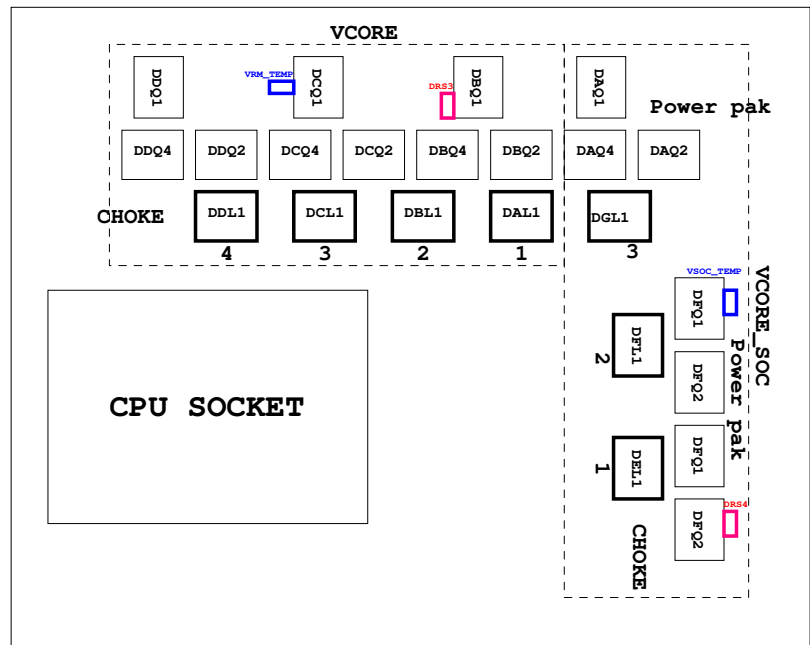


B450M DS3H WIFI V2 Y1

| PAGE | TITLE | Revision :1.0 |
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| 02 | BOM & PCB MODIFY HISTORY | |
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| 04 | CPU DDR4 MEMORY | |
| 05 | CPU DDI, CONTROL | |
| 06 | CPU GFX, GPP, SB, GND | |
| 07 | CPU MISC | |
| 08 | CPU POWER | |
| 09 | CPU CLK, USB3, SPI ,LPC | |
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| 11 | DDR4 CHANNEL B | |
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| 13 | PM USB | |
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| 15 | PM POWER, GND | |
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| 17 | IT8686 | |
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| 20 | ALC887 CODEC | |
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| 22 | POWER SEQ, A_VDDP | |
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| 27 | DDR POWER ,5VDUAL ,3VDUAL |
| 28 | RTL8118 |
| 29 | FAN, COM, HWM |
| 30 | HDMI Connector |
| 31 | PCIEx1 Slot |
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| 33 | CPU SMD CAP TOP |
| 34 | M.2 Socket (SATA/PCIE) |
| 35 | M2_WIFI |
| 36 | LAYOUT RULE |
| 37 | LED_CPU/D_LED1/D_LED2 |



2015.12.30~B.L

| | | | |
|--------------------------|------------------------------|------------|---------|
| GIGABYTE™ | | | |
| Title COVER SHEET | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: | Friday, September 11, 2020 | Sheet | 1 of 37 |

Model Name: B450M DS3H WIFI V2 Y1

Version: 1.0

Component value change history

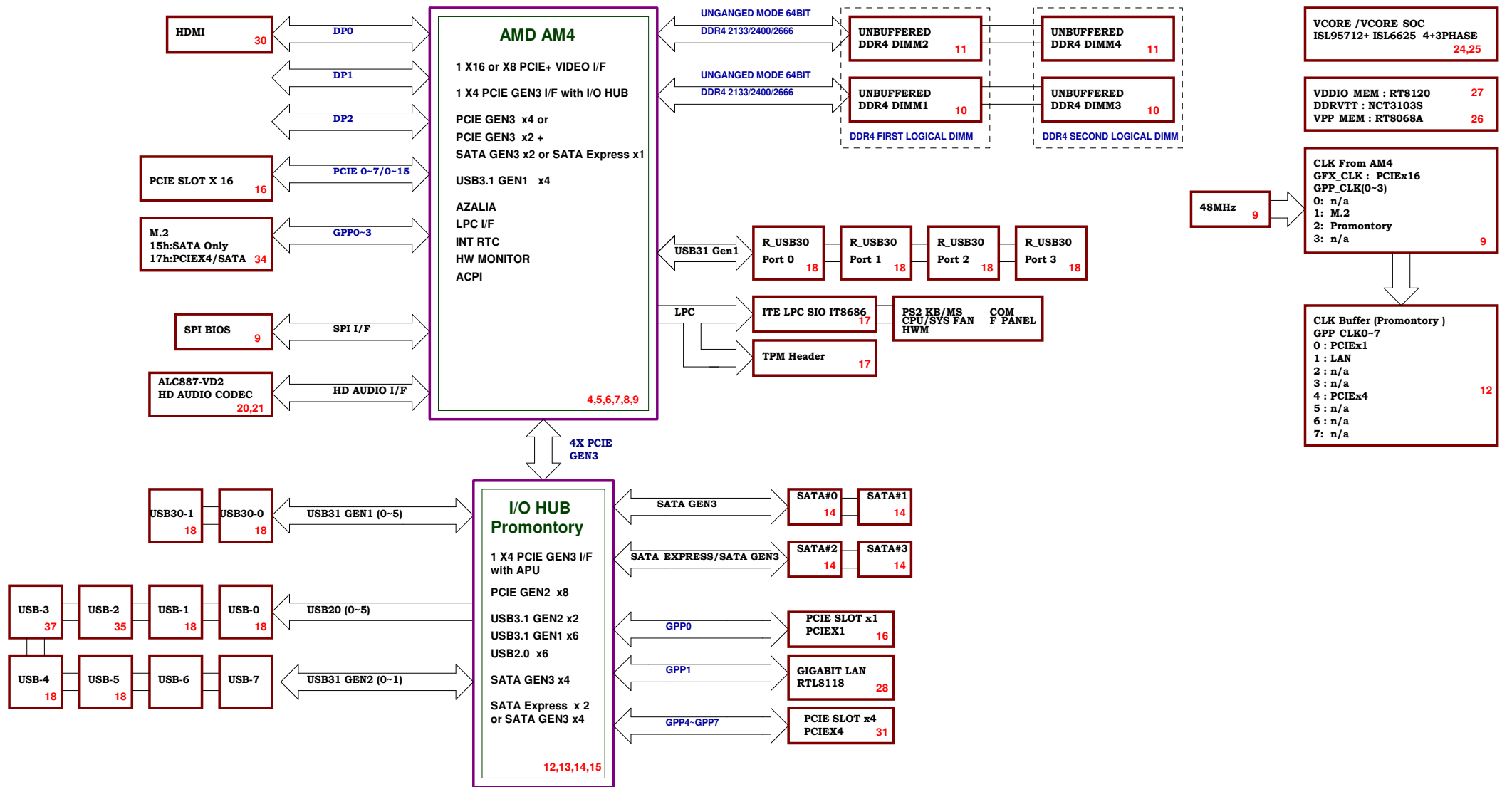
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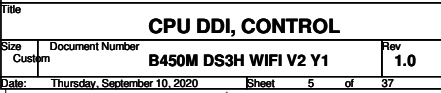
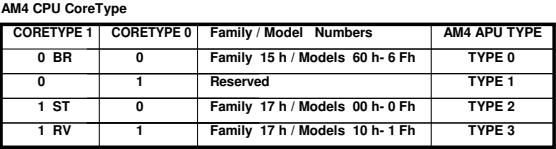
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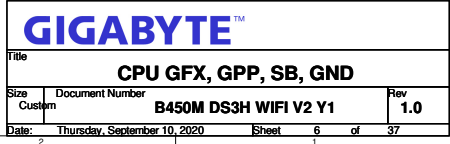
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Circuit or PCB layout change for next version

[illegible]

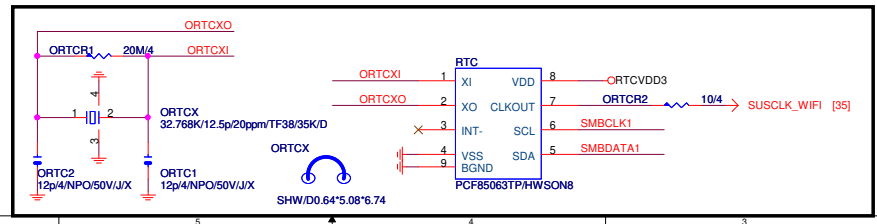





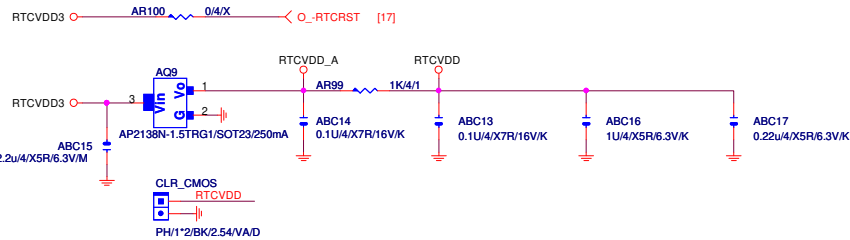
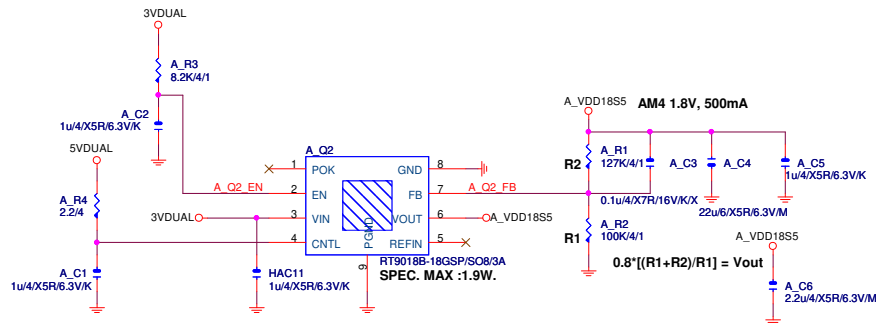
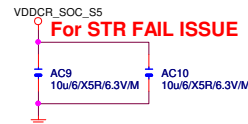
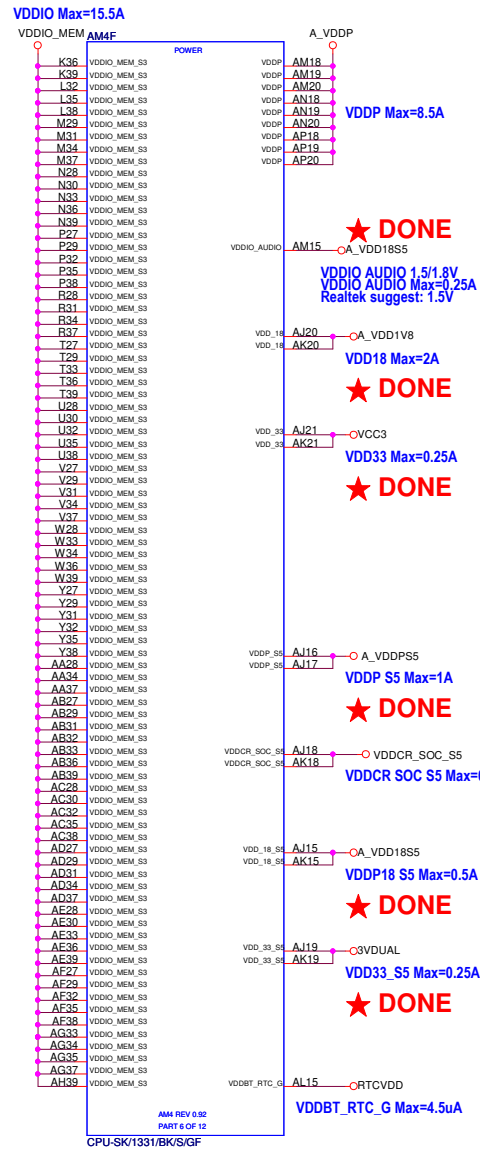


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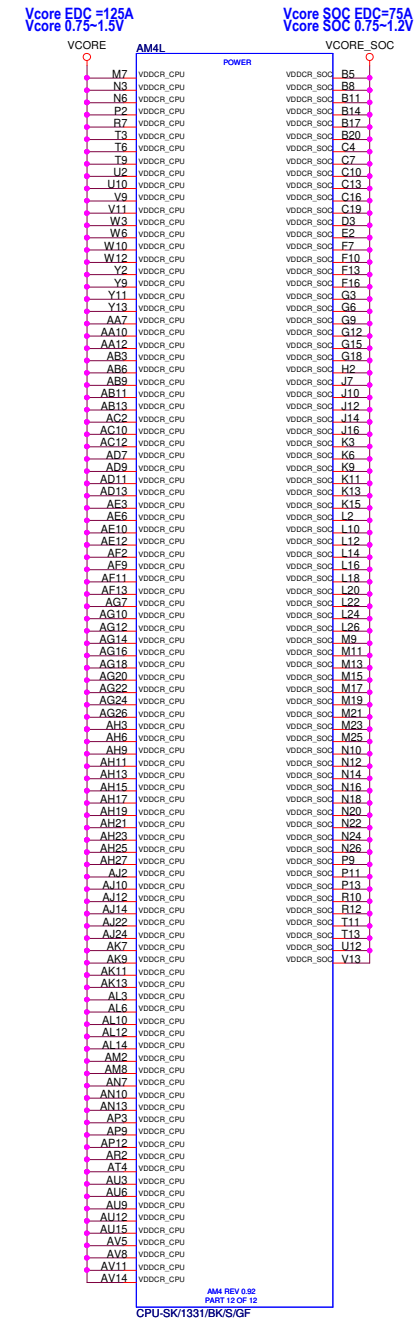
| Internal Debug Only | | | |
|---------------------|-------|-------|---|
| TEST0 | TEST1 | TEST2 | Description |
| 0 | 0 | 0 | FCH TAP accessible from APU when TAPEN is asserted FCH JTAG pins overloaded for multiple functions, in this configuration the FCH JTAG are used as non-JTAG pins |
| 0 | 0 | 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. |



| | | | |
|---|------------------------------|-------|------------|
|  | | | |
| Title | | | |
| <p align="center">AM4 MISC</p> | | | |
| Size | Document Number | | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet | 7 of 37 |

