

Technical Datasheet 4G Gateway

Product Overview: -

The 4G Gateway is an advanced networking device designed to provide seamless connectivity and data management capabilities for various applications. With support for 4G LTE connectivity, cloud connectivity via MQTT protocol, and robust storage options, it offers a comprehensive solution for remote monitoring and control systems. Equipped with Modbus RS485 port and micro Sim compatibility, it caters to a wide range of industrial and IoT applications. The intuitive web-based UI interface allows for easy configuration and management, making it an ideal choice for both professionals and enthusiasts.



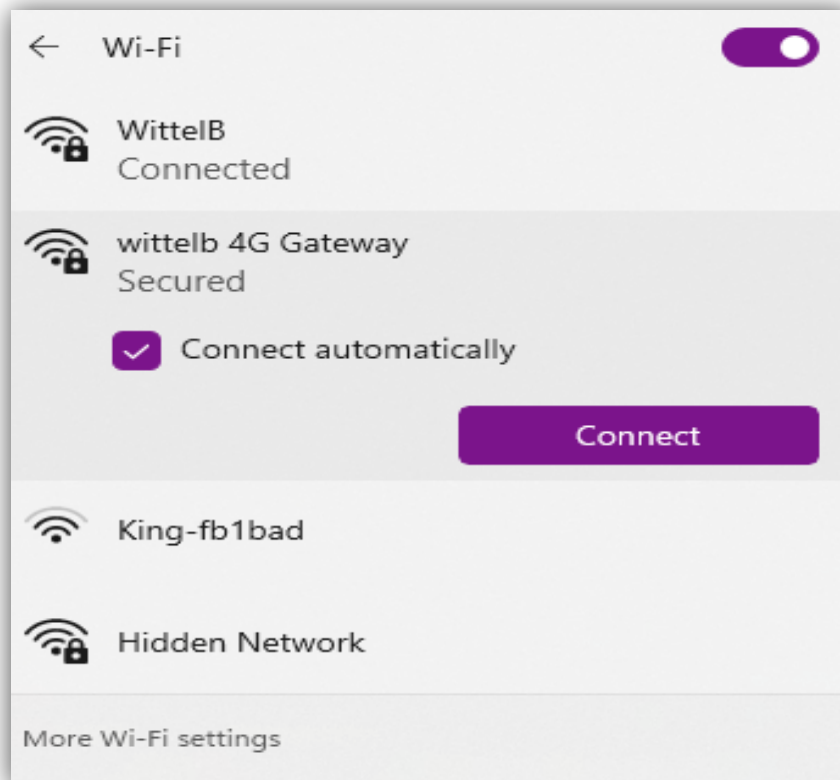
Specifications

General –

- **4G LTE Connectivity:** Utilizes 4G LTE technology for reliable and high-speed internet access.
- **Cloud Connectivity (MQTT):** Seamlessly connects to cloud platforms using the MQTT protocol for efficient data transmission and management.

