Sphere 4G Wi-Fi Router with GPS

Operating Instructions

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Overview

Congratulations on purchasing your Sphere Wi-Fi router!

You will now have the pleasure of surfing the internet with ease whilst on your travels. With the in-built flash drive / hard drive sharing feature, you will also be able to stream movies/videos/files from the router without consuming data.

The Sphere Wi-Fi router also has a GPS tracking feature which will allow you to obtain the location of the caravan at any time!

The router also has a Wi-Fi Extender feature which allows you to connect to other Wi-Fi networks within range to help reduce your data consumption.

To ensure the system is configured correctly, please follow the steps in the instruction document below.

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Setup

A full size SIM card is required with sufficient data and talk/voice (for GPS model) credit to obtain 3G/4G internet connection.
Disconnect power before inserting the SIM card. Insert the SIM card in the position shown in the photo below.

This router has been configured with Telstra service as default, however, if you wish to use another ISP this can be changed. Please refer to the "Internet Settings" section for instructions on how to connect using another ISP.

Please note, this router has an automatic restart function. If no internet connection is detected, the unit will restart itself after 10 minutes. This will assist in maintaining a successful connection in case of irregular circumstances which require a router reboot.

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To perform the recommended changes mentioned in this document under **Router Settings, Wi-Fi Settings, Internet Settings and Wi-Fi Extender** by using a laptop, please ensure you:

a. Power up the router
Wait 3 minutes for the router to complete its initiation procedure

b. Search and connect to the router Wi-Fi SSID signal (**SphereWiFi-xxxx**)
Default password = **12345678**

c. Open an internet web browser and log into the router by typing **192.168.8.1** as the URL
Default password = **admin**

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Router Settings

Default **Router** credentials:

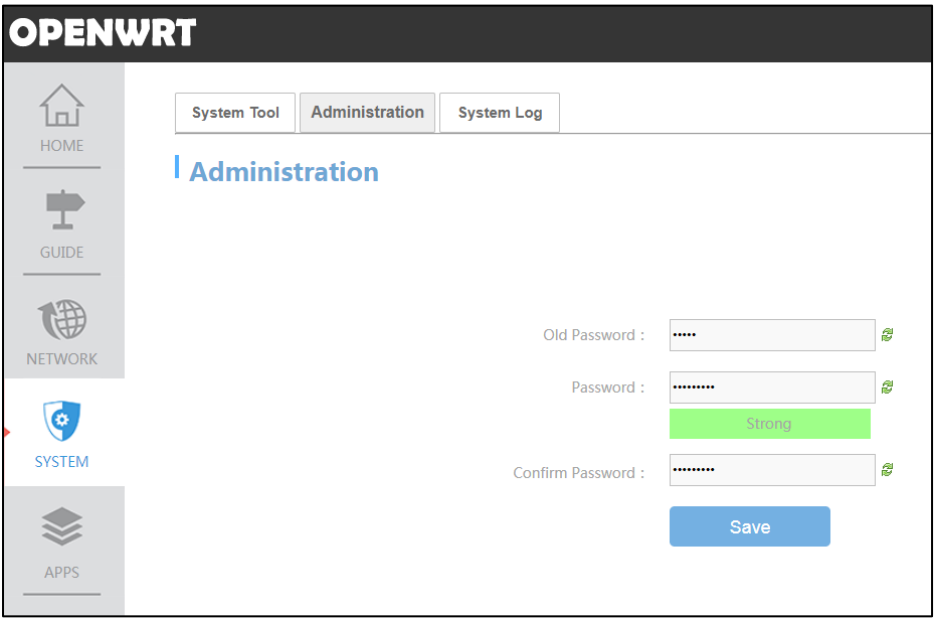
IP address = **192.168.8.1**

Password = **admin**

Changing the Router Password

Please note: this is not a required step for router operation.
If you want to change the router password, please follow the steps below:

i. On the side of the web page click: **System -> Administration**
ii. Input the old and new password



iii. Click "**Save**". Please wait a few minutes for the changes to be applied

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Wi-Fi Settings

Default **Wi-Fi SSID** credentials:

