Model Name: B460M DS3H AC V2-Y1

Rev 1.0

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH PWR
15	PCH GND
16	ITE 8686 LPC IO
17	HWM
18	FAN CTRL--SIO
19	BIOS
20	CEC
21	PCI EXPRESS*16 SLOT
22	PCI EXPRESS*1 SLOT
23	SATA Connector
24	M.2 X4 (A)
25	IT8892E (NA)
26	PCI SLOT (NA)
27	ASM1085 POWER (NA)
28	LDO POWER (NA)

SHEET	TITLE
29	ISL95866 PWM-IRON
30	ISL95866 VCORE-IRON
31	ISL95866 VCCGT-IRON
32	VCCSA_VCCIO_VCCPLL
33	RT8237_DDR_BEAD
34	RT8068A_VPP
35	RT8237_PCH-BEAD
36	DISCRETE POWER
37	POWER MAP
38	ATX POWER , A_-PROCHOT
39	KB_MS
40	DVI CONN
41	RTD2168 - DP to VGA - IC
42	RTD2168 - DP to VGA - Conn
43	REALTEK 8111G
44	USB_LAN CONNECTOR-81118
45	Realtek ALC887
46	REAR AUDIO JACK
47	ADUIO LED
48	R_USB30_1
49	R_USB30_2
50	HDMI (MASK)
51	Redriver-R_USB31 (NA)
52	F_USB30
53	F_USB
54	F_PANEL
55	COM, TPM
56	EMI-ESD
	NTC MAP

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 1 of 63

Model Name: B460M DS3H AC V2-Y1 *rev 1.0*

Component value change history

2020/08/25

Data	Change Item	Reason
2020/07/29	Modify from B460M DS3H AC	
	M2 WIFI CARD 使用RTL8821CE CG(1*1 AC+BT4.2)	

Circuit or PCB layout change

DATE	Change Item	Reason

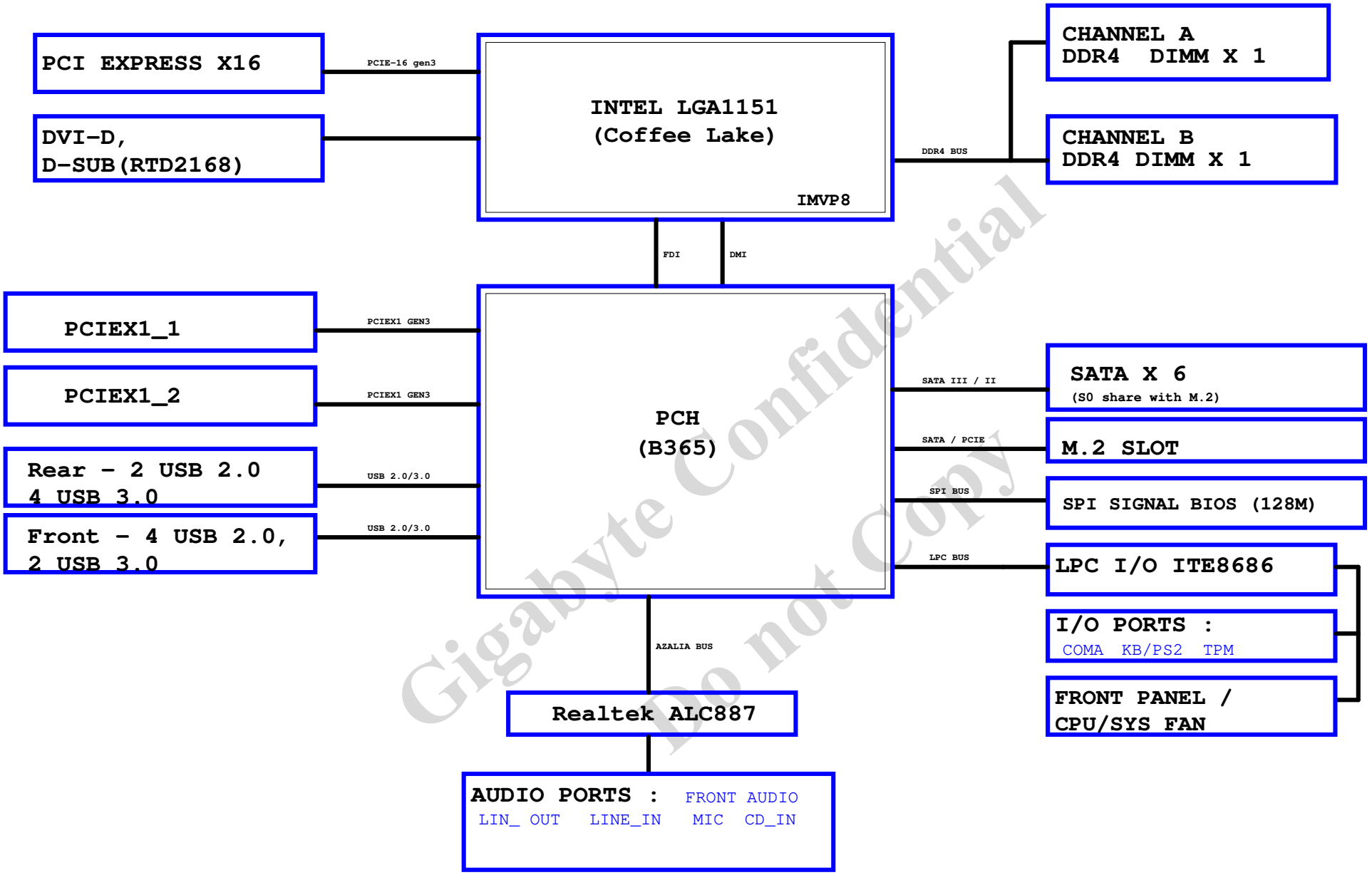
GIGABYTE™

Title: BOM & PCB MODIFY HISTORY

Size	Document Number	Rev
Custom	B460M DS3H AC V2-Y1	1.0

Date: Tuesday, September 29, 2020 Sheet 2 of 63

BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 3 of 63	

檢查組態調整線路
The CFG signals default value of '1'

CFG[4]: 0=eDP enable / 1=eDP disable
CFG[7]: 1=PEG Train immediately following RESET
0=PEG Wait for BIOS

CFG[13]: 1=VCCSA Fixed Mode / 0=SVID Mode

Z490 Notes Rev 1.05
VAXG 1.3V Run PTU VAXG High & CPU OC 5G hang issue
Remove WR30

LGA1200E
CML_S_IP
T=190922B
5 OF 13
CPU-SK/1200/S/GF

LGA1200C
CML_S_IP
T=190922B
3 OF 13
CPU-SK/1200/S/GF

LGA1200D
CML_S_IP
T=190922B
4 OF 13
CPU-SK/1200/S/GF

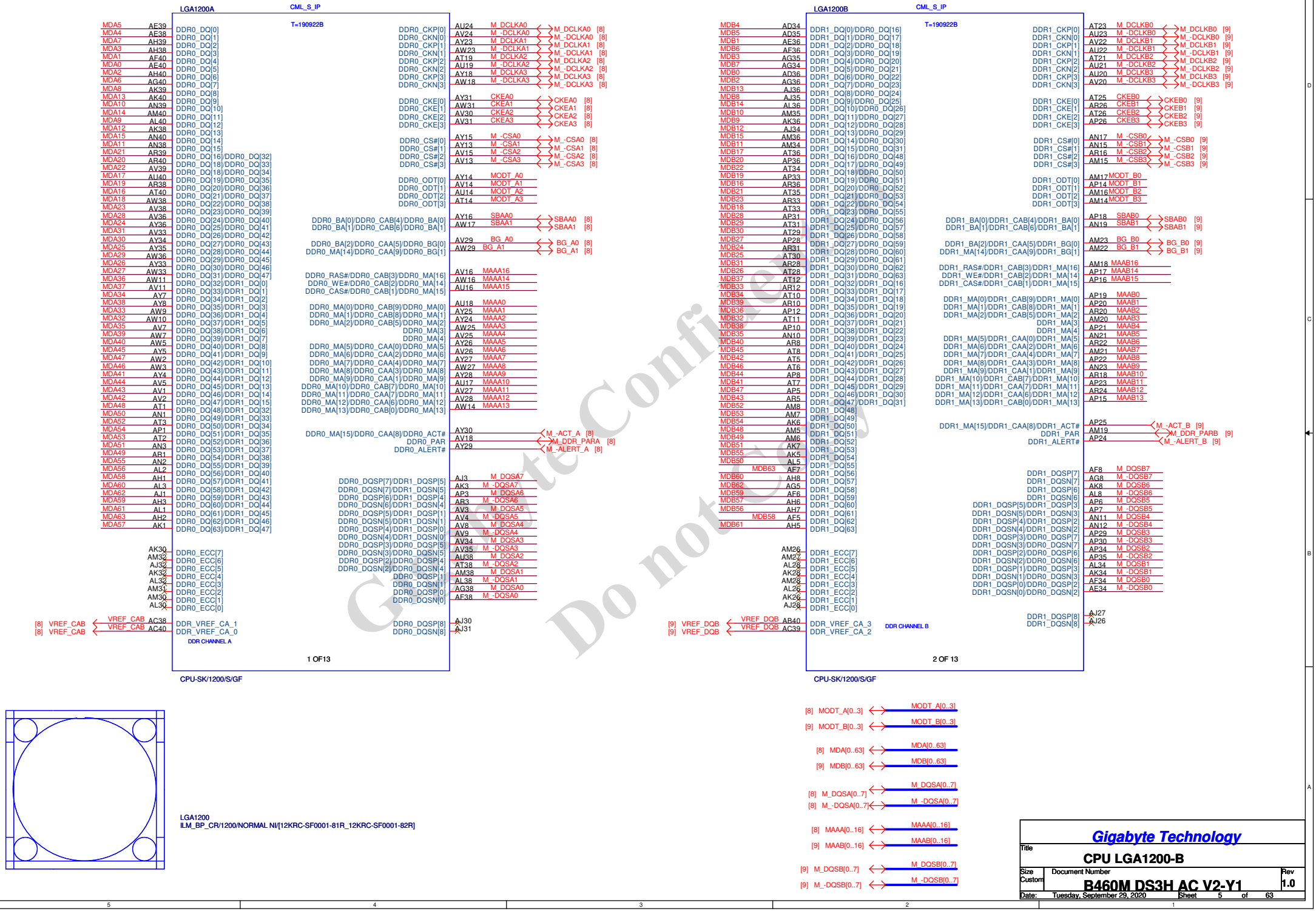
DP-VGA
DVI
HDMI

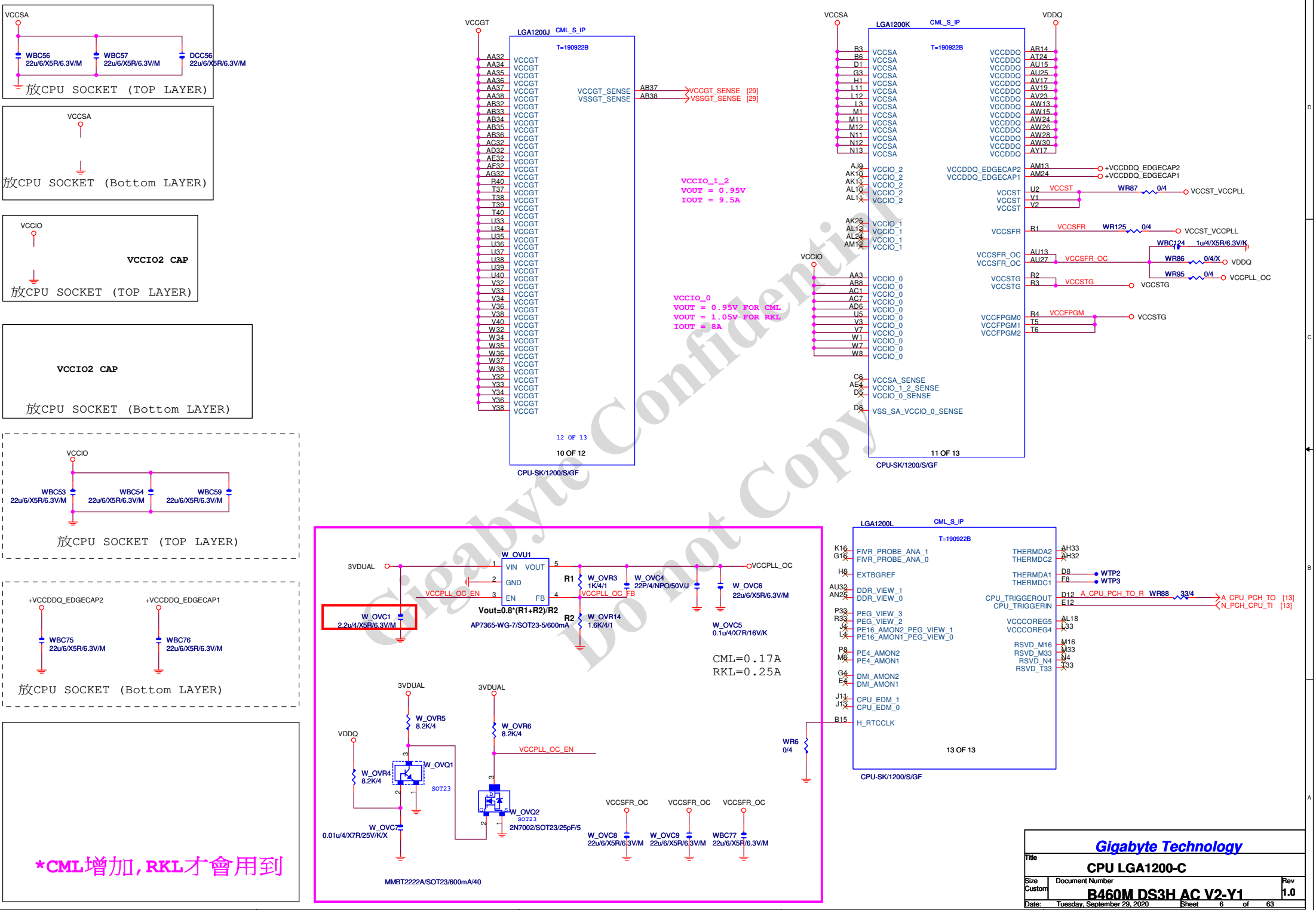
* CPU_ID
1: RKL -->VCCIO=1.0V
0: CML -->VCCIO=0V

若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

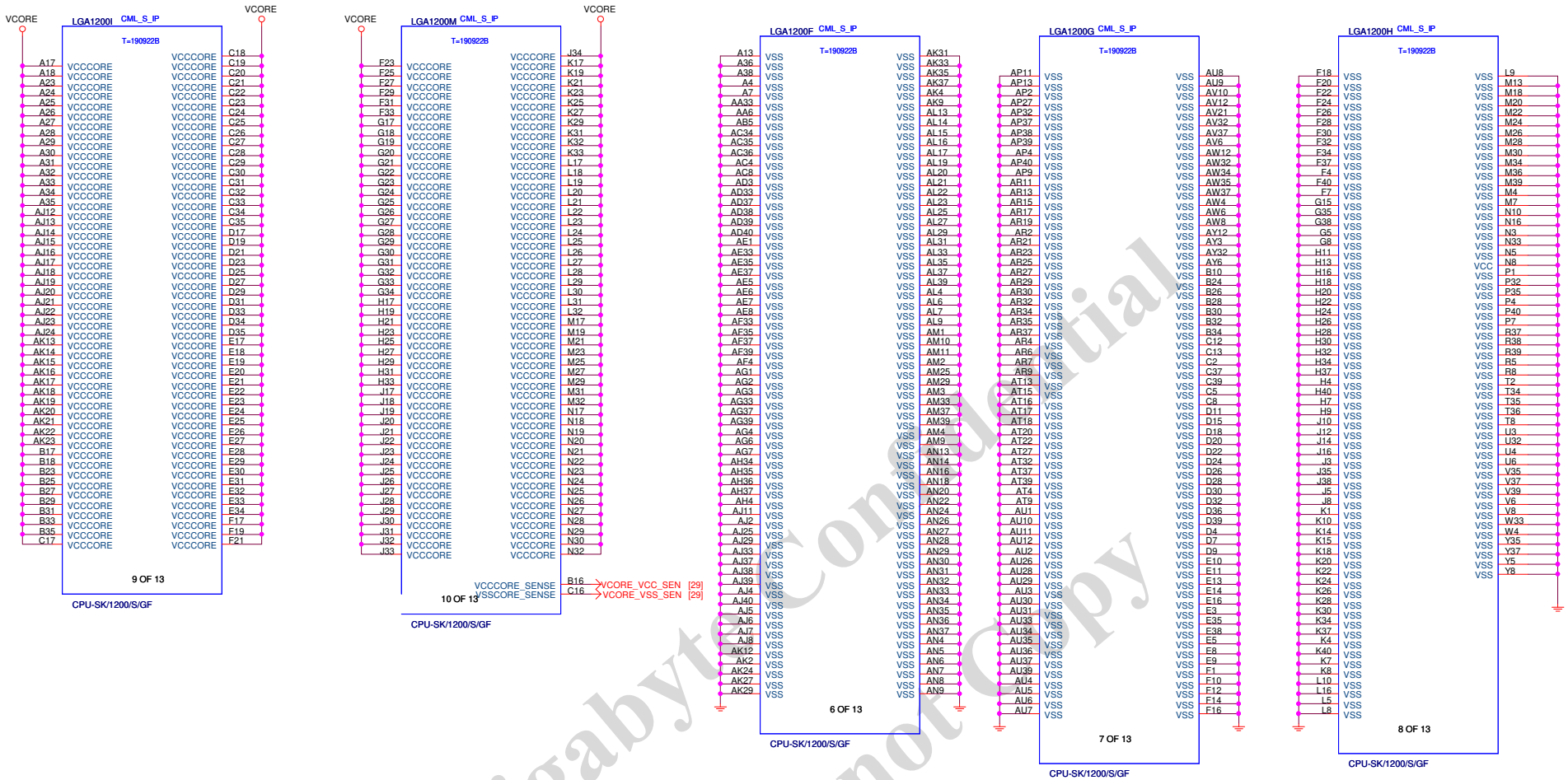
Gigabyte Technology

Title	CPU LGA1200-A	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 4 of 63	





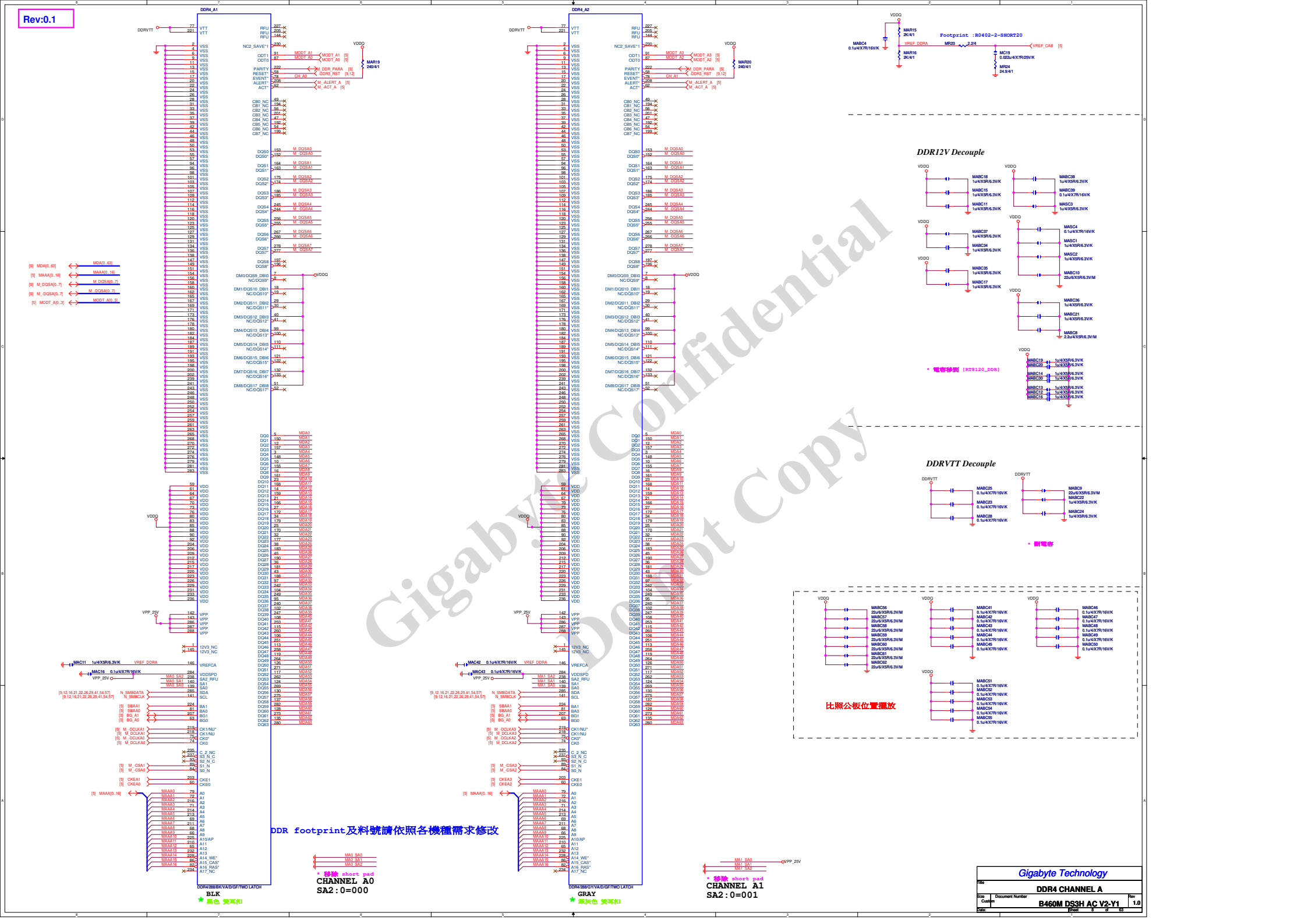
Gigabyte Technology		
Title: CPU LGA1200-C		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 6 of 63	



* 刪 Vcore 電容

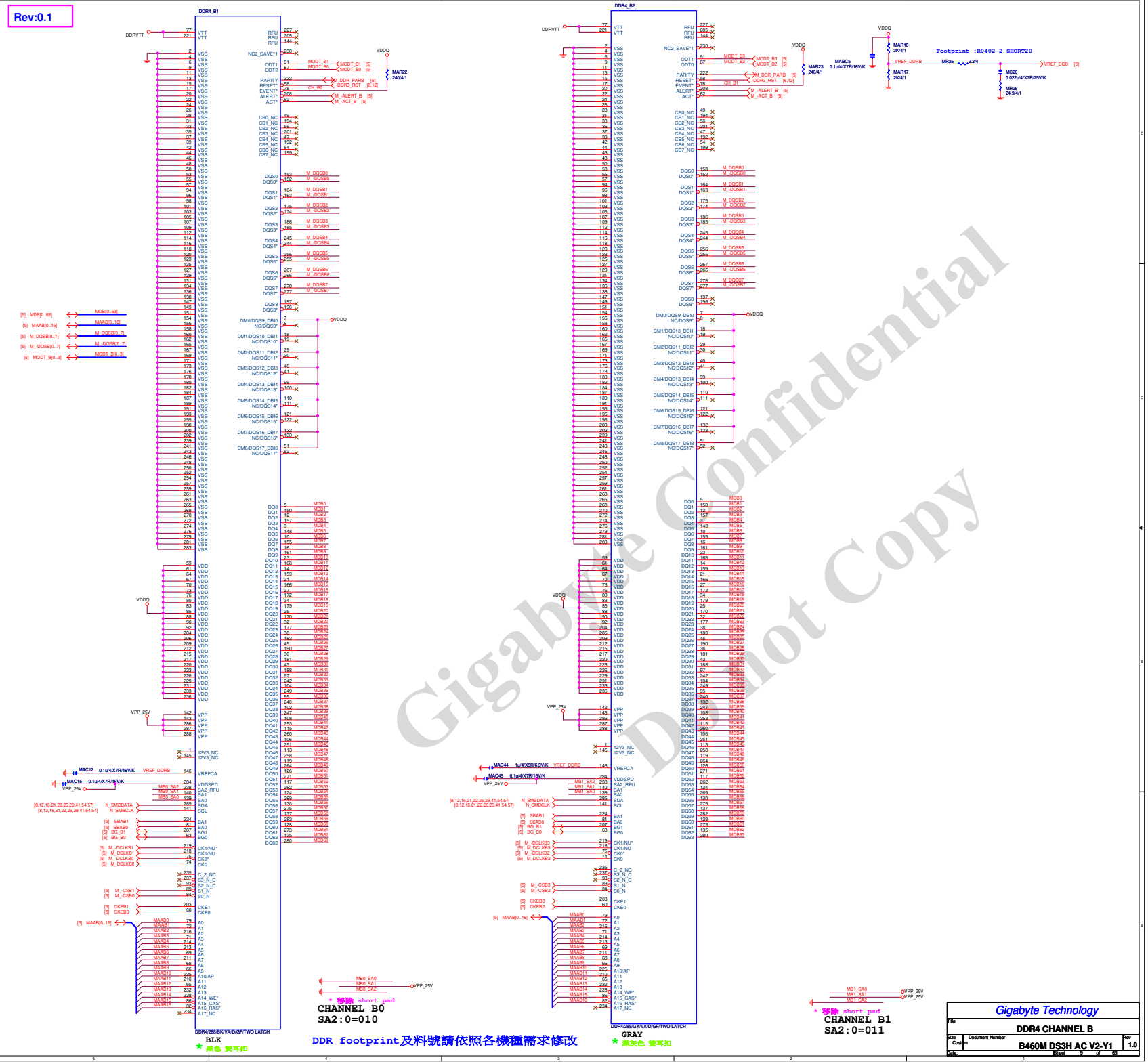
Gigabyte Technology		
Title: CPU LGA1200-D		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 7 of 63	

