

Model Name: GA-Q170TN-GSM PLUS

rev1.0

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,GND
15	Dual BIOS
16	ITE 8628 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*4 SLOT
20	SATA
21	ISL95858_856 PWM
22	ISL95858_856 MOS_VCORE
23	ISL95858_856 MOS_VCCGT
24	VCCSA_VCCIO_VCCPLL
25	RT8237_DDR_VDDQ
26	RT8068_VPP
27	RT8237_PCH_-BEAD

SHEET

TITLE

28	DISCRETE POWER
29	ATX POWER , A_-PROCHOT
30	DC to 12V VCC VCC3
31	PTN3356 - DP to VGA - IC
32	PTN3356- DP to VGA - Conn
33	MINI PCI-E & MSATA
34	R_USB30_1
35	R_USB30_2
36	EDP
37	LVDS CH7511
38	REALTEK ALC887
39	REAR AUDIO JACK
40	DUAL LAN-C-I211
41	DUAL LAN-C-I219
42	LAN CONNECTOR-I211-I219
43	F_USB20
44	COM
45	LPT , TPM
46	F_PANEL
47	DP PORT
48	HDMI PORT
49	POWER MAP
50	EMI/ESD
51	TABLE LIST
52	NTC MAP

Gigabyte Technology

Cover Sheet

Title	Document Number	Rev
GA-Q170TN-GSM PLUS		1.0
Date: Thursday, May 26, 2016	Sheet 1 of 52	

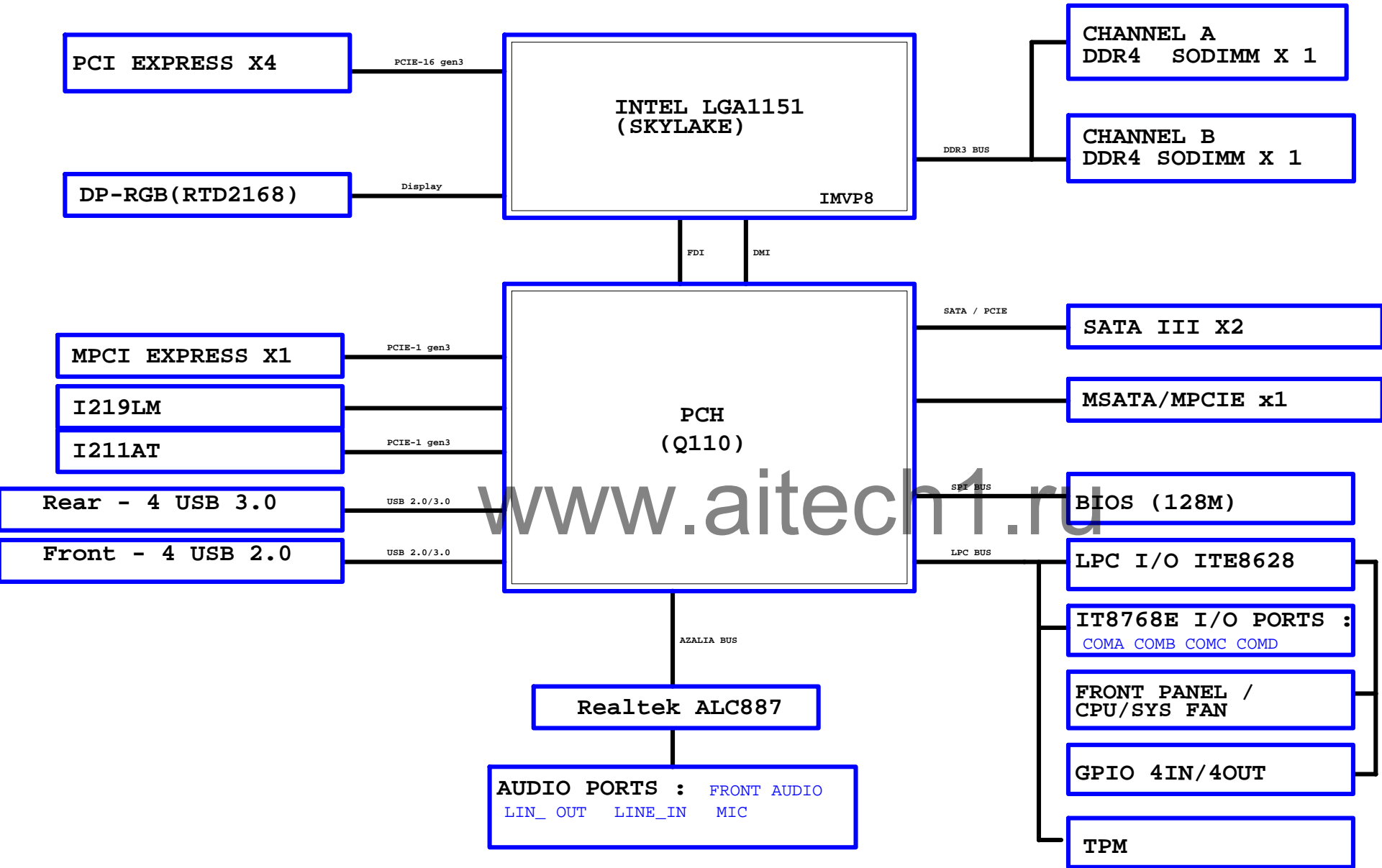
Model Name: GA-Q170TN-GSM PLUS *rev:1.0* Circuit or PCB layout change

Component value change history

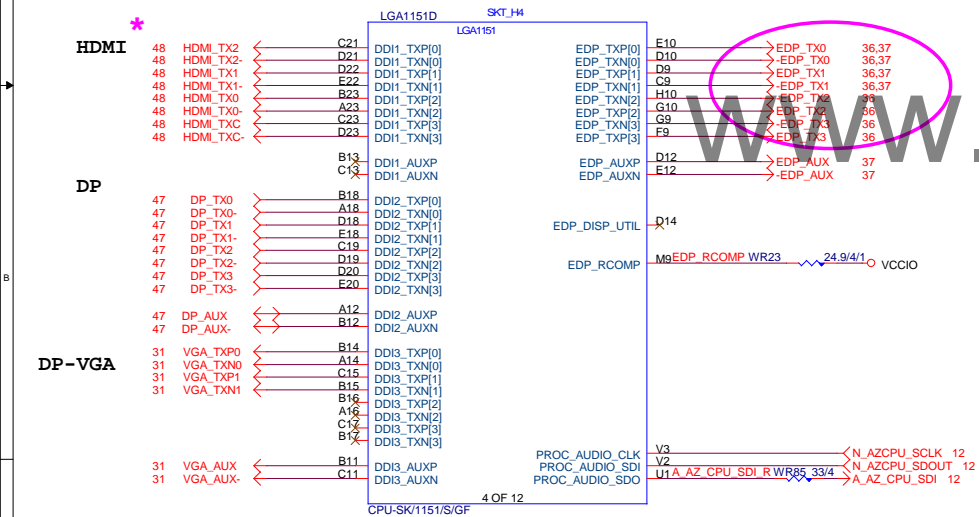
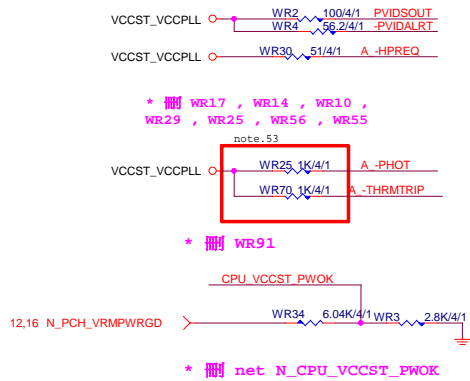
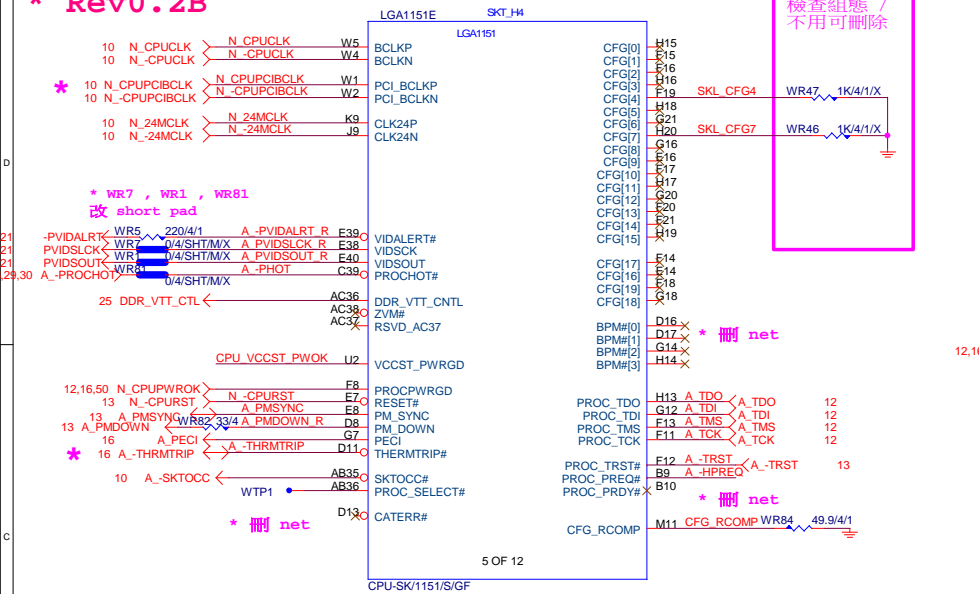
2016/05/18

[illegible][illegible]

BLOCK DIAGRAM



*** Rev0.2B**



```
G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R
```

```
4 layer HDMI/DP/eDP/=====4/4/4//15
6 layer HDMI/DP/eDP/=====4/5.5/4//15
```

Impedance=85 +- 15%

```
CFG[2]:x16 Lane Numbering
Reversal_1=
NORMAL;0=reversal
CFG[4]: eDP
enable:1:disable/0=enable
CFG[6:5]:PCI Express* Bifurcation; 11=
1 x16 PCI Express;10=2x8 PCI Express
CFG[7]: PEG Training:1=(default) PEG Train
immediately following RESET#;0=PEG Wait
for BIOS
```

Bifurcation Config.	Signals Lanes		
	CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0

```

PA_EXP_TXP[0..3]  >>> PA_EXP_TXP[0..3]  19
PA_EXP_TXN[0..3]  >>> PA_EXP_TXN[0..3]  19
PA_EXP_RXP[0..3]  >>> PA_EXP_RXP[0..3]  19
PA_EXP_RXN[0..3]  >>> PA_EXP_RXN[0..3]  19

```

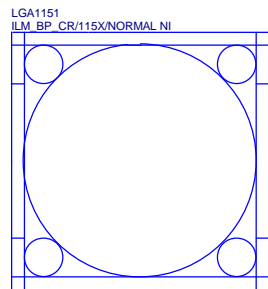
```
4 layer PEG/DMI=====4/4/4//15
6 layer PEG/DMI=====4/5.5/4//15
```

Impedance=85 +- 15%

W=12 mil out of CPU
S=15 mil out of CPU

<i>Gigabyte Technology</i>			
Title			
CPU LGA1151-A			
Size Custom	Document Number		Rev
	GA-Q170TN-GSM PLUS		1.0
Date:	Thursday, May 26, 2016	Sheet	4 of 52

* 改DDR4 net



Need check the new CPU ME



8 MODT A[0..1] \longleftrightarrow MODT A[0..1]

9 MODT BI[0..1] \longleftrightarrow MODT BI[0..1]

8 MDA[0..63] ↔ MDA[0..63]

9 $\text{MDB}[0..63] \longleftrightarrow \text{MDB}[0..63]$

8 M_DQSA[0..7] \longleftrightarrow M_DQSA[0..7]

8 $M_{-}DQSA[0..7] \longleftrightarrow M_{-}DQSA[0..7]$

8 MAAA[0..16] \longleftrightarrow MAAA[0..16]

9 MAAB[0..16] \longleftrightarrow MAAB[0..16]

9 M_DQSB[0..7] \longleftrightarrow M_DQSB[0..7]

9 M_-DQSB[0..7] \longleftrightarrow M_-DQSB[0..7]

DDR CHANNEL
B

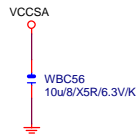
2 OF 12

Gigabyte Technology

CPU LGA1151-B

Size	Document Number
Custom	GA-Q170TN-GSM PLUS

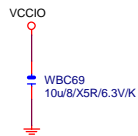
Date: Thursday, May 26, 2016 Sheet 5 of 52



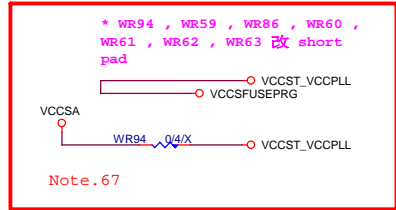
* 刪 WBC50 電容

* WBC51 , WBC52
VDDQ 改 VCCSA

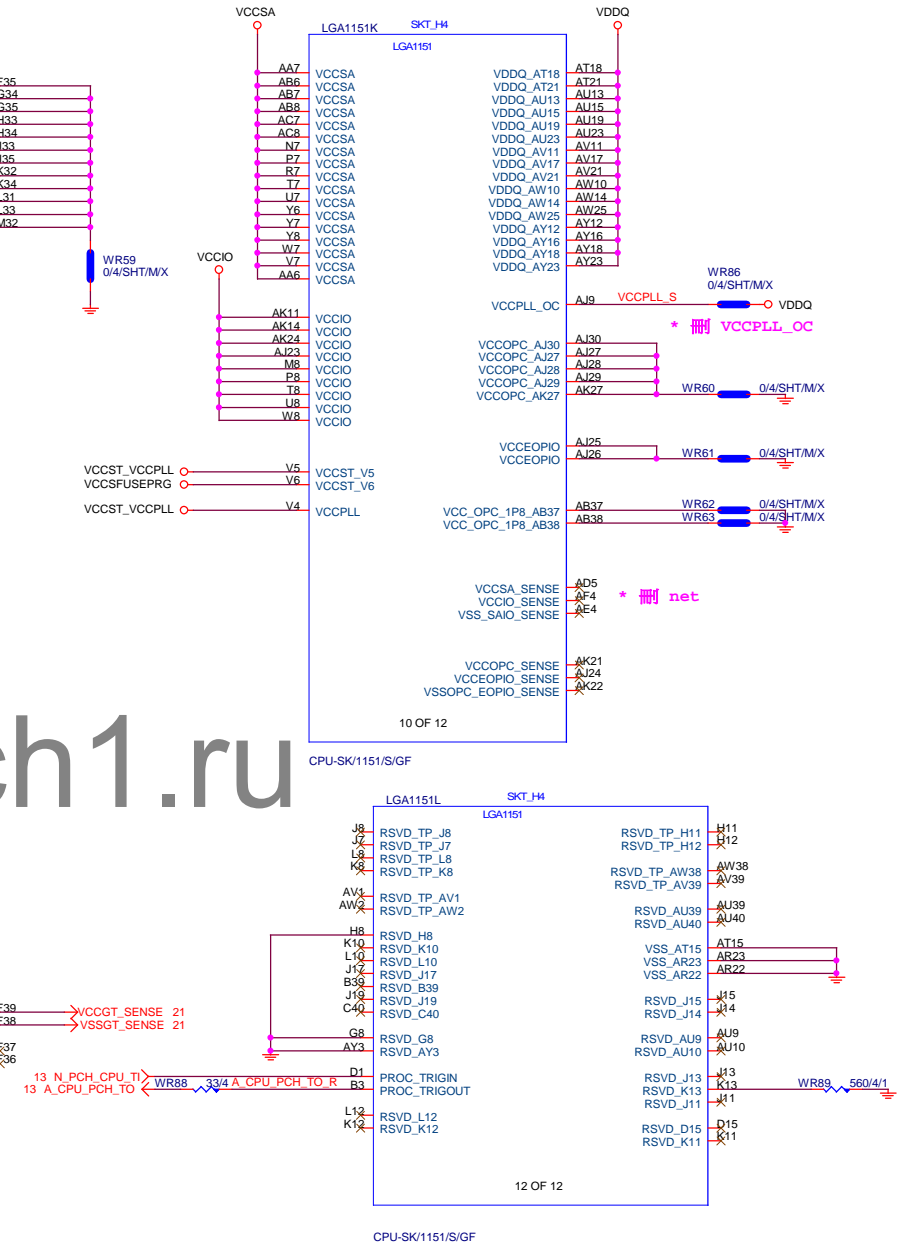
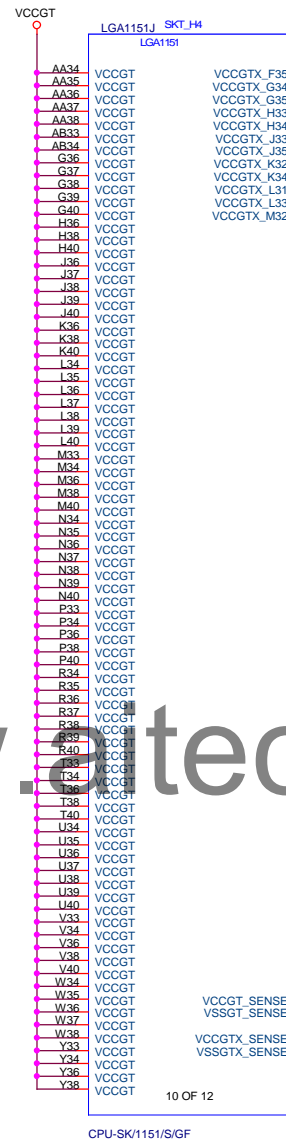
* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容

