GA-990FXA-UD3

Revision : 4.02

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Model Name:GA-990FXA-UD3

AM2-->AM3 Different: AE9-->AE7, H22-->H20. Extra pin:B2 AM3 socket is 938 pins. Only shift 2 pins.

Component value change history

4 Layer, 4mil 50ohm +/- 15% X

Version: 4.02

P-Code: U98145-0

Date	Version		Change Items
2011.03.17	0.1 New BOM Release.	PCB:0.1	Modify from 9M990FXA5-00-01
2011.04.13	1.0A BOM Release.	PCB:1.0	Add AMD Validation parts ,Add Thermal-Die schematic Delete AZ2025 for AUDIO
2011.04.27	1.0B BOM Release.	PCB:1.01	Remove PCB silkscreen SLI logo
2011.05.05	1.0C BOM Release.	PCB:1.01	更改 CPU RM 為分離式
2011.05.05	1.0D BOM Release.	PCB:1.0	PCB Change to 1.0 (Silk W/SLI Logo)
2011.08.05	1.1A BOM Release.	PCB:1.1	Add Load-Line Droop control
2011.08.24	1.1B BOM Release.	PCB:1.1	modify PWM DR73 ,DR82 ,DR83 ,DR84 ISEN 196R ,轉 P-BOM
2011.09.29	1.1C BOM Release.	PCB:1.1	modify 黑色box header 印字銘板移印,字體方向也進行轉向
2012.01.02	1.1D BOM Release.	PCB:1.1	Modify LAN 8111E => 8111F
2012.02.20	1.1D ECN BOM Release.	PCB:1.1	Add mosfet second source Vishay 4+7
2012.04.02	1.1E BOM Release.	PCB:1.1	Modify USB_LAN, KB_MS_USB 料件紅色改黑色
2012.04.17	1.1F BOM Release.	PCB:1.11	Add CPU PWM MOSFET Thermal protect
2012.05.07	1.1G BOM Release.	PCB:1.11	R156 change to 2.32K for correct CPU PWM mosfet thermal range
2012.08.01	3.0A BOM Release.	PCB:3.0	Modify SIO IT8728 ,ErP 0.5W
2012.08.22	3.0B BOM Release.	PCB:3.01	Patch some PSU can't boot when ERP enable, STR issue
2012.10.12	3.0C P-BOM Release.	PCB:3.02	Remove EES 文字面 ,Modify Ultra Durable & Revision 文字面
2012.11.15	3.0C ECN BOM Release.	PCB:3.02	移除未上件 PCB 廠家 (全成信 文印不良)
2012.12.27	3.0D MP-BOM Release.	PCB:3.02	USB_LAN (RU9):11NR6-702009-96R ,使用RU9 ~~USB_LAN可省略LAESD1保護LED~~
2013.02.26	4.0A E-BOM Release.	PCB:4.0	Modify Digital PWM ,USB3 VL805 ,Remove IPWR ,Add Pipe HS
2013.06.07	4.0B P-BOM Release.	PCB:4.01	Modify 工廠 DFM ,更正文字面字串 ,Change DDR slot color
2013.06.13	4.0B ECN Release.	PCB:4.01	零件部需求,因缺料,增加 MOS_HS 12SP2-PA9903-02R 替料已利試產
2013.07.18	4.0B ECN Release.	PCB:4.01	移除PVT未上件PCB廠商 全成信
2013.08.23	4.0B ECN Release.	PCB:4.01	Add second source RBU1 9172-A2 ,採購告知大概 9月以後 陸續進行轉換
2013.08.14	4.0C P-BOM Release.	PCB:4.01	Modify PPAKSO-8 mosfet P/N
2014.07.04	4.0D P-BOM Release.	PCB:4.02	SATA MLCC remove

Circuit or PCB layout change for next version

Date	Version	Reason
2011.03.16	0.1 Gerber-out	Modify from GA-990FXA-UD5 Rev 0.1
2011.04.12	1.0 Gerber-out	Add AMD Validation parts ,Add Thermal-Die schematic
2011.04.26	1.01 Gerber-out	Remove PCB silkscreen SLI logo
2011.08.04	1.1 Gerber-out	Add Load-Line Droop control
2012.04.16	1.11 Gerber-out	Add CPU PWM MOSFET Thermal protect
2012.07.31	3.0 Gerber-out	Modify SIO IT8728 ,ErP 0.5W
2012.08.21	3.01 Gerber-out	Patch some PSU can't boot when ERP enable, STR issue
2012.10.11	3.02 Gerber-out	Remove EES 文字面 ,Modify Ultra Durable & Revision 文字面
2013.02.25	4.0 Gerber-out	Modify Digital PWM ,USB3 VL805 ,Remove IPWR ,Add Pipe HS
2013.06.06	4.01 Gerber-out	Modify 工廠 DFM ,更正文字面字串
2014.07.04	4.02 Gerber-out	SATA remove MLCC, 改為 short/mask *32pcs

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Title: BOM & PCB HISTORY

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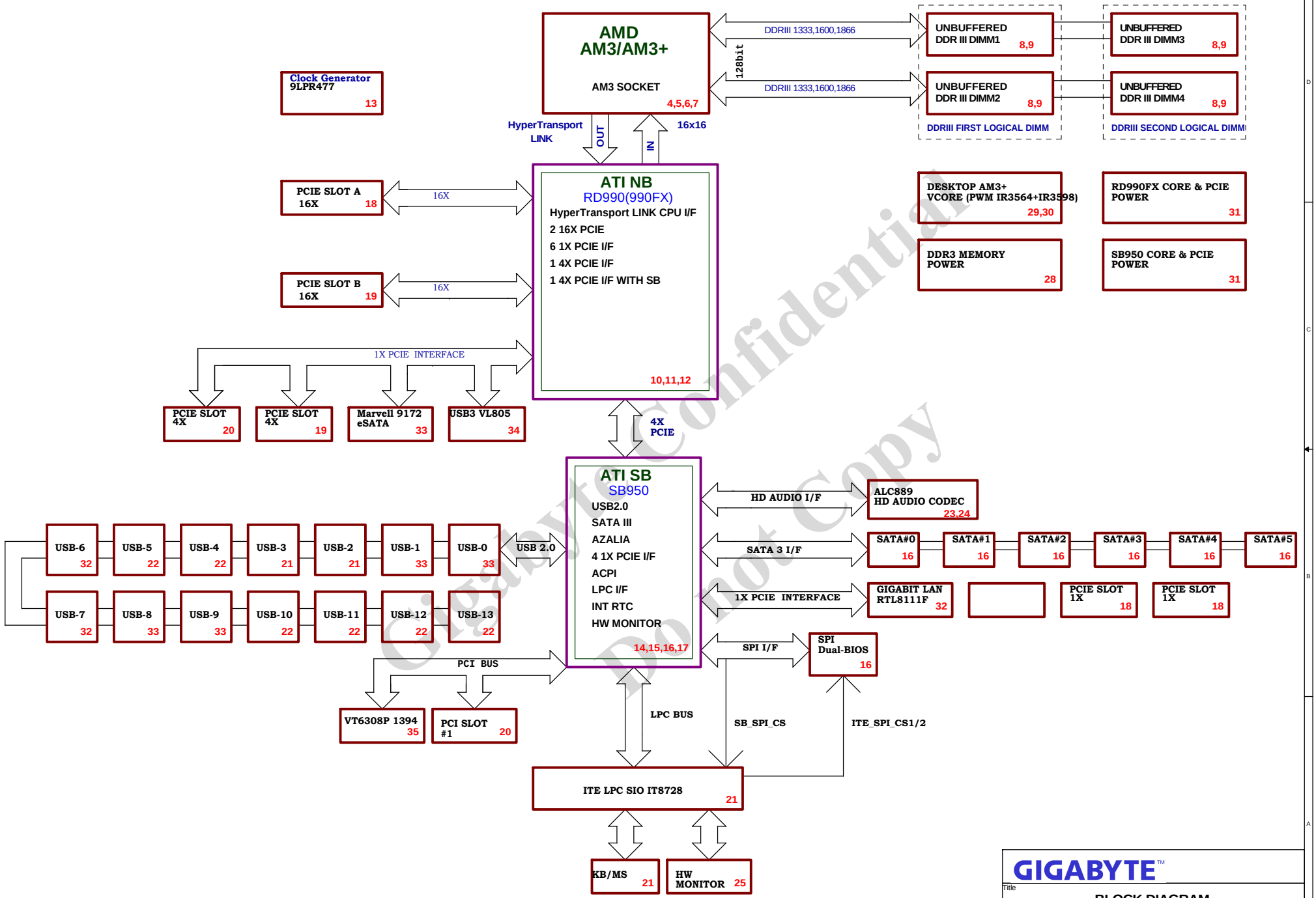

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Title: BLOCK DIAGRAM		
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L0_CADIN_L[0..15] L0_CADIN_L[0..15] 10
L0_CADIN_H[0..15] L0_CADIN_H[0..15] 10
L0_CADOUT_L[0..15] L0_CADOUT_L[0..15] 10
L0_CADOUT_H[0..15] L0_CADOUT_H[0..15] 10

CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR15V
CPU_VDDR = CPU_VDDR12

VLDT_A = VCC12_HT
VLDT_B = HT12B

M2CPUA

HYPERTRANSPORT

10 L0_CLKIN_H1	L0_CLKIN_H1	N6	L0_CLKIN_H(1)	L0_CLKOUT_H(1)	AD5	L0_CLKOUT_H1	L0_CLKOUT_H1 10
10 L0_CLKIN_L1	L0_CLKIN_L1	P6	L0_CLKIN_L(1)	L0_CLKOUT_L(1)	AD4	L0_CLKOUT_L1	L0_CLKOUT_L1 10
10 L0_CLKIN_H0	L0_CLKIN_H0	N3	L0_CLKIN_H(0)	L0_CLKOUT_H(0)	AD1	L0_CLKOUT_H0	L0_CLKOUT_H0 10
10 L0_CLKIN_L0	L0_CLKIN_L0	N2	L0_CLKIN_L(0)	L0_CLKOUT_L(0)	AC1	L0_CLKOUT_L0	L0_CLKOUT_L0 10
10 L0_CTLIN_H1	L0_CTLIN_H1	V4	L0_CTLIN_H(1)	L0_CTLOUT_H(1)	Y6	L0_CTLOUT_H1	L0_CTLOUT_H1 10
10 L0_CTLIN_L1	L0_CTLIN_L1	V5	L0_CTLIN_L(1)	L0_CTLOUT_L(1)	W6	L0_CTLOUT_L1	L0_CTLOUT_L1 10
10 L0_CTLIN_H0	L0_CTLIN_H0	U1	L0_CTLIN_H(0)	L0_CTLOUT_H(0)	W2	L0_CTLOUT_H0	L0_CTLOUT_H0 10
10 L0_CTLIN_L0	L0_CTLIN_L0	V1	L0_CTLIN_L(0)	L0_CTLOUT_L(0)	W3	L0_CTLOUT_L0	L0_CTLOUT_L0 10
	L0_CADIN_H15	U6	L0_CADIN_H(15)	L0_CADOUT_H(15)	Y5	L0_CADOUT_H15	
	L0_CADIN_L15	V6	L0_CADIN_L(15)	L0_CADOUT_L(15)	Y4	L0_CADOUT_L15	
	L0_CADIN_H14	T4	L0_CADIN_H(14)	L0_CADOUT_H(14)	AB6	L0_CADOUT_H14	
	L0_CADIN_L14	T5	L0_CADIN_L(14)	L0_CADOUT_L(14)	AA6	L0_CADOUT_L14	
	L0_CADIN_H13	R6	L0_CADIN_H(13)	L0_CADOUT_H(13)	AB5	L0_CADOUT_H13	
	L0_CADIN_L13	T6	L0_CADIN_L(13)	L0_CADOUT_L(13)	AB4	L0_CADOUT_L13	
	L0_CADIN_H12	P4	L0_CADIN_H(12)	L0_CADOUT_H(12)	AD6	L0_CADOUT_H12	
	L0_CADIN_L12	P5	L0_CADIN_L(12)	L0_CADOUT_L(12)	AC6	L0_CADOUT_L12	
	L0_CADIN_H11	M4	L0_CADIN_H(11)	L0_CADOUT_H(11)	AF6	L0_CADOUT_H11	
	L0_CADIN_L11	M5	L0_CADIN_L(11)	L0_CADOUT_L(11)	AF5	L0_CADOUT_L11	
	L0_CADIN_H10	L6	L0_CADIN_H(10)	L0_CADOUT_H(10)	AF4	L0_CADOUT_H10	
	L0_CADIN_L10	M6	L0_CADIN_L(10)	L0_CADOUT_L(10)	AH6	L0_CADOUT_L10	
	L0_CADIN_H9	K4	L0_CADIN_H(9)	L0_CADOUT_H(9)	AG6	L0_CADOUT_H9	
	L0_CADIN_L9	K5	L0_CADIN_L(9)	L0_CADOUT_L(9)	AH5	L0_CADOUT_L9	
	L0_CADIN_H8	J6	L0_CADIN_H(8)	L0_CADOUT_H(8)	AH4	L0_CADOUT_H8	
	L0_CADIN_L8	K6	L0_CADIN_L(8)	L0_CADOUT_L(8)		L0_CADOUT_L8	
	L0_CADIN_H7	U3	L0_CADIN_H(7)	L0_CADOUT_H(7)	Y1	L0_CADOUT_H7	
	L0_CADIN_L7	U2	L0_CADIN_L(7)	L0_CADOUT_L(7)	W1	L0_CADOUT_L7	
	L0_CADIN_H6	R1	L0_CADIN_H(6)	L0_CADOUT_H(6)	AA2	L0_CADOUT_H6	
	L0_CADIN_L6	T1	L0_CADIN_L(6)	L0_CADOUT_L(6)	AA3	L0_CADOUT_L6	
	L0_CADIN_H5	R3	L0_CADIN_H(5)	L0_CADOUT_H(5)	AB1	L0_CADOUT_H5	
	L0_CADIN_L5	R2	L0_CADIN_L(5)	L0_CADOUT_L(5)	AA1	L0_CADOUT_L5	
	L0_CADIN_H4	N1	L0_CADIN_H(4)	L0_CADOUT_H(4)	AC2	L0_CADOUT_H4	
	L0_CADIN_L4	P1	L0_CADIN_L(4)	L0_CADOUT_L(4)	AC3	L0_CADOUT_L4	
	L0_CADIN_H3	L1	L0_CADIN_H(3)	L0_CADOUT_H(3)	AE2	L0_CADOUT_H3	
	L0_CADIN_L3	M1	L0_CADIN_L(3)	L0_CADOUT_L(3)	AE3	L0_CADOUT_L3	
	L0_CADIN_H2	L3	L0_CADIN_H(2)	L0_CADOUT_H(2)	AF1	L0_CADOUT_H2	
	L0_CADIN_L2	L2	L0_CADIN_L(2)	L0_CADOUT_L(2)	AE1	L0_CADOUT_L2	
	L0_CADIN_H1	J1	L0_CADIN_H(1)	L0_CADOUT_H(1)	AG2	L0_CADOUT_H1	
	L0_CADIN_L1	K1	L0_CADIN_L(1)	L0_CADOUT_L(1)	AG3	L0_CADOUT_L1	
	L0_CADIN_H0	J3	L0_CADIN_H(0)	L0_CADOUT_H(0)	AH1	L0_CADOUT_H0	
	L0_CADIN_L0	J2	L0_CADIN_L(0)	L0_CADOUT_L(0)	AG1	L0_CADOUT_L0	

CPU-SK/941AM3/S/GF/[10SC1-A01942-01R_10SC1-A01942-02R]

VCORE
AC1 100P/4/NPO/50V/J/X
AC2 100P/4/NPO/50V/J/X
AC3 100P/4/NPO/50V/J/X
HT_BUS Vcore use

MH3 MH9 MH8
MH1 MH2 MH4
MH7 MH5 MH6
HOLE_3/X

COUPON1 COUPON1 1 2 COUPON/X VCC
COUPON2 COUPON2 1 2 COUPON/X

K1 K2 K3 K4 K5 K6
K1_ICT/X

M2CPU
AM3RM/SC/BL/MB/[12KRC-04K812-31R]

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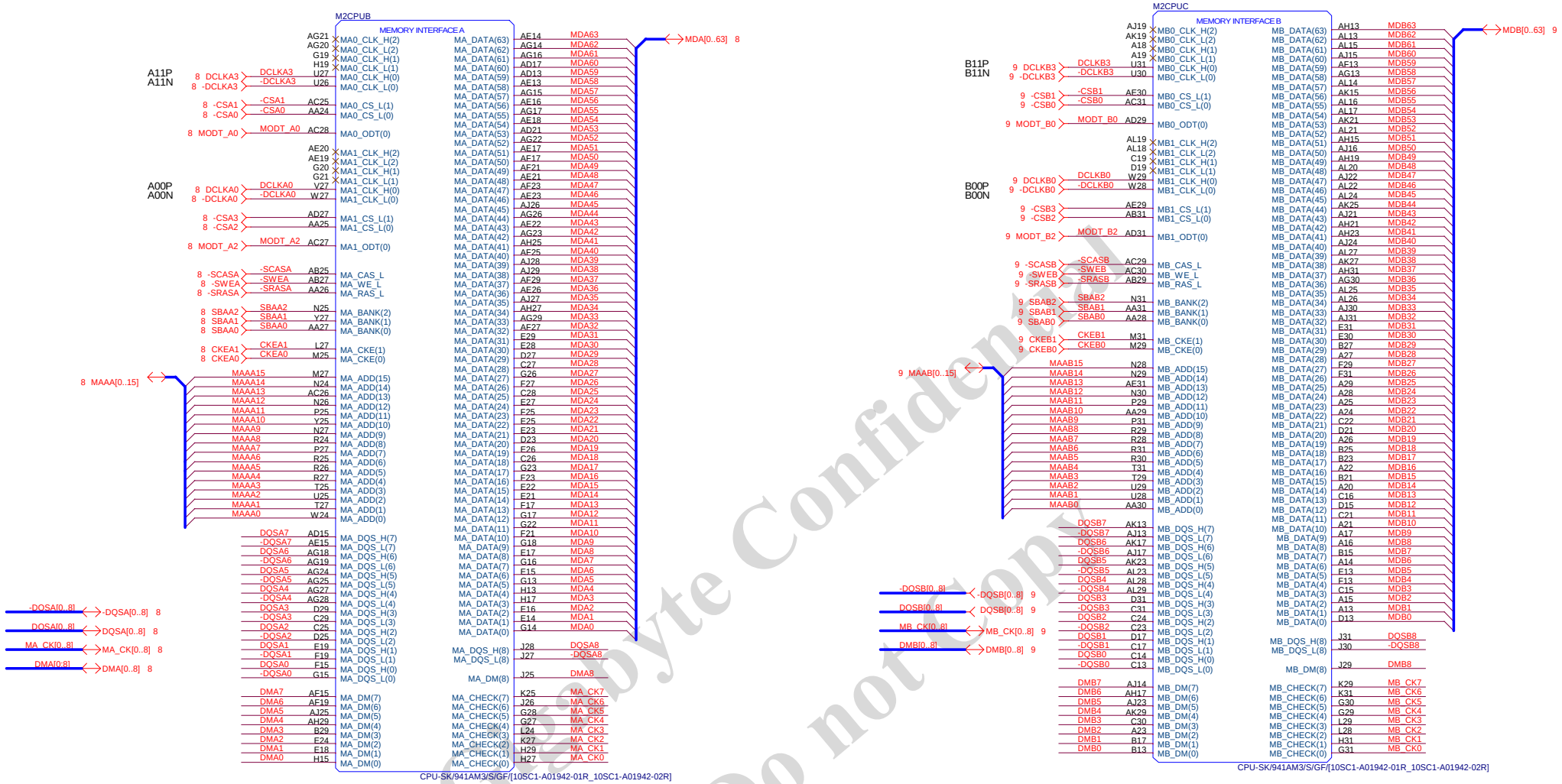

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SB600 CPU_PWR / DDR18V

DDR15V
-CPURST AR1 300/4
-LDT_STOP AR2 300/4
AC4 150P/4/NPO/50V/J/X

-CPURST
AC5 100P/4/NPO/50V/J

2.5V/0.5A

VDDA25
ABC1 4.7u/6X5R/6.3V/K
ABC2 3.3n/4/X7R/50V/K
ABC3 0.22u/4/X5R/6.3V/K

13 CPUCLK0_H CPUCLK0_H AC6 3.9n/4/X7R/50V/K CLKIN_H
13 CPUCLK0_L CPUCLK0_L AC7 3.9n/4/X7R/50V/K AR3 169/4/1 CLKIN_L

For IR over voltage clear when use hardware reset.

