

*satplusr reach360.com.au*

# SATPLUS REACH360

ONLINE • OFFROAD

## IMPROVE YOUR SIGNAL INCREASE YOUR COVERAGE

With its high gain antenna and powerful industrial modem, you'll be connected where others can't.

Turn your caravan, motorhome, truck or boat into an instant hotspot\*

\* requires a network provider SIM and data plan



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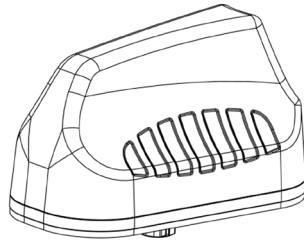
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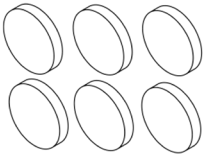
# PACKING CHECKLIST

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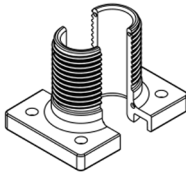
- Teltonika Router (either RUT240 or RUT360) x 1
- Router 12V Cigarette Lead x 1
- Router 240V Power Adapter x 1
- Mounting Bracket / Cable tidy x 1
- Mounting Bracket Screws (M4) x 4
- WIFI Antennas x 2
- Internal LTE Antennas x 2
- SIM Starter Pack x 1
- SIM Removal Tool x 1
- Reach 360 Antenna x 1
- Antenna mixed Component Bag x 1
- Ethernet Cable x 1



**Antenna Unit**



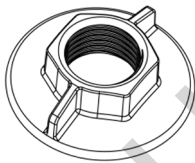
**Adhesive Foam Discs**



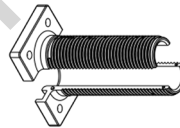
**10mm Threaded Spigot  
(Attached to antenna)**



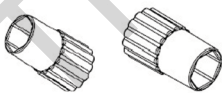
**(M4 x 12mm)  
Stainless Steel Screws (x8)**



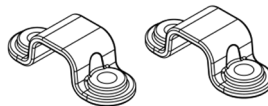
**Plastic Nut**



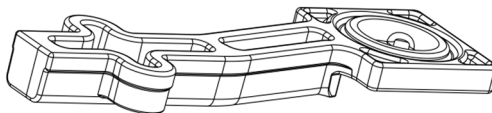
**50mm Threaded Spigot**



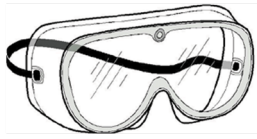
**Grip Extenders  
(Attached to cable)**



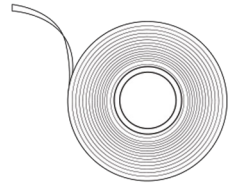
**Cable Clips**



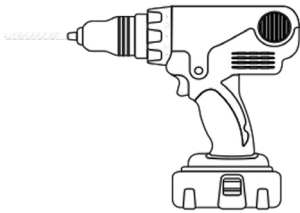
**Spigot Seal**



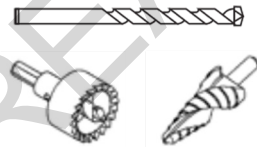
**Safety goggles**



**Masking tape**

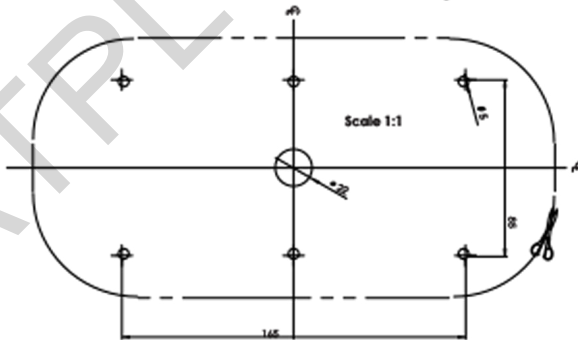


**Drill**



**Drill bits**

**Installation Drill Hole Template**



**Drilling template is available to download from [satplusreach360.com.au/downloads](http://satplusreach360.com.au/downloads)**

# SAFETY

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If you are unsure about how to install this antenna yourself, obtain the help of a professional installer.

