Please read directions completely before starting.

Thank you for your purchase of our Outdoor Directional kit, the QuMax. Feel free to call or text if you need anything. The following instructions will allow for a simple DIY install. We recommend you power up the antenna first before you mount it in its final location to familiarize yourself with the admin pages, where you will be pointing the antenna, and everything is working correctly.

The modem is mounted inside of the QuMax outdoor antenna, (as seen below) this is something we do for you prior to shipping. The system is designed so that all you need to do is mount the antenna in a good location for cell reception, so you'll want it facing the tower and up high is best if possible Be sure the outside antenna is nice and stable once mounted and run the included cat 7 cable from the antenna to inside the house. Then simply plug in the POE injector or router included in your kit, to power up the unit and supply you with a Network connection.
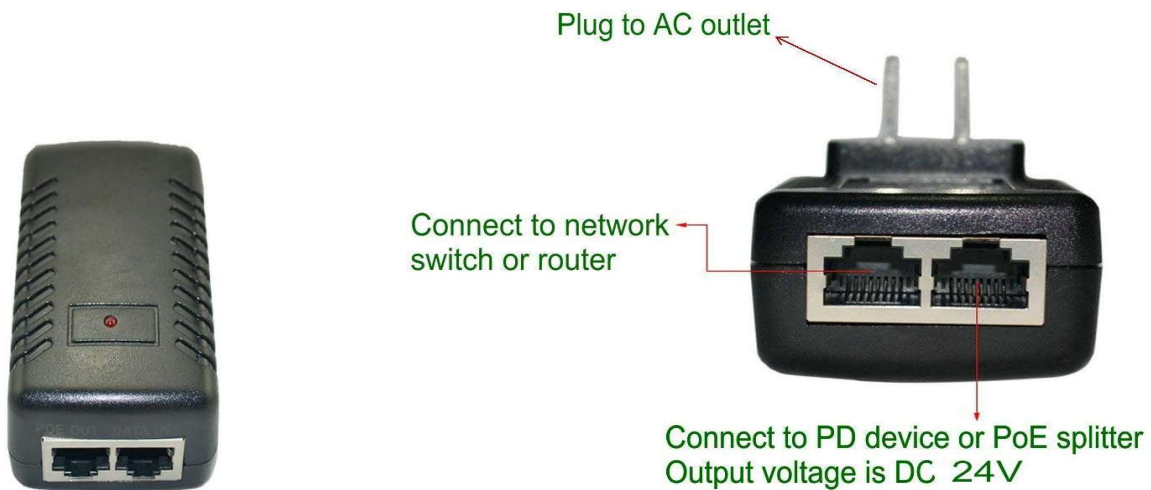

The outdoor antenna will broadcast Wi-Fi outside so if there is a strong Wi-Fi signal inside the house you are up and running. Generally, we recommend you have a Wi-Fi router inside your house for the best results.

Cell signal is broadcasted from the tower and provides your modem access to the internet.

Step one: Mount the outdoor antenna somewhere high for the best reception. Or use one of the masts we sell in our store for easy installation.

Step Two: Run the included Cat 7 cable inside the home and connect the included PoE (power over Ethernet) adapter. Be sure to connect the outside unit to the PoE side.

Plug to AC outlet

Connect to network switch or router

Connect to PD device or PoE splitter
Output voltage is DC 24V

Step Three: Connect a phone or laptop to the Wi-Fi and login to the modem. You can also connect via ethernet from the PoE to your computer. NOTE: If you have our Gigabit Router you won't use the PoE, the routers WAN port will power the modem.

Connecting to Wi-Fi:

Go to the wireless networks on your phone or computer and look for the network name **SecureWISP**.

You will then use the password: **Letmein2**

Now let's continue to get your system setup, if you want to change the Wi-Fi password you can come back later to do so.

Logging into the router:

In a browser, type **192.168.1.1** in the URL address bar and press enter.

It will ask for a password, enter: Securewisp01

Once you have logged in to the modem, you will be on the ***Overview*** *page.*

Authorization Required

Please enter your username and password.

Username	admin
Password	Securewisp01

Login

TELTONIKA   Status   Network   Services   System   Logout

FW ver.: RUT2XX_R_00.01.11.2

Overview

System — 9.0% CPU load

Router uptime	9d 20h 43m 25s (since 2020-02-26, 20:45:47)
Local device time	2020-03-07, 17:29:12
Memory usage	RAM: 88% used FLASH: 13% used
Firmware version	RUT2XX_R_00.01.11.2

Information icon
Change APN

Mobile — -61 dBm

Data connection	3d 16h 28m 50s (since 2020-03-04, 01:00:22)
State	Registered (home); T-Mobile; 4G (LTE)
SIM card status	SIM (Ready) **Make sure SIM is Ready**
Bytes received/sent *	54.9 GB / 2.2 GB

Change SSID Here

Wireless — ON

SSID	🔒 SecureWISP (AP)
Mode	1- AP; 11 CH (2.462 GHz)

WAN — Mobile

IP address	28.228.164.183 W Public IP address
WAN failover status	Failover link is enabled

Local Network

IP / netmask	192.168.1.1 / 255.255.255.0
DHCP Leases	1

Remote Management System — ON

Status	Standby
Connection State	Error: Expired license.