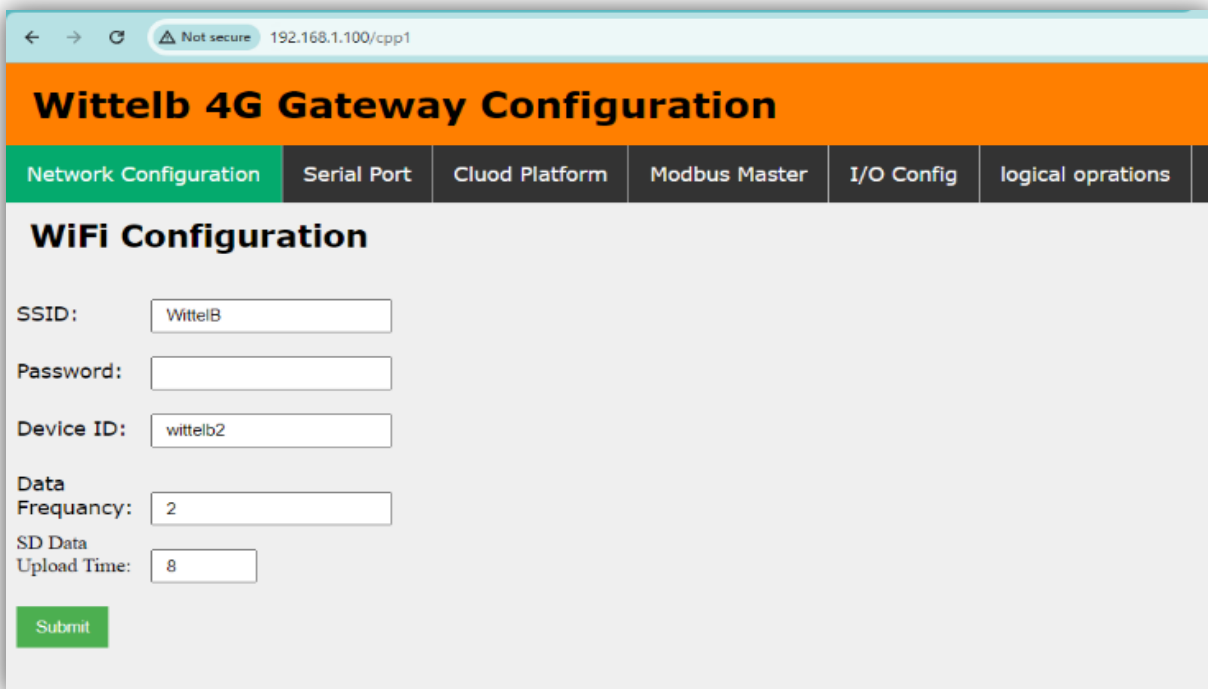
- Event Storage:** Offers on board event storage, capable of storing up to 50,000 events or more. Includes an external memory card slot for easy data retrieval in the event of 4G network issues.
- Modbus RS485 Port:** Features 1 port of Modbus RS485 for integration with industrial control systems and sensors.
- GPS Location Data:** Provides GPS location data for monitoring of remote equipment.
- Micro Sim Compatibility:** Supports micro Sim card for flexible and convenient connectivity option.
- Digital and Analog I/O Ports:** Multiple digital and analog input/output ports can be provided as per custom requirements.
- Web-based UI Interface:** Intuitive web-based user interface for easy configuration, monitoring, and management.
- Dimensions:** 110 mm L x 80 mm B x 50 mm H.
- Power:** Input Power – 15-40 VDC, Typical – 12V DC @ 150mA.
- Operating Temperature:** 0 – 60C (32 ~ 140F).
- Storage Temperature:** 20 - 70C (-4 ~ 158F).
- Storage Humidity:** 5 ~ 95 % RH, non – Condensing.

Configuration Settings: -



- Power up the module by connecting a 12-24 V DC supply.
- Insert the SIM card into the designated slot.
- Place the Micro SD card into its designated slot.
- Connect MODBUS RTU Multiple Slave devices (up to 31) to the A & B Terminal Of Module.
- Access the module's configuration hotspot
(ID: Wittelb-4G-GATEWAY, PASS: 123456789).
- Default IP Address of Module is “192.168.1.100/cpp1”.
- Upon entering the provided IP address, a configuration webpage Pages will be accessible.

Page1:-



The screenshot shows a web browser window with the address bar displaying "192.168.1.100/cpp1". The page title is "Wittelb 4G Gateway Configuration". Below the title is a navigation bar with tabs: "Network Configuration" (highlighted in green), "Serial Port", "Cluod Platform", "Modbus Master", "I/O Config", and "logical oprations". The main content area is titled "WiFi Configuration" and contains the following fields:

- SSID:
- Password:
- Device ID:
- Data Frequency:
- SD Data Upload Time:

A green "Submit" button is located at the bottom left of the configuration area.

- Enter SSID and Password and reset the module to Connect to The Local Network.

