GA-F2A88XM-D3H

Revision : 3.02

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		+3.3V_RUN=VCC3
		+3.3V_ALW=3VDUAL

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Title: COVER SHEET

Size	Document Number	Rev
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Model Name:GA-F2A88XM-D3H

Component value change history

Version: 3.02

P-Code: U12061-0

Date	Change Item		Reason
2012.05.25	0.1 New BOM Release.	PCB: 0.1	Modify from GA-A75M-UD2H Rev2.0
2012.07.04	1.0A BOM Release.	PCB: 1.0	PM change spec to 4+2 phase ,ISL6377
2012.08.10	1.0B BOM Release.	PCB: 1.01	Colay HDMI_SPDIF connector for 清庫存 ,Mask SATA3_6/7 connector
2012.08.23	1.0C BOM Release.	PCB: 1.01	Change U1 A75 Rev.A13 => Rev.A14 ,轉 P-BOM
2012.09.12	1.0A BOM Release.	PCB: 1.0	Change A85X chipset ,support 8 SATA port
2012.09.19	1.0B BOM Release.	PCB: 1.01	Mask OPTICAL connector
2012.09.21	1.0G BOM Release.	PCB: 1.01	Update BIOS size 32Mb to 64Mb for RAID5 raidrom use
2012.10.25	1.1A P-BOM Release.	PCB: 1.1	HDMI_SPDIF Connector 庫存清完 , 改回單獨 HDMI & OPTICAL connector
2012.12.18	1.1B MP BOM Release.	PCB:1.1	USB_LAN (RU9):11NR6-702009-96R ,使用RU9 USB_LAN可省略LAESD1保護LED
2013.04.11	1.2A E- BOM Release.	PCB:1.2	Update FM2CPU footprint ,改咖啡黑PCB ,slot/connector配色
2013.04.29	1.2B P- BOM Release.	PCB:1.2	Fixed 串接兩層 PS/2 KVM switch issue ,R51,R52 改 8.2k
2013.06.26	3.0A E-BOM Release.	PCB:3.0	Modify Colay FM2+ ,IT8620 ,FAN NCT3941S-A
2013.08.12	3.0B P-BOM Release.	PCB:3.01	CPU_FAN change to White color ,PCIEx16 cap change to 0.22uF , modify VDDA25 分壓阻值
2013.12.11	3.0C P-BOM Release.	PCB:3.01	CU1 ALC887-VD2 change to 加強版 ,Remove CD1
2014.06.26	3.0D P-BOM Release.	PCB:3.02	SATA MLCC remove

Circuit or PCB layout change for next version

Date	Change Item	Reason
2012.05.24	Rev 0.1 Gerber-out	Modify from GA-A75M-UD2H Rev2.0
2012.07.03	Rev 1.0 Gerber-out	PM change spec to 4+2 phase ,ISL6377
2012.08.09	Rev 1.01 Gerber-out	Colay HDMI_SPDIF connector for 清庫存 ,Mask SATA3_6/7 connector
2012.09.11	Rev 1.0 Gerber-out	Change A85X chipset ,support 8 SATA port
2012.09.18	Rev 1.01 Gerber-out	Mask OPTICAL connector
2012.10.25	Rev 1.1 Gerber-out	HDMI_SPDIF Connector 庫存清完 , 改回單獨 HDMI & OPTICAL connector
2013.04.10	Rev 1.2 Gerber-out	Update FM2CPU footprint ,改咖啡黑PCB ,slot/connector配色 , DDR layout 貼 F2A85X-UP4-R102 走線
2013.06.25	Rev 3.0 Gerber-out	Modify Colay FM2+ ,IT8620 ,FAN NCT3941S-A
2013.08.09	Rev 3.01 Gerber-out	Modify HDMI ,F_PANEL footprint ,Change SIO GP25 ,VDDSPD colay fuse ,PCB 文字面修改
2014.06.26	Rev 3.02 Gerber-out	SATA remove MLCC, 改為 short/mask *32pcs

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Title: BOM & PCB HISTORY

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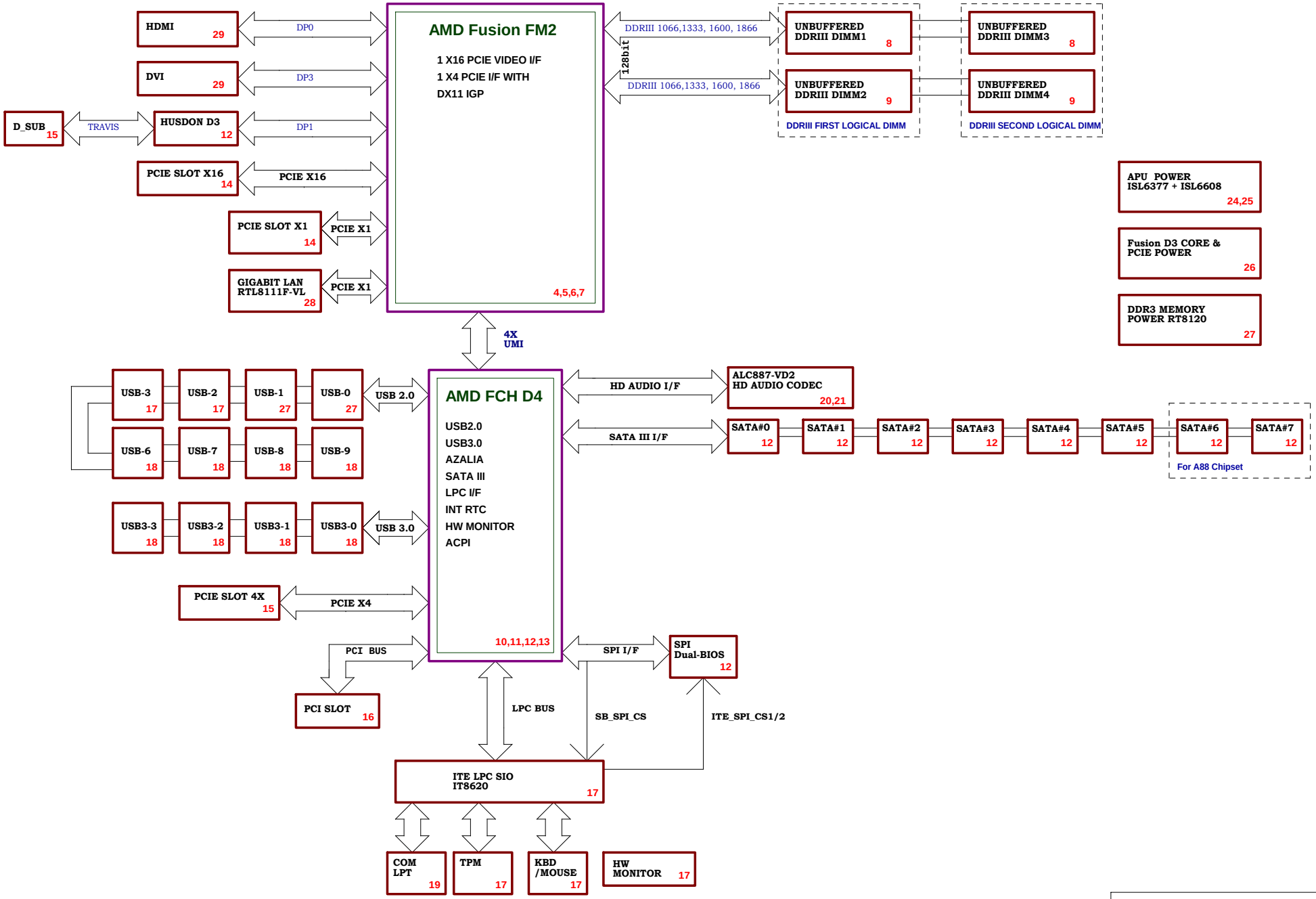

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Title: BLOCK DIAGRAM		
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FM2R2B

MEMORY CHANNELA

8 MAAA[0..15]

MAAA0 V27
MAAA1 P27
MAAA2 R25
MAAA3 P26
MAAA4 R24
MAAA5 P24
MAAA6 P23
MAAA7 N26
MAAA8 N23
MAAA9 M25
MAAA10 V24
MAAA11 N25
MAAA12 M24
MAAA13 Y23
MAAA14 L27
MAAA15 L24

8 SBAA0 SBAA0 W26
8 SBAA1 SBAA1 V25
8 SBAA2 SBAA2 L26

DMA0 E17
DMA1 H21
DMA2 F25
DMA3 G29
DMA4 AE29
DMA5 AE25
DMA6 AG21
DMA7 AF17

DQSA0 H17
-DQSA0 G17
DQSA1 F21
-DQSA1 E21
DQSA2 G26
-DQSA2 G25
DQSA3 F30
-DQSA3 E30
DQSA4 AE28
-DQSA4 AE29
DQSA5 AG24
-DQSA5 AG25
DQSA6 AE20
-DQSA6 AF21
DQSA7 AE16
-DQSA7 AD16

8 DCLKA0 DCLKA0 U27
8 -DCLKA0 -DCLKA0 U26
8 DCLKA1 DCLKA1 T23
8 -DCLKA1 -DCLKA1 U23
8 DCLKA2 DCLKA2 T25
8 -DCLKA2 -DCLKA2 T26
8 DCLKA3 DCLKA3 R27
8 -DCLKA3 -DCLKA3 R28

8 CKEA0 CKEA0 L23
8 CKEA1 CKEA1 K26

8 MODT_A0 MODT_A0 AA24
8 MODT_A1 MODT_A1 AC27
8 MODT_A2 MODT_A2 AA25
8 MODT_A3 MODT_A3 AC26

8 -CSA0 -CSA0 Y27
8 -CSA1 -CSA1 AB26
8 -CSA2 -CSA2 W23
8 -CSA3 -CSA3 AB25

8 -SRASA -SRASA W25
8 -SCASA -SCASA Y24
8 -SWEA -SWEA Y26

8 MEM_MA_RST- MEM_MA_RST- J25
8 MEM_MA_HOT- MEM_MA_HOT- U24

APU_M_VREF K22
MA_VREFDQ E15
MA_ZVDD J24

Place within 1" of APU.

DDR15V AR23 39.2/4/1 MA_ZVDD
DDR15V AR48 1K/4/1 MEM_MA_HOT-

MA_DATA0 F16 MDA0
MA_DATA1 G16 MDA1
MA_DATA2 H18 MDA2
MA_DATA3 F19 MDA3
MA_DATA4 F15 MDA4
MA_DATA5 H15 MDA5
MA_DATA6 E18 MDA6
MA_DATA7 F18 MDA7

MA_DATA8 G20 MDA8
MA_DATA9 H20 MDA9
MA_DATA10 E23 MDA10
MA_DATA11 G23 MDA11
MA_DATA12 G19 MDA12
MA_DATA13 E20 MDA13
MA_DATA14 F22 MDA14
MA_DATA15 G22 MDA15

MA_DATA16 F24 MDA16
MA_DATA17 H24 MDA17
MA_DATA18 E27 MDA18
MA_DATA19 F27 MDA19
MA_DATA20 H23 MDA20
MA_DATA21 E24 MDA21
MA_DATA22 E26 MDA22
MA_DATA23 H26 MDA23

MA_DATA24 G28 MDA24
MA_DATA25 E29 MDA25
MA_DATA26 H29 MDA26
MA_DATA27 H30 MDA27
MA_DATA28 H27 MDA28
MA_DATA29 F28 MDA29
MA_DATA30 F31 MDA30
MA_DATA31 G31 MDA31

MA_DATA32 AD30 MDA32
MA_DATA33 AF30 MDA33
MA_DATA34 AG27 MDA34
MA_DATA35 AF27 MDA35
MA_DATA36 AD31 MDA36
MA_DATA37 AE31 MDA37
MA_DATA38 AG28 MDA38
MA_DATA39 AD28 MDA39

MA_DATA40 AF26 MDA40
MA_DATA41 AD25 MDA41
MA_DATA42 AF23 MDA42
MA_DATA43 AE23 MDA43
MA_DATA44 AD27 MDA44
MA_DATA45 AE26 MDA45
MA_DATA46 AE24 MDA46
MA_DATA47 AD24 MDA47

MA_DATA48 AG22 MDA48
MA_DATA49 AD21 MDA49
MA_DATA50 AE19 MDA50
MA_DATA51 AG19 MDA51
MA_DATA52 AD22 MDA52
MA_DATA53 AE22 MDA53
MA_DATA54 AE20 MDA54
MA_DATA55 AD19 MDA55

MA_DATA56 AG18 MDA56
MA_DATA57 AE17 MDA57
MA_DATA58 AF15 MDA58
MA_DATA59 AG15 MDA59
MA_DATA60 AD18 MDA60
MA_DATA61 AF18 MDA61
MA_DATA62 AG16 MDA62
MA_DATA63 AD15 MDA63

MDA[0..63] 8

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

FM2 DDR Layout Guide

	Impedance	4L-1080
Clcoks	72 ohm	20/7.5/5/7.5/20
ADDR, CMD, Control	40 ohm	7 mil
DQS	90 ohm	20/5/6/5/20
DATA, DM	55 ohm	4 mil
Others	40~60 ohm	7 mil

-DQSA[0..7] -DQSA[0..7] 8
DQSA[0..7] DQSA[0..7] 8
DMA[0..7] DMA[0..7] 8

-DQSB[0..7] -DQSB[0..7] 9
DQSB[0..7] DQSB[0..7] 9
DMB[0..7] DMB[0..7] 9

FM2R2C

MEMORY CHANNELB

9 MAAB[0..15]

MAAB0 V31
MAAB1 N28
MAAB2 P29
MAAB3 N29
MAAB4 N31
MAAB5 M30
MAAB6 M31
MAAB7 M28
MAAB8 M27
MAAB9 L30
MAAB10 W31
MAAB11 L29
MAAB12 K28
MAAB13 AB28
MAAB14 K31
MAAB15 J31

9 SBAB0 SBAB0 W29
9 SBAB1 SBAB1 V30
9 SBAB2 SBAB2 K29

DMB0 D16
DMB1 B20
DMB2 A25
DMB3 D29
DMB4 AL29
DMB5 AH25
DMB6 AK21
DMB7 AJ17

DQSB0 A17
-DQSB0 B17
DQSB1 B21
-DQSB1 C21
DQSB2 D25
-DQSB2 C25
DQSB3 B29
-DQSB3 A29
DQSB4 AJ29
-DQSB4 AH29
DQSB5 AK25
-DQSB5 AL25
DQSB6 AJ20
-DQSB6 AJ21
DQSB7 AL16
-DQSB7 AL17

9 DCLKB0 DCLKB0 U30
9 -DCLKB0 -DCLKB0 U29
9 DCLKB1 DCLKB1 T29
9 -DCLKB1 -DCLKB1 T28
9 DCLKB2 DCLKB2 R31
9 -DCLKB2 -DCLKB2 T31
9 DCLKB3 DCLKB3 P30
9 -DCLKB3 -DCLKB3 R30

9 CKEB0 CKEB0 J30
9 CKEB1 CKEB1 J28

9 MODT_B0 MODT_B0 AA30
9 MODT_B1 MODT_B1 AC30
9 MODT_B2 MODT_B2 AA31
9 MODT_B3 MODT_B3 AC29

9 -CSB0 -CSB0 Y29
9 -CSB1 -CSB1 AB29
9 -CSB2 -CSB2 Y30
9 -CSB3 -CSB3 AB31

9 -SRASB -SRASB W28
9 -SCASB -SCASB AA27
9 -SWEB -SWEB AA28

9 MEM_MB_RST- MEM_MB_RST- J27
9 MEM_MB_HOT- MEM_MB_HOT- V28
MB_VREFDQ D14
MB_ZVDD K25

DDR15V AR27 39.2/4/1 MB_ZVDD
DDR15V AR49 1K/4/1 MEM_MB_HOT-

MB_DATA0 A16 MDB0
MB_DATA1 C16 MDB1
MB_DATA2 B18 MDB2
MB_DATA3 A19 MDB3
MB_DATA4 C15 MDB4
MB_DATA5 B15 MDB5
MB_DATA6 D17 MDB6
MB_DATA7 C18 MDB7

MB_DATA8 D20 MDB8
MB_DATA9 A20 MDB9
MB_DATA10 D22 MDB10
MB_DATA11 D23 MDB11
MB_DATA12 C19 MDB12
MB_DATA13 D19 MDB13
MB_DATA14 A22 MDB14
MB_DATA15 C22 MDB15

