A1SQN
A1SQN-E

USER'S MANUAL

Revision 1.0a

The information in this user's manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, and makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our website at www.supermicro.com.**

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FCC Statement: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate".

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

Manual Revision: 1.0a

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Preface

This manual is written for system integrators, IT technicians and knowledgeable end users. It provides information for the installation and use of the SUPERO® A1SQN/A1SQN-E motherboard.

About This Motherboard

The SUPERO® A1SQN/A1SQN-E motherboard supports a small core and low power Intel® Quark™ X1021 SoC (System-on-a-Chip) processor in a BGA package. With a X1021 processor built in, the A1SQN/A1SQN-E motherboard offers thermally constrained, fanless, and headless applications with security and manageability features. The A1SQN/A1SQN-E is ideally suited for the Internet of Things (IoT) Gateway connecting devices to the cloud. This motherboard is a platform that enables companies to seamlessly interconnect industrial infrastructure devices and secure data flow between devices and the cloud. Please refer to our website at http://www.supermicro.com/products/ for processor and memory support updates. This product is intended to be installed and serviced by professional technicians.

Manual Organization

Chapter 1 describes the features, specifications and performance of the motherboard, and provides detailed information on the Intel® X1021 processor.

Chapter 2 provides hardware installation instructions. Read this chapter when installing the processor, memory modules and other hardware components into the system. If you encounter any problems, see **Chapter 3**, which describes troubleshooting procedures for mini PCIe card.

Conventions Used in the Manual:

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself:

Warning: Critical information to prevent damage to the components or injury to yourself.

Important: Important information given to ensure proper system installation or to relay safety precautions.

Note: Additional Information given to differentiate various models or to provide instructions for correct system setup.

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Chapter 1

Introduction

1-1 Overview

Checklist

Congratulations on purchasing your computer motherboard from an acknowledged leader in the industry. Supermicro boards are designed with the utmost attention to detail to provide you with the highest standards in quality and performance.

Please check that the following items have all been included with your motherboard. If anything listed here is damaged or missing, contact your retailer.

The following items are included in the retail box:

- One (1) Supermicro Motherboard
- One (1) Quick Reference Guide

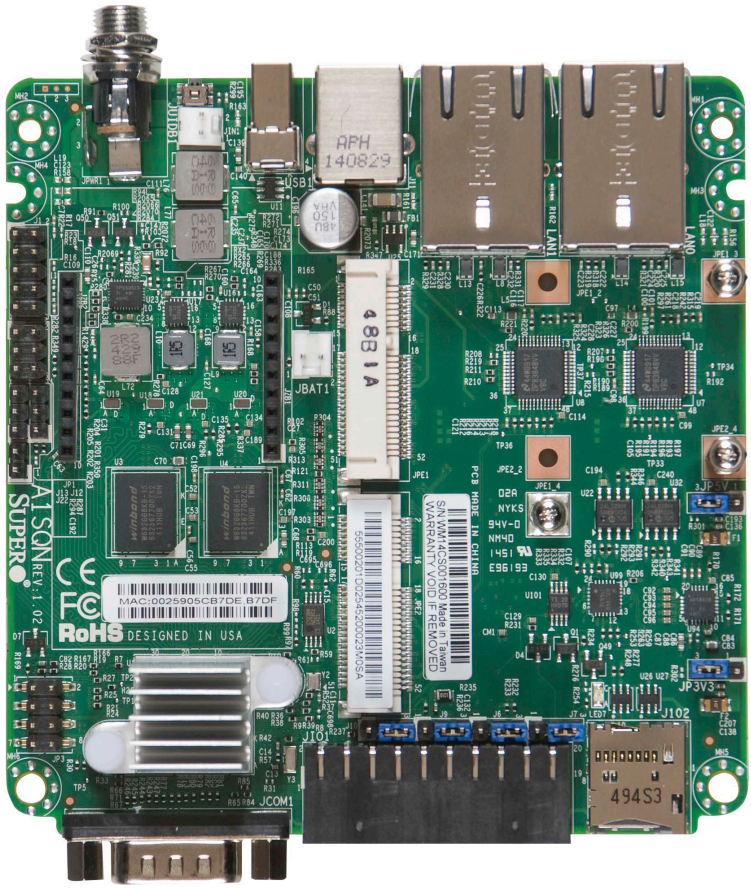
Note: For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your motherboard.

