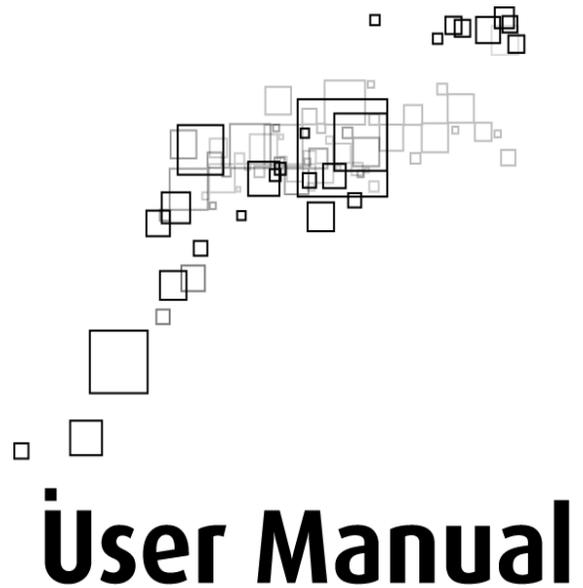


MOFI6500-5GXeLTE-RM520  
Advanced High Performance  
Router  
Updated Manual can be located  
at: [www.MoFiNetwork.com](http://www.MoFiNetwork.com)  
1-888-499-0123 (Toll Free)



Please note that it is recommended to download our full User Manual on our site since this is current version that is enclosed does not have all the features listed.

Manual revision version is 1.0

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# About the Product

The MOFI6500-5GXeLTE-RM520 is a 1.3GHz CPU cellular router with extended range high WiFi 6 coverage.

The cellular runs off the x62 5G solution using the Quectel RM520-GL cellular module that works on all 4G/LTE and 5G networks.

Unit has

2 x Nano SIM Slots (4FF)

4 x external cellular antenna input

5 x WiFi Antennas,

4 x Ethernet 100/1000 LAN ports

1 x 100/1000 WAN port

2 x USB ports

External Serial Console Port

2 x Power Input (regular barrel connection as well as a 4-pin Molex Connector)

Also include in an LED ON/OFF switch where if needed, you can take off any unwanted LED light on the router (great for RV or if router is in a location where it is too bright at night)

This MOFI6500-5GXeLTE-RM520 can work on 4G/LTE and 5G using the x62 5G chipset solution.

The unit is enclosed in a metal rugged case and in the hood features a 1.3GHz blazing fast CPU, 1GB of very fast RAM, 128MB of system memory and build in exclusive power amplified for both the 2.4GHz and the 5GHz wireless signal with WiFi 6 technology using 5 x WiFi external antennas.

The MOFI6500-5GXeLTE-RM520 creates a secure Wi-Fi® network by supporting the latest wireless security features to prevent unauthorized access. It supports for 64/128-bit WEP, WPA, WPA2 and WPA3 to ensure that you will be able to secure your Wi-Fi network, regardless of your client devices. In addition, the 4G/LTE/5G Mobile Router utilizes dual active firewalls (SPI and NAT) to prevent potential attacks from across the Internet.

# Features

- High performance mission critical solution for your 4G/LTE/5G solution.
- Support (4G/LTE/5G) USB modem connection - to offer a network connection with full mobility
- Units has build in amplifiers that boost the WiFi with a strong yet clean signal that will allow to use the router as far as possible ever using the 5GHz WiFi Bands where other lower performance router cannot reach this range.
- Support WAN Port and 4-Port 10/100/1000M (Full Gigabit Support)
- Support for 64/128-bit WEP, WPA, and WPA2 and the new WPA3 - ensure secure WiFi network, and prevent unauthorized access
- Detachable Antennas - allows flexible gain performance antennas for both the cellular and WiFi connection and offers the ability to use outdoor external antennas
- Auto Fail Over (Can have a cellular and Cable/DSL/Satellite connection, if the Cable/DSL/Satellite connection is lost, the cellular connection will take over and as soon as the connection is established again, it will revert back to the Cable/DSL/Satellite connection.
- Many more features are included in the router which you can find at [www.mofinetwork.com](http://www.mofinetwork.com) for help and videos. You can visit our youtube channel for videos <https://www.youtube.com/c/Mofinetwork/videos>
- You can also send us an email anytime to: [support@mofinetwork.com](mailto:support@mofinetwork.com)

# Requirements

- Your computer must meet the following minimum requirements.
- Any internet browser to surf the internet
- Ethernet network adapter or WiFi network adaptor
- The MOFI router will work with basically any operating system and devices.

# Device Design - Front Panel



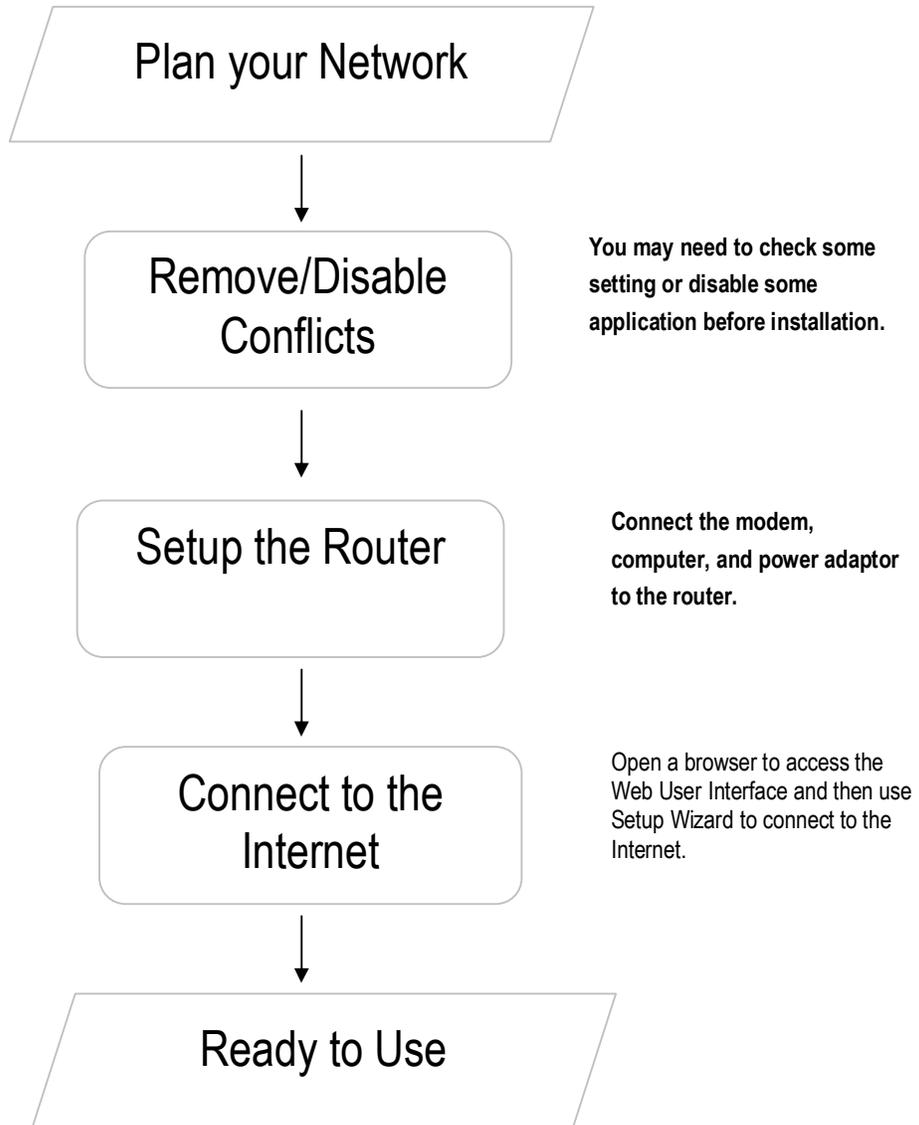
LED	Behavior	Description
<b>Power/Boot Status</b>	Blink/Solid	<b>Blink when booting, Solid when completed boot.</b>
Internet	On	Internet using the SIM Card
	Off	No Internet access
	BLINKING	Using the WAN Internet
Wi-Fi	On	Wireless is enabled (will blink to show the wireless traffic)
	Off	Wireless is disabled
	Blinking Very Fast	Normal Use Unit is in recovery mode
WAN	On	Connected to a Cable/DSL/Satellite
	Off	No Modem connection
Ethernet 1-4	On	Connected to an Active Ethernet Device
	Off	No Ethernet Connection
	Blinking	Transmitting/Receiving Data

