



robustOS

R5030

Industrial 5G Wi-Fi 6 Router

5 x ETH + 2 x Dual-band Wi-Fi 6 + 1 x GNSS +

1 x DI + 1 x DO



INTRODUCTION

The R5030 is an industrial-grade 5G router that provides cutting-edge wireless connectivity with dual-band Wi-Fi 6 support. It is powered by our proven high-performance CPU platform and **RobustOS** - an operating system independently developed by Robustel. This OS features enterprise-grade security that has been validated through comprehensive third-party penetration testing. Compliant with 3GPP Release 15/16 standards, the R5030 is designed for the following applications:

Passenger Wi-Fi Solutions: Delivering seamless onboard connectivity to enhance passenger experience through high-density mobile access

- **Advanced Captive Portal:** Enables secure user authentication and customized service delivery for public transit networks.
- **High-Speed Connectivity:** Ensures reliable internet access via concurrent 5G NSA/SA and Wi-Fi 6, ideal for streaming, work, and communication on the go.

Enterprise Networking Applications: Empowering businesses with robust connectivity solutions.

- **Broadband Failover:** Configurable for primary internet via Ethernet or Wi-Fi, with automatic failover to 5G/4G during outages, ensuring uninterrupted service.
- **Primary Broadband:** Provides the flexibility to leverage 5G wireless internet, offering significant technical and commercial advantages by eliminating reliance on wired infrastructure.

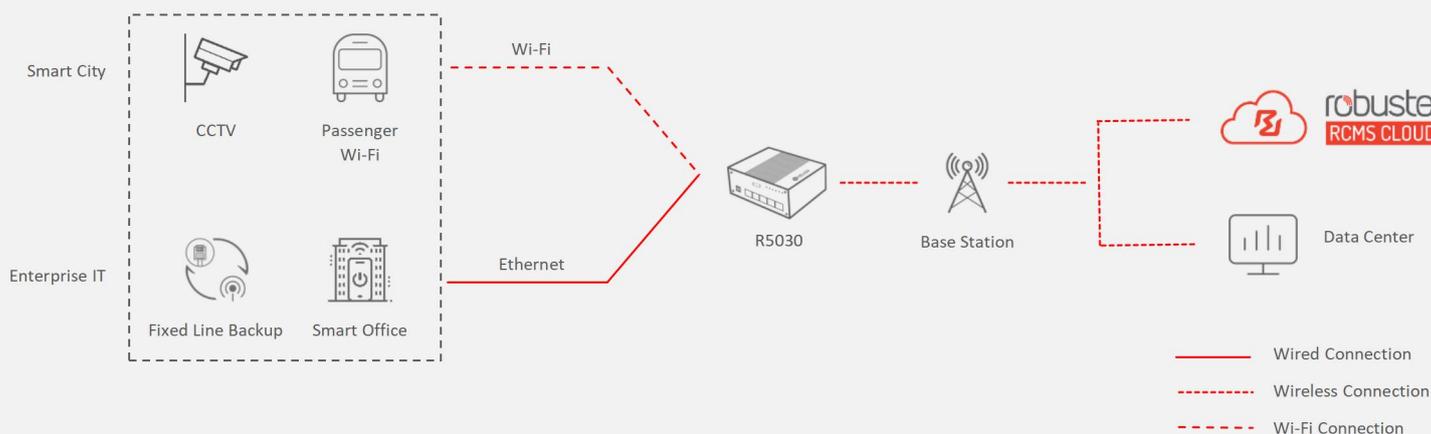
The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize 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. Experience robust, cloud-native device management by registering at: <https://rcms-cloud.robustel.net>

KEY FEATURES

- Industrial 5G router
- 5G/4G/3G cellular connections
- Supports Ethernet, Wi-Fi and 5G/4G internet with auto-failover
- Dual-band Wi-Fi 6 supported in both AP and Client mode
- Dedicated GNSS
- Captive portal support
- Fully programmable operating system with a well-documented SDK
- Multiple VPN options available including DMVPN, IPsec, and more
- Free cloud management platform (RCMS)
- Robust metal enclosure with a compact design for DIN-rail and wall mounting



APPLICATION EXAMPLE



SPECIFICATIONS

Hardware System

CPU	Dual-core ARM Cortex A53, 1.0 GHz
RAM	512 MB
Flash	8 GB eMMC

Cellular Interface

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

Ethernet Port

Number of ports	5 x 10/100/1000 Mbps 1 x WAN + 4 x LAN, or 5 x LAN optional
PoE-PD	ETH0 port, compliance with IEEE802.3at
Magnet isolation protection	1 KV

Wi-Fi Interface

Number of antennas	2
Connector	RP-SMA-K
Standards	802.11a/b/g/n/ac/ax, 2 x 2 MIMO Supporting AP and Client modes
Frequency bands	2.412 - 2.484 GHz (2.4 GHz ISM band) 5.18 - 5.825 GHz (5 GHz ISM band)
Security	WPA, WPA2, WPA3
Encryption	AES, TKIP

Digital Input/Output Port

Number of ports	1 x DI + 1 x DO, wet contact
Connector	4-pin Micro-Fit socket (share with power supply)
Absolute maximum VDC	+30 V DC (DI), +30 V DC (DO)
Absolute maximum ADC	100 mA (DO)
Signal definition	DI, DO, - (Power Minus is also referred to as DI/DO Minus)

GNSS Interface

Number of antennas	1
Connector	SMA-K
GNSS frequency	GPS: L1 QZSS: L1 SBAS: L1 Galileo: E1 GLONASS: L1 BDS: B1I+B1C