Carefully plan your installation taking into consideration the location of the router inside the van, availability of power for the router, positioning of the antenna, distance of the antenna from the router (subject to cable length), framework and electrical wires inside the roof etc.

Be cautious when working at heights. If you are at all uncomfortable working at heights **DO NOT** proceed with this installation and consult a professional installer.

Use appropriate safety gear when operating electrical tools.

Do not install this product in rainy conditions.

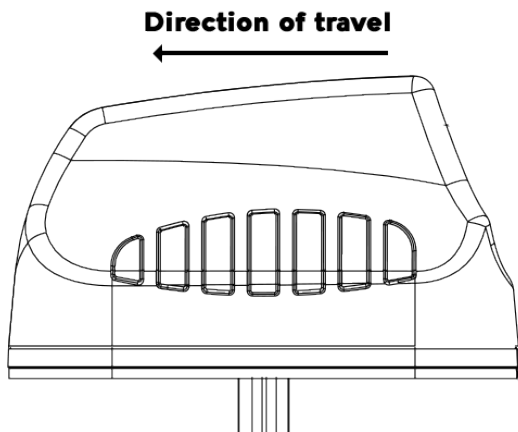
Use commonsense and do not take any risks that may jeopardise the product or your own safety.

SatPlus takes no responsibility for damage to equipment, injury or death and strongly suggests that the product be installed by a professional.

## INSTALLATION INSTRUCTIONS

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Regardless of spigot or surface mounting, please ensure the chosen antenna position takes into consideration the cable length as the two cables will need to be long enough to connect to the Teltonika router inside the vehicle or van. Also consider the location of the Teltonika router as it will require 12V power via a cigarette socket or 240V AC socket. The antenna must be forward facing when installed on the roof of the van. See picture on next page.



We have included 2 x LTE internal antennas that won't be required if you are connecting the router to the Reach360 external antenna. These internal antennas can be used should you remove the router from the van for any reason.

## CABLE ROUTING

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Never pull on the cable connectors. Pull only on the cable ensuring the cable is not under excessive tension and **NEVER** pull cable through cable entry holes at an angle unless you have assistance.

The allowable cable bend radius is 30mm.

Cover connector with insulation tape before threading through holes.

All penetration holes (other than for the spigot) should be well sealed with Sikaflex.

Cable entry holes should be properly sealed with an appropriate weatherproof cable entry cover (applicable to surface mounting only).

All screw holes should be filled with Sikaflex prior to and after screwing.

# MOUNTING OPTIONS

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*The MIMO-3-12 antenna can be mounted in 3 ways:*

**1. Spigot mounting** - This is the preferred and most common method. A hole is drilled directly below the antenna and the cables are routed through the spigot and into the van.

**2. Surface mounting** - The antenna is adhered to the roof with the cables routed out the back of the antenna to an alternate cable entry point. Only suitable for composite vans. Surface mount brackets are available, contact your supplier.

**3. Magnetic mounting** - A temporary method whereby the antenna is magnetically mounted to a metallic surface.



## **SPIGOT MOUNTING:**

**STEP 1:** Choose a mounting location that is at least 500mm from heat sources and higher obstacles such as air conditioners, satellite dishes or TV antennas etc. It is recommended that the antenna be installed at the highest possible location on the van or vehicle roof so that a signal can be received in a 360 degree radius. The antenna should be preferably installed on a level surface.

**STEP 2:** Once you have decided on the location and checked that there are no obstructions such as cables or framework below the mounting surface for the spigot to pass through, use the 1:1 drill template to mark the mounting location. The template can be downloaded from [www.satplusreach360.com.au](http://www.satplusreach360.com.au) under "downloads".

