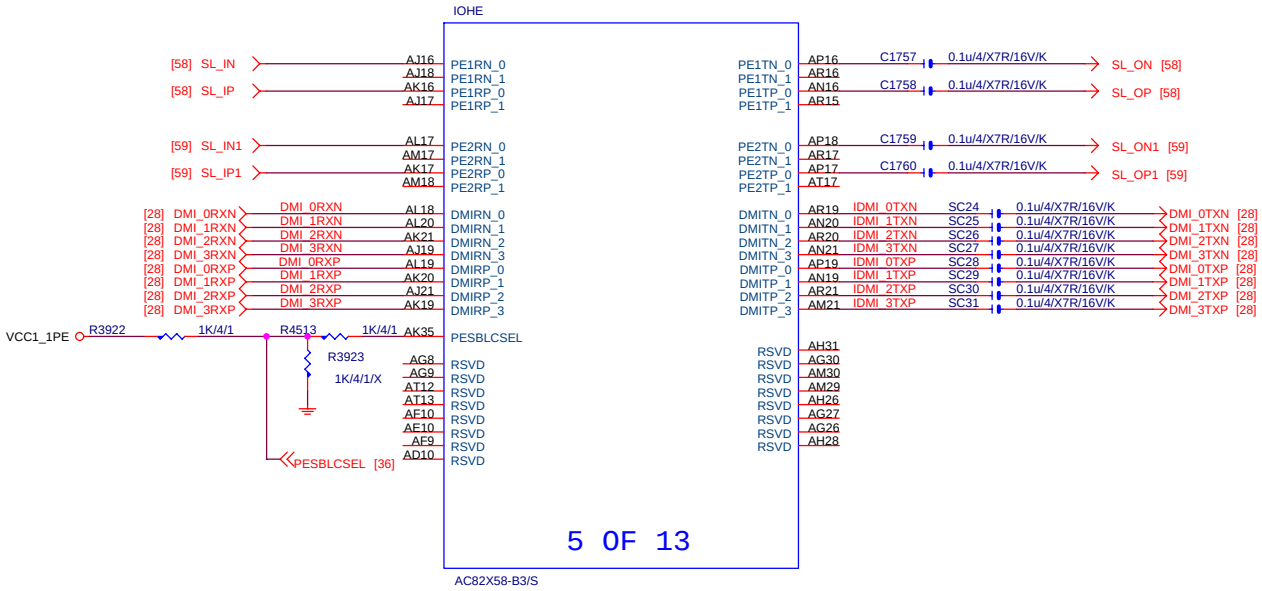
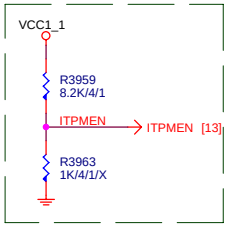
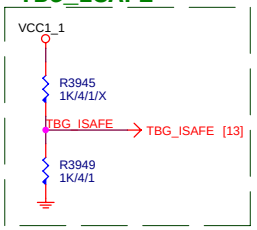
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date:	Sheet 11 of 59	



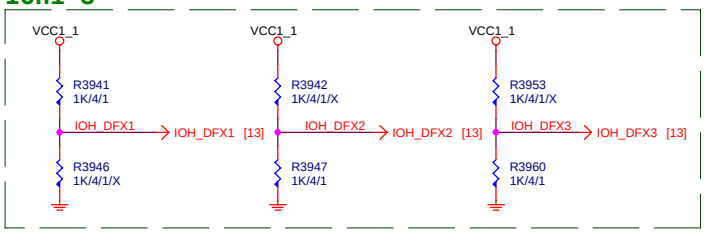
ITPMEN



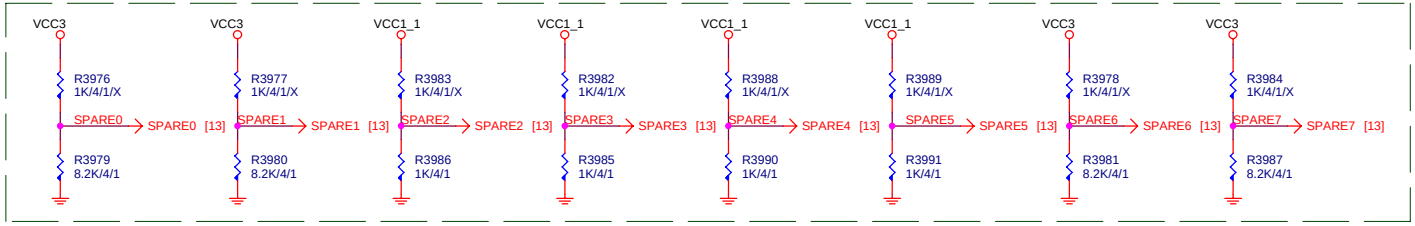
TBG_ISAFE



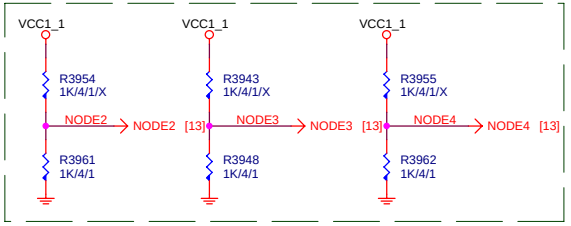
IOH1~3



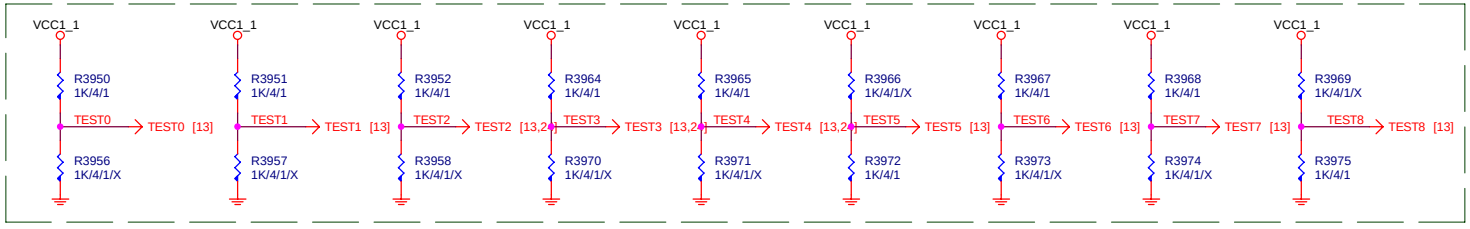
SPARE0~7



NOD2~3



TEST0~8



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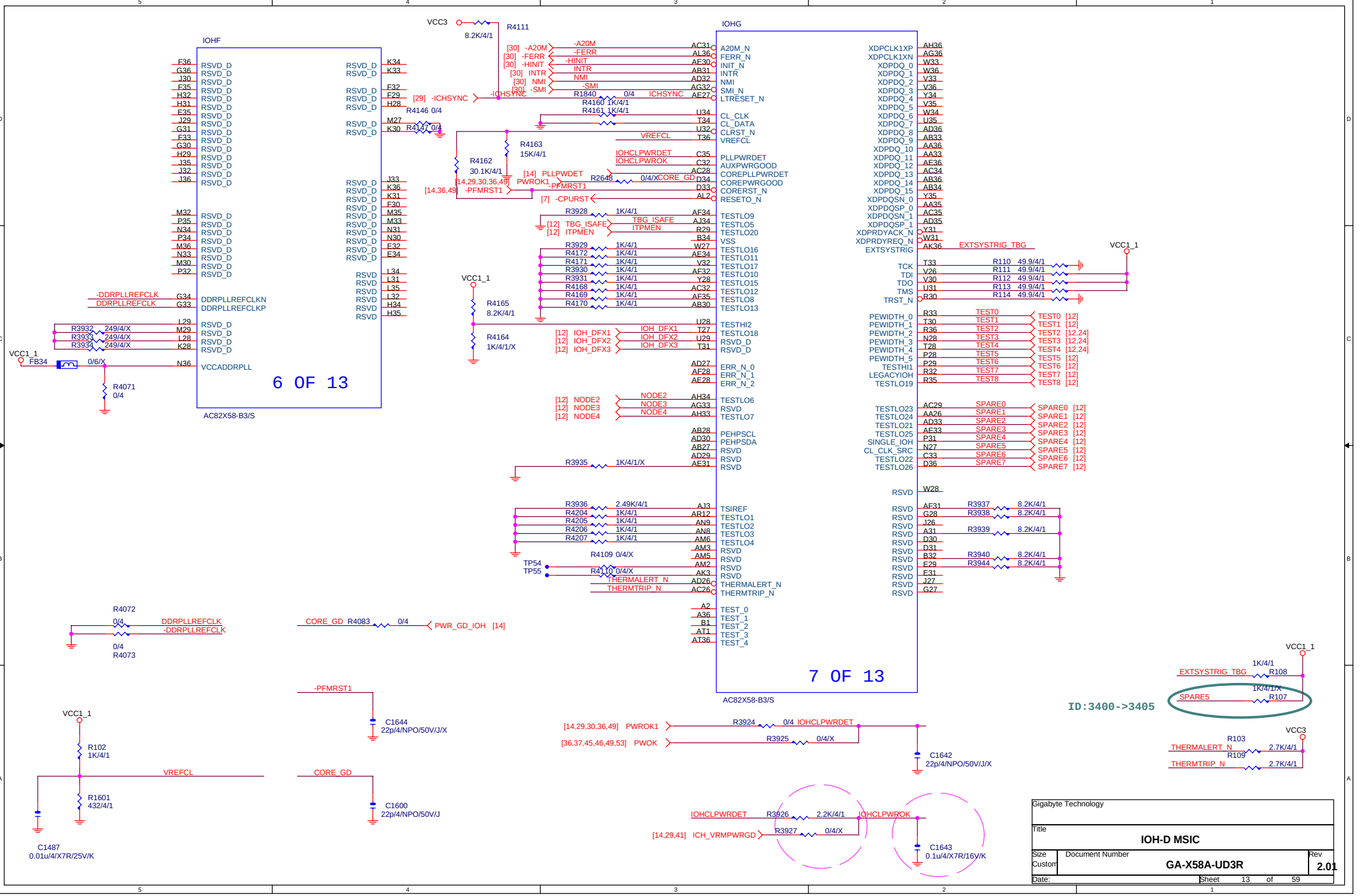
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date:	Sheet 12 of 59	


IOHF
6 OF 13
AC82X58-B3/S
IOHG
7 OF 13
AC82X58-B3/S
VCC3
8.2K/4/1
R4111
R4146 0/4
R4147 0/4
R4163
15K/4/1
R4162
30.1K/4/1
R4165
8.2K/4/1
R4164
1K/4/1/X
R4071
0/4
R4072
0/4
R4073
0/4
R4109 0/4/X
R4110 0/4/X
R1840 0/4
R4160 1K/4/1
R4161 1K/4/1
R3928 1K/4/1
R3929 1K/4/1
R4172 1K/4/1
R4171 1K/4/1
R3930 1K/4/1
R3931 1K/4/1
R4168 1K/4/1
R4169 1K/4/1
R4170 1K/4/1
R3935 1K/4/1/X
R3936 2.49K/4/1
R4204 1K/4/1
R4205 1K/4/1
R4206 1K/4/1
R4207 1K/4/1
R2648 0/4/X
R3932 249/4/X
R3933 249/4/X
R3934 249/4/X
FB34 0/6/X
R110 49.9/4/1
R111 49.9/4/1
R112 49.9/4/1
R113 49.9/4/1
R114 49.9/4/1
R3937 8.2K/4/1
R3938 8.2K/4/1
R3939 8.2K/4/1
R3940 8.2K/4/1
R3944 8.2K/4/1
R3924 0/4
R3925 0/4/X
R3926 2.2K/4/1
R3927 0/4/X
R102 1K/4/1
R1601 432/4/1
R108 1K/4/1
R107 1K/4/1/X
R103 2.7K/4/1
R109 2.7K/4/1
C1644 22p/4/NPO/50V/J/X
C1600 22p/4/NPO/50V/J
C1642 22p/4/NPO/50V/J/X
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C1487 0.01u/4/X7R/25V/K
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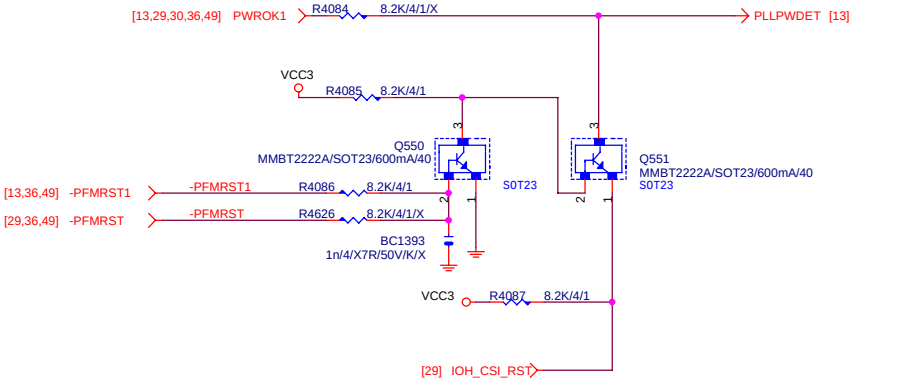
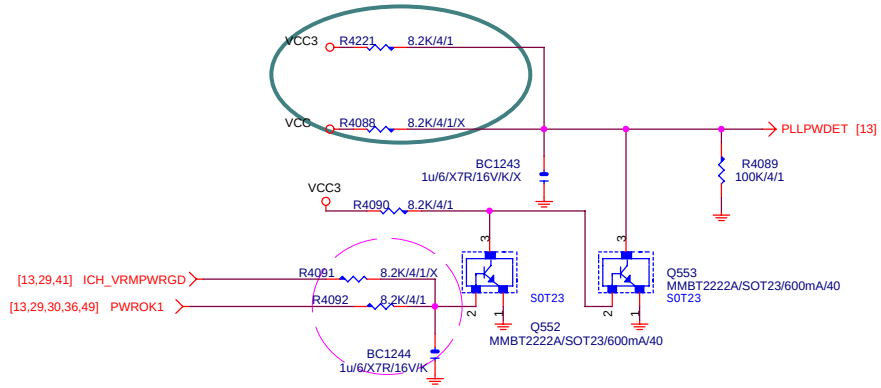
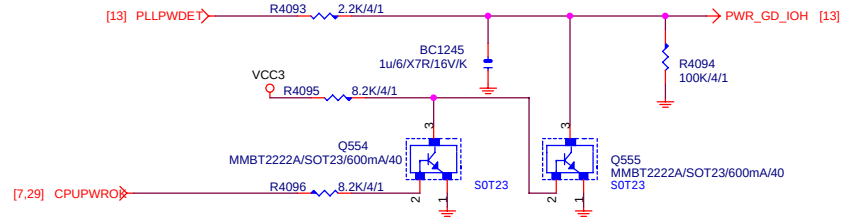
VREFCL
CORE_GD
-PFMRST1
-DDRPLLREFCLK
DDRPLLREFCLK
PWR_GD_IOH [14]
ID:3400->3405
Gigabyte Technology
Title
IOH-D MSIC
Size Custom
Document Number GA-X58A-UD3R
Rev 2.01
Date:
Sheet 13 of 59







Gigabyte Technology		
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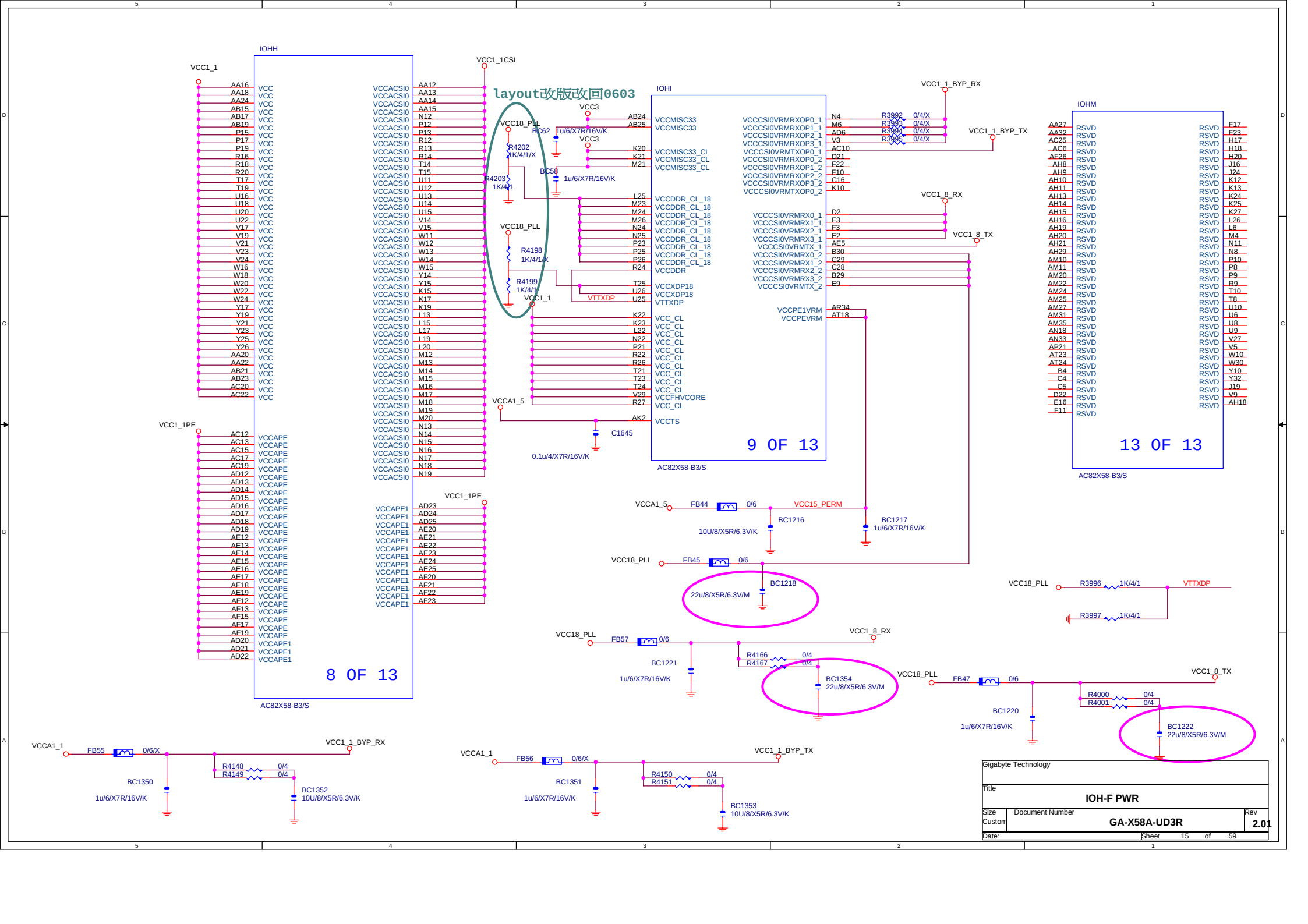
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date:	Sheet 14 of 59	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VCC1_1
VCC1_1CSI
layout改版改回0603
IOHI
IOHM
VCC1_1_BYP_RX
VCC1_1_BYP_TX
VCC1_8_RX
VCC1_8_TX
VCC1_1PE
VCCA1_5
VCC18_PLL
VCC3
VTTXDP
VCC15_PERM
VCCA1_1
8 OF 13
9 OF 13
13 OF 13
AC82X58-B3/S
AC82X58-B3/S
AC82X58-B3/S
C1645
0.1u/4/X7R/16V/K
1u/6/X7R/16V/K
10U/8/X5R/6.3V/K
22u/8/X5R/6.3V/M
Gigabyte Technology
IOH-F PWR
GA-X58A-UD3R
2.01
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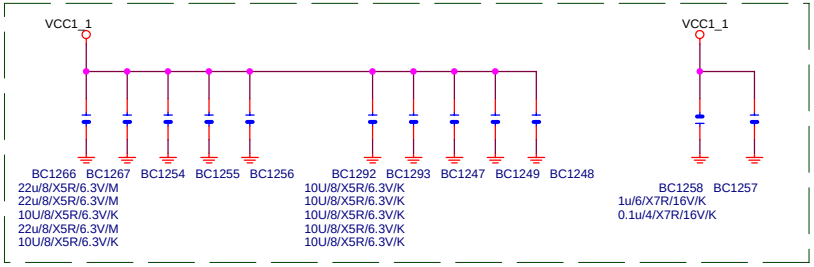
TOP Side

VCC1_1



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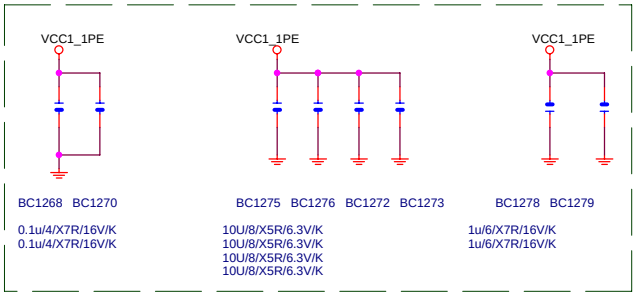
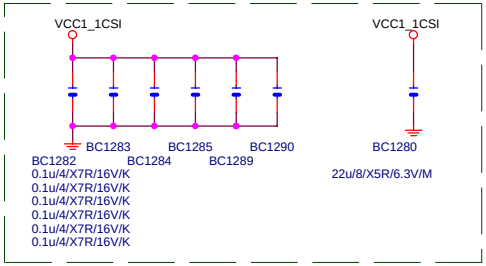
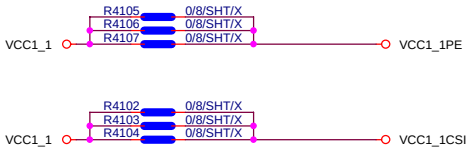


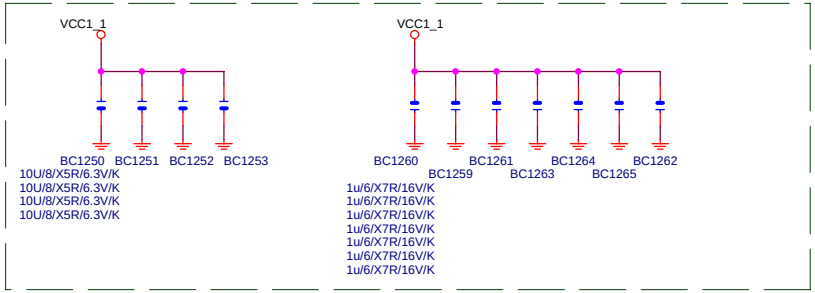
VCC1_1CSI





Bottom Side

VCC1_1



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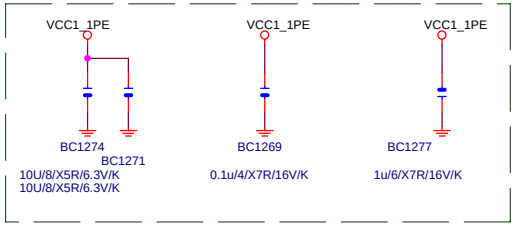

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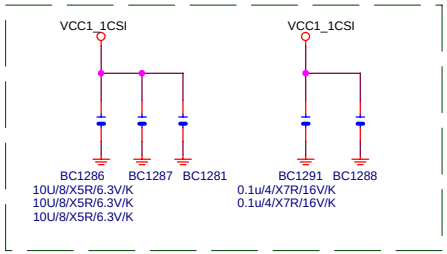

