GA-78LMT-S2PT

Revision :4.01

9M78LMT2T-00

GIGABYTE™

Title: COVER SHEET		
Size: Custom	Document Number: GA-78LMT-S2PT	Rev: 4.01
Date: Friday, May 18, 2012	Sheet 1 of 28	

Model Name:GA-78LMT-S2PT

Component value change history

Version: 4.01

P-Code: U11120-0

Date	Change Item		Reason
2011.10.25	3.1A E_BOM Release.	PCB: 3.1	Modify from 78LMT-S2P 4.0, Remove DVI, Add LPT,IDE, COM PH 改 CONN to back panel
2011.12.28	3.1B P_BOM Release.	PCB: 3.1	ACN1~2 , PCN1~4 , PC2 180p Cap for HCL requirements
2012.01.20	3.1C P_BOM Release.	PCB: 3.1	Change CLK GEN RTM880-792
2012.02.13	40A D_BOM Release.	PCB: 4.0	Change PWM RT8871+RT9612 & RT8120 , IT8728 EX,
2012.05.02	40B E_BOM Release.	PCB: 4.01	Add PRN1&2 33ohm , IT8728 Use Sorting 過的料號 -71R / R153 改2.32K
2012.05.18	40B P_BOM Release.	PCB: 4.01	Turn PVT BOM ,Delete 全成信 PCB

Circuit or PCB layout change for next version

Date	Version	Change Item
2011.10.25	3.1 Gerber out	Modify from 78LMT-S2P 4.0. Remove DVI, Add LPT,IDE, COM PH 改 CONN to back, (RS760=RS780L) SIO/LAN /F_PANEL /F_USB/VGA relocate
2012.03.06	4.0 Gerber out	Change PWM to RT8868 + 8896 & IO Change to IT8728EX , MOSFET TO252 Change to P-PEK DDR3 slot,避開螺孔干涉問題, MOSFETHOT Protect ,Remove EC34,EC44 (DDR&NB_VCC VIN)
2012.05.02	4.01 Gerber out	Add OR24,OR30 Short Pad & LPT PD0~7 Serise 33ohm RES (ITE reaommend) & IO_BLINK Change GP20 / RESET Rount by EMI Request

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Title: BOM & PCB HISTORY

Size: Custom | Document Number: GA-78LMT-S2PT | Rev: 4.01

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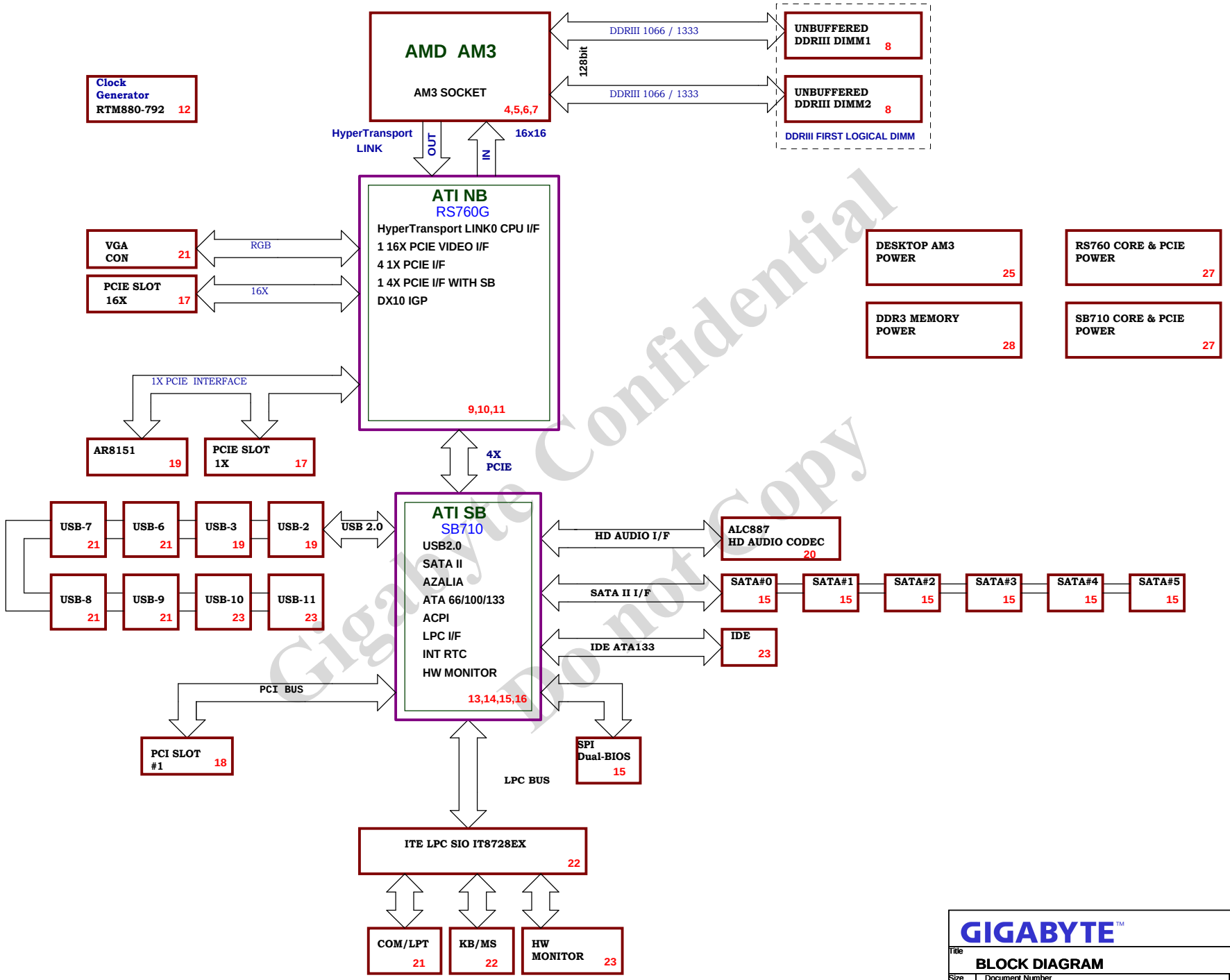
RS780L CUSTOMER DESKTOP DESIGN



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Title: BLOCK DIAGRAM		
Size: Custom	Document Number: GA-78LMT-S2PT	Rev: 4.01
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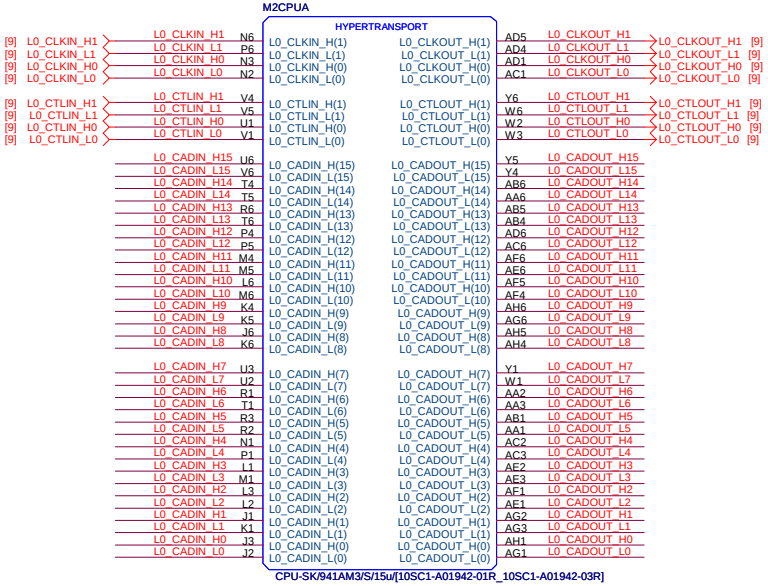
L0_CADIN_L[0..15] L0_CADIN_L[0..15] [9]

L0_CADIN_H[0..15] L0_CADIN_H[0..15] [9]

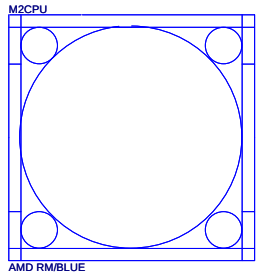
L0_CADOUT_L[0..15] L0_CADOUT_L[0..15] [9]

L0_CADOUT_H[0..15] L0_CADOUT_H[0..15] [9]



CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR18V
CPU_VTT_SUS = DDRVTT

VLDT_A = VCC12_HT
VLDT_B = HT12B



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Title: CPU HYPER TRANSPORT		
Size: Custom	Document Number: GA-78LMT-S2PT	Rev: 4.01
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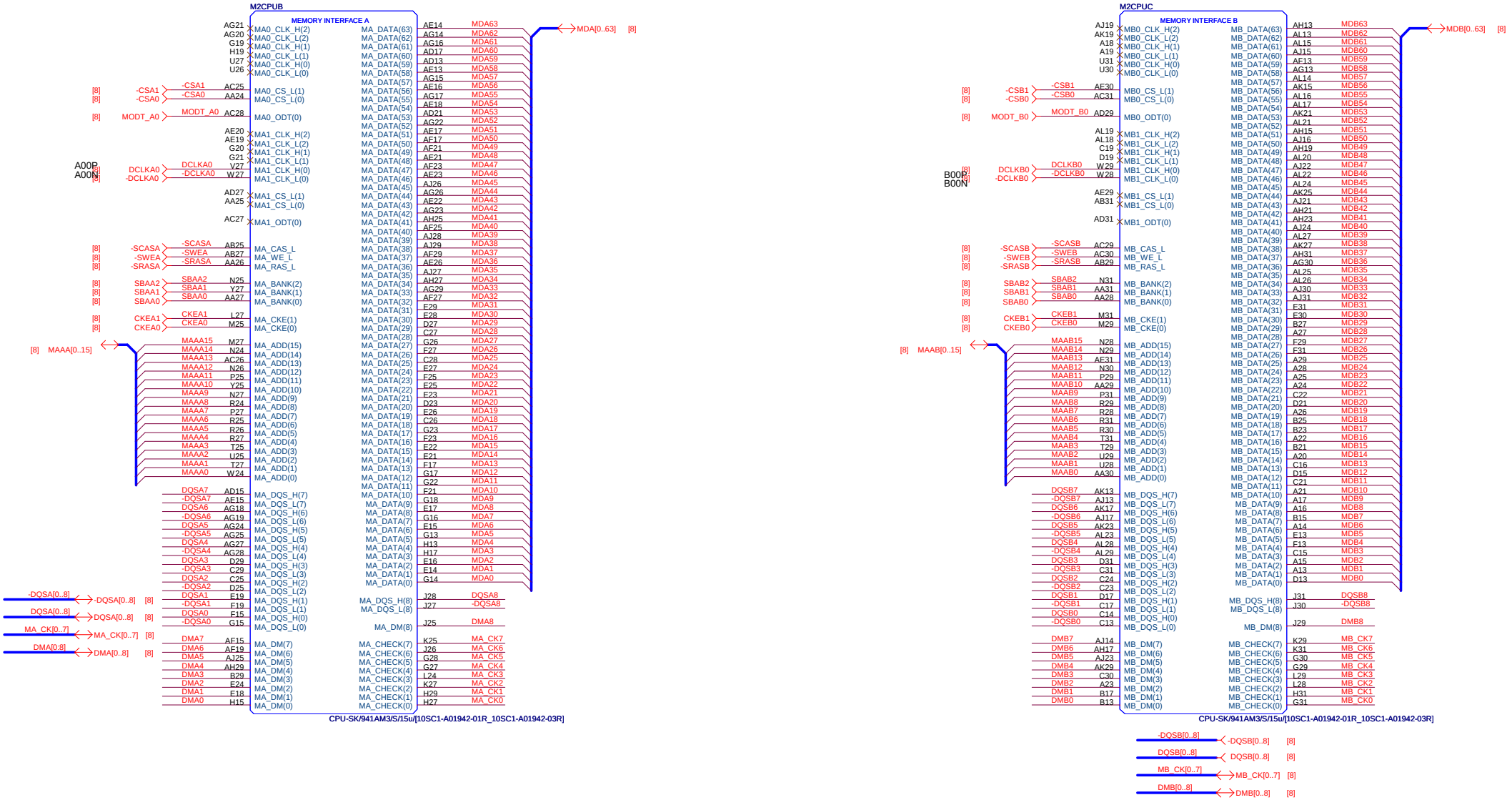

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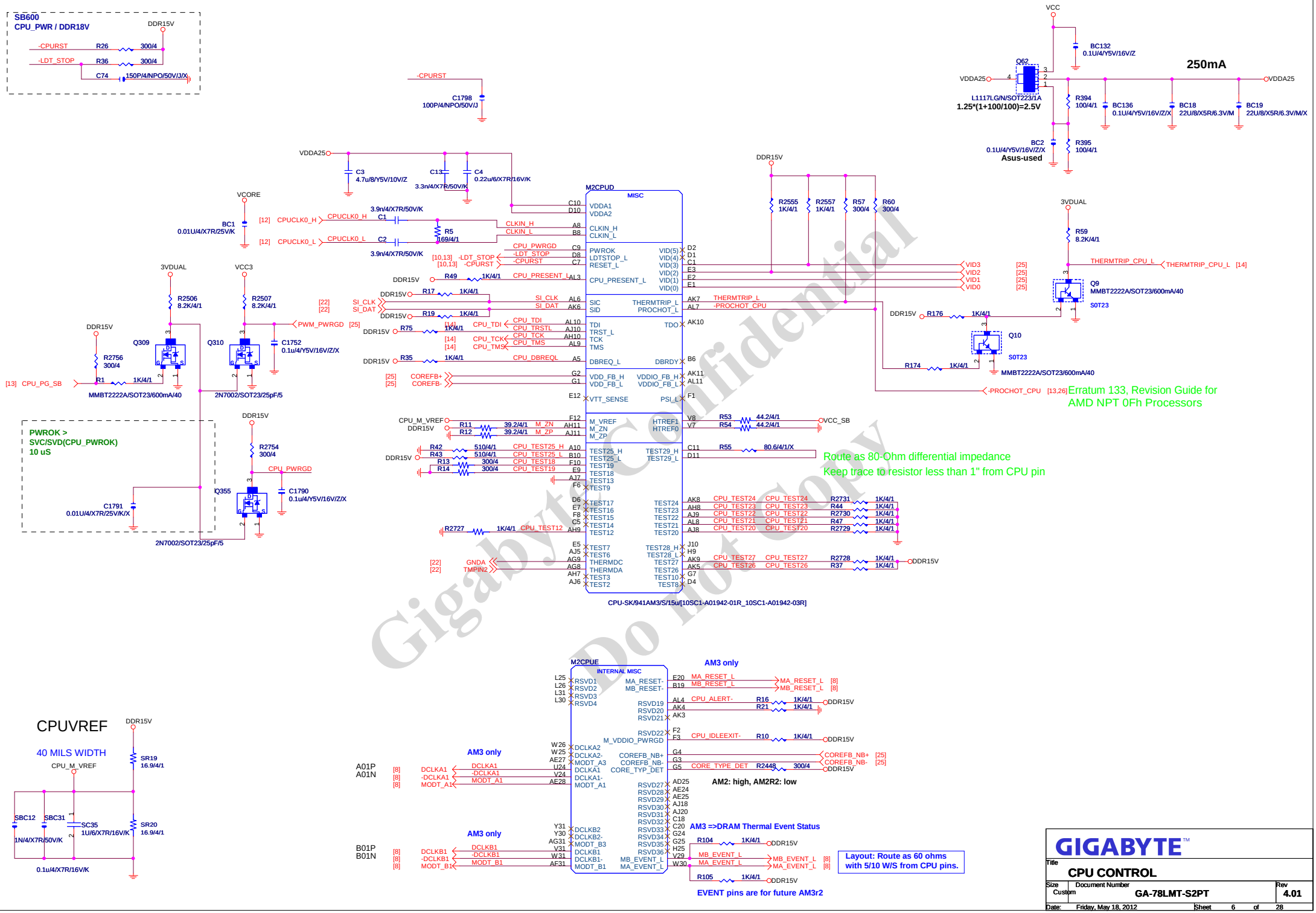
Title	CPU DDRII MEMORY	
Size: Custom	Document Number: GA-78LMT-S2PT	Rev: 4.01
Date: Friday, May 18, 2012	Sheet 5 of 28	


