

User Guide MiWire RouDem 5G



UserGuide_MiWireRouDem5G_Rev.1.00

This manual is applicable to the following solution/product

Item name	Manufacture part no.	Coverage
MiWire RouDem 5G	MWR-5G	Worldwide 5G and LTE-A coverage

Record of revisions

Rev.	Description	Release Date	Initials
1.00	First publication	April, 2025	NFP

Table of Contents



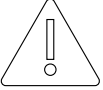

Introduction	2
Safety information.....	2
Required information for the reader.....	3
Package Content.....	3
Requirements	3
System Configuration	4
Hardware Overview.....	5
Ports MiWire RouDem	5
Ports PoE adapter	5
LED's.....	6
MiWire RouDem	6
Installation of the MiWire RouDem.....	7
STEP 1 – Inserting the Micro-SIM card	7
STEP 2 – Preparing mounting bracket and connecting the ethernet cable.....	8
STEP 3 – Installing the MiWire RouDem	9
STEP 4 – Cable wiring.....	10
STEP 5 – Powering the RouDem	10
STEP 6 – Configuration of internet via MiWire RouDem	11
STEP 7 – Registration	11
MiWire user interface.....	12
Specifications	19
FAQ/Troubleshoot.....	21
Service & Repair	22

Introduction

Thank you for purchasing MiWire RouDem. The MiWire RouDem makes it possible to extend the reach of mobile networks in coastal areas with an automatic directional turning antenna.

Safety information

Read, follow, and keep this instruction.

	<p>WARNING - Product installation</p> <p>To ensure correct performance of this equipment, it is strongly recommended that professionals with expertise, properly trained, and likewise authorized within the industry is completing the installation.</p>
	<p>WARNING – Do not disassemble</p> <p>Do not disassemble or modify this equipment.</p>
	<p>WARNING – Input Power</p> <p>The input voltage range is 100-240 VDC.</p>
	<p>CAUTION – Contains li-ion batteries</p> <p>The product contains li-ion batteries. Must not be opened or be replaced by unauthorized buddies.</p>

Required information for the reader

IMPORTANT: Text marked 'Important' provides essential information to the reader and is key information to the user for the equipment to work properly. Damage to the equipment can occur if instructions are not followed.

Package Content

Item	Quantity
MiWire RouDem 5G	1
Mounting Bracket	1
Power supply	1
Screws M4x12mm	5
Unbraco 4 Key	1
Torx 10 Key	1
Privacy Policy	1
User Guide	1
Registration Information	1

