



robustOS

R1511P

Embedded 4G Router

2 x Ethernet + 1 x Wi-Fi + 1 x SIM + 1 x RS-232/RS-485



INTRODUCTION

The R1511P is a fully featured embedded 4G router designed for applications such as EV charging, traffic signs, vending machines, medical instrumentation, industrial instrumentation, and various other IoT applications. This embedded router addresses two key challenges that traditional routers often face: cost and size.

The R1511P is a cost-effective solution featuring a compact form factor with Ethernet WAN, Wi-Fi WAN, and 4G WAN interfaces, all of which can be independently configured within the powerful onboard operating system - **RobustOS**. RobustOS is Robustel's advanced Linux-based router operating system, providing functionality that could take a software engineer many months to develop and even longer to adequately test. Key features of RobustOS include:

RobustVPN: Innovative use of OpenVPN tunneling to provide a fixed IP address on the router, anywhere.

RCMS: Robustel's cloud management platform, essential for managing a fleet of routers, with options for OEM branding.

SMS Control: Complete control of the router via SMS for general status updates or resolving fault conditions with IP communications.

Automated Failover: Easily configure the router to automatically switch from WAN/Wi-Fi to 4G with just a few clicks.

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:

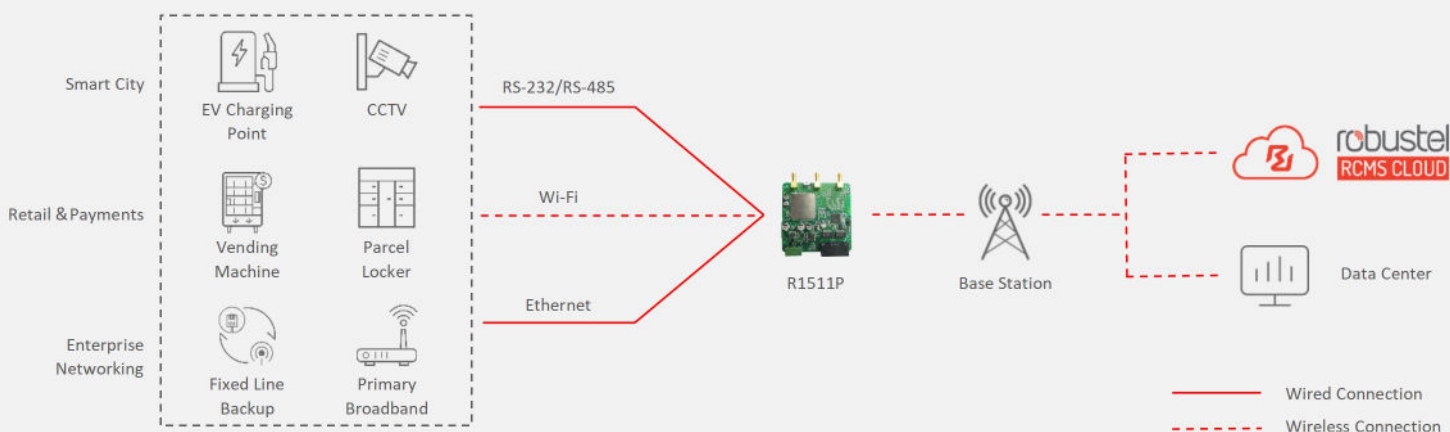
<https://rcms-cloud.robustel.net>



KEY FEATURES

- Compact and powerful 4G router board, fully customizable in software
- Dual Ethernet ports, Wi-Fi (AP and Client mode), and 4G/3G/2G capabilities
- RS-232 (default) or RS-485 port for connecting to serial devices, plus an integrated Modbus gateway
- Pre-certified PCB to minimize manufacturer certification challenges
- Fully programmable Linux environment with comprehensive SDK documentation
- Direct connectivity to Raspberry Pi or similar low-cost embedded PCs for internet access
- Bulk packaging and shipping options available to reduce impact on customer BOM costs

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware System

CPU	MIPS, 650 MHz
RAM	128 MB
Flash	16 MB

Cellular Interface

Number of antennas	2 x external antennas (MAIN + AUX)
Connector	SMA-K
SIM	1 x Mini SIM (2FF)

Ethernet Port

Number of ports	2 x 10/100 Mbps
	2 x LAN or 1 x LAN + 1 x WAN
Magnet isolation protection	1.5 KV

Serial Port

Number of ports	1 x RS-232 or 1 x RS-485 (hardware configuration)
Connector	3-pin 3.5 mm female socket
Baud rate	300 bps ~ 115200 bps

Wi-Fi Interface

Number of antennas	2 (1 x external antenna + 1 x PCB antenna)
Connector	RP-SMA-K (external antenna)
Standards	802.11 b/g/n, supporting AP and Client modes
Frequency bands	2.4 GHz
Security	WEP, WPA, WPA2, WPA3
Encryption	64/128 AES, TKIP