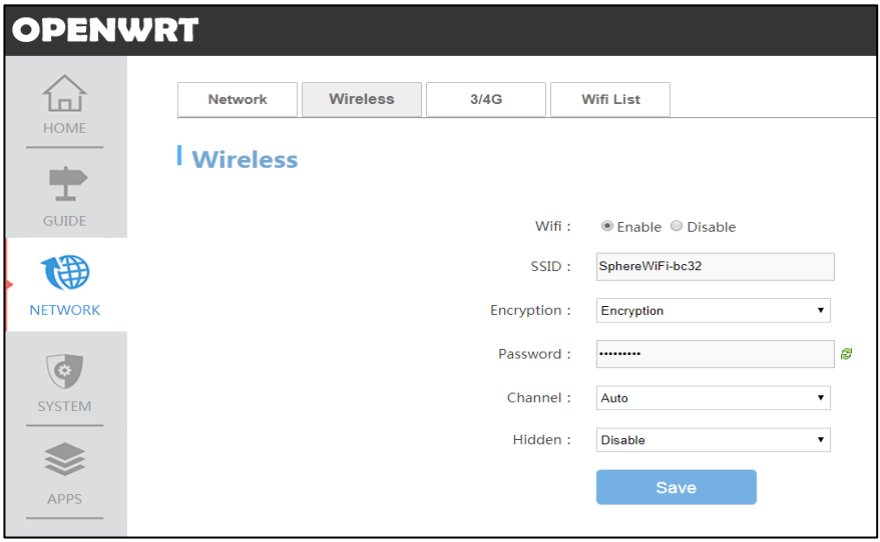
SSID = **SphereWiFi-xxxx**

Password = **12345678**

Changing the Wi-Fi Name and/or Password

If you want to change the Wi-Fi name and/or password follow the steps below:

i. On the side of the web page click: **Network -> Wireless**
ii. In the SSID field type the desired new Wi-Fi name
iii. In the Password field type the desired new Wi-Fi password



iv. Click "**Save**". Please wait a few minutes for the changes to be applied
v. Once the changes are applied, you will be disconnected from the initial router Wi-Fi signal. Please search and connect to the new Wi-Fi signal name you have just changed, and use the new password.

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Internet Settings

The router has default settings to enable internet access with Telstra. If you are using another Internet Service Provider (ISP), or changing back to a Telstra service, please follow the steps below to ensure your internet access is working correctly.

To test that the router has internet access, open a web browser and open a web page. If the web page loads successfully, then your router is configured correctly for internet access. Otherwise, please follow the steps below:

To enable **internet access**:

You will need to input the specific ISP APN details (depending on the SIM card service provider you have purchased) as shown below:

PLEASE NOTE: Both the "Username" and "Password" fields are always empty with no credentials to be used.

i. Click: **Network -> 3/4G**:
ii. In the **Advanced** drop down menu, select "**display**"
iii. Insert the correct APN details (as per your ISP) in the APN field
   1. **Username** = *empty*
   2. **Password** = *empty*
   3. **APN:**

If your ISP is:	**APN =**
Telstra/Boost	telstra.iph
Optus/amaysim/Vaya/iiNet/TPG/Dodo/Virgin	yesinternet
Vodafone/Kogan	live.vodafone.com

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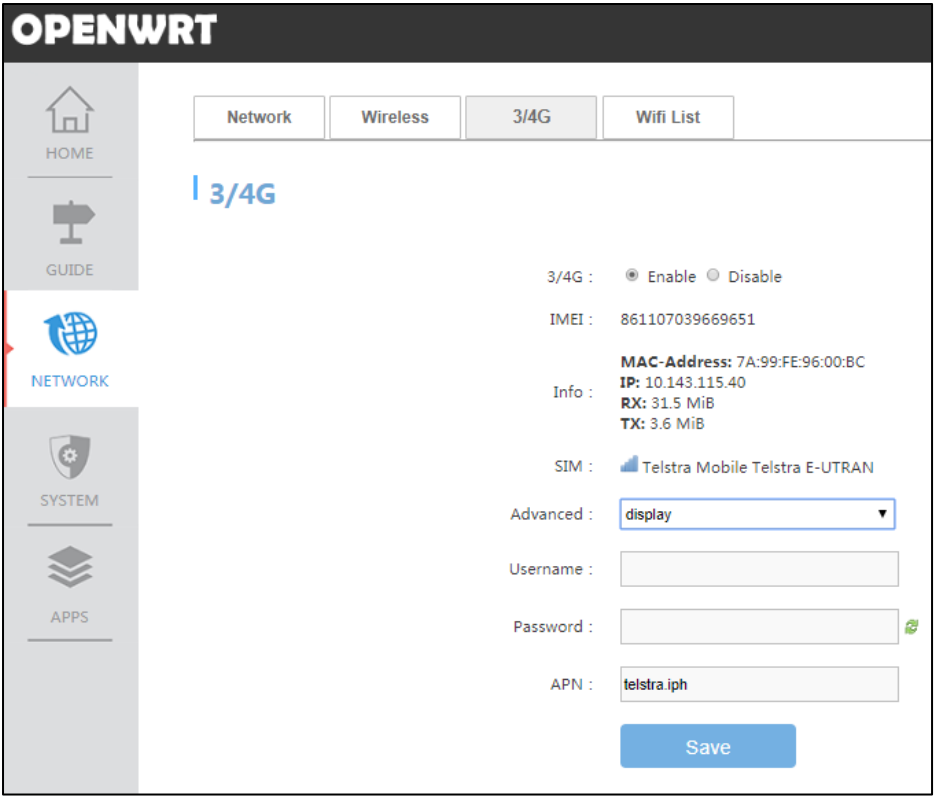

iv. Click: "**Save**",

v. Click "**OK**" on the Success pop-up message

vi. Wait 2 minutes, then open a web page to confirm that you have internet access