Recent System Events

1	2020-03-07 17:28:24 - Web UI: Authentication was succesful fro ...
2	2020-03-05 09:46:53 - Web UI: Authentication was succesful fro ...
3	2020-03-05 09:46:37 - Web UI: Authentication was not succesful ...
4	2020-03-04 18:45:55 - DHCP: Leased 192.168.1.126 IP address fo ...

Recent Network Events

1	2020-03-04 06:56:49 - WiFi client disconnected: 7C:38:AD:9B:39 ...
2	2020-03-04 01:08:34 - Connected to T-Mobile operator
3	2020-03-04 01:01:06 - Mobile data connected, IP: 28.228.164.18 ...
4	2020-03-04 01:00:56 - Joined 4G LTE

* Your carrier's data usage accounting may differ. Teltonika is not liable should any accounting discrepancies occur.

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You will then click on the information icon on the Mobile section and this will bring up the signal information page.

This is the screen you will use to get the signal optimized.

The best way to sight in your antenna is to figure out the direction of your tower. To do this most of the time you can do it standing in your yard. Start by pointing your antenna out in front of you with it powered up and you're logged into the info screen on your phone or laptop. Let's call this first position you are pointing your antenna as 12 o'clock.   Check the SINR and make a note of it. You need to hold it

at this position at least 60-90 sec. to get a good reading. You will also want to click the REFRESH button at the bottom right of the screen so the signal will update.   Then turn to 6 o'clock and repeat, also waiting and clicking REFRESH. Then repeat at the 3 and 9 o'clock positions. Take the highest **positive** number and this is the general direction of the tower your antenna is connecting to.

Now you have an idea of where the tower is you can mount your antenna at the desired location on your house with a pole or antenna mount and point the antenna in that direction.

You will then fine tune the outdoor antenna by turning it left and right, in very small increments, until you get the RSRP as low as possible. -55 is a very strong signal and -100 is a poor signal, so in the -80 to -65 range is ideal or as low as you can get it. You also want the SINR (signal to noise) as high a positive number as you can get. 14 is a very strong signal and -1 is a poor signal. The RSRP & SINR have a direct control of the download speeds you get. The easiest way to do this is by connecting to the modem with a smartphone so you can take this information with you and see it as you are aiming the antenna. Optionally, aim the antenna and go inside and see what the readings are, then adjust accordingly.

Here is a table that shows the relevance of each signal and what good readings are. Use it as a reference.

RSSI   Received Signal Strength Indicator   **4G signal levels**

RSSI	Signal strength	Description
> -65 dBm	Excellent	Strong signal with maximum data speeds
-65 dBm to -75 dBm	Good	Strong signal with good data speeds
-75 dBm to -85 dBm	Fair	Fair but useful, fast and reliable data speeds may be attained, but marginal data with drop-outs is possible
-85 dBm to -95 dBm	Poor	Performance will drop drastically
<= -95 dBm	No signal	Disconnection

RSRP   Reference Signals Received Power

RSRP	Signal strength	Description
>= -80 dBm	Excellent	Strong signal with maximum data speeds
-80 dBm to -90 dBm	Good	Strong signal with good data speeds
-90 dBm to -100 dBm	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -100, performance will drop drastically
<= -100 dBm	No signal	Disnonnection

RSRQ   Reference Signal Received Quality

| RSRQ	Signal quality	Description
>= -10 dB	Excellent	Strong signal with maximum data speeds
-10 dB to -15 dB	Good	Strong signal with good data speeds
-15 dB to -20 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -20, performance will drop drastically
<= -20 dB	No signal	Disconnection

SINR   Signal-to-Interference-plus-Noise Ratio

| SINR	Signal strength	Description
>= 20 dB	Excellent	Strong signal with maximum data speeds
13 dB to 20 dB	Good	Strong signal with good data speeds
0 dB to 13 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to 0, performance will drop drastically
<= 0 dB	No signal	Disconnection

