6005 Type - WiSenMeshWAN® Smart Gateway (C-Type)

Basics

Primary Battery Power (Internal)	Qty. x 4 (3.6V Lithium primary D-Cell ER34615)
Battery Connection	Standard Aluminium Battery Holder
Secondary DC Power (External)	A. 7-32VDC@Min.2A (WiSen® IP68 110/240VAC to 12VDC Power Adaptor); B. External Battery Unit (WiSen® M001-10.8V Battery Unit); C. Solar Unit (WiSen® M101-Solar Unit).
Mobile Network Stop Voltage	< 2.65VDC
Local Storage	8GB (Minimum 1.5 Yrs Storage)
Dimension (L x W x H)	180 x 140 x 60mm
Weight	⩽ 2.0kg
Cable Gland	Qty. 1 x EMC-CMA12 for external RS232 connection (through cable diameter, 3-6mm) Qty. 1 x EMC-CMA14 for external DC input power connection (through cable diameter, 4-8mm)
Wire Connection	Spring type wiring terminal

External Interface

Daughter Board	<u>Default</u>: 4G daughter board: Compatible with 2G/2.5G/3G/4G of Micro SIM card; Micro SIM card size: Length = 15mm, Width = 12mm, Thickness = 0.76±0.04mm; Note: SIM card slot is damaged (if SIM card is too thick) or unreliable 4G connection occurs (if SIM card is too thin). Other Daughter Board Options to replace the default: A. Wi-Fi daughter board; B. Ethernet daughter board; C. RS-485 daughter board; D. Fibre optics daughter board.
Main Board	RS232: Connect a RS232-to-USB cable from a gateway to a Windows PC for local data monitoring or parameter configuration; Purchasable from Wisen or link below (or equivalent) https://www.tme.eu/gb/details/usb-rs232-18-33/usb-modules/ftdi/usb-rs232-we-1800-bt-3-3/?brutto=1 TTL: One way communication ONLY Connect a TTL-to-USB cable from a gateway to a Windows PC for parallel data inspection while data is sending via the daughter board or RS232. https://www.tme.eu/gb/details/ttl-232r-3v3/usb-modules/ftdi/
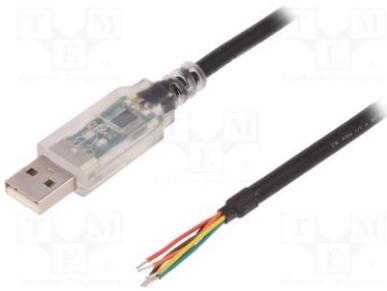
 Software to use: Standard Serial Port Software V3.1.16 or above	

WSN Interface	
Mesh Wireless Interface	WiSenMeshWAN® Protocol
Low Power Mode	T ≥ 5min and Server Connection Ratio DTU_Configuration = [1, 99]T Gateway only connects with the Server every (T x DTU_Configuration) time period.

Standard System Parameter	
Temperature	Measurement Range:-40 to 85°C; Accuracy: ±1°C, typical 0.5°C; Resolution: 0.1°C
Voltage	Accuracy: ±0.1V

Industrial Standard	
Casing and Painting Materials	Aluminium-Alloy Die Castings 12 (Epoxy Polyester Powder Coating)
IP Rating	≥ IP66
Operating Temperature	-40 to 85°C
Fire Proof	Approved

Applications	

A gateway is used as a key unit in Wireless Sensor Network system. It is responsible for the command issuing (such as T modifications) to and data collection from all the nodes involved in a mesh network; Meanwhile, it forwards the data and system information to the remote server via mobile network or the local server via standard RS232 connections.

For the extended public communication range between "Smart Gateway or Stand Alone Units" and the remote server clouds, please refer to "3200: Data Transmission Unit".

Highlights	

Gateway Unit Default Actions after a Power-On:

After the gateway unit is powered on, it:

1. always performs T=1min for 3 times;
2. automatically changes to the T configured previously by the customer.

Note: ensure to wait for at least 3-5min before a power on.

Fast T Change by Physically Rebooting:

1. Gateway T Change:

   To change T from a slow T (e.g., T=60min) to a faster T (e.g., T=5min), the recommended method is to:

   1) Power off the gateway;
   2) Send a T change command to the gateway via the Wisen Web Platform;
   3) Power on the gateway, then the gateway automatically receives the T change once it connects to the server.

