robustel

R1520

robustOS

Industrial Dual SIM Cellular VPN Router

Suitable for 2G, 3G, 4G networks

INTRODUCTION

The R1520 router from Robustel is a versatile 4G router with 5 x Ethernet ports and a range of advanced functions for IoT Applications. There are 2 core models in the R1520 family as follows:
R1520 (S) – This is the STANDARD version without GPS suitable for most light industrial and Enterprise applications
R1520 (V) – This is the VEHICLE version with E-mark and GPS. It is optimized for vehicle use but can be used for any application

The Linux based Operating System, **RobustOS**, has been developed entirely in-house which leads to a very high standard of technical support and infrequent firmware updates due to modular nature of the OS. Many unique software innovations are built on top of RobustOS, these include:
RobustVPN – highly flexible hosted VPN service so customers can easily enjoy a "fixed IP router"
Data-Guard – invaluable failsafe in case of a system failure and runaway data usage
Smart Reboot – SMS tool to push roaming SIMs from a non-working to working state
Sniffer – run a Wireshark trace directly on the router for invaluable diagnostic information.

RCMS is Robustel's free router monitoring service that is fully compatible with the R1520. It allows customer to see a location overview of their routers quickly and simply on a map. Features such as data usage, signal strength, current network and much more can then be viewed on a per router basis. Over-the-air updates are supported for Firmware, router configuration and Apps serving as essential 'insurance' if anything was not quite right during deployment.

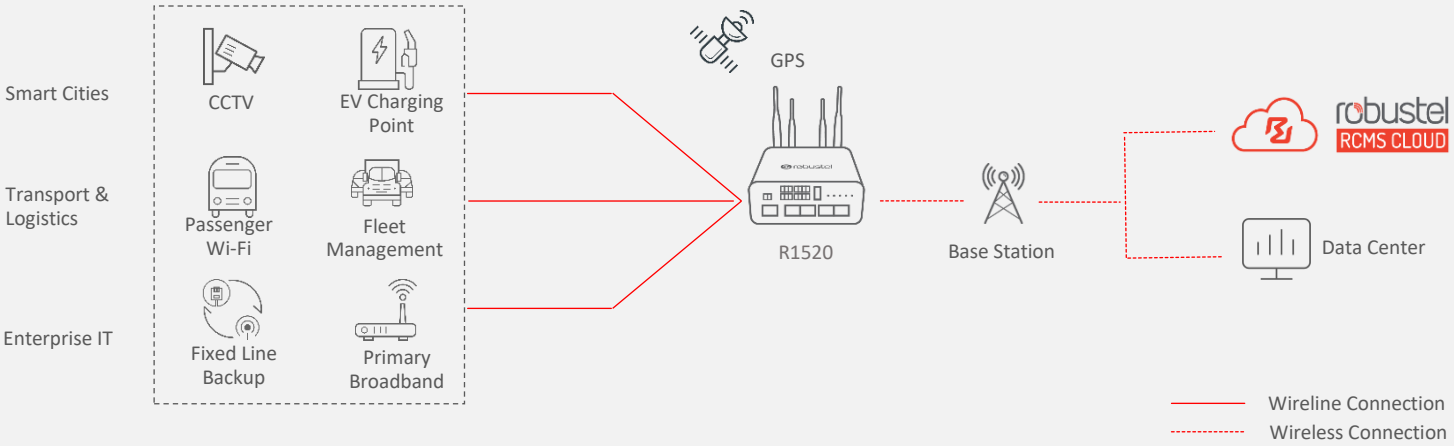
You can try Robustel's free router management platform by signing up here:
https://rcms-cloud.robustel.net

robustel RCMS CLOUD

KEY FEATURES

- Cost-effective & high performance 3G/4G router
- Rugged design with 9 to 36 VDC power
- "Global" 4G version available
- E-mark certification for in vehicle use
- Optically isolated digital IO
- 10-bit Analog interface for direct sensor connections
- Supports Dual SIMs & Wi-Fi/Ethernet as WAN
- Cellular keep-alive and fast failover
- Extensive range of software "apps" for enhanced functionality
- RobustVPN – hosted service providing a "fixed IP" router
- IPsec/OpenVPN/GRE/L2TP/PPTP/DMVPN supported
- Extensive global certifications

APPLICATION EXAMPLE



SPECIFICATIONS

Cellular Interface

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

Ethernet Interface

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

Wi-Fi Interface

Number of antennas	2
Connector	RP-SMA-K
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

DI/DO

Type	1 x DI + 1 x DO, wet contact
Isolation	3 KV
Socket form	2 x 3-pin 3.5 mm female socket
Level	3 ~ 30 VDC = HIGH, 0 ~ 1VDC = LOW
Absolute maximum VDC	30 VDC (DI/DO)
Absolute maximum ADC	10 mA (DI/DO)

Analog Input

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

Serial Port

Type	1 x RS232 + 1 x RS485
Socket form	2 x 4-pin 3.5 mm female socket
Signal definitions	RS232: RXD, TXD, SGND, RTS, CTS RS485: Data+ (A), Data- (B), GND

Other Interfaces

1 x GPS interface (Optional, depending on cellular module)
1 x 480Mbps high-speed USB 2.0 interface

Others

Reset button	1 x RST
RTC	External RTC clock, Backup energy storage capacitor can be maintained for 2 days
LED indicators	1 x RUN, 1 x MDM, 1 x USR, 1 x RSSI, 1 x Wi-Fi
Built-in	Watchdog, Timer

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 tunnel	IPsec, OpenVPN, GRE
Firewall	DMZ, anti-DDoS, Filtering (IP/Domain name/ MAC address), Port Mapping, Access Control
Remote management	Web, CLI, SMS

App Center (Available Apps for RobustOS)

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.*

SDK

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

Power Supply and Consumption

Connector	2-pin 3.5 mm socket with lock
Input voltage	9 ~ 36 VDC
Power consumption	Idle: 250 mA@12 V Data link: 890 mA (peak) @12 V

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Plastic, 250 g
Dimensions	105 x 90 x 46 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

Regulatory and Type Approvals

Environmental	RoHS2.0, WEEE
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 IEC 61000-4-11 (DIP) Level 2

ORDERING INFORMATION

Model	PN	GNSS	POE-PD	Frequency Bands*	Country/Region	Certifications (*In progress)
R1520-4L (V)	B056704	√	√	**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
	B056713	√	-			
	B056705	√	√	**4G**: LTE FDD: B1/B3/B8/B18/B19/B26; LTE TDD: B41 **3G**: WCDMA: B1/B6/B8/B19	Japan	Telec, JATE
	B056714	√	-			
	B056708	√	√	**4G**: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/ B18/B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 **3G**: WCDMA: B1/B2/B4/B5/B6/B8/B19 **2G**: GSM: 850/900/1800/1900 MHz	EMEA North America, China,	CE, E-Mark, FCC, IC, CCC, TRA, ICASA, UKCA
	B056715	√	-			
R1520-4L (S)	B056703	-	√	**4G**: LTE FDD: B1/B3/B7/B8/B20/B28A **3G**: WCDMA: B1/B8 **2G**: GSM: B3/B8	EMEA	CE, UKCA, E-Mark
	B056712	-	-			

**For more information about 4G frequency bands in different countries, please contact your Robustel sales representative.*

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