



R1511P robustOS

Embedded 4G Router

2 Ethernet + Wi-Fi + 1 SIM + 1 RS232/RS485



INTRODUCTION

The R1511P is a fully featured embedded 4G router targeted at applications such as EV Charging, traffic signs, vending machines, medical instrumentation, industrial instrumentation and many more IoT-type applications. An embedded router solves two problems that traditional routers do not – cost and size.

The R1511P is a cost-effective small footprint board with Ethernet WAN, Wifi WAN and 4G WAN interfaces that can all be independently configured in the powerful onboard Operating System – **RobustOS**.

RobustOS is Robustel’s brilliant Linux based router operating system that offers functionality that could take a software engineer many months to write and even more months to adequately test. Key features of RobustOS include:

RobustVPN – innovative use of Open VPN tunneling to provide a fixed IP address on the router anywhere

RCMS – Robustel’s Cloud management platform – essential for managing an estate of routers – can be OEM branded

Data Guard – critical ‘failsafe’ that stops unexpected data overusage within seconds of a threshold being breached

Smart Reboot – essential recovery solution for when your roaming SIM card doesn’t roam!

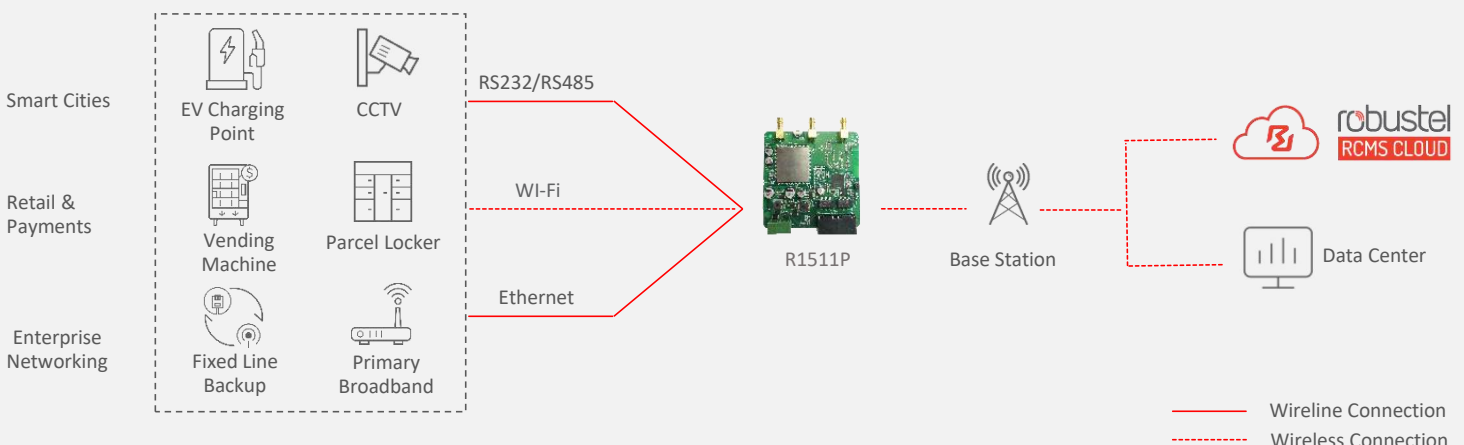
SMS Control – total control of the router using SMS for general status or fixing fault conditions with IP Comms

Automated failover – configure the router to automatically fail from WAN/Wifi to 4G with just a few clicks

KEY FEATURES

- Small footprint powerful 4G router board – fully customizable in software
- Dual Ethernet, Wi-Fi (AP and client) and 4G/3G/2G capability
- RS232 (default) or RS485 port for connection to serial devices + integrated Modbus gateway
- Pre-certified PCB means that manufacturer certification challenges are minimized
- Fully programmable Linux environment with excellent SDK Documentation
- Can be connected directly to Raspberry Pi or similar low cost embedded PC for internet access
- “Smart Reboot” included for enhanced Roaming SIM management
- Bulk packaging + shipping options to minimize addition to customer BOM cost
- RS232 (default) or RS485 port for connection to serial devices + integrated Modbus gateway

APPLICATION EXAMPLE



SPECIFICATIONS

Cellular Interface

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

Ethernet Interface

| | |
|-----------------------------|---|
| Number of ports | 2 x 10/100 Mbps, 2 x LAN or 1 x LAN + 1 x WAN |
| Magnet isolation Protection | 1.5 KV |

