



**User Manual**

# **SOM-DH5000**

**Development Board for COM  
HPC Server Size D**

**ADVANTECH**

*Enabling an Intelligent Planet*

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Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

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If you believe your product to be defective, follow the steps outlined below.

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the package and ship the package prepaid to your dealer.

# Declaration of Conformity

## CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Please contact your local supplier for ordering information.

Test conditions for passing also include the equipment being operated within an industrial enclosure. In order to protect the product from damage caused by electrostatic discharge (ESD) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

## FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

## FM

This equipment has passed FM certification. According to the National Fire Protection Association, work sites are categorized into different classes, divisions, and groups based on hazard considerations. This equipment is compliant with the specifications for Class I, Division 2, Groups A, B, C, and D indoor hazards.

# Technical Support and Assistance

1. Visit the Advantech website at [www.advantech.com/support](http://www.advantech.com/support) to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before calling:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages

## Warnings, Cautions, and Notes

**Warning!** Warnings indicate conditions that, if not observed, can result in personal injury!



**Caution!** Cautions are included to help prevent hardware damage and data losses. For example,



“Batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.”

**Note!** Notes provide optional additional information.



## Document Feedback

To assist us with improving this manual, we welcome all comments and constructive criticism. Please send all feedback in writing to [support@advantech.com](mailto:support@advantech.com).

## Selection Guide

Part No.	Description
SOM-DH5000-00A1	COM-HPC Development Board for Client Pinout with 5mm-height Board-to-Board Connector

## Packing List

Check that the items listed below are included and in good condition before system installation. If any item does not accord with the list, contact your dealer immediately.

Part No.	Description	Quantity
1700008941	M Cable SATA 7P/SATA 7P 32CM C=R 180/180D W/Lock	2

# Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect the equipment from all power outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If any of the following occurs, have the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated the equipment.
  - The equipment has been exposed to moisture.
  - The equipment is malfunctioning, or does not operate according to the user manual.
  - The equipment has been dropped and damaged.
  - The equipment shows obvious signs of breakage.
15. Do not leave the equipment in an environment with a storage temperature of below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or above  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ) as this may damage the components. The equipment should be kept in a controlled environment.
16. **CAUTION:** Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
17. In accordance with IEC 704-1:1982 specifications, the sound pressure level at the operator's position should not exceed 70 dB (A).

**DISCLAIMER:** These instructions are provided according to IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

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## Safety Precautions - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from the PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the PC is powered on.
- Disconnect the power before making any configuration changes. A sudden rush of power after connecting a jumper or installing a card may damage sensitive electronic components.

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# Chapter 1

## General Information

This chapter details background information on the SOM-DH5000 Development Board for COM-HPC.

Sections include:

- Introduction
- Functional Block Diagram
- Product Specifications

## 1.1 Introduction

The Advantech SOM-DH5000 development carrier board complies with PICMG COM-HPC pinout standards and is compatible with modules of corresponding form factors. It utilizes 400-pin connectors and supports several display connectors (eDP, DP++, HDMI) and USB types (USB 3.0 Type A and Type C). Additionally, it accommodates M.2 E-Key connectors and HD audio. This board is crafted to serve diverse applications for end users and can function as a reference design board by emulating necessary functions. Customers have the flexibility to directly integrate the SOM-DH5000 directly into their products as an application board.

**Table 1.1: Acronyms**

<b>Term</b>	<b>Define</b>
AC'97	Audio CODEC (Coder-Decoder)
ACPI	Advanced Configuration Power Interface – a standard to implement power-saving modes in PC-AT systems
BIOS	Basic Input Output System – firmware in a PC-AT system that is used to initialize system components before handing control over to the operating system
CAN	Controller-area network (CAN or CAN-bus) is a vehicle bus standard designed to allow micro-controllers to communicate with each other within a vehicle without a host computer
DDI	Digital Display Interface – containing DisplayPort, HDMI/DVI, and SDVO
EAPI	Embedded Application Programmable Interface Software interface for COM Express® specific industrial functions – System information – Watchdog timer – I2C Bus – Flat-panel brightness control – User storage area – GPIO
GbE	Gigabit Ethernet
GPIO	General purpose input output
HDA	Intel® High Definition Audio (HD Audio) refers to the specification released by Intel in 2004 for delivering high-definition audio that is capable of playing back more channels at higher quality than AC'97.
I2C	Inter Integrated Circuit – 2-wire (clock and data) signaling scheme allowing communication between integrated circuits, primarily used to read and load register values
ME	Management Engine
PC-AT	“Personal Computer – Advanced Technology” – an IBM trademark term used to refer to Intel-based personal computers in the 1990s
PEG	PCI Express Graphics
RTC	Real-Time Clock – battery-backed circuit in PC-AT systems that keeps the system time and date as well as certain system setup parameters
SPD	Serial Presence Detect – refers to serial EEPROM on DRAMs that has DRAM Module configuration information
TPM	Trusted Platform Module – chip to enhance the security features of a computer system
UEFI	Unified Extensible Firmware Interface
WDT	Watchdog Timer