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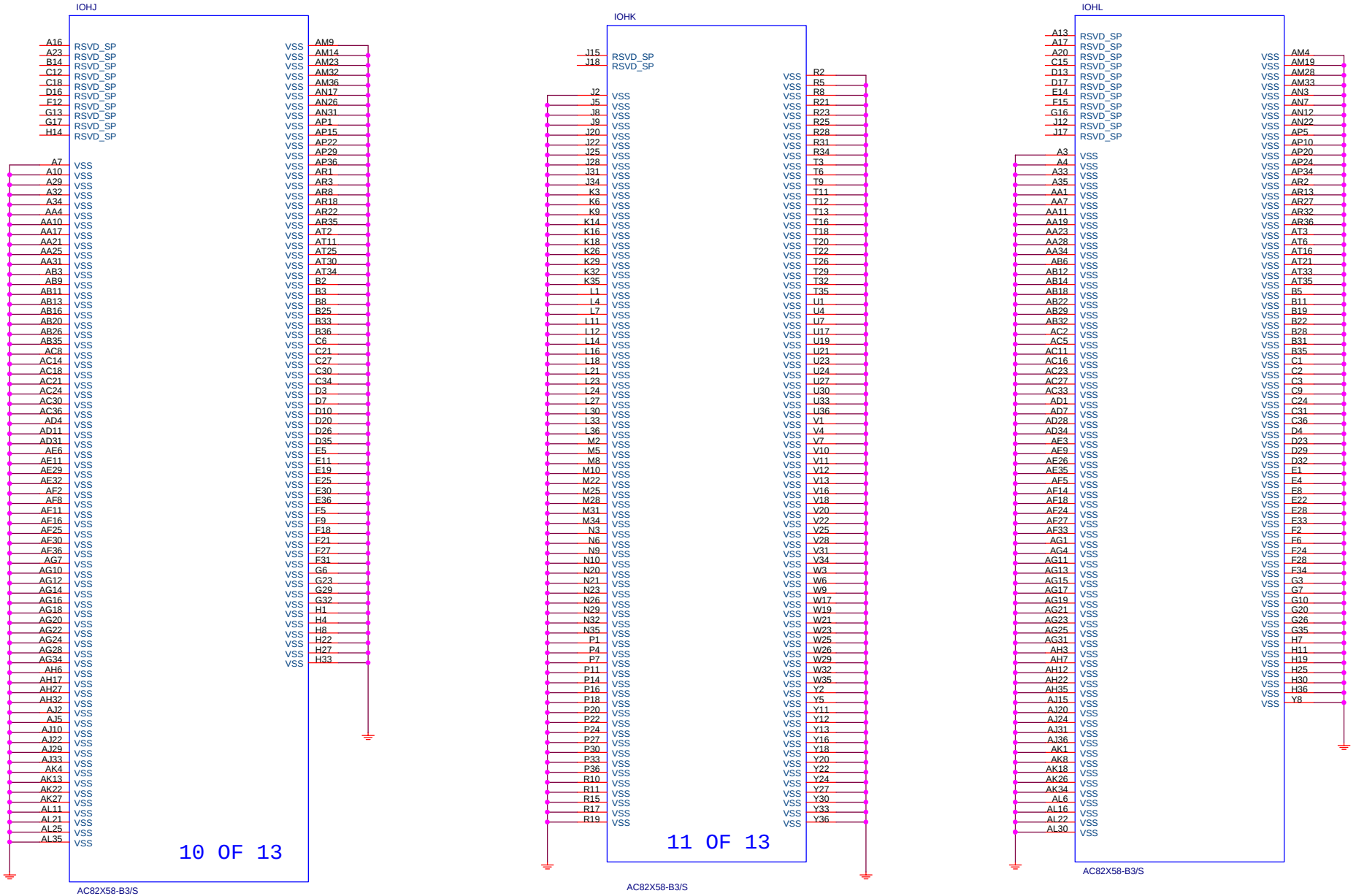
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date:	Sheet 16 of 59	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C12 RSVD_SP
C18 RSVD_SP
D16 RSVD_SP
F12 RSVD_SP
G13 RSVD_SP
G17 RSVD_SP
H14 RSVD_SP
A7 VSS
A10 VSS
A29 VSS
A32 VSS
A34 VSS
AA4 VSS
AA10 VSS
AA17 VSS
AA21 VSS
AA25 VSS
AA31 VSS
AB3 VSS
AB9 VSS
AB11 VSS
AB13 VSS
AB16 VSS
AB20 VSS
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AC24 VSS
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AE11 VSS
AE29 VSS
AE32 VSS
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AK27 VSS
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AL21 VSS
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AL35 VSS
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VSS AM23
VSS AM32
VSS AM36
VSS AN17
VSS AN26
VSS AN31
VSS AP1
VSS AP15
VSS AP22
VSS AP29
VSS AP36
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VSS AR3
VSS AR8
VSS AR18
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VSS AR35
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VSS AT25
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VSS AT34
VSS B2
VSS B3
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VSS E25
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10 OF 13
AC82X58-B3/S
IOHK
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J5 VSS
J8 VSS
J9 VSS
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R15 VSS
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VSS T35
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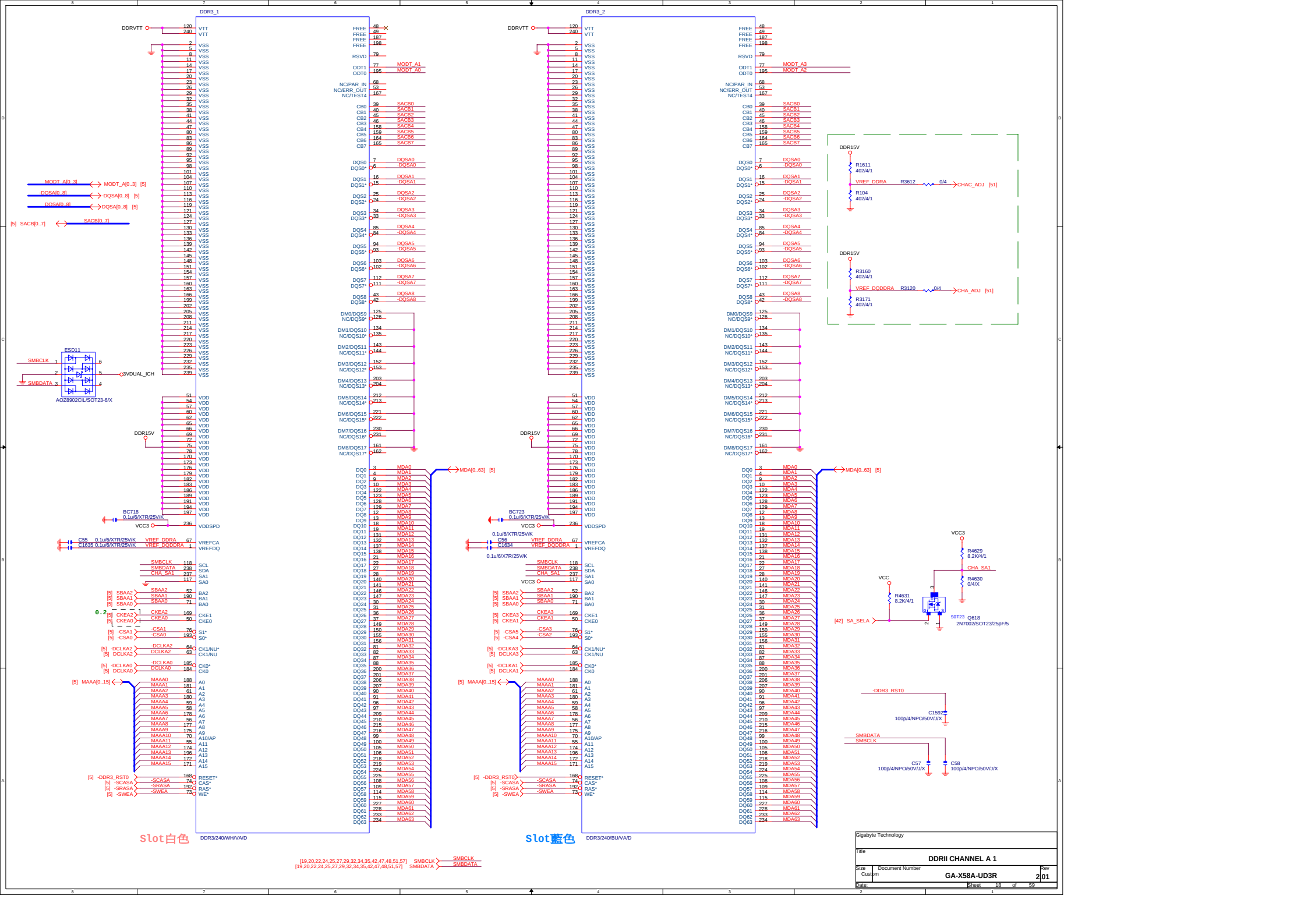
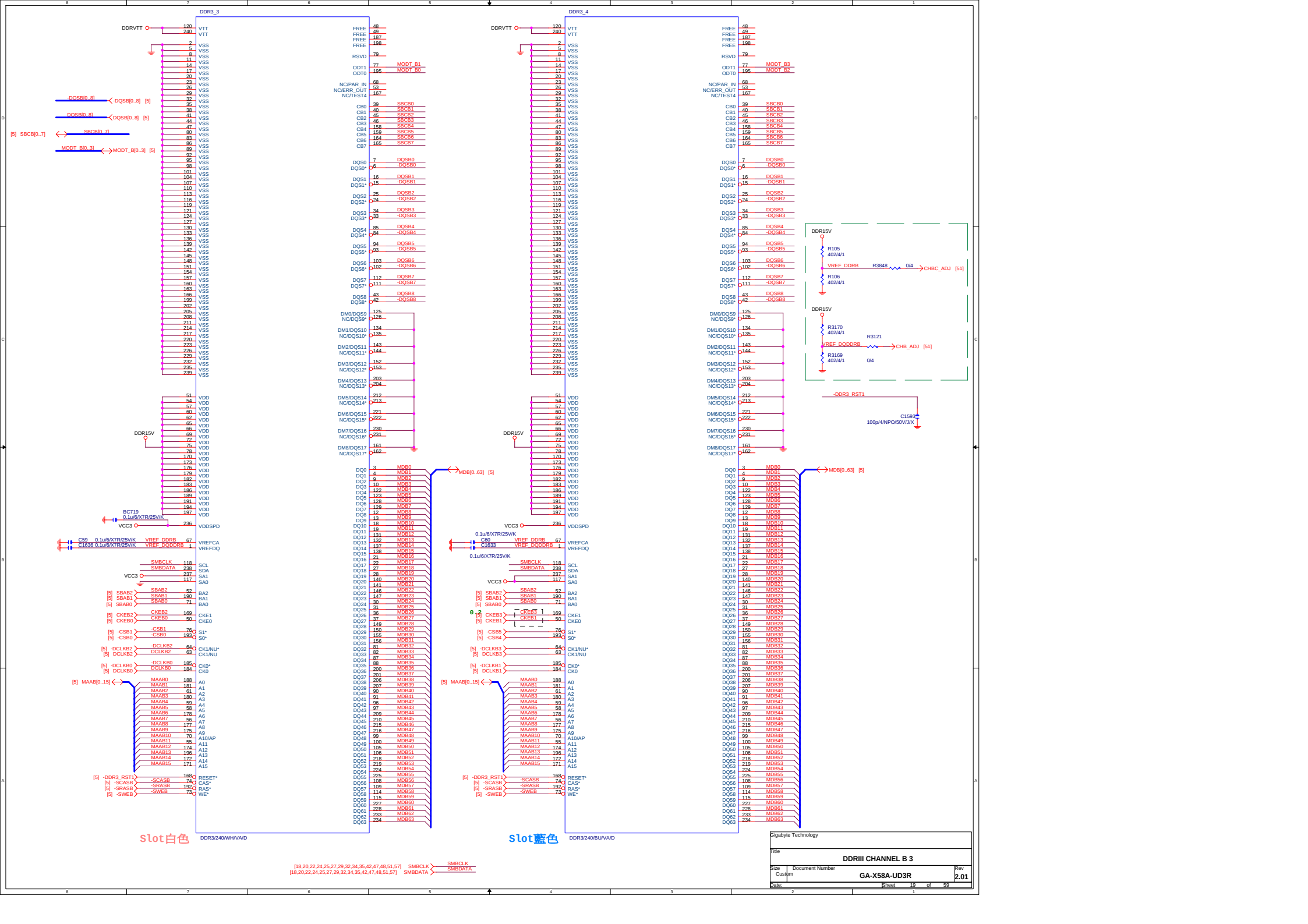
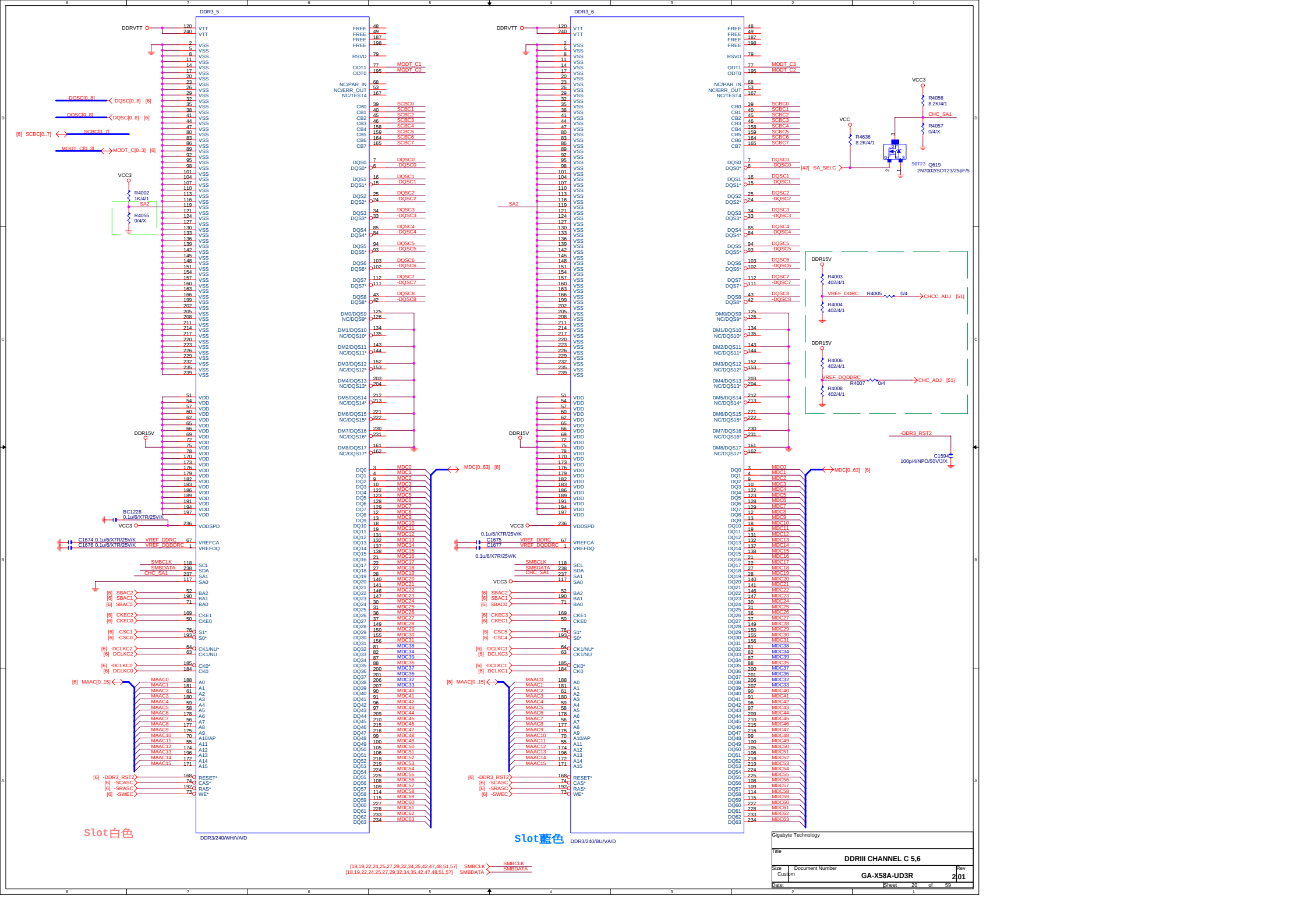
VSS U4
VSS U7
VSS U17
VSS U19
VSS U21
VSS U23
VSS U24
VSS U27
VSS U30
VSS U33
VSS U36
VSS V1
VSS V4
VSS V7
VSS V10
VSS V11
VSS V12
VSS V13
VSS V16
VSS V18
VSS V20
VSS V22
VSS V25
VSS V28
VSS V31
VSS V34
VSS W3
VSS W6
VSS W9
VSS W17
VSS W19
VSS W21
VSS W23
VSS W25
VSS W26
VSS W29
VSS W32
VSS W35
VSS Y2
VSS Y5
VSS Y11
VSS Y12
VSS Y13
VSS Y16
VSS Y18
VSS Y20
VSS Y22
VSS Y24
VSS Y27
VSS Y30
VSS Y33
VSS Y36
11 OF 13
AC82X58-B3/S
IOHL
A13 RSVD_SP
A17 RSVD_SP
A20 RSVD_SP
C15 RSVD_SP
D13 RSVD_SP
D17 RSVD_SP
E14 RSVD_SP
F15 RSVD_SP
G16 RSVD_SP
J12 RSVD_SP
J17 RSVD_SP
A3 VSS
A4 VSS
A33 VSS
A35 VSS
AA1 VSS
AA7 VSS
AA11 VSS
AA19 VSS
AA23 VSS
AA28 VSS
AA34 VSS
AB6 VSS
AB12 VSS
AB14 VSS
AB18 VSS
AB22 VSS
AB29 VSS
AB32 VSS
AC2 VSS
AC5 VSS
AC11 VSS
AC16 VSS
AC23 VSS
AC27 VSS
AC33 VSS
AD1 VSS
AD7 VSS
AD28 VSS
AD34 VSS
AE3 VSS
AE9 VSS
AE26 VSS
AE35 VSS
AF5 VSS
AF14 VSS
AF18 VSS
AF24 VSS
AF27 VSS
AF33 VSS
AG1 VSS
AG4 VSS
AG11 VSS
AG13 VSS
AG15 VSS
AG17 VSS
AG19 VSS
AG21 VSS
AG23 VSS
AG25 VSS
AG31 VSS
AH3 VSS
AH7 VSS
AH12 VSS
AH22 VSS
AH35 VSS
AJ15 VSS
AJ20 VSS
AJ24 VSS
AJ31 VSS
AJ36 VSS
AK1 VSS
AK8 VSS
AK18 VSS
AK26 VSS
AK34 VSS
AL6 VSS
AL16 VSS
AL22 VSS
AL30 VSS
VSS AM4
VSS AM19
VSS AM28
VSS AM33
VSS AN3
VSS AN7
VSS AN12
VSS AN22
VSS AP5
VSS AP10
VSS AP20
VSS AP24
VSS AP34
VSS AR2
VSS AR13
VSS AR27
VSS AR32
VSS AR36
VSS AT3
VSS AT6
VSS AT16
VSS AT21
VSS AT33
VSS AT35
VSS B5
VSS B11
VSS B19
VSS B22
VSS B28
VSS B31
VSS B35
VSS C1
VSS C2
VSS C3
VSS C9
VSS C24
VSS C31
VSS C36
VSS D4
VSS D23
VSS D29
VSS D32
VSS E1
VSS E4
VSS E8
VSS E22
VSS E28
VSS E33
VSS F2
VSS F6
VSS F24
VSS F28
VSS F34
VSS G3
VSS G7
VSS G10
VSS G20
VSS G26
VSS G35
VSS H7
VSS H11
VSS H19
VSS H25
VSS H30
VSS H36
VSS Y8
AC82X58-B3/S
Gigabyte Technology
Title
IOH-H GND
Size
Custom
Document Number
GA-X58A-UD3R
Rev
2.01
Date:
Sheet 17 of 59



Gigabyte Technology			
Title	DDRII CHANNEL A 1		
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01	
Date:	Sheet 18 of 59		

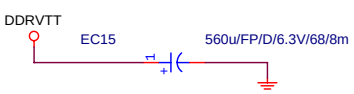


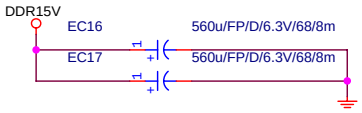
Gigabyte Technology	
Title	DDRIII CHANNEL B 3
Size: Custom	Document Number: GA-X58A-UD3R
Rev	2.01
Date:	Sheet 19 of 59

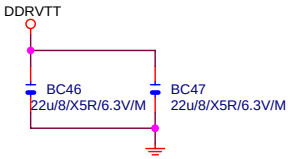

DDR3_5
DDR3_6
DDRVTT
VCC3
DDR15V
VCC
SA2
SA_SELC
CHCC_ADJ
CHC_ADJ
VREF_DDRC
VREF_DQDDRC
-DDR3_RST2
MDC[0..63]
MAAC[0..15]
SMBCLK
SMBDATA
CHC_SA1
MODT_C3
MODT_C2
MODT_C1
MODT_C0
-DQSC[0..8]
DQSC[0..8]
SCBC[0..7]
MODT_C[0..3]
Slot白色
Slot藍色
DDR3/240/WH/VA/D
DDR3/240/BU/VA/D
Gigabyte Technology
DDRIII CHANNEL C 5,6
GA-X58A-UD3R
2.01
Sheet 20 of 59

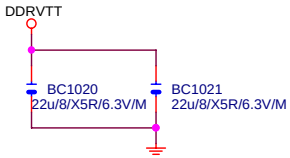
DDR TERMINATION CHANNEL A

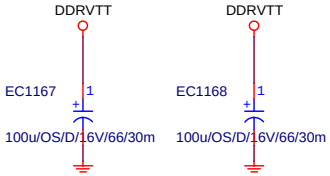
DDRVTT Decouple



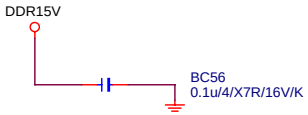


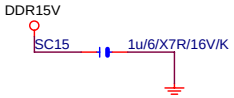




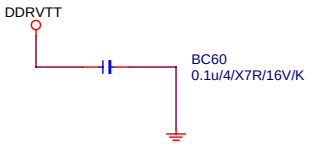


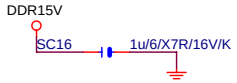
DDR18V Decouple

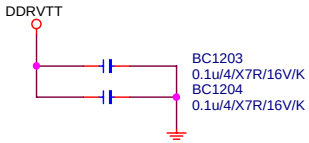


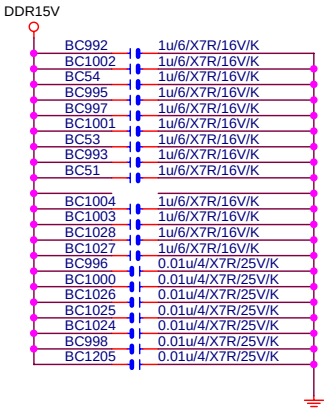


DDRVTT Decouple



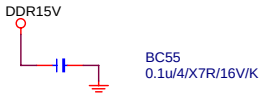




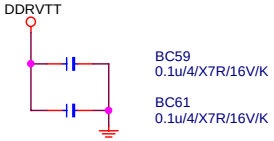


DDR TERMINATION CHANNEL B

DDR18V Decouple

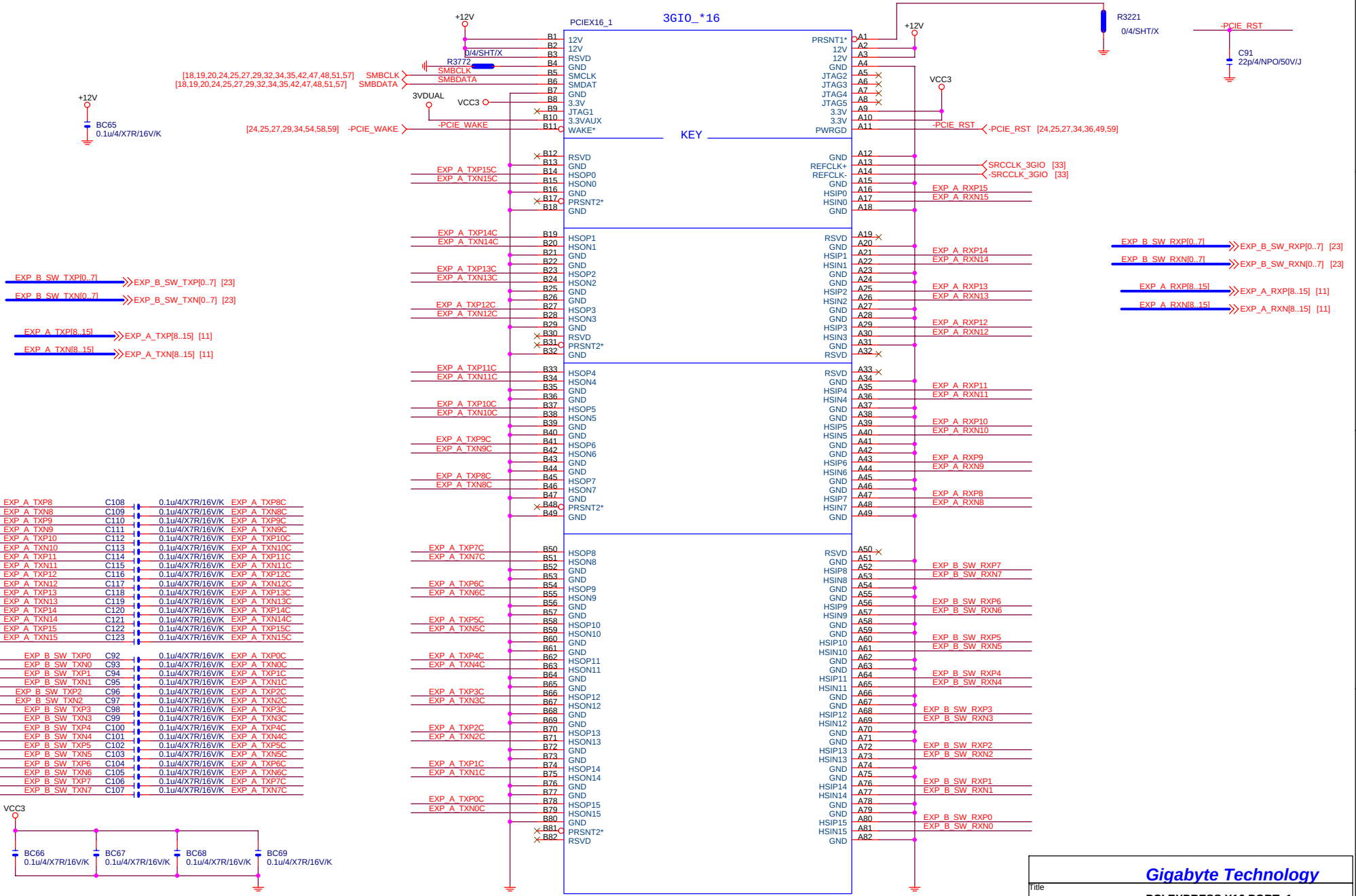


DDRVTT Decouple



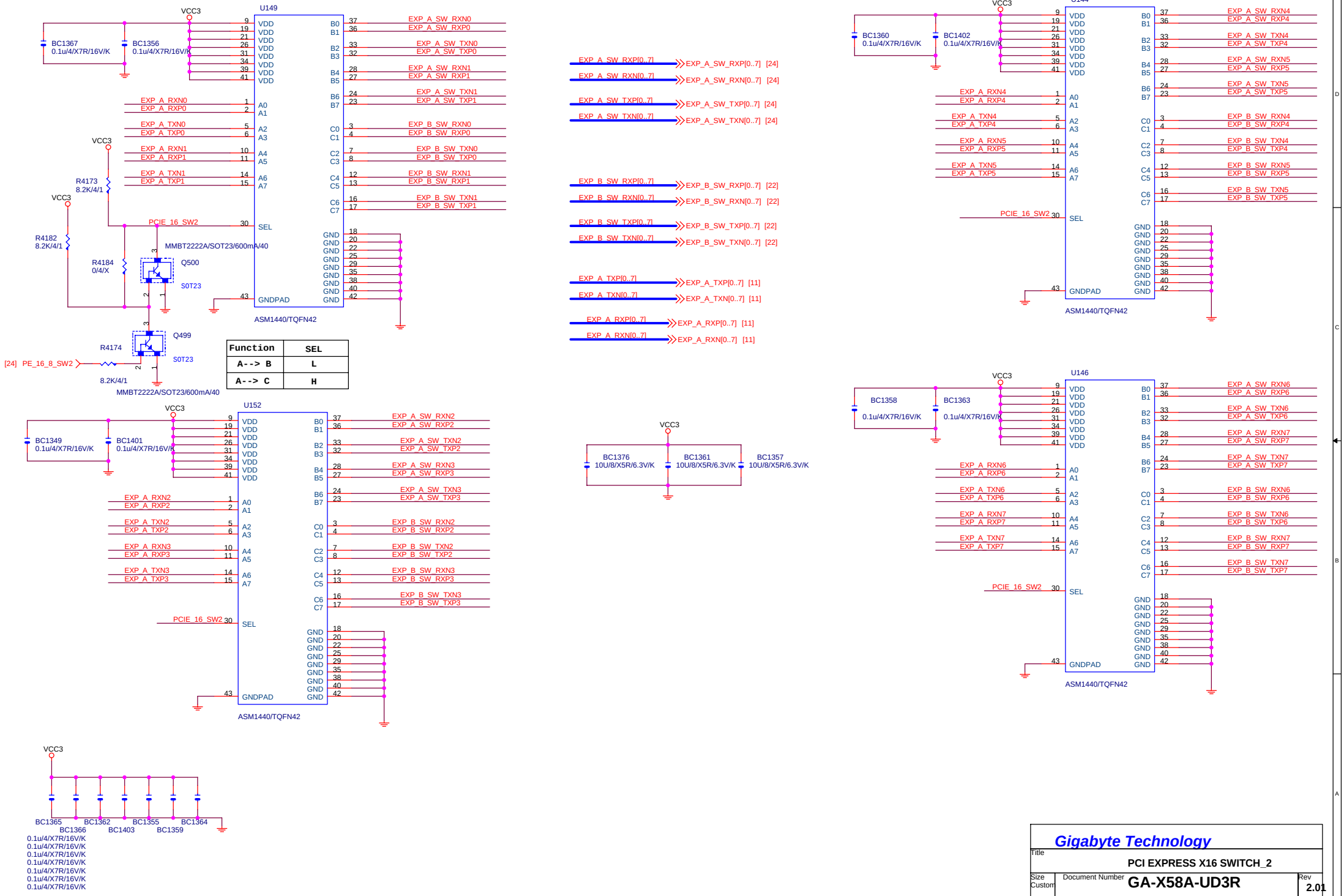
Gigabyte Technology		
Title: DDRII TERMINATOR		
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 21 of 59	

