X570 UD

Revision : 1.0

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2015.12.30--B.L

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Model Name:X570 UD

Component value change history

Version: 1.0

P-Code: U98126-0

Date	Change Item	Reason
2019/05/31	first release	
	9MX57UD-00-01 BOM	
2019/07/09	9MX57UD-00-10A BOM	
	1.QFR8->X,QFR17上件 2.PM_HS->12SF2-S11013-21R /22R	
	, RMOS->12SP2-S08823-21R / 22R , TMOS->12SP2-S11233-21R / 22R	
	3.MCU1->X 4.M_BIOS Scoket->X 5.WIFI 不上件	
	6.DU1->10TA1-669147-04R,DAJP->X 7.110A->10KS2-040131-02R	

Circuit or PCB layout change for next version

Date	Change Item	Reason
2019/05/28 PCB:0.1	1.PCB first release	
	2.線路由X570 Gaming X Rev1.0修改	
2019/07/05 PCB:1.0	1.文字面Rev0.1 -> 1.0	
	2.Add DC15 , AC9 3.Del IO_1,IO_2	

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Title	BOM & PCB HISTORY	
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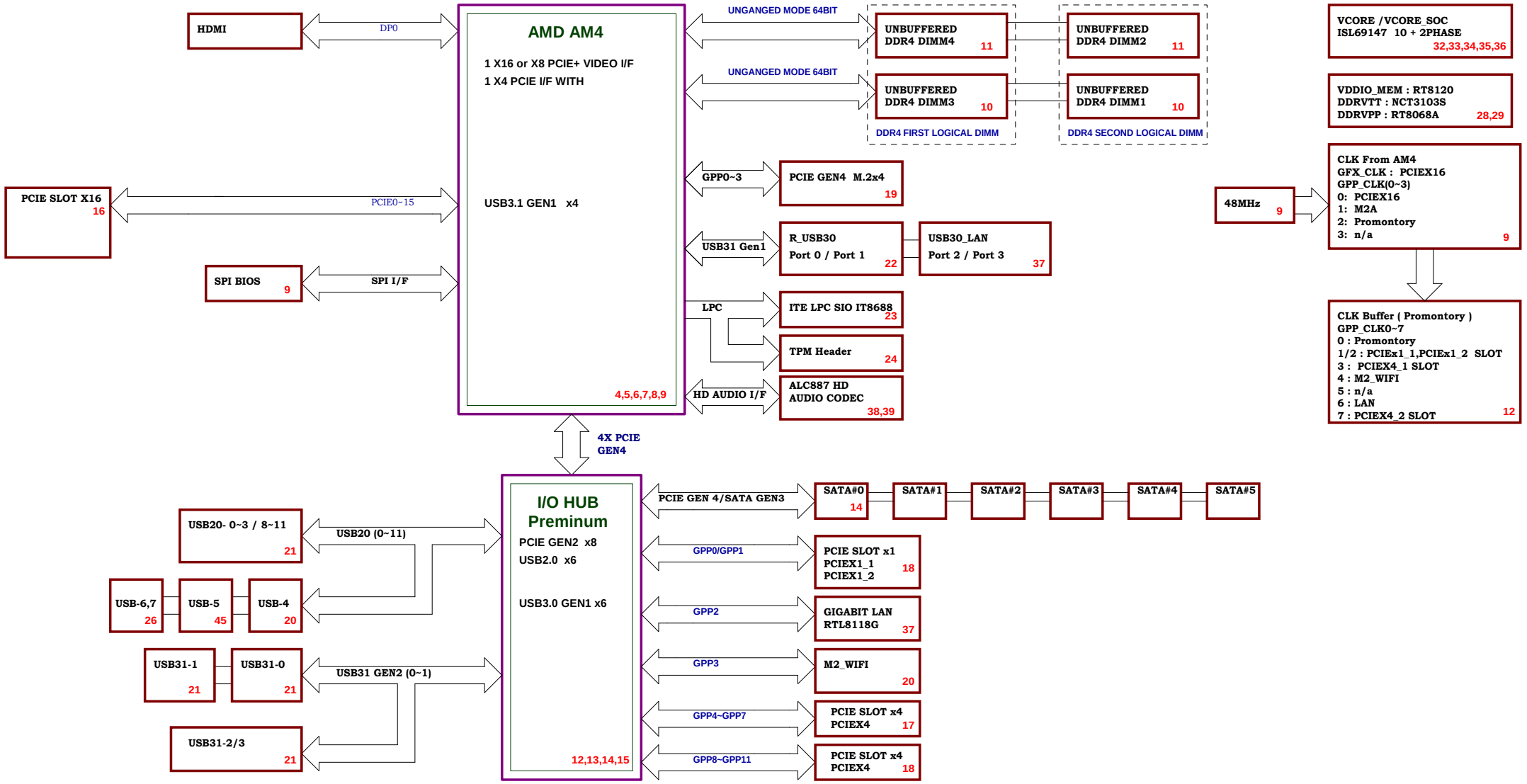

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Title	BLOCK DIAGRAM	
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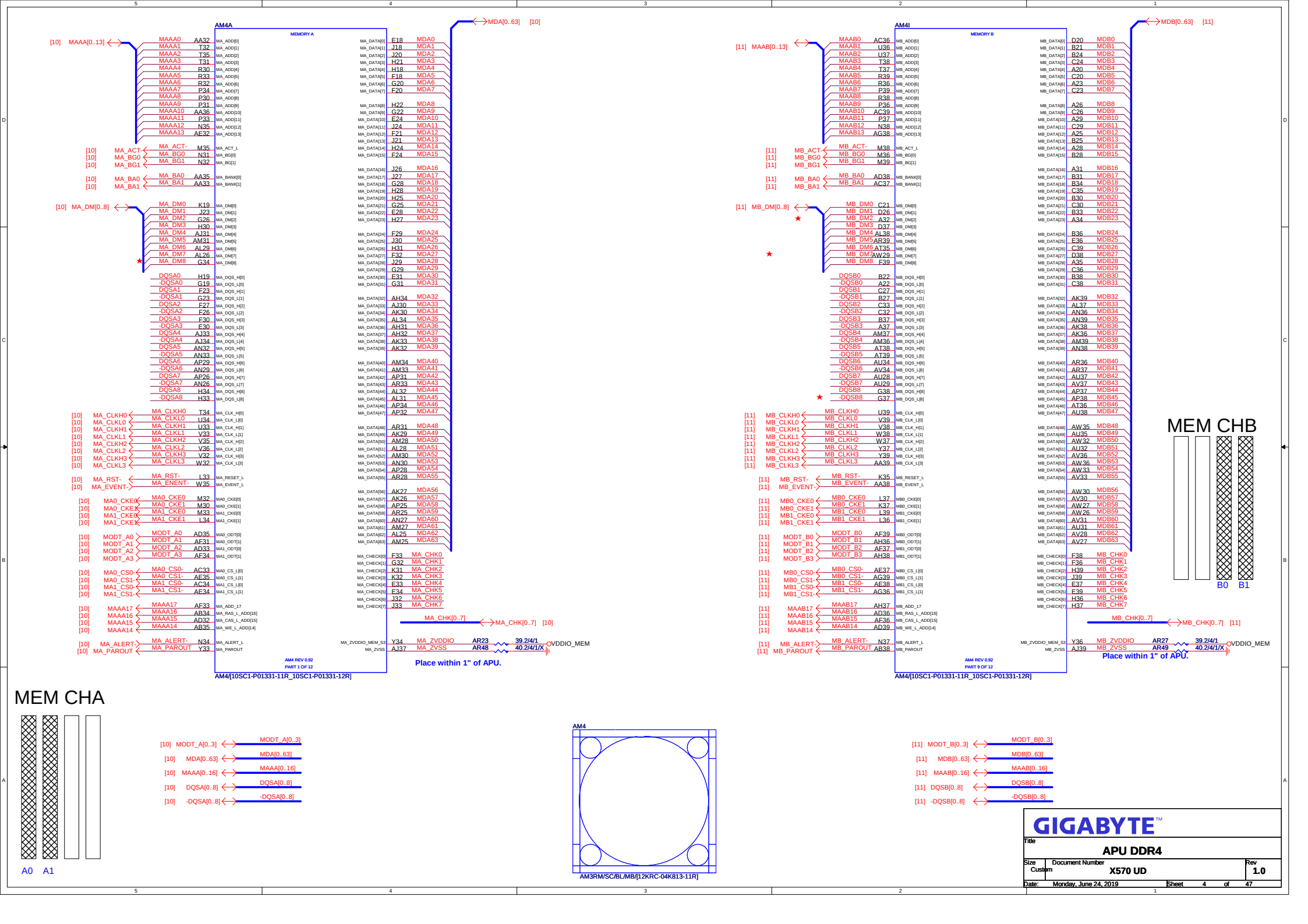
AM4A
MEMORY A
AM4 REV 0.92
PART 1 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
MDA[0..63] [10]
MA_CHK[0..7] MA_CHK[0..7] [10]
Place within 1" of APU.
AM4I
MEMORY B
AM4 REV 0.92
PART 9 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
MDB[0..63] [11]
MB_CHK[0..7] MB_CHK[0..7] [11]
Place within 1" of APU.
MEM CHB
B0 B1
MEM CHA
A0 A1
AM4
AM3RM/SC/BL/MB/[12KRC-04K813-11R]
MODT_A[0..3]
MDA[0..63]
MAAA[0..16]
DQSA[0..8]
-DQSA[0..8]
MODT_B[0..3]
MDB[0..63]
MAAB[0..16]
DQSB[0..8]
-DQSB[0..8]
GIGABYTE
Title
APU DDR4
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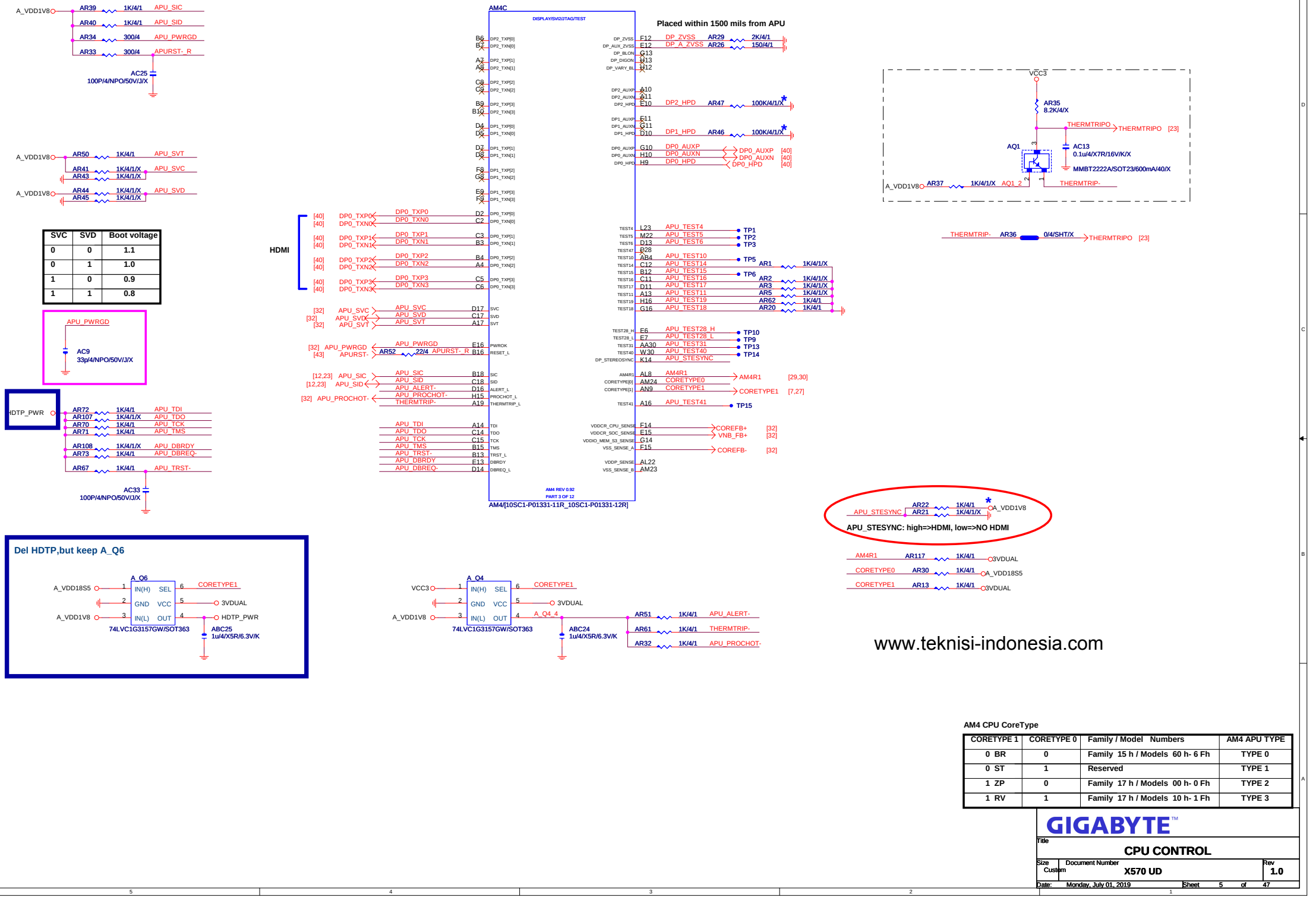

SVC	SVD	Boot voltage
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

www.teknisi-indonesia.com

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	
Size: Custom	Document Number: X570 UD	Rev: 1.0
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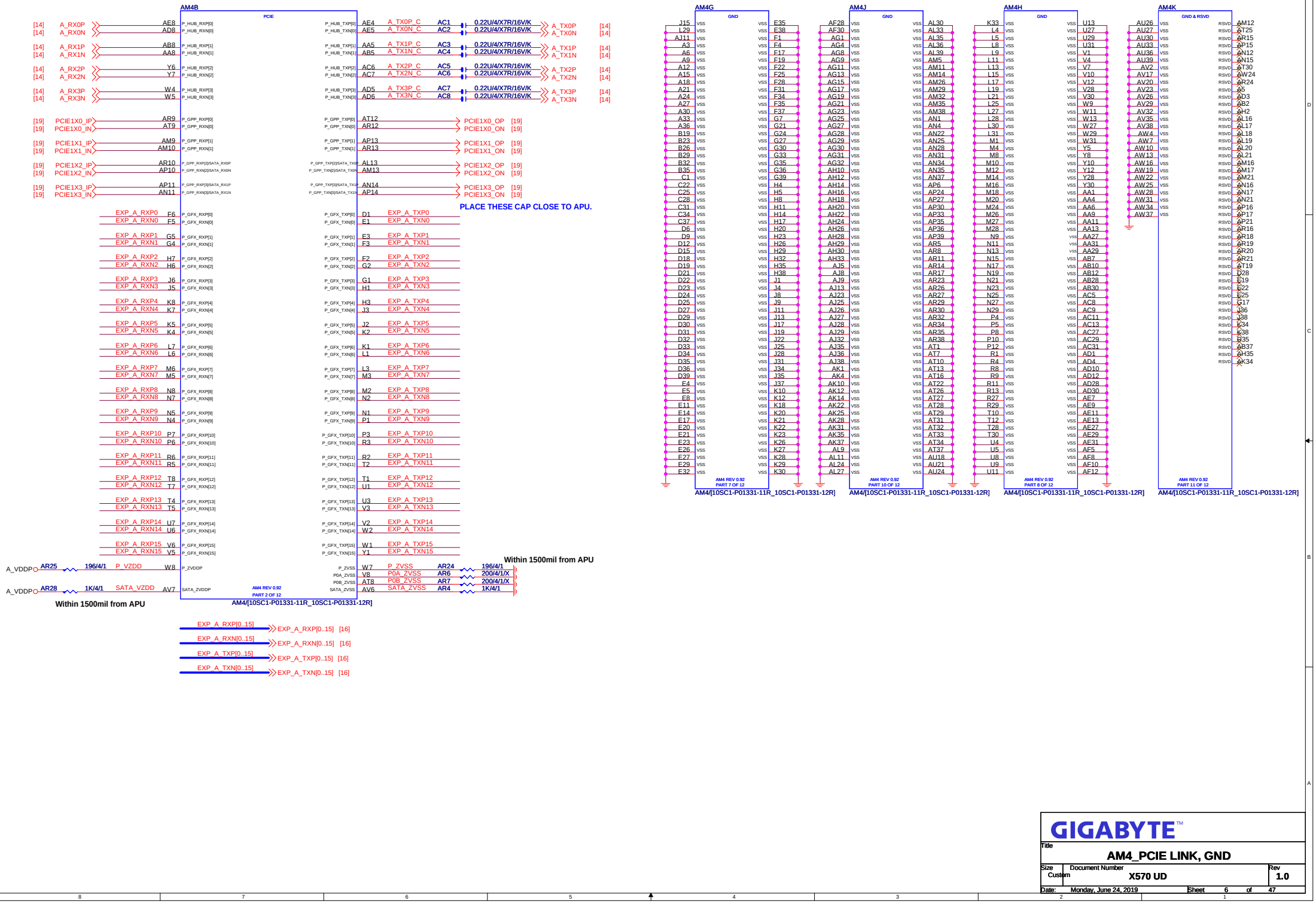

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Title	AM4_PCIE LINK, GND	
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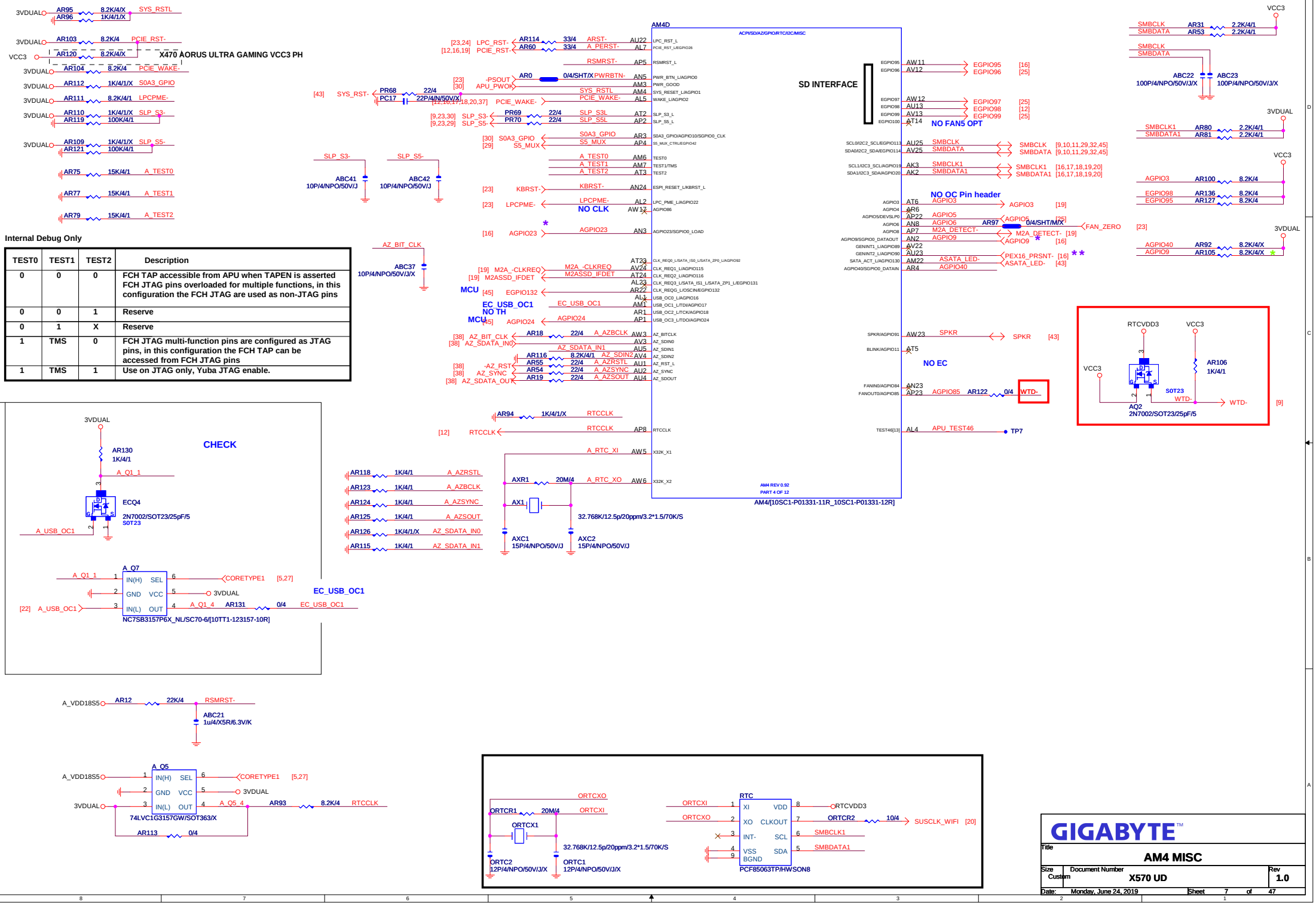
X470 AORUS ULTRA GAMING VCC3 PH
AM4D
ACPI/SD/AZ/GPIO/RTC/I2C/MISC
SD INTERFACE
NO FAN5 OPT
NO OC Pin header
NO CLK
NO EC
NO TH
MCU
EC_USB_OC1
CHECK
AM4 REV 0.92
PART 4 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]
Internal Debug Only
TEST0 TEST1 TEST2 Description
0 0 0 FCH TAP accessible from APU when 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.
ECQ4
2N7002/SOT23/25pF/5
SOT23
AQ2
NC7SB3157P6X_NL/SC70-6/[10TT1-123157-10R]
74LVC1G3157GW/SOT363/X
PCF85063TP/HWSON8
32.768K/12.5p/20ppm/3.2*1.5/70K/S
GIGABYTE
Title
AM4 MISC
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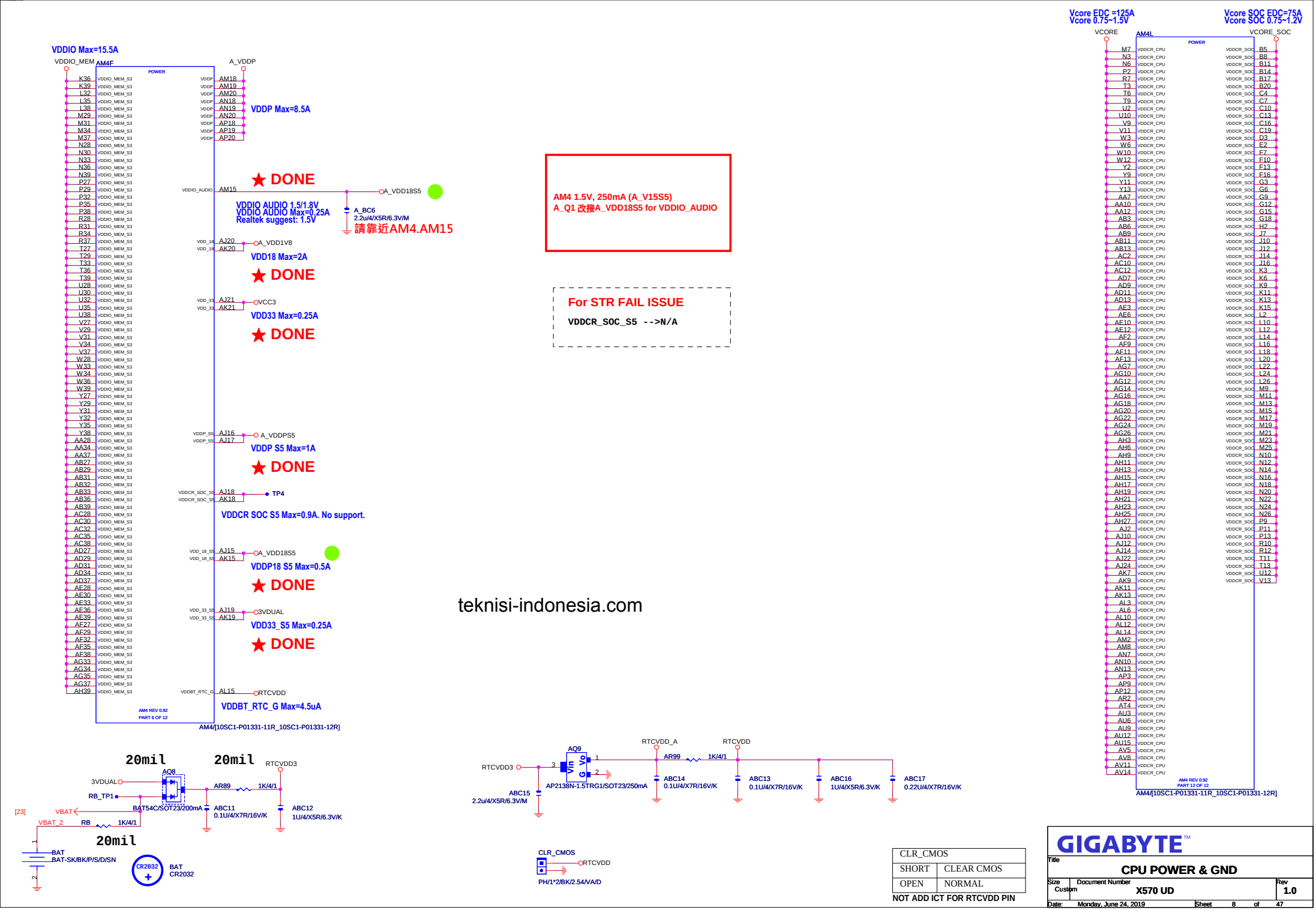
VDDIO Max=15.5A
VDDIO_MEM
AM4F
POWER
A_VDDP
VDDP Max=8.5A
★ DONE
VDDIO_AUDIO
AM15
A_VDD18S5
VDDIO AUDIO 1.5/1.8V
VDDIO AUDIO Max=0.25A
Realtek suggest: 1.5V
A_BC6
2.2u/4/X5R/6.3V/M
請靠近AM4.AM15
AM4 1.5V, 250mA (A_V15S5)
A_Q1 改接A_VDD18S5 for VDDIO_AUDIO
For STR FAIL ISSUE
VDDCR_SOC_S5 -->N/A
VDD18 Max=2A
★ DONE
A_VDD1V8
VCC3
VDD33 Max=0.25A
★ DONE
A_VDDPS5
VDDP S5 Max=1A
★ DONE
TP4
VDDCR SOC S5 Max=0.9A. No support.
A_VDD18S5
VDDP18 S5 Max=0.5A
★ DONE
3VDUAL
VDD33_S5 Max=0.25A
★ DONE
RTCVDD
VDDBT_RTC_G Max=4.5uA
AM4 REV 0.92
PART 6 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]
Vcore EDC =125A
Vcore 0.75~1.5V
Vcore SOC EDC=75A
Vcore SOC 0.75~1.2V
VCORE
AM4L
VCORE_SOC
AM4 REV 0.92
PART 12 OF 12
AM4[10SC1-P01331-11R_10SC1-P01331-12R]
teknisi-indonesia.com
20mil
20mil
AQ8
3VDUAL
RB_TP1
VBAT
[23]
VBAT_2
RB
1K/4/1
BAT54C/SOT23/200mA
AR89
1K/4/1
ABC11
0.1U/4/X7R/16V/K
ABC12
1U/4/X5R/6.3V/K
20mil
BAT
BAT-SK/BK/P/S/D/SN
CR2032
BAT
CR2032
AQ9
RTCVDD3
AP2138N-1.5TRG1/SOT23/250mA
RTCVDD_A
AR99
1K/4/1
RTCVDD
ABC15
2.2u/4/X5R/6.3V/M
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
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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_10XT5-V48000-00R]

pull up and pull down to the clock from CPU to X570 clock FOR INTERNAL CLOCK GEN project.

