5G INDUSTRIAL IOT ROUTER
NTC-550 SERIES

Quick Start Guide

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GETTING STARTED

This quick start guide will help to get you up and running with your new Lantronix NTC-550 Series router. Further advanced configuration can be found in the NTC-550 Series User Guide availbale at https://www.lantronix.com/products/ntc-550-series/

WHAT YOU'LL NEED

Depending on your chosen setup you may need certain components to configure your device correctly, such as:

› An external power supply unit for the NTC-550 Series router.
› External antennas with FAKRA connectors
› A flathead screwdriver for terminating power input wires.
› A laptop or PC for setup and advanced configuration.
› Additional fasteners and screwdrivers for specific wall or rail mounting.
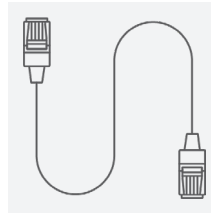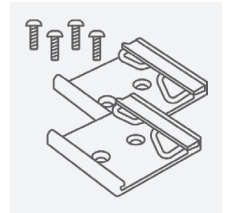
WHAT'S IN THE BOX
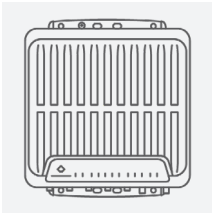
1 x NTC-550
Series router
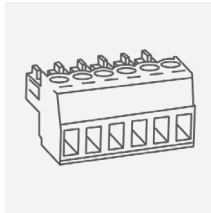
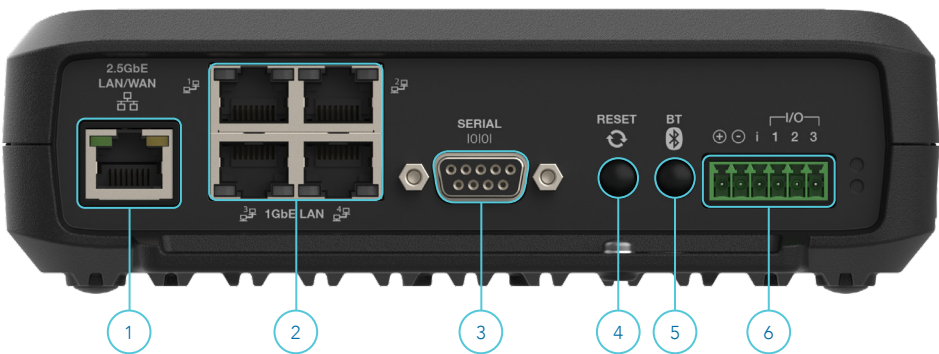1 x Six-way
terminal block

