GA-AX370-GAMING 5

Revision : 1.01

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2015.12.30--B.L

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Model Name:GA-AX370-GAMING 5

Component value change history

Version: 1.01

P-Code: U98126-0

Date	Change Item		Reason
2016.08.08	01 New BOM Release.	PCB: 0.1	1. OR169 NA
			2. FIX PWM PHASE 6. 1. FIX PT X4: CONFI 4/211/1111. 3. OR13, OR35 POP, OR33 NC. 4. AGPIO_4 add pull down. 5. FIX SATA_EXPRESS ISSUE.
			1. USB SSC STRAP 2. DAC POWER P_EN-->P_GATE 3. PCIE Group 0/1 strap & sch 4. SataExpress strap & sch 5. EFUSE_PWR SCH ADD 預留pull down sch 6.PAUC6/PAUC8 0402-->0603 10u 7. STARDUST MEASURE DAR30&DAR27-->11K DAR61-->13K 8. PT USB30 Add Redriver 9. update codec 1220 VER:053 10. IT8686 ADD FOR FIX PSU VCC3 負壓 SCH 11. IT8792 BOM 12. WATCHDOG PIN CHANGE TO PIN47 & PIN90 13. DEBUG LED GPIO CHANGE TO SIO GP65 & GP95(CPU & DRAM LED) 14.PX2 FOOTPRINT CHANGE 15.ADD AR100 FOR O_-RTCRST 16.PR60/PR61 PULL UP , PR59/PR63 NA GPP GROUP0 17.PR22/PR65 PULL UP , PR64 NA GPP GROUP1 18. DDR SLOT "DDR4/288/BK/VA/D/G15/TWO LATCH/SHELL"雙耳扣用料 19.MOS_T 12SP2-S09425-71R_12SP2-S09425-72R_12SP2-S09425-73R 20. MOD_R 12SP2-S08025-71R_12SP2-S08025-72R_12SP2-S08025-73R 21. USB31_LAN "11NR6-706009-51R"
2016.11.29	01 New BOM Release.	PCB: 0.1	0. rename AX370-Gaming 5 1. OR37 PULL 3VDUAL_IO(部分SIO POWER改接3VDUAL_IO for ERP) 2. BEEP- 原GP27 改接 GP15 (IT8686 Pin32) , OR26 Pull hi 刪除 3. MB_ID2 原GP26 改接 GP65 (IT8686 Pin82), 4. TPM PIN1 修改,不接SIO,改接至CPU 5. LPC from EC8792 (注意FW) 6. MR19 N/A , MR0 上件 , OR38 / OR39 上件 (Debug LED) 7. OC Botton GPIO CHANGE 8. DUAL BIOS from EC8792(須注意FW) 9. CC change to TI3220 10. PCH_TEMP/X16_TEMP/X16_TEMP2 change to 10K/4/1/S 11. FPQ351/FPQ80/FPQ81 先不上件 12. MOS_T/R & PCH HS 料號修改 13. MA_DR12 2K-->1.91K
2017.01.16	101 New BOM Release.	PCB: 101	1. MASK XMP & TURBO 2. ECR100 PULL TO VCC3 3. CPU_FAN color CHANGE TO GRAY 4. DAU1 Update PN:10TA1-635201-08R 5. FPQ351 上件 For Watchdog 6. ECR21 NA (預防AGPIO85誤動作) 7. PR7 change to 10p , PC15/PC16 NA 8. OR51 CHANGE TO 0ohm NA 9. PT Crystal 1M-->10p / 匹配cap NA

Circuit or PCB layout change for next version

Date	Change Item	Reason
2017.01.13	Rev 1.01 Gerber-out	1. MASK XMP & TURBO 2. ECR100 PULL TO VCC3 3. PUMP1/2 change name SYS_FAN5_PUMP,SYS_FAN6_PUMP, 4. SIO & EC 48M ADD OR1 & ECR30 1K PULL DOWN

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Title: BOM & PCB HISTORY

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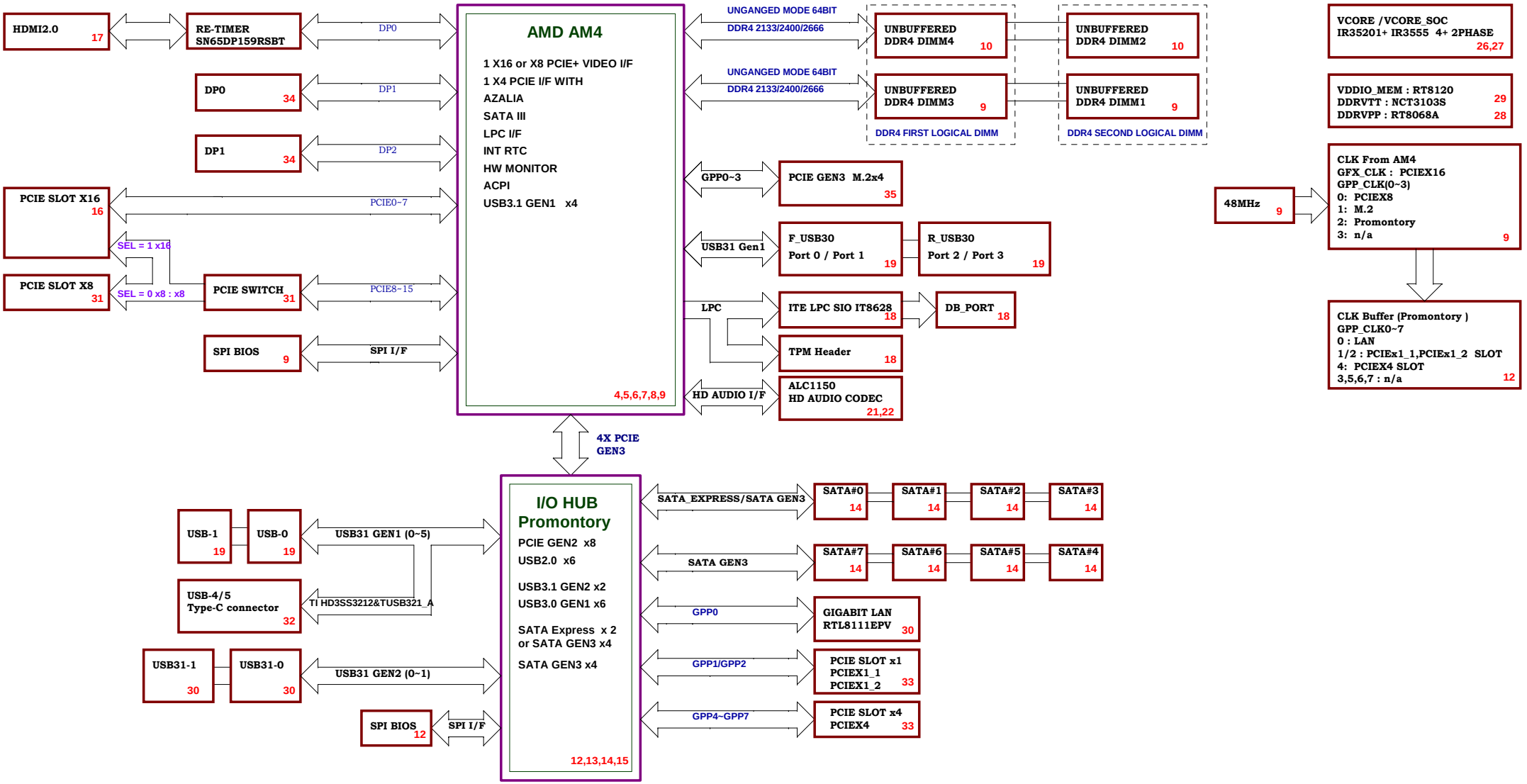

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Title	BLOCK DIAGRAM	
Size: Custom	Document Number: AX370-GAMING 5	Rev: 1.01
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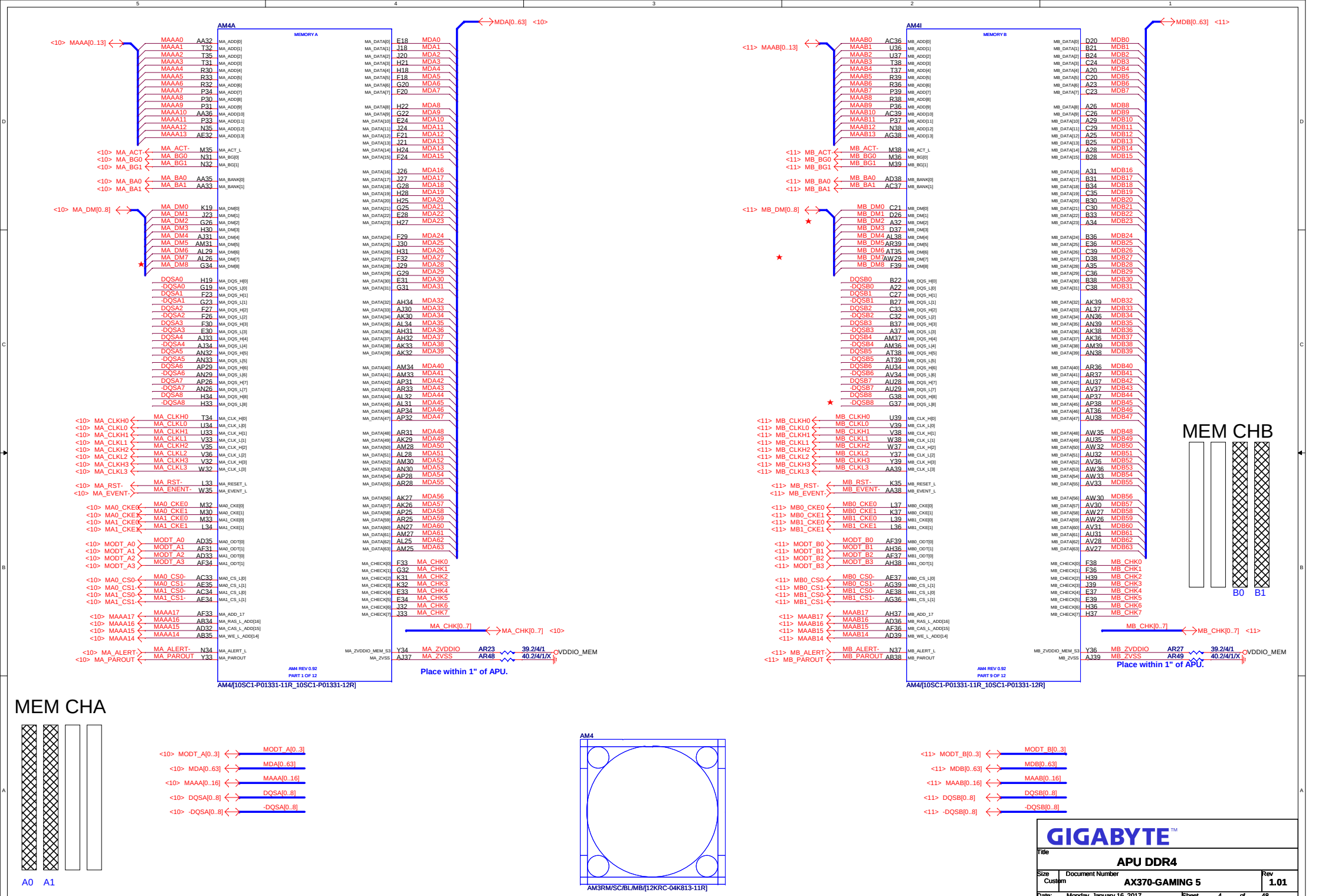
AM4A
MEMORY A
AM4 REV 0.92
PART 1 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
AM4I
MEMORY B
AM4 REV 0.92
PART 9 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
MEM CHB
B0 B1
MEM CHA
A0 A1
Place within 1" of APU.
Place within 1" of APU.
AM4
AM3RM/SC/BL/MB/[12KRC-04K813-11R]
GIGABYTE
APU DDR4
AX370-GAMING 5
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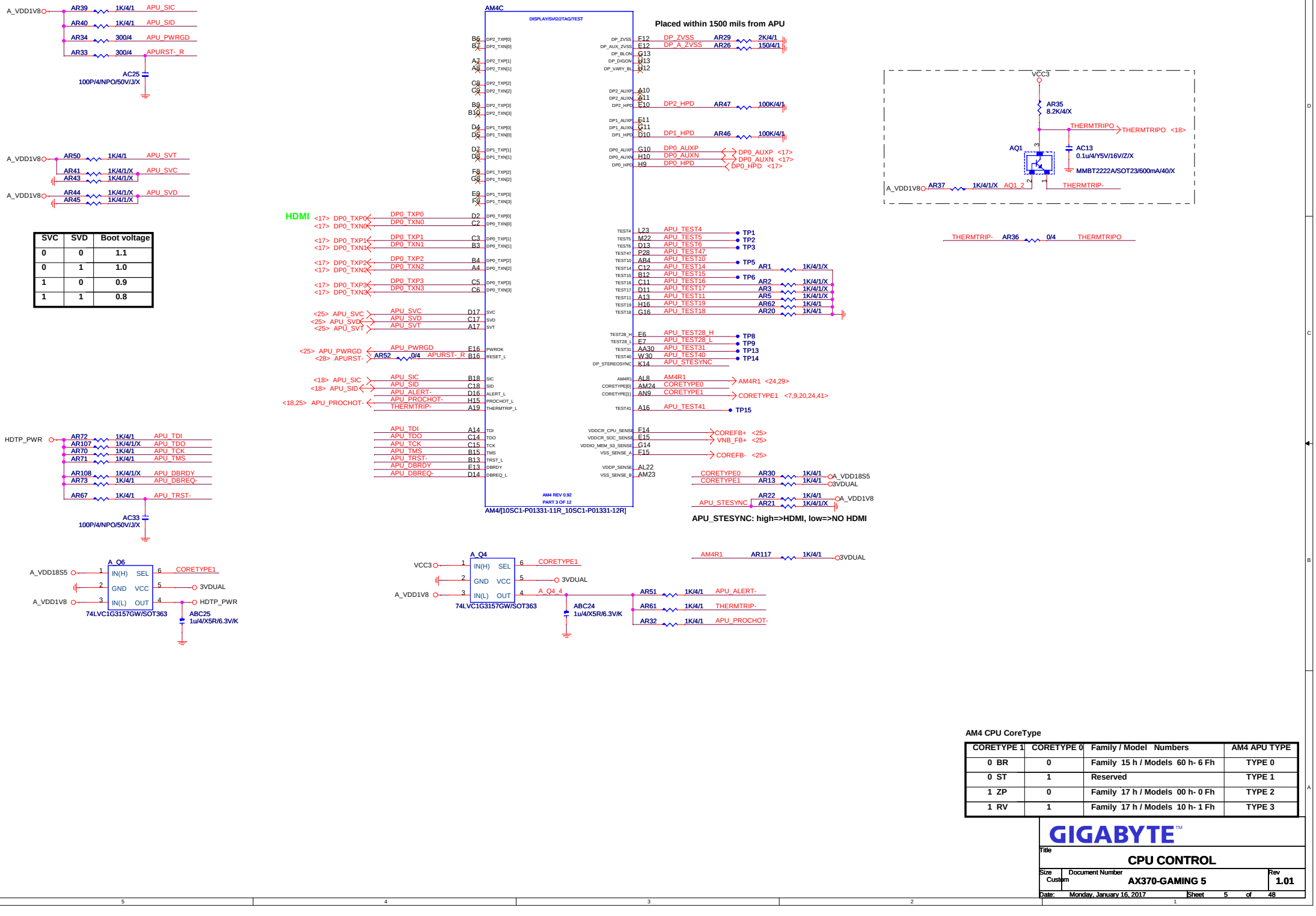

AM4 CPU CoreType

CORETYPE 1	CORETYPE 0	Family / Model Numbers	AM4 APU TYPE
0 BR	0	Family 15 h / Models 60 h- 6 Fh	TYPE 0
0 ST	1	Reserved	TYPE 1
1 ZP	0	Family 17 h / Models 00 h- 0 Fh	TYPE 2
1 RV	1	Family 17 h / Models 10 h- 1 Fh	TYPE 3

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Title	CPU CONTROL		
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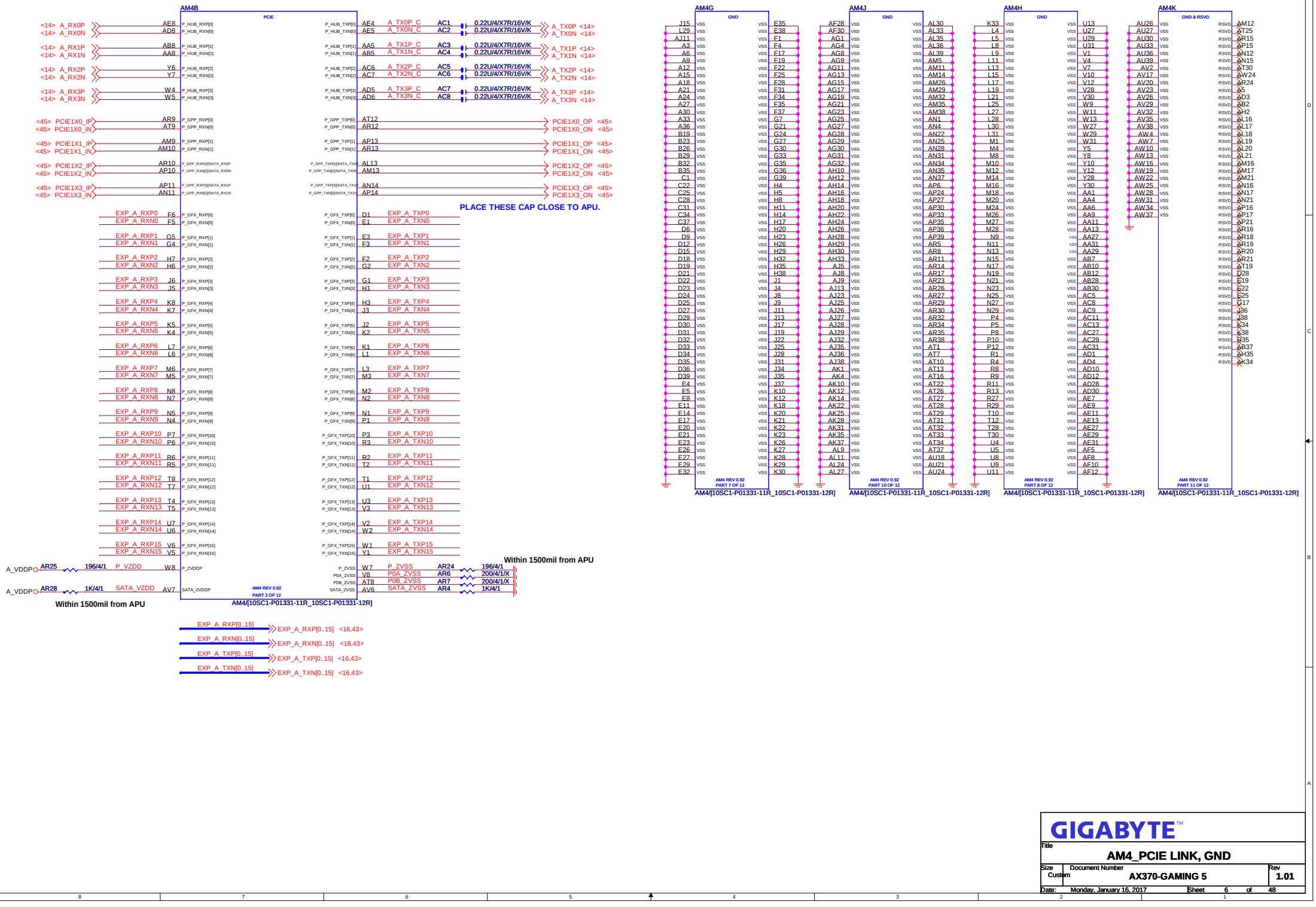
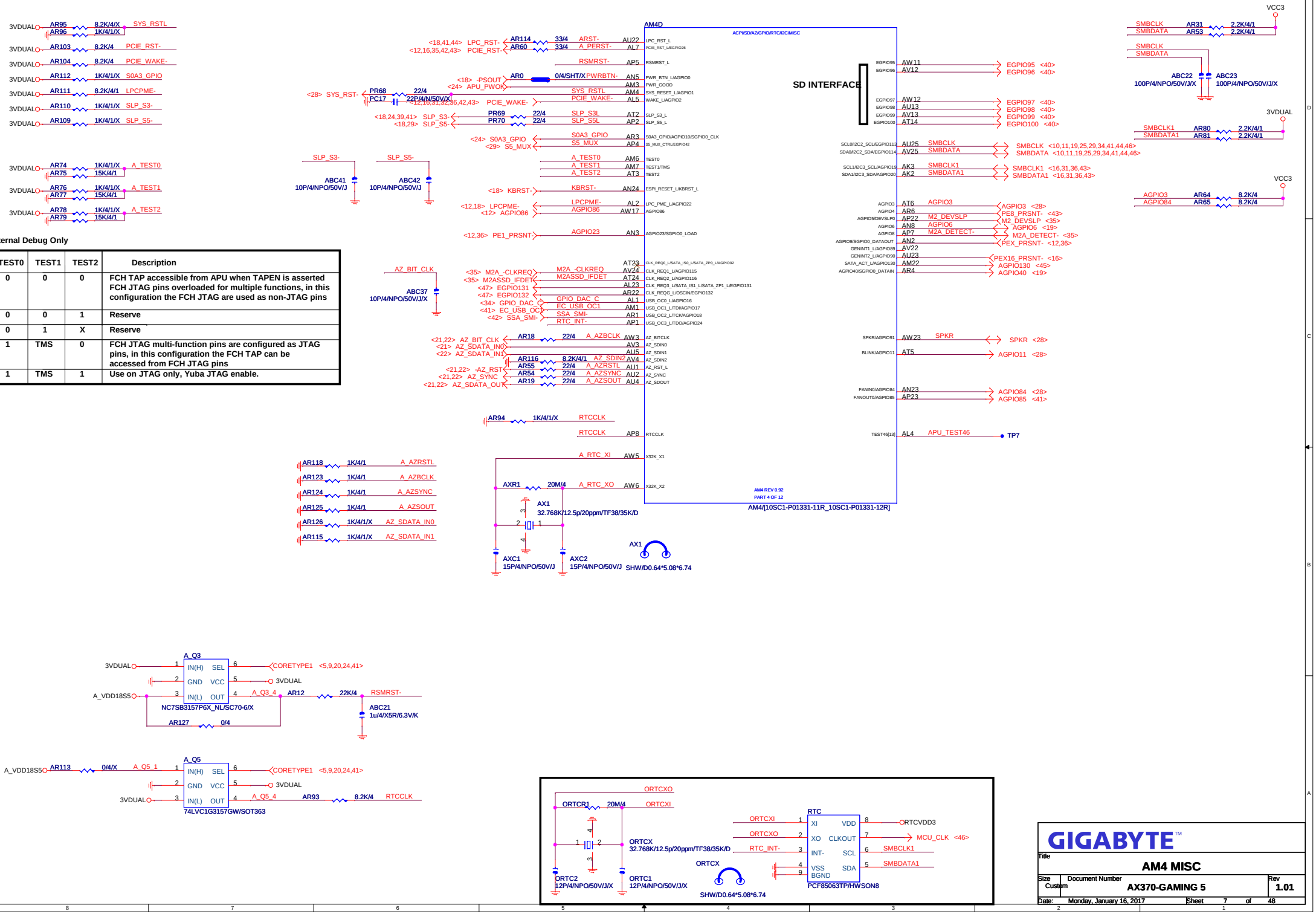

AM4B
PCIE
AM4 REV 0.92
PART 2 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]
PLACE THESE CAP CLOSE TO APU.
Within 1500mil from APU
Within 1500mil from APU
AM4G
GND
AM4J
GND
AM4H
GND
AM4K
GND & RSVD
AM4 REV 0.92
PART 7 OF 12
PART 10 OF 12
PART 8 OF 12
PART 11 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]


