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Quick Start **Guide**

4G LTE Light Industrial M2M Router
NWL-25

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Quick Start Guide

This quick start guide is designed to get you up and running quickly with your new NWL-25-02 router. More advanced set up instructions can be found in the user guide which can be downloaded from
www.netcommwireless.com/product/m2m/nwl-25

Package contents

This package includes

1. 1 x NetComm Wireless 4G LTE Light Industrial M2M Router (NWL-25-02)
2. 2 x 4G/LTE antennas
3. 1 x 1.5m Yellow Ethernet cable
4. 1 x DIN rail mounting bracket
5. 1 x Six-way terminal block
6. 1 x Quick start guide (not shown)

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Device overview

ITEM		DESCRIPTION
1	4G/LTE MAIN antenna connector	SMA female connector for the main 4G/LTE antenna.
2	Serial port	Female DB9 port supporting 9-wire RS-232, RS-485 or RS-422 (software selectable).
3	Micro USB 2.0 OTG port	Provides connectivity for optional external storage or a USB Ethernet dongle. Supplies up to 0.5A to connected device.
4	4G/LTE AUX antenna connector	SMA female connector for the auxiliary 4G/LTE antenna.

ITEM		DESCRIPTION
5	SIM card slot	Insert SIM card here.
6	SIM card slot eject button	Press this button with a pen or paperclip to release the SIM card tray.
7	Six-way terminal block connector	Connect power source, ignition and I/O wires here. Power, ignition and I/O wires may be terminated on the supplied terminal block and connected to a power source. Refer to the diagram and table under **Step 4** of the **Installing your device** section for correct wiring of the terminal block. Operates in the 8-40V DC range.
8	Reset button	• Press and hold for less than 5 seconds to reboot to normal mode. • Press and hold for 5 to 15 seconds to reboot to recovery mode. • Press and hold for 15 to 20 seconds to reset the router to factory default settings.
9	RJ45 Ethernet port	Connect one or several devices via a network switch here.

Getting started

Depending on your individual setup, you may need certain components to configure your device correctly.

- External power supply unit for the NWL-25-02 router (not included).
- Flathead screwdriver for terminating power input wires.
- Notebook or PC for advanced configuration.
- Additional fasteners and screwdrivers for specific wall or rail mounting.

Mounting options

The NetComm Wireless 4G LTE Light Industrial M2M Router (NWL-25-02) can be installed quickly and easily in a variety of locations.

MOUNT TYPE	DESCRIPTION	BENEFITS
Wall mount	a) Flat against the wall	Slimline form factor, close to wall
	b) Perpendicular to the wall	Small wall footprint
	c) Mount via DIN rail bracket	Easy to remove
C Section DIN rail mount	Slide onto a rail	Simplicity
Top hat DIN rail mount	Mount on a bracket and slide onto a rail	Simplicity. Can mount in between other devices
Desk mount	Stand on a desk	Simplicity, versatility

* Please remove the protective film from the top of the device after it has been mounted.

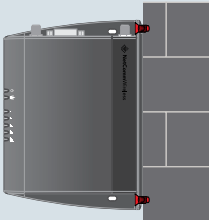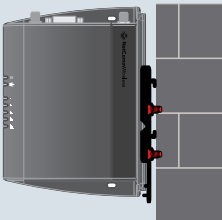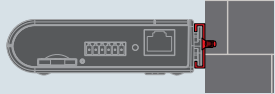| DIN RAIL MOUNTING BRACKET	
1	Push to release
2	V Bend allows you to snap the DIN bracket onto the middle of a DIN rail, rather than sliding it onto the end.
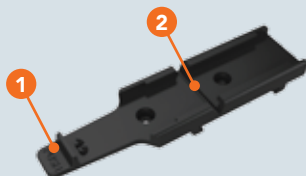
Wall mount
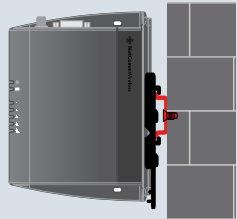
a) Flat against the wall

