Technical Datasheet 4G/TCP Gateway

Product Overview: -

The Gateway is a versatile networking device designed for seamless data transmission over both **4G LTE** and **TCP/IP** networks. This dual-connectivity feature ensures reliable communication, allowing data to be sent via cellular (4G) or wired TCP, depending on network availability or user preference. With MQTT cloud connectivity, Modbus RS485 support, and micro SIM compatibility, it is ideal for industrial and IoT applications. The intuitive web-based UI simplifies configuration and management, making it a powerful solution for remote monitoring, data logging, and real-time control in diverse environments.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.

- **Web-based UI Interface:** Intuitive web-based user interface for easy configuration, monitoring, and management.

- **Modbus RTU to TCP Conversion:** Built-in capability for seamless data conversion between RS485 and Ethernet networks.

- **Dimensions:** 110 mm L x 110 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: -
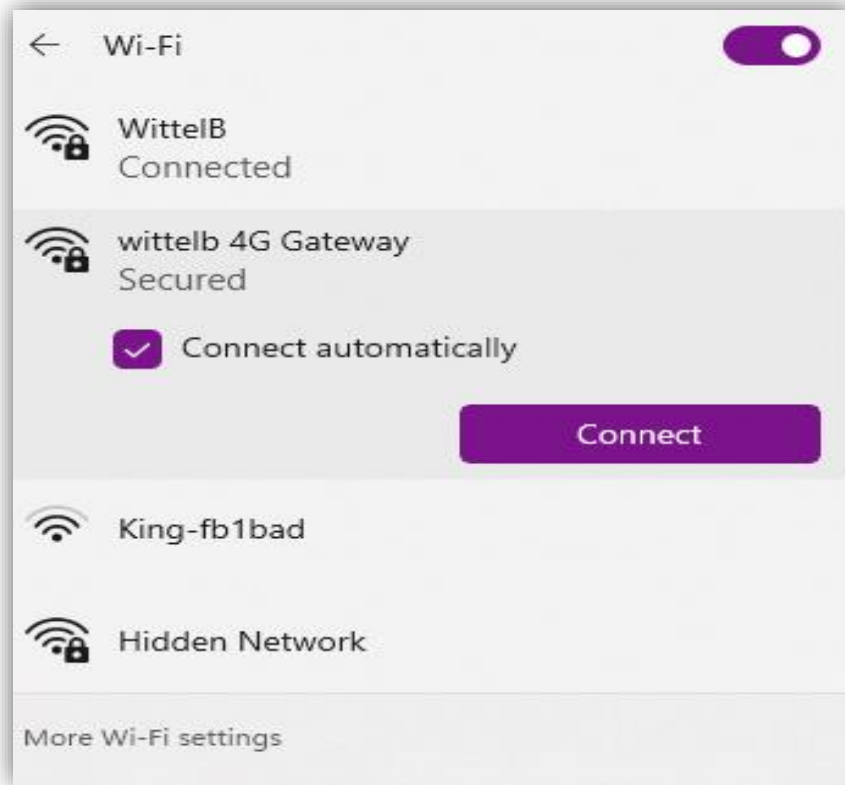
- Power up the module by connecting a 12 V DC supply.
- Insert the SIM card into the designated slot.
- Place the Micro SD card into its designated slot.
- Connect MODBUS RTU Multiple Slave devices (up to 5) to the A & B Terminal Of Module.
- Access the module's configuration hotspot
  (ID: Wittelb-4G-GATEWAY, PASS: 123456789).
- Default IP Address of Module is "**192.168.4.100/cpp1**".
- Upon entering the provided IP address, a configuration webpage Pages will be accessible.

