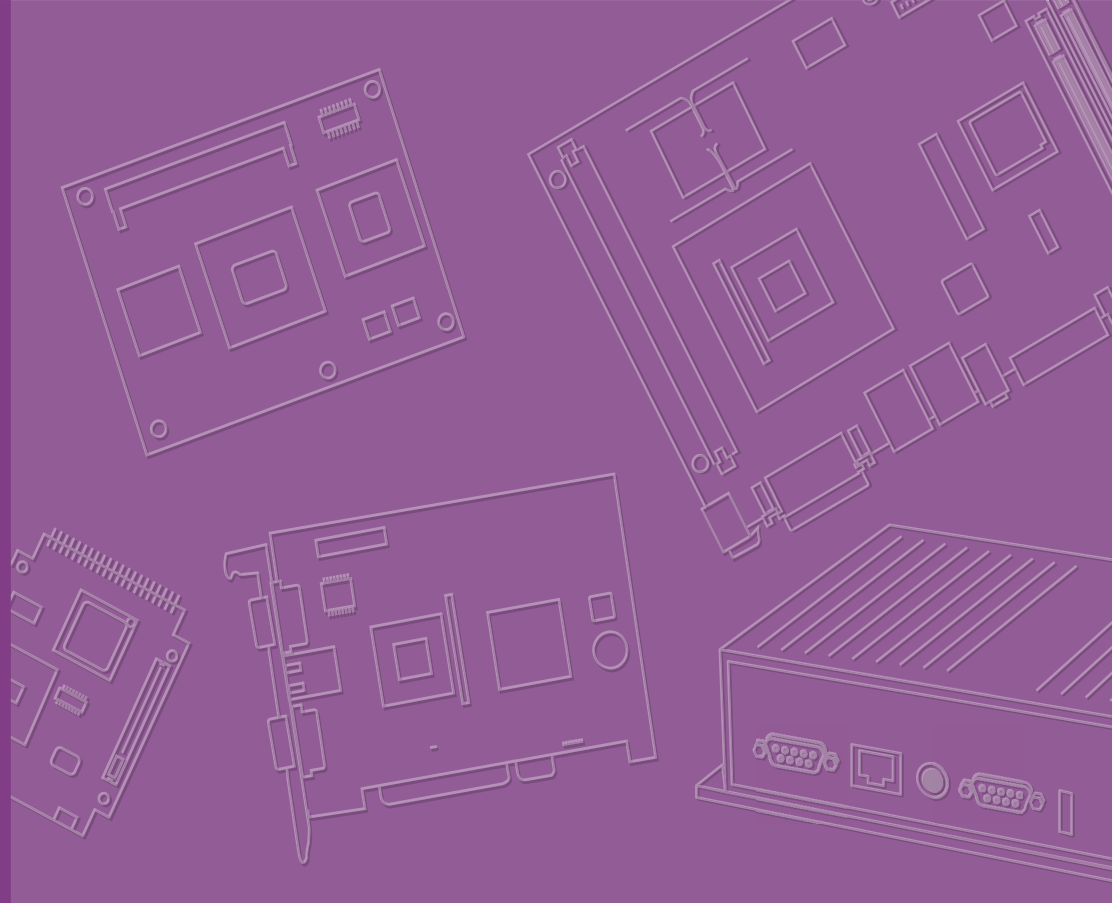




**User Manual**



# **SOM-DB5900**

**Development Board for COM  
Express Type 6 Pin-out Modules**

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## Copyright

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All other product names or trademarks are properties of their respective owners.

## Product Warranty (2 years)

Advantech warrants to you, 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.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

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 you get 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 an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

# Declaration of Conformity

## CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

## FCC Class B

Note: 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 instructions, 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 help.

## FM

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

# Technical Support and Assistance

1. Visit the [Rockwell Automation website at http://www.rockwellautomation.com](http://www.rockwellautomation.com) where you can find the latest information about the product.
2. Contact your distributor, sales representative, or [rockwell@rockwellautomation.com](mailto:rockwell@rockwellautomation.com) customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - 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, which if not observed, can cause personal injury!



**Caution!** Cautions are included to help you avoid damaging hardware or losing data. e.g.



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

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



## Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. A



## Selection Guide w/ P/N

Part No.	Description
SOM-DB5900-00A1E	COM Express Development Board for Type 6 Pin-out compatible

## Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

Part No.	Description	Quantity
SOM-DB5900	COM Express Development Board	1
SOM-EA21	10GBase-T Riser Card	1
SOM-EA10	PClex4 to 4 PClex1 Riser Card	1
1700008941	Serial ATA Cable 7P/7P 32cm	2
1960046435T100	I/O Bracket for SOM-DB5900	1
1960077399N000 1	0GB RJ45 I/O Bracket for SOM-EA21	1
1931000590	Screw M2.5*5L	3
1935030500	Screw M3*5L	2

# Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it 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. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. 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 by transient overvoltage.
12. Never pour any 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 one of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well, or you cannot get it to work according to the user's manual.
  - The equipment has been dropped and damaged.
  - The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

**DISCLAIMER:** This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

## Safety Precaution - 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 your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

## Acronyms

Term	Define
AC'97	Audio CODEC (Coder-Decoder)
ACPI	Advanced Configuration Power Interface – standard to implement power saving modes in PC-AT systems
BIOS	Basic Input Output System – firmware in 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 microcontrollers 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 <sup>®</sup> specific industrial function <ul style="list-style-type: none"><li>■ System information</li><li>■ Watchdog timer</li><li>■ I2C Bus</li><li>■ Flat Panel brightness control</li><li>■ User storage area</li><li>■ GPIO</li></ul>
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 circuit, 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 computer in 1990s
PEG	PCI Express Graphics
RTC	Real Time Clock – battery backed circuit in PC-AT systems that keeps 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	Watch Dog Timer