SB600
CPU_PWR / DDR18V
DDR15V
-CPURST
R26
300/4
-LDT_STOP
R36
300/4
C74
150P/4/NPO/50V/J/X
-CPURST
C1798
100P4/NPO/50V/J
VCC
BC132
0.1U/4/Y5V/16V/Z
250mA
Q62
VDDA25
L1117LG/N/SOT223/1A
1.25*(1+100/100)=2.5V
R394
100/4/1
BC136
0.1U/4/Y5V/16V/Z/X
BC18
22U/8/X5R/6.3V/M
BC19
22U/8/X5R/6.3V/M/X
BC2
0.1U/4/Y5V/16V/Z/X
Asus-used
R395
100/4/1
VDDA25
C3
4.7u/8/Y5V/10V/Z
C13
3.3n/4/X7R/50V/K
C4
0.22u/6/X7R/16V/K
VCORE
BC1
0.01U/4/X7R/25V/K
[12] CPUCLK0_H
CPUCLK0_H
C1
3.9n/4/X7R/50V/K
[12] CPUCLK0_L
CPUCLK0_L
C2
3.9n/4/X7R/50V/K
R5
169/4/1
M2CPUD
MISC
C10
D10
VDDA1
VDDA2
CLKIN_H
CLKIN_L
A8
B8
CLKIN_H
CLKIN_L
CPU_PWRGD
-LDT_STOP
-CPURST
C9
D8
C7
PWROK
LDTSTOP_L
RESET_L
[10,13] -LDT_STOP
[10,13] -CPURST
CPU_PRESENT_L
AL3
DDR15V
R49
1K/4/1
DDR15V
R17
1K/4/1
SI_CLK
SI_DAT
AL6
AK6
SIC
SID
THERMTRIP_L
PROCHOT_L
AK7
AL7
THERMTRIP_L
-PROCHOT_CPU
[22] SI_CLK
[22] SI_DAT
DDR15V
R19
1K/4/1
DDR15V
R75
1K/4/1
[14] CPU_TDI
CPU_TDI
CPU_TRSTL
CPU_TCK
CPU_TMS
AL10
AH10
AL9
TDI
TRST_L
TCK
TMS
TDO
AK10
[14] CPU_TCK
[14] CPU_TMS
DDR15V
R35
1K/4/1
CPU_DBREQL
A5
DBREQ_L
DBRDY
B6
[25] COREFB+
[25] COREFB-
G2
G1
VDD_FB_H
VDD_FB_L
VDDIO_FB_H
VDDIO_FB_L
AK11
AL11
E12
VTT_SENSE
PSI_L
F1
CPU_M_VREF
DDR15V
R11
39.2/4/1
M_ZN
R12
39.2/4/1
M_ZP
F12
AH11
AJ11
M_VREF
M_ZN
M_ZP
HTREF1
HTREF0
V8
V7
R53
44.2/4/1
R54
44.2/4/1
VCC_SB
DDR15V
R42
510/4/1
CPU_TEST25_H
R43
510/4/1
CPU_TEST25_L
R13
300/4
CPU_TEST18
R14
300/4
CPU_TEST19
A10
B10
F10
E9
AJ7
F6
TEST25_H
TEST25_L
TEST19
TEST18
TEST13
TEST9
TEST29_H
TEST29_L
C11
D11
R55
80.6/4/1/X
Route as 80-Ohm differential impedance
Keep trace to resistor less than 1" from CPU pin
D6
E7
F8
C5
AH9
TEST17
TEST16
TEST15
TEST14
TEST12
TEST24
TEST23
TEST22
TEST21
TEST20
AK8
AH8
AJ9
AL8
AJ8
CPU_TEST24
CPU_TEST23
CPU_TEST22
CPU_TEST21
CPU_TEST20
R2731
R44
R2730
R47
R2729
1K/4/1
R2727
1K/4/1
CPU_TEST12
E5
AJ5
AG9
AG8
AH7
AJ6
TEST7
TEST6
THERMDC
THERMDA
TEST3
TEST2
TEST28_H
TEST28_L
TEST27
TEST26
TEST10
TEST8
J10
H9
AK9
AK5
G7
D4
CPU_TEST27
CPU_TEST26
R2728
R37
[22] GNDA
[22] TMPIN2
DDR15V
CPU-SK/941AM3/S/15u/[10SC1-A01942-01R_10SC1-A01942-03R]
R2555
1K/4/1
R2557
1K/4/1
R57
300/4
R60
300/4
VID(5)
VID(4)
VID(3)
VID(2)
VID(1)
VID(0)
D2
D1
C1
E3
E2
E1
VID3 [25]
VID2 [25]
VID1 [25]
VID0 [25]
3VDUAL
R59
8.2K/4/1
THERMTRIP_CPU_L
THERMTRIP_CPU_L [14]
Q9
MMBT2222A/SOT23/600mA/40
S0T23
DDR15V
R176
1K/4/1
Q10
S0T23
R174
1K/4/1
MMBT2222A/SOT23/600mA/40
-PROCHOT_CPU [13,26]
Erratum 133, Revision Guide for
AMD NPT 0Fh Processors
3VDUAL
VCC3
R2506
8.2K/4/1
R2507
8.2K/4/1
PWM_PWRGD [25]
C1752
0.1u/4/Y5V/16V/Z/X
DDR15V
R2756
300/4
[13] CPU_PG_SB
R1
1K/4/1
Q309
Q310
MMBT2222A/SOT23/600mA/40
2N7002/SOT23/25pF/5
PWROK >
SVC/SVD(CPU_PWROK)
10 uS
DDR15V
R2754
300/4
CPU_PWRGD
C1790
0.1u/4/Y5V/16V/Z/X
Q355
C1791
0.01U/4/X7R/25V/K/X
2N7002/SOT23/25pF/5
M2CPUE
INTERNAL MISC
AM3 only
L25
L26
L31
L30
RSVD1
RSVD2
RSVD3
RSVD4
MA_RESET-
MB_RESET-
E20
B19
MA_RESET_L
MB_RESET_L
MA_RESET_L [8]
MB_RESET_L [8]
RSVD19
RSVD20
RSVD21
AL4
AK4
AK3
CPU_ALERT-
R16
1K/4/1
R21
1K/4/1
DDR15V
RSVD22
M_VDDIO_PWRGD
F2
F3
CPU_IDLEEXIT-
R10
1K/4/1
DDR15V
AM3 only
A01P
A01N
[8] DCLKA1
[8] -DCLKA1
[8] MODT_A1
W26
W25
AE27
U24
V24
AE28
DCLKA2
DCLKA2-
MODT_A3
DCLKA1
DCLKA1-
MODT_A1
COREFB_NB+
COREFB_NB-
CORE_TYP_DET
G4
G3
G5
CORE_TYPE_DET
R2448
300/4
DDR15V
COREFB_NB+ [25]
COREFB_NB- [25]
AM2: high, AM2R2: low
RSVD27
RSVD28
RSVD29
RSVD30
RSVD31
RSVD32
RSVD33
RSVD34
RSVD35
RSVD36
AD25
AE24
AE25
AJ18
AJ20
C18
C20
G24
G25
H25
V29
W30
AM3 only
B01P
B01N
[8] DCLKB1
[8] -DCLKB1
[8] MODT_B1
Y31
Y30
AG31
V31
W31
AE31
DCLKB2
DCLKB2-
MODT_B3
DCLKB1
DCLKB1-
MODT_B1
MB_EVENT_L
MA_EVENT_L
AM3 =>DRAM Thermal Event Status
R104
1K/4/1
DDR15V
MB_EVENT_L
MA_EVENT_L
MB_EVENT_L [8]
MA_EVENT_L [8]
R105
1K/4/1
DDR15V
Layout: Route as 60 ohms
with 5/10 W/S from CPU pins.
EVENT pins are for future AM3r2
CPUVREF
40 MILS WIDTH
DDR15V
SR19
16.9/4/1
CPU_M_VREF
SBC12
1N/4/X7R/50V/K
SBC31
SC35
1U/6/X7R/16V/K
SR20
16.9/4/1
0.1u/4/X7R/16V/K
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Title
CPU CONTROL
Size
Custom
Document Number
GA-78LMT-S2PT
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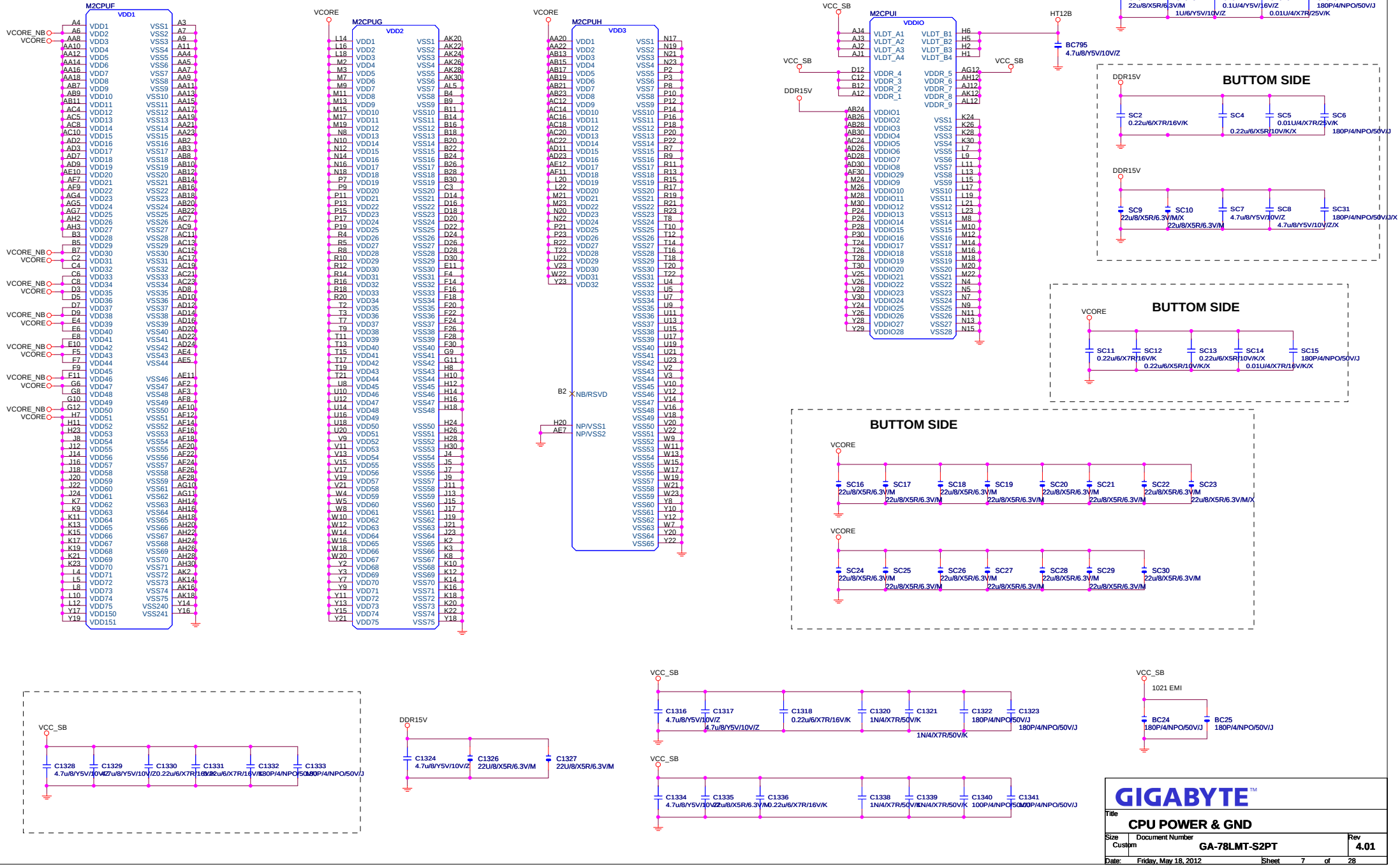
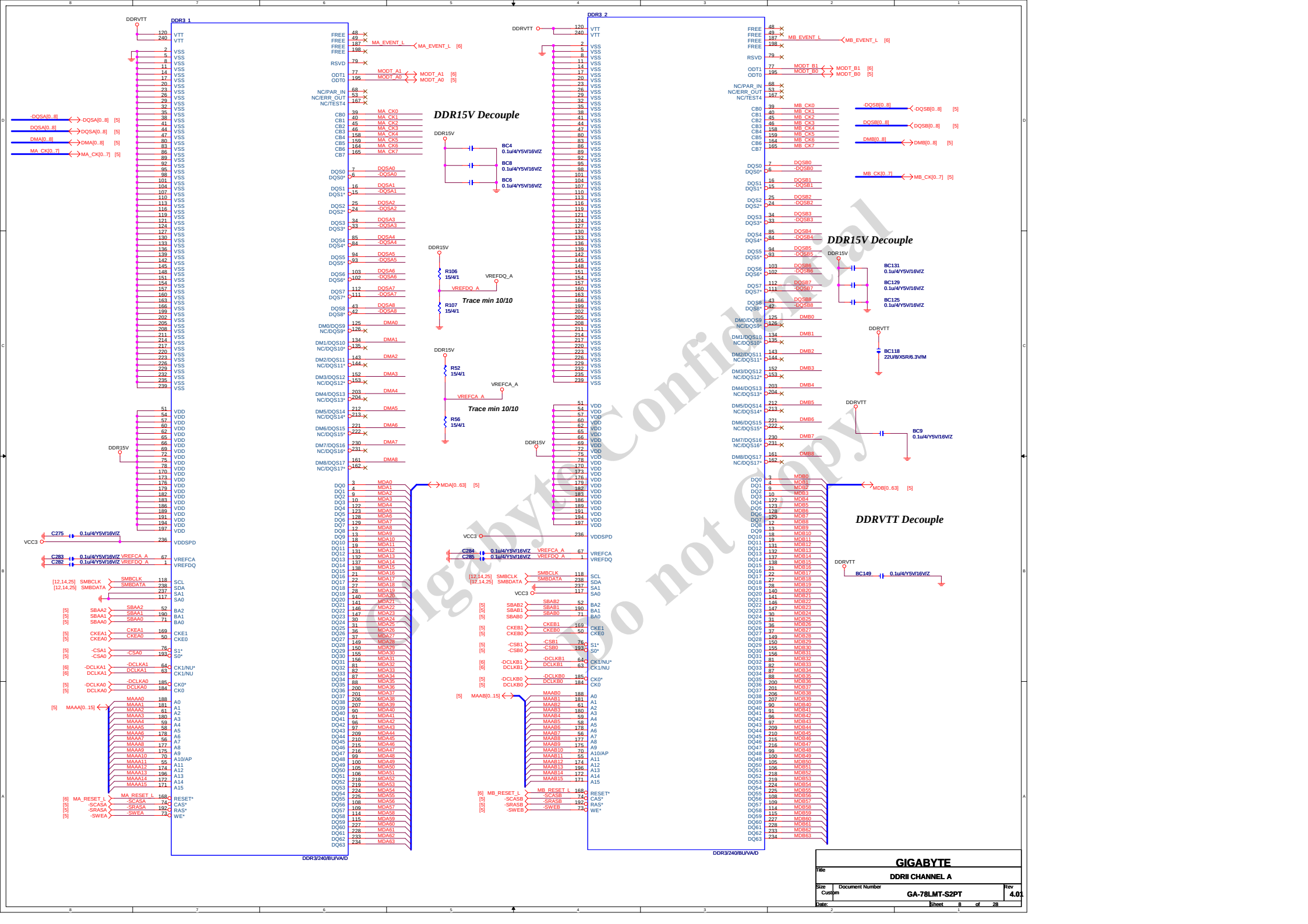
VLDT_RUN_B is connected to the VLDT_RUN power supply through the package or on the die. It is only connected on the board to decoupling near the CPU package.




