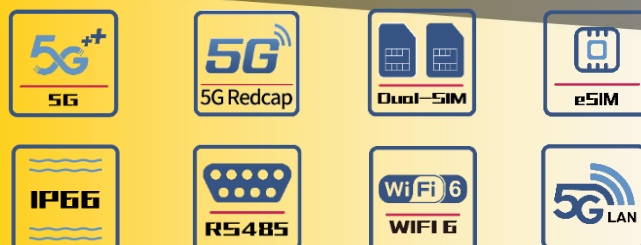


# 5G Industrial Router

FNR400-00



## Introduction

FNR400-00 is an ultra-compact industrial IoT router featuring 5G and Wi-Fi 6 connectivity for high-speed, long-range wireless data transmission. Powered by a dual-core Arm Cortex-A53 1.3GHz processor and OpenWrt 21, it delivers stable and secure networking performance for industrial applications. The router supports 1×RS232, 1×RS485, 1×Gigabit Ethernet LAN, and 1×2.5G Ethernet WAN/LAN interface, enabling seamless connectivity for serial, Ethernet, and Wi-Fi devices with transparent data transmission and routing functions. It is widely used in smart grid, industrial automation, transportation, energy, environmental monitoring, smart city, security, water management, and other M2M IoT applications.



Industrial-grade Design

- ▶ Industrial-grade design with dedicated hardware routing architecture
- ▶ High-performance industrial wireless routing SoC chipset
- ▶ IP30 aluminum housing with fan and heatsink for efficient cooling
- ▶ Ultra-compact 99×76×35.5mm size for AGV and robotics applications
- ▶ Wide DC 9–36V power input for industrial environments



Stability & Reliability

- ▶ WDT Watchdog design to ensure system stability
- ▶ Adopt a complete anti-drop mechanism to ensure that the data terminal is always online
- ▶ Built-in 1.5KV electromagnetic isolation protection for Ethernet interface
- ▶ RS232/RS485 interface power and data isolation, in line with CSA, UL and IEC standards
- ▶ SIM/UIM card interface built-in 15KV ESD protection
- ▶ Built-in reverse phase protection and over voltage protection for power interface
- ▶ Supports power failure alarm notification (optional)



Standard & Convenience

- ▶ Standard RS232, RS485, Ethernet and WIFI Interface
- ▶ Standard WAN port with PPPoE support for direct ADSL connection
- ▶ Intelligent data terminal with instant data transmission on power-up
- ▶ Flexible operation with multiple selectable working modes
- ▶ Supports local and remote WEB or CLI configuration management
- ▶ Supports wall-mounted and pole-mounted installation

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High Performance

- ▶ Supports 5G NR, RedCap, 5G LAN, slicing, and precision timing
- ▶ Supports frequency lock, cell lock, EOIP, VxLAN, GRETAP, and bridge mode
- ▶ Supports Static IP, DHCP, PPPoE, 3G/4G/5G WAN connections
- ▶ Dual-link failover between cellular and wired WAN networks
- ▶ Supports PPTP, L2TP, and IPsec VPN client modes
- ▶ Supports PPTP, L2TP, and IPsec VPN server modes
- ▶ Remote management via SYSLOG, SNMP, TELNET, SSHD, and HTTPS
- ▶ Supports local and remote firmware upgrades and configuration backup
- ▶ Supports NTP synchronization with built-in RTC
- ▶ Compatible with multiple domestic and global DDNS services
- ▶ Supports VLAN, MAC cloning, and PPPoE server functions
- ▶ Wi-Fi 6 supports AP, Client, and Mesh modes (optional)
- ▶ Supports WEP, WPA, WPA2, WPA3, and MAC filtering (optional)
- ▶ Multiple online trigger modes via SMS, calls, serial, or network data
- ▶ Supports APN and VPDN networking features
- ▶ Supports DHCP, DDNS, firewall, NAT, DMZ, QoS, and traffic statistics
- ▶ Supports TCP/IP, UDP, HTTP, and optional FTP protocols
- ▶ Supports SPI firewall, VPN passthrough, access control, and URL filtering
- ▶ Supports optional TR069 and SNMP device management protocols
- ▶ Integrates with Four-Faith Cloud for intelligent remote maintenance

