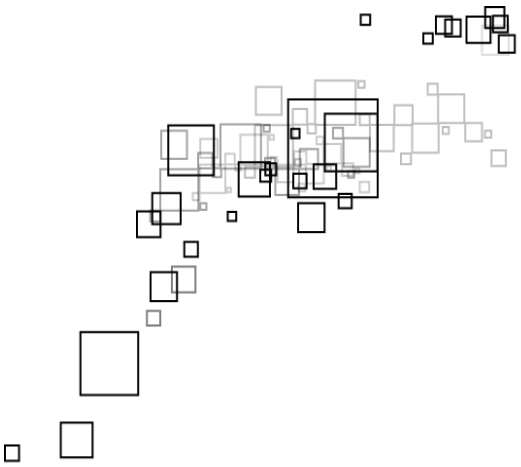
MOFI6500-5GXeLTE-RM520-HP
Advanced High Performance Router
Updated Manual can be located

at: www.MoFiNetwork.com

1-888-499-0123 (Toll Free)



User Manual

Please note that is it 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 1.2

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About the Product

The MOFI6500-5GXeLTE-RM520-HP is a powerful cellular router featuring a 1.3GHz CPU and extended Wi-Fi 6 coverage for enhanced range and performance.

Powered by the x62 5G solution, this router utilizes the Quectel RM520-GL cellular module, compatible with all 4G/LTE and 5G networks.

Key Features:

- **SIM Slots**: 2 x Nano SIM slots (4FF)
- **Antenna Inputs**: 4 x external cellular antenna inputs, plus 5 x Wi-Fi antennas
- **Ethernet Ports**: 4 x 100/1000 LAN ports and 1 x 100/1000 WAN port
- **USB Ports**: 2 x USB ports
- **Console Port**: External serial console port
- **Power Inputs**: 2 x power inputs (standard barrel connection and 4-pin Molex connector)
- **LED Control**: Includes an LED ON/OFF switch, perfect for dim environments like RVs or during the night

With its rugged metal casing, the MOFI6500-5GXeLTE-RM520-HP houses a blazing-fast 1.3GHz CPU, 1GB of high-speed RAM, and 128MB of system memory.

It features built-in power amplification for both 2.4GHz and 5GHz wireless signals, utilizing five external Wi-Fi antennas and Wi-Fi 6 technology.

This router creates a secure Wi-Fi network by supporting the latest wireless security standards to prevent unauthorized access.

It offers protection through 64/128-bit WEP, WPA, WPA2, and WPA3 protocols. Additionally, it incorporates dual active firewalls (SPI and NAT) to defend against potential online threats.

Features

- **High-Performance Solution**: Designed for mission-critical 4G/LTE/5G connectivity.
- **USB Modem Support**: Connects to 4G/LTE/5G USB modems for full mobility.
- **Built-in Amplifiers**: Enhance Wi-Fi range and strength, particularly on the 5GHz band, outperforming lower-quality routers.
- **WAN and Gigabit Ports**: Includes a WAN port and four 10/100/1000M ports (full Gigabit support).
- **Robust Security**: Supports 64/128-bit WEP, WPA, WPA2, and WPA3, ensuring a secure Wi-Fi network and preventing unauthorized access.
- **Detachable Antennas**: Offers flexible gain performance for both cellular and Wi-Fi connections, with the option for outdoor external antennas.
- **Auto Failover**: Automatically switches to cellular connection if the Cable/DSL/Satellite connection is lost, reverting back once the primary connection is restored.
- **Additional Resources**: Discover more features at mofinetwork.com and check out our YouTube channel for helpful videos: MOFI Network YouTube.
- **Support**: Feel free to reach out anytime at support@mofinetwork.com.

Requirements

To ensure a smooth setup, your computer must meet the following minimum requirements:

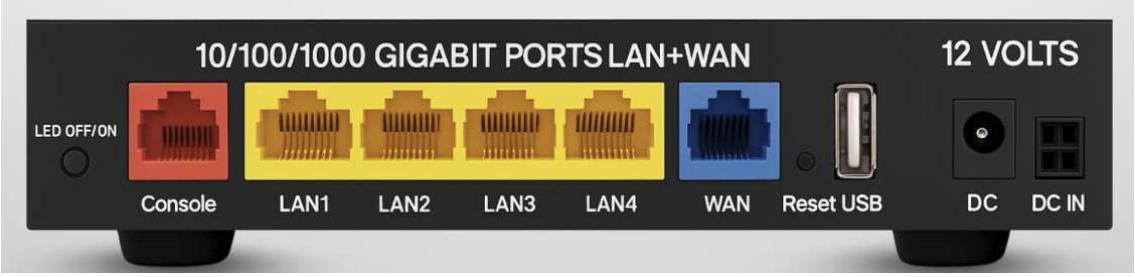
- An internet browser to access the web
- An Ethernet network adapter or a Wi-Fi network adapter
- The MOFI router is compatible with virtually any operating system and device.

Device Design - Front Panel

Images above is the 4 cellular antenna 5G model, depend on what model you have, it maybe be no cellular for the non module version, 2 cellular antennas for the LTE model or 4 cellular antennas for the 5G model.

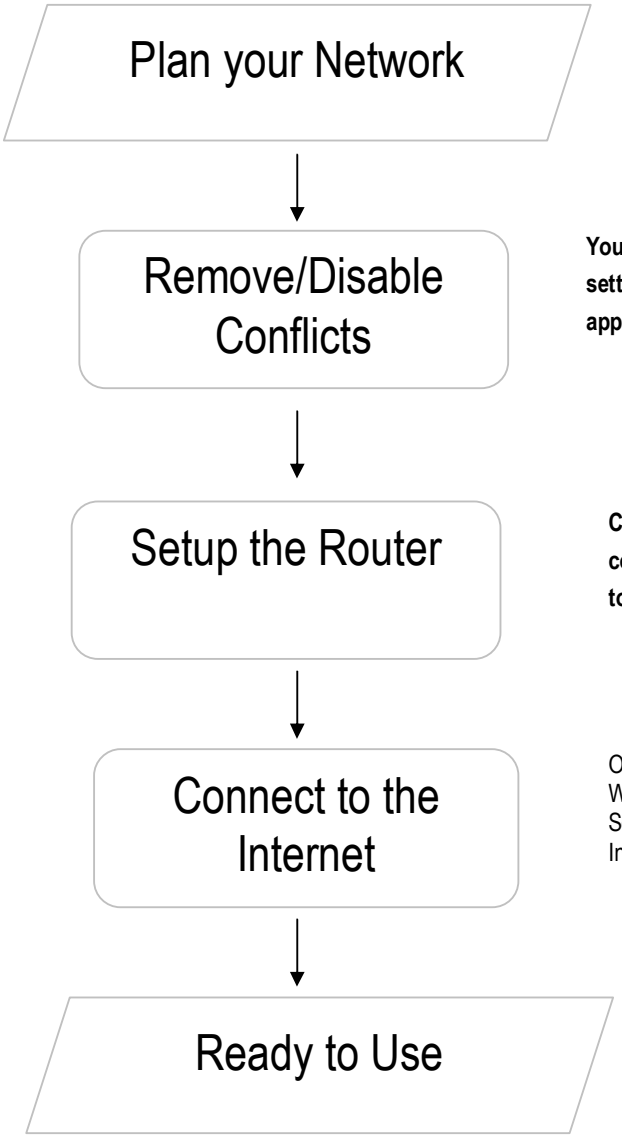
LED	Behavior	Description
Power/Boot Status	Blink/Solid	**Blink when booting, Solid when competed boot.**
Internet	On	Internet using the SIM Card
	Off	No Internet access
	BLINKING	Using the WAN Internet
Wi-Fi	On	Wireless is enabled (will blink to show the wireless traffic)
	Off	Wireless is disabled
	Blinking 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



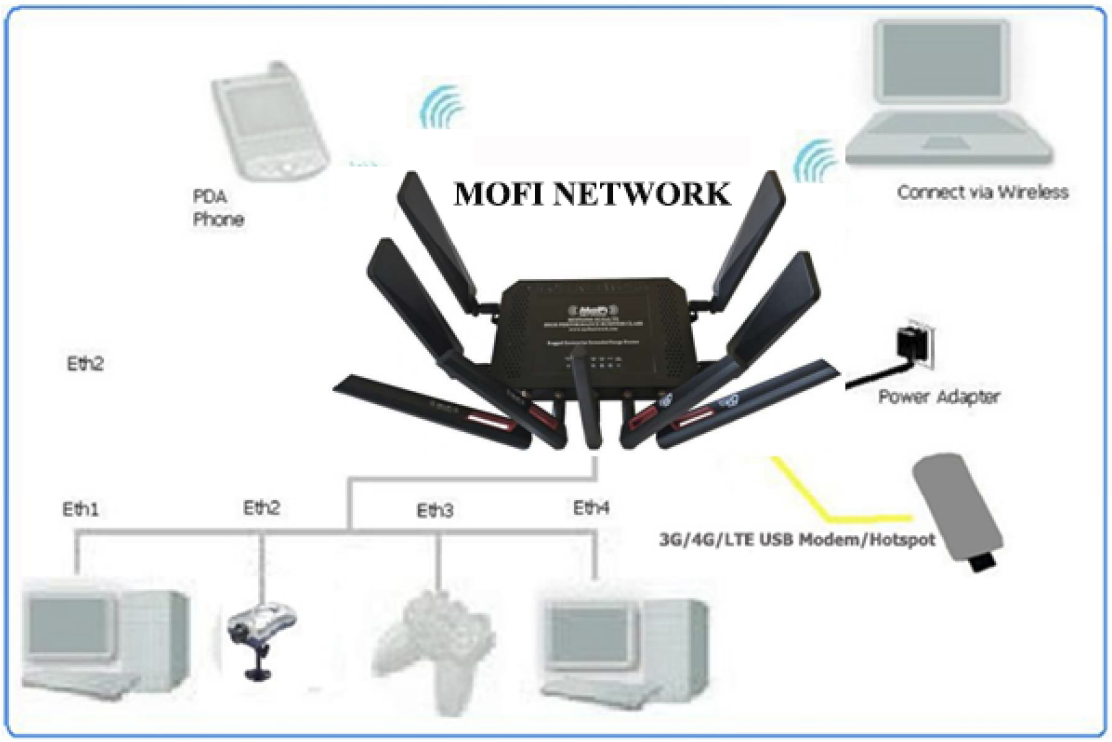
Label	Description
Ethernet Port 1-4	Connecting with computers/devices using an Ethernet cable
WAN	Connect to a modem Cable/DSL/Satellite using an Ethernet cable
Reset	Press for 10 seconds to reset to the Factory Default.
Power Jack	Use 12V 3.5A Power Adapter