Page2:- On second page you can set device Baud rate,Parity,Data Bits for RS485 Communication

Wittelb 4G Gateway Configuration

Network Configuration	Serial Port	Cloud Platform	Modbus Master	I/O Config	logical oprations
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Rs485 Configuration

Baud Rate:

9600

▼

Data bits:

8

▼

Parity:

None

▼

Stop Bits:

1

▼

Save RS485 Configuration

Page3:-

- Navigate to page 3 on the cloud platform.
- Input the Host IP or Domain.

Wittelb 4G Gateway Configuration

Network Configuration	Serial Port	cloud Platform	Modbus Master	I/O Config	logical oprations
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Cloud configuration

Host IP or Domain:

broker.emqx.io

Port:

1883

Publish Topic:

wittelb/001

Publish Topic SD :

wittelb/001

Subscribe Topic:

wittelb/002

User Name:

emqx

Password:

public

Save Cloud Settings

- Enter the port Number.
- Enter the topics for publishing and receiving messages.
- Provide a username and password if required.
- Allow a few seconds for the module to restart and establish a connection to MQTT.

Page4:-

- Go to page 4 on the Modbus Master interface.
- Input the name and slave address for the designated slave.
- Specify the register address from which you want to read slave data.
- Indicate the register end address for the slave.
- Enter the function code corresponding to the desired slave.

Wittelb 4G Gateway Configuration

Network Configuration | Serial Port | cloud Platform | **Modbus Master** | I/O Config | logical oprations | About

Name	Slave Address	Register start	Quantity	Function Code	Actions
<input type="text" value="MFM"/>	<input type="text" value="5"/>	<input type="text" value="0"/>	<input type="text" value="50"/>	<input type="text" value="3"/>	<input type="button" value="Delete"/>

Page5:-

- Go to page 5 on the I/O Config interface.

Wittelb 4G Gateway Configuration

Network Configuration | Serial Port | Cloud Platform | Modbus Master | **I/O Config** | Logical Operations

Sr.No	Input/Output	Name	Value
1	DO1	RLY1	
2	DO2	RLY2	
3	DO3	RLY3	1
4	DO4	RLY4	
5	DI1	DI01	1
6	DI2	DI02	
7	DI3	DI03	
8	DI4	DI04	
9	AI1	AI-10-0	250
10	AI2	AI-10-1	197
11	AI3	AI-10-2	213
12	AI4	AI-10-3	227
13	AI1	AI-12-4	552
14	AI2	AI-12-5	2
15	AI3	AI-12-6	
16	AI4	AI-12-7	1

Submit

- You can view real-time values of both analog and digital inputs on the baseboard.
- Additionally, you have the option to assign specific names to each input/output (I/O) as needed.

Page6:-

Wittelb 4G Gateway Configuration

Network Configuration | Serial Port | Cloud Platform | Modbus Master | I/O Config | **Logical Operations**

Select Relay:

Relay 1

Input1:

OFF

Submit

Select Relay:

Relay 2

Input1:

OFF

Submit

Select Relay:

Relay 3

Input1:

OFF

Submit

Select Relay:

Relay 4

Input1:

OFF

Submit

- Navigate to page 6 on the Logical Operations interface.
- Here, you can configure logical AND and OR operations for each of the 4 relays.
- You have the flexibility to assign any two digital inputs to a relay and choose the desired logical operation.
- Additionally, you can assign an analog input to a relay and define minimum and maximum threshold values for relay operation.
- If you prefer not to use any logical operation, simply select the "OFF" option for input one.