DG:AM3 1.04

M2CPUD
MISC
C10 VDDA1
D10 VDDA2
A8 CLKIN_H
B8 CLKIN_L
C9 CPU_PWRGD
D8 -LDT_STOP
C7 -CPURST
AL3 CPU_PRESENT_L
11,14 -LDT_STOP
11,14,15 -CPURST
PWROK
LDTSTOP_L
RESET_L
CPU_PRESENT_L
VID(5) D2
VID(4) D1
VID(3) C1
VID(2) E3
VID(1) E2
VID(0) E1

DDR15V
AR16 1K/4/1
AR17 1K/4/1
AR18 1K/4/1
AR19 300/4
SVC 29
SVD 29
AR20 300/4
AM3 only

3VDUAL
AR24 8.2K/4/1
THERMTRIP_CPU_L
THERMTRIP_CPU_L 15,28
AQ5 MMBT2222A/SOT23/600mA/40 S0T23

DDR15V AR4 1K/4/1 SIC 21
DDR15V AR5 1K/4/1 SID 21
SIC AL6
SID AK6
SIC
SID
THERMTRIP_L AK7
PROCHOT_L AL7
THERMTRIP_L
-PROCHOT

15 CPU_TDI CPU_TDI AL10
CPU_TRST- AJ10
CPU_TCK AH10
CPU_TMS AL9
TDI
TRST_L
TCK
TMS
TDO AK10

DDR15V AR47 1K/4/1/X CPU_TDI
DDR15V AR48 1K/4/1/X CPU_TRST-
DDR15V AR49 1K/4/1/X CPU_TCK
DDR15V AR50 1K/4/1/X CPU_TMS
DDR15V AR51 300/4/X CPU_DBREQ-

CPU_DBREQ- A5
DBREQ_L
DBRDY B6

DDR15V AR22 1K/4/1 AR23 1K/4/1
AQ4 MMBT2222A/SOT23/600mA/40 S0T23
AR21 1K/4/1
AR25 0/4/SHT/X -PROCHOT_CPU
-PROCHOT_CPU 14,15,61

Erratum 133, Revision Guide for AMD NPT 0Fh Processors

29 COREFB+ G2
29 COREFB- G1
VDD_FB_H
VDD_FB_L
VDDIO_FB_H AK11
VDDIO_FB_L AL11

VTT_SENSE AM3 only, may not use, like AM2

VTT_SENSE E12
PSI_L F1

CPU_M_VREF F12
DDR15V AR6 39.2/4/1 AH11
DDR15V AR7 39.2/4/1/X AJ11
M_VREF
M_ZN
M_ZP
HTREF1 V8
HTREF0 V7
AR52 46.4/4/1
AR53 46.4/4/1
VCC12_HT

CPU_TEST25_H A10
CPU_TEST25_L B10
TEST25_H
TEST25_L
TEST19
TEST18
TEST13
TEST9
TEST29_H C11
TEST29_L D11
AR54 80.6/4/1/X

AR8 1K/4/1
AR9 1K/4/1

Route as 80-Ohm differential impedance
Keep trace to resistor less than 1" from CPU pin

D6 TEST17
E7 TEST16
F8 TEST15
C5 TEST14
AH9 TEST12
TEST24 AK8
TEST23 AH8
TEST22 AJ9
TEST21 AL8
TEST20 AJ8
CPU_TEST24
CPU_TEST22
CPU_TEST21
CPU_TEST20
AR55 1K/4/1

AR10 1K/4/1

LAYOUT: Route trace 50 mils wide and 500 to 750 mils long between these caps.

E5 TEST7
AJ5 TEST6
AG9 THERMDC
AG8 THERMDA
AH7 TEST3
AJ6 TEST2
TEST28_H J10
TEST28_L H9
TEST27 AK9
TEST26 AK5
TEST10 G7
TEST8 D4
CPU_TEST27
CPU_TEST26

21 GNDA
21 TMPIN2

CPU-SK/941AM3/S/GF/[10SC1-A01942-01R_10SC1-A01942-02R]

3VDUAL
AR13 8.2K/4/1
VCC3
AR14 8.2K/4/1/X
DDR15V
AR56 300/4
PWM_PWRGD 29
AC8 0.1u/4/Y5V/16V/Z/X
AQ1
AQ2
DDR15V
AR11 300/4
14 CPU_PG_SB
AR12 1K/4/1
MMBT2222A/SOT23/600mA/40
2N7002/SOT23/25pF/5/X

DDR15V
AR15 1K/4/1
CPU_PWRGD
AMD comment for validation.
AQ3
AC9 0.1u/4/Y5V/16V/Z/X
2N7002/SOT23/25pF/5

Erratum 133, Revision Guide for AMD NPT 0Fh Processors

DDR15V
CPU_TEST26 AR26 1K/4/1
CPU_PRESENT_L AR27 1K/4/1
CPU_TEST25_H AR28 510/4/1/X
AR29 510/4/1
CPU_TEST25_L AR30 510/4/1/X
AR31 510/4/1
CPU_TEST21 AR32 1K/4/1

DDR15V
CPU_TEST27 AR33 1K/4/1
CPU_TEST20 AR34 1K/4/1
CPU_TEST22 AR35 1K/4/1
CPU_TEST24 AR36 1K/4/1

CPUVREF

40 MILS WIDTH

DDR15V
CPU_M_VREF
SAR1 15/4/1
SABC1
SABC2
1N/4/X7R/50V/K
SABC3 1U/4/X5R/6.3V/K
SAR2 15/4/1
0.1U/4/X7R/16V/K

Layout: Place within 500mils of the CPU socket.

M2CPUE
INTERNAL MISC
L25 RSVD1
L26 RSVD2
L31 RSVD3
L30 RSVD4
MA_RESET-
MB_RESET-
ALERT-
SA0
RSVD21
RSVD22
M_VDDIO_PWRGD
DCLKA2
DCLKA2-
MODT_A3
DCLKA1
DCLKA1-
MODT_A1
COREFB_NB+
COREFB_NB-
CORE_TYP_DET
DCLKB2
DCLKB2-
MODT_B3
DCLKB1
DCLKB1-
MODT_B1
MB_EVENT_L
MA_EVENT_L

AM3 only

A10P A10N
8 DCLKA2 W26
8 -DCLKA2 W25
8 MODT_A3 AE27
A01P A01N
8 DCLKA1 U24
8 -DCLKA1 V24
8 MODT_A1 AE28

AM3 only

B10P B10N
9 DCLKB2 Y31
9 -DCLKB2 Y30
9 MODT_B3 AG31
B01P B01N
9 DCLKB1 V31
9 -DCLKB1 W31
9 MODT_B1 AF31

AM3 only
E20 MA_RESET_L
B19 MB_RESET_L
MA_RESET_L 8
MB_RESET_L 9
AR37 1K/4/1
DDR15V
AL4 CPU_ALERT-
AK4 AR40 1K/4/1
AK3

VCC3
AR38 1K/4/1
AQ6
3VDUAL
AR39 8.2K/4/1
SB_ALERT- 16
2N7002/SOT23/25pF/5

F2
F3 CPU_IDLEEXIT-
AR41 1K/4/1
DDR15V
M_VDDIO_PWRGD not support PID:40778
G4 COREFB_NB+ 29
G3 COREFB_NB- 29
G5 CORE_TYPE_DET AR42 1K/4/1 DDR15V
AM2: high, AM2R2: low

RSVD27 AD25
RSVD28 AE24
RSVD29 AE25
RSVD30 AJ18
RSVD31 AJ20
RSVD32 C18
RSVD33 C20
RSVD34 G24
RSVD35 G25
RSVD36 H25
V29
W30

AM3 =>DRAM Thermal Event Status
AR43 1K/4/1 DDR15V
MB_EVENT_L
MA_EVENT_L
MB_EVENT_L 9
MA_EVENT_L 8
AR44 1K/4/1 DDR15V
EVENT pins are for future AM3r2

Layout: Route as 60 ohms with 5/10 W/S from CPU pins.

3VDUAL
AR45 1K/4/1
AQ7
3VDUAL
AR46 8.2K/4/1
CPU_IDLEEXIT-
SB_IDLEEXIT- 15
2N7002/SOT23/25pF/5

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VLDT_RUN_B is connected to the VLDT_RUN power supply through the package or on the die. It is only connected on the board to decoupling near the CPU package.

M2CPUF
VDD1

VCORE_NB
VCORE

AE9 Missing pins on package and socket used for mechanical keying. =>AM3

M2CPUG
VDD2

VCORE

H22 Missing pins on package and socket used for mechanical keying. =>AM3

M2CPUH
VDD3

VCORE

B2 NB/RSVD
AM3 Only
H20 NP/VSS1
AE7 NP/VSS2

GND

M2CPUI
VDDIO

VCC12_HT
VCC12_HT

CPU_VDDR12
VCC12_HT

DDR15V

VCC12_HT
CPU_VDDR12

HT12B
ABC4
10u/6/X5R/6.3V/M

GND

VCORE_NB

ABC5 22u/8/X5R/6.3V/M
ABC6 22u/8/X5R/6.3V/M
ABC7 4.7u/6/X5R/6.3V/K
ABC8 0.22u/4/X5R/6.3V/K
ABC9 0.01u/4/X7R/25V/K
ABC10 180P/4/NPO/50V/J

AMD Validation

ABC39 22u/8/X5R/6.3V/M
ABC40 22u/8/X5R/6.3V/M
ABC41 22u/8/X5R/6.3V/M
ABC42 22u/8/X5R/6.3V/M
ABC43 22u/8/X5R/6.3V/M
ABC44 22u/8/X5R/6.3V/M

BUTTOM SIDE

DDR15V

SABC4 0.22u/4/X5R/6.3V/K
SABC5 4.7u/6/X5R/6.3V/K
SABC6 0.22u/4/X5R/6.3V/K
SABC7 0.01u/4/X7R/25V/K
SABC8 180P/4/NPO/50V/J

SABC9 22u/8/X5R/6.3V/M
SABC10 22u/8/X5R/6.3V/M
SABC11 4.7u/6/X5R/6.3V/K
SABC12 10u/6/X5R/6.3V/M
SABC13 180P/4/NPO/50V/J

BUTTOM SIDE

VCORE

SABC14 0.22u/4/X5R/6.3V/K
SABC15 0.22u/4/X5R/6.3V/K
SABC16 0.22u/4/X5R/6.3V/K
SABC17 0.01U/4/X7R/25V/K
SABC18 180P/4/NPO/50V/J

BUTTOM SIDE

VCORE

SABC19 22u/8/X5R/6.3V/M
SABC20 22u/8/X5R/6.3V/M
SABC21 22u/8/X5R/6.3V/M
SABC22 22u/8/X5R/6.3V/M
SABC23 22u/8/X5R/6.3V/M
SABC24 22u/8/X5R/6.3V/M
SABC25 22u/8/X5R/6.3V/M
SABC26 22u/8/X5R/6.3V/M

SABC27 22u/8/X5R/6.3V/M
SABC28 22u/8/X5R/6.3V/M
SABC29 22u/8/X5R/6.3V/M
SABC30 22u/8/X5R/6.3V/M
SABC31 22u/8/X5R/6.3V/M
SABC32 22u/8/X5R/6.3V/M
SABC33 22u/8/X5R/6.3V/M

VCC12_HT

ABC11 10u/6/X5R/6.3V/M
ABC12 4.7u/6/X5R/6.3V/K
ABC13 0.22u/4/X5R/6.3V/K
ABC14 0.22u/4/X5R/6.3V/K
ABC15 180P/4/NPO/50V/J
ABC16 0.1u/4/X7R/16V/K

ABC21 10u/6/X5R/6.3V/M
ABC22 4.7u/6/X5R/6.3V/K
ABC23 0.22u/4/X5R/6.3V/K
ABC24 1N/4/X7R/50V/K
ABC25 0.01u/4/X7R/25V/K
ABC26 0.1u/4/X7R/16V/K
ABC27 180P/4/NPO/50V/J

ABC28 22u/8/X5R/6.3V/M
ABC29 4.7u/6/X5R/6.3V/K
ABC30 0.22u/4/X5R/6.3V/K
ABC31 0.01u/4/X7R/25V/K
ABC32 1N/4/X7R/50V/K
ABC33 180P/4/NPO/50V/J
ABC34 0.1u/4/X7R/16V/K

DDR15V

ABC17 10u/6/X5R/6.3V/M
ABC18 10u/6/X5R/6.3V/M
ABC19 0.22u/4/X5R/6.3V/K
ABC20 0.22u/4/X5R/6.3V/K

GND

VCORE

AMD Validation

SABC34 22u/8/X5R/6.3V/M
SABC35 22u/8/X5R/6.3V/M
SABC36 22u/8/X5R/6.3V/M
SABC37 22u/8/X5R/6.3V/M
SABC38 22u/8/X5R/6.3V/M
SABC39 22u/8/X5R/6.3V/M
SABC40 22u/8/X5R/6.3V/M

VCORE

AMD Validation

SABC41 22u/8/X5R/6.3V/M
SABC42 22u/8/X5R/6.3V/M
SABC43 22u/8/X5R/6.3V/M
SABC44 22u/8/X5R/6.3V/M
SABC45 22u/8/X5R/6.3V/M
SABC46 22u/8/X5R/6.3V/M
SABC47 22u/8/X5R/6.3V/M

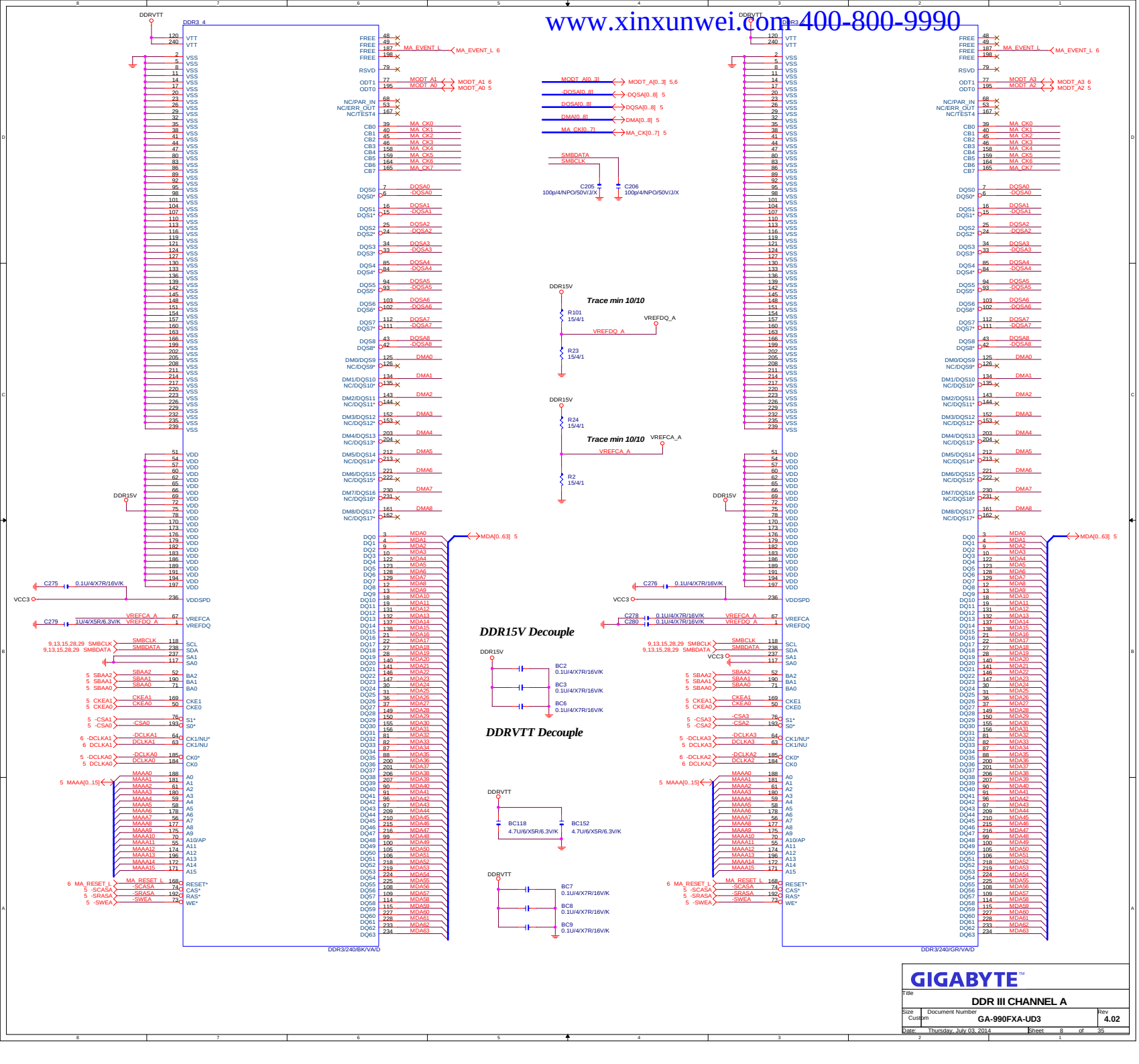
1021 EMI

VCC12_HT

ABC35 100P/4/NPO/50V/J
ABC36 100P/4/NPO/50V/J
ABC37 100P/4/NPO/50V/J/K
ABC38 100P/4/NPO/50V/J/K

GIGABYTE™

Title	CPU POWER & GND	
Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
Date: Thursday, July 03, 2014	Sheet 7 of 35	



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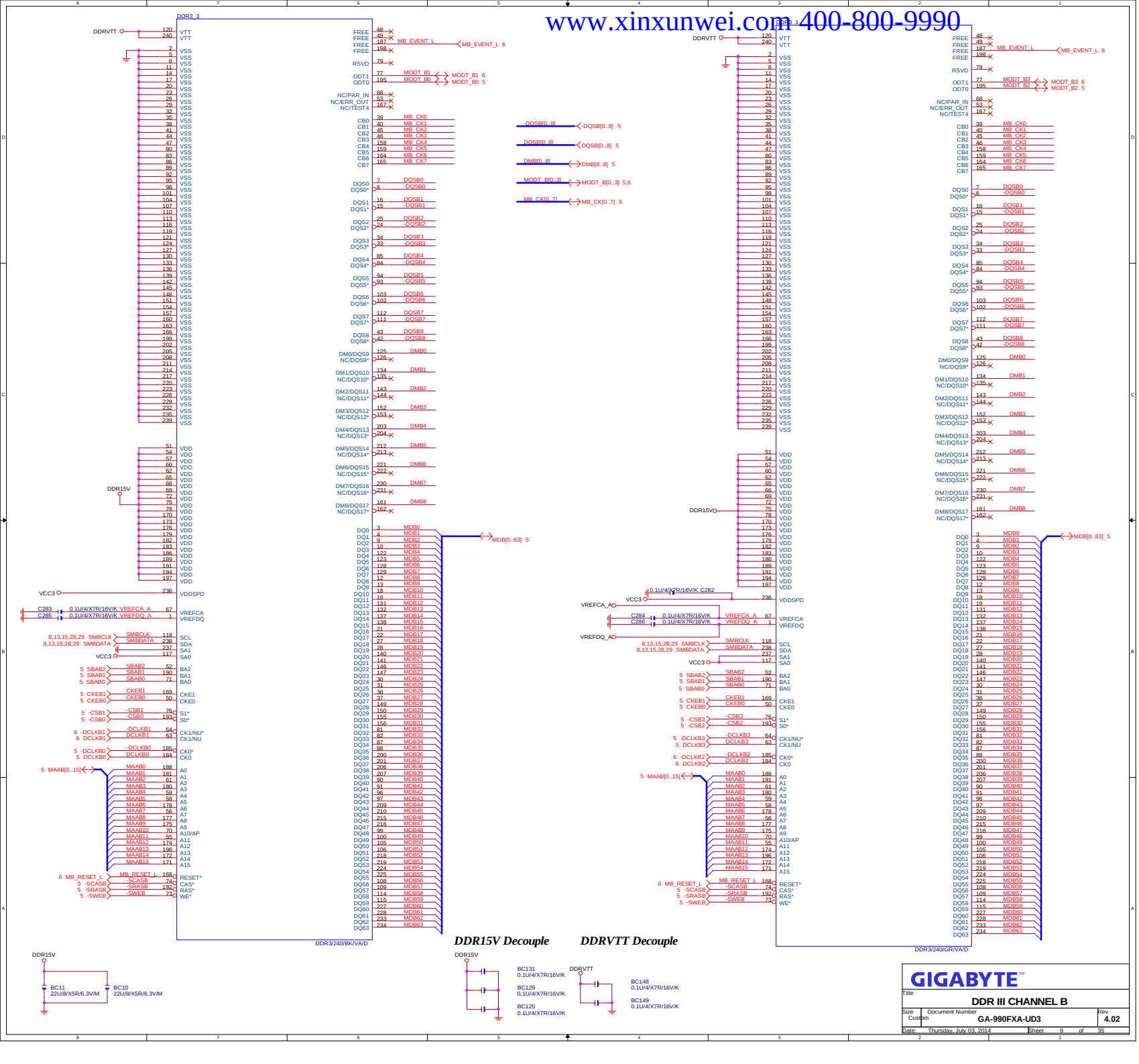
Title: DDR III CHANNEL A