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# Chapter 1

## General Information

This chapter gives background information of the SOM-DB5900 Type 6 compatible carrier board

Sections include:

- Introduction
- Functional Block Diagram
- Product Specification

## 1.1 Introduction

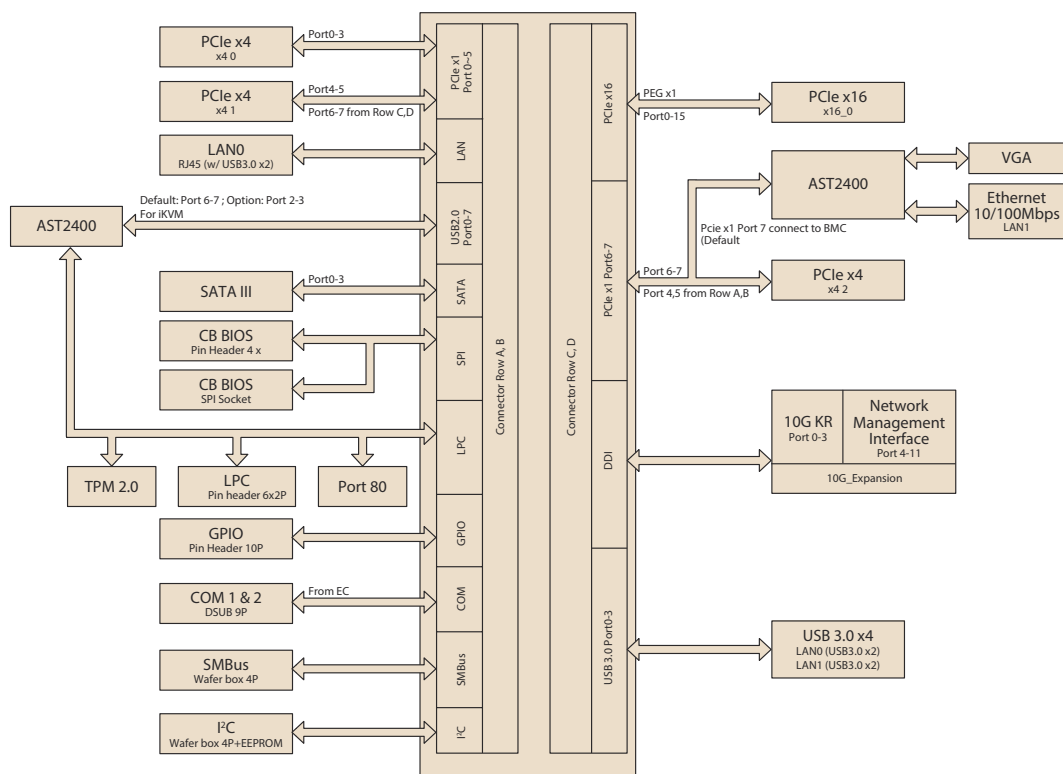
SOM-DB5900 is a new carrier board which is compliant with PICMG COM.0R 2.1 Type 6 Pin out. It is created for COM Express Basic module SOM-5991, supporting 2x 10GBase-T with riser card SOM-EA21 through a PCIe x16 slot. Besides, SOM-DB5900 is built in a BMC which supports IPMI and iKV, thus users can connect to SOM-5991 from an external computer for remote management, power on or off under DOS mode, or BIOS mode without entering the OS, and can even be used for remote BIOS upgrades. Also, the VGA function from BMC makes users easily test or monitor system status directly without any external graphics card.

Customers can emulate required functions on SOM-DB5900 as a reference design board, or sometimes customers integrate the SOM-DB5900 directly into their product as the application board.

**Note!** COM Express SOM-5991 is designed by Intel Xeon D, this platform does not offer graphics.



## 1.2 Functional Block Diagram



### 1.2.1 Pin Description

Advantech provides useful checklists for schematic design and layout routing. In the schematic checklist, it will specify details about each pin's electrical properties and how to connect. In the layout checklist, it will specify the layout constraints and recommendations for trace length, impedance, and other necessary information during design.

Please contact your nearest Advantech branch office or call to get design documents and further advanced support.

# Chapter 2

## Mechanical Information

This chapter gives mechanical information on the SOM-DB5900 Type 6 compatible Carrier Board

Sections include:

- Board Information
- Mechanical Drawing
- Assembly Drawing

## 2.1 Board Information

The figures below indicate the main chips on COM Express Basic module.

Take note of these positions while designing your customer's own carrier board to avoid mechanical and thermal problems and for best thermal dissipation performance.

