

Model Name:Z490 VISION G

Rev 1.0

SHEET TITLE

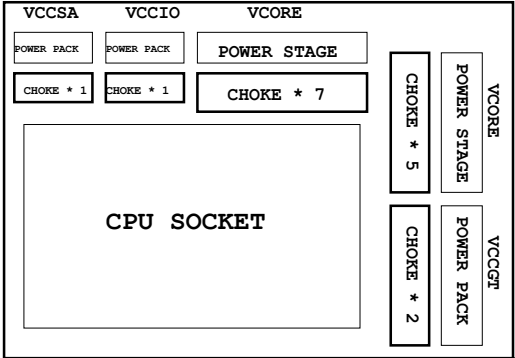
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	LGA1200 A
05	LGA1200 B-DDR4
06	LGA1200 C
07	LGA1200 D
08	DDR4 CHANNEL A 1,2
09	DDR4 CHANNEL B 1,2
10	PCH CLOCK/DDC/BIOS CNP_R1.04
11	PCH DMI USB PCIE CNP_R1.04
12	PCH HDA/MISC CNP_R1.04
13	PCH SATA/PCIE/CNVI CNP_R1.04
14	PCH PWR CNP_R1.04
15	PCH GND/Heatsink CNP_R1.04
16	SATA
17	IDT6V41821 CLK BUFFER
18	CNVi M2 WIFI
19	FP,BZ,TPM,THB
20	Redriver C/D
21	INTEL I225
22	USB31 LAN CONNECTOR-I219
23	RST, PWR, CLR CMOS, 80 PORT
24	ATX POWER
25	PCI EXPRESS X16 SLOT
26	PCI EXPRESS X8 SLOT
27	PCI EXPRESS X16 SWITCH
28	PCI EXPRESS X4 SLOT
29	N/A
30	PCI EXPRESS X1 SLOTS
31	M.2 X4 (A) PCIE X4 SWITCH
32	M.2 X4 (A)
33	M.2 X4 (M)
34	M.2 X4 (M) S4~S5 SWITCH

SHEET TITLE

35	IT8795 8FAN
36	FAN CTRL-CFL SIO 879X 8 FAN
37	ITE 8688 LPC IO BIOS SW
38	HWM
39	Dual BIOS SW
40	CEC Logic IT8686+IT8795
41	Realtek ALC1220
42	REAR AUDIO JACK
43	N/A
44	HDMI/R USB30
45	IT5702
46	NCT5946
47	N/A
48	TI HD3SS3220 Type C Rear
49	Redriver TypeC
50	TUSB321 Front TypeC
51	GENESYS GL850S 1 Rear
52	R USB20X4
53	GENESYS GL850S 2 Front
54	F USB20
55	F USB30
56	CPU / AUDIO / LED C LED
57	D LED
58	EMI-ESD
59	VCCSA VCCIO-Ferrite-Z系列
60	CPU POWER-Z系列
61	RT8120 DDR CHOKE-Ferrite-2L
62	RT8120 VPP CHOKE-合金
63	RT8120 PCH-CHOKE-Ferrite
64	DISCRETE POWER
65	ISL69269 PWM
66	SIC653A MOS 1
67	SIC653A MOS 2
68	SIC653A MOS 3

SHEET TITLE

69	ISL69222 MOS GT
70	SIC653A MOS 1
71	VCCSA
72	VCCIO / VCCIO2 -Ferrite-Z系列
73	NCT3933
74	TABLE LIST
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Model Name: Z490 VISION G  
Component value change history

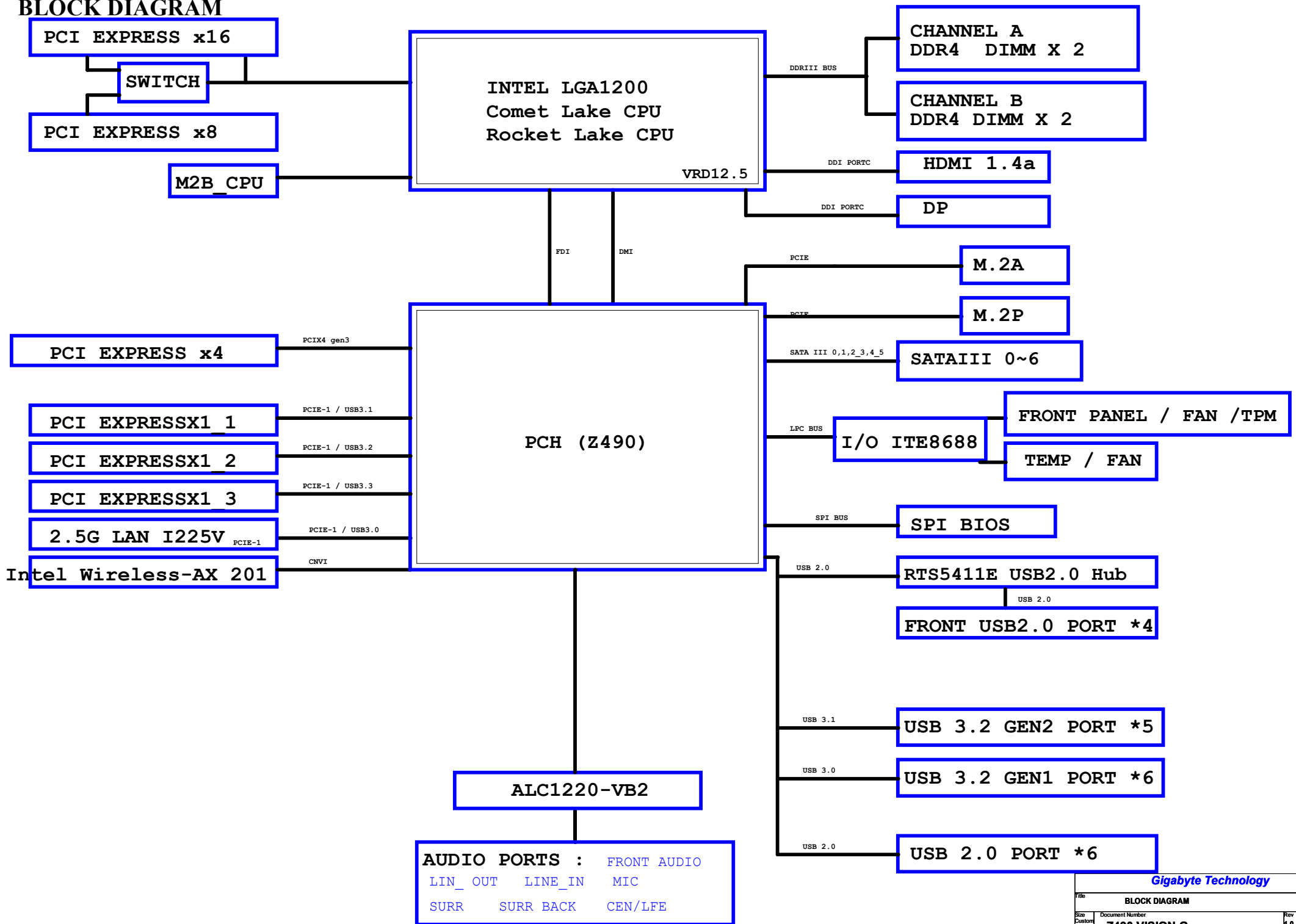
Data	Change Item	Reason
2018/04/12 EBOM:01	First Release ROM 01	
2018/05/22 EBOM:02	1.R_USB30/HDMI 更新成黃色的料號 2.ATX 2*4 更新號 3.CBC49-52更換料號 4.BSS20 100 ohm--->30 ohm 5.del OR110,OR181,OR189 6.QCA85/QCB55 21K---->22.6K 7.add esc23/esc26 1n/4/XTR/50V/K	
2018/06/17 EBOM:03	1.CEC線路移除 2.HEATSINK料號確認 3.BAR10/11/BAR13移除 4.因電容缺料QCA110/QCAC11 改上0.22uF/QCAC3/QCBC3 改上1uF/0603 5.DBR31+26.1K;DBR30+DBR33+20K 6.QCA05/QCB05修改料號 7.DCR18 and DCR31 改18K/4/1. OCP=30A 8.更新OR212為不升件。 9.del qca821/qcb829 新增 qca86/qcb86/qca87/qcb87 10.QCAC5/QCBC5 0.010/4/50V--->0.010/4/25V	
2018/07/17 PBOM:10A	1.Modified redriver resistor 2.DEL DBR31/DBR33/DBR35/DBR36 3.Modified I135201 resistor:DAK31+20.5K;DAK30+DAK33 7.8K;DBR30+DBR33=18.7K 4.DEL DBR17, ADD DBR16 5.BSS20 QCMH 100/4/1 6.update PCB 料號 7.DEL F118P; ADD V118P for TYPE C ISSUE 8.ADD V118P4---->250V/4/1. AMS 200 PPM/4/1 --->10/1845V/6 9.DEL V118P4---->250V/4/1. AMS 200 PPM/4/1 移裝至 虛板 10.DEL DCR10/DCR12/DCR13/DCR14/DCR15/DCR17/DCR18 11.DAC49 10F---->4.70F	
2018/07/31 PBOM:10B	1.ADD FRONT REDRIVER	
2018/08/2 PBOM:10D	1.因10B新增為10D 2.Modified redriver resistor U1OR13---->368K PULL DOWN 3.Modified DBR35/OM11 37.8K---->33.2K for CPU LOADLINE 3.DEL WR239/OR171	
2018/08/20 PBOM:10E	1.移裝D_VDR2 for VCC5漏電	
2018/09/04 PBOM:10F	1.更換PCB版本為1.02	
2018/10/19 PBOM:10G	1.更換PCB版本為1.03	1.DEL WTP4, WTP5 2.ADD DCR30+DCR39 3.DEL DC W1/DC W2,ADD DC_WBC3 4.ADD MDC1/MDC2 5.SWAP NET MHA14/MHA15 / MCR56/MCR59 6.UPDATE FOOTPRINT DCR151-8 7.ADD D_LED2 digital led data control
2018/11/08 PBOM:10J	1.因10F新增為10J 2.QCA13/QCA14 100/16V----->100/25V 3.QCA13/QCA14 0.010/25V----->20.010/50V 4.QCA13/QCA14 25W/4 ----->2470K/4 5.因 有缺料將料號130P-Q20001-W28 6.因10G新增為10J 更換 QCA13,MA_DCR2 缺料改移---->310EP-070703-10B 7.DCQ5,DCQ6,DCQ7,DCQ8,DCQ9,DCQ10,MA_DCR2 18K/4/1,DCR14/DCR31+27K/4/1.	
2018/11/09 PBOM:10M	1.因10G新增,更換PCB版本為1.04 1.CCPR1/CCPR2 ---->WAS5 2.ADD QCA13/QCA14/DCR10/QCA11 for VIN OVP ISSUE 3.QCA13/QCA14 100/16V----->100/25V 4.QCA13/QCA14 0.010/25V----->20.010/50V 5.QCA13/QCA14 25W/4 ----->2470K/4 6.因缺料將DCR2 更換DCR14,MA_DCR2 18K/4/1,DCR14/DCR31+27K/4/1. 7.DCQ5,DCQ6,MA_DQ5,DCQ9,DCQ10,MA_DQ4 缺料改移---->310EP-070703-10B	
2018/12/26 PBOM:10N	1.QCA13/QCA14/DCR10/QCA11/330P/16V--->220P/25V	
2018/12/26 PBOM:10O	1.ADD OC1/OC8/OC9/OC10 for BMM VOLTAGE ISSUE	
2020/02/22 PBOM:10B	ROM (F-level) 把10R 移轉，換成30R (RTS5411ERTS5411R) // 2.VA00 1.3V RUN PUT VA00 High & CPU OC 5G hang issue Remove NR30	
2020/02/23 PBOM:10C	1.BM03 Switch 修改Address由7改為74 CPU & PCR & PCR2全部改為CNG SSD LED control issue 修改如下 a. PC-漏電4.7K/4 b. BM03 switch修改1.4K/4/1 c. Level-shift改PCAM4417	

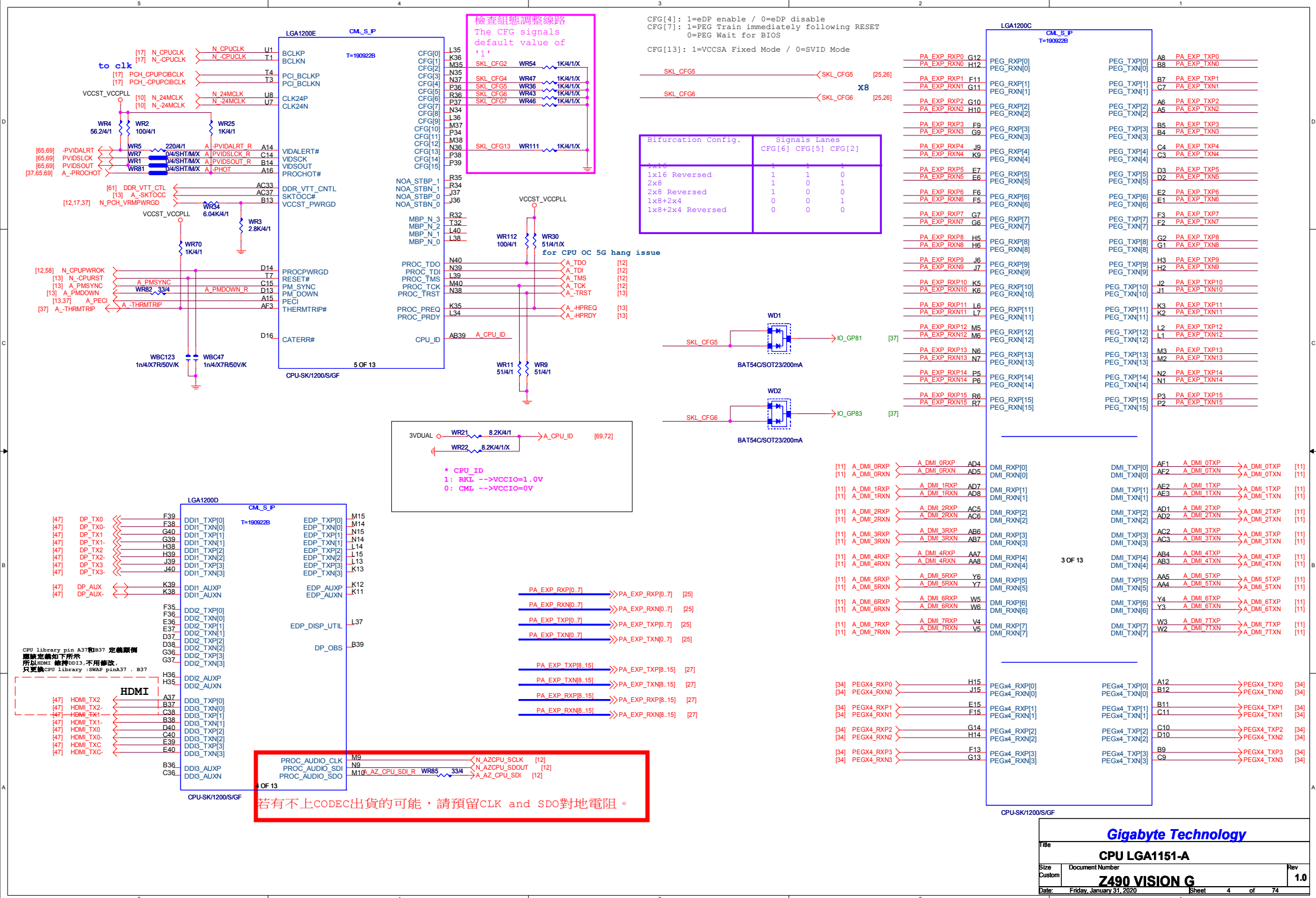
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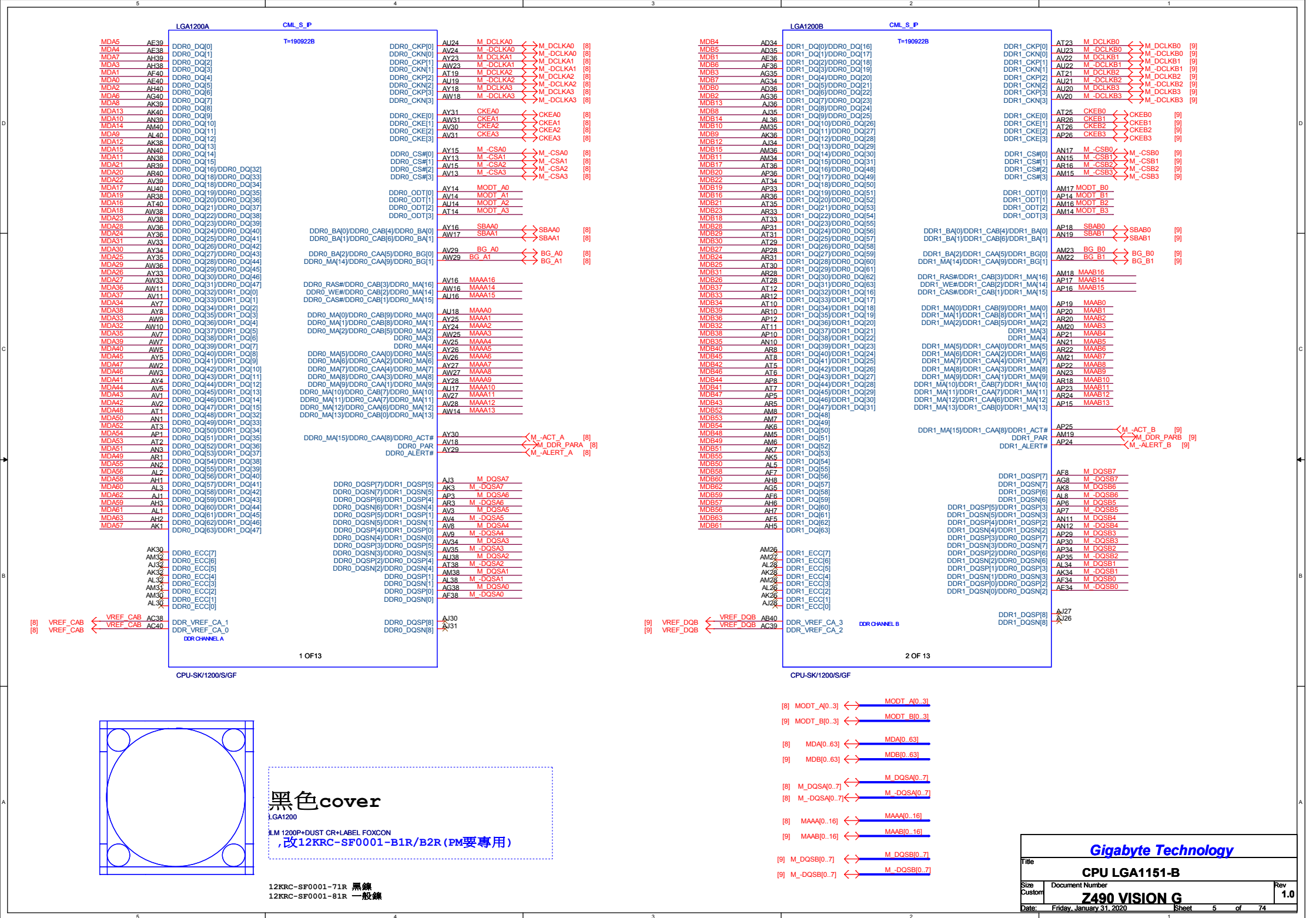
## Circuit or PCB layout change

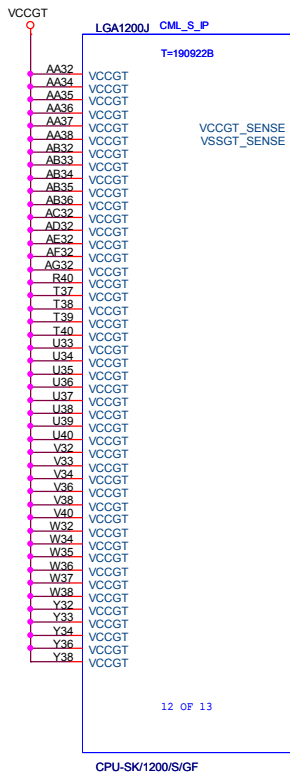
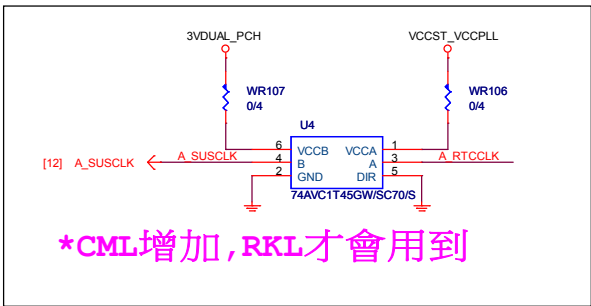
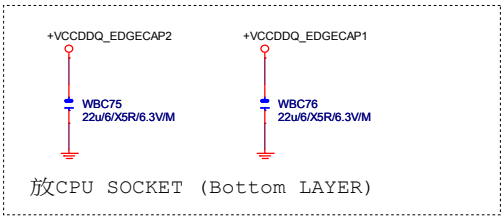
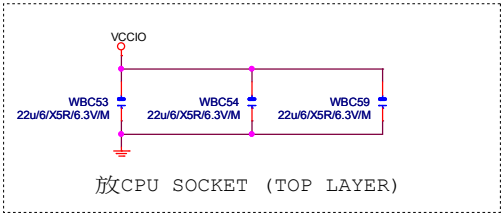
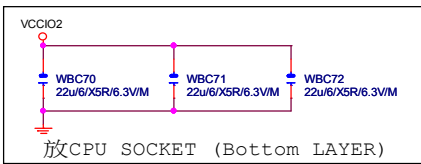
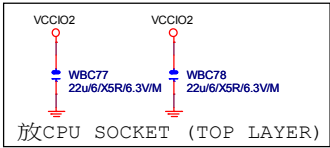
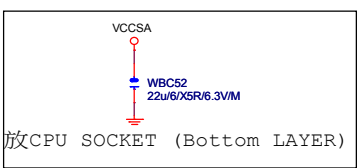
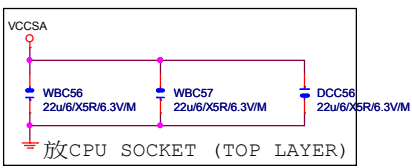
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# BLOCK DIAGRAM





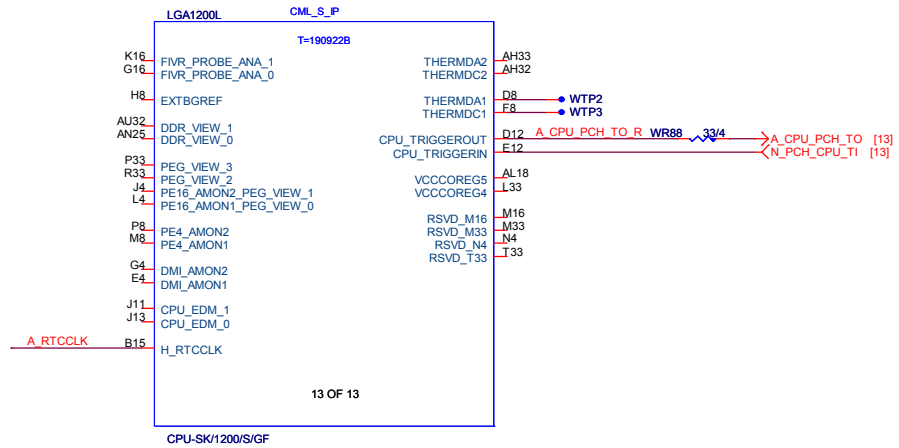
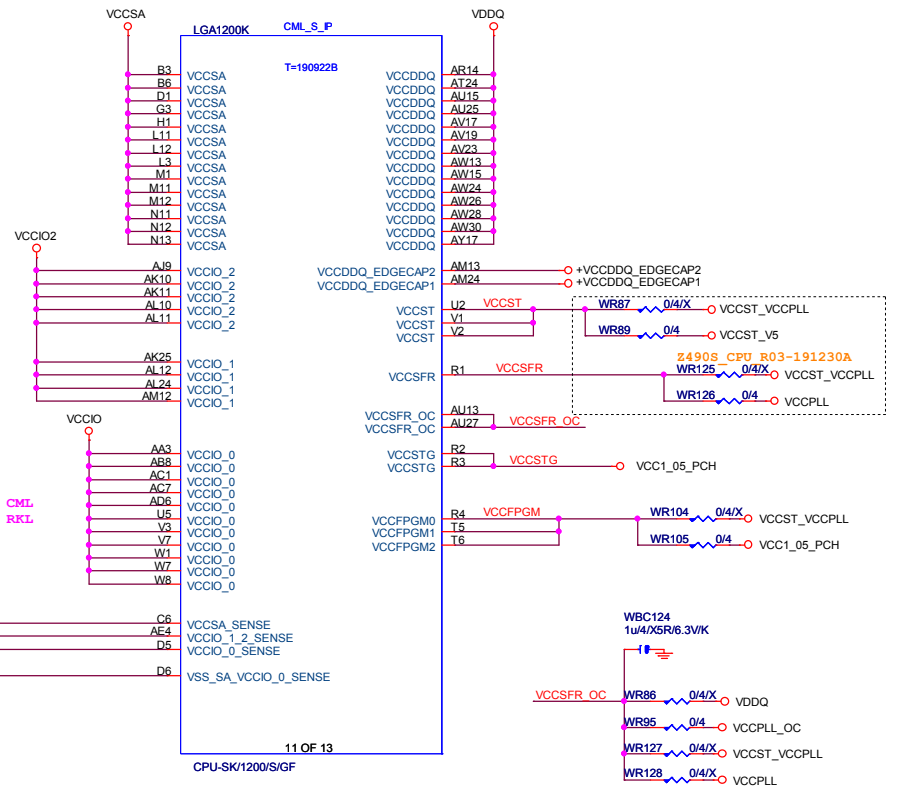




VCCIO\_1\_2  
VOUT = 0.95V  
IOUT = 9.5A

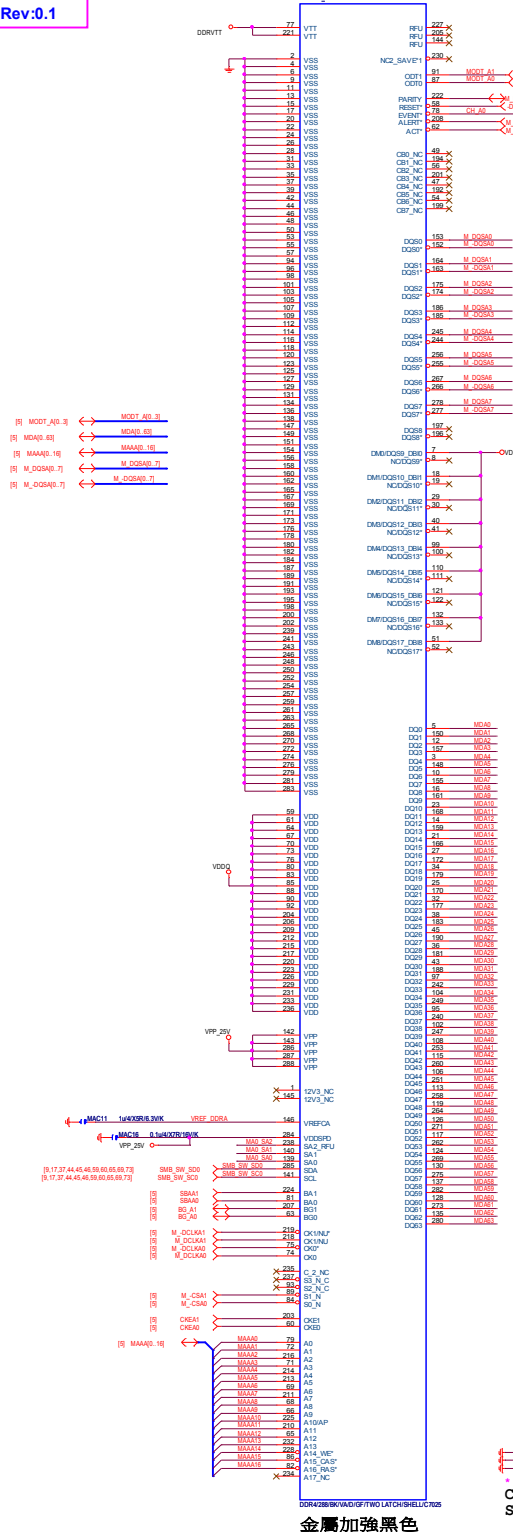
VCCIO\_0  
VOUT = 0.95V FOR CML  
VOUT = 1.05V FOR RKL  
IOUT = 8A