**BACK VIEW**



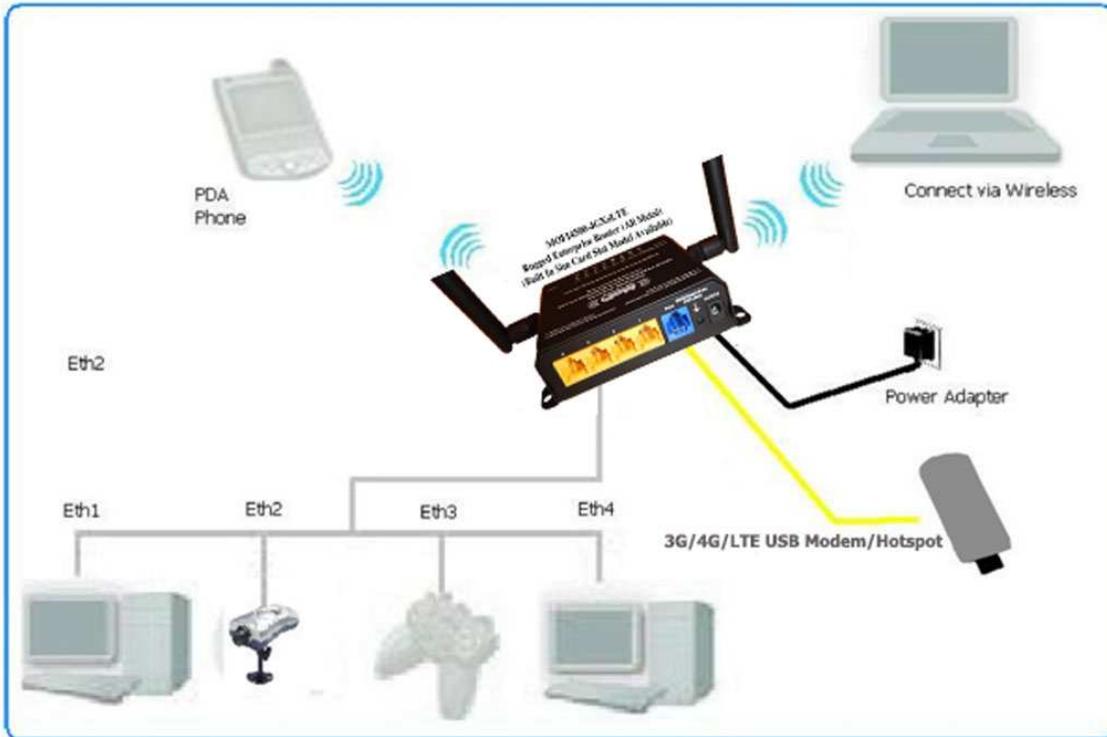
Label	Description
Ethernet Port 1-4	Connecting with computers/devices using an Ethernet cable
WAN	Connect to a modem Cable/DSL/Satellite using an Ethernet cable
Reset	Press for 10 seconds to reset to the Factory Default.
Power Jack	Use 12V 3.5A Power Adapter

# Getting Started

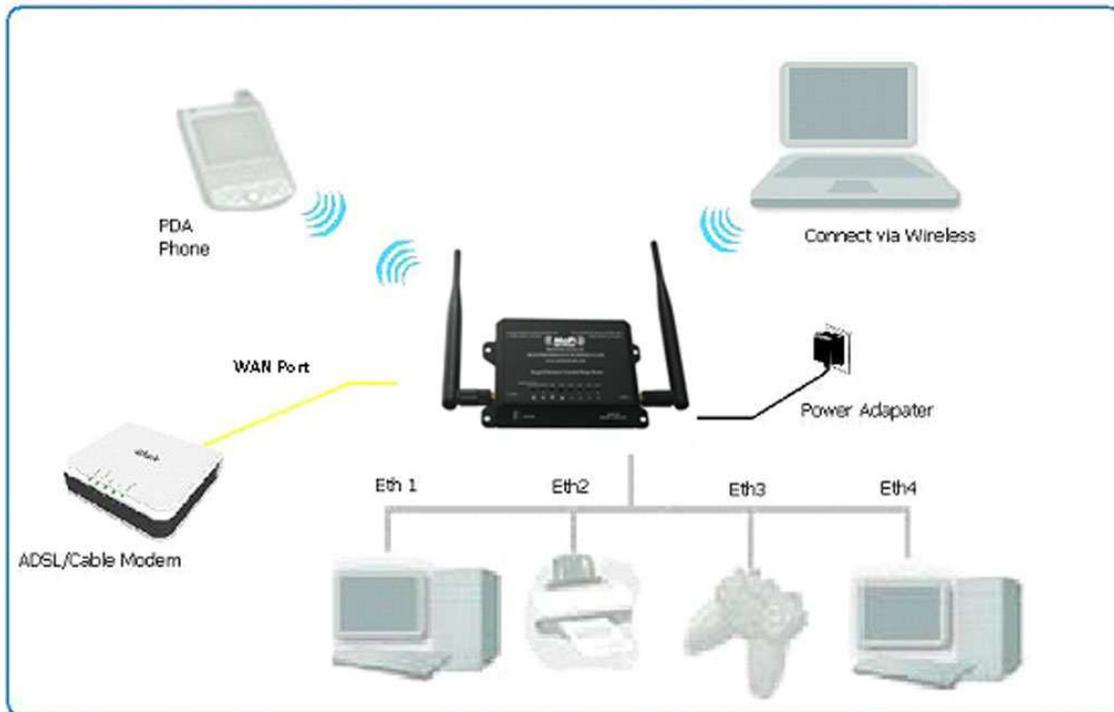


# Plan Your Network

## 1. Using a 4G/LTE/5G USB Modem Stick



## 2. Using a DSL/Cable modem (If your DSL/Cable modem is both a router and a modem, contact us.



# Remove or Disable Conflicts

To make sure the router installation moves on smoothly, you need to remove or disable conflicts that may interfere the installation. Probable conflicts may include:

- Internet sharing applications
- Proxy software
- Security software
- TCP/IP settings
- Internet properties
- Temporary Internet files

## Internet Sharing, Proxy, and Security Applications

Internet sharing, proxy software, and firewall applications may interfere with the router installation. These should be removed or disabled before start the installation.

If you have any of the following or similar applications installed on your computer, remove or disable them according to the manufacturer's instructions.

Internet Sharing Applications	Proxy Software	Security Software
Microsoft Internet Sharing	WinGate	Symantec
	WinProxy	Zone Alarm

## Configuring the TCP/IP Settings

Check if your computer uses default TCP/IP Settings

To check the TCP/IP properties:

1. Click the Start button, and then click Run. This opens the Run dialog box.
2. Type in ncpa.cpl, and then click OK. This opens the Network Connections in your computer.
3. Right-click LAN, and then select Properties. This opens the Local Area Connection Properties dialog box.
4. Select Internet Protocol (TCP/IP), and then click Properties. This opens the Internet Protocol (TCP/IP) dialog box.
5. Select Obtain an IP address automatically.
6. To close the Internet Protocol (TCP/IP) dialog box, click OK.
7. To close the Local Area Connection Properties dialog box, click OK.

## Configuring Internet Properties

To set the Internet Properties:

1. Click the Start button, and then click Run. This opens the Run dialog box.
2. Type in inetcppl.cpl, and then click Ok. This opens the Internet Properties.
3. Click the Connections Tab.
4. In Dial-up and Virtual Private Network settings, select Never dial a connection.
5. Click Ok the button to close the Internet Properties.

## Removing Temporary Internet Files

**Temporary Internet files are files from Web sites that are stored in your computer. Delete these files to clean the cache and remove footprints left by the Web pages you visited.**

To remove temporary Internet files:

1. Click the Start button, and then click Run. This opens the Run dialog box.
2. Type control, and then click OK. This opens Control Panel.
3. Double-click Internet Options. This opens Internet Options.
4. In the Temporary Internet Files pane, click Delete Cookies.
5. Click Delete Files.
6. To close Internet Properties, click OK.

# Installing your Router

The MOFI6500-5GXELTE-RM520 SIM Version can be used in many ways including as a 4G/LTE/5G router or just a regular Cable/DSL/Satellite high speed router including using it with Starlink.

Using a SIM card from your provider direct from provider

1. Insert your SIM card in the SIM card slot on the side of the router and connect all antennas to router.

The router has 2 Nano (4FF) SIM slot slots, #1 and #2.

If you need to switch to the use SIM SLOT#2, you will need to log into the router, go to Mofi Internal Modem then click on the SIM CARD CONTROL

2. Connect the power cable to the router's power jack and plug it in to the wall socket.
3. Connect your PC to any available Ethernet port using an Ethernet cable or connect via wireless.

Recommended to connect to the 5GHz WiFi.

(do not use the WAN)

4. At this point, your connection should be connected. If not, you will need to check your settings

Is the APN correct and is the router reading the sim card fine?

To check this, log into the router

Go to Mofi Internal Modem then click on the configuration tab on the left

The carrier ID should show up (that is how you know the router is reading the sim card)

On the bottom of that page, it will show the current access point (APN) that you are using.

You need to confirm the APN is correct that you need to use, if not, then you can select it from the APN list what you need to use or under country, select custom APN and enter the APN that you want to use then save and reboot.

## Using a DSL or Cable Modem or Satellite Modem

If you choose to use a DSL, Cable or Satellite modem you are required to have the following:

- DSL or cable modem or Satellite modem
- Active Internet Account

1. Connect your DSL, Cable or Satellite modem to the router's WAN port using an Ethernet cable.
2. Connect the power cable to the router's power jack and plug it in to the wall socket.
3. Connect your PC to any of available Ethernet port using an Ethernet cable or connect via wireless.

**Note:** Ensure that the router's IP address does not conflict with the DSL/Cable/Satellite modem. Please refer to your modem's User Manual on how to change the LAN IP address. The default IP on the MOFI6500-5GXeLTE-RM520 is 192.168.10.1

# Connecting to the Internet VIA 4G/LTE/5G

Here is a video to help you setup the MOFI router using the wizard:

<https://youtu.be/jevcVD5t0G8> (this is for the MOFI4500 but the setup process is very similar to the MOFI6500)

If you have a cable, DSL or Satellite modem that does not need to have a username/password, just connect the output from the Cable/DSL/Satellite to the WAN port of the router then repower your Cable/DSL/Satellitebox and you should be online.

To Connect to the Internet via the Web User Interface with a 4G//LTE/5G connection, you only need to put the sim card in and the router should auto detect and it should work. If you need to manually enter the info, do the following:

1. Open your Internet web browser.
2. Type <http://192.168.10.1> in the address bar and press enter. This opens the login authentication page.
3. Type your Username and Password. Your default Username is root and the password is: admin  
Please refrain from saving your username and password if your browser asks you to..
4. Run the wizard on the top right and follow the on screen instruction

The screenshot shows the MOFI Network Web User Interface. At the top, there is a navigation bar with 'MAIN MENU', 'INTERNET USAGE', and 'WIZARD'. Below this is the MOFI NETWORK logo. The main content area is titled 'Welcome to the MOFI6500-5GXeLTE Basic Set Up Area'. It includes a 'CHECK INTERNET STATUS' button and a link to 'Run Setup Wizard (click here to setup wifi security)'. Below this, there is a table with WAN Status information:

WAN Status
External IPV4 Address: 99.229.147.131
Primary IPV6 Address: [IPV6 Disabled]
Secondary IPV6 Address: IPV6 Disabled
Usage: (Use square brackets) <a href="http://[IPV6 ADDRESS]">http://[IPV6 ADDRESS]</a>

Below the table, the Router ID is listed as E43A6581B80C. At the bottom, there is a section for 'Mofi Cloud Link' with a note: 'If you require a public dedicated IP, contact us about our Mofi Cloud Link Service. [Click here to Setup](#)'.