Getting Started

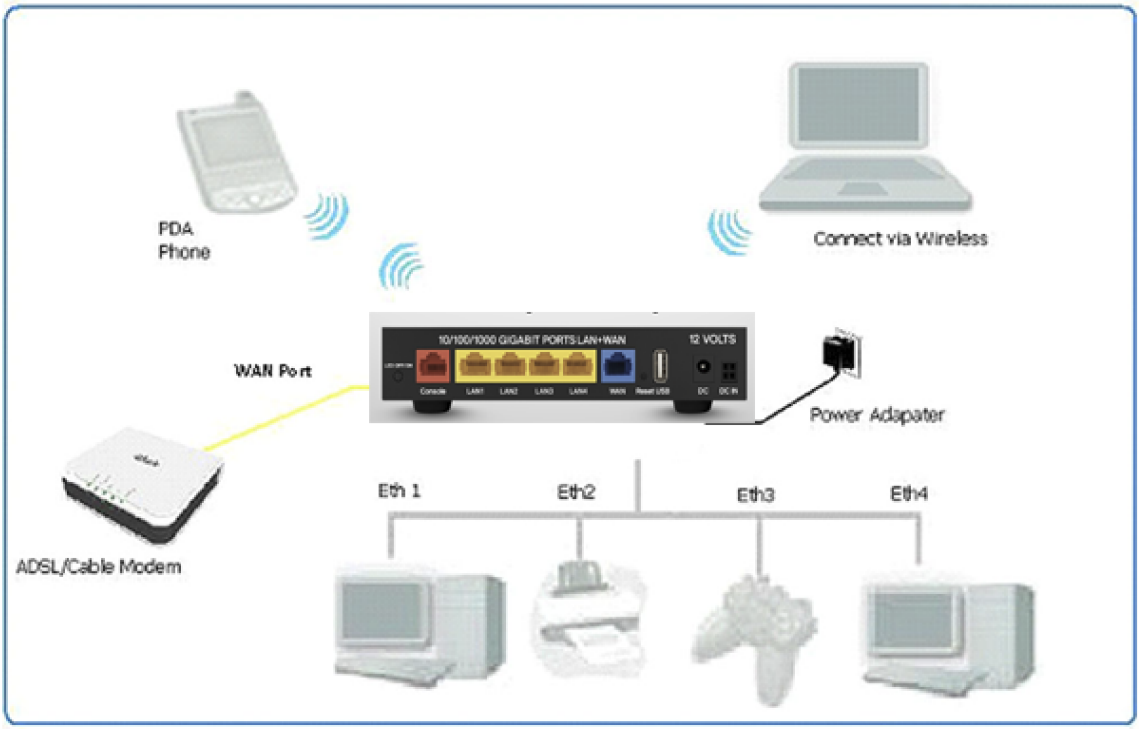


Plan Your Network

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 ensure a smooth router installation, it's important to eliminate any potential conflicts that could disrupt the process. Possible conflicts 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 can interfere with the installation of your router. Be sure to remove or disable these programs before you begin.

If you have any of the applications listed above (or similar ones) installed on your computer, please follow the manufacturer's instructions to remove or disable them.

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

Configuring TCP/IP Settings

To ensure your computer is using the default TCP/IP settings, follow these steps:

1. Click the **Start** button, then select **Run** to open the Run dialog box.
2. Type ncpa.cpl and click **OK** to open the Network Connections window.
3. Right-click on **Local Area Connection** and select **Properties** to open the Local Area Connection Properties dialog.
4. Select **Internet Protocol (TCP/IP)** and click **Properties** to open the Internet Protocol (TCP/IP) dialog.
5. Choose **Obtain an IP address automatically**.
6. Click **OK** to close the Internet Protocol (TCP/IP) dialog.
7. Click **OK** again to close the Local Area Connection Properties dialog.

Configuring Internet Properties

To adjust your Internet Properties, follow these steps:

1. Click the **Start** button, then select **Run** to open the Run dialog box.
2. Type inetcpl.cpl and click **OK** to open the Internet Properties window.
3. Navigate to the **Connections** tab.
4. Under **Dial-up and Virtual Private Network settings**, select **Never dial a connection**.
5. Click **OK** to close the Internet Properties window.

Removing Temporary Internet Files

To clear temporary Internet files, which are stored from websites you've visited, follow these steps:

1. Click the **Start** button, then select **Run** to open the Run dialog box.
2. Type control and click **OK** to open the Control Panel.
3. Double-click **Internet Options** to access the Internet Options settings.
4. In the **Temporary Internet Files** section, click **Delete Cookies**.
5. Click **Delete Files**.
6. Finally, click **OK** to close the Internet Properties window.

Installing your Router

The MOFI6500-5GXeLTE-RM520-HP SIM Version can serve multiple functions, including acting as a 4G/LTE/5G router or as a standard Cable/DSL/Satellite high-speed router, even compatible with Starlink.

Using a SIM Card from Your Provider

1. **Insert SIM Card**: Place your SIM card into the designated slot on the side of the router and connect all antennas. Note the SIM Card will face down as in the picture below. The router features two Nano (4FF) SIM slots, labeled #1 and #2. To switch to SIM Slot #2, log into the router, navigate to Mofi Internal Modem, and select SIM CARD CONTROL.

2. **Power the Router**: Connect the power cable to the router's power jack and plug it into a wall socket.
3. **Connect to Your PC**: Use an Ethernet cable to connect your PC to any available Ethernet port (avoid using the WAN port) or connect wirelessly. It's recommended to connect to the 5GHz WiFi.
4. **Check Connection**: Your connection should now be active. If not, verify your settings. Check if the APN is correct and ensure the router is reading the SIM card properly. Log into the router, go to Mofi Internal Modem, and click on the configuration tab. The carrier ID should appear, indicating the SIM card is recognized. At the bottom of that page, confirm the current APN. If it's incorrect, select the appropriate APN from the list or enter a custom APN under the country settings, then save and reboot.

Using a DSL, Cable, or Satellite Modem

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

- DSL, cable, or satellite modem
- Active Internet account

1. **Connect Modem**: Use an Ethernet cable to connect your DSL, Cable, or Satellite modem to the router's WAN port.
2. **Power the Router**: Connect the power cable to the router's power jack and plug it into a wall socket.
3. **Connect to Your PC**: Connect your PC to any 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

Using Starlink Satellite Internet

If you choose to use Starlink:

1. Connect Modem: Use the Starlink Ethernet cable to connect your router's WAN port.

2. Connect Modem: Use the Starlink app to put the Starlink modem in bridg/IP Pass-through mode

3. Power the Router and Starlink off and on: Connect the power cable to the router's power jack and plug it into a wall socket.

4. Connect to Your PC: Connect your PC to any 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's a helpful video to guide you through setting up the MOFI router using the wizard: Setup Video (Note: This is for the MOFI5500, but the setup process is very similar for the MOFI6500).
https://youtu.be/CKUDvZGT31Y

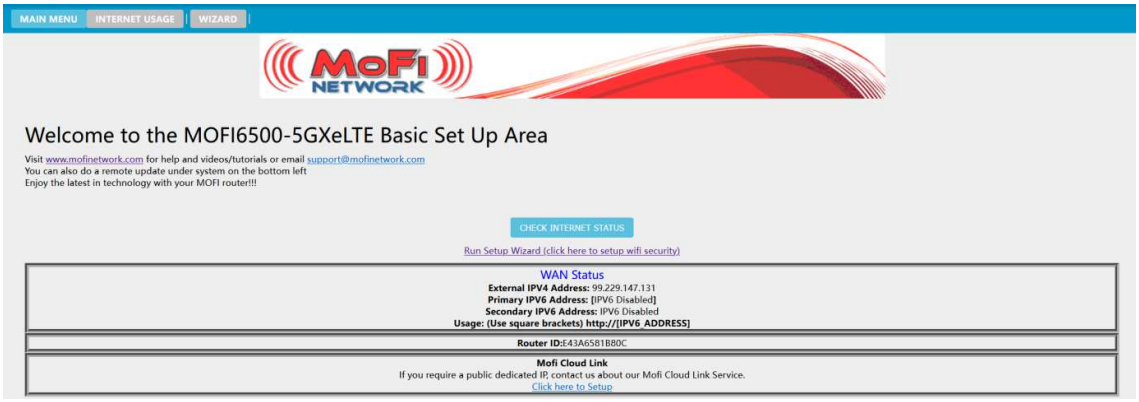
Connecting via Cable, DSL, or Satellite Modem

If you have a cable, DSL, or satellite modem that doesn't require a username or password, simply connect the modem's output to the WAN port of the router. Then, power cycle your modem, and you should be online.

Connecting via 4G/LTE/5G

For a 4G/LTE/5G connection, just insert the SIM card into the router. It should auto-detect and connect. If you need to enter the information manually, follow these steps:

1. Open your web browser.
2. Type http://192.168.10.1 in the address bar and press Enter. This will take you to the login page.
3. Enter your Username and Password. The default Username is root and the password is admin. *Please avoid saving your username and password if prompted by your browser.*
4. Click on the wizard in the top corner and follow the on-screen instructions.

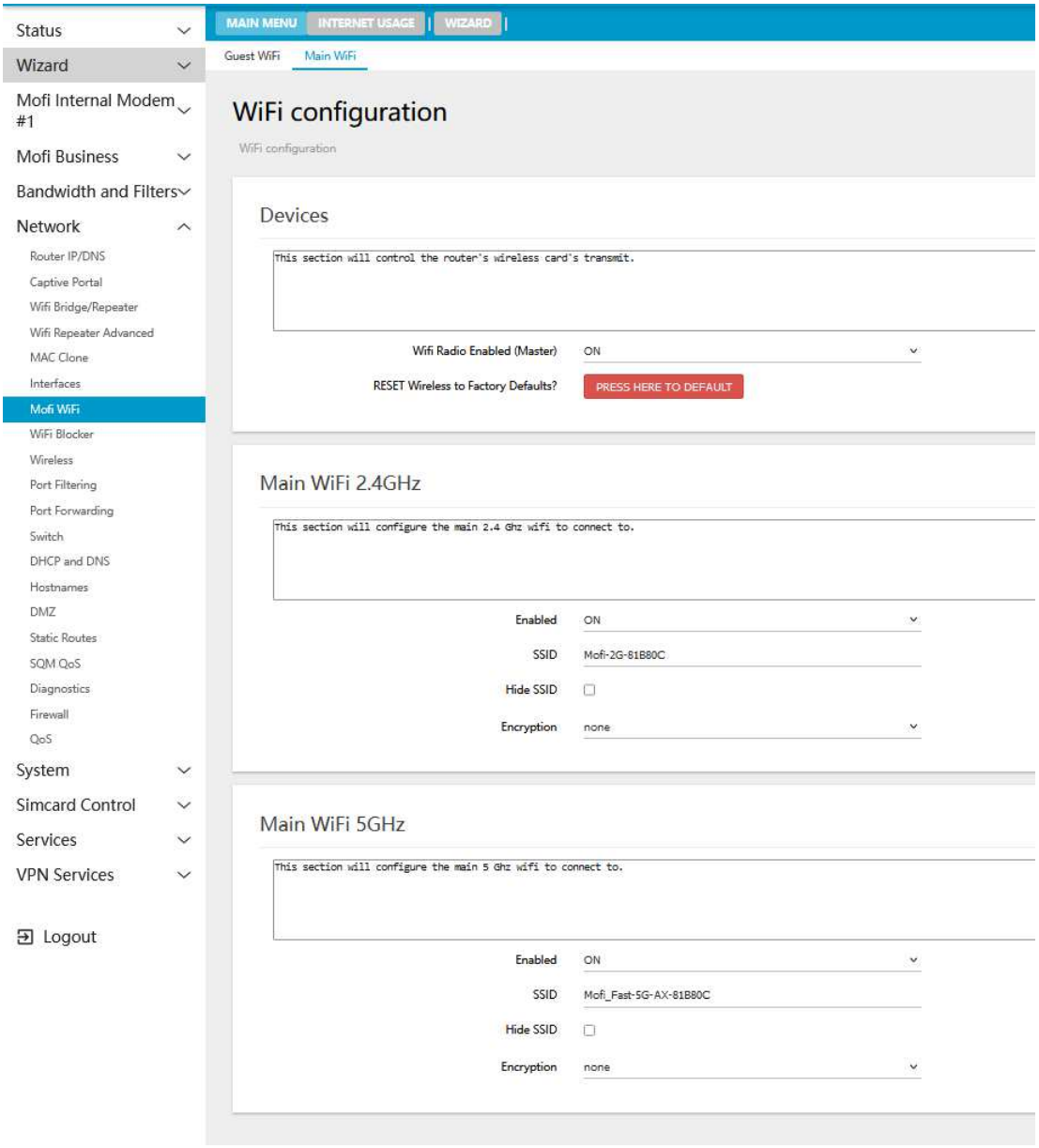


Wireless

By default, the wireless network name is set to MOFINETWORKXXX, where XXX represents the last four digits of your router's MAC address. If you don't need to set up a WiFi name or password, you can skip this step.