1 x 1m Ethernet cable

1 x DIN rail mounting kit

1 x Welcome card

DEVICE OVERVIEW

NO.	INTERFACE	DESCRIPTION
1	2.5Gbps WAN/LAN Ethernet port	Connect a wired WAN or local Ethernet compatible devices here.
2	Gigabit LAN Ethernet ports	Connect local Ethernet compatible devices here.
3	Serial port	Configurable RS232 DE-9 serial port used to connect to devices via serial.
4	Bluetooth pairing button	Press for one second then release to initiate Bluetooth pairing
5	Factory Reset button	Press and hold for less than 5 seconds to reboot the device. Press and hold for 5 to 10 seconds to switch to the standby memory bank. Press and hold for 10 to 15 seconds to reset to the highest level of installed configuration settings.
6	Six-way terminal block connector	Connect power source wires here. Power wires may be terminated on optional terminal block and connected to DC input jack. Refer to the Installing your router section for further information.
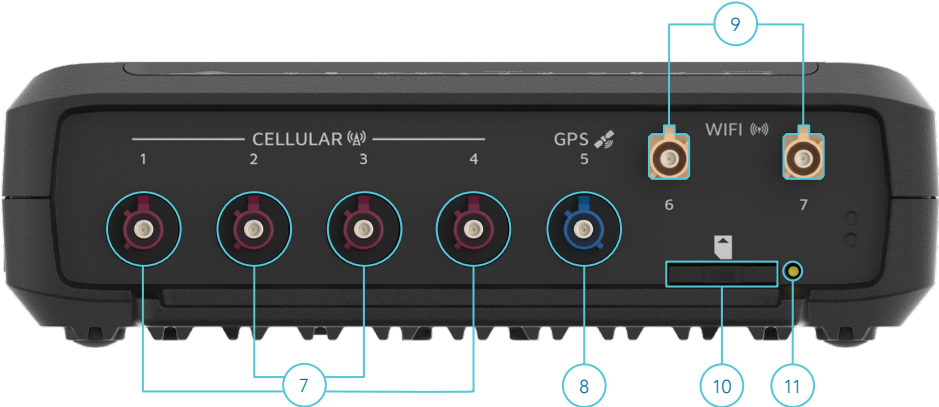
NO.	INTERFACE	DESCRIPTION
7	Cellular antenna sockets	FAKRA connector for cellular antennas.
8	GPS antenna socket	FAKRA connector for GPS antennas.
9	Wi-Fi antenna socket	FAKRA connector for Wi-Fi antennas.
10	SIM card tray	Insert SIM card (2FF size) here.
11	SIM eject button	Press with a SIM removal tool or thin implement such as a paper clip to eject the SIM card tray.
12	microSD card slot	Insert microSD card here. Remove the cover using a Phillips head screwdriver to access the slot.
13	USB-C port	Provides USB connectivity for debugging. Remove the cover using a Phillips head screwdriver to access the port.
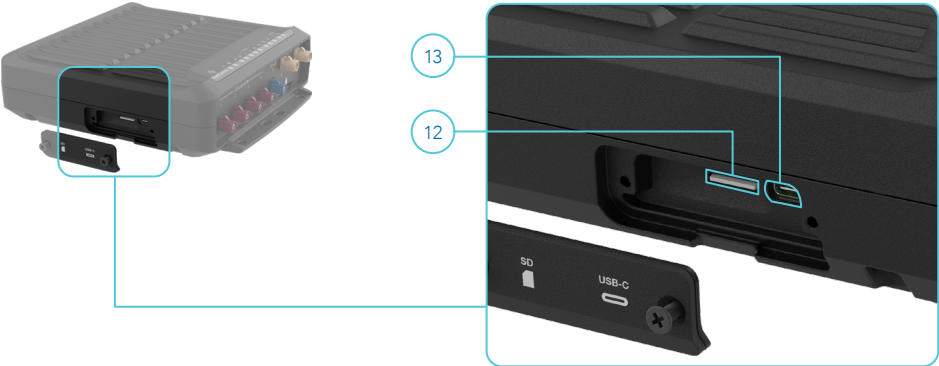
LED INDICATORS

The NTC-550 Series router uses **12 LEDs** to display the current system and connection status.
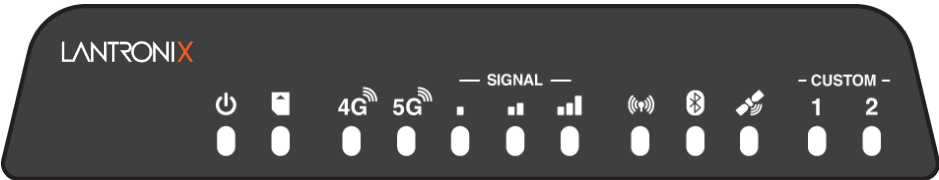
LED	NAME	COLOUR	STATE	DESCRIPTION
Power	Power	⊗	Off	Power off
		🔆	Blinking	Router starting up
		🟢	On	Power on
SIM	SIM	⊗	Off	No SIM detected
		🔴	Blinking	SIM error
		🟢	On	SIM installed and working
4G	4G Network	⊗	Off	No 4G connection
		🔆	Blinking	Connecting to 4G network
		🟢	On	4G connected
5G	5G Network	⊗	Off	No 5G connection
		🔆	Blinking	Connecting to 5G network
		🟢	On	5G connected

