POWER Page 28~ 35

- AC/BATT CONNECTOR
- BATT CHARGER
- CPU CORE
- +5V_SUS +3.3V_ALW
- +1.5V_SUS / +0.75V_VTT
- +1.1V_RUN
- +0.9V_RUN LDO
- +1.8V_RUN LDO
- +2.5V_RUN LDO
- +1.1V_ALW_SB LDO

DDR3-SODIMM Page 7 — DDR III 800 MHZ

DDR3-SODIMM Page 8 — DDR III 800 MHZ

Dual/ Single Core CPU
AMD
Nile
Single: 12W/ Dual:15W
Page 4, 5, 6

1066 MHz HT

Side Port with 128M (MAX) Page 11 — DDR III

North Bridge
ATI
RS880M
Page 9, 10, 11, 12

- LVDS → **Panel** Page 13
- HDMI → **HDMI Conn** Page 14
- DP → **Mini DP Conn** Page 14

PCI-E → PCI-E x 1 / USB2.0 x 1 → **WLAN Half MINI-CARD** Page 22

PCI-E x 1 / USB2.0 x 1 → **WWAN MINI-CARD** Page 22 → **SIM Card Conn**

A-link (PCIE x 4)

Analog MIC
Audio Jack
Audio Jack
→ **AUDIO Codec IDT 92HD79** Page 23 — HDA → **Int. CLK**

Digital MIC Reserved → **WebCam+Digital MIC** Page 13

USB2.0 → **SATA - HDD** Page 20 (FPC)

South Bridge
ATI
SB820M
Page 15, 16, 17, 18

USB2.0 x 1 → **USB 2.0** Page 20

USB2.0 x 1 → **USB 2.0** Page 20

USB2.0 x 1 / SATA2 → **eSATA/ USB Conn** Page 20

USB2.0 x 1 → **Blue Tooth Conn** Page 24

Crystal 25M

PCI-E x 1 → **LAN Controller (10/100M)& Card Reader**
Realtek RTL8401
Page 21
→ **CardReader CONN**
→ **Magnetic** → **RJ45**

Crystal 32.768K

Crystal 25M / 32.768K

LPC → **SIO**
ITE
ITE8502E Page 25

SPI → **FLASH Memory 2MB** (8 Pin SO8W) Page 19

Keyboard Page 24

PS/2 → **Touchpad** Page 24 — T/P Board

LED/ Hall sensor Page 24 — Indicator Board

Power SW Page 24 — Power SW Board

THERMAL
SMSC
EMC1423 Page 26
- CPU Thermal Diode
- OTP Sensor

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Title: Cover Sheet		
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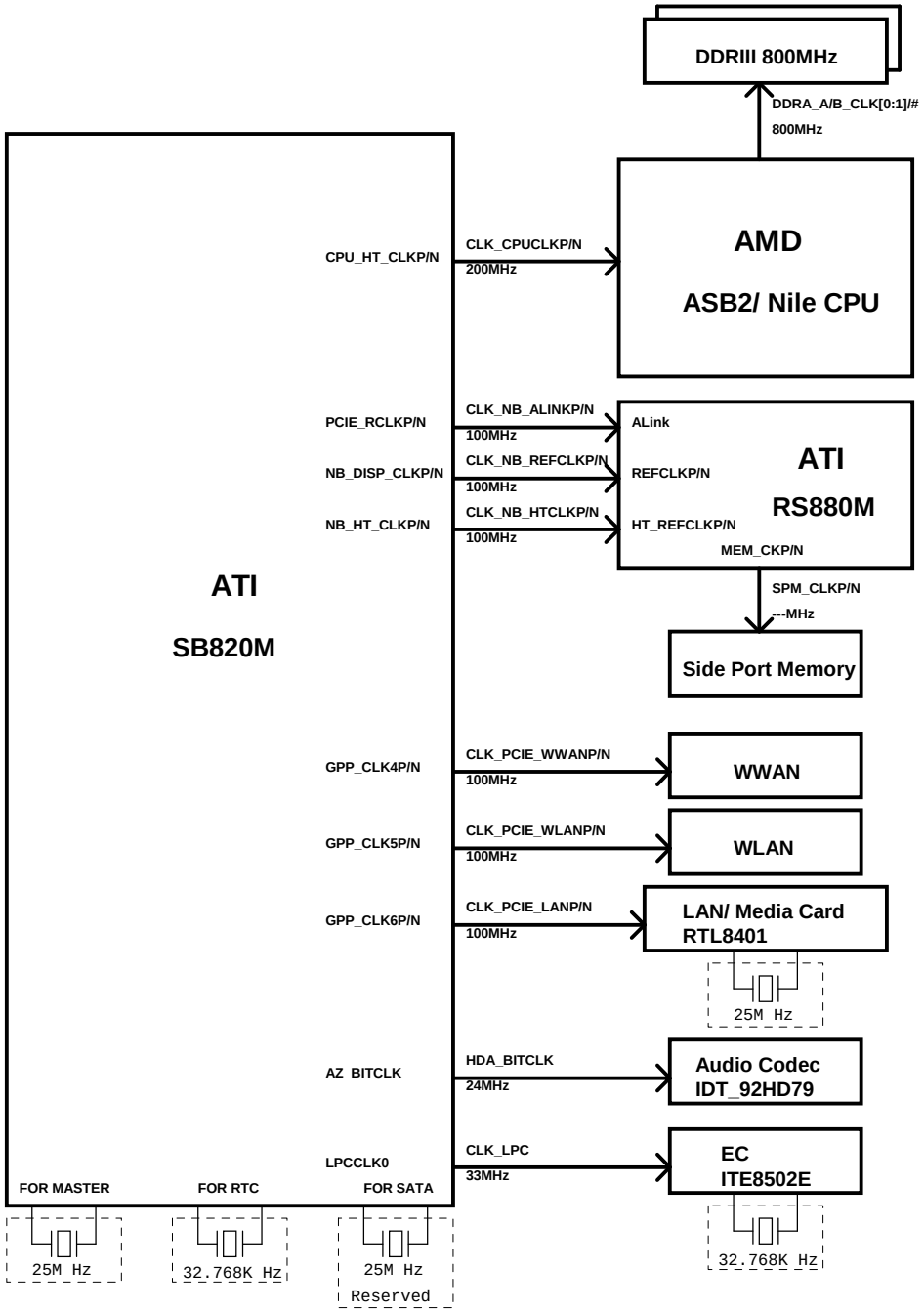
Clock Mapping



Power State

Power States						
Power Rail	**Control Signal**	**S0**	**S3**	**S4**	**S5/ AC-In**	**G3/ Battery Only**
+PWR_SRC	N/A	V	V	V	V	V
+0.75V_DDR_VTT	RUN_ON	V				
+0.9V_RUN	RUN_ON	V				
+1.1V_ALW_SB	SB_DUAL_PWRON	V	V	V	V	
+1.1V_SUS	SUS_ON	V	V			
+1.1V_RUN	RUN_ON	V				
+1.5V_SUS	SUS_ON	V	V			
+1.5V_RUN	RUN_ON	V				
+1.8V_RUN	RUN_ON	V				
+2.5V_RUN	RUN_ON	V				
+3.3V_ALW	+3.3V_EN2	V	V	V	V	V
+3.3V_ALW_SB	SB_DUAL_PWRON	V	V	V	V	
+3.3V_SUS	SUS_ON	V	V			
+3.3V_RUN	RUN_ON	V				
+3.3V_KBVCC	N/A	V	V	V	V	V
+5V_LDO	N/A	V	V	V	V	V
+5V_SUS	5V_SUS_ON	V	V			
+5V_RUN	RUN_ON	V				
+GFX_PWR_SRC	N/A	V	V	V	V	V
+LCDVCC	LCD_DIGON	V				
+CPU_VDDNB	2.5V_PWRGD	V				
+VCC_CORE	2.5V_PWRGD	V				
+RTC_CELL	N/A	V	V	V	V	V
+USB_RIGHT_PWR	USB_EN#	V	V			
+USB_LEFT_PWR	USB_EN#	V	V			

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Title: CLK Mapping/ Power States

Size | Document Number: Inspiron Z -- AMD | Rev: A00

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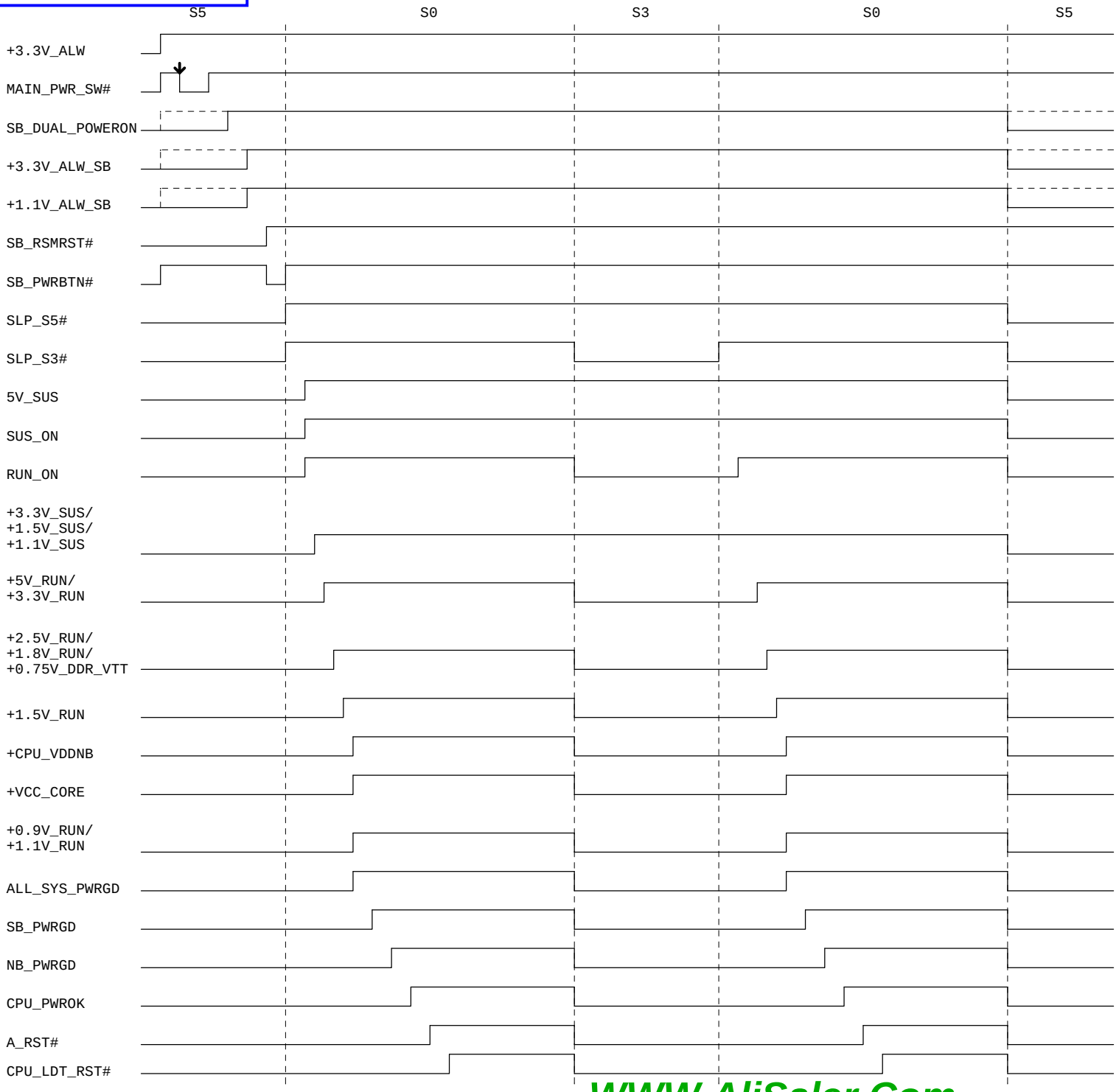
Power On Sequence



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Title: Power Sequence		
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AMD Debug Termination

Signal Name		Type - Struct[1]	Header	Termination	Level Shift[4]	Term Voltage
TEST2	DRAIN0	-	Unconnected	-	-	-
TEST3	GATE0	-	Unconnected	-	-	-
TEST6	DIECRACKMON		Unconnected			
TEST7	ANALOG_T		Unconnected			
TEST8	DIG_T	-	Unconnected	-	-	-
TEST9	ANALOGIN			Tie to VSS		
TEST10	ANALOGOUT		Unconnected			
TEST14	BP0	O P/P	BP, Pin 1 or TP	-		-
TEST15	BP1	O P/P	BP, Pin 3 or TP	-		-
TEST16	BP2	O P/P	BP, Pin 5 or TP	-		-
TEST17	BP3	O P/P	BP, Pin 7 or TP	-		-
TEST18	PLLTEST1		SCAN, pin 7 and HDT+, pin 20	1 K Ω		VSS
TEST19	PLLTEST0		SCAN, pin 9 and HDT+, pin 18	1 K Ω		VSS
TEST20	SCANCLK2	I	SCAN, pin 19	1 K Ω		VSS
TEST21	SCANEN	I	SCAN, pin 11	1 K Ω		VSS
TEST22	SCANSHIFTEN	I	SCAN, pin 13	1 K Ω		VSS
TEST23	TSTUPD		TP	1 K Ω		VSS
TEST24	SCANCLK1	I	SCAN, pin 17	1 K Ω		VSS
TEST25_H	BYPASSCLK_H	I	TP	510 Ω		VDDIO
TEST25_L	BYPASSCLK_L	I	TP	510 Ω		VSS
TEST26	BURNIN_L	-	Termination only	1 K Ω		VDDIO
TEST27	SINGLECHAIN	I		1 K Ω		VDDIO
TEST28_H	H_PLLCHRZ_P		Unconnected			
TEST28_L	L_PLLCHRZ_N		Unconnected			
TEST29_H	H_FBCLKOUT_P			80.6 Ω (differential)		
TEST29_L	L_FBCLKOUT_N					

AMD CPU Sku table

DELH-40GAB4900-X000	Athlon Single Core 1.7G AMK125DBV13GM	DELH-11D00020000003G IC CPU AMK125DBV13GM 1G7 BGA-812
DELH-40GAB4900-X001	Athlon Dual Core 1.3G AMK325DBV23GM	DELH-11D00020000002G IC CPU AMK325DBV23GM 1G3 BGA-812
DELH-40GAB4900-X002	Turion Dual Core 1.5G TMK625DBV23GM	DELH-11D00020000001G IC CPU TMK625DBV23GM 1G5 BGA-812

Keep trace from resister to CPU within 0.6"
Keep trace from capacity to CPU within 1.2"

0.25A

+CPU_VDDA

+2.5V_RUN L604 2 BLM18PG300SN1D

(15) CLK_CPUCLKP C667 1 2 3900p/50V

(15) CLK_CPUCLKN C666 1 2 3900p/50V

R642 169_F

C672 180p/50V

C669 4.7u/6.3V/0603

C675 220n/10V

C673 3300p/50V

U14D

MISC

VDDA_1 A8
VDDA_2 B8

CPU_CLKP A6
CPU_CLKN A7
CLKIN_H
CLKIN_L

RSVD|CORE_TYPE M31 CPU_CORE_TYPE 1 T605PAD

(15,29) CPU_PWRGD D10
(10,15) LDT_STP# E9
(15) LDT_RST# F9
PWROK
LDTSTOP_L
RESET_L

PAD T19 1

SVC C1
SVD B2

CPU_SVC (29)
CPU_SVD (29)
CPU_THRMDC (26)

C132 *100p/50V_NC

CPU_SIC AN4
CPU_SID AN5
SIC
SID
RSVD_SA0

(26) CPU_THRM_ALERT# AM2 ALERT_L

THERMDC AL6
THERMDA AM5
THERMTRIP_L AK6
PROCHOT_L AN6

CPU_THRMDA (26)
CPU_THRMTRIP# (26)
CPU_PROCHOT# (15,29)

CPU_TDI AM8
CPU_TRST# AL8
CPU_TCK AK8
CPU_TMS AN8
TDI
TRST_L
TCK
TMS

TDO AN7 CPU_TDO

+1.5V_SUS

R197 1 2 300 CPU_DBREQ# G9

DBREQ_L

DBRDY H9 CPU_DBRDY R198 1 2 *300_NC

(29) CPU_VSS_SENSE D2
VSS_SENSE
VLDT_SENSE E2
VDD_SENSE E1
VDDNB_SENSE D1
VDDIO_SENSE D3
VDDR_SENSE C2

RSVD3 AM6

+1.1V_RUN

AJ9 CPU_PRESENT# 1 T606PAD

Place near by CPU within 1.5"

(29) CPU_VDD_SENSE
(29) CPU_VDDNB_SENSE
(31) CPU_VDDIO_SENSE
(33) CPU_VDDR_SENSE
+CPU_MVREF
+0.75V_VTT_REF

R634 1 2 *0_NC

CPU_M_ZN_H A11
CPU_M_ZN_L AM9
M_VREF AN9
M_ZN_H
M_ZN_L

HTREF1 V10 CPU_HTREF1 R645 1 2 44.2_F
HTREF0 V9 CPU_HTREF0 R644 1 2 44.2_F

Route as 80 ohm, diff

BYPASSCLK_H A9
BYPASSCLK_L B9
PLLTEST0 A5
PLLTEST1 B6

R210 1 2 510 CPU_BYPASSCLK_H
R212 1 2 510 CPU_BYPASSCLK_L
R213 1 2 1K CPU_PLLTEST0
R211 1 2 1K CPU_PLLTEST1

ANALOGIN G8

R643 1 2 0 CPU_ANALOGIN

FBCLKOUT_H B10 CPU_FBCLKOUT_H R209 1 2 80.6_F
FBCLKOUT_L A10 CPU_FBCLKOUT_L

SCANCLK1 AK7 CPU_SCANCLK1 R660 1 2 1K
TSTUPD AG8 CPU_TSTUPD R655 1 2 1K
SCANSHIFTEN AK9 CPU_SCANSHFTEN R203 1 2 1K
SCANEN AH9 CPU_SCANEN R657 1 2 1K
SCANCLK2 AM7 CPU_SCANCLK2 R192 1 2 1K

+1.5V_SUS

PLLCHRZ_H G11
PLLCHRZ_L H11
SINGLECHAIN AJ8 CPU_SINGLECHAIN R658 1 2 1K
BURNIN_L AM4 CPU_BURNIN_L R199 1 2 1K
ANALOGOUT D7
DIG_T B5

PAD T603 1 CPU_BP3 F8
PAD T20 1 CPU_BP2 C8
PAD T21 1 CPU_BP1 D9
PAD T604 1 CPU_BP0 E8

BP3
BP2
BP1
BP0

ANALOG_T C6
DIECRACKMON AH7
GATE0 AK5
DRAIN0 AJ7

M_TEST AG9

AMD_CPU_GENEVA

+1.5V_RUN

CPU_PWRGD R195 1 2 300
LDT_RST# R196 1 2 300
LDT_STP# R189 1 2 300

+1.5V_SUS

CPU_THRMTRIP# R659 1 2 1K
CPU_PROCHOT# R200 1 2 300
CPU_THRM_ALERT# R663 1 2 1K
CPU_SIC R202 1 2 1K
CPU_SID R201 1 2 1K

+1.5V_SUS

R635 1K_F

+CPU_MVREF

R636 1K_F

C655 0.01u/16V

C654 1000p/50V

R204 39.2

Place near by CPU within 1"

C128 *0.1u/10V_NC

IPCC

CPU_PROCHOT#

(25) IPCC_SMI

Q616 ME2N7002W

AMD Debug Port

+1.5V_SUS

CN7

CPU_DBREQ#
CPU_DBRDY
CPU_TCK
CPU_TMS
CPU_TDI
CPU_TRST#
CPU_TDO

*SAMTEC_ASP-68200-07_NC

+3.3V_RUN

R667 4.7K

+1.5V_RUN

R665 4.7K

Q614 MMBT3904

LDT_RST#

+1.5V_SUS

R220 2.2K

Q17 MMBT3904

(25) SMBCLK2

CPU_SIC

D14 RB500V-40

+1.5V_SUS

R221 2.2K

Q16 MMBT3904

(25) SMBDAT2

CPU_SID

D15 RB500V-40

(9) HT_IN[0..15]
(9) HT_IN#[0..15]

U14A

HT LINK

HT_IN15 W7
HT_IN#15 W6
HT_IN14 U6
HT_IN#14 U5
HT_IN13 R7
HT_IN#13 R6
HT_IN12 P6
HT_IN#12 P5
HT_IN11 L6
HT_IN#11 L5
HT_IN10 J6
HT_IN#10 J5
HT_IN9 H4
HT_IN#9 H3
HT_IN8 G6
HT_IN#8 G5
HT_IN7 T3
HT_IN#7 T4
HT_IN6 T2
HT_IN#6 T1
HT_IN5 P3
HT_IN#5 P4
HT_IN4 P2
HT_IN#4 P1
HT_IN3 M2
HT_IN#3 M1
HT_IN2 K3
HT_IN#2 K4
HT_IN1 K2
HT_IN#1 K1
HT_IN0 H2
HT_IN#0 H1

L0_CADIN_H15 L0_CADOUT_H15
L0_CADIN_L15 L0_CADOUT_L15
L0_CADIN_H14 L0_CADOUT_H14
L0_CADIN_L14 L0_CADOUT_L14
L0_CADIN_H13 L0_CADOUT_H13
L0_CADIN_L13 L0_CADOUT_L13
L0_CADIN_H12 L0_CADOUT_H12
L0_CADIN_L12 L0_CADOUT_L12
L0_CADIN_H11 L0_CADOUT_H11
L0_CADIN_L11 L0_CADOUT_L11
L0_CADIN_H10 L0_CADOUT_H10
L0_CADIN_L10 L0_CADOUT_L10
L0_CADIN_H9 L0_CADOUT_H9
L0_CADIN_L9 L0_CADOUT_L9
L0_CADIN_H8 L0_CADOUT_H8
L0_CADIN_L8 L0_CADOUT_L8
L0_CADIN_H7 L0_CADOUT_H7
L0_CADIN_L7 L0_CADOUT_L7
L0_CADIN_H6 L0_CADOUT_H6
L0_CADIN_L6 L0_CADOUT_L6
L0_CADIN_H5 L0_CADOUT_H5
L0_CADIN_L5 L0_CADOUT_L5
L0_CADIN_H4 L0_CADOUT_H4
L0_CADIN_L4 L0_CADOUT_L4
L0_CADIN_H3 L0_CADOUT_H3
L0_CADIN_L3 L0_CADOUT_L3
L0_CADIN_H2 L0_CADOUT_H2
L0_CADIN_L2 L0_CADOUT_L2
L0_CADIN_H1 L0_CADOUT_H1
L0_CADIN_L1 L0_CADOUT_L1
L0_CADIN_H0 L0_CADOUT_H0
L0_CADIN_L0 L0_CADOUT_L0

AB6 HT_OUT15
AB5 HT_OUT#15
AB9 HT_OUT14
AB8 HT_OUT#14
AC7 HT_OUT13
AC6 HT_OUT#13
AE6 HT_OUT12
AE5 HT_OUT#12
AE9 HT_OUT11
AE8 HT_OUT#11
AH3 HT_OUT10
AH4 HT_OUT#10
AK3 HT_OUT9
AK4 HT_OUT#9
AH1 HT_OUT8
AH2 HT_OUT#8
Y1 HT_OUT7
Y2 HT_OUT#7
Y4 HT_OUT6
Y3 HT_OUT#6
AB1 HT_OUT5
AB2 HT_OUT#5
AB4 HT_OUT4
AB3 HT_OUT#4
AD4 HT_OUT3
AD3 HT_OUT#3
AF1 HT_OUT2
AF2 HT_OUT#2
AF4 HT_OUT1
AF3 HT_OUT#1
AK1 HT_OUT0
AK2 HT_OUT#0

(9) HT_CLKIN1
(9) HT_CLKIN#1
(9) HT_CLKIN0
(9) HT_CLKIN#0

M8 L0_CLKIN_H1
M7 L0_CLKIN_L1
M3 L0_CLKIN_H0
M4 L0_CLKIN_L0

L0_CLKOUT_H1 AF6
L0_CLKOUT_L1 AF5
L0_CLKOUT_H0 AD1
L0_CLKOUT_L0 AD2

HT_CLKOUT1 (9)
HT_CLKOUT#1 (9)
HT_CLKOUT0 (9)
HT_CLKOUT#0 (9)

(9) HT_CTLIN1
(9) HT_CTLIN#1
(9) HT_CTLIN0
(9) HT_CTLIN#0

Y6 L0_CTLIN_H1
Y5 L0_CTLIN_L1
V2 L0_CTLIN_H0
V1 L0_CTLIN_L0

L0_CTLOUT_H1 Y8
L0_CTLOUT_L1 Y9
L0_CTLOUT_H0 V4
L0_CTLOUT_L0 V3

HT_CTLOUT1 (9)
HT_CTLOUT#1 (9)
HT_CTLOUT0 (9)
HT_CTLOUT#0 (9)

AMD_CPU_GENEVA

(9) HT_OUT[0..15]
(9) HT_OUT#[0..15]

Title: CPU - HT/ MISC

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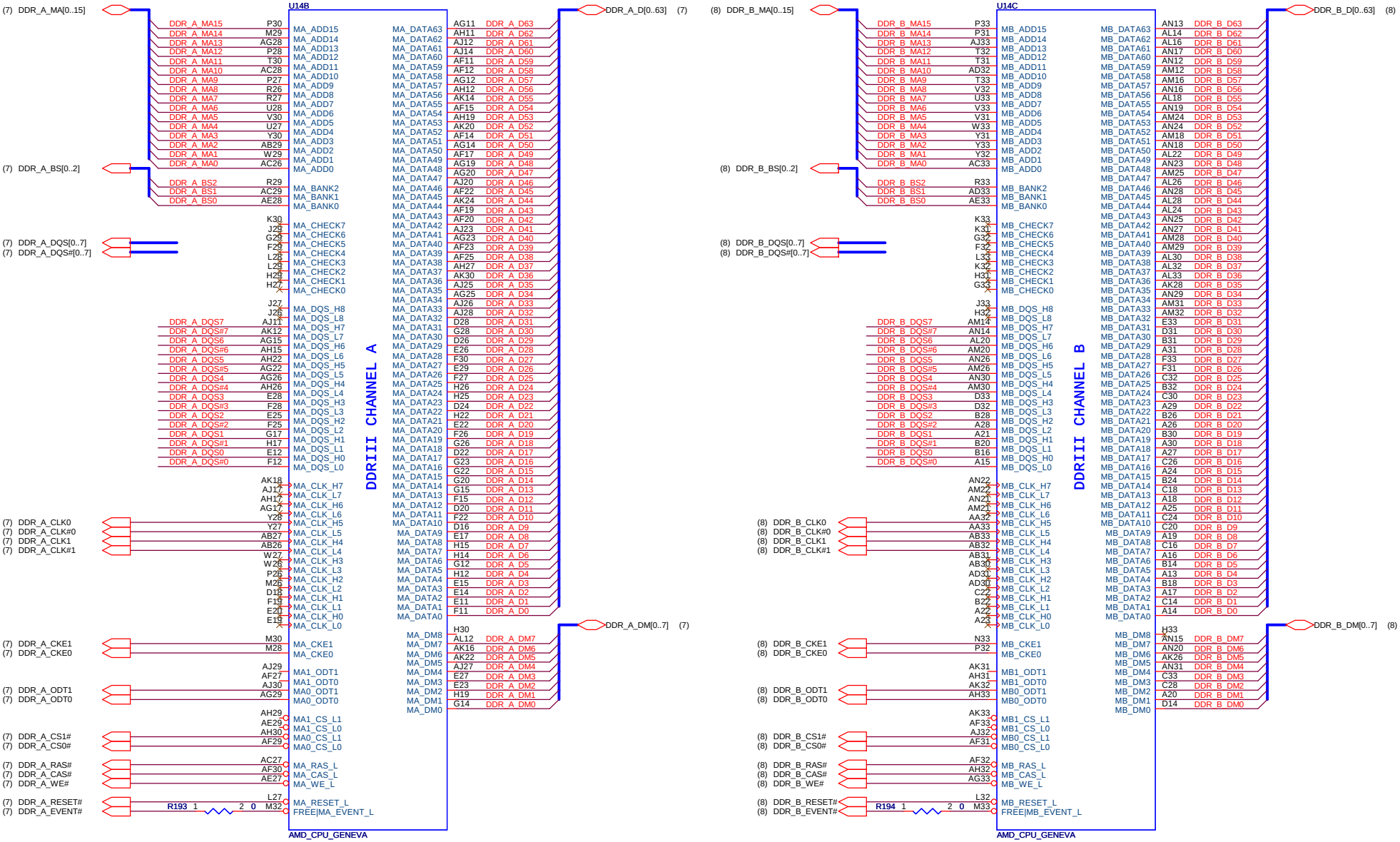

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Title	CPU - DDR I/F	
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VLDT Trace at ltast 200 mils wide

+VCC_CORE

+VCC_CORE

15A

U14E

POWER 1

AMD_CPU_GENEVA

+1.5V_SUS

2.5A/3.0A

1.5A

+1.1V_RUN

+0.9V_RUN

1.25A

+CPU_VDDNB

2A

U14F

POWER 2

AMD_CPU_GENEVA

Power Group A	Power Group B
VDDIO	VDD
VDDA	VDDNB
	VLDT
	VDDR

U14G

GND 1

AMD_CPU_GENEVA

U14H

GND 2

AMD_CPU_GENEVA

+CPU_VDDNB

Bottom side decoupling

C674 10u/6.3V/0603 C671 10u/6.3V/0603 C152 10u/6.3V/0603 C156 10u/6.3V/0603

+1.5V_SUS

Bottom side decoupling

C773 10u/6.3V/0603 C775 10u/6.3V/0603 C774 10u/6.3V/0603 C687 10u/6.3V/0603 C688 10u/6.3V/0603 C751 220n/10V C761 220n/10V C718 180p/50V C707 180p/50V

+VCC_CORE

Bottom side decoupling

C708 10u/6.3V/0603 C703 10u/6.3V/0603 C681 10u/6.3V/0603 C742 10u/6.3V/0603 C682 10u/6.3V/0603 C714 10u/6.3V/0603 C721 10u/6.3V/0603 C724 10u/6.3V/0603 C716 220n/10V C693 0.01u/16V C711 180p/50V

+VCC_CORE

Botton side decoupling

C701 10u/6.3V/0603 C740 10u/6.3V/0603 C733 10u/6.3V/0603 C736 10u/6.3V/0603 C683 10u/6.3V/0603 C746 10u/6.3V/0603 C709 10u/6.3V/0603 C700 10u/6.3V/0603 C699 220n/10V C747 0.01u/16V C730 180p/50V C181 33p/50V RFI

+0.9V_RUN

Place as close to processor as possible.