## 1.2 Block Diagram

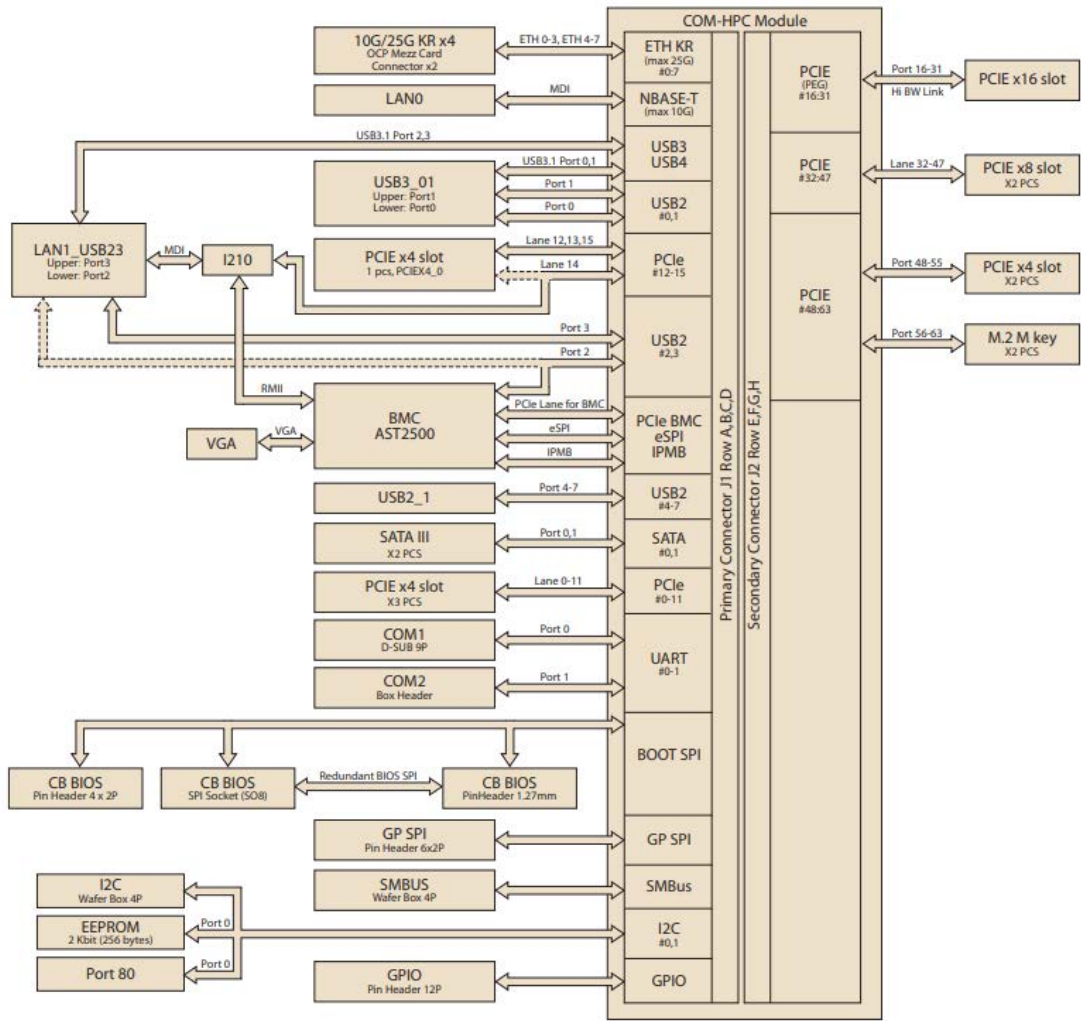


Figure 1.1 Block Diagram



# Chapter 2

## Mechanical Information

This chapter details mechanical information for the SOM-DH5000 Development Board for COM-HPC.

Sections include:

- Board Information
- Mechanical Diagrams
- Assembly Diagram

## 2.1 Board Information

The figure below indicates the main chips on the SOM-DH5000 Development Board for COM-HPC.

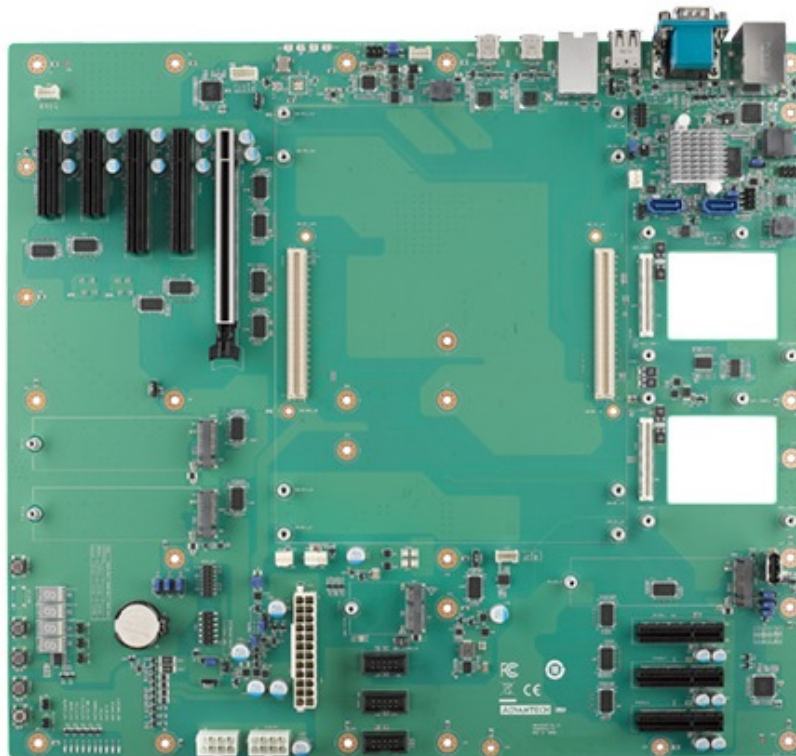


Figure 2.1 Board Chips ID - Front

## 2.2 Mechanical Diagram

For more information regarding the following 2D/3D models, please visit the Advantech COM support service website: <http://com.advantech.com>.

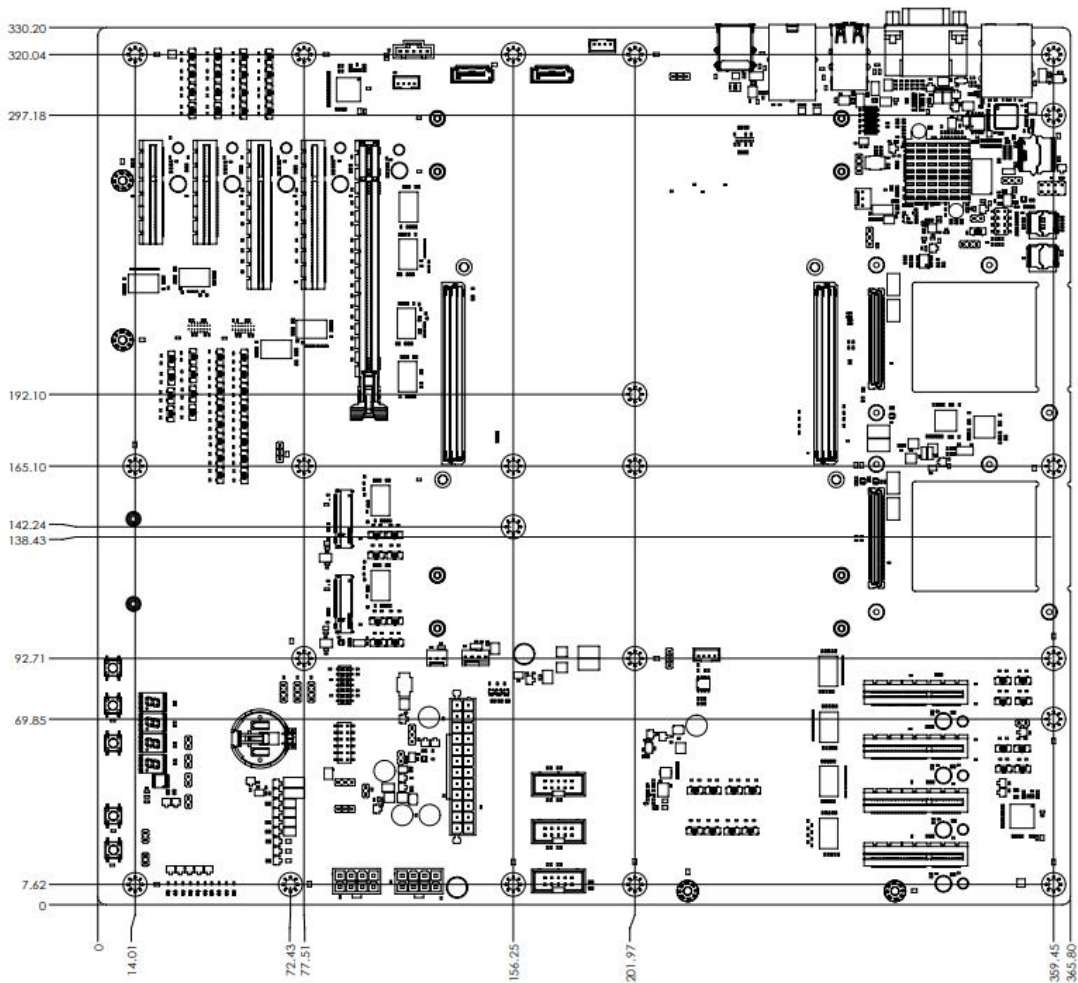
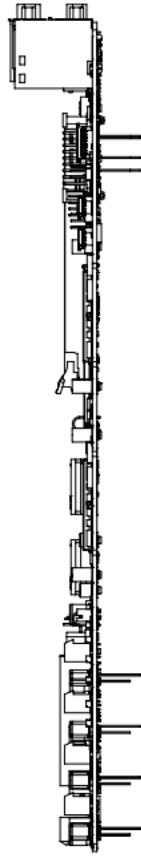


Figure 2.2 Board Mechanical Diagram - Front



Figure 2.3 Board Mechanical Diagram - Side 1



**Figure 2.4 Board Mechanical Diagram - Side 2**



## 2.3 Assembly Diagram

These figures demonstrate the order of assembly for attaching the thermal module and COM module to the carrier board.