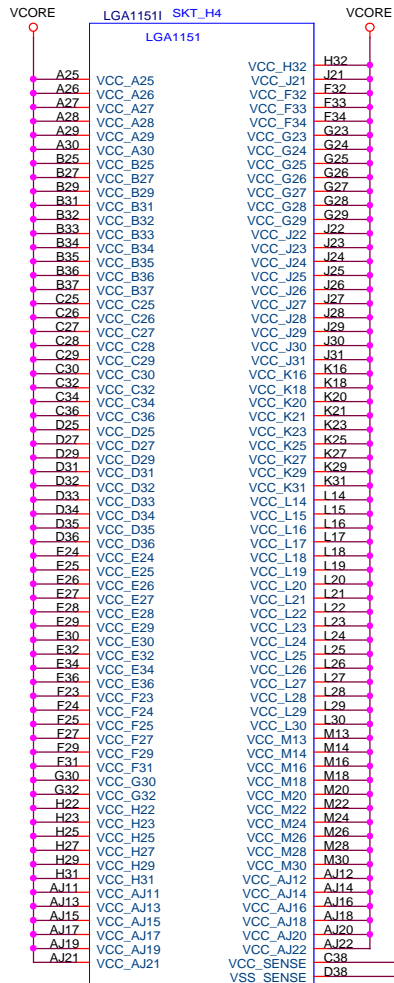


* 刪 VCCGT 電容



www.tech1.ru

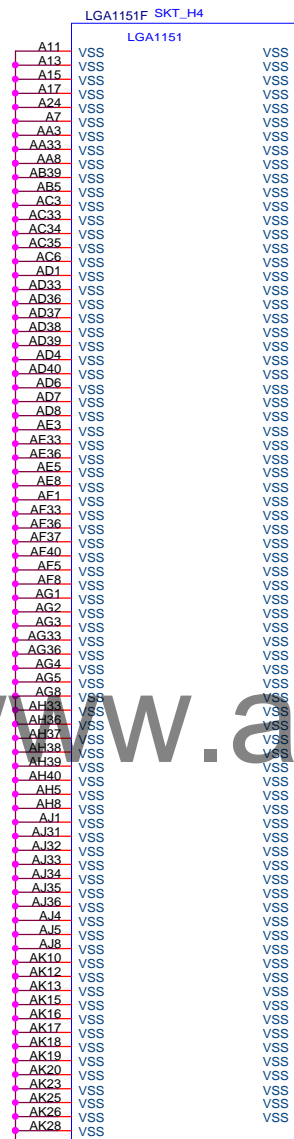




9 OF 12

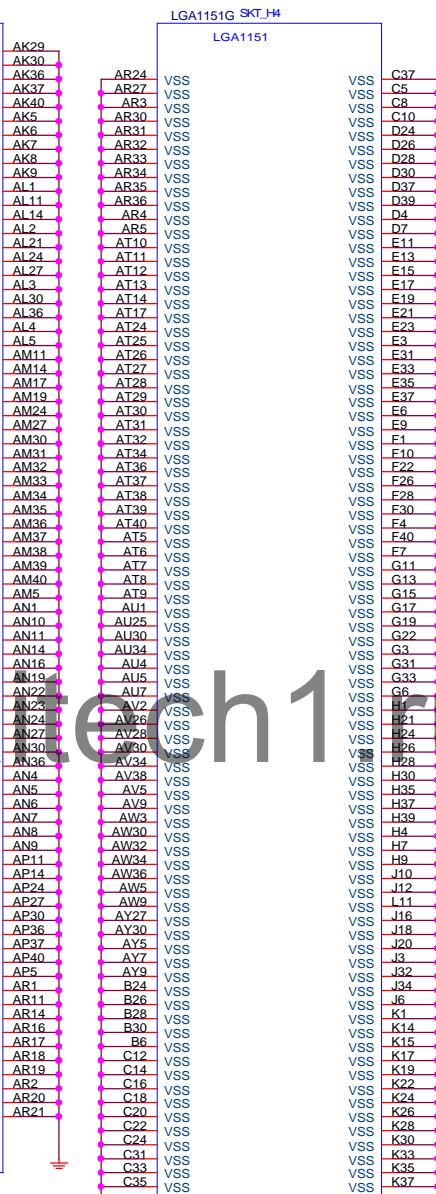
CPU-SK/1151/S/GF

* 刪 Vcore 電容



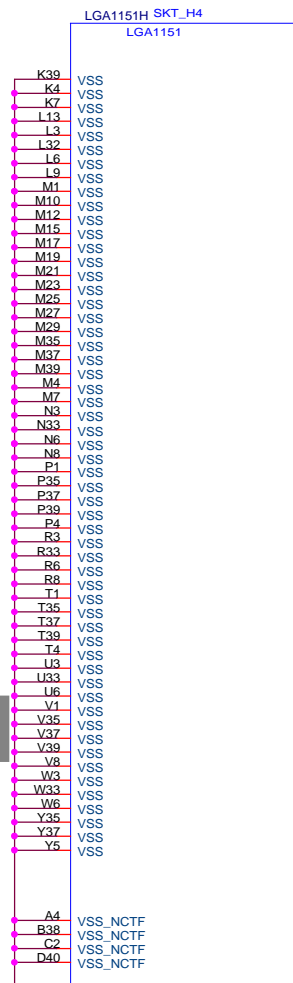
6 OF 12

CPU-SK/1151/S/GF



7 OF 12

CPU-SK/1151/S/GF

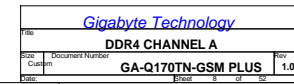
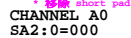


8 OF 12

CPU-SK/1151/S/GF

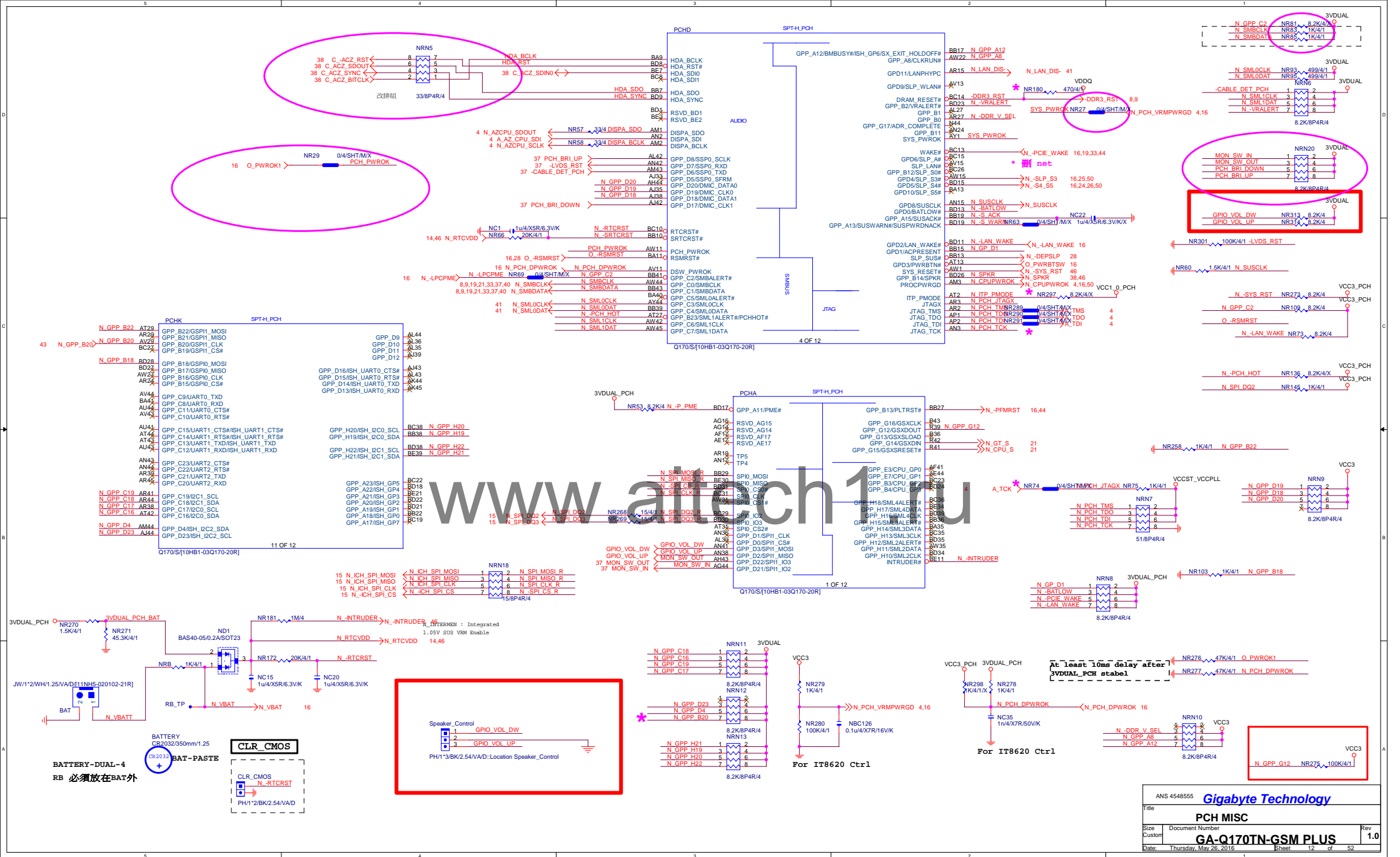
Gigabyte Technology

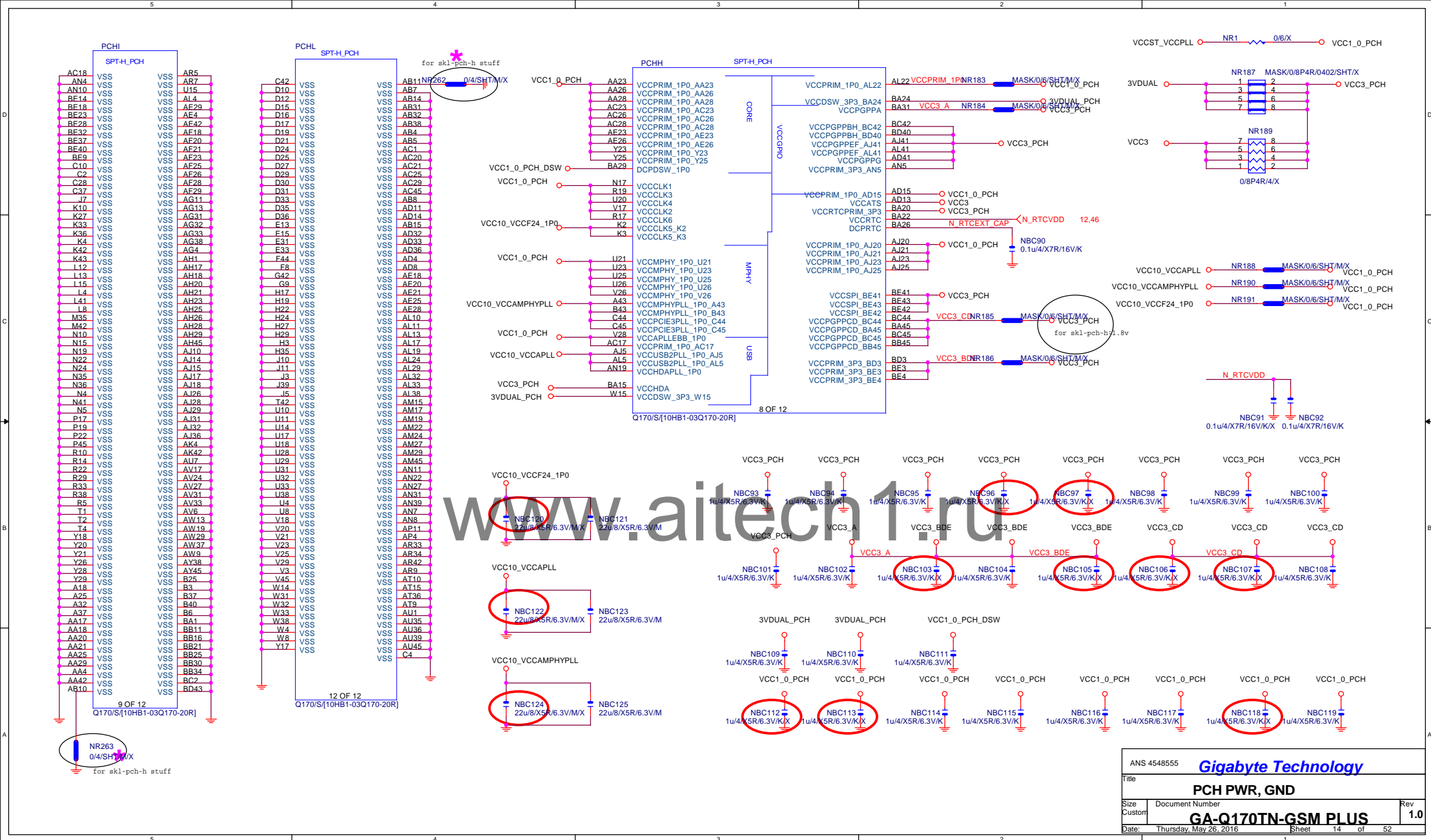
Title			CPU LGA1151-C	
Size	Document Number		Rev	
Custom	GA-Q170TN-GSM PLUS		1.0	
Date:	Thursday, May 26, 2016	Sheet	7	of 52

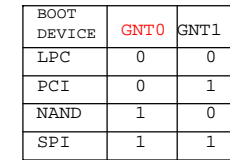










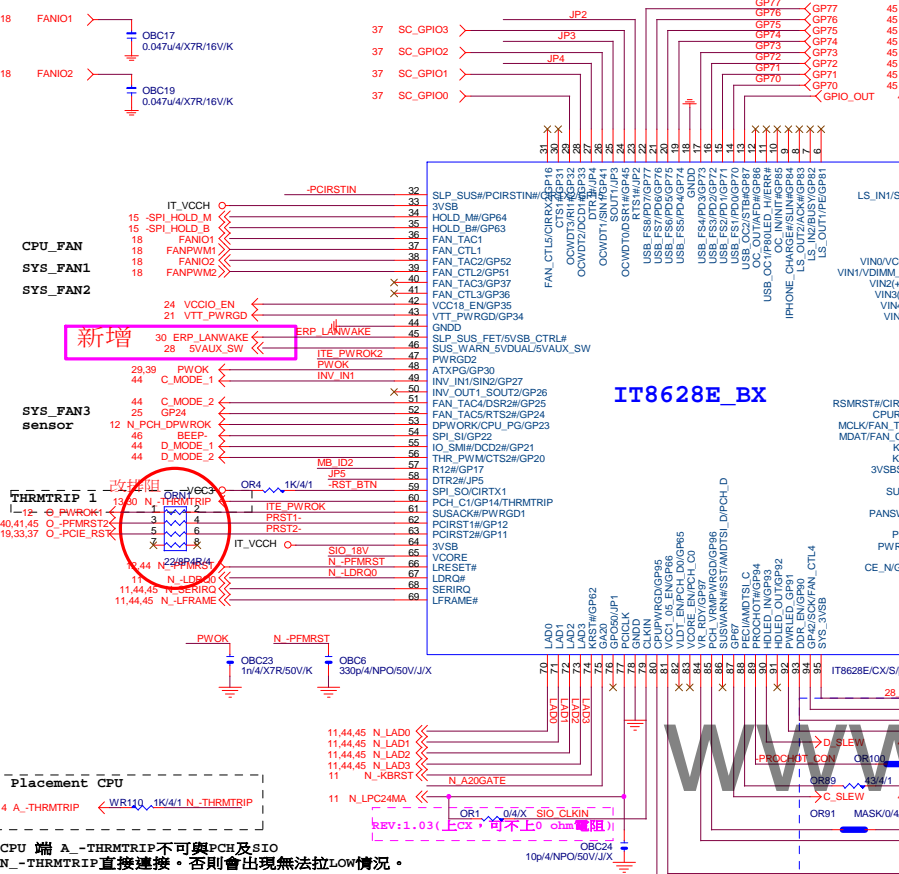


www.aitech1.ru



BIOS_PH

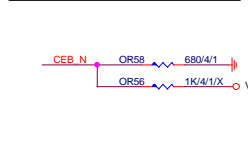
SIO IT8628BX REV:1.08



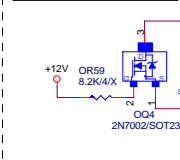
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL5 FAN_TAC5
OPT_FAN or SYS_FAN4	N/A
THRMTrip1	YES PIN60
THRMTrip2	YES PIN94

IT8628BX GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時 會拉 Lo
PIN 90/91	DEFAULT為HDLLED FUNCTION, GP93 BYPASS TO GP92 高波時 會拉 Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 Lo
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
PIN 22	PIN22, 需高於3V, 若低於 該部分COM PORT及LPT裝置 雜訊會異常動作。

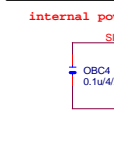
DUAL BIOS OPT STRAP



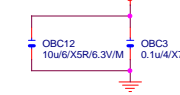
Power leakage



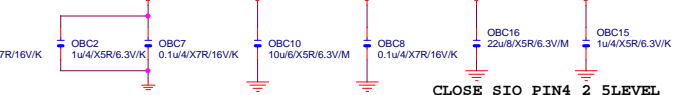
SIO_18V



SIO CAP



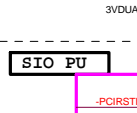
CLOSE SIO PIN4 2_5LEVEL



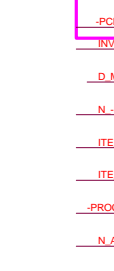
MB ID



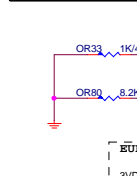
PWR SHT



SIO PU



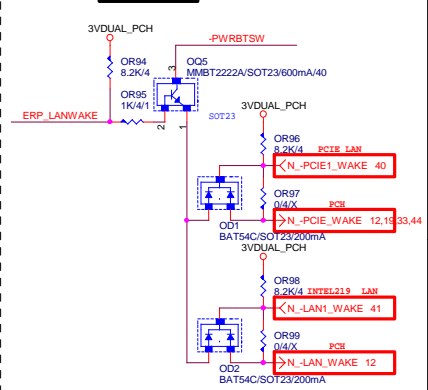
SIO STRAP



EUP control detect	
3VDUAL	OR47 100k/41 28 3VSB

FOR SYS_FAN3確認SYS_TEMP	
JP2	1 Disable WDT 0 Enable WDT to rest PWROK
JP3	1 SPI-Flash Disable 0 SPI-Flash Enable
JP4	1 k8 power sequency function is Disable 0 k8 power sequency function is Enable
JP5	1 anti-surge Disable 0 anti-surge Enable
JP3	1 1 The default value of EC Index 63h/6Bh/73h is 80h. 0 The default value of EC Index 63h/6Bh/73h is FFh
JP5	0 1 The default value of EC Index 63h/6Bh/73h is 00h. 0 The default value of EC Index 63h/6Bh/73h is 40h.

(組態三) Dual LAN

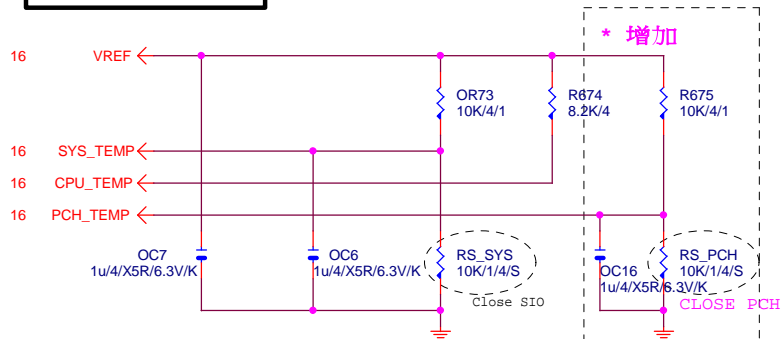


Gigabyte Technology

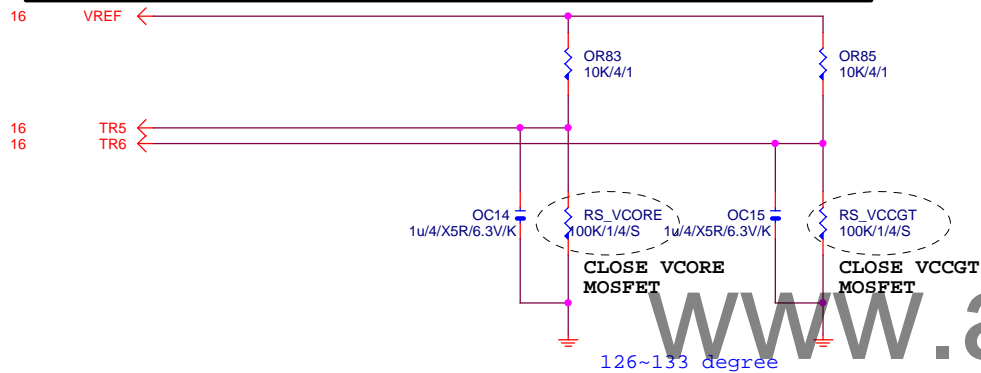
Title		ITE 8628 LPC IO	
Size	Document Number	Rev	
Custom		GA-Q170TN-GSM PLUS	
Date	Thursday, May 26, 2016	Sheet	16 of 52

TEMP H/W MONITOR

REV 1.04



RS_VCORE, RS_VCCGT, CLOSE CPU_VCORE & VCCGT MOSFET

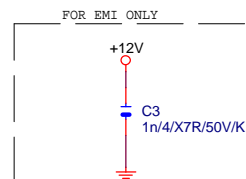
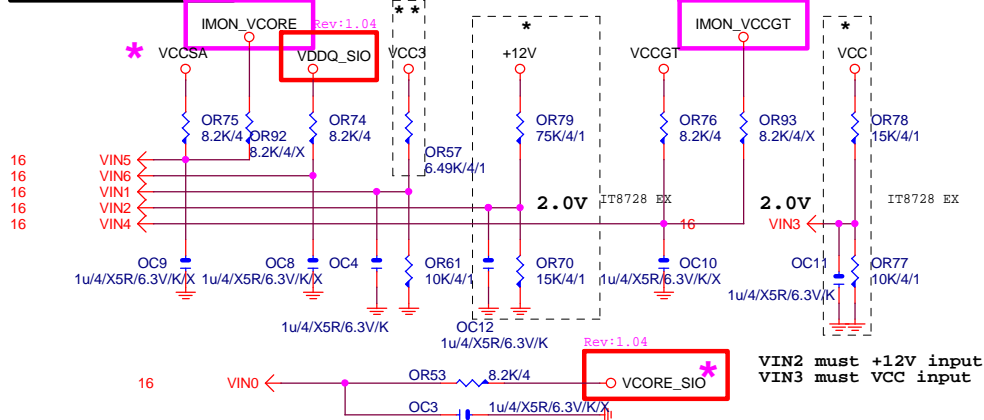
~~PROCHOT: 有mos heartsink 不用prochot function~~

