R1520LG

Industrial LoRaWAN Gateway
Low Power Consumption & Long Range Communication

2 x Ethernet + 1 x RS-232 + 1 x RS-485 + 1 x Wi-Fi



INTRODUCTION

The R1520LG is Robustel's innovative LoRaWAN gateway, specifically engineered for high-volume in-building applications. Combining cost-effectiveness with exceptional versatility, this gateway addresses a wide range of deployment scenarios, including:

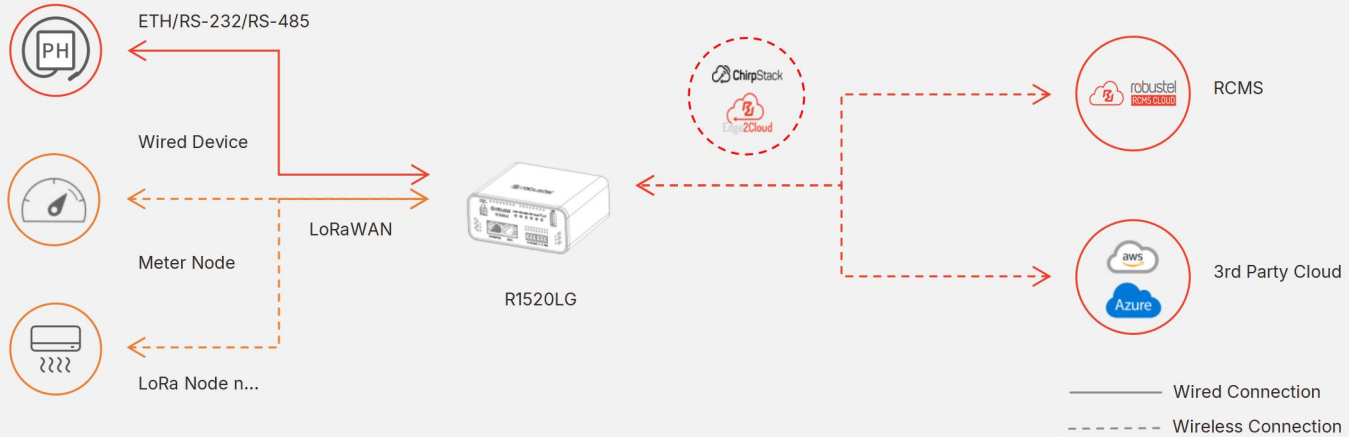
1. External LoRa Network Server (LNS): Choose from multiple packet forwarders such as UDP, Basic Station, or Loriot for tailored connectivity solutions.
2. Internal LoRa Network Server (LNS): Utilize ChirpStack for comprehensive customer control over your network.
3. Enhanced Internal LNS: Our unique "E2C ChirpStack" integration, a pioneering feature, offers seamless connectivity options.
4. Direct Cloud Integration: The E2C ChirpStack software connector enables LoRa sensors to connect directly to AWS and Azure cloud environments, simplifying data management.
5. Dual Functionality: E2C ChirpStack can be paired with E2C Modbus within the R1520LG, allowing easy data aggregation from both wired and wireless sensors into the cloud.

The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize device locations and track critical metrics such as data usage, signal strength, and network status. To ensure seamless operations, the platform facilitates over-the-air (OTA) updates for firmware, configurations, and applications, minimizing downtime while optimizing system performance. For more information or to get started with RCMS, visit: https://rcms-cloud.robustel.net

KEY FEATURES

- Supports PoE-PD for flexible gateway placement
- Wi-Fi client and AP modes
- Wide 9–60 VDC power input range
- Dual Ethernet ports for WAN and LAN connections
- Dual SIM slots for resilient cellular communication
- RS-232 and RS-485 ports for peripheral connection
- Operations Console for robust gateway management
- RobustVPN for easy remote access to gateways, regardless of SIM or internet connection type
- E2C ChirpStack integration for seamless LoRa data connectivity to AWS, Azure, or other cloud platforms
- LoRa data buffering via E2C ChirpStack, a feature not typically found in standard LoRa gateways

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware

Hardware System	
CPU	ARM Cortex-A7, 792 MHz
RAM	512 MB/1 GB DDR3
Flash	8 GB eMMC
Cellular Interface	
Number of antennas	2
Connector	SMA-K
SIM	2 x Mini SIM (2FF)
Ethernet Port	
Number of ports	2 x 10/100 Mbps, LAN or WAN
WAN port	Supports 802.3at PD feature on ETH0
Magnet isolation protection	1.5 kV
LoRa Interface	
Number of antennas	1
Connector	SMA-K / RP-SMA-K (for US915 only)
Frequency	US915 EU868 AU915
Channel capacity	Supports up to 8 channels receiving data simultaneously
Serial Port	
Number of ports	1 x RS-232 + 1 x RS-485
Connector	2 x 3-pin 3.5 mm female socket
Baud rate	300–115200 bps
Signal definition	RS-232: TXD, RXD, GND RS-485: Data+(A), Data-(B), GND
Wi-Fi Interface	
Number of antennas	1
Connector	RP-SMA-K
Standards	802.11 b/g/n; supports AP and client modes
Frequency bands	2.412–2.472 GHz (2.4 GHz ISM band)
Security	WEP, WPA, WPA2
Encryption	AES, TKIP
Others	
Reset button	1 x RST
USB port	1 x USB 2.0 (host), Type A, 5 V, 500 mA
LED indicators	1 x LORA, RUN, 1 x MDM, 1 x USR, 1 x WLAN and 1 x RSSI
Watchdog	External
Power Supply and Consumption	
Connector	4-pin Micro-Fit socket
Input voltage	12/24/48 VDC, 9–60 VDC 42.5–57 VDC (PoE-PD) Reverse polarity protection, surge protection
Power consumption	Idle: 1.5 W@12 V Max: 10 W@12 V
Rec. power supply	12 VDC/1.5 A power adapter