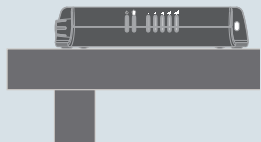## b) Perpendicular to the wall

c) Mounted via DIN rail bracket

C Section DIN rail mount

Top hat DIN rail mount

Desk mount

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Overview of LED indicators

LED ICON	NAME	COLOR	STATE	DESCRIPTION
Power	Power	▢	Off	Power off
			Double flash	Powering up
			On	Power on
			On	Power on in recovery mode
			Slow flashing	Hardware error
Network	Network		On	Connected via WWAN
			Blinking[1]	Traffic via WWAN
			Slow flashing	Connecting PDP
			On	Registered network
			Slow flashing	Registering network
			Slow flashing	SIM PIN locked
			Fast flashing	SIM PUK locked
			On	Can't connect
Signal strength	Signal strength		On	4G/LTE

1   *The term "blinking" means that the LED may pulse, with the intervals that the LED is on and off not being equal. The term "flashing" means that the LED turns on and off at equal intervals.*

Installing your device

Step 1: Insert the SIM card

Press the SIM Eject button to eject the SIM card tray. Place the SIM card in the tray and then insert the loaded tray into the SIM slot with the gold side facing up, as shown below.
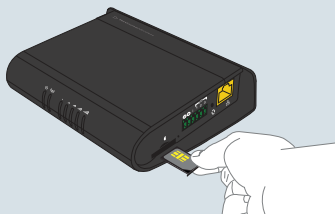
Step 2: Attach the antennas

The NWL-25-02 router is shipped with caps on the 4G/LTE main and auxiliary antenna sockets. To attach the supplied antennas, first remove the socket caps from the antenna sockets then screw the antennas onto the sockets by turning them in a clockwise direction. For optimal performance we recommend attaching both antennas, however, if you wish to use only one antenna, it must be connected to the 4G/LTE Main antenna socket. Please refer to the **Device overview** section for the antenna socket layout.
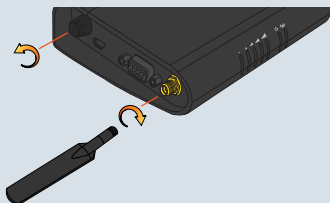
Step 3: Mount the router

Mount your router in a suitable location using the options listed in the **Mounting options** section.

When selecting a location to mount the NWL-25-02 router, keep in mind that it features two high performance antennas designed to provide optimum signal strength in a wide range of environments. If you find the signal strength is weak, try moving the router to a different place, mounting it differently or changing the orientation of the antennas.

The signal strength LEDs update within a few seconds with a rolling average signal strength reading. When selecting a location for the router, please allow up to 20 seconds for the signal strength LEDs to update before repositioning.

Step 4: Connect the power and Ethernet cables

Connect power to your router using one of two options.

DC power via 6-pin connector

Remove the attached green terminal block from your router and connect to the router's power socket using a DC power supply, sold separately.

DC power via field terminated power source

If an 8-40V DC power supply is available, you can insert the wires into the supplied terminal block to power your router. Use a flathead screwdriver to tighten the terminal block screws and secure the power wires, making sure that you have correctly wired the terminal block as illustrated below.

TERMINAL	DESCRIPTION
⊕	Positive wire for power.
⊖	Ground wire.
i	Dedicated terminal for ignition detection.
I/O	Three terminals used for input/output detection. (Please refer to the User Guide and SDK Guide for more information).

The green power LED on the router lights up when a power source is connected. Attach the supplied yellow Ethernet cable to the LAN port on your router and the other end to your computer.

Step 5: Access the router's web interface

In your web browser's address bar enter **http://192.168.1.1/.**
The login page is displayed.

There are two system management accounts (Root Manager and Admin) with different management capabilities.