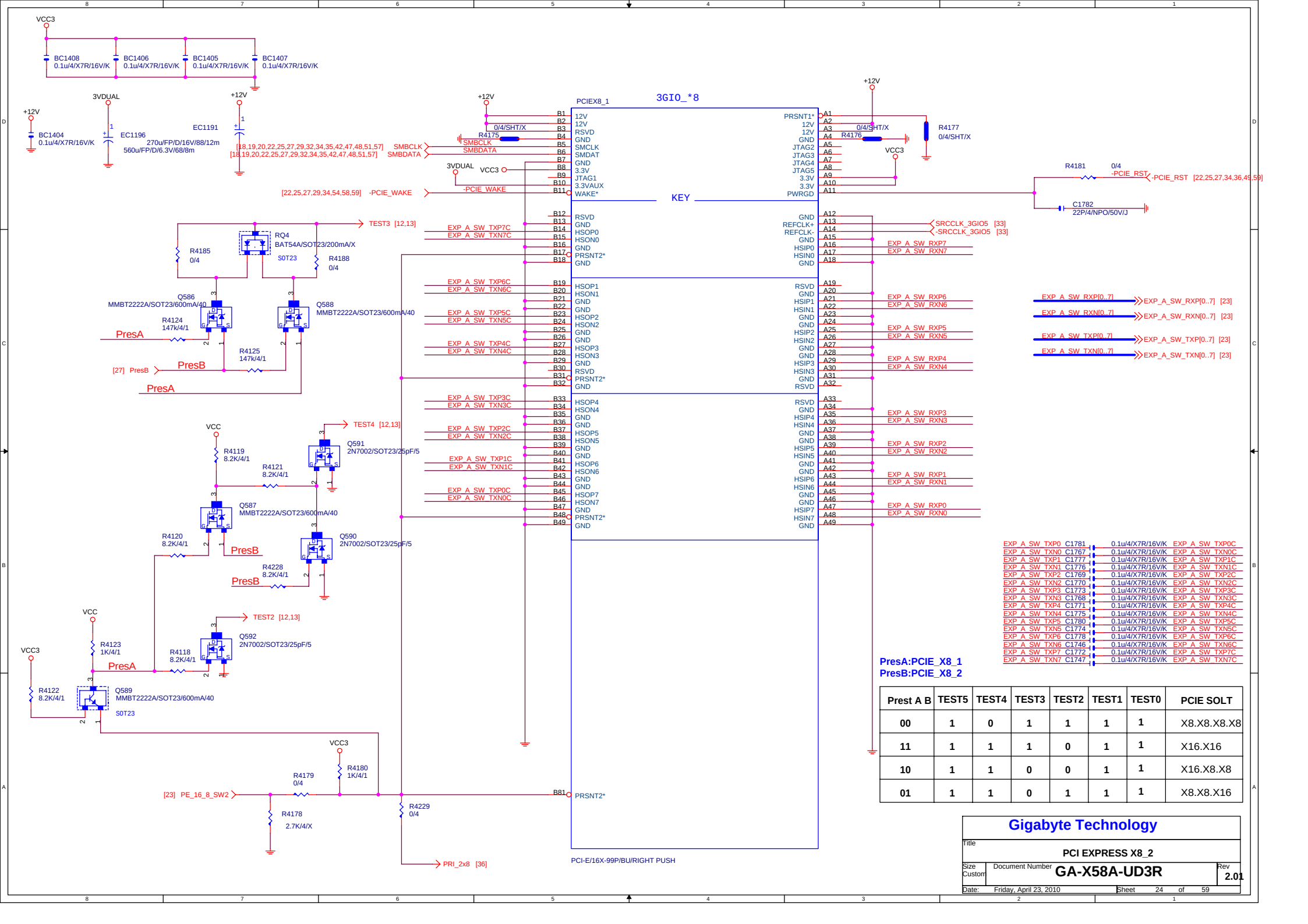
PCIESLOT-164DN-2



PCI-E/16X-164P/BU-297C/RIGHT PUSH

Gigabyte Technology		
Title	PCI EXPRESS X16 PORT_1	
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 22 of 59	


U149
VCC3
BC1367 0.1u/4/X7R/16V/K
BC1356 0.1u/4/X7R/16V/K
EXP_A_RXN0
EXP_A_RXP0
EXP_A_TXN0
EXP_A_TXP0
EXP_A_RXN1
EXP_A_RXP1
EXP_A_TXN1
EXP_A_TXP1
EXP_B_SW_RXN0
EXP_B_SW_RXP0
EXP_B_SW_TXN0
EXP_B_SW_TXP0
EXP_B_SW_RXN1
EXP_B_SW_RXP1
EXP_B_SW_TXN1
EXP_B_SW_TXP1
R4173 8.2K/4/1
R4182 8.2K/4/1
R4184 0/4/X
PCIE_16_SW2
MMBT2222A/SOT23/600mA/40
Q500
S0T23
Q499
R4174
[24] PE_16_8_SW2
8.2K/4/1
GNDPAD
ASM1440/TQFN42
Function | SEL
A--> B | L
A--> C | H
EXP_A_SW_RXP[0..7] EXP_A_SW_RXP[0..7] [24]
EXP_A_SW_RXN[0..7] EXP_A_SW_RXN[0..7] [24]
EXP_A_SW_TXP[0..7] EXP_A_SW_TXP[0..7] [24]
EXP_A_SW_TXN[0..7] EXP_A_SW_TXN[0..7] [24]
EXP_B_SW_RXP[0..7] EXP_B_SW_RXP[0..7] [22]
EXP_B_SW_RXN[0..7] EXP_B_SW_RXN[0..7] [22]
EXP_B_SW_TXP[0..7] EXP_B_SW_TXP[0..7] [22]
EXP_B_SW_TXN[0..7] EXP_B_SW_TXN[0..7] [22]
EXP_A_TXP[0..7] EXP_A_TXP[0..7] [11]
EXP_A_TXN[0..7] EXP_A_TXN[0..7] [11]
EXP_A_RXP[0..7] EXP_A_RXP[0..7] [11]
EXP_A_RXN[0..7] EXP_A_RXN[0..7] [11]
U144
BC1360 0.1u/4/X7R/16V/K
BC1402 0.1u/4/X7R/16V/K
EXP_A_RXN4
EXP_A_RXP4
EXP_A_TXN4
EXP_A_TXP4
EXP_A_RXN5
EXP_A_RXP5
EXP_A_TXN5
EXP_A_TXP5
EXP_B_SW_RXN4
EXP_B_SW_RXP4
EXP_B_SW_TXN4
EXP_B_SW_TXP4
EXP_B_SW_RXN5
EXP_B_SW_RXP5
EXP_B_SW_TXN5
EXP_B_SW_TXP5
U152
BC1349 0.1u/4/X7R/16V/K
BC1401 0.1u/4/X7R/16V/K
EXP_A_RXN2
EXP_A_RXP2
EXP_A_TXN2
EXP_A_TXP2
EXP_A_RXN3
EXP_A_RXP3
EXP_A_TXN3
EXP_A_TXP3
EXP_B_SW_RXN2
EXP_B_SW_RXP2
EXP_B_SW_TXN2
EXP_B_SW_TXP2
EXP_B_SW_RXN3
EXP_B_SW_RXP3
EXP_B_SW_TXN3
EXP_B_SW_TXP3
BC1376 10U/8/X5R/6.3V/K
BC1361 10U/8/X5R/6.3V/K
BC1357 10U/8/X5R/6.3V/K
U146
BC1358 0.1u/4/X7R/16V/K
BC1363 0.1u/4/X7R/16V/K
EXP_A_RXN6
EXP_A_RXP6
EXP_A_TXN6
EXP_A_TXP6
EXP_A_RXN7
EXP_A_RXP7
EXP_A_TXN7
EXP_A_TXP7
EXP_B_SW_RXN6
EXP_B_SW_RXP6
EXP_B_SW_TXN6
EXP_B_SW_TXP6
EXP_B_SW_RXN7
EXP_B_SW_RXP7
EXP_B_SW_TXN7
EXP_B_SW_TXP7
BC1365 BC1362 BC1355 BC1364
BC1366 BC1403 BC1359
0.1u/4/X7R/16V/K
Gigabyte Technology
Title
PCI EXPRESS X16 SWITCH_2
Size Custom
Document Number GA-X58A-UD3R
Rev 2.01
Date: Friday, April 23, 2010
Sheet 23 of 59



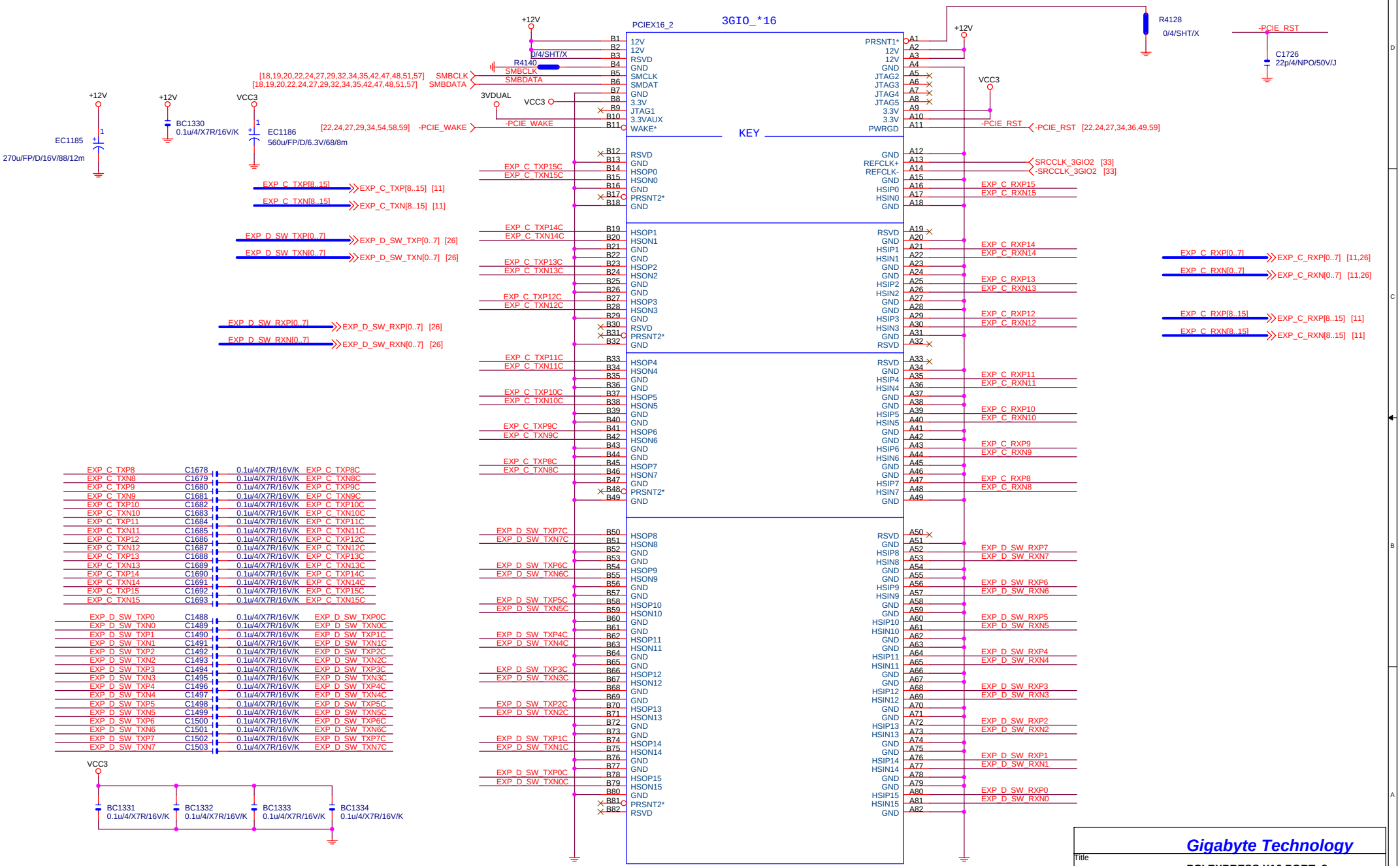
Prest A B	TEST5	TEST4	TEST3	TEST2	TEST1	TEST0	PCIE SOLT
00	1	0	1	1	1	1	X8.X8.X8.X8
11	1	1	1	0	1	1	X16.X16
10	1	1	0	0	1	1	X16.X8.X8
01	1	1	0	1	1	1	X8.X8.X16

EXP_A_SW_TXP0	C1781	0.1u/4/X7R/16V/K EXP_A_SW_TXP0C
EXP_A_SW_TXN0	C1767	0.1u/4/X7R/16V/K EXP_A_SW_TXN0C
EXP_A_SW_TXP1	C1777	0.1u/4/X7R/16V/K EXP_A_SW_TXP1C
EXP_A_SW_TXN1	C1776	0.1u/4/X7R/16V/K EXP_A_SW_TXN1C
EXP_A_SW_TXP2	C1769	0.1u/4/X7R/16V/K EXP_A_SW_TXP2C
EXP_A_SW_TXN2	C1770	0.1u/4/X7R/16V/K EXP_A_SW_TXN2C
EXP_A_SW_TXP3	C1773	0.1u/4/X7R/16V/K EXP_A_SW_TXP3C
EXP_A_SW_TXN3	C1768	0.1u/4/X7R/16V/K EXP_A_SW_TXN3C
EXP_A_SW_TXP4	C1771	0.1u/4/X7R/16V/K EXP_A_SW_TXP4C
EXP_A_SW_TXN4	C1775	0.1u/4/X7R/16V/K EXP_A_SW_TXN4C
EXP_A_SW_TXP5	C1780	0.1u/4/X7R/16V/K EXP_A_SW_TXP5C
EXP_A_SW_TXN5	C1774	0.1u/4/X7R/16V/K EXP_A_SW_TXN5C
EXP_A_SW_TXP6	C1778	0.1u/4/X7R/16V/K EXP_A_SW_TXP6C
EXP_A_SW_TXN6	C1746	0.1u/4/X7R/16V/K EXP_A_SW_TXN6C
EXP_A_SW_TXP7	C1772	0.1u/4/X7R/16V/K EXP_A_SW_TXP7C
EXP_A_SW_TXN7	C1747	0.1u/4/X7R/16V/K EXP_A_SW_TXN7C

Gigabyte Technology

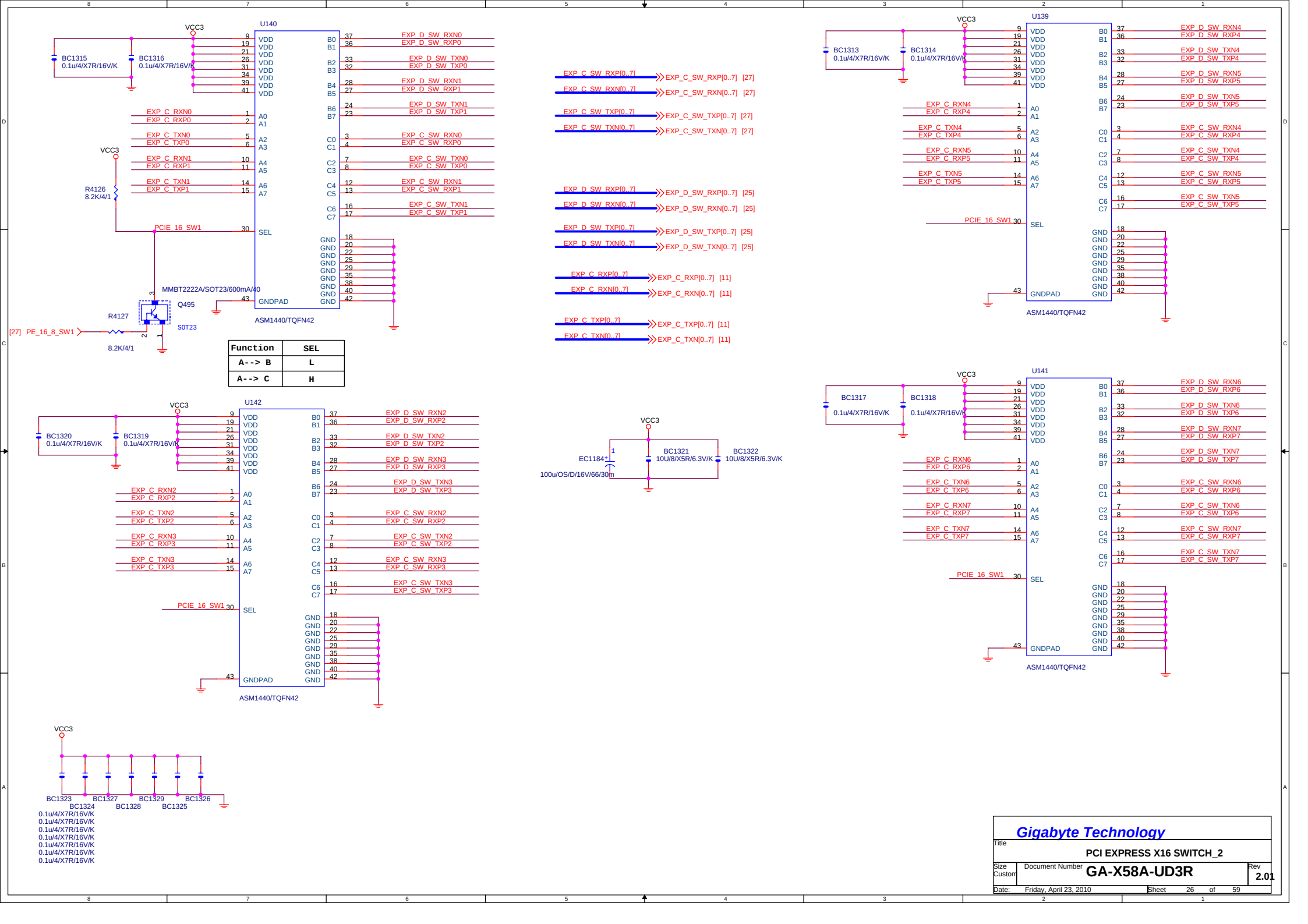
Title	PCI EXPRESS X8_2	
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 24 of 59	

PCIESLOT-164DN-2



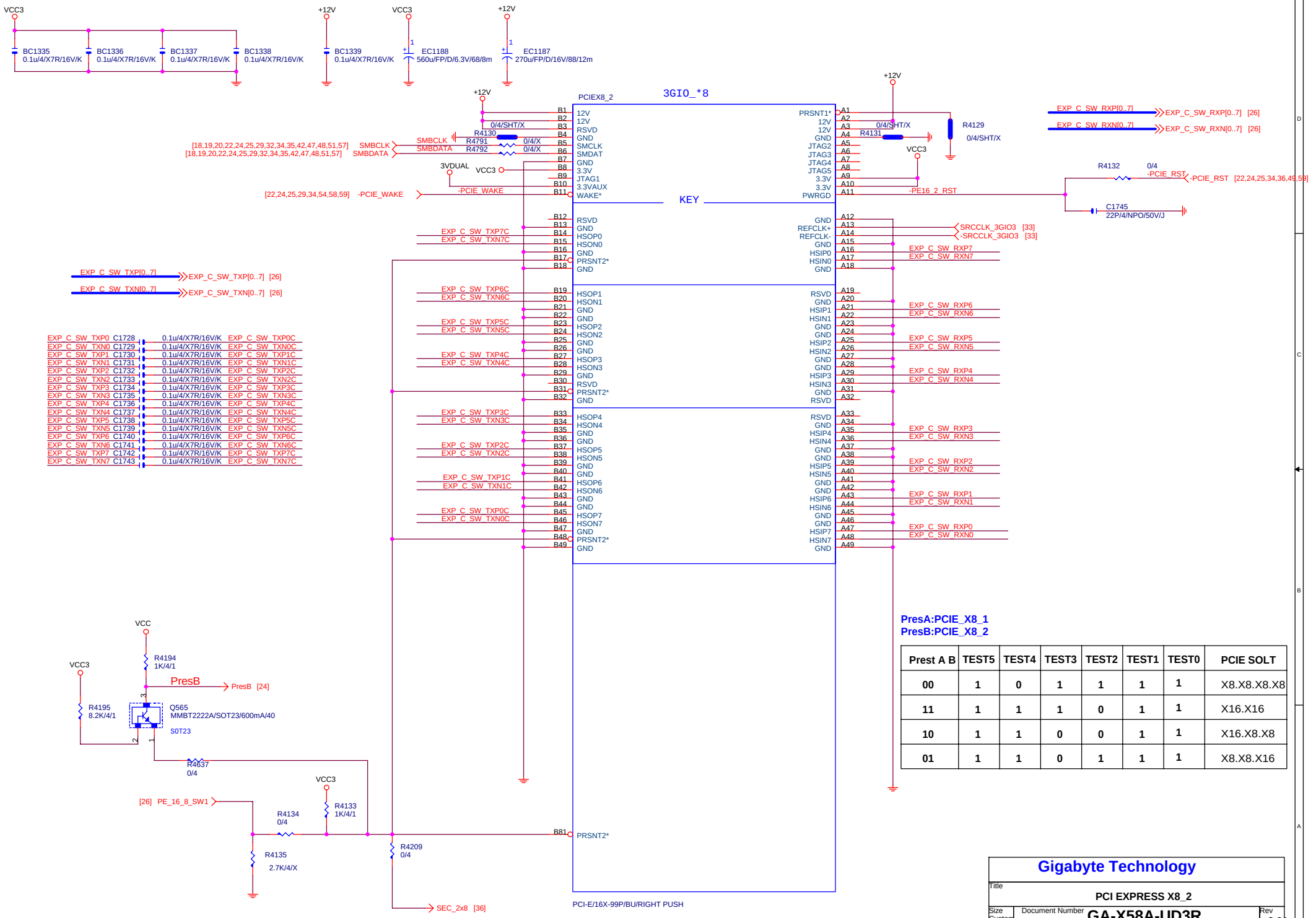
PCI-E/16X-164P/BU-297C/RIGHT PUSH

Gigabyte Technology	
Title	PCI EXPRESS X16 PORT_2
Size: Custom	Document Number: GA-X58A-UD3R
Rev: 2.01	
Date: Friday, April 23, 2010	Sheet 25 of 59



Function	SEL
A--> B	L
A--> C	H

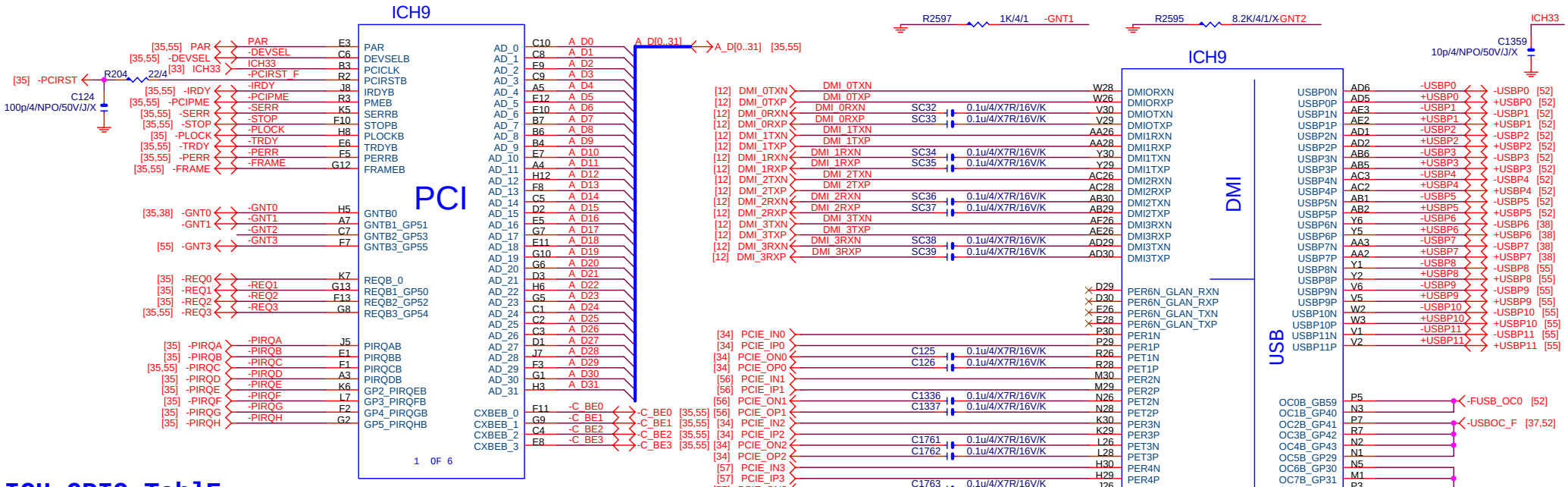
Gigabyte Technology	
Title	PCI EXPRESS X16 SWITCH_2
Size: Custom	Document Number: GA-X58A-UD3R
Rev	2.01
Date: Friday, April 23, 2010	Sheet 26 of 59



Prest A B	TEST5	TEST4	TEST3	TEST2	TEST1	TEST0	PCIE SOLT
00	1	0	1	1	1	1	X8.X8.X8.X8
11	1	1	1	0	1	1	X16.X16
10	1	1	0	0	1	1	X16.X8.X8
01	1	1	0	1	1	1	X8.X8.X16

Gigabyte Technology

Title	PCI EXPRESS X8_2	
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 27 of 59	



ICH GPIO TablE

PIN NAME	USAGE	NOTE
GP9_WOL_EN(GPIO9)	8268_P18	
GP20(GPIO20)	8268_P18	
GP0	-PECI_REQ	
GP8	STRAP_CSI_FRE1	
GP12	STRAP_CSI_FRE0	
GP27_QRT_STATE0	3VDUAL_ICH	原ISOLATEB_1
GP26_S4_STATEB	3VDUAL_ICH	原ISOLATEB_2
CLGPIO5_GP57	F_LED1_C	
GP1_TACH1	F_LED2_C	
GP22_SCLOCK	F_LED3_C	
GP28_SLOAD	F_LED4_C	
GP21_SATA0GP	F_LED5_C	
GP6_TACH2	NBT_LED2_C	
GP39_SDATAOUT0	-CPU_PSI_DIS	
GP34(GPIO34)	-SPI_WP0	
GP48_SDATAOUT1	-EN_PWM	
GP19_SATA1GP	-ACZ_DET	
GP25	-CPU_STOP	
GP36_SATA2GP	GPIO36(FS)	
GP37_SATA3GP	SATA3GP	
SMBALERTB_GP11	-SMBALRT	
GP10_ALERTB	ICH_GP10(-CATERR)	原-LAN1_DSM
GP13	-LPCPME	

Gigabyte Technology		
Title: ICH10 DMI, PCI, USB		
Size: B	Document Number: GA-X58A-UD3R	Rev: 2.01
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ICH9

LPC
AUDIO
LAN
RTC
MISC
SMB
SPI

4 of 6

for page35 CSICBSL線路

FOR PCIEX4 才需PULL-UP

DEFAULT ENABLE (TLS)

Hi : x4 1 port
Lo : x1 4 port

GPIO0~15

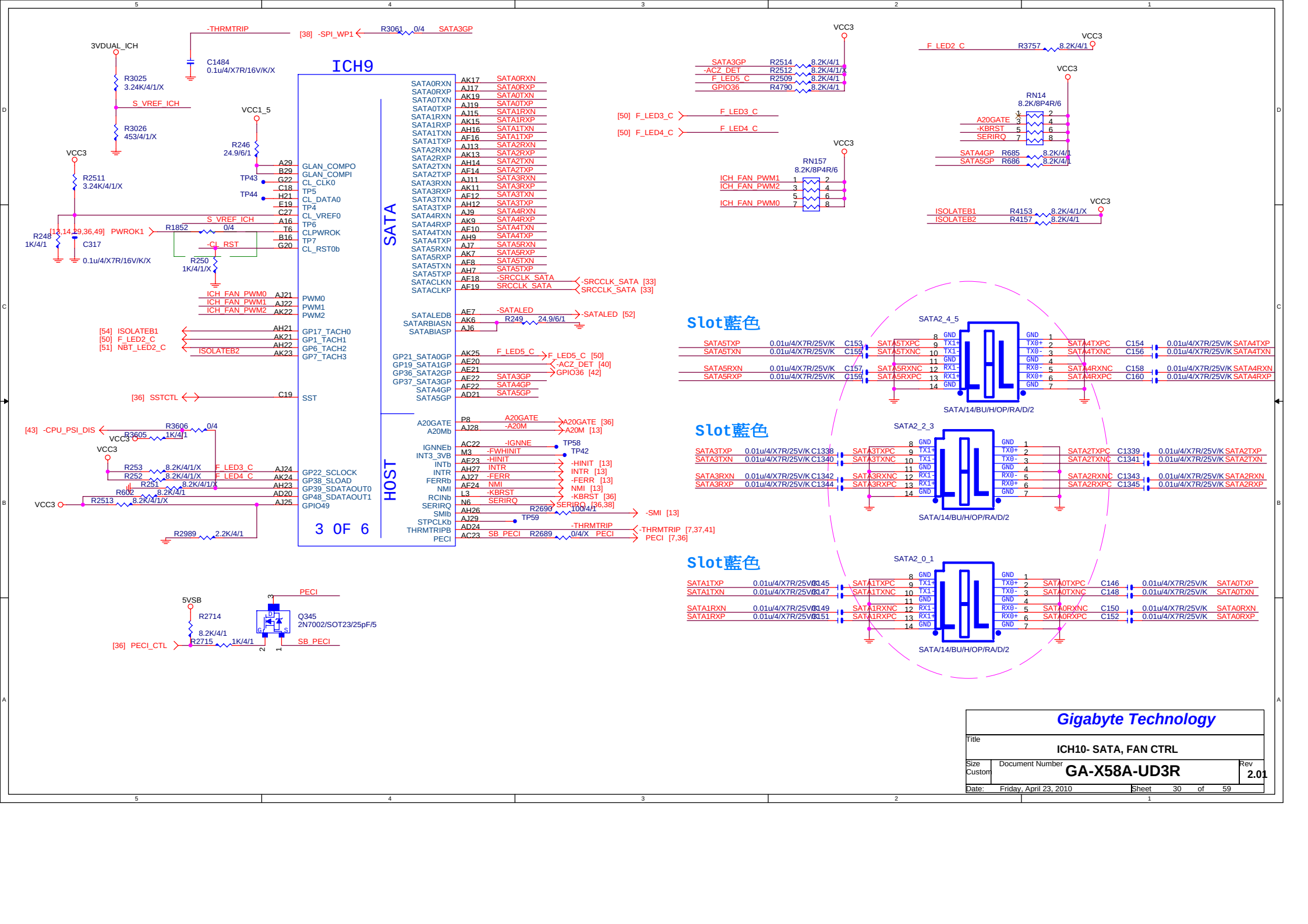
MB_ID1 for Media (媒體 P-H)