[69] VCCSA\_SENSE  
[72] VCCIO2\_SENSE  
[72] VCCIO\_SENSE  
[69] VSSA\_VIO\_SENSE



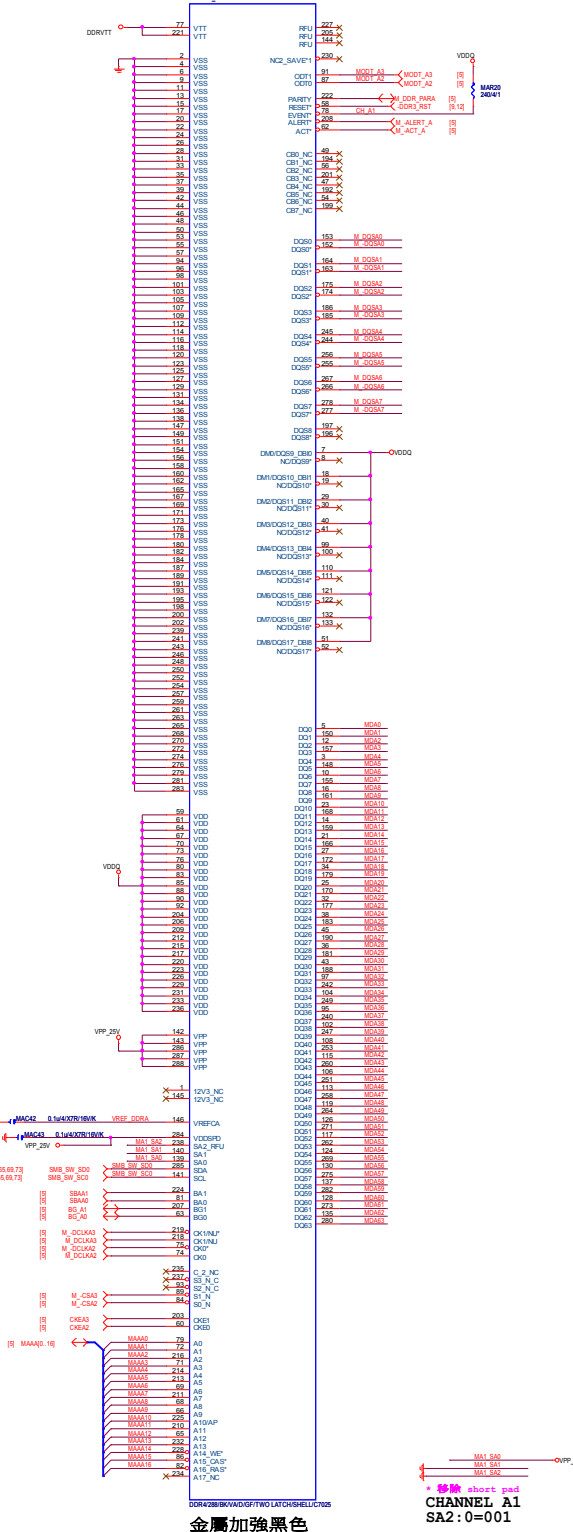






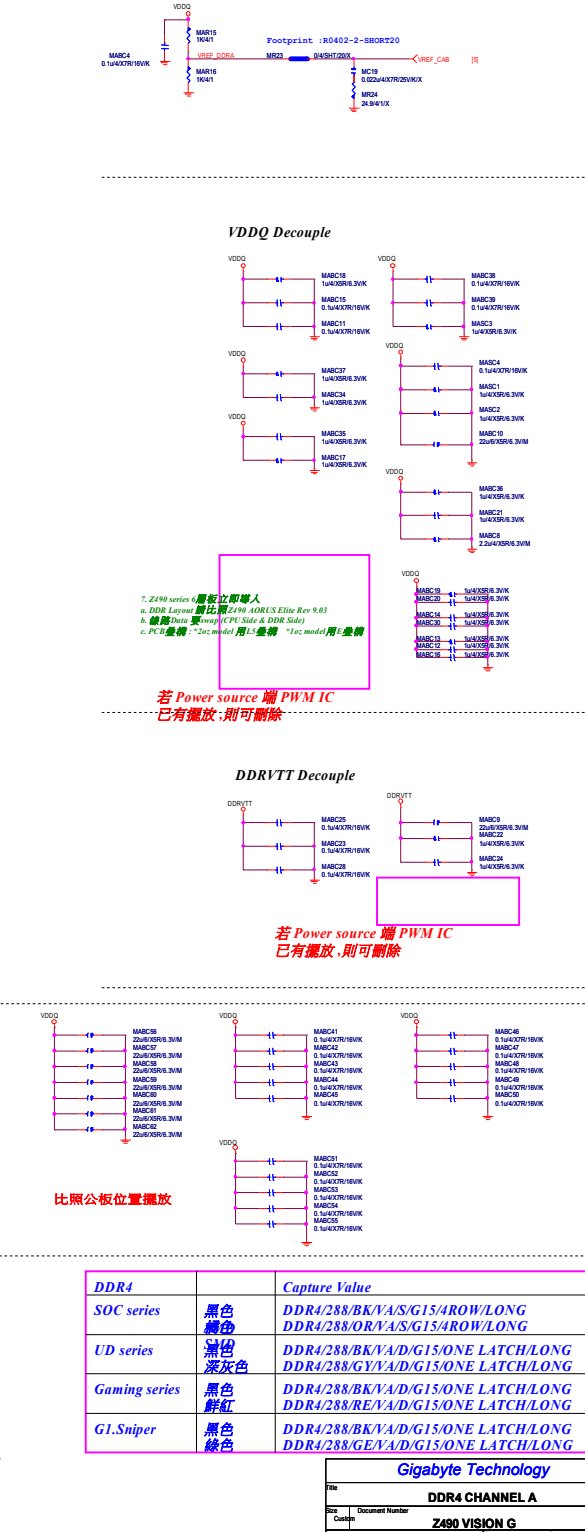
✂ 移除 short pad  
CHANNEL A0  
SA2:0=000

金屬加強黑色



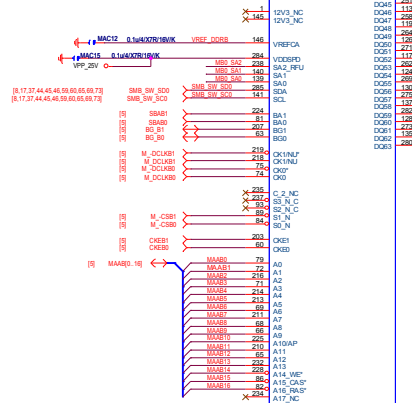
✂ 移除 short pad  
CHANNEL A1  
SA2:0=001

金屬加強黑色



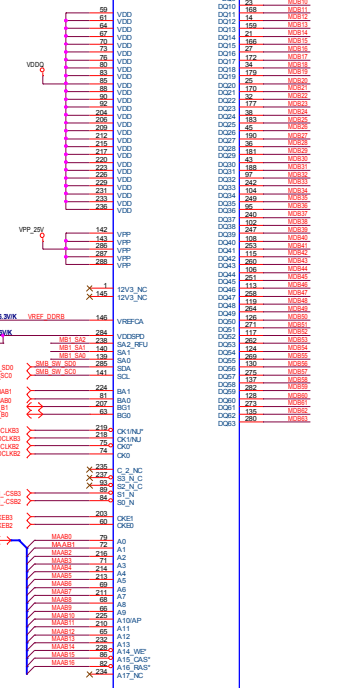
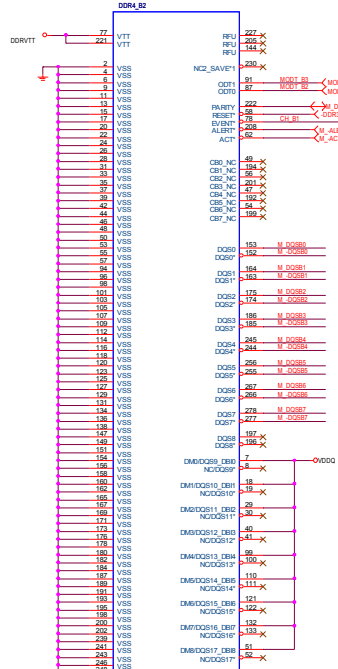
DDR4	Capture Value
SOC series	DDR4/288/BK/VA/S/G15/4ROW/LONG
UD series	DDR4/288/0R/VA/S/G15/4ROW/LONG
Gaming series	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG
G1.Sniper	DDR4/288/RE/VA/D/G15/ONE LATCH/LONG



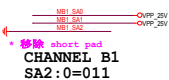
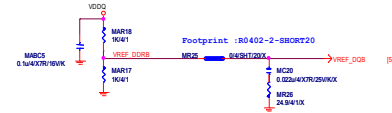


CHANNEL B0  
SA2:0=010

金屬加強黑色



金屬加強黑色



CHANNEL B.  
SA2:0=011

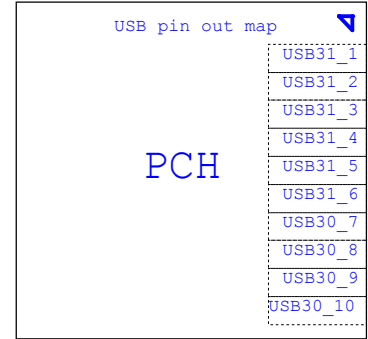
Gigabyte Technology

Title			DDR4 CHANNEL B		
Size	Document Number				Rev
Custom	Z490 VISION G				1



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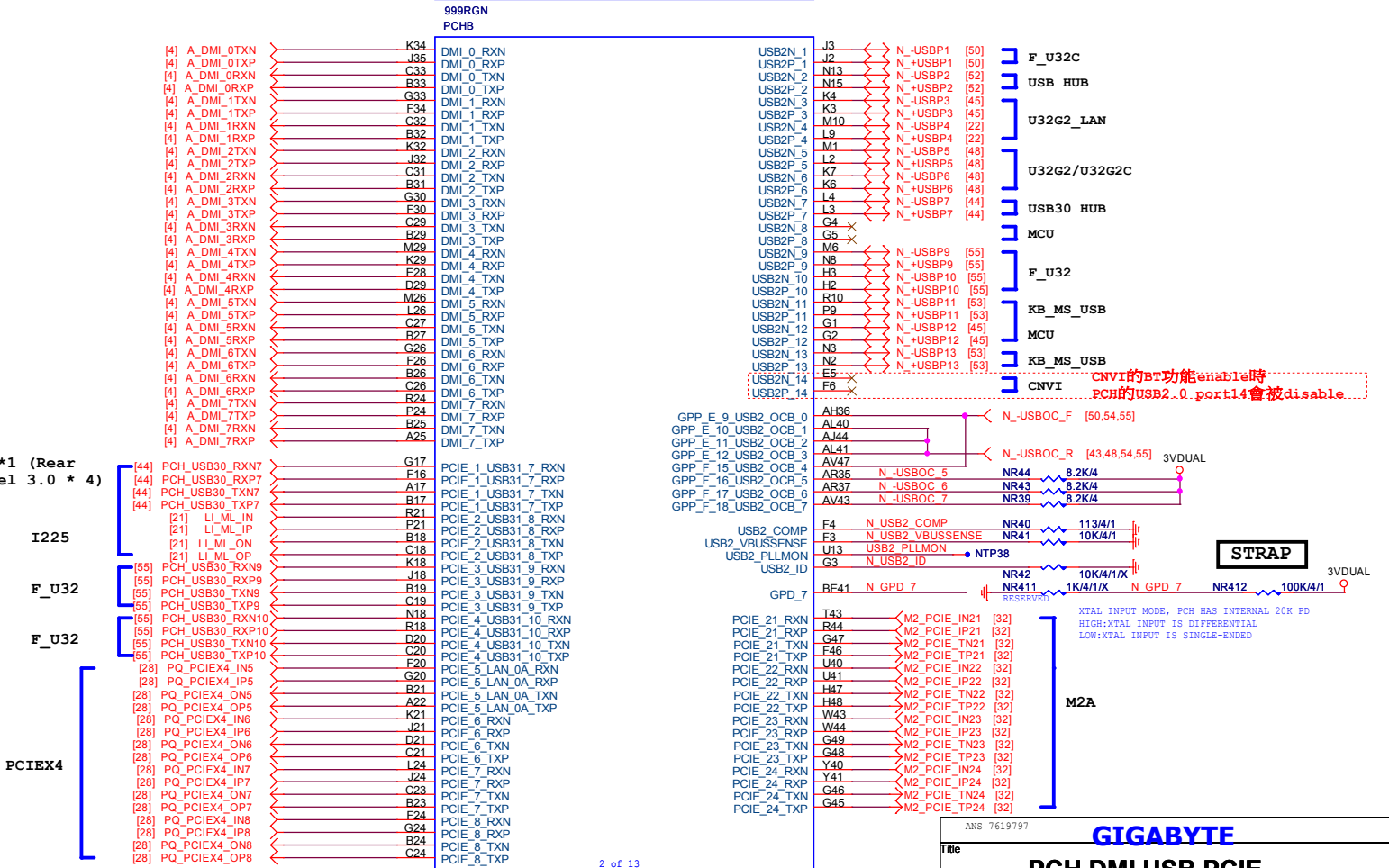
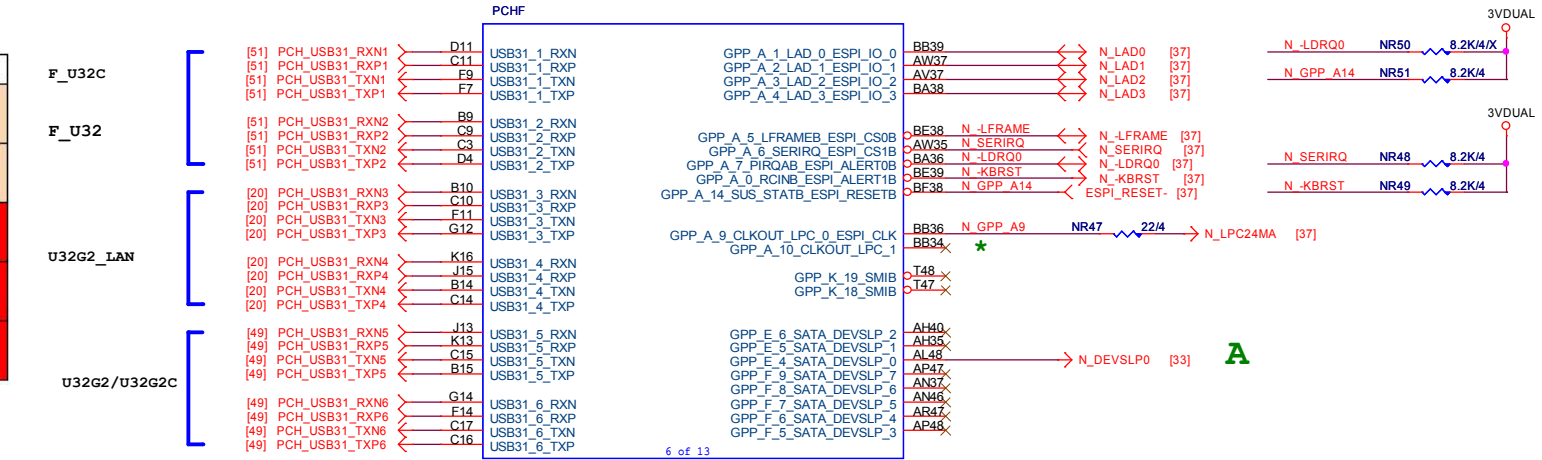
ITEM	USB P1	USB P2	USB P3	USB P4	USB P5	USB P6
H410	請換PCH-V 線路					
B460						
H470	U3.2	U3.2	U3.2	U3.2	U3.2	U3.2
	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen1	Gen1
Z490	U3.2	U3.2	U3.2	U3.2	U3.2	U3.2
	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1
Q470	U3.2	U3.2	U3.2	U3.2	U3.2	U3.2
	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1
W480	U3.2	U3.2	U3.2	U3.2	U3.2	U3.2
	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1	Gen2x1



ITEM	USB P10	USB P11	USB P12	USB P13	USB P14
H410	請換PCH-V 線路				
B460					
H470	USB2	USB2	USB2	USB2	USB2
Z490	USB2	USB2	USB2	USB2	USB2
Q470	USB2	USB2	USB2	USB2	USB2
W480	USB2	USB2	USB2	USB2	USB2

ITEM	USB P7 PCIE P1	USB P8 PCIE P2	USB P9 PCIE P3	USB P10 PCIE P4	PCIE P5	PCIE P6	PCIE P7	PCIE P8
H410	請換PCH-V 線路							
B460								
H470	U3.2 Gen1	U3.2 Gen1	N/A	N/A	PCIE GbE	PCIE	PCIE	PCIE
Z490	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	PCIE GbE	PCIE	PCIE	PCIE
Q470	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	PCIE GbE	PCIE	PCIE	PCIE
W480	U3.2 Gen2x1 PCIE	U3.2 Gen2x1 PCIE	U3.2 Gen1 PCIE	U3.2 Gen1 PCIE	PCIE GbE	PCIE	PCIE	PCIE

ITEM	PCIE P21	PCIE P22	PCIE P23	PCIE P24
H410	請換PCH-V 線路			
B460				
H470	PCIE	PCIE	PCIE	PCIE
Z490	PCIE	PCIE	PCIE	PCIE
Q470	PCIE	PCIE	PCIE	PCIE
W480	PCIE	PCIE	PCIE	PCIE



ANS 7619797

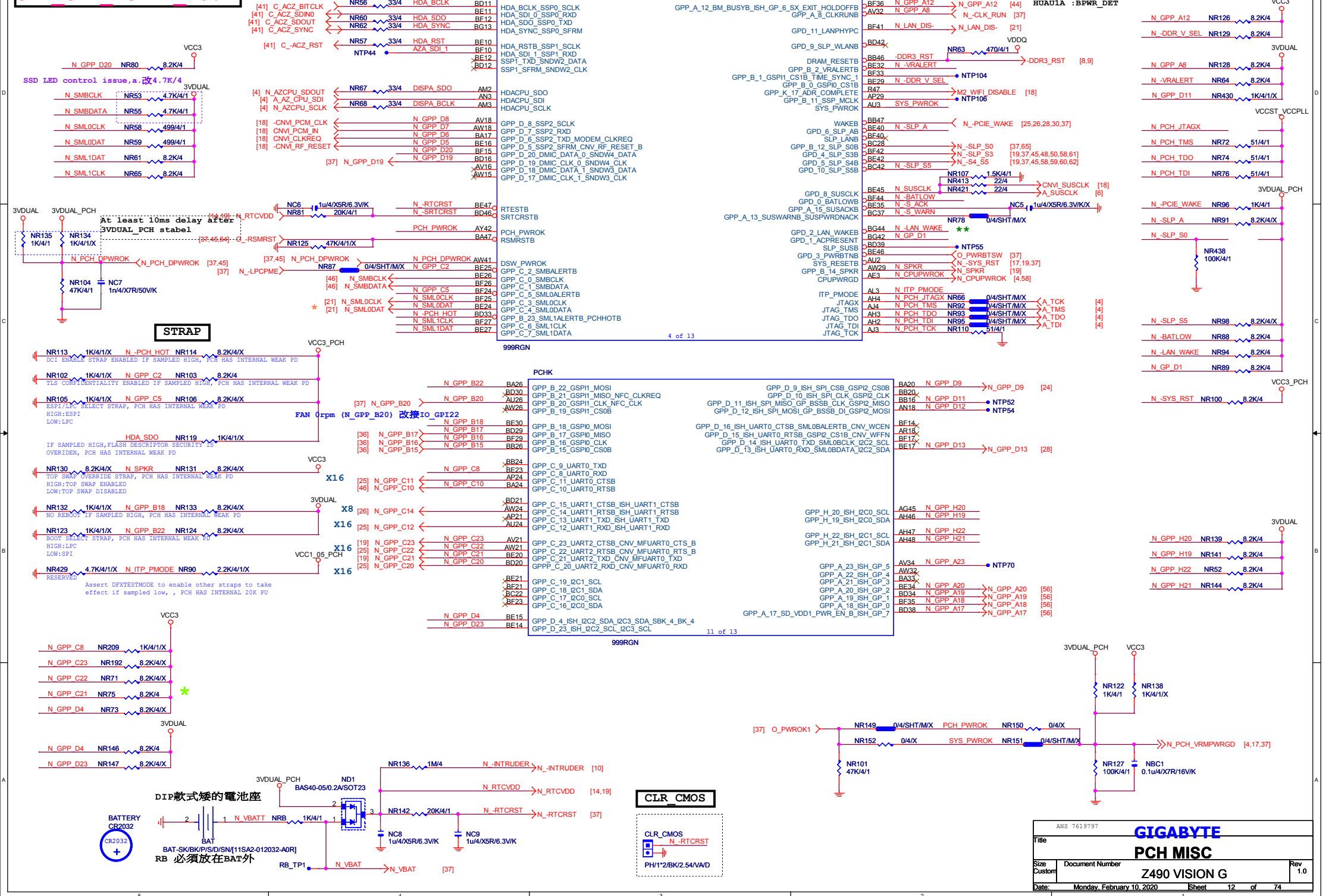
**GIGABYTE**

Title: **PCH DMI,USB,PCIE**

Size Custom: Document Number: **Z490 VISION G** Rev 1.0

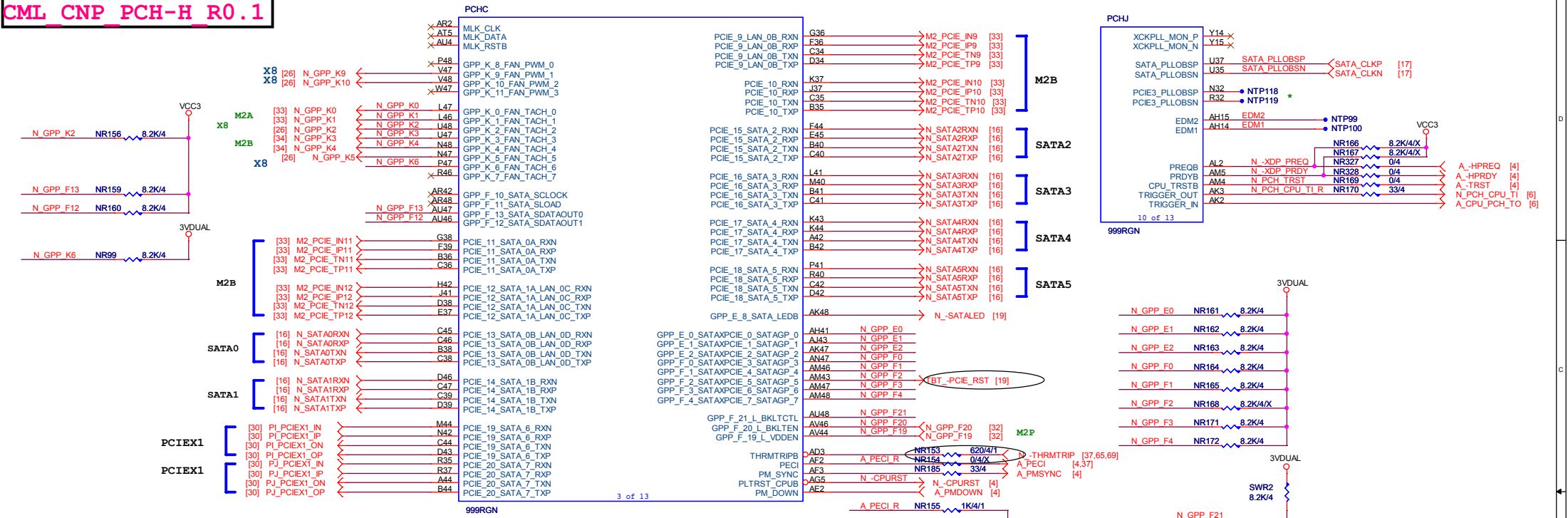
Date: Monday, February 10, 2020 Sheet 11 of 74

CML CNP PCH-H R0.1

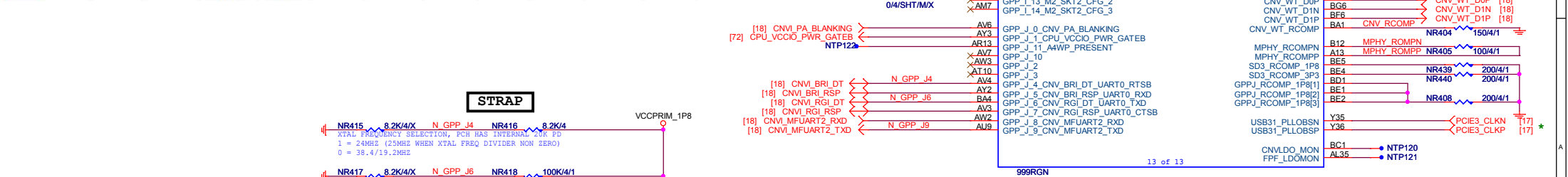




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ITEM	PCIE P9	PCIE P10	PCIE P11	PCIE P12	PCIE P13	PCIE P14	PCIE P15	PCIE P16	PCIE P17	PCIE P18	PCIE P19	PCIE P20
H410	請換PCH-V線路											
B460												
H470	PCIE GbE	PCIE	PCIE SATA 0B	PCIE SATA 1B	PCIE SATA 0	PCIE SATA 1	PCIE SATA 2	PCIE SATA 3	SATA4	SATA5	PCIE	PCIE
Z490	PCIE GbE	PCIE	PCIE SATA 0B	PCIE SATA 1B	PCIE SATA 0	PCIE SATA 1	PCIE SATA 2	PCIE SATA 3	PCIE SATA 4	PCIE SATA 5	PCIE	PCIE
Q470	PCIE GbE	PCIE	PCIE SATA 0B	PCIE SATA 1B	PCIE SATA 0	PCIE SATA 1	PCIE SATA 2	PCIE SATA 3	PCIE SATA 4	PCIE SATA 5	PCIE	PCIE
W480	PCIE GbE	PCIE	PCIE SATA 0B	PCIE SATA 1B	PCIE SATA 0	PCIE SATA 1	PCIE SATA 2	PCIE SATA 3	PCIE SATA 4	PCIE SATA 5	PCIE SATA 6	PCIE SATA 7



**STRAP**

NR115 8.2K/4X N\_GPP\_J4 NR116 8.2K/4

XTAL FREQUENCY SELECTION, PCH HAS INTERNAL 20K PD  
1 = 24MHz (25MHz WHEN XTAL FREQ DIVIDER NON ZERO)  
0 = 38.4/19.2MHz

NR117 8.2K/4X N\_GPP\_J6 NR118 100K/4/1

CNV2  
0 = INTEGRATED CNVI ENABLE  
1 = INTEGRATED CNVI DISABLE

NR119 8.2K/4X N\_GPP\_J8 NR120 8.2K/4X

SELECT CNV SPI BIOS FLASH INTERFACE OPERATING VOLTAGE, PCH HAS INTERNAL 20K PD  
1 = VCCPSPI IS CONNECTED TO 1.8V RAIL  
0 = VCCPSPI IS CONNECTED TO 3.3V RAIL

ANS 761979

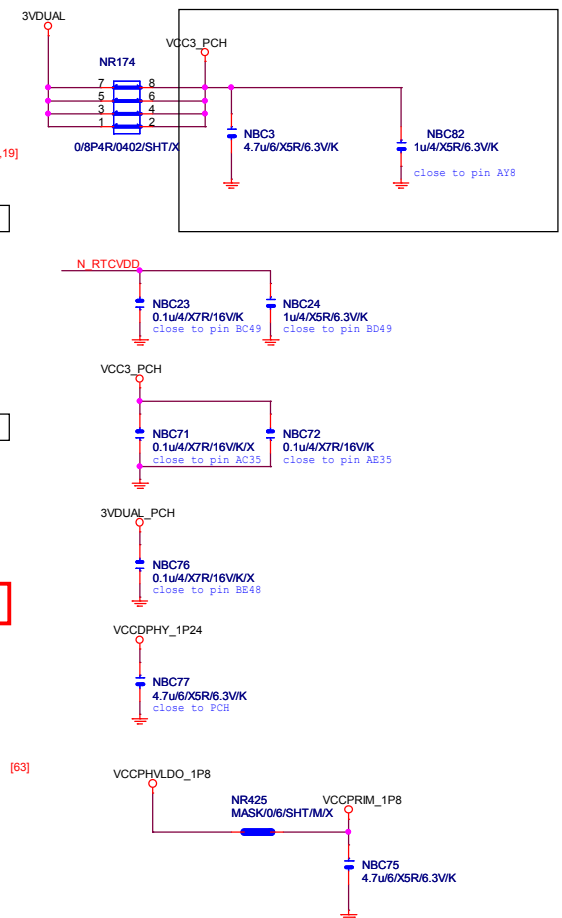
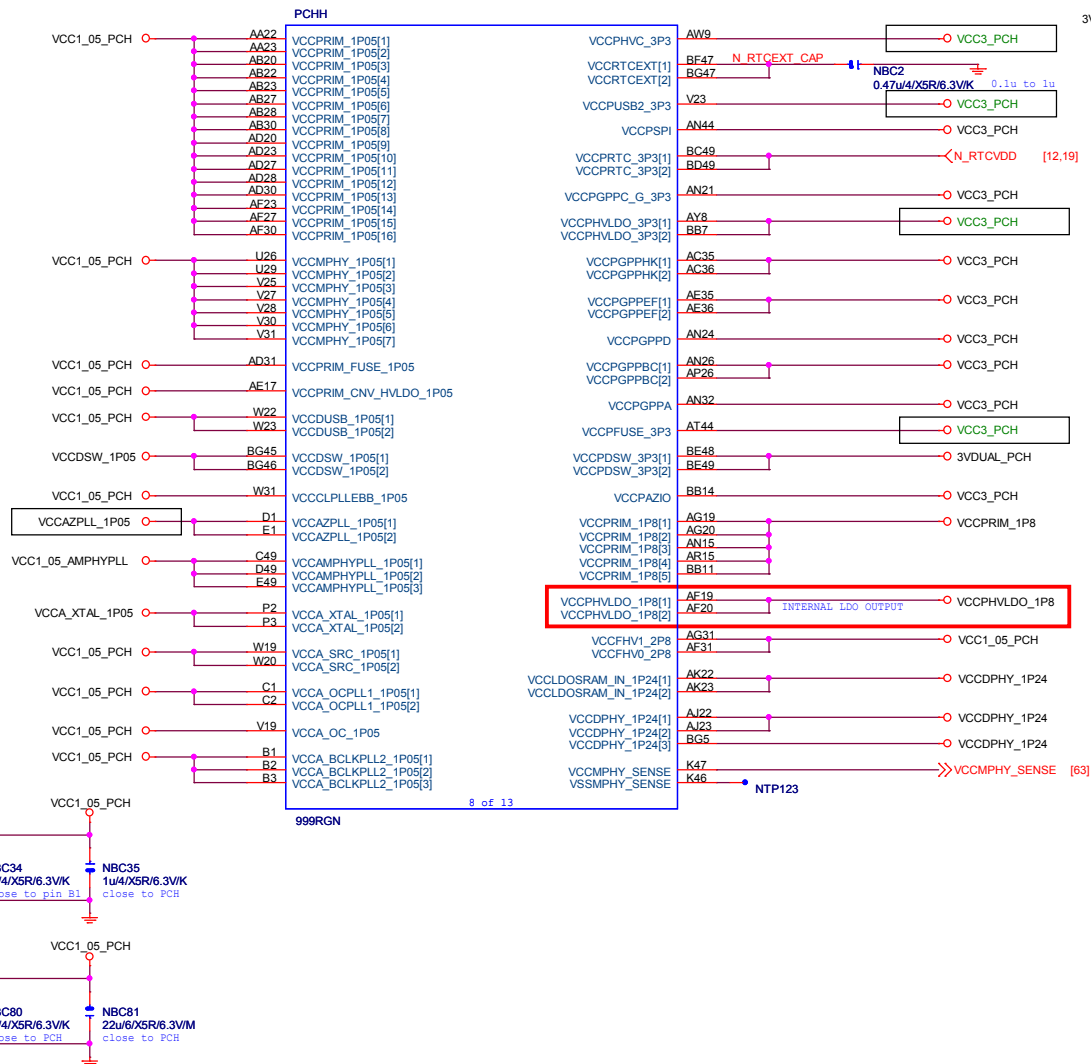
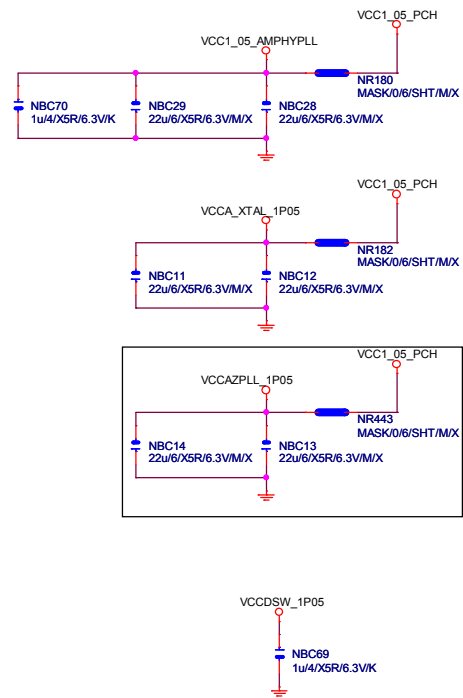
**GIGABYTE**