VOLTAGE-- H/W MONITOR

Connect to PWM

* IT8728 BX
** IT8728 CX

Connect to PWM

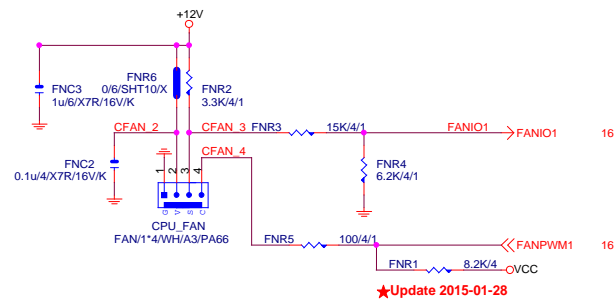


Gigabyte Technology

Title				
HWM,KB/MS, FAN CTRL				
Size	Document Number			Rev
Custom	GA-Q170TN-GSM PLUS			1.0
Date:	Thursday, May 26, 2016	Sheet	17	of 52

CPU SMART FAN

Rev: 0.53

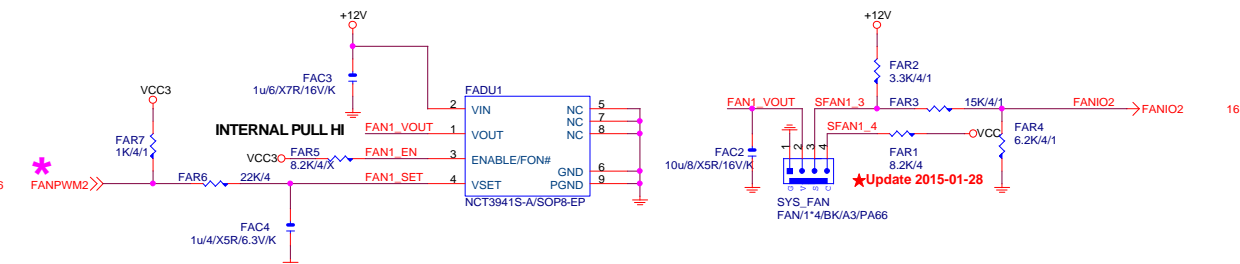


SYSTEM FAN1

Linear SYS_FAN

Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)

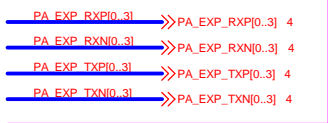
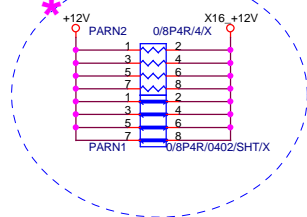
A.



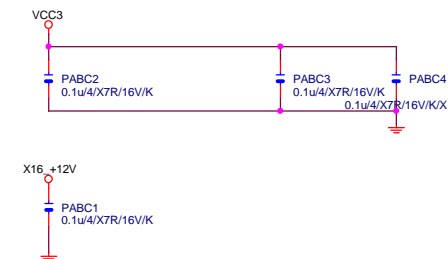
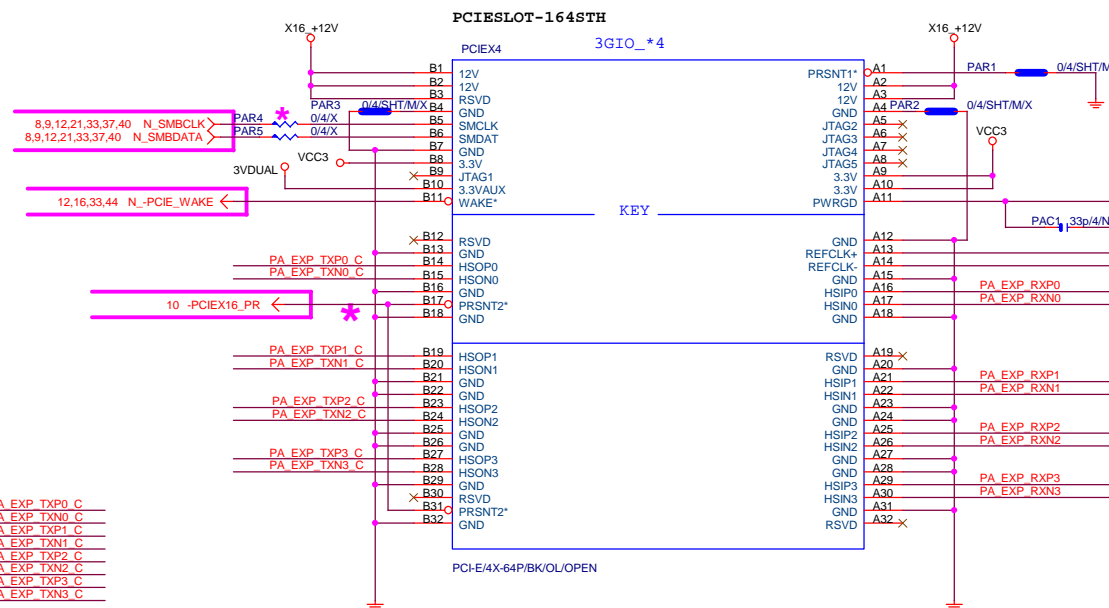
www.aitech1.ru

Gigabyte Technology

Title		
FAN CTRL		
Size	Document Number	Rev
Custom	GA-Q170TN-GSM PLUS	1.0
Date:	Thursday, May 26, 2016	Sheet 18 of 52

+12V_protect
short-wire test

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

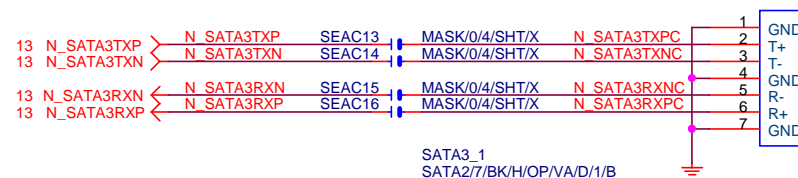
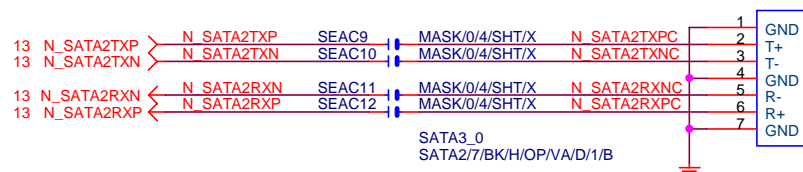


www.aitech1.ru

Gigabyte Technology

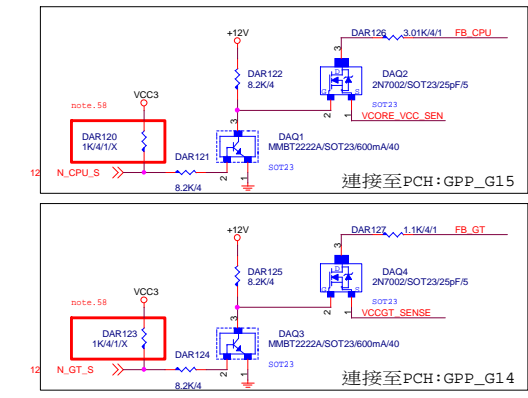
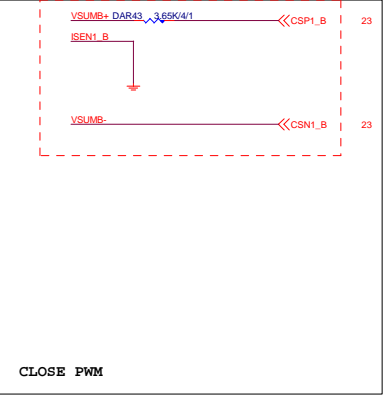
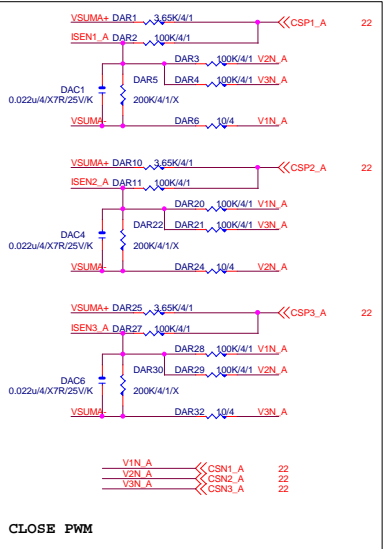
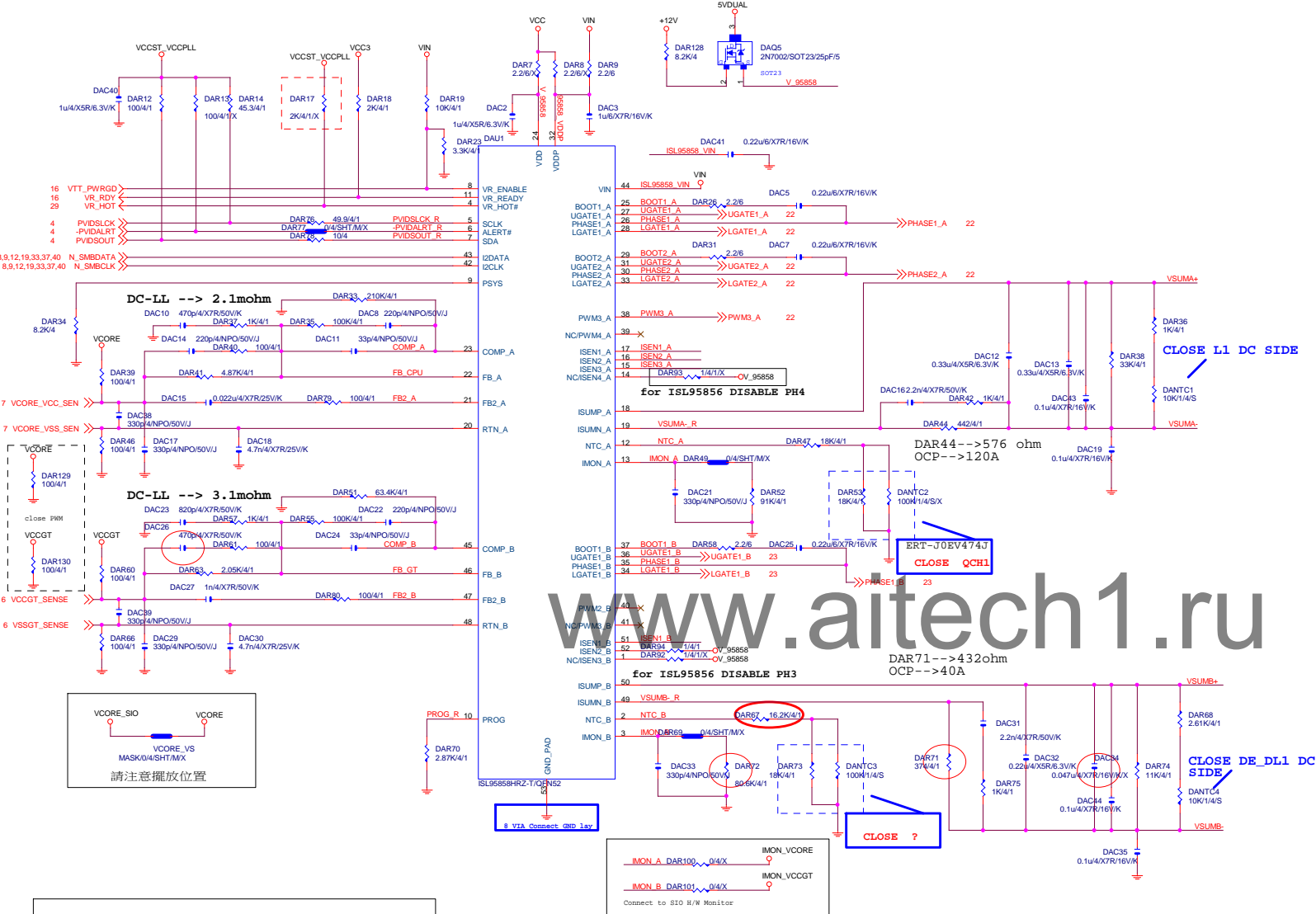
Title			
PCI EXPRESS * 16			
Size	Document Number	Rev	
Custom	GA-Q170TN-GSM PLUS	1.0	
Date:	Thursday, May 26, 2016	Sheet	19 of 52

Rev 0.6



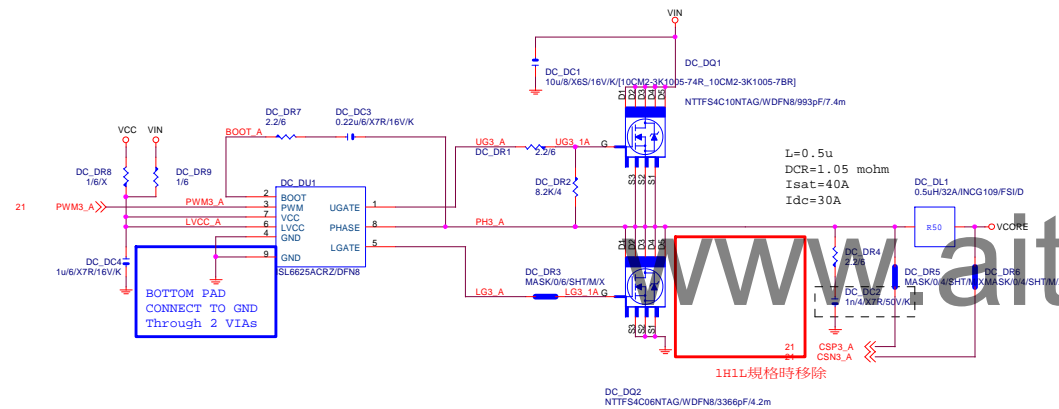
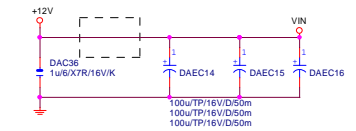
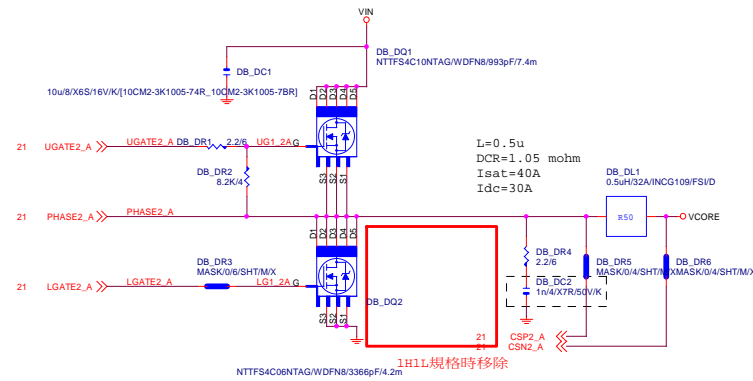
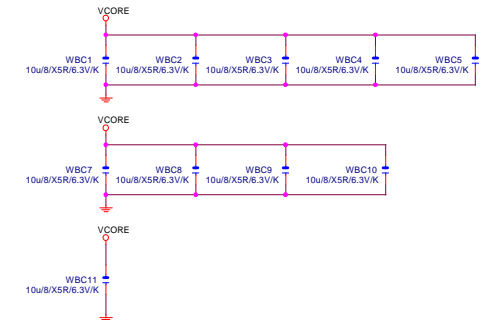
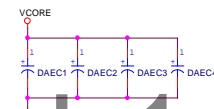
www.aitech1.ru

Gigabyte Technology		
Title		
SATA EXPRESS		
Size	Document Number	Rev
Custom	GA-Q170TN-GSM PLUS	1.0
Date: Thursday, May 26, 2016		
Sheet 20 of 52		



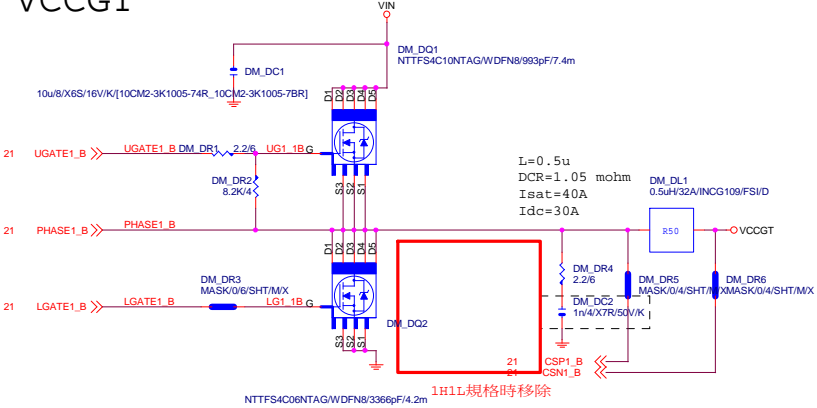
REV:0.15

VIN CAP 270u*3PCS

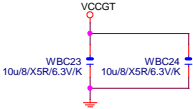
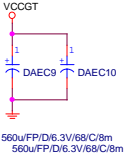
VCORE CAP 560u*4PCS
22u*10PCS**GIGABYTE™**

Title			
ISL95858_MOS			
Size	Document Number	Rev	
Custom	GA-Q170TN-GSM PLUS	1.0	
Date:	Thursday, May 26, 2016	Sheet	22 of 52

VCCGT



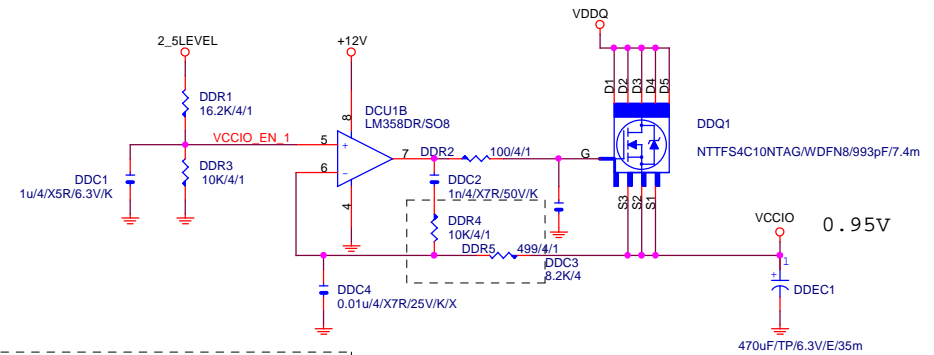
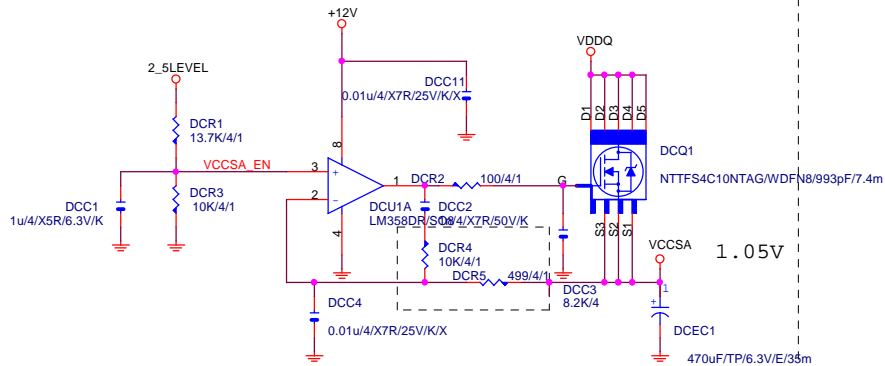
VCCGT CAP 560u*2PCS
22u*2PCS



