

5G Industrial Router

NR550



Introduction

NR550 is a wireless communication router for the Internet of Things (IoT), it uses a high-performance industrial level 32-bit communication processor and wireless module, embedded with the real-time operating system as the software platform, and using 3G/4G/5G cellular network to provide users with wireless long-distance large data transmission function.

NR550 – Industrial design, high and low temperature resistance, durable casing.

The design and manufacture of the Proroute RAPID NR550 ensures reliable and hassle free performance. With high-grade 32 bit processors and industrial grade wireless and 5G cellular modules, this router is designed to ensure a stable, secure and reliable connectivity for the long term. Rugged metal casing, high protection level, wide temperature and pressure, EMC level 4, the NR550 can withstand harsh conditions such as extreme temperature, unstable voltage, high electromagnetic radiation and dust to ensure continuous communication between remote equipment and monitoring centre.

Multi-antenna design to improve data transmission and reception capabilities

Externally widened 4 high-performance antennas, through scientific layout, in a limited space, to achieve greater isolation between the same frequency antennas, effectively reduce the same frequency interference, and improve data transmission and reception capabilities.

Industrial 5G Router

providing high performance with rugged good looks connectivity resilience and functionality for a wide range of applications. Suitable for M2M remote access and monitoring as well as home and office 5G connectivity.

5G Industrial Router NR550



- ▶ High-performance industrial-grade wireless module
- ▶ High-performance industrial-grade 32-bit communication processor
- ▶ Metal shell, protection grade IP30. Metal housing and system safety isolation
- ▶ Wide power input DC 9~36V
- ▶ Flash : Nor flash 16MB NAND flash 128MB
- ▶ DDR3 : 512MB
- ▶ Multiple WAN connection methods, include static IP, DHCP, PPPOE,
- ▶ 3G/UMTS/4G/LTE, DHCP-4G/5G
- ▶ Remote management SYSLOG/SNMP/TELNET/SSH/HTTPS
- ▶ Support local upgrade and remote upgrade, import and export configuration files
- ▶ NTP / Built in RTC
- ▶ MAC address clone
- ▶ Operating Temperature -35~+75°C (-31~+167°F)
- ▶ Storage Temperature -40~+85°C (-40~+185°F)
- ▶ Relative Humidity 95% (No condensation)

5G Processor

5G Modem – Asia/Europe/Australia (excludes China) support boths 5G SA and NSA network architectures with faster transmission speed, better carrying capacity, and lower network latency. Supports the 5G NR Sub6 band, and is compatible with LTE and WCDMA standards.



- ▶ 5G Sub-6 Bands : n1/3/5/7/8/20/28/38/40/41/77/78/79
- ▶ LTE FDD Bands : B1/3/5/7/8/18/19/20/28/32
- ▶ LTE TDD Bands : B38/40/41/42/43
- ▶ WCDMA Bands : B1/3/5/8/19
- ▶ MIMO: 5G NR DL – 4x4MIMO: n1/3/7/38/40/41/77/78/79
- ▶ MIMO: 5G NR UL – 2x2MIMO: n41/77/78/79
- ▶ MIMO: LTE DL – 4x4MIMO: B1/3/7/32/38/40/41/42/43
- ▶ MIMO: LTE UL – 1x1 MIMO
- ▶ NR SA – 2.1Gbps(DL) / 900Mbps(UL)
- ▶ NR ENDC – 2.5Gbps(DL) / 600Mbps(UL)
- ▶ LTE – 1Gbps(DL) / 150Mbps(UL)
- ▶ WCDMA – 42Mbps(DL) / 5.76Mbps(UL)
- ▶ Hardware download and upload speeds are maximum theoretical and will depend upon 4G/5G network provider,
- ▶ distance to base station, environment and network throttling / prioritisation / contention.

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- ▶ 802.11AC/g/n WiFi Dual Band
- ▶ 2.412GHz to 2.472GHz and 5.150GHz to 5.825GHz, simultaneous dual band
- ▶ 2x2 MU-MIMO On-board WiFi 2.4GHz radio, up to 400Mbps physical data rate
- ▶ 2x2 MU-MIMO On-board WiFi 5GHz radio, up to 866Mbps physical data rate
- ▶ Intelligent, combined dual band WiFi antennas supporting both 2.4Ghz and 5.0Ghz ranges
- ▶ AP /AP Client/bridge mode supported
- ▶ WEP, WPA, WPA2 encryption
- ▶ Power : 26dBm (11b), 21dBm (11ac/MCS7/HT40), 20dBm (11ac/MCS9/HT80)
- ▶ Sensitivity : <-72dBm@54Mbps
- ▶ Supports up to 50 WiFi Users

VPN – Virtual Private Network

is a method of connecting multiple private networks across the Internet.