DDR3_1
DDR3_2
DDR15V Decouple
DDR15V Decouple
DDRVTT Decouple
Trace min 10/10
Trace min 10/10
DDR3/240/BU/VA/D
DDR3/240/BU/VA/D
GIGABYTE
DDRII CHANNEL A
GA-78LMT-S2PT
4.01
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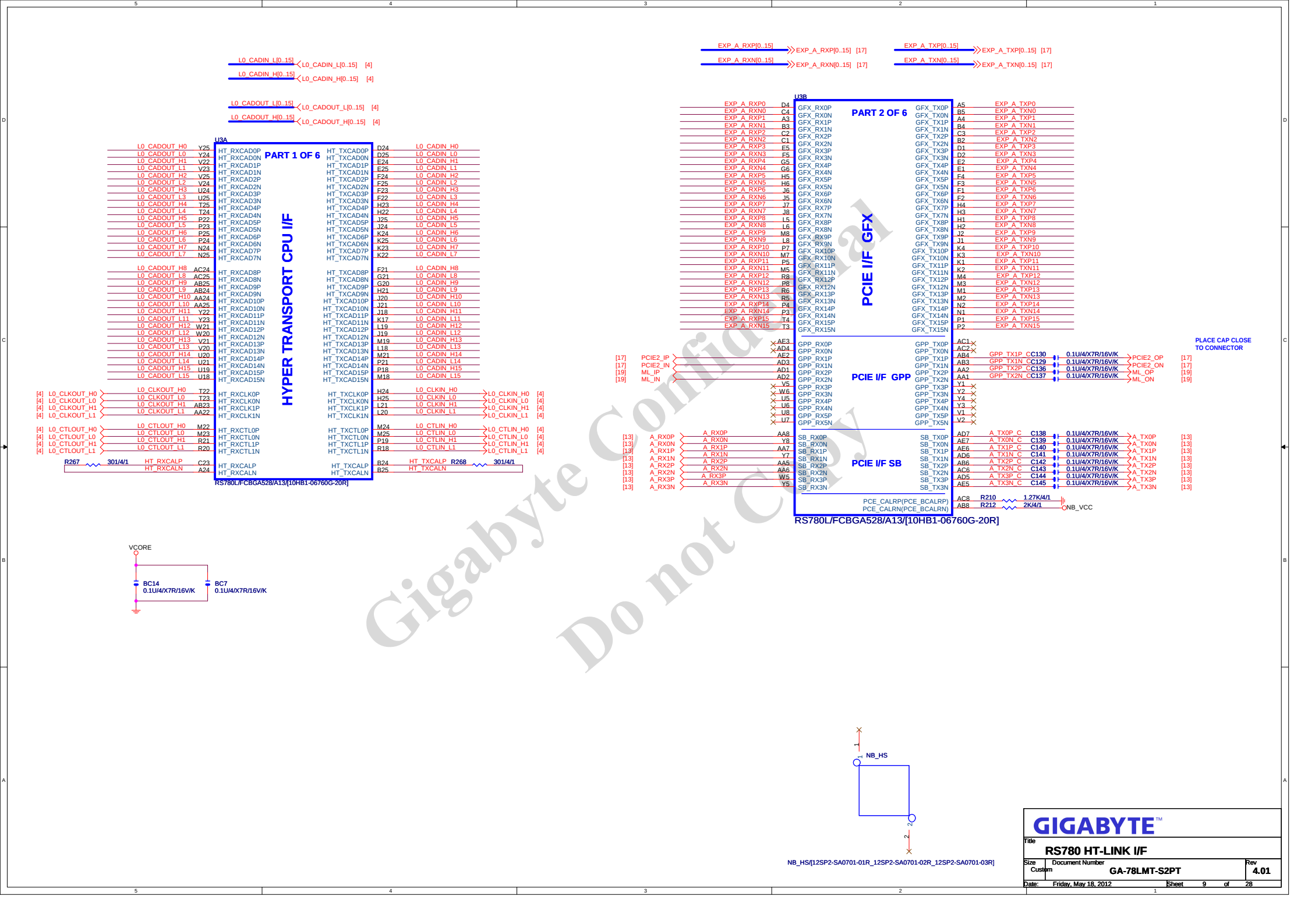
L0_CADIN_L[0..15]
L0_CADIN_L[0..15] [4]
L0_CADIN_H[0..15]
L0_CADIN_H[0..15] [4]
L0_CADOUT_L[0..15]
L0_CADOUT_L[0..15] [4]
L0_CADOUT_H[0..15]
L0_CADOUT_H[0..15] [4]
U3A
PART 1 OF 6
HYPER TRANSPORT CPU I/F
RS780L/FCBGA528/A13/[10HB1-06760G-20R]
L0_CADOUT_H0 Y25
L0_CADOUT_L0 Y24
L0_CADOUT_H1 V22
L0_CADOUT_L1 V23
L0_CADOUT_H2 V25
L0_CADOUT_L2 V24
L0_CADOUT_H3 U24
L0_CADOUT_L3 U25
L0_CADOUT_H4 T25
L0_CADOUT_L4 T24
L0_CADOUT_H5 P22
L0_CADOUT_L5 P23
L0_CADOUT_H6 P25
L0_CADOUT_L6 P24
L0_CADOUT_H7 N24
L0_CADOUT_L7 N25
L0_CADOUT_H8 AC24
L0_CADOUT_L8 AC25
L0_CADOUT_H9 AB25
L0_CADOUT_L9 AB24
L0_CADOUT_H10 AA24
L0_CADOUT_L10 AA25
L0_CADOUT_H11 Y22
L0_CADOUT_L11 Y23
L0_CADOUT_H12 W21
L0_CADOUT_L12 W20
L0_CADOUT_H13 V21
L0_CADOUT_L13 V20
L0_CADOUT_H14 U20
L0_CADOUT_L14 U21
L0_CADOUT_H15 U19
L0_CADOUT_L15 U18
L0_CLKOUT_H0 T22
L0_CLKOUT_L0 T23
L0_CLKOUT_H1 AB23
L0_CLKOUT_L1 AA22
L0_CTLOUT_H0 M22
L0_CTLOUT_L0 M23
L0_CTLOUT_H1 R21
L0_CTLOUT_L1 R20
R267 301/4/1 HT_RXCALP
HT_RXCALN A24
HT_RXCALP C23
HT_RXCALN
HT_TXCALP B24
HT_TXCALN B25
R268 301/4/1
L0_CLKIN_H0
L0_CLKIN_L0
L0_CLKIN_H1
L0_CLKIN_L1
L0_CTLIN_H0
L0_CTLIN_L0
L0_CTLIN_H1
L0_CTLIN_L1
VCORE
BC14 0.1U/4/X7R/16V/K
BC7 0.1U/4/X7R/16V/K
EXP_A_RXP[0..15]
EXP_A_RXP[0..15] [17]
EXP_A_RXN[0..15]
EXP_A_RXN[0..15] [17]
EXP_A_TXP[0..15]
EXP_A_TXP[0..15] [17]
EXP_A_TXN[0..15]
EXP_A_TXN[0..15] [17]
U3B
PART 2 OF 6
PCIE I/F GFX
PCIE I/F GPP
PCIE I/F SB
RS780L/FCBGA528/A13/[10HB1-06760G-20R]
PLACE CAP CLOSE TO CONNECTOR
GPP_TX1P_C C130 0.1U/4/X7R/16V/K PCIE2_OP [17]
GPP_TX1N_C C129 0.1U/4/X7R/16V/K PCIE2_ON [17]
GPP_TX2P_C C136 0.1U/4/X7R/16V/K ML_OP [19]
GPP_TX2N_C C137 0.1U/4/X7R/16V/K ML_ON [19]
A_TX0P_C C138 0.1U/4/X7R/16V/K A_TX0P [13]
A_TX0N_C C139 0.1U/4/X7R/16V/K A_TX0N [13]
A_TX1P_C C140 0.1U/4/X7R/16V/K A_TX1P [13]
A_TX1N_C C141 0.1U/4/X7R/16V/K A_TX1N [13]
A_TX2P_C C142 0.1U/4/X7R/16V/K A_TX2P [13]
A_TX2N_C C143 0.1U/4/X7R/16V/K A_TX2N [13]
A_TX3P_C C144 0.1U/4/X7R/16V/K A_TX3P [13]
A_TX3N_C C145 0.1U/4/X7R/16V/K A_TX3N [13]
R210 1.27K/4/1
R212 2K/4/1
NB_VCC
PCE_CALRP(PCE_BCALRP)
PCE_CALRN(PCE_BCALRN)
NB_HS
NB_HS/[12SP2-SA0701-01R_12SP2-SA0701-02R_12SP2-SA0701-03R]
GIGABYTE
RS780 HT-LINK I/F
Size Custom
Document Number GA-78LMT-S2PT
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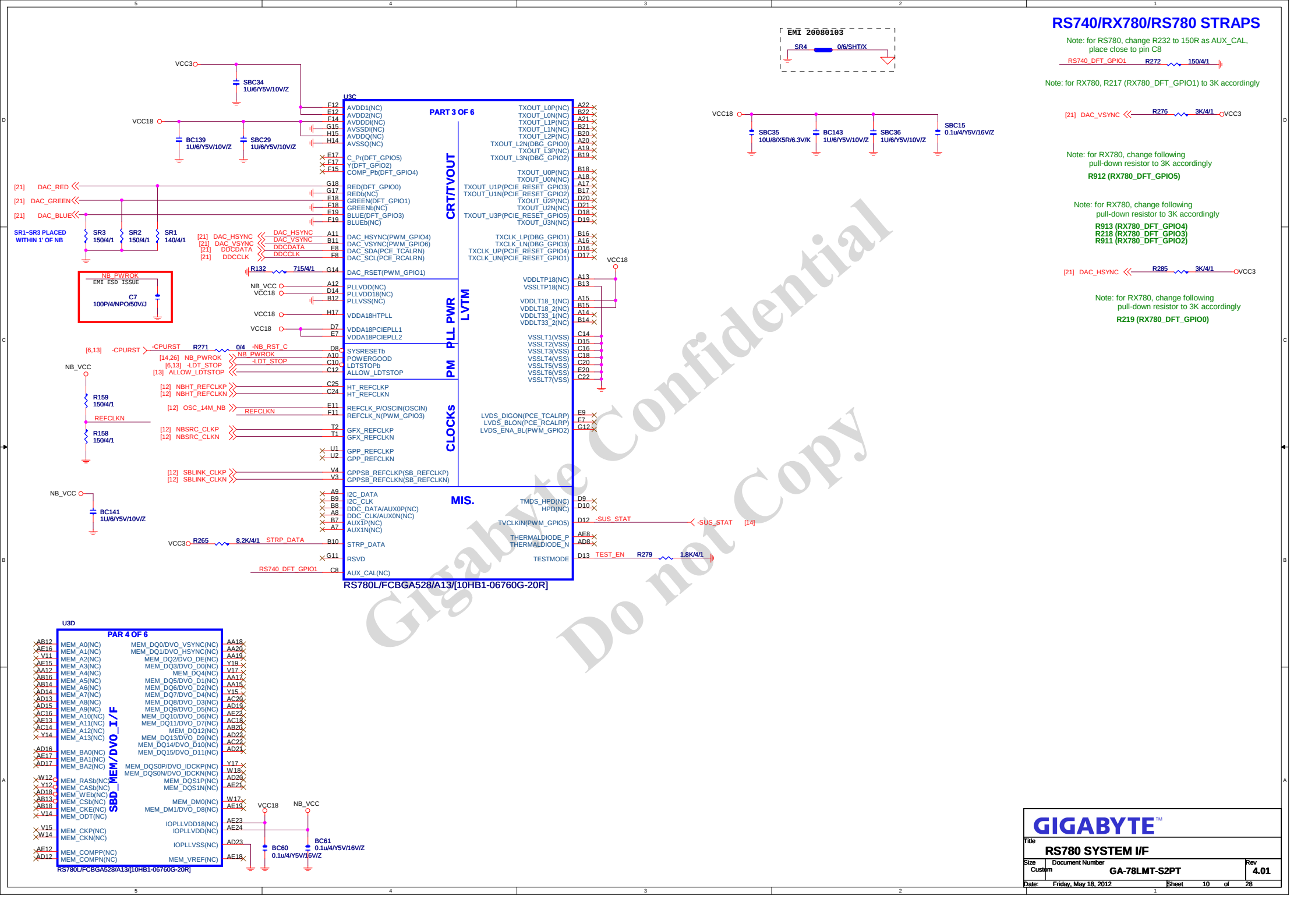
RS740/RX780/RS780 STRAPS
Note: for RS780, change R232 to 150R as AUX_CAL, place close to pin C8
RS740_DFT_GPIO1 R272 150/4/1
Note: for RX780, R217 (RX780_DFT_GPIO1) to 3K accordingly
[21] DAC_VSYNC R276 3K/4/1 VCC3
Note: for RX780, change following pull-down resistor to 3K accordingly
R912 (RX780_DFT_GPIO5)
Note: for RX780, change following pull-down resistor to 3K accordingly
R913 (RX780_DFT_GPIO4)
R218 (RX780_DFT_GPIO3)
R911 (RX780_DFT_GPIO2)
[21] DAC_HSYNC R285 3K/4/1 VCC3
Note: for RX780, change following pull-down resistor to 3K accordingly
R219 (RX780_DFT_GPIO0)
EMI 20080103
SR4 0/6/SHT/X
U3C
PART 3 OF 6
CRT/TVOUT
PLL PWR
LVTM
PM
CLOCKs
MIS.
RS780L/FCBGA528/A13/[10HB1-06760G-20R]
U3D
PAR 4 OF 6
SBD_MEM/DVO_I/F
RS780L/FCBGA528/A13/[10HB1-06760G-20R]
SR1~SR3 PLACED WITHIN 1' OF NB
NB_PWROK
EMI ESD ISSUE
C7 100P/4/NPO/50V/J
SBC34 1U/6/Y5V/10V/Z
BC139 1U/6/Y5V/10V/Z
SBC29 1U/6/Y5V/10V/Z
SBC35 10U/8/X5R/6.3V/K
BC143 1U/6/Y5V/10V/Z
SBC36 1U/6/Y5V/10V/Z
SBC15 0.1u/4/Y5V/16V/Z
BC141 1U/6/Y5V/10V/Z
BC60 0.1u/4/Y5V/16V/Z
BC61 0.1u/4/Y5V/16V/Z
R159 150/4/1
R158 150/4/1
R265 8.2K/4/1
R279 1.8K/4/1
R271 0/4
R132 715/4/1
-CPURST
-NB_RST_C
NB_PWROK
-LDT_STOP
ALLOW_LDTSTOP
REFCLKN
-SUS_STAT
TEST_EN
STRP_DATA
RS740_DFT_GPIO1
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Title
RS780 SYSTEM I/F
Size Custom
Document Number GA-78LMT-S2PT
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Date: Friday, May 18, 2012
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RS740/RX780/RS780 POWER DIFFERENCE TABLE

PIN NAME	RS740	RX780	RS780	PIN NAME	RS740	RX780	RS780
VDDHT	NC	+1.1V	+1.1V	IOPLLVDD	+1.2V	NC	+1.1V
VDDHTRX	NC	+1.1V	+1.1V	AVDD	+3.3V	NC	+3.3V
VDDHTTX	+1.2V	+1.2V	+1.2V	AVDDDI	+1.8V	NC	+1.8V
VDDA18PCIE	NC	+1.8V	+1.8V	AVDDQ	+1.8V	NC	+1.8V
VDD18	+1.8V	+1.8V	+1.8V	PLLVDD	+1.2V	NC	+1.1V
VDD18_MEM	NC	NC	+1.8V	PLLVDD18	+1.8V	NC	+1.8V
VDDPCIE	+1.2V	+1.1V	+1.1V	VDDA18PCIEPLL	+1.2V	+1.8V	+1.8V
VDDC	+1.2V	+1.1V	+1.1V	VDDA18HTPLL	+1.8V	+1.8V	+1.8V
VDD_MEM	+1.8V	NC	+1.8V(DDR2) +1.5V(DDR3)	VDDLTP18	+1.8V	NC	+1.8V
VDD33	+3.3V	NC	+3.3V	VDDLT18	+1.8V	NC	+1.8V
IOPLLVDD18	+1.8V	NC	+1.8V	VDDLT33	+3.3V	NC	NC

U3F

PART 6/6

GROUND

RS780L/FCBGA528/A13/[10HB1-06760G-20R]

Please use 1mm pad size, place all ELT test pads on bottom side only

U3E

PART 5/6

POWER

RS780L/FCBGA528/A13/[10HB1-06760G-20R]

NB_VCC

VCC_SB

VCC18

VCC3

1.1V

1.2V

SBC19 0.1u/4/Y5V/16V/Z

SBC14 0.1u/4/Y5V/16V/Z

BC31 22U/8/X5R/6.3V/M

BC68 1U/6/Y5V/10V/Z

BC70 0.1u/4/Y5V/16V/Z

BC32 10u/8/X5R/6.3V/K

BC91 0.1u/4/Y5V/16V/Z

SBC25 0.1u/4/Y5V/16V/Z

SBC18 0.1u/4/Y5V/16V/Z

SBC22 0.1u/4/Y5V/16V/Z

BC33 22u/8/X5R/6.3V/M

BC37 1U/6/Y5V/10V/Z

BC58 0.1u/4/Y5V/16V/Z

SBC26 0.1u/4/Y5V/16V/Z

SBC23 0.1u/4/Y5V/16V/Z

SBC24 0.1u/4/Y5V/16V/Z

BC42 1U/6/Y5V/10V/Z

BC34 1U/6/Y5V/10V/Z

SBC27 0.1u/4/Y5V/16V/Z

SBC6 0.1u/4/Y5V/16V/Z

BC69 0.1u/4/Y5V/16V/Z

BC54 0.1u/4/Y5V/16V/Z

BC43 1U/6/Y5V/10V/Z

BC94 10u/8/X5R/6.3V/K

SBC9 0.1u/4/Y5V/16V/Z

SBC10 0.1u/4/Y5V/16V/Z

SBC11 0.1u/4/Y5V/16V/Z

SBC13 0.1u/4/Y5V/16V/Z

SBC8 0.1u/4/Y5V/16V/Z

SBC7 0.1u/4/Y5V/16V/Z

SBC4 0.1u/4/Y5V/16V/Z

SBC2 10u/8/X5R/6.3V/K

BC65 0.1u/4/Y5V/16V/Z

BC56 0.1u/4/Y5V/16V/Z

SBC16 0.1u/4/Y5V/16V/Z

SBC17 0.1u/4/Y5V/16V/Z

SBC32 0.1u/4/Y5V/16V/Z

SBC33 0.1u/4/Y5V/16V/Z

BC55 10u/8/X5R/6.3V/K

BC53 1U/6/Y5V/10V/Z

SBC30 0.1u/4/Y5V/16V/Z

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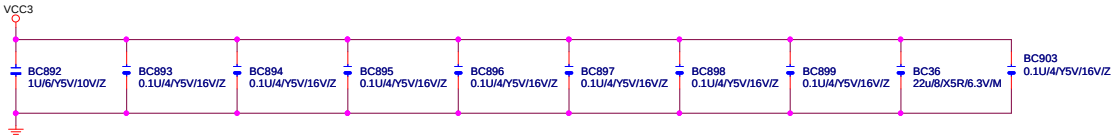
Title: RS780 POWER & GND		
Size: Custom	Document Number: GA-78LMT-S2PT	Rev: 4.01
Date: Friday, May 18, 2012	Sheet 11 of 28	



1- PLACE ALL THE SERIES TERMINATION RESISTORS AS CLOSE TO U800 AS POSSIBLE

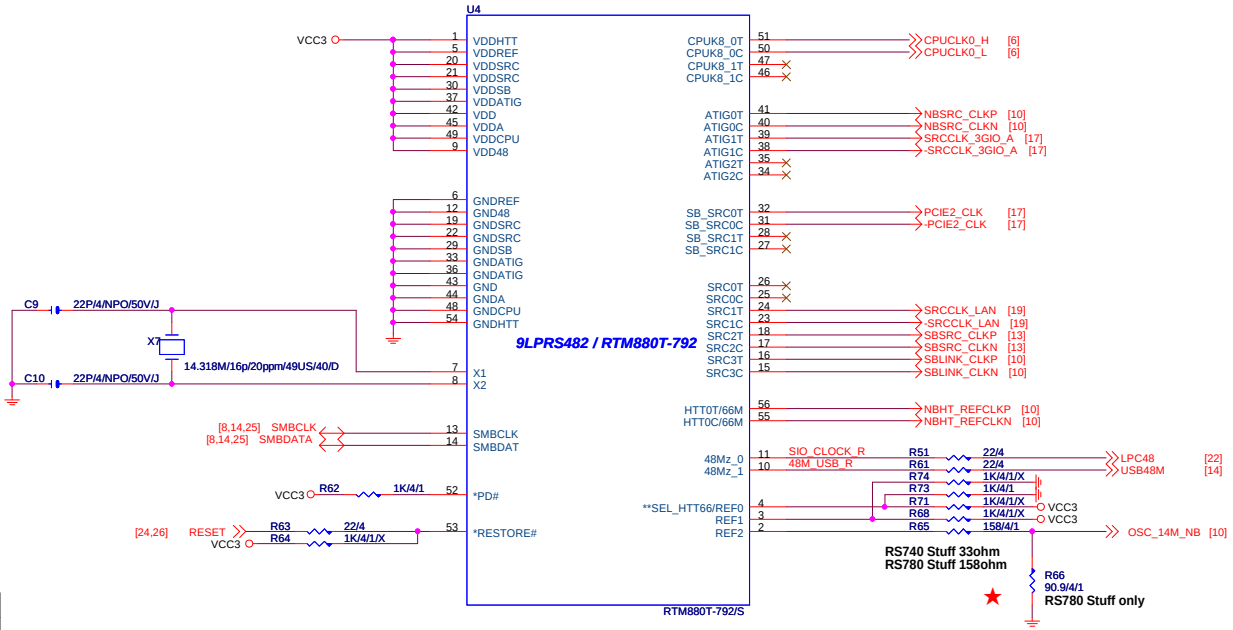
2- ROUTE ALL SRCCLKTx AND SRCCLKCx AS DIFFERENT PAIR RULE

3- PUT DECOUPLING CAPS CLOSE TO U800 POWER PIN

NB CLOCK INPUT TABLE

NB CLOCKS	RS740	RX780	RS780	
HT_REFCLKP	66M SE(SE)	100M DIFF	100M DIFF	
HT_REFCLKN	NC	100M DIFF	100M DIFF	
REFCLK_P	14M SE (3.3V)	14M SE (1.8V)	14M SE (1.1V)	100M DIFF
REFCLK_N	NC	NC	vref	100M DIFF
GFX_REFCLK*	100M DIFF	100M DIFF	100M DIFF	
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPPSB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

* the GFX_REFCLK input is required for all cases



C9 22P/4/NPO/50V/J
C10 22P/4/NPO/50V/J
X7 14.318M/16p/20ppm/49US/40/D
[8,14,25] SMBCLK
[8,14,25] SMBDATA
VCC3 R62 1K/4/1
[24,26] RESET R63 22/4 R64 1K/4/1/X VCC3
R51 22/4
R61 22/4
R74 1K/4/1/X
R73 1K/4/1
R71 1K/4/1/X
R68 1K/4/1/X VCC3
R65 158/4/1 VCC3
RS740 Stuff 33ohm
RS780 Stuff 158ohm
R66 90.9/4/1
RS780 Stuff only

watch dog --
RESTORE# 接 RESET

	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 82.5R/130R
RS780 (Single-ended)	1.1V 158R/90.9R

**SEL_HTT66/REF0		OUT 3.3V 14.318MHz REF output.
IN	Low	100MHz differential HT clock, (Internal 120KΩ pull-down)
	High	66MHz 3.3V single ended HT clock.