Size	Document Number	Rev
Custom	GA-990FXA-UD3	4.02

Date: Thursday, July 03, 2014 Sheet 8 of 35



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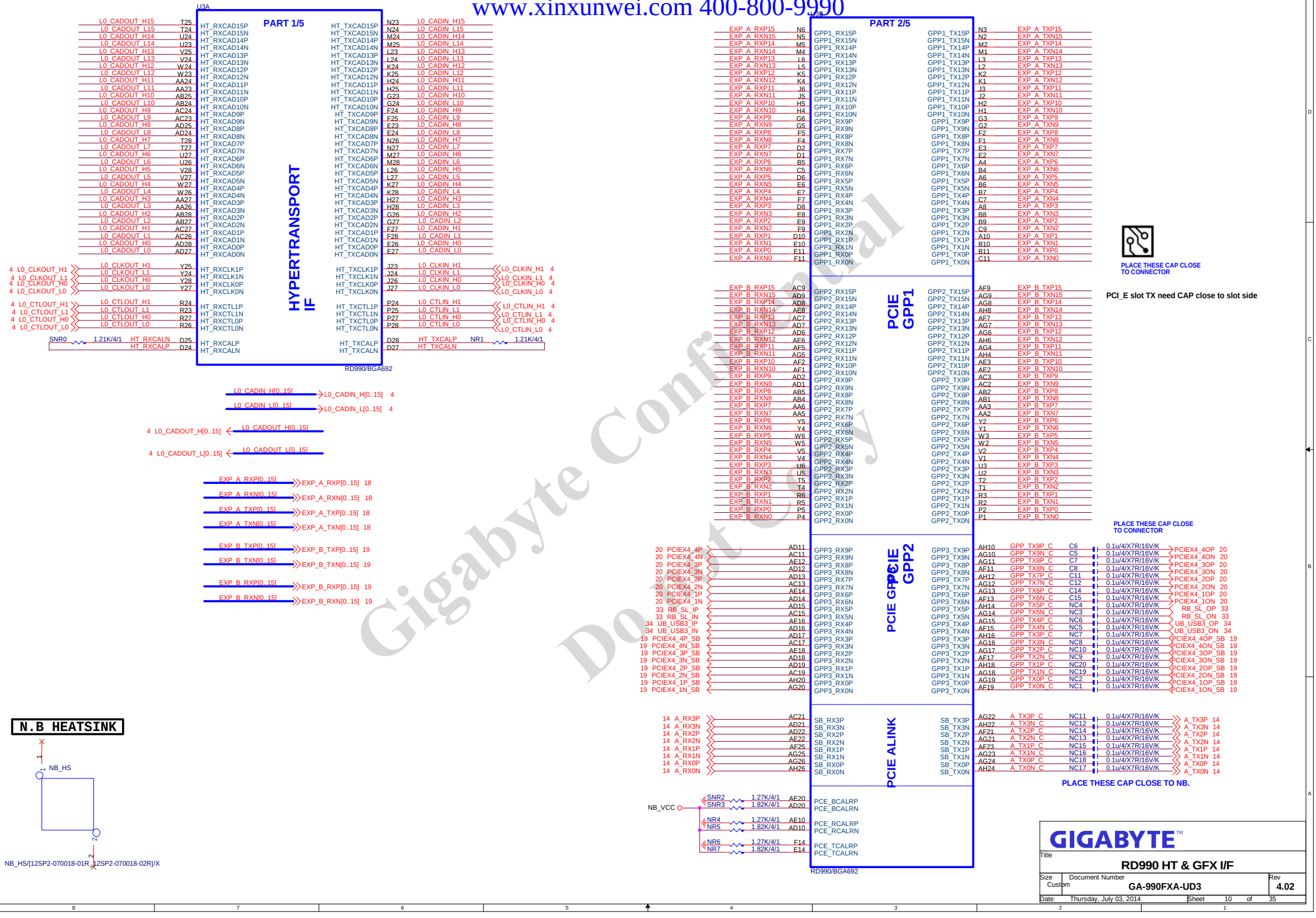
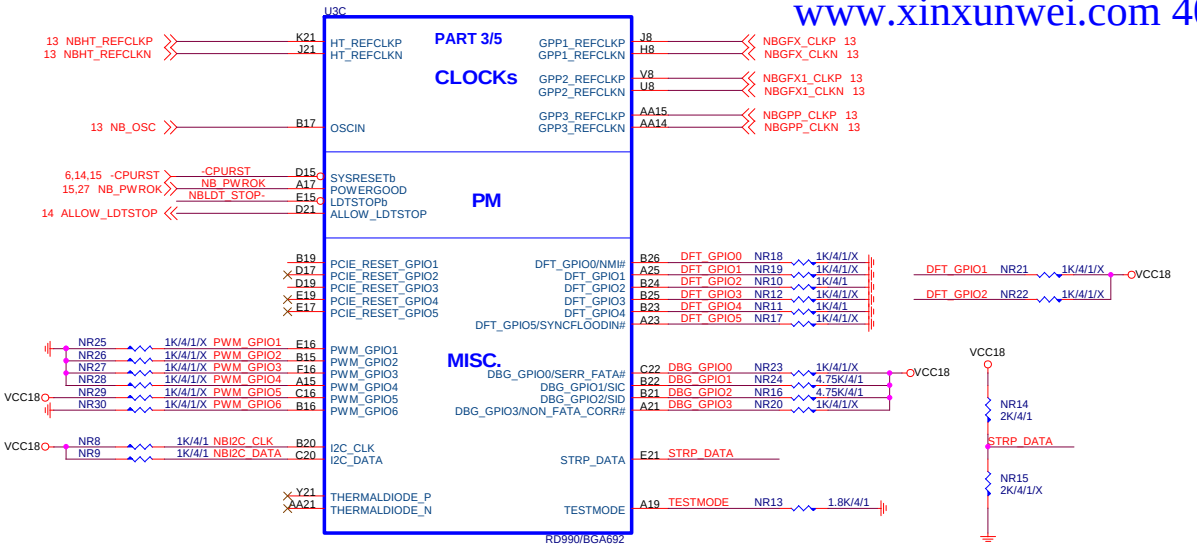
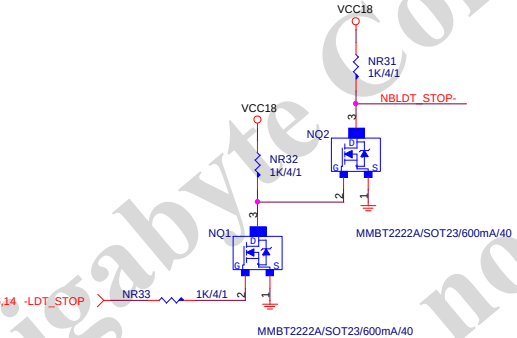
Title	DDR III CHANNEL B	
Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
Date: Thursday, July 03, 2014	Sheet 9 of 35	



Title	RD990 HT & GFX I/F
Size	Custom
Document Number	GA-990FXA-UD3
Rev	4.02
Date:	Thursday, July 03, 2014
Sheet	10 of 35





DFT_GPIO5: STRAP_DEBUG_BUS_GPIO_ENABLEb

Enables the Test Debug Bus using GPIO.
1 : Disable (Can still be enabled using nbcfg register access)
0 : Enable

DFT_GPIO[4:2]: STRAP_PCIE_GPP_CFG[2:0]

These pin straps are used to configure PCI-E GPP mode.
GPIO4:3:2
000 : 4:2:4 B
001 : 4:1:1:4 C
010 : 1:1:1:1:1:1:4 L (Hardware Default)
011 : 2:1:1:1:1:4 E
100 : 2:2:1:1:4 K
101: 2:2:2:4 C2
110: Hardware default (mode L) or EEPROM
111: Hardware default (mode L) or EEPROM
101 : 01100
111 : 01011

DFT_GPIO1: LOAD_EEPROM_STRAPS

Selects Loading of STRAPS from EPROM
1 : Bypass the loading of EEPROM straps and use Hardware Default Values
0 : I2C Master can load strap values from EEPROM if connected, or use default values if not connected

DFT_GPIO0: STRAP_DEBUG_BUS_PCIE_ENABLEb

Enables the Test Debug Bus using PCIE bus
1 : Disable (Can still be enabled using nbcfg register access)
0 : Enable

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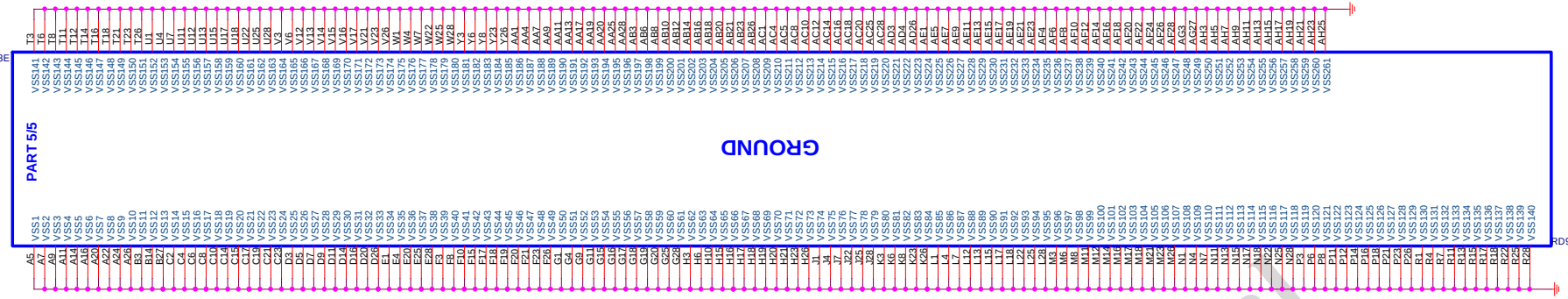
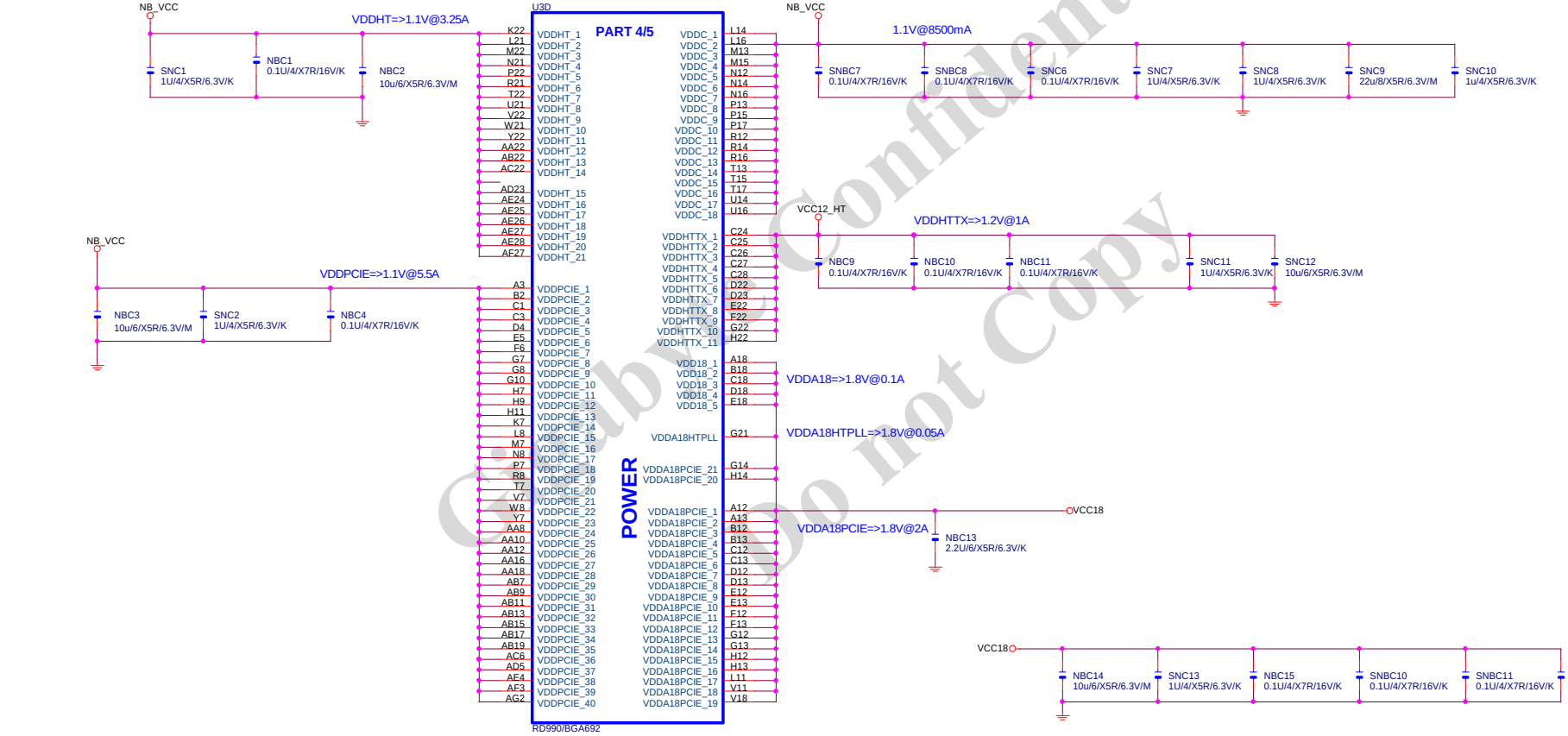
Title: RD990 CLOCK & SYSB I/F

Size: Custom | Document Number: GA-990FXA-UD3 | Rev: 4.02

Date: Thursday, July 03, 2014 | Sheet 11 of 35





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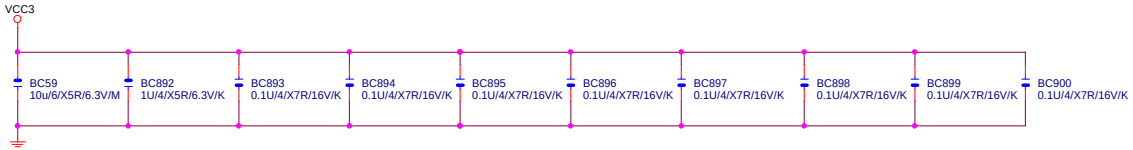
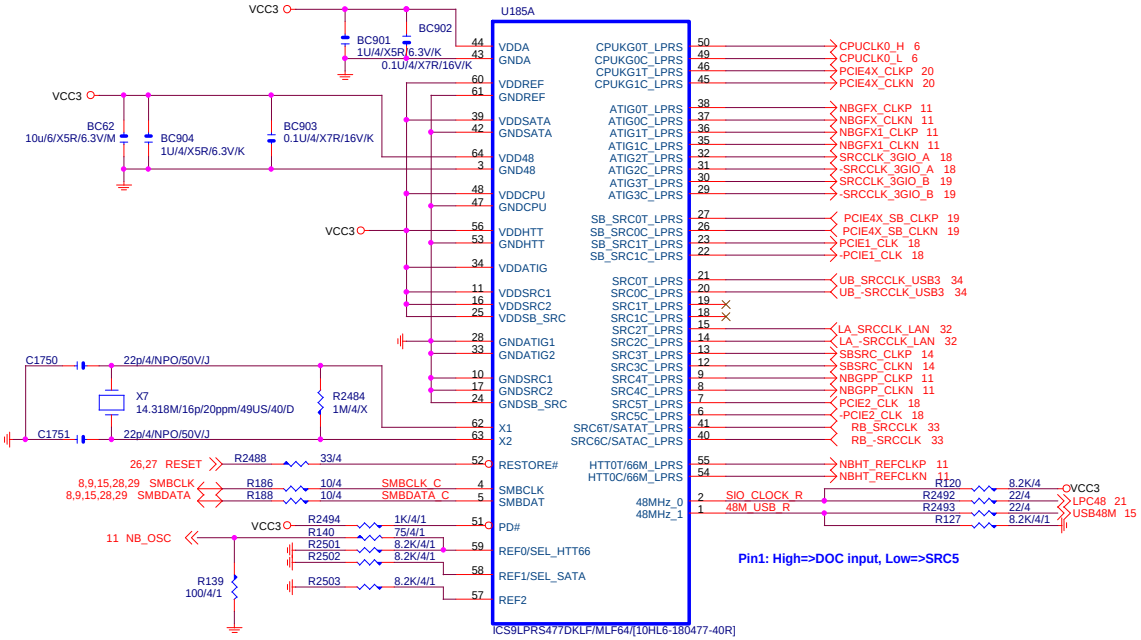
Title	RD990 POWER	
Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
Date: Thursday, July 03, 2014	Sheet 12 of 35	



NB CLOCK INPUT TABLE

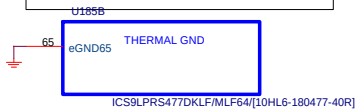
NB CLOCKS	RS740	RX780	RS780	
HT_REFCLKP	66M SE(SE)	100M DIFF	100M DIFF	
HT_REFCLKN	NC	100M DIFF	100M DIFF	
REFCLK_P	14M SE (3.3V)	14M SE (1.8V)	14M SE (1.1V)	100M DIFF
REFCLK_N	NC	NC	vref	100M DIFF
GFX_REFCLK*	100M DIFF	100M DIFF	100M DIFF	
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPPSB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

* the GFX_REFCLK input is required for all cases



Pin1: High=>DOC input, Low=>SRC5

Clock chip has internal serial terminations for differencial pairs, external resistors are reserved for debug purpose.



	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 82.5R/130R
RS780 (Single-ended)	1.1V 158R/90.9R

REF0/SEL_HTT66	HTT CLOCK
0	100.00 DIFFERENTIAL
1	66.66 SINGLE END

REF1/SEL_SATA	SRC6/SATA
0	100.00 DIFFERENTIAL SPREADING SRC CLOCK
1	100.00 NON-SPREADING DIFFERENTIAL SATA CLOCK

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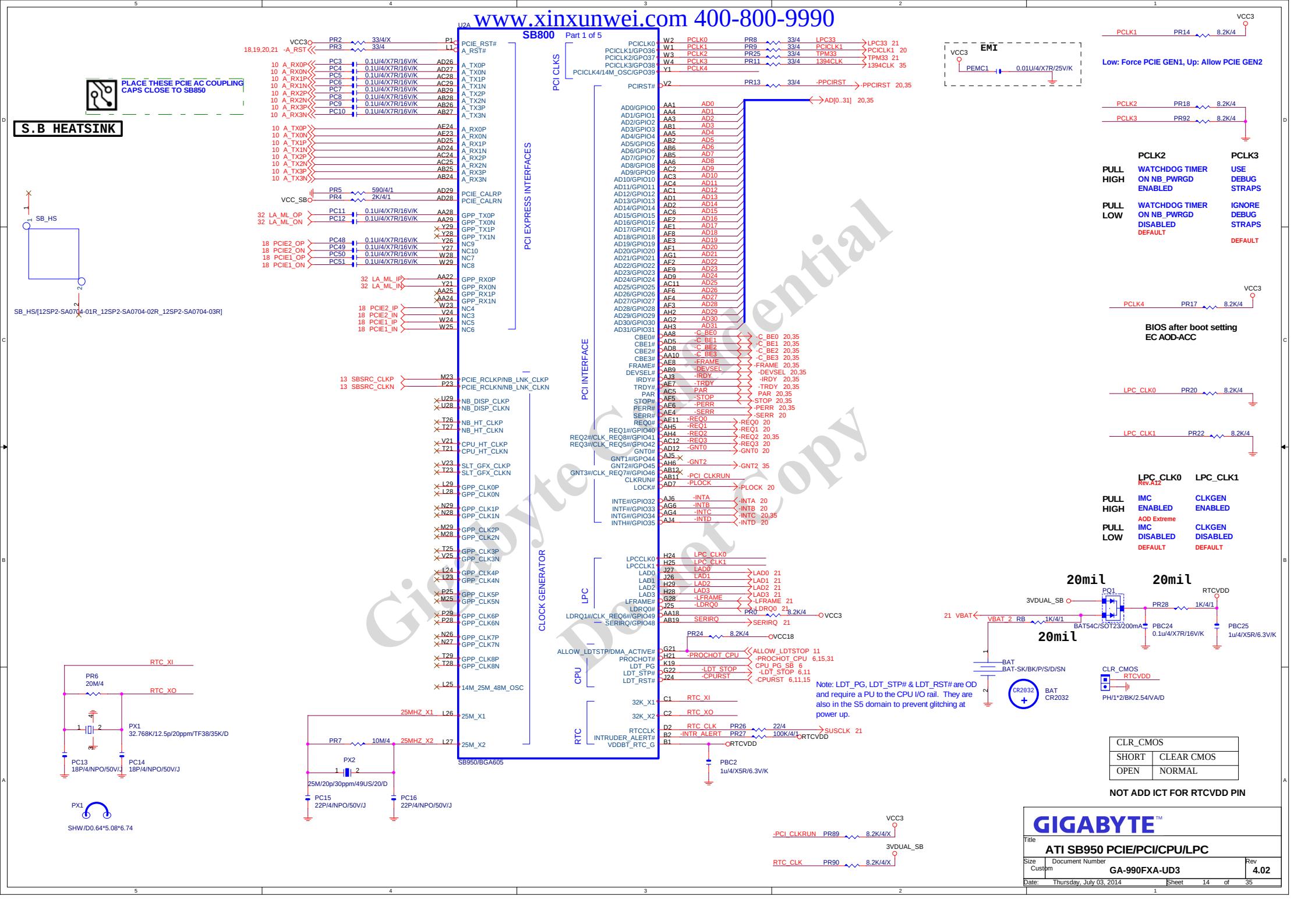
Title: ICS9LPRS477

Size: Custom | Document Number: GA-990FXA-UD3 | Rev: 4.02

Date: Thursday, July 03, 2014 | Sheet 13 of 35



USB11	FRONT PANEL
USB10	FRONT PANEL
USB9	FRONT PANEL
USB8	FRONT PANEL
USB7	FRONT PANEL
USB6	FRONT PANEL
USB5	FRONT PANEL
USB4	FRONT PANEL
USB3	REAR PANEL
USB2	REAR PANEL
USB1	REAR PANEL
USB0	REAR PANEL

either HWM inputs or PWR_GD signals can be used for power-up sequencer

3VDUAL_SB
IMC_GPIO200 PR61 2.2K/4/1
IMC_GPIO199 PR62 2.2K/4/1

IMC_GPIO200 IMC_GPIO199

ROM TYPE:

H, H = Reserved

H, L = SPI ROM DEFAULT

L, H = LPC ROM

L, L = FWH ROM

SB_TEST2 PR29 8.2K/4
SB_TEST1 PR30 8.2K/4
SB_TEST0 PR31 8.2K/4
VCC3

-SUS_STAT PR32 8.2K/4
SMBCLK PR55 1K/4/1
SMBDATA PR56 1K/4/1
WD_PWRGD PR33 8.2K/4
-LPCSMI PR46 8.2K/4
3VDUAL_SB

-RI PR34 8.2K/4
SMBCLK1 PR57 2.2K/4/1
SMBDATA1 PR58 2.2K/4/1
-PCIE_WAKE PR59 2.2K/4/1

-PCIPME PR60 2.2K/4/1 3VDUAL
UB_SMIB PR76 8.2K/4/1 3VDUAL
MOS_OT PR89 8.2K/4/1 3VDUAL

SB_PWROK
PBC4 100P/4/NPO/50V/J/X

SMBCLK
SMBDATA
PBC5 100P/4/NPO/50V/J/X
PBC6 100P/4/NPO/50V/J/X

AZ_BIT_CLK
PBC7 100P/4/NPO/50V/J/X

VCC3
AZ_SDATA_OUT PR36 8.2K/4/X
PR35 8.2K/4

Low: Performance Mode(D),
Up: Low Power Mode.

