NetCommWireless

Quick Start **Guide**

NTC-100

4G LTE Cat M1/NB1 Industrial IoT Serial Modem

NetCommWireless

Quick start guide

This quick start guide will help you set up and connect your device quickly and easily. More advanced set up instructions can be found in the user guide which can be downloaded from **www.netcommwireless.com/product/m2m/ntc-100.**

Package contents

The NTC-100 package includes:

1 x NTC-100

1 x Quick Start Guide

1 x Y-cable
(Nano-fit to DE-9 and DC power input)

1 x DIN rail mounting bracket

1 x Torx screw

Prerequisites

Depending on your circumstances, you may require some of the following items to complete the installation of the NTC-100 serial modem:

- An AC/DC power adapter,
  - 2.1mm centre positive jack,
  - 100-240V AC : 12V DC/1.5A (used in conjunction with the included Y-cable)
- A suitable cellular antenna such as the NANT-00001-000 (LTE Tube Antenna)
- A standard USB to USB Micro Type B cable
- Additional screws and fasteners
- A Windows PC or other device with an available serial or USB port
- A terminal emulation client such as PuTTY
- A T6 Torx driver to secure the SIM slot (optional)

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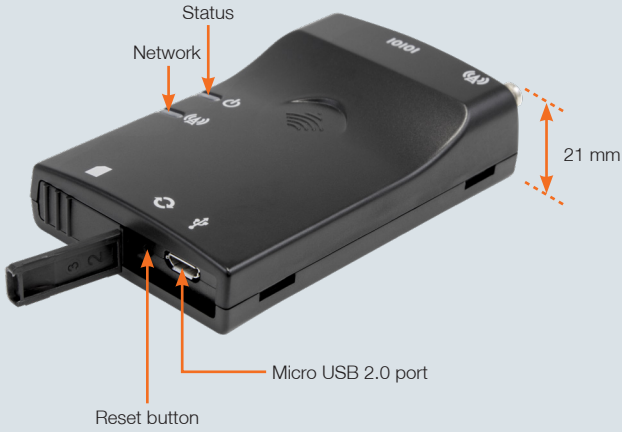
Device Overview

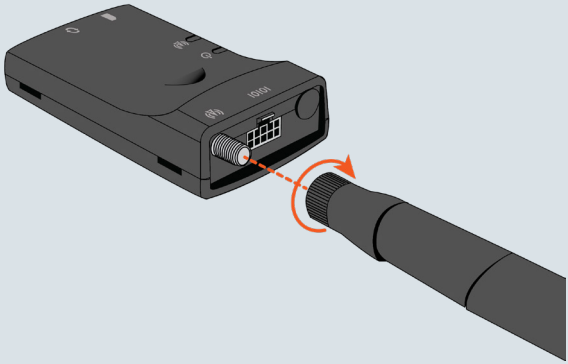

Status
Network
21 mm
Micro USB 2.0 port
Reset button


SIM card slot

Installation

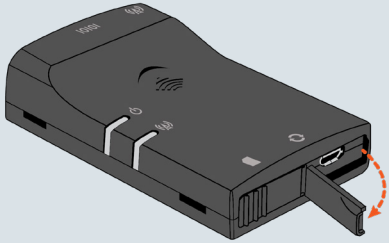
Connecting the antenna

Connect the antenna to the SMA connector on the NTC-100 serial modem by placing it on the SMA connector and turning it in a clockwise direction.

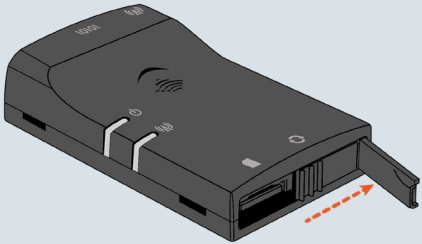


Inserting the SIM card

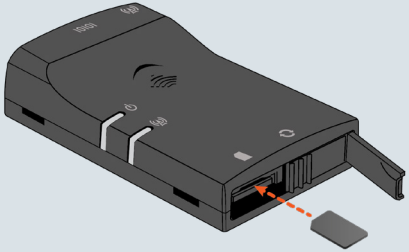
1. Lift the cover from the right side. This reveals the Micro USB 2.0 port and the reset button.



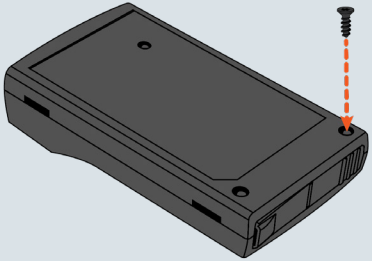
2. Slide the cover to the right to reveal the SIM card slot.



3. Insert the SIM card into the slot with the gold SIM conductor pins facing down. Push the SIM card in until it locks in place. To remove the SIM card, push it in again and it will unlock.



4. Slide the cover back to the left and then push the right side closed.
5. To lock the protective cover, fasten the provided Torx screw into the hole below the SIM card slot on the bottom of the device using a T6 Torx driver.