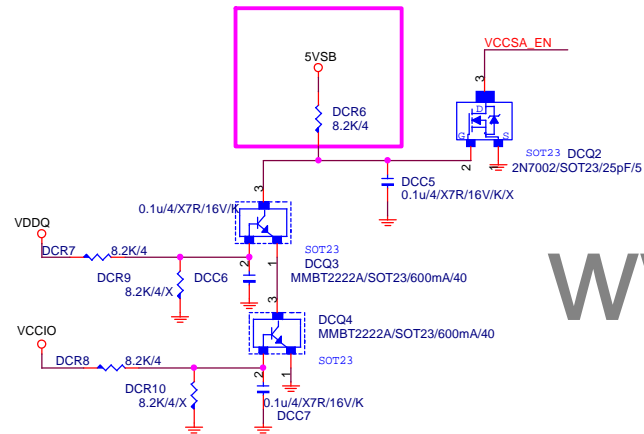
www.aitech1.ru

GIGABYTE™

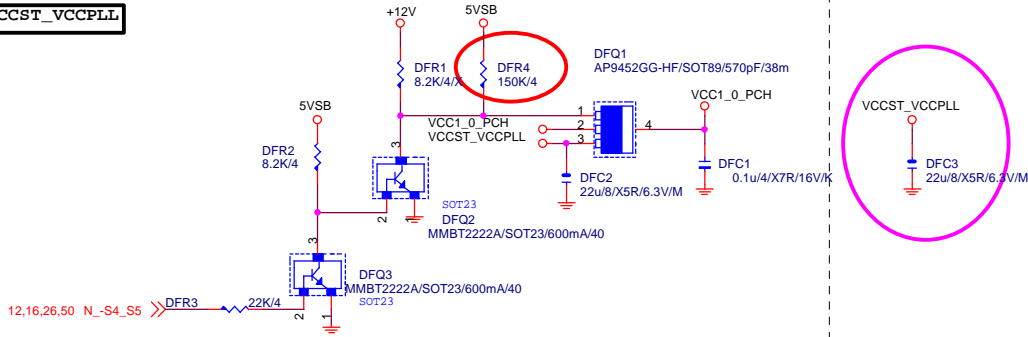
Title		
ISL95858_MOS		
Size	Document Number	Rev
Custom	GA-Q170TN-GSM PLUS	1.0
Date:	Thursday, May 26, 2016	Sheet 23 of 52



VCCIO_EN 1 DDR10 0/4/SHT/M/X VCCIO_EN 16
Connect to IT8620



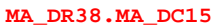
www.aitech1.ru



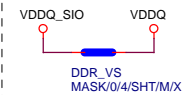
GIGABYTE™			
Title	VCCSA_VCCIO		
Size	Document Number	Rev	
Custom	GA-Q170TN-GSM PLUS	1.0	
Date:	Thursday, May 26, 2016	Sheet	24 of 52

DDR4

DDR4



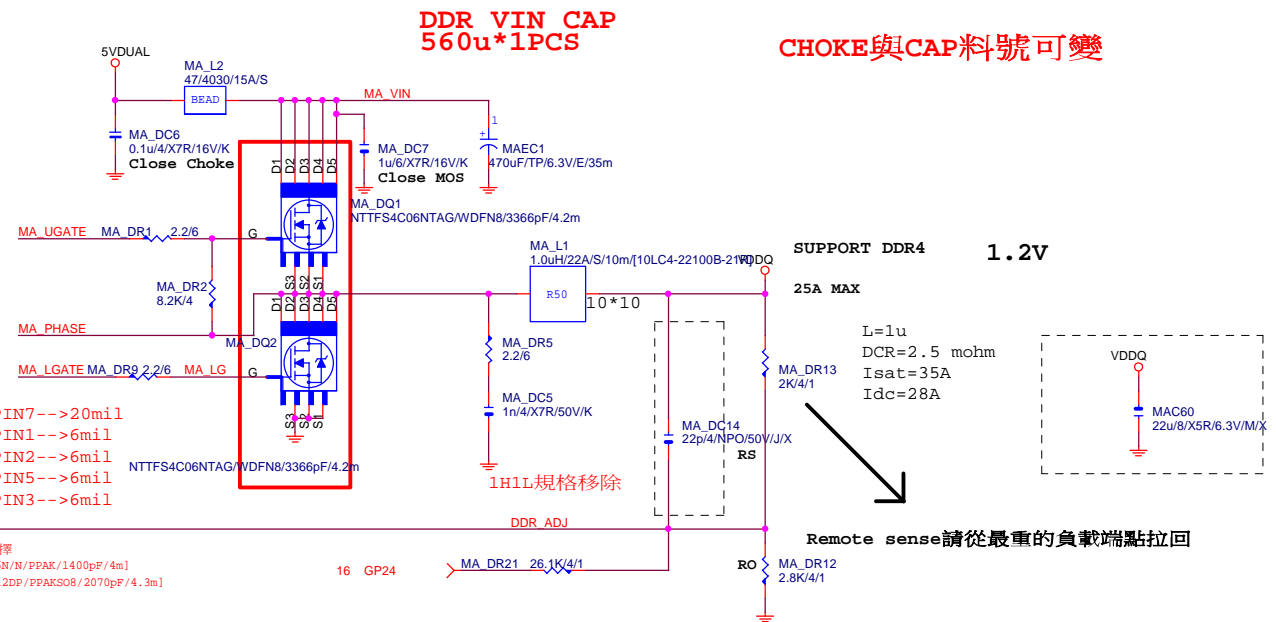
VPP_25V使用8120.8068A.RT8237時上件



FS=290K
OCP=40A

MOSFET請依MOSFET使用規則,自行選擇
ON-->10IF9-040406-10R[NTMS4C06N/N/PPAK/1400pF/4m]
VISHAY-->10IF9-040012-10R[SIRA12DF/PPAKS08/2070pF/4.3m]

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



SUPPORT DDR4 1.2V

25A MAX

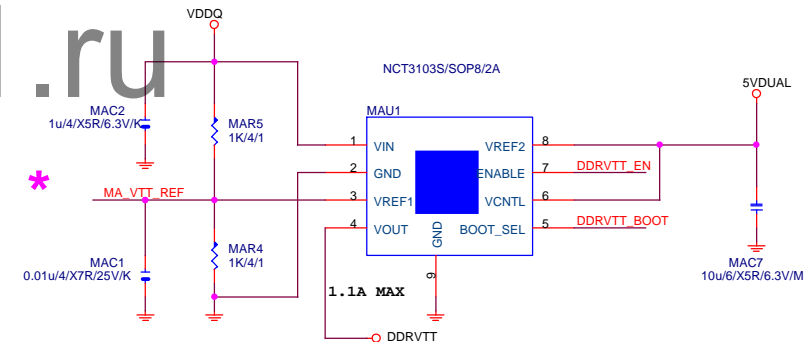
L=1u
DCR=2.5 mohm
Isat=35A
Idc=28A

Remote sense請從最重的負載端點拉回

PWR SEQ

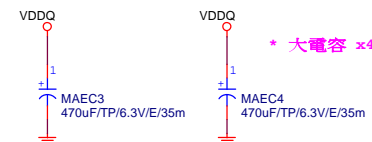
CLOSE TO DDR POWER PLANE

www.aitech1.ru

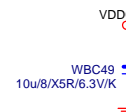
DDRVTT

MAU1上NCT3103S時上件(不可以改short pad)

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

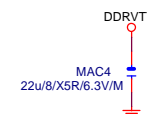


* 大電容 x4



DDRVTT CAP

* 大電容 x0

**GIGABYTE™**

Title
RT8237_DDR4_POWER

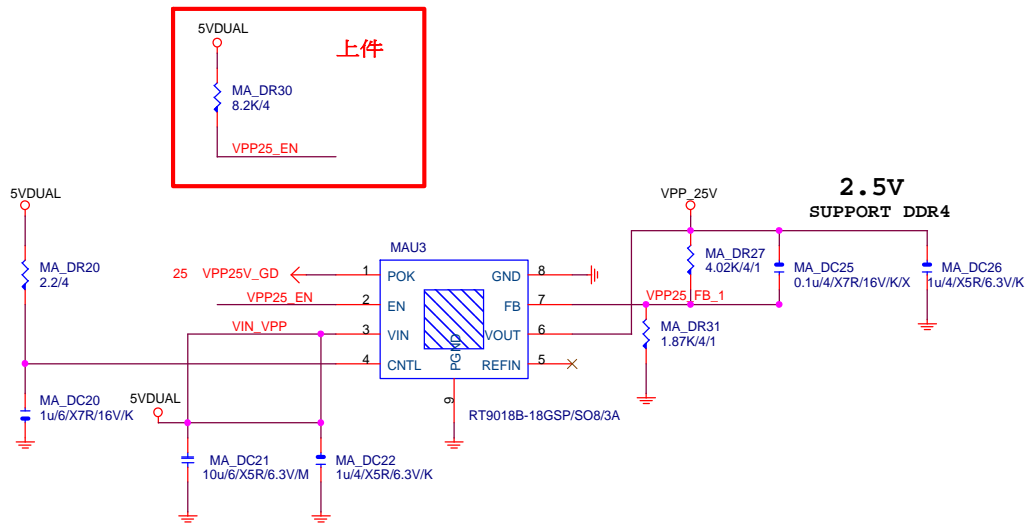
Size	Document Number
Custom	GA-Q170TN-GSM PLUS

Rev
1.0

Date: Thursday, May 26, 2016 Sheet 25 of 52

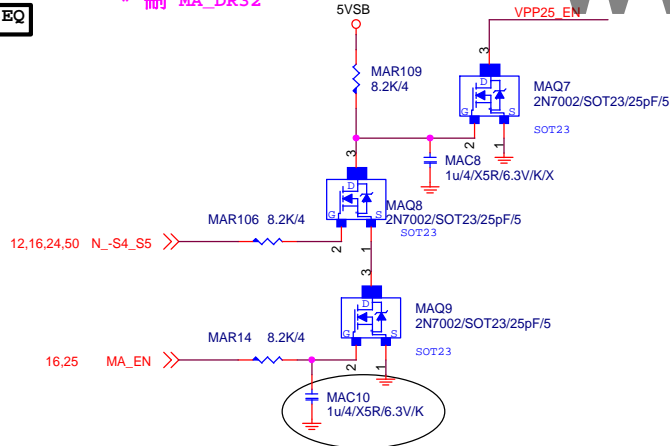
REV:0.4

VPP_25V



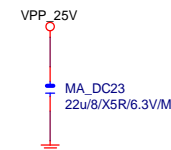
PWR_SEQ

* 刪 MA_DR32



VPP CAP 22u*1PCS

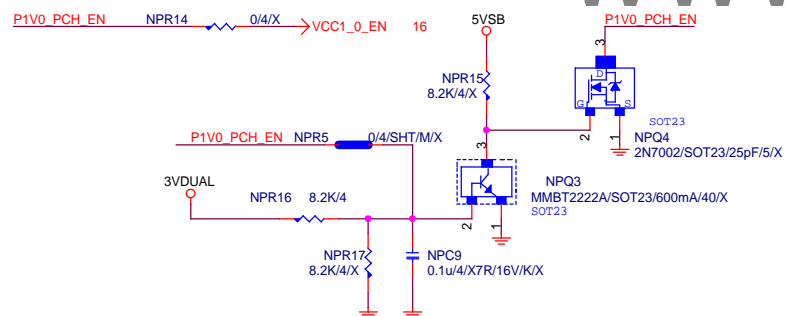
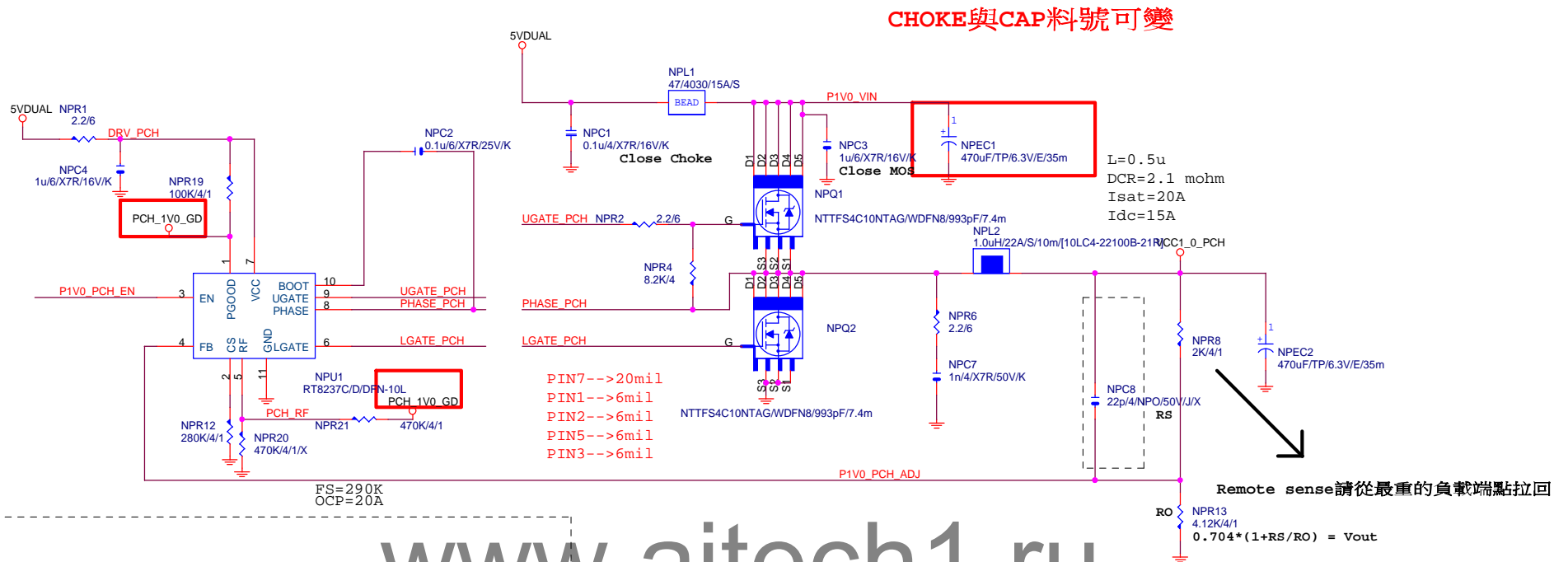
* 大電容 x0




GIGABYTE™

Title			RT9018_VPP25 POWER
Size	Document Number	Rev	
Custom	GA-Q170TN-GSM PLUS	1.0	
Date:	Thursday, May 26, 2016	Sheet	26 of 52

REV:0.50



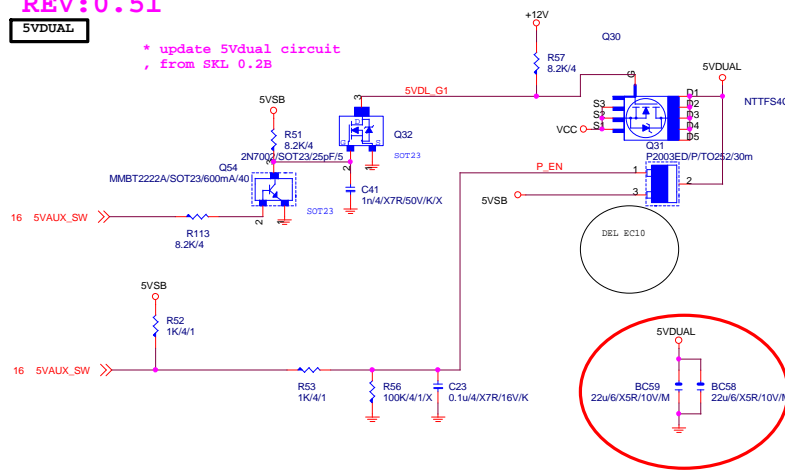
請放置CHOKE一出來的地方

			
Title			
RT8237_PCH POWER			
Size	Document Number		Rev
Custom	GA-Q170TN-GSM PLUS		1.0
Date:	Thursday, May 26, 2016	Sheet	27 of 52

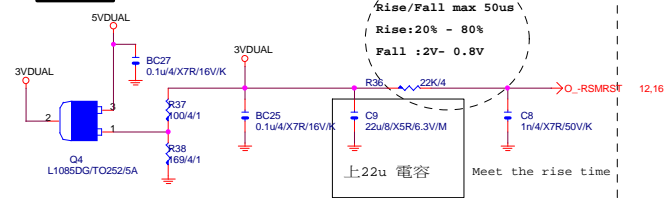
REV:0.51

5VDUAL

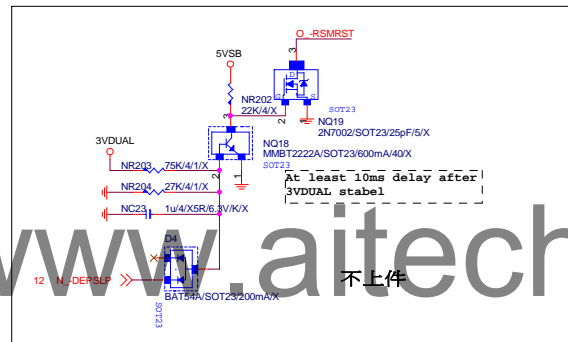
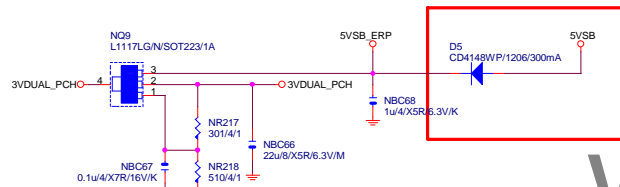
* update 5Vdual circuit
from SKL 0.2B



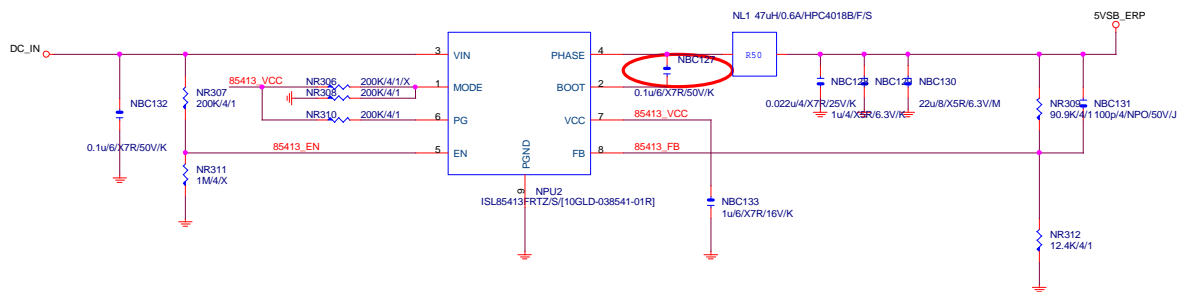
3VDUAL



3VDUAL_PCH

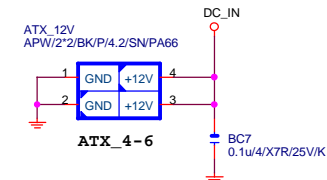
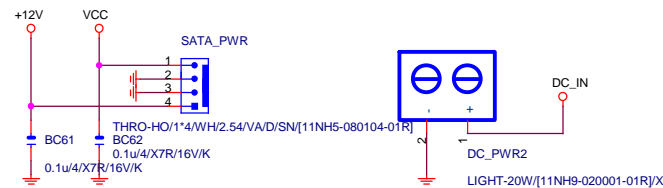
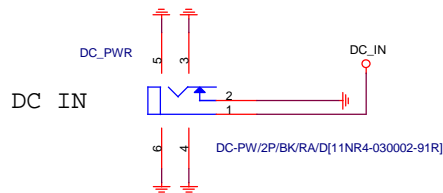


