SenseLiveX7700D/7900

LoRa Gateway & Modbus

RTU to JSON

Configuration Datasheet

LoRa to RS232/485/442&TCP/IP

Catalogue

1. Introduction:-

SLX7700D-7900: LORA enables long-range, low-cost wireless communication without monthly fees, outperforming WiFi and Zigbee in distance. The LORA devices use the SX1287 chip with -140dBm sensitivity and +20dBm power, achieving up to 8km outdoor range with low power consumption.

- **SLX7700D (Serial to LORA)**: Supports RS232/485/422 for wireless serial communication.
- **SL7900 (Ethernet to LORA)**: Connects LORA to the Internet, enabling Modbus TCP, JSON, and TCP/IP data transfer.

2. Technical Parameters:-

Data	Working voltage	DC9~24V
	Working current	9700：30mA@12V 9743：160mA@12V
	Environment Temperature	-40℃~85℃
	Environment humidity	< 95%RH
	Respond speed	The default wireless configuration of the 9600bps takes 70 milliseconds to send and receive 1 byte of data。
Wireless Communication	Transmit Distance	The outdoor area has no shelter of 6km~8km, and the indoor area crosses about 5 floors。
	Frequency range	410MHz~525MHz
	wireless channel	115
	Receiving sensitivity	-140dbm
	Transmission power	20dbm

	Modulation method	LoRa™ Patented modulation technology
	Wireless Connection	External SMA male antenna, suction cup antenna 1 meters; Working frequency： 490MHz
cable communication	Serial Port Data	Baud Rate：1200~115200bps；Check Bits：None, Even, Odd；Digit 8；Stop bits 1。
	Ethernet Protocol	（Only 7900 support TCP/IP protocol） ETHERNET、 IP、 TCP、 UDP、 HTTP、 ARP、 ICMP、 DHCP、 DNS
Outline	Interface	485/422：Terminal； 232： DB9；Ethernet：RJ45
	Power Supply	Positive inside and negative outside, standard power socket
	Size	L x W x H =9.4cm×6.5cm×2.5cm

3. Software Installation:-

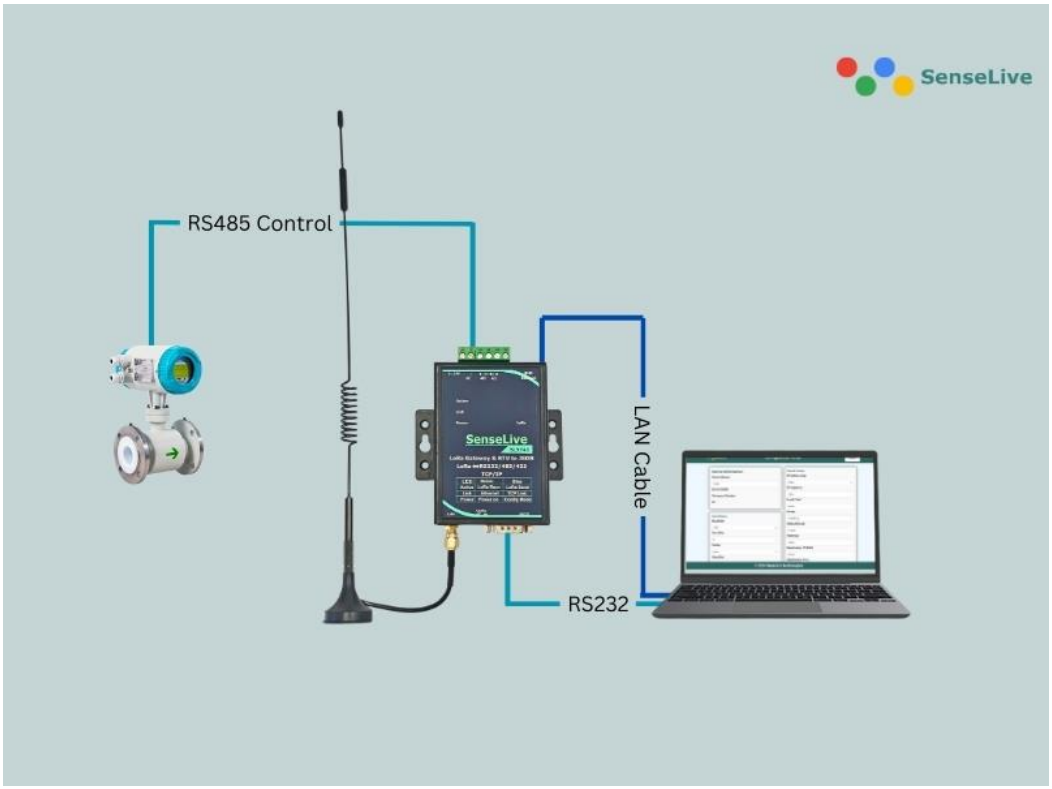
To download Vicrom software just click on the below link