**PCH SATA,PCIE,SATA\_EXPRESS**

Size Custom Document Number 2490 VISION G Rev 1.0

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CML CNP PCH-H R0.1





CML CNP PCH-H R0.1

PCH		
A2	VSS	AL12
A28	VSS	AL17
A3	VSS	AL21
A33	VSS	AL24
A37	VSS	AL26
A4	VSS	AL29
A45	VSS	AL33
A46	VSS	AL38
A47	VSS	AM1
A48	VSS	AM18
A5	VSS	AM32
A8	VSS	AM49
AA19	VSS	AN12
AA20	VSS	AN16
AA25	VSS	AN34
AA27	VSS	AN38
AA28	VSS	AP4
AA30	VSS	AP46
AA31	VSS	AR12
AA49	VSS	AR16
AA5	VSS	AR34
AB19	VSS	AR38
AB25	VSS	AT1
AB31	VSS	AT16
AC12	VSS	AT18
AC17	VSS	AT21
AC33	VSS	AT24
AC38	VSS	AT26
AC4	VSS	AT29
AC46	VSS	AT32
AD1	VSS	AT34
AD19	VSS	AT45
AD2	VSS	AV11
AD22	VSS	AV39
AD25	VSS	AW10
AD49	VSS	AW4
AE12	VSS	AW40
AE33	VSS	AW46
AE38	VSS	B47
AE4	VSS	B48
AE46	VSS	B49
AF22	VSS	B49
AF25	VSS	BA12
AF28	VSS	BA14
AG1	VSS	BA44
AG22	VSS	BA5
AG23	VSS	BA6
AG25	VSS	BA6
AG27	VSS	BB41
AG28	VSS	BB43
AG30	VSS	BB9
AG38	VSS	BC10
AG49	VSS	BC13
AH12	VSS	BC15
AH17	VSS	BC19
AH33	VSS	BC24
AH38	VSS	BC26
AH39	VSS	BC31
AH49	VSS	BC35
AJ20	VSS	BC40
AJ25	VSS	BC46
AJ27	VSS	BC8
AJ28	VSS	BD43
AJ30	VSS	BE44
AJ31	VSS	BF1
AK19	VSS	BF2
AK20	VSS	BF3
AK25	VSS	BF48
AK27	VSS	BF49
AK28	VSS	BG17
AK30	VSS	BG2
AK31	VSS	BG22
AK4	VSS	BG25
AK46	VSS	BC28

PCH		
BG3	VSS	M24
BG33	VSS	M32
BG37	VSS	M34
BG4	VSS	M49
BG46	VSS	M5
C12	VSS	N12
C25	VSS	N16
C30	VSS	N34
C4	VSS	N35
C48	VSS	N37
C5	VSS	N38
D12	VSS	P26
D16	VSS	P29
D17	VSS	P4
D30	VSS	P46
D33	VSS	R12
D8	VSS	R16
E10	VSS	R26
E13	VSS	R29
E15	VSS	R3
E17	VSS	R34
E19	VSS	R38
E22	VSS	R4
E24	VSS	T17
E26	VSS	T18
E31	VSS	T32
E33	VSS	T4
E35	VSS	T49
E40	VSS	T5
E42	VSS	T7
E8	VSS	U12
F41	VSS	U15
F43	VSS	U17
F47	VSS	U21
G44	VSS	U24
G6	VSS	U33
H8	VSS	U38
J10	VSS	V20
J26	VSS	V22
J29	VSS	V4
J4	VSS	V46
J40	VSS	W25
J46	VSS	W27
J47	VSS	W28
J48	VSS	W30
J9	VSS	Y10
K11	VSS	Y12
K39	VSS	Y17
M16	VSS	Y33
M18	VSS	Y38
M21	VSS	Y9

999RGN 12 of 13

删除REAR\_HS

裝甲

此料移至LED小卡的BOM

IO&AUDIO---FOOTPRINT合一起

IO\_AU\_CR/GRAY 10U CS  
PC/WH/Z490 WHITE

IO(12KRC-0H0043-02R)X

IO\_AU\_CR/GRAY 10U CS  
PC/WH/Z490 WHITE

不上:IO&AUDIO---FOOTPRINT合一起  
改上9C BOM

PCH\_HS

PCH HS/BLACK/COVER(12SP2-S09913-03R/06R)

Footprint  
:sink\_z490\_vision\_pch

一體式IO SHIELD

AIO\_SHIELD

IO SH/SUS 430/H=0.2mm AJOHO(11AIO-0C0034-02R)

AIO\_SK1 AIO\_SK2

SCM/M24.0mm/M10.5/3.5D(12KSF-F10305-02R)X  
SCM/M24.0mm/M10.5/3.5D(12KSF-F10305-02R)X

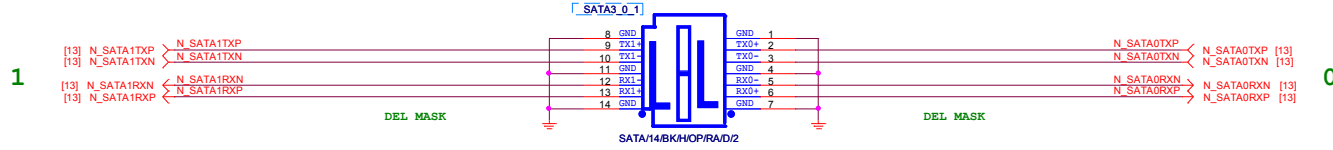
鎖背面裝甲SK

Z490 VISION:一體式IO:11AIO-0C0034-02R:裸片+銘板

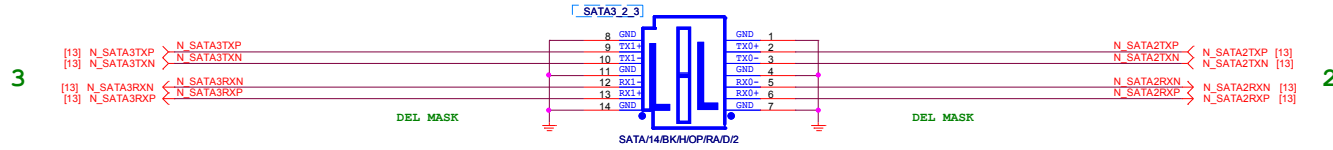
ANS 7619797			
Title			
PCH GND/Heatsink			
Size	Document Number	Rev	
Custom	Z490 VISION G	1.0	
Date:	Monday, February 10, 2020	Sheet	15 of 74

Footprint : H2X7-SATA2-D90

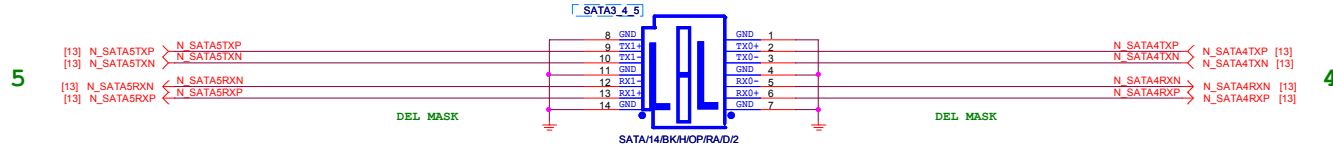
IO13/IO14 To SATA3 port0/1  
上 Port (8~14) 下 Port (1~7)



IO15/IO16 To SATA3 port2/3  
上 Port (8~14) 下 Port (1~7)



IO17/IO18 To SATA3 port4/5  
上 Port (8~14) 下 Port (1~7)



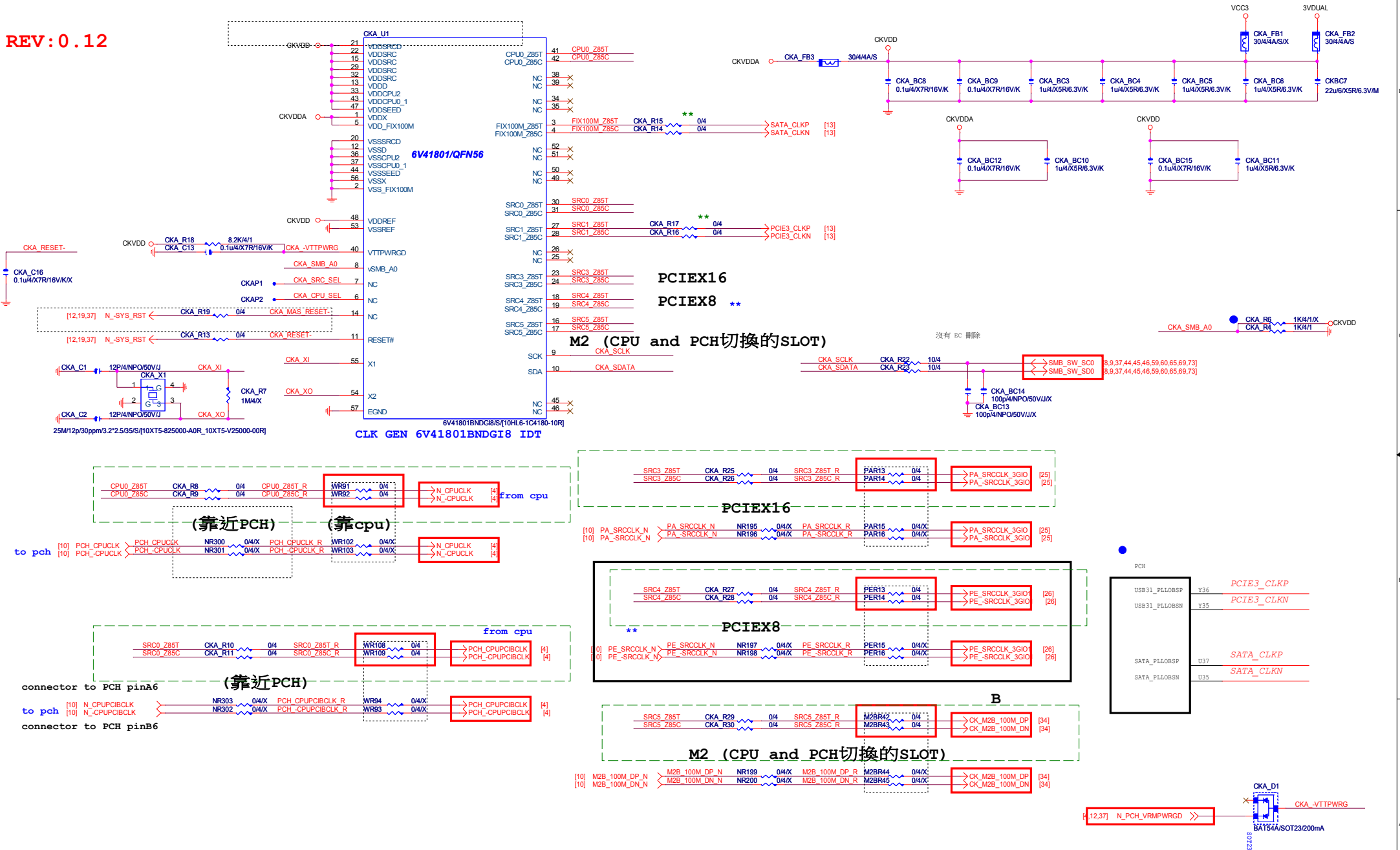
SATA 5 (文字面寫SATA 1)  
SATA 4 (文字面寫SATA 0)  
SATA 3  
SATA 2  
SATA 1 (文字面寫SATA 5)  
SATA 0 (文字面寫SATA 4)

Gigabyte Technology

Title		
SATA		
Size	Document Number	Rev
Custom	Z490 VISION G	1.0
Date:	Friday, January 31, 2020	

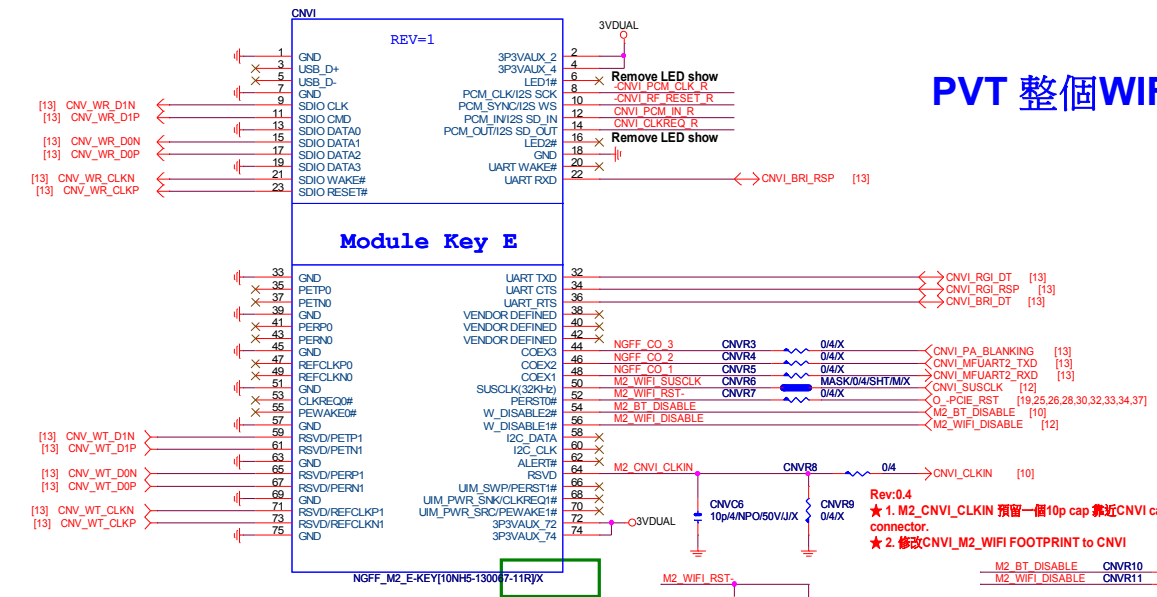
Sheet 16 of 74

REV:0.12



不支援PCIE介面WIFI及USB介面BT

CNVi\_M2\_WIFI



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: NGFF-E-75P-2

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

FOR M.2 WIFI PIN SIZE

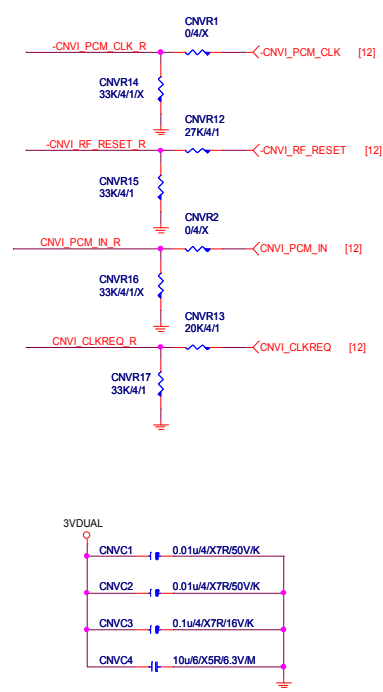
Key-E for CNVi (後窗一體卡式), Footprint 不 Mask, MP不上件

安規貼紙

WI-FI WITH BT M.2 CARD QUALCOM[12LB6-TAC0960-00R]X

Rev:0.6

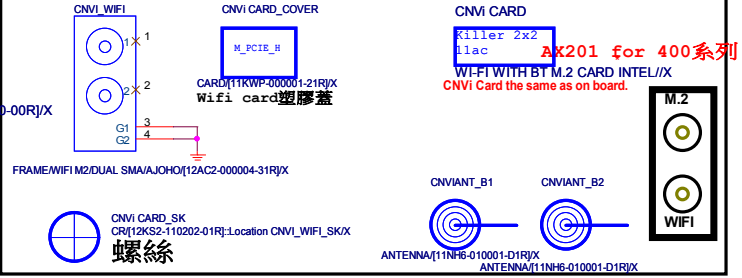
★ 1. 將PCH吐出的3.3V 經分壓為1.8V 才連到CNVi



FOR M.2 WIFI MODULE @ REAR PANEL

★Update 2015-02-11

一套WIFI MODULE包含外框+WIFI CARD+天線

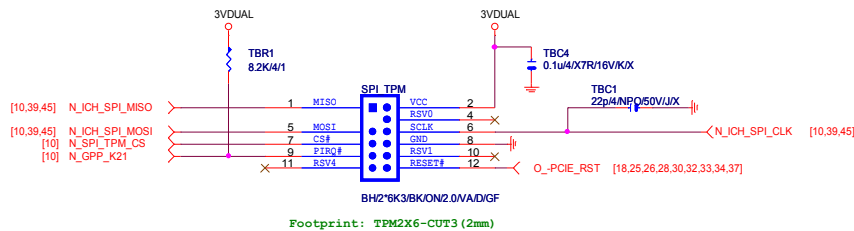


兩片式WIFI金屬殼改為單件式  
Layout Library : wifi-ekey-module-1  
Tiptop P/N : 12AC2-000004-31R

GIGABYTE

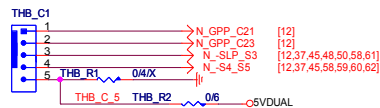
Title			CNVi_M2_WIFI	
Size			Z490 VISION G	
Date			Friday, January 31, 2020	Rev 1.0

## TPM CONNECT



## Thunderbolt

★Update 2015-12-29



JW/1\*5/BK/2.0/VA/D/[11NH5-040105-41R\_11NH5-040105-42R]  
Footprint update "WAFER-1X5P"



JW/1\*3/BK/2.0/VA/D/[11NH5-040103-41R]

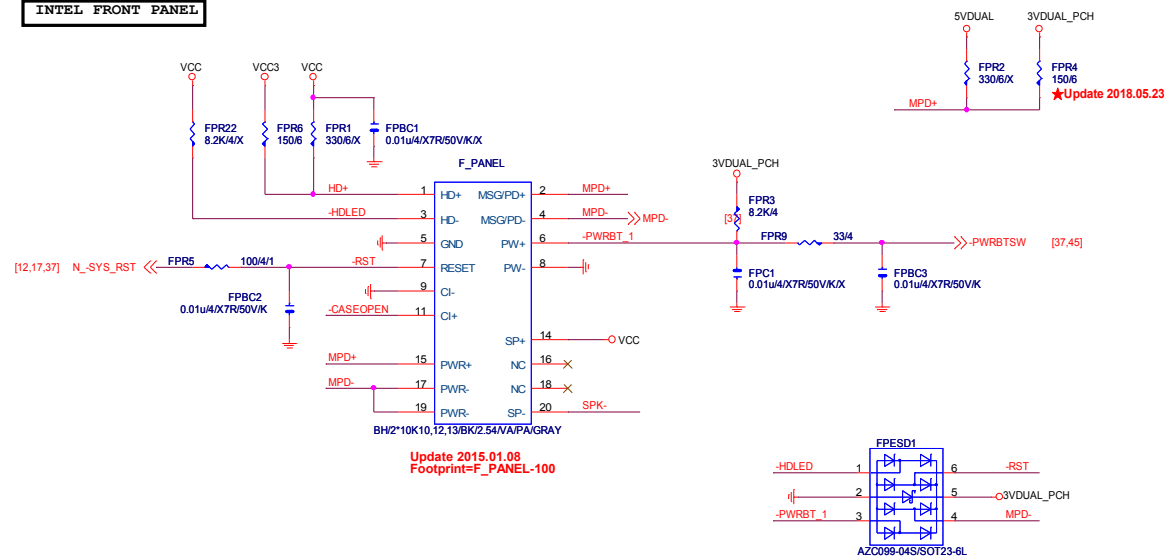
FOR TBT RTD3 THB C1 footprint "WAFER1X3-2MM"

## z490系列使用

TBT\_PCIE\_RST : CFL connector to GPP\_F2  
TBT\_PCIE\_WAKE\_N : CFL connector to GPP\_H15  
RTD3\_CIO\_PWR\_EN : CML connector to GPP\_K23

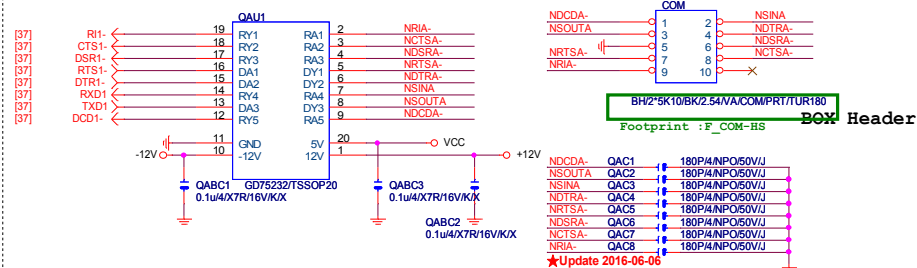
Rev: 0.91

## INTEL FRONT PANEL

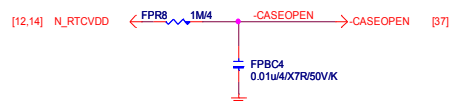


## COM PORT

Rev: 0.7

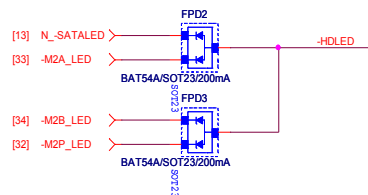


## CASE OPEN

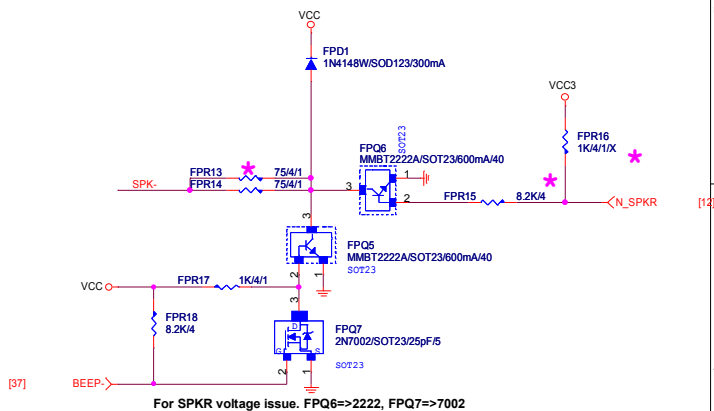


SATA LED
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SATA LED



**SPEAKER**

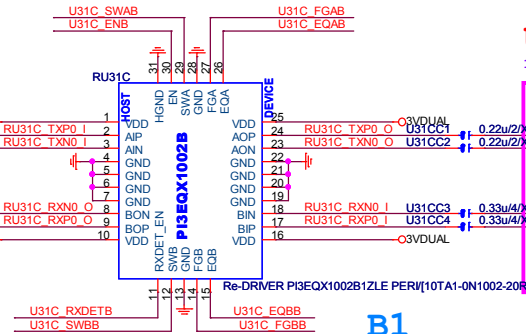


## Gigabyte Technology

Title			
<b>FP,F USB,USB PWR,FDD,BZ,TB C</b>			
Size Custom	Document Number	Rev	
	<b>Z490 VISION G</b>	<b>1.0</b>	
Date:	Friday, January 31, 2020	Sheet	19 of 74

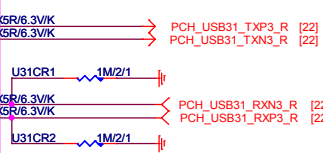
## PCH Site

[11] PCH\_USB31\_TXP3  
[11] PCH\_USB31\_TXN3  
[11] PCH\_USB31\_RXN3  
[11] PCH\_USB31\_RXP3



## USB-A Connector Site

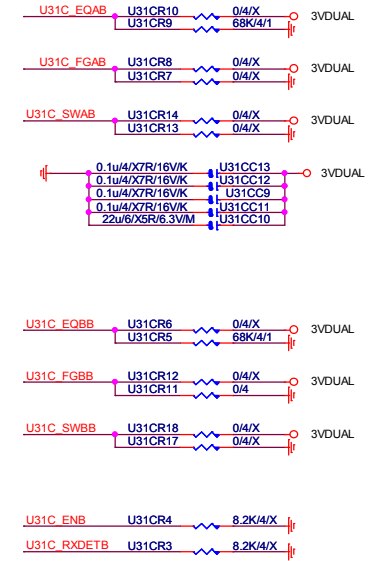
1. RX用0.330UF. 2. 只有RX pull down 1M/2/1



U32G2\_LAN  
UP

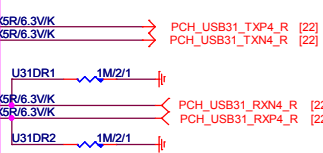
TX

RX



## USB-A Connector Site

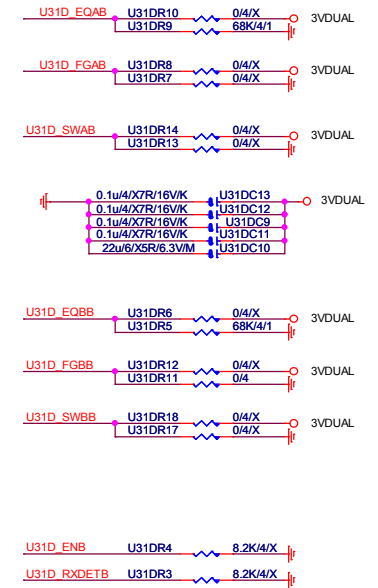
1. RX用0.330UF. 2. 只有RX pull down 1M/2/1



U32G2\_LAN  
DOWN

TX

RX

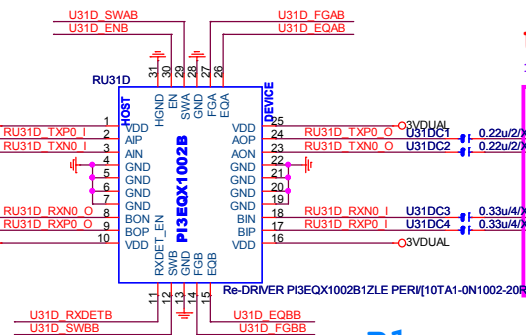


## Layout Rule:

1. Differential Pair can't be swaped
2. Redriver to Connector Length min. 500mil

## PCH Site

[11] PCH\_USB31\_TXP4  
[11] PCH\_USB31\_TXN4  
[11] PCH\_USB31\_RXN4  
[11] PCH\_USB31\_RXP4



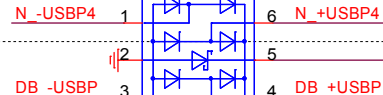
B1





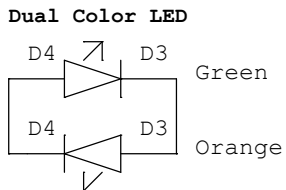
## R2.04

note:可變更USB NAME




USB上白下紅:USB3.1+LAN/1G/WH,RE/GO,Y/OS/RA/D/1/15KV

### USB30\_LAN\_LAYOUT示意圖



**Single Color LED**

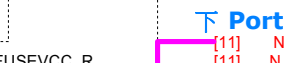
D2  D1 Yellow

FOOT PRINT: LAN COVER

可變  
[視SPEC需求]

note:可變更USB NAME

[I225]



可變

## 可變

可變

可變 可變

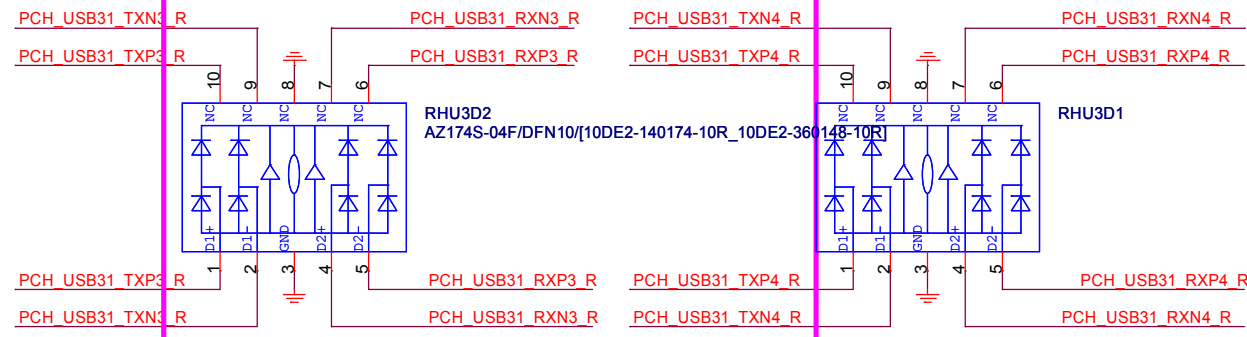
## Q-Flash

上 Port

LA MDI-->100歐姆:[20/4/8/4/20]

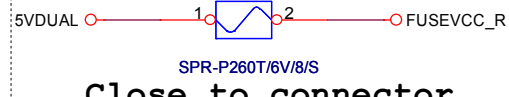
note:可變更USB NAME

## NET 可自行調整



note:可變更FUSE

可變

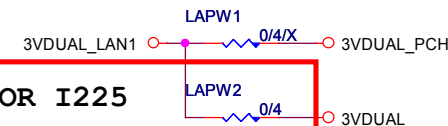


Close to connector  
FUSE-0805

**\*ERP WOL**

note: lan power連接及電流

## 可變



改ERP NO WAKE FOR I225

\*ERP NO WOL

## Gigabyte Technology

## LAN CONNECTOR-I219

## number **Z490 VISION G**

Title			
LAN CONNECTOR-I219			
Size	Document Number	Rev	
Custom	Z490 VISION G	1.0	
Date:	Friday, January 31, 2020	Sheet	22 of 74

Rev: 0.6



Title

RST, PWR, CLR\_CMOS

Size

Custom

Document Number

Z490 VISION G

Rev

1.0

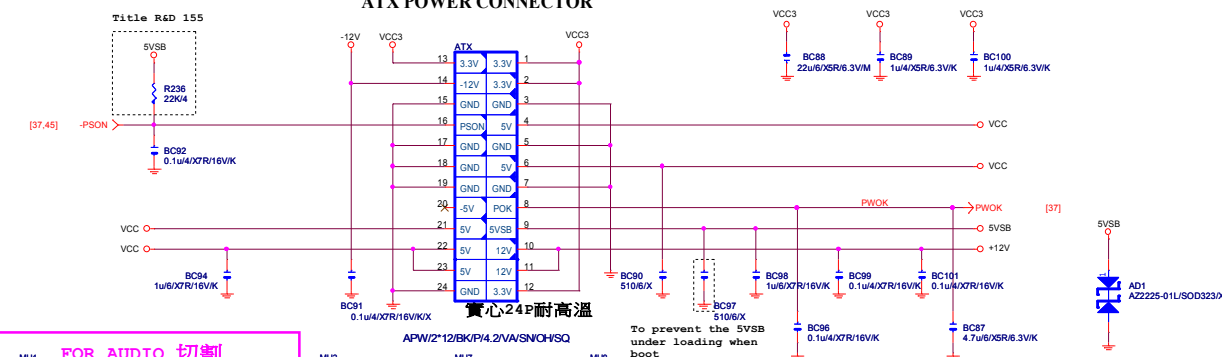
Date

Friday, January 31, 2020

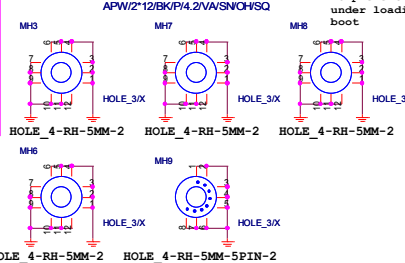
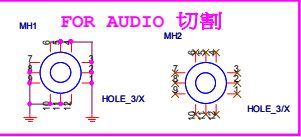
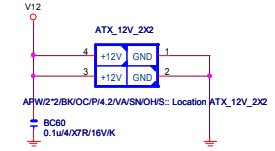
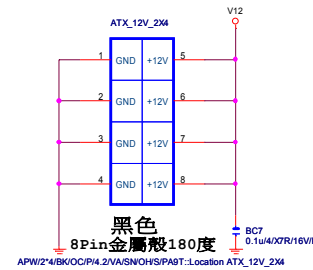
Sheet