Root Manager account

Grants full privileges such as firmware upgrades, device configuration, backup and restore, and reset to factory default settings. To access the Root Manager account, use these login details.

http://192.168.1.1	
Username	root
Password	admin

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Admin account

Allows updates to general settings. To access the Admin account, use these login details.

http://192.168.1.1	
Username	admin
Password	admin

Enter the username and password for the admin or root manager account and click **Log in.** The Status page is displayed.

Step 6: Unlock the SIM card

If the inserted SIM card is PIN locked, a pop-up window is displayed informing you that you must unlock the SIM before use.

Click the **OK** button. The SIM Security page is displayed.

In the **Current PIN** field, enter the SIM PIN and then enter it again in the **Confirm current PIN** field. If you do not want to enter the PIN code each time the SIM is inserted, select the **Remember PIN** option. Click the **Save** button. After a moment, the router displays "Success! The SIM unlock was successful".

Step 7: Connect to the Internet

If the SIM Status is OK, the NWL-25-02 router automatically attempts to connect to the Internet by detecting the correct APN and connection details.

If automatic configuration was unsuccessful, you must manually enter the connection details.

To manually configure the connection profile:

1. From the top menu bar, select the **Networking** option.
2. Next to Profile1, click the ✎ button. The Data connection profile settings screen is displayed.
3. In the **APN** field, enter the APN name that your carrier requires for mobile broadband connection. If required, enter the **Username** and **Password** in the Username and Password fields. Click the **Save** button.

The connection profile is now configured.

Verifying the connection status

Click on the **Status** menu item from the top menu bar. The Status page is displayed. The mobile broadband connection is established successfully if the **Status** field in the **WWAN connection status** section displays **Connected**.

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Configuring multiple devices

To apply your advanced configuration settings to more than one NWL-25-02 router, follow these simple steps.

Step 1: Back up your router's configuration

Log in to the web configuration interface, click on the **System** menu, select **System configuration** and click on **Settings backup and restore**.

If you want to password protect your backup configuration files, enter your password in the fields under **Save a copy of current settings** and click on **Save.** If you don't want to password protect your files, just click on Save. The router will then prompt you to select a location to save the settings file.

Step 2: Restore your backup configuration

In the web configuration interface click on the **System** menu, select **System configuration** and click on **Settings backup and restore.**

From the **Restore saved settings** section, click on **Choose a file** and select the backup configuration file on your computer.

Click **Restore** to copy the settings to the new NWL-25-02 router. The router will apply these settings and inform you it will reboot - click on **OK.**

Tip: Don't change the file extension of the backup file as this may cause it to corrupt.

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Safety and product care

RF exposure

Your device contains a transmitter and a receiver. When it is on, it receives and transmits RF energy. When you communicate with your device, the system handling your connection controls the power level at which your device transmits.

This device meets the government's requirements for exposure to radio waves.

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. To ensure compliance with RF exposure guidelines the device must be used with a minimum of 20cm separation from the body. Failure to observe these instructions could result in your RF exposure exceeding the relevant guideline limits.

External antenna

Any optional external antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter. Please consult the health and safety guide of the chosen antenna for specific body separation guidelines as a greater distance of separation may be required for high-gain antennas.

Any external antenna gain must meet RF exposure and maximum radiated output power limits of the applicable rule section.

FCC statement

FCC compliance

Federal Communications Commission Notice (United States): Before a wireless device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure.

FCC regulations

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.

This device 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:

- Reorientate 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.

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

Electrical safety

Accessories

Only use approved accessories.

Do not connect with incompatible products or accessories.

Connection to a car

Seek professional advice when connecting a device interface to the vehicle electrical system.

Distraction

Operating machinery

Full attention must be given to operating the machinery in order to reduce the risk of an accident.

Product handling

You alone are responsible for how you use your device and any consequences of its use.