5VSB_ERP



Gigabyte Technology

Title	DISCRETE POWER
Size	Custom
Document Number	GA-Q170TN-GSM PLUS
Date	Thursday, May 26, 2016
Sheet	28 of 52

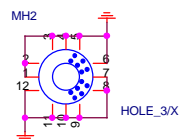


BLACK CONNECTOR

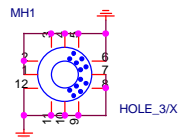
螺絲孔

MH1:GND-T
FOR EMI
TEST驗證

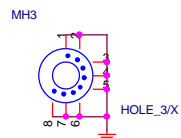
MB LOCATION



Modify for EMI

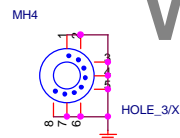


HOLE_4-RH-5MM-1



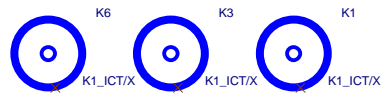
HOLE_4-RH-5MM-5PIN-1

HOLE_4-RH-5MM-1



HOLE_4-RH-5MM-5PIN-1

固定孔/光學點

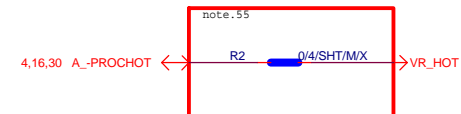


K1-ICT

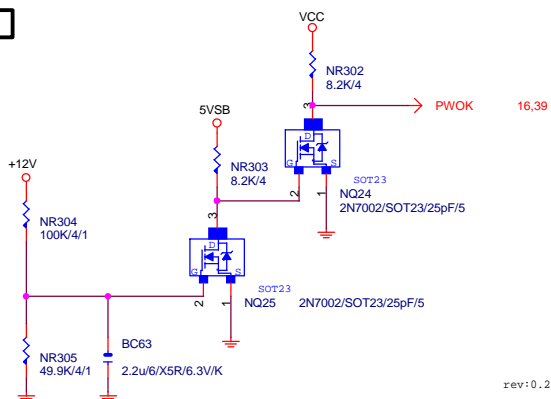
To prevent the 5VSB
under loading when
boot

-PROHOT

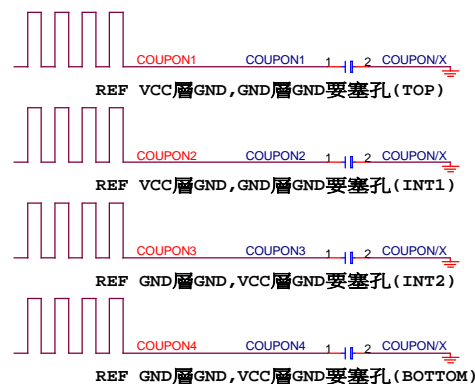
* 保留 ?



PWOK



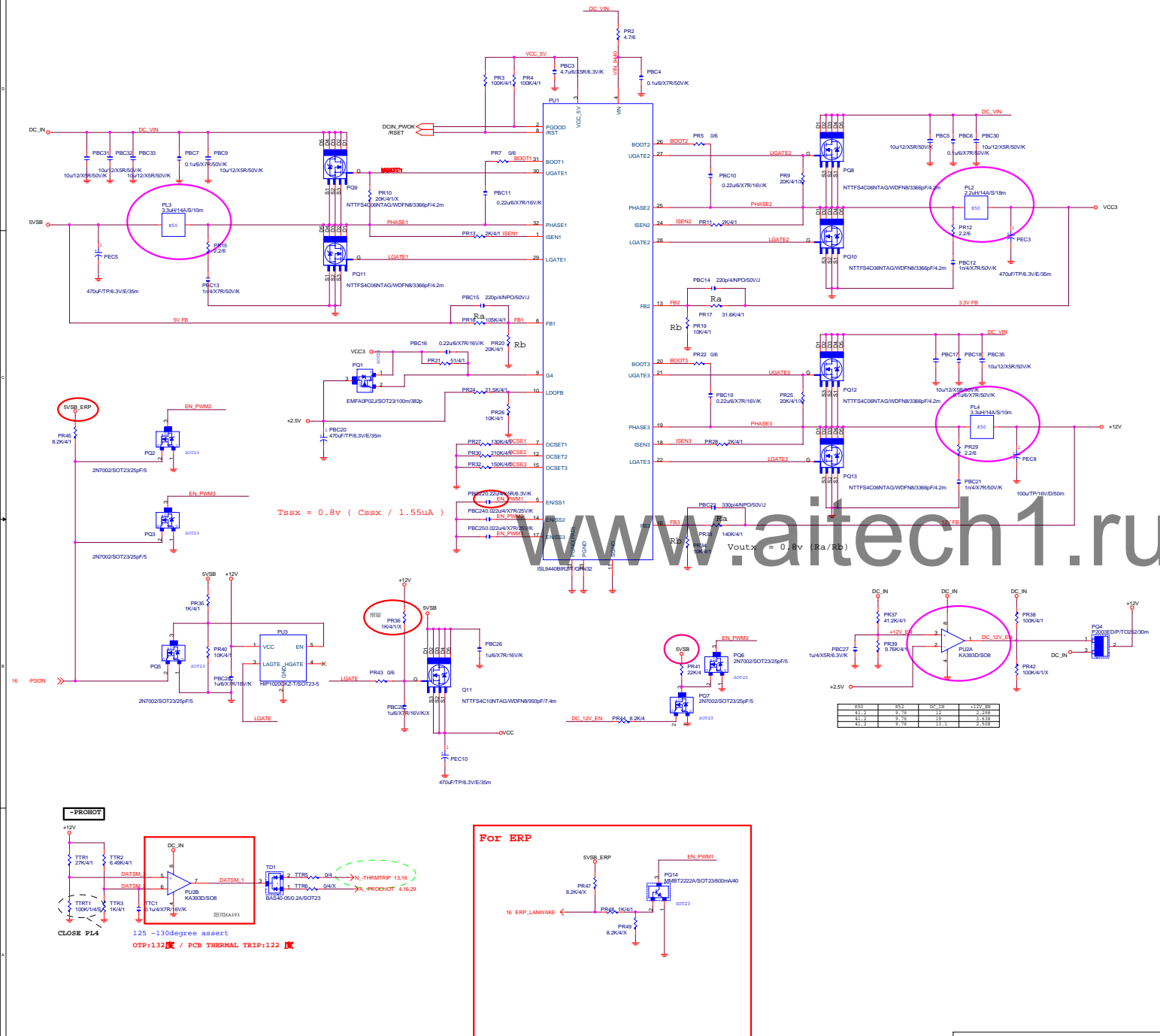
COUPON



Gigabyte Technology

Title		ATX POWER CONNECTOR	
Size	Custom	Document Number	GA-Q170TN-GSM PLUS
Date:	Thursday, May 26, 2016	Sheet	29 of 52

ISL9440B DC_19V TO ATX 12V 5V 3.3V



ROM PART: PTN3356R1BS/[10HQ5-A23356-10R]
FLASH PART: PTN3356F1BS/[10HQ5-A23356-20R]

省X'TAL COST DOWN:

1. 上件:

DVC28 [10p/4/NPO/50V/J]

DVC11 [10p/4/NPO/50V/J]~修改值
DVR10 [8.2K/4]

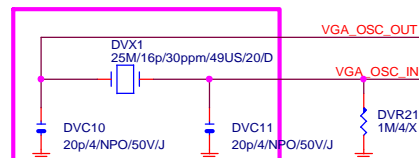
2. 删除:

DVX1 [25M/16p/30ppm/49US/20/D]

DVC10 [20p/4/NPO/50V/J]

DVR9 [8.2K/4]

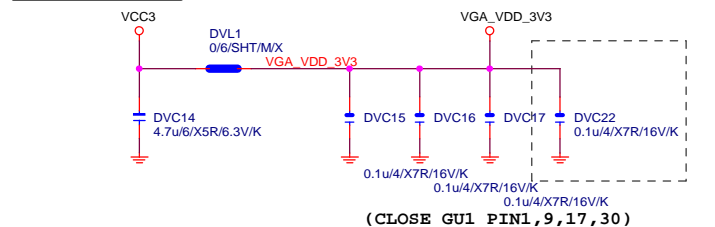
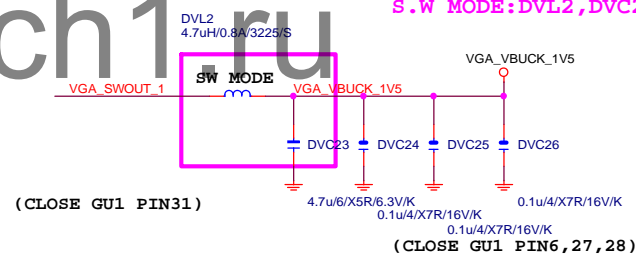
25M Crystal FROM PCH 24MHZ ISSUE



CFG5 For Crystal Less

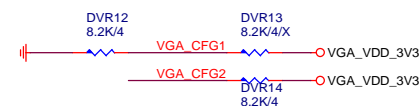


ADAPTER POWER

LDO MODE: DVL2, DVC23-->X
S.W MODE: DVL2, DVC23-->O

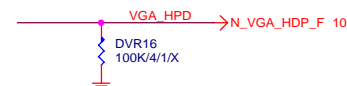
CFG1&2

Non-Compliant

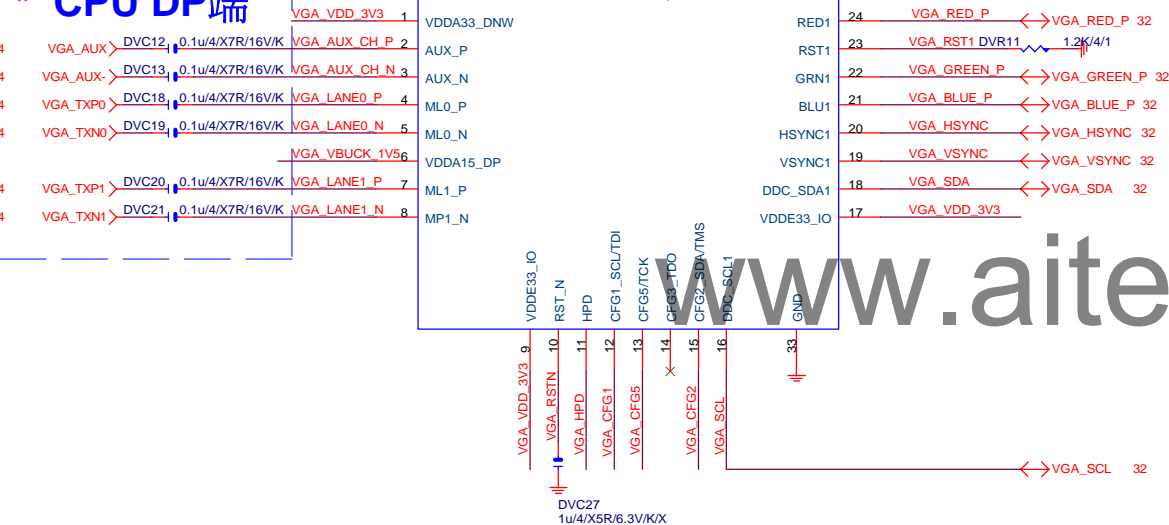


HPD

PCH端 *

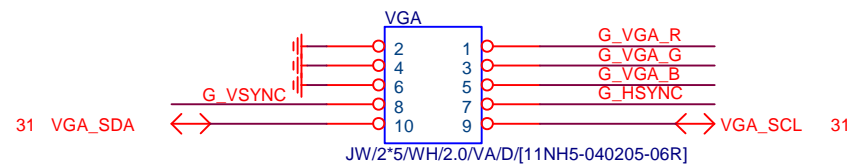
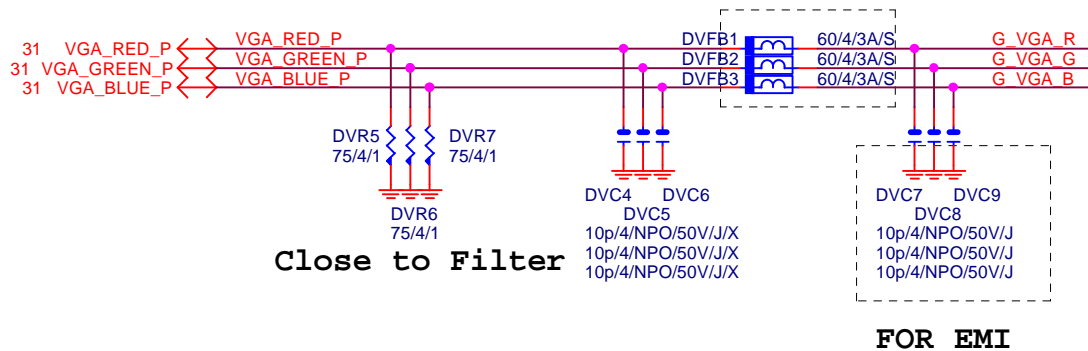
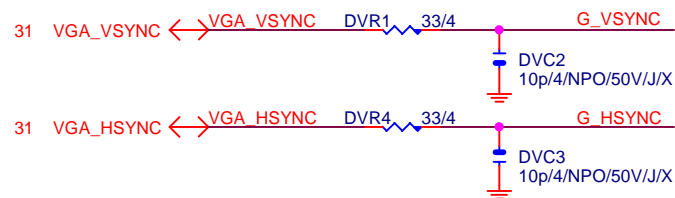
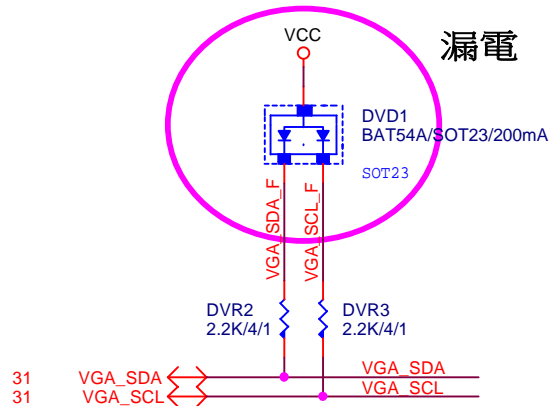


* CPU DP端

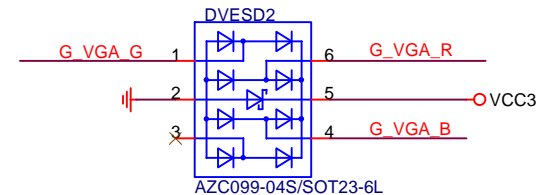
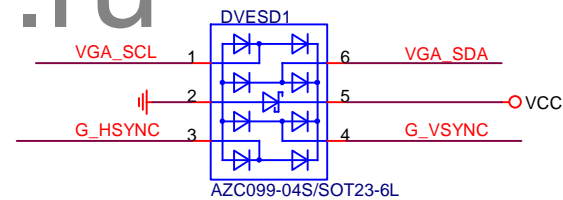


放置PCH端

Gigabyte Technology
NXP-PTN3356

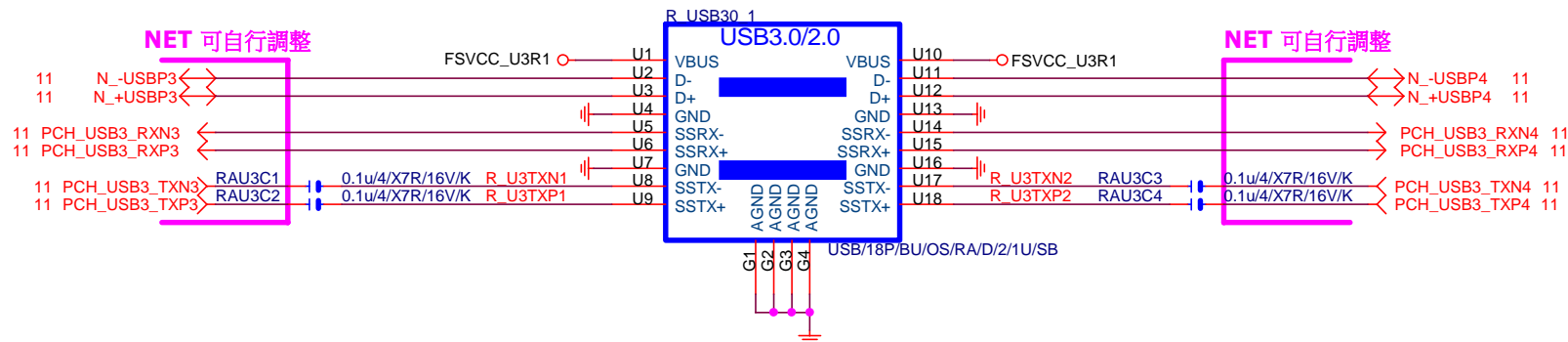


VGA ESD



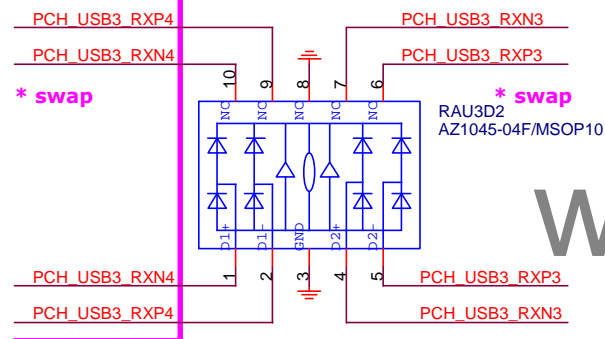
Rev: 0.7

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

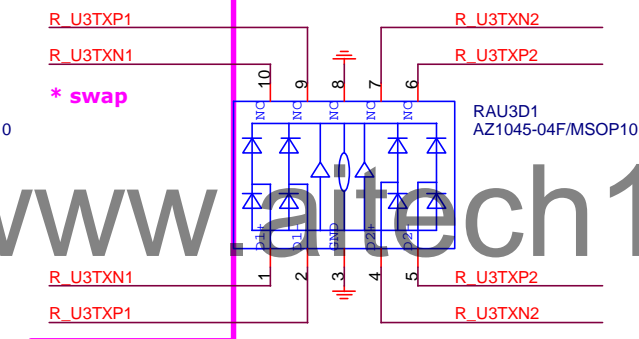


ESD

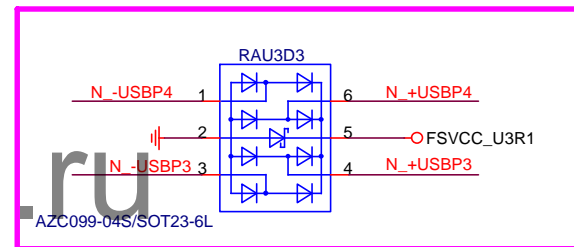
NET 可自行調整



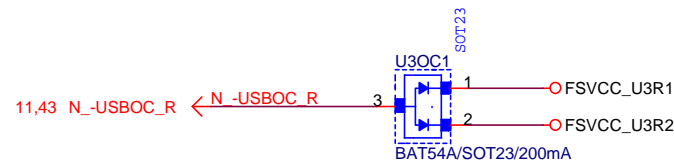
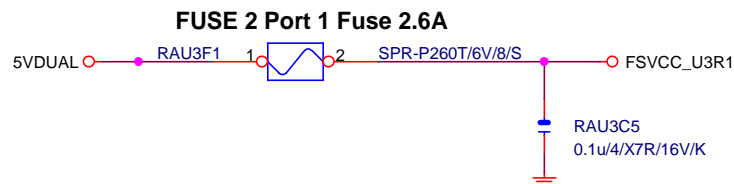
NET 可自行調整



