AIG-502 Series
Quick Installation Guide

Version 1.0, September 2024

Technical Support Contact Information
www.moxa.com/support

P/N: 1802005020000

Overview

The AIG-502 Series computers are built around a 7th Gen Intel® Core™ i7 processor and come with 1 HDMI display port, 3 USB 3.0 ports, 2 Gigabit LAN ports, and 2 3-in-1 RS-232/422/485 serial ports. The AIG-502 is also equipped with a 2.5" HDD/SSD slot and a built-in TPM 2.0 module.

Additional value and convenience are provided through a modular design with three independent slots for flexible system integration and expansion. Users have the option to add a variety of different communications modules, including Wi-Fi, 3G, LTE, GPS, and mSATA expansion modules.

The AIG-502 is designed to operate reliably in extreme conditions, such as continuous exposure to low or high temperatures, humidity, high vibration, and power surges, making them perfect for heavy industry, solar grid, water/wastewater, oil and gas, and transportation applications.

Package Checklist

Before installing the AIG-502, verify that the package contains the following items:

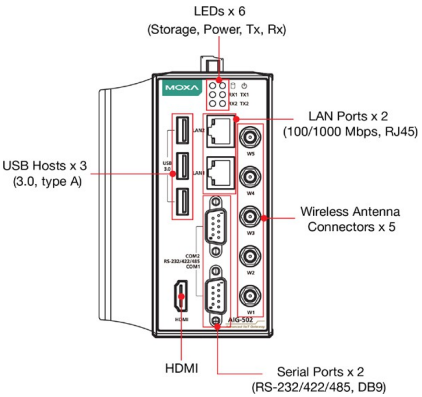
- AIG-502 embedded computer
- Terminal block to power jack converter
- DIN-rail mounting kit
- Quick installation guide (printed)
- Warranty card
- Tamper-resistant label

NOTE Notify your Moxa sales representative if any of the above items are missing or damaged.

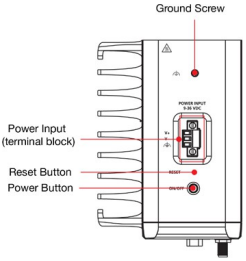
Panel Layout

The panel layouts of the AIG-502 are shown in the following illustrations:

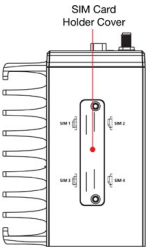
Front View



Top View



Bottom View



LED Indicators

The following table describes the function of the LED indicators located on the front panel of the AIG-502:

LED Name	Status	Description
Power 	Green	Power is on and computer is functioning normally
	Off	Power is off
Storage 1 (mSATA) 	Yellow	Blinking: Data is being transmitted
	Off	No data transmission.
LAN 1/2 (Located on the connectors)	Green	Steady On: 100 Mbps Ethernet link Blinking: Data is being transmitted
	Yellow	Steady On: 1000 Mbps Ethernet link Blinking: Data is being transmitted
	Off	10 Mbps Ethernet link or LAN is not connected
Tx 1/2	Green	Blinking: Data is being transmitted.
	Off	No connection
Rx 1/2	Yellow	Blinking: Data is being transmitted.
	Off	No connection

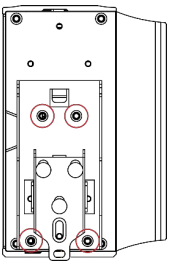
Installing the AIG-502

DIN-rail Mounting

The AIG-502 comes with a DIN-rail mounting kit.

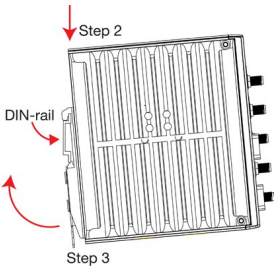
To install the DIN-rail mounting kit and mount the AIG-502 on to a DIN rail, do the following:

STEP 1:
Use the 4 screws included with the kit to attach the DIN-rail mounting bracket to the AIG-502's rear panel and tighten the screws to secure the bracket.



STEP 2:
Insert the top of the DIN rail into the slot just below the upper hook of the DIN-rail mounting kit.

STEP 3:
Press the AIG-502 towards the DIN rail until it snaps into place.

