

QuantaBig Solution

Quanta “Big Sur” Architecture

Revision 0.2

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Revision History:

Revision	Date	Description
0.1	2016-01-16	Release for Open Compute Project
0.2	2017-07-05	HW license and template reformat

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1 INTRODUCTION

The Quanta Big Sur is 4OU/21” chassis which using IA-64 based dual-socket servers that support the Grantley –EP processors in combination with the Wellsburg PCH (PCH) to provide a balanced feature set between technology leadership and cost. Quanta Grantley platform will be 16 DIMMs and supports 8 GPGPU cards and Max. 8 2.5”HDDs .

The intended audiences for this document are the Grantley platform technical leads, software team, validation team, and board design engineers that need to utilize a comprehensive package. This document will provide the Big Sur Design Teams the product specific features that are required to be implemented on the boards. Product feature requirements and block diagrams will be provided.

Links to reference documents that dive into the implementation for the software stack, common-core solution, server management architecture, fan-speed control architecture, chassis, power budget, and thermal requirements are provided.

1.1 LICENSE

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2 PRODUCT ARCHITECTURE OVERVIEW

The Big Sur 16 DIMMs Server board will be Quanta Grantley server product. The silicon ingredients and features are as follows list:

Table 2-1. Grantley Enterprise Server Big Sur Feature List

Board Name	Grantley Server Baseboard
Form Factor	4OU / 533mm x 800mm x 189mm/ 21" x 31.5" x 7.4"
Baseboard size	12” x 13, 8 layer, 1.6mm, 16 DIMMs
CPU	Intel Xeon Haswell/Broadwell-EP, R3 Socket ,Quantity :2
Max Processor Wattage	145W, Optimized power delivery for 95W, VRD 12.5
QPI Speed	9.6 GT/s, 8.0GT/s, 6.4GT/s
Chipset	Intel (R) C610 series chipset (Wellsburg)
Memory	ECC RDIMM/ LRDIMM slots Up to 1TB (64Gx16) of memory for LRDIMM Up to 1TB (64Gx16) of memory for RDIMM
PCIe Expansion Slot	(1) PCIe x16 G3 riser slot for low-profile card (By Riser) (1) PCIe x8 G3 riser slot for low-profile card (Option) (1) PCIe x8 G3 OCP mezzanine card slot
Front IO	(2) USB 3.0 ports (1) VGA port (BMC AST2400) (1) RS232 serial port (1) GbE RJ45 management port (1) ID Button with ID LED (1) Power Button with power LED (1)Reset Button
Network	OCP PCI-E x8 Gen3 Mezzanine card support PHY RTL8211 to BMC for delicate management NIC port.
Storage	(8) 2.5" SATA hot-plug drives
USB	Two USB3.0 ports on Front
Video	ASPEED AST2400 8MB DDR3 video memory
GPGPU Card	PCI-E x16 Gen3, double-wide GPU card, Quantity : 8
Series Port	One external serial port on Front
FAN	(4) Dual-rotor FAN (Fan size :76x92x92)
ACPI	ACPI compliance, S0, S5 support. (* No S1 and S3 support.)

TPM	Yes
Power-Supply	Through Open Rack Power Bus Bar , Open Rack V2 support
Chassis	4OU system

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2.1 PRODUCT ARCHITECTURE BLOCK DIAGRAM

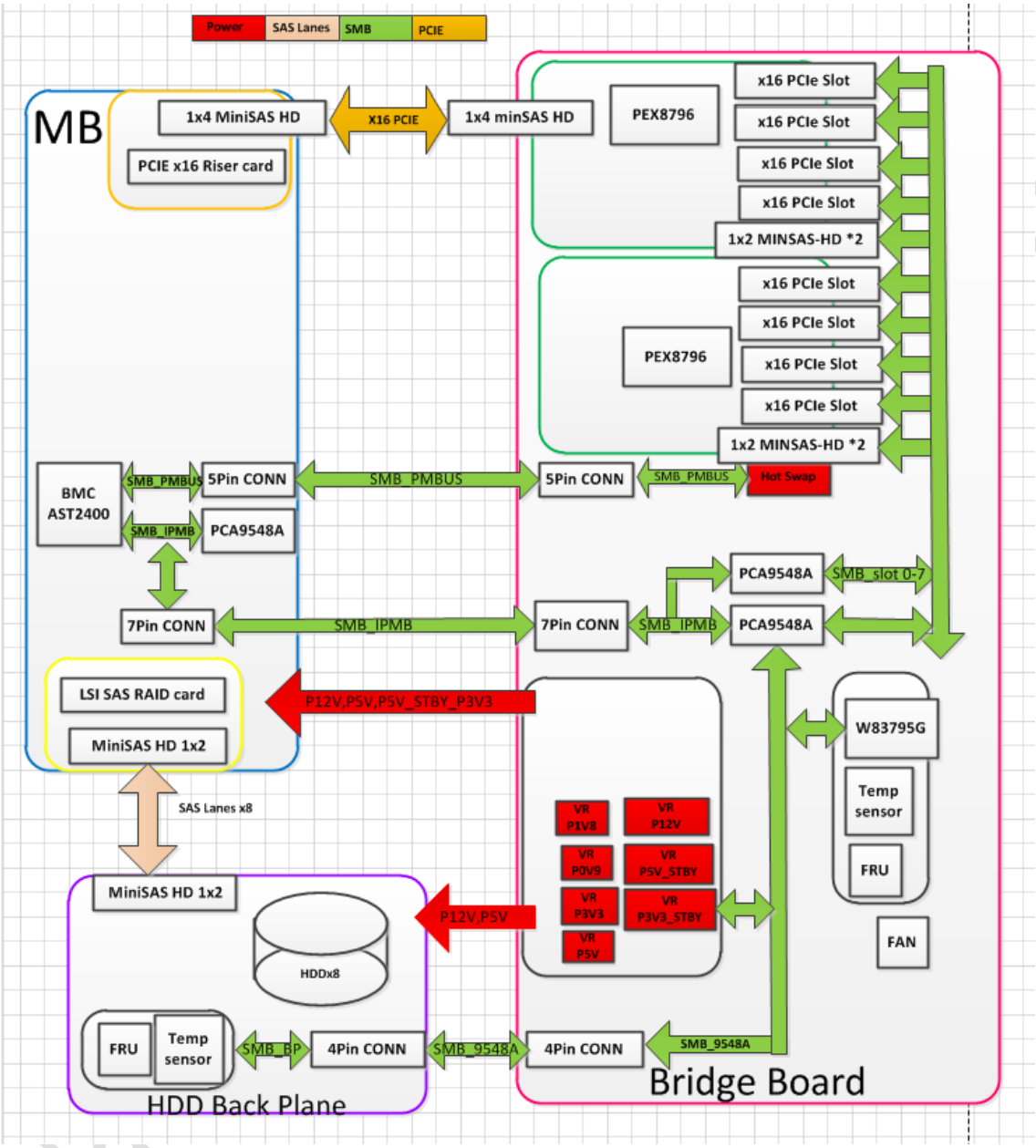


Figure 2-1 Grantley BIG SUR Configuration

2.2 BASEBOARD PLACEMENT

W 304.8mm (12 “) x L 330.2mm (13”)

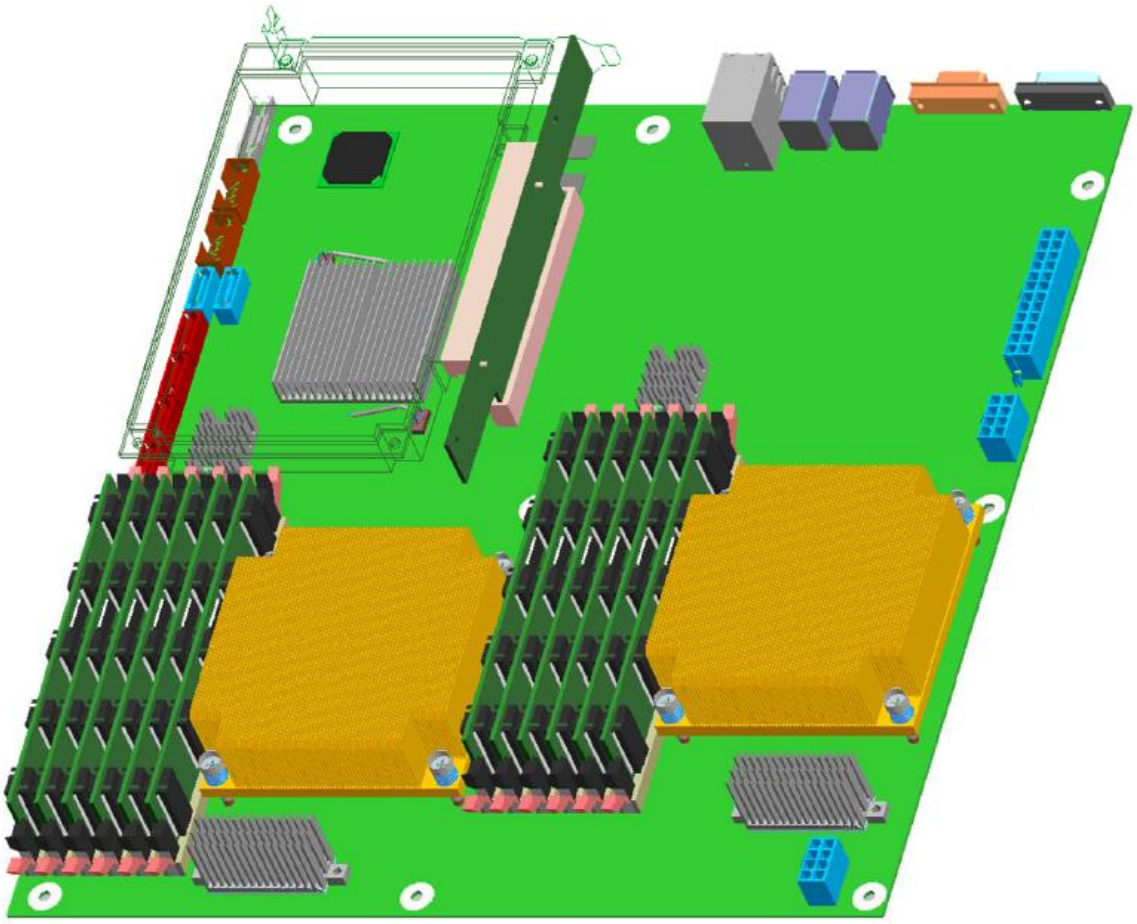


Figure 2-2: SSI Baseboard Placement

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2.2.1 Baseboard Main Power connector

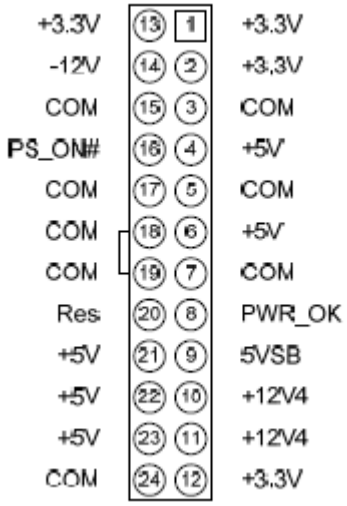


Figure 2-3: SSI Baseboard Main power connector

2.2.2 Baseboard Processor Power connector

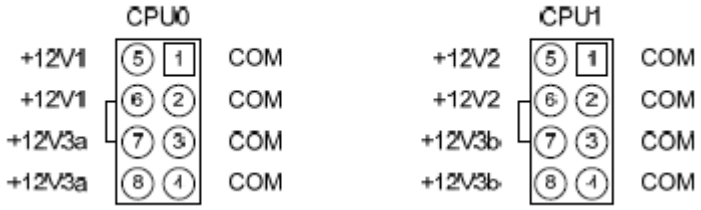


Figure 2-4: SSI Baseboard processor power connector

2.2.3 Baseboard Sever Signal connector

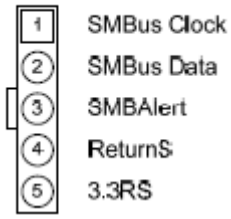


Figure 2-5: SSI Baseboard sever signal connector

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3 SYSTEM SUB BOARDs

3.1 GPU LINKING BOARD

3.1.1 GPU LINKING BOARD BLOACK DIAGRAM

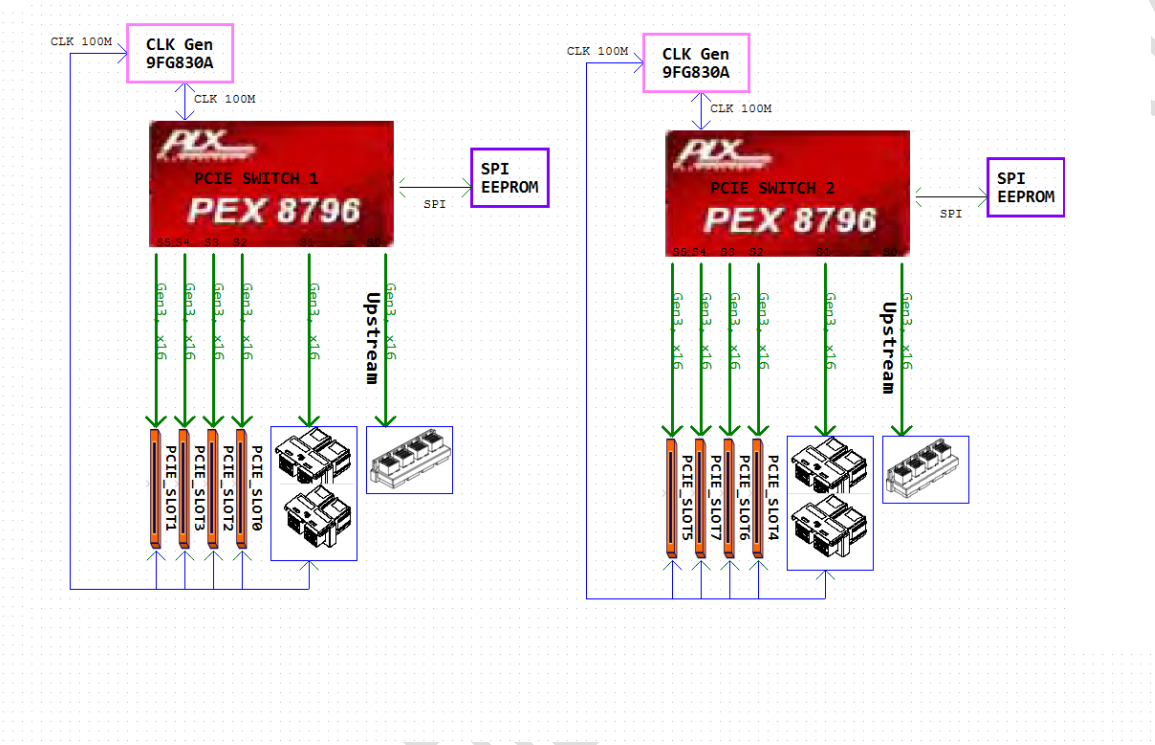


Figure 3-1 GPU Linking Board Block Diagram

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3.1.2 GPU LINKING BOARD PLACEMENT

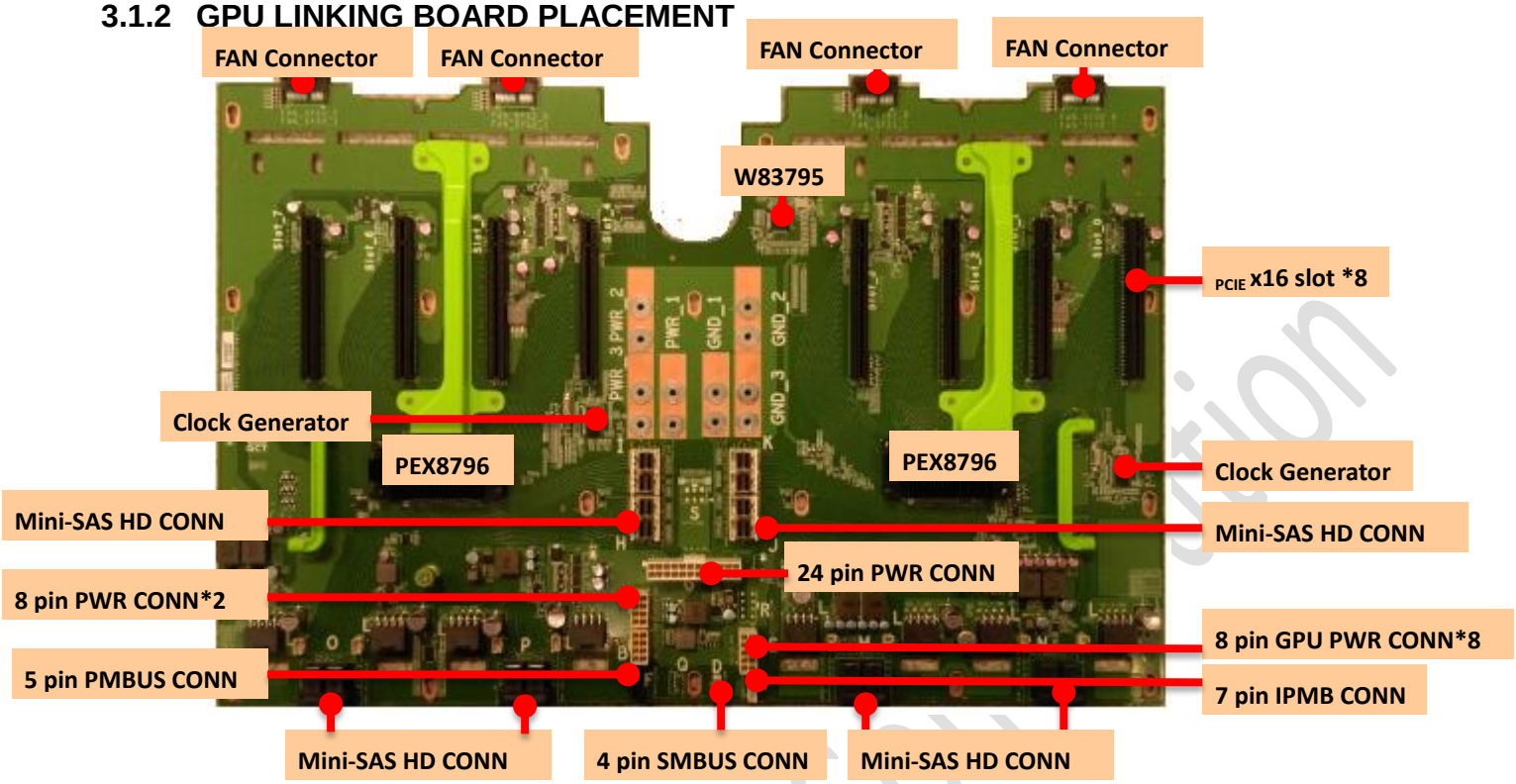


Figure 3-2 GPU Linking Board Placement

3.1.3 GPU LINKING BOARD Temperature sensor

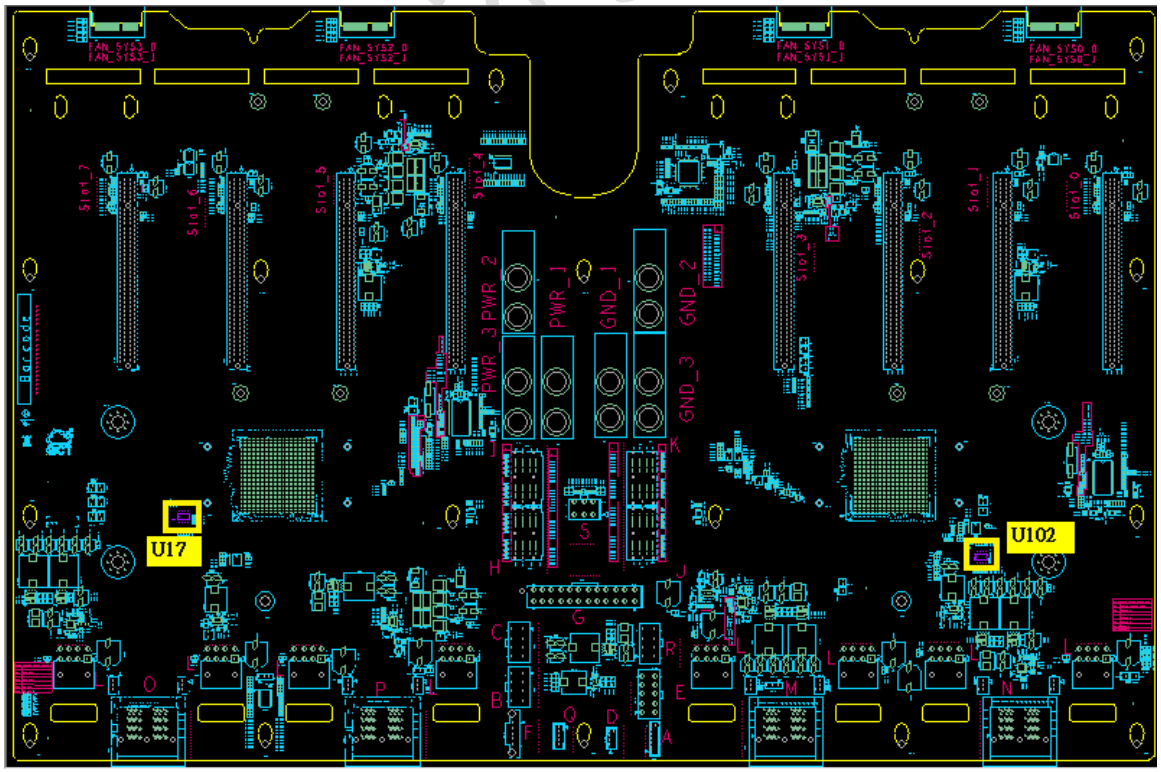


Figure 3-3 GPU Linking Board Temperature sensor location

Device	Part Ref	Implementation
TMP75	U17(Empty)	Temp PCI Switch2 ambient sensor
	U102	Temp PCI Switch1 ambient sensor