SMCI product manuals: http://www.supermicro.com/support/manuals/

Product Drivers and utilities: ftp://ftp.supermicro.com/

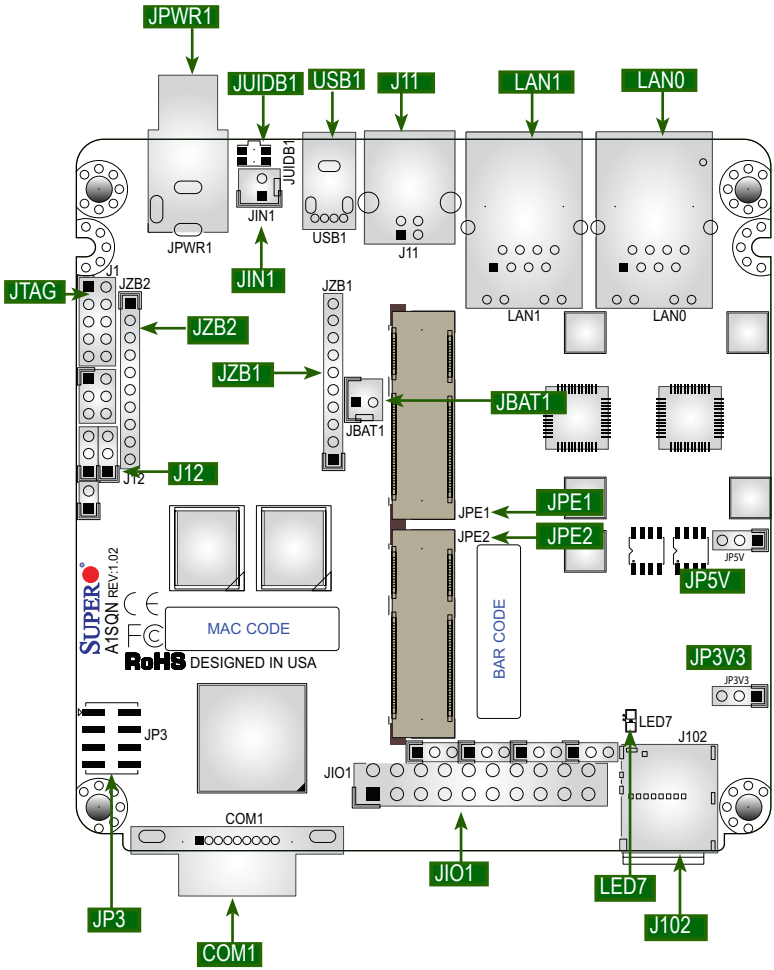
If you have any questions, please contact our support team at support@supermicro.com.

SUPERMICRO A1SQN Motherboard Image



Note: All graphics shown in this manual were based upon the latest PCB Revision available at the time of publishing of the manual. The motherboard you've received may or may not look exactly the same as the graphics shown in this manual.

A1SQN/A1SQN-E Motherboard Quick Reference



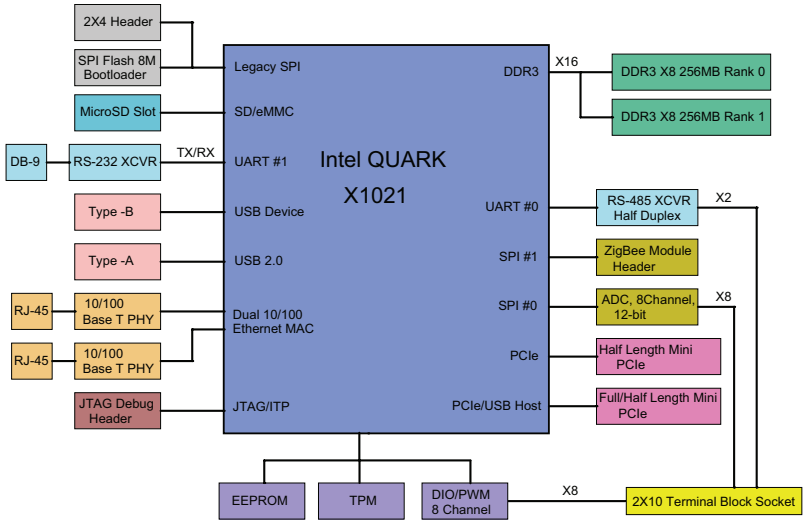
Headers/Connectors	
Connector	**Description**
COM1	COM1 Port
J1	JTAG Header
J11	USB Type B Port
J12	I2C Header
J102	Micro SD Card Slot
JBAT1	RTC Battery Connector
JIN1	Alternative Power Input when DC Jack is not in use
JIO1	2X10 External I/O
JP3V3	JIO1 3.3V Output (See page 2-13 for settings)
JP5V	JIO1 5V Output (See page 2-13 for settings)
JP3	2x4 SPI Flash Image Programming Header
JPE1	Full/Half Length Mini PCIe Card Slot with one USB 2.0 Interface
JPE2	Half Length Mini PCIe Card Slot
JPWR1	5V-18V Motherboard Power connector
JUIDB1	H/W Reset Button
JZB1/JZB2	ZigBee Headers
LAN0	10/100Mb Ethernet Port
LAN1	General Software program to Bridge LAN Port
USB1	USB 2.0 Port

LED Indicators			
LED	**Description**	**Color**	**Status**
LED7	MicroSD Read/Write Indicator	Green	On

Motherboard Features

CPU	Intel® Quark™ X1021 single-core 32nm SoC (System-on-a-Chip) with a clock rate of up to 400 MHz.
Memory	Onboard 512MB of DDR3-800
Network Connections	**Network Controllers**
	Intel® X1021
	LAN Ports
	One (1) 10/100Mb Ethernet Port One (1) Bridge LAN Port
I/O Devices	**PCI Express Slots**
	One (1) Full/Half Length Mini PCIe card slot with one USB 2.0 Interface One (1) Half Length Mini PCIe card slot
	USB Devices
	One (1) USB Type A port One (1) USB Type B port
	Serial (COM) Port
	One (1) RS232 Serial Port through DB9 connector
	Terminal Block Connector
	One (1) 2 x 10 External I/O support DIO/ADC/RS485
	Memory Slot
	One (1) MicroSD slot
Other	ROHS (Full Compliance, Lead Free)
	A1SQN: Operating Temperature 0^0-60^0C A1SQN-E: Operating Temperature -20^0-75^0C
Dimensions	4" x 4.1" (101.6mm x 104.14mm) Optimizied for use in a NUC Chassis

A1SQN/A1SQN-E Motherboard Block Diagram



System Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the Motherboard Features pages for the actual specifications of each motherboard.