# Wireless

By default, the wireless network name is: MOFINETWORKXXX where the XXXX is the last 4 digits of your router's MAC address.

If you do not require setting up a WIFI name or a wireless password then you can skip this step.

If you want to change the network name (ESSID) or add a wireless password, please do the following:

You can just run the wizard which will allow you to set this up easily or if you want more control, you can do this by going to Network -->Mofi Wifi

NOTE: All the MOFI6500 models are equipped with dual band WIFI which means that your router will broadcast both 2.4GHz and 5GHz Wireless connection.

The screenshot displays the router's web interface for WiFi configuration. The top navigation bar includes 'MAIN MENU', 'INTERNET USAGE', and 'WIZARD'. The left sidebar lists various settings, with 'Mofi WiFi' highlighted. The main content area is titled 'WiFi configuration' and is divided into three sections: 'Devices', 'Main WiFi 2.4GHz', and 'Main WiFi 5GHz'. Each section contains a text box for instructions and a form with fields for 'Enabled', 'SSID', 'Hide SSID', and 'Encryption'. The 'Main WiFi 2.4GHz' section shows 'Enabled' set to 'ON', 'SSID' as 'Mofi-2G-81B80C', 'Hide SSID' as an unchecked checkbox, and 'Encryption' as 'none'. The 'Main WiFi 5GHz' section shows 'Enabled' set to 'ON', 'SSID' as 'Mofi\_Fast-5G-AX-81B80C', 'Hide SSID' as an unchecked checkbox, and 'Encryption' as 'none'. A red button labeled 'PRESS HERE TO DEFAULT' is visible in the 'Devices' section.

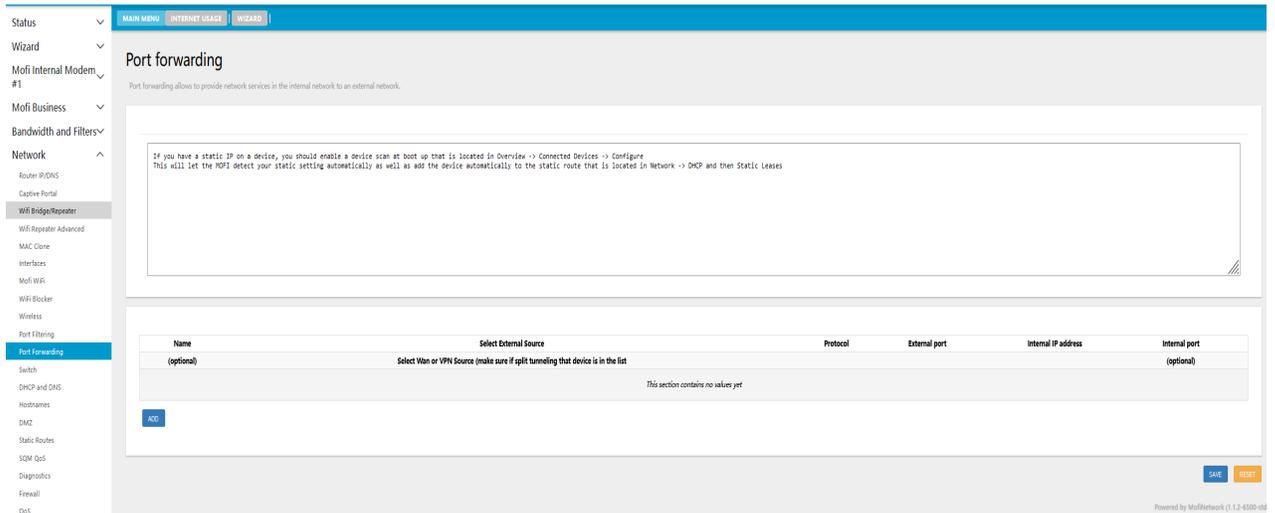
The most popular encryption is WPA2-PSK. It is recommended to select this and enter the password in the Password Field (minimum 8 characters)

Click on Save to save the changes

# How to forward ports:

(Note you will need a public IP address in order to do any port forwarding)

MOFI offers a public IP service depending on what you need this for. By default, most cellular connection does not provide a public IP. If you need this service then please contact us for a free trial.



Port Forwarding should be just under Network, Click on Add

For Name, enter whatever you want to call it

Select the Protocol you want to use

Enter the external port that you want to forward to

Usually the internal and external ports would be the same

Select the IP address of the device you want to forward to, Click on "Save"

If you are using a mobile internet connection like a cellular connection, you will probably have a private IP from your provider.

If you have a private IP, you will not be able to use any port forwarding features.

If you would like a public IP that will work with port forwarding, we offer a service called Mofi Cloud Link.

Call us if you want to get this set up.

There are 2 ways to get around this:

- 1) You could contact your internet service provider and try to get a public IP address from them. Some providers do not offer this.
- 2) We offer a public IP option. To get this, contact us and we can instantly set up your account and you will be able to get a public IP address and have access remotely to your network. A lot of customers use this option to use with a video camera system so if this is something you are looking to do, contact us toll free at 1-888-499-0123 or email [sales@mofinetwork.com](mailto:sales@mofinetwork.com)

# How to open ports in the router:

Note that normally, you would not have to do this. If you feel you need to, first double check as when you do a port forward, it should automatically open the ports for you.

These are the default port that are open by default

WEB 80

SSH 22

HTTPS 443

RDP 3389

UDP 68

If you want to be use or open some of the uncommon ports to connect to your DVR or other devices from the outside, below is the instruction on how to open up ports.

When you do a port forwarding rule, it normally opens the port by default so the below is normally not needed.

Log into the router

Click on Network Tab --> Firewall

Under Rules, click Add

For the Name, put whatever you like to describe it

Source Zone: Leave at WAN/USB

Protocol: Select which one you want or "Any" if you are not sure

Source Address: Leave it default "any"

Destination Address: (this is where you would enter the port you would like to open) example 2100

Action: Leave default at "accept"

Click "Save & Apply" to save the changes

Now the port is open in the router.

To actually use this, you may have to set a port forward rule

The easiest way is to upgrade to version 3.1 or later where has the port forwarding under Network

Click on Network Tab --> Port Forwarding

Click on Add

For Name, enter whatever you want to call it

Select the Protocol you want to use

Enter the external port that you want to forward to

Select the IP address of the device you want to forward to

Click on "Save"

# How to Set a Wireless Bridge/Repeater:

The first thing you need to know ahead of time is the wireless SSID (network name) and password of the device that you want to connect to if it has a security enable on it.

Note it is case sensitive so make sure you have everything exactly the way it is.

If you are using a hotspot device such as the MiFi units, the wireless password is printed on the inside cover of the unit.

Connect the router to your pc with the Ethernet cable in one of the 4 ports (not the WAN port)

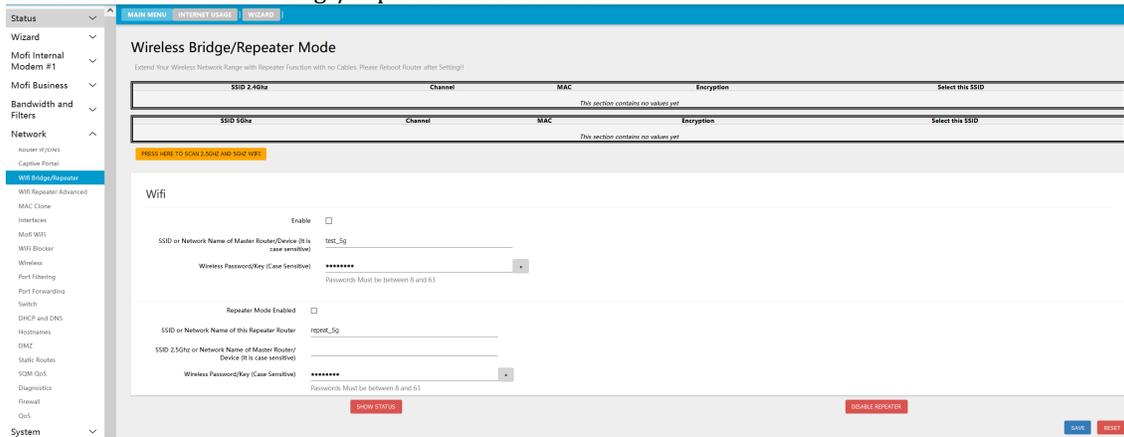
Open up your web browser

Log into the router,

http://192.168.10.1

username: root, password: admin

## 1. Go to Network → Wifi Bridge/Repeater under Network



**NOTE:** All the MOFI6500 routers are equipped with dual band WIFI. So you need to ensure which band of WIFI are you trying to form the bridge with (repeater 2.4GHz / repeater 5GHz)

2. Under 2.4GHz Scan / 5GHz, click on Press Here to Scan 2.4GHz WIFI / 5GHz WIFI and this will populate the list with the available wireless network around you.

3. Click on “Select Me” for the network that you would like to form the bridge with.

4. Under Wifi 2.4GHz / 5GHz, make sure it is enabled and verify the network name is correct and then enter the WiFi password of that device.

5. Under Bridge/Repeater 2.4GHz / 5GHz (this) Router, verify that it is enabled.

This section is for the WiFi name that you want to broadcast from your MOFI6500 router.

Enter the name you want to use (it cannot be the same as any other network around you) and then enter the password you want to use. Then click on Save.