3.1.4 GPU LINKING BOARD SMBUS Block Diagram

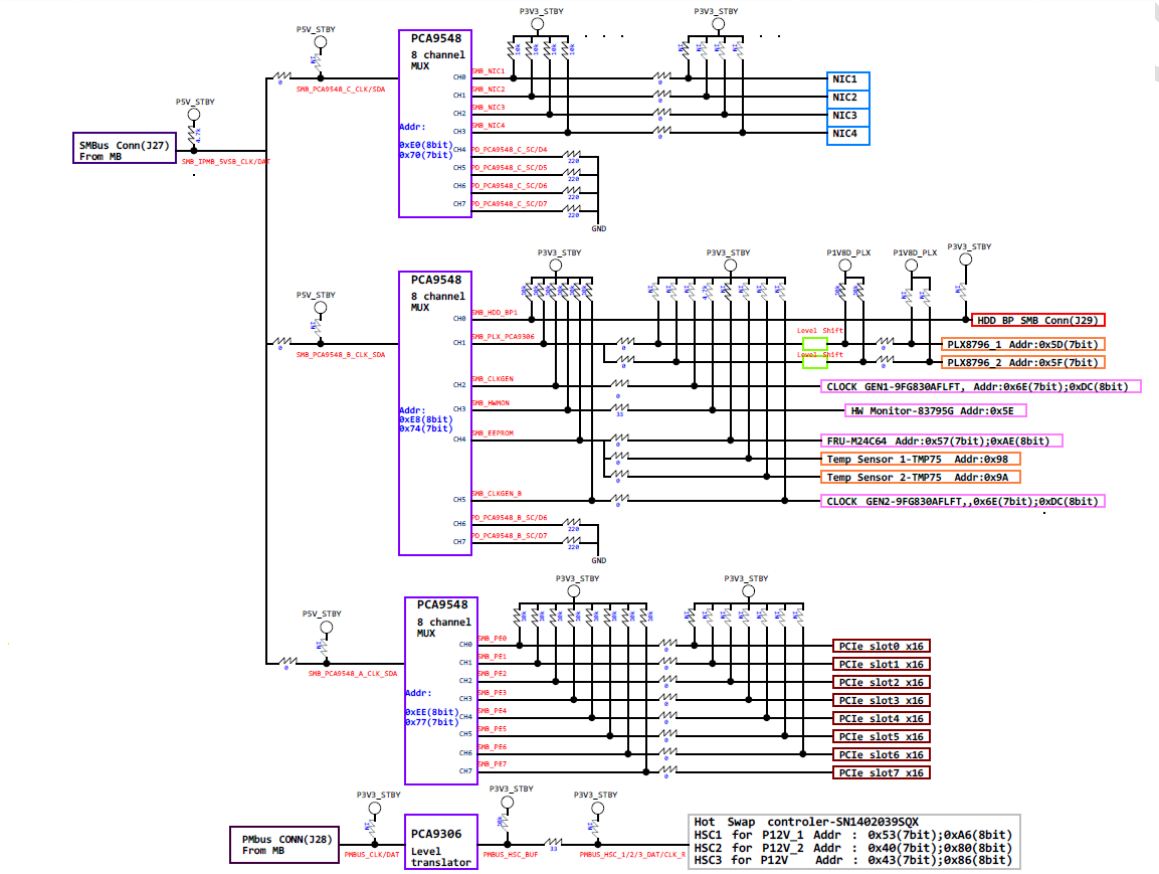


Figure 3-4 GPU Linking Board SMBUS Block Diagram

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3.1.5 GPU LINKING BOARD Connectors Pinout

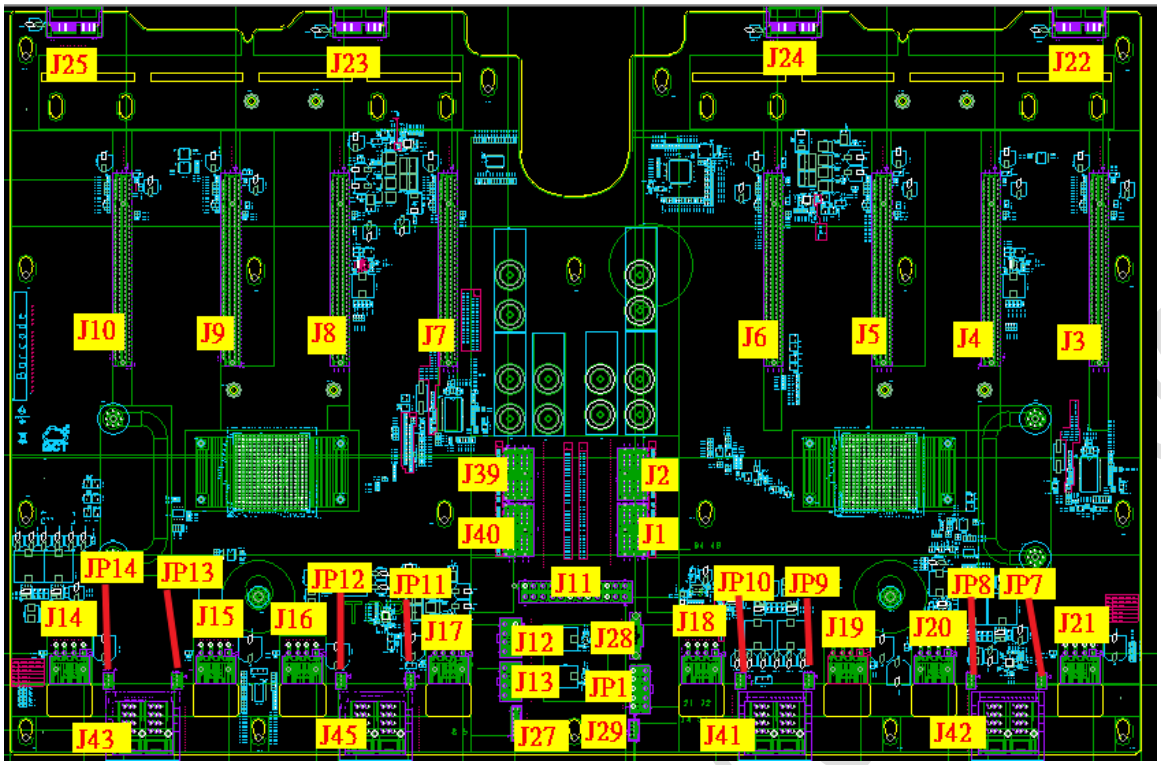
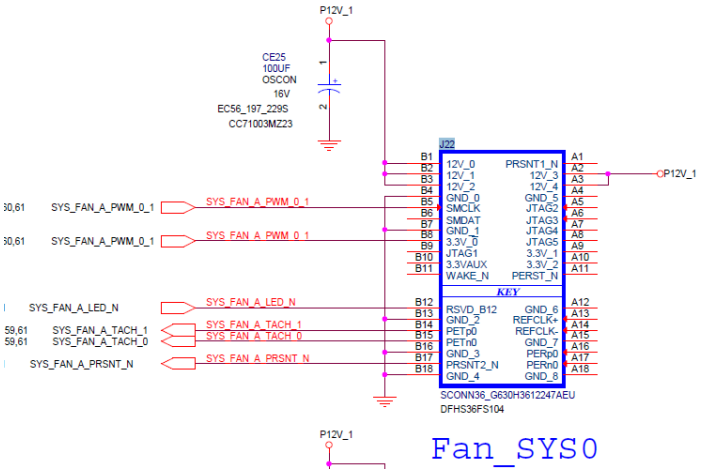


Figure 3-5 GPU Linking Board connectors

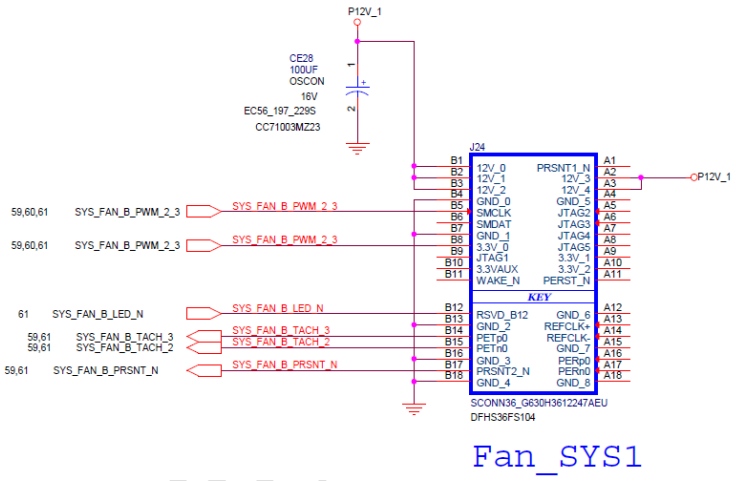
3.1.5.1 J22-FAN_SYS_0 Connector



Pin	Single name	Pin	Single name
A1		B1	P12V_1
A2	P12V_1	B2	P12V_1
A3	P12V_1	B3	P12V_1
A4		B4	GND

A5		B5	SYS_FAN_A_PWM_0_1
A6		B6	
A7		B7	GND
A8		B8	SYS_FAN_A_PWM_0_1
A9		B9	
A10		B10	
A11		B11	
A12		B12	SYS_FAN_A_LED_N
A13		B13	GND
A14		B14	SYS_FAN_A_TACH_1
A15		B15	SYS_FAN_A_TACH_1
A16		B16	GND
A17		B17	SYS_FAN_A_PRSNT_N
A18		B18	GND

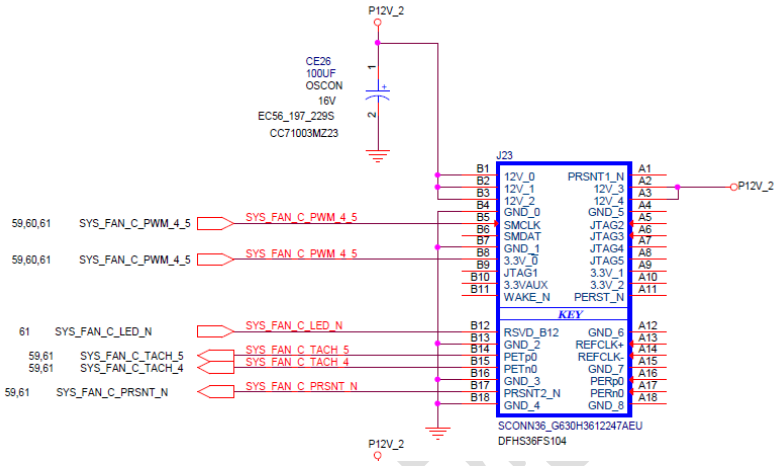
3.1.5.2 J24-FAN_SYS_1 Connector



Pin	Single name	Pin	Single name
A1		B1	P12V_1
A2	P12V_1	B2	P12V_1
A3	P12V_1	B3	P12V_1
A4		B4	GND
A5		B5	SYS_FAN_A_PWM_0_1
A6		B6	
A7		B7	GND
A8		B8	SYS_FAN_B_PWM_2_3

A9		B9	
A10		B10	
A11		B11	
A12		B12	SYS_FAN_B_LED_N
A13		B13	GND
A14		B14	SYS_FAN_B_TACH_3
A15		B15	SYS_FAN_B_TACH_2
A16		B16	GND
A17		B17	SYS_FAN_B_PRSNT_N
A18		B18	GND

3.1.5.3 J24-FAN_SYS_2 Connector

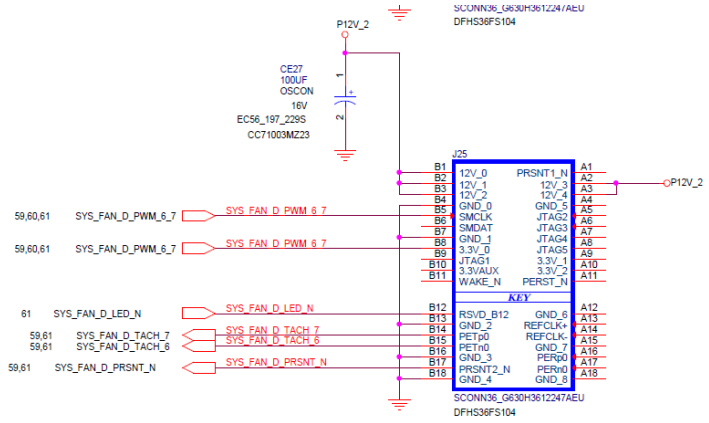


Pin	Single name	Pin	Single name
A1		B1	P12V_2
A2	P12V_2	B2	P12V_2
A3	P12V_2	B3	P12V_2
A4		B4	GND
A5		B5	SYS_FAN_C_PWM_4_5
A6		B6	
A7		B7	GND
A8		B8	SYS_FAN_C_PWM_4_5
A9		B9	
A10		B10	
A11		B11	
A12		B12	SYS_FAN_C_LED_N

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A13		B13	GND
A14		B14	SYS_FAN_C_TACH_5
A15		B15	SYS_FAN_C_TACH_4
A16		B16	GND
A17		B17	SYS_FAN_C_PRSNT_N
A18		B18	GND

3.1.5.4 J25-FAN_SYS_3 Connector



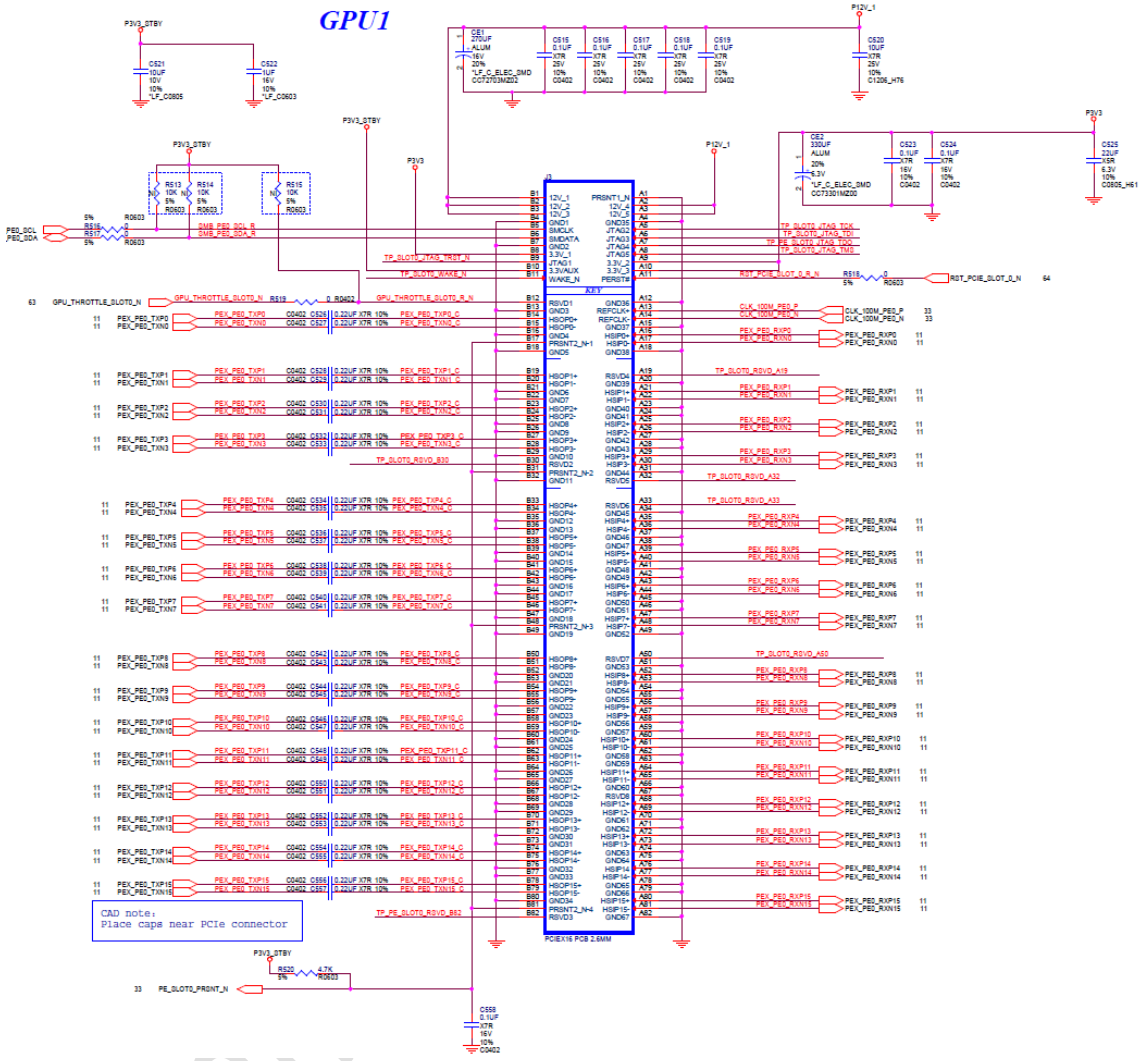
Fan_SYS3

Pin	Single name	Pin	Single name
A1		B1	P12V_2
A2	P12V_2	B2	P12V_2
A3	P12V_2	B3	P12V_2
A4		B4	GND
A5		B5	SYS_FAN_D_PWM_6_7
A6		B6	
A7		B7	GND
A8		B8	SYS_FAN_D_PWM_6_7
A9		B9	
A10		B10	
A11		B11	
A12		B12	SYS_FAN_D_LED_N
A13		B13	GND
A14		B14	SYS_FAN_D_TACH_7
A15		B15	SYS_FAN_D_TACH_6
A16		B16	GND

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A17		B17	SYS_FAN_D_PRSNT_N
A18		B18	GND

3.1.5.5 J3-PCIE Slot_0 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_1
A2	P12V_1	B2	P12V_1
A3	P12V_1	B3	P12V_1
A4	GND	B4	GND
A5	TP_SLOT1_JTAG_TCK	B5	SMB_PE0_SCL_R
A6	TP_SLOT0_JTAG_TDI	B6	SMB_PE0_SDA_R
A7	TP_PE_SLOT0_JTAG_TDO	B7	GND
A8	TP_SLOT0_JTAG_TMS	B8	P3V3

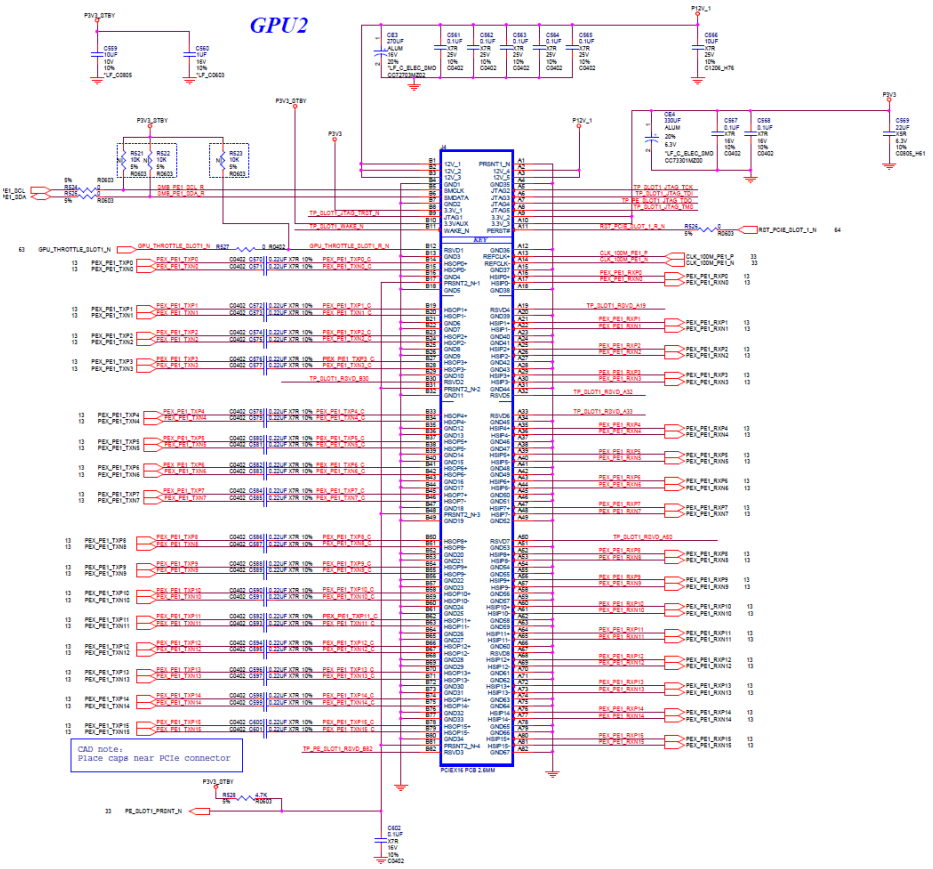
A9	P3V3	B9	TP_SLOT0_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_0_R_N	B11	TP_SLOT0_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT0_R_N
A13	CLK_100M_PE0_P	B13	GND
A14	CLK_100M_PE0_N	B14	PEX_PE0_TXP0_C
A15	GND	B15	PEX_PE0_TXN0_C
A16	PEX_PE1_RXP0	B16	GND
A17	PEX_PE1_RXN0	B17	PE_SLOT0_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT0_RSVD_A19	B19	PEX_PE0_TXP1_C
A20	GND	B20	PEX_PE0_TXN1_C
A21	PEX_PE0_RXP1	B21	GND
A22	PEX_PE0_RXN1	B22	GND
A23	GND	B23	PEX_PE0_TXP2_C
A24	GND	B24	PEX_PE0_TXN2_C
A25	PEX_PE0_RXP2	B25	GND
A26	PEX_PE0_RXN2	B26	GND
A27	GND	B27	PEX_PE0_TXP3_C
A28	GND	B28	PEX_PE0_TXN3_C
A29	PEX_PE0_RXP3	B29	GND
A30	PEX_PE0_RXN3	B30	TP_SLOT0_RSVD_B30
A31	GND	B31	PE_SLOT0_PRSNT_N
A32	TP_SLOT0_RSVD_A32	B32	GND
A33	TP_SLOT0_RSVD_A33	B33	PEX_PE0_TXP4_C
A34	GND	B34	PEX_PE0_TXN4_C
A35	PEX_PE0_RXP4	B35	GND
A36	PEX_PE0_RXN4	B36	GND
A37	GND	B37	PEX_PE0_TXP5_C
A38	GND	B38	PEX_PE0_TXN5_C
A39	PEX_PE0_RXP5	B39	GND
A40	PEX_PE0_RXN5	B40	GND
A41	GND	B41	PEX_PE0_TXP6_C
A42	GND	B42	PEX_PE0_TXN6_C
A43	PEX_PE0_RXP6	B43	GND
A44	PEX_PE0_RXN6	B44	GND
A45	GND	B45	PEX_PE0_TXP7_C

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A46	GND	B46	PEX_PE0_TXN7_C
A47	PEX_PE0_RXP7	B47	GND
A48	PEX_PE0_RXN7	B48	PE_SLOT0_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT0_RSVD_A50	B50	PEX_PE0_TXP8_C
A51	GND	B51	PEX_PE0_TXN8_C
A52	PEX_PE0_RXP8	B52	GND
A53	PEX_PE0_RXN8	B53	GND
A54	GND	B54	PEX_PE0_TXP9_C
A55	GND	B55	PEX_PE0_TXN9_C
A56	PEX_PE0_RXP9	B56	GND
A57	PEX_PE0_RXN9	B57	GND
A58	GND	B58	PEX_PE0_TXP10_C
A59	GND	B59	PEX_PE0_TXN10_C
A60	PEX_PE_RXP10	B60	GND
A61	PEX_PE0_RXN10	B61	GND
A62	GND	B62	PEX_PE0_TXP11_C
A63	GND	B63	PEX_PE0_TXN11_C
A64	PEX_PE0_RXP11	B64	GND
A65	PEX_PE0_RXN11	B65	GND
A66	GND	B66	PEX_PE0_TXP12_C
A67	GND	B67	PEX_PE0_TXN12_C
A68	PEX_PE0_RXP12	B68	GND
A69	PEX_PE0_RXN12	B69	GND
A70	GND	B70	PEX_PE0_TXP13_C
A71	GND	B71	PEX_PE0_TXN13_C
A72	PEX_PE0_RXP13	B72	GND
A73	PEX_PE0_RXN13	B73	GND
A74	GND	B74	PEX_PE0_TXP14_C
A75	GND	B75	PEX_PE0_TXN14_C
A76	PEX_PE0_RXP14	B76	GND
A77	PEX_PE0_RXN14	B77	GND
A78	GND	B78	PEX_PE0_TXP15_C
A79	GND	B79	PEX_PE0_TXN15_C
A80	PEX_PE0_RXP15	B80	GND
A81	PEX_PE0_RXN15	B81	PE_SLOT0_PRSNT_N
A82	GND	B82	TP_PE_SLOT0_RSVD_B82