Rev:0.1

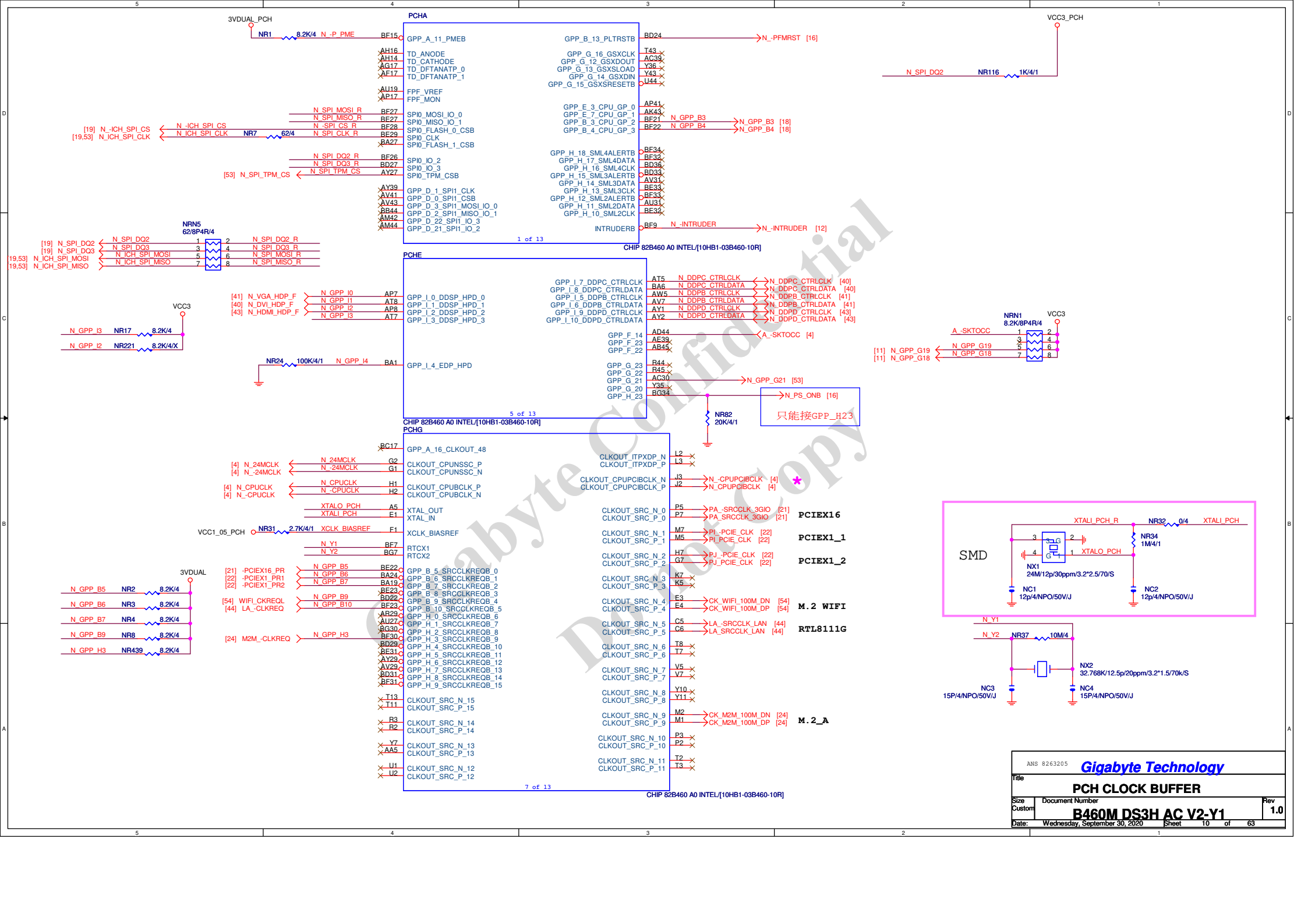


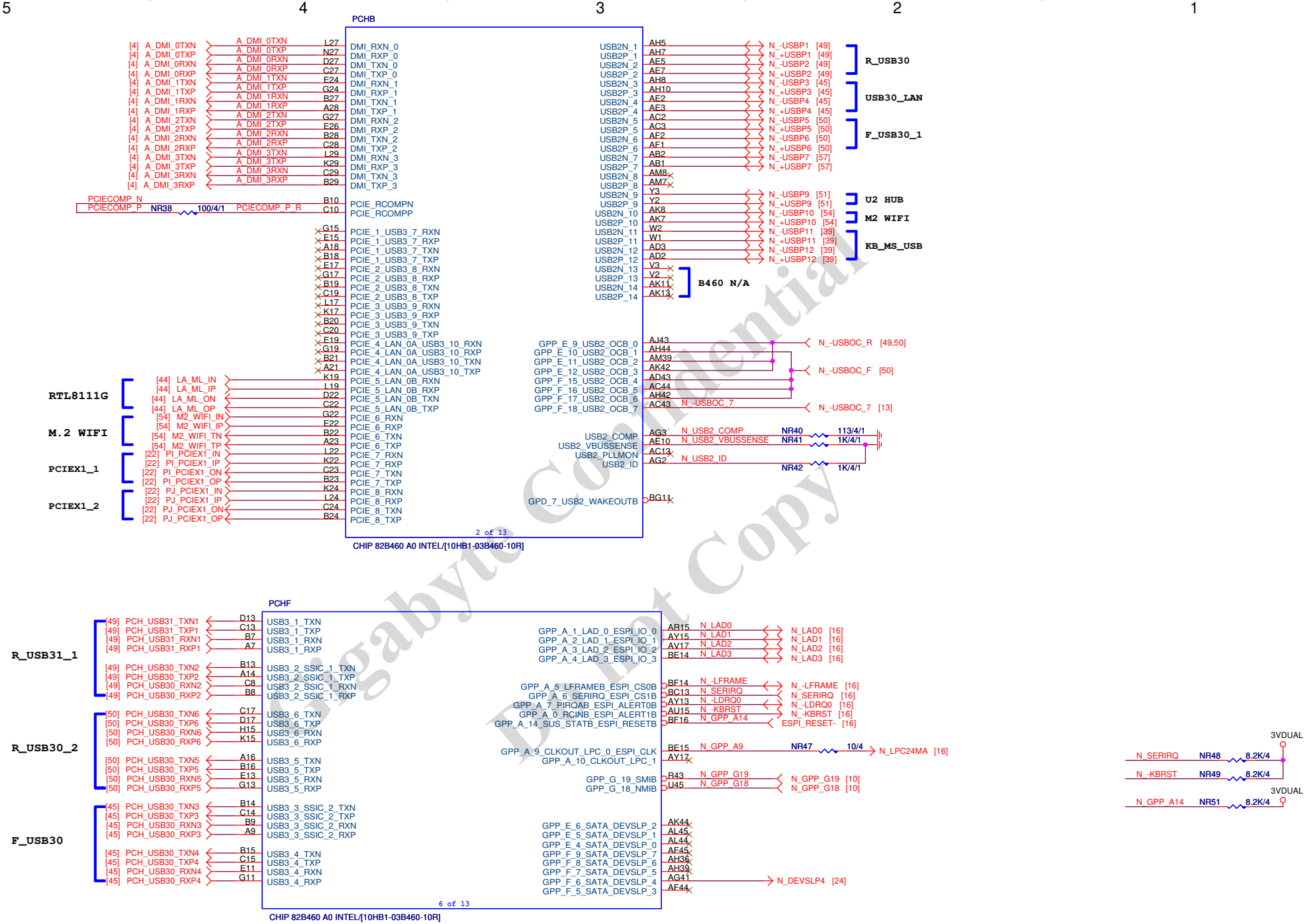
Gigabyte Technology			
Title: DDR4 CHANNEL A			
Size: Custom	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date:	Sheet 8 of 63		

Rev:0.1



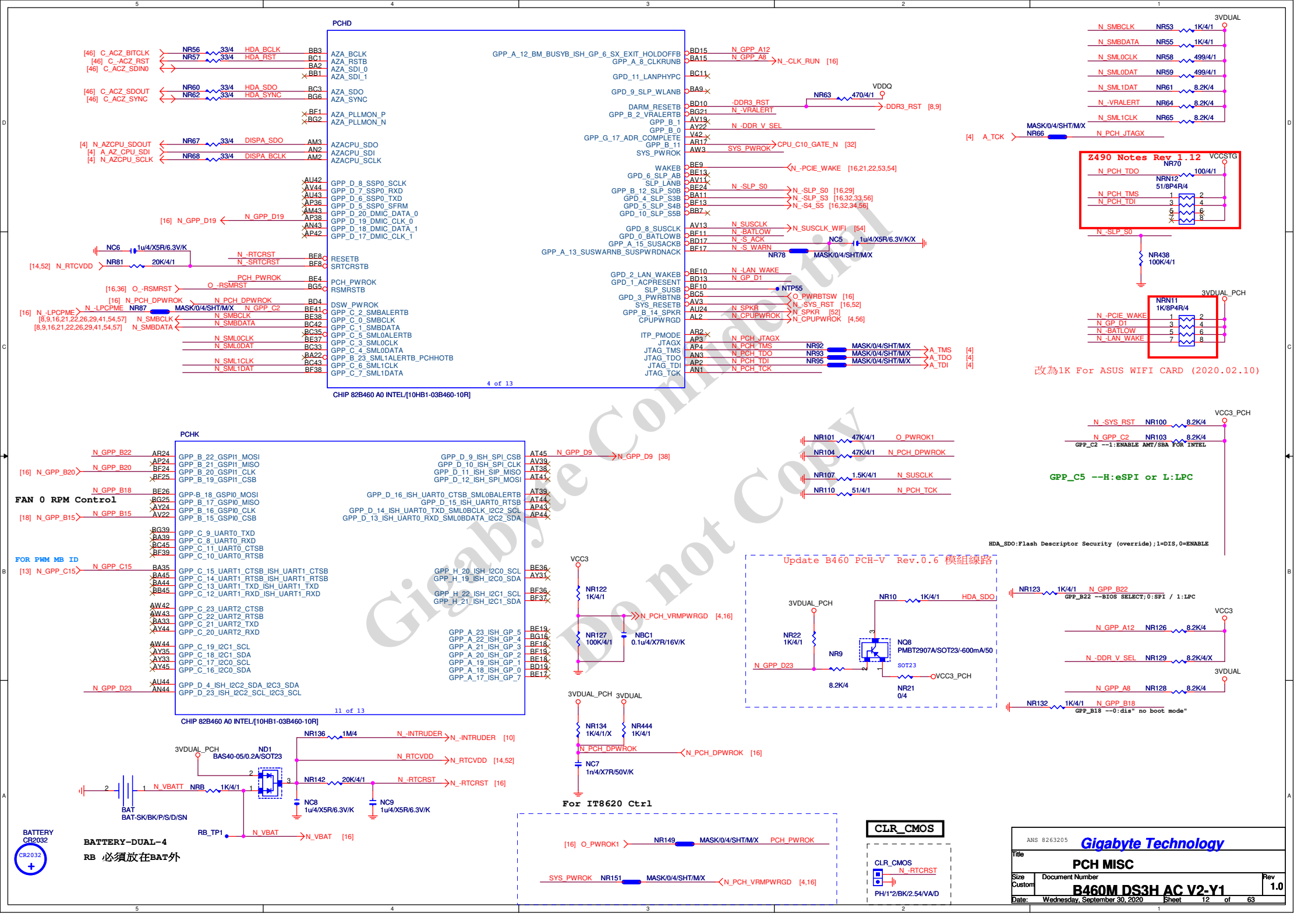
Gigabyte Technology			
Title: DDR4 CHANNEL B			
Size: Custom	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date:	Sheet 9 of 63		

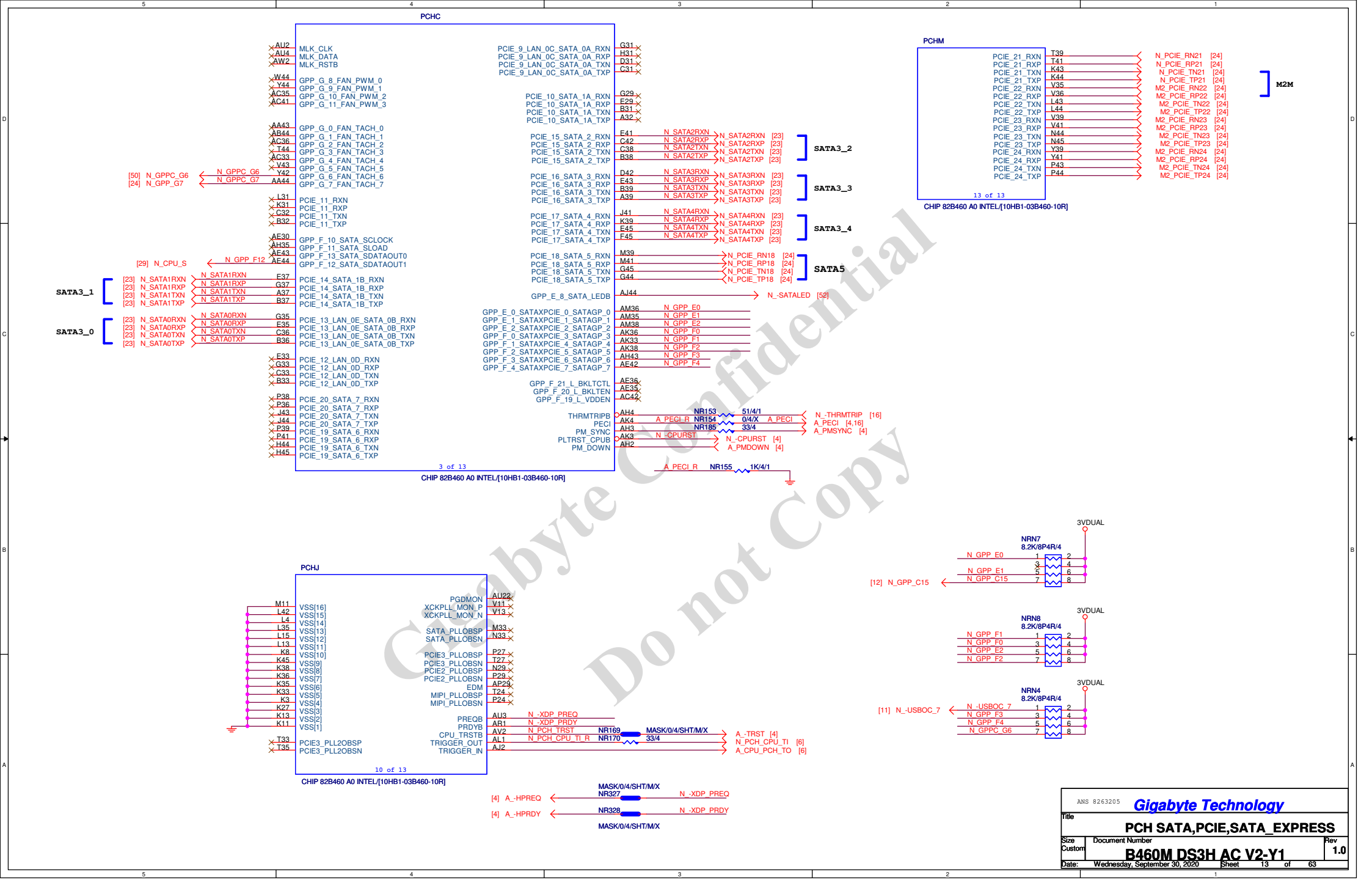

3VDUAL_PCH
NR1 8.2K/4 N_-P_PME
PCHA
GPP_A_11_PMEB
TD_ANODE
TD_CATHODE
TD_DFTANATP_0
TD_DFTANATP_1
FPF_VREF
FPF_MON
SPI0_MOSI_IO_0
SPI0_MISO_IO_1
SPI0_FLASH_0_CSB
SPI0_CLK
SPI0_FLASH_1_CSB
SPI0_IO_2
SPI0_IO_3
SPI0_TPM_CSB
GPP_D_1_SPI1_CLK
GPP_D_0_SPI1_CSB
GPP_D_3_SPI1_MOSI_IO_0
GPP_D_2_SPI1_MISO_IO_1
GPP_D_22_SPI1_IO_3
GPP_D_21_SPI1_IO_2
1 of 13
GPP_B_13_PLTRSTB
GPP_G_16_GSXCLK
GPP_G_12_GSXDOUT
GPP_G_13_GSXSLOAD
GPP_G_14_GSXDIN
GPP_G_15_GSXSRESETB
GPP_E_3_CPU_GP_0
GPP_E_7_CPU_GP_1
GPP_B_3_CPU_GP_2
GPP_B_4_CPU_GP_3
GPP_H_18_SML4ALERTB
GPP_H_17_SML4DATA
GPP_H_16_SML4CLK
GPP_H_15_SML3ALERTB
GPP_H_14_SML3DATA
GPP_H_13_SML3CLK
GPP_H_12_SML2ALERTB
GPP_H_11_SML2DATA
GPP_H_10_SML2CLK
INTRUDERB
CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]
N_-PFMRST [16]
N_GPP_B3 [18]
N_GPP_B4 [18]
N_-INTRUDER [12]
VCC3_PCH
N_SPI_DQ2 NR116 1K/4/1
NRN5 62/8P4R/4
[19] N_SPI_DQ2
[19] N_SPI_DQ3
[19,53] N_ICH_SPI_MOSI
[19,53] N_ICH_SPI_MISO
[19] N_-ICH_SPI_CS
[19,53] N_ICH_SPI_CLK
NR7 62/4
[53] N_SPI_TPM_CS
PCHE
GPP_I_0_DDSP_HPD_0
GPP_I_1_DDSP_HPD_1
GPP_I_2_DDSP_HPD_2
GPP_I_3_DDSP_HPD_3
GPP_I_4_EDP_HPD
5 of 13
GPP_I_7_DDPC_CTRLCLK
GPP_I_8_DDPC_CTRLDATA
GPP_I_5_DDPB_CTRLCLK
GPP_I_6_DDPB_CTRLDATA
GPP_I_9_DDPD_CTRLCLK
GPP_I_10_DDPD_CTRLDATA
GPP_F_14
GPP_F_23
GPP_F_22
GPP_G_23
GPP_G_22
GPP_G_21
GPP_G_20
GPP_H_23
N_DDPC_CTRLCLK [40]
N_DDPC_CTRLDATA [40]
N_DDPB_CTRLCLK [41]
N_DDPB_CTRLDATA [41]
N_DDPD_CTRLCLK [43]
N_DDPD_CTRLDATA [43]
A_-SKTOCC [4]
N_GPP_G21 [53]
N_PS_ONB [16]
只能接GPP_H23
NR82 20K/4/1
[41] N_VGA_HDP_F
[40] N_DVI_HDP_F
[43] N_HDMI_HDP_F
N_GPP_I0
N_GPP_I1
N_GPP_I2
N_GPP_I3
NR17 8.2K/4
NR221 8.2K/4/X
NR24 100K/4/1
VCC3
NRN1 8.2K/8P4R/4
A_-SKTOCC
N_GPP_G19
N_GPP_G18
[11] N_GPP_G19
[11] N_GPP_G18
PCHG
GPP_A_16_CLKOUT_48
CLKOUT_CPUNSSC_P
CLKOUT_CPUNSSC_N
CLKOUT_CPUBCLK_P
CLKOUT_CPUBCLK_N
XTAL_OUT
XTAL_IN
XCLK_BIASREF
RTCX1
RTCX2
GPP_B_5_SRCCLKREQB_0
GPP_B_6_SRCCLKREQB_1
GPP_B_7_SRCCLKREQB_2
GPP_B_8_SRCCLKREQB_3
GPP_B_9_SRCCLKREQB_4
GPP_B_10_SRCCLKREQB_5
GPP_H_0_SRCCLKREQB_6
GPP_H_1_SRCCLKREQB_7
GPP_H_2_SRCCLKREQB_8
GPP_H_3_SRCCLKREQB_9
GPP_H_4_SRCCLKREQB_10
GPP_H_5_SRCCLKREQB_11
GPP_H_6_SRCCLKREQB_12
GPP_H_7_SRCCLKREQB_13
GPP_H_8_SRCCLKREQB_14
GPP_H_9_SRCCLKREQB_15
CLKOUT_SRC_N_15
CLKOUT_SRC_P_15
CLKOUT_SRC_N_14
CLKOUT_SRC_P_14
CLKOUT_SRC_N_13
CLKOUT_SRC_P_13
CLKOUT_SRC_N_12
CLKOUT_SRC_P_12
7 of 13
CLKOUT_ITPXDP_N
CLKOUT_ITPXDP_P
CLKOUT_CPUPCIBCLK_N
CLKOUT_CPUPCIBCLK_P
CLKOUT_SRC_N_0
CLKOUT_SRC_P_0
CLKOUT_SRC_N_1
CLKOUT_SRC_P_1
CLKOUT_SRC_N_2
CLKOUT_SRC_P_2
CLKOUT_SRC_N_3
CLKOUT_SRC_P_3
CLKOUT_SRC_N_4
CLKOUT_SRC_P_4
CLKOUT_SRC_N_5
CLKOUT_SRC_P_5
CLKOUT_SRC_N_6
CLKOUT_SRC_P_6
CLKOUT_SRC_N_7
CLKOUT_SRC_P_7
CLKOUT_SRC_N_8
CLKOUT_SRC_P_8
CLKOUT_SRC_N_9
CLKOUT_SRC_P_9
CLKOUT_SRC_N_10
CLKOUT_SRC_P_10
CLKOUT_SRC_N_11
CLKOUT_SRC_P_11
CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]
N_-CPUPCIBCLK [4]
N_CPUPCIBCLK [4]
PA_-SRCCLK_3GIO [21]
PA_SRCCLK_3GIO [21]
PCIEX16
PI_-PCIE_CLK [22]
PI_PCIE_CLK [22]
PCIEX1_1
PJ_-PCIE_CLK [22]
PJ_PCIE_CLK [22]
PCIEX1_2
CK_WIFI_100M_DN [54]
CK_WIFI_100M_DP [54]
M.2 WIFI
LA_-SRCCLK_LAN [44]
LA_SRCCLK_LAN [44]
RTL8111G
CK_M2M_100M_DN [24]
CK_M2M_100M_DP [24]
M.2_A
[4] N_24MCLK
[4] N_-24MCLK
[4] N_CPUCLK
[4] N_-CPUCLK
XTALO_PCH
XTALI_PCH
VCC1_05_PCH
NR31 2.7K/4/1
N_Y1
N_Y2
3VDUAL
[21] -PCIEX16_PR
[22] -PCIEX1_PR1
[22] -PCIEX1_PR2
[54] WIFI_CKREQL
[44] LA_-CLKREQ
[24] M2M_-CLKREQ
N_GPP_B5 NR2 8.2K/4
N_GPP_B6 NR3 8.2K/4
N_GPP_B7 NR4 8.2K/4
N_GPP_B9 NR8 8.2K/4
N_GPP_H3 NR439 8.2K/4
SMD
XTALI_PCH_R
NR32 0/4
NR34 1M/4/1
NX1 24M/12p/30ppm/3.2*2.5/70/S
NC1 12p/4/NPO/50V/J
NC2 12p/4/NPO/50V/J
NR37 10M/4
NX2 32.768K/12.5p/20ppm/3.2*1.5/70k/S
NC3 15P/4/NPO/50V/J
NC4 15P/4/NPO/50V/J
ANS 8263205
Gigabyte Technology
Title
PCH CLOCK BUFFER
Size Custom
Document Number
B460M DS3H AC V2-Y1
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 10 of 63
Gigabyte Confidential
Do Not Copy

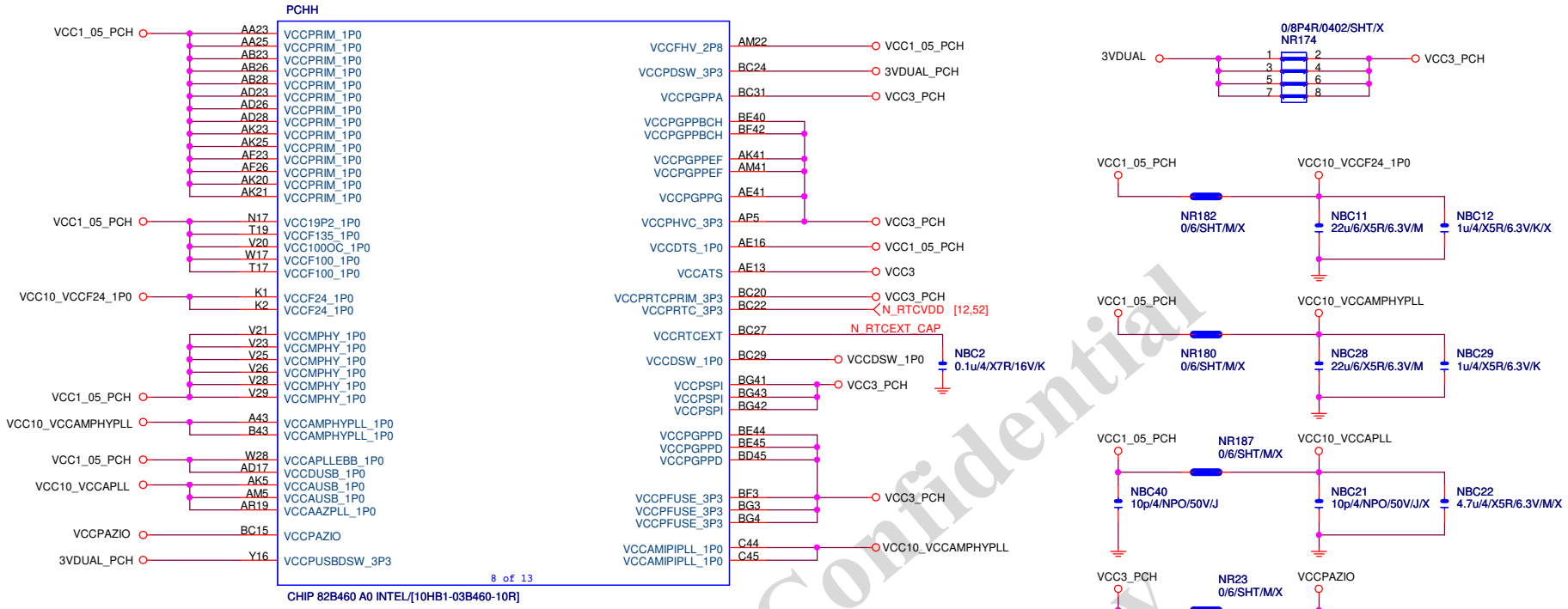


ANS 8263205 **Gigabyte Technology**

Title	PCH DMI,USB,PCIE	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 11 of 63	


PCHD
AZA_BCLK
AZA_RSTB
AZA_SDI_0
AZA_SDI_1
AZA_SDO
AZA_SYNC
AZA_PLLMON_P
AZA_PLLMON_N
AZACPU_SDO
AZACPU_SDI
AZACPU_SCLK
GPP_D_8_SSP0_SCLK
GPP_D_7_SSP0_RXD
GPP_D_6_SSP0_TXD
GPP_D_5_SSP0_SFRM
GPP_D_20_DMIC_DATA_0
GPP_D_19_DMIC_CLK_0
GPP_D_18_DMIC_DATA_1
GPP_D_17_DMIC_CLK_1
RESETB
SRTCRSTB
PCH_PWROK
RSMRSTB
DSW_PWROK
GPP_C_2_SMBALERTB
GPP_C_0_SMBCLK
GPP_C_1_SMBDATA
GPP_C_5_SML0ALERTB
GPP_C_3_SML0CLK
GPP_C_4_SML0DATA
GPP_B_23_SML1ALERTB_PCHHOTB
GPP_C_6_SML1CLK
GPP_C_7_SML1DATA
4 of 13
CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]
GPP_A_12_BM_BUSYB_ISH_GP_6_SX_EXIT_HOLDOFFB
GPP_A_8_CLKRUNB
GPD_11_LANPHYPC
GPD_9_SLP_WLANB
DARM_RESETB
GPP_B_2_VRALERTB
GPP_B_1
GPP_B_0
GPP_G_17_ADR_COMPLETE
GPP_B_11
SYS_PWROK
WAKEB
GPD_6_SLP_AB
SLP_LANB
GPP_B_12_SLP_S0B
GPD_4_SLP_S3B
GPD_5_SLP_S4B
GPD_10_SLP_S5B
GPD_8_SUSCLK
GPD_0_BATLOWB
GPP_A_15_SUSACKB
GPP_A_13_SUSWARNB_SUSPWRDNACK
GPD_2_LAN_WAKEB
GPD_1_ACPRESENT
SLP_SUSB
GPD_3_PWRBTNB
SYS_RESETB
GPP_B_14_SPKR
CPUPWRGD
ITP_PMODE
JTAGX
JTAG_TMS
JTAG_TDO
JTAG_TDI
JTAG_TCK
N_GPP_A12
N_GPP_A8
N_-CLK_RUN [16]
VDDQ
-DDR3_RST
N_-VRALERT
N_-DDR_V_SEL
CPU_C10_GATE_N [32]
N_-PCIE_WAKE [16,21,22,53,54]
N_-SLP_S0
N_-SLP_S0 [16,29]
N_-SLP_S3 [16,32,33,56]
N_-S4_S5 [16,32,34,56]
N_SUSCLK
N_-BATLOW
N_-S_ACK
N_-S_WARN
N_SUSCLK_WIFI [54]
N_-LAN_WAKE
N_GP_D1
NTP55
O_PWRBTSW [16]
N_-SYS_RST [16,52]
N_SPKR [52]
N_CPUPWROK [4,56]
N_PCH_JTAGX
N_PCH_TMS
N_PCH_TDO
N_PCH_TDI
N_PCH_TCK
A_TMS [4]
A_TDO [4]
A_TDI [4]
3VDUAL
N_SMBCLK
N_SMBDATA
N_SML0CLK
N_SML0DAT
N_SML1DAT
N_-VRALERT
N_SML1CLK
A_TCK [4]
N_PCH_JTAGX
Z490 Notes Rev 1.12
VCCSTG
N_PCH_TDO
N_PCH_TMS
N_PCH_TDI
N_-SLP_S0
3VDUAL_PCH
N_PCIE_WAKE
N_GP_D1
N_-BATLOW
N_-LAN_WAKE
改為1K For ASUS WIFI CARD (2020.02.10)
PCHK
FAN 0 RPM Control
FOR PWM MB ID
GPP_B_22_GSPI1_MOSI
GPP_B_21_GSPI1_MISO
GPP_B_20_GSPI1_CLK
GPP_B_19_GSPI1_CSB
GPP_B_18_GSPI0_MOSI
GPP_B_17_GSPI0_MISO
GPP_B_16_GSPI0_CLK
GPP_B_15_GSPI0_CSB
GPP_C_9_UART0_TXD
GPP_C_8_UART0_RXD
GPP_C_11_UART0_CTSB
GPP_C_10_UART0_RTSB
GPP_C_15_UART1_CTSB_ISH_UART1_CTSB
GPP_C_14_UART1_RTSB_ISH_UART1_RTSB
GPP_C_13_UART1_TXD_ISH_UART1_TXD
GPP_C_12_UART1_RXD_ISH_UART1_RXD
GPP_C_23_UART2_CTSB
GPP_C_22_UART2_RTSB
GPP_C_21_UART2_TXD
GPP_C_20_UART2_RXD
GPP_C_19_I2C1_SCL
GPP_C_18_I2C1_SDA
GPP_C_17_I2C0_SCL
GPP_C_16_I2C0_SDA
GPP_D_4_ISH_I2C2_SDA_I2C3_SDA
GPP_D_23_ISH_I2C2_SCL_I2C3_SCL
11 of 13
CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]
GPP_D_9_ISH_SPI_CSB
GPP_D_10_ISH_SPI_CLK
GPP_D_11_ISH_SPI_MISO
GPP_D_12_ISH_SPI_MOSI
GPP_D_16_ISH_UART0_CTSB_SML0BALERTB
GPP_D_15_ISH_UART0_RTSB
GPP_D_14_ISH_UART0_TXD_SML0BCLK_I2C2_SCL
GPP_D_13_ISH_UART0_RXD_SML0BDATA_I2C2_SDA
GPP_H_20_ISH_I2C0_SCL
GPP_H_19_ISH_I2C0_SDA
GPP_H_22_ISH_I2C1_SCL
GPP_H_21_ISH_I2C1_SDA
GPP_A_23_ISH_GP_5
GPP_A_22_ISH_GP_4
GPP_A_21_ISH_GP_3
GPP_A_20_ISH_GP_2
GPP_A_19_ISH_GP_1
GPP_A_18_ISH_GP_0
GPP_A_17_ISH_GP_7
N_GPP_D9 [38]
GPP_C5 --H:eSPI or L:LPC
HDA_SDO:Flash Descriptor Security (override);1=DIS,0=ENABLE
GPP_C2 --1:ENABLE AMT/SBA FOR INTEL
Update B460 PCH-V Rev.0.6 模組線路
3VDUAL_PCH
NQ8
PMBT2907A/SOT23/-600mA/50
SOT23
VCC3_PCH
GPP_B22 --BIOS SELECT;0:SPI / 1:LPC
GPP_B18 --0:dis" no boot mode"
N_PCH_VRMPWRGD [4,16]
N_PCH_DPWROK [16]
For IT8620 Ctrl
3VDUAL_PCH
ND1
BAS40-05/0.2A/SOT23
BAT
BAT-SK/BK/P/S/D/SN
N_VBATT
N_-INTRUDER [10]
N_RTCVDD [14,52]
N_-RTCRST [16]
N_VBAT [16]
RB_TP1
BATTERY
CR2032
BATTERY-DUAL-4
RB 必須放在BAT外
CLR_CMOS
PH/1*2/BK/2.54/VA/D
O_PWROK1 [16]
SYS_PWROK
PCH_PWROK
N_PCH_VRMPWRGD [4,16]
ANS 8263205
Gigabyte Technology
Title
PCH MISC
Size
Custom
Document Number
B460M DS3H AC V2-Y1
Rev
1.0
Date: Wednesday, September 30, 2020
Sheet 12 of 63
Gigabyte Confidential
Do not Copy