http://senselive.io/download/software/SLVirCom.zip

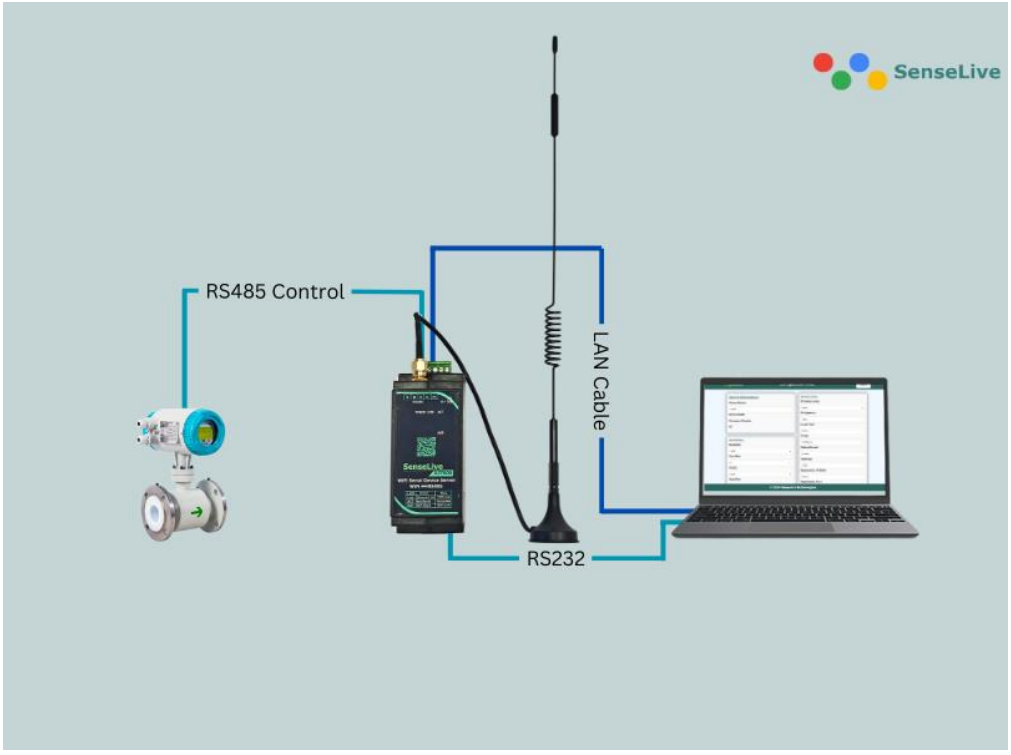
4. Hardware Connection:-

- **Power Supply:** Connect on-site 2-wire power to positive and negative terminals.
- **Serial Port:** Connect based on user device. For the first 485 port, connect 485+ to 1A and 485- to 1B.
- **Network:** Use a standard network cable to connect directly to a computer or through a switch.

1. SLX7900:-



2. SLX7700D:-



5. Parameter Configuration:-

1. After installing Vircom and connecting the hardware, run the software and click on "Device Management."

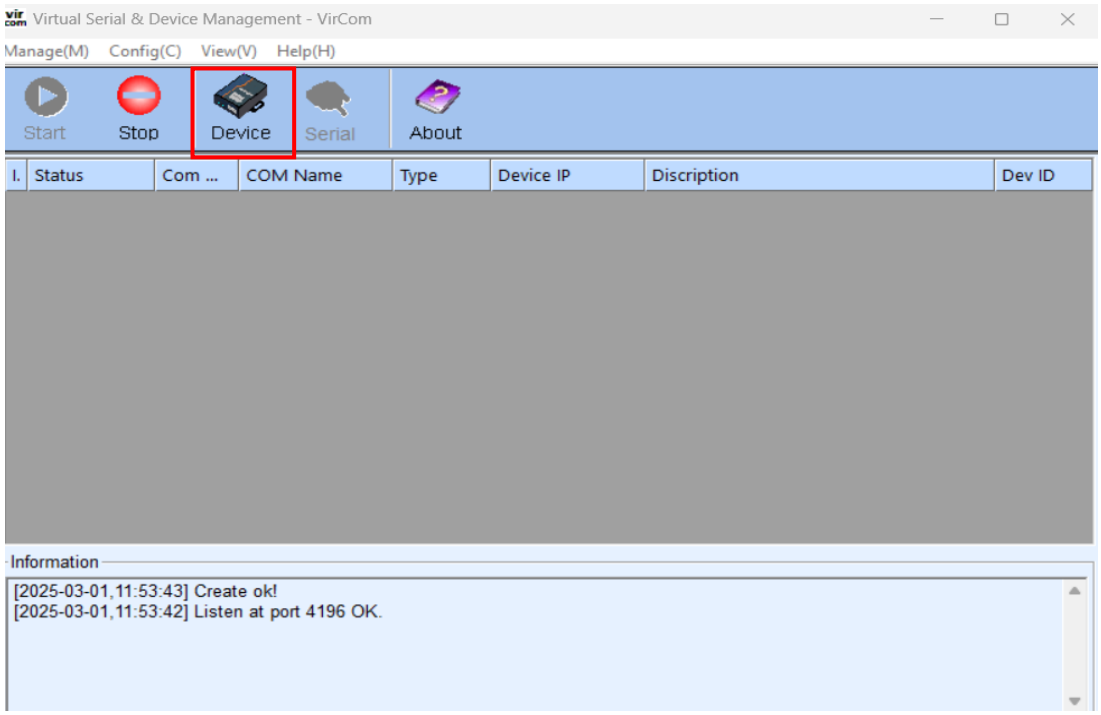


Fig. 1 Vircom Main Interface

2. In device interface click on “Auto search”. As you can see, the connected device is visible in the Device Manager, as shown in Figure 2.
3. Click “Edit Device” to set the parameters.

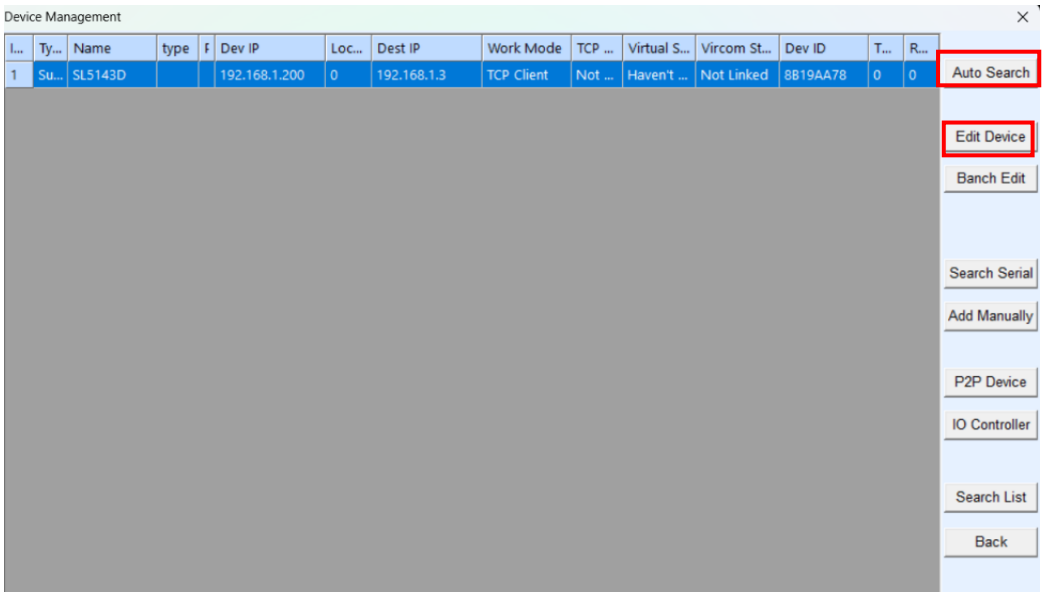


Fig. 2 Device List

4. IN network setting you have to change IP address, port and baud rate and then click “modify setting”.

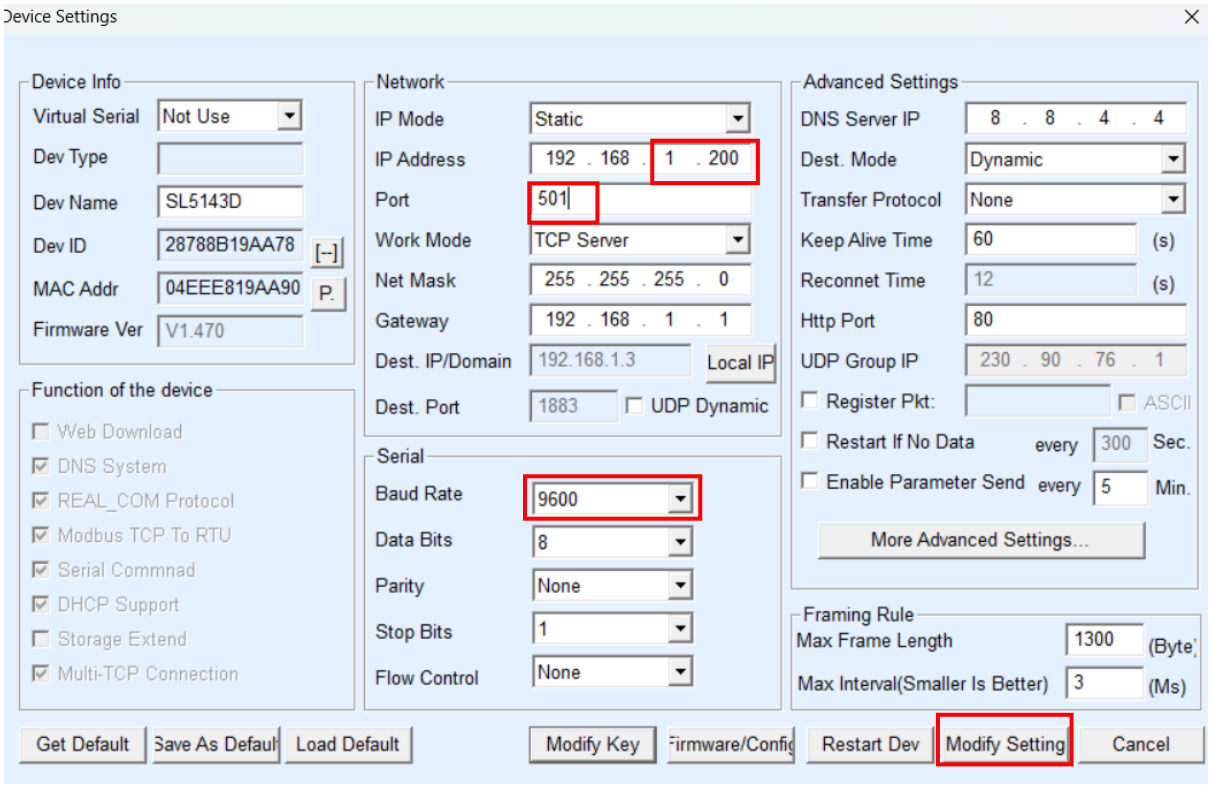


Fig. 3 Device setting

6. Control Panel Setting:-

Open the control panel→ Click Network and Internet → Click Network and Sharing Center → Click Change adapter settings→ Open IPv4 Properties, Right-click on your active network connection (Ethernet/Wi-Fi) → Click Properties.

To Connect to a Network (LAN or Internet)

Add the network credential, it need to be same as your device but last two digit should be different.

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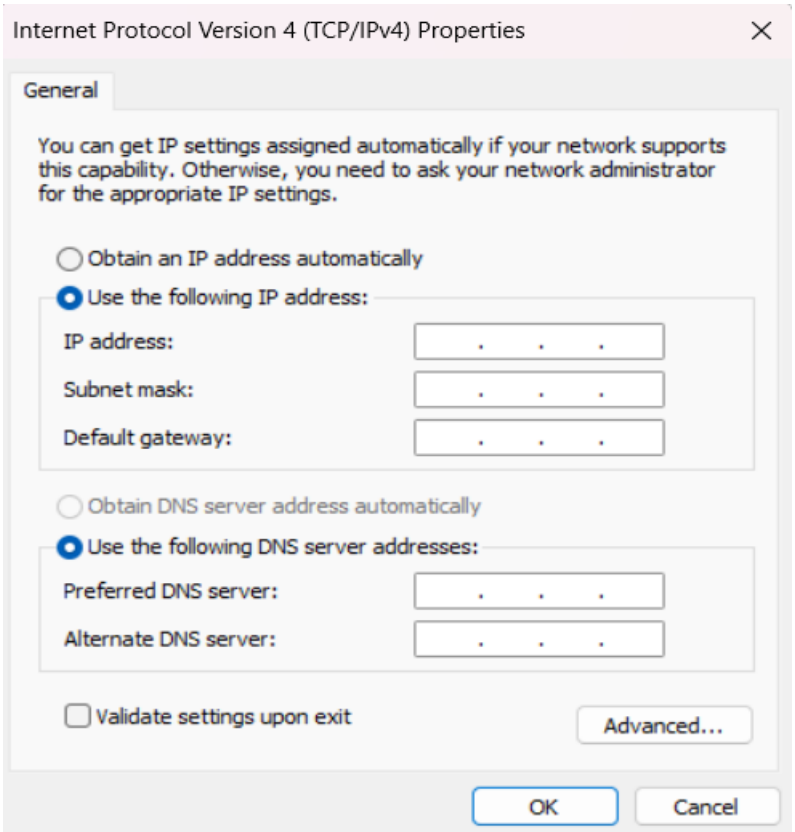

Fig.4 To Connect to a Network (LAN or Internet)

7. Modbus Communication Settings :-

1. In advance setting, set transfer protocol as Modbus_TCP protocol.

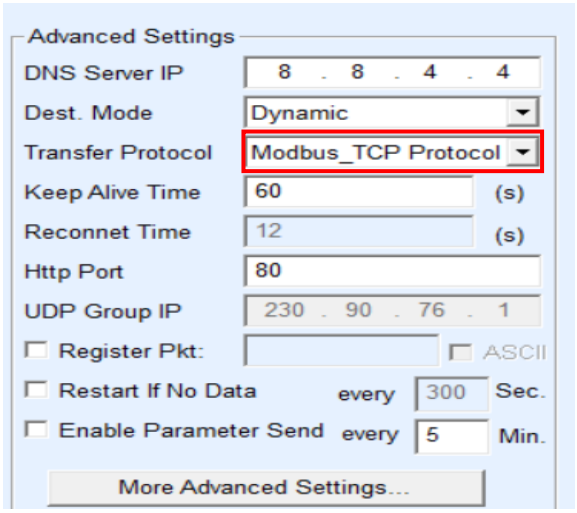

Fig.5 Enable Modbus TCP Function

2. In network setting, set work mode as TCP server and then click on “modify setting”.

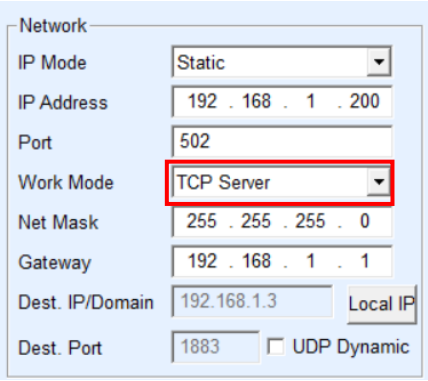

Fig.6 Modbus TCP as client.

8. MQTT Communication Settings :-

1. In device setting interface click on firmware configuration as show in fig 7.
2. In configuration save location select folder which is created on your PC, as show in fig 8.
3. Then click on MQTT configuration.

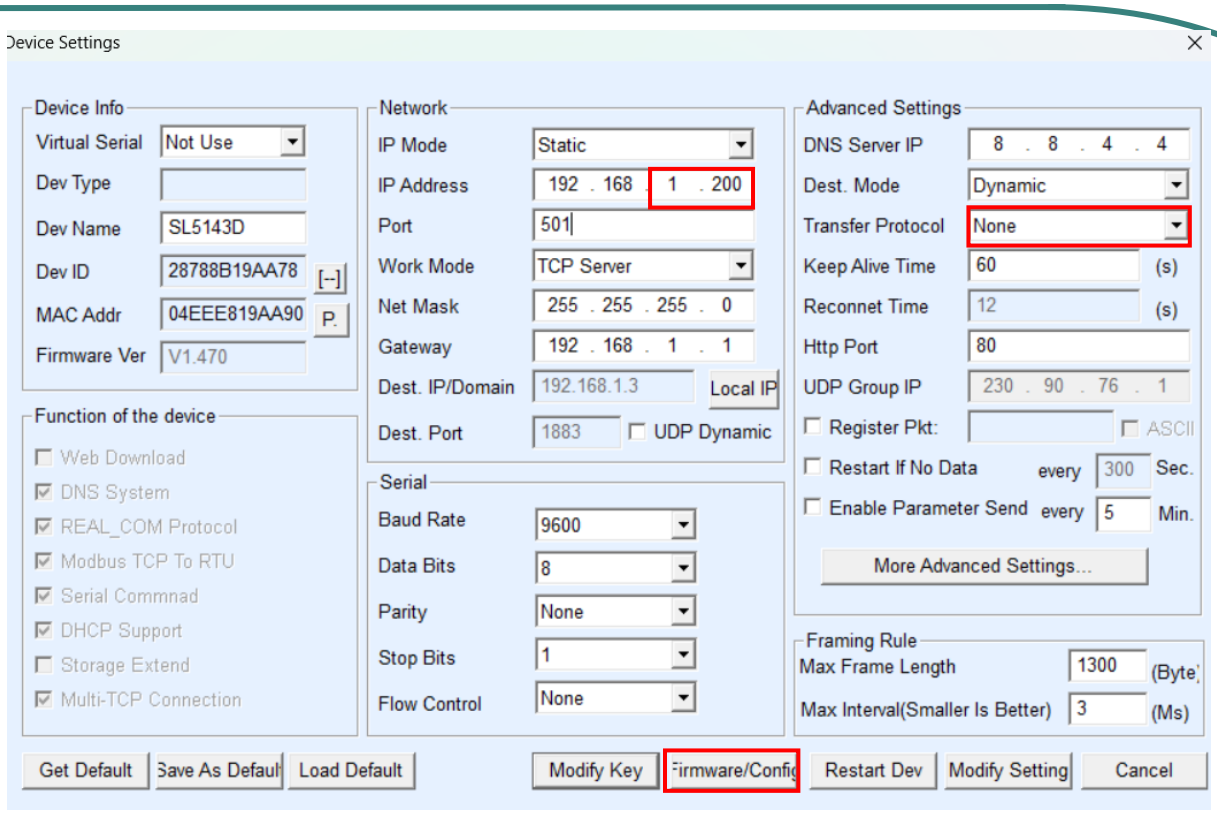

Fig.7 Device Setting

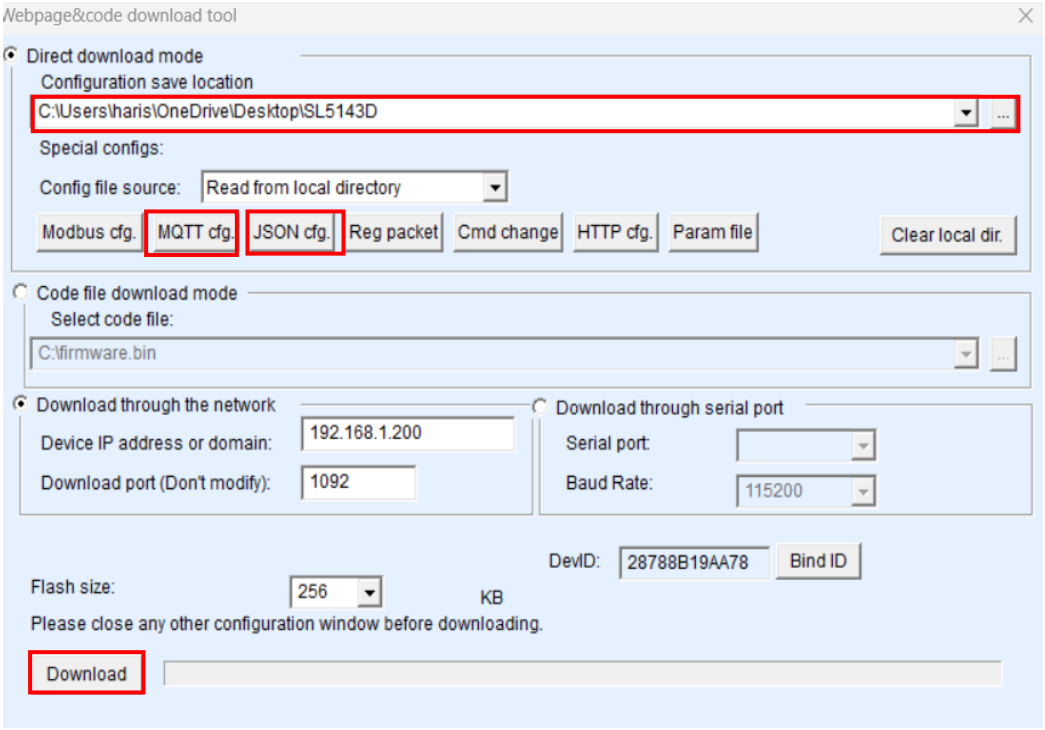

Fig.8 firmware configuration

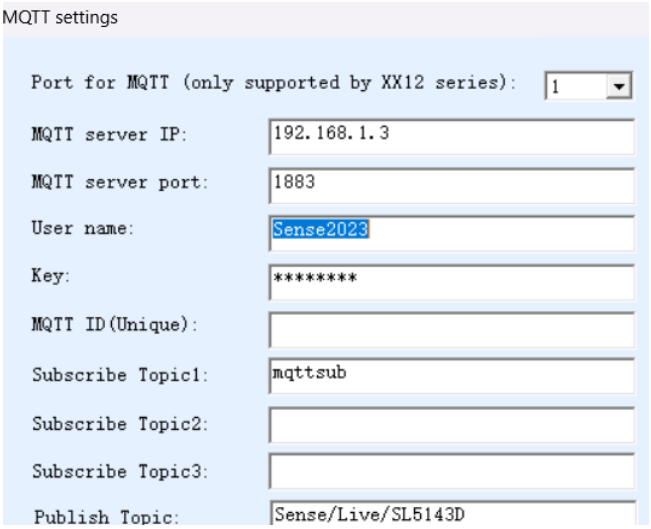

Fig.9 MQTT Setting

4. Configure the MQTT Broker, MQTT server IP, port, username, password, subscribe topic, publish topic and save it, then click on ”Download” as you see in fig 8 .

9. JSON Configuration:-

1. After configuring MQTT, return to the firmware configuration interface and click on the JSON configuration, as shown in Figure 8, Download JSON.
2. To set (water, energy) meters parameter, Click on the “JSON upload”.
3. Add slave address.
4. Add the corresponding JSON keyword to store multiple readings of the energy meter. This keyword can be a number or a character, depending on the energy meter.

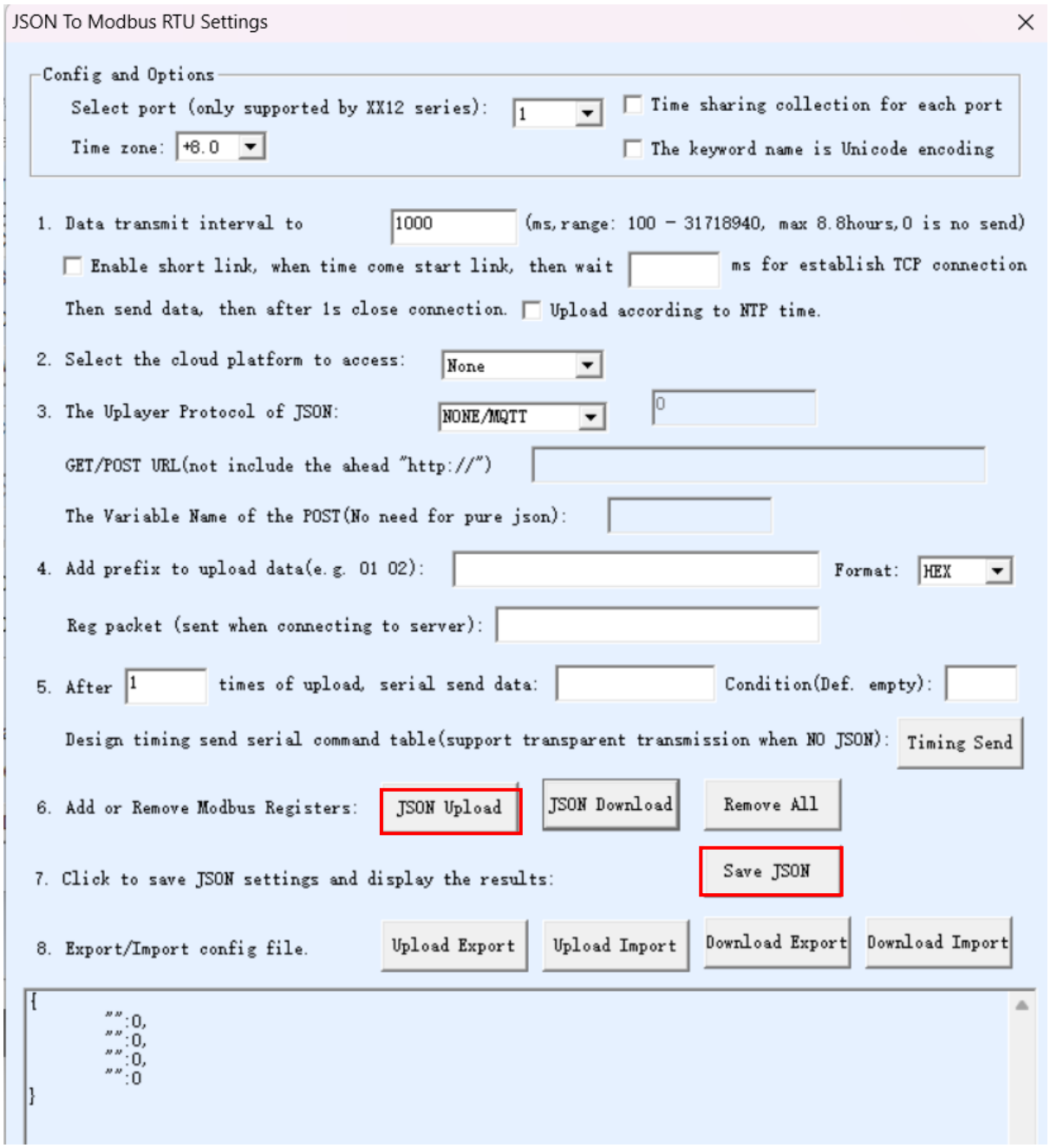

Fig.10 MQTT Setting

5. Add the Modbus function code so that you know which number corresponds to which function.
6. Add register address as per energy meter.

7. Then, click on “Enter Next.” The register address will increase by 1, and you must assign the corresponding JSON keyword one by one after every click.
8. Click on “Save and Exit.” The saved JSON parameters will be visible. Then, go back to firmware configuration interface and click on “Download as show in fig 8.”

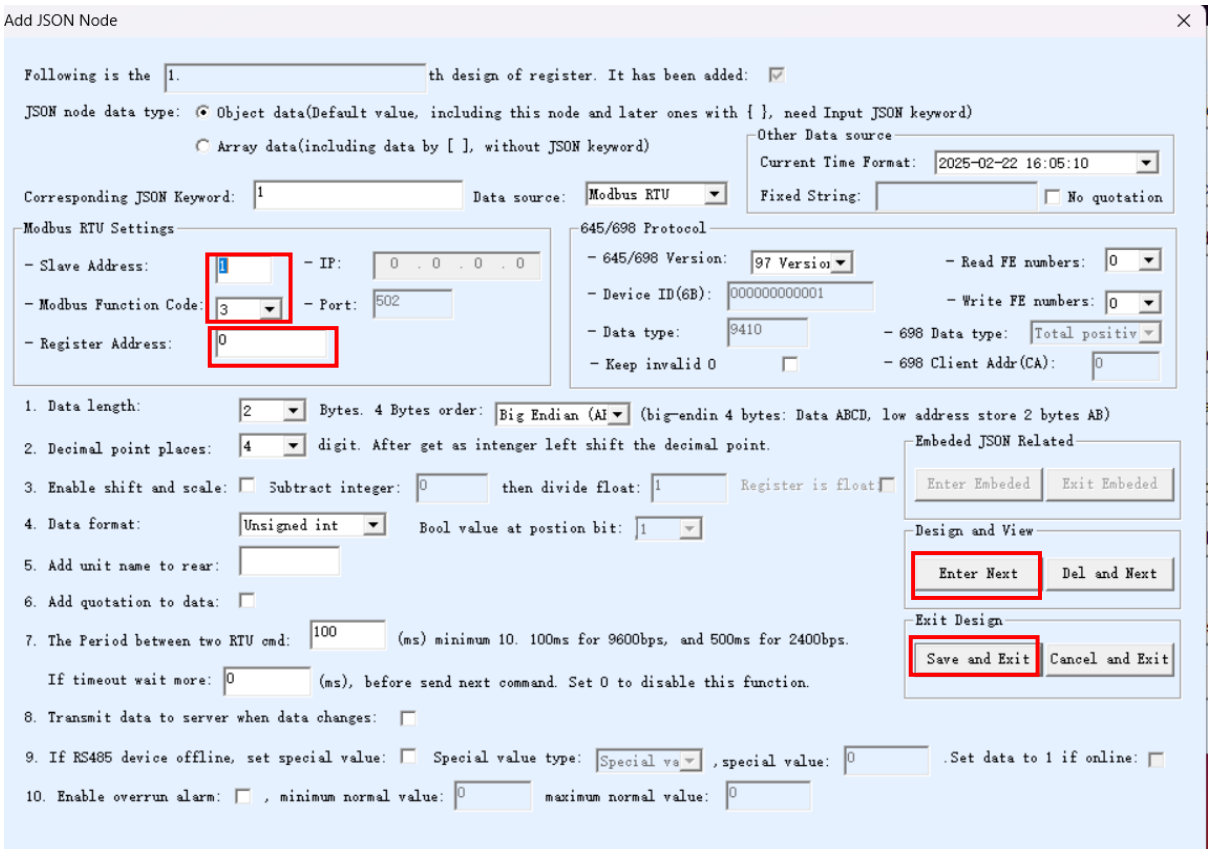

Fig.11 Add JSON node

10.Output on MQTT Explore:-

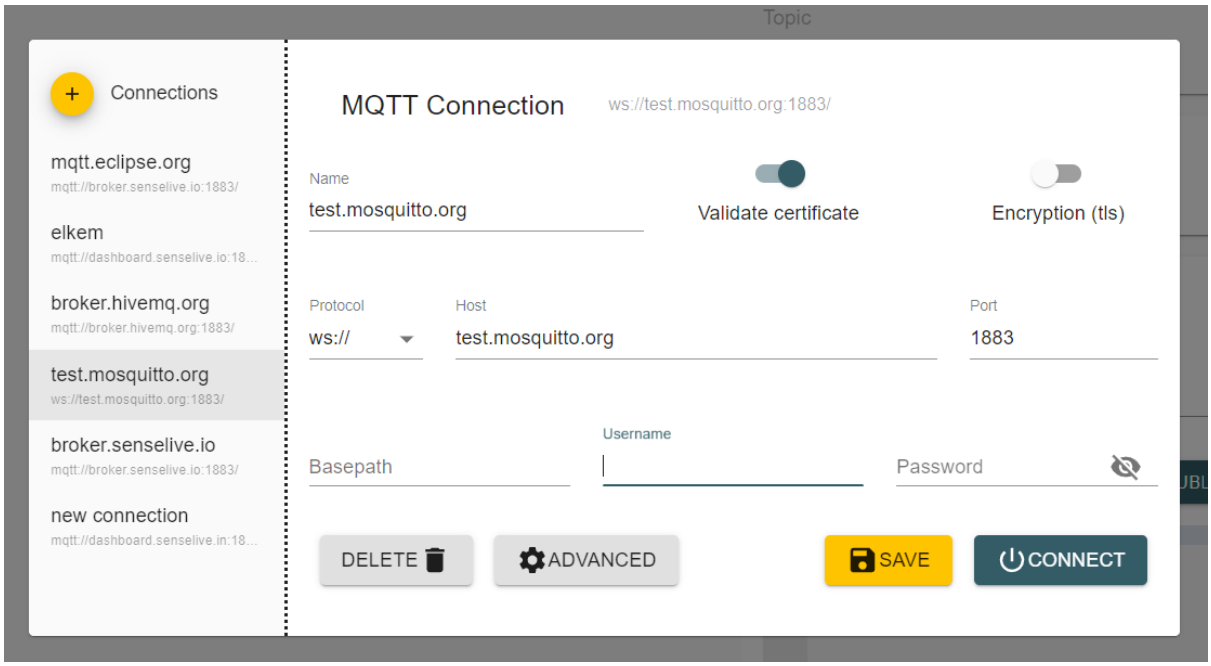

