EG5100

Industrial Edge Computing Gateway

2 x Ethernet + 2 x RS-232/485 + 2 x DI + 2 x DO

Optional Wi-Fi, Bluetooth and GNSS



INTRODUCTION

The Robustel EG5100 is an industrial-grade edge computing gateway combining global 4G/3G/2G cellular backhaul and ARMv7-based edge processing. Its Debian-based Linux operating system provides an open software environment, while Docker enables containerized deployment for industrial edge applications. The device combines cellular routing and embedded computing for lightweight edge data processing.

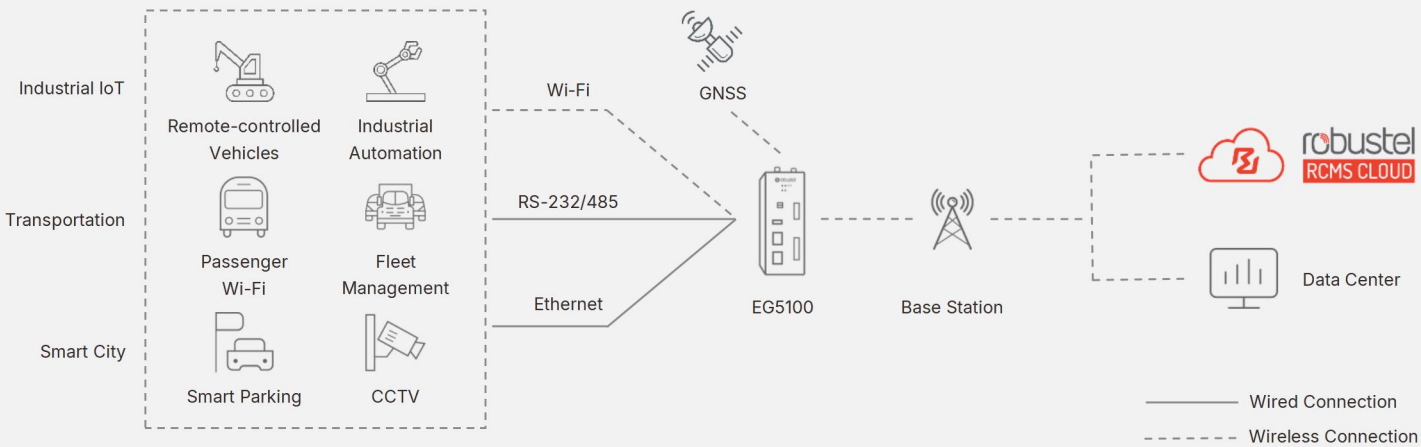
Powered by a 792 MHz Cortex-A7 CPU, the gateway runs **RobustOS Pro**, Robustel's self-developed operating system, delivering enterprise-grade security, VPN, Smart Roaming, and SMS-based remote management. Designed for mission-critical IoT systems, it integrates cellular connectivity, cybersecurity, and edge compute capabilities into a single ruggedized platform, minimizing deployment complexity.

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

- Industrial-grade 4G/3G/2G cellular connectivity with global band support
- 792 MHz Cortex-A7 CPU, 1 GB DDR3 RAM, and 8 GB eMMC for lightweight edge applications
- Docker containerization with access to 50,000+ Debian-compatible packages
- Optional 802.11ac Wi-Fi with dual-mode AP/client operation
- Optional Bluetooth 5.2 support
- 2 x software-configurable RS-232/485 ports
- 2 x DI + 2 x DO for industrial I/O monitoring and control
- Dual-SIM support for redundant communications and a wide operating temperature range
- Multi-language SDK support (C, C++, Java, Python, and Node.js) with an open development toolchain
- Multi-protocol VPN (IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN, and WireGuard) and firewall
- Robustel Cloud Manager Service (RCMS) for centralized device management

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware

Hardware System	
CPU	ARM Cortex-A7, 792 MHz
RAM	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 RJ45, 10/100 Mbps, LAN or WAN
Magnet isolation protection	1.5 kV
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)
Isolation	Bi-directional optocoupler (DI) Single directional optocoupler (DO)
Absolute max voltage	+30 VDC
Absolute max current	100 mA
Signal definition	DI1+, DI1-, DI2+, DI2-, DO1+, DO1-, DO2+, DO2-
Wi-Fi Interface (optional)	
Number of antennas	2
Connector	RP-SMA-K
Standards	802.11a/b/g/n/ac; 2 x 2 MIMO; 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)
Security	WEP 64-bit and 128-bit encryption with H/W TKIP processing WPA/WPA3 (Wi-Fi Protected Access) AES-CCMP hardware implementation as part of 802.11i security standard
Bluetooth Interface (optional)	
Number of antennas	1 (shared with Wi-Fi antenna)
Connector	RP-SMA-K
Standards	Bluetooth 2.1 and 3.0 + Enhanced Data Rate (EDR) + Bluetooth 5.2
GNSS Interface (optional)	
Number of antennas	1
Connector	SMA-K
Technology	GPS, GLONASS, BDS, Galileo, QZSS
Others	
Reset button	1 x RST
USB port	1 x USB 2.0 (host), Type A, 5 V, 500 mA
LED indicators	1 x RUN, 1 x Signal, 1 x USR, and 1 x MDM
Watchdog	External

Power Supply and Consumption	
Connector	2-pin 3.5 mm terminal block with lock
Input voltage	12/24/48 VDC, 9–60 VDC Reverse polarity protection, surge protection
Power consumption	Idle: 3 W@12 V Max: 12 W@12 V
Rec. power supply	12 VDC/1.5 A power adapter
Physical Characteristics	
Ingress protection	IP30
Housing & Weight	Metal, 567 g
Dimensions	49 x 105 x 128 mm
Installation	Desktop, wall mounting & 35 mm DIN-rail mounting
Operating temperature	-40 to +70 °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) Level 4 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Level 4 EN 61000-4-5 (Surge) Level 3, AC Mains Power Port Level 3, Signal Ports EN 61000-4-6 (CS) Level 2 EN 61000-4-8 (PFM) Level 4 EN 61000-4-11 (Dips)

Software

Operating System (Basic Features of RobustOS Pro)

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, etc.
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)
Debian repository available	
Available RAM for SDK	768 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	GNSS	Frequency Bands	Region	Certifications	Package Contents
EG5100-A2ECA-NU	A006600707	-	-	Global	CE, RCM, CB, UKCA, FCC, IC	1 x Gateway (B Code: B066712) 1 x DIN Rail Mounting Kit
	A006600708	-		Global	CE, RCM, CB, UKCA, FCC, IC	1 x Gateway (B Code: B066712) 2 x Wi-Fi Antenna 1 x Power Adapter 1 x DIN Rail Mounting Kit
EG5100-A2CCA-4L-A06GL	A006600711	√	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28 LTE TDD: B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	Global	CE, RCM, CB, UKCA, FCC, IC, NTC	1 x Gateway (B Code: B066708) 1 x DIN Rail Mounting Kit
	A006600712	√		Global	CE, RCM, CB, UKCA, FCC, IC, NTC	1 x Gateway (B Code: B066708) 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter 1 x DIN Rail 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.