



LG3120e



Industrial Edge Computing LoRaWAN Gateway

2 x ETH + 2 x RS-232/485 + 2 x DI + 2 x DO + 1 x Wi-Fi + 1 x LoRa



INTRODUCTION

The LG3120e is a high-performance industrial edge LoRaWAN gateway designed for remote and distributed field deployments where traditional cabling is difficult, costly, or impractical. By merging server-grade processing power—featuring a quad-core 2.0 GHz CPU and 2 GB RAM—with the comprehensive E2C Field Suite, the LG3120e provides a native LoRaWAN ecosystem for rapid wireless networking.

Operating on RobustOS Pro (Debian 11), the LG3120e acts as a centralized intelligence hub that solves the "Last Mile" connection problem. It enables plug-and-play monitoring for outdoor and distributed assets, bridging the gap between isolated field sensors and cloud-based analytics without the need for complex cabling.

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

- **Wireless Last Mile Connectivity:** Built-in LoRaWAN connectivity enables rapid deployment across distributed or remote sites where cabling is costly or impractical.
- **Zero-Touch Sensor Onboarding:** Automatically recognizes LoRaWAN sensors with over 300 pre-built codecs, generating data points and semantic tags in seconds for true plug-and-play monitoring.
- **Integrated LNS:** Built-in LoRaWAN Network Server for centralized device management and real-time monitoring of wireless field assets.
- **E2C Field Data Integration:** Supports LoRaWAN, Modbus, OPC UA, and BACnet to normalize field-device data for edge processing and cloud integration.
- **Visual Logic and Dashboard:** Specialized Node-RED nodes and a built-in visualization engine for drag-and-drop automation and local dashboards.
- **Server-Grade Performance:** A quad-core 2.0 GHz CPU and 2 GB RAM enable local data processing to help reduce cloud traffic and application latency.
- **Industrial I/O Density:** Includes 2 x RS-232/485, 2 x DI, and 2 x DO interfaces to reduce the need for external I/O modules.

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware

Hardware System

CPU	Quad-core ARM Cortex-A53@2.0 GHz
RAM	2 GB LPDDR4
Flash	8 GB eMMC

Cellular Interface

Number of antennas	2
Connector	SMA-K
SIM	1 x Mini SIM (2FF)
eSIM	1 x eSIM (MFF2); GSMA SGP.22 compliant; supports profile download/removal and typically up to 8 eSIM profiles

Ethernet Port

Number of ports	2 x 10/100 Mbps, LAN or WAN
Magnet isolation protection	1.5 kV

LoRa Interface

Number of antennas	1
Connector	RP-SMA-K
Frequency	US915 EU868 AU915 AS923
Channel capacity	Supports up to 8 channels receiving data simultaneously

Serial Port

Number of ports	2 x RS-232/485 (software configurable)
Connector	6-pin 3.5 mm terminal block with lock
Baud rate	300–115200 bps
Signal definition	RS-232: TXD, RXD, GND RS-485: Data+(A), Data-(B), GND

Digital Input / Digital Output

Number of ports	2 x DI + 2 x DO, wet contact
Connector	8-pin 3.5 mm terminal block with lock (DI/DO)
Absolute max voltage	+30 VDC
Absolute max current	100 mA
Signal definition	DI1+, DI1-, DI2+, DI2-, DO1+, DO1-, DO2+, DO2-

Wi-Fi Interface

Number of antennas	1, supporting only 1T1R
Connector	RP-SMA-K
Standards	802.11 a/b/g/n/ac/ax; supports AP and client modes
Frequency bands	2.412–2.472 GHz (2.4 GHz ISM band) 5.15–5.825 GHz (5 GHz ISM band)

Others

TPM	TPM 2.0
Reset button	1 x RST
USB port	1 x USB 2.0 (host), Type A, 5 V, 500 mA 1 x USB 2.0, Type C, console port
LED indicators	1 x RUN, 1 x RSSI, 1 x MDM, and 1 x USR
microSD	1 x microSD, supporting up to 2 TB
Watchdog	External
RTC	Remains functional up to 5 days after power loss

Power Supply and Consumption

Connector	2-pin 3.5 mm terminal block with lock
Input voltage	12/24 VDC, 9–36 VDC Reverse polarity protection, surge protection
Power consumption	Idle: 1.5 W@12 V Max: 15 W@12 V
Rec. power supply	12 VDC/1.5 A power adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 587 g
Dimensions	49 x 105 x 128 mm
Installation	Desktop, wall mounting & 35 mm DIN rail mounting
Operating temperature	-25 to +70 °C
Storage temperature	-40 to +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) Level 3 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Level 3 EN 61000-4-5 (Surge) Level 3, AC Mains Power Port Level 3, Signal Ports EN 61000-4-6 (CS) Level 3

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, eSIM Management, E2C Field Suite

SDK

Operating system	RobustOS Pro (Based on Debian 11 Bullseye)
Programming languages	C, C++, Python, Java, Node.js, etc. (for users to develop own applications)
Available Flash for SDK	6 GB
Available RAM for SDK	1.5 GB

App Center* (Available Apps for RobustOS Pro)

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

Cloud Platform

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

Model	Order Code	LoRa Frequency	Frequency Bands	Region	Certifications	Package Contents
LG3120e-ABJAA-4L-A35GL	A015800001	EU868	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	EU	CE*, UKCA*	1 x Gateway (B Code: B015800001) 1 x Wall Mounting Kit
	A015800002	EU868	3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	EU	CE*, UKCA*	1 x Gateway (B Code: B015800001) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Adapter 1 x Wall Mounting Kit
LG3120e-ACJAA-4L-A35GL	A015800003	AU915	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	AU	RCM*	1 x Gateway (B Code: B015800002) 1 x Wall Mounting Kit
	A015800004	AU915	3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	AU	RCM*	1 x Gateway (B Code: B015800002) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Adapter 1 x Wall Mounting Kit
LG3120e-ADJAA-4L-A35GL	A015800005	US915	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	NA	FCC*, IC*	1 x Gateway (B Code: B015800003) 1 x Wall Mounting Kit
	A015800006	US915	3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	NA	FCC*, IC*	1 x Gateway (B Code: B015800003) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Adapter 1 x Wall Mounting Kit
LG3120e-AEJAA-4L-A35GL	A015800007	AS923	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	Asia	CE*	1 x Gateway (B Code: B015800004) 1 x Wall Mounting Kit
	A015800008	AS923	3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	Asia	CE*	1 x Gateway (B Code: B015800004) 2 x Cellular Antenna 1 x Wi-Fi Antenna 1 x LoRa Antenna 1 x Power Adapter 1 x Wall Mounting Kit

NOTE:

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