C780 4.7u/6.3V/0603 C129 4.7u/6.3V/0603 C769 220n/10V C131 220n/10V C155 220n/10V C679 220n/10V

Didn't show on design guildline.

C153 4.7u/6.3V/0603 C677 4.7u/6.3V/0603 C767 1000p/50V C154 1000p/50V C771 1000p/50V C130 1000p/50V C680 180p/50V C678 180p/50V C778 180p/50V C676 180p/50V

+1.1V_RUN

Place as close to processor as possible.

C695 10u/6.3V/0603 C785 10u/6.3V/0603 C151 10u/6.3V/0603 C149 220n/10V C786 220n/10V C150 180p/50V C691 180p/50V

+1.5V_SUS

Decoupling between CPU& DIMM, Place as close to processor as possible.

C689 4.7u/6.3V/0603 C776 4.7u/6.3V/0603 C686 4.7u/6.3V/0603 C777 4.7u/6.3V/0603 C765 220n/10V C725 220n/10V C698 220n/10V C727 220n/10V C750 0.01u/16V C732 0.01u/16V C743 180p/50V C784 220n/10V C783 220n/10V C781 0.1u/10V C782 0.1u/10V

Modify 22uF to 10uF * 2 cause by height limitaion.

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Title	CPU - PWR/ GND	
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DDRIII DIMM A

CN10A

(5) DDR_A_MA[0..15]
DDR_A_MA0 98
DDR_A_MA1 97
DDR_A_MA2 96
DDR_A_MA3 95
DDR_A_MA4 92
DDR_A_MA5 91
DDR_A_MA6 90
DDR_A_MA7 86
DDR_A_MA8 89
DDR_A_MA9 85
DDR_A_MA10 107
DDR_A_MA11 84
DDR_A_MA12 83
DDR_A_MA13 119
DDR_A_MA14 80
DDR_A_MA15 78

DDR_A_BS0 109
DDR_A_BS1 108
DDR_A_BS2 79

(5) DDR_A_BS[0..2]
(5) DDR_A_CS0# 114
(5) DDR_A_CS1# 121
(5) DDR_A_CLK0 101
(5) DDR_A_CLK#0 103
(5) DDR_A_CLK1 102
(5) DDR_A_CLK#1 104
(5) DDR_A_CKE0 73
(5) DDR_A_CKE1 74
(5) DDR_A_CAS# 115
(5) DDR_A_RAS# 110
(5) DDR_A_WE# 113
197
201
202
(8,17,22) SB_SMB_SCL0
(8,17,22) SB_SMB_SDA0 200

(5) DDR_A_ODT0 116
(5) DDR_A_ODT1 120

(5) DDR_A_DM[0..7]
DDR_A_DM0 11
DDR_A_DM1 28
DDR_A_DM2 46
DDR_A_DM3 63
DDR_A_DM4 136
DDR_A_DM5 153
DDR_A_DM6 170
DDR_A_DM7 187

(5) DDR_A_DQS[0..7]
(5) DDR_A_DQS#[0..7]
DDR_A_DQS0 12
DDR_A_DQS1 29
DDR_A_DQS2 47
DDR_A_DQS3 64
DDR_A_DQS4 137
DDR_A_DQS5 154
DDR_A_DQS6 171
DDR_A_DQS7 188
DDR_A_DQS#0 10
DDR_A_DQS#1 27
DDR_A_DQS#2 45
DDR_A_DQS#3 62
DDR_A_DQS#4 135
DDR_A_DQS#5 152
DDR_A_DQS#6 169
DDR_A_DQS#7 186

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12 A13 A14 A15
BA0 BA1 BA2 S0# S1# CK0 CK0# CK1 CK1# CKE0 CKE1 CAS# RAS# WE# SA0 SA1 SCL SDA
ODT0 ODT1
DM0 DM1 DM2 DM3 DM4 DM5 DM6 DM7
DQS0 DQS1 DQS2 DQS3 DQS4 DQS5 DQS6 DQS7 DQS0# DQS1# DQS2# DQS3# DQS4# DQS5# DQS6# DQS7#
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 DQ16 DQ17 DQ18 DQ19 DQ20 DQ21 DQ22 DQ23 DQ24 DQ25 DQ26 DQ27 DQ28 DQ29 DQ30 DQ31 DQ32 DQ33 DQ34 DQ35 DQ36 DQ37 DQ38 DQ39 DQ40 DQ41 DQ42 DQ43 DQ44 DQ45 DQ46 DQ47 DQ48 DQ49 DQ50 DQ51 DQ52 DQ53 DQ54 DQ55 DQ56 DQ57 DQ58 DQ59 DQ60 DQ61 DQ62 DQ63

5 DDR_A_D0
7 DDR_A_D1
15 DDR_A_D2
17 DDR_A_D3
4 DDR_A_D4
6 DDR_A_D5
16 DDR_A_D6
18 DDR_A_D7
21 DDR_A_D8
23 DDR_A_D9
33 DDR_A_D10
35 DDR_A_D11
22 DDR_A_D12
24 DDR_A_D13
34 DDR_A_D14
36 DDR_A_D15
39 DDR_A_D16
41 DDR_A_D17
51 DDR_A_D18
53 DDR_A_D19
40 DDR_A_D20
42 DDR_A_D21
50 DDR_A_D22
52 DDR_A_D23
57 DDR_A_D24
59 DDR_A_D25
67 DDR_A_D26
69 DDR_A_D27
56 DDR_A_D28
58 DDR_A_D29
68 DDR_A_D30
70 DDR_A_D31
129 DDR_A_D32
131 DDR_A_D33
141 DDR_A_D34
143 DDR_A_D35
130 DDR_A_D36
132 DDR_A_D37
140 DDR_A_D38
142 DDR_A_D39
147 DDR_A_D40
149 DDR_A_D41
157 DDR_A_D42
159 DDR_A_D43
146 DDR_A_D44
148 DDR_A_D45
158 DDR_A_D46
160 DDR_A_D47
163 DDR_A_D48
165 DDR_A_D49
175 DDR_A_D50
177 DDR_A_D51
164 DDR_A_D52
166 DDR_A_D53
174 DDR_A_D54
176 DDR_A_D55
181 DDR_A_D56
183 DDR_A_D57
191 DDR_A_D58
193 DDR_A_D59
180 DDR_A_D60
182 DDR_A_D61
192 DDR_A_D62
194 DDR_A_D63

LINKTEK_DDRRK-20401-TP4B

DDR_A_D[0..63] (5)

CN10B

+1.5V_SUS
VDD1 75
VDD2 76
VDD3 81
VDD4 82
VDD5 87
VDD6 88
VDD7 93
VDD8 94
VDD9 99
VDD10 100
VDD11 105
VDD12 106
VDD13 111
VDD14 112
VDD15 117
VDD16 118
VDD17 123
VDD18 124
VDDSPD 199

VSS16 44
VSS17 48
VSS18 49
VSS19 54
VSS20 55
VSS21 60
VSS22 61
VSS23 65
VSS24 66
VSS25 71
VSS26 72
VSS27 127
VSS28 128
VSS29 133
VSS30 134
VSS31 138
VSS32 139
VSS33 144
VSS34 145
VSS35 150
VSS36 151
VSS37 155
VSS38 156
VSS39 161
VSS40 162
VSS41 167
VSS42 168
VSS43 172
VSS44 173
VSS45 178
VSS46 179
VSS47 184
VSS48 185
VSS49 189
VSS50 190
VSS51 195
VSS52 196

+3.3V_RUN
C796 0.1u/10V

+1.5V_SUS
R662 1 2 2.2K
PAD T608 1

NC1 77
NC2 122
TEST 125

(5) DDR_A_EVENT# 198
(5) DDR_A_RESET# 30
EVENT#
RESET#

+0.75V_VTT_REF
R648 1 2 *0_0603_NC
+MEM_VTT_REF
C659 0.1u/10V

VREF-DQ 1
VREF-CA 126

VSS1 2
VSS2 3
VSS3 8
VSS4 9
VSS5 13
VSS6 14
VSS7 19
VSS8 20
VSS9 25
VSS10 26
VSS11 31
VSS12 32
VSS13 37
VSS14 38
VSS15 43

VTT1 203
VTT2 204
GND1 m1
GND2 m2

+0.75V_DDR_VTT
C794 10u/6.3V/0603
C798 0.1u/10V
C790 0.22u/25V/0603

LINKTEK_DDRRK-20401-TP4B

SM_MEM BUS ADDRESS	
SO-DIMM0	1010 000
SO-DIMM1	1010 001

For EMI Reserved

DDR_A_CLK1 R650 1 2 *200_F_NC DDR_A_CLK#1
DDR_A_CLK0 R649 1 2 *200_F_NC DDR_A_CLK#0

+1.5V_SUS
C772 4.7u/6.3V/0603
C684 4.7u/6.3V/0603
C762 1u/10V/0603
C764 1u/10V/0603
C697 1u/10V/0603
C694 *330u/6.3V_NC
C720 2200p/50V

+1.5V_SUS
C756 10u/6.3V/0603
C696 0.1u/10V
C752 0.1u/10V
C739 0.1u/10V
C745 0.1u/10V
C757 0.1u/10V
C729 0.1u/10V

Place ESD Protection diodes.

SB_SMB_SDA0
SB_SMB_SCL0
ESD603
*IP4220CZ6_NC
+3.3V_RUN

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Title: SO-DIMM1
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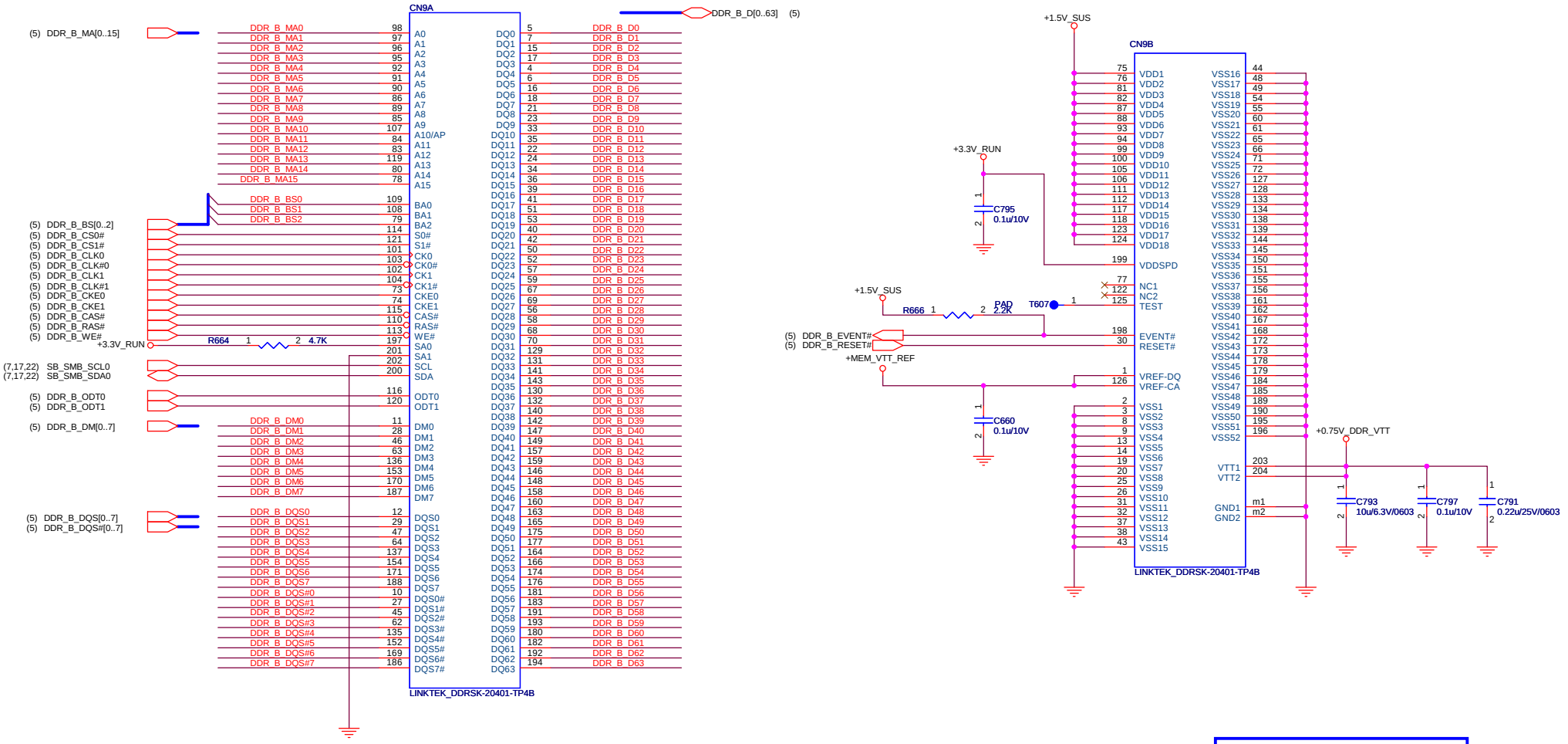
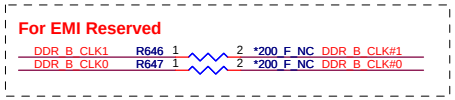
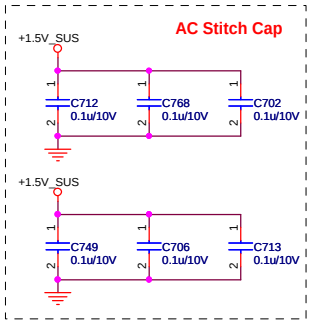
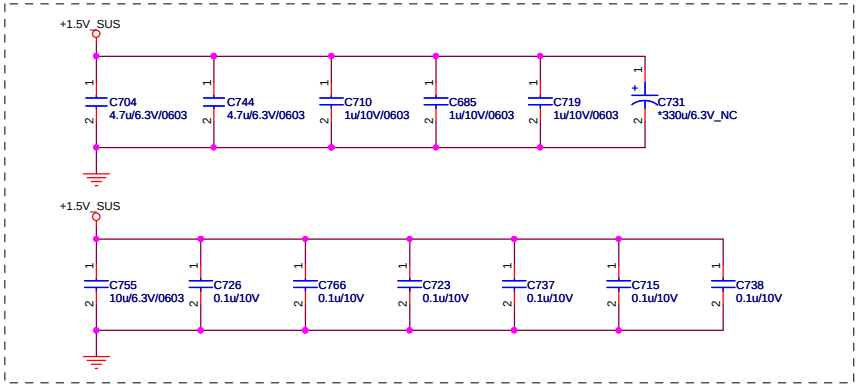
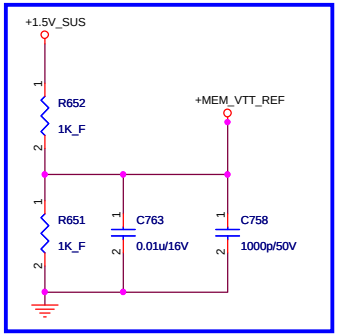
DDRIII DIMM B











Title	SO-DIMM2	
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NB HT/ PCIE

HYPER TRANSPORT CPU I/F

PART 1 OF 6

U10A

ATI_RS880M

(4) HT_OUT[0..15]
(4) HT_OUT#[0..15]

HT_OUT0	Y25	HT_RXCAD0P	HT_TXCAD0P	D24	HT_IN0
HT_OUT#0	Y24	HT_RXCAD0N	HT_TXCAD0N	D25	HT_IN#0
HT_OUT1	V22	HT_RXCAD1P	HT_TXCAD1P	E24	HT_IN1
HT_OUT#1	V23	HT_RXCAD1N	HT_TXCAD1N	E25	HT_IN#1
HT_OUT2	V25	HT_RXCAD2P	HT_TXCAD2P	F24	HT_IN2
HT_OUT#2	V24	HT_RXCAD2N	HT_TXCAD2N	F25	HT_IN#2
HT_OUT3	U24	HT_RXCAD3P	HT_TXCAD3P	F23	HT_IN3
HT_OUT#3	U25	HT_RXCAD3N	HT_TXCAD3N	F22	HT_IN#3
HT_OUT4	T25	HT_RXCAD4P	HT_TXCAD4P	H23	HT_IN4
HT_OUT#4	T24	HT_RXCAD4N	HT_TXCAD4N	H22	HT_IN#4
HT_OUT5	P22	HT_RXCAD5P	HT_TXCAD5P	J25	HT_IN5
HT_OUT#5	P23	HT_RXCAD5N	HT_TXCAD5N	J24	HT_IN#5
HT_OUT6	P25	HT_RXCAD6P	HT_TXCAD6P	K24	HT_IN6
HT_OUT#6	P24	HT_RXCAD6N	HT_TXCAD6N	K25	HT_IN#6
HT_OUT7	N24	HT_RXCAD7P	HT_TXCAD7P	K23	HT_IN7
HT_OUT#7	N25	HT_RXCAD7N	HT_TXCAD7N	K22	HT_IN#7
HT_OUT8	AC24	HT_RXCAD8P	HT_TXCAD8P	F21	HT_IN8
HT_OUT#8	AC25	HT_RXCAD8N	HT_TXCAD8N	G21	HT_IN#8
HT_OUT9	AB25	HT_RXCAD9P	HT_TXCAD9P	G20	HT_IN9
HT_OUT#9	AB24	HT_RXCAD9N	HT_TXCAD9N	H21	HT_IN#9
HT_OUT10	AA24	HT_RXCAD10P	HT_TXCAD10P	J20	HT_IN10
HT_OUT#10	AA25	HT_RXCAD10N	HT_TXCAD10N	J21	HT_IN#10
HT_OUT11	Y22	HT_RXCAD11P	HT_TXCAD11P	J18	HT_IN11
HT_OUT#11	Y23	HT_RXCAD11N	HT_TXCAD11N	K17	HT_IN#11
HT_OUT12	W21	HT_RXCAD12P	HT_TXCAD12P	L19	HT_IN12
HT_OUT#12	W20	HT_RXCAD12N	HT_TXCAD12N	J19	HT_IN#12
HT_OUT13	V21	HT_RXCAD13P	HT_TXCAD13P	M19	HT_IN13
HT_OUT#13	V20	HT_RXCAD13N	HT_TXCAD13N	L18	HT_IN#13
HT_OUT14	U20	HT_RXCAD14P	HT_TXCAD14P	M21	HT_IN14
HT_OUT#14	U21	HT_RXCAD14N	HT_TXCAD14N	P21	HT_IN#14
HT_OUT15	U19	HT_RXCAD15P	HT_TXCAD15P	P18	HT_IN15
HT_OUT#15	U18	HT_RXCAD15N	HT_TXCAD15N	M18	HT_IN#15

HT_IN[0..15] (4)
HT_IN#[0..15] (4)

(4) HT_CLKOUT0	T22	HT_RXCLK0P	HT_TXCLK0P	H24	HT_CLKIN0 (4)
(4) HT_CLKOUT#0	T23	HT_RXCLK0N	HT_TXCLK0N	H25	HT_CLKIN#0 (4)
(4) HT_CLKOUT1	AB23	HT_RXCLK1P	HT_TXCLK1P	L21	HT_CLKIN1 (4)
(4) HT_CLKOUT#1	AA22	HT_RXCLK1N	HT_TXCLK1N	L20	HT_CLKIN#1 (4)
(4) HT_CTLOUT0	M22	HT_RXCTL0P	HT_TXCTL0P	M24	HT_CTLIN0 (4)
(4) HT_CTLOUT#0	M23	HT_RXCTL0N	HT_TXCTL0N	M25	HT_CTLIN#0 (4)
(4) HT_CTLOUT1	R21	HT_RXCTL1P	HT_TXCTL1P	P19	HT_CTLIN1 (4)
(4) HT_CTLOUT#1	R20	HT_RXCTL1N	HT_TXCTL1N	R18	HT_CTLIN#1 (4)
HT_OUTCAL	C23			B24	HT_INCAL
R128 2 1 301_F HT_OUTCAL#	A24	HT_RXCALP	HT_TXCALP	B25	HT_INCAL# R129 1 2 301_F
		HT_RXCALN	HT_TXCALN		

PCIE I/F GFX

PART 2 OF 6

U10B

ATI_RS880M

D4	GFX_RX0P	GFX_TX0P	A5	HDMI_TX2_P_C	C76 1 2 0.1u/10V HDMI_TX2_P (14)
C4	GFX_RX0N	GFX_TX0N	B5	HDMI_TX2_N_C	C79 1 2 0.1u/10V HDMI_TX2_N (14)
A3	GFX_RX1P	GFX_TX1P	A4	HDMI_TX1_P_C	C71 1 2 0.1u/10V HDMI_TX1_P (14)
B3	GFX_RX1N	GFX_TX1N	B4	HDMI_TX1_N_C	C75 1 2 0.1u/10V HDMI_TX1_N (14)
C2	GFX_RX2P	GFX_TX2P	C3	HDMI_TX0_P_C	C65 1 2 0.1u/10V HDMI_TX0_P (14)
C1	GFX_RX2N	GFX_TX2N	B2	HDMI_TX0_N_C	C66 1 2 0.1u/10V HDMI_TX0_N (14)
E5	GFX_RX3P	GFX_TX3P	D1	HDMI_CLK_P_C	C67 1 2 0.1u/10V HDMI_CLK_P (14)
F5	GFX_RX3N	GFX_TX3N	D2	HDMI_CLK_N_C	C68 1 2 0.1u/10V HDMI_CLK_N (14)
G5	GFX_RX4P	GFX_TX4P	E2	DP_LANE0_P_C	C95 1 2 0.1u/10V DP_LANE0_P (14)
G6	GFX_RX4N	GFX_TX4N	E1	DP_LANE0_N_C	C96 1 2 0.1u/10V DP_LANE0_N (14)
H5	GFX_RX5P	GFX_TX5P	F4	DP_LANE1_P_C	C91 1 2 0.1u/10V DP_LANE1_P (14)
H6	GFX_RX5N	GFX_TX5N	F3	DP_LANE1_N_C	C92 1 2 0.1u/10V DP_LANE1_N (14)
J6	GFX_RX6P	GFX_TX6P	F1	DP_LANE2_P_C	C86 1 2 0.1u/10V DP_LANE2_P (14)
J5	GFX_RX6N	GFX_TX6N	F2	DP_LANE2_N_C	C87 1 2 0.1u/10V DP_LANE2_N (14)
J7	GFX_RX7P	GFX_TX7P	H4	DP_LANE3_P_C	C93 1 2 0.1u/10V DP_LANE3_P (14)
J8	GFX_RX7N	GFX_TX7N	H3	DP_LANE3_N_C	C94 1 2 0.1u/10V DP_LANE3_N (14)
L5	GFX_RX8P	GFX_TX8P	H1		
L6	GFX_RX8N	GFX_TX8N	H2		
M8	GFX_RX9P	GFX_TX9P	J2		
L8	GFX_RX9N	GFX_TX9N	J1		
P7	GFX_RX10P	GFX_TX10P	K4		
M7	GFX_RX10N	GFX_TX10N	K3		
P5	GFX_RX11P	GFX_TX11P	K1		
M5	GFX_RX11N	GFX_TX11N	K2		
R8	GFX_RX12P	GFX_TX12P	M4		
P8	GFX_RX12N	GFX_TX12N	M3		
R6	GFX_RX13P	GFX_TX13P	M1		
R5	GFX_RX13N	GFX_TX13N	M2		
P4	GFX_RX14P	GFX_TX14P	N2		
P3	GFX_RX14N	GFX_TX14N	N1		
T4	GFX_RX15P	GFX_TX15P	P1		
T3	GFX_RX15N	GFX_TX15N	P2		

C263, C264, C260, C261, C265, C266, C208, C262:
Near by HDMI Conn -- CN6
C258, C259, C256, C257, C254, C255, C206, C253:
Near by DP Conn -- CN7

HDMI_CLK_P R84 1 2 715_F
HDMI_CLK_N R86 1 2 715_F
HDMI_TX0_P R80 1 2 715_F
HDMI_TX0_N R82 1 2 715_F
HDMI_TX1_P R88 1 2 715_F
HDMI_TX1_N R98 1 2 715_F
HDMI_TX2_P R107 1 2 715_F
HDMI_TX2_N R110 1 2 715_F

+5V_RUN
Q8 ME2N7002W

Near by HDMI Conn CN6

PCIE I/F GPP

WWAN
WLAN
LAN/ Media Card

(22) PCIE_RX0_P
(22) PCIE_RX0_N
(22) PCIE_RX1_P
(22) PCIE_RX1_N
(21) PCIE_RX2_P
(21) PCIE_RX2_N

AE3	GPP_RX0P	GPP_TX0P	AC1	PCIE_TX0_P_C	C108 1 2 0.1u/10V PCIE_TX0_P (22)
AD4	GPP_RX0N	GPP_TX0N	AC2	PCIE_TX0_N_C	C109 1 2 0.1u/10V PCIE_TX0_N (22)
AE2	GPP_RX1P	GPP_TX1P	AB4	PCIE_TX1_P_C	C106 1 2 0.1u/10V PCIE_TX1_P (22)
AD3	GPP_RX1N	GPP_TX1N	AB3	PCIE_TX1_N_C	C107 1 2 0.1u/10V PCIE_TX1_N (22)
AD1	GPP_RX2P	GPP_TX2P	AA2	PCIE_TX2_P_C	C103 1 2 0.1u/10V PCIE_TX2_P (21)
AD2	GPP_RX2N	GPP_TX2N	AA1	PCIE_TX2_N_C	C104 1 2 0.1u/10V PCIE_TX2_N (21)
Y5	GPP_RX3P	GPP_TX3P	Y1		
W6	GPP_RX3N	GPP_TX3N	Y2		
U5	GPP_RX4P	GPP_TX4P	Y4		
U6	GPP_RX4N	GPP_TX4N	Y3		
U8	GPP_RX5P	GPP_TX5P	V1		
U7	GPP_RX5N	GPP_TX5N	V2		

PCIE I/F SB

WWAN
WLAN
LAN/ Media Card

(15) PCIE_ALINK_RX0_P
(15) PCIE_ALINK_RX0_N
(15) PCIE_ALINK_RX1_P
(15) PCIE_ALINK_RX1_N
(15) PCIE_ALINK_RX2_P
(15) PCIE_ALINK_RX2_N
(15) PCIE_ALINK_RX3_P
(15) PCIE_ALINK_RX3_N

AA8	SB_RX0P	SB_TX0P	AD7	PCIE_ALINK_TX0_P_C	C114 1 2 0.1u/10V PCIE_ALINK_TX0_P (15)
Y8	SB_RX0N	SB_TX0N	AE7	PCIE_ALINK_TX0_N_C	C113 1 2 0.1u/10V PCIE_ALINK_TX0_N (15)
AA7	SB_RX1P	SB_TX1P	AE6	PCIE_ALINK_TX1_P_C	C112 1 2 0.1u/10V PCIE_ALINK_TX1_P (15)
Y7	SB_RX1N	SB_TX1N	AD6	PCIE_ALINK_TX1_N_C	C111 1 2 0.1u/10V PCIE_ALINK_TX1_N (15)
AA5	SB_RX2P	SB_TX2P	AB6	PCIE_ALINK_TX2_P_C	C119 1 2 0.1u/10V PCIE_ALINK_TX2_P (15)
AA6	SB_RX2N	SB_TX2N	AC6	PCIE_ALINK_TX2_N_C	C118 1 2 0.1u/10V PCIE_ALINK_TX2_N (15)
W5	SB_RX3P	SB_TX3P	AD5	PCIE_ALINK_TX3_P_C	C116 1 2 0.1u/10V PCIE_ALINK_TX3_P (15)
Y5	SB_RX3N	SB_TX3N	AE5	PCIE_ALINK_TX3_N_C	C117 1 2 0.1u/10V PCIE_ALINK_TX3_N (15)

PCE_CALRP
PCE_CALRN
AC8 R684 2 1 1.27K_F
AB8 R685 1 2 2K_F
+1.1V_RUN

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Title	NB - HT/ PCIE/ HDMI	
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NB LVDS/ PM

110mA
20mA
4mA
CRT disable

U10C
PART 3 OF 6
ATI_RS880M

CRT/TVOUT
PLL PWR
LVTM
PM
CLOCKs
MIS.