Wi-Fi Interface

| | |
|--------------------|---|
| Number of antennas | 1 External antenna |
| Connector | RP-SMA-K (External antenna) |
| Standards | 802.11b/g/n, supports AP and Client modes |
| Frequency bands | 2.4 GHz |
| Security | WEP, WPA, WPA2 |
| Encryption | 64/128 AES, TKIP |
| Data speed | 2 x 2 MIMO, 300 Mbps |

Serial Interface

| | |
|-----------|---|
| Type | 1 x RS232 or 1 x RS485 (Hardware configuration) |
| Connector | 3-pin 3.5 mm female socket |
| Baud rate | 300bps ~ 115200bps |

Others

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

Software (Basic features of RobustOS)

| | |
|-------------------|---|
| Network protocols | PPPoE, TCP, UDP, DHCP, NAT, DNS, NTP, SMTP, VLAN, SSH2, DDNS, etc. |
| VPN tunnel | IPSec, OpenVPN, GRE |
| Firewall | DMZ, anti-DoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control |
| Remote Management | Web, CLI, SMS |

SDK

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

App Center (Available Apps for RobustOS)

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|-------|---|
| Apps* | L2TP, PPTP, DMVPN, VRRP, QoS, Captive Portal, WLAN Multi AP, SNMP, Language, RCMS |
|-------|---|

*Request on demand. For more Apps please visit www.robustel.com.

Power Supply and Consumption

| | |
|-------------------|---|
| Connector | 2-pin 3.5 mm female socket |
| Input voltage | 9 ~ 36V DC |
| Power consumption | Idle: 100 mA@12 V Data link: 500 mA (peak) @12 V |

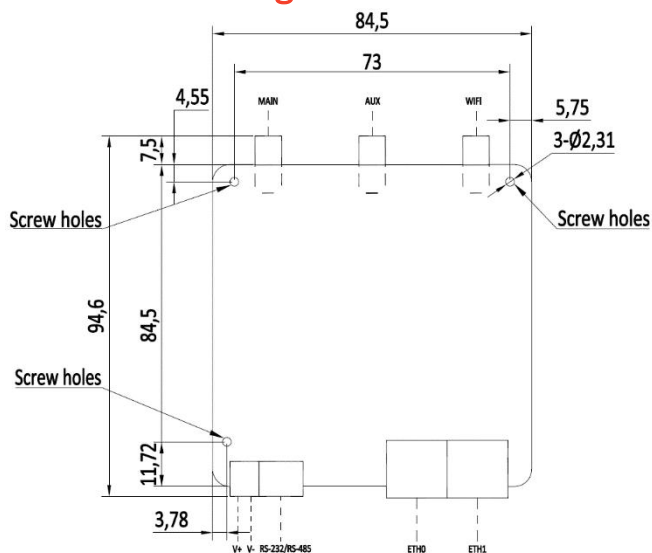
Physical Characteristics

| | |
|-----------------------|---|
| 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 |

Regulatory and Type Approvals

| | |
|-----|---|
| EMI | EN 55032: 2012/AC: 2013 (CE & RE) Class B |
| EMS | IEC 61000-4-2 (ESD) Contact Level 2 IEC 61000-4-3 (RS) Level 2 IEC 61000-4-4 (EFT) Level 2 IEC 61000-4-5 (Surge) Level 2 IEC 61000-4-6 (CS) Level 2 |

Dimension Diagram



ORDERING INFORMATION

| Model | PN | Serial Interface | LTE Category | Frequency Bands* | Region/Country | Certification |
|-------------------|---------|------------------|--------------|--|----------------|---------------|
| R1511P-4L-A02EU-A | B061713 | RS232 | CAT4 | 4G: LTE FDD: B1/B3/B7/B8/B20/B28A 3G: WCDMA: B1/B8 2G: GSM: B3/B8 | EMEA | CE |
| R1511P-4L-A02EU-B | B061714 | RS485 | | | | |
| R1511P-4L-A03AU-A | B061717 | RS232 | CAT4 | 4G: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE TDD: B40 3G: WCDMA: B1/B2/B5/B8 2G: GSM: B2/B3/B5/B8 | Oceania | RCM |
| R1511P-4L-A03AU-B | B061718 | RS485 | | | | |

* Please note that the different LTE frequency bands are model dependent and not all 4G frequencies are currently supported on a single model of 1511P router.

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