



# EV8100

robustOS Pro

## Elevator Voice Gateway

1 x FXS + 2 x ETH + 1 x RS-232 + 1 x RS-485 + 1 x CAN + 4 x DI + 1 x Relay + Wi-Fi (optional) + Bluetooth (optional)



## INTRODUCTION

Robustel's **EV8100** is an advanced elevator voice gateway designed to facilitate voice transmission over VoIP and VoLTE, ensuring seamless communication between cellular networks and elevator intercom systems. This next-generation device features multiple interfaces, enabling comprehensive remote monitoring and management of the elevator communication system, which allows for rapid and efficient resolution of any issues or malfunctions.

With its robust design and advanced capabilities, the EV8100 serves as a reliable and essential safety solution for modern buildings. It supports Docker, allowing for the easy deployment of applications, and is powered by **RobustOS Pro** – Robustel's latest Linux Debian Bullseye-based router operating system, featuring enhanced cybersecurity, an intuitive graphical user interface (GUI), and a wide array of software functionalities, including VPN support, Smart Roaming, SMS remote control, and more.

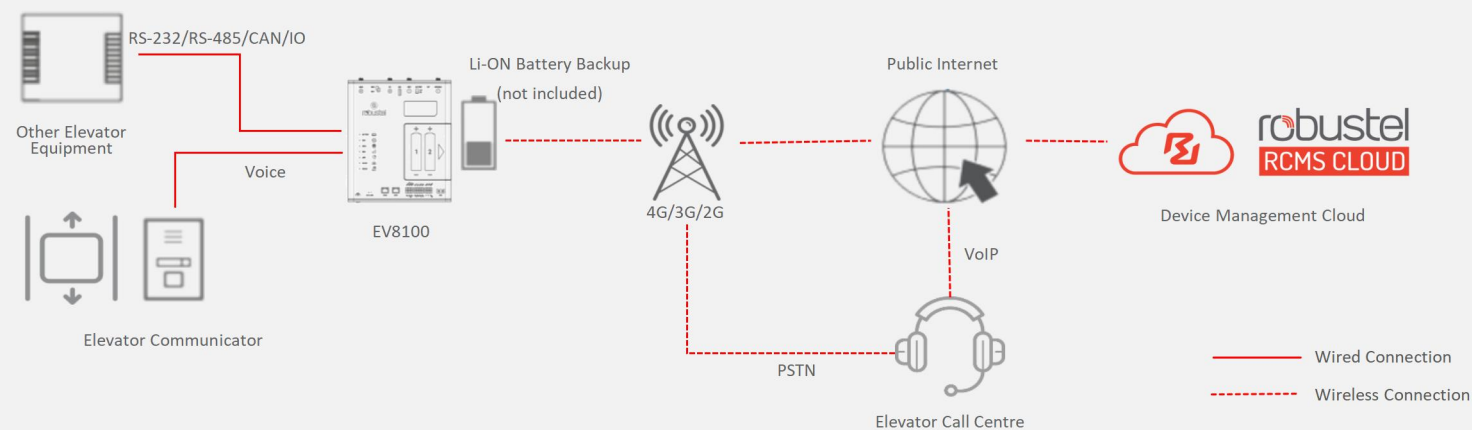
The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize 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

- Supports VoIP and VoLTE, with VoLTE as a backup voice communication line
- Complies with EN 81-28 and AS1735 standards with an integrated battery holder
- Provides stable 4G/3G/2G cellular connectivity with global band support
- Features an 8 GB eMMC Flash for running complex applications
- Enables application management through Docker containerization
- Connects to industrial and legacy devices via 1 x RS-232, 1 x RS-485, and 1 x CAN ports
- Allows monitoring and control with 4 x Digital Inputs (DI) and 1 x Relay
- Offers dual SIM slots for redundant communication
- Includes optional 802.11ac Wi-Fi for Access Point and Client modes
- Provides optional Bluetooth 5.2 for enhanced wireless connectivity
- Supports development in C, C++, Java, Python, and Node.js
- Grants access to over 50,000 applications from the Debian repository
- Ensures secure connections with various VPN options, including IPsec and OpenVPN
- Facilitates device management with Robustel's cloud management platform (RCMS)

## APPLICATION EXAMPLE



# SPECIFICATIONS

## Hardware System

|       |                        |
|-------|------------------------|
| CPU   | ARM Cortex-A7, 792 MHz |
| RAM   | 512 MB DDR3            |
| Flash | 8 GB eMMC              |

## Cellular Interface

|                    |                    |
|--------------------|--------------------|
| Number of antennas | 2                  |
| Connector          | SMA-K              |
| SIM                | 2 x Mini SIM (2FF) |

## FXS Port

|                   |                              |
|-------------------|------------------------------|
| Number of ports   | 1                            |
| Connector         | 2-pin 5.08 mm terminal block |
| Signal definition | TIP, RING                    |
| Loop voltage      | -48 V DC                     |
| Loop current      | 20 mA max                    |
| Loop resistance   | 800 Ohm max                  |