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USB Sharing Settings

This router has been configured to allow sharing of the flash / hard drive inserted into the USB port in the router, to the devices connected to the router via Wi-Fi.
Therefore, with a flash or hard drive inserted into the USB port on the router, any phone, tablet or laptop connected to the router can wirelessly access and view files/movies which are stored on the USB drive.
This does not consume any data or bandwidth from the SIM card inside the router.

So while driving, with the router powered up and phones/tablets/laptop connected to the Wi-Fi signal from the router, other passengers in the car can watch movies stored on the USB drive without costing any money!

To access **USB drive**:

a. Insert flash drive into the USB slot on the router
b. Make sure you are connected to the router Wi-Fi network
c. Depending on the type of device you wish to view the files through, choose the appropriate next steps

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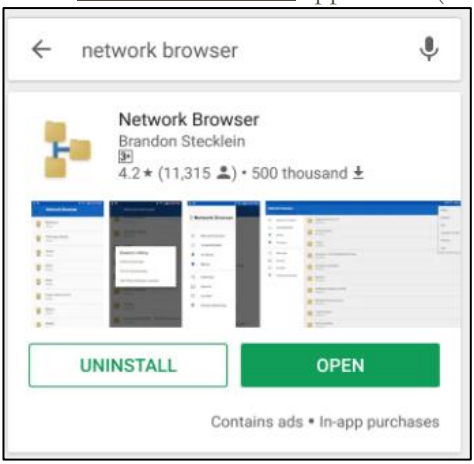
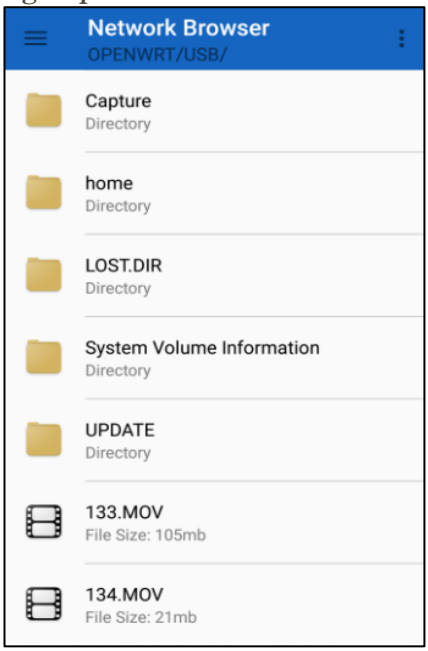
Access via Android device

i. Download the **Network Browser** application (or similar app)



ii. Connect to router Wi-Fi signal and open the application

iii. Click: **Workgroup -> OPENWRT -> USB** to view the files



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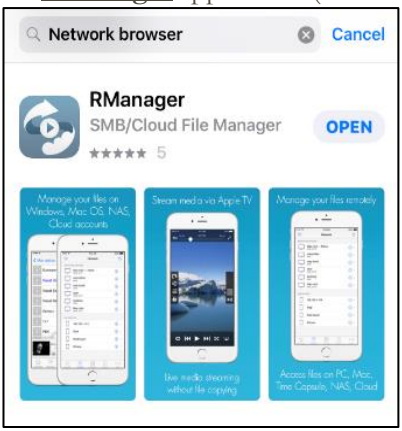
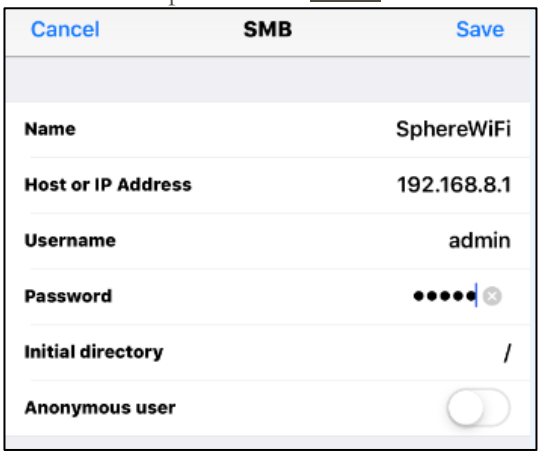
Access via iOS Apple device

i. Download the **RManager** application (or similar app)



ii. Connect to router Wi-Fi signal and open the application
iii. Click on the "**Storage**" tab at the bottom of the screen
iv. Click the **+** icon in the top right hand corner
v. Under "**Network Services**", Click: "**SMB**"
vi. Click "**Continue**" on the pop-up message

vii. Enter the details (as shown in the image below) and Click "**Save**"
Please Note: "Username" and "Password" fields require **router** details
Default router username = admin
Default router password = admin



viii. On the Storage tab, click: **SphereWiFi -> USB** to view the files stored on the USB

