



R1511P

robustOS

Embedded 4G Router

2 Ethernet + WiFi + 1 SIM + 1 RS-232/RS-485



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!

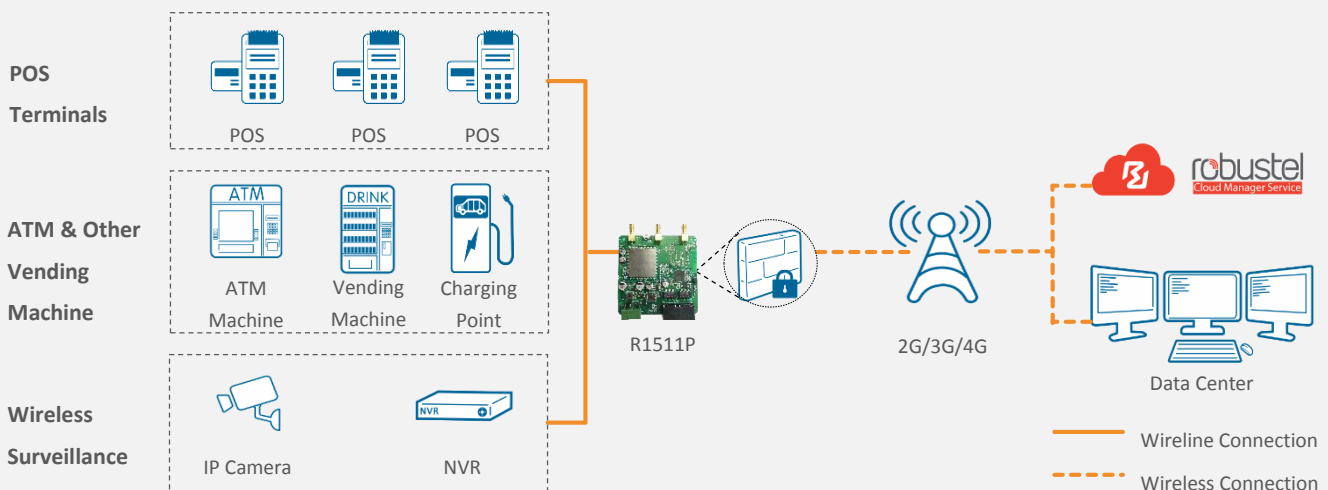
SMS Control – total control of the router using SMS for general status or fixing fault conditions with IP Comms

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 customisable in software
- > Dual Ethernet, Wifi (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 minimised
- > 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 minimise 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 antenna(MAIN + AUX)
Connector	SMA-K
SIM	1* (3 V & 1.8 V) Standard SIM or eSIM

Ethernet Interface

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

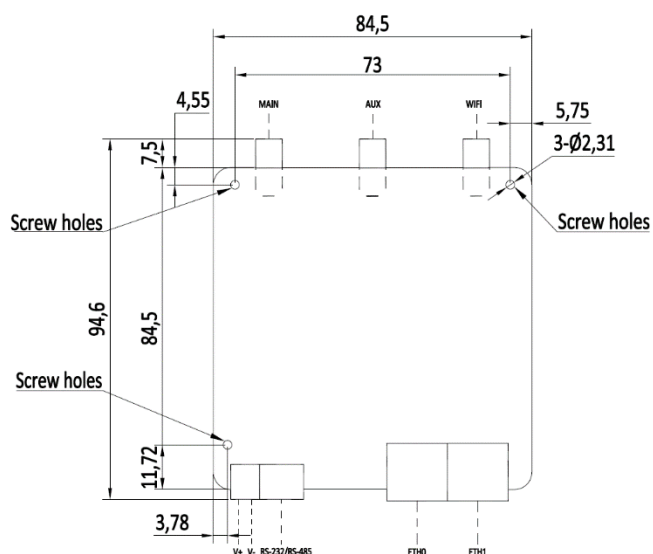
WiFi Interface

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*2 MIMO, 300 Mbps
RF output power	802.11b 19 dBm
(+/-1 dBm)	802.11g 19 dBm
	802.11n (20 MHz) 18 dBm
	802.11n (40 MHz) 17 dBm
Receiving sensitivity	802.11b -93 dBm
(+/-1 dBm)	802.11g -90 dBm
	802.11n (20 MHz) -88 dBm
	802.11n (40 MHz) -85 dBm

Serial Interface

Type	1 x RS-232 or 1 x RS-485(Hardware configuration)
Connector	3-pin 3.5 mm female socket
Baud rate	300bps to 115200bps

Dimension diagram



Others

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

Software (Basic features of RobustOS)

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

SDK

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

App Center (Available Apps for RobustOS)

Apps*	L2TP, PPTP, DMVPN, VRRP, QoS, Captive Portal, WLAN Multi AP, SNMP, Language, RCMS
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*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 to 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*8 black cross grooved pan head tapping
Operating Temperature	-25 to +70 °C
Storage Temperature	-40 to +85 °C
Relative Humidity	5 to 95% RH

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

*(In progress)

*See ordering information for details about other certifications

ORDERING INFORMATION

Model	Serial Interface	LTE Category	Frequency Bands*			Region/ Country	Certification (* In progress)
			4G	3G	2G		
R1511P-4L-A02EU-A	RS-232	CAT4	LTE FDD:	WCDMA: B1/B8	GSM: B3/B8	EMEA	CE*
R1511P-4L-A02EU-B	RS-485		B1/B3/B7/B8/B20/B28A				

* 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.

* Please contact your sales representative for more detailed information on model numbers and for availability of "Global" routers.