



robustOS

# R1520

Industrial Dual SIM Cellular VPN Router  
Suitable for 2G, 3G, 4G networks



## INTRODUCTION

The R1520 router from Robustel is a versatile 4G router equipped with five Ethernet ports and a range of advanced functions tailored for IoT applications. There are two core models in the R1520 family:

**R1520 (S):** The STANDARD version without GNSS, suitable for most light industrial and enterprise applications.

**R1520 (V):** The VEHICLE version, featuring E-mark certification and GNSS. This model is optimized for vehicle use but can also be utilized in various other applications.

The Linux-based operating system, **RobustOS**, has been developed entirely in-house, ensuring a high standard of technical support and infrequent firmware updates due to the modular nature of the OS. RobustOS includes many unique software innovations, such as:

**RobustVPN:** A highly flexible hosted VPN service that allows customers to easily enjoy a fixed IP router.

**Sniffer:** A built-in tool that enables users to run a Wireshark trace directly on the router, providing invaluable diagnostic information.

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:

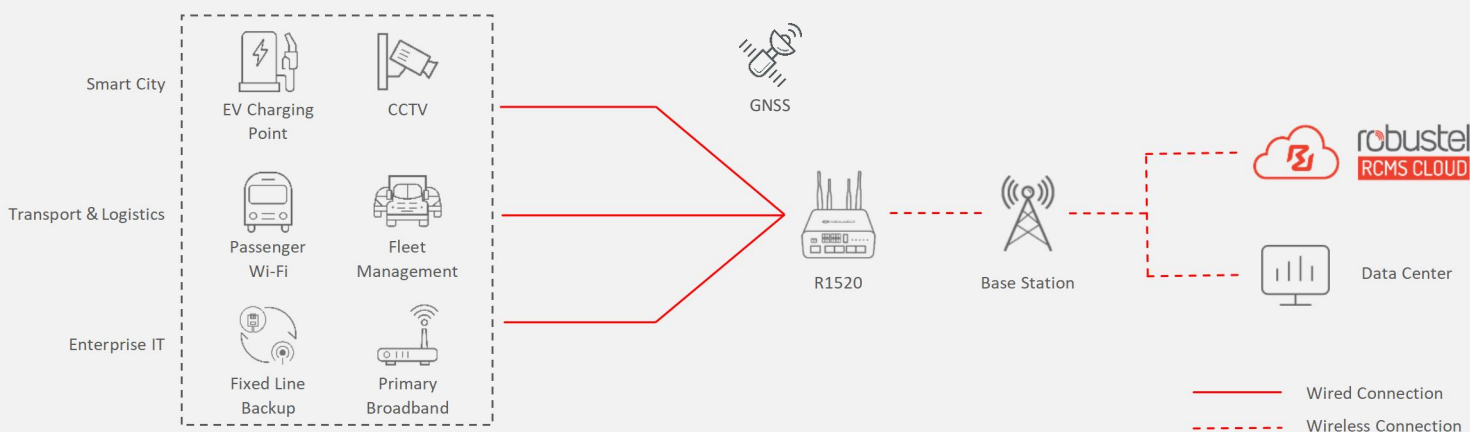
<https://rcms-cloud.robustel.net>



## KEY FEATURES

- Cost-effective and high-performance 3G/4G router
- Rugged design with a power input range of 9 ~ 36 V DC
- "Global" 4G version available for international use
- E-mark certification for in-vehicle applications
- Optically isolated digital I/O for enhanced safety
- 10-bit analog interface for direct sensor connections
- Supports dual SIMs and Wi-Fi/Ethernet as WAN options
- Cellular keep-alive feature and fast failover capabilities
- Extensive range of software applications for enhanced functionality
- RobustVPN - Hosted service providing a fixed IP router
- Supports multiple VPN protocols: IPsec, OpenVPN, GRE, L2TP, PPTP, and DMVPN
- Extensive global certifications ensure compliance and reliability

## APPLICATION EXAMPLE



# SPECIFICATIONS

## Hardware System

CPU	MIPS, 650 MHz
RAM	128 MB
Flash	16 MB

## Cellular Interface

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

## Ethernet Port

Number of ports	5 x 10/100 Mbps 5 LAN by default, can be configured as 1 WAN + 4 LAN
WAN port	Support 802.3af & 802.3at PD feature on ETH0 (optional)
Magnet isolation protection	1.5 KV

## Digital Input/Output Port

Number of ports	1 x DI + 1 x DO, wet contact
Connector	2 x 3-pin 3.5 mm female socket
Isolation	3 KV
Level	3 ~ 30 V DC = HIGH, 0 ~ 1 V DC = LOW
Absolute maximum VDC	30 V DC (DI/DO)
Absolute maximum ADC	10 mA (DI/DO)

