



# R5020 Lite robustOS

High Speed Smart 5G Router

2 Eth + 1 RS232 /RS485 + High-speed dual-band Wi-Fi



## INTRODUCTION

The R5020 Lite is Robustel’s new 5G capable router supporting global 5G, 4G and 3G bands. The R5020 Lite leverages our tried and tested high performance CPU platform and **RobustOS 5** – an Operating System developed in-house by Robustel that has passed extensive 3<sup>rd</sup> party penetration testing.

R5020 Lite is compatible with 3GPP Release 16 and targeted at the following applications:

**Broadband Failover** – R5020 Lite can be configured to use Ethernet or Wi-Fi as primary internet and failover to 5G/4G in the event of an outage. This can help provide resilience to shops and small offices at a reasonable cost and provide sufficient bandwidth for many users. IPsec, DMVPN, GRE+ many more protocols can be used for connections into core networks.

**Primary Broadband** – Cellular network operators can now provide unlimited 5G tariffs at very reasonable prices. For many, a chance to cut the cables and use a wireless internet connection can be technically or commercially favorable.

**SD-WAN** – whilst many appliances have cellular options built-in, the R5020 Lite can offer a very low-cost way to add a 5G backup route & by virtue of being able to located externally to the appliance, is more likely to get a good 5G signal!

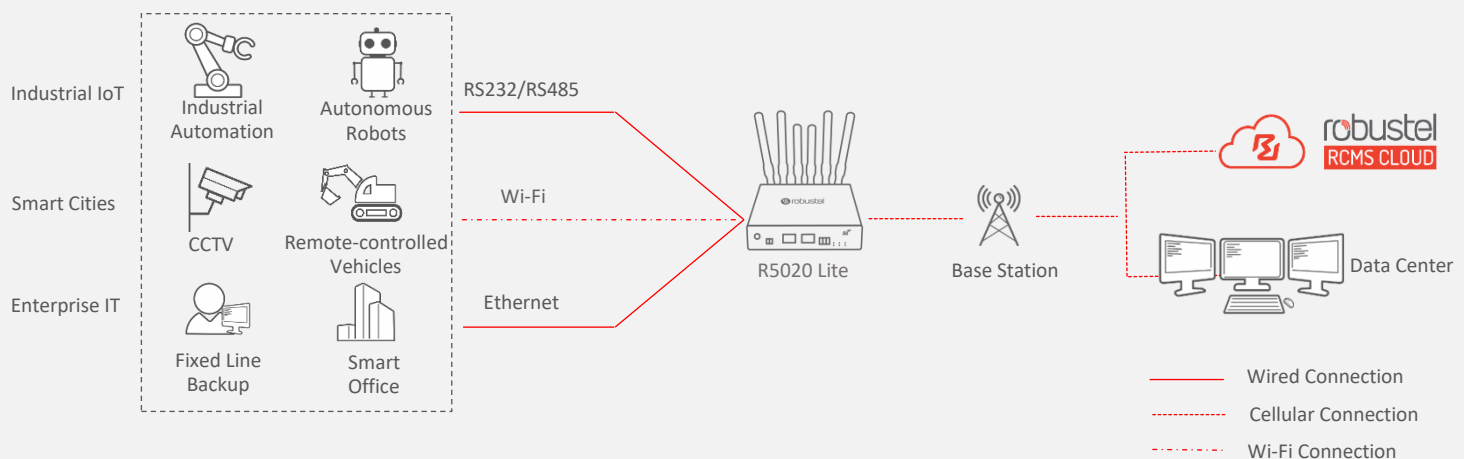
**RCMS** is Robustel’s free router monitoring service that is fully compatible with the R5020 Lite. It is an extremely polished piece of software hosted on MS Azure & available as a privately hosted instance. You can try Robustel’s free router management platform by signing up here: <https://rcms-cloud.robustel.net>

## KEY FEATURES

- Low cost industrial 5G Router
- Global 5G/4G/3G cellular connections
- Cutting-edge 5G 3GPP Release 16 cellular interface
- Supports Ethernet, Wi-Fi and 5G/4G internet with auto-failover
- 1 x RS232/RS485 (software configurable) ports for connection to industrial/legacy devices
- Fully programmable Operating System with a well-documented SDK
- Multiple VPN options available including DMVPN, IPsec, L2TP + more...
- Free cloud management platform - RCMS
- Robust metal enclosure with small footprint – DIN-rail + wall mount options