Power and serial communication options

The NTC-100 serial modem may be connected and powered by:

- The built-in 5V Micro USB socket (USB cable not included)

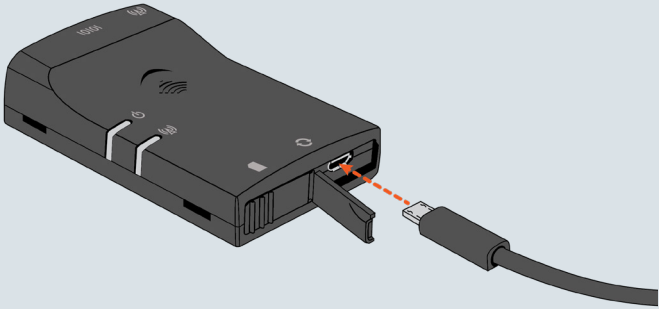
OR

- The 10-pin power/data connector using the included Y-cable.

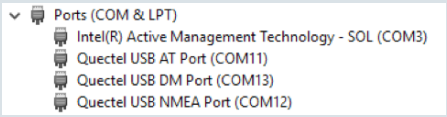
Powering the NTC-100 serial modem via 5V Micro USB socket

The NTC-100 serial modem features a USB port which can optionally be used for serial connectivity, terminal emulation or for establishing a PPP internet connection. The USB port enumerates a number of endpoints after the USB port driver is installed.

Connect a standard USB to USB Micro Type B cable (not included) between the NTC-100 serial modem and a powered USB port on your device (e.g. computer). The USB cable provides the NTC-100 serial modem with power and an emulated serial port input.



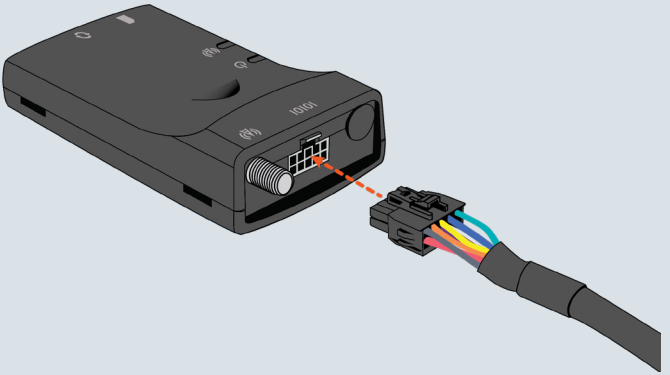
1. For USB port communication, you must install a driver compatible with the NTC-100 serial modem's embedded Quectel BG96 cellular module. The Windows drivers are available from the NTC-100 serial modem product page on the NetComm Wireless website (www.netcommwireless.com/product/m2m/ntc-100).
2. After the download has completed, install the driver by double-clicking on the downloaded file and following the installer prompts.
3. Open the **Control Panel** and then **Device Manager**. The NTC-100 serial modem appears under **Ports** with three Quectel USB entries.



The COM port used for each port is displayed in brackets next to each port type. For terminal access, take note of the COM port assigned to the **Quectel USB AT Port**. In the screenshot above, it is COM11. For further instructions, see the **Accessing the NTC-100 via terminal emulator** section of this guide.

Powering the NTC-100 via Y-cable

The included Y-cable features a breakout cable providing a DC Jack. Connect the Serial plug to a Serial port on your device (e.g. computer) and then connect a 4.5-36V power source to the DC Jack to power the unit. Connect the 10-pin plug into the 10-pin connector on the NTC-100 serial modem.



After powering up, the NTC-100 serial modem is ready to establish a serial communication link. See the next section for instructions on accessing the NTC-100 serial modem via terminal emulator.

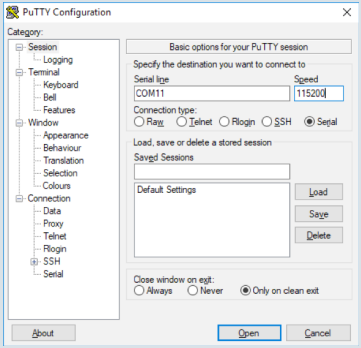
Configuring the NTC-100 via SMS

A full list of SMS commands used to control and configure the NTC-100 are available in the User Guide.

Accessing the NTC-100 via terminal emulator

To access the NTC-100 using a terminal emulator:

1. Using your terminal emulator, create a new connection to the COM port assigned to the connected serial port, with the bitrate set to 115200.



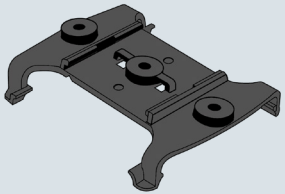
2. If you are accessing the NTC-100 via the USB interface, type `AT` and Press Enter in the terminal window that appears. If the NTC-100 is connected, it replies with `OK`. Note that you can access only module AT commands from the USB port.

   If you are accessing the NTC-100 via the Serial Y cable, type any character. The terminal prompts you for a username and password. At the username prompt, type `root` then press Enter. At the password prompt, type `admin` then press Enter. When logged in, type `AT`. The NTC-100 replies with `OK`. From the Serial interface, you can access module AT commands and custom application AT commands.

