

User guide.

MiFi 8800L

verizon



©2018 Inseego Corp. All rights reserved. The information contained in this document is subject to change without notice and should not be construed as a commitment by Inseego Corp.

Patents and Licenses

For a complete list of all Inseego Corp. patents, visit www.inseegowireless.com/about/contact-us.

Software License

Proprietary Rights Provisions:

The software drivers provided with this product are copyrighted by Inseego Corp. and/or Inseego Corp.' suppliers. Although copyrighted, the software drivers are unpublished and embody valuable trade secrets proprietary to Inseego Corp. and/or Inseego Corp. suppliers. The disassembly, decompilation, and/or Reverse Engineering of the software drivers for any purpose is strictly prohibited by international law. The copying of the software drivers, except for a reasonable number of back-up copies is strictly prohibited by international law. It is forbidden by international law to provide access to the software drivers to any person for any purpose other than processing the internal data for the intended use of the software drivers.

U.S. Government Restricted Rights Clause:

The software drivers are classified as "Commercial Computing device Software" and the U.S. Government is acquiring only "Restricted Rights" in the software drivers and their Documentation.

U.S. Government Export Administration Act Compliance Clause:

It is forbidden by US law to export, license or otherwise transfer the software drivers or Derivative Works to any country where such transfer is prohibited by the United States Export Administration Act, or any successor legislation, or in violation of the laws of any other country.

Trademarks and Service Marks

Inseego Corp. is a trademark of Inseego Corp., and the other trademarks, logos, and service marks (collectively the "Trademarks") used in this user manual are the property of Inseego Corp. or their respective owners. Nothing contained in this user manual should be construed as granting by implication, estoppel, or otherwise, a license or right of use of Inseego Corp. or any other Trademark displayed in this user manual without the written permission of Inseego Corp. or its respective owners.

- Inseego Corp., and the Inseego Corp. logo are all trademarks of Inseego Corp.
- MiFi® and the MiFi logo are registered trademarks of Inseego Corp.
- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Apple®, Mac®, and Mac OS® are trademarks of Apple, Inc., registered in the U.S. and other countries.
- Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

The names of actual companies and products mentioned in this user manual may be the trademarks of their respective owners.

Inseego Corp. Revision History

Part Number	Revision	Description	Date
90027123	R1	Initial release	08 Oct 2018

FCC ID: PKRNVWMIFI8800

PN: 90027123_R1_MASTER_UG_MiFi8800L_VZW_08 Oct 2018

Please visit www.inseego.com for the latest information about your device.

Contents

Overview.....	1
Overview.....	2
Package Contents	2
System Requirements.....	2
About Jetpack’s Internet Connection	3
Caring for Your Jetpack	3
About Your Jetpack.....	4
Status Indicators.....	5
Power Management.....	7
Charging Your Jetpack.....	7
Using Your Jetpack to Charge Other Devices.....	7
Battery Tips.....	9
Replacing the 4G LTE SIM Card	10
Using Your Jetpack’s Touchscreen	11
Turning Your Jetpack On and Off.....	12
Connecting to Your Jetpack.....	12
Using Your Jetpack’s Touchscreen	13
The Home Screen.....	13
Managing Your Jetpack Using the Touchscreen.....	15
Managing Your Jetpack Using the Touchscreen	16
About this Chapter	16
Wi-Fi	16
Connected Devices	17
Data Usage.....	17
Settings	17
Universal Charging	18
MiFi Share.....	18
Software Update	19
About Jetpack.....	19
Help.....	20
Managing Your Jetpack Admin Website.....	21
Managing Your Jetpack Using the Admin Website	22
About this Chapter	22
Accessing the Jetpack Admin Website.....	22
The Jetpack Admin Website Home Screen	23
Checking Data Usage.....	24
Changing Your Jetpack Admin Password	25
Managing Wi-Fi.....	25

Managing Connected Devices	28
Editing a Connected Device	28
Changing the Maximum Number of Connected Devices	29
Blocked Devices	29
Managing MiFi Share	30
Managing Jetpack Settings	31
The Preferences Tab	31
The Software Update Tab	32
The Backup and Restore Tab	33
The GPS Tab	33
The Advanced Tab	34
Firewall	37
About Jetpack	44
Internet Status	44
Jetpack Info	45
Diagnostics	45
4G LTE Network	46
Logs	47
Getting Help	48

Troubleshooting **49**

Overview	50
Common Problems and Solutions	51
Technical Support	55
Technical Support	55

Product Specifications and Regulatory Information **56**

Product Specifications	57
General	57
Technology/Bands	57
Environmental	58
Regulatory Statements	59
Wireless Communications	61
Limited Warranty and Liability	61
Safety Hazards	62
Proper Battery Use and Disposal	64

Glossary **65**

Overview

Overview
About Your Jetpack
Power Management

Overview

Congratulations on your purchase of the Verizon Jetpack® MiFi® 8800L.

With the Jetpack you can access 4G LTE networks for faster apps, uploads and downloads. Connect up to 15 Wi-Fi enabled devices to the Internet at once - laptops, tablets, e-readers, gaming consoles and more* - and experience download speeds up to 10 times faster than with Verizon's 3G*.

The Jetpack is also backwards compatible to 3G networks, ensuring reliable connectivity when you need it most.

Package Contents

The Verizon Jetpack MiFi 8800L package includes:

- MiFi 8800L
- Pre-installed 4400mAh Standard Lithium Ion Battery
- Pre-installed 4G LTE SIM Card (4FF)
- QuickCharge Charger
- Type A to Type C USB Cable
- Verizon Wireless Brochures

System Requirements

- Compatible with all major operating systems
- Works with the latest versions of browsers, including Google Chrome®, Firefox®, Internet Explorer®, Safari™ and Mobile Safari™.

To use Wi-Fi mode, your computer or other device needs Wi-Fi capability and Internet browser software. If your computer does not have Wi-Fi capability you can use Ethernet over USB tethering.

Your Jetpack must have proper data service to function.

About Jetpack's Internet Connection

With LTE you can get the speed you require to work efficiently outside the home or office. You can connect to the Internet, access your corporate intranet, check your email and download attachments at speeds that are up to 10 times faster than 3G*.

4G Mobile Broadband with LTE*

- Download: typical download speeds of 5-12 Mbps.
- Upload: typical upload speeds of 2-5 Mbps.

Wi-Fi 802.11a/b/g/n/ac

- 802.11a uses the 5.0 GHz frequency with speeds up to 12 Mbps.
- 802.11b uses the 2.4 GHz frequency with speeds up to 12 Mbps.

Caring for Your Jetpack

Like any electronic device, the Jetpack must be handled with care to ensure reliable operation. Inseego Corp recommends the following guidelines:

- Protect the Jetpack from liquids, dust, and excessive temperatures.
- Do not apply adhesive labels to the Jetpack; they might cause the Jetpack to potentially overheat and they might alter the performance of the antenna.
- Store the Jetpack in a safe place when not in use.

* Average download speeds of 5-12 Mbps/average upload speeds of 2-5 Mbps. Actual throughput speed and coverage may vary.

About Your Jetpack



- ❶ **Power Button** — Powers the Jetpack on and off.
- ❷ **Color Touchscreen (2.4 in)** — Displays device status, data usage, and number of users connected. Swipe left/right/up or down to access available menu options.
- ❸ **Test Port**
- ❹ **USB-C Port** — Use to connect the QuickCharge charger, Internet over USB-C, to charge one additional wireless device, and MiFi Share file sharing via mass storage.
- ❺ **Test Port**



- ❻ **Master Reset Hole** — Use to reset Jetpack back to original factory settings.
- ❼ **Battery Compartment** — The battery is pre-installed.
- ❽ **Battery Removal Divot** — Insert a fingernail here and lift to remove the battery.

Status Indicators

DISPLAY ICON		DESCRIPTION
No icons		The Jetpack is powered off or not receiving power, or the screen is in power-saving mode.
Network Signal Strength		Network Signal Strength Indicator. More bars indicate more signal strength.
Activity Indicator		Data is being transferred between the mobile network and your Jetpack.
Roaming		Roaming indicator.
Wi-Fi Indicator		Your Jetpack Wi-Fi network is turned ON.
Messages		You have unread messages.
Connected Devices		Shows the number of Wi-Fi devices connected to your Jetpack.
Battery Charge Indicator		The battery is fully charged.
Battery Charge Indicator		the battery is critically low and the Jetpack will shut down unless the battery is connected to the charger.
Battery AC Charging Indicator		Displays when the Jetpack is connected to the AC charger.
Battery USB Charging Indicator		Displays when the Jetpack is connected via USB and is charging.

OTHER ICONS

SIM - Red



If this icon is displayed, there is no SIM card installed.

SIM - Red



If this icon is displayed, your SIM is locked. Real-time data usage meter will not display.

SIM - Red



If this icon is displayed, there is a SIM error. Check to be sure your SIM card is properly installed.

USB Tethered



If this icon is displayed, your Jetpack is connected to Wi-Fi via USB.

Universal Charging



Tap the icon to display Universal Charging status. Options include Available, Charging, or Not available.

Software Update



Scroll and select the icon to display the current SW version, and to download and install an update.

MiFi Share



USB Mass storage device in use.

Power Management

Charging Your Jetpack

IMPORTANT Before you use your Jetpack, be sure to charge the battery for at least three hours to ensure a full initial charge. When fully charged, the battery has up to 24 hours of life.

To charge the battery:

- 1 Connect the USB end of the QuickCharge charger into the charging port of the Jetpack.
- 2 Plug the other end of the wall charger into the appropriate electrical outlet. When the battery is fully charged, the battery icon  will turn solid black.

Before using your Jetpack, read the battery safety information in the "Safety Hazards" section of this guide. (See Proper Battery Use and Disposal on page 124.)