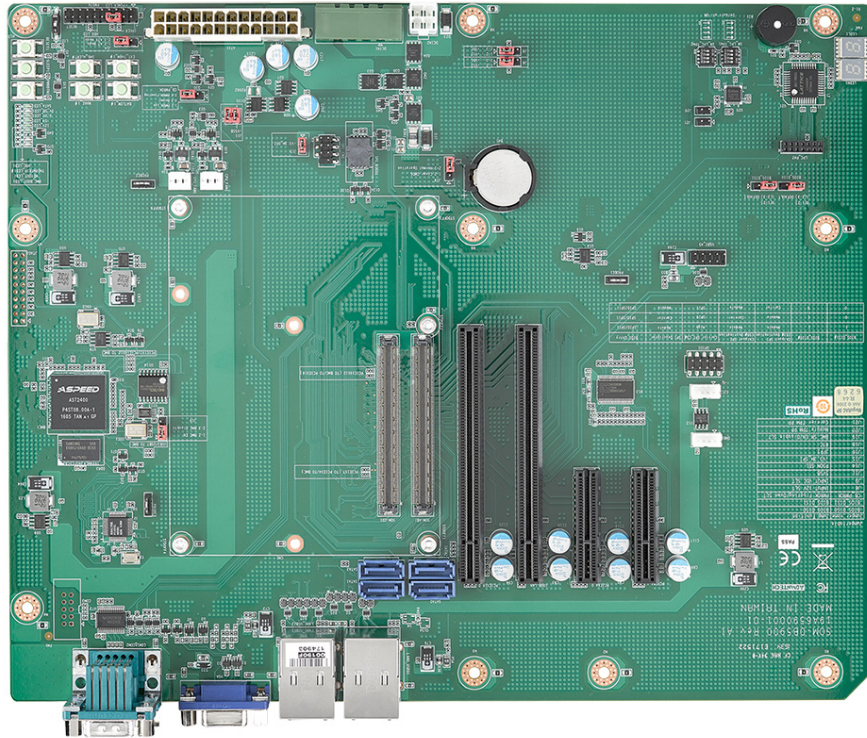
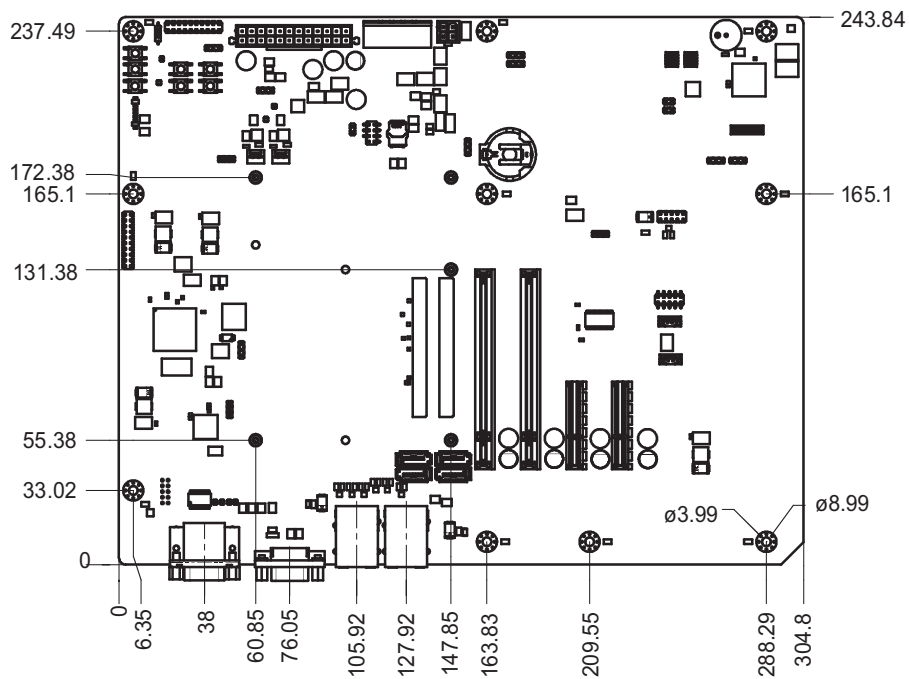


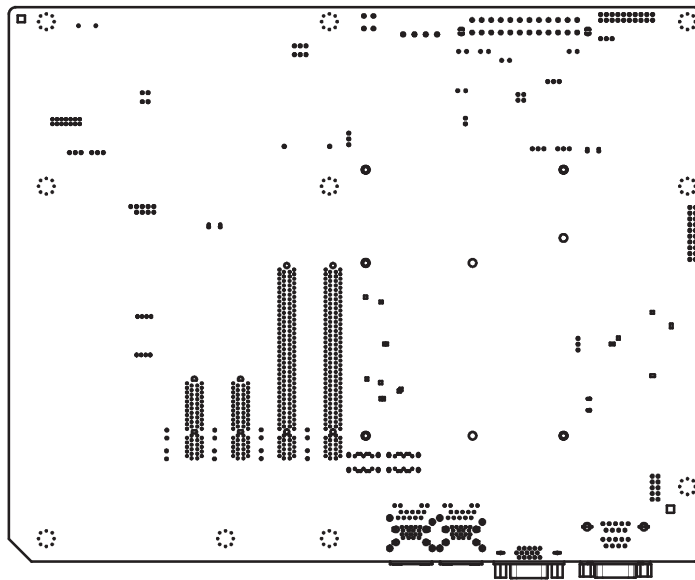
Figure 2.1 Board chips identify - Front

## 2.2 Mechanical Drawing

For more details about 2D/3D models,



**Figure 2.2 Board Mechanical Drawing - Front**



**Figure 2.3 Board Mechanical Drawing - Back**



**Figure 2.4 Board Mechanical Drawing - Side**

## 2.3 Assembly Drawing

The assembly order from the thermal module, the COM Express Basic module to the carrier board.