RB 必須放在BAT外

BATTERY-DUAL-4

H: REV1.0
L: REV2.0

Gigabyte Technology	
Title	ICH10 GPIO, CTRL
Size B	Document Number GA-X58A-UD3R Rev 2.01
Date: Friday, April 23, 2010	Sheet 29 of 59


ICH9
SATA
HOST
3 OF 6
Slot藍色
SATA2_4_5
SATA2_2_3
SATA2_0_1
SATA/14/BU/H/OP/RA/D/2
Gigabyte Technology
ICH10- SATA, FAN CTRL
GA-X58A-UD3R
2.01
Friday, April 23, 2010
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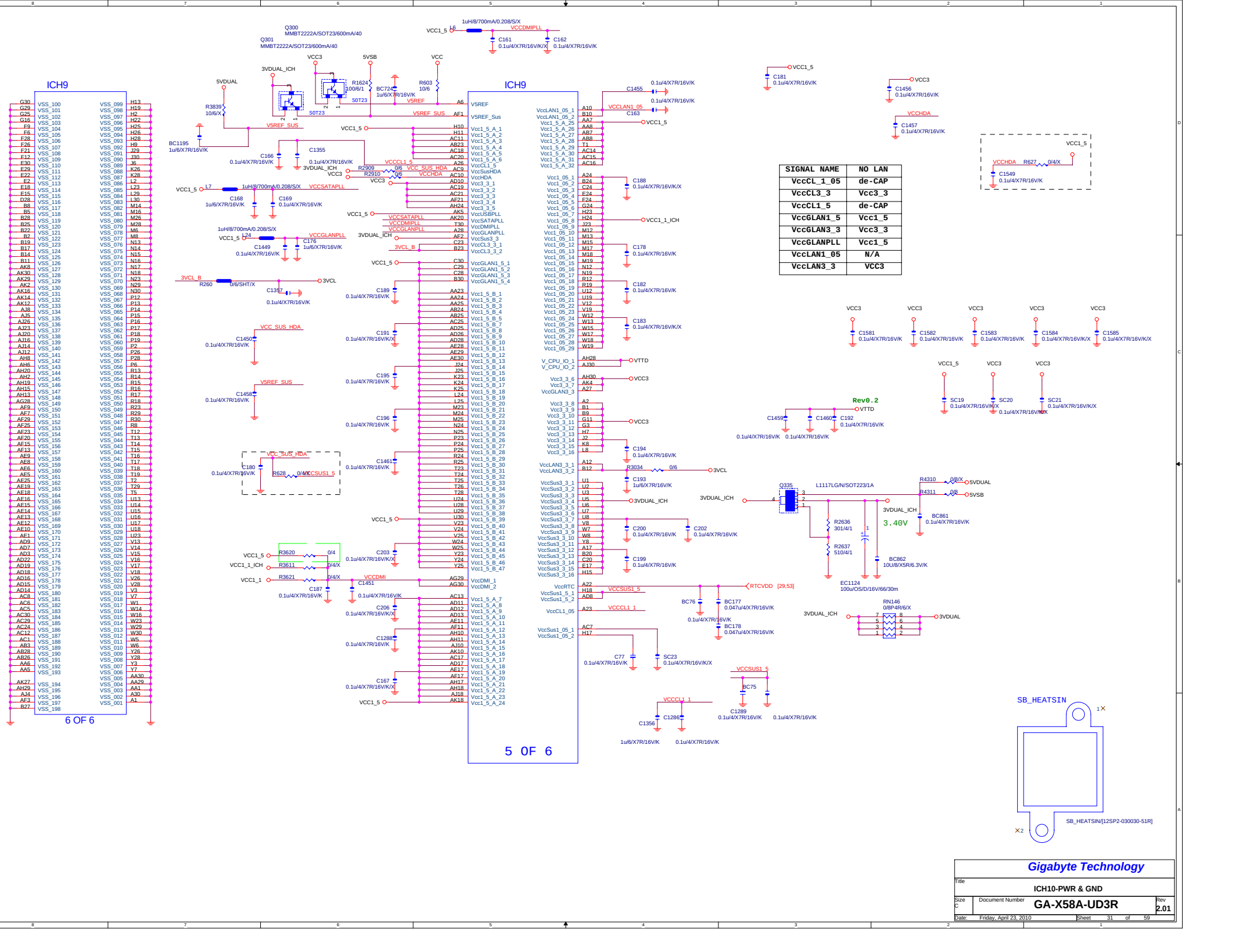
ICH9
6 OF 6
ICH9
5 OF 6
Q300
MMBT2222A/SOT23/600mA/40
Q301
MMBT2222A/SOT23/600mA/40
1uH/8/700mA/0.208/S/X
VCCDMIPLL
C161
0.1u/4/X7R/16V/K/X
C162
0.1u/4/X7R/16V/K
3VDUAL_ICH
5VDUAL
5VSB
VCC
VCC3
R1624
100/6/1
BC724
1u/6/X7R/16V/K
R603
10/6
S0T23
V5REF
V5REF_SUS
R3839
10/6/X
BC1195
1u/6/X7R/16V/K
C166
0.1u/4/X7R/16V/K
C1355
0.1u/4/X7R/16V/K
VCCCL1_5
R2909
0/6
VCC_SUS_HDA
R2910
0/6
VCCHDA
L7
1uH/8/700mA/0.208/S/X
VCCSATAPLL
C168
1u/6/X7R/16V/K
C169
0.1u/4/X7R/16V/K
VCCGLANPLL
C176
1u/6/X7R/16V/K
C1449
0.1u/4/X7R/16V/K
3VCL_B
R260
0/6/SHT/X
3VCL
C1357
0.1u/4/X7R/16V/K
C1450
0.1u/4/X7R/16V/K
C1458
0.1u/4/X7R/16V/K
C180
0.1u/4/X7R/16V/K
R628
0/4/X
VCCSUS1_5
R3620
0/4
R3611
0/4/X
R3621
0/4/X
VCCDMI
C1451
0.1u/4/X7R/16V/K
C187
0.1u/4/X7R/16V/K
C189
0.1u/4/X7R/16V/K
C191
0.1u/4/X7R/16V/K/X
C195
0.1u/4/X7R/16V/K
C196
0.1u/4/X7R/16V/K
C1461
0.1u/4/X7R/16V/K
C203
0.1u/4/X7R/16V/K/X
C206
0.1u/4/X7R/16V/K/X
C1288
0.1u/4/X7R/16V/K
C167
0.1u/4/X7R/16V/K/X
C1455
0.1u/4/X7R/16V/K
VCCLAN1_05
C163
0.1u/4/X7R/16V/K
C188
0.1u/4/X7R/16V/K/X
VCC1_1_ICH
C178
0.1u/4/X7R/16V/K
C182
0.1u/4/X7R/16V/K
C183
0.1u/4/X7R/16V/K/X
VTTD
VCC3
C194
0.1u/4/X7R/16V/K
R3034
0/6
3VCL
C193
1u/6/X7R/16V/K
3VDUAL_ICH
C200
0.1u/4/X7R/16V/K
C202
0.1u/4/X7R/16V/K
C199
0.1u/4/X7R/16V/K
VCCSUS1_5
RTCVDD [29,53]
BC76
0.1u/4/X7R/16V/K
BC177
0.047u/4/X7R/16V/K
BC178
0.047u/4/X7R/16V/K
VCCCL1_1
C77
0.1u/4/X7R/16V/K
SC23
0.1u/4/X7R/16V/K/X
VCCSUS1_5
BC75
C1289
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K
VCCCL1_1
C1286
C1356
1u/6/X7R/16V/K
0.1u/4/X7R/16V/K
VCC1_5
C181
0.1u/4/X7R/16V/K
VCC3
C1456
0.1u/4/X7R/16V/K
VCCHDA
C1457
0.1u/4/X7R/16V/K
VCC1_5
VCCHDA
R627
0/4/X
C1549
0.1u/4/X7R/16V/K
SIGNAL NAME | NO LAN
VccCL_1_05 | de-CAP
VccCL3_3 | Vcc3_3
VccCL1_5 | de-CAP
VccGLAN1_5 | Vcc1_5
VccGLAN3_3 | Vcc3_3
VccGLANPLL | Vcc1_5
VccLAN1_05 | N/A
VccLAN3_3 | VCC3
C1581
0.1u/4/X7R/16V/K
C1582
0.1u/4/X7R/16V/K
C1583
0.1u/4/X7R/16V/K
C1584
0.1u/4/X7R/16V/K/X
C1585
0.1u/4/X7R/16V/K/X
SC19
0.1u/4/X7R/16V/K/X
SC20
0.1u/4/X7R/16V/K/X
SC21
0.1u/4/X7R/16V/K/X
Rev0.2
C1459
0.1u/4/X7R/16V/K
C1460
0.1u/4/X7R/16V/K
C192
0.1u/4/X7R/16V/K
Q335
L1117LG/N/SOT223/1A
3VDUAL_ICH
3.40V
R4310
0/8/X
R4311
0/8
5VDUAL
5VSB
BC861
0.1u/4/X7R/16V/K
R2636
301/4/1
R2637
510/4/1
BC862
10u/8/X5R/6.3V/K
EC1124
100u/OS/D/16V/66/30m
RN146
0/8P4R/6/X
3VDUAL
SB_HEATSIN
SB_HEATSIN/[12SP2-030030-51R]
Gigabyte Technology
Title
ICH10-PWR & GND
Size C
Document Number
GA-X58A-UD3R
Rev 2.01
Date: Friday, April 23, 2010
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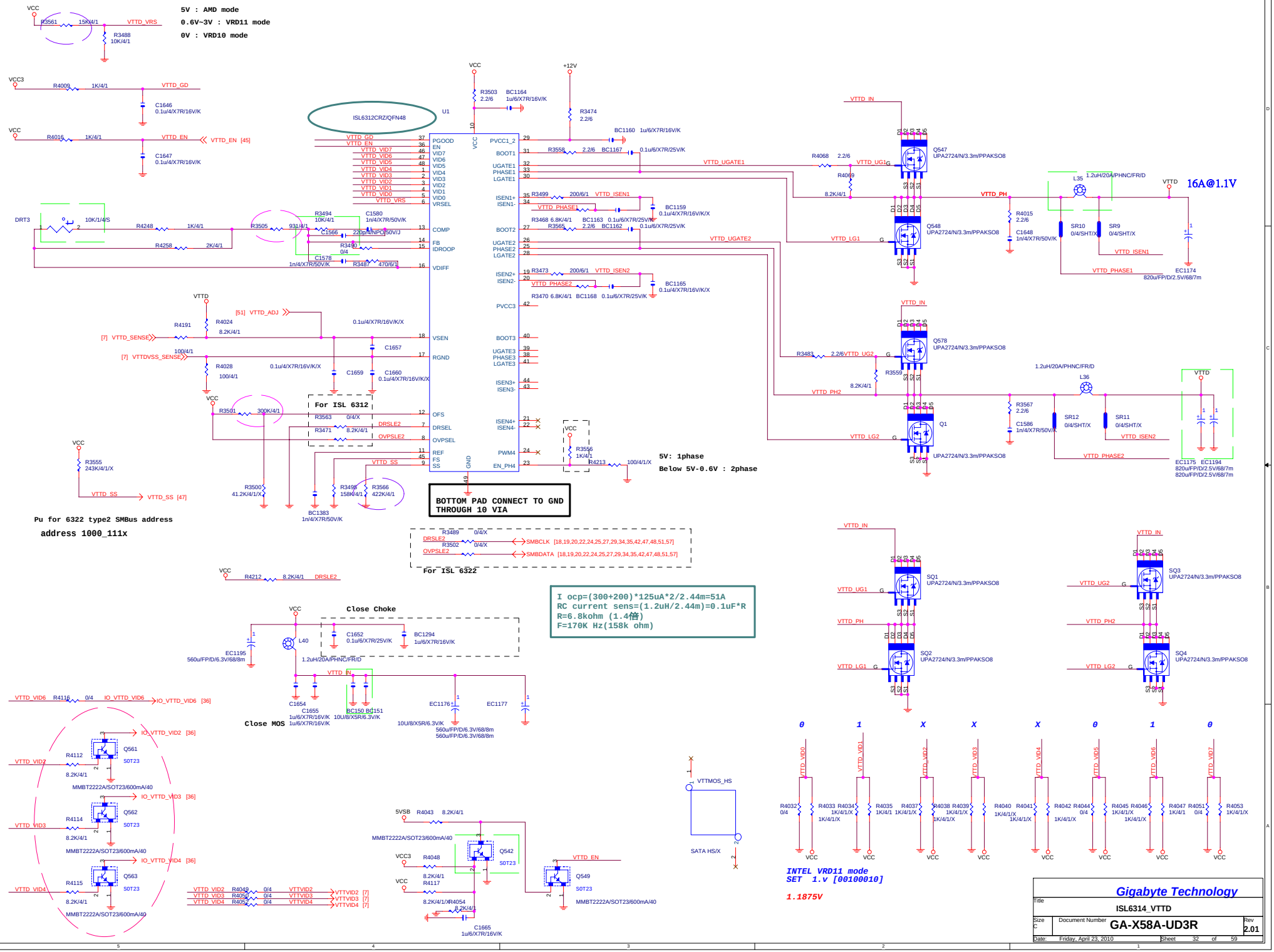
5V : AMD mode
0.6V~3V : VRD11 mode
0V : VRD10 mode
ISL6312CRZ/QFN48
U1
For ISL 6312
For ISL 6322
5V: 1phase
Below 5V-0.6V : 2phase
BOTTOM PAD CONNECT TO GND THROUGH 10 VIA
Pu for 6322 type2 SMBus address
address 1000_111x
Close Choke
Close MOS
I ocp=(300+200)*125uA*2/2.44m=51A
RC current sens=(1.2uH/2.44m)=0.1uF*R
R=6.8kohm (1.4倍)
F=170K Hz(158k ohm)
16A@1.1V
INTEL VRD11 mode
SET 1.v [00100010]
1.1875V
Gigabyte Technology
ISL6314_VTTD
GA-X58A-UD3R
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CLK GEN CK505

For EMI

U49

9LPRS914HKLF/MLF72

To LAN1 (lane5)
To ICH (Always on)
To clock buffer (Always on)
To PCIEx8_2 slot
To PCIEx8_1 slot
To PCIEx16-1 slot
To 9123-1
To ICH (Always on)
To MCH (Always on)
To MCH (Always on)
To PCIEx16-1 slot
To JM363
To NEC

MMBT2907A/SOT23/-600mA/50/X

GSEL=1 , DOTCLK 96Mhz from 12/13
GSEL=0 , PCIECLK11 from 12/13

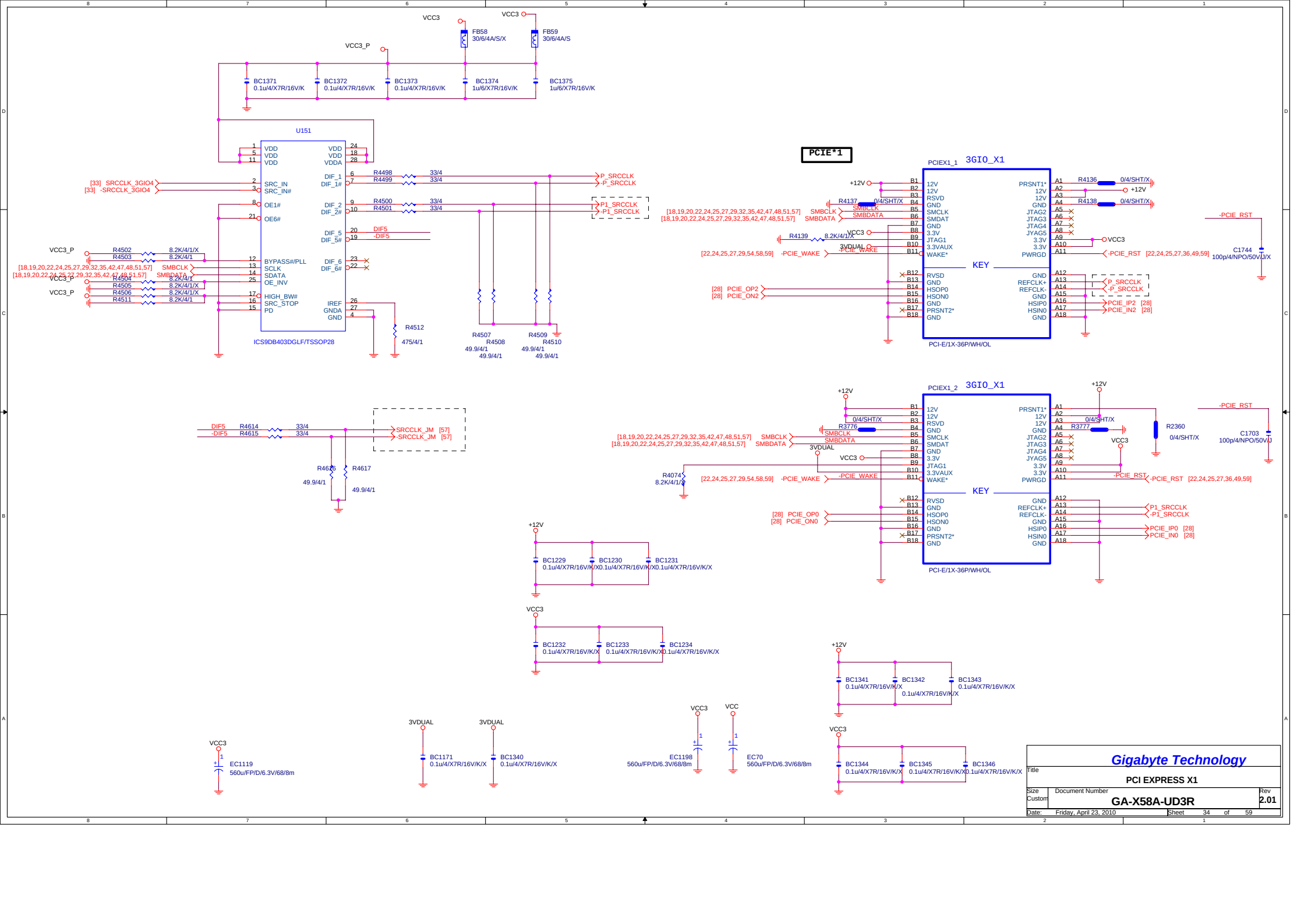
SEL_48= 1 , 24Mhz from pin10
SEL_48= 0 , 48Mhz from pin10

SEL_STOP: latched input to select pin functionality
1 = Selects pin 44/45 to be PCI_STOP#/CPU_STOP#
0 = Selects pin 44/45 to be PCIEX outputs ;
3.3V PCICLK output

check leak current

2N7002/SOT23/25pF/5/X

Gigabyte Technology	
Title	ICS9LPRS914
Size: Custom	Document Number: GA-X58A-UD3R
Rev	2.01
Date: Friday, April 23, 2010	Sheet 33 of 59


VCC3
FB58 30/6/4A/S/X
FB59 30/6/4A/S
VCC3_P
BC1371 0.1u/4/X7R/16V/K
BC1372 0.1u/4/X7R/16V/K
BC1373 0.1u/4/X7R/16V/K
BC1374 1u/6/X7R/16V/K
BC1375 1u/6/X7R/16V/K
U151
ICS9DB403DGLF/TSSOP28
[33] SRCCLK_3GIO4
[33] -SRCCLK_3GIO4
P_SRCCLK
-P_SRCCLK
P1_SRCCLK
-P1_SRCCLK
DIF5
-DIF5
R4498 33/4
R4499 33/4
R4500 33/4
R4501 33/4
R4502 8.2K/4/1/X
R4503 8.2K/4/1
R4504 8.2K/4/1
R4505 8.2K/4/1/X
R4506 8.2K/4/1/X
R4511 8.2K/4/1
R4512 475/4/1
R4507 49.9/4/1
R4508 49.9/4/1
R4509 49.9/4/1
R4510 49.9/4/1
PCIE*1
PCIEX1_1 3GIO_X1
PCI-E/1X-36P/WH/OL
KEY
R4136 0/4/SHT/X
R4137 0/4/SHT/X
R4138 0/4/SHT/X
R4139 8.2K/4/1/X
-PCIE_RST
C1744 100p/4/NPO/50V/J/X
PCIE_IP2 [28]
PCIE_IN2 [28]
PCIE_OP2 [28]
PCIE_ON2 [28]
PCIEX1_2 3GIO_X1
R3776 0/4/SHT/X
R3777 0/4/SHT/X
R2360 0/4/SHT/X
C1703 100p/4/NPO/50V/J
R4074 8.2K/4/1/X
PCIE_IP0 [28]
PCIE_IN0 [28]
PCIE_OP0 [28]
PCIE_ON0 [28]
DIF5 R4614 33/4
-DIF5 R4615 33/4
SRCCLK_JM [57]
-SRCCLK_JM [57]
R4616 49.9/4/1
R4617 49.9/4/1
BC1229 0.1u/4/X7R/16V/K/X
BC1230 0.1u/4/X7R/16V/K/X
BC1231 0.1u/4/X7R/16V/K/X
BC1232 0.1u/4/X7R/16V/K/X
BC1233 0.1u/4/X7R/16V/K/X
BC1234 0.1u/4/X7R/16V/K/X
BC1341 0.1u/4/X7R/16V/K/X
BC1342 0.1u/4/X7R/16V/K/X
BC1343 0.1u/4/X7R/16V/K/X
BC1344 0.1u/4/X7R/16V/K/X
BC1345 0.1u/4/X7R/16V/K/X
BC1346 0.1u/4/X7R/16V/K/X
EC1119 560u/FP/D/6.3V/68/8m
BC1171 0.1u/4/X7R/16V/K/X
BC1340 0.1u/4/X7R/16V/K/X
EC1198 560u/FP/D/6.3V/68/8m
EC70 560u/FP/D/6.3V/68/8m
3VDUAL
VCC
Gigabyte Technology
Title
PCI EXPRESS X1
Size Custom
Document Number
GA-X58A-UD3R
Rev 2.01
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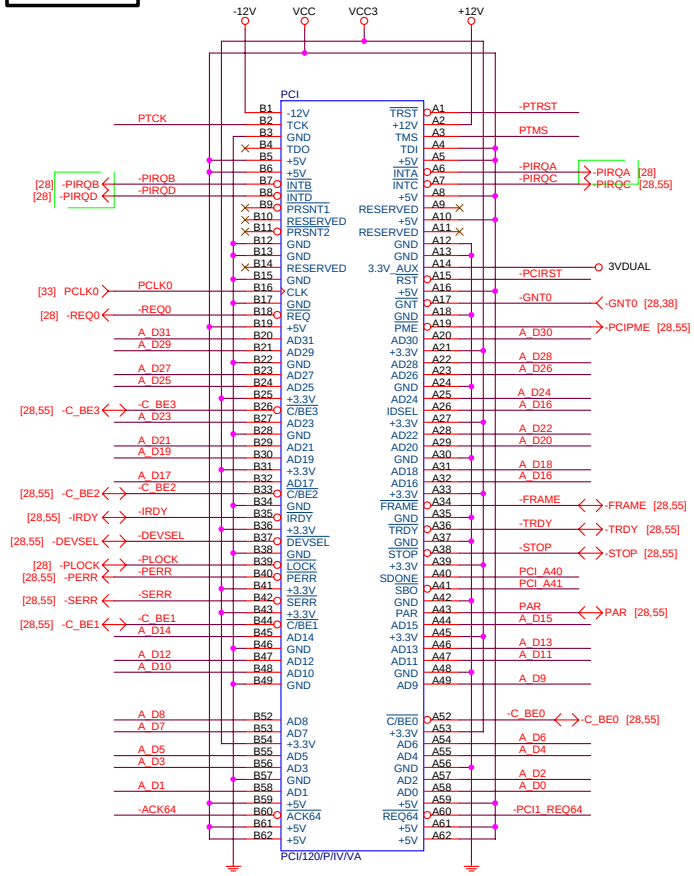
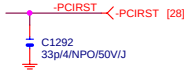
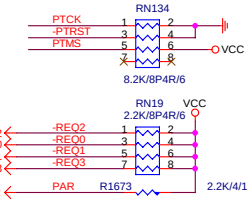
PCI1,2 SLOT

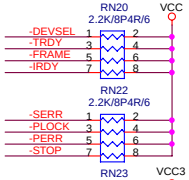


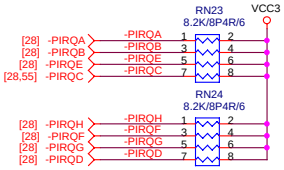
-REQ0/-GNT0/AD16

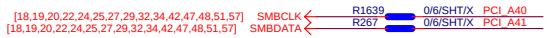


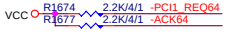
Place close to PCI1

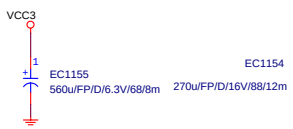












Gigabyte Technology		
Title: PCI SLOT 1,		
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
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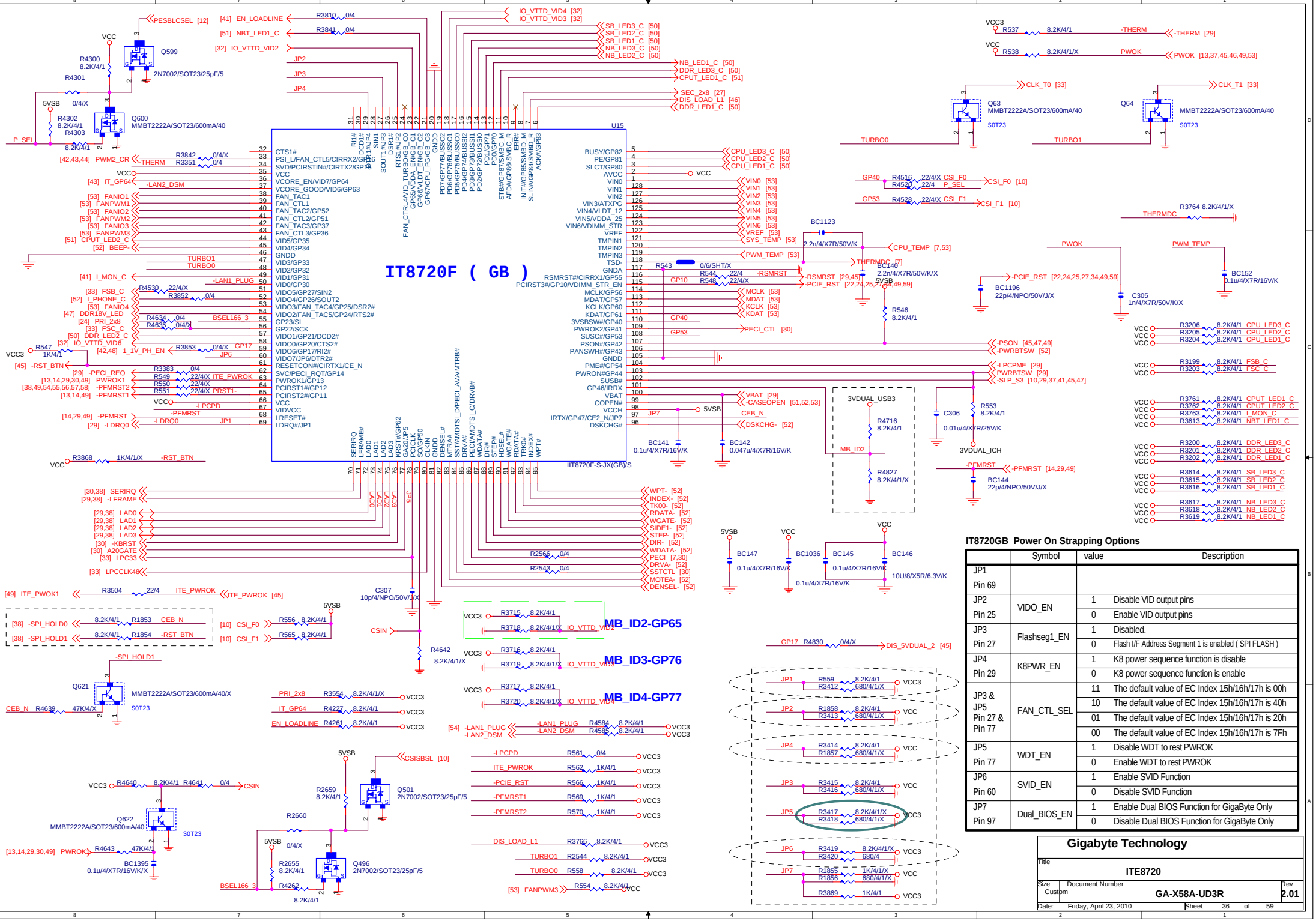

