R5020 Lite robustOS

High Speed Smart 5G Router

2 Eth + 1 RS232 /RS485 + GNSS (Optional) +

Dual-band Wi-Fi

INTRODUCTION

The R5020 Lite is Robustel's new 5G capable router support 5G, 4G and 3G Network. 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 3rd 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!
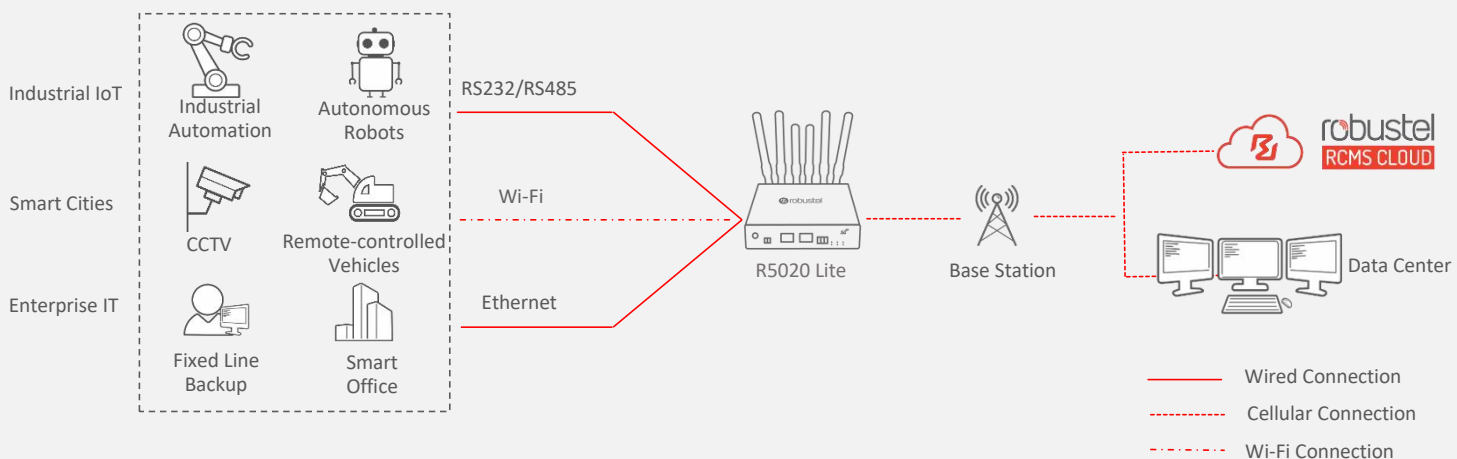
RCMS is Robustel's free router monitoring service that is fully compatible with the R5020 Lite. It is an extremely polished piece of software hosted on MS Azure & available as a privately hosted instance. You can try Robustel's free router management platform by signing up here: https://rcms-cloud.robustel.net

KEY FEATURES

➢ Low cost industrial 5G Router

➢ 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

robustel RCMS CLOUD

APPLICATION EXAMPLE

Industrial IoT — Industrial Automation, Autonomous Robots

Smart Cities — CCTV, Remote-controlled Vehicles

Enterprise IT — Fixed Line Backup, Smart Office

RS232/RS485 · Wi-Fi · Ethernet → R5020 Lite → Base Station → robustel RCMS CLOUD — Data Center

——— Wired Connection
- - - - Cellular Connection
······ Wi-Fi Connection

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	$\pm$8 KV air discharge, $\pm$6 KV contact discharge
Baud rate	300 bps ~ 115200 bps
Signal definition	RS232: TXD, RXD, GND RS485: Data+ (A), Data- (B), Ground (GND)

GNSS Interface (Optional)

Number of antennas	1
Connector	SMA-K
GNSS Frequency	Band L1, GPS L5
GNSS Technology	GPS, GLONASS, BeiDou, Galileo and QZSS

Others

Reset button	1 x RST
LED indicators	1 x RUN, 1 x Modem, 1 x USR, 1 x RSSI, 1 x Wi-Fi 2.4G, 1 x Wi-Fi 5G
Built-in	Watchdog

Power Supply and Consumption

Input voltage	12 ~ 36 VDC
Power consumption	Idle: 370 mA@12 V Data link: 1.7 A (peak) @12 V
Connector	B098004 : 2-pin 3.5 mm female socket with lock B098005 : 4-pin Industrial DC Power Socket

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.

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
Physical Features	IEC 60068-2-6 (Sinusoidal Vibration) IEC 60068-2-64 (Random Vibration) IEC 60068-2-27 (Mechanical Shock)
EMI	EN 55032 Conducted Emission Class B EN 55032 Radiated Emission Class B EN 61000-3-2 (Harmonic Current) EN 61000-3-3 (Voltage Flicker)
EMS	EN 61000-4-2 (ESD) Contact Level 3, Air Level 3 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Power Ports Level 2 Signal Ports Level 3 EN 61000-4-5 (Surge) Line to line Level 2, Line to ground Level 3 EN 61000-4-6 (CS) Level 3 EN 61000-4-11 (Dips) Class 2

R5020L-A-5G-A25GL (PN: B098004)

R5020L-B-5G-A30EU (PN: B098005)

ORDERING INFORMATION

Ordering Code	GNSS	Power Connector	Frequency Bands	Country/ Region*	Certification (* In progress)	Package Information
B098004	-	2-PIN 3.5 mm female socket with lock	**5G**: NR SA/NSA: n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/ n66/n70/n71/n75/n76/n77/n78/n79 **4G**: 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) **3G**: WCDMA: B1/B2/B4/B5/B8/B19	Global	CB, CE, UKCA, RCM, TELEC, JATE, EMark	1 x R5020L-A-5G-A25GL (PN: B098004)
A098002						1 x R5020L-A-5G-A25GL (PN: B098004) 1 x Global Power adapter 1 x Wall Mounting Kit 4 x 5G Rubber Antenna 2 x WiFi Rubber Antenna
B098005	√	4-PIN industrial DC power socket	**5G:** NR SA/NSA: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n71/n75/n76/n77/n78 **4G:** LTE FDD: B1/3/5/7/8/20/28/32/71 LTE TDD: B38/B40/B41/B42/B43 **3G:** WCDMA: B1/B5/B8	EMEA, APAC, Brazil	CE*, UKCA*, RCM*, EMark*	1 x R5020L-B-5G-A30EU (PN: B098005)
A098004						1 x R5020L-B-5G-A30EU (PN: B098005) 1 x Global Power adapter 1 x Wall Mounting Kit 4 x 5G Rubber Antenna 2 x WiFi Rubber Antenna

* For more information on all available ordering options, please contact us directly.

* Region - APAC: Excluding China and Japan. EMEA: Excluding Russia and Belarus.