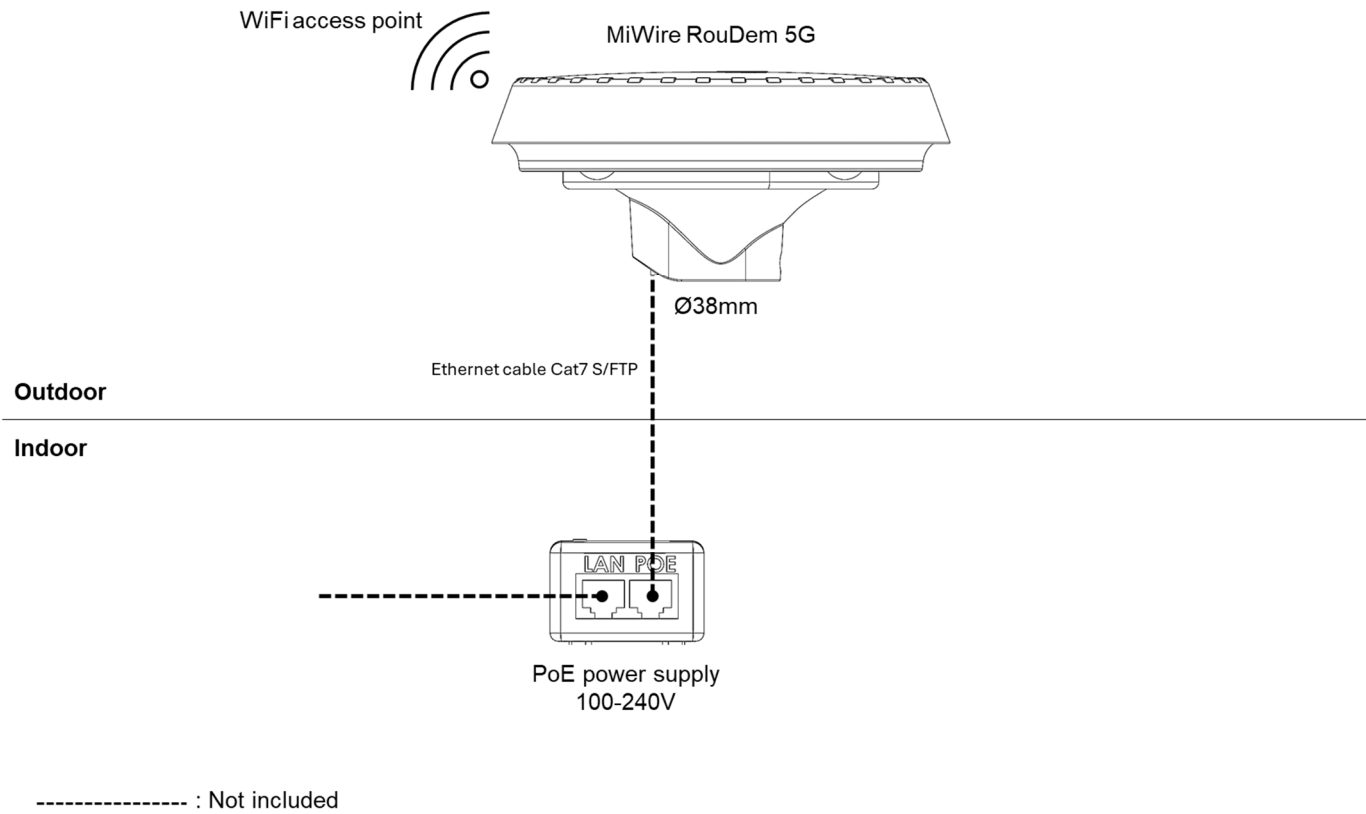
Requirements

- **Data subscription**
To receive data via the MiWire RouDem solution you must have a subscription with a data provider. Each antenna needs a subscription.
- **Cable(s)**
The package content **DOES NOT include cables for cable run installations**. To install MiWire RouDem one must follow these cable specifications when purchasing cables for installation:

Network cable type	S/FTP CAT7, UV- and water resistant, double shielded, grounded
Connector 1	RJ45 (male), CAT7 S/FTP, grounded
Connector 2	RJ45 (male), CAT7 S/FTP, grounded
Length	The length of the cables depends on the location for installation. In the System Configuration section, you will find an overview of the set up. Max. length is 100m

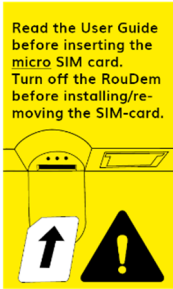
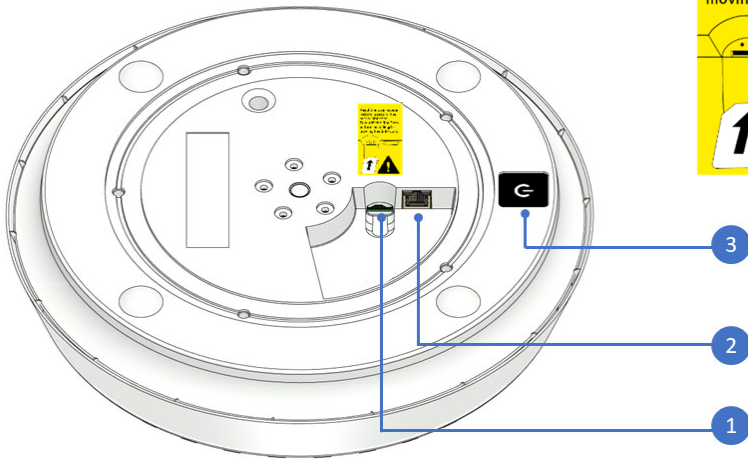
- **Mounting**
Depending on installation scenario, mounting accessories can vary. The mounting should take place at the highest spot possible and where possible with a good 360° view. The mounting bracket interfaces to a pole of Ø38mm/1.5" (outer diameter). Read more about the mounting in the section; Installation of the MiWire RouDem section, step 3.

