



R2110



High Speed Smart 5G RedCap Router

4 x Ethernet + 1 x RS-232 + 1 x RS-485



INTRODUCTION

The Robustel High Speed Smart 5G RedCap Router (R2110) is a rugged cellular router offering state-of-the-art mobile connectivity for Internet of Things applications.

R2110 is a powerful platform developed based on **RobustOS**, a Robustel self-developed and Linux-based operating system which is designed to be used in Robustel devices. The RobustOS includes basic networking features and protocols, providing customers with an excellent user experience. Meanwhile, RobustOS offers Software Development Kit (SDK) that allows partners and customers to develop IoT applications by using C and C++. It also provides various Apps to meet fragmented IoT market demands.

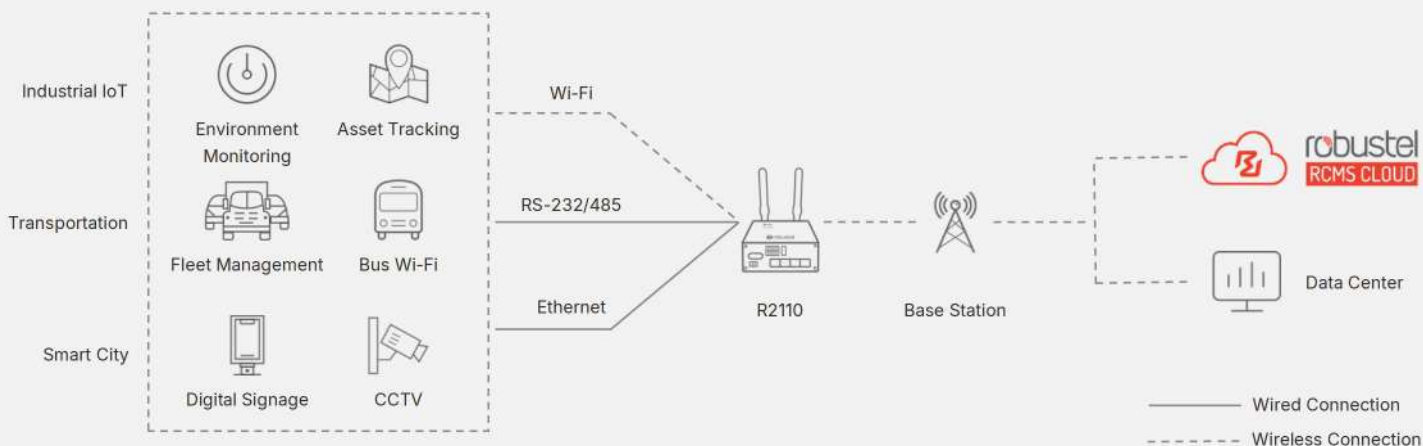
The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize 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. For more information or to get started with RCMS, visit: <https://rcms-cloud.robustel.net>



KEY FEATURES

- Efficient low latency with moderate capacity 5G RedCap network
- Supports 5G standalone networking (SA) and is backward compatible with 4G networks
- Supports GPS feature
- Supports WWAN, WAN, WLAN link backup and ICMP detection
- Supports cold backup, warm backup and load balancing
- RobustOS + SDK + App
- IPSec/OpenVPN/GRE/WireGuard
- Management and maintenance via Web/CLI/SNMP/RCMS
- Robust industrial design (desktop or wall mounting or DIN rail mounting)

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware

Hardware System

CPU	Dual-core MIPS, 880 MHz
RAM	512 MB
Flash	32 MB

Cellular Interface

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

Ethernet Port

Number of ports	4 x 10/100/1000 Mbps, 4 x LAN by default, can be configured as 1 x WAN + 3 x LAN supporting 802.3at PD feature on ETH0 (optional)
Magnet isolation protection	1 kV

Serial Port

Number of ports	1 x RS-232 + 1 x RS-485
Connector	2 x 3-pin on 2 x 5-pin 3.5 mm female socket
Baud rate	300-115200 bps