1-2 Processor Overview

The Intel® Quark™ SoC X1021 processor is the next generation secure, low-power Intel® Architecture (IA) SoC for deeply embedded applications. The SoC integrates the Intel® Quark™ SoC X1021 Core plus all the required hardware components to run off-the-shelf operating systems and to leverage the vast x86 software eco-system.

To enable secure applications, the SoC secures SKU features an on-die Boot ROM that is used to establish a hardware Root of Trust (RoT). The immutable code located within the Boot ROM is used to initiate an iterative firmware authentication process ensuring only trusted code is executed when taking the platform out of reset. In addition, the SoC provides an ECC-protected DRAM solution using only standard x8 DDR3 devices.

The SoC also features a 512 Kbyte on-die embedded SRAM (eSRAM) that can be configured to overlay regions of DRAM to provide low latency access to critical portions of system memory. For robustness, the contents of this on-die eSRAM are also ECC protected.

Intel® Quark™ X1021 Processor Features

The X1021 processor offers the following features:

- One-fifth the size of an Intel® Atom™ Single Core
- Simplicity and Power of Pentium Class Instruction Set Architecture Extended Temperature qualified for Harsh, 400 MHz operating frequency
- Integrated on-die ECC support re-uses main memory to save on cost Native PCI Express Gen 2 for differentiated I/O expansion and Architectural Scalability
- Built-in dual 10/100Mb dual LAN controller
- Built-in RS232, GPIO and I2C peripheral
- Support SDHC up to 32GB
- Two mini PCIe devices

Notes

Chapter 2

Installation

2-1 Standardized Warning Statements

The following statements are industry-standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this section in its entirety before installing or configuring components in the Supermicro chassis.

Battery Handling

Warning!

There is a danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告
电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告
電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה !

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك
استبدال البطارية
فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة
تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Product Disposal

Warning!

Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה !

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

2-2 Static-Sensitive Devices

Electrostatic-Discharge (ESD) can damage electronic components. To avoid damaging your system board, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Use only the correct type of onboard CMOS battery. Do not install the onboard battery upside down to avoid possible explosion.

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the board, make sure that the person handling it is static protected.

2-3 Motherboard Installation

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both motherboard and chassis match. Although a chassis may have both plastic and metal mounting fasteners, metal ones are highly recommended because they ground the motherboard to the chassis. Make sure that the metal standoffs click in or are screwed in tightly. Then use a screwdriver to secure the motherboard onto the motherboard tray.

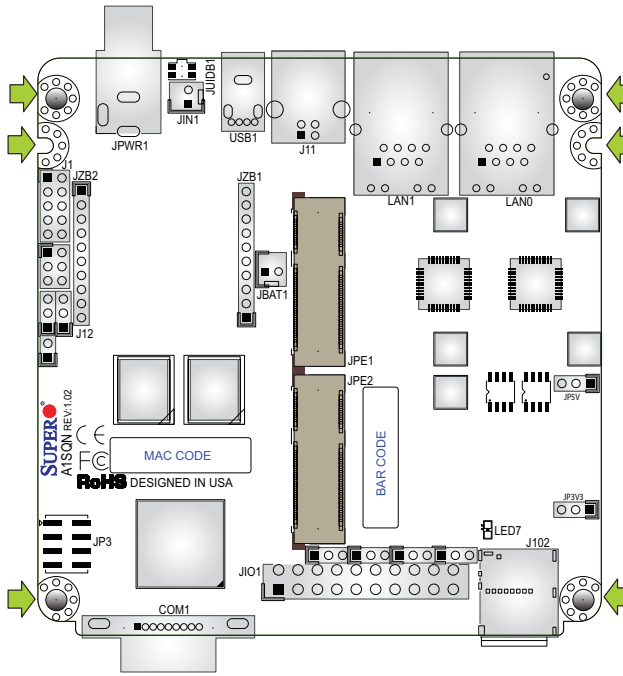
Tools Needed

Philips Screwdriver (1)

Philips Screws (6)

Standoffs (6) Only if Needed

Location of Mounting Holes

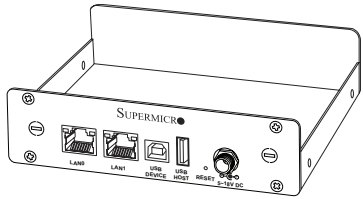


Caution: 1) To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw during motherboard installation. 2) Some components are very close to the mounting holes. Please take precautionary measures to avoid damaging these components when installing the motherboard to the chassis.

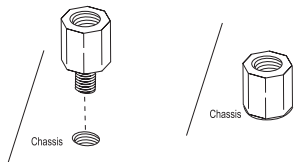
Installing the Motherboard

1. Locate the mounting holes on the motherboard. (See the previous page.)

2. Locate the matching mounting holes on the chassis. Align the mounting holes on the motherboard against the mounting holes on the chassis.