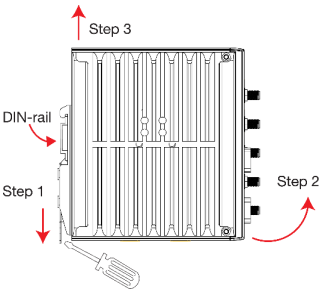


Removal:

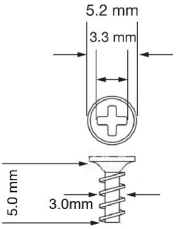
To remove the AIG-502 from the DIN rail, do the following:

STEP 1:
Pull down the latch on the mounting kit with a screwdriver.

STEP 2 & 3:
Pull the AIG-502 slightly forward and lift it up to remove it from the DIN rail.



For the specifications of the DIN-rail mounting screws, refer to the illustration on the right and adhere to the values specified to secure the DIN-rail bracket to the rear panel of the computer.

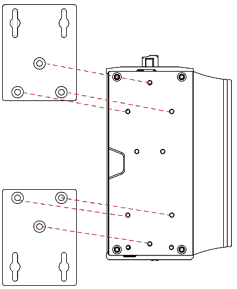


Wall Mounting

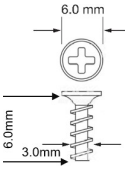
The AIG-502 can be installed on a wall by using the optional wall-mounting kit.

NOTE The wall-mounting kit is not included in the package and must be purchased separately.

STEP 1:
Use three screws for each bracket and attach the brackets to the rear of the AIG-502.



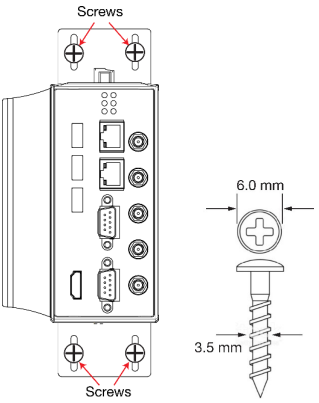
Refer to the figure on the right for the specifications of the screws used to attach the mounting brackets.



STEP 2:
Use two screws per bracket to attach the AIG-502 to a wall or cabinet.

NOTE:
Mounting the AIG-502 to a wall requires four screws. Use the AIG-502 computer, with the optional wall-mounting brackets attached, as a guide to mark the correct locations of the screws on the wall.

The heads of the screws should be less than 6.0 mm in diameter, the shafts should be less than 3.5 mm as shown in the figure on the right.

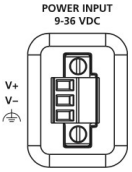


The recommended length of the screws is more than 10 mm.

Do not drive the screws in all the way; leave a space of about 2 mm to allow room for sliding the wall-mounting bracket between the wall and the screws.

Connector Descriptions

Power Connector



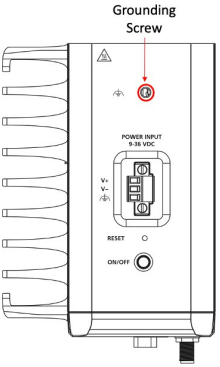
Use an Listed Power Supply (LPS, 9 to 36 VDC) or Class 2 power cord to connect to the AIG-502's terminal block to power jack converter and then turn on the power. The Power LED will light up to indicate that the power is supplied properly. The OS is ready when the Power LED glows a solid green.

ATTENTION

This product is intended to be supplied by a Listed Power Supply with output marked LPS and rated to deliver 9 to 36 VDC at a minimum of 8 A. Ensure that the power cord is connected to a socket-outlet with earthing connection, or an equivalent.

Grounding the AIG-502

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the grounding screw (M4) to the grounding surface prior to connecting the power as shown in the illustration on the right.



NOTE A 4 mm^2 conductor must be used when utilizing the connection to the external grounding screw. The heat sink is grounded to the chassis by an internal screw.

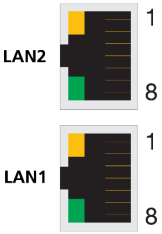
Terminal Block

The plug-half connection must be secured by screws with a torque value of 0.19 N-m. The wires used should be of 14 to 18 AWG wire size. The recommended stripping length for the wires is 6 to 7 mm.