ANS 8263205 **Gigabyte Technology**

Title: **PCH PWR**

Size	Document Number	Rev
B	**B460M DS3H AC V2-Y1**	1.0

Date: Wednesday, September 30, 2020 Sheet 14 of 63

PCHI

A25	VSS	VSS	A42		
A30	VSS	VSS	D45		
P22	VSS	VSS	BG44		
AV38	VSS	VSS	BF44		
AV45	VSS	VSS	BF45		
AV8	VSS	VSS	BF2		
AY11	VSS	VSS	W29		
AY19	VSS	VSS	A35		
AY37	VSS	VSS	A40		
AY4	VSS	VSS	A41		
AY42	VSS	VSS	AA17		
AY8	VSS	VSS	AA18		
B25	VSS	VSS	AA20		
B3	VSS	VSS	AA21		
B30	VSS	VSS	AA26		
B35	VSS	VSS	AA28		
B4	VSS	VSS	AA29		
B41	VSS	VSS	AB17		
BA13	VSS	VSS	AC32		
BA17	VSS	VSS	AE4		
BA29	VSS	VSS	AE8		
BA31	VSS	VSS	AF18		
BA37	VSS	VSS	AF20		
BA4	VSS	VSS	AF21		
BA42	VSS	VSS	AF25		
BB40	VSS	VSS	AF28		
BC38	VSS	VSS	AF29		
BC40	VSS	VSS	AF4		
BC9	VSS	VSS	AF42		
BD11	VSS	VSS	AG18		
BD16	VSS	VSS	AG20		
BD2	VSS	VSS	AG21		
BD21	VSS	VSS	AG23		
BD25	VSS	VSS	AG25		
F2	VSS	VSS	AG26		
E31	VSS	VSS	AG28		
E6	VSS	VSS	AG29		
E8	VSS	VSS	AH11		
F39	VSS	VSS	AH13		
F43	VSS	VSS	AH30		
G4	VSS	VSS	AH32		
G40	VSS	VSS	AH33		
G42	VSS	VSS	AH38		
F6	VSS	VSS	AJ1		
G9	VSS	VSS	AJ17		
H11	VSS	VSS	AJ18		
H13	VSS	VSS	AJ20		
H17	VSS	VSS	AJ21		
H19	VSS	VSS	AJ23		
H22	VSS	VSS	AJ25		
H24	VSS	VSS	AJ26		
H27	VSS	VSS	AJ28		
H29	VSS	VSS	AJ29		
H33	VSS	VSS	AJ45		
H35	VSS	VSS	AK10		
H38	VSS	VSS	AK14		
H4	VSS	VSS	AK16		
H42	VSS	VSS	AK17		
H9	VSS	VSS	AK18		
J4	VSS	VSS	AK26		
M36	VSS	VSS	AK28		
M38	VSS	VSS	AM14		
M4	VSS	VSS	AN14		
M8	VSS	VSS	AP19		
M9	VSS	VSS	AR22		
N13	VSS	VSS	AR27		
N15	VSS	VSS	AU29		
N19	VSS	VSS	AU33		
N22	VSS	VSS	AV1		
N24	VSS	VSS	AV10		
N31	VSS	VSS	AV15		
N42	VSS	VSS	AV24		
P10	VSS	VSS	AV27		
P12	VSS	VSS	AV33		
AV35	VSS				

9 of 13

CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]

PCHL

BD34	VSS[70]	VSS[1]	AB18
BD39	VSS[71]	VSS[2]	AB20
BD7	VSS[72]	VSS[3]	AB21
BE2	VSS[73]	VSS[4]	AB25
BF43	VSS[74]	VSS[5]	AB29
BF5	VSS[75]	VSS[6]	AB4
BG18	VSS[76]	VSS[7]	AB42
BG23	VSS[77]	VSS[8]	AC10
BG28	VSS[78]	VSS[9]	AC11
BG32	VSS[79]	VSS[10]	AC14
BG37	VSS[80]	VSS[11]	AC16
BG40	VSS[81]	VSS[12]	AC38
BG9	VSS[83]	VSS[13]	AC4
C1	VSS[84]	VSS[14]	AC5
A12	VSS[85]	VSS[15]	AC7
C2	VSS[86]	VSS[16]	AC8
C37	VSS[87]	VSS[17]	AD1
A6	VSS[88]	VSS[18]	AD18
C9	VSS[89]	VSS[19]	AD20
D1	VSS[90]	VSS[20]	AD21
D10	VSS[91]	VSS[21]	AD25
D12	VSS[92]	VSS[22]	AD29
D15	VSS[93]	VSS[23]	AD45
D16	VSS[94]	VSS[24]	AE11
B12	VSS[95]	VSS[25]	AE14
D19	VSS[96]	VSS[26]	AE32
D21	VSS[97]	VSS[27]	AE33
D24	VSS[98]	VSS[28]	AE38
D25	VSS[99]	VSS[29]	AK29
D29	VSS[100]	VSS[30]	AK30
D30	VSS[101]	VSS[31]	AK32
D33	VSS[102]	VSS[32]	AK35
D35	VSS[103]	VSS[33]	AK39
D36	VSS[104]	VSS[34]	AL4
D39	VSS[105]	VSS[35]	AL42
D44	VSS[106]	VSS[36]	AM10
D7	VSS[107]	VSS[37]	AM11
P13	VSS[108]	VSS[38]	AM13
P15	VSS[109]	VSS[39]	AM17
P17	VSS[110]	VSS[40]	AM19
P19	VSS[111]	VSS[41]	AM24
P31	VSS[112]	VSS[42]	AM27
P33	VSS[113]	VSS[43]	AM29
P35	VSS[114]	VSS[44]	AM32
P4	VSS[115]	VSS[45]	AM33
P42	VSS[116]	VSS[46]	AM4
P8	VSS[117]	VSS[47]	AN45
R1	VSS[118]	VSS[48]	AP10
R32	VSS[119]	VSS[49]	AP11
T10	VSS[120]	VSS[50]	AP13
T14	VSS[121]	VSS[51]	AP15
T22	VSS[122]	VSS[52]	AP22
T29	VSS[123]	VSS[53]	AP27
T32	VSS[124]	VSS[54]	AP31
T36	VSS[125]	VSS[55]	AP33
T38	VSS[126]	VSS[56]	AP34
Y38	VSS[151]	VSS[57]	AP39
Y4	VSS[152]	VSS[127]	T4
Y8	VSS[153]	VSS[143]	W26
T42	VSS[154]	VSS[128]	V16
T5	VSS[155]	VSS[129]	V17
U4	VSS[156]	VSS[130]	V18
U42	VSS[157]	VSS[131]	V30
V10	VSS[158]	VSS[132]	V32
V14	VSS[159]	VSS[133]	V33
W3	VSS[144]	VSS[134]	V38
AR13	VSS[58]	VSS[135]	V4
AR31	VSS[59]	VSS[136]	V8
AR33	VSS[60]		
AR4	VSS[61]	VSS[138]	W18
AT10	VSS[62]	VSS[139]	W20
AT13	VSS[63]	VSS[140]	W21
AT35	VSS[64]	VSS[141]	W23
AT37	VSS[65]	VSS[142]	W25
AT42	VSS[66]		
AU11	VSS[67]	VSS_1	A44
AU17	VSS[68]	VSS_10	BE1
BD30	VSS[69]	VSS_11	BD1
W45	VSS[145]	VSS_14	B1
Y13	VSS[146]	VSS_15	A2
Y14	VSS[147]	VSS_16	B2
Y30	VSS[148]	VSS_17	A3
Y32	VSS[149]	VSS_18	A4
Y33	VSS[150]	VSS_2	B44
BG14	VSS_BG14	VSS_3	B45

12 of 13

CHIP 82B460 A0 INTEL/[10HB1-03B460-10R]

SB_HEATSIN

1

2

BGAHSINK_SB-42X42

PCH_HS

HEAT SINK/N-BG/GBT MK/H81/KWOG/[12SP2-S04208-61R_12SP2-S04208-62R_12SP2-S04208-63R]

TMOS

1

2

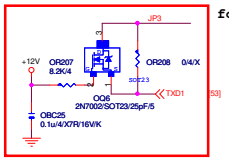
MOS_Heatsink/[12SP2-S09425-11R_12SP2-S09425-12R_12SP2-S09425-13R]

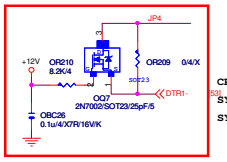
Gigabyte Technology		ANS 8263205
Title: PCH GND		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 15 of 63	

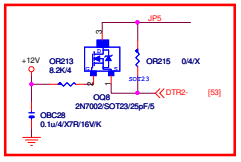
CFL SIO IT8686 REV:0.5

IT8686 LPT+COMA

for LPC/eSPI power mode







CPU_FAN

SYS_FAN1

SYS_FAN2

SYS_FAN3 sensor

SYS_FAN4 sensor

低階MB有COMB，無OTP_FAN 連腳用GP16取代

IT8688

THRMTRIP

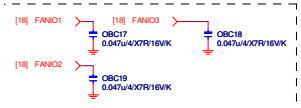
PROCHOT

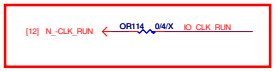
DUAL BIOS ONLY

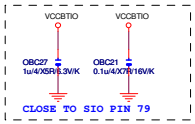
CLOSE TO SIO PIN 79

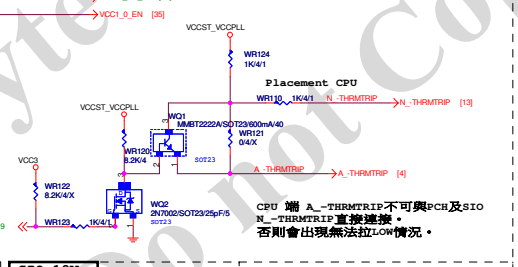
Placement CPU

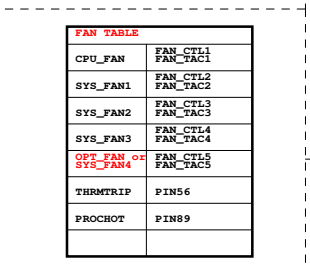
CPU 端 A_~THRMTRIP不可與PCH及SIO N_~THRMTRIP直接連接。否則會出現無法拉LOW情況。



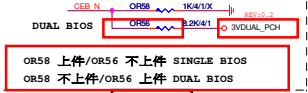








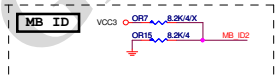
DUAL BIOS OPT STRAP



OR58 上件/OR56 不上件 SINGLE BIOS

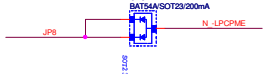
OR58 不上件/OR56 上件 DUAL BIOS

MB ID



SIO_18V

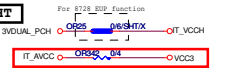
internal power pin, max 22nF cap



SIO CAP

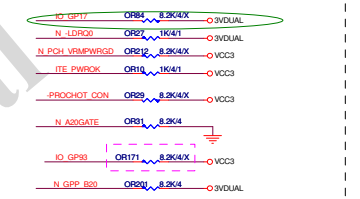
CLOSE SIO PIN4 2_5LEVEL

PWR SHT

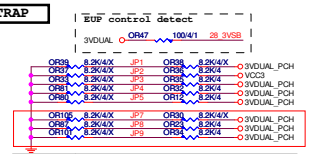


SIO PU

新增

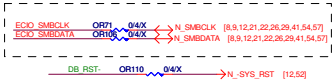


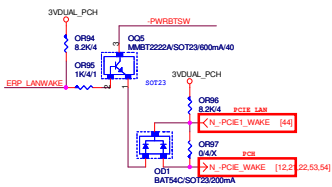
SIO STRAP



JP8 Pull High For Dual BIOS

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



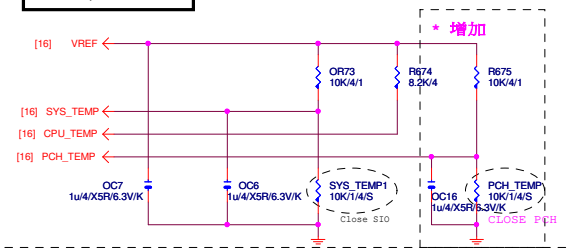


ERP Wake on LAN

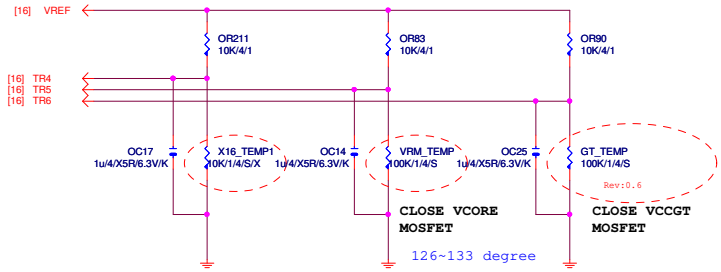
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN (只管一個LAN支援ERP下WAKE UP)	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	Single LAN BOM只上OR97。 Dual LAN BOM只上OR97、OR99。	

Gigabyte Technology		
Title	IT8686	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 16 of 63	

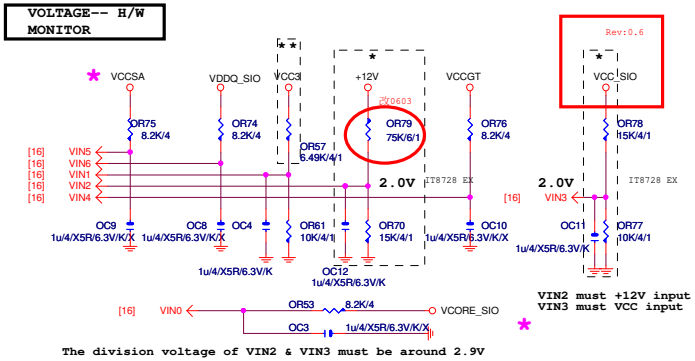
TEMP H/W MONITOR

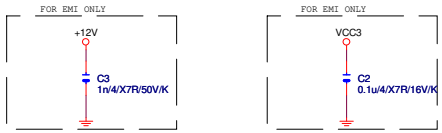


低階機種:3個FAN時使用



VOLTAGE-- H/W MONITOR



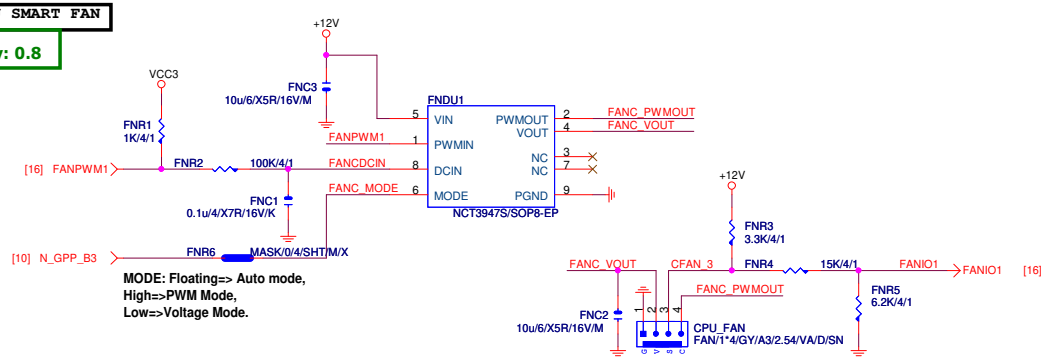


★Update 2015-04.24

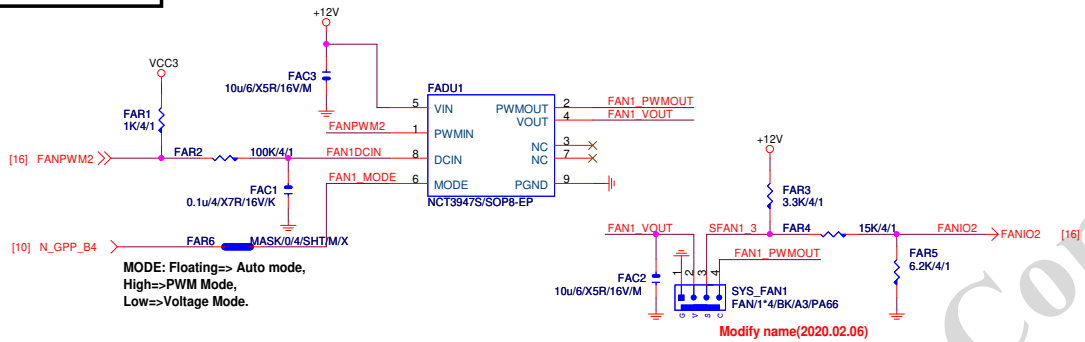
Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 17 of 63	

CPU SMART FAN

Rev: 0.8

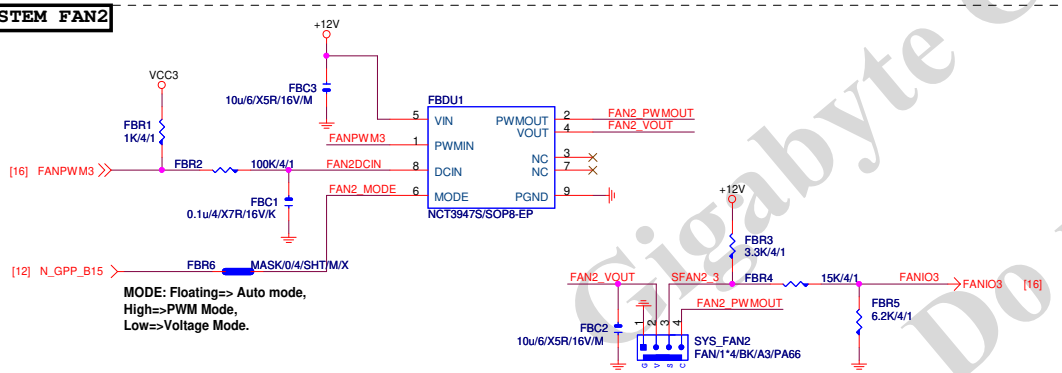


A. SYSTEM FAN1



Modify name(2020.02.06)

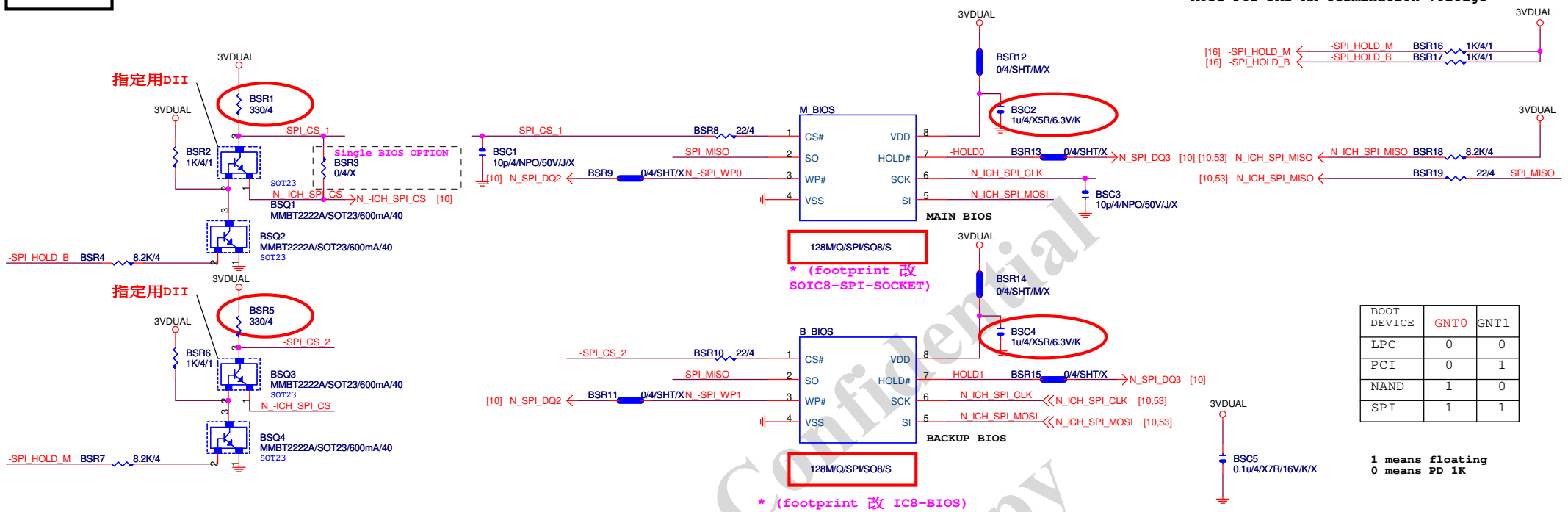
SYSTEM FAN2



Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 18 of 63	

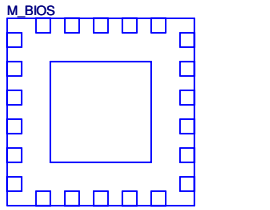
DUAL BIOS

MOSI For DMI RX Termination Voltage



BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K



* 試產先上 , PVT 移除

Gigabyte Technology		
Title: BIOS		
Size: Custom	Document Number: B460MDS3H A0 V2.Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 19 of 68	

GIGABYTE™

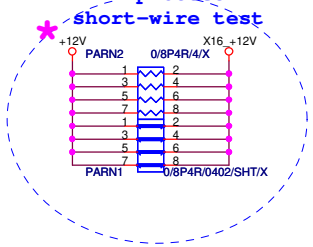
Title: CEC relate circuit

Size	Document Number	Rev
Custom	B460M DS3H AC V2-Y1	1.0

Date: Tuesday, September 29, 2020 Sheet 20 of 63

Rev 0.2

+12 protect
short-wire test



PCIESLOT-164P

PCIEX16

3GIO_*16

KEY

X16_+12V

3VDUAL

VCC3

[8,9,12,16,22,26,29,41,54,57] N_SMBCLK
[8,9,12,16,22,26,29,41,54,57] N_SMBDATA
[12,16,22,53,54] N_-PCIE_WAKE
[10] -PCIEX16_PR
O_-PCIE_RST [16,22,24,53,54]
PA_SRCCLK_3GIO [10]
PA_-SRCCLK_3GIO [10]

PA_EXP_RXP[0..15] → PA_EXP_RXP[0..15] [4]
PA_EXP_RXN[0..15] → PA_EXP_RXN[0..15] [4]
PA_EXP_TXP[0..15] → PA_EXP_TXP[0..15] [4]
PA_EXP_TXN[0..15] → PA_EXP_TXN[0..15] [4]

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15_C

B1	12V	A1 PRSNT1*
B2	12V	A2 12V
B3	RSVD	A3 12V
B4	GND	A4 GND
B5	SMCLK	A5 JTAG2
B6	SMDAT	A6 JTAG3
B7	GND	A7 JTAG4
B8	3.3V	A8 JTAG5
B9	JTAG1	A9 3.3V
B10	3.3VAUX	A10 3.3V
B11	WAKE*	A11 PWRGD
B12	RSVD	A12 GND
B13	GND	A13 REFCLK+
B14	HSOP0	A14 REFCLK-
B15	HSON0	A15 GND
B16	GND	A16 HSIP0
B17	PRSNT2*	A17 HSIN0
B18	GND	A18 GND
B19	HSOP1	A19 RSVD
B20	HSON1	A20 GND
B21	GND	A21 HSIP1
B22	GND	A22 HSIN1
B23	HSOP2	A23 GND
B24	HSON2	A24 GND
B25	GND	A25 HSIP2
B26	GND	A26 HSIN2
B27	HSOP3	A27 GND
B28	HSON3	A28 GND
B29	GND	A29 HSIP3
B30	RSVD	A30 HSIN3
B31	PRSNT2*	A31 GND
B32	GND	A32 RSVD
B33	HSOP4	A33 RSVD
B34	HSON4	A34 GND
B35	GND	A35 HSIP4
B36	GND	A36 HSIN4
B37	HSOP5	A37 GND
B38	HSON5	A38 GND
B39	GND	A39 HSIP5
B40	GND	A40 HSIN5
B41	HSOP6	A41 GND
B42	HSON6	A42 GND
B43	GND	A43 HSIP6
B44	GND	A44 HSIN6
B45	HSOP7	A45 GND
B46	HSON7	A46 GND
B47	GND	A47 HSIP7
B48	PRSNT2*	A48 HSIN7
B49	GND	A49 GND
B50	HSOP8	A50 RSVD
B51	HSON8	A51 GND
B52	GND	A52 HSIP8
B53	GND	A53 HSIN8
B54	HSOP9	A54 GND
B55	HSON9	A55 GND
B56	GND	A56 HSIP9
B57	GND	A57 HSIN9
B58	HSOP10	A58 GND
B59	HSON10	A59 GND
B60	GND	A60 HSIP10
B61	GND	A61 HSIN10
B62	HSOP11	A62 GND
B63	HSON11	A63 GND
B64	GND	A64 HSIP11
B65	GND	A65 HSIN11
B66	HSOP12	A66 GND
B67	HSON12	A67 GND
B68	GND	A68 HSIP12
B69	GND	A69 HSIN12
B70	HSOP13	A70 GND
B71	HSON13	A71 GND
B72	GND	A72 HSIP13
B73	GND	A73 HSIN13
B74	HSOP14	A74 GND
B75	HSON14	A75 GND
B76	GND	A76 HSIP14
B77	GND	A77 HSIN14
B78	HSOP15	A78 GND
B79	HSON15	A79 GND
B80	GND	A80 HSIP15
B81	PRSNT2*	A81 HSIN15
B82	RSVD	A82 GND