+3.3V_RUN
+1.8V_RUN
AVDD1 F12
AVDD2 E12
AVDDDI F14
AVSSDI G15
AVDDQ H15
AVSSQ H14
C_Pr E17
Y F17
COMP_Pb F15
RED G18
REDb G17
GREEN E18
GREENb E19
BLUE F18
BLUEb F19
(11) CRT_HSYNC DAC_HSYNC A11
(11) CRT_VSYNC DAC_VSYNC B11
DAC_SCL F8
DAC_SDA E8
R686 1 2 715_F DAC_RSET G14
+NB_PLLVDD PLLVDD A12
+NB_PLLVDD18 PLLVDD18 D14
PLLVSS B12
+NB_VDDA18HPLL VDDA18HTPLL H17
+NB_VDDA18PCIEPLL VDDA18PCIEPLL1 D7
VDDA18PCIEPLL2 E7
(15,22,25) A_RST# R120 1 2 0 NB_RST# D8
(17) NB_PWRGD SYSRESETb A10
NB_LDT_STP# POWERGOOD C10
(15) EN_LDT_STP LDTSTOPb C12
ALLOW_LDTSTOP
(15) CLK_NB_HTCLKP HT_REFCLKP C25
(15) CLK_NB_HTCLKN HT_REFCLKN C24
(15) CLK_NB_REFCLKP REFCLK_P/OSCIN(OSCIN) E11
(15) CLK_NB_REFCLKN REFCLK_N(PWM_GPIO3) F11
T14 PAD 1 CLK_NB_GFXCLKP GFX_REFCLKP T2
T15 PAD 1 CLK_NB_GFXCLKN GFX_REFCLKN T1
T17 PAD 1 CLK_NB_GPPCLKP GPP_REFCLKP U1
T16 PAD 1 CLK_NB_GPPCLKN GPP_REFCLKN U2
(15) CLK_NB_ALINKP GPPSB_REFCLKP V4
(15) CLK_NB_ALINKN GPPSB_REFCLKN V3
(13) LVDS_DDCCLK I2C_CLK B9
(13) LVDS_DDCDAT I2C_DATA A9
(14) HDMI_SCL DDC_CLK0/AUX0P A8
(14) HDMI_SDA DDC_DATA0/AUX0N B8
(14) AUX_SINK_P DDC_CLK1/AUX1P B7
(14) AUX_SINK_N DDC_DATA1/AUX1N A7
R133 1 2 *2K_F_NC NB_STRP_DATA STRP_DATA B10
RSVD G11
R688 1 2 150_F NB_AUX_CAL AUX_CAL C8

TXOUT_L0P A22
TXOUT_L0N B22
TXOUT_L1P A21
TXOUT_L1N B21
TXOUT_L2P B20
TXOUT_L2N A20
TXOUT_L3P A19
TXOUT_L3N B19
LVDS_TX0+ (13)
LVDS_TX0- (13)
LVDS_TX1+ (13)
LVDS_TX1- (13)
LVDS_TX2+ (13)
LVDS_TX2- (13)
TXOUT_U0P B18
TXOUT_U0N A18
TXOUT_U1P A17
TXOUT_U1N B17
TXOUT_U2P D20
TXOUT_U2N D21
TXOUT_U3P D18
TXOUT_U3N D19
TXCLK_LP B16
TXCLK_LN A16
TXCLK_UP D16
TXCLK_UN D17
LVDS_TXCLK+ (13)
LVDS_TXCLK- (13)
VDDLTP18 A13
VSSLTP18 B13
VDDLT18P
L612 2 MPZ1608S221AT +1.8V_RUN 15mA
VDDLT18_1 A15
VDDLT18_2 B15
VDDLT33_1 A14
VDDLT33_2 B14
VDDLT18
L613 2 MPZ1608S221AT +1.8V_RUN 300mA
C880 0.1u/10V
C882 4.7u/6.3V/0603
C879 2.2u/16V/0603
VSSLT1 C14
VSSLT2 D15
VSSLT3 C16
VSSLT4 C18
VSSLT5 C20
VSSLT6 E20
VSSLT7 C22
LVDS_DIGON E9
LVDS_BLON F7
LVDS_ENA_BL G12
LCD_DIGON (13)
LCD_PWM_GFX (13)
LCD_BLON_GFX (25)
R687 1 2 4.7K
R690 1 2 4.7K
R130 1 2 4.7K
TMDS_HPD D9
HPD D10
HDMI_DET (14)
DP_HPD_SINK (14)
SUS_STAT# D12
R124 1 2 0
SUS_STAT# (17)
SUS_STAT#_R (11)
THERMALDIODE_P AE8
THERMALDIODE_N AD8
NB_THRMDA (26)
NB_THRMDC (26)
TESTMODE D13
TESTMODE R136 1 2 1.8K

+1.8V_RUN
+NB_VDDA18PCIEPLL
L610 2 MPZ1608S221AT 120mA
C876 2.2u/16V/0603
+NB_VDDA18HPLL
L609 2 MPZ1608S221AT 20mA
C875 2.2u/16V/0603
+NB_PLLVDD18
L608 2 MPZ1608S221AT 20mA
C874 2.2u/16V/0603
+1.1V_RUN
+NB_PLLVDD
L611 2 MPZ1608S221AT 65mA
C878 2.2u/16V/0603

+1.8V_RUN
+1.8V_RUN
R121 1K
U2A
(4,15) LDT_STP#
NB_LDT_STP#
SN74LVC2G07DCKR

+1.8V_RUN
EN_LDT_STP R135 1 2 1K
NB_PWRGD R122 1 2 300
+3.3V_RUN
LVDS_DDCCLK R132 1 2 4.7K
LVDS_DDCDAT R131 1 2 4.7K
CLK_NB_GFXCLKP R163 1 2 4.7K
CLK_NB_GFXCLKN R166 1 2 4.7K

NB_THRMDA
C115 *100p/50V_NC
NB_THRMDC
Place near by U3

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Title	NB - LVDS/ CRT/ PM	
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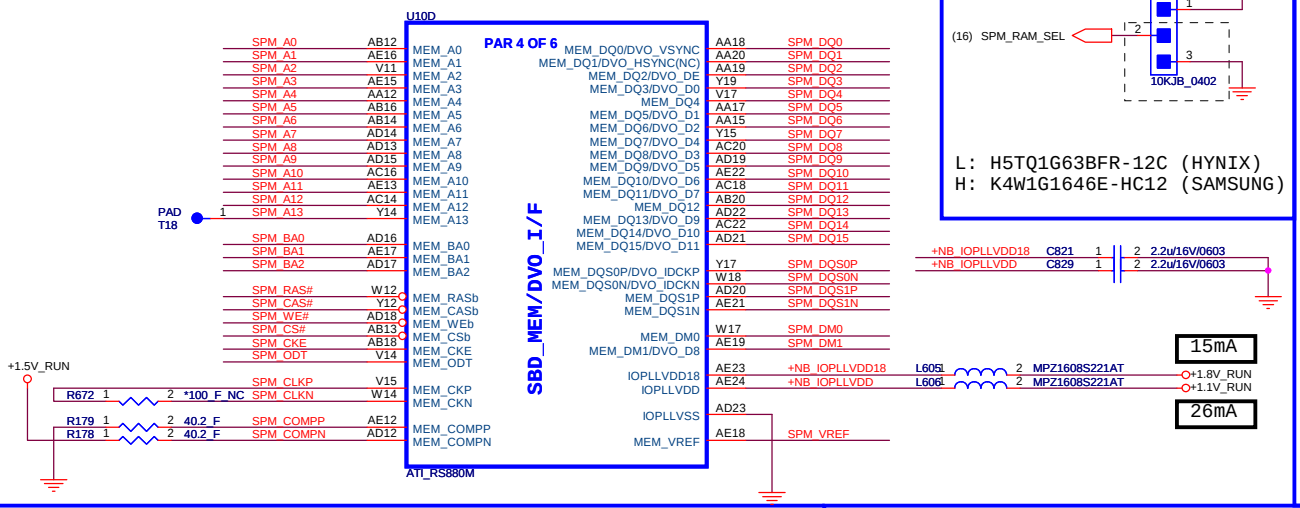
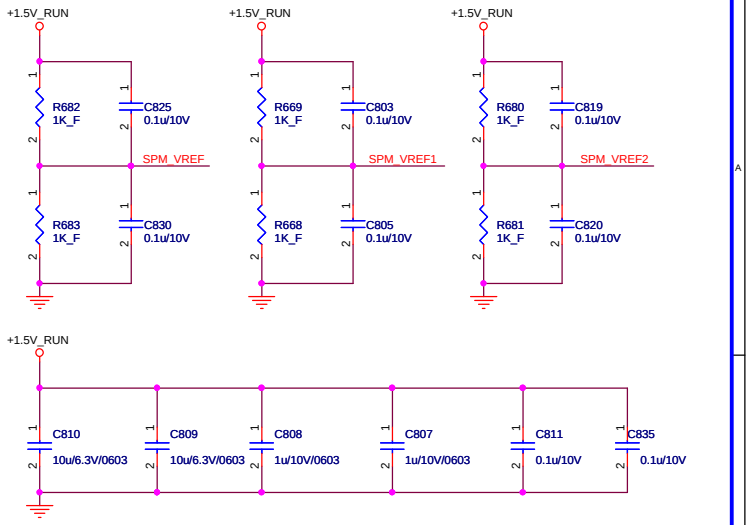
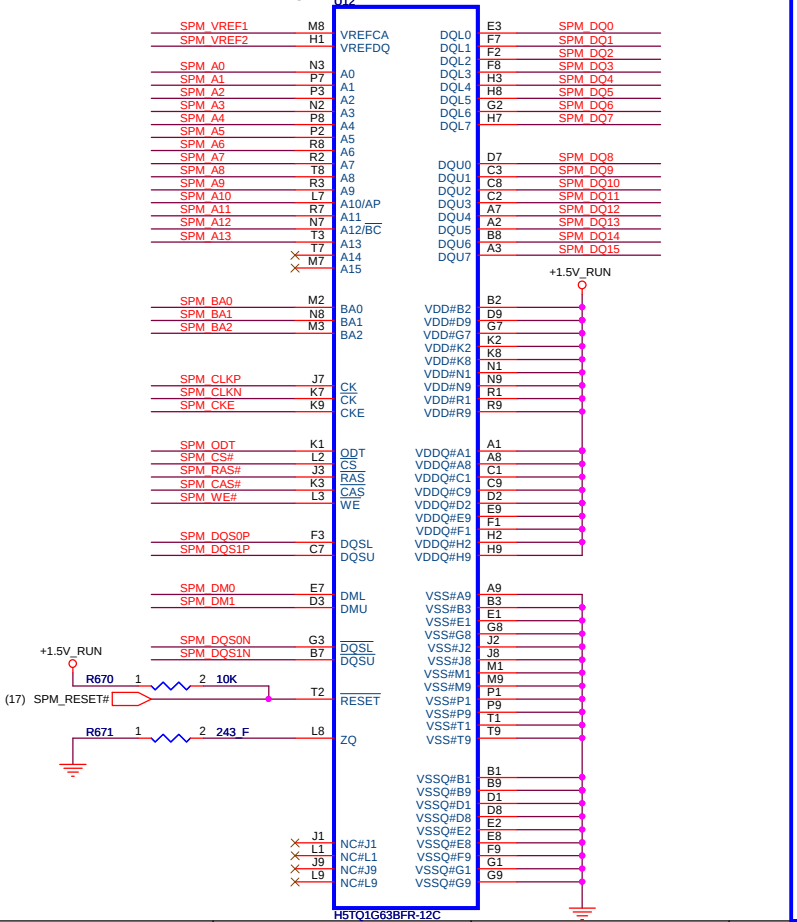
Side Port/ Strapping





Other source (Samsung):
DELH-14D0020000003G -- IC gDDR3 K4W1G1646E-HC12 64Mb*16 FBGA96

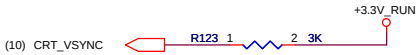


RS880M H/W STRAPS

The strap values are latched into internal registers after the assertion of the POWERGOOD signal to the RS880M

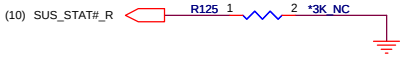
STRAP_DEBUG_BUS_GPIO_ENABLEb

Enables the Test Debug Bus using GPIO.
DAC_VSYNC (RS880.Pin B11)
1 = Disable (default)
0 = Ensable



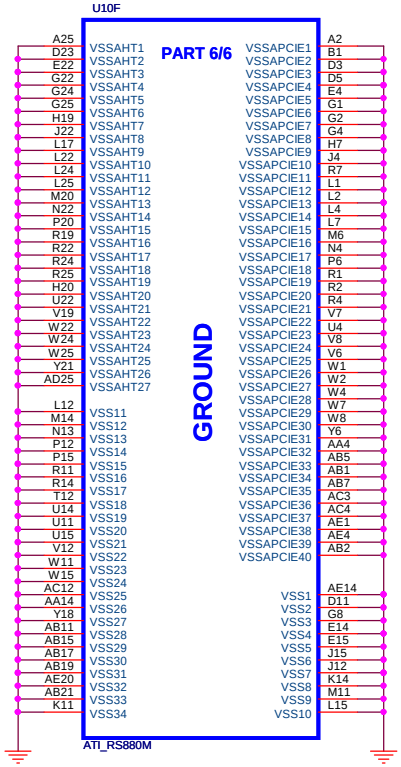
DFT_GPIO1: LOAD_EEPROM_STRAPS

Selects Loading of STRAPS from EPROM.
SUS_STAT# (RS880.Pin D12)
1 = Bypass the loading of EEPROM straps and use Hardware Default Values
0 = I2C Master can load strap values from EEPROM if connected, or use default values if not connected



RS880: Enable Side Port Memory

Selects if Memory SIDE PORT is available or not
DAC_HSYNC (RS880.Pin A11)
1 : Disable (default)
0 : Enable
Register Readback of strap: NB_CLKCFG:CLK_TOP_SPARE_D[1]



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Title	NB - STRAP/ SIDE PORT	
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RS880M POWER TABLE

PIN NAME	RS880M	PIN NAME	RS880M
VDDHT	+1.1V	IOPLLVDD	+1.1V
VDDHTRX	+1.1V	AVDD	+3.3V
VDDHTTX	+1.1V	AVDDDI	+1.8V
VDDA18PCIE	+1.8V	AVDDQ	+1.8V
VDDG18	+1.8V	PLLVDD	+1.1V
VDD18_MEM	+1.8V	PLLVDD18	+1.8V
VDDPCIE	+1.1V	VDDA18PCIEPLL	+1.8V
VDDC	+1.1V	VDDA18HTPLL	+1.8V
VDD_MEM	+1.8V/1.5V	VDDLTP18	+1.8V
VDDG33	+3.3V	VDDLT18	+1.8V
IOPLLVDD18	+1.8V	VDDLT33	NC

600mA
+1.1V_RUN
C854 4.7u/6.3V/0603
C846 0.1u/10V
C850 0.1u/10V
C849 0.1u/10V

700mA
+1.1V_RUN
C866 4.7u/6.3V/0603
C844 0.1u/10V
C860 0.1u/10V
C841 0.1u/10V

400mA
+1.1V_RUN
C865 4.7u/6.3V/0603
C861 0.1u/10V
C863 0.1u/10V
C868 0.1u/10V
C838 0.1u/10V

700mA
+NB_VDDA18PCIE
C859 4.7u/6.3V/0603
C853 4.7u/6.3V/0603
C839 0.1u/10V
C843 0.1u/10V
C845 0.1u/10V
C855 0.1u/10V

10mA
+1.8V_RUN
C867 1u/10V

25mA
+1.8V_RUN
C827 1u/10V

+1.8V_RUN
L607 MPZ1608S221AT
+NB_VDDA18PCIE

U10E
PART 5/6
POWER
ATI_RS880M

J17	VDDHT_1	VDDPCIE_1	A6
K16	VDDHT_2	VDDPCIE_2	B6
L16	VDDHT_3	VDDPCIE_3	C6
M16	VDDHT_4	VDDPCIE_4	D6
P16	VDDHT_5	VDDPCIE_5	E6
R16	VDDHT_6	VDDPCIE_6	F6
T16	VDDHT_7	VDDPCIE_7	G7
		VDDPCIE_8	H8
H18		VDDPCIE_9	J9
G19	VDDHTRX_1	VDDPCIE_10	K9
F20	VDDHTRX_2	VDDPCIE_11	M9
E21	VDDHTRX_3	VDDPCIE_12	L9
D22	VDDHTRX_4	VDDPCIE_13	P9
B23	VDDHTRX_5	VDDPCIE_14	R9
A23	VDDHTRX_6	VDDPCIE_15	T9
	VDDHTRX_7	VDDPCIE_16	V9
		VDDPCIE_17	U9
AE25	VDDHTTX_1		
AD24	VDDHTTX_2		
AC23	VDDHTTX_3	VDDC_1	K12
AB22	VDDHTTX_4	VDDC_2	J14
AA21	VDDHTTX_5	VDDC_3	U16
Y20	VDDHTTX_6	VDDC_4	J11
W19	VDDHTTX_7	VDDC_5	K15
V18	VDDHTTX_8	VDDC_6	M12
U17	VDDHTTX_9	VDDC_7	L14
T17	VDDHTTX_10	VDDC_8	L11
R17	VDDHTTX_11	VDDC_9	M13
P17	VDDHTTX_12	VDDC_10	M15
M17	VDDHTTX_13	VDDC_11	N12
		VDDC_12	N14
J10	VDDA18PCIE_1	VDDC_13	P11
P10	VDDA18PCIE_2	VDDC_14	P13
K10	VDDA18PCIE_3	VDDC_15	P14
M10	VDDA18PCIE_4	VDDC_16	R12
L10	VDDA18PCIE_5	VDDC_17	R15
W9	VDDA18PCIE_6	VDDC_18	T11
H9	VDDA18PCIE_7	VDDC_19	T15
T10	VDDA18PCIE_8	VDDC_20	U12
R10	VDDA18PCIE_9	VDDC_21	T14
Y9	VDDA18PCIE_10	VDDC_22	J16
AA9	VDDA18PCIE_11		
AB9	VDDA18PCIE_12	VDD_MEM1	AE10
AD9	VDDA18PCIE_13	VDD_MEM2	AA11
AE9	VDDA18PCIE_14	VDD_MEM3	Y11
U10	VDDA18PCIE_15	VDD_MEM4	AD10
		VDD_MEM5	AB10
F9	VDD18_1	VDD_MEM6	AC10
G9	VDD18_2		
AE11	VDD18_MEM1	VDD33_1	H11
AD11	VDD18_MEM2	VDD33_2	H12

2.5A
+1.1V_RUN
C847 0.1u/10V
C871 0.1u/10V
C873 1u/10V/0603
C881 1u/10V/0603
C877 4.7u/6.3V/0603

12A
+1.1V_RUN
C857 0.1u/10V
C851 0.1u/10V
C840 0.1u/10V
C856 0.1u/10V
C858 0.1u/10V
C848 0.1u/10V
C842 0.1u/10V
C872 10u/6.3V/0603
C869 10u/6.3V/0603

100mA
+1.5V_RUN
C837 0.1u/10V
C831 0.1u/10V
C823 1u/10V/0603
C832 1u/10V/0603
C804 10u/6.3V/0603
C126 10u/6.3V/0603

60mA
+3.3V_RUN
C862 0.1u/10V
C870 0.1u/10V

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Title	NB - PWR	
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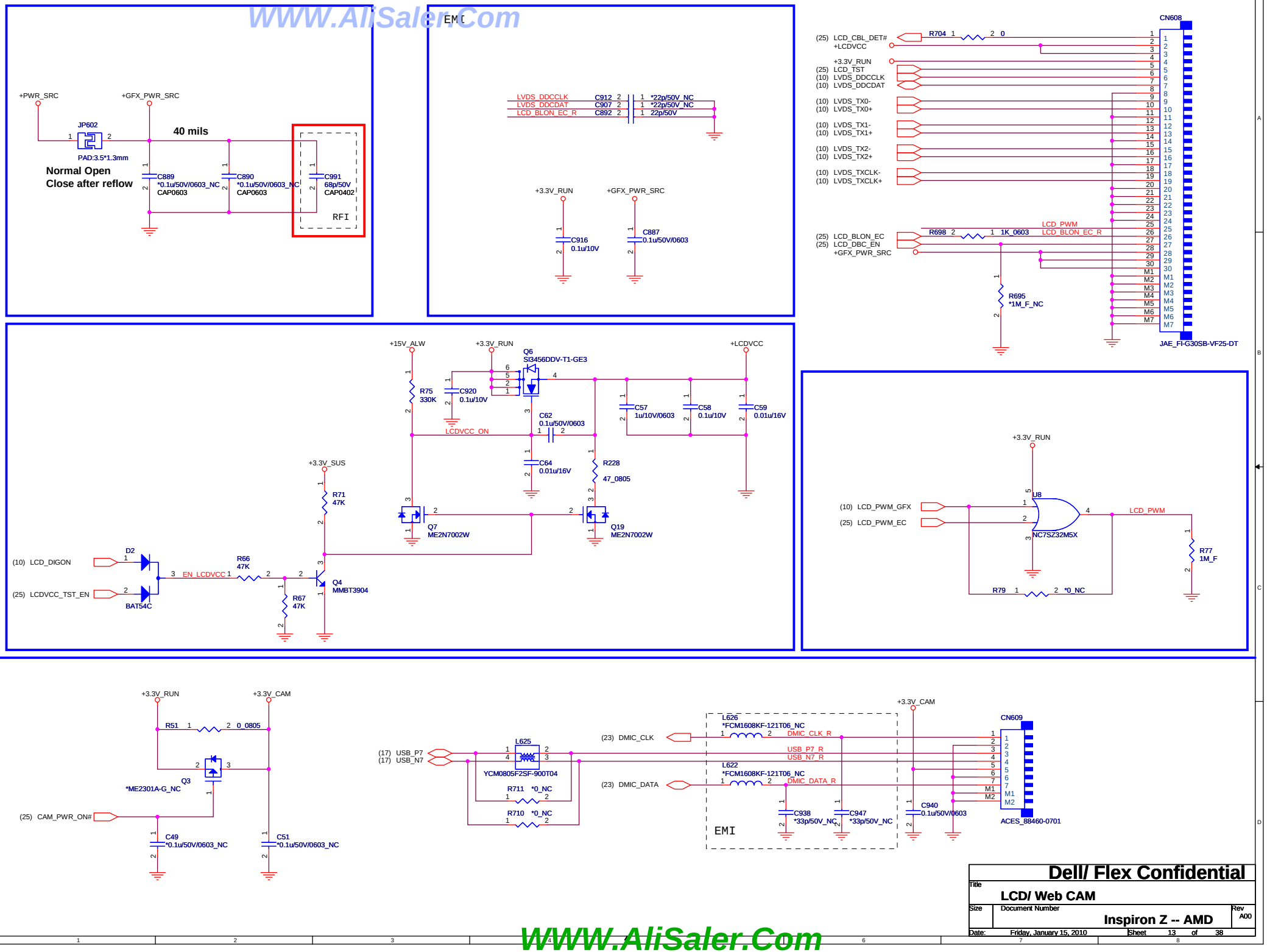

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Title	LCD/ Web CAM	
Size	Document Number: Inspiron Z -- AMD	Rev: A00
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Reserve For EMI

