# R2000 robustOS

## Industrial Dual SIM Cellular VPN Router
## 2 Eth + 2 SIM

## INTRODUCTION

The Robustel Industrial Dual SIM Cellular VPN Router (R2000) is a rugged cellular router offering state-of-the-art mobile connectivity for machine to machine (M2M) applications.
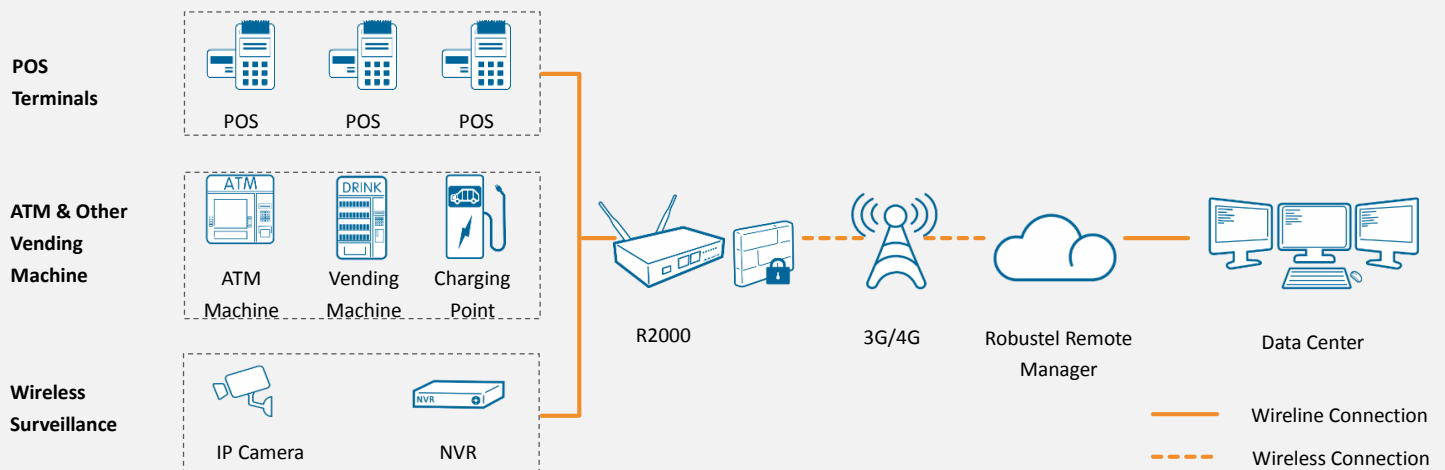
R2000 is a powerful router developed from **RobustOS**, a Robustel self-developed and Linux-based operating system which is designed to be used in Robustel devices. The RobustOS includes basic networking features and protocols providing customers with a very good user experience. Meanwhile, Robustel offers a **Software Development Kit** (SDK) for partners and customers to allow additional customization by using C, Python or Java. It also provides rich **Apps** to meet fragmented IoT market demands.

Robustel is a leading global industrial IoT/M2M hardware and solution provider. Since its establishment in 2010 in Guangzhou, China, Robustel has been focusing on designing and manufacturing industrial cellular routers, gateways, modems, cloud platforms and E2E solutions. In order to support global business in more than 100+ countries and regions, Robustel has set up local offices in Germany, Australia, the Netherlands, the UK, Japan and Hong Kong.

## KEY FEATURES

> Dual-SIM redundancy for continuous 2G/3G/4G cellular network connections

> The feature *Link Manager* supports Cellular WAN, Ethernet WAN, WLAN WAN link backup and ICMP detection

> WAN – Static/PPPoE/DHCP Client

> WAN port supports PD feature - compatible with 802.3at. (optional)

> Supports IPv6

> RobustOS + SDK + App

> IPsec/OpenVPN/GRE/L2TP/PPTP/ DMVPN

> Management and maintenance via Web/CLI/SMS/RCMS Cloud

> Auto reboot via SMS/Timing

> Robust industrial design (9 to 36V DC, desktop or wall mounting or DIN rail mounting)

## APPLICATION EXAMPLE

**POS Terminals**
POS  POS  POS

**ATM & Other Vending Machine**
ATM Machine  Vending Machine  Charging Point

**Wireless Surveillance**
IP Camera  NVR

R2000  3G/4G  Robustel Remote Manager  Data Center

— Wireline Connection
---- Wireless Connection

# SPECIFICATIONS

## Cellular Interface
| | |
|---|---|
| Number of antennas | 2 (MAIN + AUX) |
| Connector | SMA-K |
| SIM | 2 (3 V & 1.8 V) |

## Ethernet Interface
| | |
|---|---|
| Number of ports | 2 x 10/100 Mbps, 2 x LAN or 1 x LAN + 1 x WAN |
| WAN port | Supporting 802.3 at PD feature (optional) |
| Magnet isolation | 1.5 KV |