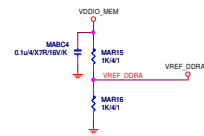
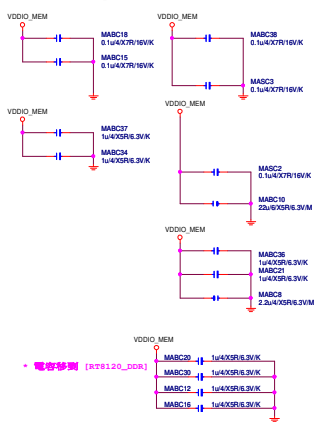
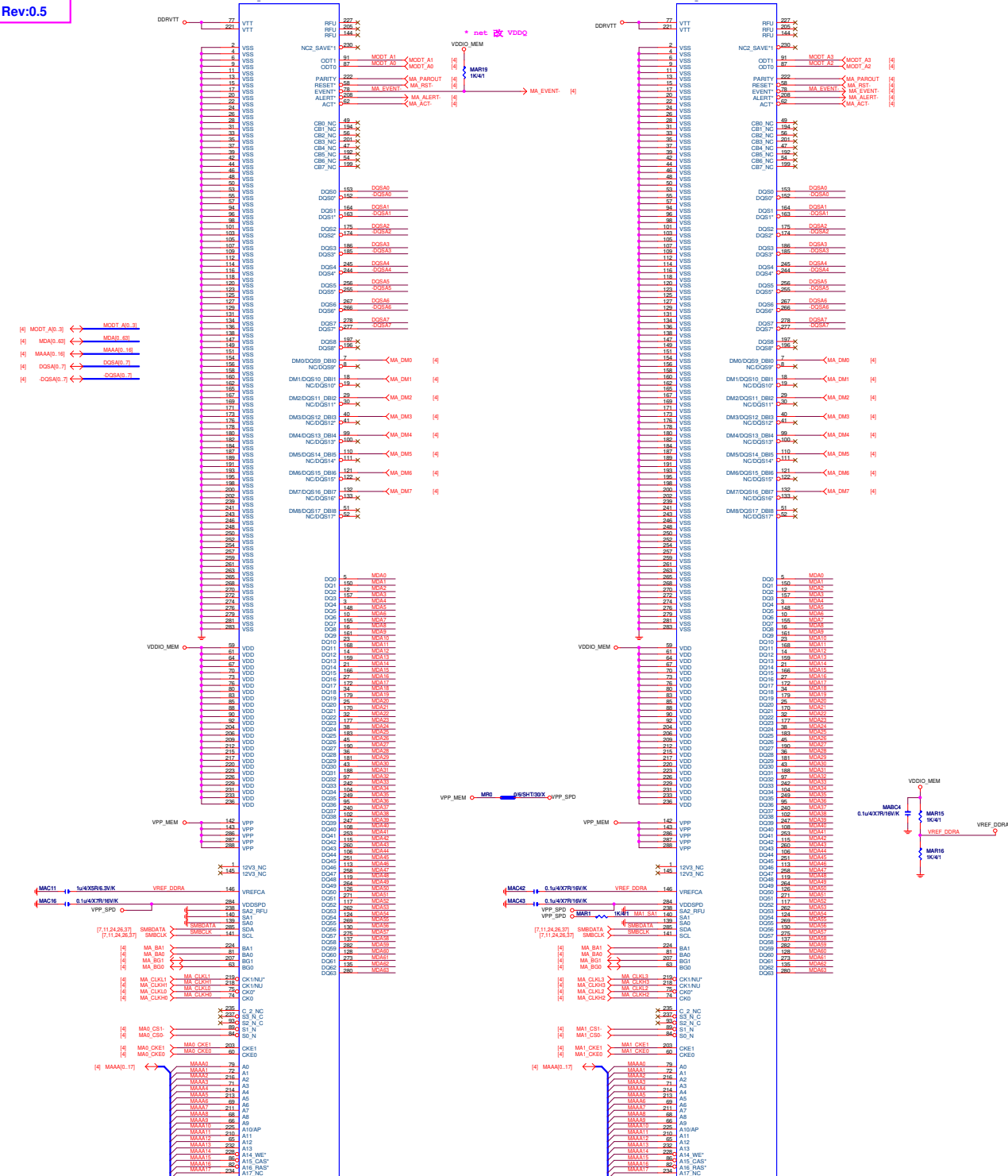


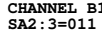
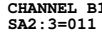
| CLR_CMOS | |
|----------------------------|------------|
| SHORT | CLEAR CMOS |
| OPEN | NORMAL |
| NOT ADD ICT FOR RTCVDD PIN | |



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| CPU POWER | | |
|-----------|------------------------------|---------------|
| Size | Document Number | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet 8 of 37 |



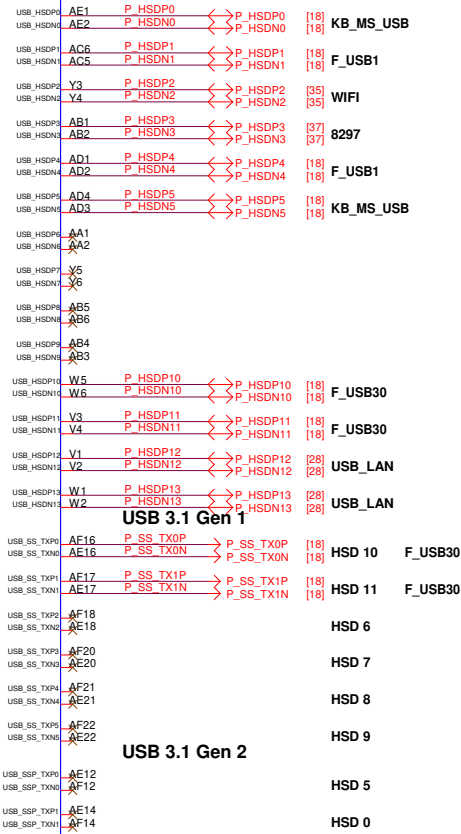
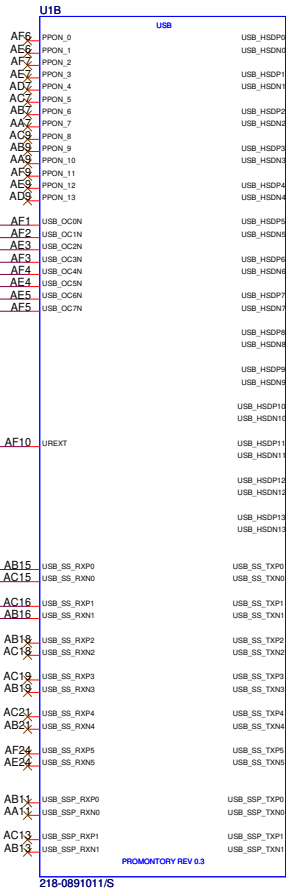


USB port power control 13:0
(VCC3). Output.

[28] -USBOC_R1>
[18] -USBOC_F1>

PR62 12.1K/4/1 P_UREXT

[18] P_SS_RX0P> P_SS_RX0P AB15 USB_SS_RXP0
[18] P_SS_RX0N> P_SS_RX0N AC15 USB_SS_RXN0
[18] P_SS_RX1P> P_SS_RX1P AC16 USB_SS_RXP1
[18] P_SS_RX1N> P_SS_RX1N AB16 USB_SS_RXN1



USB 3.1 Gen 2

USB 3.1 Gen 1

| USB3.1 | USB2.0 | USB_OC |
|---------------------|----------------|----------|
| USB_SSP_TX/RXP/N[0] | USB_HSDP/N[5] | USB_OC0N |
| USB_SSP_TX/RXP/N[1] | USB_HSDP/N[0] | USB_OC1N |
| USB3.0 | USB2.0 | USB_OC |
| USB_SS_TX/RXP/N[0] | USB_HSDP/N[10] | USB_OC2N |
| USB_SS_TX/RXP/N[1] | USB_HSDP/N[11] | USB_OC3N |
| USB_SS_TX/RXP/N[2] | USB_HSDP/N[6] | USB_OC4N |
| USB_SS_TX/RXP/N[3] | USB_HSDP/N[7] | USB_OC5N |
| USB_SS_TX/RXP/N[4] | USB_HSDP/N[8] | USB_OC6N |
| USB_SS_TX/RXP/N[5] | USB_HSDP/N[9] | USB_OC7N |
| | USB_HSDP/N[11] | USB_OC7N |
| | USB_HSDP/N[2] | USB_OC7N |
| | USB_HSDP/N[3] | USB_OC7N |
| | USB_HSDP/N[4] | USB_OC7N |
| | USB_HSDP/N[12] | USB_OC7N |
| | USB_HSDP/N[13] | USB_OC7N |

| 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 |
| PROM3 | 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 |

★ PCB顏色：咖啡黑(咖啡)
★ 文字面：灰色
★ 圖騰：灰色 圖騰B450M DS3H WIFI

GIGABYTE™
ANS 8202608

Title
PM USB

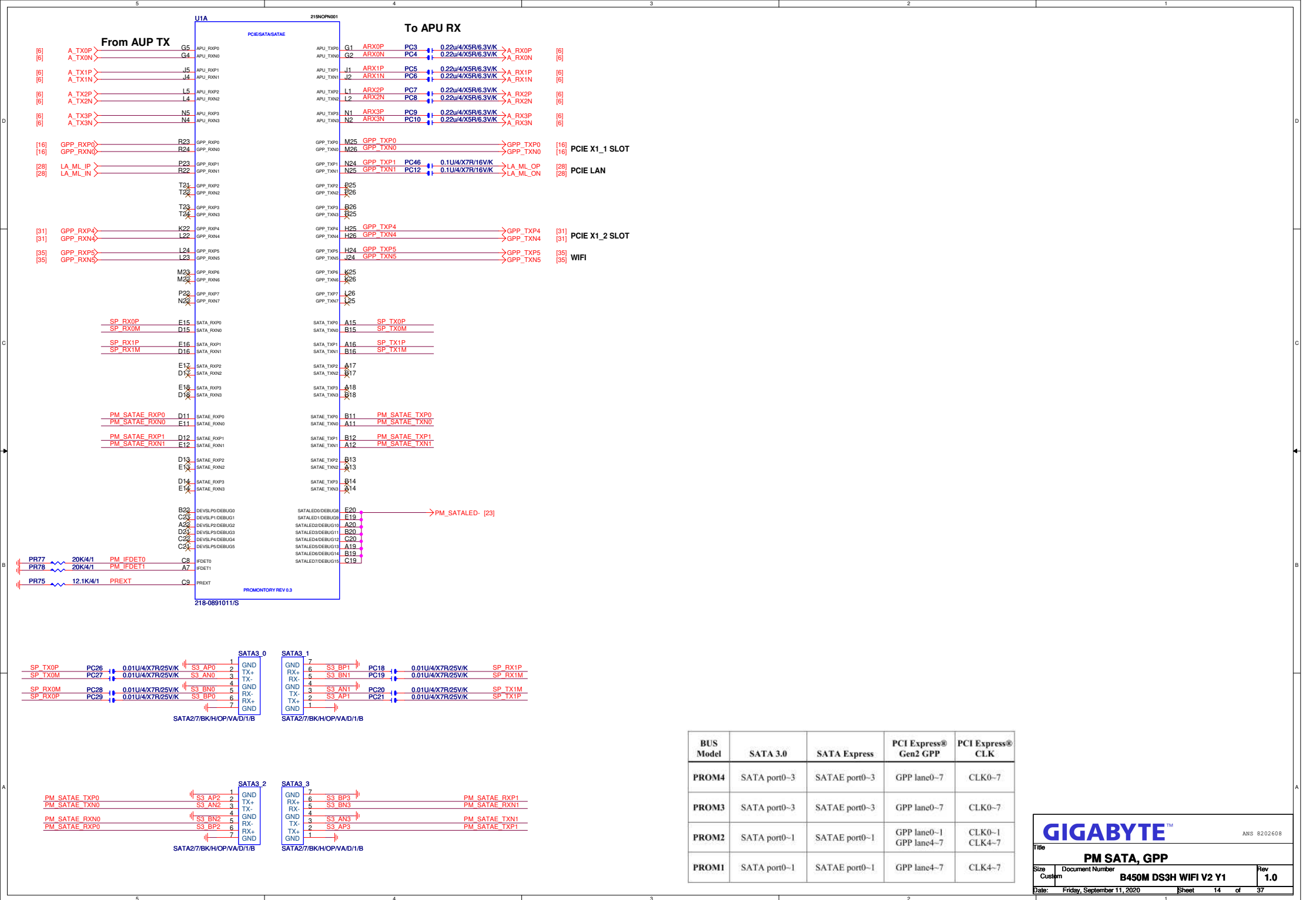
Size
Custom

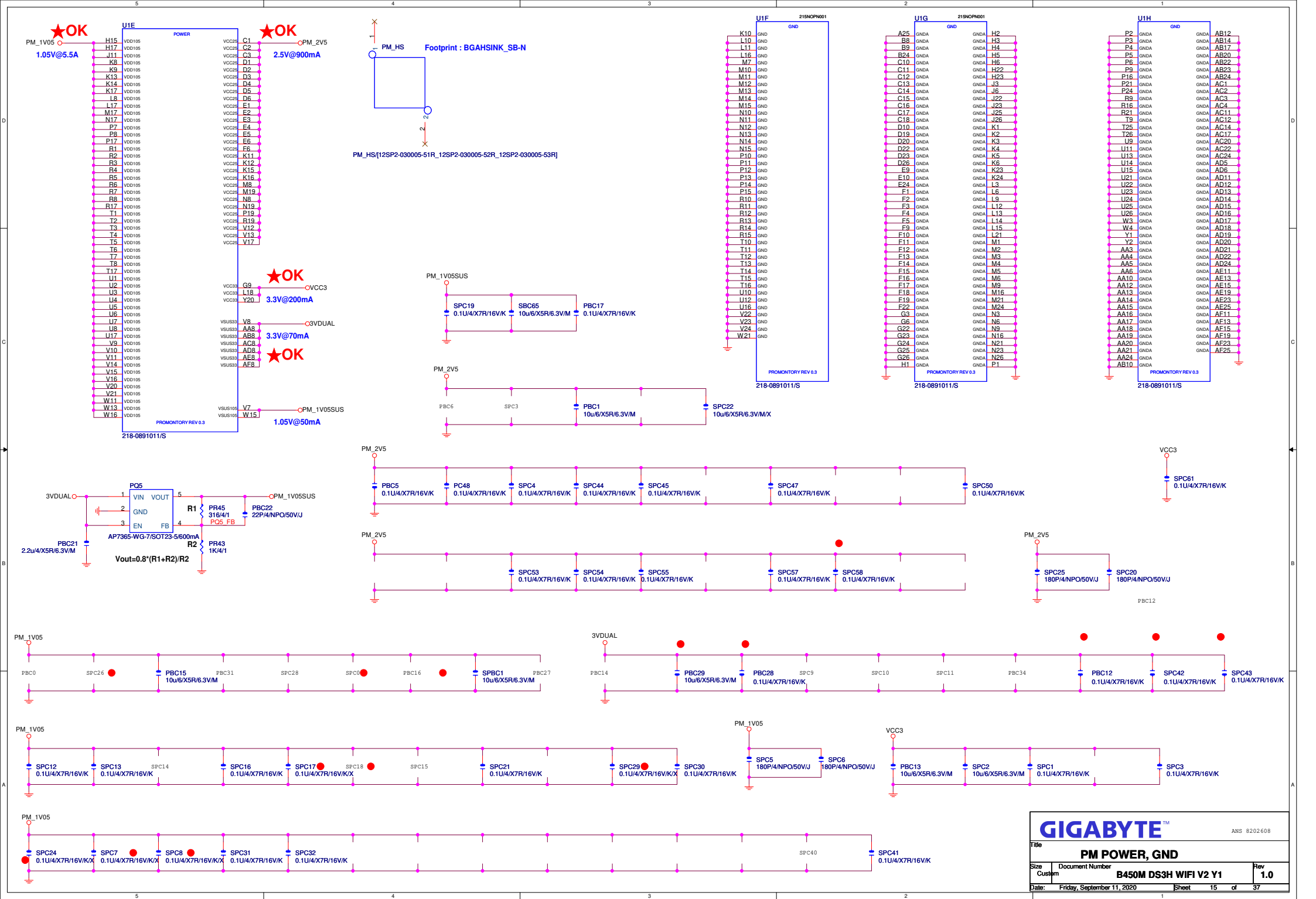
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B450M DS3H WIFI V2 Y1