PCI-E/16X-164P/GY/LONG DOUBLE/HK*2

黑色SLOT

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

VCC3
PABC2 0.1u/4/X7R/16V/K
PABC3 0.1u/4/X7R/16V/K
PABC4 0.1u/4/X7R/16V/K/X

+12V
PAEC1 270u/FP/D/16V/8C/A/10m
X16_+12V
PABC1 0.1u/4/X7R/16V/K
VCC3
PAEC2 560u/FP/D/6.3V/69/A/7m

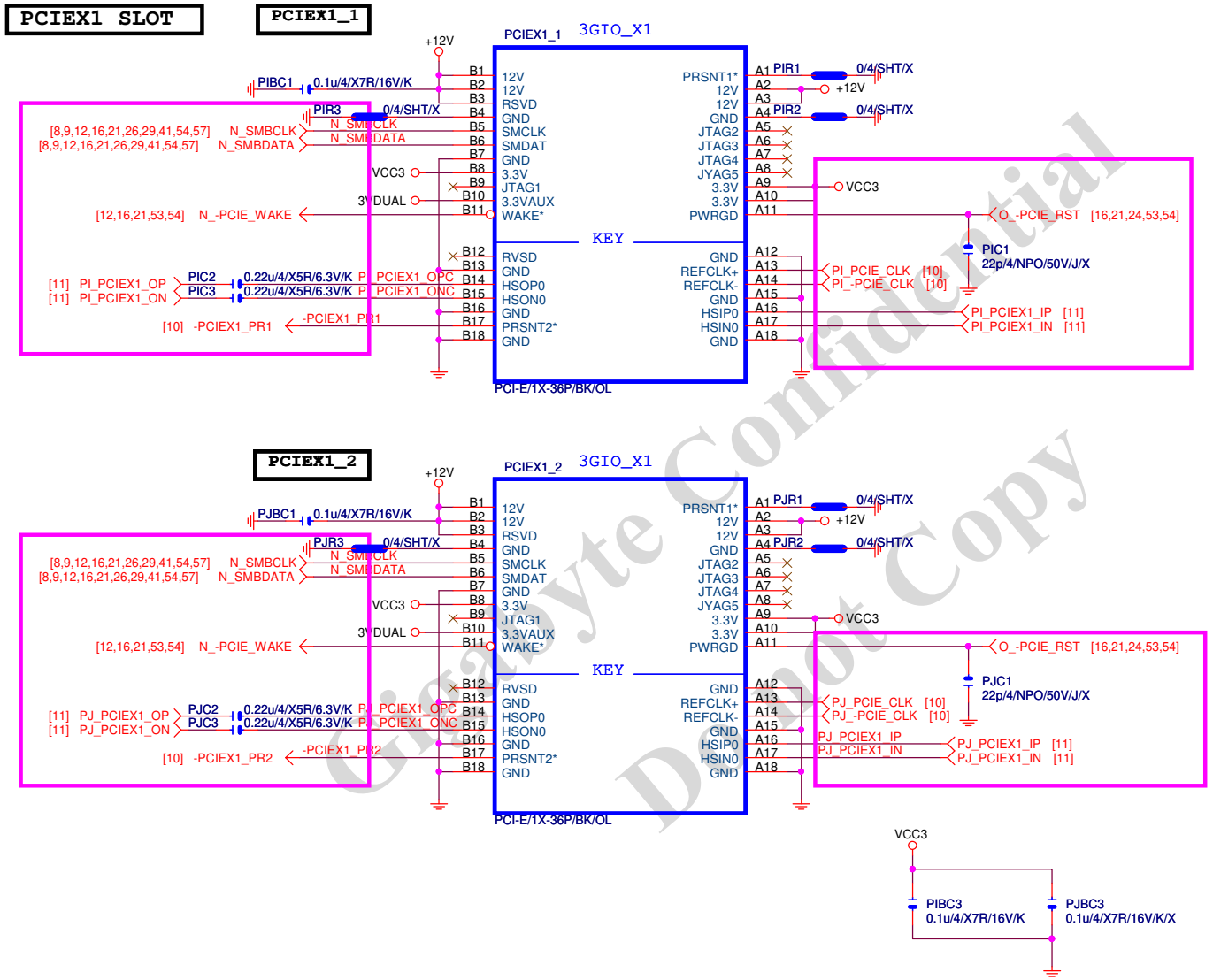
Gigabyte Technology

Title: PCI EXPRESS * 16

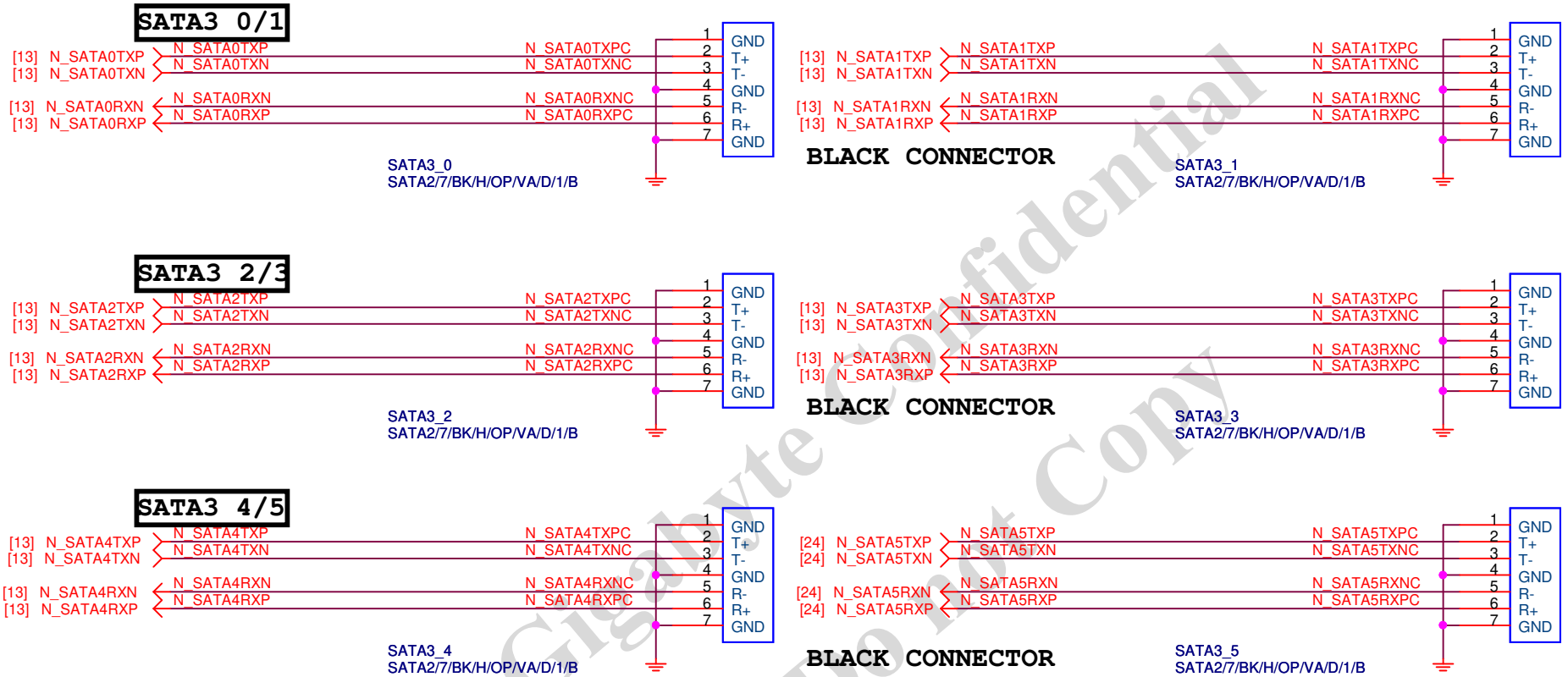
Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 21 of 63

Rev 0.51



Gigabyte Technology		
Title: PCIE_X4		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 22 of 63	



Gigabyte Technology		
Title: SATA		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 23 of 63	

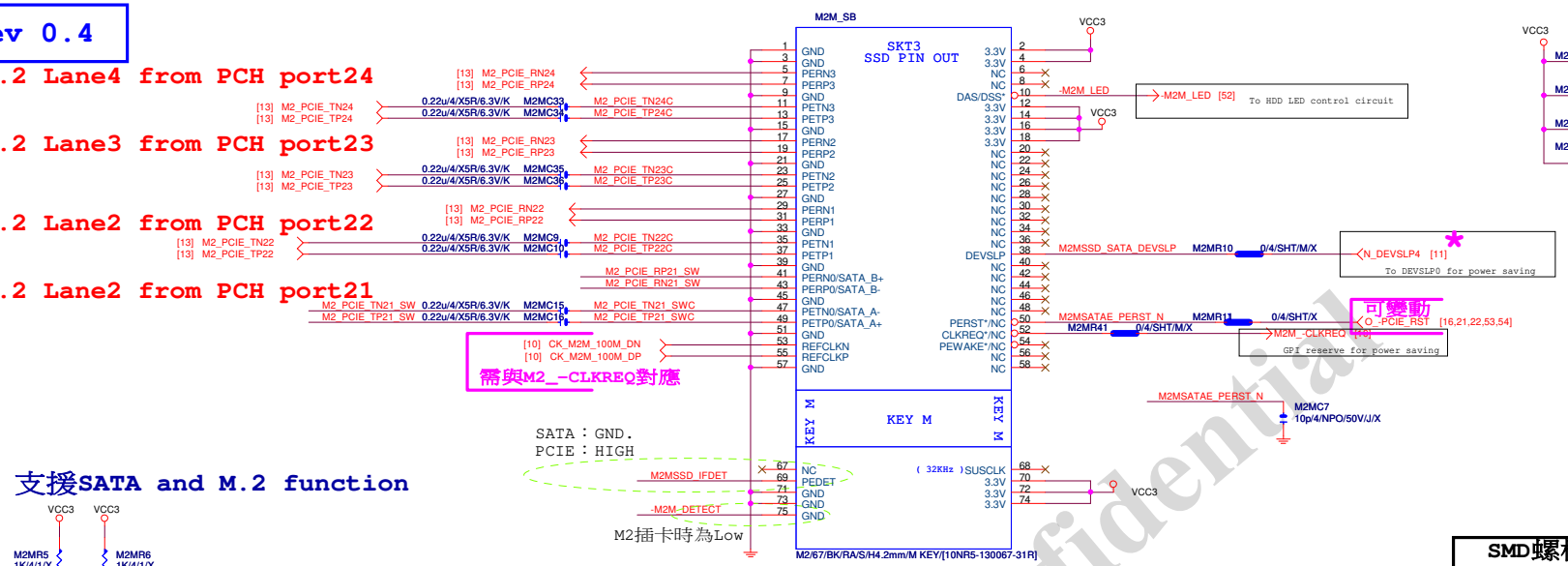
Rev 0.4

M.2 Lane4 from PCH port24

M.2 Lane3 from PCH port23

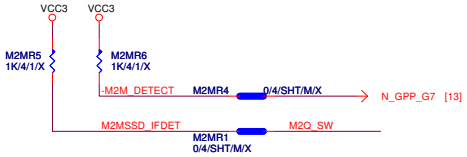
M.2 Lane2 from PCH port22

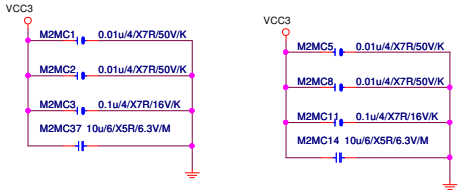
M.2 Lane2 from PCH port21



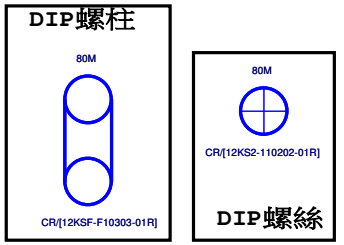
可變動

支援SATA and M.2 function

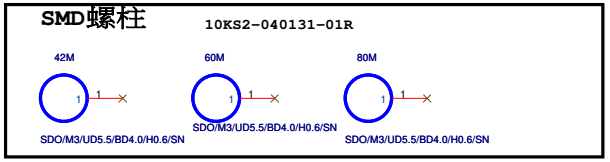




DIP螺柱

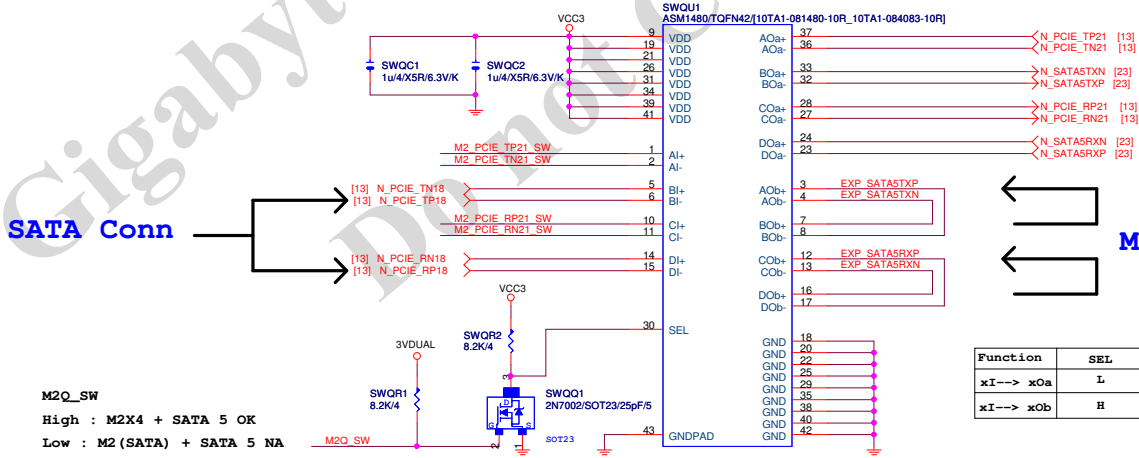


SMD螺柱 10KS2-040131-01R



★ Footprint : m2_80_h2mm8w

舊的Switch,價格低



SATA Conn

M.2 PCIE Mode

M.2 SATA Mode

M2Q_SW
High : M2X4 + SATA 5 OK
Low : M2(SATA) + SATA 5 NA

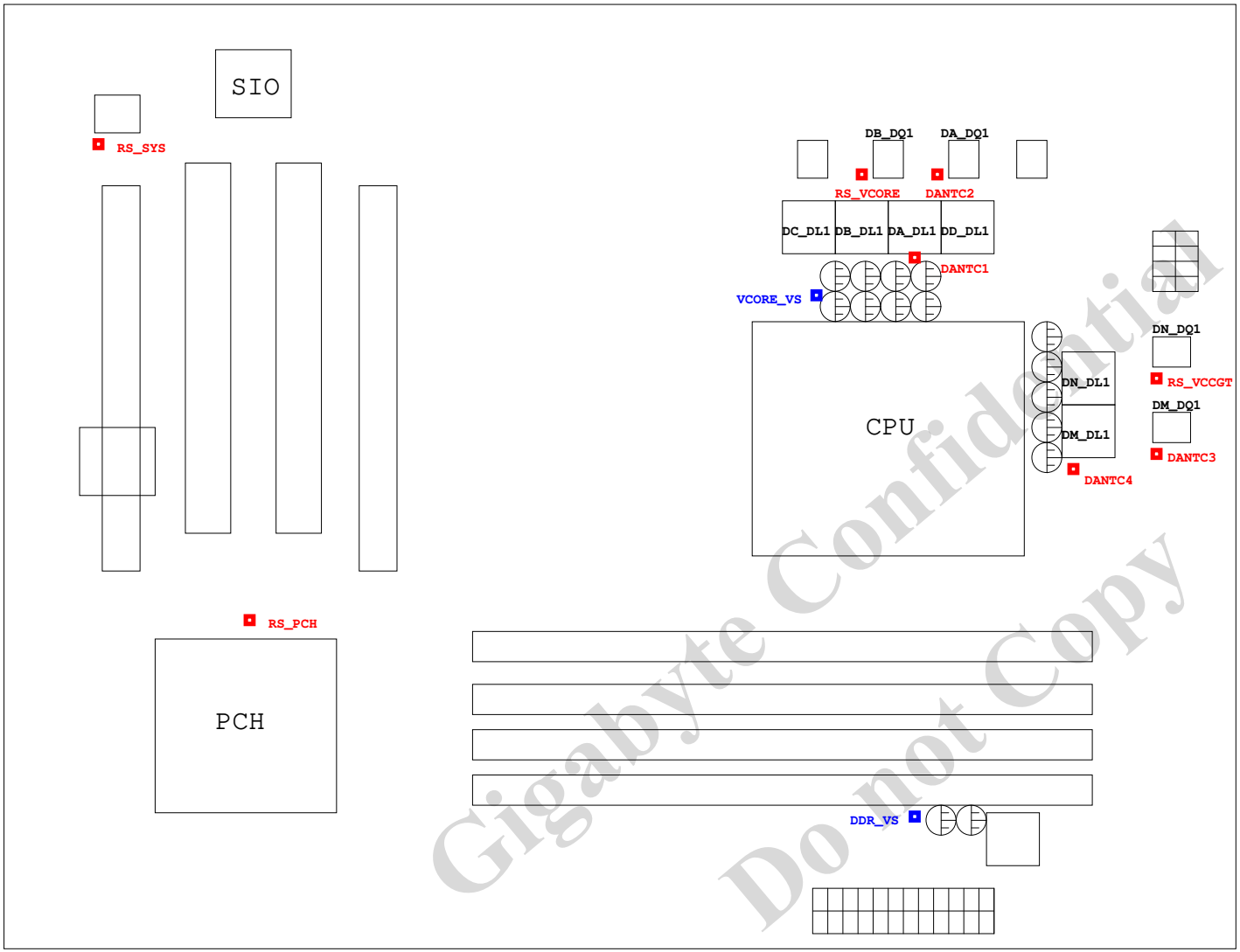
Function	SEL
xI--> xOa	L
xI--> xOb	H

Gigabyte Technology

Title: M.2 X4

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 24 of 63



熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

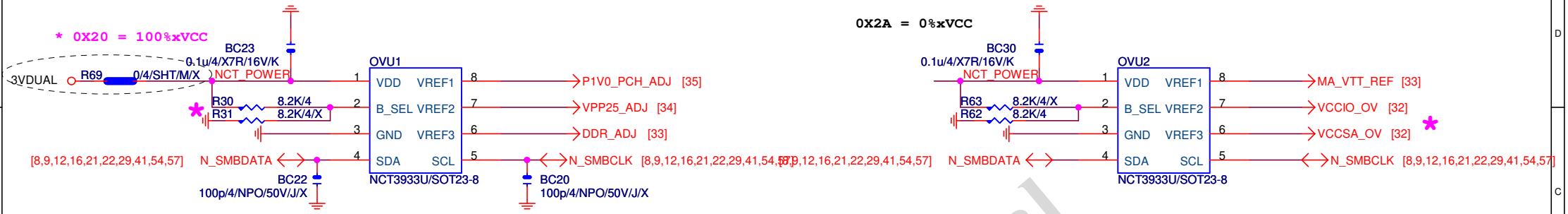
Gigabyte Technology

Title: NTC MAP

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 25 of 63

OVER VOLTAGE



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: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 26 of 63

REV:0.1

VCORE_SIO — VCORE — VCORE_VS

MASK/0/4/SHT/M/X

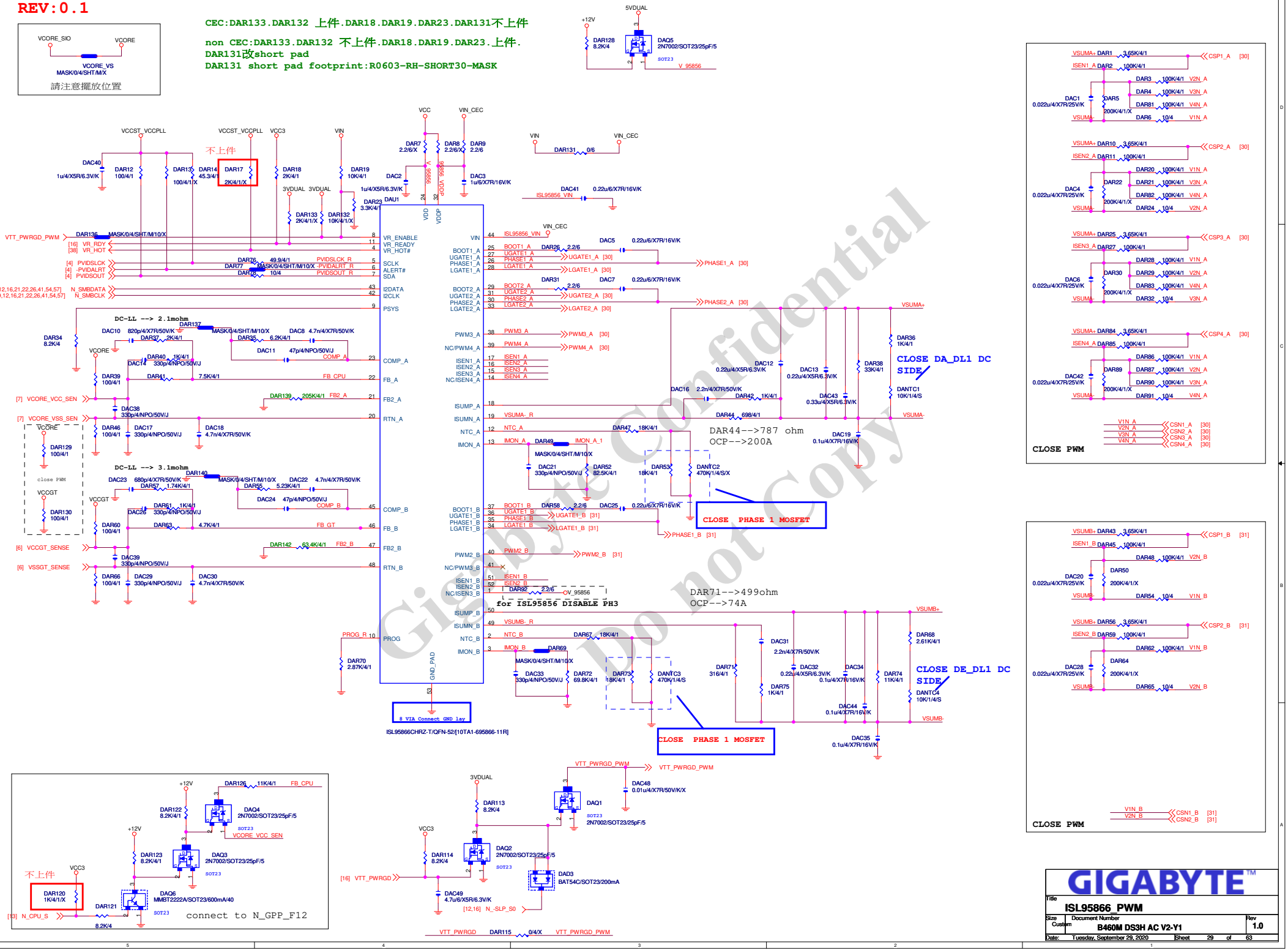
請注意擺放位置

CEC:DAR133.DAR132 上件.DAR18.DAR19.DAR23.DAR131不上件

non CEC:DAR133.DAR132 不上件.DAR18.DAR19.DAR23.上件.

DAR131改short pad

DAR131 short pad footprint:R0603-RH-SHORT30-MASK



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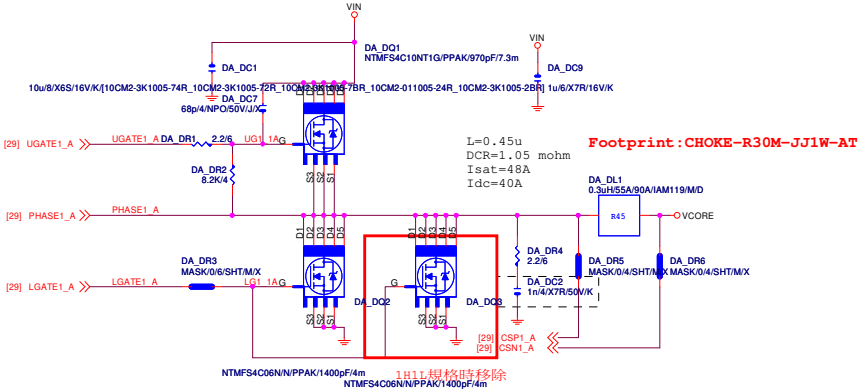
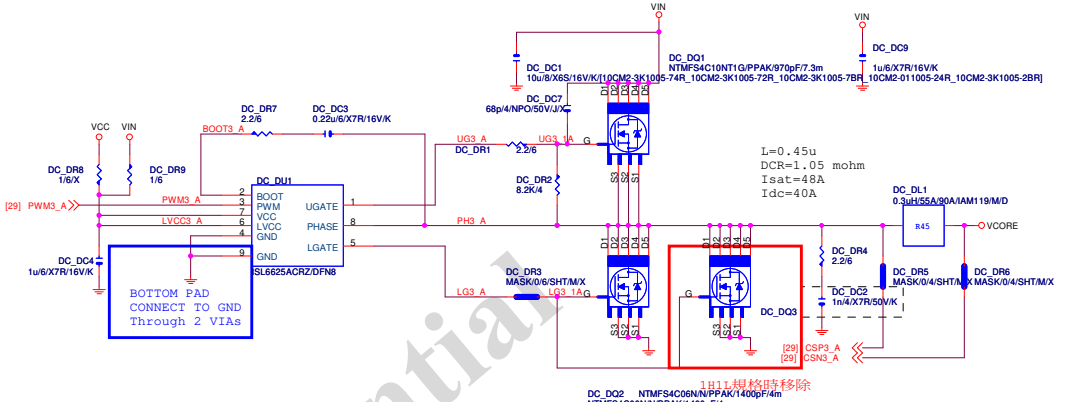
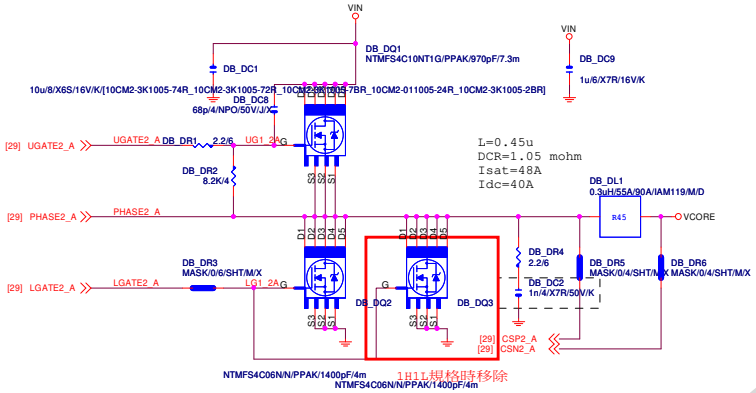
Title	ISL95866_PWM	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 29 of 63	