A_VDDP
AR134 10K/4/1
PM_CLKN
PM_CLKP
AR135 10K/4/1

★1.8V SPI ROM USE

A_VDD1V8
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

A_VDD1V8
NR237 330/4/1
A_SPI_CS-

Single (128Mx1)
Layout colay 256Mx1

*PVT時,M_BIOS顆粒,放在SMD階

M_BIOS
A_SPI_CS- 1 CS#
A_SPI_DI 2 SO
A_SPI_WP- 3 WP#
4 VSS
VDD 8 AC18 0.1u/4/X7R/16V/K
HOLD# 7 A_SPI_HD-
SCK 6 A_SPI_CLK
SI 5 A_SPI_DO
128M/SPI/SO8/200mil/S

FOOTPRINT:IC8WSON-BIOS-COLAY'

M_BIOS
SMD SPI SOCKET 8P 200MIL LOTES/[10SL2-00000B-31R]/X

AM4E
CLK/USB/SPI/LPC

VCC3 AR82 8.2K/4/1/X LPC_CK0
AR83 2K/4/1
VCC3 AR84 8.2K/4/1/X LPC_CK1
AR85 1K/4/1
VCC3 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
None CLK Buffer : A_SPI_CLK pull-high

GPP0 input provides a clock input that replaces the internally generated 100Mhz based clock used as the reference for the internal data fabric, PCIe, and SATA controllers and associated logic. GPP0 input should not include spread spectrum modulation.

X16 Slot
[16] A_GFX_CLKP AF6 GFX_CLKP
[16] A_GFX_CLKN AF7 GFX_CLKN
AG5 GPP_CLK0P
AG6 GPP_CLK0N
M.2 Socket
[19] M2A_CLKP AH4 GPP_CLK1P
[19] M2A_CLKN AH5 GPP_CLK1N
Promontory
[12] PM_CLKP AH7 GPP_CLK2P
[12] PM_CLKN AH8 GPP_CLK2N
AJ6 GPP_CLK3P
AJ7 GPP_CLK3N

GPP1 input provides a clock input that replaces the internally generated 100MHz base clock used as the reference for the CCLK PLL and divisor logic. GPP1 input should include spread spectrum modulation

A48M_X1 AJ1 X48M_X1
A48M_X2 AH1 X48M_X2

Del LPC_CLK0
[24] DB_CLK AR91 10/4 LPC_CK0 AU20 LPCCLK0/EGPIO74
[23] LPC_CLK1 AR69 22/4 LPC_CK1 AU19 LPCCLK1/EGPIO75

[23,24] LAD0 AW20 LAD0/EGPIO104
[23,24] LAD1 AV21 LAD1/EGPIO105
[23,24] LAD2 AT21 LAD2/EGPIO106
[23,24] LAD3 AT20 LAD3/EGPIO107
[23,24] LFRAME- AW18 LFRAME_L/EGPIO109
[23] LDRQ0- AT15 ESPI_ALERT_L/LDRQ0_L/EGPIO108
[23,24] SERIRQ AW21 SERIRQ/AGPIO87
[43] AGPIO88 AV19 LPC_CLKRUN_L/AGPIO88
TP8 AT18 LPC_PD_L/AGPIO21
AGPIO21 FOR EXTREAM USE
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
AW15 SPI_CS2_L/ESPI_CS_L/EGPIO119
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
[19] M2_DEVSLP M2_DEVSLP AU17 SPI_TPM_CS_L/AGPIO76

AM4 REV 0.92
PART 5 OF 12
AM4/[10SC1-P01331-11R_10SC1-P01331-12R]

48M_OSC AR7
USB_ZVSS AT11 USB_ZVSS AR9 11.8K/4/1
USB_HSD0P AU7 A_HSDP0
USB_HSD0N AU8 A_HSDN0 R_USB30 (Q_FASH)
USB_HSD1P AW8 A_HSDP1 A_HSDP1 [22]
USB_HSD1N AW9 A_HSDN1 A_HSDN1 [22] R_USB30
USB_HSD2P AU10 A_HSDP2 A_HSDP2 [37]
USB_HSD2N AU11 A_HSDN2 A_HSDN2 [37] USB30_LAN
USB_HSD3P AV9 A_HSDP3 A_HSDP3 [37]
USB_HSD3N AV10 A_HSDN3 A_HSDN3 [37] USB30_LAN
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

USB_SS_ZVSS AJ4 A_SS_ZVSS AR16 1K/4/1
USB_SS_ZVDDP AK8 A_SS_ZVDD AR17 1K/4/1 A_VDDPS5
USB_SS_0TXP AF3 A_SS_TX0P A_SS_TX0P [22]
USB_SS_0TXN AF4 A_SS_TX0N A_SS_TX0N [22]
USB_SS_0RXP Y3 A_SS_RX0P A_SS_RX0P [22]
USB_SS_0RXN Y4 A_SS_RX0N A_SS_RX0N [22]
USB_SS_1TXP AB1 A_SS_TX1P A_SS_TX1P [22] R_USB30
USB_SS_1TXN AC1 A_SS_TX1N A_SS_TX1N [22]
USB_SS_1RXP AA2 A_SS_RX1P A_SS_RX1P [22]
USB_SS_1RXN AA3 A_SS_RX1N A_SS_RX1N [22]
USB_SS_2TXP AC3 A_SS_TX2P A_SS_TX2P [37]
USB_SS_2TXN AC4 A_SS_TX2N A_SS_TX2N [37]
USB_SS_2RXP AD2 A_SS_RX2P A_SS_RX2P [37]
USB_SS_2RXN AE2 A_SS_RX2N A_SS_RX2N [37] USB30_LAN
USB_SS_3TXP AG2 A_SS_TX3P A_SS_TX3P [37]
USB_SS_3TXN AG3 A_SS_TX3N A_SS_TX3N [37]
USB_SS_3RXP AE1 A_SS_RX3P A_SS_RX3P [37]
USB_SS_3RXN AE1 A_SS_RX3N A_SS_RX3N [37]

c.Add QFR17,BOM Remove QFR8
FW還是只有一個
之後會用pin 4 FUN_EN區別,
FUN_EN High : Single BIOS Models (Enable Watchdog)
FUN_EN Low : DUAL BIOS Models (Disable Watchdog)

[22] Q_FLASHN
[22] Q_FLASHP
QFC4 0.1U/4/X7R/16V/K QFU1_28
QFU1_25
QFR16 0/4
QFR9 1K/4/1/X WTD- [7]
-ATX_PSON [23,43]

Pin	Hi	Low
24	Intel	AMD
25	24MHZ	48MHZ

VCC3 QFR17 1K/4/1 QF_EN

Fix 75504 power too low.

5VDUAL QFR1 0/4
QFC1 0.1U/4/X7R/16V/K
QFC2 10u/6/X5R/6.3V/M
A_HSDP0
A_HSDN0
QFR8 1K/4/1/X QF_EN
QFR15 0/4
[7] WTD-
[30] Q_FLASH QFR2 33/4 POK_CTRL

QFU1
VDD5V
TDP
TDM
FUN_EN
NC
GND
POK_CTRL#
VCC_DET
ACT_LED
START_UP#
SDA
SCL
S3#
S4#
FINTEK7550/S[10HP2-NT7550-10R]

21 VCC_DET QFR7 1K/4/1 VCC3
20 ACT_LED ACT_LED [22]
19 START_UP
18 SMBDATA SMBDATA [7,10,11,29,32,45]
17 SMBCLK SMBCLK [7,10,11,29,32,45]
16 QFR10 0/4 SLP_S3- [7,23,30]
15 QFR11 0/4 SLP_S5- [7,23,29]

接至Location:SQD4 (主要當CPU有上時,需將PU_PWOK 拉low)

3VDUAL
QFC6 0.1u/4/X7R/16V/K
QFC7 1n/4/X7R/50V/K
Near QFX1 3VDUAL for EMI

[23,43] -PWRBTSW QFR14 0/4 Q_PSOUT-
A_VDD1V8
QFC5 0.1u/4/X7R/16V/K

Fix 75504 clock amp too low
QFR3 0/4 3VDUAL
QFX1
48MHZ
A_SPI_DI pull up
A_SPI_DO
A_SPI_CLK
A_SPI_CS-
OSCILLATOR
48M/3.3V/15p/25ppm/3.2*2.5/S/[100C7-N34800-00R_10OC7-P34800-00R]

Fix Q_FLASH fail with CPU.
3VDUAL QFR13 1K/4/1/X
VCC3 QFR12 1K/4/1 POK_CTRL

5VDUAL QFR5 8.2K/4/1 START_UP START_UP [22]

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Rev:0.5

PCB:4

DDR4_A1

DDR4_A2

* net 改 VDDQ

DDR12V Decouple

* 電容移到 [RT8120_DDR]

DDRVTT Decouple

CHANNEL A0
SA2:0=000

CHANNEL A1
SA2:2=010

DDR4-288P-STH-36C24P

DDR4-288P-34C22P-3

BLK
黑色雙耳扣

Footprint : DDR4-288P-34C22P-3

DDR4288BBK/VA/D/GF/TWO LATCH/C/02S

GIGABYTE

Title: DDR4 CHANNEL A

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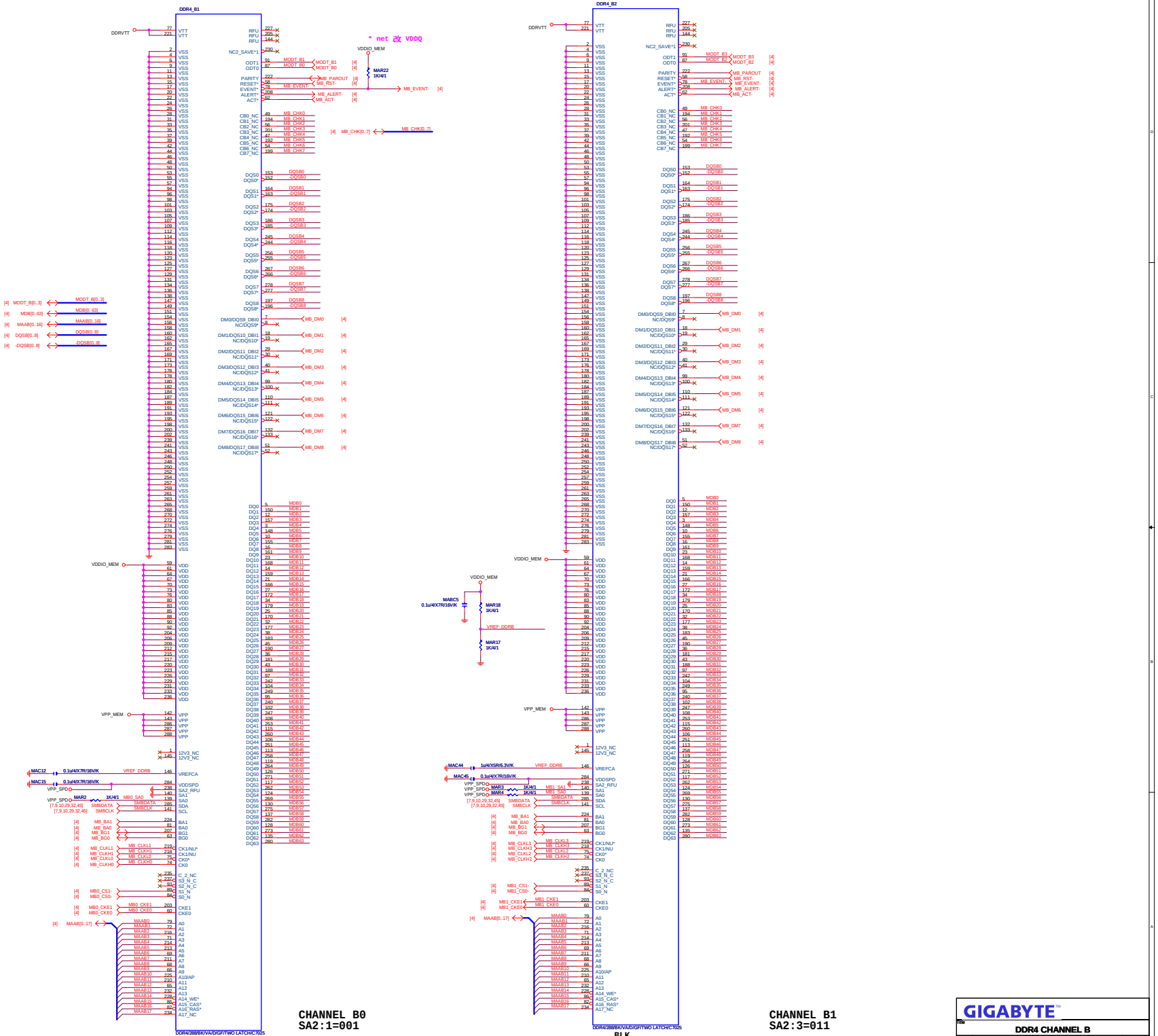

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Title	DDR4 CHANNEL B		
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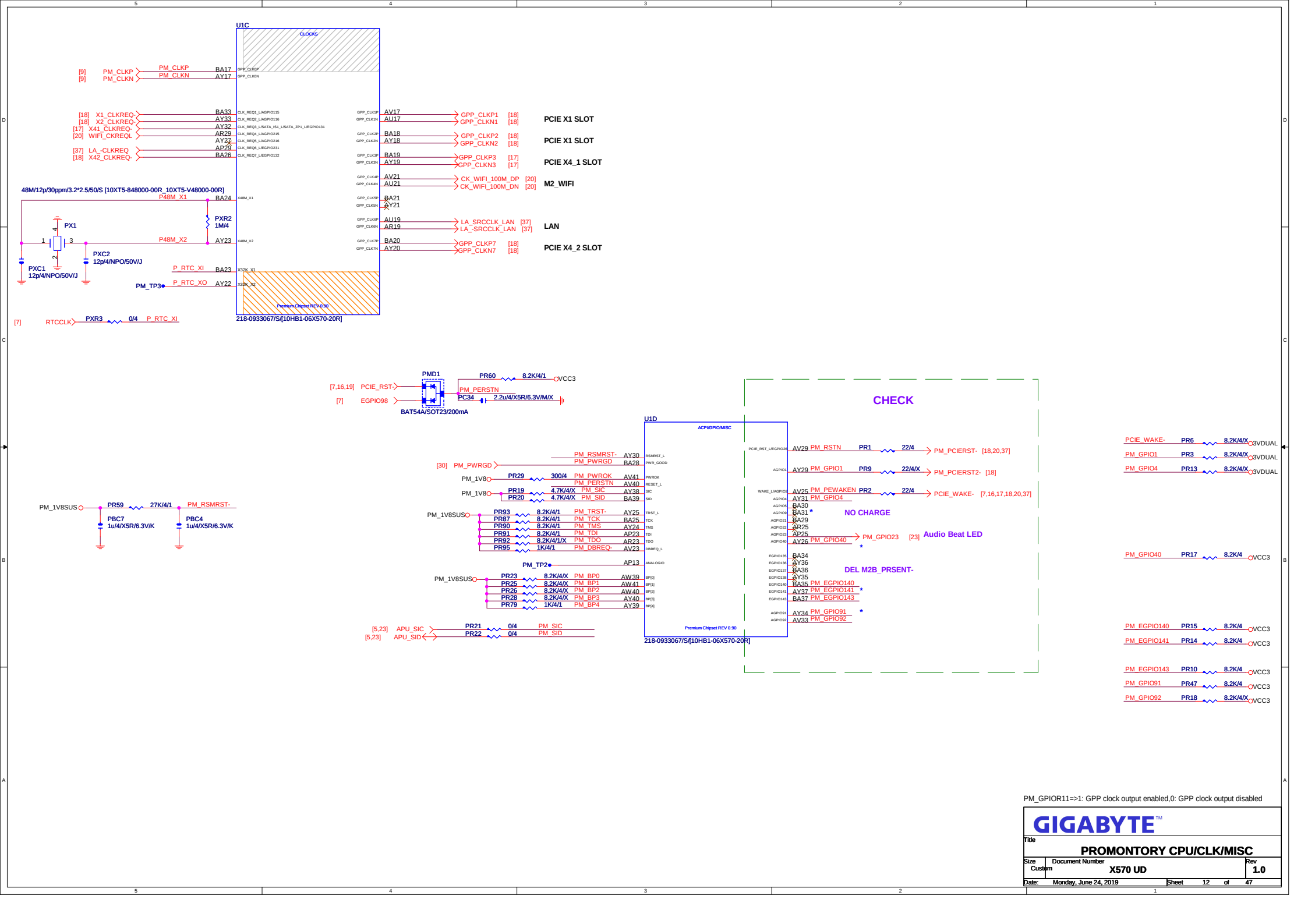
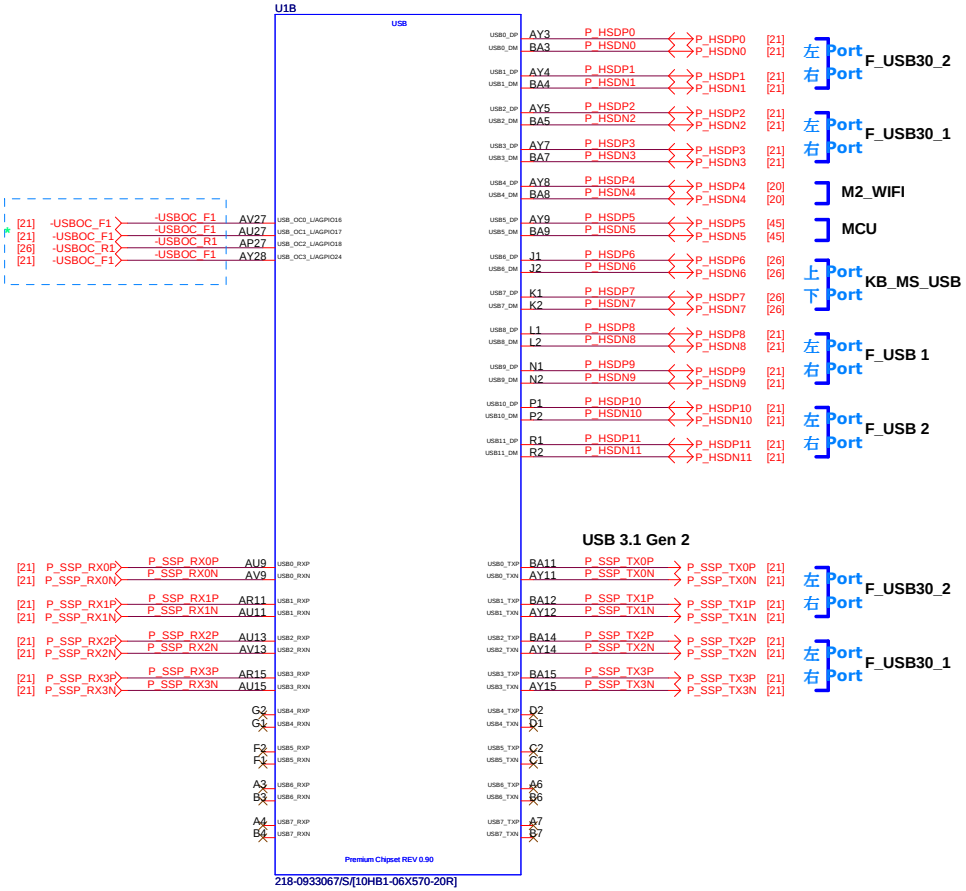