CAUTION! Use only batteries and chargers with your Jetpack that have been approved by Inseego Corp for optimal performance and safe operation.

Using Your Jetpack to Charge Other Devices

The universal charging port allows you to charge an additional device such as a phone or tablet, using your Jetpack.

To charge an additional device:

- 1 Connect the USB cable to the device to be charged.
- 2 Connect the other end of the USB cable to the Universal Charging port on the Jetpack.



To check your Jetpack's battery level, from the Home screen, tap **Menu > Universal Charging**.

Replacing the Battery

To remove and replace the battery:

- 1 Insert your fingernail in the battery removal groove at the top edge of the battery cover, then lift and remove the battery cover. Set the cover aside.



- 2 Insert your finger into the battery removal divot and lift the battery out of the battery compartment.



- 3 Align the gold contacts on the new battery with the gold contacts on the Jetpack and gently slide the battery into place.



- 4 Replace the cover by setting it on the Jetpack where the notches align, then press on the cover until it clicks into place and is flat across the entire bottom surface.



Battery Tips

WARNING! Always use only approved batteries and chargers with your Jetpack. The warranty does not cover damage caused by non-approved batteries and/or chargers.

- Do not use sharp objects or use excessive force to remove the battery or to access the battery well, this may damage the Jetpack and the battery.
- The battery discharges more rapidly as additional devices access your Jetpack.
- Battery life depends on the network, signal strength, temperature, features, and accessories you use.
- New batteries or batteries stored for a long time may take more time to charge.
- When charging your battery, keep it near room temperature.
- When storing your battery, keep it uncharged in a cool, dark, dry place.
- Never expose batteries to temperatures below -20°C (4°F) or above 60°C (140°F).
- Never leave the Jetpack in an unattended vehicle where it can get too hot or too cold.
- Some batteries perform best after several full charge/discharge cycles.
- It is normal for batteries to gradually wear down and require longer charging times. If you notice a change in your battery life, it is probably time to purchase a new battery.

IMPORTANT Whenever you remove or insert the battery, ensure your Jetpack is not connected to any device or power source. Never use tools, knives, keys, pens or any type of object to force the door open or to remove the battery. Using any of these types of objects could result in puncturing the battery.

Replacing the 4G LTE SIM Card

Your SIM (Subscriber Identity Module) card is a small rectangular plastic card that stores your phone number and important information about your wireless service. Your Jetpack comes with the SIM card and battery already installed.

To remove the 4G LTE SIM card:

- 1 Insert your fingernail in the battery removal groove at the top edge of the battery cover, then lift and remove the cover. Set the cover aside.
- 2 Remove the battery from the battery well.
- 3 Carefully slide the SIM card backwards to remove from the SIM card slot.



NOTE Should your 4G SIM card be lost or damaged, contact your network operator.

To install a new 4G LTE SIM card:

- 1 Lift to open the battery cover located on the back of the Jetpack.
- 2 If necessary, remove the SIM card from the outer card, being careful not to touch the gold-colored contacts.
- 3 Hold the card with the gold-colored contact points facing down.
- 4 Insert the SIM card into the slot. The SIM card **MUST** remain in the SIM card slot when in use.



CAUTION! Do not bend or scratch your SIM card. Avoid exposing your SIM card to static electricity, water, or dirt.

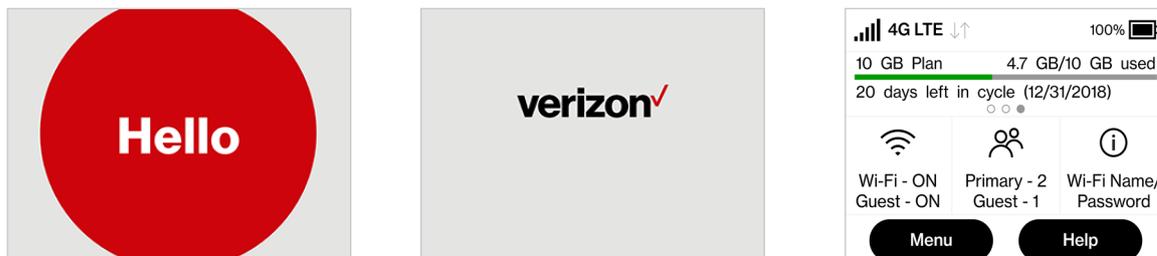
2

Using Your Jetpack's Touchscreen

Turning Your Jetpack On and Off
Using Your Jetpack's Touchscreen

Turning Your Jetpack On and Off

- To turn your Jetpack on, press and hold the **Power** button for 2 seconds.



- To turn it off, press and hold the **Power** button for 3 seconds..
- To wake the Jetpack display, press and release the **Power** button.

Connecting to Your Jetpack

You can use the Jetpack as a wireless mobile hotspot to connect your computer and up to a total of 15 Wi-Fi enabled devices to the mobile broadband network.

To connect to your Jetpack:

- 1 Turn on your Wi-Fi enabled device and your Jetpack. The Jetpack will broadcast its own wireless network and name.

Tip! The steps to connect to a Wi-Fi network vary depending on your device and software. See your device's User Guide for more information.

- 2 When prompted, enter your Wi-Fi Network password. The Jetpack Home screen should now show an additional connected device. Your Wi-Fi enabled device is now connected to the Internet.
- 3 You can view or change Jetpack settings by connecting to the Jetpack Admin website at <http://my.Jetpack> or <http://192.168.1.1>.

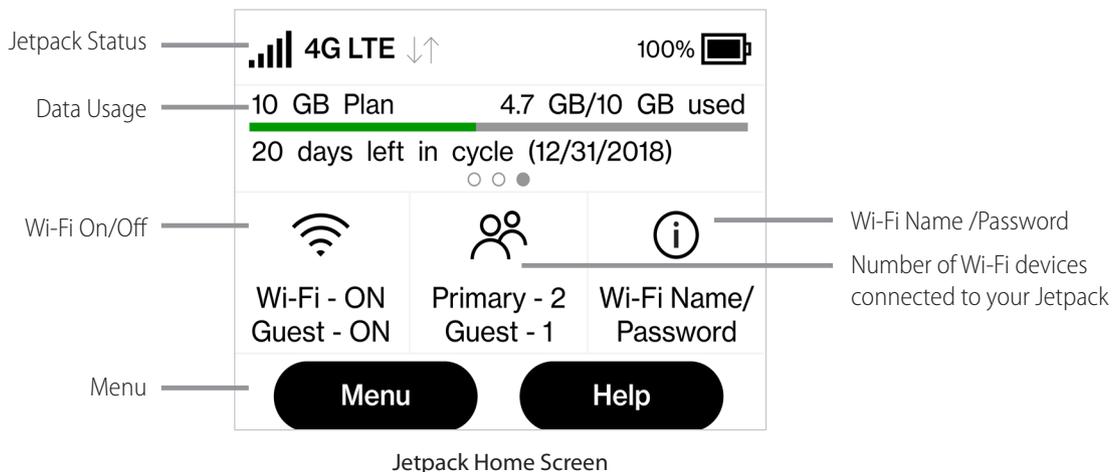
IMPORTANT Charge the battery completely before you connect your computer to your Jetpack. (See [Power Management](#).)

Using Your Jetpack's Touchscreen

From the Jetpack's touchscreen, you can check your Jetpack's status, view your current data usage, see Wi-Fi and Connected Devices details, and more.

The Home Screen

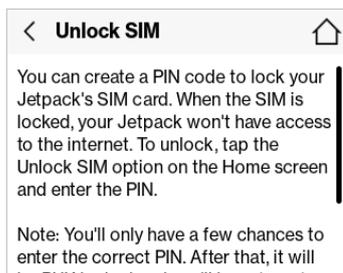
The Home screen lets you see what your Jetpack is doing at a glance.



At the top of the screen, you'll see status indicators for network signal strength , data traffic activity , unread Verizon system messages , roaming , and battery .

The Data Usage section shows how much of your monthly data you've used and how much time is left until the next billing cycle.

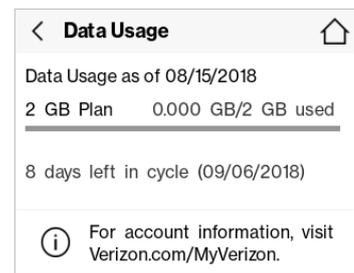
NOTE If SIM Lock is turned on, or if another device is connected to the Universal Charging port and being charged, the Data Usage meter won't be shown. Scroll and tap the Data Usage icon to view your current data usage details.



Unlock SIM



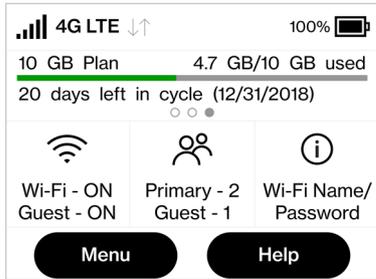
Retrieve Data Usage



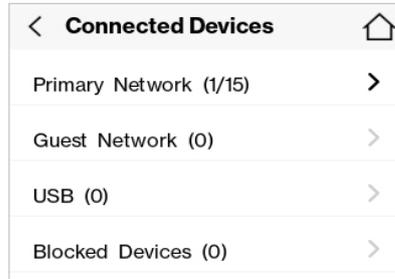
Data Usage Display

The middle of the screen shows you if Wi-Fi is on or off, and how many devices are connected to your Jetpack's Wi-Fi network.

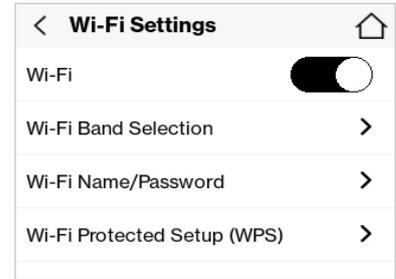
Your Wi-Fi Name and Password are next. For information on changing your Wi-Fi Name and Password, see (See [Managing Jetpack Settings](#)).



