CGT541R-E

1×RS485 to 4G LTE CAT-1 Industrial Serial-to-Cellular Wireless Modem



- 1 × RS485 serial port to European mainstream 4G Cat-1 network, support GSM fallback
- Support SSL/TLS encryption in HTTP Client and MQTT operation modes, support two-way certificates authentication
- Support Socket Distribution Protocol: 4 socket links, and keep these 4 links independent of each other
- Support parameter configuration via serial, network, and SMS AT commands, and provide the PC configuration tool
- Supports bi-directional transparent transmission
- Cloud support: MQTT via AWS IOT, Thingsboard, Alibaba Cloud, EMQX, Tuya, Cumulocity IoT, and so on
- Built with a hardware watchdog to ensure system stability and prevent crashes
- DC 9~36V wide input voltage, DIN Rail mount design
- -30 ℃~+75 ℃ working temperature range

Product Description

CGT541R-E is a secure industrial LTE Cat 1 modem designed for stable serial-to-cellular communication in IoT deployments.

It supports LTE and GSM networks and covers mainstream European frequency bands. The device provides reliable transparent transmission for serial data, supports TLS/SSL encrypted communication, SMS transmission, HTTPD client mode, and AT command configuration. With wide-voltage power input, RS485 interface, hardware watchdog, and FOTA upgrade capability, it is built for long-term, unattended industrial applications.

It also supports MQTT connections to AWS IoT, ThingsBoard, Alibaba Cloud, EMQX, Tuya, Cumulocity IoT and other IoT platforms, enabling fast cloud integration.

Product Features

- Support LTE Cat 1 and GPRS, delivering 10 Mbps downlink / 5 Mbps uplink, millisecond-level latency and coverage of major European frequency bands for wide-area, stable deployment
- Support TCP/UDP transparent transmission, TLS/SSL encrypted transmission, SMS transmission, HTTPD Client mode and AT command configuration through both serial and network interfaces
- Integrate 1 × RS485 interface with 4K × 20-packet socket buffering, supporting simple passthrough or flexible configuration via serial or network AT commands
- Enable simple data passthrough or flexible configuration via serial or network AT commands.
- Support base station geolocation and NTP function
- Easy to deploy and manage with remote FOTA upgrading, FTP firmware update and Socket Distribution Protocol for multi-device data distribution.
- Support IPv4/IPv6 networking, HTTPS, MQTT/MQTTS and SMS, compatible with AWS IoT, ThingsBoard, Alibaba Cloud, EMQX, Tuya and Cumulocity IoT.
- Wide DC 9~36V power input with standard terminal and DC jack connector, suitable for diverse power environments
- Multiple indicator lights, convenient and accurate to check the device status
- Compact DIN Rail-mounting form factor with status indicators and MicroSIM slot, enabling quick installation and field maintenance.
- Built-in hardware watchdog and industrial-grade design ensure stable operation under -30℃ to +75℃