VPNs can serve to achieve many different goals, but some of its main purposes are:



- ▶ access between remote private networks;
- ▶ data encryption;
- ▶ anonymity when browsing the Internet.

NR550 router has built-in VPN Server / Client Functionality as standard.

- ▶ Supports Open VPN / PPTP / L2TP / IPSEC
- ▶ Supports GRE Tunnelling
- ▶ Supports up to 5 simultaneous IPSEC tunnels

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RS232 Interface

NR550 has RS232 port and is supplied with RS232 Serial Cable



- ▶ 1 x RS232 , Built in 15KV ESD :
- ▶ Data bit : 5, 6, 7, 8
- ▶ Stop bit : 1, 1.5 (Optional), 2
- ▶ Check : NONE, ODD, EVEN, SPACE (Optional) and MARK (Optional)
- ▶ Baud rate : 2400~115200bits/s

Product Specification

Cellular Specification

Module	Industrial grade, Cellular 5G modem
Frequency	5G Sub-6 Bands : n1/3/5/7/8/20/28/38/40/41/77/78/79 LTE FDD Bands : B1/3/5/7/8/18/19/20/28/32 LTE TDD Bands : B38/40/41/42/43 WCDMA Bands : B1/3/5/8/19 MIMO: 5G NR DL – 4x4MIMO: n1/3/7/38/40/41/77/78/79 MIMO: 5G NR UL – 2x2MIMO: n41/77/78/79 MIMO: LTE DL – 4x4MIMO: B1/3/7/32/38/40/41/42/43 MIMO: LTE UL – 1x1 MIMO
Bandwidth	5G NR : DL 2.1Gbps, UL 900Mbps LTE Cat20 : DL 1.0Gbps, UL 150Mbps WCDMA / HSPA+ : DL 42Mbps, UL 5.76Mbps
Power	< 23dBm
Sensitivity	<-97dBm

WIFI Specification

Frequency	IEEE802.11b/g/n, 2.4G, AP mode, IEEE802.11ac, 5.8G, AP mode
Bandwidth	IEEE802.11b/g : 54Mbps IEEE802.11n : 300Mbps IEEE802.11ac : 866Mbps
Security	WEP, WPA, WPA2 encryption
Power	26dBm (11b), 21dBm (11ac/MCS7/HT40), 20dBm (11ac/MCS9/HT80)
Sensitive	<-72dBm@54Mbps

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Hardware System

Items	Contents
CPU	Industrial-grade 32-bit communication processor
FLASH	Nor flash 16MB NAND flash 128MB
DDR3	512MB
Interfaces	
WAN	1 x 1000M ETH port, auto adapt MDI/MDIX, built in 1.5KV ESD
LAN	4 x 1000M ETH port, auto adapt MDI/MDIX, built in 1.5KV ESD
Console	1 x RS232 , Built in 15KV ESD : Data bit : 5, 6, 7, 8 Stop bit : 1, 1.5 (Optional), 2 check : NONE, ODD, EVEN, SPACE (Optional) and MARK (Optional) Baud rate : 2400~115200bits/s
Indicators	"PWR", "SYS", "2.4G", "5.8G", "Online", "Signal"
Antenna	Cellular : 4 x SMA female, characteristic impedance 50 ohms WIFI : 2 x SMA male, characteristic impedance 50 ohms
SIM/UIM	Standard drawer type(2 x SIM slot), 1.8V/3V SIM/UIM,15KV ESD protection
Power	2.1mm DC interface built-in power reverse protection
Reset Button	Router restart and router factory settings reset
Power Supply	
Standard	DC 12V/1.5A
Range	DC 9~36V
Consumption	<1.2A (12V)

Physical Properties

Items	Contents
Shell	Metal shell, IP30
Size	244x135.5x35.8 mm (Does not include antenna and mounting parts)
Weight	980g
Others	
Operating Temperature	-35~+75°C (-31~+167°F)
Storage Temperature	-40~+85°C (-40~+185°F)
Relative Humidity	95% (No condensation)