Physical Characteristics	
Ingress protection	IP30
Housing & Weight	Plastic, 238.5 g
Dimensions	46 x 90 x 105 mm
Installation	Desktop, wall mounting & 35 mm DIN rail mounting
Operating temperature	-20 to +60 °C
Storage temperature	-40 to +85 °C
Relative humidity	5–95% RH (non-condensing)
Regulatory and Type Approvals	
Environmental	RoHS 2.0
EMI	EN 55032 Conducted Emission Class B EN 55032 Radiated Emission Class B
EMS	EN 61000-4-2 (ESD) Contact Level 2, Air Level 3 EN 61000-4-3 (RS) Level 2 EN 61000-4-4 (EFT) Level 2 EN 61000-4-5 (Surge) Level 3, AC Mains Power Port Level 2, Signal Ports EN 61000-4-6 (CS) Level 2 EN 61000-4-8 (PFM) Level 2 EN 61000-4-11 (Dips)

Software

Operating System (Basic Features of RobustOS Pro)

LoRaWAN protocols	V1.0.4 Class A/Class C
Network protocols	PPP, PPPoE, ARP, VLAN, ICMP, NAT, TCP, UDP, DHCP, DNS, DDNS, NTP, HTTP, HTTPS, Telnet, SSH2, SMTP, Static Routing, etc.
VPN tunnels	IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN, WireGuard
Firewalls	DMZ, anti-DoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control
Remote management	Web, CLI, SMS, RCMS
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU Gateway
Others	Smart Roaming V3, Language, Edge2Cloud
SDK	
Operating system	RobustOS Pro (based on Debian Linux)
Programming languages	C, C++, Python, Java, Node.js, etc. (for users to develop their own applications)
Available RAM for SDK	256 MB/720 MB
Available Flash for SDK	6 GB

App Center* (Available Apps for RobustOS Pro)

*Available upon request. For more apps, please visit www.robustel.com.

Cloud Platform	
Robustel Cloud Manager Service (RCMS)	RobustLink, RobustVPN, Operation Console

ORDERING INFORMATION

Model	Order Code	LoRa Frequency	RAM	Frequency Bands	Region	Certifications	Package Contents
R1520LG-AB-4L-A35GL	A013700011	EU868	512 MB	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 LTE TDD: B34/B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	EU	CE	1 x Gateway (B Code: B137002) 1 x Wall Mounting Kit
	A013700004	EU868	512 MB		EU	CE	1 x Gateway (B Code: B137002) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
	A013700017	EU868	1 GB		EU	CE	1 x Gateway (B Code: B013700012) 1 x Wall Mounting Kit
	A013700018	EU868	1 GB		EU	CE	1 x Gateway (B Code: B013700012) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
R1520LG-AC-4L-A35GL	A013700012	AU915	512 MB	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 LTE TDD: B34/B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	AU	RCM	1 x Gateway (B Code: B137003) 1 x Wall Mounting Kit
	A013700005	AU915	512 MB		AU	RCM	1 x Gateway (B Code: B137003) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
	A013700019	AU915	1 GB		AU	RCM	1 x Gateway (B Code: B013700013) 1 x Wall Mounting Kit
	A013700020	AU915	1 GB		AU	RCM	1 x Gateway (B Code: B013700013) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
	A013700023	AS923	1 GB		Asia	-	1 x Gateway (B Code: B013700019) 1 x Wall Mounting Kit
	A013700024	AS923	1 GB		Asia	-	1 x Gateway (B Code: B013700019) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
R1520LG-AD-4L-A35GL	A013700013	US915	512 MB	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 LTE TDD: B34/B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	NA	FCC, IC	1 x Gateway (B Code: B137004) 1 x Wall Mounting Kit
	A013700006	US915	512 MB		NA	FCC, IC	1 x Gateway (B Code: B137004) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit
	A013700021	US915	1 GB		NA	FCC, IC	1 x Gateway (B Code: B013700014) 1 x Wall Mounting Kit
	A013700022	US915	1 GB		NA	FCC, IC	1 x Gateway (B Code: B013700014) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x PSU Adapter Cable 1 x Wall Mounting Kit

NOTE:

1. For more information about regional and carrier-specific variants, please contact us.
2. * Denotes certification in progress.

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Subject to change without notice.