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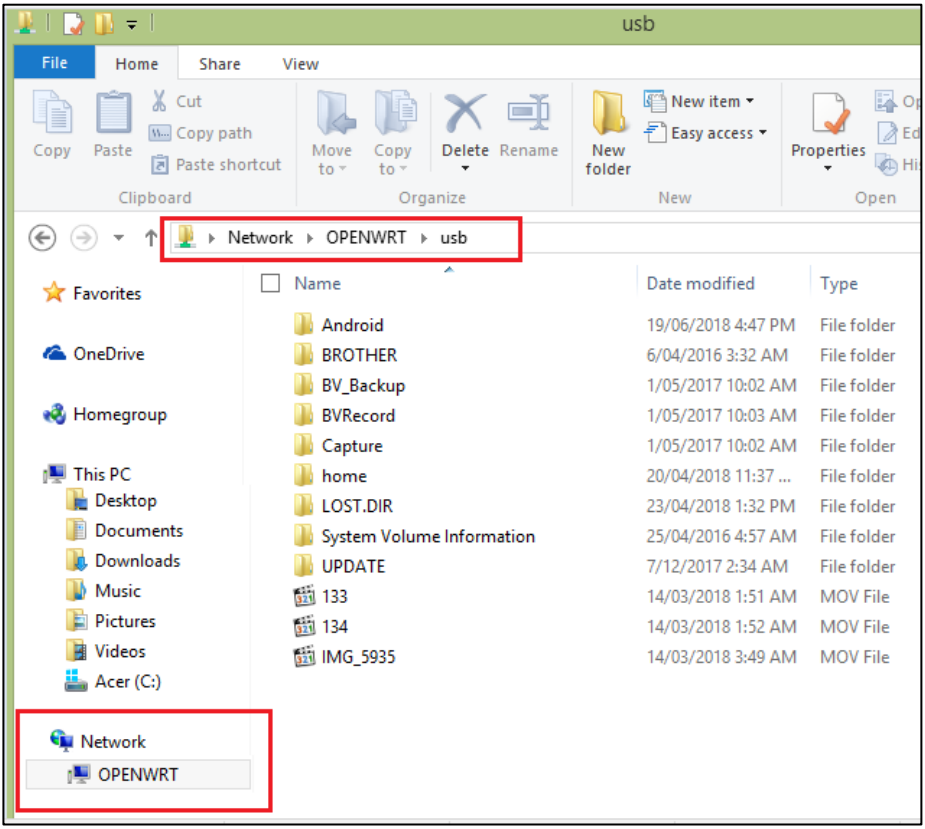
Access via Laptop

i. Open a File Explorer
ii. On the left side of the File Explorer, click: **Network -> OPENWRT**
iii. Double Click "**USB**" folder



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Wi-Fi Extender

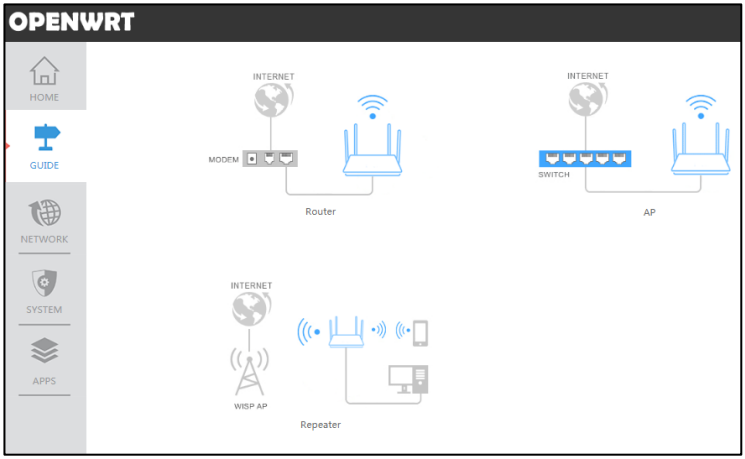
The Sphere Wi-Fi router can also be used to connect to external Wi-Fi networks (example: Caravan Park Free Wi-Fi). Much like smart-phones, by using external Wi-Fi networks you will reduce the data consumption of the SIM card plan inside the router.

The router refers to external Wi-Fi networks as "Repeater" networks.

Please note, that for the router with GPS model, the router is unable to respond to SMS messages while connected to external Wi-Fi networks.