System Configuration



Hardware Overview

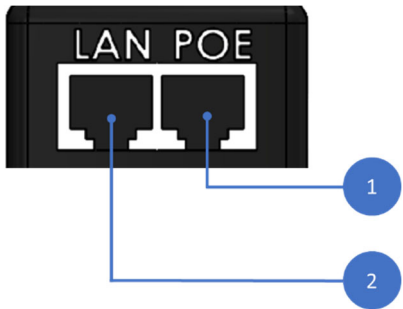
PORTS MIWIRE ROUDEM



IMPORTANT: Read Step 1 in the section about Installation of the MiWire RouDem.

1 SIM card slot
The slot is a Micro-SIM slot used for the SIM card from the data provider. The SIM card slot is a click system.
2 Ethernet port
RJ45 cable port.
3 On/off button
The On/Off button is a push button. Press 1x for on/off. The LED will flash for on and off.

PORTS POE ADAPTER



1 PoE port (Power over Ethernet)
The RJ45 port is reserved for the ethernet cable from the antenna
2 LAN port
The RJ45 port is for optional LAN connection.

LED's

MIWIRE ROUDEM



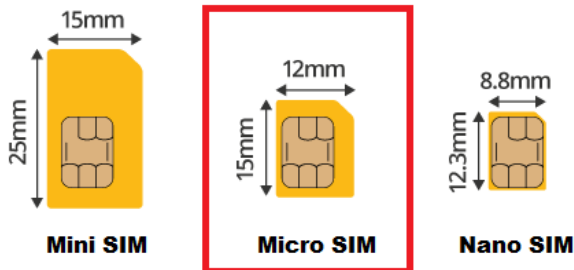
The LED will blink blue when the antenna starts up. As soon as it's connected to the mobile network, the LED will change to a steady blue light.

Installation of the MiWire RouDem

STEP 1 – INSERTING THE MICRO-SIM CARD

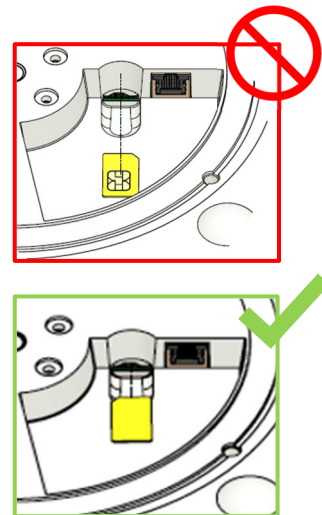
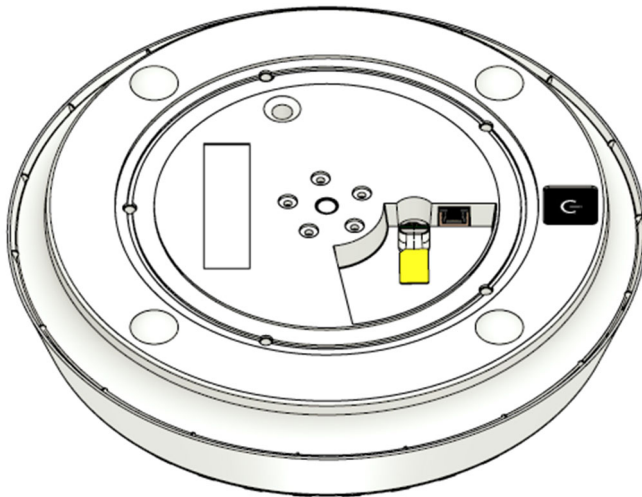
You find the SIM card slot at the bottom of the RouDem.

1. Carefully click out the SIM card in **Micro SIM** format.



IMPORTANT: press on the top of the SIM card to make sure there is a smooth surface.

2. RouDem's SIM card slot is a click system. Do not use tweezers, pliers, or other tools to force the SIM card in/out. Use the click system to gently insert/remove the SIM card by using your fingers by clicking it into place and clicking it out. Any resistance other than the smooth pressure of the spring is a warning that something is not correct. When installing/removing the SIM-card the RouDem must be turned off.
 - a. **IMPORTANT:** Insert the SIM card with the angled corner facing the left and the gold area facing down. When it is placed correctly you will hear/sense a 'click'.