Digital Input / Digital Output

Number of ports	1 x DI + 1 x DO, wet contact
Connector	2 x 2-pin on 2 x 5-pin 3.5 mm female socket
Isolation	3.75 kVDC
Absolute max voltage	+30 VDC (DI), +30 VDC (DO)
Absolute max current	100 mA (DO)

Wi-Fi Interface

Number of antennas	2
Connector	RP-SMA-K
Standards	802.11 a/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

GNSS Interface

Number of antennas	1
Connector	SMA-K with 50 ohms impedance
Technology	GPS/QZSS/GLONASS/Galileo/BeiDou
Tracking sensitivity	GNSS: greater than -148 dBm
Horizontal position accuracy	GNSS: 2.5 m

Others

Reset button	1 x RST
USB port	1 x USB 2.0 (host), Type A, 5 V, 500 mA
LED indicators	1 x RUN, 1 x MODEM, 1 x NET, 1 x USR, 1 x RSSI, and 1 x WIFI
microSD	1 x microSD
Watchdog	Built-in

Power Supply and Consumption

Connector	3-pin 3.5 mm terminal block with lock
Input voltage	12/24 VDC, 9-36 VDC Reverse polarity protection, surge protection
Power consumption	Idle: 9.5 W@12 V Max: 12.0 W@12 V
Rec. power supply	12 VDC/1.5 A power adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 500 g
Dimensions	48 x 100 x 125 mm
Installation	Desktop, wall mounting & 35 mm DIN rail mounting
Operating temperature	-20 to +55 °C (normal operation) -25 to +70 °C (extended operation)
Storage temperature	-40 to +85 °C
Relative humidity	5-95% RH (non-condensing)

Regulatory and Type Approvals

Environmental	RoHS2.0, WEEE
EMI	EN 55032 Conducted Emission Class A 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, AC Mains Power Port Level 3, Signal Ports EN 61000-4-6 (CS) Level 2 EN 61000-4-8 (PFM) Level 2 EN 61000-4-11 (Dips) Class 2

Software

Operating System (Basic Features of RobustOS)

Network protocols	PPP, PPPoE, ARP, VLAN, ICMP, NAT, TCP, UDP, DHCP, DNS, DDNS, NTP, HTTP, HTTPS, Telnet, SSH2, SMTP, 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, RCMS
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU to TCP
Others	Smart Roaming V3, etc.

SDK

Operating system	RobustOS (Based on Debian 11 Bullseye)
Programming languages	C, C++, Python, Java, Node.js, etc. (for users to develop own applications)

Debian repository available

Available Flash for SDK	5 MB
Available RAM for SDK	256 MB

App Center (Available Apps for RobustOS)

Apps*	L2TP, PPTP, DMVPN, VRRP, QoS, SNMP, Language, RCMS, Dynamic Routing, Captive Portal, Modbus Master, TR069*, Edge2Cloud
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*Request on demand. For more Apps please visit www.robustel.com.

Cloud Platform

Robustel Cloud Manager Service (RCMS)	RobustLink, RobustVPN, Operation Console
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ORDERING INFORMATION

Model	Order Code	Category	Frequency Bands	Region	Certifications	Package Contents
R2110-5R	A004400712	5G RedCap	5G NR: N1/3/5/7/8/20/28/38/40/41/77/78	EMEA, ANZ, and SEA	CE*, UKCA*	1 x Gateway (B Code: B004400756) 2 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter 1 x DIN Rail Mounting Kit
	A004400713	5G RedCap	4G: LTE FDD: B1/3/5/7/8/20/28 LTETDD: B38/40/41/42/43	EMEA, ANZ, and SEA	CE*, UKCA*	1 x Gateway (B Code: B004400756) 1 x DIN Rail Mounting Kit

NOTE:

1. For more information about regional and carrier-specific variants, please contact us.
2. * Denotes certification in progress.