



R1520LG

robustOS Pro

Industrial LoRaWAN Gateway
 Low Power Consumption & Long Range Communication
 2 x Ethernet, 1 x RS232 + RS485, POE-PD, WiFi



INTRODUCTION

Robustel's R1520LG is a new generation of industrial LoRaWAN gateway, supporting global 4G/3G/2G networks as well as WiFi and PoE-PD.

R1520LG 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.

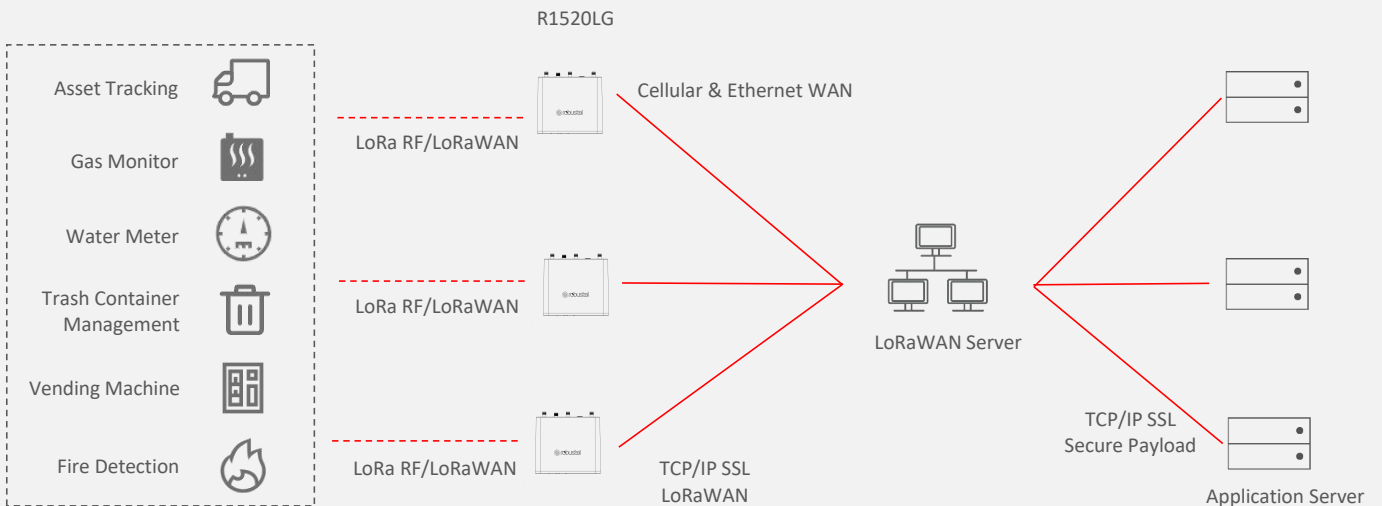
RCMS is Robustel's free router monitoring service that is fully compatible with the R1520LG. It allows customer to see a location overview of their routers quickly and simply on a map. Features such as data usage, signal strength, current network and much more can then be viewed on a per router basis. 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

- Embedded LoRaWAN network server and compatible with mainstream network servers
- Equipped with SX1302 chip for efficient high-traffic handling with lower power consumption
- Up to 8 channels simultaneous data reception
- Multi backhaul backups with Ethernet, cellular and Wi-Fi
- 802.3at compliant POE interface for easy power supply
- Rich interfaces with 1 x RS232 + 1 x RS485 and 2 x ETH
- Dual SIM card redundancy with built-in 4G wireless communication module
- 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	i.MX 6ULL, 792Mz
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 802.3at PD feature on ETH0
Magnet isolation protection	1 KV

LoRa Interface

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

Serial Interface

Type	1 x RS232 +1 x RS485
Connector	2x 3-pin 3.5 mm female socket
ESD protection	8 KV air, 4KV contact
Baud rate	300bps to 115200bps
Signal	RS232: TXD, RXD, GND RS485: Data+ (A), Data- (B), GND

WiFi Interface

Numbers of antennas	1
Connector	RP-SMA-K
Standards	802.11b/g/n, supports AP and Clients modes
Frequency bands	2.4GHz
Security	WEP, WPA, WPA2
Encryption	64/128 AES, TKIP
Data speed	TBD

Others

Reset button	1 x RST
USB	1x USB 2.0 (host), Type A, 500mA
LED indicators	1 x RUN, 1 x MDM, 1 x USR, 1 x RSSI, 1 x WLAN, 1x LoRa
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.
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*Request on demand. For more Apps please visit www.robustel.com.

Power Supply and Consumption

Connector	4-pin Micro-Fit socket
Input voltage	9 to 60V DC
Power consumption	Idle: TBD Data link: TBD

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Plastic, TBD
Dimensions	TBD
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-20 to +60 °C
Storage temperature	-40 to +85 °C
Relative humidity	5 to 95% RH

Regulatory and Type Approvals *(In progress)

Environmental	RoHS2.0*
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*See ordering information for details about other certifications

ORDERING INFORMATION

Model	PN	LoRa Frequency	Cellular	Frequency Bands*	Country/Region	Certification (* In progress)
R1520LG-470M-AA-4L-A06GL	B137001	470 MHz	√	4G: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41WCDMA: B1/B2/B4/B5/B6/B8/B19 3G: GSM: B2/B3/B5/B8	China	-
R1520LG-863M-AB-4L-A06GL	B137002	868 MHz	√		EU	CE*
R1520LG-915M-AC-4L-A06GL	B137003	915 MHz	√		US	FCC*
R1520LG-902M-AC-4L-A06GL	B137004	902MHz	√		AU	RCM*
R1520LG-470M-AA-NU	B137005	470 Mhz	-	-	China	-
R1520LG-863M-AB-NU	B137006	868 Mhz	-	-	EU	CE*
R1520LG-915M-AC-NU	B137007	915 Mhz	-	-	US	FCC*
R1520LG-902M-AC-NU	B137008	902MHz	-	-	AU	RCM*

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