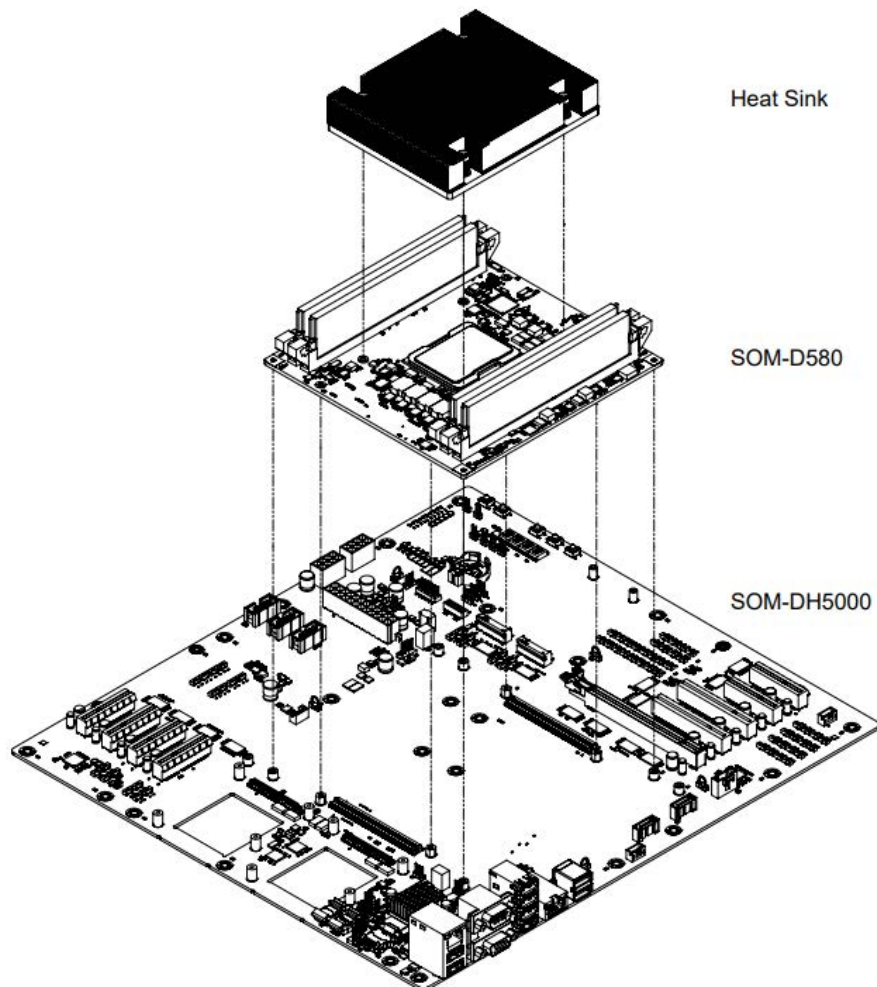


Figure 2.5 Assembly Diagram



# Chapter 3

## Connectors and Jumper Settings

This chapter details information on the connector and jumper settings for the SOM-DH5000 Development Board for COM-HPC.