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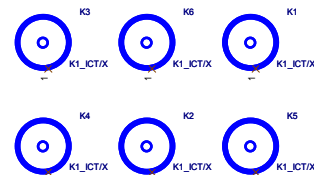
# ATX POWER CONNECTOR



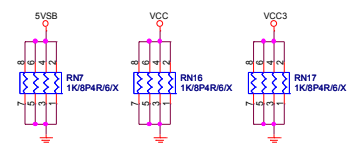
## ATXX4 POWER CONNECTOR



## 固定孔/光學點



## DUMMY LOAD

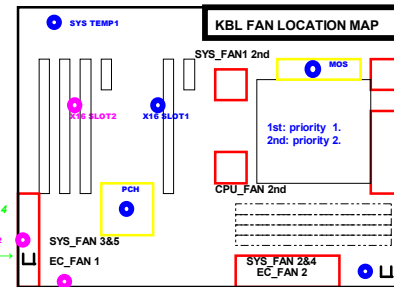


For CHINA Power issue

REV:1.07

HOT MOS H/W MONITOR

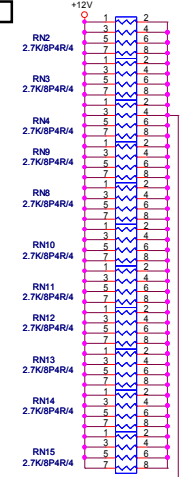
RS\_VCORE ~ RS\_VCCGT CLOSE CPU VCORE & VCCGT MOSFET  
-PROCHOT:有mos heatsink不用prochot function



8 FAN from IO & EC

## +12V DUMMY LOAD

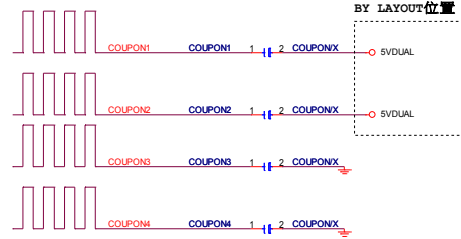
To fix 12V light load abnormal issue



VOLTAGE-- H/W MONITOR

178728 BX

## COUPON

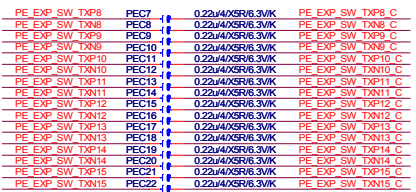
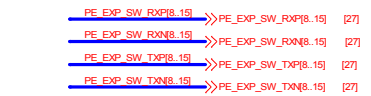
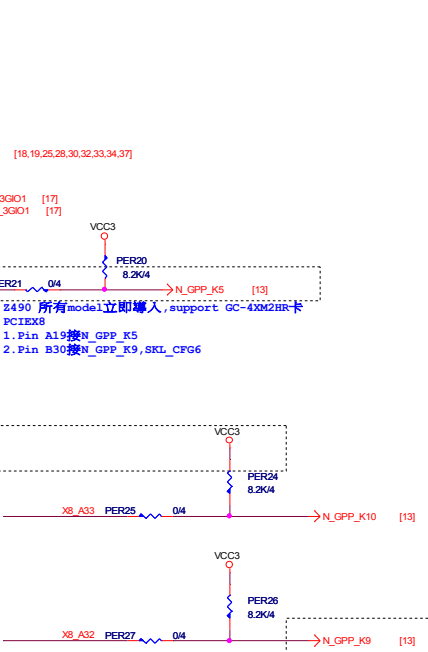
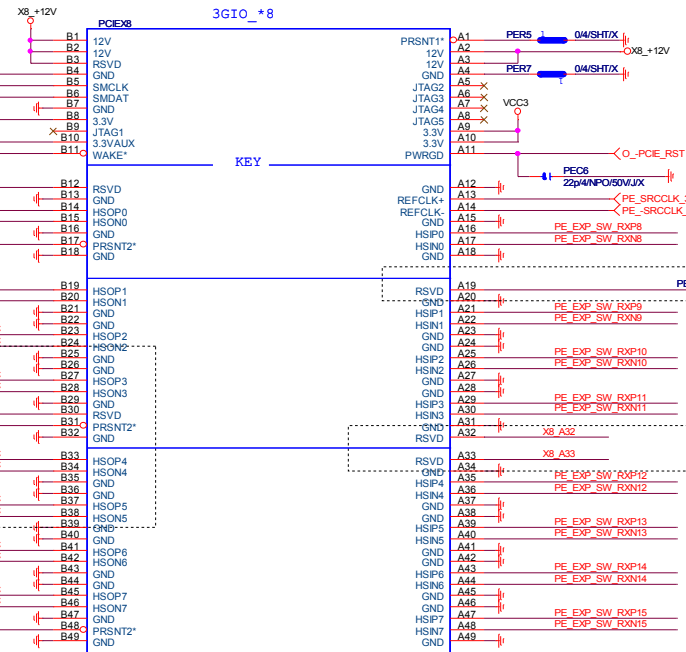
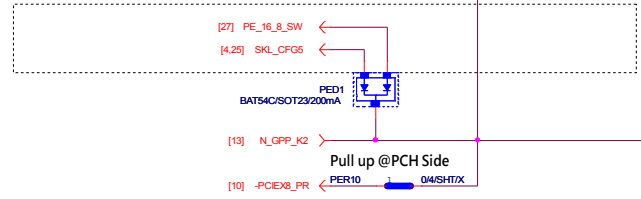
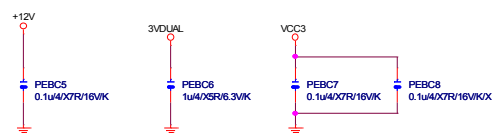
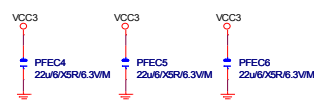
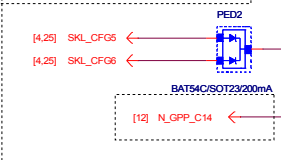
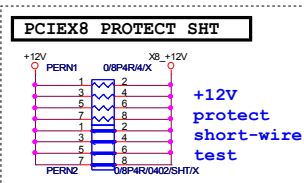
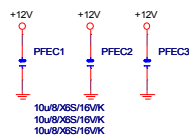


BY LAYOUT位置

The division voltage of VIN2 & VIN3 must be around 2.9V



R0.4



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

## 黑色金屬加強版

**加強版金屬** build-in RGB LED slot

Footprint: PCIESLOT-98STH-X299  
Value: 黑 PCI-E/8X-99P/BK/LONG DOUBLE/HK\*2/SHELL/LED

加強版金屬slot (無LED透光)

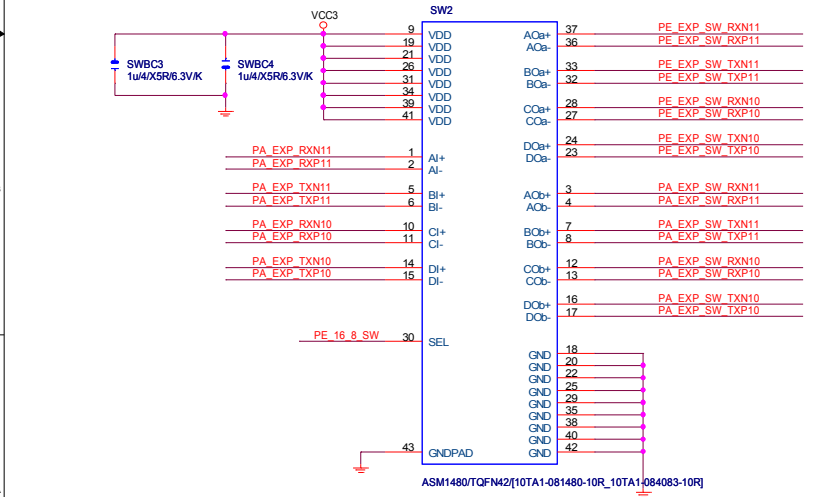
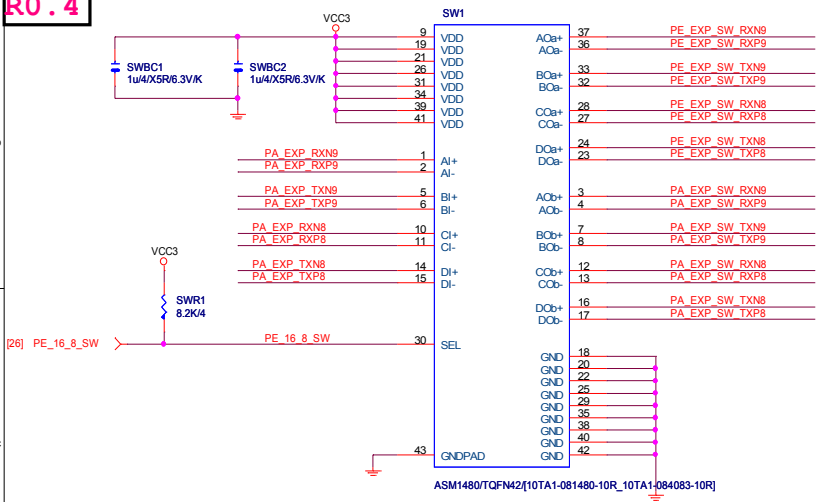
Footprint:	PCIESLOT-98ST8
Value: 深灰	PCI-E/8X-99P/GY/LONG DOUBLE/HK*2/SHELL
橘	PCI-E/8X-99P/OR/LONG DOUBLE/HK*2/SHELL
鮮紅	PCI-E/8X-99P/RE/LONG DOUBLE/HK*2/SHELL
迷彩	PCI-E/8X-99P/LB/LONG DOUBLE/HK*2/SHELL
黑綠	PCI-E/8X-99P/BK/LONG DOUBLE/HK*2/SHELL
綠	缺
銀黑	PCI-E/8X-99P/BK/LONG DOUBLE/HK*2/BK NI SH

### BOM Option

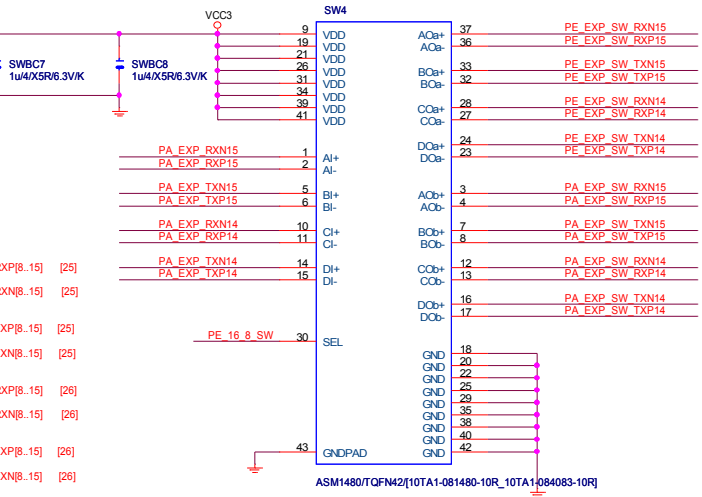
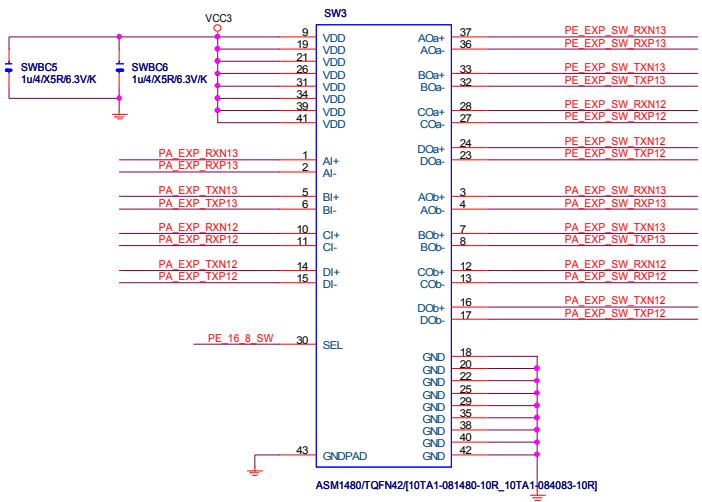
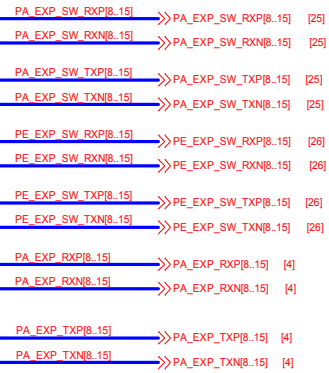


Title			
<b>PCI EXPRESS X8</b>			
Size	Document Number	Rev	
Custom	<b>Z490 VISION G</b>	<b>1.0</b>	
Date:	Friday, January 31, 2020	Sheet	26 of 74





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



**GIGABYTE™**

File

Size

Custom

Document Number

Rev

Date

Friday, January 31, 2020

Sheet

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Rev

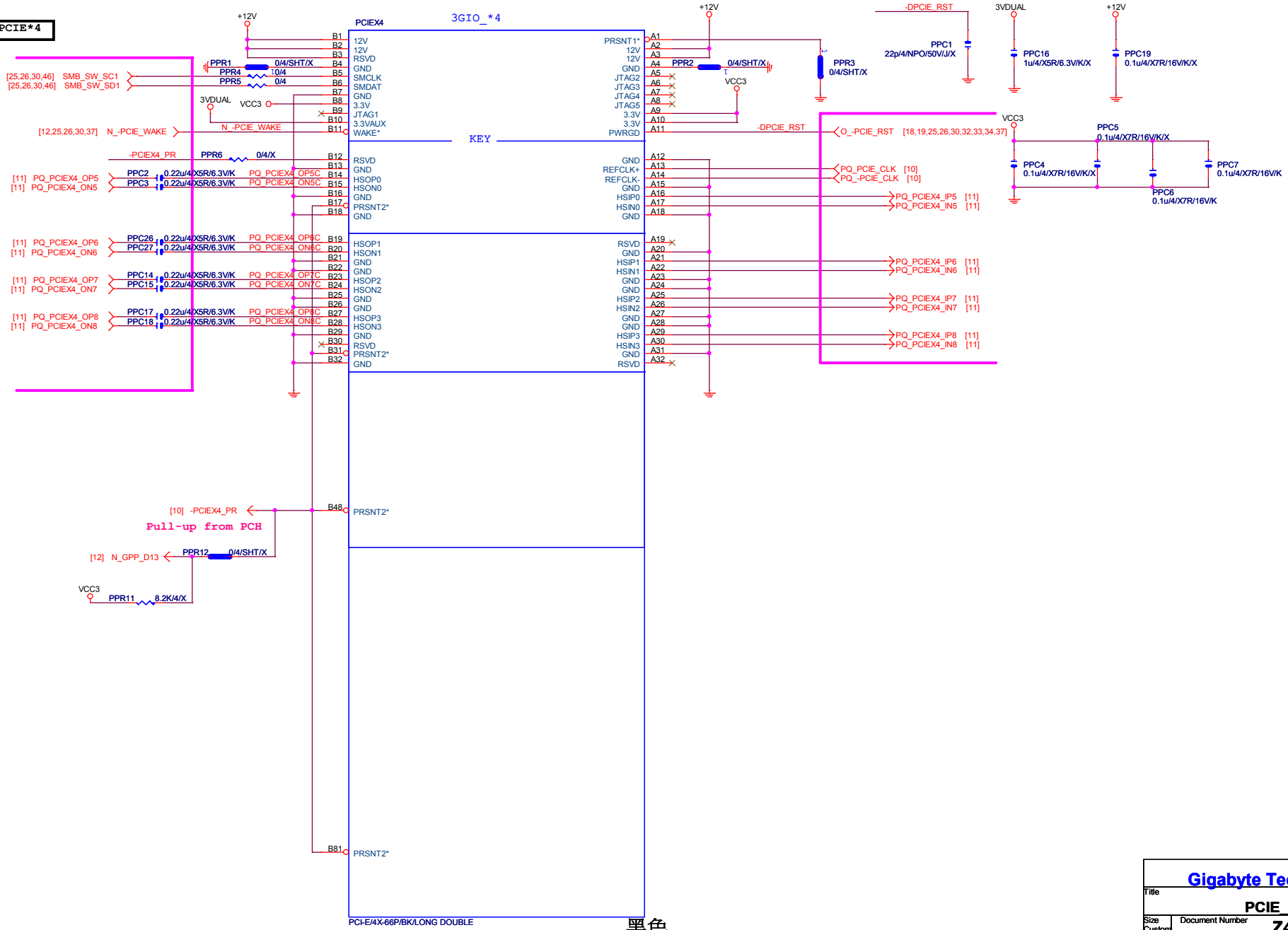
1.0

PCI EXPRESS X16 SWITCH

Z490 VISION G

Footprint "PCIESLOT-64P-1"

PCIE\*4



Gigabyte Technology

Title		
PCIE X1 1.2		
Size	Document Number	Rev
Custom	Z490 VISION G	1.0
Date:	Friday, January 31, 2020	Sheet 28 of 74

Rev 0.1

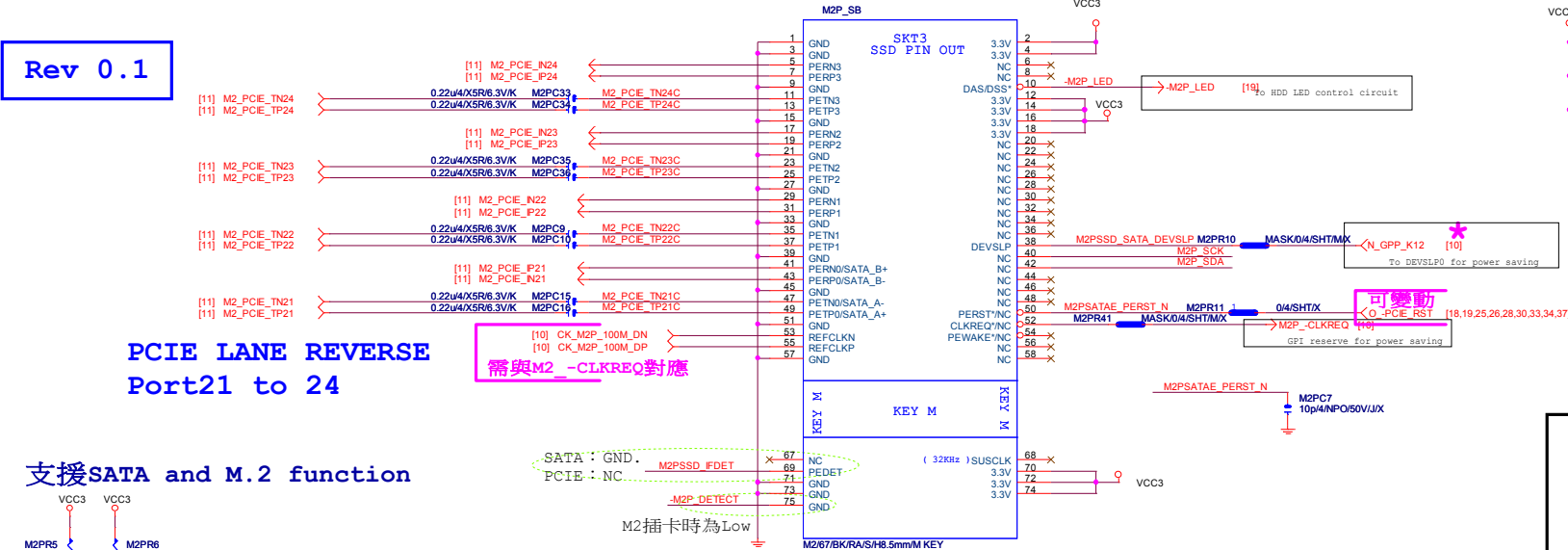
Title			Gigabyte Technology SWITCH		
Size	Document Number	Z490 VISION G			Rev
Custom					1.0
Date:	Friday, January 31, 2020	Sheet	29	of	74



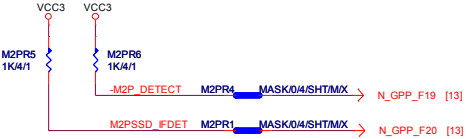
5					4					3					2					1				
D																								
C																								
B																								
A																								

Title			<i><b>Gigabyte Technology</b></i> <i><b>SWITCH</b></i>																					
Size	Custom	Document Number	<b>Z490 VISION G</b>															Rev	1.0					
Date:	Friday, January 31, 2020										Sheet	31	of	74										

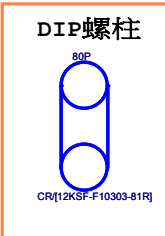
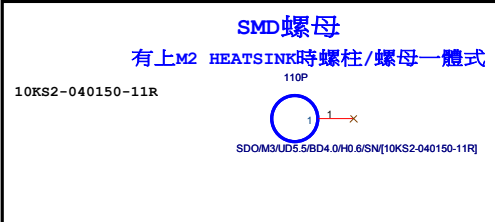
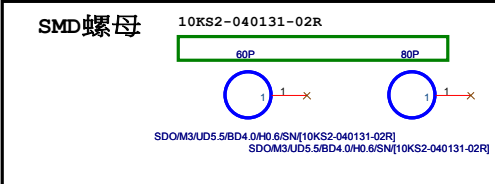
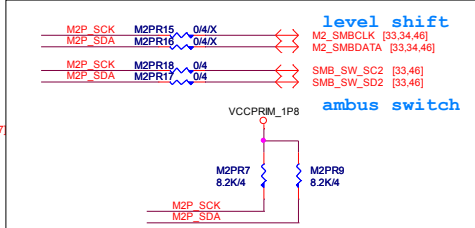
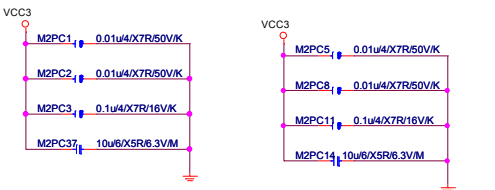
Rev 0.1

PCIE LANE REVERSE  
Port21 to 24

## 支援SATA and M.2 function



Flex IO priority	N_GPP_K0	N_GPP_K1	IO14 PCIE#9	IO15 PCIE#10	IO16 PCIE#11	IO17 PCIE#12	IO18 PCIE#13	IO19 PCIE#14
M2A SATA	L	L	PCIE	PCIE	SATA 0	SATA 1	X	X
M2A PCIE (PCIE Reverse)	L	H	PCIE	PCIE	PCIE	PCIE	SATA 0	SATA 1
	H	X	X	X	X	X	SATA 0	SATA 1



12KSF-F10303-81R

改81R (PM要求Fix Phison M2 SSD問題)

12KS2-110202-31R:SCREW I HEAD M2\*2.0 GT  
改31R (PM要求Fix Phison M2 SSD問題)

M2P\_HS  
M2 HEATSINK  
PCHM2\_HS\_V1/12SP1-S12605-03R/06R]

M.2 HS/NEW  
SCREW/Z490\_VISIO/ZH  
22.4\*128\*5mm/GAP  
PAD/BLACK/INK

<b><i>Gigabyte Technology</i></b>			
Title			
<b>M.2 X4</b>			
Size	Document Number		Rev
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Rev 0.1

M.2 Lane4 from PCH port14

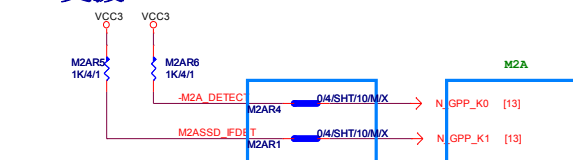
M.2 Lane3 from PCH port1

M.2 Lane2 from PCH port1

M.2 Lane2 from PCH port1<sub>M2</sub>

```
x4 22110 M.2 slot
(SATA mode from IO17/S1, PCIe lane
reverse) =>Pin41=>P ,Pin43=>N
```

支援SATA and M.2 function



需與M2 -CLKREQ對應

金屬加強 Footprint : M2 80 CUT42W

預留金屬加強不上件:M2/67/BK/RA/S/H8.5mm/M  
KEY/[10NR5-130067-52R]

金屬加強 (10NR5-130M67-31R) (M.2 鐵殼DIP款)

Flex IO priority	N_GPP_K1	IO14 PCIe#9	IO15 PCIe#10	IO16 PCIe#11	IO17 PCIe#12
M2A SATA	L	PCIE	PCIE	SATA 0	SATA 1
M2A PCIE (PCIE Reverse)	H	PCIE	PCIE	PCIE	PCIE

level shift

ambus switch

刪除SMD螺柱文字面 "B" ,不要show 出在PCB文字面上

## SMD螺柱

SMD螺柱	10KS2-040131-02R
-------	------------------

## DIP螺柱

## SMD螺母

有上M2 HEATSINK時螺柱/螺母一體式

M2A\_HS

M2 HEATSINK

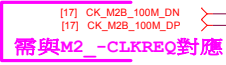
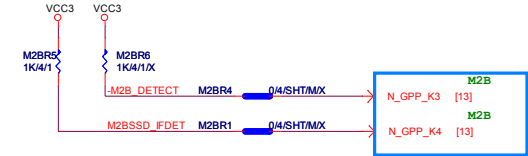
PCHM2\_HS\_V2/[12SP1-S12805-03R/06R]

M.2 HS/NEW SCREW/Z490\_VISIO/ZH  
22.4\*126\*5mm/GAP PAD/BLACK/INK

**Gigabyte Technology**

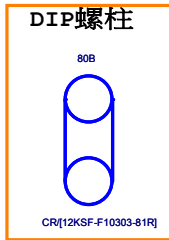
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M.2 X4			
Size Custom	Document Number	Rev	
	Z490 VISION G	1.0	
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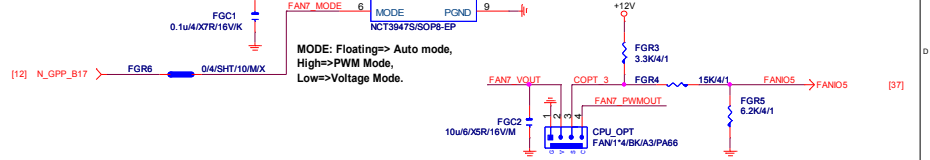
預留金屬加強不上件:M2/67/BK/RA/S/H8.5mm/M  
KEY/[10NR5-130067-52R]

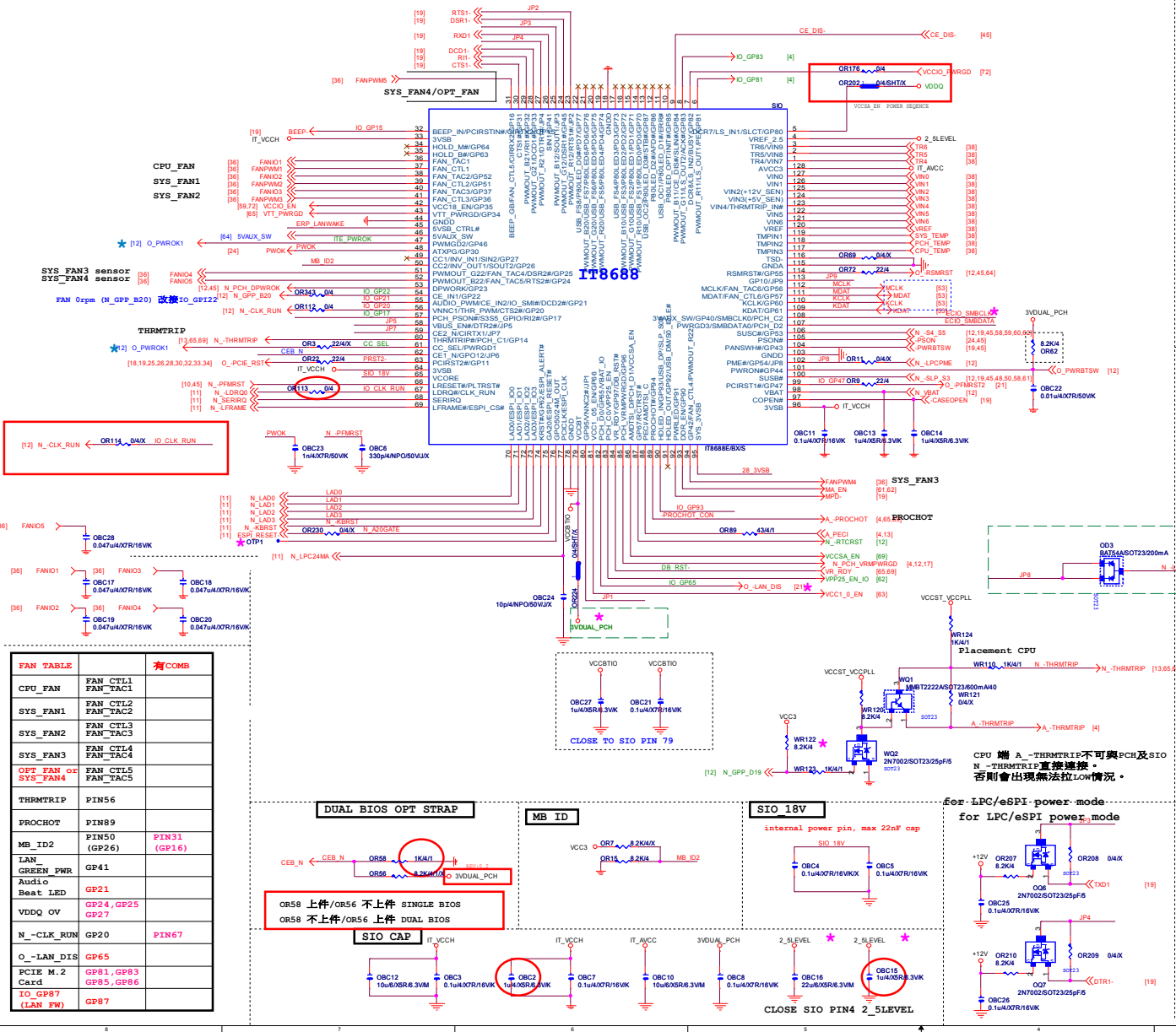
金屬加強 (10NR5-130M67-31R) (M.2鐵殼DIP款)



