

# General information

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## Model Selection

Atreyo manufactures several versions of the AG-1621 with respect to components and modules used in it, There are two versions available with respect to OS pre-installed, Linux (Debian) and OpenWRT.

The table below lists all the currently manufactured models.

Model Variant	Cellular Network			GNSS	Internal Memory	
	GPRS	3G	LTE		8GB	16GB
<b>AG-1621-8G</b>					✓	
<b>AG-1621-8G-LT-IN</b>	✓		✓	✓	✓	
<b>AG-1621-8G-LT-EU</b>	✓		✓	✓	✓	
<b>AG-1621-8G-LT-GL</b>	✓	✓	✓	✓	✓	
<b>AG-1621-8G-WRT</b>					✓	
<b>AG-1621-8G-LT-IN-WRT</b>	✓		✓	✓	✓	
<b>AG-1621-8G-LT-EU-WRT</b>	✓		✓	✓	✓	
<b>AG-1621-8G-LT-GL-WRT</b>	✓	✓	✓	✓	✓	

### Linux-based version:

- AG-1621-8G does not have a cellular module installed.
- AG-1621-8G-LT-IN is the basic variant of this model. It has a cellular module certified for India.
- You can install any module powered by 3.3V and having a pinout compatible with the pinout of the EC200 module. Refer to cellular modem documentation pinout.
- AG-1621-8G-LT-EU is the same as the base model except that it has a cellular module certified for Europe.

- AG-1621-8G-LT-GL is a version with a module certified all over the world.

## OpenWRT based version:

AG-1621-8G-WRT is the same as the basic variant of this model except it has OpenWRT OS instead of Linux and does not have a cellular module installed.

- AG-1621-8G-LT-IN-WRT is the basic variant of this model. It has a cellular module certified for India.
  - AG-1621-8G-LT-EU-WRT is the same as the base model except that it has a cellular module certified for Europe.
  - AG-1621-8G-LT-GL-WRT is a version with a module certified all over the world.
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# Hardware

The device is manufactured as a PCBA placed in an aluminum profile with DIN-Rail mount and connectors on its side plates.

The main PCB inside the profile has a MiniPCIe socket to mount the LTE modem.

This design has many advantages.

The aluminum profile efficiently transfers heat from the electronics, keeping them cool even under heavy loads.

The profile also protects the electronics from damage from impact, shock, and vibration.

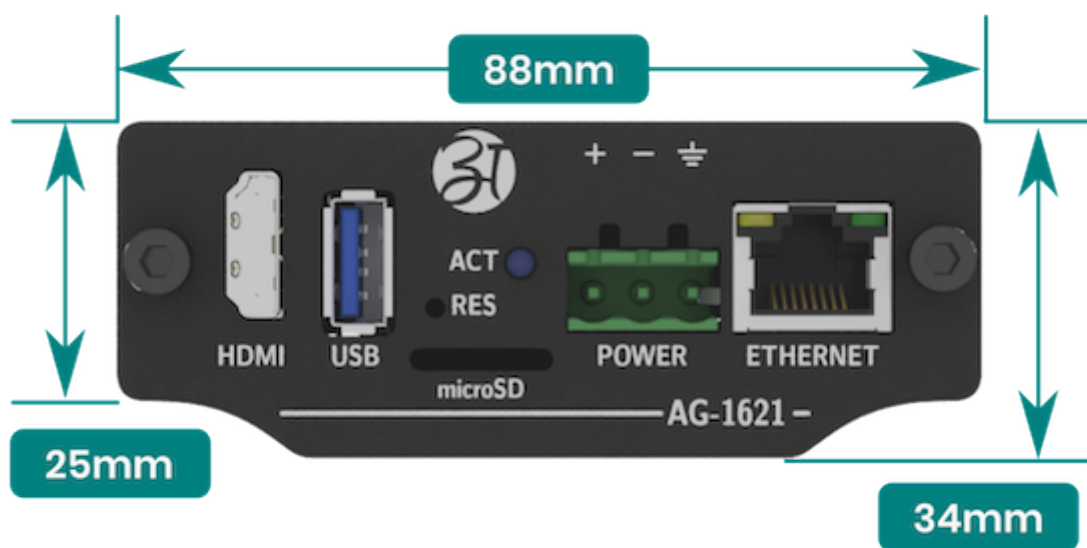
The PCB is easy to access for maintenance and repair purpose.

The overall design is compact and lightweight, making it easy to install and deploy.

