

GA-AB350-GAMING

PAGE	TITLE	Revision : 1.0
01	COVER SHEET	
02	BOM & PCB MODIFY HISTORY	
03	BLOCK DIAGRAM	
04	CPU DDR4 MEMORY	
05	CPU CONTROL	
06	CPU GFX, GPP, SB, GND	
07	CPU ACPI/GPIO/USB/AUDIO	
08	CPU POWER & GND	
09	CPU CLK/SPI/USB	
10	DDR4 CHANNEL A	
11	DDR4 CHANNEL B	
12	PM CLK/GPIO/FAN	
13	PM USB	
14	PM UMI/GPP/SATA	
15	PM POWER & GND	
16	PCI EXPRESS x16	
17	HDMI , DVI	
18	IT8628CX , TPM	
19	F_USB30 , R_USB30 , F_USB20	
20	A_VDD1V8 / A_VDDPS5	
21	ALC887 CODEC	
22	AUDIO JACK	
23	AUDIO LED	
24	POWER SEQUENCE , A_VDDP	
25	PWM SL95712	

[illegible]

Model Name:GA-AB350-GAMING

Component value change history

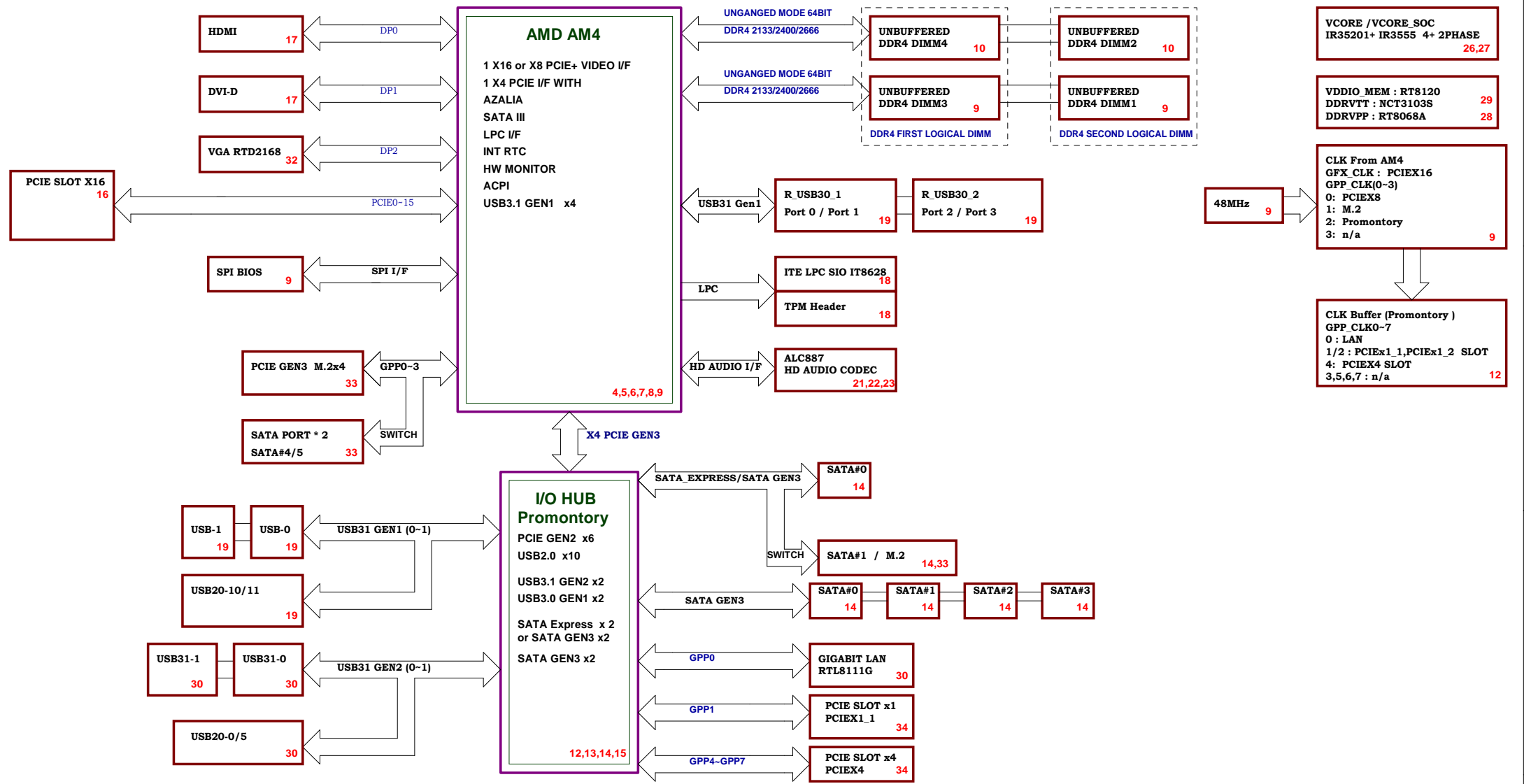
Version: 1.0

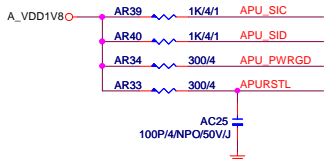
P-Code: U98126-0

[illegible]

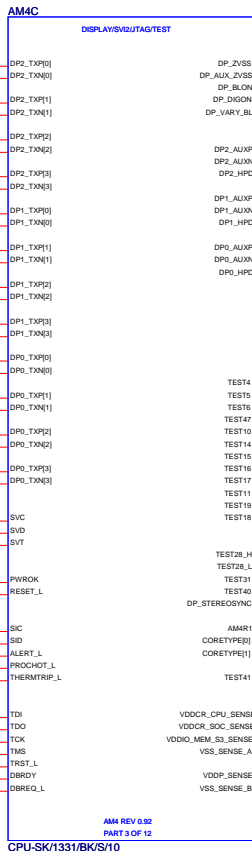
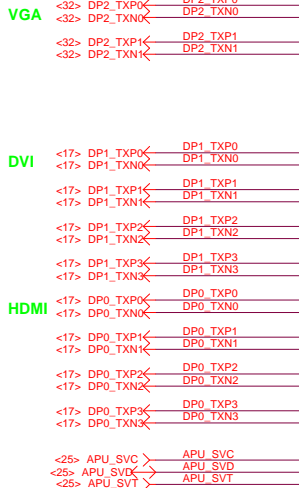
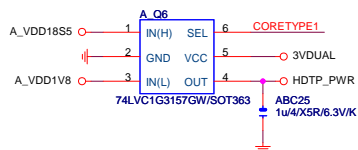
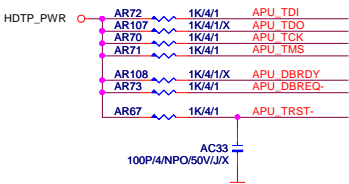
Circuit or PCB layout change for next version

[illegible]

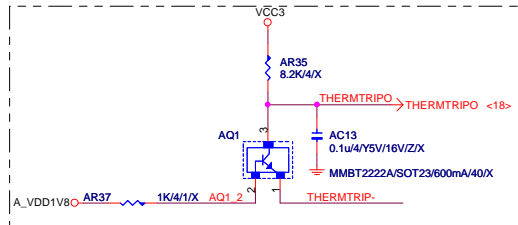
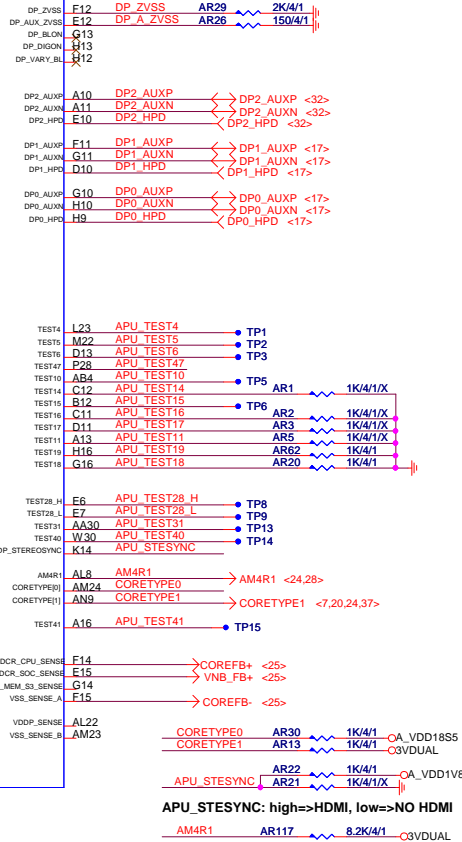




SVC	SVD	Boot voltage
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8



Placed within 1500 mils from APU



www.teknisi-indonesia.com

AM4 CPU CoreType

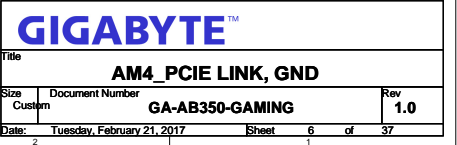
CORETYPE 1	CORETYPE 0	Family / Model Numbers	AM4 APU TYPE
0 BR	0	Family 15 h / Models 60 h-6 Fh	TYPE 0
0 ST	1	Reserved	TYPE 1
1 ZP	0	Family 17 h / Models 00 h-0 Fh	TYPE 2
1 RV	1	Family 17 h / Models 10 h-1 Fh	TYPE 3

GIGABYTE™

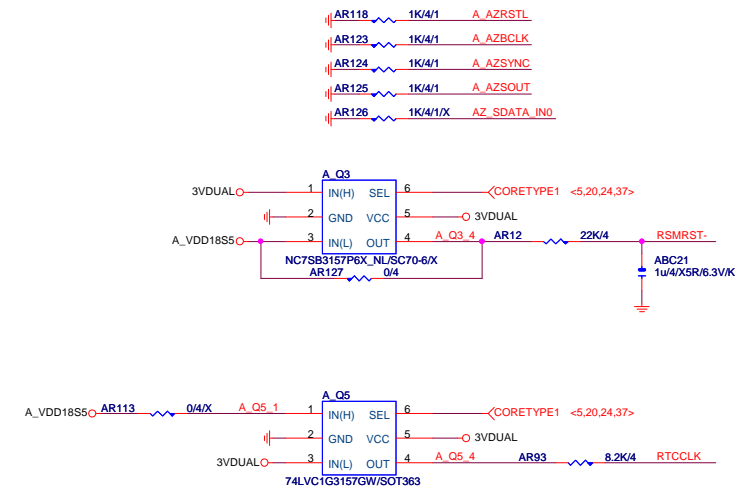
Title: **CPU CONTROL**

Size: Custom Document Number: **GA-AB350-GAMING** Rev: **1.0**

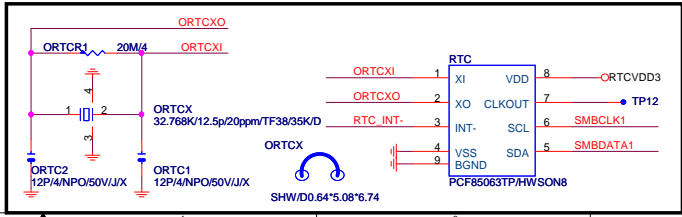
Date: Tuesday, February 21, 2017 Sheet: 5 of 37



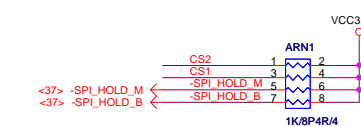
TEST0	TEST1	TEST2	Description
0	0	0	FCH TAP accessible from APU when TAPEN is asserted FCH JTAG pins overloaded for multiple functions, in this configuration the FCH JTAG are used as non-JTAG pins
0	0	1	Reserve
0	1	X	Reserve
1	TMS	0	FCH JTAG multi-function pins are configured as JTAG pins, in this configuration the FCH TAP can be accessed from FCH JTAG pins
1	TMS	1	Use on JTAG only, Yuba JTAG enable.