MB_DATA16 C24 MDB16
MB_DATA17 B24 MDB17
MB_DATA18 B26 MDB18
MB_DATA19 C27 MDB19
MB_DATA20 A23 MDB20
MB_DATA21 B23 MDB21
MB_DATA22 D26 MDB22
MB_DATA23 A26 MDB23

MB_DATA24 C28 MDB24
MB_DATA25 D28 MDB25
MB_DATA26 C31 MDB26
MB_DATA27 D31 MDB27
MB_DATA28 B27 MDB28
MB_DATA29 A28 MDB29
MB_DATA30 B30 MDB30
MB_DATA31 C30 MDB31

MB_DATA32 AJ30 MDB32
MB_DATA33 AK30 MDB33
MB_DATA34 AH28 MDB34
MB_DATA35 AJ27 MDB35
MB_DATA36 AG30 MDB36
MB_DATA37 AH31 MDB37
MB_DATA38 AK28 MDB38
MB_DATA39 AL28 MDB39

MB_DATA40 AJ26 MDB40
MB_DATA41 AH26 MDB41
MB_DATA42 AH23 MDB42
MB_DATA43 AJ23 MDB43
MB_DATA44 AK27 MDB44
MB_DATA45 AL26 MDB45
MB_DATA46 AJ24 MDB46
MB_DATA47 AK24 MDB47

MB_DATA48 AK22 MDB48
MB_DATA49 AH22 MDB49
MB_DATA50 AL19 MDB50
MB_DATA51 AK19 MDB51
MB_DATA52 AL23 MDB52
MB_DATA53 AL22 MDB53
MB_DATA54 AH20 MDB54
MB_DATA55 AL20 MDB55

MB_DATA56 AJ18 MDB56
MB_DATA57 AH17 MDB57
MB_DATA58 AJ15 MDB58
MB_DATA59 AK15 MDB59
MB_DATA60 AH19 MDB60
MB_DATA61 AK18 MDB61
MB_DATA62 AK16 MDB62
MB_DATA63 AH16 MDB63

MDB[0..63] 9

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

FM2+ / FM2 SEL

VOL_SELP 2 VREFDQA 1 AQ2 3 VREFDQ_A
2N7002/SOT23/25pF/5

5VDUAL
AR54 1K/4/1
VOL_SELP
VOL_SELP 2 VREFDQA 1 AQ3 3 VREFDQ_B
2N7002/SOT23/25pF/5

5VDUAL
AR56 1K/4/1
VOL_SELN
AQ1
2N7002/SOT23/25pF/5
2D writing training switcher.

VOL_SELN 2 MA_VREFDQ 1 AQ5 3 VREFDQ_A
2N7002/SOT23/25pF/5

AQ0
5,26 VOL_SELP VOL_SEL
2N7002/SOT23/25pF/5

VOL_SELN 2 MB_VREFDQ 1 AQ4 3 VREFDQ_B
2N7002/SOT23/25pF/5

VOL_SEL	0	1
	KAVERI (FM2R2)	TRINITY (FM2)

CPUVREF

40 MILS WIDTH

DDR15V
APU_M_VREF
SAR1 1K/4/1
SAR2 1K/4/1
SABC1 1N/4/X7R/50V/K
SABC2 0.1U/4/X7R/16V/K
SABC3 1U/6/X7R/16V/K

Layout: Place within 500mils of the CPU socket.

MEM CHA

A0 A1

MEM CHB

B0 B1

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Title	APU DDRIII MEMORY	
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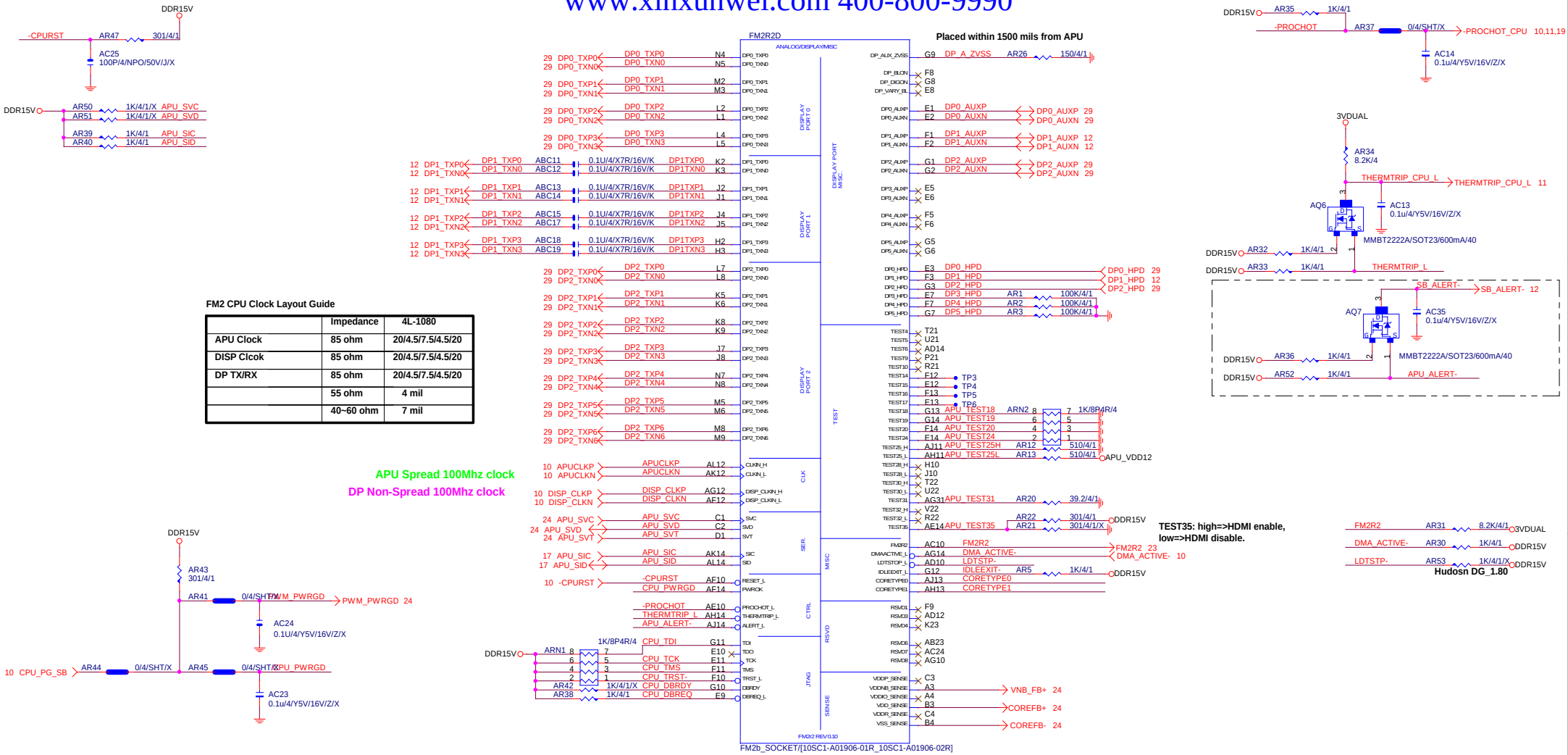

FM2 CPU Clock Layout Guide

	Impedance	4L-1080
APU Clock	85 ohm	20/4.5/7.5/4.5/20
DISP Clcok	85 ohm	20/4.5/7.5/4.5/20
DP TX/RX	85 ohm	20/4.5/7.5/4.5/20
	55 ohm	4 mil
	40~60 ohm	7 mil

	APU FM2
Group A	VDDA25:1.8~2.7V/0.5A
Group A	DDR15V:0.8~2.3V/30A
Group B	VCORE: 0.8~2.0V/120A
Group B	VCORE_NB:1.2V/50A
Group B	VDDP:1.2V/5A
Group B	VDDR:1.2V/5A

Gropu A must early than Group B

APU	CORETYPE0	CORETYPE1
TRINITY	1	1
KAVERI	0	1
TBD	1	0
TBD	0	0

VOL_SEL	0	1
	KAVERI (FM2R2)	TRINITY (FM2)

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Title: APU CONTROL

Size	Document Number	Rev
Custom	GA-F2A88XM-D3H	3.02

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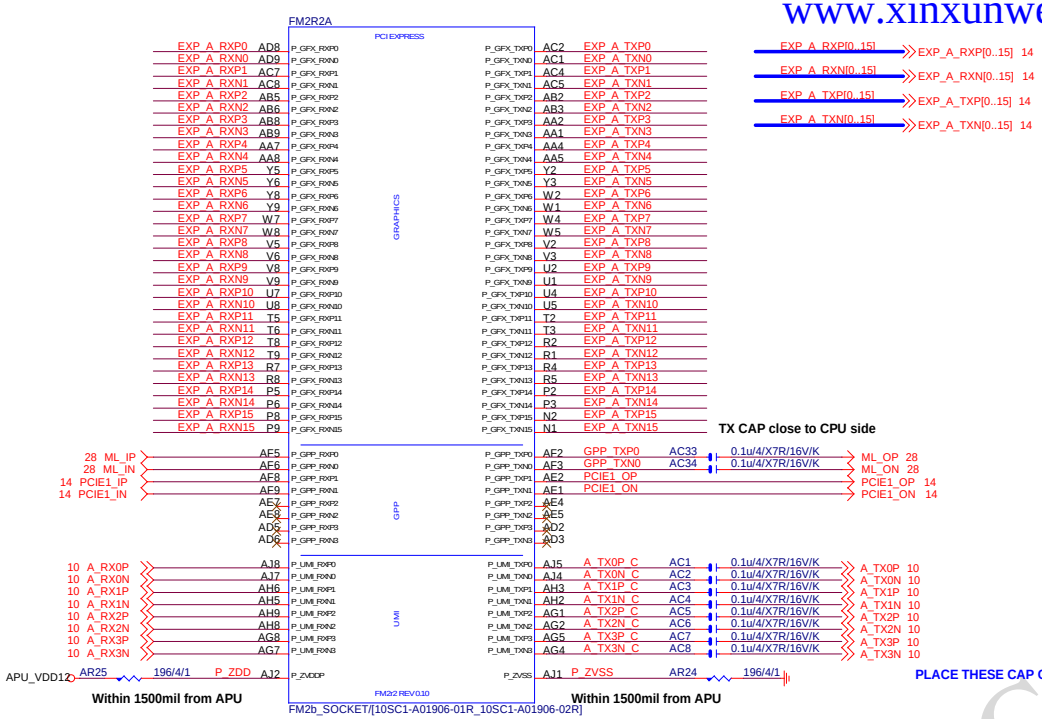

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Title	APU GFX, GPP, UMI I/F	
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DDR15V=1.25V/1.35V/1.5V(DDR3)

VCORE FM2R2E VCORE FM2R2F DDR15V VDDA25

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

VDDA25

ABC16 4.7u/6/X5R/6.3V/K ABC1 0.22u/6/X7R/16V/K ABC2 3.3N/4/X7R/50V/K

VCORE_NB

GND:232 pin,
VCORE:99 pin,
VCORE_NB: 30 pin,
DDR15V:49 pin,
VDDP:9 pin, VDDR:9 pin, VDDA25:2 pin,
VDDNB_CAP:2 pin,Total:430 pin.

PCIE_X16 Cross Moat CAP

VCORE DC1 0.01U/4/X7R/25V/K DC2 0.01U/4/X7R/25V/K DC3 0.01U/4/X7R/25V/K

VDDNB_CAP

SAC26 4.7u/6/X5R/6.3V/K SAC1 22u/8/X5R/6.3V/M SAC2 22u/8/X5R/6.3V/M

Place close N13, M14 pin inside the backplate cavity opeining.

APU_VDD12

APU_VDD12

Check Power from AMD

FM2R2

AMD RM/BLACK/[12KRC-04K812-31R_12KRC-04K812-32R]

FM2R2G FM2R2H

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

FM2b_SOCKET/[10SC1-A01906-01R_10SC1-A01906-02R]

VCORE_NB

ABC4 22u/8/X5R/6.3V/M ABC8 22u/8/X5R/6.3V/M ABC9 22u/8/X5R/6.3V/M ABC5 22u/8/X5R/6.3V/M

VCORE_NB

AC15 0.22U/6/X7R/16V/K AC16 0.22U/6/X7R/16V/K ABC6 22u/8/X5R/6.3V/M ABC7 22u/8/X5R/6.3V/M

VCORE_NB

ABC20 22u/8/X5R/6.3V/M ABC21 22u/8/X5R/6.3V/M ABC22 22u/8/X5R/6.3V/M ABC23 22u/8/X5R/6.3V/M

DDR15V

SAC27 22u/8/X5R/6.3V/M SAC28 22u/8/X5R/6.3V/M SAC29 22u/8/X5R/6.3V/M SAC15 180P/4/NPO/50V/J SAC30 0.22U/6/X7R/16V/K SAC31 0.22U/6/X7R/16V/K SAC32 4.7u/6/X5R/6.3V/K SAC54 4.7u/6/X5R/6.3V/K SAC55 0.22U/6/X7R/16V/K SAC53 22u/8/X5R/6.3V/M

APU_VDD12

AC21 22u/8/X5R/6.3V/M ABC10 4.7u/6/X5R/6.3V/K AC19 0.22U/6/X7R/16V/K AC17 1N/4/X7R/50V/K

APU_VDD12

AC12 22u/8/X5R/6.3V/M ABC3 4.7u/6/X5R/6.3V/K AC11 0.22U/6/X7R/16V/K AC9 180P/4/NPO/50V/J

VCORE

SAC25 22u/8/X5R/6.3V/M SAC33 22u/8/X5R/6.3V/M SAC34 22u/8/X5R/6.3V/M SAC35 22u/8/X5R/6.3V/M SAC36 22u/8/X5R/6.3V/M SAC38 22u/8/X5R/6.3V/M SAC37 22u/8/X5R/6.3V/M SAC39 22u/8/X5R/6.3V/M SAC41 22u/8/X5R/6.3V/M SAC40 22u/8/X5R/6.3V/M

BUTTOM SIDE

VCORE

SAC6 22u/8/X5R/6.3V/M SAC7 22u/8/X5R/6.3V/M SAC8 22u/8/X5R/6.3V/M SAC9 22u/8/X5R/6.3V/M SAC10 22u/8/X5R/6.3V/M SAC11 22u/8/X5R/6.3V/M SAC12 22u/8/X5R/6.3V/M SAC13 22u/8/X5R/6.3V/M

VCORE

SAC18 22u/8/X5R/6.3V/M SAC14 22u/8/X5R/6.3V/M SAC17 22u/8/X5R/6.3V/M SAC19 22u/8/X5R/6.3V/M SAC20 22u/8/X5R/6.3V/M SAC21 22u/8/X5R/6.3V/M SAC23 22u/8/X5R/6.3V/M SAC22 22u/8/X5R/6.3V/M

VCORE

SAC16 0.22U/6/X7R/16V/K SAC24 0.22U/6/X7R/16V/K SABC9 22u/8/X5R/6.3V/M SABC10 22u/8/X5R/6.3V/M SAC3 180P/4/NPO/50V/J SAC5 180P/4/NPO/50V/J SABC11 22u/8/X5R/6.3V/M SABC12 22u/8/X5R/6.3V/M SAC4 180P/4/NPO/50V/J

APU_VDD12

AC27 22u/8/X5R/6.3V/M AC26 4.7u/6/X5R/6.3V/K AC22 4.7u/6/X5R/6.3V/K AC32 0.22U/6/X7R/16V/K SAC47 180P/4/NPO/50V/J SAC52 1N/4/X7R/50V/K