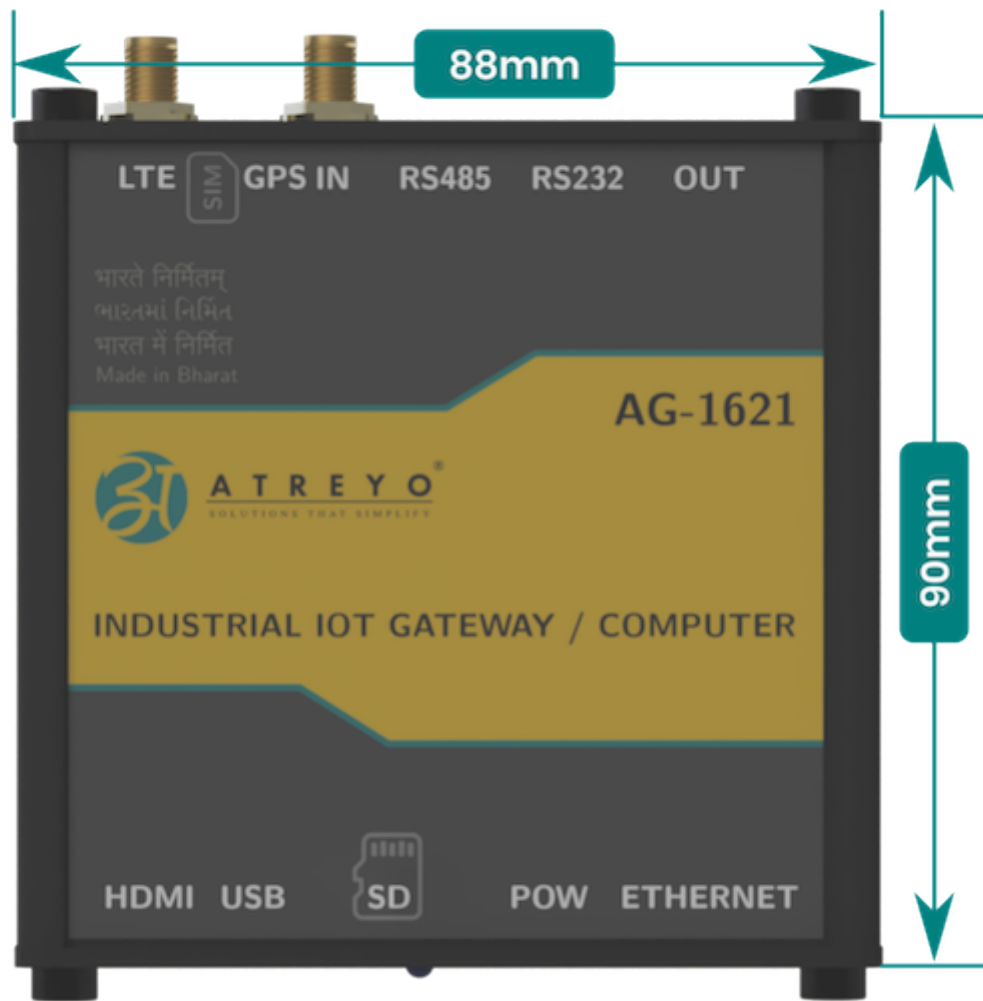
## Mechanical Dimensions

The device's compact body design makes it easier to fit even if less amount of space is available.