This is how you mount the modem inside the antenna.
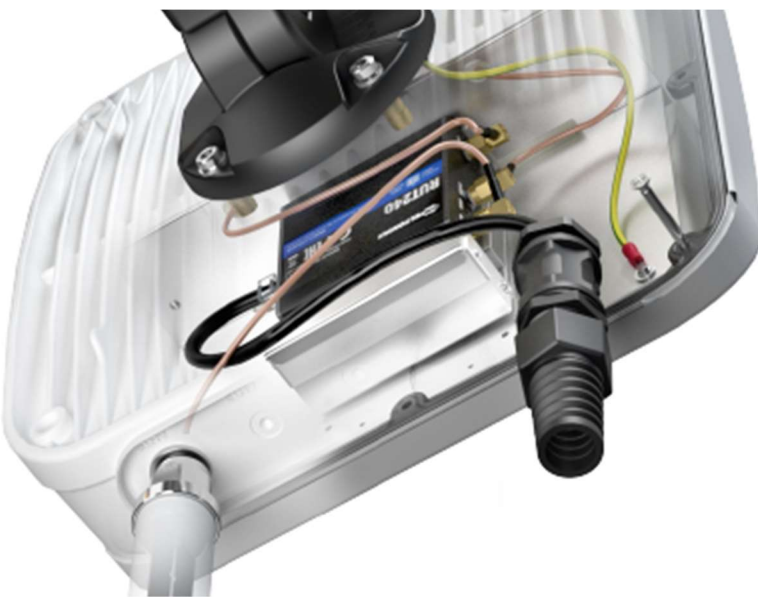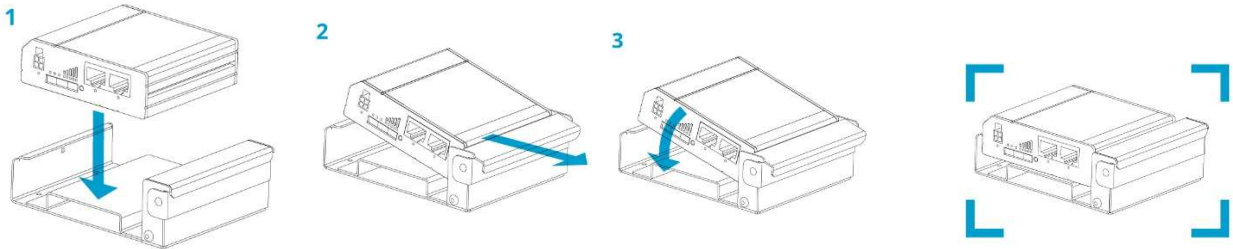
Your network connection will go into the LAN port on the modem.
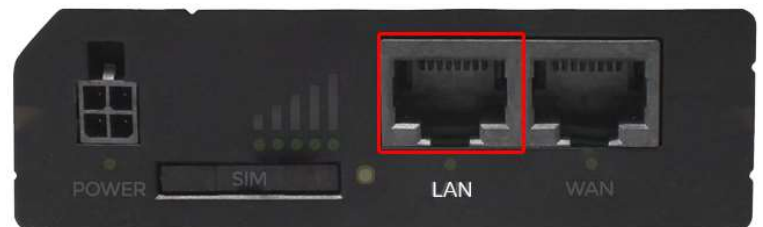
Switching from T-Mobile to AT&T you will need to change your APN. This can be found by going to NETWORK > MOBILE

On this screen you will see the APN set for T-Mobile below.

Status ▾   Network ▾   Services ▾   System ▾

Mobile
WAN
LAN
VLAN
Wireless
Firewall
Routing
Load Balancing

Connection type   QMI ▾

Mode   NAT ▾

ℹ Passthrough and Bridge modes are

APN   T-Mobile GPRS (fast.t ▾ ☑ Auto

PIN number

PUK code

Dialing number   *99#

MTU   1500

Service mode   Automatic ▾

You will want to uncheck the Auto box and type in the word broadband as seen below.

Connection type   QMI ▾

Mode   NAT ▾

ℹ Passthrough and Bridge modes are

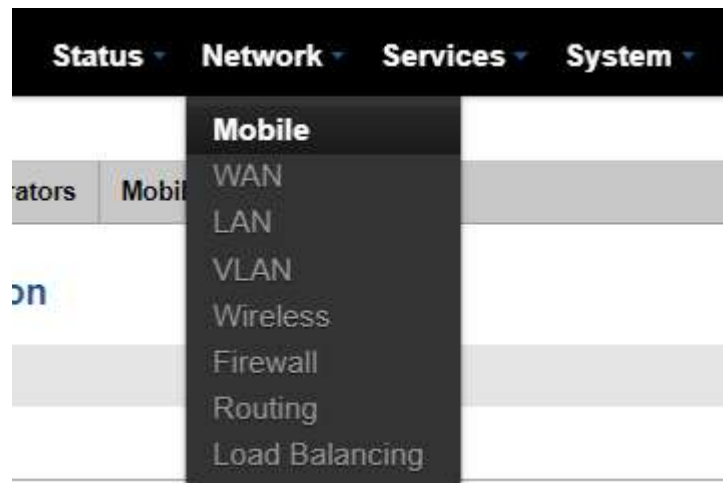APN   broadband   ☐ Auto

PIN number

PUK code

Dialing number   *99#

MTU   1500

thentication method   None ▾

Once you have made the change you need to click the SAVE button on the bottom right of the screen. You need to wait 5 minutes for it to reconfigure your modem then unplug for 60 seconds and plug back in.

NOTE: Your kit will sometimes have a white AT&T SIM card, but it is not active. You will need to call in to activate it before it will work.

If you can't figure it out or if you have any questions, reach out using the support numbers.

Thank you for your business and we hope you enjoy our product.