(9) HDMI_CLK_P
(9) HDMI_CLK_N
L11 *YCM0805F2SF-900T04_NC
HDMI_CLK_P_R
HDMI_CLK_N_R
R85 0
R87 0

(9) HDMI_TX0_P
(9) HDMI_TX0_N
L10 *YCM0805F2SF-900T04_NC
HDMI_TX0_P_R
HDMI_TX0_N_R
R81 0
R83 0

(9) HDMI_TX1_P
(9) HDMI_TX1_N
L12 *YCM0805F2SF-900T04_NC
HDMI_TX1_P_R
HDMI_TX1_N_R
R89 0
R105 0

(9) HDMI_TX2_P
(9) HDMI_TX2_N
L13 *YCM0805F2SF-900T04_NC
HDMI_TX2_P_R
HDMI_TX2_N_R
R108 0
R111 0

HDMI CONNECTOR

+5V_RUN
D16 RB500V-40
D17 RB500V-40
R78 4.7K
R76 4.7K
T613 PAD
T612 PAD
(10) HDMI_SCL
(10) HDMI_SDA
F601 1.1A-POLYSW
1.1A / 5V
L9 BLM18PG181SN1D
HDMI_PWR
CN5
HDMI_TX2_P_R
HDMI_TX2_N_R
HDMI_TX1_P_R
HDMI_TX1_N_R
HDMI_TX0_P_R
HDMI_TX0_N_R
HDMI_CLK_P_R
HDMI_CLK_N_R
HDMI_CEC
D2+ D2_Shield D2- D1+ D1_Shield D1- D0+ D0_Shield D0- CK+ CK_Shield CK- CE_Remote NC DDC_CLK DDC_DATA GND +5V HP_DET
ACON_2HE1503-001111
C61 180p/50V
C63 0.1u/10V
EMI
+3.3V_RUN
Q5 MMBT3904
R69 200K_F
(10) HDMI_DET
R72 10K
R70 *330K_NC
HDMI_SCL
HDMI_SDA
C901 *180p/50V_NC
C897 *180p/50V_NC
EMI

Reserve For EMI

(9) DP_LANE3_N
(9) DP_LANE3_P
L17 *YCM0805F2SF-900T04_NC
DP_LANE3_N_R
DP_LANE3_P_R
R145 0
R139 0

(9) DP_LANE2_N
(9) DP_LANE2_P
L14 *YCM0805F2SF-900T04_NC
DP_LANE2_N_R
DP_LANE2_P_R
R119 0
R118 0

(9) DP_LANE1_N
(9) DP_LANE1_P
L16 *YCM0805F2SF-900T04_NC
DP_LANE1_N_R
DP_LANE1_P_R
R138 0
R137 0

(9) DP_LANE0_N
(9) DP_LANE0_P
L18 *YCM0805F2SF-900T04_NC
DP_LANE0_N_R
DP_LANE0_P_R
R147 0
R146 0

Mini DISPLAY PORT CONNECTOR

+3.3V_RUN
Q15 MMBT3904
(10) DP_HPD_SINK
R150 200K_F
R153 10K
R151 *330K_NC
L19 BLM18PG181SN1D
C97 220p/50V
EMI
DP_HPD_SINK_R

1.1A / 5V
+3.3V_RUN
F6 1.1A-POLYSW
+3.3V_DP_PWR
C90 0.1u/10V

CN6 FOXCONN_3V112M3-RH3JD7-7H
GND5 LANE2N LANE2P GND3 LANE1N LANE1P GND1 LANE0N LANE0P GND0
PWR AUXN AUXP GND4 LANE3N LANE3P GND2 CFG2 CFG1 HPD
DP_LANE2_N_R
DP_LANE2_P_R
DP_LANE1_N_R
DP_LANE1_P_R
DP_LANE0_N_R
DP_LANE0_P_R
AUX_SINK_N_R
AUX_SINK_P_R
DP_LANE3_N_R
DP_LANE3_P_R
R689 4.7M_F
DP_CAD_SINK
DP_HPD_SINK_R
R148 1M_F

+15V_ALW
R152 100K
R149 100K
DP_CAD_SINK#
DP_CAD_SINK
Q11 ME2N7002W
Q9 ME2N7002W
(10) AUX_SINK_N
(10) AUX_SINK_P
Q14 ME2N7002W
Q13 ME2N7002W
Q12 ME2N7002W
Q10 ME2N7002W
DP_DDC_EN
R126 0
R127 0
L15 *DLW21SN900SQ2_NC
C89 0.1u/10V
C88 0.1u/10V
AUX_SINK_N_R
AUX_SINK_P_R
R692 100K
R693 100K
+3.3V_DP_PWR

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Title	HDMI/ mini DP	
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PCI-E Reset

+3.3V_SUS

U5B 74LVC08APW: SB_PCIE_RST#0 (4), A_RST# (5) → MPCIE_RST#0 (22) (6)

+3.3V_SUS

U5C 74LVC08APW: SB_PCIE_RST#1 (9), (10) → MPCIE_RST#1 (22) (8)

+3.3V_SUS

U5D 74LVC08APW: (12), (13) → LAN_RST# (21) (11)

SB_PCIE_RST#2 (16)

+3.3V_RUN — R223 1 2 *10K_NC WLAN_CLKREQ#

+3.3V_LAN — R222 1 2 *10K_NC LAN_CLKREQ#

RFI

C993 1 2 *33p/50V_NC CLK_PORT80

EMI

C72 1 2 *10p/50V_NC CLK_LPC

C77 1 2 *10p/50V_NC CLK_LAN_25M

C27 1 2 150p/50V A_RST#

C46 1 2 150p/50V PE_RESET#

XTALIN_RTC — R39 1 2 20M — Y2 32.768KHz_12.5pF — XTALOUT_RTC

C48 22p/50V

C47 22p/50V

PAD T6 — PE_RESET# — R46 33 — SB_PE_RESET# R — P1

(10,22,25) A_RST# — R35 33 — A_RST# R — L1

U6A — SB820M — Part 1 of 5

PCI EXPRESS INTERFACES

(9) PCIE_ALINK_RX0_P	C80 0.1u/10V	PCIE_ALINK_RX0_P_C	AD26	A_TX0P
(9) PCIE_ALINK_RX0_N	C81 0.1u/10V	PCIE_ALINK_RX0_N_C	AD27	A_TX0N
(9) PCIE_ALINK_RX1_P	C74 0.1u/10V	PCIE_ALINK_RX1_P_C	AC28	A_TX1P
(9) PCIE_ALINK_RX1_N	C73 0.1u/10V	PCIE_ALINK_RX1_N_C	AC29	A_TX1N
(9) PCIE_ALINK_RX2_P	C84 0.1u/10V	PCIE_ALINK_RX2_P_C	AB29	A_TX2P
(9) PCIE_ALINK_RX2_N	C85 0.1u/10V	PCIE_ALINK_RX2_N_C	AB28	A_TX2N
(9) PCIE_ALINK_RX3_P	C82 0.1u/10V	PCIE_ALINK_RX3_P_C	AB26	A_TX3P
(9) PCIE_ALINK_RX3_N	C83 0.1u/10V	PCIE_ALINK_RX3_N_C	AB27	A_TX3N
(9) PCIE_ALINK_TX0_P			AE24	A_RX0P
(9) PCIE_ALINK_TX0_N			AE23	A_RX0N
(9) PCIE_ALINK_TX1_P			AD25	A_RX1P
(9) PCIE_ALINK_TX1_N			AD24	A_RX1N
(9) PCIE_ALINK_TX2_P			AC24	A_RX2P
(9) PCIE_ALINK_TX2_N			AC25	A_RX2N
(9) PCIE_ALINK_TX3_P			AB25	A_RX3P
(9) PCIE_ALINK_TX3_N			AB24	A_RX3N

R699 590_F — R700 2K_F — PCIE_CALRP — PCIE_CALRN — AD29 PCIE_CALRP — AD28 PCIE_CALRN

+SB_VDDAN11_PCIE

AA28	GPP_TX0P		
AA29	GPP_TX0N		
Y29	GPP_TX1P		
Y28	GPP_TX1N		
Y26	GPP_TX2P		
Y27	GPP_TX2N		
W28	GPP_TX3P		
W29	GPP_TX3N		
AA22	GPP_RX0P		
Y21	GPP_RX0N		
AA25	GPP_RX1P		
AA24	GPP_RX1N		
W23	GPP_RX2P		
V24	GPP_RX2N		
W24	GPP_RX3P		
W25	GPP_RX3N		

CLOCK GENERATOR

(10) CLK_NB_ALINKP	R113 0	CLK_NB_ALINKP_R	M23	PCIE_RCLKP/NB_LNK_CLKP
(10) CLK_NB_ALINKN	R112 0	CLK_NB_ALINKN_R	P23	PCIE_RCLKN/NB_LNK_CLKN
(10) CLK_NB_REFCLKP	R100 0	CLK_NB_REFCLKP_R	U29	NB_DISP_CLKP
(10) CLK_NB_REFCLKN	R99 0	CLK_NB_REFCLKN_R	U28	NB_DISP_CLKN
(10) CLK_NB_HTCLKP	R114 0	CLK_NB_HTCLKP_R	T26	NB_HT_CLKP
(10) CLK_NB_HTCLKN	R115 0	CLK_NB_HTCLKN_R	T27	NB_HT_CLKN
(4) CLK_CPUCLKP	R696 0	CLK_CPUCLKP_R	V21	CPU_HT_CLKP
(4) CLK_CPUCLKN	R697 0	CLK_CPUCLKN_R	T21	CPU_HT_CLKN
			V23	SLT_GFX_CLKP
			T23	SLT_GFX_CLKN
			L29	GPP_CLK0P
			L28	GPP_CLK0N
			N29	GPP_CLK1P
			N28	GPP_CLK1N
			M29	GPP_CLK2P
			M28	GPP_CLK2N
			T25	GPP_CLK3P
			V25	GPP_CLK3N
WWAN (22) CLK_PCIE_WWANP	R104 0	CLK_PCIE_WWANP_R	L24	GPP_CLK4P
(22) CLK_PCIE_WWANN	R103 0	CLK_PCIE_WWANN_R	L23	GPP_CLK4N
WLAN (22) CLK_PCIE_WLANP	R101 0	CLK_PCIE_WLANP_R	P25	GPP_CLK5P
(22) CLK_PCIE_WLANN	R102 0	CLK_PCIE_WLANN_R	M25	GPP_CLK5N
LAN/ Media Card (21) CLK_PCIE_LANP	R116 0	CLK_PCIE_LANP_R	P29	GPP_CLK6P
(21) CLK_PCIE_LANN	R117 0	CLK_PCIE_LANN_R	P28	GPP_CLK6N
			N26	GPP_CLK7P
			N27	GPP_CLK7N
			T29	GPP_CLK8P
			T28	GPP_CLK8N
(21) CLK_LAN_25M	R90 *33_NC	CLK_LAN_25M_R	L25	14M_25M_48M_OSC

C69 12p/50V — Y4 25MHz_12pF — R106 1M_F — C70 12p/50V

XTALIN_25M — L26 25M_X1

XTALOUT_25M — L27 25M_X2

ATI_SB820M

PCI CLKS

PCICLK0	W2	T8 PAD	
PCICLK1/GPIO36	W1	PCICLK1 (16)	
PCICLK2/GPIO37	W3	PCICLK2 (16)	
PCICLK3/GPIO38	W4	PCICLK3 (16)	
PCICLK4/14M_OSC/GPIO39	Y1	PCICLK4 (16)	
PCIRST#	V2	+3.3V_RUN	

SB_PCIE_RST#0 — R734 20K_F — AA1

SB_PCIE_RST#1 — R735 20K_F — AA4

PCI INTERFACE

AD0/GPIO0	AA3		
AD1/GPIO1	AB1		
AD2/GPIO2	AA5		
AD3/GPIO3	AB2		
AD4/GPIO4	AB6		
AD5/GPIO5	AB5		
AD6/GPIO6	AA6		
AD7/GPIO7	AC2		
AD8/GPIO8	AC3		
AD9/GPIO9	AC4		
AD10/GPIO10	AC1		
AD11/GPIO11	AD1		
AD12/GPIO12	AD2		
AD13/GPIO13	AC6		
AD14/GPIO14	AE2		
AD15/GPIO15	AE1		
AD16/GPIO16	AF8		
AD17/GPIO17	AE3		
AD18/GPIO18	AF1		
AD19/GPIO19	AG1		
AD20/GPIO20	AF2		
AD21/GPIO21	AE9	T12 PAD	
AD22/GPIO22	AD9	T617PAD	
AD23/GPIO23	AC11	T616PAD	
AD24/GPIO24	AF6	T10 PAD	
AD25/GPIO25	AF4	T11 PAD	
AD26/GPIO26	AF3		
AD27/GPIO27	AH2		
AD28/GPIO28	AG2		
AD29/GPIO29	AH3		
AD30/GPIO30	AA8		
AD31/GPIO31	AD5		
CBE0#	AD8		
CBE1#	AA10		
CBE2#	AE8		
CBE3#	AB9		
FRAME#	AJ3		
DEVSEL#	AE7		
IRDY#	AC5		
TRDY#	AF5		
PAR	AE6		
STOP#	AE4		
PERR#	AE11		
SERR#	AH5		
REQ0#	AH4	T615PAD	
REQ1#/GPIO40	AC12	WLAN_CLKREQ# (22)	
REQ2#/CLK_REQ8#/GPIO41	AD12		
REQ3#/CLK_REQ5#/GPIO42	AJ5		
GNT0#	AH6	T13 PAD	
GNT1#/GPO44	AB12	T614PAD	
GNT2#/GPO45	AB11	CLKRUN# (25)	
GNT3#/CLK_REQ7#/GPIO46	AD7		
CLKRUN#	AJ6		
LOCK#	AG6		
INTE#/GPIO32	AG4		
INTF#/GPIO33	AJ4		
INTG#/GPIO34			
INTH#/GPIO35			

LPC

LPCCLK0	H24	R94 22 / R219 22	CLK_LPC1 (16), CLK_LPC_R (16), CLK_LPC (25), CLK_PORT80 (22)
LPCCLK1	H25		
LAD0	J27		LPC_AD0 (22,25)
LAD1	J26		LPC_AD1 (22,25)
LAD2	H29		LPC_AD2 (22,25)
LAD3	H28		LPC_AD3 (22,25)
LFRAME#	G28		LPC_FRAME# (22,25)
LDRQ0#	J25		LPC_DRQ#0 (22)
LDRQ1#/CLK_REQ6#/GPIO49	AA18		LAN_CLKREQ# (21)
SERIRQ/GPIO48	AB19		IRQ_SERIRQ (22,25)

CPU

ALLOW_LDTSTP/DMA_ACTIVE#	G21	EN_LDT_STP (10)
PROCHOT#	H21	CPU_PROCHOT# (4,29)
LDT_PG	K19	CPU_PWRGD (4,29)
LDT_STP#	G22	LDT_STP# (4,10)
LDT_RST#	J24	LDT_RST# (4)

RTC

32K_X1	C1	XTALIN_RTC	
32K_X2	C2	XTALOUT_RTC	
RTCCLK	D2	SB_RTCCLK	T622PAD
INTRUDER_ALERT#	B2	INTRUDER_ALERT#	T623PAD
VDDBT_RTC_G	B1		

+RTC_CELL — C952 0.1u/16V

Title	SB - PCIE/ CPU/ ALink
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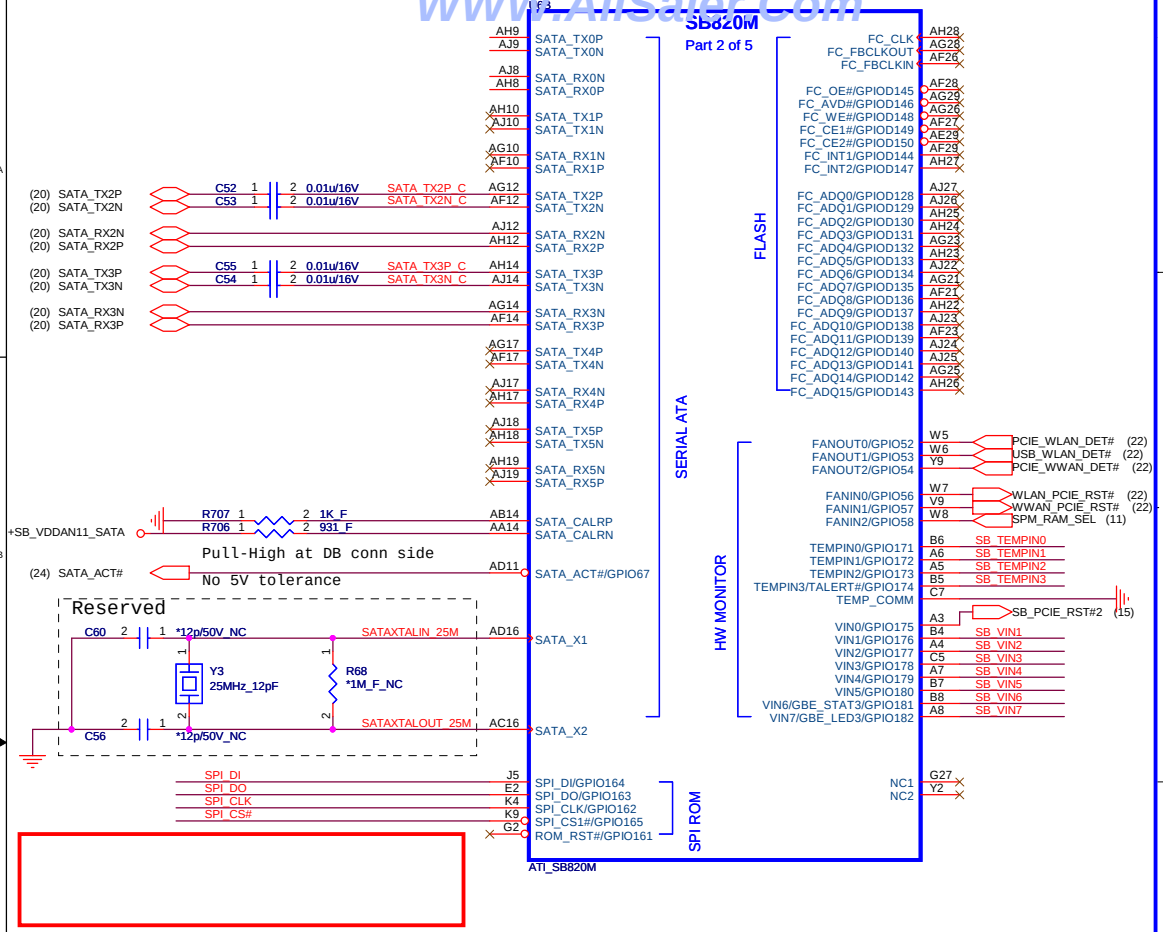


SB820M H/W STRAPS

Type I are captured on RSMRST#
Type II are captured on PWRGD.

ECEnableStrap (LPCCLK0)

Embedded Controller (EC):
- L: Disable
- H: Enable

(15) CLK_LPC_R — R93 10K

CLKGEN (LPCCLK1)

Define Clock Generator:
- L: External clock mode
- H: Internal clock mode

(15) CLK_LPC1 — R91 10K — +3.3V_ALW_SB

ROMTYPE_1&0 (EC_PWM3& EC_PWM2)

ROMTYPE_1 EC_PWM3	ROMTYPE_0 EC_PWM2	ROM type
0	0	FWH
0	1	LPC& PMC ROM
1	0	SPI
1	1	Reserve

Pull-High --> 10Kohm, Pull-Low --> 2.2Kohm

(17) EC_PWM3 — RJ2 10KJA_0402 — +3.3V_ALW_SB
(17) EC_PWM2 — RJ3 2.2KJB_0402 — +3.3V_ALW_SB

BIF_GEN2_COMPLIANCE_Strap (PCI CLK1)

Set PCIe to Gen II mode:
SB820M: Omly provision for Pull down is required, not install by default.

(15) PCICLK1 — R40 *10K_NC

BootFailTmrEn (PCI CLK2)

Watchdog function:
- L: Disable BootFailtmr function
- H: Enable BootFailtmr function

(15) PCICLK2 — R42 10K

DefaulStrapMode (PCI CLK3)

Default Debug Straps:
- L: Disable Debug Straps
- H: Select external Debug Straps

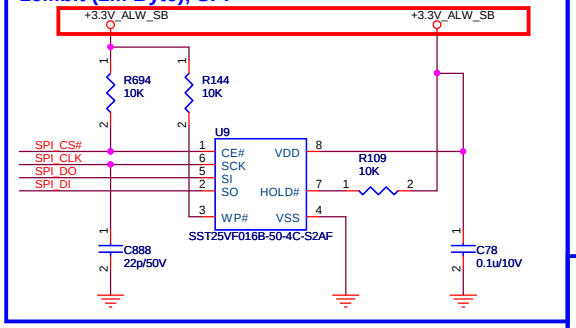
(15) PCICLK3 — R41 10K

CPUClkSel (PCI CLK4)

CPU/ NB HT Clock Selection:
- L: Reserved
- H: Required setting for integrated clock mode

(15) PCICLK4 — R30 10K — +3.3V_RUN

16Mbit (2M Byte), SPI



CoreSpeedMode (AZ_SDOUT)

Slow down core clock for low power mobile platform:
- L: Performance Mode
- H: Low Power Mode

(17) HDA_SDATA_OUT_R — R47 10K

Type I : LPCCLK0, EC_PWM3& EC_PWM2
Type II : the rest of strapping

SB820M Debug Straps

PciPllByp (PCI AD27)

Bypass PCI PLL
(Used in funcitonal test at tester):
- L: Bypass internal PLL clock
- H: Use internal PLL generated PLL CLK (Internal Pull-Up of 15Kohm)

ILAAutorunEnB (PCI AD26)

ILA Auto run Enable
- L: ILA Auto run enable
- H: ILA Auto run disable (Internal Pull-Up of 15Kohm)

FCClkByP (PCI AD25)

Bypass FC CLK
- L: Bypass internal FC CLK (Used in funcitonal test at tester)
- H: Use internal FC CLK

I2CROMEn (PCI AD24)

I2C ROM Enable. Load the setting for A-Link Express/ PLL/ music control from I2C ROM
- L: Getting the value from I2C EPROM
- H: Disable I2C ROM (Internal Pull-Up of 15Kohm)

PCI_ROM_BOOT (PCI AD23)

Booting from PCI memory
- L: Route ROM fetch tp PCI bus on the very first boot. Use ROMTYPE to determine the ROM type on the subsequent boots.
- H: Use ROMTYPE straps to determine the ROM type (Internal Pull-Up of 15Kohm)

PCIe EEPROM Data/ Clock (PCI_REQ3/ PCI_GNT3)

PCIe EEPROM Data/ Clock

Connected to PCIe EEPROM SDA/ SCL pin or provided test point access for lad use.

R61 R60 R58 R59 — 10K — SB_TEMPIN0 SB_TEMPIN1 SB_TEMPIN2 SB_TEMPIN3
+3.3V_SUS
R55 — 10K — SB_PCIE_RST#2
R56 R57 R54 R63 R62 R64 R65 — 10K — SB_VIN1 SB_VIN2 SB_VIN3 SB_VIN4 SB_VIN5 SB_VIN6 SB_VIN7

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SB820M Debug Straps

+3.3V_ALW_SB

R53 1 2 *2.2K_NC SB_TEST0
R52 1 2 *2.2K_NC SB_TEST1
R716 1 2 *2.2K_NC SB_TEST2

+3.3V_SUS

(25) SB_PWRGD_EC
SLP_S3# 2
U5A 74LVC08APW
1 3 SB_PWRGD
14 7

RUN PWR
DUAL PWR

EMI

C45 1 2 *10p/50V_NC HDA_BITCLK

R38 1 2 *10K_NC HDA_BITCLK
R36 1 2 *10K_NC HDA_SDATA_IN

+3.3V_ALW_SB

R32 1 2 10K GBE_COL
R43 1 2 10K GBE_PHY_INTR
R44 1 2 10K GBE_CRS
R50 1 2 10K GBE_MDIO
R31 1 2 10K GBE_RXERR
R714 1 2 10K SB_SMB_SCL1
R715 1 2 10K SB_SMB_SDA1
R96 1 2 10K SB_SMB_SCL2
R97 1 2 10K SB_SMB_SDA2
R95 1 2 10K SB_SMB_SCL3
R92 1 2 10K SB_SMB_SDA3
R37 1 2 10K SB_PWRBTN#

+3.3V_RUN

R74 1 2 2.2K SB_SMB_SCL0
R73 1 2 2.2K SB_SMB_SDA0
R713 1 2 4.7K SUS_STAT#
R49 1 2 *10K_NC WWAN_CLKREQ#

U6D

(25) SB_PME# PAD T7 1 J2 PCI_PME#/GEVENT4#
K1 RI#/GEVENT22#
D3 SPI_CS3#/GBE_STAT1/GEVENT21#
(23,25,27) SLP_S3# F1 SLP_S3#
(25) SLP_S5# H1 SLP_S5#
(25) SB_PWRBTN# F2 PWR_BTN#
SB_PWRGD H5 PWR_GOOD
(10) SUS_STAT# G6 SUS_STAT#
SB_TEST0 B3 TEST0
SB_TEST1 C4 TEST1/TMS
SB_TEST2 F6 TEST2
(25) SB_A20GATE AD21 GA20IN/GEVENT0#
(25) SB_KBRST# AE21 KBRST#/GEVENT1#
(25) SB_EXT_SCI# K2 LPC_PME#/GEVENT3#
(25) SB_EXT_SMI# J29 LPC_SMI#/GEVENT23#
H2 GEVENT5#
PAD T9 1 J1 SYS_RESET#/GEVENT19#
(21,22) PCIE_WAKE# H6 WAKE#/GEVENT8#
F3 IR_RX1/GEVENT20#
PAD T626 1 J6 THRMTRIP#/SMBALERT#/GEVENT2#
(10) NB_PWRGD AC19 NB_PWRGD
(25) SB_RSMRST# G1 RSMRST#
(22) WWAN_CLKREQ# AD19 CLK_REQ4#/SATA_IS0#/GPIO64
AA16 CLK_REQ3#/SATA_IS1#/GPIO63
AB21 SMARTVOLT1/SATA_IS2#/GPIO50
AC18 CLK_REQ0#/SATA_IS3#/GPIO60
(22) USB_WWAN_DET# AF20 SATA_IS4#/FANOUT3/GPIO55
(24) BT_DET# AE19 SATA_IS5#/FANIN3/GPIO59
(23) SPKR AF19 SPKR/GPIO66
(7,8,22) SB_SMB_SCL0 AD22 SCL0/GPIO43
(7,8,22) SB_SMB_SDA0 AE22 SDA0/GPIO47
SB_SMB_SCL1 F5 SCL1/GPIO227
SB_SMB_SDA1 F4 SDA1/GPIO228
DUAL PWR
AH21 CLK_REQ2#/FANIN4/GPIO62
AB18 CLK_REQ1#/FANOUT4/GPIO61
PAD T625 1 E1 IR_LED#/LLB#/GPIO184
AJ21 SMARTVOLT2/SHUTDOWN#/GPIO51
(11) SPM_RESET# H4 DDR3_RST#/GEVENT7#
(21) LAN_ISOLATE# D5 GBE_LED0/GPIO183
D7 GBE_LED1/GEVENT9#
G5 GBE_LED2/GEVENT10#
K3 GBE_STAT0/GEVENT11#
AA20 CLK_REQG#/GPIO65/OSCIN
(25) SIO_EXT_WAKE# H3 BLINK/USB_OC7#/GEVENT18#
PAD T624 1 D1 USB_OC6#/IR_TX1/GEVENT6#
PAD T623 1 E4 USB_OC5#/IR_TX0/GEVENT17#
PAD T619 1 D4 USB_OC4#/IR_RX0/GEVENT16#
PAD T622 1 E8 USB_OC3#/AC_PRES/TDO/GEVENT15#
PAD T618 1 F7 USB_OC2#/TCK/GEVENT14#
E7 USB_OC1#/TDI/GEVENT13#
(20) USB_OC2_3# F8 USB_OC0#/TRST#/GEVENT12#
(20) USB_OC0#
(23) HDA_BITCLK R48 1 2 33 M3 AZ_BITCLK
(23) HDA_SDATA_OUT R34 1 2 33 N1 AZ_SDOUT
(23) HDA_SDATA_IN L2 AZ_SDIN0/GPIO167
(16) HDA_SDATA_OUT_R M2 AZ_SDIN1/GPIO168
M1 AZ_SDIN2/GPIO169
M4 AZ_SDIN3/GPIO170
(23) HDA_SYNC R33 1 2 33 N2 AZ_SYNC
(23) HDA_RESET# R45 1 2 33 P2 AZ_RST#
GBE_COL T1 GBE_COL
GBE_CRS T4 GBE_CRS
L6 GBE_MDCK
GBE_MDIO L5 GBE_MDIO
T9 GBE_RXCLK
U1 GBE_RXD3
U3 GBE_RXD2
T2 GBE_RXD1
U2 GBE_RXD0
T5 GBE_RXCTL/RXDV
GBE_RXERR V5 GBE_RXERR
P5 GBE_TXCLK
M5 GBE_TXD3
P9 GBE_TXD2
T7 GBE_TXD1
P7 GBE_TXD0
M7 GBE_TXCTL/TXEN
P4 GBE_PHY_PD
M9 GBE_PHY_RST#
GBE_PHY_INTR V7 GBE_PHY_INTR
E23 PS2_DAT/SDA4/GPIO187
E24 PS2_CLK/SCL4/GPIO188
F21 SPI_CS2#/GBE_STAT2/GPIO166
G29 FC_RST#/GPO160
D27 PS2KB_DAT/GPIO189
F28 PS2KB_CLK/GPIO190
F29 PS2M_DAT/GPIO191
E27 PS2M_CLK/GPIO192