After 30 seconds, the router should connect and you will see the internet LED on the router come on.

It is suggested to power cycle the router at this point.

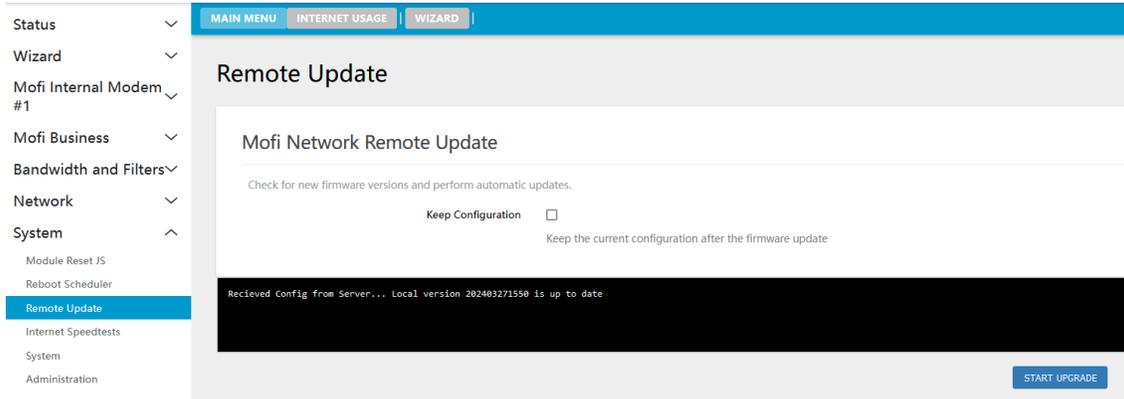
When the router comes back up, you should see the name in step #5 that you made and you should be able to connect and have internet

If for some reason you do not have internet, you will need to double check that you have selected the correct network name and entered the correct wifi password for that network name.

# How to do a Firmware Upgrade:

There are two ways to upgrade the firmware on the MOFI6500 router:

If you have a working internet connection, then you can perform a Remote Update. You can do this by going to System → Remote Update



However, if you do not have internet access on the router, you may have to do a manual firmware update.

To do a manual firmware update, please visit [www.mofinetwork.com](http://www.mofinetwork.com) and then go to Support --> Downloads, then click on select MOFI6500 Download

Download the latest firmware and then follow the instructions there on how to update.

NOTE: After you have installed the latest firmware update, you will need to perform a factory default to reset the router.

If you make a mistake or encounter an error during the firmware upgrade process and the router seems to be non-functional, look at our section on how to do a MOFI Recovery.

# How to Remote Login into the Router:

Remote Login on the MOFI6500 router is enabled by default and can be accessed on port 80, 81 and 8080

Port 8080 is the official port for remote access on the MOFI6500 router.

If you have a public IP address, you will be able to access your router remotely by going to:

`http://yourpublicIPaddress:8080`

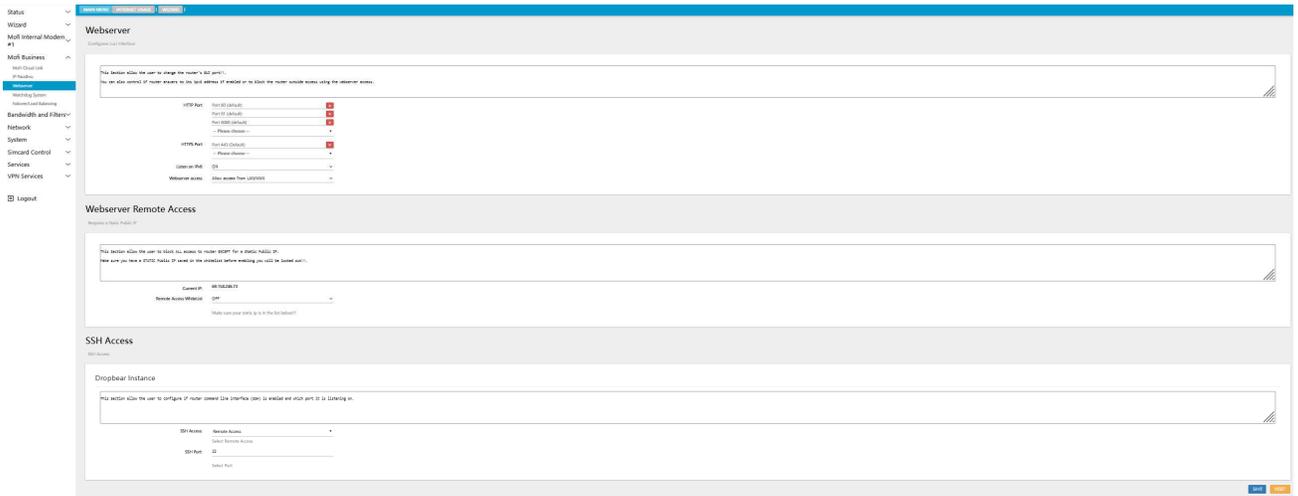
However, if you are using a cellular connection and have not paid or added a public ip option to your account, you cannot get direct access to the router as the NAT will not let you do this,

If you have a security camera system for example and want to log in directly, you will need to contact you internet service provider and get a public IP option or contact us for a public IP option that we offer.

# How to modify settings/ports for remote access to the router:

By default, the router is set to receive on port 80, 81 and 8080

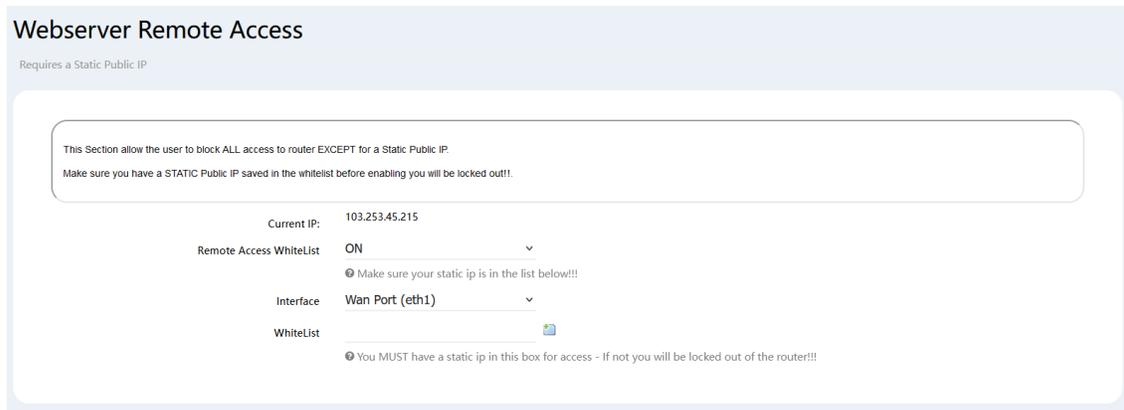
If you want to change this, log into the router and go to Mofi Business → Webserver



To change the port, click on the HTTP Port option and select custom and then change it to what you want. If you want port 90 for example, you would type: 90

If you want to disable access for remote access, just turn remote access off.

If you want to limit remote access to specific IP address, for Remote Access White list, turn it ON  
For the Interface, select the current internet connection type you have. By default, WAN port is selected.  
Under White list, type the IP address that can have access to the router.  
If you want multiple IP, click on the plus icon on the right



There are many more features that are not covered in this manual such as

We are currently making some changes to this section but below is some more options not fully documented

- Parental Control Scheduler (ability automatically to allow or block access to individual devices via the mac address). This feature is great to block kids for use of internet when they should not be using it.
- Wifi speed limiter. This allows you to set the upload and download speed of your WiFi signal. You can add 2 WiFi network and each of these can be individually control the speed. This feature would be great for customers of a bus company or store that want to give their customers access to the internet but do not want a customer to kill the bandwidth usage and cause a slow down for everyone else or use up too much data.
- Bandwidth monitoring. This feature allows viewing the usage at any point during the month for each individual device. This is great if you have an infecting device and want to track where the extra data use is coming from. It is suggest you enable the remote management and track the bandwidth uses there as this will give you the most accurate measurements
- Bandwidth control: This feature allow you to set specific amount of data to an individual device via the MAC address. You can also use this option in daily or monthly quota so if a user used too much data in the allotted time, they will lose internet access automatically until their time gets reset normally the next day or when the billing month starts over.

# FAIL OVER

If you require the highest stability, Fail Over can be a life saver.

This feature is used if you have 2 activate internet connection.

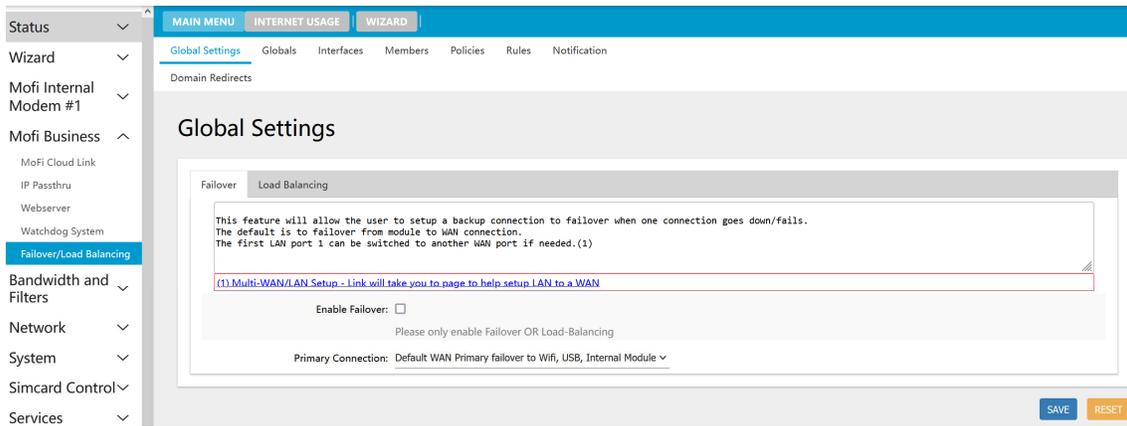
You can specify which connection you want as your main connection and once that connection drops (or if it is not available), it will jump to the secondary connection and then jump back to the primary connection when it is available.