Tap Menu to Open Menu Options



Swipe Up/Down to Desired Option



Tap to View Desired Option

Managing Your Jetpack Using the Touchscreen

About this Chapter

Wi-Fi

Connected Devices

Jetpack Settings

Messages

MiFi Share

Software Update

About Jetpack

Help

Managing Your Jetpack Using the Touchscreen

About this Chapter

You can manage, monitor, and customize your Jetpack settings directly on the Jetpack's touchscreen, or by using the Jetpack Admin website.

In this chapter, we will show you what features you can manage on your Jetpack's touchscreen.

For website instructions, including features that can only be managed on the website, see Chapter 4, **Managing Your Jetpack Using the Jetpack Admin Website**.

For general instructions on using your touchscreen, see Chapter 2, **Using your Jetpack's Touchscreen**.

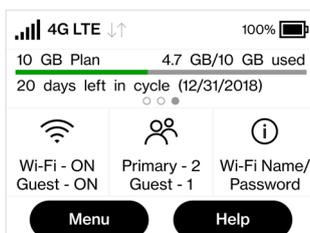
Wi-Fi

Wi-Fi allows you to turn Wi-Fi ON/OFF, and select your Primary and Guest Network settings.

- 1 From the Home screen, select **Menu > Wi-Fi**.
- 2 Select **Wi-Fi** to display the Wi-Fi options.
 - Select **Wi-Fi Band Selection** to select your Primary and Guest Network settings.

NOTE Use the Guest Network to temporarily share Internet access with guests. It creates a separate Wi-Fi network with a different name and password, and provides the same configuration options as the Primary network. Users on the Guest network are isolated from users on your primary network. You can choose to use the Guest Network under either the **2.4 GHz** Band or **5 GHz** Band or don't select either band to turn it off.

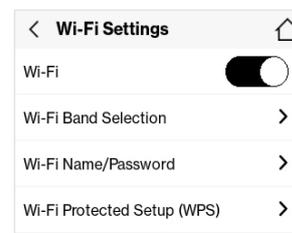
- Select **Wi-Fi Name/Password** to display your current Primary and Guest Network Wi-Fi Name and Password settings.
- Select **Wi-Fi Protected Setup (WPS)** to allow compatible Wi-Fi devices to easily connect to your Jetpack's Primary or Guest network.



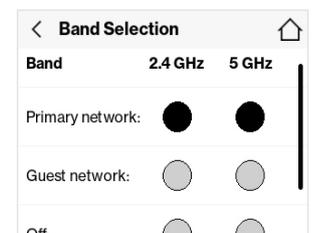
Tap Menu



Select Wi-Fi



Select Wi-Fi option



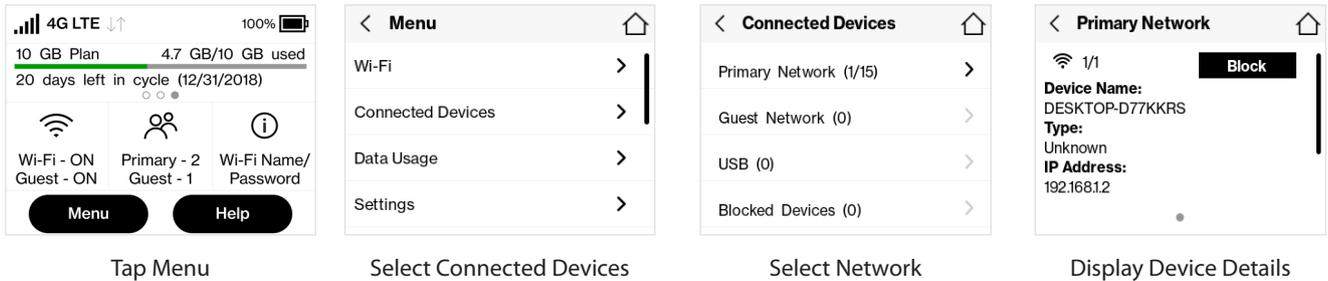
Display Wi-Fi Option Details

Connected Devices

From the Home screen, tap the number of Wi-Fi enabled devices currently connected to your Jetpack networks to see the **Connected Devices** screen.

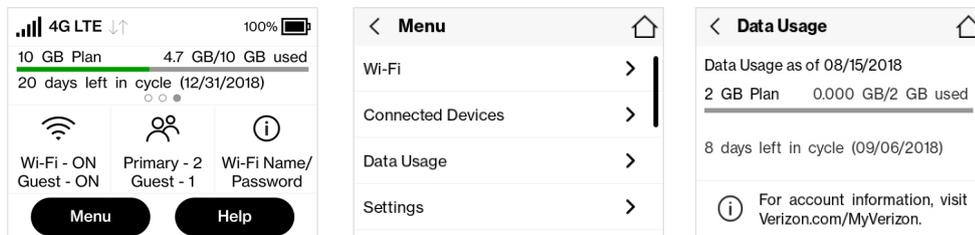
From here you can tap **Primary Network**, **Guest Network** or **USB** to see the DNS and MAC details for each device connected to the Jetpack, and to block or unblock each device.

You can also tap to see a list of **Blocked Devices** and unblock devices from that screen.



Data Usage

To see your estimated data usage from the Menu, from the Home screen tap **Menu > Data Usage**.

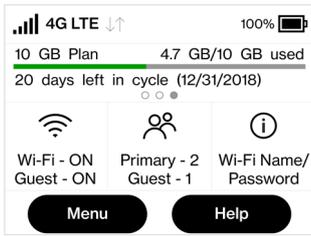


Settings

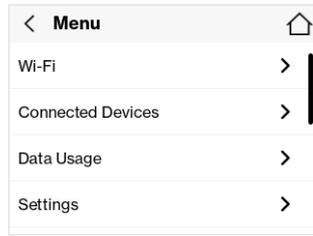
You can change various **Jetpack Settings** or reset your Jetpack to the original factory settings.

From the Home screen, tap **Menu > Settings**, then choose from one of the following to see the options for that setting:

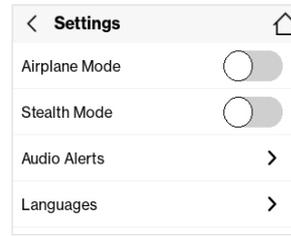
- **Airplane Mode**
- **Stealth Mode**
- **Audio Alerts**
- **Languages**
- **Screen Timeout**
- **Network Settings**
- **Sleep Mode**
- **Factory Reset**
- **Advanced Settings**



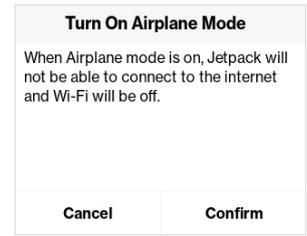
Tap Menu



Select Settings



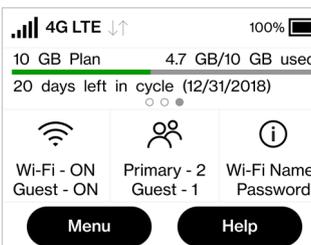
Select Desired Setting



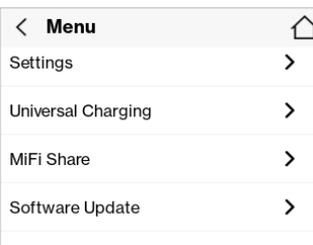
Display Setting Options

Universal Charging

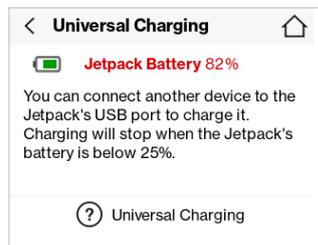
To see your Jetpack battery charging status and universal charging information, from the Home screen tap **Menu > Universal Charging**.



Tap Menu



Select Universal Charging



Battery Charging Information

T

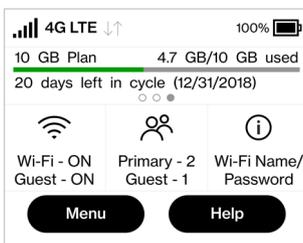
MiFi Share

MiFi Share lets you share files and folders with connected devices on the Jetpack's Wi-Fi network when a USB mass storage device is connected to the USB C port.

To set-up your MiFi settings:

- 1 From the Home screen, tap **Menu > MiFi Share**.
- 2 Select your desired option and tap the **ON/OFF** button to turn the setting ON or OFF.

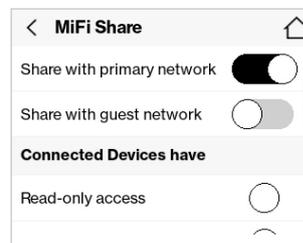
NOTE To see instructions on how to access shared folders, sign in to the Jetpack Admin Website and go to **MiFi Share > How do I access the shared folders?**



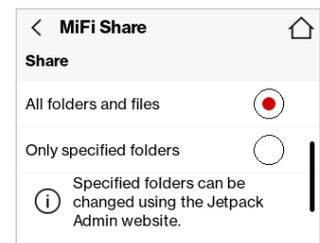
Tap Menu



Select MiFi Share



Select Content to Share



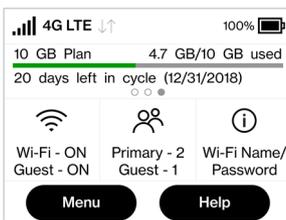
Select Access and Access Type

Software Update

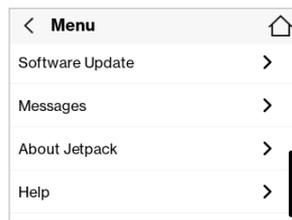
Software Update allows you to view the current software version and when the last check was made for updates, lists available updates, and provides an update history. You can also download and install a new update using your Jetpack device.