AM4D
ACPI/SD/AZ/GPIO/RTC/I2C/MISC
SD INTERFACE
AM4 REV 0.92
PART 4 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
3VDUAL
VCC3
SYS_RSTL
PCIE_RST-
PCIE_WAKE-
S0A3_GPIO
LPCPME-
SLP_S3-
SLP_S5-
A_TEST0
A_TEST1
A_TEST2
Internal Debug Only
TEST0 TEST1 TEST2 Description
0 0 0 FCH TAP accessible from APU when TAPEN is asserted FCH JTAG pins overloaded for multiple functions, in this configuration the FCH JTAG are used as non-JTAG pins
0 0 1 Reserve
0 1 X Reserve
1 TMS 0 FCH JTAG multi-function pins are configured as JTAG pins, in this configuration the FCH TAP can be accessed from FCH JTAG pins
1 TMS 1 Use on JTAG only, Yuba JTAG enable.
LPC_RST-
PCIE_RST-
ARST-
A_PERST-
RSMRST-
PWRBTN-
PWR_GOOD
SYS_RSTL
PCIE_WAKE-
SLP_S3L
SLP_S5L
S0A3_GPIO
S5_MUX
A_TEST0
A_TEST1
A_TEST2
KBRST-
LPCPME-
AGPIO86
AGPIO23
M2A_-CLKREQ
M2ASSD_IFDET
GPIO_DAC_C
EC_USB_OC1
SSA_SMI-
RTC_INT-
A_AZBCLK
A_AZRSTL
A_AZSYNC
A_AZSOUT
A_RTC_XI
A_RTC_XO
RTCCLK
SMBCLK
SMBDATA
SMBCLK1
SMBDATA1
AGPIO3
AGPIO84
M2_DEVSLP
AGPIO6
M2A_DETECT-
PEX_PRSNT-
PEX16_PRSNT-
AGPIO130
AGPIO40
SPKR
AGPIO11
AGPIO85
APU_TEST46
TP7
ABC37 10P/4/NPO/50V/J/X
ABC41 10P/4/NPO/50V/J
ABC42 10P/4/NPO/50V/J
AXR1 20M/4
AX1 32.768K/12.5p/20ppm/TF38/35K/D
AXC1 15P/4/NPO/50V/J
AXC2 15P/4/NPO/50V/J
AX1 SHW/D0.64*5.08*6.74
ABC22 100P/4/NPO/50V/J/X
ABC23 100P/4/NPO/50V/J/X
A_Q3
NC7SB3157P6X_NL/SC70-6/X
A_Q5
74LVC1G3157GW/SOT363
ORTCXO
ORTCXI
ORTCR1 20M/4
ORTCX 32.768K/12.5p/20ppm/TF38/35K/D
ORTC2 12P/4/NPO/50V/J/X
ORTC1 12P/4/NPO/50V/J/X
ORTCX SHW/D0.64*5.08*6.74
RTC
PCF85063TP/HWSON8
RTCVDD3
MCU_CLK
SMBCLK1
SMBDATA1
GIGABYTE
Title
AM4 MISC
Size Custom
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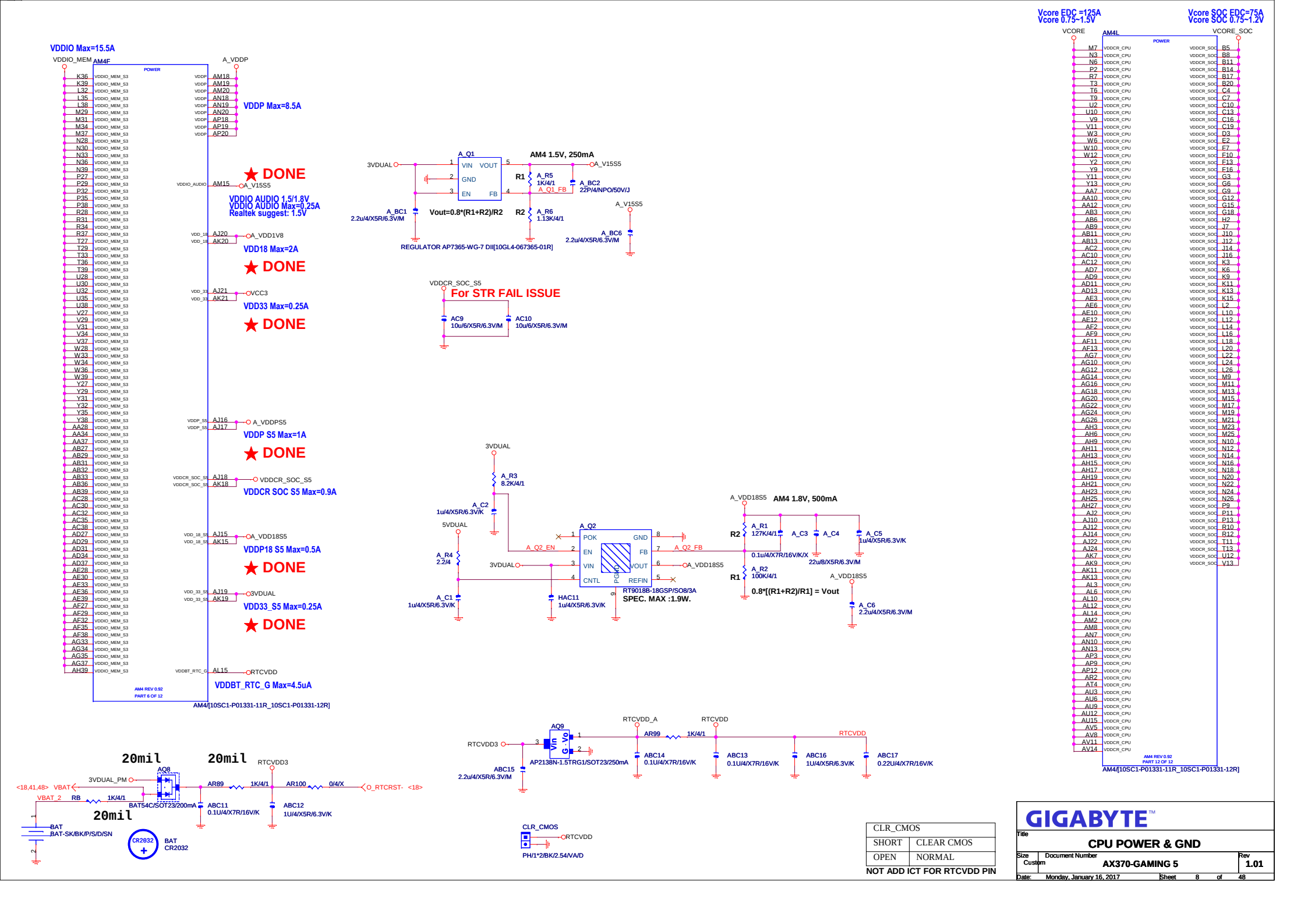
VDDIO Max=15.5A
VDDIO_MEM
AM4F
POWER
A_VDDP
VDDP Max=8.5A
DONE
VDDIO_AUDIO
AM15
A_V15S5
VDDIO AUDIO 1.5/1.8V
VDDIO AUDIO Max=0.25A
Realtek suggest: 1.5V
VDD_18
AJ20
AK20
A_VDD1V8
VDD18 Max=2A
DONE
VDD_33
AJ21
AK21
VCC3
VDD33 Max=0.25A
DONE
VDDP_S5
AJ16
AK17
A_VDDPS5
VDDP S5 Max=1A
DONE
VDDCR_SOC_S5
AJ18
AK18
VDDCR SOC S5 Max=0.9A
VDD_18_S5
AJ15
AK15
A_VDD18S5
VDDP18 S5 Max=0.5A
DONE
VDD_33_S5
AJ19
AK19
3VDUAL
VDD33_S5 Max=0.25A
DONE
VDDBT_RTC_G
AL15
RTCVDD
VDDBT_RTC_G Max=4.5uA
AM4 REV 0.92
PART 6 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]
A_Q1
AM4 1.5V, 250mA
3VDUAL
VIN
VOUT
GND
EN
FB
R1
A_R5
1K/4/1
A_Q1_FB
A_BC2
22P/4/NPO/50V/J
A_V15S5
A_BC1
2.2u/4/X5R/6.3V/M
Vout=0.8*(R1+R2)/R2
R2
A_R6
1.13K/4/1
A_BC6
2.2u/4/X5R/6.3V/M
REGULATOR AP7365-WG-7 DII[10GL4-067365-01R]
VDDCR_SOC_S5
For STR FAIL ISSUE
AC9
10u/6/X5R/6.3V/M
AC10
10u/6/X5R/6.3V/M
3VDUAL
A_R3
8.2K/4/1
A_C2
1u/4/X5R/6.3V/K
5VDUAL
A_R4
2.2/4
A_C1
1u/4/X5R/6.3V/K
A_Q2
POK
GND
EN
FB
VIN
VOUT
CNTL
REFIN
PGND
A_Q2_EN
A_Q2_FB
A_VDD18S5
HAC11
1u/4/X5R/6.3V/K
RT9018B-18GSP/SO8/3A
SPEC. MAX :1.9W.
A_VDD18S5
AM4 1.8V, 500mA
R2
A_R1
127K/4/1
A_C3
A_C4
A_C5
1u/4/X5R/6.3V/K
0.1u/4/X7R/16V/K/X
22u/8/X5R/6.3V/M
R1
A_R2
100K/4/1
0.8*[(R1+R2)/R1] = Vout
A_VDD18S5
A_C6
2.2u/4/X5R/6.3V/M
VCORE
AM4L
POWER
VCORE_SOC
Vcore EDC =125A
Vcore 0.75~1.5V
Vcore SOC EDC=75A
Vcore SOC 0.75~1.2V
AM4 REV 0.92
PART 12 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]
20mil
20mil
20mil
AQ8
3VDUAL_PM
<18,41,48> VBAT
VBAT_2
RB
1K/4/1
BAT54C/SOT23/200mA
AR89
1K/4/1
AR100
0/4/X
O_RTCRST- <18>
RTCVDD3
ABC11
0.1U/4/X7R/16V/K
ABC12
1U/4/X5R/6.3V/K
BAT
BAT-SK/BK/P/S/D/SN
CR2032
BAT
CR2032
AQ9
RTCVDD3
AP2138N-1.5TRG1/SOT23/250mA
ABC15
2.2u/4/X5R/6.3V/M
RTCVDD_A
AR99
1K/4/1
RTCVDD
ABC14
0.1U/4/X7R/16V/K
ABC13
0.1U/4/X7R/16V/K
ABC16
1U/4/X5R/6.3V/K
ABC17
0.22U/4/X7R/16V/K
CLR_CMOS
RTCVDD
PH/1*2/BK/2.54/VA/D
CLR_CMOS
SHORT
CLEAR CMOS
OPEN
NORMAL
NOT ADD ICT FOR RTCVDD PIN
GIGABYTE
Title
CPU POWER & GND
Size
Custom
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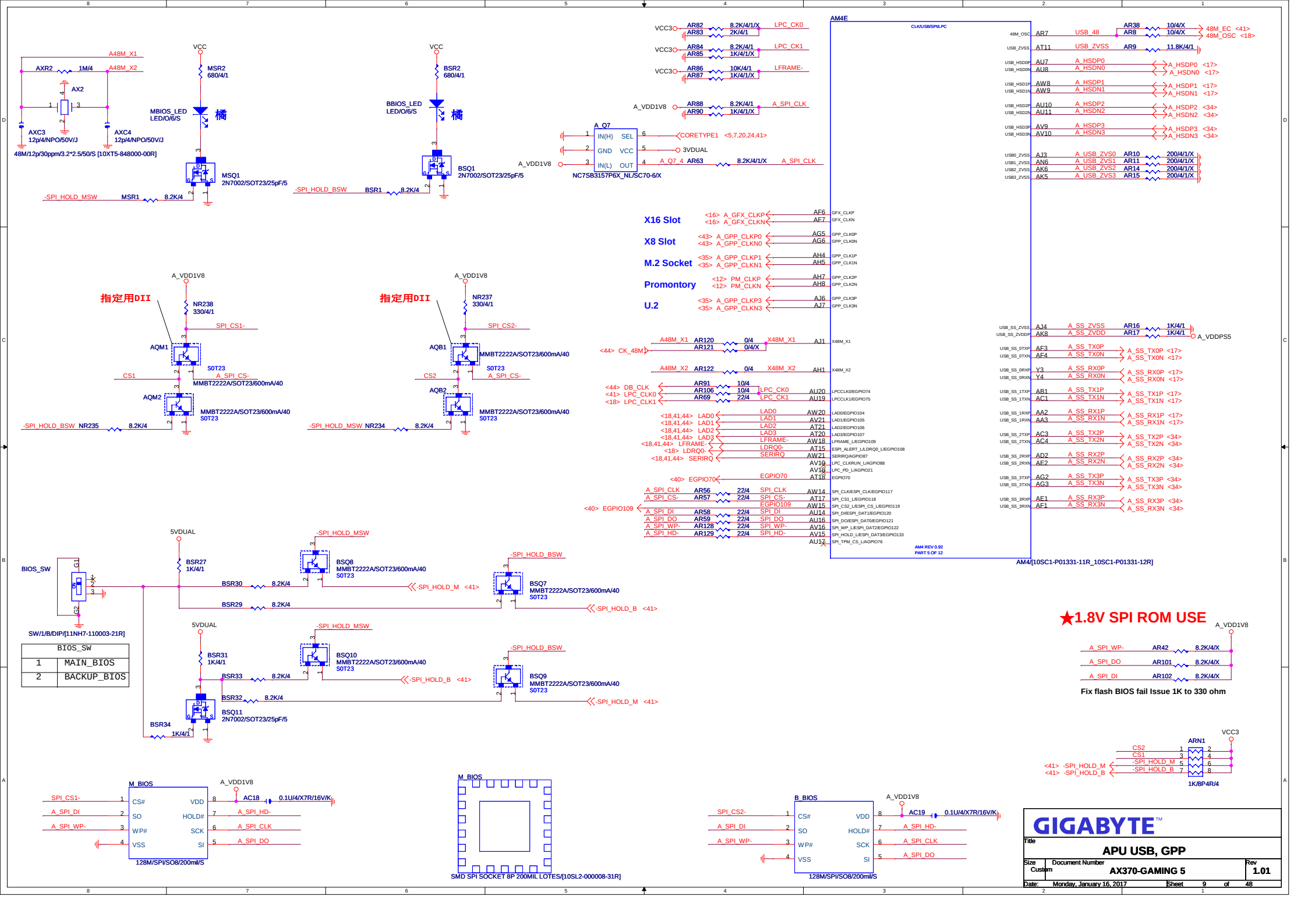
A48M_X1
AXR2
1M/4
A48M_X2
AX2
AXC3
12p/4/NPO/50V/J
AXC4
12p/4/NPO/50V/J
48M/12p/30ppm/3.2*2.5/50/S [10XT5-848000-00R]
VCC
MSR2
680/4/1
MBIOS_LED
LED/O/6/S
MSQ1
2N7002/SOT23/25pF/5
-SPI_HOLD_MSW
MSR1
8.2K/4
BSR2
680/4/1
BBIOS_LED
LED/O/6/S
BSQ1
2N7002/SOT23/25pF/5
-SPI_HOLD_BSW
BSR1
8.2K/4
VCC3
AR82
8.2K/4/1/X
LPC_CK0
AR83
2K/4/1
AR84
8.2K/4/1
LPC_CK1
AR85
1K/4/1/X
AR86
10K/4/1
LFRAME-
AR87
1K/4/1/X
A_VDD1V8
AR88
8.2K/4/1
A_SPI_CLK
AR90
1K/4/1/X
A_Q7
IN(H)
SEL
GND
VCC
IN(L)
OUT
CORETYPE1 <5,7,20,24,41>
3VDUAL
A_Q7_4
AR63
8.2K/4/1/X
A_SPI_CLK
NC7SB3157P6X_NL/SC70-6/X
AM4E
CLK/USB/SPI/LPC
48M_OSC
AR7
USB_48
AR38
10/4/X
AR8
10/4/X
48M_EC <41>
48M_OSC <18>
USB_ZVSS
AT11
USB_ZVSS
AR9
11.8K/4/1
USB_HSDP0
AU7
A_HSDP0
A_HSDP0 <17>
USB_HSDN0
AU8
A_HSDN0
A_HSDN0 <17>
USB_HSDP1
AW8
A_HSDP1
A_HSDP1 <17>
USB_HSDN1
AW9
A_HSDN1
A_HSDN1 <17>
USB_HSDP2
AU10
A_HSDP2
A_HSDP2 <34>
USB_HSDN2
AU11
A_HSDN2
A_HSDN2 <34>
USB_HSDP3
AV9
A_HSDP3
A_HSDP3 <34>
USB_HSDN3
AV10
A_HSDN3
A_HSDN3 <34>
USB0_ZVSS
AJ3
A_USB_ZVS0
AR10
200/4/1/X
USB1_ZVSS
AN6
A_USB_ZVS1
AR11
200/4/1/X
USB2_ZVSS
AK6
A_USB_ZVS2
AR14
200/4/1/X
USB3_ZVSS
AK5
A_USB_ZVS3
AR15
200/4/1/X
X16 Slot
<16> A_GFX_CLKP
<16> A_GFX_CLKN
AF6
GFX_CLKP
AF7
GFX_CLKN
X8 Slot
<43> A_GPP_CLKP0
<43> A_GPP_CLKN0
AG5
GPP_CLK0P
AG6
GPP_CLK0N
M.2 Socket
<35> A_GPP_CLKP1
<35> A_GPP_CLKN1
AH4
GPP_CLK1P
AH5
GPP_CLK1N
Promontory
<12> PM_CLKP
<12> PM_CLKN
AH7
GPP_CLK2P
AH8
GPP_CLK2N
U.2
<35> A_GPP_CLKP3
<35> A_GPP_CLKN3
AJ6
GPP_CLK3P
AJ7
GPP_CLK3N
A48M_X1
AR120
0/4
X48M_X1
AJ1
X48M_X1
<44> CK_48M
AR121
0/4/X
A48M_X2
AR122
0/4
X48M_X2
AH1
X48M_X2
<44> DB_CLK
AR91
10/4
<41> LPC_CLK0
AR106
10/4
LPC_CK0
AU20
LPCCLK0/EGPIO74
<18> LPC_CLK1
AR69
22/4
LPC_CK1
AU19
LPCCLK1/EGPIO75
<18,41,44> LAD0
LAD0
AW20
LAD0/EGPIO104
<18,41,44> LAD1
LAD1
AV21
LAD1/EGPIO105
<18,41,44> LAD2
LAD2
AT21
LAD2/EGPIO106
<18,41,44> LAD3
LAD3
AT20
LAD3/EGPIO107
<18,41,44> LFRAME-
LFRAME-
AW18
LFRAME_L/EGPIO109
<18> LDRQ0-
LDRQ0-
AT15
ESPI_ALERT_L/LDRQ0_L/EGPIO108
<18,41,44> SERIRQ
SERIRQ
AW21
SERIRQ/AGPIO87
AV19
LPC_CLKRUN_L/AGPIO88
AV18
LPC_PD_L/AGPIO21
<40> EGPIO70
EGPIO70
AT18
EGPIO70
A_SPI_CLK
AR56
22/4
SPI_CLK
AW14
SPI_CLK/ESPI_CLK/EGPIO117
A_SPI_CS-
AR57
22/4
SPI_CS-
AT17
SPI_CS1_L/EGPIO118
EGPIO109
AW15
SPI_CS2_L/ESPI_CS_L/EGPIO119
<40> EGPIO109
A_SPI_DI
AR58
22/4
SPI_DI
AU14
SPI_DI/ESPI_DAT1/EGPIO120
A_SPI_DO
AR59
22/4
SPI_DO
AU16
SPI_DO/ESPI_DAT0/EGPIO121
A_SPI_WP-
AR128
22/4
SPI_WP-
AV16
SPI_WP_L/ESPI_DAT2/EGPIO122
A_SPI_HD-
AR129
22/4
SPI_HD-
AV15
SPI_HOLD_L/ESPI_DAT3/EGPIO133
AU17
SPI_TPM_CS_L/AGPIO76
AM4 REV 0.92
PART 5 OF 12
AM4(10SC1-P01331-11R_10SC1-P01331-12R]
USB_SS_ZVSS
AJ4
A_SS_ZVSS
AR16
1K/4/1
USB_SS_ZVDD
AK8
A_SS_ZVDD
AR17
1K/4/1
A_VDDPS5
USB_SS_0TXP
AF3
A_SS_TX0P
A_SS_TX0P <17>
USB_SS_0TXN
AF4
A_SS_TX0N
A_SS_TX0N <17>
USB_SS_0RXP
Y3
A_SS_RX0P
A_SS_RX0P <17>
USB_SS_0RXN
Y4
A_SS_RX0N
A_SS_RX0N <17>
USB_SS_1TXP
AB1
A_SS_TX1P
A_SS_TX1P <17>
USB_SS_1TXN
AC1
A_SS_TX1N
A_SS_TX1N <17>
USB_SS_1RXP
AA2
A_SS_RX1P
A_SS_RX1P <17>
USB_SS_1RXN
AA3
A_SS_RX1N
A_SS_RX1N <17>
USB_SS_2TXP
AC3
A_SS_TX2P
A_SS_TX2P <34>
USB_SS_2TXN
AC4
A_SS_TX2N
A_SS_TX2N <34>
USB_SS_2RXP
AD2
A_SS_RX2P
A_SS_RX2P <34>
USB_SS_2RXN
AE2
A_SS_RX2N
A_SS_RX2N <34>
USB_SS_3TXP
AG2
A_SS_TX3P
A_SS_TX3P <34>
USB_SS_3TXN
AG3
A_SS_TX3N
A_SS_TX3N <34>
USB_SS_3RXP
AE1
A_SS_RX3P
A_SS_RX3P <34>
USB_SS_3RXN
AF1
A_SS_RX3N
A_SS_RX3N <34>
A_VDD1V8
指定用DII
NR238
330/4/1
SPI_CS1-
AQM1
S0T23
A_SPI_CS-
CS1
MMBT2222A/SOT23/600mA/40
AQM2
MMBT2222A/SOT23/600mA/40
S0T23
-SPI_HOLD_BSW
NR235
8.2K/4
NR237
330/4/1
SPI_CS2-
AQB1
AQB2
CS2
-SPI_HOLD_MSW
NR234
8.2K/4
BIOS_SW
SW/1/B/DIP/[11NH7-110003-21R]
BIOS_SW
1 MAIN_BIOS
2 BACKUP_BIOS
5VDUAL
BSR27
1K/4/1
BSR30
8.2K/4
BSR29
8.2K/4
BSQ8
MMBT2222A/SOT23/600mA/40
S0T23
-SPI_HOLD_M <41>
BSQ7
MMBT2222A/SOT23/600mA/40
S0T23
-SPI_HOLD_B <41>
BSR31
1K/4/1
BSR33
8.2K/4
BSR32
8.2K/4
BSR34
1K/4/1
BSQ10
MMBT2222A/SOT23/600mA/40
S0T23
BSQ9
MMBT2222A/SOT23/600mA/40
S0T23
BSQ11
2N7002/SOT23/25pF/5
★1.8V SPI ROM USE
A_SPI_WP-
AR42
8.2K/4/X
A_SPI_DO
AR101
8.2K/4/X
A_SPI_DI
AR102
8.2K/4/X
Fix flash BIOS fail Issue 1K to 330 ohm
VCC3
ARN1
CS2
CS1
-SPI_HOLD_M
-SPI_HOLD_B
<41> -SPI_HOLD_M
<41> -SPI_HOLD_B
1K/8P4R/4
M_BIOS
SPI_CS1-
A_SPI_DI
A_SPI_WP-
CS#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
AC18
0.1U/4/X7R/16V/K
A_SPI_HD-
A_SPI_CLK
A_SPI_DO
128M/SPI/SO8/200mil/S
SMD SPI SOCKET 8P 200MIL LOTES/[10SL2-000008-31R]
B_BIOS
SPI_CS2-
AC19
128M/SPI/SO8/200mil/S
GIGABYTE
Title
APU USB, GPP
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DDR4_4

DDR4_2

* net 改 VDDQ

DDR12V Decouple

DDRVTT Decouple

* 電容移到 [RT8120_DDR]

CHANNEL A0
SA2:0=000

CHANNEL A1
SA2:2=010

DDR4/28BBK/VA/D/G15/TWO LATCH/SHELL

Title	DDR4 CHANNEL A
Size: Custom	Document Number: AX370-GAMING 5
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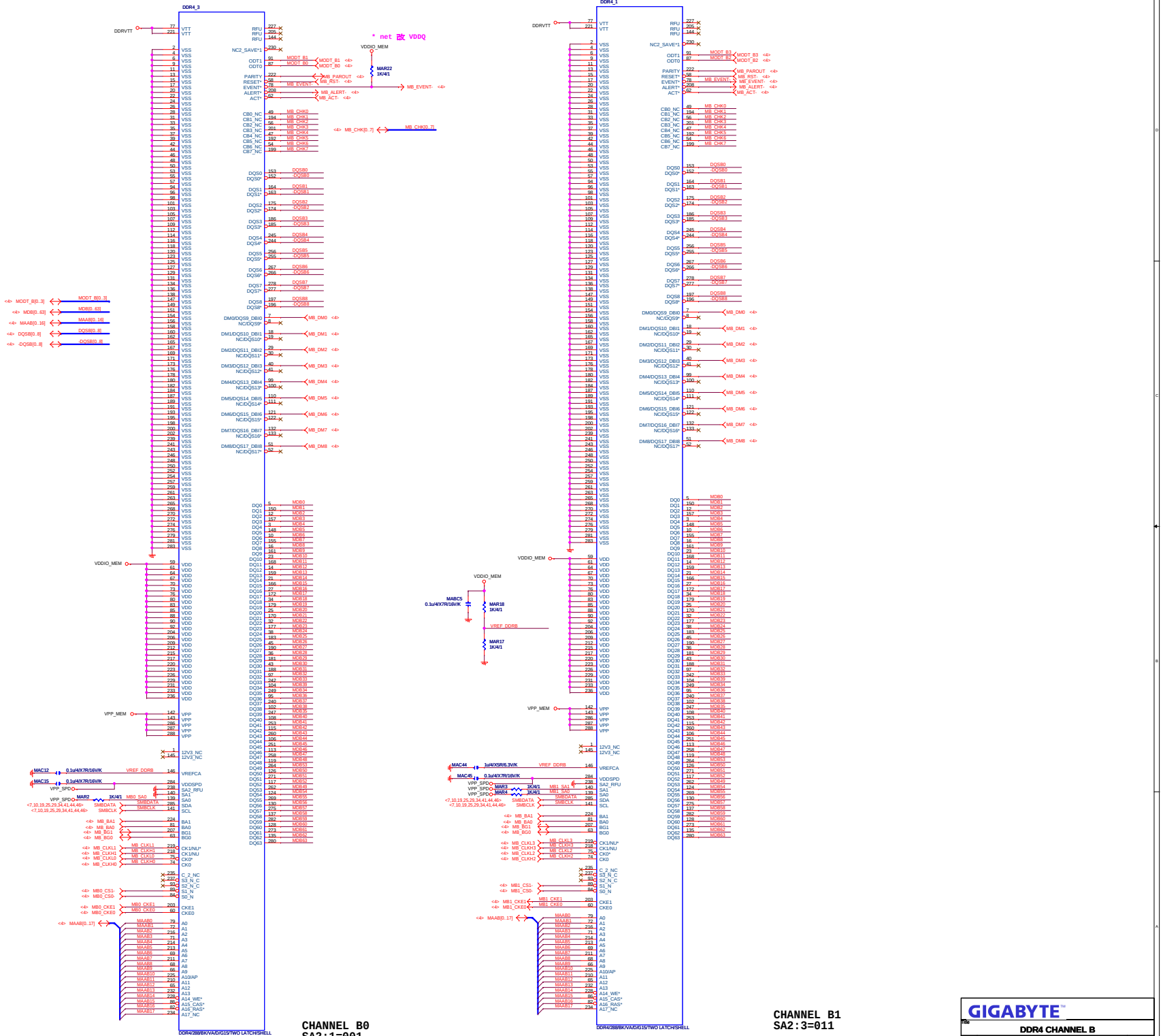
GIGABYTE



Title	DDR4 CHANNEL B
Size: Custom	Document Number: AX370-GAMING 5
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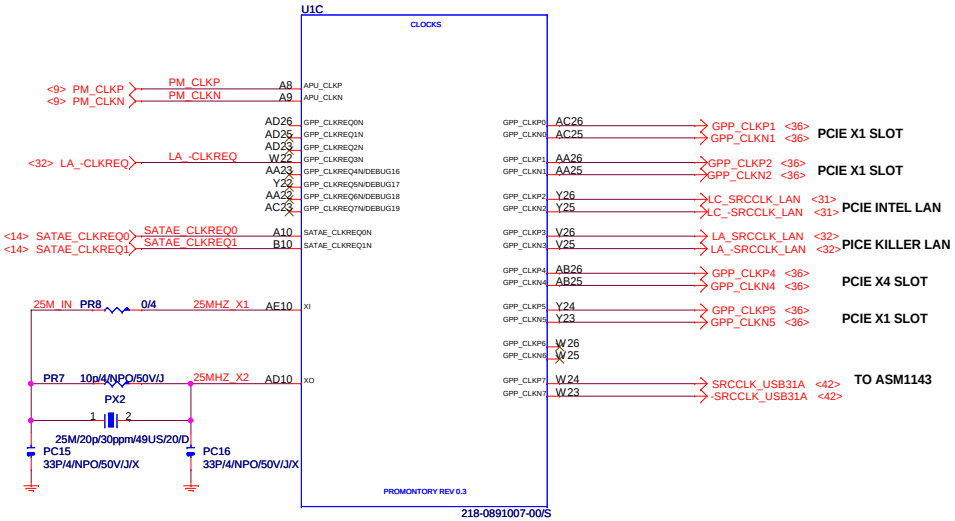
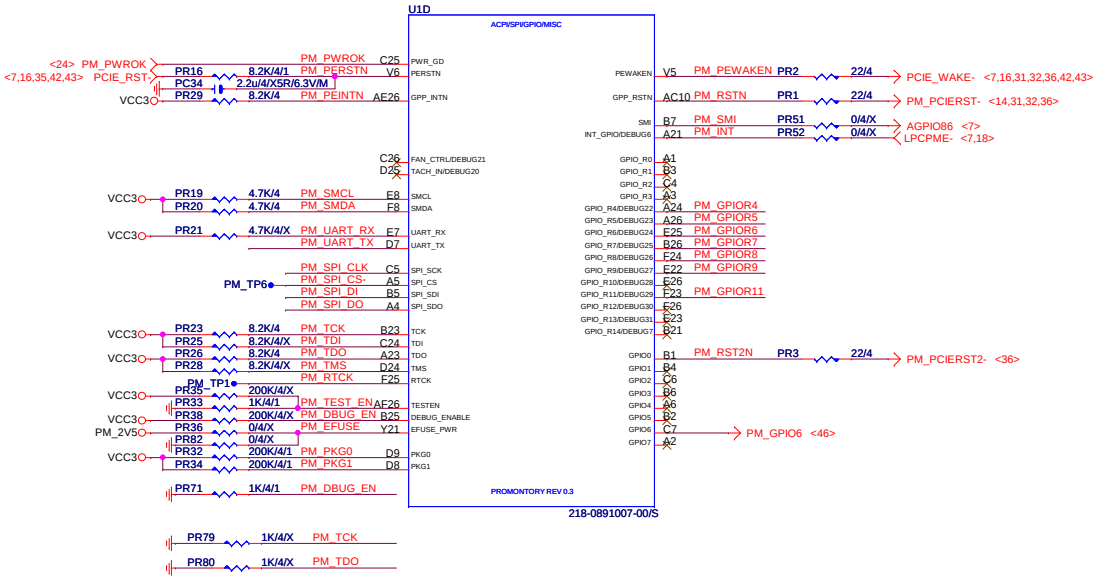
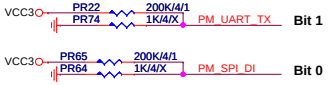
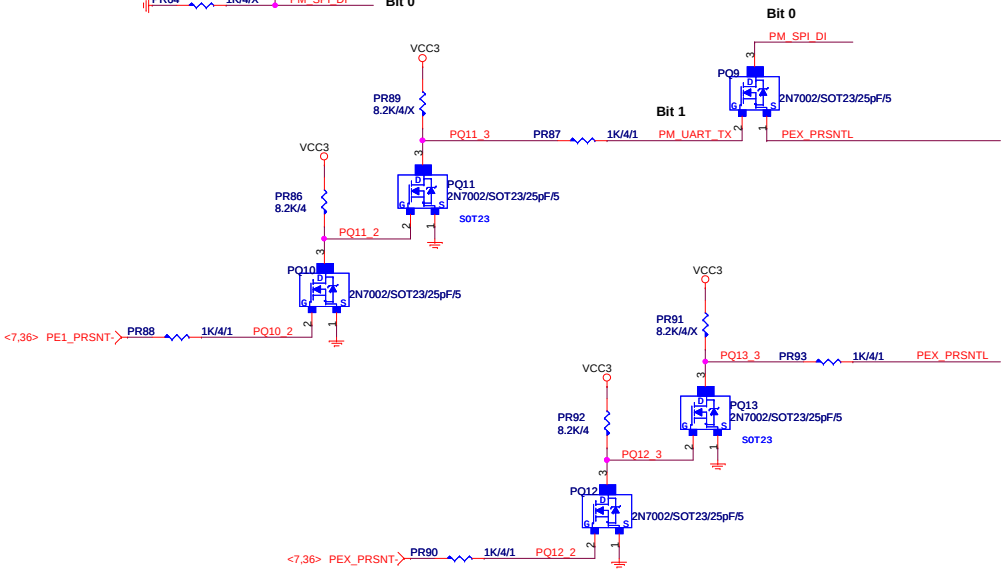




PM GPP Group 0 Strap: 11=> 1PCIe x4, 10=>1PCIe x2, 2PCIex1, 01=>4PCIe x1, 00=>Reserved.
PM GPP Group 0=>0~3

PM GPP Group 1 Strap: 11=> 1PCIe x4, 10=>1PCIe x2, 2PCIex1, 01=>4PCIe x1, 00=>Reserved.
PM GPP Group 1=>4~7





PM_GPIOR4 1: GPP clock source from APU_CLKP/N; 0: GPP clock source from Crystal, also enables GPIO_R8 .

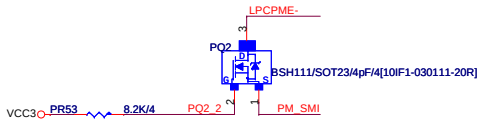
PM_GPIOR5=>1 : USBC SSC disable, 0: USBC SSC enable

PM_GPIOR6=>1: SATA SSC disable, 0: SATA SSC enable

PM_GPIOR7=>1: SATA Express SSC disable, 0: SATA Express SSC enable

PM_GPIOR8 (enabled from GPIO_R4) =>1: GPP SSC disable, 0: GPP SSC enable

PM_GPIOR11=>1: GPP clock output enabled,0: GPP clock output disabled



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Title	PROMONTORY CPU/CLK/MISC	
Size: Custom	Document Number: AX370-GAMING 5	Rev: 1.01
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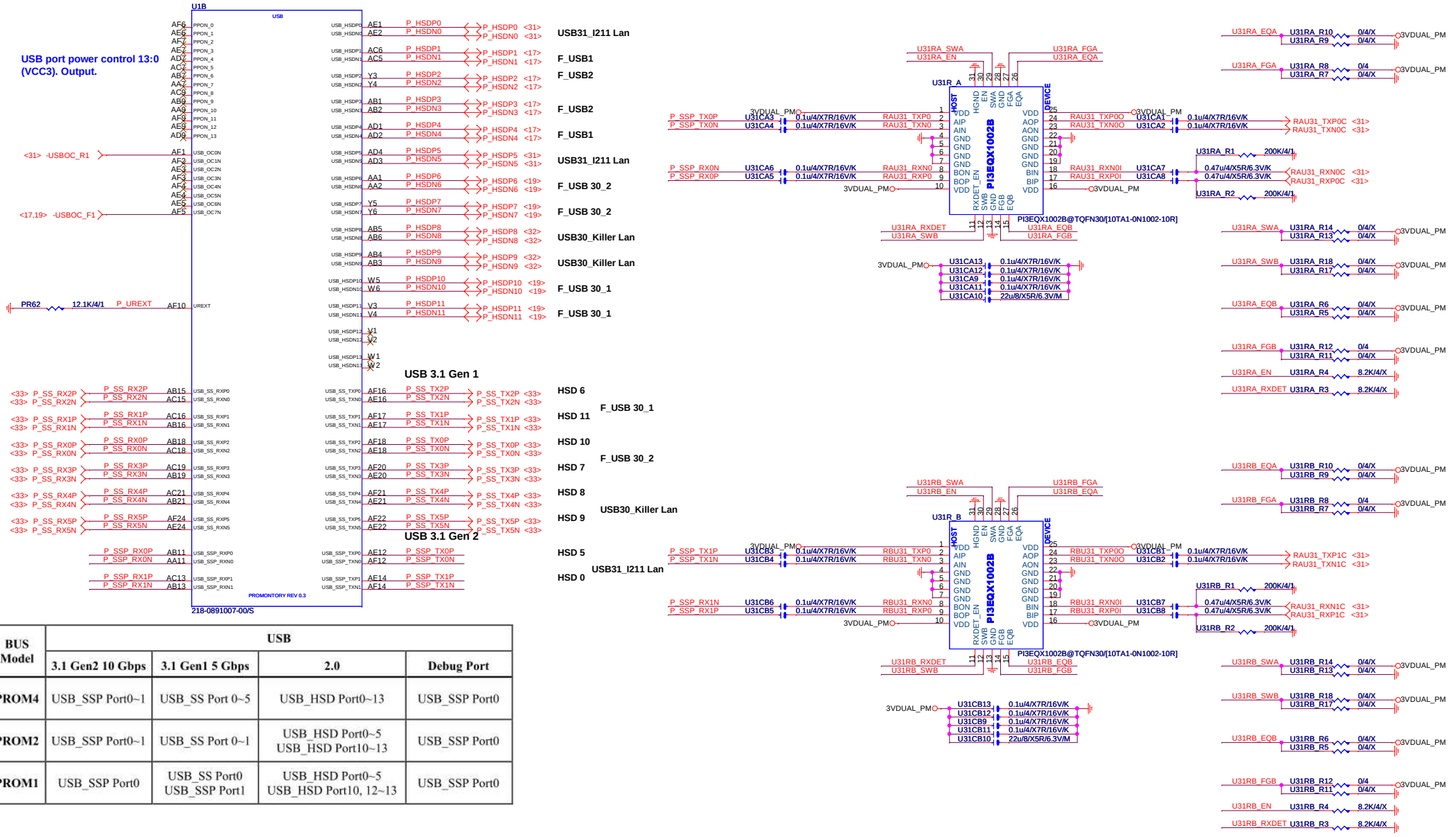

BUS Model	USB			
	3.1 Gen2 10 Gbps	3.1 Gen1 5 Gbps	2.0	Debug Port
PROM4	USB_SSP Port0~1	USB_SS Port 0~5	USB_HSD Port0~13	USB_SSP Port0
PROM2	USB_SSP Port0~1	USB_SS Port 0~1	USB_HSD Port0~5 USB_HSD Port10~13	USB_SSP Port0
PROM1	USB_SSP Port0	USB_SS Port0 USB_SSP Port1	USB_HSD Port0~5 USB_HSD Port10, 12~13	USB_SSP Port0