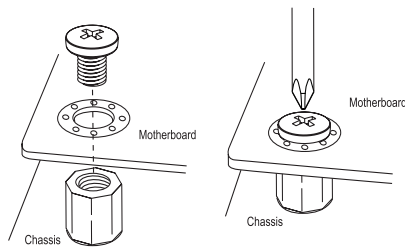


3. Install standoffs in the chassis as needed.



4. Install the motherboard into the chassis carefully to avoid damaging other motherboard components.

5. Using the Phillips screwdriver, insert a Phillips head #6 screw into a mounting hole on the motherboard and its matching mounting hole on the chassis.



6. Repeat Step 5 to insert #6 screws into all mounting holes.

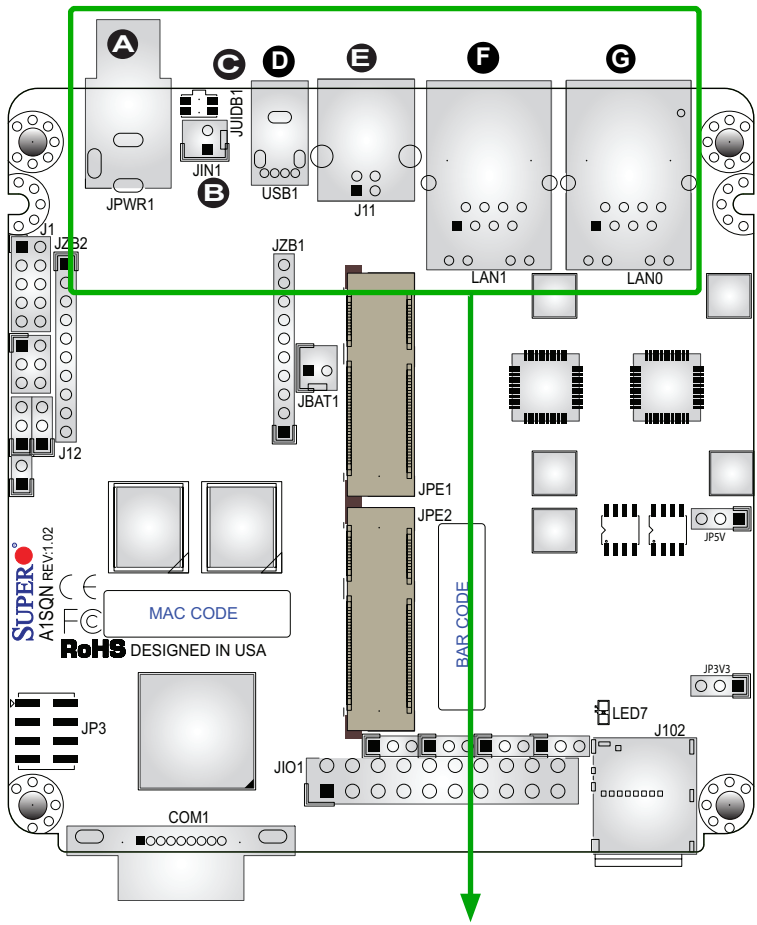
7. Make sure that the motherboard is securely placed in the chassis.

Note: Images displayed are for illustration only. Your chassis or components might look different from those shown in this manual.

2-4 Connectors/IO Ports

The I/O ports are color coded in conformance with the industry standards. See the figure below for the colors and locations of the various I/O ports.

Backplane I/O Panel



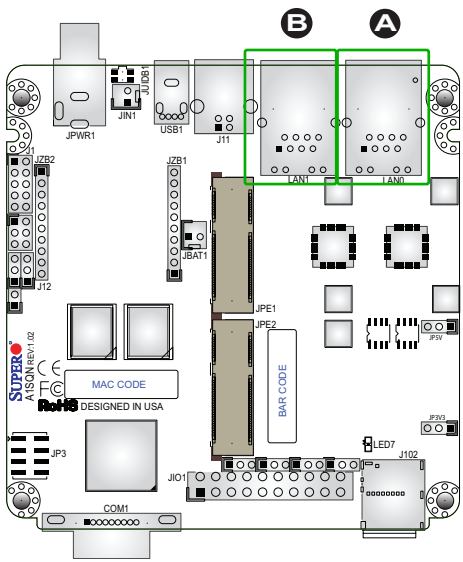
Backplane I/O Panel	
A. 5V-18V Power Connector	E. USB Type B Port
B. Alternative Power Connector	F. LAN1
C. Hardware Reset Button	G. LAN0
D. USB 2.0 Port	

Ethernet Ports

One 10/100Mbps Ethernet port (LAN0) is located on the backpanel to provide network connections. LAN1 is a Bridge LAN port. These ports accept RJ45 type cables.

RJ45 Pin Definitions	
Pin#	Definition
1	ETH_MDI_TXP
2	ETH_MDI_TXN
3	ETH_MDI_RXP
4	N/C
5	N/C
6	ETH_MDI_RXN
7	N/C
8	N/C

RJ45 PCB Pin Definition					
Pin	Definition	Pin	Definition	Pin	Definition
R1	ETH_MDI_TXP	L1	LAN_ACTION_LED	C1	Chassis Ground
R2	ETH_MDI_TXN	L2	P3V3	C2	Chassis Ground
R3	TX_CT	L3	LAN_LINK_LED		
R4	GND	L4	P3V3		
R5	GND				
R6	RX_CT				
R7	ETH_MDI_TXP				
R8	ETH_MDI_RXN				



A. LAN0

B. LAN1

Universal Serial Bus (USB)

One Universal Serial Bus 2.0 port is located on the I/O backpanel. A USB Type B port is located next to the USB 2.0 port. Cables are not included in the shipment. See the tables on the right for pin definitions.