SB820M
Part 4 of 5

ACPI / WAKE UP EVENTS
USB 1.1 USB MISC
USB 2.0
GPIO
USB OC
HD AUDIO
GBE LAN
EMBEDDED CTRL

USBCLK/14M_25M_48M_OSC A10 USB_CLK 1 T22 PAD
USB_RCOMP G19 USB_RCOMP R703 1 2 11.8K_F
USB_FSD1P/GPIO186 J10
USB_FSD1N H11
USB_FSD0P/GPIO185 H9
USB_FSD0N J8
USB_HSD13P B12
USB_HSD13N A12
USB_HSD12P F11
USB_HSD12N E11
USB_HSD11P E14
USB_HSD11N E12
USB_HSD10P J12
USB_HSD10N J14
USB_HSD9P A13
USB_HSD9N B13
USB_HSD8P D13
USB_HSD8N C13
USB_HSD7P G12 USB_P7 (13)
USB_HSD7N G14 USB_N7 (13)
USB_HSD6P G16 USB_P6 (24)
USB_HSD6N G18 USB_N6 (24)
USB_HSD5P D16 USB_P5 (22)
USB_HSD5N C16 USB_N5 (22)
USB_HSD4P B14 USB_P4 (22)
USB_HSD4N A14 USB_N4 (22)
USB_HSD3P E18 USB_P3 (20)
USB_HSD3N E16 USB_N3 (20)
USB_HSD2P J16 USB_P2 (20)
USB_HSD2N J18 USB_N2 (20)
USB_HSD1P B17
USB_HSD1N A17
USB_HSD0P A16 USB_P0 (20)
USB_HSD0N B16 USB_N0 (20)
SCL2/GPIO193 D25 SB_SMB_SCL2
SDA2/GPIO194 F23 SB_SMB_SDA2
SCL3_LV/GPIO195 B26 SB_SMB_SCL3
SDA3_LV/GPIO196 E26 SB_SMB_SDA3
DUAL PWR
DUAL PWR
EC_PWM0/EC_TIMER0/GPIO197 F25
EC_PWM1/EC_TIMER1/GPIO198 E22
EC_PWM2/EC_TIMER2/GPIO199 F22
EC_PWM3/EC_TIMER3/GPIO200 E21 EC_PWM2 (16)
EC_PWM3 (16)
KSI_0/GPIO201 G24
KSI_1/GPIO202 G25
KSI_2/GPIO203 E28
KSI_3/GPIO204 E29
KSI_4/GPIO205 D29
KSI_5/GPIO206 D28
KSI_6/GPIO207 C29
KSI_7/GPIO208 C28
KSO_0/GPIO209 B28
KSO_1/GPIO210 A27
KSO_2/GPIO211 B27
KSO_3/GPIO212 D26
KSO_4/GPIO213 A26
KSO_5/GPIO214 C26
KSO_6/GPIO215 A24
KSO_7/GPIO216 B25
KSO_8/GPIO217 A25
KSO_9/GPIO218 D24
KSO_10/GPIO219 B24
KSO_11/GPIO220 C24
KSO_12/GPIO221 B23
KSO_13/GPIO222 A23
KSO_14/GPIO223 D22
KSO_15/GPIO224 C22
KSO_16/GPIO225 A22
KSO_17/GPIO226 B22

ATI_SB820M

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Title: SB - ACPI/ USB/ HDA
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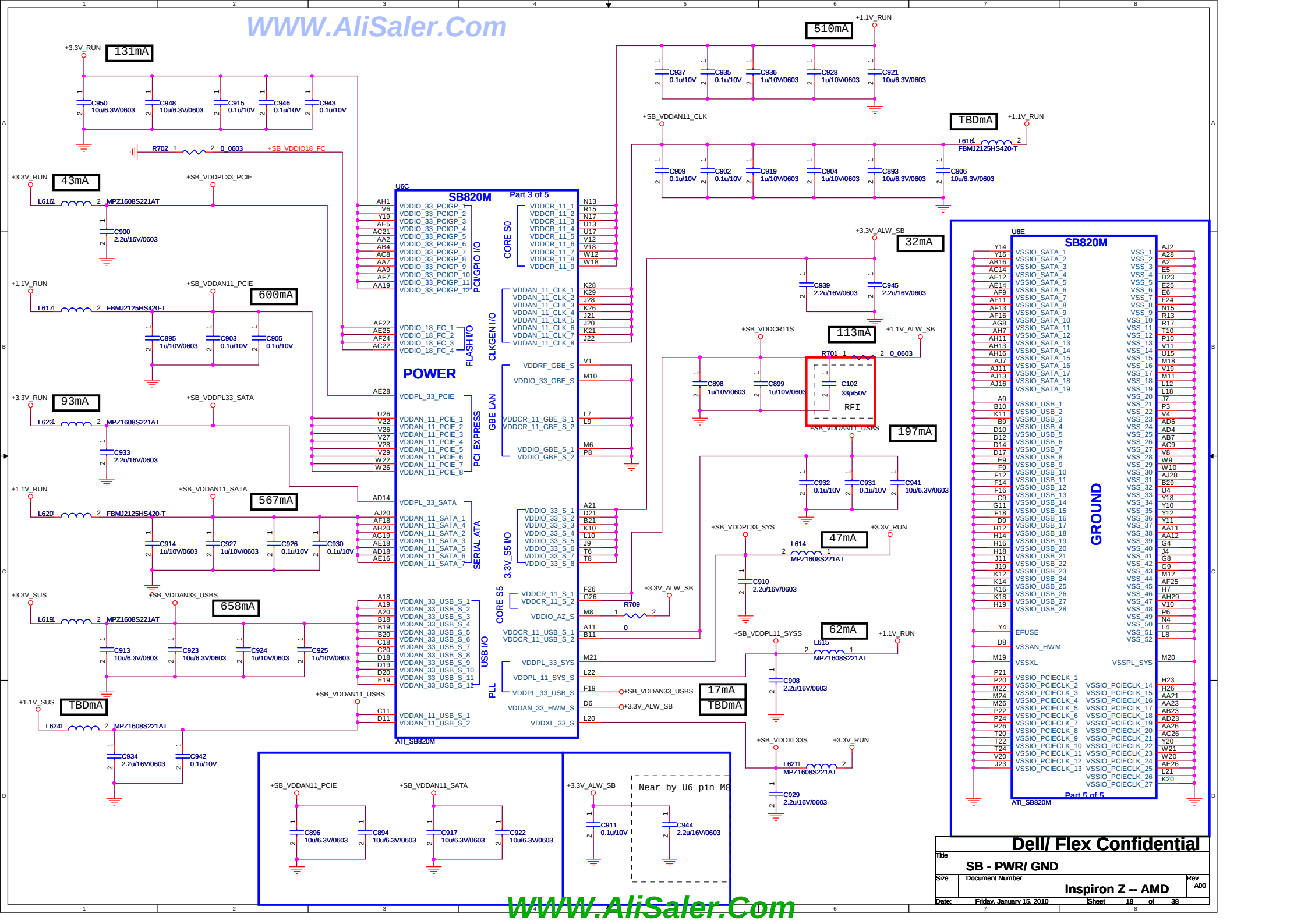
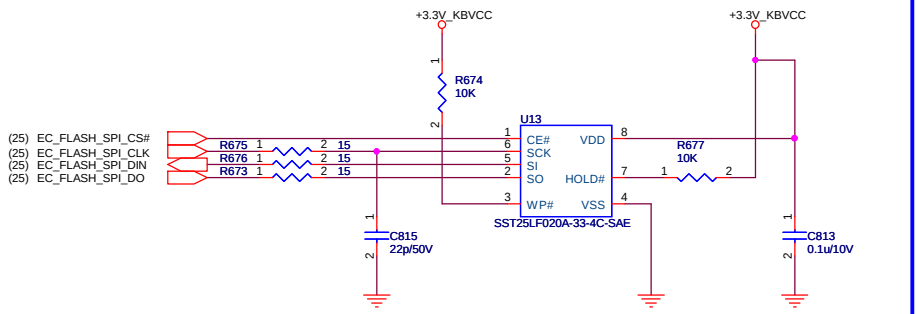
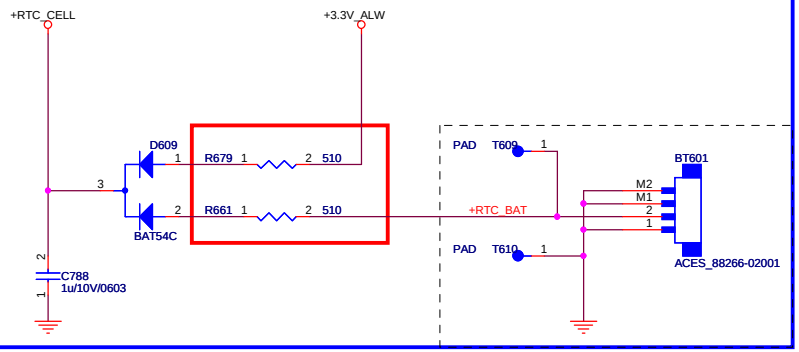


RTC/ SPI

2Mbit (256K Byte), SPI



RTC BATTERY



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Title: RTC/ SPI		
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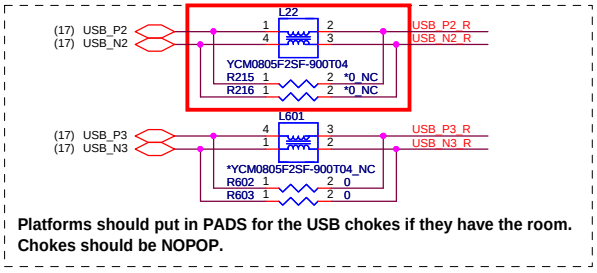
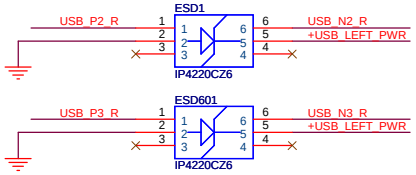
USB Jack x 2



Platforms should put in PADS for the USB chokes if they have the room.
Chokes should be NOPOP.



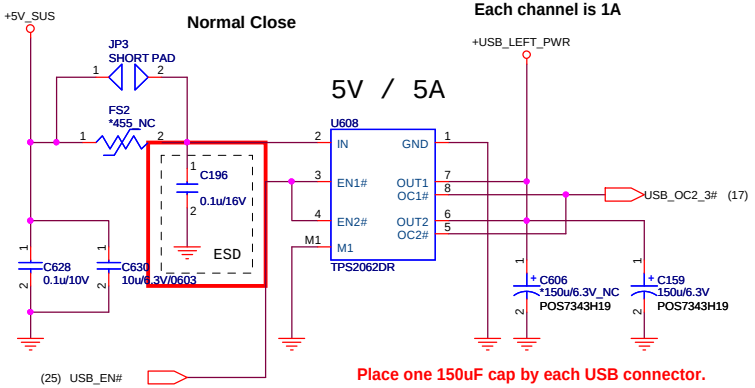
Place ESD diodes as close as USB connector.

USB POWER SW

Normal Close

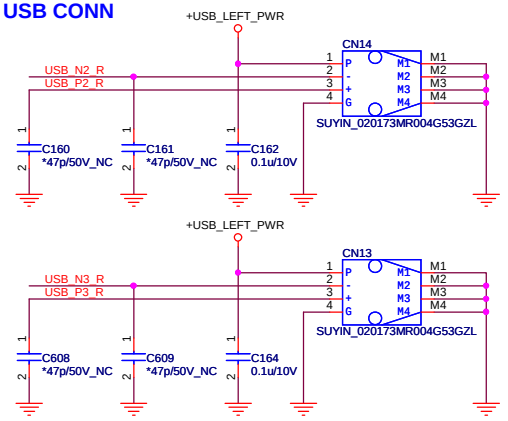
Each channel is 1A

5V / 5A



Place one 150uF cap by each USB connector.

USB CONN

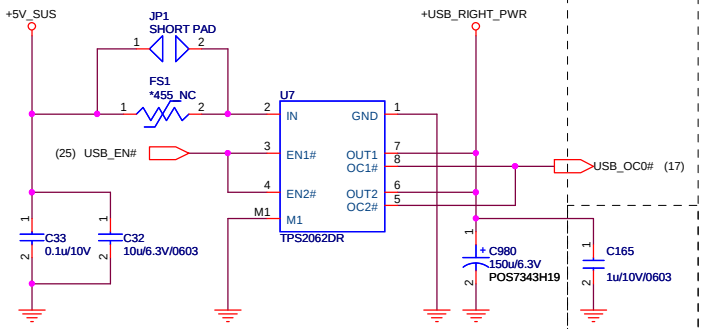


eSATA Connector

USB POWER SW

Normal Close

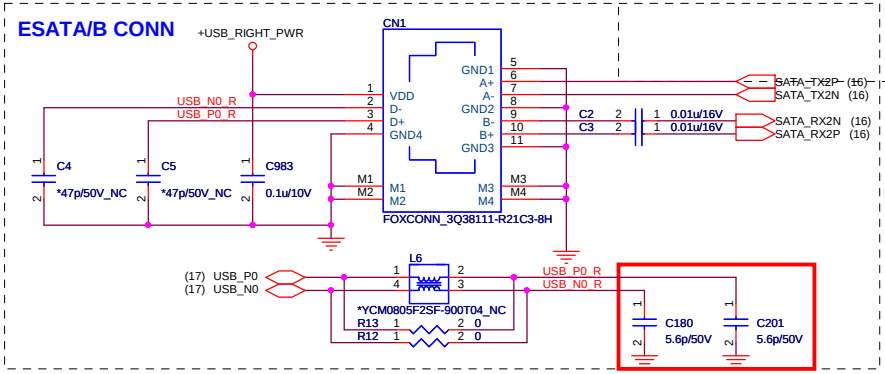
Each channel is 1A



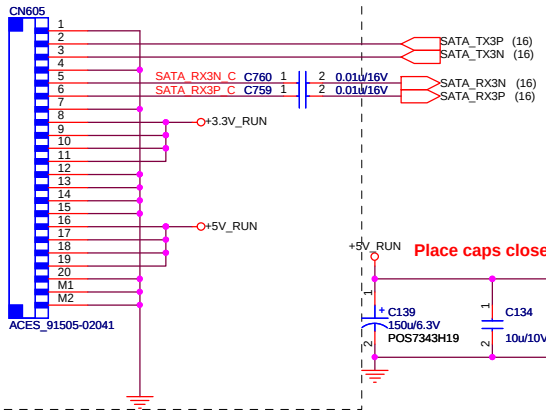
Place one 150uF cap by each USB connector.

ESD

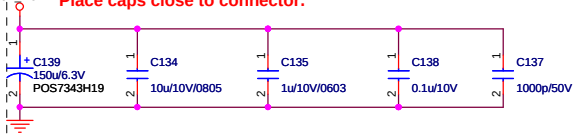
ESATA/B CONN



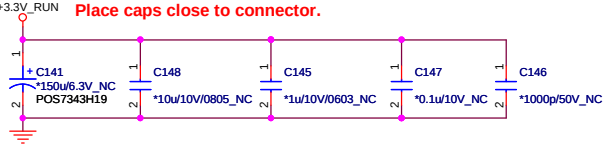
SATA HDD Connector



+5V_RUN Place caps close to connector.



+3.3V_RUN Place caps close to connector.



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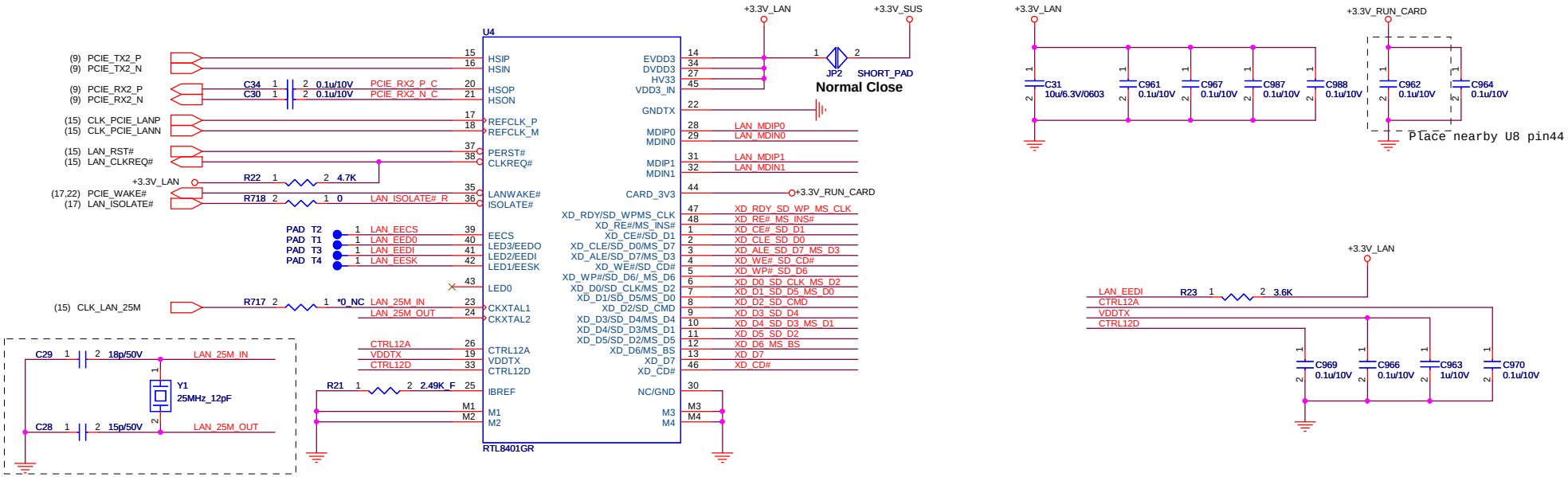
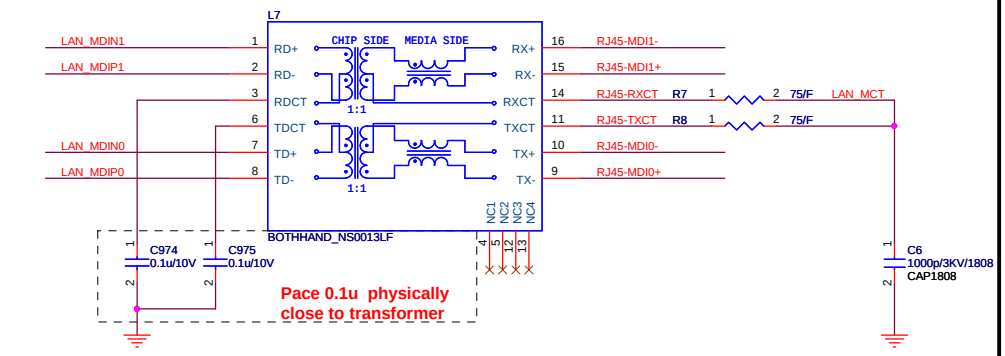
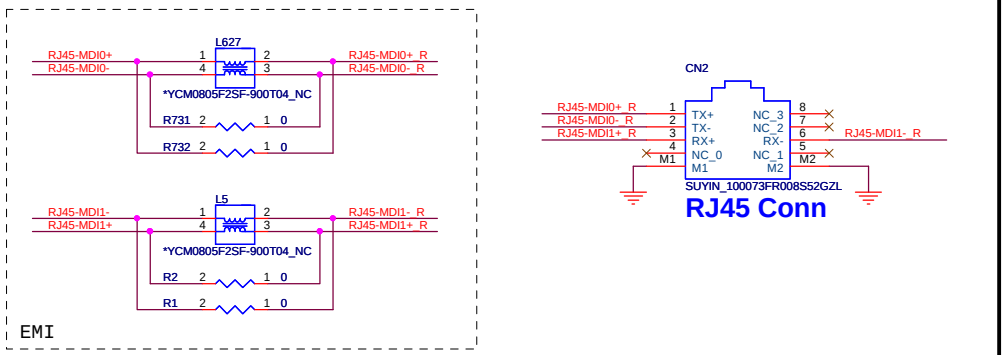
LAN/ Card Reader



TRANSFORMER

Layout Note:
Route MDI+/- pairs with 100 ohm differential trace immpedance.

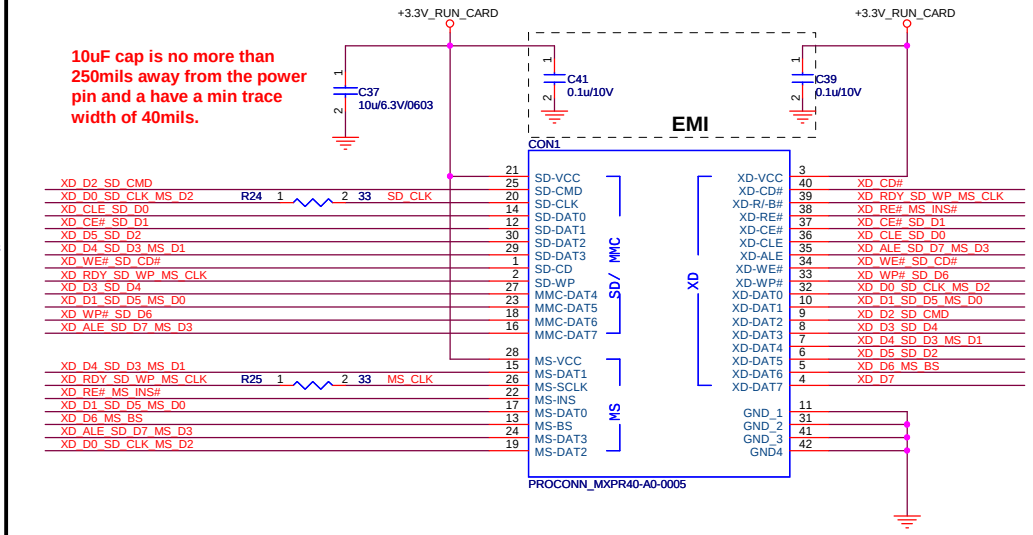


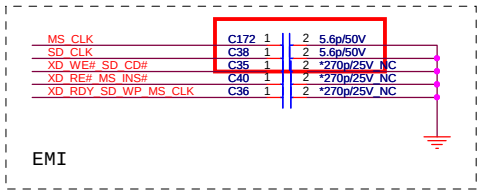


RJ45 Conn

Card Reader Conn

10uF cap is no more than 250mils away from the power pin and a have a min trace width of 40mils.





Title	LAN/ Card Reader -- RL8401
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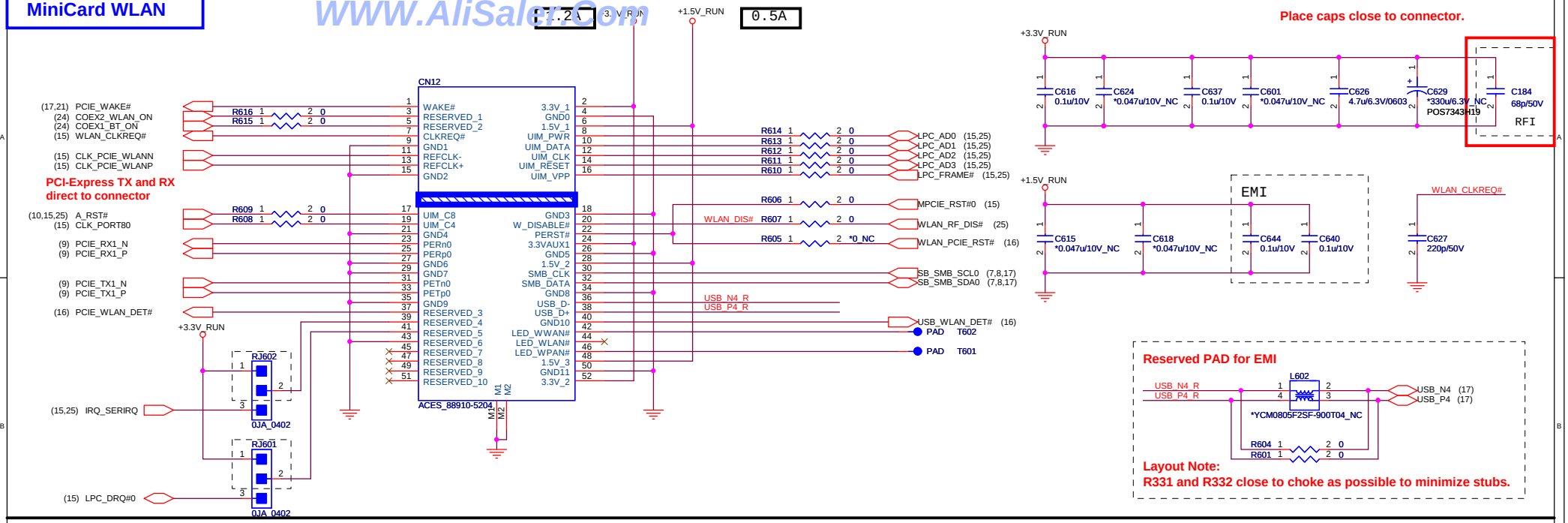
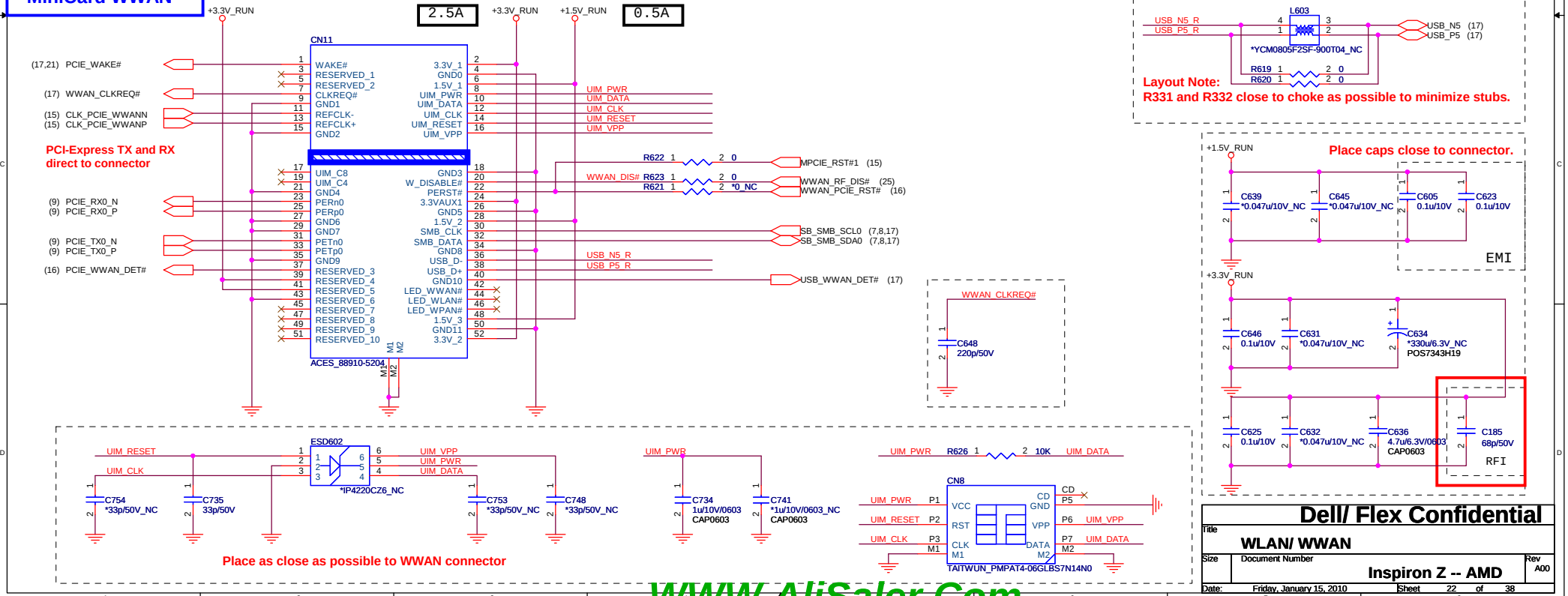
MiniCard WLAN