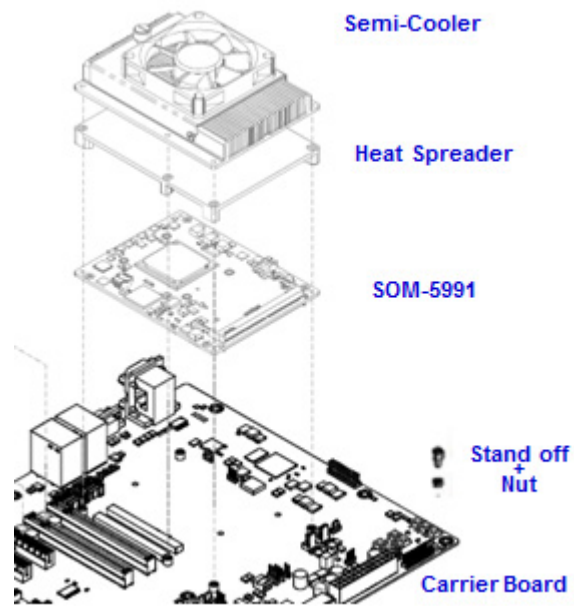


Figure 2.5 Assembly Drawing

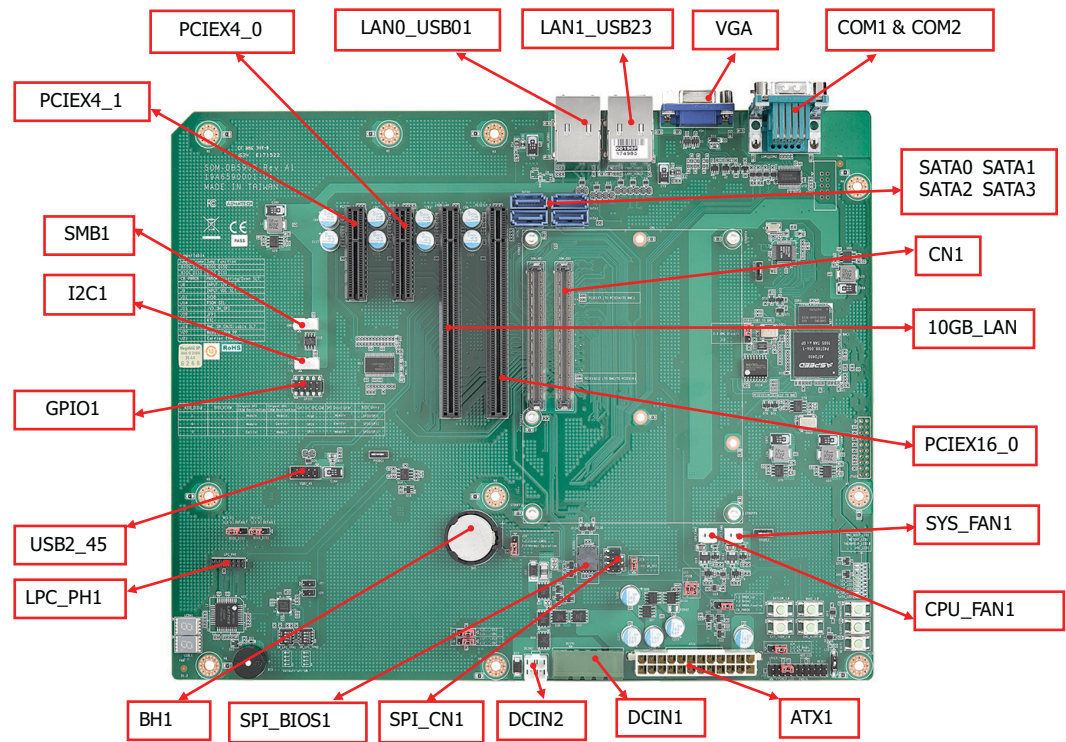
# Chapter 3

## Connectors and Jumper Settings

This chapter info connectors and jumper settings on the SOM-DB5900 Type 6 compatible Carrier Board.

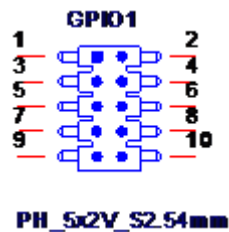
## 3.1 SOM-DB5900 Connectors and Jumper Settings

### 3.1.1 SOM-DB5900 Connector Location



**Table 3.1: GPIO1 GPIO Pin Header**

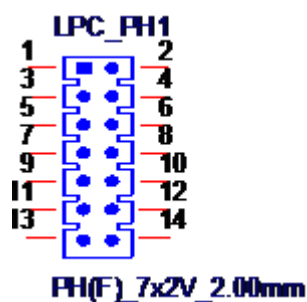
Pin	Signal	Pin	Signal
1	GPI0	2	GPO0
3	GPI1	4	GPO1
5	GPI2	6	GPO2
7	GPI3	8	GPO3
9	GND	10	GND



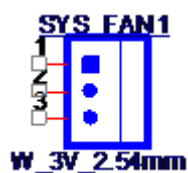


**Table 3.2: LPC\_PH1 Low Pin Count Pin Header**

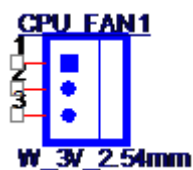
Pin	Signal	Pin	Signal
1	CLK33M_PH	2	LPC_AD1
3	PLTRST#	4	LPC_AD0
5	LPC_FRAME#	6	+V3.3
7	LPC_AD3	8	GND
9	LPC_AD2	10	Pull-up via 10K ohm to +V3.3
11	SERIRQ	12	PLTRST#
13	+V5_DUAL	14	+V5

**Table 3.3: SYS\_FAN1 System Fan Connector**

Pin	Signal
1	GND
2	+V12
3	SYSFAN_IN

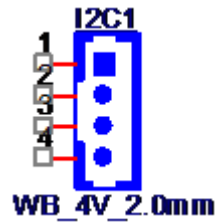
**Table 3.4: CPU\_FAN1 Smart Fan Connector**

Pin	Signal
1	GND
2	+V_FAN
3	FANTACH_R1



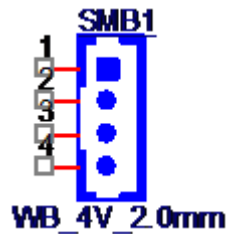
**Table 3.5: I2C1 I2C Wafer Box**

Pin	Signal
1	GND
2	I2C_DAT
3	I2C_CLK
4	+V3.3_DUAL



**Table 3.6: SMB1 SMBus Wafer Box**

Pin	Signal
1	GND
2	SMB_DAT
3	SMB_CLK
4	+V3.3_DUAL



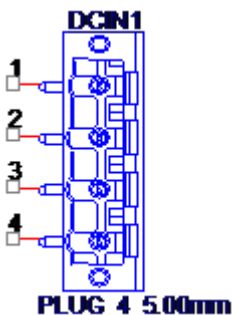
**Table 3.7: BH1 RTC Battery Connector**