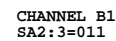
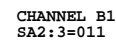


	LPC_CLK0	LPC_CLK1	AGPIO3	RTC_CLK	LFRAME_L	SYS_RST#	SPI_CLK (ZP)
PULL HIGH	BOOT FAIL TIMER ENABLED	Use 480kHz crystal clock and generate both internal and external clocks (DEFAULT)	Enhanced reset logic (for quicker S5 S5 resume) (DEFAULT)	Coin battery is on board. (DEFAULT)	SPI ROM (DEFAULT)	normal reset mode (DEFAULT)	Use 480kHz crystal clock and generate both internal and external clocks (DEFAULT)
PULL LOW	BOOT FAIL TIMER DISABLED (DEFAULT)	Use 1000kHz PCIE clock as reference clock and generate internal clocks only	Default to traditional reset logic (DEFAULT)	Coin battery is not on board.	LPC ROM	short reset mode	Use 1000kHz PCIE clock as reference clock and generate internal clocks only
C3/ST DIE ONLY						ZP DIE ONLY	



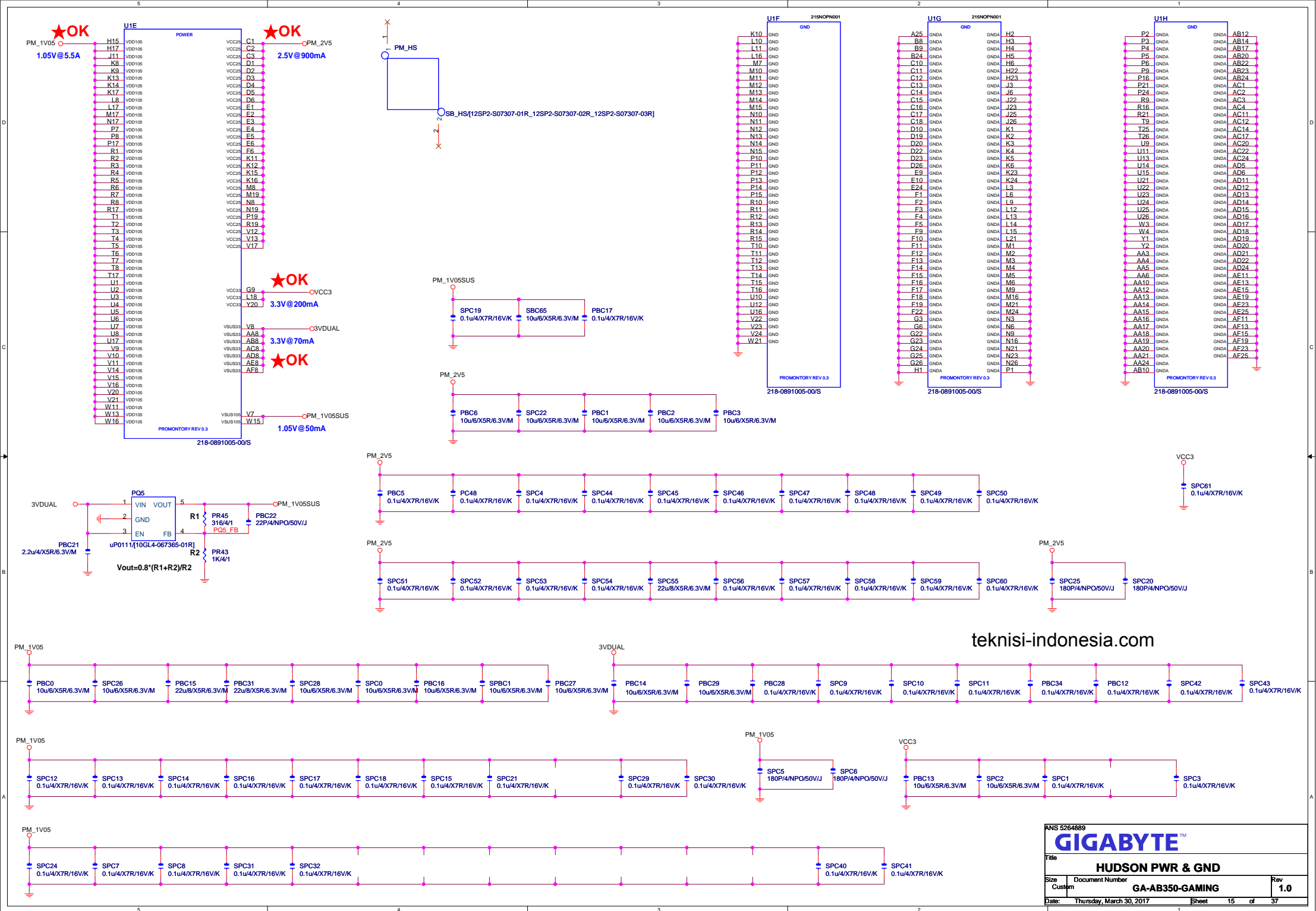
GIGABYTE™			
Title			
AM4 MISC			
Size	Document Number	Rev	
Custom	GA-AB350-GAMING	1.0	
Date:	Tuesday, February 21, 2017	Sheet	7 of 37

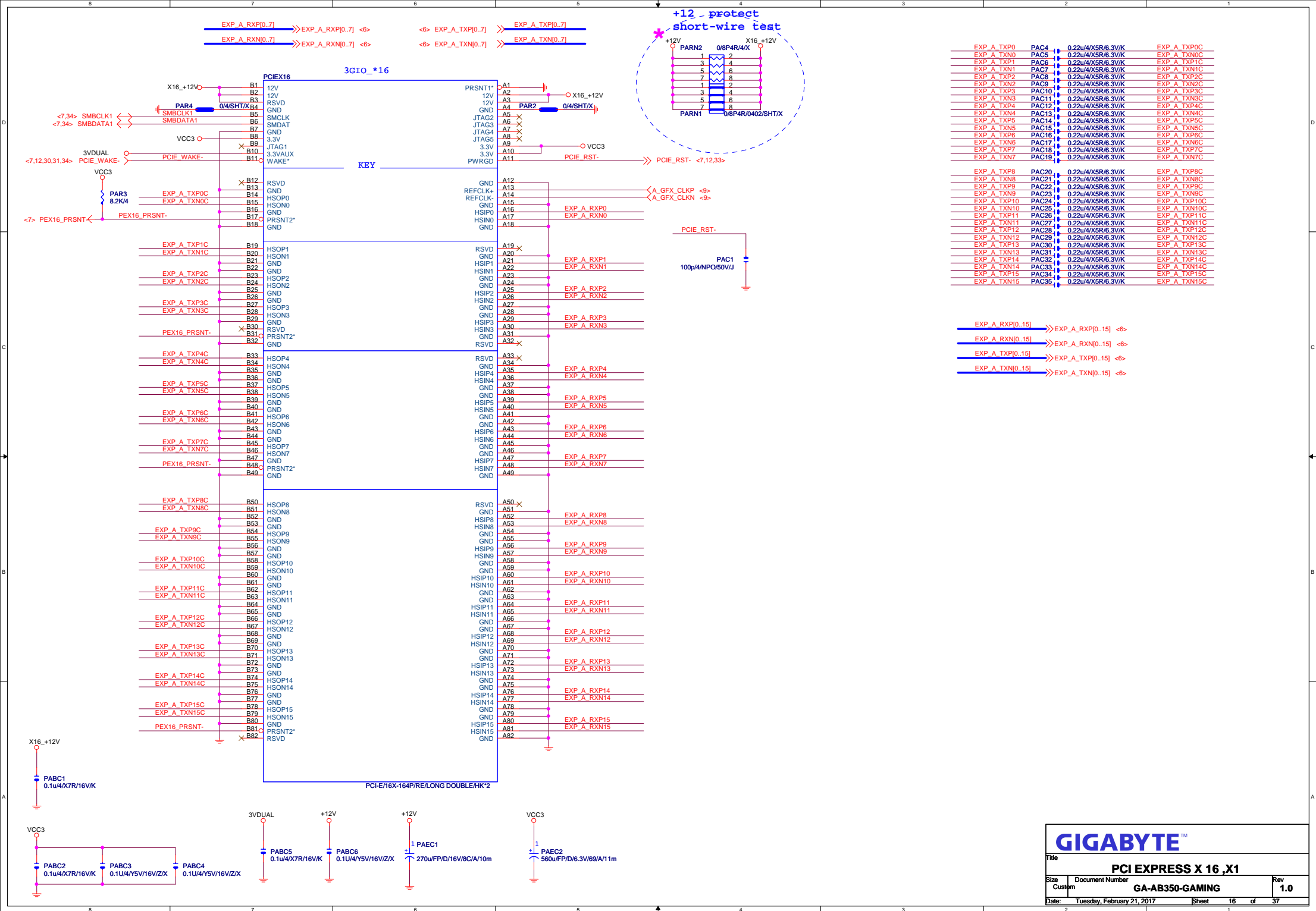


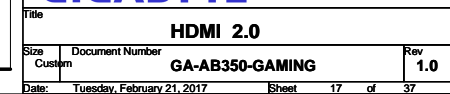
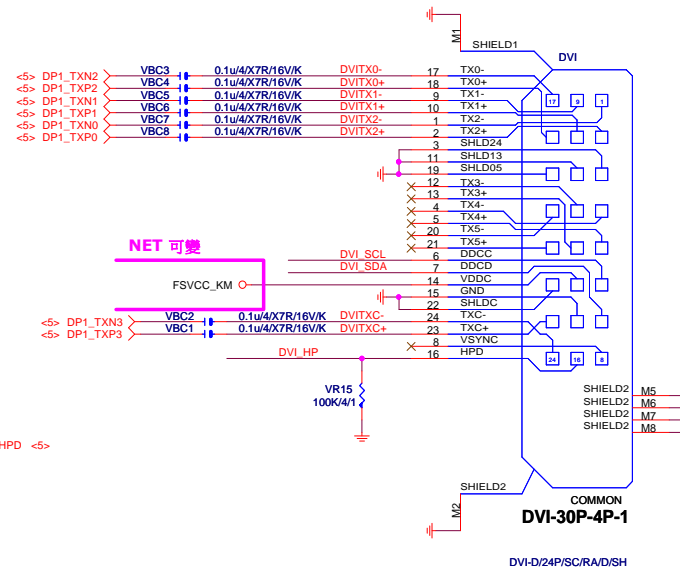
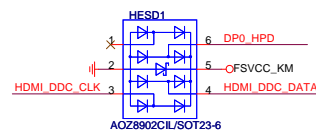
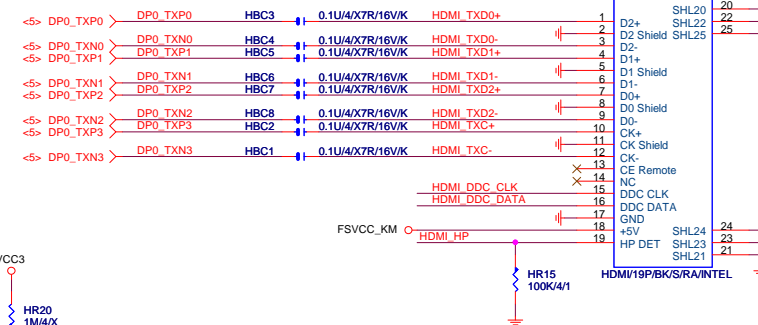