### Side view



Top view

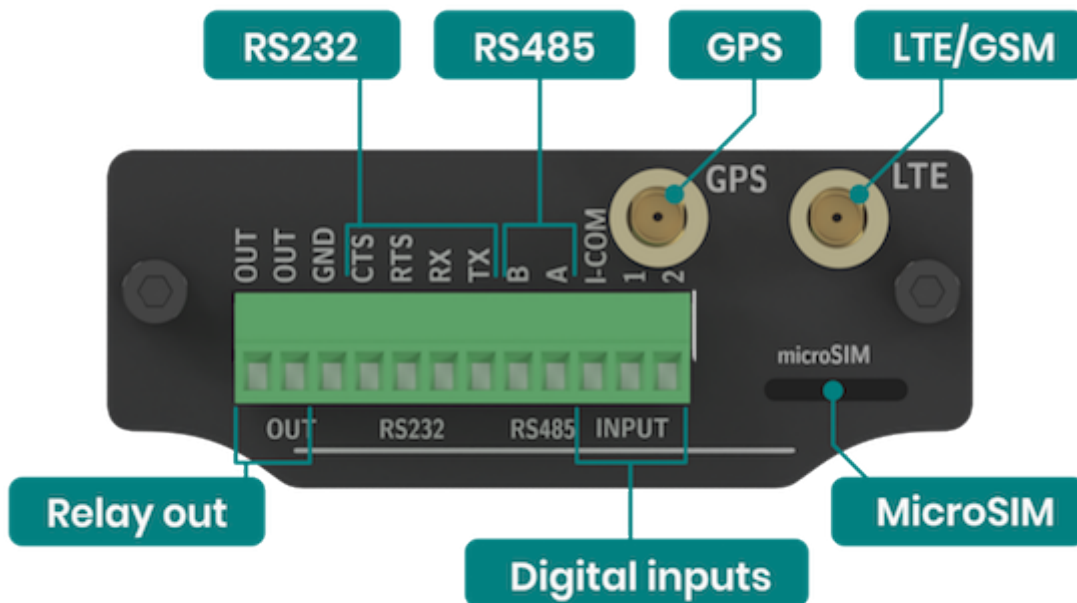


## Connectors

### Top view

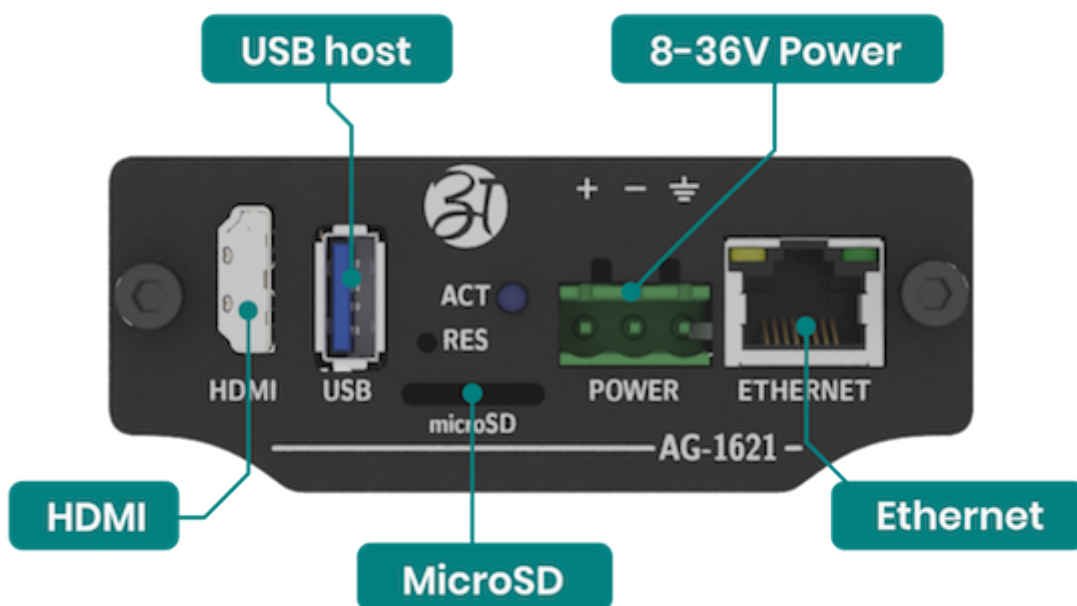
The AG-1621 has a pluggable connector on its top side. The connector can be used for RS232 and RS485 connection as well as inputs and output.

LTE and GPS antennas can be connected to female SMA antenna sockets and SIM card to be inserted in microSIM slot.



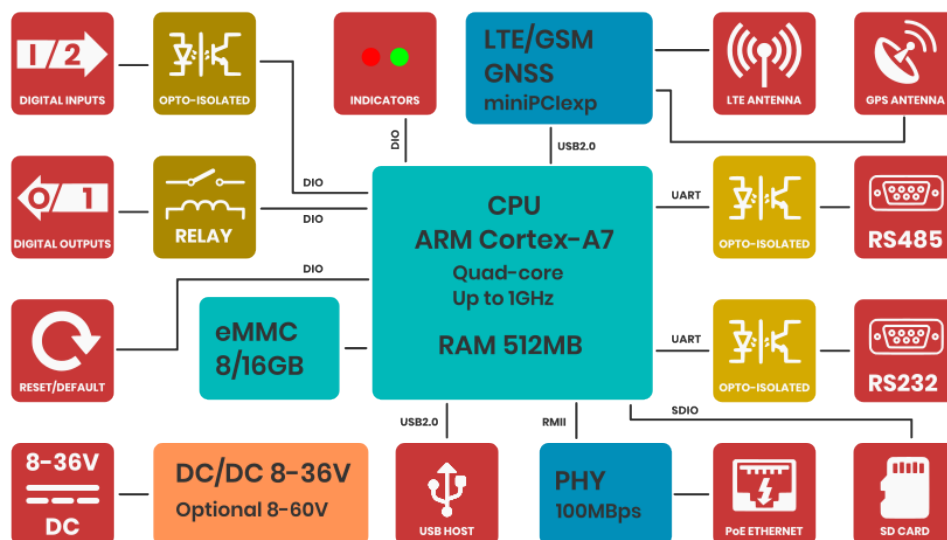
## Bottom view

On the bottom side, it has a LAN socket with LED indicator, microSD card slot, USB type A host, HDMI output, and a 3-pin female connector as power socket.



