



LG5100

robustOS

Industrial LoRaWAN Gateway

Low Power Consumption & Long Range Communication

2 x Ethernet, 2 x RS232/RS485, 2 x DI/DO, POE-PD



INTRODUCTION

Robustel's LG5100 series is a new generation of industrial LoRaWAN gateway, supporting global 4G/3G/2G networks for cellular backhaul, with a fully-fledged Debian Operating System able to support thousands of existing or new ARMv7 (Raspberry Pi compatible) based applications.

LG5100 uses **RobustOS Pro** IoT gateway operating system. RobustOS Pro is developed by Robustel based on **Debian 11** (bullseye), a common Linux operating system, more convenient for customers to develop edge computing applications by themselves according to their needs, supporting programming languages such as C, C++, Python, Java, Node.js etc., and the latest common APPs can be downloaded in RCMS to fully meet the needs of fragmented IoT applications.

LG5100 supports **Docker** for easy deployment of applications and benefits from 'RobustOS Pro' - enhanced cybersecurity, advanced GUI and a myriad of software features including VPNs, Smart Roaming, SMS remote control and more.

RCMS is Robustel's free router monitoring service that is fully compatible with the LG5100. It allows customer to see a location overview of their routers quickly and simply on a map. Features such as data usage, signal strength, current network and much more can then be viewed on a per router basis. Over-the-air updates are supported for Firmware, router configuration and Apps serving as essential "insurance" if anything was not quite right during deployment. You can try Robustel's free router management platform by signing up here:

<https://rcms-cloud.robustel.net>

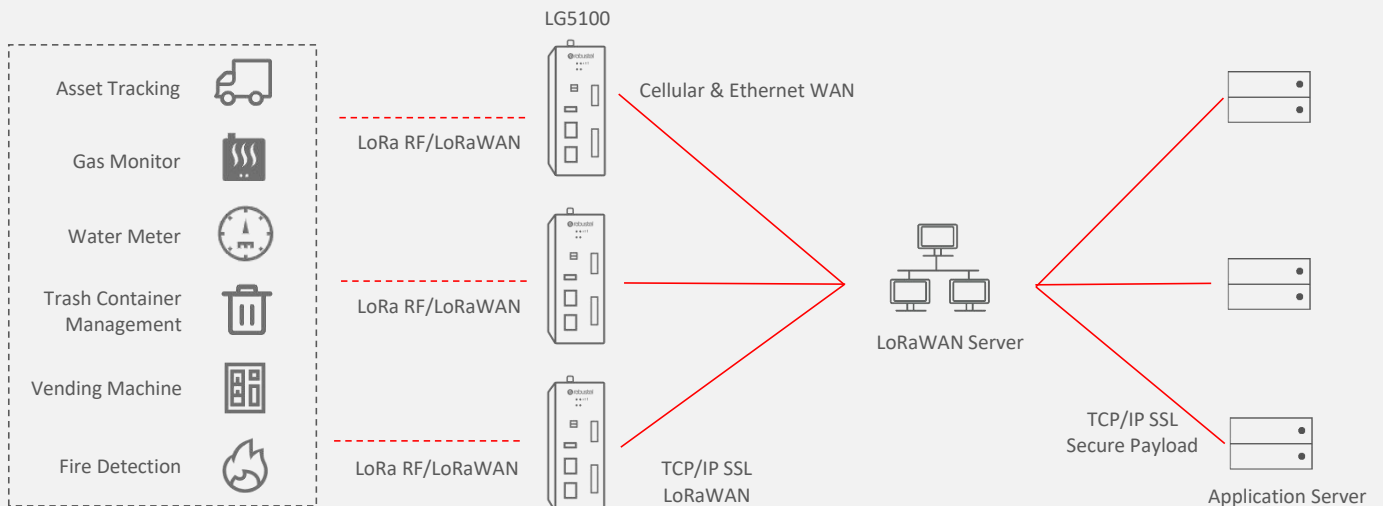


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RCMS CLOUD

KEY FEATURES

- Supports global LoRaWAN frequency bands
- Compatible with LoRaWAN and private protocols
- 'Docker' containerization supported
- Supports embedded LoRaWAN network server
- Up to 8 channels supports receive data simultaneously
- Supports Packet Forwarder Version 2.2.1 and Packet Forwarder Protocol Version 1
- Rich interfaces with 2 x RS232/ RS485 (software configurable), 2 x DI, 2 x DO
- Dual SIM card redundant back-up with embedded 4G wireless communication module
- Cellular WAN, Ethernet WAN, link backup and ICMP detection
- RobustOS Pro + SDK + Apps
- Robust industrial design (9 to 60V DC input voltage, support desktop, wall mounting or rail mounting)
- Supports RCMS – Robustel's router/gateway management platform for effective management of large estates of devices