APU_VDD12

AC31 22u/8/X5R/6.3V/M SAC43 180P/4/NPO/50V/J

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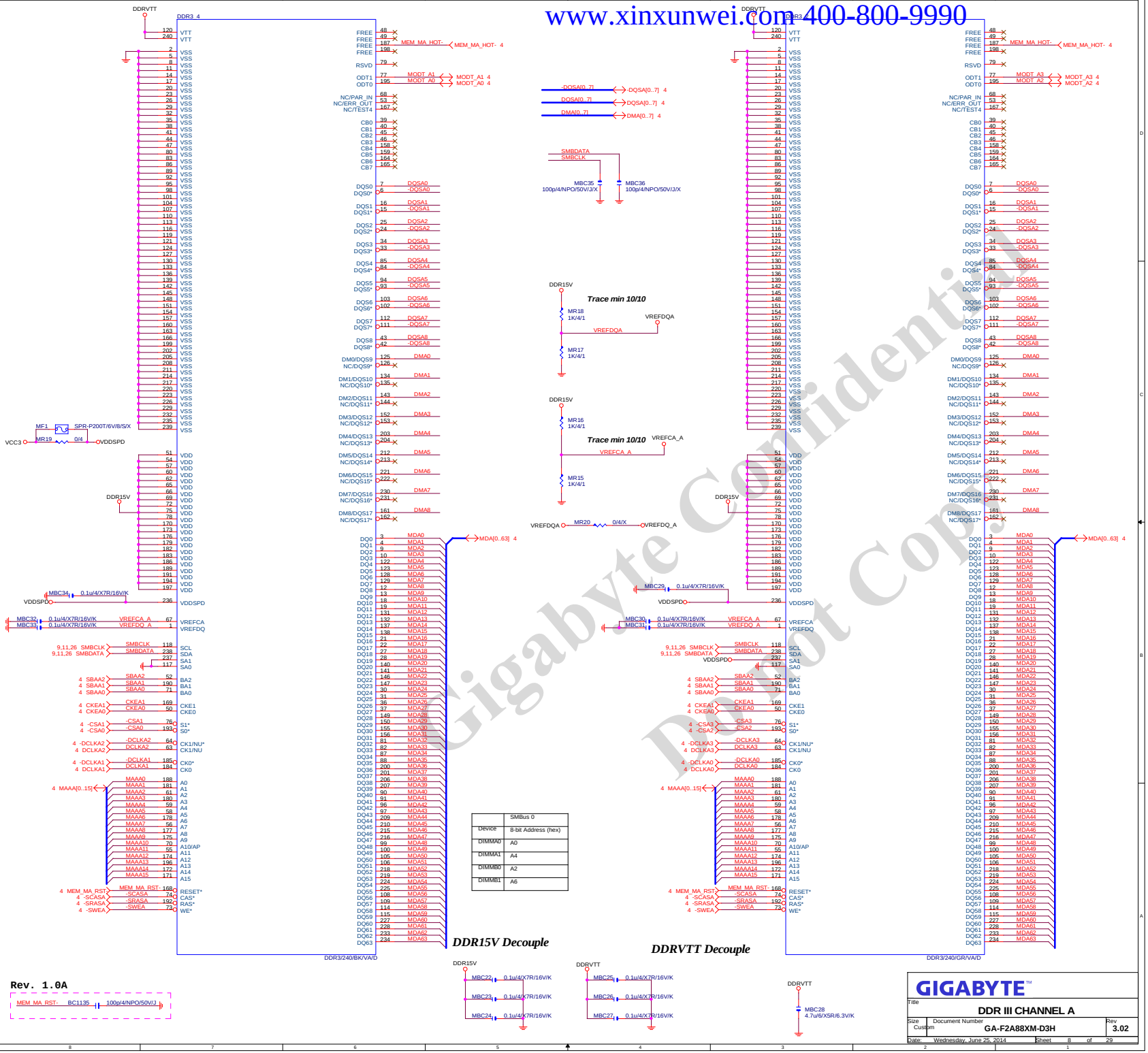
Title: APU POWER & GND

Size: Custom | Document Number: GA-F2A88XM-D3H | Rev: 3.02

Date: Wednesday, June 25, 2014 | Sheet 7 of 29



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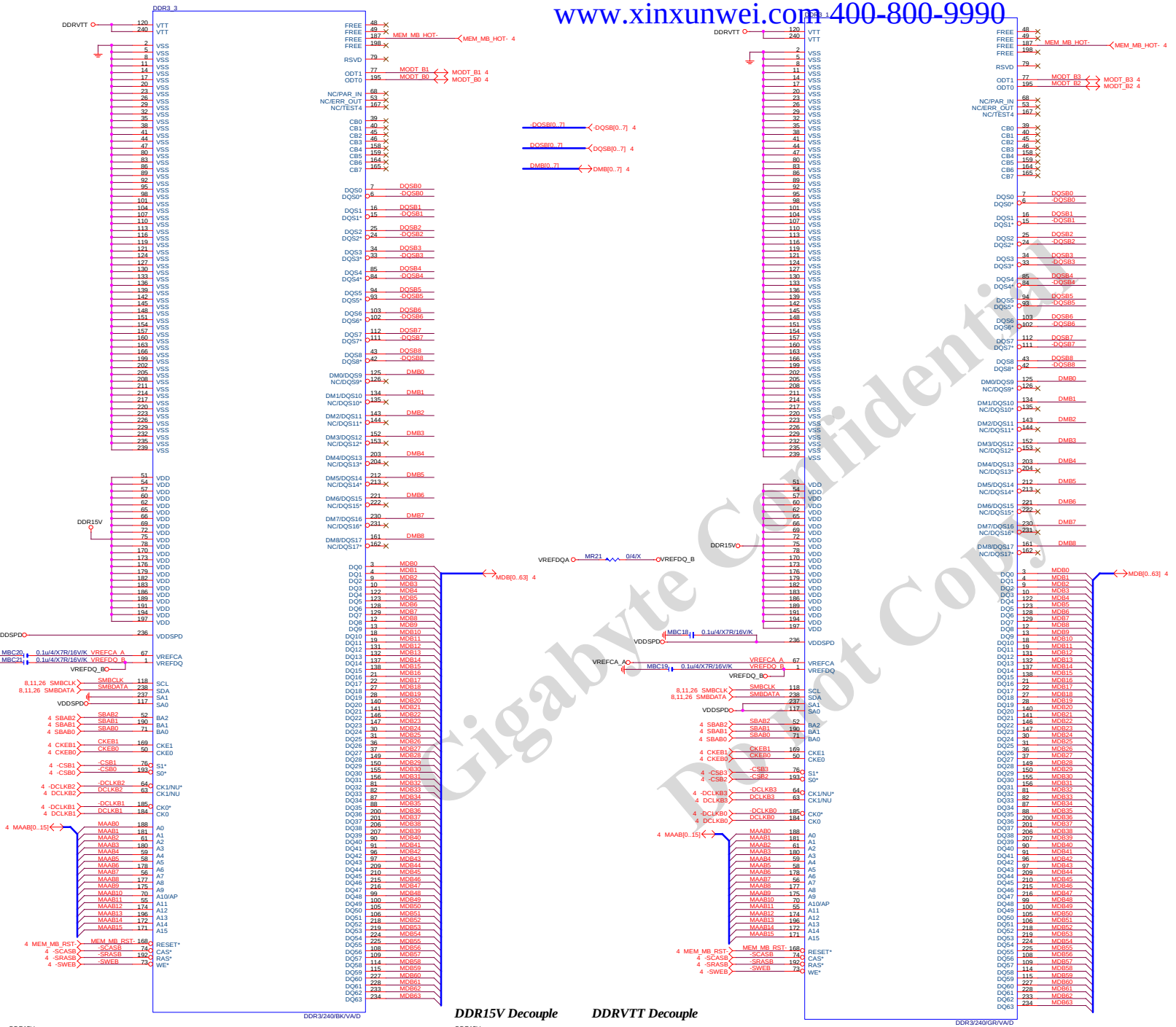
Title	DDR III CHANNEL A	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
Date: Wednesday, June 25, 2014	Sheet 8 of 29	



GIGABYTE™

Title	DDR III CHANNEL B	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
Date: Wednesday, June 25, 2014	Sheet 9 of 29	

PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB850

S.B HEATSINK

SB_HS

SB_HS/[12SP2-S04208-61R_12SP2-S04208-62R_12SP2-S04208-63R]

U1E HUDSON-2 Part 1 of 5

BOLTON-D4/[10HB1-060BT4-10R]

Low: Force PCIE GEN1, Up: Allow PCIE GEN2

PCLK3	
PULL HIGH	USE DEBUG STRAPS
PULL LOW	IGNORE DEBUG STRAPS DEFAULT

CLKGEN Mode: Only for integrated clock mode.

	LPC_CLK0	LPC_CLK1
PULL HIGH	IMC ENABLED AOD Extreme	CLKGEN ENABLED
PULL LOW	IMC DISABLED DEFAULT	CLKGEN DISABLED DEFAULT

Note: LDT_STP# leave NC--DG1.0

CLR_CMOS	
SHORT	CLEAR CMOS
OPEN	NORMAL

NOT ADD ICT FOR RTCVDD PIN

Pull down for S5+ Mode

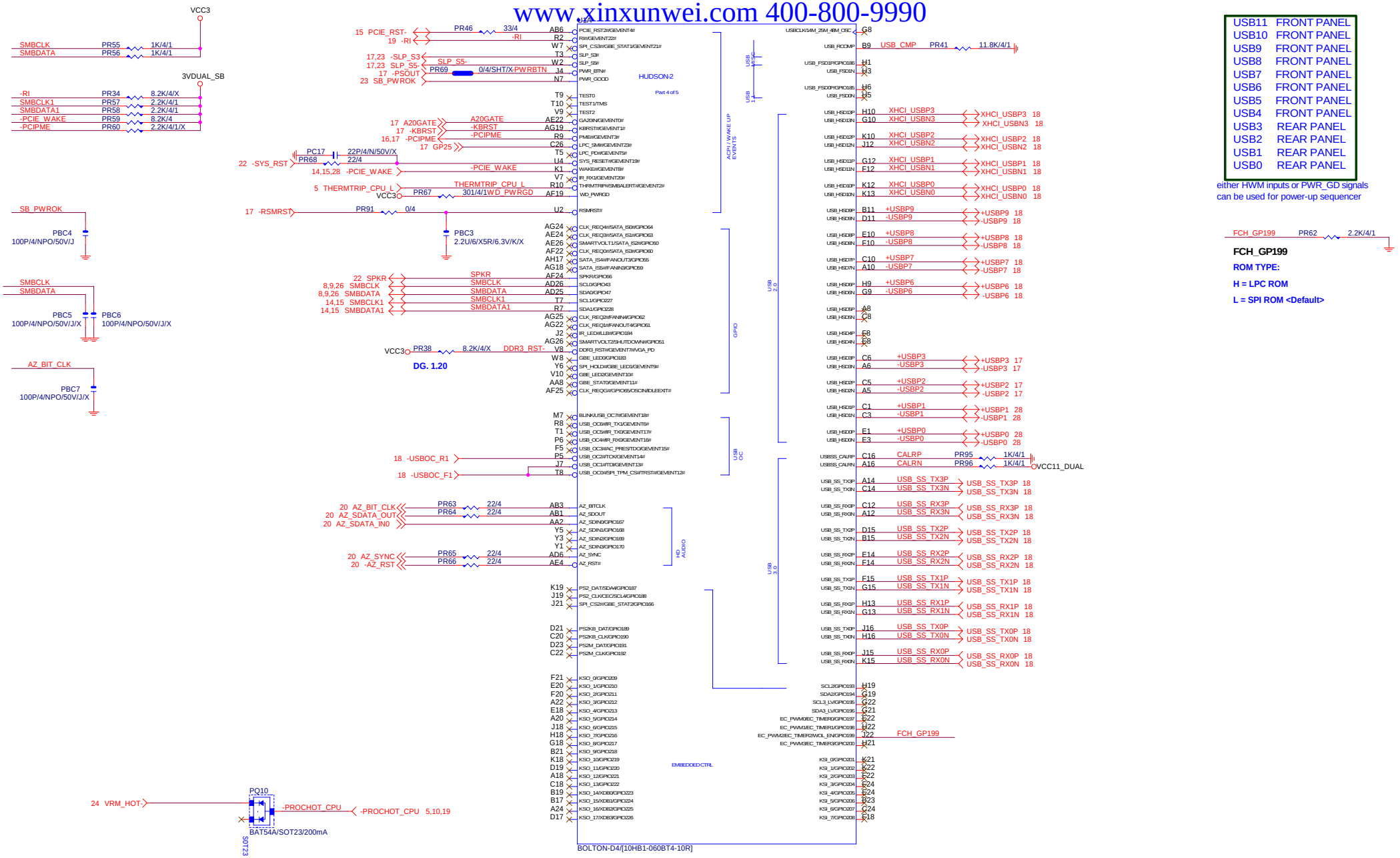
SHW/D0.64*5.08*6.74

GIGABYTE

Title: HUDSON D4 PCIE/PCI/CPU/LPC

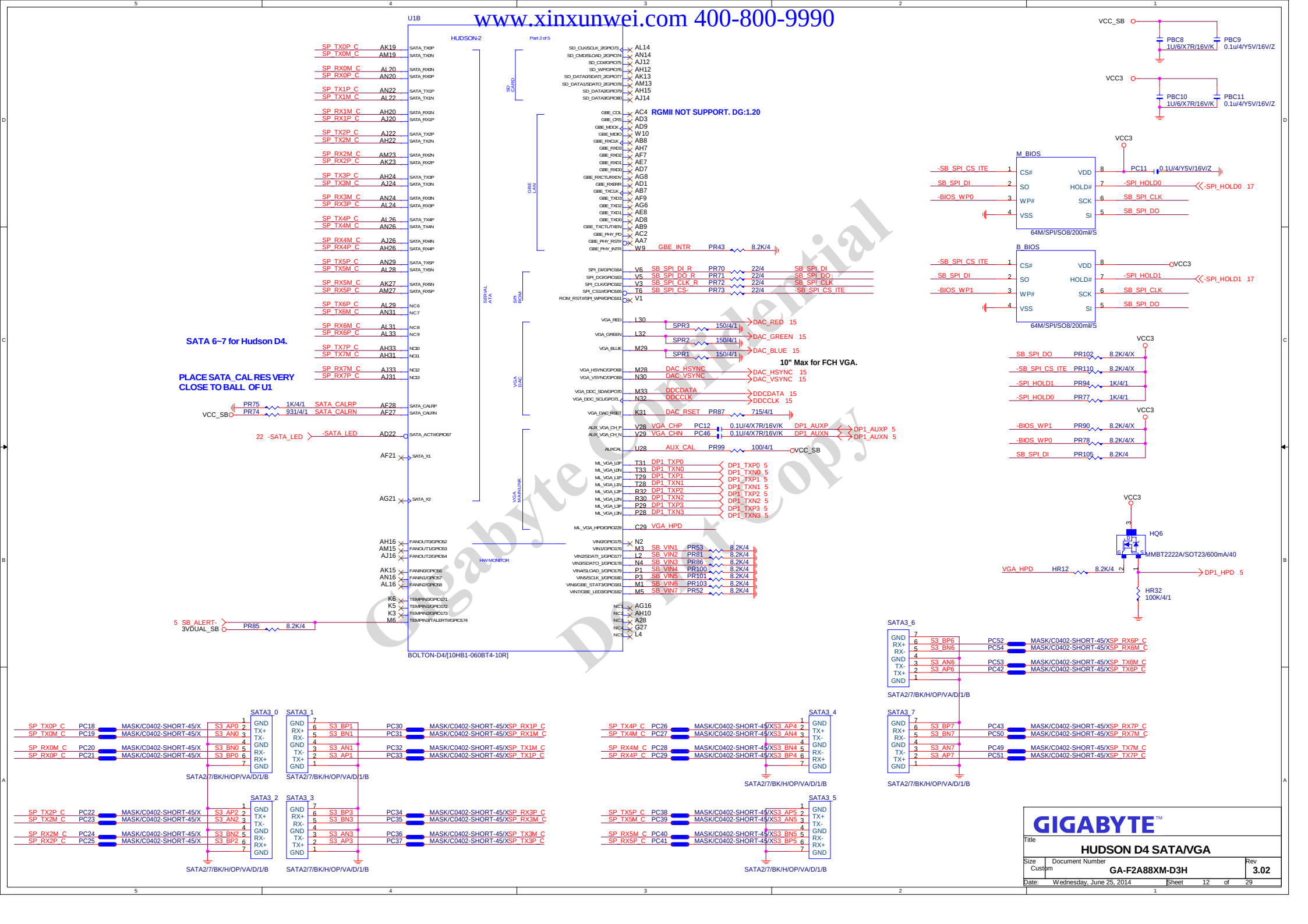
Size: Custom | Document Number: GA-F2A88XM-D3H | Rev: 3.02