IT8720GB Power On Strapping Options

	Symbol	value	Description
JP1 Pin 69			
JP2 Pin 25	VIDO_EN	1	Disable VID output pins
		0	Enable VID output pins
JP3 Pin 27	Flashseg1_EN	1	Disabled.
		0	Flash I/F Address Segment 1 is enabled (SPI FLASH)
JP4 Pin 29	K8PWR_EN	1	K8 power sequence function is disable
		0	K8 power sequence function is enable
JP3 & JP5 Pin 27 & Pin 77	FAN_CTL_SEL	11	The default value of EC Index 15h/16h/17h is 00h
		10	The default value of EC Index 15h/16h/17h is 40h
		01	The default value of EC Index 15h/16h/17h is 20h
		00	The default value of EC Index 15h/16h/17h is 7Fh
JP5 Pin 77	WDT_EN	1	Disable WDT to rest PWROK
		0	Enable WDT to rest PWROK
JP6 Pin 60	SVID_EN	1	Enable SVID Function
		0	Disable SVID Function
JP7 Pin 97	Dual_BIOS_EN	1	Enable Dual BIOS Function for GigaByte Only
		0	Disable Dual BIOS Function for GigaByte Only

Gigabyte Technology

Title: **ITE8720**

Size: Custom | Document Number: **GA-X58A-UD3R** | Rev: **2.01**

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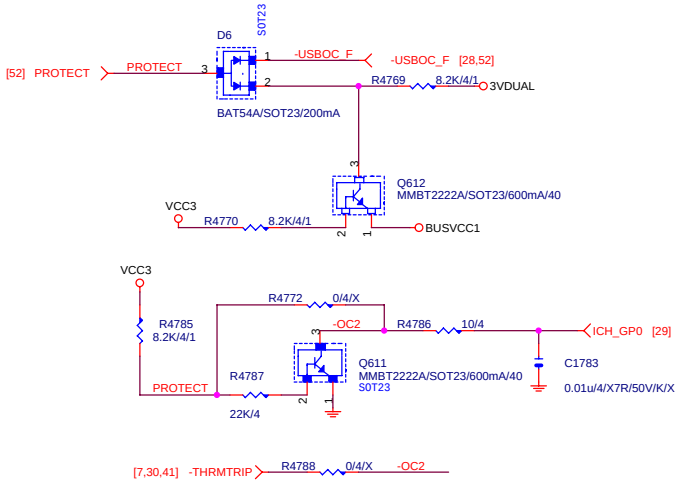
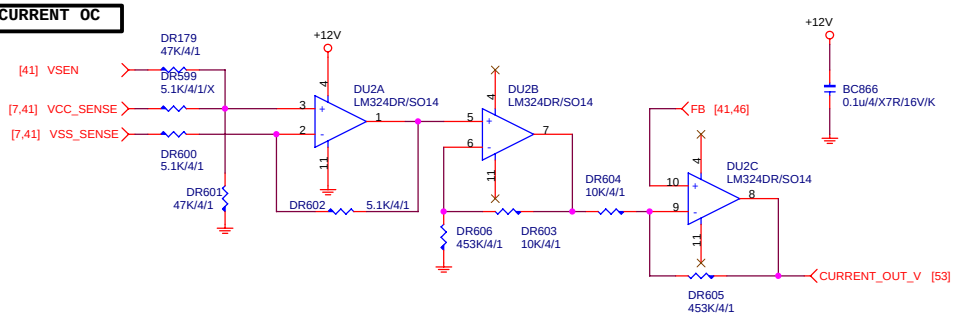
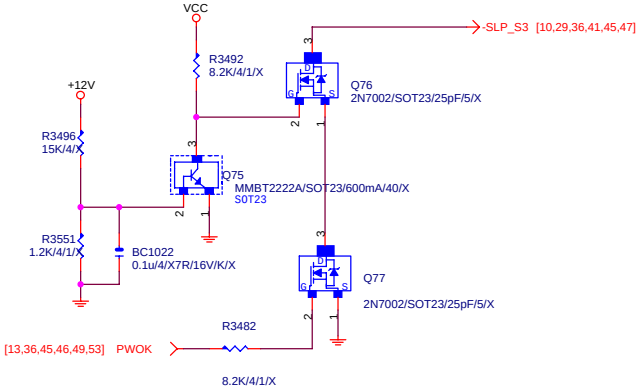
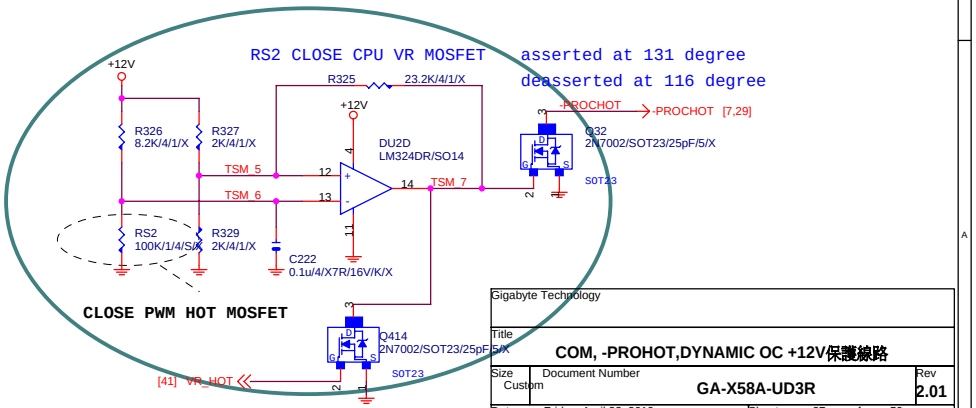


DYNAMIC CURRENT OC





-PROHOT



Gigabyte Technology			
Title	COM, -PROHOT,DYNAMIC OC +12V保護線路		
Size: Custom	Document Number: GA-X58A-UD3R		Rev: 2.01
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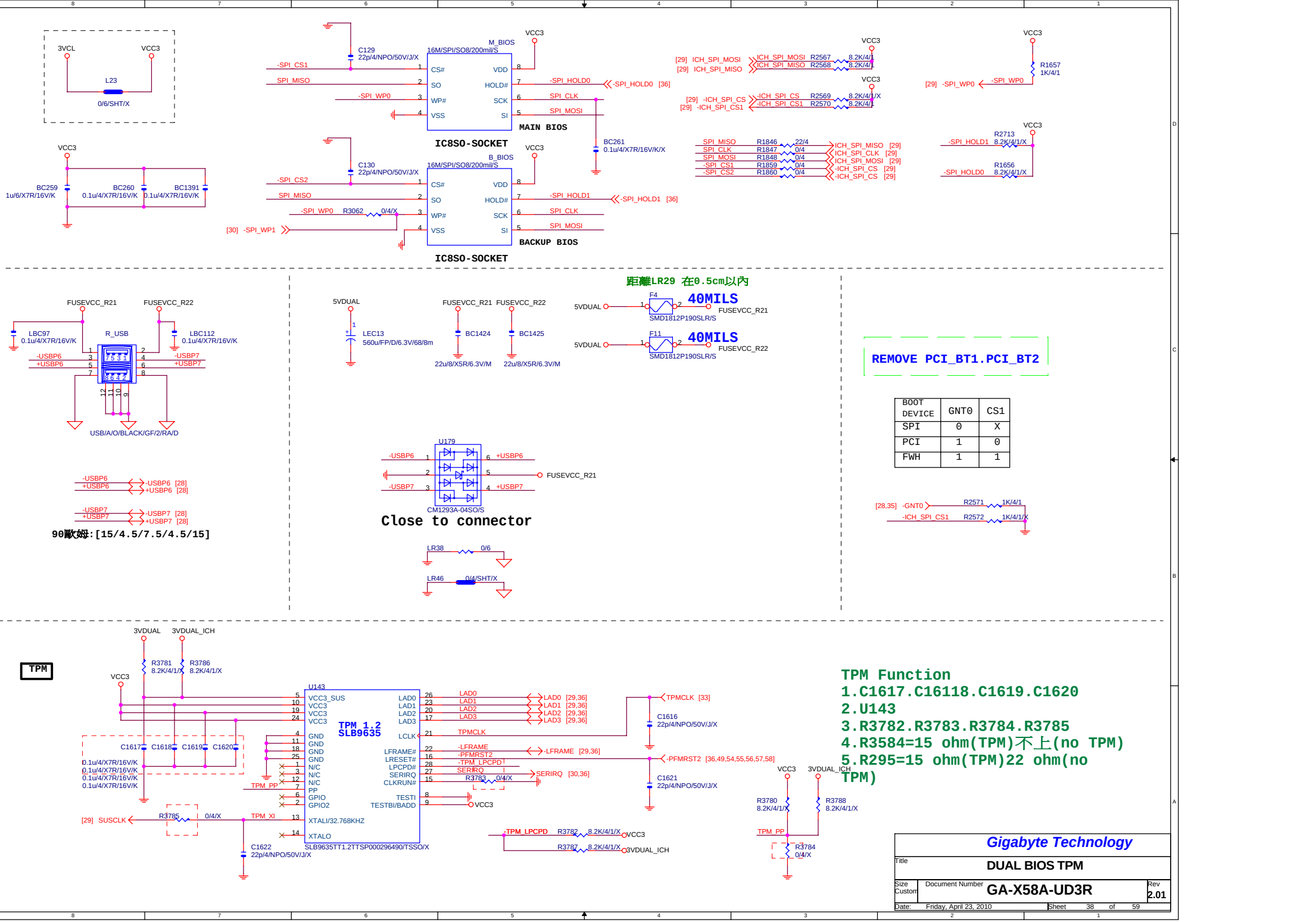
3VCL
VCC3
L23
0/6/SHT/X
C129
22p/4/NPO/50V/J/X
M_BIOS
16M/SPI/SO8/200mil/S
-SPI_CS1
SPI_MISO
-SPI_WP0
CS#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
-SPI_HOLD0
SPI_CLK
SPI_MOSI
MAIN BIOS
IC8SO-SOCKET
BC261
0.1u/4/X7R/16V/K/X
[29] ICH_SPI_MOSI
[29] ICH_SPI_MISO
ICH_SPI_MOSI R2567 8.2K/4/1
ICH_SPI_MISO R2568 8.2K/4/1
[29] -ICH_SPI_CS
[29] -ICH_SPI_CS1
-ICH_SPI_CS R2569 8.2K/4/1/X
-ICH_SPI_CS1 R2570 8.2K/4/1
R1657
1K/4/1
[29] -SPI_WP0
BC259
1u/6/X7R/16V/K
BC260
0.1u/4/X7R/16V/K
BC1391
0.1u/4/X7R/16V/K
C130
22p/4/NPO/50V/J/X
B_BIOS
-SPI_CS2
-SPI_WP0 R3062 0/4/X
[30] -SPI_WP1
-SPI_HOLD1
BACKUP BIOS
SPI_MISO R1846 22/4
SPI_CLK R1847 0/4
SPI_MOSI R1848 0/4
-SPI_CS1 R1859 0/4
-SPI_CS2 R1860 0/4
ICH_SPI_MISO [29]
ICH_SPI_CLK [29]
ICH_SPI_MOSI [29]
-ICH_SPI_CS [29]
-ICH_SPI_CS [29]
R2713
8.2K/4/1/X
R1656
8.2K/4/1/X
-SPI_HOLD1
-SPI_HOLD0
FUSEVCC_R21
FUSEVCC_R22
LBC97
0.1u/4/X7R/16V/K
R_USB
LBC112
0.1u/4/X7R/16V/K
-USBP6
+USBP6
-USBP7
+USBP7
USB/A/O/BLACK/GF/2/RA/D
5VDUAL
LEC13
560u/FP/D/6.3V/68/8m
BC1424
22u/8/X5R/6.3V/M
BC1425
22u/8/X5R/6.3V/M
距離LR29 在0.5cm以內
F4
40MILS
SMD1812P190SLR/S
F11
40MILS
SMD1812P190SLR/S
REMOVE PCI_BT1.PCI_BT2
BOOT DEVICE | GNT0 | CS1
SPI | 0 | X
PCI | 1 | 0
FWH | 1 | 1
[28,35] -GNT0
-ICH_SPI_CS1
R2571 1K/4/1
R2572 1K/4/1/X
U179
CM1293A-04SO/S
Close to connector
LR38 0/6
LR46 0/4/SHT/X
90歐姆:[15/4.5/7.5/4.5/15]
TPM
3VDUAL
3VDUAL_ICH
R3781 8.2K/4/1/X
R3786 8.2K/4/1/X
U143
TPM_1.2
SLB9635
SLB9635TT1.2TTSP000296490/TSSO/X
C1617
C1618
C1619
C1620
0.1u/4/X7R/16V/K
TPM_PP
TPM_XI
XTALI/32.768KHZ
XTALO
C1622
22p/4/NPO/50V/J/X
R3785 0/4/X
[29] SUSCLK
LAD0
LAD1
LAD2
LAD3
LCLK
LFRAME#
LRESET#
LPCPD#
SERIRQ
CLKRUN#
TESTI
TESTBI/BADD
-LFRAME
-PFMRST2
-TPM_LPCPD!
R3783 0/4/X
TPMCLK [33]
C1616
22p/4/NPO/50V/J/X
C1621
22p/4/NPO/50V/J/X
-PFMRST2 [36,49,54,55,56,57,58]
-TPM_LPCPD
R3782 8.2K/4/1/X
R3787 8.2K/4/1/X
R3780 8.2K/4/1/X
R3788 8.2K/4/1/X
R3784 0/4/X
TPM Function
1.C1617.C16118.C1619.C1620
2.U143
3.R3782.R3783.R3784.R3785
4.R3584=15 ohm(TPM)不上(no TPM)
5.R295=15 ohm(TPM)22 ohm(no TPM)
Gigabyte Technology
Title
DUAL BIOS TPM
Size
Custom
Document Number
GA-X58A-UD3R
Rev
2.01
Date: Friday, April 23, 2010
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AZALIA CODEC

ALC889A+/ALC889A/ALC888Vx Colay

	ALC889A+	ALC889A	ALC888Vx
CR111	X	O	X
CR112	X	O	X
CR750	X	O	O
CR999	O	X	X
CR2	20K/1%	20K/0.1%	20K/1%

CR2: 20K/4/0.1% @ALC889A
CR2: 20K/4/1% @ALC889A+/ALC888Vx

CR14/CBC4 close to SouthBridge

co-layout

JD resistors close to pin34 of CODEC

Can Support Amp Out

For ALC888-VD/ALC892

Digital Area

Analog Area

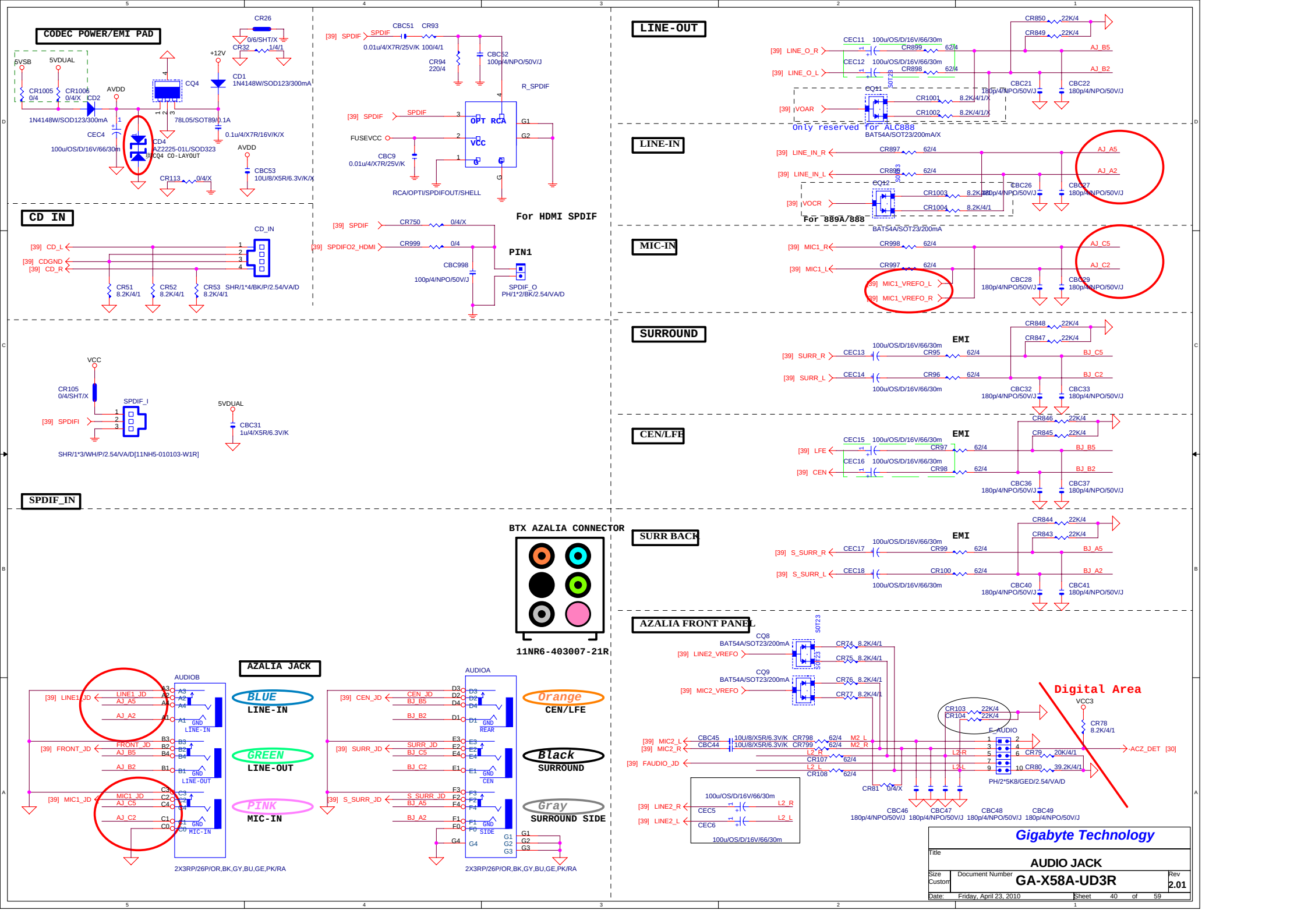
JD resistors close to pin13 of CODEC

Can Support Amp Out

ALC889A+

ALC889-GR/S

Gigabyte Technology		
Title	HD AUDIO ALC889A+	
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 39 of 59	


CODEC POWER/EMI PAD
5VSB
5VDUAL
+12V
CR1005 0/4
CR1006 0/4/X
CD2 1N4148W/SOD123/300mA
AVDD
CQ4
CD1 1N4148W/SOD123/300mA
78L05/SOT89/0.1A
CEC4 100u/OS/D/16V/66/30m
CD4 AZ2225-01L/SOD323
CQ4 CO-LAYOUT
0.1u/4/X7R/16V/K/X
CBC53 10U/8/X5R/6.3V/K/X
CR26 0/6/SHT/X
CR32 1/4/1
CR113 0/4/X
CD IN
CD_IN
[39] CD_L
[39] CDGND
[39] CD_R
CR51 8.2K/4/1
CR52 8.2K/4/1
CR53 SHR/1*4/BK/P/2.54/VA/D 8.2K/4/1
SPDIF_IN
VCC
CR105 0/4/SHT/X
SPDIF_I
[39] SPDIFI
SHR/1*3/WH/P/2.54/VA/D[11NH5-010103-W1R]
5VDUAL
CBC31 1u/4/X5R/6.3V/K
[39] SPDIF
CBC51 0.01u/4/X7R/25V/K
CR93 100/4/1
CR94 220/4
CBC52 100p/4/NPO/50V/J
R_SPDIF
OPT RCA
VCC
FUSEVCC
CBC9 0.01u/4/X7R/25V/K
RCA/OPTI/SPDIFOUT/SHELL
For HDMI SPDIF
CR750 0/4/X
[39] SPDIFO2_HDMI
CR999 0/4
CBC998 100p/4/NPO/50V/J
PIN1
SPDIF_O PH/1*2/BK/2.54/VA/D
BTX AZALIA CONNECTOR
11NR6-403007-21R
AZALIA JACK
AUDIOB
AUDIOA
[39] LINE1_JD
[39] FRONT_JD
[39] MIC1_JD
[39] CEN_JD
[39] SURR_JD
[39] S_SURR_JD
BLUE
LINE-IN
GREEN
LINE-OUT
PINK
MIC-IN
Orange
CEN/LFE
Black
SURROUND
Gray
SURROUND SIDE
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA
LINE-OUT
[39] LINE_O_R
[39] LINE_O_L
[39] VOAR
CEC11 100u/OS/D/16V/66/30m
CEC12 100u/OS/D/16V/66/30m
CR899 62/4
CR898 62/4
CQ11
CR1001 8.2K/4/1/X
CR1002 8.2K/4/1/X
Only reserved for ALC888
BAT54A/SOT23/200mA/X
CR850 22K/4
CR849 22K/4
AJ_B5
AJ_B2
CBC21 180p/4/NPO/50V/J
CBC22 180p/4/NPO/50V/J
LINE-IN
[39] LINE_IN_R
[39] LINE_IN_L
[39] VOCR
CR897 62/4
CR896 62/4
CQ12
CR1003 8.2K/4/1
CR1004 8.2K/4/1
For 889A/888
BAT54A/SOT23/200mA
AJ_A5
AJ_A2
CBC26 180p/4/NPO/50V/J
CBC27 180p/4/NPO/50V/J
MIC-IN
[39] MIC1_R
[39] MIC1_L
[39] MIC1_VREFO_L
[39] MIC1_VREFO_R
CR998 62/4
CR997 62/4
AJ_C5
AJ_C2
CBC28 180p/4/NPO/50V/J
CBC29 180p/4/NPO/50V/J
SURROUND
EMI
[39] SURR_R
[39] SURR_L
CEC13 100u/OS/D/16V/66/30m
CEC14 100u/OS/D/16V/66/30m
CR95 62/4
CR96 62/4
CR848 22K/4
CR847 22K/4
BJ_C5
BJ_C2
CBC32 180p/4/NPO/50V/J
CBC33 180p/4/NPO/50V/J
CEN/LFE
[39] LFE
[39] CEN
CEC15 100u/OS/D/16V/66/30m
CEC16 100u/OS/D/16V/66/30m
CR97 62/4
CR98 62/4
CR846 22K/4
CR845 22K/4
BJ_B5
BJ_B2
CBC36 180p/4/NPO/50V/J
CBC37 180p/4/NPO/50V/J
SURR BACK
[39] S_SURR_R
[39] S_SURR_L
CEC17 100u/OS/D/16V/66/30m
CEC18 100u/OS/D/16V/66/30m
CR99 62/4
CR100 62/4
CR844 22K/4
CR843 22K/4
BJ_A5
BJ_A2
CBC40 180p/4/NPO/50V/J
CBC41 180p/4/NPO/50V/J
AZALIA FRONT PANEL
CQ8 BAT54A/SOT23/200mA
CQ9 BAT54A/SOT23/200mA
[39] LINE2_VREFO
[39] MIC2_VREFO
CR74 8.2K/4/1
CR75 8.2K/4/1
CR76 8.2K/4/1
CR77 8.2K/4/1
Digital Area
VCC3
CR78 8.2K/4/1
CR103 22K/4
CR104 22K/4
F_AUDIO
[39] MIC2_L
[39] MIC2_R
[39] FAUDIO_JD
CBC45 10U/8/X5R/6.3V/K
CBC44 10U/8/X5R/6.3V/K
CR798 62/4
CR799 62/4
CR107 62/4
CR108 62/4
CR81 0/4/X
CR79 20K/4/1
CR80 39.2K/4/1
ACZ_DET [30]
PH/2*5K8/GED/2.54/VA/D
[39] LINE2_R
[39] LINE2_L
CEC5 100u/OS/D/16V/66/30m
CEC6 100u/OS/D/16V/66/30m
CBC46 180p/4/NPO/50V/J
CBC47 180p/4/NPO/50V/J
CBC48 180p/4/NPO/50V/J
CBC49 180p/4/NPO/50V/J
Gigabyte Technology
Title
AUDIO JACK
Size Custom
Document Number GA-X58A-UD3R
Rev 2.01
Date: Friday, April 23, 2010
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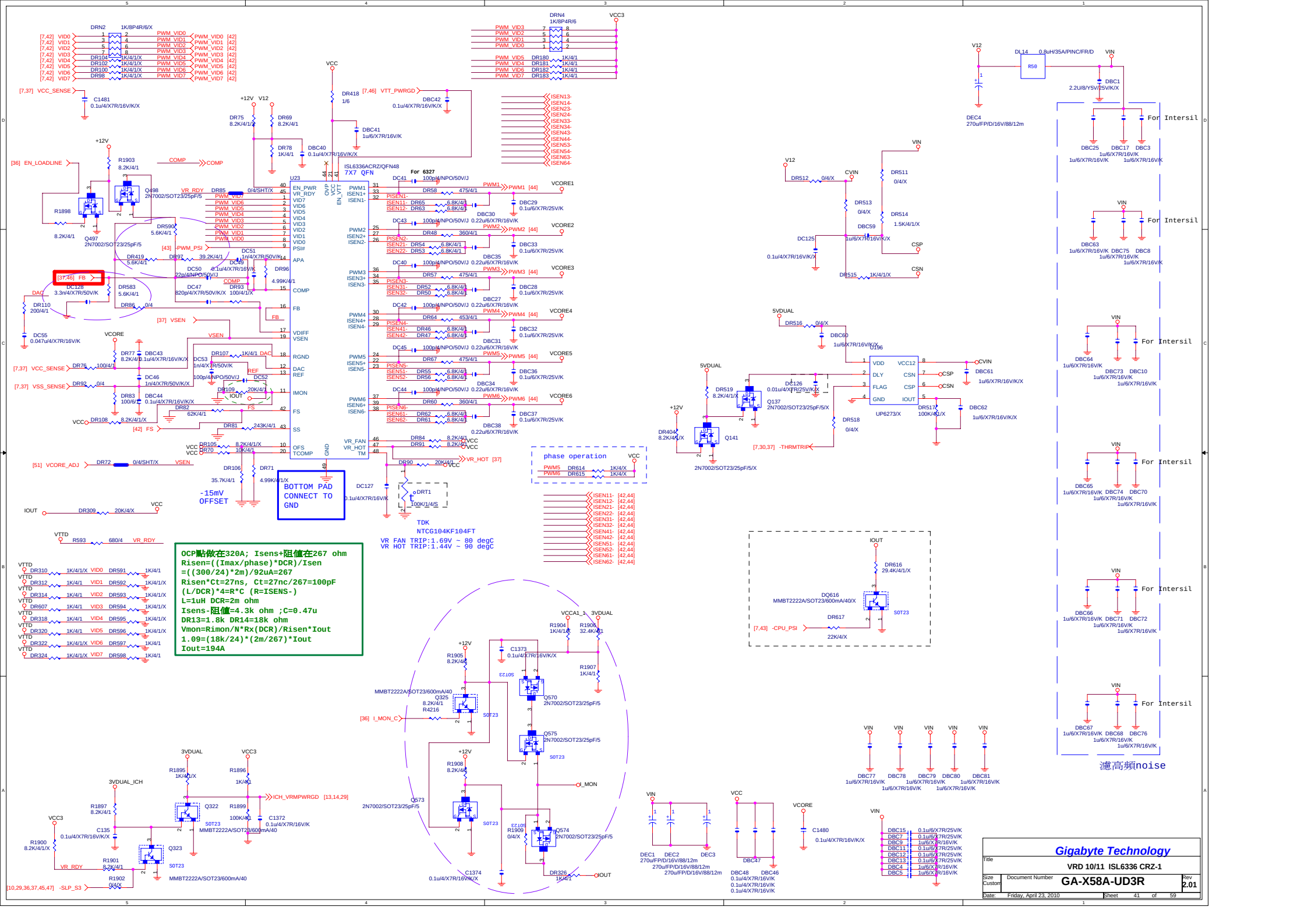
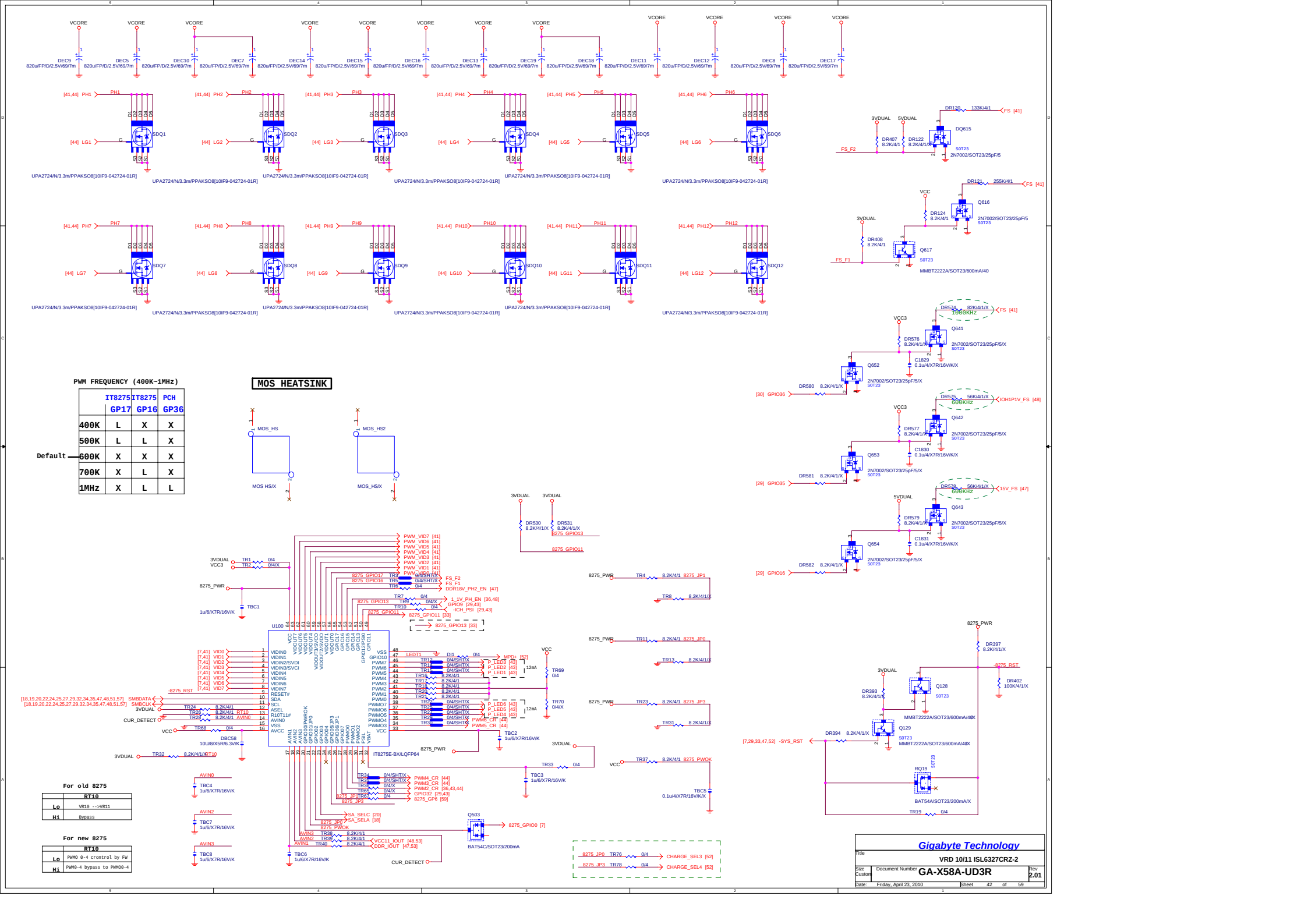