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Title: PM USB

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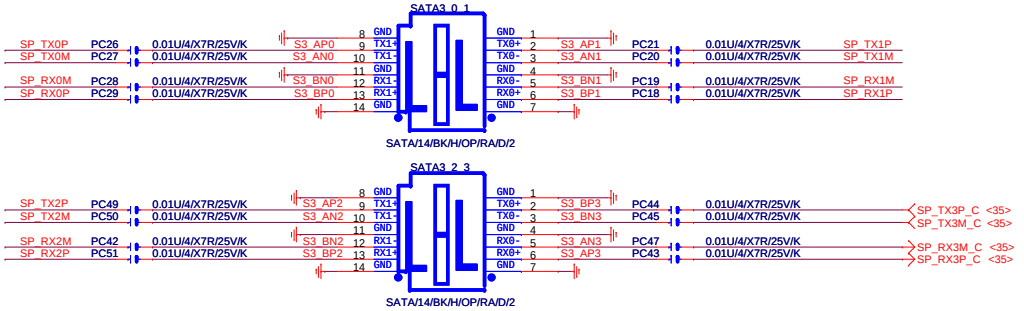
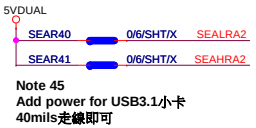
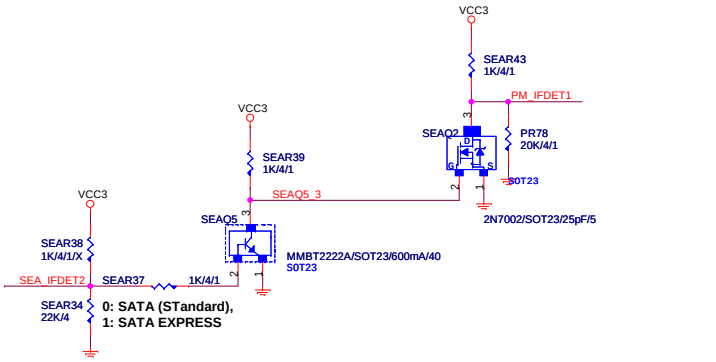
BUS Model	SATA 3.0	SATA Express	PCI Express® Gen2 GPP	PCI Express® CLK
PROM4	SATA port0~3	SATAE port0~3	GPP lane0~7	CLK0~7
PROM2	SATA port0~1	SATAE port0~1	GPP lane0~1 GPP lane4~7	CLK0~1 CLK4~7
PROM1	SATA port0~1	SATAE port0~1	GPP lane4~7	CLK4~7

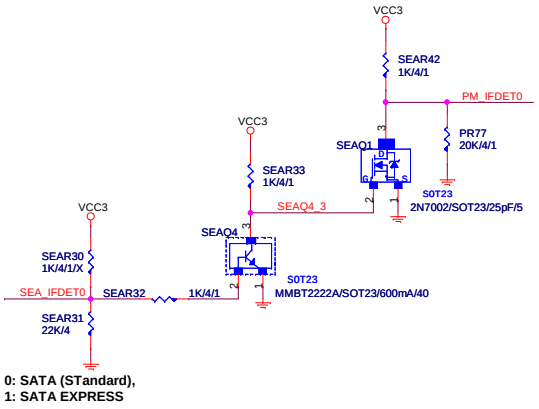


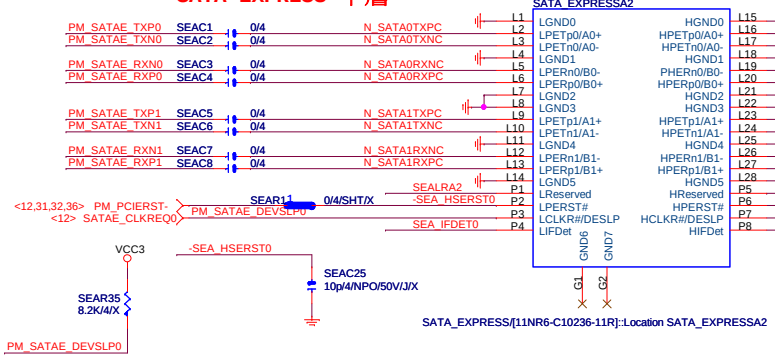




To SATA3 port0/1

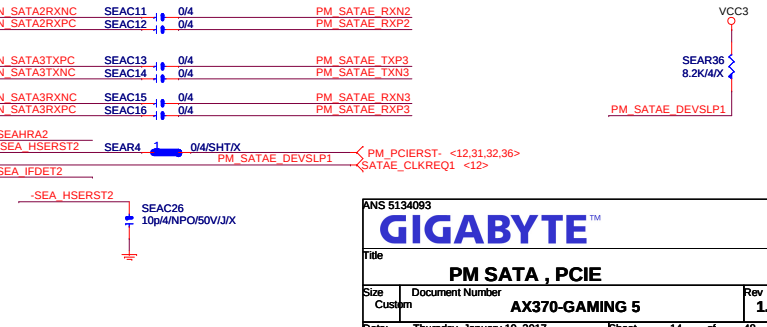
SATA EXPRESS 下層





To SATA3 port2/3

SATA EXPRESS 上層



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GIGABYTE™

Title: **PM SATA , PCIE**

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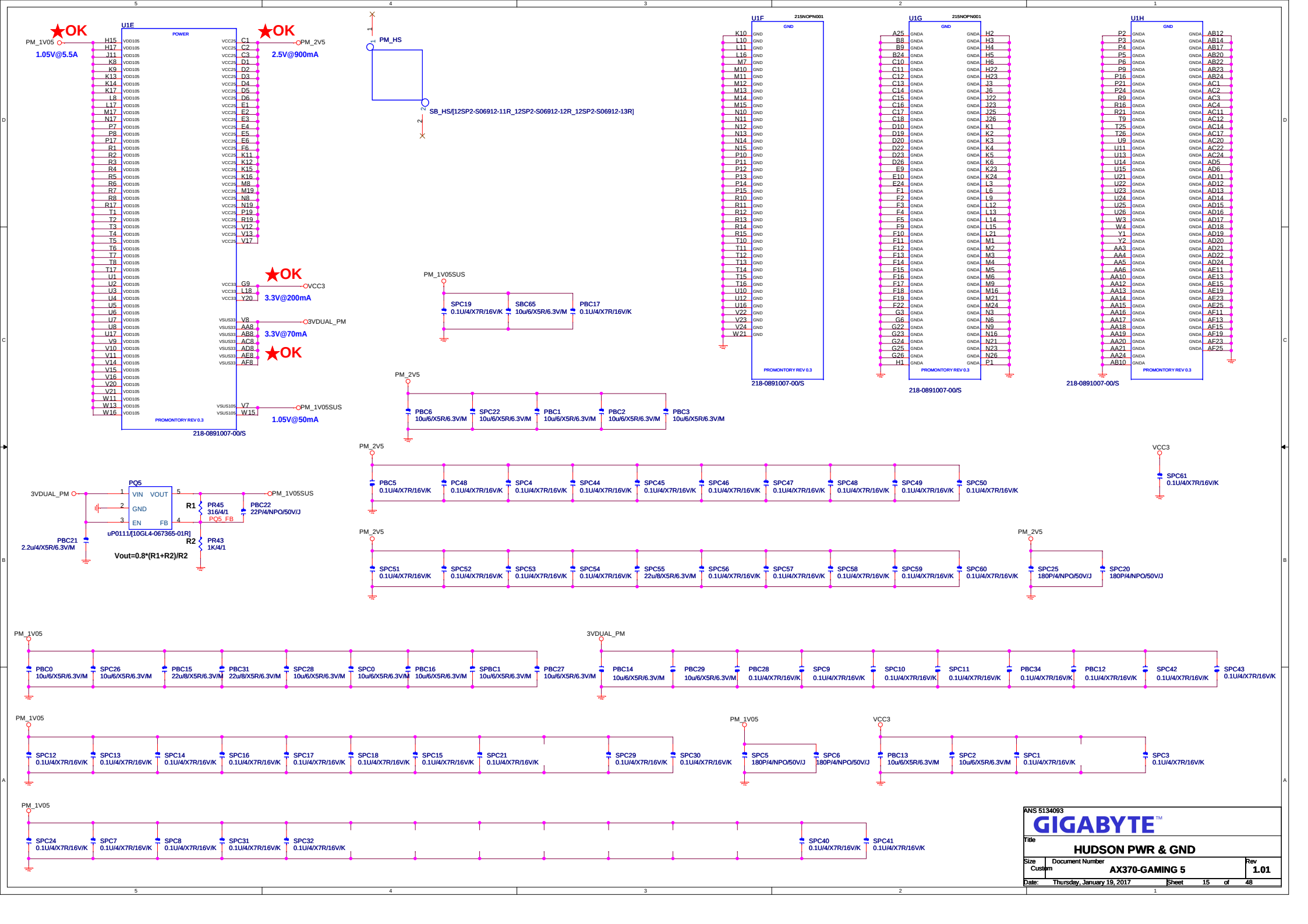
U1E
POWER
PM_1V05
1.05V@5.5A
OK
PM_2V5
2.5V@900mA
VCC3
3.3V@200mA
3VDUAL_PM
3.3V@70mA
PM_1V05SUS
1.05V@50mA
PROMONTORY REV 0.3
218-0891007-00/S
PM_HS
SB_HS/[12SP2-S06912-11R_12SP2-S06912-12R_12SP2-S06912-13R]
U1F
U1G
U1H
215NOPN001
GND
218-0891007-00/S
SPC19 0.1U/4/X7R/16V/K
SBC65 10u/6/X5R/6.3V/M
PBC17 0.1U/4/X7R/16V/K
PBC6 10u/6/X5R/6.3V/M
SPC22 10u/6/X5R/6.3V/M
PBC1 10u/6/X5R/6.3V/M
PBC2 10u/6/X5R/6.3V/M
PBC3 10u/6/X5R/6.3V/M
PQ5
uP0111/[10GL4-067365-01R]
VIN
VOUT
GND
EN
FB
PQ5_FB
R1
PR45 316/4/1
R2
PR43 1K/4/1
PBC21 2.2u/4/X5R/6.3V/M
PBC22 22P/4/NPO/50V/J
Vout=0.8*(R1+R2)/R2
PBC5 0.1U/4/X7R/16V/K
PC48 0.1U/4/X7R/16V/K
SPC4 0.1U/4/X7R/16V/K
SPC44 0.1U/4/X7R/16V/K
SPC45 0.1U/4/X7R/16V/K
SPC46 0.1U/4/X7R/16V/K
SPC47 0.1U/4/X7R/16V/K
SPC48 0.1U/4/X7R/16V/K
SPC49 0.1U/4/X7R/16V/K
SPC50 0.1U/4/X7R/16V/K
SPC61 0.1U/4/X7R/16V/K
SPC51 0.1U/4/X7R/16V/K
SPC52 0.1U/4/X7R/16V/K
SPC53 0.1U/4/X7R/16V/K
SPC54 0.1U/4/X7R/16V/K
SPC55 22u/8/X5R/6.3V/M
SPC56 0.1U/4/X7R/16V/K
SPC57 0.1U/4/X7R/16V/K
SPC58 0.1U/4/X7R/16V/K
SPC59 0.1U/4/X7R/16V/K
SPC60 0.1U/4/X7R/16V/K
SPC25 180P/4/NPO/50V/J
SPC20 180P/4/NPO/50V/J
PBC0 10u/6/X5R/6.3V/M
SPC26 10u/6/X5R/6.3V/M
PBC15 22u/8/X5R/6.3V/M
PBC31 22u/8/X5R/6.3V/M
SPC28 10u/6/X5R/6.3V/M
SPC0 10u/6/X5R/6.3V/M
PBC16 10u/6/X5R/6.3V/M
SPBC1 10u/6/X5R/6.3V/M
PBC27 10u/6/X5R/6.3V/M
PBC14 10u/6/X5R/6.3V/M
PBC29 10u/6/X5R/6.3V/M
PBC28 0.1U/4/X7R/16V/K
SPC9 0.1U/4/X7R/16V/K
SPC10 0.1U/4/X7R/16V/K
SPC11 0.1U/4/X7R/16V/K
PBC34 0.1U/4/X7R/16V/K
PBC12 0.1U/4/X7R/16V/K
SPC42 0.1U/4/X7R/16V/K
SPC43 0.1U/4/X7R/16V/K
SPC12 0.1U/4/X7R/16V/K
SPC13 0.1U/4/X7R/16V/K
SPC14 0.1U/4/X7R/16V/K
SPC16 0.1U/4/X7R/16V/K
SPC17 0.1U/4/X7R/16V/K
SPC18 0.1U/4/X7R/16V/K
SPC15 0.1U/4/X7R/16V/K
SPC21 0.1U/4/X7R/16V/K
SPC29 0.1U/4/X7R/16V/K
SPC30 0.1U/4/X7R/16V/K
SPC5 180P/4/NPO/50V/J
SPC6 180P/4/NPO/50V/J
PBC13 10u/6/X5R/6.3V/M
SPC2 10u/6/X5R/6.3V/M
SPC1 0.1U/4/X7R/16V/K
SPC3 0.1U/4/X7R/16V/K
SPC24 0.1U/4/X7R/16V/K
SPC7 0.1U/4/X7R/16V/K
SPC8 0.1U/4/X7R/16V/K
SPC31 0.1U/4/X7R/16V/K
SPC32 0.1U/4/X7R/16V/K
SPC40 0.1U/4/X7R/16V/K
SPC41 0.1U/4/X7R/16V/K
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GIGABYTE
Title
HUDSON PWR & GND
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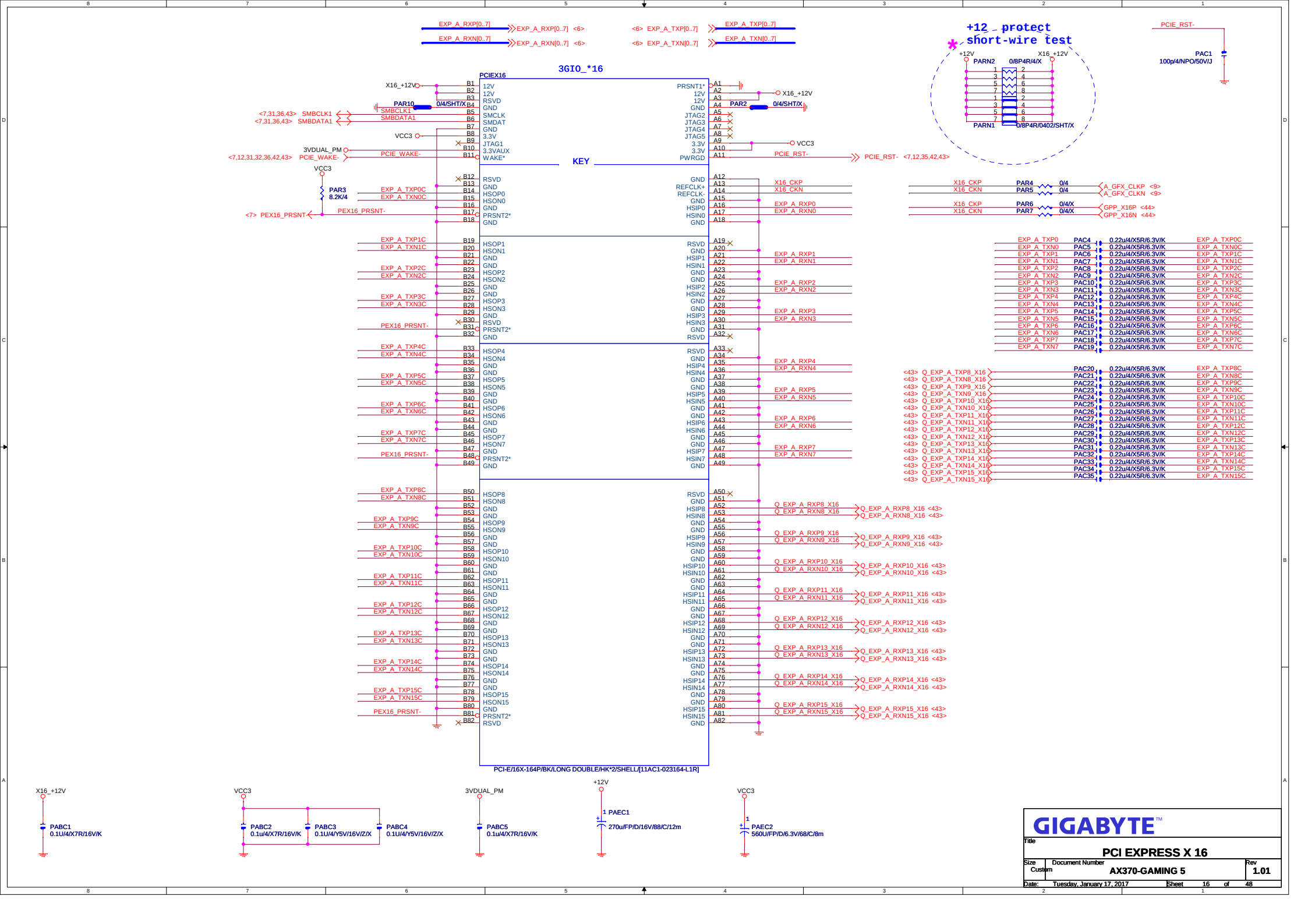
EXP_A_RXP[0..7]
EXP_A_RXN[0..7]
EXP_A_TXP[0..7]
EXP_A_TXN[0..7]
+12 protect
short-wire test
PCIE_RST-
PAC1
100p/4/NPO/50V/J
3GIO_*16
PCIEX16
KEY
PCI-E/16X-164P/BK/LONG DOUBLE/HK*2/SHELL/[11AC1-023164-L1R]
PAR10
PAR2
PAR3
8.2K/4
PAR4
PAR5
PAR6
PAR7
PARN2
PARN1
0/8P4R/4/X
0/8P4R/0402/SHT/X
PAC4
PAC5
PAC6
PAC7
PAC8
PAC9
PAC10
PAC11
PAC12
PAC13
PAC14
PAC15
PAC16
PAC17
PAC18
PAC19
PAC20
PAC21
PAC22
PAC23
PAC24
PAC25
PAC26
PAC27
PAC28
PAC29
PAC30
PAC31
PAC32
PAC33
PAC34
PAC35
PABC1
0.1U/4/X7R/16V/K
PABC2
0.1u/4/X7R/16V/K
PABC3
0.1U/4/Y5V/16V/Z/X
PABC4
0.1U/4/Y5V/16V/Z/X
PABC5
0.1u/4/X7R/16V/K
PAEC1
270u/FP/D/16V/88/C/12m
PAEC2
560U/FP/D/6.3V/68/C/8m
GIGABYTE
Title
PCI EXPRESS X 16
Size
Custom
Document Number
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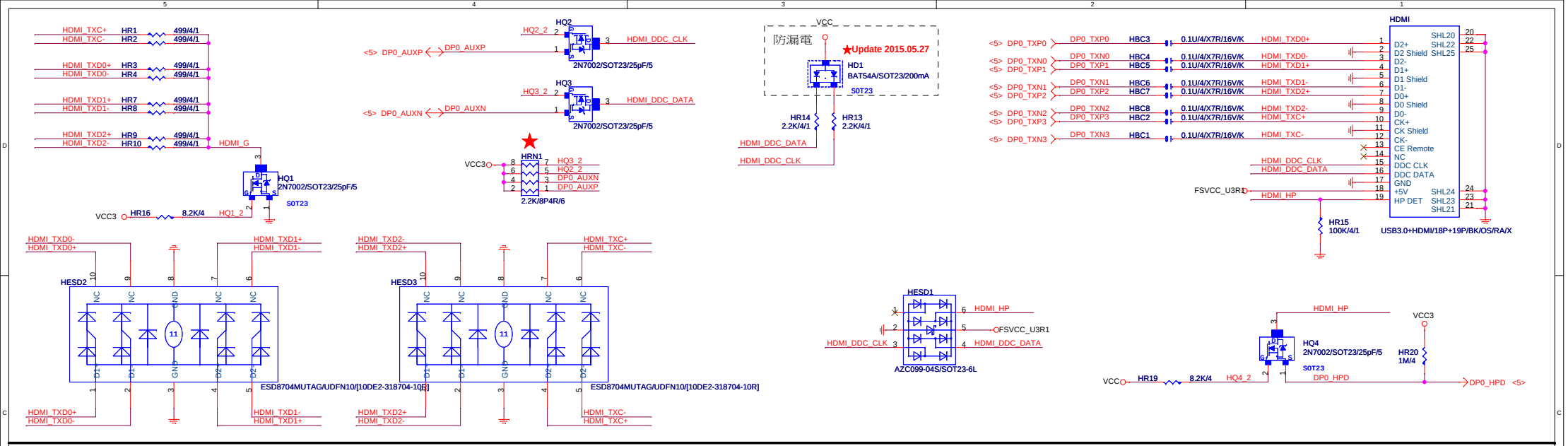

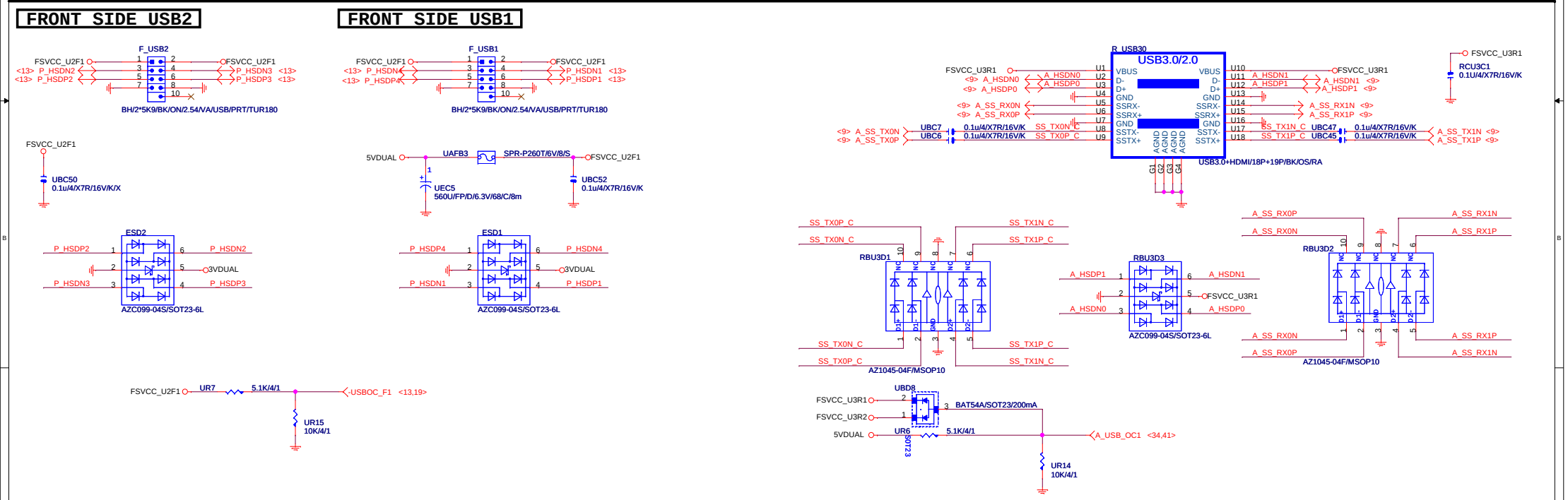

GIGABYTE			
Title	HDMI 2.0		
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SIO IT8628CX REV:1.09

(組態三) **Dual LAN**

IT8686

SIO

IT8686E/CX/S

ERP Wake on LAN

Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	BOM不上	N/A

SIO STRAP

JP2	1	Disable WDT to rest PWROK
	0	Enable WDT to rest PWROK
JP3		Dual-BIOS CS pin mode select bit "0" See the below table
JP4	1	LPC/ESPI power VCCBT = 3.3V
	0	LPC/ESPI power VCCBT = 1.8V
JP5	1	LPC I/F
	0	ESPI I/F
JP6	1	Enable Dual BIOS Function (for GigaByte Only)
	0	Disable Dual BIOS Function (for GigaByte Only)
JP7		Dual-BIOS CE pin mode select bit "1" See the below table
JP7 JP3	1 1	CE pin disable (Hold pin mode)
	1 0	CE mode 1
	0 1	CE mode 2
	0 0	CE mode 3

FAN TABLE

CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTRIP	PIN56
PROCHOT	PIN89

OR58 上件/OR56 不上件 SINGLE BIOS,
OR58 不上件/OR56 上件 DUAL BIOS

CLOSE SIO PIN4 2_5LEVEL

Title	ITE 8686 LPC IO, TPM, KB/MS
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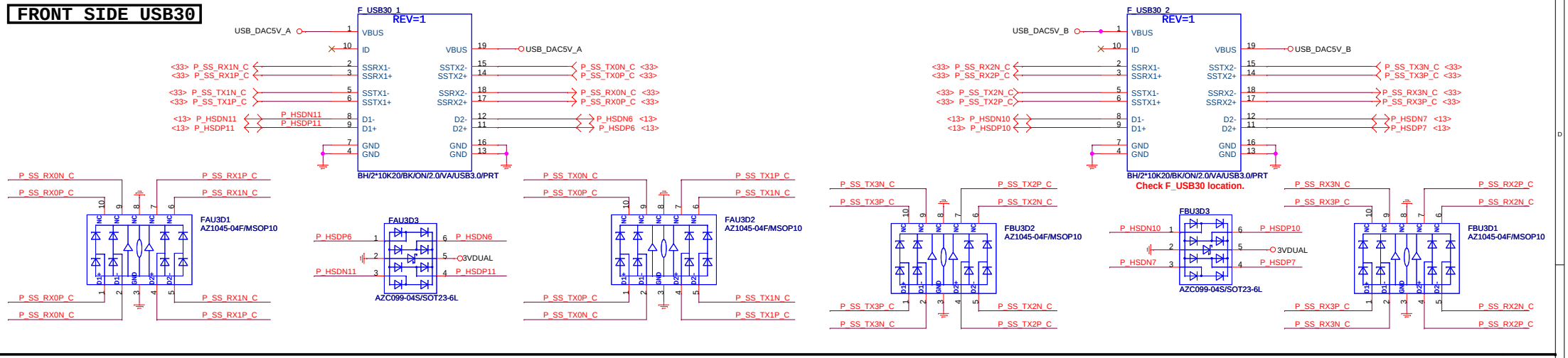
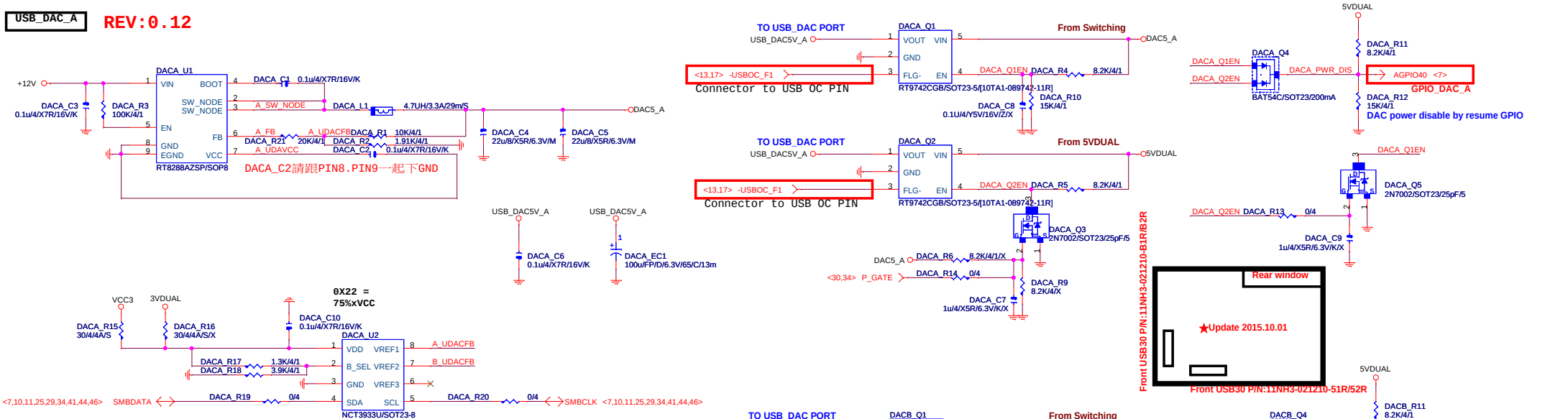
FRONT SIDE USB30