U1C
CLOCKS
[9] PM_CLKP
[9] PM_CLKN
PM_CLKP BA17 GPP_CLK0P
PM_CLKN AY17 GPP_CLK0N
[18] X1_CLKREQ-
[18] X2_CLKREQ-
[17] X41_CLKREQ-
[20] WIFI_CKREQL
[37] LA_-CLKREQ
[18] X42_CLKREQ-
BA33 CLK_REQ1_LIAGPIO115
AY33 CLK_REQ2_LIAGPIO116
AY32 CLK_REQ3_LISATA_IS1_LISATA_ZP1_LIEGPIO131
AR29 CLK_REQ4_LIAGPIO215
AY27 CLK_REQ5_LIAGPIO216
AP29 CLK_REQ6_LIEGPIO231
BA26 CLK_REQ7_LIEGPIO132
GPP_CLK1P AV17 GPP_CLKP1 [18]
GPP_CLK1N AU17 GPP_CLKN1 [18]
PCIE X1 SLOT
GPP_CLK2P BA18 GPP_CLKP2 [18]
GPP_CLK2N AY18 GPP_CLKN2 [18]
PCIE X1 SLOT
GPP_CLK3P BA19 GPP_CLKP3 [17]
GPP_CLK3N AY19 GPP_CLKN3 [17]
PCIE X4_1 SLOT
GPP_CLK4P AV21 CK_WIFI_100M_DP [20]
GPP_CLK4N AU21 CK_WIFI_100M_DN [20]
M2_WIFI
GPP_CLK5P BA21
GPP_CLK5N AY21
GPP_CLK6P AU19 LA_SRCCLK_LAN [37]
GPP_CLK6N AR19 LA_-SRCCLK_LAN [37]
LAN
GPP_CLK7P BA20 GPP_CLKP7 [18]
GPP_CLK7N AY20 GPP_CLKN7 [18]
PCIE X4_2 SLOT
48M/12p/30ppm/3.2*2.5/50/S [10XT5-848000-00R_10XT5-V48000-00R]
P48M_X1 BA24 X48M_X1
PX1
PXR2 1M/4
P48M_X2 AY23 X48M_X2
PXC2 12p/4/NPO/50V/J
PXC1 12p/4/NPO/50V/J
P_RTC_XI BA23 X32K_X1
PM_TP3
P_RTC_XO AY22 X32K_X2
Premium Chipset REV 0.90
[7] RTCCLK
PXR3 0/4 P_RTC_XI
218-0933067/S/[10HB1-06X570-20R]
PMD1
[7,16,19] PCIE_RST
[7] EGPIO98
PR60 8.2K/4/1 VCC3
PM_PERSTN
PC34 2.2u/4/X5R/6.3V/M/X
BAT54A/SOT23/200mA
U1D
ACPI/GPIO/MISC
PM_RSMRST- AY30 RSMRST_L
PM_PWRGD BA28 PWR_GOOD
[30] PM_PWRGD
PM_1V8 PR29 300/4 PM_PWROK AV41 PWROK
PM_PERSTN AV40 RESET_L
PM_1V8 PR19 4.7K/4/X PM_SIC AY38 SIC
PR20 4.7K/4/X PM_SID BA39 SID
PM_1V8SUS PR93 8.2K/4/1 PM_TRST- AY25 TRST_L
PR87 8.2K/4/1 PM_TCK BA25 TCK
PR90 8.2K/4/1 PM_TMS AY24 TMS
PR91 8.2K/4/1 PM_TDI AP23 TDI
PR92 8.2K/4/1/X PM_TDO AR23 TDO
PR95 1K/4/1 PM_DBREQ- AV23 DBREQ_L
PM_TP2 AP13 ANALOG/O
PM_1V8SUS PR23 8.2K/4/X PM_BP0 AW39 BP[0]
PR25 8.2K/4/X PM_BP1 AW41 BP[1]
PR26 8.2K/4/X PM_BP2 AW40 BP[2]
PR28 8.2K/4/X PM_BP3 AY40 BP[3]
PR79 1K/4/1 PM_BP4 AY39 BP[4]
[5,23] APU_SIC
[5,23] APU_SID
PR21 0/4 PM_SIC
PR22 0/4 PM_SID
Premium Chipset REV 0.90
218-0933067/S/[10HB1-06X570-20R]
CHECK
PCIE_RST_LIEGPIO29 AV29 PM_RSTN PR1 22/4 PM_PCIERST- [18,20,37]
AGPIO1 AY29 PM_GPIO1 PR9 22/4/X PM_PCIERST2- [18]
WAKE_LIAGPIO2 AV25 PM_PEWAKEN PR2 22/4 PCIE_WAKE- [7,16,17,18,20,37]
AGPIO4 AY31 PM_GPIO4
AGPIO5 BA30
AGPIO6 BA31 *
NO CHARGE
AGPIO21 AY29
AGPIO22 AR25
AGPIO23 AP25 PM_GPIO23 [23] Audio Beat LED
AGPIO40 AY26 PM_GPIO40 *
EGPIO135 BA34
EGPIO136 AY36
EGPIO137 BA36
EGPIO138 AY35
DEL M2B_PRSENT-
EGPIO140 BA35 PM_EGPIO140
EGPIO141 AY37 PM_EGPIO141 *
EGPIO143 BA37 PM_EGPIO143
AGPIO91 AY34 PM_GPIO91 *
AGPIO92 AY33 PM_GPIO92
PM_1V8SUS PR59 27K/4/1 PM_RSMRST-
PBC7 1u/4/X5R/6.3V/K
PBC4 1u/4/X5R/6.3V/K
PCIE_WAKE- PR6 8.2K/4/X 3VDUAL
PM_GPIO1 PR3 8.2K/4/X 3VDUAL
PM_GPIO4 PR13 8.2K/4/X 3VDUAL
PM_GPIO40 PR17 8.2K/4 VCC3
PM_EGPIO140 PR15 8.2K/4 VCC3
PM_EGPIO141 PR14 8.2K/4 VCC3
PM_EGPIO143 PR10 8.2K/4 VCC3
PM_GPIO91 PR47 8.2K/4 VCC3
PM_GPIO92 PR18 8.2K/4/X VCC3
PM_GPIOR11=>1: GPP clock output enabled,0: GPP clock output disabled
GIGABYTE
Title
PROMONTORY CPU/CLK/MISC
Size Custom
Document Number X570 UD
Rev 1.0
Date: Monday, June 24, 2019
Sheet 12 of 47



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USB Controller 0: USB20 [0:5], USB30 [0:3]

USB Controller 1: USB20 [6:11], USB30 [4:7]

USB30G2	USB20
0	4
1	4
2	5
3	5
4	9
5	8
6	7
7	6

USB30_I211 Lan

F_USB 30_2

F_USB 30_1

FRONT TYPE C

HSD 10

HSD 11

HSD 6

HSD 7

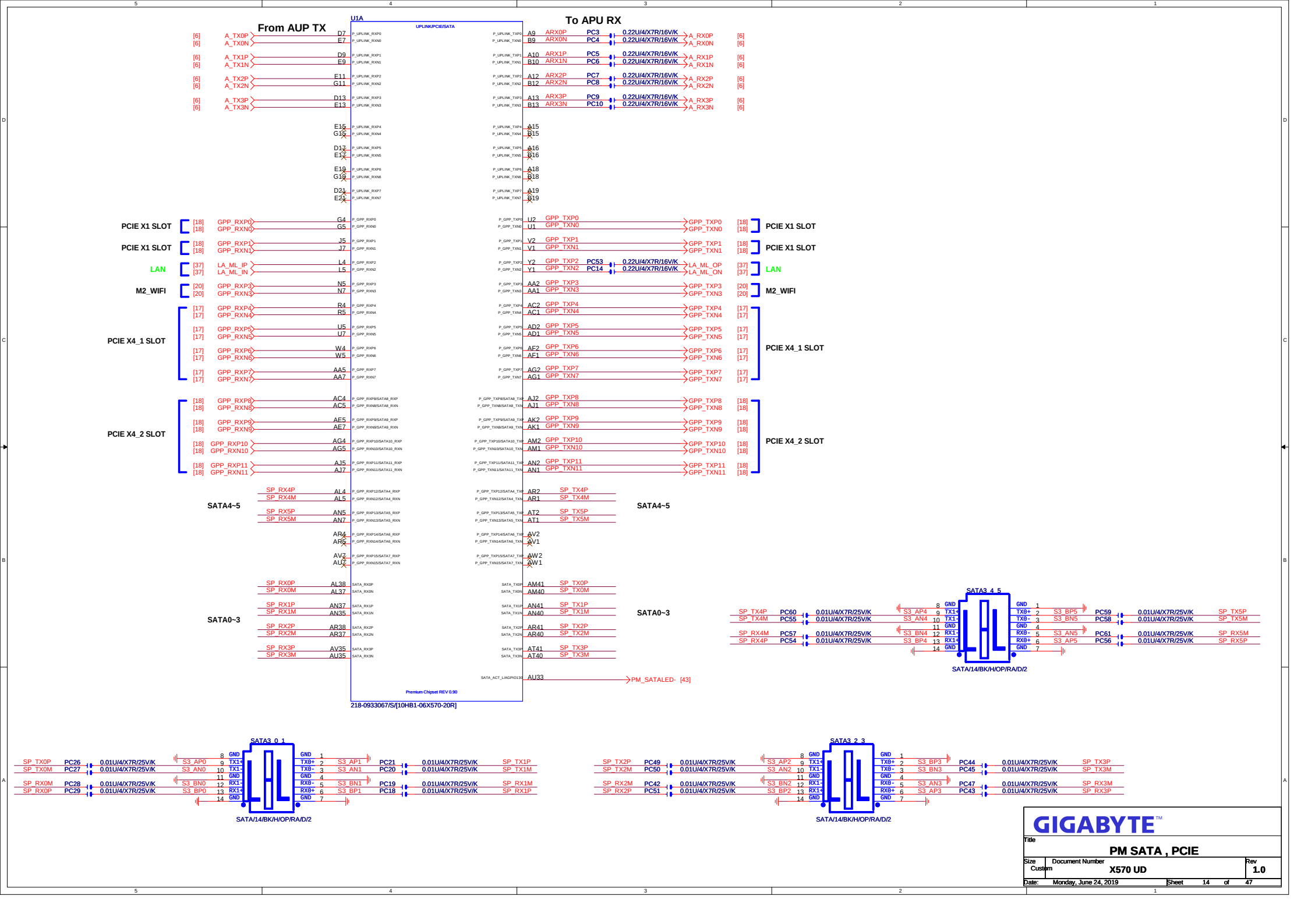
HSD 8

HSD 9

HSD 5

GIGABYTE™

Title	PM USB	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 13 of 47	


From AUP TX
To APU RX
U1A
UPLINK/PCIE/SATA
A_TX0P
A_TX0N
A_TX1P
A_TX1N
A_TX2P
A_TX2N
A_TX3P
A_TX3N
A_RX0P
A_RX0N
A_RX1P
A_RX1N
A_RX2P
A_RX2N
A_RX3P
A_RX3N
0.22U/4/X7R/16V/K
PCIE X1 SLOT
LAN
M2_WIFI
PCIE X4_1 SLOT
PCIE X4_2 SLOT
SATA4~5
SATA0~3
PM_SATALED-
Premium Chipset REV 0.90
218-0933067/S/[10HB1-06X570-20R]
SATA3_0_1
SATA3_2_3
SATA3_4_5
SATA14/BK/H/OP/RA/D/2
0.01U/4/X7R/25V/K


U1E
POWER
OK
PM_1VSOC
1V@MAX 9A
1.2V@MAX 5A
PM_CLDO12
PM_1V8
1.8V@500mA
PM_1V8SUS
1.8V@100mA
VCC3
3.3V@200mA
3VDUAL
3.3V@100mA
PM_09SOCS5
1.0V@Max 1A
PM_CLDO12
PM_1VSOC
CHECK LOCATION
CHECK LOCATION
CHECK LOCATION
Premium Chipset REV 0.90
218-0933067/S/[10HB1-06X570-20R]
U1H
GND
U1G
GND
U1F
GND
U1I
RSVD
PR4
PR5
200/4/X
U1_AG11
U1_AE11
PDA_ZVSS
DIECRACKMON
PM_CLDO12
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
PM_09SOCS5
PBC8 0.1U/4/X7R/16V/K
PBC19 22U/6/X5R/6.3V/M
PBC18 22U/6/X5R/6.3V/M
SPC61 0.1U/4/X7R/16V/K
SPC37 0.1U/4/X7R/16V/K
SPC36 180P/4/NPO/50V/J
SPC35 180P/4/NPO/50V/J
PM_CLDO12
SPC51 0.1U/4/X7R/16V/K
SPC52 0.1U/4/X7R/16V/K
SPC53 0.1U/4/X7R/16V/K
SPC54 1U/4/X5R/6.3V/K
SPC55 22u/6/X5R/6.3V/M
SPC56 1U/4/X5R/6.3V/K
SPC57 1U/4/X5R/6.3V/K
SPC58 1U/4/X5R/6.3V/K
SPC59 1U/4/X5R/6.3V/K
SPC60 1U/4/X5R/6.3V/K
PBC6 22U/6/X5R/6.3V/M
SPC22 22U/6/X5R/6.3V/M
PBC1 22U/6/X5R/6.3V/M
PBC2 22U/6/X5R/6.3V/M
PBC3 10u/6/X5R/6.3V/M
SPC25 180P/4/NPO/50V/J
SPC20 180P/4/NPO/50V/J
PM_1VSOC
SPC12 1U/4/X5R/6.3V/K
SPC13 1U/4/X5R/6.3V/K
SPC14 1U/4/X5R/6.3V/K
SPC16 1U/4/X5R/6.3V/K
SPC17 1U/4/X5R/6.3V/K
SPC18 1U/4/X5R/6.3V/K
SPC15 1U/4/X5R/6.3V/K
SPC21 1U/4/X5R/6.3V/K
SPC29 1U/4/X5R/6.3V/K
SPC30 1U/4/X5R/6.3V/K
PBC0 10u/6/X5R/6.3V/M
SPC26 10u/6/X5R/6.3V/M
PBC15 22U/6/X5R/6.3V/M
PBC31 22u/6/X5R/6.3V/M
SPC28 22u/6/X5R/6.3V/M
SPC0 22u/6/X5R/6.3V/M
PBC16 22u/6/X5R/6.3V/M
SPBC1 10u/6/X5R/6.3V/M
PBC27 10u/6/X5R/6.3V/M
PM_1VSOC
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
PBC12 0.1U/4/X7R/16V/K
SPC42 0.1U/4/X7R/16V/K
SPC43 0.1U/4/X7R/16V/K
SPC5 180P/4/NPO/50V/J
SPC6 180P/4/NPO/50V/J
PM_1V8SUS
SBC65 22u/6/X5R/6.3V/M
SPC19 0.1U/4/X7R/16V/K
PBC17 0.1U/4/X7R/16V/K
SPC33 180P/4/NPO/50V/J
SPC34 180P/4/NPO/50V/J
PM_1V8
SPC27 22u/6/X5R/6.3V/M
SPC10 0.1U/4/X7R/16V/K
SPC11 0.1U/4/X7R/16V/K
PBC34 0.1U/4/X7R/16V/K
3VDUAL
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
VCC3
SPC2 22u/6/X5R/6.3V/M
SPC1 0.1U/4/X7R/16V/K
SPC3 0.1U/4/X7R/16V/K
SPC23 0.1U/4/X7R/16V/K
GIGABYTE
Title
HUDSON PWR & GND
Size
Custom
Document Number
X570 UD
Rev
1.0
Date:
Monday, June 24, 2019
Sheet
15
of
47

FOR SMBUS
PCIEX16不能short pad ,不上件

Footprint :
PCIESLOT-164STH

3GIO_*16

+12 protect
short-wire test

0.22u/4/X5R/6.3V/K,Footprint:C0402-2

PCIEX16

KEY

PCI-E/16X-164P/BK/LONG DOUBLE/HK*2/SHELL/GEN4.0

黑色 金屬 加強

嘉澤黑色 PCIE 16X 強化版 Gen4.011AC1-023164-V1R

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Title	PCI EXPRESS X 16
Size	Custom
Document Number	X570 UD
Rev	1.0
Date:	Monday, June 24, 2019
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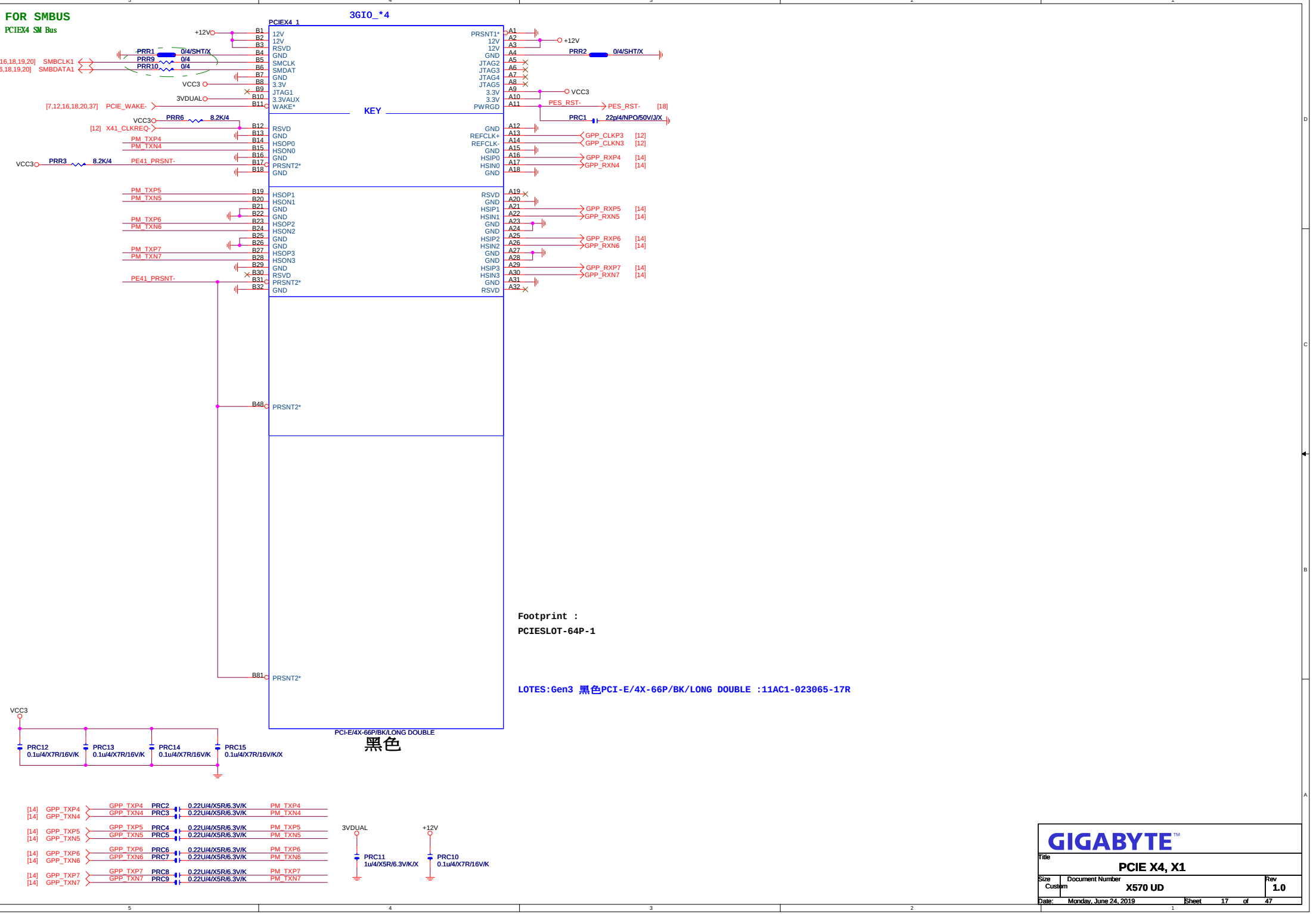
FOR SMBUS
PCIEX4 SM Bus
3GIO_*4
PCIEX4_1
KEY
PCI-E/4X-66P/BK/LONG DOUBLE
黑色
Footprint :
PCIESLOT-64P-1
LOTES:Gen3 黑色PCI-E/4X-66P/BK/LONG DOUBLE :11AC1-023065-17R
GIGABYTE
Title
PCIE X4, X1
Size
Custom
Document Number
X570 UD
Rev
1.0
Date:
Monday, June 24, 2019
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17
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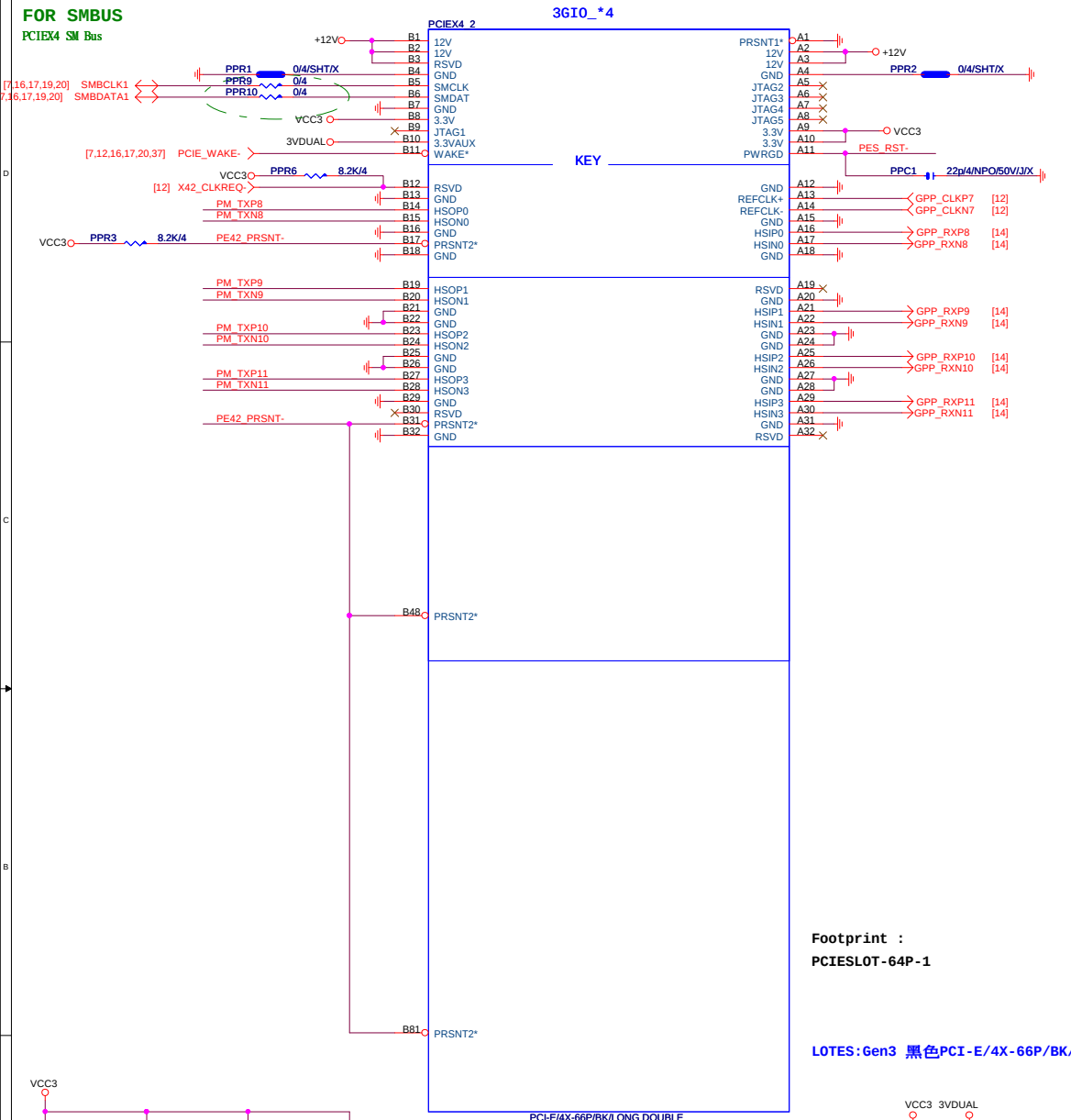
47

FOR SMBUS

PCIEX4 SM Bus

3GIO_*4

PCIEX4_2

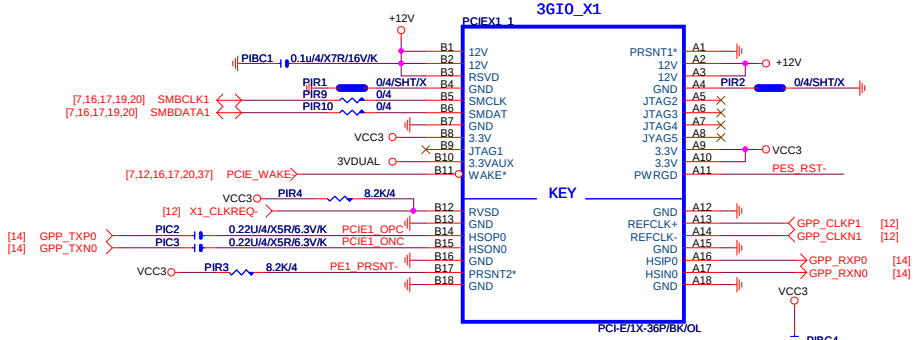


PCI-E/4X-66P/BK/LONG DOUBLE

黑色

3GIO_X1

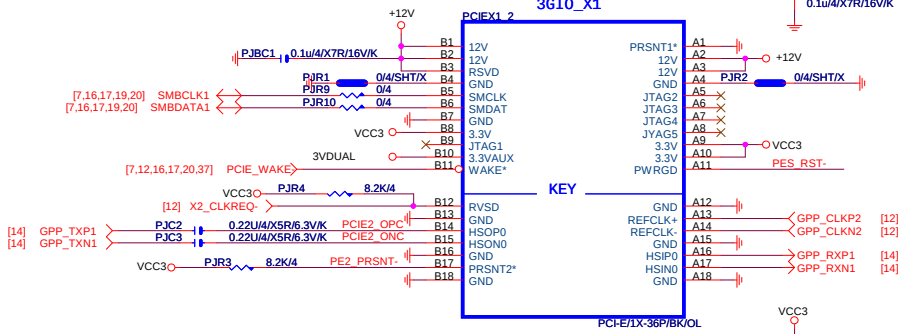
PCIEX1_1



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

3GIO_X1

PCIEX1_2

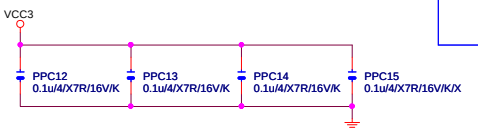


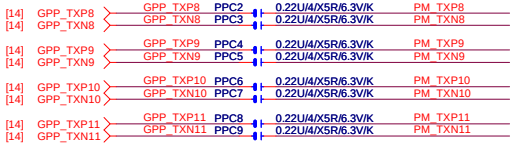
PCI-E/1X-36P/BK/OL

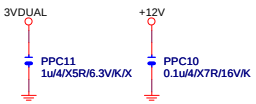
Footprint :

