

SRG-APL

IoT Gateway System

User's Manual 1st Ed

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Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● SRG-APL	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page at AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
3. Make sure the power source matches the power rating of the device.
4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
5. Always completely disconnect the power before working on the system's hardware.
6. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
8. Always disconnect this device from any AC supply before cleaning.
9. While cleaning, use a damp cloth instead of liquid or spray detergents.
10. Make sure the device is installed near a power outlet and is easily accessible.
11. Keep this device away from humidity.
12. Place the device on a solid surface during installation to prevent falls
13. Do not cover the openings on the device to ensure optimal heat dissipation.
14. Watch out for high temperatures when the system is running.
15. Do not touch the heat sink or heat spreader when the system is running
16. Never pour any liquid into the openings. This could cause fire or electric shock.

17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
18. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device
19. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

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

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON System

QO4-381 Rev.A0

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯 醚(PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器 与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	×	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

×：表示该有害物质的某一均质材料超出了 GB/T 26572 的限量要求，然而该部件

仍符合欧盟指令 2011/65/EU 的规范。

备注：

一、此产品所标示之环保使用期限，系指在一般正常使用状况下。

二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。

三、上述部件物质液晶模块、触控模块仅一体机产品适用。

China RoHS Requirement (EN)

Hazardous and Toxic Materials List

AAEON System

QO4-381 Rev.A0

Component Name	Hazardous or Toxic Materials or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated biphenyls (PBBs)	Polybrominated ethers (PBDEs)
PCB and Components	X	O	O	O	O	O
Wires & Connectors for Ext.Connections	X	O	O	O	O	O
Chassis	O	O	O	O	O	O
CPU & RAM	X	O	O	O	O	O
HDD Drive	X	O	O	O	O	O
LCD Module	X	X	O	O	O	O
Optical Drive	X	O	O	O	O	O
Touch Control Module	X	O	O	O	O	O
PSU	X	O	O	O	O	O
Battery	X	O	O	O	O	O

This form is prepared in compliance with the provisions of SJ/T 11364.

O: The level of toxic or hazardous materials present in this component and its parts is below the limit specified by GB/T 26572.

X: The level of toxic of hazardous materials present in the component exceed the limits specified by GB/T 26572, but is still in compliance with EU Directive 2011/65/EU (RoHS 2).

Notes:

1. The Environment Friendly Use Period indicated by labelling on this product is applicable only to use under normal conditions.
2. Individual components including the CPU, RAM/memory, HDD, optical drive, and PSU are optional.
3. LCD Module and Touch Control Module only applies to certain products which feature these components.

Table of Contents

Chapter 1 - Product Specifications	1
1.1 Specifications	2
Chapter 2 – Hardware Information	5
2.1 Dimensions	6
2.2 I/O Location.....	7
2.2.1 List of Connectors	8
2.2.2 Giga LAN Port.....	9
2.3 Wireless Hardware Setup	10
2.3.1 Mini Card and M.2 E Key Slot Installation	10
Chapter 3 – Drivers Installation	13
3.1 Drivers Download and Installation.....	14

Chapter 1

Product Specifications

1.1 Specifications

System

Processor	Intel Atom X5-E3940 Processor SoC / Intel HD 500 Graphics
Memory	Onboard LPDDR4 1866MHz 4GB / 8GB (Optional)
Storage	eMMC 5.1 32GB / 64GB (Optional)
Real Time Clock	RTC x 1, with 3V CR2032 Lithium battery
Security	—
Indicators	—
Cellular	Mini PCIe Connector x 1
Wireless Lan	M.2 2230 E Key slot x 1
Operating System	Windows 10 IoT Enterprise / Linux
Support Protocol	—

I/O

Serial Port	—
Ethernet	Gigabit Ethernet x 2, RJ-45
USB	USB 3.0 x 4, Type A
ADC	—
DI/DO	—
CAN Bus	—
Display	HDMI 1.4 x 1
Power Connector	DC Jack
Debug Port	—
Expansion Slot	SIM card slot x 1 Micro SD slot x 1
Other Interface	Power switch button x 1 Reset switch button x 1 Antenna x 3 (Optional)