USB 2.0 Port Pin Definitions

Pin#	Definition
1	P5V_USB
2	USB_CON_N0
3	USB_CON_P0
4	GND

USB Type B Port Pin Definitions

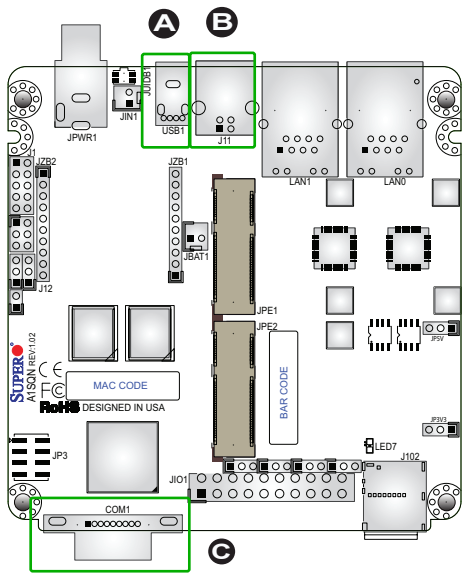
Pin#	Definition
1	NC
2	USB_CON_N0
3	USB_CON_P0
4	GND

Serial Port

COM1 port is located on the backpanel to provde a serial port connection. See the table on the right for pin definitions.

Serial (COM1) Ports Pin Definitions

Pin #	Definition	Pin #	Definition
1	NC	6	NC
2	RXD	7	NC
3	TXD	8	NC
4	NC	9	NC
5	NC	10	N/A



A. USB 2.0 Port
B. USB Type B Port
C. COM1 Port

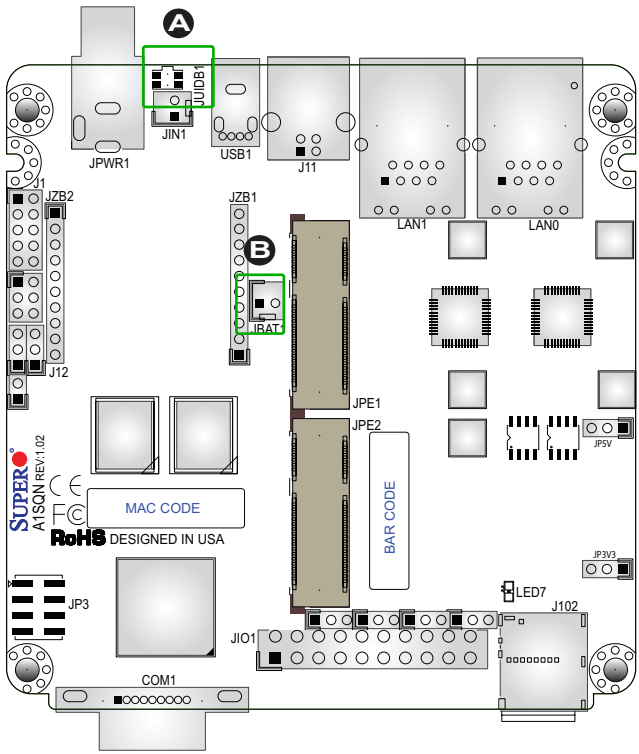
Hardware Reset Button

A Hardware Reset button is located at JUIDB1 on the backpanel next to the USB port. When you press the reset button, the whole unit will reboot.

RTC Battery Connector

The RTC (Real Time Clock) battery connector is located at JBAT1. Use this connector to connect an RTC battery to retain system time and date. The RTC battery is also know as a CMOS battery.

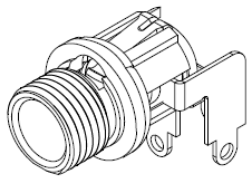
A. Hardware Reset Switch
B. RTC Battery Connector

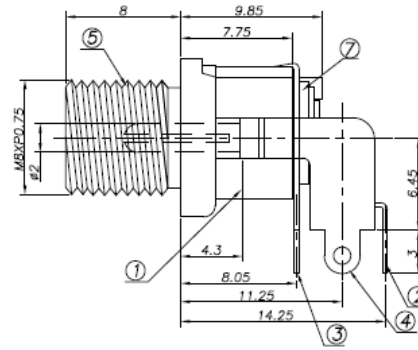


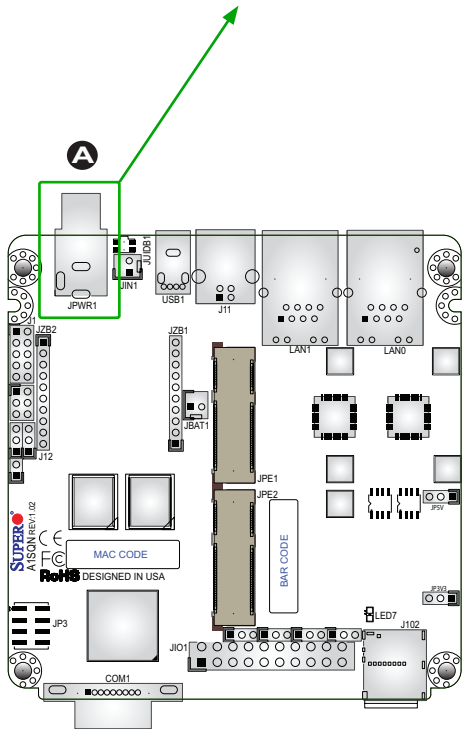
5V-18V Motherboard Power Connector

The 5V-18V power connector (JPWR1) is used to provide power to the motherboard. This connector has a special lock mechanism. See the images below for the dimensions of the connector. Dimensions are in millimeters