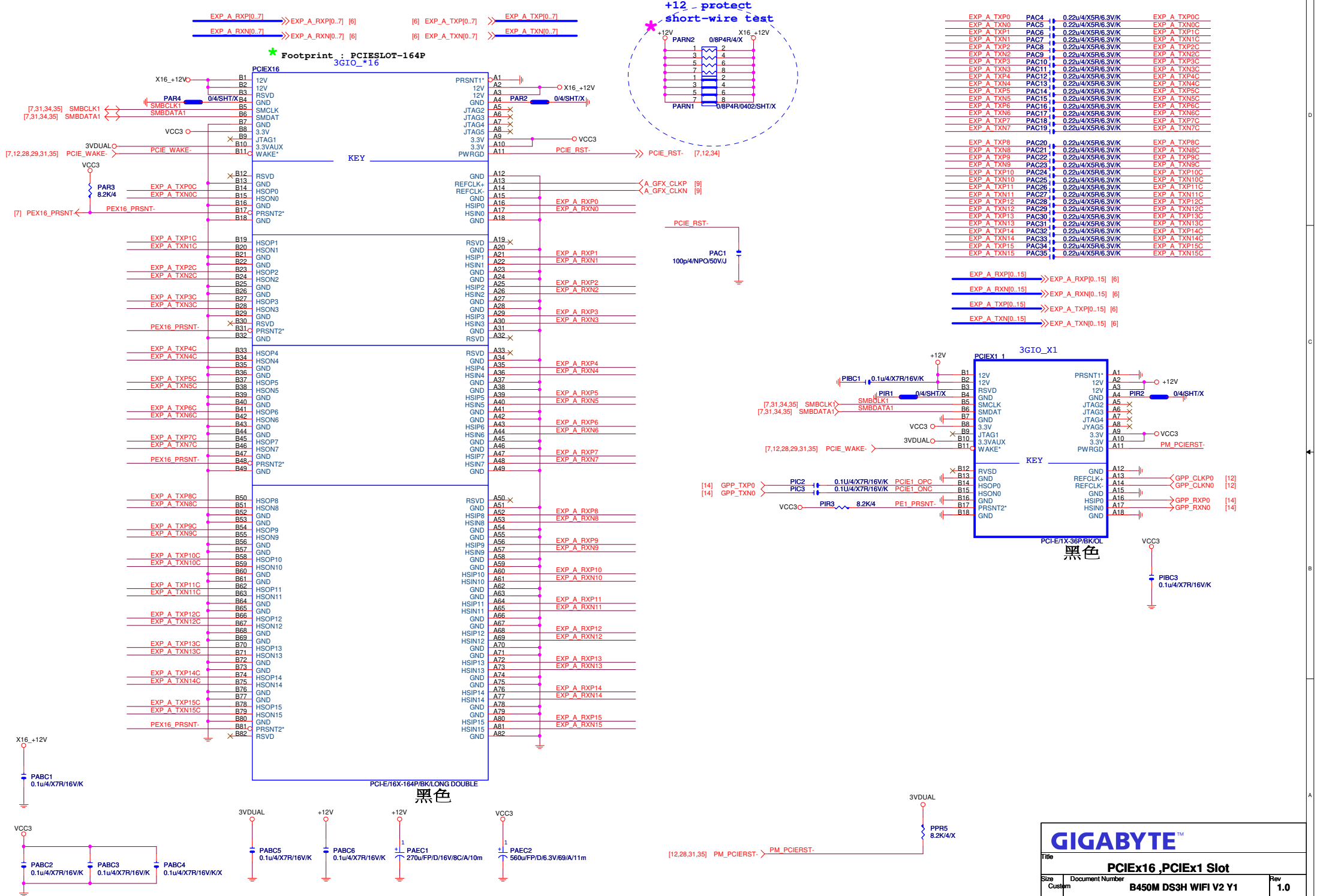
Rev
1.0

Date: Friday, September 11, 2020

Sheet 13 **of** 37



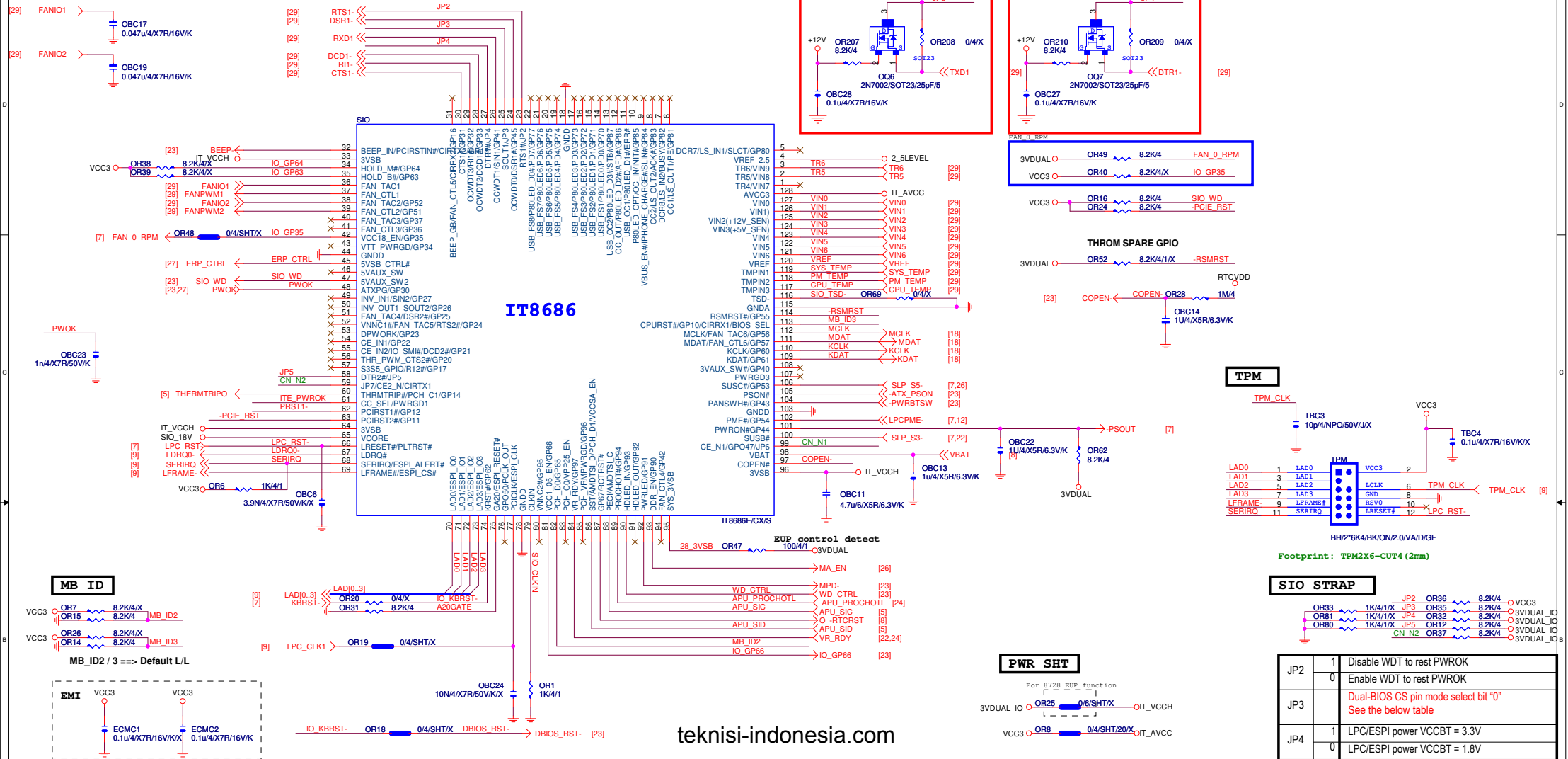




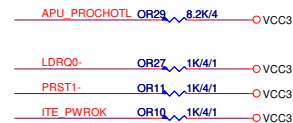
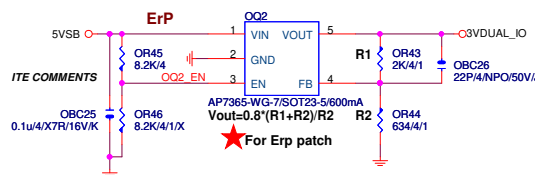
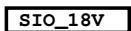
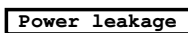
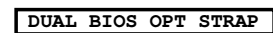
Title

PCIEx16,PCIEx1 Slot

| | | |
|--------|------------------------------|----------------|
| Size | Document Number | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet 16 of 37 |



| 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 |

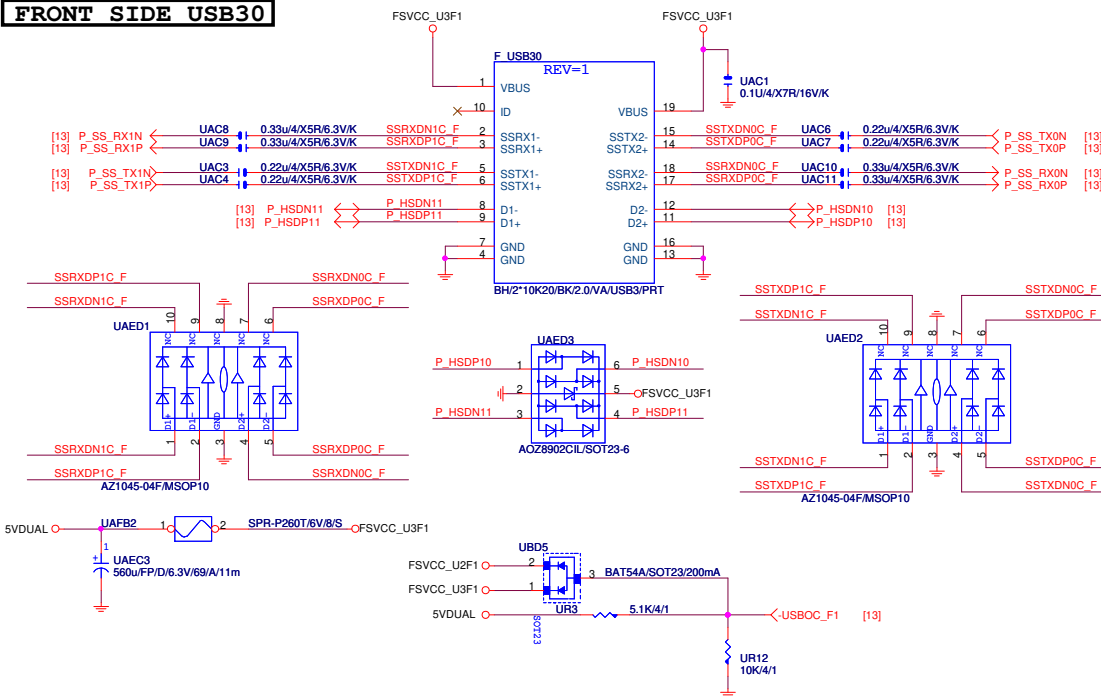


| | | |
|-----|-----|---|
| JP2 | 1 | Disable WDT to rest PWROK |
| | 0 | Enable WDT to rest PWROK |
| JP3 | | Dual-BIOS CS pin mode select bit "0" See the below table |
| JP4 | 1 | LPC/ESPI power VCCBT = 3.3V |
| | 0 | LPC/ESPI power VCCBT = 1.8V |
| JP5 | 1 | LPC I/F |
| | 0 | ESPI I/F |
| JP6 | 1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

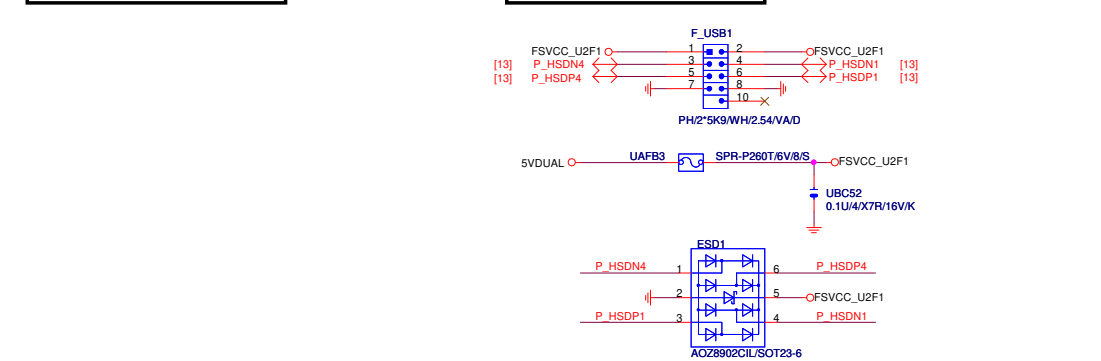
GIGABYTE™

| | | | |
|-----------------|------------------------------|-------|----------|
| Title | | | |
| ITE 8686 LPC IO | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: | Thursday, September 10, 2020 | Sheet | 17 of 37 |

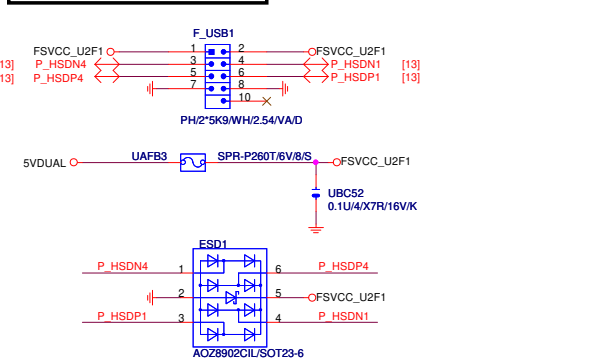
FRONT SIDE USB30



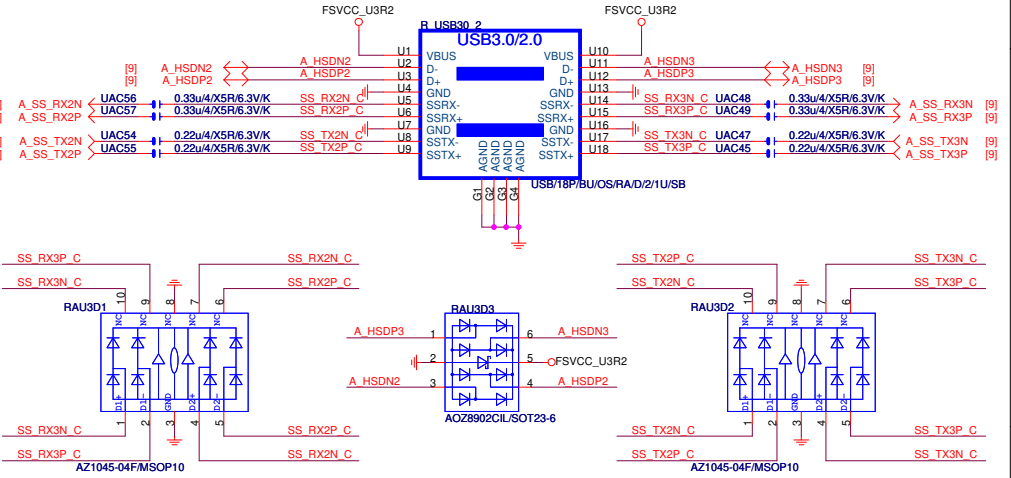
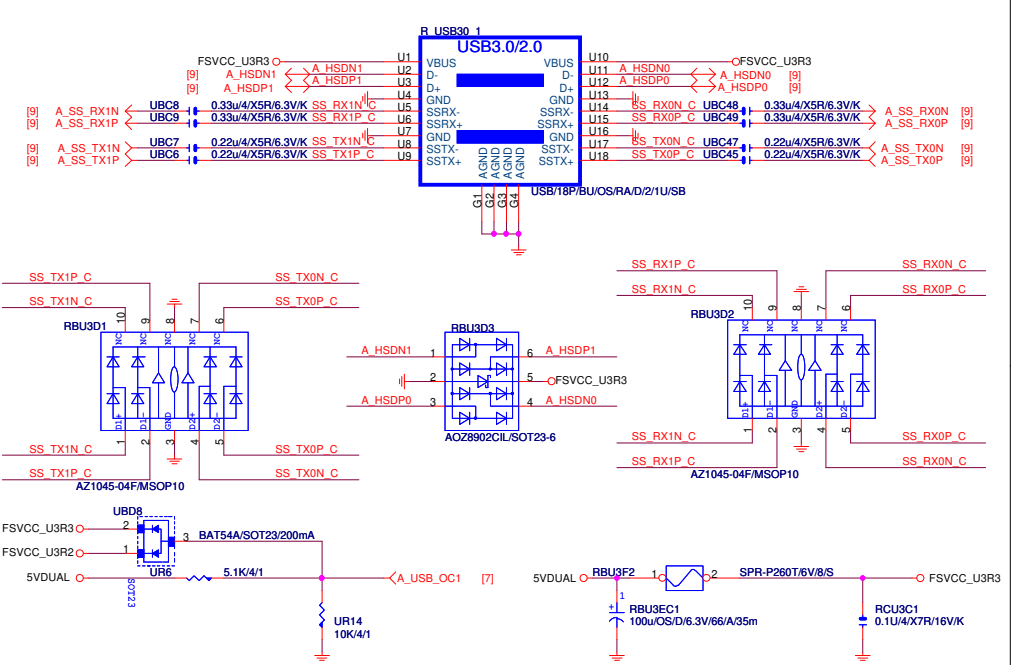
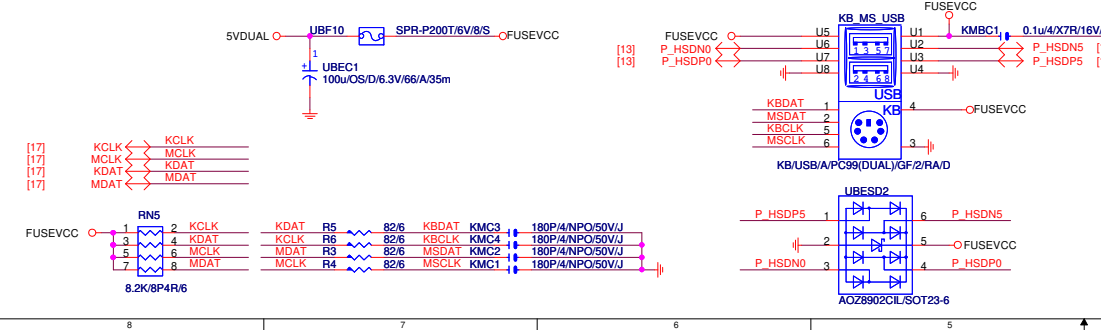
FRONT SIDE USB2