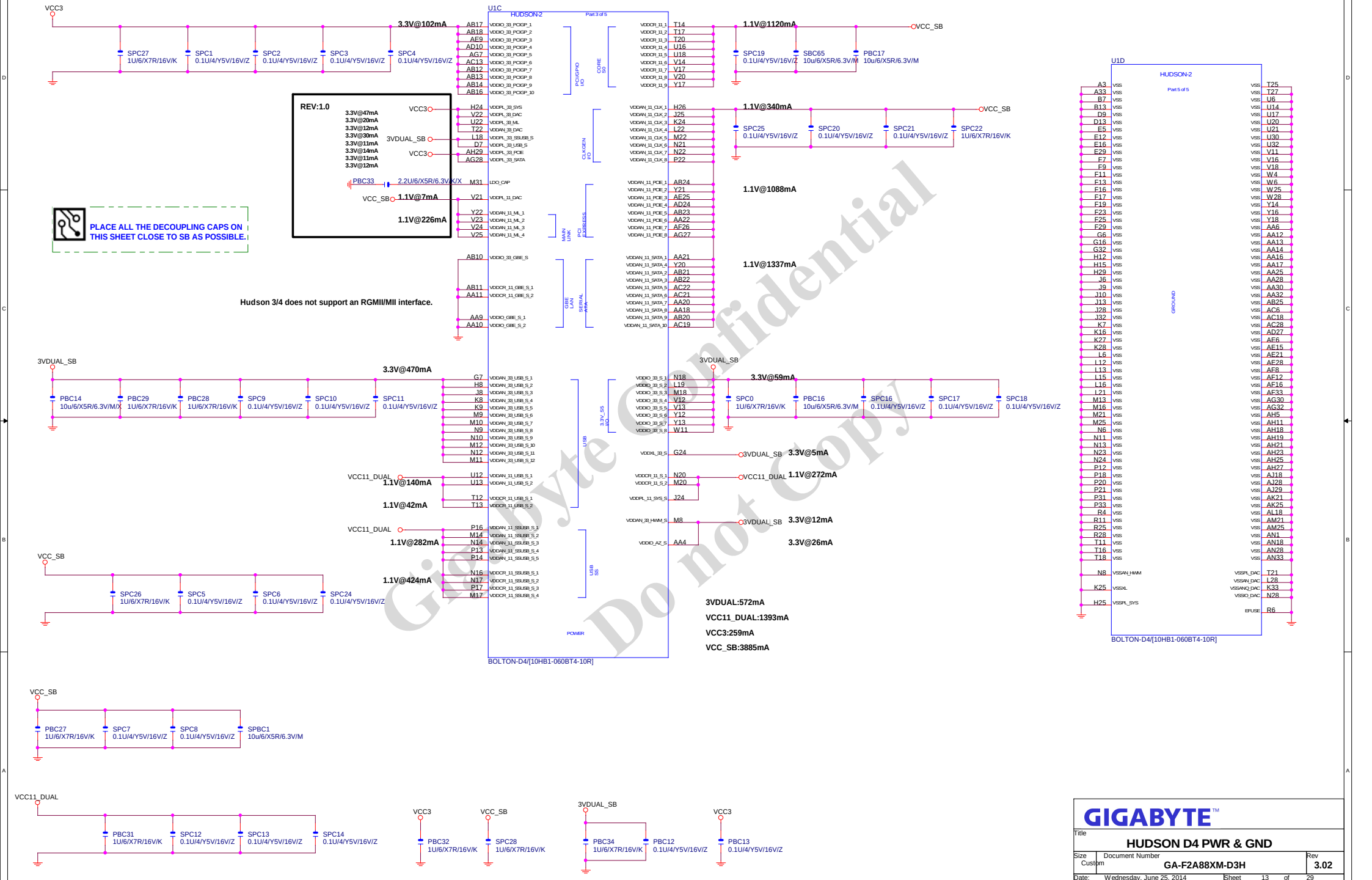
Date: Wednesday, June 25, 2014 | Sheet 10 of 29



GIGABYTE™

Title	HUDSON D4 ACPI/USB/GPIO/AUDIO	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
Date: Wednesday, June 25, 2014	Sheet 11 of 29	





Title	HUDSON D4 PWR & GND	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
Date: Wednesday, June 25, 2014	Sheet 13 of 29	

EXP_A_RXP[0..15] EXP_A_RXP[0..15] 6 EXP_A_TXP[0..15] EXP_A_TXP[0..15] 6
EXP_A_RXN[0..15] EXP_A_RXN[0..15] 6 EXP_A_TXN[0..15] EXP_A_TXN[0..15] 6

3GIO_*16

PCIEX16

	B1	12V	PRSNT1*	A1	
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
	B4	GND	GND	A4	
11,15 SMBCLK1	B5	SMBCLK1 SMCLK	JTAG2	A5	
11,15 SMBDATA1	B6	SMBDATA1 SMDAT	JTAG3	A6	
	B7	GND	JTAG4	A7	
VCC3	B8	3.3V	JTAG5	A8	
	B9	JTAG1	3.3V	A9	VCC3
3VDUAL	B10	3.3VAUX	3.3V	A10	
11,15,28 -PCIE_WAKE	B11	-PCIE_WAKE WAKE*	PWRGD	A11	APUPCIE_RST- APUPCIE_RST- 10,28
		KEY			
	B12	RSVD	GND	A12	
	B13	GND	REFCLK+	A13	SRCCLK_16XP 10
	B14	HSOP0 EXP_A_TXP15C	REFCLK-	A14	SRCCLK_16XN 10
	B15	HSON0 EXP_A_TXN15C	GND	A15	
	B16	GND	HSIP0	A16	EXP_A_RXP15
	B17	PRSNT2*	HSIN0	A17	EXP_A_RXN15
	B18	GND	GND	A18	
	B19	HSOP1 EXP_A_TXP14C	RSVD	A19	
	B20	HSON1 EXP_A_TXN14C	GND	A20	
	B21	GND	HSIP1	A21	EXP_A_RXP14
	B22	GND	HSIN1	A22	EXP_A_RXN14
	B23	HSOP2 EXP_A_TXP13C	GND	A23	
	B24	HSON2 EXP_A_TXN13C	GND	A24	
	B25	GND	HSIP2	A25	EXP_A_RXP13
	B26	GND	HSIN2	A26	EXP_A_RXN13
	B27	HSOP3 EXP_A_TXP12C	GND	A27	
	B28	HSON3 EXP_A_TXN12C	GND	A28	
	B29	GND	HSIP3	A29	EXP_A_RXP12
	B30	RSVD	HSIN3	A30	EXP_A_RXN12
PE0_PRSNT-	B31	PRSNT2*	GND	A31	
	B32	GND	RSVD	A32	
	B33	HSOP4 EXP_A_TXP11C	RSVD	A33	
	B34	HSON4 EXP_A_TXN11C	GND	A34	
	B35	GND	HSIP4	A35	EXP_A_RXP11
	B36	GND	HSIN4	A36	EXP_A_RXN11
	B37	HSOP5 EXP_A_TXP10C	GND	A37	
	B38	HSON5 EXP_A_TXN10C	GND	A38	
	B39	GND	HSIP5	A39	EXP_A_RXP10
	B40	GND	HSIN5	A40	EXP_A_RXN10
	B41	HSOP6 EXP_A_TXP9C	GND	A41	
	B42	HSON6 EXP_A_TXN9C	GND	A42	
	B43	GND	HSIP6	A43	EXP_A_RXP9
	B44	GND	HSIN6	A44	EXP_A_RXN9
	B45	HSOP7 EXP_A_TXP8C	GND	A45	
	B46	HSON7 EXP_A_TXN8C	GND	A46	
	B47	GND	HSIP7	A47	EXP_A_RXP8
PE0_PRSNT-	B48	PRSNT2*	HSIN7	A48	EXP_A_RXN8
	B49	GND	GND	A49	
	B50	HSOP8 EXP_A_TXP7C	RSVD	A50	
	B51	HSON8 EXP_A_TXN7C	GND	A51	
	B52	GND	HSIP8	A52	EXP_A_RXP7
	B53	GND	HSIN8	A53	EXP_A_RXN7
	B54	HSOP9 EXP_A_TXP6C	GND	A54	
	B55	HSON9 EXP_A_TXN6C	GND	A55	
	B56	GND	HSIP9	A56	EXP_A_RXP6
	B57	GND	HSIN9	A57	EXP_A_RXN6
	B58	HSOP10 EXP_A_TXP5C	GND	A58	
	B59	HSON10 EXP_A_TXN5C	GND	A59	
	B60	GND	HSIP10	A60	EXP_A_RXP5
	B61	GND	HSIN10	A61	EXP_A_RXN5
	B62	HSOP11 EXP_A_TXP4C	GND	A62	
	B63	HSON11 EXP_A_TXN4C	GND	A63	
	B64	GND	HSIP11	A64	EXP_A_RXP4
	B65	GND	HSIN11	A65	EXP_A_RXN4
	B66	HSOP12 EXP_A_TXP3C	GND	A66	
	B67	HSON12 EXP_A_TXN3C	GND	A67	
	B68	GND	HSIP12	A68	EXP_A_RXP3
	B69	GND	HSIN12	A69	EXP_A_RXN3
	B70	HSOP13 EXP_A_TXP2C	GND	A70	
	B71	HSON13 EXP_A_TXN2C	GND	A71	
	B72	GND	HSIP13	A72	EXP_A_RXP2
	B73	GND	HSIN13	A73	EXP_A_RXN2
	B74	HSOP14 EXP_A_TXP1C	GND	A74	
	B75	HSON14 EXP_A_TXN1C	GND	A75	
	B76	GND	HSIP14	A76	EXP_A_RXP1
	B77	GND	HSIN14	A77	EXP_A_RXN1
	B78	HSOP15 EXP_A_TXP0C	GND	A78	
	B79	HSON15 EXP_A_TXN0C	GND	A79	
	B80	GND	HSIP15	A80	EXP_A_RXP0
PE0_PRSNT-	B81	PRSNT2*	HSIN15	A81	EXP_A_RXN0
	B82	RSVD	GND	A82	

PCI-E/16X-164P/BK/LONG DOUBLE

R2400 8.2K/4 PE0_PRSNT-

3GIO_X1

PCIEX1

	B1	12V	PRSNT1*	A1	
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
R71 0/4/SHT/X	B4	GND	GND	A4	R73 0/4/SHT/X
11,15 SMBCLK1	B5	SMBCLK1 SMCLK	JTAG2	A5	
11,15 SMBDATA1	B6	SMBDATA1 SMDAT	JTAG3	A6	
VCC3	B7	GND	JTAG4	A7	
	B8	3.3V	JYAG5	A8	
3VDUAL	B9	JTAG1	3.3V	A9	VCC3
11,15,28 -PCIE_WAKE	B10	3.3VAUX -PCIE_WAKE	3.3V	A10	
	B11	WAKE*	PWRGD	A11	APUPCIE_RST- APUPCIE_RST- 10,28
		KEY			
	B12	RSVD	GND	A12	
PCIE1_OPC	B13	GND	REFCLK+	A13	SRCCLK_1XP 10
PCIE1_ONC	B14	HSOP0	REFCLK-	A14	SRCCLK_1XN 10
	B15	HSON0	GND	A15	
	B16	GND	HSIP0	A16	PCIE1_IP 6
VCC3 R35 8.2K/4 PE1_PRSNT-	B17	PRSNT2*	HSIN0	A17	PCIE1_IN 6
	B18	GND	GND	A18	

PCI-E/1X-36P/BK/OL

+12V: BC833 0.1u/4/X7R/16V/K, BC834 0.1U/4/Y5V/16V/Z, BC835 0.1U/4/Y5V/16V/Z
VCC3: BC836 0.1u/4/X7R/16V/K, BC838 0.1U/4/Y5V/16V/Z, BC839 0.1U/4/Y5V/16V/Z
3VDUAL: BC837 0.1U/4/Y5V/16V/Z, BC840 0.1U/4/Y5V/16V/Z
+12V: EC167 270u/FP/D/16V/8C/A/10m

RN21 RN23 0/8P4R/0402/SHT/X

BC841 0.1u/4/X7R/16V/K

C1643 100P/4/N/50V/X

EXP_A_TXP0	C1644	0.22u/4/X5R/6.3V/K EXP_A_TXP0C
EXP_A_TXN0	C1645	0.22u/4/X5R/6.3V/K EXP_A_TXN0C
EXP_A_TXP1	C1646	0.22u/4/X5R/6.3V/K EXP_A_TXP1C
EXP_A_TXN1	C1647	0.22u/4/X5R/6.3V/K EXP_A_TXN1C
EXP_A_TXP2	C1648	0.22u/4/X5R/6.3V/K EXP_A_TXP2C
EXP_A_TXN2	C1649	0.22u/4/X5R/6.3V/K EXP_A_TXN2C
EXP_A_TXP3	C1650	0.22u/4/X5R/6.3V/K EXP_A_TXP3C
EXP_A_TXN3	C1651	0.22u/4/X5R/6.3V/K EXP_A_TXN3C
EXP_A_TXP4	C1652	0.22u/4/X5R/6.3V/K EXP_A_TXP4C
EXP_A_TXN4	C1653	0.22u/4/X5R/6.3V/K EXP_A_TXN4C
EXP_A_TXP5	C1654	0.22u/4/X5R/6.3V/K EXP_A_TXP5C
EXP_A_TXN5	C1655	0.22u/4/X5R/6.3V/K EXP_A_TXN5C
EXP_A_TXP6	C1656	0.22u/4/X5R/6.3V/K EXP_A_TXP6C
EXP_A_TXN6	C1657	0.22u/4/X5R/6.3V/K EXP_A_TXN6C
EXP_A_TXP7	C1658	0.22u/4/X5R/6.3V/K EXP_A_TXP7C
EXP_A_TXN7	C1659	0.22u/4/X5R/6.3V/K EXP_A_TXN7C
EXP_A_TXP8	C1660	0.22u/4/X5R/6.3V/K EXP_A_TXP8C
EXP_A_TXN8	C1661	0.22u/4/X5R/6.3V/K EXP_A_TXN8C
EXP_A_TXP9	C1662	0.22u/4/X5R/6.3V/K EXP_A_TXP9C
EXP_A_TXN9	C1663	0.22u/4/X5R/6.3V/K EXP_A_TXN9C
EXP_A_TXP10	C1664	0.22u/4/X5R/6.3V/K EXP_A_TXP10C
EXP_A_TXN10	C1665	0.22u/4/X5R/6.3V/K EXP_A_TXN10C
EXP_A_TXP11	C1666	0.22u/4/X5R/6.3V/K EXP_A_TXP11C
EXP_A_TXN11	C1667	0.22u/4/X5R/6.3V/K EXP_A_TXN11C
EXP_A_TXP12	C1668	0.22u/4/X5R/6.3V/K EXP_A_TXP12C
EXP_A_TXN12	C1669	0.22u/4/X5R/6.3V/K EXP_A_TXN12C
EXP_A_TXP13	C1670	0.22u/4/X5R/6.3V/K EXP_A_TXP13C
EXP_A_TXN13	C1671	0.22u/4/X5R/6.3V/K EXP_A_TXN13C
EXP_A_TXP14	C1672	0.22u/4/X5R/6.3V/K EXP_A_TXP14C
EXP_A_TXN14	C1673	0.22u/4/X5R/6.3V/K EXP_A_TXN14C
EXP_A_TXP15	C1674	0.22u/4/X5R/6.3V/K EXP_A_TXP15C
EXP_A_TXN15	C1675	0.22u/4/X5R/6.3V/K EXP_A_TXN15C