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3.1.5.6 J4-PCIE Slot_1 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_1
A2	P12V_1	B2	P12V_1
A3	P12V_1	B3	P12V_1
A4	GND	B4	GND
A5	TP_SLOT1_JTAG_TCK	B5	SMB_PE1_SCL_R
A6	TP_SLOT1_JTAG_TDI	B6	SMB_PE1_SDA_R
A7	TP_PE_SLOT1_JTAG_TDO	B7	GND
A8	TP_SLOT1_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT1_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_1_R_N	B11	TP_SLOT1_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT1_R_N
A13	CLK_100M_PE1_P	B13	GND
A14	CLK_100M_PE1_N	B14	PEX_PE1_TXP0_C
A15	GND	B15	PEX_PE1_TXN0_C
A16	PEX_PE1_RXP0	B16	GND

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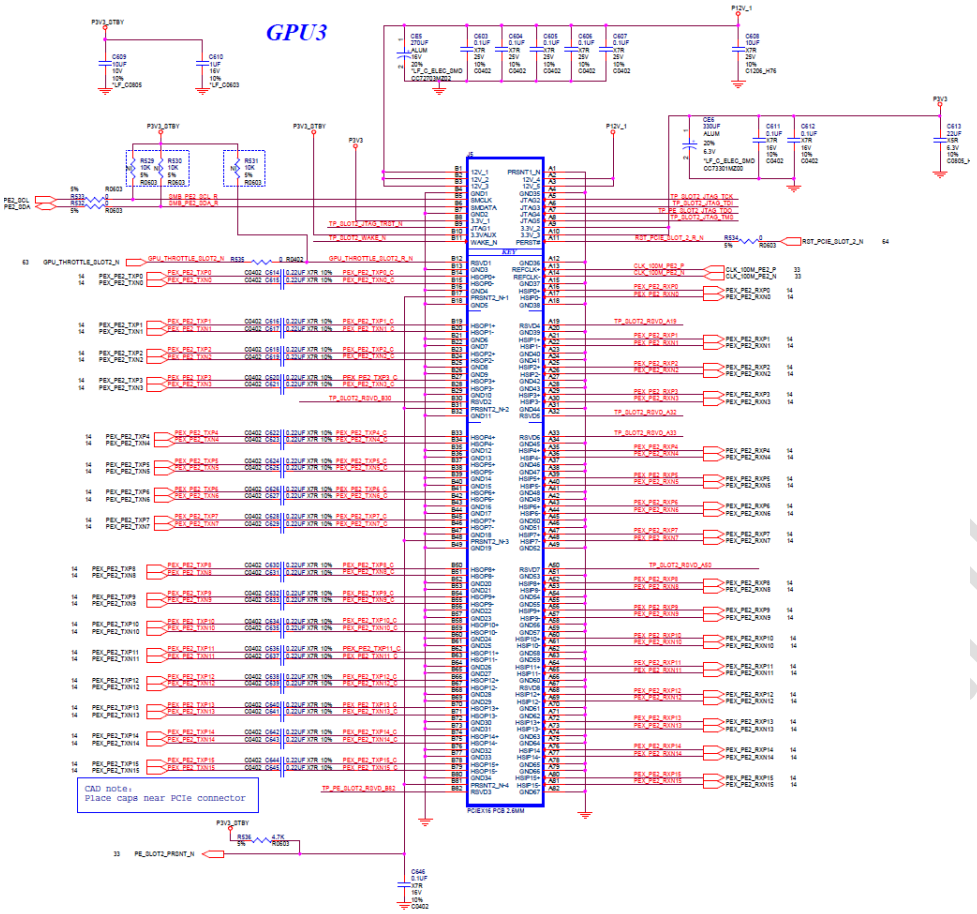
A17	PEX_PE1_RXN0	B17	PE_SLOT1_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT1_RSVD_A19	B19	PEX_PE1_TXP1_C
A20	GND	B20	PEX_PE1_TXN1_C
A21	PEX_PE1_RXP1	B21	GND
A22	PEX_PE1_RXN1	B22	GND
A23	GND	B23	PEX_PE1_TXP2_C
A24	GND	B24	PEX_PE1_TXN2_C
A25	PEX_PE1_RXP2	B25	GND
A26	PEX_PE1_RXN2	B26	GND
A27	GND	B27	PEX_PE1_TXP3_C
A28	GND	B28	PEX_PE1_TXN3_C
A29	PEX_PE1_RXP3	B29	GND
A30	PEX_PE1_RXN3	B30	TP_SLOT1_RSVD_B30
A31	GND	B31	PE_SLOT1_PRSNT_N
A32	TP_SLOT1_RSVD_A32	B32	GND
A33	TP_SLOT1_RSVD_A33	B33	PEX_PE1_TXP4_C
A34	GND	B34	PEX_PE1_TXN4_C
A35	PEX_PE1_RXP4	B35	GND
A36	PEX_PE1_RXN4	B36	GND
A37	GND	B37	PEX_PE1_TXP5_C
A38	GND	B38	PEX_PE1_TXN5_C
A39	PEX_PE1_RXP5	B39	GND
A40	PEX_PE1_RXN5	B40	GND
A41	GND	B41	PEX_PE1_TXP6_C
A42	GND	B42	PEX_PE1_TXN6_C
A43	PEX_PE1_RXP6	B43	GND
A44	PEX_PE1_RXN6	B44	GND
A45	GND	B45	PEX_PE1_TXP7_C
A46	GND	B46	PEX_PE1_TXN7_C
A47	PEX_PE1_RXP7	B47	GND
A48	PEX_PE1_RXN7	B48	PE_SLOT1_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT1_RSVD_A50	B50	PEX_PE1_TXP8_C
A51	GND	B51	PEX_PE1_TXN8_C
A52	PEX_PE1_RXP8	B52	GND
A53	PEX_PE1_RXN8	B53	GND

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A54	GND	B54	PEX_PE1_TXP9_C
A55	GND	B55	PEX_PE1_TXN9_C
A56	PEX_PE1_RXP9	B56	GND
A57	PEX_PE1_RXN9	B57	GND
A58	GND	B58	PEX_PE1_TXP10_C
A59	GND	B59	PEX_PE1_TXN10_C
A60	PEX_PE1_RXP10	B60	GND
A61	PEX_PE1_RXN10	B61	GND
A62	GND	B62	PEX_PE1_TXP11_C
A63	GND	B63	PEX_PE1_TXN11_C
A64	PEX_PE1_RXP11	B64	GND
A65	PEX_PE1_RXN11	B65	GND
A66	GND	B66	PEX_PE1_TXP12_C
A67	GND	B67	PEX_PE1_TXN12_C
A68	PEX_PE1_RXP12	B68	GND
A69	PEX_PE1_RXN12	B69	GND
A70	GND	B70	PEX_PE1_TXP13_C
A71	GND	B71	PEX_PE1_TXN13_C
A72	PEX_PE1_RXP13	B72	GND
A73	PEX_PE1_RXN13	B73	GND
A74	GND	B74	PEX_PE1_TXP14_C
A75	GND	B75	PEX_PE1_TXN14_C
A76	PEX_PE1_RXP14	B76	GND
A77	PEX_PE1_RXN14	B77	GND
A78	GND	B78	PEX_PE1_TXP15_C
A79	GND	B79	PEX_PE1_TXN15_C
A80	PEX_PE1_RXP15	B80	GND
A81	PEX_PE1_RXN15	B81	PE_SLOT1_PRSNT_N
A82	GND	B82	TP_PE_SLOT1_RSVD_B82

Quanta Big Sur Contribution

3.1.5.7 J5-PCIE Slot_2 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_1
A2	P12V_1	B2	P12V_1
A3	P12V_1	B3	P12V_1
A4	GND	B4	GND
A5	TP_SLOT2_JTAG_TCK	B5	SMB_PE2_SCL_R
A6	TP_SLOT2_JTAG_TDI	B6	SMB_PE2_SDA_R
A7	TP_PE_SLOT2_JTAG_TDO	B7	GND
A8	TP_SLOT2_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT2_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_2_R_N	B11	TP_SLOT2_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT2_R_N
A13	CLK_100M_PE2_P	B13	GND
A14	CLK_100M_PE2_N	B14	PEX_PE2_TXP0_C
A15	GND	B15	PEX_PE2_TXN0_C
A16	PEX_PE2_RXP0	B16	GND

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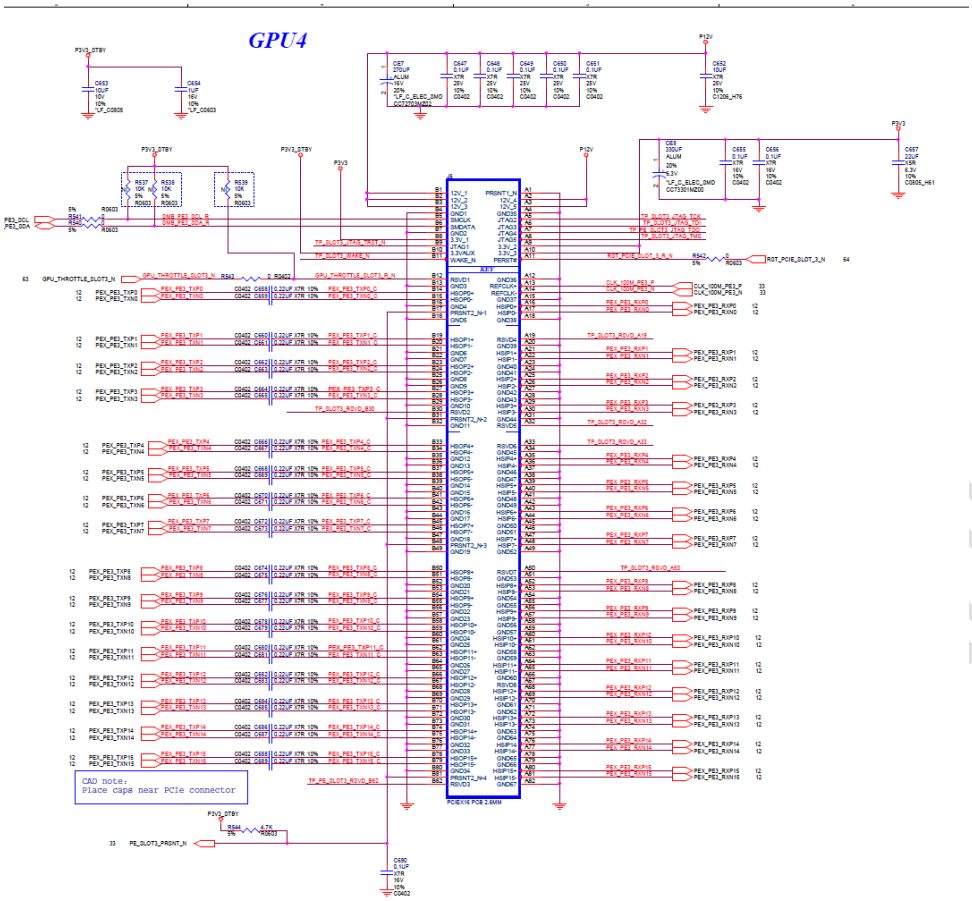
A17	PEX_PE2_RXN0	B17	PE_SLOT2_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT2_RSVD_A19	B19	PEX_PE2_TXP1_C
A20	GND	B20	PEX_PE2_TXN1_C
A21	PEX_PE2_RXP1	B21	GND
A22	PEX_PE2_RXN1	B22	GND
A23	GND	B23	PEX_PE2_TXP2_C
A24	GND	B24	PEX_PE2_TXN2_C
A25	PEX_PE2_RXP2	B25	GND
A26	PEX_PE2_RXN2	B26	GND
A27	GND	B27	PEX_PE2_TXP3_C
A28	GND	B28	PEX_PE2_TXN3_C
A29	PEX_PE2_RXP3	B29	GND
A30	PEX_PE2_RXN3	B30	TP_SLOT2_RSVD_B30
A31	GND	B31	PE_SLOT2_PRSNT_N
A32	TP_SLOT2_RSVD_A32	B32	GND
A33	TP_SLOT2_RSVD_A33	B33	PEX_PE2_TXP4_C
A34	GND	B34	PEX_PE2_TXN4_C
A35	PEX_PE2_RXP4	B35	GND
A36	PEX_PE2_RXN4	B36	GND
A37	GND	B37	PEX_PE2_TXP5_C
A38	GND	B38	PEX_PE2_TXN5_C
A39	PEX_PE2_RXP5	B39	GND
A40	PEX_PE2_RXN5	B40	GND
A41	GND	B41	PEX_PE2_TXP6_C
A42	GND	B42	PEX_PE2_TXN6_C
A43	PEX_PE2_RXP6	B43	GND
A44	PEX_PE2_RXN6	B44	GND
A45	GND	B45	PEX_PE2_TXP7_C
A46	GND	B46	PEX_PE2_TXN7_C
A47	PEX_PE2_RXP7	B47	GND
A48	PEX_PE2_RXN7	B48	PE_SLOT2_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT2_RSVD_A50	B50	PEX_PE2_TXP8_C
A51	GND	B51	PEX_PE2_TXN8_C
A52	PEX_PE2_RXP8	B52	GND
A53	PEX_PE2_RXN8	B53	GND

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A54	GND	B54	PEX_PE2_TXP9_C
A55	GND	B55	PEX_PE2_TXN9_C
A56	PEX_PE2_RXP9	B56	GND
A57	PEX_PE2_RXN9	B57	GND
A58	GND	B58	PEX_PE2_TXP10_C
A59	GND	B59	PEX_PE2_TXN10_C
A60	PEX_PE2_RXP10	B60	GND
A61	PEX_PE2_RXN10	B61	GND
A62	GND	B62	PEX_PE2_TXP11_C
A63	GND	B63	PEX_PE2_TXN11_C
A64	PEX_PE2_RXP11	B64	GND
A65	PEX_PE2_RXN11	B65	GND
A66	GND	B66	PEX_PE2_TXP12_C
A67	GND	B67	PEX_PE2_TXN12_C
A68	PEX_PE2_RXP12	B68	GND
A69	PEX_PE2_RXN12	B69	GND
A70	GND	B70	PEX_PE2_TXP13_C
A71	GND	B71	PEX_PE2_TXN13_C
A72	PEX_PE2_RXP13	B72	GND
A73	PEX_PE2_RXN13	B73	GND
A74	GND	B74	PEX_PE2_TXP14_C
A75	GND	B75	PEX_PE2_TXN14_C
A76	PEX_PE2_RXP14	B76	GND
A77	PEX_PE2_RXN14	B77	GND
A78	GND	B78	PEX_PE2_TXP15_C
A79	GND	B79	PEX_PE2_TXN15_C
A80	PEX_PE2_RXP15	B80	GND
A81	PEX_PE2_RXN15	B81	PE_SLOT2_PRSNT_N
A82	GND	B82	TP_PE_SLOT2_RSVD_B82

Quanta Big Sur Contribution

3.1.5.8 J6-PCIE Slot_3 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V
A2	P12V	B2	P12V
A3	P12V	B3	P12V
A4	GND	B4	GND
A5	TP_SLOT3_JTAG_TCK	B5	SMB_PE3_SCL_R
A6	TP_SLOT3_JTAG_TDI	B6	SMB_PE3_SDA_R
A7	TP_PE_SLOT3_JTAG_TDO	B7	GND
A8	TP_SLOT3_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT3_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_3_R_N	B11	TP_SLOT3_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT3_R_N
A13	CLK_100M_PE3_P	B13	GND
A14	CLK_100M_PE3_N	B14	PEX_PE3_TXP0_C
A15	GND	B15	PEX_PE3_TXN0_C
A16	PEX_PE3_RXP0	B16	GND

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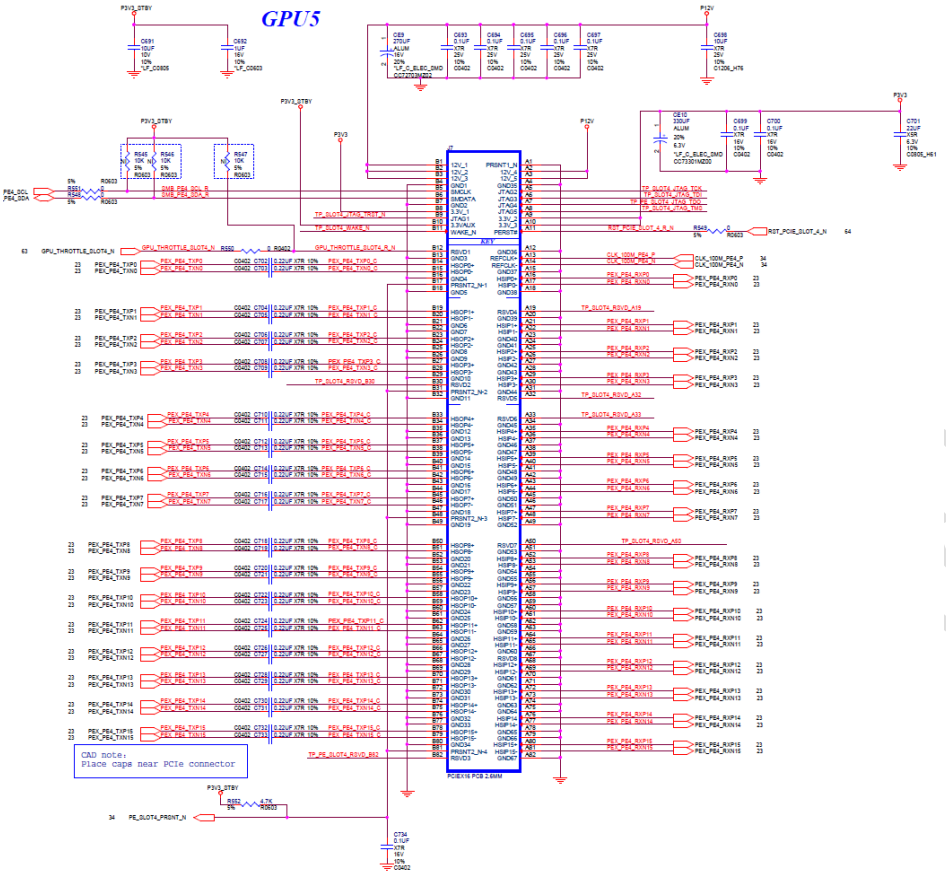
A17	PEX_PE3_RXN0	B17	PE_SLOT3_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT3_RSVD_A19	B19	PEX_PE3_TXP1_C
A20	GND	B20	PEX_PE3_TXN1_C
A21	PEX_PE3_RXP1	B21	GND
A22	PEX_PE3_RXN1	B22	GND
A23	GND	B23	PEX_PE3_TXP2_C
A24	GND	B24	PEX_PE3_TXN2_C
A25	PEX_PE3_RXP2	B25	GND
A26	PEX_PE3_RXN2	B26	GND
A27	GND	B27	PEX_PE3_TXP3_C
A28	GND	B28	PEX_PE3_TXN3_C
A29	PEX_PE3_RXP3	B29	GND
A30	PEX_PE3_RXN3	B30	TP_SLOT3_RSVD_B30
A31	GND	B31	PE_SLOT3_PRSNT_N
A32	TP_SLOT3_RSVD_A32	B32	GND
A33	TP_SLOT3_RSVD_A33	B33	PEX_PE3_TXP4_C
A34	GND	B34	PEX_PE3_TXN4_C
A35	PEX_PE3_RXP4	B35	GND
A36	PEX_PE3_RXN4	B36	GND
A37	GND	B37	PEX_PE3_TXP5_C
A38	GND	B38	PEX_PE3_TXN5_C
A39	PEX_PE3_RXP5	B39	GND
A40	PEX_PE3_RXN5	B40	GND
A41	GND	B41	PEX_PE3_TXP6_C
A42	GND	B42	PEX_PE3_TXN6_C
A43	PEX_PE3_RXP6	B43	GND
A44	PEX_PE3_RXN6	B44	GND
A45	GND	B45	PEX_PE3_TXP7_C
A46	GND	B46	PEX_PE3_TXN7_C
A47	PEX_PE3_RXP7	B47	GND
A48	PEX_PE3_RXN7	B48	PE_SLOT3_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT3_RSVD_A50	B50	PEX_PE3_TXP8_C
A51	GND	B51	PEX_PE3_TXN8_C
A52	PEX_PE3_RXP8	B52	GND
A53	PEX_PE3_RXN8	B53	GND

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A54	GND	B54	PEX_PE3_TXP9_C
A55	GND	B55	PEX_PE3_TXN9_C
A56	PEX_PE3_RXP9	B56	GND
A57	PEX_PE3_RXN9	B57	GND
A58	GND	B58	PEX_PE3_TXP10_C
A59	GND	B59	PEX_PE3_TXN10_C
A60	PEX_PE3_RXP10	B60	GND
A61	PEX_PE3_RXN10	B61	GND
A62	GND	B62	PEX_PE3_TXP11_C
A63	GND	B63	PEX_PE3_TXN11_C
A64	PEX_PE3_RXP11	B64	GND
A65	PEX_PE3_RXN11	B65	GND
A66	GND	B66	PEX_PE3_TXP12_C
A67	GND	B67	PEX_PE3_TXN12_C
A68	PEX_PE3_RXP12	B68	GND
A69	PEX_PE3_RXN12	B69	GND
A70	GND	B70	PEX_PE3_TXP13_C
A71	GND	B71	PEX_PE3_TXN13_C
A72	PEX_PE3_RXP13	B72	GND
A73	PEX_PE3_RXN13	B73	GND
A74	GND	B74	PEX_PE3_TXP14_C
A75	GND	B75	PEX_PE3_TXN14_C
A76	PEX_PE3_RXP14	B76	GND
A77	PEX_PE3_RXN14	B77	GND
A78	GND	B78	PEX_PE3_TXP15_C
A79	GND	B79	PEX_PE3_TXN15_C
A80	PEX_PE3_RXP15	B80	GND
A81	PEX_PE3_RXN15	B81	PE_SLOT3_PRSNT_N
A82	GND	B82	TP_PE_SLOT3_RSVD_B82