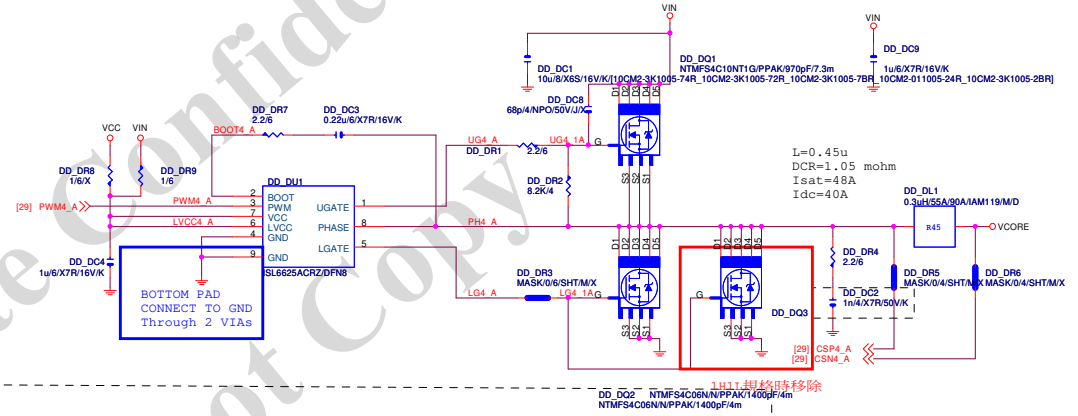
REV:0.55

VCORE



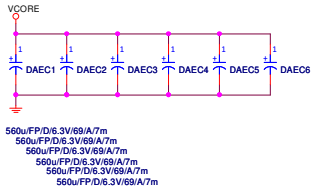


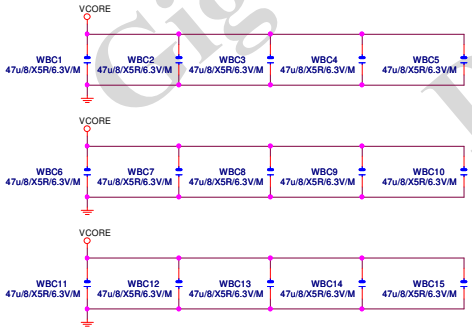


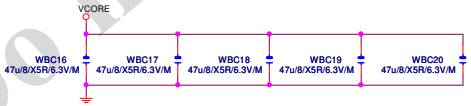


VCORE CAP

560u*6PCS
22u*20PCS



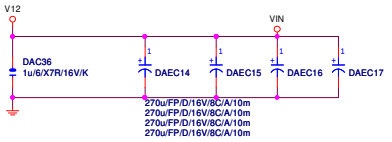




放CPU SOCKET (TOP LAYER)

VIN CAP

270u*4PCS

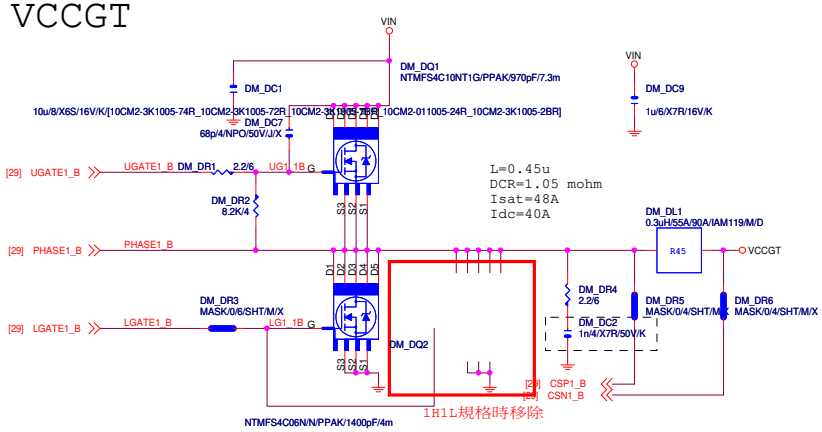


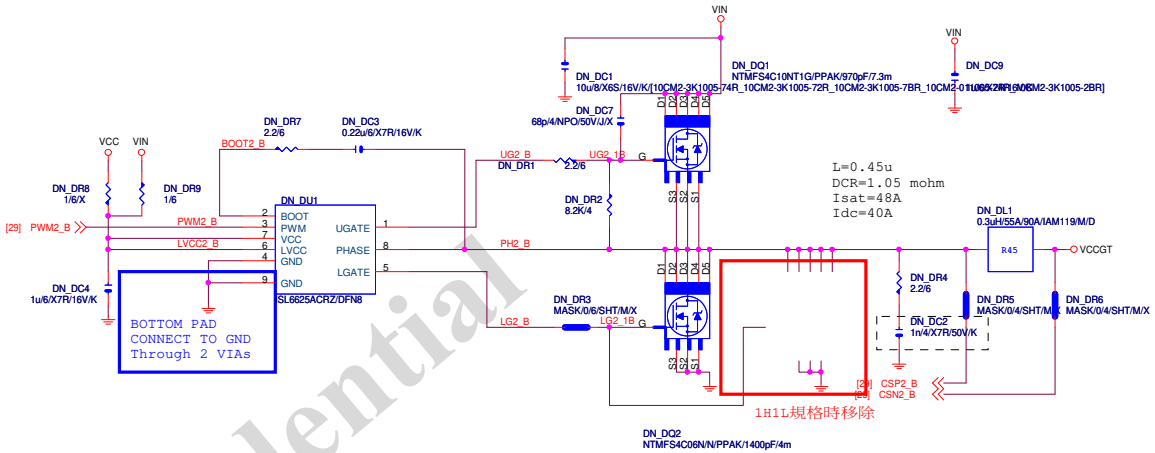
GIGABYTE

Title	ISL95866_MOS	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 30 of 63	

REV::0.55

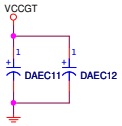
VCCGT



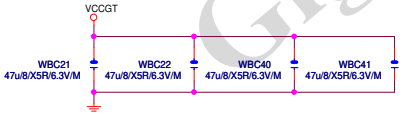


VCCGT CAP

560u*2PCS
22u*4PCS



560u/FP/D/6.3V/69/A/7m
560u/FP/D/6.3V/69/A/7m



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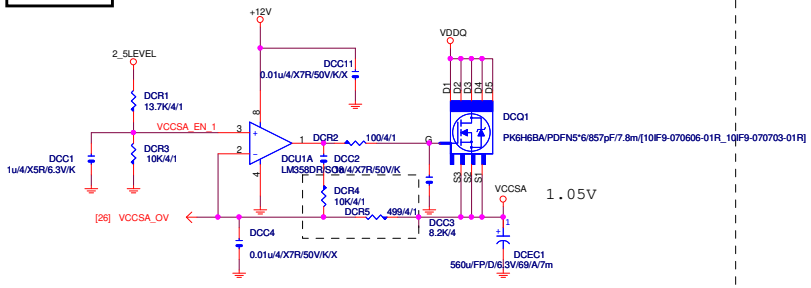
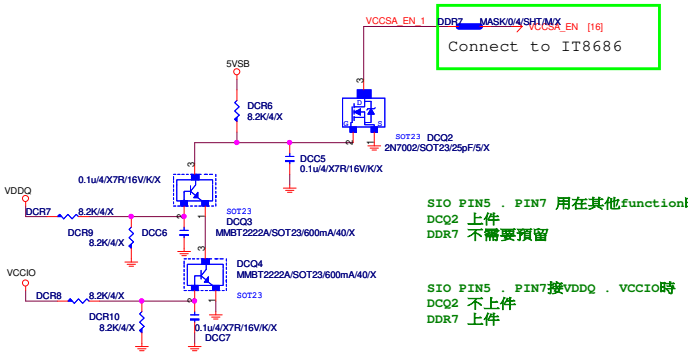
Title	ISL95866_MOS	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 31 of 63	

REV:0.3

VCCSA

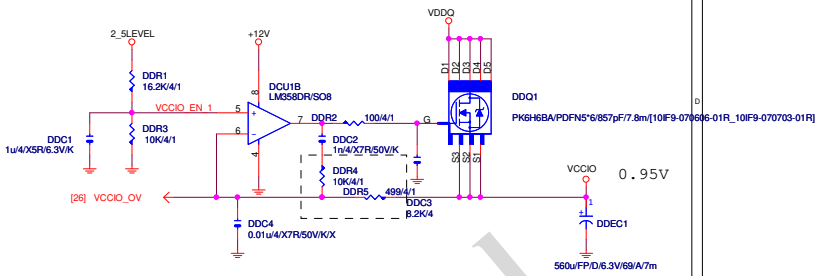


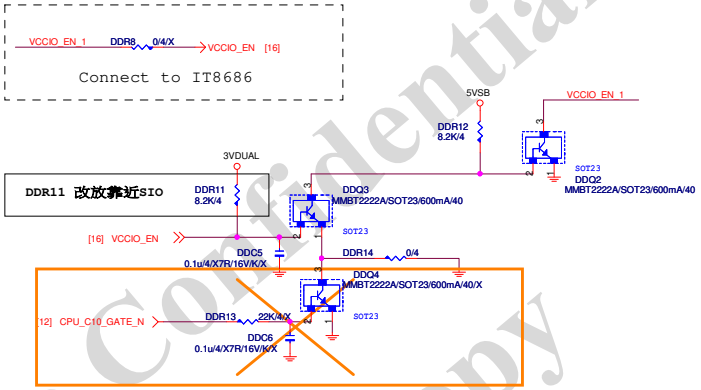


SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

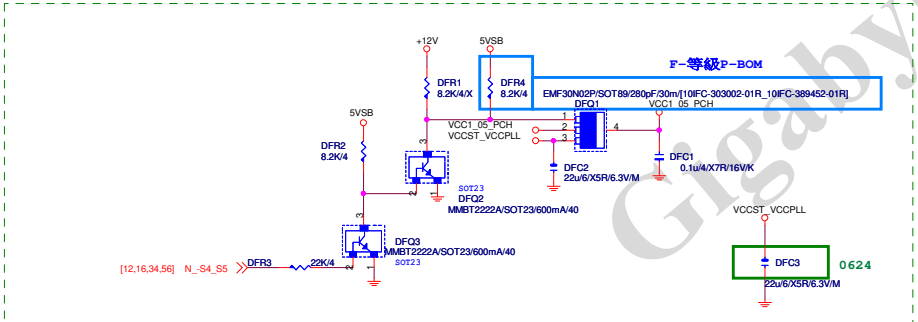
SIO PIN5 . PIN7接VDDQ . VCCIO時
DCQ2 不上件
DDR7 上件

VCCIO

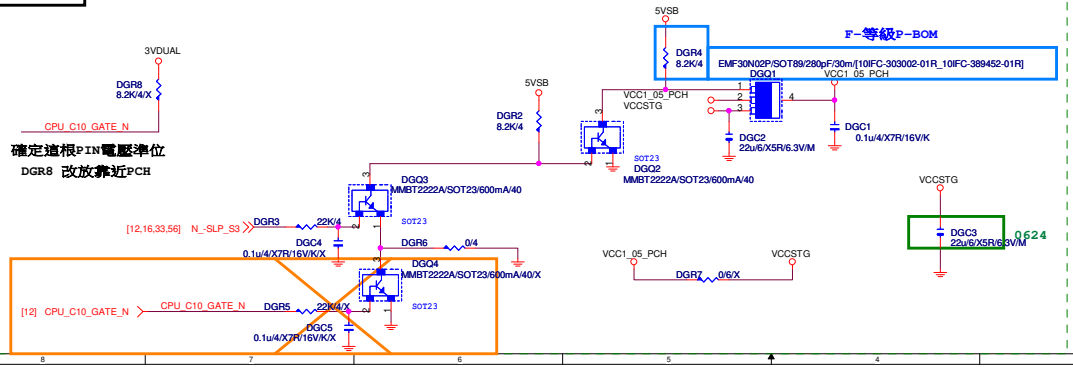




VCCST_VCCPLL



VCCSTG



GIGABYTE™

Title	VCCSA_VCCIO_no 44E	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 32 of 63	

REV:0.3

DDR4

5VDUAL
MAR2
8.2K/4
MA_EN
上件

MA_DR38.MA_DC15

VPP_25V使用8120.8068A.RT8237時上件

VDDQ_SIO
VDDQ
DDR_VS
MASK/0/4/SHT/M/X

CLOSE TO DDR POWER PLANE

5VDUAL
MA_DR8
2.2/6
MA_DC10
1u/6/X7R/16V/K
MA_DR37
100K/4/1
VDDQ_GD
VPP_25V
5VDUAL
MA_DR40
8.2K/4/X
MA_DR41
8.2K/4
[34] VPP25V_GD
MA_DR38
MASK/0/4/SHT/M/10/X
DDR_EN
[16,34] MA_EN
MA_DR39 0/4/X
MA_DC15
0.1u/4/X7R/16V/K
MA_DC9
0.1u/6/X7R/25V/K
MA_UGATE
MA_PHASE
MA_LGATE
MAU2
RT8237/[10TA1-608237-01R]
EN
PGOOD
VCC
BOOT
UGATE
PHASE
FB
CS
RF
GND
LGATE
MA_RF
MA_DR45
VDDQ_GD
470K/4/1
MA_DR15
182K/4/1
MA_DR19
470K/4/1/X

FS=290K
OCP=40A

PIN7-->20mil
PIN1-->6mil
PIN2-->6mil
PIN5-->6mil
PIN3-->6mil

MOSFET請依MOSFET使用規則,自行選擇
ON-->10IF9-040406-10R[NTMFS4C06N/N/PPAK/1400pF/4m]
VISHAY-->10IF9-040012-10R[SIRA12DP/PPAKSO8/2070pF/4.3m]

5VDUAL
MA_L2
47/4030/15A/S
BEAD
MA_DC6
0.1u/4/X7R/16V/K
Close Choke
MA_DC25
68p/4/NPO/50V/J/X
MA_VIN
MA_DC7
1u/6/X7R/16V/K
Close MOS
MAEC1
560u/FP/D/6.3V/69/A/7m
MA_DQ1
NTMFS4C06N/N/PPAK/1400pF/4m
MA_UGATE
MA_DR1 2.2/6
MA_UG
MA_DR2
8.2K/4
MA_PHASE
MA_DQ2
MA_LGATE
MA_DR9 2.2/6
MA_LG
NTMFS4C06N/N/PPAK/1400pF/4m
MA_L1
1uH/35A/IMD109/M/D
R50
灰色平面
10*10
VDDQ
MA_DR5
2.2/6
MA_DC5
1n/4/X7R/50V/K
MA_DC14
22p/4/NPO/50V/J/X
RS
MA_DR13
1K/4/1
RO
MA_DR12
1.4K/4/1
DDR_ADJ
[26] DDR_ADJ

1H1L規格移除

DDR VIN CAP
560u*2PCS

CHOKE與CAP料號可變

自動插件 footprint:
CHOKE05U-40A-1PQ-AT

SUPPORT DDR4 1.2V
25A MAX

L=1u
DCR=2.5 mohm
Isat=35A
Idc=28A

VDDQ
MAC60
22u/6/X5R/6.3V/M/X

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

For power sequence require

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)

DDRVTT

VDDQ
NCT3103S/SOP8/2A/[10GL2-203103-01R]
MAC2
1u/4/X5R/6.3V/K
MAR5
1K/4/1
MAU1
VIN
GND
VREF1
VOUT
VREF2
ENABLE
VCNTL
BOOT_SEL
GND
26] MA_VTT_REF
MA_VTT_REF
DDRVTT_EN
DDRVTT_BOOT
MAC1
0.01u/4/X7R/50V/K
MAR4
1K/4/1
1.1A MAX
DDRVTT
5VDUAL
MAC7
10u/6/X5R/6.3V/M

DDR CAP 560u*4PCS 22u*2PCS

VDDQ
Footprint
EC6D8MM-RH-2
* 大電容 x4
MAEC2
560u/FP/D/6.3V/69/A/7m
MAEC3
560u/FP/D/6.3V/69/A/7m
MAEC4
560u/FP/D/6.3V/69/A/7m

DDRVTT CAP

* 大電容 x0
DDRVTT
MAC4
22u/6/X5R/6.3V/M

[4] DDR_VTT_CTL
[12,15,32,56] N_-SLP_S3
DDR_VTT_CTL MAR110 MASK/0/4/SHT/M/10/X DDRVTT_EN
N_-SLP_S3 MAR111 MASK/0/4/SHT/M/10/X DDRVTT_BOOT

GIGABYTE

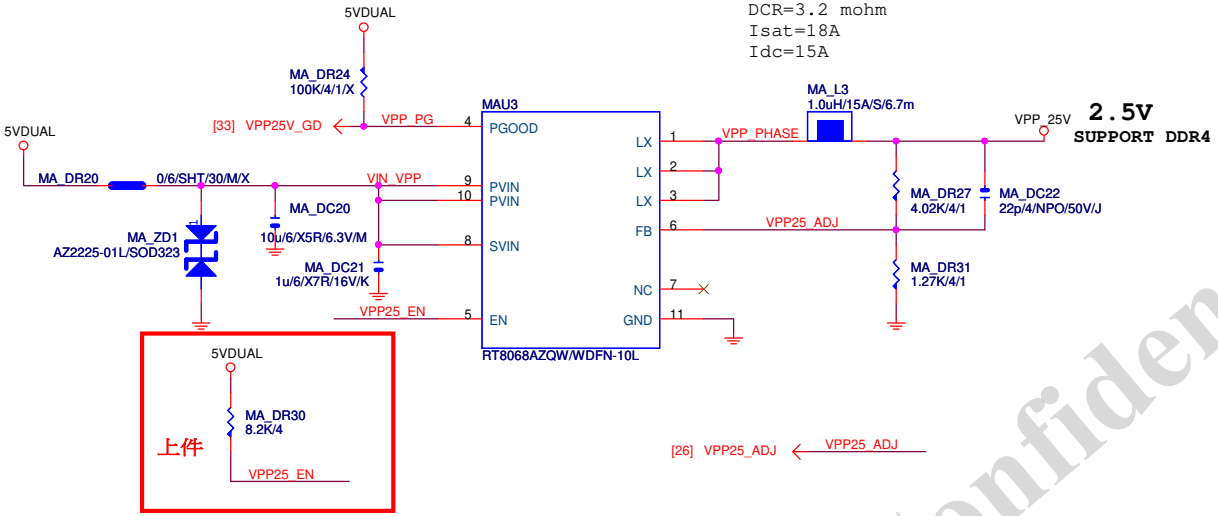
Title	RT8237_DDR4 POWER	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 33 of 63	

REV:0.1

VPP_25V

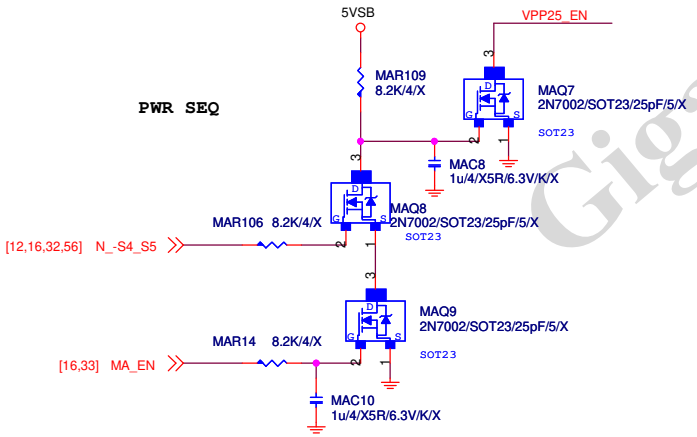
CHOKE與CAP料號可變

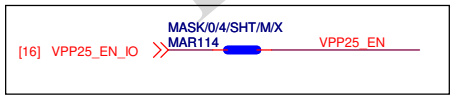
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A



PWR SEQ

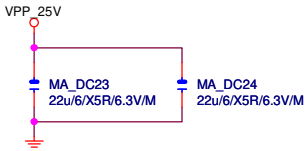
* 刪 MA_DR32





VPP CAP 22u*1PCS

* 大電容 x0



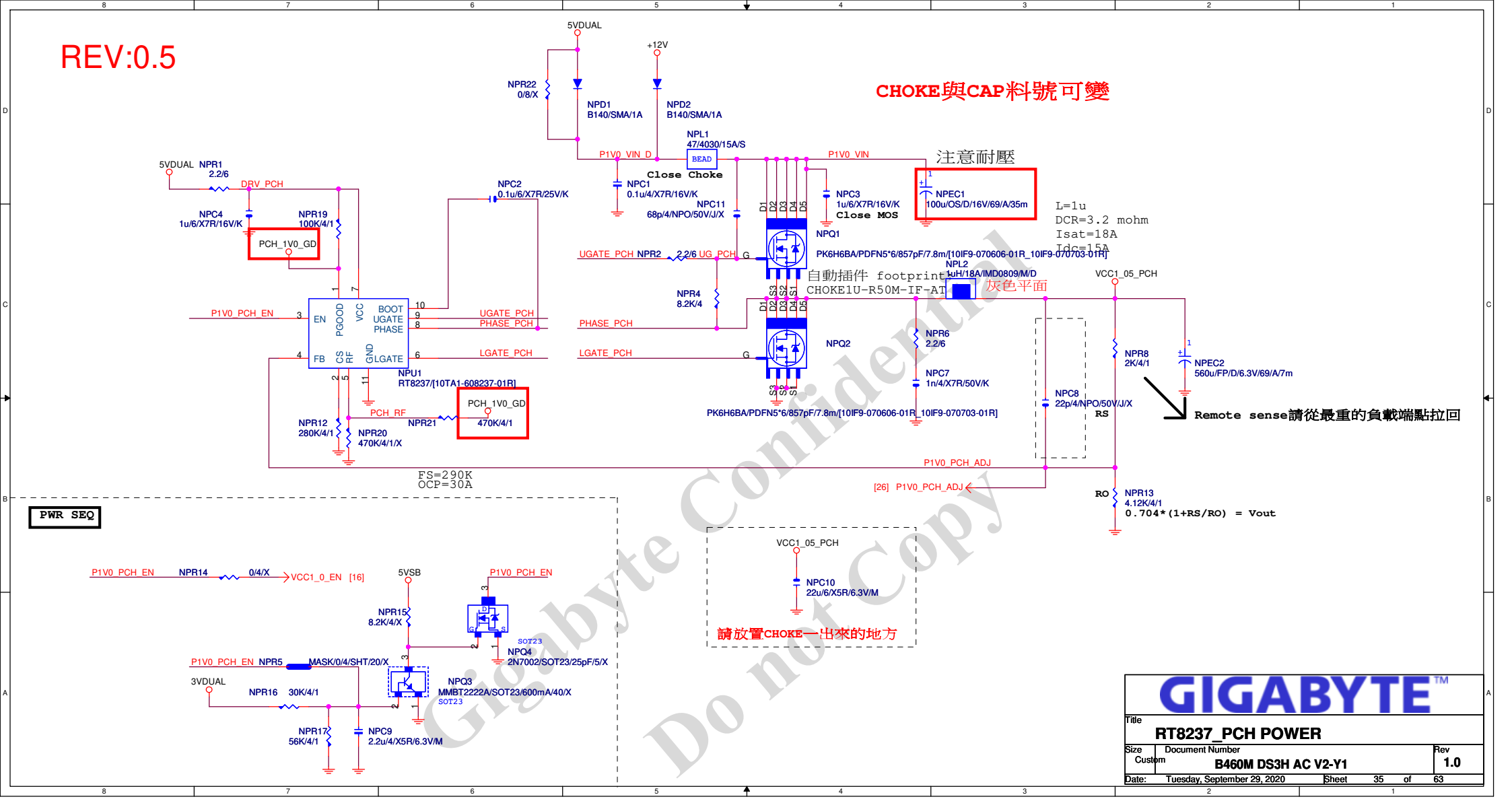
GIGABYTE™

Title: RT8068A_VPP25 POWER

Size	Document Number	Rev
Custom	B460M DS3H AC V2-Y1	1.0

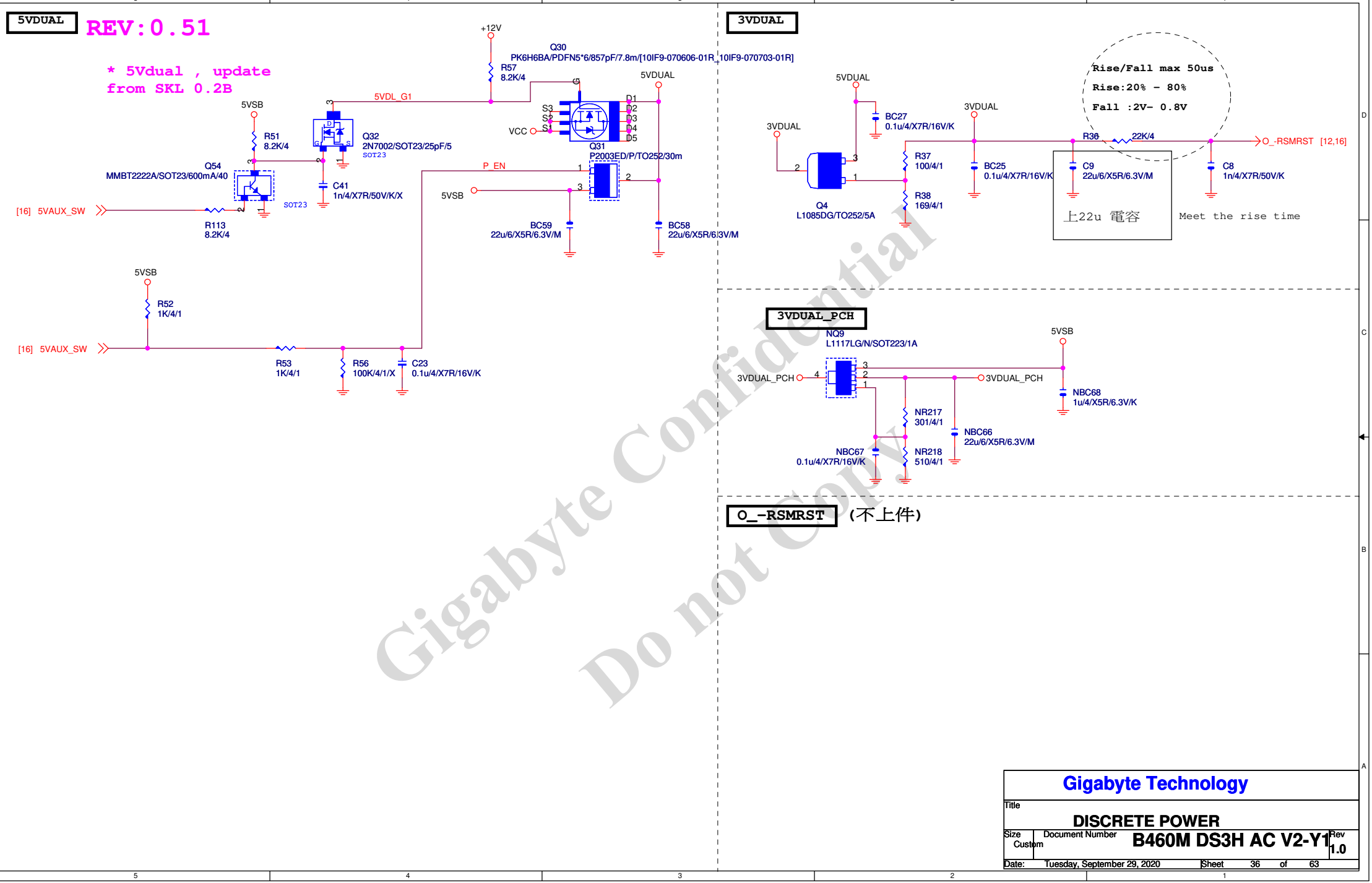
Date: Tuesday, September 29, 2020 Sheet 34 of 63

REV:0.5

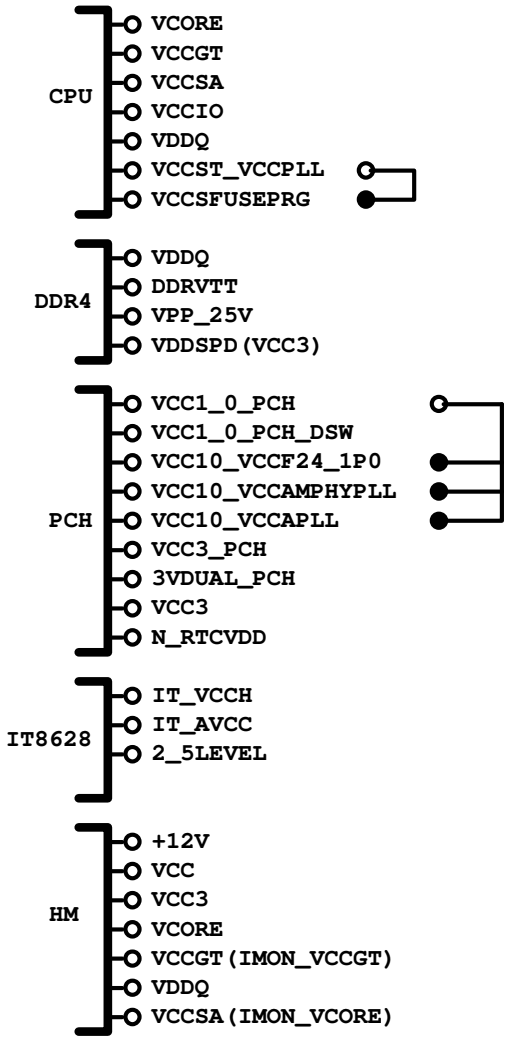


GIGABYTE™

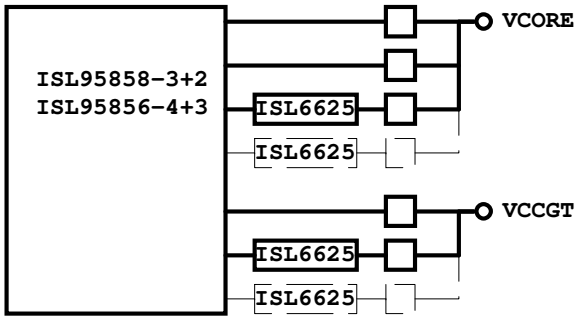
Title	RT8237_PCH POWER	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 35 of 63	