6 PCIE1_OP C13 0.1u/4/X7R/16V/K PCIE1_OPC
6 PCIE1_ON C14 0.1u/4/X7R/16V/K PCIE1_ONC

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Title: PCI EXPRESS X 16 ,X1

Size	Document Number	Rev
Custom	GA-F2A88XM-D3H	3.02

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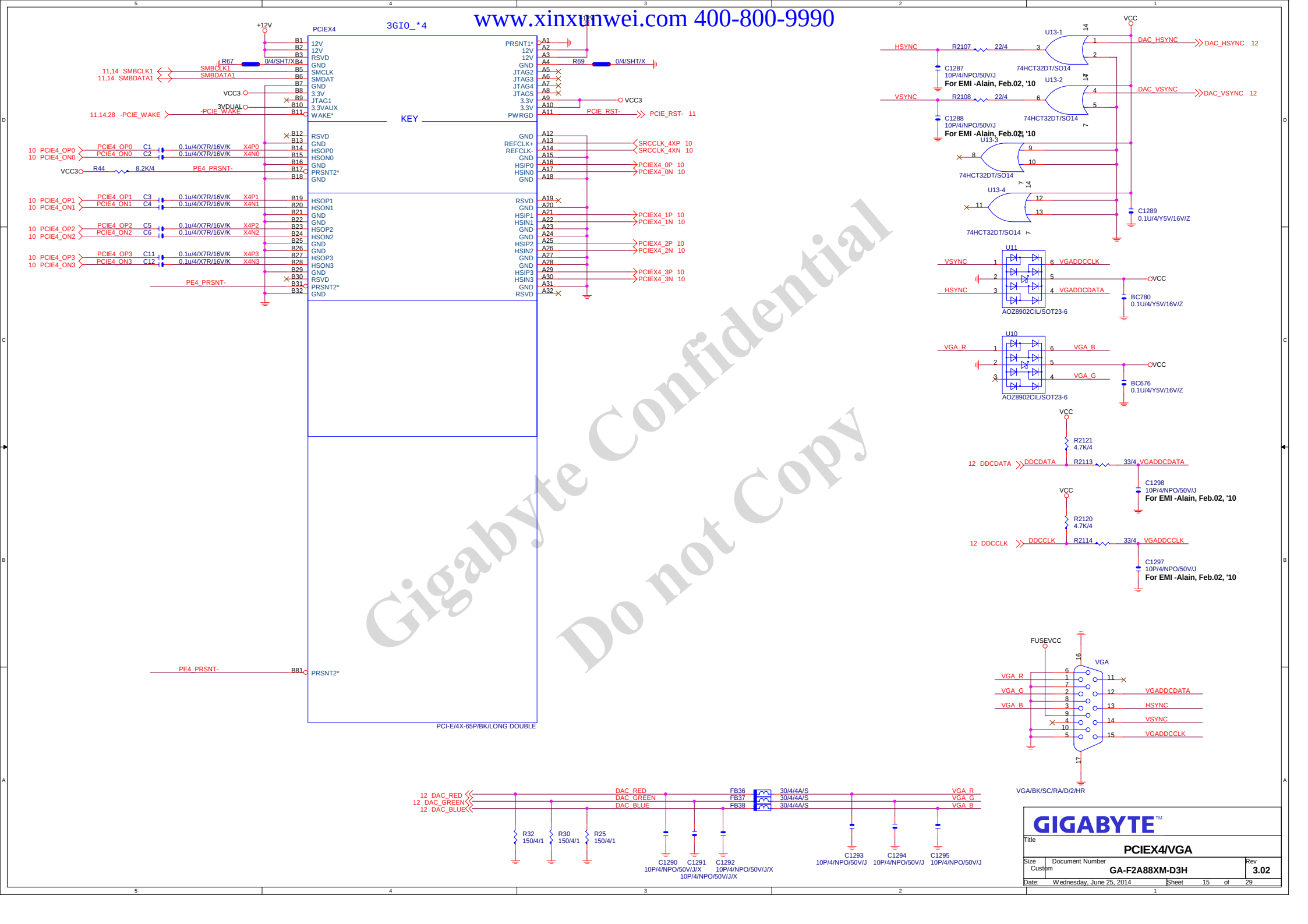

Title	PCIEX4/VGA
Size	Custom
Document Number	GA-F2A88XM-D3H
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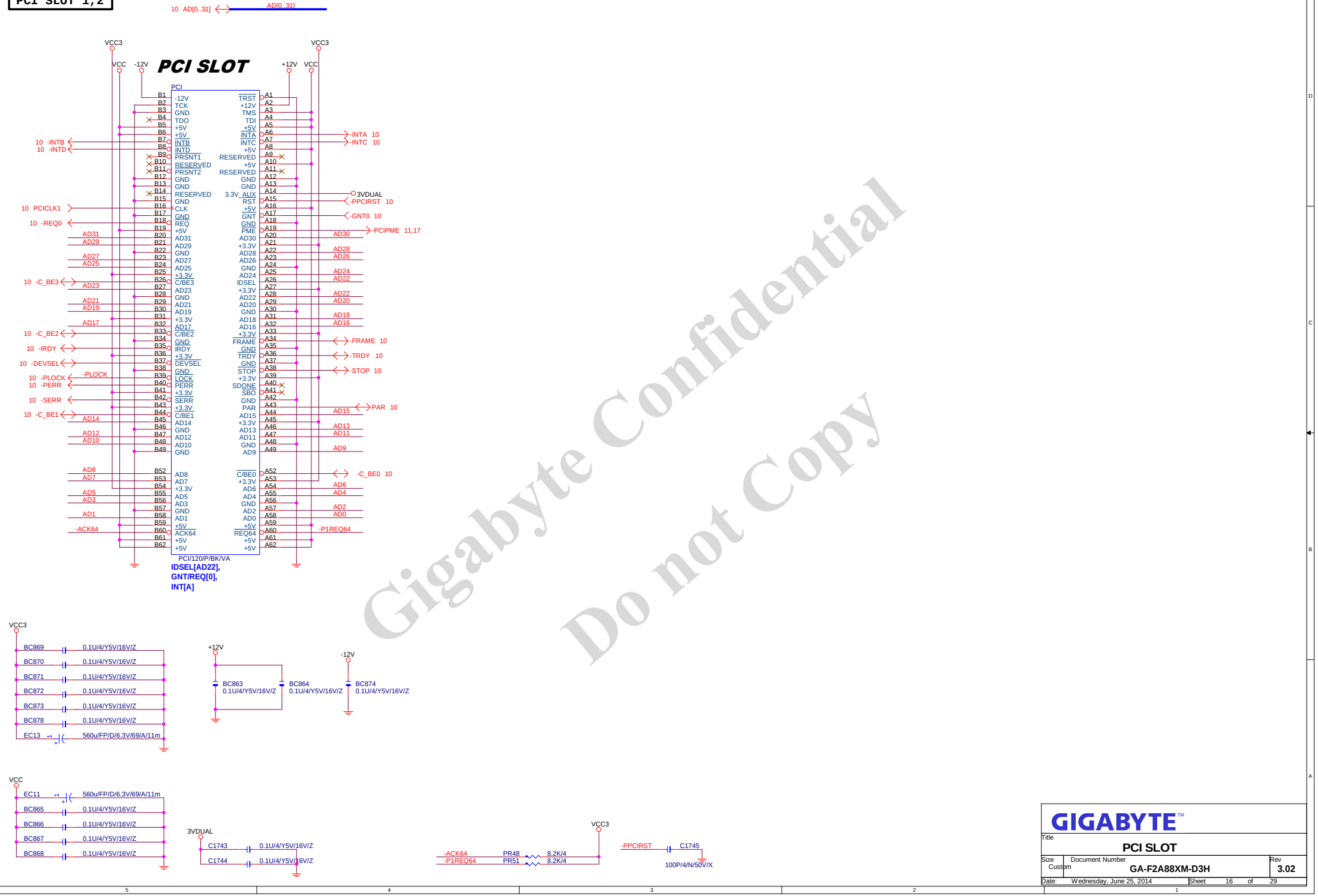
PCI SLOT 1,2



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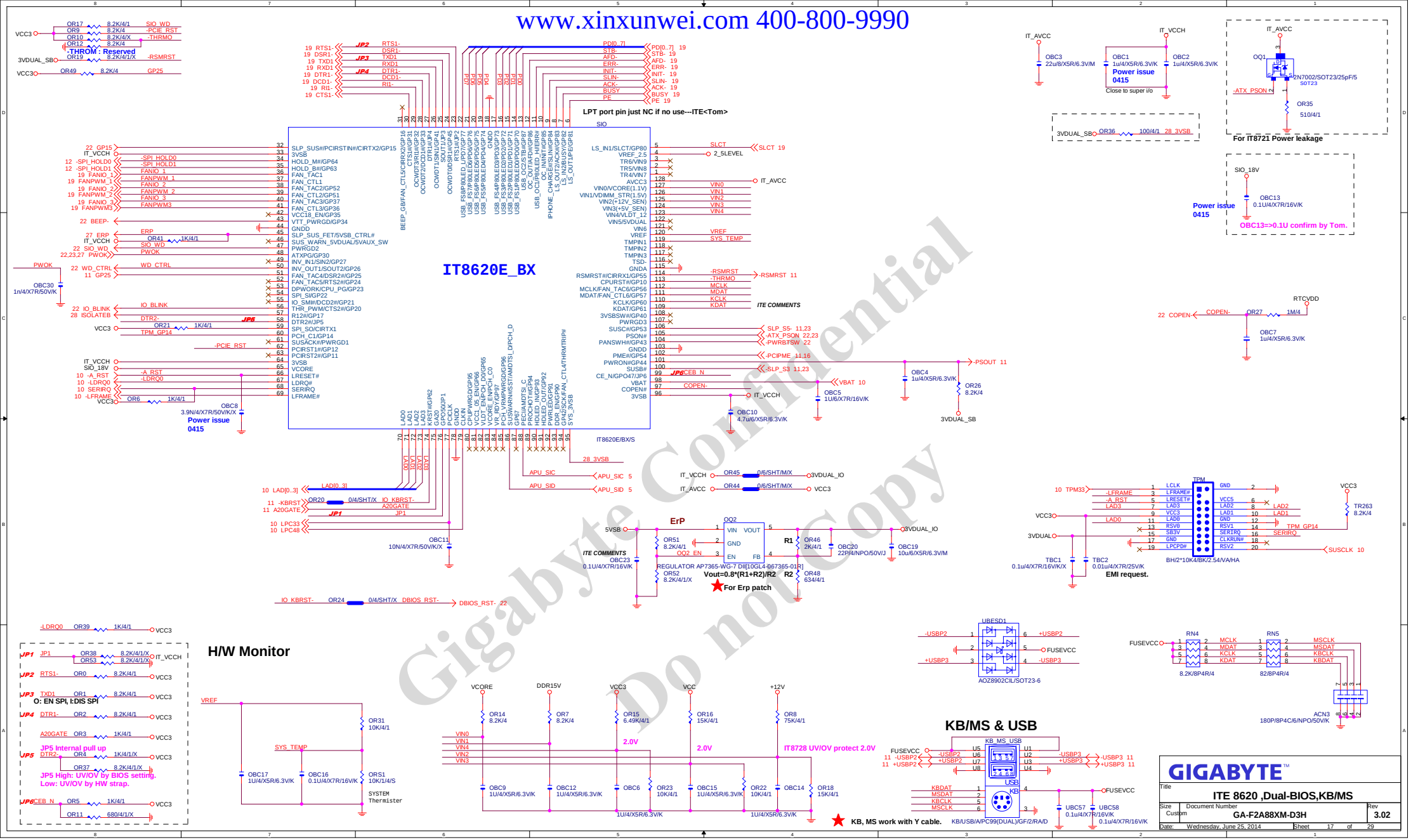
Title	PCI SLOT	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
Date: Wednesday, June 25, 2014	Sheet 16 of 29	



Title	ITE 8620 ,Dual-BIOS,KB/MS
Size	Custom
Document Number	GA-F2A88XM-D3H
Rev	3.02
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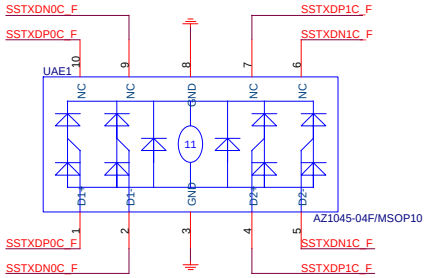
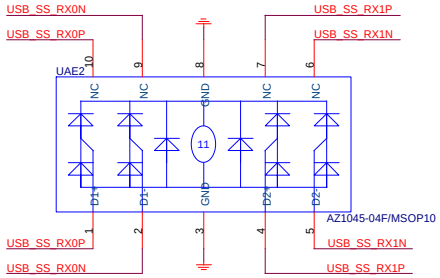
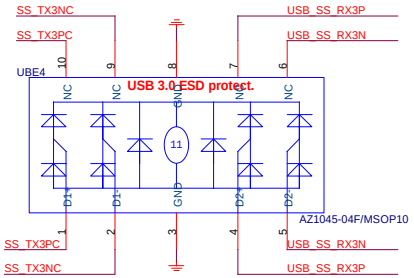
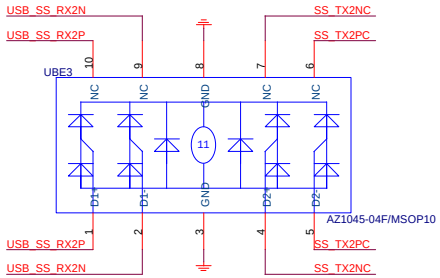
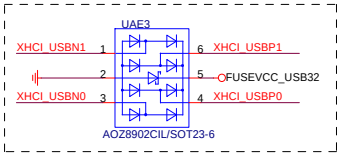
Sheet	17 of 29