Power Supply

Power Requirement	12V DC-In @ 3A-5A 5.5/2.5 mm
Power Consumption	20 W (Full Loading)
MTBF (Hours)	516,789

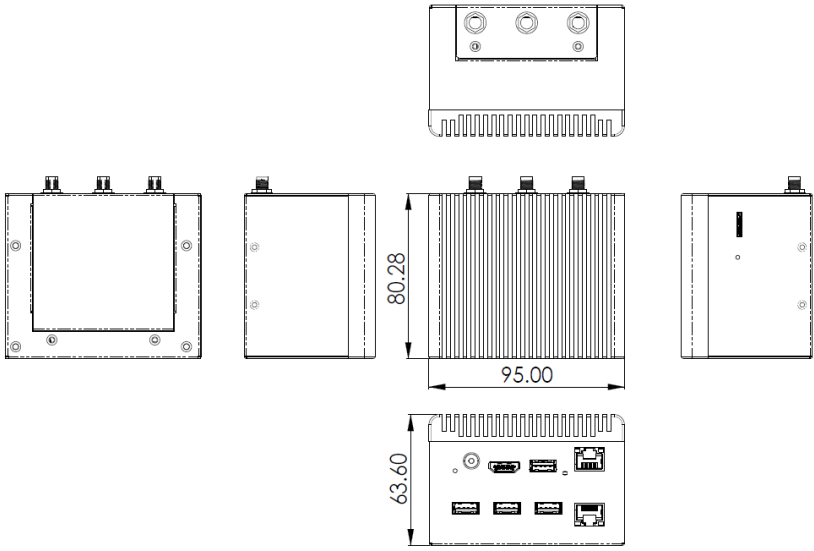
Environmental and Mechanical

Dimension	3.16" x 3.7" x 2.5" (80.28 x 95 x 63.6 mm)
Weight	1.94lb (880g)
Mount Options	Wall Mount / DIN Rail (Optional)
Operation Temperature	32 °F ~ 140 °F (0 °C ~ 60 °C)
Storage Temperature	-40 °F ~ 176 °F (-40 °C ~ 80 °C)
Operation Humidity	10% ~ 95% relative humidity, non-condensing
Vibration	2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without USB devices attached)
Shock	20G peak acceleration (11 msec. Duration, eMMC, microSD, or SSD) IEC 68-2-27
CE/FCC	CE/FCC (with CE-RED)
Green Product	RoHS

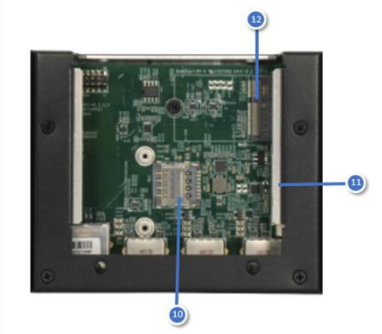
Chapter 2

Hardware Information

2.1 Dimensions



2.2 I/O Location



2.2.1 List of Connectors

The SRG-APL features several connectors which can be configured for your application. This section details those connections and their specifications.

Position	Function
1	Giga LAN Port The standard RJ-45 LAN jack is provided the connection to the Local Area Network (LAN).
2	USB 3.0 Port The USB 3.0 type A connector, it could also support usb mass storage.
3	Power Light Power on will turn on the blue light.
4	HDMI Port The HDMI 1.4 support output, viewing OS on additional display.
5	DC Power Jack The gateway could accept DC 12V input.
6	Reset Button Press the button will reboot the OS.
7	Micro SD Slot User can increase the storage by insert the micro SD card.
8	Power Switch Button Press the button long time will force shutdown.
9	Antenna Connector The Antenna type will be Wi-Fi/Bluetooth/LTE.
10	Micro SIM Slot User can insert the micro SIM card into the slot when using LTE module on mini card slot.

11 Mini Card Slot

This mini PCIe slot can support LTE module (USB+PCIe signal).

12 M.2 2230 E Key slot

This M.2 E key slot can support Wi-Fi/Bluetooth module (USB+PCIe signal).