**STEP 3:** To prevent the drill sliding off course, use masking tape over the drill point to help keep the drill bit in place. The masking tape also prevents hot shavings from the drill or hole saw damaging the paint work.

**STEP 4:** Set the drill to low speed and carefully drill a pilot hole (3 or 4mm). Then, use a 22 mm hole saw or step drill bit to open the hole to the required size (recommended hole size for spigot is 22mm). ***Trial the antenna by feeding the cables through the hole and placing the adhesive foam seal under the antenna (do not remove the wax paper from the pad at this stage) then resting the antenna over the hole with the spigot sticking through the hole. If the spigot is too short for the plastic nut to thread, remove it and replace it with the 50mm spigot.***

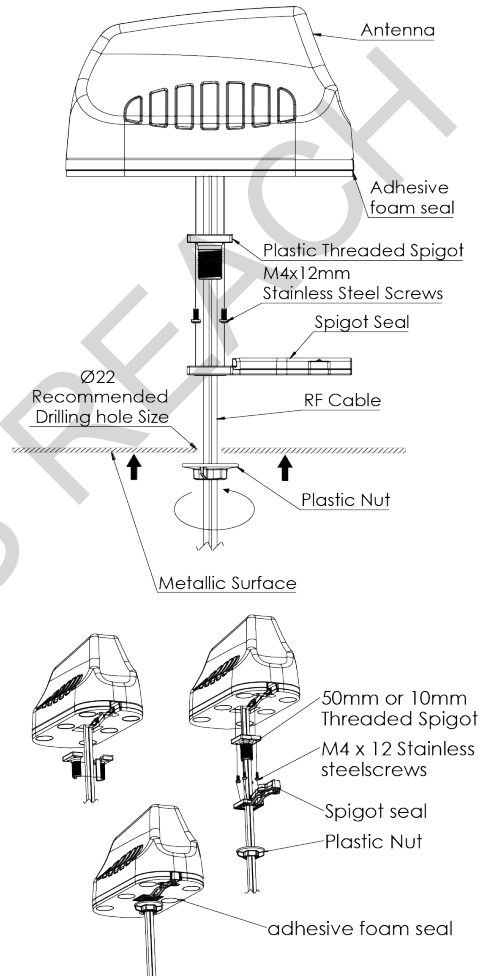
**STEP 5:** Clean the entire surface on which you plan to mount the antenna. Alcohol wipes can be used to remove oil or dirt from the surface.

**STEP 6:** Remove the wax protection paper from the adhesive foam seal (antenna side only) and press firmly against the base of the antenna. Now insert the antenna cables in through the rubber spigot seal and fix the spigot seal in place underside the antenna. Now feed the antenna cables through drilled hole.

**STEP 7:** Remove the wax paper from the underside of the antenna and make sure the antenna is placed straight with the spigot placed over the hole. Push the antenna down onto the mounting surface. Press firmly and hold for 30 seconds.

**STEP 8:** Inside the van or vehicle, fit the plastic lock nut onto the spigot and hand tighten firmly.

**STEP 9:** After the antenna has been fitted, we suggest running a bead of silicon or Sikaflex around the perimeter to further reduce the possibility of water ingress.



## ***SURFACE MOUNTING:***

Where spigot mounting is not an option, the antenna can be surface mounted.

**NOTE:** Providing that the surface material is composite and suitable for mounting, the antenna can be adhered directly to the roof surface. If the surface is questionable for example a ribbed aluminium roof, it is suggested that a flat aluminium plate be glued to the roof surface first and the antenna then mounted to the plate. Alternatively, contact your supplier for a surface mount bracket that raises the antenna off the roof and allows you to also use the adhesive foam seal, spigot and lock nut.

**STEP 1:** Choose a mounting location that is at least 500mm from heat sources and higher obstacles such as air conditioners, satellite dishes or TV antennas etc. It is recommended that the antenna be installed at the highest possible location on the van or vehicle roof so that a signal can be received in a 360 degree radius. The antenna should be installed on a level surface.