Quanta Big Sur Contribution

3.1.5.9 J7-PCIE Slot_4 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V
A2	P12V	B2	P12V
A3	P12V	B3	P12V
A4	GND	B4	GND
A5	TP_SLOT4_JTAG_TCK	B5	SMB_PE4_SCL_R
A6	TP_SLOT4_JTAG_TDI	B6	SMB_PE4_SDA_R
A7	TP_PE_SLOT4_JTAG_TDO	B7	GND
A8	TP_SLOT4_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT4_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_4_R_N	B11	TP_SLOT4_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT4_R_N
A13	CLK_100M_PE4_P	B13	GND
A14	CLK_100M_PE4_N	B14	PEX_PE4_TXP0_C
A15	GND	B15	PEX_PE4_TXN0_C
A16	PEX_PE4_RXP0	B16	GND

Quanta Big Sur Contribution

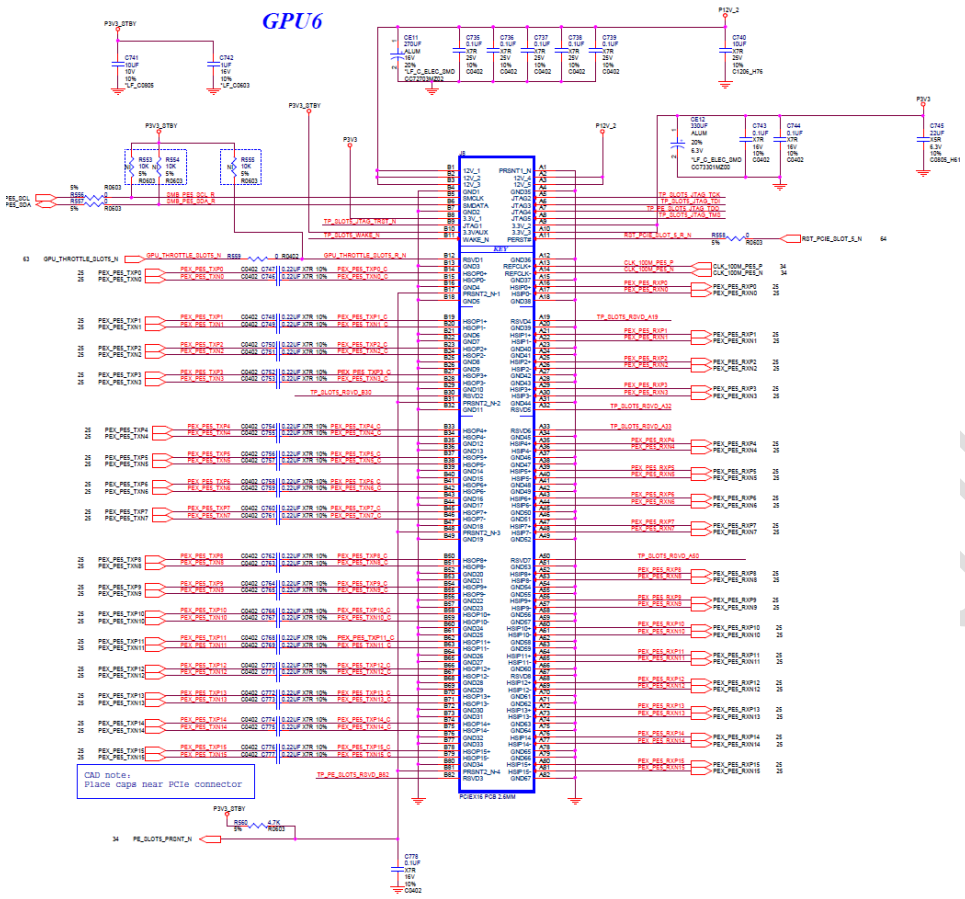
A17	PEX_PE4_RXN0	B17	PE_SLOT4_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT4_RSVD_A19	B19	PEX_PE4_TXP1_C
A20	GND	B20	PEX_PE4_TXN1_C
A21	PEX_PE4_RXP1	B21	GND
A22	PEX_PE4_RXN1	B22	GND
A23	GND	B23	PEX_PE4_TXP2_C
A24	GND	B24	PEX_PE4_TXN2_C
A25	PEX_PE4_RXP2	B25	GND
A26	PEX_PE4_RXN2	B26	GND
A27	GND	B27	PEX_PE4_TXP3_C
A28	GND	B28	PEX_PE4_TXN3_C
A29	PEX_PE4_RXP3	B29	GND
A30	PEX_PE4_RXN3	B30	TP_SLOT4_RSVD_B30
A31	GND	B31	PE_SLOT4_PRSNT_N
A32	TP_SLOT4_RSVD_A32	B32	GND
A33	TP_SLOT4_RSVD_A33	B33	PEX_PE4_TXP4_C
A34	GND	B34	PEX_PE4_TXN4_C
A35	PEX_PE4_RXP4	B35	GND
A36	PEX_PE4_RXN4	B36	GND
A37	GND	B37	PEX_PE4_TXP5_C
A38	GND	B38	PEX_PE4_TXN5_C
A39	PEX_PE4_RXP5	B39	GND
A40	PEX_PE4_RXN5	B40	GND
A41	GND	B41	PEX_PE4_TXP6_C
A42	GND	B42	PEX_PE4_TXN6_C
A43	PEX_PE4_RXP6	B43	GND
A44	PEX_PE4_RXN6	B44	GND
A45	GND	B45	PEX_PE4_TXP7_C
A46	GND	B46	PEX_PE4_TXN7_C
A47	PEX_PE4_RXP7	B47	GND
A48	PEX_PE4_RXN7	B48	PE_SLOT4_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT4_RSVD_A50	B50	PEX_PE4_TXP8_C
A51	GND	B51	PEX_PE4_TXN8_C
A52	PEX_PE4_RXP8	B52	GND
A53	PEX_PE4_RXN8	B53	GND

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A54	GND	B54	PEX_PE4_TXP9_C
A55	GND	B55	PEX_PE4_TXN9_C
A56	PEX_PE4_RXP9	B56	GND
A57	PEX_PE4_RXN9	B57	GND
A58	GND	B58	PEX_PE4_TXP10_C
A59	GND	B59	PEX_PE4_TXN10_C
A60	PEX_PE4_RXP10	B60	GND
A61	PEX_PE4_RXN10	B61	GND
A62	GND	B62	PEX_PE4_TXP11_C
A63	GND	B63	PEX_PE4_TXN11_C
A64	PEX_PE4_RXP11	B64	GND
A65	PEX_PE4_RXN11	B65	GND
A66	GND	B66	PEX_PE4_TXP12_C
A67	GND	B67	PEX_PE4_TXN12_C
A68	PEX_PE4_RXP12	B68	GND
A69	PEX_PE4_RXN12	B69	GND
A70	GND	B70	PEX_PE4_TXP13_C
A71	GND	B71	PEX_PE4_TXN13_C
A72	PEX_PE4_RXP13	B72	GND
A73	PEX_PE4_RXN13	B73	GND
A74	GND	B74	PEX_PE4_TXP14_C
A75	GND	B75	PEX_PE4_TXN14_C
A76	PEX_PE4_RXP14	B76	GND
A77	PEX_PE4_RXN14	B77	GND
A78	GND	B78	PEX_PE4_TXP15_C
A79	GND	B79	PEX_PE4_TXN15_C
A80	PEX_PE4_RXP15	B80	GND
A81	PEX_PE4_RXN15	B81	PE_SLOT4_PRSNT_N
A82	GND	B82	TP_PE_SLOT4_RSVD_B82

Quanta Big Sur Contribution

3.1.5.10 J8-PCIE Slot_5 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_2
A2	P12V_2	B2	P12V_2
A3	P12V_2	B3	P12V_2
A4	GND	B4	GND
A5	TP_SLOT5_JTAG_TCK	B5	SMB_PE5_SCL_R
A6	TP_SLOT5_JTAG_TDI	B6	SMB_PE5_SDA_R
A7	TP_PE_SLOT5_JTAG_TDO	B7	GND
A8	TP_SLOT5_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT5_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_5_R_N	B11	TP_SLOT5_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT5_R_N
A13	CLK_100M_PE5_P	B13	GND
A14	CLK_100M_PE5_N	B14	PEX_PE5_TXP0_C
A15	GND	B15	PEX_PE5_TXN0_C

Quanta Big Sur Contribution

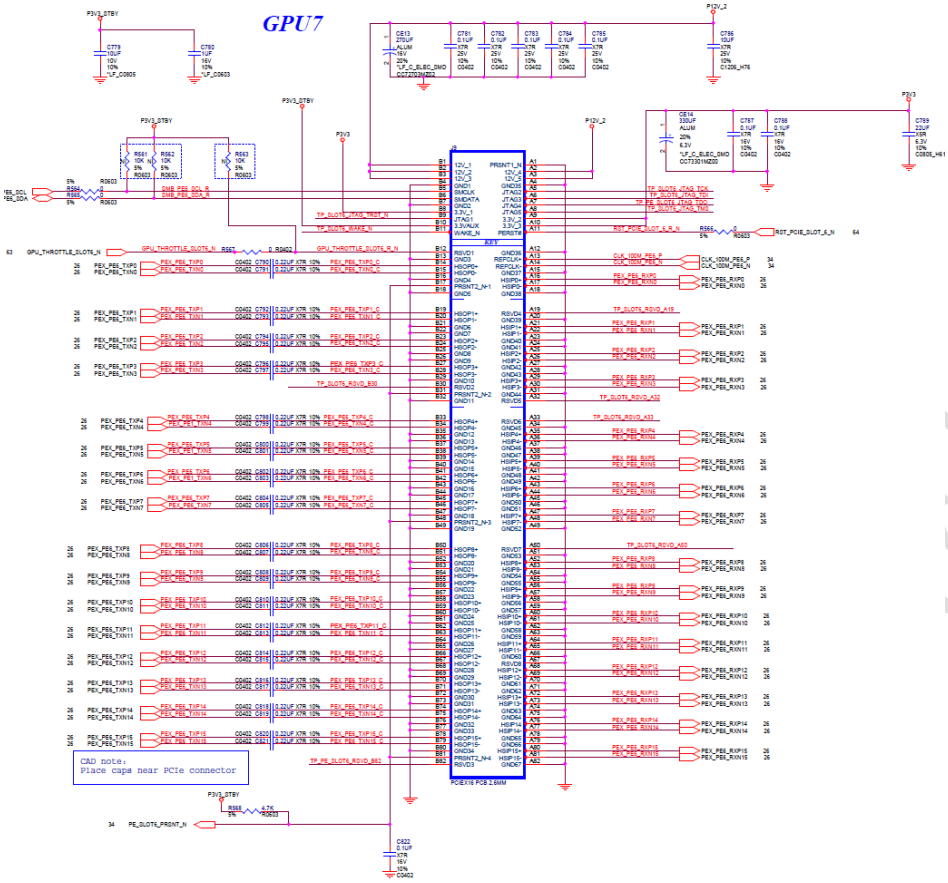
A16	PEX_PE5_RXP0	B16	GND
A17	PEX_PE5_RXN0	B17	PE_SLOT5_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT5_RSVD_A19	B19	PEX_PE5_TXP1_C
A20	GND	B20	PEX_PE5_TXN1_C
A21	PEX_PE5_RXP1	B21	GND
A22	PEX_PE5_RXN1	B22	GND
A23	GND	B23	PEX_PE5_TXP2_C
A24	GND	B24	PEX_PE5_TXN2_C
A25	PEX_PE5_RXP2	B25	GND
A26	PEX_PE5_RXN2	B26	GND
A27	GND	B27	PEX_PE5_TXP3_C
A28	GND	B28	PEX_PE5_TXN3_C
A29	PEX_PE5_RXP3	B29	GND
A30	PEX_PE5_RXN3	B30	TP_SLOT5_RSVD_B30
A31	GND	B31	PE_SLOT5_PRSNT_N
A32	TP_SLOT5_RSVD_A32	B32	GND
A33	TP_SLOT5_RSVD_A33	B33	PEX_PE5_TXP4_C
A34	GND	B34	PEX_PE5_TXN4_C
A35	PEX_PE5_RXP4	B35	GND
A36	PEX_PE5_RXN4	B36	GND
A37	GND	B37	PEX_PE5_TXP5_C
A38	GND	B38	PEX_PE5_TXN5_C
A39	PEX_PE5_RXP5	B39	GND
A40	PEX_PE5_RXN5	B40	GND
A41	GND	B41	PEX_PE5_TXP6_C
A42	GND	B42	PEX_PE5_TXN6_C
A43	PEX_PE5_RXP6	B43	GND
A44	PEX_PE5_RXN6	B44	GND
A45	GND	B45	PEX_PE5_TXP7_C
A46	GND	B46	PEX_PE5_TXN7_C
A47	PEX_PE5_RXP7	B47	GND
A48	PEX_PE5_RXN7	B48	PE_SLOT5_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT5_RSVD_A50	B50	PEX_PE5_TXP8_C
A51	GND	B51	PEX_PE5_TXN8_C
A52	PEX_PE5_RXP8	B52	GND

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A53	PEX_PE5_RXN8	B53	GND
A54	GND	B54	PEX_PE5_TXP9_C
A55	GND	B55	PEX_PE5_TXN9_C
A56	PEX_PE5_RXP9	B56	GND
A57	PEX_PE5_RXN9	B57	GND
A58	GND	B58	PEX_PE5_TXP10_C
A59	GND	B59	PEX_PE5_TXN10_C
A60	PEX_PE5_RXP10	B60	GND
A61	PEX_PE5_RXN10	B61	GND
A62	GND	B62	PEX_PE5_TXP11_C
A63	GND	B63	PEX_PE5_TXN11_C
A64	PEX_PE5_RXP11	B64	GND
A65	PEX_PE5_RXN11	B65	GND
A66	GND	B66	PEX_PE5_TXP12_C
A67	GND	B67	PEX_PE5_TXN12_C
A68	PEX_PE5_RXP12	B68	GND
A69	PEX_PE5_RXN12	B69	GND
A70	GND	B70	PEX_PE5_TXP13_C
A71	GND	B71	PEX_PE5_TXN13_C
A72	PEX_PE5_RXP13	B72	GND
A73	PEX_PE5_RXN13	B73	GND
A74	GND	B74	PEX_PE5_TXP14_C
A75	GND	B75	PEX_PE5_TXN14_C
A76	PEX_PE5_RXP14	B76	GND
A77	PEX_PE5_RXN14	B77	GND
A78	GND	B78	PEX_PE5_TXP15_C
A79	GND	B79	PEX_PE5_TXN15_C
A80	PEX_PE5_RXP15	B80	GND
A81	PEX_PE5_RXN15	B81	PE_SLOT5_PRSNT_N
A82	GND	B82	TP_PE_SLOT5_RSVD_B82

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3.1.5.11 J9-PCIE Slot_6 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_2
A2	P12V_2	B2	P12V_2
A3	P12V_2	B3	P12V_2
A4	GND	B4	GND
A5	TP_SLOT6_JTAG_TCK	B5	SMB_PE6_SCL_R
A6	TP_SLOT6_JTAG_TDI	B6	SMB_PE6_SDA_R
A7	TP_PE_SLOT6_JTAG_TDO	B7	GND
A8	TP_SLOT6_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT6_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_6_R_N	B11	TP_SLOT6_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT6_R_N
A13	CLK_100M_PE6_P	B13	GND
A14	CLK_100M_PE6_N	B14	PEX_PE6_TXP0_C
A15	GND	B15	PEX_PE6_TXN0_C

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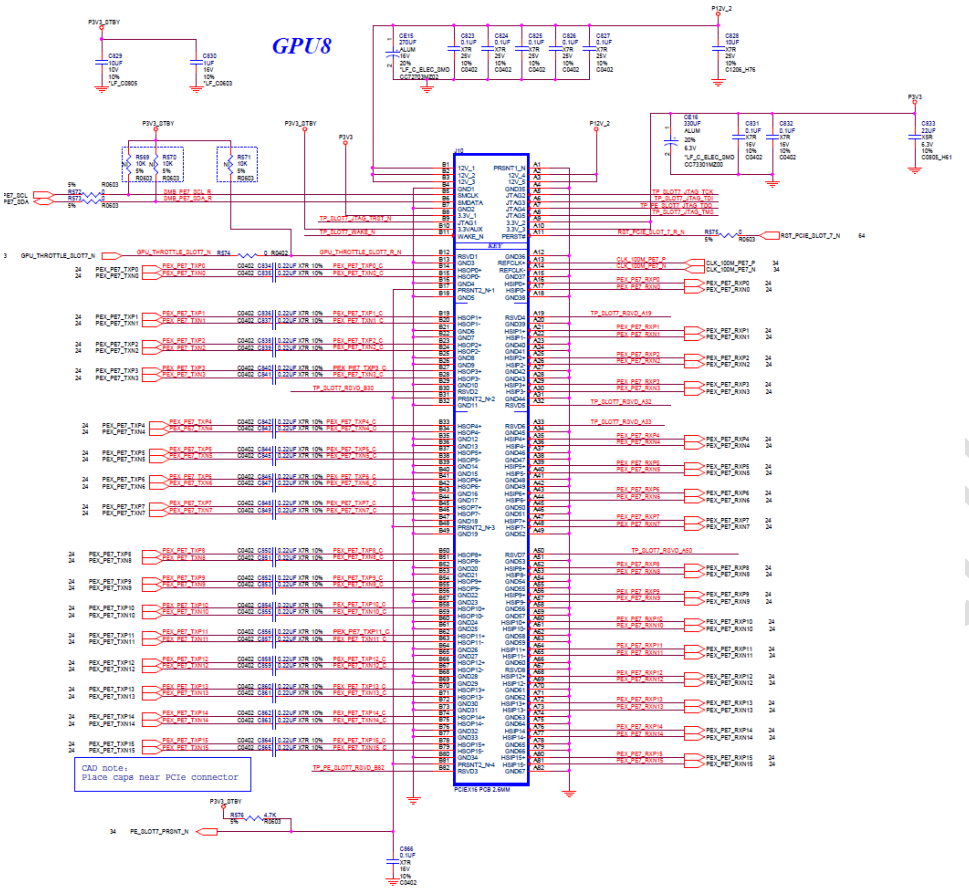
A16	PEX_PE6_RXP0	B16	GND
A17	PEX_PE6_RXN0	B17	PE_SLOT6_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT6_RSVD_A19	B19	PEX_PE6_TXP1_C
A20	GND	B20	PEX_PE6_TXN1_C
A21	PEX_PE6_RXP1	B21	GND
A22	PEX_PE6_RXN1	B22	GND
A23	GND	B23	PEX_PE6_TXP2_C
A24	GND	B24	PEX_PE6_TXN2_C
A25	PEX_PE6_RXP2	B25	GND
A26	PEX_PE6_RXN2	B26	GND
A27	GND	B27	PEX_PE6_TXP3_C
A28	GND	B28	PEX_PE6_TXN3_C
A29	PEX_PE6_RXP3	B29	GND
A30	PEX_PE6_RXN3	B30	TP_SLOT6_RSVD_B30
A31	GND	B31	PE_SLOT6_PRSNT_N
A32	TP_SLOT6_RSVD_A32	B32	GND
A33	TP_SLOT6_RSVD_A33	B33	PEX_PE6_TXP4_C
A34	GND	B34	PEX_PE6_TXN4_C
A35	PEX_PE6_RXP4	B35	GND
A36	PEX_PE6_RXN4	B36	GND
A37	GND	B37	PEX_PE6_TXP5_C
A38	GND	B38	PEX_PE6_TXN5_C
A39	PEX_PE6_RXP5	B39	GND
A40	PEX_PE6_RXN5	B40	GND
A41	GND	B41	PEX_PE6_TXP6_C
A42	GND	B42	PEX_PE6_TXN6_C
A43	PEX_PE6_RXP6	B43	GND
A44	PEX_PE6_RXN6	B44	GND
A45	GND	B45	PEX_PE6_TXP7_C
A46	GND	B46	PEX_PE6_TXN7_C
A47	PEX_PE6_RXP7	B47	GND
A48	PEX_PE6_RXN7	B48	PE_SLOT6_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT6_RSVD_A50	B50	PEX_PE6_TXP8_C
A51	GND	B51	PEX_PE6_TXN8_C
A52	PEX_PE6_RXP8	B52	GND

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A53	PEX_PE6_RXN8	B53	GND
A54	GND	B54	PEX_PE6_TXP9_C
A55	GND	B55	PEX_PE6_TXN9_C
A56	PEX_PE6_RXP9	B56	GND
A57	PEX_PE6_RXN9	B57	GND
A58	GND	B58	PEX_PE6_TXP10_C
A59	GND	B59	PEX_PE6_TXN10_C
A60	PEX_PE6_RXP10	B60	GND
A61	PEX_PE6_RXN10	B61	GND
A62	GND	B62	PEX_PE6_TXP11_C
A63	GND	B63	PEX_PE6_TXN11_C
A64	PEX_PE6_RXP11	B64	GND
A65	PEX_PE6_RXN11	B65	GND
A66	GND	B66	PEX_PE6_TXP12_C
A67	GND	B67	PEX_PE6_TXN12_C
A68	PEX_PE6_RXP12	B68	GND
A69	PEX_PE6_RXN12	B69	GND
A70	GND	B70	PEX_PE6_TXP13_C
A71	GND	B71	PEX_PE6_TXN13_C
A72	PEX_PE6_RXP13	B72	GND
A73	PEX_PE6_RXN13	B73	GND
A74	GND	B74	PEX_PE6_TXP14_C
A75	GND	B75	PEX_PE6_TXN14_C
A76	PEX_PE6_RXP14	B76	GND
A77	PEX_PE6_RXN14	B77	GND
A78	GND	B78	PEX_PE6_TXP15_C
A79	GND	B79	PEX_PE6_TXN15_C
A80	PEX_PE6_RXP15	B80	GND
A81	PEX_PE6_RXN15	B81	PE_SLOT6_PRSNT_N
A82	GND	B82	TP_PE_SLOT6_RSVD_B82

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3.1.5.12 J10-PCIE Slot_7 Connector



Pin	Single name	Pin	Single name
A1	GND	B1	P12V_2
A2	P12V_2	B2	P12V_2
A3	P12V_2	B3	P12V_2
A4	GND	B4	GND
A5	TP_SLOT7_JTAG_TCK	B5	SMB_PE7_SCL_R
A6	TP_SLOT7_JTAG_TDI	B6	SMB_PE7_SDA_R
A7	TP_PE_SLOT7_JTAG_TDO	B7	GND
A8	TP_SLOT7_JTAG_TMS	B8	P3V3
A9	P3V3	B9	TP_SLOT7_JTAG_TRST_N
A10	P3V3	B10	P3V3_STBY
A11	RST_PCIE_SLOT_7_R_N	B11	TP_SLOT7_WAKE_N
A12	GND	B12	GPU_THROTTLE_SLOT7_R_N
A13	CLK_100M_PE7_P	B13	GND
A14	CLK_100M_PE7_N	B14	PEX_PE7_TXP0_C
A15	GND	B15	PEX_PE7_TXN0_C