To check for a Software update:

- 1 On the Home screen, tap **Menu** and select **Software Update** to display the current Software and Configuration versions. Tap **Check for Update** to check for the latest Software version available.
- 2 If an update is available, you can choose to download and install the update using your Jetpack.
- 3 Tap **OK** to return to the Software Update page.



Software Update option



Select Yes to Check



Checking for New Version

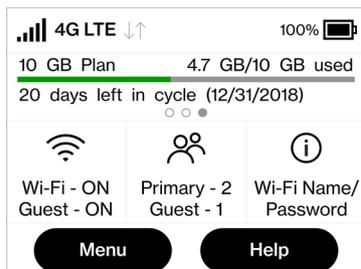


Update Status

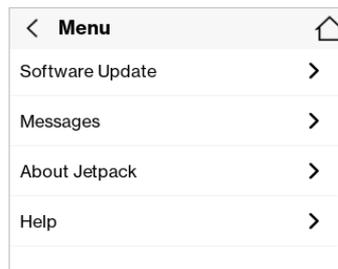
About Jetpack

About Jetpack displays information about your Jetpack, including Internet and roaming status, model and version, wireless and IMEI number, and battery charge level.

- 1 On the Home screen tap **Menu**, then select **About Jetpack** to display model number, software and configuration versions, and wireless number.
- 2 Swipe up or down to see the IMEI, battery level, internet status, technology, network, signal strength, SNR, and roaming status.



About Jetpack Option



Internet Connection Status



Jetpack Details

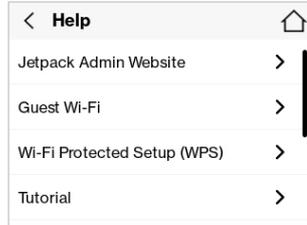
Help

You can get help right from your Jetpack's touchscreen.

- 1 On the Home screen, tap **Help** to open the Help screen options. Help options include **Jetpack Admin Website**, **Guest Wi-Fi**, **Wi-Fi Protected Setup (WPS)**, **Tutorial**, **Unlock SIM**, **Universal Charging**, **MiFi Share** and **GPS**.
- 2 Swipe up/down to highlight the desired Help option, then press to display option choices and information.
- 3 Tap < to return to the Menu screen, or the Home icon  to return to the Home screen.



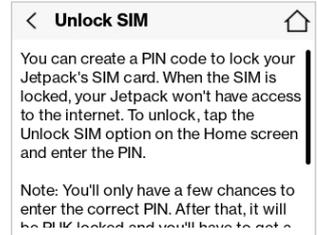
Help Option



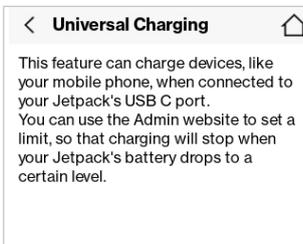
Select Help Option



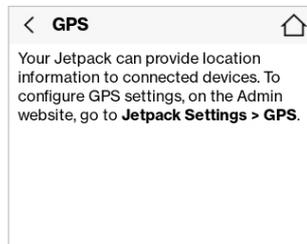
Jetpack Admin Website Help



Unlock SIM



Universal Charging



GPS

Managing Your Jetpack Admin Website

About this Chapter

The Jetpack Admin Website Home Screen

Jetpack Data Usage

Managing Wi-Fi

Managing Connected Devices

Managing MiFi Share Settings

Managing Jetpack Settings

About Jetpack

Getting Help

Managing Your Jetpack Using the Admin Website

About this Chapter

In this chapter, we will show you how to manage your Jetpack using the Jetpack Admin website.

From the Jetpack Admin website, you can customize settings including Wi-Fi settings, passwords, GPS options, and more. You will also find links to the My Verizon website and other online tools to help you get the most out of your Jetpack.

NOTE For instructions on managing your Jetpack using its touchscreen, see Chapter 3, **Managing Your Jetpack Using the Touchscreen.**

Accessing the Jetpack Admin Website

To connect to the Jetpack Admin website:

- 1 Connect your Wi-Fi capable device to the Jetpack. (See [Connecting to Your Jetpack.](#))

NOTE You must be connected to your Jetpack's Wi-Fi network to access the Admin website.

- 2 Open a web browser on your connected device and enter <http://my.jetpack/> or <http://192.168.1.1>.
- 3 Click **Sign In** in the upper right corner of the screen and sign in with your Jetpack Admin password. When you first get your Jetpack, this will be the same as your Wi-Fi password.
- 4 You can also check your messages, change your Admin password, restart your Jetpack, or sign out from the Sign In drop down menu.

The Jetpack Admin Website Home Screen

My Jetpack Home page allows you to quickly access commonly used links and all available menu options for your Jetpack, and contains the following quick link menu options:

- **Data Usage**
- **Wi-Fi**
- **Connected Devices**
- **MiFi Share**
- **Jetpack Settings**
- **About**
- **Help**

The screenshot displays the Verizon Jetpack Admin Website Home Screen. At the top, the Verizon logo is on the left, and the status bar shows 'Verizon Wireless 4G LTE' and '100%' battery. A 'Sign In' button is in the top right. The main content area is divided into several sections:

- Welcome to Your Jetpack:** Features a data usage bar showing 83.987 GB remaining (16% used) and a circular gauge indicating 12 days to go. A note states: 'All usage is an estimate. Billing cycle ends 10/08/2018'.
- Wi-Fi:** Shows 'Primary Network: ON' and 'Guest Network: OFF' with their respective SSIDs.
- Connected Devices : 2:** Lists two devices: 'Jodis-iPhone' and 'san-000292', both connected to the 'Primary' network.
- MiFi Share:** Shows 'MiFi Share: OFF'.
- Jetpack Settings:** Shows 'Mobile Network: ON', 'Port Filtering: OFF', 'GPS: OFF', and 'System Update' status.
- About:** Shows 'Internet Status: Connected', 'Network name: Verizon Wireless', 'Technology: 4G LTE', and 'Time connected: 00 days, 04 hrs, 41 min'.
- Help:** Lists 'Help Topics' with links for 'Overview', 'Setup', 'Tips', 'Security Features', 'Device Support Page & User Guide', and 'Coverage Map'.

Checking Data Usage

Current estimated data usage displays on the Home page, including data used, data remaining, days to go and billing cycle end date.

NOTE Roaming charges or roaming minutes may not be included in your estimate. Credits and adjustments to your account may not appear until your next billing statement, and may not be reflected in your current balance. Payments are applied to your account on the same day they are made.

Changing Your Jetpack Admin Password

The Admin Password is used to sign in to Settings. To change your Admin Password:

- 1 On the Admin website Home screen, select **Admin Settings** from the Sign In drop down menu. Enter your current Admin password in the **Enter current password** box, then click **Continue**.
- 2 Enter your new password in the **Enter new password** box, then re-enter your new password in the **Confirm new password** box.
- 3 Select a security question from the drop down menu and enter the answer in the **Answer Security Question** field. Click Save Changes.

Change Jetpack Admin Password.

Current password:

New Admin Password:

Note: Password must be at least 6 characters.

Confirm new Admin Password:

Select Security Question:

Answer Security Question:

Save Changes

NOTE The next time you sign in to Jetpack Settings, you will need to use the new password.

Managing Wi-Fi

The Wi-Fi page lets you manage your Jetpack's Wi-Fi settings. This page is divided into 3 tabs:

- **Settings**
- **Primary Network**
- **Guest Network**

Settings

From the Settings tab, you can turn your Jetpack's Wi-Fi ON/OFF, change Network and Wi-Fi ON/OFF, change Network and Wi-Fi Connections Settings, and customize Band Settings.

To turn **Wi-Fi** ON/OFF, use the switch and then click **Save Changes** at the bottom of the screen.

To select or turn off **Band Selections** for the Primary and Guest networks, mark the buttons for 2.4 GHz Band and 5 GHz Band. Choose **Off**, **Primary network**, or **Guest network**.

To change the maximum number of Wi-Fi devices that can connect to the Jetpack (the default is set to 15), make your selection from the **Limit connected devices to** dropdown menu.

To customize the **Band Settings**:

- 1 Click on the **2.4 GHz Band Settings** or **5 GHz Band Settings** link to display the available Band Settings options.
- 2 Make your **Mode**, **Channel**, and **Bandwidth** selections from the dropdown menus and then click **Save Changes**.

The screenshot displays the 'Settings' page for a Jetpack, with tabs for 'Settings', 'Primary Network', and 'Guest Network'. The 'Settings' tab is active. A note states: 'These settings apply regardless of which network (Primary, Guest, or both) is in use. Changes made to these Wi-Fi settings may prevent some Wi-Fi devices from connecting to this Jetpack.'