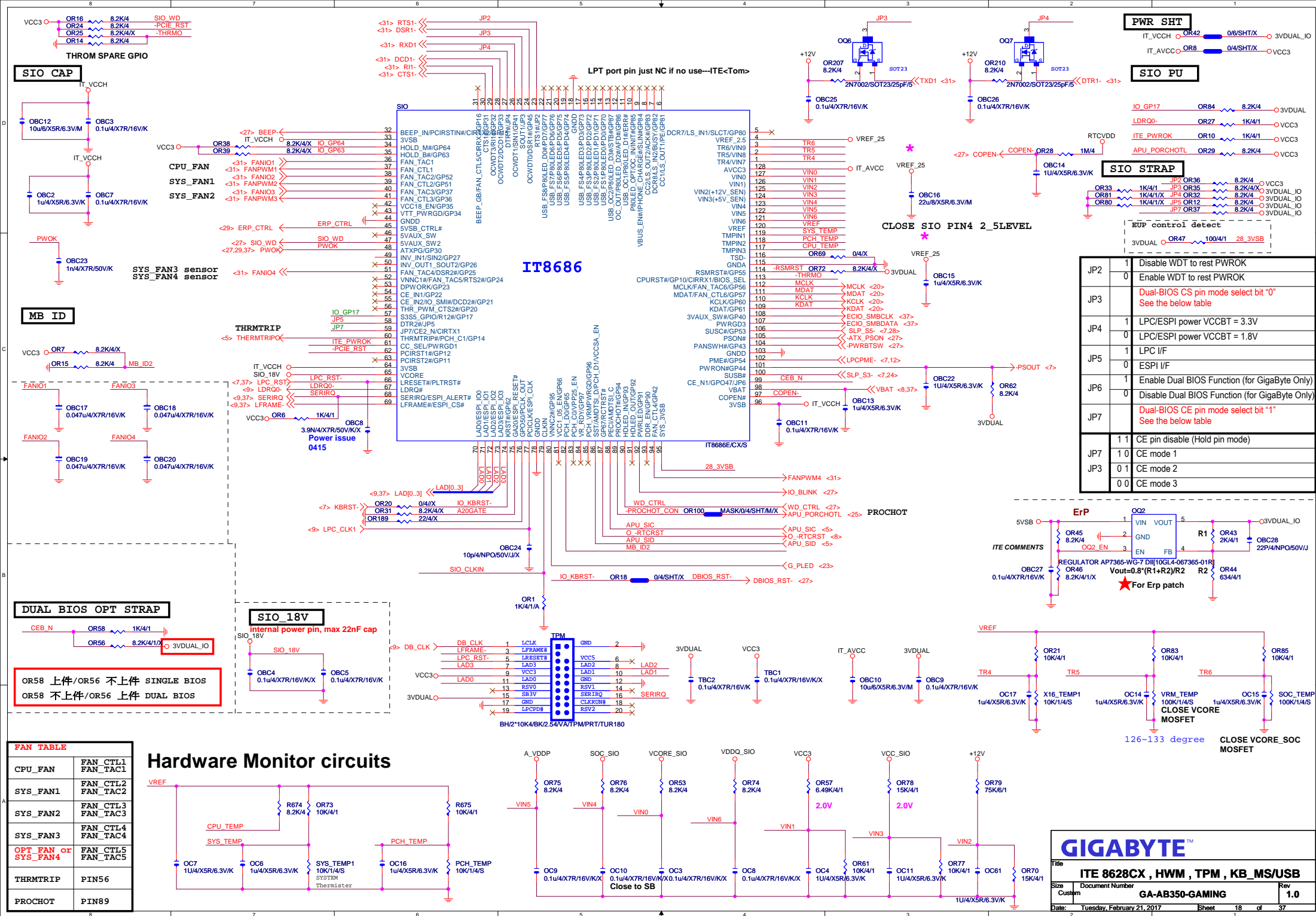


ANS 5264889			
GIGABYTE™			
Title PROMONTORY CPU/CLK/MISC			
Size Custom	Document Number GA-AB350-GAMING	Rev 1.0	
Date:	Thursday, March 30, 2017	Sheet	12 of 37

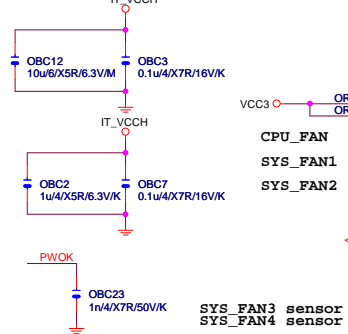




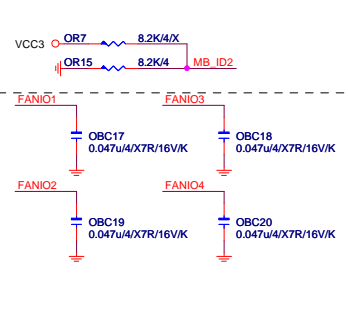




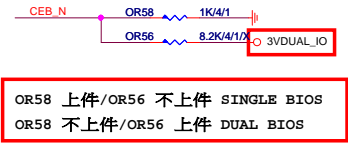
SIO CAP



MB ID

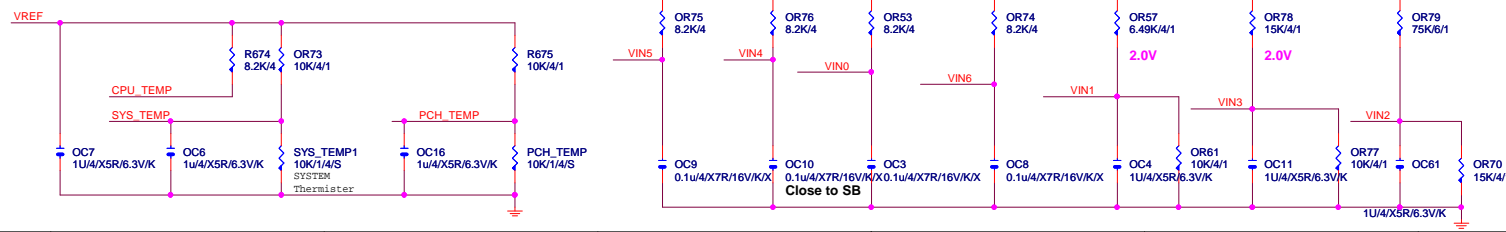


DUAL BIOS OPT STRAP



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

Hardware Monitor circuits

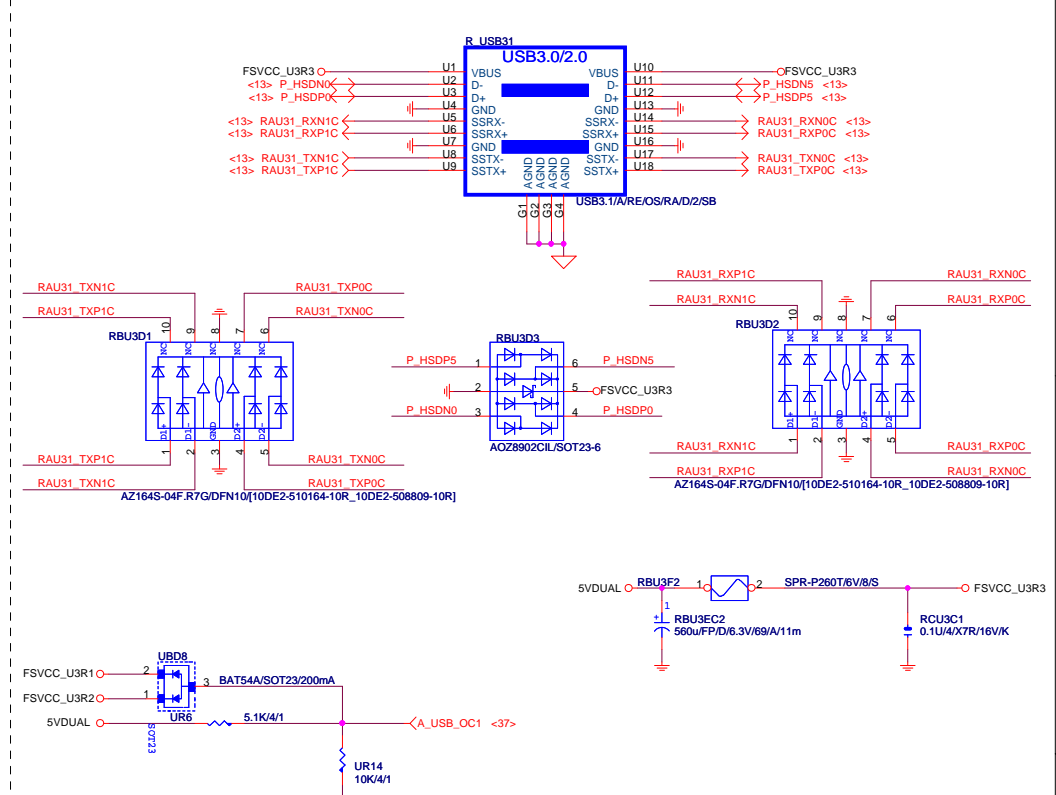
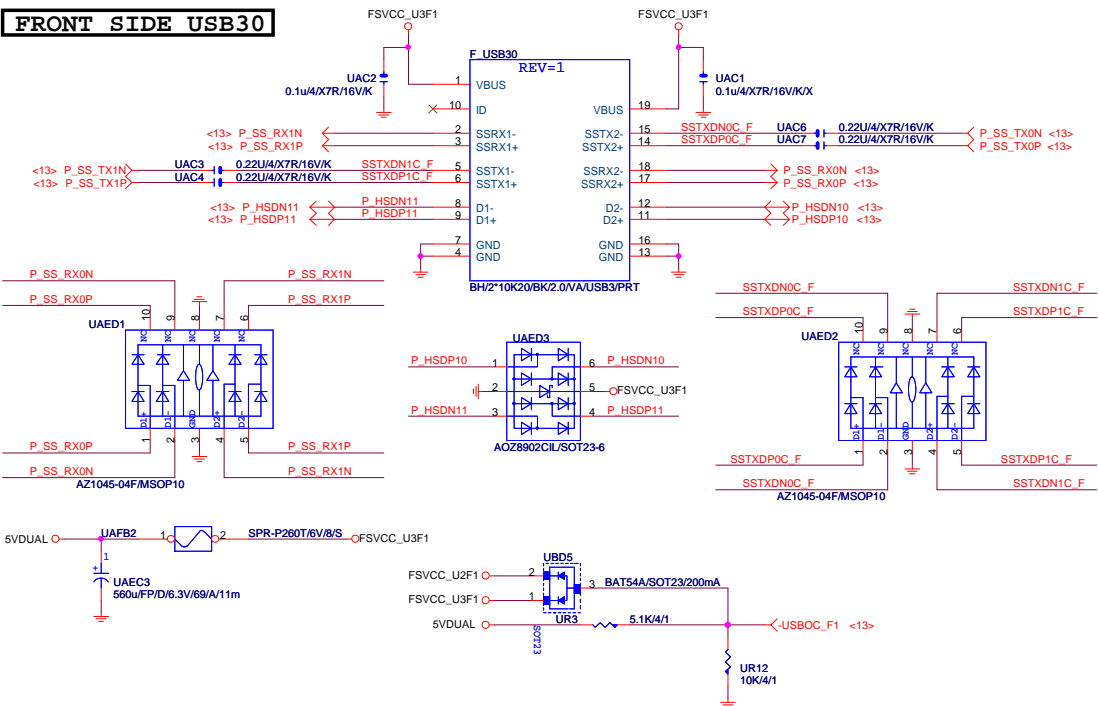


