



robustOS Pro

EG5100

Industrial Edge Computing Gateway

2 x ETH + 2 x DI + 2 x DO +

RS-232/485/CAN, Optional Wi-Fi, Bluetooth & 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 11 (bullseye) based operating system supports Raspberry Pi-compatible applications, while Docker enables rapid containerized deployment in harsh environments. The device merges cellular routing and embedded computing for real-time edge analytics.

Powered by a 792 MHz Cortex-A7 CPU, the EG5100 runs **RobustOS Pro** - Robustel's self-developed OS - to deliver enterprise security (VPN/IPsec, 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.

Experience robust, cloud-native device management by registering at:

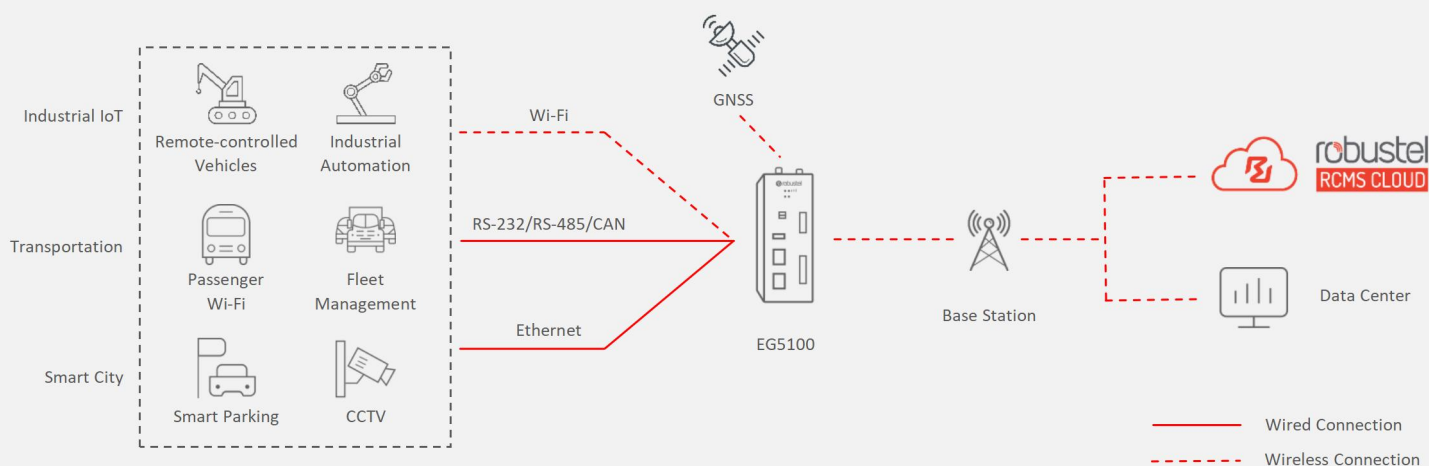
<https://rcms-cloud.robustel.net>



KEY FEATURES

- Industrial-grade 4G/3G/2G cellular connectivity with global band support
- 8GB eMMC Flash storage and ARM compute engine for edge applications
- Docker containerization and 50,000+ Debian compatible packages
- Optional 802.11ac Wi-Fi with dual-mode AP/Client operation
- Optional Bluetooth 5.2 compliant
- 2 x software-configurable RS-232/485 ports (or 1 x RS-232/485 + 1 x CAN)
- 2 x DI/DO interfaces for industrial I/O monitoring
- Dual-SIM redundancy and wide operating temperature range
- Multi-language SDK support (C/C++/Java/Python/Node.js) with open development toolchain
- Multi-protocol VPN (IPsec/OpenVPN/GRE/L2TP/PPTP/DMVPN) and firewall
- RCMS (Robustel Cloud Management System) for large-scale device control

APPLICATION EXAMPLE



SPECIFICATIONS

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 KV

Serial Port

Number of ports	2 x RS-232/RS-485 (software configurable) Or 1 x RS-232/RS-485 (software configurable) + 1 x CAN
Connector	6-pin 3.5 mm terminal block with lock
ESD protection	15 KV air, 8 KV contact
Baud rate	300 bps ~ 115200 bps
Signal definition	RS-232: TXD, RXD, GND RS-485: Data+ (A), Data- (B), GND CAN: H, L, GND