## WiFi Interface (Optional)
| | | |
|---|---|---|
| Number of antennas | 2 (WiFi1 + WiFi2) | |
| Connector | RP-SMA-K | |
| Standards | 802.11b/g/n, supporting AP and Client modes | |
| Frequency bands | 2.4 GHz | |
| Security | WEP, WPA, WPA2 | |
| Encryption | 64/128 AES, TKIP | |
| Data speed | 2*2 MIMO, 300 Mbps | |
| RF output power | 802.11b | 19 dBm |
| (+/-1 dBm) | 802.11g | 19 dBm |
| | 802.11n (20 MHz) | 18 dBm |
| | 802.11n (40 MHz) | 17 dBm |
| Receiving sensitivity | 802.11b | -93 dBm |
| (+/-1 dBm) | 802.11g | -90 dBm |
| | 802.11n (20 MHz) | -88 dBm |
| | 802.11n (40 MHz) | -85 dBm |

## Others
| | |
|---|---|
| Reset button | 1 x RST |
| LED indicators | 1 x RUN, 1 x PPP, 1 x USR, 3 x RSSI |
| Built-in | Watchdog, Timer |

## Software (Basic features of RobustOS)
| | |
|---|---|
| Network protocols | PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPs, DNS, ARP, BGP, RIP, OSPF, 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 |
| Management | Web, CLI, SMS |
| Serial port | Transparent, TCP Client/Server, UDP, Modbus RTU Gateway |

## App Center (Available Apps for RobustOS)
| | |
|---|---|
| Apps* | L2TP, PPTP, DMVPN , VRRP, QoS, Captive Protal, WLAN Multi AP, SNMP, Language, RCMS |

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

## Power Supply and Consumption
| | |
|---|---|
| Connector | 3-pin 3.5 mm female socket |
| Input voltage | 9 to 36V DC |
| Power consumption | Idle: 100 mA@12 V |
| | Data link: 500 mA (peak) @12 V |
| PD feature* (optional) | WAN port supported |
| | Input voltage: 48~57V DC |

*It is not recommended to use DC power supply and PD power supply*

## Physical Characteristics
| | |
|---|---|
| Ingress protection | IP30 |
| Housing & Weight | Metal, 305 g |
| Dimensions | 127.5 x 82.5 x 29.5 mm |
| Installations | Desktop, wall mounting and 35 mm DIN rail mounting |

## Regulatory and Type Approvals
| | |
|---|---|
| Regulatory | RCM, CE, CCC, EAC, FCC, Telec, CB, IC |
| Carrier | AT&T, PTCRB |
| Application | E-mark (Vehicle) |
| Environmental | RoHS2.0, WEEE |
| EMI | EN 55032: 2012/AC: 2013 (CE & RE) Class A |
| EMS | IEC 61000-4-2 (ESD) Contact Level 2; Air Level 3 |
| | IEC 61000-4-4 (EFT) Level 2 |
| | IEC 61000-4-5 (Surge) Level 3 |

# ORDERING INFORMATION

| Model | R2000-3P | R2000-4L | R2000-4M | R2000-NU |
|---|---|---|---|---|
| Router Type | HSPA+ Router | LTE Router | LTE-M Router | -- |
| Air Interface | GSM/GPRS/EDGE/HSDPA/HSUPA/HSPA+ | GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA/HSPA+/DC-HSPA+/TD-SCDMA/CDMA (CDMA 1X/EVDO)/FDD LTE/TDD LTE/ | EGPRS/Cat.M1/Cat.NB1 | -- |
| Frequency Bands | -- | AU: B1/B2[①]/B3/B4/B5/B7/B8/B28<br>EMEA: B1/B3/B5/B7/B8/B20, B38/B39/B40<br>US: B2/B4/B12<br>JP: B1/B3/B8/B18/B19/B26<br>CN: B1/B3, B38/B39/B40/B41 | LTE Cat.M1/Cat.NB1:B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28/B39(for TDD) | -- |
| 4G* | | | | |
| 3G | B1/B2/B5/B8/B19 | AU: B1/B2/B5/B8<br>EMEA: B1/B5/B8<br>US: B2/B4/B5<br>JP: B1/B6/B8/B19<br>CN: B34/B39, R0/A BC0/BC1/BC10 | -- | -- |
| 2G | 850/900/1800/1900 MHz | AU: 850/900/1800/1900MHz<br>EMEA/CN: 900/1800 MHz | EGPRS:850/900/1800/1900MHz | -- |
| Operating Temperature | -25 to +70 °C | -25 to +70 °C | -25 to +70 °C | -25 to +70 °C |
| Storage Temperature | -40 to +85 °C | -40 to +85 °C | -40 to +85 °C | -40 to +85 °C |
| Relative Humidity | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH |

①: LTE B2 of AU does not support Rx-diversity *For more information about 4G frequency bands in different countries, please contact your Robustel sales representative.*