Page 1: -

Wittelb 4G Gateway Configuration

| Network Configuration | Serial Port | Cluod Platform | Modbus Master | I/O Config | logical oprations |

WiFi Configuration

SSID: WittelB

Password:

Device ID: wittelb001

Data Frequancy: 2

SD Data Upload Time: 4

Submit

TCP/IP Configuration

MAC ID: 08 : B6 : 1F : 9E : 9B : D0

IP: 192 . 168 . 1 . 254

MASK: 255 . 255 . 255 . 0

GW: 192 . 168 . 1 . 1

Submit
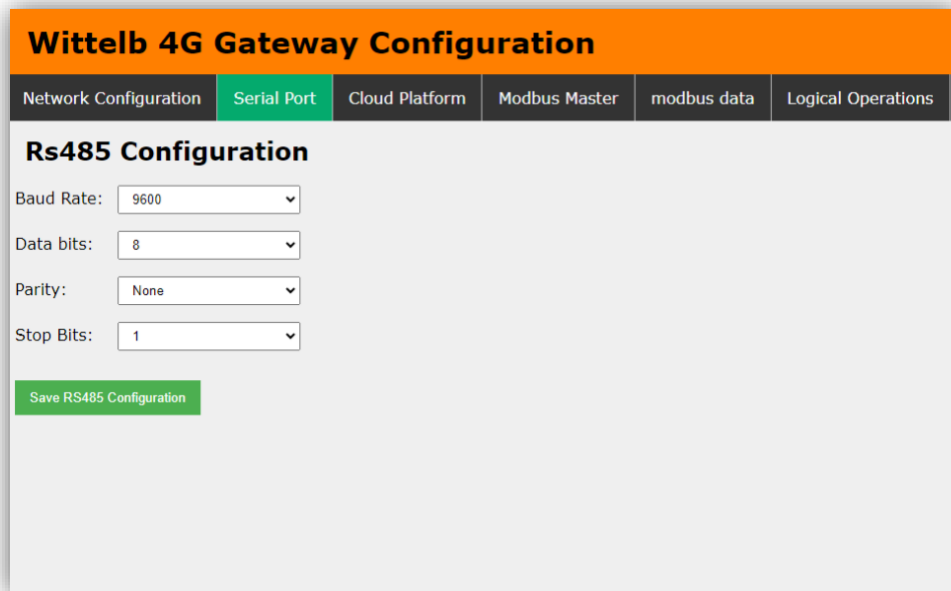
- Enter Device ID (Should be unique for every device).
- Enter data frequency in min to receive data on cloud.
- Enter time to upload SD card data to cloud.
- To connect to local Ethernet network, enter IP, mask, gateway.

Page 2:- 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 | modbus data | Logical Operations |

Rs485 Configuration
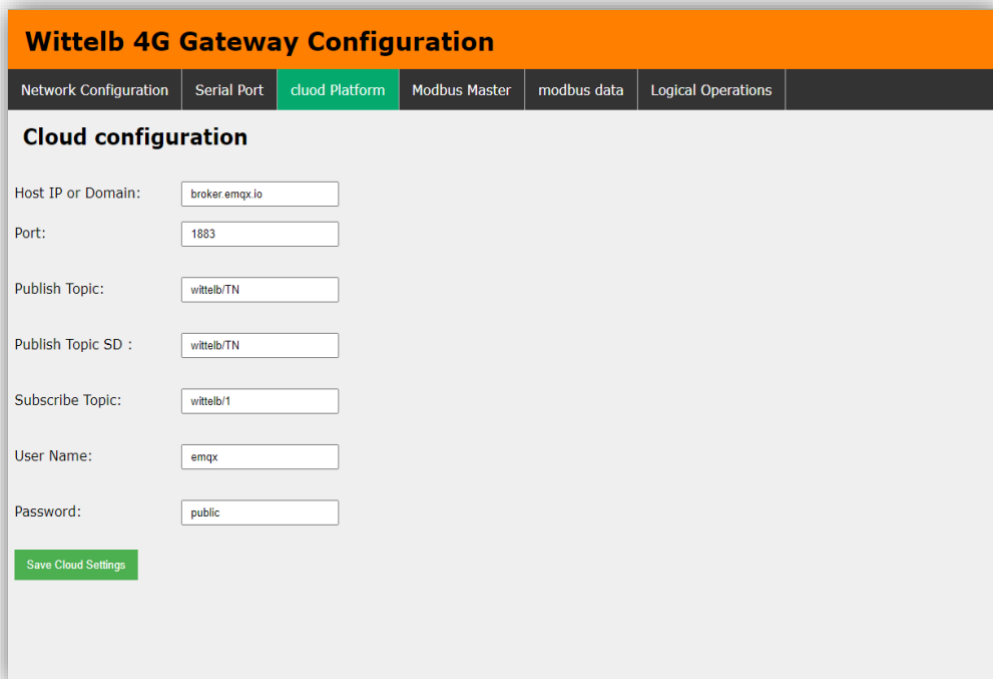
Baud Rate: 9600

Data bits: 8

Parity: None

Stop Bits: 1

Save RS485 Configuration

Page 3:-

- Navigate to page 3 on the cloud platform.