To change the network name (ESSID) or add a wireless password, you have two options:

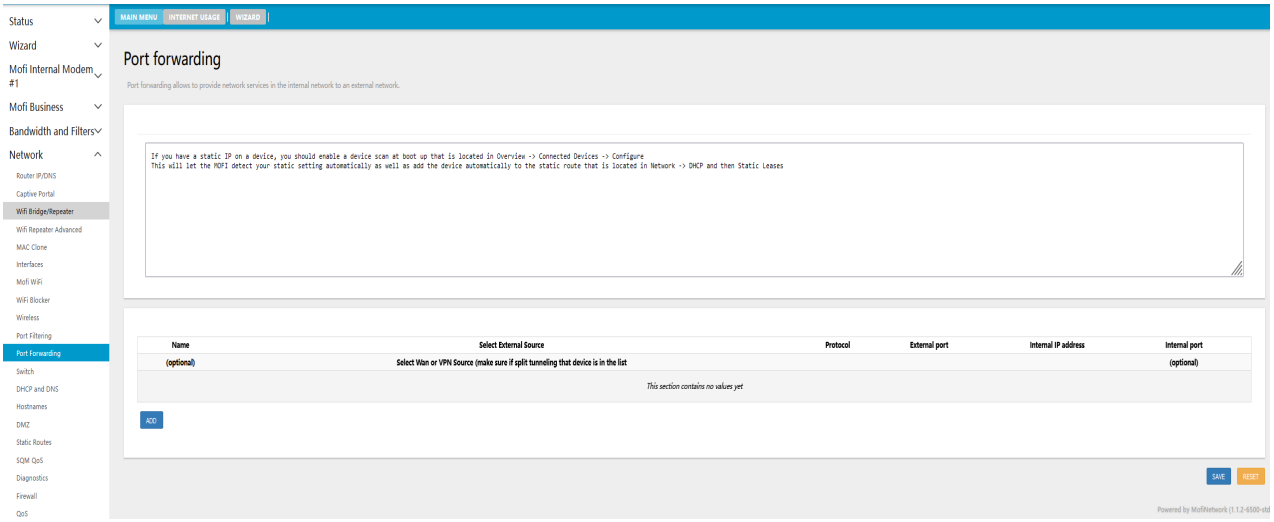
1. Use the wizard for a quick and easy setup.
2. For more control, navigate to **Network → MOFI WiFi**.
   Note: All MOFI6500 models come with dual-band WiFi, meaning your router will broadcast both 2.4GHz and 5GHz wireless connections.



The most commonly used encryption method is WPA2-PSK. It's recommended to choose this option and enter your password in the Password field (minimum of 8 characters). Click "Save" to apply the changes.

How to forward ports:

(Note you will need a public IP address in order to do any port forwarding)
To perform port forwarding, you need a public IP address.
MOFI offers a public IP service tailored to your needs. By default, most cellular connections do not provide a public IP. If you require this service, please contact us for a free trial.



Setting Up Port Forwarding

1. Go to **Network** and click on **Add** under Port Forwarding.
2. Enter a name for the port forwarding rule.
3. Select the protocol you want to use.
4. Enter the external port number you wish to forward (typically, the internal and external ports are the same).
5. Choose the IP address of the device you want to forward to.
6. Click **Save**.

Note: If you are using a mobile internet connection, you likely have a private IP address from your provider, which means port forwarding will not be available.

Options for Obtaining a Public IP:

1. **Contact Your Internet Service Provider:** Some providers may offer a public IP address, but not all do.
2. **Utilize Our Public IP Option:** We can quickly set up a public IP address for you, allowing remote access to your network. Many customers use this service for video camera systems. For assistance, call us toll-free at 1-888-499-0123 or email sales@mofinetwork.com.

How to open ports in the router:

Typically, you shouldn't need to manually open ports, as port forwarding usually does this automatically. However, if you feel it's necessary, double-check first. Below are the default ports that are open:

- **WEB:** 80
- **SSH:** 22
- **HTTPS:** 443
- **RDP:** 3389
- **UDP:** 68

If you need to open additional, less common ports for connecting to your DVR or other devices, follow these instructions:

1. Log into the router.
2. Click on the **Network** tab, then select **Firewall**.
3. Under **Rules**, click **Add**.
4. For the **Name**, enter a description of your choice.
5. **Source Zone:** Leave as WAN/USB.
6. **Protocol:** Select the desired protocol or choose "Any" if unsure.
7. **Source Address:** Leave as default ("any").
8. **Destination Address:** Enter the port number you want to open (e.g., 2100).
9. **Action:** Keep the default setting as "accept".
10. Click **Save & Apply** to save your changes.

Now the port should be open on the router. To utilize this, you may also need to set up a port forwarding rule.

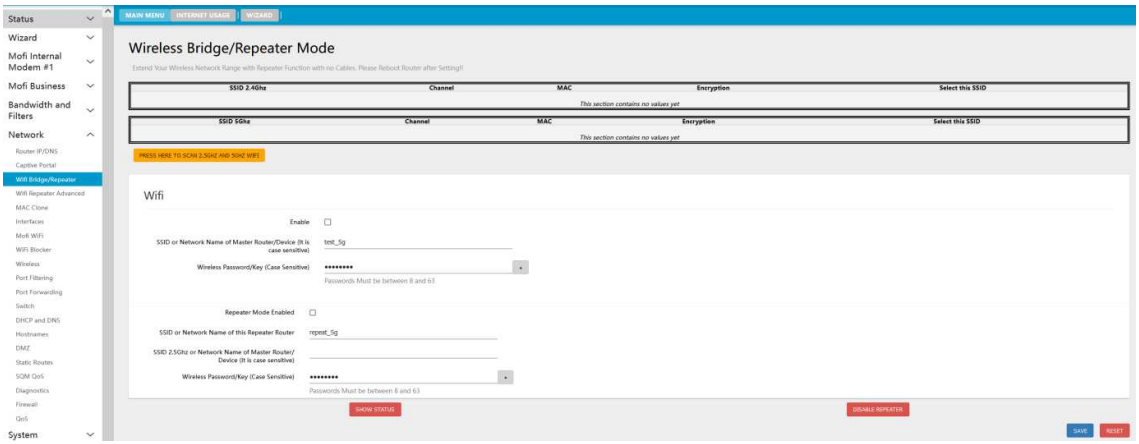
For a simpler process, consider upgrading to version 3.1 or later, which includes a more straightforward port forwarding feature under the Network settings:

1. Click on the **Network** tab and select **Port Forwarding**.
2. Click **Add**.
3. For the **Name**, enter a label for the rule.
4. Select the desired **Protocol**.
5. Enter the **external port** you want to forward.
6. Choose the **IP address** of the device you want to forward to.
7. Click **Save**.

How to Set a Wireless Bridge/Repeater:

Before you begin, ensure you have the SSID (network name) and password for the device you want to connect to, especially if it has security enabled. Remember that passwords are case-sensitive, so enter them exactly as they appear. If you're using a hotspot device like a MiFi unit, you can find the wireless password printed inside the cover.

1. Connect the router to your PC using an Ethernet cable, plugging it into one of the four LAN ports (not the WAN port).
2. Open your web browser and log into the router by visiting:
   http://192.168.10.1
   Username: root
   Password: admin
3. Navigate to **Network** → **WiFi Bridge/Repeater** under the Network section.



Note: All MOFI6500 routers come with dual-band WiFi. Be sure to select the correct band (2.4GHz or 5GHz) for the bridge connection.

1. Under **2.4GHz Scan / 5GHz**, click on **Press Here to Scan** for the desired WiFi band. This will display a list of available wireless networks in your vicinity.
2. Click on **Select Me** next to the network you wish to bridge with.
3. Ensure that the **WiFi 2.4GHz / 5GHz** option is enabled, and verify that the network name is correct. Enter the WiFi password for the selected network.
4. In the **Bridge/Repeater 2.4GHz / 5GHz** section, confirm that it is enabled. This section allows you to set the WiFi name you want to broadcast from your MOFI6500 router. Enter a unique name (it must not match any other nearby networks) and specify the password you wish to use. Click **Save**.

After approximately 30 seconds, the router should connect, and the internet LED will illuminate. It is recommended to power cycle the router at this point.

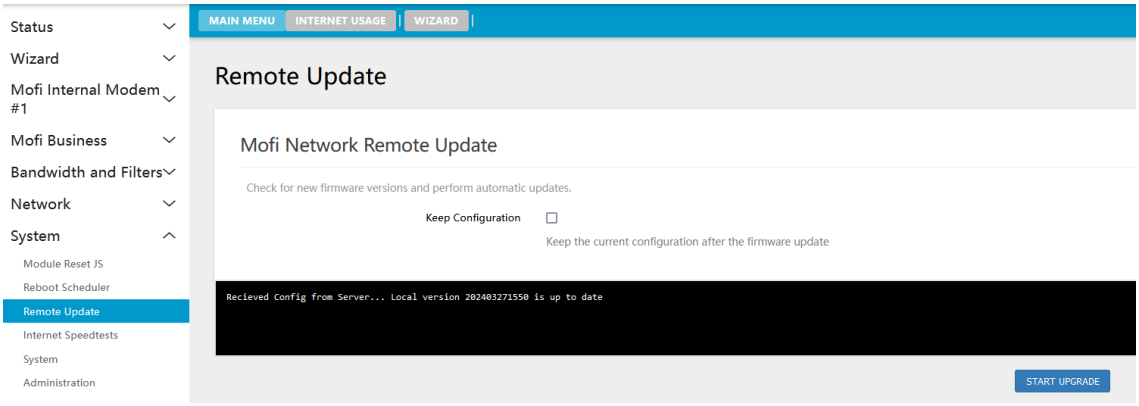
When the router powers back up, you should see the WiFi name you created in step 4, and you should be able to connect to it for internet access.

If you encounter any issues and do not have internet access, double-check that you selected the correct network name and entered the accurate WiFi password.

How to do a Firmware Upgrade:

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

1. **Remote Update**:
   If you have an active internet connection, you can perform a remote update.
   To do this, navigate to **System** → **Remote Update**.



If your router does not have internet access, you will need to perform a manual firmware update.
To do this, visit www.mofinetwork.com and navigate to **Support** → **Downloads**. Select the MOFI6500 download option to obtain the latest firmware.

After downloading the firmware, follow the provided instructions for the update.

Note: Once the firmware update is installed, you will need to perform a factory reset on the router to complete the process.

If you encounter any issues or if the router becomes non-functional during the firmware upgrade, please refer to the section on how to perform a MOFI Recovery.

How to Remote Login into the Router:

Remote login is enabled by default on the MOFI6500 router and can be accessed through ports 80, 81, and 8080, with port 8080 designated as the official remote access port.