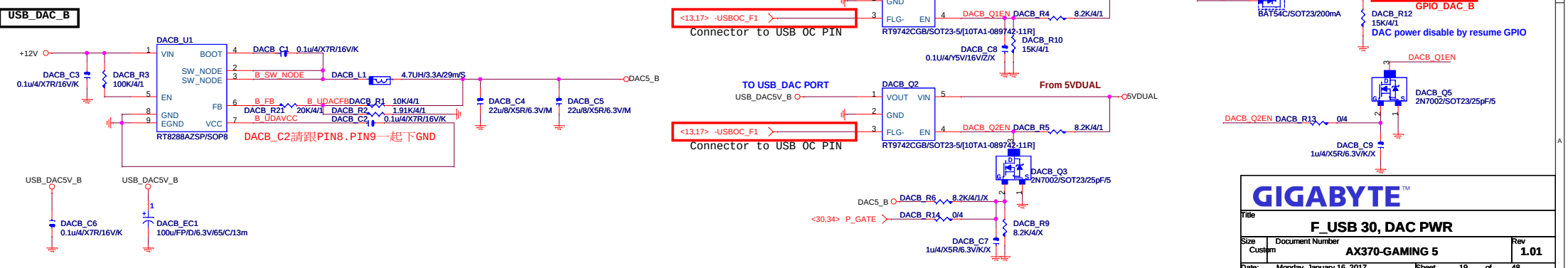


USB_DAC_A

REV:0.12



USB_DAC_B



GIGABYTE			
Title	F_USB 30, DAC PWR		
Size: Custom	Document Number: AX370-GAMING 5		Rev: 1.01
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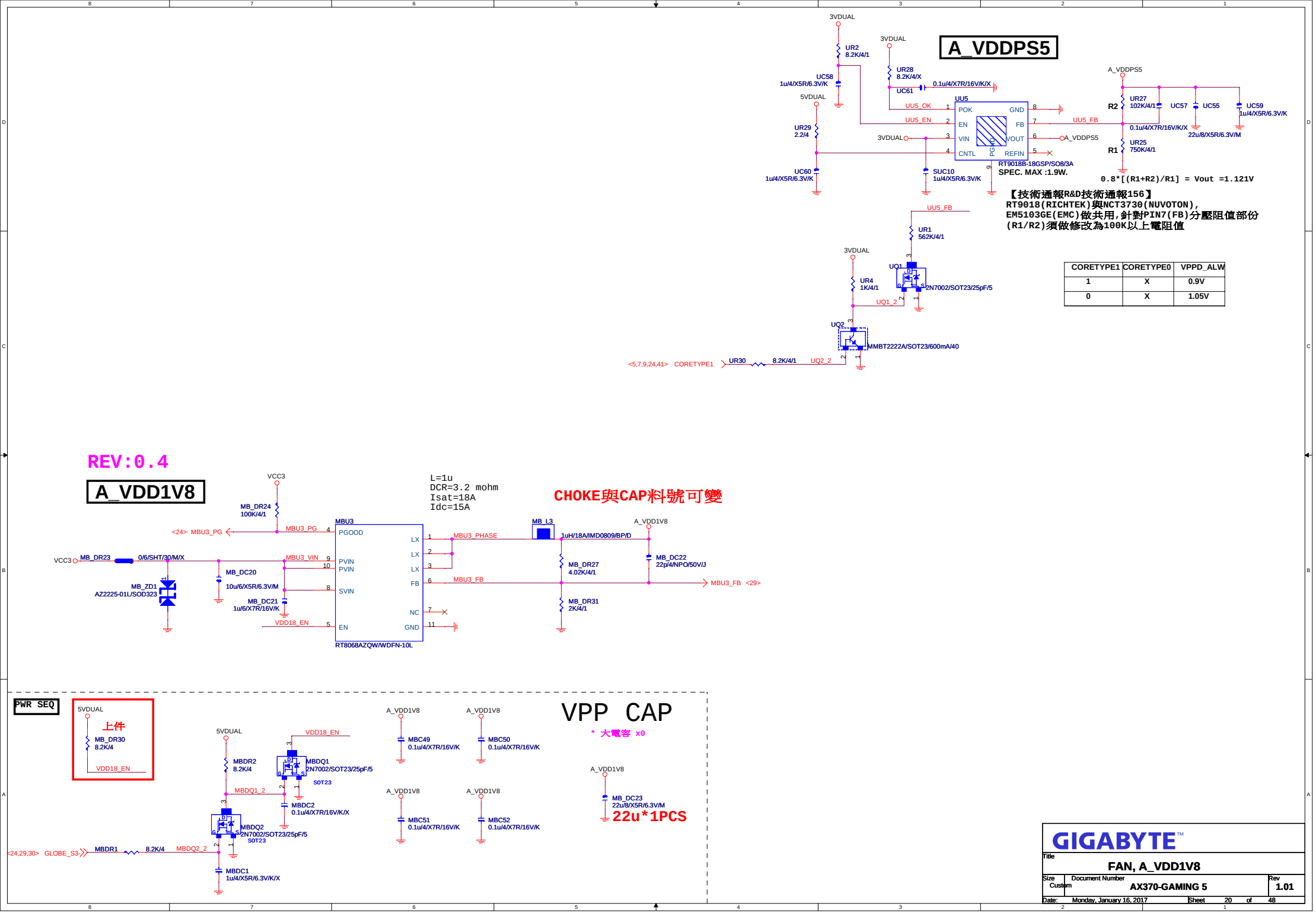
A_VDDPS5
3VDUAL
UR2
8.2K/4/1
UR28
8.2K/4/X
0.1u/4/X7R/16V/K/X
UC61
UC58
1u/4/X5R/6.3V/K
5VDUAL
UR29
2.2/4
UC60
1u/4/X5R/6.3V/K
UU5
POK
EN
VIN
CNTL
GND
FB
VOUT
REFIN
PGD
RT9018B-18GSP/SO8/3A
SPEC. MAX :1.9W.
UU5_OK
UU5_EN
UU5_FB
SUC10
1u/4/X5R/6.3V/K
R2
UR27
102K/4/1
UC57
UC55
UC59
1u/4/X5R/6.3V/K
0.1u/4/X7R/16V/K/X
22u/8/X5R/6.3V/M
R1
UR25
750K/4/1
0.8*[(R1+R2)/R1] = Vout =1.121V
【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
(R1/R2)須做修改為100K以上電阻值
UR1
562K/4/1
UQ1
2N7002/SOT23/25pF/5
UR4
1K/4/1
UQ1_2
UQ2
MMBT2222A/SOT23/600mA/40
<5,7,9,24,41> CORETYPE1
UR30
8.2K/4/1
UQ2_2
CORETYPE1 CORETYPE0 VPPD_ALW
1 X 0.9V
0 X 1.05V
REV:0.4
A_VDD1V8
VCC3
MB_DR24
100K/4/1
<24> MBU3_PG
MBU3_PG
MBU3
PGOOD
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A
CHOKE與CAP料號可變
MB_L3
1uH/18A/IMD0809/BP/D
A_VDD1V8
MB_DR23
0/6/SHT/30/M/X
MB_ZD1
AZ2225-01L/SOD323
MB_DC20
10u/6/X5R/6.3V/M
MB_DC21
1u/6/X7R/16V/K
MBU3_VIN
PVIN
PVIN
SVIN
LX
LX
LX
FB
NC
EN
GND
MBU3_PHASE
MBU3_FB
VDD18_EN
MB_DR27
4.02K/4/1
MB_DR31
2K/4/1
MB_DC22
22p/4/NPO/50V/J
MBU3_FB <29>
RT8068AZQW/WDFN-10L
PWR SEQ
5VDUAL
上件
MB_DR30
8.2K/4
VDD18_EN
MBDR2
8.2K/4
MBDQ1
2N7002/SOT23/25pF/5
SOT23
MBDQ1_2
MBDC2
0.1u/4/X7R/16V/K/X
MBDQ2
2N7002/SOT23/25pF/5
SOT23
MBDR1
8.2K/4
MBDQ2_2
<24,29,30> GLOBE_S3
MBDC1
1u/4/X5R/6.3V/K/X
VPP CAP
* 大電容 x0
A_VDD1V8
MBC49
0.1u/4/X7R/16V/K
MBC50
0.1u/4/X7R/16V/K
MBC51
0.1u/4/X7R/16V/K
MBC52
0.1u/4/X7R/16V/K
MB_DC23
22u/8/X5R/6.3V/M
22u*1PCS
GIGABYTE
Title
FAN, A_VDD1V8
Size
Custom
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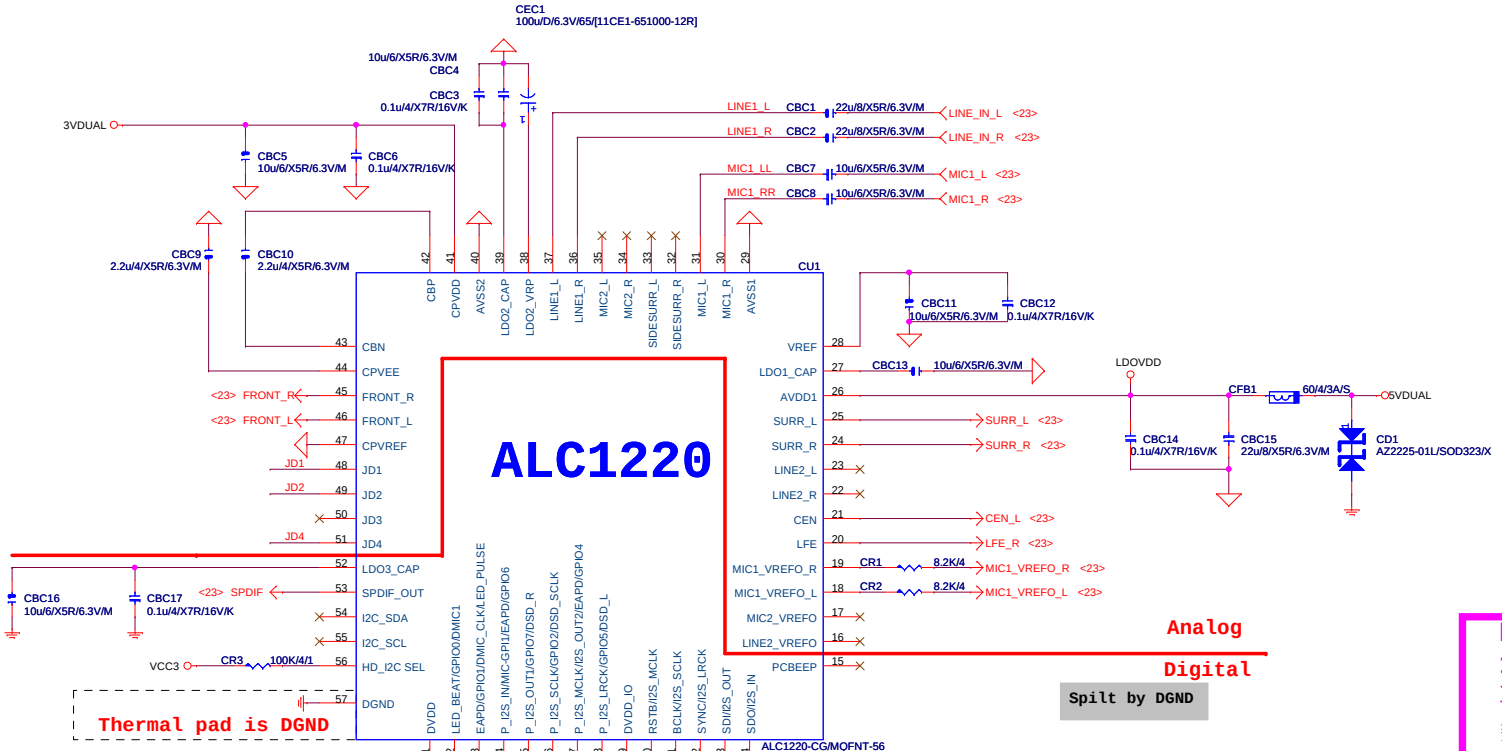
ALC1220 5H+1S+ALC1220

LAYOUT注意:螺絲孔下GND方式
1. MH1空間夠,下DGND
   空間不夠,改為Isolate
2. MH2一律改為Isolate

MH1 AGND　　MH2 AGND

LAYOUT注意:是否要加?
GND切割線

音效區域印刷



BOM OPTION :
1. AUDIO CONNECT
不銹鋼料號:11NR6-403025-A2R
鍍金料號:11NR6-403025-92R
2. AUDIO CAP
Nichicon MW音效電容 : 11CE1-651000-12R
Chemicon音效電容 : 11CE2-651000-05R

GIGABYTE

Title	ALC1220 REAR	
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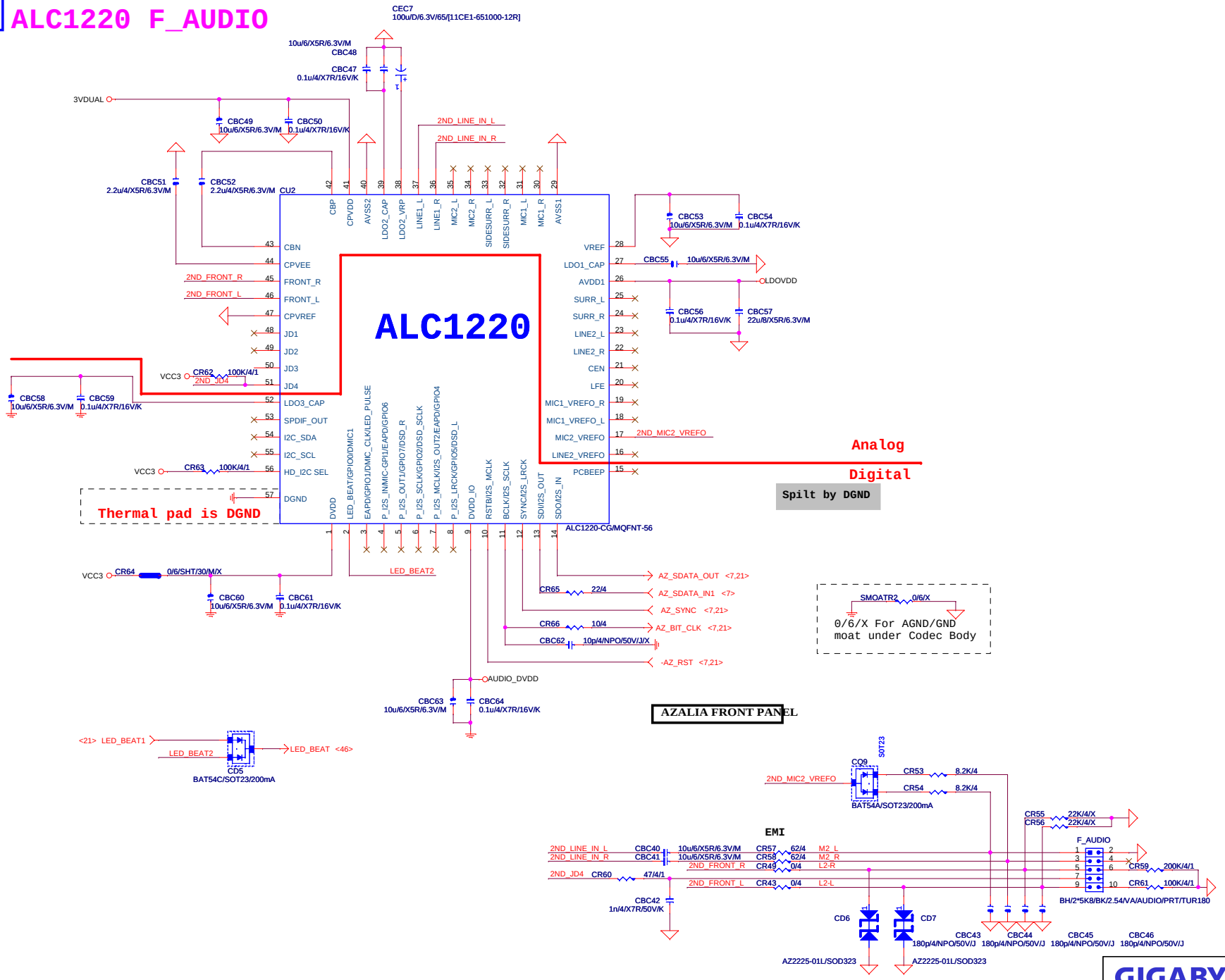
ALC1220 F_AUDIO



GIGABYTE™

Title	ALC1220 FRONT	
Size: Custom	Document Number: AX370-GAMING 5	Rev: 1.01
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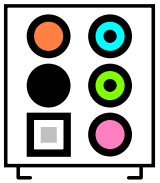
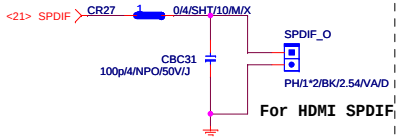
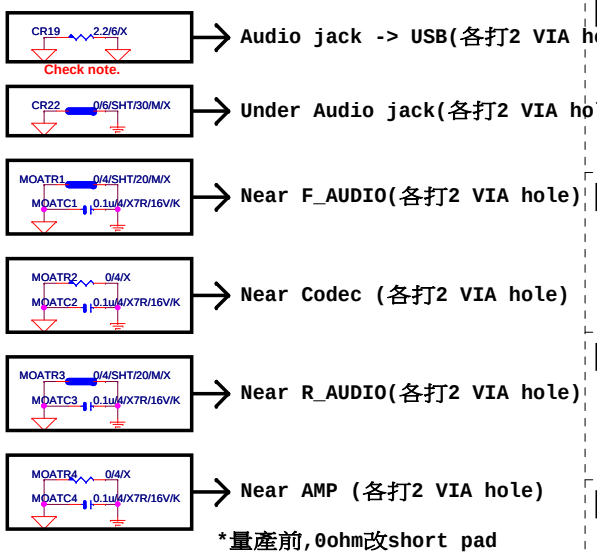
AZALIA JACK

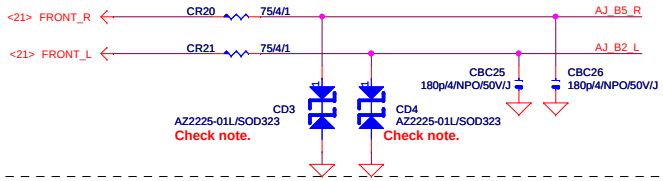


SPDIF_OUT

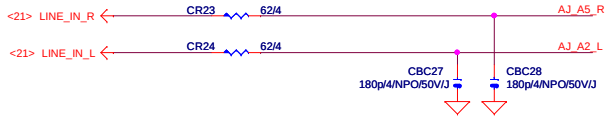




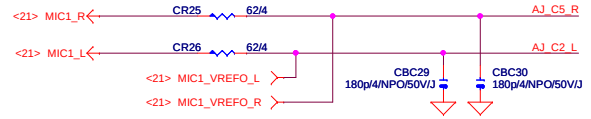
LINE-OUT



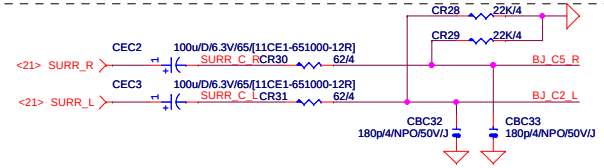
LINE-IN



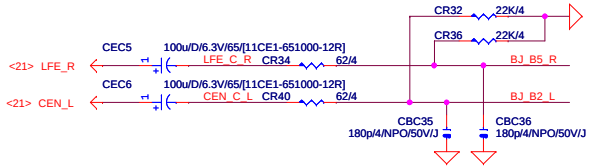
MIC-IN

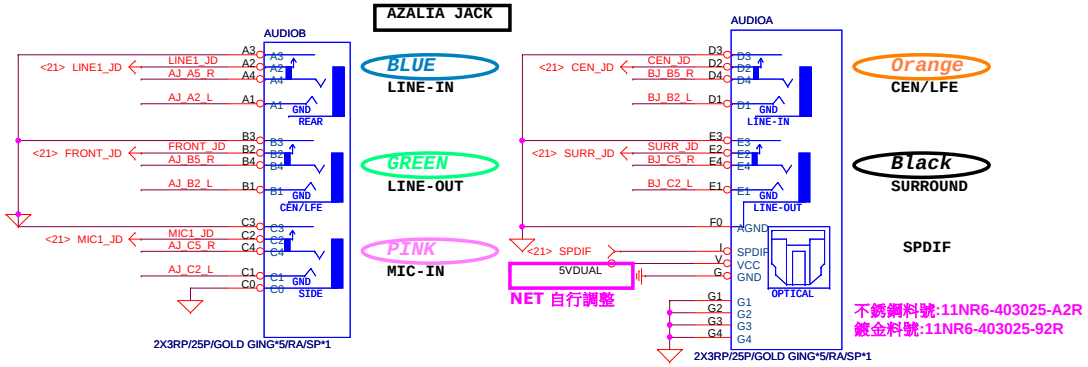


SURROUND

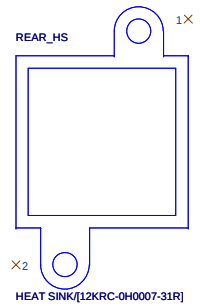


CEN/LFE

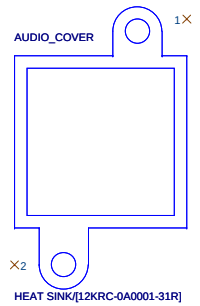




不銹鋼料號:11NR6-403025-A2R
鍍金料號:11NR6-403025-92R



Footprint"Z270X_BASE_COVER"



Footprint "Z270X_EXTEND_COVER"