5V-18V Power Connector Pin Definitions	
Pin#	Definition
1	VIN
2	GND
3	NC







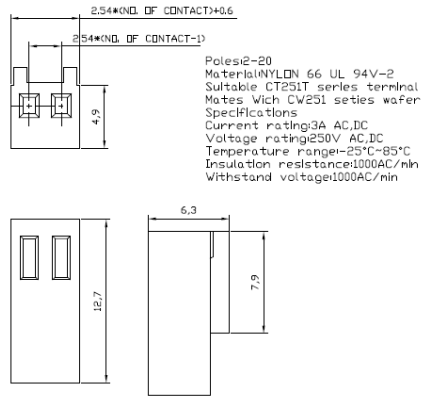
A. 5V-18V Power Connector

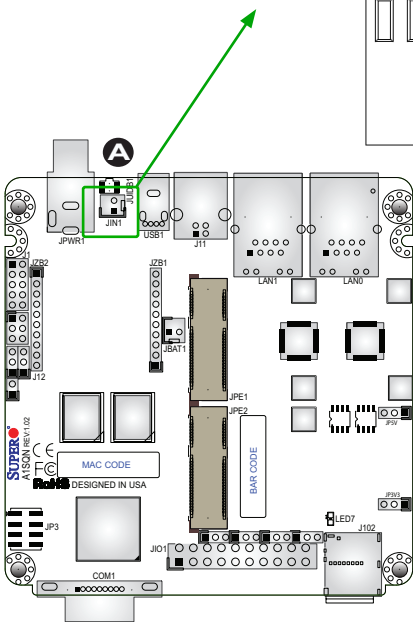
Alternative Power Connector

Use this alternative power connector located at JIN1 for 5V-18V input power when DC jack is not in use. This motherboard also supports a mating connector that can be connected to JIN1. See the table on the right for pin definitions of the alternative power connector. See the images below for the dimensions of the mating connector. Dimensions are in millimeters.

Alternative Power Connector Pin Definitions	
Pin#	Definition
1	PVIN
2	Ground

Note: The following is the compatible mating connector product model name: P/N: 239-02-101-11-2. You can order this connector from PONY Technology Corp.





I²C Connector

The I²C header at J12, is a 3-pin connector, pitch 2.54mm, controls and monitors the I²C slave devices. See the table on the right for pin definitions.

I²C Header Pin Definitions	
Pin#	Definition
1	SCL
2	GND
3	SDA

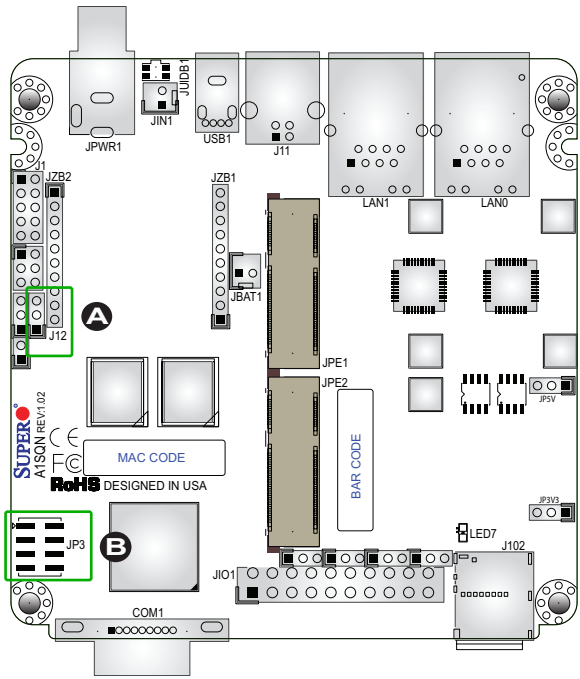
SPI Flash Program Header

The SPI Flash header at JP3 is a 2 x 4 pin connector, pitch 2.54mm, that can be used to update the 8MB flash image. See the table on the right for pin definitions.

SPI Flash Program Header Pin Definitions	
Pin#	Definition
1	VCC
2	GND
3	CS#
4	CLK
5	MISO
6	MOSI
7	NC
8	NC

A. I²C Header

B. SPI Flash Header



A1SQN/A1SQN-E 2X10 External I/O Conector

The external I/O connector at JIO1 provides RS485, analog input, and DIO (Digital Input/Output) connectivity. See the tables below for pin definitions.

A1SQN/A1SQN-E 2X10 External I/O Pin Definitions

Pin#	Definition	Pin #	Definition
1	RS485A	2	RS485B
3	GND	4	GND
5	DIO1	6	DIO0
7	DIO3	8	DIO2
9	DIO5	10	DIO4
11	DIO7	12	DIO6
13	ADC1	14	ADC0
15	ADC3	16	ADC2
17	ADC5	18	ADC4
19	ADC7/3.3V	20	ADC6/5V

JP5V and JP3V3 Jumpers

JP5V provides 5V output, and JP3V3 provides 3.3V output for the external I/O connector at JIO1. See the tables below for jumper settings.