Wi-Fi

- Allow Wi-Fi devices to connect to this Jetpack: ON
- Allow Wi-Fi setting changes to be made from the Jetpack screen: ON
- Limit connected devices to: 15 (dropdown menu)

Band Selection

	2.4 GHz Band	5 GHz Band
Primary network	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Guest network	<input type="radio"/>	<input type="radio"/>
Off	<input type="radio"/>	<input type="radio"/>

2.4GHz Band Settings

- 802.11 Mode: 802.11bgn
- Channel: Automatic (dropdown menu)

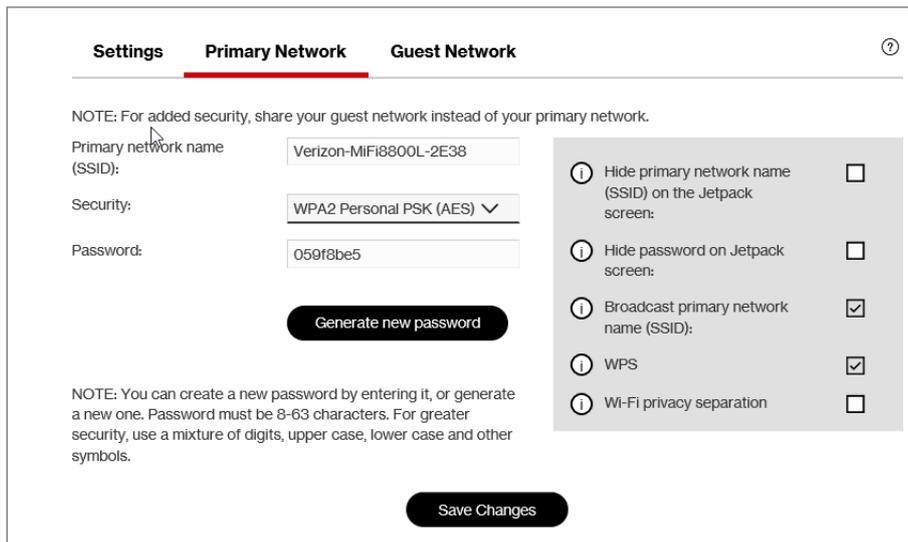
5GHz Band Settings

- 802.11 Mode: 802.11acn (dropdown menu)
- Bandwidth: 80 MHz (dropdown menu)
- Channel: Automatic (dropdown menu)

Save Changes (button)

Primary Network

From the Primary Network tab, you can change your Wi-Fi Name (SSID) and Password (Key), select the type of security, and turn Options ON/OFF for your primary network.



Settings **Primary Network** **Guest Network** ?

NOTE: For added security, share your guest network instead of your primary network.

Primary network name (SSID):

Security: ▼

Password:

Generate new password

NOTE: You can create a new password by entering it, or generate a new one. Password must be 8-63 characters. For greater security, use a mixture of digits, upper case, lower case and other symbols.

Save Changes

- i Hide primary network name (SSID) on the Jetpack screen:
- i Hide password on Jetpack screen:
- i Broadcast primary network name (SSID):
- i WPS
- i Wi-Fi privacy separation

To change the Primary Network **Wi-Fi Password (SSID)** enter the new Wi-Fi name into the field.

To change the type of Wi-Fi security for the Primary Network, choose an option from the **Security** dropdown menu.

To change the Primary Network **Wi-Fi Password (Key)**, enter the new password into the field or click **Generate New Key**. Then click **Save Changes**.

To turn **Options**, such as **Broadcast Wi-Fi Name (SSID)** and **WPS**, ON/OFF for the Primary Network:

- 1 Click the **Options** link to display available options. Options currently turned ON will display with a checkmark in a red box.
- 2 Click the checkboxes to turn options ON or OFF and then click **Save Changes**.

Guest Network

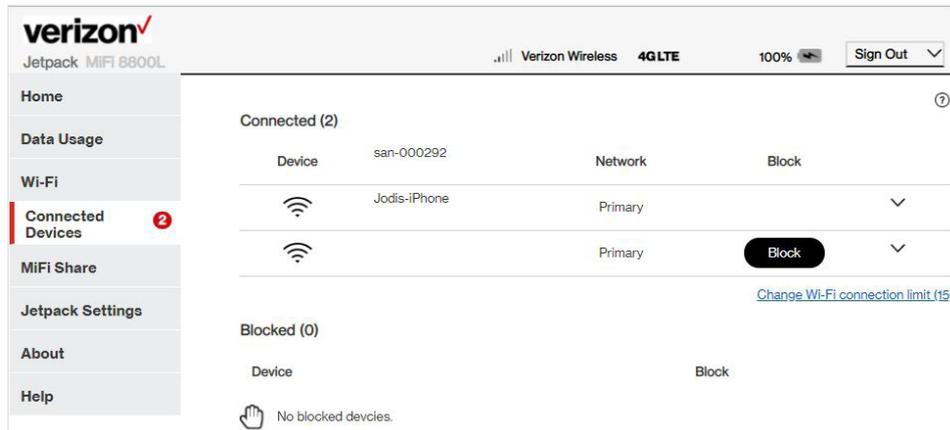
The same settings described above for the Primary Network are available for the Guest Network..

Managing Connected Devices

The **Connected Devices** page lets you view, edit, and block devices that are currently connected to your Jetpack and also unblock devices.

For the **Primary Network** and **Guest Network**, you can see the IP Address, MAC Address, and Link Local of all devices connected to the Wi-Fi network. The Wi-Fi network name is displayed after the heading.

You can also see information on **Blocked Devices**, including the name and MAC address of any blocked devices.



The Primary Network and Guest Network sections list all devices connected to your Jetpack via Wi-Fi including:

- **Change Max Wi-Fi Connections** — Allows you to set how many devices can simultaneously connect to the Jetpack's Wi-Fi network.
- **Wi-Fi** — The first column indicates the type of connected device. You can use the **Edit** option to set or change the type. If the type has not been set, no icon is displayed. Once you set the device type, an appropriate icon is displayed.
- **Band Selection** — This will show either the default hostname of the connected device or the name you choose using the **Edit** option.
- **2.4GHz Band Settings** option — Allows you to change the name of any connected device.
- **5.0GHz Band Settings** — Displays an icon to indicate the connection type for each connected device.

Editing a Connected Device

To edit a connected device:

- 1 Click the drop down menu for the connected device to open a page where you can edit the device.
- 2 Select the appropriate changes and click **Save**.

Changing the Maximum Number of Connected Devices

To change the maximum number of connected devices:

Click **Change Max Connections** on the **Connected Devices** page to open the Wi-Fi Settings page. Select the number of devices from the **Maximum Wi-Fi connected devices** dropdown menu and click **Save Changes**.

Blocked Devices

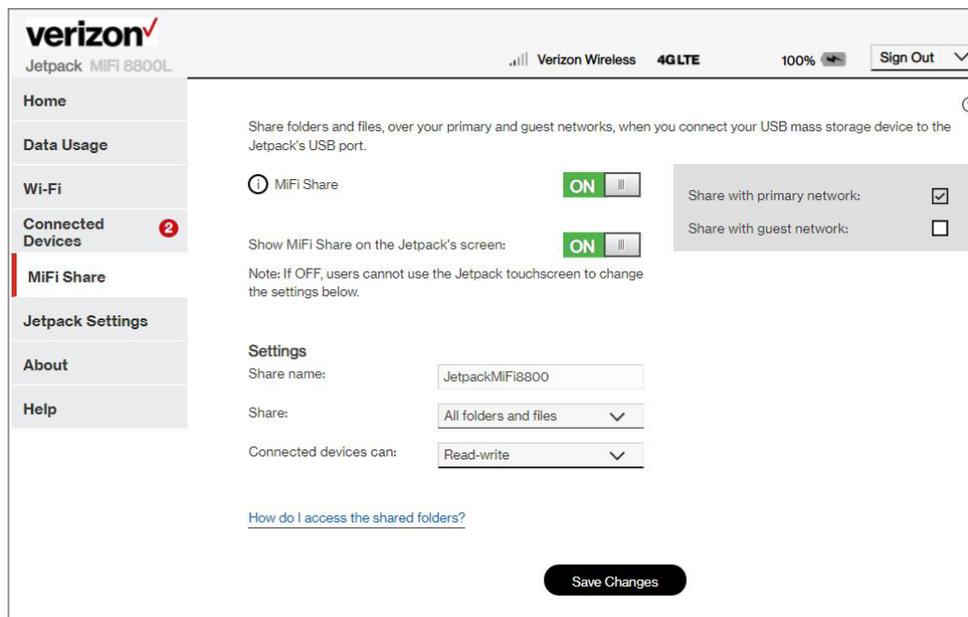
The Blocked Devices section lists any devices you have blocked. Note that since these devices are not currently connected, and are blocked from connecting, they do not have an IP address. Instead, they are identified by their name and MAC address.

Click **Unblock** to unblock a previously blocked device, freeing it to connect again. The unblocked device is deleted from the **Blocked Devices list**, and will reappear in the **Connected Devices** list when it connects.

Managing MiFi Share

Share folders and files, over your primary and guest networks, when you connect your USB mass storage device to the Jetpack's USB port. From MiFi Share you can:

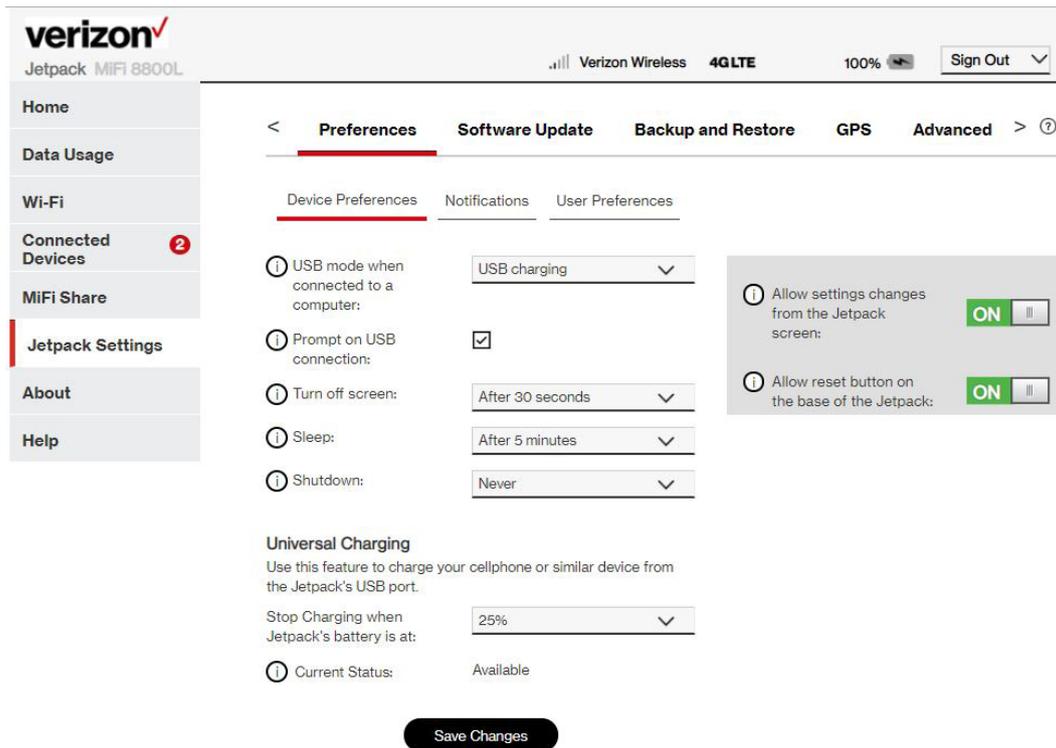
- **MiFi Share** — Turn ON/OFF.
- **Show MiFiShare on Jetpack's screen** — Turn ON/OFF.
- **Share with primary network** — Click the checkbox to allow/block.
- **Share with guest network** — Click the checkbox to allow/block.
- **Settings** — Enter Share name, select Share content and connection devices permission from the dropdown menu options.