Quanta Big Sur Contribution

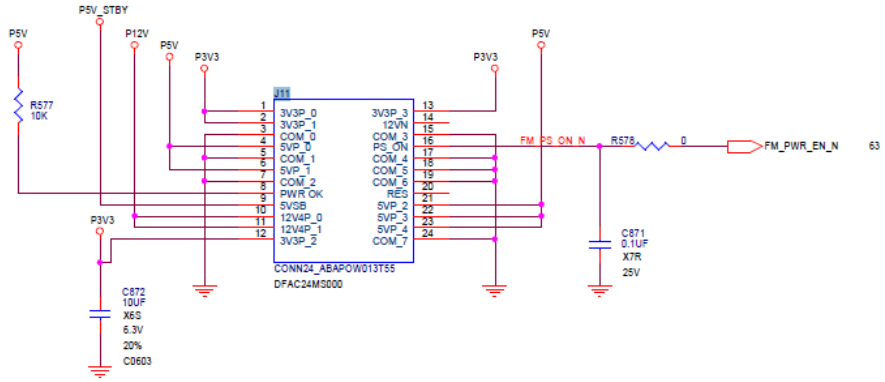
A16	PEX_PE7_RXP0	B16	GND
A17	PEX_PE7_RXN0	B17	PE_SLOT7_PRSNT_N
A18	GND	B18	GND
A19	TP_SLOT7_RSVD_A19	B19	PEX_PE7_TXP1_C
A20	GND	B20	PEX_PE7_TXN1_C
A21	PEX_PE7_RXP1	B21	GND
A22	PEX_PE7_RXN1	B22	GND
A23	GND	B23	PEX_PE7_TXP2_C
A24	GND	B24	PEX_PE7_TXN2_C
A25	PEX_PE7_RXP2	B25	GND
A26	PEX_PE7_RXN2	B26	GND
A27	GND	B27	PEX_PE7_TXP3_C
A28	GND	B28	PEX_PE7_TXN3_C
A29	PEX_PE7_RXP3	B29	GND
A30	PEX_PE7_RXN3	B30	TP_SLOT7_RSVD_B30
A31	GND	B31	PE_SLOT7_PRSNT_N
A32	TP_SLOT7_RSVD_A32	B32	GND
A33	TP_SLOT7_RSVD_A33	B33	PEX_PE7_TXP4_C
A34	GND	B34	PEX_PE7_TXN4_C
A35	PEX_PE7_RXP4	B35	GND
A36	PEX_PE7_RXN4	B36	GND
A37	GND	B37	PEX_PE7_TXP5_C
A38	GND	B38	PEX_PE7_TXN5_C
A39	PEX_PE7_RXP5	B39	GND
A40	PEX_PE7_RXN5	B40	GND
A41	GND	B41	PEX_PE7_TXP6_C
A42	GND	B42	PEX_PE7_TXN6_C
A43	PEX_PE7_RXP6	B43	GND
A44	PEX_PE7_RXN6	B44	GND
A45	GND	B45	PEX_PE7_TXP7_C
A46	GND	B46	PEX_PE7_TXN7_C
A47	PEX_PE7_RXP7	B47	GND
A48	PEX_PE7_RXN7	B48	PE_SLOT7_PRSNT_N
A49	GND	B49	GND
A50	TP_SLOT7_RSVD_A50	B50	PEX_PE7_TXP8_C
A51	GND	B51	PEX_PE7_TXN8_C
A52	PEX_PE7_RXP8	B52	GND

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A53	PEX_PE7_RXN8	B53	GND
A54	GND	B54	PEX_PE7_TXP9_C
A55	GND	B55	PEX_PE7_TXN9_C
A56	PEX_PE7_RXP9	B56	GND
A57	PEX_PE7_RXN9	B57	GND
A58	GND	B58	PEX_PE7_TXP10_C
A59	GND	B59	PEX_PE7_TXN10_C
A60	PEX_PE7_RXP10	B60	GND
A61	PEX_PE7_RXN10	B61	GND
A62	GND	B62	PEX_PE7_TXP11_C
A63	GND	B63	PEX_PE7_TXN11_C
A64	PEX_PE7_RXP11	B64	GND
A65	PEX_PE7_RXN11	B65	GND
A66	GND	B66	PEX_PE7_TXP12_C
A67	GND	B67	PEX_PE7_TXN12_C
A68	PEX_PE7_RXP12	B68	GND
A69	PEX_PE7_RXN12	B69	GND
A70	GND	B70	PEX_PE7_TXP13_C
A71	GND	B71	PEX_PE7_TXN13_C
A72	PEX_PE7_RXP13	B72	GND
A73	PEX_PE7_RXN13	B73	GND
A74	GND	B74	PEX_PE7_TXP14_C
A75	GND	B75	PEX_PE7_TXN14_C
A76	PEX_PE7_RXP14	B76	GND
A77	PEX_PE7_RXN14	B77	GND
A78	GND	B78	PEX_PE7_TXP15_C
A79	GND	B79	PEX_PE7_TXN15_C
A80	PEX_PE7_RXP15	B80	GND
A81	PEX_PE7_RXN15	B81	PE_SLOT7_PRSNT_N
A82	GND	B82	TP_PE_SLOT7_RSVD_B82

Quanta Big Sur Contribution

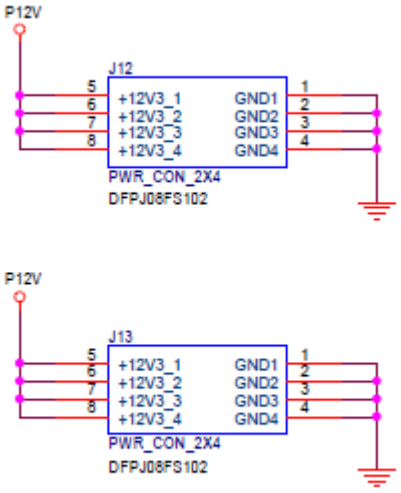
3.1.5.13 J11-24 PIN MB_MAIN_PWR Connector



Pin	Single name	Pin	Single name
1	P3V3	13	P3V3
2	P3V3	14	
3	GND	15	GND
4	P5V	16	FM_PS_ON_N
5	GND	17	GND
6	P5V	18	GND
7	GND	19	GND
8	PWROK	20	
9	P5V_STBY	21	P5V
10	P12V	22	P5V
11	P12V	23	P5V
12	P3V3	24	GND

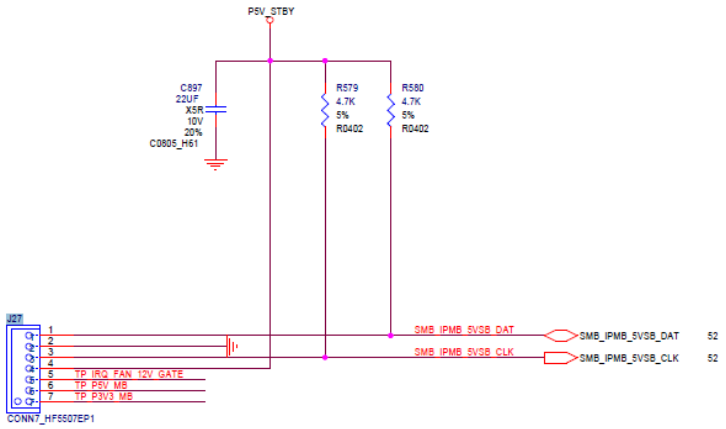
Quanta Big Sur Contribution

3.1.5.14 J12/J13-8 PIN MB_CPU_PWR Connector



Pin	Single name	Pin	Single name
1	GND	5	P12V
2	GND	6	P12V
3	GND	7	P12V
4	GND	8	P12V

3.1.5.15 J27-7 PIN IPMB Connector

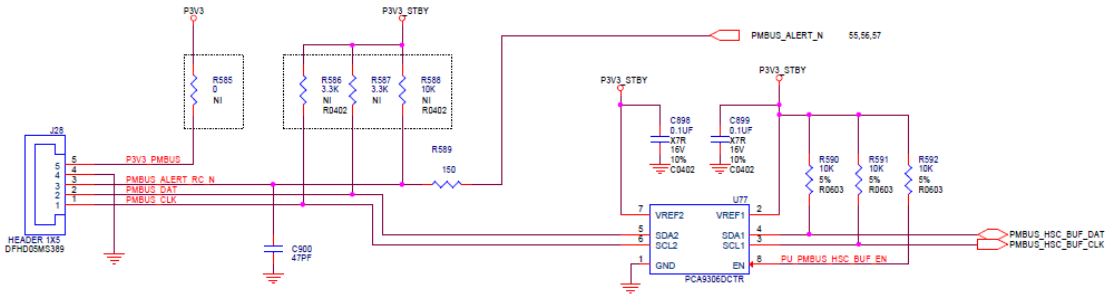


Pin	Single name
1	SMB_IPMB_5VSB_DAT
2	GND
3	SMB_IPMB_5VSB_CLK

Big Sur Contribution

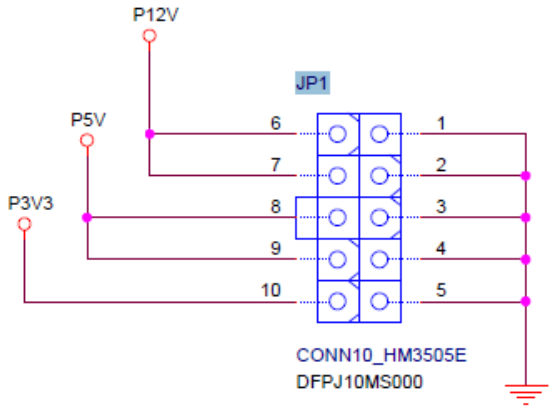
4	P5V_STBY
5	TP_IRQ_FAN_12V_GATE
6	TP_P5V_MB
7	TP_P3V3_MB

3.1.5.16 J28-5 PIN PMBUS Connector



Pin	Single name
1	PMBUS_CLK
2	PMBUS_DAT
3	PMBUS_ALERT_RC_N
4	GND
5	P3V3_PMBUS

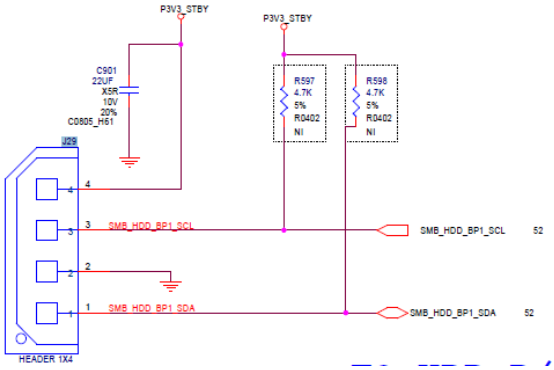
3.1.5.17 JP1-10 PIN HDD_BP_PWR Connector



Pin	Single name	Pin	Single name
1	GND	6	P12V

2	GND	7	P12V
3	GND	8	P5V
4	GND	9	P5V
5	GND	10	P3V3

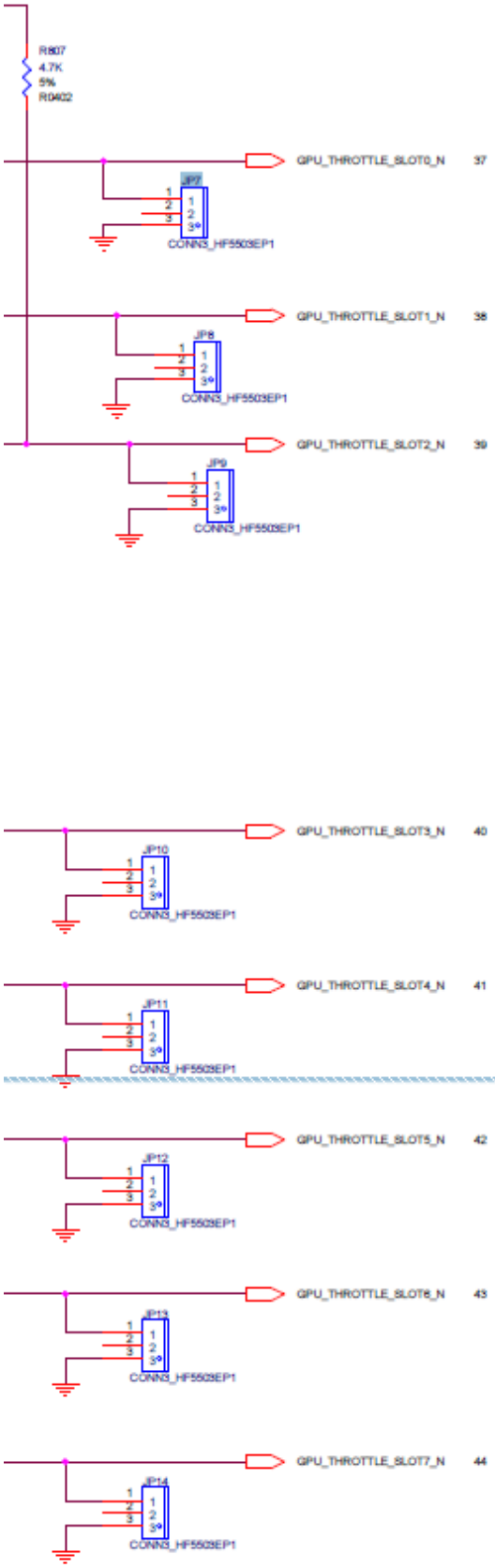
3.1.5.18 J29-4 PIN SMBUS Connector



Pin	Single name
1	SMB_HDD_BP1_SDA
2	GND
3	SMB_HDD_BP1_SCL
4	P3V3_STBY

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3.1.5.19 JP7/JP8/JP9/JP10/JP11/JP12/JP13/JP14-3PIN GPU_PWR Brake Connector



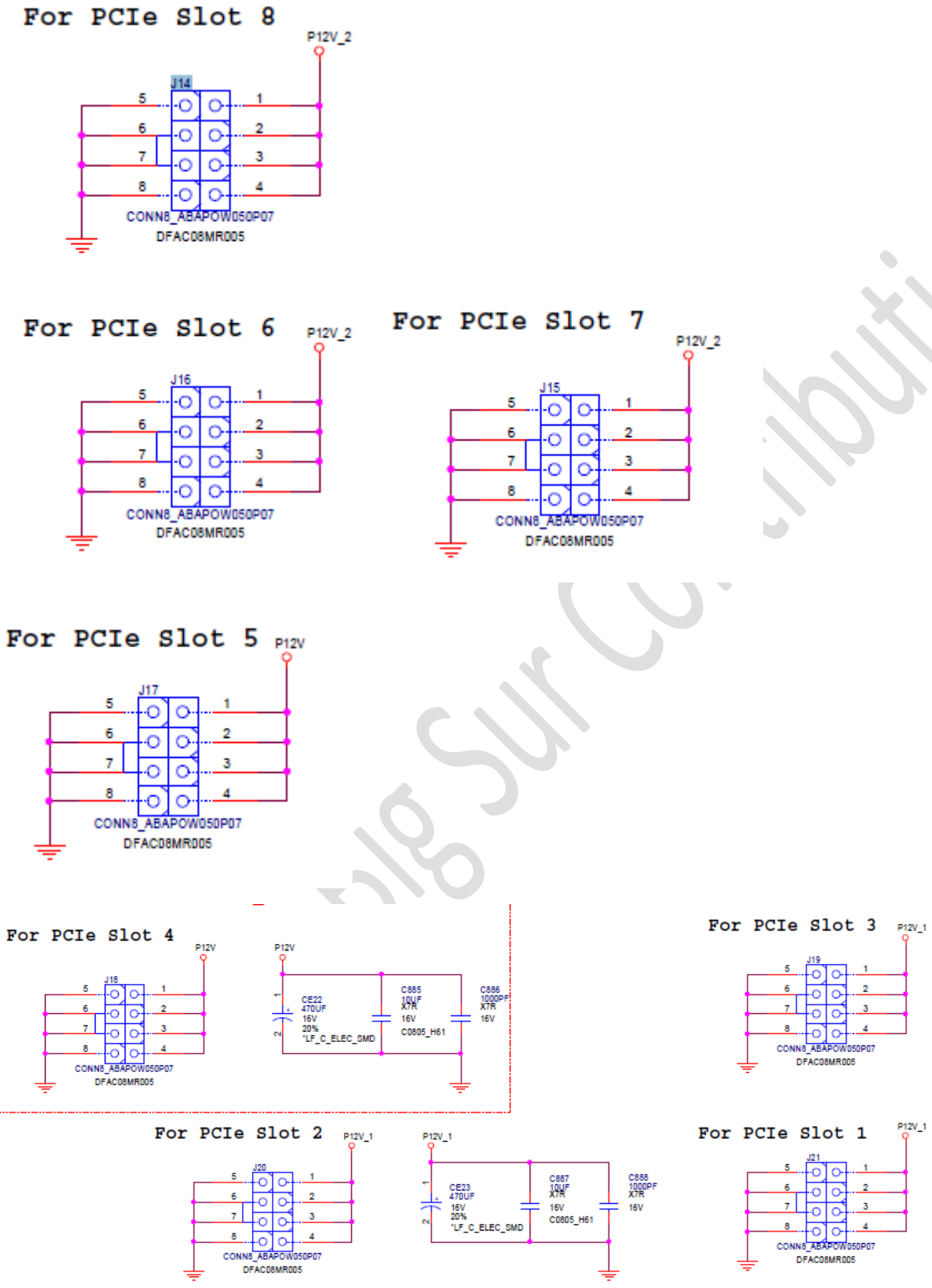
Pin	Single name

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1	GPU_THROTTLE_SLOTX_N
2	
3	GND

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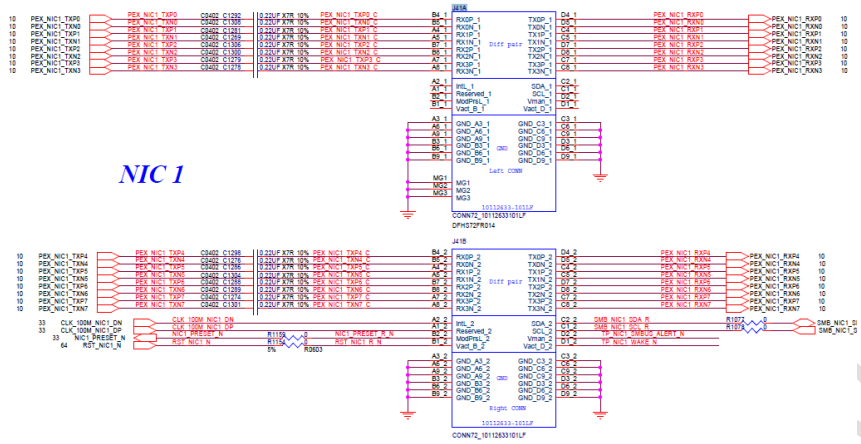
3.1.5.20 J14/J15/J16/J17/J18/J19/J20/J21-GPU_PWR Connector



Pin	Single name	Pin	Single name
1	P12V	6	GND
2	P12V	7	GND

3	P12V	8	GND
4	P12V	9	GND

3.1.5.21 J41-MINISAS-HD 1X2 Connector for NIC1



J41A :

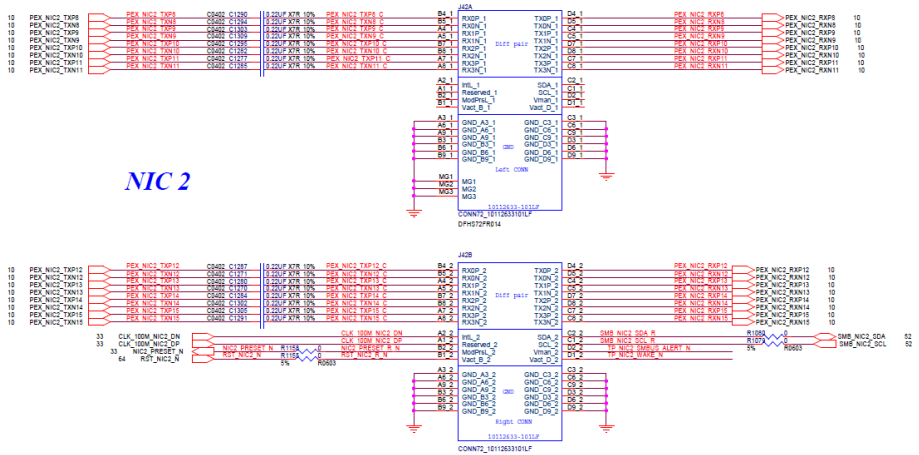
Pin	Single name	Pin	Single name
A1		B1	
A2		B2	
A3	GND	B3	GND
A4	PEX_NIC1_TXP1_C	B4	PEX_NIC1_TXP0_C
A5	PEX_NIC1_TXN1_C	B5	PEX_NIC1_TXN0_C
A6	GND	B6	GND
A7	PEX_NIC1_TXP3_C	B7	PEX_NIC1_TXP2_C
A8	PEX_NIC1_TXN3_C	B8	PEX_NIC1_TXN2_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_NIC1_RXP1	D4	PEX_NIC1_RXP0
C5	PEX_NIC1_RXN1	D5	PEX_NIC1_RXN0
C6	GND	D6	GND
C7	PEX_NIC1_RXP3	D7	PEX_NIC1_RXP2
C8	PEX_NIC1_RXN3	D8	PEX_NIC1_RXN2
C9	GND	D9	GND

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J41B:

Pin	Single name	Pin	Single name
A1	CLK_100M_NIC1_DP	B1	RST_NIC1_R_N
A2	CLK_100M_NIC1_DN	B2	NIC1_PRESET_R_N
A3	GND	B3	GND
A4	PEX_NIC1_TXP5_C	B4	PEX_NIC1_TXP4_C
A5	PEX_NIC1_TXN5_C	B5	PEX_NIC1_TXN4_C
A6	GND	B6	GND
A7	PEX_NIC1_TXP7_C	B7	PEX_NIC1_TXP6_C
A8	PEX_NIC1_TXN7_C	B8	PEX_NIC1_TXN6_C
A9	GND	B9	GND
C1	SMB_NIC1_SCL_R	D1	TP_NIC1_WAKE_N
C2	SMB_NIC1_SDA_R	D2	TP_NIC1_SMBUS_ALERT_N
C3	GND	D3	GND
C4	PEX_NIC1_RXP5	D4	PEX_NIC1_RXP4
C5	PEX_NIC1_RXN5	D5	PEX_NIC1_RXN4
C6	GND	D6	GND
C7	PEX_NIC1_RXP7	D7	PEX_NIC1_RXP6
C8	PEX_NIC1_RXN7	D8	PEX_NIC1_RXN6
C9	GND	D9	GND

3.1.5.22 J42-MINISAS-HD 1X2 Connector for NIC2



J42A:

Pin	Single name	Pin	Single name
A1		B1	
A2		B2	

Big Sur Contribution

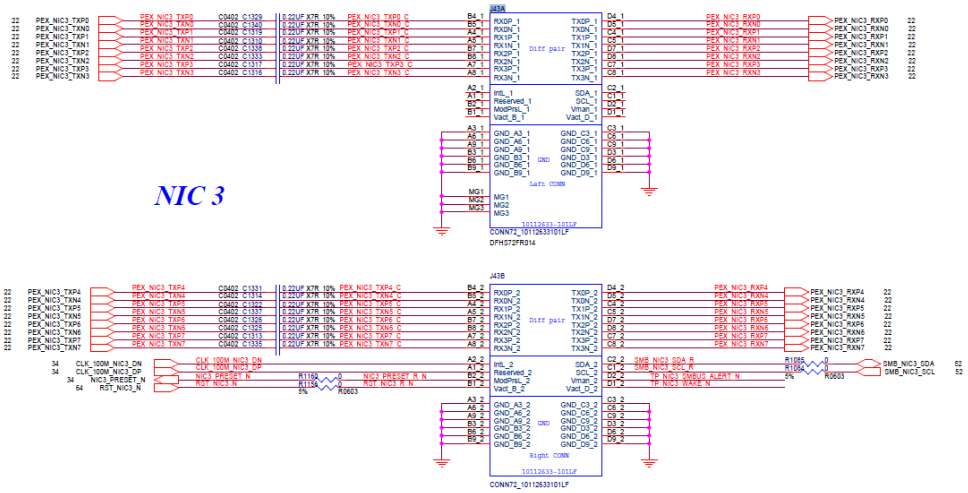
A3	GND	B3	GND
A4	PEX_NIC2_TXP9_C	B4	PEX_NIC2_TXP8_C
A5	PEX_NIC2_TXN9_C	B5	PEX_NIC2_TXN8_C
A6	GND	B6	GND
A7	PEX_NIC2_TXP11_C	B7	PEX_NIC2_TXP10_C
A8	PEX_NIC2_TXN11_C	B8	PEX_NIC2_TXN10_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_NIC2_RXP9	D4	PEX_NIC2_RXP8
C5	PEX_NIC2_RXN9	D5	PEX_NIC2_RXN8
C6	GND	D6	GND
C7	PEX_NIC2_RXP11	D7	PEX_NIC2_RXP10
C8	PEX_NIC2_RXN11	D8	PEX_NIC2_RXN10
C9	GND	D9	GND

J42B:

Pin	Single name	Pin	Single name
A1	CLK_100M_NIC2_DP	B1	RST_NIC2_R_N
A2	CLK_100M_NIC2_DN	B2	NIC2_PRESET_R_N
A3	GND	B3	GND
A4	PEX_NIC2_TXP13_C	B4	PEX_NIC2_TXP12_C
A5	PEX_NIC2_TXN13_C	B5	PEX_NIC2_TXN12_C
A6	GND	B6	GND
A7	PEX_NIC2_TXP15_C	B7	PEX_NIC2_TXP14_C
A8	PEX_NIC2_TXN15_C	B8	PEX_NIC2_TXN14_C
A9	GND	B9	GND
C1	SMB_NIC2_SCL_R	D1	TP_NIC2_WAKE_N
C2	SMB_NIC2_SDA_R	D2	TP_NIC2_SMBUS_ALERT_N
C3	GND	D3	GND
C4	PEX_NIC2_RXP13	D4	PEX_NIC2_RXP12
C5	PEX_NIC2_RXN13	D5	PEX_NIC2_RXN12
C6	GND	D6	GND
C7	PEX_NIC2_RXP15	D7	PEX_NIC2_RXP14
C8	PEX_NIC2_RXN15	D8	PEX_NIC2_RXN14
C9	GND	D9	GND

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3.1.5.23 J43-MINISAS-HD 1X2 Connector for NIC3



J43A :

Pin	Single name	Pin	Single name
A1		B1	
A2		B2	
A3	GND	B3	GND
A4	PEX_NIC3_TXP1_C	B4	PEX_NIC3_TXP0_C
A5	PEX_NIC3_TXN1_C	B5	PEX_NIC3_TXN0_C
A6	GND	B6	GND
A7	PEX_NIC3_TXP3_C	B7	PEX_NIC3_TXP2_C
A8	PEX_NIC3_TXN3_C	B8	PEX_NIC3_TXN2_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_NIC3_RXP1	D4	PEX_NIC3_RXP0
C5	PEX_NIC3_RXN1	D5	PEX_NIC3_RXN0
C6	GND	D6	GND
C7	PEX_NIC3_RXP3	D7	PEX_NIC3_RXP2
C8	PEX_NIC3_RXN3	D8	PEX_NIC3_RXN2
C9	GND	D9	GND

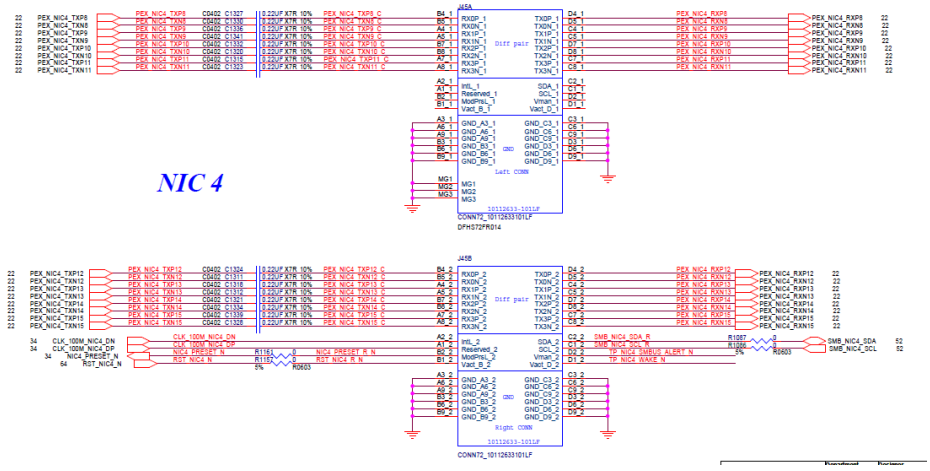
J43B:

Quanta Big Sur Contribution

Pin	Single name	Pin	Single name
A1	CLK_100M_NIC3_DP	B1	RST_NIC3_R_N
A2	CLK_100M_NIC3_DN	B2	NIC3_PRESET_R_N
A3	GND	B3	GND
A4	PEX_NIC3_TXP5_C	B4	PEX_NIC3_TXP4_C
A5	PEX_NIC3_TXN5_C	B5	PEX_NIC3_TXN4_C
A6	GND	B6	GND
A7	PEX_NIC3_TXP7_C	B7	PEX_NIC3_TXP6_C
A8	PEX_NIC3_TXN7_C	B8	PEX_NIC3_TXN6_C
A9	GND	B9	GND
C1	SMB_NIC3_SCL_R	D1	TP_NIC3_WAKE_N
C2	SMB_NIC3_SDA_R	D2	TP_NIC3_SMBUS_ALERT_N
C3	GND	D3	GND
C4	PEX_NIC3_RXP5	D4	PEX_NIC3_RXP4
C5	PEX_NIC3_RXN5	D5	PEX_NIC3_RXN4
C6	GND	D6	GND
C7	PEX_NIC3_RXP7	D7	PEX_NIC3_RXP6
C8	PEX_NIC3_RXN7	D8	PEX_NIC3_RXN6
C9	GND	D9	GND

Big Sur Contribution

3.1.5.24 J45-MINISAS-HD 1X2 Connector for NIC4



J45A:

Pin	Single name	Pin	Single name
A1		B1	
A2		B2	
A3	GND	B3	GND
A4	PEX_NIC4_TXP9_C	B4	PEX_NIC4_TXP8_C
A5	PEX_NIC4_TXN9_C	B5	PEX_NIC4_TXN8_C
A6	GND	B6	GND
A7	PEX_NIC4_TXP11_C	B7	PEX_NIC4_TXP10_C
A8	PEX_NIC4_TXN11_C	B8	PEX_NIC4_TXN10_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_NIC4_RXP9	D4	PEX_NIC4_RXP8
C5	PEX_NIC4_RXN9	D5	PEX_NIC4_RXN8
C6	GND	D6	GND
C7	PEX_NIC4_RXP11	D7	PEX_NIC4_RXP10
C8	PEX_NIC4_RXN11	D8	PEX_NIC4_RXN10
C9	GND	D9	GND

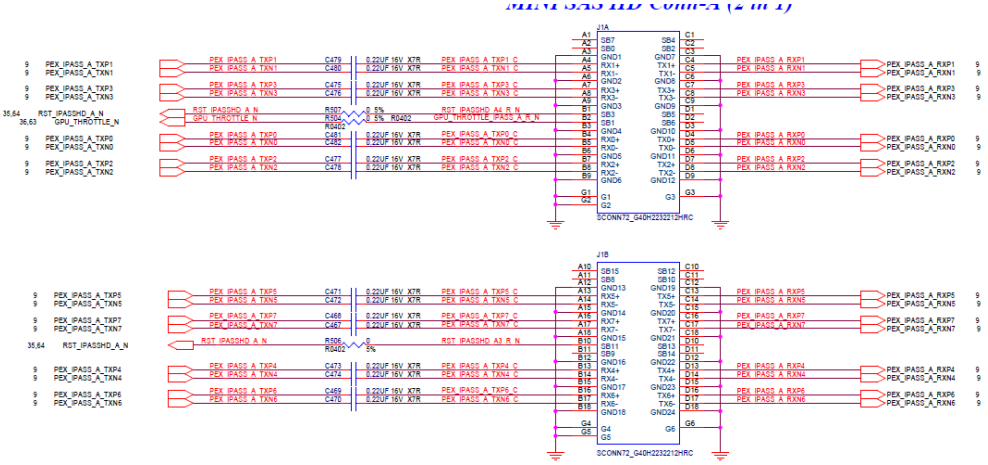
J45B:

Pin	Single name	Pin	Single name
A1	CLK_100M_NIC4_DP	B1	RST_NIC4_R_N
A2	CLK_100M_NIC4_DN	B2	NIC4_PRESET_R_N
A3	GND	B3	GND
A4	PEX_NIC4_TXP13_C	B4	PEX_NIC4_TXP12_C
A5	PEX_NIC4_TXN13_C	B5	PEX_NIC4_TXN12_C
A6	GND	B6	GND
A7	PEX_NIC4_TXP15_C	B7	PEX_NIC4_TXP14_C
A8	PEX_NIC4_TXN15_C	B8	PEX_NIC4_TXN14_C
A9	GND	B9	GND
C1	SMB_NIC4_SCL_R	D1	TP_NIC4_WAKE_N
C2	SMB_NIC4_SDA_R	D2	TP_NIC4_SMBUS_ALERT_N
C3	GND	D3	GND
C4	PEX_NIC4_RXP13	D4	PEX_NIC4_RXP12
C5	PEX_NIC4_RXN13	D5	PEX_NIC4_RXN12
C6	GND	D6	GND
C7	PEX_NIC4_RXP15	D7	PEX_NIC4_RXP14

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C8	PEX_NIC4_RXN15	D8	PEX_NIC4_RXN14
C9	GND	D9	GND

3.1.5.25 J1-MINISAS-HD 1X2 Connector for upstream 1



J1A:

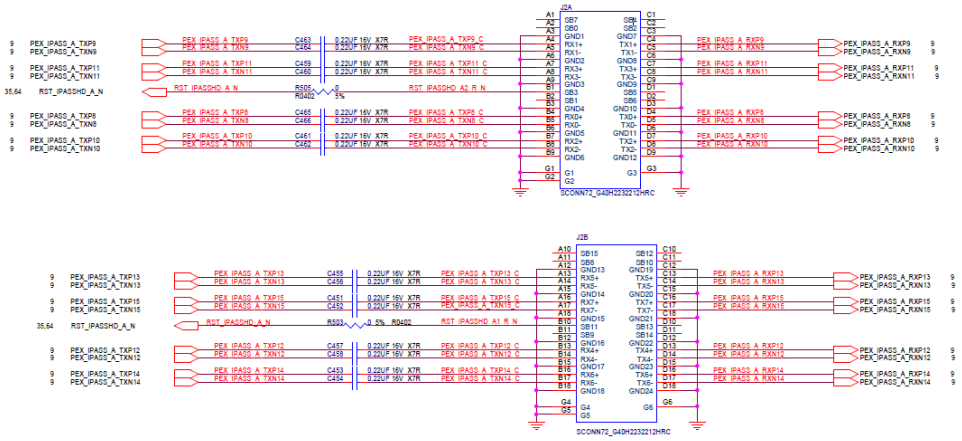
Pin	Single name	Pin	Single name
A1		B1	RST_IPASSHD_A4_R_N
A2		B2	GPU_THROTTLE_IPASS_A_R_N
A3	GND	B3	GND
A4	PEX_IPASS_A_TXP1_C	B4	PEX_IPASS_A_TXP0_C
A5	PEX_IPASS_A_TXN1_C	B5	PEX_IPASS_A_TXN0_C
A6	GND	B6	GND
A7	PEX_IPASS_A_TXP3_C	B7	PEX_IPASS_A_TXP2_C
A8	PEX_IPASS_A_TXN3_C	B8	PEX_IPASS_A_TXN2_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_IPASS_A_RXP1	D4	PEX_IPASS_A_RXP0
C5	PEX_IPASS_A_RXN1	D5	PEX_IPASS_A_RXN0
C6	GND	D6	GND
C7	PEX_IPASS_A_RXP3	D7	PEX_IPASS_A_RXP2
C8	PEX_IPASS_A_RXN3	D8	PEX_IPASS_A_RXN2
C9	GND	D9	GND

J1B:

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Pin	Single name	Pin	Single name
A10		B10	RST_IPASSHD_A3_R_N
A11		B11	
A12	GND	B12	GND
A13	PEX_IPASS_A_TXP5_C	B13	PEX_IPASS_A_TXP4_C
A14	PEX_IPASS_A_TXN5_C	B14	PEX_IPASS_A_TXN4_C
A15	GND	B15	GND
A16	PEX_IPASS_A_TXP7_C	B16	PEX_IPASS_A_TXP6_C
A17	PEX_IPASS_A_TXN7_C	B17	PEX_IPASS_A_TXN6_C
A18	GND	B18	GND
C10		D10	
C11		D11	
C12	GND	D12	GND
C13	PEX_IPASS_A_RXP5	D13	PEX_IPASS_A_RXP4
C14	PEX_IPASS_A_RXN5	D14	PEX_IPASS_A_RXN4
C15	GND	D15	GND
C16	PEX_IPASS_A_RXP7	D16	PEX_IPASS_A_RXP6
C17	PEX_IPASS_A_RXN7	D17	PEX_IPASS_A_RXN6
C18	GND	D18	GND

3.1.5.26 J2-MINISAS-HD 1X2 Connector for upstream 1



J2A:

Pin	Single name	Pin	Single name
A1		B1	RST_IPASSHD_A2_R_N
A2		B2	
A3	GND	B3	GND

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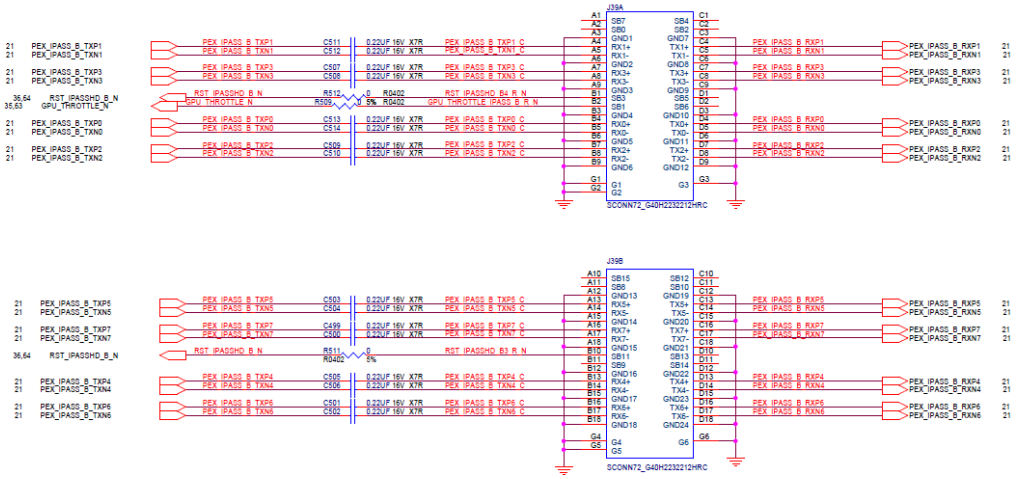
A4	PEX_IPASS_A_TXP9_C	B4	PEX_IPASS_A_TXP8_C
A5	PEX_IPASS_A_TXN9_C	B5	PEX_IPASS_A_TXN8_C
A6	GND	B6	GND
A7	PEX_IPASS_A_TXP11_C	B7	PEX_IPASS_A_TXP10_C
A8	PEX_IPASS_A_TXN11_C	B8	PEX_IPASS_A_TXN10_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_IPASS_A_RXP9	D4	PEX_IPASS_A_RXP8
C5	PEX_IPASS_A_RXN9	D5	PEX_IPASS_A_RXN8
C6	GND	D6	GND
C7	PEX_IPASS_A_RXP11	D7	PEX_IPASS_A_RXP10
C8	PEX_IPASS_A_RXN11	D8	PEX_IPASS_A_RXN10
C9	GND	D9	GND

J2B:

Pin	Single name	Pin	Single name
A10		B10	RST_IPASSHD_A1_R_N
A11		B11	
A12	GND	B12	GND
A13	PEX_IPASS_A_TXP13_C	B13	PEX_IPASS_A_TXP12_C
A14	PEX_IPASS_A_TXN13_C	B14	PEX_IPASS_A_TXN12_C
A15	GND	B15	GND
A16	PEX_IPASS_A_TXP15_C	B16	PEX_IPASS_A_TXP14_C
A17	PEX_IPASS_A_TXN15_C	B17	PEX_IPASS_A_TXN14_C
A18	GND	B18	GND
C10		D10	
C11		D11	
C12	GND	D12	GND
C13	PEX_IPASS_A_RXP13	D13	PEX_IPASS_A_RXP12
C14	PEX_IPASS_A_RXN13	D14	PEX_IPASS_A_RXN12
C15	GND	D15	GND
C16	PEX_IPASS_A_RXP15	D16	PEX_IPASS_A_RXP14
C17	PEX_IPASS_A_RXN15	D17	PEX_IPASS_A_RXN14
C18	GND	D18	GND

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3.1.5.27 J39-MINISAS-HD 1X2 Connector for upstream 2



J39A:

Pin	Single name	Pin	Single name
A1		B1	RST_IPASSHD_B4_R_N
A2		B2	GPU_THROTTLE_IPASS_B_R_N
A3	GND	B3	GND
A4	PEX_IPASS_B_TXP1_C	B4	PEX_IPASS_B_TXP0_C
A5	PEX_IPASS_B_TXN1_C	B5	PEX_IPASS_B_TXN0_C
A6	GND	B6	GND
A7	PEX_IPASS_B_TXP3_C	B7	PEX_IPASS_B_TXP2_C
A8	PEX_IPASS_B_TXN3_C	B8	PEX_IPASS_B_TXN2_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_IPASS_B_RXP1	D4	PEX_IPASS_B_RXP0
C5	PEX_IPASS_B_RXN1	D5	PEX_IPASS_B_RXN0
C6	GND	D6	GND
C7	PEX_IPASS_B_RXP3	D7	PEX_IPASS_B_RXP2
C8	PEX_IPASS_B_RXN3	D8	PEX_IPASS_B_RXN2
C9	GND	D9	GND

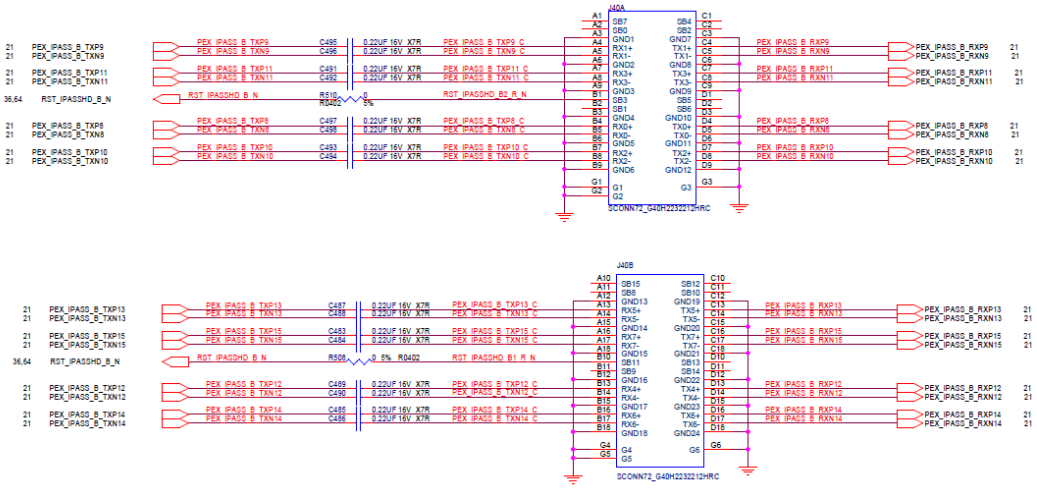
J39B:

Pin	Single name	Pin	Single name
A10		B10	RST_IPASSHD_B3_R_N
A11		B11	

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A12	GND	B12	GND
A13	PEX_IPASS_B_TXP5_C	B13	PEX_IPASS_B_TXP4_C
A14	PEX_IPASS_B_TXN5_C	B14	PEX_IPASS_B_TXN4_C
A15	GND	B15	GND
A16	PEX_IPASS_B_TXP7_C	B16	PEX_IPASS_B_TXP6_C
A17	PEX_IPASS_B_TXN7_C	B17	PEX_IPASS_B_TXN6_C
A18	GND	B18	GND
C10		D10	
C11		D11	
C12	GND	D12	GND
C13	PEX_IPASS_B_RXP5	D13	PEX_IPASS_B_RXP4
C14	PEX_IPASS_B_RXN5	D14	PEX_IPASS_B_RXN4
C15	GND	D15	GND
C16	PEX_IPASS_B_RXP7	D16	PEX_IPASS_B_RXP6
C17	PEX_IPASS_B_RXN7	D17	PEX_IPASS_B_RXN6
C18	GND	D18	GND

3.1.5.28 J40-MINISAS-HD 1X2 Connector for upstream2



J40A:

Pin	Single name	Pin	Single name
A1		B1	RST_IPASSHD_A2_R_N
A2		B2	
A3	GND	B3	GND
A4	PEX_IPASS_B_TXP9_C	B4	PEX_IPASS_B_TXP8_C
A5	PEX_IPASS_B_TXN9_C	B5	PEX_IPASS_B_TXN8_C