## APPLICATION EXAMPLE



## SPECIFICATIONS

### Cellular Interface

Number of antennas	4 (ANT0 + ANT1 + ANT2 + ANT3)
Connector	SMA-K
SIM	2 x Mini SIM (2FF)

### Ethernet Interface

Number of ports	2 x 10/100/1000 Mbps, 2 LAN by default, can be configured as 1 WAN + 1 LAN
-----------------	--

Isolation protection	1 KV
----------------------	------

### Wi-Fi Interface

Number of antennas	2 (Wi-Fi1 + Wi-Fi2)
Connector	RP-SMA-K
Standards	802.11a/b/g/n/ac, 2 x 2 MIMO, supports AP and Client modes

Frequency bands	2.412 - 2.472 GHz (2.4 GHz ISM band) 5.15 - 5.825 GHz (5 GHz ISM band)
-----------------	---

Security	WPA, WPA2, WEP, WPA3*
----------	-----------------------

Encryption	AES, TKIP, WEP64
------------	------------------

Data speed	5G: Up to 867 Mbps
------------	--------------------

	2.4G: Up to 300 Mbps
--	----------------------

### Serial Interface

Number of ports	1 x RS232 or 1 x RS485 (Software configurable)
-----------------	--

Connector	1 x 3-pin 3.5 mm female socket
-----------	--------------------------------

ESD protection	±8 KV air discharge, ±6 KV contact discharge
----------------	--

Baud rate	300 bps ~ 115200 bps
-----------	----------------------

Signal definition	RS232: TXD, RXD, GND
-------------------	----------------------

	RS485: Data+ (A), Data- (B), Ground (GND)
--	---

### Others

Reset button	1 x RST
--------------	---------

LED indicators	1 x RUN, 1 x Modem, 1 x USB, 1 x RSSI, 1 x Wi-Fi 2.4G, 1 x Wi-Fi 5G
----------------	--

Built-in	Watchdog
----------	----------

### 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
-------------------	---------------

Serial port	Transparent, TCP Client/Server, UDP,
-------------	--------------------------------------

	Modbus RTU to TCP
--	-------------------

Others	Data Guard, etc.
--------	------------------

### SDK

Supported programming languages	C, C++
---------------------------------	--------

Flash available for SDK	5 MB
-------------------------	------

RAM available for SDK	128 MB
-----------------------	--------

### App Center (Available Apps for RobustOS)

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

\*Upon request. For more Apps please visit [www.robustel.com](http://www.robustel.com).

### Power Supply and Consumption

Connector	2-pin 3.5 mm female socket with lock
-----------	--------------------------------------

Input voltage	12 ~ 36 VDC
---------------	-------------

Power consumption	Idle: 370 mA@12 V
-------------------	-------------------

	Data link: 1.7 A (peak) @12 V
--	-------------------------------

### Physical Characteristics

Ingress protection	IP30
--------------------	------

Housing & Weight	Aluminum, 475 g
------------------	-----------------

Dimension	136*115*32 mm
-----------	---------------

Installations	DIN rail mounting, desktop or wall mounting
---------------	---

Operating temperature	-20 ~ +55°C (Normal temperature)
-----------------------	----------------------------------

	-25 ~ +70°C (Extended temperature)
--	------------------------------------

Storage temperature	-40 ~ +85°C
---------------------	-------------

Relative humidity	5 ~ 95%RH
-------------------	-----------

### Regulatory and Type Approvals

Environmental	RoHS2.0
---------------	---------

## ORDERING INFORMATION

Model	PN	Frequency Bands*	Country/Region	Certification (*Planned)
R5020L-A-5G-A25GL	B098004	<b>5G:</b> NR SA/NSA: n1/n2/n3/n5/n7/n8/n12/n13/n14/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n71/n75/n76/n77/n78/n79 <b>4G:</b> LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE TDD: B34/B38/B39/B40/B41/B42/B43/B48 LAA: B46 (only supports 2 x 2 MIMO) <b>3G:</b> WCDMA: B1/B2/B4/B5/B8/B19	Global	CE*,UKCA*,RCM*

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