

cnRanger | Tyndall 101

LTE 14dBi Subscriber Module

Quick Start Guide



Introduction

This guide provides quick installation steps for cnRanger Tyndall 101 Subscriber Module (SM).

Package Contents



Tools Required

- Flat head screwdriver (Pole Mounting)
- 12 mm wrench (Pole Mounting)

** SKU "2LTE-SM-404" does not contain Power cord.

STEP 1 (Pole Mount)



Assemble the radio to the pole mounting bracket.

STEP 2 (Pole Mount)



Secure pole mounting bracket with M8 nut and bolt by applying 3.0 Nm torque.

STEP 3 (Pole Mount)



Insert hose clamps through pole mounting bracket and clamp to pole by applying 3.0 Nm torque.

STEP 4



Remove cap and connect RJ 45 cable to the radio.

STEP 5 (Pole Mount)



Align radio to required angle by tilting up and down. The maximum radio tilting angle is $\pm 40^\circ$, with an incremental of 10° . Secure radio with max 5.0 Nm torque.

Powering Up

1. Connect the Ethernet cable from Eth/PoE-IN of cnRanger Tyndall 101 to the PoE port of Gigabit Data + Power
2. Connect an Ethernet cable from your LAN or Computer to the Gigabit Data port of the PoE adapter.



3. Connect the Power Cord to the adapter, and then plug the Power Cord into a power outlet.



Once powered ON -- Power LED should illuminate continuously on PoE Adapter.

**Shielded Category 5 (or above) cabling should be used for all outdoor wired Ethernet connections and should be grounded through the AC ground of the PoE.

Configure Management PC

1. Select Properties for the Ethernet port.
 - In Windows, it is found in Control Panel > Network and Internet > Network Connections > Local Area Connection.
 - In MAC, it is found in System Preferences > Network.
 - In Linux, it is found in System Settings > Network > Wired > Options
2. IP Address configuration to use the static Tyndall factory default address:
 - a. Assign a static address on the 169.254.0.0/16 subnet other than 169.254.1.1. It is recommended to use 169.254.1.3.
 - b. Assign a subnet mask of 255.255.0.0
 - c. Leave the default gateway blank

- IP address configuration using dynamically assigned address:
In this case, the management PC is configured to automatically detect the network configuration (i.e., DHCP).
Once the network configuration is detected, use the web browser to navigate to the discovered default gateway IP address and login using the following credentials

- Username: admin
- Password: admin

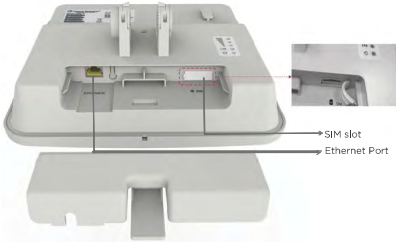
Quick Link Setup

Initial device configuration is performed over the Ethernet Interface using Tyndall 101 GUI.
To configure using Tyndall 101 GUI:
Open the web browser, navigate to 169.254.1, and login with the following credentials:

- o Username: admin
- o Password: admin

Navigate to either the configuration or quick start menu to setup Tyndall 101 for the desired modes of operation.
Once the Tyndall 101 is configured and the radio link is operational, further management may be performed over the radio link by using cnMaestro or Tyndall 101 GUI.

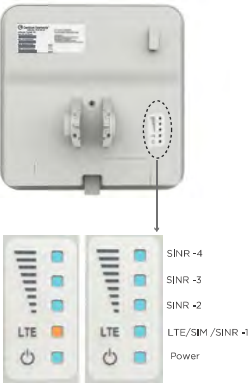
Hardware Overview



SIM Slot
The SIM slot is used for inserting SIM card.

Ethernet Port
The Ethernet port is used to connect the power and should be connected to the LAN and DHCP server.

Hardware Overview



Hardware Overview

LED Name	LED	Color	Behavior	Status Indication
Power status		Blue	Steady ON	Device is ON (AC is plugged in).
		Blue	OFF	Device is OFF (AC is not plugged in or device is faulty).
LTE/SIM		Blue	Steady ON	LTE is attached.
		Blue	Blinking	Searching for LTE.
		Blue	OFF	No LTE is attached.
		Orange	Steady ON	SIM issue or PIN code is required.
		Blinking	Steady ON	SIM detection in process.
		Orange	OFF	SIM is detected and working properly. It turns to blue once LTE is attached.
LTE + SINR Status		When CPE connects to Base station, the 3 LEDs become signal quality indicators according to SINR or other pre-defined quality indicator.		

Hardware Overview

LED Name	LED	Color	Behavior	Status Indication
LTE SINR-1 + SINR-4		Blue	OFF	CNR < 18dB 11dB <= CNR < 18dB
		Blue	Steady ON	
		Blue	Steady ON	18dB <= CNR < 23dB
		Blue	Steady ON	23dB <= CNR

Specifications

Model: cnMaestro Tyndall 101	
Product Dimension	360*190*75.2 mm
Weight with Mounting Kit	2.022 kg
Networking Interface	10/100/1000 Mbps Ethernet port (RJ45)
Operating Frequency	2170 ~ 2620 MHz
LTE Band 30	2300 ~ 2400 MHz
LTE Band 40	2495 ~ 2650 MHz
Antenna Gain	15 dBi
Beamwidth	25 degree
Max Power Consumption	7.6 W
Max TX Power (ConductANT)	26 dBm
Power Supply	80V_V02
Wireless Security	128/256 AES
Operating Modes	LTE TDD
Mounting	7/16 (6/8) (included)
Supported Pole Size	18.3 to 76.2 (mm) 2.5" to 3.0" (inch)
IP Rating	IP67
Operating Temperature	-40°C to +60°C
Operating Humidity	5-95% Noncondensing
Certification	FCC

*Regulatory dependent

Safety Notice

Warning:
To prevent loss of life or physical injury, observe the following safety guidelines. In no event shall Cambium Networks be liable for any injury or damage caused during the installation of Tyndall 101 SM. Ensure that only qualified personnel install.

Only use attachments/accessories specified by the manufacturer.

Electrical Safety Information

1. Compliance with manufacturer's label for voltage, frequency, and current requirements. Connecting to a different power source than those specified may result in improper operation, damage to equipment or pose a fire hazard if the limitations are not followed.
2. There are no serviceable parts inside this equipment. Service should be provided only by a qualified service technician.
3. This equipment is provided with a detachable power cord which has an integral safety ground wire intended for connection to a grounded safety outlet.

- a. Do not substitute the power cord with one that is not the provided approved type. Never use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.
- b. The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.
- c. Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.
- d. Protective earthing is provided by Listed AC adapter. Building installation shall provide appropriate short-circuit backup protection.
- e. Protective bonding must be installed in accordance with local national wiring rules and regulations.

FCC Compliance



This equipment 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 of the following measures:

- Reorient 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

For product available in the USA/Canada market, only channel 1-11 can be operated. Selection of other channels is not possible.

Professional installation is required.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 42 cm between the radiator & your body.

Online Resources

Support:
<http://www.cambiumnetworks.com/support/>

Contact us:
<http://www.cambiumnetworks.com/support/contact-support/>