U23
ISL6336ACRZ/QFN48
7X7 QFN
For 6327
EN_PWR
VR_RDY
VID7
VID6
VID5
VID4
VID3
VID2
VID1
VID0
PSI#
APA
COMP
FB
VDIFF
VSEN
RGND
DAC
REF
IMON
FS
SS
OFS
TCOMP
GND
OVP
VCC
EN_VTT
PWM1
ISEN1+
ISEN1-
PWM2
ISEN2+
ISEN2-
PWM3
ISEN3+
ISEN3-
PWM4
ISEN4+
ISEN4-
PWM5
ISEN5+
ISEN5-
PWM6
ISEN6+
ISEN6-
VR_FAN
VR_HOT
TM
BOTTOM PAD
CONNECT TO
GND
-15mV
OFFSET
TDK
NTCG104KF104FT
VR FAN TRIP:1.69V ~ 80 degC
VR HOT TRIP:1.44V ~ 90 degC
phase operation
OCP點做在320A; Isens+阻值在267 ohm
Risen=((Imax/phase)*DCR)/Isen
=((300/24)*2m)/92uA=267
Risen*Ct=27ns, Ct=27nc/267=100pF
(L/DCR)*4=R*C (R=ISENS-)
L=1uH DCR=2m ohm
Isens-阻值=4.3k ohm ;C=0.47u
DR13=1.8k DR14=18k ohm
Vmon=Rimon/N*Rx(DCR)/Risen*Iout
1.09=(18k/24)*(2m/267)*Iout
Iout=194A
UP6273/X
濾高頻noise
Gigabyte Technology
VRD 10/11 ISL6336 CRZ-1
GA-X58A-UD3R
2.01
Friday, April 23, 2010
41
59


VCORE
DEC9 820u/FP/D/2.5V/69/7m
DEC5 820u/FP/D/2.5V/69/7m
DEC10 820u/FP/D/2.5V/69/7m
DEC7 820u/FP/D/2.5V/69/7m
DEC14 820u/FP/D/2.5V/69/7m
DEC15 820u/FP/D/2.5V/69/7m
DEC16 820u/FP/D/2.5V/69/7m
DEC13 820u/FP/D/2.5V/69/7m
DEC19 820u/FP/D/2.5V/69/7m
DEC18 820u/FP/D/2.5V/69/7m
DEC11 820u/FP/D/2.5V/69/7m
DEC12 820u/FP/D/2.5V/69/7m
DEC8 820u/FP/D/2.5V/69/7m
DEC17 820u/FP/D/2.5V/69/7m
PH1
PH2
PH3
PH4
PH5
PH6
PH7
PH8
PH9
PH10
PH11
PH12
SDQ1
SDQ2
SDQ3
SDQ4
SDQ5
SDQ6
SDQ7
SDQ8
SDQ9
SDQ10
SDQ11
SDQ12
UPA2724/N/3.3m/PPAKSO8[10IF9-042724-01R]
PWM FREQUENCY (400K~1MHz)
IT8275 GP17
IT8275 GP16
PCH GP36
400K L X X
500K L L X
Default 600K X X X
700K X L X
1MHz X L L
MOS HEATSINK
MOS_HS
MOS_HS2
MOS HS/X
MOS_HS/X
U100
IT8275E-BX/LQFP64
3VDUAL
VCC3
8275_PWR
VCC
PWM_VID7 [41]
PWM_VID6 [41]
PWM_VID5 [41]
PWM_VID4 [41]
PWM_VID3 [41]
PWM_VID2 [41]
PWM_VID1 [41]
PWM_VID0 [41]
8275_GPIO17
8275_GPIO16
8275_GPIO13
8275_GPIO11
8275_GPIO13 [33]
FS_F2
FS_F1
DDR18V_PH2_EN [47]
1_1V_PH_EN [36,48]
GPIO9 [29,43]
-ICH_PSI [29,43]
8275_GPIO11 [33]
MPD+ [52]
P_LED3 [43]
P_LED2 [43]
P_LED1 [43]
P_LED6 [43]
P_LED5 [43]
P_LED4 [43]
PWM5_CR [44]
PWM4_CR [44]
PWM3_CR [44]
PWM2_CR [36,43,44]
GPIO32 [29,43]
8275_GP6 [59]
SA_SELC [20]
SA_SELA [18]
VCC11_IOUT [48,53]
DDR_IOUT [47,53]
8275_GPIO0 [7]
CUR_DETECT
SMBDATA
SMBCLK
-8275_RST
CHARGE_SEL3 [52]
CHARGE_SEL4 [52]
For old 8275
RT10
LO VR10 -->VR11
Hi Bypass
For new 8275
RT10
LO PWM0 0-4 crontrol by FW
Hi PWM0-4 bypass to PWM00-4
Gigabyte Technology
Title
VRD 10/11 ISL6327CRZ-2
Size Custom
Document Number GA-X58A-UD3R
Rev 2.01
Date: Friday, April 23, 2010
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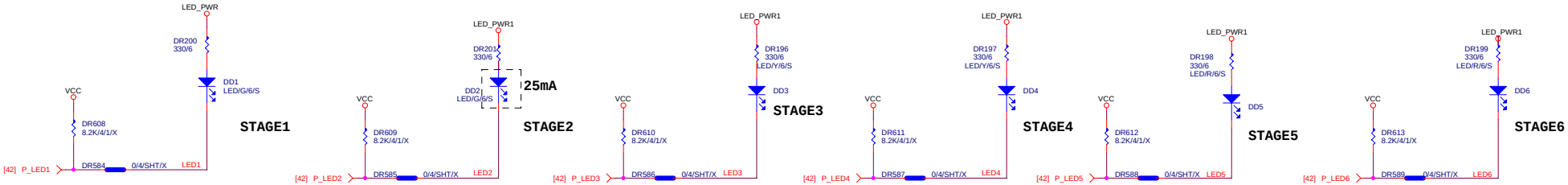
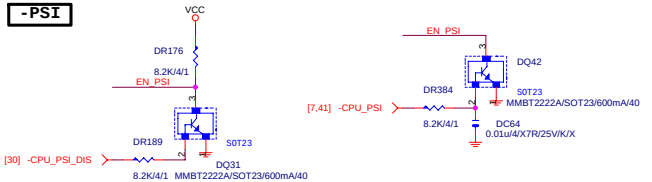
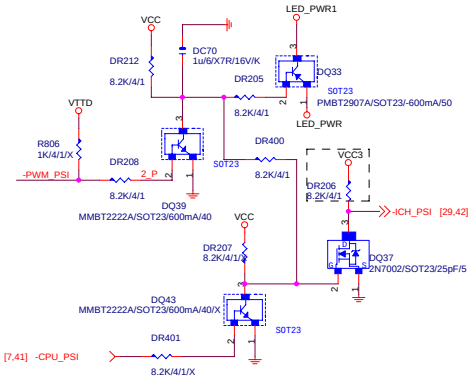
PHASE LED

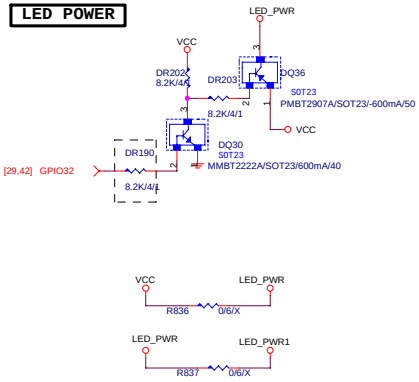


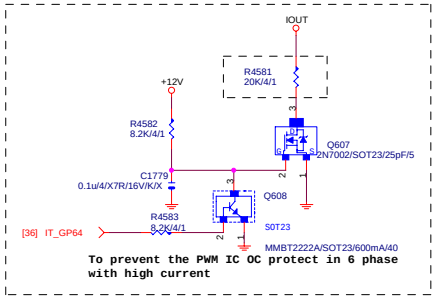
-PSI

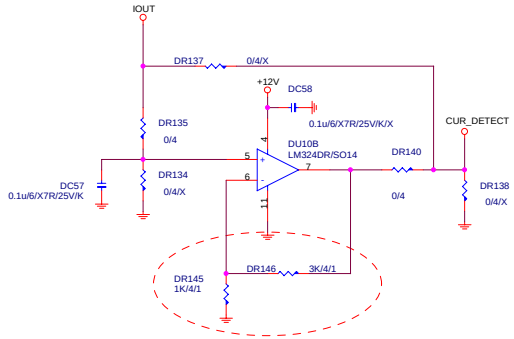


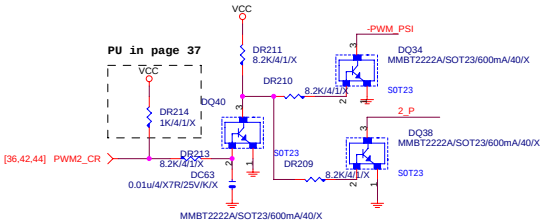


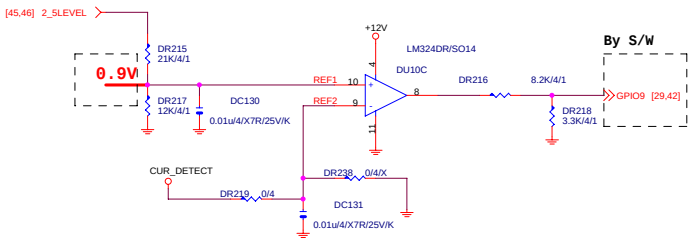
LED POWER





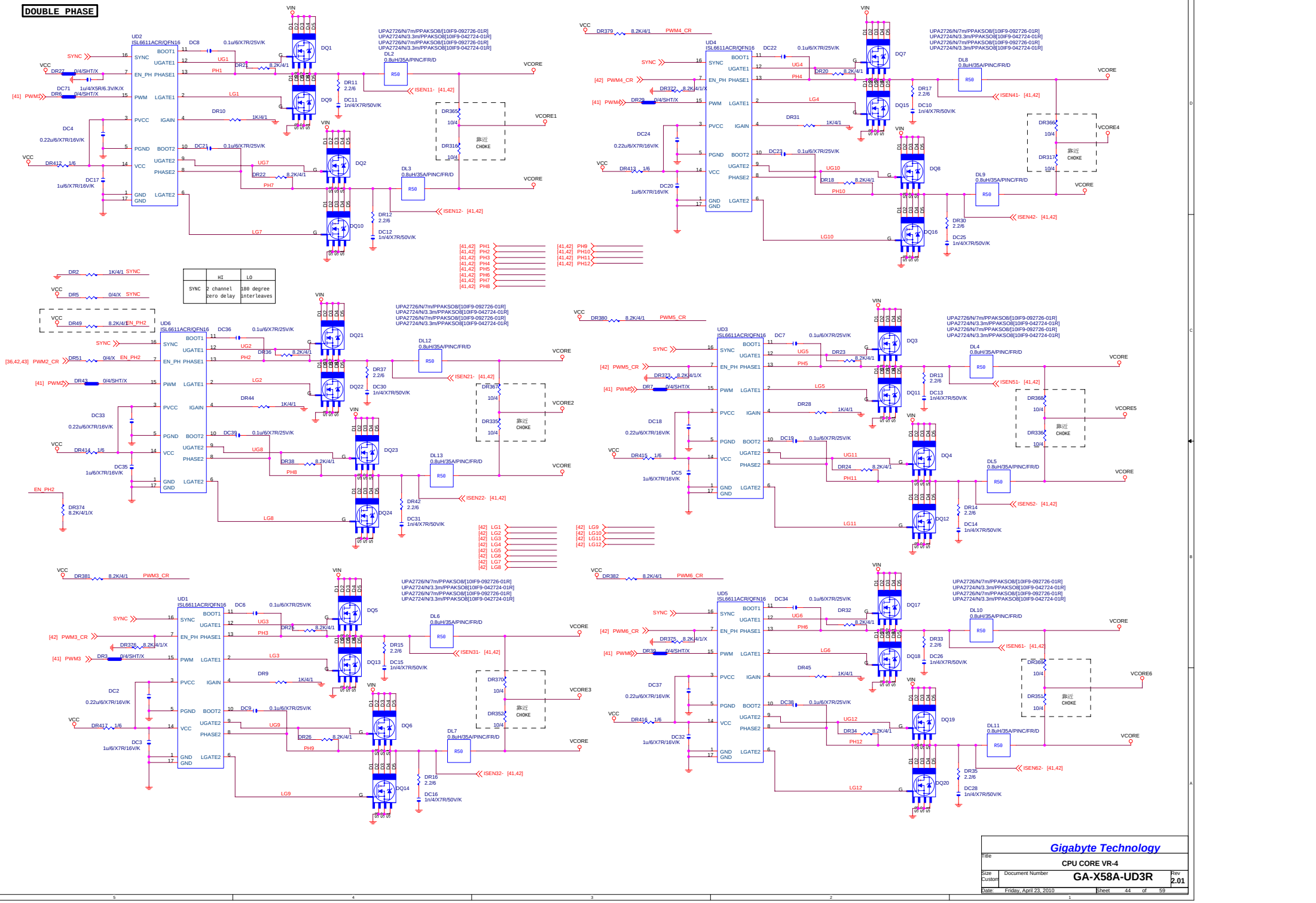


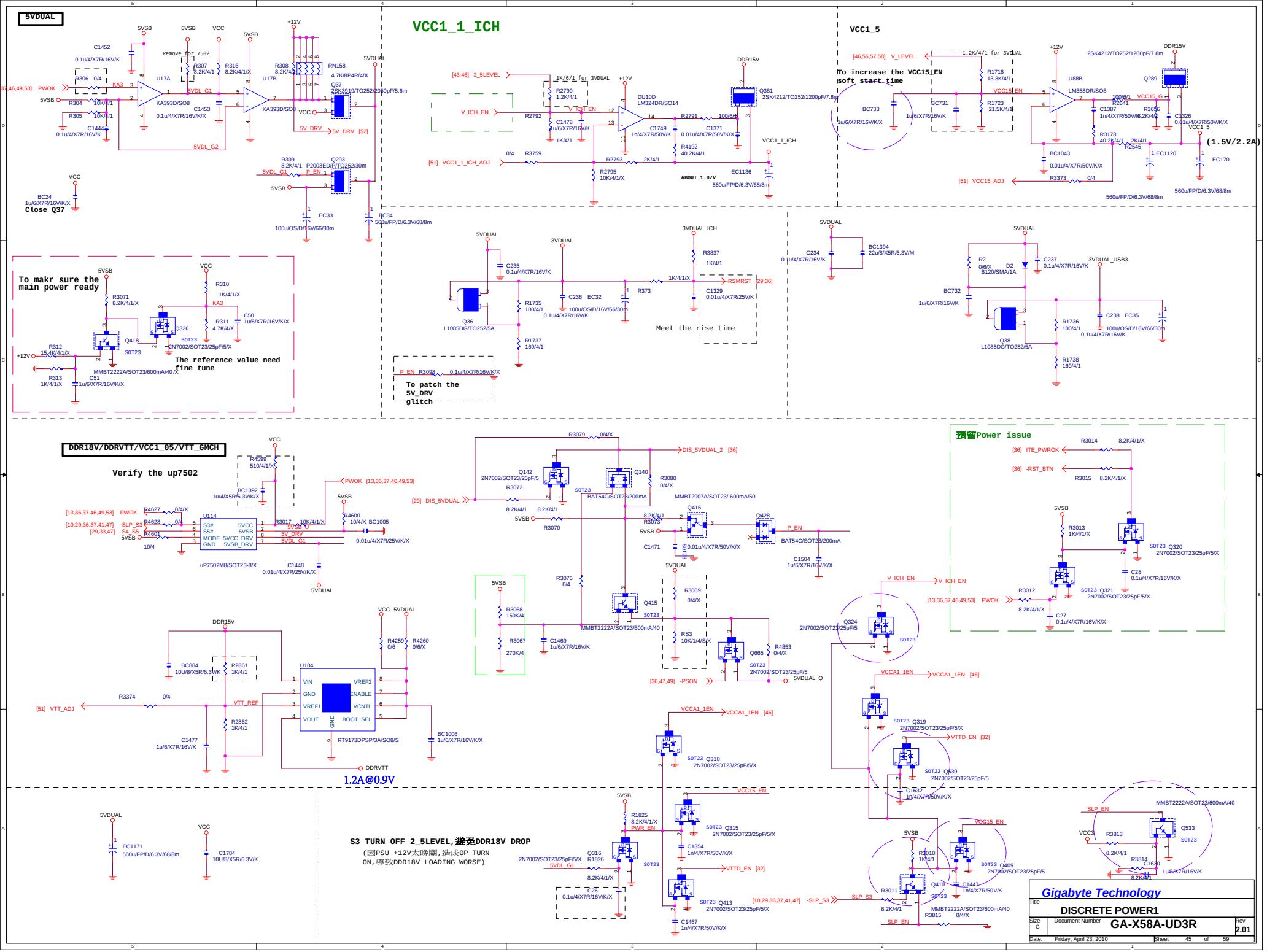




Gigabyte Technology		
Title: CPU CORE VR-3		
Size: Custom	Document Number: GA-X58A-UD3R	Rev: 2.01
Date: Friday, April 23, 2010	Sheet 43 of 59	

DOUBLE PHASE




5VDUAL
VCC1_1_ICH
VCC1_5
To increase the VCC15 EN soft start time
(1.5V/2.2A)
Close Q37
To makr sure the main power ready
The reference value need fine tune
To patch the 5V_DRV glitch
Meet the rise time
DDR18V/DDRVTT/VCC1_05/VTT_GMCH
Verify the up7502
1.2A@0.9V
預留Power issue
S3 TURN OFF 2_5LEVEL,避免DDR18V DROP
(因PSU +12V太晚關,造成OP TURN ON,導致DDR18V LOADING WORSE)
Gigabyte Technology
DISCRETE POWER1
GA-X58A-UD3R
Rev 2.01
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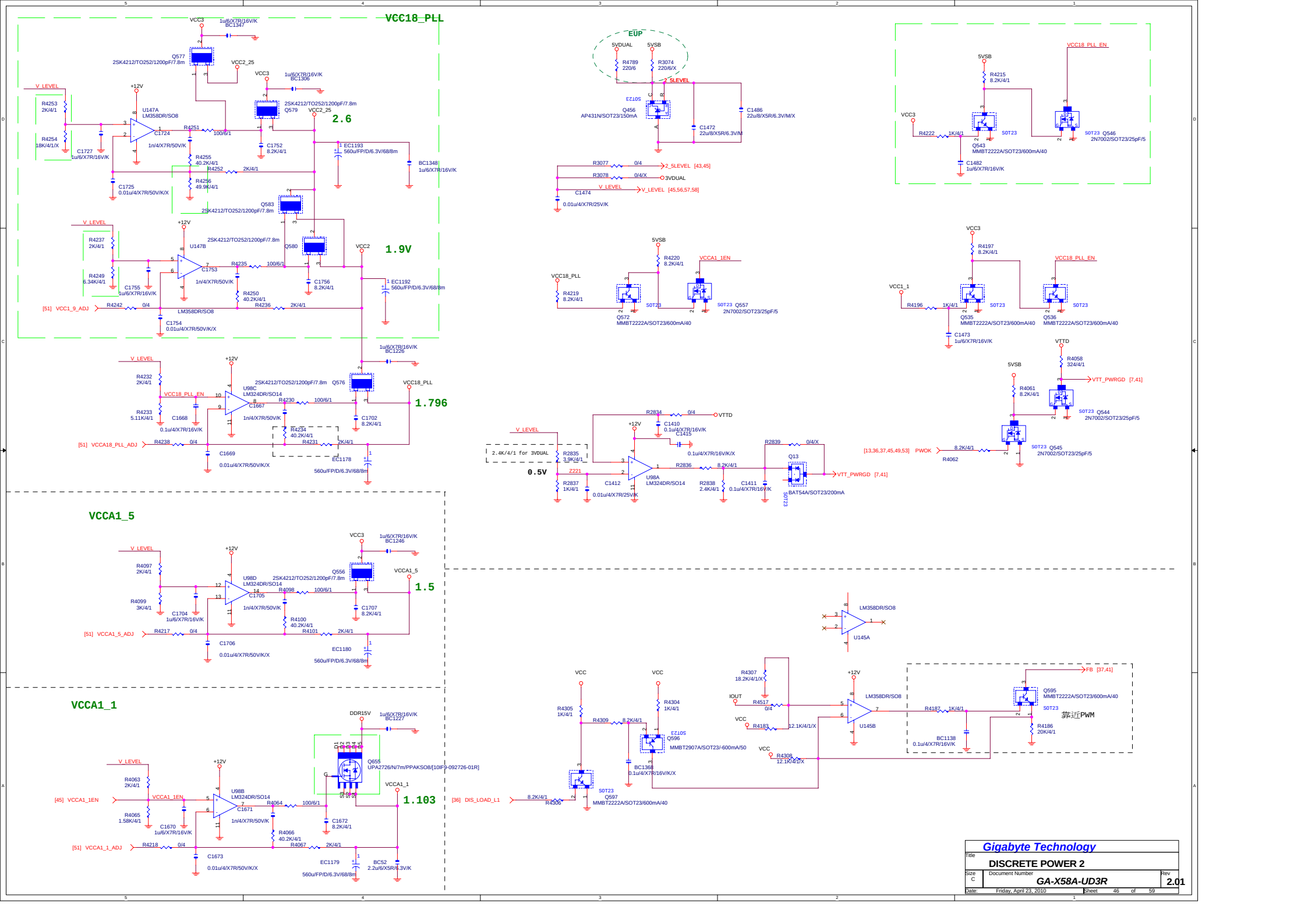
VCC18_PLL
VCCA1_5
VCCA1_1
EUP
2.6
1.9V
1.796
1.5
1.103
0.5V
Gigabyte Technology
DISCRETE POWER 2
GA-X58A-UD3R
2.01
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5V : AMD mode
0.6V~3V : VRD11 mode
0V : VRD10 mode

ISL6322G/QFN48

1.1375V * 1.6

For ISL 6312

address 1000_110x

5V: 1phase
Below 5V-0.6V : 2phase

BOTTOM PAD CONNECT TO GND THROUGH 10 VIA

For ISL 6322

Close Choke

Close MOS

POWER ISSUE

SET 2.5V when 2phase enable

15A@1.8V

I ocp=(300+100)*125uA*2/2.44m=40.8A
RC current sens=(1.2uH/2.44m)=0.1uF*R
R=6.8kohm (1.4%)
F=170K Hz(158k ohm)

INTEL VRD10 mode
SET 1.5375v [01001101]

Bit 7 Pull High for AMD 6bit mode
Reomve Bit6 when use AMD mode

For ISL6322

Title	DDR PWM_ISL6322G
Size	Custom
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5V : AMD mode
0.6V~3V : VRD11 mode
0V : VRD10 mode

ISL6322G/QFN48

0.775v * 1.47

Pu for 6322 type2 SMBus address
address 1000_111x

For ISL6312

Low to clear
6322 setup

BOTTOM PAD CONNECT TO GND
THROUGH 10 VIA

For ISL6322

5V: 1phase
Below 5V-0.6V : 2phase

SET 2.5V when 2phase enable

I ocp=(300+100)*125uA*2/2.44m=40.8A
RC current sens=(1.2uH/2.44m)=0.1uF*R
R=6.8kohm (1.4倍)
F=170K Hz(158k ohm)

Close Choke

30A@1.1V

GREEN

YELLOW

VRD10 7bit mode Rev1.02
SET 1.15v [X1111100]