Wittelb 4G Gateway Configuration

| Network Configuration | Serial Port | cluod Platform | Modbus Master | modbus data | Logical Operations |

Cloud configuration

Host IP or Domain: broker.emqx.io

Port: 1883

Publish Topic: wittelb/TN

Publish Topic SD :   wittelb/TN

Subscribe Topic: wittelb/1
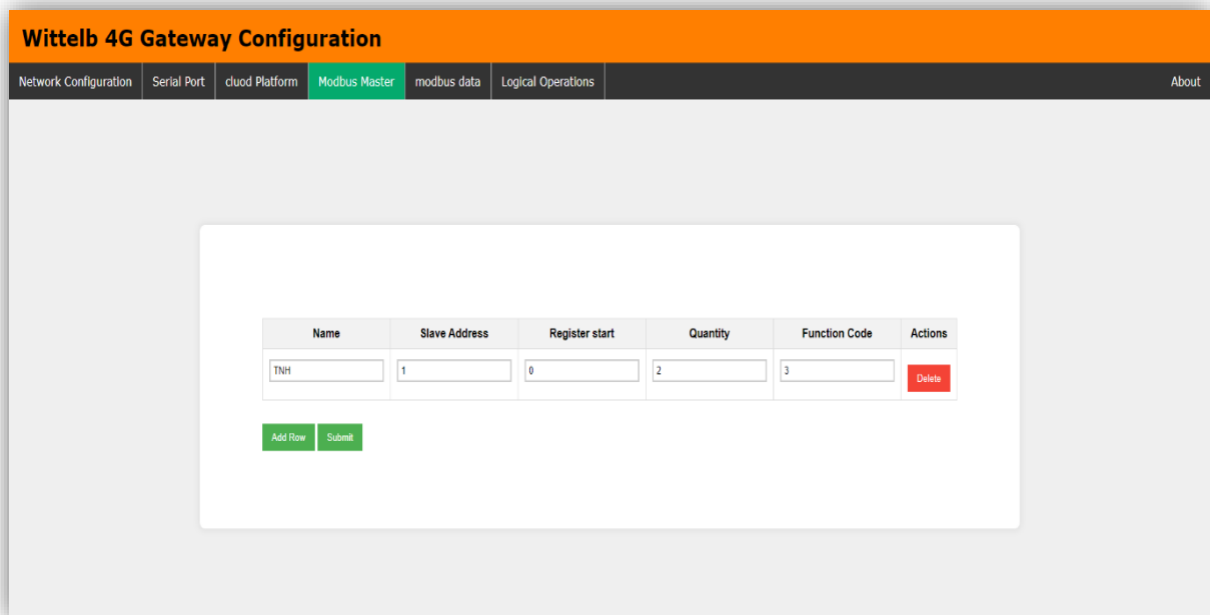
User Name: emqx

Password: public

Save Cloud Settings

- Input the Host IP or Domain.
- 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.

Page 4:-

- 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	cluod Platform	Modbus Master	modbus data	Logical Operations	About

Name	Slave Address	Register start	Quantity	Function Code	Actions
TNH	1	0	2	3	Delete

Add Row   Submit

Page 5:-

- On page 5, you can query each slave to retrieve real-time data.
- You can also rename the register to match your data point name.

Page 6:-

- On page 6, set the offset value to the actual value.
- Enter the slave ID and specify the desired arithmetic operation.
- Input the register address configured on the previous page.
- Enter the offset value, and the data will be sent to your cloud.