APPLICATION EXAMPLE



SPECIFICATIONS

| Hardware System | |
|-----------------|-----------------------|
| CPU | ARM Cortex-A7, 792MHz |
| RAM | 512MB DDR3 |
| Flash | 8GB eMMC |

| Cellular Interface | |
|--------------------|------------------|
| Number of antennas | 2 |
| Connector | SMA-K |
| SIM | 2 Mini SIM (2FF) |

| Ethernet Interface | |
|-----------------------------|------------------------------------|
| Ports | 2 x 10/100 Mbps, LAN or WAN |
| WAN port | Support 802.3af PD feature on ETH0 |
| Magnet isolation protection | 1 KV |

| LoRa Interface | |
|--------------------------|---|
| Number of antennas | 1 |
| Connector | SMA-K |
| Frequency *(In progress) | EU868 AU915 CN470 EU433* US915* RU864* IN865* KR920* AS923* |
| Max transmitted power | +25 dBm |
| Max sensitivity | -140 dBm |
| Channel Capacity | Supports up to 8 channels receive data simultaneously |

| Serial Interface | |
|------------------|--|
| Type | 2 x RS232/ RS485 (software configurable) |
| Connector | 6-pin 3.5 mm terminal block with lock |
| ESD protection | 8 KV air, 4KV contact |
| Baud rate | 300bps to 115200bps |
| Signal | RS232: TXD, RXD, GND RS485: Data+ (A), Data- (B), GND |

| DI/DO | |
|----------------------|--|
| Number of ports | 2 x DI + 2 x DO, wet contact |
| Connector | 8-pin 3.5 mm terminal block with lock (DI/DO) |
| Absolute maximum VDC | + 30V DC |
| Absolute maximum ADC | 100mA |
| Signal | DI1+, DI1-, DI2+, DI2-, DO1+, DO1-, DO2+, DO2- |

| Others | |
|----------------|---------------------------------------|
| Reset button | 1 x RST |
| USB | 1x USB 2.0 (host), Type A, 5V 500mA |
| LED indicators | 1 x RUN, 1 x MDM, 1 x USR, 1 x Signal |
| Watchdog | External |

| Software (Basic features of RobustOS Pro) | |
|---|---|
| LoRaWAN protocols | V1.0.4 Class A/Class B/Class C |
| Network protocols | PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPS, DNS, ARP, NTP, SMTP, Telnet, VLAN, SSH2, DDNS, etc. |
| VPN tunnel | IPsec, OpenVPN, GRE |
| Firewall | DMZ, anti-DoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control |
| Management | Web, CLI, SMS |
| Serial port | Transparent, TCP Client/Server, UDP, Modbus RTU Gateway |
| Other | Smart Reboot, Data Guard, Smart Roaming |

| SDK | |
|--------------------------------|--|
| Operating System | RobustOS Pro (Based on Debian 11 bullseye) |
| Supported programming language | C, C++, Python, Java, Node.js etc. (for users to develop own applications) |
| Flash available for SDK | 6GB |
| RAM available for SDK | 256MB |

| App Center (Available Apps for RobustOS Pro) | |
|--|--|
| Apps* | L2TP, PPTP, DMVPN, VRRP, QoS, SNMP, Language, RCMS, Dynamic route, Captive Portal, Modbus Master, etc. |

*Request on demand. For more Apps please visit www.robustel.com.

| Power Supply and Consumption | |
|------------------------------|---|
| Connector | 2-pin 3.5 mm terminal block with lock |
| Input voltage | 9 to 60V DC |
| Power consumption | Idle: 180 mA@12 V Data link: 1A (peak) @12 V |

| Physical Characteristics | |
|--------------------------|--|
| Ingress protection | IP30 |
| Housing & Weight | Metal, 555 g |
| Dimensions | 49 x 105 x 128 mm |
| Installations | Desktop, wall mounting and 35 mm DIN rail mounting |
| Operating temperature | -40 to +70 °C |
| Storage temperature | -40 to +85 °C |
| Relative humidity | 5 to 95% RH |

| Regulatory and Type Approvals *(In progress) | |
|--|----------|
| Environmental | RoHS2.0* |

*See ordering information for details about other certifications

ORDERING INFORMATION

| Model | PN | LoRa Frequency | Cellular | Frequency Bands* | Country/Region | Certification (* In progress) |
|---------------------|---------|----------------|----------|---|----------------|-------------------------------|
| LG5100-AAB-4L-A23CN | B092701 | 470 Mhz | √ | 4G: LTE FDD: B1/ B3/ B5/ B8 3G: WCDMA: B1/ B5/ B8 | China | - |
| LG5100-BAB-4L-A06GL | B092702 | 868 Mhz | √ | 4G: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE TDD: B34/B38/B39/B40/B41 | EMEA | CB*, CE*, UKCA* |
| LG5100-CAB-4L-A06GL | B092703 | 915 Mhz | √ | 3G: WCDMA: B1/B2/B4/B5/B6/B8/B19 2G: GSM: B2/B3/B5/B8 | Oceania | CB*, RCM* |
| LG5100-AAB-NU | B092705 | 470 Mhz | - | - | China | - |
| LG5100-BAB-NU | B092706 | 868 Mhz | - | - | EMEA | CB*, CE*, UKCA* |
| LG5100-CAB-NU | B092707 | 915 Mhz | - | - | Oceania | CB*, RCM* |

*For more information about frequency bands in different countries, please contact your Robustel sales representative.