Connecting to External Wi-Fi Networks

i. Click **Guide -> Repeater**



ii. Click **Next** under the LAN IP

iii. Click **Next** under the router SSID and password

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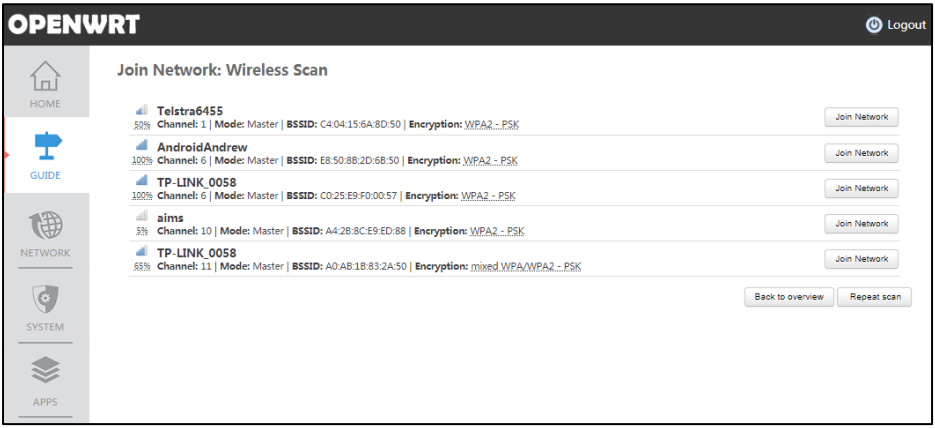
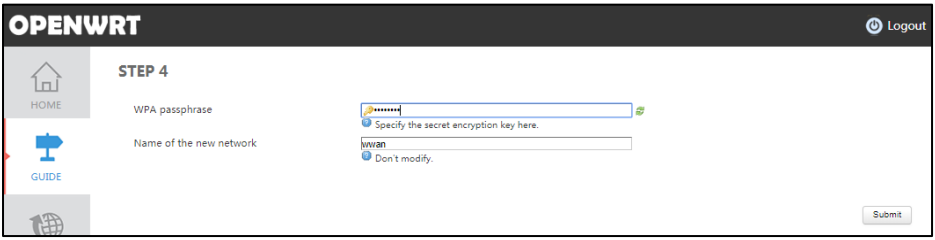
iv. The router will scan for external Wi-Fi networks in range.
Click **Join Network** next to the network you wish to connect to



v. Enter the external Wi-Fi network **password** (if required) into the **WPA passphrase** field

vi. Click **Submit**



vii. Wait 1 minute while the router reconnects to the internet via the external Wi-Fi source

viii. Check that you have internet connection by opening a web page.

The router has now been placed into Repeater (external Wi-Fi) network connection mode.
To change this network connection mode for only 4G, please refer to **Changing Network Connection Mode** section.

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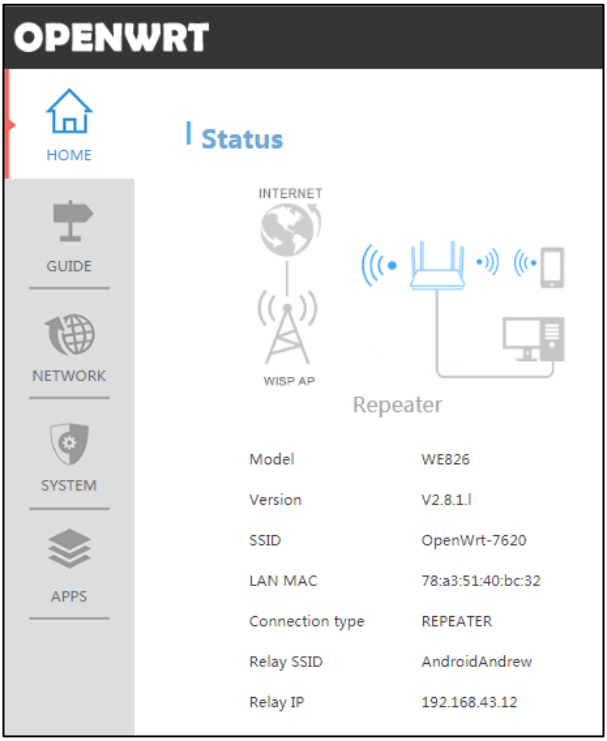
Checking Internet Connection Type

You can also confirm that your internet connection is via the external Wi-Fi network by looking at the "**Connection type**" text written at the bottom of the Home page

- **WAN** = Hard-wired LAN cable
- **REPEATER** = external Wi-Fi network
- **4G** = SIM card data