Others

Reset button	1 x RST
LED indicators	1 x RUN, 1 x MDM, 1 x USR, 1 x RSSI, 1 x WLAN
Watchdog	Built-in

Power Supply and Consumption

Connector	2-pin 3.5 mm female socket
Input voltage	12/24 V DC, 9 ~ 36 V DC
	Reverse polarity protection, surge protection
Power consumption	Idle: 1.5 W@12 V
	Max: 6 W@12 V
Recommended power supply	12 V DC/1.0 A power adapter

Physical Characteristics

Housing & Weight	65 g
Installations	Three screw holes are fixed
	ST2 x 8 black cross grooved pan head tapping
Operating temperature	-25 ~ +70 °C
Storage temperature	-40 ~ +85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

Software (Basic features of RobustOS)

Network protocols	PPPoE, TCP, UDP, DHCP, NAT, DNS, NTP, SMTP, Telnet, VLAN, SSH2, DDNS, etc.
VPN tunnels	IPsec, OpenVPN, GRE, WireGuard
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
Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2)

SDK

Supported programming languages	C, C++
Flash available for SDK	4 MB
RAM available for SDK	64 MB

App Center (Available Apps for RobustOS)

Apps*	L2TP, PPTP, DMVPN, VRRP, QoS, Captive Portal, WLAN Multi AP, SNMP, Language, RCMS, etc.
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*Request on demand. For more Apps please visit www.robustel.com.

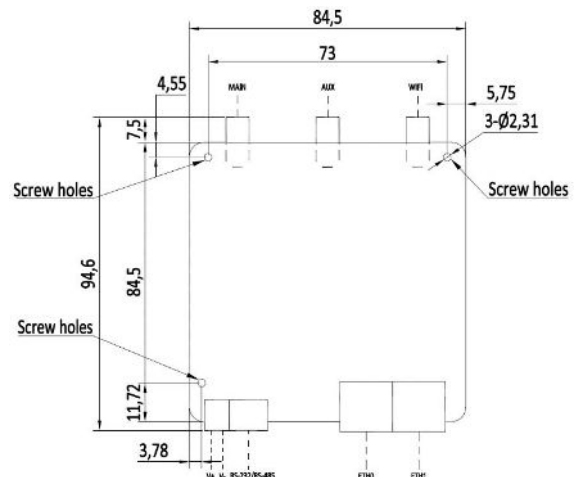
Cloud Platform

Robustel Cloud Manager Service (RCMS)	RobustLink, RobustVPN, Operation Console
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Regulatory and Type Approvals

EMI	EN 55032 Conducted Emission Class B
	EN 55032 Radiated Emission Class B
EMS	EN 61000-4-2 (ESD) Contact Level 2, Air Level 3
	EN 61000-4-3 (RS) Level 2
	EN 61000-4-4 (EFT) Level 2
	EN 61000-4-5 (Surge) Level 3
	EN 61000-4-6 (CS) Level 2

DIMENSIONS (MM)



ORDERING INFORMATION

Model	Order Code	Serial Port	Frequency Bands*	Country /Region	Certification	Package Contains
R1511P-4L-A02EU-A	A006100739	RS-232	4G: LTE FDD: B1/3/7/8/20/28A 3G: WCDMA: B1/8 2G: GSM: B3/8	EMEA+SEA	CE, UKCA, CB	1 x R1511P Router (B Code: B061713)
R1511P-4L-A02EU-B	A006100740	RS-485				1 x R1511P Router (B Code: B061714)
R1511P-4L-A03AU-A	A006100741	RS-232	4G: LTE FDD: B1/2/3/4/5/7/8/28 LTE TDD: B40 3G: WCDMA: B1/2/5/8 2G: GSM: B2/3/5/8	ANZ+LATAM	RCM	1 x R1511P Router (B Code: B061717)
R1511P-4L-A03AU-B	A006100742	RS-485				1 x R1511P Router (B Code: B061718)
R1511P-4L-A05NA-A	A006100743	RS-232	4G: LTE FDD: B2/4/5/12/13/14/66/71 3G: WCDMA: B2/4/5	US	FCC	1 x R1511P Router (B Code: B061731)
R1511P-4L-A05NA-B	A006100744	RS-485				1 x R1511P Router (B Code: B061732)
R1511P-4L-A24EU-A	A006100745	RS-232	4G: LTE FDD: B1/3/5/7/8/20/28 LTE TDD: B38/40/41 3G: WCDMA: B1/8 2G: GSM: B3/8	EMEA+SEA	CE, UKCA	1 x R1511P Router (B Code: B061742)
R1511P-4L-A24EU-B	A006100719	RS-485				1 x R1511P Router (B Code: B006100746)

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