To activate fail over, go to Mofi Business → Fail Over / Load Balancing

1. Enable by checking box

2. Normally, 99% of customers wants WAN as primary and cellular as secondary so you can select the default profile. If you want to change, select the option you need.

3. Save & reboot router



# LOAD BALANCING

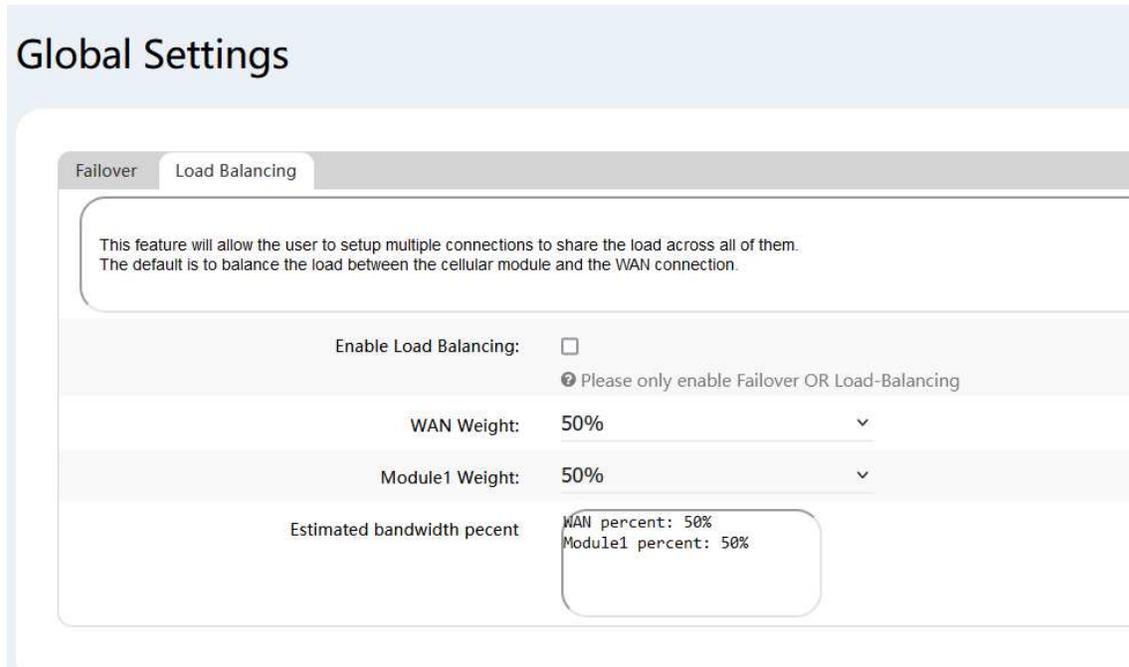
If you require the fastest internet possible, the Load Balancing feature will allow you to take two WAN connections and make them work as one.

To active Load Balancing, go to Mofi Business → Fail Over/Load Balancing

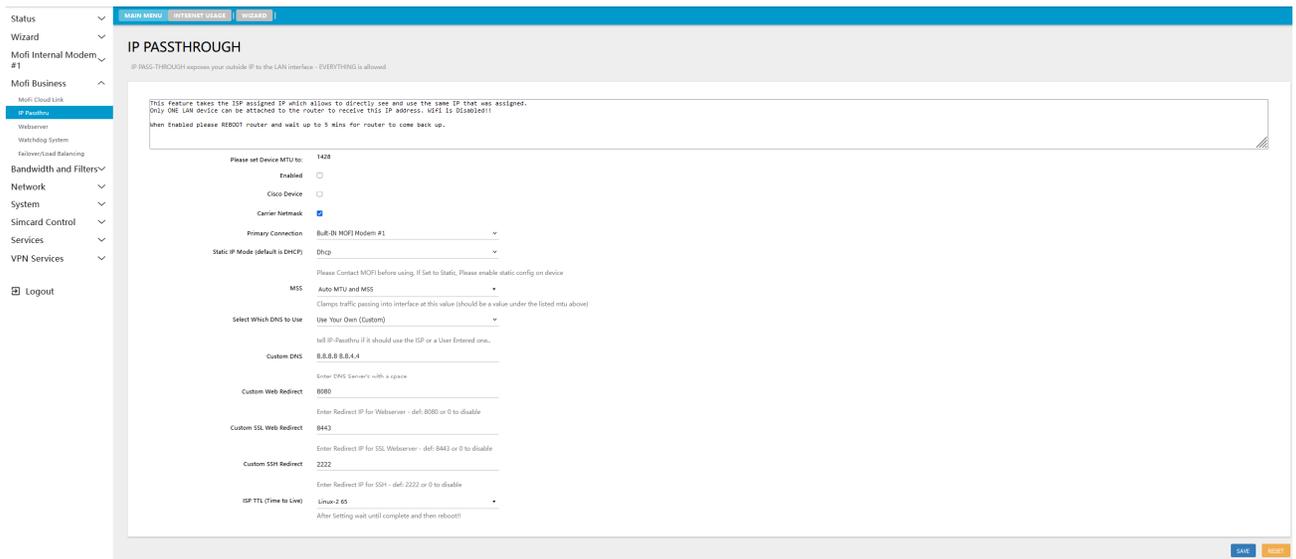
1. Select Load Balancing
2. Enable by checking the box that says Enable Load Balancing
3. Save and reboot the router

With this feature, you will need to have 2 internet connections (one is the WAN port and the other in port 1)

This feature also includes fail over simultaneously so if one connection fails, the other will still work. If both connections are working, they will bind together and work as one. This will ensure the faster connection speeds possible than any single connection connected.



# IP Pass Through



With IP Pass Through, this feature will make your router to work as a modem.  
Only 1 device can be connected via Ethernet Port 1.

This feature will prevent 2 routers from conflicting each other.

To enable IP Pass-through, check the box that says Enabled and then save and reboot the router.

Normally you would never need to change any of the default settings here.

When IP Pass Through is on, your WiFi will automatically be disabled.

If you are connected to a device, all ports will be sent to this.  
This feature will pass everything over to the device connected.

If you connect a different device, you will have to reboot the router for this to be active.

If you need access back to the router after it is in IP Pass-through Mode, go to <http://192.168.10.1:8080> or if you have a public IP Address, <http://yourpublicIP:8080>

Note that by default, most cellular connection provides a private IP address and as such, port forwarding will not work.

If you require a public IP address, contact us about this option.

If you make a mistake and can't back in the router, you can do a reset by holding the reset button at the back for 10 seconds and then release after the router is booted up.

# MOFI RECOVERY (For MOFI6500)

## How to recover router from wrong file update or other problem

To do a boot recovery, follow these steps:

### Step 1: Set router is recovery mode

Connect the router to your pc with an Ethernet cable to port 1 at the back of the router.  
Unplug the router and press and hold the reset button on the back of the router.  
Plug back in power in router and after 15 seconds until you see only 2 blue LEDS FLASH, then release the reset button.

### Step 2: Set your network connection to static ip address: 192.168.10.7

To set your static ip address, you can do this:

Go to control panel --> network connection or network and internet

- ➔ Network and sharing center
- ➔ click on change adaptor settings or network connections
- ➔ right click on local area connections and then select properties
- ➔ click on Internet Protocol TCP IP V4 so it turns blue

click on properties and enter the below:

IP: 192.168.10.7

subnet: 255.255.255.0

default gateway: 192.168.10.1

Then go out and save

### Step 3: Mofi Recovery Interface

Open your web browser to

<http://192.168.10.1>

Browse to the file you want to recover to and open and run

Will take approx 1 mins for router to complete.

You will see the power/booting status light go off and flash and then go back solid

### Step 4: Set back your network cable to automatic

To set your network card back to automatic, you can do this:

Go to control panel --> network connection or network and internet

then network and sharing center

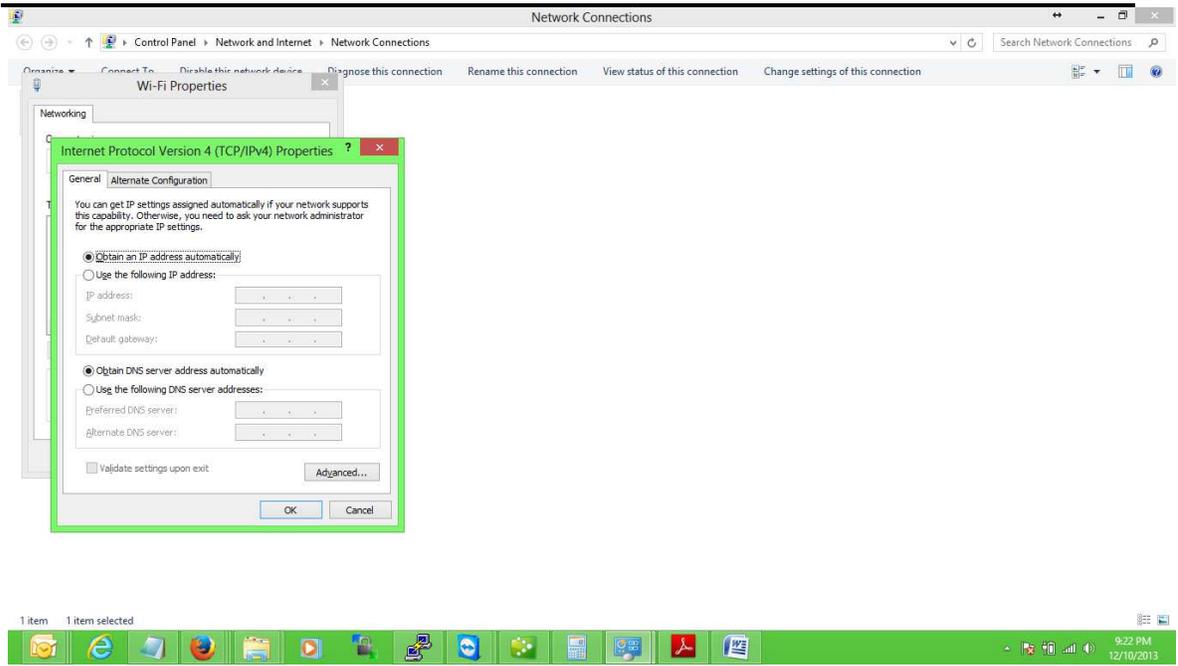
then click on change adaptor settings or network connections

under network connections, right click on local area connections and then select properties

click on Internet Protocol TCP IP V4 so it turns blue

click on properties and select "Obtain an IP address automatically"

Also, make sure the DNS is set to "Obtain DNS server address automatically"



### Step 5: Log into the router

Now, you will be able to log back in the router.