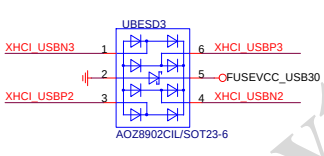


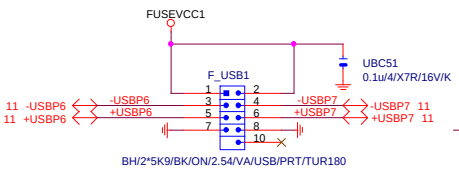


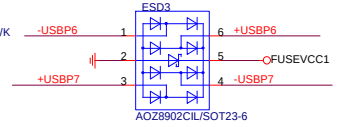


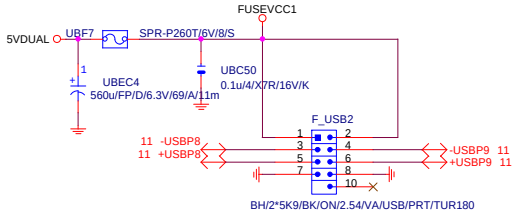


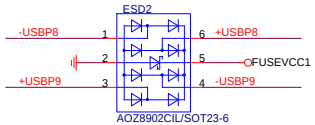


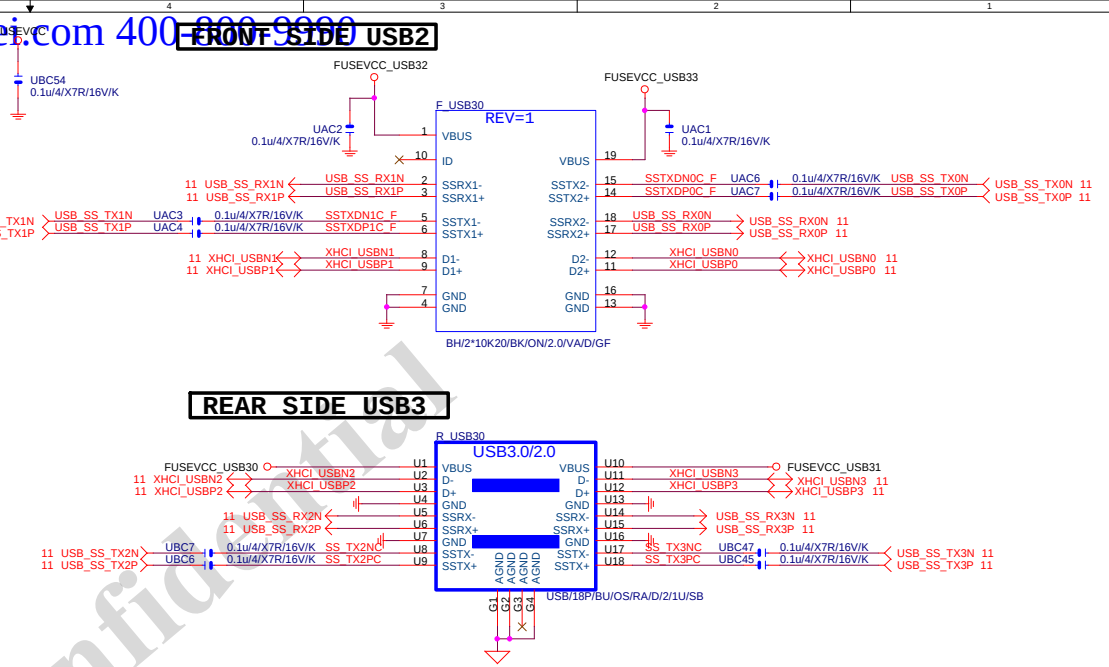


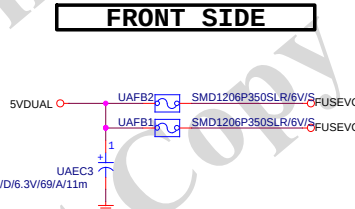


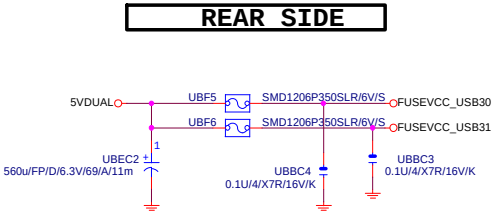


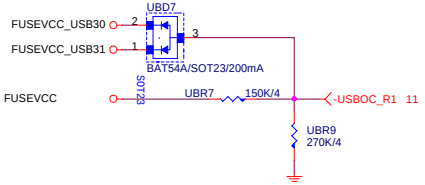


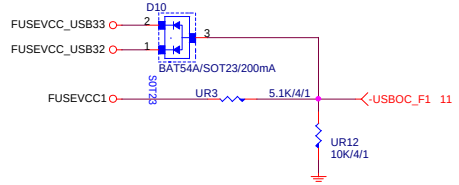












GIGABYTE™

Title: F_USB, F_USB30 ,R_USB30

Size	Document Number	Rev
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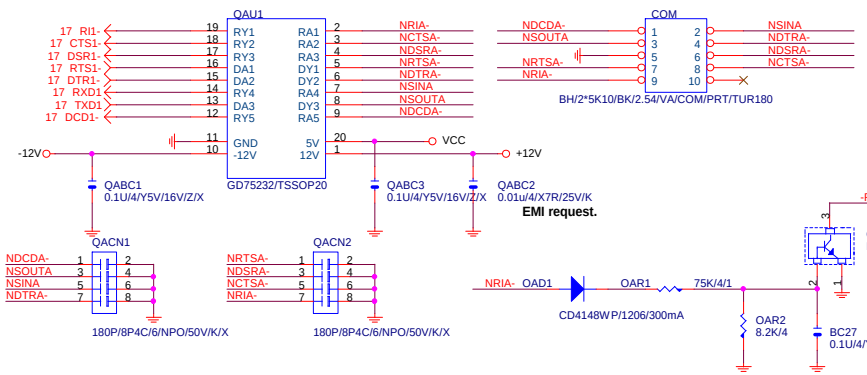
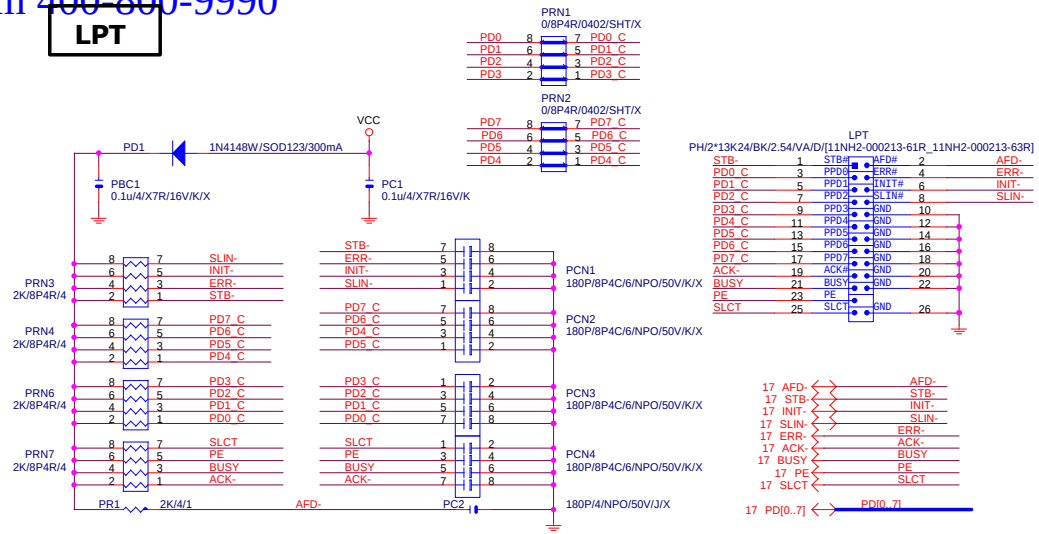
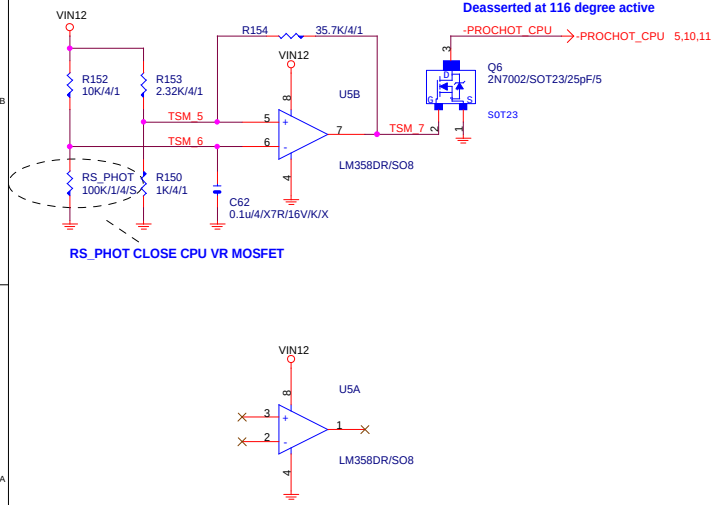
COM



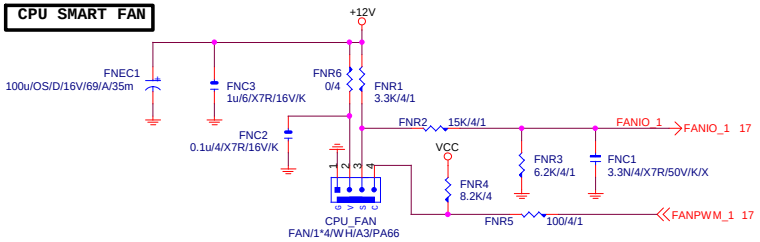
LPT



MOSFET Hot Protection



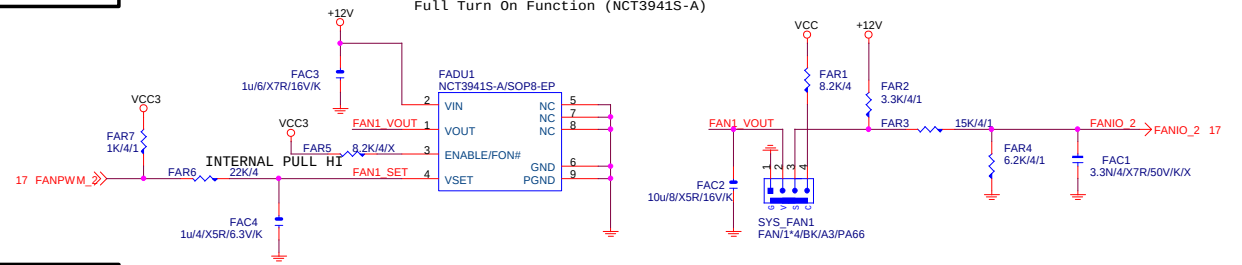
CPU SMART FAN



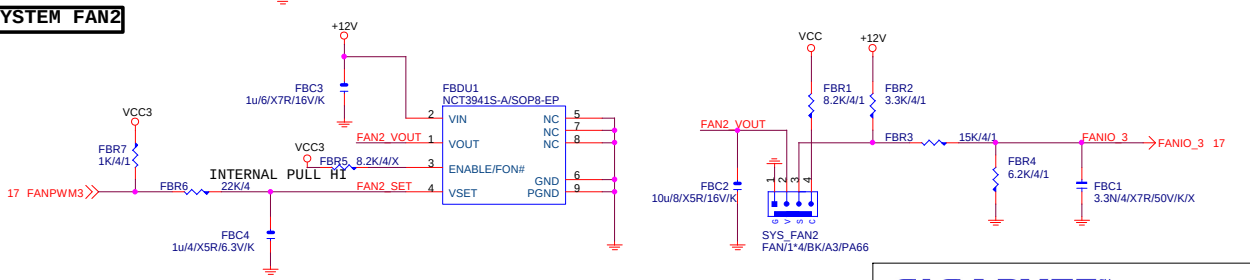
SYSTEM FAN1

Linear SYS_FAN

Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



SYSTEM FAN2



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Title: CPU & SYS FAN COM,LPT,MOSFET HOT

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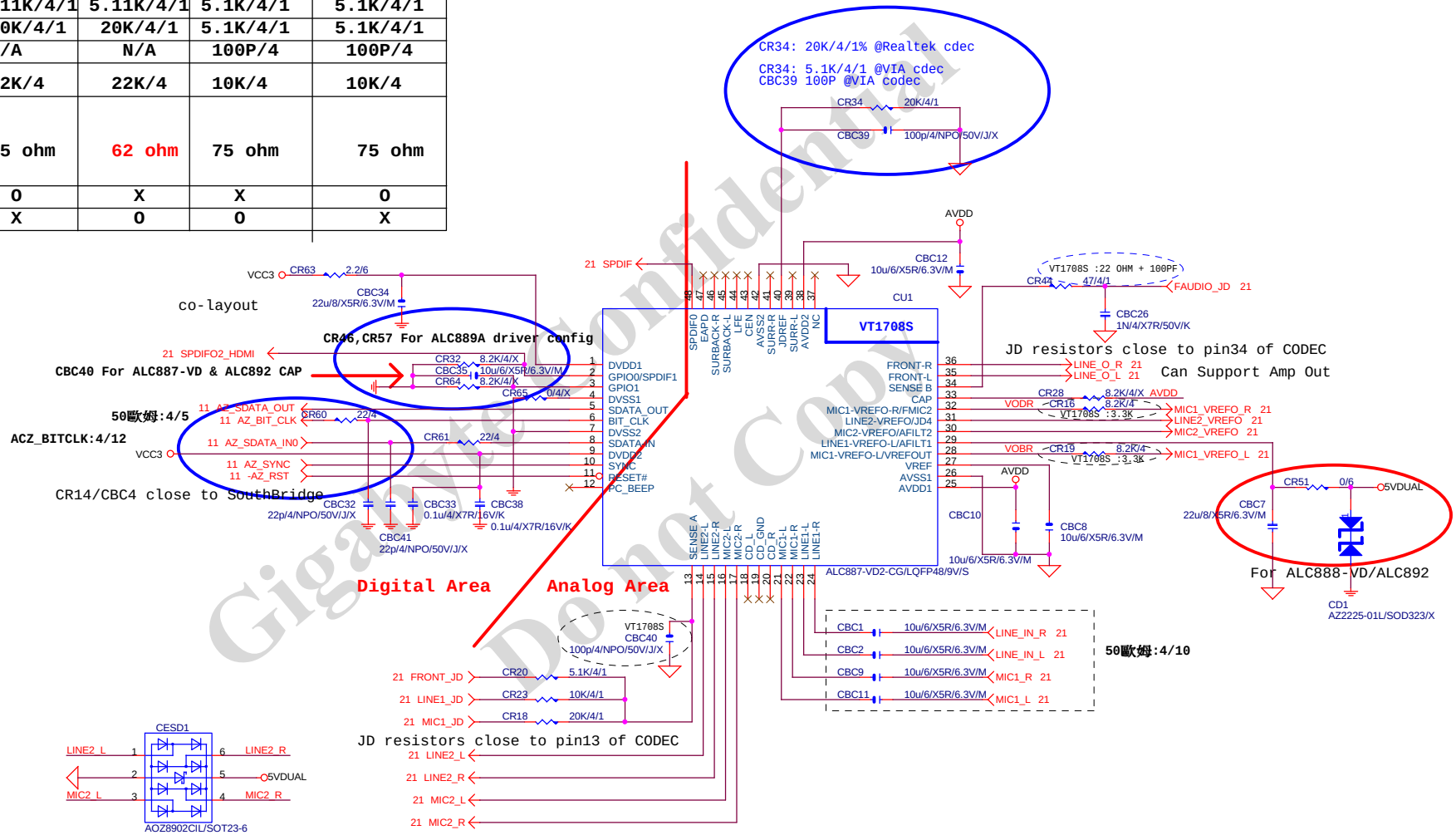
AZALIA CODEC *ALC883/ALC888-A/ALC888B/ALC888-VD/ALC892R/ALC889/ALC889A Colay*

	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR65	X	0	0	X
CR64	X	X	X	0
CR44/CBC6	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR34	20K/1%	20K/1%	5.1K/1%	5.1K/1%
CR31	0	0	0	0
CR30	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	5.1K/4/1	5.1K/4/1
CBC39/CBC40	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR1/CR14/ CR17/CR22/CR13/CR11/ CR57/CR53	75 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	0	X	X	0
CD2/CD3/CQ3/CQ5	X	0	0	X



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Title	ALC887-VD2 CODEC	
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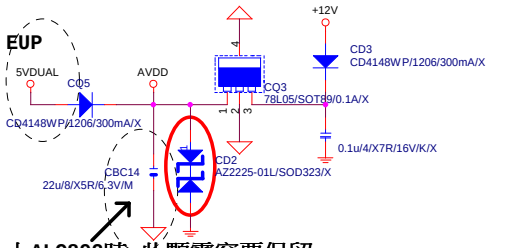
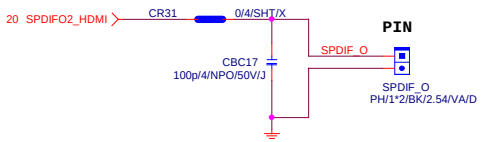
CODEC POWER/EMI PAD



上ALC892時,此顆電容要保留

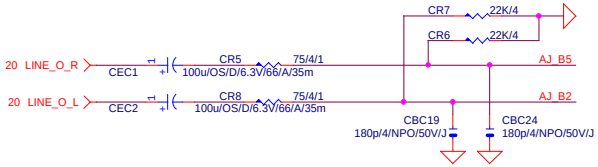
ADD CD2 For ESD PROTECT DIODE

SPDIF_OUT



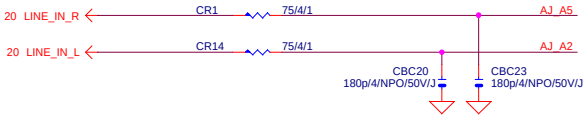
For HDMI SPDIF

LINE-OUT



LINE-IN

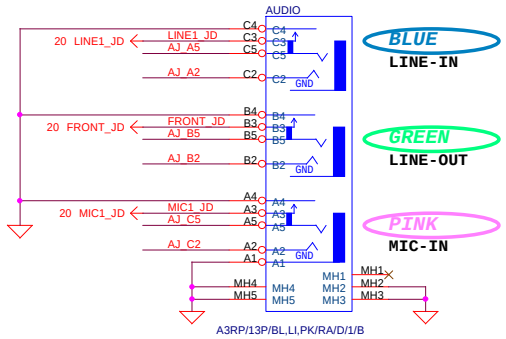
Only reserved for ALC888



Verify MIC function in LINE-in

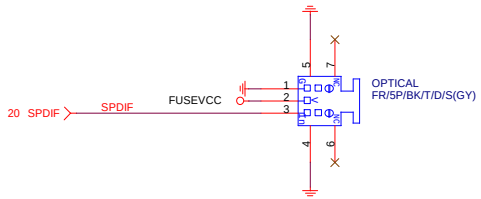
For 889A/888

HD Audio Jack



A3RP/13P/BL,LI,PK/RA/D/1/B

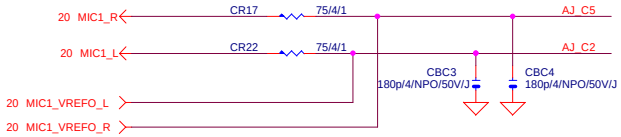
2 type Connector Co-lay



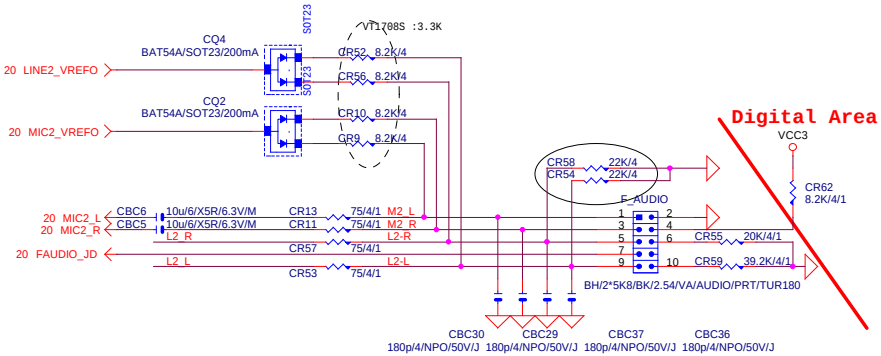
1.0/1.1 Selection

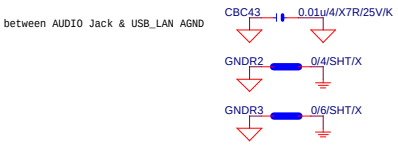
	HDMI_SPDIF	OPTICAL	CR40
Rev: 1.0	V	X	V
Rev: 1.1	HDMI	V	X

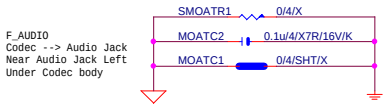
MIC-IN

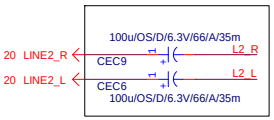


AZALIA FRONT PANEL









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Title: AUDIO JACK

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FRONT PANEL

F_PANEL
BH/2*10K10,12,13/BK/2.54/VA/PA

ATX POWER CONNECTOR

ATX
APW/2*12/BK/VA/SN/2SHK/PA66

【技術通報R&D技術通報153】
To fix 12V light load abnormal issue

【技術通報R&D技術通報154】
PWOK PATCH

For Seasonic 900W Power supply cant Boot issue

EMI request.