# 3.1 SOM-DH5000 Connectors and Jumper Settings

## 3.1.1 Connector Locations

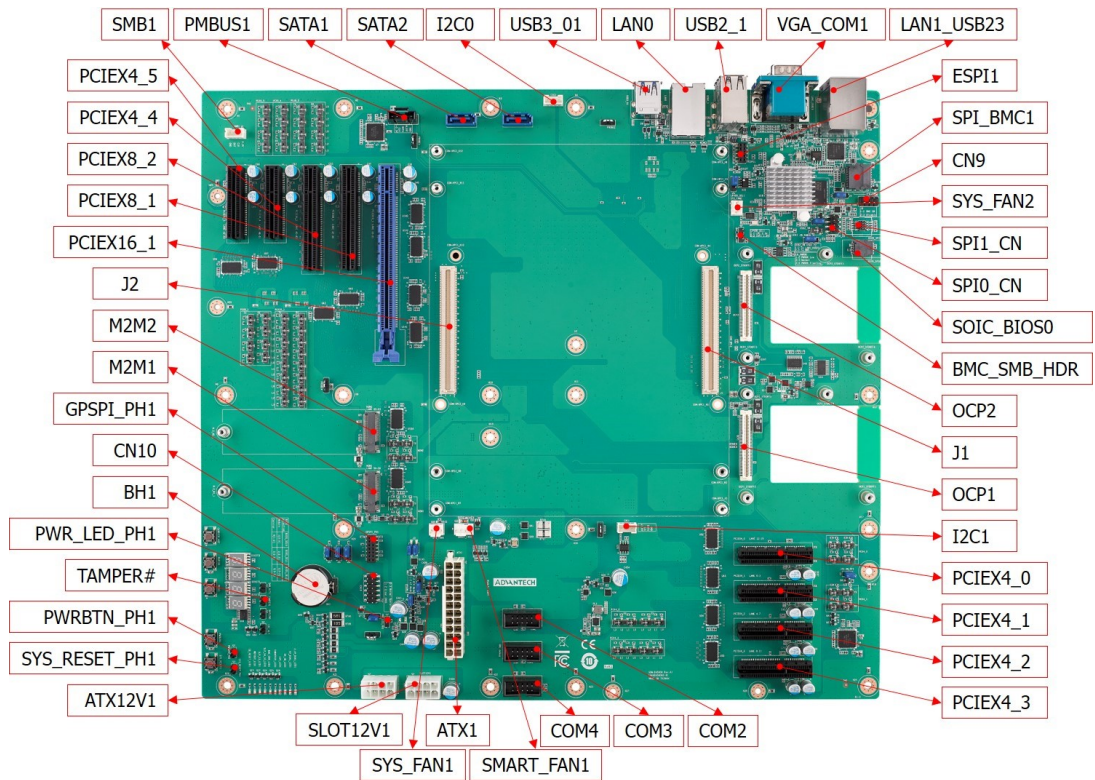


Figure 3.1 Connector Locations

## 3.1.2 Jumper Locations

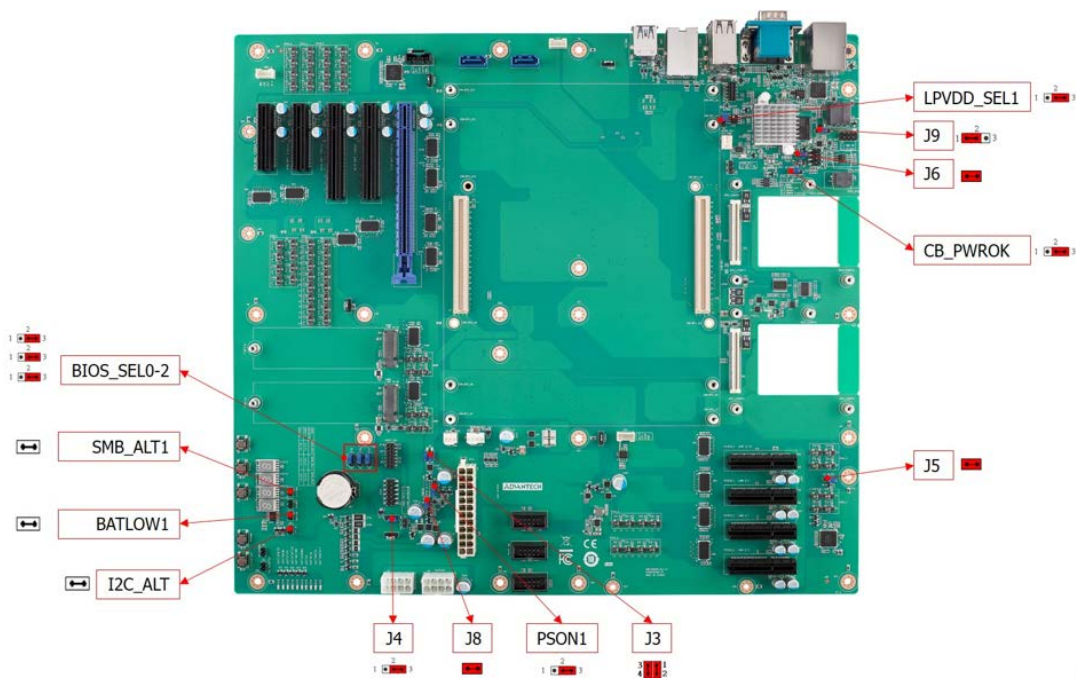


Figure 3.2 Jumper Locations

### 3.1.3 Switch Locations

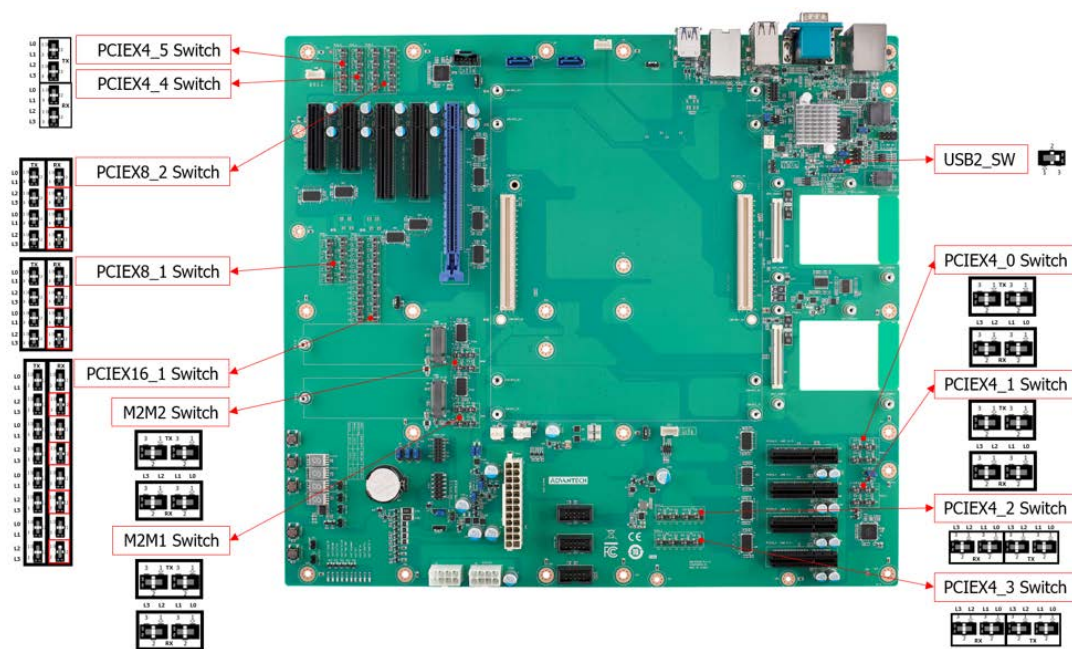


Figure 3.3 Switch Locations

### 3.1.4 I/O Connector Locations

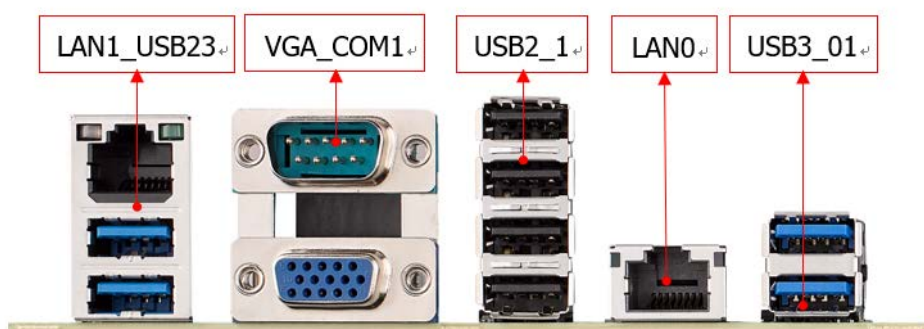


Figure 3.4 I/O Connector Locations

### 3.1.5 Button Locations

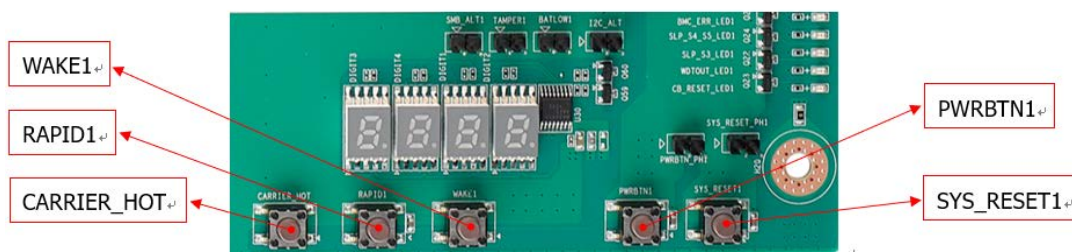


Figure 3.5 Button Locations

### 3.1.6 LED Locations

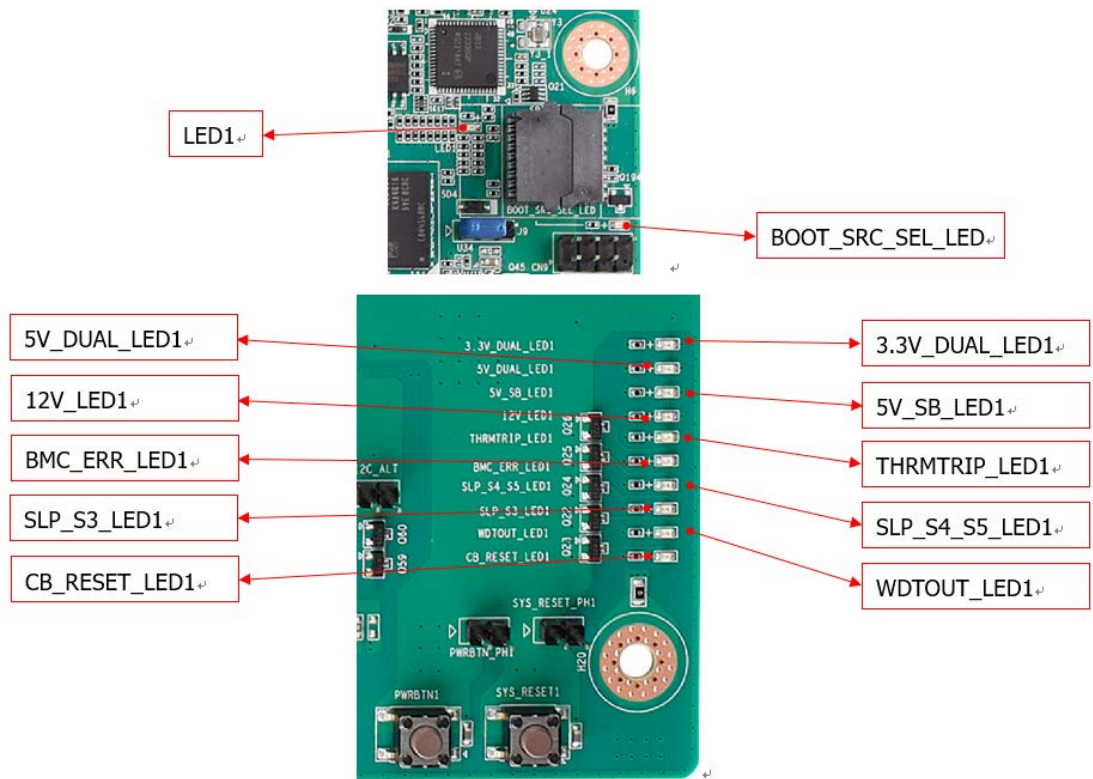


Figure 3.6 LED Locations

### 3.1.7 Connector List

Table 3.1: Connector List			
Label	Function	Label	Function
ATX1	ATX Connector	ATX12V1	DC 12V Input Connector 1
SLOT12V1	DC 12V Input Connector 2	BH1	RTC Battery Socket
BMC_SMB_HDR	BMC IPMB Pin Header	CN10	GPIO Pin Header
CN9	BMC SPI Pin Header	COM2	COM-HPC UART Port 1 Wafer Box
COM3	BMC Debug Console Wafer Box	COM4	BMC UART Port 1 Wafer Box
ESPI1	eSPI Debug Pin Header	GPSPI_PH1	GP SPI Pin Header
I2C0	COM-HPC I2C Port 0 Wafer Box (3.3V)	I2C1	COM-HPC I2C Port 1 Wafer Box(1.8V)
J1	COM-HPC Connector (A, B, C, D)	J2	COM-HPC Connector (E, F, G, H)
LAN0	COM-HPC NBASE-T Port 0	LAN1_USB23	LAN1, USB 3.0/2.0 Port 2 and Port 3 Connector
M2M1	M.2 M-Key Connector 1 (PCIe Lanes 56-59)	M2M2	M.2 M-Key Connector 2 (PCIe Lane 60-63)
OCP1/OCP2	OCP Module Connector 1 and 2	PCIEX16_1	PCIe x16 Slot (PCIe Lanes 16-31)
PCIEX4_0	PCIe x4 Slot 0 (PCIe Lanes 12-15)	PCIEX4_1	PCIe x4 Slot 1 (PCIe Lanes 0-3)
PCIEX4_2	PCIe x4 Slot 2 (PCIe Lanes 4-7)	PCIEX4_3	PCIe x4 Slot 3 (PCIe Lanes 8-11)
PCIEX4_4	PCIe x4 Slot 4 (PCIe Lanes 48-51)	PCIEX4_5	PCIe x4 Slot 5 (PCIe Lanes 52-55)
PCIEX8_1	PCIe x8 Slot 1 (PCIe Lanes 32-39)	PCIEX8_2	PCIe x8 Slot 2 (PCIe Lanes 40-47)