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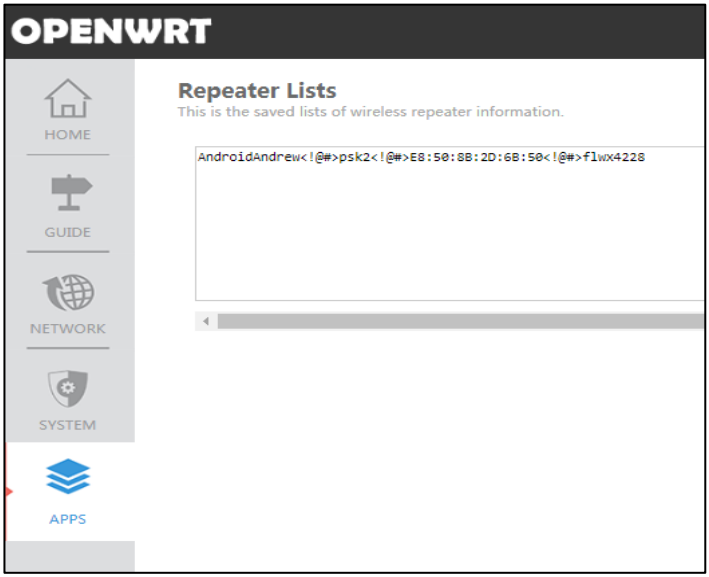
Viewing Saved External Wi-Fi Networks

i. Click **APPS -> Repeater List**



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Network Priority

There are 3 sources of internet connection for the router:

- WAN (LAN cable hardwired into blue port)
- External Wi-Fi
- 4G

By default, if a **WAN** connection is detected, the router will take that as first priority and connect to the internet via this connection.

The second default priority will be **External Wi-Fi/Repeater**. This is only identified after an external Wi-Fi network is connected and saved to the router.

The third default priority is **4G** (SIM card).

To change the priority order of these internet connection types, please follow the below steps:

i. Click **Network -> Network**
ii. In the **Priority** drop down menu, select the desired priority order
Please note: the highest priority is on the left, and lowest on the right. Also, the External Wi-Fi (Repeater) network will not appear until after you have connected and saved at least 1 external Wi-Fi network

Changing Network Connection Mode

To direct the router to only use the 4G network please follow the below steps:

i. Click **Guide -> Router** (this is for 4G connection)
ii. On the **Step 1** page: Click **Next**
iii. On the **Step 2** page: Click **Save**

Please note, in this mode, the router will no longer search and connect to any saved External Wi-Fi networks.
To search and connect to External Wi-Fi networks, please follow the steps in **Connecting to External Wi-Fi Networks** section.

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GPS Operation

Routers with the GPS location functionality require an internal SIM card with sufficient data and talk/voice credit to operate successfully.
Please ensure that the correct internet settings have been applied to allow the router to respond with the GPS co-ordinates.
Refer to the "Internet Settings" section to follow steps for instructions.

The GPS co-ordinates are obtained by sending an SMS to the phone number of the SIM card used inside the router. The router will then reply to the sender by SMS with the GPS co-ordinates in decimal degrees format. The decimal degrees position can then be copied into Google/Google Maps (or similar), or into a GPS navigation device.

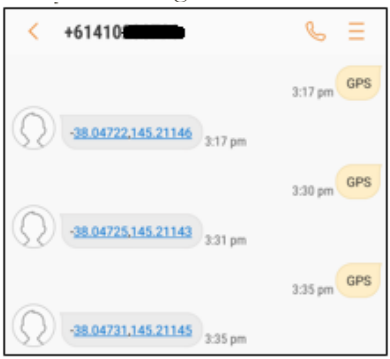
Please note, that while the caravan is garaged or stored inside a structure (garage), it may respond with a "Location failure" SMS message as it cannot locate the GPS satellites to obtain its position.

To obtain **GPS coordinates**:

a. From a mobile phone, send an SMS message of "**GPS**" to the SIM card phone number inside the router. Please ensure you SMS "**GPS**" in capital letters with no spaces or other characters.

b. Wait approximately 45 seconds to 1 minute for an SMS response from the SIM card phone number inside the router

c. The router will return 2 numbers with 5 decimal places each, I.E: "**-37.81440, 144.96311″ ,** this has successfully returned the GPS coordinates in a decimal degrees format.



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d. Copy the numerical text from the returned SMS, and paste into Google Maps to show you the current router location.