NET 可自行調整



FUSE

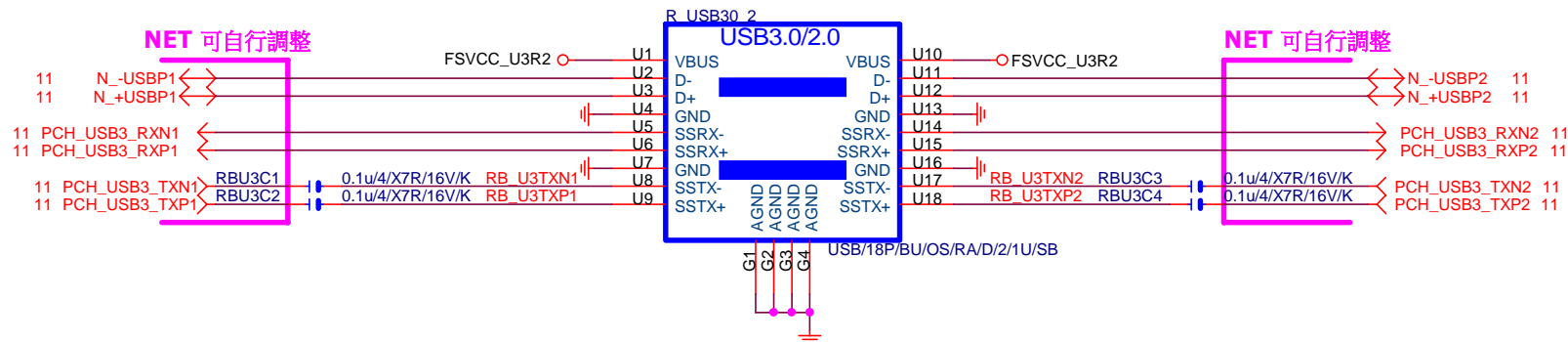


Gigabyte Technology

Title		R_USB30,USB_OC	
Size	Document Number	GA-Q170TN-GSM PLUS	
Custom		Rev 1.0	
Date:	Thursday, May 26, 2016	Sheet	34 of 52

Rev: 0.7

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

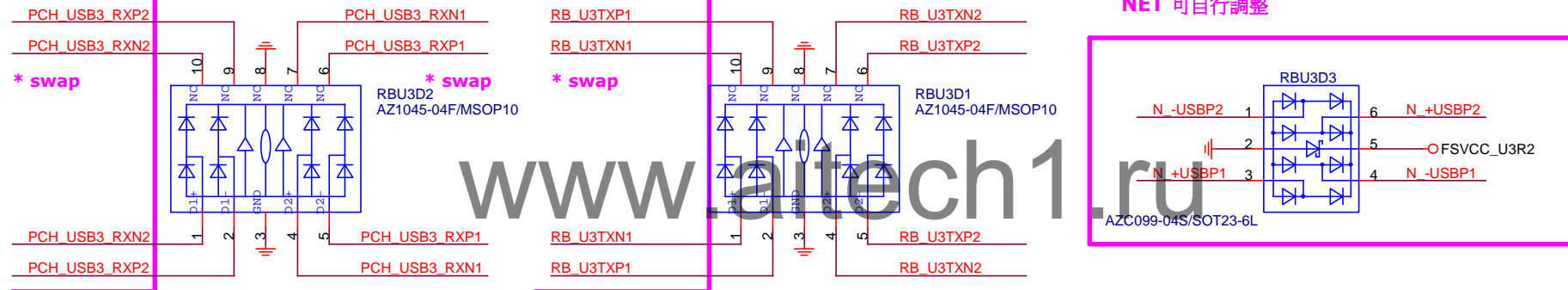


ESD

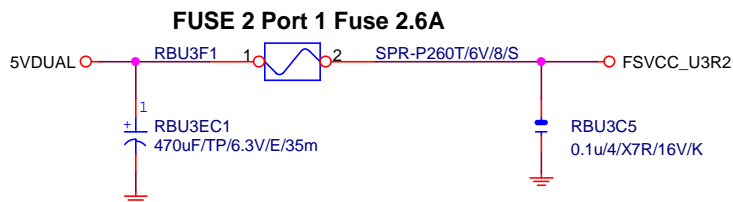
NET 可自行調整

NET 可自行調整

NET 可自行調整



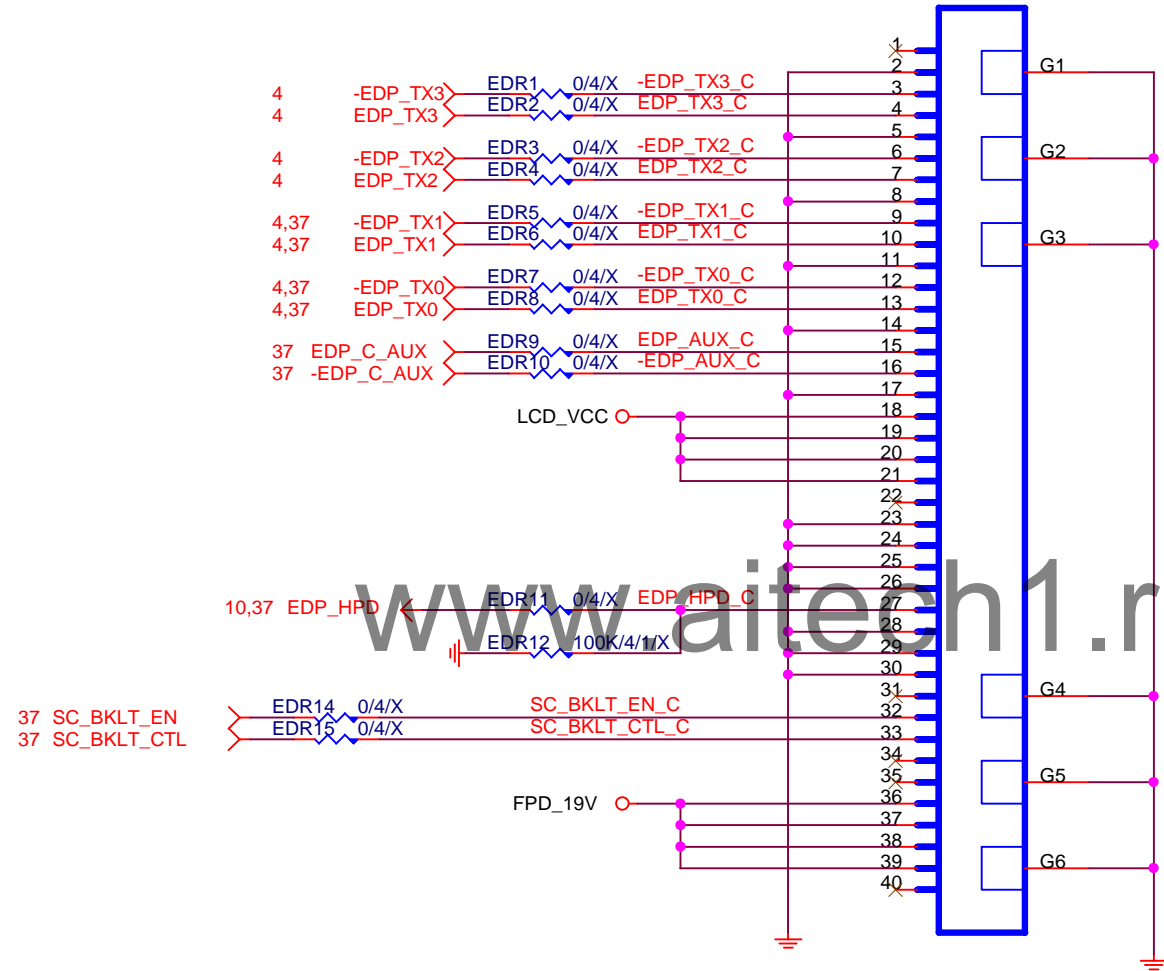
FUSE



Gigabyte Technology

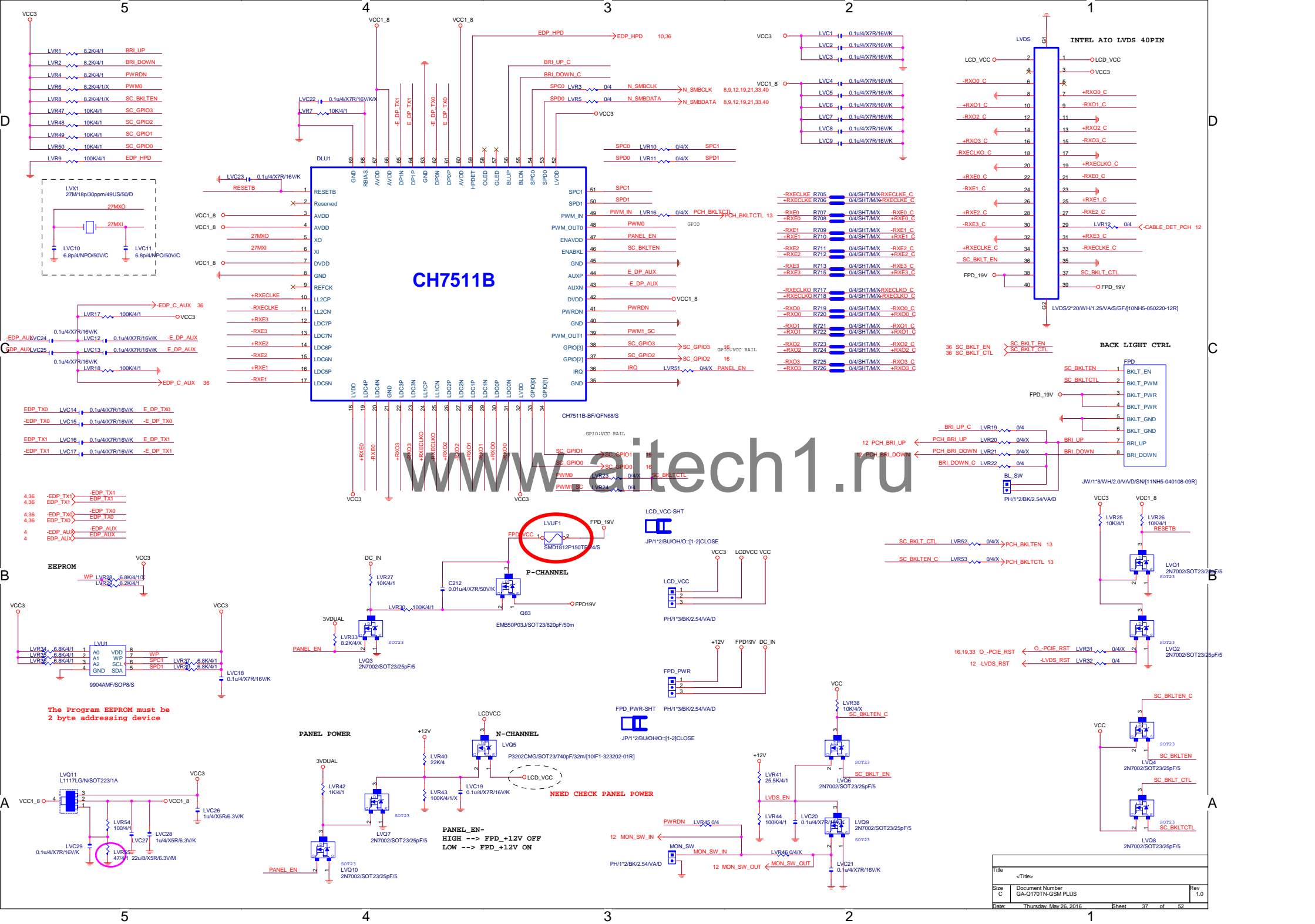
Title		R_USB30,USB_OC	
Size	Document Number	GA-Q170TN-GSM PLUS	
Custom		Rev 1.0	
Date:	Thursday, May 26, 2016	Sheet	35 of 52

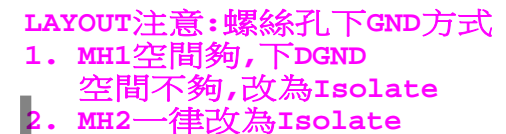
INTEL AIO LVDS 40PIN EDP



LVDS/1*40/IV/0.5/RA/S/GF/[10NR5-100140-00R]/X

Title		
<Title>		
Size	Document Number	Rev
A	GA-Q170TN-GSM PLUS	1.0
Date:	Thursday, May 26, 2016	Sheet 36 of 52





<input type="radio"/> MH1	<input type="radio"/> MH2	
DGND	Isolate	

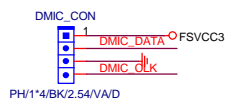
CU3

1 6

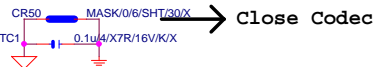
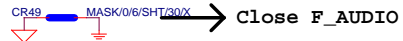
2 5 FSVCC3

3 DMIC_CLK 4 DMIC_DATA

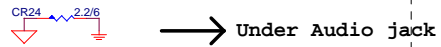
AZC099-04S/SOT23-6L



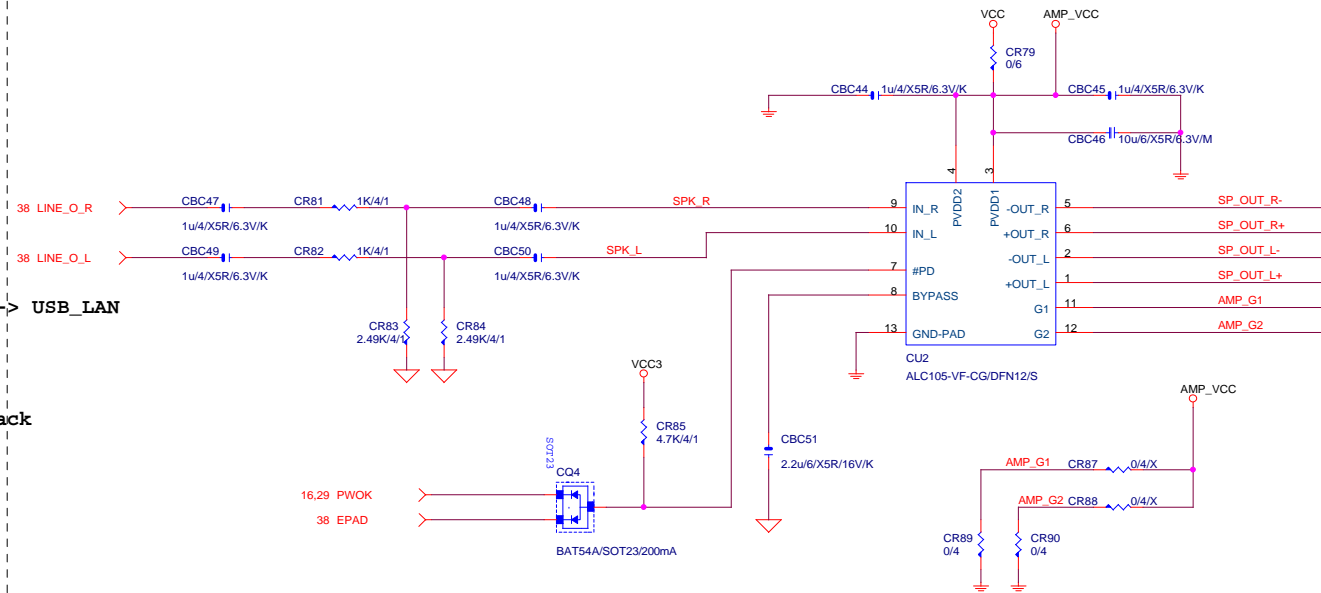
Rev 0.5



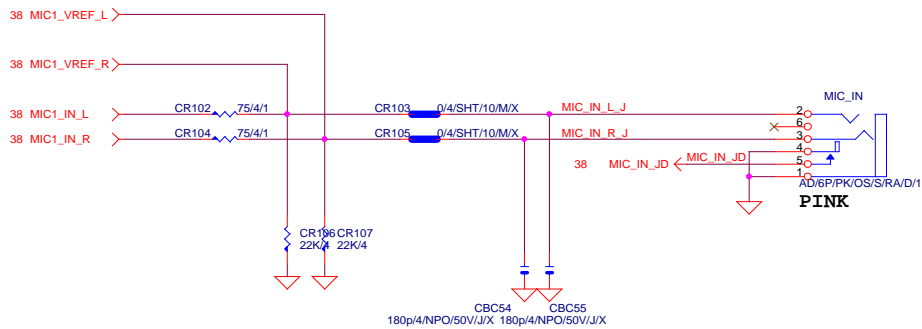
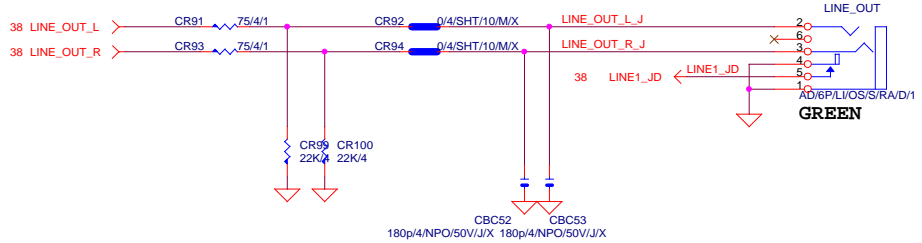
→ Audio jack ↔ USB_LAN