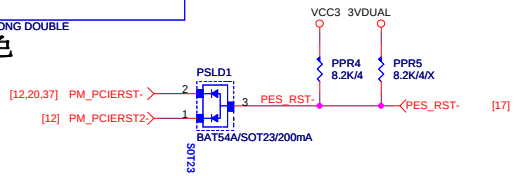
PCIESLOT-64P-1

LOTES:Gen3 黑色PCI-E/4X-66P/BK/LONG DOUBLE :11AC1-023065-17R





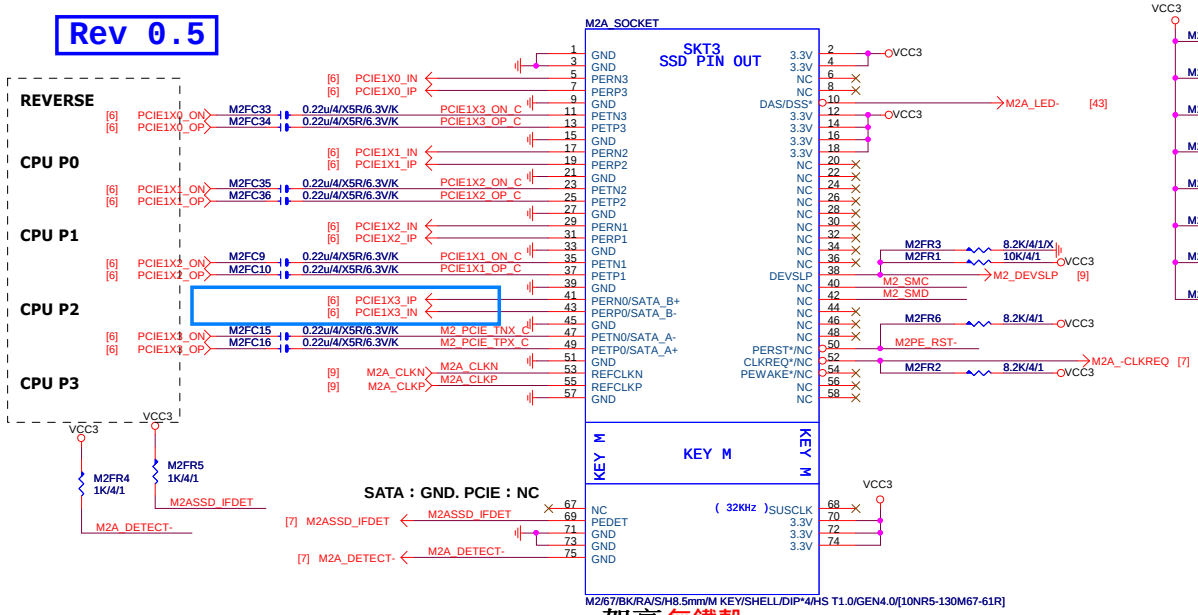




GIGABYTE™

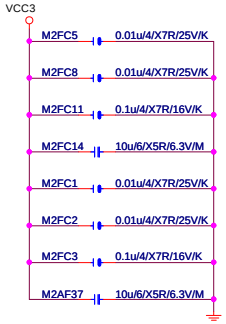
Title	PCIE X4, X1	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 18 of 47	

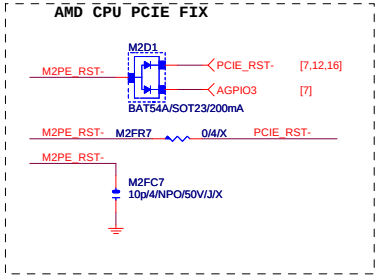
Rev 0.5

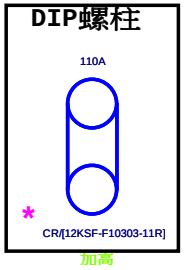


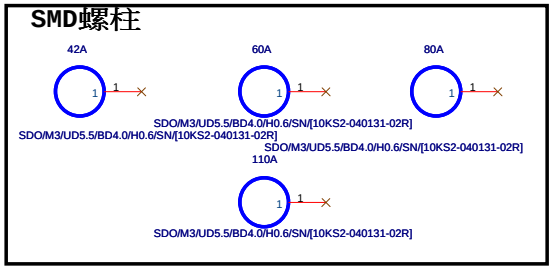
架高 無鐵殼

Footprint : M2_110

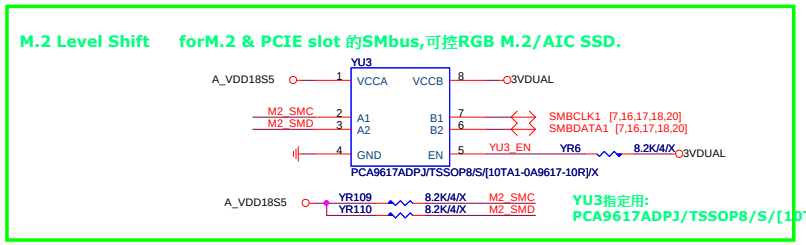








删除SMD螺柱文字面 "A" ,不要show 出在PCB文字面上



GIGABYTE			
Title	M.2 SLOT FROM CPU(A)		
Size: Custom	Document Number: X570 UD		Rev: 1.0
Date: Wednesday, July 03, 2019	Sheet 19 of 47		

Rev: 0.2

*全部不上件

請選擇適用的USBport :
SOC/UD7/UD5/G1/G7 : USB4
;UD3/G5:USB6

NET 可變

[13] P_HSDP4
[13] P_HSDN4

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8)
外層Impedance=85 +- 17.5%

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8)
內層 Impedance=85 +- 12%

NET 可變

WIFI use PCIE port4 in X99

[14] GPP_TXP3
[14] GPP_TXN3
[14] GPP_RXP3
[14] GPP_RXN3
[12] CK_WIFI_100M_DP
[12] CK_WIFI_100M_DN
[12] WIFI_CKREQL
[7,12,16,17,18,37] PCIE_WAKE-

M2WC4 0.1u/4/X7R/16V/K/X M2_WIFI_TP_C
M2WC5 0.1u/4/X7R/16V/K/X M2_WIFI_TN_C
M2WR4 22/4/X WIFI_CKREQ-
M2WR6 0/4/SHT/20/X WIFI_WAKE-

WIFI_CKREQL connect to relative pin.

3VDUAL M2WR1 8.2K/4/X WIFI_CKREQ-

M2_WIFI

REV=1

1	GND	3P3VAUX_2	2
3	USB_D+	3P3VAUX_4	4
5	USB_D-	LED1#	6
7	GND	PCM_CLK/I2S SCK	8
9	SDIO CLK	PCM_SYNC/I2S WS	10
11	SDIO CMD	PCM_IN/I2S SD_IN	12
13	SDIO DATA0	PCM_OUT/I2S SD_OUT	14
15	SDIO DATA1	LED2#	16
17	SDIO DATA2	GND	18
19	SDIO DATA3	UART WAKE#	20
21	SDIO WAKE#	UART RXD	22
23	SDIO RESET#		

3VDUAL

Remove LED show

Remove LED show

Module Key E

33	GND	UART TXD	32
35	PETP0	UART CTS	34
37	PETN0	UART_RTS	36
39	GND	VENDOR DEFINED	38
41	PERP0	VENDOR DEFINED	40
43	PERN0	VENDOR DEFINED	42
45	GND	COEX3	44
47	REFCLKP0	COEX2	46
49	REFCLKN0	COEX1	48
51	GND	SUSCLK(32KHz)	50
53	CLKREQ0#	PERST0#	52
55	PEWAKE0#	W_DISABLE2#	54
57	GND	W_DISABLE1#	56
59	RSVD/PETP1	I2C_DATA	58
61	RSVD/PETN1	I2C_CLK	60
63	GND	ALERT#	62
65	RSVD/PERP1	RSVD	64
67	RSVD/PERN1	UIM_SWP/PERST1#	66
69	GND	UIM_PWR_SNK/CLKREQ1#	68
71	RSVD/REFCLKP1	UIM_PWR_SRC/PEWAKE1#	70
73	RSVD/REFCLKN1	3P3VAUX_72	72
75	GND	3P3VAUX_74	74

3VDUAL

NGFF_M2_E-KEY[10NH5-130067-11R]/X

3VDUAL

M2WC1 0.01u/4/X7R/25V/K/X
M2WC2 0.01u/4/X7R/25V/K/X
M2WC3 0.1u/4/X7R/16V/K/X
M2WC6 10u/6/X5R/6.3V/M/X

M2_WIFI_SUSCLK M2WR3 0/4/SHT/M/X SUSCLK_WIFI [7]
M2_WIFI_RST- M2WR5 0/4/SHT/M/X PM_PCIERST- [12,18,37]
M2_WIFI_DIS2- M2WR7 8.2K/4/X 3VDUAL
M2_WIFI_DIS1- M2WR8 8.2K/4/X
M2_WIFI_SDATA M2WR9 10/4/X SMBDATA1 [7,16,17,18,19]
M2_WIFI_SCLK M2WR10 10/4/X SMBCLK1 [7,16,17,18,19]
M2_WIFI_ALERT- M2WR11 8.2K/4/X 3VDUAL

M2_WIFI_RST-

M2WBC1
10p/4/NPO/50V/J/X

FOR M.2 WIFI MODULE @ REAR PANEL

★Update 2015-02-11

一套WIFI MODULE包含外框+WIFI CARD+天線

INTEL_WIFI

CNVi CARD
M_PCIE_H
CARD/[11KWP-000001-21R]/X
Wifi card塑膠蓋

Wifi card
Killer 2x2 11ac
Intel WIFI 8265/[20CB1-023168-10R]/X

M.2
WIFI

FRAME/WIFI M2/RA/1535 I/[12AC2-000004-31R]/X

CNVI_WIFI_SK CR/[12KS2-110202-01R]/X
螺絲

ANTENNA
ANTENNA/[11NH6-010001-D1R]/X

ANTENNA1
ANTENNA/[11NH6-010001-D1R]/X

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8)
內層 Impedance=85 +- 12%

直立
Footprint Notice.
★Update 2015-07-22
★Footprint for 直立式 SMD: WIFI-EKEY
★SMD P/N: 直立式 10NH5-130067-11R.

橫躺
Footprint Notice.
★Update 2015-07-22
★Footprint for 橫躺式高: NGFF-E-75P-3
★Footprint for 橫躺式矮: CNVI

Rev:0.6
★ for PCIe mode 預留

★ 橫躺式高SMD P/N:10NR5-130067-61R
★ 橫躺式矮SMD P/N:10NR5-130067-22R

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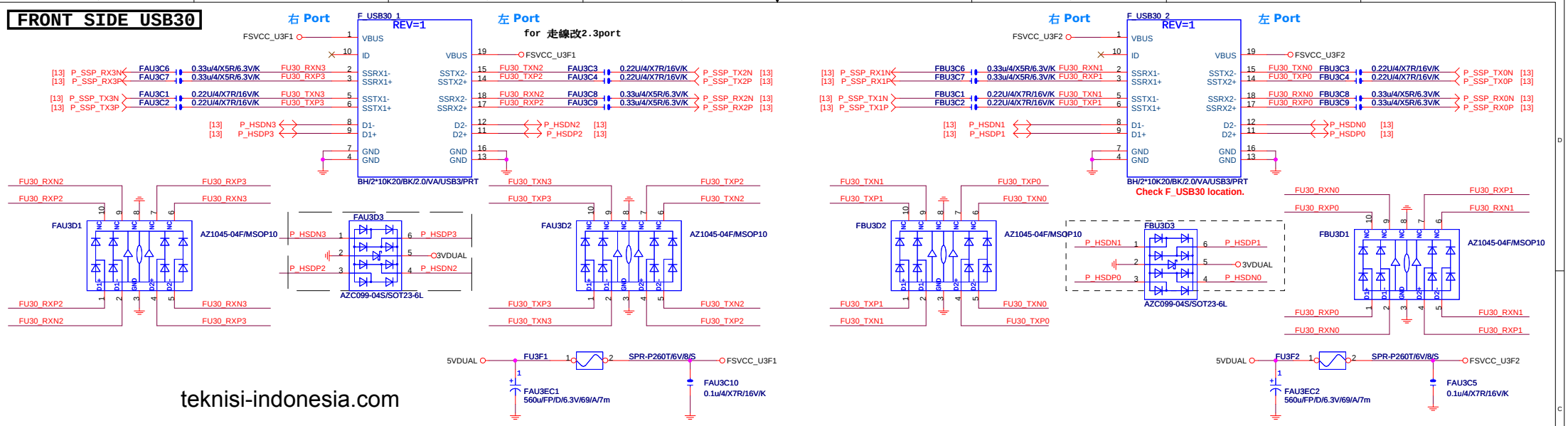
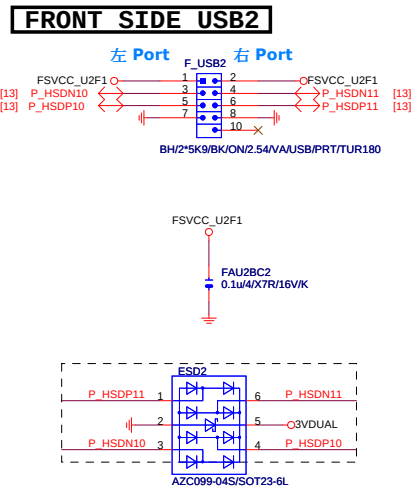
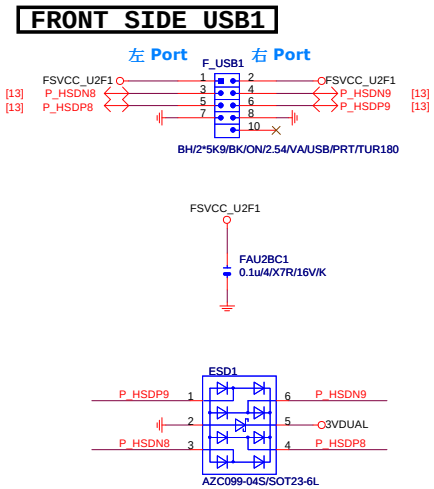
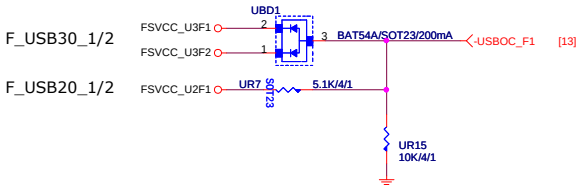
Title	M2_WIFI_E_KEY	
Size B	Document Number X570 UD	Rev 1.0
Date: Thursday, June 27, 2019	Sheet 20 of 47	



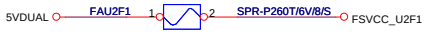






Close to connector

FUSE 2 Port 1 Fuse 2A



Color markers can be changed by model

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Title	F_ USB30,F_ USB20	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 21 of 47	

R_USB30_1

FROM CPU WITH Q_FALSH

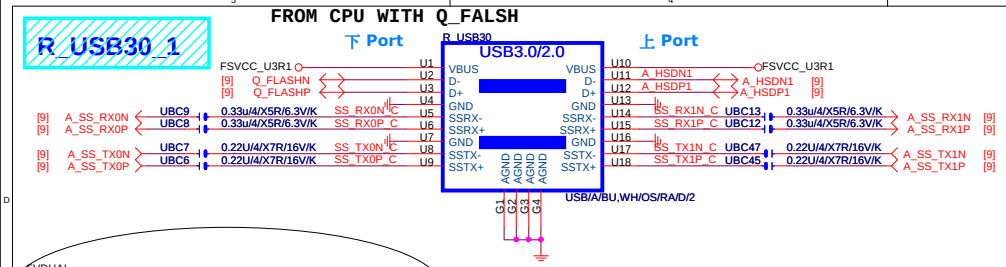
下 Port

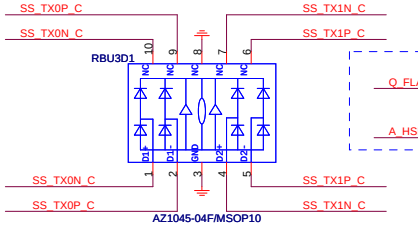
上 Port

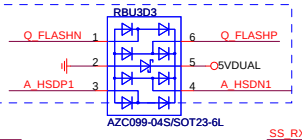
R_USB30

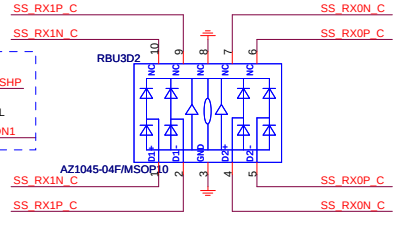
USB3.0/2.0

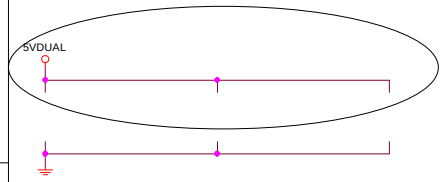
USB/A/BU,WH/OS/RA/D/2



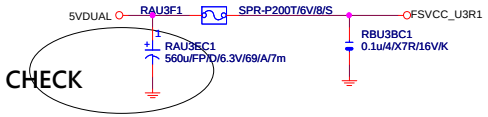


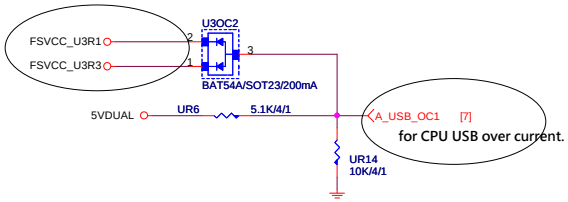




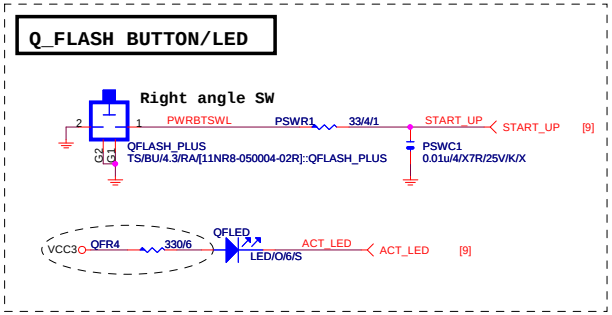


電容數CHECK





Q_FLASH BUTTON/LED

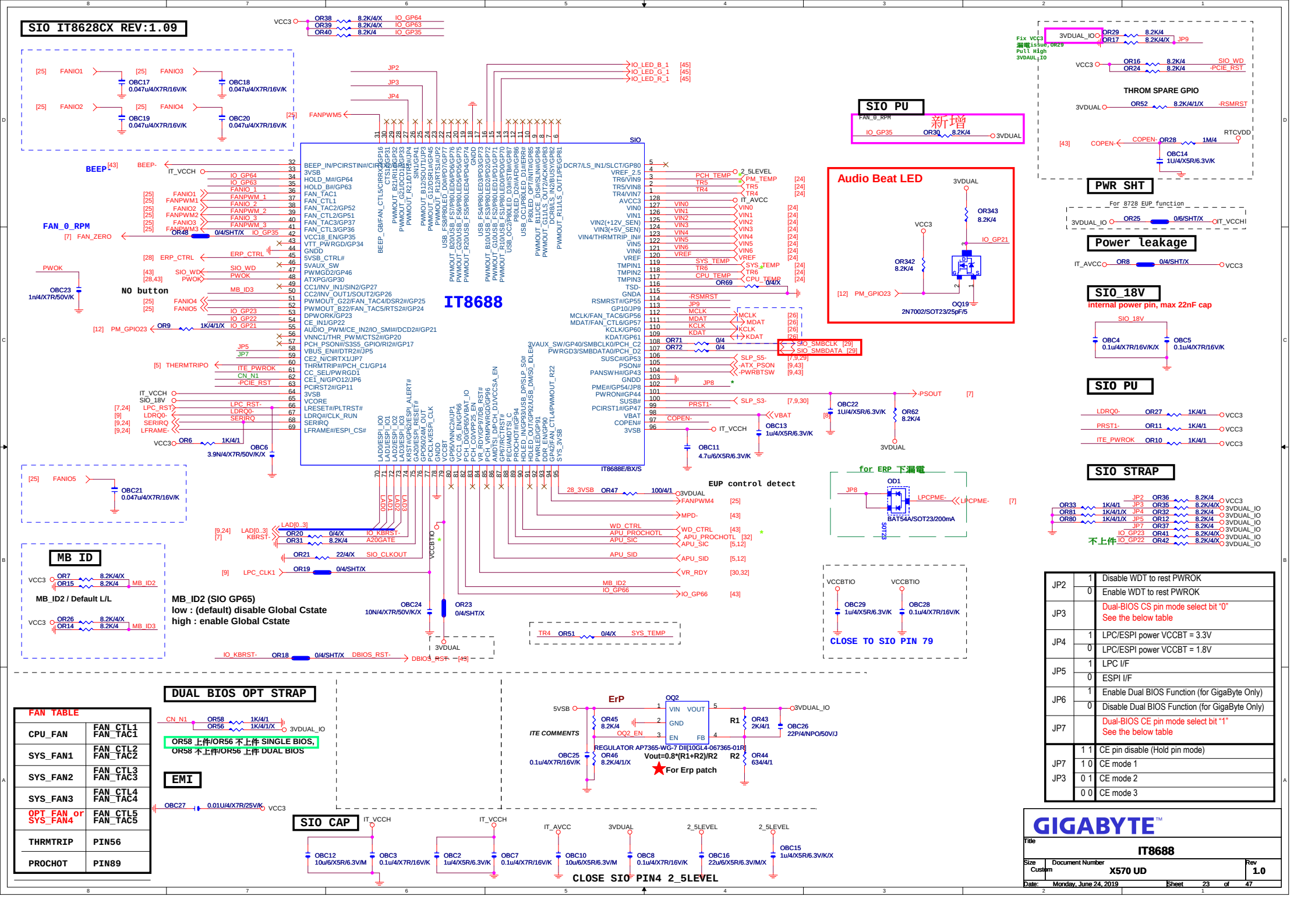


*位置可參考X570 I AORUS PRO WIFI

GIGABYTE

Title	R_USB30,R_USB20	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 22 of 47	