Managing Jetpack Settings

The **Jetpack Settings** page allows you to make administration password and preference changes; obtain software update information; backup and restore files to your Jetpack; and set GPS preferences. The Jetpack Settings page is divided into 5 tabs:

- **Preferences**
- **Software Update**
- **Backup and Restore**
- **GPS**
- **Advanced**



The Preferences Tab

From the Preferences tab, you can manage your Jetpack's Preference settings. This tab is divided into 3 sections:

- **Device Preferences**
- **Notifications**
- **User Preferences**

Device Preferences

From the Device Preferences settings, you can turn your Jetpack's Wi-Fi ON/OFF, change Network and Wi-Fi ON/OFF, change Network and Wi-Fi Connections Settings, and customize Band Settings.

- **Device Preferences** — Set the behaviour of the Jetpack.
- **Allow Settings Changes** — Allow settings to be changed from the Jetpack display.
- **Allow Reset Button** — Allow settings to be changed from the Jetpack display
- **Universal Charging** — Charge your cellphone or similar device.

Notifications

From the Notifications settings, you can turn ON/OFF listed notifications, and turn ON/OFF for selected alerts.notifications.

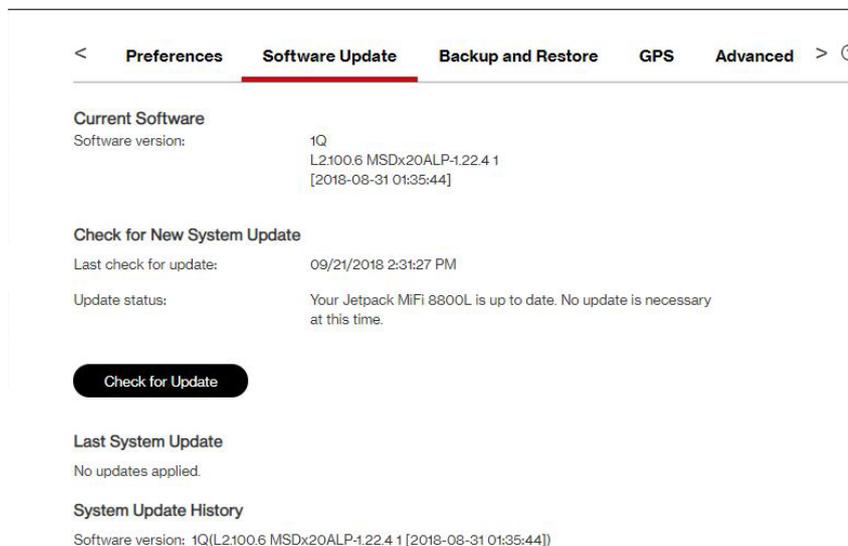
User Preferences

From the User Preferences settings, you to customize the date, time, distance and number formats.

The Software Update Tab

From Software Update settings, you can:

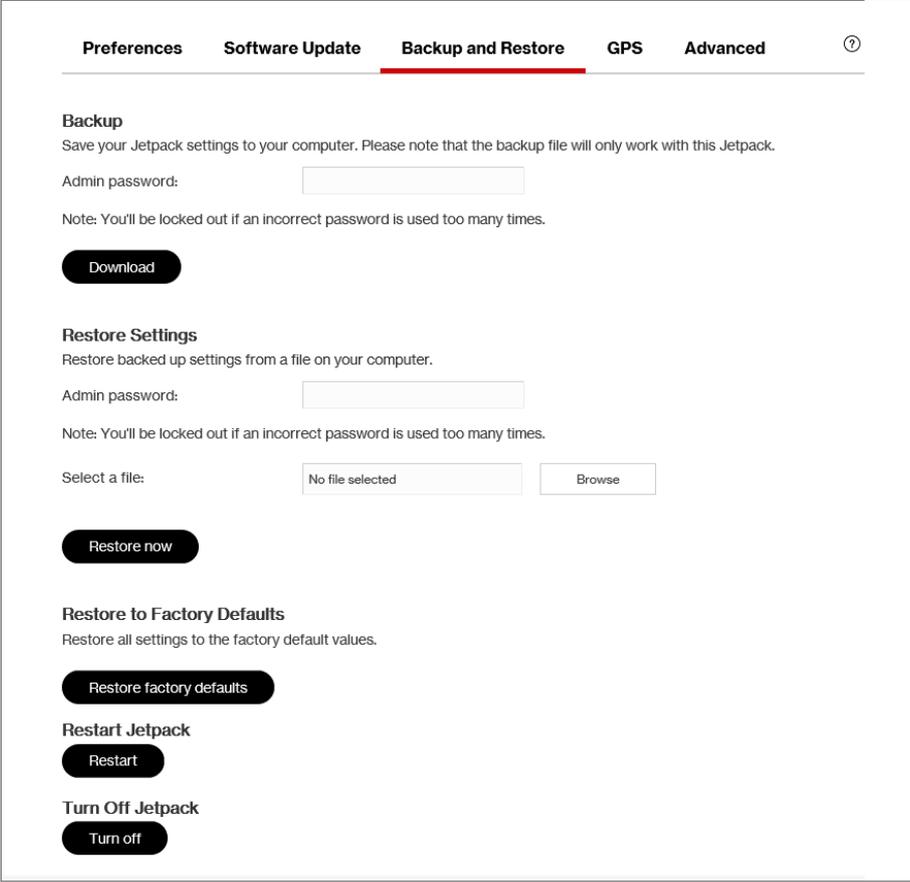
- **Current software version**— Display information for the current software version, date of last check for updates and the number of updates currently available.
- **Checked for New System Update** — Display the date of the last software update.
- **Last System Update** — Display most recent software update information.
- **System Update History** — Display the software version update history.



The Backup and Restore Tab

From Backup and Restore settings you can:

- **Backup** — Save your Jetpack settings to your computer. You must enter your Admin Password in the **Admin Password** field and click **Download** to save settings to your computer.
- **Restore Settings**— Upload a previously saved backup file from your computer to your Jetpack. Click **Browse** and select a file, then enter the Admin Password you were using when the backup file was saved in the **Admin Password** field and click **Restore Now**.
- **Restore to Factory Defaults** — Restore all settings on your Jetpack to the factory default values. Click **Restore Factory Defaults** to restore all such settings. If prompted for a password, use the default Admin Password which is **admin**.
- **Restart Jetpack** — Restart your Jetpack.
- **Turn Off Jetpack** — Shutdown your Jetpack.



The screenshot shows the 'Backup and Restore' settings page. At the top, there is a navigation bar with tabs for 'Preferences', 'Software Update', 'Backup and Restore' (which is highlighted with a red underline), 'GPS', and 'Advanced'. A help icon (?) is located on the right side of the navigation bar. Below the navigation bar, the page is divided into several sections:

- Backup**: A section with the instruction 'Save your Jetpack settings to your computer. Please note that the backup file will only work with this Jetpack.' It includes an 'Admin password:' field, a note 'Note: You'll be locked out if an incorrect password is used too many times.', and a 'Download' button.
- Restore Settings**: A section with the instruction 'Restore backed up settings from a file on your computer.' It includes an 'Admin password:' field, a note 'Note: You'll be locked out if an incorrect password is used too many times.', a 'Select a file:' field with 'No file selected' and a 'Browse' button, and a 'Restore now' button.
- Restore to Factory Defaults**: A section with the instruction 'Restore all settings to the factory default values.' and a 'Restore factory defaults' button.
- Restart Jetpack**: A section with a 'Restart' button.
- Turn Off Jetpack**: A section with a 'Turn off' button.

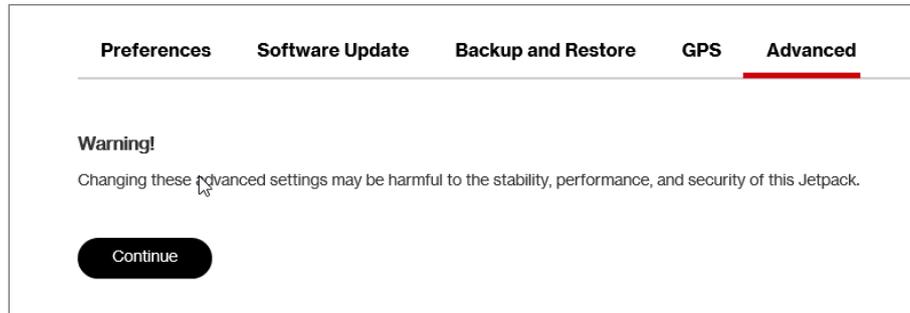
The GPS Tab

From GPS settings you can:

- **GPS ON/OFF** — Turn ON/OFF the GPS feature.
- **Turn off** — Set when the GPS receiver will turn off, once it is on.