2. Power on the nodes within radio communication distance to the gateway. Then within 1-2T, the nodes will be seen on the Wisen Web Platform.
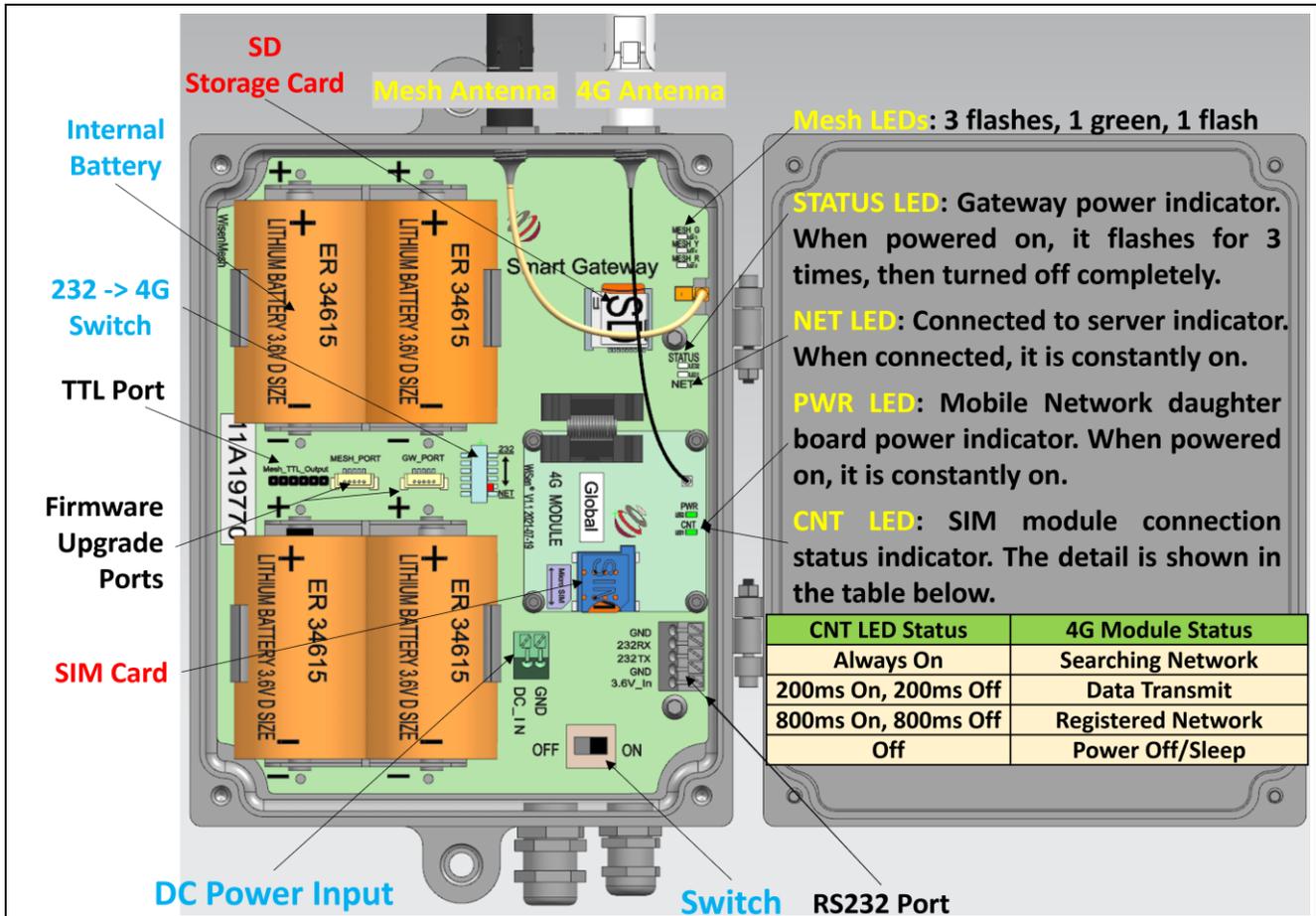
Gateway PCB Layout	

SD Storage Card

Mesh Antenna **4G Antenna**

Internal Battery

232 -> 4G Switch

TTL Port

Firmware Upgrade Ports

SIM Card

DC Power Input

Switch **RS232 Port**

Mesh LEDs: 3 flashes, 1 green, 1 flash

STATUS LED: Gateway power indicator. When powered on, it flashes for 3 times, then turned off completely.