Ethernet Ports

The 10/100/1000 Mbps Ethernet ports use RJ45 connectors. The pin diagrams for the ports are shown below:

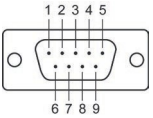
Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	–	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-



Serial Ports

The serial ports use DB9 connectors. Each port can be configured by software as a RS-232, RS-422, or RS-485 port. The pin assignments for the ports are shown below:

Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–



USIM Slot

The AIG-502 has two USIM slots for 3G/LTE wireless Internet connections. Each slot supports dual USIM cards. To install a USIM card, gently remove the outer cover on the bottom panel, and then insert the USIM card into the slot.

USB Hosts

The AIG-502 has 3 USB 3.0 Type-A connectors located on the front panel. The ports support keyboard and mouse devices and can also be used to connect a flash disk for storing large amounts of data.

HDMI Connector

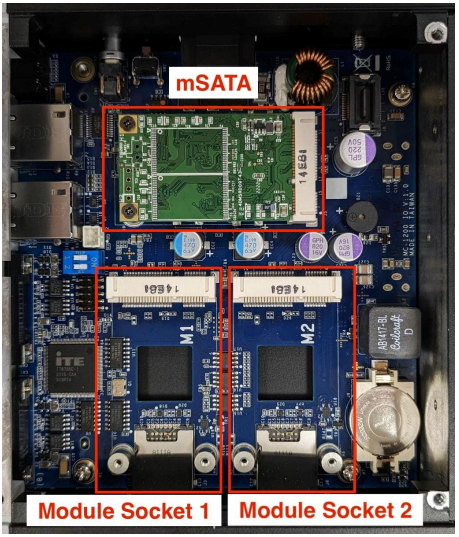
The AIG-502 has an HDMI connector located on the front panel, allowing users to connect to a video device.

NOTE Make sure you use an HDMI-certified cable for a reliable video connection.

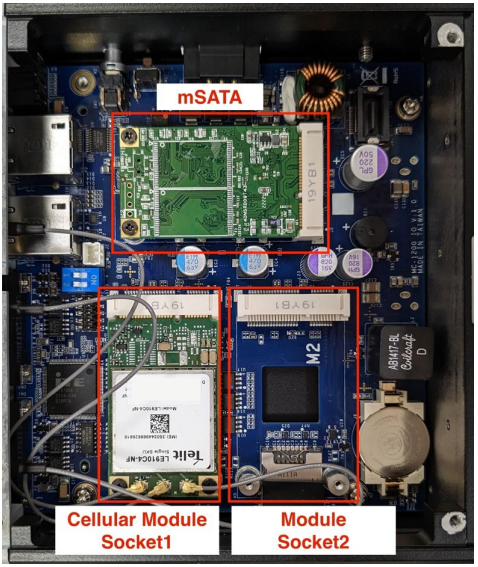
Installing Communications Modules

The AIG-502 Series comes with three sockets for installing various communications modules. Unfasten the screws on the right side of the computer and remove the cover to find the locations of these sockets as shown below:

AIG-502-T-AZU-LX:



AIG-502-T-US/EU/AP-AZU-LX:

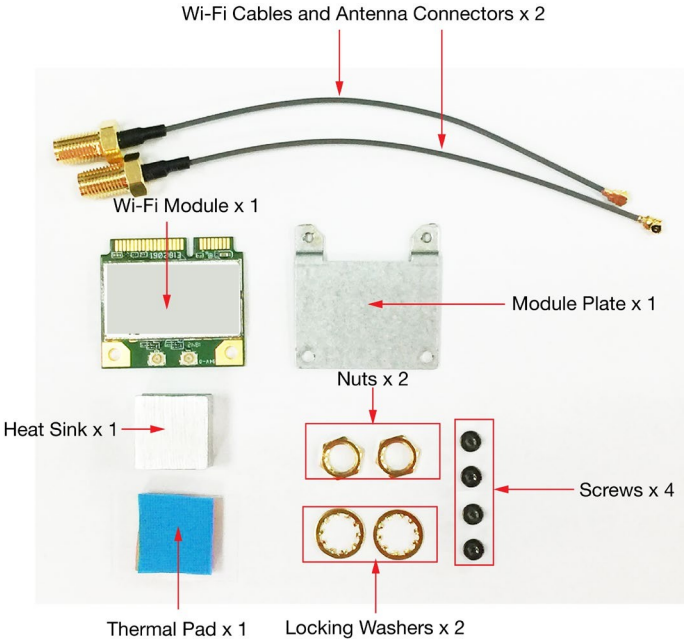


Installing the Wi-Fi Module

You can install up to two Wi-Fi/cellular modules for wireless communication.