-AZ_RST PR37 8.2K/4

Low: Disable PCI MEM boot(D),
Up: Enable PCI MEM boot

26 -SYS_RST PR68 22/4
PC17 22P/4/N/50V/X
3VDUAL_SB PR91 20K/4/1/X -RSMRST
PBC3 2.2U/6/X5R/6.3V/K/X

29 VRM_HOT- PQ11 -PROCHOT_CPU -PROCHOT_CPU 6,14,31
BAT54A/SOT23/200mA
SOT23

U2D

20,35 -PCIPME			J2	PCI_PME#/GEVENT4#	ACPI / WAKE UP EVENTS
25 -RI	-RI		K1	RI#/GEVENT22#	
			D3	SPI_CS3#/GBE_STAT1/GEVENT21#	
21,27 -SLP_S3			F1	SLP_S3#	
21,27 -SLP_S5-	SLP_S5-		H1	SLP_S5#	
21 -PSOUT	PR69 0/4/SHT/X-PWRBTN		F2	PWR_BTN#	
27 SB_PWROK			H5	PWR_GOOD	
	-SUS_STAT		G6	SUS_STAT#	
	SB_TEST2		B3	TEST0	
	SB_TEST1		C4	TEST1/TMS	
	SB_TEST0		F6	TEST2	
21 A20GATE			AD21	GA20IN/GEVENT0#	
21 -KBRST			AE21	KBRST#/GEVENT1#	
21 -LPCPME	-LPCPME		K2	LPC_PME#/GEVENT3#	
21 GP80	PR45 0/4/SHT/X-LPCSMI		J29	LPC_SMI#/GEVENT23#	
			H2	GEVENT5#	
			J1	SYS_RESET#/GEVENT19#	
18,19,20,32,34 -PCIE_WAKE	-PCIE_WAKE		H6	WAKE#/GEVENT8#	
			F3	IR_RX1/GEVENT20#	
6,28 THERMTRIP_CPU_L	THERMTRIP_CPU_L		J6	THRMTRIP#/SMBALERT#/GEVENT2#	
11,27 NB_PWROK	PR67 0/4/X/WD_PWRGD		AC19	NB_PWRGD	
21 -RSMRST	-RSMRST		G1	RSMRST#	
19 EXP_B_PRSNT-			AD19	CLK_REQ4#/SATA_IS0#/GPIO64	GPIO
			AA16	CLK_REQ3#/SATA_IS1#/GPIO63	
19 PE4_2PRSNT_SB_R-			AB21	SMARTVOLT1/SATA_IS2#/GPIO50	
18 PE0_PRSNT-	PE0_PRSNT-		AC18	CLK_REQ0#/SATA_IS3#/GPIO60	
20 PE4_2PRSNT_R-			AF20	SATA_IS4#/FANOUT3/GPIO55	
			AE19	SATA_IS5#/FANIN3/GPIO59	
26 SPKR	SPKR		AF19	SPKR/GPIO66	
8,9,13,28,29 SMBCLK	SMBCLK		AD22	SCL0/GPIO43	
8,9,13,28,29 SMBDATA	SMBDATA		AE22	SDA0/GPIO47	
18,19,20 SMBCLK1	SMBCLK1		F5	SCL1/GPIO227	
18,19,20 SMBDATA1	SMBDATA1		F4	SDA1/GPIO228	
			AH21	CLK_REQ2#/FANIN4/GPIO62	
			AB18	CLK_REQ1#/FANOUT4/GPIO61	
			E1	IR_LED#/LLB#/GPIO184	
			AJ21	SMARTVOLT2/SHUTDOWN#/GPIO51	
VCC3 PR38 8.2K/4	DDR3_RST-		H4	DDR3_RST#/GEVENT7#	
			D5	GBE_LED0/GPIO183	
			D7	GBE_LED1/GEVENT9#	
			G5	GBE_LED2/GEVENT10#	
			K3	GBE_STAT0/GEVENT11#	
6 SB_IDLEEXIT-			AA20	CLK_REQG#/GPIO65/OSCIN	
31 MOS_OT	MOS_OT		H3	BLINK/USB_OC7#/GEVENT18#	USB OC
			D1	USB_OC6#/IR_TX1/GEVENT6#	
34 -USBSMI	PR93 0/4/X/UB_SMIB		E4	USB_OC5#/IR_TX0/GEVENT17#	
			D4	USB_OC4#/IR_RX0/GEVENT16#	
			E8	USB_OC3#/AC_PRES/TDO/GEVENT15#	
32 -USBOC_R1			F7	USB_OC2#/TCK/GEVENT14#	
			E7	USB_OC1#/TDI/GEVENT13#	
22 -USBOC_F1			F8	USB_OC0#/TRST#/GEVENT12#	
23 AZ_BIT_CLK	PR63 22/4		M3	AZ_BITCLK	HD AUDIO
23 AZ_SDATA_OUT	PR64 22/4		N1	AZ_SDOUT	
23 AZ_SDATA_IN0			L2	AZ_SDIN0/GPIO167	
			M2	AZ_SDIN1/GPIO168	
			M1	AZ_SDIN2/GPIO169	
			M4	AZ_SDIN3/GPIO170	
23 AZ_SYNC	PR65 22/4		N2	AZ_SYNC	
23 -AZ_RST	PR66 22/4		P2	AZ_RST#	
	PR39 8.2K/4	GBE_COL	T1	GBE_COL	GBE LAN
	PR40 8.2K/4	GBE_CRS	T4	GBE_CRS	
			L6	GBE_MDCK	
3VDUAL PR41 8.2K/4	GBE_MDIO		L5	GBE_MDIO	
			T9	GBE_RXCLK	
			U1	GBE_RXD3	
			U3	GBE_RXD2	
			T2	GBE_RXD1	
			U2	GBE_RXD0	
			T5	GBE_RXCTL/RXDV	
PR42 8.2K/4	GBE_RXERR		V5	GBE_RXERR	
			P5	GBE_TXCLK	
			M5	GBE_TXD3	
			P9	GBE_TXD2	
			T7	GBE_TXD1	
			P7	GBE_TXD0	
			M7	GBE_TXCTL/TXEN	
			P4	GBE_PHY_PD	
			M9	GBE_PHY_RST#	
3VDUAL PR43 8.2K/4	GBE_INTR		V7	GBE_PHY_INTR	
			E23	PS2_DAT/SDA4/GPIO187	EMBEDDED CTRL
			E24	PS2_CLK/SCL4/GPIO188	
			F21	SPI_CS2#/GBE_STAT2/GPIO166	
			G29	FC_RST#/GPO160	
			D27	PS2KB_DAT/GPIO189	
			F28	PS2KB_CLK/GPIO190	
			F29	PS2M_DAT/GPIO191	
			E27	PS2M_CLK/GPIO192	

SB800
Part 4 of 5

SB950/BGA605

			A10	USBCLK/14M_25M_48M_OSC	USB 1.1 USB MISC
			G19	USB_RCOMP	
			J10	USB_FSD1P/GPIO186	
			H11	USB_FSD1N	
			H9	USB_FSD0P/GPIO185	
			J8	USB_FSD0N	
			B12	USB_HSD13P	USB 2.0
			A12	USB_HSD13N	
			E11	USB_HSD12P	
			E12	USB_HSD12N	
			E14	USB_HSD11P	
			E12	USB_HSD11N	
			J12	USB_HSD10P	
			J14	USB_HSD10N	
			A13	USB_HSD9P	
			B13	USB_HSD9N	
			D13	USB_HSD8P	
			C13	USB_HSD8N	
			G12	USB_HSD7P	
			G14	USB_HSD7N	
			G16	USB_HSD6P	
			G18	USB_HSD6N	
			D16	USB_HSD5P	
			C16	USB_HSD5N	
			B14	USB_HSD4P	
			A14	USB_HSD4N	
			E18	USB_HSD3P	
			E16	USB_HSD3N	
			J16	USB_HSD2P	
			J18	USB_HSD2N	
			B17	USB_HSD1P	
			A17	USB_HSD1N	
			A16	USB_HSD0P	
			B16	USB_HSD0N	
			D25	SCL2/GPIO193	EMBEDDED CTRL
			F23	SDA2/GPIO194	
			B26	SCL3_LV/GPIO195	
			E26	SDA3_LV/GPIO196	
			F25	EC_PWM0/EC_TIMER0/GPIO197	
			E22	EC_PWM1/EC_TIMER1/GPIO198	
			F22	EC_PWM2/EC_TIMER2/GPIO199	
			E21	EC_PWM3/EC_TIMER3/GPIO200	
			G24	KSI_0/GPIO201	
			G25	KSI_1/GPIO202	
			E28	KSI_2/GPIO203	
			E29	KSI_3/GPIO204	
			D29	KSI_4/GPIO205	
			D28	KSI_5/GPIO206	
			C29	KSI_6/GPIO207	
			C28	KSI_7/GPIO208	
			B28	KSO_0/GPIO209	
			A27	KSO_1/GPIO210	
			B27	KSO_2/GPIO211	
			D26	KSO_3/GPIO212	
			A26	KSO_4/GPIO213	
			C26	KSO_5/GPIO214	
			A24	KSO_6/GPIO215	
			B25	KSO_7/GPIO216	
			A25	KSO_8/GPIO217	
			D24	KSO_9/GPIO218	
			B24	KSO_10/GPIO219	
			C24	KSO_11/GPIO220	
			B23	KSO_12/GPIO221	
			A23	KSO_13/GPIO222	
			D22	KSO_14/GPIO223	
			C22	KSO_15/GPIO224	
			A22	KSO_16/GPIO225	
			B22	KSO_17/GPIO226	

USB48M 13
SPR1 11.8K/4/1

USB_FSD1P/GPIO186 J10
USB_FSD1N H11
USB_FSD0P/GPIO185 H9
USB_FSD0N J8

USB_HSD13P B12	+USBP13	+USBP13 22
USB_HSD13N A12	-USBP13	-USBP13 22
USB_HSD12P E11	+USBP12	+USBP12 22
USB_HSD12N E11	-USBP12	-USBP12 22
USB_HSD11P E14	+USBP11	+USBP11 22
USB_HSD11N E12	-USBP11	-USBP11 22
USB_HSD10P J12	+USBP10	+USBP10 22
USB_HSD10N J14	-USBP10	-USBP10 22
USB_HSD9P A13	+USBP9	+USBP9 33
USB_HSD9N B13	-USBP9	-USBP9 33
USB_HSD8P D13	+USBP8	+USBP8 33
USB_HSD8N C13	-USBP8	-USBP8 33
USB_HSD7P G12	+USBP7	+USBP7 32
USB_HSD7N G14	-USBP7	-USBP7 32
USB_HSD6P G16	+USBP6	+USBP6 32
USB_HSD6N G18	-USBP6	-USBP6 32
USB_HSD5P D16	+USBP5	+USBP5 22
USB_HSD5N C16	-USBP5	-USBP5 22
USB_HSD4P B14	+USBP4	+USBP4 22
USB_HSD4N A14	-USBP4	-USBP4 22
USB_HSD3P E18	+USBP3	+USBP3 21
USB_HSD3N E16	-USBP3	-USBP3 21
USB_HSD2P J16	+USBP2	+USBP2 21
USB_HSD2N J18	-USBP2	-USBP2 21
USB_HSD1P B17	+USBP1	+USBP1 33
USB_HSD1N A17	-USBP1	-USBP1 33
USB_HSD0P A16	+USBP0	+USBP0 33
USB_HSD0N B16	-USBP0	-USBP0 33

SCL2/GPIO193 D25 PR52 8.2K/4 3VDUAL_SB
SDA2/GPIO194 F23 PR53 8.2K/4
SCL3_LV/GPIO195 B26 SCL3 PR95 8.2K/4
SDA3_LV/GPIO196 E26 SDA3 PR96 8.2K/4

EC_PWM2/EC_TIMER2/GPIO199 F22 IMC_GPIO199
EC_PWM3/EC_TIMER3/GPIO200 E21 IMC_GPIO200

KSO_1/GPIO210 A27 IMC_TDO
KSO_2/GPIO211 B27
KSO_3/GPIO212 D26 IMC_TMS
KSO_4/GPIO213 A26 IMC_TCK
KSO_7/GPIO216 B25 IMC_CRST-

DDR15V
PR51 8.2K/4/X
PQ9
IMC_CRST- PR98 100/4/1/X1 -CPURST -CPURST 6,11,14
MMBT3904/SOT23/200mA/30/X
SOT23

DDR15V
PR50 8.2K/4
PQ8
IMC_TMS PR10 100/4/1 CPU_TMS CPU_TMS 6
MMBT3904/SOT23/200mA/30
PBC19 33P/4/NPO/50V/J/X
SOT23

DDR15V
PR49 8.2K/4
PQ7
IMC_TCK PR88 100/4/1 CPU_TCK CPU_TCK 6
MMBT3904/SOT23/200mA/30
PBC23 33P/4/NPO/50V/J/X
SOT23

DDR15V
PR47 8.2K/4
PQ5
IMC_TDO PR54 100/4/1 CPU_TDI CPU_TDI 6
MMBT3904/SOT23/200mA/30
SOT23

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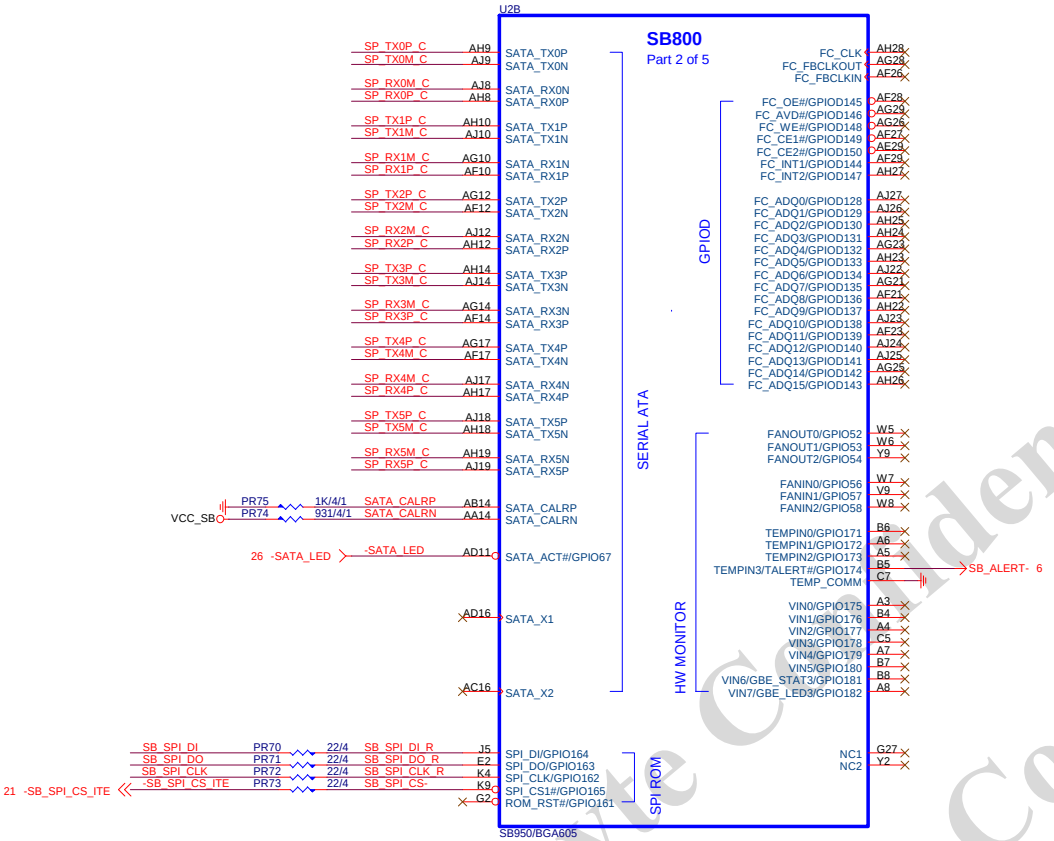
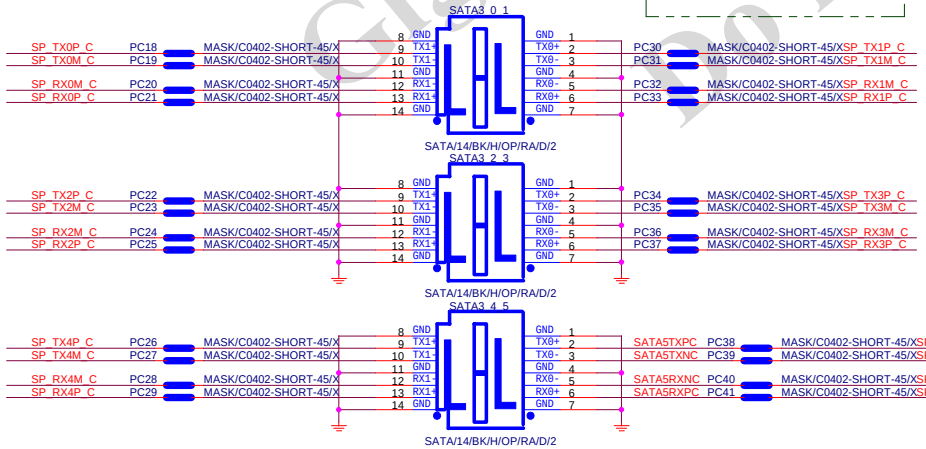
Title	ATI SB950 ACPI/USB/GPIO/AUDIO		
Size	Document Number		Rev
Custom	GA-990FXA-UD3		4.02
Date:	Thursday, July 03, 2014	Sheet 15 of 35	

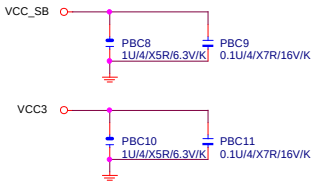


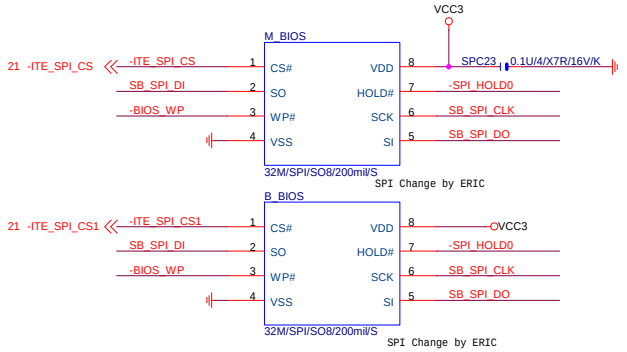
PLACE SATA_CAL RES VERY CLOSE TO BALL OF U600

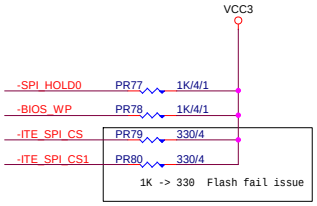
NOTE :
R650 IS 1K 1% FOR 25MHz XTAL, 4.99K 1% FOR 100MHz INTERNAL CLOCK

PLACE SATA AC COUPLING CAPS CLOSE TO SB850









GIGABYTE™

Title: ATI SB950 SATA/IDE/HWM/SPI

Size	Document Number	Rev
Custom	GA-990FXA-UD3	4.02

Date: Thursday, July 03, 2014 Sheet 16 of 35

PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.