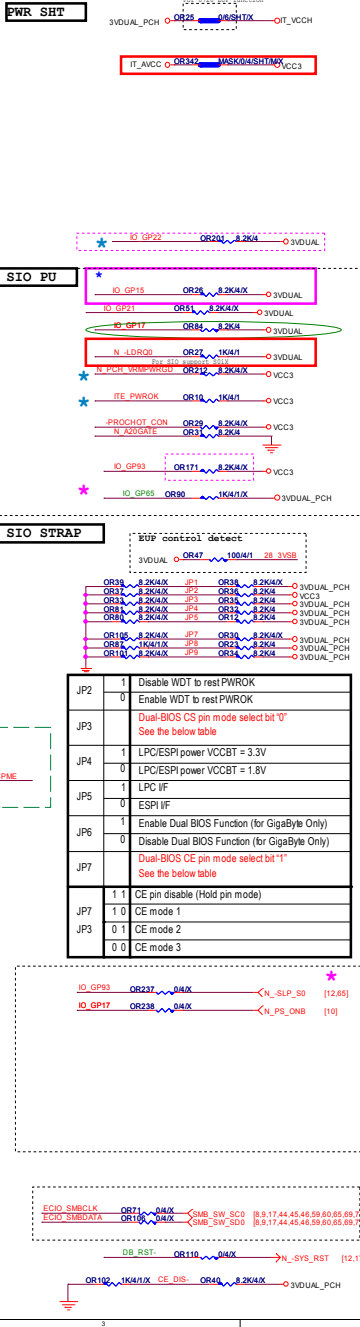
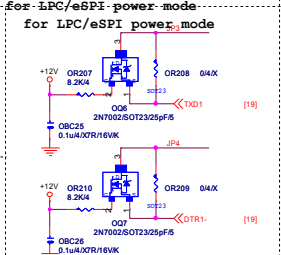
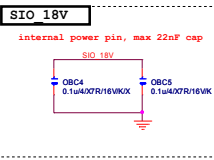
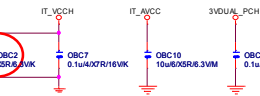
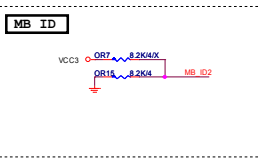
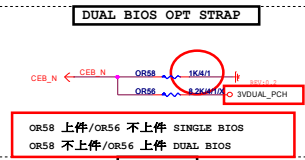


Title			
8FAN			
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FAN TABLE	FAN COMB	有COMB
CPU_FAN	FAN CTL1	
SYS_FAN1	FAN CTL2	
SYS_FAN2	FAN CTL3	
SYS_FAN3	FAN CTL4	
OPT_FAN OR SYS_FAN4	FAN CTL5	
THRMTRIP	PIN56	
PROCHOT	PIN89	
MB_ID2	PIN50 (GP26)	PIN31 (GP16)
LAN GREEN FWR	GP41	
Audio Beat LED	GP21	
VDDQ OV	GP24, GP25	
N_CLK_RUN	GP20	PIN67
O_LAN_DIS	GP65	
PCIe M.2 Card	GP81, GP83, GP85, GP86	
IO GP87 (LAN FW)	GP87	



請依開來規格，選擇Support Exp下 LAN Wake up組態。

(組態一) PCIE LAN (Single & Dual LAN)

改ERP NO WAKE FOR I225

(組態二) INTEL219 LAN (Single LAN)

(組態三) INTEL LAN+PCIE LAN (Dual LAN)

有IC 機置，不支援ERP Wake，只開上件OR97，OR94, OR95, OR96, OR1, OR98不上件。

JP8	1	WDT 4sec time out
JP8	0 <th>WDT 15sec time out</th>	WDT 15sec time out

JP2	1	Disable WDT to rest PWROK
JP2 <th>0</th> <th>Enable WDT to rest PWROK</th>	0	Enable WDT to rest PWROK
JP3 <th>1</th> <th>Dual-BIOS CS pin mode select bit "0"</th>	1	Dual-BIOS CS pin mode select bit "0"
JP4 <th>1</th> <th>LPC/ESPI power VCCBT = 3.3V</th>	1	LPC/ESPI power VCCBT = 3.3V
JP5 <th>1</th> <th>LPC IF</th>	1	LPC IF
JP6 <th>1</th> <th>ESPI IF</th>	1	ESPI IF
JP7 <th>1</th> <th>Enable Dual BIOS Function (for GigaByte Only)</th>	1	Enable Dual BIOS Function (for GigaByte Only)
JP8 <th>1</th> <th>Disable Dual BIOS Function (for GigaByte Only)</th>	1	Disable Dual BIOS Function (for GigaByte Only)
JP9 <th>1</th> <th>Dual-BIOS CE pin mode select bit "1"</th>	1	Dual-BIOS CE pin mode select bit "1"
JP10 <th>1</th> <th>CE pin disable (Hold pin mode)</th>	1	CE pin disable (Hold pin mode)
JP11 <th>1</th> <th>CE mode 1</th>	1	CE mode 1
JP12 <th>1</th> <th>CE mode 2</th>	1	CE mode 2
JP13 <th>1</th> <th>CE mode 3</th>	1	CE mode 3

ERP Wake on LAN		
Single LAN	Realtek	組態一
Single LAN	Atheros	組態二
Dual LAN (只留一個LAN支援ERP下 WAKE UP)	Atheros+Atheros	組態一
Dual LAN	Intel 219+Atheros	組態二
Dual LAN	Intel 219+Intel 210	組態三
No Support ERP	Single LAN BOM只上OR97，Dual LAN BOM只上OR97，OR99。	

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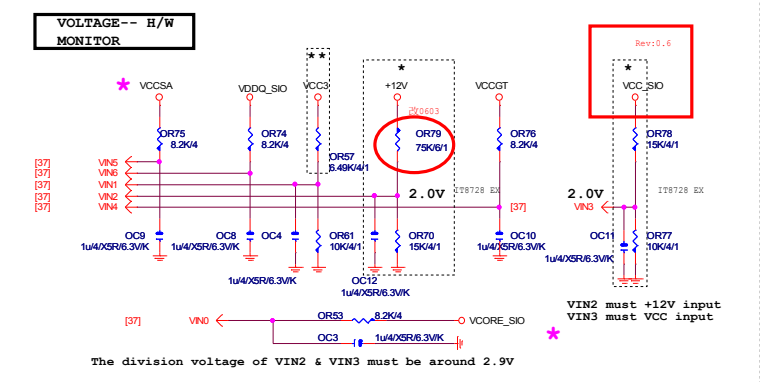
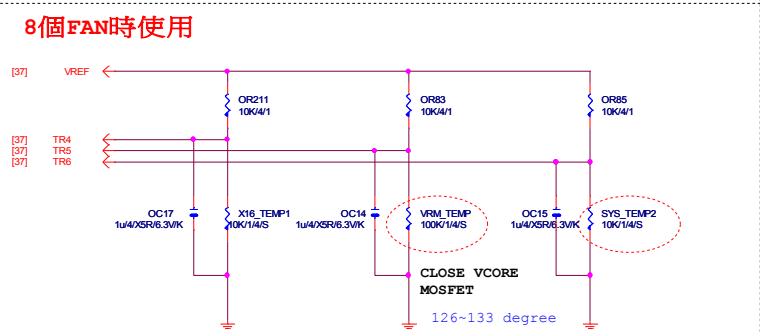
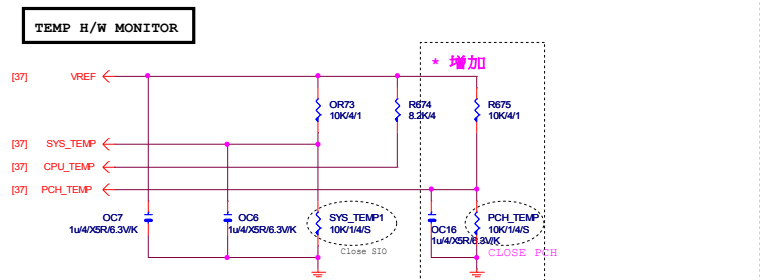
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Doc Number: 7490 VISION G

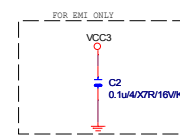
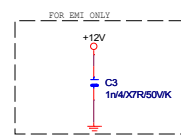
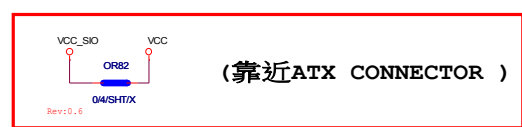
Date: Friday, January 31, 2020

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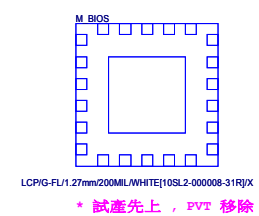
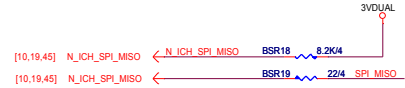
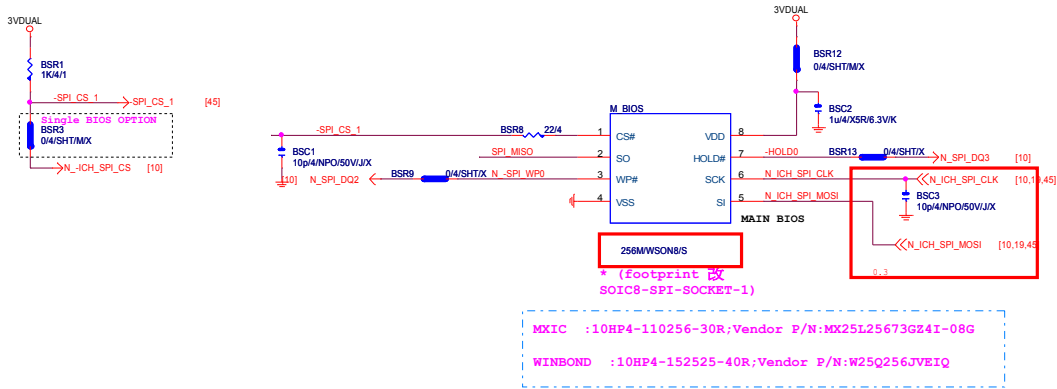


JP4 LOW ESPI MODE  
VCCBT 改走VCCBT\_18V ..刪除

ESPI MODE 使用的1.8v線路 -刪除



DUAL BIOS



LCP/G-FL/1.27mm/200MIL/WHITE/10SL2-000008-31Rj/X

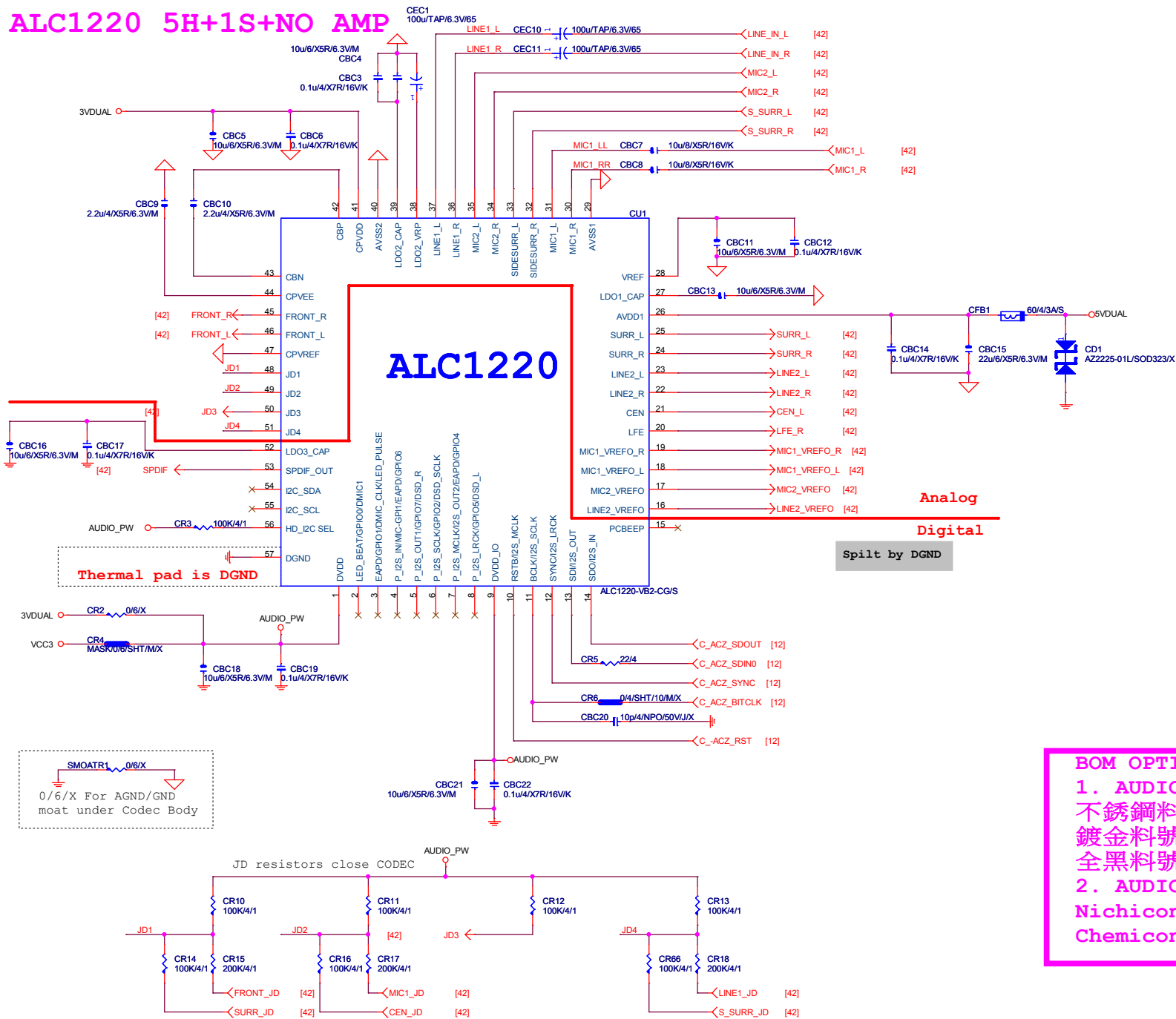
\* 試産先上 , PVT 移除



PWM頁面 "VIN\_CEC" 建議移除

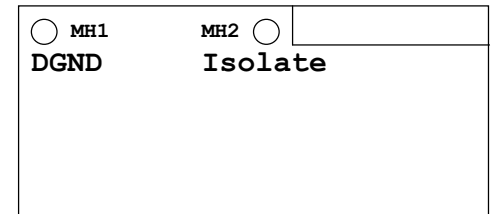
Rev 6.0

# ALC1220 5H+1S+NO AMP

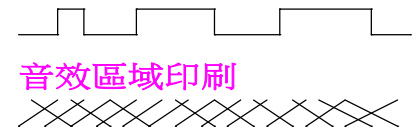


LAYOUT注意: 螺絲孔下GND方式

1. MH1下DGND
2. MH2一律改為Isolate



LAYOUT注意: 是否要加?  
AGND切割線



BOM OPTION :

1. AUDIO CONNECT

不銹鋼料號: 11NR6-403025-A3R

鍍金料號: 11NR6-403025-92R

全黑料號: 11NR6-403025-B1R

2. AUDIO CAP

Nichicon MW音效電容 : 100u/TAP/6.3V/65

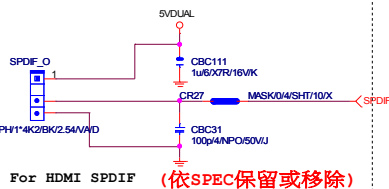
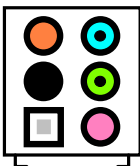
Chemicon音效電容 : 100uF/TAP/10V/6\*5

Gigabyte Technology

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Rev 6.0

AZALIA JACK



MOATR1 0.04  
MOATC1 0.1u/470R/16VK

Near F\_AUDIO

MOATR2 0.04X  
MOATC2 0.1u/470R/16VK

Near Codec

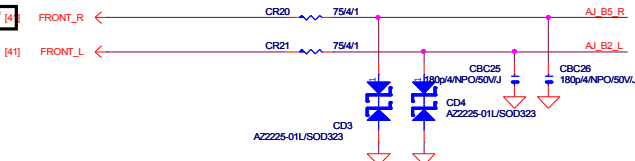
MOATR3 0.04X  
MOATC3 0.1u/470R/16VK

Under Audio Jack

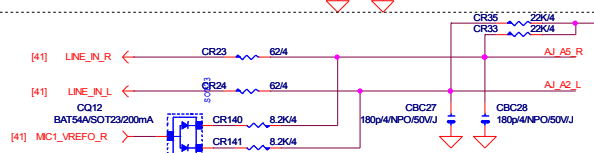
MOATR4 2.2K  
MOATC4 0.1u/470R/16VK

Audio Jack - LAN

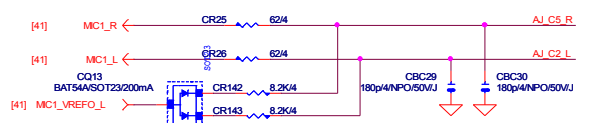
LINE-OUT



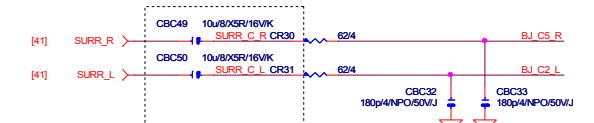
LINE-IN



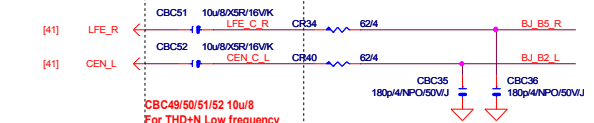
MIC-IN



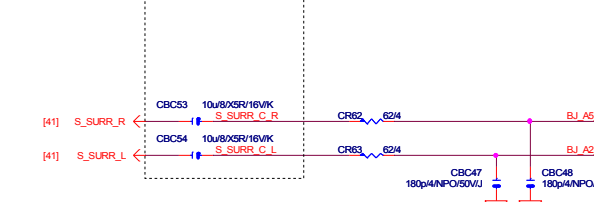
SURROUND



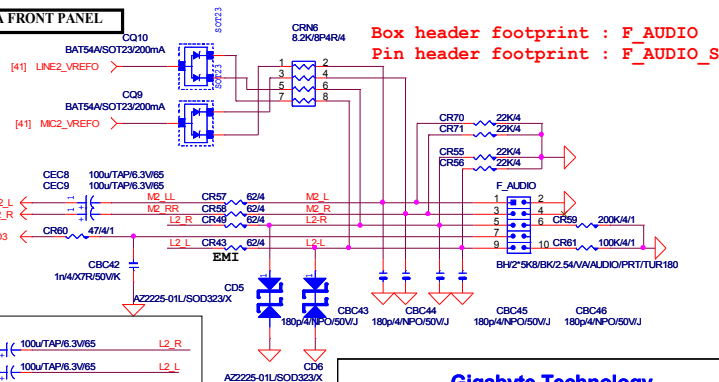
CEN/LFE



SURR BACK

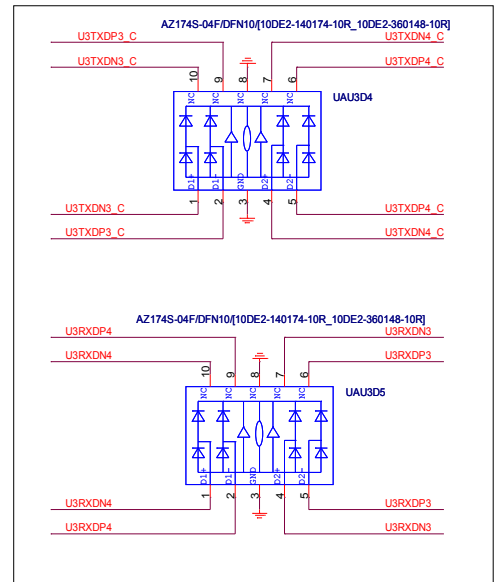
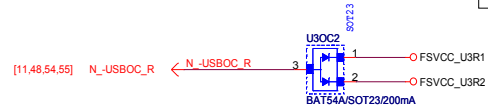
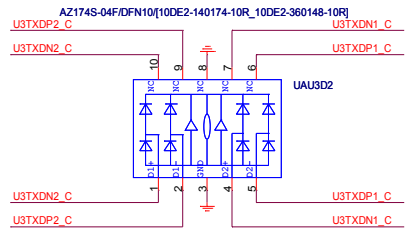
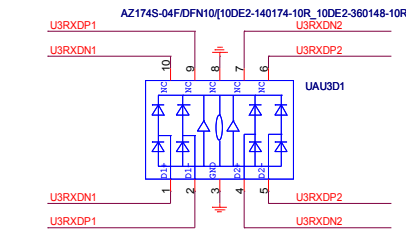
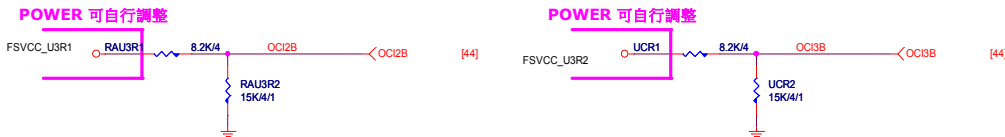
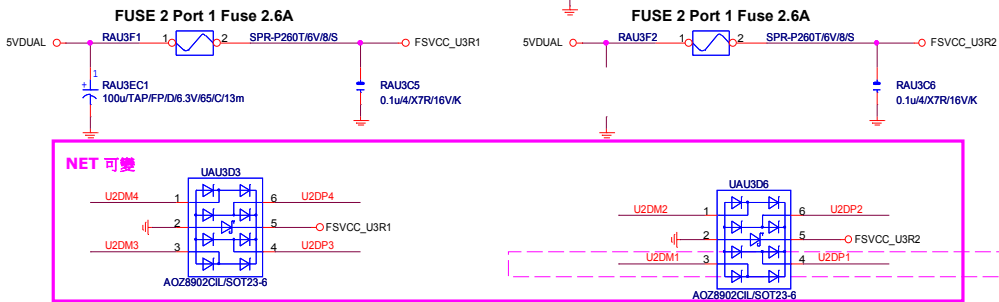
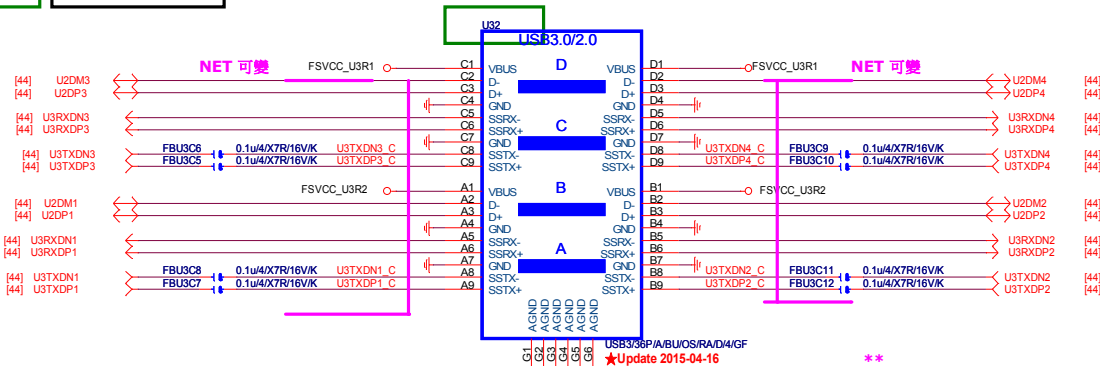


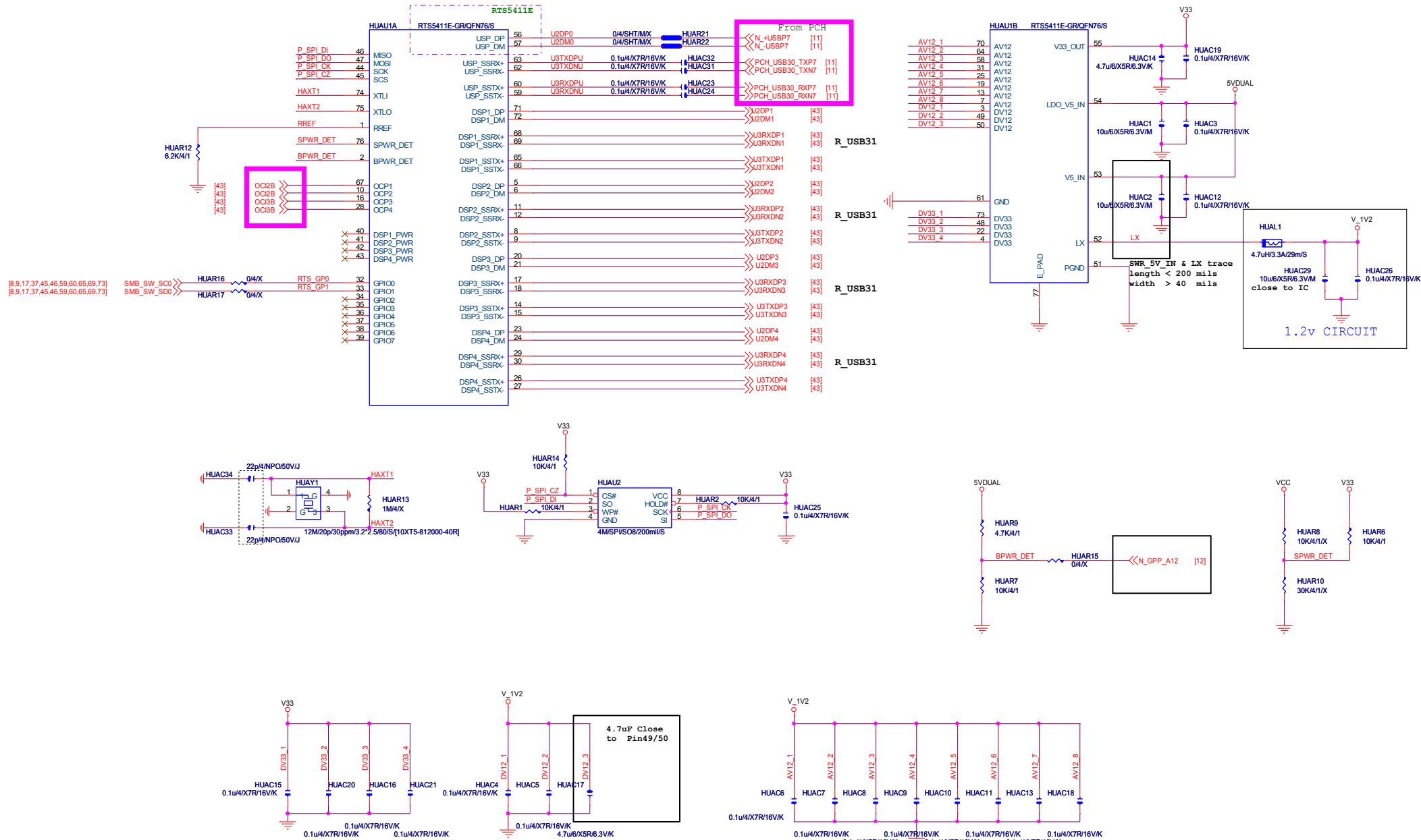
AZALIA FRONT PANEL



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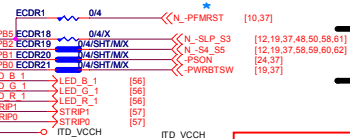
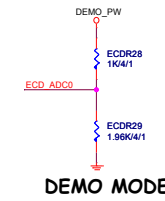
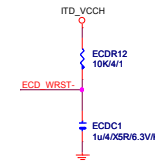
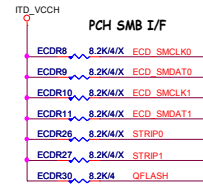
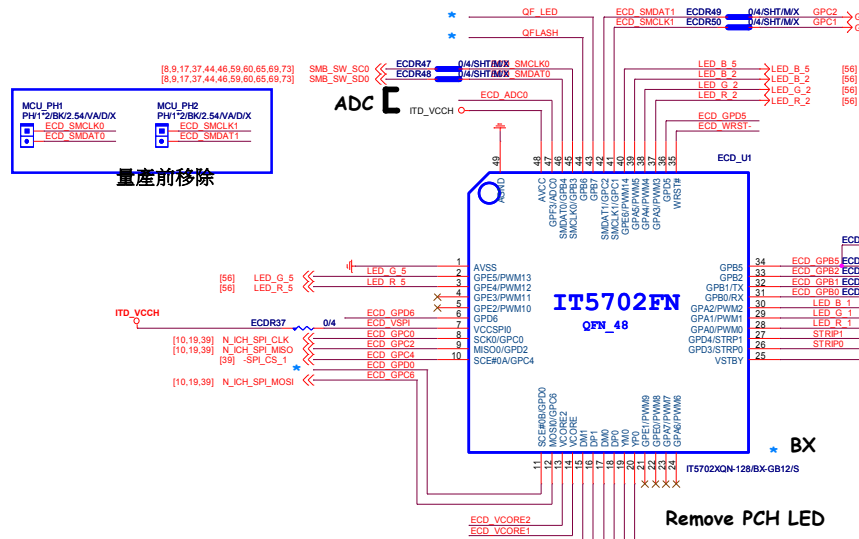
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AUDIO JACK		
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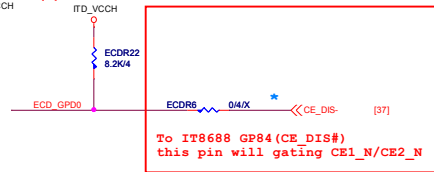


這邊確認RTS5411E OCP1/OC2為共用, OCP3/OC4為共用, FW部分設定為low active.