FRONT SIDE USB1



KB/MS & USB

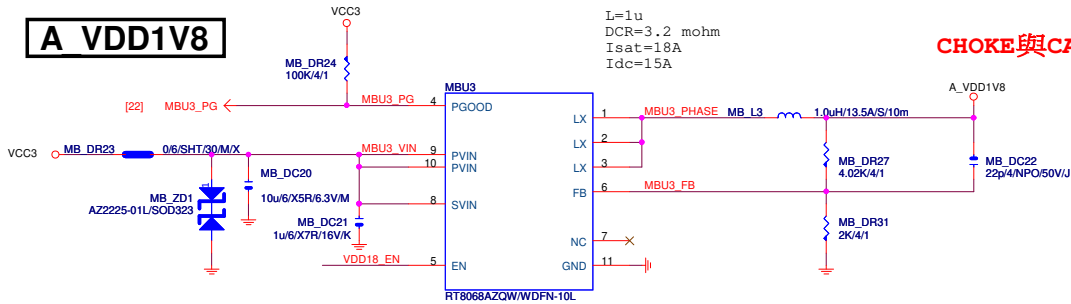


GIGABYTE

| F_USB,F_USB30,R_USB30,KB_MS_USB | | | |
|---------------------------------|------------------------------|-----------------------|----------|
| Title | Document Number | B450M DS3H WIFI V2 Y1 | Rev 1.0 |
| Size | Custom | | |
| Date | Thursday, September 10, 2020 | Sheet | 18 of 37 |

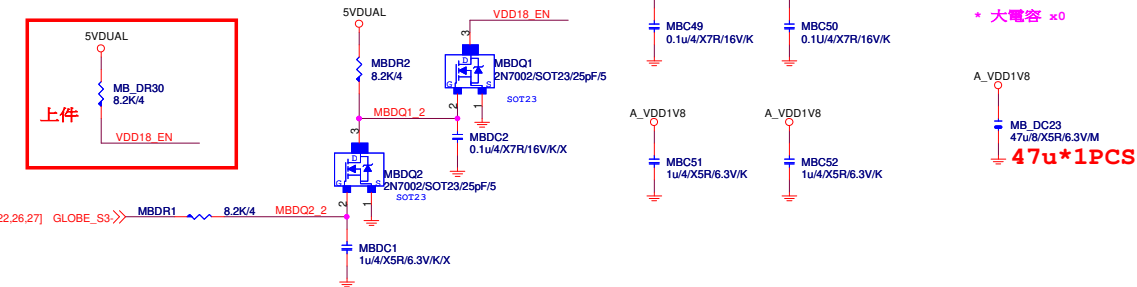
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A VDD1V8

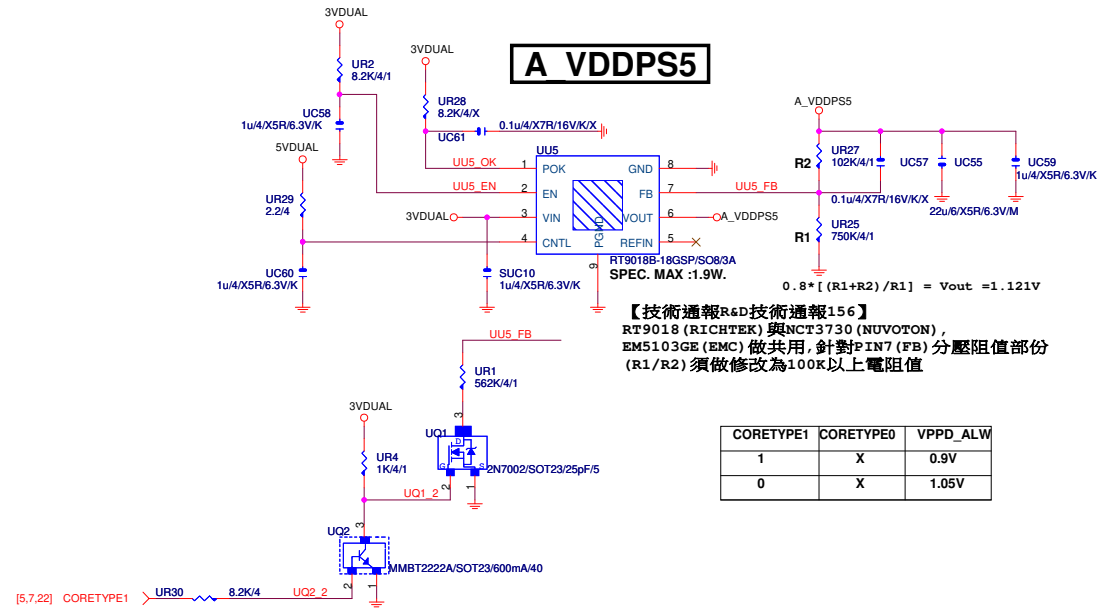


PWR_SEQ

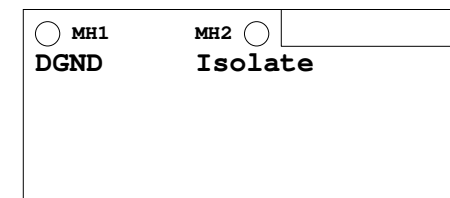
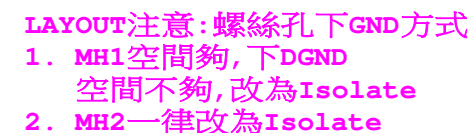
* 刪 MA_DR32



A VDDPS5



| CORETYPE1 | CORETYPE0 | VPPD_ALW |
|-----------|-----------|----------|
| 1 | X | 0.9V |
| 0 | X | 1.05V |

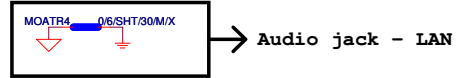
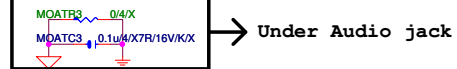
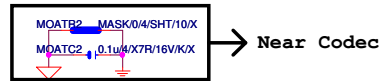
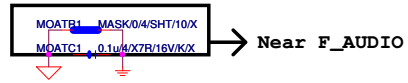


GND切割線



| | | | | |
|---|------------------------------|-------|-------|-----|
|  | | | | |
| Title | | | | |
| ALC887 CODEC | | | | |
| Size | Document Number | | | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | | | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet | 20 of | 37 |

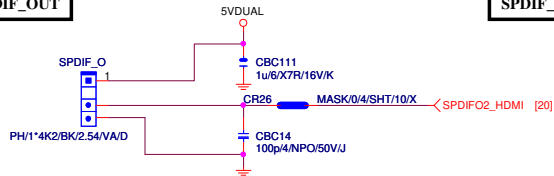
Rev 3.1



*量産前, 0ohm改short pad

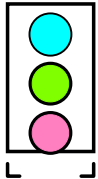
SPDIF_OUT

SPDIF_IN



For HDMI SPDIF (依SPEC保留或移除)

AZALIA JACK

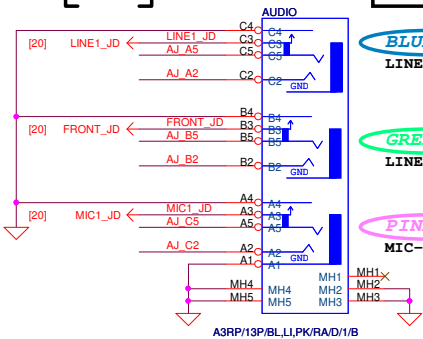


AZALIA JACK

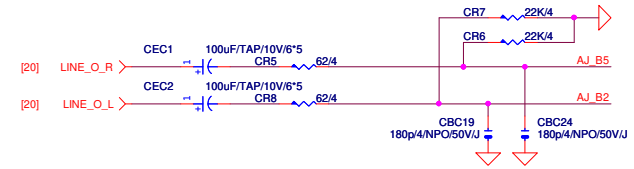
BLUE
LINE-IN

GREEN
LINE-OUT

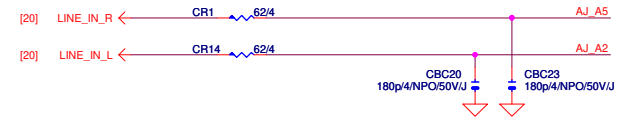
PINK
MIC-IN



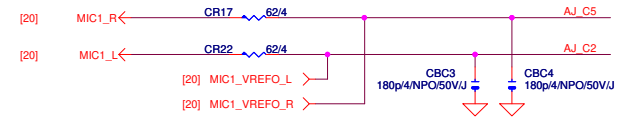
LINE-OUT



LINE-IN



MIC-IN

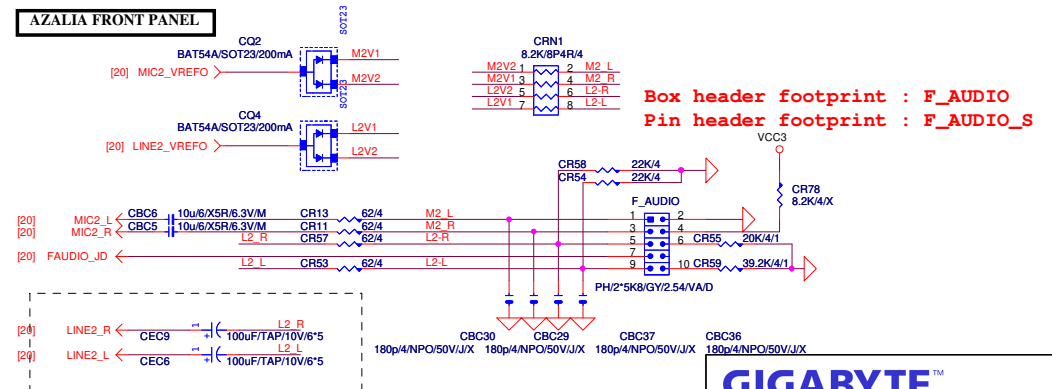


SURROUND

CEN/LFE

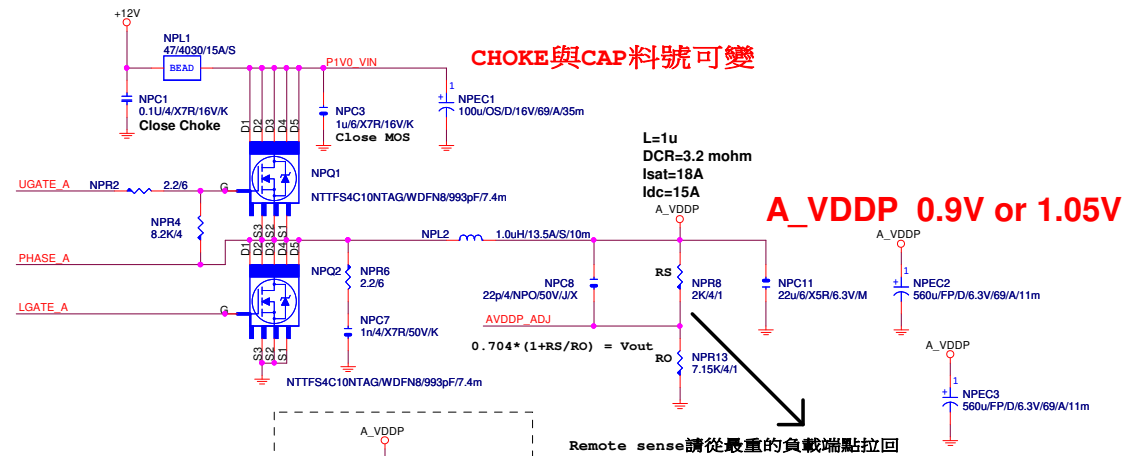
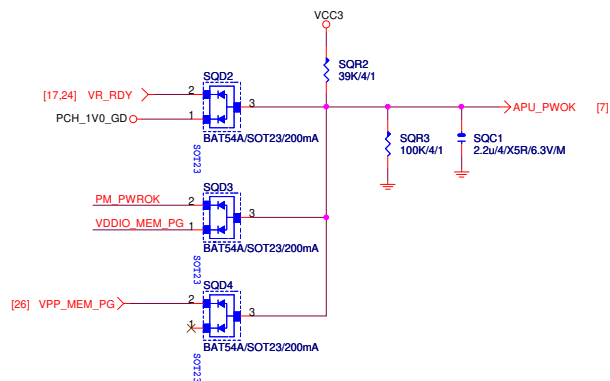
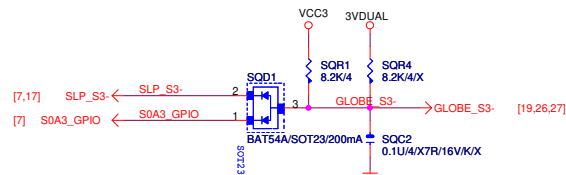
SURR BACK

AZALIA FRONT PANEL



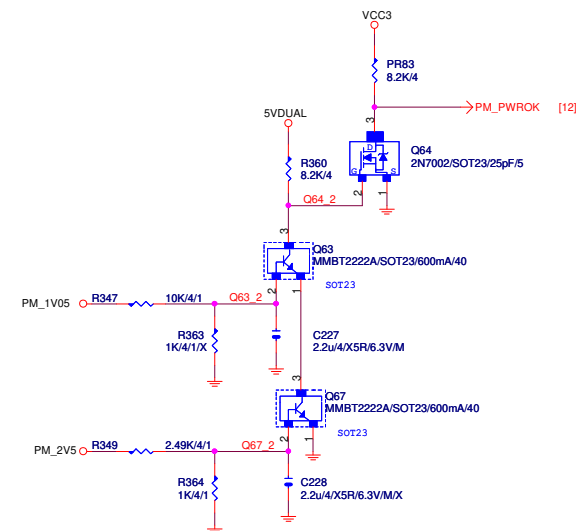
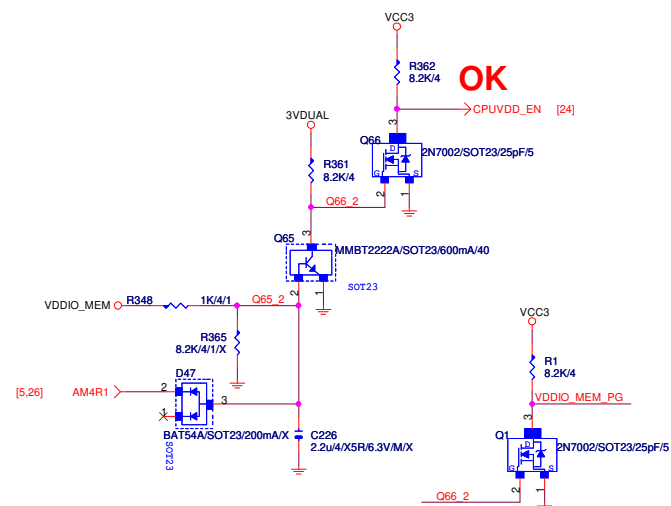
GIGABYTE™

| Title | | |
|------------|------------------------------|----------------|
| AUDIO JACK | | |
| Size | Document Number | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet 21 of 37 |