You must always switch off your device wherever the use of a mobile phone is prohibited. Do not use the device without the clip-on covers attached, and do not remove or change the covers while using the device. Use of your device is subject to safety measures designed to protect users and their environment.

- Always treat your device and its accessories with care and keep it in a clean and dust-free place.
- Do not expose your device or its accessories to open flames or lit tobacco products
- Do not expose your device or its accessories to liquid, moisture or high humidity.
- Do not drop, throw or try to bend your device or its accessories.
- Do not use harsh chemicals, cleaning solvents, or aerosols to clean the device or its accessories.

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- Do not paint your device or its accessories.
- Do not attempt to disassemble your device or its accessories, only authorised personnel must do so.
- Do not use or install this product in extremely hot or cold areas. Ensure that the device is installed in an area where the temperature is within the supported operating temperature range (-30°C to 70°C)
- Do not use your device in an enclosed environment or where heat dissipation is poor. Prolonged use in such space may cause excessive heat and raise ambient temperature, which will lead to automatic shutdown of your device or the disconnection of the mobile network connection for your safety. To use your device normally again after such shutdown, cool it in a well-ventilated place before turning it on.
- Please check local regulations for disposal of electronic products.
- Do not operate the device where ventilation is restricted
- Installation and configuration should be performed by trained personnel only.
- Do not use or install this product near water to avoid fire or shock hazard. Avoid exposing the equipment to rain or damp areas.
- Arrange power and Ethernet cables in a manner such that they are not likely to be stepped on or have items placed on them.
- Ensure that the voltage and rated current of the power source match the requirements of the device. Do not connect the device to an inappropriate power source.

Children

Do not leave your device and its accessories within the reach of small children or allow them to play with it. They could hurt themselves or others, or could accidentally damage the device.

Your device contains small parts with sharp edges that may cause an injury or which could become detached and create a choking hazard.

Emergency situations

This device, like any wireless device, operates using radio signals, which cannot guarantee connection in all conditions. Therefore, you must never rely solely on any wireless device for emergency communications.

Device heating

Your device may become warm during normal use.

Faulty and damaged products

Do not attempt to disassemble the device or its accessories.

Only qualified personnel must service or repair the device or its accessories.

If your device or its accessories have been submerged in water punctured or subjected to a severe fall, do not use until they have been checked at an authorised service centre.

Interference

Care must be taken when using the device in close proximity to personal medical devices, such as pacemakers and hearing aids.

Pacemakers

Pacemaker manufacturers recommend that a minimum separation of 15cm be maintained between a device and a pacemaker to avoid potential interference with the pacemaker.

Hearing aids

People with hearing aids or other cochlear implants may experience interfering noises when using wireless devices or when one is nearby.

The level of interference will depend on the type of hearing device and the distance from the interference source, increasing the separation between them may reduce the interference. You may also consult your hearing aid manufacturer to discuss alternatives.

Medical devices

Please consult your doctor and the device manufacturer to determine if operation of your device may interfere with the operation of your medical device.

Hospitals

Switch off your wireless device when requested to do so in hospitals, clinics or health care facilities. These requests are designed to prevent possible interference with sensitive medical equipment.

Interference in cars

Please note that because of possible interference to electronic equipment, some vehicle manufacturers forbid the use of devices in their vehicles unless an external antenna is included in the installation.

Explosive environments

Petrol stations and explosive atmospheres

In locations with potentially explosive atmospheres, obey all posted signs to turn off wireless devices such as your device or other radio equipment. Areas with potentially explosive atmospheres include fuelling areas, below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles, such as grain, dust, or metal powders.

Blasting caps and areas

Turn off your device or wireless device when in a blasting area or in areas posted turn off "two-way radios" or "electronic devices" to avoid interfering with blasting operations.

Product Warranty

For warranty information please visit
http://www.netcommwireless.com/product/m2m/nwl-25

Technical Support

For firmware updates or if you have any technical difficulties with your product, please refer to the support section of our website.

support.netcommwireless.com

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