NET LED: Connected to server indicator. When connected, it is constantly on.

PWR LED: Mobile Network daughter board power indicator. When powered on, it is constantly on.

CNT LED: SIM module connection status indicator. The detail is shown in the table below.

CNT LED Status	4G Module Status
Always On	Searching Network
200ms On, 200ms Off	Data Transmit
800ms On, 800ms Off	Registered Network
Off	Power Off/Sleep

Figure. Gateway Layout (Subject to the real product).

Installation Guidance (Please refer to "Instructions to Configure a Wisen System.pdf")

When connected to a remote server, "NET" LED will be constantly on.

Figure. Gateway Product Photos.

Figure. 110-240VAC to 12VDC@3.3A Power Adapter Connection (Left)

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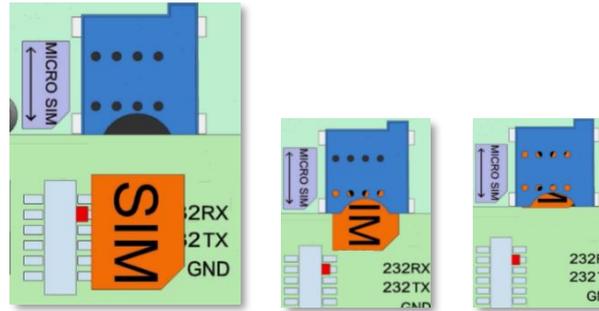RS232 to USB Connection (Right). Note, the "232 <-> NET" Switch must be turned to "232" status.
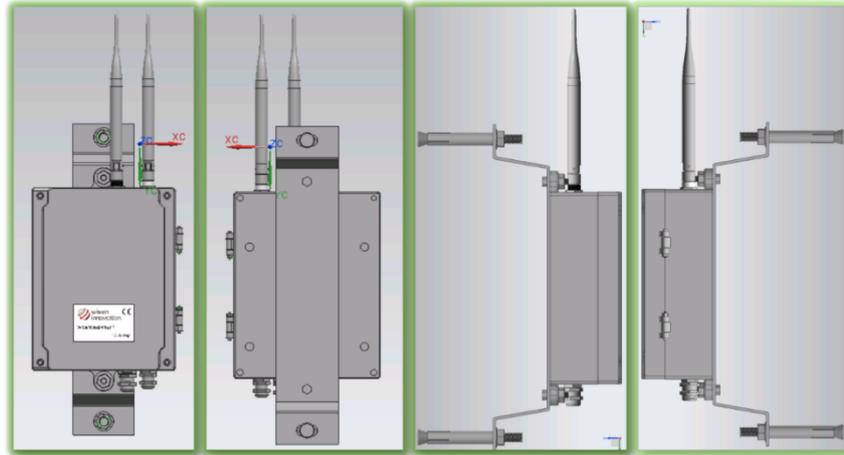

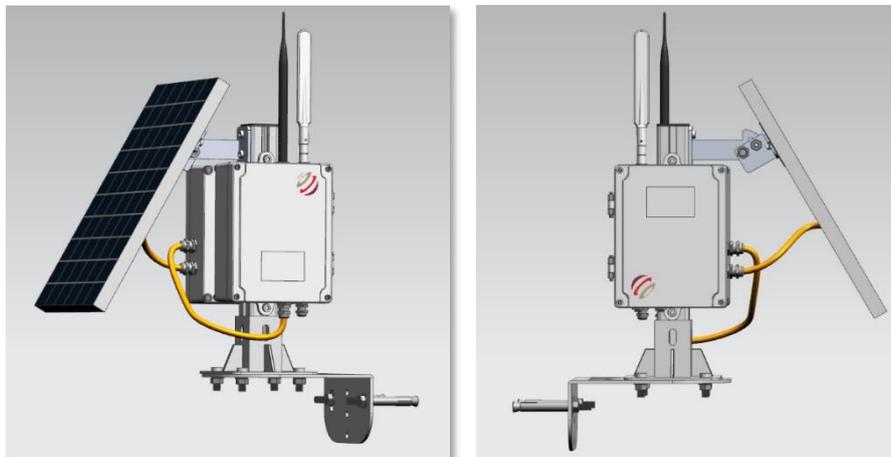Figure. SIM Card Orientation.

Figure. Gateway Fixing Bracket.

Figure. Gateway with M101-Solar Unit & Tower Bracket.