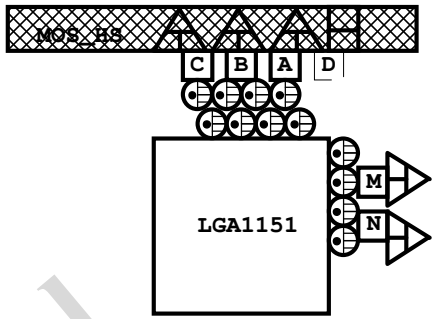


POWER BLOCK MAP

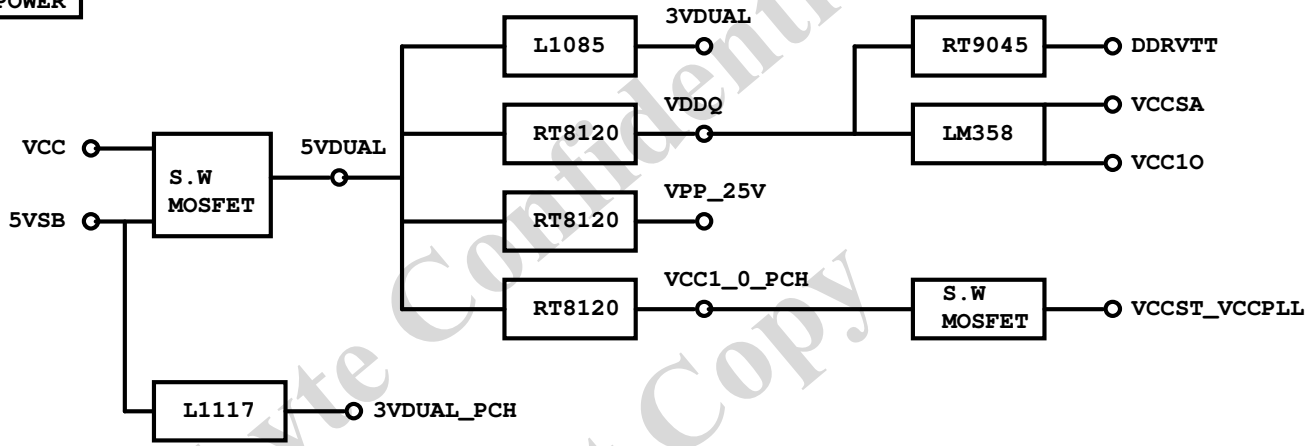


VCORE/VCCGT

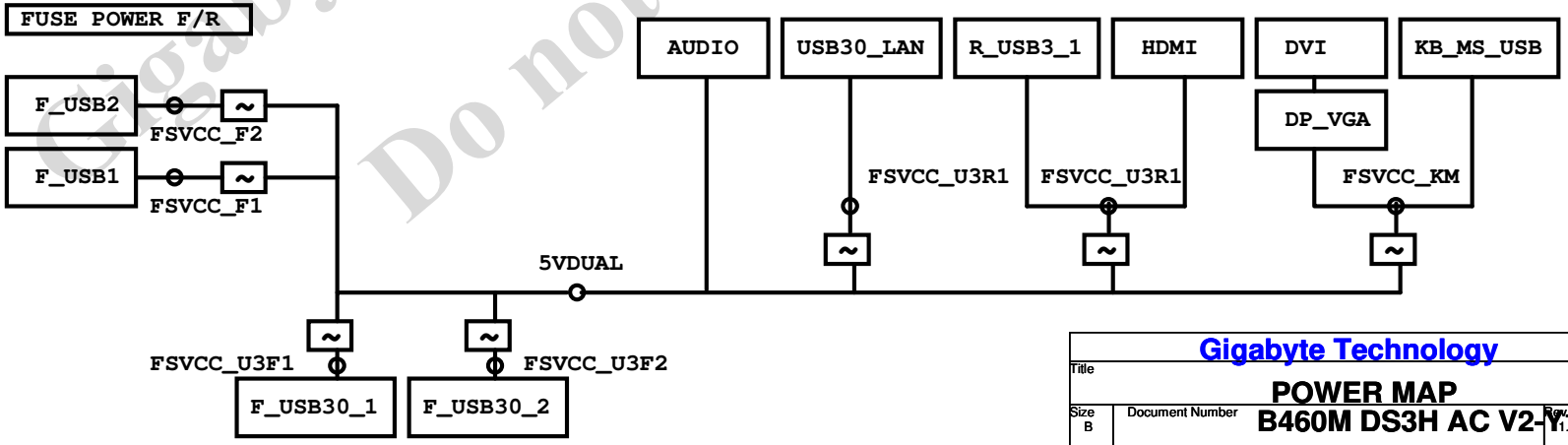




POWER



FUSE POWER F/R



Gigabyte Technology		
Title: POWER MAP		
Size: B	Document Number: B460M DS3H AC V2-Y1	Rev: 1.1
Date: Tuesday, September 29, 2020	Sheet 37 of 63	

ATXX24 POWER CONNECTOR

2x12 (一般Pin)
FOOTPRINT:ATXPWR_24-6

Patch some PSU no internal pull up resistor

R695 22K/4

-PSON_PSU

BC37 0.1u/4/X7R/16V/K

* 刪除 -5V

ATX

13	3.3V	3.3V	1
14	-12V	3.3V	2
15	GND	GND	3
16	PSON	5V	4
17	GND	GND	5
18	GND	5V	6
19	GND	GND	7
20	-5V	POK	8
21	5V	5VSB	9
22	5V	12V	10
23	5V	12V	11
24	GND	3.3V	12

BK

APW/2*12/BK/VA/SN/2SHK/PA66

BC35 22u/6/X5R/6.3V/M
BC46 1u/4/X5R/6.3V/K
BC48 1u/4/X5R/6.3V/K
BC36 0.1u/4/X7R/16V/K/X
BC38 510/6/X
BC42 510/6/X
BC43 1u/4/X5R/6.3V/K
BC44 0.1u/4/X7R/16V/K
BC45 0.1u/4/X7R/16V/K
BC41 0.1u/4/X7R/16V/K
BC39 1u/4/X5R/6.3V/K

To prevent the 5VSB under loading when boot

AD1 AZ2225-01L/SOD323/X

BC9 4.7u/6/X5R/6.3V/K

PWOK [16]

DUMMY LOAD

RN7 1K/8P4R/6/X
RN8 1K/8P4R/6/X
RN9 1K/8P4R/6/X

ATXX4 POWER CONNECTOR

2x4 (單心Pin)
FOOTPRINT:ATXPW2X4-SOLID

ATX_12V_2X4

1	GND	+12V	5
2	GND	+12V	6
3	GND	+12V	7
4	GND	+12V	8

BK

APW/2*4/BK/OC/P/4.2/VA/SN/OH/S/PA9T::ATX_12V_2X4

BC7 0.1u/4/X7R/16V/K

螺絲孔

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

HOLE_4-RH-1

14/12/24
Modify for EMI

HOLE_4-RH-5MM-2

固定孔/光學點

K6 K3 K1
K5 K2 K4
K1_ICT/X

K1-ICT

To prevent the 5VSB under loading when boot

I1 I2 I3 I4 I5
4MMH/X

4MMH

+12V DUMMY LOAD

【技術通報R&D技術通報153】

To fix 12V light load abnromal issue

RN2 2.7K/8P4R/4
RN3 2.7K/8P4R/4
RN4 2.7K/8P4R/4
RN5 2.7K/8P4R/4
RN6 2.7K/8P4R/4

R1 1K/4/1/K
Q9
R703 330/4
[12] N_GPP_D9
EMF30N02J/SOT23/627pF/30m

-PROHOT

[4,16] A_-PROCHOT
A_-PROCHOT R2 MASK/0/4/SHT/M/X
VR_HOT [29]

COUPON

COUPON1 COUPON1 COUPON/X 5VDUAL
COUPON2 COUPON2 COUPON/X

BY LAYOUT位置

5VSB
R5 8.2K/4
Q3 2N7002/SOT23/25pF/5
R3 22K/4
Q2 2N7002/SOT23/25pF/5
Q5 2N7002/SOT23/25pF/5
[4] A_CPU_ID
[16]
-PSON
R4 0/4/X

* CPU_ID
1: RKL
0: CML

Gigabyte Technology

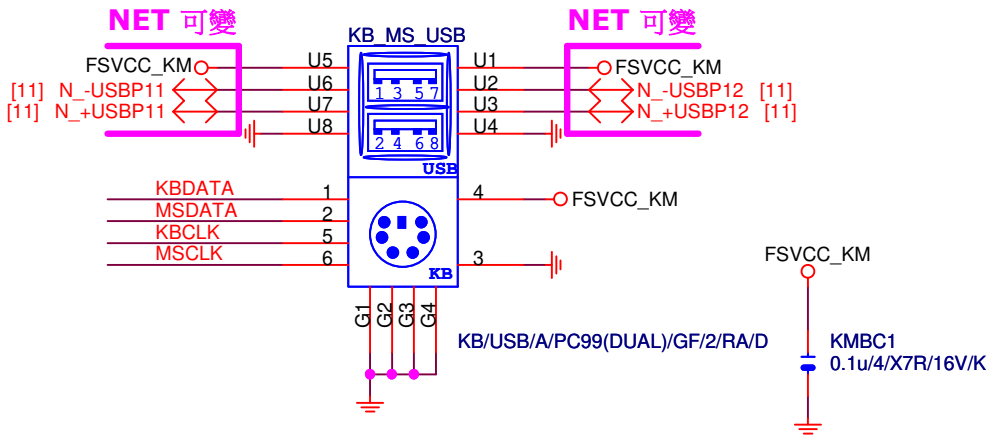
Title: ATX POWER CONNECTOR

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

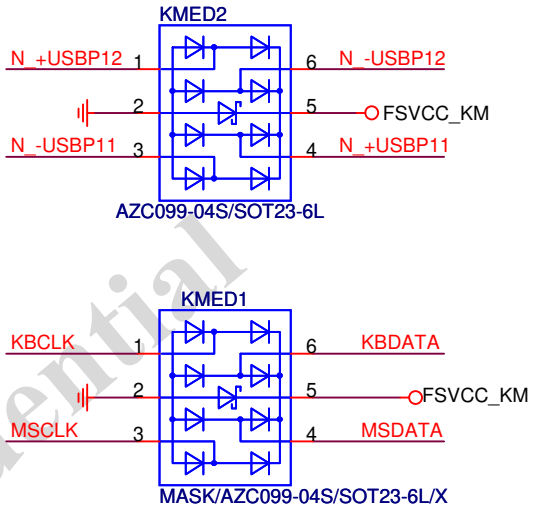
Date: Tuesday, September 29, 2020 | Sheet 38 of 63

KB_MS_USB

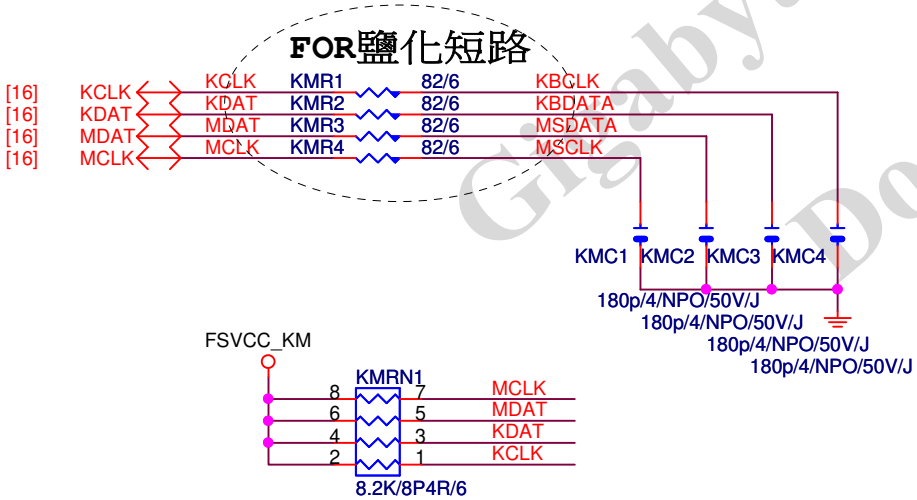
Rev: 0.7



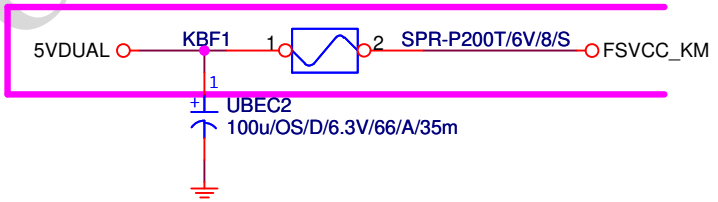
ESD



KB_MS_USB DAMPING/PU

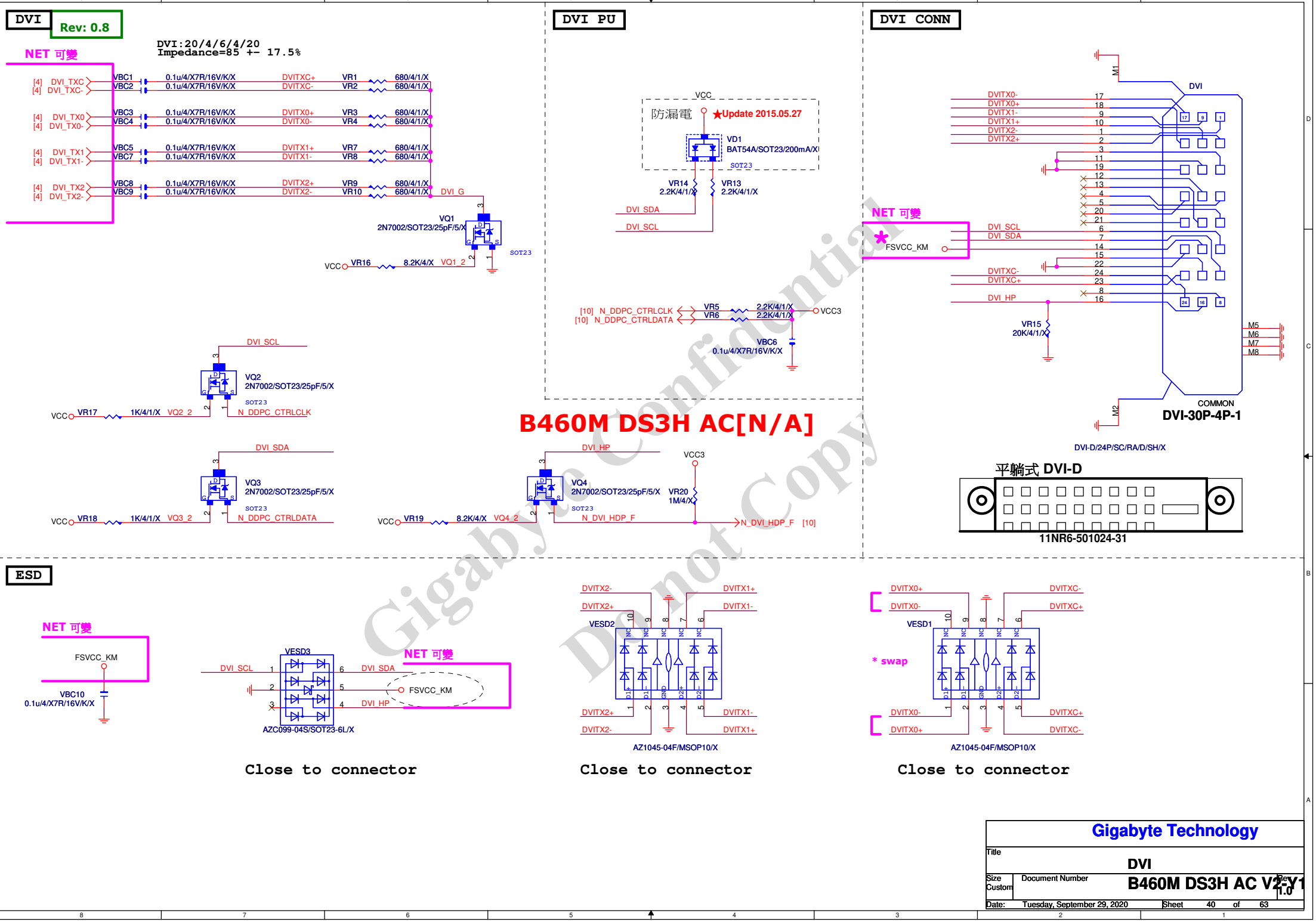


KB_MS_USB PWR

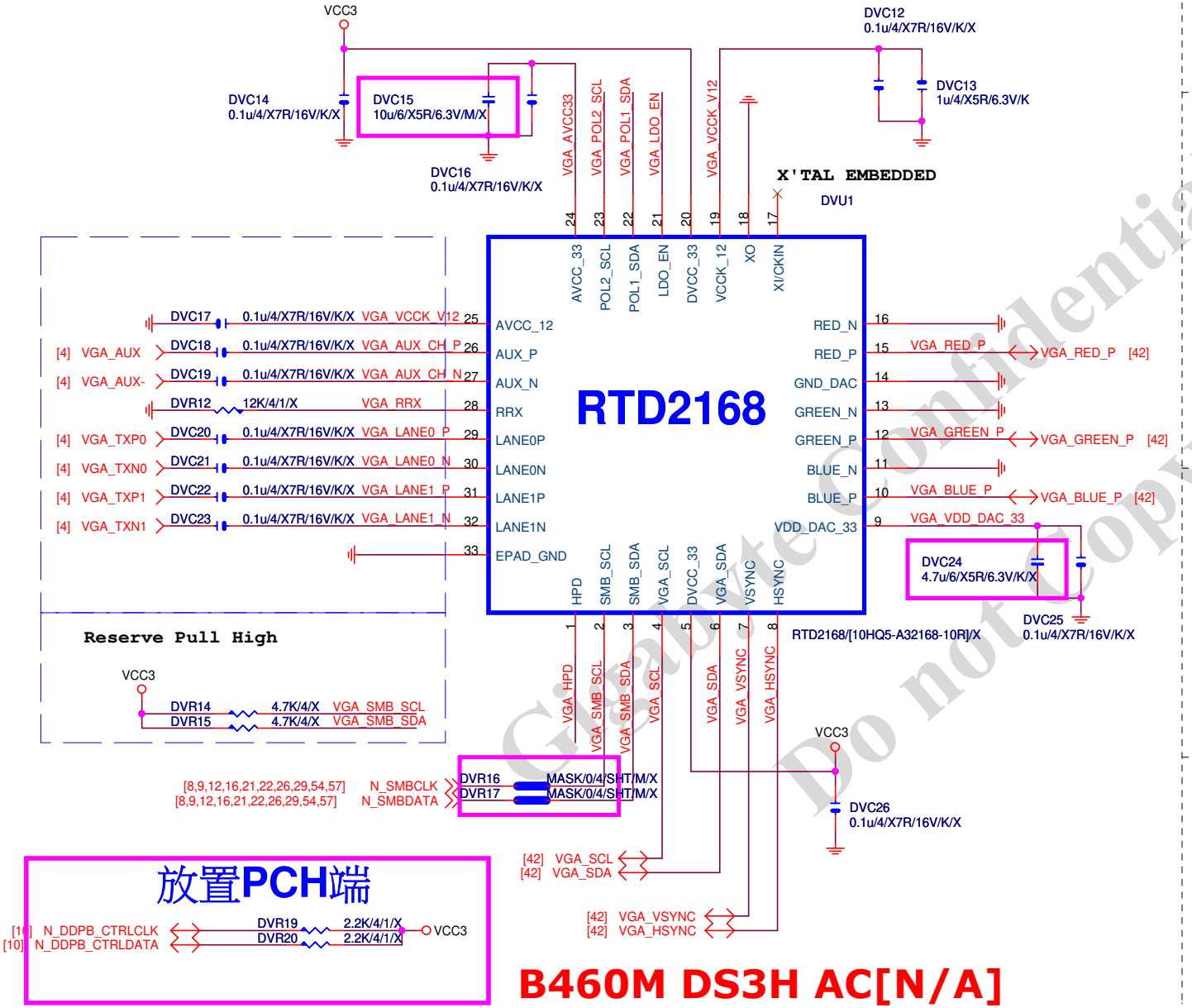


USB OC PROTECT

Gigabyte Technology			
Title: KB_MS_USB			
Size: A	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date: Tuesday, September 29, 2020		Sheet 39 of 63	


DVI
Rev: 0.8
DVI:20/4/6/4/20
Impedance=85 +- 17.5%
NET 可變
[4] DVI_TXC
[4] DVI_TXC-
VBC1
VBC2
0.1u/4/X7R/16V/K/X
DVITXC+
DVITXC-
VR1
VR2
680/4/1/X
[4] DVI_TX0
[4] DVI_TX0-
VBC3
VBC4
DVITX0+
DVITX0-
VR3
VR4
[4] DVI_TX1
[4] DVI_TX1-
VBC5
VBC7
DVITX1+
DVITX1-
VR7
VR8
[4] DVI_TX2
[4] DVI_TX2-
VBC8
VBC9
DVITX2+
DVITX2-
VR9
VR10
DVI_G
VQ1
2N7002/SOT23/25pF/5/X
SOT23
VCC
VR16
8.2K/4/X
VQ1_2
DVI_SCL
VQ2
2N7002/SOT23/25pF/5/X
VR17
1K/4/1/X
VQ2_2
N_DDPC_CTRLCLK
DVI_SDA
VQ3
2N7002/SOT23/25pF/5/X
VR18
VQ3_2
N_DDPC_CTRLDATA
DVI PU
VCC
防漏電
★Update 2015.05.27
VD1
BAT54A/SOT23/200mA/X
VR14
2.2K/4/1/X
VR13
DVI_SDA
DVI_SCL
[10] N_DDPC_CTRLCLK
[10] N_DDPC_CTRLDATA
VR5
VR6
VCC3
VBC6
0.1u/4/X7R/16V/K/X
DVI_HP
VQ4
2N7002/SOT23/25pF/5/X
VR20
1M/4/X
VR19
8.2K/4/X
VQ4_2
N_DVI_HDP_F
[10]
DVI CONN
NET 可變
FSVCC_KM
M1
DVI
DVITX0-
DVITX0+
DVITX1-
DVITX1+
DVITX2-
DVITX2+
DVI_SCL
DVI_SDA
DVITXC-
DVITXC+
DVI_HP
VR15
20K/4/1/X
M5
M6
M7
M8
M2
COMMON
DVI-30P-4P-1
DVI-D/24P/SC/RA/D/SH/X
平躺式 DVI-D
11NR6-501024-31
B460M DS3H AC[N/A]
ESD
NET 可變
FSVCC_KM
VBC10
0.1u/4/X7R/16V/K/X
VESD3
DVI_SCL
DVI_SDA
FSVCC_KM
DVI_HP
AZC099-04S/SOT23-6L/X
Close to connector
VESD2
AZ1045-04F/MSOP10/X
Close to connector
VESD1
* swap
AZ1045-04F/MSOP10/X
Close to connector
Gigabyte Confidential
Do not Copy
Gigabyte Technology
Title
DVI
Size
Custom
Document Number
B460M DS3H AC V2
Rev
1.0
Date:
Tuesday, September 29, 2020
Sheet
40
of
63

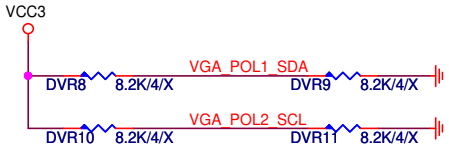
RTD2168 | R2.0



B460M DS3H AC[N/A]

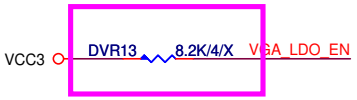
POWER

Power on latch



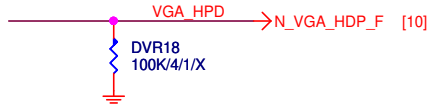
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	**ROM ONLY MODE**	EEPROM MODE

Embedded LDO



LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

DP HPD



Gigabyte Technology

Title: DP-VGA RTD2168

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 41 of 63

VGA SIGNAL | R2.0

VCC

DVD1
BAT54A/SOT23/200mA/X

SOT23

VGA_SDA_F

VGA_SCL_F

DVR2
2.2K/4/1/X

DVR3
2.2K/4/1/X

[41] VGA_SDA

[41] VGA_SCL

VGA_SDA

VGA_SCL

B460M DS3H AC[N/A]

[41] VGA_VSYNC — VGA_VSYNC — DVR1 33/4/X — G_VSYNC

DVC2
10p/4/NPO/50V/J/X

[41] VGA_HSYNC — VGA_HSYNC — DVR4 33/4/X — G_HSYNC

DVC3
10p/4/NPO/50V/J/X

[41] VGA_RED_P — VGA_RED_P — DVFB1 30/4/4A/S/X — G_VGA_R

[41] VGA_GREEN_P — VGA_GREEN_P — DVFB2 30/4/4A/S/X — G_VGA_G

[41] VGA_BLUE_P — VGA_BLUE_P — DVFB3 30/4/4A/S/X — G_VGA_B

DVR5
75/4/1/X

DVR7
75/4/1/X

DVR6
75/4/1/X

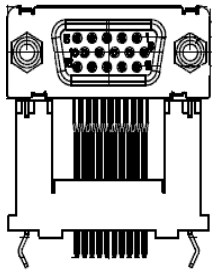
DVC4 DVC5 DVC6
10p/4/NPO/50V/J/X
10p/4/NPO/50V/J/X
10p/4/NPO/50V/J/X

Close to Filter

DVC7 DVC9
DVC8
10p/4/NPO/50V/J/X
10p/4/NPO/50V/J/X
10p/4/NPO/50V/J/X

FOR EMI

VGA CONN. 架高型VGA(BLACK)