請放置CHOKE一出來的地方

| CORETYPE1 | CORETYPE0 | VPPD_ALW |
|-----------|-----------|----------|
| 1 | X | 0.9V |
| 0 | X | 1.05V |

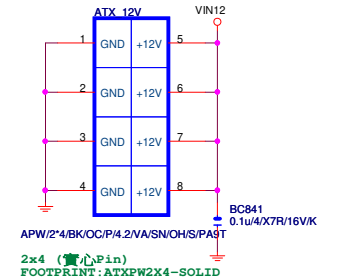
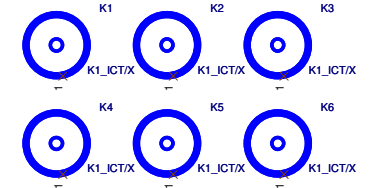
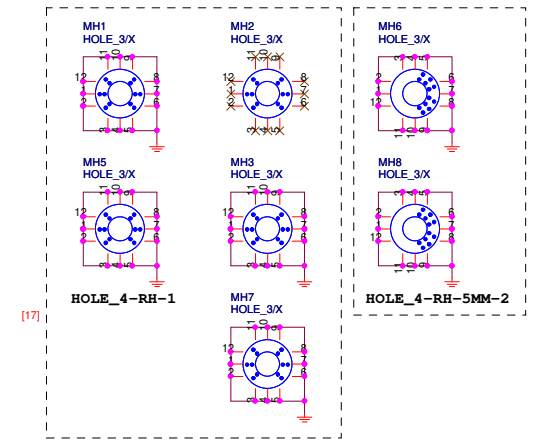
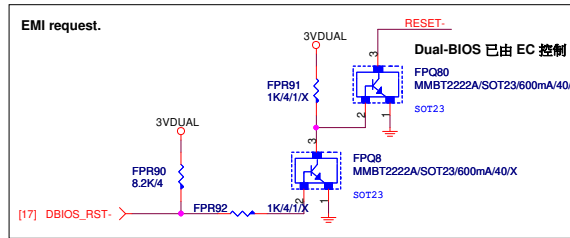
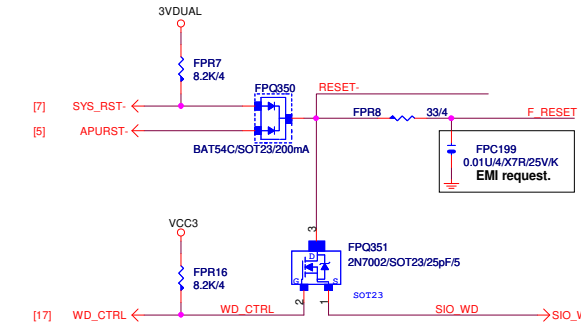
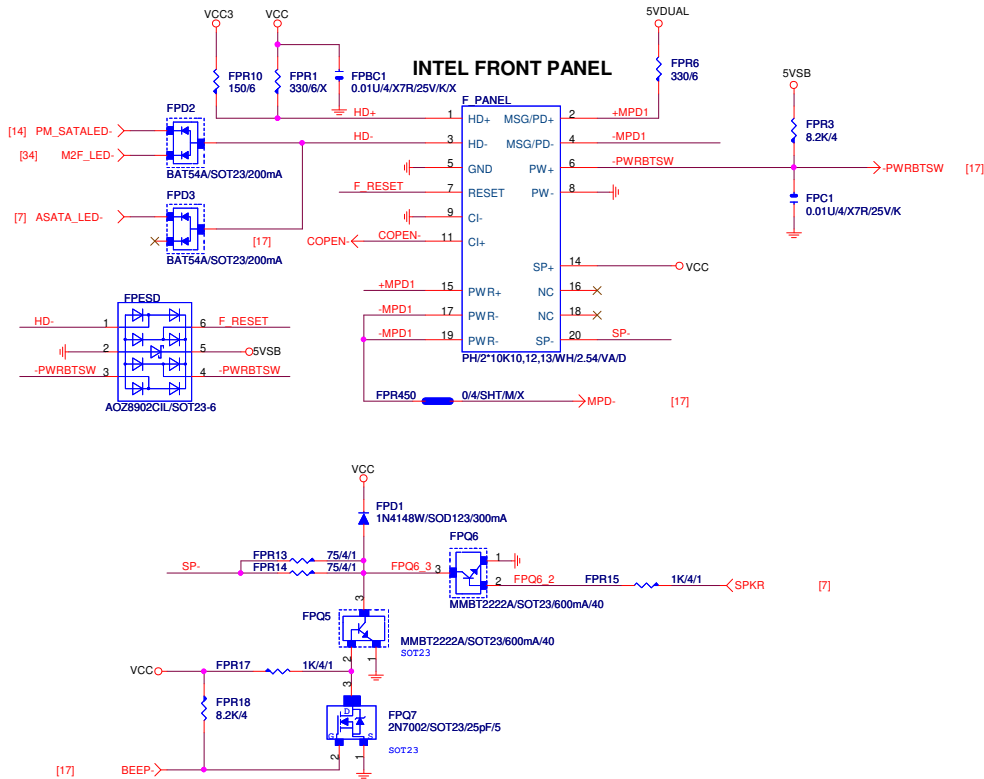


GIGABYTE™

Title POWER_SEQ, A_VDDP

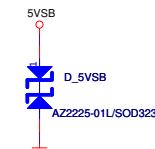
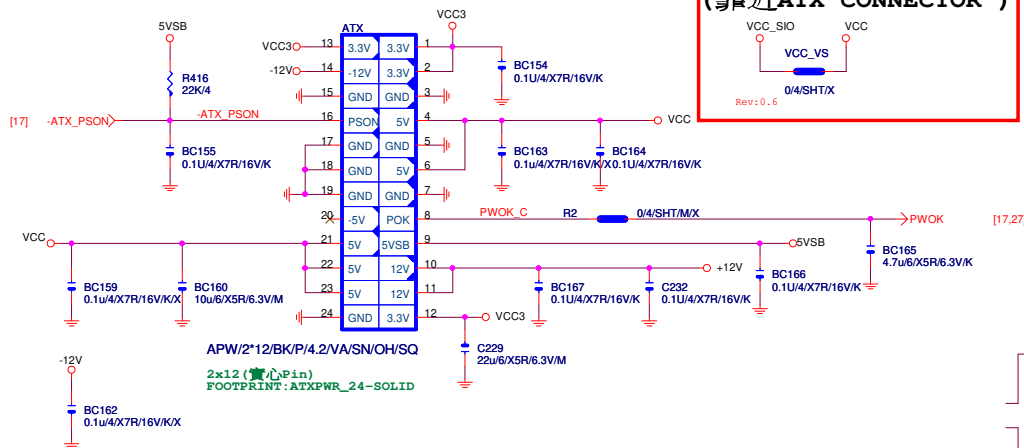
Size Custom Document Number B450M DS3H WIFI V2 Y1 Rev 1.0