JP5V Jumper Settings

A1SQN/ A1SQN-E	
Pin#	Definition
1-2	JIO1 Pin 20 5V Output
2-3 (Default)	JIO1 Pin 20 ADC6

JP3V3 Jumper Settings

A1SQN/ A1SQN-E	
Pin#	Definition
1-2	JIO1 Pin 19 3.3V Output
2-3 (Default)	JIO1 Pin 19 ADC7

Note: Please refer to page 1-3 for the locations of the external I/O connector JIO1 and jumpers JP5V and JP3V3.

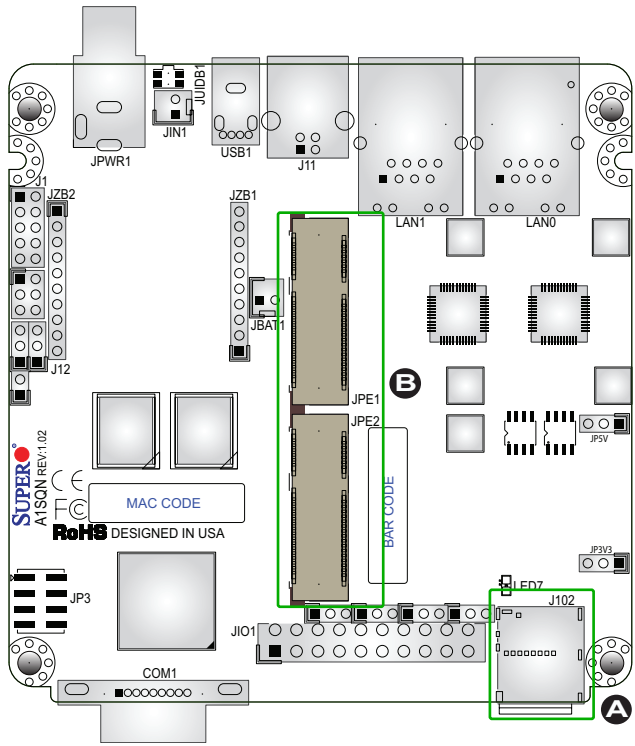
Micro SD Card Slot

Insert a Micro SD memory card into the expansion slot at J102 for additional memory or OS image.

Mini PCIe Card Slots

One Full/Half and one Half length mini PCIe card slots are located at JPE1 and JPE2. A USB 2.0 interface is available with JPE1.

A. MicroSD Card Slot
B. Mini PCIe Card Slots



ZigBee Headers

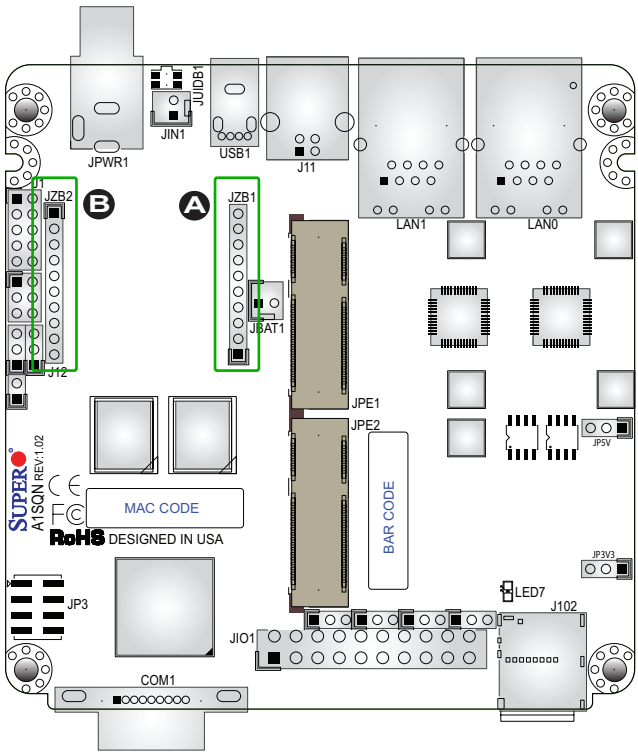
Connect a ZigBee module to the JZB1 and JZB2 headers. The ZigBee module allows your system to communicate to other devices through a wireless personal area network based on 802.15.4 standard. See the tables below for pin definitions.

ZigBee Header (JZB1) Pin Definitions	
Pin#	Definition
1	FRAME-GND
2	RSVD1
3	RSVD2
4	RSVD3
5	CS0-GP7
6	CLK
7	MOSI
8	MISO
9	VCC
10	GND

ZigBee Header (JZB2) Pin Definitions	
Pin#	Definition
1	GND
2	VCC
3	CS1-GP5
4	RST-N-GP4
5	ID0-GP0
6	ID1-GP1
7	ID2-GP2
8	ID3-GP3
9	RSVD-GP6
10	FRAME-GND

