



R3000 robustOS

Industrial Dual SIM Cellular VPN Router
 2 Eth + 1 USB Host + 2 x RS232 or 1 x RS232
 + 1 x RS485



INTRODUCTION

The Robustel Industrial Dual SIM Cellular VPN Router (R3000) is a rugged cellular router offering state-of-the-art mobile connectivity for machine to machine (M2M) applications. R3000 is used extensively in industrial applications such as pipeline monitoring, water treatment, Gas & Electricity distribution networks and many similar environments where a hardened product with bulletproof cellular communications is required. R3000 has extensive overvoltage protection, high EMC immunity and has a DIN-rail / panel mount form-factor making it ideal for use in any kind of industrial automation enclosure.

The following software features are present on R3000:

- Smart Roaming** – intelligent network selection tool for roaming SIMs
- RobustVPN** – Simple remote access on any SIM using Robustel hosted VPN
- RCMS** – Free Router Management Platform – very feature rich
- Data Guard** – Automatically stop data overruns to avoid billshock

RCMS is Robustel’s free router monitoring service that is fully compatible with the R3000. It allows customer to see a location overview of their routers quickly and simply on a map. Features such as data usage, signal strength, current network and much more can then be viewed on a per router basis. Over-the-air updates are supported for Firmware, router configuration and Apps serving as essential ‘insurance’ if anything was not quite right during deployment.

You can try Robustel’s free router management platform by signing up here:

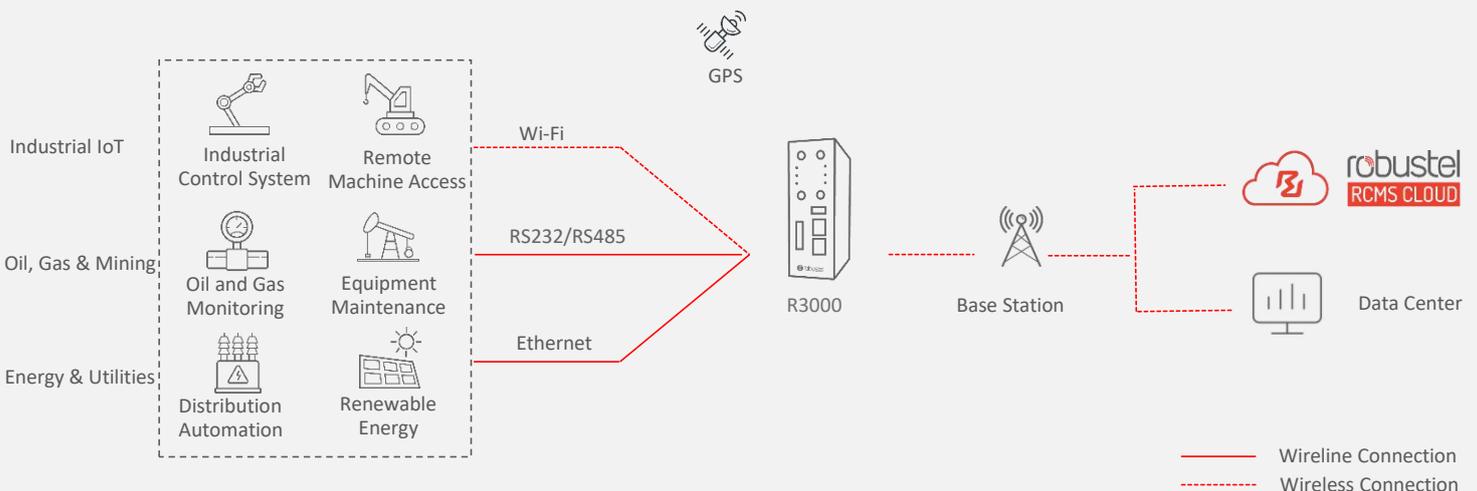
<https://rcms-cloud.robustel.net>



KEY FEATURES

- The feature *Link Manager* supports WWAN1, WWAN2, Ethernet WAN, WLAN WAN link backup and ICMP detection
- The option *Backup Mode* supports cold, warm and load balancing
- Supports IPv6
- RobustOS + SDK + App
- IPSec/OpenVPN/GRE/L2TP/PPTP/DMVPN
- Management and maintenance via Web/CLI/SNMP/RCMS Cloud
- Robust industrial design (9 ~ 60V DC, desktop or wall mounting or DIN rail mounting)

APPLICATION EXAMPLE



SPECIFICATIONS

Cellular Interface

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

Ethernet Interface

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

Wi-Fi Interface (Optional)

| | |
|--------------------|--|
| Number of antennas | 1 |
| Connector | RP-SMA-K |
| Standards | 802.11 a/b/g/n, supports AP and Client modes |
| Frequency bands | 2.4 GHz 5 GHz |
| Security | Open, WPA, WPA2, WEP |
| Encryption | AES, TKIP, WEP64 |
| Data speed | Up to 150 Mbps |