## Product Specification

| Cellular Specification |                                                                                                                                                                                                     |                                                                                                                              |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Product                | 5G                                                                                                                                                                                                  | 5G Redcap                                                                                                                    |
| Items                  | Contents                                                                                                                                                                                            |                                                                                                                              |
| Standard and Frequency | <b>5G NR:</b><br>n1/n2/n3/n5/n7/n8/n20/n28/n41/n66/n71/n77/n78/n79<br><b>LTE:</b><br>B1/B2/B3/B4(66)/B5(18/19/26)/B7/B8/B12(17)/B13/B14/B20/B25/B26/B28/B29/B30/B38/B39/B40/B41/B42/B43/B46/B48/B71 | <b>5G Redcap:</b><br>N1/N3/N5/N8/N28/N41/N78/N79<br><b>LTE-FDD:</b><br>B1/B3/B5/B8<br><b>LTE-TDD:</b><br>B34/B38/B39/B40/B41 |
|                        | <b>Note: Band support may vary based on the selected module region.</b>                                                                                                                             |                                                                                                                              |
| Theoretical Bandwidth  | <b>5G NR:</b> DL 3.4 Gbps; UL 350 Mbps<br><b>LTE CAT20:</b> DL 2.0 Gbps; UL 150 Mbps<br><b>HSPA+:</b> DL 42 Mbps; UL 5.76 Mbps                                                                      | <b>5G NR:</b> DL 226 Mbps; UL 120 Mbps<br><b>LTE:</b> DL 200 Mbps; UL 100 Mbps                                               |
|                        | <b>Note: Different modules provide varying theoretical speeds; actual performance depends on local network conditions and real-world testing.</b>                                                   |                                                                                                                              |
| Transmit Power         | <26dBm                                                                                                                                                                                              |                                                                                                                              |
| Receive Sensitivity    | <-103dBm                                                                                                                                                                                            |                                                                                                                              |

# 5G Industrial Router FNR400



| Hardware System           |                                                                         |              |
|---------------------------|-------------------------------------------------------------------------|--------------|
| Product                   | 5G                                                                      | 5G Redcap    |
| Items                     | Contents                                                                |              |
| CPU                       | Industrial-grade dual-core Arm Cortex-A53 processor, 1.3GHz clock speed |              |
| Flash                     | 128MB                                                                   |              |
| DDR3                      | 512MB                                                                   |              |
| WIFI                      |                                                                         |              |
| Items                     | Contents                                                                |              |
| Wi-Fi Protocol            | IEEE802.11 a/b/g/n/ac/ax                                                |              |
| Frequency Band            | 2.4GHz+5.8GHz, Support AP mode                                          |              |
| Theoretical Max Bandwidth | IEEE802.11b (2.4G) : Maximum speed up to 11Mbps                         |              |
|                           | IEEE802.11g (2.4G) : Maximum speed up to 54Mbps                         |              |
|                           | IEEE802.11n (2.4G) : Maximum speed up to 300Mbps                        |              |
|                           | IEEE802.11ax (2.4G) : Maximum speed up to 574Mbps                       |              |
|                           | IEEE802.11ac (5G) : Maximum speed up to 1733Mbps                        |              |
|                           | IEEE802.11ax (5G) : Maximum speed up to 2402Mbps                        |              |
| Frequency Band            | 20MHz, 40MHz, 80MHz                                                     |              |
| Security Encryption       | Supports multiple encryption methods including WEP, WPA, and WPA2       |              |
| Transmit Power            | 23±2 dBm @ 11b/1Mbps                                                    |              |
|                           | 22±2 dBm @ 11g/6Mbps                                                    |              |
|                           | 20±2 dBm @ 2.4G 11n/MCS0/HT20                                           |              |
|                           | 18±2 dBm @ 5.8G 11n/MCS0/HT20                                           |              |
|                           | 20±2 dBm @ 2.4G 11n/MCS0/HT40                                           |              |
|                           | 18±2 dBm @ 5.8G 11n/MCS0/HT40                                           |              |
|                           | 18±2 dBm @ 11ac/MCS0/HT80                                               |              |
|                           | 18±2 dBm @ 11ax/MCS0/HT160                                              |              |
| Power Supply              |                                                                         |              |
| Items                     | Contents                                                                |              |
| Power Standard            | DC 12V/1.5A                                                             |              |
| Range                     | DC 9~36V                                                                |              |
| Operate Current           | < 1.2A (12V)                                                            | < 0.5A (12V) |