*量產前,0ohm改short pad



Single Audio Footprint待更新

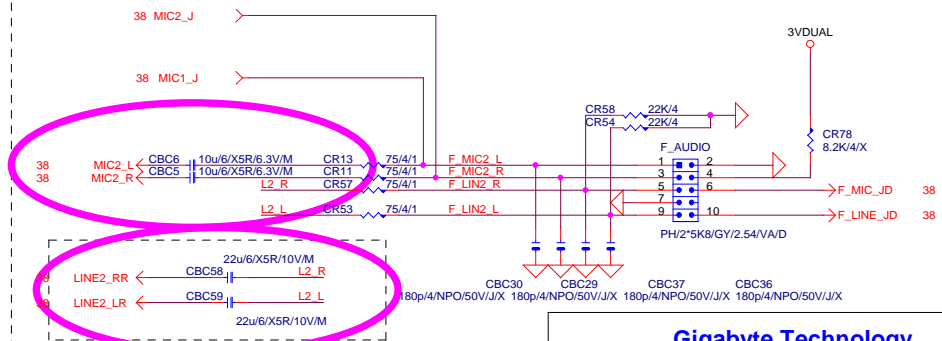


CEN/LFE

SURR BACK



AZALIA FRONT PANEL



Gigabyte Technology

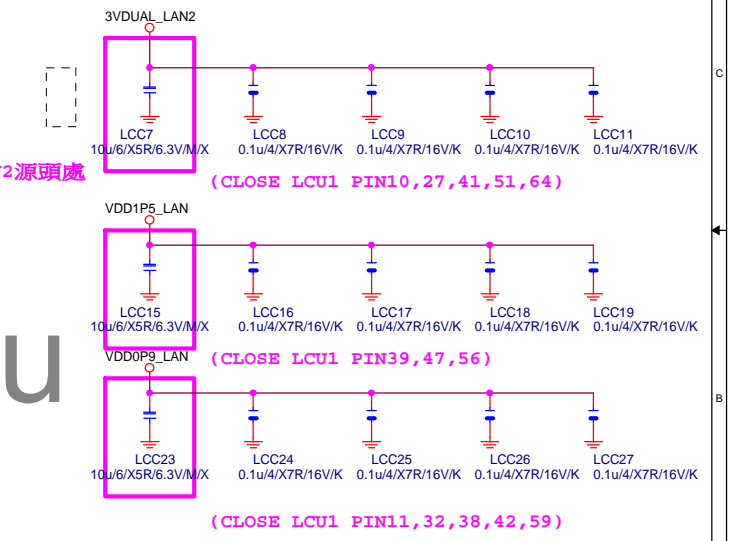
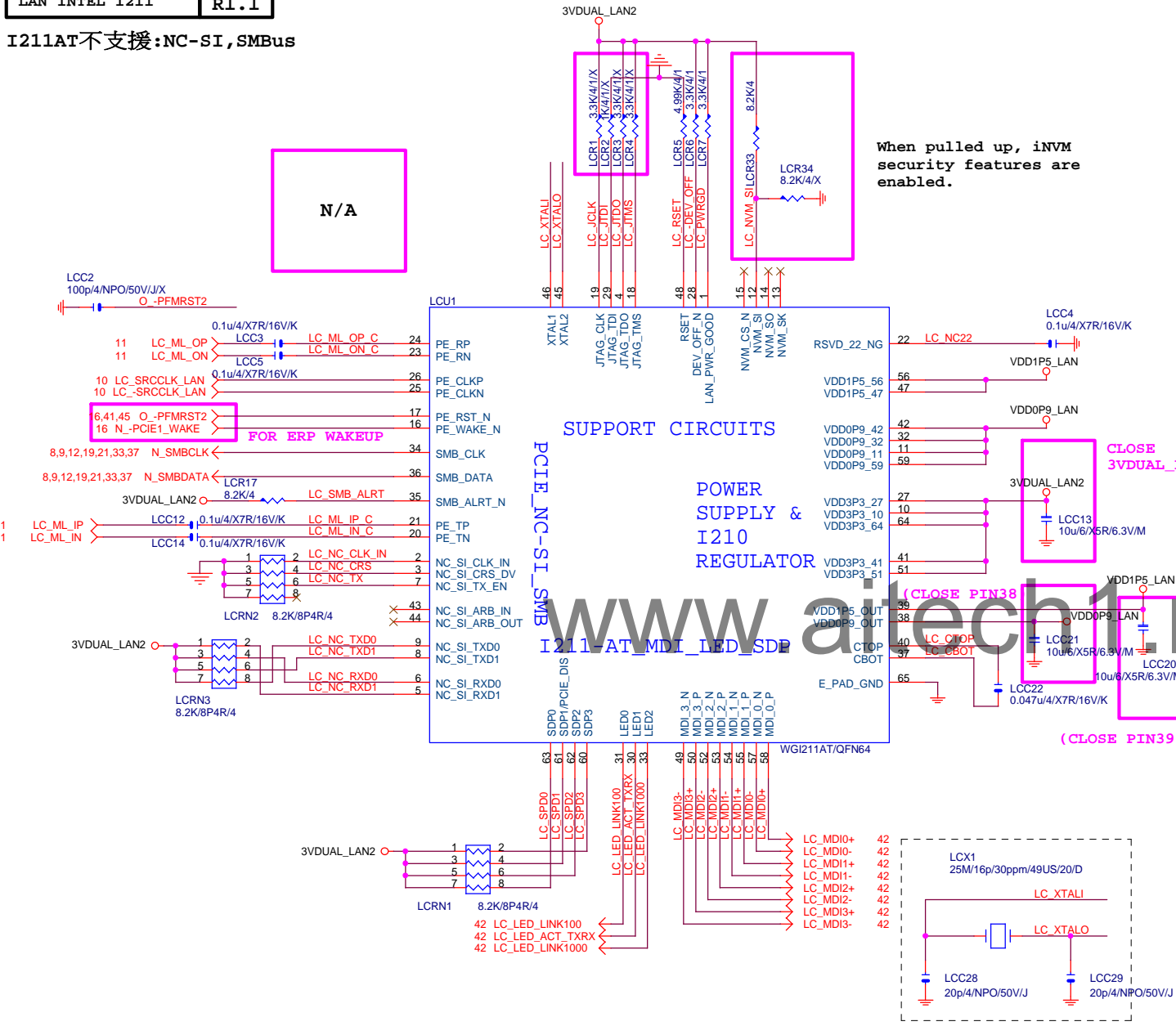
Title		AUDIO JACK	
Size Custom	Document Number	GA-Q170TN-GSM PLUS	
Date: Thursday, May 26, 2016	Sheet	39	of 52

I211AT不支援:NC-SI,SMBus

N/A

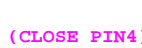
When pulled up, iNVM security features are enabled.

N/A





LAN POWER



CLOSE LBL1

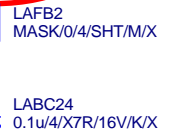
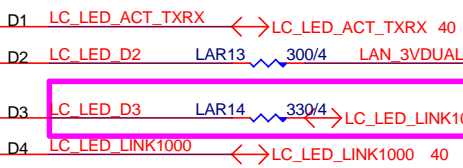
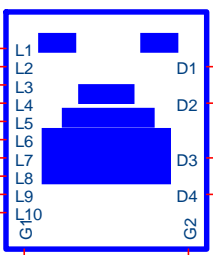
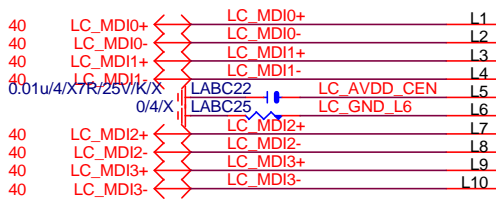
USB_LAN CONNECTOR R1.06

USB_LAN CONNECTOR

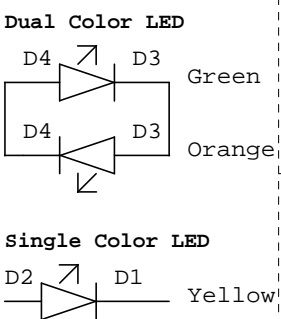
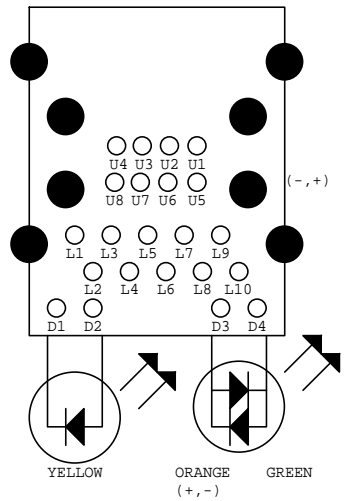
note:可變更USB NAME

211AT

LAN1
LAN/1G/GO,Y/S/RA/D/1



USB_LAN LAYOUT示意圖

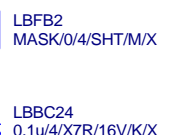
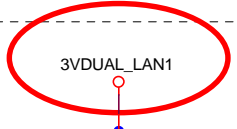
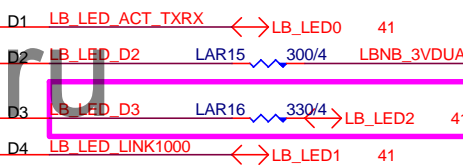
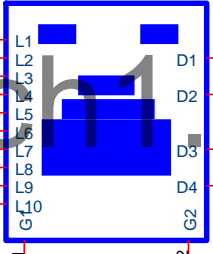
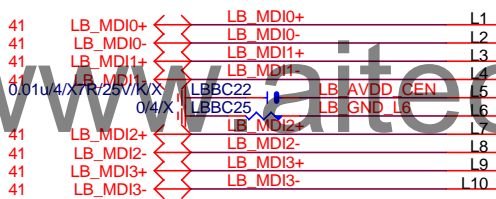


USB_LAN CONNECTOR

note:可變更USB NAME

219V

LAN2
LAN/1G/GO,Y/S/RA/D/1

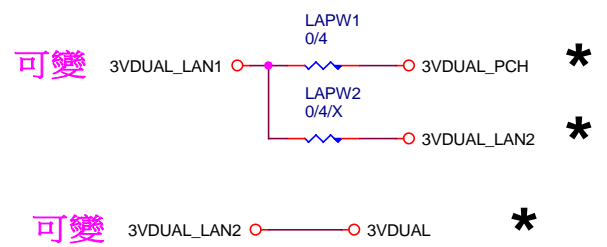


EMI SHORT PAD

PS:視EMI需求

LAN POWER

note: lan power連接及電流



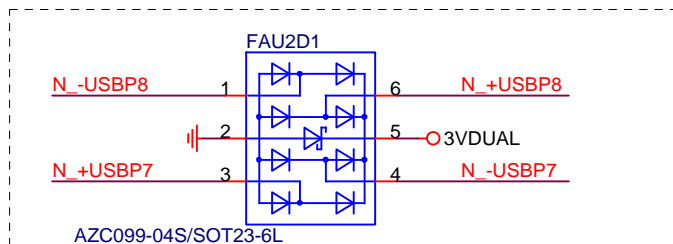
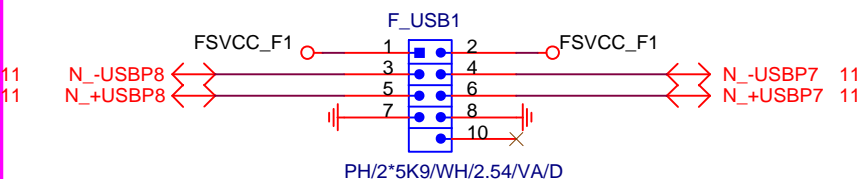
Gigabyte Technology			
LAN CONNECTOR-RTL8111G			
Size	Document Number	Rev	
Custom		GA-Q170TN-GSM PLUS	
Date:	Thursday, May 26, 2016	Sheet	42 of 52

Rev: 0.7

FRONT USB1

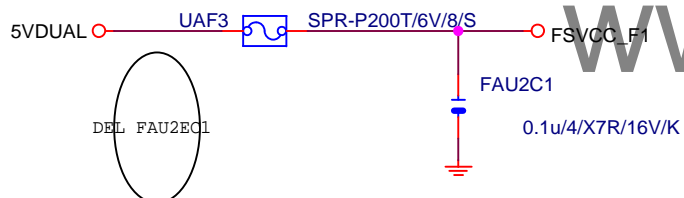
NET 可變

FUSB2X5-HS

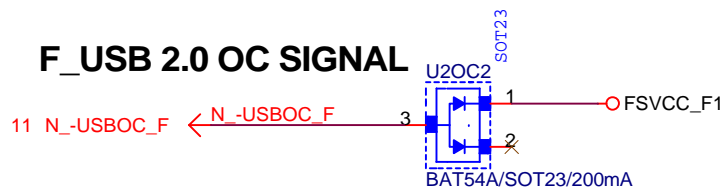


Close to connector

FUSE 2 Port 1 Fuse 2A



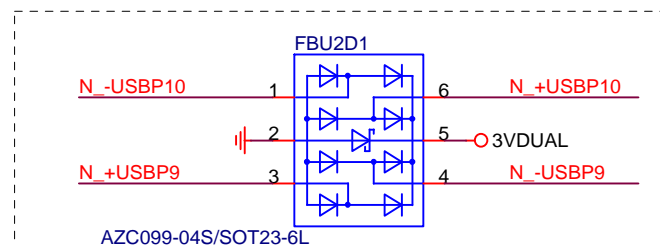
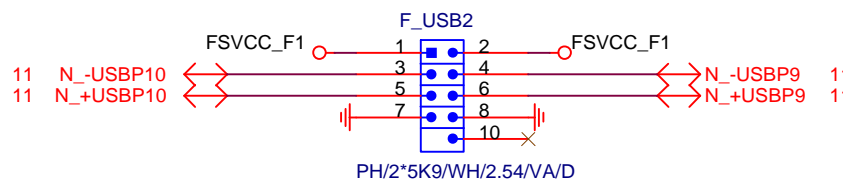
F_USB 2.0 OC SIGNAL



FRONT USB2

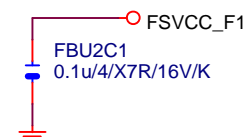
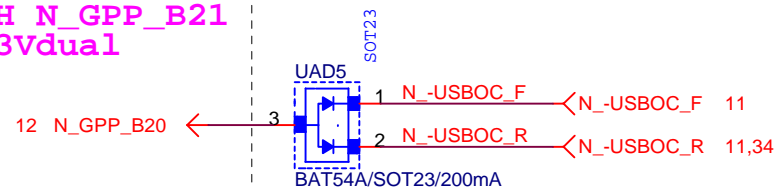
NET 可變

FUSB2X5-HS



Close to connector

FUSE 2 Port 1 Fuse 2A

* 接 PCH N_GPP_B21
PCH PU 3Vdual

Gigabyte Technology

Title

USB2.0

Size
A

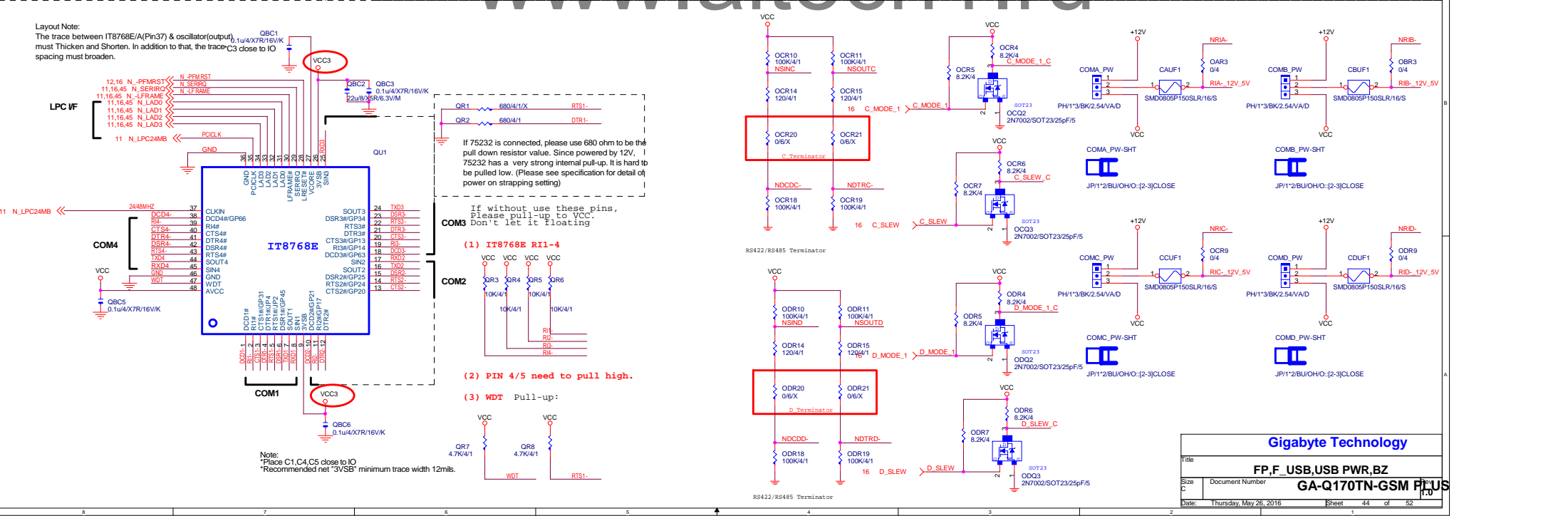
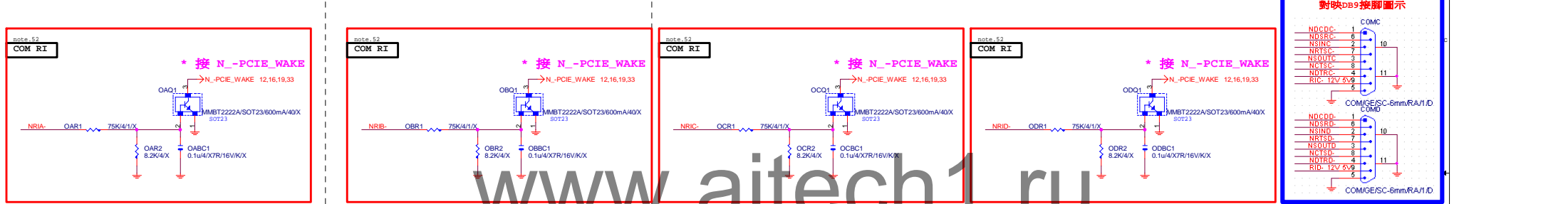
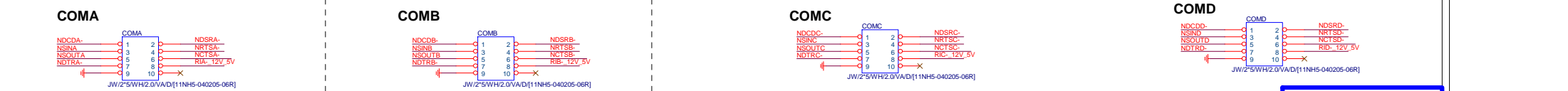
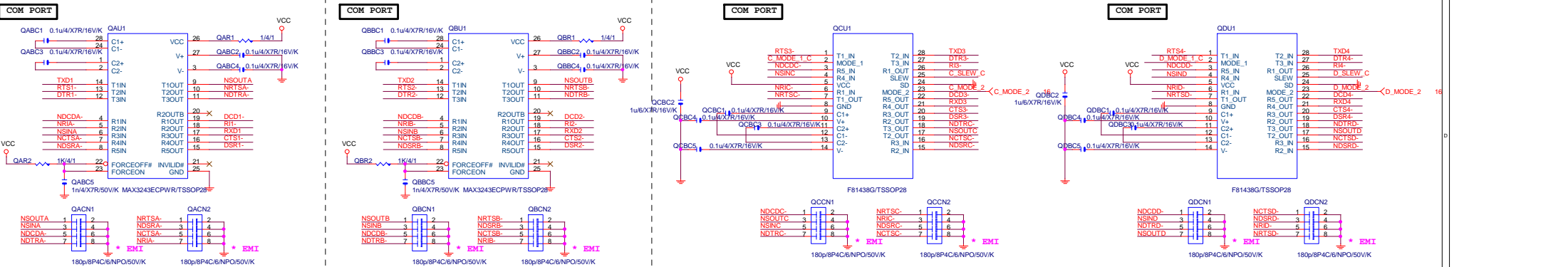
Document Number