Select Relay:

Relay 2

Input1:

DI3

Logical Operation:

AND

Input1 State:

High

Input2:

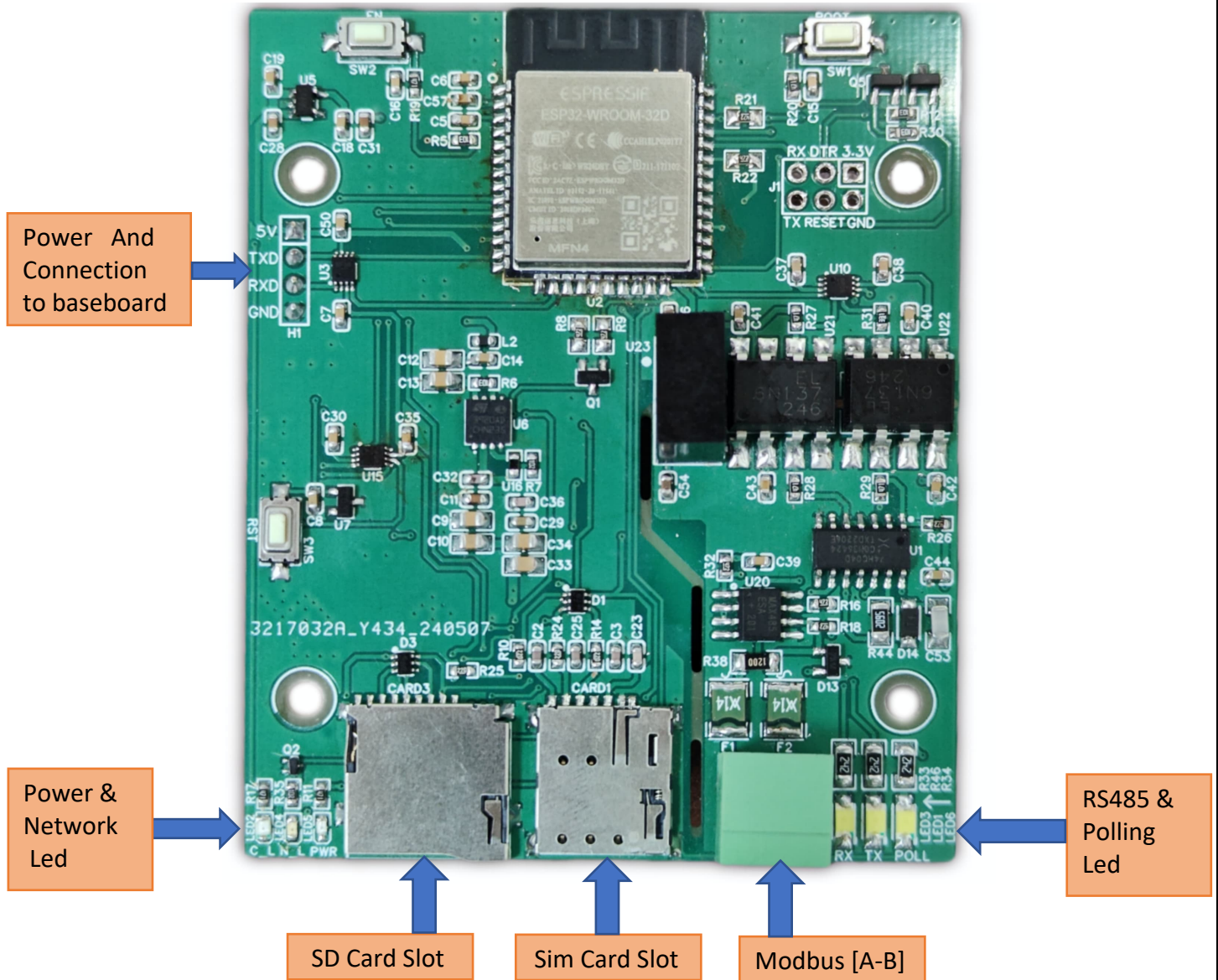
DI1

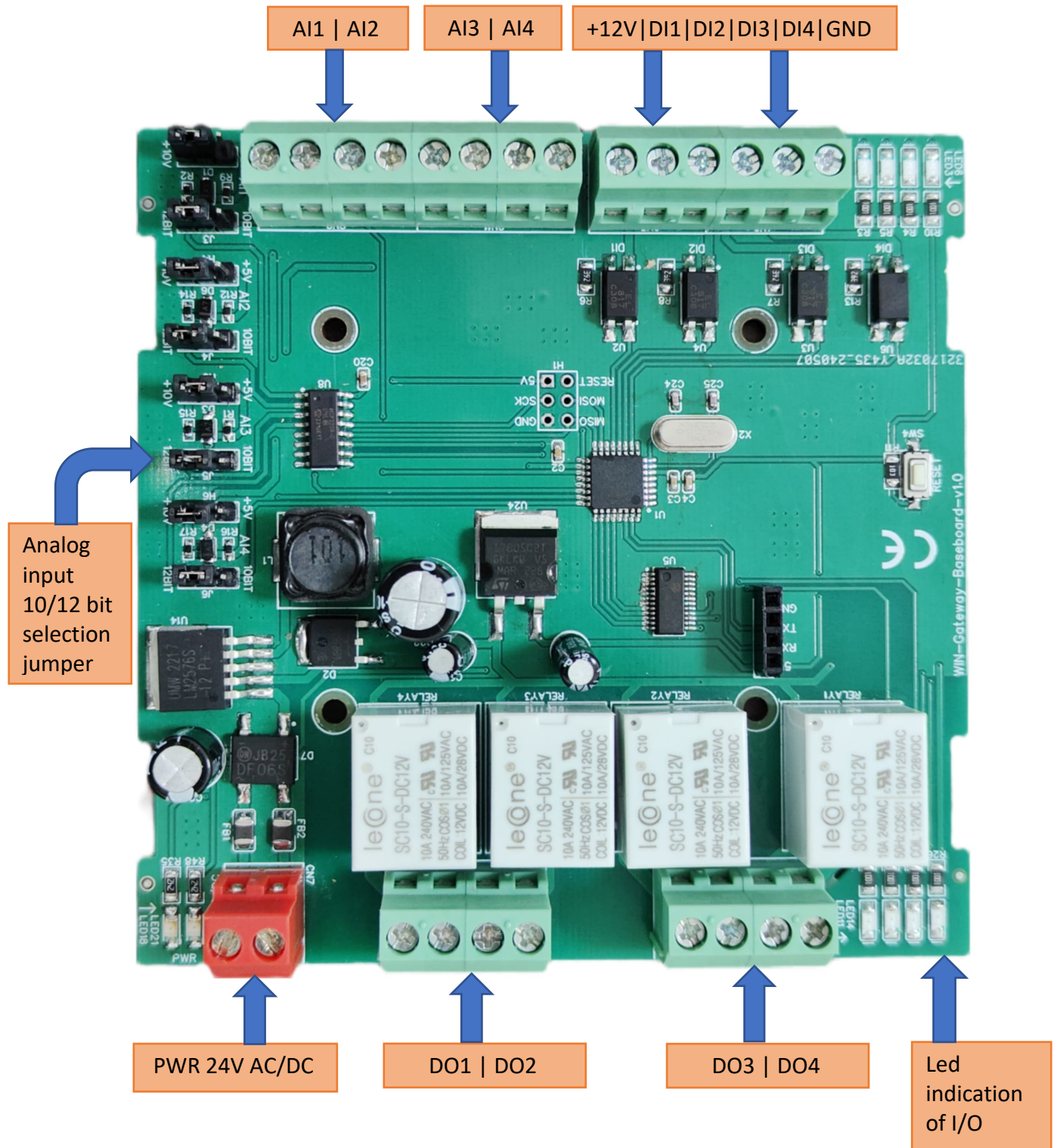
Input2 State:

High

Submit

4G Gateway connection Diagram:





Additional Features: -

Communication ports are isolated

Input power reverse polarity safety

ESD Safety IEC 61000-4-2, $\pm 30\text{KV}$ contact, $\pm 30\text{KV}$ air

EFT IEC 61000-4-4, 50A (5/50ms)

400V isolation.

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