**STEP 2:** Clean the entire surface on which you plan to mount the antenna. Alcohol wipes can be used to remove oil or dirt from the surface.

**STEP 3:** Remove the plastic nut, spigot seal and short spigot from the antenna as these will not be required.

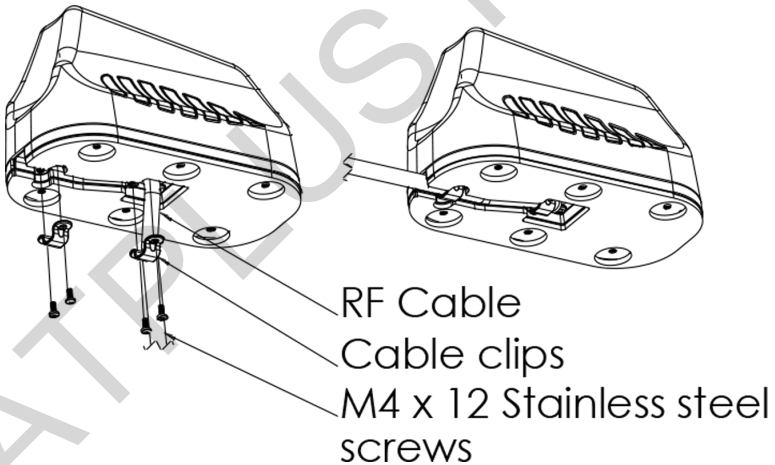
**STEP 4:** Push the RF cables into the groove in the base of the antenna and secure the cable with 2 x cable clips and 4 x (M4 x 12mm) stainless steel screws.

**STEP 5:** Remove the wax paper from the adhesive foam seal (antenna side only) and press firmly against the base of the antenna. For extra adhesion, stick on the 6 x foam disks over the threaded holes (these are only used for magnetic mounting).

**STEP 6:** Remove the wax paper from the underside of the antenna and make sure the antenna is placed straight. Push the antenna down onto the mounting surface. Press firmly and hold for 30 seconds.

**STEP 7:** Route the cables from the antenna to the cable entry position and drill a penetration hole for the cables to enter. Use conduit to protect the cables and the conduit should be glued or screwed to the roof with saddles (all holes must be injected with sealant and all screws sealed).

**IMPORTANT:** Ensure that the cable entry hole has a protective rubber grommet or seal around it to prevent the cable from rubbing on the sharp edge. Also, a weatherproof cover should be used for the cables to enter through and to properly seal the hole. Contact your supplier.



### **MAGNETIC SURFACE MOUNTING:**

The antenna can be temporarily mounted on a metallic surface using the optional magnetic mount. Note that this is only to be used while the vehicle is stationary. Contact your supplier if this mount is required.