The Advanced Tab

IMPORTANT! Changing the Jetpack's Advanced settings can adversely affect stability, performance and security of the Jetpack.



From Advanced settings you can:

- **Networks** — Turn off cellular data to prevent all internet traffic from using the Jetpack mobile broadband connection.
- **Manual DNS** — Automatically select a Domain Name Server (DNS). From the Manual DNS settings, you can select up to two DNS (Domain Name Server) IP addresses.
- **SIM** — Find settings and information about the Jetpack's Subscriber Identity Module (SIM) card. The SIM card inside your Jetpack can be locked with a PIN code for additional security. If locked, the PIN code must be entered before the Jetpack can connect to the Internet.
- **Firewall** — Determine which Internet traffic is allowed.
- **MAC Filter** — Determine which Internet traffic is allowed.
- **LAN** — Manage your Jetpack's IPv4 and IPv6 network settings.
- **Port Filtering** — Block outgoing Internet connections and permit only allowed applications to access the Internet. You can also customize a list of allowed applications which permits only certain programs to connect to the Internet.
- **Port Forwarding** — Allow incoming traffic from the Internet to be forwarded to a particular computer or device on your Wi-Fi network. Normally, the built-in firewall blocks incoming traffic from the Internet. Use Port Forwarding to allow Internet users to access any server you are running on your computer, such as a Web, FTP, or E-mail server. For some online games, Port Forwarding must be used in order for the games to function correctly.
- **VPN** — Establish a tunnel connection to an OpenVPN server and route all traffic on connected devices through the tunnel.

Networks

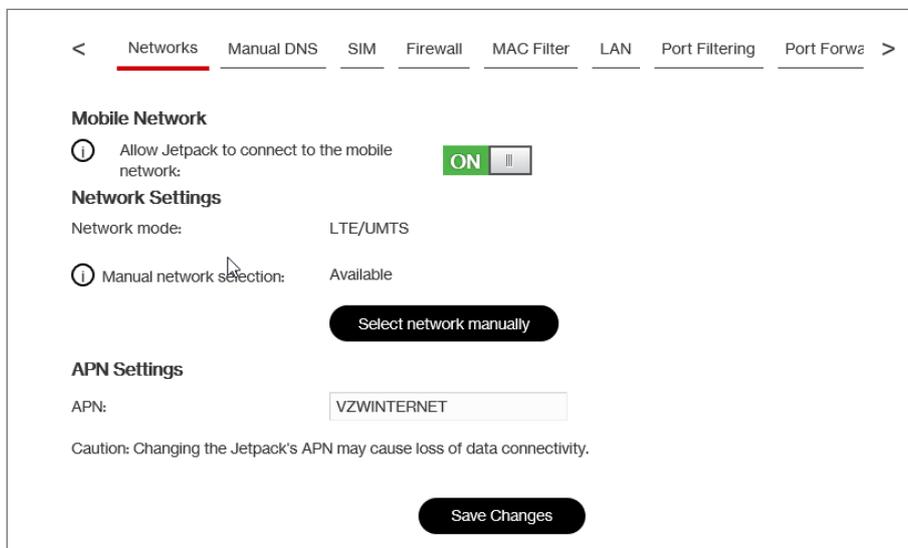
From Networks settings, you can manage:

- **Mobile Network** — Allows you to turn off cellular data to prevent all internet traffic from using the Jetpack mobile broadband connection.
- **Preferred network technology** — Allows you to select the network technologies which will be used.
- **APN Settings** — Displays the network carrier APN.

To turn off cellular data and prevent all internet traffic from using the Jetpack mobile broadband connection:

- Slide the Mobile Network ON/OFF button to **OFF**, then click **Confirm**.

NOTE All internet connections will be immediately terminated when you click **Confirm**.

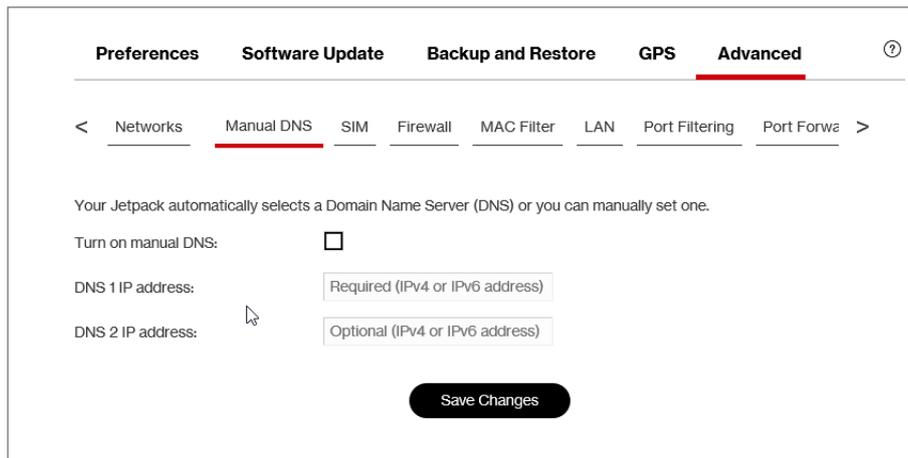


Manual DNS

The Jetpack automatically selects a Domain Name Server (DNS). From the Manual DNS settings, you can select up to two DNS (Domain Name Server) IP addresses.

To manually select a Domain Name Server:

- 1 Click the box next to **Enable manual DNS**.
- 2 Enter the IP address for the first DNS in the **DNS 1 IP address** field, then enter the IP address for the second DNS in the **DNS2 IP** address field. Click **Save Changes**.

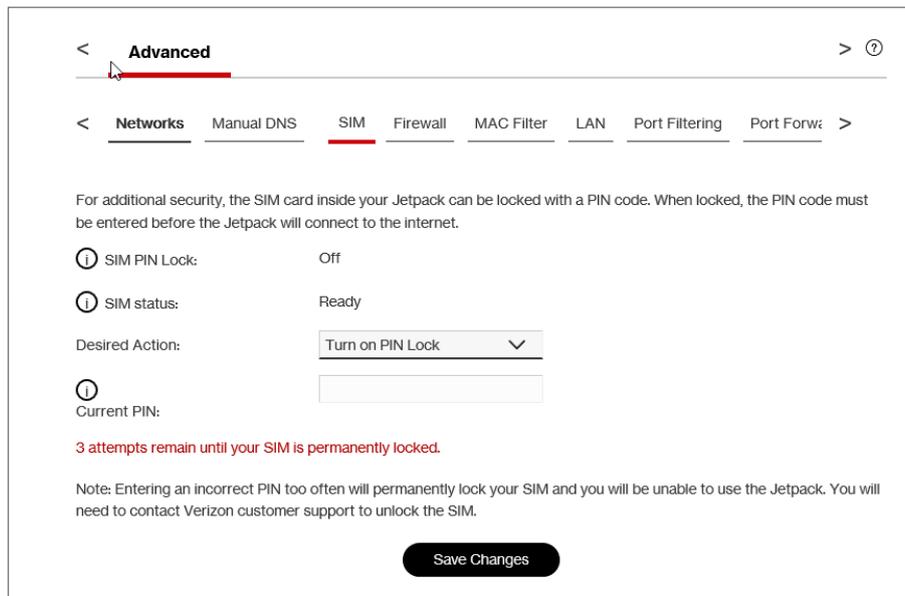


SIM

In the SIM settings, you'll find settings and information about the Jetpack's Subscriber Identity Module (SIM) card. The SIM card inside your Jetpack can be locked with a PIN code for additional security. If locked, the PIN code must be entered before the Jetpack can connect to the Internet. SIM settings include:

- **SIM PIN Lock feature** — If ON, the PIN lock has been turned on, and the SIM PIN must be entered in order to connect to the mobile network. If OFF, the PIN lock feature is not turned on, and the SIM PIN is not required.
- **SIM status** — Indicates the current status of the SIM card. Possible values include:
 - **Ready** — This is the normal state. The SIM PIN is not used.
 - **PIN Locked** — The SIM PIN must be entered before you can use the mobile network.
 - **PUK Locked** — The PUK for the SIM must be entered in order to continue. The PUK can be obtained from your service provider.
 - **Unlocked** — The SIM PIN is needed, but has already been entered.
 - **No SIM** — No SIM was detected. If you do have a SIM, check that it is inserted correctly.
 - **SIM Error** — A SIM was detected, but it did not respond as expected, and cannot be used.
- **Desired action** — Allows you to turn the PIN lock feature ON/OFF.
- **Enter current PIN** — Type the desired PIN in the **Enter current PIN** field. The default PIN is 1111.