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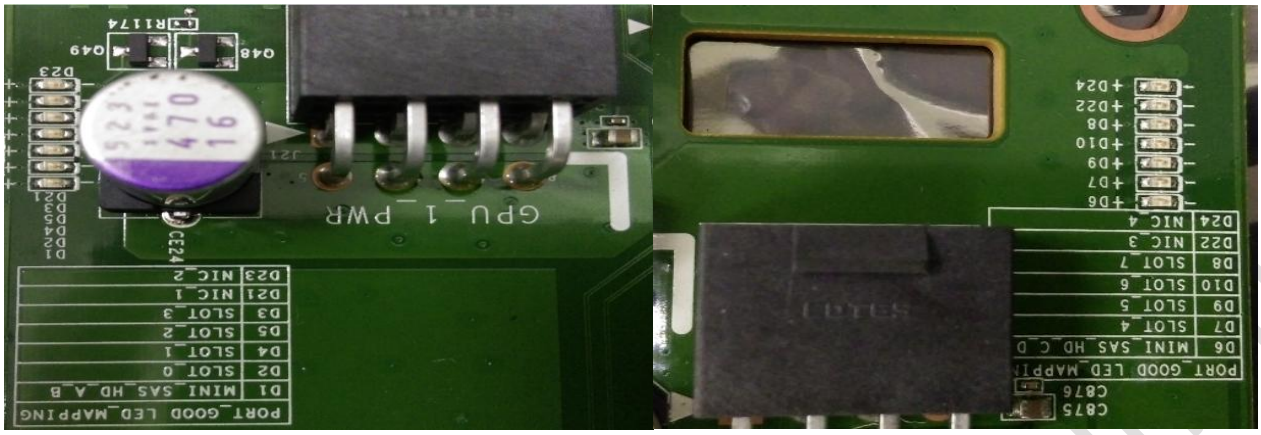
A6	GND	B6	GND
A7	PEX_IPASS_B_TXP11_C	B7	PEX_IPASS_B_TXP10_C
A8	PEX_IPASS_B_TXN11_C	B8	PEX_IPASS_B_TXN10_C
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PEX_IPASS_B_RXP9	D4	PEX_IPASS_B_RXP8
C5	PEX_IPASS_B_RXN9	D5	PEX_IPASS_B_RXN8
C6	GND	D6	GND
C7	PEX_IPASS_B_RXP11	D7	PEX_IPASS_B_RXP10
C8	PEX_IPASS_B_RXN11	D8	PEX_IPASS_B_RXN10
C9	GND	D9	GND

J40B:

Pin	Single name	Pin	Single name
A10		B10	RST_IPASSHD_B1_R_N
A11		B11	
A12	GND	B12	GND
A13	PEX_IPASS_B_TXP13_C	B13	PEX_IPASS_B_TXP12_C
A14	PEX_IPASS_B_TXN13_C	B14	PEX_IPASS_B_TXN12_C
A15	GND	B15	GND
A16	PEX_IPASS_B_TXP15_C	B16	PEX_IPASS_B_TXP14_C
A17	PEX_IPASS_B_TXN15_C	B17	PEX_IPASS_B_TXN14_C
A18	GND	B18	GND
C10		D10	
C11		D11	
C12	GND	D12	GND
C13	PEX_IPASS_B_RXP13	D13	PEX_IPASS_B_RXP12
C14	PEX_IPASS_B_RXN13	D14	PEX_IPASS_B_RXN12
C15	GND	D15	GND
C16	PEX_IPASS_B_RXP15	D16	PEX_IPASS_B_RXP14
C17	PEX_IPASS_B_RXN15	D17	PEX_IPASS_B_RXN14
C18	GND	D18	GND

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3.1.6 GPU LINKING BOARD LEDs



Function	location	LED color	Behavior
MINI_SAS_HD_A_B	D1	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_0	D2	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_1	D4	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_2	D5	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_3	D3	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
NIC_1	D21	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link

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NIC_2	D23	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
MINI_SAS_HD_C_D	D6	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_4	D7	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_5	D9	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_6	D10	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
SLOT_7	D8	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
NIC_3	D22	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link
NIC_4	D24	Green	On : port link Good Blinking : PCIE GEN1/GEN2 Speed Off : No link

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3.2 2U 1X16 PCIE MINI-SAS HD RISER BOARD

2U 1x16 slot PCIe Mini SAS-HD Riser is installed on Riser Slot of Motherboard in 4U system.

- J10: x8 PCIE
- J11: x8 PCIE

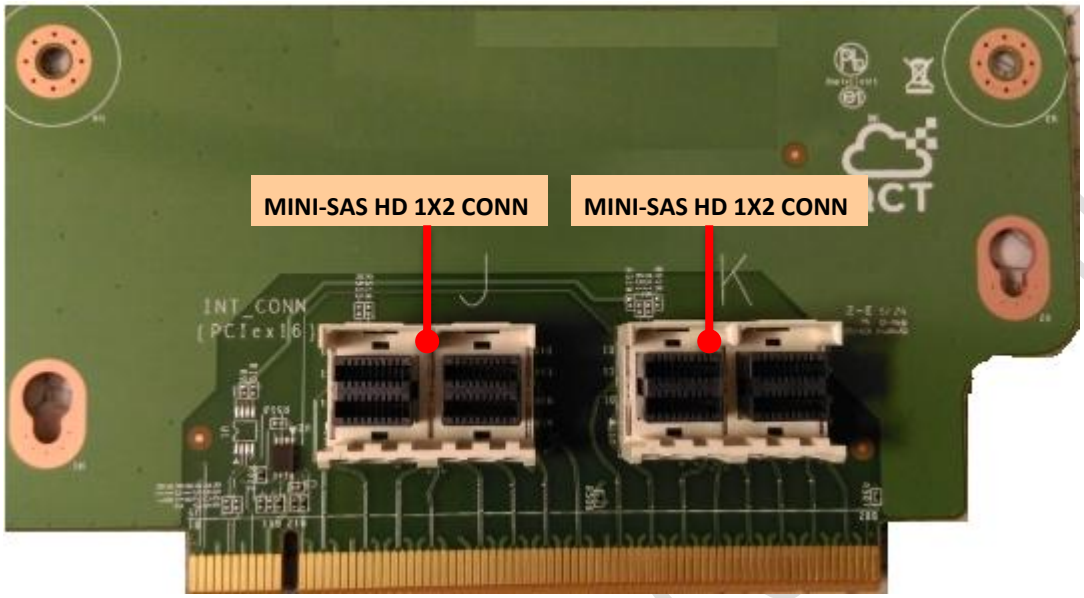


Figure 3-6 1x16 PCIE MINI-SAS HD Riser Board

3.2.1 RISER BOARD CONNECTOR PINOUT

3.2.1.1 J10-MINISAS-HD 1X2 Connector



J10A:

Pin	Single name	Pin	Single name
A1	PCIE_100M_PE3_CKP	B1	
A2	PCIE_100M_PE3_CKN	B2	GPU_THROTTLE_N_R1
A3	GND	B3	GND
A4	PCIE_A_RXP1	B4	PCIE_A_RXP0
A5	PCIE_A_RXN1	B5	PCIE_A_RXN0
A6	GND	B6	GND
A7	PCIE_A_RXP3	B7	PCIE_A_RXP2
A8	PCIE_A_RXN3	B8	PCIE_A_RXN2
A9	GND	B9	GND
C1		D1	SMB_SLOTA_DAT
C2		D2	SMB_SLOTA_CLK
C3	GND	D3	GND
C4	PCIE_A_TXPC1	D4	PCIE_A_TXPC0
C5	PCIE_A_TXNC1	D5	PCIE_A_TXNC0
C6	GND	D6	GND
C7	PCIE_A_TXPC3	D7	PCIE_A_TXPC2
C8	PCIE_A_TXNC3	D8	PCIE_A_TXNC2
C9	GND	D9	GND

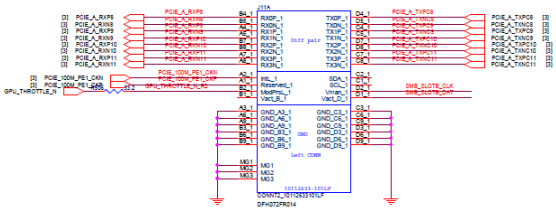
J10B:

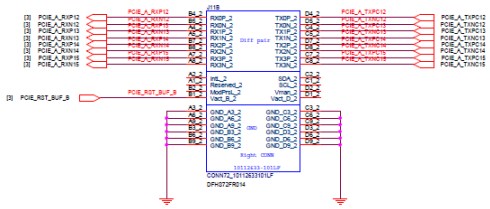
Pin	Single name	Pin	Single name
A1		B1	PCIE_RST_BUF_A
A2		B2	
A3	GND	B3	GND
A4	PCIE_A_RXP5	B4	PCIE_A_RXP4
A5	PCIE_A_RXN5	B5	PCIE_A_RXN4
A6	GND	B6	GND
A7	PCIE_A_RXP7	B7	PCIE_A_RXP6
A8	PCIE_A_RXN7	B8	PCIE_A_RXN6
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PCIE_A_TXPC5	D4	PCIE_A_TXPC4
C5	PCIE_A_TXNC5	D5	PCIE_A_TXNC4
C6	GND	D6	GND
C7	PCIE_A_TXPC7	D7	PCIE_A_TXPC6

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C8	PCIE_A_TXNC7	D8	PCIE_A_TXNC6
C9	GND	D9	GND

3.2.1.2 J11-MINISAS-HD 1X2 Connector





J11A:

Pin	Single name	Pin	Single name
A1	PCIE_100M_PE1_CKP	B1	
A2	PCIE_100M_PE1_CKN	B2	GPU_THROTTLE_N_R2
A3	GND	B3	GND
A4	PCIE_A_RXP9	B4	PCIE_A_RXP8
A5	PCIE_A_RXN9	B5	PCIE_A_RXN8
A6	GND	B6	GND
A7	PCIE_A_RXP11	B7	PCIE_A_RXP10
A8	PCIE_A_RXN11	B8	PCIE_A_RXN10
A9	GND	B9	GND
C1		D1	SMB_SLOTB_DAT
C2		D2	SMB_SLOTB_CLK
C3	GND	D3	GND
C4	PCIE_A_TXPC9	D4	PCIE_A_TXPC8
C5	PCIE_A_TXNC9	D5	PCIE_A_TXNC8
C6	GND	D6	GND
C7	PCIE_A_TXPC11	D7	PCIE_A_TXPC10
C8	PCIE_A_TXNC11	D8	PCIE_A_TXNC10
C9	GND	D9	GND

J11B:

Pin	Single name	Pin	Single name
A1		B1	PCIE_RST_BUF_B
A2		B2	
A3	GND	B3	GND

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A4	PCIE_A_RXP13	B4	PCIE_A_RXP12
A5	PCIE_A_RXN13	B5	PCIE_A_RXN12
A6	GND	B6	GND
A7	PCIE_A_RXP15	B7	PCIE_A_RXP14
A8	PCIE_A_RXN15	B8	PCIE_A_RXN14
A9	GND	B9	GND
C1		D1	
C2		D2	
C3	GND	D3	GND
C4	PCIE_A_TXPC13	D4	PCIE_A_TXPC12
C5	PCIE_A_TXNC13	D5	PCIE_A_TXNC12
C6	GND	D6	GND
C7	PCIE_A_TXPC15	D7	PCIE_A_TXPC14
C8	PCIE_A_TXNC15	D8	PCIE_A_TXNC14
C9	GND	D9	GND

3.3 HDD BACKPLANE BOARD

HDD BP Board supports 8 x2.5” HDD and supports HDD hot-swap .

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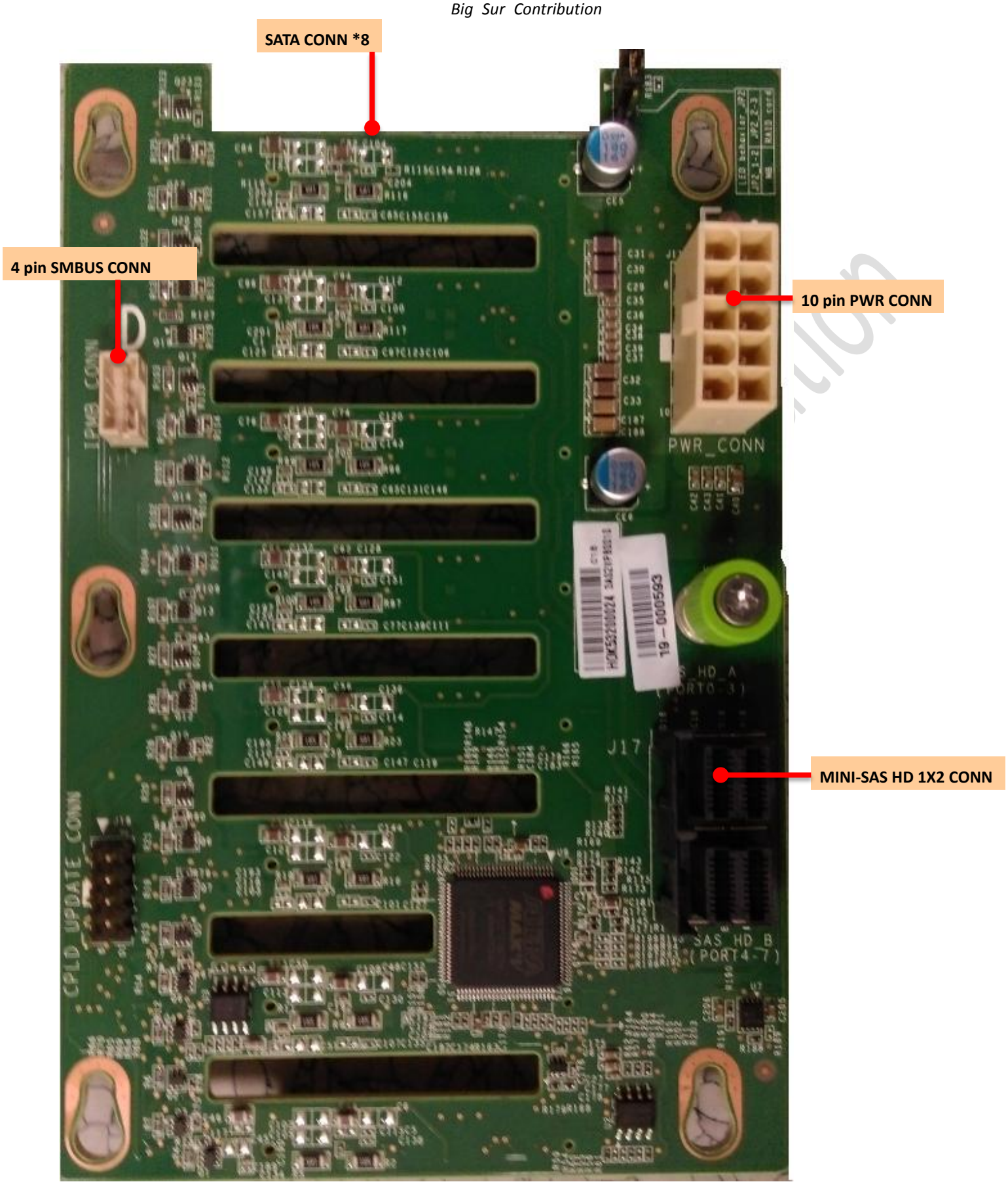
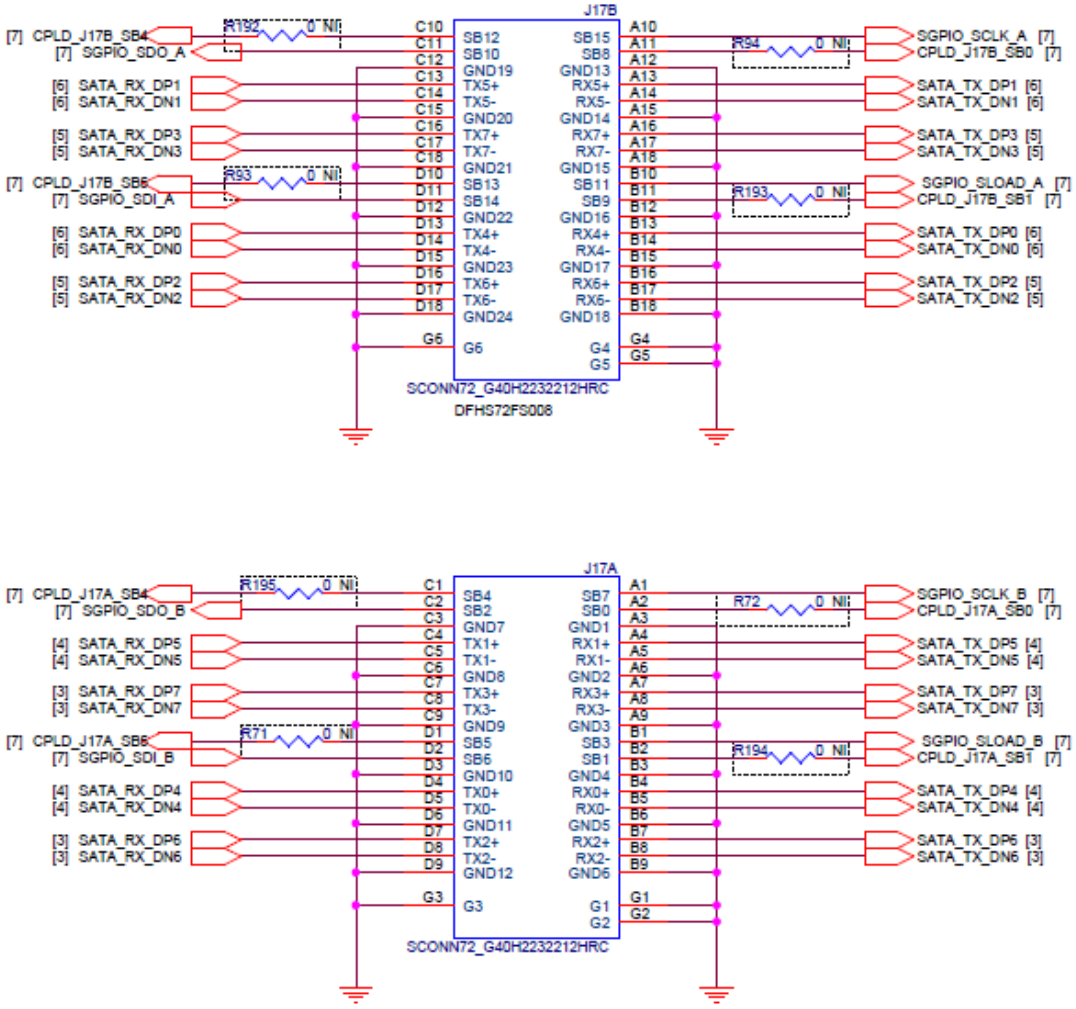


Figure 3-7 HDD Backplane Board

3.3.1 HDD BACKPLANE BOARD CONNECTOR PINOUT

3.3.1.1 J17-MINISAS-HD 1X2 Connector



J17A:

Pin	Single name	Pin	Single name
A1	SGPIO_SCLK_B	B1	SGPIO_SLOAD_B
A2		B2	
A3	GND	B3	GND
A4	SATA_TX_DP5	B4	SATA_TX_DP4
A5	SATA_TX_DN5	B5	SATA_TX_DN4
A6	GND	B6	GND
A7	SATA_TX_DP7	B7	SATA_TX_DP6
A8	SATA_TX_DN7	B8	SATA_TX_DN6
A9	GND	B9	GND
C1		D1	

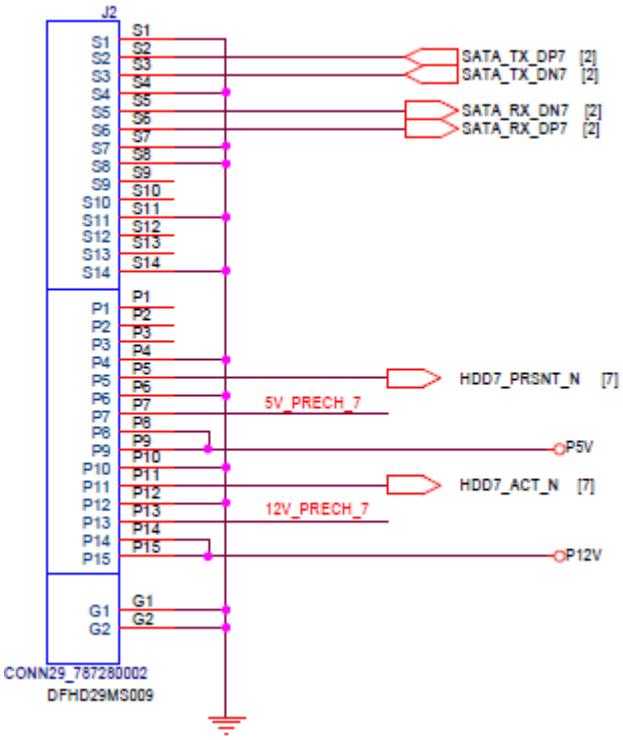
C2		D2	SGPIO_SDI_B
C3	GND	D3	GND
C4	SATA_RX_DP5	D4	SATA_RX_DP4
C5	SATA_RX_DN5	D5	SATA_RX_DN4
C6	GND	D6	GND
C7	SATA_RX_DP7	D7	SATA_RX_DP6
C8	SATA_RX_DN7	D8	SATA_RX_DN6
C9	GND	D9	GND

J17B:

Pin	Single name	Pin	Single name
A10	SGPIO_SCLK_A	B10	SGPIO_SLOAD_A
A11		B11	
A12	GND	B12	GND
A13	SATA_TX_DP1	B13	SATA_TX_DP0
A14	SATA_TX_DN1	B14	SATA_TX_DN0
A15	GND	B15	GND
A16	SATA_TX_DP3	B16	SATA_TX_DP2
A17	SATA_TX_DN3	B17	SATA_TX_DN2
A18	GND	B18	GND
C10		D10	
C11	SGPIO_SDO_A	D11	SGPIO_SDI_A
C12	GND	D12	GND
C13	SATA_RX_DP1	D13	SATA_RX_DP0
C14	SATA_RX_DN1	D14	SATA_RX_DN0
C15	GND	D15	GND
C16	SATA_RX_DP3	D16	SATA_RX_DP2
C17	SATA_RX_DN3	D17	SATA_RX_DN2
C18	GND	D18	GND

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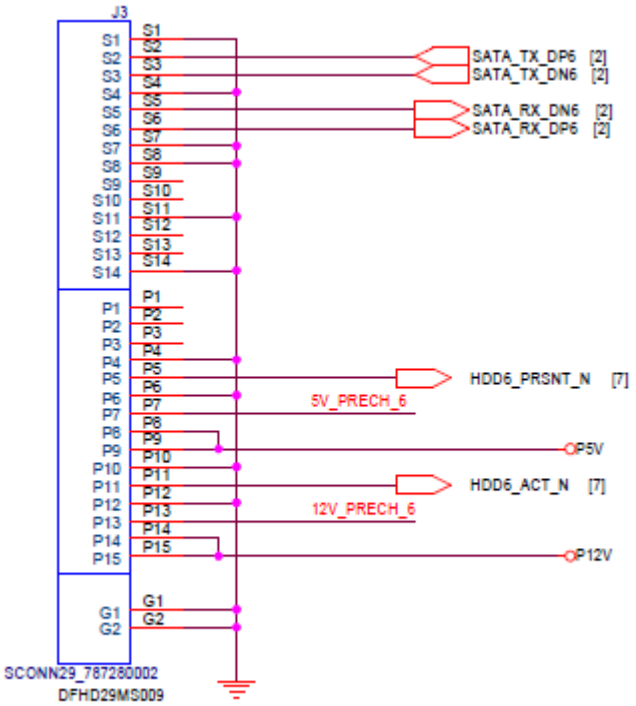
3.3.1.2 J2-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP7	P2	
S3	SATA_TX_DN7	P3	
S4	GND	P4	GND
S5	SATA_RX_DN7	P5	HDD7_PRSNT_N
S6	SATA_RX_DP7	P6	GND
S7	GND	P7	5V_PRECH_7
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD7_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_7
S14	GND	P14	P12V
		P15	P12V