GIGABYTE

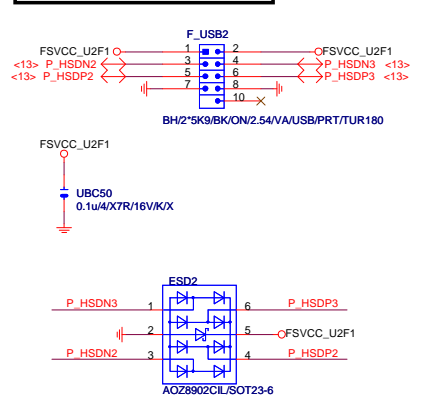
ITE 8628CX , HWM , TPM , KB_MS/USB

Title	ITE 8628CX , HWM , TPM , KB_MS/USB	Rev	1.0
Size	Document Number	GA-AB350-GAMING	
Customer			
Date	Tuesday, February 21, 2017	Sheet	18 of 37

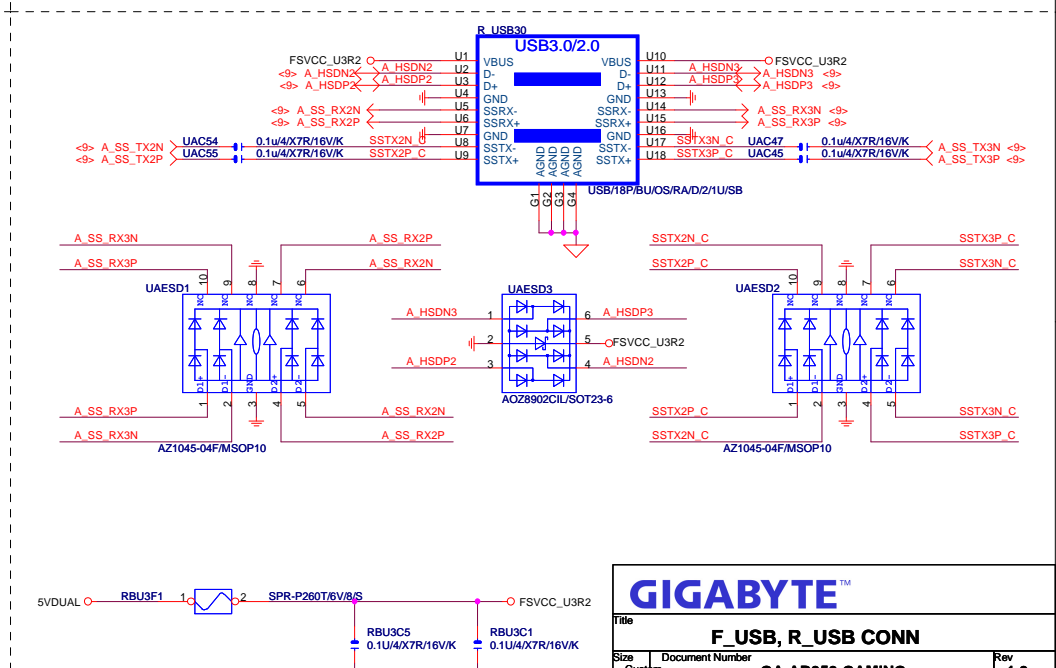
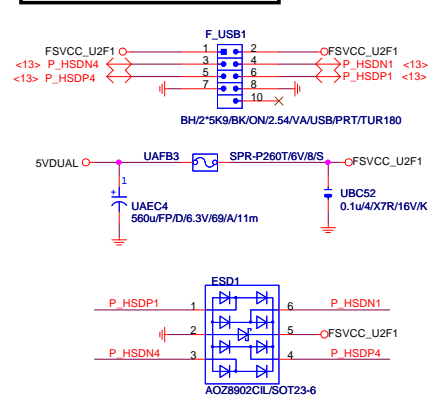
FRONT SIDE USB30

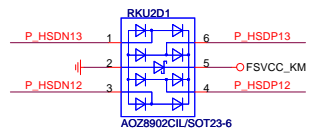


FRONT SIDE USB2



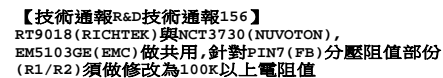
FRONT SIDE USB1





REV: 0.4

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



CORETYPE1	CORETYPE0	VPPD_ALW
1	X	0.9V
0	X	1.05V

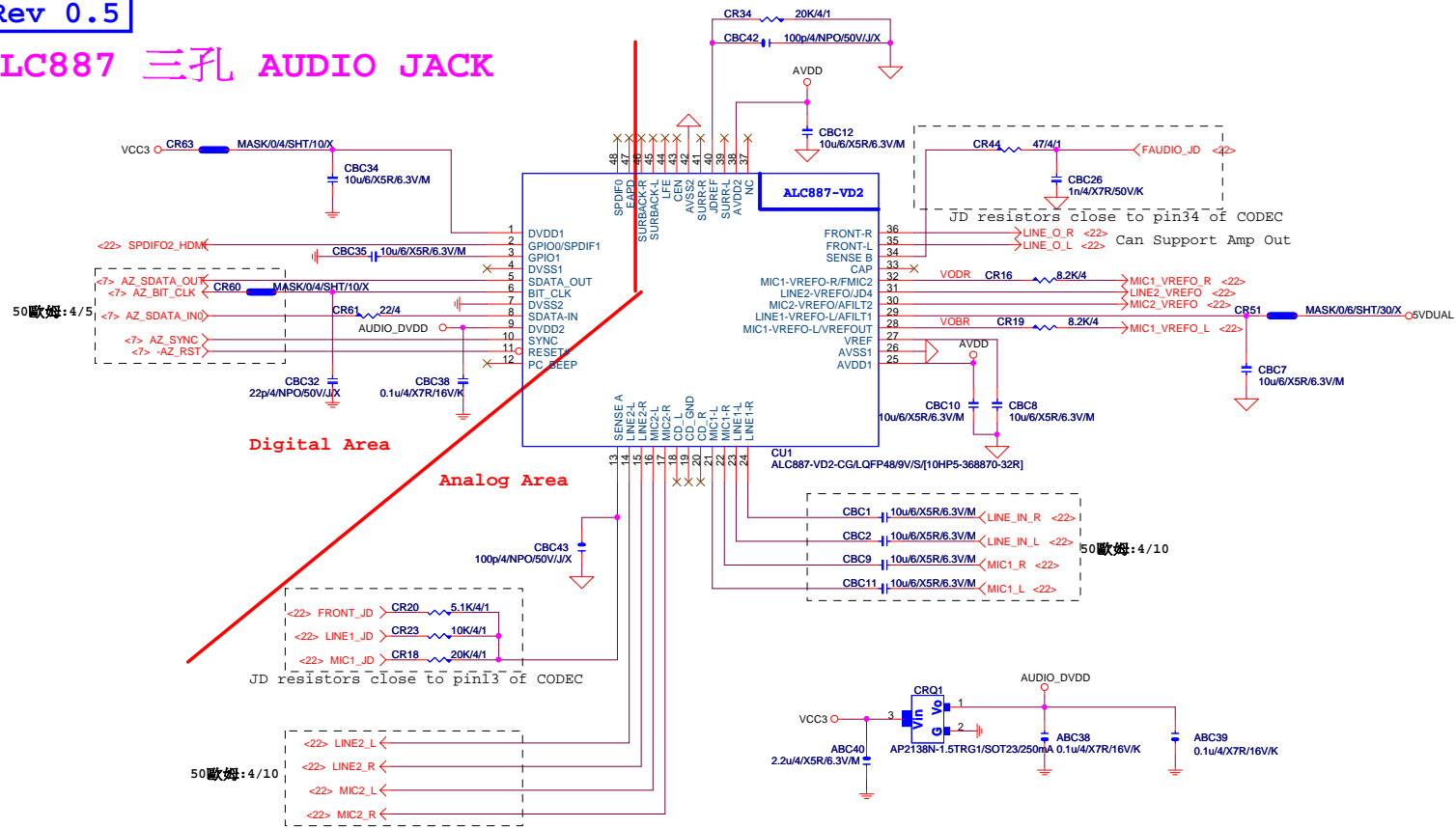
VPP CAP
* 大電容 x0

22u*1PCS



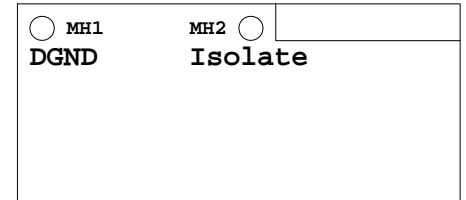
Title			
FAN, A_VDD1V8			
Size	Document Number	Rev	
Custom	GA-AB350-GAMING	1.0	
Date:	Tuesday, February 21, 2017	Sheet	20 of 37

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

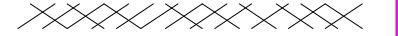


LAYOUT注意:要加

GND切割線

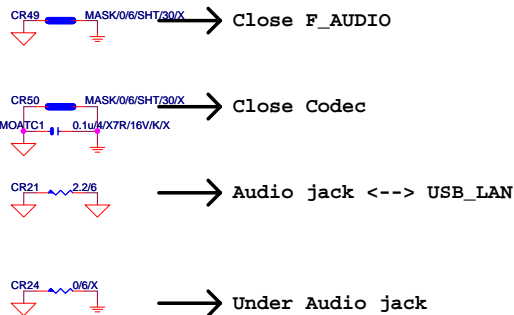


音效區域印刷



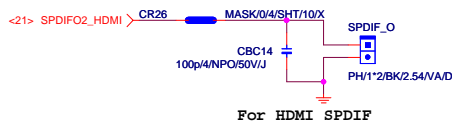
- BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

