Available from:
CONCEPT13.CO.UK
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R1520LG

Industrial LoRaWAN Gateway
Low Power Consumption & Long Range Communication
2 x ETH + 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.

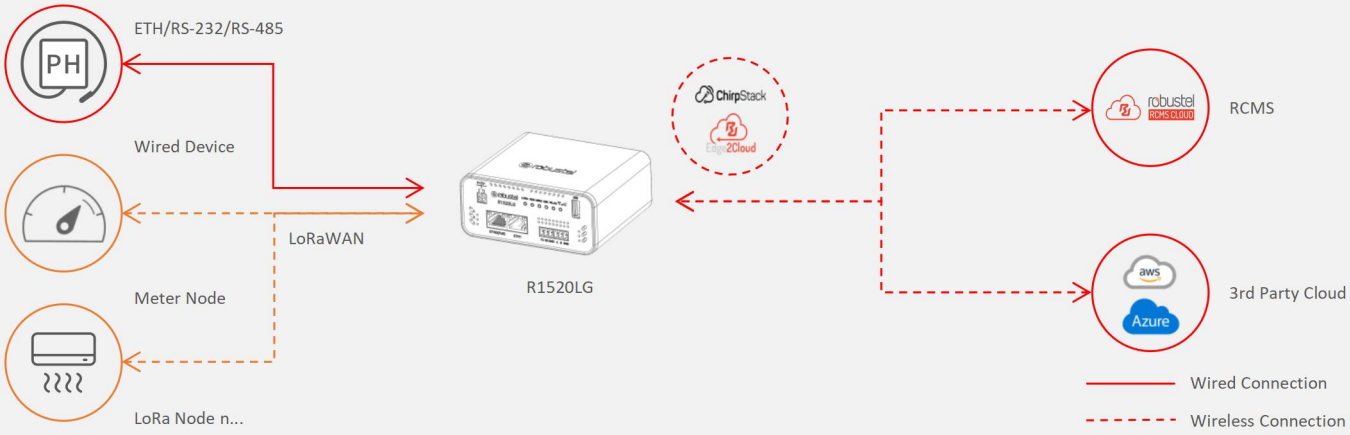
The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize 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. Experience robust, cloud-native device management by registering at:
https://rcms-cloud.robustel.net

robustel RCMS CLOUD

KEY FEATURES

- Support PoE-PD for optimal gateway location
- Wi-Fi client and AP modes
- Wide power input ranging from 9 to 60V DC
- Dual Ethernet ports for WAN and LAN connections
- Dual SIM slots for resilient cellular communication
- RS-232 and RS-485 ports for peripheral connection
- Utilize the "Operations Console" for robust gateway management
- Offer RobustVPN for easy remote access to all gateways, regardless of SIM or internet connection type
- Integrate "E2C Chirpstack" for seamless LoRa data connectivity to AWS/Azure or other cloud platforms
- Enable data buffering for LoRa data via "E2C Chirpstack," a feature not typically found in standard LoRa gateways

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware System

CPU	i.MX 6ULL, 792 MHz
RAM	512 MB 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	Support 802.3at PD feature on ETH0
Magnet isolation protection	1 KV

LoRa Interface

Number of antennas	1
Connector	SMA-K
Frequency	US915 CN470 EU868 AU915
Max transmitted power	+25 dBm
Max sensitivity	-140 dBm
Channel Capacity	Supports up to 8 channels receive 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
ESD protection	8 KV air, 4 KV contact
Baud rate	300 bps to 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 Clients modes
Frequency bands	2.4 GHz
Security	WEP, WPA, WPA2
Encryption	64/128 AES, TKIP

Others

Reset button	1 x RST
USB port	1x USB 2.0 (host), Type A, 500 mA
LED indicators	1 x LORA, 1 x RUN, 1 x MDM, 1 x USR, 1 x WLAN, 1 x RSSI
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, DNS, NTP, SMTP, Telnet, HTTPs, ARP, VLAN, SSH2, DDNS, etc.
VPN tunnels	IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN
Firewalls	DMZ, anti-DoS, Filtering (IP/Domain name/MAC address),Port Mapping, Access Control
Remote management	Web, CLI, SMS
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU Gateway
Others	Smart Roaming V2

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	6 GB
RAM available for SDK	256 MB

App Center (Available Apps for RobustOS Pro)

App*	Language, RCMS, Wireguard, Edge2Cloud

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

Cloud Platform

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

Power Supply and Consumption

Connector	4-pin Micro-Fit socket
Input voltage	12/24/48 V DC, 9 to 60 V DC PoE-PD: 42.5 to 57 V DC Reverse polarity protection, surge protection
Power consumption	Idle: 1.5 W@12 V Max: 10 W@12 V
Recommended power supply	12V DC/1.5 A Power Adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Plastic, 238.5 g
Dimensions	105 x 90 x 46 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-20 ~ + 60 °C
Storage temperature	-40 ~ + 85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

Regulatory and Type Approvals

Environmental	RoHS2.0
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 EN 61000-4-6 (CS) Level 2 EN 61000-4-8 (PFM) Level 2 EN 61000-4-11 (Dips)

ORDERING INFORMATION

Model	Order Code	LoRa Frequency	Frequency Bands**	Country /Region	Certification (*In progress)	Package Contains
R1520LG-AB-4L-A35GL	A013700011	863 ~ 870 MHz	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 LTE TDD: B34/38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	EU	CE	1 x R1520LG Gateway (B Code: B137002) 1 x Wall Mounting Kit
	A013700004	863 ~ 870 MHz				1 x R1520LG Gateway (B Code: B137002) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Plug Converter 1 x Wall Mounting Kit
R1520LG-AC-4L-A35GL	A013700012	915 ~ 928 MHz		AU	RCM	1 x R1520LG Gateway (B Code: B137003) 1 x Wall Mounting Kit
	A013700005	915 ~ 928 MHz				1 x R1520LG Gateway (B Code: B137003) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Plug Converter 1 x Wall Mounting Kit
R1520LG-AD-4L-A35GL	A013700013	902 ~ 928MHz		NA	FCC* IC*	1 x R1520LG Gateway (B Code: B137004) 1 x Wall Mounting Kit
	A013700006	902 ~ 928MHz				1 x R1520LG Gateway (B Code: B137004) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Plug Converter 1 x Wall Mounting Kit
R1520LG-AB-NU	A013700014	863 ~ 870 MHz	-	EU	CE	1 x R1520LG Gateway (B Code: B137006) 1 x Wall Mounting Kit
	A013700008	863 ~ 870 MHz				1 x R1520LG Gateway (B Code: B137006) 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Plug Converter 1 x Wall Mounting Kit
R1520LG-AC-NU	A013700015	915 ~ 928 MHz		AU	RCM	1 x R1520LG Gateway (B Code: B137007) 1 x Wall Mounting Kit
	A013700009	915 ~ 928 MHz				1 x R1520LG Gateway (B Code: B137007) 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Plug Converter 1 x Wall Mounting Kit
R1520LG-AD-NU	A013700016	902 ~ 928MHz		NA	FCC* IC*	1 x R1520LG Gateway (B Code: B137008) 1 x Wall Mounting Kit
	A013700010	902 ~ 928MHz				1 x R1520LG Gateway (B Code: B137008) 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Wall Mounting Kit 1 x Power Plug Converter

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

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Website: www.robustel.com
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