U2C

SB800 Part 3 of 5

POWER

SB950/BGA605

U2E

SB800 GROUND Part 5 of 5

SB950/BGA605

GIGABYTE™

Title: ATI SB950 POWER & GND

Size: Custom | Document Number: GA-990FXA-UD3 | Rev: 4.02

Date: Thursday, July 03, 2014 | Sheet 17 of 35

Lay 在 PCIe slot 旁

MASK-10

+12V_ISEN R16 0/6/SHT-10/MASK/X

X16_+12V

PCIEX16_1 3GIO_*16

15,19,20 SMBCLK1 SMBCLK1 R61 0/4/SHT/X

15,19,20 SMBDATA1 SMBDATA1

3VDUAL

15,19,20,32,34 -PCIE_WAKE -PCIE_WAKE

VCC3

R2400 8.2K/4/1

15 PE0_PRSNT- PE0_PRSNT-

KEY

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

X16_+12V BC835 0.1U/4/X7R/16V/K

-PCIE_RST_16 C1643 100P/4/N/50V/X

R62 0/4/SHT/X

-PCIE_RST_16 R3 10/4 -A_RST -A_RST 14,19,20,21

+12V X16_+12V RN21 0/8P4R/0402/SHT/X RN22 0/8P4R/4/X RN23 0/8P4R/4/X

SRCCLK_3GIO_A 13 -SRCCLK_3GIO_A 13

EXP_A_TXP[0..15] EXP_A_TXP[0..15] 10

EXP_A_TXN[0..15] EXP_A_TXN[0..15] 10

EXP_A_RXP[0..15] EXP_A_RXP[0..15] 10

EXP_A_RXN[0..15] EXP_A_RXN[0..15] 10

EXP_A_TXP0	C1644	0.1u/4/X7R/16V/K EXP_A_TXP0C
EXP_A_TXN0	C1645	0.1u/4/X7R/16V/K EXP_A_TXN0C
EXP_A_TXP1	C1646	0.1u/4/X7R/16V/K EXP_A_TXP1C
EXP_A_TXN1	C1647	0.1u/4/X7R/16V/K EXP_A_TXN1C
EXP_A_TXP2	C1648	0.1u/4/X7R/16V/K EXP_A_TXP2C
EXP_A_TXN2	C1649	0.1u/4/X7R/16V/K EXP_A_TXN2C
EXP_A_TXP3	C1650	0.1u/4/X7R/16V/K EXP_A_TXP3C
EXP_A_TXN3	C1651	0.1u/4/X7R/16V/K EXP_A_TXN3C
EXP_A_TXP4	C1652	0.1u/4/X7R/16V/K EXP_A_TXP4C
EXP_A_TXN4	C1653	0.1u/4/X7R/16V/K EXP_A_TXN4C
EXP_A_TXP5	C1654	0.1u/4/X7R/16V/K EXP_A_TXP5C
EXP_A_TXN5	C1655	0.1u/4/X7R/16V/K EXP_A_TXN5C
EXP_A_TXP6	C1656	0.1u/4/X7R/16V/K EXP_A_TXP6C
EXP_A_TXN6	C1657	0.1u/4/X7R/16V/K EXP_A_TXN6C
EXP_A_TXP7	C1658	0.1u/4/X7R/16V/K EXP_A_TXP7C
EXP_A_TXN7	C1659	0.1u/4/X7R/16V/K EXP_A_TXN7C
EXP_A_TXP8	C1660	0.1u/4/X7R/16V/K EXP_A_TXP8C
EXP_A_TXN8	C1661	0.1u/4/X7R/16V/K EXP_A_TXN8C
EXP_A_TXP9	C1662	0.1u/4/X7R/16V/K EXP_A_TXP9C
EXP_A_TXN9	C1663	0.1u/4/X7R/16V/K EXP_A_TXN9C
EXP_A_TXP10	C1664	0.1u/4/X7R/16V/K EXP_A_TXP10C
EXP_A_TXN10	C1665	0.1u/4/X7R/16V/K EXP_A_TXN10C
EXP_A_TXP11	C1666	0.1u/4/X7R/16V/K EXP_A_TXP11C
EXP_A_TXN11	C1667	0.1u/4/X7R/16V/K EXP_A_TXN11C
EXP_A_TXP12	C1668	0.1u/4/X7R/16V/K EXP_A_TXP12C
EXP_A_TXN12	C1669	0.1u/4/X7R/16V/K EXP_A_TXN12C
EXP_A_TXP13	C1670	0.1u/4/X7R/16V/K EXP_A_TXP13C
EXP_A_TXN13	C1671	0.1u/4/X7R/16V/K EXP_A_TXN13C
EXP_A_TXP14	C1672	0.1u/4/X7R/16V/K EXP_A_TXP14C
EXP_A_TXN14	C1673	0.1u/4/X7R/16V/K EXP_A_TXN14C
EXP_A_TXP15	C1674	0.1u/4/X7R/16V/K EXP_A_TXP15C
EXP_A_TXN15	C1675	0.1u/4/X7R/16V/K EXP_A_TXN15C

PCIEX1_2 3GIO_X1

R71 0/4/SHT/X R73 0/4/SHT/X

15,19,20 SMBCLK1 SMBCLK1

15,19,20 SMBDATA1 SMBDATA1

VCC3 3VDUAL

15,19,20,32,34 -PCIE_WAKE -PCIE_WAKE

PCIE_RST- PCIE_RST- 21,32,34

14 PCIE2_OP 14 PCIE2_ON

R36 8.2K/4/PE2_PRSNT-

PCIE2_CLK 13 -PCIE2_CLK 13

PCIE2_IP 14 PCIE2_IN 14

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

PCIEX1_1 3GIO_X1

R63 0/4/SHT/X R64 0/4/SHT/X C1746 100P/4/N/50V/X

15,19,20 SMBCLK1 SMBCLK1

15,19,20 SMBDATA1 SMBDATA1

VCC3 3VDUAL

15,19,20,32,34 -PCIE_WAKE -PCIE_WAKE

PCIE_RST- PCIE_RST- 21,32,34

14 PCIE1_OP 14 PCIE1_ON

R35 8.2K/4/PE1_PRSNT-

PCIE1_CLK 13 -PCIE1_CLK 13

PCIE1_IP 14 PCIE1_IN 14

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

+12V BC833 0.1U/4/X7R/16V/K/X BC834 0.1U/4/X7R/16V/K

VCC3 BC836 0.1U/4/X7R/16V/K BC838 0.1U/4/X7R/16V/K BC839 0.1U/4/X7R/16V/K

3VDUAL BC837 0.1U/4/X7R/16V/K BC840 0.1U/4/X7R/16V/K

+12V EC172 270u/FP/D/16V/88/12m

VCC3 EC3 560u/fp/d/6.3v/68/8m

GIGABYTE™

Title: PCI EXPRESS X 16 ,X1

Size: Custom | Document Number: GA-990FXA-UD3 | Rev: 4.02

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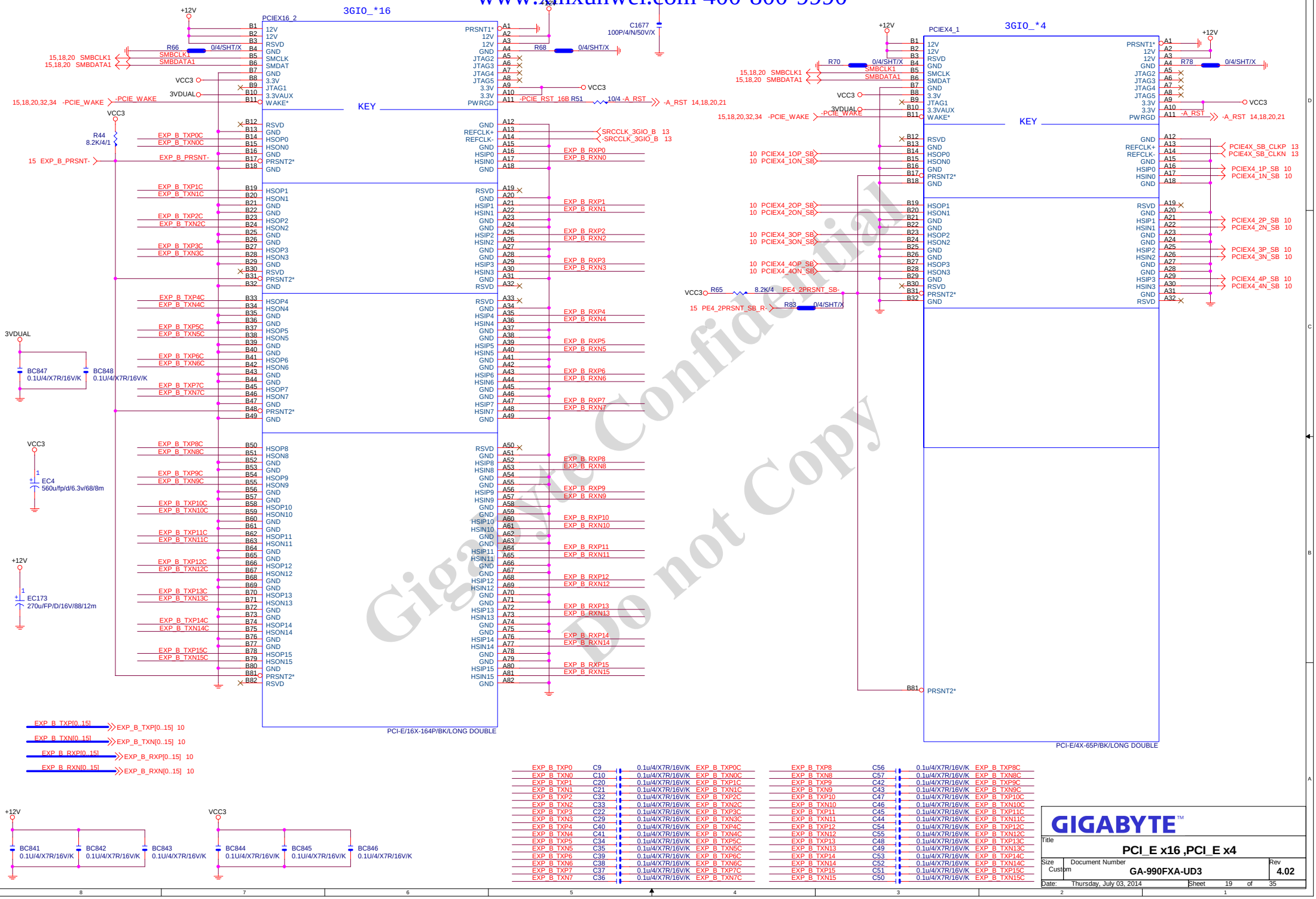

EXP_B_TXP0	C9	0.1u/4/X7R/16V/K	EXP_B_TXP0C	EXP_B_TXP8	C56	0.1u/4/X7R/16V/K	EXP_B_TXP8C
EXP_B_TXN0	C10	0.1u/4/X7R/16V/K	EXP_B_TXN0C	EXP_B_TXN8	C57	0.1u/4/X7R/16V/K	EXP_B_TXN8C
EXP_B_TXP1	C20	0.1u/4/X7R/16V/K	EXP_B_TXP1C	EXP_B_TXP9	C42	0.1u/4/X7R/16V/K	EXP_B_TXP9C
EXP_B_TXN1	C21	0.1u/4/X7R/16V/K	EXP_B_TXN1C	EXP_B_TXN9	C43	0.1u/4/X7R/16V/K	EXP_B_TXN9C
EXP_B_TXP2	C32	0.1u/4/X7R/16V/K	EXP_B_TXP2C	EXP_B_TXP10	C47	0.1u/4/X7R/16V/K	EXP_B_TXP10C
EXP_B_TXN2	C33	0.1u/4/X7R/16V/K	EXP_B_TXN2C	EXP_B_TXN10	C46	0.1u/4/X7R/16V/K	EXP_B_TXN10C
EXP_B_TXP3	C22	0.1u/4/X7R/16V/K	EXP_B_TXP3C	EXP_B_TXP11	C45	0.1u/4/X7R/16V/K	EXP_B_TXP11C
EXP_B_TXN3	C29	0.1u/4/X7R/16V/K	EXP_B_TXN3C	EXP_B_TXN11	C44	0.1u/4/X7R/16V/K	EXP_B_TXN11C
EXP_B_TXP4	C40	0.1u/4/X7R/16V/K	EXP_B_TXP4C	EXP_B_TXP12	C54	0.1u/4/X7R/16V/K	EXP_B_TXP12C
EXP_B_TXN4	C41	0.1u/4/X7R/16V/K	EXP_B_TXN4C	EXP_B_TXN12	C55	0.1u/4/X7R/16V/K	EXP_B_TXN12C
EXP_B_TXP5	C34	0.1u/4/X7R/16V/K	EXP_B_TXP5C	EXP_B_TXP13	C48	0.1u/4/X7R/16V/K	EXP_B_TXP13C
EXP_B_TXN5	C35	0.1u/4/X7R/16V/K	EXP_B_TXN5C	EXP_B_TXN13	C49	0.1u/4/X7R/16V/K	EXP_B_TXN13C
EXP_B_TXP6	C39	0.1u/4/X7R/16V/K	EXP_B_TXP6C	EXP_B_TXP14	C53	0.1u/4/X7R/16V/K	EXP_B_TXP14C
EXP_B_TXN6	C38	0.1u/4/X7R/16V/K	EXP_B_TXN6C	EXP_B_TXN14	C52	0.1u/4/X7R/16V/K	EXP_B_TXN14C
EXP_B_TXP7	C37	0.1u/4/X7R/16V/K	EXP_B_TXP7C	EXP_B_TXP15	C51	0.1u/4/X7R/16V/K	EXP_B_TXP15C
EXP_B_TXN7	C36	0.1u/4/X7R/16V/K	EXP_B_TXN7C	EXP_B_TXN15	C50	0.1u/4/X7R/16V/K	EXP_B_TXN15C

GIGABYTE™

Title: PCI_E x16 ,PCI_E x4

Size: Custom | Document Number: GA-990FXA-UD3 | Rev: 4.02

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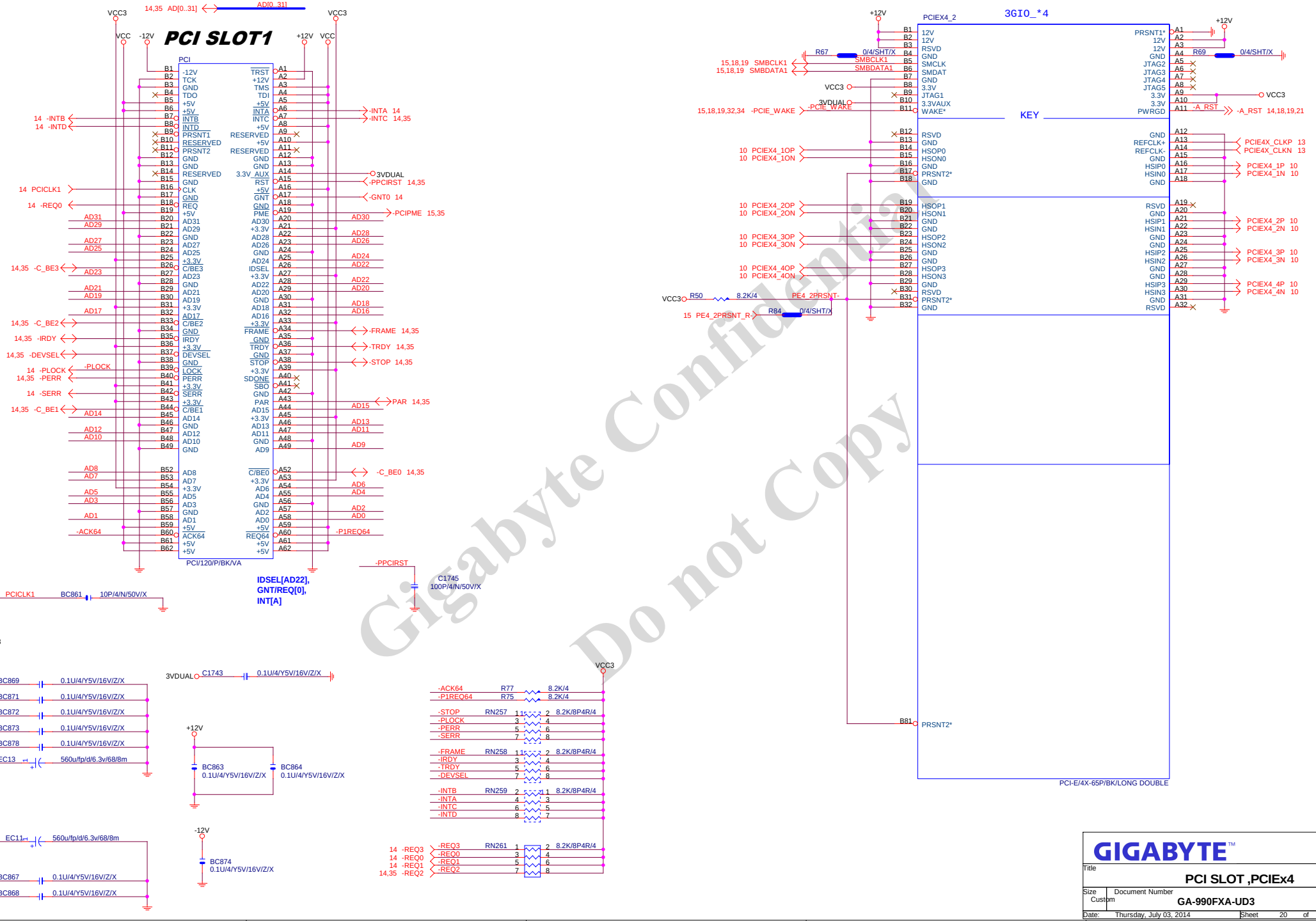

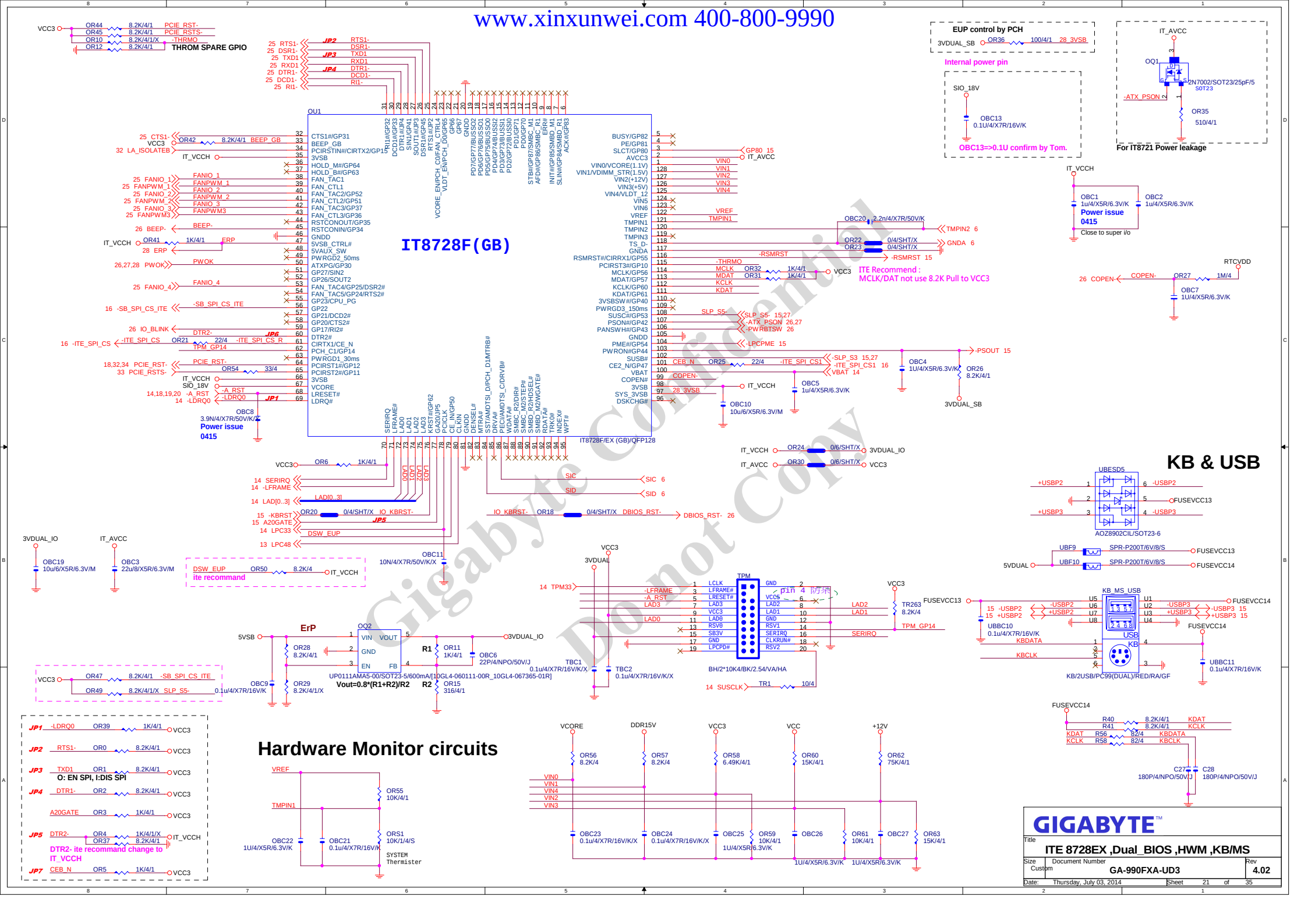

Title	ITE 8728EX ,Dual_BIOS ,HWM ,KB/MS
Size	Custom
Document Number	GA-990FXA-UD3
Rev	4.02
Date:	Thursday, July 03, 2014
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FRONT SIDE USB3