To log in router, go to <http://192.168.10.1>

username: root

password: admin

Once you are in, you can now load the latest firmware to bring the router to the latest version.

# MOFI REMOTE MANAGEMENT

## How to Enable Remote Management

With your MOFI router, you have the ability to access your router status and make various changes if need all from an online interface on our server. To use this feature, you will need to enable this option that is located in:

Basic Mode --> System --> Remote Management

The way this works is the router will contact the server every 4 mins and check to see if there are any changes needed. If there is, it will take and apply them.

This remote management feature will work on both a public and private IP address and no need for any special IP settings for this to work.

For customers that want to have all their routers show up under one account so it can easily be managed, contact us for how you can do this.

Status ▾ MAIN MENU INTERNET USAGE WIZARD

Wizard ▾

Mofi Internal Modem #1 ▾

Mofi Business ▾

Bandwidth and Filters ▾

Network ▾

System ▾

Module Reset JS

Reboot Scheduler

Remote Update

Internet Speedtests

System

Administration

Admin Password

Factory Default

**Remote Management**

Gather Support Logs

Misc Settings

Software

Startup

Scheduled Tasks

LED Configuration

Backup / Flash Firmware

Module Reset

Reboot

Simcard Control ▾

Services ▾

VPN Services ▾

Logout

### Remote Management

[Open Remote Management Dashboard](#)

RouterID: E43A6581B80C

#### INFORMATION

\*\*\* How to Access the Remote Management Dashboard \*\*\*

1. Press Sync bandwidth button to sync the bandwidth usage of the router with the value from server side
2. Enter a VALID Email Address For Recovery.
3. Click on Enable Remote Management.
4. Press Save to complete the process.
5. Navigate off the page and come back. (reload)
6. The server will return a Username and a Password to access your router online.

Server is located at: <https://manage.mofimanager.com> or Use the Button above called "Open Remote Management Dashboard"

NOTE: Please make a note of the returned password (unless you change it inside the portal) since if you factory-default/reset the router and re-enable the remote management portal will still be the original password.

Click to ==> **OPEN REMOTE MANAGEMENT DASH-BOARD**

Sync bandwidth **SYNC BW WITH SERVER BEFORE ENABLING REMOTE**

Account Status: Not Registered!! (First Run?)

ACS Started: no

Enable:

Enable Remote Management

Recovery Email: no\_recovery

Add recovery\_email\_address

**Enable SSH:**

(optional) Allows Commandline Access to router via SSH

**Username:** xxxxxx

**Password:** \*\*\*\*

Forgot Password [Click here](#)  
Press Once

1. Press Sync bandwidth button to sync the bandwidth usage of the router with the value from server side
2. Enter a VALID Email Address for Recovery.
3. Click on Enable Remote Management.
4. Press Save to complete the process.
5. Navigate off the page and come back. (reload)

6. The server will return a Username and a Password to access your router online.

Server is located at: <https://manage.mofimanager.com> or Use the Button above called "Open Remote Management Dashboard"

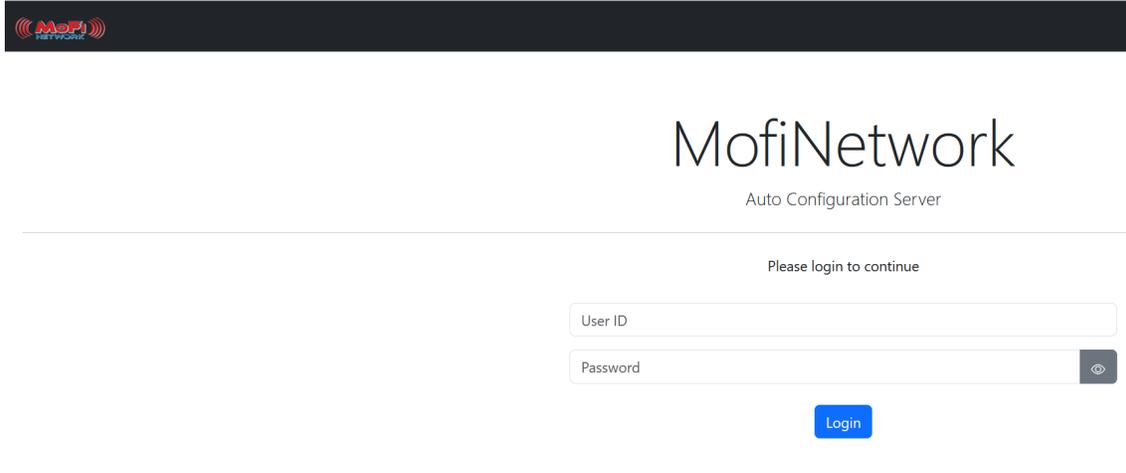
NOTE: Please make a note of the returned password (unless you change it inside the portal) since if you factory-default/reset the router and re-enable the remote management portal will still be the original password.

Please contact [support@mofinetwork.com](mailto:support@mofinetwork.com) to reset your password and provide router id and the recovery email to confirm.

Please REBOOT/UNPLUG the router after everything has been setup to allow the router to provision.

The router will automatically upload its info to the server on reboot.

Once you visit <https://manage.mofimanager.com> or Use the Button above called "Open Remote Management Dashboard" you can log in using the username (MAC address of your router) and the password that was displayed above.



Once you are logged in, you will see an interface similar to the one below:



ID: This show your ID for your router that is internet to MOFI NETWORK

User: This is your MAC Address on your router

Version: This is the firmware version that is being used on your router

Model: This is the model router you are using

Serial: This is your MAC Address

**Connected VIA:** This will show how you are connected, WAN or 4G/LTE

**IP Address:** Your public IP address you are assigned. Note that your internal IP address assigned by the provider might be different since by default, most providers provide a private IP address

**Last Seen:** This is the last time the server has seen your router

**Edit:** In this section, once you click on that, you will have the option to change your password on the server. Default is admin

**Router/Wifi Password:** You can change both your Router Admin password and/or your Wifi password in this section

**Wifi SSID:** Section to change the network name on your router

**Wifi Status:** Section to turn wifi on and off.

**Show Remote Gui:** Section to allow or disable the option to turn on/off remote management after it has been enabled. You sometimes might not want to have the ability to disable the remote management by the user and this is how you can do this.

**Bandwidth:** Ability to turn on and off bandwidth monitoring

Once bandwidth is hit, you will still be able to access the router via this management interface but you will have no internet.

**Firmware Operation:** Ability to push a firmware update to the router

**Factory Default:** Ability to do a factory default on the router

**Reboot:** Ability to reboot router

# MOFI CLOUD LINK

## STATIC DEDICATED PUBLIC IP SERVICE

Do you need a public IP address or do you know what it is?

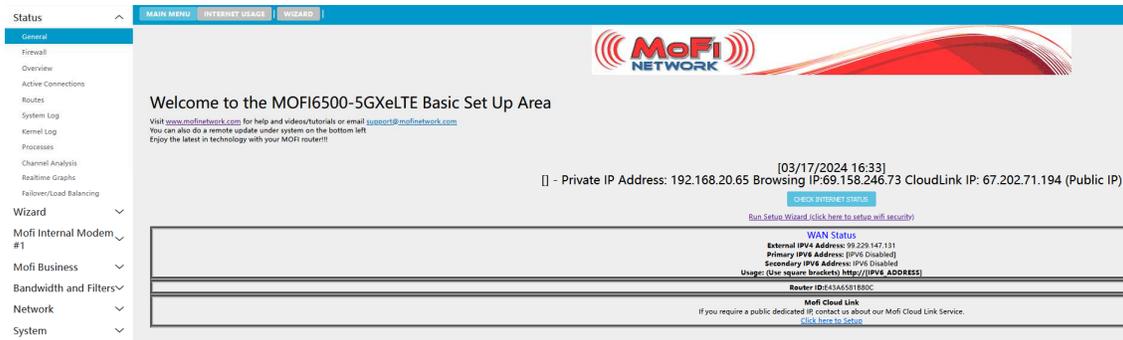
You are given what is referred to as a Private IP address by 99% of all providers.

With a private IP address, you cannot do any port forwarding. If you have a device that needs to forward a port like a camera system, you will need to get a public IP address.

There is a misunderstanding regarding whether or not you have a public IP.

Note every internet service needs a public IP to browse the web but that does not mean you have a public IP. There is a way to check which IP address your service provider assigned you.

To see what IP address you are getting you could log into the router and then click on **Check Internet Status**.



If both IP's are the same, then you have a public IP.

The MOFI CLOUD would make a great solution.

The MOFI CLOUD will give you a dedicated static public IP address.

This implies that your IP address will not change and it won't be shared with anyone. Even if the provider has closed some ports, it'll always have all of its ports open.

A wonderful benefit of the MOFI CLOUD is it does not matter what connection or provider you use, you will always have the same IP.

If you have a cellular connection and decide to change your provider, it would not matter. Your IP address will not change.