Pin	Signal
1	+VBAT_BH
2	GND



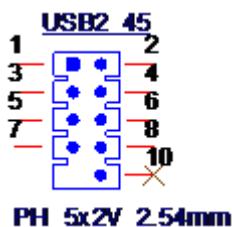
**Table 3.8: DCIN1 Wide Range DC Input Connector1**

Pin	Signal
1	GND
2	+VDC
3	+VDC
4	GND



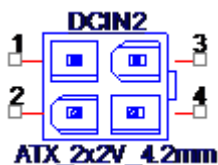
**Table 3.9: USB2\_45 USB2.0 Port4 & Port5 Connector**

Pin	Signal	Pin	Signal
1	+V5_USB_4_5	2	+V5_USB_4_5
3	USB4_Z_P-	4	USB5_Z_P-
5	USB4_Z_P+	6	USB5_Z_P+
7	GND	8	GND
		10	NC



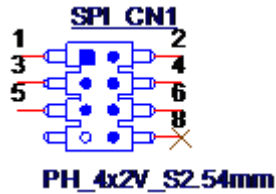
**Table 3.10: DCIN2 Wide Range DC Input Connector2**

Pin	Signal	Pin	Signal
1	GND	3	+VDC
2	GND	4	+VDC

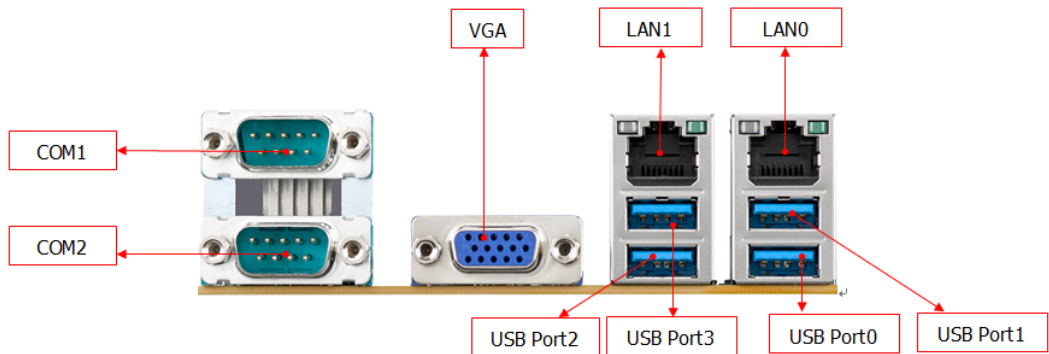


**Table 3.11: SPI\_CN1 SPI BIOS Pin Header**

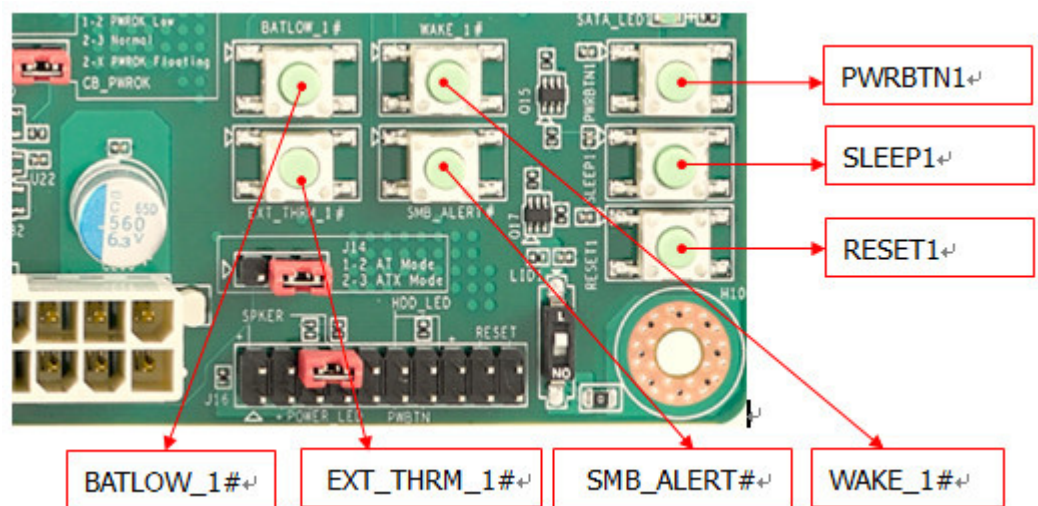
Pin	Signal	Pin	Signal
1	+V3.3M_SPI_J	2	GND
3	Q_SPI_CB_CS#	4	Q_SPI_CB_CLK
5	Q_SPI_CB_MISO	6	Q_SPI_CB_MOSI
X		8	NC