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LED INDICATORS CONTINUED
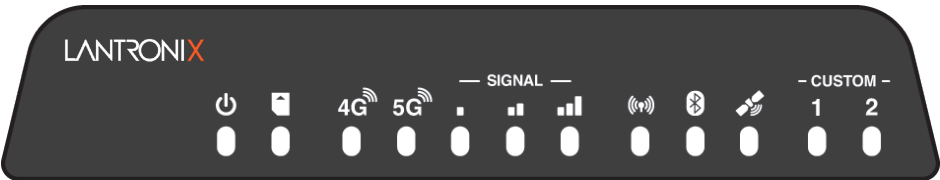
LED	NAME	COLOUR	STATE	DESCRIPTION
SIGNAL	Signal Strength	⊗	Off	No signal
		▪	One Lit	Poor signal
		▪▪	Two Lit	Fair signal
		▪▪▪	Three Lit	Good signal
(((•)))	Wireless	⊗	Off	Wireless off
		☀	Blinking	Client mode enabled
		🟠	On (Amber)	Connected to Wi-Fi network as client device
		🟢	On	Wireless Access Point enabled
🅱	Bluetooth	⊗	Off	Bluetooth off
		☀	Blinking	Bluetooth pairing mode
		🟢	On	Bluetooth on
📡	GPS	⊗	Off	GPS off
		☀	Blinking	Acquiring GPS location
		🟢	On	GPS on
CUSTOM	Custom 1		Customisable	Programmable LED for custom use
CUSTOM	Custom 2		Customisable	Programmable LED for custom use

INSTALLING YOUR ROUTER

1. INSERT THE SIM CARD

Before inserting the **SIM card**, examine the SIM for signs of damage or deformation that could prevent it being safely inserted or cause it to become stuck in the router. Examine the **gold contact points** of the SIM for signs of wear or damage that may prevent it from working correctly.

Use a thin pointed implement such as a **paper clip**, **pen**, or **SIM eject tool** to press the SIM eject button which ejects the SIM card tray. Place the SIM card in the tray and then insert the loaded tray into the SIM card slot with the gold side facing up.

The SIM tray should slide easily into the slot, **do not force** the loaded SIM tray into the slot.

2. ATTACH ANTENNAS

The router is fitted with multiple **antenna connectors** for use with cellular networks, Wi-Fi and GPS. Attach antennas fitted with **FAKRA connectors**.

Refer to the **Device Overview** section for the antenna socket layout.

3. MOUNT THE ROUTER

Choosing a location

Try to mount your router in a location that is both aesthetically pleasing and will provide the **best possible signal strength** with your chosen antennas. If you find the signal strength is weak, try adjusting your antennas, mounting them differently or changing their orientation.

The **signal strength LEDs** update within a few seconds of 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.

Mount your router in a suitable location using the options below:

Wall Mount
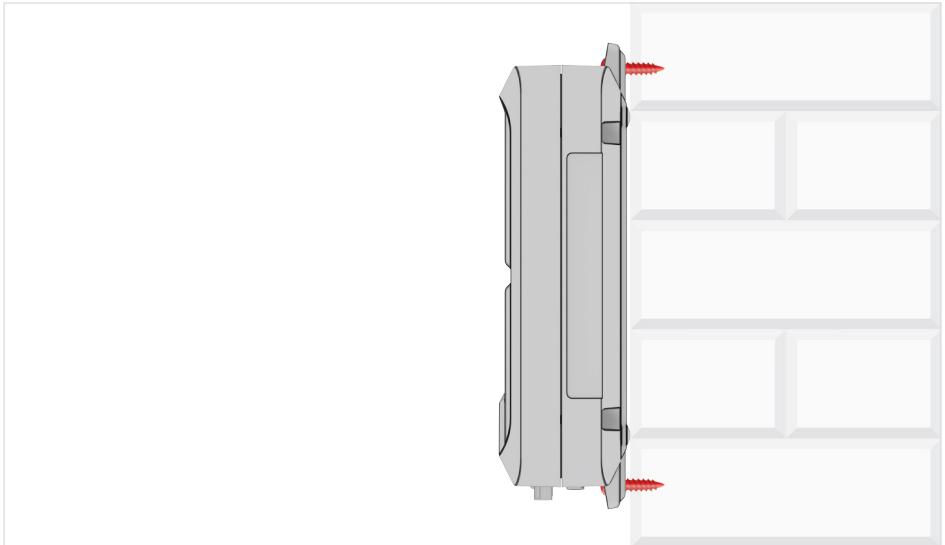
Ceiling Mount
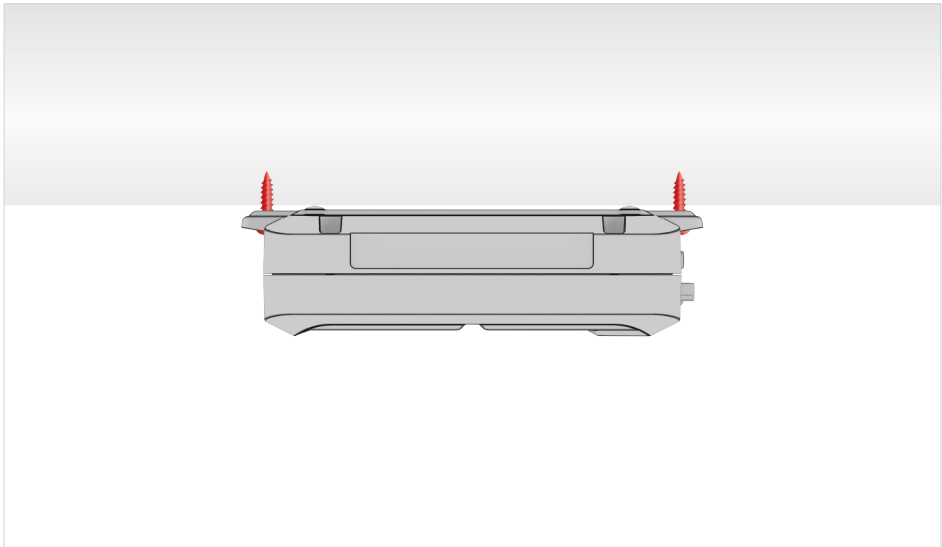
Desk Mount
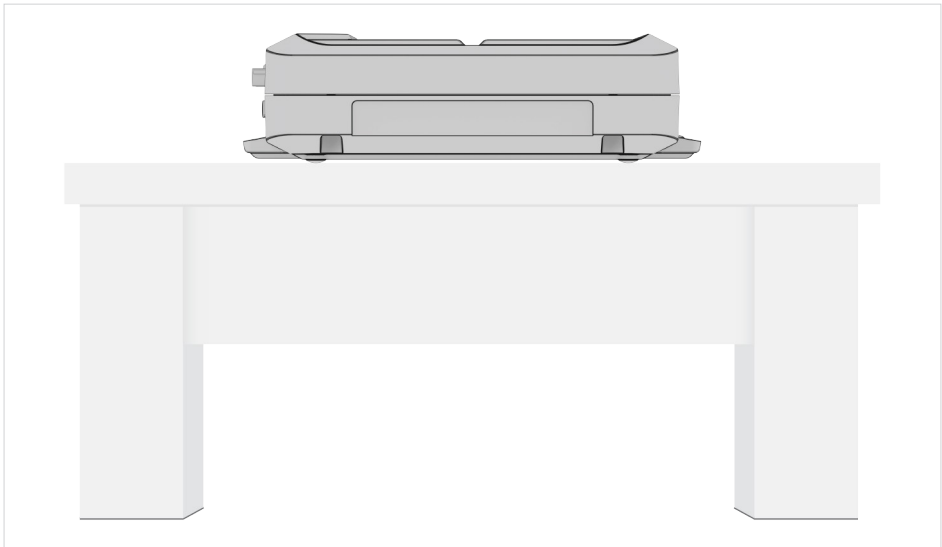
DIN Rail Mounting Kit

