R3000

robustOS

Industrial Dual SIM Cellular VPN Router

2 x ETH + 2 x DI + 2 x DO +
2 x RS-232 or 1 x RS-232 + 1 x RS-485

INTRODUCTION

The Robustel Industrial Dual SIM Cellular VPN Router R3000 is a rugged cellular router designed to provide state-of-the-art mobile connectivity for machine-to-machine (M2M) applications.

The R3000 is widely utilized in industrial sectors such as pipeline monitoring, water treatment, gas and electricity distribution networks, and other similar environments where a durable product with reliable cellular communications is essential.

It features extensive overvoltage protection, high electromagnetic compatibility (EMC) immunity, and a DIN-rail/panel mount form factor, making it ideal for use in various industrial automation enclosures.

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:
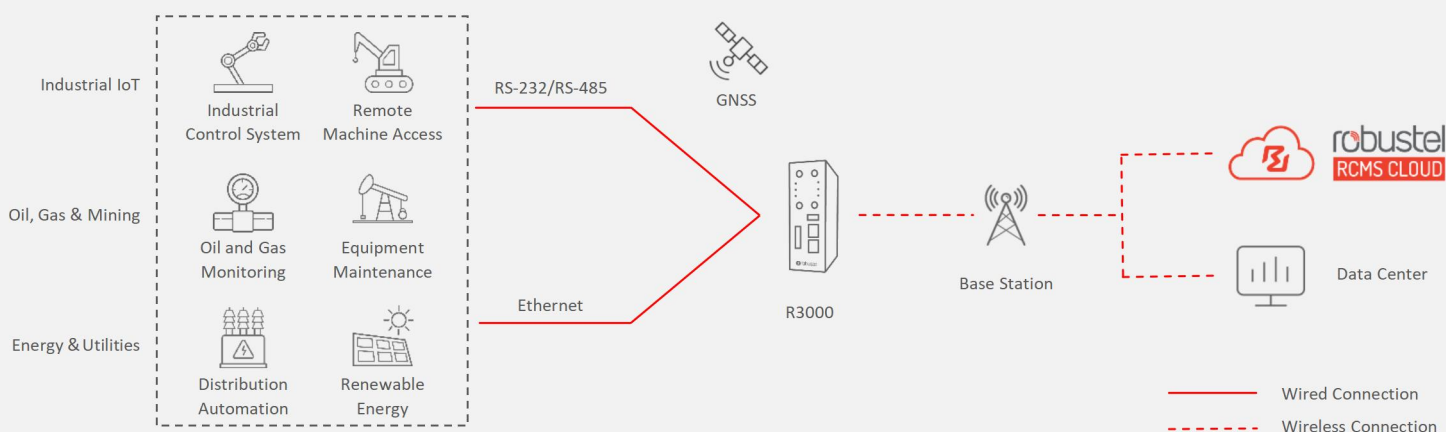https://rcms-cloud.robustel.net

KEY FEATURES

- Link Manager supporting WWAN1, WWAN2, Ethernet WAN, WLAN WAN link backup, and ICMP detection

- Backup Mode options for cold, warm, and load balancing

- Supports IPv6

- RobustOS with SDK and application support

- Supports IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN and WireGuard

- Management and maintenance via Web, CLI, SNMP, and RCMS Cloud

- Robust industrial design with input voltage options of 9 ~ 60 V DC, supporting desktop, wall, or DIN rail mounting

APPLICATION EXAMPLE

SPECIFICATIONS

Hardware System

CPU	ARM, 400 MHz
RAM	128 MB
Flash	256 MB

Cellular Interface

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

Ethernet Port

Number of ports	2 x 10/100 Mbps
	2 x LAN or 1 x LAN + 1 x WAN
Magnet isolation protection	1.5 KV

Serial Port

Number of ports	2 x RS-232 or 1 x RS-232 + 1 x RS-485
Connector	7-pin 3.5 mm female socket with lock
ESD protection	±15 KV air discharge, ±8 KV contact discharge
Baud rate	300 bps ~ 230400 bps
Flow control	RTS/CTS (for RS-232)