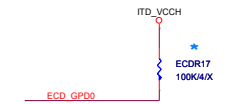
ECD\_U1 請放在PCH到BIOS路徑上. 避免線過長



Q-Flash  
Power Sequence



GPD0 pull-up to 3VSB  
To ignore the test mode



to PCH USB Host

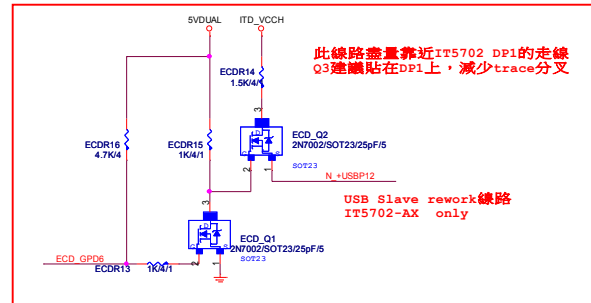
PCH USB HID device

to PCH USB Host

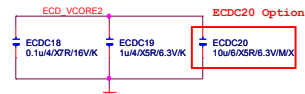
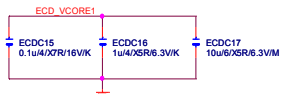
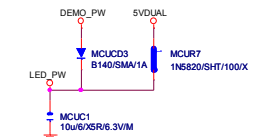
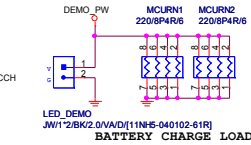
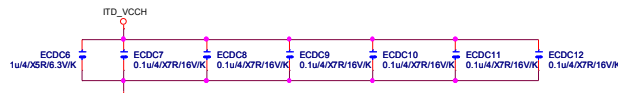
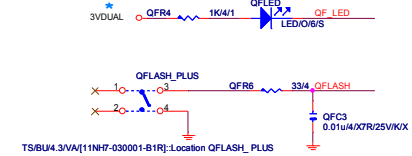
to USB Connector

USB Switch for Q-flash

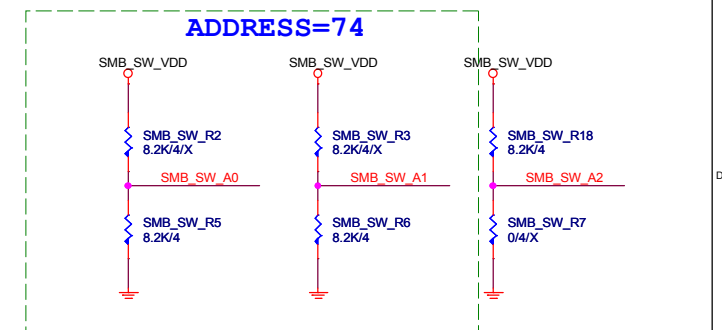
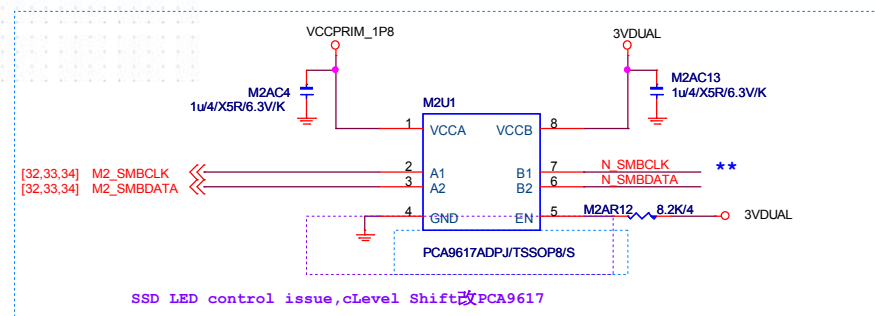
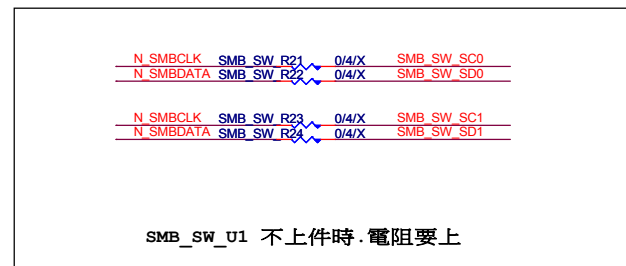
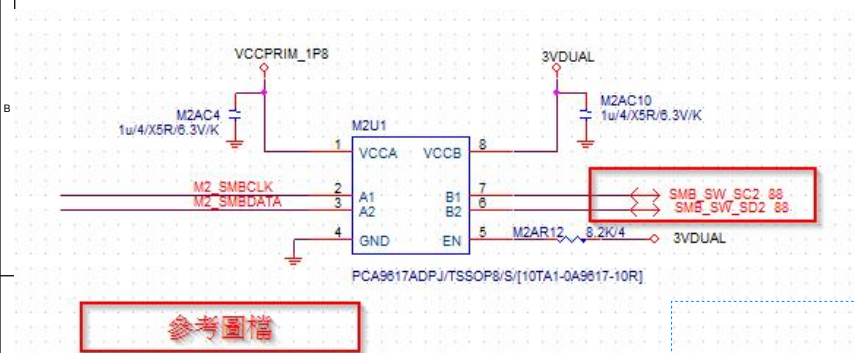
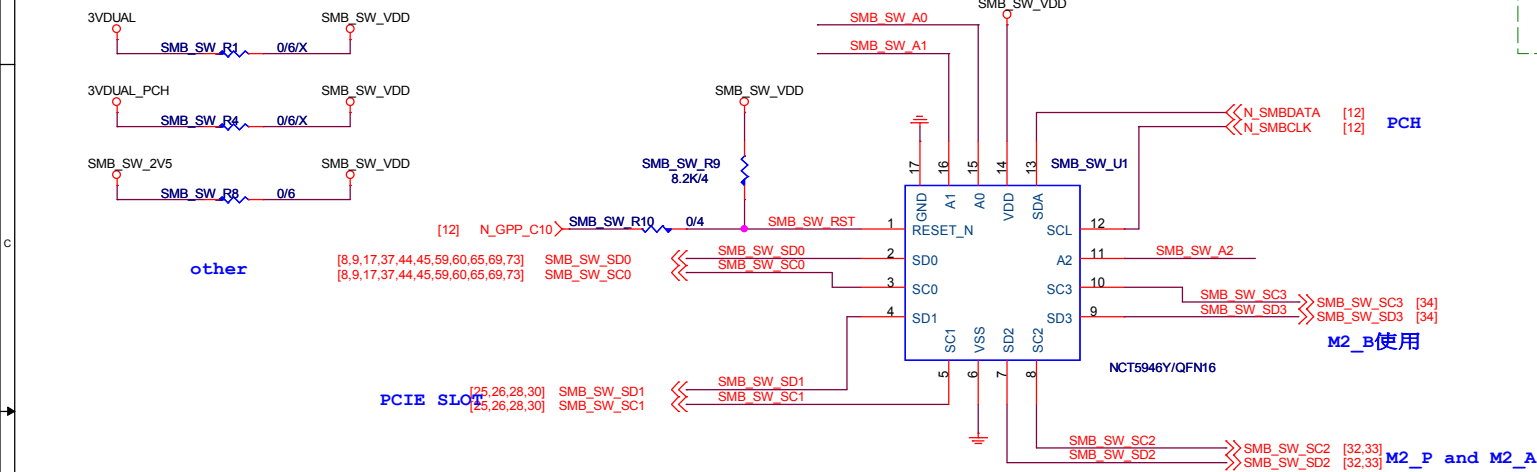
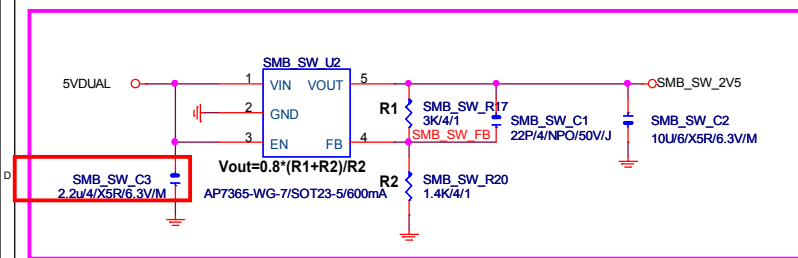
Remove PCH LED



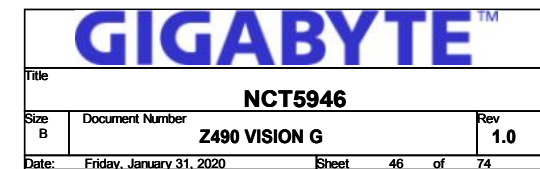
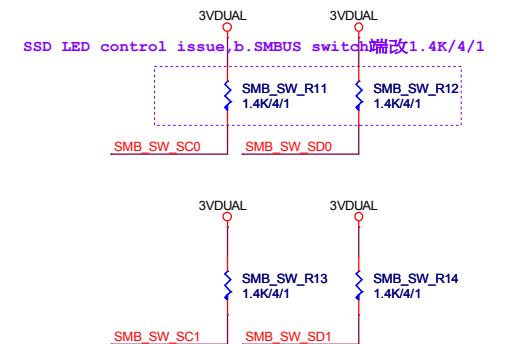
Q\_FLASH BUTTON/LED



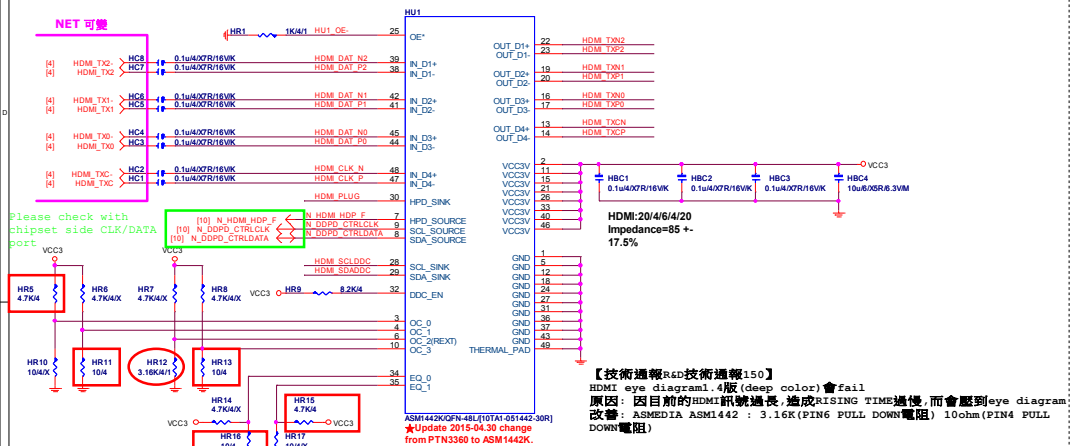
REV: 0.1



Inputs			I <sup>2</sup> C bus slave address (1,1,1,0,A2,A1,A0)
A2	A1	A0	
L	L	L	70h
L	L	H	71h
L	H	L	72h
L	H	H	73h
H	L	L	74h
H	L	H	75h
H	H	L	76h
H	H	H	77h







PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K

ASM1442:紅色框要上,HR12:3.16K

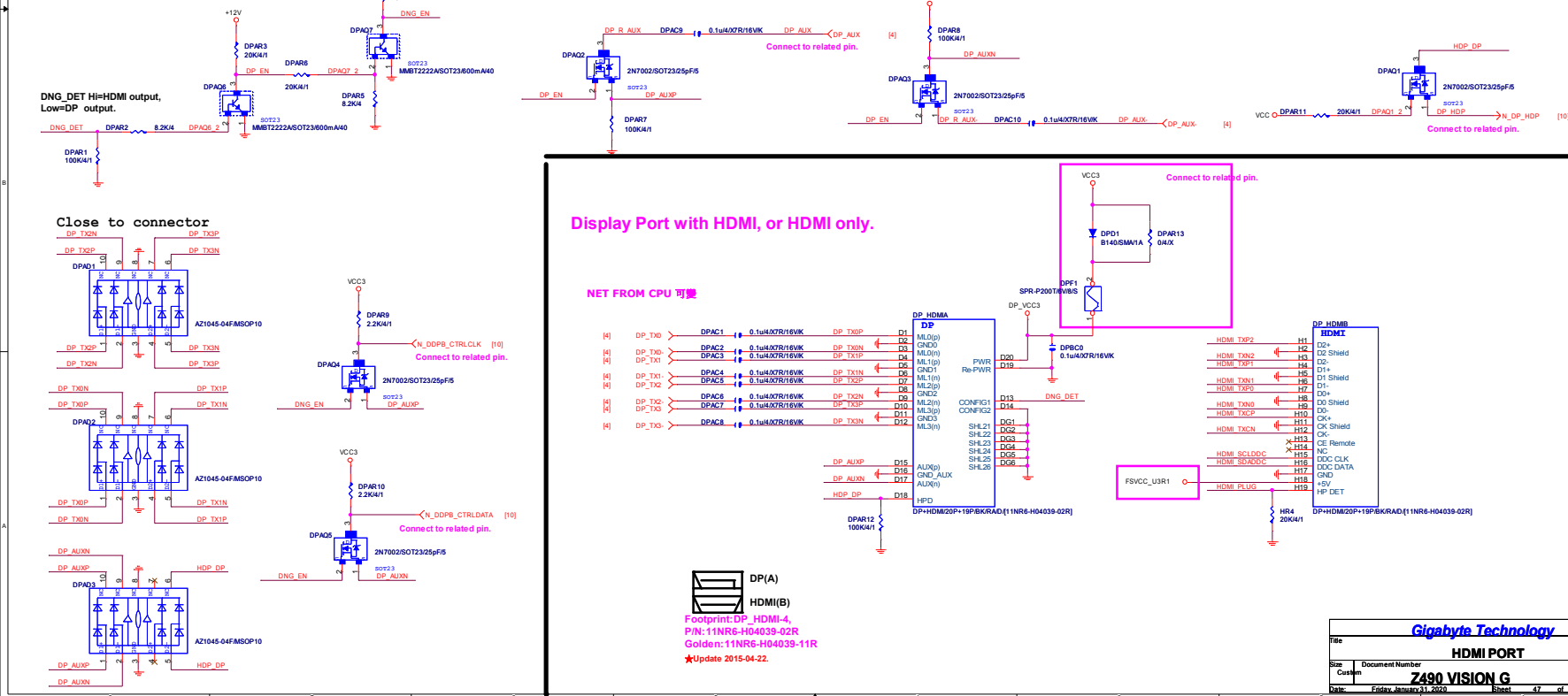
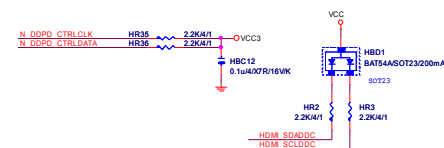
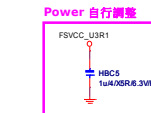
【技術通報R&amp;D技術通報150】

HDMI eye diagram1.4版(deep color)會fail

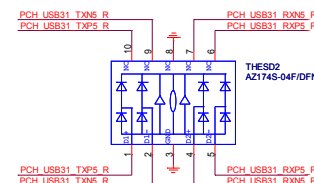
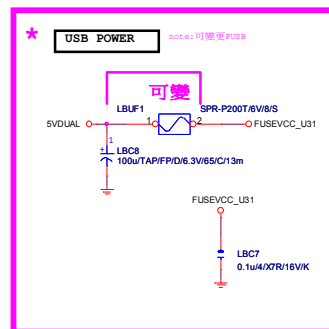
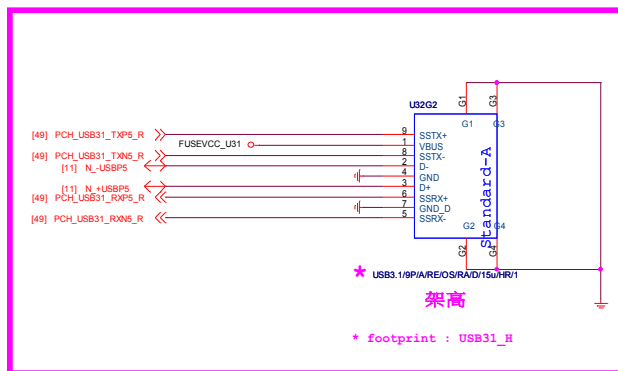
原因：因目前的HDMI訊號過長，造成RISING TIME過慢，而會壓到eye diagram

改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

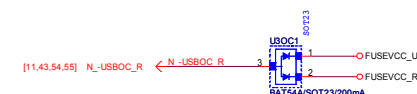
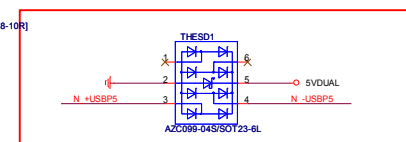
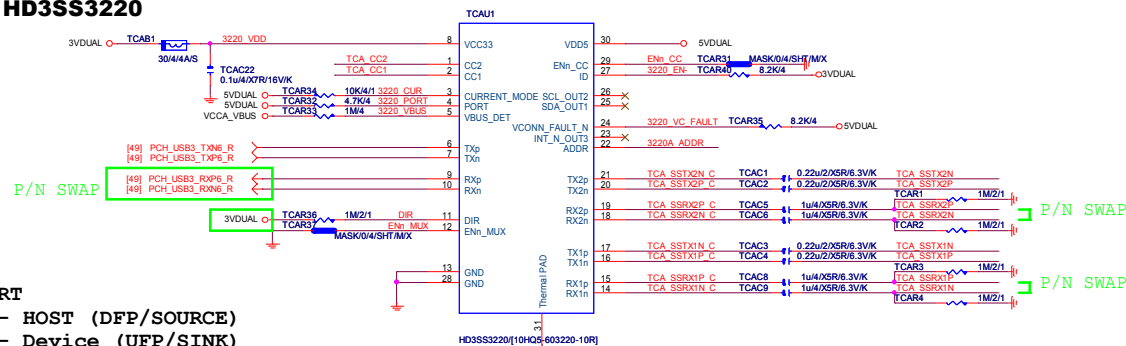
HDMI CONN



USB31 TYPE A Connector / power source / FUSE which choose for project demand



\* 0922

**TI HD3SS3220**

PORT

H	-	HOST (DFP/SOURCE)
---	---	-------------------

```

H - Host (DIP/SOURCE)
L - Device (UFP/SINK)

```

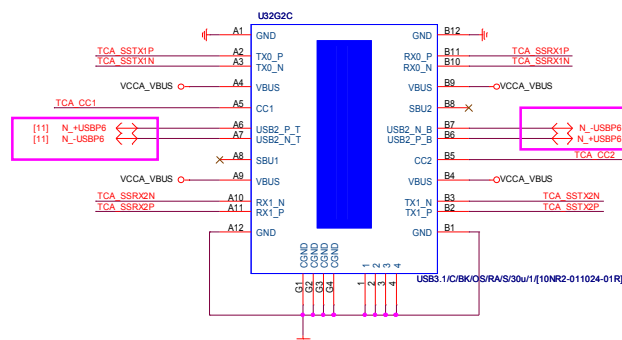
NC - Dual Role (DRP)

CURRENT MODE

L - Default (900mA) / Pull down to GND or NC

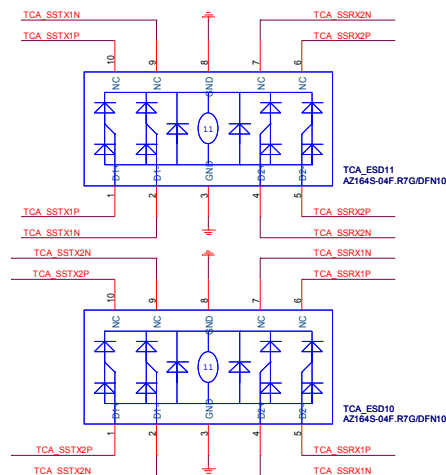
M - Medium (1.5A) / Pull up to VDD 500K

H - High (3.0A) / Pull up to VDD 10K

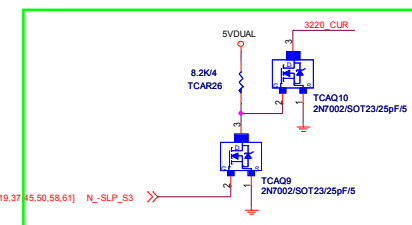
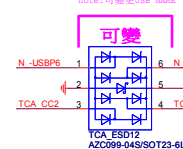


## USB2.0 can be used the same source

## Color markers can be changed by model

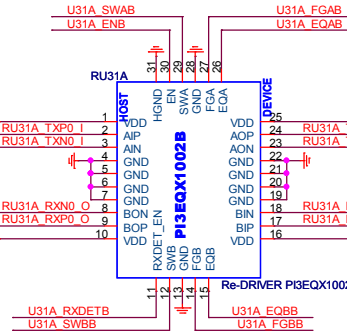
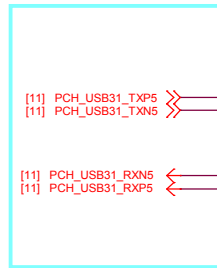


note: 可擦 USB NAM



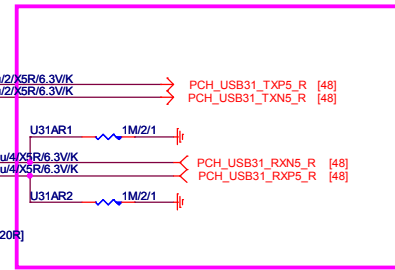
For VBUS current limit at 900mA on S3

## PCH Site



## USB-A Connector Site

1. RX用0.330UF. 2. 只有RX pull down 1M/2/1

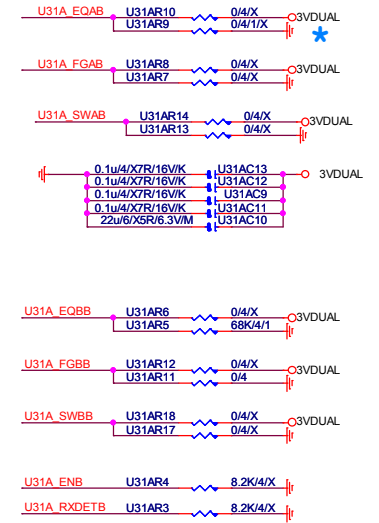


B1

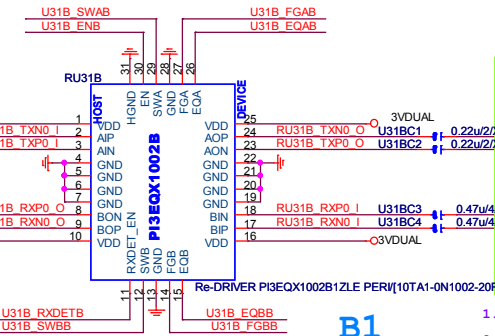
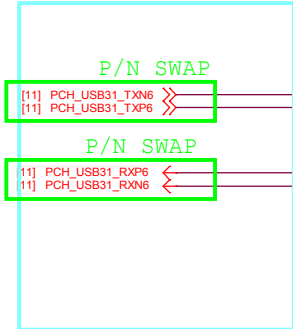
U32G2  
A\_UP

TX

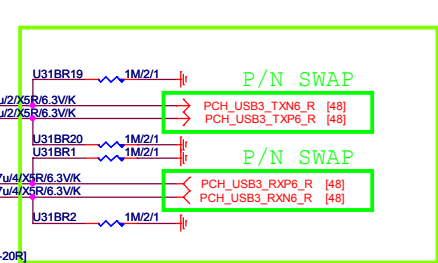
RX



## PCH Site



## USB-C Connector Site



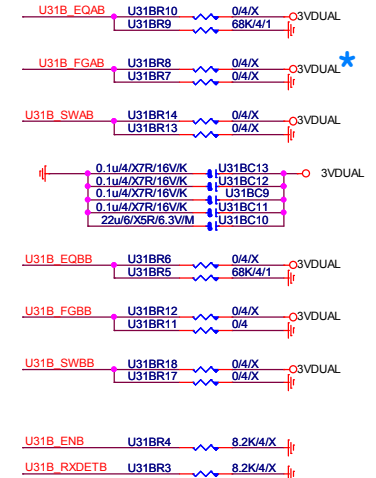
B1

1. For TYPE C :TX/RX redriver + MUX , pull down 1M/2/1  
2. TYPE C RX 0.47uF + MUX ,AC CAP 1uF

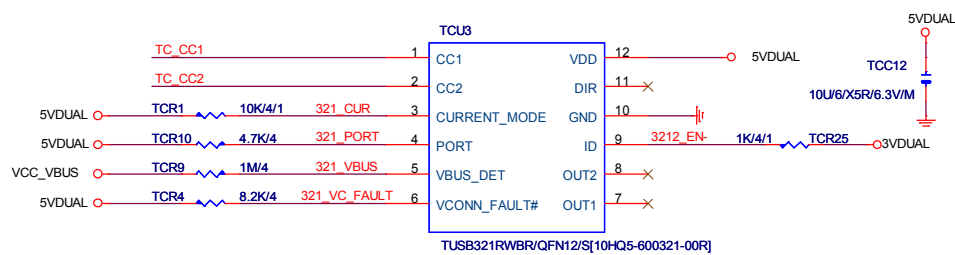
U32G2C  
C\_DOWN

TX

RX



# Type C U30 SW Rev. 1.02

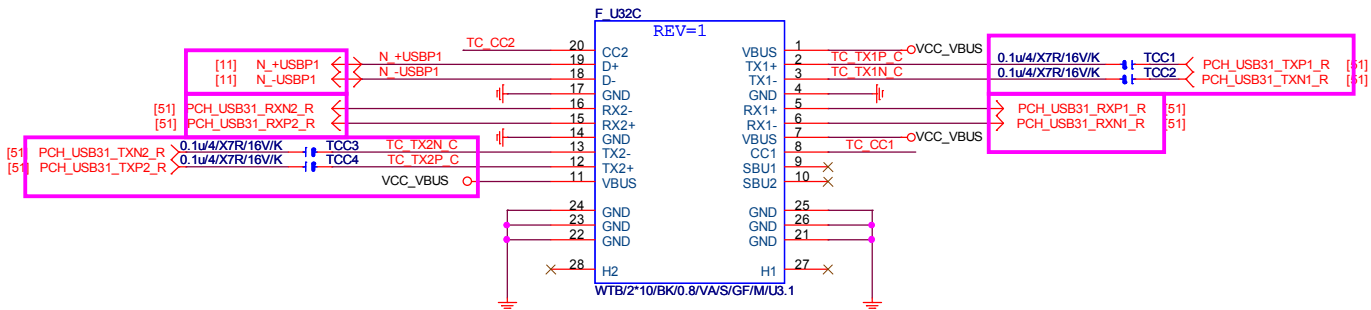
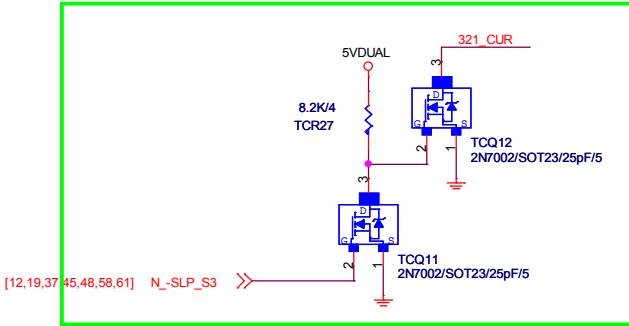


## CURRENT MODE

- L - Default current / Pull down to GND or NC
  - M - Medium (1.5A) current / Pull up to VDD 500K
  - H - High (3.0A) current / Pull up to VDD 10K
- For VBUS current limit at 900mA on S3

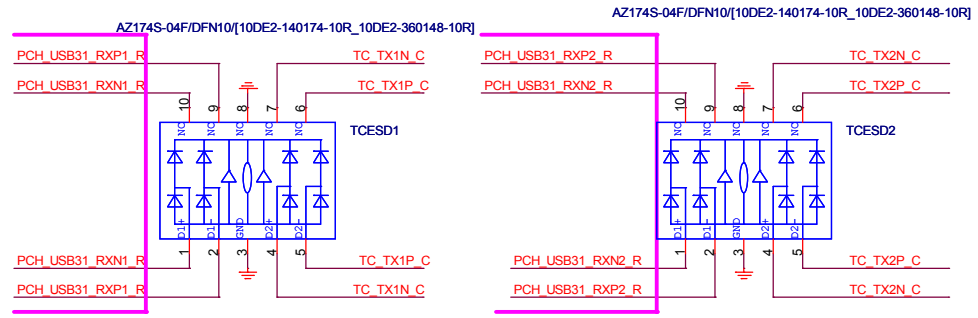
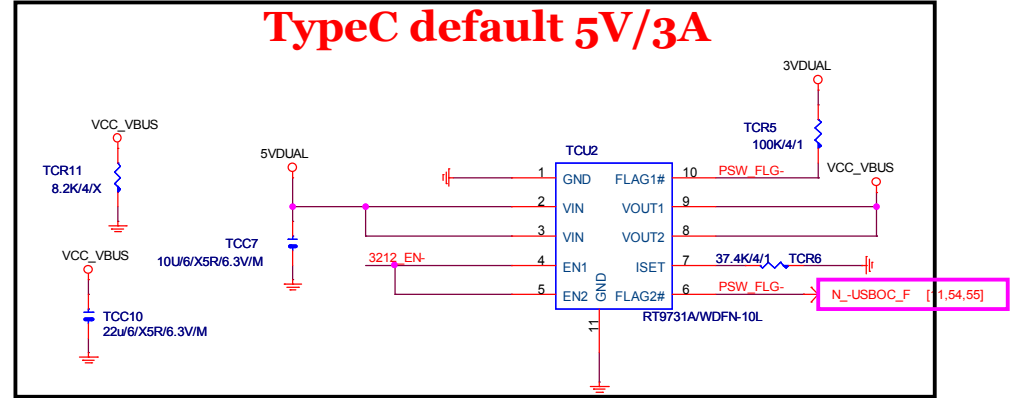
## PORT

- H - HOST
- L - Device
- NC - Dual Role

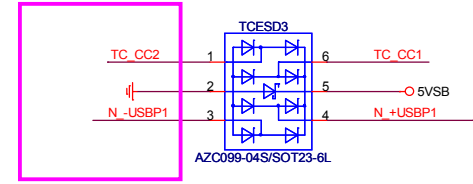


USB2.0 can be used the same source

## TypeC default 5V/3A

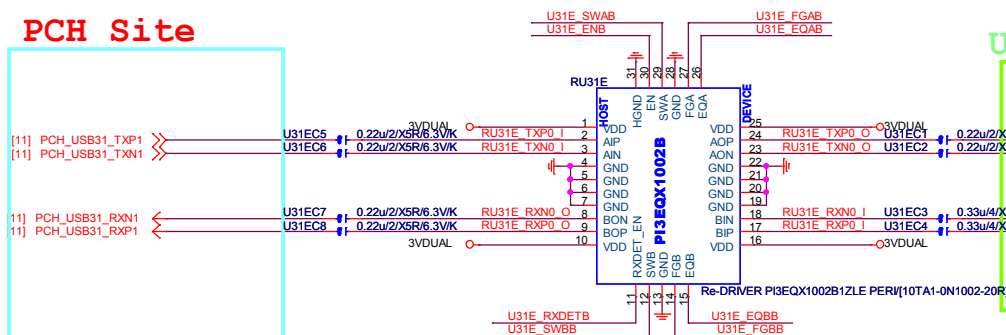


Color markers can be changed by model



GIGABYTE™			
Title			
TI TUSB321			
Size	Document Number		Rev
	Z490 VISION G		1.0
Date:	Friday, January 31, 2020	Sheet	50 of 74