GA-Q170TN-GSM PLUS

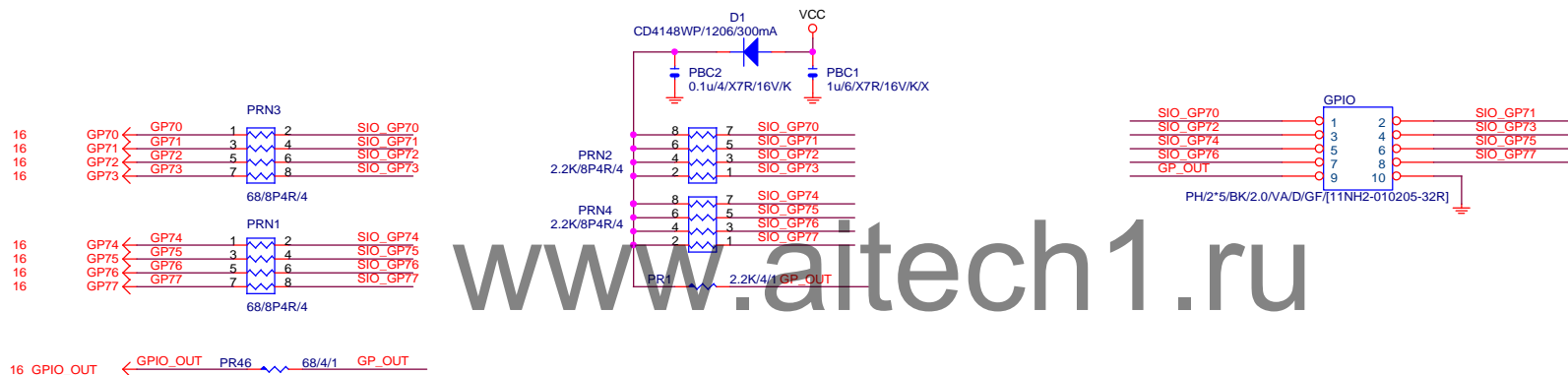
Rev
1.0

Date: Thursday, May 26, 2016

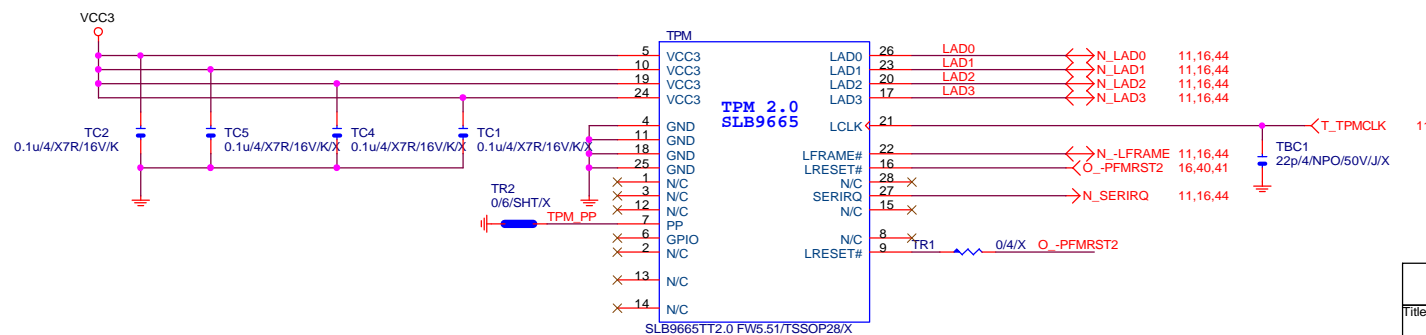
Sheet 43 of 52



GPIO



TPM onboard

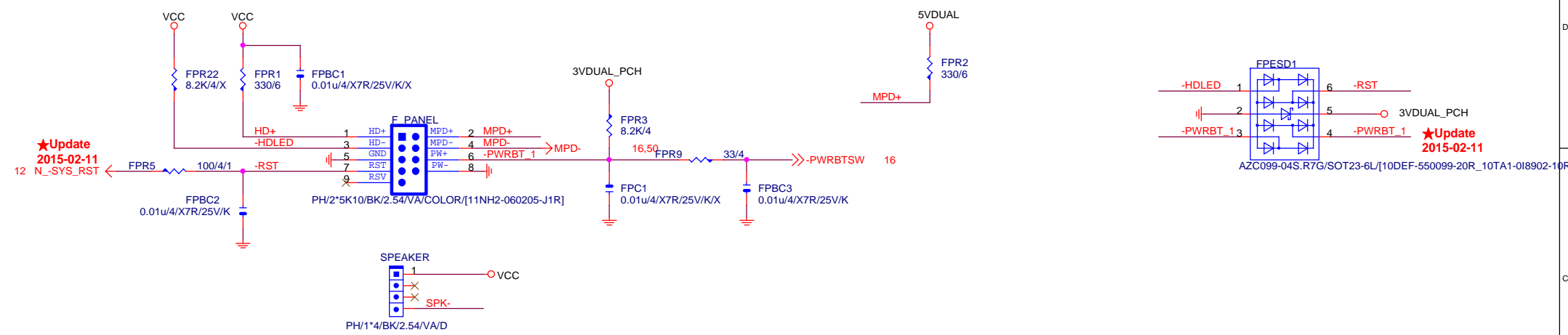


Thunderbolt (N/A)

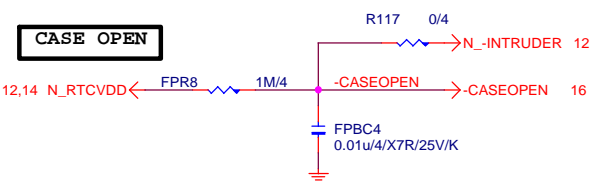
Gigabyte Technology				
Title FP,F_USB,USB PWR,BZ				
Size Custom	Document Number GA-Q170TN-GSM PWR			Revision 1.0
Date:	Thursday, May 26, 2016	Sheet	45 of 52	

FRONT PANEL SHORT

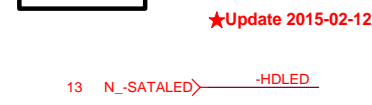
Rev: 0.7



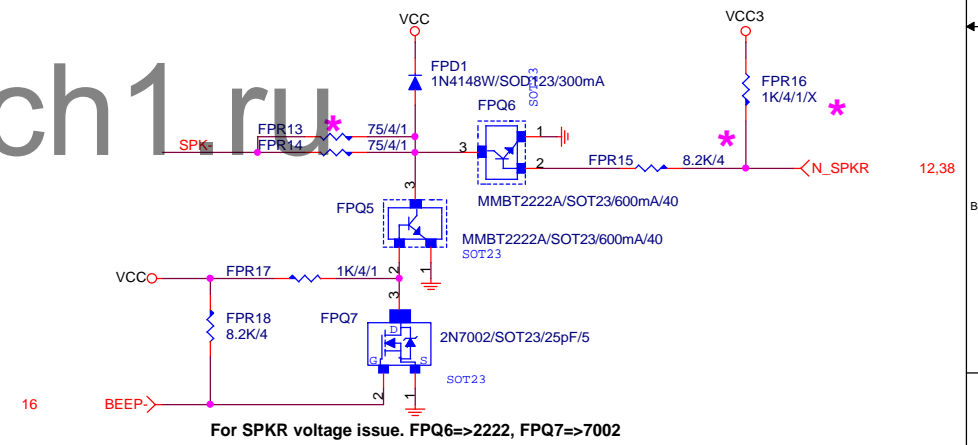
CASE OPEN



SATA LED

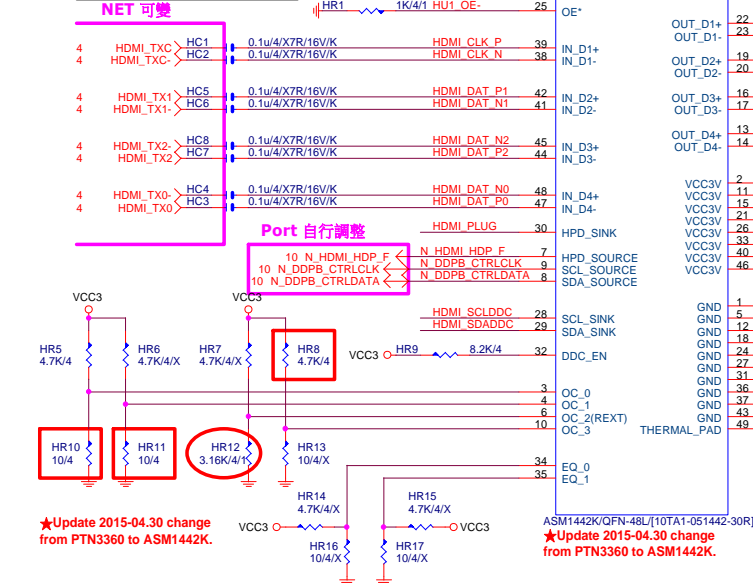


www.aitech1.ru

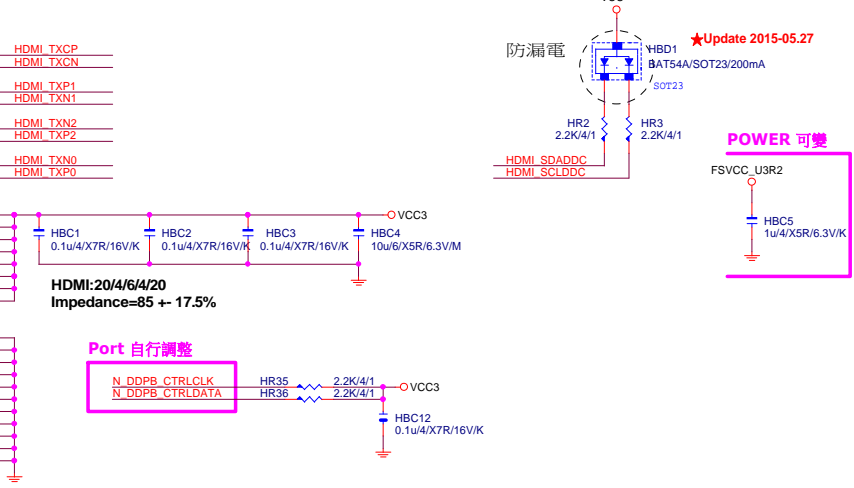


Gigabyte Technology			
Title			
FRONT PANEL			
Size	Document Number	GA-Q170TN-GSM PLUS	
Custom			
Date:	Thursday, May 26, 2016	Sheet	46 of 52

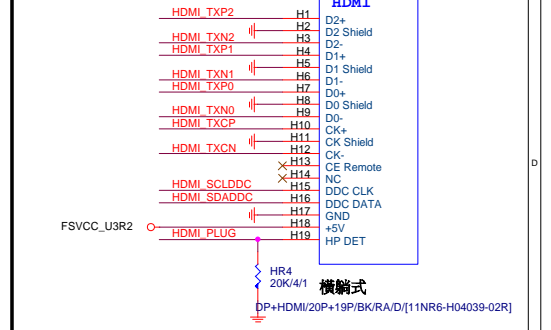
HDMI LEVEL SHIFT



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

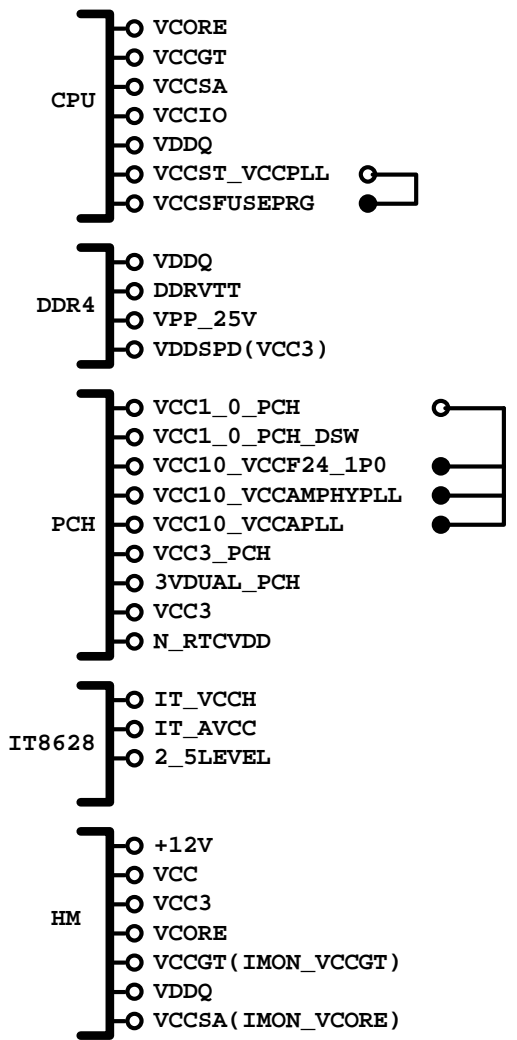


【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

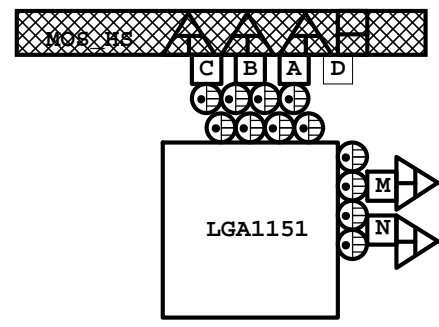
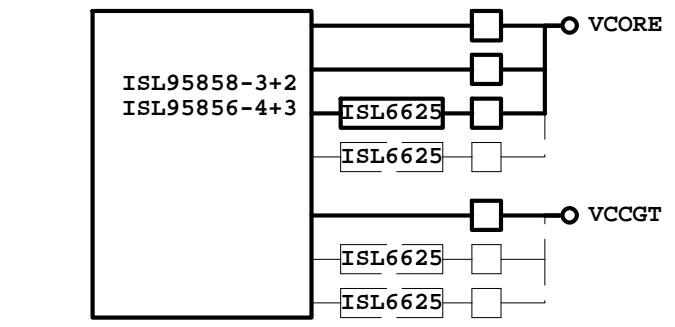


www.aitech1.ru

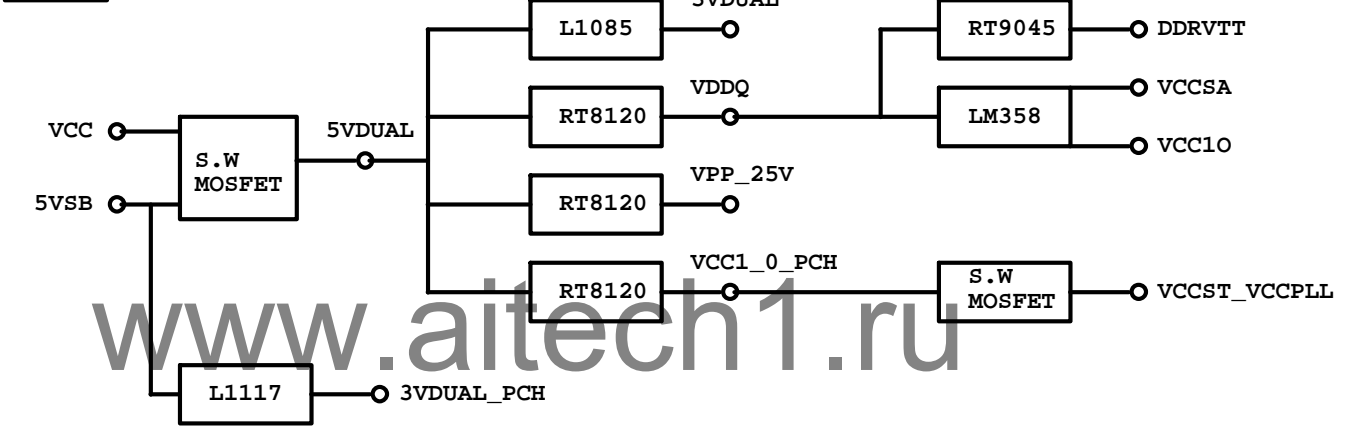
POWER BLOCK MAP



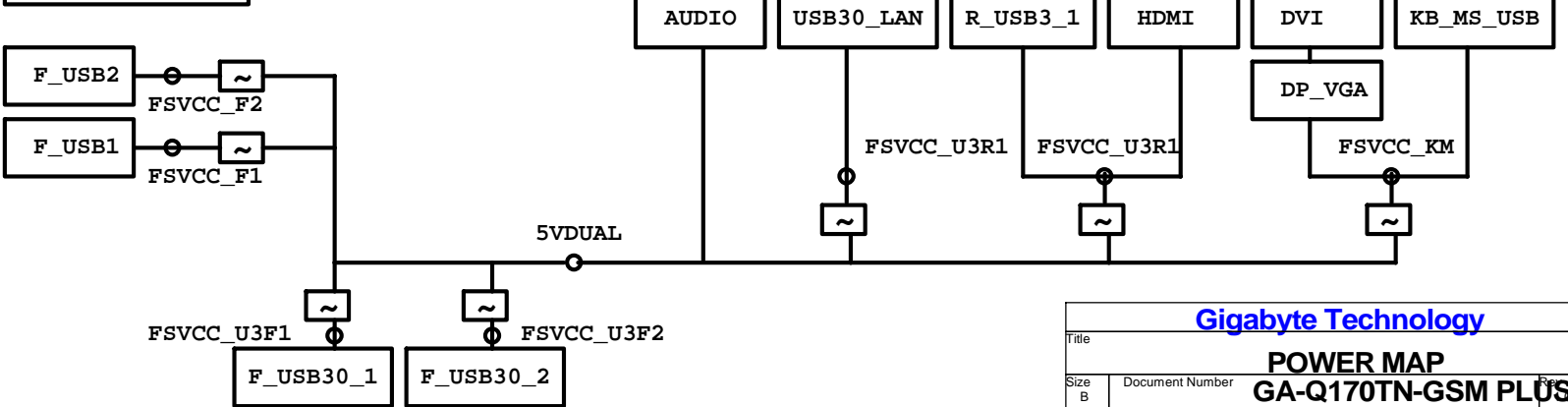
VCORE/VCCGT



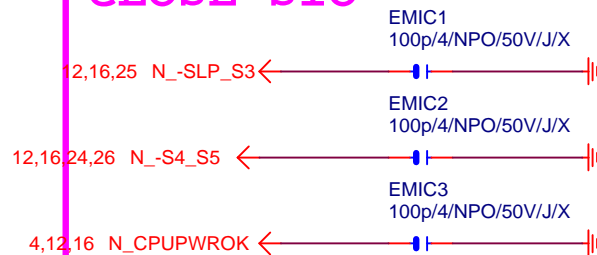
POWER



FUSE POWER F/R



CLOSE SIO



CLOSE PCH



close to PCH (NR17)

close to F_PANEL
(PIN92)MPD-**GIGABYTE™**

Title

EMI/ESDSize
A

Document Number

GA-Q170TN-GSM PLUSRev
1.0

Date: Thursday, May 26, 2016

Sheet 50 of 52

固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11C05-C82700-01R	270u/FP/D/16V/88/C/12m
11C05-C61000-01R	100u/OS/D/16V/66/C/30m
11C02-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11C02-685600-01R	560u/FP/D/6.3V/68/8m
11C05-882700-01R	270u/FP/D/16V/88/12m
11C05-661000-03R	100u/OS/D/16V/66/30m
11C02-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11C02-661000-09R	100u/OS/D/6.3V/66/A/35m
11C05-691000-09R	100u/OS/D/16V/69/A/35m
11C05-8C2700-09R	270u/FP/D/16V/8C/A/10m
11C02-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-M4500C-01R	0.5uH/40A/IMD109/M/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CHOKE1U-R50M-IF

Ferrite


	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		10*7	CHOKE11X8MM-SMD

BEAD

	料號	Capture Value	SIZE	Footprint
DIP	10LFB-15470A-01R	47/4030/15A/S	4*3	BEADC8B-BPH_SMD

PWM料號

	料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R	IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R	IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R	IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R	IC40MLFP-ISL95835



Title

RT8120_DDR4 POWER

Size Custom

Document Number

GA-Q170TN-GSM PLUS

Rev

1.0

Date:

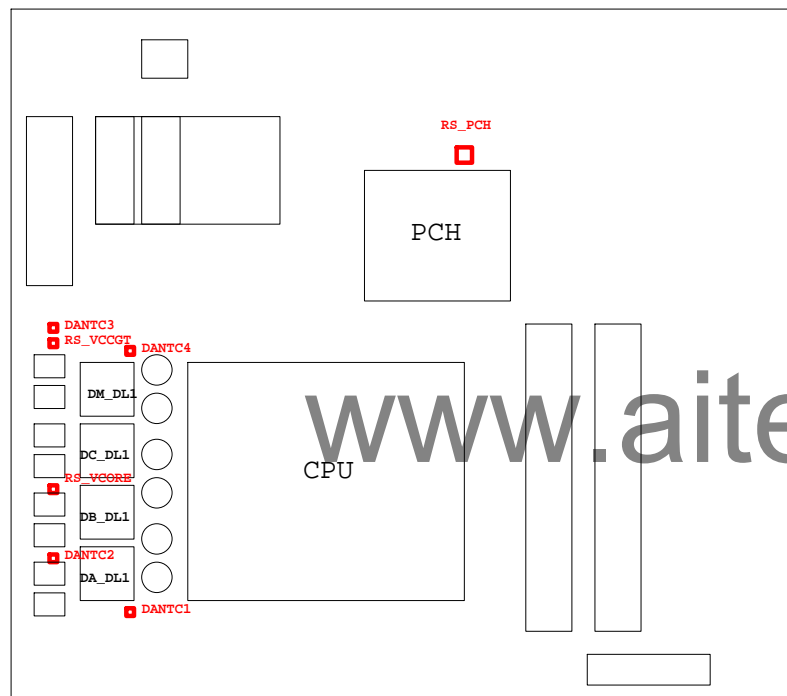
Thursday, May 26, 2016

Sheet

51

of

52



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