PMBUS1	PM Bus Pin Header	PWR_LED_PH1	Carrier Board Power Indicator Pin Header
PWRBTN_PH1	Power Button Pin Header	SATA1	SATA Port 0 Connector
SATA2	SATA Port 1 Connector	SMART_FAN1	Smart Fan Connector
SMB1	SMBus Wafer Box	SOIC_BIOS0	SPI0 BIOS Socket
SPI_BMC1	BMC SPI Socket	SPI0_CN	SPI0 BIOS Pin Header
SPI1_CN	SPI1 BIOS Pin Header	SYS_FAN1/ SYS_FAN2	System Fan Connector 1 and 2
SYS_RE- SET_PH1	System Reset Button Pin Header	TAMPER1	Tamper Pin Header
USB2_1	USB 2.0 Port 4, 5, 6, and 7	USB3_01	USB 3.0/2.0 Port 0 and Port 1 Connector
VGA_COM1	CRT and COM-HPC UART Port 0 DB9 Connector		

### 3.1.8 Jumper, Switch, and Button List

**Table 3.2: Jumper and Button List**

Label	Function	Label	Function
BATLOW1	BATLOW# Jumper	BIOS_SEL0	BIOS Select 0
BIOS_SEL1	BIOS Select 1	BIOS_SEL2	BIOS Select 2
CB_PWROK	PWROK Signal Pull Down or Floating SEL	PSON1	ATX/AT Mode SEL
SMB_ALT1	COM-HPC SMBus Alert# Jumper	I2C_ALT	COM-HPC I2C Alert Port 0 Jumper
J3	COM-HPC Module +V5SB Supply	J4	Normal Operation / Clear CMOS SEL
J5	Carrier Board SPI Power Supply	J6	Carrier Board Redundant SPI BIOS SEL
J8	COM-HPC Type 2 SEL	J9	BMC SPI Flash Hold SEL
LPVDD_SEL1	eSPI or LPC of BMC Power SEL	CARRIER_HOT	CARRIER HOT Button
PWRBTN1	Power Button	RAPID1	Rapid Shutdown Button
SYS_RESET1	Reset Button	WAKE1	Wake Button

**Table 3.3: Switch List**

Label	Function	Label	Function
PCIEX16_1	TX*8, RX*8	PCIEX16_1	TX*8, RX*8
PCIEX8_1	TX*4, RX*4	PCIEX8_1	TX*4, RX*4
PCIEX8_2	TX*4, RX*4	PCIEX8_2	TX*4, RX*4
PCIEX4_0	TX*2, RX*2	PCIEX4_0	TX*2, RX*2
PCIEX4_1	TX*2, RX*2	PCIEX4_1	TX*2, RX*2
PCIEX4_2	TX*2, RX*2	PCIEX4_2	TX*2, RX*2
PCIEX4_3	TX*2, RX*2	PCIEX4_3	TX*2, RX*2
PCIEX4_4	TX*2, RX*2	PCIEX4_4	TX*2, RX*2
PCIEX4_5	TX*2, RX*2	PCIEX4_5	TX*2, RX*2
M2M1	TX*2, RX*2	M2M1	TX*2, RX*2
M2M2	TX*2, RX*2	M2M2	TX*2, RX*2
USB2_SW	USB 2.0 Port2 to LAN2_USB23 or BMC	USB2_SW	USB 2.0 Port2 to LAN2_USB23 or BMC