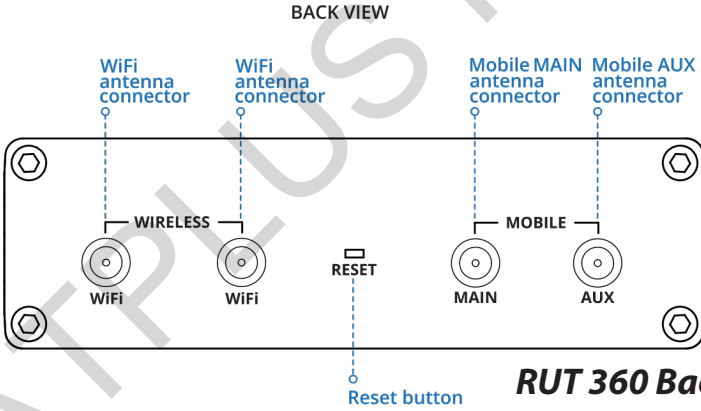
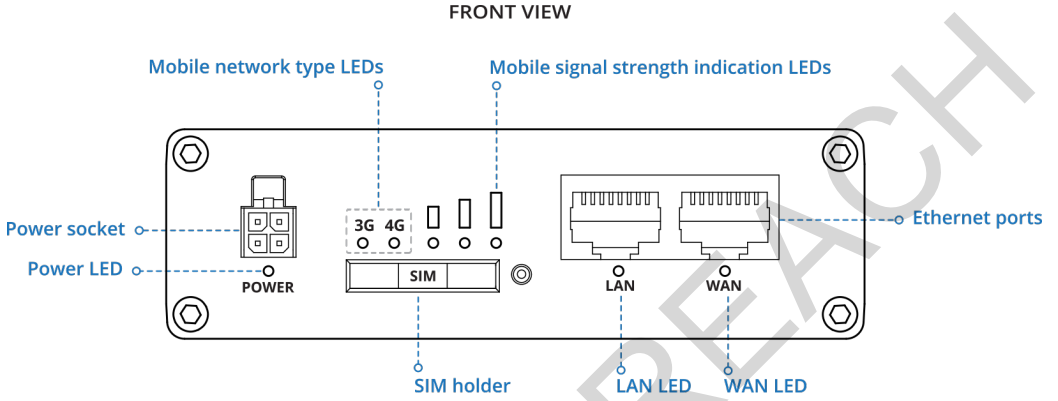
# LOCATING THE ROUTER

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It is important that the router is installed close to a power source. The router uses an extremely low amount of power and we suggest powering it via the included 12V cigarette lead. In this case you will require a cigarette socket to be nearby. Many caravans or motorhomes only have one single socket for powering the TV or other accessories. You may require a cigarette splitter cable that converts the single cigarette socket to twin sockets. These are readily available from your local automotive or electronics supplier. Otherwise an additional socket can be fitted. If 12V is not required, the router can be powered via the included 240V AC adapter instead.

Once you have chosen the location, decide on whether you will use the cable tidy bracket or simply adhere the router to the wall using the supplied velcro strips. The cable tidy bracket is useful as it keeps the excess cable tidy at the back of the bracket, provides a sturdy mounting fixture and houses the router firmly against the bracket while travelling. If you decide to only use the velcro, please ensure that the router is supported underneath on a shelf or inside a cupboard as well. This will prevent the router from vibrating loose from the velcro in extreme road conditions.

# RUT 360 Front View

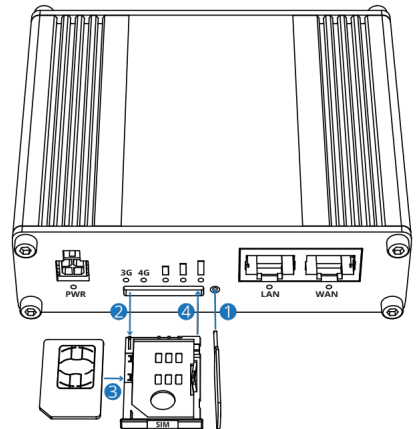


# INSERTING THE SIM

The Reach 360 requires a STANDARD SIM to be inserted into the router. We supply a SIM removal tool to eject the SIM tray. Insert the tool into the ejection hole and eject the SIM (you may need to use your fingernails to grip the edge of the SIM tray). The router accepts a STANDARD SIM and if you are not using your own, then you can place the supplied SIM onto the tray (ensuring it fits snug one way only) and close the tray. If using your own SIM and it is a standard size, it will fit in the tray. If using a NANO or MICRO, either use the SIM adapter kit supplied with the Teltonika router or pop out the chip from the supplied SIM starter pack and use the standard surround with your own SIM.

