Y201-G Mini 4G DTU Specification



> User Manual and Wiring

> Reference: Y201-G Technical ManualCountry Coverage: Country Coverage Quick Guide

Contents

1. Overview
2. Ordering Information
3. Key Features
4. Technical Specifications
5. Interfaces and Indicators
6. Mechanical and Installation

1. Overview

Y201-G is the 4G Cat.1 model in the Y201 mini DTU family. It bridges serial devices to cellular networks and supports nationwide 4G connectivity, wide-range power input, and four transparent Socket channels. The device supports TCP, UDP, HTTP, MQTT, peer-to-peer transmission, SMS transparent transmission, and Modbus polling with JSON reporting.

Item	Description
Positioning	Industrial 4G Cat.1 serial DTU
Power Input	9 to 36 VDC wide-range input
Serial Interface	RS232 / RS485 / TTL, depending on model
Cellular Network	LTE Cat.1
Socket Channels	4 channels per serial port: A / B / C / D
Configuration	Config tool, serial AT, network AT, SMS AT

Highlights

- Compact housing for easy integration into control cabinets and edge devices
- Four concurrent Socket channels for multi-platform data access
- SMS transparent transmission, transparent AT, and offline cache for weak-network scenarios
- Hardware and software watchdogs with self-recovery logic
- Modbus active polling and JSON reporting to reduce platform-side parsing work

2. Ordering Information

2.1 Model Configuration

`Y201-G` is a mini DTU with a 4G Cat.1 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-G	RS485
Y201-G	RS232
Y201-G	TTL

2.3 Standard Package

1 x Y201-G device, electronic documentation, warranty information.
Optional accessories: 4G antenna, power adapter, serial cable harness, mounting accessories.

3. Key Features

1. **Nationwide 4G Cat.1**: Supports mainstream FDD and TDD bands for industrial cellular deployments.
2. **Wide Voltage and High Reliability**: `9 to 36 VDC` input with reverse-polarity protection and Level 4 ESD protection.
3. **Flexible Serial Options**: Supports RS232, RS485, and TTL with configurable serial parameters.
4. **Multi-Protocol Transparent Transmission**: Supports TCP, UDP, HTTP, MQTT, peer-to-peer transmission, and SMS transparent transmission.
5. **Four-Socket Architecture**: A single serial port can run channels A, B, C, and D in parallel.
6. **Enhanced Data Handling**: Supports registration packets, heartbeat packets, offline cache, and data format conversion.
7. **Smart Data Collection**: Supports active Modbus polling and JSON reporting.
8. **Remote O&M Ready**: Supports local upgrade, HTTP upgrade, remote AT, and remote device management.

4. Technical Specifications

4.1 Electrical and Environmental

Parameter	Specification
Dimensions	74.6 × 22.6 × 18.1 mm, excluding tabs, antenna connector, and terminal
Operating Temperature	`-35 to 75 C`, standard version
Extended Temperature	`-40 to 85 C`, extended version
Operating Humidity	`5 to 95% RH`, non-condensing
Power Connector	5-pin, 2.54 mm pluggable terminal
Supply Voltage	`9 to 36 VDC`
Current Consumption	`100 mA @ 12 V`

4.2 RF Specifications

Parameter	Specification
LTE-FDD	B1 / B3 / B5 / B8, uplink/downlink 5/10 Mbps
LTE-TDD	B34 / B38 / B39 / B40 / B41, uplink/downlink 2/8 Mbps
TX Power, FDD	Class 3, `23 dBm +/-2 dB`
TX Power, TDD	Class 3, `23 dBm +1/-3 dB`

4.3 Serial Specifications

Parameter	Specification
Interface Type	RS232, 3-pin / RS485, 2-pin / TTL, 3-pin
Baud Rate	`1200 to 460800 bps`, default `9600`
Parity	`NONE` / `ODD` / `EVEN`
Data Bits	`8`
Stop Bits	`1` / `2`
Flow Control	`NFC` / `485`

4.4 Protocol and Software Functions

Item	Specification
Network Protocols	DNS / TCP / UDP / PING
Transparent Transmission	TCP Client / UDP Client / HTTP / MQTT / Peer-to-peer / SMS
Socket Capability	Socket A / B / C / D per serial port, A enabled by default
Packetization	Length `64 to 1024`, default `1024`; interval `1 to 300 ms`, default `5 ms`
Registration / Heartbeat	Independently configurable per serial port, disabled by default
Upgrade Method	Local USB upgrade and HTTP upgrade

5. Interfaces and Indicators

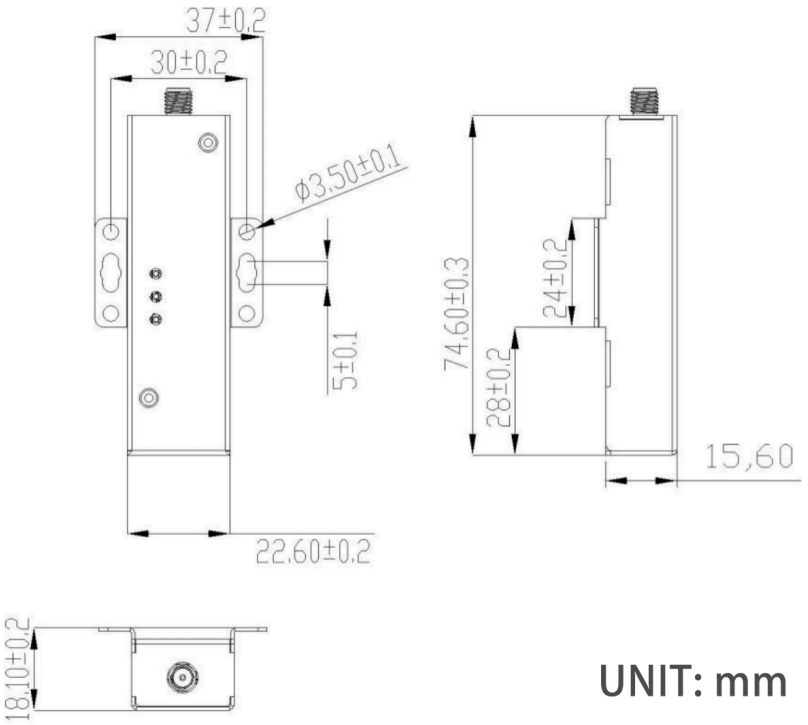
5.1 Main Interfaces

Interface	Description
Power Terminal	5-pin, 2.54 mm terminal for wide-range DC input
Serial Terminal	RS232 / RS485 / TTL, depending on model
SIM Slot	Cellular access
Antenna Connector	4G antenna connection
USB	Micro USB for upgrade and maintenance

5.2 LEDs and Button

Item	Meaning
Power	Steady on when powered
WORK	Fast blink: not registered; slow blink: registered to base station
DATA	Off: server disconnected; on: connected; blinking: serial data activity
Reload Button	Press and hold for `3 to 10 s` to restore default parameters

6. Mechanical and Installation



Item	Description
Dimensions	74.6 × 22.6 × 18.1 mm
Mounting	Bracket or DIN-rail mounting, depending on project accessories

Installation recommendations:

- Keep the antenna away from strong interference sources and high-current cables.
- Add fuse and surge protection on the power side.
- For RS485 wiring, use shielded twisted pair and proper grounding.

- **Manufacturer:** Hunan YenGear Tech Co., Ltd.
- **Address:** Room 21014, Building 1, Fudi Xingguang Tiandi, Yingxin Road, Yuhua District, Changsha, Hunan, China
- **Email:** hi@yengear.com
- **Website:** www.yengear.com