Date: Thursday, September 10, 2020 Sheet 22 of 37

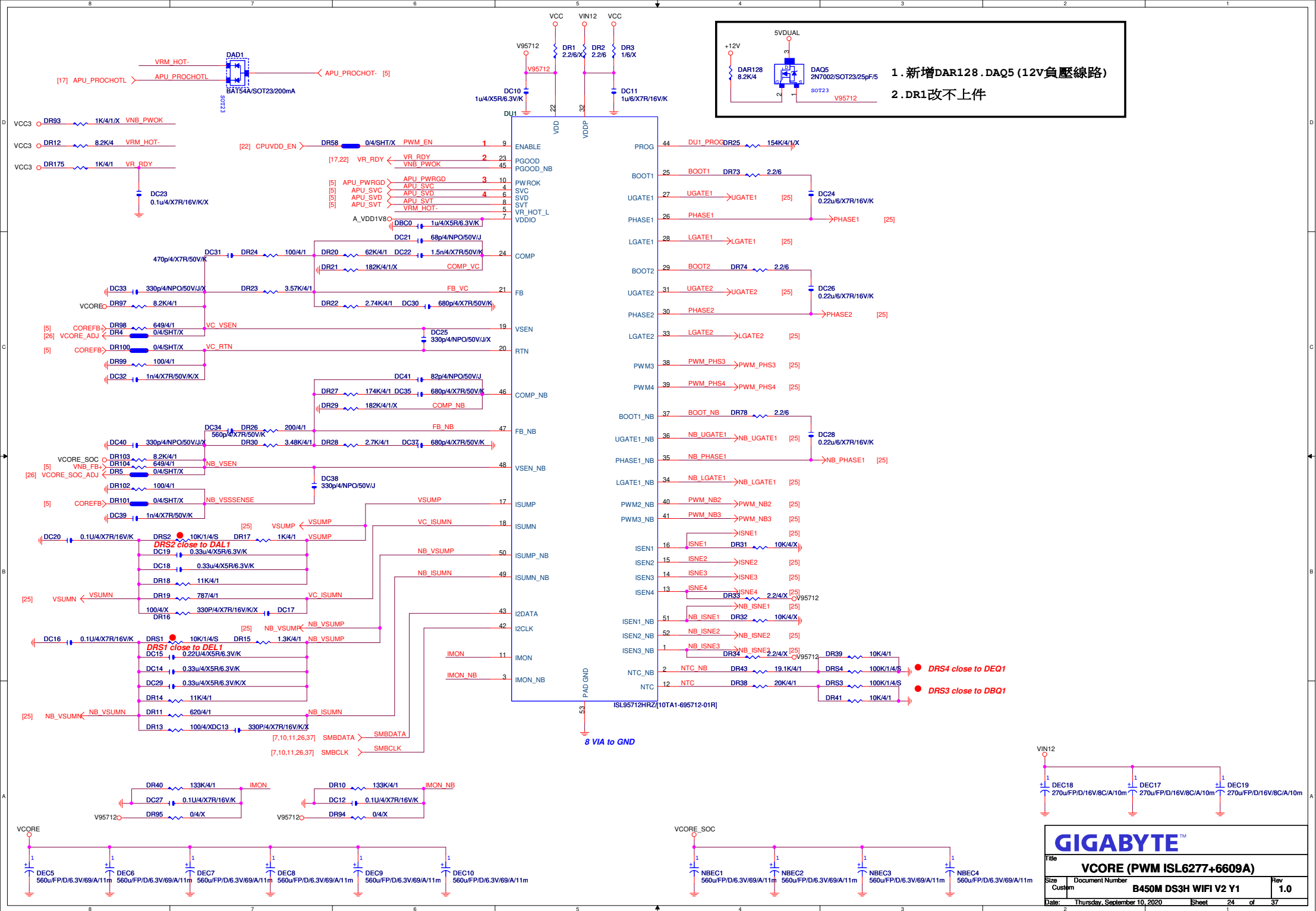


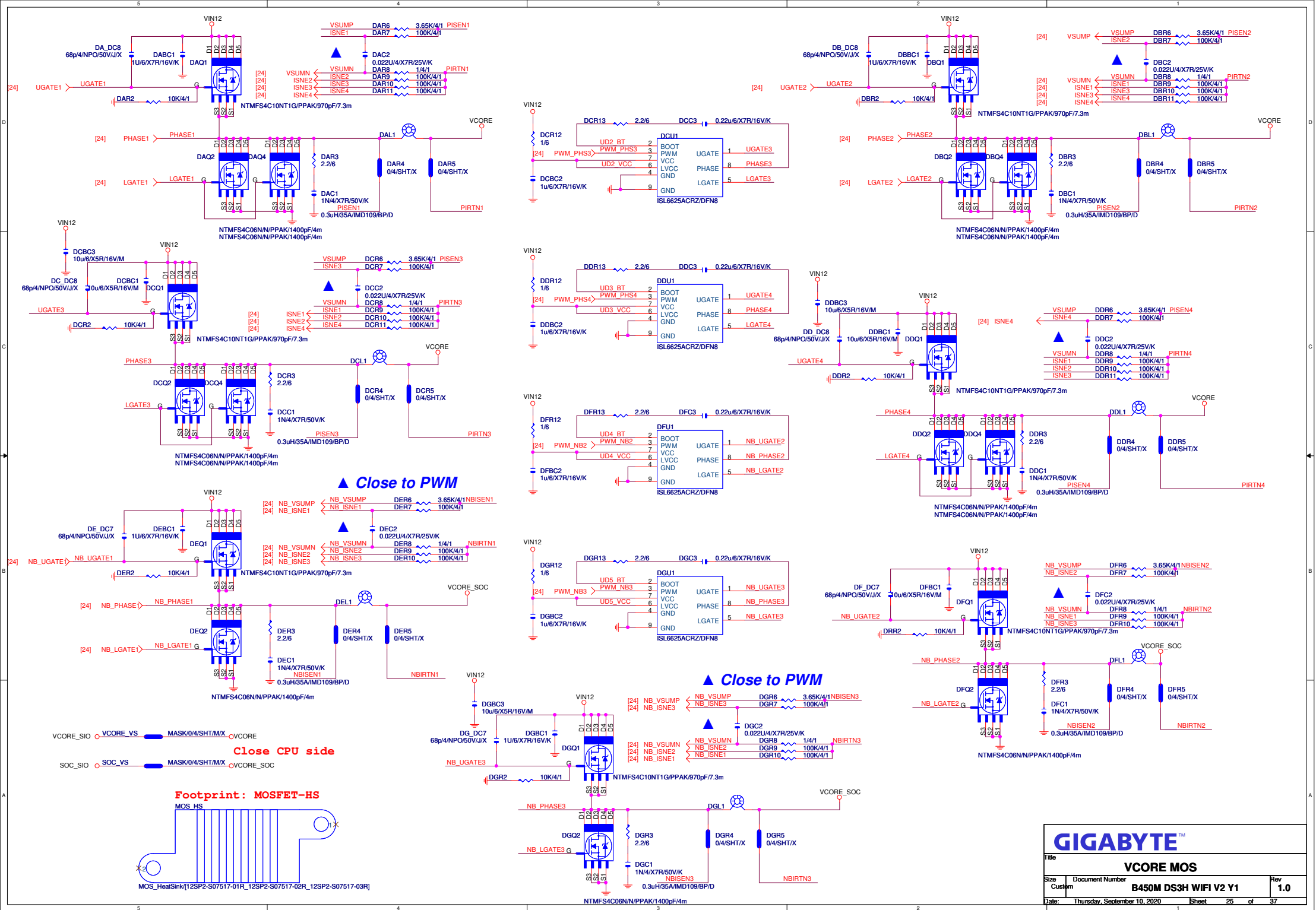
ATX POWER CONNECTOR

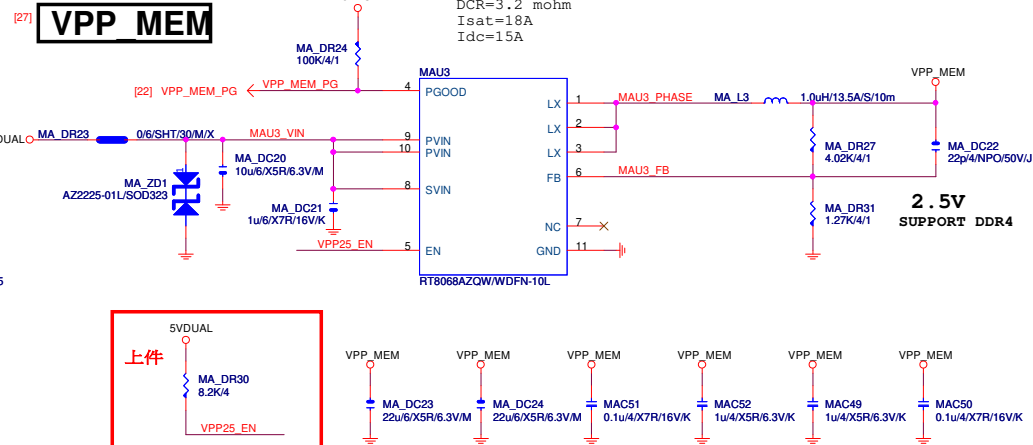
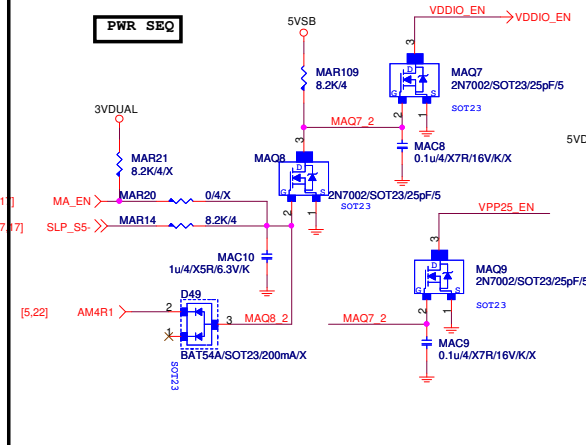
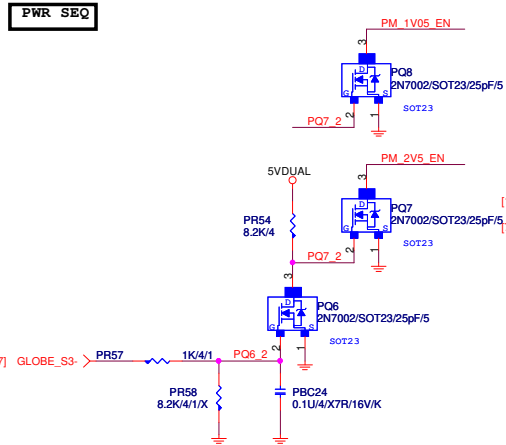
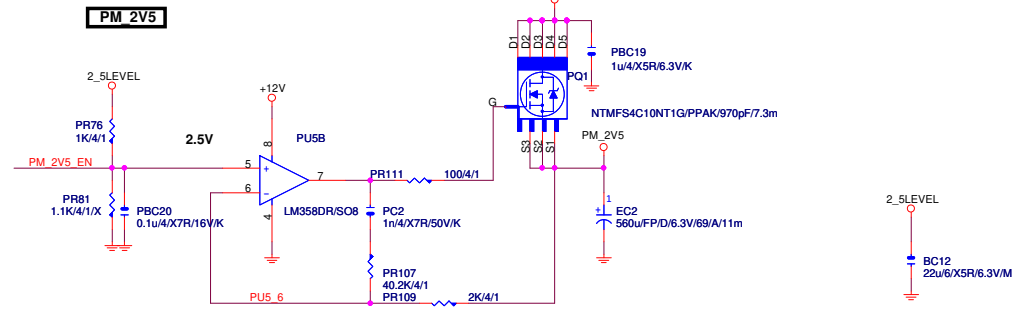
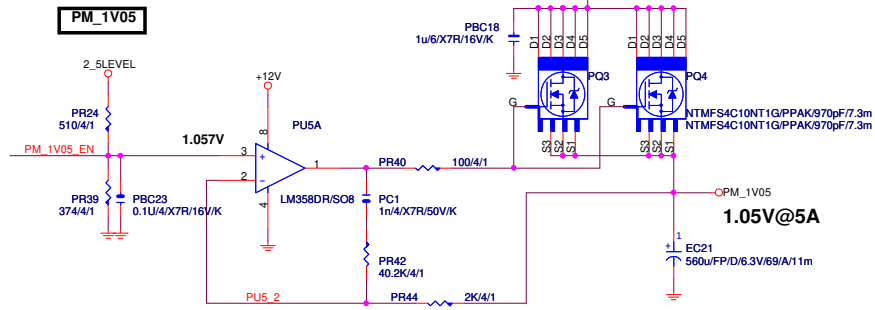
(靠近 ATX CONNECTOR)



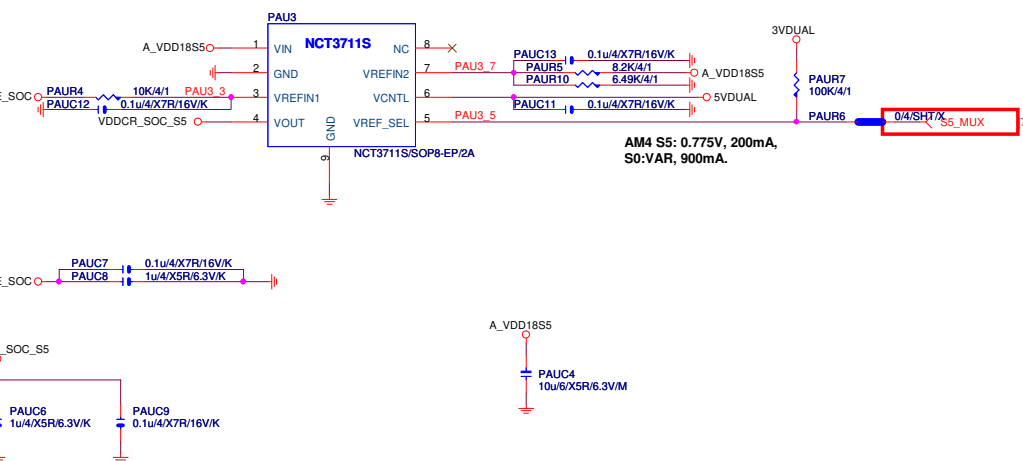
| GIGABYTE™ | | | |
|-------------|------------------------------|-------|----------|
| Title | | | |
| ATX_F_PANEL | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: | Thursday, September 10, 2020 | Sheet | 23 of 37 |



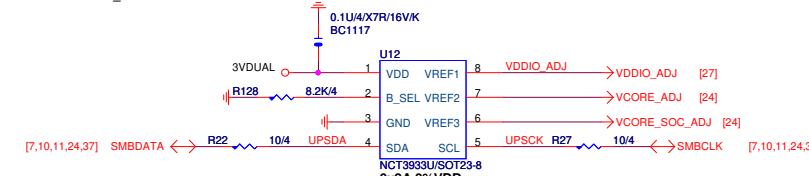


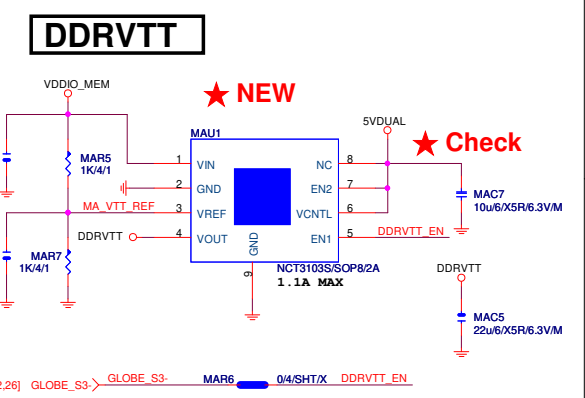
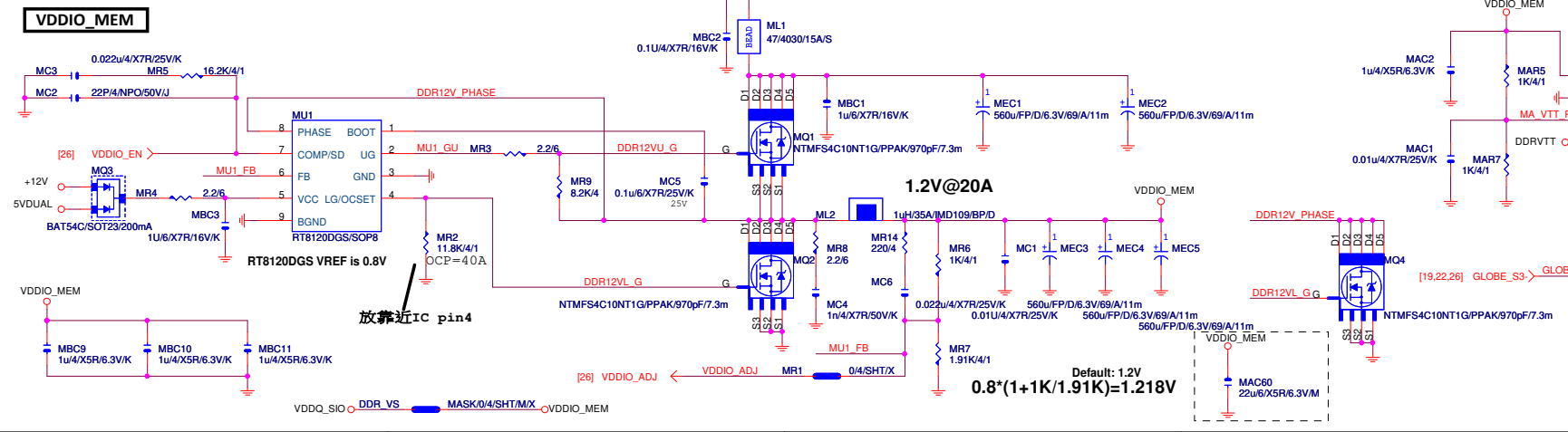
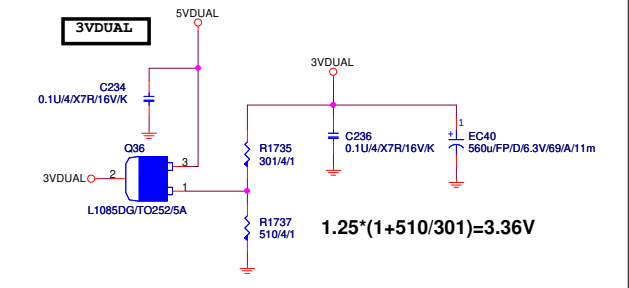
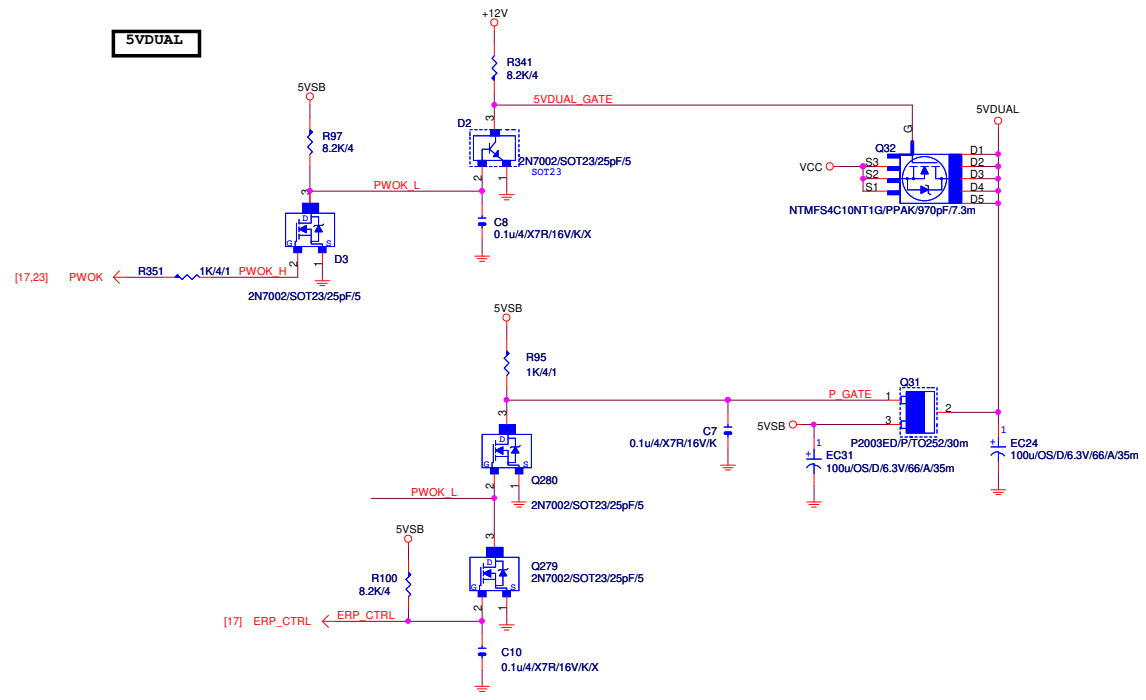


VDDCR SOC S5



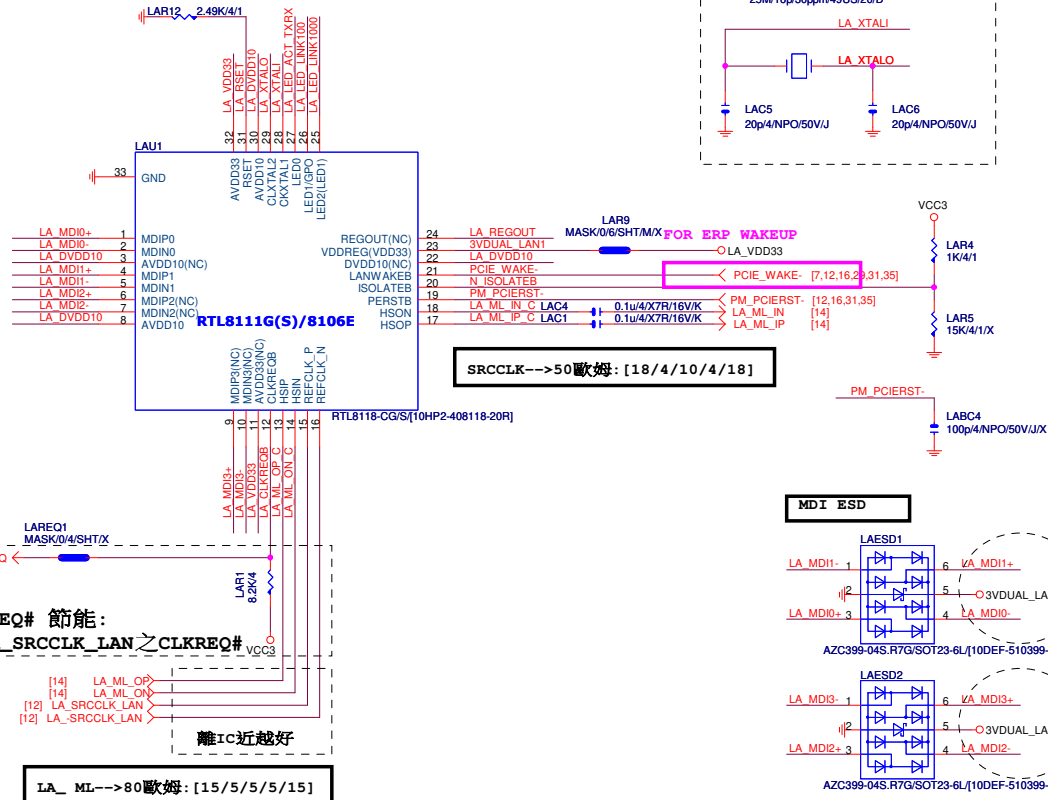
S5_MUX: S0-->High, S5-->Low
H: VDDCR_SOC_S5 will track VCORE_SOC.
L: If VCORE_SOC < 0.775V (OR 0.85V), VDDCR_SOC_S5=0.775V.
If VCORE_SOC=0.775V (OR 0.85V), VDDCR_SOC_S5 will trace VCORE_SOC.