Digital Input/Output Port

Number of ports	2 x DI (dry contact) + 2 x DO (wet contact)
	Note: Order code A001800705 is the only variant with 4 x DI (dry contact) in this product family.
Connector	7-pin 3.5 mm female socket with lock
Isolation	3 KVDC or 2 KVrms
Absolute maximum VDC	DI: DC input voltage +5 V DC
	DO: 30 V DC
Absolute maximum ADC	300 mA

GNSS Interface (Optional)

Number of antennas	1
Connector	SMA-K with 50 ohms impedance
Tracking sensitivity	-146 dBm
Horizontal position accuracy	< 2.5 m CEP50
Protocol	NMEA-0183

Others

Reset button	1 x RST
SD	1 x Micro SD
USB port	1 x USB 2.0 host, up to 480 Mbps
LED indicators	1 x RUN, 1 x PPP, 1 x USR, 1 x RSSI, 1 x NET, 1 x SIM
Watchdog	Built-in

Software (Basic features of RobustOS)

Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, DNS, NTP, SMTP, Telnet, HTTPs, ARP, VLAN, 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
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU Gateway
Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2)
Others	Smart Roaming V2

SDK

Supported programming languages	C, C++
Flash available for SDK	64 MB
RAM available for SDK	64 MB

App Center (Available Apps for RobustOS)

Apps*	L2TP, PPTP, DMVPN, VRRP, QoS, SNMP, Language, RCMS, Edge2Cloud, etc.

*Request on demand. For more Apps please visit www.robustel.com.

Cloud Platform

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

Power Supply and Consumption

Connector	3-pin 5 mm female socket with lock
Input voltage	12/24/48 V DC, 9 ~ 60 V DC
	Reverse polarity protection, surge protection
Power consumption	Idle: 1.5 W@12 V
	Max: 5 W@12 V
Recommended power supply	12 V DC/1.5 A power adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 570 g
Dimensions	43.5 x 104 x 125 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-40 ~ +75 °C
Storage temperature	-40 ~ +85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

Regulatory and Type Approvals

Environmental	RoHS2.0, WEEE
EMI	EN 55032 Conducted Emission Class B
	EN 55032 Radiated Emission Class B
EMS	EN 61000-4-2 (ESD) Level 4
	EN 61000-4-3 (RS) Level 4
	EN 61000-4-4 (EFT) Level 4
	EN 61000-4-5 (Surge) Level 3
	EN 61000-4-6 (CS) Level 2
	EN 61000-4-8 (PFM) Level 4

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ORDERING INFORMATION

Model	Order Code	GNSS	Serial Port	Frequency Bands*	Country /Region	Certification	Package Contains
R3000-4L	A001800704	-	1 x RS-232 + 1 x RS-485	4G: LTE FDD: B1/2/3/4/5/7/8/28 LTE TDD: B40 3G: WCDMA: B1/2/5/8 2G: GSM: B2/3/5/8	ANZ+LATAM	RCM, ANATEL, CRC, MTC	1 x R3000 Router (B Code: B018728)
	A001800705	√	-		EMEA+SEA	CE, UKCA, E-Mark	1 x R3000 Router (B Code: B018749)
	A001800706	-	1 x RS-232 + 1 x RS-485	4G: LTE FDD: B1/3/5/7/8/20 LTE TDD: B38/40/41 3G: WCDMA: B1/5/8 2G: GSM: B3/8	EMEA+SEA	CE, UKCA, E-Mark, IMDA, SIRIM, NTC, TDRA	1 x R3000 Router (B Code: B018735)
	A001800709	-	2 x RS-232			CE, UKCA, TDRA	1 x R3000 Router (B Code: B018750)
	A001800707	-	1 x RS-232 + 1 x RS-485	4G: LTE FDD: B1/3/8/18/19/26 LTE TDD: B41 3G: WCDMA: B1/6/8/19	Japan	Telec, JATE	1 x R3000 Router (B Code: B018752)
	A001800708	√	1 x RS-232 + 1 x RS-485	4G: LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/ B20/25/26/28 LTE TDD: B38/39/40/41 3G: WCDMA: B1/2/4/5/6/8/19 2G: GSM: B2/3/5/8	Global	FCC, IC, UL, PTCRB, AT&T, Verizon, CE, UKCA, SIRIM, E-Mark, CB, TDRA, RCM	1 x R3000 Router (B Code: B018745)

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