Fig.12 MQTT Explore Application

- You can search the topic which is configure in device.

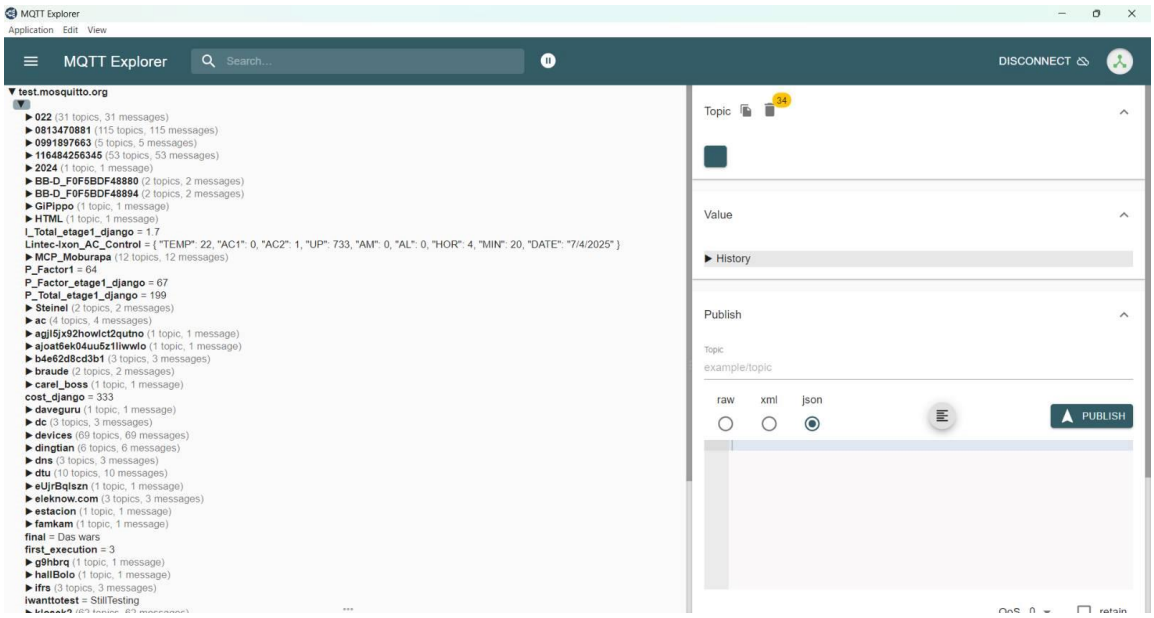

Fig.13 Broker interface