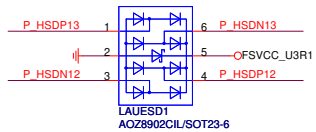
| GIGABYTE™ | | |
|-------------------|------------------------------|----------------|
| Title | | |
| DDR POWER ,5VDUAL | | |
| Size | Document Number | Rev |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 |
| Date: | Thursday, September 10, 2020 | Sheet 27 of 37 |

| | |
|--------------|-------|
| LAN:RTL8111G | R2.03 |
|--------------|-------|

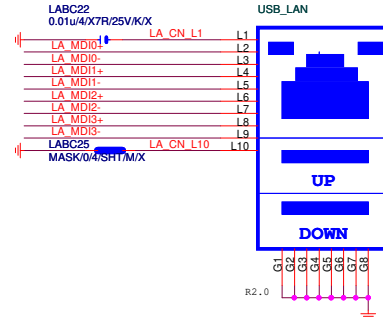


| | |
|-------------------|-------|
| USB_LAN CONNECTOR | R2.03 |
|-------------------|-------|

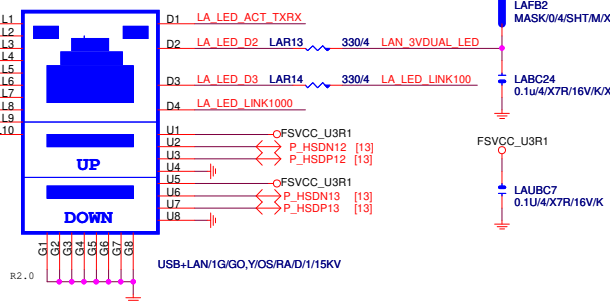
RMA ESD PROTECT



USB_LAN CONNECTOR

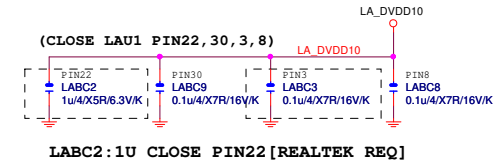


[RTL8111G]



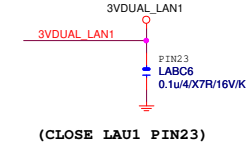
LA_MDI-->100歐姆:[20/4/8/4/20]

LAN POWER

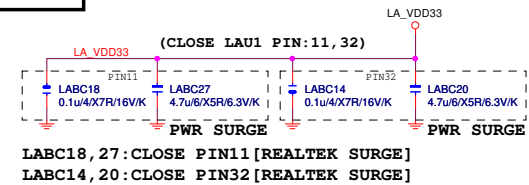


LAN POWER

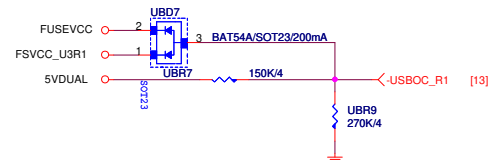
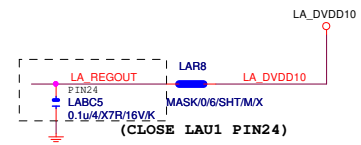
note: lan power連接及電流



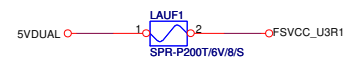
LAN POWER



LAN POWER

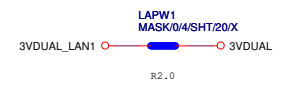


USB POWER



Close to connector
USB_LAN 2-Port 2.0A
FUSE-0805

LAN POWER

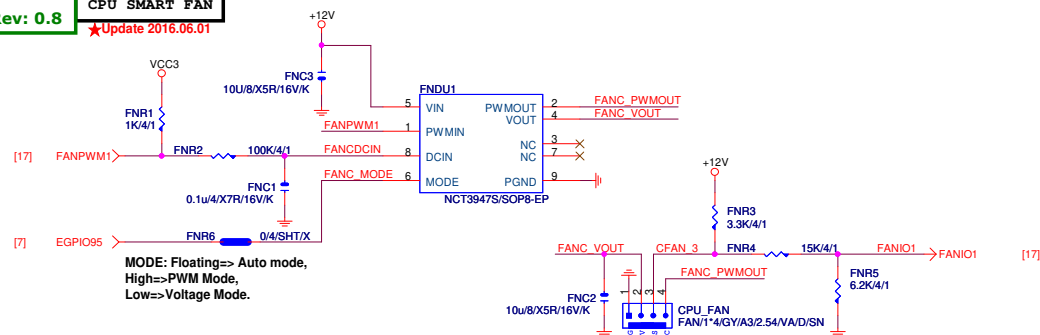


EMI

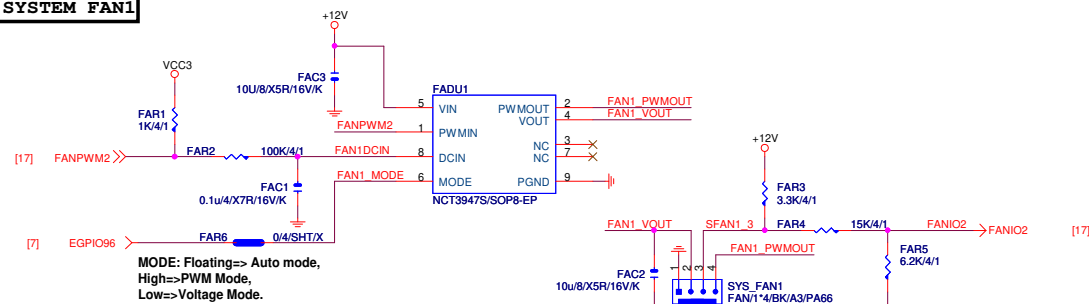
LAN AGND change GND
Remove Short Pad

GIGABYTE™

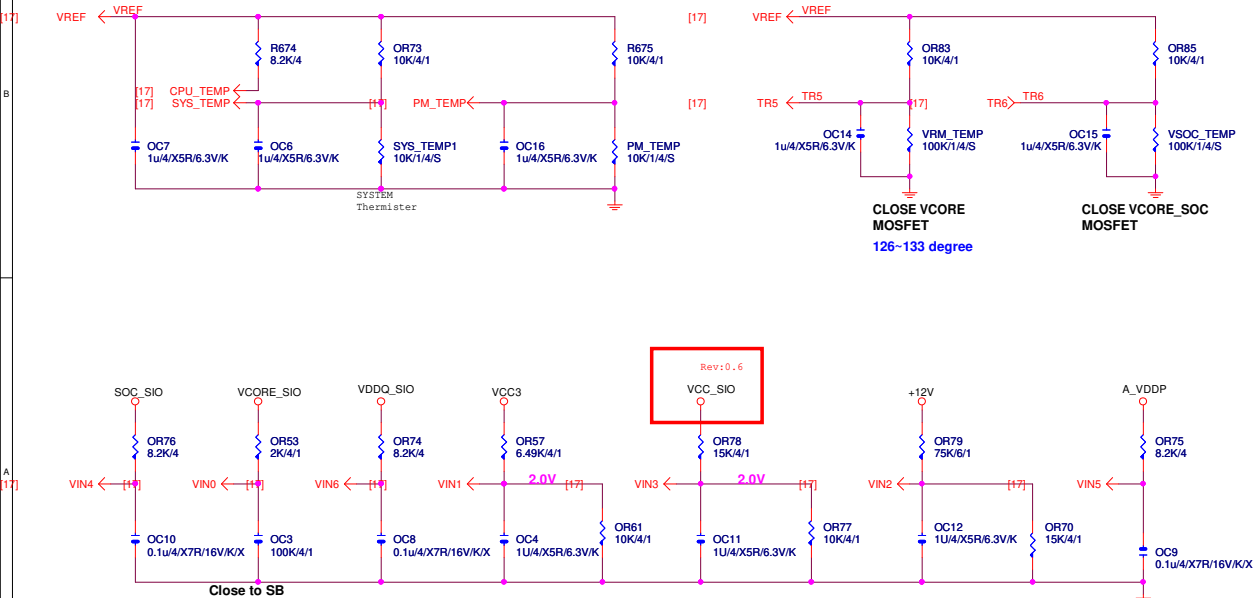
| | | | |
|---------|------------------------------|-------|----------|
| Title | | | |
| RTL8118 | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
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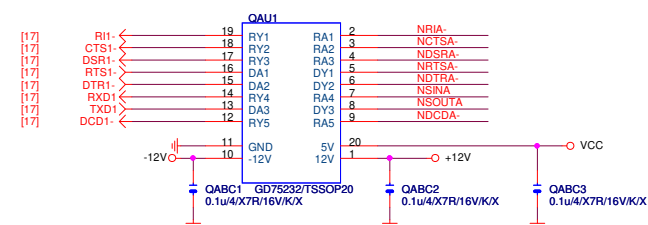
SYSTEM FAN1



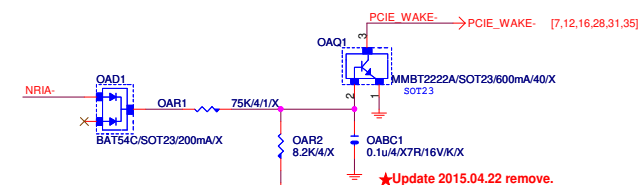
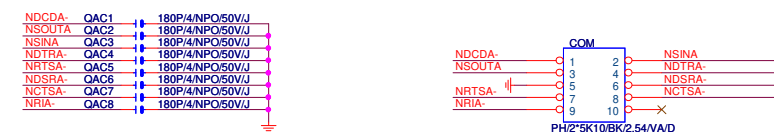
teknisi-indonesia.com

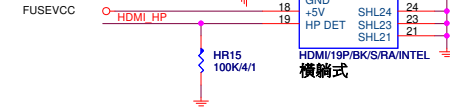
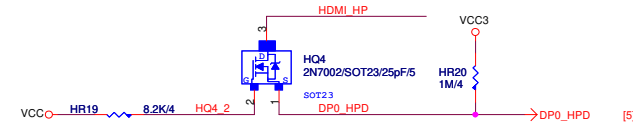
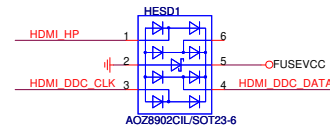
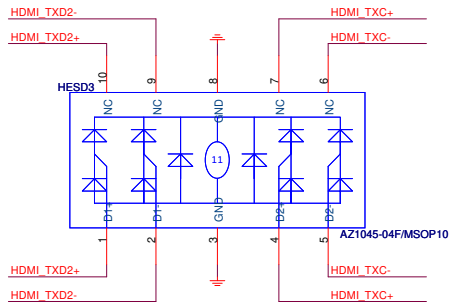
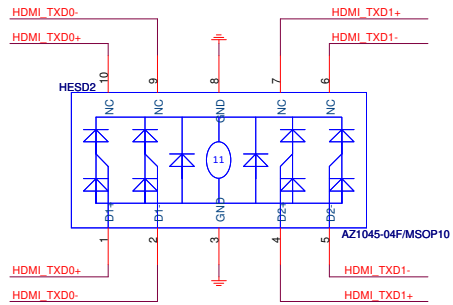
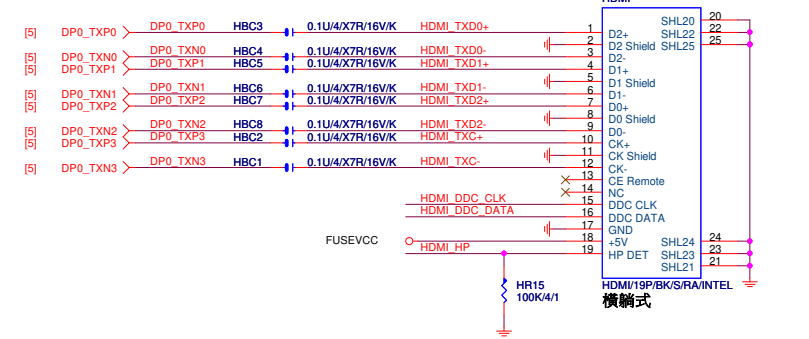
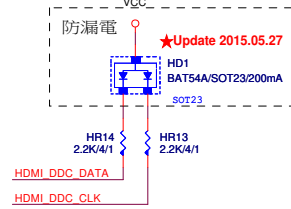
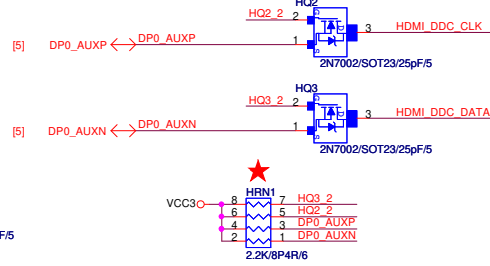
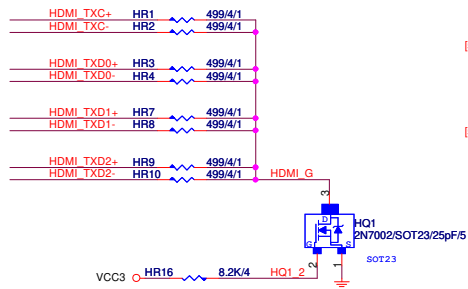


LPT PORT



R&D技術通報151 有使用PRINT PORT的
MODEL，需使用新料號:10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。





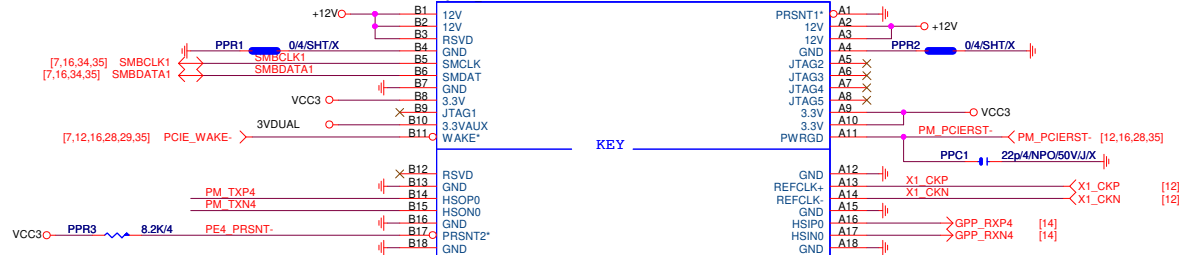
Rev: 0.73

DVI CONN

* Footprint : PCIESLOT-64P-1

3GIO_*4

PCIE1 2

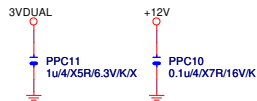
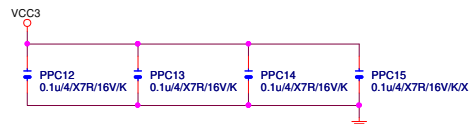