GIGABYTE™

Title: ICS9LPRS485C

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PLACE THESE PCIE AC COUPLING CAPS CLOSE TO U600

S.B HEATSINK

SB_HS

SB_HS/[12SP2-030005-41R_12SP2-030005-42R_12SP2-030005-43R]

U2A

SB700

Part 1 of 5

PCI EXPRESS INTERFACE

PCI INTERFACE

CLOCK GENERATOR

PCI CLKS

LPC

RTC XTAL

CPU

RTC

SB710/FCBGA528/A14/[10HB1-06B710-11R]

Note: LDT_PG, LDT_STP# & LDT_RST# are OD and require a PU to the CPU I/O rail. They are also in the S5 domain to prevent glitching at power up.

X4 32.768K/12.5p/20ppm/TF38/35K/D

SHW/D0.64*5.08*6.74

PCLK2	PCLK3
PULL HIGH	WATCHDOG TIMER ON NB_PWRGD ENABLED	USE DEBUG STRAPS
PULL LOW	WATCHDOG TIMER ON NB_PWRGD DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT

BIOS after boot setting
EC AOD-ACC

LPC_CLK0	LPC_CLK1
PULL HIGH	IMC ENABLED AOD Extreme	CLKGEN ENABLED
PULL LOW	IMC DISABLED DEFAULT	CLKGEN DISABLED DEFAULT

20mil 20mil 20mil

BAT54C/SOT23/200mA

BATTERY CR2032

PH/1*2/BK/2.54/VA/D

CLR_CMOS	
SHORT	CLEAR CMOS
OPEN	NORMAL

NOT ADD ICT FOR RTCVDD PIN

GIGABYTE

Title: ATI SB710 PCIE/PCI/CPU/LPC

Size: Custom | Document Number: GA-78LMT-S2PT | Rev: 4.01

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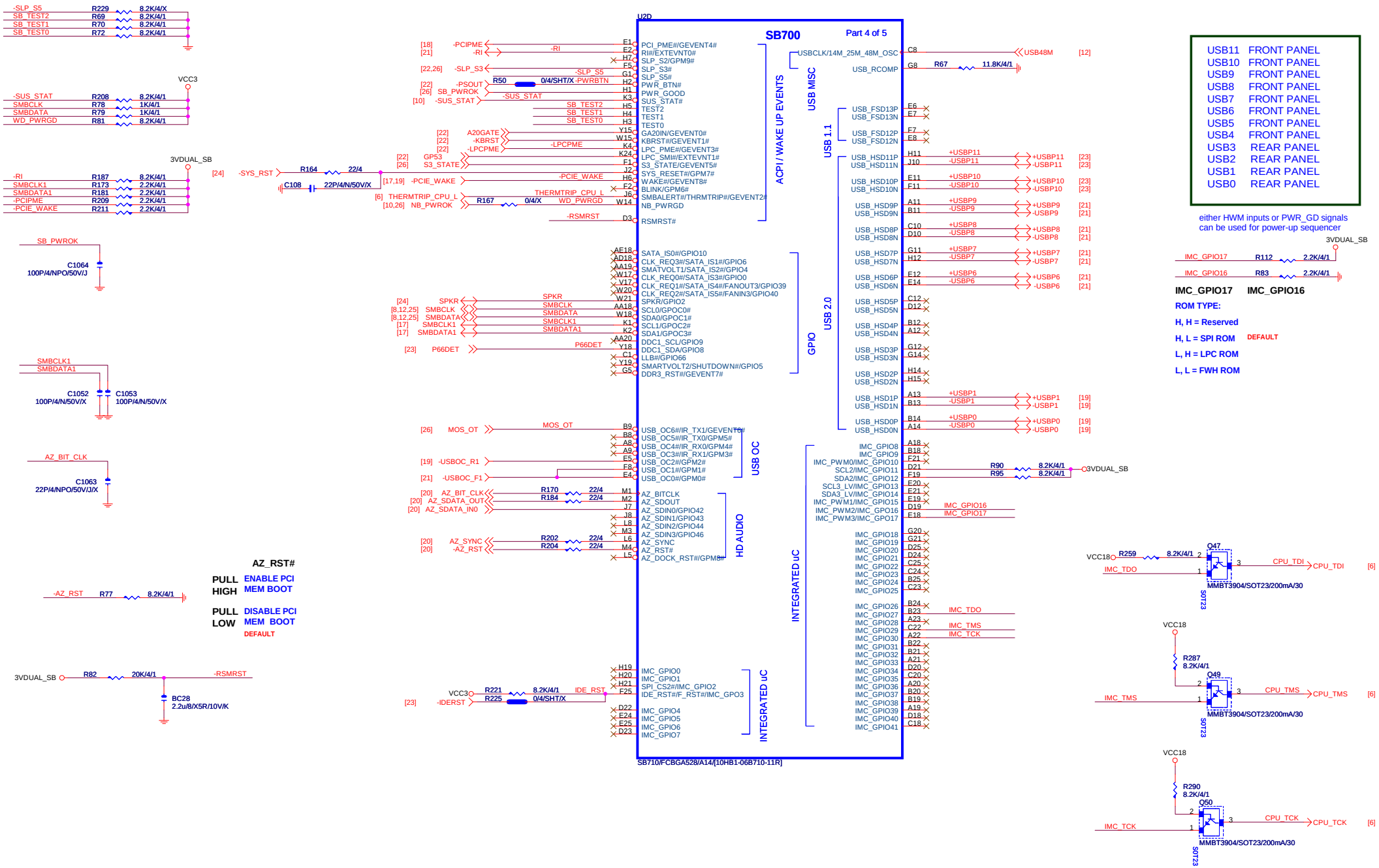
U2D
SB700
Part 4 of 5
SB710/FCBGA528/A14/[10HB1-06B710-11R]
ACPI / WAKE UP EVENTS
USB MISC
USB 1.1
USB 2.0
GPIO
USB OC
HD AUDIO
INTEGRATED uC
PCI_PME#/GEVENT4#
RI#/EXTEVNT0#
SLP_S2/GPM9#
SLP_S3#
SLP_S5#
PWR_BTN#
PWR_GOOD
SUS_STAT#
TEST2
TEST1
TEST0
GA20IN/GEVENT0#
KBRST#/GEVENT1#
LPC_PME#/GEVENT3#
LPC_SMI#/EXTEVNT1#
S3_STATE/GEVENT5#
SYS_RESET#/GPM7#
WAKE#/GEVENT8#
BLINK/GPM6#
SMBALERT#/THRMTRIP#/GEVENT2#
NB_PWRGD
RSMRST#
USBCLK/14M_25M_48M_OSC
USB_RCOMP
USB_FSD13P
USB_FSD13N
USB_FSD12P
USB_FSD12N
USB_HSD11P
USB_HSD11N
USB_HSD10P
USB_HSD10N
USB_HSD9P
USB_HSD9N
USB_HSD8P
USB_HSD8N
USB_HSD7P
USB_HSD7N
USB_HSD6P
USB_HSD6N
USB_HSD5P
USB_HSD5N
USB_HSD4P
USB_HSD4N
USB_HSD3P
USB_HSD3N
USB_HSD2P
USB_HSD2N
USB_HSD1P
USB_HSD1N
USB_HSD0P
USB_HSD0N
SATA_IS0#/GPIO10
CLK_REQ3#/SATA_IS1#/GPIO6
SMATVOLT1/SATA_IS2#/GPIO4
CLK_REQ0#/SATA_IS3#/GPIO0
CLK_REQ1#/SATA_IS4#/FANOUT3/GPIO39
CLK_REQ2#/SATA_IS5#/FANIN3/GPIO40
SPKR/GPIO2
SCL0/GPOC0#
SDA0/GPOC1#
SCL1/GPOC2#
SDA1/GPOC3#
DDC1_SCL/GPIO9
DDC1_SDA/GPIO8
LLB#/GPIO66
SMARTVOLT2/SHUTDOWN#/GPIO5
DDR3_RST#/GEVENT7#
USB_OC6#/IR_TX1/GEVENT6#
USB_OC5#/IR_TX0/GPM5#
USB_OC4#/IR_RX0/GPM4#
USB_OC3#/IR_RX1/GPM3#
USB_OC2#/GPM2#
USB_OC1#/GPM1#
USB_OC0#/GPM0#
AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO42
AZ_SDIN1/GPIO43
AZ_SDIN2/GPIO44
AZ_SDIN3/GPIO46
AZ_SYNC
AZ_RST#
AZ_DOCK_RST#/GPM8#
IMC_GPIO0
IMC_GPIO1
SPI_CS2#/IMC_GPIO2
IDE_RST#/F_RST#/IMC_GPO3
IMC_GPIO4
IMC_GPIO5
IMC_GPIO6
IMC_GPIO7
IMC_GPIO8
IMC_GPIO9
IMC_PWM0/IMC_GPIO10
SCL2/IMC_GPIO11
SDA2/IMC_GPIO12
SCL3_LV/IMC_GPIO13
SDA3_LV/IMC_GPIO14
IMC_PWM1/IMC_GPIO15
IMC_PWM2/IMC_GPIO16
IMC_PWM3/IMC_GPIO17
IMC_GPIO18
IMC_GPIO19
IMC_GPIO20
IMC_GPIO21
IMC_GPIO22
IMC_GPIO23
IMC_GPIO24
IMC_GPIO25
IMC_GPIO26
IMC_GPIO27
IMC_GPIO28
IMC_GPIO29
IMC_GPIO30
IMC_GPIO31
IMC_GPIO32
IMC_GPIO33
IMC_GPIO34
IMC_GPIO35
IMC_GPIO36
IMC_GPIO37
IMC_GPIO38
IMC_GPIO39
IMC_GPIO40
IMC_GPIO41
-SLP_S5 R229 8.2K/4/X
SB_TEST2 R69 8.2K/4/1
SB_TEST1 R70 8.2K/4/1
SB_TEST0 R72 8.2K/4/1
VCC3
-SUS_STAT R208 8.2K/4/1
SMBCLK R78 1K/4/1
SMBDATA R79 1K/4/1
WD_PWRGD R81 8.2K/4/1
3VDUAL_SB
-RI R187 8.2K/4/1
SMBCLK1 R173 2.2K/4/1
SMBDATA1 R181 2.2K/4/1
-PCIPME R209 2.2K/4/1
-PCIE_WAKE R211 2.2K/4/1
SB_PWROK
C1064 100P/4/NPO/50V/J
SMBCLK1
SMBDATA1
C1052 100P/4/N/50V/X
C1053 100P/4/N/50V/X
AZ_BIT_CLK
C1063 22P/4/NPO/50V/J/X
-AZ_RST R77 8.2K/4/1
3VDUAL_SB R82 20K/4/1 -RSMRST
BC28 2.2u/8/X5R/10V/K
[24] -SYS_RST R164 22/4
C108 22P/4/N/50V/X
[18] -PCIPME
[21] -RI
-RI
[22,26] -SLP_S3
-SLP_S5
[22] -PSOUT
[26] SB_PWROK
R50 0/4/SHT/X -PWRBTN
[10] -SUS_STAT
-SUS_STAT
SB_TEST2
SB_TEST1
SB_TEST0
[22] A20GATE
[22] -KBRST
-LPCPME
[22] -LPCPME
[22] GP53
[26] S3_STATE
[17,19] -PCIE_WAKE
-PCIE_WAKE
[6] THERMTRIP_CPU_L
THERMTRIP_CPU_L
[10,26] NB_PWROK
R167 0/4/X
WD_PWRGD
-RSMRST
[24] SPKR
[8,12,25] SMBCLK
[8,12,25] SMBDATA
[17] SMBCLK1
[17] SMBDATA1
SPKR
SMBCLK
SMBDATA
SMBCLK1
SMBDATA1
[23] P66DET
P66DET
[26] MOS_OT
MOS_OT
[19] -USBOC_R1
[21] -USBOC_F1
[20] AZ_BIT_CLK
[20] AZ_SDATA_OUT
[20] AZ_SDATA_IN0
R170 22/4
R184 22/4
[20] AZ_SYNC
[20] -AZ_RST
R202 22/4
R204 22/4
VCC3
[23] -IDERST
R221 8.2K/4/1
R225 0/4/SHT/X
IDE_RST
C8 USB48M [12]
G8 R67 11.8K/4/1
H11 +USBP11
J10 -USBP11
+USBP11 [23]
-USBP11 [23]
E11 +USBP10
F11 -USBP10
+USBP10 [23]
-USBP10 [23]
A11 +USBP9
B11 -USBP9
+USBP9 [21]
-USBP9 [21]
C10 +USBP8
D10 -USBP8
+USBP8 [21]
-USBP8 [21]
G11 +USBP7
H12 -USBP7
+USBP7 [21]
-USBP7 [21]
E12 +USBP6
E14 -USBP6
+USBP6 [21]
-USBP6 [21]
A13 +USBP1
B13 -USBP1
+USBP1 [19]
-USBP1 [19]
B14 +USBP0
A14 -USBP0
+USBP0 [19]
-USBP0 [19]
R90 8.2K/4/1
R95 8.2K/4/1
3VDUAL_SB
IMC_TDO
IMC_TMS
IMC_TCK
USB11 FRONT PANEL
USB10 FRONT PANEL
USB9 FRONT PANEL
USB8 FRONT PANEL
USB7 FRONT PANEL
USB6 FRONT PANEL
USB5 FRONT PANEL
USB4 FRONT PANEL
USB3 REAR PANEL
USB2 REAR PANEL
USB1 REAR PANEL
USB0 REAR PANEL
either HWM inputs or PWR_GD signals can be used for power-up sequencer
3VDUAL_SB
IMC_GPIO17 R112 2.2K/4/1
IMC_GPIO16 R83 2.2K/4/1
IMC_GPIO17 IMC_GPIO16
ROM TYPE:
H, H = Reserved
H, L = SPI ROM DEFAULT
L, H = LPC ROM
L, L = FWH ROM
AZ_RST#
PULL HIGH ENABLE PCI MEM BOOT
PULL LOW DISABLE PCI MEM BOOT DEFAULT
VCC18 R259 8.2K/4/1 Q47 CPU_TDI [6]
IMC_TDO
MMBT3904/SOT23/200mA/30
SOT23
VCC18 R287 8.2K/4/1 Q49 CPU_TMS [6]
IMC_TMS
MMBT3904/SOT23/200mA/30
SOT23
VCC18 R290 8.2K/4/1 Q50 CPU_TCK [6]
IMC_TCK
MMBT3904/SOT23/200mA/30
SOT23
GIGABYTE
Title
ATI SB710 ACPI/USB/GPIO/AUDIO
Size Custom
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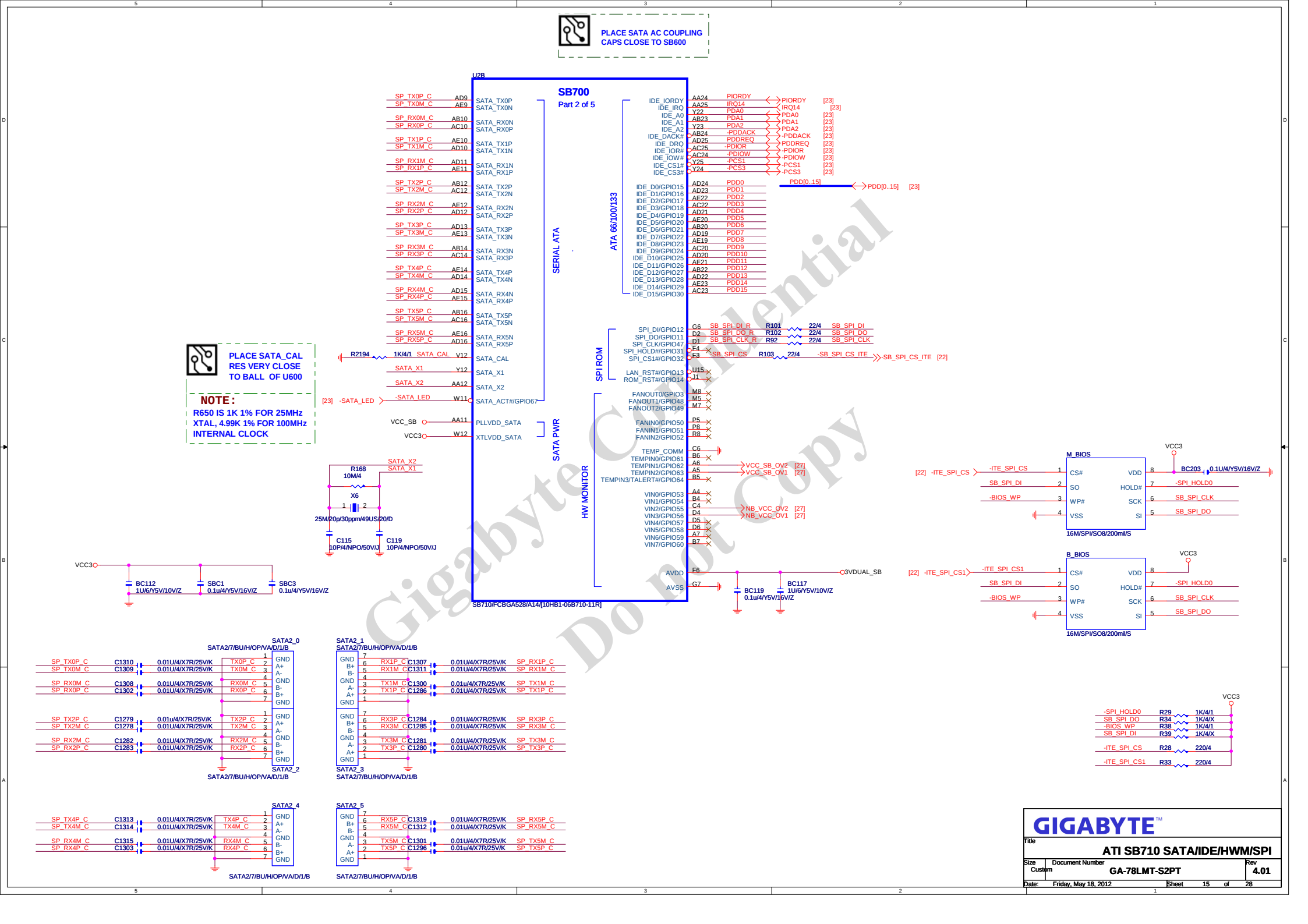
PLACE SATA AC COUPLING CAPS CLOSE TO SB600
U2B
SB700
Part 2 of 5
SERIAL ATA
ATA 66/100/133
SPI ROM
SATA PWR
HW MONITOR
SATA_TX0P
SATA_TX0N
SATA_RX0N
SATA_RX0P
SATA_TX1P
SATA_TX1N
SATA_RX1N
SATA_RX1P
SATA_TX2P
SATA_TX2N
SATA_RX2N
SATA_RX2P
SATA_TX3P
SATA_TX3N
SATA_RX3N
SATA_RX3P
SATA_TX4P
SATA_TX4N
SATA_RX4N
SATA_RX4P
SATA_TX5P
SATA_TX5N
SATA_RX5N
SATA_RX5P
SATA_CAL
SATA_X1
SATA_X2
SATA_ACT#/GPIO67
PLLVDD_SATA
XTLVDD_SATA
PLACE SATA_CAL RES VERY CLOSE TO BALL OF U600
NOTE :
R650 IS 1K 1% FOR 25MHz XTAL, 4.99K 1% FOR 100MHz INTERNAL CLOCK
R2194 1K/4/1 SATA_CAL
-SATA_LED
VCC_SB
VCC3
IDE_IORDY
IDE_IRQ
IDE_A0
IDE_A1
IDE_A2
IDE_DACK#
IDE_DRQ
IDE_IOR#
IDE_IOW#
IDE_CS1#
IDE_CS3#
IDE_D0/GPIO15
IDE_D1/GPIO16
IDE_D2/GPIO17
IDE_D3/GPIO18
IDE_D4/GPIO19
IDE_D5/GPIO20
IDE_D6/GPIO21
IDE_D7/GPIO22
IDE_D8/GPIO23
IDE_D9/GPIO24
IDE_D10/GPIO25
IDE_D11/GPIO26
IDE_D12/GPIO27
IDE_D13/GPIO28
IDE_D14/GPIO29
IDE_D15/GPIO30
PDD[0..15]
SPI_DI/GPIO12
SPI_DO/GPIO11
SPI_CLK/GPIO47
SPI_HOLD#/GPIO31
SPI_CS1#/GPIO32
LAN_RST#/GPIO13
ROM_RST#/GPIO14
SB_SPI_DI_R
SB_SPI_DO_R
SB_SPI_CLK_R
SB_SPI_CS
-SB_SPI_CS_ITE
FANOUT0/GPIO3
FANOUT1/GPIO48
FANOUT2/GPIO49
FANIN0/GPIO50
FANIN1/GPIO51
FANIN2/GPIO52
TEMP_COMM
TEMPIN0/GPIO61
TEMPIN1/GPIO62
TEMPIN2/GPIO63
TEMPIN3/TALERT#/GPIO64
VIN0/GPIO53
VIN1/GPIO54
VIN2/GPIO55
VIN3/GPIO56
VIN4/GPIO57
VIN5/GPIO58
VIN6/GPIO59
VIN7/GPIO60
VCC_SB_OV2
VCC_SB_OV1
NB_VCC_OV2
NB_VCC_OV1
AVDD
AVSS
3VDUAL_SB
SB710/FCBGA528/A14/[10HB1-06B710-11R]
R168 10M/4
X6
25M/20p/30ppm/49US/20/D
C115 10P/4/NPO/50V/J
C119 10P/4/NPO/50V/J
BC112 1U/6/Y5V/10V/Z
SBC1 0.1u/4/Y5V/16V/Z
SBC3 0.1u/4/Y5V/16V/Z
BC119 0.1u/4/Y5V/16V/Z
BC117 1U/6/Y5V/10V/Z
M_BIOS
B_BIOS
CS#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
16M/SPI/SO8/200mil/S
-ITE_SPI_CS
-ITE_SPI_CS1
SB_SPI_DI
-BIOS_WP
-SPI_HOLD0
SB_SPI_CLK
SB_SPI_DO
BC203 0.1U/4/Y5V/16V/Z
SATA2_0
SATA2_1
SATA2_2
SATA2_3
SATA2_4
SATA2_5
SATA2/7/BU/H/OP/VA/D/1/B
SP_TX0P_C
SP_TX0M_C
SP_RX0M_C
SP_RX0P_C
SP_TX1P_C
SP_TX1M_C
SP_RX1M_C
SP_RX1P_C
SP_TX2P_C
SP_TX2M_C
SP_RX2M_C
SP_RX2P_C
SP_TX3P_C
SP_TX3M_C
SP_RX3M_C
SP_RX3P_C
SP_TX4P_C
SP_TX4M_C
SP_RX4M_C
SP_RX4P_C
SP_TX5P_C
SP_TX5M_C
SP_RX5M_C
SP_RX5P_C
0.01U/4/X7R/25V/K
0.01u/4/X7R/25V/K
R29 1K/4/1
R34 1K/4/X
R38 1K/4/1
R39 1K/4/X
R28 220/4
R33 220/4
Gigabyte Confidential
Do not Copy
GIGABYTE
Title
ATI SB710 SATA/IDE/HWM/SPI
Size Custom
Document Number GA-78LMT-S2PT
Rev 4.01
Date: Friday, May 18, 2012
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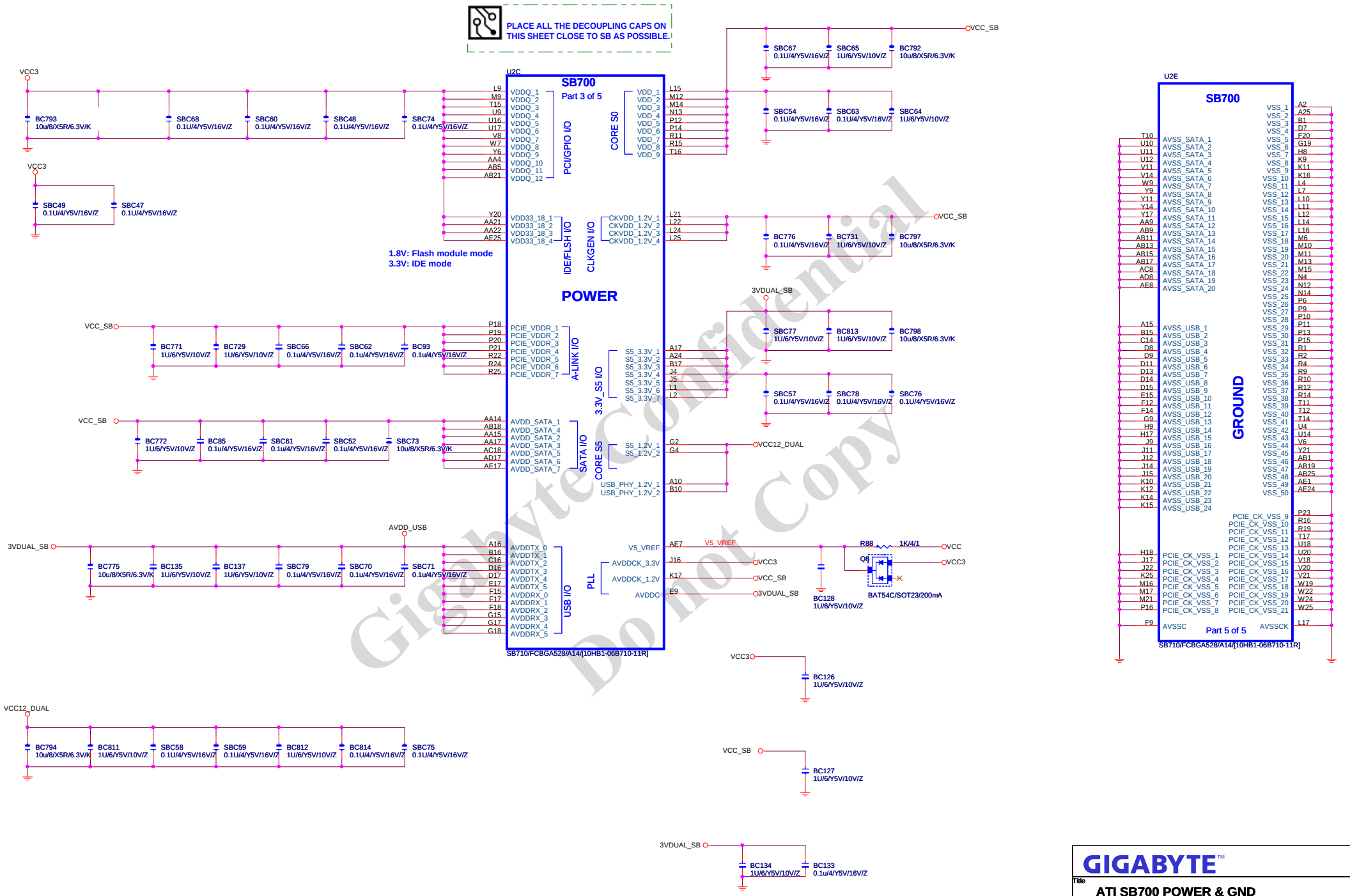