A. JZB1

B. JZB2

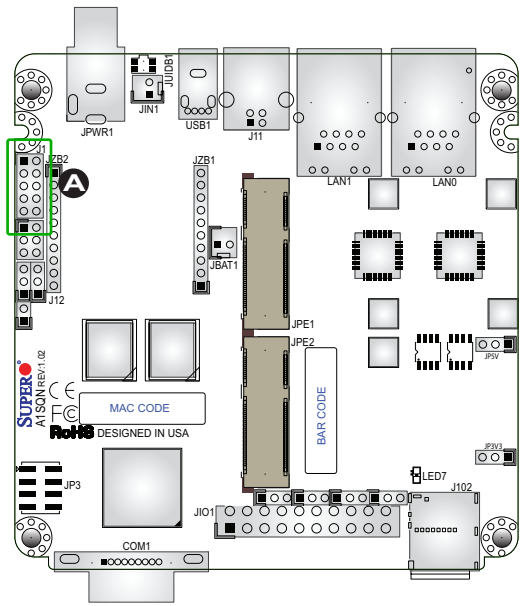


JTAG Header

JTAG at J1 stands for Joint Test Action Group, a 2 x 4 pin connector, pitch 2.54mm, is the common name for the IEEE 1149.1 - Standard Test Access Port and Boundary-Scan Architecture. This feature was initially created to test printed circuit boards. See the table on the right for pin definitions.

JTAG Header Pin Definitions	
Pin#	Definition
1	VCC
2	TMS
3	GND
4	TCK
5	GND
6	TDO
7	N/A
8	TDI
9	GND
10	RESET

A. JTAG Header



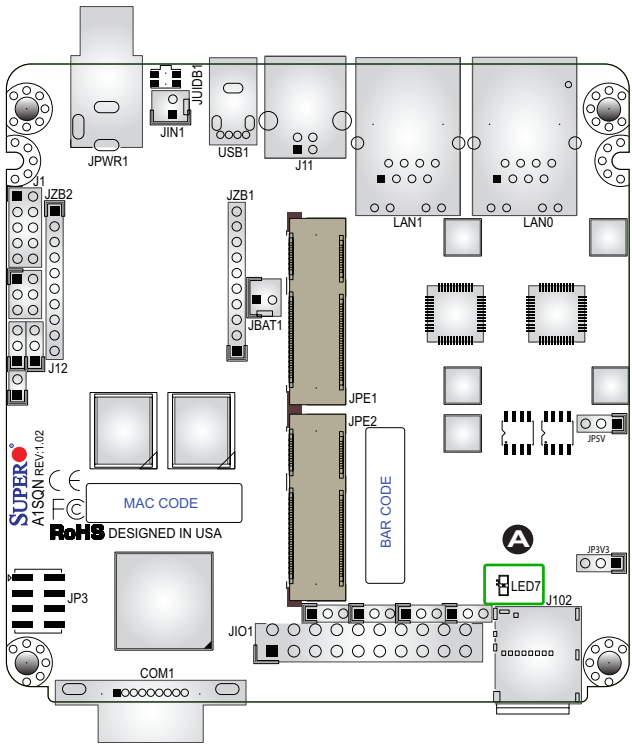
2-5 LED Indicators

Micro SD Read/Write Indicator (LED7)

The Micro SD Read/Write indicator is located at LED7. This indicator displays the Micro SD slot activity. Refer to the table on the right for details. Also see the layout below for the LED location.

Micro SD Read/Write Indicator Activity LED		
Color	Status	Definition
Green	On	Read/Write

A. Micro SD Indicator LED



Chapter 3

Troubleshooting

3-1 Technical Support Procedures

Before contacting Technical Support, please make sure that you have followed all the steps listed below. Also, Note that as a motherboard manufacturer, Supermicro does not sell directly to end users, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

1. Please go through the 'Troubleshooting Procedures' and 'Frequently Asked Question' (FAQ) sections in this chapter or see the FAQs on our website (http://www.supermicro.com/support/faqs/) before contacting Technical Support.

2. OS image upgrades can be downloaded from our website at:

   (http://www.supermicro.com/products/motherboard/quark/a1sqn.cfm), under the link Download OS Image.

3. If you've followed the instructions above to troubleshoot your system, and still cannot resolve the problem, then contact Supermicro's technical support and provide them with the following information:

- Motherboard model and PCB revision number
- System configuration
- An example of a Technical Support form is on our website at:

  (http://www.supermicro.com/RmaForm/).

4. Distributors: For immediate assistance, please have your account number ready when placing a call to our technical support department. We can be reached by e-mail at support@supermicro.com, by phone at: (408) 503-8000, option 2, or by fax at (408) 503-8019.

3-2 Frequently Asked Question

Question: How much memory does my motherboard support?

Answer: The A1SQN/A1SQN-E motherboard has 512MB of DDR3 800 MHz on-board memory.

Question: What kind of devices does my motherboard support?

Answer: The A1SQN/A1SQN-E motherboard supports a dual-band ZigBee module (SMC P/N: AOC-WPAN-Q58) and mini PCIe support for wifi/Bluetooth (SMC P/N: AOC-WLAN-NB159H) and 3G card (SMC P/N: AOC-3GMODEM).

Question: Which mini PCIe slot should I use for a 3G card?

Answer: A 3G card requires USB 2.0 interface and connects to JPE1 mini PCIe slot.

Question: Which mini PCIe slot should I use for a wifi/Bluetooth card?

Answer: Please connect the wifi/Bluetooth card to JPE1 mini PCIe slot, since a Bluetooth device requires USB interface. JPE2 mini PCIe slot does not support USB interface.

3-3 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. For faster service, you may also obtain RMA authorizations online (http://www.supermicro.com/RmaForm/). When you return the motherboard to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Notes

(Disclaimer Continued)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.