3. Check if the device is working with the purchased SIM card. Turn on the RouDem by pressing the on/off button and wait for the LED to light green. It takes a few minutes. If the LED remain red, please read the troubleshoot section.

PLEASE NOTE that when removing/inserting a new SIM card it is important to reboot the unit.

STEP 2 – PREPARING MOUNTING BRACKET AND CONNECTING THE ETHERNET CABLE

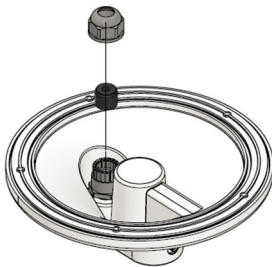
IMPORTANT: It is required to mount the mounting bracket to avoid humidity and dirt entering the RouDem.

1. Pass the cable through the cable gland.
 - a. Unscrew the sealing nut and use a small tool such as an Allen key or a pen to get the seal out.
 - b. Pass the cable through the body and the sealing nut, mount the seal on the cable and place the seal back into the claw.
 - c. Screw on the sealing nut and make sure it is tightened very tight.
2. Connect the Ethernet cable to the Ethernet port in the RouDem.
3. Affix the mounting bracket to the RouDem with the five screws using the supplied Torx 10 Key.

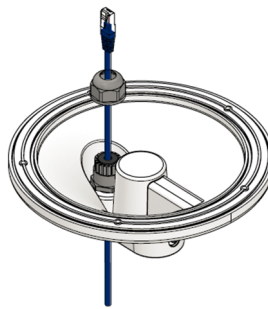
IMPORTANT: it is important that the mounting bracket is secured with all five screws to maintain waterproofness.

4. Tighten the mounting bracket to a pole Ø38mm/1.5" pole by tightening the two grub screws with the supplied Unbraco 4 Key.

1 a



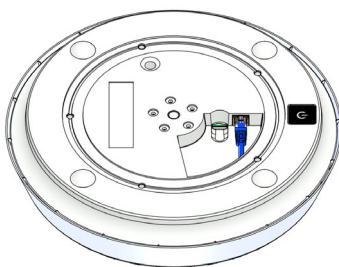
1 b



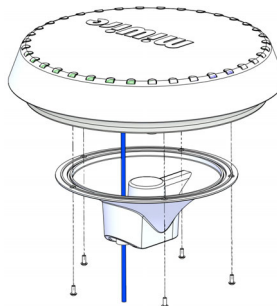
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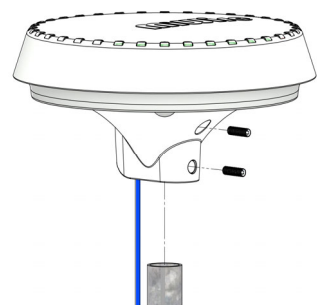
2



3



4

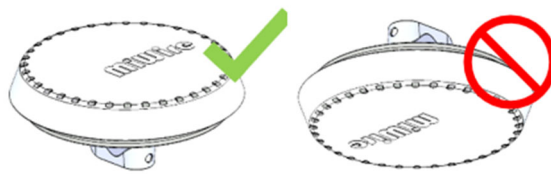


STEP 3 – INSTALLING THE MIWIRE ROUDEM

Before installing each MiWire RouDem permanently you should determine the suitability of the location for installation.

Installation considerations:

- Install the MiWire RouDem above the roof at the highest spot possible on a pole, a mast, or another appropriate platform with opportunity to accommodate a pole of Ø38mm/1.5"
- Place the RouDem where there is a good all-round view. It is rarely possible to place the RouDem where a completely clear view in all directions is available, but as good as possible to obtain the best performance.
- The RouDem should always be installed in a horizontal position and upright.



! IMPORTANT INSTRUCTION !

Before permanent installation please check compass interference via the user interface. Read more about how to access the user interface on p. 12 in the user guide.

1. In the browsers' URL line type the IP address (192.168.X.1*) of the RouDem and press enter.
2. Sign in with username '**admin**' and password '**1234**'.
3. Go to the menu tab 'Compass & Map'.
4. Click on 'Calibrate'.
5. The task takes approx. 2 min. The value must be above 80. If the value is below 80, please reconsider placement and repeat the process. Please also read the installation considerations below.

*Please see the specific IP address of the RouDem. It is stated on the label if it has not been manually changed.