GIGABYTE™

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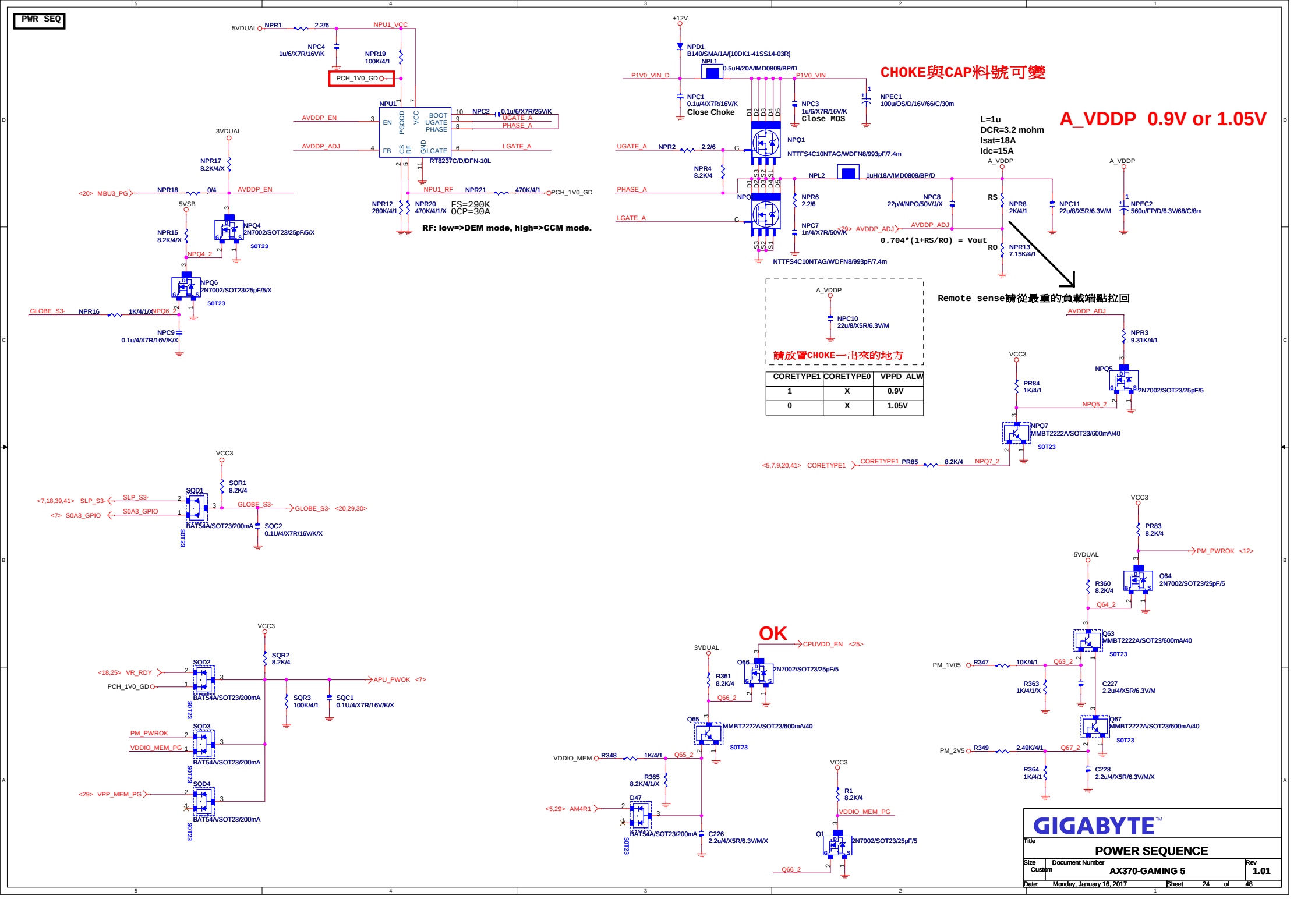
PWR SEQ
5VDUAL
NPR1 2.2/6
NPU1_VCC
NPC4 1u/6/X7R/16V/K
NPR19 100K/4/1
PCH_1V0_GD
NPU1
AVDDP_EN
AVDDP_ADJ
EN PGOOD VCC BOOT UGATE PHASE
FB CS RF GND LGATE
RT8237C/D/DFN-10L
NPC2 0.1u/6/X7R/25V/K
UGATE_A
PHASE_A
LGATE_A
NPU1_RF
NPR21 470K/4/1
PCH_1V0_GD
NPR12 280K/4/1
NPR20 470K/4/1/X
FS=290K
OCP=30A
RF: low=>DEM mode, high=>CCM mode.
3VDUAL
NPR17 8.2K/4/X
<20> MBU3_PG
NPR18 0/4
AVDDP_EN
5VSB
NPR15 8.2K/4/X
NPQ4 2N7002/SOT23/25pF/5/X
SOT23
NPQ4_2
NPQ6 2N7002/SOT23/25pF/5/X
SOT23
GLOBE_S3-
NPR16 1K/4/1/X
NPQ6_2
NPC9 0.1u/4/X7R/16V/K/X
+12V
NPD1 B140/SMA/1A/[10DK1-41SS14-03R]
NPL1 0.5uH/20A/IMD0809/BP/D
P1V0_VIN_D
P1V0_VIN
NPC1 0.1u/4/X7R/16V/K Close Choke
NPC3 1u/6/X7R/16V/K Close MOS
NPEC1 100u/OS/D/16V/66/C/30m
CHOKE與CAP料號可變
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A
A_VDDP 0.9V or 1.05V
UGATE_A
NPR2 2.2/6
NPQ1 NTTFS4C10NTAG/WDFN8/993pF/7.4m
NPR4 8.2K/4
PHASE_A
NPL2 1uH/18A/IMD0809/BP/D
NPQ2
NPR6 2.2/6
NPC7 1n/4/X7R/50V/K
LGATE_A
NTTFS4C10NTAG/WDFN8/993pF/7.4m
A_VDDP
NPC8 22p/4/NPO/50V/J/X
RS
NPR8 2K/4/1
NPC11 22u/8/X5R/6.3V/M
NPEC2 560u/FP/D/6.3V/68/C/8m
<29> AVDDP_ADJ
AVDDP_ADJ
0.704*(1+RS/RO) = Vout
RO
NPR13 7.15K/4/1
Remote sense請從最重的負載端點拉回
A_VDDP
NPC10 22u/8/X5R/6.3V/M
請放置CHOKE一出來的地方
CORETYPE1 CORETYPE0 VPPD_ALW
1 X 0.9V
0 X 1.05V
AVDDP_ADJ
NPR3 9.31K/4/1
VCC3
PR84 1K/4/1
NPQ5 2N7002/SOT23/25pF/5
NPQ5_2
NPQ7 MMBT2222A/SOT23/600mA/40
S0T23
<5,7,9,20,41> CORETYPE1
CORETYPE1 PR85 8.2K/4
NPQ7_2
VCC3
SQR1 8.2K/4
SQD1
<7,18,39,41> SLP_S3-
SLP_S3-
<7> S0A3_GPIO
S0A3_GPIO
GLOBE_S3-
GLOBE_S3- <20,29,30>
BAT54A/SOT23/200mA
SQC2 0.1U/4/X7R/16V/K/X
SOT23
VCC3
SQR2 8.2K/4
SQD2
<18,25> VR_RDY
PCH_1V0_GD
APU_PWOK <7>
SQR3 100K/4/1
SQC1 0.1U/4/X7R/16V/K/X
PM_PWROK
VDDIO_MEM_PG
SQD3
SQD4
<29> VPP_MEM_PG
BAT54A/SOT23/200mA
SOT23
OK
3VDUAL
CPUVDD_EN <25>
Q66 2N7002/SOT23/25pF/5
R361 8.2K/4
Q66_2
Q65 MMBT2222A/SOT23/600mA/40
S0T23
VDDIO_MEM
R348 1K/4/1
Q65_2
R365 8.2K/4/1/X
<5,29> AM4R1
D47
BAT54A/SOT23/200mA
C226 2.2u/4/X5R/6.3V/M/X
VCC3
R1 8.2K/4
VDDIO_MEM_PG
Q1 2N7002/SOT23/25pF/5
Q66_2
VCC3
PR83 8.2K/4
PM_PWROK <12>
5VDUAL
R360 8.2K/4
Q64 2N7002/SOT23/25pF/5
Q64_2
Q63 MMBT2222A/SOT23/600mA/40
S0T23
PM_1V05
R347 10K/4/1
Q63_2
R363 1K/4/1/X
C227 2.2u/4/X5R/6.3V/M
Q67 MMBT2222A/SOT23/600mA/40
S0T23
PM_2V5
R349 2.49K/4/1
Q67_2
R364 1K/4/1
C228 2.2u/4/X5R/6.3V/M/X
GIGABYTE
Title
POWER SEQUENCE
Size Custom
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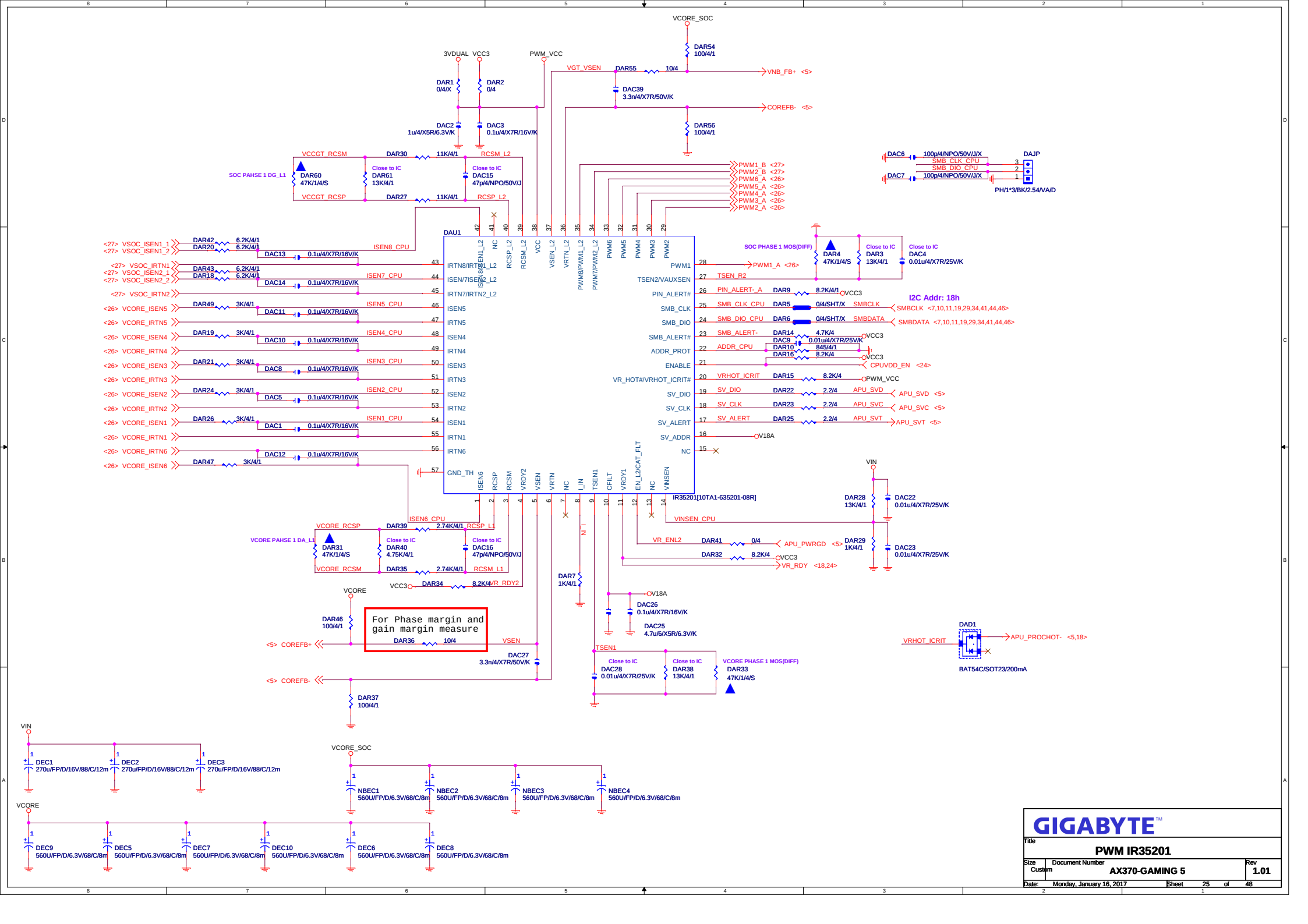
VCORE_SOC
DAR54 100/4/1
3VDUAL VCC3
PWM_VCC
VGT_VSEN
DAR55 10/4
VNB_FB+ <5>
DAC39 3.3n/4/X7R/50V/K
COREFB- <5>
DAR56 100/4/1
DAR1 0/4/X
DAR2 0/4
DAC2 1u/4/X5R/6.3V/K
DAC3 0.1u/4/X7R/16V/K
VCCGT_RCSM
DAR30 11K/4/1
RCSM_L2
SOC PAHSE 1 DG_L1
DAR60 47K/1/4/S
Close to IC
DAR61 13K/4/1
Close to IC
DAC15 47p/4/NPO/50V/J
VCCGT_RCSP
DAR27 11K/4/1
RCSP_L2
PWM1_B <27>
PWM2_B <27>
PWM6_A <26>
PWM5_A <26>
PWM4_A <26>
PWM3_A <26>
PWM2_A <26>
DAC6 100p/4/NPO/50V/J/X
SMB_CLK_CPU
SMB_DIO_CPU
DAC7 100p/4/NPO/50V/J/X
DAJP
PH/1*3/BK/2.54/VA/D
DAU1
<27> VSOC_ISEN1_1
<27> VSOC_ISEN1_2
DAR42 6.2K/4/1
DAR20 6.2K/4/1
DAC13 0.1u/4/X7R/16V/K
ISEN8_CPU
<27> VSOC_IRTN1
<27> VSOC_ISEN2_1
<27> VSOC_ISEN2_2
DAR43 6.2K/4/1
DAR18 6.2K/4/1
DAC14 0.1u/4/X7R/16V/K
ISEN7_CPU
<27> VSOC_IRTN2
<26> VCORE_ISEN5
DAR49 3K/4/1
DAC11 0.1u/4/X7R/16V/K
ISEN5_CPU
<26> VCORE_IRTN5
<26> VCORE_ISEN4
DAR19 3K/4/1
DAC10 0.1u/4/X7R/16V/K
ISEN4_CPU
<26> VCORE_IRTN4
<26> VCORE_ISEN3
DAR21 3K/4/1
DAC8 0.1u/4/X7R/16V/K
ISEN3_CPU
<26> VCORE_IRTN3
<26> VCORE_ISEN2
DAR24 3K/4/1
DAC5 0.1u/4/X7R/16V/K
ISEN2_CPU
<26> VCORE_IRTN2
<26> VCORE_ISEN1
DAR26 3K/4/1
DAC1 0.1u/4/X7R/16V/K
ISEN1_CPU
<26> VCORE_IRTN1
<26> VCORE_IRTN6
DAC12 0.1u/4/X7R/16V/K
<26> VCORE_ISEN6
DAR47 3K/4/1
IRTN8/IRTN1_L2
ISEN/7ISEN2_L2
IRTN7/IRTN2_L2
ISEN5
IRTN5
ISEN4
IRTN4
ISEN3
IRTN3
ISEN2
IRTN2
ISEN1
IRTN1
IRTN6
GND_TH
ISEN8/ISEN1_L2
NC
RCSP_L2
RCSM_L2
VCC
VSEN_L2
VRTN_L2
PWM8/PWM1_L2
PWM7/PWM2_L2
PWM6
PWM5
PWM4
PWM3
PWM2
PWM1
TSEN2/VAUXSEN
PIN_ALERT#
SMB_CLK
SMB_DIO
SMB_ALERT#
ADDR_PROT
ENABLE
VR_HOT#/VRHOT_ICRIT#
SV_DIO
SV_CLK
SV_ALERT
SV_ADDR
NC
ISEN6
RCSP
RCSM
VRDY2
VSEN
VRTN
NC
I_IN
TSEN1
CFILT
VRDY1
EN_L2/CAT_FLT
NC
VINSEN
IR35201[10TA1-635201-08R]
SOC PHASE 1 MOS(DIFF)
DAR4 47K/1/4/S
Close to IC
DAR3 13K/4/1
Close to IC
DAC4 0.01u/4/X7R/25V/K
PWM1_A <26>
TSEN_R2
PIN_ALERT- A
DAR9 8.2K/4/1
VCC3
I2C Addr: 18h
SMB_CLK_CPU
DAR5 0/4/SHT/X
SMBCLK
SMBCLK <7,10,11,19,29,34,41,44,46>
SMB_DIO_CPU
DAR6 0/4/SHT/X
SMBDATA
SMBDATA <7,10,11,19,29,34,41,44,46>
SMB_ALERT-
DAR14 4.7K/4
DAC9 0.01u/4/X7R/25V/K
ADDR_CPU
DAR10 845/4/1
DAR16 8.2K/4
CPUVDD_EN <24>
VRHOT_ICRIT
DAR15 8.2K/4
PWM_VCC
SV_DIO
DAR22 2.2/4
APU_SVD
APU_SVD <5>
SV_CLK
DAR23 2.2/4
APU_SVC
APU_SVC <5>
SV_ALERT
DAR25 2.2/4
APU_SVT
APU_SVT <5>
V18A
VIN
DAR28 13K/4/1
DAC22 0.01u/4/X7R/25V/K
VINSEN_CPU
DAR29 1K/4/1
DAC23 0.01u/4/X7R/25V/K
VR_ENL2
DAR41 0/4
APU_PWRGD <5>
DAR32 8.2K/4
VR_RDY <18,24>
VCORE_RCSP
DAR39 2.74K/4/1
RCSP_L1
VCORE PAHSE 1 DA_L1
DAR31 47K/1/4/S
Close to IC
DAR40 4.75K/4/1
Close to IC
DAC16 47p/4/NPO/50V/J
VCORE_RCSM
DAR35 2.74K/4/1
RCSM_L1
VCC3
DAR34 8.2K/4
VR_RDY2
DAR7 1K/4/1
V18A
DAC26 0.1u/4/X7R/16V/K
DAC25 4.7u/6/X5R/6.3V/K
VCORE
DAR46 100/4/1
For Phase margin and gain margin measure
<5> COREFB+
DAR36 10/4
VSEN
DAC27 3.3n/4/X7R/50V/K
<5> COREFB-
DAR37 100/4/1
TSEN1
Close to IC
DAC28 0.01u/4/X7R/25V/K
Close to IC
DAR38 13K/4/1
VCORE PHASE 1 MOS(DIFF)
DAR33 47K/1/4/S
VRHOT_ICRIT
DAD1
APU_PROCHOT- <5,18>
BAT54C/SOT23/200mA
VIN
DEC1 270u/FP/D/16V/88/C/12m
DEC2 270u/FP/D/16V/88/C/12m
DEC3 270u/FP/D/16V/88/C/12m
VCORE
DEC9 560U/FP/D/6.3V/68/C/8m
DEC5 560U/FP/D/6.3V/68/C/8m
DEC7 560U/FP/D/6.3V/68/C/8m
DEC10 560U/FP/D/6.3V/68/C/8m
DEC6 560U/FP/D/6.3V/68/C/8m
DEC8 560U/FP/D/6.3V/68/C/8m
VCORE_SOC
NBEC1 560U/FP/D/6.3V/68/C/8m
NBEC2 560U/FP/D/6.3V/68/C/8m
NBEC3 560U/FP/D/6.3V/68/C/8m
NBEC4 560U/FP/D/6.3V/68/C/8m
GIGABYTE
Title
PWM IR35201
Size Custom
Document Number AX370-GAMING 5
Rev 1.01
Date: Monday, January 16, 2017
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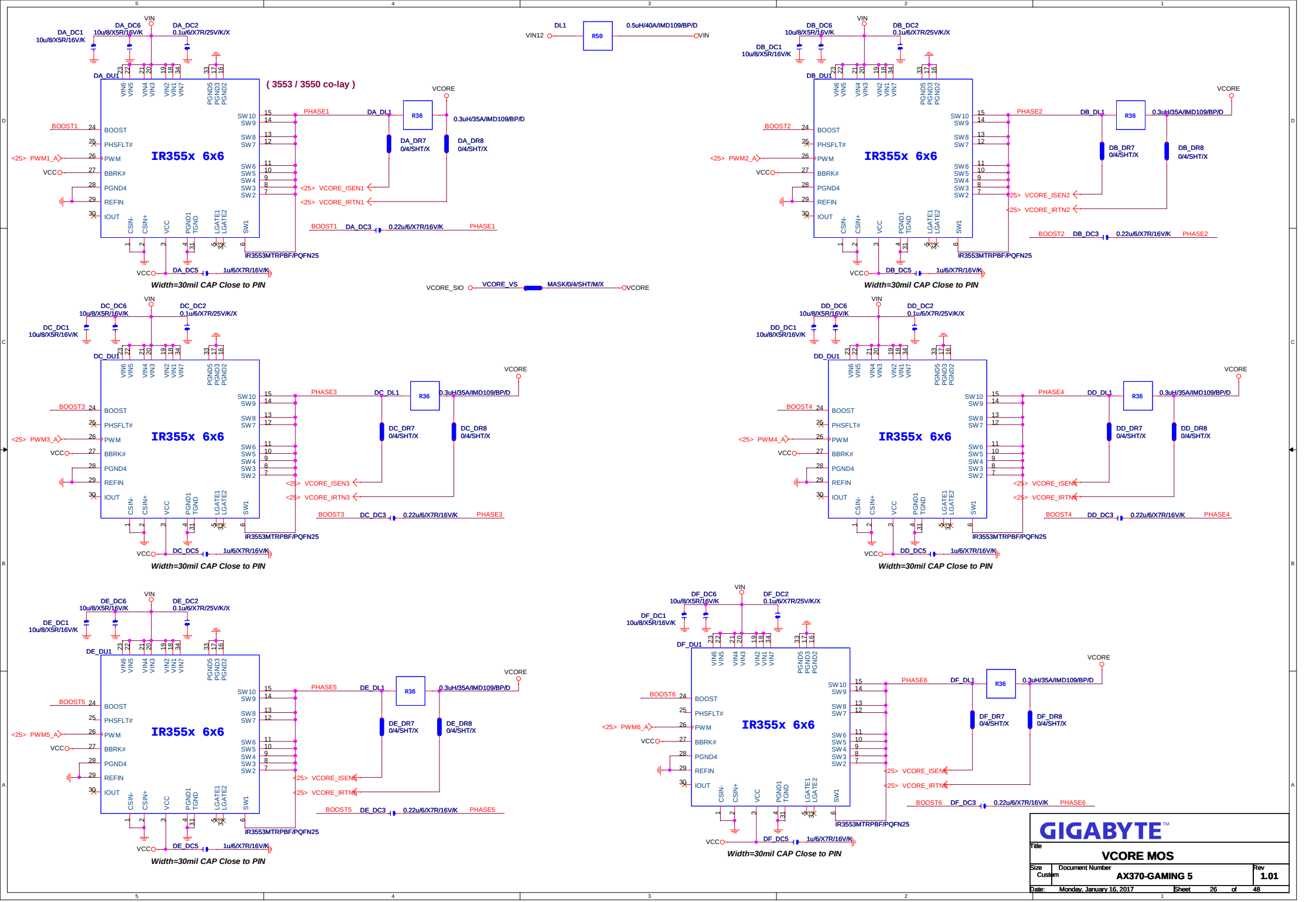
(3553 / 3550 co-lay)
IR355x 6x6
IR3553MTRPBF/PQFN25
Width=30mil CAP Close to PIN
VCORE_SIO
VCORE_VS
MASK/0/4/SHT/M/X
VCORE
VIN
VIN12
DL1
R50
0.5uH/40A/IMD109/BP/D
DA_DU1
DA_DC1 10u/8/X5R/16V/K
DA_DC6 10u/8/X5R/16V/K
DA_DC2 0.1u/6/X7R/25V/K/X
DA_DC5 1u/6/X7R/16V/K
DA_DL1
DA_DR7 0/4/SHT/X
DA_DR8 0/4/SHT/X
DA_DC3 0.22u/6/X7R/16V/K
PHASE1
BOOST1
<25> PWM1_A
<25> VCORE_ISEN1
<25> VCORE_IRTN1
0.3uH/35A/IMD109/BP/D
DB_DU1
DB_DC1 10u/8/X5R/16V/K
DB_DC6 10u/8/X5R/16V/K
DB_DC2 0.1u/6/X7R/25V/K/X
DB_DC5 1u/6/X7R/16V/K
DB_DL1
DB_DR7 0/4/SHT/X
DB_DR8 0/4/SHT/X
DB_DC3 0.22u/6/X7R/16V/K
PHASE2
BOOST2
<25> PWM2_A
<25> VCORE_ISEN2
<25> VCORE_IRTN2
DC_DU1
DC_DC1 10u/8/X5R/16V/K
DC_DC6 10u/8/X5R/16V/K
DC_DC2 0.1u/6/X7R/25V/K/X
DC_DC5 1u/6/X7R/16V/K
DC_DL1
DC_DR7 0/4/SHT/X
DC_DR8 0/4/SHT/X
DC_DC3 0.22u/6/X7R/16V/K
PHASE3
BOOST3
<25> PWM3_A
<25> VCORE_ISEN3
<25> VCORE_IRTN3
DD_DU1
DD_DC1 10u/8/X5R/16V/K
DD_DC6 10u/8/X5R/16V/K
DD_DC2 0.1u/6/X7R/25V/K/X
DD_DC5 1u/6/X7R/16V/K
DD_DL1
DD_DR7 0/4/SHT/X
DD_DR8 0/4/SHT/X
DD_DC3 0.22u/6/X7R/16V/K
PHASE4
BOOST4
<25> PWM4_A
<25> VCORE_ISEN
<25> VCORE_IRTN
DE_DU1
DE_DC1 10u/8/X5R/16V/K
DE_DC6 10u/8/X5R/16V/K
DE_DC2 0.1u/6/X7R/25V/K/X
DE_DC5 1u/6/X7R/16V/K
DE_DL1
DE_DR7 0/4/SHT/X
DE_DR8 0/4/SHT/X
DE_DC3 0.22u/6/X7R/16V/K
PHASE5
BOOST5
<25> PWM5_A
<25> VCORE_ISEN
<25> VCORE_IRTN
DF_DU1
DF_DC1 10u/8/X5R/16V/K
DF_DC6 10u/8/X5R/16V/K
DF_DC2 0.1u/6/X7R/25V/K/X
DF_DC5 1u/6/X7R/16V/K
DF_DL1
DF_DR7 0/4/SHT/X
DF_DR8 0/4/SHT/X
DF_DC3 0.22u/6/X7R/16V/K
PHASE6
BOOST6
<25> PWM6_A
<25> VCORE_ISEN
<25> VCORE_IRTN
GIGABYTE
Title
VCORE MOS
Size
Custom
Document Number
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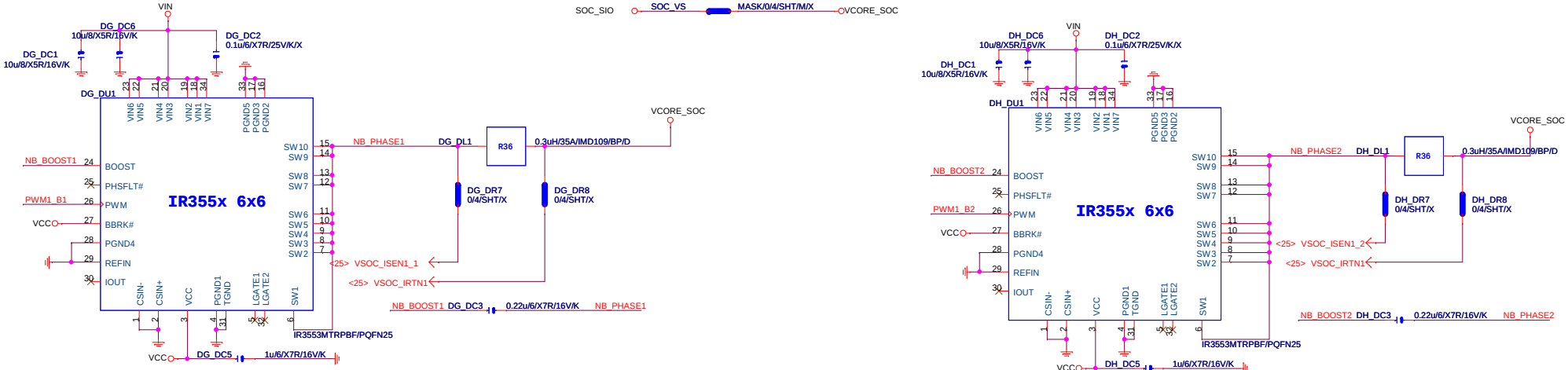
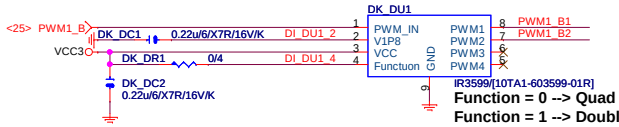
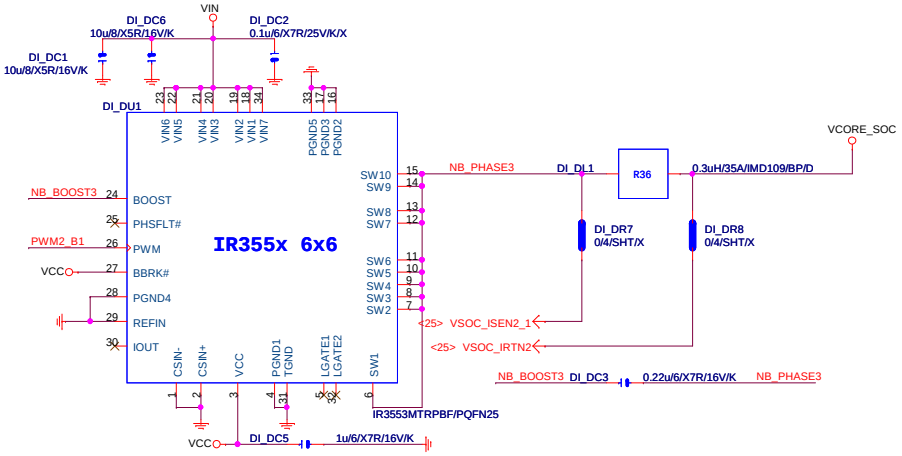
Vcore_Soc

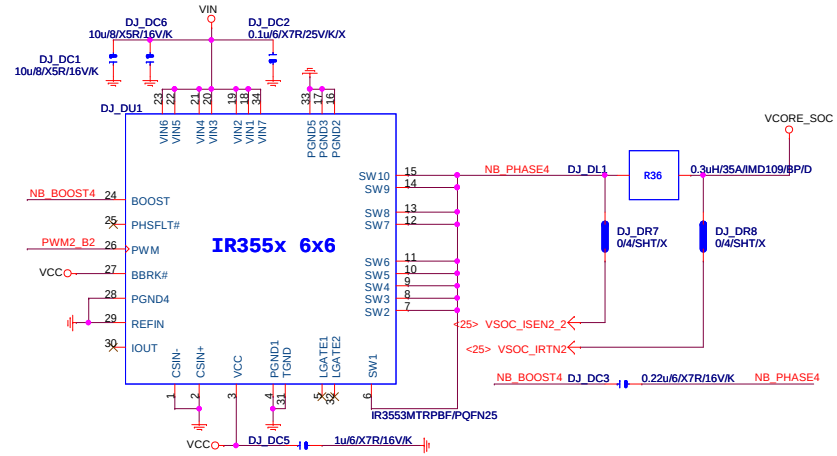


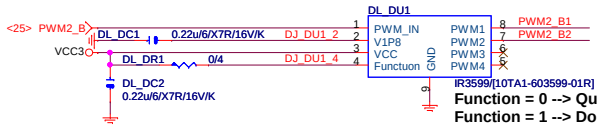
SOC_SIO — SOC_VS — MASK/0/4/SHT/M/X — VCORE_SOC



Function = 0 --> Quad mode
Function = 1 --> Doubled mode

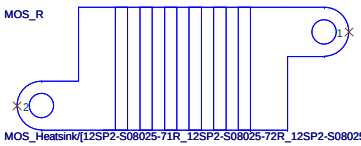


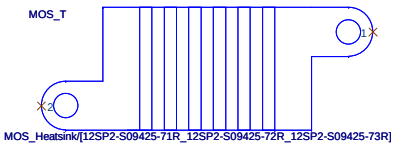




Function = 0 --> Quad mode
Function = 1 --> Doubled mode

MOS HEATSINK





GIGABYTE™

Title	VCORE_SOC	
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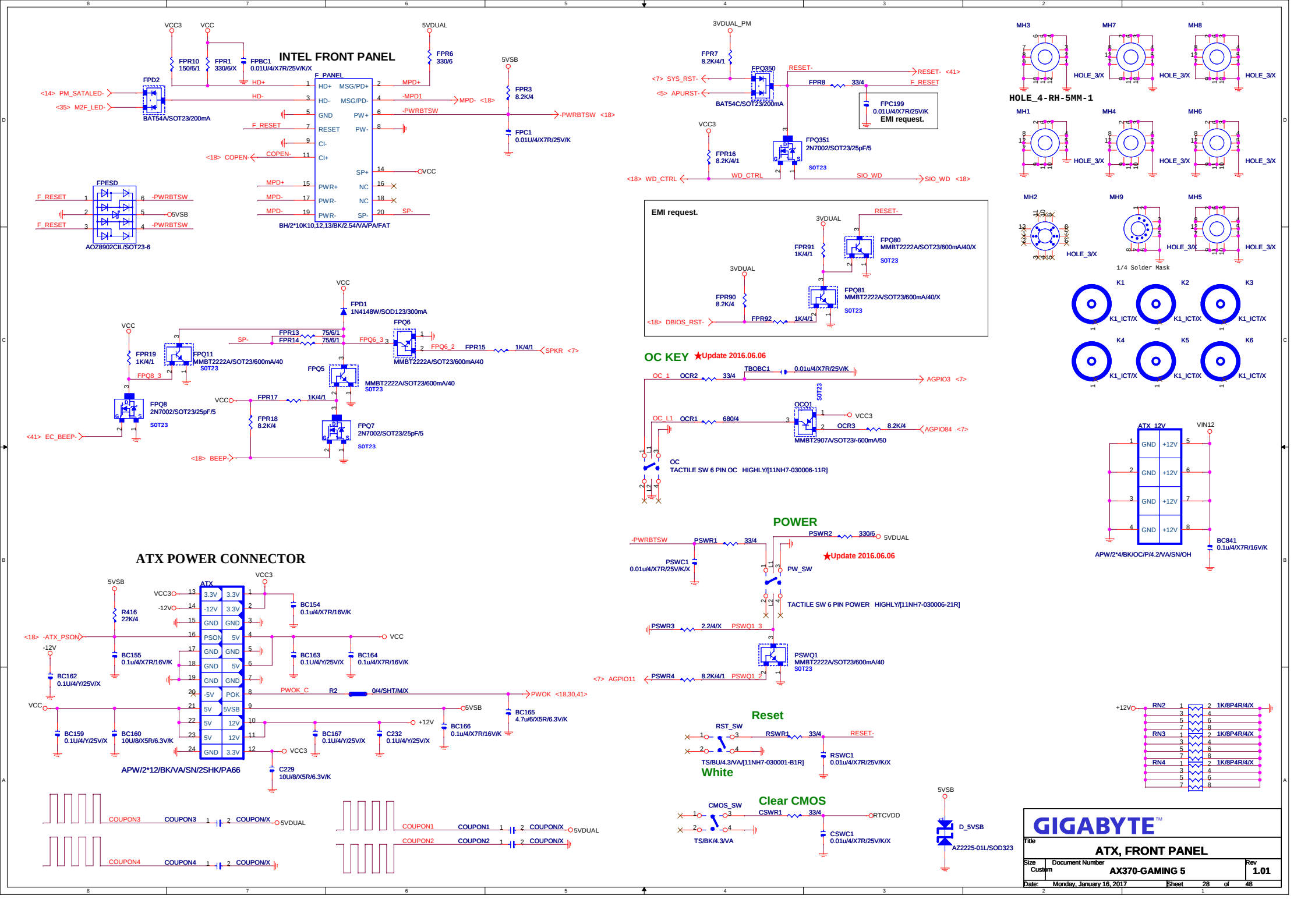
INTEL FRONT PANEL
F_PANEL
BH/2*10K10,12,13/BK/2.54/VA/PA/FAT
FPESD
AOZ8902CIL/SOT23-6
ATX POWER CONNECTOR
APW/2*12/BK/VA/SN/2SHK/PA66
OC KEY ★Update 2016.06.06
OC
TACTILE SW 6 PIN OC HIGHLY/[11NH7-030006-11R]
POWER
★Update 2016.06.06
TACTILE SW 6 PIN POWER HIGHLY/[11NH7-030006-21R]
Reset
White
Clear CMOS
EMI request.
HOLE_4-RH-5MM-1
1/4 Solder Mask
APW/2*4/BK/OC/P/4.2/VA/SN/OH
GIGABYTE
ATX, FRONT PANEL
AX370-GAMING 5
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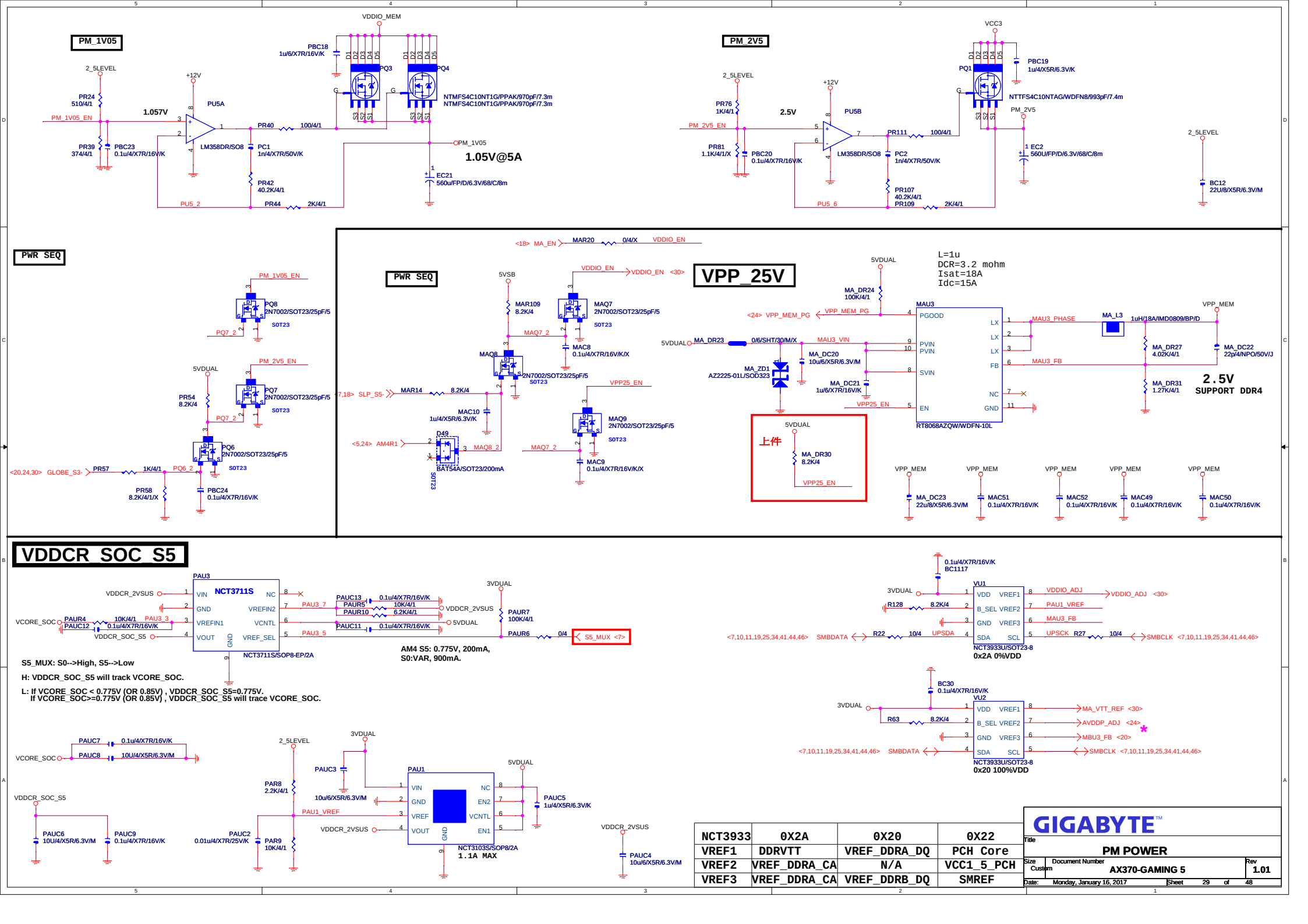

NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

GIGABYTE™

Title: PM POWER

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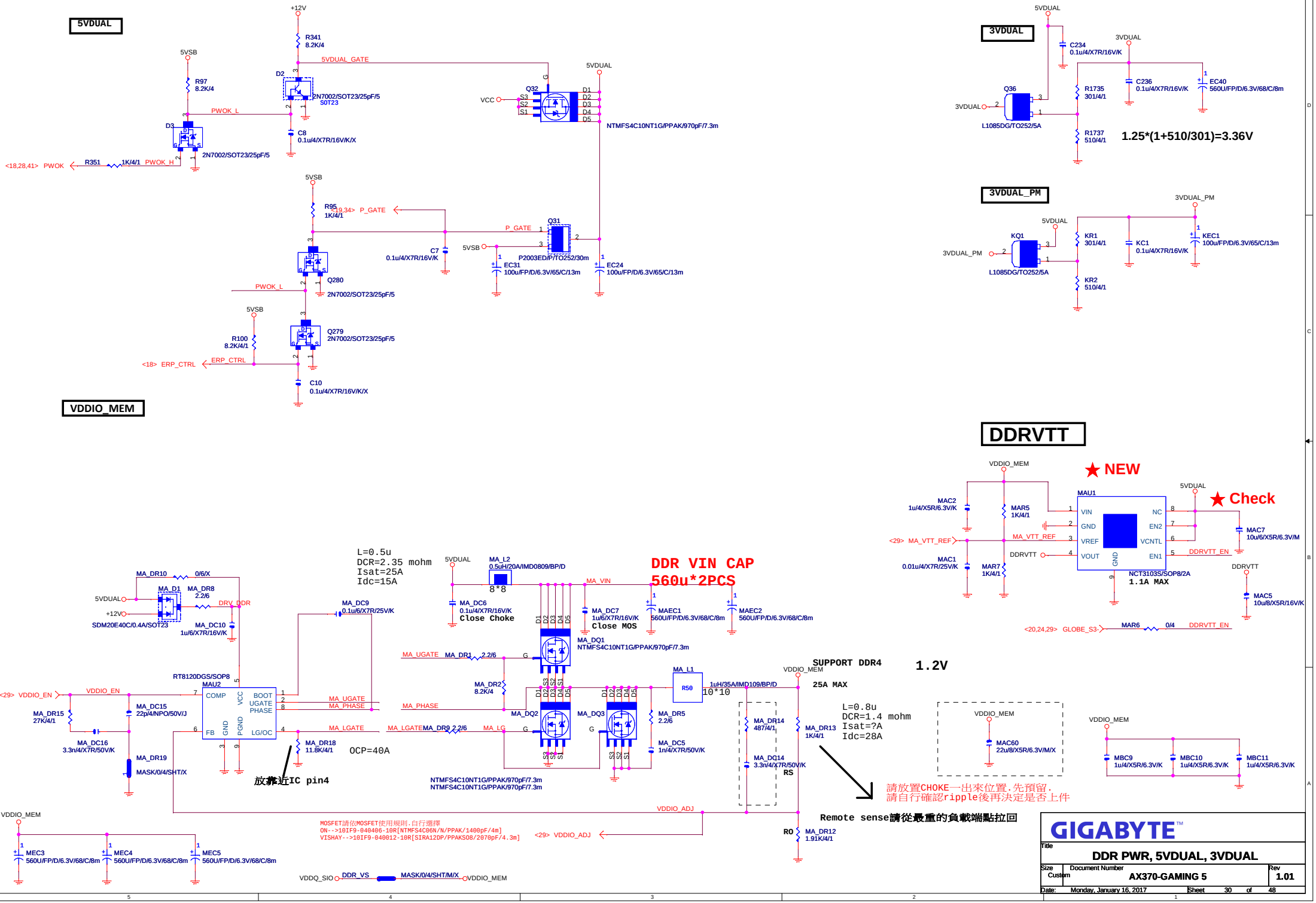
5VDUAL
+12V
R341
8.2K/4
5VDUAL_GATE
5VSB
R97
8.2K/4
D2
2N7002/SOT23/25pF/5
SOT23
PWOK_L
C8
0.1u/4/X7R/16V/K/X
D3
2N7002/SOT23/25pF/5
<18,28,41> PWOK
R351
1K/4/1
PWOK_H
Q32
VCC
NTMFS4C10NT1G/PPAK/970pF/7.3m
R95
1K/4/1
<19,34> P_GATE
P_GATE
Q31
C7
0.1u/4/X7R/16V/K
P2003ED/F/TO252/30m
EC31
100u/FP/D/6.3V/65/C/13m
EC24
100u/FP/D/6.3V/65/C/13m
Q280
2N7002/SOT23/25pF/5
PWOK_L
R100
8.2K/4/1
Q279
2N7002/SOT23/25pF/5
<18> ERP_CTRL
ERP_CTRL
C10
0.1u/4/X7R/16V/K/X
3VDUAL
C234
0.1u/4/X7R/16V/K
Q36
L1085DG/TO252/5A
R1735
301/4/1
C236
0.1u/4/X7R/16V/K
EC40
560U/FP/D/6.3V/68/C/8m
R1737
510/4/1
1.25*(1+510/301)=3.36V
3VDUAL_PM
KQ1
L1085DG/TO252/5A
KR1
301/4/1
KC1
0.1u/4/X7R/16V/K
KEC1
100u/FP/D/6.3V/65/C/13m
KR2
510/4/1
VDDIO_MEM
★NEW
MAU1
MAC2
1u/4/X5R/6.3V/K
MAR5
1K/4/1
<29> MA_VTT_REF
MA_VTT_REF
DDRVTT
MAC1
0.01u/4/X7R/25V/K
MAR7
1K/4/1
VIN
GND
VREF
VOUT
NC
EN2
VCNTL
EN1
NCT3103S/SOP8/2A
1.1A MAX
★Check
MAC7
10u/6/X5R/6.3V/M
DDRVTT_EN
MAC5
10u/8/X5R/16V/K
<20,24,29> GLOBE_S3
MAR6
0/4
DDRVTT_EN
DDRVTT
VDDIO_MEM
L=0.5u
DCR=2.35 mohm
Isat=25A
Idc=15A
MA_DR10
0/6/X
MA_D1
MA_DR8
2.2/6
SDM20E40C/0.4A/SOT23
MA_DC10
1u/6/X7R/16V/K
MA_DC9
0.1u/6/X7R/25V/K
RT8120DGS/SOP8
MAU2
<29> VDDIO_EN
MA_DR15
27K/4/1
MA_DC15
22p/4/NPO/50V/J
MA_DC16
3.3n/4/X7R/50V/K
MA_DR19
MASK/0/4/SHT/X
COMP
FB
GND
VCC
BOOT
UGATE
PHASE
PGND
LG/OC
MA_UGATE
MA_PHASE
MA_LGATE
MA_DR18
11.8K/4/1
OCP=40A
放靠近IC pin4
5VDUAL
MA_L2
0.5uH/20A/IMD0809/BP/D
8*8
MA_DC6
0.1u/4/X7R/16V/K
Close Choke
MA_VIN
MA_DC7
1u/6/X7R/16V/K
Close MOS
MAEC1
560U/FP/D/6.3V/68/C/8m
MAEC2
560U/FP/D/6.3V/68/C/8m
DDR VIN CAP
560u*2PCS
MA_DQ1
NTMFS4C10NT1G/PPAK/970pF/7.3m
MA_DR1
2.2/6
MA_DR2
8.2K/4
MA_DQ2
MA_DQ3
MA_L1
R50
1uH/35A/IMD109/BP/D
10*10
MA_DR5
2.2/6
MA_DC5
1n/4/X7R/50V/K
NTMFS4C10NT1G/PPAK/970pF/7.3m
NTMFS4C10NT1G/PPAK/970pF/7.3m
SUPPORT DDR4
1.2V
25A MAX
MA_DR14
487/4/1
MA_DR13
1K/4/1
MA_DQ14
3.3n/4/X7R/50V/K
RS
L=0.8u
DCR=1.4 mohm
Isat=?A
Idc=28A
請放置CHOKE一出來位置.先預留.
請自行確認ripple後再決定是否上件
Remote sense請從最重的負載端點拉回
RO
MA_DR12
1.91K/4/1
VDDIO_ADJ
<29> VDDIO_ADJ
MOSFET請依MOSFET使用規則.自行選擇
ON-->10IF9-040406-10R[NTMFS4C06N/N/PPAK/1400pF/4m]
VISHAY-->10IF9-040012-10R[SIRA12DP/PPAKSO8/2070pF/4.3m]
MAC60
22u/8/X5R/6.3V/M/X
MBC9
1u/4/X5R/6.3V/K
MBC10
1u/4/X5R/6.3V/K
MBC11
1u/4/X5R/6.3V/K
MEC3
560U/FP/D/6.3V/68/C/8m
MEC4
560U/FP/D/6.3V/68/C/8m
MEC5
560U/FP/D/6.3V/68/C/8m
VDDQ_SIO
DDR_VS
MASK/0/4/SHT/M/X
VDDIO_MEM
GIGABYTE
Title
DDR PWR, 5VDUAL, 3VDUAL
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LAN INTEL I211AT R1.1

I211AT不支援:NC-SI,SMBus

When pulled up, iNVM security features are enabled.