SIO IT8628CX REV:1.09



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

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

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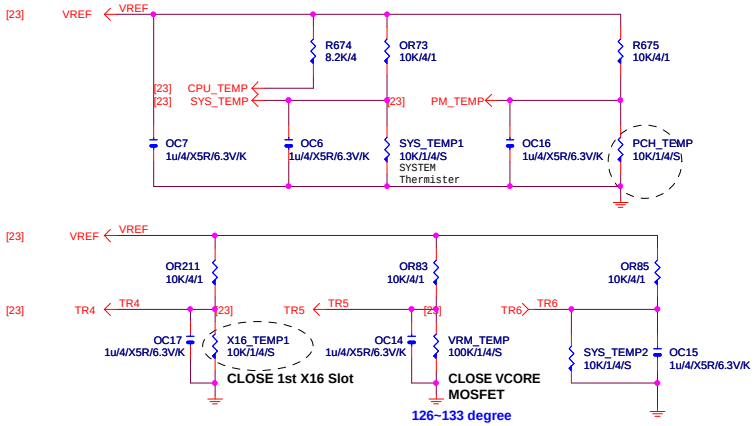
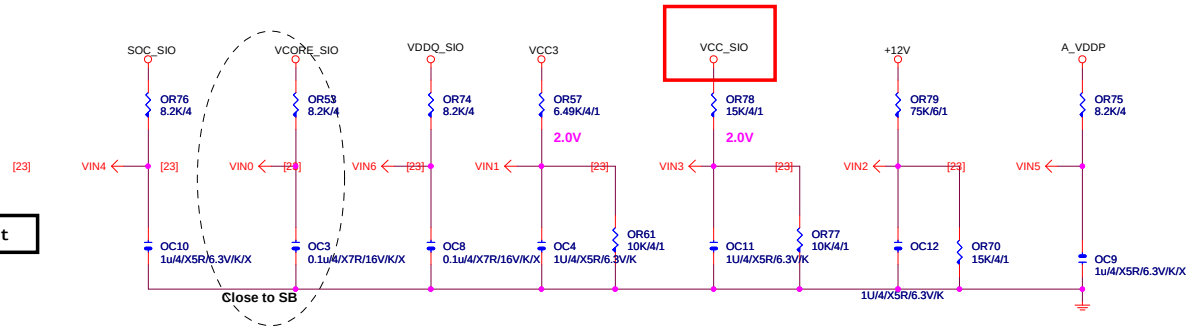
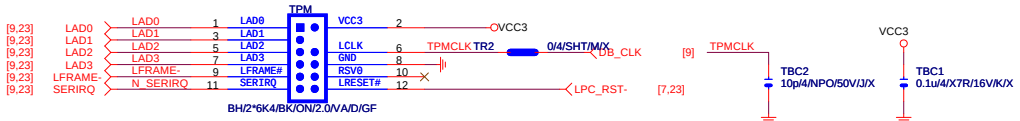
Title	IT8688	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 23 of 47	

删除clk



Del Thunderbolt





TPM update footprint : TPM2X6-CUT4-1

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Title	HWM, TPM	
Size: Custom	Document Number: X570 UD	Rev: 1.0
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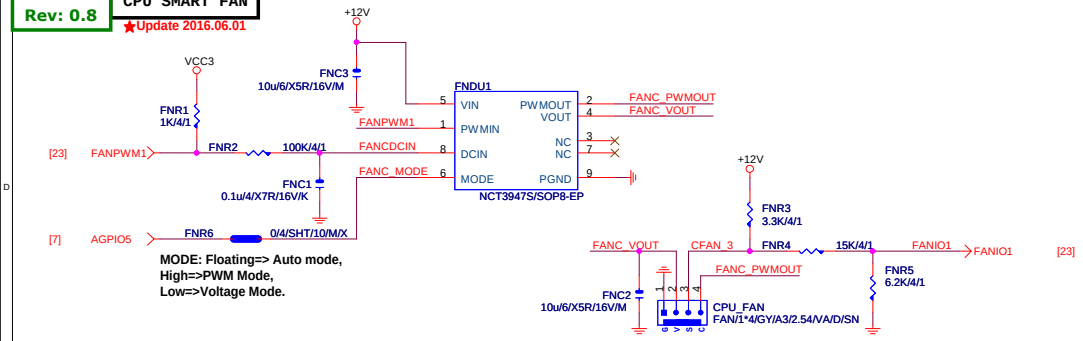
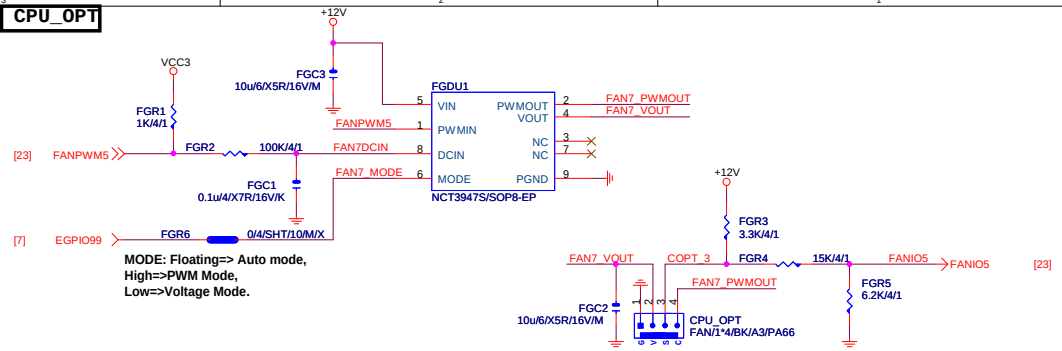
Rev: 0.8

CPU_SMART_FAN

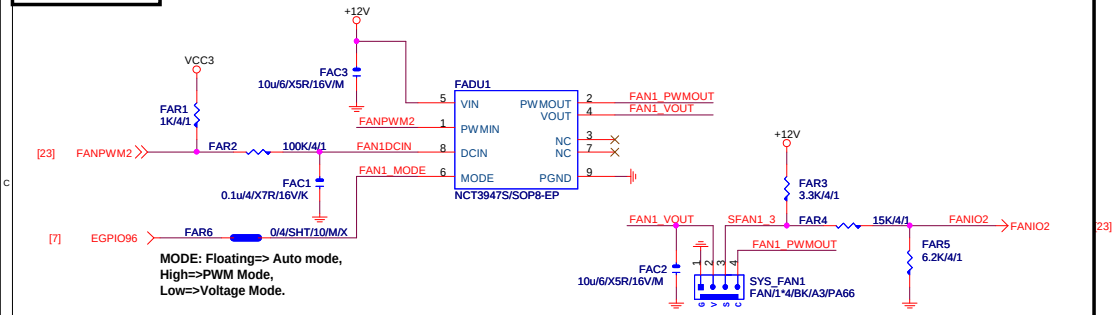
★Update 2016.06.01



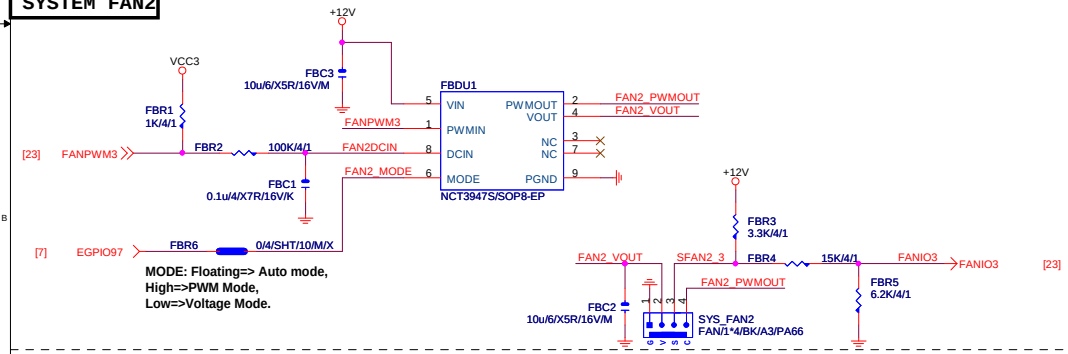
CPU_OPT



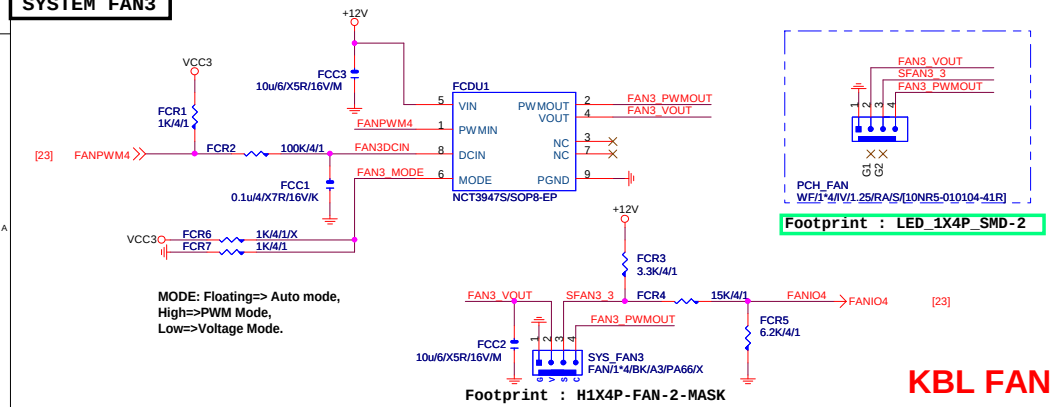
SYSTEM_FAN1



SYSTEM_FAN2



SYSTEM_FAN3



Footprint : LED_1X4P_SMD-2

Footprint : H1X4P-FAN-2-MASK

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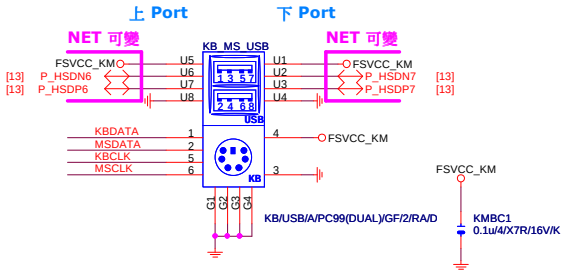
KBL FAN LOCATION MAP REFER TO PAGE.27

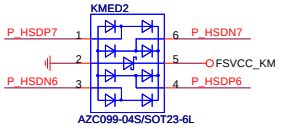
GIGABYTE™

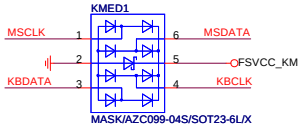
Title: FAN		
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 25 of 47	

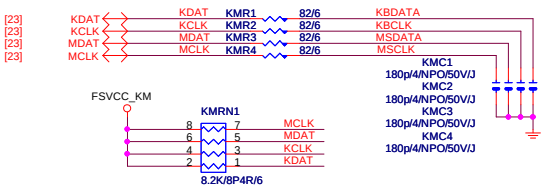
Rev: 0.91

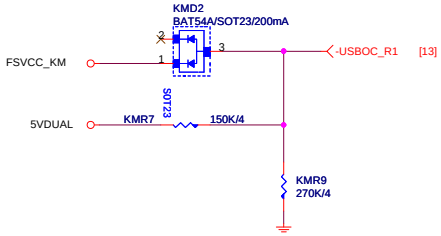
KB/MS



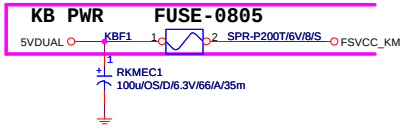








NET 可變, 與其他USB SHARE



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Title: KB_MS_USB		
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 26 of 47	

A_VDDP

A_VDDP 0.9V or 1.05V
CHOKE與CAP料號可變

L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

灰色SMD

0.704*(1+RS/RO) = Vout

Remote sense請從最重的負載端點拉回

RF: low=>DEM mode, high=>CCM mode.

FS=290K
OCP=30A

請放置CHOKE一出來的地方

CORETYPE1	CORETYPE0	VPPD_ALW
1	X	0.9V
0	X	1.05V

A_VDDPS5

A_VDDPS5 0.9V or 1.05V (1A)

0.8*[(R1+R2)/R1] = Vout =1.121V

CORETYPE1	CORETYPE0	VPPD_ALW
1	X	0.9V
0	X	1.05V

【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

REV:0.4

A_VDD1V8

A_VDD1V8 1.8V (2A)

L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

灰色SMD

MA_L3,MB_L3, NPL2 footprint to CHOKE6X6MM_SMD-1

上件

VPP CAP

22u*1PCS

A_VDD18S5

A_VDD18S5 1.8V (500mA)

0.8*[(R1+R2)/R1] = Vout

VDDCR_SOC_S5

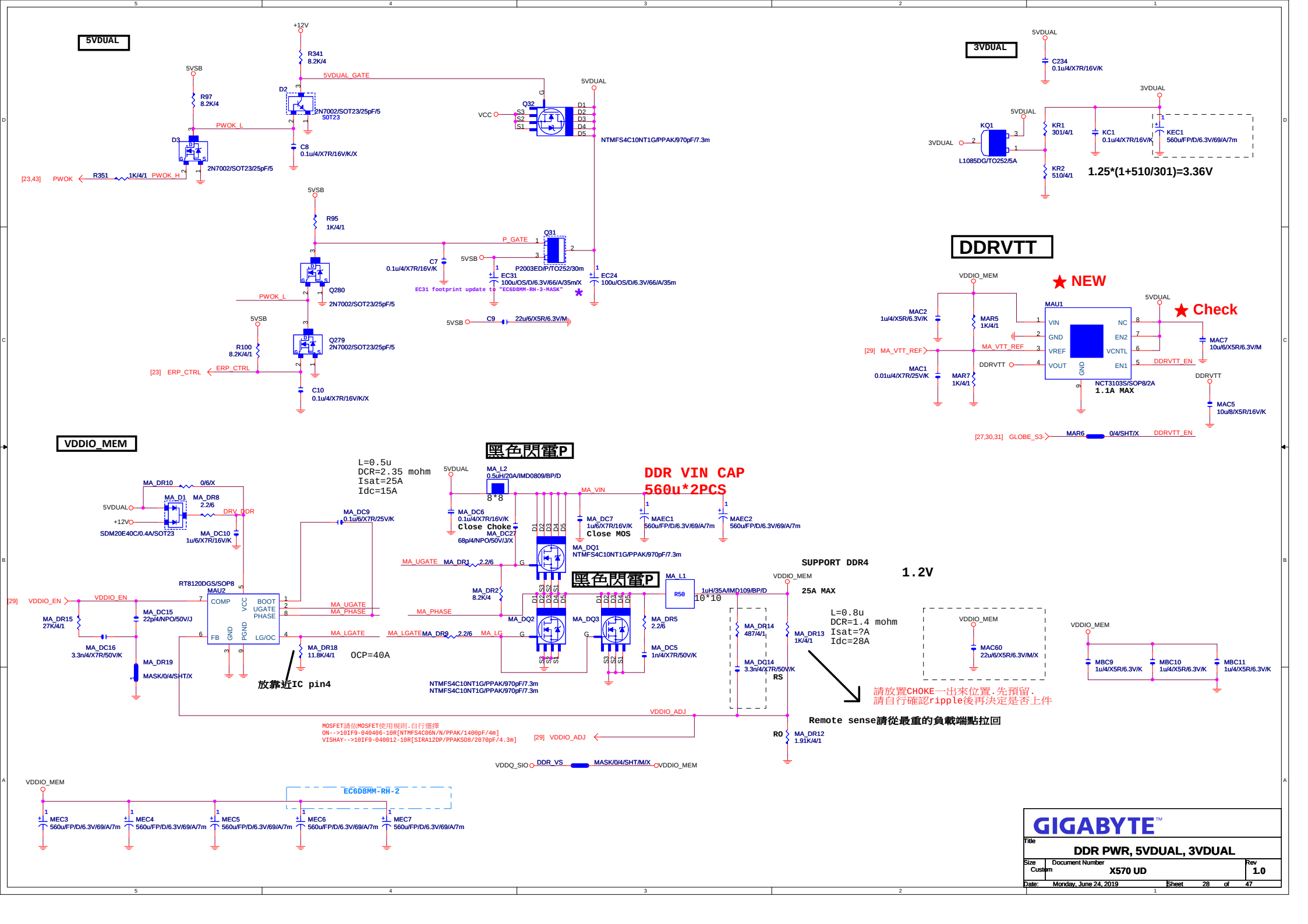
S5_MUX: S0-->High, S5-->Low

H: VDDCR_SOC_S5 will track VCORE_SOC.

L: If VCORE_SOC < 0.775V (OR 0.85V) , VDDCR_SOC_S5=0.775V.
If VCORE_SOC>=0.775V (OR 0.85V) , VDDCR_SOC_S5 will trace VCORE_SOC.

GIGABYTE

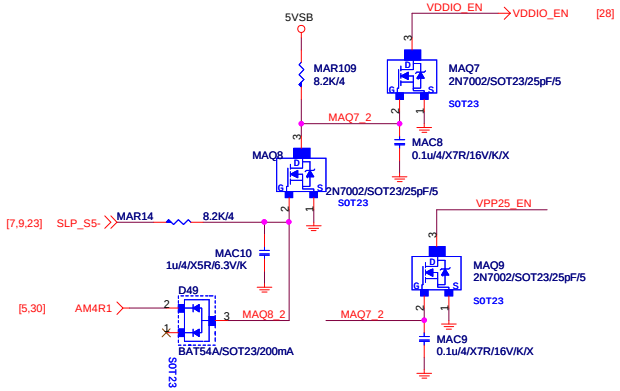
Title	A_VDDP/A_VDDPS5/A_VDD1V8/A_VDD18S5	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 27 of 47	



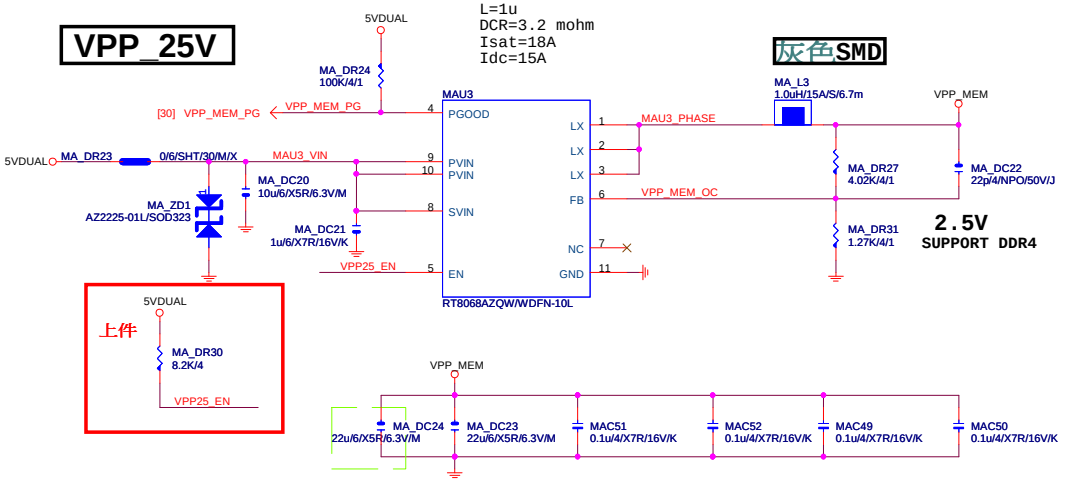
GIGABYTE™

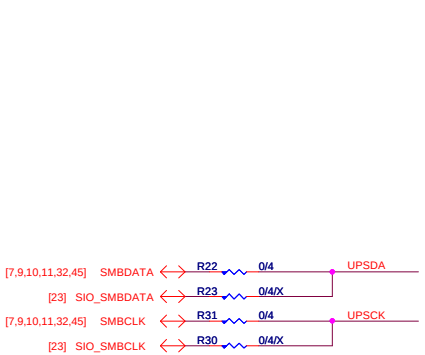
Title	DDR PWR, 5VDUAL, 3VDUAL	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 28 of 47	

PWR SEQ



VPP_25V





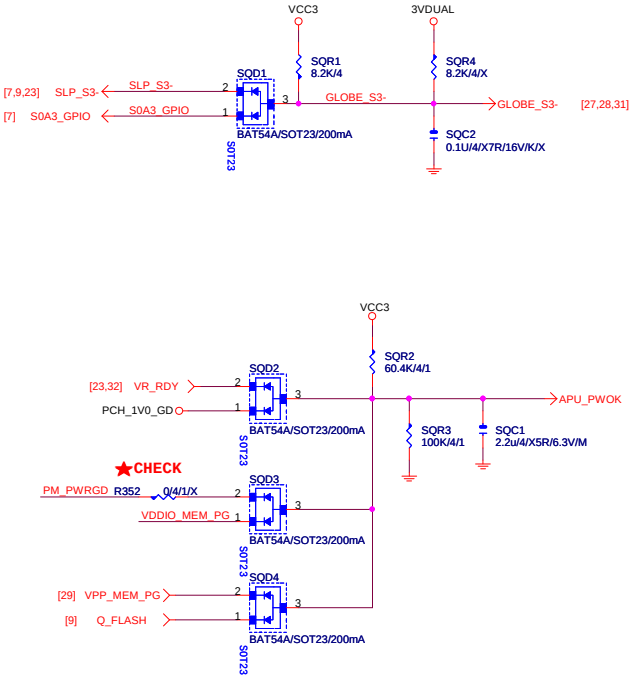
Address	0x2A	0x28	0x26	0x24	0x22	0x20
R1 (kΩ)	open	3.9	3	2.2	1.3	10
R2 (kΩ)	10	1.3	2.2	3	3.9	open
ADD_SEL Voltage (% of VCC)	0	25	42	58	75	100

Table1. Recommended Slave Address Setting

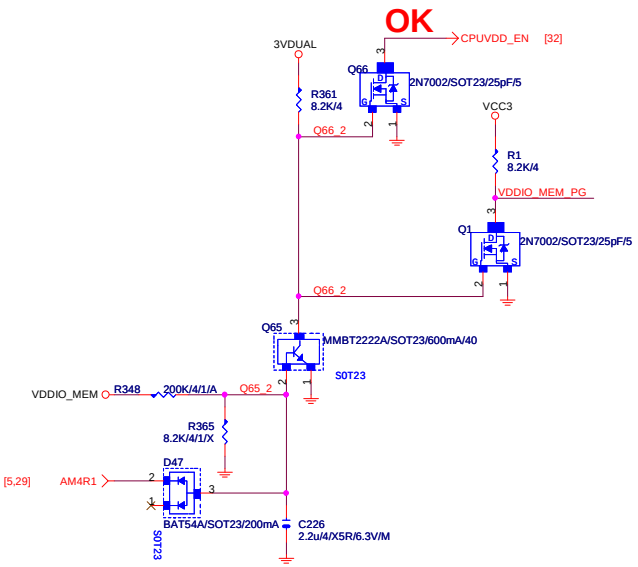
GIGABYTE™

Title: VPPMEM		
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 29 of 47	

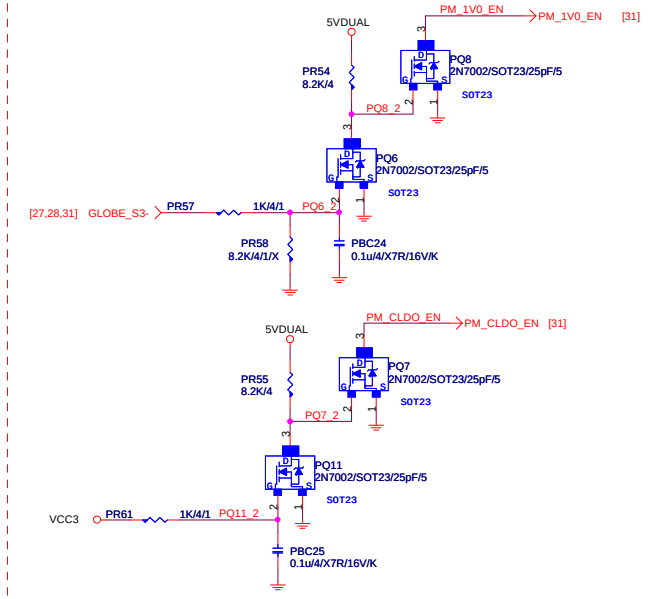
PWR SEQ

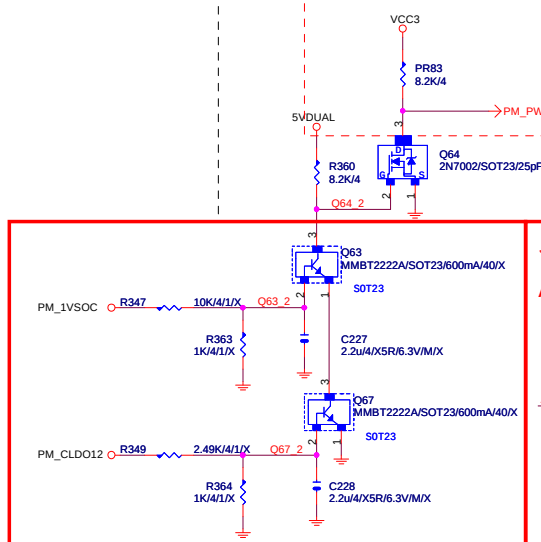


CPU PWR SEQ



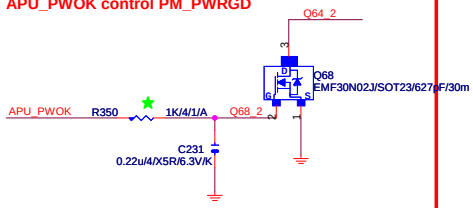
PM SWR SEQ



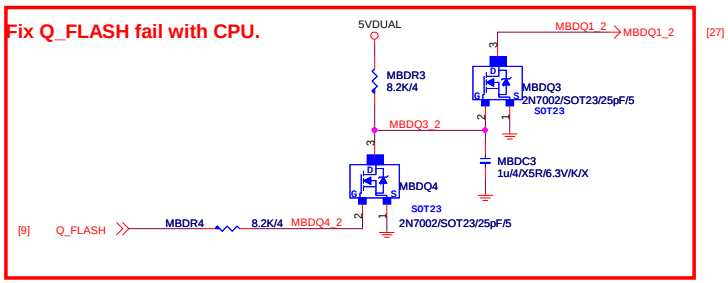


★Sequence

APU_PWOK control PM_PWRGD



Fix Q_FLASH fail with CPU.