STEP 4 – CABLE WIRING

Cable wiring considerations:

- Where possible avoid routing the cables near other electrical equipment and cables.
- If possible, all cable routing must be done in a cable duct.
- Do not apply any load to the connectors.
- Cable specification:

Network cable type	S/FTP CAT7 or above, UV- and water resistant, double shielded, grounded
Connector 1	RJ45 (male), CAT7 S/FTP, grounded
Connector 2	RJ45 (male), CAT7 S/FTP, grounded
Length	The length of the cables depends on the location for installation. In the System Configuration section, you will find an overview of the set up. Max. length is 100m.

STEP 5 – POWERING THE ROUDEM

1. Connect the ethernet cable from the RouDem to the POE port of the PoE adapter/power supply.



2. Plug the PoE adapter into an indoor power outlet 100-240VDC. If not the RouDem is already turned on or turns on automatically as it is powered, turn the RouDem on by pressing the on/off button in the bottom of the RouDem. If you do not have access to the on/off button please read the restart/reboot part in the troubleshoot section.
3. Optional: connect to local LAN/network equipment via the LAN port of the PoE adapter.

Battery feature:

In the event of a power outage, the RouDem is battery-powered, providing a minimum of 1 hour of operation.

Note: the device will not charge at temperatures below 10°C and above 45°C.

STEP 6 – CONFIGURATION OF INTERNET VIA MIWIRE ROUDEM

Connect directly via RouDem's WiFi and/or connect with external network equipment.

WiFi

1. Select WiFi settings on a compatible device e.g., a computer, a smartphone, or tablet. The device will automatically search for available WiFi networks (make sure WiFi is on).
2. Choose the WiFi network with the name containing *MiWire*. The SSID (network name) and WiFi key. Find the information on the unit label, which is found under the RouDem, on the box or on the registration flyer.

PC and External network equipment

Connect the POE adapter/power supply to external network equipment e.g., a router, a switch or WiFi access points by using the LAN port.

STEP 7 – REGISTRATION

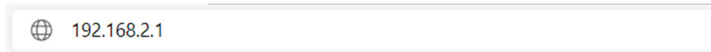
This step must be performed by the end-user of the product. When registering the RouDem you can receive the best service and support. Follow the instruction on the registration flyer.

MiWire user interface

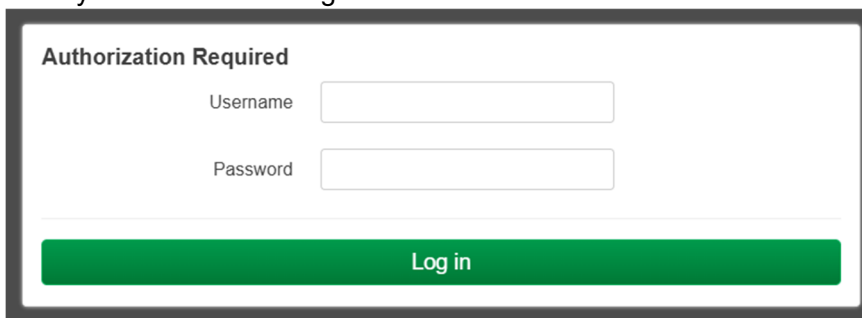
After installation of the MiWire RouDem solution has been performed, the system is fully operational. In this section there will be a description of system settings which are configurable from the Web Server/MiWire user interface.

MiWire user interface presents an overall status of the RouDem and allow the user to configure network related settings, get an overview SIM card information and perform device commands. You can only access the user interface if you are connected to a MiWire related network either by WiFi or cable.

1. Open MiWire user interface by entering 192.168.2.1 in a web browser. There is a web server for each RouDem. The user interface is optimized for Google Chrome.



2. Log in with Username: admin & Password: 1234 (**IMPORTANT:** for optimum security, we recommend changing the password). The system will always be delivered from the factory with this default log in.

A screenshot of a login page titled "Authorization Required". It features two input fields: "Username" and "Password", each with a small icon to its left. Below these fields is a green button with the text "Log in". The entire form is enclosed in a dark gray border.

3. The menu bar at the top of the page consists of three dropdown menus: *MiWire*, *Advanced Features & Services*. In the following only the MiWire dropdown will be introduced. We do not recommend changing the settings if you are not familiar with the configurations parameters or have been trained or consulted with an expert.