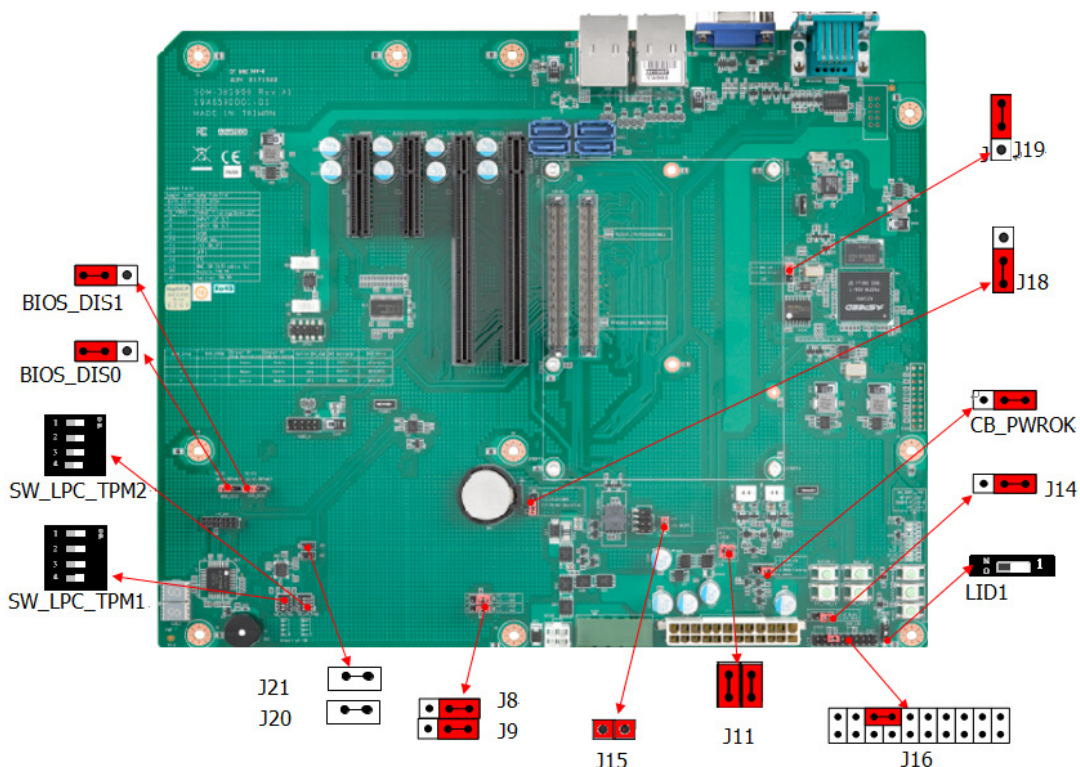
### 3.1.2 I/O Connector Location



### 3.1.3 Button Location



### 3.1.4 Jumper and Switch Location



#### 3.1.4.1 Jumper Setting

Table 3.12: BIOS_DIS0/IOS_DIS1 BIOS Disable0, BIOS Disable1						
BIOS_DIS1# (J3)	BIOS_DIS0# (J2)	Chipset SPI CS1# Destination	Chipset SPI CS0# Destination	Carrier SPI_CS#	SPI Descriptor	BIOS Entry
2-3 (1)	2-3 (1)	Module	Module	High	Module	SPI0/SPI1 [Default]
1-2 (0)	2-3 (1)	Module	Carrier	SPI0	Carrier	SPI0/SPI1
1-2 (0)	1-2 (0)	Carrier	Module	SPI1	Module	SPI0/SPI1

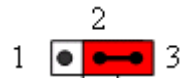


Table 3.13: J8, J9 SOM-D5900 Voltage Input (VIN) Selection	
Pin	Function
J8 1-2 J9 1-2	Supply ATX (+V12) to VIN [Default]
J8 2-3 J9 2-3	Supply DCIN (+VDC) to VIN



**Table 3.14: J14 ATX / AT Mode Selection**

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



**Table 3.15: J11 COMe Module +V5SB Supply**

Pin	Function
1-X 3-X	Not supply +V5SB to COMe Module
1-2 3-4	Supply +V5SB to COMe Module [Default]



**Table 3.16: J15 Carrier Board SPI power supply**

Pin	Function
1-2	Carrier Board SPI power supply [Default]
1-X	Carrier Board SPI no power



**Table 3.17: J20 COMe Module TPM Disable**

Pin	Function
1-X	COMe Module TPM Enable [Default]
1-2	COMe Module TPM Disable



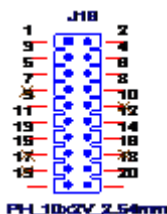
**Table 3.18: J21 Carrier Board TPM Disable**

Pin	Function
1-X	Carrier Board TPM Enable [Default]
1-2	Carrier Board TPM Disable



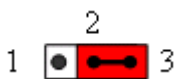
**Table 3.19: J16 Front Panel Connector**

Pin	Function
3-5	Power LED (Pin1 is positive)
6-8	Buzzer Enable
12-14	HDD LED (Pin14 is positive)
11-13	Power Button
18-20	Reset Button



**Table 3.20: J18 Normal Operation / Clear COMS Selection**

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



**Table 3.21: CB\_PWROK Power ok signal Pull Down/Floating Selection**

Pin	Function
1-2	POWROK Signal Pull Down
2-3	POWROK Signal connect to Module [Default]
2-X	POWROK Signal Floating



**Table 3.22: J19 BMC Software Enable Disable Selection**

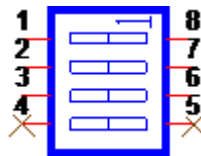
Pin	Function
1-2	BMC Software Enable [Default]
2-3	BMC Software Disable



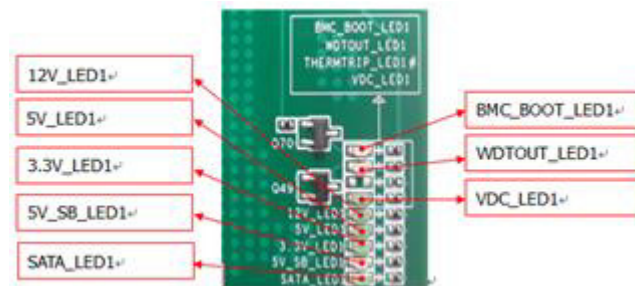
### 3.1.4.2 Switch Setting

**Table 3.23: SW\_LPC\_TPM1 & SW\_LPC\_TPM2 TPM Enable/Disable Switch**

Dip Switch	1-8	2-7	3-6	4-5	Function
SW_LPC_TPM1 ~ SW_LPC_TPM2	ON	ON	ON	ON	TPM Enable [Default]
	OFF	OFF	OFF	OFF	TPM Disable



### 3.1.5 LED Location





### 3.1.6 LED Function List

**Table 3.24: LED Function List**

Location	Function
BMC_BOOT_LED1	BMC Boot Indicate.
WDTOUT_LED1	Watch Dog Time Out Indicate.
VDC_LED1	VDC Power Input Indicate.
12V_LED1	Carrier Board ATX 12V ready Indicate.
5V_LED1	Carrier Board ATX 5V ready Indicate.
3.3V_LED1	Carrier Board ATX 3.3V ready Indicate.
5V_SB_LED1	Carrier Board ATX 5V_SB ready Indicate.
SATA_LED1	SATA signal connect Indicate.