Others

Reset button	1 x RST
USB port	1 x USB 2.0 (host), 500 mA
LED indicators	1 x RUN, 1 x MDM, 1 x RSSI, 1 x USR, 1 x 2.4G Wi-Fi, 1 x 5G Wi-Fi
Watchdog	External

Software (Basic features of RobustOS)

Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, DNS, NTP, SMTP, Telnet, VLAN, HTTPS, ARP, SSH2, DDNS, 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
Others	Smart Roaming V3

SDK

Supported programming languages	C, C++
Flash available for SDK	6.5 GB
RAM available for SDK	128 MB

App Center (Available Apps for RobustOS)

Apps*	PPTP, DMVPN, VRRP, SNMP, Language, RCMS, Captive Portal, WLAN Multi AP, Edge2Cloud, etc.
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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, Portal Management
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Power Supply and Consumption

Connector	4-pin Micro-Fit socket
Input voltage	12/24 V DC, 9 ~ 36 V DC Reverse polarity protection, surge protection
Power consumption	Idle: 6 W@24 V Max: 16.5 W@24 V
Recommended power supply	24 V DC/1.5 A power adapter
PoE-PD (ETH0)	42.5 ~ 57 V DC

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 581 g
Dimensions	49 x 105 x 128 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 (non-condensing)

Regulatory and Type Approvals

Environmental	RoHS2.0
Testing	IEC 60068-2-6 (Sinusoidal Vibration) IEC 60068-2-27 (Mechanical Shock) IEC 60068-2-64 (Random Vibration)
EMI	EN 55032 Conducted Emission Class B 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 2 EN 61000-4-6 (CS) Level 2 ISO 7637-2 (Surge) Level 3

ORDERING INFORMATION

Model	Order Code	Frequency Bands ¹	Country /Region ²	Certification (*In Progress)	Package Contains
R5030-A-5G-A30EU	A015400001				1 x R5030 Router (B Code: B015400001) 1 x Wall Mounting Kit 1 x Power Plug Converter
	A015400002	5G: NR SA/NSA: n1/3/5/7/8/20/28/38/40/41/71/75/76/77/78 4G: LTE FDD: B1/3/5/7/8/20/28/29/32/71 LTE TDD: B38/40/41/42/43 3G: WCDMA: B1/5/8		CE* UKCA* RCM* E-Mark*	1 x R5030 Router (B Code: B015400001) 1 x Wall Mounting Kit 4 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter
R5030-B-5G-A30EU ³	A015400003	LTE FDD: B1/3/5/7/8/20/28/29/32/71 LTE TDD: B38/40/41/42/43 3G: WCDMA: B1/5/8	EMEA+APAC	CE* UKCA* RCM* E-Mark*	1 x R5030 Router (B Code: B015400002) 1 x Wall Mounting Kit 1 x Power Plug Converter
	A015400004	5G: NSA: n1/3/7/28/38/40/41/77/78 SA: n1/3/5/7/8/20/28/38/40/41/66/77/78 4G: LTE FDD: B1/2/3/4/5/7/8/20/28/66 LTE TDD: B38/40/41 3G: WCDMA: B1/2/5/8			1 x R5030 Router (B Code: B015400002) 1 x Wall Mounting Kit 4 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter
R5030-A-5G-A43EA	A015400005	5G: NSA: n1/3/7/28/38/40/41/77/78 SA: n1/3/5/7/8/20/28/38/40/41/66/77/78 4G: LTE FDD: B1/2/3/4/5/7/8/20/28/66 LTE TDD: B38/40/41 3G: WCDMA: B1/2/5/8	EMEA+APAC	CE* UKCA* RCM*	1 x R5030 Router (B Code: B015400003) 1 x Wall Mounting Kit 1 x Power Plug Converter
	A015400006	5G: NR SA/NSA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/ 41/48/66/70/71/75/76/77/78/79 4G: LTE FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/ 30/32/66/71 LTE TDD: B34/38/39/40/41/42/43/48 LAA: B46 (only supports 2 x 2 MIMO) 3G: WCDMA: B1/2/4/5/8/19			1 x R5030 Router (B Code: B015400003) 1 x Wall Mounting Kit 4 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter
R5030-A-5G-A25GL ⁴	A015400007	5G: NR SA/NSA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/ 41/48/66/70/71/75/76/77/78/79 4G: LTE FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/ 30/32/66/71 LTE TDD: B34/38/39/40/41/42/43/48 LAA: B46 (only supports 2 x 2 MIMO) 3G: WCDMA: B1/2/4/5/8/19	Global	-	1 x R5030 Router (B Code: B015400004) 1 x Wall Mounting Kit 1 x Power Plug Converter
	A015400008	5G: NR SA/NSA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/ 41/48/66/70/71/75/76/77/78/79 4G: LTE FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/ 30/32/66/71 LTE TDD: B34/38/39/40/41/42/43/48 LAA: B46 (only supports 2 x 2 MIMO) 3G: WCDMA: B1/2/4/5/8/19			1 x R5030 Router (B Code: B015400004) 1 x Wall Mounting Kit 4 x Cellular Antenna 2 x Wi-Fi Antenna 1 x GNSS Antenna 1 x Power Adapter

Note:

- For more information about frequency bands in different countries, please contact your Robustel sales representative.
- Region: APAC (excluding China and Japan); EMEA (excluding Russia and Belarus).
- The R5030-B-5G-A30EU is designed for vehicle applications and operates on different Wi-Fi bands compared to R5030-A-5G-A30EU.
- The certification for the model R5030-A-5G-A25GL is currently on hold. FCC and Anatel certifications will be triggered as needed. Note that this model currently does not support Telstra certification and is not recommended for use on the Telstra network.

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