Rev 0.5



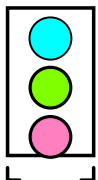
*量産前,0ohm改short pad

SPDIF_OUT

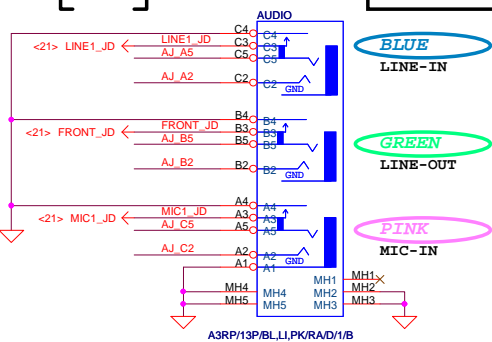


SPDIF_IN

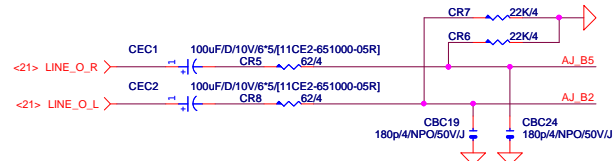
AZALIA JACK



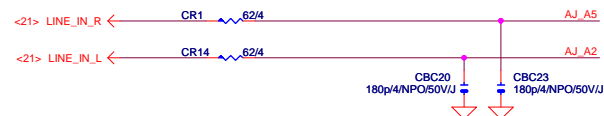
AZALIA JACK



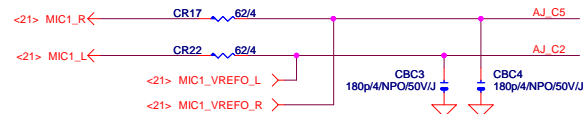
LINE-OUT



LINE-IN



MIC-IN

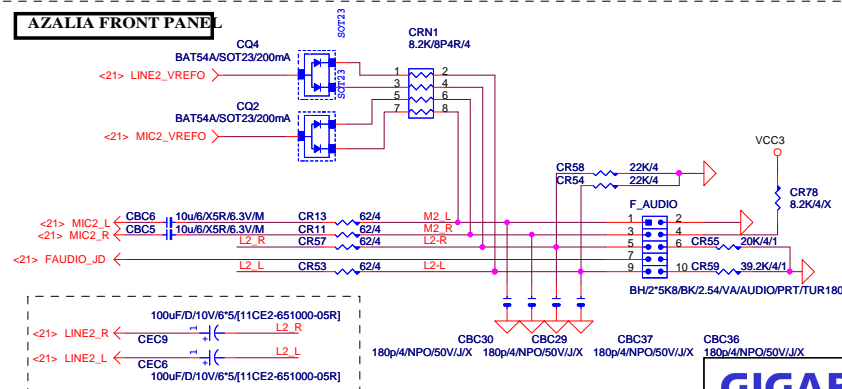


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



GIGABYTE

Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-AB350-GAMING	1.0
Date:	Tuesday, February 21, 2017	Sheet 22 of 37

5

4

3

2

1

VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)

AUDIO LED Control

	IO_GP25	IO_GP23	IO_GP91
Still Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

BLUE

C.LED1
LED/R/H/0603/S

C.LED2
LED/R/H/0603/S

C.LED3
LED/R/H/0603/S

C.LED4
LED/R/H/0603/S

C.LED5
LED/R/H/0603/S

C.LED6
LED/R/H/0603/S

C.LED7
LED/R/H/0603/S

C.LED8
LED/R/H/0603/S

C.LED9
LED/R/H/0603/S

C.LED10
LED/R/H/0603/S

VCC

CRN3
120/8P4R/6

LED_PW

C_LED

BOM OPTION :

1. Chemicon音效電容

2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)

3. LED Reserve (上件與否和LED顏色,依照各Model spec)

<18> G_PLED

(IT8628 GP92)

H

ITE8620 GP25

(可以和MPD-不同步)

VCC

CR103
8.2K/4

G_PLED

CQ28
EMF30N02J/SOT23/627pF/30m

SOT23

C_LED

GIGABYTE™

Title

VCORE_SOC

Size

Custom

Document Number

GA-AB350-GAMING

Rev

1.0

Date

Tuesday, February 21, 2017

Sheet

23

of

37

5

4

3

2

1

VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)

AUDIO LED Control

	IO_GP25	IO_GP23	IO_GP91
Still Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

BLUE

C.LED1
LED/R/H/0603/S

C.LED2
LED/R/H/0603/S

C.LED3
LED/R/H/0603/S

C.LED4
LED/R/H/0603/S

C.LED5
LED/R/H/0603/S

C.LED6
LED/R/H/0603/S

C.LED7
LED/R/H/0603/S

C.LED8
LED/R/H/0603/S

C.LED9
LED/R/H/0603/S

C.LED10
LED/R/H/0603/S

VCC

CRN3
120/8P4R/6

LED_PW

C_LED

BOM OPTION :

1. Chemicon音效電容

2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)

3. LED Reserve (上件與否和LED顏色,依照各Model spec)

VCC

CR103
8.2K/4

G_PLED

C_LED

<18> G_PLED

(IT8628 GP92)

H

ITE8620 GP25

(可以和MPD-不同步)

CQ28
EMF30N02J/SOT23/627pF/30m

SOT23

GIGABYTE™

Title

Size

Custom

Date

VCORE_SOC

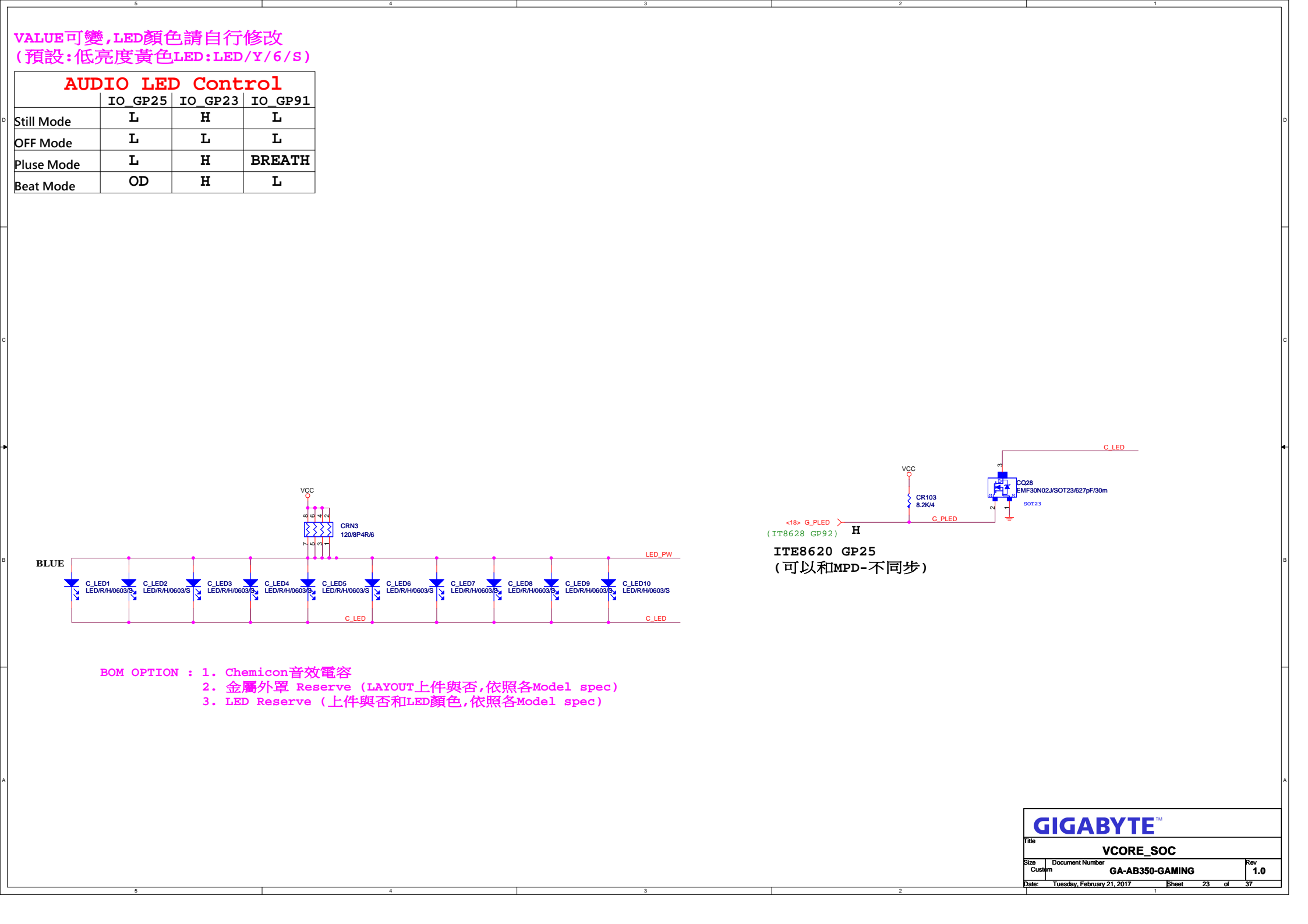
Document Number

Tuesday, February 21, 2017

Rev

1.0

Sheet 23 of 37



5

4

3

2

1

VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)

	IO_GP25	IO_GP23	IO_GP91
Still Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

AUDIO LED Control

BLUE

VCC

CRN3
120/8P4R/6

C.LED1
LED/R/H/0603/S

C.LED2
LED/R/H/0603/S

C.LED3
LED/R/H/0603/S

C.LED4
LED/R/H/0603/S

C.LED5
LED/R/H/0603/S

C.LED6
LED/R/H/0603/S

C.LED7
LED/R/H/0603/S

C.LED8
LED/R/H/0603/S

C.LED9
LED/R/H/0603/S

C.LED10
LED/R/H/0603/S

LED_PW

C_LED

<18> G_PLED >
(IT8628 GP92) H

ITE8620 GP25
(可以和MPD-不同步)

VCC

CR103
8.2K/4

G_PLED

CQ28
EMF30N02J/SOT23/627pF/30m

SOT23

C_LED

BOM OPTION :

- Chemicon音效電容
- 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)
- LED Reserve (上件與否和LED顏色,依照各Model spec)

GIGABYTE™			
Title	VCORE_SOC		
Size Custom	Document Number	Rev	
	GA-AB350-GAMING	1.0	
Date:	Tuesday, February 21, 2017	Sheet	23 of 37