2.2.2 Giga LAN Port



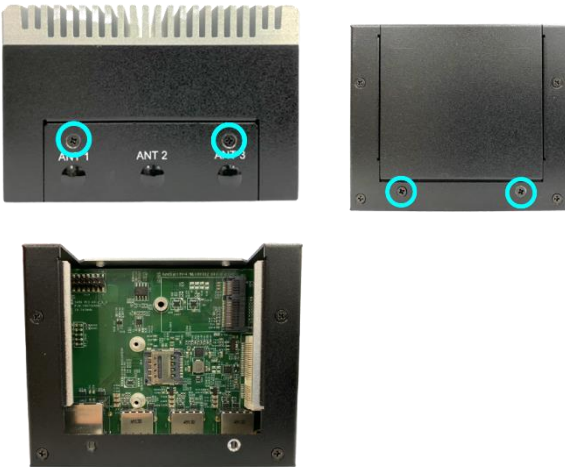
LED	Function	Status
Yellow	Active status	ON: LAN link is established. OFF: LAN link is not established. Blink: Data received and transmitted.
Orange /Green	Link Speed status	Green on: 10/100Mbps. Orange on: 1000Mbps.

2.3 Wireless Hardware Setup

The SRG-APL features for connecting to wireless networks such as 4G LTE and WiFi. This section details how to install a SIM Card, 4G/LTE module and WiFi/BT module.

2.3.1 Mini Card and M.2 E Key Slot Installation

Step 1: Remove the four screws then remove the bottom cover









Step 2: Install a SIM Card (Micro SIM) simply lock the SIM Card into the slot. Push the holder to right to open, put on a SIM card, close the holder and push it to left to lock. Take care to make sure the card is oriented correctly.



Step 3: Install the 4G/LTE module into mini card slot, and connect the RF coaxial cable to the 4G/LTE module. Install the WiFi/BT module into M.2 E key slot, and connect the RF coaxial cable to the WiFi/BT module. Here to see the detail as the form.

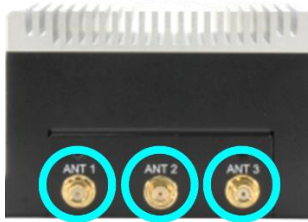


Item	Module	Install Antenna Place
WiFi/Bluetooth	 <p>ENL-R8822CE module</p>	 <p>Install the RF cable to left conn. to support Wi-Fi signal ; Install the RF cable to right conn. to support Wi-Fi and Bluetooth signal. (Wifi 2T2R + BT 1T1R)</p>  <p>Wi-Fi Bluetooth</p>
4G/LTE	 <p>EG25-G module</p>	 <p>Install the RF cable to left conn. to support 4G/LTE signal.</p>  <p>4G/LTE</p>

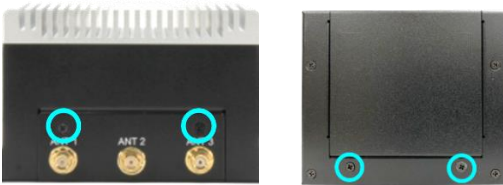
Step 4: Remove the plug from antenna hole.



Step 5: Install the RF coaxial cable on the antenna hole.



Step 6: Place the bottom cover and secure the screws.



Chapter 3

Drivers Installation

3.1 Drivers Download and Installation

Drivers for the SRG-APL can be downloaded from the product page on the AAEON website. Download the driver(s) you need and follow the steps below to install them.

Install Chipset Drivers

1. Unzip the Chipset driver zip file
2. Run the **SetupChipset.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install Graphics Drivers

1. Unzip the Graphics driver zip file
2. Run the **Setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install TXE Drivers

1. Unzip the TXE driver zip file
2. Run the **SetupTXE.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install LAN Drivers

1. Unzip the PROWinx64 driver zip file
2. Run the **PROWinx64.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install HSUART Drivers

1. Unzip the Intel RST driver zip file
2. Run the **Intel_Processor_Win10_HSUART_Sub_Drivers_64Bit.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install Serial Port Drivers

1. Unzip the Serial IO Driver zip file
2. Run the **SetupSerialIO.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically