Y201-R Mini Ethernet DTU Specification



> User Manual and Wiring

> Reference: Y201-R Technical Manual

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1. Overview

Y201-R is the Ethernet model in the Y201 mini DTU family. It bridges serial devices to Ethernet networks and uses a dual-core `240 MHz` MCU, `5 to 36 VDC` wide-range power input, and selectable `RS485`, `RS232`, or `TTL` serial interfaces. The device provides two Socket channels for network communication.

It supports TCP and UDP transparent transmission, HTTP client, MQTT client, and Modbus RTU to Modbus TCP conversion.

Item	Description
Positioning	Serial-to-Ethernet industrial DTU
Processor	Dual-core `240 MHz` MCU
Supply Range	`5 to 36 VDC`
Serial Interface	RS485 / RS232 / TTL, depending on SKU
Network Interface	RJ45 Ethernet
Configuration	Web UI in a browser

Highlights

- Dual Socket channels A and B for multi-center data access
- Modbus RTU to Modbus TCP protocol conversion
- Registration packets, heartbeat packets, and auto-reconnect
- HTTP and MQTT cloud connectivity, including Alibaba Cloud MQTT mapping
- Browser-based configuration with no dedicated PC utility required

2. Ordering Information

2.1 Model Configuration

`Y201-R` is a mini DTU with an RJ45 Ethernet uplink. Serial interface type is selected separately and is not appended to the model number.

For family codes and examples, see Model Groups and Suffixes.

2.2 Configuration

Model	Serial Interface
Y201-R	RS485
Y201-R	RS232
Y201-R	TTL

2.3 Standard Package

1 x Y201-R device, quick guide, warranty information.
Optional accessories: power adapter, serial cable harness, DIN mounting parts.

3. Key Features

1. **Dual-Socket Architecture**: Each serial port maps to Socket A and B for main-link and backup-link separation.
2. **Broad Protocol Coverage**: Supports TCP server/client, UDP server/client, HTTP client, and MQTT client.
3. **Modbus Gateway**: Can switch between transparent mode and Modbus RTU to Modbus TCP conversion mode.
4. **Registration Packet Modes**: Supports `FIRST`, `EVERY`, and `ALL`.
5. **Heartbeat Keepalive**: Supports both network heartbeat and serial heartbeat for online status monitoring.

6. **Auto Reconnect**: TCP client reconnects automatically on connection failure, with about a `1 s` retry interval.
7. **Web-Based Maintenance**: Default address `192.168.10.8`, default login `admin/admin`.

4. Technical Specifications

4.1 Electrical and Hardware

Parameter	Specification
Processor	Dual-core `240 MHz` MCU
Supply Voltage	`5 to 36 VDC`
Serial Interface	RS485 / RS232 / TTL, depending on model
Baud Rate	`9600 bps` (default)
Network Interface	RJ45 Ethernet

4.2 Network and Protocol Capability

Item	Specification
Socket A	TCP server / TCP client / UDP server / UDP client / HTTP client / MQTT client
Socket B	TCP client / UDP server / UDP client
TCP Server Concurrency	Up to 8 clients per port
TCP Client Behavior	Connects automatically after IP acquisition and reconnects on failure
HTTP	Supports HTTP 1.0 / 1.1, GET / POST / AUTO
MQTT	Supports standard MQTT and Alibaba Cloud MQTT format

4.3 Gateway and Data Functions

Item	Description
Modbus Gateway	Disabled by default; converts Modbus RTU and Modbus TCP when enabled
Registration Packet Modes	`FIRST` / `EVERY` / `ALL`
Heartbeat Direction	Network heartbeat for TCP/UDP client, serial heartbeat for serial side
AT-State Impact	Heartbeat transmission pauses while the device is in AT command mode

5. Interfaces and Indicators

5.1 Hardware Interfaces

Interface	Description
Power Input	Device power input
Serial Port	RS485 / RS232 / TTL, depending on SKU
RJ45 Port	Network access and debugging

5.2 Status and Maintenance

- LEDs indicate power, runtime status, and data activity.
- The Web UI shows status, system information, and port configuration.
- Parameters must be saved and then applied by reboot.

6. Installation and Access

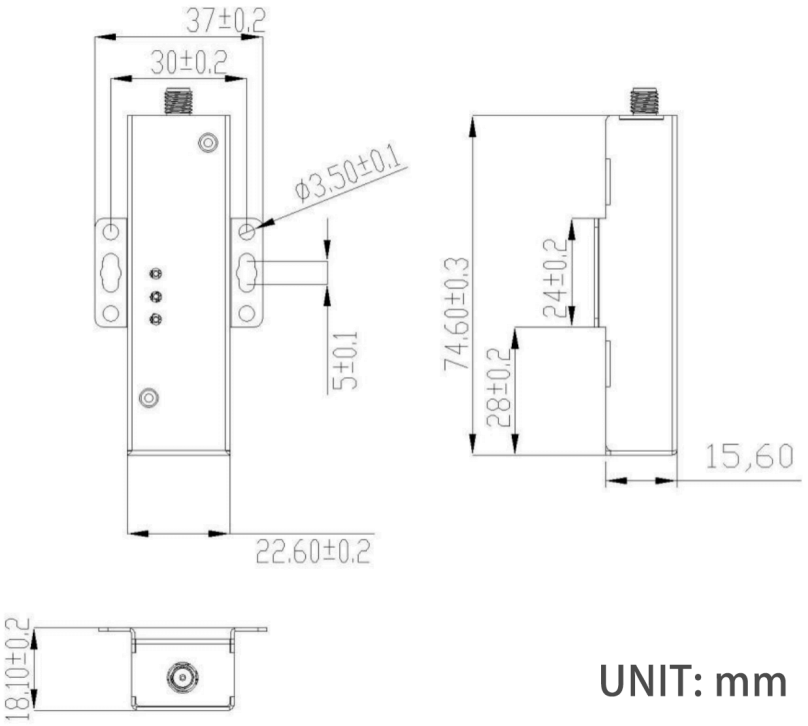
6.1 Initial Access

1. Power on the device and connect the PC to the RJ45 port with an Ethernet cable.
2. Set the PC NIC to the same subnet as the device.
3. Open `192.168.10.8` in a browser.
4. Log in with `admin/admin`.

6.2 Configuration Recommendations

1. Configure the device IP first and keep it on the same subnet as the host.
2. Set serial parameters to match the field device.
3. Select the required Socket protocol, such as TCP, UDP, HTTP, or MQTT.
4. Enable Modbus gateway, registration packet, and heartbeat as needed.
5. Save parameters and reboot the device.

6.3 Mechanical Dimensions



This dimension drawing applies to the Y201 mini enclosure and can be used as an installation reference for the Y201-R.

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