## Analog Input Port

Number of ports	1 x AI (can be configured as voltage type or current type)
Connector	2 x 3-pin 3.5 mm female socket
Voltage input range	0 ~ 24 V DC
Current input range	4 ~ 20 mA (current-type input requires external resistance, and finally measured by voltage)
Signal definition	AI, AGND

## Serial Port

Number of ports	1 x RS-232 + 1 x RS-485
Connector	2 x 4-pin 3.5 mm female socket
Signal definition	RS-232: RXD, TXD, SGND, RTS, CTS RS-485: Data+ (A), Data- (B), Ground (GND)

## Wi-Fi Interface

Number of antennas	2
Connector	RP-SMA-K
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

## Other Interfaces

1 x GNSS interface (Optional, depending on the cellular module)

1 x 480 Mbps High-speed USB 2.0 port (Type A, 5 V, 500 mA)

## Others

Reset button	1 x RST
LED indicators	1 x RUN, 1 x MDM, 1 x USR, 1 x WLAN, 1 x RSSI
Watchdog	Built-in
RTC	External RTC clock for accurate timekeeping Backup energy storage capacitor provides up to 2 days of maintenance

## Software (Basic features of RobustOS)

Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPS, DNS, ARP, 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)
Others	Smart Roaming 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, Edge2Cloud, etc.
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\*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
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## Power Supply and Consumption

Connector	2-pin 3.5 mm female socket
Input voltage	12/24 V DC, 9 ~ 36 V DC
PoE-PD voltage	40 ~ 57 V DC Reverse polarity protection, surge protection
Power consumption	Idle: 3 W@12 V Max: 11 W@12 V
Recommended power supply	12 V DC/1.5 A power adapter

## Physical Characteristics

Ingress protection	IP30
Housing & Weight	Plastic, 250 g
Dimensions	46 x 90 x 105 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-25 ~ +70 °C
Storage temperature	-40 ~ +85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

## Regulatory and Type Approvals

Environmental	RoHS2.0, WEEE
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 EN 61000-4-11 (Dips) Level 2

## ORDERING INFORMATION

Model	Order Code	PoE-PD	Frequency Bands*	Country /Region	Certification	Package Contains		
R1520-4L (V)	A005600715	√		EMEA+SEA	CE, E-Mark, FCC, IC, TDRA, ICASA, UKCA, SIRIM, NTC, E118	1 x R1520 Router (B Code: B056708)		
	A005600716					1 x R1520 Router (B Code: B056708) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter		
	A005600717	-	LTE TDD: B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8			ANZ+LATAM	RCM, CB, E118	1 x R1520 Router (B Code: B056715)
	A005600718		1 x R1520 Router (B Code: B056715) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter					
	A005600719	√				ANZ+LATAM	RCM, CB, E118	1 x R1520 Router (B Code: B056704)
	A005600720							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
	A005600721	-		ANZ+LATAM	RCM, CB, E118, ANATEL	1 x R1520 Router (B Code: B056713)		
	A005600722					1 x R1520 Router (B Code: B056713) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter		
	A005600723	√		Japan	Telec, JATE	1 x R1520 Router (B Code: B056705)		
	A005600724					4G: LTE FDD: B1/3/8/18/19/26 LTE TDD: B41 3G: WCDMA: B1/6/8/19	1 x R1520 Router (B Code: B056705) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter	
	A005600725	-				1 x R1520 Router (B Code: B056714)		
	A005600726					1 x R1520 Router (B Code: B056714) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter		

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

Model	Order Code	PoE-PD	Frequency Bands*	Country /Region	Certification	Package Contains		
R1520-4L (S)	A005600709	√	4G: LTE FDD: B1/3/7/8/20/28A 3G: WCDMA: B1/8 2G: GSM: B3/8	EMEA+SEA	CE, UKCA, E-Mark, CB, E118	1 x R1520 Router (B Code: B056703)		
	A005600710					1 x R1520 Router (B Code: B056703) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter		
	A005600711	1 x R1520 Router (B Code: B056712)						
	A005600712	-					1 x R1520 Router (B Code: B056712) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter	
	A005600713	-			4G: LTE FDD: B1/3/5/7/8/20/28 LTE TDD: B38/40/41 3G: WCDMA: B1/5/8 2G: GSM: B3/8		CE, UKCA, E-Mark	1 x R1520 Router (B Code: B056720)
	A005600714							1 x R1520 Router (B Code: B056720) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Wi-Fi Antenna 1 x Power Adapter

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