



EG3120e



Industrial High-Performance
Edge Computing Server with LTE and
Multi-Serial Integration



INTRODUCTION

The Robustel EG3120e extends industrial connectivity with edge computing capabilities for local data processing, protocol integration, and application hosting. Powered by a quad-core 2.0 GHz Cortex-A53 processor, 2 GB LPDDR4 RAM, and 8 GB eMMC, the EG3120e provides an industrial Linux-based edge platform for local applications, protocol conversion, and data processing close to field devices.

At its core lies **RobustOS Pro**, an advanced operating system based on Debian Linux. This open Linux environment helps developers reduce dependency on proprietary development frameworks, offering native support for standard programming languages (C, C++, Java, Python, Node.js) and access to thousands of existing Debian packages. Whether deploying custom edge logic or utilizing pre-built apps from the **Robustel Cloud Manager Service (RCMS)**, the EG3120e bridges the gap between OT protocols and IT flexibility.

Designed for complex industrial environments, the EG3120e eliminates the need for separate Industrial PCs (IPCs) and serial concentrators. With a dedicated 4 x RS-485 architecture, extensive I/O (DI/DO/AI), and robust LTE Cat 4 connectivity, it provides an integrated platform for smart energy, building automation, and factory retrofit applications.



KEY FEATURES

Server-Grade Edge Power

- Quad-core 2.0 GHz Cortex-A53 CPU with 2 GB LPDDR4 RAM and 8 GB eMMC for lightweight edge computing applications.
- Local processing significantly reduces cloud data transfer costs and network latency.

E2C Factory: All-in-One Edge Intelligence

- The "6C" Workflow: A unified runtime that seamlessly **Collects** data, **Computes** logic, **Caches** logs, provides a **Canvas** for visualization, **Connects** IT/OT, and enables bidirectional **Control**.
- Instant Operational Insights: Built-in Web SCADA and OEE dashboards calculate performance metrics every minute to improve factory visibility.

Direct Legacy Integration (4 x RS-485)

- Four dedicated RS-485 ports allow direct connection to inverters and meters without external hubs.
- Reduces hardware costs and simplifies wiring in complex industrial environments.

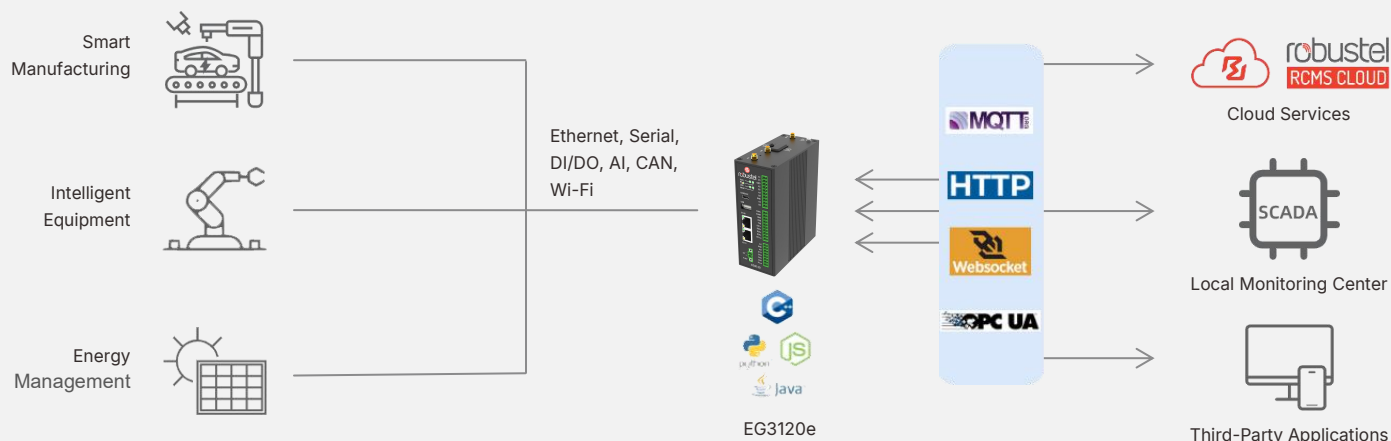
Zero-Touch Global Connectivity (SGP.22 eSIM)

- Native SGP.22 eSIM support allows for over-the-air carrier switching via RCMS.
- Supports a single global SKU strategy, eliminating the need for manual on-site SIM swaps.

Open Linux-Based Ecosystem

- Debian-based Linux operating system with standard development tools and a broad package ecosystem.
- Enables easier porting of existing applications to accelerate time to market.

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

Cellular technologies	4G LTE Cat 4 / 3G / 2G
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, WAN or LAN
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Serial Port

Number of ports	4 x RS-485 and 1 x RS-232
Baud rate	300–115200 bps, default 115200 bps

Digital Input / Digital Output

I/O capability	4 x DI and 4 x DO
Contact type	Wet contact
DI input voltage (high level)	9–30 V
DI input voltage (low level)	0–3 V
DO voltage range	5–30 V
DO load current range	0–100 mA

Wi-Fi Interface

Number of antennas	1 x RP-SMA-K, supporting only 1T1R
Standards	802.11a/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)

Analog Input Interface

Number of interfaces	2 x AI
Input type	Voltage type
Voltage input range	0–24 V

CAN Interface

Number of interfaces	1 x CAN
Standard	CAN 2.0B, compliant with ISO 11898-1:2003, up to 1 Mbps

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 for 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	RoHS 2.0
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)

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, 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	Supports APT and DPKG package management tools
Available RAM for SDK	1.6 GB
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
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ORDERING INFORMATION

Model	Order Code	Interfaces	Frequency Bands	Region	Package Contents
EG3120e-E2EDA-4L-A35GL	A015700001	4 x RS-485 1 x RS-232 4 x DI 4 x DO 2 x AI 1 x CAN Wi-Fi 6	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	Global	1 x EG3120e (B Code: B015700001) 1 x DIN Rail Mounting Kit
	A015700002		3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	Global	1 x EG3120e (B Code: B015700001) 2 x Cellular Antenna 1 x Wi-Fi 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.