Bit 7 Pull High
for AMD 6bit mode

Reomve Bit6
when use AMD mode

X 1 1 1 1 1 0 0

GIGABYTE

Title: GMCH PWM_ISL6322G
Size: Custom
Document Number: GA-X58A-UD3R
Rev: 2.01
Date: Friday, April 23, 2010
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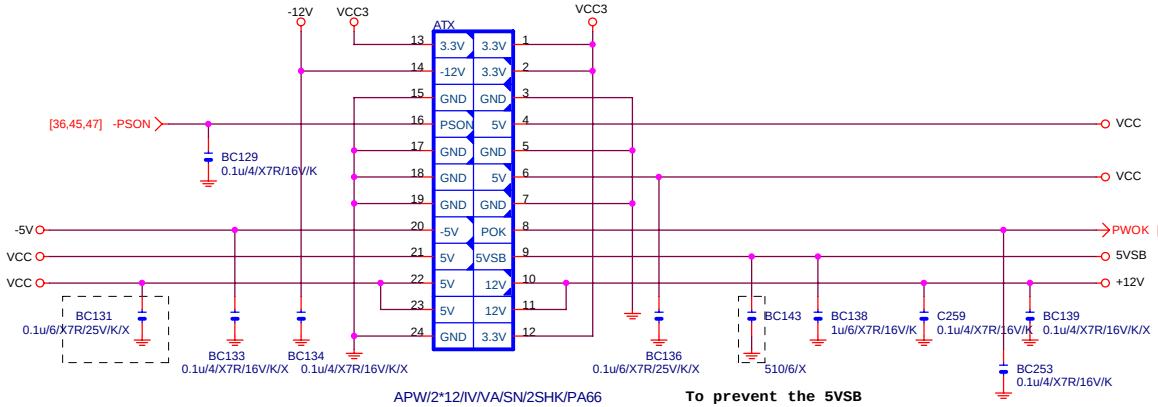
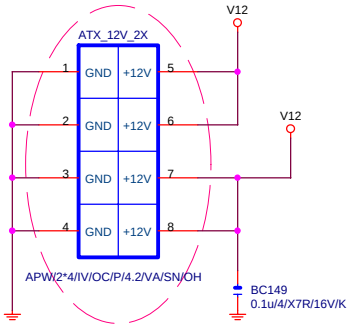
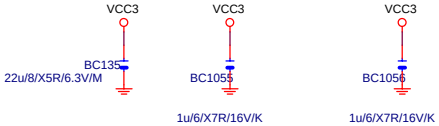
ATX POWER CONNECTOR



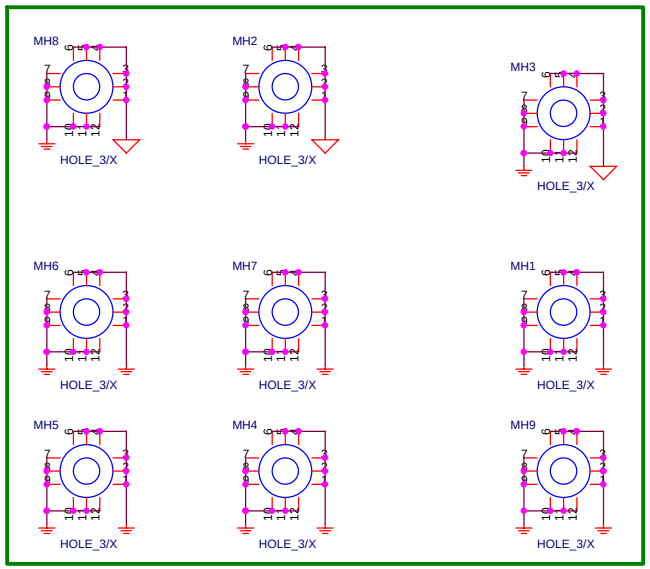
APW/2*12/IV/VA/SN/2SHK/PA66

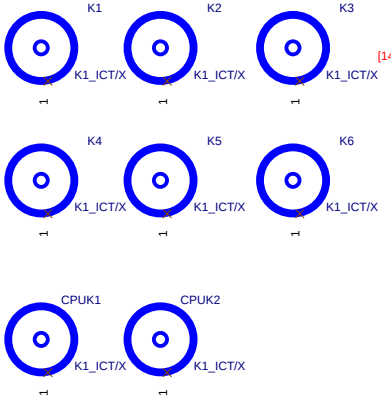
To prevent the 5VSB under loading when boot

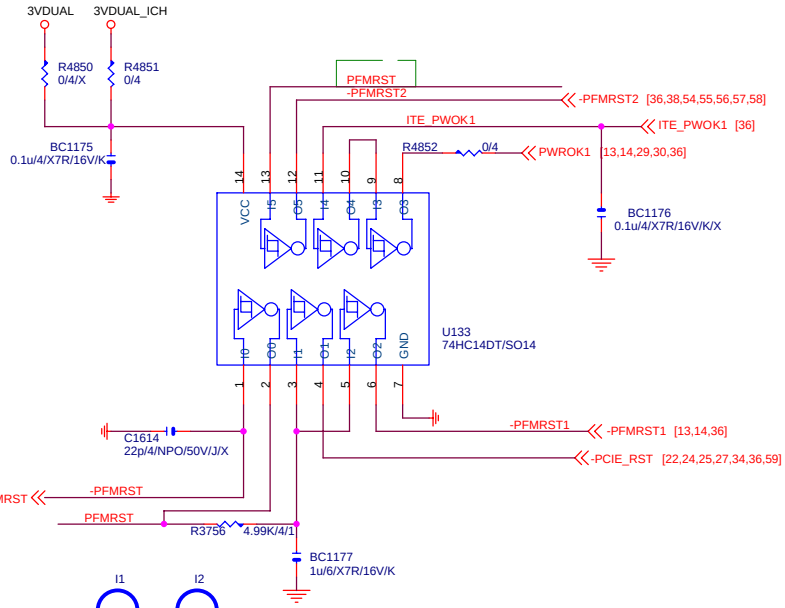


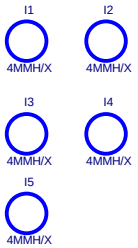


PCB 螺絲孔位置(Footprint不同)









Gigabyte Technology

Title	ATX POWER CONNECTOR	
Size B	Document Number GA-X58A-UD3R	Rev 2.01
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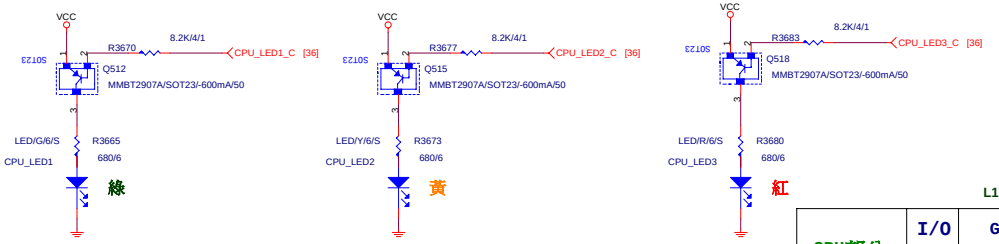
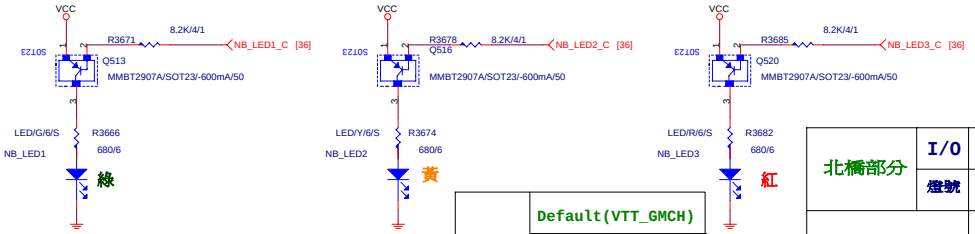
CPU Voltage



CPU_LED 選擇
Default(Vcore)
CPU PLL
VTTD

		L1	L2	L3
CPU部分	I/O	GP80	GP81	GP82
	燈號	CPU_LED1_C	CPU_LED1_C	CPU_LED1_C
CPU Vcore電壓		1.45V~1.54372V	1.55V~1.59375V	1.6V以上
VTTD		1.25~1.4V	1.42~1.55V	1.56V以上

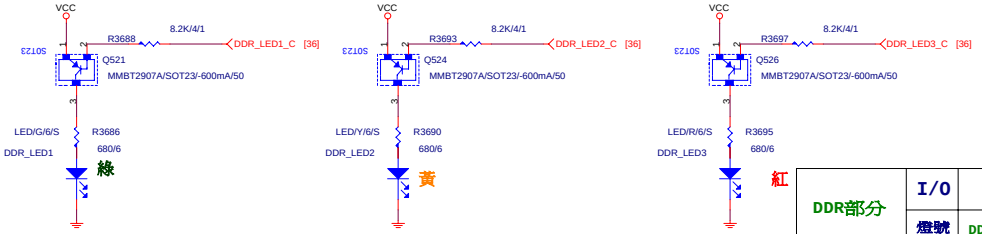
IOH Voltage



NB_LED 選擇
Default(VTT_GMCH)
VCC1_1

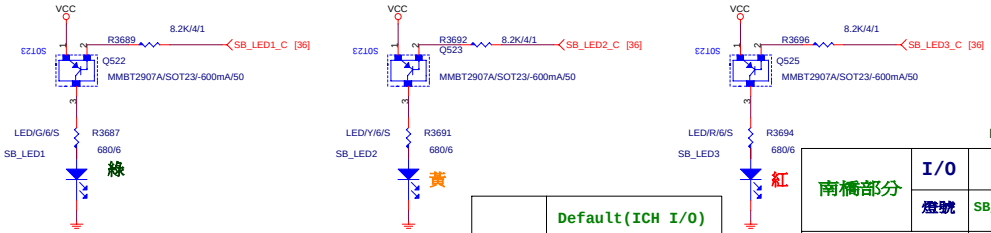
		L1	L2	L3
北橋部分	I/O	GP70	GP71	GP72
	燈號	NB_LED1_C	NB_LED2_C	NB_LED3_C
VCC1_1		1.18V~1.3V	1.32~1.5V	1.52V以上

DDR Voltage



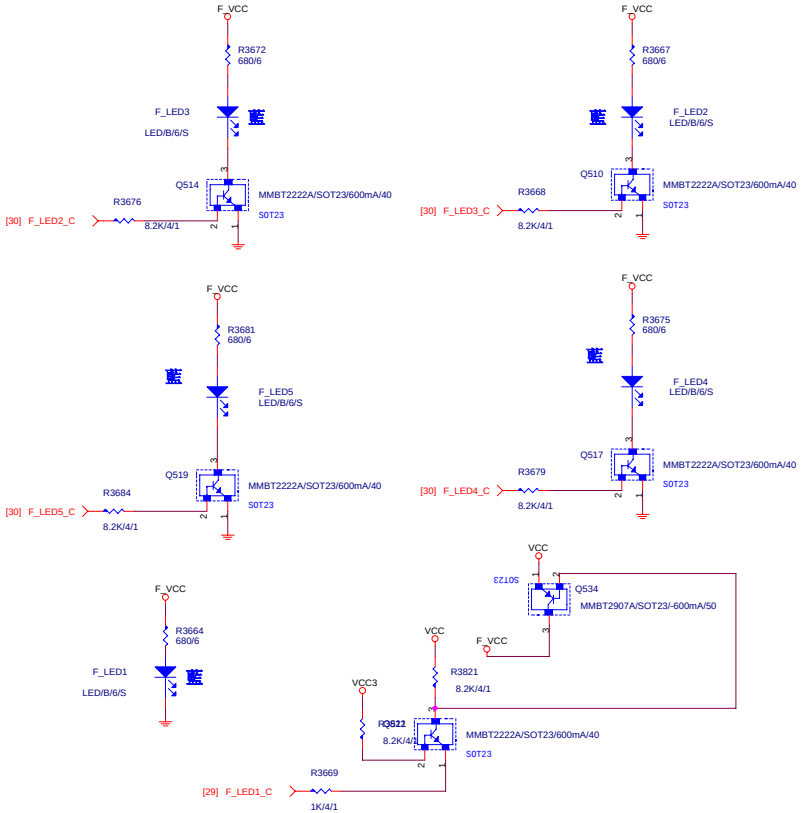
		L1	L2	L3
DDR部分	I/O	GP83	GP21	GP87
	燈號	DDR_LED1_C	DDR_LED2_C	DDR_LED3_C
DDR3電壓		1.55~1.65V	1.68~1.74V	1.76V以上

ICH Voltage



SB_LED 選擇
Default(ICH I/O)
VCC1_5
VCC1_1_ICH

		L1	L2	L3
南橋部分	I/O	GP73	GP74	GP64
	燈號	SB_LED1_C	SB_LED2_C	SB_LED3_C
VCC1_5		1.56~1.68V	1.68~1.86V	1.88V以上
VCC1_1_ICH		1.18V~1.3V	1.32~1.5V	1.52V以上



FSB LED	OFF	L1	L2	L3	L4	L5
GPIO		ICH GP57	ICH GP56	ICH GP22	ICH GP38	ICH GP21
CPU 133		145~	155~	165~	175~	185~

燈號表示方式

	L1 (LED1)	L2(LED2)	L3 (LED3)
CPU/DDR NB/SB	綠	黃	紅

Gigabyte Technology			
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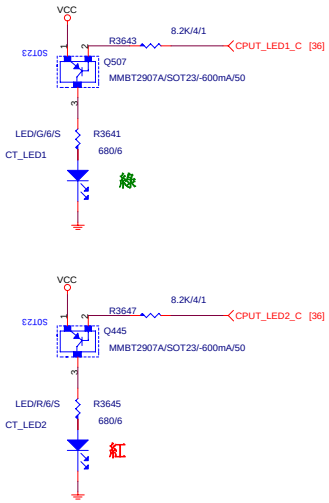
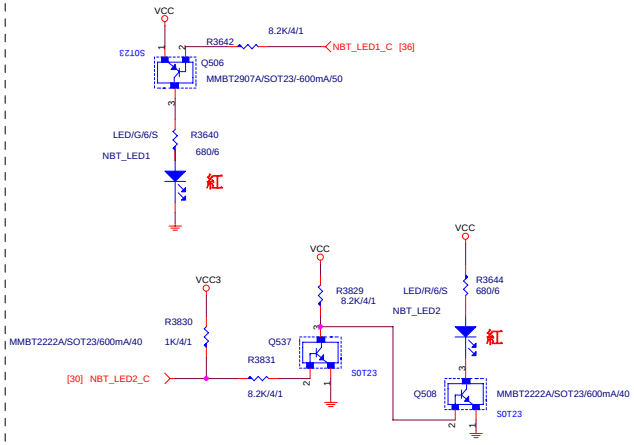
CPU溫度顯示

	I/O	Thermal
CPUT_LED1	GP63	60℃以上
CPUT_LED2	GP35	70℃以上



北橋(MCH)溫度顯示

	I/O	Thermal
NBT_LED1	GP30	60℃以上
NBT_LED2	GP31	70℃以上



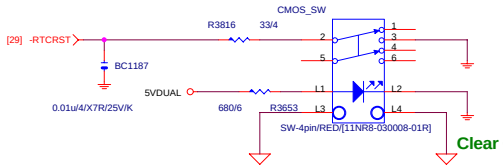
Switch 部分

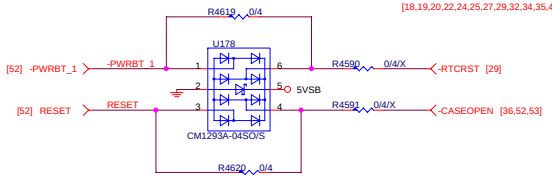
Clear CMOS 90℃料號:11NR8-030008-01R.

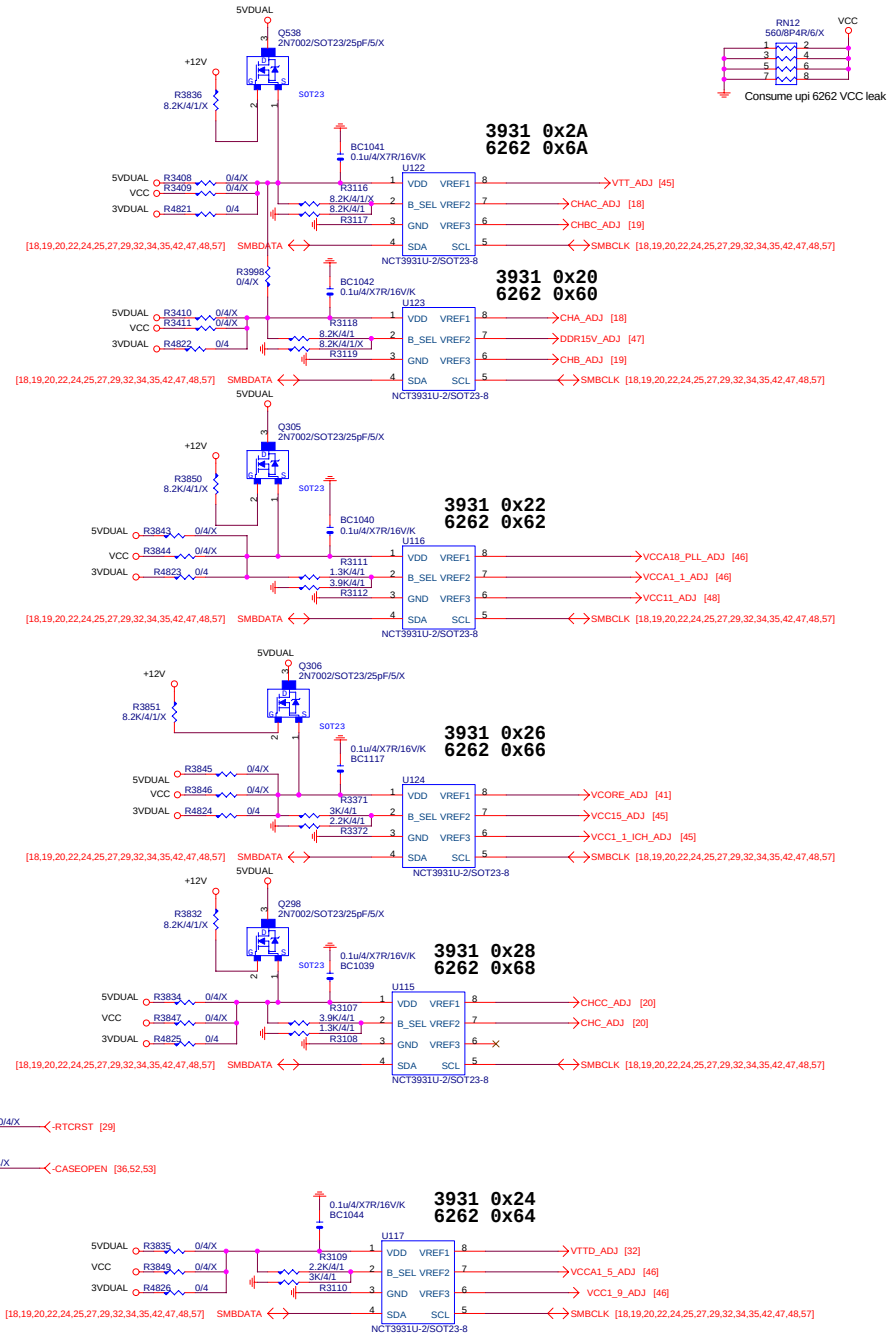
Clear CMOS 180℃料號:11NH7-060001-11R.

Power 180℃料號:11NH7-030001-21R.

Reset 180℃料號:11NH7-060001-51R.







UPI6262 Table

up6262	0X60-U123(5VDUAL)	0X62-U116(5VDUAL)	0X6A-U122(5VDUAL)	0X66-U124(5VDUAL)	0X68-U115(5VDUAL)	0X64-U117(5VDUAL)
VREF1	CHA_ADJ	VCCA18_PLL_ADJ	VTT_ADJ	VCORE_ADJ	CHCC_ADJ	VTTD_ADJ
VREF2	DDR18V_ADJ	VCCA1_1_ADJ	CHAC_ADJ	VCC15_ADJ	CHC_ADJ	VCC1_1_ICH_ADJ
VREF3	CHB_ADJ	VCC11_ADJ	CHBC_ADJ	VCCA1_5_ADJ	MCH_RAMVREF_ADJ	VCC1_9_ADJ

Gigabyte Technology

Title: LED CONTROL & UPI6262& BOTTOM

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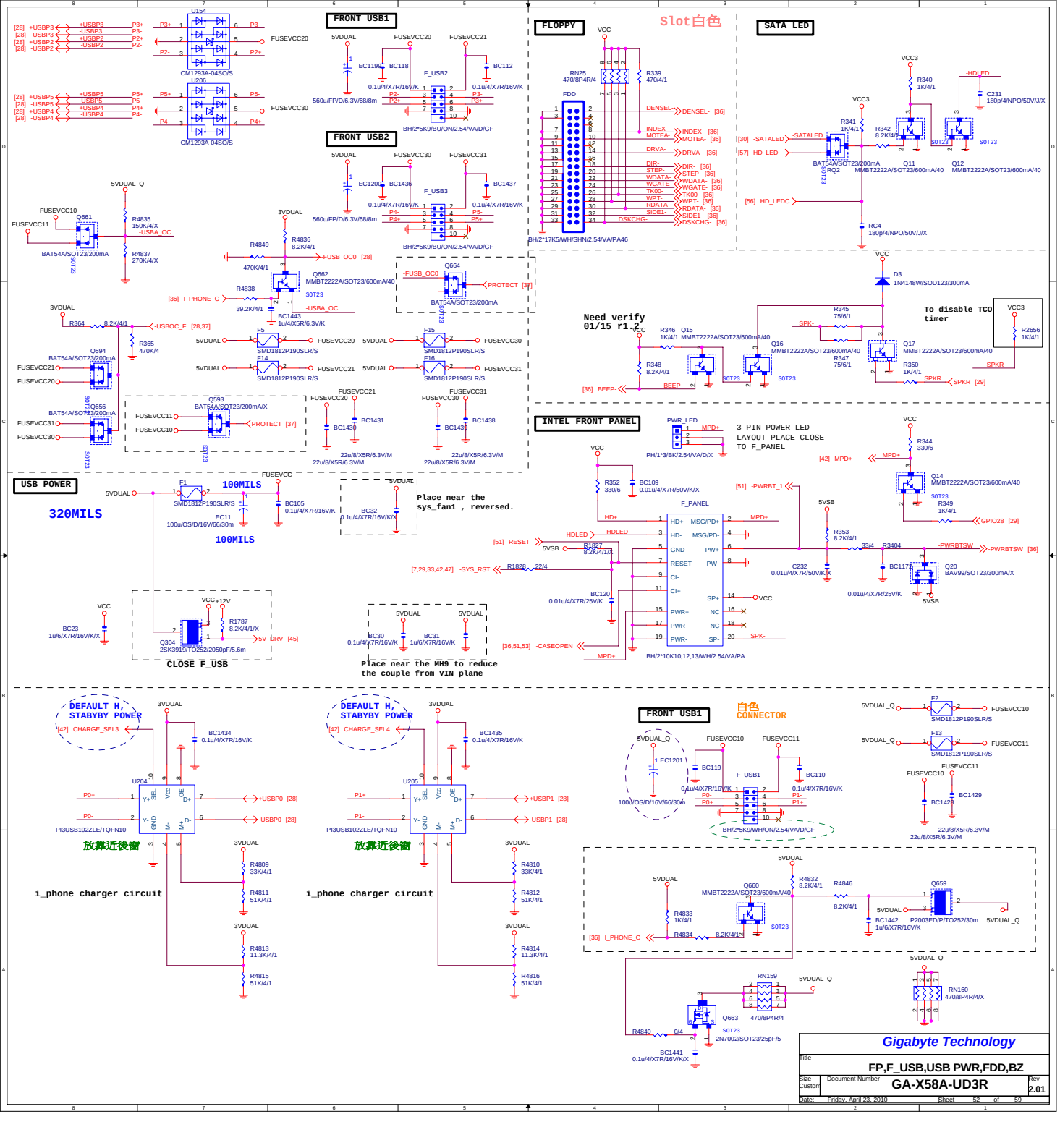
FRONT USB1
FRONT USB2
FLOPPY
Slot白色
SATA LED
INTEL FRONT PANEL
USB POWER
320MILS
100MILS
Need verify 01/15 r1.2
To disable TCO timer
3 PIN POWER LED LAYOUT PLACE CLOSE TO F_PANEL
Place near the sys_fan1 , reversed.
CLOSE F_USB
Place near the MH9 to reduce the couple from VIN plane
DEFAULT H, STABYBY POWER
放靠近後窗
i_phone charger circuit
白色 CONNECTOR
Gigabyte Technology
FP,F_USB,USB PWR,FDD,BZ
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TEMP H/W MONITOR

[36] VREF
[36] SYS_TEMP
[36] PWM_TEMP
[7,36] CPU_TEMP
R1651 10K/4/1
R269 10K/4/1
R270 30K/4/1/X
C1294 1u/6/X7R/16V/K
C1295 1u/6/X7R/16V/K
RS1 10K/1/4/S
RS5 10K/1/4/S
C1296 1n/4/X7R/50V/K/X

CPU SMART FAN

+12V
C1468 1n/4/X7R/50V/K
FOR EMI ONLY

+12V
BC1114 0.1u/4/X7R/16V/K/X
SYS_FAN3
FAN/1*3/WH/A3/PA66

+12V
R4638 0/6/SHT/X
BC1115 0.1u/4/X7R/16V/K/X
NB_FAN
FAN/1*3/WH/A3/PA66

Q62 BAV99/SOT23/300mA/X
Anti Spike
VCC

CASE OPEN

[29,31] RTCVDD
R279 1M/4
-CASEOPEN
-CASEOPEN [36,51,52]
C1297 0.01u/4/X7R/25V/K

Case Open Circuits

[36] FANPWM1
R2604 0/4S/X
VCC3 VCC
R2601 1K/4/1
CPUFAN_VCC
R1744 1K/4/1/X
R1746 22K/4
R385 22K/4
BC115 1u/6/X7R/16V/K
R391 8.2K/4/1
U89B LM358DR/SO8
BC114 0.1u/4/X7R/16V/K
R1743 8.2K/4/1
Q21 PA102FDG/TO252/115m/430
CE2 100u/OS/D/16V/66/30m
CPUFAN_VCC
R1592 0/8/X
[36] FANPWM3
R381 100/6/1
R378 3.3K/4/1
R379 15K/4/1
R390 0/4S/X
R1745 6.2K/4/1
C1331 0.047u/4/X7R/16V/K
FANIO1 [36]
CPU_FAN
FAN/1*4/WH/A3/PA66

VOLTAGE-- H/W MONITOR

VCORE R366 8.2K/4/1
DDR15V R367 8.2K/4/1
VCC3 R3797 8.2K/4/1/X R368 8.2K/4/1
+12V R3798 8.2K/4/1/X R369 24K/4/1
VCC11_IOUT [42,48]
DDR_IOUT [42,47]
CURRENT_OUT_V [37]
CUR_DETECT
R370 10K/4/1
R2922 10K/4/1
[36] VIN0
[36] VIN1
[36] VIN2
[36] VIN5
[36] VIN4
[36] VIN6
C1623 1u/6/X7R/16V/K
C1624 1u/6/X7R/16V/K
R2576 8.2K/4/1
C1637
C1476 1u/6/X7R/16V/K
1u/6/X7R/16V/K

SYS FAN

+12V
R1814 3.3K/4/1
R1815 0/4S/X
R2639
R2624 6.2K/4/1
15K/4/1
C1351 0.047u/4/X7R/16V/K
FANIO3 [36]
PWR_FAN
FAN/1*3/WH/A3/PA66

+12V
R3039 3.3K/4/1
R3041
R3040 0/4S/X
R3043 6.2K/4/1
15K/4/1
C1454 0.047u/4/X7R/16V/K
FANIO4 [36]
SYS_FAN1
FAN/1*3/WH/A3/PA66