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Size	Custom
Document Number	GA-78LMT-S2PT
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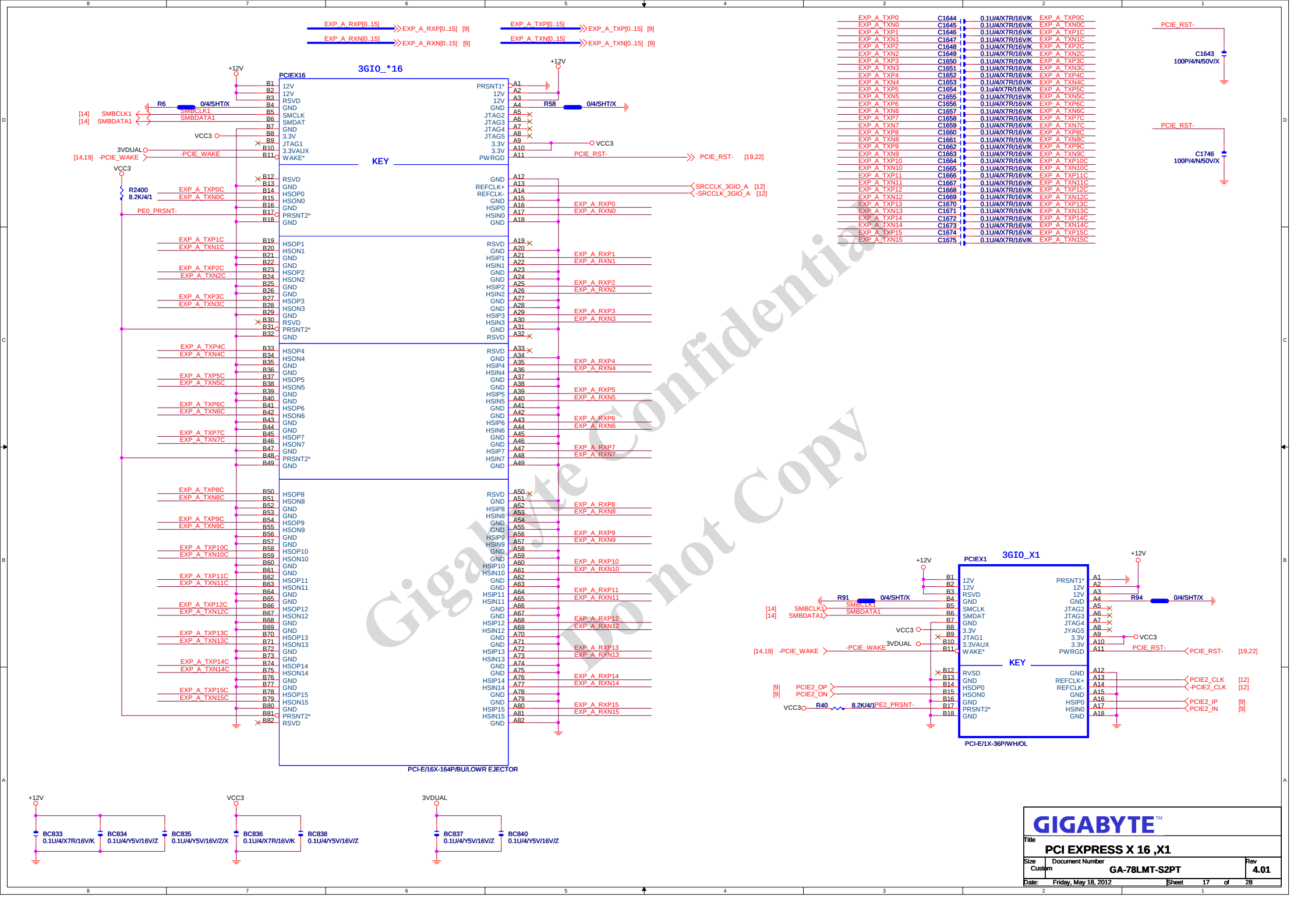

EXP_A_TXP0	C1644	0.1U/4/X7R/16V/K	EXP_A_TXP0C
EXP_A_TXN0	C1645	0.1U/4/X7R/16V/K	EXP_A_TXN0C
EXP_A_TXP1	C1646	0.1U/4/X7R/16V/K	EXP_A_TXP1C
EXP_A_TXN1	C1647	0.1U/4/X7R/16V/K	EXP_A_TXN1C
EXP_A_TXP2	C1648	0.1U/4/X7R/16V/K	EXP_A_TXP2C
EXP_A_TXN2	C1649	0.1U/4/X7R/16V/K	EXP_A_TXN2C
EXP_A_TXP3	C1650	0.1U/4/X7R/16V/K	EXP_A_TXP3C
EXP_A_TXN3	C1651	0.1U/4/X7R/16V/K	EXP_A_TXN3C
EXP_A_TXP4	C1652	0.1U/4/X7R/16V/K	EXP_A_TXP4C
EXP_A_TXN4	C1653	0.1U/4/X7R/16V/K	EXP_A_TXN4C
EXP_A_TXP5	C1654	0.1U/4/X7R/16V/K	EXP_A_TXP5C
EXP_A_TXN5	C1655	0.1U/4/X7R/16V/K	EXP_A_TXN5C
EXP_A_TXP6	C1656	0.1U/4/X7R/16V/K	EXP_A_TXP6C
EXP_A_TXN6	C1657	0.1U/4/X7R/16V/K	EXP_A_TXN6C
EXP_A_TXP7	C1658	0.1U/4/X7R/16V/K	EXP_A_TXP7C
EXP_A_TXN7	C1659	0.1U/4/X7R/16V/K	EXP_A_TXN7C
EXP_A_TXP8	C1660	0.1U/4/X7R/16V/K	EXP_A_TXP8C
EXP_A_TXN8	C1661	0.1U/4/X7R/16V/K	EXP_A_TXN8C
EXP_A_TXP9	C1662	0.1U/4/X7R/16V/K	EXP_A_TXP9C
EXP_A_TXN9	C1663	0.1U/4/X7R/16V/K	EXP_A_TXN9C
EXP_A_TXP10	C1664	0.1U/4/X7R/16V/K	EXP_A_TXP10C
EXP_A_TXN10	C1665	0.1U/4/X7R/16V/K	EXP_A_TXN10C
EXP_A_TXP11	C1666	0.1U/4/X7R/16V/K	EXP_A_TXP11C
EXP_A_TXN11	C1667	0.1U/4/X7R/16V/K	EXP_A_TXN11C
EXP_A_TXP12	C1668	0.1U/4/X7R/16V/K	EXP_A_TXP12C
EXP_A_TXN12	C1669	0.1U/4/X7R/16V/K	EXP_A_TXN12C
EXP_A_TXP13	C1670	0.1U/4/X7R/16V/K	EXP_A_TXP13C
EXP_A_TXN13	C1671	0.1U/4/X7R/16V/K	EXP_A_TXN13C
EXP_A_TXP14	C1672	0.1U/4/X7R/16V/K	EXP_A_TXP14C
EXP_A_TXN14	C1673	0.1U/4/X7R/16V/K	EXP_A_TXN14C
EXP_A_TXP15	C1674	0.1U/4/X7R/16V/K	EXP_A_TXP15C
EXP_A_TXN15	C1675	0.1U/4/X7R/16V/K	EXP_A_TXN15C