MiniCard WWAN



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Title	WLAN/ WWAN	
Size	Document Number: Inspiron Z -- AMD	Rev: A00
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AZALIA (HD) CODEC
SPK & HP AMP

U3 92HD79B1A5NLGXTAX

+3.3V_RUN
R719 0_0805
A_DVDD
C26 1u/10V/0603 CAP0603
C24 0.1u/25V/0603
C23 10u/10V/0805

Analog MIC connect please close to CODEC

CN610 ACES_88266-02001

(17) HDA_BITCLK
(17) HDA_SDATA_IN
(17) HDA_SDATA_OUT
(17) HDA_SYNC
(17) HDA_RESET#
R19 33
HDA_BITCLK
HDA_SDI
HDA_RESET#

AUD_MIC_L0 C11 2.2u/16V/0603
AUD_MIC_R0 C10 2.2u/16V/0603
AUD_MIC1_VREFO1

INT_MIC R14 0_0603 C18 1u/10V/0603 CAP0603
R11 2.2K

EMI
C13 *47p/50V_NC
C12 1u/10V/0603

(13) DMIC_CLK
(13) DMIC_DATA
R20 33

C8 2.2u/16V/0603

DVDD_CORE
DVDD_IO
DVDD
HDA_BITCLK
HDA_SDI
HDA_SDO
HDA_SYNC
HDA_RST#
PORTA_L (HP0)
PORTA_R (HP0)
VREFOUT-A
PORTC_L
PORTC_R
VREFOUT-C
DMIC_CLK/GPIO1
DMIC0/GPIO2
DMIC1/GPIO/SPDIFOUT1
SPDIFOUT0
CAP+
CAP-
EAPD
DVSS
AVSS1 AVSS2 AVSS3 PVSS AGND1 AGND2 AGND3 AGND4 AGND5 AGND6 AGND7 AGND8 AGND9 AGND10 AGND11 AGND12

+AUDIO_VDDA
+AUDIO_PVDD
330ohm_1.5A
+5V_RUN
R729 0_0805
R720 0_0805
C979 0.1u/25V/0603
C7 1u/10V/0603
C20 0.1u/25V/0603
C21 1u/10V/0603
C19 10u/10V/0805
330ohm_1.5A
R16 2.49K_F
R15 2.49K_F
SENSE-A
C22 1000p/50V

AVDD1 AVDD2
PVDD1 PVDD2
SENSE_B SENSE_A
Mono_Out
PORTE_L PORTE_R
PORTF_L PORTF_R
PORTD_R+ PORTD_R- PORTD_L+ PORTD_L-
PORTB_L (HP1) PORTB_R (HP1)
CAP2 VREFFILT V- VREG
PCBEEP

BEEP2

Speaker=8ohm/1W
Driver Gain setting is 01111 = 9.18dB

EMI
SPR+_O R205 0_0603
SPR-_O R206 0_0603
SPL+_O R208 0_0603
SPL-_O R207 0_0603
AUD_HP1_L0
AUD_HP1_R0
C140 *47p/50V_NC
C142 *47p/50V_NC
C143 *47p/50V_NC
C144 *47p/50V_NC
CN604 ACES_88266-04001
SPR+ SPR- SPL+ SPL-

C17 4.7u/6.3V/0603
C9 10u/6.3V/0603
C16 10u/6.3V/0603
C15 1u/10V/0603

(17,25,27) SLP_S3#
D1
R18 100K
(25) AMP_MUTE#
BAT54A
R17 100
SHDN#
C976 1u/10V/0603 CAP0603
AMP_MUTE# :
KBC default set HI
(17) HDA_RESET#
D608
*BAS316_NC

JP603
JUMPER2_SHORT
Normal Close
Jumper Trace width >= 80mil

Close to CODEC
+AUDIO_VDDA
C1 *0.1u/25V_0603_NC CAP0603
C25 1u/10V/0603 CAP0603
BEEP2
BEEP1
R9 10K
U1 *74LVC1G86GW_NC
BEEP (25)
SPKR (17)
R217 22K
R218 22K

AUD_MIC1_VREFO1
C14 1u/10V/0603 CAP0603
R3 4.7K
R4 4.7K

L1 BLM18AG121SN1D
AUD_MIC_L0
AUD_MIC_R0
L2 BLM18AG121SN1D
AUD_MIC_L1
AUD_MIC_R1
C984 220p/50V
C985 220p/50V
SENSE-A
R730 39.2K_F
CN3 SINGATRON_2SJ1012-000111
JACK 2 (MIC)

AUD_HP1_L0
AUD_HP1_R0
R5 56_F_0603
R6 56_F_0603
L3 BLM18AG121SN1D
L4 BLM18AG121SN1D
AUD_HP1_L1
AUD_HP1_R1
AUD_HP1_L2
AUD_HP1_R2
C981 0.01u/16V
C982 0.01u/16V
SENSE-A
R733 20K_F
CN4 SINGATRON_2SJ1012-000111
JACK 1 (HP)

EMI Reserved
C986 0.1u/16V
C973 0.1u/16V
C978 0.1u/16V
C972 0.1u/16V
C977 0.1u/16V

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Title	Audio -- ITD_92HD79B1A5NLGXTAX	
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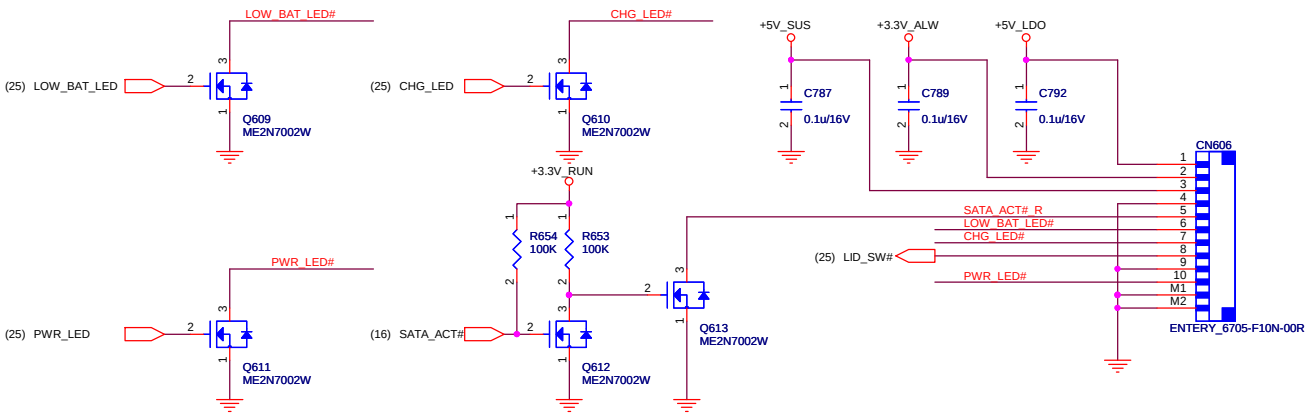
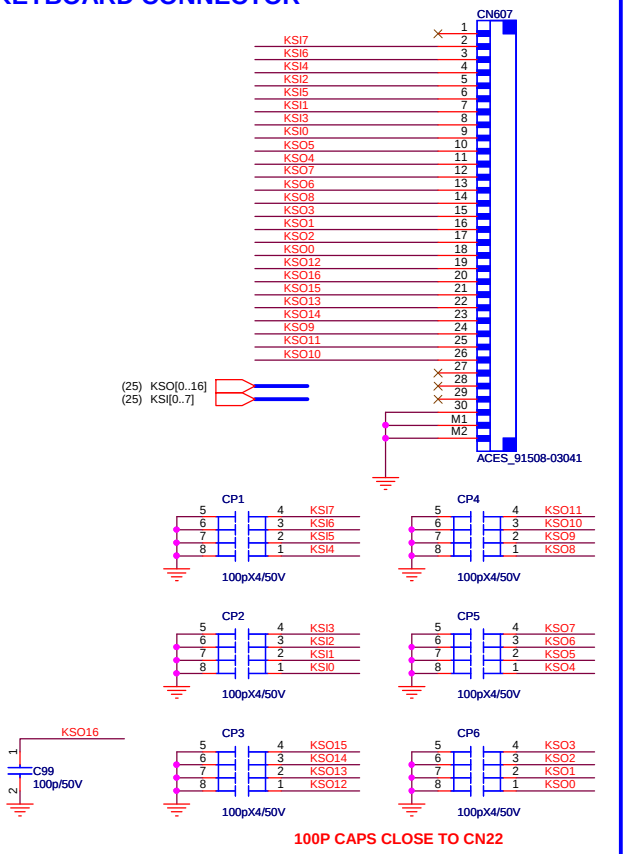
Indicator Board CONNECTOR

Hall Sensor | PWR LED | CHG LED | HDD LED

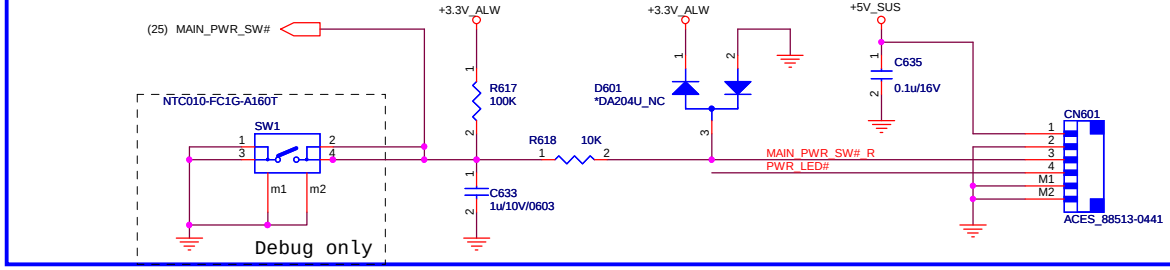
Indicator/ Hall sensor Boad



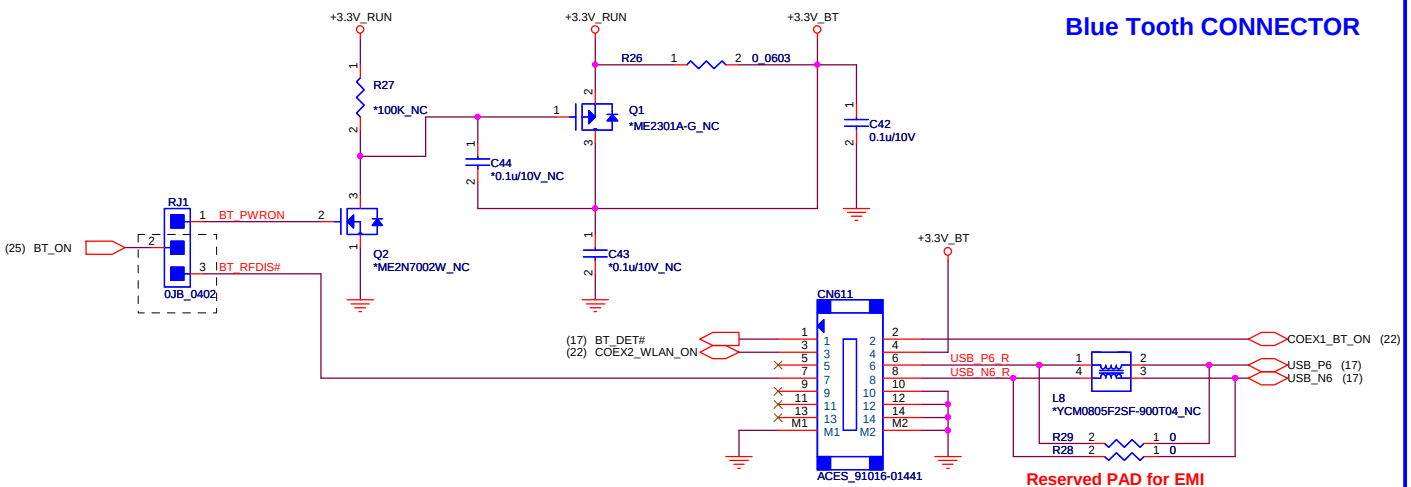
KEYBOARD CONNECTOR



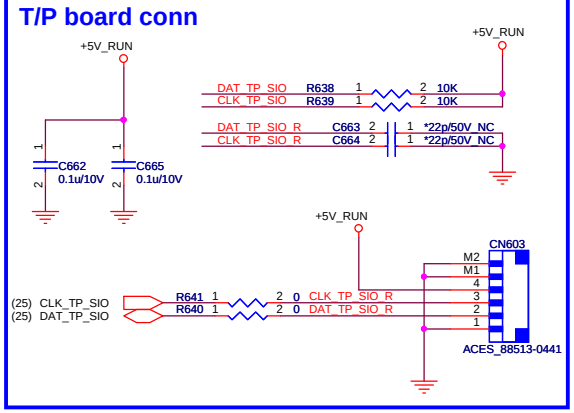
Power Button Board CONNECTOR



Blue Tooth CONNECTOR



T/P board conn



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Title	PWR SW/ T/P/ KB/ BT Conn	
Size	Document Number: Inspiron Z -- AMD	Rev A00
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ITE8502E LQFP-128L

(24) KSO[0..16]
(24) KSI[0..7]
(28) ADAPT_TRIP_SET

KEYBOARD

KSO16 57 KSO17/GPC5
KSO15 56 KSO16/GPC3
KSO14 55 KSO15
KSO13 54 KSO14
KSO12 53 KSO13
KSO11 52 KSO12/SLCT
KSO10 51 KSO11/ERR
KSO9 46 KSO10/PE
KSO8 45 KSO9/BUSY
KSO7 44 KSO8/ACK
KSO6 43 KSO7/PD7
KSO5 42 KSO6/PD6
KSO4 41 KSO5/PD5
KSO3 40 KSO4/PD4
KSO2 39 KSO3/PD3
KSO1 38 KSO2/PD2
KSO0 37 KSO1/PD1
KSO0/PD0

KSI7 65 KSI7
KSI6 64 KSI6
KSI5 63 KSI5
KSI4 62 KSI4
KSI3 61 KSI3/SLIN
KSI2 60 KSI2/INT
KSI1 59 KSI1/AFD
KSI0 58 KSI0/STB

SMBCLK1
SMBDAT1
D5 *RB500V-40_NC
D4 *RB500V-40_NC
Remove in next revision
SMBCLK2
SMBDAT2
D7 *RB500V-40_NC
D6 *RB500V-40_NC

LPC

(10,15,22) A_RST#
(15) CLK_LPC
(15,22) LPC_FRAME#
(15,22) LPC_AD0
(15,22) LPC_AD1
(15,22) LPC_AD2
(15,22) LPC_AD3
(15) CLKRUN#
(15,22) IRQ_SERIRQ
(13) LCD_TST
(26) WRST#
(13) LCD_BLON_EC
(24) CHG_LED
(17) SB_PME#

R184 1 2 0 22 LPCRST/WUI4/GPD2
R181 1 2 0 13 LPCCLK
6 LFRAME
10 LAD0
9 LAD1
8 LAD2
7 LAD3
93 CLKRUN/WUI16/GPH0/ID0
5 SERIRQ
15 ECSMI# ECSMI/GPD4
23 ECSCI# ECSCI/GPD3
126 GA20 GA20/GPB5
17 LPCPD/WUI6/GPE6
4 GPB6 KBRST/GPB6
14 WRST# WRST
16 PWUREQ/GPC7
19 L80HLAT/GPE0
20 D10 2 1 SIO_PME# L80LLAT/WUI7/GPE7
1PS76SB40

+3.3V_KBVCC
R182 100K
WRST#
C122 1u/10V/0603 CAP0603

SMBUS

Charge and BAT
Thermal
CPU TSI

(28,34) SMBCLK0
(28,34) SMBDAT0
(26) SMBCLK1
(26) SMBDAT1
(4) SMBCLK2
(4) SMBDAT2

110 SMCLK0/GPB3
111 SMDAT0/GPB4
115 SMCLK1/GPC1
116 SMDAT1/GPC2
117 SMCLK2/WUI22/GPF6
118 SMDAT2/WUI23/GPF7

PS/2

(24) BT_ON
(22) WLAN_RF_DIS#
(22) WWAN_RF_DIS#
(24) CLK_TP_SIO
(24) DAT_TP_SIO

85 PS2CLK0/GPF0
86 DELAY_VR_PWRGD PS2DAT0/GPF1
87 PS2CLK1/GPF2
88 PS2DAT1/GPF3
89 PS2CLK2/WUI20/GPF4
90 PS2DAT2/WUI21/GPF5

(17) SB_EXT_SMI# D9 1PS76SB40 ECSMI#
(17) SB_EXT_SCI# D11 1PS76SB40 ECSCI#
(17) SB_A20GATE D8 1PS76SB40 GA20
(17) SB_KBRST# D12 1PS76SB40 GPB6

ITE8502_XTAL1 128 CK32K
ITE8502_XTAL2 2 CK32KE

SIO_VSS 1 12 27 49 91 113 122 VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7
SIO_AVCC 74 AVCC
SIO_AVSS 75 AVSS

ADC/DAC

66 ADC0/GPI0
67 EC_ADC1 ADC1/GPI1
68 EC_ADC2 ADC2/GPI2
69 BID0 ADC3/GPI3
70 BID1 ADC4/GPI4
71 PID0 ADC5/GPI5
72 ADC6/GPI6
73 ADC7/GPI7

R162 1 2 0
R157 1 2
R161 1 2
ALL_SYS_PWRGD (27)
ADAPT_OC (28)
SLP_S5# (17)

76 DAC0/GPJ0
77 DAC1/GPJ1
78 DAC2/GPJ2
79 DAC3/GPJ3
80 DAC4/GPJ4
81 DAC5/GPJ5

D18 1PS76SB40
D3 1PS76SB40
SB_PWRGD_EC (17)
SIO_EXT_WAKE# (17)
AMP_MUTE# (23)
SB_DUAL_PWRON (27)
SB_RSMRST# (17)
SB_PWRBTN# (17)

PWM

24 PWM0/GPA0
25 PWM1/GPA1
28 PWM2/GPA2
29 PWM3/GPA3
30 PWM4/GPA4
31 PID1 PWM5/GPA5
32 PWM6/GPA6
34 PWM7/GPA7
47 TACH0/GPD6
48 TACH1/GPD7
120 TMRI0/WUI2/GPC4
124 TMRI1/WUI3/GPC6

PWR_LED (24)
LCD_DBC_EN (13)
FAN_PWM (26)
LCD_PWM_EC (13)
LCD_CBL_DET# (13)
BEEP (23)
FAN_TACH (26)
LCD_BLON_GFX (10)
LID_SW# (24)
PBAT_PRES# (34)

IR/UART

108 RXD/GPB0
109 TXD/GPB1
119 CRX0/GPC0
123 CTX0/GPB2
94 WUI17/GPH1/ID1
95 WUI18/GPH2/ID2

T611PAD
LOW_BAT_LED (24)
CHARGE_EN (28)
RUN_ON (27,31,33)
CAM_PWR_ON# (13)
SLP_S3# (17,23,27)

LPC/FWH FLASH

100 FLFRAME/GPG2/LF
106 FLRST/GPG0/TM
104 FLAD3/GPG6
103 FLAD2/SO
102 FLAD1/SI
101 FLAD0/SCE
105 FLCLK

EC_FLRST#
SUS_ON (27,31)
IPCC_SMI (4)
EC_FLASH_SPI_DO (19)
EC_FLASH_SPI_DIN (19)
EC_FLASH_SPI_CS# (19)
EC_FLASH_SPI_CLK (19)
R224 1 2 0 RFI

EGPC

82 EGAD/GPE1
83 EGCS/GPE2
84 EGCLK/GPE3

PS_ID (34)
5V_SUS_ON (32)
EC_EGCLK

96 WUI19/GPH3/ID3
97 GPH4/ID4
98 GPH5/ID5
99 GPH6/ID6
107 GPG1/ID7

Default is pull-up

18 RI1/WUI0/GPD0
21 RI2/WUI1/GPD1
35 WUI5/GPE5
112 RING/PWRFAIL/LPCRST/GPB7
125 PWRSW/GPE4
33 GINT/GPD5

THRM_ALERT# (26)
ACAV_IN (28)
USB_EN# (20)
MAIN_PWR_SW# (24)
LCDVCC_TST_EN (13)

R180 1 2 0 ITE8502_XTAL2
Y5
ITE8502_XTAL1
32.768KHz_12.5pF
C123 10p/50V
C120 10p/50V

+3.3V_KBVCC
L21 BLM18AG121SN1D SIO_AVCC
L20 BLM18AG121SN1D SIO_AVSS
C101 0.1u/10V

SIO_VSS
C121 0.1u/10V

+3.3V_KBVCC
C100 10u/6.3V/0603
C110 0.1u/10V
C822 0.1u/10V
C826 0.1u/10V
C817 0.1u/10V
C182 68p/50V RFI
Place these caps close to ITE8502.

CLK_LPC
R188 0
C125 10p/50V

+3.3V_RUN
+3.3V_KBVCC
R190 *0_NC
C124 0.1u/10V
+RTC_CELL
R187 1 2 0

+3.3V_ALW
+3.3V_KBVCC
JP601 SHORT_PAD
Normal Close

+3.3V_KBVCC
SMBDAT0 R172 4.7K
SMBCLK0 R171 4.7K
SMBDAT1 R174 4.7K
SMBCLK1 R173 4.7K
SMBDAT2 R176 4.7K
SMBCLK2 R175 4.7K
EC_EGCLK R165 *10K_NC
EC_FLRST# R170 *10K_NC
DELAY_VR_PWRGD R164 *10K_NC

EC_FLASH_SPI_DO C828 *33p/50V_NC
EC_FLASH_SPI_DIN C833 *33p/50V_NC
RFI

SUS_ON R168 100K
+5V_SUS
LID_SW# R678 100K
+3.3V_RUN
LCD_BLON_EC R183 *10K_NC
LCD_CBL_DET# R177 100K

EC_FLASH_SPI_CLK
R169 *10_NC
C105 *2.2p/50V_NC

Platform ID Straps

+3.3V_KBVCC
PID1 PID0
R186 10K
R154 10K
PID0
PID1
R185 *10K_NC
R158 *10K_NC

PID1	PID0	Inspiron Z
0	0	Intel Discrete
0	1	Intel UMA
1	0	AMD Discrete
1	1	AMD UMA

Board ID Straps

+3.3V_KBVCC
BID1 BID0
R159 10K
R156 *10K_NC
BID0
BID1
R155 *10K_NC
R160 10K

BID1	BID0	Inspiron Z
0	0	SSI (X00)
0	1	PT (X01)
1	0	ST (X02)
1	1	MP(A0)

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Title: SIO -- ITE_8502E
Size: Document Number: Inspiron Z -- AMD
Rev: A00
Date: Friday, January 15, 2010
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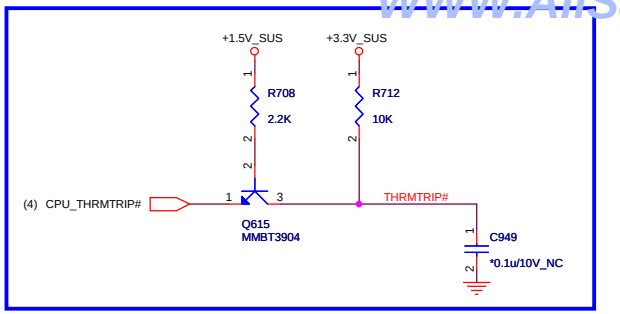
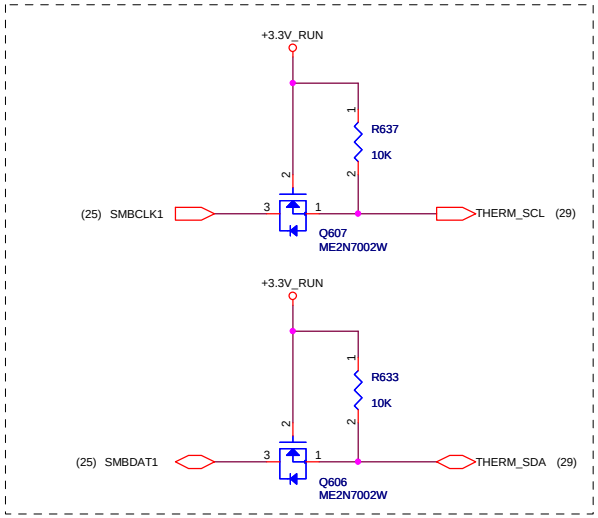




