R1520LG

robust**OS** pro

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

INTRODUCTION

R1520LG is Robustel's new and unique LoRaWAN gateway, optimized for high volume in-building applications.The product has been designed to be very cost-effective and extremely versatile – providing a solution for all deployment scenarios including:

1. External LNS with a choice of packet forwarders – UDP / Basic Station / Loriot.

2. Internal LNS (Chirpstack) with full customer control.

3. Internal LNS (Chirpstack) + "E2C Chirpstack" – NEW & UNIQUE!

4. Robustel's "E2C Chirpstack" software connector allows LoRa sensors to be connected directly into AWS & Azure cloud environments.

5. E2C Chirpstack can be used alongside E2C Modbus in the R1520LG to get data from wired and wireless sensors easily into the cloud.

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

➢ Supports PoE-PD for optimal location of gateway

➢ WiFi client and AP Supported

➢ Wide 9 to 60VDC power input

➢ Dual Ethernet ports providing WAN & LAN connections

➢ Dual SIM slots for resilient cellular communications

➢ RS232 & RS485 for peripheral connection

➢ Supported by "Operations Console" – Robustel's unique Gateway management environment

➢ RobustVPN provides easy remote access to all Gateways no matter what SIM/internet connection type is used

➢ "E2C Chirpstack" provides a simple connector for LoRa data – directly into AWS/Azure or other cloud platforms

➢ "E2C Chirpstack" provides data buffering of LoRa data – not usually available in standard LoRa gateways

APPLICATION EXAMPLE

SPECIFICATIONS

Hardware System
CPU	i.MX 6ULL, 792Mz
RAM	512 MB DDR3
Flash	8 GB 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	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

Others
Reset button	1 x RST
USB	1x USB 2.0 (host), Type A, 500 mA
LED indicators	1 x RUN, 1 x MDM, 1 x USR, 1 x RSSI, 1 x WLAN, 1 x 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

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)
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	4-pin Micro-Fit socket
Input voltage	9 to 60V DC，PoE-PD: 42.5 to 57V DC
Power consumption	Idle: 1.5w
	Data link: 10w (peak)

Physical Characteristics
Housing & Weight	Plastic, 238.5g
Dimensions	105 x 90 x 46 mm
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*

*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-A35GL	B137001	470 MHz	√	**4G:** LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/ B20/ B25 /B26 /B28 /B66 LTE TDD: B34/B38/B39/B40/B41 **3G:** WCDMA: B1/B2/B4/B5/B6/B8/B19 **2G:** GSM: B2/B3/B5/B8	CN	-
R1520LG-868M-AB-4L-A35GL	B137002	868 MHz	√		EU	CE*
R1520LG-915M-AC-4L-A35GL	B137003	915 MHz	√		AU	RCM*
R1520LG-902M-AD-4L-A35GL	B137004	902 MHz	√		US	FCC*
R1520LG-470M-AA-NU	B137005	470 MHz	-	-	CN	-
R1520LG-868M-AB-NU	B137006	868 Mhz	-	-	EU	CE*
R1520LG-915M-AC-NU	B137007	915 MHz	-	-	AU	RCM*
R1520LG-902M-AD-NU	B137008	902 MHz	-	-	US	FCC*

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