## PCH Site



## USB TypeC Connector Site

TX

F\_U32G2C  
CC1

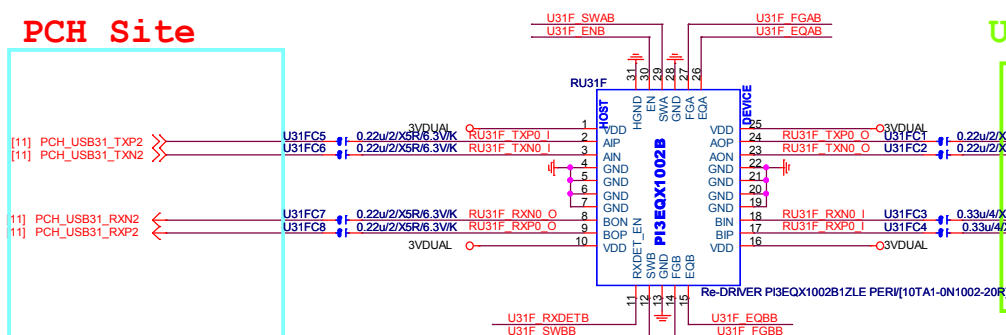
- 1.For TYPEC :TX/RX redriver + MUX , pull down 1M/2/1
- 2.TYPEC RX 0.33uF + pure redriver

B1

## Layout Rule:

1. Differential Pair can't be swapped
2. Redriver to Connector Length min. 500mil

## PCH Site



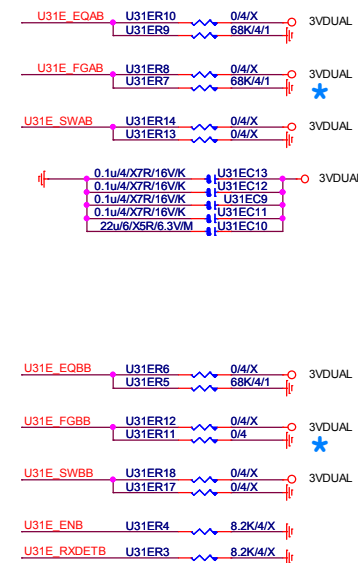
## USB TypeC Connector Site

TX

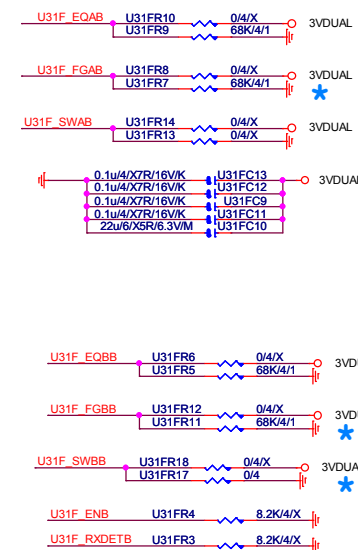
F\_U32G2C  
CC2

- 1.For TYPEC :TX/RX redriver + MUX , pull down 1M/2/1
- 2.TYPEC RX 0.33uF + pure redriver

B1

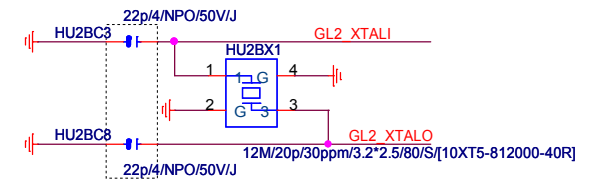
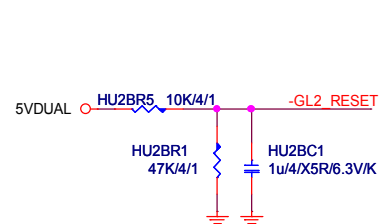
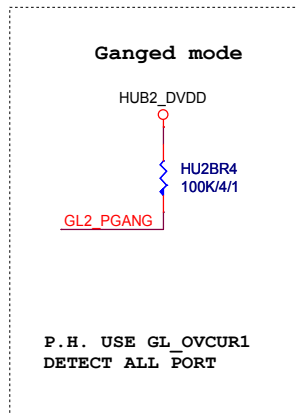
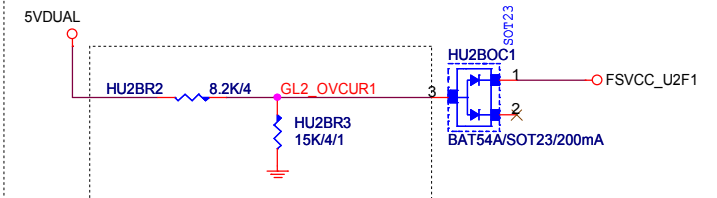
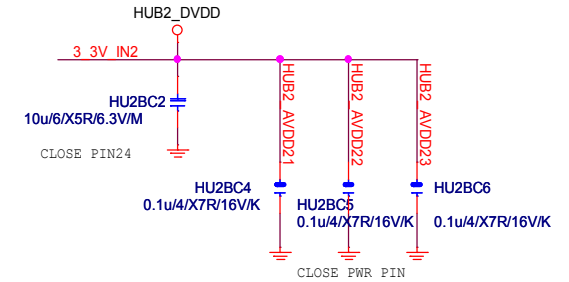
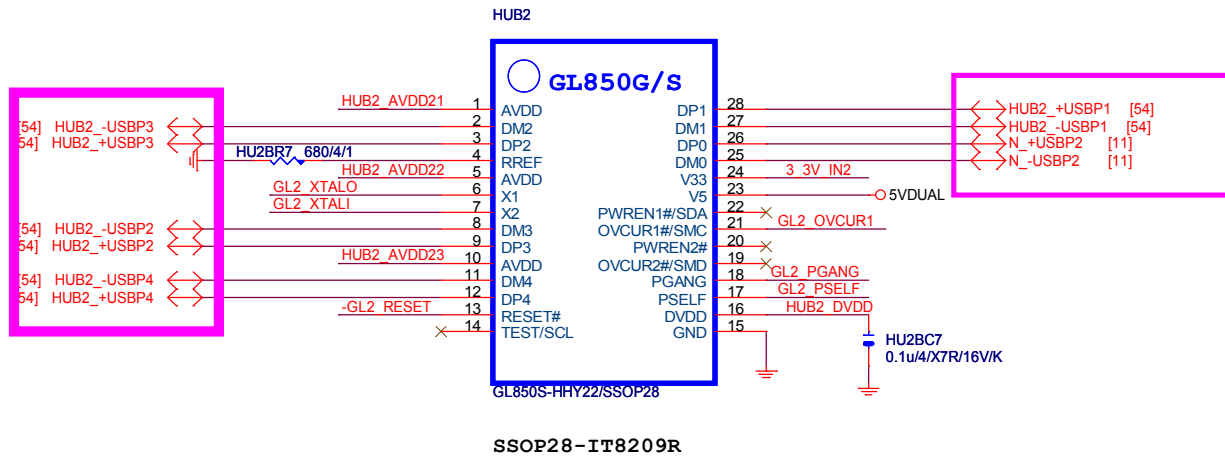


RX

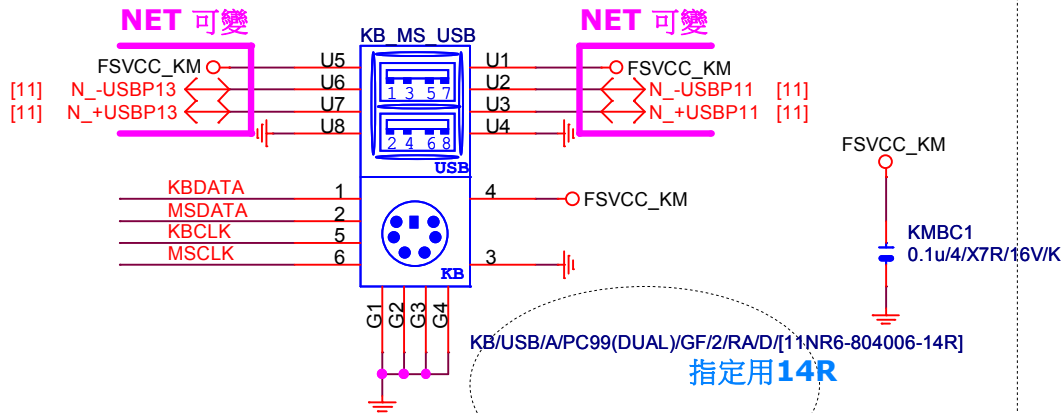


RX

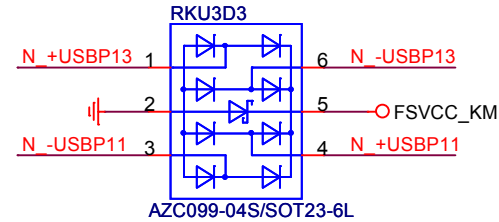
Gigabyte Technology			
Title			
P3EQX1002B Redriver/DC-J_C/D			
Size	Document Number	Z490 VISION G	
Custom			Rev 1.0
Date:	Friday, January 31, 2020	Sheet	51 of 74



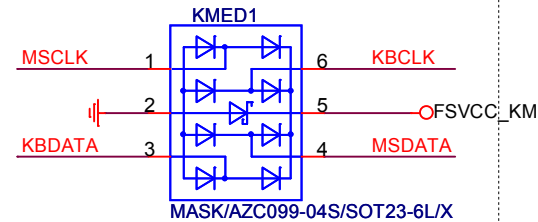
Title					HUB GL850GS_2				
Size	Document Number				Z490 VISION G				Rev
Custom									1.0
Date:	Friday, January 31, 2020				Sheet	52	of	74	



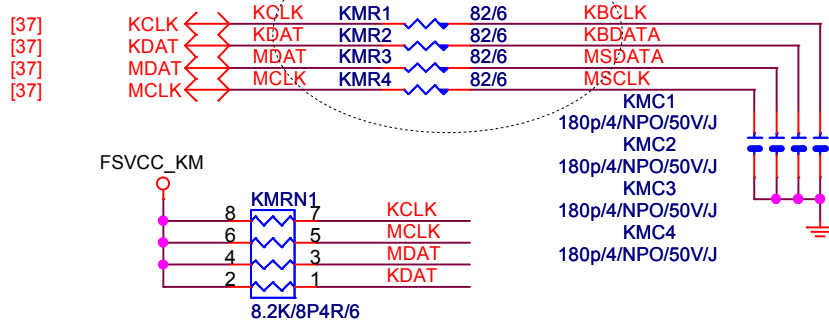
## ESD 可自行SWAP PIN



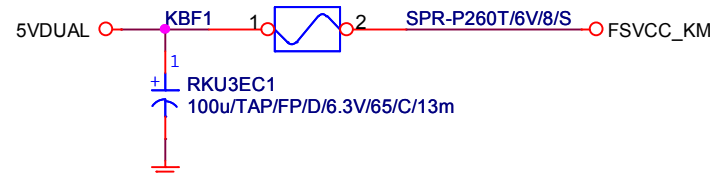
## ESD 可自行SWAP PIN



## FOR鹽化短路



## FUSE 2 Port 1 Fuse 2.6A



## USB OC PROTECT

Gigabyte Technology

Title

HUB GL850GS\_2

Size  
ADocument Number  
Z490 VISION GRev  
1.0

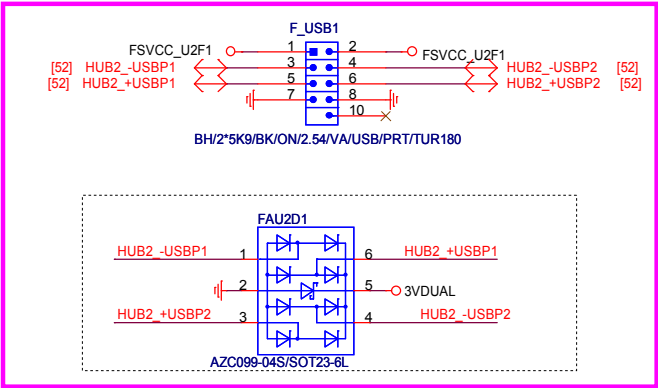
Date: Friday, January 31, 2020

Sheet 53 of 74

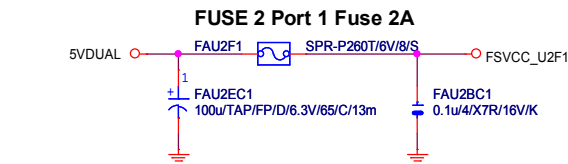


FRONT USB1

NET 可變

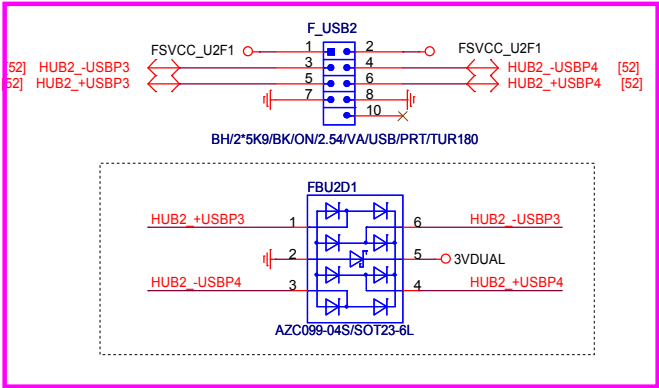


Close to connector  
FUSE 2 Port 1 Fuse 2A



FRONT USB2

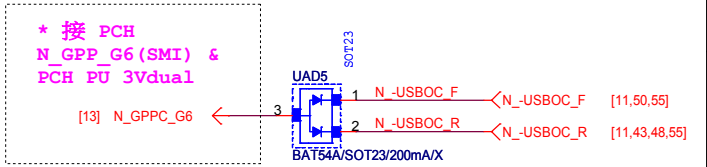
NET 可變



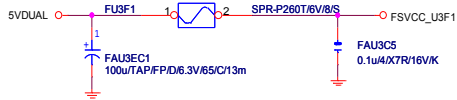
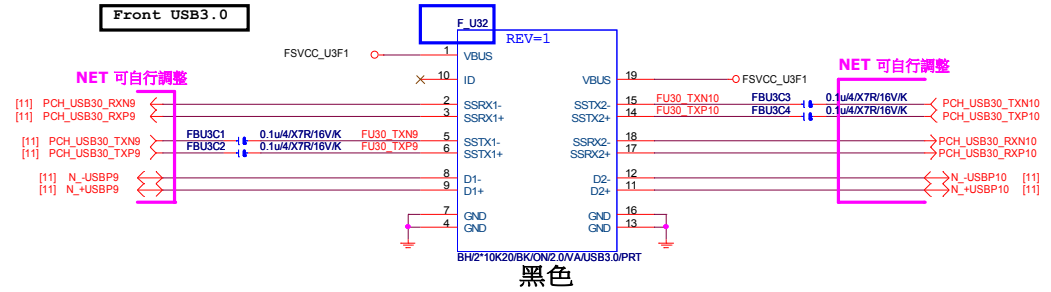
Close to connector  
FUSE 2 Port 1 Fuse 2A

FUSE 2 Port 1 Fuse 2A

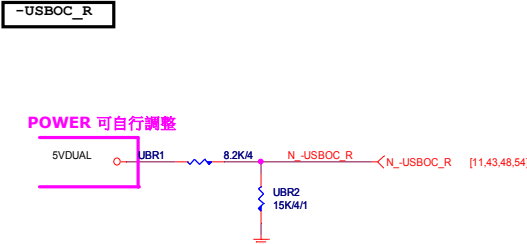
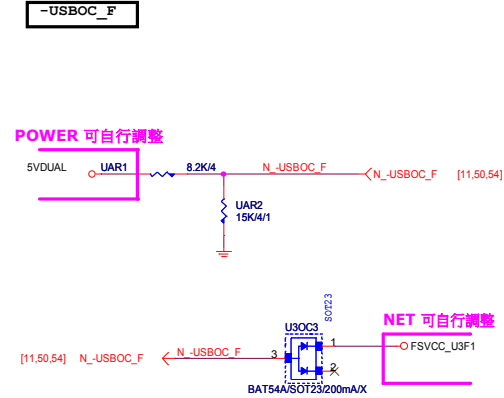
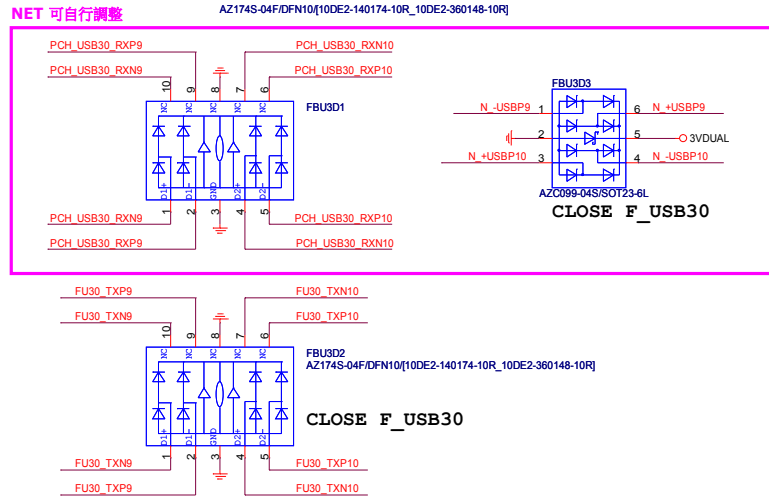
F\_USB 2.0 OC SIGNAL



Gigabyte Technology			
Title			
USB2.0			
Size	Document Number	Z490 VISION G	
Custom			Rev 1.0
Date:	Friday, January 31, 2020	Sheet 54	of 74

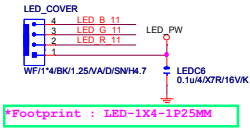


**F\_USB POWER PROTECT**

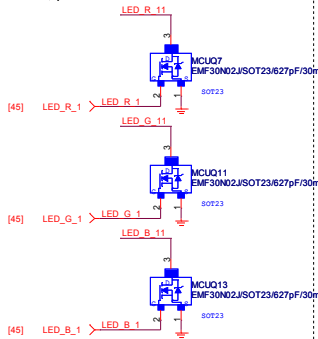


第一區 LED

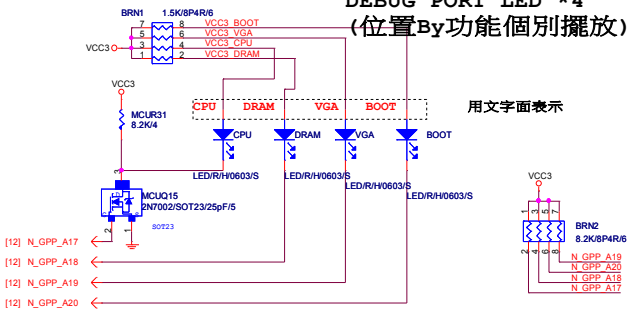
FOR 後窗裝甲 led connect  
(LED\_COVER放在後窗裝甲內)



第一區 LED CONTROL



DEBUG PORT LED \*4  
(位置By功能個別擺放)



N_GPP_A17	CPU DEBUG
N_GPP_A18	DDR DEBUG
N_GPP_A19	VGA DEBUG
N_GPP_A20	BOOT DEVICE DEBUG

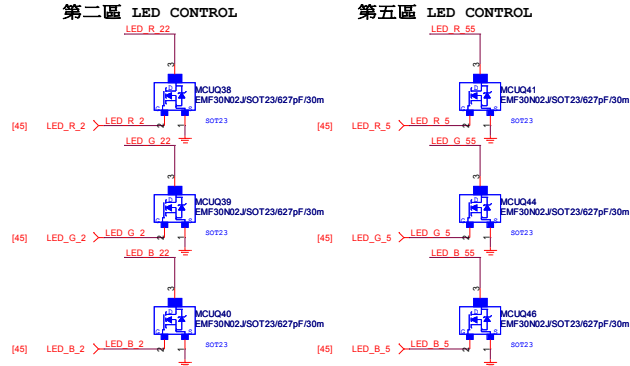
用文字面表示

第三區 LED

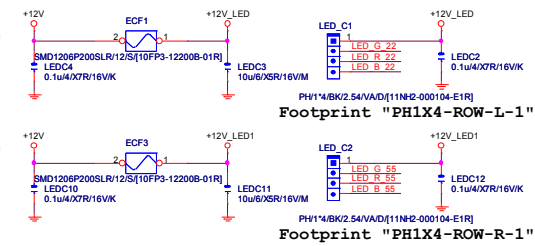
Remove PCH LED

第三區 LED CONTROL

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)



第四區 LED

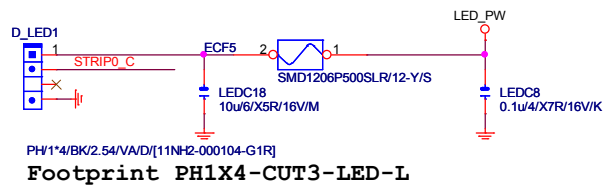
第四區 LED CONTROL

GIGABYTE™

File	PCH/AUDIO/DEBUG/C_LED1/2		
Size	Document Number	Rev	
Custom	Z490 VISION G	1.0	
Date:	Friday, January 31, 2020	Sheet	56 of 74

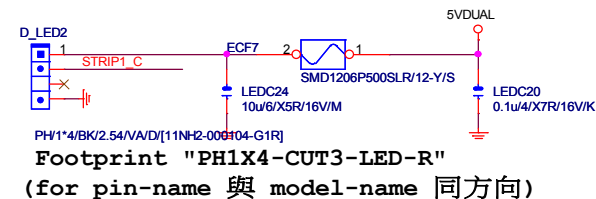
# 第六區 LED (靠近左上板邊位置)

## Digital LED Strip1

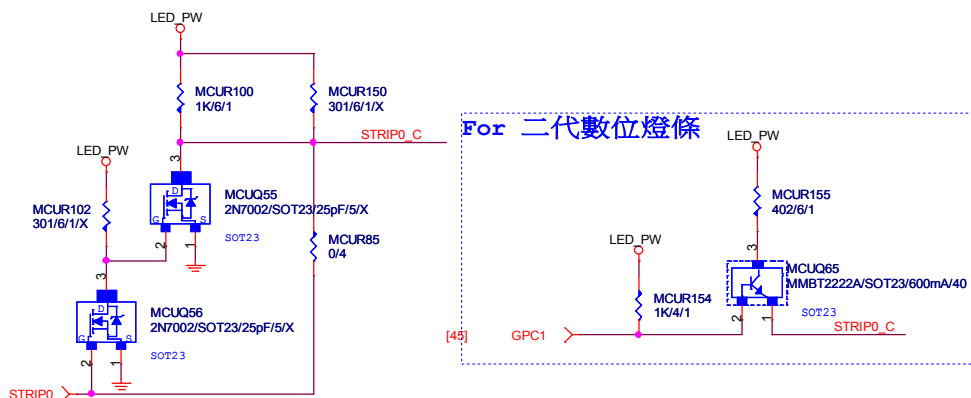


# 第七區 (靠近右下CPU板邊位置)

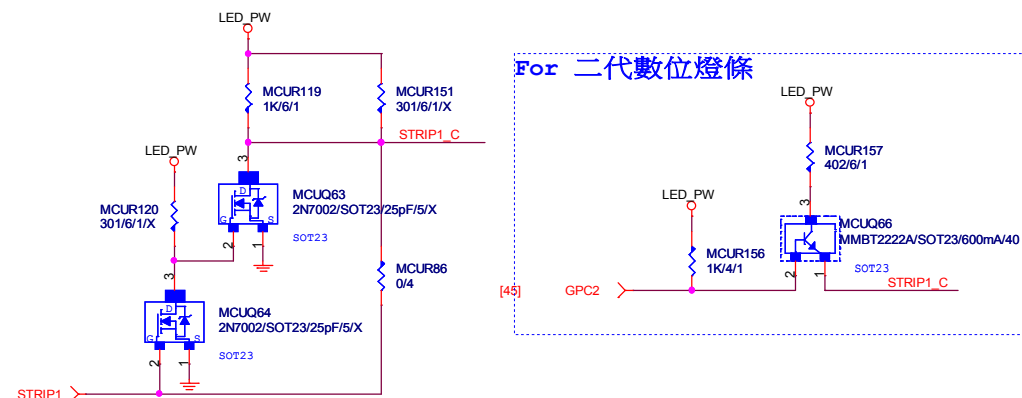
## Digital LED Strip2



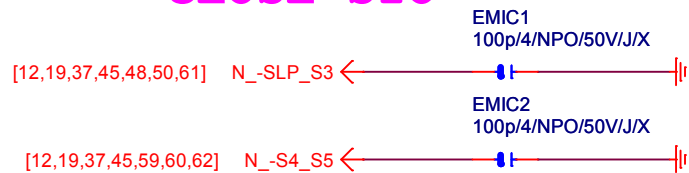
## 燈條 Level shift



## 燈條 Level shift



## CLOSE SIO



\*Del EMIC3

## CLOSE PCH

**GIGABYTE™**

Title

**EMI/ESD**Size  
A

Document Number

**Z490 VISION G**

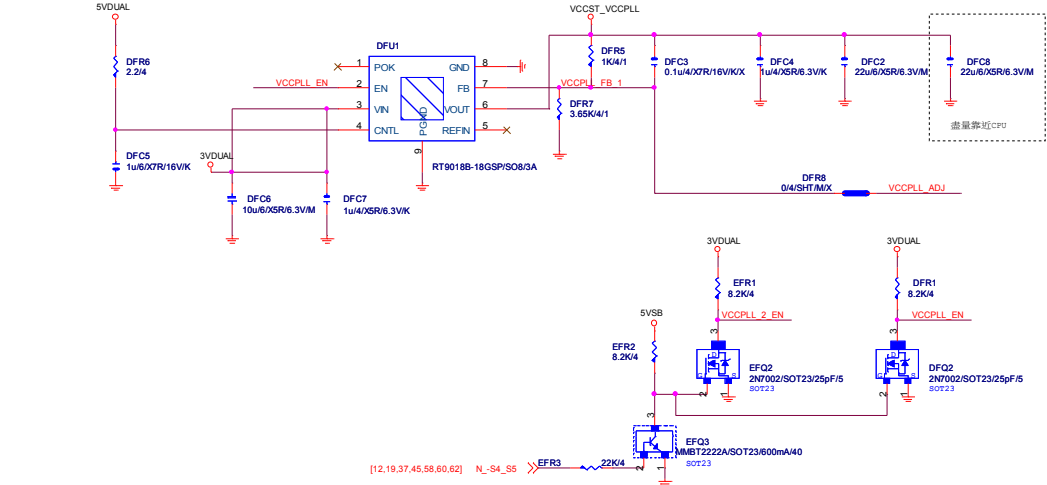
Rev

**1.0**

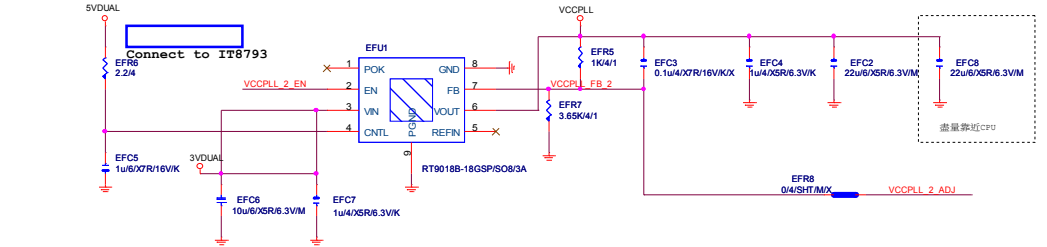
Date: Friday, January 31, 2020

Sheet 58 of 74

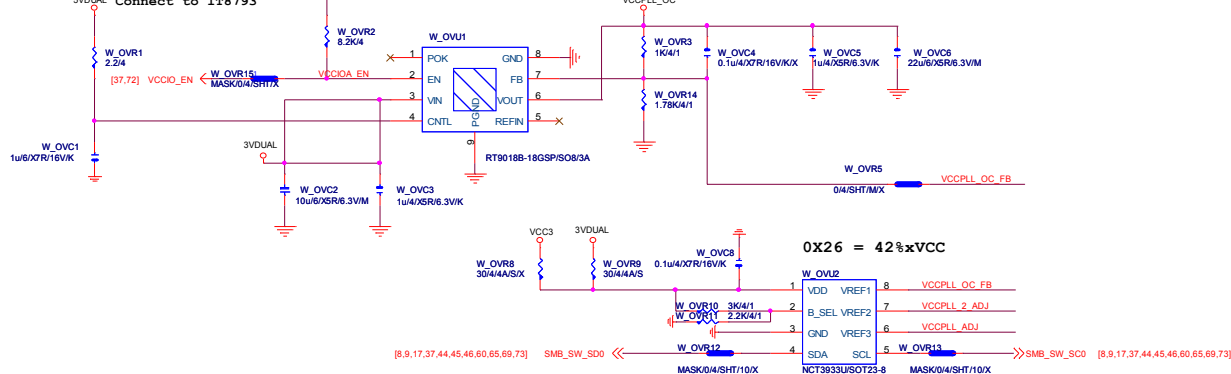
VCCST\_VCCPLL 替換原先MOS開關線路

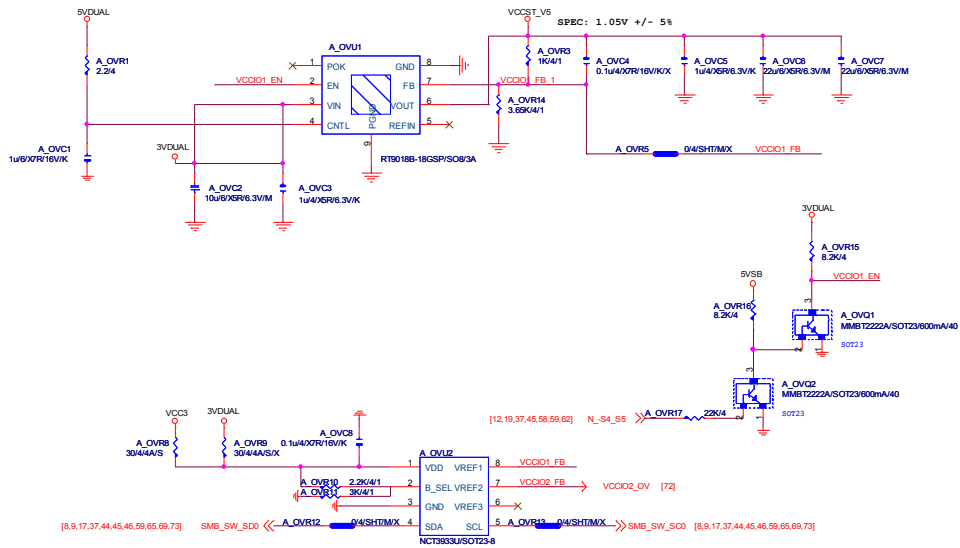


VCCPLL



VCCPLL\_OC





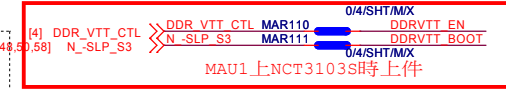
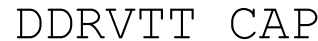
0X24 = 58%xVCC

