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 optimised 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 customers 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.
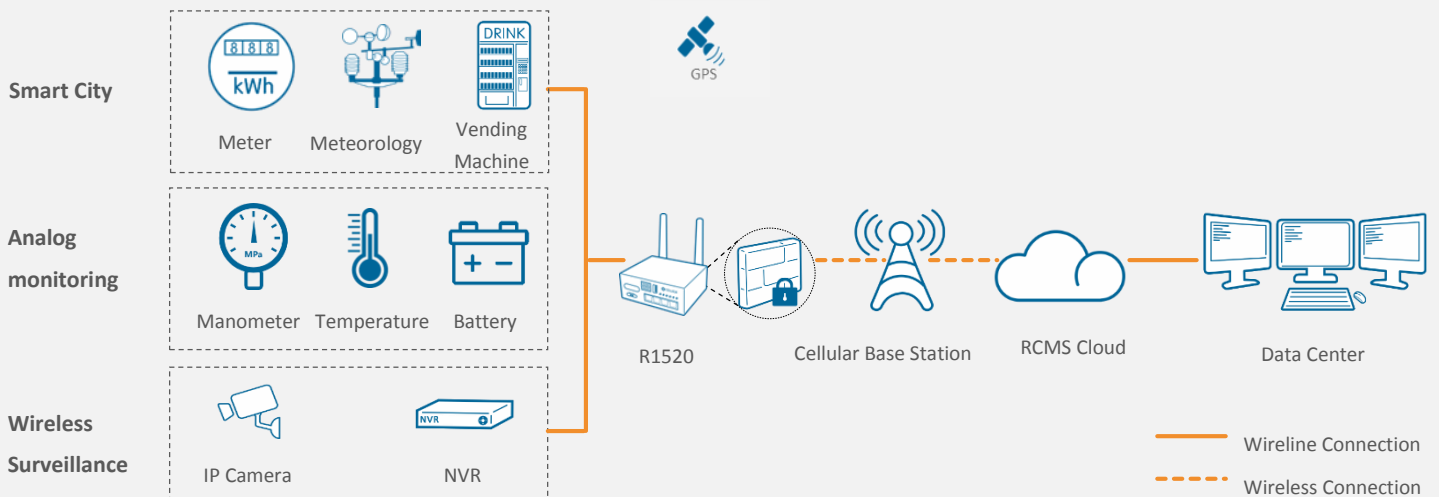Over-the-air updates are supported for Firmware, router configuration and Apps serving as essential 'insurance' if anything was not quite right during deployment.
For a free trial of RCMS, visit: https://rcms-cloud.robustel.net

KEY FEATURES

- Cost-effective & high performance 3G/4G router
- Rugged design with 9 to 36Vdc power
- "Global" 4G version available
- E-mark certification for in vehicle use
- Optically isolated digital IO
- 10-bit Analogue interface for direct sensor connections
- Supports Dual SIMs & Wifi/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

Smart City	Meter Meteorology Vending Machine	GPS
Analog monitoring	Manometer Temperature Battery	R1520 Cellular Base Station RCMS Cloud Data Center
Wireless Surveillance	IP Camera NVR	Wireline Connection Wireless Connection

SPECIFICATIONS

Cellular Interface

Number of antennas	2
Connector	SMA-K
SIM	2, Standard SIM or eSIM

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
Magnet isolation	1.5 KV

WiFi 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*2 MIMO, 300 Mbps

DI/DO

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

Analogue Input

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

Serial Port

Type	1 x RS-232 + 1 x RS-485 serial port
Socket form	2 * 4-pin 3.5 mm female socket
Signal definition	RXD TXD SGND RTS CTS（RS-232） Data+ (A)，Data- (B)，ground(GND);(RS-485)

Device Interface

1 x GPS interface (Optional, depending on the cellular module)
1 x 480Mbps high-speed USB2.0 interface

Others

Reset button	1 x reset button (RST button)
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 WiFi
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-DoS, 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 Protal, 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 socket with lock
Input voltage	9 to 36V DC
Power consumption	Idle: 100 mA@12 V Data link:1.0 A (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 to +70 °C
Storage Temperature	-40 to +85 °C
Relative Humidity	5 to 95% RH

Approvals

Environmental	RoHS2.0, WEEE
EMC	
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

*(In progress)

ORDERING INFORMATION

Model	R1520-4L (S)	R1520-4L (V)	R1520-4L (V)	R1520-4L (V)	R1520-4L (V)
PN	B056703	B056708	B056704	B056705	B056702
Air Interface	GSM/WCDMA/ FDD LTE	GSM/WCDMA/ FDD LTE/TDD LTE	GSM/WCDMA/ FDD LTE/TDD LTE	WCDMA/ FDD LTE/TDD LTE	GSM/CDMA/WCDMA/TD-SCDMA/FDD LTE/TDD LTE
Frequency Bands	LTE FDD: B1/B3/B7/B8/B20/B28A	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28	LTE FDD： B1/B3/B8/B18/B19/B26	LTE-FDD: B1/B3/B5/B8
4G*		B13/B18/B19/B20/B25/B26/B28; LTE TDD: B38/B39/B40/B41;	LTE TDD: B40	LTE TDD: B41	LTE-TDD: B38/B39/B40/B41
3G	B1/B8	B1/B2/B4/B5/B6/B8/B19	B1/B2/B5/B8	B1/B6/B8/B19	WCDMA: B1/B8 TD-SCDMA: B34/B39 CDMA: BC0
2G	900/1800MHz	850/900/1800/1900MHz	850/900/1800/1900MHz	/	900/1800MHz
Region/Country	EMEA/Korea/Thailand/India	EMEA	Australia/New Zealand/ Taiwan/Brazil/Indonesia	Japan	China/India
GNSS	/	GPS/GLONASS/BeiDou/Galileo	GPS/GLONASS/BeiDou/Galileo	GPS/GLONASS/BeiDou/Galileo	GPS/GLONASS/BeiDou/Galileo
Certification(* In progress)	CE	CE, EMARK	RCM	TELEC*, JATE*	

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