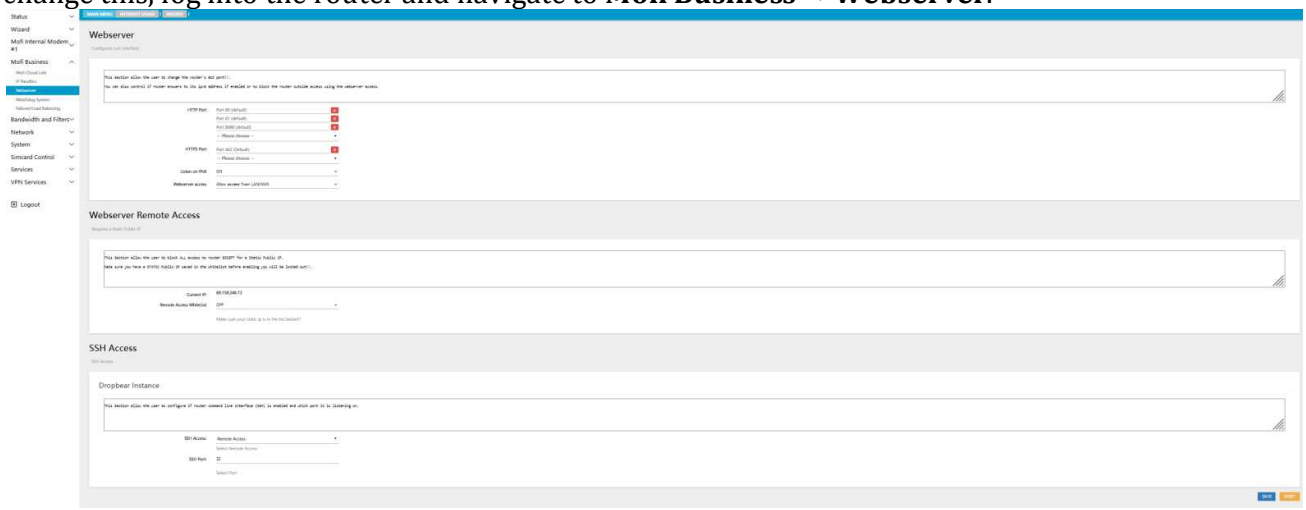
If you have a public IP address, you can access your router remotely by navigating to: http://yourpublicIPaddress:8080

However, if you are using a cellular connection without a public IP option on your account, direct access to the router will not be possible due to NAT restrictions.

For example, if you want to log in directly to a security camera system, you'll need to contact your internet service provider to add a public IP option to your account. Alternatively, you can reach out to us for information on the public IP options we offer.

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

By default, the router is configured to receive connections on ports 80, 81, and 8080. To change this, log into the router and navigate to **Mofi Business → Webserver**.



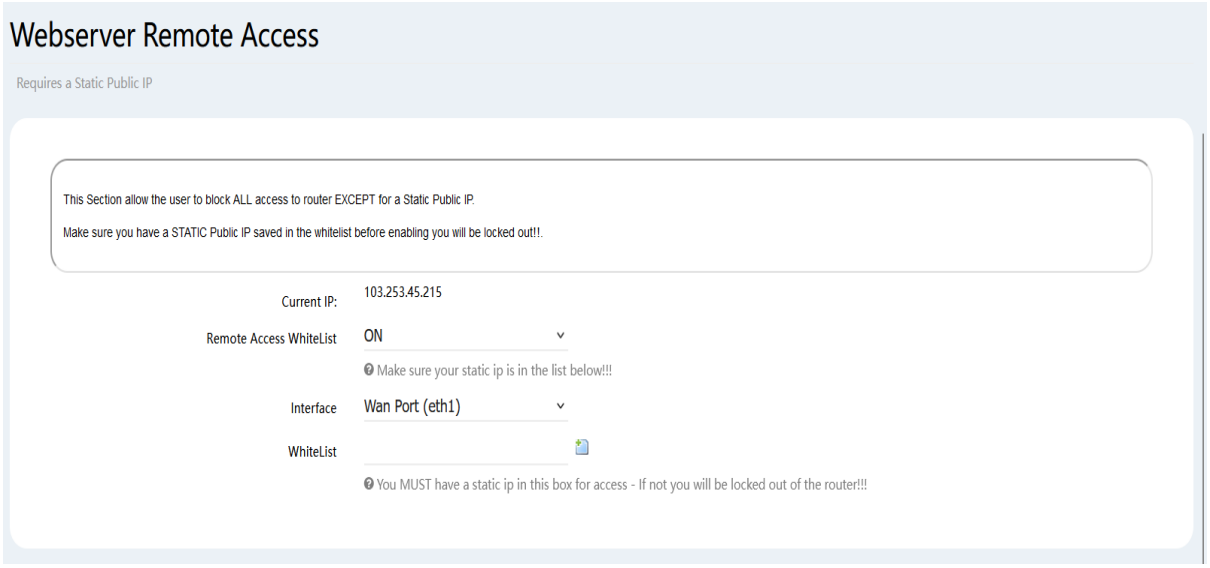
To modify the port:

1. Click on the **HTTP Port** option and select **Custom**.
2. Enter your desired port number (e.g., if you want to use port 90, simply type **90**).

To disable remote access, turn the remote access option off.

If you wish to restrict remote access to specific IP addresses, enable the **Remote Access Whitelist**. Select the current internet connection type you are using (by default, the WAN port is selected).

In the **Whitelist** section, enter the IP address that should have access to the router. To add multiple IP addresses, click the plus icon on the right.



Parental Control Scheduler

The Parental Control Scheduler allows you to automatically manage internet access for individual devices based on their MAC addresses. This feature is particularly useful for restricting internet usage for kids during designated times, ensuring they stay offline when they should be focused on other activities.

Setting Up Parental Control Scheduler on the MOFI6500

1. **Log into the Router:**
   - Open your web browser and enter http://192.168.10.1 in the address bar.
   - Enter the username (root) and password (admin).
2. **Navigate to Parental Controls:**
   - Click on the **"Bandwidth And Filters"** tab in the main menu.
   - Select **"Parental Control"** from the dropdown.
3. **Add a Device:**
   - Click on **"Add Device"**.
   - Enter the MAC address of the device you want to manage. (You can usually find this in the device settings or on the device itself.)
   - Give the device a name for easy identification.
4. **Set Up Scheduling:**
   - Choose the days and times you want to allow or block internet access for this device.
   - Specify whether you want to allow or deny access during the selected times.
5. **Save Changes:**
   - Click **"Save"** to apply your settings.
6. **Review Settings:**
   - Ensure the rules you created are listed and active.
   - Test the settings by trying to access the internet on the specified device during the scheduled times.

Additional Tips:

- You can repeat the steps for multiple devices as needed.
- Make sure to check for any firmware updates to ensure all features work correctly.
- If you need to adjust settings, you can return to the Parental Control section at any time.

This setup will help you manage internet access effectively for individual devices on your network!

Wi-Fi Speed Limiter

This feature allows you to set specific upload and download speeds for your WiFi signal. You can configure two separate WiFi networks, each with individually controlled speed limits. This is particularly useful for businesses, such as bus companies or retail stores, that want to offer internet access to customers while preventing any single user from consuming excessive bandwidth, which could slow down the connection for everyone else or use up too much data.

To set up a WiFi speed limiter on the MOFI6500, follow these steps:

1. **Log Into the Router:**
   - Open a web browser and enter http://192.168.10.1.
   - Enter your username (default: root) and password (default: admin).
2. **Navigate to Bandwidth and Filters.**
   - Select **Wi-Fi Speed Limiter** from the menu.
3. **Enable:**
   - Enable this by changing the OFF to ON under Master Enable.
4. **Set Speed Limits:**
   - For each network, you can specify the **Upload** and **Download** speed limits. Enter your desired values in the respective fields.
5. **Save Changes:**
   - Click on **Save** to apply your settings.
6. **Reboot (if necessary):**
   - If prompted, reboot the router to ensure the new settings take effect.

By following these steps, you can effectively manage bandwidth and ensure a smoother internet experience for all users connected to your MOFI6500 router.

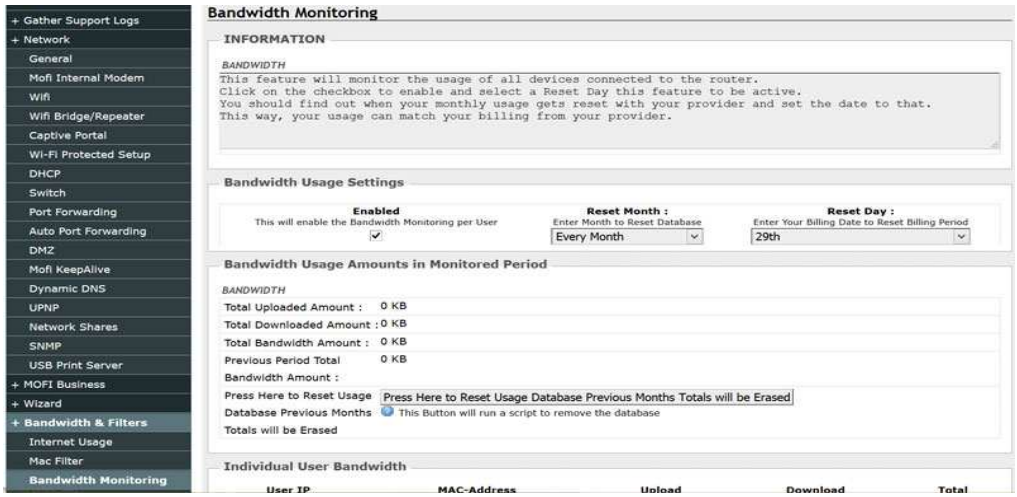
Bandwidth Monitoring

This feature lets you monitor data usage for each individual device at any time during the month. It's especially useful for identifying devices that may be consuming excessive data. To get the most accurate measurements, it's recommended to enable remote management and track bandwidth usage there.

To set up bandwidth usage tracking on a MOFI6500, follow these steps:

1. **Log into the Router**:
    - Open a web browser and enter the router's IP address (usually http://192.168.10.1).
    - Enter your username (default is root) and password (default is admin).
2. **Enable Remote Management**:
    - Navigate to the **System** or **Management** tab.
    - Look for an option labeled **Remote Management** and enable it.
    - Save the changes.
3. **Access Bandwidth Monitoring**:
    - Go to the **Bandwidth And Filters** tab.
    - Select **Bandwidth Monitoring**.
    - Here, you can view the data usage for each connected device.
4. **Enable:**
    - Enable this by turning this on.
5. **Make necessary changes**:
    - You can make changes that best suit you under this menu.
6. **Save Settings**:
    - Make sure to save any changes you've made to ensure they take effect.

After setting this up, you'll have better visibility of data usage for each device on your network



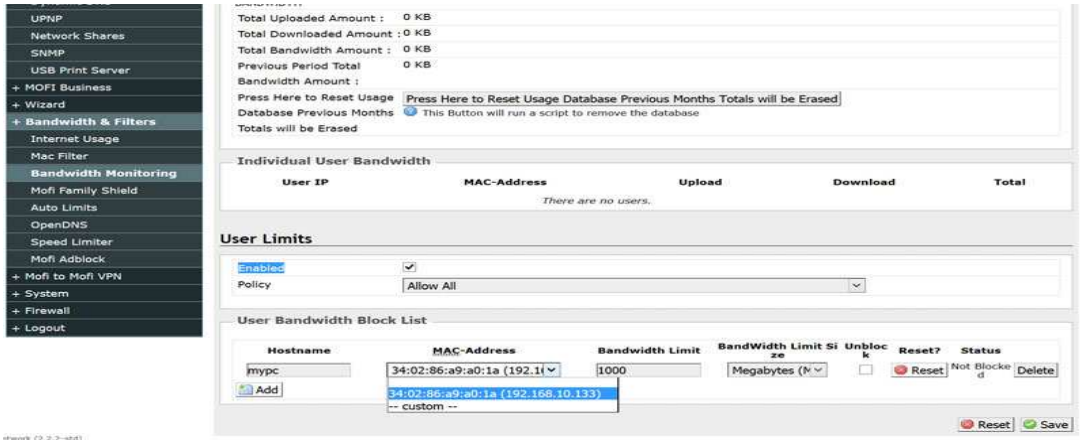
Bandwidth Control

This feature enables you to allocate a specific data limit to individual devices based on their MAC addresses. You can set daily or monthly quotas, so if a user exceeds their allotted data within the designated time, their internet access will be automatically suspended until the quota resets, typically the following day or at the start of the new billing month.