   Further AT commands are available in the supporting documentation on the NetComm Wireless website at **www.netcommwireless.com/product/m2m/ntc-100**

Mounting options

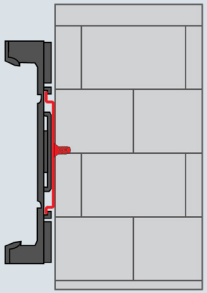
The NTC-100 serial modem can be mounted on a wall, DIN rail or a pole by using the mounting bracket. The mounting bracket is made from polyamide, a flexible material.



DIN rail mounting

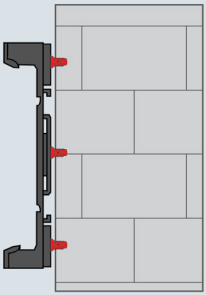
The NTC-100 serial modem mounting bracket has been designed to fit a TS 35 Type-O DIN rail with a 25mm core.

Bend the mounting bracket at the bend line so that the ridges are able to 'hold' onto the DIN rail edges as per the diagram below. Alternatively, if the end of the DIN rail is open, you can slide the bracket on to the rail. You also have the option of securing the mounting bracket further by screwing it into place on the rail.



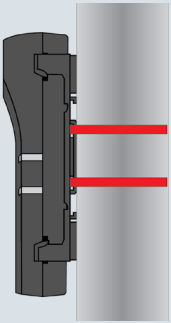
Wall mounting

Select the location where you would like to attach the NTC-100 serial modem. Attach the mounting bracket to the chosen wall or ceiling by using the 3 screw holes (screws not included).



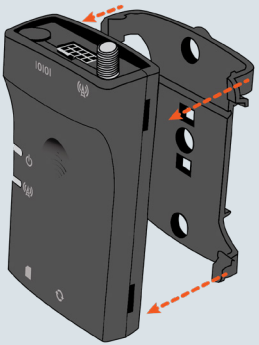
Pole mounting

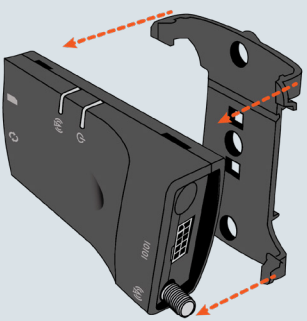
Use cable ties (max 4mm width) through the holes on the mounting bracket to affix the NTC-100 to a pole.



Inserting the NTC-100 into the mounting bracket

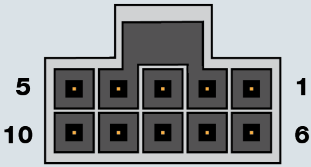
Once the bracket is attached to the DIN rail, wall or pole, snap the NTC-100 into the mounting bracket to hold it in place. The NTC-100 can be snapped into the mounting bracket in two ways, as shown below.





Pin outs

10-pin power/data connector



Note: The image to the left depicts the NanoFit header on the NTC-100 as viewed from the side of the device.

Pin map

Nano-Fit Pin	DE-9 Pin	Wire Colour	RS-232	RS-485	RS-422
1	2	Green	RXD	A	RD-
2	1	Blue	DCD	B	RD+
3	7	Yellow	RTS		
4	9	Orange	RI		
5	5	Black	GND	GND	GND
6	4	Brown	DTR		TD-
7	3	White	TXD		TD+
8	6	Purple	DSR		
9	8	Grey	CTS		
10	-	Red	DC In	DC In	DC In

USB

1. VUSB 5V
2. USB Data N
3. USB Data P
4. USB ID
5. GND

LED indicators

The NTC-100 serial modem uses two LEDs to display the current system and connection status.

Status LED

Status	Description
Off	The power is off.
Flashing Red	Device error.
Flashing Green	The NTC-100 is powering up.
Solid Green	The NTC-100 is powered up and ready for connection.

Network LED

Functions

Status	Description
Off	No signal.
Intermittently Red (on 30 seconds, off 30 seconds)	No SIM detected.
Blinking Red (displays red once every 2 seconds)	SIM detected but not connected.
Blinking Red, Amber or Green	Registered to network with poor (red), medium (amber) or strong (green) signal strength.
Flashing Red, Amber or Green	Data being transferred with poor (red), medium (amber) or strong (green) signal strength.

Signal Strength

Network LED Colour	Signal Strength
Green	High
Amber	Medium
Red	Low
OFF	No signal

Accessories

Additional cables are available for purchase separately. Contact your NetComm Wireless sales representative to order additional cables. Refer to the table below for the product codes.

Accessory Name	Product Code
Y-Cable (DE-9 female to 10-pin + DC5521 female)	MCBL-00004-000
Straight cable (8P8C to 10-pin)	MCBL-00003-000
Straight cable (10-pin to open cable)	MCBL-00005-000

Regulatory information

FCC Statement

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

MPE Statement

This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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Product Warranty

For warranty information please visit
https://support.netcommwireless.com/warranty-info

Technical Support

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

NetCommWireless

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