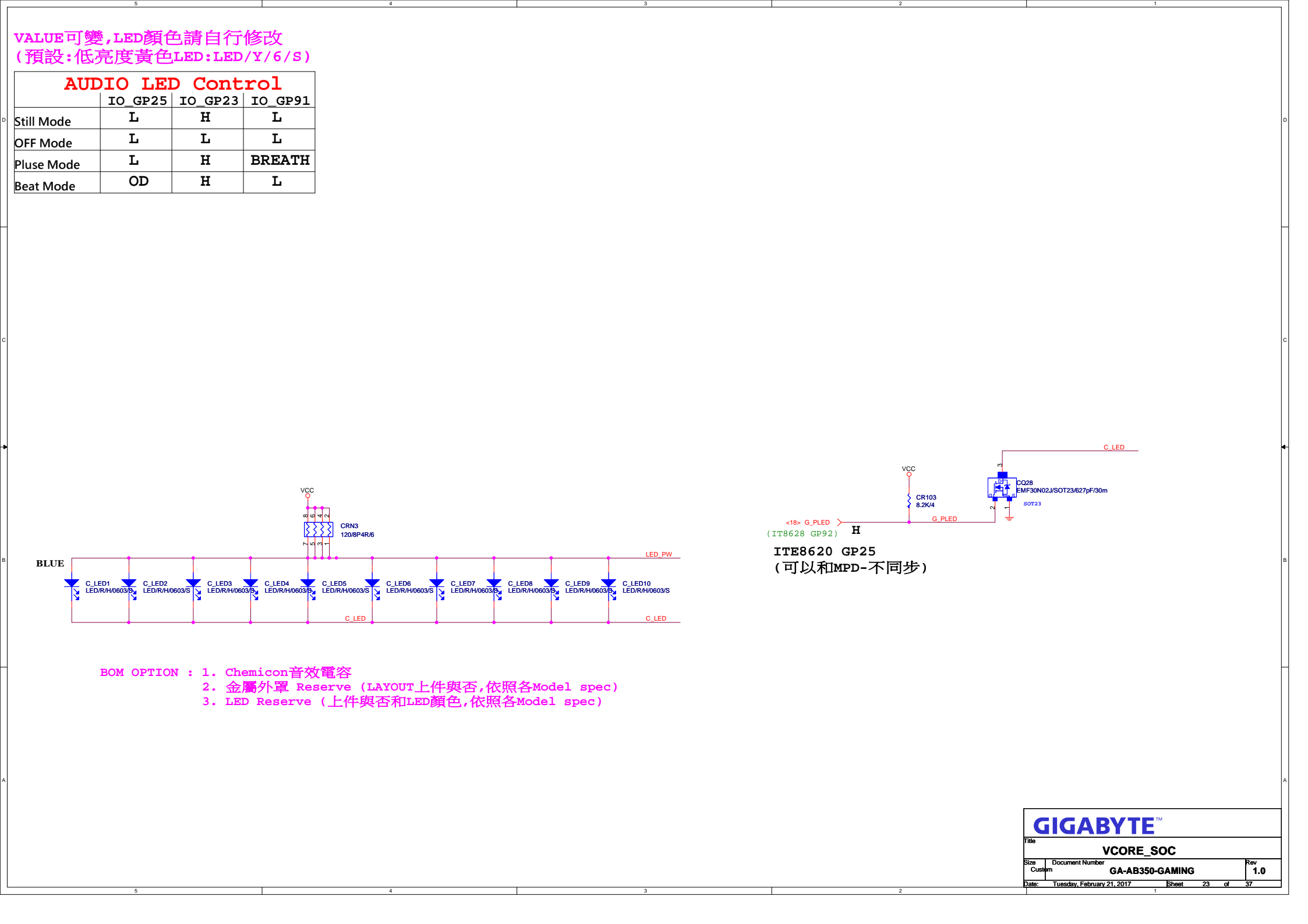
5

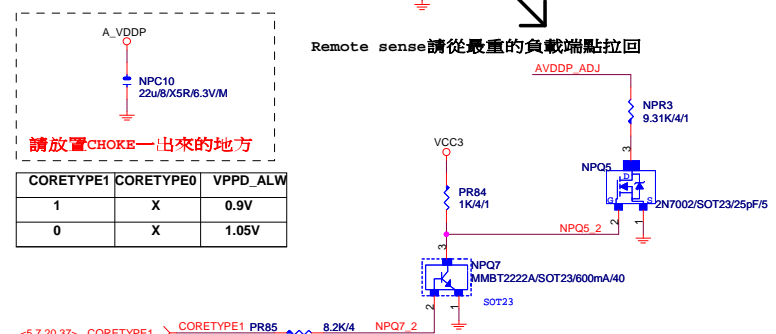
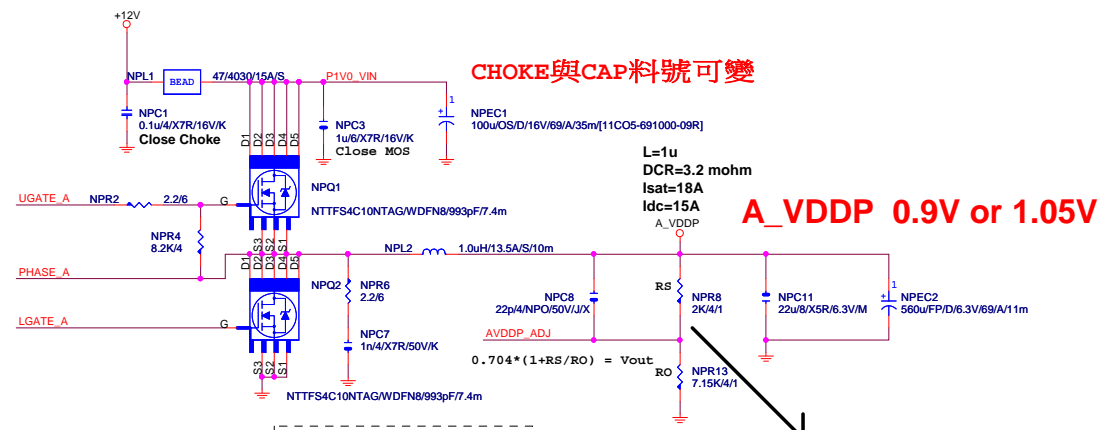
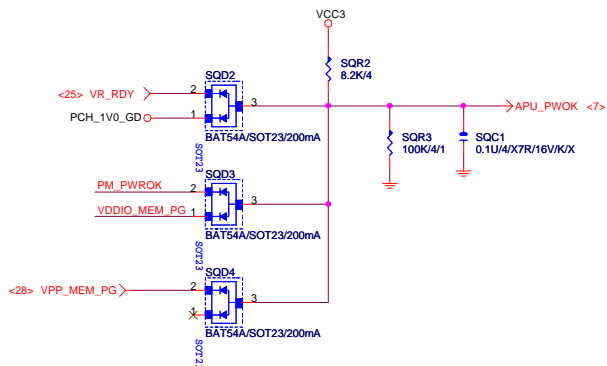
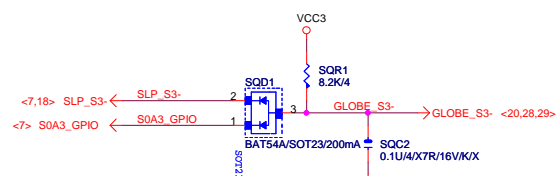
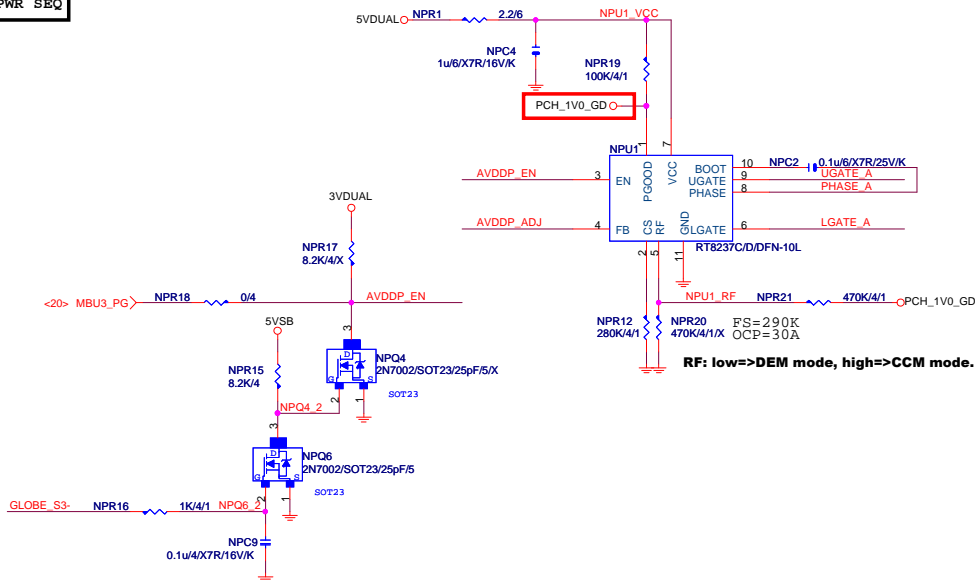
4

3

2

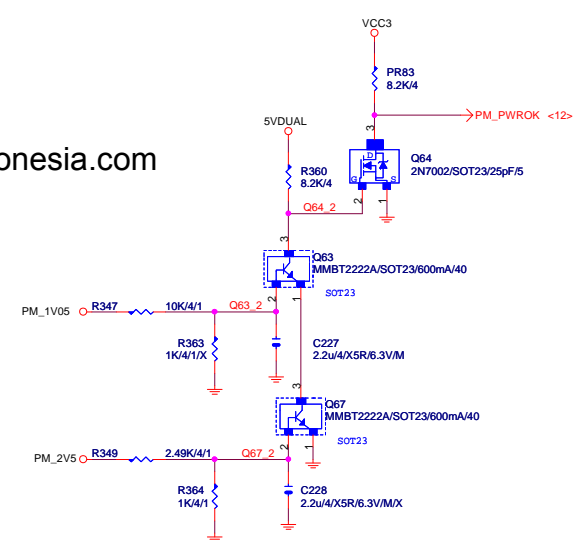
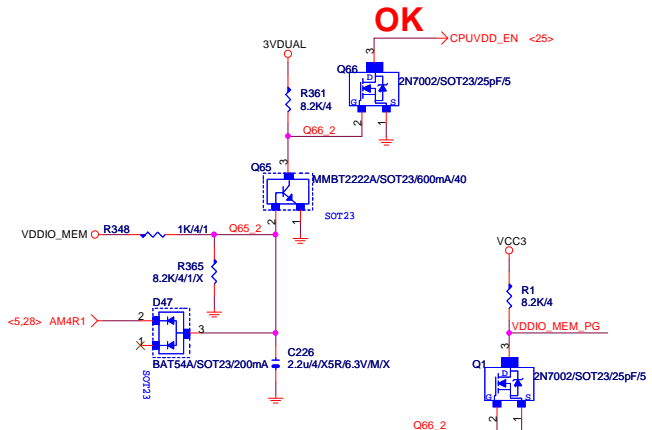
1