To set up bandwidth control on the MOFI6500, follow these steps:

1. **Log Into the Router**:
   - Open your web browser and enter http://192.168.10.1.
   - Enter your username (root) and password (admin).
2. **Navigate to Bandwidth and Filter Control**:
   - Select **Bandwidth Monitoring** from the options.
3. **Enable Bandwidth Monitoring**:
   - Check the option to enable bandwidth control.
4. **Add a Device**:
   - Click on **Add Device** or similar option.
   - Enter the MAC address of the device you want to set a limit for. You can usually find the MAC address in the device's settings.
5. **Set Data Limits**:
   - Specify the daily or monthly data limit for that device.
   - Choose whether the quota resets daily or monthly.
6. **Save Changes**:
   - Click **Save** or **Apply** to confirm your settings.
7. **Reboot if Necessary**:
   - If prompted, reboot the router to apply the changes.

After setting this up, the specified device will automatically lose internet access if it exceeds the allocated data limit.



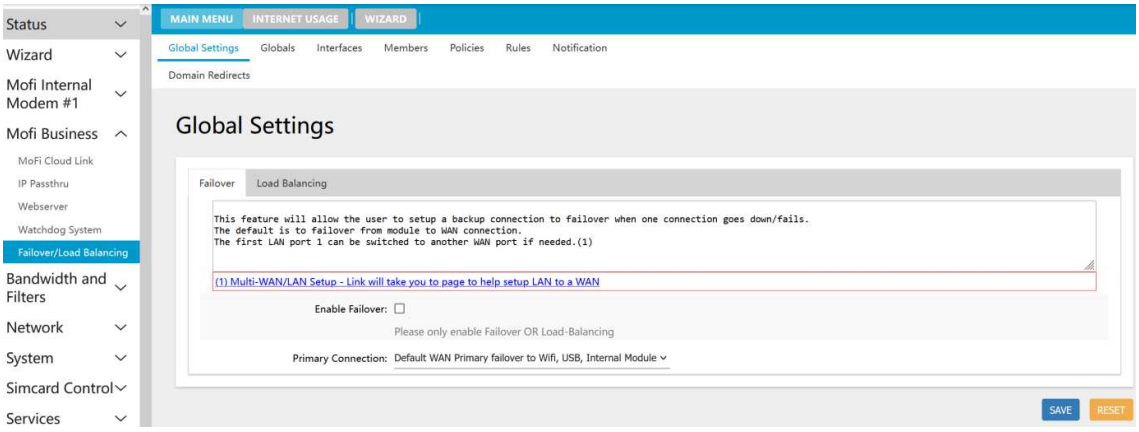
FAIL OVER

Fail Over Feature

For the highest stability, the Fail Over feature can be a lifesaver. This feature is designed for users with two active internet connections. You can designate one connection as the primary, and if it drops or becomes unavailable, the system will automatically switch to the secondary connection. It will revert back to the primary connection when it becomes available again.

To activate Fail Over, follow these steps:

1. Navigate to **Mofi Business → Fail Over / Load Balancing**.
2. Check the box to **Enable**.
3. Most customers prefer to set the WAN connection as primary and the cellular connection as secondary, so you can select the default profile. If you wish to customize this, choose the appropriate option.
4. Click **Save** and reboot the router.



LOAD BALANCING

Load Balancing Feature

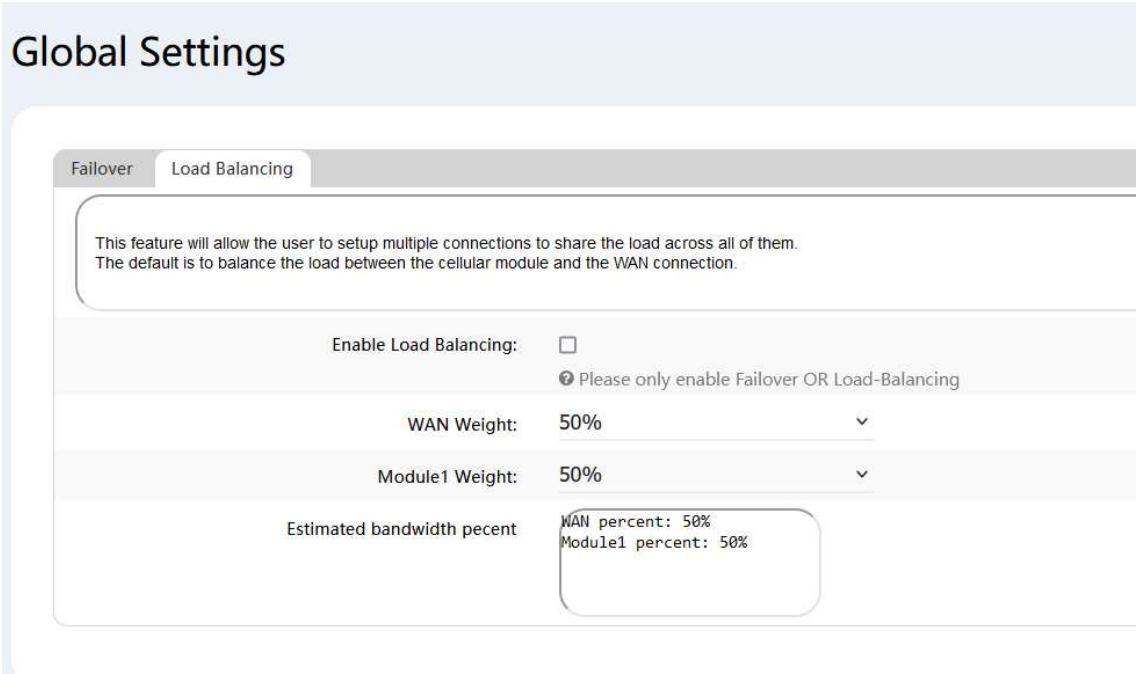
If you need the fastest internet possible, the Load Balancing feature allows you to combine two WAN connections into one.

To activate Load Balancing, follow these steps:

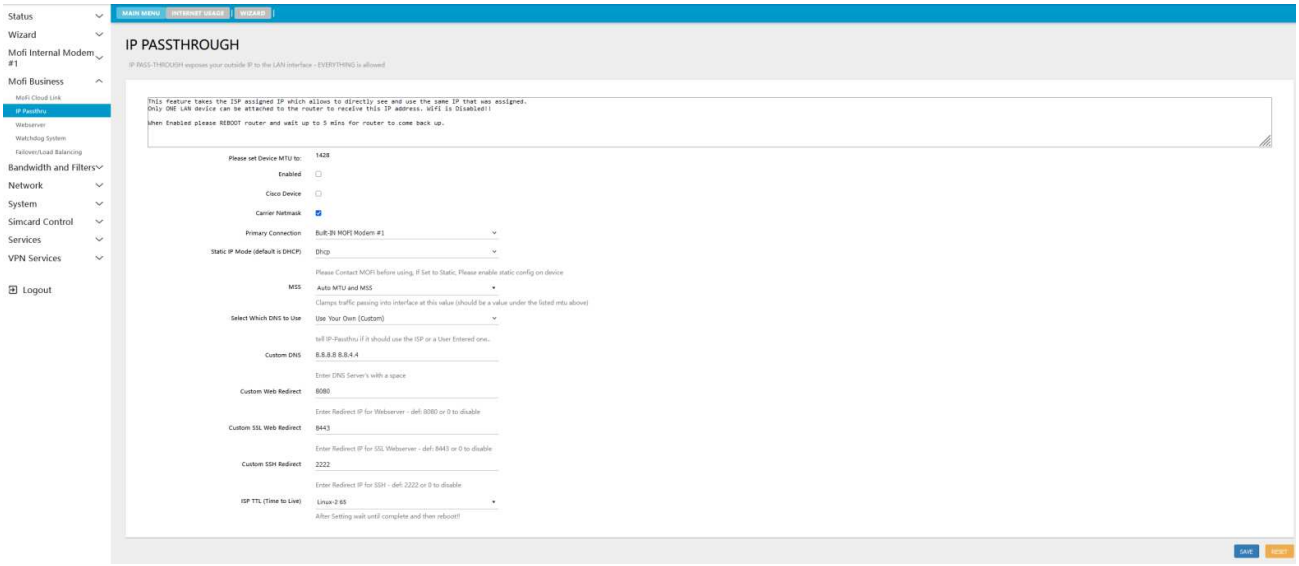
1. Navigate to **Mofi Business → Fail Over/Load Balancing**.
2. Select **Load Balancing**.
3. Check the box labeled **Enable Load Balancing**.
4. Click **Save** and reboot the router.

This feature requires two internet connections: one connected to the WAN port and the other to Port 1.

Load Balancing also provides failover support, so if one connection fails, the other will remain active. When both connections are working, they will work together, ensuring faster speeds than any single connection can provide.



IP Pass Through



IP Pass-Through Feature

The IP Pass-Through feature allows your router to function as a modem, enabling only one device to connect via Ethernet Port 1. This prevents conflicts between two routers.

To enable IP Pass-Through, check the box labeled **Enabled**, then save your changes and reboot the router. Typically, you won't need to modify any of the default settings.

When IP Pass-Through is active, your Wi-Fi will be automatically disabled. All traffic will be directed to the connected device, and if you switch to a different device, you'll need to reboot the router for the changes to take effect.

To access the router while in IP Pass-Through mode, go to http://192.168.10.1:8080, or if you have a public IP address, use http://yourpublicIP:8080.

Keep in mind that most cellular connections provide a private IP address by default, which means port forwarding, will not work. If you need a public IP address, please contact us for options.

If you encounter issues and cannot access the router, you can reset it by holding the reset button on the back for 10 seconds and then releasing it after the router has rebooted.

MOFI RECOVERY (For MOFI6500)

How to recover router from wrong file update or other problem

Boot Recovery Instructions

Step 1: Set Router to Recovery Mode

1. Connect the router to your PC using an Ethernet cable, plugging it into port 1 on the back of the router.
2. Unplug the router and press and hold the reset button located on the back.
3. While holding the reset button, plug the power back into the router.
4. After 15 seconds, release the reset button when you see only two blue LEDs flashing.

