REDZ
SMART COMMUNICATION

redz-sc.com   hi@redz-sc.com
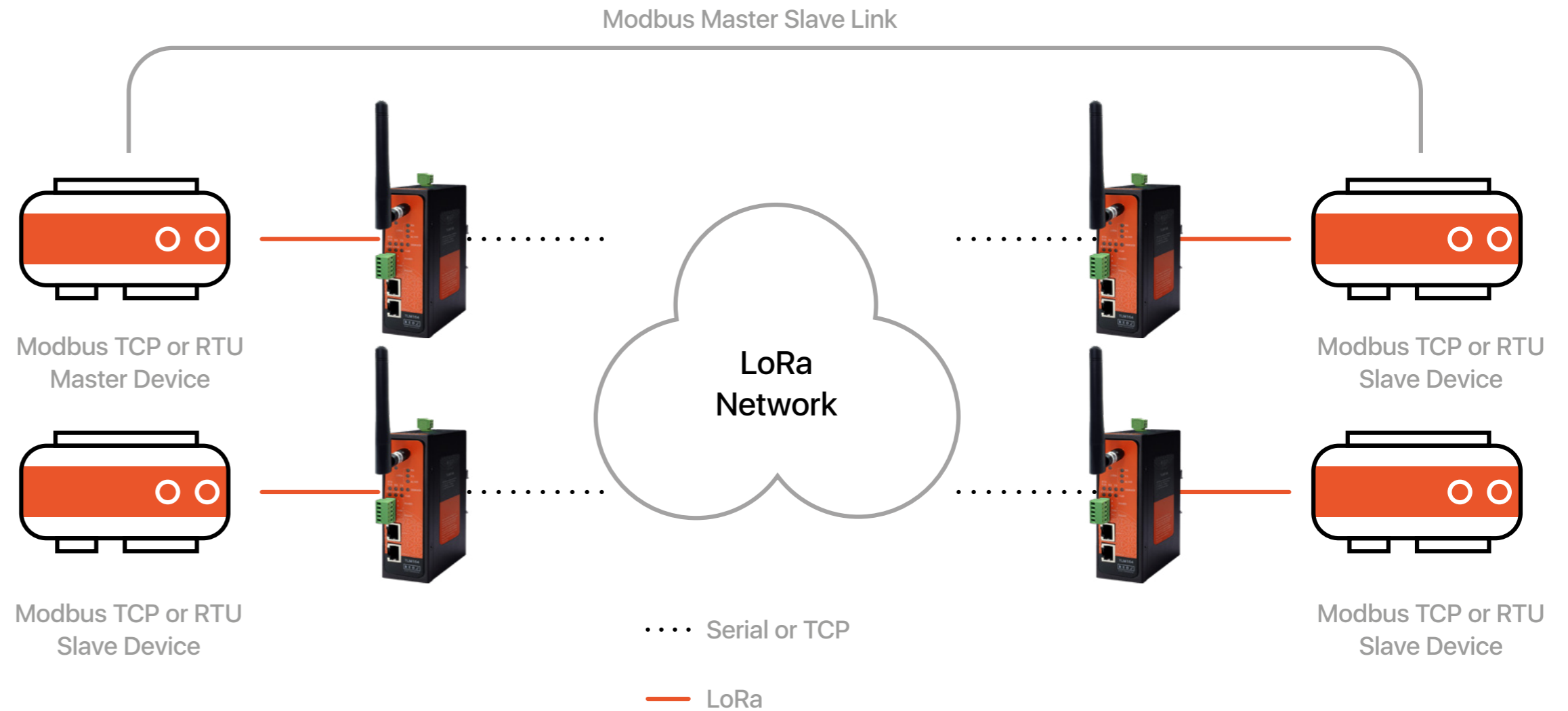
TLM154 LoRa Based Gateway

with 2 × 10/100Base-T(x) Ports,
1 × RS232 and 1 × RS485 Serial Ports

TLM Series LoRa Based RF Gateways are designed for industrial-grade Radio Frequency (RF) communication and particularly for facilities of rugged industry and infrastructure

Modbus Master Slave Link

Modbus TCP or RTU Master Device

Modbus TCP or RTU Slave Device

LoRa Network

Modbus TCP or RTU Slave Device

Modbus TCP or RTU Slave Device

····· Serial or TCP

——— LoRa

TLM Series LoRa Based RF Gateways are tailored to perform various features such as wide temperature range, wide power input range and several connectivity ports. Thus, TLM Series LoRa Based RF Gateways are the best choice for facility management, sewage treatment, power utility, telecommunication, transportation and all other applications that require industrial Radio Frequency (RF) connectivity.

TLM Series RF Gateways can create a LoRa Based RF network and connect Serial and/or ETH based devices with each other. All communication can be done over Radio Frequency network, based on LoRa standard. TLM Series LoRa Based RF Gateways can act as TCP to Lora Gateway as

TCP Server, TCP to Lora Gateway as TCP Client or Serial to LoRa Gateway all in one device. Typical applications: Automated Meter reading, Wireless networks, Home – Building – Industrial Automation, Remote Control, Wireless Sensors, Telemetry, Wireless Alarm and Security Systems...

Main Features

- Supports 2 x 10/100Base-T(X) ports
- Supports Full/Half-Duplex, auto MDI/MDI-X on each port
- Supports 1 x RS232 and 1 x RS485 Serial Connection up to 921600 Baud
- Embedded web interface for ease of use
- REDZ special design, plug and play Server-Client Operating Modes
- Instant switch between operating modes with buttons
- Up to 10 client connection in Server Mode
- DHCP Server Capability
- Easy to follow Device Status on web interface
- 868MHz LoRa based Radio Frequency (RF) Communication
- LoRa Rx Group Address and Device Address Configurable
- LoRa Tx Group Address and Device Address Configurable
- LoRa Signal Bandwidth Configurable: 125, 250, 500 kHz
- LoRa Radio Power Configurable between 5dBm (~3mW) to 20dBm (100mW)
- Easy to follow LoRa data packages on web interface
- Black List and White List based LoRa package filter
- Firmware Upgrade over Web
- 2 firmware storage capability on same device (1 active only)
- 5-60V DC wide range power input
- Wide operating temperature range from -40 to 85 °C
- Rugged Metal IP-40 housing design
- DIN-Rail mounting

Technical Specifications

Connectors and Ports

SMA Antenna Connector for LoRa	1 Standard SMA female interface, 50 ohm
Console Port	Micro USB connection for LOG in 115200 baud
10/100T(X) RJ45 Ports	Ethernet Connection on 2 ports
Serial Ports	5 pin wired Terminal Connection Tx, Rx, GND for RS232 A and B for RS485
Reset Buttons	Reset to Client and Reset to Server Operating modes buttons

Ethernet Switch Technology

Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-T(X) IEEE 802.3x Flow Control
Mac Table	1K MAC address entry
Processing	Store-and-Forward
Memory	448K bits packet buffer memory

LoRa Technology

Based on	STM32L151CxU6Axx Pre-Certified according to EN 300 220
Sensitivity	Down to -138 dBm
Output Power level	Up to 20 dBm
Link Budget	Up to 156 dB
Communication Distance	Up to 15 km (Line of Sight)
Typical Communication Distance Indoor/Urban	> 2 km
Frequency Range	Min 863Mhz, Max 870MHz

Physical & Environmental Characteristics

Enclosure	Metal, IP 40
Dimensions	43 × 95 × 124 (w × d × h) mm
Weight	380 gr
Storage Temperature	– 65 to 150 ℃
Operating Temperature	– 40 to 85 ℃
Operating Humidity	5% to 95% Non-condensing

Power

Input Range	5-60V DC input
Reverse Polarity Protection	Available
Thermal Shutdown and Current Limit Protection	Available

Led Indicators

Power indicator	Power LED
10/100T(X) Indicators	Activity LEDs: ETH1, ETH2 and CKL (Activity of device itself)
LoRa Indicators	Alive (Blinks during normal operation), Tx and Rx of data LEDs
System Indicators	Status LED, Tx and Rx of data LEDs and Server LED (LED ON: Server Operating Mode, LED OFF: Client Operating Mode)
Console Indicators	Tx and Rx of data LEDs

POWER INPUT

RESET TO SERVER

RESET TO CLIENT

Ordering Information

TLM154

868MHz LoRa based gateway,

2 × 10 / 100 T (x) ETH ports,

1 × RS232 & 1 × RS485,

5–60 V DC Power Input

Product Selection

Model	5–60V DC Power input	90–265V AC (100–370V DC), 47Hz to 63Hz AC Power Input	3 Phase AC Power input, 110 V–240 V / 50–60 Hz AC Power Input	2 × 10/100 T(x) ETH ports	1 × RS232 and 1 × RS485 Serial Ports	Instant Switch to Client or Server Operating Modes with Button	BPL (Broadband Power Line) Link
TLM154	●			●	●	●	
TLM254		●		●	●	●	
TLM655			●	●	●	●	●