LCU1

SUPPORT CIRCUITS

POWER SUPPLY & I210 REGULATOR

I211-AT_MDI_LED_SDP

PCIE_NC-SI_SMB

WGI211AT/QFN64/[10HP2-400211-10R]

FOR ERP WAKEUP

CLOSE 3VDUAL_LAN2源頭處

(CLOSE PIN38)

(CLOSE PIN39)

LAN POWER

EMI SHORT PAD

(CLOSE LCU1 PIN10,27,41,51,64)

(CLOSE LCU1 PIN39,47,56)

(CLOSE LCU1 PIN11,32,38,42,59)

note: lan power連接及電流

USB_LAN

USB_LAN CONNECTOR

note:可變更USB NAME

[I210]

USB30_LAN1

USB3.1+LAN/1G/RE/GO,Y/OS/RA/D/1/15KV

LA_MDI-->100歐姆:[20/4/8/4/20]

LA_MDI-->100歐姆:[20/4/8/4/20]

LCU3ESD1

LCU3ESD2

AZ164S-04F.R7G/DFN10/[10DE2-510164-10R_10DE2-508809-10R]

AZC099-04S/SOT23-6L

GIGABYTE

Title	RTL8111EPV	
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LAN:E2201(E2400) R1.05

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

離IC近越好

<12> LA_-SRCCLK_LAN
<12> LA_SRCCLK_LAN
LAC1 0.1u/4/X7R/16V/K LA_ML_OP_C
LAC2 0.1u/4/X7R/16V/K LA_ML_ON_C
<14> LA_ML_OP
<14> LA_ML_ON

PCIE X1 SLOT

LABC5 0.1u/4/X7R/16V/K
LABC4 1u/4/X5R/6.3V/K
LABC3 0.1u/4/X7R/16V/K
LABC6 0.1u/4/X7R/16V/K/X

LA_AVDDVCO
LABC7 0.1u/4/X7R/16V/K
LABC8 4.7u/6/X5R/6.3V/K
AR8161-->(0)

3VDUAL_LAN1
LABC9 10u/6/X5R/6.3V/M
1u/4/X5R/6.3V/K
LABC10
LABC11 0.1u/4/X7R/16V/K

LA_LED_ACT_TXRX
LA_LED_LINK100
LA_LX
LA_DVDDL
LA_AVDDVCO
LA_AVDDL

3VDUAL_LAN1
LAC33 100p/4/NPO/50V/J/X
LAR6 8.2K/4
FOR ERP WAKEUP
<12,14,31,36> PM_PCIERST-
<7,12,16,31,36,42,43> PCIE_WAKE-
<12> LA_-CLKREQ
LAREQ1 0/4
LABC12 1u/4/X5R/6.3V/K/X

L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#

LAU1

41	EGND		
40	LX		
39	LED1		
38	LED0		
37	DVDDL_REG		
36	RX_N		
35	RX_P		
34	AVDDL		
33	REFCLKP		
32	REFCLKN		
31	AVDDL		
1	VDD3V	TX_P	30
2	PERST#	TX_N	29
3	WAKE#	NC	28
4	CLKREQ#	TESTMODE2	27
5	DEBUGMODE0	TESTMODE1	26
6	AVDDL_REG	TESTMODE0	25
7	XTLO	PPS	24
8	XTLI	LED2	23
9	AVDDH_REG	AVDDH	22
10	RBIAS	TRXN3	21

Qualcomm (Atheros) Killer E2201

LA_ ML-->80歐姆:[15/5/5/5/15]

離IC近越好

LA_ML_IP_C LAC12 0.1u/4/X7R/16V/K LA_ML_IP <14>
LA_ML_IN_C LAC13 0.1u/4/X7R/16V/K LA_ML_IN <14>

LAR9 0/4/X LABC14
LA_PPS LA_DVDDL 0.1u/4/X7R/16V/K/X
LA_LED_LINK1000 LA_AVDDH
LABC17 0.1u/4/X7R/16V/K
LA_MDI3-

LABC15 1u/4/X5R/6.3V/K
LABC16 0.1u/4/X7R/16V/K
LABC18 1u/4/X5R/6.3V/K
LABC19 0.1u/4/X7R/16V/K
LA_RBIAS
LAR10 2.37K/4/1

11	TRXP0	AVDD33	17
12	TRXN0	TRXP2	18
13	AVDDL	TRXN2	19
14	TRXP1	AVDDL	20
15	TRXN1	TRXP3	
16	AVDD33		

E2500-RIV1-RL/QFN40/[10HP2-402500-10R]

E2400料號:E2400-RIV1-RL/QFN40/[10HP2-402400-10R]

LA_MDI0+
LA_MDI0-
LA_MDI1+
LA_MDI1-
LA_MDI2+
LA_MDI2-
LA_MDI3+
LABC21 0.1u/4/X7R/16V/K
LABC20 0.1u/4/X7R/16V/K/X

LA_XTALI
LAX1
LA_XTALO
25M/16p/30ppm/49US/20/D
LAC31 20p/4/NPO/50V/J
LAC32 20p/4/NPO/50V/J

LA_AVDD33
LAR19 MASK/0/4/SHT/X 3VDUAL_LAN1
LABC22 1u/4/X5R/6.3V/K

LAN POWER

LAL1 4.7uH/0.8A/3225/S
LA_LX_OUT LA_LX
CLOSE
LA_LX 200mil
LABC1 10u/6/X5R/6.3V/M
LABC2 0.1u/4/X7R/16V/K

LA_DVDDL LA_AVDDL LA_AVDDVCO
LAR5 MASK/0/6/SHT/X AR8161-->(0)
LAFB1 30/4/4A/S AR8161-->BEAD
LAFB3 30/4/4A/S AR8161-->BEAD

LA_AVDDH
LAR7 8.2K/4 LA_LED_ACT_TXRX
LAR8 8.2K/4 LA_LED_LINK100
VCC3
LAR11 8.2K/4 LA_VDDCT

LAN_COVER FOOT PRINT:LAN_COVER

EMI SHORT PAD

PS:視EMI需求

LAR24 MASK/0/4/SHT/M/X

LAN POWER

可變 3VDUAL_LAN1 LAPW1 0/4 3VDUAL

*
*

USB POWER

note:可變更FUSE

可變

5VDUAL RFUS3 SPR-P260T/6V/8/S RFSVCC_U3R3

Close to connector
FUSE-0805

USB_LAN CONNECTOR

note:可變更USB NAME

[E2201]

3VDUAL_LAN1
LAFB2 MASK/0/4/SHT/M/X
LABC24 0.1u/4/X7R/16V/K/X

LABC27 0.1u/4/X7R/16V/K
LA_CN_L1
LA_MDI0+
LA_MDI0-
LA_MDI1+
LA_MDI1-
LA_MDI2+
LA_MDI2-
LA_MDI3+
LA_MDI3-
LABC25 MASK/0/4/SHT/M/X
LA_CN_L10

USB30_LAN2

L1		D1	LA_LED_ACT_TXRX
L2		D2	LA_LED_D2 LAR13 330/4 LAN_3VDUAL_LED
L3		D3	LA_LED_LINK100 LAR14 330/4
L4		D4	LA_LED_LINK1000 LAR15 330/4
L5			
L6			
L7			
L8			
L9			
L10		DT	
		DT	
RFSVCC_U3R3	VBUS	VBUS	RFSVCC_U3R3
<13> P_HSDN8	D-	D-	<13> P_HSDN9
<13> P_HSDP8	D+	D+	<13> P_HSDP9
	GND	GND	
<33> P_SS_RX4N_C	SSRX-	SSRX-	<33> P_SS_RX5N_C
<33> P_SS_RX4P_C	SSRX+	SSRX+	<33> P_SS_RX5P_C
	GND	GND	
<33> P_SS_TX4N_C	SSTX-	SSTX-	<33> P_SS_TX5N_C
<33> P_SS_TX4P_C	SSTX+	SSTX+	<33> P_SS_TX5P_C

USB3.0 USB3.0

LAUBC13 0.1u/4/X7R/16V/K

USB3+LAN/1G/GO,Y/OS/RA/D/G30/[11NR6-702009-X1R]

LA_MDI-->100歐姆:[20/4/8/4/20]

P_SS_TX4N_C
P_SS_TX4P_C
P_SS_RX4N_C
P_SS_RX4P_C

10	9	8	7	6					
NC	NC	GND	NC	NC					
		11							
D1-	D1+	GND	D2+	D2-					
1	2	3	4	5					

LAU3ESD1 AZ1045-04F/MSOP10

P_SS_TX4P_C
P_SS_TX4N_C
P_SS_RX4P_C
P_SS_RX4N_C

note:可變更USB NAME

可變

P_SS_TX5N_C
P_SS_TX5P_C
P_SS_RX5N_C
P_SS_RX5P_C

10	9	8	7	6					
NC	NC	GND	NC	NC					
		11							
D1-	D1+	GND	D2+	D2-					
1	2	3	4	5					

LAU3ESD2 AZ1045-04F/MSOP10

P_SS_TX5P_C
P_SS_TX5N_C
P_SS_RX5P_C
P_SS_RX5N_C

LAUESD1
P_HSDP9 1
P_HSDN8 3
6 P_HSDN9
5 RFSVCC_U3R3
4 P_HSDP8
AZC099-04S/SOT23-6L

GIGABYTE™

Title: RTL8111EPV

Size: Custom | Document Number: AX370-GAMING 5 | Rev: 1.01

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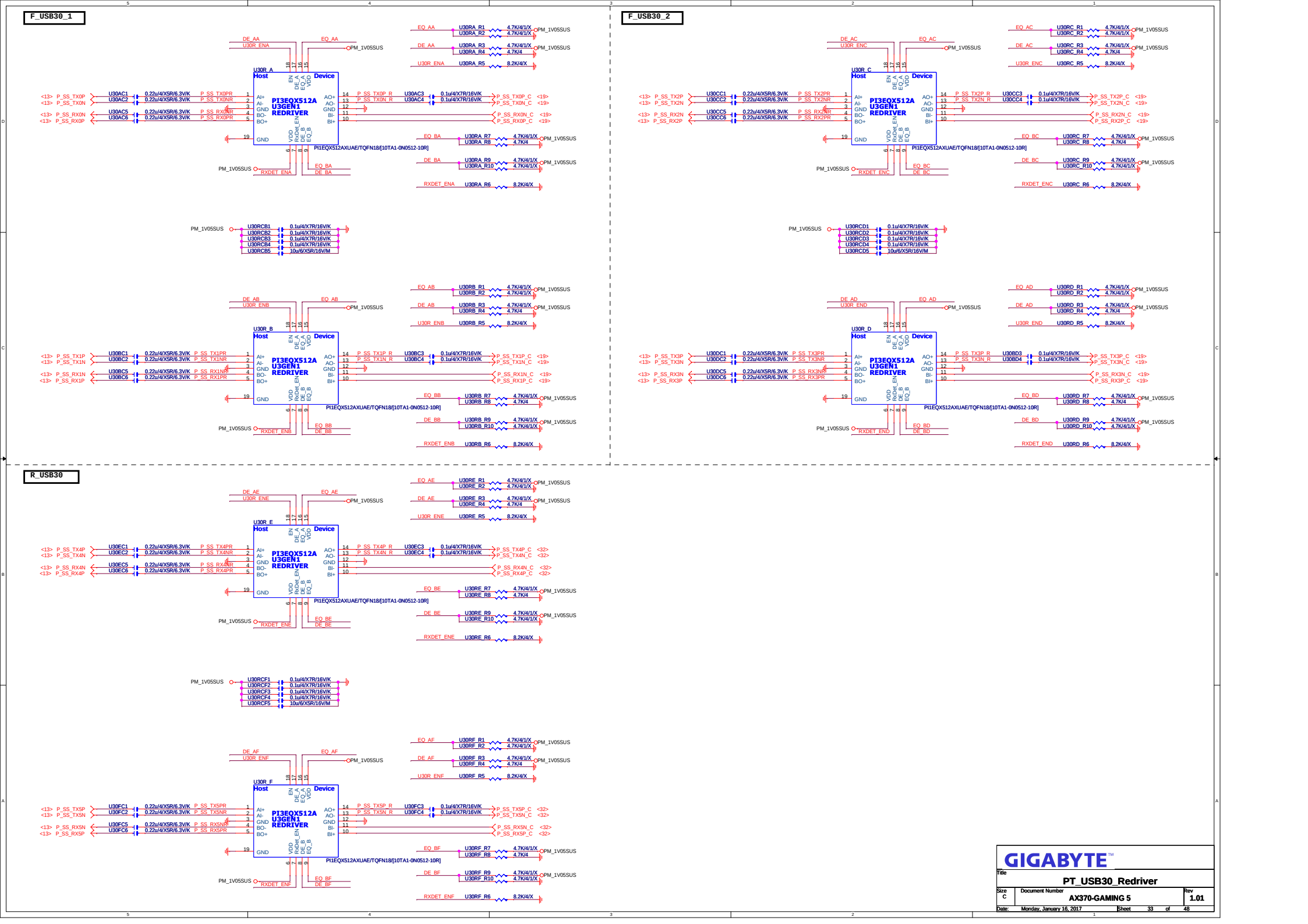
F_USB30_1
U30R_A
Host
Device
PI3EQX512A
U3GEN1
REDRIVER
PI1EQX512AXUAE/TQFN18/[10TA1-0N0512-10R]
F_USB30_2
U30R_C
R_USB30
U30R_E
U30R_F
PT_USB30_Redriver
GIGABYTE
AX370-GAMING 5
1.01
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KB/MS/DAC PWR

FOR鹽化短路

KB_MS_USB30
KB/USB3/A/PC99(DUAL)/YL/GF/2/RA/D::Location KB_MS_USB30

AZ1045-04F/MSOP10

AZC099-04S/SOT23-6L

MASK/AZC099-04S/SOT23-6L/X

USB_DAC_C

Rev0.12

RT8288AZSP/SOP8

DACC_C2請跟PIN8.PIN9一起下GND

TO USB_DAC PORT

From Switching

RT9742CGB/SOT23-5/[10TA1-089742-11R]

Connector to USB OC PIN

TO USB_DAC PORT

From 5VDUAL

RT9742CGB/SOT23-5/[10TA1-089742-11R]

Connector to USB OC PIN

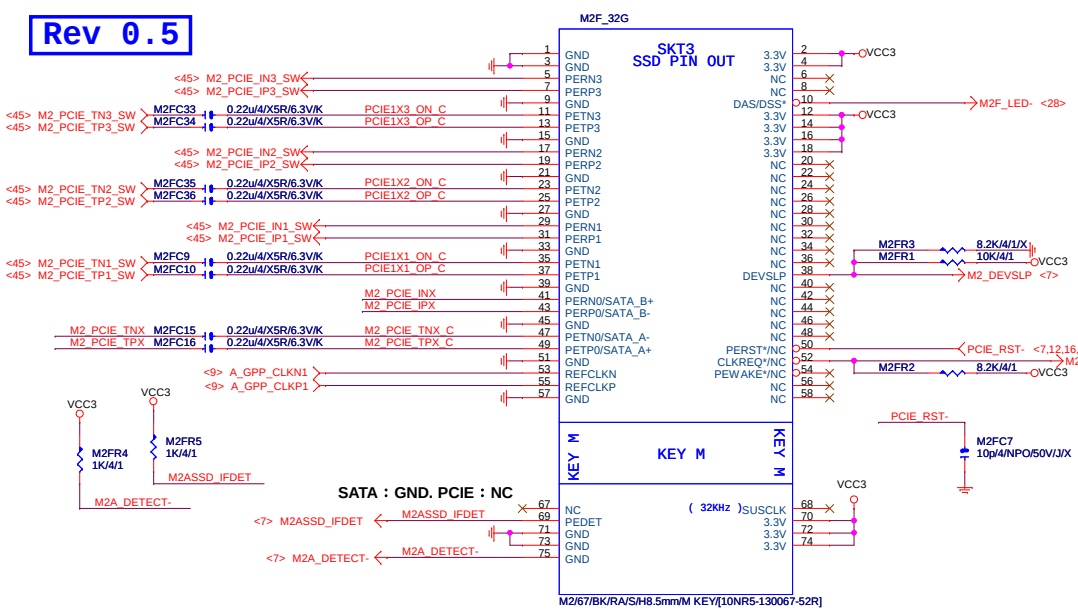
DAC power disable by resume GPIO

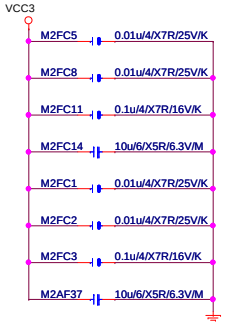
0X28 =25%xVCC

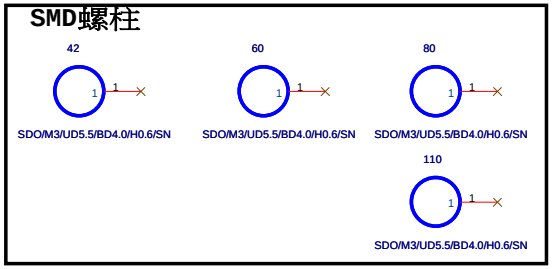
NCT3933U/SOT23-8

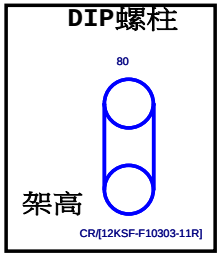
Title	KB_USB_DEC PWR
Size	Custom
Document Number	AX370-GAMING 5
Rev	1.01
Date:	Monday, January 16, 2017
Sheet	34 of 48

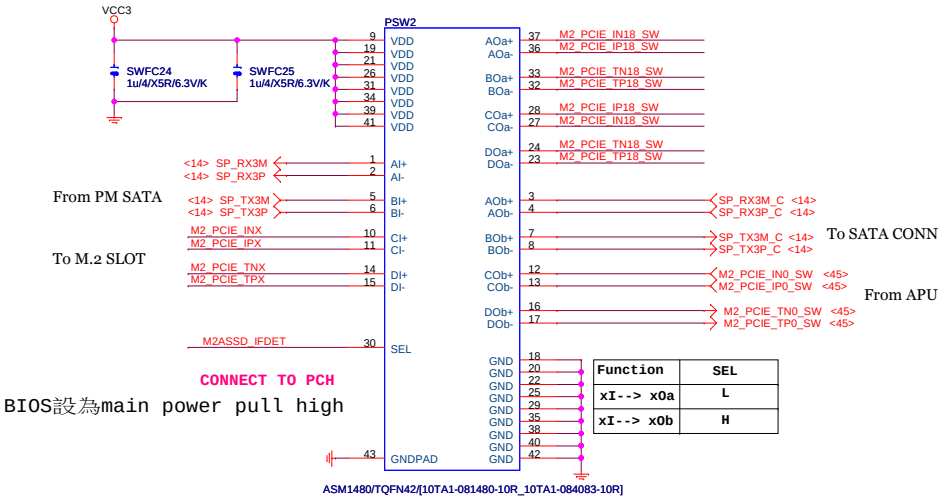
Rev 0.5

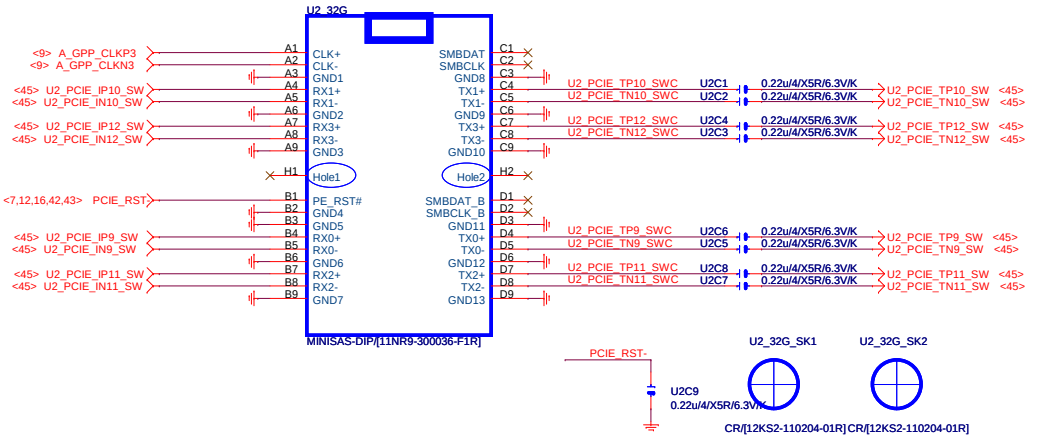












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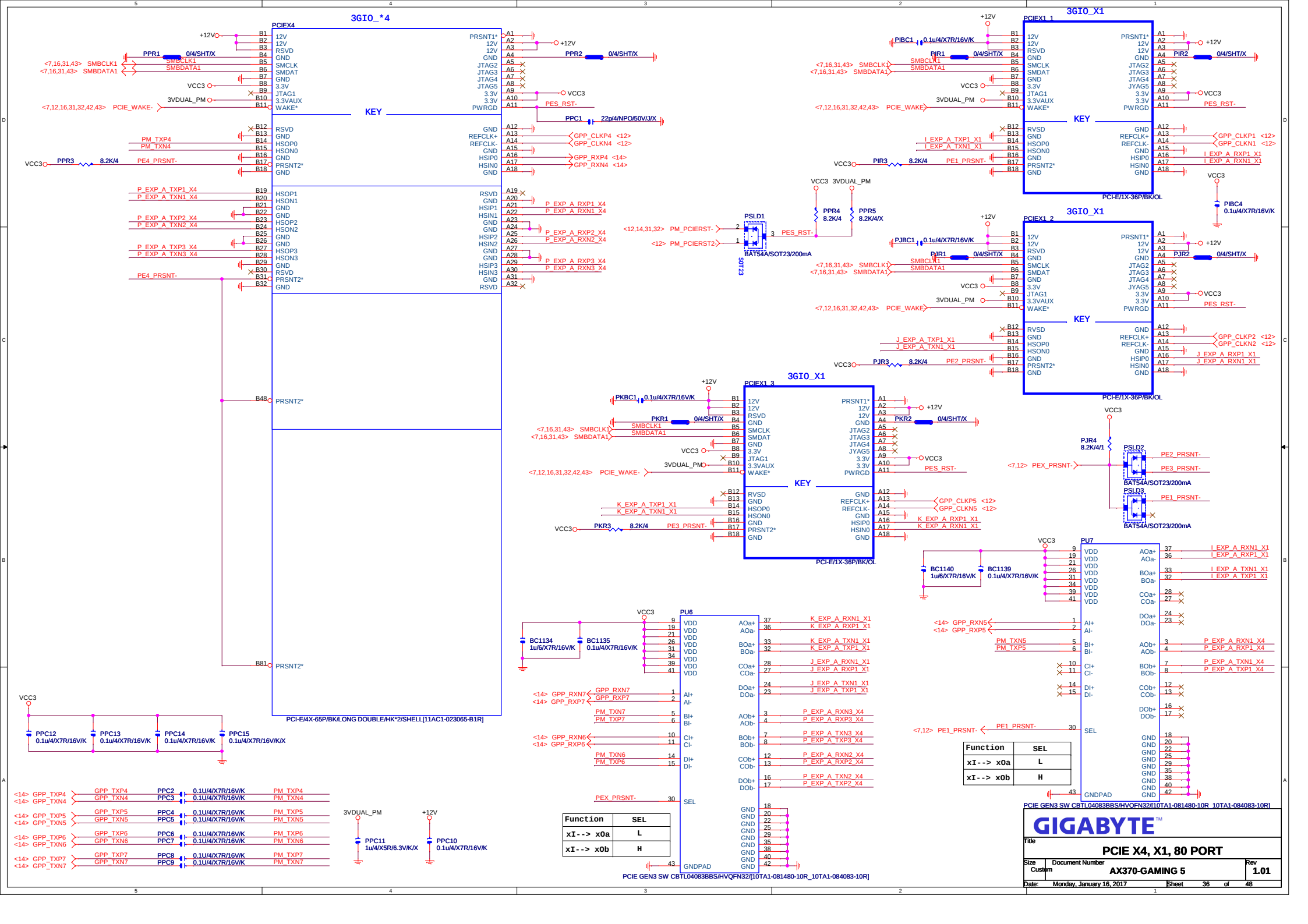
Title	U.2, M.2 SOCKET	
Size: Custom	Document Number: AX370-GAMING 5	Rev: 1.01
Date: Monday, January 16, 2017	Sheet 35 of 48	


3GIO_*4
PCIEX4
PCI-E/4X-65P/BK/LONG DOUBLE/HK*2/SHELL[11AC1-023065-B1R]
3GIO_X1
PCIEX1_1
PCIEX1_2
PCIEX1_3
PCI-E/1X-36P/BK/OL
KEY
PSLD1
PSLD2
PSLD3
BAT54A/SOT23/200mA
PU6
PU7
PCIE GEN3 SW CBTL04083BBS/HVQFN32/[10TA1-081480-10R_10TA1-084083-10R]
Function
SEL
xI--> xOa
L
xI--> xOb
H
GIGABYTE
Title
PCIE X4, X1, 80 PORT
Size
Custom
Document Number
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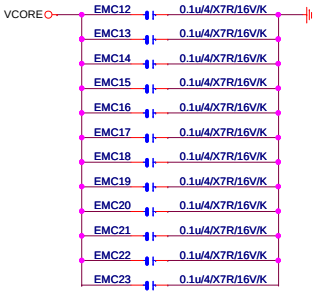
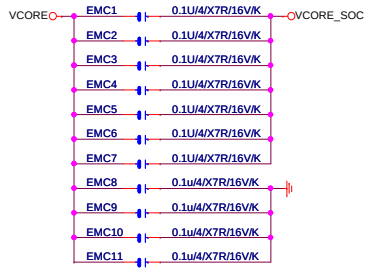
48

CPU TOP CAVITY

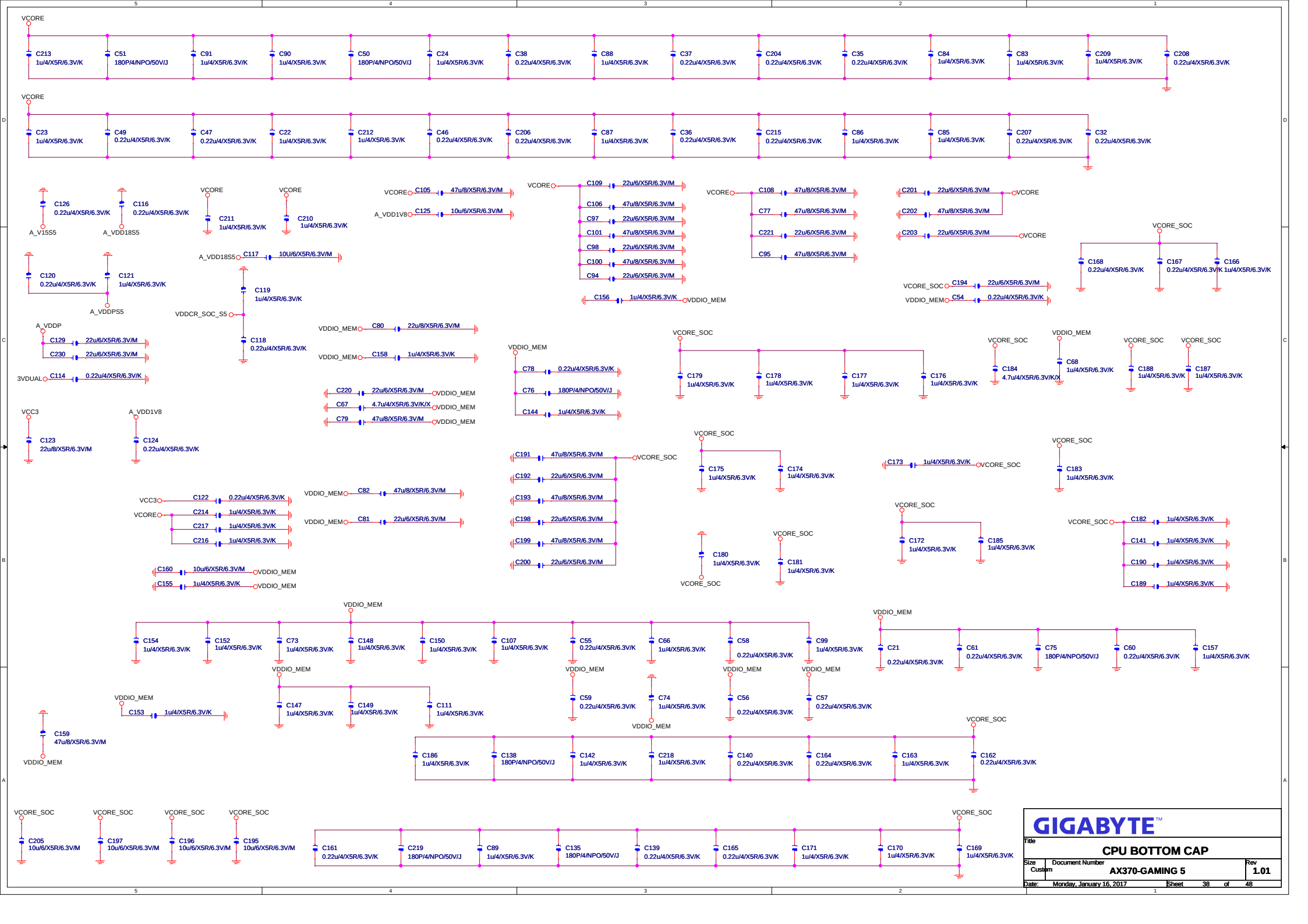


Cross Plane CAP



GIGABYTE™

Title: CPU TOP CAP		
Size: Custom	Document Number: AX370-GAMING 5	Rev: 1.01
Date: Monday, January 16, 2017	Sheet 37 of 48	


