NOKIA

Quick start guide

Nokia Industrial 4G fieldrouter FRRO401d

NOKIA

NOKIA

Nokia Industrial 4G fieldrouter FRRO401d

Nokia Industrial 4G fieldrouter FRRO401d provides LTE service in a ruggedized form factor. With an operating temperature range of –40°C ~ 70°C endurance, they offer industrial-grade environmental qualifications while providing higher speed data services for video and other bandwidth-intensive applications.

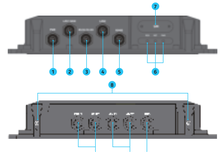
Nokia Industrial 4G fieldrouter FRRO401d has strong anti-vibration ability and it is qualified for extreme industrial environments and ideally suited for rail, transportation, mining, oil and gas, manufacturing, and other outdoor applications.

Nokia Industrial 4G fieldrouter FRRO401d supports wide range of bands and can also provide accurate real-time location information.
Remote device management is supported via TR-069 protocol. The router can also be managed using Local Web UI on the device itself.

This document will serve as a quick start guide for Nokia Industrial 4G fieldrouter FRRO401d. In this document, the Nokia Industrial 4G fieldrouter FRRO401d will be replaced by the router.

NOKIA

Device architecture



1. Power port
2. LAN1/WAN port
3. RS232 and DIDO port
4. LAN2 port
5. RS485 port
6. LED interface
7. SIM interface
8. Ground screws
9. WIFI antenna interface(Optional)
10. LTE antenna interface
11. GPS antenna interface(Optional)

Note 1: The reset button is beside SIM interface, if press 1s, router will restart; If press on for 10s, the router will reset to factory defaults.

NOKIA

Note 2: There are two white ground screws also at behind of device.

Antenna Port Definition

Device ANT port	Type	Supported bands
ANT1	Main Antenna (Tx/Rx)	FDD: B2/B4/B5/B8/B12/B13/B14/B17/B25/B26/B66 TDD: B38/B41/B42/B43/B48/B53
ANT2	Diversity Antenna (Tx/Rx)	FDD: B2/B4/B5/B8/B12/B13/B14/B17/B25/B26/B66 TDD: B38/B41/B42/B43/B48/B53

RS232/485 Cable Definition

RS232/485 cable definition				
	Number	Colors	RS485	RS232+ DIDO
	1	Orange & White	NC	DO2
	2	Orange	NC	DI2
	3	Green & White	RS_GND	DO1
	4	Blue	RS_GND	DI1
	5	Blue & White	RS_GND	RS_GND
	6	Green	RS_GND	RS_GND
	7	Brown & White	RS485_B	RS232_TX
	8	Brown	RS485_A	RS232_RX

NOKIA

LAN/WAN Cable Definition

LAN/WAN cable definition			
	Number	Colors	LAN/WAN
	1	Orange & White	MDI0+/RJ45-1
	2	Orange	MDI0-/RJ45-2
	3	Green & White	MDI1+/RJ45-3
	4	Blue	MDI2+/RJ45-4
	5	Blue & White	MDI2-/RJ45-5
	6	Green	MDI1-/RJ45-6
	7	Brown & White	MDI3+/RJ45-7
	8	Brown	MDI3-/RJ45-8

Power Cable Definition

Power cable definition			
	Number	Colors	PWR
	1	Red	PWR_Positive
	2	Black	PWR_GND
	3	NC	NC
	4	NC	NC

NOKIA

Working Environment

Operating temperature	–40°C ~ 70°C
Storage temperature	–40°C ~ 85°C
Humidity	5% ~ 95%
Power Supply	9 ~ 36VDC
Power Consumption	<20W
Water and Dustproof	IP67

Packing List

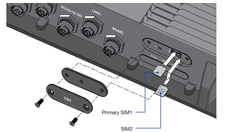
Items	Accessories	Quantity
1	A-Code cable to RJ45 jack ADC2 (Ethernet cable)	1
2	A-Code 8-Pin cable ADB1 (Data cable)	1
3	A-Code 4-Pin cable M12A (Power cable)	1
4	Mounting bolt	4
5	Grounding cable	1
6	Protective cap (TNC)	6
7	Protective cap (M12)	5
8	Power adapter	1
9	Rubber paddle antenna	4

NOKIA

Hardware Configuration

Install SIM cards

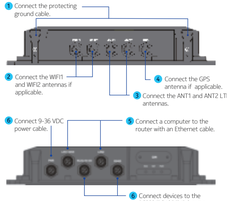
1. Use a cross screwdriver to remove the SIM card cover.
2. Slide the SIM cards into the SIM slots until they click into place. By default, the SIM card in slot 1 (the upper slot) is the Primary SIM card. When the SRP router is powered on or rebooted, it automatically connects to the network associated with the Primary SIM card.
3. Re-attach the cover.