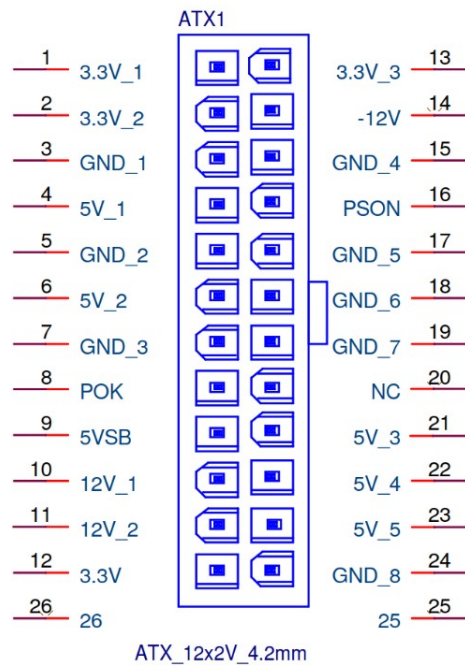


### 3.1.9 LED Function List

**Table 3.4: LED Function List**

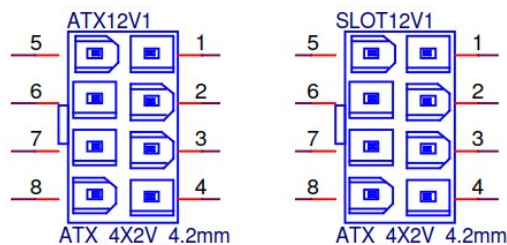
<b>Location</b>	<b>Function</b>
12V_LED1	Carrier Board ATX +12V ready Indication
3.3V_DUAL_LED1	Carrier Board ATX +V3.3_DUAL ready Indication
5V_SB_LED1	Carrier Board ATX +V5SB ready Indication
5V_DUAL_LED1	Carrier Board ATX +V5_DUAL ready Indication
SLP_S3_LED1	SLP_S3 Signal Ready Indication
SLP_S4_S5_LED1	SLP_S4/SLP_S5 Signal Ready Indication
CB_RESET_LED1	Carrier Board Reset Indication
THRMTRIP_LED1	Module occurs Thermal Trip Indication
WDTOUT_LED1	Watchdog Indication
LED1	BMC Heart Beat LED indicator
BOOT_SRC_SEL_LED	Redundant BIOS SPI Flash Indication
BMC_ERR_LED1	BMC Error occurs Indication

### 3.1.10 Connector Pin Definitions



**Table 3.5: ATX1 ATX Connector**

Pin	Signal	Pin	Signal
1	+V3.3	13	+V3.3
2	+V3.3	14	NC
3	GND	15	GND
4	+V5	16	CN_PSON#
5	GND	17	GND
6	+V5	18	GND
7	GND	19	GND
8	PWR_OK	20	NC
9	+V5SB	21	+V5
10	+V12	22	+V5
11	+V12	23	+V5
12	+V3.3	24	GND
26	NC	25	NC



**Table 3.6: ATX12V1, SLOT12V1 DC 12V Input Connector 1 and 2**

Pins	Signal	Pin	Signal
1,2,3,4	GND	5,6,7,8	+V12



Table 3.7: BH1 RTC Battery Socket

Pin	Signal	Pin	Signal
1	GND	2	+VBAT_BH

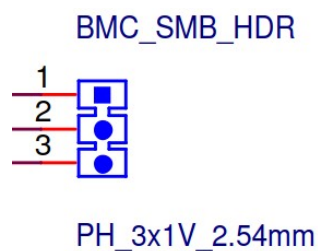


Table 3.8: BMC\_SMB\_HDR Pin Header

Pin	Signal
1	BMC_SMB_CLK8
2	BMC_SMB_DATA8
3	GND

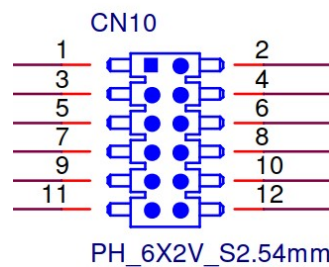
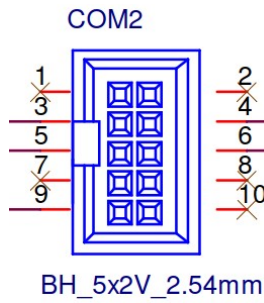


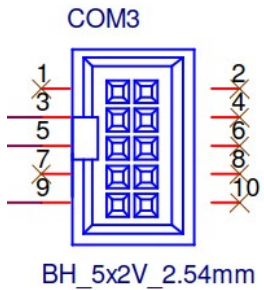
Table 3.9: CN10 GPIO Pin Header

Pin	Signal	Pin	Signal
1	GPIO0	2	GPIO6
3	GPIO1	4	GPIO7
5	GPIO2	6	GPIO8
7	GPIO3	8	GPIO9
9	GPIO4	10	GPIO10
11	GPIO5	12	GPIO11



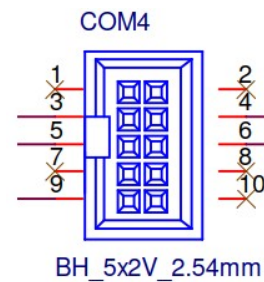
**Table 3.10: COM2 COM-HPC UART Port 1 Wafer Box**

Pin	Signal	Pin	Signal
1	NC	2	NC
3	COM1_RXD	4	COM1_RTS#
5	COM1_TXD	6	COM1_CTS#
7	NC	8	NC
9	GND	10	NC



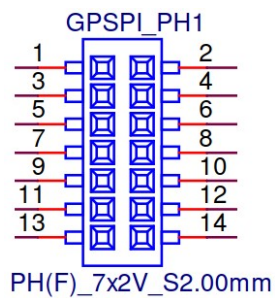
**Table 3.11: COM3 BMC Debug Console Wafer Box**

Pins	Signal	Pin	Signal
1,2,4,6,7,8,10	NC	3	BMC_UART_RXD5
9	GND	5	BMC_UART_TXD5

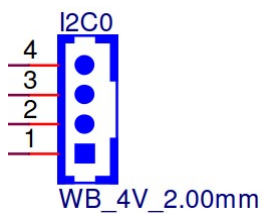


**Table 3.12: COM4 BMC UART Port 1 Wafer Box**

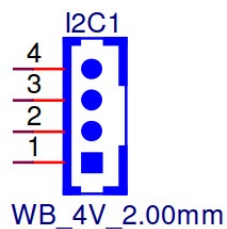
Pin	Signal	Pin	Signal
1	NC	2	NC
3	BMC_COM3_RX	4	BMC_COM3_RTS#
5	BMC_COM3_TXD	6	BMC_COM3_CTS#
7	NC	8	NC
9	GND	10	NC