PRSNT2*

PRSNT2*

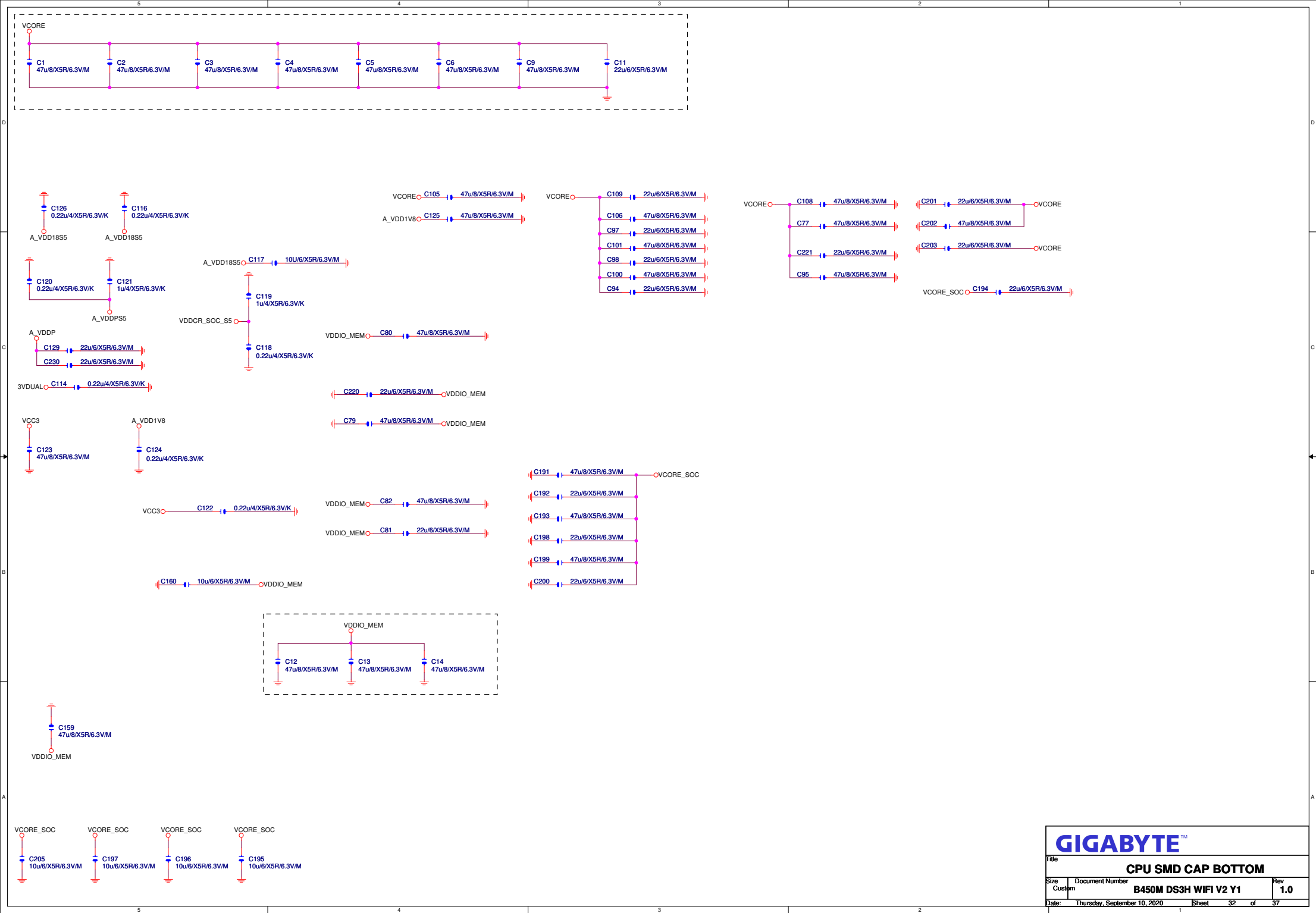
PCI-E/4X-66P/6K/LONG DOUBLE

黑色

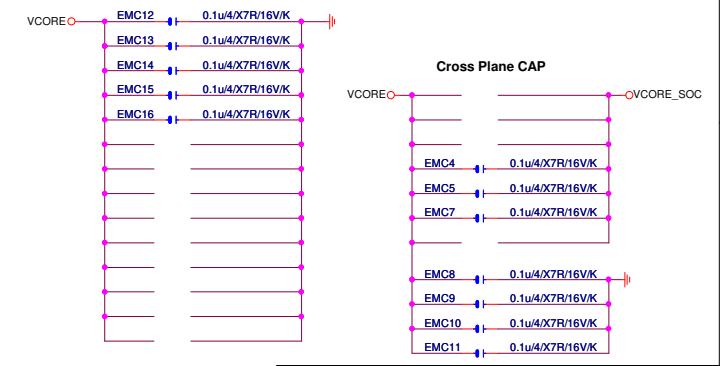


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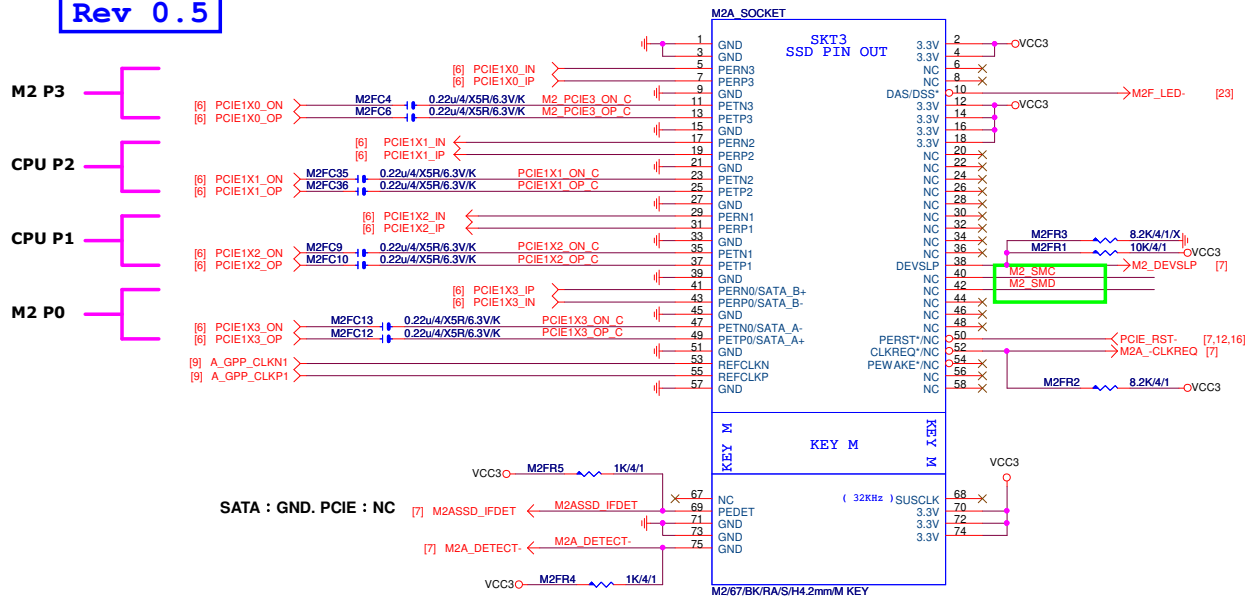
| Title | | | |
|------------------------------------|-----------------------|-------|----------|
| PCIE1 Slot | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: Thursday, September 10, 2020 | | Sheet | 31 of 37 |



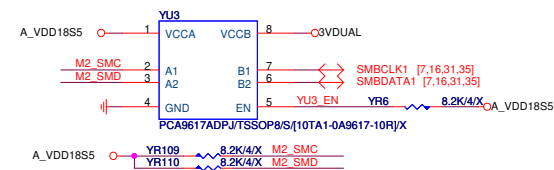
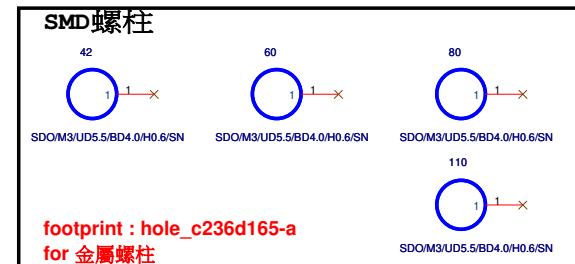
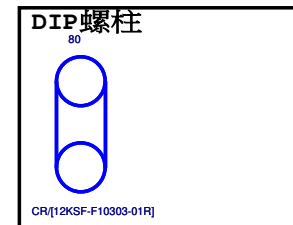
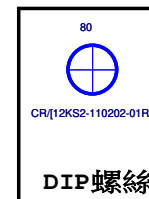
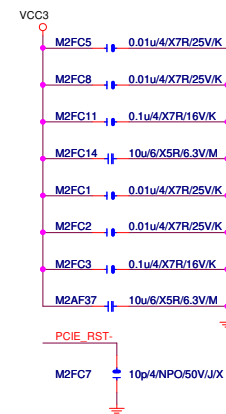
CPU TOP CAVITY



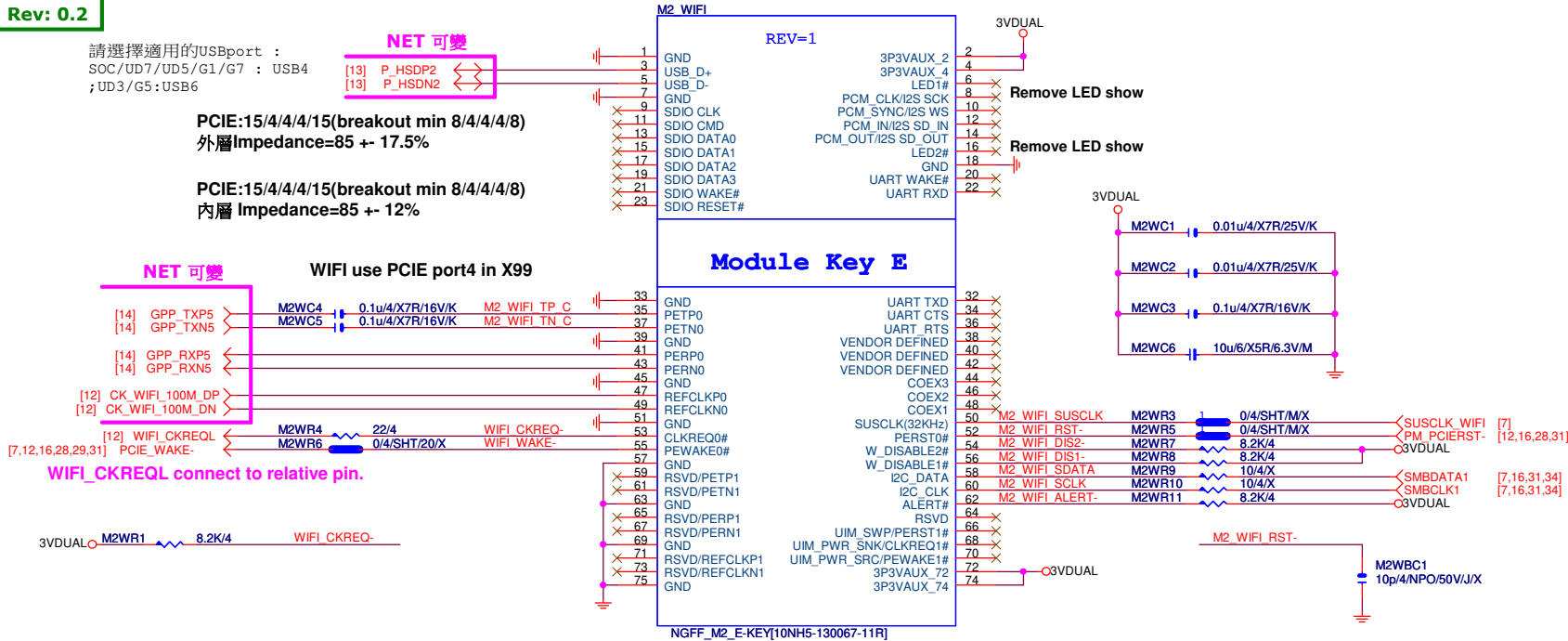
Rev 0.5



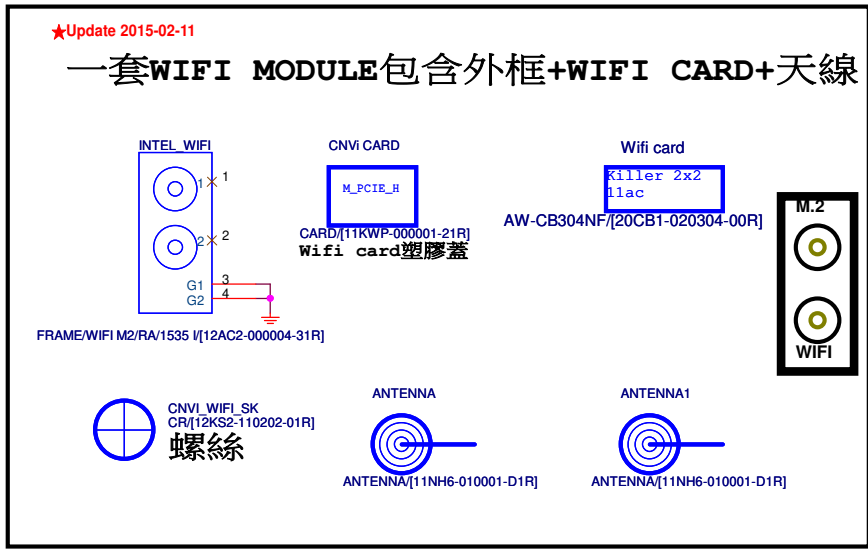
footprint : NGFF-M-75P-11CM-09MM-SMD



Rev: 0.2



FOR M.2 WIFI MODULE @ REAR PANEL



PCIE:15/4/4/15(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.

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

橫躺 Footprint Notice.

★Update 2015-07-22

★Footprint for 橫躺式高:
NGFF-E-75P-3

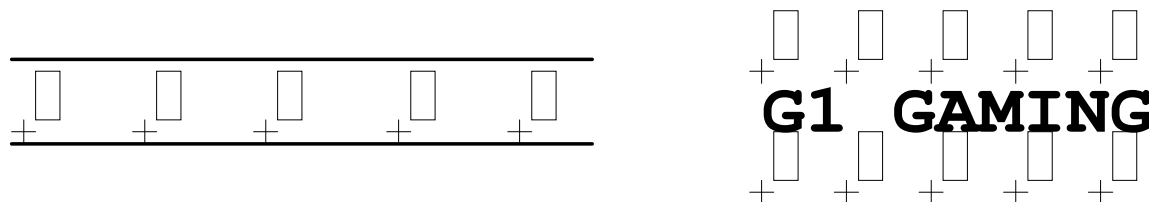
★Footprint for 橫躺式矮:
CNV1

| GIGABYTE™ | | | |
|---------------|------------------------------|-------|----------|
| Title | | | |
| M2_WIFI_E_KEY | | | |
| Size B | Document Number | Rev | |
| | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: | Thursday, September 10, 2020 | Sheet | 35 of 37 |

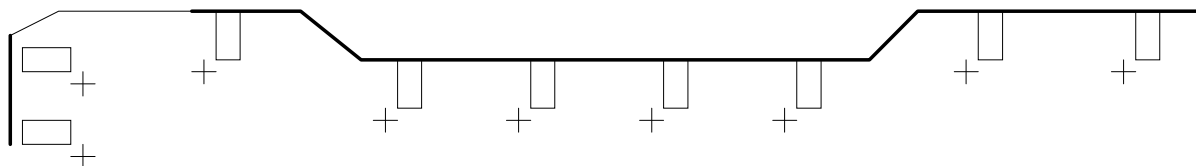
RGB LED LAYOUT 注意事項：

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

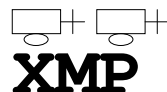
PCB板邊透光model name鏤空+背面 RGB LED



Audio Ground切割線+背面 RGB LED



"XMP"字樣鏤空+背面 RGB測發光 LED

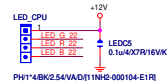


| | | | |
|---------------------------|------------------------------|------------|----------|
| GIGABYTE™ | | | |
| Title LAYOUT GUIDE | | | |
| Size | Document Number | Rev | |
| Custom | B450M DS3H WIFI V2 Y1 | 1.0 | |
| Date: | Thursday, September 10, 2020 | Sheet | 36 of 37 |

第一區 LED

第二區 LED

燈條 LED (LED_CPU放在CPU附近位置)

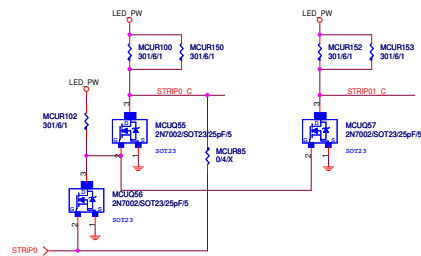
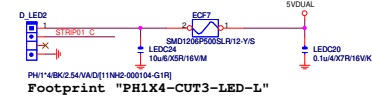


Footprint "PH1X4-FAN-AMD"

第六區 LED (靠近左上板邊位置)
Digital LED Strip1

Footprint "PH1X4-CUT3-LED-L"

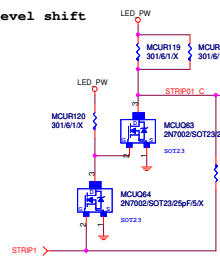
燈條 Level shift

(靠近右下CPU板邊位置)
Digital LED Strip2

Footprint "PH1X4-CUT3-LED-L"

(for pin-name 與 model-name 同方向)

裝甲 Level shift

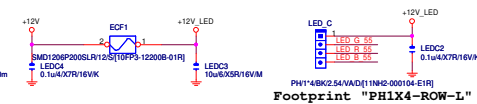
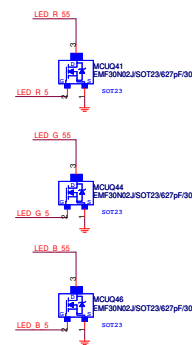


第五區 LED

燈條 LED (LED_C1放在PCB左邊板邊位置)

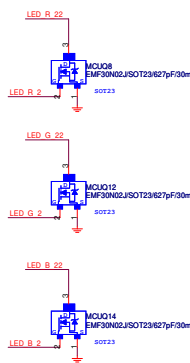
燈條 LED (LED_C2放在PCB右邊板邊位置)

第五區 LED CONTROL

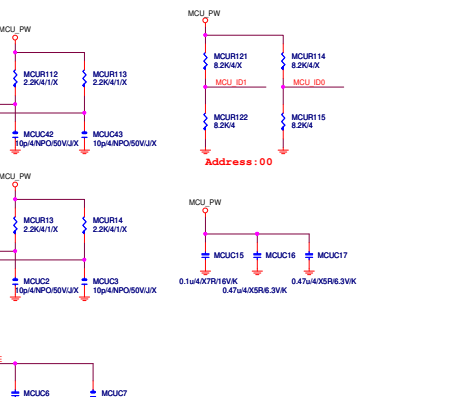


Footprint "PH1X4-ROW-L"

第二區 LED CONTROL



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MCU Firmware檔
b450m_v103.bin