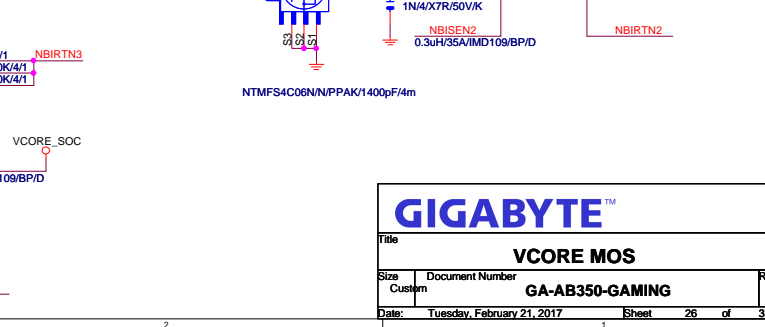
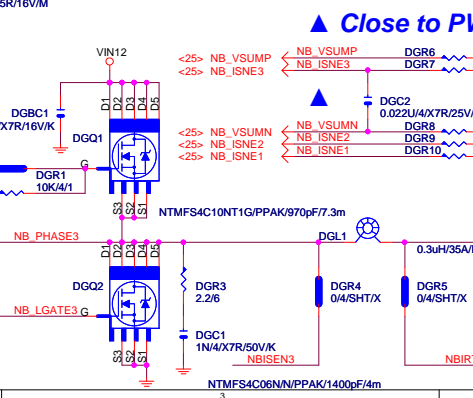
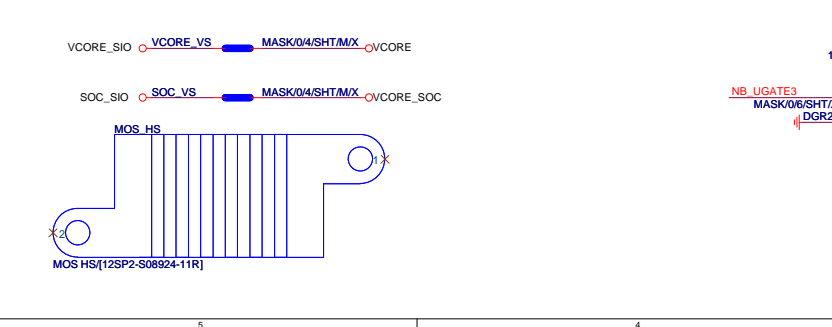
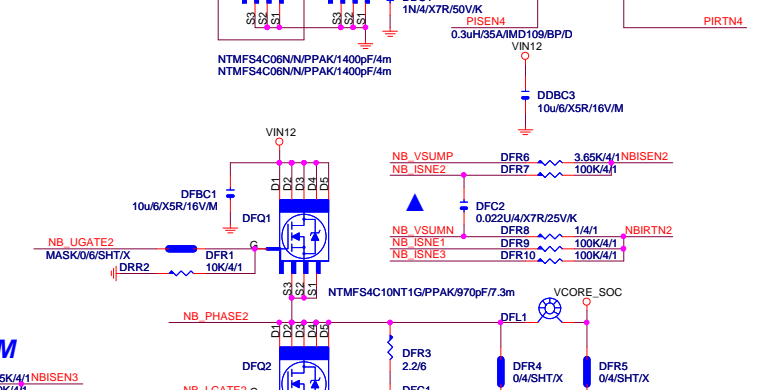
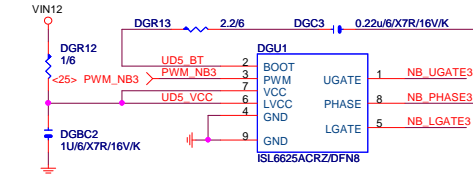
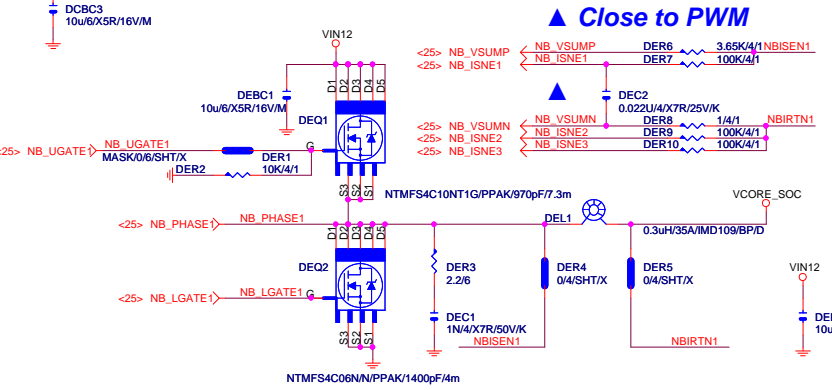
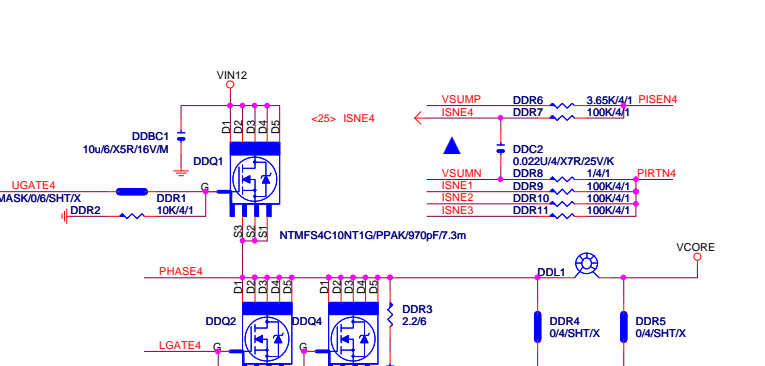
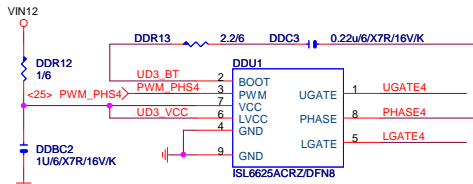
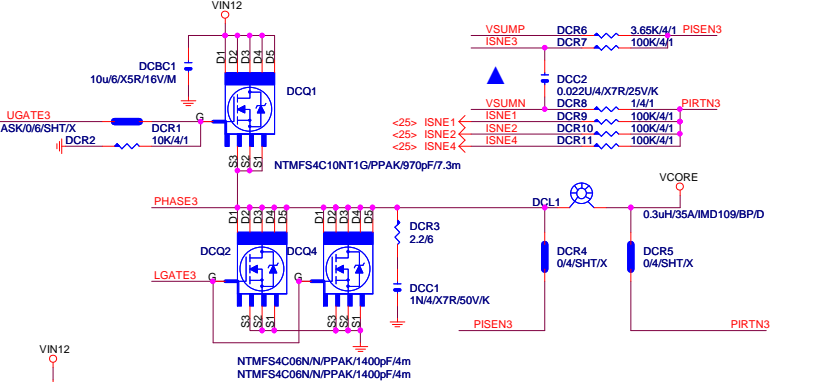
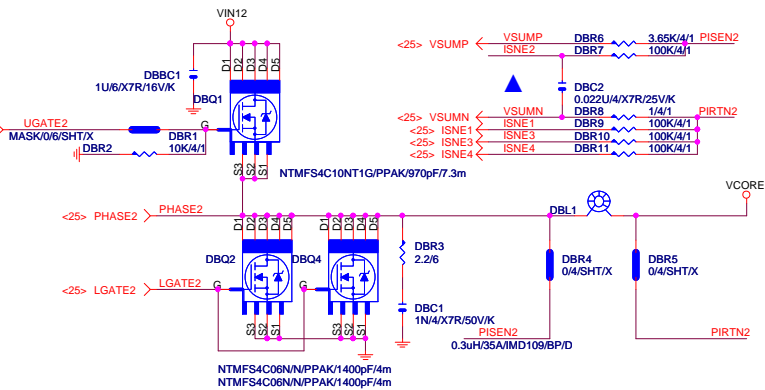
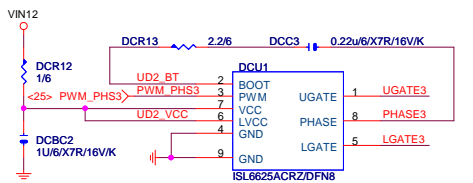
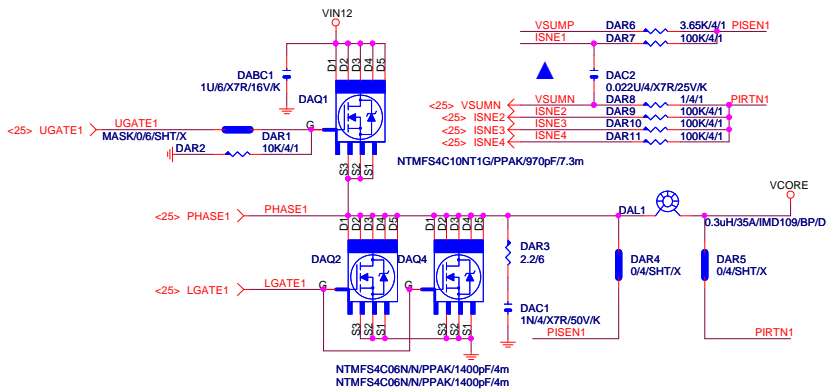




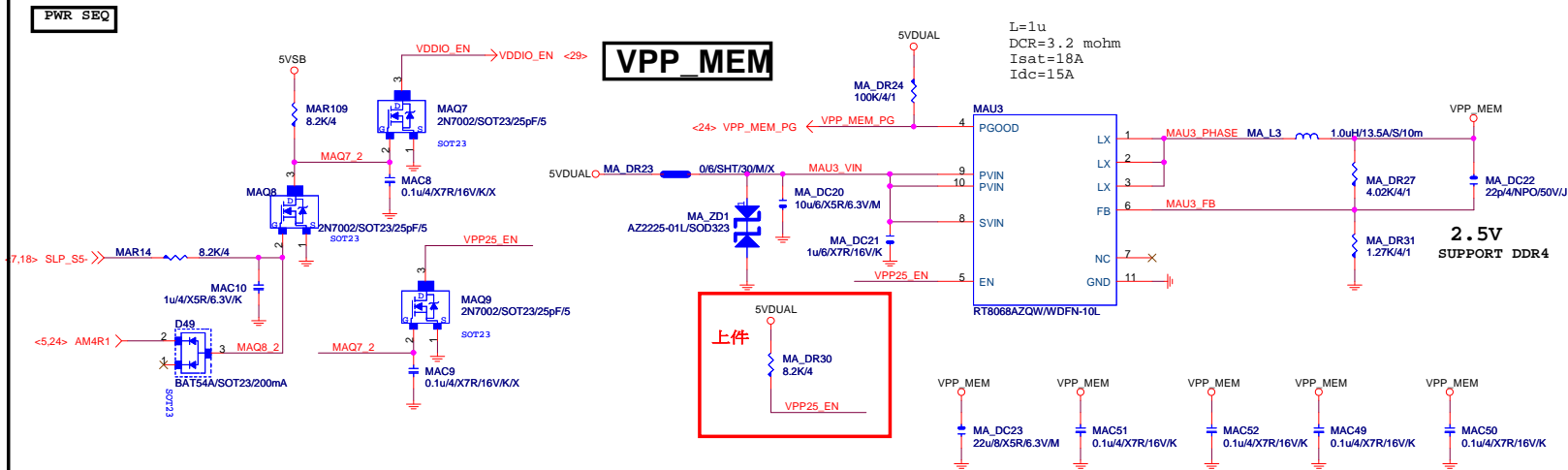
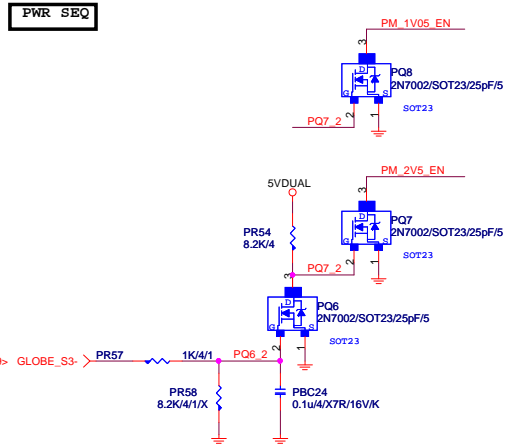
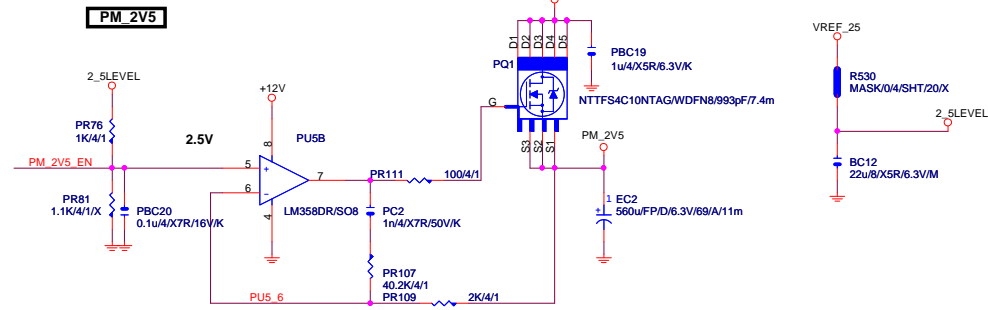
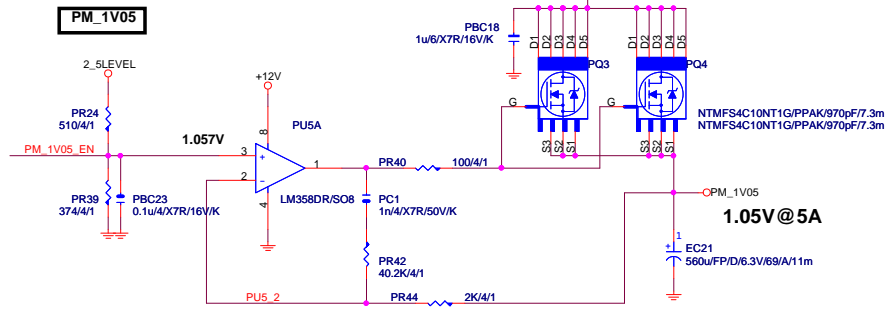
CORETYPE1	CORETYPE0	VPPD_ALV
1	X	0.9V
0	X	1.05V

