

Nokia Industrial 5G fieldrouter FRRO501a

Nokia Industrial 5G fieldrouter FRRO501a is a ruggedized router that enables the most advanced 5G experience, ensuring efficient traffic for demanding applications and use cases. Supporting a wide range of spectrum bands in both 4G and 5G, the fieldrouter FRRO501a integrates to your private wireless network, allowing you to get the most out of your existing systems, machines and infrastructure.

With an IP 67 protection level rating, and anti-vibration design, this highly ruggedized router is ideal to ensure the quality of wireless communication for video and other bandwidth-intensive applications in harsh outdoor conditions. As with all Nokia Industrial devices, it is seamlessly onboarded to the network and managed via Nokia DAC device management.



Benefits

- Qualcomm SDX55 single chip solution
- 5G NR and LTE-A CAT16 dual mode
- Support both SA and NSA
- Global bands supported
- Ruggedized and anti-vibration design
- Powerful software features
- Web, TR069 and SNMP based device management
- Support 2.5G WAN/LAN and diverse industry interfaces
- IP67 rating for outdoor environment

Technical specifications

Dimensions and weight

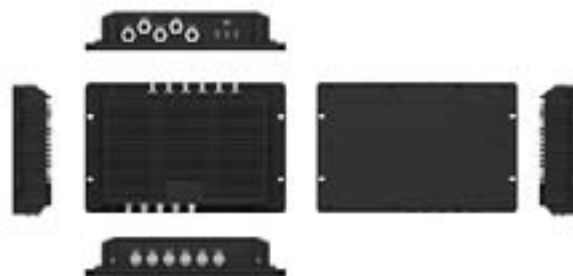
- Height: 290mm
- Width: 189mm
- Depth: 56mm
- Weight: ~2Kg

Environmental

- Operating temperature: -40~70°C
- Storage temperature: -40~85°C
- Humidity: 5% ~ 95%
- Operating voltage: DC 12~36V

Hardware specifications

Module	Quectel RM500Q-GL	
Chipset	Qualcomm SDX55	
Category	3GPP Release 15, Category 16	
Cellular bands	5G NR n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 WCDMA <ul style="list-style-type: none"> B1/B2/B3/B4/B5/B8/B19 	LTE <ul style="list-style-type: none"> LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B46/B48
GNSS	Passive detection: GPS/GLONASS/BeiDou/Galileo	
Wi-Fi	Support 2.4GHz/5GHz dual band and IEEE802.11 b/g/n/ac/ax Wi-Fi	
Network mode	Support SA/NSA	
External port	<ul style="list-style-type: none"> 1 x M12 for Power supply 1 x M12 for 10/100/1000Mbps compatible GE port 1 x M12 for 2.5GHz GE port 1 x M12 for RS232 + 2 x DI + 2 x DO 1 x M12 for RS485 2 x Nano SIM Slot (4FF, Dual SIM Single Active) 	
Antenna port	<ul style="list-style-type: none"> 3 x TNC connector for NR&LTE antenna 1 x TNC connector for NR&LTE&GNSS antenna 2 x TNC connector for 2.4&5GHz Wi-Fi antenna 	
LED indicators	<ul style="list-style-type: none"> 1 x Power indicator 1 x Network status indicator 1 x RSSI indicator 	
Button	1 x Reboot or Restore Button	
MIMO	<ul style="list-style-type: none"> DL 4*4 MIMO; UL 2*2 MIMO Wi-Fi 2*2 MIMO 	
ENDC	Support	
Tx/Rx	<ul style="list-style-type: none"> 2Tx/4Rx on n41/n77/n78/n79; 1Tx/4Rx on other LTE/NR bands 	
Power consumption	<24W	
General view		