Technical Specifications

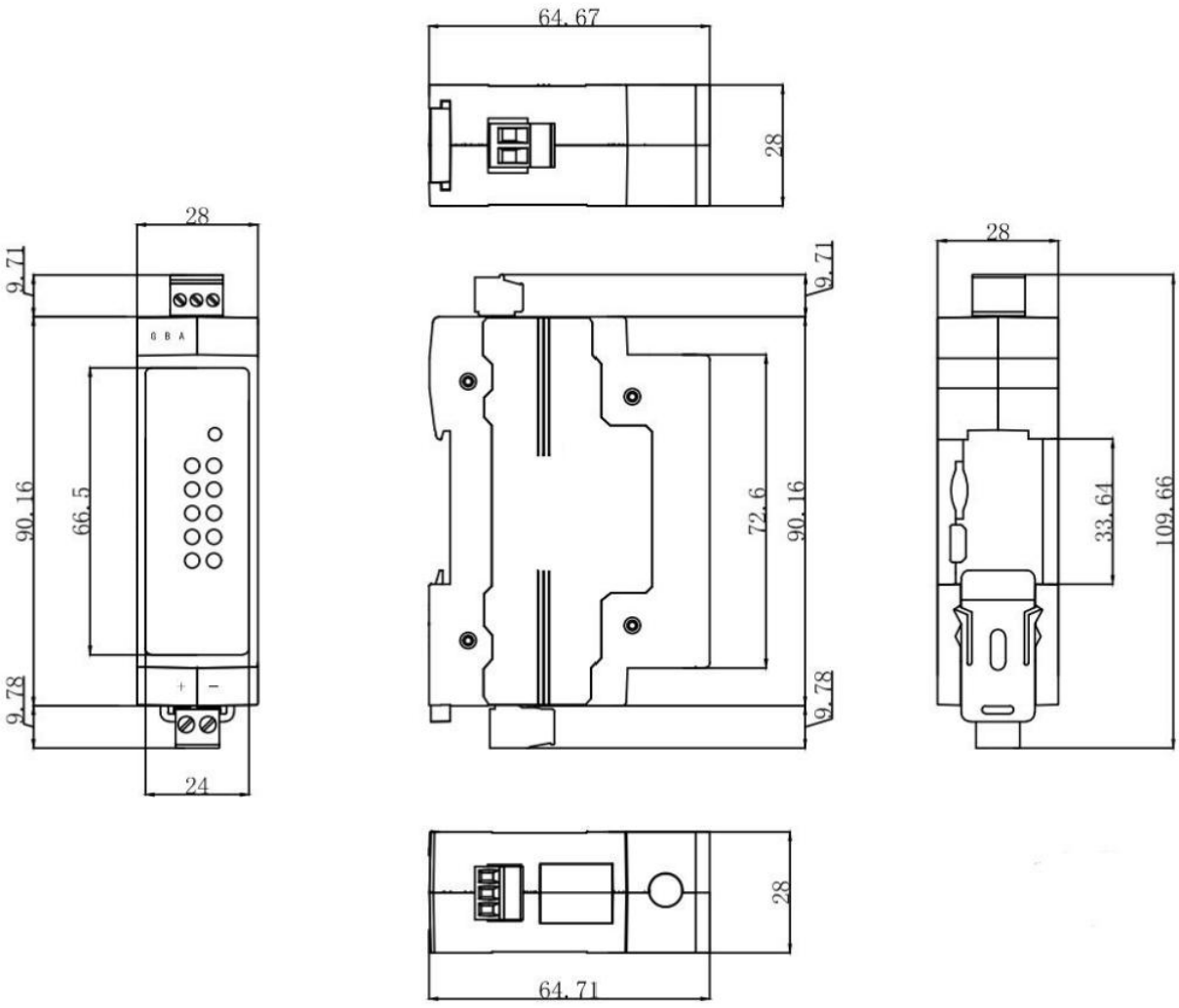
Software	
Network Protocol	TCP, UDP, IPv4, IPv6, HTTP, HTTPS, MQTT, MQTTS, DNS, SSL, TLS, ECM, RNDIS, PPP
User Configuration	AT commands via Serial, Network, SMS
Operation Mode	CMD/NET/HTTPD/SMS/MQTT
Transparent Transmission	TCP/UDP Server, TCP/UDP Client, HTTPD, SMS
MQTT	AWS IoT, ThingsBoard, Alibaba Cloud MQTT, EMQX, Tuya, Cumulocity IoT
RNDIS	Default Close
SMS	MO/MT, Text and PDU modes
Registration Package /Heartbeat Package	Support
Packaging mechanism	Packaging time(ms): 10~500, default 50 Packaging length(byte): 5~65535, defalut 1024
Base Station Location	Support
Serial to Network	4 sockets, default A
Serial Port Buffer	20 packets × 4 KBytes per socket
Remote Configuration	Support
Time Synchronization	NTP
Remote Upgrade	FOTA self-upgrade FTP firmware update
Remote Configuration	Support
4G Cellular	

Working Frequency	LTE FDD: B1/B3/B7/B8/B20/B28 GSM: 900/1800 MHz
Transmission Speed	LTE Cat 1: 10 Mbps DL / 5 Mbps UL GPRS: 85.6 Kbps DL / 85.6 Kbps UL
TX Power	LTE FDD: 23 dBm ±2 dB GSM 900 MHz: 33 dBm ±2 dB GSM 1800 MHz: 30 dBm ±2 dB
Rx Sensitivity	GSM 900 MHz: −109.5 dBm GSM 1800 MHz: −108 dBm LTE FDD B1/B3/B20: −98 dBm LTE FDD B7: −97.5 dBm LTE FDD B8/B28: −98.5 dBm
Interface	
Antenna	1 × SMA-F connector (outer-thread, inner-socket)
Serial Port	Serial Signal: 1×RS485 Connection Method: 3-pin terminal Baud Rate: 1200~230400bps Data Bits: 8 bits Stop Bits: 1 bit, 2 bits Parity: None, Odd, Even
SIM Card Slot	1 × Micro SIM (3FF), 1.8 V / 3.0 V
USB	Slave, Micro USB, USB 2.0 High speed
Button	Reload
Status LED	POWER, WORK, NET, LINK, Signal strength, TX, RX
Power Supply	
Input Voltage	DC 9~36V

Operating Current	Average: 21mA-50mA, maximum: 54mA (12V)
Power Consumption	< 3 W
Connection	Pluggable industrial terminal block
Physical Characteristics	
Dimensions	28 × 64.7 × 109.7 mm
Installations	DIN Rail mount
Housing Material	ABS Plastic
Weight	< 110 g
Working Environment	
Operating Temp	−30℃~+75℃
Storage Temp	-40℃~+85℃
Relative Humidity	5%~95% (non-condensing)
Industry Standard	
Certifications	CE, RoHS

Dimensions

Unit: mm



Ordering Information

Standard Model	RS485	4G Antenna	Input Voltage
CGT541R-E	1	1	DC 9~36V

Contact Us

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