Linear SYS_FAN

SYSFAN_VCC
VCC VCC3
R2494 1K/4/1/X
R2599 1K/4/1
R2491 22K/4
R2498 8.2K/4/1
SFAN_OP+
R2600 22K/4
[36] FANPWM2
R2603 0/4S/X
BC726 1u/6/X7R/16V/K
U89A LM358DR/SO8
R2670 8.2K/4/1
Q344 PA102FDG/TO252/115m/430
SYSFAN_VCC
EC173 100u/OS/D/16V/66/30m
VCC
R2625 8.2K/4/1
R2489 0/8/X
R2488 3.3K/4/1
R2626 0/4S/X
R2490 15K/4/1
R2493 6.2K/4/1
C1364 0.047u/4/X7R/16V/K
FANIO2 [36]
SYS_FAN2
FAN/1*4/WH/A3/PA66

KB/MS

[36] MCLK
[36] MDAT
[36] KCLK
[36] KDAT
RN138 82/8P4R/6
MSCLK
MSDATA
KBCLK
KBDATA
FUSEVCC
RN29 8.2K/8P4R/6
CN1 180P/8P4C/6/NPO/50V/K
KB_MS
MS
KB
KB/MS/6P/PC99/OS/RA/D/2
BC108 0.1u/4/X7R/16V/K
BC258 0.1u/4/X7R/16V/K
U180 AOZ8902CIL/SOT23-6/X
For EMI

R3799 0/4
PWOK [13,36,37,45,46,49]
VCC3
R3800 8.2K/4/1/X
[36] VIN3
VIN3
Q532 BAT54A/SOT23/200mA/X
SOT23

R4257 0/4S/X

Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
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PCIE-1G LAN

XTAL2:外部CLK IN

RSET需LAYOUT GND GUARD

FOR DSM MODE
(DEEP SLUMBER MODE)

ENABLE SW

RTL8111E-VB-GR/QFN48

CLOSE LAN CHIP

P35-152-19W9

Dual Color LED

Single Color LED

(CLOSE LU1)

(PIN3,6,9,13,29,41,45)

CLOSE LL1

(PIN21)

USB3+RJ45[11NR6-702009-K1R_11NR6-702009-K2R]

CM1293A-04SO/S

Gigabyte Technology	
Title	REALTEK RTL8111E
Size: Custom	Document Number: GA-X58A-UD3R
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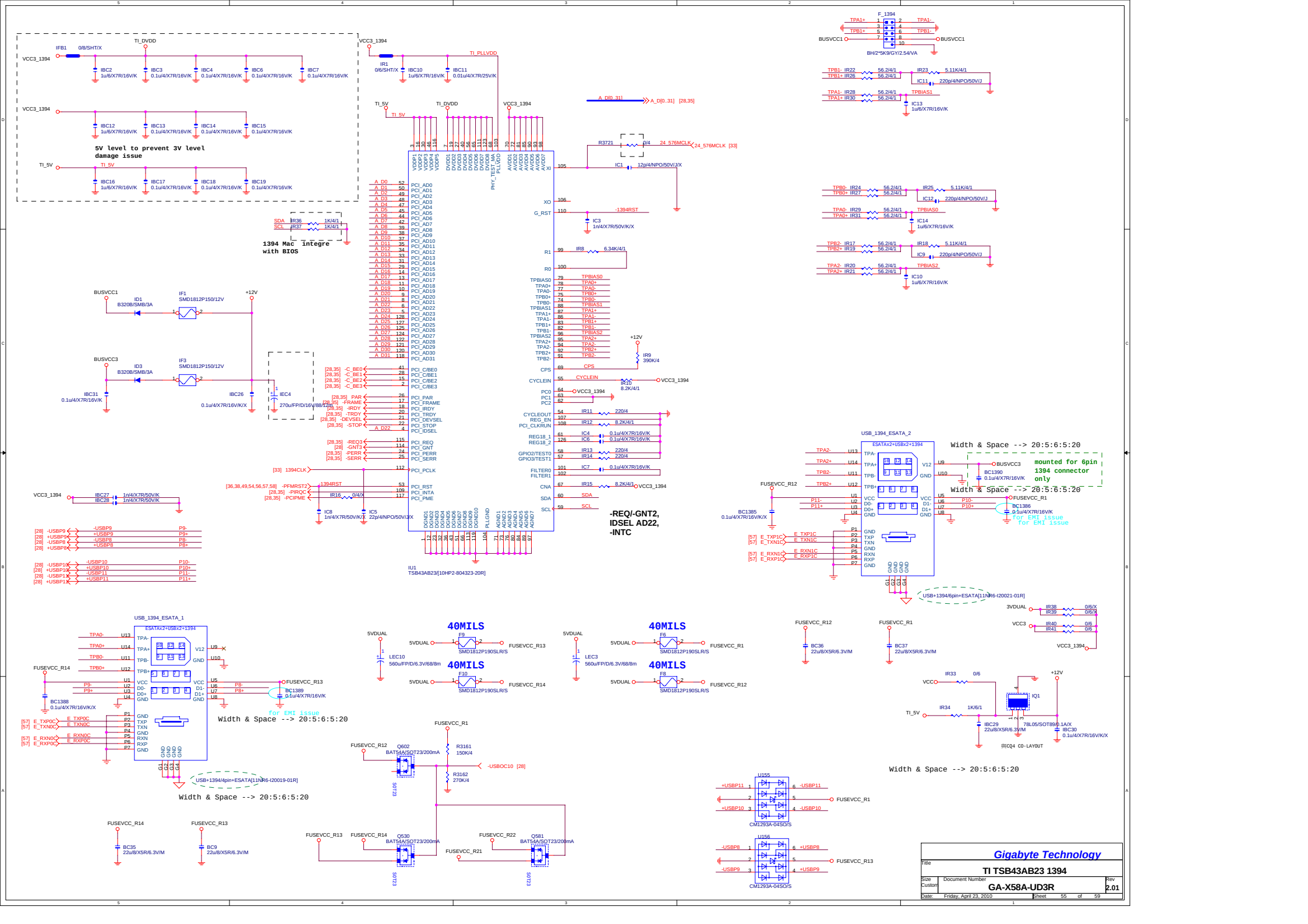
TI_DVDD
VCC3_1394
IFB1
0/8/SHT/X
IBC2 1u/6/X7R/16V/K
IBC3 0.1u/4/X7R/16V/K
IBC4 0.1u/4/X7R/16V/K
IBC6 0.1u/4/X7R/16V/K
IBC7 0.1u/4/X7R/16V/K
IBC12 1u/6/X7R/16V/K
IBC13 0.1u/4/X7R/16V/K
IBC14 0.1u/4/X7R/16V/K
IBC15 0.1u/4/X7R/16V/K
5V level to prevent 3V level damage issue
TI_5V
IBC16 1u/6/X7R/16V/K
IBC17 0.1u/4/X7R/16V/K
IBC18 0.1u/4/X7R/16V/K
IBC19 0.1u/4/X7R/16V/K
TI_PLLVDD
IR1 0/6/SHT/X
IBC10 1u/6/X7R/16V/K
IBC11 0.01u/4/X7R/25V/K
A_D[0..31]
R3721 0/4 24_576MCLK
IC1 12p/4/NPO/50V/J/X
IC3 1n/4/X7R/50V/K/X
-1394RST
IR8 6.34K/4/1
TPBIAS0
TPA0+
TPA0-
TPB0+
TPB0-
TPBIAS1
TPA1+
TPA1-
TPB1+
TPB1-
TPBIAS2
TPA2+
TPA2-
TPB2+
TPB2-
IR9 390K/4
CPS
CYCLEIN
IR10 8.2K/4/1
PC0
PC1
PC2
CYCLEOUT
REG_EN
PCI_CLKRUN
IR11 220/4
IR12 8.2K/4/1
REG18_1
REG18_2
IC4 0.1u/4/X7R/16V/K
IC6 0.1u/4/X7R/16V/K
GPIO2/TEST0
GPIO3/TEST1
IR13 220/4
IR14 220/4
FILTER0
FILTER1
IC7 0.1u/4/X7R/16V/K
CNA
IR15 8.2K/4/1
SDA
SCL
PCI_AD0
PCI_AD1
PCI_AD2
PCI_AD3
PCI_AD4
PCI_AD5
PCI_AD6
PCI_AD7
PCI_AD8
PCI_AD9
PCI_AD10
PCI_AD11
PCI_AD12
PCI_AD13
PCI_AD14
PCI_AD15
PCI_AD16
PCI_AD17
PCI_AD18
PCI_AD19
PCI_AD20
PCI_AD21
PCI_AD22
PCI_AD23
PCI_AD24
PCI_AD25
PCI_AD26
PCI_AD27
PCI_AD28
PCI_AD29
PCI_AD30
PCI_AD31
PCI_C/BE0
PCI_C/BE1
PCI_C/BE2
PCI_C/BE3
PCI_PAR
PCI_FRAME
PCI_IRDY
PCI_TRDY
PCI_DEVSEL
PCI_STOP
PCI_IDSEL
PCI_REQ
PCI_GNT
PCI_PERR
PCI_SERR
PCI_PCLK
PCI_RST
PCI_INTA
PCI_PME
IU1
TSB43AB23/[10HP2-804323-20R]
-REQ/-GNT2, IDSEL AD22, -INTC
1394 Mac integre with BIOS
SDA IR36 1K/4/1
SCL IR37 1K/4/1
BUSVCC1
ID1 B320B/SMB/3A
IF1 SMD1812P150/12V
+12V
BUSVCC3
ID3 B320B/SMB/3A
IF3 SMD1812P150/12V
IBC31 0.1u/4/X7R/16V/K
IBC26 0.1u/4/X7R/16V/K/X
IEC4 270u/FP/D/16V/8/12m
IC8 1n/4/X7R/50V/K/X
IC5 22p/4/NPO/50V/J/X
IBC27 1n/4/X7R/50V/K
IBC28 1n/4/X7R/50V/K
F_1394
BH/2*5K9/GY/2.54/VA
TPB1- IR22 56.2/4/1
TPB1+ IR26 56.2/4/1
IR23 5.11K/4/1
IC11 220p/4/NPO/50V/J
TPBIAS1
TPA1- IR28 56.2/4/1
TPA1+ IR30 56.2/4/1
IC13 1u/6/X7R/16V/K
TPB0- IR24 56.2/4/1
TPB0+ IR27 56.2/4/1
IR25 5.11K/4/1
IC12 220p/4/NPO/50V/J
TPBIAS0
TPA0- IR29 56.2/4/1
TPA0+ IR31 56.2/4/1
IC14 1u/6/X7R/16V/K
TPB2- IR17 56.2/4/1
TPB2+ IR19 56.2/4/1
IR18 5.11K/4/1
IC9 220p/4/NPO/50V/J
TPA2- IR20 56.2/4/1
TPA2+ IR21 56.2/4/1
TPBIAS2
IC10 1u/6/X7R/16V/K
USB_1394_ESATA_2
ESATAx2+USBx2+1394
Width & Space --> 20:5:6:5:20
mounted for 6pin 1394 connector only
BC1390 0.1u/4/X7R/16V/K
BC1386 0.1u/4/X7R/16V/K
for EMI issue
FUSEVCC_R12
FUSEVCC_R1
BC1385 0.1u/4/X7R/16V/K/X
USB+1394/6pin+ESATA[11NR6-I20021-01R]
USB_1394_ESATA_1
BC1388 0.1u/4/X7R/16V/K/X
BC1389 0.1u/4/X7R/16V/K
FUSEVCC_R14
FUSEVCC_R13
USB+1394/4pin+ESATA[11NR6-I20019-01R]
40MILS
F9 SMD1812P190SLR/S
F10 SMD1812P190SLR/S
F6 SMD1812P190SLR/S
F8 SMD1812P190SLR/S
LEC10 560u/FP/D/6.3V/68/8m
LEC3 560u/FP/D/6.3V/68/8m
BC36 22u/8/X5R/6.3V/M
BC37 22u/8/X5R/6.3V/M
3VDUAL
VCC3
VCC3_1394
IR38 0/6/X
IR39 0/6/X
IR40 0/6
IR41 0/6
IR33 0/6
IR34 1K/6/1
IQ1
IBC29 22u/8/X5R/6.3V/M
78L05/SOT89/0.1A/X
IBC30 0.1u/4/X7R/16V/K/X
供CQ4 CO-LAYOUT
R3161 150K/4
R3162 270K/4
-USBOC10 [28]
Q602 BAT54A/SOT23/200mA
Q530 BAT54A/SOT23/200mA
Q581 BAT54A/SOT23/200mA
SOT23
U155
U156
CM1293A-04SO/S
Gigabyte Technology
TI TSB43AB23 1394
GA-X58A-UD3R
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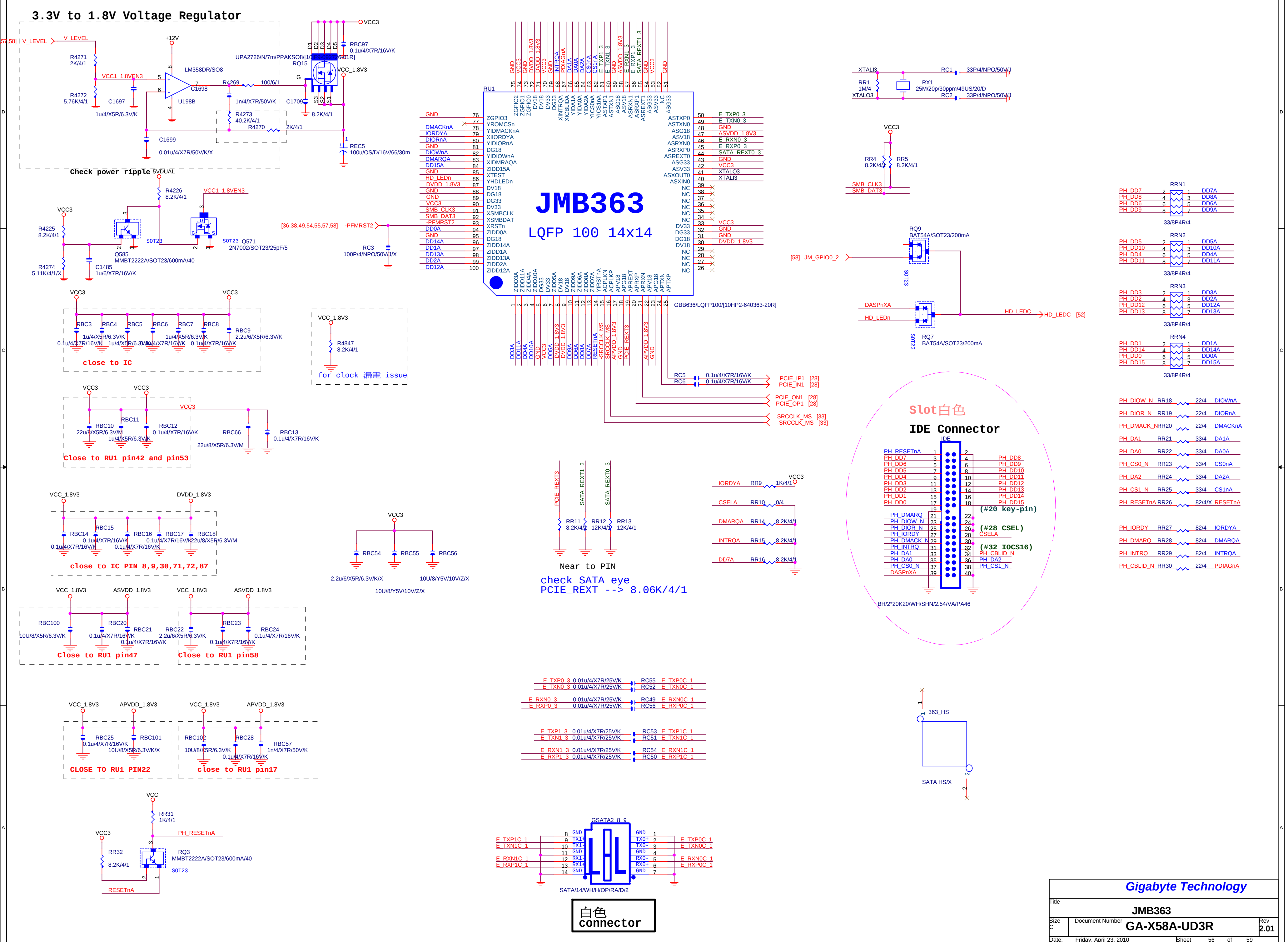

Gigabyte Technology

Title	JMB363
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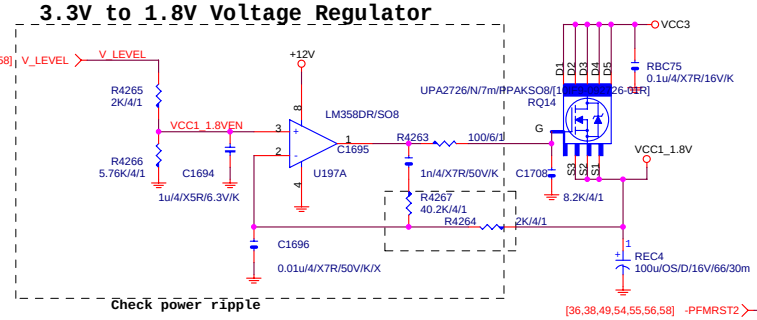
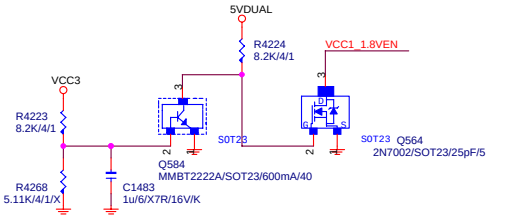
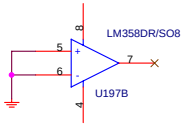
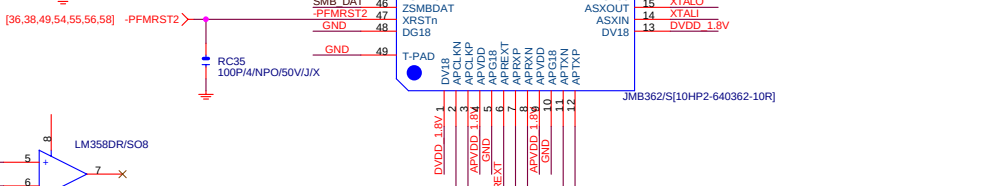
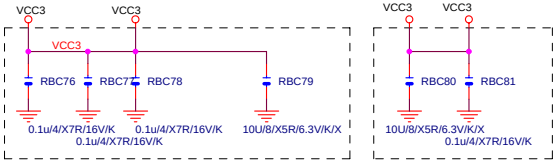
3.3V to 1.8V Voltage Regulator

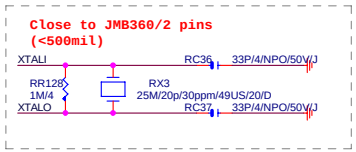


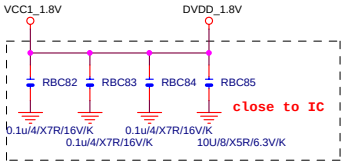


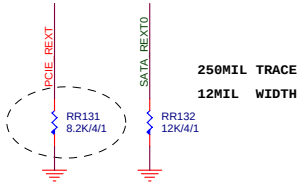


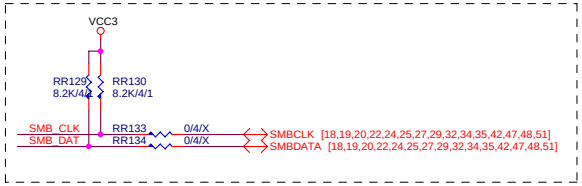


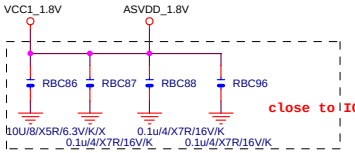


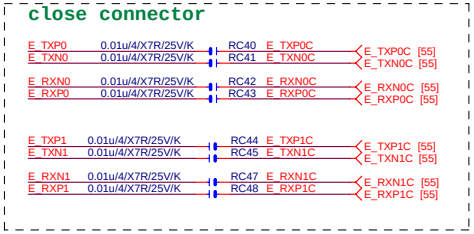


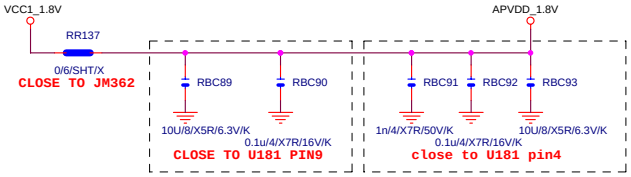












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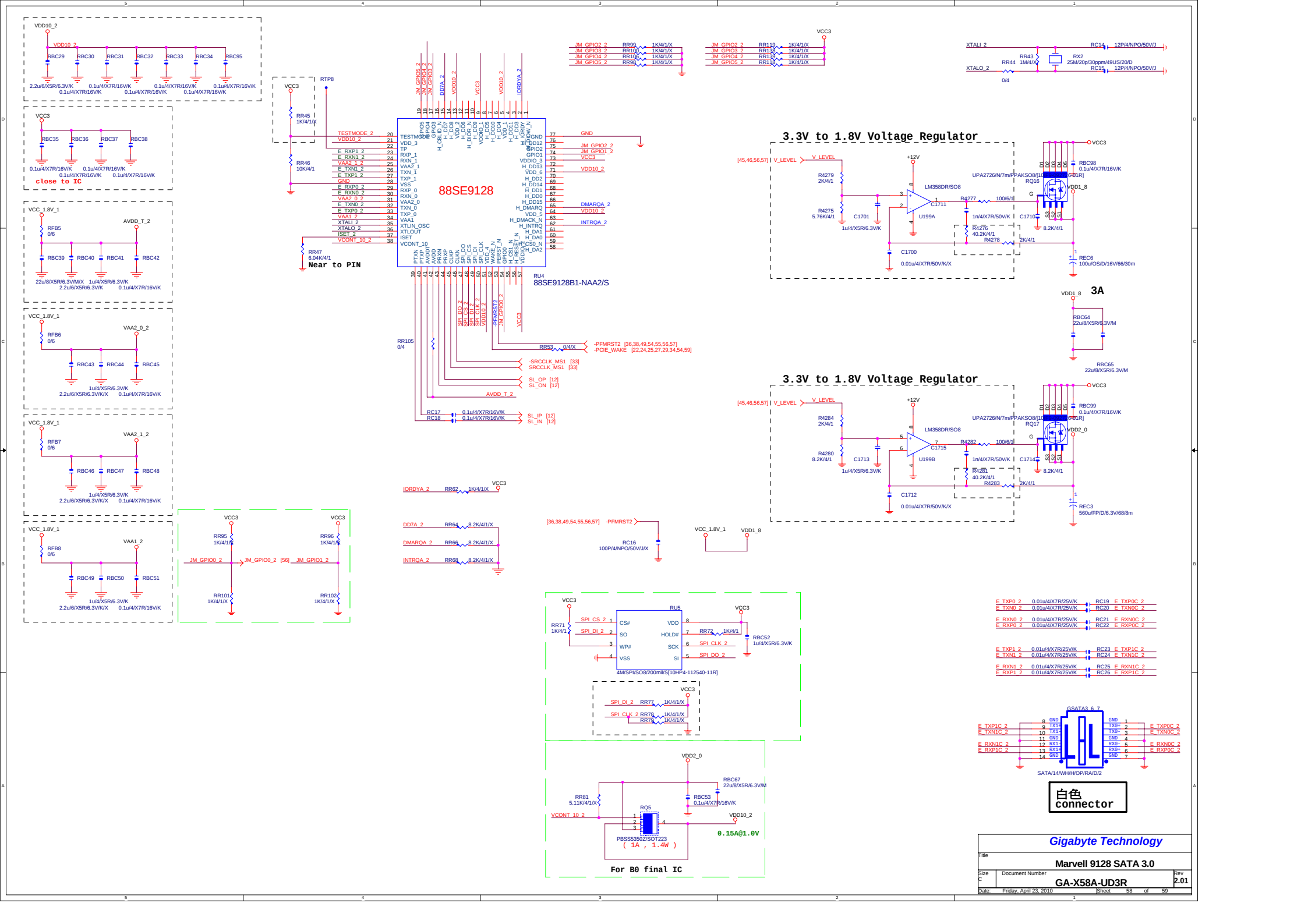
88SE9128
88SE9128B1-NAA2/S
RU4
Near to PIN
3.3V to 1.8V Voltage Regulator
3A
3.3V to 1.8V Voltage Regulator
close to IC
For B0 final IC
0.15A@1.0V
白色
connector
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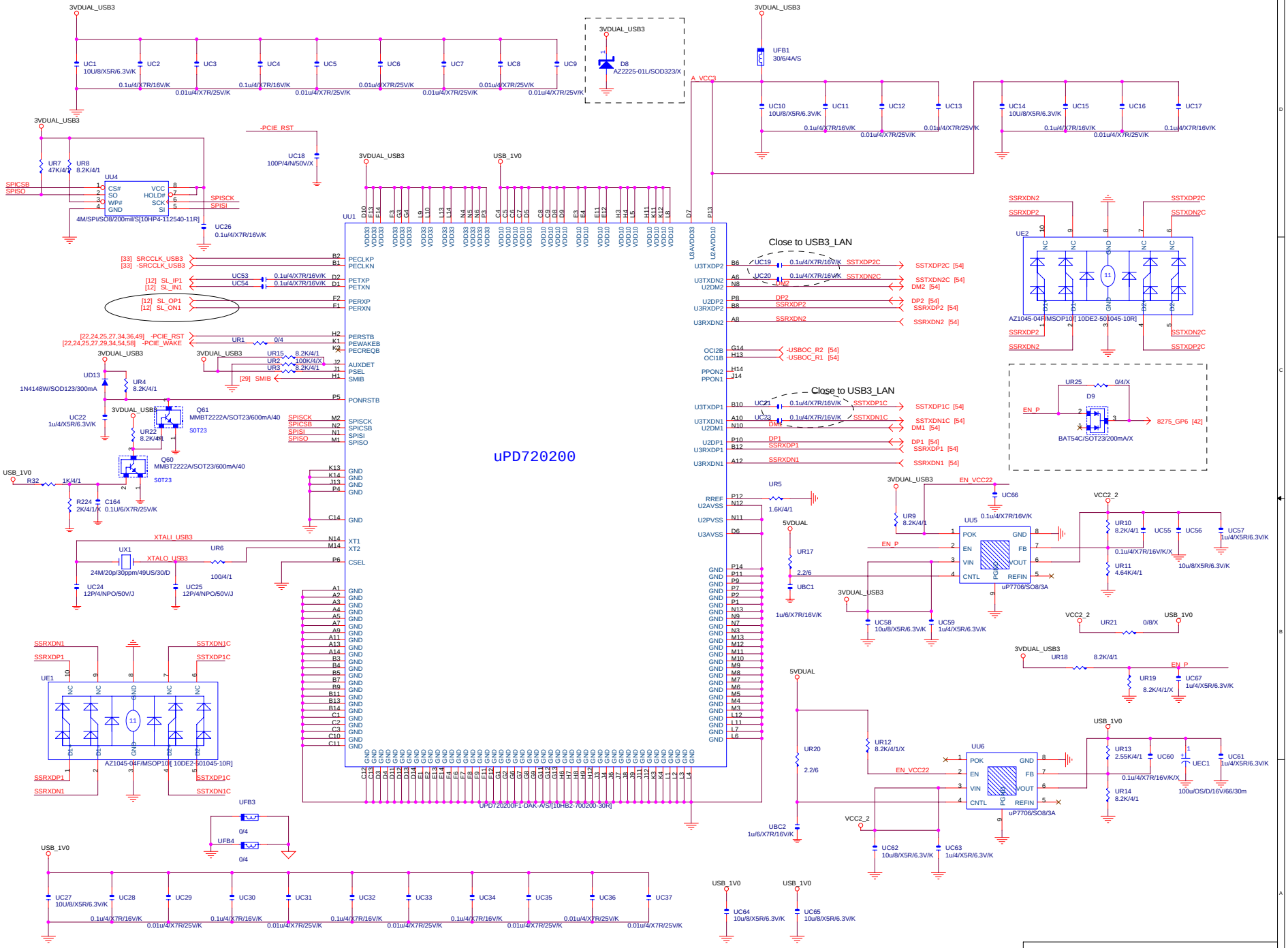

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