ATX_12V
APW/2*4/BK/OC/P/4.2/VA/SN/OH

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Title	ATX, FRONT PANEL	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
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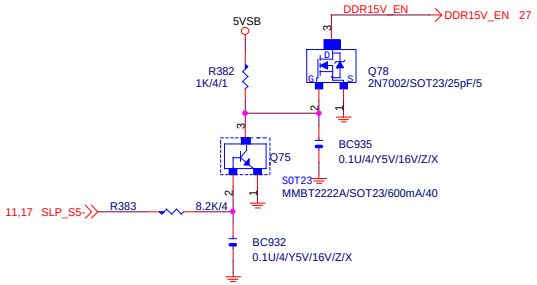

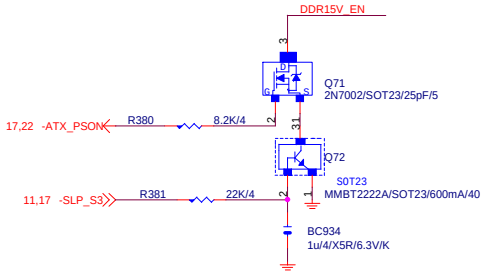

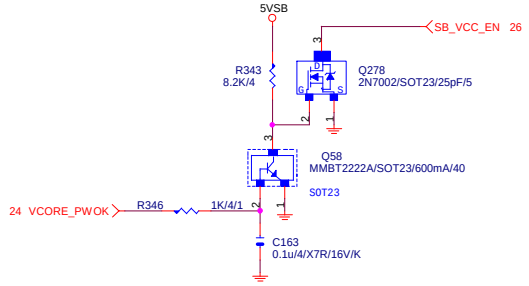

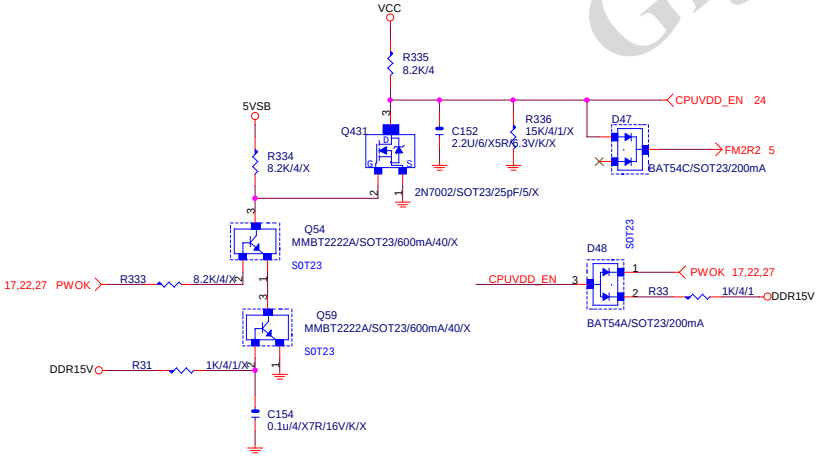

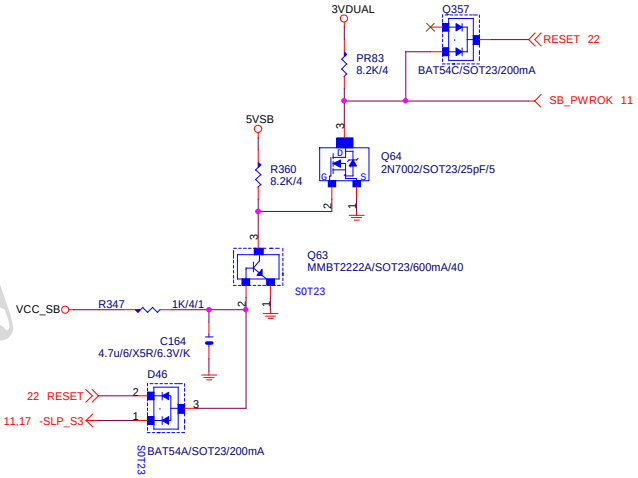

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Title: POWER SEQUENCE		
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
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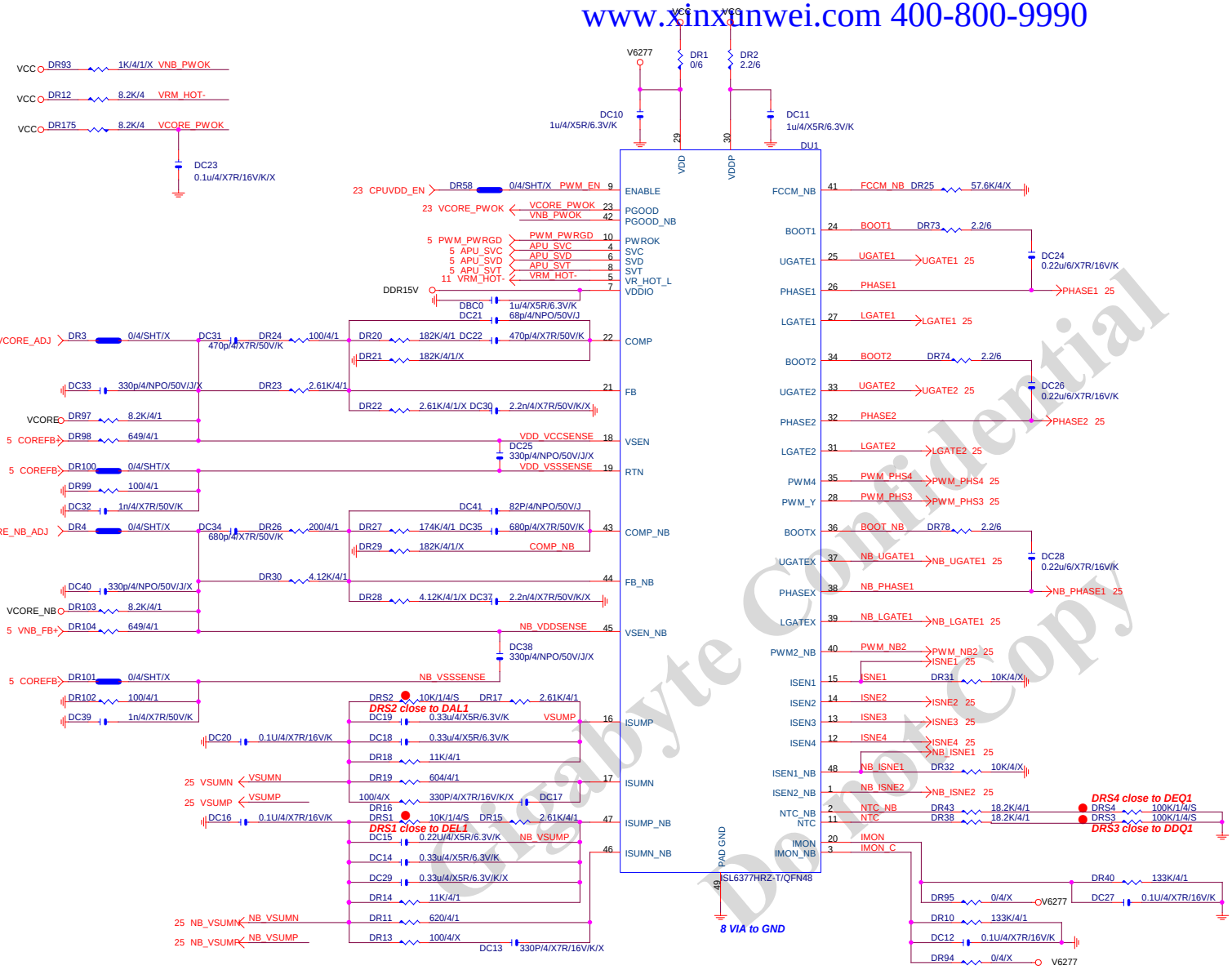

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Title	VCORE (PWM ISL6377+ISL6208B)	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
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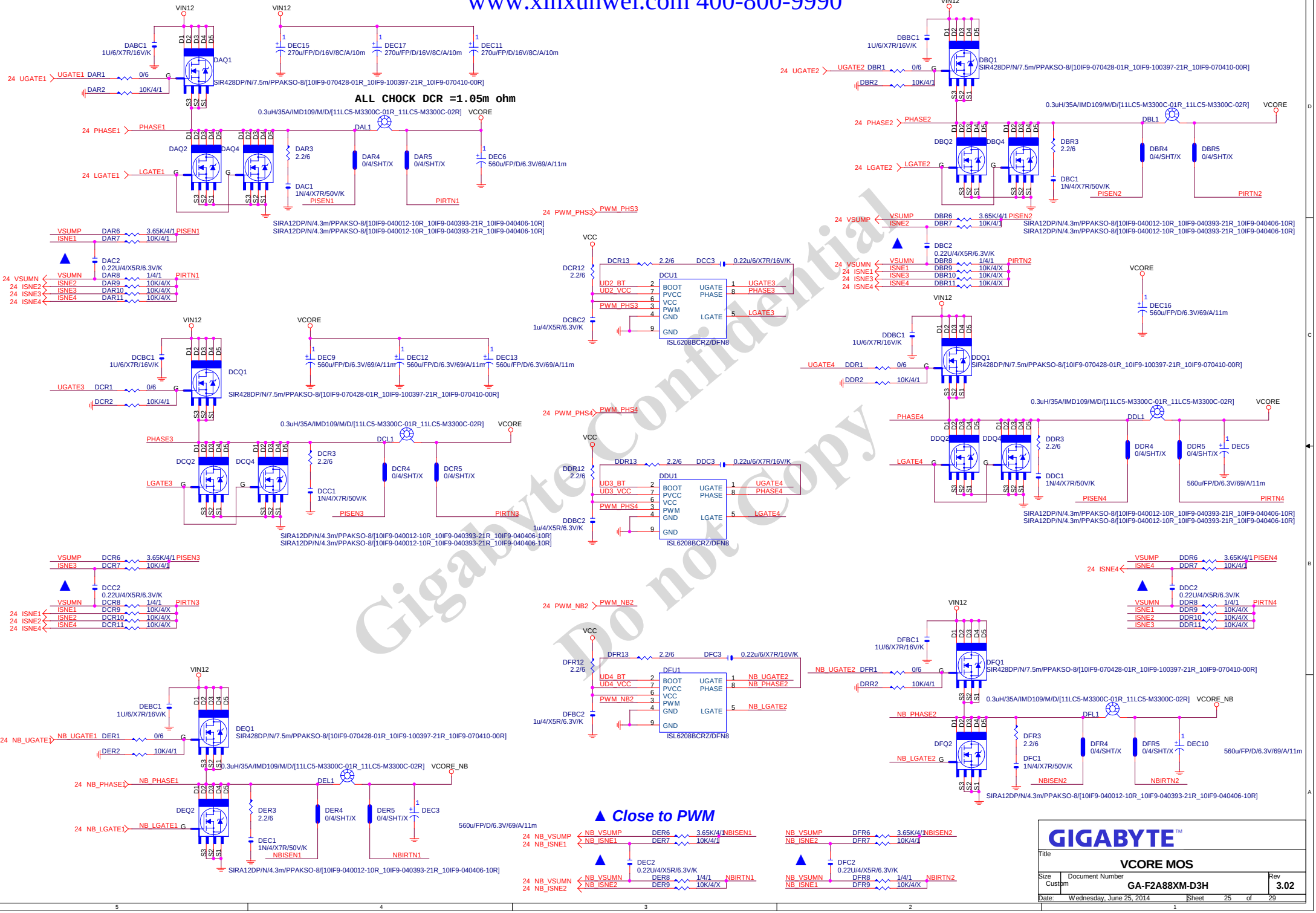

GIGABYTE™

Title	VCORE MOS	
Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
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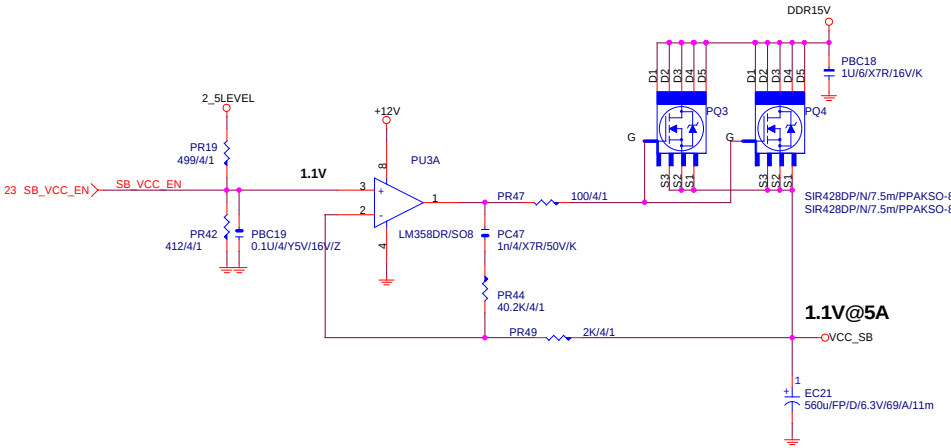
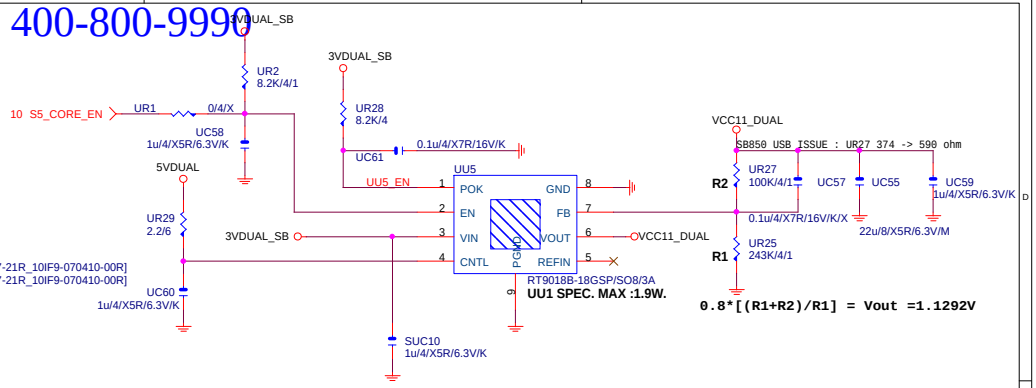
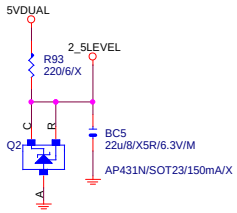
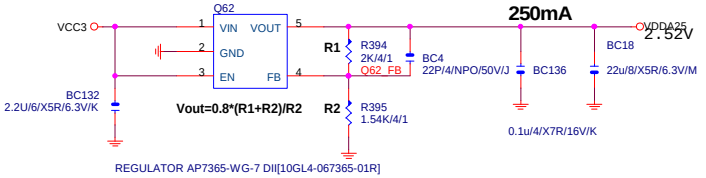
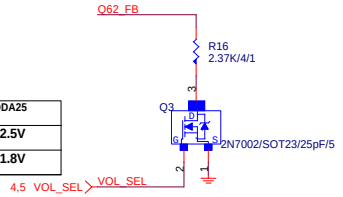
VCC_SB