### 3.1.7 Connector List

**Table 3.25: Connector List**

Label	Function	Label	Function
ATX1	ATX Connector	BH1	RTC Battery Connector
CN1	COM Express Connector	CPU_FAN1	Smart Fan Connector
COM1	UART Connector (Tx, Rx)	SMB1	SMBus Wafer Box
COM2	UART Connector (Tx, Rx)	SYS_FAN1	System Fan Connector
DCIN1	Wide Range DC Input Connector1	SPI_CN1	SPI BIOS PIN HEADER
GPIO1	GPIO Pin Header	USB2_45	USB2.0 Port4 and Port5 Connector
I2C1	I2C Wafer Box	SPI_BIOS1	SPI BIOS Socket
LAN0_USB01	LAN0, USB3.0/2.0 Port0 and Port1 Connector	DCIN2	Wide Range DC Input Connector2
LAN1_USB23	LAN1, USB3.0/2.0 Port2 and Port3 Connector		
LPC_PH1	Low Pin Count Pin Header		
PCIEX16_0	PCIe x16 slot		
10GB_LAN	PCIe x16 slot(for 10G LAN card)		
PCIEX4_0	PCIe x4 slot		
PCIEX4_1	PCIe x4 slot		
SATA0	SATA Connector		
SATA1	SATA Connector		
SATA2	SATA Connector		
SATA3	SATA Connector		
VGA	CRT Connector		

### 3.1.8 Jumper, Switch, Button List

**Table 3.26: Jumper, Switch, Button List**

Label	Function	Label	Function
J8, J9	SOM-DB5900 Voltage Input (VIN) Selection	SW_LPC_TPM1	TPM Enable/Disable Switch
J11	COMe Module +V5SB supply	SW_LPC_TPM2	TPM Enable/Disable Switch
J14	ATX / AT Mode Selection	CB_PWROK	PWROK Signal Pull Down or Floating Selection
J15	Carrier Board SPI power supply	PWRBTN1	Power Button
J16	Front Panel Connector	RESET1	Reset Button
J18	Normal Operation / Clear COMS Selection	SLEEP1	Sleep Button
J19	BMC software Enable Disable Selection	EXT_THRM_1#	External Thermal Trip Button
J20	COMe Module TPM Disable	BATLOW_1#	Battery Low Button
J21	Carrier Board TPM Disable	SMB_ALERT#	SM Bus Alert Button
BIOS_DIS0	BIOS Disable0	WAKE_1#	Wake Button
BIOS_DIS1	BIOS Disable1	LID1	LID Button

### 3.1.9 Connector Pin Definition

**Table 3.27: Connector Pin Definition**

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
A1	GND	A22	PCIE_RX9-_LAN0_KR_RX1-	A43	PCIE_RX14+_LAN1_PORT0_SDP0	A64	NC
A2	+V12	A23	GND	A44	PCIE_RX14-_LAN1_PORT0_SDP1	A65	NC
A3	+V12	A24	GND	A45	GND	A66	GND
A4	GND	A25	PCIE_RX10+_LAN1_KR_RX0+	A46	GND	A67	GND
A5	GND	A26	PCIE_RX10-_LAN1_KR_RX0-	A47	PCIE_RX15+_LAN1_PORT1_SDP0	A68	Flexible_IO_P0_RX+
A6	+V3.3	A27	GND	A48	PCIE_RX15-_LAN1_PORT1_SDP1	A69	Flexible_IO_P0_RX-
A7	NC	A28	GND	A49	GND	A70	GND
A8	+V3.3	A29	PCIE_RX11+_LAN1_KR_RX1+	A50	NC	A71	GND
A9	+V3.3	A30	PCIE_RX11-_LAN1_KR_RX1-	A51	GND	A72	Flexible_IO_P1_RX+
A10	+V3.3	A31	GND	A52	RSVD_LAN0_PORT1_LED0	A73	Flexible_IO_P1_RX-
A11	PLTRST#	A32	NC	A53	RSVD_LAN0_PORT1_LED1	A74	GND
A12	GND	A33	NC	A54	GND	A75	GND

A13	CLK_PCIEX16_2+	A34	GND	A55	GND	A76	Flexible_IO_P2_RX+
A14	CLK_PCIEX16_2-	A35	PCIE_RX12+_LAN0_PORT0_SDP0	A56	RSVD_LAN1_POR_T1_LED0	A77	Flexible_IO_P2_RX-
A15	GND	A36	PCIE_RX12-_LAN0_PORT0_SDP1	A57	RSVD_LAN1_POR_T1_LED1	A78	GND
A16	PCIE_RX8+_LAN0_KR_RX0+	A37	GND	A58	GND	A79	GND
A17	PCIE_RX8-_LAN0_KR_RX0-	A38	GND	A59	GND	A80	Flexible_IO_P3_RX+
A18	GND	A39	PCIE_RX13+_LAN0_PORT1_SDP0	A60	SMB_LAN_ALRT#	A81	Flexible_IO_P3_RX-
A19	NC	A40	PCIE_RX13-_LAN0_PORT1_SDP1	A61	NC	A82	GND
A20	GND	A41	GND	A62	GND		
A21	PCIE_RX9+_LAN0_KR_RX1+	A42	GND	A63	GND		