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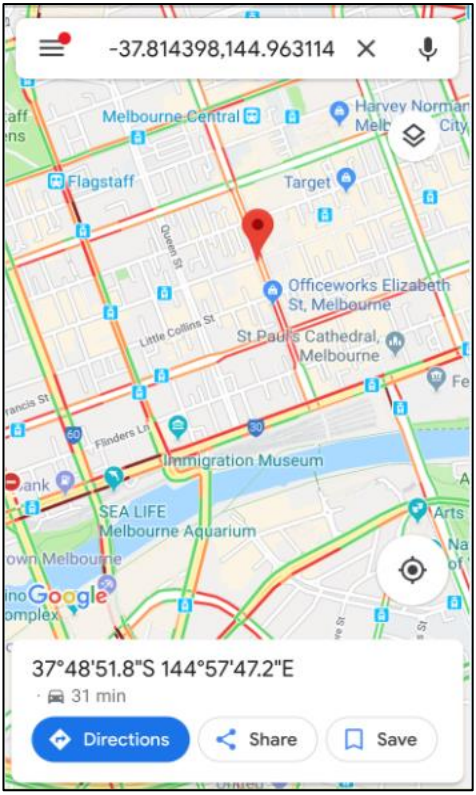

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Troubleshooting

Resetting the Router

If you are experiencing issues with your router, such as **forgotten passwords**, please reset the router.
This will return all configurations back to the factory firmware settings.
The Wi-Fi SSID name and password will return to the default settings, also the router password will return to the default settings

To reset the router, press and hold the "**Reset**" button located on the top of the router for 10 seconds before releasing the button.

All LED's will illuminate for 1 second, and the unit will then begin resetting.

Please wait a couple of minutes, before reconnecting to the Wi-Fi signal and follow instructions above to re-configure if desired.

Please note, the Wi-Fi signal will return to the default signal "**SphereWiFi-xxxx**"

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GPS Operation

If you are experiencing issues with the **GPS feature** and not receiving the expected return SMS of 2 numbers with 5 decimal places each.
For example, if the return SMS from the router is:

i. "**Location failure**" – This means the unit cannot locate GPS satellites. Please wait some time and try again. As mentioned in the "GPS Operation" section above, the router may return this response if the caravan is inside a structure like a garage or warehouse.
ii. "**message failure**" – This means an incorrect text message was sent to the router. Please ensure just "GPS" is sent to the SIM card phone number inside the router
iii. "**GPS active fail**" – This means the router you have sent an SMS message to does not support this GPS feature
iv. No response at all - Please wait some time and try again. Otherwise, if the issue persists, this means one or more of the following:
    a. The router power is disconnected
    b. The router internet access has not been configured correctly. Please test internet availability as per "Internet Settings" section
    c. The router is connected to the internet via the Wi-Fi Extender function. The router is only able to send SMS responses when connected to the internet via the internal 4G SIM. Please refer to Wi-Fi Extender section for steps on how to switch the internet connection back to 4G.
    d. The SIM card has no credit remaining
    e. The SIM card is data only. Please ensure the SIM card used is both data and talk/voice

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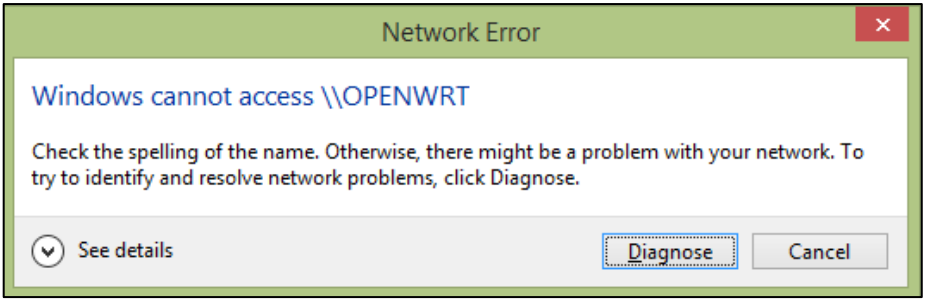
USB Operation

If you are experiencing issues in accessing the **USB drive** and receiving an error (similar to the one shown below) from your laptop or smartphone, then:



i. Attempt to connect to the USB

ii. Using the device you are attempting to connect to the USB drive with, log into router (**192.168.8.1**) via Web Browser.
This step is now complete and you can minimize the Web Browser

iii. Try again to open USB network folder.
It may ask for the **Router** username and password before you are able to view the folder contents. Please use the default Router credentials, or the new Router password if you have changed the Router password

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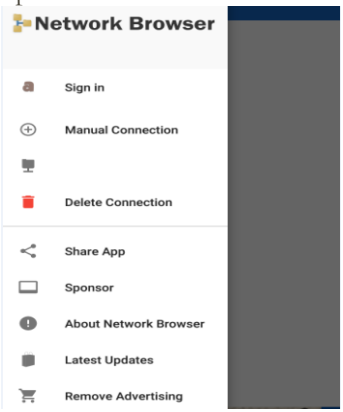
For issues with **Android APP connection**