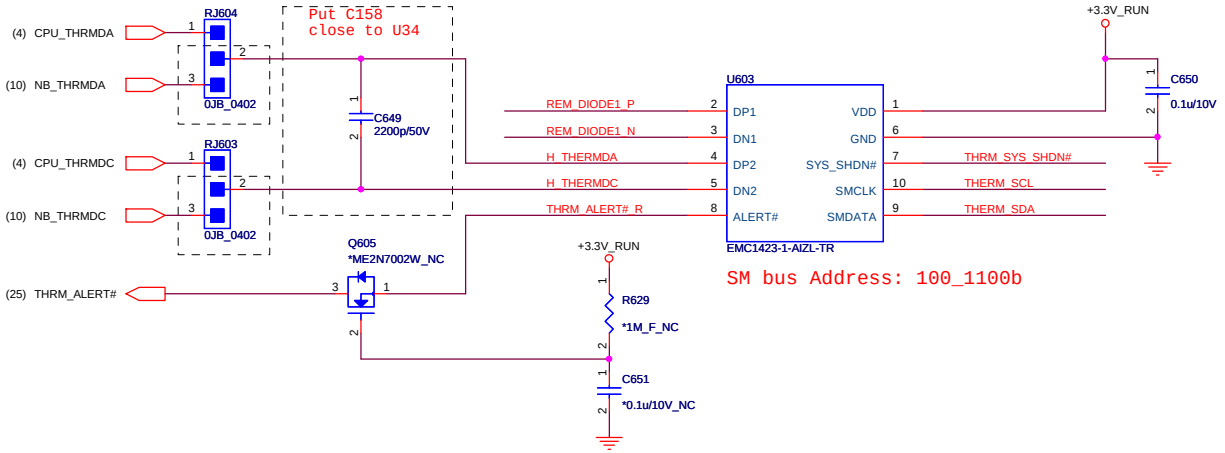
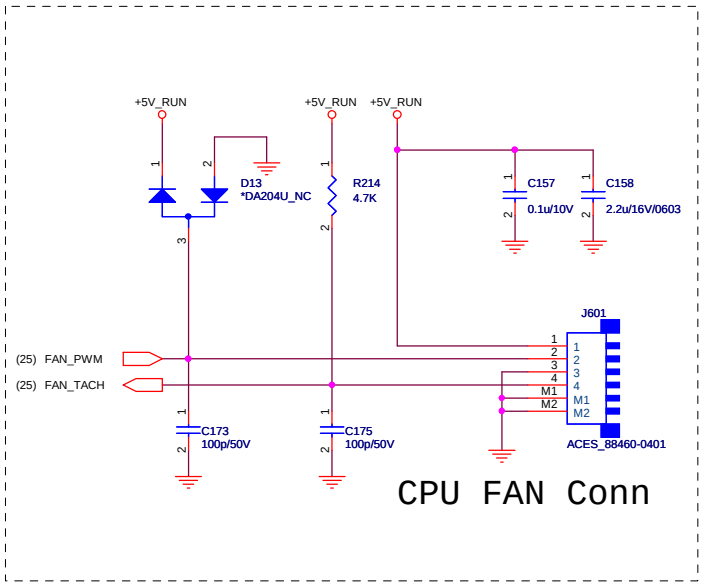
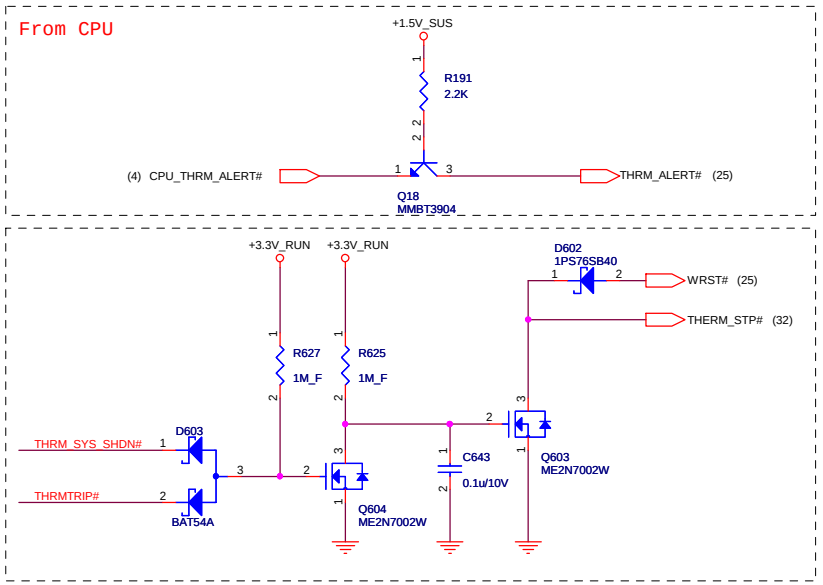
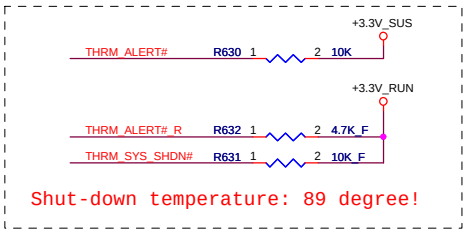


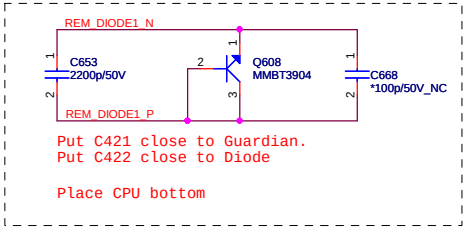
Table 5.2 $\overline{\text{SYS\_SHDN}}$ Threshold Temperature

$\overline{\text{SYS\_SHD}}$ PULL-UP / $\overline{\text{ALERT}}$ PULL-UP	4.7K OHM ±10%	6.8K OHM ±10%	10K OHM ±10%	15K OHM ±10%	22K OHM ±10%	33K OHM ±10%
4.7K OHM ±10%	77°C	83°C	89°C	95°C	101°C	107°C
6.8K OHM ±10%	78°C	84°C	90°C	96°C	102°C	108°C
10K OHM ±10%	79°C	85°C	91°C	97°C	103°C	109°C
15K OHM ±10%	80°C	86°C	92°C	98°C	104°C	110°C
22K OHM ±10%	81°C	87°C	93°C	99°C	105°C	111°C
33K OHM ±10%	82°C	88°C	94°C	100°C	106°C	112°C









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Title	THRM -- EMC2103-2	
Size	Document Number: Inspiron Z -- AMD	Rev A00
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RUN/ SUS CKT

1.5A

+3.3V_ALW, +15V_ALW, +5V_SUS, +5V_RUN

PR55 100K, PR54 100K

PQ16 ME4410D-G

5V_RUN_EN

C136 0.1u/50V/0603

RUN_ON#

PQ18 ME2N7002W

(25,31,33) RUN_ON

PQ17 ME2N7002W

PC59 *4700p/25V_NC

PC60 0.1u/50V/0603

700mA

+3.3V_ALW, +15V_ALW, +3.3V_ALW, +3.3V_SUS

PR707 100K, PR710 100K

PQ2 ME4410D-G

SUS_PWR_ENABLE

C965 0.1u/50V/0603

SUS_ON#

PQ608 ME2N7002W

(25,31) SUS_ON

PQ605 ME2N7002W

C992 68p/50V RFI

PC681 4700p/25V

PC1 0.1u/50V/0603

4A

+15V_ALW, +3.3V_ALW, +3.3V_RUN

PR63 150K

PQ8 ME4410D-G

3.3V_RUN_EN

C50 0.1u/50V/0603

RUN_ON#

PQ25 ME2N7002W

PC28 *4700p/25V_NC

PC29 0.1u/50V/0603

+1.1V_ALW_SB, +1.1V_SUS

PQ11 ME2306D-G

SUS_PWR_ENABLE

PC42 0.1u/50V/0603

800mA

+15V_ALW, +1.5V_SUS, +1.5V_RUN

PR64 150K

PQ15 ME4410D-G

1.5V_RUN_EN

C812 0.1u/50V/0603

RUN_ON#

PQ26 ME2N7002W

PC648 *4700p/25V_NC

PC647 0.1u/50V/0603

300mA

+3.3V_ALW, +PWR_SRC, +15V_ALW, +3.3V_ALW, +3.3V_ALW_SB

PR708 100K

RJ606 330KJA_0402

PQ1 ME2306D-G

3V_SB_DUAL_ENABLE

C959 0.1u/50V/0603

SB_DUAL_PWRON#

PQ609 ME2N7002W

(25) SB_DUAL_PWRON

PQ604 ME2N7002W

PC97 33p/50V RFI

PC682 *4700p/25V_NC

PC677 0.1u/50V/0603

PWRGD

+3.3V_RUN

R656 100K

(33) 0.9V_RUN_PWRGD — D607

(30) 1.1V_RUN_PWRGD — BAT54A

(29,30,31) 1.8V_RUN_PWRGD — D605

(17,23,25) SLP_S3# — BAT54A

(29) VCORE_PWRGD — D604 1PS76SB40

(32) 3.3V_5V_PWRGD — D606

(31) 1.5V_DDR_PWRGD — BAT54A

ALL_SYS_PWRGD (25)

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Title	RUN/ SUS PWR	
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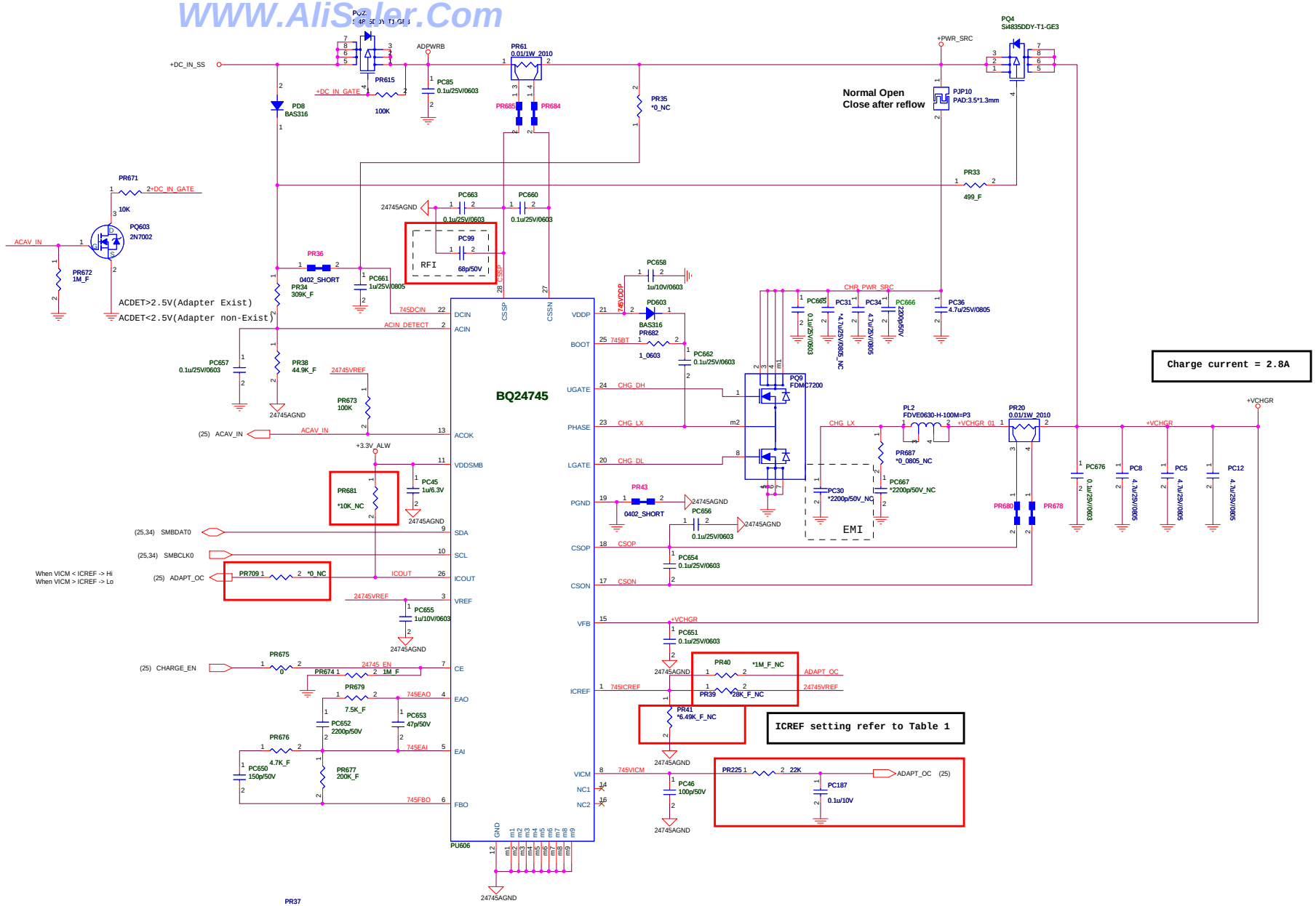

Table 1				
Adapter (W)	Trip current (A)	PQ12	PR37	PR41
65W	3.13	NA	NA	6.49K
90W	4.34	2N7002	19.1K	10K

Note 1: PR37 is populated if ADAPT_TRIP_SET is used to program for the next lower adapter.
ADAPT_TRIP_SET is floating for the higher adapter, grounded for the lower adapter.

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Title: PWR -- Charger circuit		
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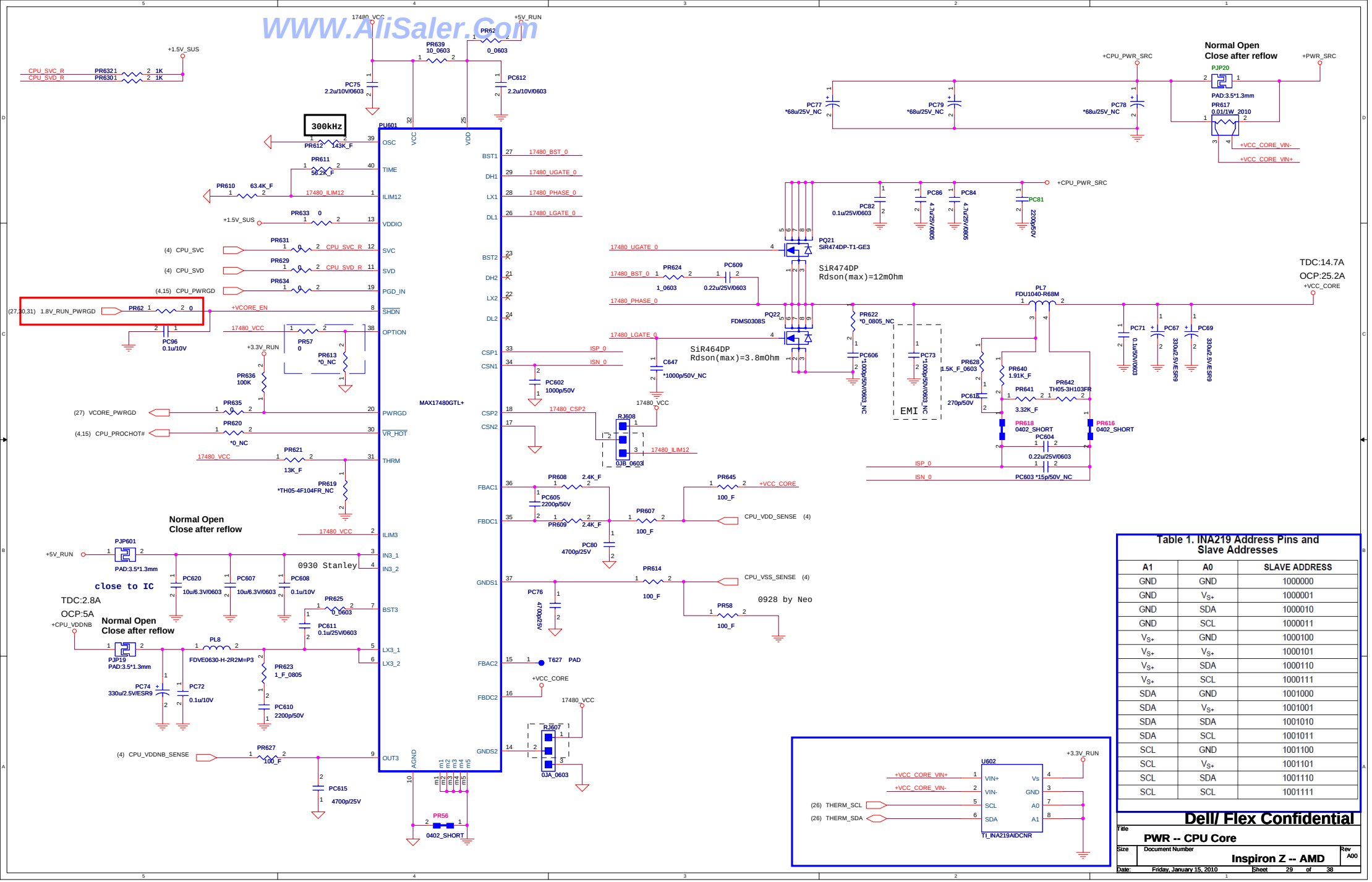

Table 1. INA219 Address Pins and Slave Addresses

A1	A0	SLAVE ADDRESS
GND	GND	1000000
GND	V_{S+}	1000001
GND	SDA	1000010
GND	SCL	1000011
V_{S+}	GND	1000100
V_{S+}	V_{S+}	1000101
V_{S+}	SDA	1000110
V_{S+}	SCL	1000111
SDA	GND	1001000
SDA	V_{S+}	1001001
SDA	SDA	1001010
SDA	SCL	1001011
SCL	GND	1001100
SCL	V_{S+}	1001101
SCL	SDA	1001110
SCL	SCL	1001111

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Title: **PWR -- CPU Core**

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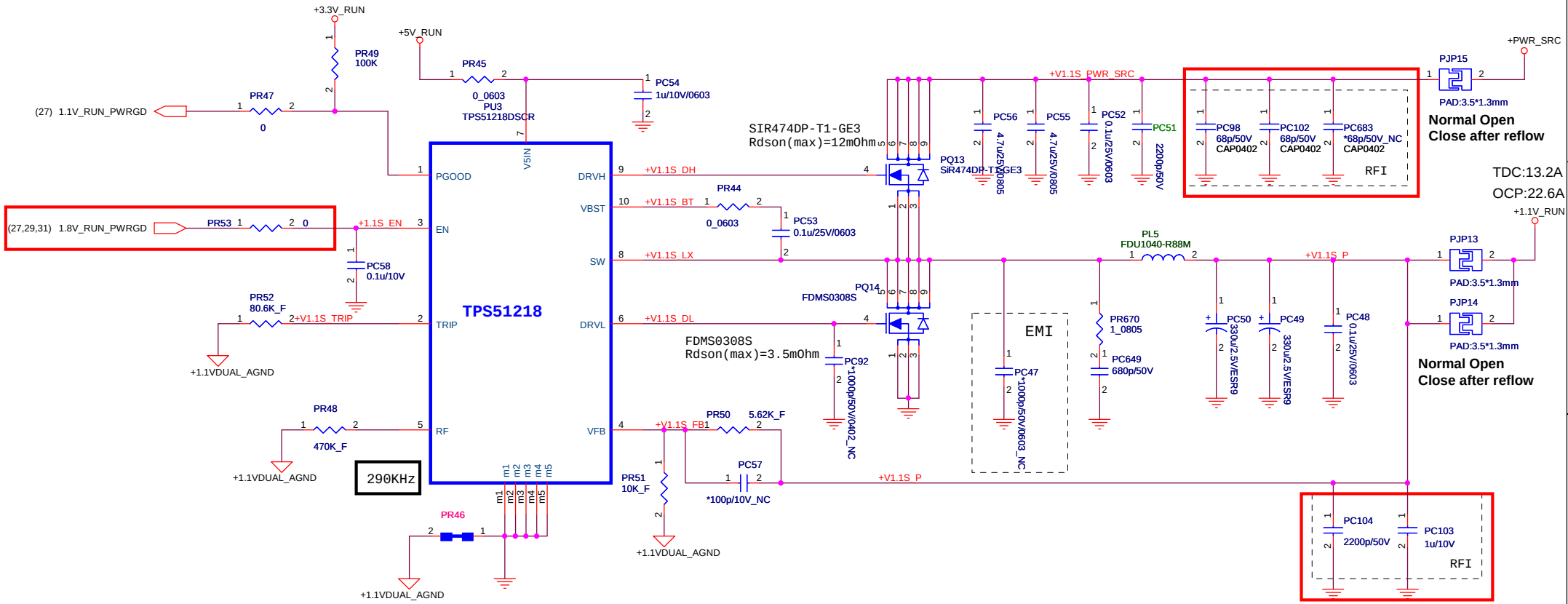
+V1.1V_RUN



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Title	PWR -- 1.1V_RUN	
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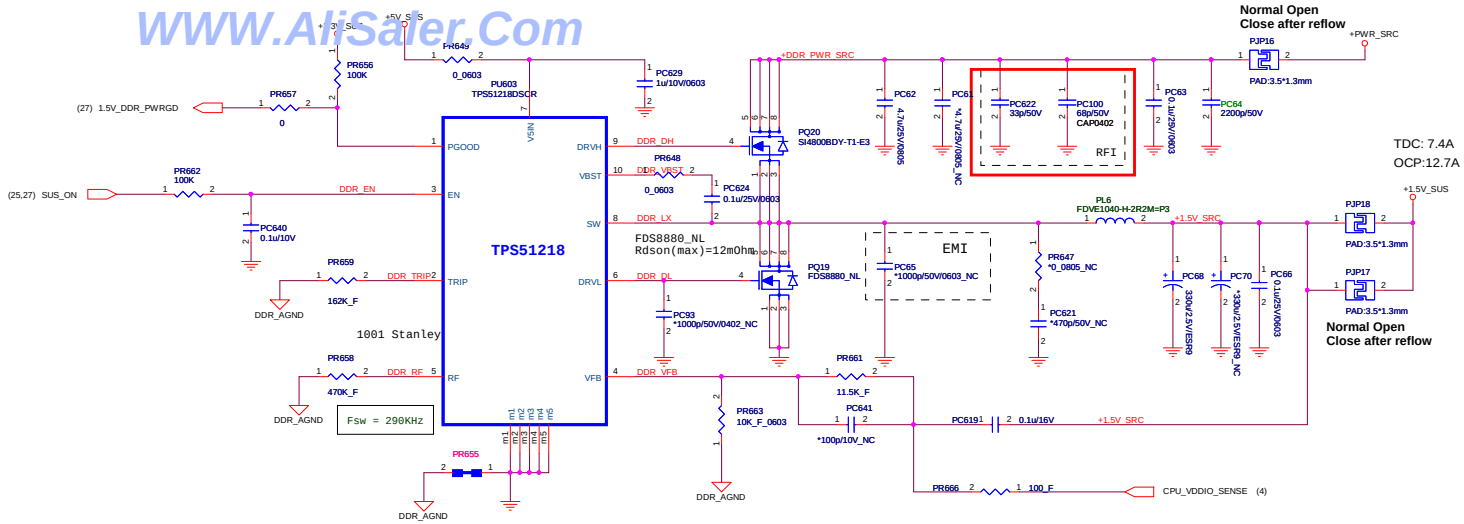
1.5VDDR



0.75VS

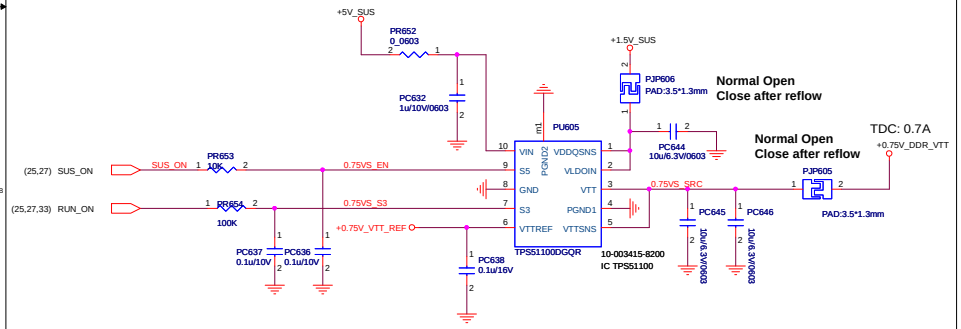
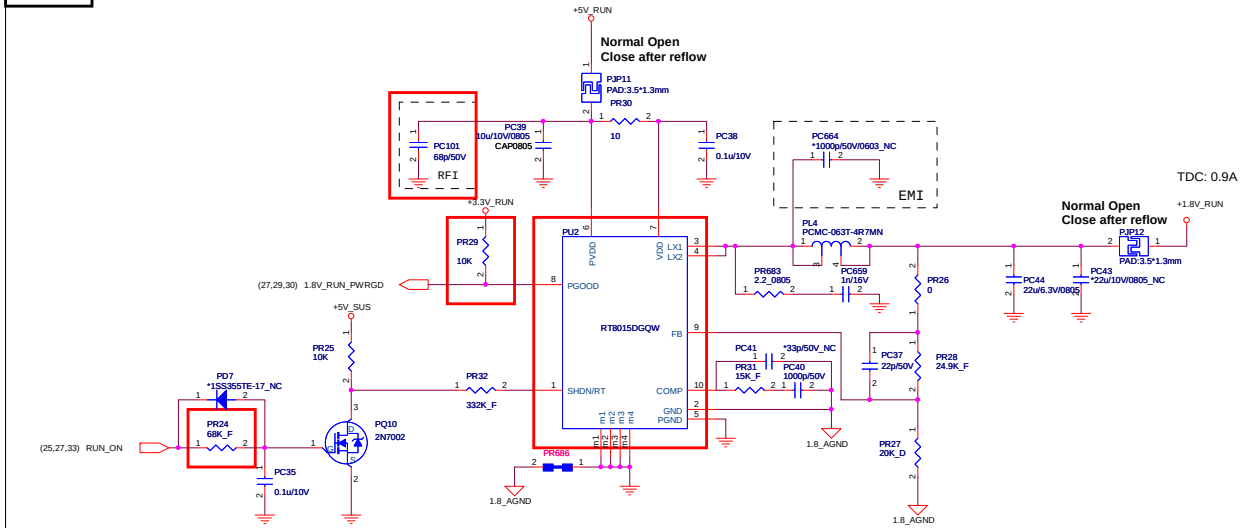


Table 1. S3 and S5 Control Table

STATE	S3	S5	VTT	VREF
Normal	Hi	Hi	1.25V/0.9V	1.25V/0.9V
Standby	Lo	Hi	12mV/6mV (High-Z)	1.25V/0.9V
Shutdown	Lo	Lo	0V (Discharge)	0V (Discharge)
Shutdown	Hi	Lo	0V (Discharge)	0V (Discharge)

1.8VS



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Title: PWR -- DDR PWR/ +1.8V_RUN			
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100mA (Max)

Normal Open
Close after reflow

PJP4 PAD:3.5*1.3mm

+PWR_SRC

+5V_PWR_SRC

PC10 4.7u/25V/0805
PC17 4.7u/25V/0805
PC22 0.1u/25V/0603
PC24 2200p/50V

PR689 390K
PR688 150K
PR694 0_0603
PR693 0_0603

+5V_LDO

PR690 10_0603
PC668 4.7u/10V/0805

MAX17020_RTC

+5V_VCC

17020_VIN

PR691 *0_NC
PC669 1u/10V/0603
PR22 0
PC670 0.1u/10V
17020_REF
*0_NC PR23
PR21 *0_NC

PC671 0.1u/25V/0603
PC25 0.1u/10V

EN_LDO

MAX17020_RTC2
*0_NC PR692

TDC: 5A
OCP: 8.6A

+5V_SUS

Normal Open
Close after reflow

PJP9 PAD:3.5*1.3mm
PJP8 PAD:3.5*1.3mm

Si4800DBY-T1-E3
Rdson(max)=30mOhm

PQ7 Si4800BDY-T1-E3

PL3 PCMC-063T-4R7MN

EMI

+5V_ALWP

PR698 *0_NC
PR700 0
PR695 *1_0805_NC
PC672 *1000p/50V_NC
PC27 1000p/50V/0603_NC

PC33 220u/6.3V/18mm
PC32 0.1u/25V/0603

PQ6 Si4134DY-T1-GE3

Si4134DY
Rdson(max)=17.5mOhm

PU607 MAX17020ETJ+

M4 M3 M2 M1 BYP OUT1 FB1 ILIM1 PGOOD1 ON1 DH1 LX1
LDOREFIN LDO VIN RTC ONLDO VCC TON REF
BST1 DL1 VDD SECFB AGND PGND DL2 BST2
REFIN2 ILIM2 OUT2 SKIP# PGOOD2 ON2 DH2 LX2

+5V_FB1
+5V_ILIM1
+5V_POK1
+5V_EN1
+5V_DH
+5V_LX

PR17 330K_F
PR19 374K_F

+3.3V_OUT
35V_SKIP#
+3.3V_POK2
+3.3V_EN2
+3.3V_DH
+3.3V_LX

PC673 0.1u/25V/0603
PR703 0_0603
+5V_BOOT
PR704 0_0603
PC674 0.1u/25V/0603
+3.3V_BOOT

+5V_DL
+3.3V_DL

PC94 1000p/50V/0402
PC95 1000p/50V/0402

+5V_LDO
PC11 1u/10V/0603
PR8 0_0603
SECFB

PR11 *0_NC
PR15 0

GND_SYS

Normal Open
Close after reflow

PJP1 PAD:3.5*1.3mm

+3.3V_PWR_SRC

PC13 2200p/50V
PC14 0.1u/25V/0603
PC16 4.7u/25V/0805
PC15 4.7u/25V/0805

TDC: 5.6A
OCP: 9.6A

Si4800DBY-T1-E3
Rdson(max)=30mOhm

PQ3 SI4800BDY-T1-E3

Normal Open
Close after reflow

PJP6 PAD:3.5*1.3mm
PJP3 PAD:3.5*1.3mm

+3.3V_ALW

EMI

PL1 PCMC-063T-4R7MN

+3.3V_ALWP

PC4 *1000p/50V/0603_NC
PR706 *1_0805_NC
PC675 *1000p/50V_NC
PR697 0
PR696 *0_NC
PC6 0.1u/25V/0603
PC18 220u/6.3V/18mm

PQ5 Si4134DY-T1-GE3

Si4134DY
Rdson(max)=17.5mOhm

+15_ALW maby can be disable
on S3,S4,S5 ; saving 1mA
But the control signal need
to be separate