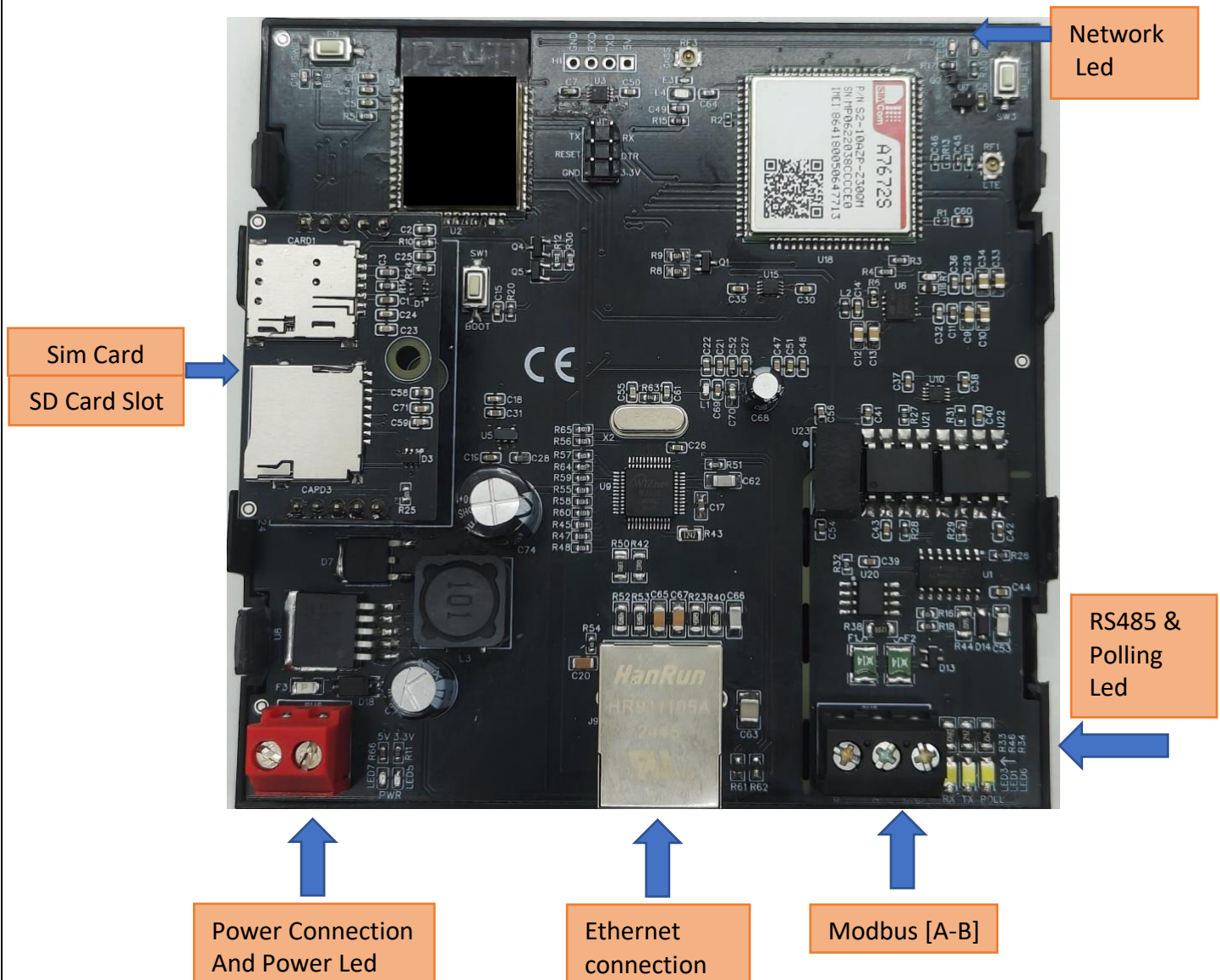- The above image shows data after performing the arithmetic operation with the Offset value applied

4G Gateway connection Diagram: -

Network Led

Sim Card

SD Card Slot

RS485 & Polling Led

Power Connection And Power Led

Ethernet connection

Modbus [A-B]

Additional Features: -

Communication ports are isolated

Input power reverse polarity safety

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

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

400V isolation.

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