## HARDWARE INSTALLATION

1. Push the SIM holder button with the SIM needle.
2. Pull out the SIM holder.
3. Insert your SIM card into the SIM holder.
4. Slide the SIM holder back into the router.
5. Attach Mobile and WiFi antennas.
6. Connect the power adapter to the socket on the front of the device. Then plug the other end of the power adapter into a power outlet.
7. Connect to the device wirelessly using SSID and password provided on the device information label or use an Ethernet cable connected to LAN port.



# WIFI PASSWORD

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The WIFI password is recorded on the back of the router. Please write this down for your records. When you power up the router you'll see the SSID of the router which you will connect to with this password on your device. Optionally, this password can be changed at a later stage.

## MOUNTING THE ROUTER

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### **OPTION 1: Cable tidy bracket**

Prior to fixing the bracket to the wall, coil up the excess cable and feed the two connectors out through the side of the bracket slot leaving enough cable length (we suggest 200mm of cable) to connect to the router and ensure a bend radius that is no less than 30mm. Note that for the Teltonika RUT240 router, the cables should come out the left hand side slot and for the RUT360 - the right side slot. Cable tie the cable roll and tuck into the back of the bracket. Note that the bracket dimension dictates the size of the cable roll so there is no need to make the roll any less than the cavity of the bracket. Now fix the bracket to the wall using the supplied stainless steel screws. Connect the two cables from the rooftop antenna to the router labelled MAIN and AUX (either cable to either connector). Hand tighten only using the pre-fitted plastic cable locks. Peel off one of the velcro pads and attach to the top back of the router ensuring that the username and password sticker is not covered. Peel off the other velcro pad and place on the already adhered velcro pad on the router. Position the router on the ledge of the bracket and press it firmly to the face of the bracket.

Attach the two WIFI antennas to the connectors on the router labelled WIFI and plug in the power cable on the other side (either the 12V cig cable or the 240V AC adaptor).



## **OPTION 2: Velcro pads only**

Peel off one of the velcro pads and attach to the top back of the router ensuring that the username and password sticker is not covered. Connect the two cables from the rooftop antenna to the router labelled MAIN and AUX (either cable to either connector). Attach the two WIFI antennas to the connectors on the router labelled WIFI and plug in the power cable on the other side (either the 12V cig cable or the 240V AC adaptor). Peel off the other velcro pad and place on the already adhered velcro pad on the router.

## **POWERING UP THE ROUTER**

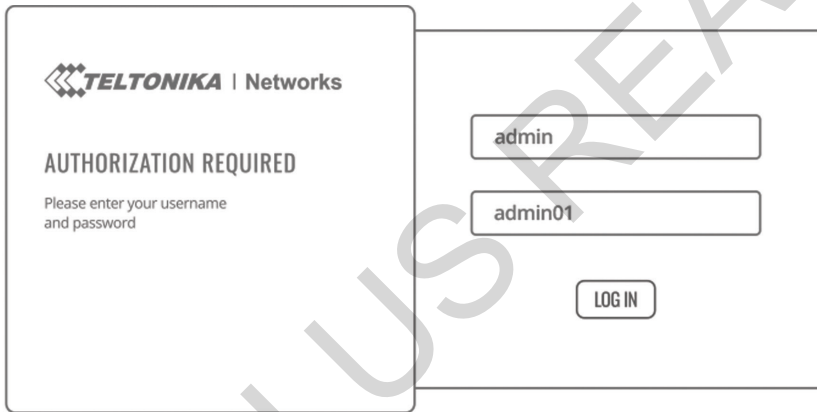
You are now ready to power up the router either using the 12V DC cable or the 240V AC adapter - either way plug in and power on. The router will take up to 2 minutes to start up. When it does, go into settings on your phone then WIFI and you should see the RUT router SSID. Select it and enter the password that you recorded earlier. You should now be able to connect to the internet providing that your SIM is correctly activated and you are in an area where there is sufficient signal for the Reach to receive and transmit.

# LOGGING IN TO THE ROUTER

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Logging into the router enables you to change settings, view signal strength/quality or connect to another wireless source to conserve your 3G/4G data. To enter the router's Web interface (WebUI), type `http://192.168.1.1` into the URL field of your Internet browser.