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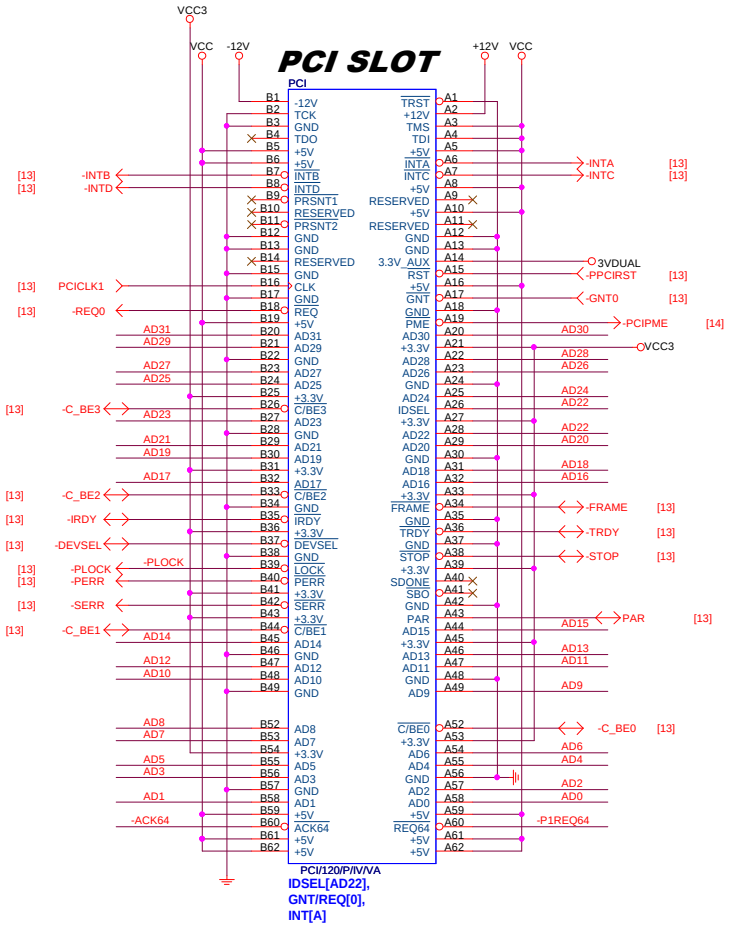
PCI SLOT 1,2



[13] AD[0..31] ↔ AD[0..31]

PCICLK1 — BC861 — 10P/4/N/50V/X

-PPCIRST — C1745 100P/4/N/50V/X

EMI, Oct.19,2010

VCC3 — BC868 — 0.01U/4/X7R/25V/K — VCC

VCC3 — BC875 — 0.01U/4/X7R/25V/K

BC875 to VCC3 ,Close to I/O
78LMT-S2PT change

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LAN:AR8151/AR8161

離IC近越好

[12] -SRCCLK_LAN
[12] SRCCLK_LAN
[9] ML_OP
[9] ML_ON

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

LABC5 0.1u/4/X7R/16V/K
LABC4 1u/4/X5R/6.3V/K
LABC3 0.1u/4/X7R/16V/K
LABC6 0.1u/4/X7R/16V/K
AR8161-->N/A (LABC6)

LA_AVDDVCO
LABC7 0.1u/4/X7R/16V/K/X
LABC8 4.7u/6/X5R/6.3V/K/X
AR8161-->(O)

3VDUAL
LABC9 10u/8/X5R/6.3V
LABC10 1u/4/X5R/6.3V
LABC11 0.1u/4/X7R/16V/K

LAU1

LA_ ML-->80歐姆:[15/5/5/5/15]

離IC近越好

LAC33 100p/4/NPO/50V/J/X
LAR6 8.2K/4/1
[17,22] PCIE_RST-
[14,17] -PCIE_WAKE

Atheros
AR8151/AR8161

VDD3V
PERST#
WAKE#
CLKREQ#
VDDCT/ISOLAT
AVDDL_REG
XTLO
XTLI
AVDDH_REG
RBIAS

TX_P
TX_N
NC
TESTMODE
SMDATA
SMCLK
DVDDL/PPS
LED2
AVDDH
TRXN3

LA_ML_IP_C LAC12 0.1u/4/X7R/16V/K ML_IP [9]
LA_ML_IN_C LAC13 0.1u/4/X7R/16V/K ML_IN [9]

LAR9 0/4
LABC14 0.1u/4/X7R/16V/K
LA_DVDDL
AR8161-->N/A (LAR9,LAC18)

LA_PPS
LA_LED_LINK1000
LA_AVDDH
LA_MDI3-
LABC17 0.1u/4/X7R/16V/K

AR8161-->N/A (LABC12)

LABC12 1u/4/X5R/6.3V/K
LABC15 1u/4/X5R/6.3V/K
LABC16 0.1u/4/X7R/16V/K
LABC18 1u/4/X5R/6.3V/K
LABC19 0.1u/4/X7R/16V/K
LAR10 2.37K/4/1

AR8151-BL1A-R/S

LAX1 25M/20p/30ppm/49US/20/D
LAC31 27p/4/NPO/50V/J
LAC32 27p/4/NPO/50V/J

LABC20 0.1u/4/X7R/16V/K
AR8161-->N/A (LABC20)
LABC21 0.1u/4/X7R/16V/K

LAR19 0/4
LAR20 0/4
3VDUAL
LA_AVDDH
AR8151:LA_AVDDH(LAR20)
AR8161:3VDUAL(LAR19)
LABC22 1u/4/X5R/6.3V/K

SCH BOM OPT:(二擇一使用)
-->(LAC30):M/B有CLK GEN 25M
-->(LAX1,LAC31,LAC32):M/B無CLK GEN 25M

LAN POWER

NEW DESIGN ONLY FOR INTERNAL SWR
AR8151:LAR3(0),LAR5(X)
AR8161:LAR5(0),LAR3/LAR4(X)

EMI Request
Put on LAR4

LAL1 4.7uH/1A/[10LC4-5A470B-01R_10LI5-12470B-01R]
LA_LX_OUT
LA_LX
CLOSE LA_LX 200mil
LABC1 10u/8/X5R/6.3V/K
LABC2 0.1u/4/X7R/16V/K

LAESD2
AZ2225-01L/SOD323/X

LA_VDDCT
LAR3 0/4
AR8161-->N/A (LAR3,LAR4)
LA_AVDD_CEN
LAR4 0/4

AR8151 POWER

LA_DVDDL
LA_AVDDL
LA_AVDDVCO
LAR5 0/6/X AR8161-->(O)
LAFB2 0/6/X AR8161-->BEAD AR8151-->N/A
LAFB3 0/6 AR8161-->BEAD AR8151-->0/6

AR8161 POWER

AR8161-->(O)
LA_AVDDH
LAR7 8.2K/4/X
LA_LED_ACT_TXRX
LAR8 8.2K/4/X
LA_LED_LINK100

AR8161-->(O)
VCC3
LAR1 30K/4/X
LAR2 0/4/X
LA_VDDCT
N_ISOLATEB [22]

Power domain chart

	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	

MDI : AR8161-->N/A

LA_MDI0+ LA_MDI0- LAR11 49.9/4/1 LAR12 49.9/4/1 LAR13 49.9/4/1 LA_MDI_RC0 LAC26 0.1u/4/X7R/16V/K
LA_MDI1+ LA_MDI1- LAR14 49.9/4/1 LAR15 49.9/4/1 LA_MDI_RC1 LAC27 0.1u/4/X7R/16V/K
LA_MDI2+ LA_MDI2- LAR16 49.9/4/1 LAR17 49.9/4/1 LA_MDI_RC2 LAC28 0.1u/4/X7R/16V/K
LA_MDI3+ LA_MDI3- LAR18 49.9/4/1 LA_MDI_RC3 LAC29 0.1u/4/X7R/16V/K

CLOSE LAN CHIP

USB_LAN CONNECTOR

LABC23 0.1u/4/X7R/16V/K
LA_AVDD_CEN
LA_MDI0+ LA_MDI0- LA_MDI1+ LA_MDI1- LA_MDI2+ LA_MDI2- LA_MDI3+ LA_MDI3-
GND_L10
LABC25 0/4/SHT/M/X

USB_LAN
UP
DOWN

D1 LA_LED_ACT_TXRX
D2 LA_LED_D2 LR13 150/4/1
D3 LA_LED_LINK100 LR21 150/4/1
D4 LA_LED_LINK1000 LR22 150/4/1

3VDUAL
LFB4 0/6/SHT/X
LAN_3VDUAL_LED
LBC33 0.1U/4/Y5V/25V/Z/X

U1 U2 -USBP0 +USBP0 U3 U4 U5 U6 -USBP1 +USBP1 U7 U8
[14] -USBP0 +USBP0 [14]
[14] -USBP1 +USBP1 [14]
FUSEVCC
LBC26 0.1U/4/Y5V/25V/Z/X
LBC29 0.1U/4/Y5V/25V/Z/X

FUSEVCC
LEC4 560u/FP/D/6.3V/69/A/11m

EC要靠近USB_PORT的FUSEVCC

USB+LAN/1G/GO,Y/OS/RA/D/8C/[11NR6-702009-0ER]

LAESD1
LA_LED_LINK100 LA_LED_ACT_TXRX
LA_LED_LINK1000 LAN_3VDUAL_LED
LA_LED_D2
AOZ8902CIL/SOT23-6

ESD1
-USBP0 -USBP1
+USBP0 FUSEVCC +USBP1
AOZ8902CIL/SOT23-6

5VDUAL F6 SMD1812P260/6V FUSEVCC

FUSEVCC R3161 150K/4 -USBOC_R1 [14]
R3162 270K/4

EMI LR28 0/6/SHT/X

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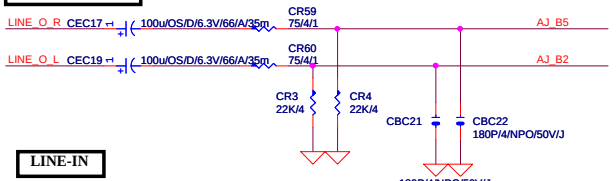
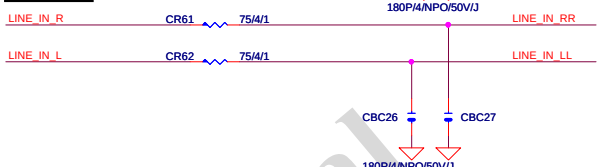
AZALIA CODEC *ALC887-VD2/ALC889/VT1708S/VT1708SCE Colay*

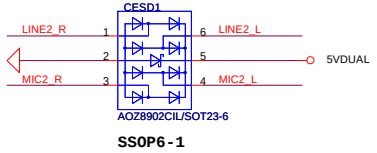
	ALC662	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR26	X	X	O	O	X
CR27	X	X	X	X	0.1u/4
CBC42	O	O	X	X	O
CR32/CBC20	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR31	X	O	O	O	O
CR30	O	X	X	X	X
CR19	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR2	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1
CBC9/CBC14	N/A	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	22K/4	10K/4	10K/4
CR59/CR60/CR61/ CR62/CR63/CR64	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O
CD1/CD2/CD3/CQ3	X	X	O	O	X

LINE OUT FRONT OUT

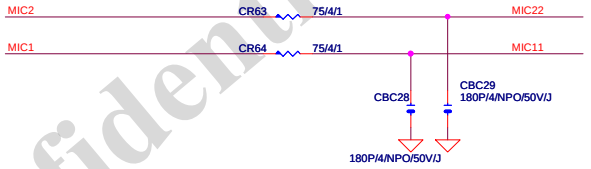


LINE-IN

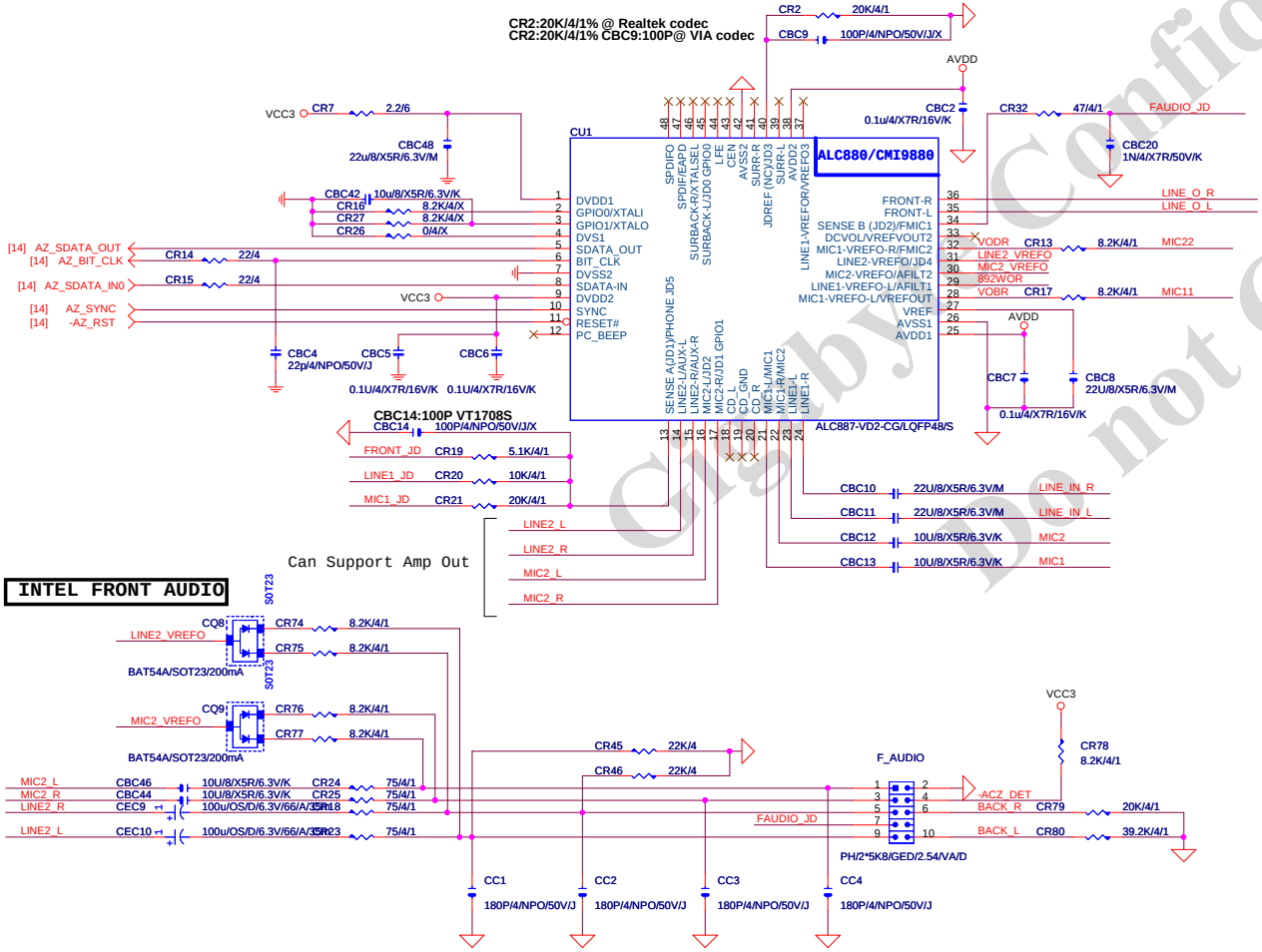


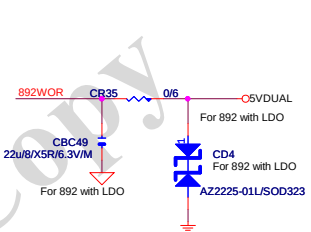


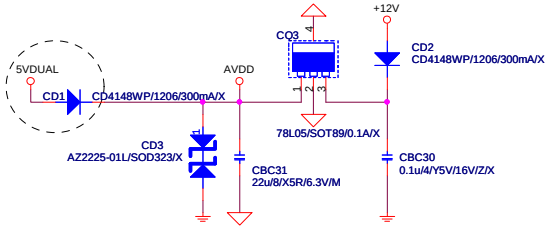
MIC



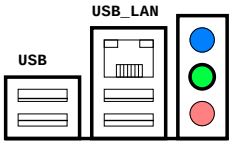
CR2:20K/4/1% @ Realtek codec
CR2:20K/4/1% CBC9:100P@ VIA codec



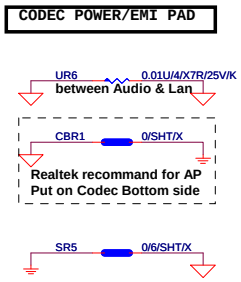


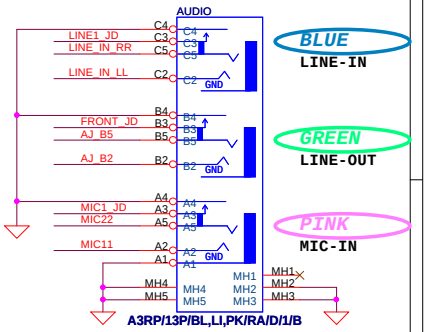


INTEL FRONT AUDIO



CODEC POWER/EMI PAD





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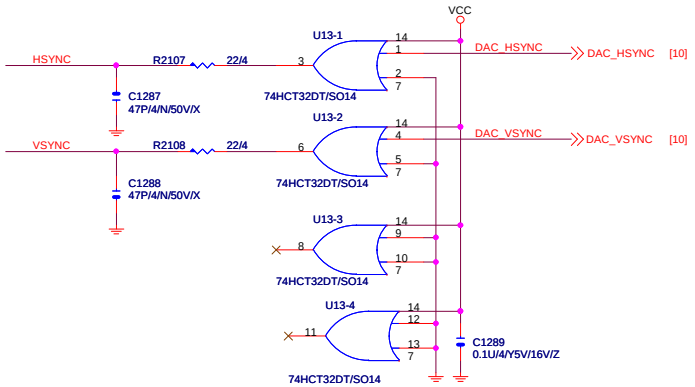
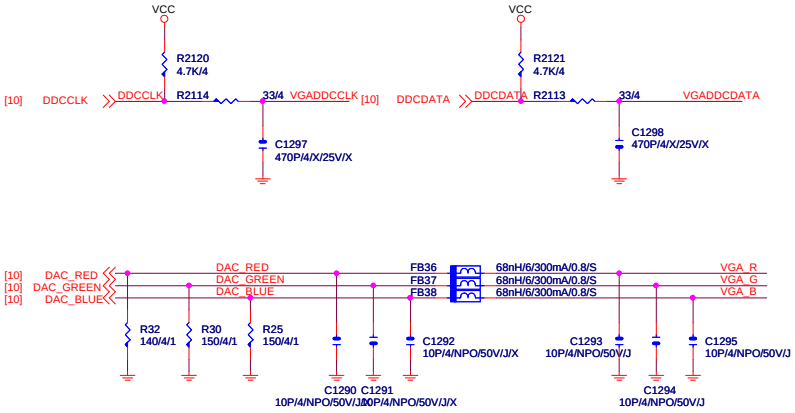
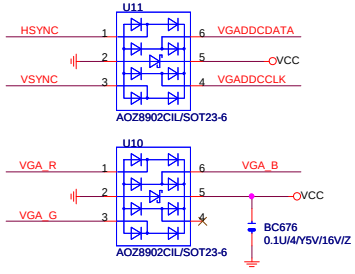
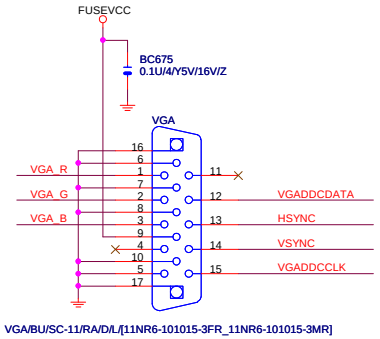
VGA