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



## DDR4



# GIGABYTE

RT8120\_DDR4 POWER

Size	Document Number
Custom	<b>Z490 VISION G</b>

Date: Friday, January 31, 2020

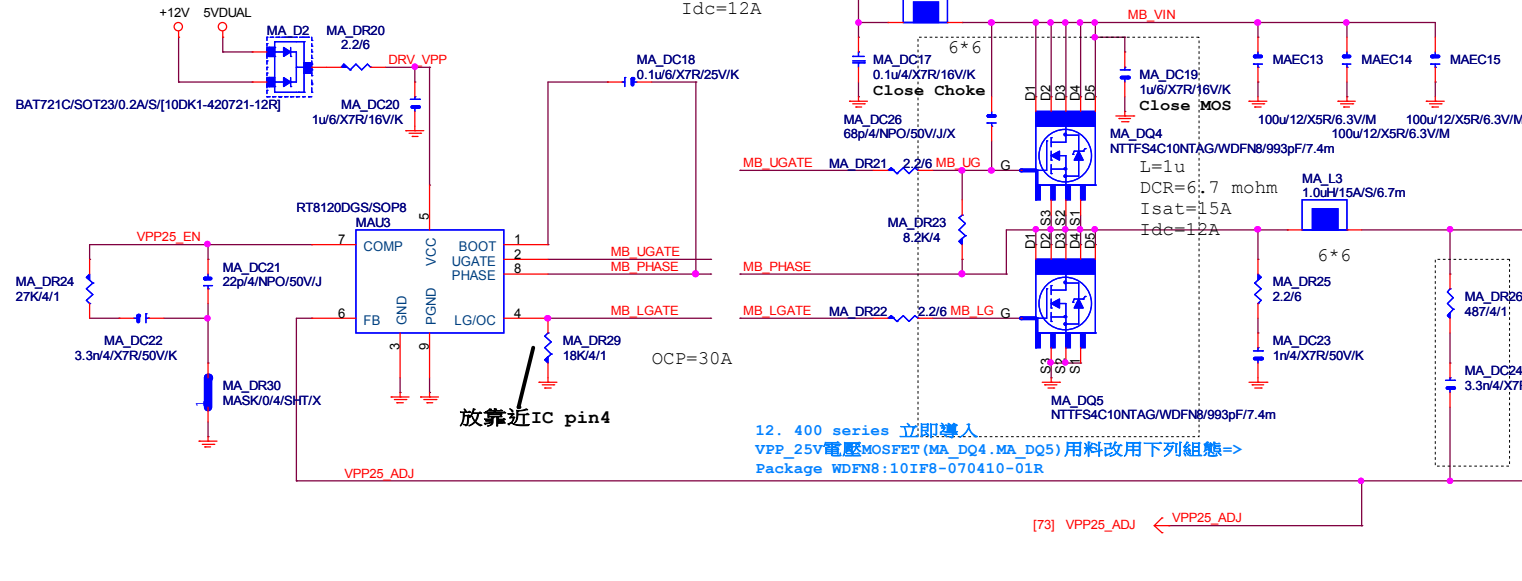
Sheet	61
-------	----

**1.0**

REV:0.1

VPP 25V

$L=1\mu$   
 $DCR=6.7\text{ mohm}$   
 $I_{sat}=15A$   
 $I_{dc}=12A$



CHOKE與CAP料號可變  
 DDR\_VPP VIN CAP  
 560u\*1PCS

$V_{(BR)DSS}$	$R_{DS(on) MAX}$	$I_D MAX$
30 V	4.2 mΩ @ 10 V	67 A
	6.1 mΩ @ 4.5 V	

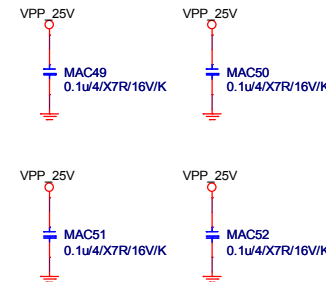
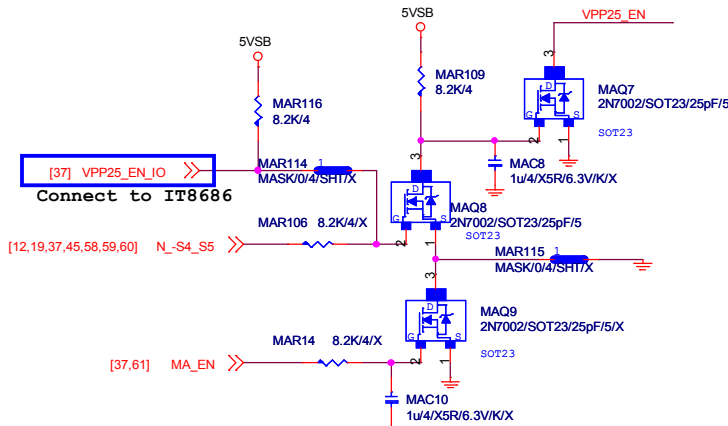
SUPPORT DDR4 2.5V  
 25A MAX

請放置CHOKE一出來位置.先預留.  
 請自行確認ripple後再決定是否上件

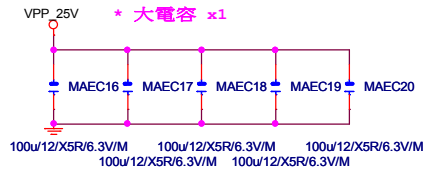
Remote sense請從最重的負載端點拉回

PWR SEQ

\* 刪 MA\_DR32



VPP CAP 560u\*1PCS

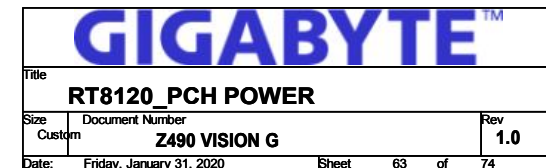


GIGABYTE™

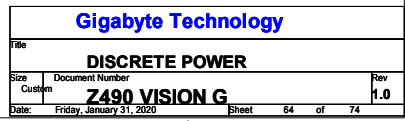
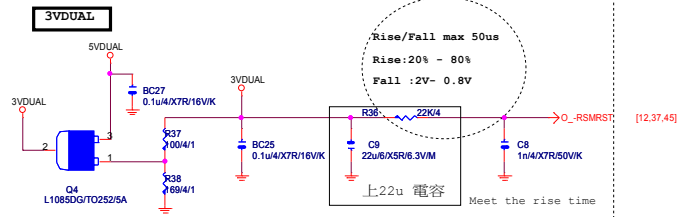
Title		
RT8120_VPP25 POWER		
Size	Document Number	Rev
Custom	Z490 VISION G	1.0
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## CHOKES與CAP料號可變

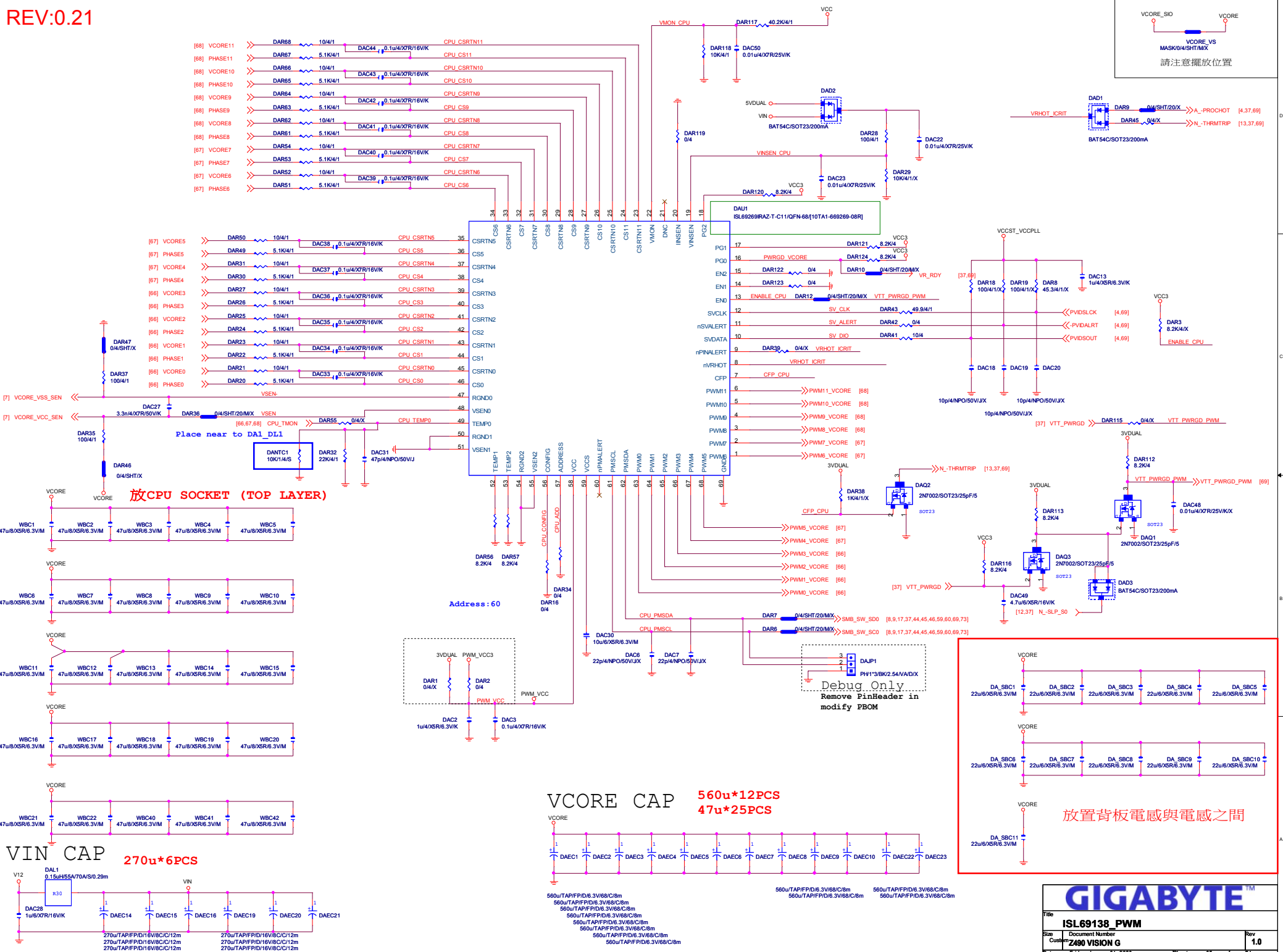
## CHOKES與CAP料號可變



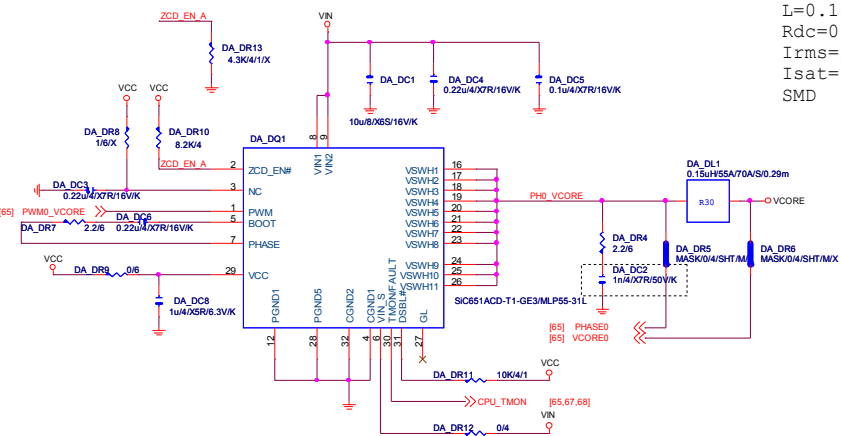
```
* update 5Vdual circuit
, from SKL 0.2B
```



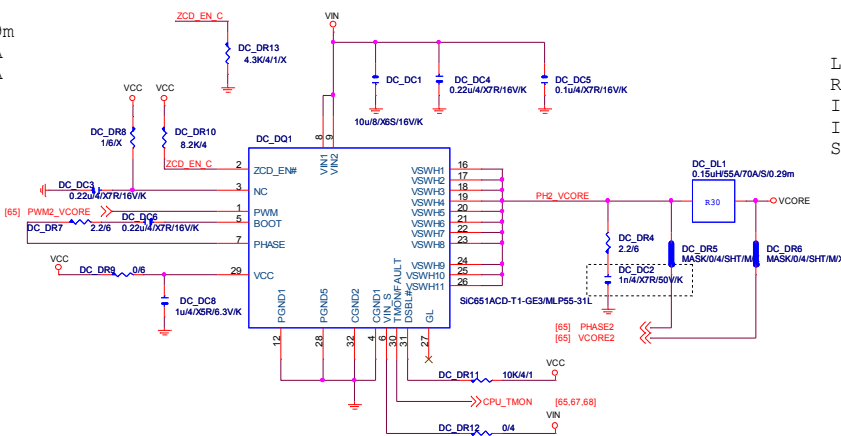
REV:0.21



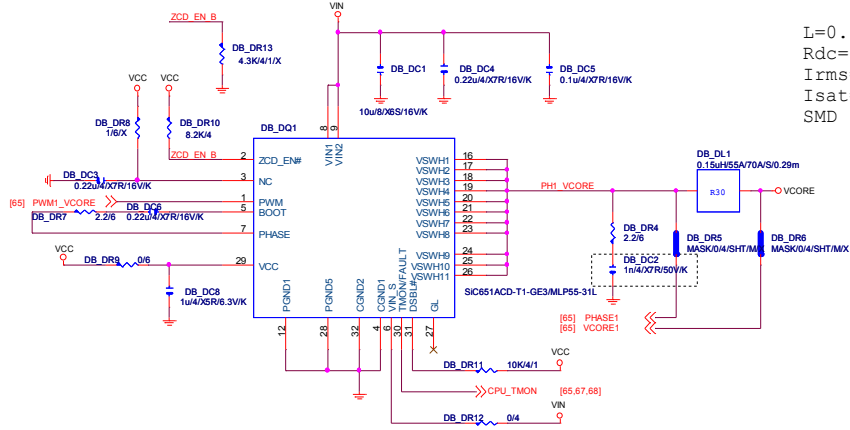
DRMOS使用NCP302155時PIN2 and PIN3要上件 (Ex:DA\_DR13.DA\_DR8.DA\_DC3)



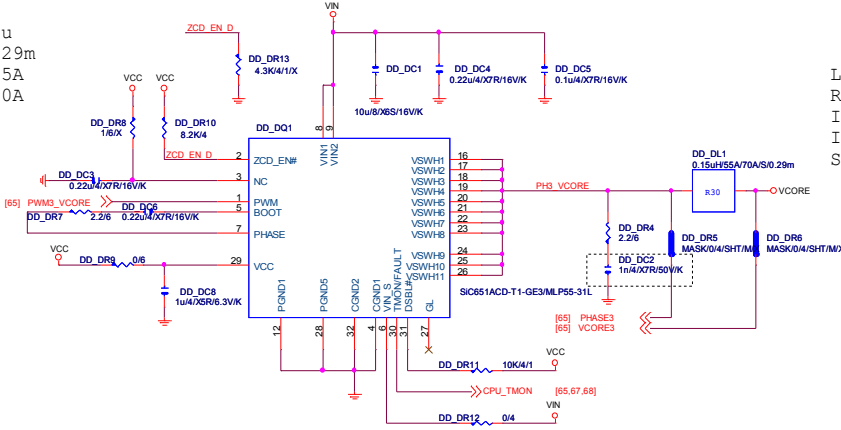
L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD



L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD

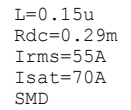
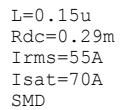
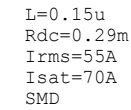
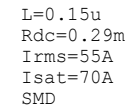


L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD



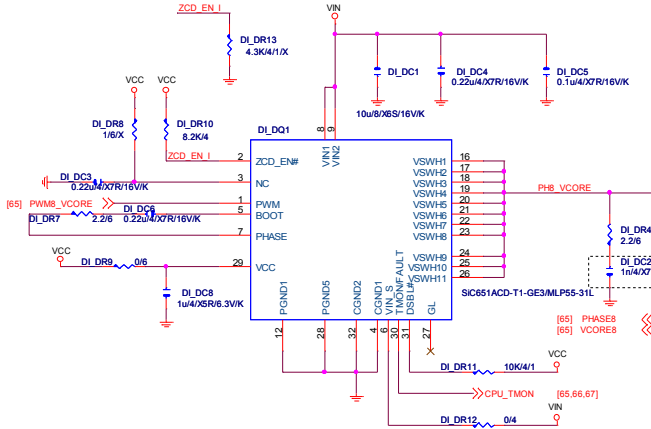
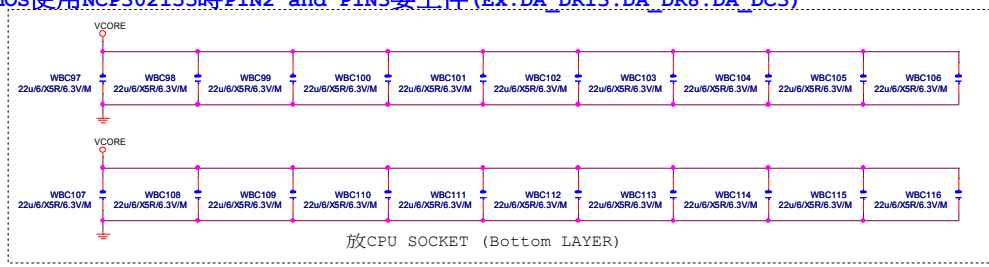
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Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD

DRMOS使用NCP302155時PIN2 and PIN3要上件 (Ex:DA\_DR13.DA\_DR8.DA\_DC3)

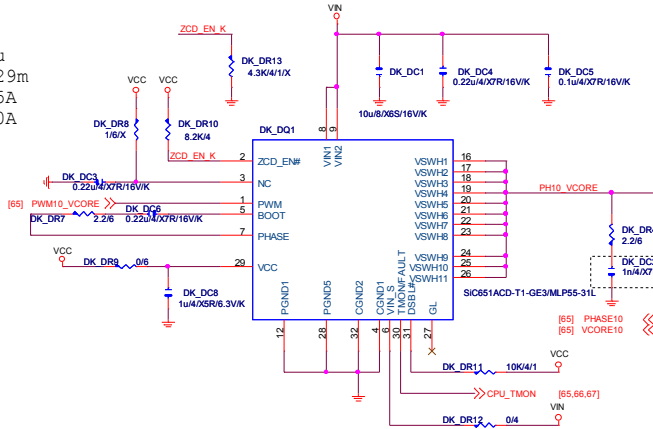


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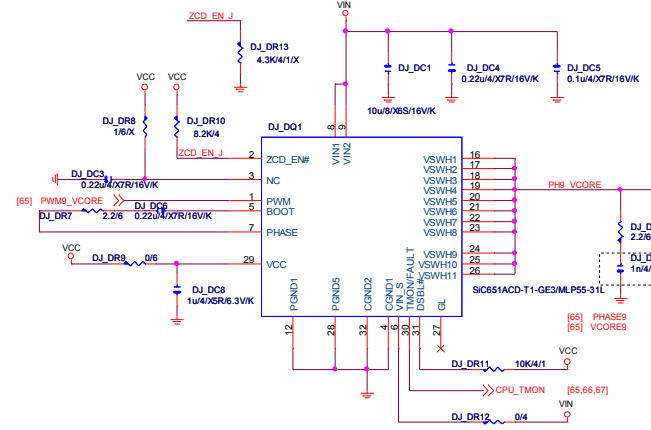
DRMOS使用NCP302155時PIN2 and PIN3要上件(Ex:DA\_DR13.DA\_DR8.DA\_DC3)



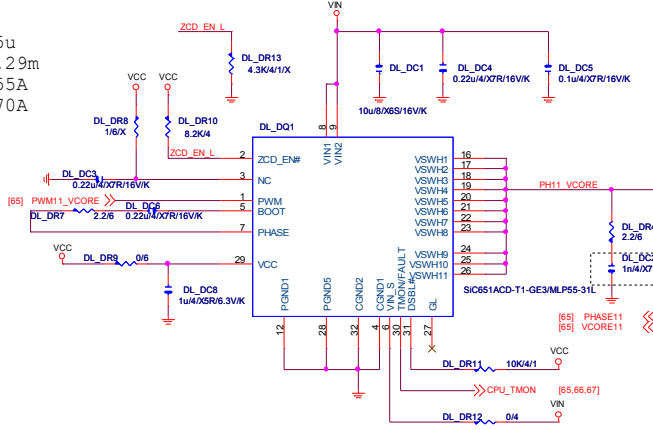
L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD



L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD

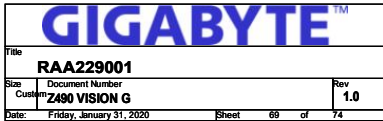


L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD



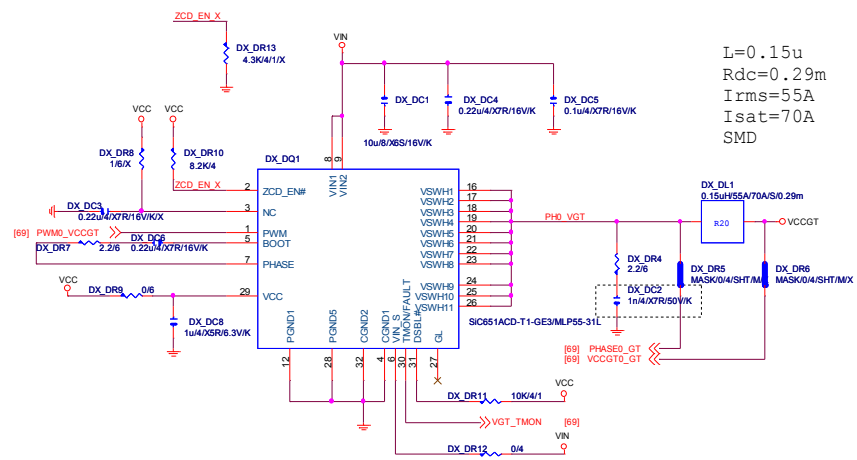
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Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD





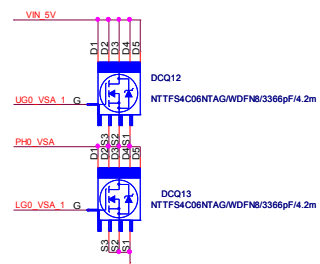
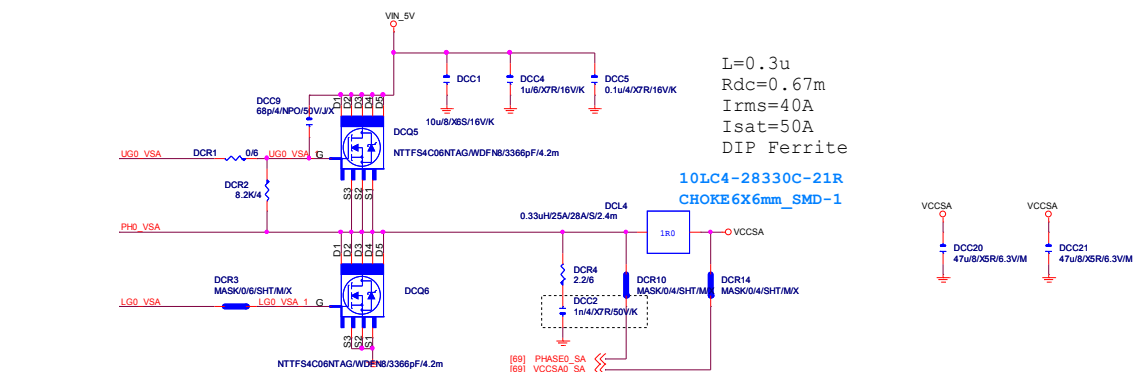
REV:0.21

DRMOS使用NCP302155時PIN2 and PIN3要上件(Ex:DA\_DR13.DA\_DR8.DA\_DC3)

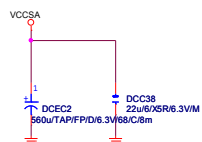
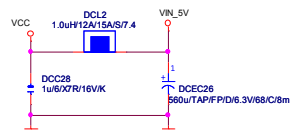


L=0.15u  
Rdc=0.29m  
Irms=55A  
Isat=70A  
SMD

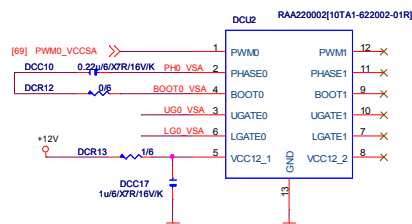
REV:0.22



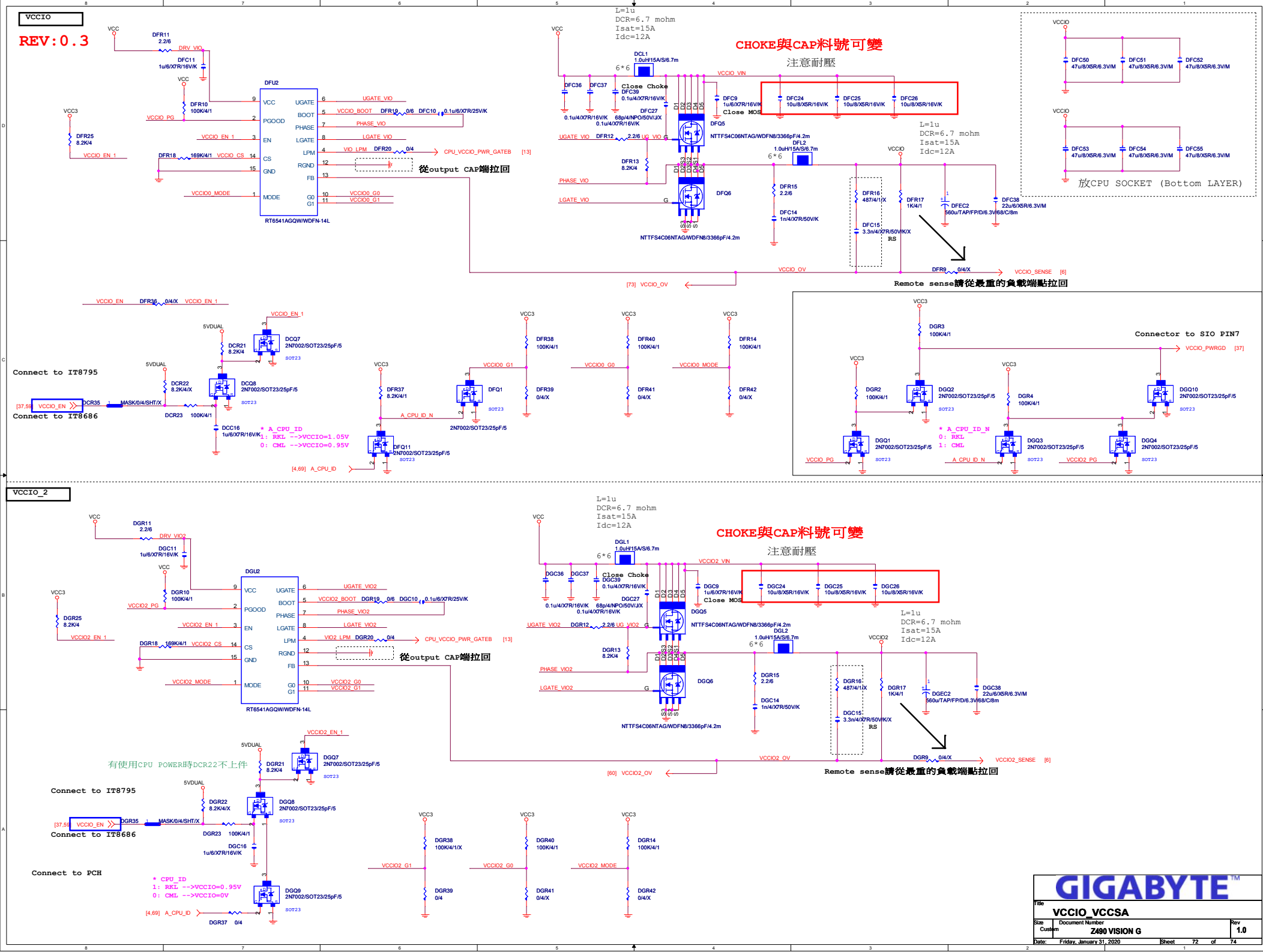
VIN CAP 560u\*1PCS



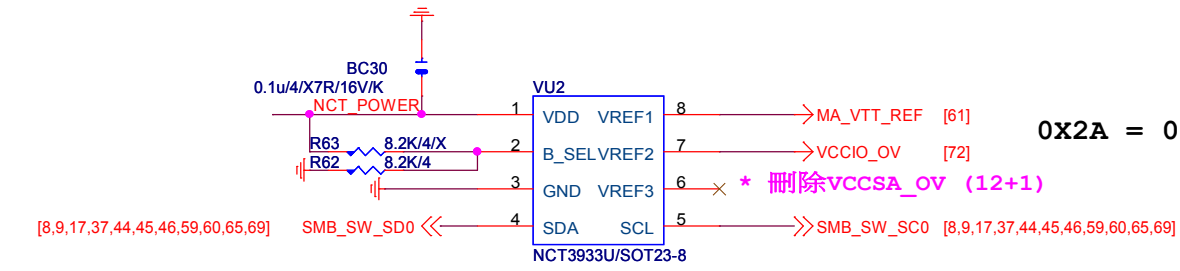
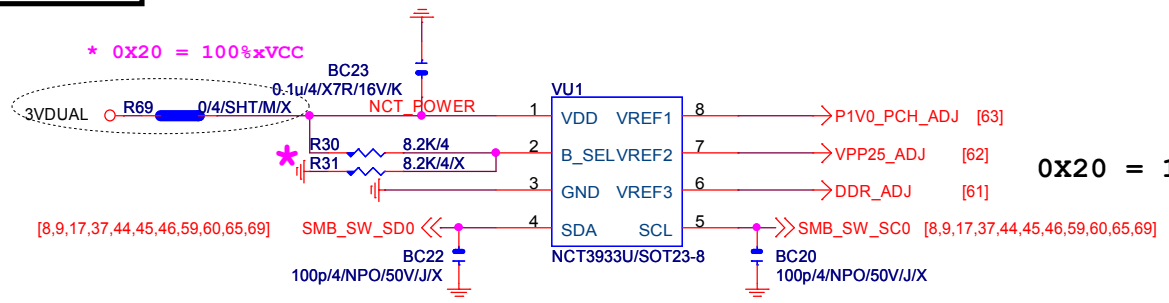
CPU SOCKET 已經有22u/6 \*4pcs



REV:0.3



OVER VOLTAGE



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

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

**Gigabyte Technology**

Title  
**CPU CORE VR-2**

Size Custom Document Number  
**Z490 VISION G**

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PWM各相位的擺法如下：

BIOS超電壓對應表：

散熱模組料號：

8IBP:  
1.12SP2-01A001-Y1R/Y2R  
2.12SP2-01A001-Z1R/Z2R  
(HIBRID模組) 包材階

<b>Gigabyte Technology</b>			
Title			
<b>TABLE LIST</b>			
Size C	Document Number		Rev
	<b>Z490 VISION G</b>		<b>1.0</b>
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