VCORE
C213 1u/4/X5R/6.3V/K
C51 180P/4/NPO/50V/J
C91 1u/4/X5R/6.3V/K
C90 1u/4/X5R/6.3V/K
C50 180P/4/NPO/50V/J
C24 1u/4/X5R/6.3V/K
C38 0.22u/4/X5R/6.3V/K
C88 1u/4/X5R/6.3V/K
C37 0.22u/4/X5R/6.3V/K
C204 0.22u/4/X5R/6.3V/K
C35 0.22u/4/X5R/6.3V/K
C84 1u/4/X5R/6.3V/K
C83 1u/4/X5R/6.3V/K
C209 1u/4/X5R/6.3V/K
C208 0.22u/4/X5R/6.3V/K
VCORE
C23 1u/4/X5R/6.3V/K
C49 0.22u/4/X5R/6.3V/K
C47 0.22u/4/X5R/6.3V/K
C22 1u/4/X5R/6.3V/K
C212 1u/4/X5R/6.3V/K
C46 0.22u/4/X5R/6.3V/K
C206 0.22u/4/X5R/6.3V/K
C87 1u/4/X5R/6.3V/K
C36 0.22u/4/X5R/6.3V/K
C215 0.22u/4/X5R/6.3V/K
C86 1u/4/X5R/6.3V/K
C85 1u/4/X5R/6.3V/K
C207 0.22u/4/X5R/6.3V/K
C32 0.22u/4/X5R/6.3V/K
C126 0.22u/4/X5R/6.3V/K
A_V15S5
C116 0.22u/4/X5R/6.3V/K
A_VDD18S5
VCORE
C211 1u/4/X5R/6.3V/K
VCORE
C210 1u/4/X5R/6.3V/K
VCORE
C105 47u/8/X5R/6.3V/M
A_VDD1V8
C125 10u/6/X5R/6.3V/M
VCORE
C109 22u/6/X5R/6.3V/M
C106 47u/8/X5R/6.3V/M
C97 22u/6/X5R/6.3V/M
C101 47u/8/X5R/6.3V/M
C98 22u/6/X5R/6.3V/M
C100 47u/8/X5R/6.3V/M
C94 22u/6/X5R/6.3V/M
C156 1u/4/X5R/6.3V/K
VDDIO_MEM
VCORE
C108 47u/8/X5R/6.3V/M
C77 47u/8/X5R/6.3V/M
C221 22u/6/X5R/6.3V/M
C95 47u/8/X5R/6.3V/M
C201 22u/6/X5R/6.3V/M
VCORE
C202 47u/8/X5R/6.3V/M
C203 22u/6/X5R/6.3V/M
VCORE
VCORE_SOC
C168 0.22u/4/X5R/6.3V/K
C167 0.22u/4/X5R/6.3V/K
C166 1u/4/X5R/6.3V/K
VCORE_SOC
C194 22u/6/X5R/6.3V/M
VDDIO_MEM
C54 0.22u/4/X5R/6.3V/K
C120 0.22u/4/X5R/6.3V/K
C121 1u/4/X5R/6.3V/K
A_VDDPS5
A_VDD18S5
C117 10U/6/X5R/6.3V/M
C119 1u/4/X5R/6.3V/K
VDDCR_SOC_S5
C118 0.22u/4/X5R/6.3V/K
A_VDDP
C129 22u/6/X5R/6.3V/M
C230 22u/6/X5R/6.3V/M
3VDUAL
C114 0.22u/4/X5R/6.3V/K
VDDIO_MEM
C80 22u/8/X5R/6.3V/M
VDDIO_MEM
C158 1u/4/X5R/6.3V/K
C220 22u/6/X5R/6.3V/M
VDDIO_MEM
C67 4.7u/4/X5R/6.3V/K/X
VDDIO_MEM
C79 47u/8/X5R/6.3V/M
VDDIO_MEM
VDDIO_MEM
C78 0.22u/4/X5R/6.3V/K
C76 180P/4/NPO/50V/J
C144 1u/4/X5R/6.3V/K
VCORE_SOC
C179 1u/4/X5R/6.3V/K
C178 1u/4/X5R/6.3V/K
C177 1u/4/X5R/6.3V/K
C176 1u/4/X5R/6.3V/K
VCORE_SOC
C184 4.7u/4/X5R/6.3V/K/X
VDDIO_MEM
C68 1u/4/X5R/6.3V/K
VCORE_SOC
C188 1u/4/X5R/6.3V/K
VCORE_SOC
C187 1u/4/X5R/6.3V/K
VCC3
C123 22u/8/X5R/6.3V/M
A_VDD1V8
C124 0.22u/4/X5R/6.3V/K
C191 47u/8/X5R/6.3V/M
VCORE_SOC
C192 22u/6/X5R/6.3V/M
C193 47u/8/X5R/6.3V/M
C198 22u/6/X5R/6.3V/M
C199 47u/8/X5R/6.3V/M
C200 22u/6/X5R/6.3V/M
VCORE_SOC
C175 1u/4/X5R/6.3V/K
C174 1u/4/X5R/6.3V/K
C173 1u/4/X5R/6.3V/K
VCORE_SOC
VCORE_SOC
C183 1u/4/X5R/6.3V/K
VCC3
C122 0.22u/4/X5R/6.3V/K
VCORE
C214 1u/4/X5R/6.3V/K
C217 1u/4/X5R/6.3V/K
C216 1u/4/X5R/6.3V/K
VDDIO_MEM
C82 47u/8/X5R/6.3V/M
VDDIO_MEM
C81 22u/6/X5R/6.3V/M
C180 1u/4/X5R/6.3V/K
VCORE_SOC
VCORE_SOC
C181 1u/4/X5R/6.3V/K
VCORE_SOC
C172 1u/4/X5R/6.3V/K
C185 1u/4/X5R/6.3V/K
VCORE_SOC
C182 1u/4/X5R/6.3V/K
C141 1u/4/X5R/6.3V/K
C190 1u/4/X5R/6.3V/K
C189 1u/4/X5R/6.3V/K
C160 10u/6/X5R/6.3V/M
VDDIO_MEM
C155 1u/4/X5R/6.3V/K
VDDIO_MEM
VDDIO_MEM
C154 1u/4/X5R/6.3V/K
C152 1u/4/X5R/6.3V/K
C73 1u/4/X5R/6.3V/K
C148 1u/4/X5R/6.3V/K
C150 1u/4/X5R/6.3V/K
C107 1u/4/X5R/6.3V/K
C55 0.22u/4/X5R/6.3V/K
C66 1u/4/X5R/6.3V/K
C58 0.22u/4/X5R/6.3V/K
C99 1u/4/X5R/6.3V/K
VDDIO_MEM
C21 0.22u/4/X5R/6.3V/K
C61 0.22u/4/X5R/6.3V/K
C75 180P/4/NPO/50V/J
C60 0.22u/4/X5R/6.3V/K
C157 1u/4/X5R/6.3V/K
VDDIO_MEM
C153 1u/4/X5R/6.3V/K
VDDIO_MEM
C147 1u/4/X5R/6.3V/K
C149 1u/4/X5R/6.3V/K
C111 1u/4/X5R/6.3V/K
VDDIO_MEM
C59 0.22u/4/X5R/6.3V/K
VDDIO_MEM
C74 1u/4/X5R/6.3V/K
VDDIO_MEM
C56 0.22u/4/X5R/6.3V/K
VDDIO_MEM
C57 0.22u/4/X5R/6.3V/K
C159 47u/8/X5R/6.3V/M
VDDIO_MEM
VCORE_SOC
C186 1u/4/X5R/6.3V/K
C138 180P/4/NPO/50V/J
C142 1u/4/X5R/6.3V/K
C218 1u/4/X5R/6.3V/K
C140 0.22u/4/X5R/6.3V/K
C164 0.22u/4/X5R/6.3V/K
C163 1u/4/X5R/6.3V/K
C162 0.22u/4/X5R/6.3V/K
VCORE_SOC
C205 10u/6/X5R/6.3V/M
VCORE_SOC
C197 10u/6/X5R/6.3V/M
VCORE_SOC
C196 10u/6/X5R/6.3V/M
VCORE_SOC
C195 10u/6/X5R/6.3V/M
C161 0.22u/4/X5R/6.3V/K
C219 180P/4/NPO/50V/J
C89 1u/4/X5R/6.3V/K
C135 180P/4/NPO/50V/J
C139 0.22u/4/X5R/6.3V/K
C165 0.22u/4/X5R/6.3V/K
C171 1u/4/X5R/6.3V/K
C170 1u/4/X5R/6.3V/K
VCORE_SOC
C169 1u/4/X5R/6.3V/K
GIGABYTE™
Title
CPU BOTTOM CAP
Size
Custom
Document Number
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Rev
1.01
Date: Monday, January 16, 2017
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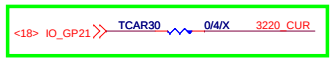
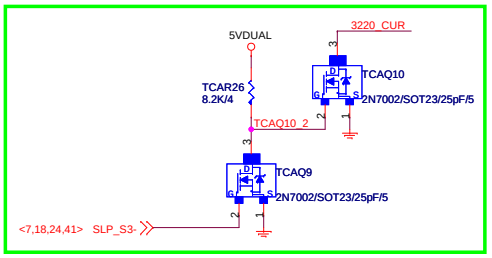
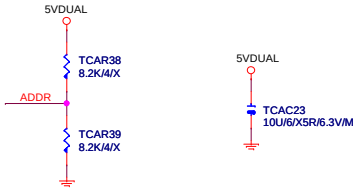
ASM1143 USB31 Host Rev0.3 TI HD3SS3220

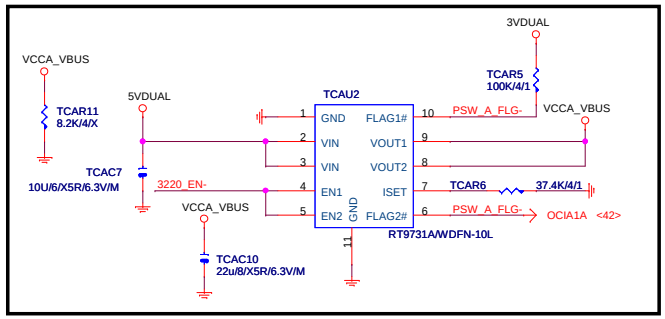
For VBUS current limit at 900mA on S3

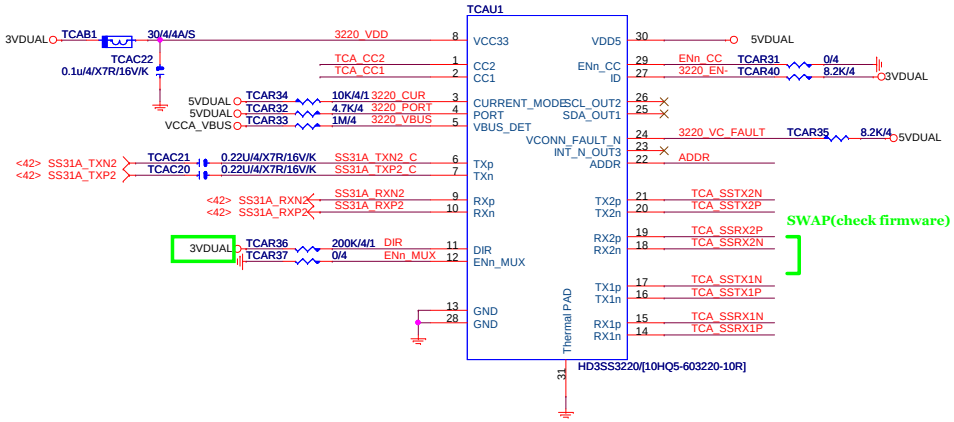






TypeC default 5V/3A

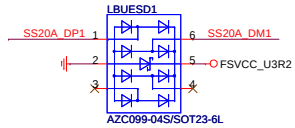


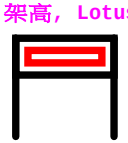


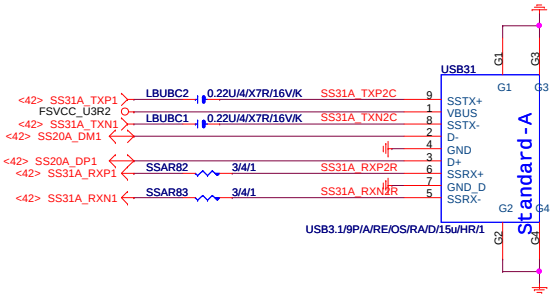
SWAP(check firmware)

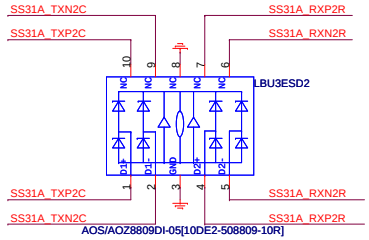
USB 3.1 Red

架高，Lotus.



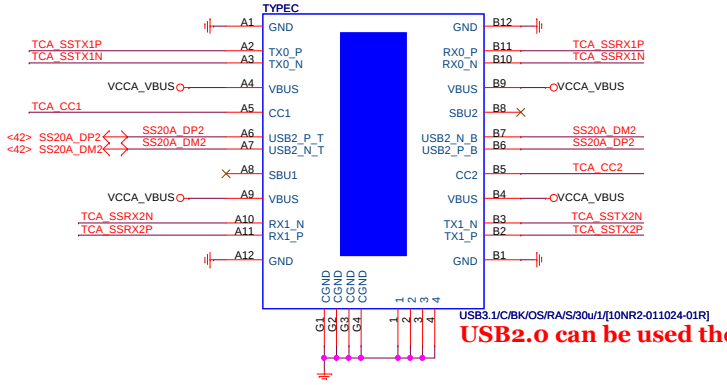




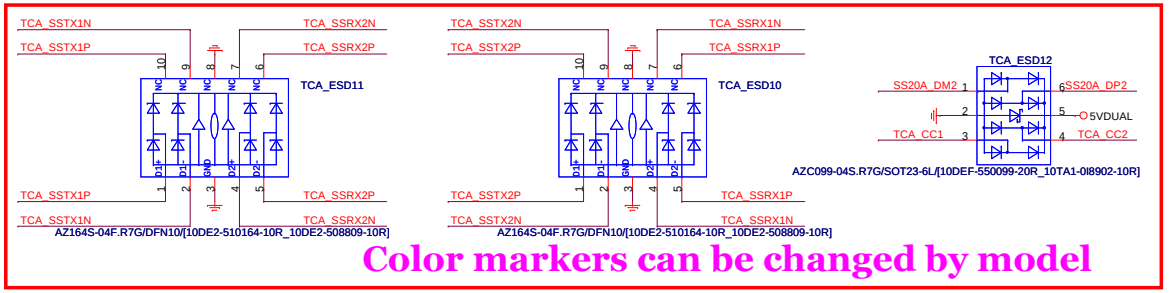


PORT
H - HOST (DFP/SOURCE)
L - Device (UFP/SINK)
NC - Dual Role (DRP)

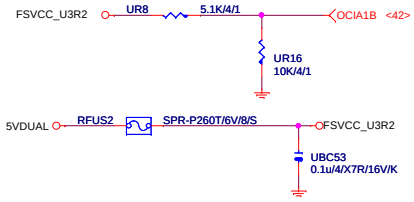
CURRENT MODE
L - Default (900mA) / Pull down to GND or NC
M - Medium (1.5A) / Pull up to VDD 500K
H - High (3.0A) / Pull up to VDD 10K



USB2.0 can be used the same source



Color markers can be changed by model



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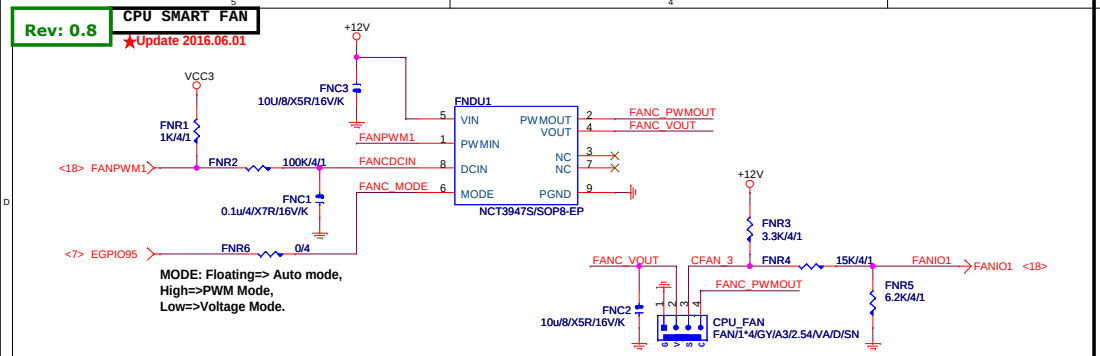
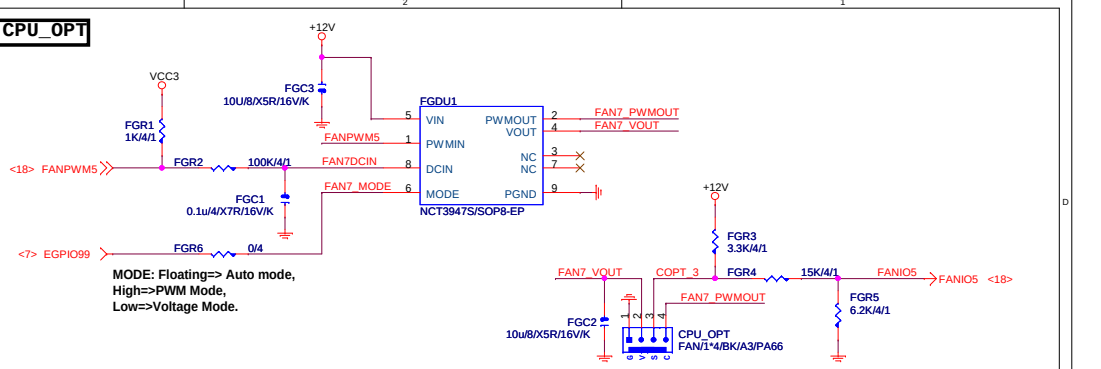
CPU_SMART_FAN

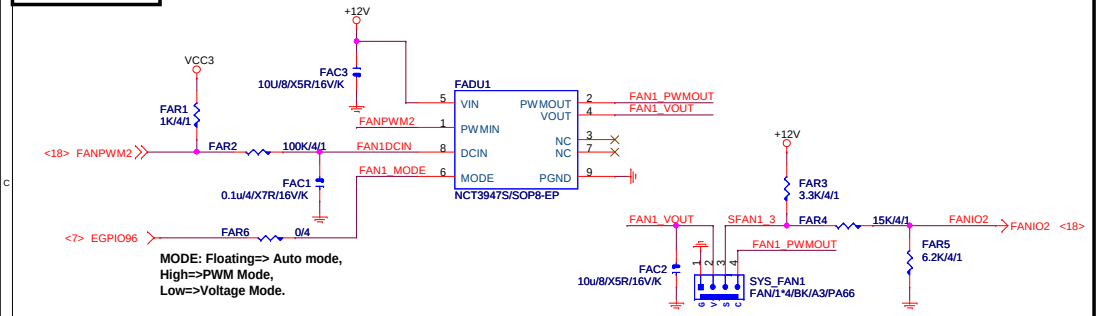
★Update 2016.06.01



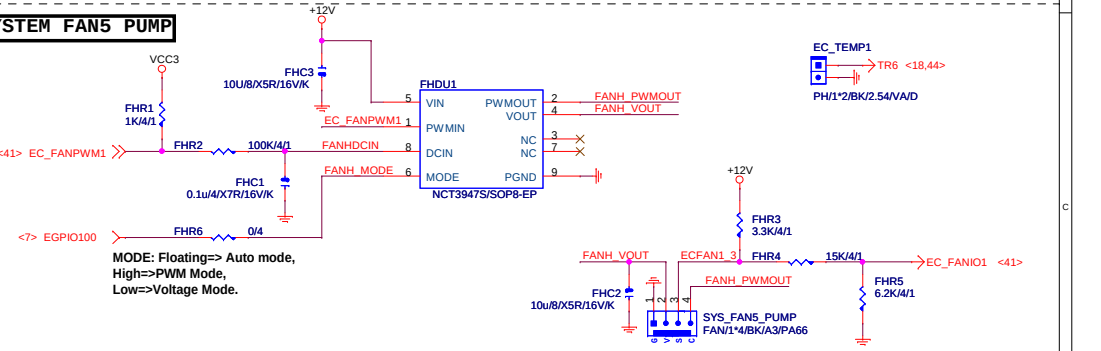
CPU_OPT



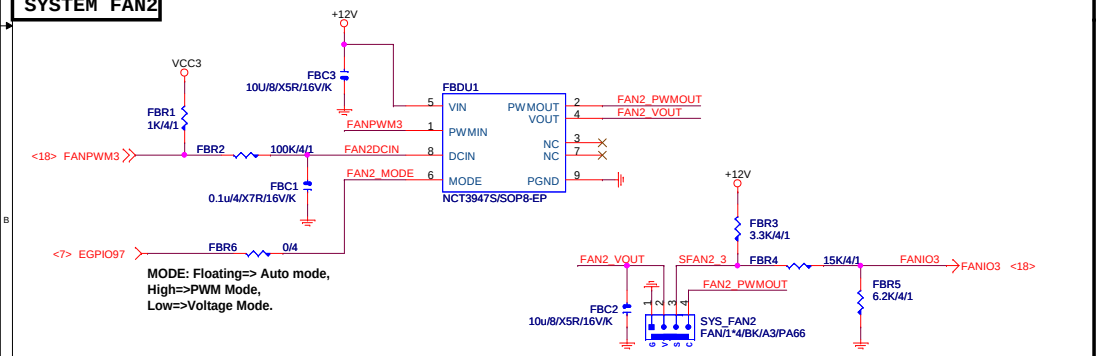
SYSTEM_FAN1



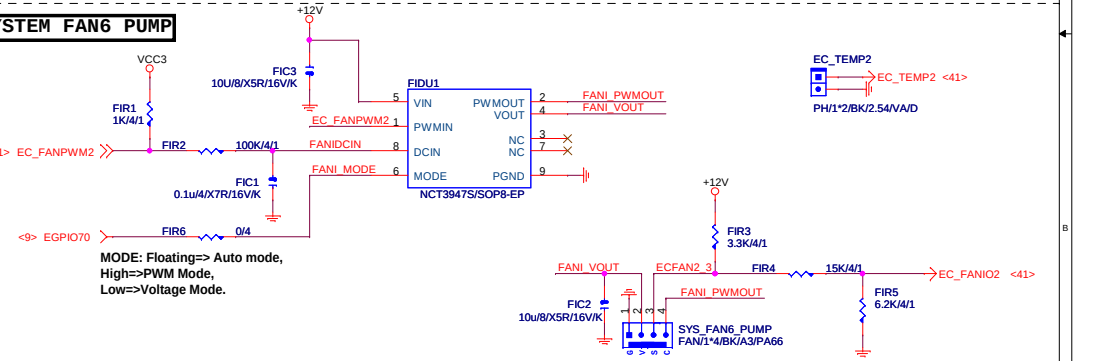
SYSTEM_FAN5_PUMP



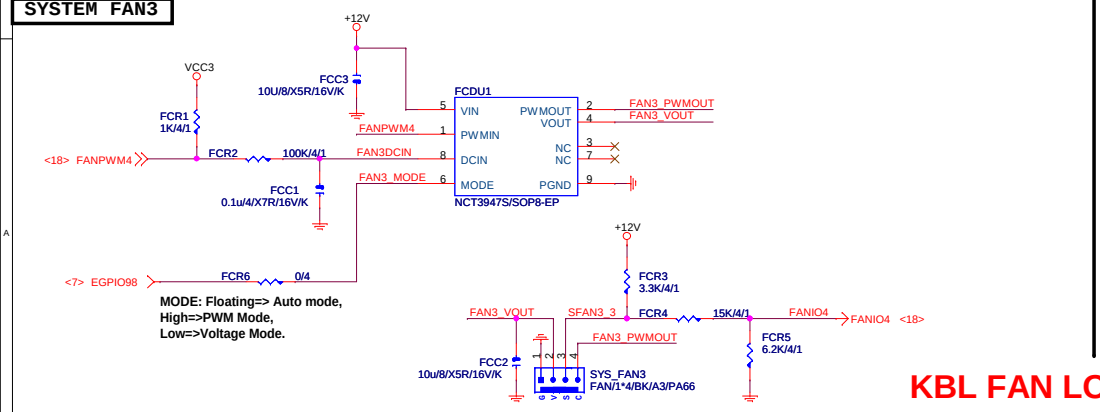
SYSTEM_FAN2



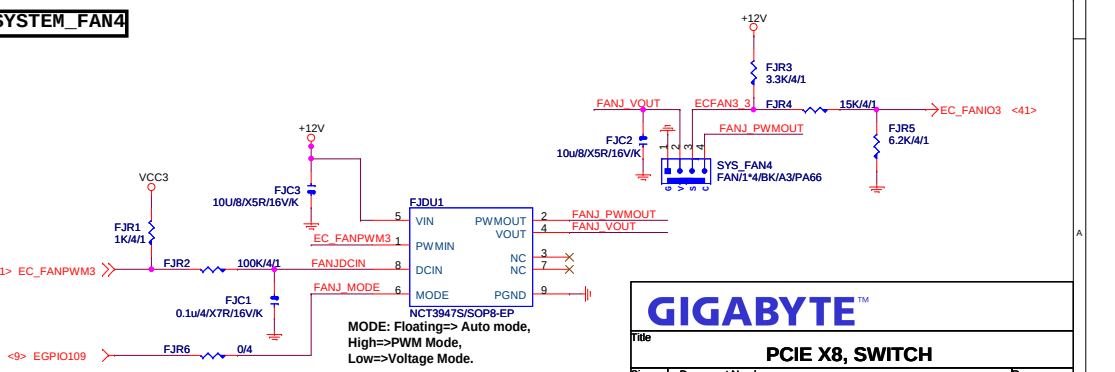
SYSTEM_FAN6_PUMP



SYSTEM_FAN3



SYSTEM_FAN4



KBL FAN LOCATION MAP REFER TO PAGE.27

GIGABYTE™

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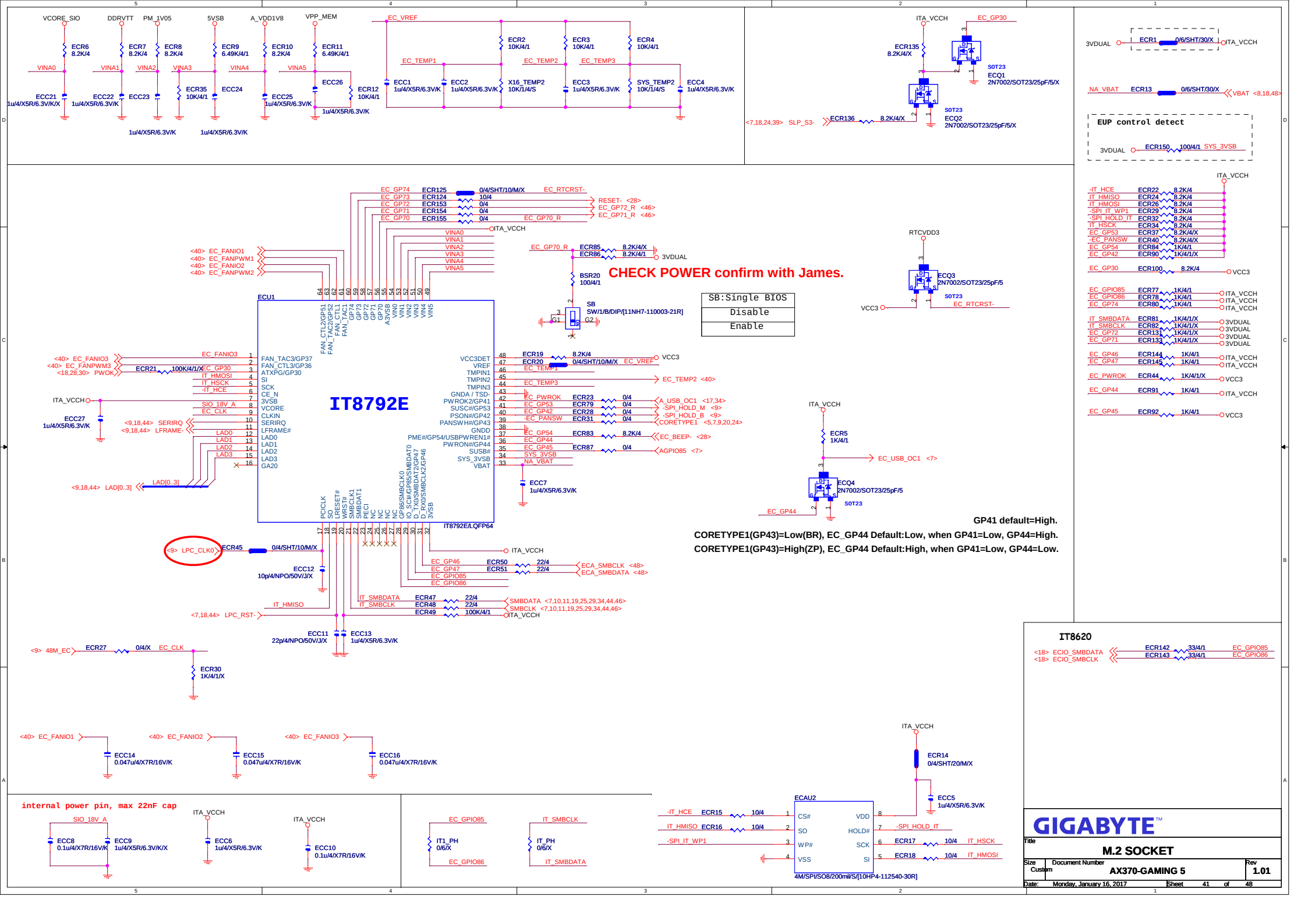
IT8792E
ECU1
IT8792E/LQFP64
CHECK POWER confirm with James.
SB:Single BIOS
Disable
Enable
GP41 default=High.
CORETYPE1(GP43)=Low(BR), EC_GP44 Default:Low, when GP41=Low, GP44=High.
CORETYPE1(GP43)=High(ZP), EC_GP44 Default:High, when GP41=Low, GP44=Low.
internal power pin, max 22nF cap
IT8620
EUP control detect
4M/SPI/SO8/200mil/S/[10HP4-112540-30R]
GIGABYTE
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ASM1143 USB3 Host Rev0.63

PCIE Gen3 X1 or PCIE Gen2 X2

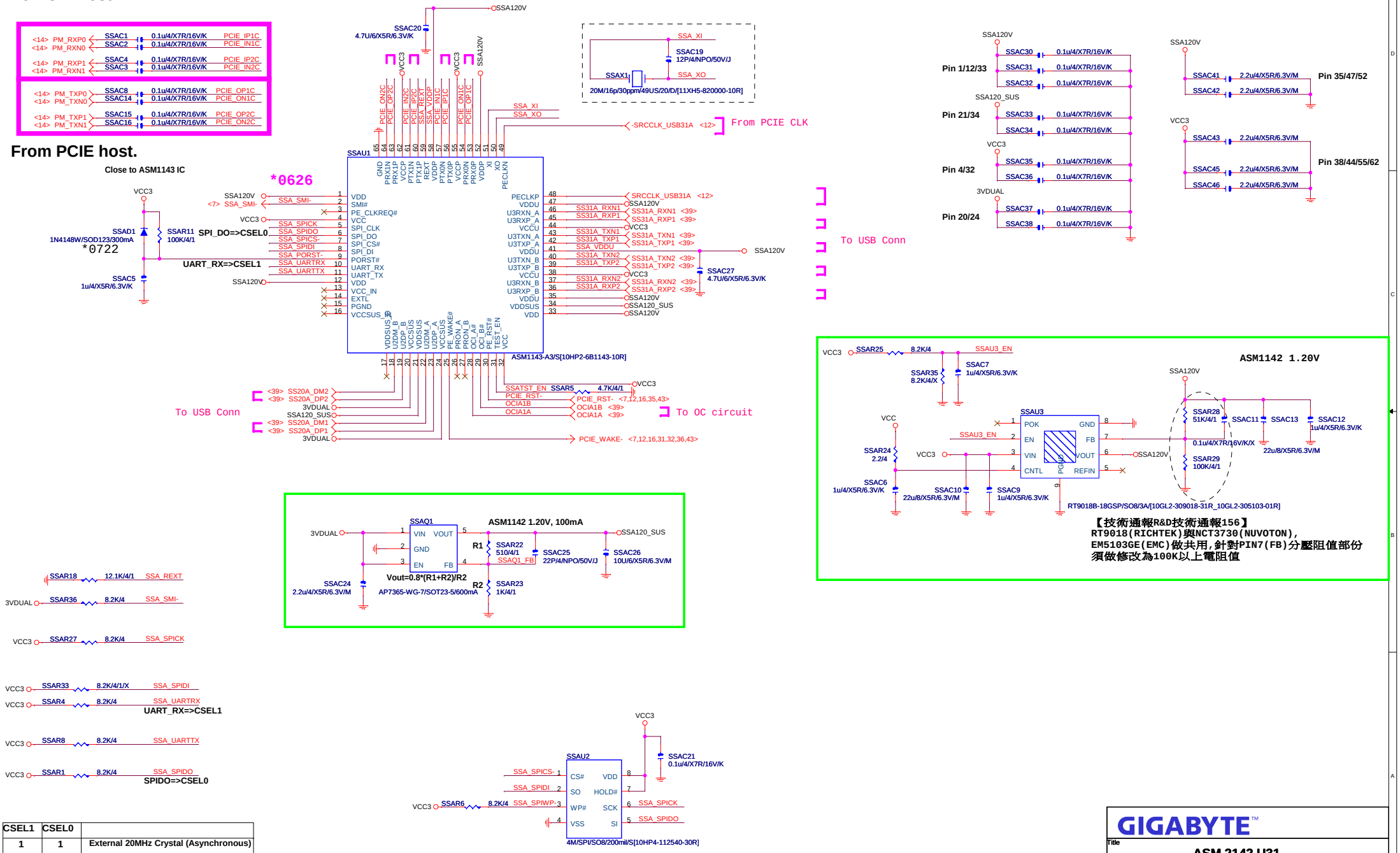
To PCIE host.