Wi-Fi Module Package

The contents of the Wi-Fi module package are shown below:

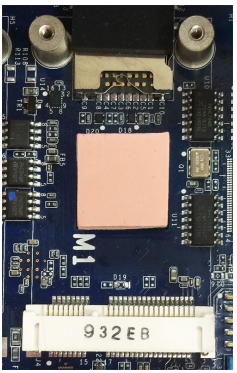


Follow these steps to install the Wi-Fi module for your AIG-502.

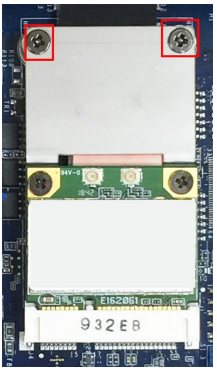
1. Attach the Wi-Fi module to the mounting plate with two screws.

2. Remove the transparent plastic and the blue covers on both sides of the thermal pad and the heat sink. Place the thermal pad on top of the heat sink.

3. Place the heat sink with the thermal pad at the center of the wireless module socket.

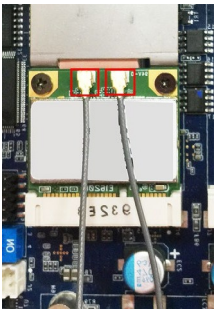


4. Insert the Wi-Fi module (with the mounting plate) into the socket and fasten the two black screws on the mounting plate to secure it.



5. Attach one end of the Wi-Fi antenna cable to the connector on the Wi-Fi module and insert the other end (with the threaded connection ring) through the antenna mounting hole on the front panel of the computer.

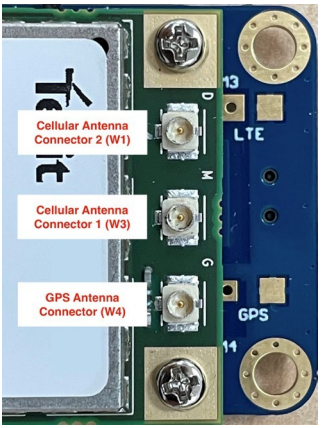
   Remove the protection cover on the mounting hole before you do so.



6. Insert the locking washer through the threaded connection ring and hold it against the front panel. Secure the antenna connector in place by tightening a nut onto the threaded protection ring.

7. Connect the Wi-Fi antenna to the connector on the front panel.
8. Use the above method to connect another Wi-Fi antenna, if necessary.
9. 9eattach the right side cover on to the computer and fasten the screws to secure it.

The pre-built cellular module comes with three SMA connectors for a GPS antenna (W4), a primary cellular antenna (W3), and a secondary cellular antenna (W1).



Installing SIM Cards

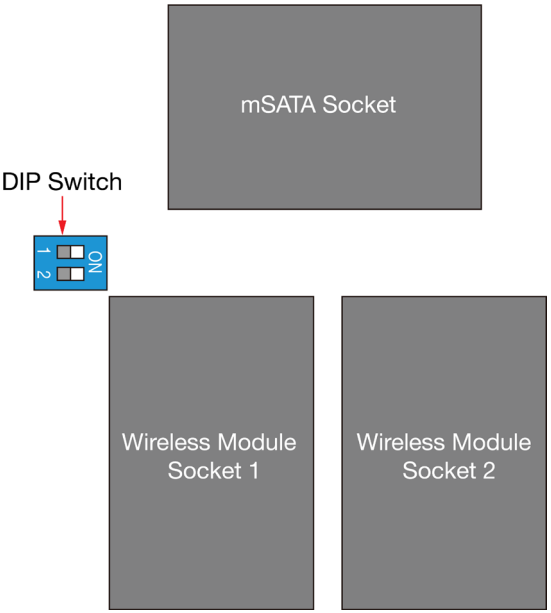
Follow these steps to install SIM cards for the cellular module.