Status

The status page presents an overall status of the RouDem.

IMPORTANT: If there is no WAN IP Address shown it is most likely because the APN settings are incorrect. Go to the Network tab and set the correct APN settings according to the current operator. The information can usually be found by looking up the MCC and MNC on the internet. Read more about setting the APN in the Network tab, 'MyDefinedAPN'.

OpenWrt		MiWire ▾	Advanced Features ▾	Services ▾	Logout	REFRESHING
Overall Status						
Wi-Fi 2.4GHz	MiWire-4857					
Wi-Fi 5GHz	MiWire-48575g					
Network	TeliaDk FDD LTE					
SIM	89450401231012057136					
GPS	55.198270, 7.737444					
Battery	0%					
Pointing	62°					
IP Connection	Up					
Device Status						
Serial Number	250151000001					
IMEI	868371053244857					
Device Name	MiWire-4857					
Hardware Version	4.4.3					
Modem Version	RM520NGLAAR03A03M4G					
Software Version	2.0.0-1					
Temperature	38°C					
Uptime	0h 2m 12s					
Local Time	2025-01-16 13:17:39					
WAN IP Address	100.90.225.68					
Status	Modem Connected					
Build Date	2025-01-14 13:56					

Network

OpenWrt

MiWire ▾Advanced Features ▾Services ▾Logout

REFRESHING

Network

Scan Mode:

Auto ▾

Type and Band

LTE BAND 3

Roaming:

OnOff

APN List

www.internet.mtelia.dk ▾

Network APN

www.internet.mtelia.dk

APN Username

Enter APN username

APN Password

Enter APN password

APN Authentication

▾

Save Changes

Start Scan

Serving Cell

Cell Identity	275B61E
Tracking Area Code	5DEA
Physical Cell ID	467
Cell Signal Strength	-103
MCC	238
MNC	20
Bandwidth	5

Network operator	
Scan mode	Select between: Auto (default) 3G 4G 3G/4G 5G 4G/5G
Roaming	Turn Roaming ON (default) /OFF
APN List	Select between: Internet (default) MyDefinedAPN
Network APN	If you change the setting in the APN List to MyDefinedAPN you can enter the APN Network
APN Username	If you change the setting in the APN List to MyDefinedAPN you can enter the APN Username
APN Password	If you change the setting in the APN List to MyDefinedAPN you can enter the APN Password

APN Authentication	If you change the setting in the APN List to MyDefinedAPN you can change the APN Authentication to: None PAP CHAP Both														
Serving Cell	Showing serving cell information <div>Serving Cell</div> <table> <tr><td>Cell Identity</td><td>275861E</td></tr> <tr><td>Tracking Area Code</td><td>50EA</td></tr> <tr><td>Physical Cell ID</td><td>467</td></tr> <tr><td>Cell Signal Strength</td><td>-104</td></tr> <tr><td>MCC</td><td>238</td></tr> <tr><td>MNC</td><td>20</td></tr> <tr><td>Bandwidth</td><td>5</td></tr> </table>	Cell Identity	275861E	Tracking Area Code	50EA	Physical Cell ID	467	Cell Signal Strength	-104	MCC	238	MNC	20	Bandwidth	5
Cell Identity	275861E														
Tracking Area Code	50EA														
Physical Cell ID	467														
Cell Signal Strength	-104														
MCC	238														
MNC	20														
Bandwidth	5														

SIM

OpenWrt	MiWire ▾	Advanced Features ▾	Services ▾	Logout	REFRESHING
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SIM Card / LED**SIM Settings**

SIM Slot: ☒ Slot 1 ☐ Slot 2 Slot 1 is the removable SIM card and Slot 2 is the on-board SIM card

Save

SIM Status

ICCID	89450401231012057136
IMSI	238201012705713
MCC	238
MNC	20
PIN Attempts	3
PUK Attempts	10
SIM Lock	Unlocked

Enable / Disable PIN Protection

PIN

Enabled

Disabled

PIN Code

Enter PIN

Submit

Status	ICCID (Integrated Circuit Card ID) IMSI (International Mobile Subscriber Identity) PIN Attempts PUK Attempts
Enable / Disable PIN Protection	
PIN	Enable or disable PIN. Disabled (default) . For your convenience, we recommend disabling the PIN, as you will

	otherwise need to enter the PIN every time the device is rebooted or updated.
PIN Code	Enter PIN code in this filed if it is required and press save
Change PIN Code	When enabling PIN code, you get an opportunity to change the PIN code.