The **DIN rail mounting kit** allows the device to be installed in two orientations. Install the DIN rail mounting kit by screwing the DIN rail mounts into the following locations.
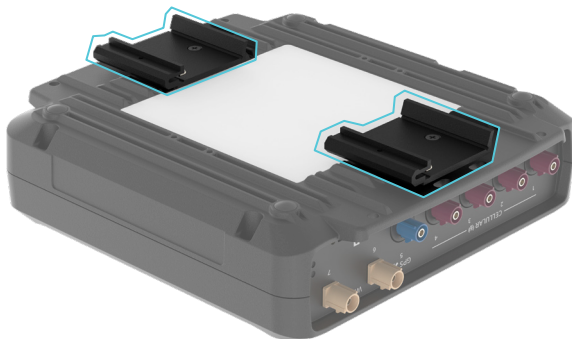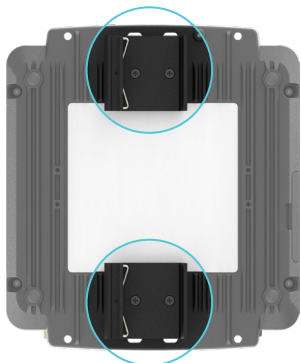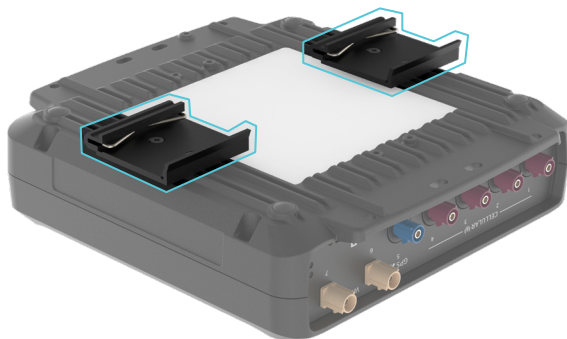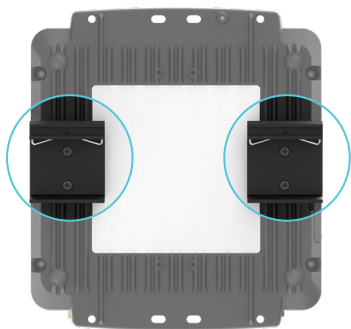
Mounting using the DIN rail kit:

DIN Rail
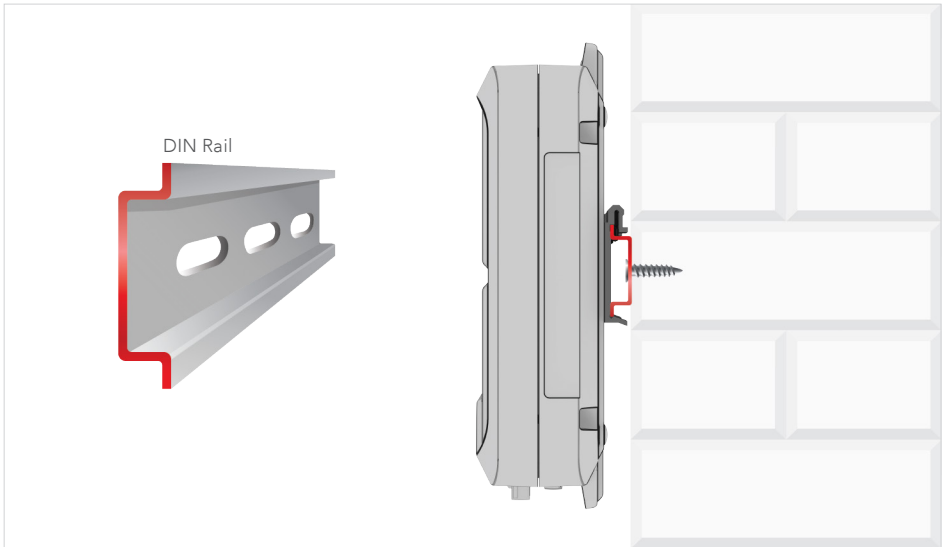
4. CONNECT THE POWER

Connect power to the router using one of the following options:

1. DC power using the optional DC power supply.

2. DC power 8 – 40V using a field terminated power source.

Connecting the power:

Remove the attached green **terminal block** from your router and insert the wires from the power supply or power source into the terminal block. Use a flathead screwdriver to tighten the terminal block screws and secure the power wires, making sure you have correctly wired the terminal block.
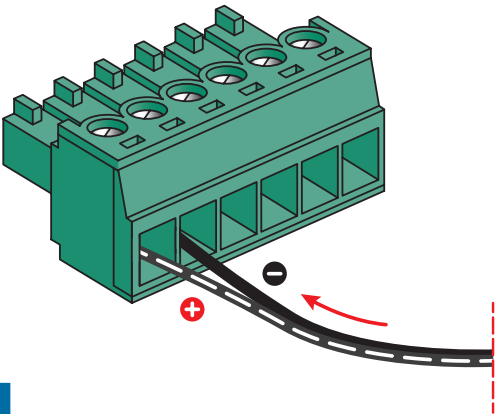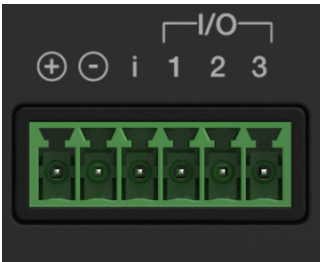
TERMINAL	DESCRIPTION
+	Positive wire for power.
-	Ground wire.
i	Dedicated terminal for ignition detection.
I/O	Three terminals used for input/output detection. Refer to the User Guide for more information.

The **green power LED** on the router will begin blinking when a power source is connected and turns **solid green** when the router is completely powered on.

5. ACCESSING THE ROUTER WEB INTERFACE

First, connect one end of the included **Ethernet cable** to the **Ethernet port** on the **router** and the other end to an **Ethernet port** on your **computer**.

Open a **web browser** and navigate to https://192.168.1.1/

The **web user** interface is displayed.

Note: The HTTP protocol is disabled by default, secure HTTP (HTTPS) is the default protocol.

Initialization

The first time the device starts up (or starts up after it is factory reset), the device enters **Configuration Mode**. In Configuration Mode, the router runs a **setup wizard** which must be completed before the router features can be accessed. This is a security feature which enables you to set strong passwords for the web interface accounts, as well as Telnet/SSH access. Configuration Mode also allows you to restore a previous configuration from a file.

To complete the setup:

1. Select the **Next** button on the first dialog box.
2. Enter the **factory default password** which can be found on the label on the **bottom** of the **device**, then select the **Next** button.
3. Select whether to configure the router as a **new device** or to **restore a previous configuration backup**.

Select one of the following options:

◉   I want to configure this as a new device.

○   I want to restore my configuration from a previous backup.

OK

Configure as a new device

To configure as a new device:

A. Select **I want to configure this as a new device** then select the **OK** button. The **New Passwords page** is displayed.

B. Enter a **new password** in each field for each account. There are three system management accounts (**root**, **admin** and **user**) as well as the SSH account. Each account may be configured with the same password.Select the Same as above checkbox to use the same password as the root user account.

Any password used must meet the following security criteria:

› The password must be a minimum of eight characters and no more than 128 characters in length.

› The password must contain at least one upper case character, one lower case character and one number.

› The password must contain at least one special character.

› The password must not be in a list of common password patterns, names and surnames, popular English words, popular US television shows, and other common patterns such as dates, repeated characters, or keyboard patterns.

C. Select the **Save** button to confirm the passwords. The router reboots into live mode automatically.
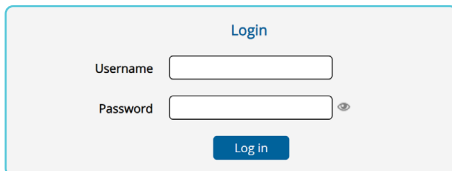
Restoring configuration from a previous backup file

Your router configuration, including passwords, can be restored by using a **backup file**. To use the backup file:

A. Select **I want to restore my configuration from a previous backup**, then select the **OK** button.

B. Select **Choose a file** and locate the backup file on your computer. If the backup file is encrypted, enter the **password**, then select the **Submit** button.

C. The router restores the previous configuration, then reboots. After reboot, log in using the passwords that were configured on the backup configuration.

Logging in

To log in to the router, enter the **login username** (root or user) and the **password** that you configured during the initialization process.

Login

Username [   ]

Password [   ] 👁

Log in

6. UNLOCK THE SIM CARD

If the inserted **SIM** is **PIN locked**, upon login a dialog is displayed informing you that **you must unlock the SIM before use**.

You must enter your PIN code to unlock and use the SIM.

OK

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

SIM SECURITY

SIM SECURITY MANAGEMENT

Status   PIN locked

PIN retries remaining   3

Current PIN   [   ] 👁

Confirm current PIN   [   ] 👁

Remember PIN   ☐

Save

In the **Current PIN** field, enter the **SIM PIN**, then in the **Confirm Current PIN** field, enter the **SIM PIN** again. If you do not want to enter the SIM PIN each time the router reboots, select the **Remember PIN** option. Select the **Save** button.