To sign up for the MOFI Cloud Link, contact us and we will set you up with a 7 days free trial

By phone 1-888-499-0123 or email: [sales@mofinetwork.com](mailto:sales@mofinetwork.com)

## Instructions on how to set this up

- Log into the router
- Go to Business then Mofi Cloud

The screenshot shows the 'Cloudlink' configuration page in a router's web interface. The page is titled 'Cloudlink' and has a subtitle 'Provides a Static ip to dynamic accounts'. Below this, there is a section for 'Global options'. A note at the top states: 'This is Mofi Cloudlink which assigns a PUBLIC IP to thisrouter so that you may connect remotely to this router's GUI,camera, DVR systems, or Alarms, Smart Home Monitoring,IPPremium Service - Please contact support@mofinetwork.com to register an account with Static Public IP'. Below the note, there are several configuration options:

- Enable CloudLink:**
- Server:** VPN Servers
- Location:** 02-340.13 (Note: We will supply you with a location select it here!)
- Username:** cloudlink7194
- Password:** \*\*\*\*\*
- IP-Passthrough:** OFF
- DMZ:**  (Passes All Traffic to ONE LAN IP)
- SSH (Remote Access):** OFF
- ROUTER GUI (Remote Access):** ON
- Advanced Settings:**  (Advance Settings-not needed for regular use. (Optional))
- Tunnel Mode:** Split Mode - Only MAC Address(es) defined below will use VPN
- Auto Find Best MTU:**
- MTU:** 1428 (Overrides Default MTU for vpn interface)
- Auto Calc Best MSS:**
- Override Calculated MSS:** 1200 (Default: MSS=MTU-40)

At the bottom of the page, there is a status bar that says 'Connecting... Please refresh screen'.

- Check the box to Enable CloudLink
- Select the location that your account is on (you should find this information in the email that we sent you)
- Enter the Username and Password
- Then hit save and reboot the router

Once the router is up you should have your public IP address assigned and you will be able to access your router from anywhere.

## Preparing your device for port forwarding:

If you would like to add a device like a video camera recorder (DVR) or any other device to get this public IP address and be able to access those devices remotely, then you will have to add those devices under the MOFI Cloudlink section.

List of Devices that will use the VPN in Split Mode

Label	MAC Address	IPv4 Address
This section contains no values yet		

ADD

SAVE RESET

- Going back to the MOFI Cloud section, there is an option to add your device that you want to use with the public IP address. You can add as many devices that you require.
- Add the MAC address and the IPv4 Address associated with that device.
- Hit save and the change will take effect immediately

## Static Lease:

For some customers, you might want to make a static IP router (this is not needed normally). In order to do that:

- Log into the router
- Go to Network and then DHCP
- Scroll to the bottom and under Static Lease, click on Add
- Enter a name to identify your device and select the MAC address for it and set the IP address that you want it to use
- Hit Save once you are done and then reboot the router

## Port Forwarding:

Once you have the MOFI Cloud Link up and running, then follow the steps below to forward the ports that you need:

- Log into the router
- Go to Network and then Port Forwarding

Port forwarding allows to provide network services in the internal network to an external network.

If you have a static IP on a device, you should enable a device scan at boot up that is located in Overview -> Connected Devices -> Configure. This will let the MOFI detect your static setting automatically as well as add the device automatically to the static route that is located in Network -> DHCP and then Static Leases

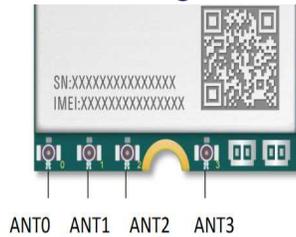
Name	Select External Source	Protocol	External port	Internal IP address	Internal port
(optional)	Select Wan or VPN Source (make sure if split tunneling that device is in the list)				(optional)
PortFwd	Cellular/Wan/Repeater	TCP+UDP	9999	... Please choose ...	9999
	Cellular/Wan/Repeater				
	Cloudlink/Vpn				

- You will have to use CloudLink/VPN instead of WAN for the External Source
- Select the Internal IP address of the device that you are trying to forward the port to
- Type in your desired ports for the external/internet port.
- Then hit save and then reboot the router.

That should complete the port forwarding process.

# Module Specs

CAT19 module using the Quectel RM520-GL



The connection from the module to the outside metal enclosure is as follows:

- ANT0 is the Primary #1
- ANT1 is the Secondary #1
- ANT2 is the Secondary #2
- ANT3 is the Primary #2

The 2 most important connector on the MOFI6500-5GxLTE-RM520 is the Primary#1 and Primary #2 Connector

**There must be an antennas or external antenna connected to the Primary #1 cellular antenna port for this unit to get a connection.**

Pin Name	I/O	Description	Comment
ANT0	AIO	Antenna 0 interface:	
		5G NR: <ul style="list-style-type: none"> <li>- Refarmed: LB TX0 /PRX &amp; MHB TX0 /PRX &amp; UHB TX1/DRX</li> <li>- n41 TX0/PRX</li> <li>- n77/n78/n79 TX1/DRX</li> </ul> LTE: LB TX0/PRX & MHB TX0/PRX & UHB TX1/DRX WCDMA: LMB TRX	
ANT1	AIO	Antenna 1 interface:	LB: 617–960 MHz MHB: 1452–2690 MHz UHB: 3400–3800 MHz n77/n78: 3300–4200 MHz n79: 4400–5000 MHz LAA: 5150-5925 MHz
		5G NR: <ul style="list-style-type: none"> <li>- Refarmed: MHB PRX MIMO &amp; UHB PRX MIMO</li> <li>- n41 PRX MIMO</li> <li>- n77/n78/n79 PRX MIMO</li> </ul> LTE: MHB PRX MIMO & UHB PRX MIMO & LAA PRX GNSS: L5	
ANT2	AIO	Antenna 2 interface:	
		5G NR: <ul style="list-style-type: none"> <li>- Refarmed: MHB TX1 <sup>13</sup>/ DRX MIMO &amp; UHB TX0/PRX</li> <li>- n41 TX1/DRX MIMO</li> </ul>	

<sup>13</sup> MHB TX1 will be active when supporting Sub 2.8 GHz EN-DC.

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		- n77/n78/n79 TX0/PRX
		LTE: MHB TX1 <sup>13</sup> /DRX MIMO & UHB TX0/PRX
		Antenna 3 interface:
		5G NR:
		- Refarmed: LB TX1 / DRX & MHB DRX & UHB DRX MIMO
ANT3	AIO	- n41 DRX
		- n77/n78/n79 DRX MIMO
		LTE: LB TX1/DRX & MHB DRX & UHB DRX MIMO & LAA DRX
		WCDMA: LMB DRX
		GNSS: L1

---

CAT19 module using the Quectel RM520-GL

SA data rates: 2.4Gbps (DL) / 900Mbps (UL)

NSA data rates: 3.4Gbps (DL) / 550Mbps (UL) 5 x Carrier Aggregations

HSPA+: 42Mbps DL, 5.76 UL

TD-HSDPA/HSUPA: 2.8Mbps DL, 2.2Mbps UL

EDGE: Multi Slot Class 12 236.8 kbps DL & UL

GPRS: Multi Slot Class 10 85.6 kbps DL & UL

LTE Supported Bands: B1, B2, B3, B4, B5, B6, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71

5G Supported Bands: N1, N2, N3, N5, N7, N8, N12, N13, N14, N18, N20, N25, N26, N28, N29, N30, N38, N40, N41, N48, N66, N70, N71, N75, N76, N77, N78, N79

An LTE band is the frequencies that the provider is using.  
Here are some common bands for various providers.

AT&T: B2, B4, B5, B12/B17, B14, B30, B66

T-Mobile: B2, B4, B5, B12/B17, B66, B71

Verizon: B2, B4, B5, B13, B66

# BAND LOCK

## Manually Setting LTE Band

An LTE band is the frequencies that the provider is using. Here are some potential bands for various providers.

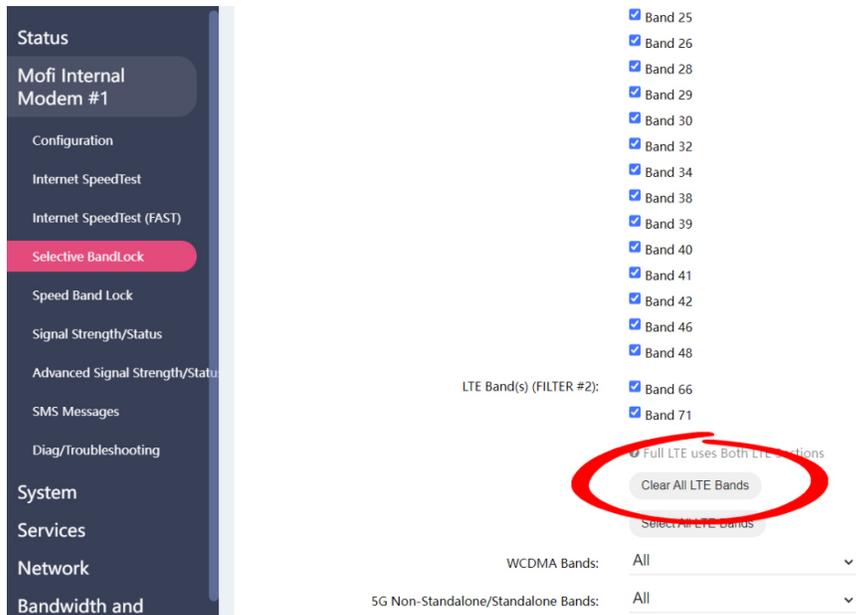
If using the MOFI6500-5GXeLTE-RM520  
AT&T: B2, B4, B5, B12/B17, B14, B30, B66  
T-Mobile: B2, B4, B5, B12/B17, B66, B71  
Verizon: B2, B4, B5, B13, B66

To do a selective band lock, follow the steps below:

- First log into the router by visiting 192.168.10.1 on your browser
- From the list on the left click on **Network** and then go to **Selective Band Lock**



- At this point from the drop down menu of the LTE bands, select **Custom**.
- You might have all the LTE bands checked (you might see a blue check mark beside each LTE band name).
- The next thing you should do is click on the button that says **Clear All LTE Bands**



- Now you will need to check only the bands that you want the router to lock on to. For example if you have AT&T and perhaps Band 4 and Band 66 is better in your area. So you would check the boxes for Band 4 and Band 66 and then hit Save on the bottom right hand corner.
- Allow the router a minute or two for the change to take effect. Once it is done, your router should be locked on to the bands that you have specifically selected.

