

Quick Start **Guide**

Light Industrial M2M Router Plus

NWL-15



Quick Start Guide

This quick start guide is designed to get you up and running quickly with your new NetComm Wireless NWL-15 router. More advanced set up instructions can be found in the user guide which can be downloaded from **www.netcommwireless.com/product/m2m/nwl-15**

Package contents

This package includes

1. 1 x NetComm Wireless NWL-15 router
2. 1 x Six-way terminal block
3. 1 x 1.5m Yellow Ethernet cable 8P8C
4. 2 x CDMA antennas
5. 1 x DIN rail mounting bracket
6. 1 x Quick start guide (not shown)



Device overview



ITEM	DESCRIPTION
1	Main antenna socket SMA female connector for main antenna.
2	Auxiliary (Aux) antenna socket SMA female connector for auxiliary antenna (receive diversity).
3	GPS antenna socket SMA female connector for GPS antenna.
4	Mini USB 2.0 OTG port Provides connectivity for external storage or a USB Ethernet dongle. Supplies up to 0.5A to connected device.
5	Serial port Female DB9 port supporting 9-wire RS-232, RS-485 or RS-422 (software selectable).





NWL-15 - Light Industrial M2M Router Plus



ITEM	DESCRIPTION
6	<p>Six-way terminal block connector</p> <p>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 3 of the Installing your device section for correct wiring of the terminal block. Operates in the 8-40V DC range.</p>
7	<p>Reset button</p> <ul style="list-style-type: none">• 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.
8	<p>RJ45 Ethernet port</p> <p>Connect one or several devices via a network switch here.</p>

Getting started

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

-  External power supply unit for the NetComm Wireless NWL-15 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.

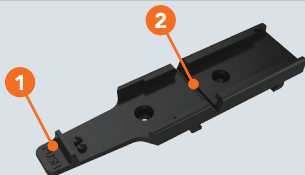
Mounting options

The NetComm Wireless NWL-15 router 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

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.

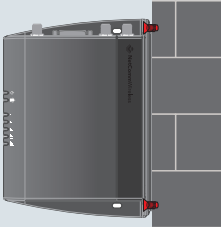


Wall mount

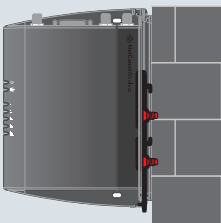
a) Flat against the wall



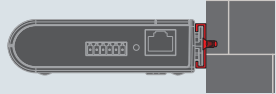
b) Perpendicular to the wall



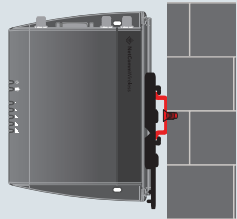
c) Mounted via DIN rail bracket



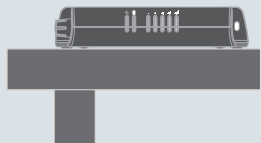
C Section DIN rail mount





















Top hat DIN rail mount



Desk mount



Overview of LED indicators

LED ICON	NAME	COLOR	STATE	DESCRIPTION
	Power		Off	Power off
			Double flash	Powering up
			On	Power on
			On	Power on in recovery mode
			Slow flashing	Hardware error
	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		On	EVDO coverage
			On	CDMA 1x coverage

- 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: Attach the antennas

The NetComm Wireless NWL-15 router is shipped with caps on the Main, Auxiliary and GPS antenna sockets. To attach the antennas, first remove the socket caps from the Main and Auxiliary antenna sockets then screw the antennas onto the sockets by turning them in a clockwise direction. Please refer to the **Device overview** section for the antenna socket layout. If you have purchased a GPS antenna, remove the socket cap from the GPS antenna socket and attach the antenna to the socket in the same manner.

Step 2: 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 NetComm Wireless NWL-15 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 3: Connect the power and Ethernet cables

Connect power to your router using one of the following options.

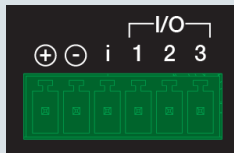
DC power via 6-pin connector

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. Connect equipment that requires network access to the Ethernet port of your router. You can connect one device directly, or several devices using a network switch. Switch on your power supply and wait 2 minutes for your NetComm Wireless NWL-15 router to start up.

Logging in to the router and activating it on the network

Before you can use your NWL-15 router, a broadband plan must first be added to it. To add a service to your NWL-15 router, contact your wireless operator (e.g. Verizon Wireless). You will need to provide the wireless operator with the MEID of your router to provision a service. The MEID of your router is printed on the box and the label affixed to the bottom of the router. After the wireless operator has provisioned the service, you may proceed to activate the NWL-15 router on the network.