Step 2: Configure Your Network Connection to a Static IP Address

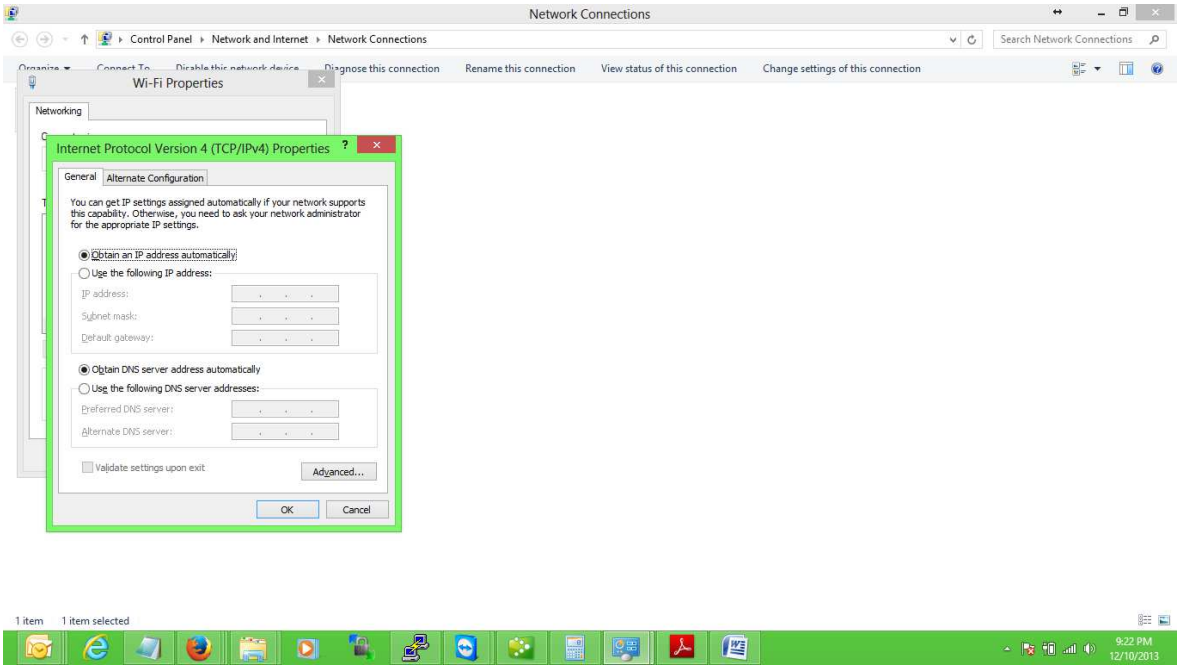
1. Go to **Control Panel → Network and Internet**.
2. Click on **Network and Sharing Center**.
3. Select **Change adapter settings**.
4. Right-click on **Local Area Connection** and choose **Properties**.
5. Highlight **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
6. Enter the following settings:
    - **IP Address:** 192.168.10.7
    - **Subnet Mask:** 255.255.255.0
    - **Default Gateway:** 192.168.10.1
7. Click **OK** to save the settings.

Step 3: Access the MOFI Recovery Interface

1. Open your web browser and go to: http://192.168.10.1.
2. Browse to the file you want to recover and open it to start the process.
3. The router will take approximately 1 minute to complete the recovery. You will notice the power/booting status light will turn off, flash, and then become solid again.

Step 4: Revert Your Network Connection to Automatic

1. Go to **Control Panel → Network and Internet**.
2. Click on **Network and Sharing Center**.
3. Select **Change adapter settings**.
4. Right-click on **Local Area Connection** and choose **Properties**.
5. Highlight **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
6. Select **Obtain an IP address automatically**.
7. Ensure that the DNS setting is also set to **Obtain DNS server address automatically**.
8. Click **OK** to save your changes.



Step 5: Log Into the Router

You can now log back into the router. To do this, go to http://192.168.10.1 and enter the following credentials:

- **Username:** root
- **Password:** admin

Once logged in, you can upload the latest firmware to update the router to the latest version.

MOFI REMOTE MANAGEMENT

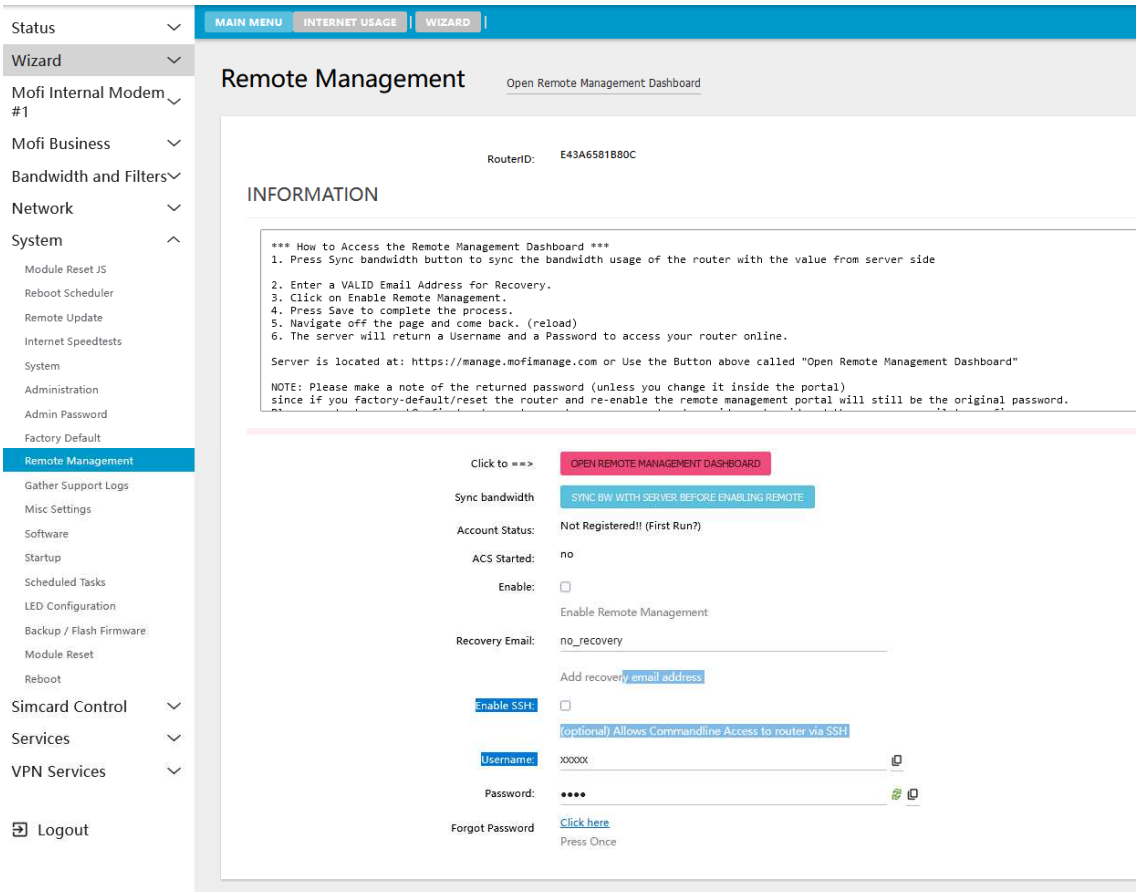
How to Enable Remote Management

With your MOFI router, you can access your router status and make various changes through an online interface on our server. To enable this feature, go to:
Basic Mode → System → Remote Management.

The router will check in with the server every 4 minutes to see if any updates are needed. If there are changes, the router will automatically apply them.

This remote management feature works with both public and private IP addresses, so no special IP settings are required.

If you want to manage multiple routers under a single account, please contact us for more information on how to set this up.



- Press the **Sync Bandwidth** button to synchronize the router's bandwidth usage with the server data.
- Enter a **VALID Email Address** for recovery purposes.
- Click on **Enable Remote Management**.

Click **Save** to complete the process.

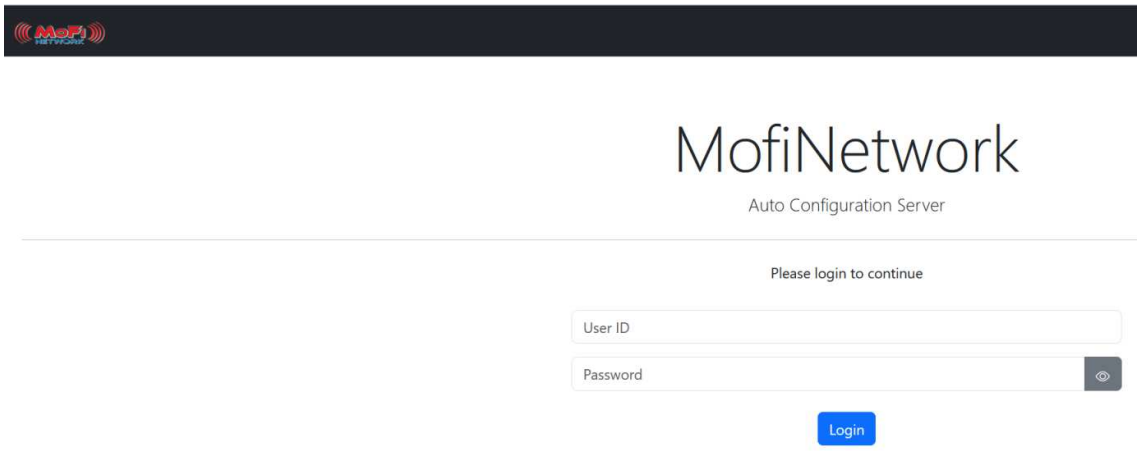
- Navigate away from the page and then return (reload).
- The server will provide you with a **Username** and **Password** to access your router online.

The server is located at: https://manage.mofimanage.com or you can use the button above labeled **"Open Remote Management Dashboard."**

Note: Please remember the password provided (unless you change it within the portal). If you factory reset the router and re-enable remote management, the original password will still apply. To reset your password, contact support@mofinetwork.com and provide your router ID along with the recovery email for confirmation.

After completing the setup, please **reboot or unplug the router** to allow it to provision. The router will automatically upload its information to the server upon reboot.

Once you access https://manage.mofimanage.com or use the **"Open Remote Management Dashboard"** button, you can log in using the username (the MAC address of your router) and the password displayed earlier.



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

Router Information

- **ID:** This shows your router's ID for connecting to the MOFI NETWORK.

- **User:** This is the MAC address of your router.
- **Version:** This indicates the firmware version currently running on your router.
- **Model:** This specifies the model of your router.
- **Serial:** This is also your router's MAC address.
- **Connected VIA:** This shows your connection type, whether it's WAN or 4G/LTE.
- **IP Address:** This is your assigned public IP address. Note that your internal IP address may differ, as most providers assign a private IP by default.
- **Last Seen:** This indicates the last time the server detected your router.
- **Edit:** Clicking this option allows you to change your password on the server (default is "admin").
- **Router/Wi-Fi Password:** Here, you can change both your router admin password and your Wi-Fi password.
- **Wi-Fi SSID:** This section allows you to change your router's network name.
- **Wi-Fi Status:** Use this section to enable or disable Wi-Fi.
- **Show Remote GUI:** This section allows you to enable or disable the option to turn remote management on or off after it has been enabled. You may want to restrict user ability to disable remote management.
- **Bandwidth:** This feature lets you turn bandwidth monitoring on or off. Even if bandwidth limits are reached, you can still access the router through this management interface, but you will lose internet access.
- **Firmware Operation:** This allows you to push firmware updates to the router.
- **Factory Default:** Use this option to restore the router to factory settings.
- **Reboot:** This allows you to reboot the router.

MOFI CLOUD LINK

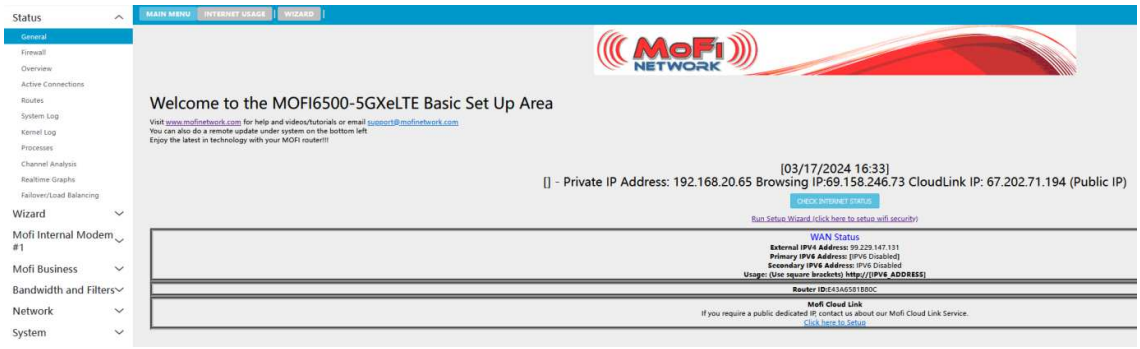
STATIC DEDICATED PUBLIC IP SERVICE

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

Most internet service providers (about 99%) assign a **Private IP address**. With a private IP address, you won't be able to perform port forwarding. If you have a device that requires port forwarding, such as a camera system, you will need to obtain a public IP address.