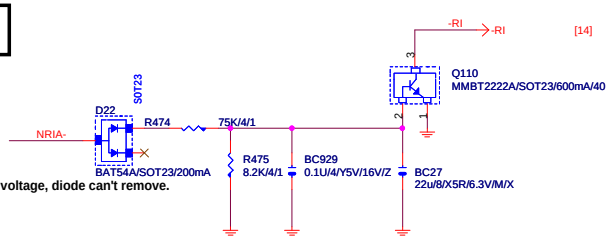


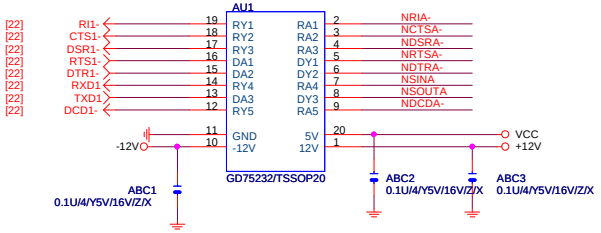


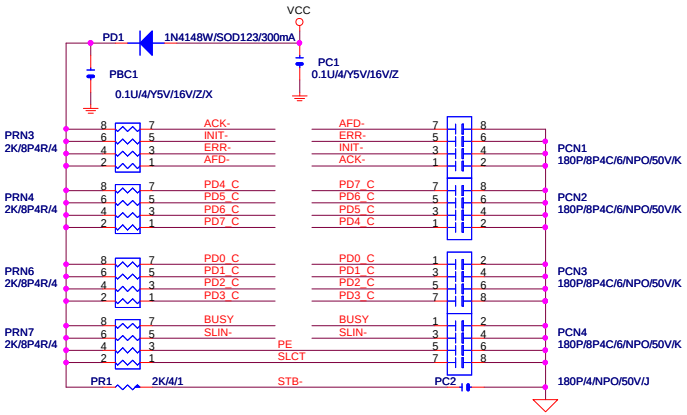




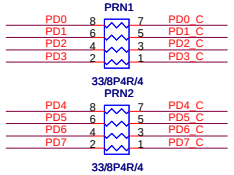
LPT

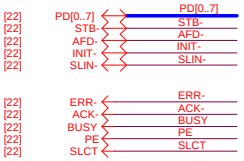


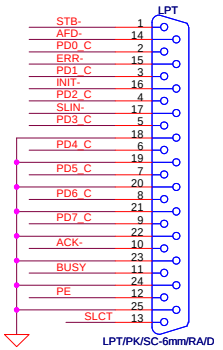




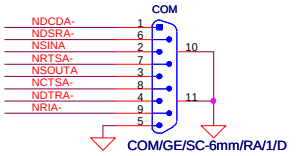
Fix Singel Glitch issue
,when put PCN1~4 Cap (ITE Recommand)

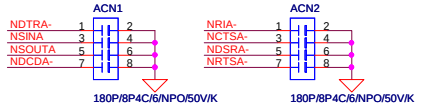


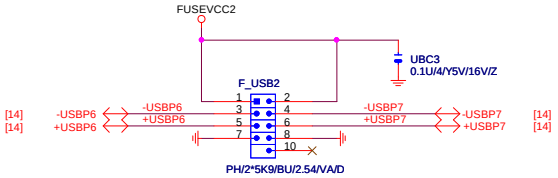


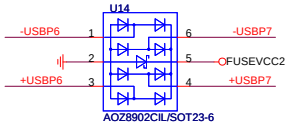


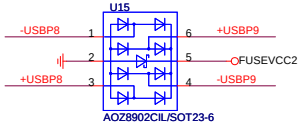
F_USB

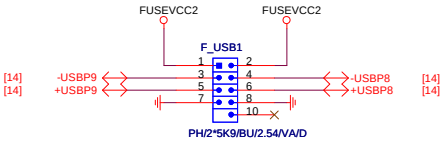


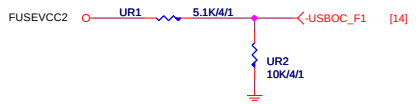


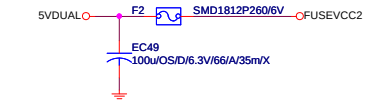












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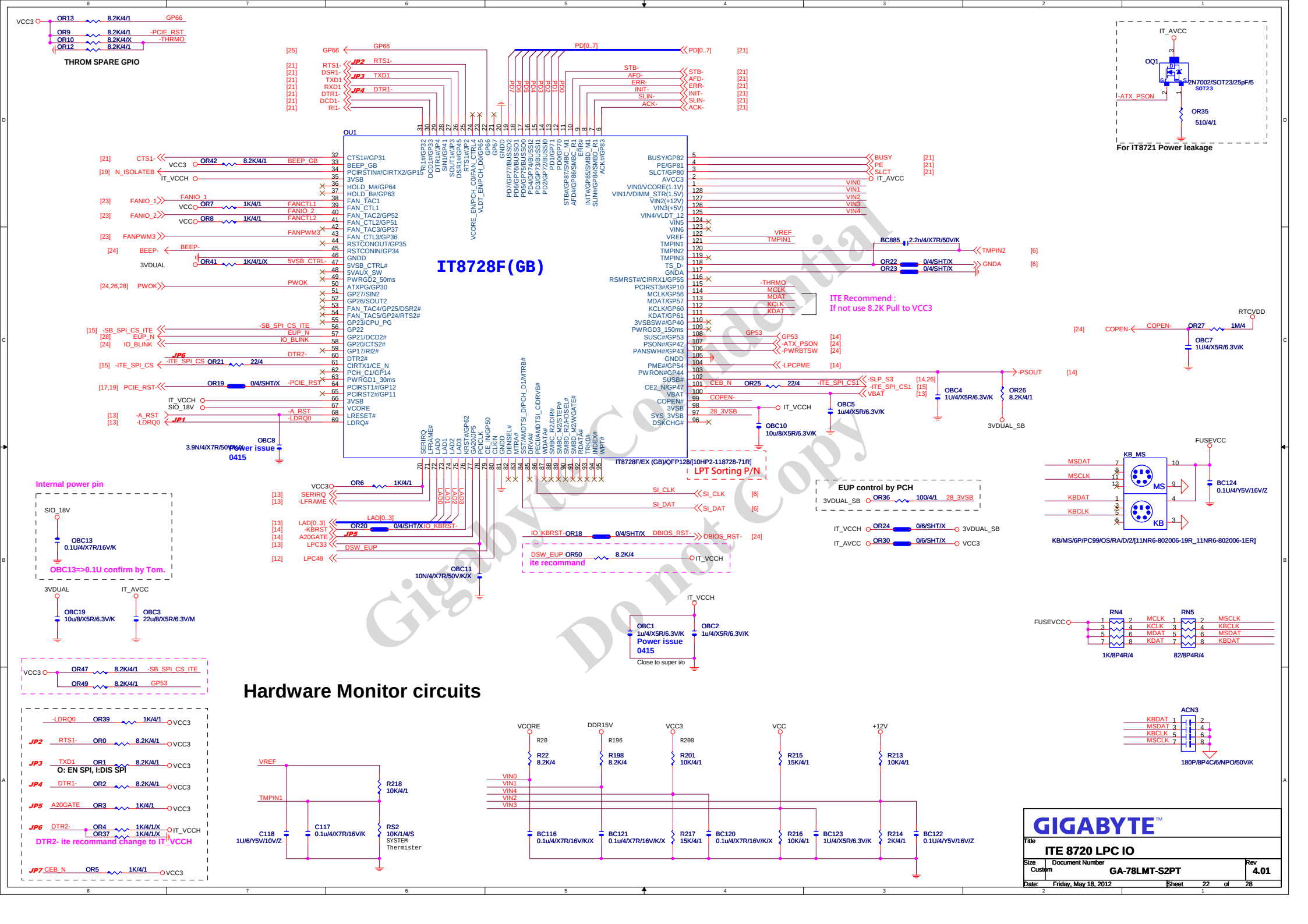
THROM SPARE GPIO
IT8728F(GB)
IT8728F/EX (GB)/QFP128/[10HP2-118728-71R]
LPT Sorting P/N
ITE Recommend :
If not use 8.2K Pull to VCC3
For IT8721 Power leakage
Power issue
0415
Internal power pin
OBC13=>0.1U confirm by Tom.
EUP control by PCH
Hardware Monitor circuits
KB/MS/6P/PC99/OS/RA/D/2/[11NR6-802006-19R_11NR6-802006-1ER]
180P/8P4C/6/NPO/50V/K
1K/8P4R/4
82/8P4R/4
DTR2- ite recommand change to IT_VCCH
O: EN SPI, I:DIS SPI
Close to super i/o
Do not Copy
GIGABYTE
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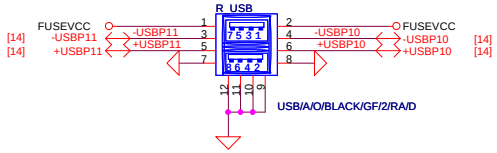
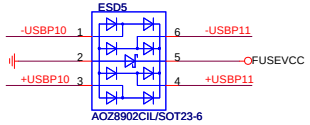
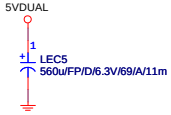
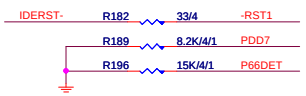
R_USB

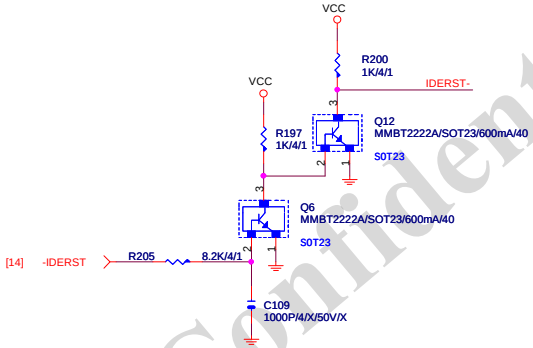


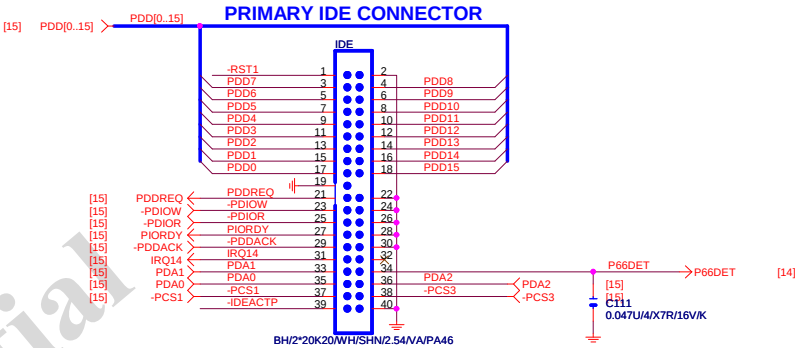


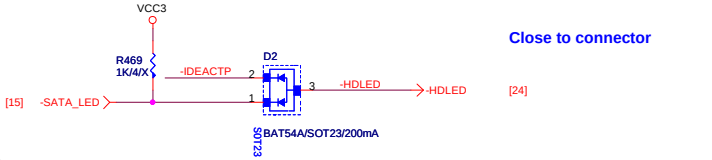


IDE

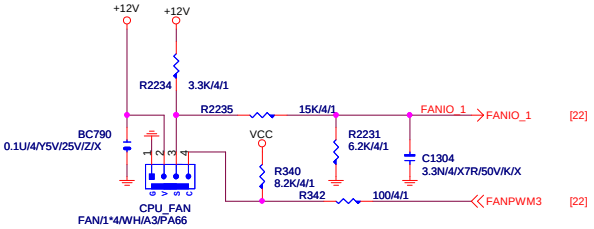




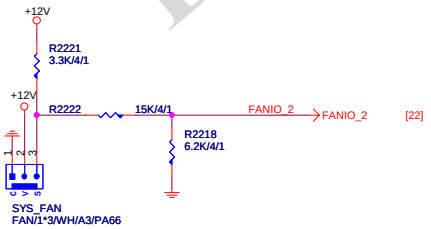




CPU_FAN



SYSTEM_FAN



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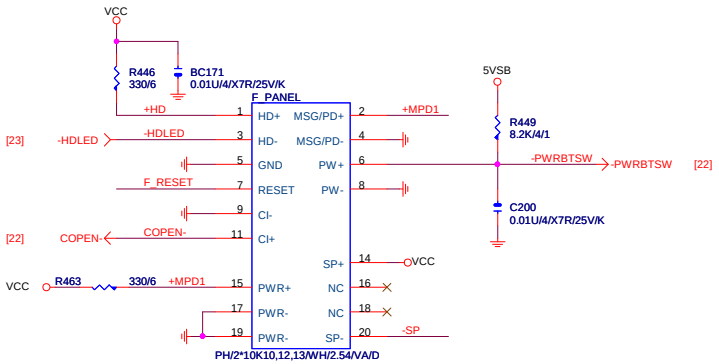
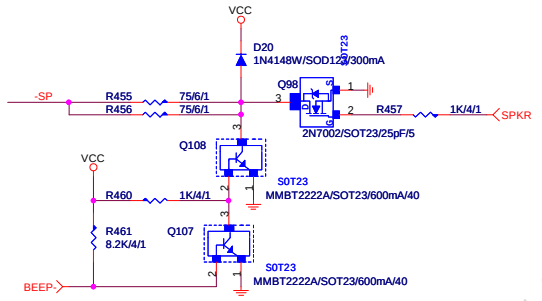
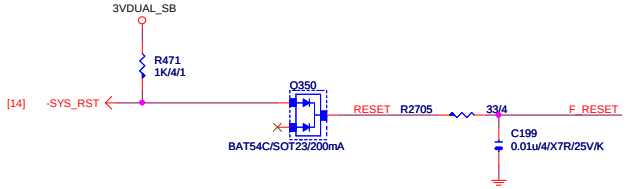
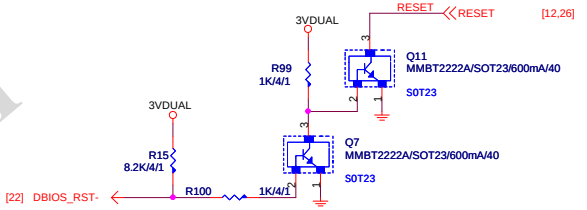
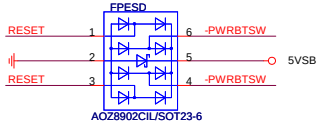