(2mA)

+PWR_SRC
PR42 *0_NC
+15V_ALW

PQ607 PDTA114YU
47K
10K

+15V_ALWP_3
+15V_ALWP_1

+3.3V_DL

PC678 0.1u/25V/0603
PC679 0.1u/25V/0603

PD2 BAT54S SOT-23
PD3 BAT54S SOT-23

+5V_SUS

PC680 0.1u/25V/0603
PC2 0.1u/25V/0603

PQ606 2N7002

5V_SUS_ON

PR705 0
+5V_LDO
SECFB

PR14 39K
+5V_LDO

+3.3V_EN2
PR701 0
PR710 0
THERM_STP# (26)

(25) 5V_SUS_ON
20K_F PR7
+5V_EN1

PD6 BAS316

PR702 200K
PR13 *0_NC

+3.3V_ALW
PR16 100K
PR699 0
+3.3V_POK2
+5V_POK1
0 PR18
3.3V_5V_PWRGD (27)

TON	Frequency
GND	OUT1@400K , OUT2@500K
VCC	OUT1@200K , OUT2@300K
OPEN	OUT1@400K , OUT2@300K

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Title: PWR -- SYS 5V/ 3V

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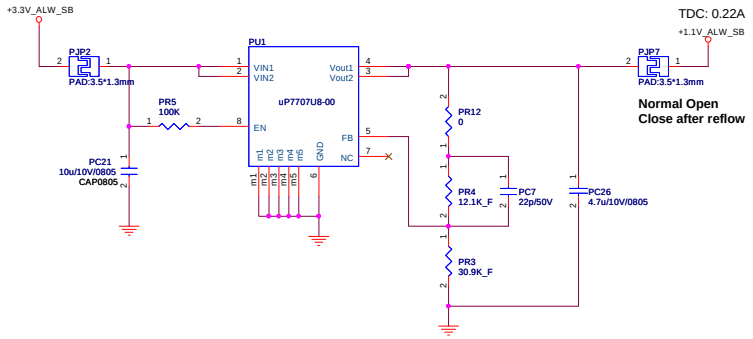
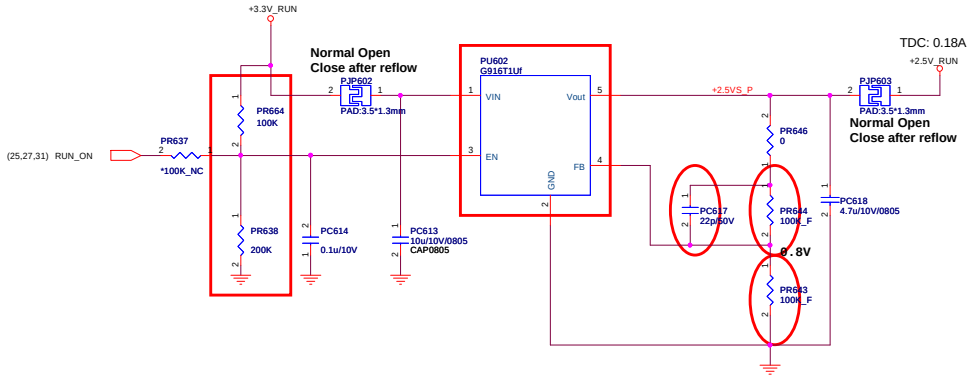
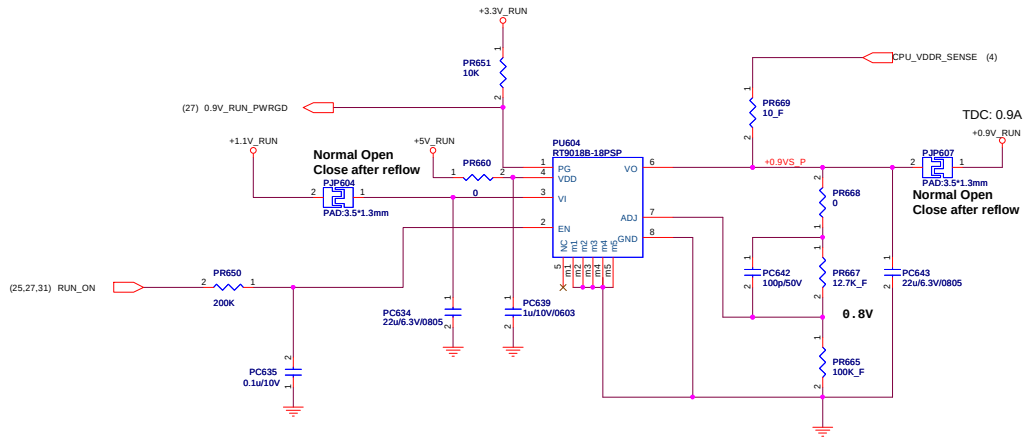
+1.1V_ALW_SB



+2.5V_RUN



+0.9V_RUN



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Title	PWR -- 1.1V_ALW/ 2.5V_RUN/ 0.9V_RUN	
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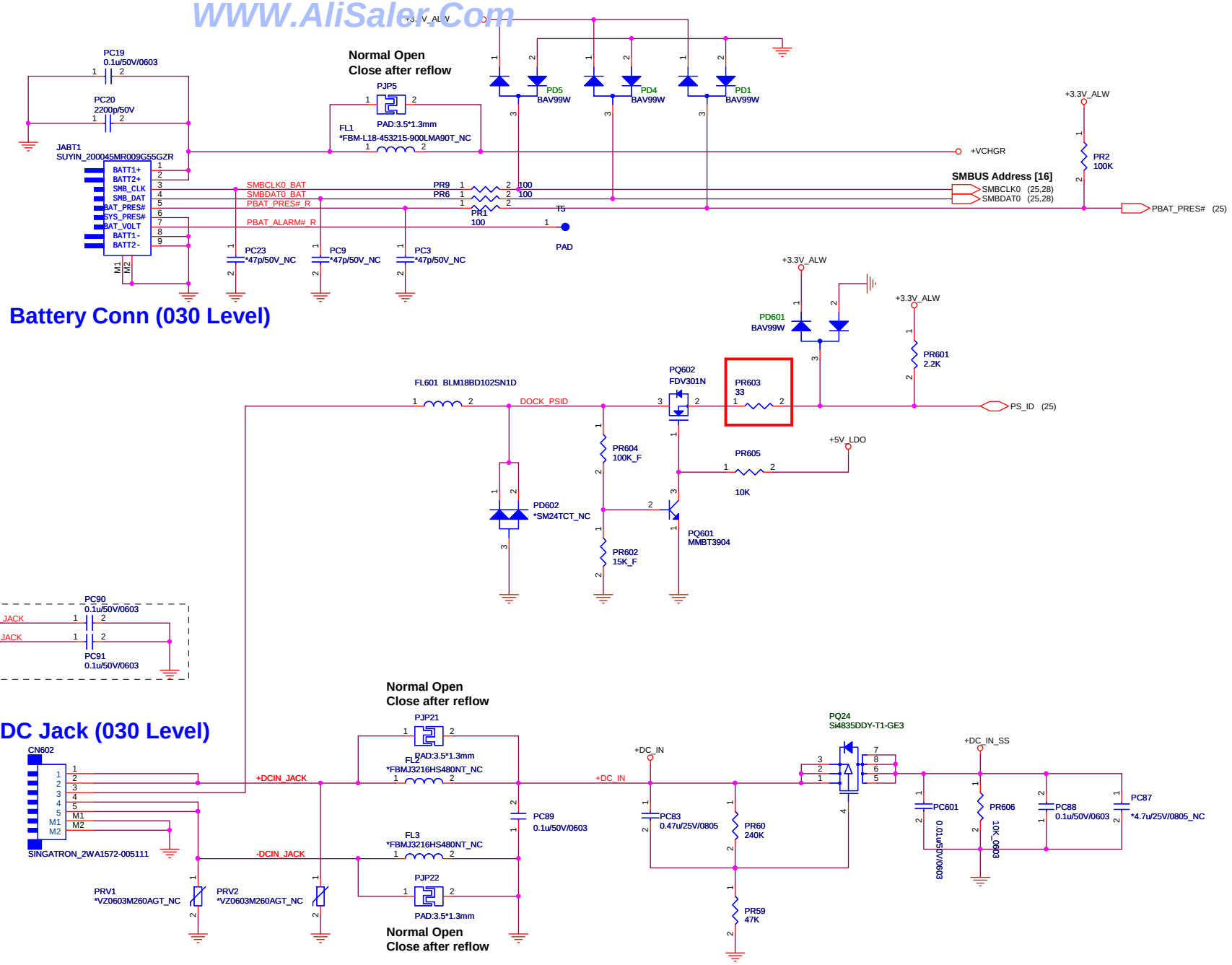

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Title	Cover Sheet	
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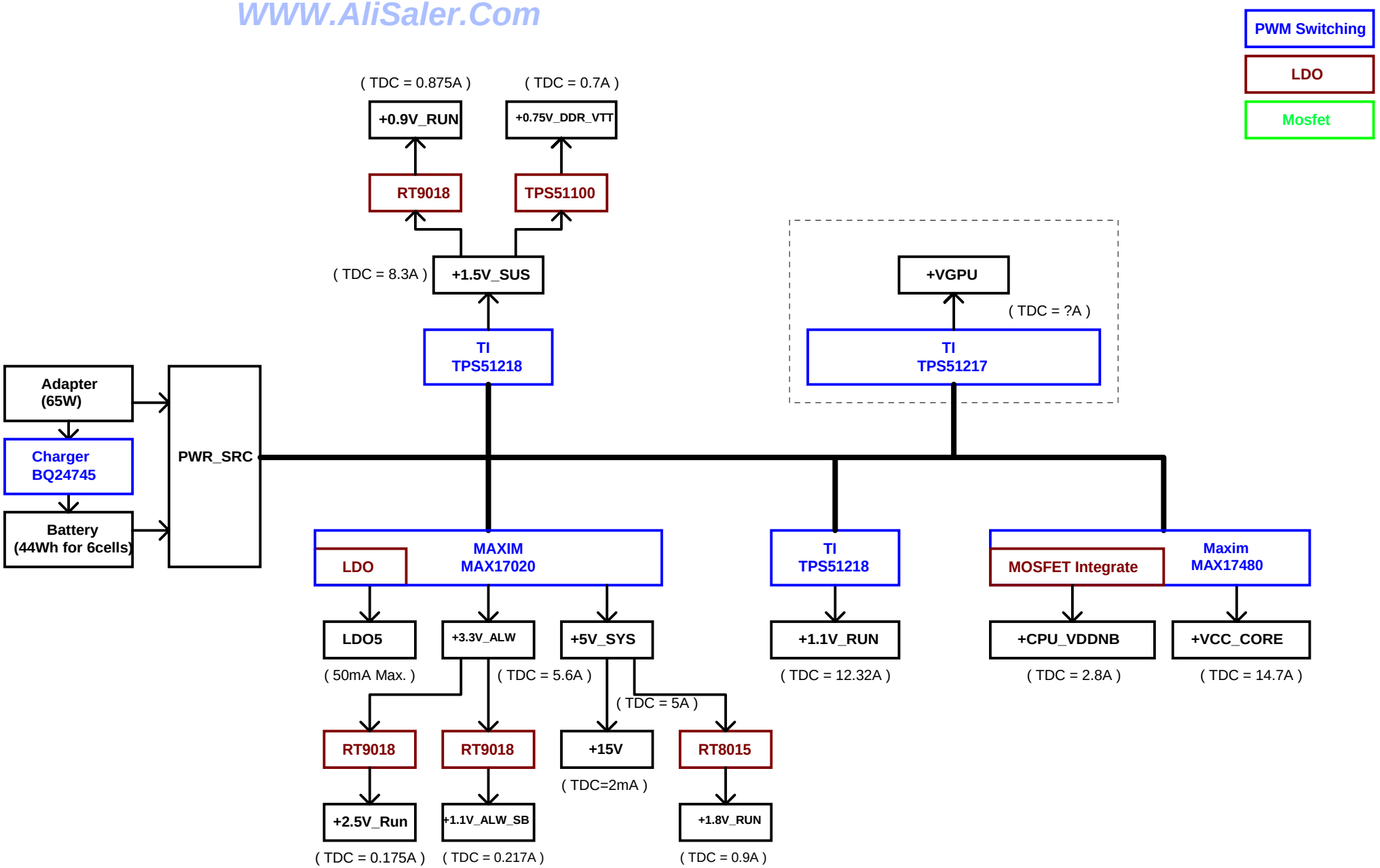

Title	Cover Sheet	
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DELL/FLEX CONFIDENTIAL

Screw Hole

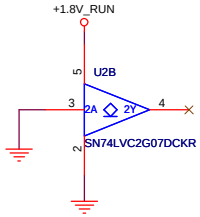
H620 PTH6_4.6 THR236_181
H622 PTH6_4.6 THR236_185
H623 PTH6_4.6 THR236_185
H613 PTH6_4.6 THR236_181
H617 PTH6_4.6 THR236_181
H626 PTH6_0_1.1 THR276B0_181
H621 PTH6_4.6 THR236_181
H610 PTH6_4.6 THR236_181
H611 PTH6_4.6 THR236_181
H612 PTH6_4.6 THR236_181
H618 PTH6_4.6 THR236_181
H605 PTH0_6_1.1 THR0B276_181
H604 PTH0_6_1.1 THR0B276_181
H608 PTH0_6_1.1 THR0B276_181
H603 PTH0_6_0.9 THR0B276_181
H615 PTH0_6_4.7 THR354B315_236
H619 PTH8B7_2.8 THR315B276_110

H629 MTH8B7_2.8
H624 MTH8B7_2.8
H602 MTH8B7_2.8
H609 MTH8B7_2.8
H628 MTH9_8B6
H614 MTH7B8_2.8
H625 MTH7B8_2.8
H601 MTH7B8_2.8
H606 MTH7B8_2.8
H616 MTH10B6
H627 MTH10B6
H607 MTH10B6

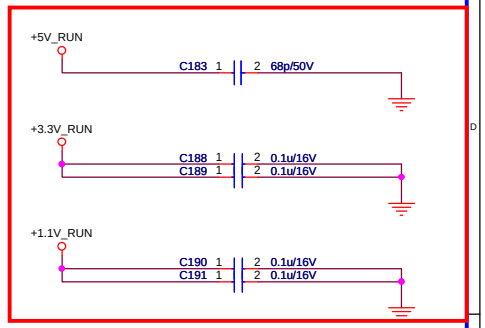
FID

FID602 FIDUCIAL — NC, NO CONNECT TO ANY.
FID2 FIDUCIAL — NC, NO CONNECT TO ANY.
FID601 FIDUCIAL — NC, NO CONNECT TO ANY.
FID1 FIDUCIAL — NC, NO CONNECT TO ANY.
FID604 FIDUCIAL — NC, NO CONNECT TO ANY.
FID4 FIDUCIAL — NC, NO CONNECT TO ANY.
FID603 FIDUCIAL — NC, NO CONNECT TO ANY.
FID3 FIDUCIAL — NC, NO CONNECT TO ANY.

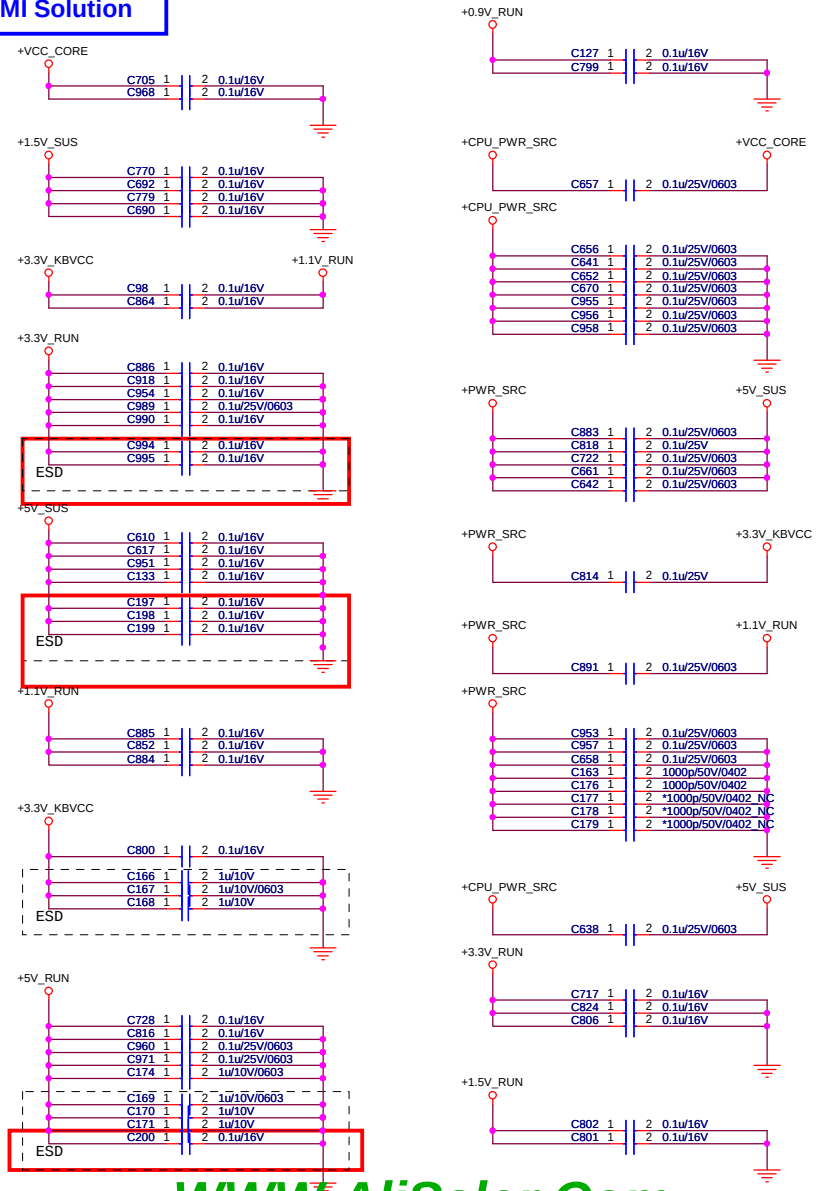
Unused Gates



RFI Solution



EMI Solution



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Title: Screw Hole/ EMI/ Unused Gates

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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phase
1			X00		X00 Schematic Official Release	X00	SSI
2	Correct PD601 direction	Correct PD601 direction	X01	34	Horizontally rotate PD601	X01	PT
3	Improve power sequence	Improve power sequence	X01	17, 27, 29	1. Modify D605 pin 2 to "SLP_S3#" 2. Remove PR638 then add PR64& PC96 to enable +VCC_CORE 3. Remove PR709 and add RJ606 to instead on pin 3 also connect "+DC_IN_SS" on RJ606 pin 1. 4. Leave PC59 empty. 5. Add AND gate (U6) combine SLP_S#& SB_PWRGD_EC for SB_PWRGD	X01	PT
4	Modify HDD SATA port to S/B Port3	S/B SATA Port5 wasn't real SATA and AMD recommend us modify to Port 3.	X01	16, 20	Modify HDD SATA port from S/B SATA Port5 to Port3. Also modify net name meet naming rule.	X01	PT
5	Improve RTC battery life cycle	Improve RTC battery life cycle	X01	19	Add D609 to improve RTC battery life cycle	X01	PT
6	Improve X'tal timing	Improve X'tal timing	X01	15, 21	1. Modify C28 to 15pF, C29 to 18pF, C69& C70 to 12pF for 25MHz X'tal. 2. Modify C47& C48 to 22pF for Y5 32.768MHz.	X01	PT
7	MMC card can't be written	MMC card can't be written	X01	21	Modify R24 to 33ohm	X01	PT
8	Solve PC Beep fail	Solve PC Beep fail	X01	23	1. Remove D608, modify R15 to 2.49K_F ohm. 2. Add R217& R218 and leave U1& C1 empty	X01	PT
9	Change FAN Conn Vendor	Request by Thermal Team	X01	26	Modify J601 to ACES 88460-0401	X01	PT
10	Dis-charge LCD VCC	Improve LCD VCC dis-charge timing	X01	13	Add R228& Q19 for LCD VCC dis-charge improvement.	X01	PT
11	Reverse USB I/F of eSATA conn	Keep device direction as the same	X01	20	Modify CN1 (eSATA conn) to FOXCONN 3Q38111-R21C3-8H	X01	PT
12	Modify PCI-E Reset source	AMD recommend to modify	X01	15	Add AND gate for PCI-E Reset timing: 1. SB_PCIE_RST#0& A_RST# for MPCIE_RST#0 2. SB_PCIE_RST#1& A_RST# for MPCIE_RST#1 3. SB_PCIE_RST#2& A_RST# for LAN_RST#	X01	PT
13	TSI function reliability	Make sure TSI I/F workable	X01	4	Modify Q16& Q17 to MMBT3904, add D14, D15, R220& R221 for TSI function.	X01	PT
14	Simplify circuit	Simplify circuit	X01	15	Add R219 and seperate LPC clock for each device.	X01	PT
15	Improve LPC clock	Seprate LPC clock for each device	X01	29	Remove Q601, Q602, R624& R628 to simplify SM Bus 1	X01	PT
16	Prevent leakage current from external device	Prevent leakage current from external device	X01	14	Add D16, D17 to prevent leakage current from external device.	X01	PT
17	Single Phase Core VR configuration	Single Phase Core VR configuration	X01	29	1. Add RJ607 2. FBDC2 connected to +VCC_CORE 3. FBAC2 add T627 4. Add RJ608	X01	PT
	Low side MOS induce	Low side MOS induce	X01	30, 31	1. Modify to FDMS0308s 2. Add PC93 for 1000pF_0402/ NA 3. Add PC94, PC95 for 1000pF_0402		
	Avoid Low Side MOS induce	Avoid Low Side MOS induce	X01	30	Add PC92 1000pF NA		
	High Side MOS Vds ring over spec.	Add Snuber on Low Side Vds	X01	30	PR670 Mounted 1ohm, PC649 Mounted 680pF		
	OCP Protection	OCP Protection	X01	31, 32	1. PR659 modify to 120K 2. PR19 modify to 301K		
	Input ripple over spec.	Input ripple over spec.	X01	31, 33	1. PC634, PC644 modify to 10uF/6.3V 2. Add C163, C176~ C179.		
	Modify package of capacity	ME height limitation	X02	29	Modify PC607 to 0603 package		

Title: History - 1

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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phase
18	Seperate RF control signal	Seperate RF control signal (Dell)	X01	22, 24, 25	1. Modify U11 (EC) pin 85, 87, 88 as BT_ON, WLAN_RF_DIS#, WWAN_RF_DIS#. 2. Move CAM_PWR_ON# to U11 pin 94.	X01	PT
19	ESD SSI solution	ESD SSI solution	X01	20, 36	Add C165~ C171 for ESD solution	X01	PT
20	LAN signal swap	For layout concern	X01	21	Swap LAN_MDIP1& LAN_MDIN, 1RJ45-MDI1+& RJ45-MDI1-.	X01	PT
21	Add Test Pad for USB CLK	AMD recommend	X01	17	Add Test Pad T22 by AMD recommend	X01	PT
22	Modify RAM Vref source	Modify RAM Vref source	X01	4, 7, 8	1. R635, R636, C654, C655, R652, R651, C758& C763 Mounted 2. Leave R648, R634 empty.	X01	PT
23	Setting GPIO level	Prevent GPIO pin floating	X01	15, 17	Add R222, R223, R734, R735, R49	X01	PT
24	Modify SPI ROM to 2M + 256K	Modify SPI ROM to 2M + 256K	X01	16, 19	Modify U9 to 2M bytes and U13 to 256K bytes.	X01	PT
25	Keeping LAN PWR source clear	Keeping LAN PWR source clear	X01	21	Delete C971& C968 and add C987, C988	X01	PT
26	Keeping EC pin level	Keeping EC pin level	X01	25	Leave R165, R170, R167, R164 empty	X01	PT
27	RFI solution (SSI)	RFI solution (SSI)	X01	25, 31	Mounte C836 and add PC622 fro 33pF	X01	PT
28	EMI solution (SSI)	EMI solution (SSI)	X01	13, 14, 21, 24, 26, 36	1. Modify L625, L10, L11, L12, L13, L5, L627 to YCM0805F2SF-900T 2. Modify R25 to 33ohm, mounte C38 and add C172 for 10pF 3. Mounte CP1, CP2, CP3, CP4, CP5, CP6& C99 4. Add C173& C175 on FAN signal 5. Add C968, C990, C989, C174, C670, C955, C956& C958	X01	PT
29			X01		X01 Schematic Official Release	X01	PT
30	Remove unused parts	Remove unused parts	X02	16, 25	Remove R140, R141, R142& R143	X02	ST
31	Prevent leakage current	Prevent leakage current	X02	16	Modify U9 power and pull-high power to +3.3V_ALW_SB	X02	ST
32	Seperate LPC CLK	Imporve LPC CLK waveform	X02	15	Connecotor R219.1 to U6.H25 (LPC_CLK1).	X02	ST
33	HTC IPCC function improve	Implement IPCC function	X02	4, 25	Add Q616 and add U11.104 as "IPCC_SMI#" for IPCC function	X02	ST
34	Fine tune PWR sequence	Fine tune PWR sequence	X02	27, 29, 30 31	1. Seperate "RUN_PWER_ENABLE" and add PR63, PR64, PQ25& PQ26. 2. Modify PR62, PR53 to 0ohm, PR24 to 68Kohm and PR29 to 10Kohm. 3. Modify VCORE& +1.1V_RUN enable signal to "1.8V_RUN_PWRGD" 4. Add PR664 for enable of +2.5V_RUN.	X02	ST
35	EMI solution (PT)	EMI solution (PT)	X02	20, 21	1. Modify L22 from N.A to mounted 2. Modify C38, C172 from 10 pF to 5.6pF.	X02	ST
36	RFI solution (PT)	RFI solution (PT)	X02	6, 10, 13, 15, 18, 27, 28, 30, 31, 36	1. Add C102, C181, C993, PC622 for 33pF 2. Add C183, C184, C185, C991, C992, PC98, PC99, PC100, PC101, PC102, PC683 for 68pF 3. Add PC103 for 1uF 4. Add C186, C187 for 0.1uF_0603 5. Add C188, C189, C190, C191, C192, C193, C194, C195 for 0.1uF 6. Add PC104 for 2200pF 7. Delete C834, C836 and add R224 as damping resistor of "EC_FLASH_SPI_CLK"	X02	ST
37	Safety solution (PT)	Improve Safety	X02	19	Add R679 and modify R661 to D609.2	X02	ST
38	ESD solution (PT)	ESD solution (PT)	X02	20, 36	Add C196, C197, C198, C199, C200, C994, C995 for ESD solution.	X02	ST
39	eSATA USB signal improve (AMD)	eSATA USB HS eye diagram improve	X02	20	Add C180, C201 by 5.6pF for eSATA USB signal improvement.	X02	ST

Title: History - 1

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