**NOTE:** *Selective Band Lock is effective in situations where a particular band might be slowing the speed of your connection after the speed band lock. So with selective band lock you will have the ability to add or remove a certain band and then finally lock on to the bands that might perform best in your area.*

## Speed Band Lock

- First log into the router by visiting 192.168.10.1 on your browser
- From the list on the left Click on **MOFI Internal Modem** and then **Speed Band Lock**



- Please select your Internet service provider from the list (AT&T/T-Mobile/Verizon etc),
- **Start Scan.** Note: this process will take about 10-15 minutes and the router will go through all the available bands in your area and then finally lock on to the best bands for your carrier.
- Once the process is done, you can view the results of the band lock under Bandwidth Test Status.

**NOTE:** In some cases, one slow band might be slowing down all the speeds in the router. For example, after speed band lock the router locked on to Band 2, 4 and 12. However, from the bandwidth test status you can see that Band 2 has a download speed of about 50mbps, Band 4 has 70mbps but Band 12 has only about 2mbps download. In that case you might want to uncheck Band 12 or the whole speed of the connection might suffer. In order to do that you will have to do a **Selective Band Lock** (please see our Selective Band Lock page for further instruction)

---

# EXTERNAL CONNECTORS

DC Jack for Power Input (110-220V input, 12V DC output, 12-30VDC Range Input)  
(Recommended inline fuse for vehicle installations: 3A fast-blow)  
12 Volts DC output 110/120 Volts 3.5 AMPS fully UL certified AC Wall Power Adapter  
4 x RJ45 for LAN ports 10/100/1000 GIGABIT (can be used as multi WAN ports)  
1 x RJ45 for WAN port 10/100/1000 GIGABIT (can be used as a LAN port)  
1 x Read USB 2.0 Port + 1 x SIDE USB 3.0 Port  
1 x Factory Default Reset Button  
5 x 5 dBi Premium External SMA Antennas for WiFi  
4 x 5 dBi Premium Wide Band External SMA Antennas for 3G/4G/LTE/5G cellular signal  
Note this model uses 4 x Cellular Antennas that are included.  
2 x 4FF SIM Slots (small nano SIM card), you must get SIM card from provider or current device, contact MOFI Network for more info if needed

CPU: 1.3GHz  
RAM 1GB (DDR4 1GB 2400MT/s)  
ROM 128GB (SYSTEM MEMORY)

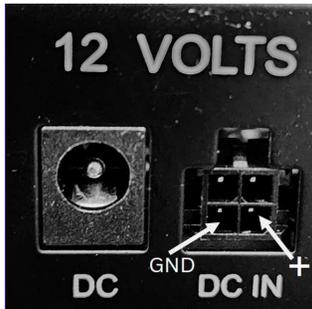
## Physical Dimension

260 mm x 140 mm x 33 mm (10in x 5.5in x 1.3in)  
Weight 340gram or 1.6 lb

Operating Temperature -30 Celsius to +75 Celsius (-22 Fahrenheit to +167 Fahrenheit)  
Storage Temperature -40 Celsius to +90 Celsius (-40 Fahrenheit to +194 Fahrenheit)

## Molex Power Connector Pinout

Units can handle 12-30 Volts



# BANDWIDTH MONITORING

If you want to set a limit of usage per device, this is where you set this.

1. You will need to enable Bandwidth Monitoring

To Enable, this, go to Bandwidth & Filters on the left hand side

Then Check the Enable option and set the day of the month that your billing cycle starts over at.

Then Save and Reboot router

What this will now do is show the individual usage of all devices connect to router. This is a nice way to see if a pc is infected with a virus if for example you are not using it and you noticed an unusual high usage.

Note it can take up to 5 mins for the usage to be updated in this page.

The screenshot shows the 'Bandwidth Monitoring' configuration page. On the left is a navigation menu with 'Bandwidth & Filters' selected. The main content area is titled 'Bandwidth Monitoring' and contains the following sections:

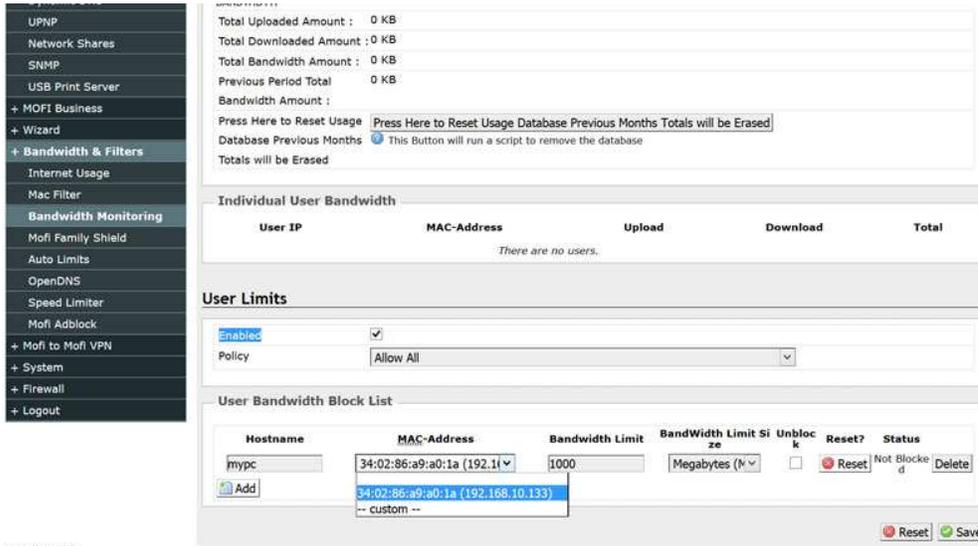
- INFORMATION**: A text box explaining that the feature monitors usage of all devices connected to the router. It instructs the user to check the 'Enabled' option and select a 'Reset Day' for the feature to be active. It notes that the monthly usage resets with the provider's billing cycle.
- Bandwidth Usage Settings**: A section with three controls:
  - Enabled**: A checkbox labeled 'This will enable the Bandwidth Monitoring per User' which is checked.
  - Reset Month**: A dropdown menu labeled 'Enter Month to Reset Database' with 'Every Month' selected.
  - Reset Day**: A dropdown menu labeled 'Enter Your Billing Date to Reset Billing Period' with '29th' selected.
- Bandwidth Usage Amounts in Monitored Period**: A section showing usage statistics:
  - BANDWIDTH**
  - Total Uploaded Amount : 0 KB
  - Total Downloaded Amount : 0 KB
  - Total Bandwidth Amount : 0 KB
  - Previous Period Total : 0 KB
  - Bandwidth Amount :
- Press Here to Reset Usage Database Previous Months Totals will be Erased**: A button with a blue icon and text: 'This Button will run a script to remove the database Totals will be Erased'.
- Individual User Bandwidth**: A table header with columns: 'User IP', 'MAC-Address', 'Upload', 'Download', and 'Total'.

# Bandwidth - USER LIMITS

Make sure the Bandwidth Monitor is enabled as explained above.

If you are looking to set a limit of data use to an individual device, you would enable the User Limits

Enable the User Limits by clicking on the check box



Click on Add and add the device you want to set the limit for. Note you will need to know the MAC address of the device that you want to set the limit. You can also see the IP address that the MAC is associated to.

Set the Limit you want, then save and reboot router.

When the user hits this limit, they will not have any access to use more data. You have the ability to override this by checking the Unblock Option if you need to as well as see if the limit has been ready by looking as the status as the image is shown above.

# TROUBLESHOOTING

Here are some basic troubleshooting steps:

Here is a video to look at also

<https://www.youtube.com/watch?v=KPqnsHaPA0&t=3s>

For most customers, the first step in trouble shooting is to do a module reset then a factory default.

Log into router

http://192.168.10.1

username: root

password: admin

after you log in

go to mofi internal modem

then on the bottom, click the button to reset the module

this will reset the module and reboot the router

once that is done

close your internet browser

make sure you are connect back to the MOFI wifi or via Ethernet cable

then log back in

once you are in

go to system then factory default

then perform reset

this will reset and reboot router

if you can't get into the router, you can reset it manually by power off then on the router

when the power led is solid

then press and hold the reset button down for 10 seconds and then release

after a few seconds, you will see power LED start to flash and then go solid after about 1-2 mins

if you see this, then the router should be reset.

once router is back up

the internet should work, if not, close your internet browser

make sure you are connect back to the MOFI wifi or via Ethernet cable

then log back in

Go to Mofi Internal Modem then click on the Configuration Tab

What does it say for the carrier ID?

By seeing the carrier ID, you know that the SIM card is being read fine.

What does it say for the phone number?

If the sim card is activated, a phone number should show up there

If this is still not working,

You should contact your provider and verify what APN (access point name) that you need use.

Once you know what APN you need to use, log into the router and go to mofi internal modem

Then click on country and select custom apn

Then enter the apn you need to use, Then save

After it is saved, reboot the router

If this is still not working, ensure that you have all 4 antennas on and you are getting a proper signal.

## Regulatory Compliance Notices

### FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, 22 and 24 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 or more 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 or television technician for help.

### Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by MoFiNetwork could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

### Exposure Information to Radio Frequency Energy

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

### European Regulations

The product has been designed, tested and manufactured according to the European R&TTE directive 1999/5/EC.