EMI 20110314
VCC3
UABC9 0.1U/4/X7R/16V/K/X
UABC10 0.1U/4/X7R/16V/K

5VDUAL
UAEC2 560u/fp/d/6.3v/68/8m

UAESD1
-USBP13 +USBP13 -USBP12 FUSEVCC4 +USBP12
AOZ8902CIL/SOT23-6

UAESD2
-USBP4 +USBP4 -USBP5 FUSEVCC15 +USBP5
AOZ8902CIL/SOT23-6

FUSEVCC4
UAF1 SPR-P200T/6V/8/S FUSEVCC9
UAF2 SPR-P200T/6V/8/S
UABC2 0.1U/4/X7R/16V/K
UABC1 560u/fp/d/6.3v/68/8m
UABC1 0.1U/4/X7R/16V/K
F_USB2
15 -USBP13 15 +USBP13 -USBP13 +USBP13 -USBP12 +USBP12 -USBP12 15 +USBP12 15
BH/2*5K9/BK/ON/2.54/VA/D/GF/LBK

FUSEVCC16
UAF4 SPR-P200T/6V/8/S FUSEVCC15
5VDUAL
UAF3 SPR-P200T/6V/8/S
UABC3 0.1U/4/X7R/16V/K
UABC4 0.1U/4/X7R/16V/K
F_USB3
15 -USBP5 15 +USBP5 -USBP5 +USBP5 -USBP4 +USBP4 -USBP4 15 +USBP4 15
BH/2*5K9/BK/ON/2.54/VA/D/GF/LBK

UAD3 UAD2 UAD1 SOT23
FUSEVCC8 FUSEVCC1 BAT54A/SOT23/200mA
FUSEVCC15 FUSEVCC16 BAT54A/SOT23/200mA
FUSEVCC9 FUSEVCC4 BAT54A/SOT23/200mA
FUSEVCC4 UAR1 5.1K/4/1 -USBOC_F1 15
UAR14 10K/4/1

SSRXN3 SSRXP3 SSRXP2 SSRXN2
UAE1 AZ1045-04F/MSOP10
SSRXP3 SSRXN3 SSRXN2 SSRXP2

SSTXP2_C SSTXN2_C SSTXN3_C SSTXP3_C
UAE2 AZ1045-04F/MSOP10
SSTXN2_C SSTXP2_C SSTXP3_C SSTXN3_C

UAESD3
DM3 DM2 DP3 DP2 FUSEVCC_USB32
AOZ8902CIL/SOT23-6

FRONT SIDE USB1

FUSEVCC8
UAF6 SPR-P200T/6V/8/S
FUSEVCC1
5VDUAL
UAF5 SPR-P200T/6V/8/S
UABC8 0.1U/4/X7R/16V/K
UABC 0.1U/4/X7R/16V/K
F_USB1
15 -USBP10 15 +USBP10 -USBP11 15 +USBP11 15
BH/2*5K9/BK/ON/2.54/VA/D/GF/LBK

UAESD4
-USBP10 +USBP10 -USBP11 FUSEVCC1 +USBP11
AOZ8902CIL/SOT23-6

UAFB2 FUSEVCC_USB32
SMD1206P350SLR/6V/S
5VDUAL
UAFB1 FUSEVCC_USB33
SMD1206P350SLR/6V/S
UAEC3 560u/fp/d/6.3v/68/8m

FUSEVCC_USB32
UAR17 150K/4 OVCUR3 OVCUR3 34
UAR18 270K/4

FUSEVCC_USB33
UAR19 150K/4 OVCUR4 OVCUR4 34
UAR20 270K/4

FUSEVCC_USB32 FUSEVCC_USB33
F_USB30 REV=1
UAC2 0.1u/4/X7R/16V/K
UAC1 0.1u/4/X7R/16V/K
VBUS ID VBUS
34 SSRXN2 SSRXP2 SSRXN2 SSRXP2 SSRX1- SSRX1+
34 SSTXN2 34 SSTXP2 SSTXN2 SSTXP2 UAC3 UAC4 0.1u/4/X7R/16V/K SSTXN2_C SSTXP2_C SSTX1- SSTX1+
34 DM2 34 DP2 DM2 DP2 D1- D1+
GND GND
SSTXN3_C SSTXP3_C UAC6 UAC7 0.1u/4/X7R/16V/K SSTXN3 SSTXP3 SSTXN3 34 SSTXP3 34 SSTX2- SSTX2+
SSRXN3 SSRXP3 SSRXN3 34 SSRXP3 34 SSRX2- SSRX2+
DM3 DP3 DM3 34 DP3 34 D2- D2+
GND GND
BH/2*10K20/BK/ON/2.0/VA/D/GF

GIGABYTE			
Title	COM/LPT/F_USB		
Size: Custom	Document Number: GA-990FXA-UD3		Rev: 4.02
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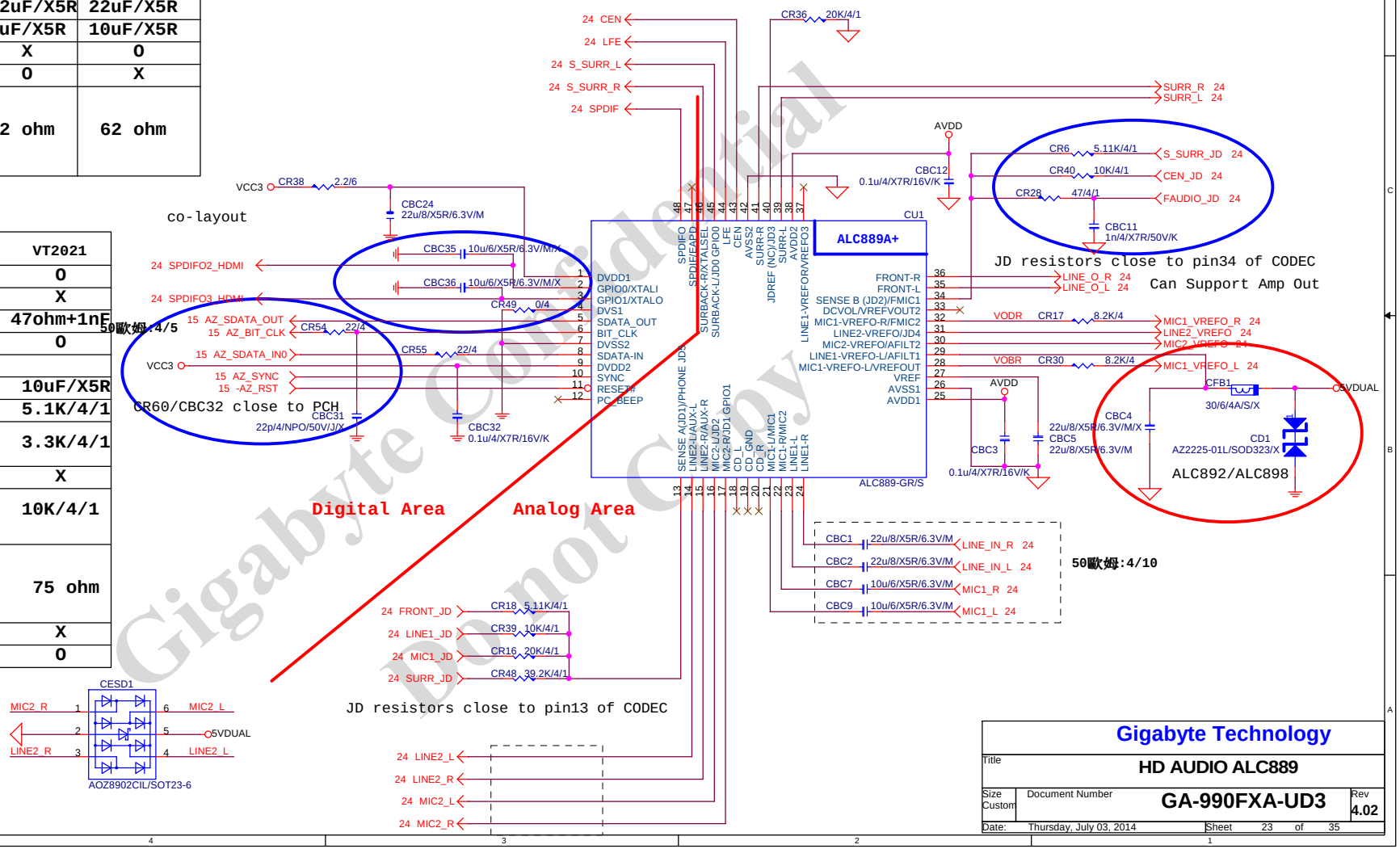
AZALIA CODEC

ALC889/ALC889B/ALC892/ALC898 Colay

	ALC889	ALC889B	ALC898/ALC892
CR65	0	0	X
CBC35	X	X	10uF/X5R
CBC39	X	10uF/X5R	X
CR31	0	X	0
CR66	X	0	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R
CBC5/CBC6/CBC9/CBC11	10uF/X5R	10uF/X5R	10uF/X5R
CR51/CD1/CBC7	X	X	0
CD2/CD3/CQ3/CQ5	0	0	X
CR5/CR8/CR1/CR14/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	62 ohm	62 ohm	62 ohm

ALC889/VT2021 Colay

	ALC889	VT2021
CR49	0	0
CBC36	X	X
CR28/CBC11	47ohm+1nF	47ohm+1nF
CR52	0	0
CBC1/CBC2	22uF/X5R	10uF/X5R
CR36	20K/4/1	5.1K/4/1
CR17/CR30/ CR25/CR15/CR12/CR3	8.2K/4	3.3K/4/1
CBC38/CBC39	X	X
CR10/CR8/CR20/CR45/ CR42/CR51/CR43/CR22/ CR27/CR26	22K/4	10K/4/1
CR7/CR9/CR5/CR13/ CR29/CR32/CR46/CR19/ CR50/CR41/CR21/CR47 CR2/CR11/CR14/CR24	62 ohm	75 ohm
CFB1/CD1/CBC4	X	X
CD2/CD3/CQ3/CQ4	0	0



Gigabyte Technology	
Title	HD AUDIO ALC889
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CODEC POWER/EMI PAD

EUP

5VDUAL — CD4 — AVDD

CD4148WP/1206/300mA

CQ3 — 78L05/SOT89/0.1A

+12V — CD3 CD4148WP/1206/300mA

CR44 0/6/SHT/X

CBC38 0.01u/4/X7R/25V/K

CBC21 0.1u/4/X7R/16V/K/X

CBC8 22u/8/X5R/6.3V/M

CD2 AZ2225-01L/SOD323

ADD CD2 For ESD PROTECT DIODE

CR37 0/4/X

上ALC892時,此顆電容要保留

CR4 0/6/SHT/X

FUSEVCC14

23 SPDIF

OPTICAL

FR/5P/BK/T/D/S(GY)

23 SPDIFO2_HDMI — CR52 0/4 — SPDIFO_HDMI

23 SPDIFO3_HDMI — CR53 0/4/X

CBC37 100p/4/NPO/50V/J

PIN

SPDIF_O PH/1*2/BK/2.54/VA/D

For HDMI SPDIF

AZALIA JACK

BTX AZALIA CONNECTOR

11NR6-403007-21R

AUDIOB

23 LINE1_JD — LINE1_JD — AJ_A5 — AJ_A2 — LINE-IN — BLUE LINE-IN

23 FRONT_JD — FRONT_JD — AJ_B5 — AJ_B2 — LINE-OUT — GREEN LINE-OUT

23 MIC1_JD — MIC1_JD — AJ_C5 — AJ_C2 — MIC-IN — PINK MIC-IN

2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

AUDIOA

23 CEN_JD — CEN_JD — BJ_B5 — BJ_B2 — REAR — CEN — Orange CEN/LFE

23 SURR_JD — SURR_JD — BJ_C5 — BJ_C2 — Black SURROUND

23 S_SURR_JD — S_SURR_JD — BJ_A5 — BJ_A2 — SIDE — Gray SURROUND SIDE

2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

LINE-OUT

23 LINE_O_R — CEC2 100u/OS/D/16V/66/30m — CR7 62/4 — CR10 22K/4 — CR8 22K/4 — AJ_B5

23 LINE_O_L — CEC3 100u/OS/D/16V/66/30m — CR9 62/4 — AJ_B2

CBC23 180p/4/NPO/50V/J — CBC26 180p/4/NPO/50V/J

LINE-IN

23 LINE_IN_R — CR5 62/4 — AJ_A5

23 LINE_IN_L — CR13 62/4 — AJ_A2

CBC18 180p/4/NPO/50V/J — CBC27 180p/4/NPO/50V/J

MIC-IN

23 MIC1_R — CR29 62/4 — AJ_C5

23 MIC1_L — CR32 62/4 — AJ_C2

23 MIC1_VREFO_L

23 MIC1_VREFO_R

CBC19 180p/4/NPO/50V/J — CBC22 180p/4/NPO/50V/J

SURROUND

EMI

23 SURR_R — CEC5 100u/OS/D/16V/66/30m — CR46 62/4 — CR20 22K/4 — CR45 22K/4 — BJ_C5

23 SURR_L — CEC7 100u/OS/D/16V/66/30m — CR19 62/4 — BJ_C2

CBC29 180p/4/NPO/50V/J — CBC28 180p/4/NPO/50V/J

CEN/LFE

EMI

23 LFE — CEC9 100u/OS/D/16V/66/30m — CR50 62/4 — CR42 22K/4 — CR51 22K/4 — BJ_B5

23 CEN — CEC10 100u/OS/D/16V/66/30m — CR41 62/4 — BJ_B2

CBC25 180p/4/NPO/50V/J — CBC34 180p/4/NPO/50V/J

SURR BACK

EMI

23 S_SURR_R — CEC8 100u/OS/D/16V/66/30m — CR21 62/4 — CR43 22K/4 — CR22 22K/4 — BJ_A5

23 S_SURR_L — CEC4 100u/OS/D/16V/66/30m — CR47 62/4 — BJ_A2

CBC33 180p/4/NPO/50V/J — CBC30 180p/4/NPO/50V/J

AZALIA FRONT PANEL

CQ2 BAT54A/SOT23/200mA — CQ1 BAT54A/SOT23/200mA (SOT23)

23 LINE2_VREFO — CR25 8.2K/4 — CR15 8.2K/4

23 MIC2_VREFO — CR12 8.2K/4 — CR3 8.2K/4

EMI

23 MIC2_L — CBC20 10u/6/X5R/6.3V/M — CR2 62/4 — M2_L

23 MIC2_R — CBC15 10u/6/X5R/6.3V/M — CR11 62/4 — M2_R

23 FAUDIO_JD — L2_R — CR14 62/4 — L2-R

L2_L — CR24 62/4 — L2-L

CR1 0/4/X

CR27 22K/4 — CR26 22K/4 — F_AUDIO

Digital Area — VCC3 — CR56 8.2K/4 — C_-ACZ_DET

CR35 20K/4/1 — CR31 39.2K/4/1

bh/2*5k8/bk/2.54/va/[11NH3-000205-P1R]

CBC10 CBC16 CBC17 CBC6 180p/4/NPO/50V/J

23 LINE2_R — CEC6 100u/OS/D/16V/66/30m — L2_R

23 LINE2_L — CEC1 — L2_L

100u/OS/D/16V/66/30m

Gigabyte Technology

Title: AUDIO JACK

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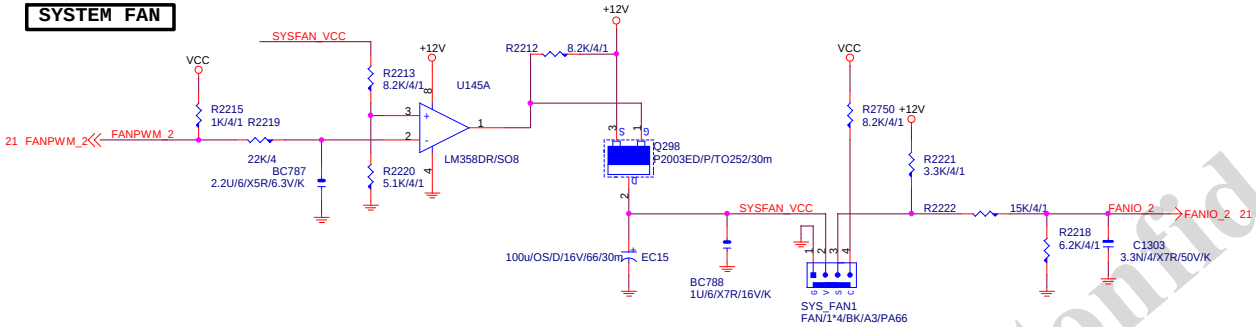
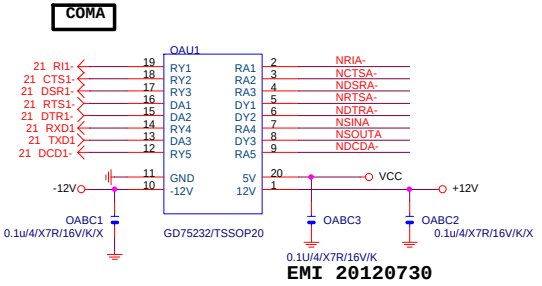
SYSTEM FAN

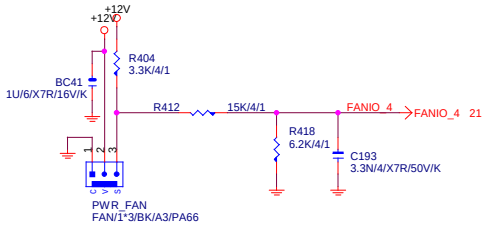


COMA

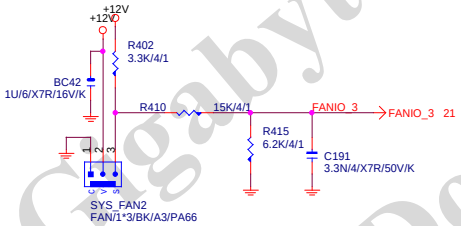


EMI 20120730

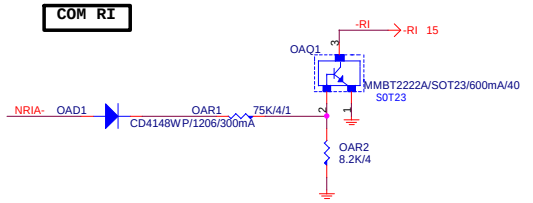
POWER FAN

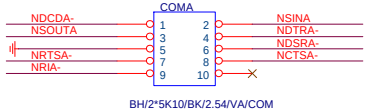


SYSTEM FAN2



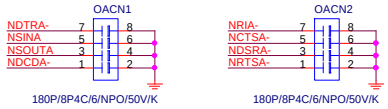
COM RI



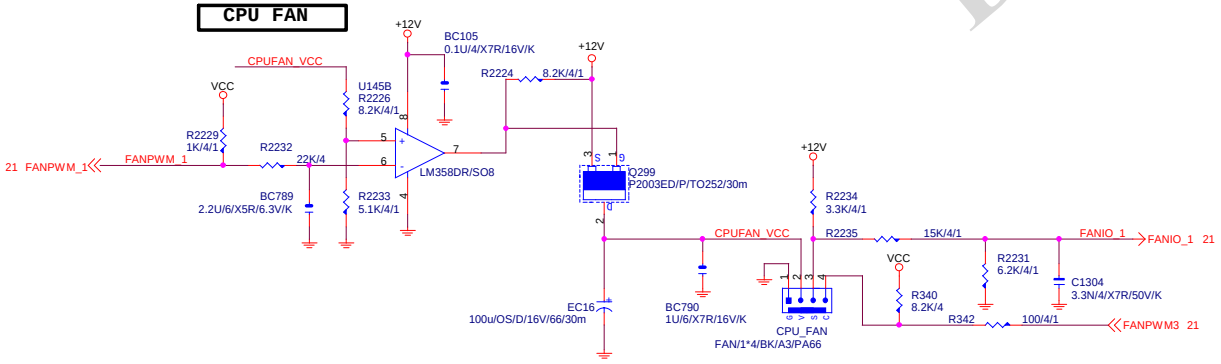


BH/2*5K10/BK/2.54/VA/COM

11NH3-000205-Y1R/Y2R



CPU FAN



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Title	FAN/HWMO/COM	
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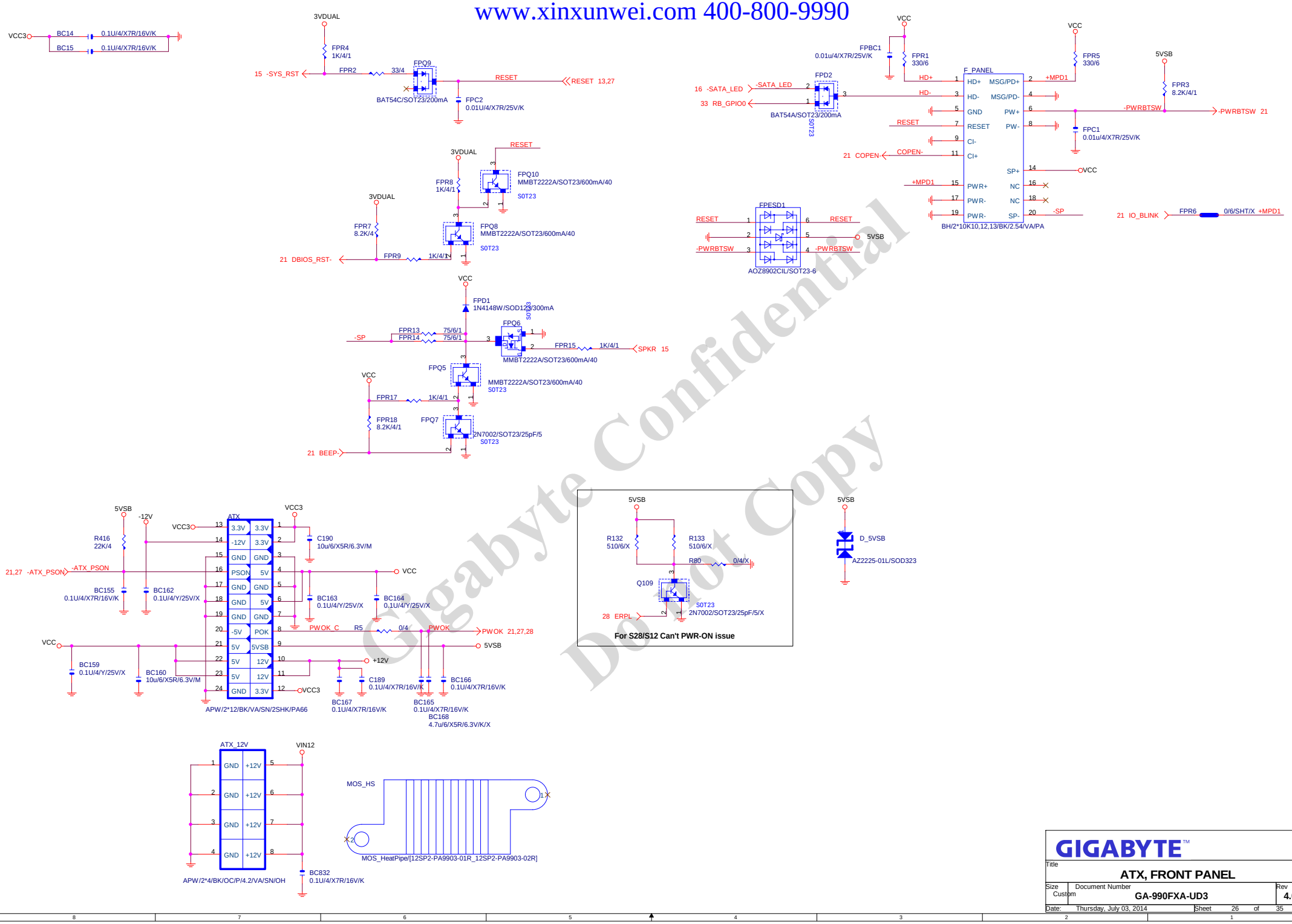