NOKIA

Connect and Turn on the Router

Note: Please connect the protecting ground cable as first step, connect 9-36 VDC power cable as the last step.



NOKIA

About Nokia

We create the critical networks and technologies to bring together the world's intelligence, across businesses, cities, supply chains and societies.

With our commitment to innovation and technology leadership, driven by the award-winning Nokia Bell Labs, we deliver networks at the limits of science across mobile, infrastructure, cloud, and enabling technologies.

Adhering to the highest standards of integrity and security, we help build the capabilities we need for a more productive, sustainable and inclusive world.

For our latest updates, please visit us online www.nokia.com and follow us on Twitter @nokia.

Nokia OYJ
Karaportti 3
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

NOKIA

Connect to the Network

When the router is powered on, a green PWR LED may occur. This indicates that the power input is good.

Once the router's radio module is configured for the SIM card, it begins the activation/provisioning process and attempts to connect to the mobile network. This process typically takes several minutes. A successful connection is indicated by a solid green NET LED. And the strength of the RF signal can be indicated by the Signal LEDs in different quantity.

Indicator	Status	Description
PWR	Green	Power on
	Off	No power supply
NET	Green	Registered to network
	Off	Not register to network
	Blinking	Searching network
RSSI	Green	Signal strong
	Yellow	Signal good
	Red	Signal weak
	Off	No signal
	Red blinking	No SIM or SIM error

NOKIA

Software Configuration

Login to the Web Management Page

1. Launch the web browser, enter https://192.168.0.1 in the address bar, and press Enter.

2. Enter the username and password, and click Login.
3. After the password is verified, you can login to the web management page.

The default username and password are both admin. If you want to view or configure the router, you should use the super account to login to the web management page. The default super username is supreadmin, and the password is admin.

NOKIA

Radio Settings

1. Choose Network > LTE Settings.
2. On LTE Settings page, you can set the configuration of LTE network.
3. In the Status list, you can view the LTE status, such as Frequency, RSSI, RSRP, RSRQ,CINR, SINR, Cell ID and etc.

NOKIA

Device management settings

1. Choose Settings>Device Information
2. On the Device Information page, you can view Device Serial Number, IMEI, IMSI and Software Version.
3. Choose Settings> System> TR069
4. On the "TR069'page , you can view/set Device management/ TR069 parameters.

NOKIA

WLAN Settings

1. Choose Settings → Wi-Fi → WLAN Settings.
2. In the General Settings list, set Wi-Fi Enable or not Enable.
3. In the SSID Profile list, change the SSID, such as: "default-SSID".
4. To ensure data security, it is recommended that you change the Wi-Fi password .
5. Click Submit to save the settings.

NOKIA

FAQs

The POWER indicator does not turn on.
1. Make sure that the power cable is connected properly and the router is powered on.
2. Make sure that the power supply is compatible with the router.

Fails to Login the web management page.
1. Make sure that the router is powered on.
2. Verify that the router is correctly connected to the computer through Wi-Fi or a network cable.
3. If the problem persists, please contact the authorized local service suppliers.

The router fails to search for the wireless network.
1. Check if the power supply is connected properly.
2. Check if the router is placed in an open area that is far away from obstructions, such as concrete or wooden walls.
3. If the problem persists, please contact the authorized local service suppliers.

The parameters are restored to default values.
1. If the router is powered off unexpectedly while being configured, the parameters may be restored to the default settings.
2. After configure the parameters, download the configuration file and restore the desired settings quickly.

The router does not support SIM card hot-plug, please confirm that the device is powered off when the SIM card is inserted or removed.

NOKIA

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons

NOKIA

and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
Caution!

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOKIA

EU DECLARATION OF CONFORMITY

CE

Hereby, Nokia declares that the radio equipment type Nokia Industrial 4G fieldrouter FRRO401d is in compliance with Directive 2014/53/EU.

Maximum transmit power

Technology	Band	Maximum transmit power
LTE	LTE bands B8/38/42/43	23 dBm ±2 dB (Class 3)
WLAN 2.4G	2400-2483.5 MHz	20 dBm
WLAN 5G	5150-5725 MHz	23 dBm
WLAN 5G	5725-5875 MHz	14 dBm

For EU Frequency band restriction