teknisi-indonesia.com



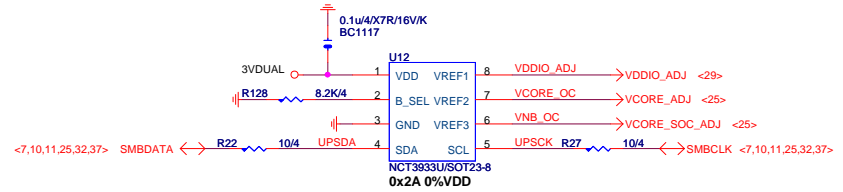
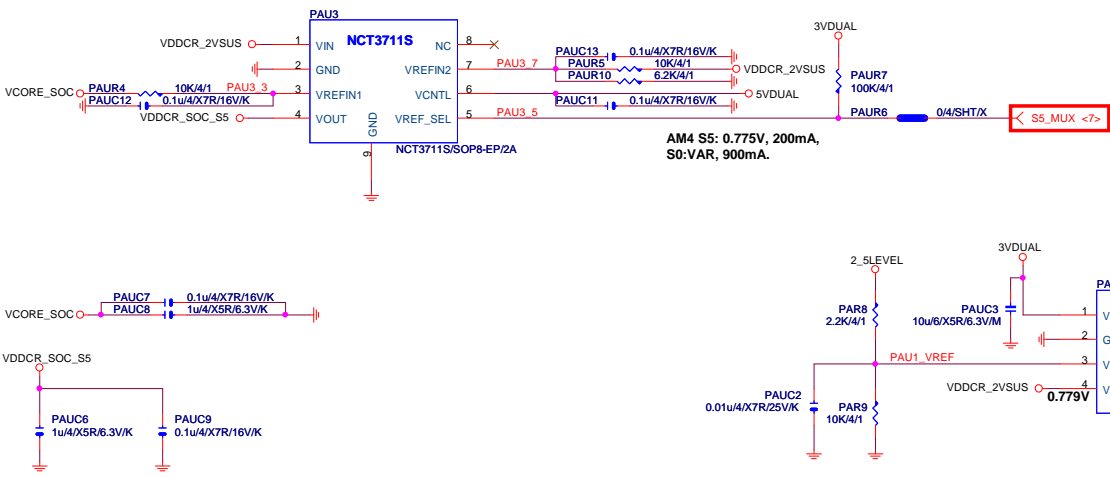


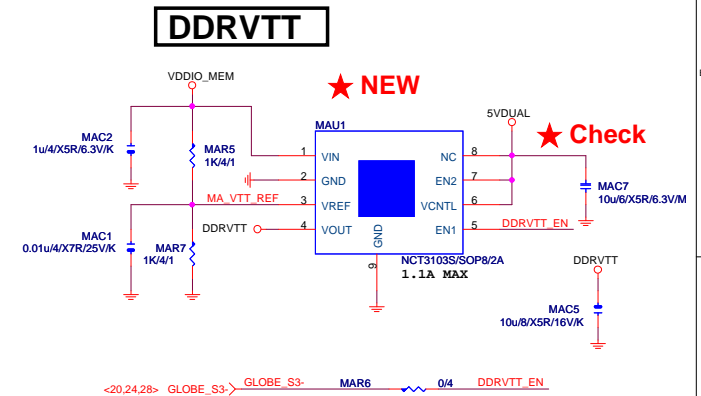
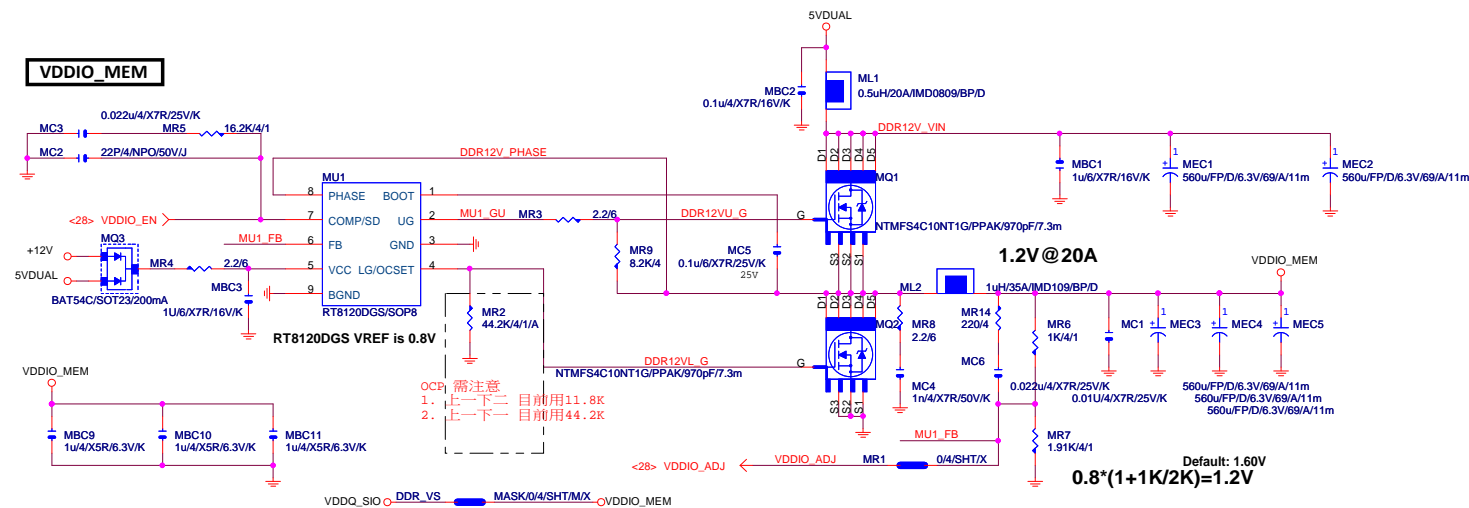
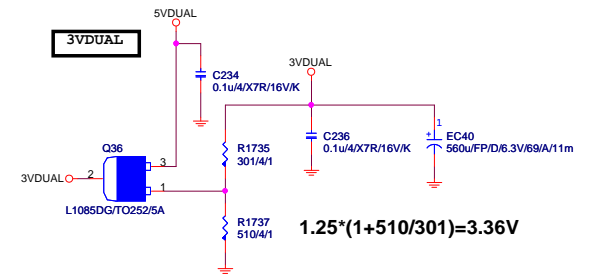
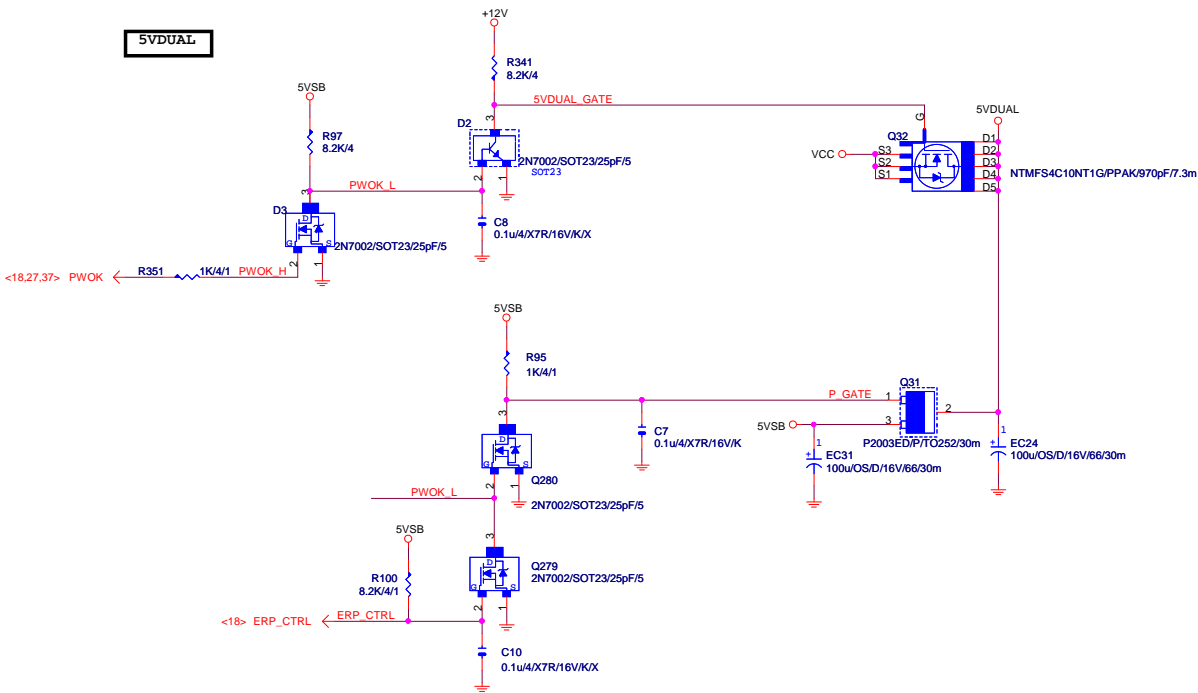
GIGABYTE™		
Title VCORE MOS		
Size	Document Number	Rev
Custom	GA-AB350-GAMING	1.0
Date:	Tuesday, February 21, 2017	Sheet 26 of 37



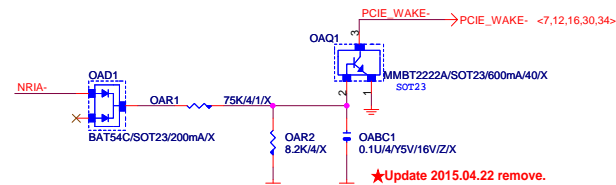
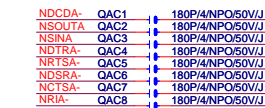
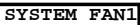
VDDCR SOC S5

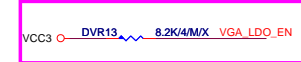
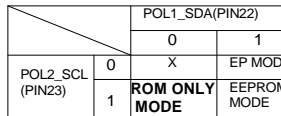
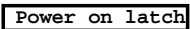
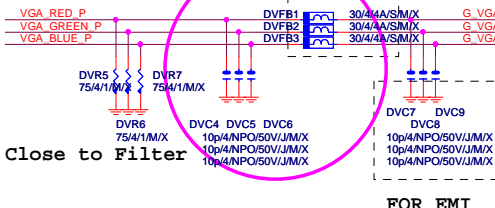
S5_MUX: S0-->High, S5-->Low
H: VDDCR_SOC_S5 will track VCORE_SOC.
L: If VCORE_SOC < 0.775V (OR 0.85V) , VDDCR_SOC_S5=0.775V.
If VCORE_SOC>=0.775V (OR 0.85V) , VDDCR_SOC_S5 will trace VCORE_SOC.





GIGABYTE™			
Title			
DDR PWR, 5VDUAL, 3VDUAL			
Size	Document Number	Rev	
Custom	GA-AB350-GAMING	1.0	
Date:	Tuesday, February 21, 2017	Sheet	29 of 37





DP HPD

