LG5100

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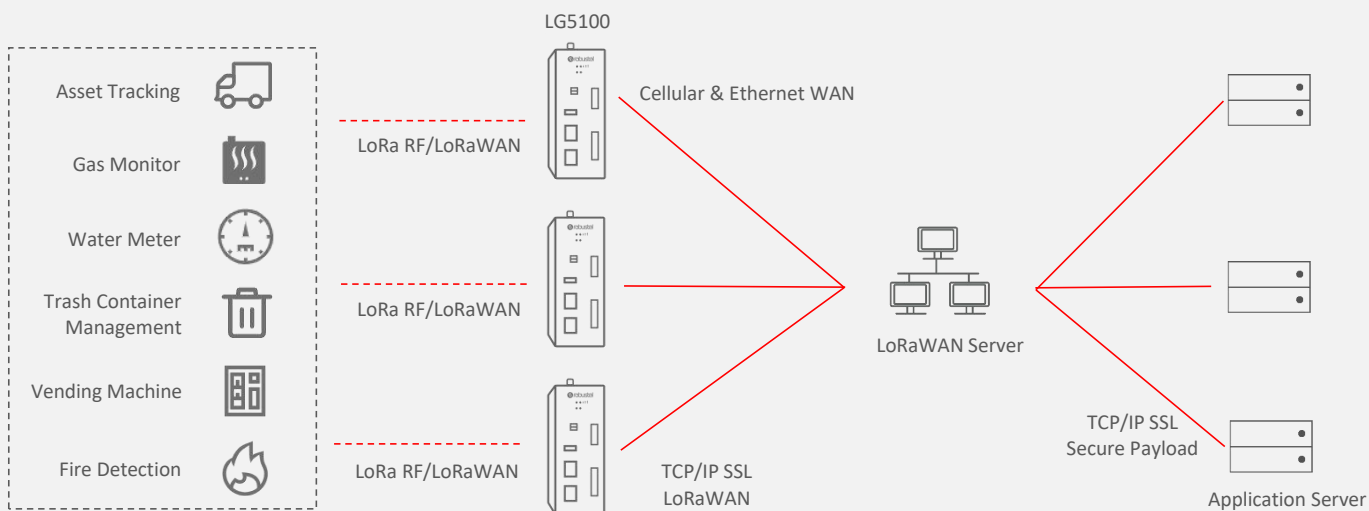https://rcms-cloud.robustel.net

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 LTE TDD: B34/ B38/ B39/ B40/ B41 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	EMEA	CB*, CE*, UKCA*
LG5100-CAB-4L-A06GL	B092703	915 Mhz	√	LTE TDD: B34/B38/B39/B40/B41 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.