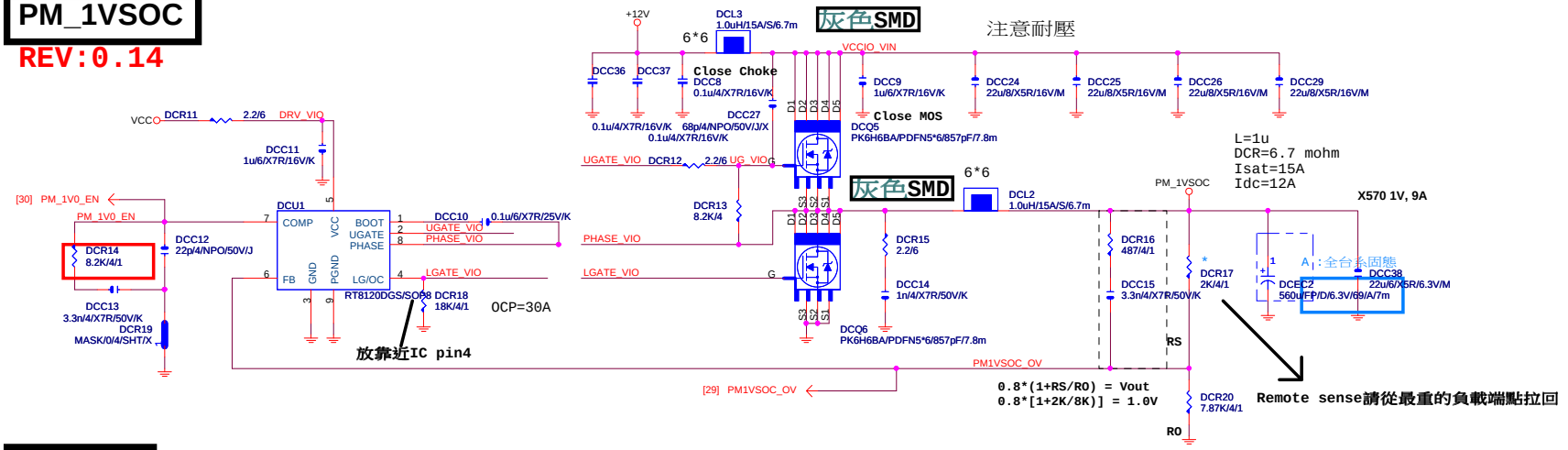
GIGABYTE™

Title	POWER SEQUENCE	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Monday, June 24, 2019	Sheet 30 of 47	

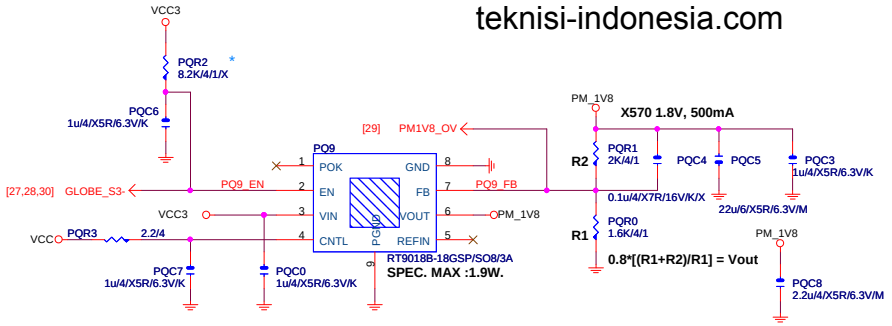
rename

PM_1VSOC

REV:0.14



PM_1V8



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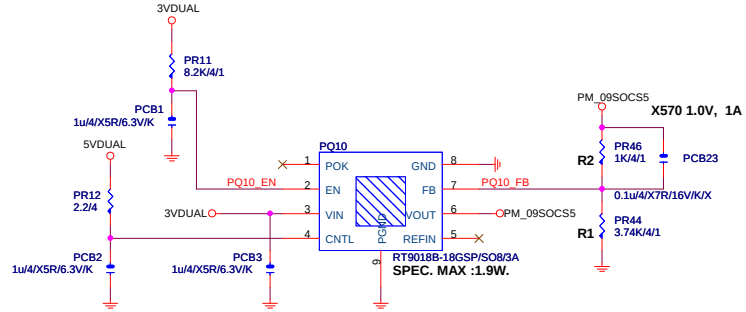
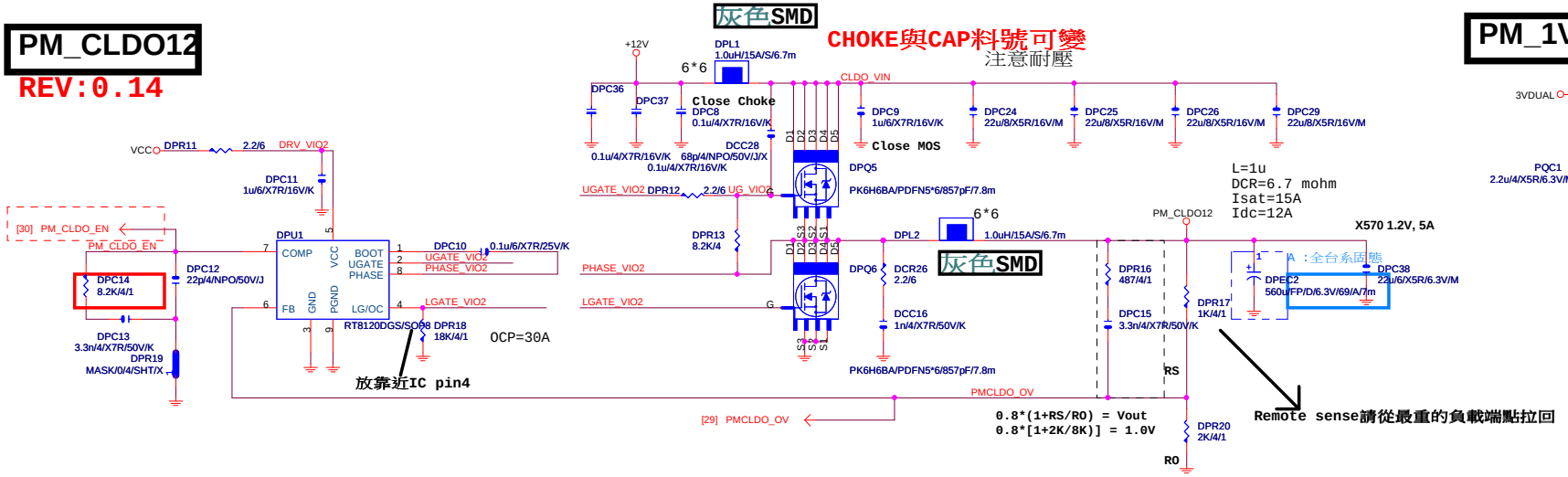
PM_1VSOC_S5

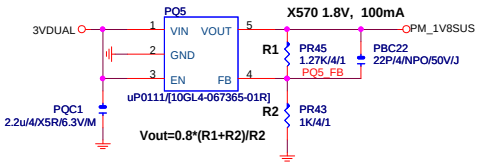


PM_CLDO12

REV:0.14



PM_1V8_SUS



GIGABYTE™

Title	X570 POWER
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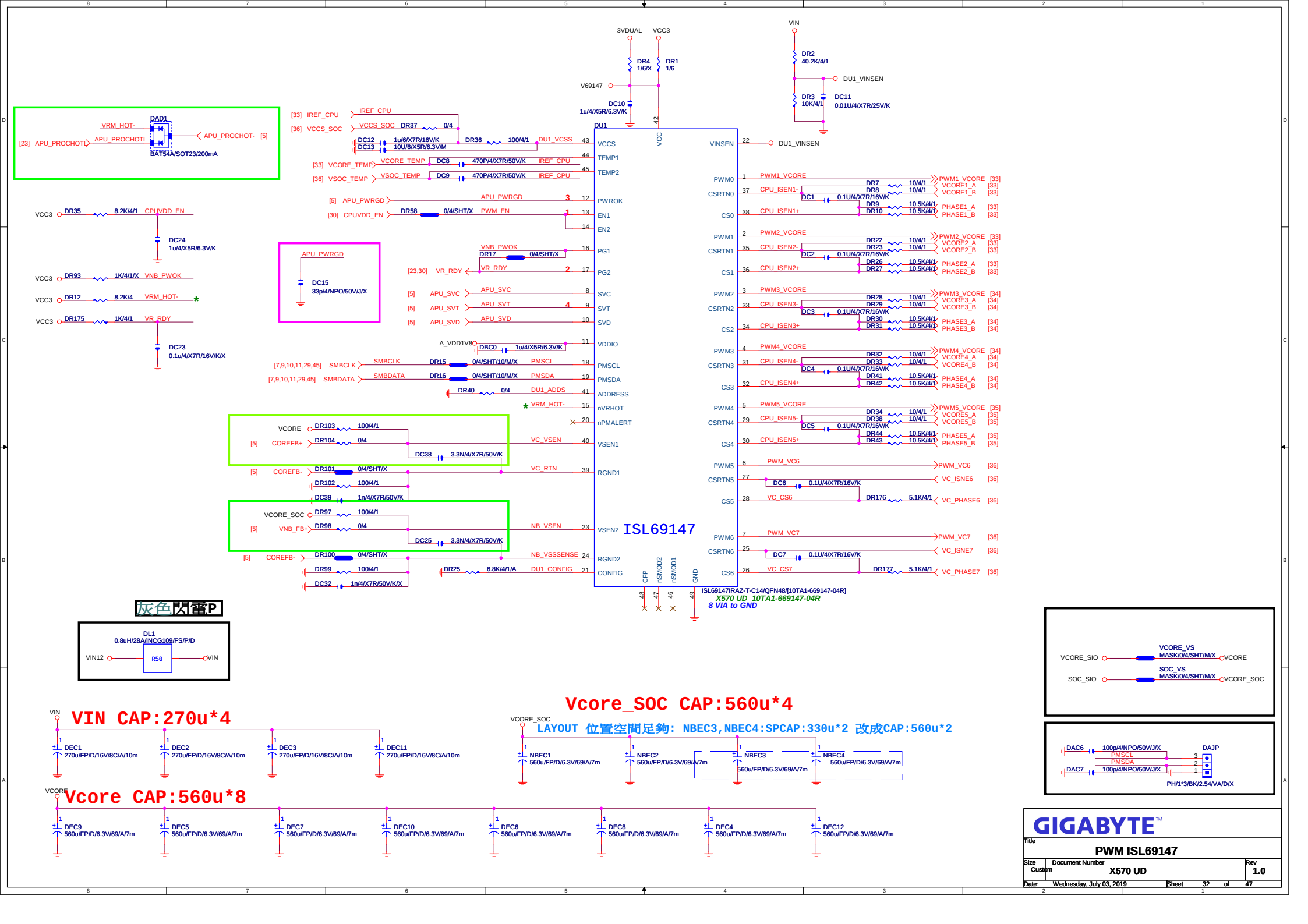
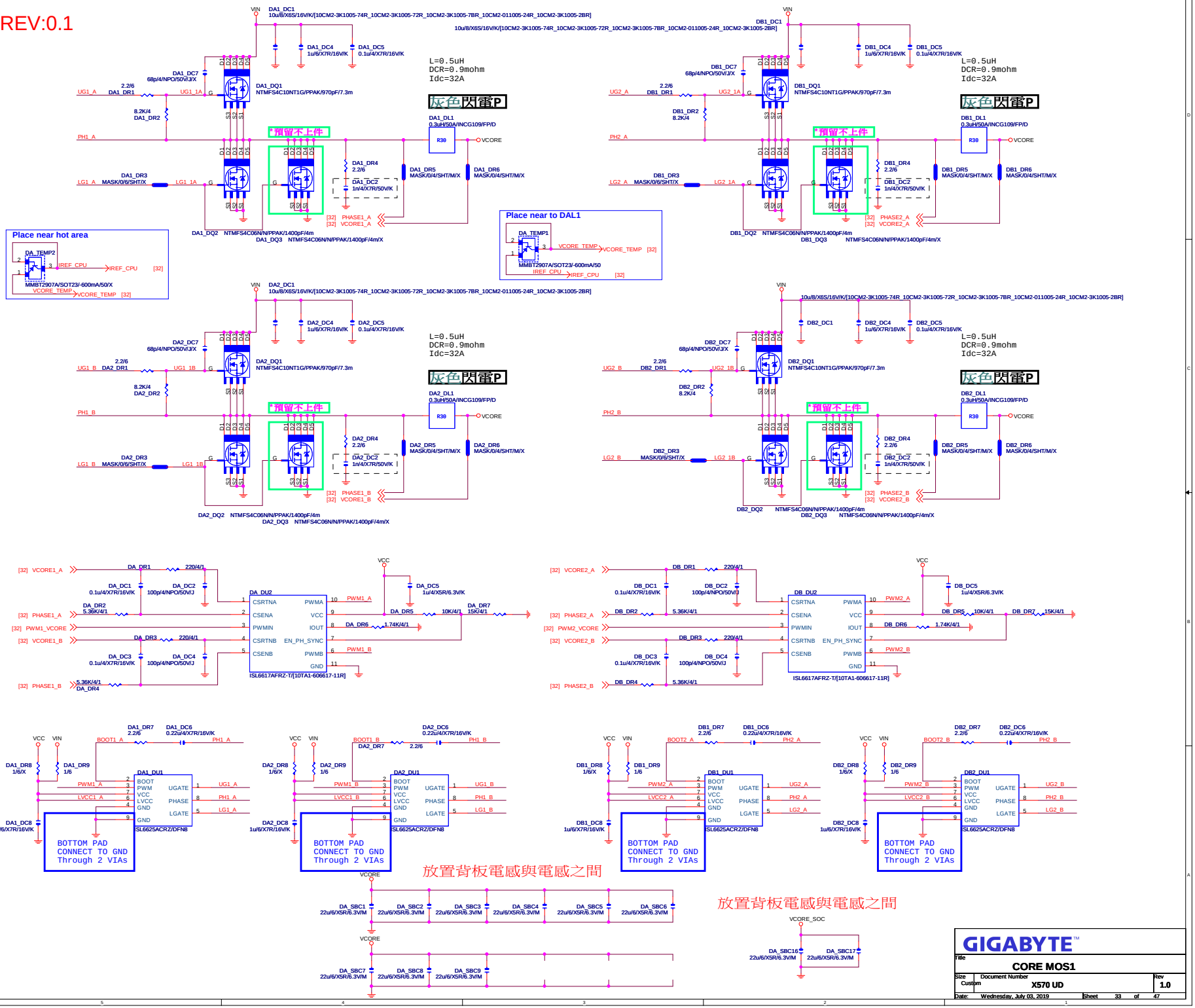


GIGABYTE™

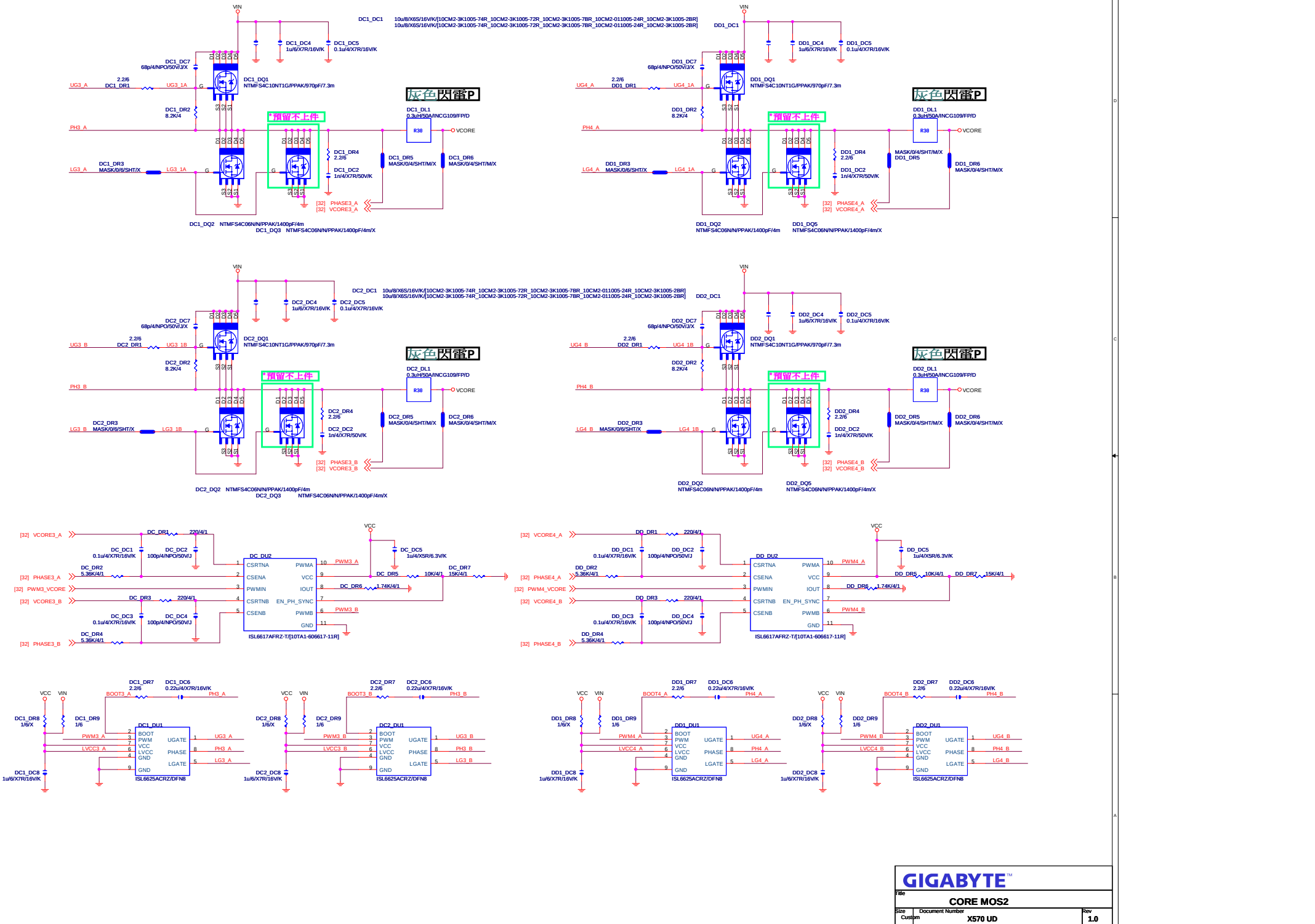
Title	PWM ISL69147	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Wednesday, July 03, 2019	Sheet 32 of 47	

REV:0.1



GIGABYTE™

Title	CORE MOS1	
Size: Custom	Document Number: X570 UD	Rev: 1.0
Date: Wednesday, July 03, 2019	Sheet 33 of 47	



GIGABYTE™

Title	CORE MOS2	
Size: Custom	Document Number: X570 UD	Rev: 1.0
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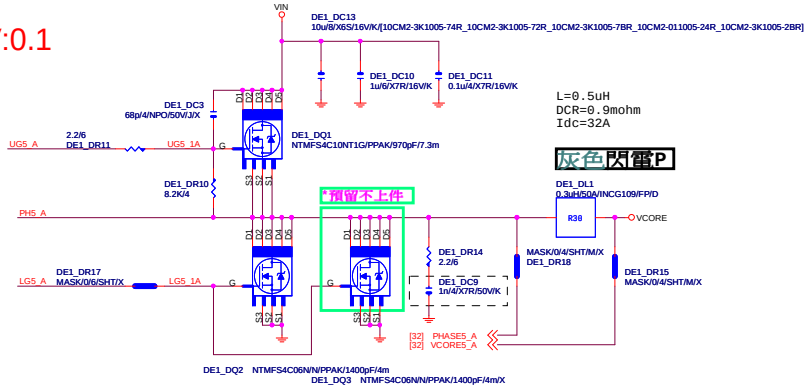
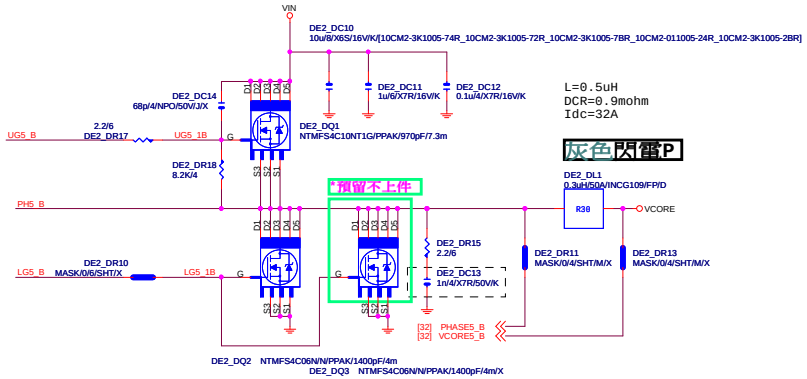
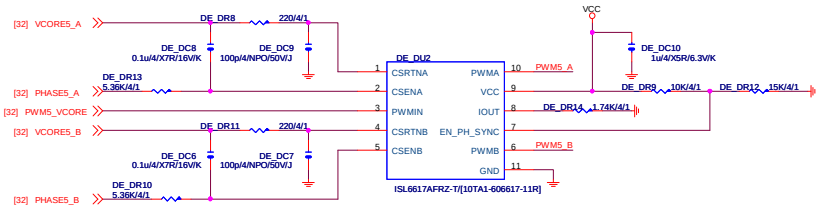
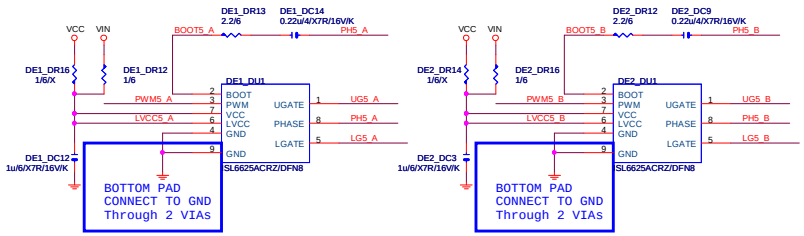
REV:0.1