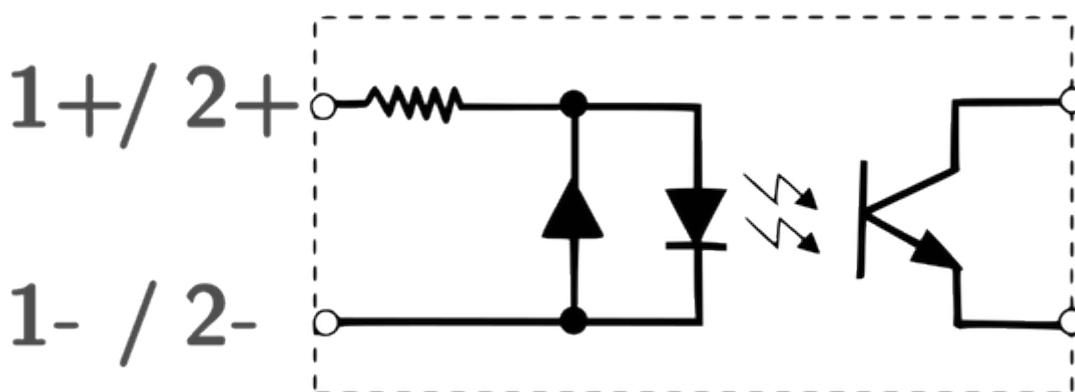
## Block Diagram

For a better understanding of the operation of the AG-1621, refer to the block diagram given below. Non-essential components have been omitted. Developers who program peripherals such as GPIOs, Serial interfaces, DI/DO etc., will find information about particular area in the sections dedicated to such peripherals.



## Digital inputs

AG-1621 have inbuilt two digital inputs which is having capability to detect input from 5V to 24V. Both the digital inputs can be directly accessed through gpio pins.



## Relay output

AG-1621 has inbuilt relay output which is directly accessible through gpio pin.

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## RS232

The RS232 port includes CTS and RTS signals in addition to TX and RX signals. The baudrate range for the RS232 port is 1200 bps ~ 921600 bps. The port is protected by high-power TVS diodes against electrical surges.

We can access this using `"/dev/ttyS2"` port which you can check using `"ls /dev/ttyS*"` command.

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## RS485

The baud rate range for the RS485 port is 600 bps ~ 921600 bps. Note that with a longer cable, the maximum speed may drop. It is recommended to use special cables designed for RS485. The port is protected by high-power TVS diodes against electrical surges.

We can access this using `"/dev/ttyS1"` port which you can check using `"ls /dev/ttyS*"` command

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## USB/SD storage

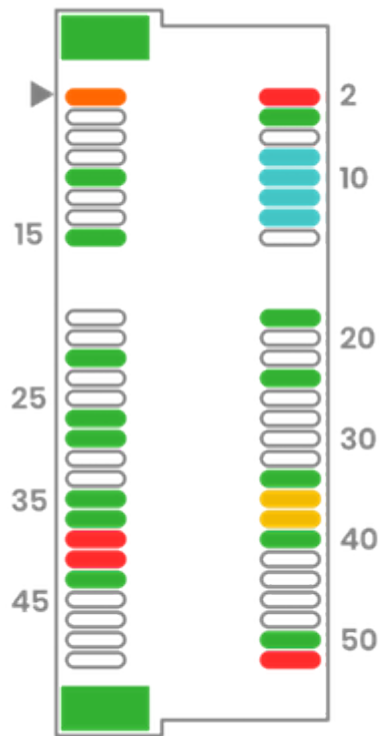
The gateway has both a microSD card as well as USB which can be used to connect a flash drive or external USB drive.

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## LTE 4G modem

Below is the description of the PCI express pinout used in the AG-1621. Before installing anything other than the EC-200U or EG25, be sure to check the pinout for compatibility. The LTE model is connected via a USB data bus.

MiniPCI express pinout



1	WAKE	2	3.3V
3	NC	4	GND
5	NC	6	NC
7	NC	8	SIM-VDD
9	GND	10	SIM-IO
11	NC	12	SIM-CLK
13	NC	14	SIM-RST
15	GND	16	NC
17	NC	18	GND
19	NC	20	FLIGHT RESET
21	GND	22	NC
23	NC	24	GND
25	NC	26	NC
27	GND	28	NC
29	GND	30	NC
31	NC	32	NC
33	NC	34	GND
35	GND	36	USB-DM
37	GND	38	USB-DP
39	3.3V	40	GND
41	3.3V	42	LED
43	GND	44	SIM- DET
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3.3V

Revision #9

Created 9 March 2025 03:20:30 by Yogesh

Updated 22 May 2025 03:05:25 by Yogesh