LED Setting

OpenWrt

MiWire ▾

Advanced Features ▾

Services ▾

Logout

REFRESHING

LED

This section allows you to set the brightness of the LED on the device.

LED Settings

Brightness: Save LED brightness ranges from 0 (Off) to 255 (Max.)

Brightness	Select a value between 0 (off) and 255 (max) to define the brightness of the external LED
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Compass

OpenWrt

MiWire

Advanced Features

Services

Logout

REFRESHING

Compass

Current Heading

63°

Set Heading

Submit

Insert value to fix antenna, enter -1 to unfix it

Compass Quality

76

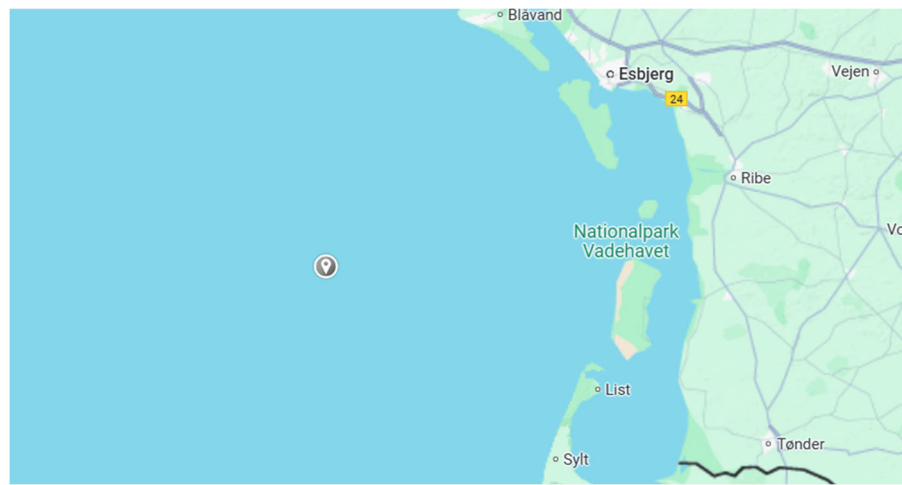
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ouDem

Calibrate

Calibration should only be done when the ship is docked

Map



Current Heading	Shows the direction the antenna is pointing. Calibrate the antenna if needed
Set Heading	Enter value to fix antenna direction*, enter -1 to unfix it. Depending on the software version the heading will be reset if you reboot the device. *Not recommended for MiWire.

Reboot/Shutdown

OpenWrt MiWire ▾ Advanced Features ▾ Services ▾ Logout

Reboot / Shutdown

This page allows you to reboot or shutdown the device.

Perform reboot

Perform shutdown

Device commands

Reboot	You will lose connection to the device during reboot. It takes a few minutes for the device to reboot.
Shutdown	You will lose connection to the device if you shut it down. Power on the device manually, by pressing the button under the device, or by removing and re-inserting the cable in the PoE adapter three times.

Admin

OpenWrt MiWire ▾ Advanced Features ▾ Services ▾ Logout

Router Password

Changes the administrator password for accessing the device

Password *

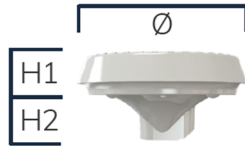
Confirmation *

Save

Change Password

New Password/Repeat Password	Change password for MiWire user interface.
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Specifications