GIGABYTE™

Title: VCORE MOS3		
Size: Custom	Document Number: X570 UD	Rev: 1.0
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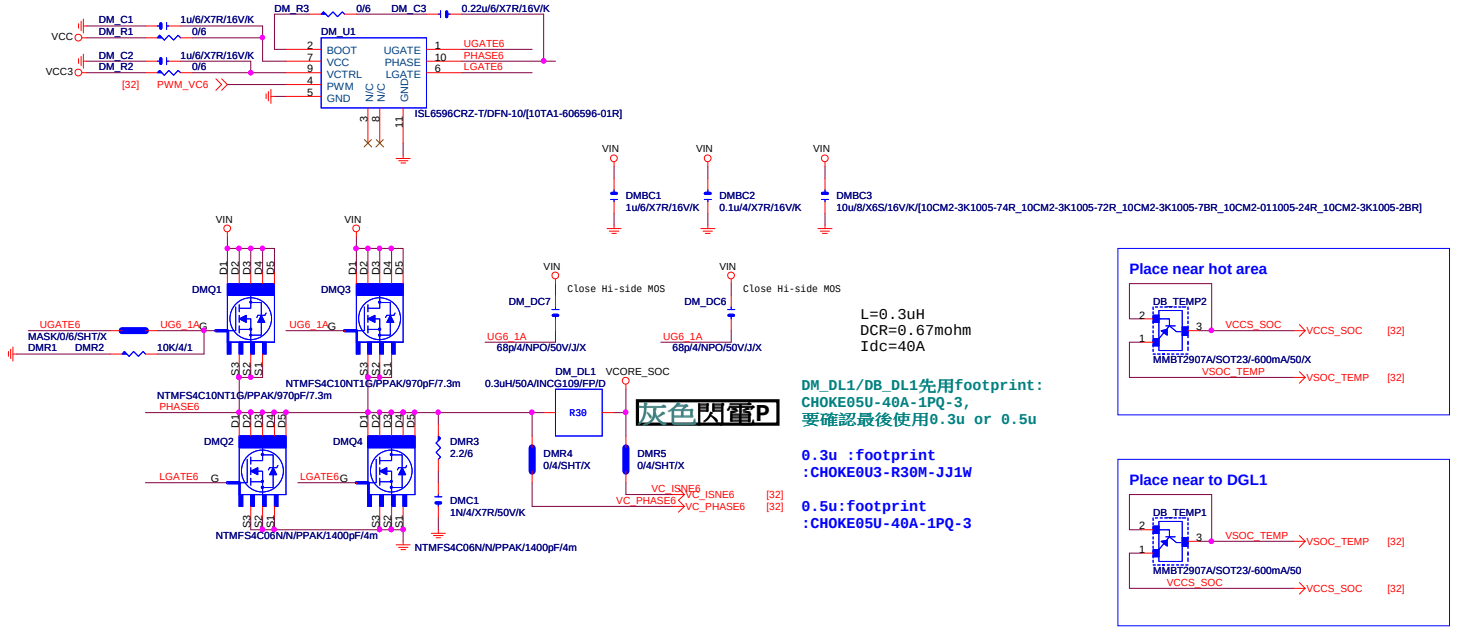
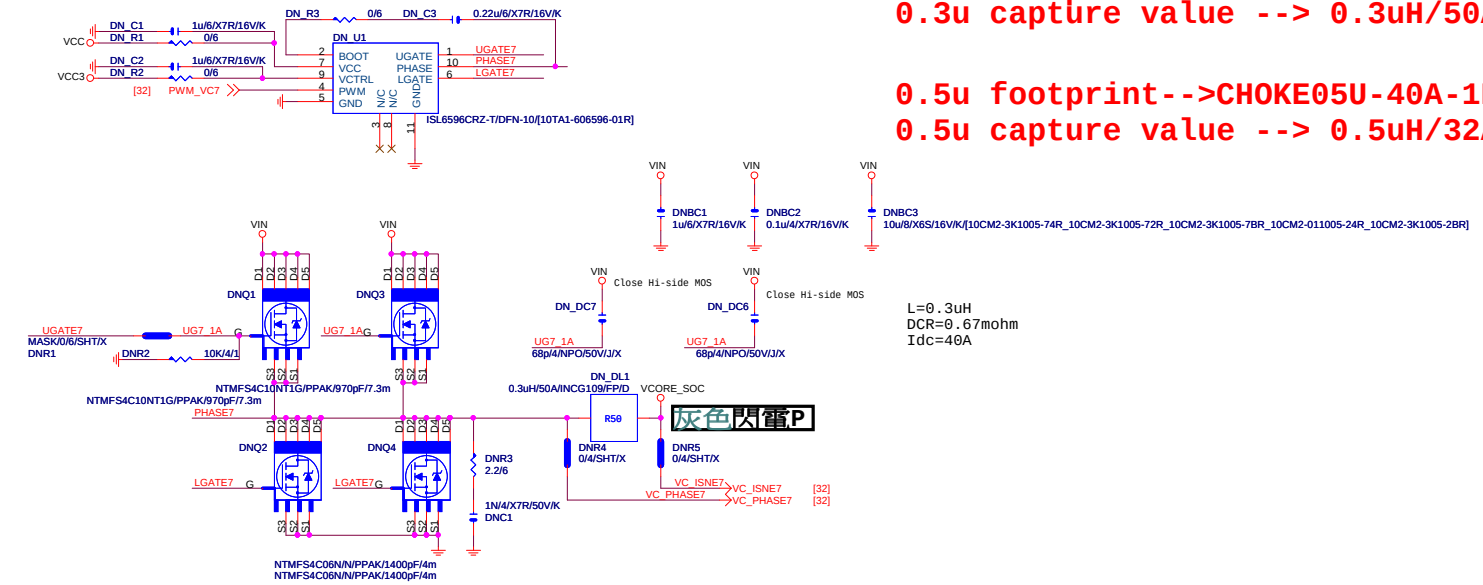
REV:0.1





0.3u footprint-->CHOKE0U3-R30M-JJ1W
0.3u capture value --> 0.3uH/50A/INCG109/FP/D

0.5u footprint-->CHOKE05U-40A-1PQ-3
0.5u capture value --> 0.5uH/32A/INCG109/FSI/D

GIGABYTE™

Title: SOC MOS		
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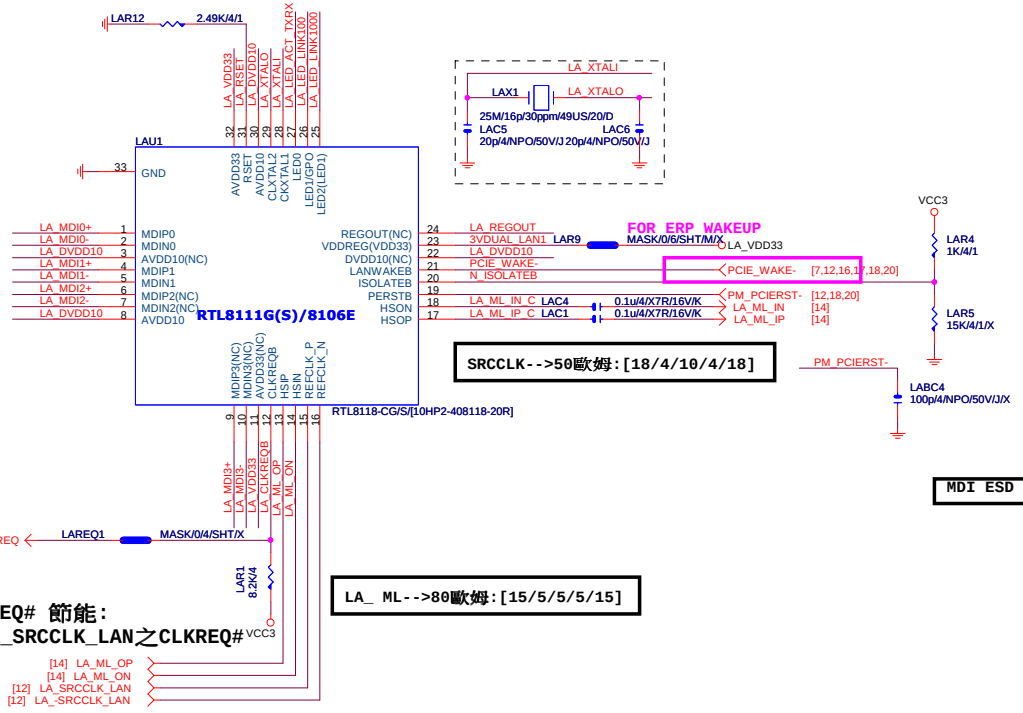
LAN:RTL8118 R2.03

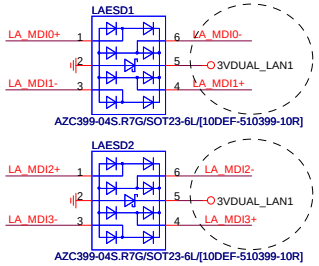


SRCCLK-->50歐姆:[18/4/10/4/18]

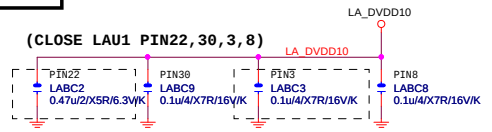
LA_ ML-->80歐姆:[15/5/5/5/15]

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

MDI ESD



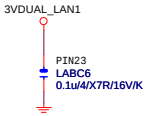
LAN POWER



LABC2:1U CLOSE PIN22[REALTEK REQ]

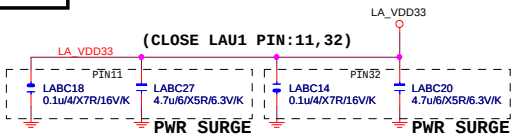
LAN POWER

note: lan power連接及電流



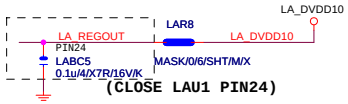
(CLOSE LAU1 PIN23)

LAN POWER



LABC18,27:CLOSE PIN11[REALTEK SURGE]
LABC14,20:CLOSE PIN32[REALTEK SURGE]

LAN POWER



(CLOSE LAU1 PIN24)

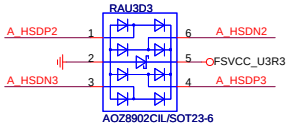
LAN POWER

note: lan power連接及電流

For PVT :LAPW1 改 R0402-2-SHORT20

EMI SHORT PAD

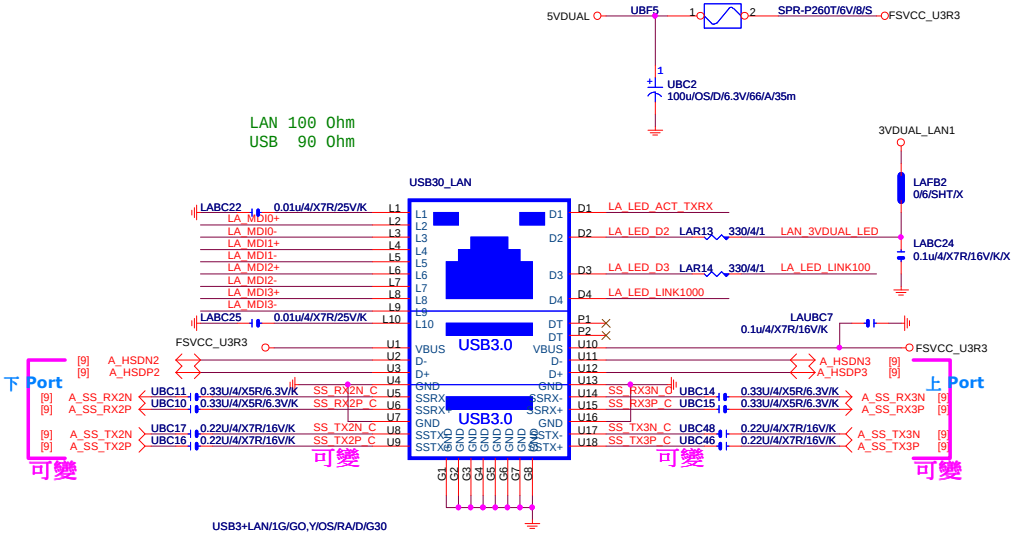
PS:視EMI需求



USB_LAN CONNECTOR

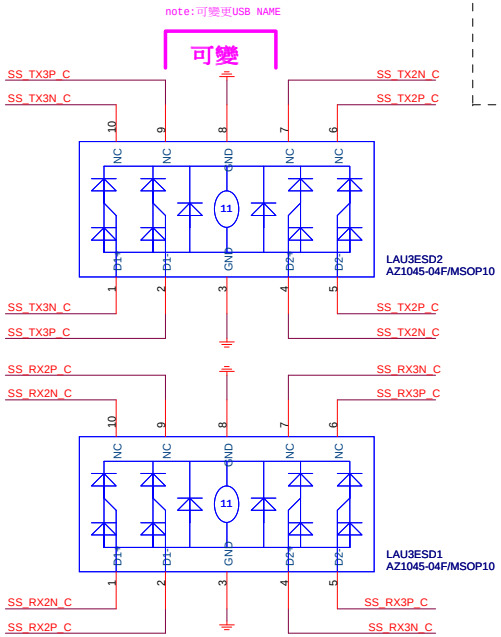
note:可變更USB NAME

LAN 100 Ohm
USB 90 Ohm



USB3+LAN/1G/GO,Y/OS/RA/D/G30

note:可變更USB NAME



GIGABYTE		
Title: RTL8118		
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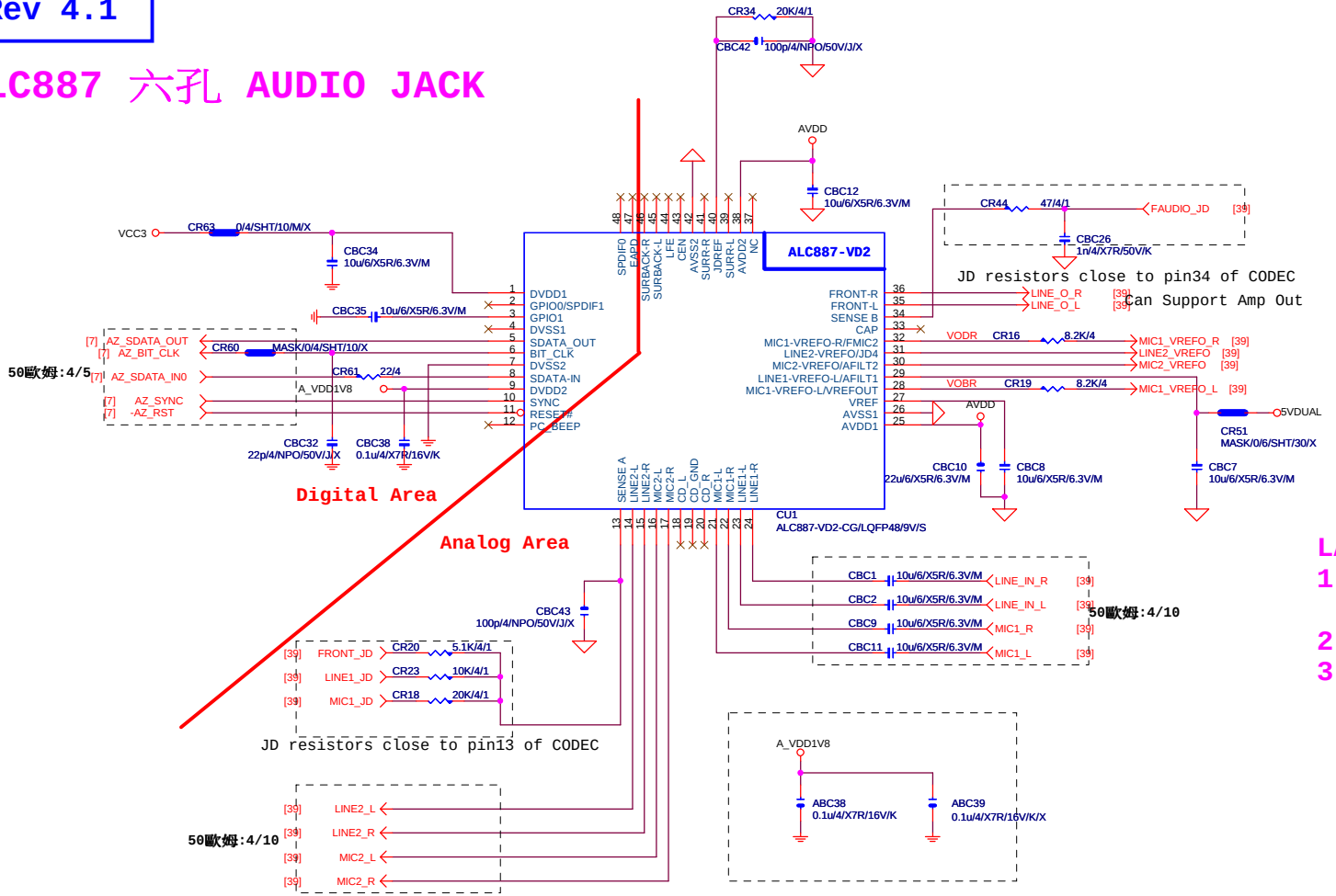
Rev 4.1

ALC887 六孔 AUDIO JACK



LAYOUT注意:螺絲孔下GND方式
1. MH1空間夠,下DGND
   空間不夠,才改為Isolate
2. MH2一律改為Isolate
3. Codec下方,第二層必須參考GND

MH1	MH2
DGND	Isolate

LAYOUT注意:要加
GND切割線

音效區域印刷

BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

GIGABYTE™

Title	Realtek ALC887	
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Rev 4.1

* MOATR5 0/4/X → Near MH1

* MOATR6 0/4/X → Under Codec

增加 for 實驗雜訊issue , 模組 not yet
用大陸反饋配備 ,底噪小聲,先移除

* MOATR1 0/4 + MOATC1 0.1u/4/X7R/16V/K/X → Near F_AUDIO

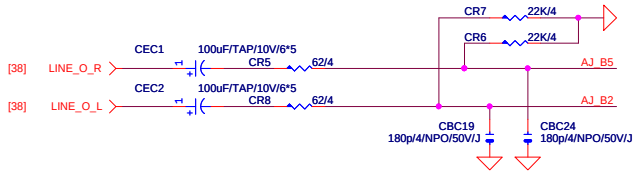
* MOATR2 0/4 + MOATC2 0.1u/4/X7R/16V/K/X → Near Codec

MOATR3 0/4/X + MOATC3 0.1u/4/X7R/16V/K/X → Under Audio jack

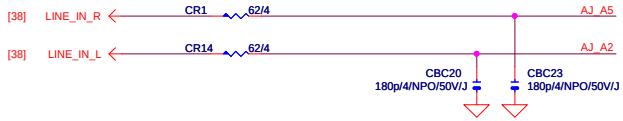
* MOATR4 0/4 → Audio jack - LAN

*量產前,MOATR1/MOATR2/MOATR4 ....0ohm改short pad

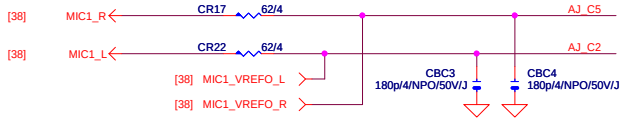
LINE-OUT



LINE-IN



MIC-IN

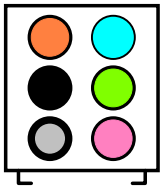


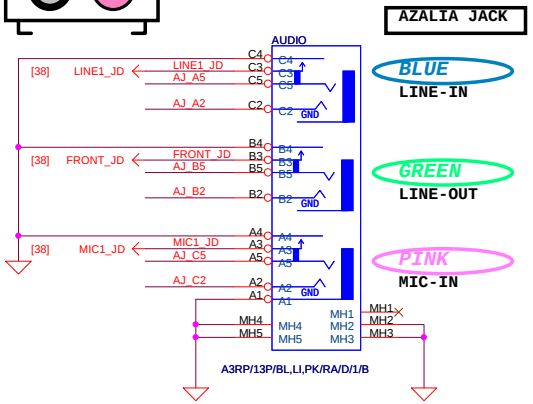
SURROUND

CEN/LFE

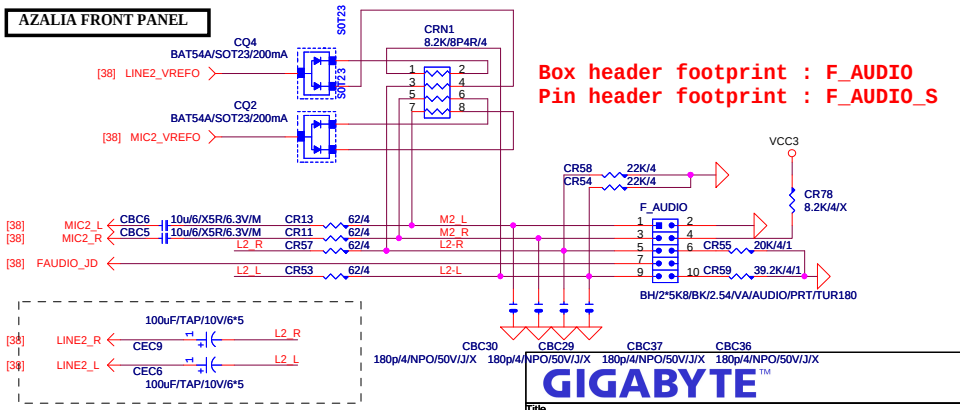
SURR BACK

AZALIA JACK





AZALIA FRONT PANEL



GIGABYTE™

Title: AUDIO JACK		
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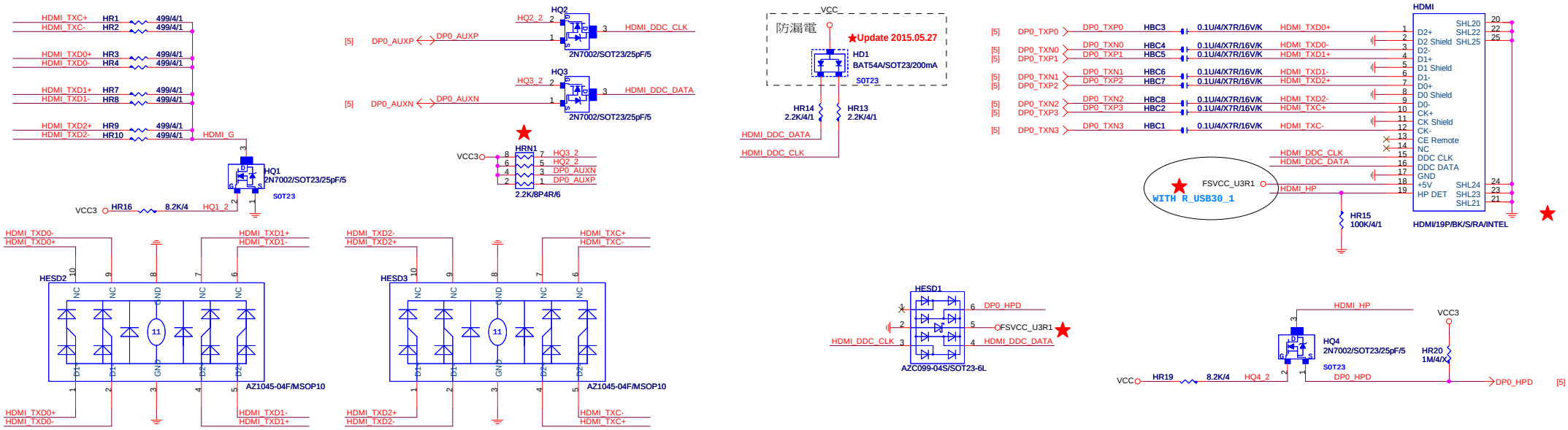

GIGABYTE™

Title	HDMI	
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CPU TOP CAVITY

VCORE	C70	47u/8/X5R/6.3V/M	VCORE	C64	47u/8/X5R/6.3V/M	C52	47u/8/X5R/6.3V/M	VCORE_SOC
VCORE	C223	22u/6/X5R/6.3V/M	VCORE	C225	22u/6/X5R/6.3V/M	C26	22u/6/X5R/6.3V/M	VCORE_SOC
VCORE	C63	47u/8/X5R/6.3V/M	VCORE	C224	47u/8/X5R/6.3V/M	C27	47u/8/X5R/6.3V/M	VCORE_SOC
VCORE	C72	22u/6/X5R/6.3V/M		C92	22u/6/X5R/6.3V/M	C31	22u/6/X5R/6.3V/M	VCORE_SOC
VCORE	C65	47u/8/X5R/6.3V/M		C53	47u/8/X5R/6.3V/M	C93	47u/8/X5R/6.3V/M	VCORE_SOC
VCORE	C62	22u/6/X5R/6.3V/M		C17	47u/8/X5R/6.3V/M	C25	22u/6/X5R/6.3V/M	VCORE_SOC
				C19	47u/8/X5R/6.3V/M	VDDIO_MEM C20	47u/8/X5R/6.3V/M	

VCORE

EMC9 0.1u/4/X7R/16V/K
EMC10 0.1u/4/X7R/16V/K
EMC11 0.1u/4/X7R/16V/K
VCORE_SOC

Cross Plane CAP

裝甲HEATSINK 分成五大部份

PCH_HS

PM_HS

Footprint :
SINK_X570_UD_PCH

PIPE MODULE/[12SF2-S11013-21R_12SF2-S11013-22R]

風扇+鋁擠型+MYLAR銘板/陽極黑色噴砂

MOS_HS

RTMOS:陽極黑色髮絲/印刷8401C

RMOS
PIPE MODULE/[12SP2-S08823-21R_12SP2-S08823-22R]