From PCIE host.

Color markers can be changed by model

ASM1143 USB3.1

Base on ASM1142 0.3 Reference SCH



【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

CSEL1	CSEL0	
1	1	External 20MHz Crystal (Asynchronous)
0	1	48MHz clock input (Synchronous)
X	0	Reseved for Test

GIGABYTE™

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Rev. 1.0A

3GIO_*8

PCIEX8

PCI-E/8X-99P/BK/LONG DOUBLE/HK*2/SHELL/[11AC1-023099-F1R]

PCIEX8 PROTECT SHT

+12V protect short-wire test

PCIE GEN3 SW CBTL04083BBS/HVQFN32/[10TA1-081480-10R_10TA1-084083-10R]

GEN3 :CBTL04083BBS/HVQFN32[10TA1-084083-10R]

Function	SEL
xI--> xOa	L
xI--> xOb	H

PLACE THESE CAP CLOSE TO CONNECTOR

PCC2	0.22u/4/X5R/6.3V/K	PCC3	0.22u/4/X5R/6.3V/K
PCC4	0.22u/4/X5R/6.3V/K	PCC5	0.22u/4/X5R/6.3V/K
PCC6	0.22u/4/X5R/6.3V/K	PCC7	0.22u/4/X5R/6.3V/K
PCC8	0.22u/4/X5R/6.3V/K	PCC9	0.22u/4/X5R/6.3V/K
PCC10	0.22u/4/X5R/6.3V/K	PCC11	0.22u/4/X5R/6.3V/K
PCC12	0.22u/4/X5R/6.3V/K	PCC13	0.22u/4/X5R/6.3V/K
PCC14	0.22u/4/X5R/6.3V/K	PCC15	0.22u/4/X5R/6.3V/K
PCC16	0.22u/4/X5R/6.3V/K	PCC17	0.22u/4/X5R/6.3V/K

PCBC1 0.1u/4/X7R/16V/K; PCBC2 1u/4/X5R/6.3V/K; PCBC3 0.1u/4/X7R/16V/K; PCBC4 0.1u/4/X7R/16V/K/X; PCEC1 270u/FP/D/16V/88/C/12m; PCEC2 560u/FP/D/6.3V/68/C/8m

GIGABYTE

Title	PCIE X8, SWITCH	
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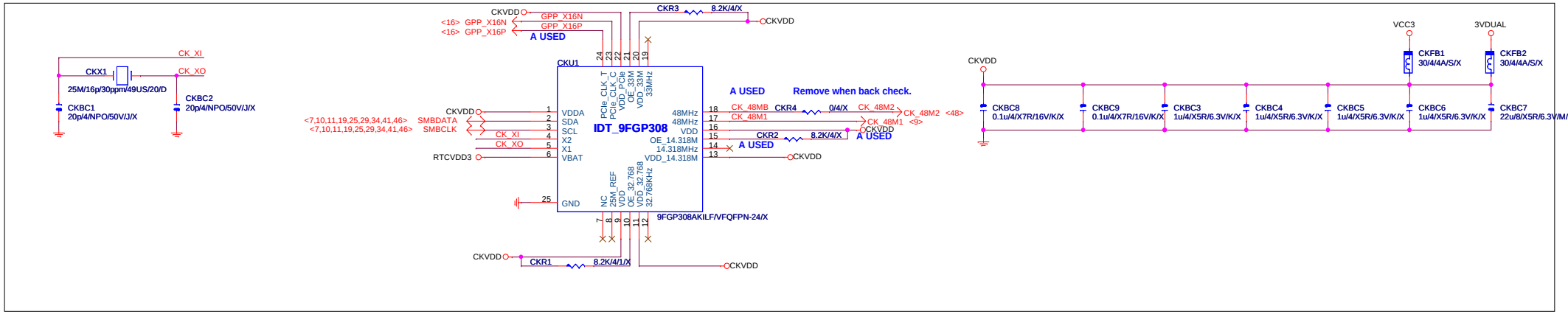
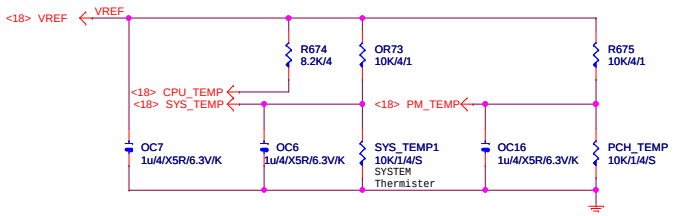
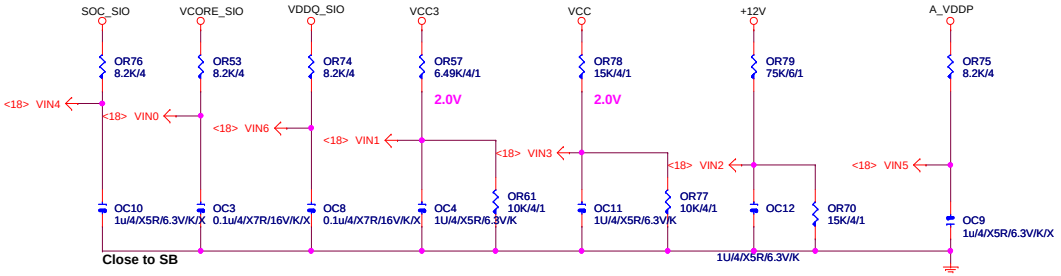
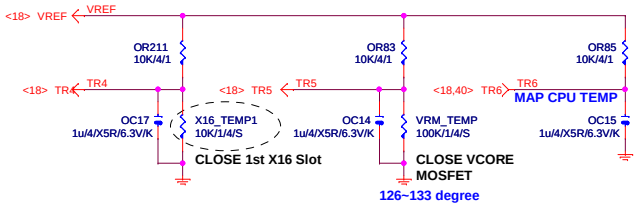
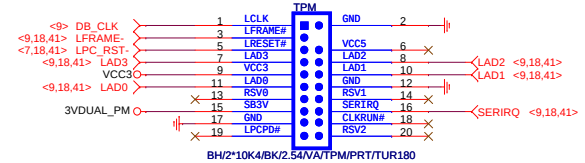


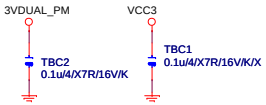
Hardware Monitor circuits











GIGABYTE™

Title: PCIE X8, SWITCH

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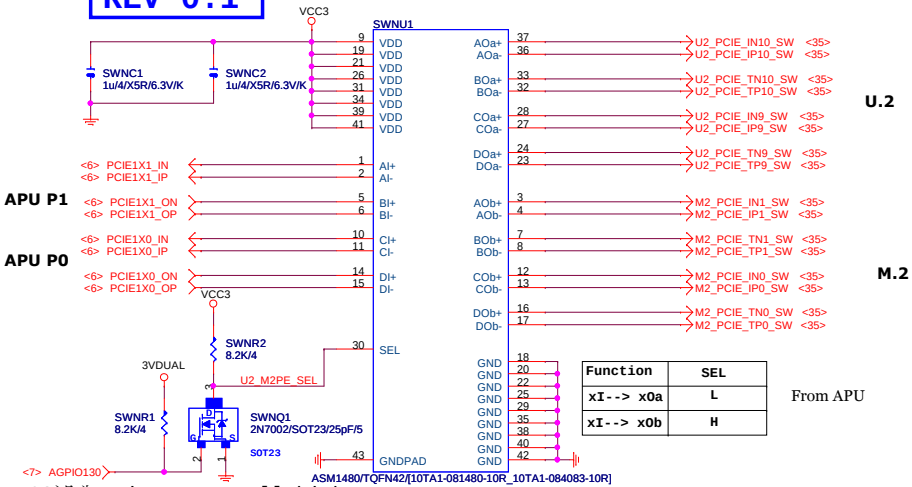
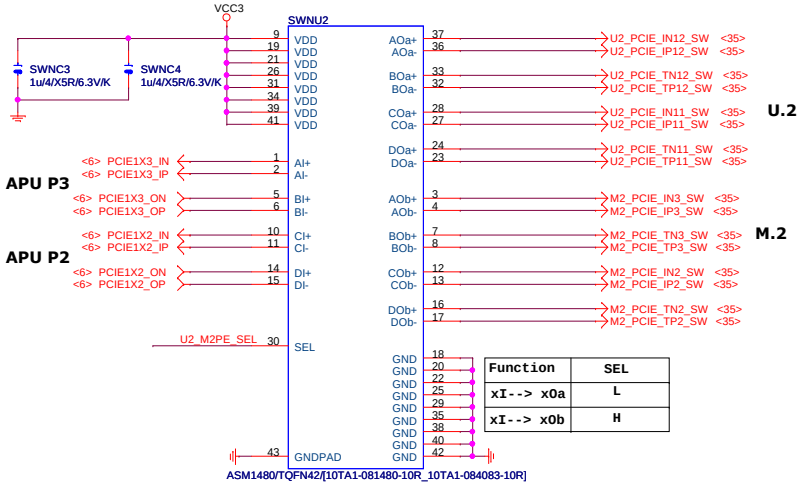
REV 0.1



Function	SEL
xI--> x0a	L
xI--> x0b	H

From APU

BIOS設為main power pull high



Function	SEL
xI--> x0a	L
xI--> x0b	H

GIGABYTE™

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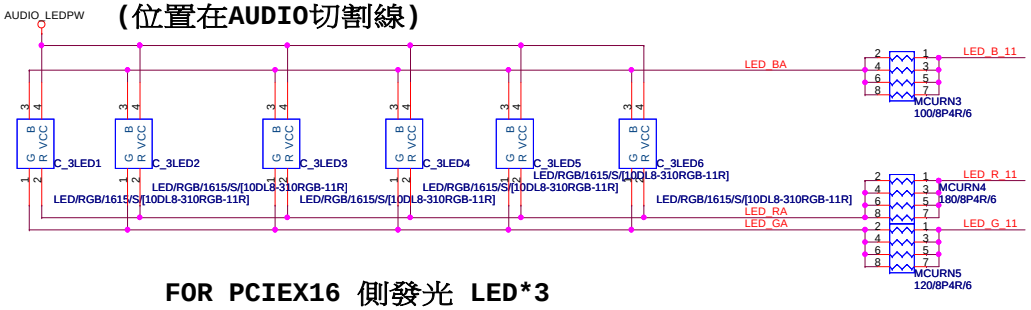
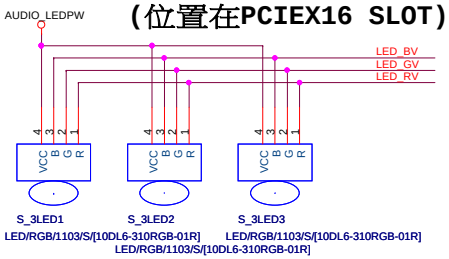
第一區 LED

Rev 0.63

FOR AUDIO 正發光 LED*13
(位置在AUDIO切割線)



FOR PCIEX16 側發光 LED*3
(位置在PCIEX16 SLOT)

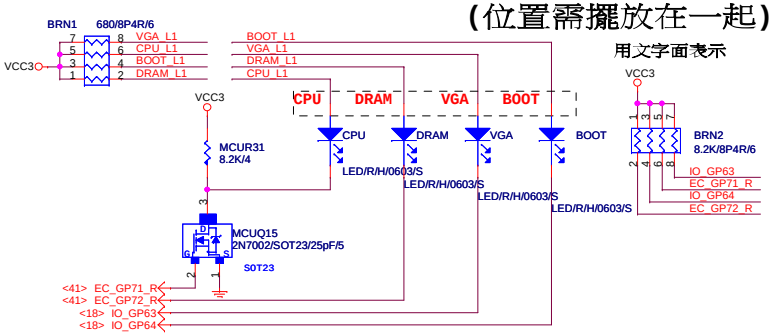


LED GPIO PIN DEFINE

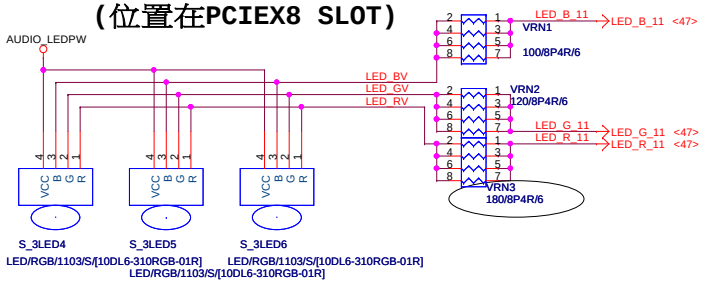
EC_GP71_R	CPU DEBUG
EC_GP72_R	DDR DEBUG
IO_GP63	VGA DEBUG
IO_GP64	BOOT DEBUG
PM_GPIO5	LED_C LED SWITCH
PM_GPIO6	PCIEX16 LED SWITCH
PM_GPIO7	PCIEX8 LED SWITCH

DEBUG PORT LED *4
(位置需擺放在一起)

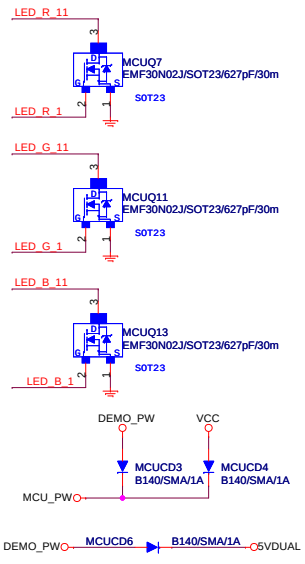
用文字面表示



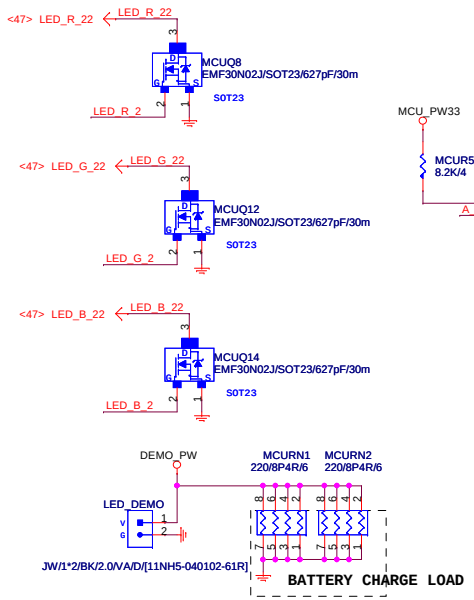
FOR PCIEX8 側發光 LED*3
(位置在PCIEX8 SLOT)

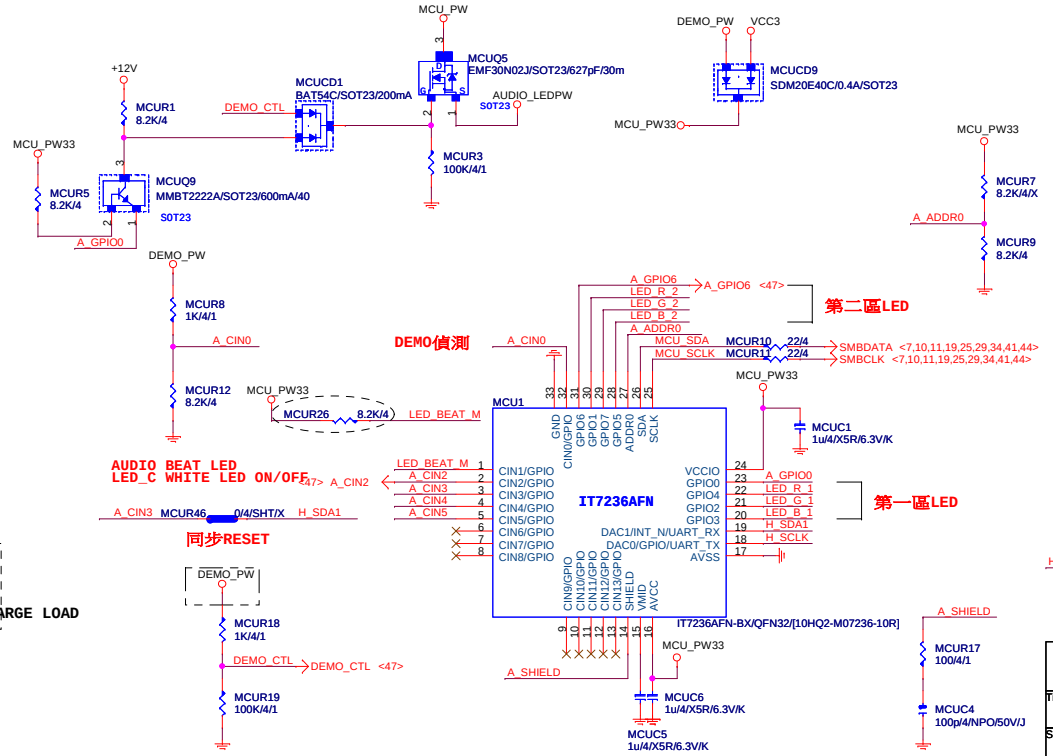


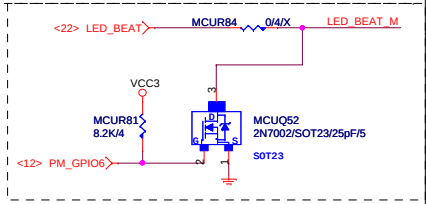
第一區 LED CONTROL

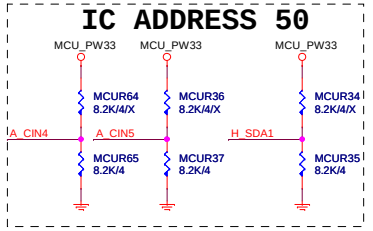


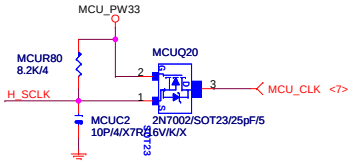
第二區 LED CONTROL











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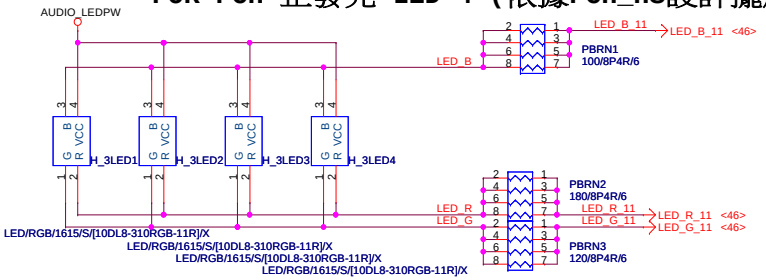
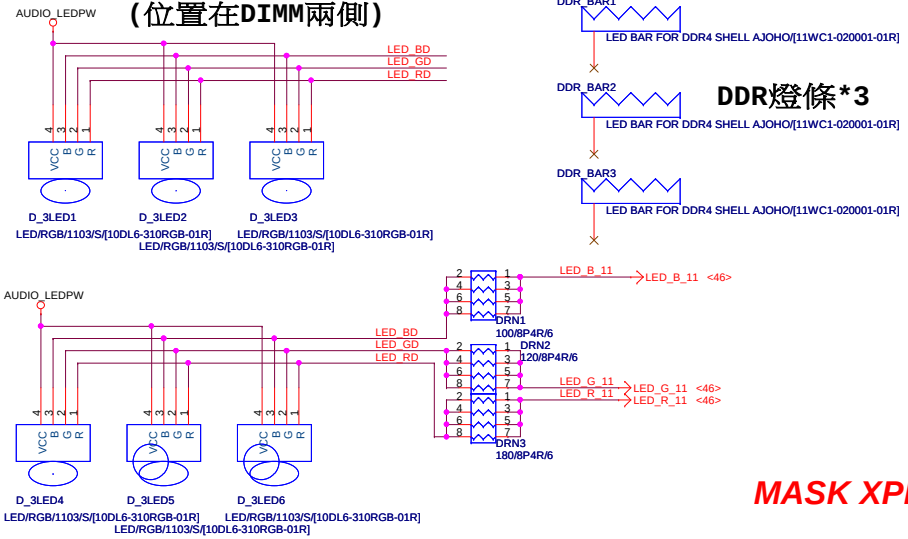
第二區 LED

Rev 0.63

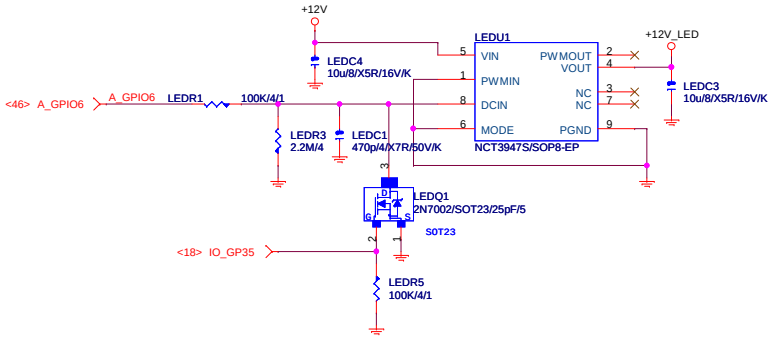
FOR PCH 正發光 LED*4 (依據PCH_HS設計擺放)



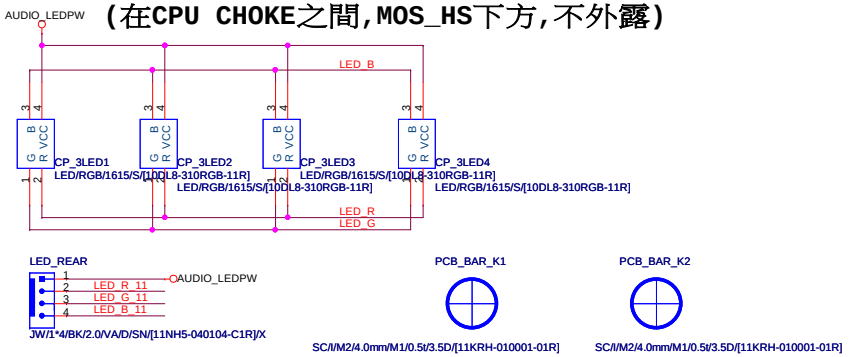
FOR DIMM 側發光 LED*6 (位置在DIMM兩側)



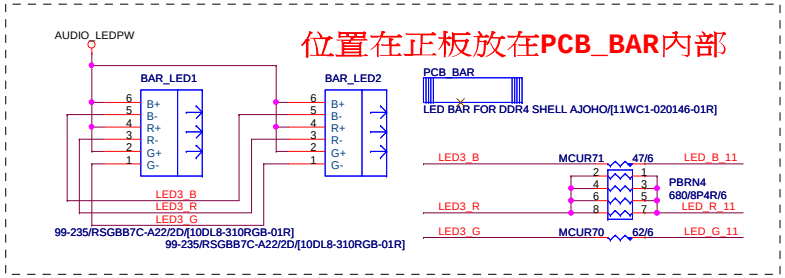
FOR 燈條 LED (LED_C放在PCB左邊板邊位置)



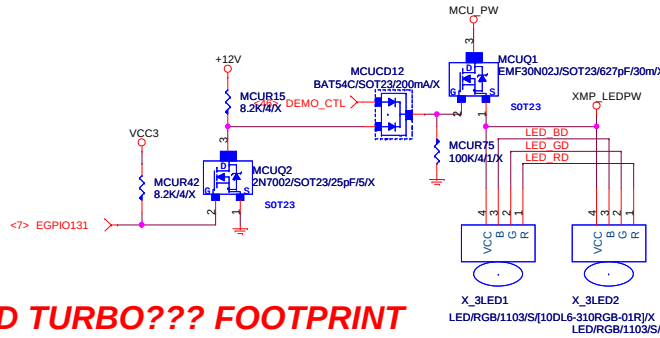
FOR CPU 正發光 LED*5 (在CPU CHOKE之間,MOS_HS下方,不外露)

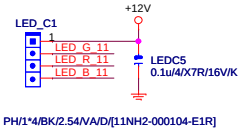


位置在正板放在PCB_BAR內部



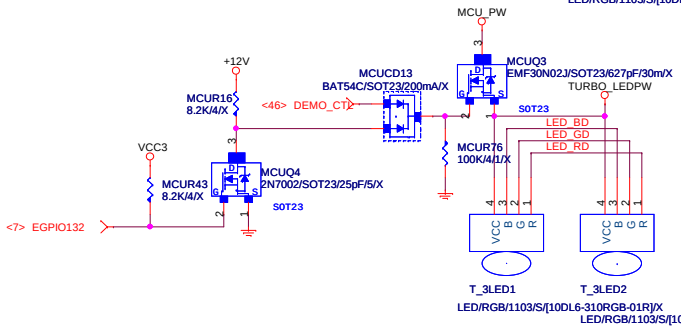
FOR XMP 側發光 LED*2 (靠近DIMM附近放背板鏤空)

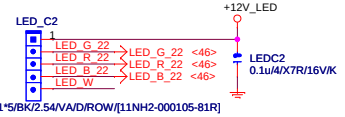


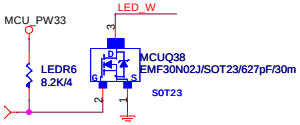


MASK XPM AND TURBO??? FOOTPRINT

FOR TURBO 側發光 LED*2 (靠近DIMM附近背板鏤空)







GIGABYTE™

Title	PCB / PCH / DDR / LED_C LED	
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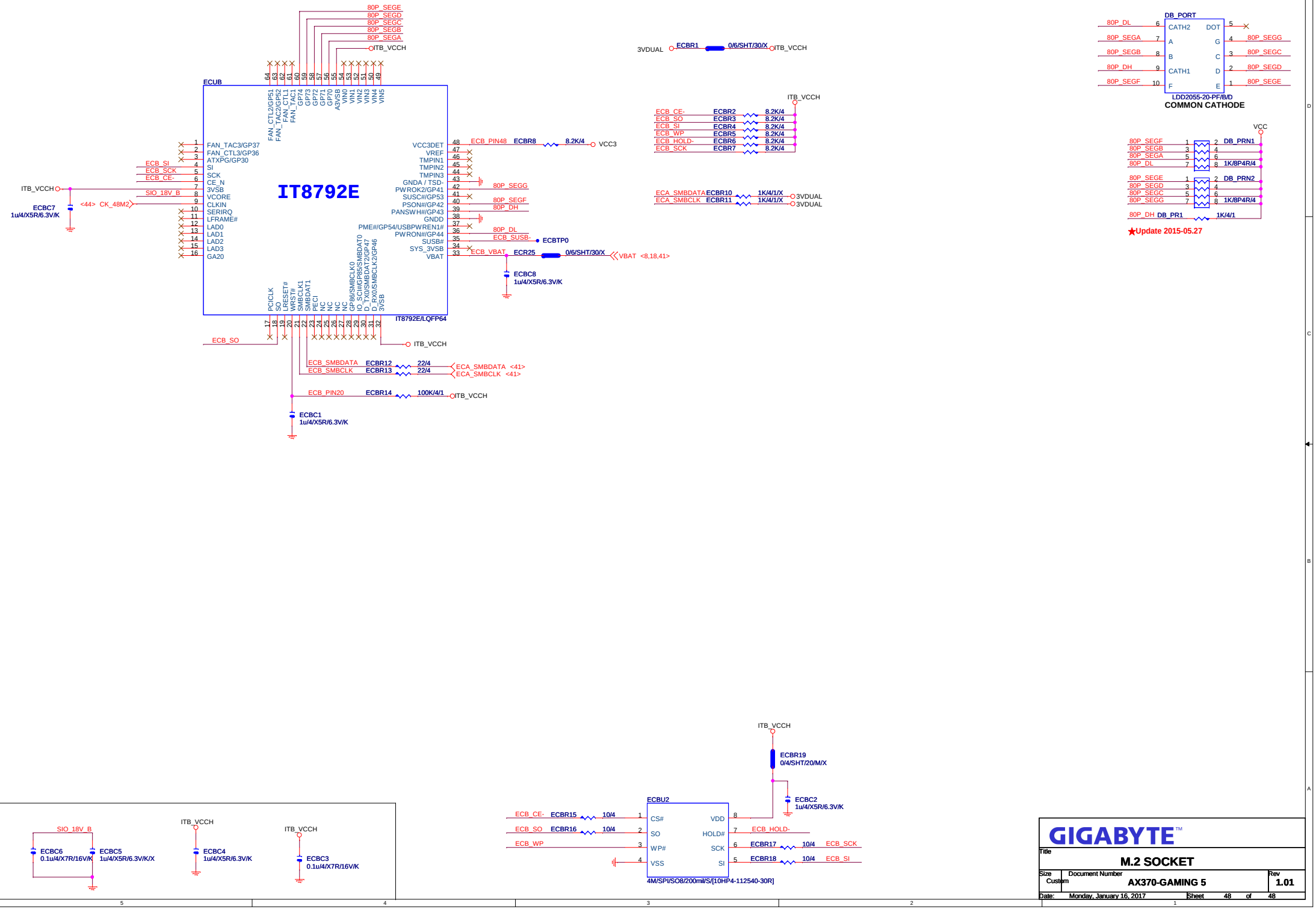

Title	M.2 SOCKET	
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