GNSS Interface (Optional)

| | |
|------------------------------|---|
| Number of antennas | 1 |
| Connector | SMA-K with 50 ohms impedance |
| Tracking sensitivity | GPS: greater than -148 dBm GNSS: greater than -140 dBm |
| Horizontal position accuracy | GPS: 2.5 m GNSS: 4.0 m |
| Protocol | NMEA-0183 V2.3 |

Serial Interface

| | |
|-----------------|--------------------------------------|
| Number of ports | 2 x RS232 or 1 x RS232 + 1 x RS485 |
| Connector | 7-pin 3.5 mm female socket with lock |
| ESD protection | ±15 KV |
| Baud rate | 300 bps ~ 230400 bps |
| Flow control | RTS/CTS (for RS232) |

DI/DO

| | |
|----------------------|--|
| Type | 2 x DI (dry contact) + 2 x DO (wet contact), |
| Connector | 7-pin 3.5 mm female socket with lock |
| Isolation | 3 KVDC or 2 KVrms |
| Absolute maximum VDC | "V+" +5 VDC (DI), 30 VDC (DO) |
| Absolute maximum ADC | 300 mA |

Others

| | |
|----------------|--|
| Reset button | 1 x RST |
| SD | 1 x Micro SD interface |
| Expansion | 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 |
| Built-in | RTC, Watchdog, Timer |

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-DDoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control |
| Remote management | Web, CLI, SMS |
| Serial port | Transparent, DNP3 Transparent, TCP Client/Server, UDP, Modbus RTU Gateway |

App Center (Available Apps for RobustOS)

| | |
|-------|--|
| Apps* | L2TP, PPTP, DMVPN, VRRP, QoS, SNMP, Language, RCMS, Data Guard |
|-------|--|

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

SDK

| | |
|--------------------------------|--------|
| Supported programming language | C, C++ |
| Flash available for SDK | 64 MB |
| RAM available for SDK | 64 MB |

Power Supply and Consumption

| | |
|-------------------|---|
| Connector | 3-pin 5 mm female socket with lock |
| Input voltage | 9 ~ 60 VDC |
| Power consumption | Idle: 100 mA@12 V Data link: 400 mA (peak) @12 V |

Physical Characteristics

| | |
|-----------------------|--|
| Ingress protection | IP30 |
| Housing & Weight | Metal, 570 g |
| Dimension | 125 x 104 x 43.5 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 |

Regulatory and Type Approvals

| | |
|---------------|--|
| Environmental | RoHS2.0, WEEE |
| EMI | EN 55032: 2012/AC: 2013 (CE & RE) Class B |
| EMS | IEC 61000-4-2 (ESD) Level 4 IEC 61000-4-3 (RS) Level 4 IEC 61000-4-4 (EFT) Level 4 IEC 61000-4-5 (Surge) Level 3 IEC 61000-4-6 (CS) Level 2 IEC 61000-4-8 (M/S) Level 4 |

ORDERING INFORMATION

| Model | PN | Category | Wi-Fi | GNSS | Serial port | Frequency Bands* | Country/Region | Certifications (*In progress) |
|----------|---------|----------|-------|------|-----------------------|---|-----------------------------|---|
| R3000-NU | B018001 | - | - | - | 1 x RS232 + 1 x RS485 | - | EMEA | CE |
| | B018002 | - | ✓ | - | 1 x RS232 + 1 x RS485 | - | EMEA | CE |
| R3000-4L | B018728 | Cat 4 | - | - | 1 x RS232 + 1 x RS485 | 4G: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE TDD: B40 3G: WCDMA: B1/B2/B5/B8 2G: GSM: B2/B3/B5/B8 | Oceania South America | RCM, ANATEL, CRC, MTC, ENACOM, ASEP |
| | B018729 | | ✓ | - | 1 x RS232 + 1 x RS485 | | | |
| | B018735 | | - | - | 1 x RS232 + 1 x RS485 | 4G: LTE FDD: B1/B3/B5/B7/B8/B20 LTE TDD: B38/B40/B41 3G: WCDMA: B1/B5/B8 2G: GSM: B3/B8 | EMEA | CE, E-Mark, UKCA, IMDA, SIRIM CE, E-Mark, UKCA, SIRIM |
| | B018739 | | ✓ | - | 1 x RS232 + 1 x RS485 | | | |
| | B018750 | | - | - | 2 x RS232 | | | |
| | B018762 | | ✓ | - | 2 x RS232 | 4G: LTE FDD: B1/ B2/ B3/ B4/ B5/ B7/B8/ B12/B13/ B18/B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 3G: WCDMA: B1/B2/B4/B5/B6/B8/B19 2G: GSM: B2/B3/B5/B8 | North America EMEA | IC, UL, FCC, PTCRB, AT&T, Verizon, CE, UKCA, EMark, SIRIM |
| | B018744 | | ✓ | - | 1 x RS232 + 1 x RS485 | | | |
| | B018745 | | - | ✓ | 1 x RS232 + 1 x RS485 | | | |
| B018752 | - | - | - | - | 1 x RS232 + 1 x RS485 | 4G: LTE FDD: B1/B3/B8/B18/B19/B26 LTE TDD: B41 3G: WCDMA: B1/B6/B8/B19 | Japan | Telec, JATE |

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