**Table 3.13: GPSPI\_PH1 GP SPI Pin Header**

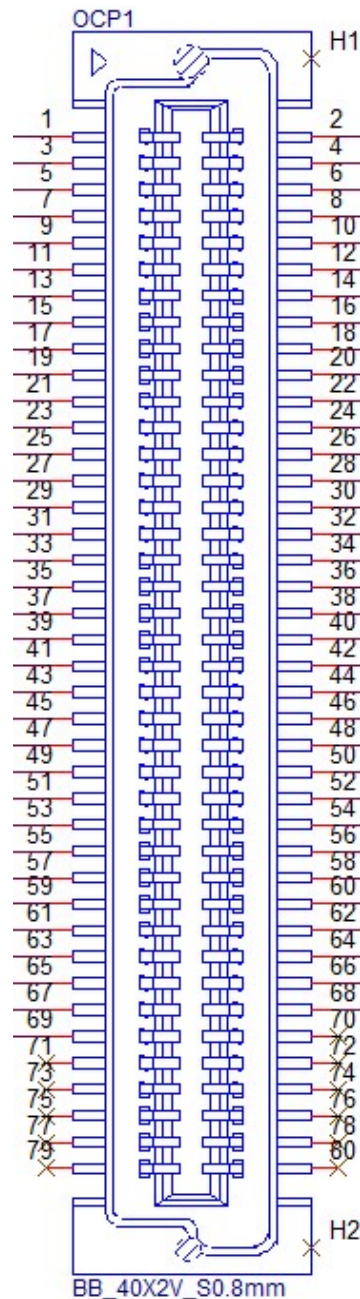
Pin	Signal	Pin	Signal
1	GPSPI_CLK	2	GPSPI_MISO
3	PLTRST#	4	GPSPI_MOSI
5	GPSPI_CS0#	6	+V3.3
7	Test Point	8	GND
9	Test Point	10	+V1.8_DUAL
11	GPSPI_ALERT#	12	PLTRST#
13	+V5_DUAL	14	+V5


**Table 3.14: I2C0 COM-HPC I2C Port 0 Wafer Box (3.3V)**

Pin	Signal
1	GND
2	I2C0_DAT
3	I2C0_CLK
3	+V3.3_DUAL


**Table 3.15: I2C1 COM-HPC I2C Port 1 Wafer Box (1.8V)**

Pin	Signal
1	GND
2	I2C1_DAT
3	I2C1_CLK
4	+V1.8_DUAL

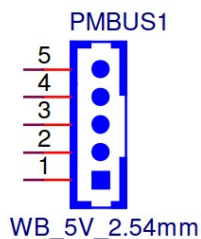


**Table 3.16: OCP1/OCP2 OCP Module Connector 1 and 2**

Pin	OCP1 Signal	OCP2 Signal	Pin	OCP1 Signal	OCP2 Signal
1	SMB_CLK	SMB_CLK	2	+VIN_OCP	+VIN_OCP
3	SMB_DAT	SMB_DAT	4	+VIN_OCP	+VIN_OCP
5	NC	NC	6	+VIN_OCP	+VIN_OCP
7	GND	GND	8	ETH0-3_PHY_RST#	ETH4-7_PHY_RST#
9	ETH2_TX+	ETH6_TX+	10	ETH0-3_INT#	ETH4-7_INT#
11	ETH2_TX-	ETH6_TX-	12	ETH1_INT#	ETH5_INT#
13	+V5_DUAL	+V5_DUAL	14	GND	GND
15	KRA_LED1_0#	KRA_LED5_0#	16	ETH0_TX+	ETH4_TX+
17	KRA_LED1_1#	KRA_LED5_1#	18	ETH0_TX-	ETH4_TX-
19	GND	GND	20	GND	GND
21	ETH3_TX+	ETH7_TX+	22	KRA_LED0_0#	KRB_LED4_0#

**Table 3.16: OCP1/OCP2 OCP Module Connector 1 and 2**

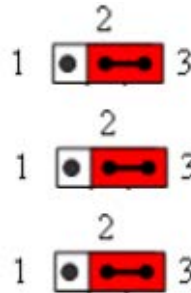
23	ETH3_TX-	ETH7_TX-	24	KRA_LED0_1#	KRB_LED4_1#
25	GND	GND	26	GND	GND
27	KRA_LED2_0#	KRA_LED6_0#	28	ETH1_TX+	ETH5_TX+
29	KRA_LED2_1#	KRA_LED6_1#	30	ETH1_TX-	ETH5_TX-
31	GND	GND	32	GND	GND
33	ETH2_RX+	ETH6_RX+	34	ETH0-3_MDIO_- CLK	ETH4-7_MDIO_- CLK
35	ETH2_RX-	ETH6_RX-	36	ETH0-3_MDIO_- DAT	ETH4-7_MDIO_- DAT
37	GND	GND	38	GND	GND
39	ETH0-3_I2C_- CLK	ETH0-3_I2C_CLK	40	ETH0_RX+	ETH4_RX+
41	ETH0-3_I2C_- DAT	ETH0-3_I2C_DAT	42	ETH0_RX-	ETH4_RX-
43	GND	GND	44	GND	GND
45	ETH3_RX+	ETH7_RX+	46	KRA_LED3_0#	KRA_LED7_0#
47	ETH3_RX-	ETH7_RX-	48	KRA_LED3_1#	KRA_LED7_1#
49	GND	GND	50	GND	GND
51	ETH1_SF- P_I2C_CLK	ETH5_SFP_I2C_- CLK	52	ETH1_RX+	ETH5_RX+
53	ETH1_SF- P_I2C_DAT	ETH5_SFP_I2C_- DAT	54	ETH1_RX-	ETH5_RX-
55	GND	GND	56	GND	GND
57	ETH3_SF- P_I2C_CLK	ETH7_SFP_I2C_- CLK	58	ETH2_SF- P_I2C_CLK	ETH6_SFP_I2C_- CLK
59	ETH3_SF- P_I2C_DAT	ETH7_SFP_I2C_- DAT	60	ETH2_SF- P_I2C_DAT	ETH6_SFP_I2C_- DAT
61	ETH2_INT#	ETH6_INT#	62	GND	GND
63	ETH3_INT#	ETH7_INT#	64	OCPA_PRSNTC	OCPB_PRSNTC
65	ETH0_SDP	ETH4_SDP	66	ETH1_SDP	ETH5_SDP
67	ETH2_SDP	ETH6_SDP	68	ETH3_SDP	ETH7_SDP
69	ETH0- 3_PHY_INT#	ETH4- 7_PHY_INT#	70	NC	NC
71	NC	NC	72	NC	NC
73	NC	NC	74	NC	NC
75	NC	NC	76	NC	NC
77	NC	NC	78	NC	NC
79	NC	NC	80	NC	NC



**Table 3.17: PMBUS1 PM Bus Pin Header**

Pin	Signal
1	BMC_SMB_CLK1
2	BMC_SMB_DATA1
3	PMBUS_SMB_ALERT#
4	GND
5	+V3.3_AUX

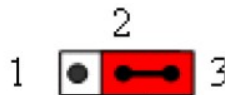
### 3.1.11 Jumper, Switch Settings

**Table 3.18: BSEL0, BSEL1, BSEL2 BIOS Selection**

BSEL0	BSEL1	BSEL2	Chipset SPI CS1# Destination	Chipset SPI CS0# Destination	SPI Descriptor
2-3 (1)	2-3 (1)	2-3 (1)	Module	Module	Module [Default]
1-2 (0)	2-3 (1)	2-3 (1)	Module	Carrier	Carrier

**Table 3.19: BATLOW1, BATLOW# Jumper**

Pins	Function
1-2	Battery Low
1-X	Normal [Default]

**Table 3.20: CB\_PWROK, Power OK Signal Pull Down or Floating Selection**

Pins	Function
1-2	PWROK Signal Pull Down
2-3	PWROK Signal connect to Module [Default]
2-X	PWROK Signal is floating

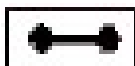



**Table 3.21: PSON1, ATX/AT Mode Selection**

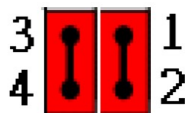
Pins	Function
1-2	AT Mode
2-3	ATX Mode [Default]