There is often confusion about whether you have a public IP address. While every internet service needs a public IP to access the web, this does not mean that your connection is assigned a public IP.

To check the IP address assigned by your service provider, log into the router and navigate to **Check Internet Status**.



If both IP addresses are the same, you have a public IP.

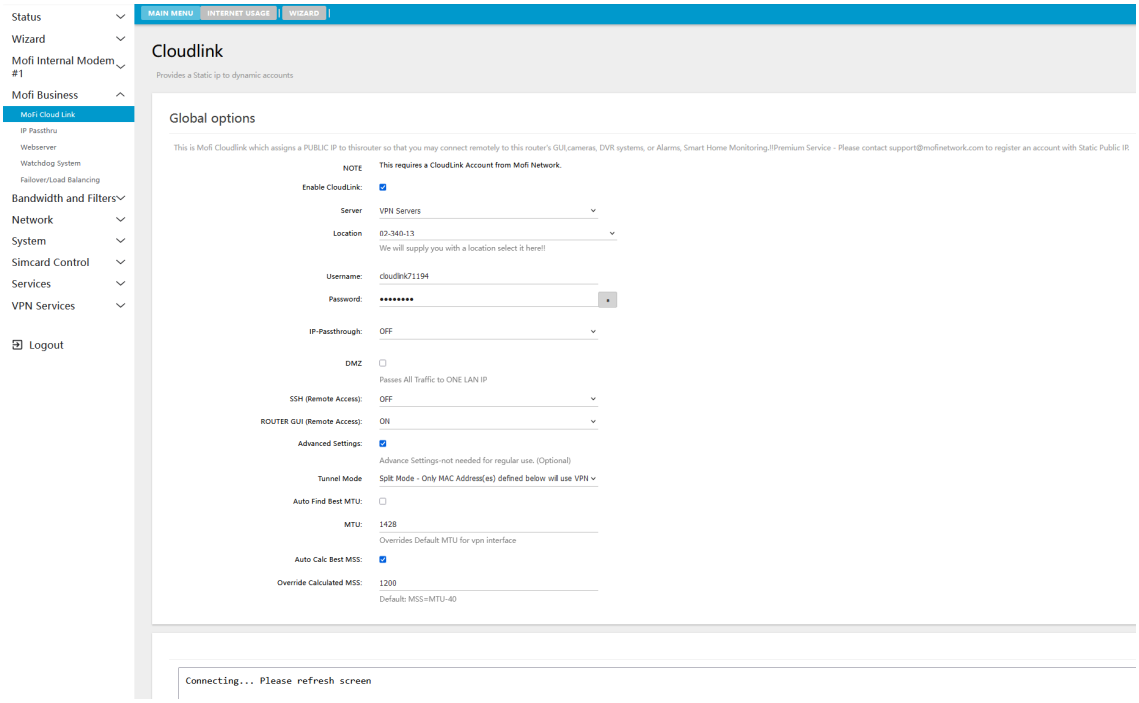
The **MOFI CLOUD** offers an excellent solution by providing a dedicated static public IP address. This means your IP address will remain constant and will not be shared with anyone. Even if your provider closes certain ports, all of your ports will remain open.

One of the great advantages of the MOFI CLOUD is that it doesn't matter which connection or provider you use; your IP address will always stay the same. If you switch your cellular provider, your IP address will not change.

To sign up for the MOFI Cloud Link and start a 7-day free trial, please contact us at 1-888-499-0123 or email us at sales@mofinetwork.com.

Instructions for Setup

1. Log into the router.
2. Navigate to **Business** and then select **MOFI CLOUD**.

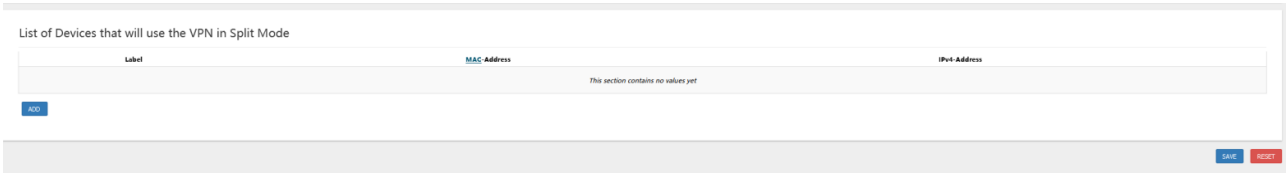


- Check the box to **Enable CloudLink**.
- Select the location associated with your account (this information can be found in the email we sent you).
- Enter your **Username** and **Password**.
- Click **Save** and reboot the router.

Once the router is back online, you should see your public IP address assigned, allowing you to access your router from anywhere.

Preparing your device for port forwarding:

If you want to add a device, such as a video camera recorder (DVR), and access it remotely using your public IP address, you will need to add these devices in the **MOFI CloudLink** section.



- 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:

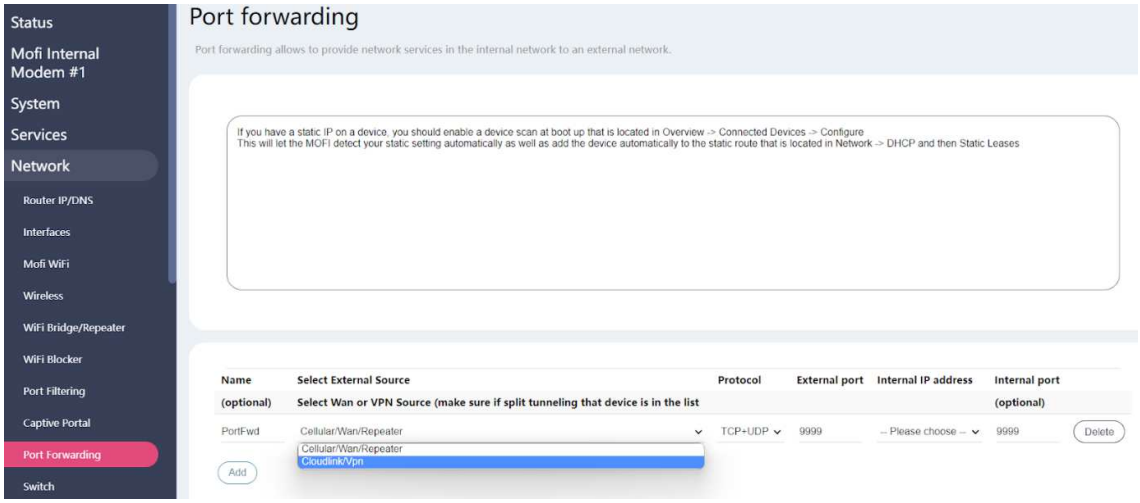
For some customers, setting a static IP for the router may be beneficial (though it's typically not necessary). To do this:

1. Log into the router.
2. Navigate to **Network** and then select **DHCP**.
3. Scroll to the bottom and click on **Add** under **Static Lease**.
4. Enter a name to identify your device, select its MAC address, and set the desired IP address.
5. Click **Save** when you're finished, 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

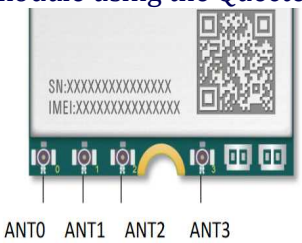


- You will have to use CloudLink/VPN instead of WAN for the External Source
- Select the Internal IP address of the device that you are trying to forward the port to
- Type in your desired ports for the external/internet port.
- Then hit save and then reboot the router.

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 connectors on the MOFI6500-5GXelTE-RM520-HP 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:** – Refarmed: LB TX0 /PRX & MHB TX0 /PRX & UHB TX1/DRX – n41 TX0/PRX – n77/n78/n79 TX1/DRX **LTE:** LB TX0/PRX & MHB TX0/PRX & UHB TX1/DRX **WCDMA:** LMB TRX	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
ANT1	AIO	Antenna 1 interface: **5G NR:** – Refarmed: MHB PRX MIMO & UHB PRX MIMO – n41 PRX MIMO – n77/n78/n79 PRX MIMO **LTE:** MHB PRX MIMO & UHB PRX MIMO & LAA PRX **GNSS:** L5	
ANT2	AIO	Antenna 2 interface: **5G NR:** – Refarmed: MHB TX1 [13]/ DRX MIMO & UHB TX0/PRX – n41 TX1/DRX MIMO	

[13] MHB TX1 will be active when supporting Sub 2.6 GHz EN-DC.

		– n77/n78/n79 TX0/PRX **LTE:** MHB TX1 [13]/DRX MIMO & UHB TX0/PRX
ANT3	AIO	Antenna 3 interface: **5G NR:** – Refarmed: LB TX1 / DRX & MHB DRX & UHB DRX MIMO – 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

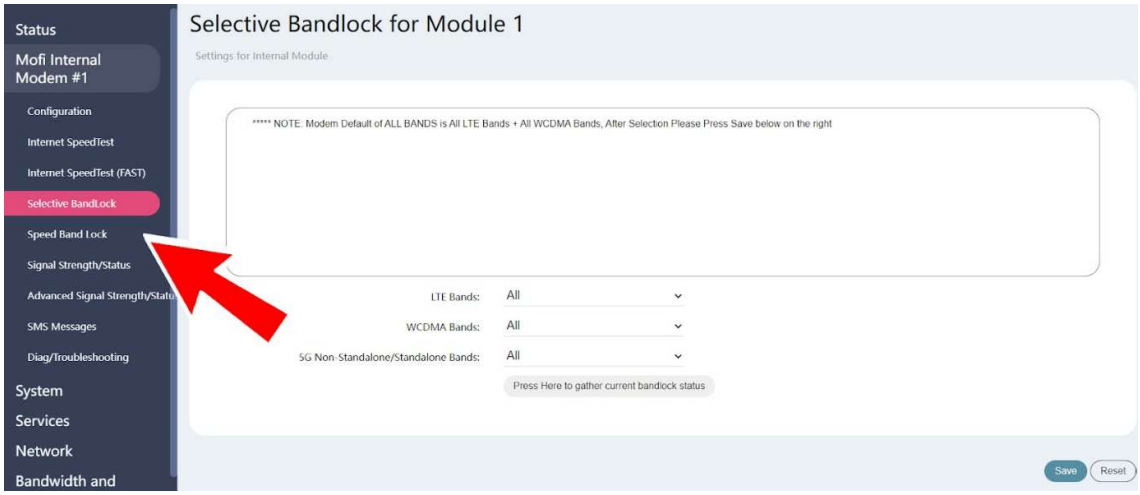
Manually Setting LTE Band

An LTE band refers to the frequency ranges used by your provider. Here are the potential bands for various providers when using the MOFI6500-5GXeLTE-RM520:

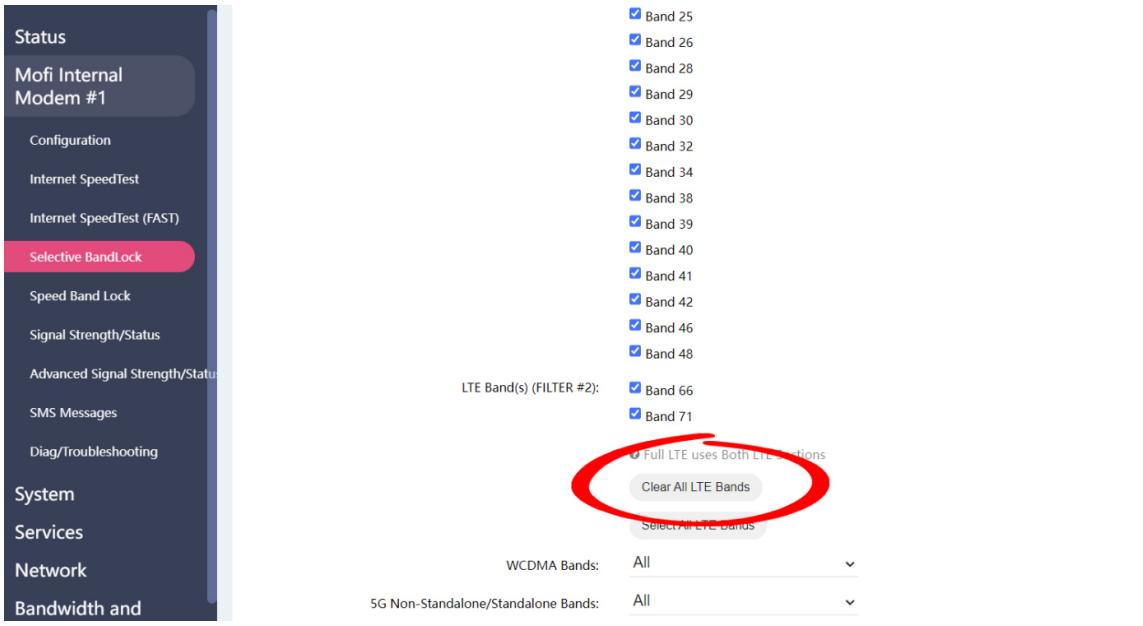
- **AT&T:** B2, B4, B5, B12/B17, B14, B30, B66
- **T-Mobile:** B2, B4, B5, B12/B17, B66, B71
- **Verizon:** B2, B4, B5, B13, B66

To perform a selective band lock, follow these steps:

1. Log into the router by entering **192.168.10.1** in your web browser.
2. From the left-hand menu, click on **MOFI INTERNAL MODEM**, then select **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**

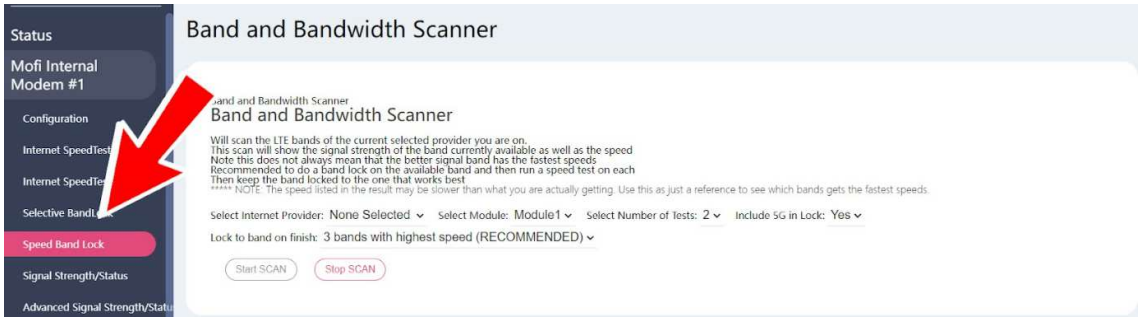


- Now you will need to check only the bands that you want the router to lock on to. For example if you have AT&T and perhaps Band 4 and Band 66 is better in your area. So you would check the boxes for Band 4 and Band 66 and then hit Save on the bottom right hand corner.
- Allow the router a minute or 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**



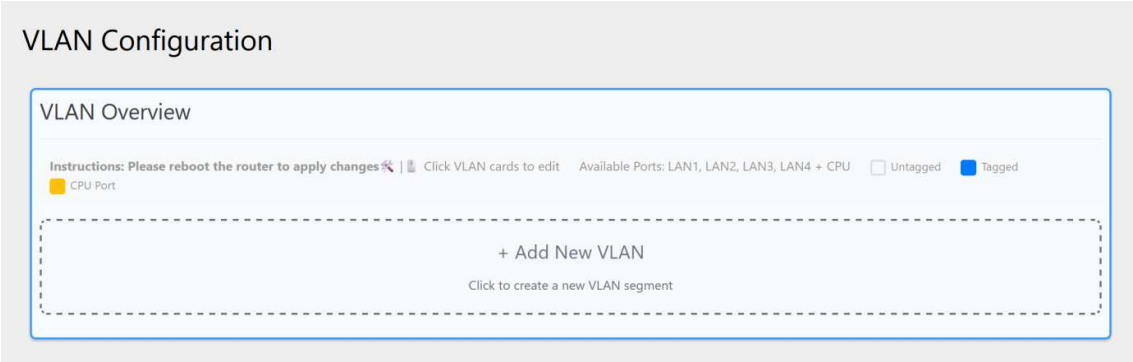
- Please select your Internet service provider from the list (AT&T/T-Mobile/Verizon etc),
- **Start Scan**. Note: this process will take about 10-15 minutes and the router will go through all the available bands in your area and then finally lock on to the best bands for your carrier.
- Once the process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

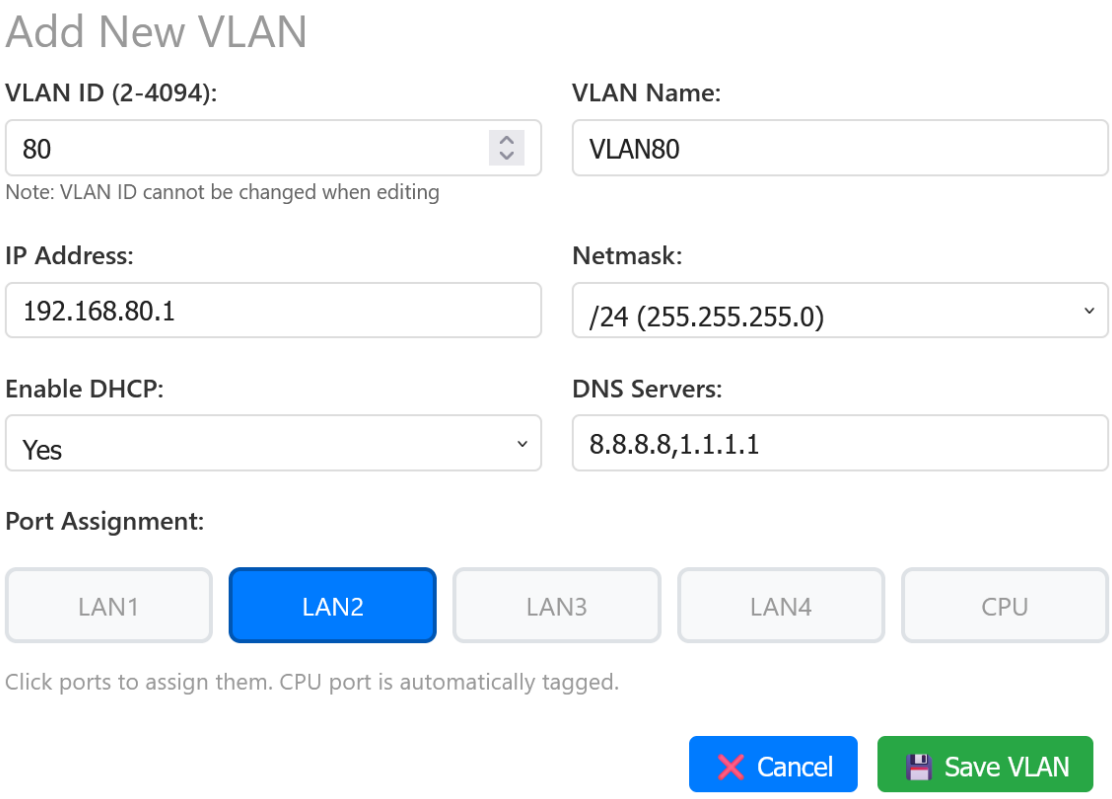
How to set up a basic VLAN

This feature is located under MOFI Business and well as under Network

- Navigate to Mofi Business → VLAN
- Click to add a new VLAN



Then just end the ip range you want to use, like 80 and select the port on the router you want to use this with, then save



EXTERNAL CONNECTORS

Power Input:

- DC Jack (110-220V input, 12V DC output, 12-30V DC range)
- Recommended inline fuse for vehicle installations: 3A fast-blow

AC Power Adapter:

- 12V DC output, 110/120V, 3.5A, fully UL certified

Ports:

- 4 x RJ45 LAN ports (10/100/1000 GIGABIT, can function as multi-WAN ports)
- 1 x RJ45 WAN port (10/100/1000 GIGABIT, can also be used as a LAN port)
- 1 x USB 2.0 port (read)
- 1 x USB 3.0 port (side)
- 1 x Factory Default Reset button

Antennas: (This model includes 4 cellular antennas)

- 5 x 5 dBi premium external SMA antennas for Wi-Fi
- 4 x 5 dBi premium wide-band external SMA antennas for 3G/4G/LTE/5G cellular signals

SIM Slots:

- 2 x 4FF SIM slots (for nano SIM cards). You must obtain a SIM card from your provider or current device. For assistance, contact MOFI Network.

Performance:

- CPU: 1.3GHz
- RAM: 1GB (DDR4, 2400MT/s)
- ROM: 128GB (system memory)

Physical Dimensions:

- Size: 260 mm x 140 mm x 33 mm (10 in x 5.5 in x 1.3 in)
- Weight: 340 grams (1.6 lb)

Operating Temperature:

- -30°C to +75°C (-22°F to +167°F)

Storage Temperature:

- -40°C to +90°C (-40°F to +194°F)

Molex Power Connector Pinout:

- Units can handle 12-30 volts.

TROUBLESHOOTING

Here are some basic troubleshooting steps:

You can also check out this helpful video: Troubleshooting Video.

For most customers, the first step in troubleshooting is to reset the module and then perform a factory reset.

1. Log into the router:

- Navigate to: http://192.168.10.1
- Username: root
- Password: admin

2. After logging in:

- Go to the "MOFI Internal Modem" section.
- At the bottom, click the button to reset the module. This will reset the module and reboot the router.

3. Once that's done:

- Close your internet browser.
- Ensure you are connected to the MOFI Wi-Fi or via Ethernet cable, then log back in.

4. After logging in again:

- Go to "System" and then select "Factory Default."
- Perform the reset. This will reset and reboot the router.

If you can't access the router:

- Power off the router and then power it back on.
- Wait until the power LED is solid, then press and hold the reset button for 10 seconds before releasing it.
- After a few seconds, the power LED should start flashing and then become solid again after about 1-2 minutes. This indicates the router has been reset.

Once the router is back up:

- The internet should be working. If not, close your internet browser.
- Make sure you are connected to the MOFI Wi-Fi or via Ethernet cable, then log back in.

5. Go to the "MOFI Internal Modem" and click on the "Configuration" tab.

What does the carrier ID show? This indicates that the SIM card is being read correctly.

What about the phone number? If the SIM card is activated, a phone number should appear there.

If you're still having issues, contact your provider to verify the correct APN (Access Point Name) you need to use. Once you have the APN, log into the router and go to the "MOFI Internal Modem" section.

Select "Country" and choose "Custom APN," then enter the required APN and save your changes. After saving, reboot the router.

If you're still experiencing problems, make sure all four antennas are connected and that you're receiving a good 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.