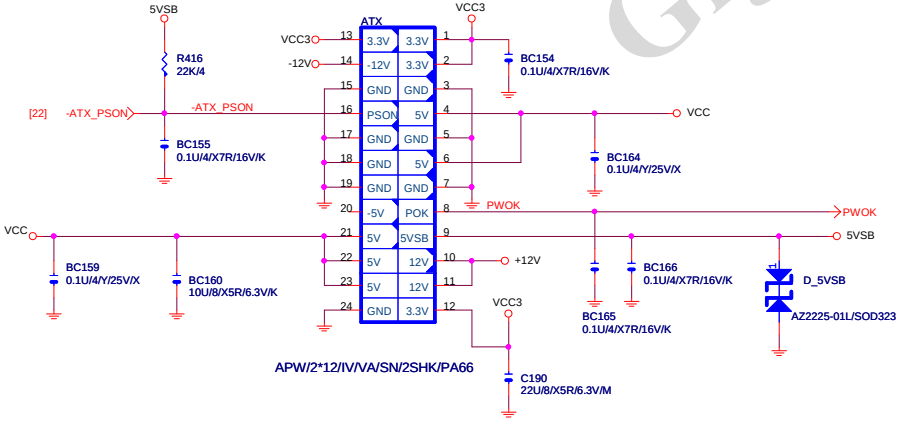


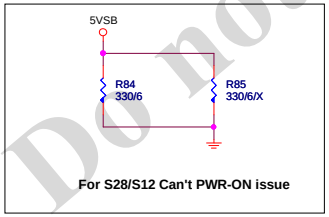


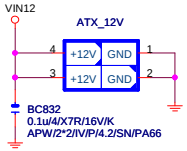


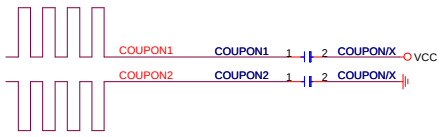


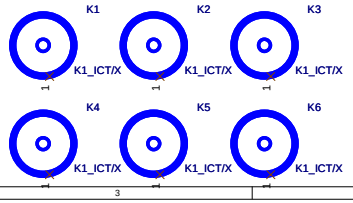
ATX POWER CONNECTOR

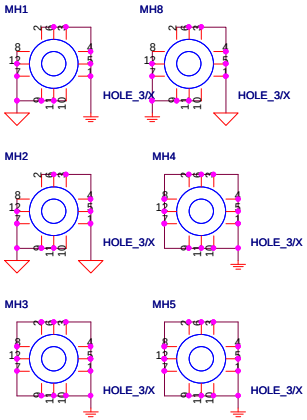












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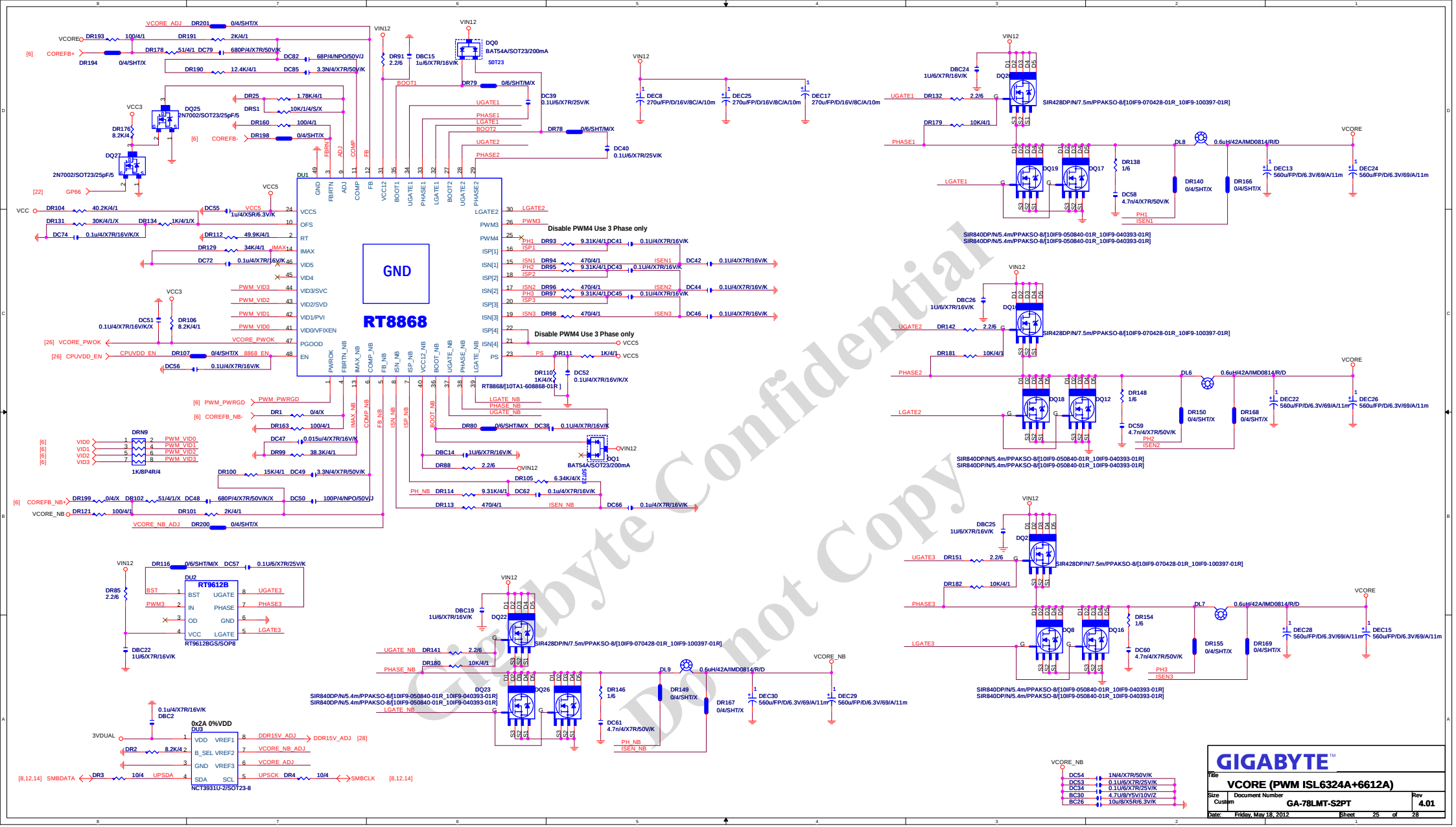

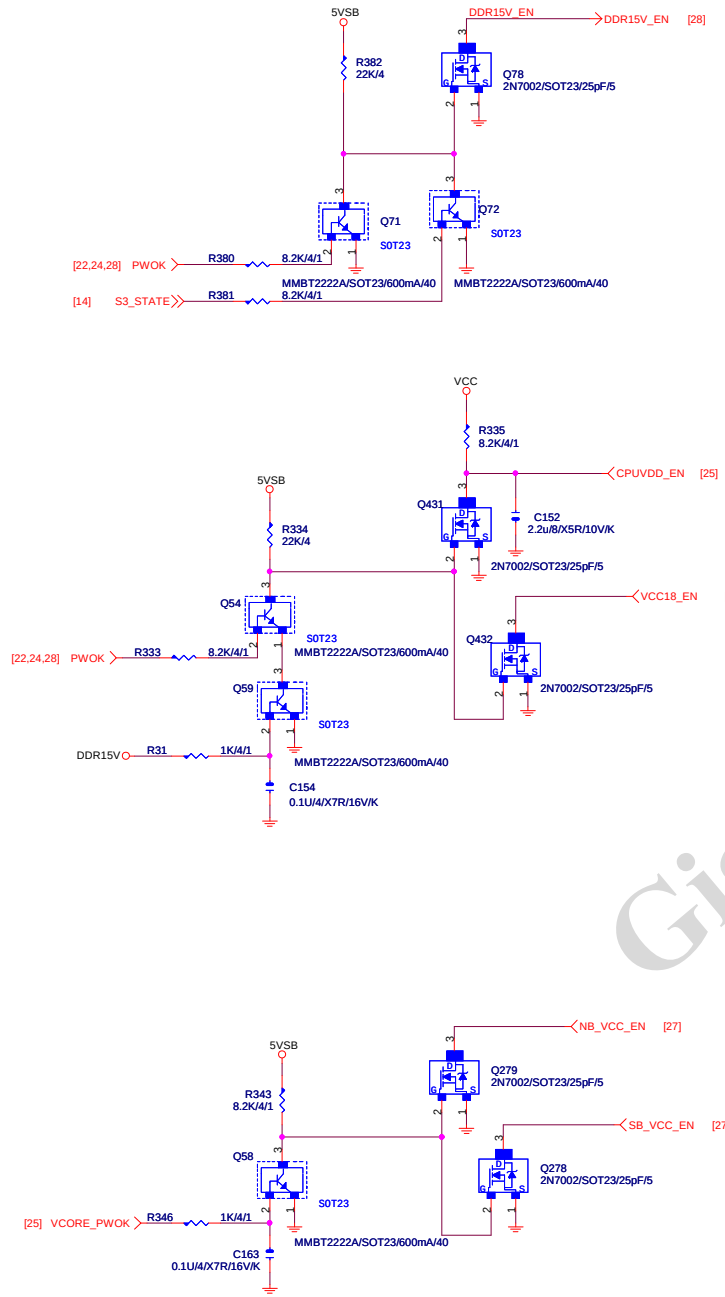

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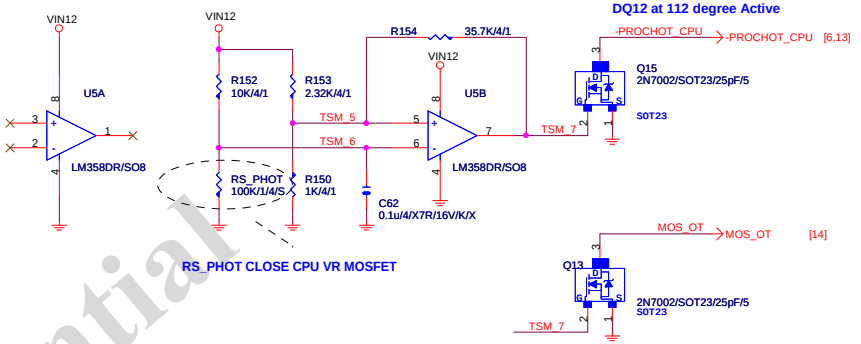

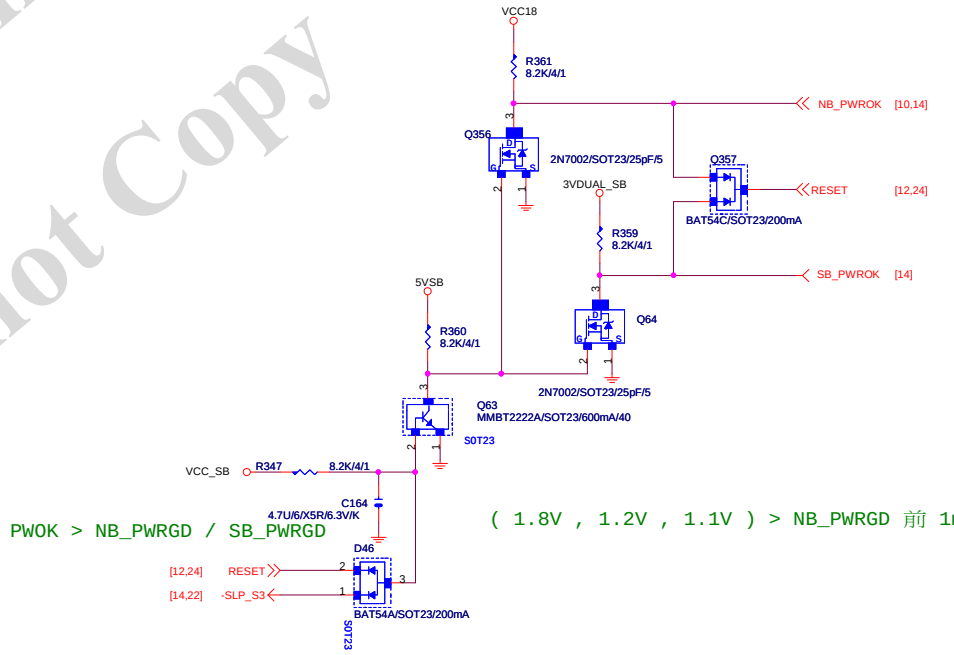

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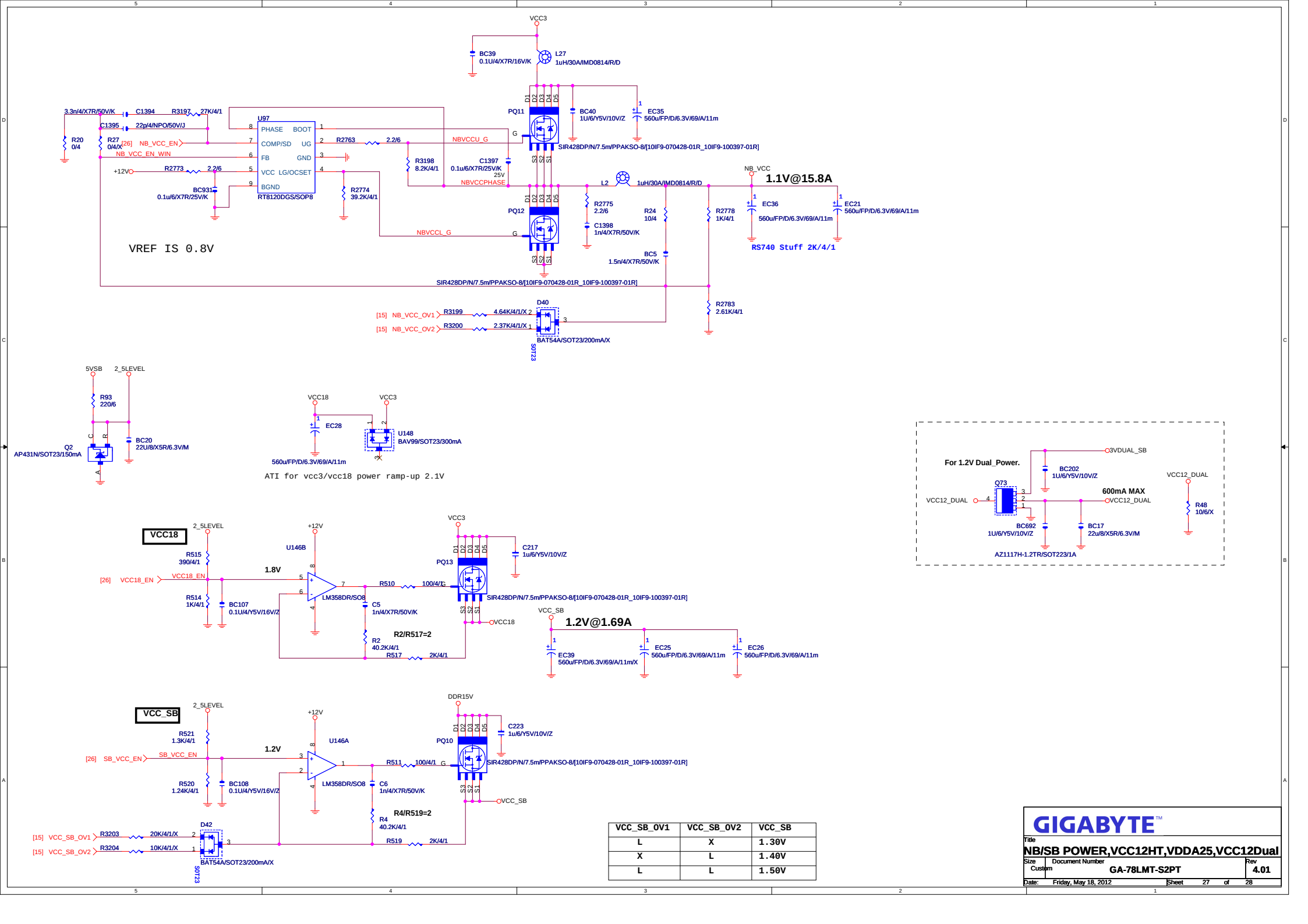

VCC_SB_OV1	VCC_SB_OV2	VCC_SB
L	X	1.30V
X	L	1.40V
L	L	1.50V

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Title: NB/SB POWER,VCC12HT,VDDA25,VCC12Dual

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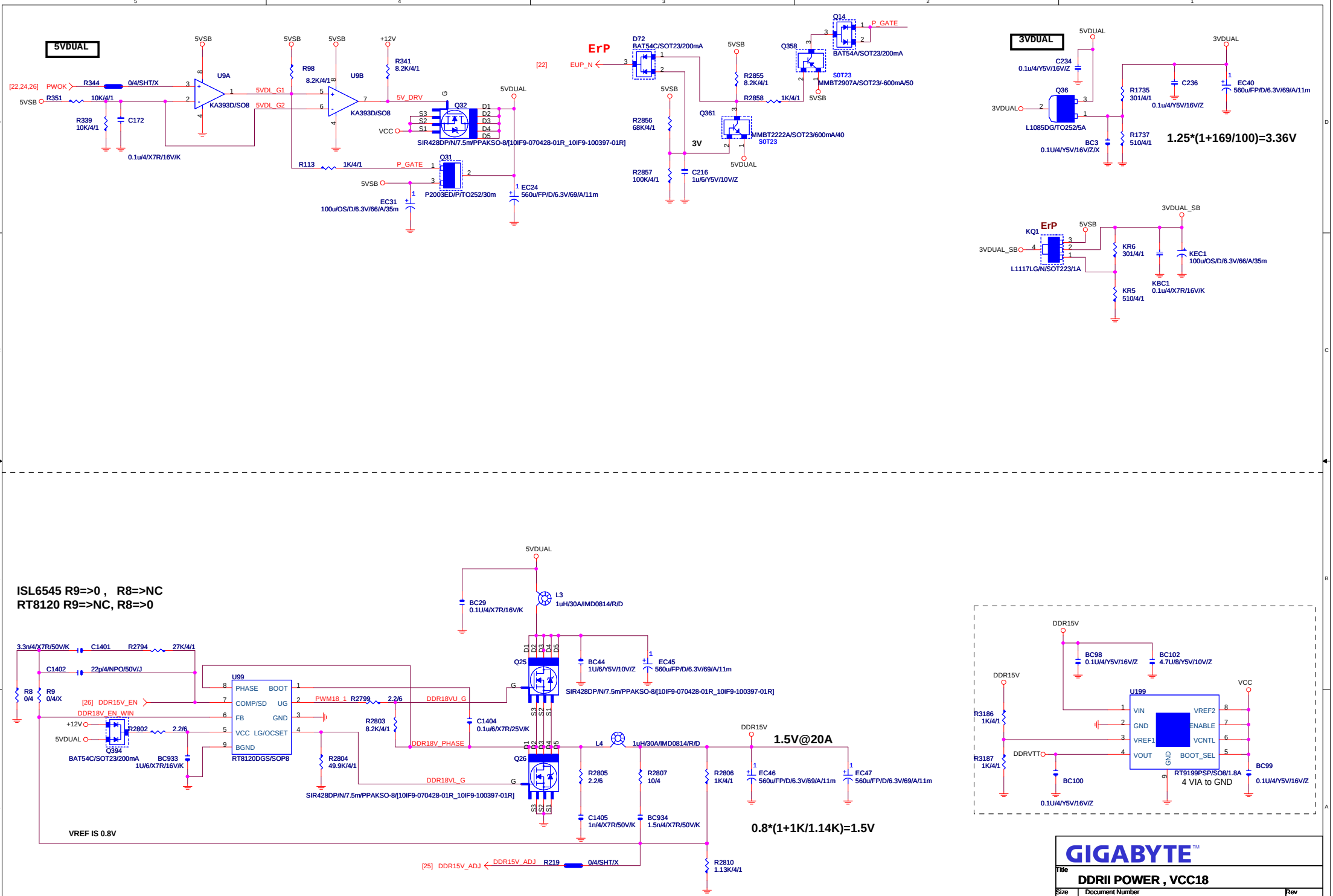

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