# 5G Industrial Router FNR400



| Interfaces              |                                                                                                                                                                                                                                                                                   |                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Product                 | 5G                                                                                                                                                                                                                                                                                | 5G Redcap                                                   |
| Items                   | Contents                                                                                                                                                                                                                                                                          |                                                             |
| WAN/LAN                 | 1× 10/100/1000/2500Mbps Ethernet port (RJ45), adaptive MDI/MDIX, built-in 1.5KV electromagnetic isolation, IEC Level 3 2KV surge protection<br><b>Note: Default as LAN port, configurable as WAN port</b>                                                                         |                                                             |
| LAN                     | 1× 10/100/1000Mbps Ethernet port (RJ45), adaptive MDI/MDIX, built-in 1.5KV electromagnetic isolation, IEC Level 3 2KV surge protection                                                                                                                                            |                                                             |
| Serial Port             | 1× RS232 and 1× RS485 serial ports with built-in 15KV ESD protection; RS485 complies with IEC Level 4 4KV surge protection<br>Data bits: 5, 6, 7, 8<br>Stop bits: 1, 1.5 (optional), 2<br>Parity: None, Even, Odd, Space (optional), Mark (optional)<br>Baud rate: 2400–115200bps |                                                             |
| Indicators              | PWR, SYS, Online, WiFi 2.4G, WiFi 5.8G, 5G (tri-color LED)                                                                                                                                                                                                                        |                                                             |
| WIFI Antenna            | 2 standard SMA male antenna connectors with 50Ω impedance.                                                                                                                                                                                                                        |                                                             |
| Cellular Antenna        | 4 standard SMA female antenna connectors with 50Ω impedance                                                                                                                                                                                                                       | 2 standard SMA female antenna connectors with 50Ω impedance |
| SIM Card                | 2× Micro-SIM slots with anti-vibration card holders, supports 1.8V/3V SIM/UIM cards, built-in 15KV ESD protection, compatible with eSIM                                                                                                                                           |                                                             |
| Power Interface         | Terminal block power connector                                                                                                                                                                                                                                                    |                                                             |
| Reset                   | Restores configuration to factory settings                                                                                                                                                                                                                                        |                                                             |
| Physical Characteristic |                                                                                                                                                                                                                                                                                   |                                                             |
| Items                   | Contents                                                                                                                                                                                                                                                                          |                                                             |
| Casing                  | Die-cast aluminum housing, IP30 protection rating                                                                                                                                                                                                                                 |                                                             |
| Dimension               | 99x76x35.5mm<br>(Excludes antennas and accessories)                                                                                                                                                                                                                               |                                                             |
| Weight                  | 320g                                                                                                                                                                                                                                                                              |                                                             |
| Operate Temperature     | -35~+75°C                                                                                                                                                                                                                                                                         |                                                             |
| Storage Temperature     | -40~+85°C                                                                                                                                                                                                                                                                         |                                                             |
| Humidity                | 95% (No condensation)                                                                                                                                                                                                                                                             |                                                             |

# 5G Industrial Router FNR400



## Dimension (mm)



## Order Information

| Model        | Description                    |
|--------------|--------------------------------|
| FNR400-00    | 5G NR, 2.4G/5G WIFI, SIM*2     |
| FNR400-00-5R | 5G Redcap, 2.4G/5G WIFI, SIM*2 |