If the **SIM PIN** was entered correctly, the router displays a **success message**. The SIM is unlocked and ready for use.

7. CONNECT TO THE INTERNET

The router automatically attempts to connect to the internet after checking the SIM status and attempting to detect the correct APN and connection details.

Depending on your mobile operator, the automatic configuration may fail, and you will have to manually enter the connection details.

Manual configuration

To manually configure the connection profile:

1. From the top Navigation bar, select **Networking**.
2. Next to **Profile1**, select the **pencil** ✎ button.
    The Wireless WAN profile settings screen is displayed.
3. In the **APN** field, enter the **APN name** that your carrier requires for a mobile broadband connection. If required, enter the **username** into the **Username field**, and the **password** into the **Password field**.
4. Select the **Save** button to apply the profile.
    The connection profile is now configured.

Verify the connection status

From the **top navigation bar**, select **Status**. The **Status page** is displayed.

A successful connection is established if the Status field in the **WWAN Connection Status** section displays **Up**.

he router is now ready for use. Connect a device or switch to the Ethernet ports, or by using the Wi-Fi network. For further configuration, see the NTC-550 Series User Guide at https://www.lantronix.com/products/ntc-550-series/

∧ **WWAN CONNECTION STATUS**

Profile name	WWAN IP	APN
-	10.102.	
Status	**DNS server**	**Connection uptime**
Up	10.3.	00:02:58
	10.3.	
IPv6 status		
Up	**WWAN IPv6**	
	2001:8004:1480:3170:5dfe:8	
MTH		

SAFETY & PRODUCT CARE

ELECTRICAL SAFETY ACCESSORIES

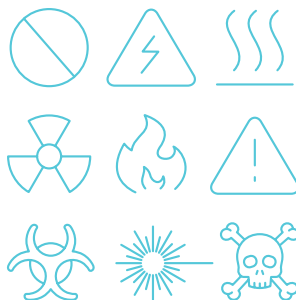### Only use approved accessories.
Do not connect with incompatible products or accessories.

Connection to a vehicle
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.

Driving
Full attention must be given to driving at all times in order to reduce the risk of an accident. Using the device in a vehicle can cause distraction and can lead to an accident. You must comply with local laws and regulations restricting the use of mobile communication devices while driving.

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.
› 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 t obacco 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 authorized personnel must do so.

› **Do not** expose your device or its accessories to extreme temperatures. Ensure that the device is installed in an area where the temperature is within the supported operating temperature range of -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.

Small 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.

Demagnetization

To avoid the risk of demagnetization, **do not** allow electronic devices or magnetic media to be close to your device for a long time.

Avoid other magnetic sources as these may cause the internal magnetometer or other sensors to malfunction and provide incorrect data.

Electrostatic Discharge
Do not touch the SIM card's metal connectors.

Air Bags
Do not place the device in the area near or over an air bag or in the air bag deployment area.

Mount the device safely before driving your vehicle

Emergency and other situations requiring continuous connectivity
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 or otherwise use the device in situations where the interruption of data connectivity could lead to death, personal injury, property damage, data loss, or other loss.

Device heating
Your device may become warm during normal use.

FAULTY AND DAMAGED PRODUCTS
Do not attempt to disassemble the device or its accessory.

Only qualified personnel should service or repair the device or its accessory.

If your device or its accessory has been submerged in water or other liquid, punctured, or subjected to a severe fall, do not use it until you have taken it to be checked at an authorized service center.

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.

Aircraft

Switch off your wireless device whenever you are instructed to do so by airport or airline staff.

Consult the airline staff about the use of wireless devices on board the aircraft, if your device offers a 'flight mode' this must be enabled prior to boarding an aircraft.

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 fueling 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.

TRADEMARK NOTICE
This product may refernce NetComm. On December 26th, 2024, Lantronix, Inc. acquired the Industrial Internet of Things (IIoT) portfolio from NetComm Pty Ltd and is authorized to use the NetComm trademark in association with this product.

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