GIGABYTE™

Title	ATX, FRONT PANEL	
Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
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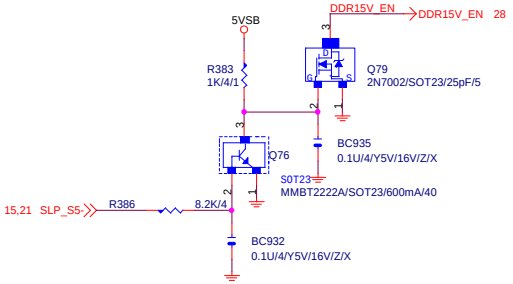

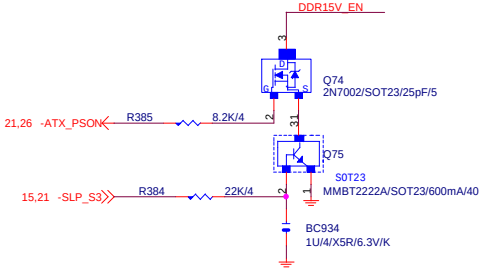

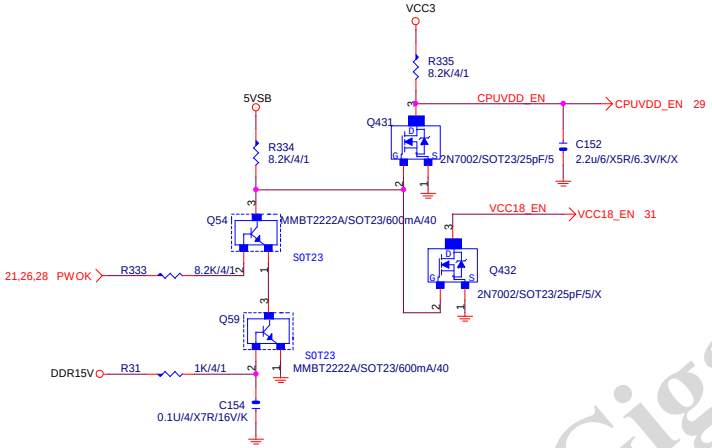

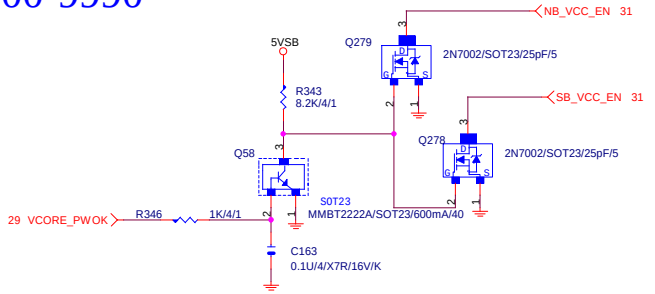

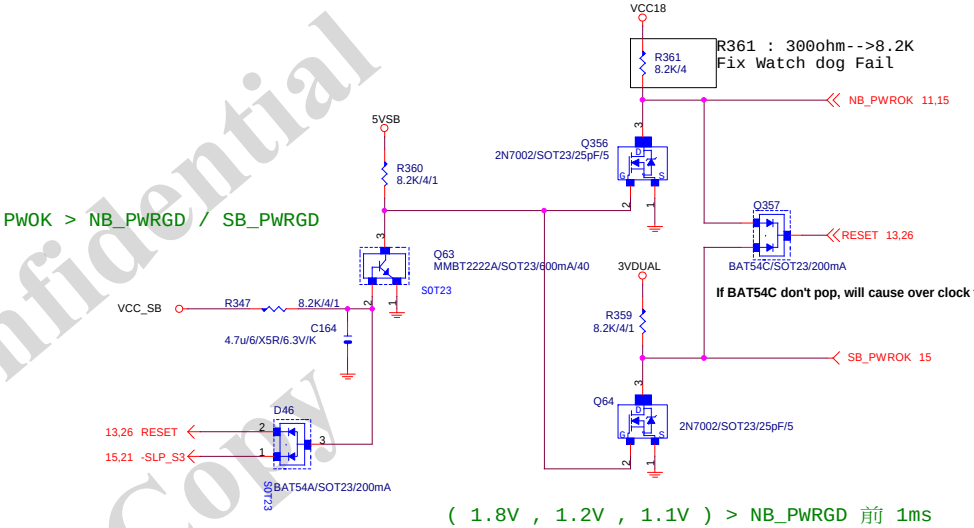

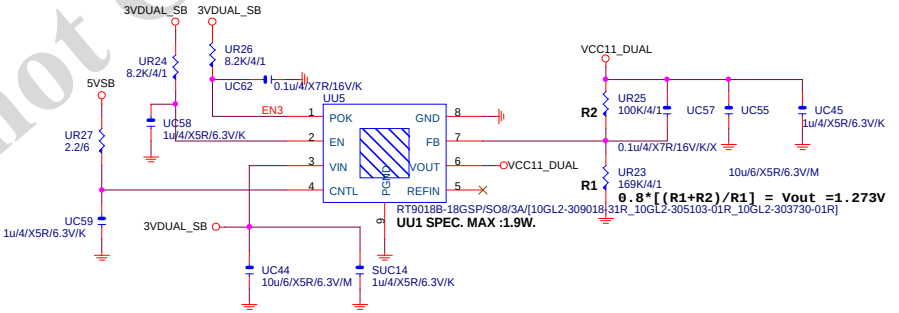

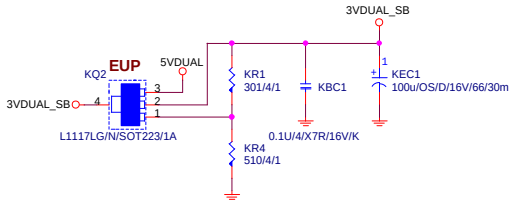

GIGABYTE™

Title: POWER SEQUENCE

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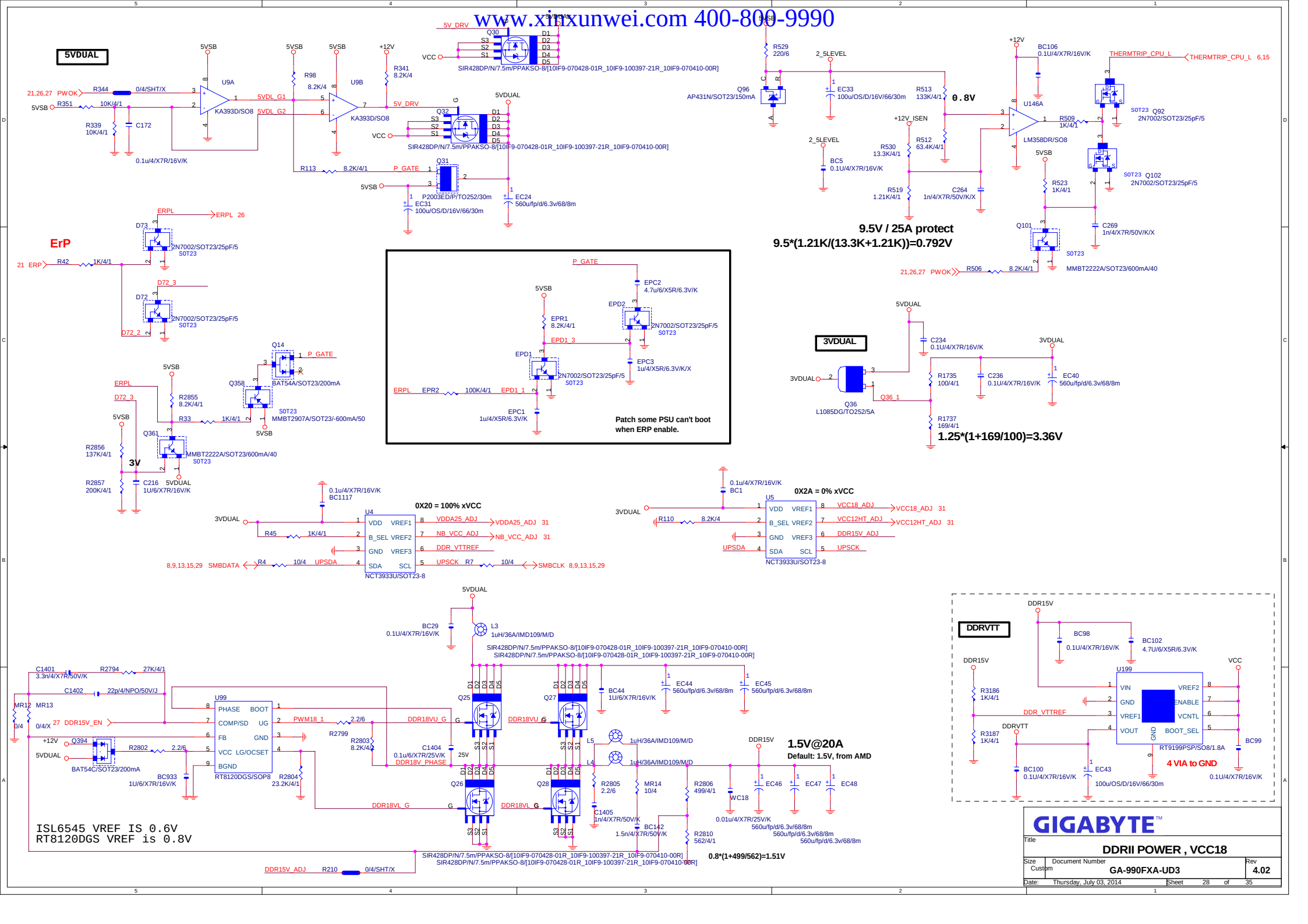
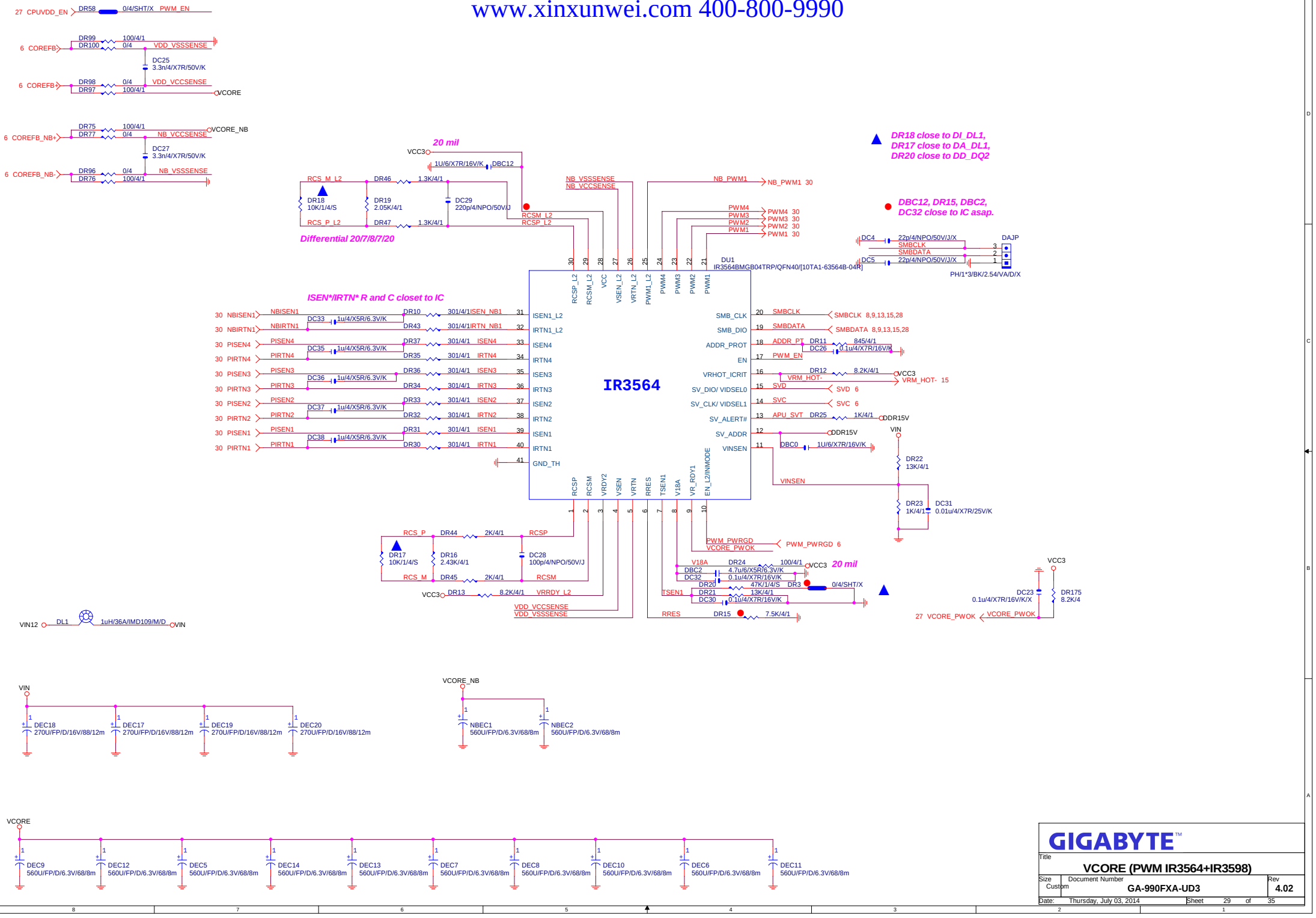
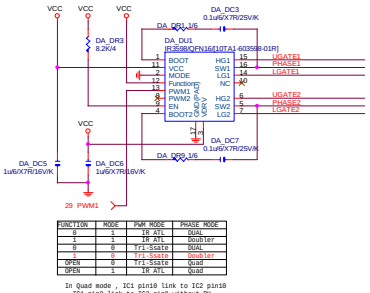
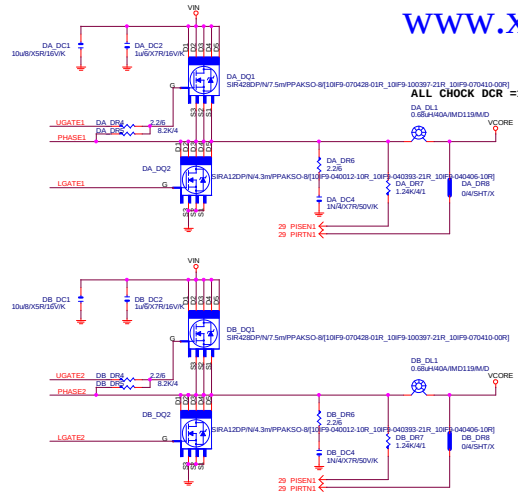


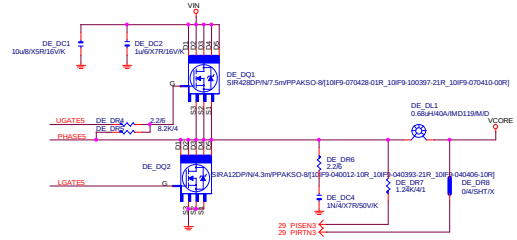


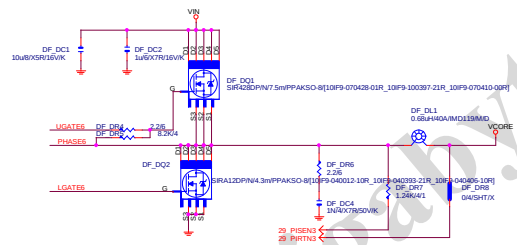


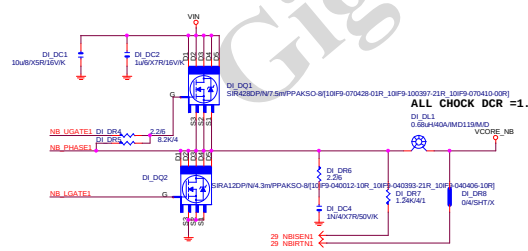
FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

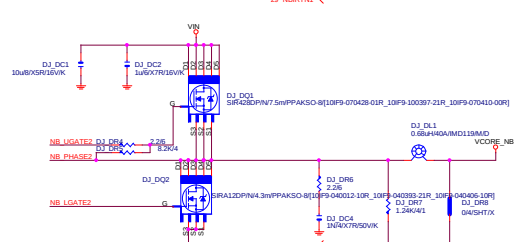
In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU





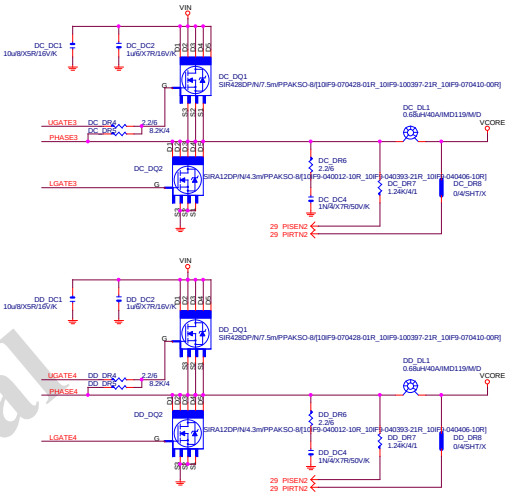


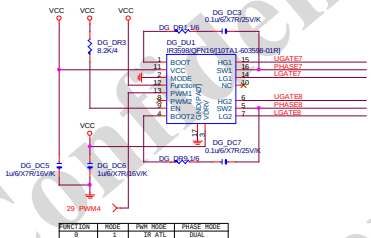




FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

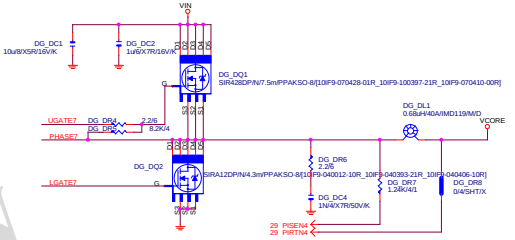
In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU

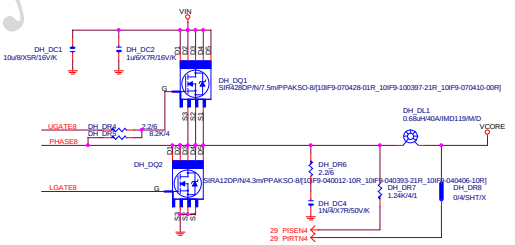




FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU





GIGABYTE

Title	VCORE MOS	
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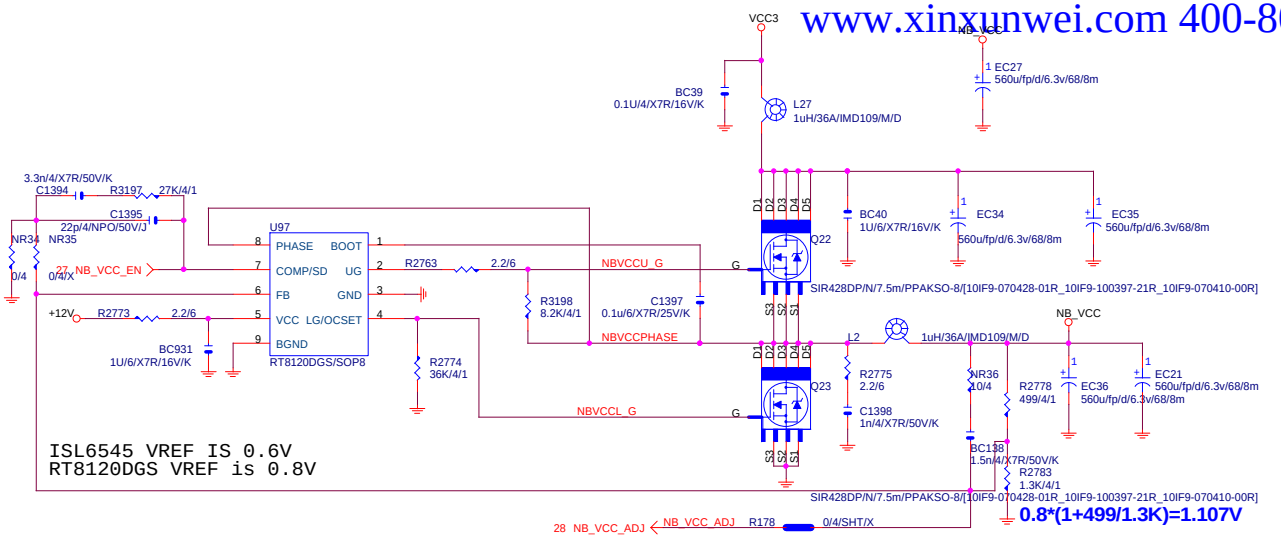

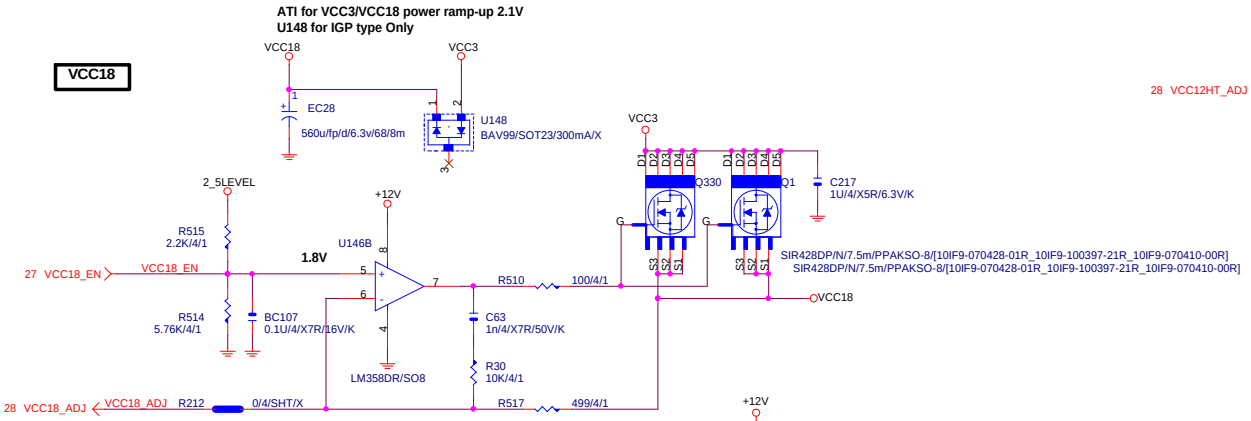

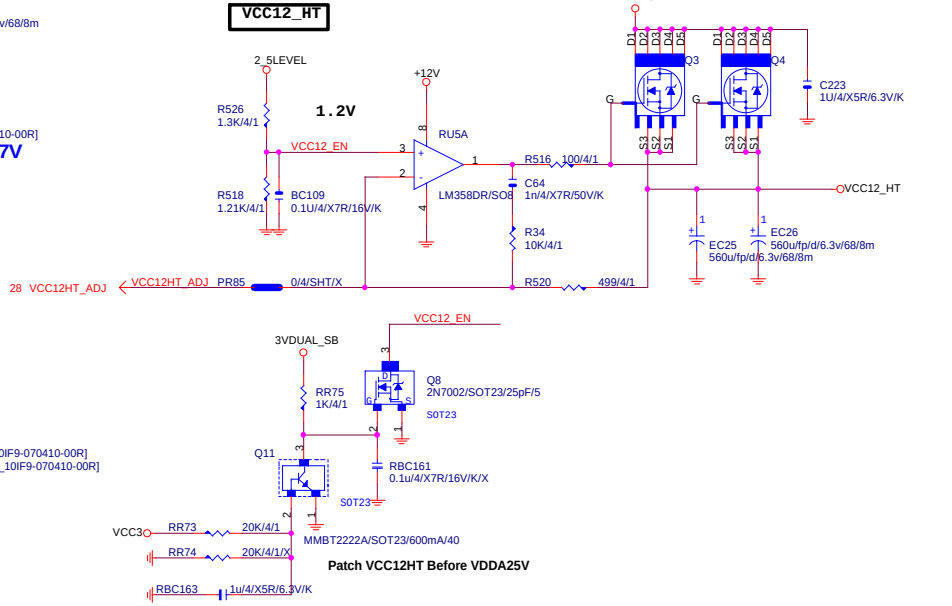

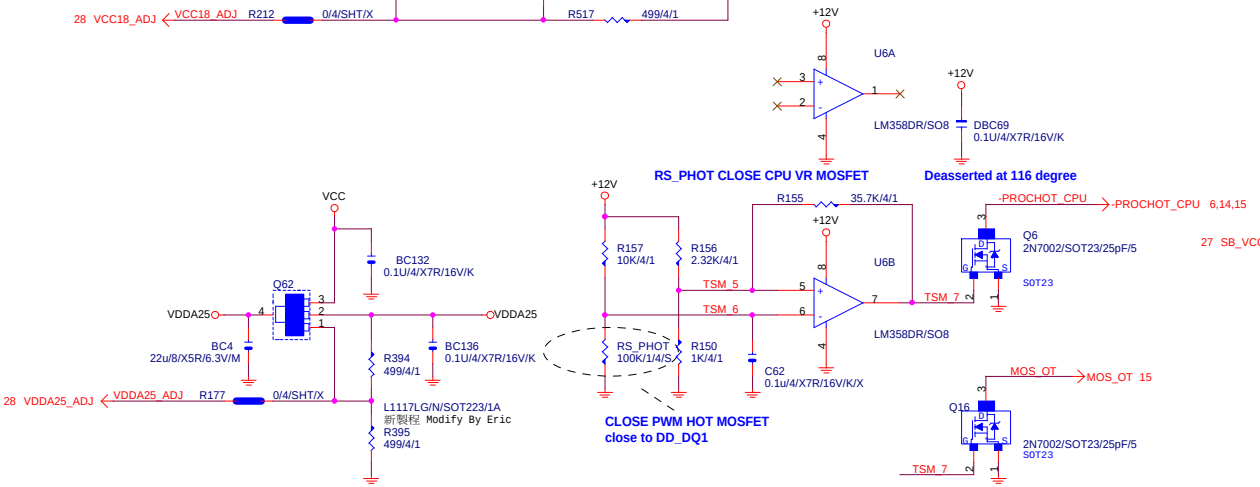

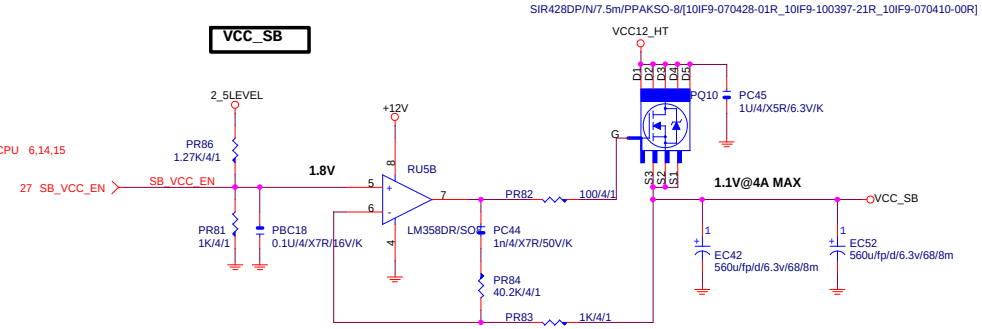

GIGABYTE™

Title: NB/SB POWER,VCC12HT,VDDA25

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PCIE-1G LAN

Power domain chart

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

FOR DSM MODE
(DEEP SLUMBER MODE)
ENABLE SW

Dual Color LED
Green
Orange

Single Color LED
Yellow

(CLOSE LU1)
(PIN3,6,9,13,29,41,45)
CLOSE LL2
(PIN21)

P35-152-19W9

離IC近越好

USB_LAN

USB 3.0 ESD protect.
AZ1045-04F/MSOP10
AOZ8902CIL/SOT23-6
SMD1206P350SLR/6V/S

9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R

Close to USB30_LAN
Close to USB30_LAN
90歐姆:[20/4.5/7.5/4.5/20]

使用RU9 USB_LAN可省略LAESD1保護LED

USB18P/BU/OS/RA/D/2/SB

GIGABYTE™

Title	REALTK RTL8111F
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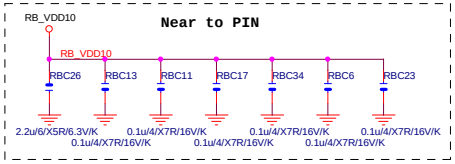
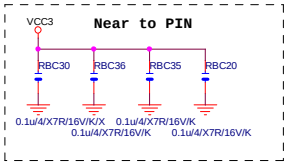
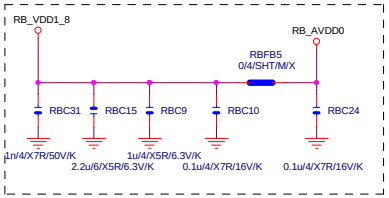
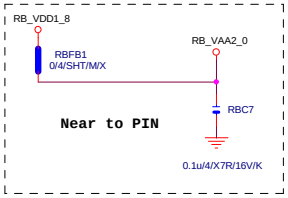
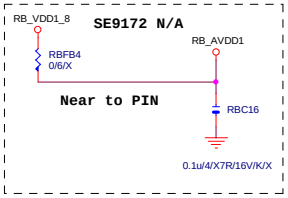
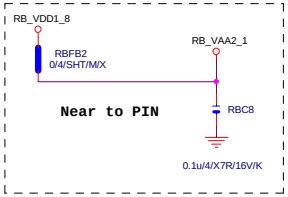


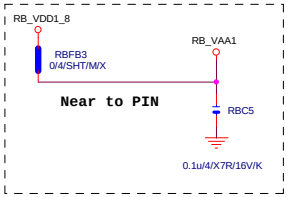


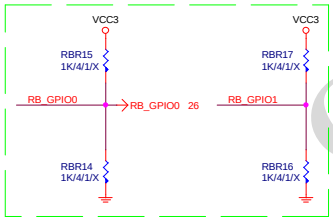


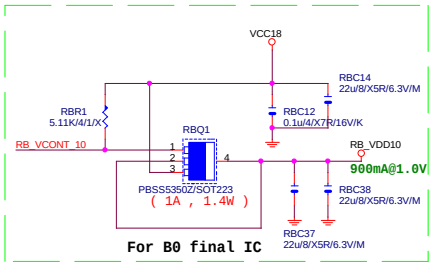


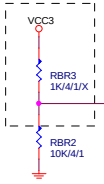


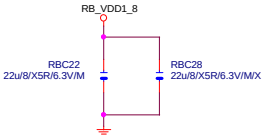




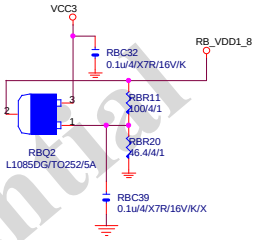


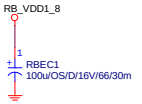






3.3V to 1.8V Voltage Regulator





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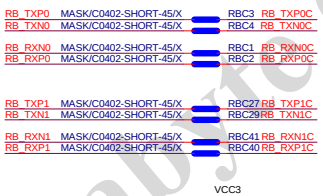

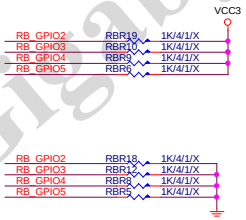

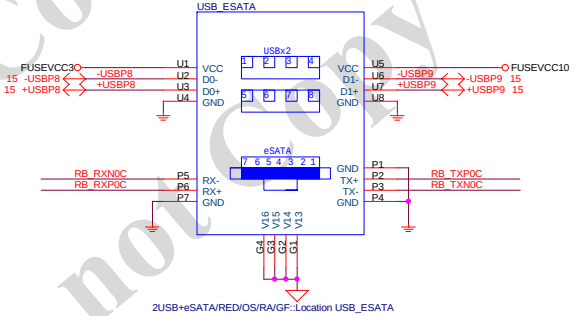

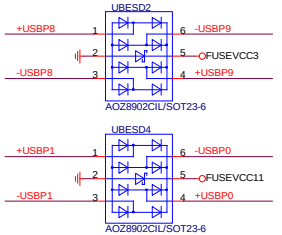

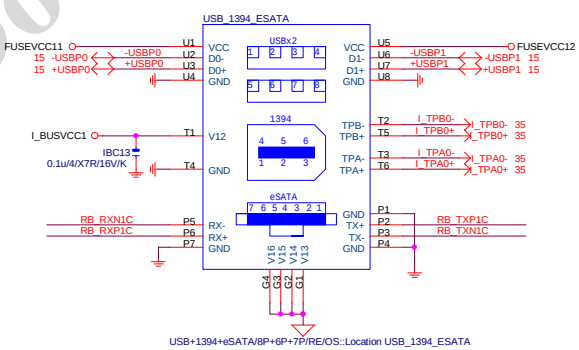

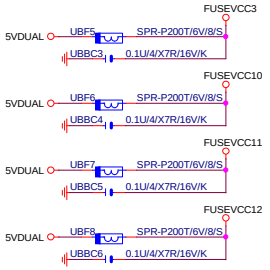

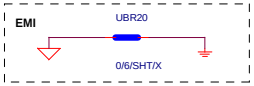

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Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
Date: Thursday, July 03, 2014	Sheet 33 of 35	

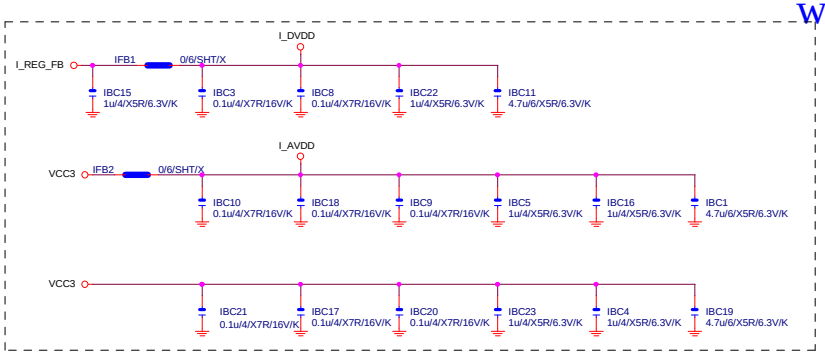
USB3.0 VL805

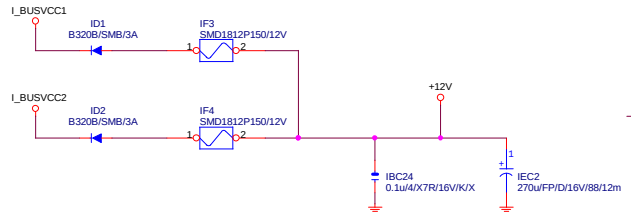
S3/S4 PCIE NEED MAIN POWER

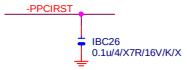
VL805

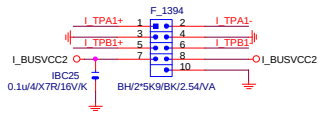
【技術通報R&D技術通報156】
RT9018(RICHTEK)與NCT3730(NUVOTON),
EM5103GE(EMC)做共用,針對PIN7(FB)分壓阻值部份
須做修改為100K以上電阻值

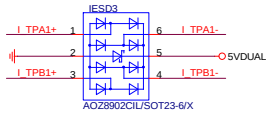
Gigabyte Technology		
Title: USB3 VL805		
Size: Custom	Document Number: GA-990FXA-UD3	Rev: 4.02
Date: Thursday, July 03, 2014	Sheet 34 of 35	











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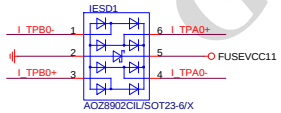

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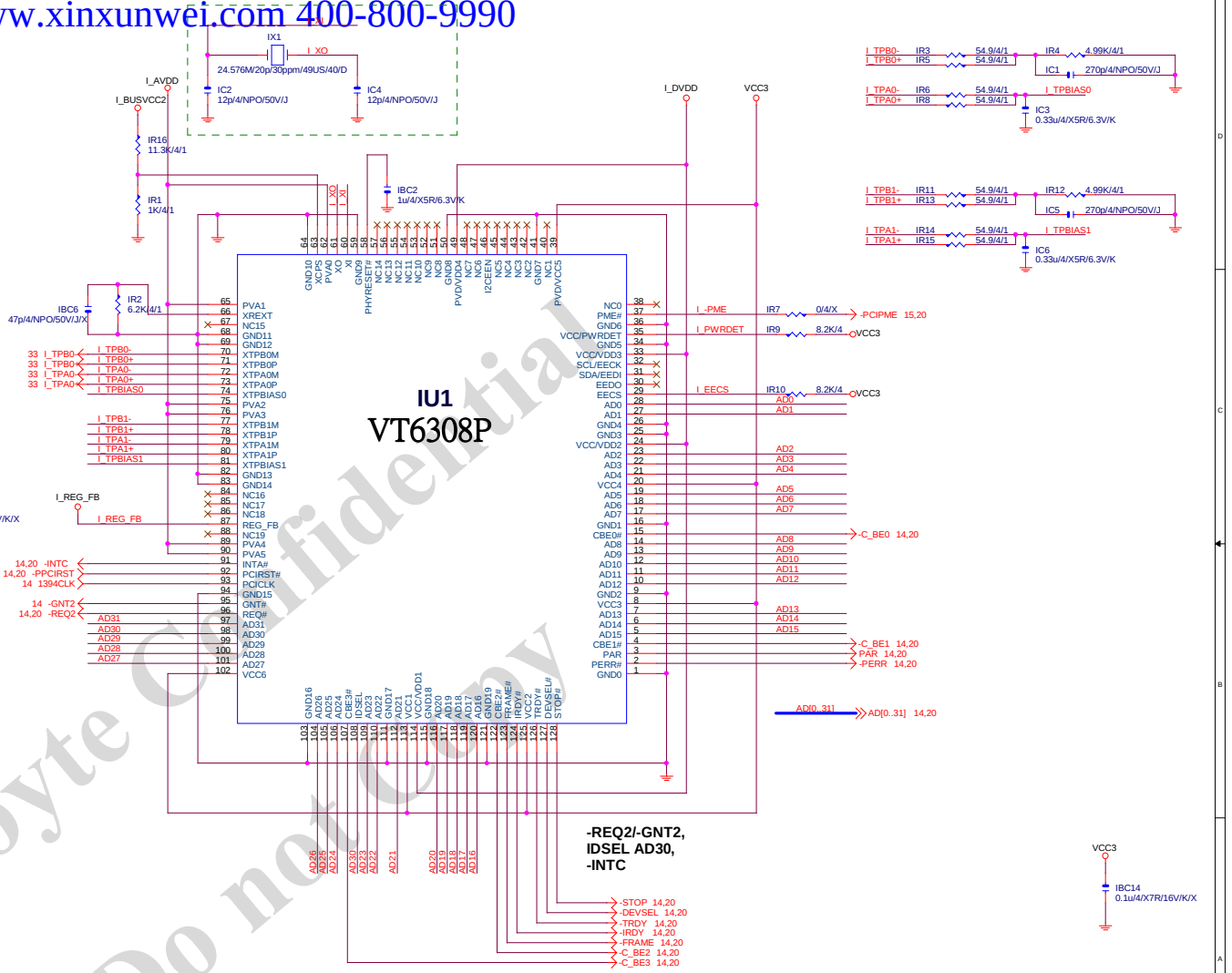

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