## Ethernet Port

|                 |  |
|-----------------|--|
| Number of ports | 2 x RJ45, 10/100 Mbps, LAN or WAN,<br>1 KV magnet isolation protection |
|-----------------|--|

## Serial Port

|                   |  |
|-------------------|--|
| Number of ports   | 1 x RS-232 + 1 x RS-485 + 1 x CAN                                    |
| Connector         | 3.5 mm terminal block  |
| ESD protection    | 8 KV Air, 4 KV Contact   |
| Baud rate         | 300 bps to 115200 bps for RS-232/RS-485,<br>up to 1 Mbps for CAN     |
| Signal definition | RS-232: TXD, RXD, GND<br>RS-485: A, B, GND<br>CAN: CAN_H, CAN_L, GND |

## Digital Input/Relay Port

|                      |  |
|----------------------|--|
| Number of ports      | 4 x DI (Wet contact) + 1 x Relay (Dry contact)                 |
| Connector            | 3.5 mm terminal block  |
| Absolute maximum VDC | + 30 V DC (DI), + 40 V DC (Relay)                              |
| Absolute maximum ADC | 100 mA (DI), 300 mA (Relay)                                    |
| Signal definition    | DI1+, DI1-, DI2+, DI2-, DI3+, DI3-, DI4+, DI4-;<br>NC, NO, COM |

## Wi-Fi Interface (Optional)

|                    |  |
|--------------------|--|
| Number of antennas | 2  |
| Connector          | RP-SMA-K   |
| Standards          | 802.11 a/b/g/n/ac, 2 x 2 MIMO,<br>Supports AP and Client modes |
| Frequency bands    | 2.4 GHz/5 GHz  |

## 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) +<br>Bluetooth 5.2 |

## Others

|                |   |
|----------------|---|
| Reset button   | 1 x RST   |
| Switch         | 1 x Battery Switch  |
| USB port       | 1 x USB 2.0 (host), Type A, 5V, 500 mA                                      |
| LED indicators | 1 x BATTERY, 1 x RUN, 1 x MDM, 1 x RSSI, 1 x LINE,<br>1 x CLOUD, 1 x DEVICE |
| Watchdog       | External  |

## VoIP

|           |                                    |
|-----------|------------------------------------|
| Protocols | SIP (RFC3261) over UDP, SIPs, SRTP |
| DTMF      | In-band, RFC2976, RFC 2833         |

## Battery

1. Battery holder for 2 x 18650 lithium batteries (not included by default).
2. Device is only compatible with 18650 (flat top) type of lithium batteries.
3. If using a single battery, install it in position 1.
4. Improper installation or use of incorrect batteries may damage the device and void

## Software (Basic features of RobustOS Pro)

|                       |  |
|-----------------------|--|
| Network protocols     | PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, DNS, NTP,<br>SMTP, Telnet, HTTPS, ARP, VLAN, SSH2, DDNS, etc. |
| VPN tunnels           | IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN   |
| Firewalls             | DMZ, anti-DoS, Filtering (IP/Domain name/MAC<br>address), Port Mapping, Access Control                     |
| Remote management     | Web, CLI, SMS  |
| Serial port protocols | Transparent, TCP Client/Server, UDP, Modbus RTU<br>Gateway   |
| Others                | Smart Roaming V2   |

## SDK

|                                |   |
|--------------------------------|---|
| Operating system               | RobustOS Pro (Based on Debian 11 Bullseye)                                    |
| Supported programming language | C, C++, Python, Java, Node.js etc.<br>(for users to develop own applications) |
| Debian repository available    |   |
| Flash available for SDK        | 6 GB  |
| RAM available for SDK          | 256 MB  |

## App Center (Available Apps for RobustOS Pro)

|      |                           |
|------|---------------------------|
| App* | Language, RCMS, Wireguard |
|------|---------------------------|

\*Request on demand. For more Apps please visit [www.robustel.com](http://www.robustel.com).

## Cloud Platform

|                                       |   |
|---------------------------------------|---|
| Robustel Cloud Manager Service (RCMS) | RobustLink, RobustVPN, Operation Console,<br>Elevator IoT |
|---------------------------------------|---|

## Power Supply and Consumption

|                          |  |
|--------------------------|--|
| Connector                | 2-pin 3.5 mm terminal block with lock                                    |
| Input voltage            | 12/24 V DC, 9 ~ 30 V DC<br>Reverse polarity protection, surge protection |
| Power consumption        | Idle: 4 W@12 V<br>Max: 15 W@12 V   |
| Recommended power supply | 12V DC/2 A Power Adapter   |