**Table 3.22: SMB\_ALT1, COM-HPC SMBus Alert# Jumper**

Pins	Function
1-2	Trigger COM-HPC SMB_ALT# (Short to GND)
1-X	Normal [Default]


**Table 3.23: I2C\_ALT, COM-HPC I2C Alert Port 0 Jumper**

Pins	Function
1-2	Trigger COM-HPC I2C0_ALT#(Short to GND)
1-X	Normal [Default]


**Table 3.24: J3, COM-HPC Module +V5SB Supply**

Pins	Function
1-X	Not supply +V5SB to COM HPC Module
3-X	
1-2	Supply +V5SB to COM HPC Module [Default]
3-4	


**Table 3.25: J4, Normal Operation / Clear CMOS SEL**

Pins	Function
1-2	Clear CMOS
2-3	Normal Operation [Default]



**Table 3.26: J5, Carrier Board SPI Power Supply**

Pins	Function
1-2	Carrier Board SPI Power Supply [Default]
1-X	Carrier Board SPI has no Power



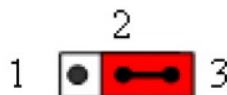
**Table 3.27: J6, Carrier Board SPI\_CS# Signal Open**

Pins	Function
1-2	SPI_CS# Signal Module and Carrier Board short [Default]
1-X	SPI_CS# Signal Module and Carrier Board open



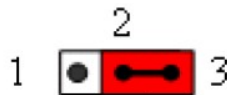
**Table 3.28: J8, COM-HPC Type 2 Select (TBD)**

Pins	Function
1-2	Carrier Board SPI Power Supply [Default]
1-X	Carrier Board SPI has no Power



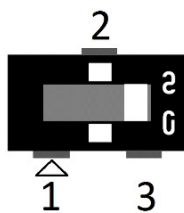
**Table 3.29: J9, BMC SPI Flash Hold SEL**

Pins	Function
1-2	BMC Software Enable [Default]
2-3	BMC Software Disable



**Table 3.30: LPVDD\_SEL1, eSPI or LPC of BMC Power SEL**

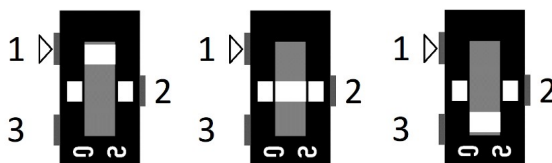
Pins	Function
1-2	BMC Power LPVDD 3.3V for LPC mode
2-3	BMC Power LPVDD 1.8V for eSPI mode [Default]



**Table 3.31: USB2\_SW USB 2.0 Port2 Selection**

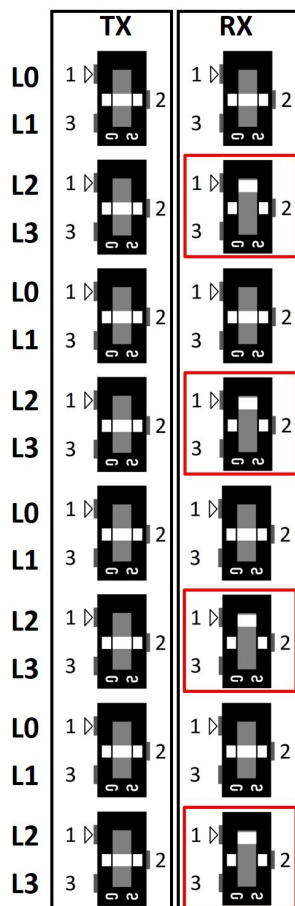
Pins	Function
1-2	USB 2.0 Port 2 connect to LAN1 USB23
2-3	USB 2.0 Port 2 connect to BMC [Default]

\*For PCIe Redriver Control Settings: TI DS320PR810



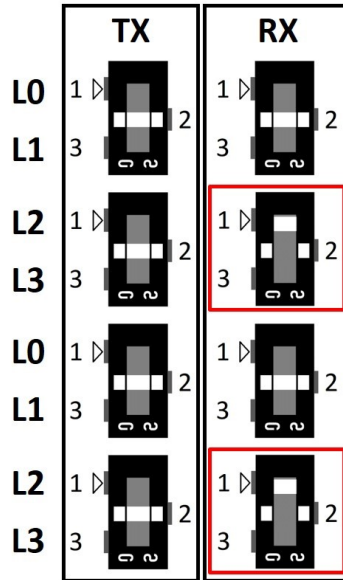
**Table 3.32: Switch Settings (PCIe Re-Driver, M2MX)**

Pins	Function
1-2	L0, or L2
2-Mid	Floating, or L4
2-3	L1, or L3



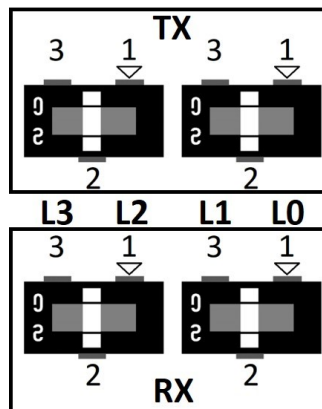
**Table 3.33: PEX16\_1 PCIe Re-Driver Switch Settings (PCIEX16\_1 Slot)**

PCIe Lanes	TX	RX
Lanes 16-19	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)
Lanes 20-23	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)
Lanes 24-27	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)
Lanes 28-31	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)



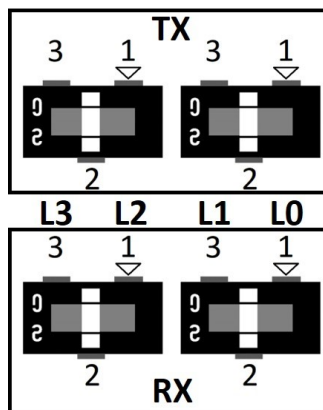
**Table 3.34: PEX8\_1/PEX8\_2 PCIe Re-Driver Switch Settings (PCIEX8\_1, PCIEX8\_2 Slot)**

PCIe Lanes	TX	RX
Lanes 16-19/40-43	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)
Lanes 20-23/44-47	2-Mid, 2-Mid (L4)	2-Mid, 1-2 (L2)



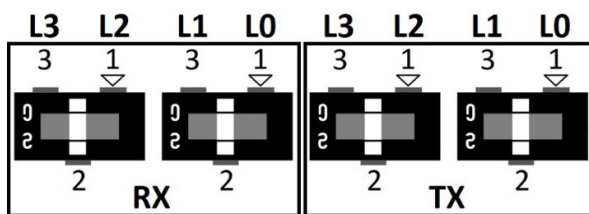
**Table 3.35: PEX4\_0/PEX4\_1 PCIe Re-Driver Switch Settings (PCIEX4\_0, PCIEX4\_1 Slot)**

PCIe Lanes	TX	RX
Lanes 12-15 / 0-3	2-Mid, 2-Mid (L4)	2-Mid, 2-Mid (L4)



**Table 3.36: M2M1, M2M2 PCIe Re-Driver Switch Settings**

PCIe Lanes	TX	RX
Lanes 12-15 / 0-3	2-Mid, 2-Mid (L4)	2-Mid, 2-Mid (L4)



**Table 3.37: PEX4\_2/PEX4\_3 PCIe Re-Driver Switch Settings (PCIEX4\_2,PCIEX4\_3 Slot)**

PCIe Lanes	TX	RX
Lanes 4-7 / 8-11	2-Mid, 2-Mid (L4)	2-Mid, 2-Mid (L4)

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