MiWire RouDem 5G	
Dimensions	Ø335mm x (H1)80mm/(H2)160mm 
Weight With mounting bracket without mounting bracket	2.1 kg 1.8 kg
Networking Interface	10/100/1000 Mbps
Power Power method	AC/DC/POE 802.3af 100-240V max. 0.5A (powered via BDU)
Battery	Lithium ion, rechargeable Min. 30 min. operational time
Environmental conditions Degree of protection Temperature operational Temperature storage Relative humidity Robustness	IP66 -20°C ~ 80°C -40°C ~ 85°C 10%-100% (non-condensing) 0.5m/1.64ft drop on concrete
Mobile network Data network Region	5G, 4G LTE, 3G Global
Frequency bands & MIMO 5G	NSA: n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70 DL 4 × 4 MIMO: n1/n2/n3/n7/n25/n30/n66/n38/ n40/n41/n48/n70 SA: n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70 DL 4 × 4 MIMO: 1/n2/n3/n7/n25/n30/n38/n40/ n41/n48/n66/n70 UL 2 × 2 MIMO: n38/n41/n48
4G LTE	LTE-FDD: B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 29/ 30/ 32/ 66 LTE-TDD: B34/ 38/ 39/ 40/ 41/ 42/ 43/ 48 DL 4 × 4 MIMO: B1/B2/B3/B4/B7/B25/B30/B38 /B40/B41/B42/B43/B48/B66
UMTS	WCDMA: B1/ 2/ 4/ 5/ 8/ 19
Antenna Automatic mechanical pointing Directional antenna Omnidirectional antenna	Yes, rotary motor with infinite rotation 699 ~ 3700 MHz, gain 3.0-11.0 dBi 617 ~ 3800MHz, peak gain ≤ 3.6 dBi

GNSS GNSS technology Bands	Fully integrated global navigation satellite system solution (GPS, GLONASS, BDS, Galileo and QZSS) L1/L5
WiFi Standards Max. Coverage outdoors Max. Datarate	802.11 b/g/n, 2.4GHz 300m/984ft 300 Mbps
Interfaces <u>LAN interface</u> Connector type Data rate Max. cable length <u>SIM</u> SIM card type <u>WLAN access point</u> WiFi standard Frequency and max. data rate	1x RJ45 port 10/100/1000 Mbps 100 m (min. cat6 S-FTP, grounded) eSIM LPA* 1x Micro-SIM 3FF slot* 2.4 GHz, 400 Mbps 5 GHz, 866.7 Mbps
Power method Connector type	AC/DC/POE 802.3af 100-240V max. 0.5A RJ45 port
Battery Battery type Operational time	Lithium ion, rechargeable Min. 1 hours

FAQ/Troubleshoot

The LED Light on the RouDem is Red	<p>- Check for PIN code requirement: Access the MiWire user interface and check the status page. If prompted, enable the PIN code via the SIM page.</p> <p>- Verify data subscription issues: If the problem persists, contact your provider to resolve any subscription issues.</p>
Unable to Access the MiWire User Interface	<p>- Verify connection: Ensure your device is connected to the MiWire RouDem system via Wi-Fi or Ethernet.</p> <p>- Check network configuration: Confirm the device is set to automatically retrieve an IP address and DNS server address.</p> <p>- Browser issues: Restart your browser or try a different one.</p> <p>- Try another device: If possible, attempt access using a different device.</p>
Restart/Reboot the Device	<p>- If the RouDem is accessible: Press the on/off button to turn it off, wait for the LED to stop flashing, and then turn it back on.</p> <p>- If the RouDem is Installed out of reach: Use the MiWire user interface (192.168.2.1 or 192.168.3.1) to press "Reboot" on the Admin page. Alternatively, disconnect and reconnect the RouDem cable from the BDU three times in a row. On the third disconnection, the device will reboot after the LED flashes.</p>
Factory Reset	<p>1. Hold the button: Press and hold the button for 10-15 seconds.</p> <p>2. LED indicators during the process: After 3 seconds, the LED blinks at 0.2-second intervals. Between 10-15 seconds, it blinks at 2-second intervals.</p> <p>3. Release the button: Release during the 10-15 second window for a successful reset.</p> <p>Important: Holding the button for more than 15 seconds cancels the reset process.</p>

Service & Repair

If the product for some reason does not work as described or is broken, contact your dealer or distributor. Your dealer/distributor will have experience and will assist with further technical support and troubleshooting.

Before contacting your dealer/distributor, please identify the product. Find the serial number and IMEI number on the unit label, which is found under the RouDem, on the box or on the registration flyer. Alternatively log on MiWire user interface and read out the serial number or IMEI number.

If the RouDem is offline it is a great help for the support if a TeamViewer session can be established through a PC and another internet connection with a cable from the PC to the RouDem.

The product does not require any scheduled maintenance or service. Once a month the product checks for new software. If a new software version is available, then the unit will upgrade. You can also check for new software manually on the MiWire user interface.