1. Remove the screws on the bottom panel of the computer and remove the cover. You will see four SIM card slots.

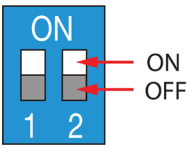
2. Insert a card in the SIM 1 slot. Make sure you insert the card in the right direction as indicated in the image beside the slot. (The notch on the SIM card should face outward.)
3. Insert the other card into the SIM 2 slot, if necessary.
4. Replace the computer cover and secure it by fastening the screws.

Switching Between the Wireless Module Sockets

As there are two wireless module sockets and you can install a Wi-Fi module in both these sockets, a DIP switch is provided to enable selection of a Wi-Fi or cellular module. The DIP switch is located below the mSATA socket as shown in the following illustration.



The DIP switch is operated as follows:



Status	Switch 1	Switch 2
ON	Wi-Fi	Wi-Fi
OFF (default)	Cellular	Cellular

For example, if you have installed a Wi-Fi module in the first socket, you need to turn the DIP switch 1 to the ON status.

NOTE
- For AIG-502-T-AZU-LX, you can install the Wi-Fi module in either socket, and turn the corresponding socket to the ON position after installation.
- For AIG-502-T-US/EU/AP-AZU-LX, turn the socket 2 to the ON position after the Wi-Fi module is installed.

Real-time Clock

The real-time clock in the AIG-502 is powered by a lithium battery. We strongly recommend that you do not replace the lithium battery without the help of a Moxa support engineer. If you need to change the battery, contact the Moxa RMA service team.

ATTENTION

There is a risk of explosion if the battery is replaced with an incorrect type of battery. Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacture's instructions.

Hazardous Locations Specifications

Model:	AIG-502-T-AZU-LX AIG-502-T-US-AZU-LX AIG-502-T-EU-AZU-LX AIG-502-T-AP-AZU-LX
Rating:	Input: 12 VDC, 6 A or 36 VDC, 2 A or 12-36VDC, 6 A (max.) for Hazardous location only.
ATEX information:	CE Ex II 3G Ex ec IIC T4 Gc UL 23 ATEX 3047X Ambient Range: -40°C ≤ Tamb ≤ +70°C WARNING – DO NOT SEPARATE WHEN ENERGIZED Rated Cable Temp ≥ 102°C
IECEx Certificate no.:	IECEx UL 23.0053X
Address of manufacturer:	No. 1111, Heping Rd., Bade Dist., Taoyuan City 334004, Taiwan

- The peripheral devices should be kept at a distance of 25 mm from device.
- Only Antenna ports (W1, W3, W4) can be used in Hazardous Locations.
- Only SIM slots (SIM 1, SIM 2) can be used in Hazardous Locations.
- The devices are OPEN-TYPE and are required to be installed in a suitable enclosure for the environment such that the devices can only be accessed with use of a tool.
- The devices are suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous location only.

Specific Conditions of use

- The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP 54 in accordance with EN IEC 60079-0/IEC 60079-0 and accessible only by use a tool.
- The equipment shall only be used in an area of at least pollution degree 2, as defined in EN IEC 60664-1/IEC 60664-1.

BSMI

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：工業物聯網閘道器 Equipment name				型號（型式）：AIG-502-T-AZU-LX Type designation (Type)		
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
外殼	○	○	○	○	○	○
印刷電路板及其電子組件	—	○	○	○	○	○
電纜/電線/連接器	—	○	○	○	○	○
機械部件-金屬	—	○	○	○	○	○
機械部件-非金屬	○	○	○	○	○	○

備考 1. "超出 0.1 wt %"及 "超出 0.01 wt %"係指限用物質之百分比含量超出百分比含量基準值。

Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考 2. "○"係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2: "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 3. "—" 係指該項限用物質為排除項目。

Note 3: The "—" indicates that the restricted substance corresponds to the exemption.

減少電磁波影響，請妥適使用。

電波功率密度 MPE 標準值為：0.45 mW/cm²，送測產品實測值為：0.163 mW/cm²，建議使用時設備天線至少距離人體 20 公分。

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

警告：更換不正確之電池形式會有爆炸的風險，請依製造商說明書處理用過之電池。

製造商資訊

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