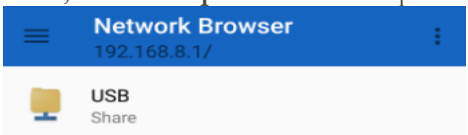
i. Open Network Browser APP

ii. The top-left corner open the menu and click "**Manual Connection**"



iii. Enter the Server IP address (**192.168.8.1**) and Nickname (**SphereWiFi**), and click **Save**

iv. Then in the Menu, click on "**SphereWiFi**" to open the **USB** drive



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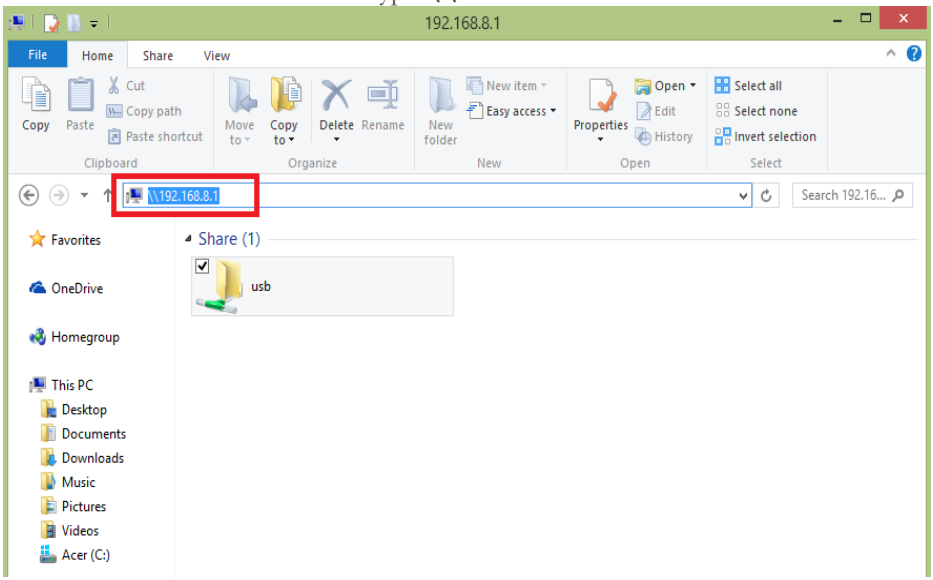
For issues with **Laptop/PC connection**

i. Open a File Explorer

ii. In the Address Bar type **\\192.168.8.1**



iii. Click on the **USB** folder to access the files

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Internet Access

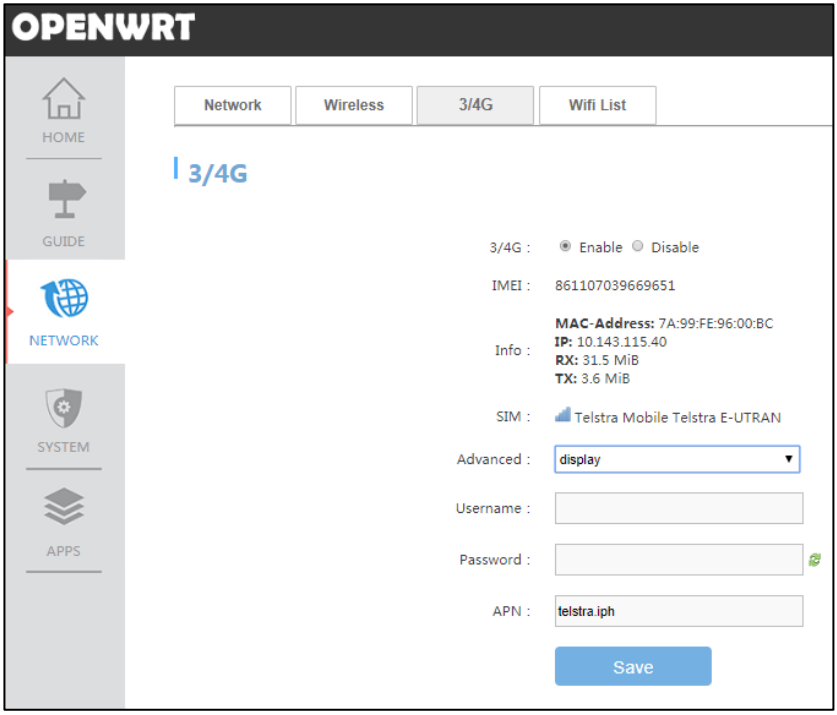
If you are experiencing internet access issues, firstly, please reboot the router by either:

- Clicking **System -> Reboot,** then **Yes**
  OR
- **Disconnecting power**, waiting 30 seconds, then **reconnecting power**

If you are having issues with External Wi-Fi networks, and want to only use the 4G network from the internal SIM, please refer to **Changing Network Connection Mode** under the **Wi-Fi Extender** section

Otherwise, please follow the steps below:

i. Log into the router (**192.168.8.1**)
ii. At the top of the web page, click: **Network -> 4G**
iii. Check that the correct APN settings have been saved as per your SIM card ISP.
If not, make the changes again and click "**Save & Apply**"



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