Digital Input/Output Port

Number of ports	2 x DI + 2 x DO, wet contact
Connector	8-pin 3.5 mm terminal block with lock (DI/DO)
Absolute maximum VDC	+30 V DC
Absolute maximum ADC	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 Supporting AP and Client modes
Frequency bands	2.412 - 2.484 GHz (2.4 GHz ISM band) 5.18 - 5.825 GHz (5 GHz ISM band)
Security	WEP 64-bit and 128-bit encryption with H/W TKIP processing WPA/WPA2 (Wi-Fi Protected Access) AES-CCMP hardware implementation as part of 802.11i security standard

Bluetooth Interface (Optional)

Number of antennas	1 (Multiplexing 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

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, 1 x MDM
Watchdog	External

Software (Basic features of RobustOS Pro)

Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, DNS, NTP, SMTP, Telnet, VLAN, HTTPS, ARP, 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 languages	C, C++, Python, Java, Node.js, etc. (for users to develop own applications)
Debian repository available	
Flash available for SDK	6 GB
RAM available for SDK	768 MB

App Center (Available Apps for RobustOS Pro)

Apps*	Language, RCMS, WireGuard, etc.
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*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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Power Supply and Consumption

Connector	2-pin 3.5 mm terminal block with lock
Input voltage	12/24/48 V DC, 9 ~ 60 V DC Reverse polarity protection, surge protection
Power consumption	Idle: 3 W@12 V Max: 12 W@12 V
Recommended power supply	12 V DC/1.5 A power adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 567 g
Dimensions	49 x 105 x 128 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-40 ~ +70 °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) Level 4 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Level 4 EN 61000-4-5 (Surge) Level 3 EN 61000-4-6 (CS) Level 2 EN 61000-4-8 (PFM) Level 4 EN 61000-4-11 (Dips)

ORDERING INFORMATION

Model	Order Code	Wi-Fi + BLE	GNSS	CAN	Frequency Bands*	Country /Region	Certification	Package Contains					
EG5100-A2ECA-NU	A006600707					Global	CE RCM CB UKCA FCC IC	1 x EG5100 Gateway (B Code: B066712) 1 x DIN Rail Mounting Kit					
	A006600708	√	-	-	-			1 x EG5100 Gateway (B Code: B066712) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x Power Adapter					
EG5100-A2ACA-4L-A06GL	A006600709						Global	CE RCM CB UKCA FCC IC NTC	1 x EG5100 Gateway (B Code: B066706) 1 x DIN Rail Mounting Kit				
	A006600710	-	√	-					1 x EG5100 Gateway (B Code: B066706) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 1 x GNSS Antenna 1 x Power Adapter				
EG5100-A2CCA-4L-A06GL	A006600711							Global	CE RCM CB UKCA FCC IC NTC	1 x EG5100 Gateway (B Code: B066708) 1 x DIN Rail Mounting Kit			
	A006600712	√	√	-	4G: LTE FDD: B1/2/3/4/5/7 /8/12/13/18/19/20/25/26 /28 LTE TDD: B38/39/40/41					1 x EG5100 Gateway (B Code: B066708) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter			
EG5100-A2ADA-4L-A06GL	A006600713				3G: WCDMA: B1/2/4/5/6/8/19				Global	CE RCM CB UKCA	1 x EG5100 Gateway (B Code: B066716) 1 x DIN Rail Mounting Kit		
	A006600714	-	√	√	2G: GSM: B2/3/5/8						1 x EG5100 Gateway (B Code: B066716) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 1 x GNSS Antenna 1 x Power Adapter		
EG5100-A2CDA-4L-A06GL	A006600715									Global	CE RCM CB UKCA	1 x EG5100 Gateway (B Code: B066717) 1 x DIN Rail Mounting Kit	
	A006600716	√	√	√								1 x EG5100 Gateway (B Code: B066717) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter	
EG5100-A2ACA-4L-A04JP	A006600717					Japan					TELEC JATE	1 x EG5100 Gateway (B Code: B066714) 1 x DIN Rail Mounting Kit	
	A006600718	-	√	-	4G: LTE FDD: B1/3/8/18/19/26 LTE TDD: B41							1 x EG5100 Gateway (B Code: B066714) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 1 x GNSS Antenna 1 x Power Adapter	
EG5100-A2CCA-4L-A04JP	A006600719				3G: WCDMA: B1/6/8/19		Japan					TELEC JATE	1 x EG5100 Gateway (B Code: B066715) 1 x DIN Rail Mounting Kit
	A006600720	√	√	-									1 x EG5100 Gateway (B Code: B066715) 1 x DIN Rail Mounting Kit 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter

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