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
B1	+V12	B22	GND	B43	GND	B64	GND
B2	+V12	B23	PCIE_TX10+_LAN1_KR_TX0+	B44	GND	B65	GND
B3	+V12	B24	PCIE_TX10-_LAN1_KR_TX0-	B45	PCIE_TX15+_LAN1_PORT1_I2C_CLK	B66	Flexible_IO_P0_TX+
B4	GND	B25	GND	B46	PCIE_TX15-_LAN1_PORT1_I2C_DATA	B67	Flexible_IO_P0_TX-
B5	SLOT_SMB_CLK	B26	GND	B47	GND	B68	GND
B6	SLOT_SMB_DATA	B27	PCIE_TX11+_LAN1_KR_TX1+	B48	+V3.3	B69	GND
B7	GND	B28	PCIE_TX11-_LAN1_KR_TX1-	B49	GND	B70	Flexible_IO_P1_TX+
B8	+V3.3	B29	GND	B50	RSVD_LAN0_POR_T0_LED0	B71	Flexible_IO_P1_TX-
B9	GND	B30	NC	B51	RSVD_LAN0_POR_T0_LED1	B72	GND
B10	+V3.3_DUAL	B31	+V3.3	B52	GND	B73	GND
B11	PCIE_WAKE#	B32	GND	B53	GND	B74	Flexible_IO_P2_TX+
B12	NC	B33	PCIE_TX12+_LAN0_PORT0_I2C_CLK	B54	RSVD_LAN1_POR_T0_LED0	B75	Flexible_IO_P2_TX-
B13	GND	B34	PCIE_TX12-_LAN0_PORT0_I2C_DATA	B55	RSVD_LAN1_POR_T0_LED1	B76	GND
B14	PCIE_TX8+_LAN0_KR_TX0+	B35	GND	B56	GND	B77	GND
B15	PCIE_TX8-_LAN0_KR_TX0-	B36	GND	B57	GND	B78	Flexible_IO_P3_TX+
B16	GND	B37	PCIE_TX13+_LAN0_PORT1_I2C_CLK	B58	SMB_LAN_CLK	B79	Flexible_IO_P3_TX-
B17	+V3.3	B38	PCIE_TX13-_LAN0_PORT1_I2C_DATA	B59	SMB_LAN_DATA	B80	GND
B18	GND	B39	GND	B60	GND	B81	+V3.3

B19	PCIE_TX9+_LAN0_KR_TX1+	B40	GND	B61	GND	B82	NC
B20	PCIE_TX9-_LAN0_KR_TX1-	B41	PCIE_TX14+_LAN1_PORT0_I2C_CLK	B62	LAN_MDC		
B21	GND	B42	PCIE_TX14-_LAN1_PORT0_I2C_DATA	B63	LAN_MDIO		

## 3.2 SOM-EA21 Connector Location and Default Jumper Setting

### 3.2.1 SOM-DB5900 Connector Location



### 3.2.2 Golden Finger Pin Definition

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
A1	NC	A22	LAN0_KR_RX1-	A43	NC	A64	NC
A2	+V12	A23	GND	A44	NC	A65	NC
A3	+V12	A24	GND	A45	GND	A66	GND
A4	GND	A25	NC	A46	GND	A67	GND
A5	NC	A26	NC	A47	NC	A68	NC
A6	NC	A27	GND	A48	NC	A69	NC
A7	NC	A28	GND	A49	GND	A70	GND
A8	NC	A29	NC	A50	NC	A71	GND
A9	+V3.3	A30	NC	A51	GND	A72	NC
A10	+V3.3	A31	GND	A52	LAN1_MDIO_P1_LED0	A73	NC
A11	PLTRST#	A32	NC	A53	LAN1_MDC_P1_LED1	A74	GND
A12	GND	A33	NC	A54	GND	A75	GND
A13	NC	A34	GND	A55	GND	A76	NC
A14	NC	A35	LAN_SPD0_0	A56	NC	A77	NC
A15	GND	A36	NC	A57	NC	A78	GND
A16	LAN0_KR_RX0+	A37	GND	A58	GND	A79	GND
A17	LAN0_KR_RX0-	A38	GND	A59	GND	A80	NC
A18	GND	A39	LAN_SPD1_0	A60	SMB_LAN_ALRT#	A81	NC

A19	NC	A40	NC	A61	NC	A82	GND
A20	GND	A41	GND	A62	GND		
A21	LAN0_KR_RX1+	A42	GND	A63	GND		

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
B1	+V12	B22	GND	B43	GND	B64	GND
B2	+V12	B23	NC	B44	GND	B65	GND
B3	+V12	B24	NC	B45	NC	B66	NC
B4	GND	B25	GND	B46	NC	B67	NC
B5	SLOT_SMB_CLK	B26	GND	B47	GND	B68	GND
B6	SLOT_SMB_DATA	B27	NC	B48	NC	B69	GND
B7	GND	B28	NC	B49	GND	B70	NC
B8	+V3.3	B29	GND	B50	LAN0_MDIO_P0_LED0	B71	NC
B9	NC	B30	NC	B51	LAN0_MDC_P0_LED1	B72	GND
B10	+V3.3_DUAL	B31	NC	B52	GND	B73	GND
B11	NC	B32	GND	B53	GND	B74	NC
B12	NC	B33	NC	B54	NC	B75	NC
B13	GND	B34	NC	B55	NC	B76	GND
B14	LAN0_KR_TX0+	B35	GND	B56	GND	B77	GND
B15	LAN0_KR_TX0-	B36	GND	B57	GND	B78	NC
B16	GND	B37	NC	B58	SMB_LAN_CLK	B79	NC
B17	NC	B38	NC	B59	SMB_LAN_DATA	B80	GND
B18	GND	B39	GND	B60	GND	B81	NC
B19	LAN0_KR_TX1+	B40	GND	B61	GND	B82	NC
B20	LAN0_KR_TX1-	B41	NC	B62	NC		
B21	GND	B42	NC	B63	NC		