FSVCC_KM

DVC1
0.1u/4/X7R/16V/K/X

VGA

G_VGA_R — 6 — 1

G_VGA_G — 7 — 2

G_VGA_B — 8 — 3

9 — 4

10 — 5

16

17

11

12 — VGA_SDA

13 — G_HSYNC

14 — G_VSYNC

15 — VGA_SCL

VGA/BK/SC/RA/D/2/HR/X

VGA ESD

DVESD1

G_HSYNC — 1

2

G_VSYNC — 3

6 — VGA_SCL

5 — VCC

4 — VGA_SDA

AZC099-04S/SOT23-6L/X

DVESD2

G_VGA_G — 1

2

G_VGA_R — 3

6

5 — VCC3

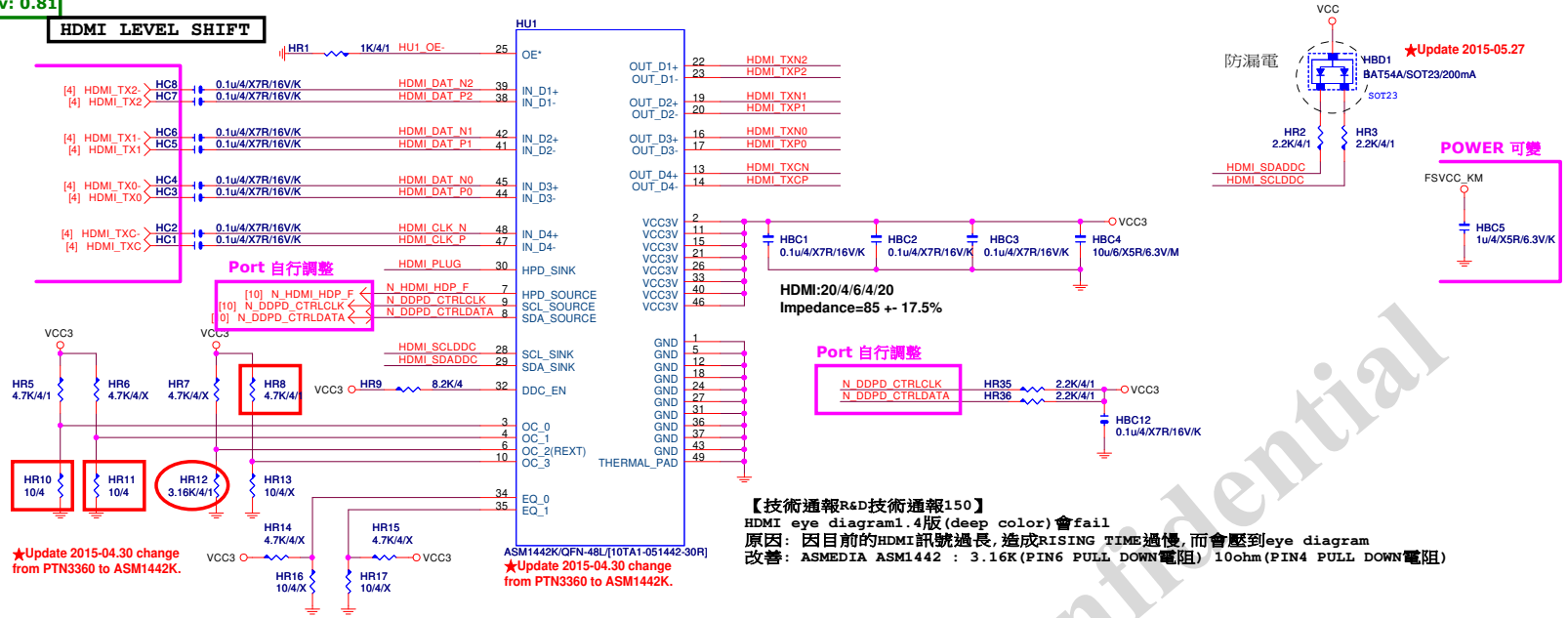
4 — G_VGA_B

AZC099-04S/SOT23-6L/X

Gigabyte Technology			
Title: DP-VGA RTD2168			
Size: Custom	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date: Tuesday, September 29, 2020		Sheet 42 of 63	

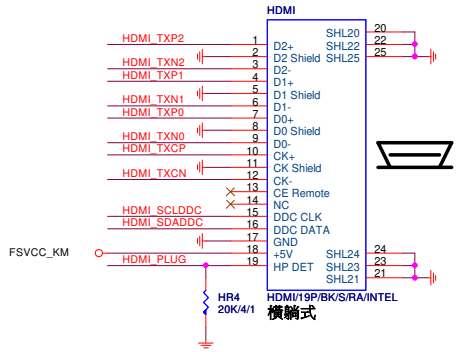
Rev: 0.81

HDMI LEVEL SHIFT



【技術通報R&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)

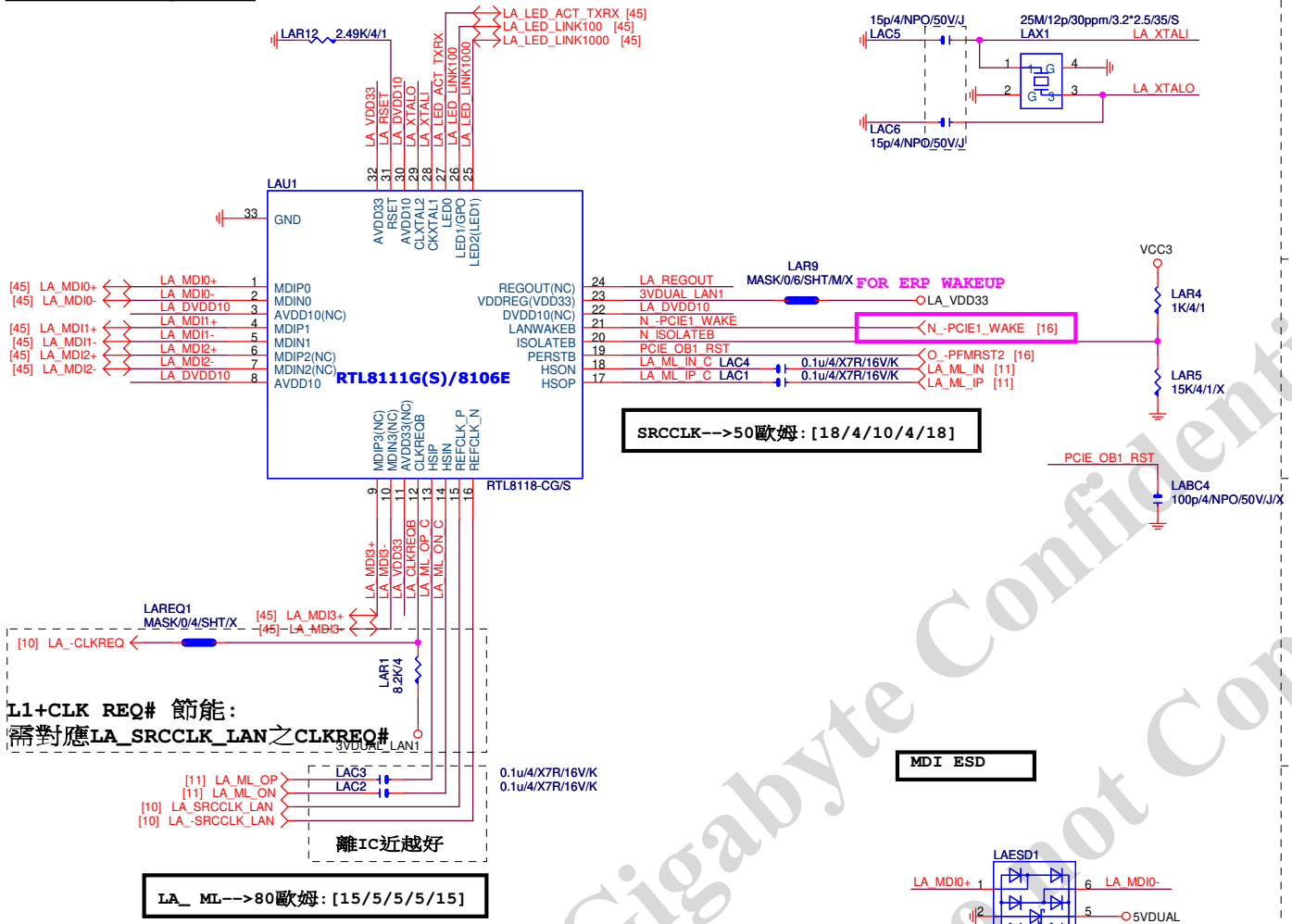
PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K



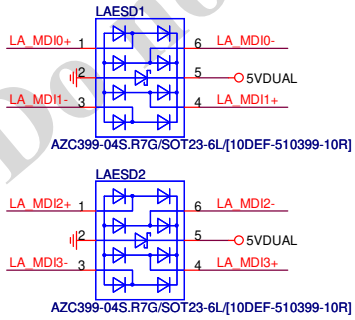
GIGABYTE

Title	FP,F_USB,USB PWR,BZ	
Size: Custom	Document Number: B460M DS3H AC V2	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 43 of 63	

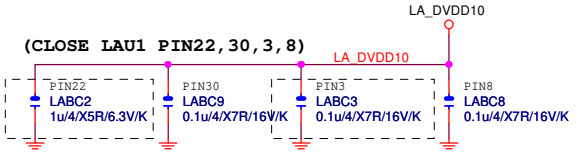
LAN:RTL8111G R2.02



MDI ESD



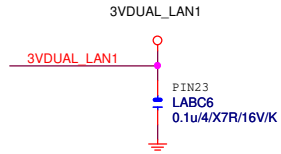
LAN POWER



LABC2:1U CLOSE PIN22[REALTEK REQ]

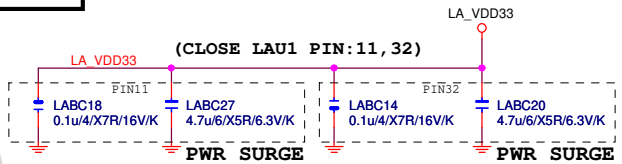
LAN POWER

note: lan power連接及電流



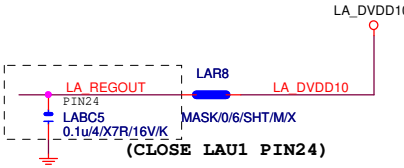
(CLOSE LAU1 PIN23)

LAN POWER



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

LAN POWER



(CLOSE LAU1 PIN24)

Gigabyte Technology
Realtek RTL8111G

Size	Document Number	Rev
Custom	B460M DS3H AC V2	1.0
Date: Tuesday, September 29, 2020	Sheet 44 of 63	

USB30_LAN CONNECTOR R2.01

RMA ESD PROTECT

note:可變更USB NAME

可變

N_-USBP3 1 — 6 N_+USBP3
2 — 5 FUSEVCC_R
N_-USBP4 3 — 4 N_+USBP4

LAUESD1
AZC099-04S/SOT23-6L

USB_LAN CONNECTOR

note:可變更USB NAME

[RTL8111G]

LABC22
0.01u/4/X7R/50V/K/X

LA_CN_L1

[44] LA_MDI0+ — LA_MDI0+ — L1
[44] LA_MDI0- — LA_MDI0- — L2
[44] LA_MDI1+ — LA_MDI1+ — L3
[44] LA_MDI1- — LA_MDI1- — L4
[44] LA_MDI2+ — LA_MDI2+ — L5
[44] LA_MDI2- — LA_MDI2- — L6
[44] LA_MDI3+ — LA_MDI3+ — L7
[44] LA_MDI3- — LA_MDI3- — L8

LABC25
MASK/0/4/SHT/M/X

LA_CN_L10

U32_LAN

L9 L10

FUSEVCC_R — VBUS U1
[11] N_-USBP3 — D- U2
[11] N_+USBP3 — D+ U3
GND U4
[11] PCH_USB30_RXN3 — SSRX- U5
[11] PCH_USB30_RXP3 — SSRX+ U6
GND U7
[11] PCH_USB30_TXN3 — SSTX- U8
[11] PCH_USB30_TXP3 — SSTX+ U9

USB3.0

D1 LA_LED_ACT_TXRX → LA_LED_ACT_TXRX [44]
D2 LA_LED_D2 — LAR13 330/4 — LAN_3VDUAL_LED
D3 LA_LED_D3 — LAR14 330/4 → LA_LED_LINK100 [44]
D4 LA_LED_LINK1000 → LA_LED_LINK1000 [44]

DT P1
DT P2
VBUS U10 — FUSEVCC_R
D- U11 — N_-USBP4 [11]
D+ U12 — N_+USBP4 [11]
GND U13
SSRX- U14 — PCH_USB30_RXN4 [11]
SSRX+ U15 — PCH_USB30_RXP4 [11]
GND U16
SSTX- U17 PCH_USB3_TXN4C — PCH_USB30_TXN4 [11]
SSTX+ U18 PCH_USB3_TXP4C — PCH_USB30_TXP4 [11]

G1 G2 G3 G4 G5 G6 G7 G8 GND

R2.0

LAUC1 PCH_USB3_TXN3C
LAUC2 PCH_USB3_TXP3C
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K

LAUC3 PCH_USB3_TXN4C
LAUC4 PCH_USB3_TXP4C
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K

可變 可變 可變 可變

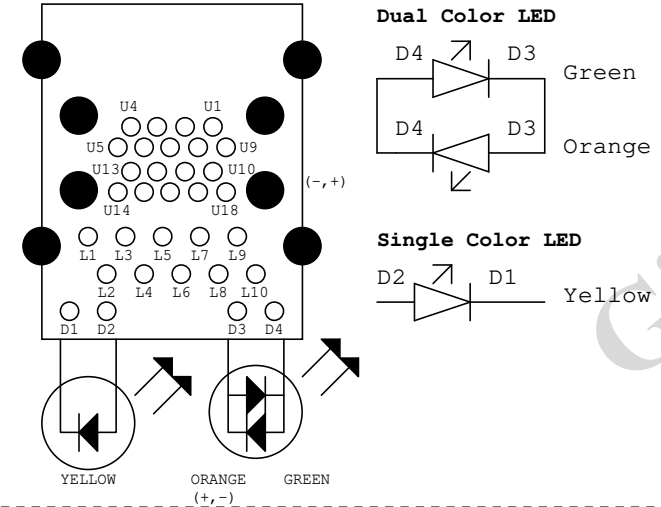
3VDUAL_LAN1
LAFB2
MASK/0/4/SHT/M/X
LABC24
0.1u/4/X7R/16V/K/X
LAUBC7
0.1u/4/X7R/16V/K

LA_MDI-->100歐姆:[20/4/8/4/20]

USB上白下藍:USB3+LAN/1G/GO,Y/OS/RA/D/G30/15KV/Q FLASH

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

USB30_LAN LAYOUT示意圖



Dual Color LED

Single Color LED

RMA ESD PROTECT

note:可變更USB NAME

PCH_USB3_TXP4C
PCH_USB3_TXN4C
PCH_USB3_TXN3C
PCH_USB3_TXP3C
PCH_USB30_RXP3
PCH_USB30_RXN3
PCH_USB30_RXN4
PCH_USB30_RXP4

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

可變

LAU3ESD1
AZ174S-04F/DFN10

LAU3ESD2
AZ174S-04F/DFN10

USB POWER

note:可變更FUSE

可變

LAU3F1
5VDUAL — 1 — 2 — FUSEVCC_R

SPR-P260T/6V/8/S

Close to connector
FUSE-0805

LAN POWER

note: lan power連接及電流

可變

LAPW1
MASK/0/4/SHT/M/X
3VDUAL_LAN1 — 3VDUAL_PCH

R2.0

Gigabyte Technology

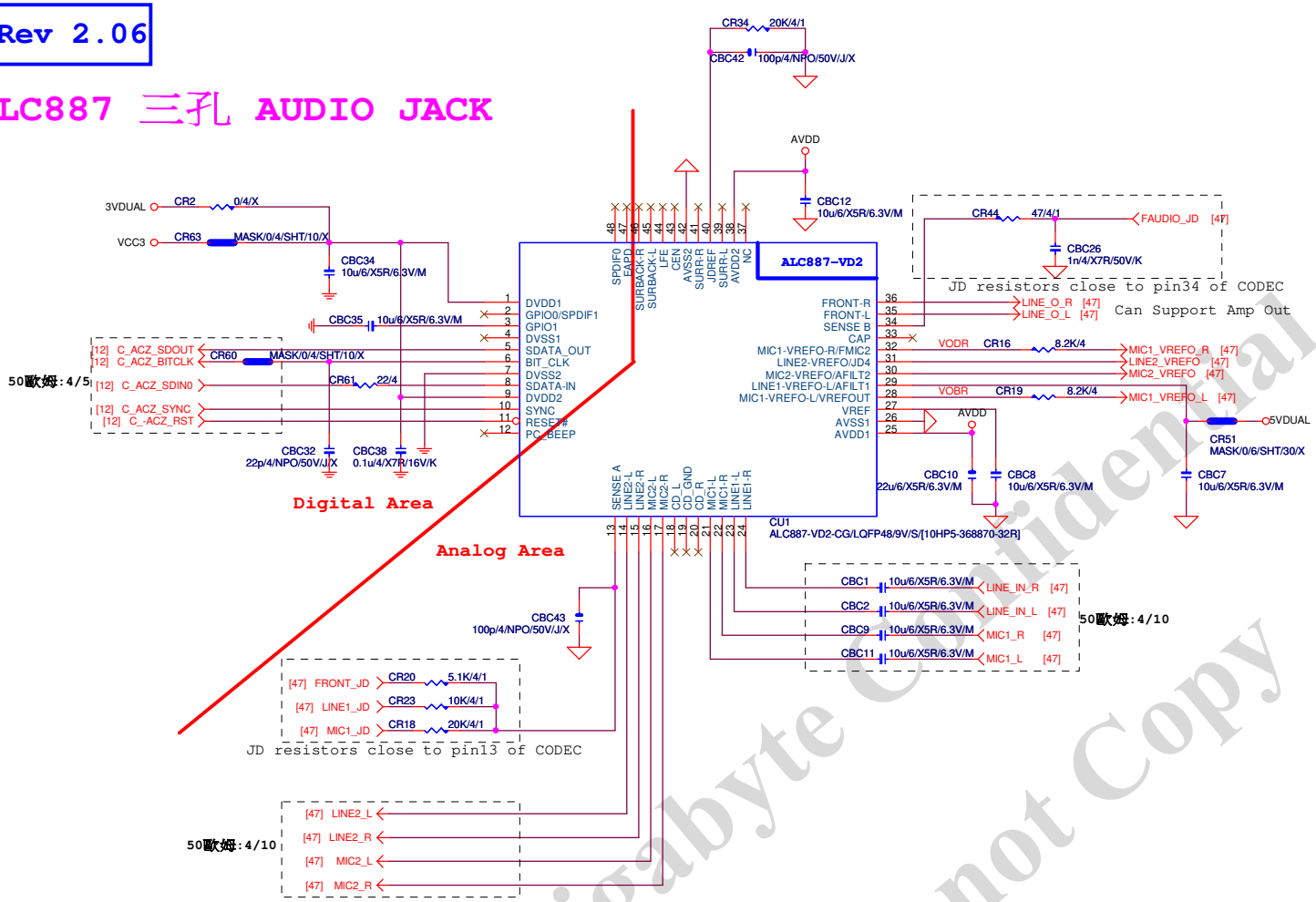
Title: LAN CONNECTOR-RTL8111G

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: Y0

Date: Tuesday, September 29, 2020 | Sheet 45 of 63

Rev 2.06

ALC887 三孔 AUDIO JACK



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

MH1	MH2
DGND	Isolate

LAYOUT注意:要加
GND切割線

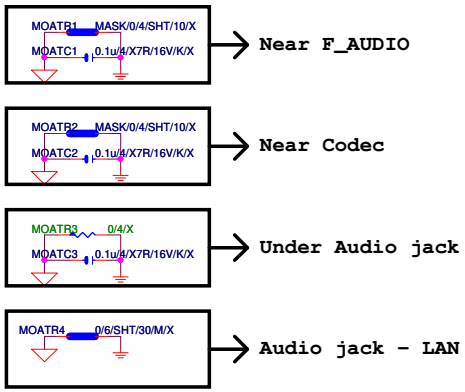
音效區域印刷

*料號後補
*LAYOUT與否,依照各Model spec

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

Gigabyte Technology		
Title: HD AUDIO ALC887		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 46 of 63	

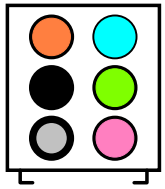
Rev 2.06

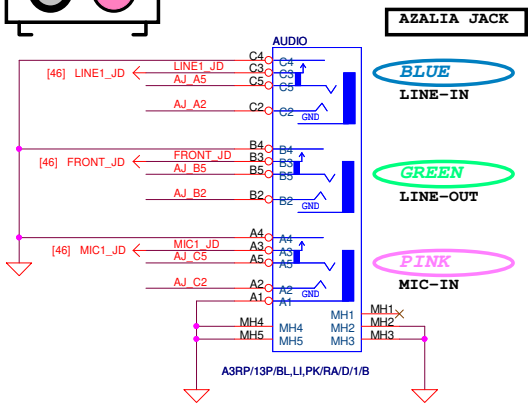


*量產前,0ohm改short pad

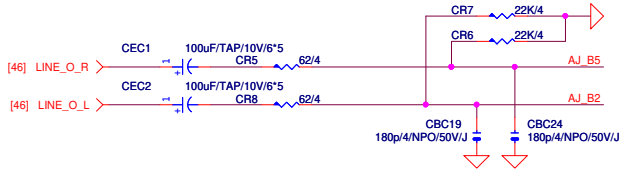
For HDMI SPDIF （依SPEC保留或移除）

AZALIA JACK

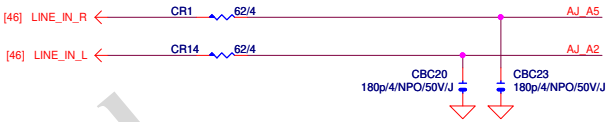




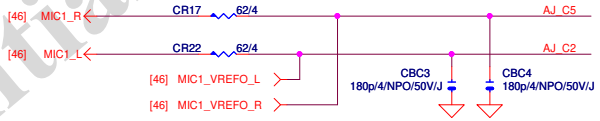
LINE-OUT



LINE-IN



MIC-IN

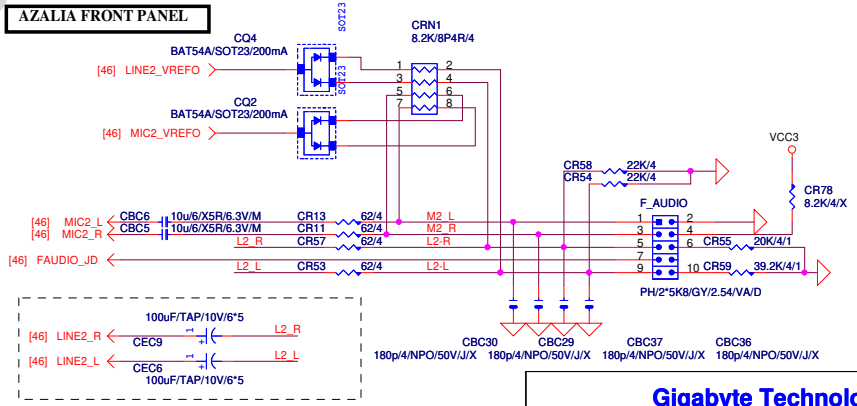


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 47 of 63

GIGABYTE™

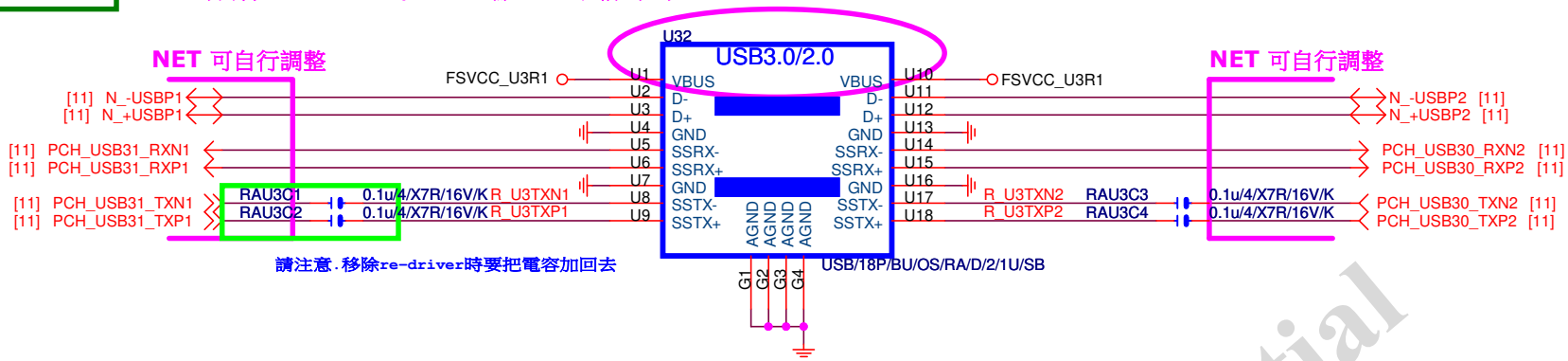
Title: **Amient Single LED**

Size	Document Number	Rev
Custom	B460M DS3H AC V2-Y1	1.0

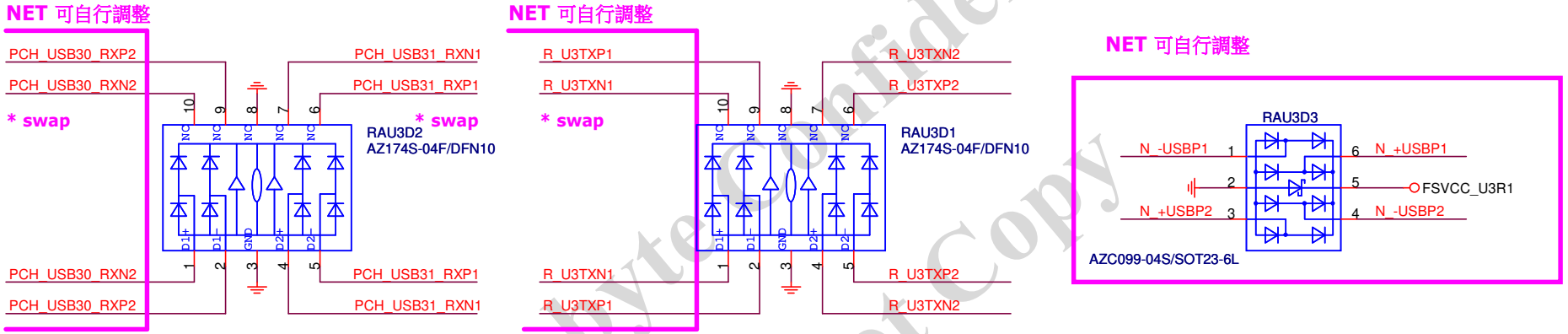
Date: Tuesday, September 29, 2020 Sheet 48 of 63

Rev: 0.7

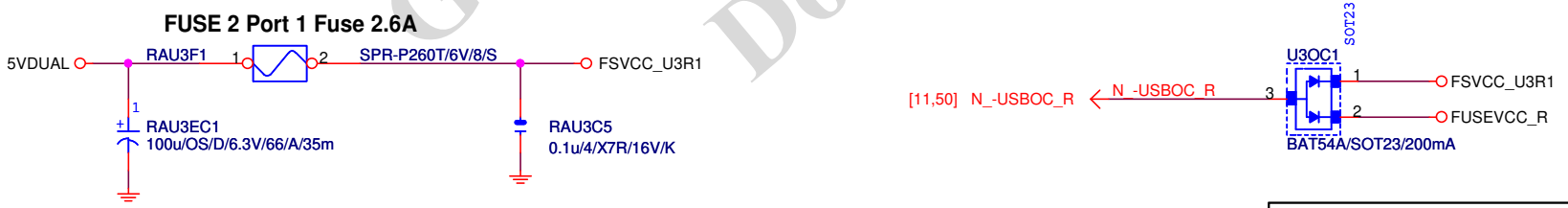
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD



FUSE



Gigabyte Technology			
Title: R_USB30,USB_OC			
Size: Custom	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 49 of 63		

Rev: 0.7

Front USB3.0

F_U32 REV=1

FSVCC_U3F1 → VBUS (1)

NET 自行調整

[11] PCH_USB30_RXN5 → SSRX1- (2)
[11] PCH_USB30_RXP5 → SSRX1+ (3)
[11] PCH_USB30_TXN5 → FAU3C1 0.1u/4/X7R/16V/K → FU30_TXN1 → SSTX1- (5)
[11] PCH_USB30_TXP5 → FAU3C2 0.1u/4/X7R/16V/K → FU30_TXP1 → SSTX1+ (6)
[11] N_-USBP5 → D1- (8)
[11] N_+USBP5 → D1+ (9)
GND (7, 4)

ID (10)

VBUS (19) → FSVCC_U3F1

FU30_TXN2 → FAU3C3 0.1u/4/X7R/16V/K → SSTX2- (15)
FU30_TXP2 → FAU3C4 0.1u/4/X7R/16V/K → SSTX2+ (14)
SSRX2- (18)
SSRX2+ (17)
D2- (12)
D2+ (11)
GND (16, 13)

NET 可自行調整

0.1u/4/X7R/16V/K → PCH_USB30_TXN6 [11]
0.1u/4/X7R/16V/K → PCH_USB30_TXP6 [11]
PCH_USB30_RXN6 [11]
PCH_USB30_RXP6 [11]
N_-USBP6 [11]
N_+USBP6 [11]

BH/2*10K20/BK/ON/2.0/V/USB3.0/PRT

F_USB30 PWR

5VDUAL → FAU3F1 → SPR-P260T/6V/8/S → FSVCC_U3F1
FAU3EC1 100u/OS/D/6.3V/66/A/35m
FAU3C5 0.1u/4/X7R/16V/K

NET 可自行調整

[11] N_-USBOC_F → N_-USBOC_F → U3OC3 BAT54A/SOT23/200mA → FSVCC_U3F1

NET 可自行調整

PCH_USB30_RXP6
PCH_USB30_RXN6
PCH_USB30_RXN5
PCH_USB30_RXP5
FAU3D1 AZ174S-04F/DFN10
PCH_USB30_RXN6
PCH_USB30_RXP6
PCH_USB30_RXP5
PCH_USB30_RXN5

FAU3D3
N_+USBP6 ↔ N_-USBP6
3VDUAL
N_-USBP5 ↔ N_+USBP5
AZC099-04S/SOT23-6L

CLOSE F_USB30

FU30_TXP2
FU30_TXN2
FU30_TXN1
FU30_TXP1
FAU3D2 AZ174S-04F/DFN10
FU30_TXN2
FU30_TXP2
FU30_TXP1
FU30_TXN1

CLOSE F_USB30

-USBOC_F

POWER 可自行調整

5VDUAL → UAR1 8.2K/4 → N_-USBOC_F → N_-USBOC_F [11]
UAR2 15K/4/1

-USBOC_R

POWER 可自行調整

FSVCC_KM → UBR1 8.2K/4 → N_-USBOC_R → N_-USBOC_R [11,49]
UBR2 15K/4/1

* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual

[13] N_GPPC_G6 → UAD5 BAT54A/SOT23/200mA
N_-USBOC_F → N_-USBOC_F [11]
N_-USBOC_R → N_-USBOC_R [11,49]

Gigabyte Technology		
Title: R_USB30,F_USB30, USB_OC		
Size: Custom	Document Number: B460M DS3H AC V2	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 50 of 63	

USB20 HUB_1

FRONT USB 2.0 PORT

Dual USB2 HUB used Rev 0.3

HU2AU1

GL850G/S

HUB_AVDD11 1 AVDD
HUB1_-USBP2 2 DM2
HUB1_+USBP2 3 DP2
4 RREF
HUB_AVDD12 5 AVDD
GL1_XTALO 6 X1
GL1_XTALI 7 X2
HUB1_-USBP3 8 DM3
HUB1_+USBP3 9 DP3
HUB_AVDD13 10 AVDD
HUB1_-USBP4 11 DM4
HUB1_+USBP4 12 DP4
-GL1_RESET 13 RESET#
14 TEST/SCL

28 DP1 HUB1_+USBP1
27 DM1 HUB1_-USBP1
26 DP0 N_+USBP9 [11]
25 DM0 N_-USBP9 [11]
24 V33 3_3V_IN1
23 V5 5VDUAL
22 PWREN1#/SDA
21 OVCUR1#/SMC GL1_OVCUR
20 PWREN2#
19 OVCUR2#/SMD
18 PGANG GL1_PGANG
17 PSELF GL1_PSELF
16 DVDD HUB1_DVDD
15 GND

HU2AR7 680/4/1

HU2AC9 0.1u/4/X7R/16V/K

HU2AC7 0.1u/4/X7R/16V/K

GL850S-HHY22/SSOP28

SSOP28-IT8209R

HUB PWR

HUB1_DVDD
3_3V_IN1
HU2AC2 10u/6/X5R/6.3V/M
CLOSE PIN24
HUB AVDD11
HUB AVDD12
HUB AVDD13
HU2AC4 0.1u/4/X7R/16V/K
HU2AC5 0.1u/4/X7R/16V/K
CLOSE PWR PIN
HU2AC6 0.1u/4/X7R/16V/K

HUB OVER CURRENT SENSE

FSVCC_U2F2
HU2AR2 8.2K/4 GL1_OVCUR
HU2AR3 15K/4/1

GL850S的over current pin請接到GL850S不要接到PCH,
PCH端改為pull-high 3VDUAL.