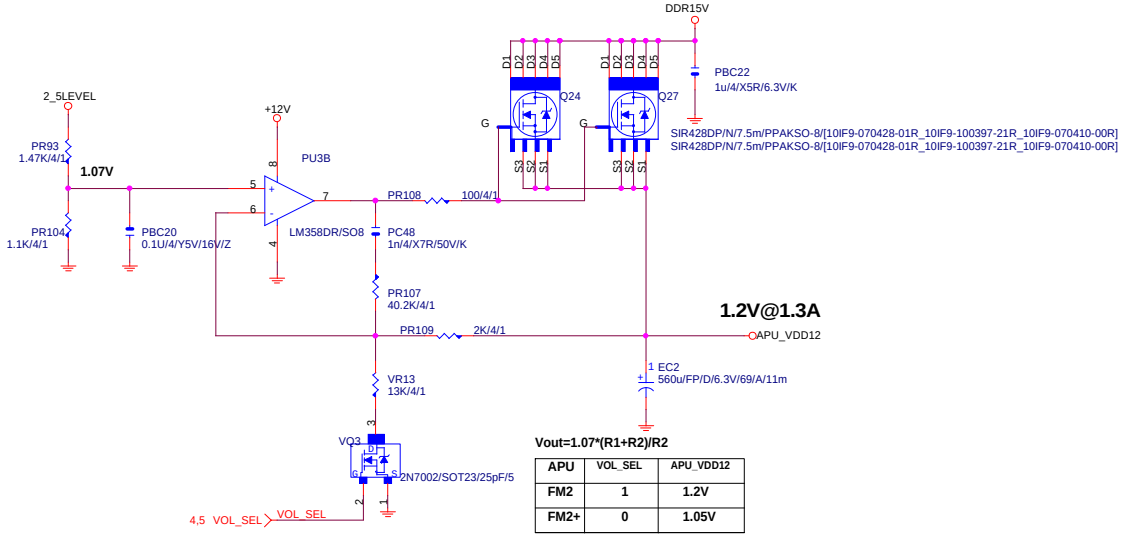






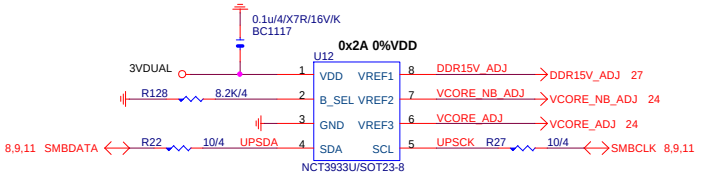
APU	VOL_SEL	VDDA25
FM2	1	2.5V
FM2+	0	1.8V

APU_VDDP



Vout=1.07*(R1+R2)/R2

APU	VOL_SEL	APU_VDD12
FM2	1	1.2V
FM2+	0	1.05V



GIGABYTE™

Title	SB PWR,VDDA25,VCC11DUAL	
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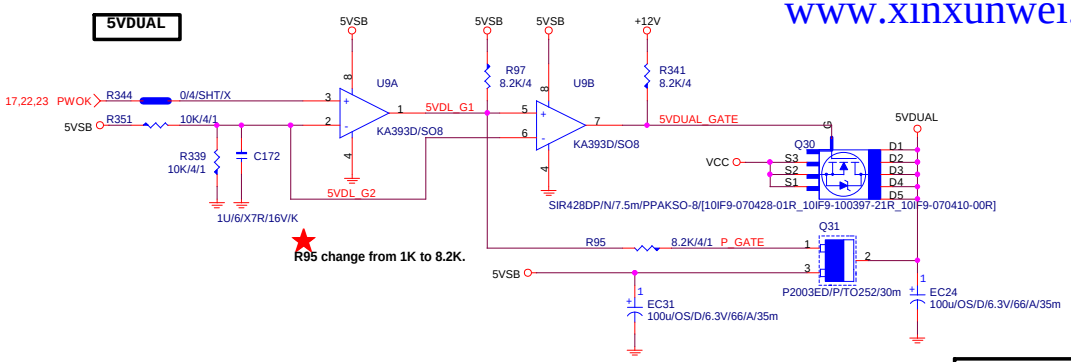
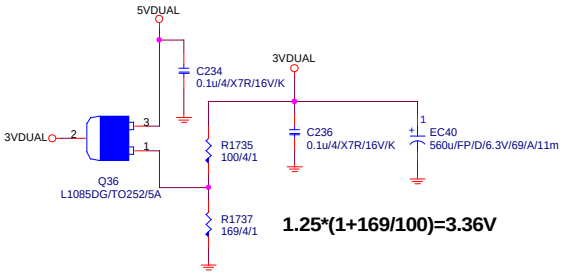
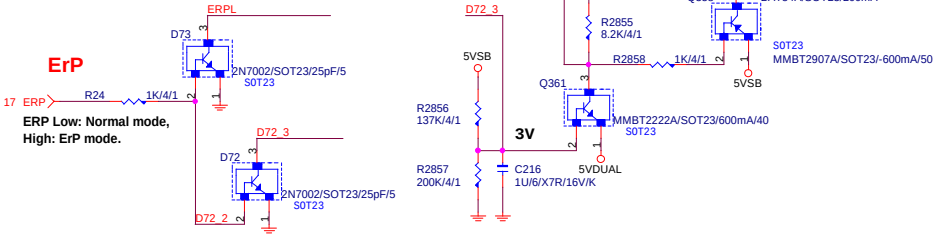
5VDUAL

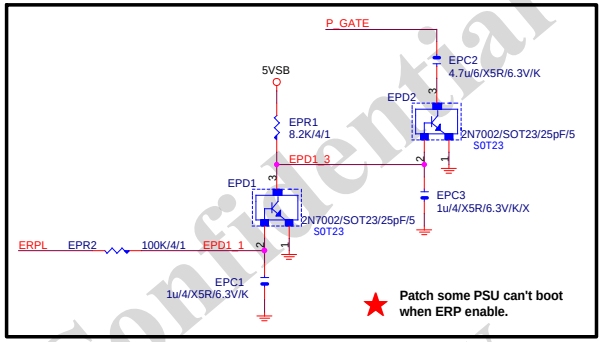


3VDUAL

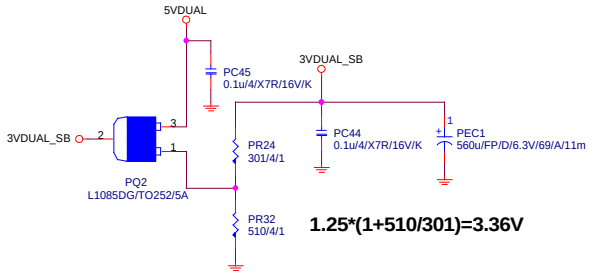


ErP

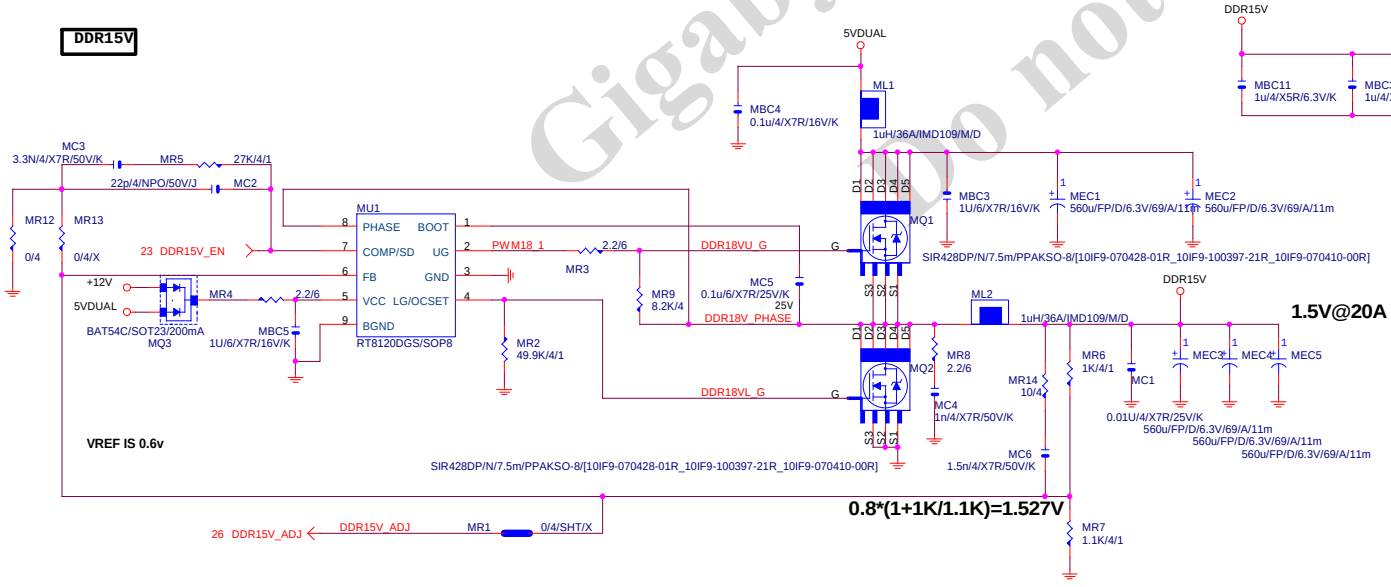




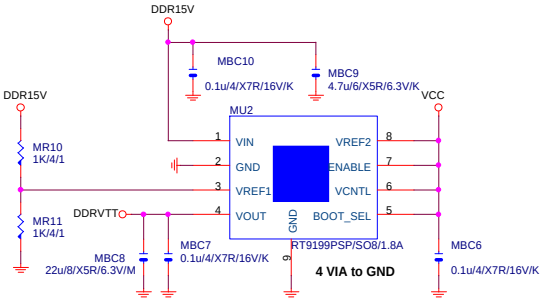
3VDUAL_SB



DDR15V



DDRVTT



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Title	DDR PWR, 5VDUAL, ERP	
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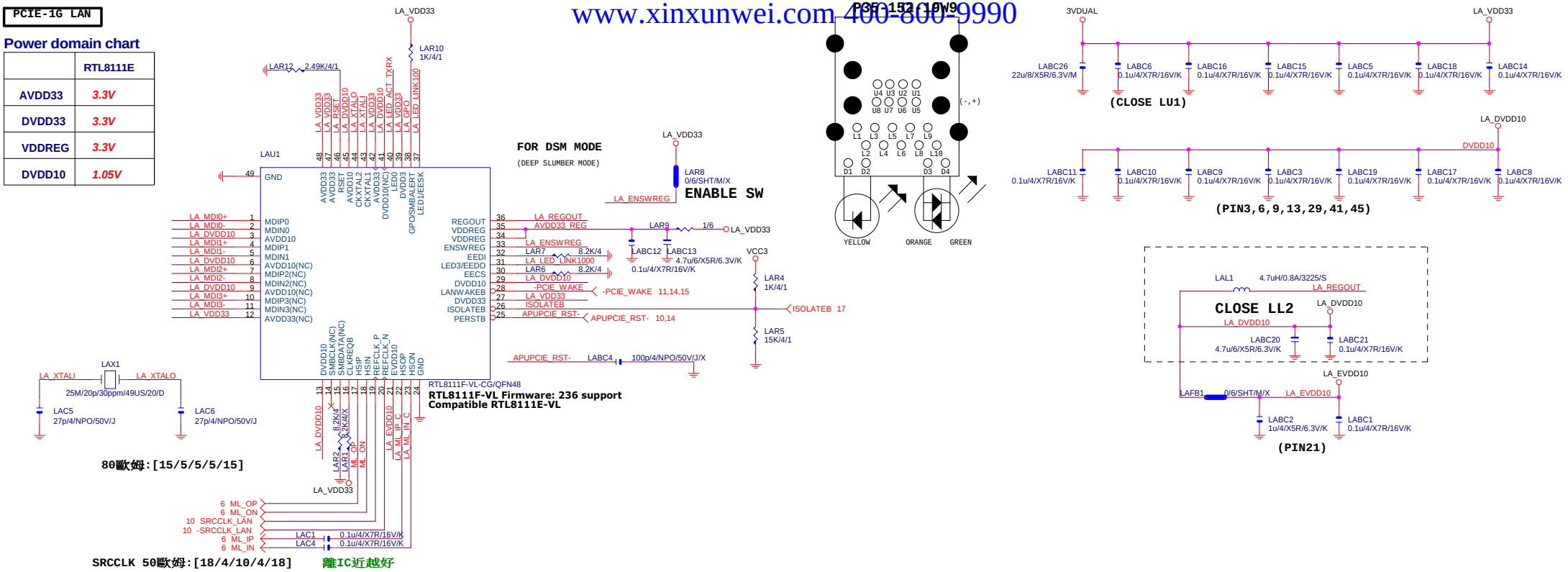
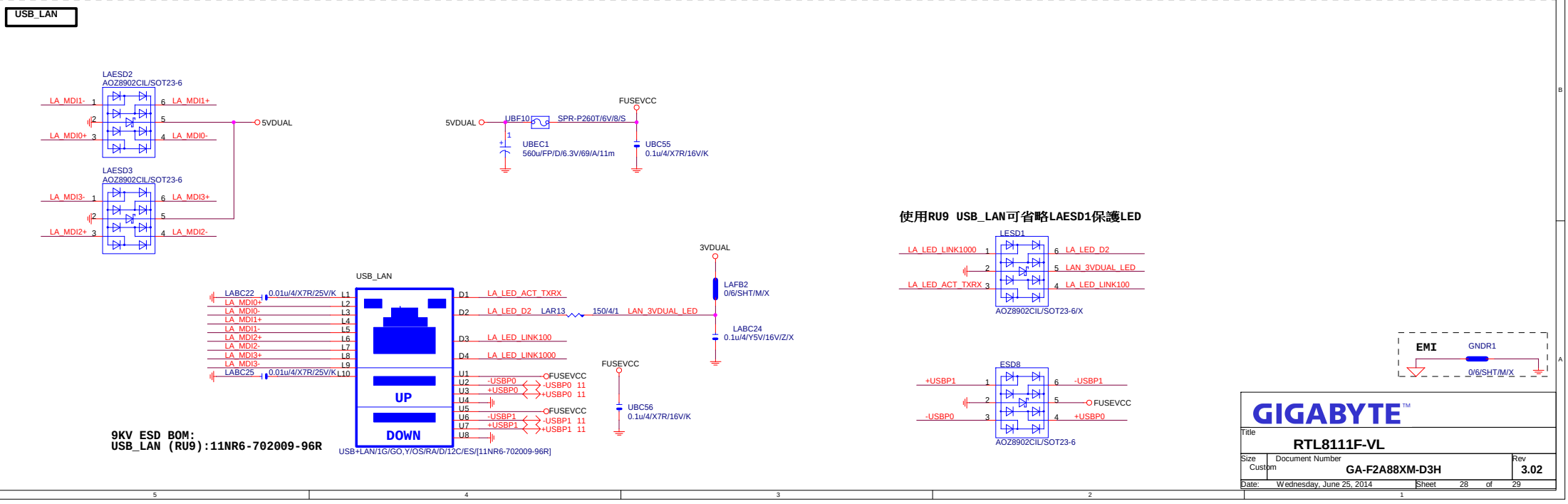
PCIE-1G LAN

Power domain chart

	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



USB_LAN



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Size: Custom	Document Number: GA-F2A88XM-D3H	Rev: 3.02
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