## Physical Characteristics

|                       |   |
|-----------------------|---|
| Ingress protection    | IP30  |
| Housing & Weight      | Plastic, 470 g  |
| Dimensions            | 170 x 150 x 35 mm   |
| Installations         | Desktop, wall mounting and 35 mm DIN rail mounting<br>Optional magnetic mounting  |
| Operating temperature | -20 ~ + 60 °C (without battery);<br>0 ~ + 45 °C (with battery)<br><i>Note: The battery can be charged at 0 ~ +35 °C</i> |
| Storage temperature   | -40 ~ + 85 °C (without battery)<br>-20 ~ + 35 °C (with battery for long term)   |
| Relative humidity     | 5 ~ 95% RH (non-condensing)   |

## Regulatory and Type Approvals

|               |  |
|---------------|--|
| Environmental | RoHS2.0  |
| EMI           | EN 55032 Conducted Emission Class B<br>EN 55032 Radiated Emission Class B  |
| EMS           | EN 61000-4-2 (ESD) Level 2<br>EN 61000-4-3 (RS) Level 3<br>EN 61000-4-4 (EFT) Level 2<br>EN 61000-4-5 (Surge) Level 2<br>EN 61000-4-6 (CS) Level 2 |

# ORDERING INFORMATION

| Model             | Order Code | Wi-Fi | BLE | Frequency Bands*  | Country /Region | Certification (*In progress)                                | Package Contains  |
|-------------------|------------|-------|-----|---|-----------------|---|---|
| EV8100-A-4L-A06GL | A012600010 | -     | -   | 4G:<br>LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/<br>20/25/26/28<br>LTE TDD: B38/39/40/41 | Global          | CE<br>UKCA<br>FCC<br>IC<br>PTCRB<br>Verizon<br>AT&T         | 1 x EV8100 Gateway (B Code: B126001)<br>1 x Wall Mounting Kit   |
|                   | A012600002 | -     | -   |   |                 |   | 1 x EV8100 Gateway (B Code: B126001)<br>2 x Cellular Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit                      |
| EV8100-B-4L-A06GL | A012600011 | √     | √   | 3G:<br>UMTS: B1/2/4/5/6/8/19<br><br>2G:<br>GSM: B2/3/5/8                            | Global          | CE<br>UKCA<br>FCC<br>IC<br>PTCRB<br>Verizon<br>AT&T<br>NTC* | 1 x EV8100 Gateway (B Code: B126002)<br>1 x Wall Mounting Kit   |
|                   | A012600003 | √     | √   |   |                 |   | 1 x EV8100 Gateway (B Code: B126002)<br>2 x Cellular Antenna<br>2 x Wi-Fi Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit |
| EV8100-A-4L-A34AU | A012600012 | -     | -   | 4G:<br>LTE FDD: B1/2/3/4/5/7/8/28<br>LTE TDD: B40                                   | ANZ             | RCM   | 1 x EV8100 Gateway (B Code: B126003)<br>1 x Wall Mounting Kit   |
|                   | A012600004 | -     | -   |   |                 |   | 1 x EV8100 Gateway (B Code: B126003)<br>2 x Cellular Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit                      |
| EV8100-B-4L-A34AU | A012600013 | √     | √   | 3G:<br>WCDMA: B1/2/4/5/8<br><br>2G:<br>GSM/EDGE: B2/3/5/8                           | ANZ             | RCM   | 1 x EV8100 Gateway (B Code: B126004)<br>1 x Wall Mounting Kit   |
|                   | A012600005 | √     | √   |   |                 |   | 1 x EV8100 Gateway (B Code: B126004)<br>2 x Cellular Antenna<br>2 x Wi-Fi Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit |
| EV8100-A-4L-A04JP | A012600014 | -     | -   | 4G:<br>LTE FDD: B1/3/8/18/19/26<br>LTE TDD: B41                                     | Japan           | JATE<br>TELEC   | 1 x EV8100 Gateway (B Code: B126005)<br>1 x Wall Mounting Kit   |
|                   | A012600006 | -     | -   |   |                 |   | 1 x EV8100 Gateway (B Code: B126005)<br>2 x Cellular Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit                      |
| EV8100-B-4L-A04JP | A012600015 | √     | √   | 3G: B1/6/8/19   | Japan           | JATE<br>TELEC   | 1 x EV8100 Gateway (B Code: B126006)<br>1 x Wall Mounting Kit   |
|                   | A012600007 | √     | √   |   |                 |   | 1 x EV8100 Gateway (B Code: B126006)<br>2 x Cellular Antenna<br>2 x Wi-Fi Antenna<br>1 x Power Adapter<br>1 x Wall Mounting Kit |
| EV8100-A-4L-A12EU | A012600016 | -     | -   | 4G:<br>LTE FDD: B1/3/7/8/20/28A<br>LTE TDD: B38/40/41                               | EU              | CE<br>UKCA  | 1 x EV8100 Gateway (B Code: B126013)<br>1 x Wall Mounting Kit   |
| EV8100-B-4L-A12EU | A012600017 | √     | √   | 3G:<br>WCDMA: B1/8<br><br>2G:<br>GSM/EDGE: B3/8                                     |                 |   | 1 x EV8100 Gateway (B Code: B126014)<br>1 x Wall Mounting Kit   |

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