HUB MODE

Ganged mode
HUB1_DVDD
HU2AR4 100K/4/1
GL1_PGANG
P.H. USE GL_OVCUR1
DETECT ALL PORT

PSELF
HUB1_DVDD
HU2AR6 100K/4/1
GL1_PSELF
HUB self-power mode:
P.H.=EVERY PORT 500mA.
P.D.=EVERY PORT 100mA.

HUB RESET

5VDUAL
HU2AR5 10K/4/1
-GL1_RESET
HU2AR1 47K/4/1
HU2AC1 1u/4/X5R/6.3V/K

F_USB 2.0 OC SIGNAL

HUB CRYSTAL

ONLY SUPPORT 12MHZ

HU2AC3 22p/4/NPO/50V/J GL1_XTALO
HU2AX1
HU2AC8 22p/4/NPO/50V/J GL1_XTALI
12M/20p/30ppm/3.2*2.5/80/S

FRONT SIDE USB1

F_USB1
FSVCC_U2F2
HUB1_-USBP1 HUB1_-USBP2
HUB1_+USBP1 HUB1_+USBP2
FSVCC_U2F2
PH/2*5K9/WH/2.54/VA/D

FAU2D1
HUB1_+USBP2 HUB1_-USBP2
3VDUAL
HUB1_-USBP1 HUB1_+USBP1
AZC099-04S/SOT23-6L

5VDUAL
FAU2F1 SPR-P260T/6V/8/S
FSVCC_U2F2
FAU2EC1 100u/OS/D/6.3V/66/A/35m
FAU2BC2 0.1u/4/X7R/16V/K

FRONT SIDE USB2

F_USB2
FSVCC_U2F2
HUB1_-USBP3 HUB1_-USBP4
HUB1_+USBP3 HUB1_+USBP4
FSVCC_U2F2
PH/2*5K9/WH/2.54/VA/D

FBU2D1
HUB1_+USBP4 HUB1_-USBP4
3VDUAL
HUB1_-USBP3 HUB1_+USBP3
AZC099-04S/SOT23-6L

Gigabyte Technology

Title: USB2.0

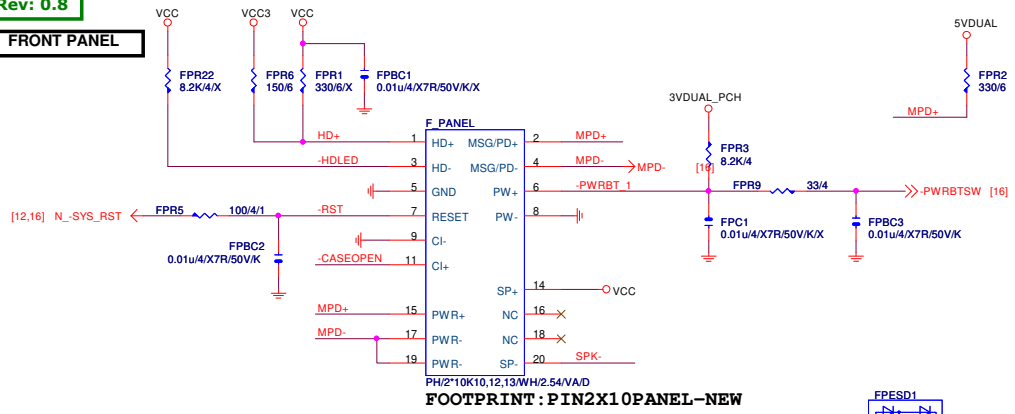
Size: Custom | Document Number: B460M DS3H AC V2-Y1 | Rev: 1.0

Date: Tuesday, September 29, 2020 | Sheet 51 of 63

Rev: 0.8

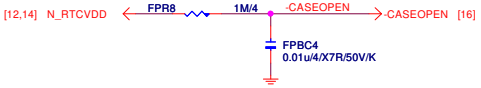
FRONT PANEL

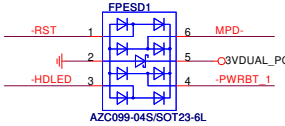
★Update 2016.06.15



FOOTPRINT:PIN2X10PANEL-NEW

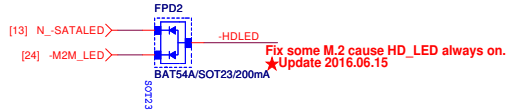
CASE OPEN





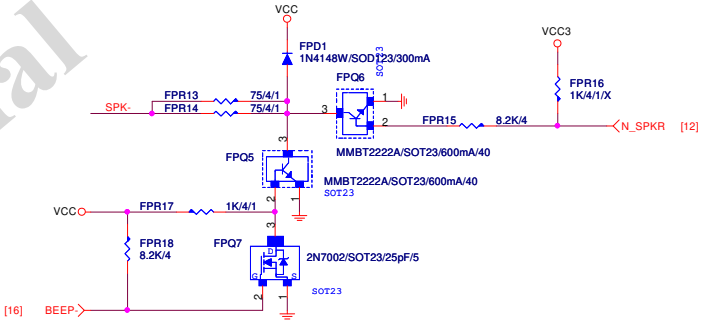
★Update 2015-02-11

SATA/M.2 LED



Fix some M.2 cause HD_LED always on.
★Update 2016.06.15

SPKR



For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

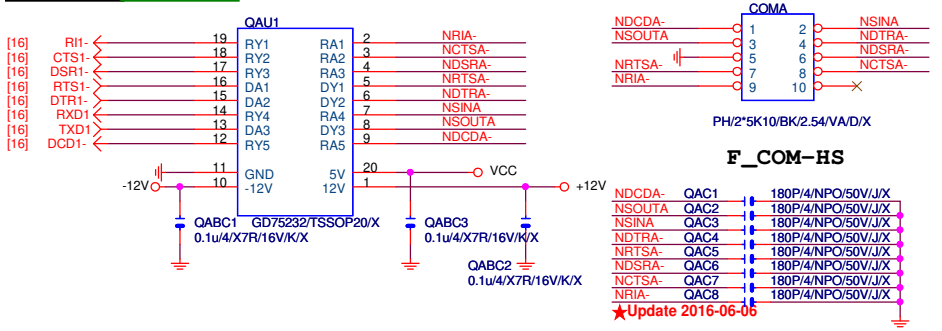
FRONT PANEL SHORT

Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 52 of 63	

COM PORT

Rev: 0.7

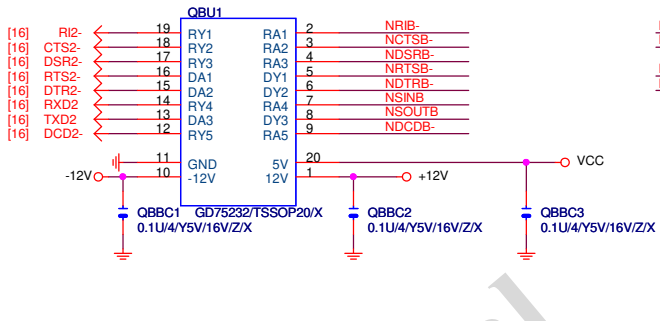
Modify name(2020.02.06)



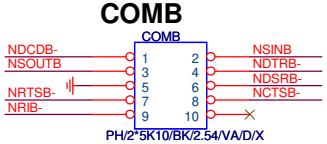
F_COM-HS

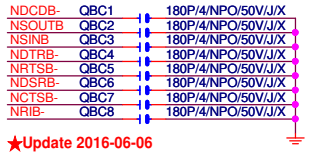
★Update 2016-06-06

B460M DS3H AC[N/A]



COMB





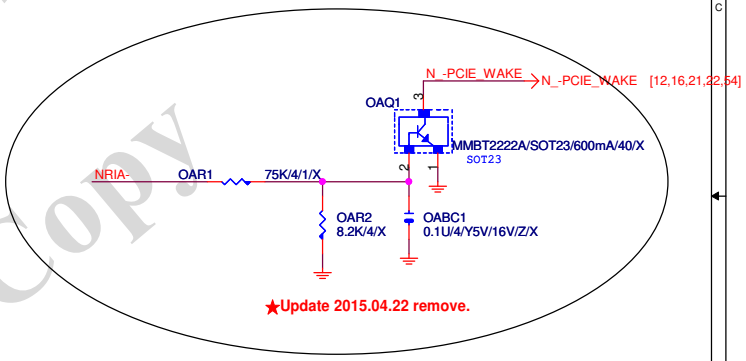
★Update 2016-06-06

B460M DS3H AC[N/A]

LPT PORT

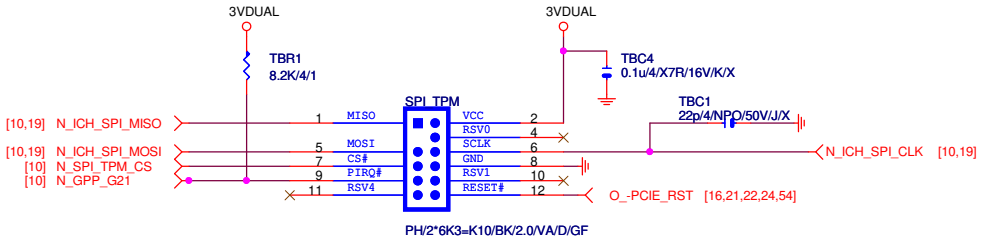
COM RI

N/A



★Update 2015.04.22 remove.

TPM CONNECT



Footprint: TPM2X6_CUT3-Z490_I

Gigabyte Technology			
Title: FP,F_USB,USB PWR,BZ			
Size: Custom	Document Number: B460M DS3H AC V2-Y1		Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 53 of 63		

Rev: 0.2

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

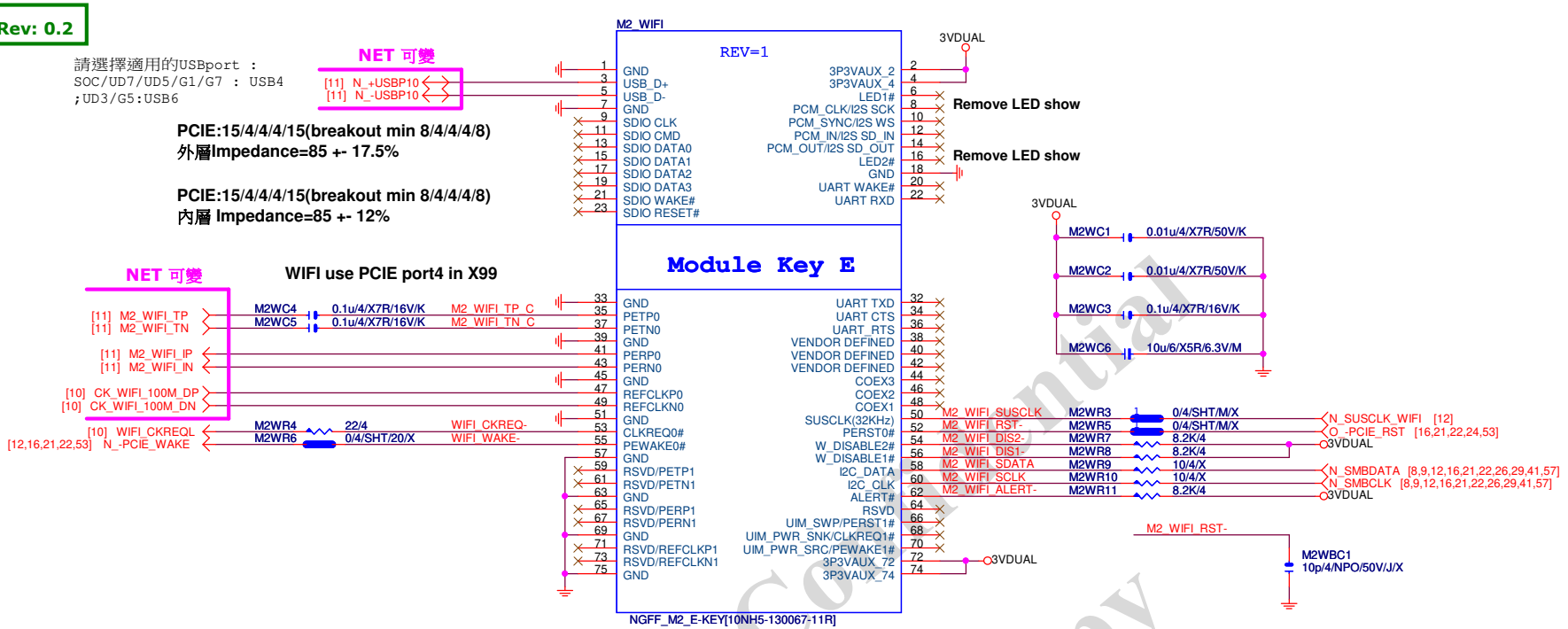
NET 可變
[11] N_+USBP10
[11] N_-USBP10

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

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

NET 可變

WIFI use PCIE port4 in X99



一套WIFI MODULE包含外框+WIFI CARD+天線

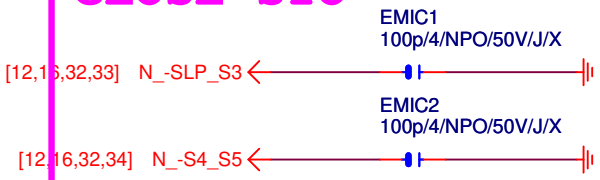
Footprint WIFI-EKEY+ WIFI-EKEY-MODULE should be a package.

GIGABYTE™

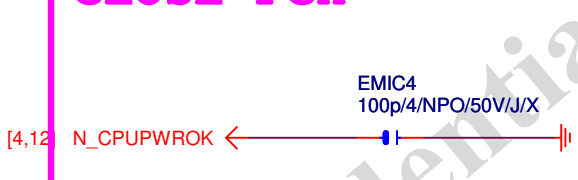
Title: M2 WIFI		
Size: B	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 54 of 63	

EMI/ESD R0.1

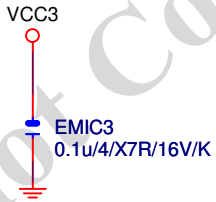
CLOSE SIO



CLOSE PCH



CLOSE NR47



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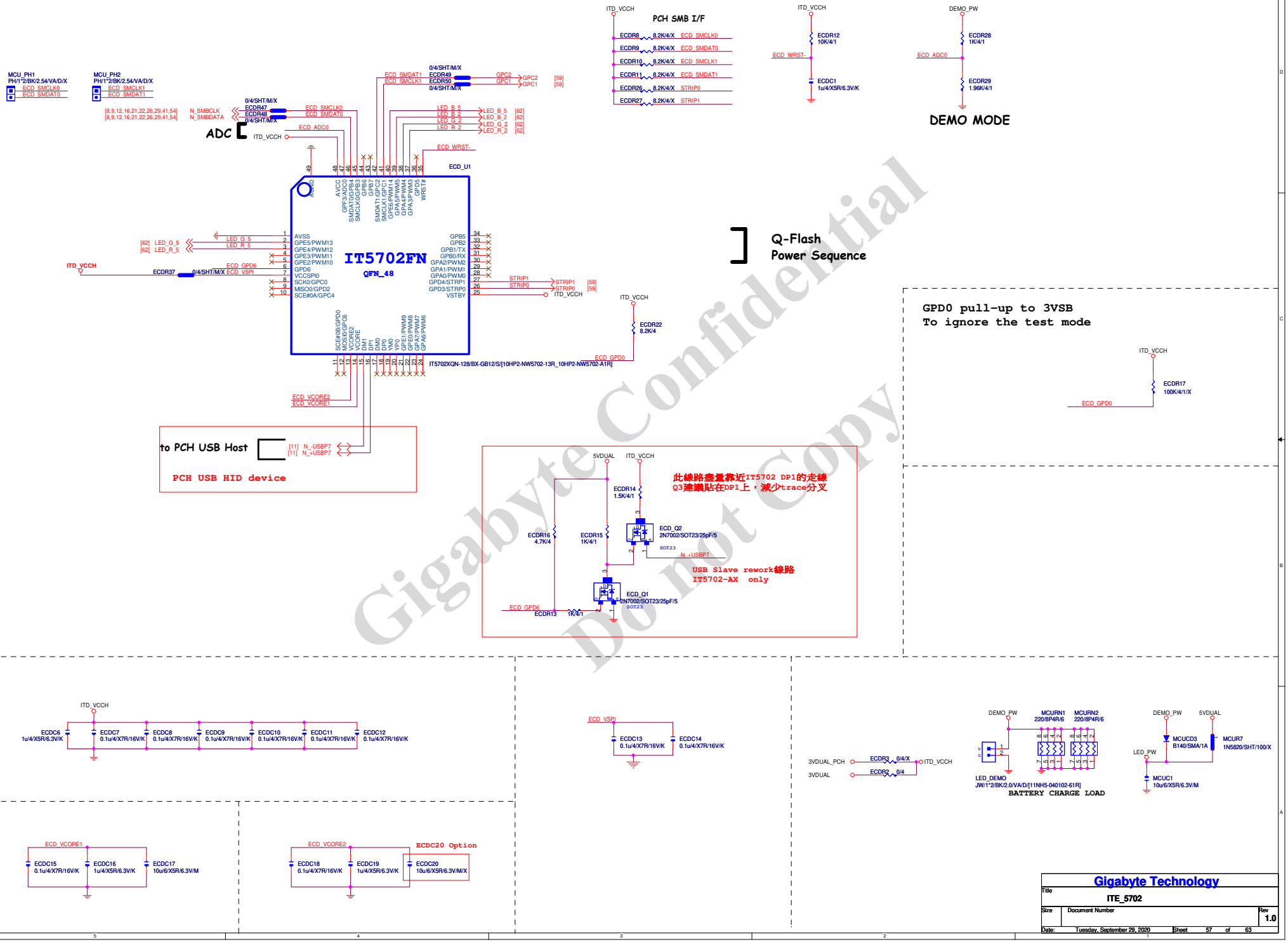
Title	EMI/ESD	
Size: A	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 56 of 63	

Rev 1.0

ECD_U1 請放在PCH到BIOS路徑上.避免線過長

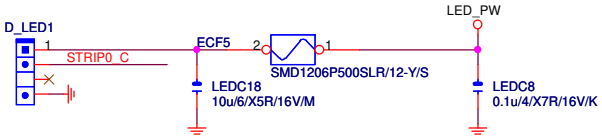


Gigabyte Technology		
Title: ITE_5702		
Size	Document Number	Rev 1.0
Date: Tuesday, September 29, 2020	Sheet 57 of 63	

Rev 1.0

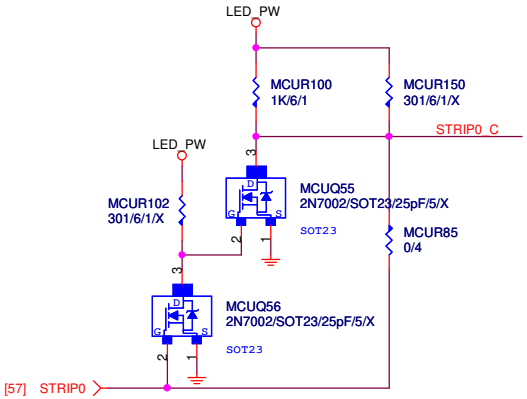
第六區 LED (靠近左上板邊位置)

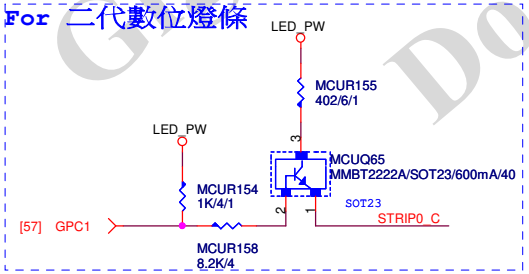
Digital LED Strip1



Footprint PH1X4-CUT3-LED-L

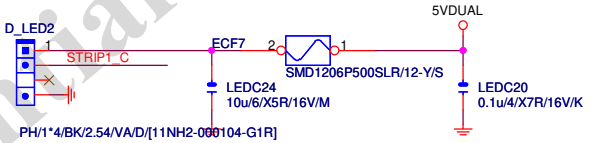
燈條 Level shift





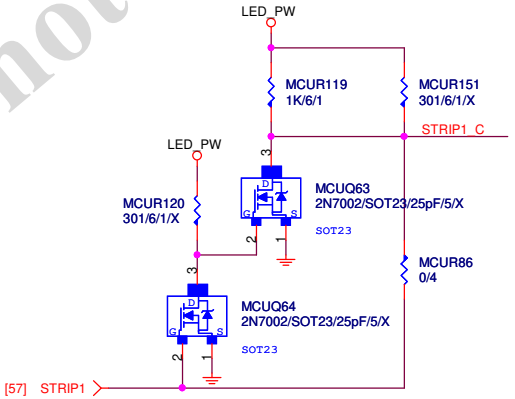
第七區(靠近右下CPU板邊位置)

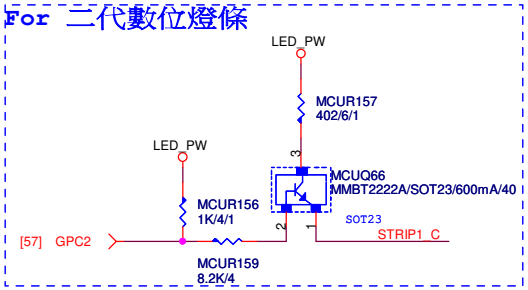
Digital LED Strip2



Footprint "PH1X4-CUT3-LED-R"
(for pin-name 與 model-name 同方向)

燈條 Level shift

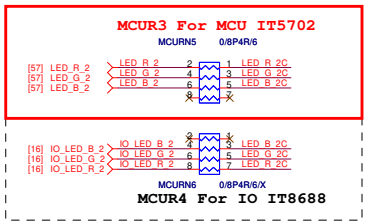


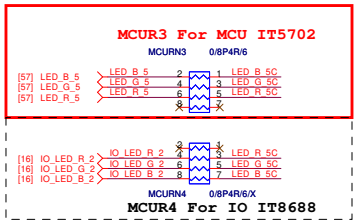


GIGABYTE™

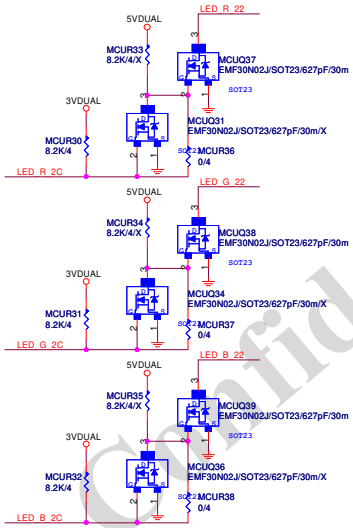
Title	D_LED1/D_LED2	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 59 of 63	

Rev 1.0

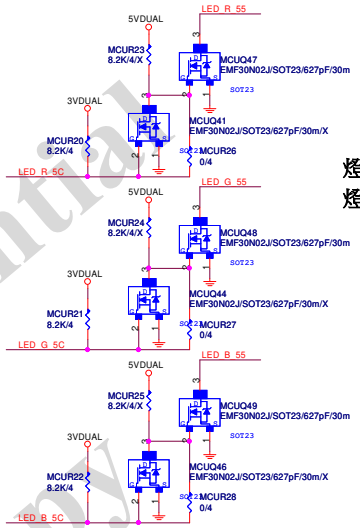




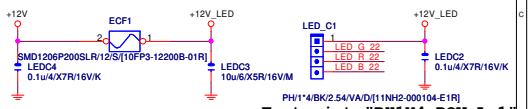
第二區 LED CONTROL



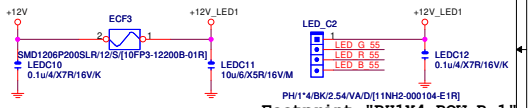
第五區 LED CONTROL



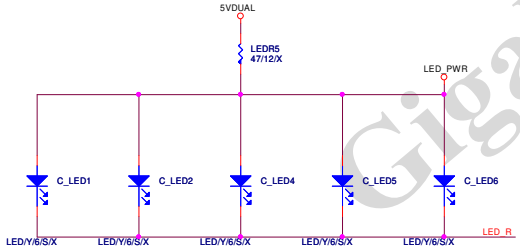
燈條 LED (LED_C1放在PCB左邊板邊位置)
燈條 LED (LED_C2放在PCB右邊板邊位置)



Footprint "PH1X4-ROW-L-1"



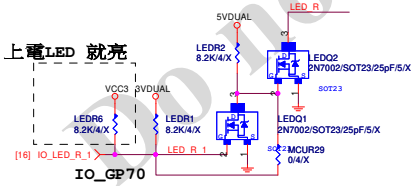
Footprint "PH1X4-ROW-R-1"



B460M DS3H AC[N/A]

第一區 LED CONTROL

FIX 上電LED 就亮



B460M DS3H AC[N/A]

GIGABYTE™

Title	PCH/AUDIO/DEBUG/C_LED1/2	
Size: Custom	Document Number: B460M DS3H AC V2-Y1	Rev: 1.0
Date: Tuesday, September 29, 2020	Sheet 62 of 65	