Software specifications

Data services	<ul style="list-style-type: none"> • 4 x APNs (two for data, one for voice, one for management) • Multi PDN (up to 16 PDNs) • IPV4/IPV6 compliance 	
LAN	<ul style="list-style-type: none"> • IEEE 802.1Q VLAN • DHCPV4/DHCPV6 server/client • DNS and DNS proxy • DMZ • UPNP • ALG • Multicast/Multicast proxy • MAC address Filtering 	
Management	<p>Version management</p> <ul style="list-style-type: none"> • Image Checksum • Active version and backup version • Rollback mechanism when upgrade fail <p>WebGUI/CLI</p> <ul style="list-style-type: none"> • Different level of user login priority and different limitation and display • Encryption backup current settings and restore the backup settings • Export of current diagnosis results and operation logs • Statistics of LAN link status, transmit and receive traffic and up time <p>Diagnostics SNMP HTTP/FTP Auto Upgrade(FOTA) USIM PIN management and card authentication USIM activation</p>	<p>TR069</p> <ul style="list-style-type: none"> • Upload/Download the ACS specified file • Download the configuration file • Configure & Queries parameters • Remote upgrade • Remote debugging operations • Cycle monitor
VPN and Routing	<ul style="list-style-type: none"> • Bridge mode/Bypass mode • NAT mode • Static mode • Port mirror • ARP • IPV4/IPV6 dual stack 	<ul style="list-style-type: none"> • Port forwarding • PPTP • GRE tunnel • L2TP V2/V3 • VPN pass-through • VxLAN
Security	<ul style="list-style-type: none"> • Firewall • Mac address filtering • IP address filtering • URL filtering • Access control • HTTPS Login from WAN • DDOS attach protection • Hierarchical user management 	

Max Tx power

- 5G NR bands: Class 3 (23±2dBm)
- 5G NR n41/n77/n78/n79 bands HPUE: Class 2 (26+2/-3dBm)
- LTE bands: Class 3 (23±2dBm)
- LTE B38/B40/B41/B42/B43 bands HPUE: Class 2 (26±2dBm)
- WCDMA bands: Class 3 (24+1/-3dBm)

Bands and BWs Support list

Band	Duplex	"SCS (kHz)"	Power Class (PC)	Bandwidths (RF ready)	NSA NSA Bandwidths	SA SA Bandwidths	SA SA 2 × 2 UL_MIMO
n1	FDD	15	3	5, 10, 15, 20, 30, 40	-	5, 10, 15, 20, 30, 40	-
n2	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n3	FDD	15	3	5, 10, 15, 20, 25, 30	-	5, 10, 15, 20, 25, 30	-
n5	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n7	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n8	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n12	FDD	15	3	5, 10, 15	-	5, 10, 15	-
n20	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n25	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n28	FDD	15	3	5, 10, 15, 20, 30	-	5, 10, 15, 20, 30	-
n38	TDD	30	3	20	20	20	-
n40	TDD	30	3	20, 30, 40, 50, 60, 80	-	20, 30, 40, 50, 60, 80	-
n41	TDD	30	2	20, 30, 40, 50, 60, 80, 90, 100	20, 30, 40, 50, 60, 80, 90, 100	20, 30, 40, 50, 60, 80, 90, 100	Supported
n48	TDD	30	3	20, 40	-	20, 40	-
n66	FDD	15	3	5, 10, 15, 20, 30, 40	-	5, 10, 15, 20, 30, 40	-
n71	FDD	15	3	5, 10, 15, 20	-	5, 10, 15, 20	-
n77	TDD	30	2	20, 40, 50, 60, 80, 90, 100	20, 40, 50, 60, 80, 90, 100	20, 40, 50, 60, 80, 90, 100	Supported
n78	TDD	30	2	20, 30, 40, 50, 60, 70, 80, 90, 100	20, 30, 40, 50, 60, 70, 80, 90, 100	20, 30, 40, 50, 60, 70, 80, 90, 100	Supported
n79	TDD	30	2	40, 50, 60, 80, 100	40, 50, 60, 80, 100	40, 50, 60, 80, 100	Supported

Compliance specifications

Certification compliance

- CE
- FCC
- ROHS
- REACH
- WEEE

Environment compliance

- Protection rating: EN60529: IP67
- Salt mist: IEC68-2-11
- Shock: IEC60068-2-27/EN50155/EN61373
- Free Fall: IEC60068-2-32 (1 meter height with package)
- Vibration: IEC60068-2-6/EN50155/EN61373

EN-DC and CA combination

For the EN-DC and CA combination table, refer the below link:

- [EN-DC and CA combination table](#)

Receiving sensitivity

For the Receiving sensitivity, refer the below link:

- [Receiving sensitivity](#)

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Nokia Oyj
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

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