Use login information shown below when prompted for authentication.



**TELTONIKA** | Networks

**AUTHORIZATION REQUIRED**

Please enter your username and password

admin

admin01

LOG IN

After you login, you will be prompted to change your password for security reasons. The new password must contain at least 8 characters, including at least one uppercase letter, one lowercase letter and one digit. This step is mandatory and you will not be able to interact with the router's WebUI before you change the password. When you change the router's password, the Configuration Wizard will start.

The Configuration Wizard is a tool used to setup some of the router's main operating parameters. Go to Overview page and pay attention to the Signal Strength indication. To maximize the cellular performance try changing the location of your vehicle/caravan to achieve the best signal conditions.

MOBILE	
	 -50 dBm
Data connection	Connected
State	Registered (home); OPERATOR; 4G (LTE)
SIM card slot in use	Ready
Bytes received/sent	348.7 KB / 223.5 KB

One of the more common reasons for logging in to the router is to change the primary data source from 3G/4G to WIFI. This is ideal when for example you are parked up for a while near a WIFI hotspot AND you know the password to connect. Data usage would now be via the WIFI source rather than the 3G/4G source. This is useful if you'll be near the WIFI source for a while and plan to use a fair amount of data such as streaming movies etc. If only for a short while then its probably not worth changing these settings. A nice feature of the Teltonika router is that after you have connected to a WIFI source, this source will be remembered and when in range the Teltonika will automatically connect thus saving your 3G/4G data.

To perform the above type `http://192.168.1.1` into the URL field of your Internet browser and click on NETWORK ~ WIRELESS then SCAN to find the WIFI source. Click JOIN NETWORK then enter the WPA passphrase - SUBMIT then SAVE and APPLY.

A message will appear stating configuration applied. You can now browse the internet via WIFI. For a complete guide to the user interface visit <https://wiki.teltonika-networks.com/view/RUT360>

SATPLUS REACH

# TROUBLESHOOTING / FAQ

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## ***Why is my router slower than my phone at times and in certain locations?***

Modern phones support faster LTE technologies than most routers as they are made and used for different purposes. The RUT 240 is a category 4 router and the RUT360 is a category 6 router. The higher the category, the faster the speed (in general). There may be times when you are in a high signal area that your mobile phone may be able to download at a speed greater than your Teltonika router. This is normal and to be expected due to the overall electronic design of high end iPhone and Samsung products. Although at times this may be the case, keep in mind that in most rural locations, your Reach will not only offer higher speeds, it will also provide greater coverage and convert your caravan to a hotspot that multiple users and devices can connect to unlike your mobile phone.

## ***My phone is connected to the Reach 360 but I do not have any mobile phone signal.***

The Reach360 is a data device that improves internet/data connection for your smart devices and computer/laptop/phone etc. It is not intended to improve your phone signal for voice and text messaging. You can however however make WhatsApp or Facebook calls via these apps. Also, iPhones and some Android phones allow WIFI calling that uses the data connection to make a voice call. You will find this within the settings of your phone. Contact your service provider for support on these features.

***I've forgotten my passwords to login to the router.***

Complete a factory reset by holding down the reset button with the pin for at least 6 seconds until all of the green LED's are ON. Once released, all of the LED's will flash together. This indicates the start of the reset routine. If you don't hold down the reset button for long enough, the router will simply restart - not reset. Allow at least 3 minutes for the router to reset.

***I have a device that can only connect via a cable not wireless.***

In this case, your device can connect to the router via the supplied ethernet cable. For example, the Altech 4921 satellite decoders do not have inbuilt wireless . They can however be connected to the router using this method. The router can support both wired and wireless devices simultaneously.

***Is the router locked to a particular carrier?***

No, both the RUT 240 and RUT 360 are unlocked and can be used with any network provider.

SATPLUS REACH