Quanta Big Sur contribution

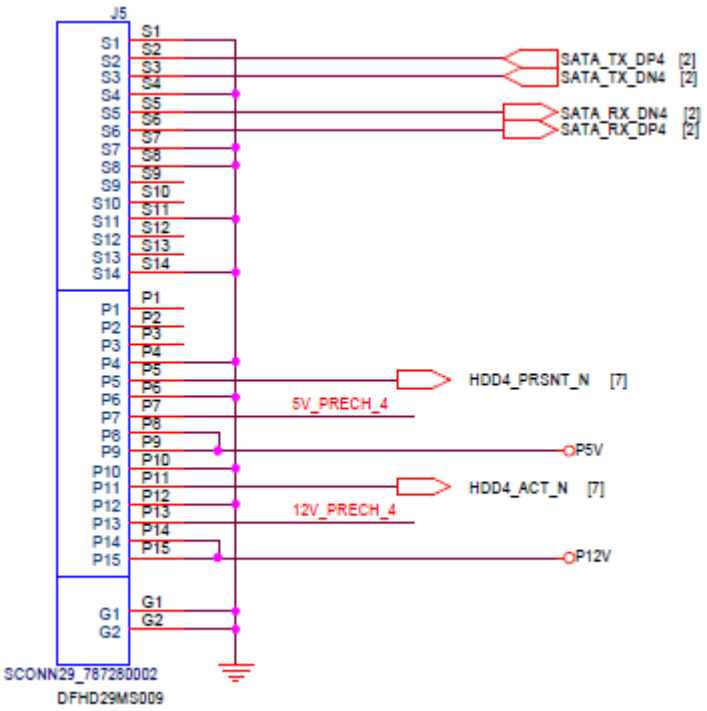
3.3.1.3 J3-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP6	P2	
S3	SATA_TX_DN6	P3	
S4	GND	P4	GND
S5	SATA_RX_DN6	P5	HDD6_PRSNT_N
S6	SATA_RX_DP6	P6	GND
S7	GND	P7	5V_PRECH_6
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD6_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_6
S14	GND	P14	P12V
		P15	P12V

Quanta Big Sur Contribution

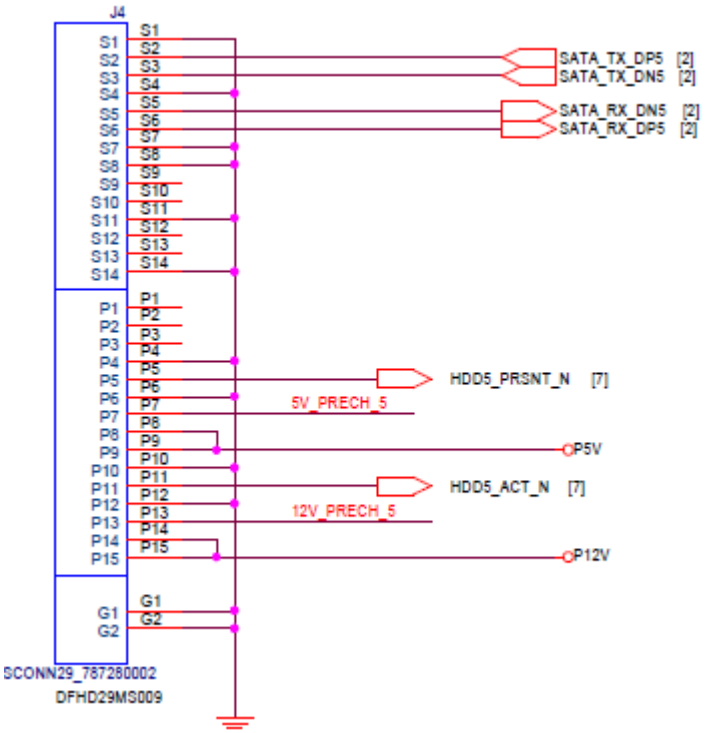
3.3.1.4 J5-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP4	P2	
S3	SATA_TX_DN4	P3	
S4	GND	P4	GND
S5	SATA_RX_DN4	P5	HDD4_PRSNT_N
S6	SATA_RX_DP4	P6	GND
S7	GND	P7	5V_PRECH_4
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD4_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_4
S14	GND	P14	P12V
		P15	P12V

Quanta Big Sur Contribution

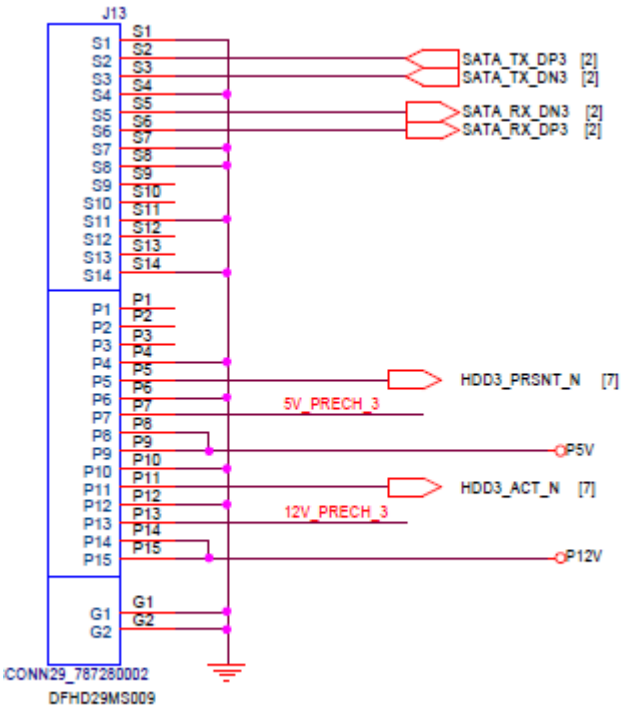
3.3.1.5 J4-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP5	P2	
S3	SATA_TX_DN5	P3	
S4	GND	P4	GND
S5	SATA_RX_DN5	P5	HDD5_PRSNT_N
S6	SATA_RX_DP5	P6	GND
S7	GND	P7	5V_PRECH_5
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD5_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_5
S14	GND	P14	P12V
		P15	P12V

Quanta Big Sur contribution

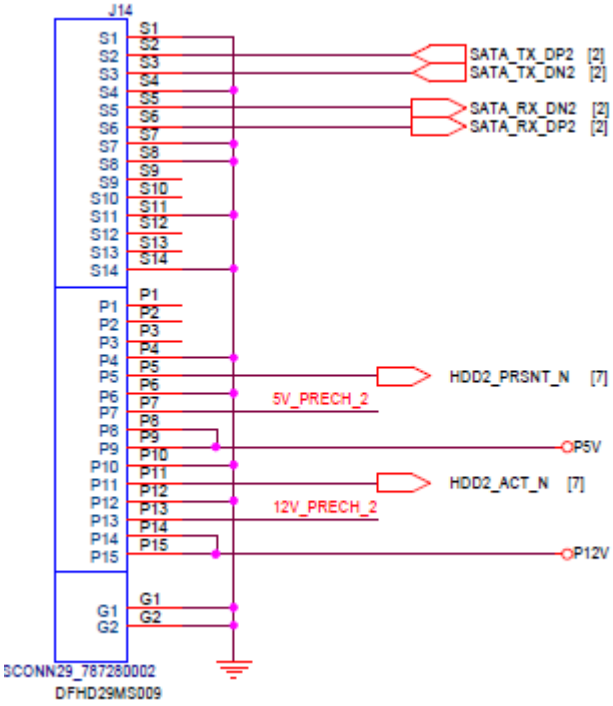
3.3.1.6 J13-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP3	P2	
S3	SATA_TX_DN3	P3	
S4	GND	P4	GND
S5	SATA_RX_DN3	P5	HDD3_PRSNT_N
S6	SATA_RX_DP3	P6	GND
S7	GND	P7	5V_PRECH_3
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD3_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_3
S14	GND	P14	P12V
		P15	P12V

Quanta Big Sur Contribution

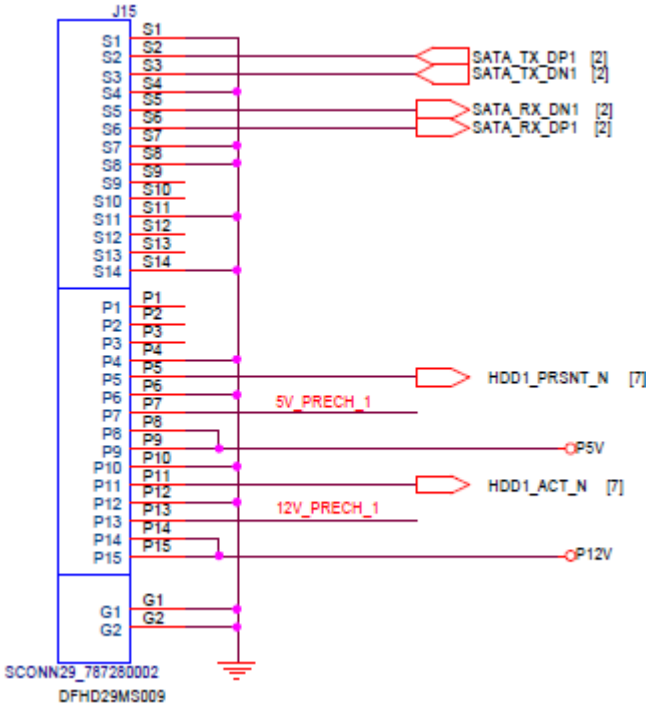
3.3.1.7 J14-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP2	P2	
S3	SATA_TX_DN2	P3	
S4	GND	P4	GND
S5	SATA_RX_DN2	P5	HDD2_PRSNT_N
S6	SATA_RX_DP2	P6	GND
S7	GND	P7	5V_PRECH_2
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD2_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_2
S14	GND	P14	P12V
		P15	P12V

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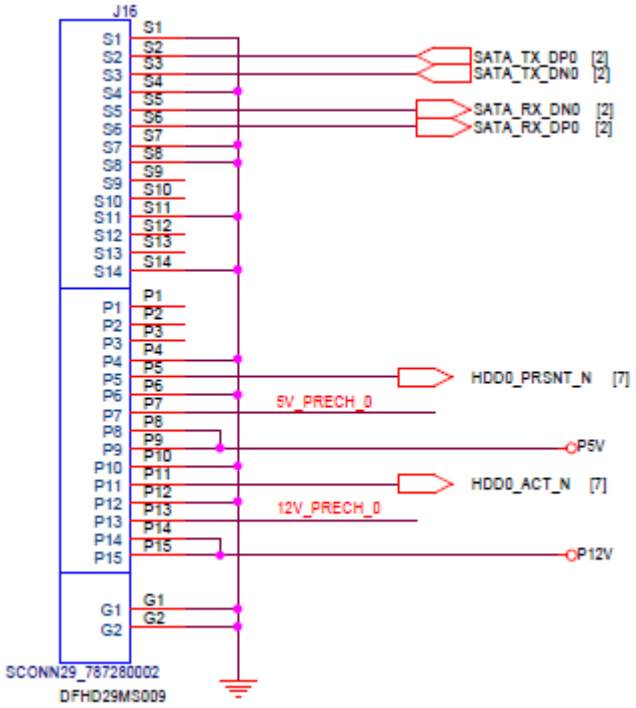
3.3.1.8 J15-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP1	P2	
S3	SATA_TX_DN1	P3	
S4	GND	P4	GND
S5	SATA_RX_DN1	P5	HDD1_PRSNT_N
S6	SATA_RX_DP1	P6	GND
S7	GND	P7	5V_PRECH_1
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD1_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_1
S14	GND	P14	P12V
		P15	P12V

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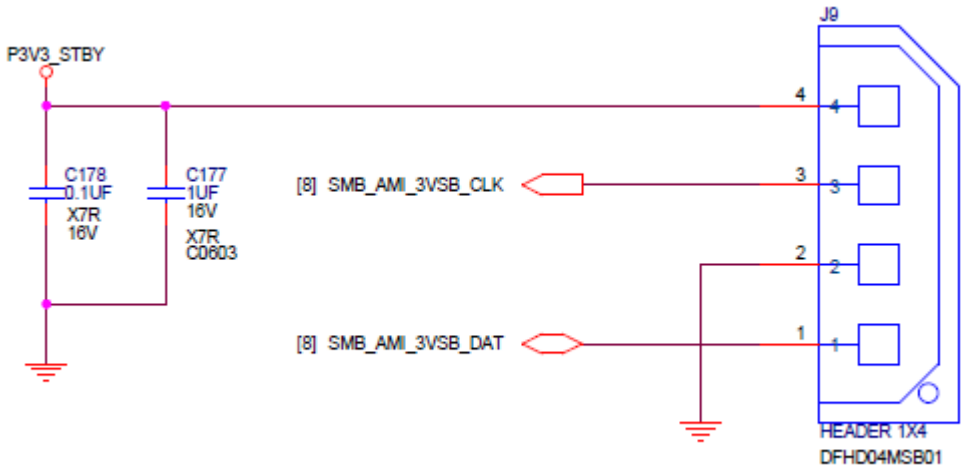
3.3.1.9 J16-SATA Connector



Pin	Single name	Pin	Single name
S1	GND	P1	
S2	SATA_TX_DP0	P2	
S3	SATA_TX_DN0	P3	
S4	GND	P4	GND
S5	SATA_RX_DN0	P5	HDD0_PRSNT_N
S6	SATA_RX_DP0	P6	GND
S7	GND	P7	5V_PRECH_0
S8	GND	P8	P5V
S9	GND	P9	P5V
S10		P10	GND
S11	GND	P11	HDD0_ACT_N
S12		P12	GND
S13		P13	12V_PRECH_0
S14	GND	P14	P12V
		P15	P12V

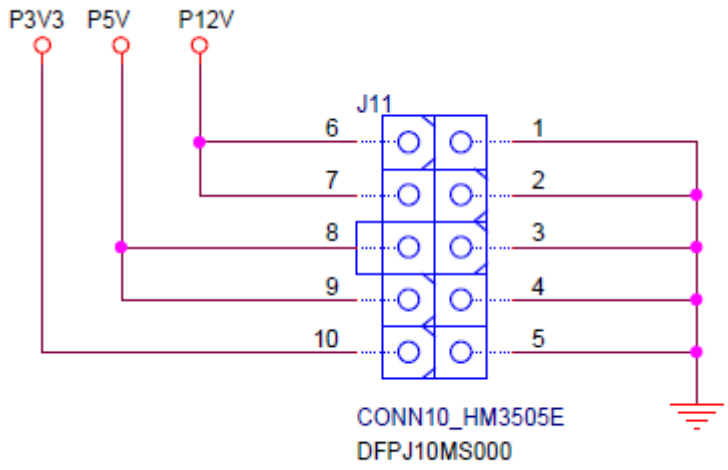
Quanta Big Sur contribution

3.3.1.10 J9-SMBUS Connector



Pin	Single name
1	SMB_AMI_3VSB_DAT
2	GND
3	SMB_AMI_3VSB_CLK
4	P3V3_STBY

3.3.1.11 J11-POWER Connector



Pin	Single name	Pin	Single name
6	P12V	1	GND
7	P12V	2	GND
8	P5V	3	GND

9	P5V	4	GND
10	P3V3	5	GND

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4 PRODUCT SYSTEM REQUIREMENTS

4OU chassis will be enabled to complement the board offering. A new chassis development is expected in order to accommodate the marketing requirements .

4.1 Chassis Overview

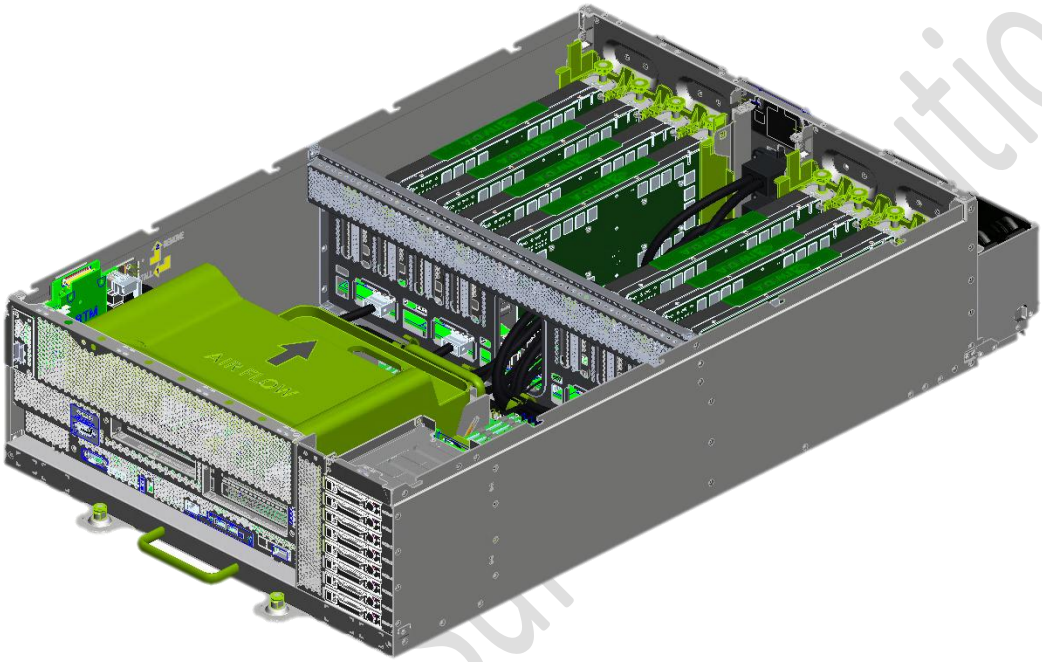
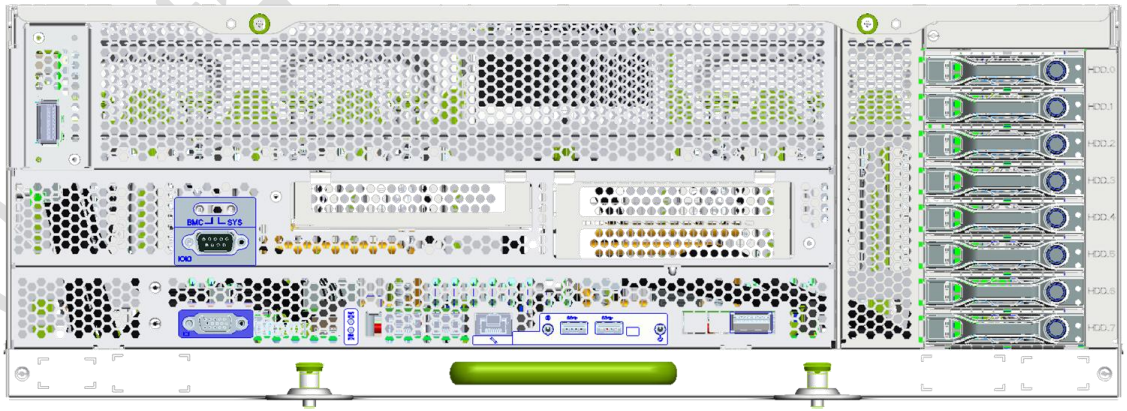


Figure 4-1 4OU Chassis



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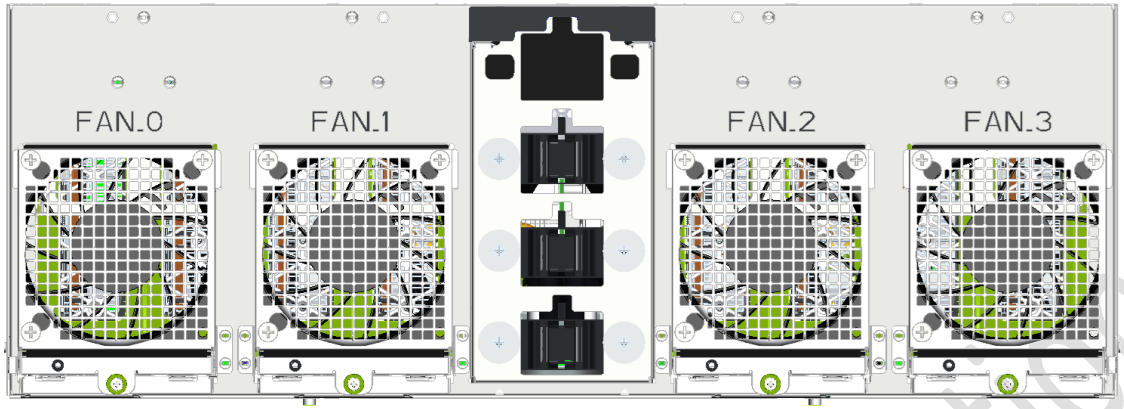


Figure 4-2 4OU Chassis Front and Rear View

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4.2 LED behavior

4.2.1 LED Function and Behavior

Table 4-1. LED behavior

Mark	Name	Color	Condition	Behavior	Voltage	Owner
	Power LED	Blue	On	S0 System Power On	5VSB	BMC
			OFF	S5 System Power Off		
	ID LED	Blue	Blinking	Unit selected for Identification	5VSB	BMC
			OFF	No Identificaiton requested		
	Fault LED	Amber	Blinking	Critical Failure: FAN /Temp/ Voltage	5VSB	BMC
				Non Critical Failure:		
			OFF	SEL Cleared		
				Last pending warning or Error has been deleted		
	HDD Activity	Blue	Blinking	HDD access (SATA Onboard Only)	5V	PCH
			OFF			
	RJ45 LED	Amber	ON	1G Link	3V3AUX	PHY
		Green	ON	100M Link		
		Green	Blinking	LAN Access		
		Dark	Blinking	10M Link		
	LAN LED	Amber	ON	Link	3V3AUX	Lan
		Green	Blinking	LAN Access		

4.3 POWER Budget

From a system power supply budgeting or thermal standpoint it's recommended to apply a derating factor.

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Power Budget			
Component	Sub-power	Quantity	Total Power
CPU	145	2	290
DIMM	9	16	144
VRD loss	60	1	60
2.5"HDD	5.8	8	46.4
PCH	7	1	7
Discrete IO	10	1	10
GPU	300	8	2400
PCIE Switch	35.776	2	71.552
6056 Fan power(100% Duty)	35.2	2	70.4
9238 Fan power(100% Duty)	55.6	4	222.4
System total Power Consumption (W) (utilization is 85%)			**2824W**

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