The following steps guide you through logging into the web based configuration interface and activating the router. The web based configuration interface is also used for status monitoring, advanced configuration and troubleshooting. To access this interface you'll need a computer with an Ethernet port and web browser (such as IE, Chrome, Firefox or Safari) installed.

Step 1: Power on your device

Make sure your NWL-15 router is turned on and disconnect any Ethernet connections.

Step 2: Access the router's web interface

Attach one end of the supplied yellow Ethernet cable 8P8C to the LAN Ethernet port on your router and the other end to your computer. Access the web configuration interface by entering **http://192.168.1.1/** into your web browser. Enter your username and password and click **Log in**. See below for the correct login details.

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

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

Step 3: Activate the router on the network

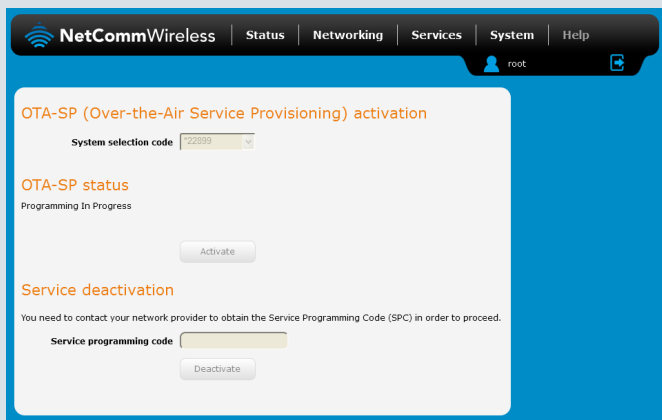
Once logged in you'll see the Status page. The Status page displays an overview of information about the network your router is connected to (if any), signal strength and data connection status.

The first time you log in to the router, its activation status is deactivated and the router prompts you to activate it with a pop-up window containing the following text:

"This device is not currently activated on a service provider network. If you wish to use the device with the cellular data network please ensure the device is inside the service provider coverage area and a service plan is already associated with this device. Click OK to start the activation process, Cancel to abort."

Click **OK** to begin the activation process.

The router displays “Programming In Progress”. Wait approximately 2 minutes for the activation process to complete.



When the activation process is complete, the router displays the Status page. The word **Activated** appears in the **Activation Status** field on the Status page. Your NWL-15 router is now activated and ready for use.

For more information on advanced configuration, refer to the full product User Guide available from the **Help** link in the web configuration interface or from the NetComm Wireless website at

<http://www.netcommwireless.com/product/m2m/nwl-15>

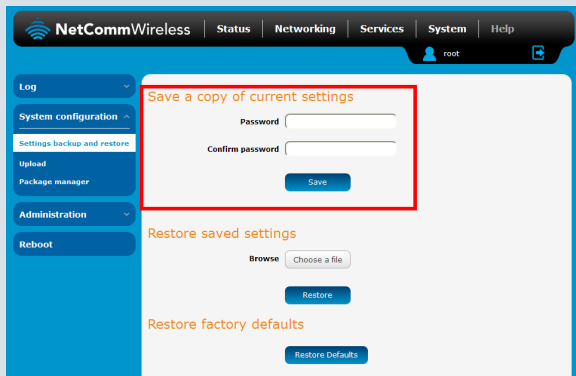
Configuring multiple devices

To apply your advanced configuration settings to more than one NWL-15 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.



The screenshot shows the NetCommWireless web configuration interface. The top navigation bar includes links for Status, Networking, Services, System, and Help. The left sidebar contains a menu with options like Log, System configuration, Settings backup and restore, Upload, Package manager, Administration, and Reboot. The main content area displays the 'Save a copy of current settings' section, which is highlighted with a red box. This section contains two password input fields labeled 'Password' and 'Confirm password', followed by a 'Save' button. Below this, there are sections for 'Restore saved settings' (with a 'Browse' button and a 'Choose a file' input) and 'Restore factory defaults' (with a 'Restore Defaults' button).

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-15 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.

The screenshot shows the NetCommWireless web interface. The top navigation bar includes 'Status', 'Networking', 'Services', 'System', and 'Help'. The 'System' menu is expanded, showing 'Log', 'System configuration', 'Settings backup and restore', 'Upload', 'Package manager', 'Administration', and 'Reboot'. The 'Settings backup and restore' section is active, displaying three options: 'Save a copy of current settings', 'Restore saved settings', and 'Restore factory defaults'. The 'Restore saved settings' section is highlighted with a red box and contains a 'Browse' button with a 'Choose a file' dropdown and a 'Restore' button. The 'Save a copy of current settings' section contains 'Password' and 'Confirm password' fields and a 'Save' button. The 'Restore factory defaults' section contains a 'Restore Defaults' button.

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.

-  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 (-20°C to 65°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-15>

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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