Footprint :
SINK_X570_UD-R

TMOS:陽極黑色髮絲/印刷8401C

TMOS
TMOS_Heatsink/[12SP2-S11233-21R_12SP2-S11233-22R]

Footprint:
SINK_X470_AORUS_ULTRA_GAMING-T

* PCB顏色 ： 咖啡黑
* 文字面 ： 灰色
* 圖騰 ： 待確認ID

GIGABYTE™

Title	TOP, ARMOR, HS		
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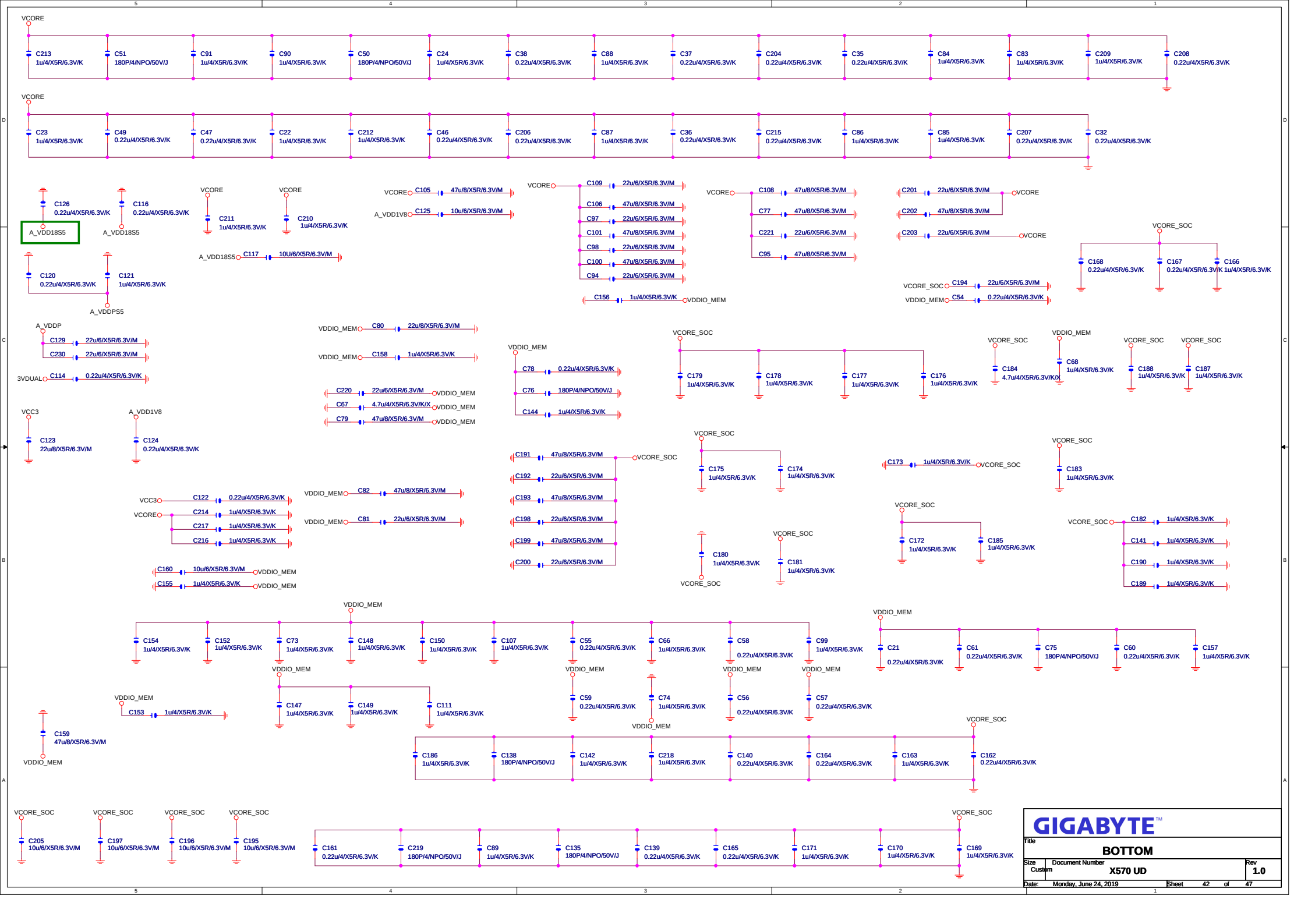
VCORE
C213 1u/4/X5R/6.3V/K
C51 180P/4/NPO/50V/J
C91 1u/4/X5R/6.3V/K
C90 1u/4/X5R/6.3V/K
C50 180P/4/NPO/50V/J
C24 1u/4/X5R/6.3V/K
C38 0.22u/4/X5R/6.3V/K
C88 1u/4/X5R/6.3V/K
C37 0.22u/4/X5R/6.3V/K
C204 0.22u/4/X5R/6.3V/K
C35 0.22u/4/X5R/6.3V/K
C84 1u/4/X5R/6.3V/K
C83 1u/4/X5R/6.3V/K
C209 1u/4/X5R/6.3V/K
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
C116 0.22u/4/X5R/6.3V/K
A_VDD18S5
A_VDD18S5
VCORE
C211 1u/4/X5R/6.3V/K
VCORE
C210 1u/4/X5R/6.3V/K
A_VDD18S5
C117 10U/6/X5R/6.3V/M
C120 0.22u/4/X5R/6.3V/K
C121 1u/4/X5R/6.3V/K
A_VDDPS5
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
C194 22u/6/X5R/6.3V/M
VDDIO_MEM
C54 0.22u/4/X5R/6.3V/K
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
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
C180 1u/4/X5R/6.3V/K
VCORE_SOC
VCORE_SOC
C181 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
C160 10u/6/X5R/6.3V/M
VDDIO_MEM
C155 1u/4/X5R/6.3V/K
VDDIO_MEM
VDDIO_MEM
C82 47u/8/X5R/6.3V/M
VDDIO_MEM
C81 22u/6/X5R/6.3V/M
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
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
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
C74 1u/4/X5R/6.3V/K
VDDIO_MEM
VDDIO_MEM
C56 0.22u/4/X5R/6.3V/K
VDDIO_MEM
C57 0.22u/4/X5R/6.3V/K
VDDIO_MEM
C153 1u/4/X5R/6.3V/K
C159 47u/8/X5R/6.3V/M
VDDIO_MEM
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
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
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Size
Custom
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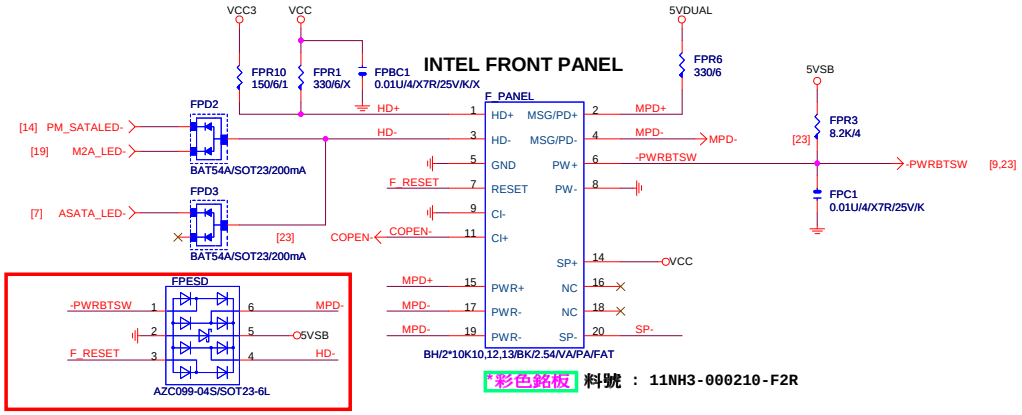

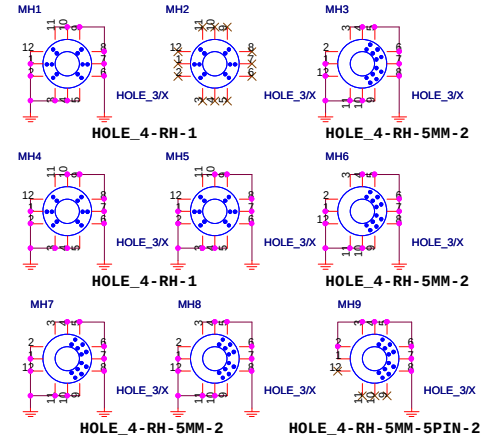

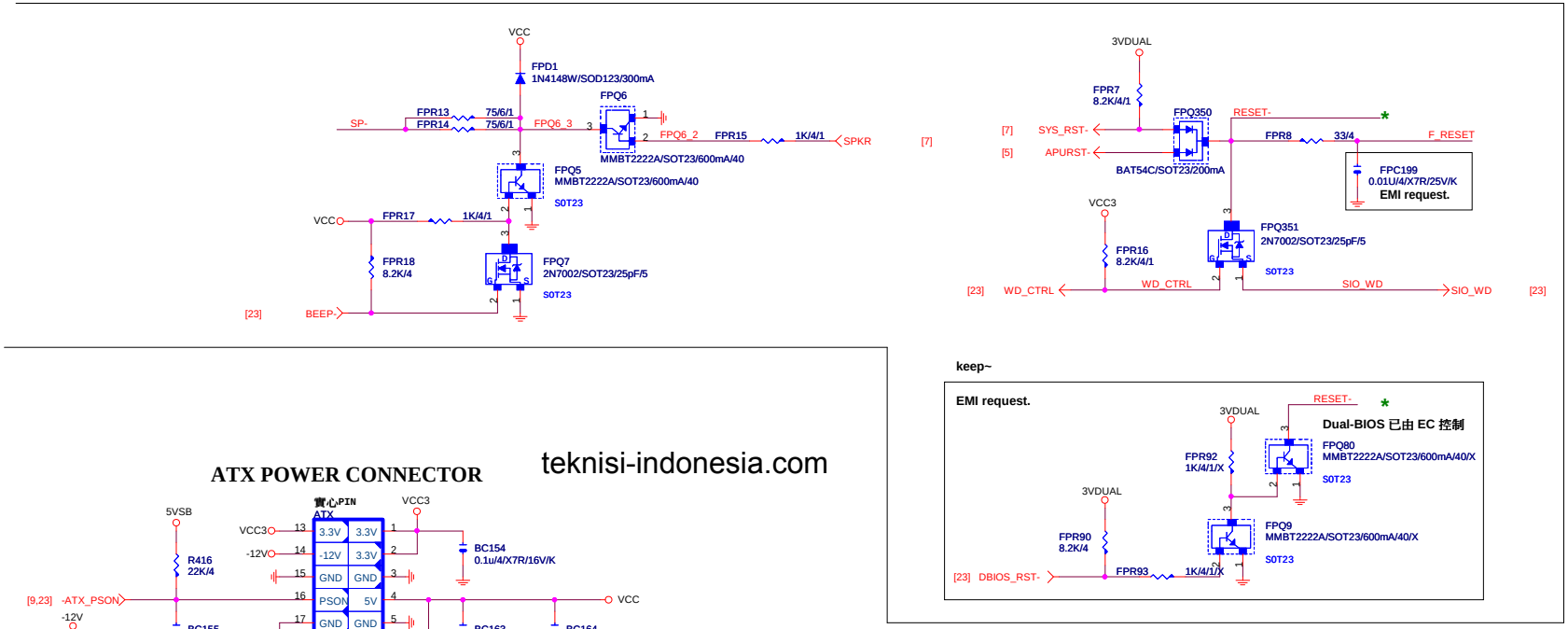

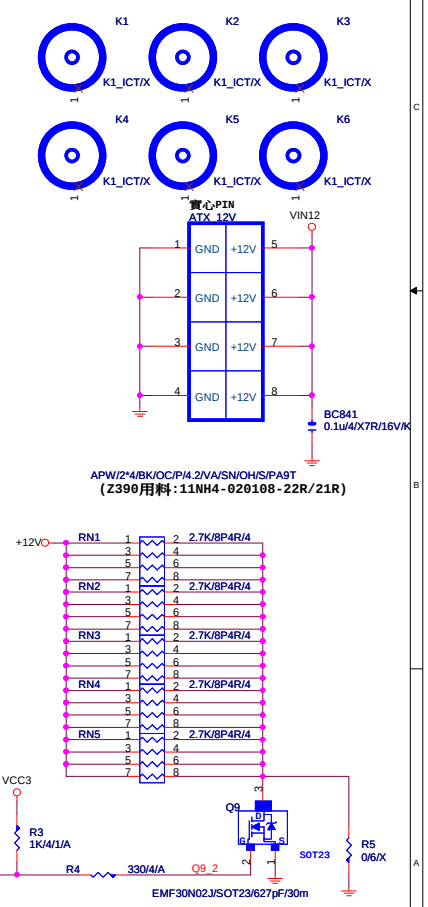

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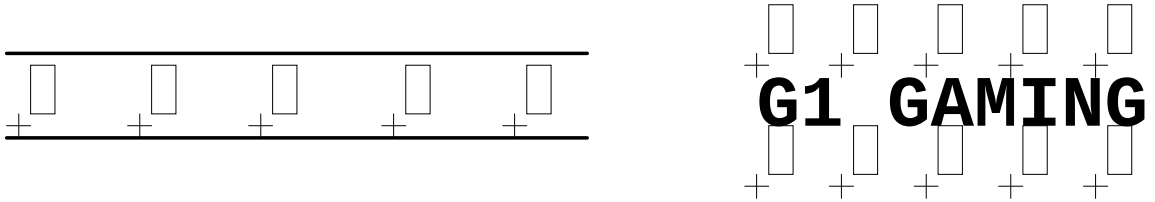
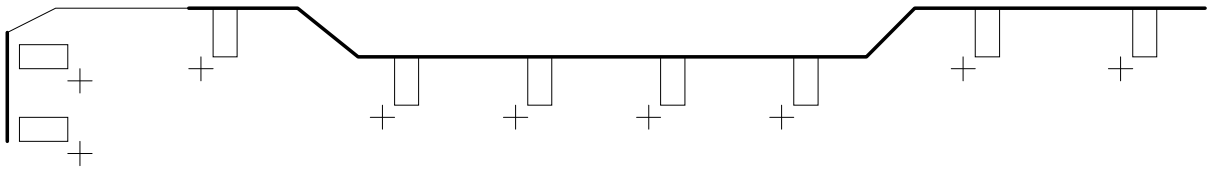
RGB LED LAYOUT 注意事項 :

1. **Debug LED (各LED依CPU/DRAM/VGA/BOOT個別位置擺放)**
2. **背板 RGB LED 方向整板請統一如下**
   (整板正極可統一朝下或朝上)
3. **正板 RGB LED 統一方向即可**
4. **MCU_PW & MCU_PW33電源一律走20mils**
5. **ECF1,ECF2,ECF3,ECF5 兩端電源走80mils或用鋪銅方式加粗**
6. **MCU LED 出pin的走線4mils,如:LED_R_1,LED_G_1,LED_B_1 .....**
7. **LED RGBW rule :W/S=10/5 mils 如:LED_R_11,LED_G_11,LED_B_11..**
   (包含從晶體到排阻到LED的net)
8. **Digital LED NET rule W/S=4/8 mils**
   GPD0_SDA_B,GPD0_SDA_BB,GPD0_SDA_C,GPD0_SDA_CC

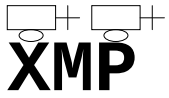
PCB板邊透光model name鏤空+背面 RGB LED



Audio Ground切割線+背面 RGB LED



"XMP"字樣鏤空+背面 RGB測發光 LED



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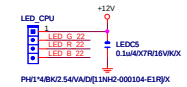
第一區 LED

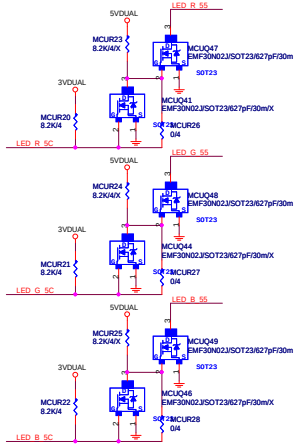
第二區 LED

燈條 LED (LED_CPU放在CPU附近位置)



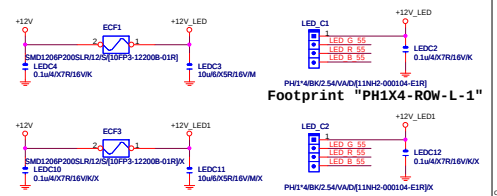
Footprint "PH1X4-FAN-AMD"

第五區 LED CONTROL



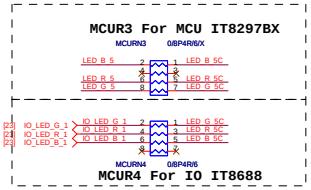
燈條 LED (LED_C1放在PCB左邊板邊位置)

燈條 LED (LED_C2放在PCB右邊板邊位置)

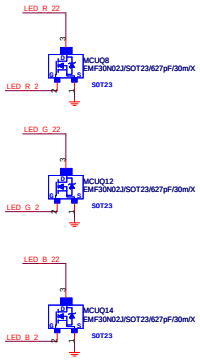


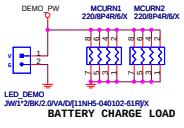
MCUR3 For MCU IT8297BX

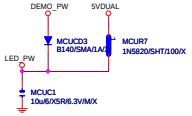
MCUR4 For IO IT8688

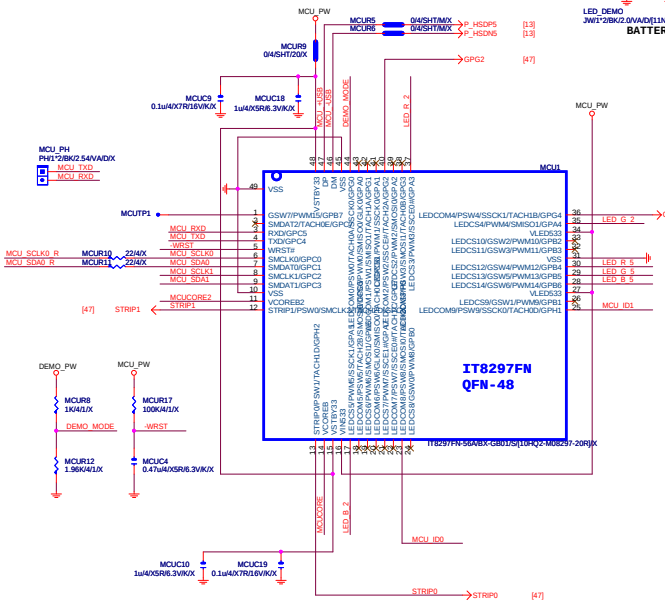


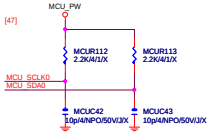
第二區 LED CONTROL

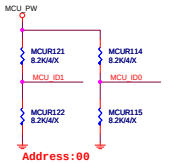


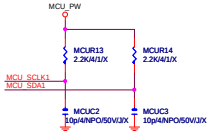


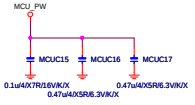


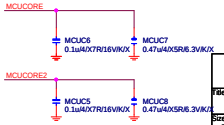


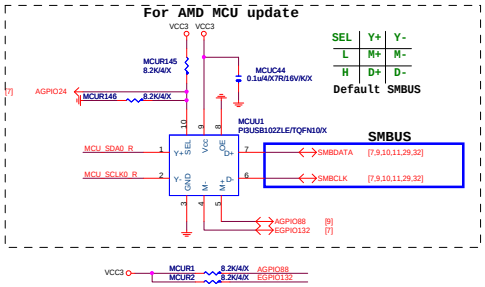












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第三區 LED

第四區 LED

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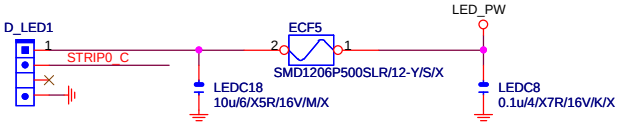
第六區 LED (靠近左上板邊位置)

(靠近右下CPU板邊位置)

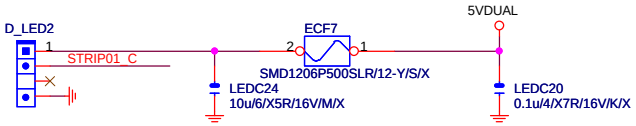
Digital LED Strip1



PH/1*4/BK/2.54/VA/D/[11NH2-000104-G1R]/X

Footprint "PH1X4-CUT3-LED-L"

Digital LED Strip2

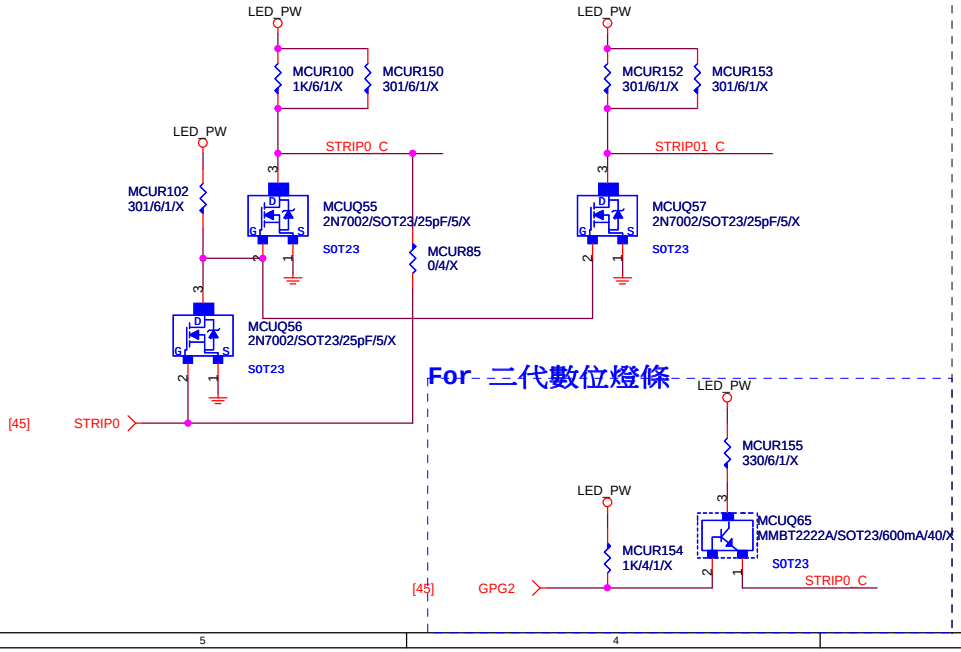


PH/1*4/BK/2.54/VA/D/[11NH2-000104-G1R]/X

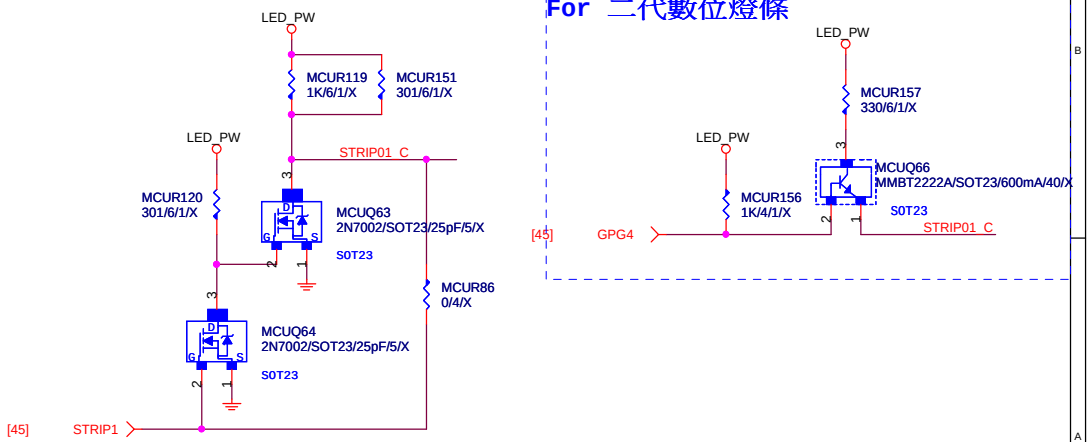
Footprint "PH1X4-CUT3-LED-R"

(for pin-name 與 model-name 同方向)

燈條 Level shift



燈條 Level shift



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