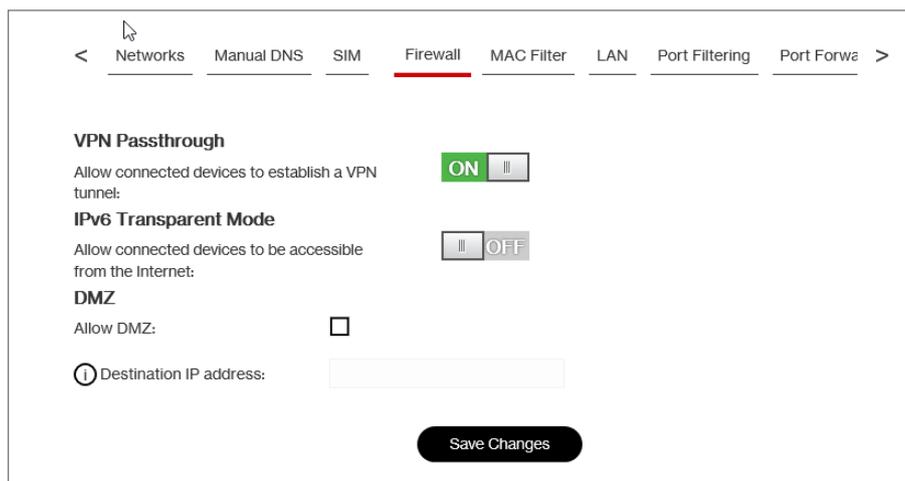
IMPORTANT! Entering an incorrect PIN will lock the SIM. **The default PIN is 1111.**



Firewall

The Jetpack firewall determines which Internet traffic is allowed. Firewall settings include:

- **VPN Passthrough** — Turns ON/OFF the VPN feature and allows or disallows connected devices to establish a VPN tunnel.
 - If **ON**, this feature allows VPN clients to connect through the Jetpack to remote VPN Servers. Normally, this option should be turned on.
 - If **OFF**, VPN clients are not allowed to connect.
- **IPv6 Transparent Mode** — Allows connected devices to be accessible from the Internet.
- **DMZ (IPv4)** — Allows the connected device specified as the DMZ IP address to receive all traffic which would otherwise be blocked by the firewall.
 - **DMZ (checkbox)** — Use the checkbox to turn ON/OFF the DMZ feature.
 - **DMZ IP Address** — Enter the IP address of the connected device you wish to become the DMZ device.

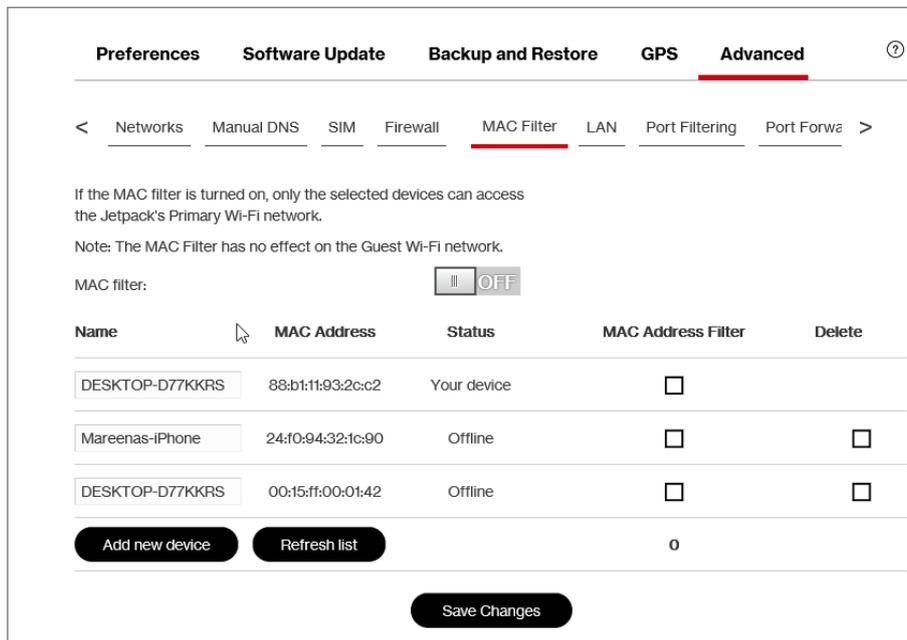


MAC Filter

The MAC Filter allows you to specify which devices can access the Jetpack Wi-Fi network.

ON/OFF — Turns the MAC Filter ON/OFF. Before turning on, make sure that the **Allowed Devices** list is not empty. When turning on, any Connected Device which is not in the Allowed Devices list will immediately be disconnected.

- **Refresh** — Use to refresh the screen and delete any unsaved changes.
- **Add Device** — Use to add a new device to the devices list.
- **Save Changes** — Use to activate and save new settings.



To add a device to the device list:

- 1 Click **Add Device** and enter the device name in the **Name** field.
- 2 Select the device type from the **Type** dropdown menu and the MAC Address in the **MAC Address** field.
- 3 Select the **Blocked** and/or **MAC Address Filter** check box as required, then click **Save Changes**.

LAN

From LAN settings, you can manage your Jetpack's network. These settings include:

- **IPv4**
 - **IP address** — The IP address for the Jetpack.
 - **Subnet mask** — The subnet mask network setting for the Jetpack. The default value 255.255.255.0 is standard for small (class "C") networks. If you change the LAN IP Address, make sure you use the correct Subnet Mask for the IP address range containing the LAN IP address.

- **MAC address** — The Media Access Controller (MAC) or physical address for the Jetpack.
- **Turn On DHCP server** — The **Turn On DHCP Server** checkbox turns the DHCP Server feature on or off. Normally this should be left turned on.
- **Start DHCP address range at** — The start range of IP addresses reserved for use by the Jetpack's DHCP server table.
- **DHCP address range** — The current range of IP addresses reserved for use by Jetpack's DHCP server table. If a device with a static IP address wants to connect to MiFi 8800L's network, the static IP should be outside of the DHCP address range. Most devices do not have a static IP.
- **DHCP lease time** — Use to determine how often connected devices must renew the IP address assigned to them by the DHCP server. Normally this is left at the default value, but if you have special requirements you can change the value.
- **IPv6**
 - **Enable IPv6** — The **Enable IPv6** checkbox turns ON/OFF the IPv6 feature.
 - **Link-Local address** — Displays the local address when IPv6 is turned on.

The screenshot shows the 'Advanced' settings page for a network configuration. At the top, there are tabs for 'Preferences', 'Software Update', 'Backup and Restore', 'GPS', and 'Advanced' (which is selected). Below these are sub-tabs for 'Networks', 'Manual DNS', 'SIM', 'Firewall', 'MAC Filter', 'LAN' (selected), 'Port Filtering', and 'Port Forwarding'. The main content area is divided into two sections: 'IPv4' and 'IPv6'. The 'IPv4' section includes fields for IP Address (192.168.1.1), Subnet Mask (255.255.255.0), MAC Address (00:15:ff:0c:2e:38), Turn on DHCP Server (checked), DHCP Lease Time (1440 minutes), Start DHCP Address Range at (192.168.1.2), and DHCP Address Range (192.168.1.2 - 192.168.1.102). The 'IPv6' section includes Turn on IPv6 (checked) and a note: 'Note: When on, connected devices can make IPv6 connections to the Internet.' Below the IPv6 section is the Link-Local Address (fe80::50a9:3eff:fe6d:9069). At the bottom center, there is a 'Save Changes' button.

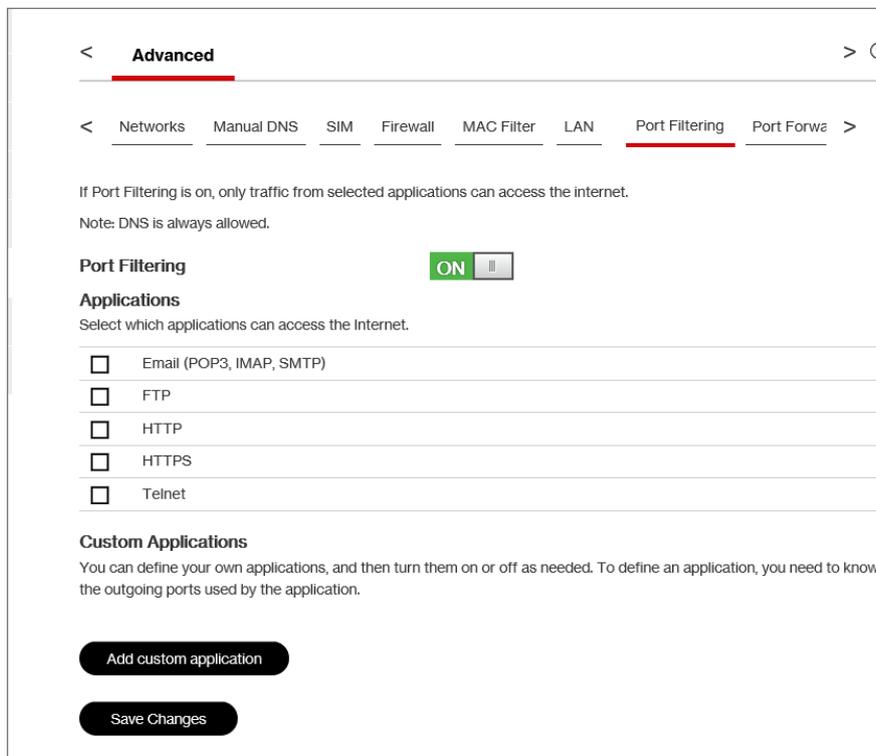
Port Filtering

Port Filtering allows you to block outgoing Internet connections and permit only allowed applications to access the Internet. You can also customize a list of allowed applications which permits only certain programs to connect to the Internet.

Slide the **ON/OFF** button to **ON** to turn on Port Filtering. When the feature is **turned on** you must select a port filtering application in the **Applications** list to allow that application to connect to the Internet. For example, if you select VPN in the Applications list but do not select HTTP, you can connect to a VPN server but you cannot connect to a web page using your Internet browser.

Port Filtering settings include:

- **Applications** — Turn on each port filtering application that needs to be able to access the Internet by checking the box next to one or more applications. When port filtering is turned on, all other applications are blocked.
- **Custom Applications** — You can define your own applications, and then turn them ON/OFF as needed. To define an application, you need to know the outgoing ports used by the application.
- **Add Custom Application** — Use to define your own applications, and then turn them on or off as needed.



To select the applications you want to allow:

- 1 Mark the checkbox to the left of the application. Click **Add Custom Application** to add a new custom application to the list of allowed applications. You can define and turn on custom Port Filtering applications. You need to know details of the traffic used and generated by the applications you wish to define.

NOTE The **Add Custom Application** option is only available when port filtering is turned **ON**. You can add up to ten custom applications.

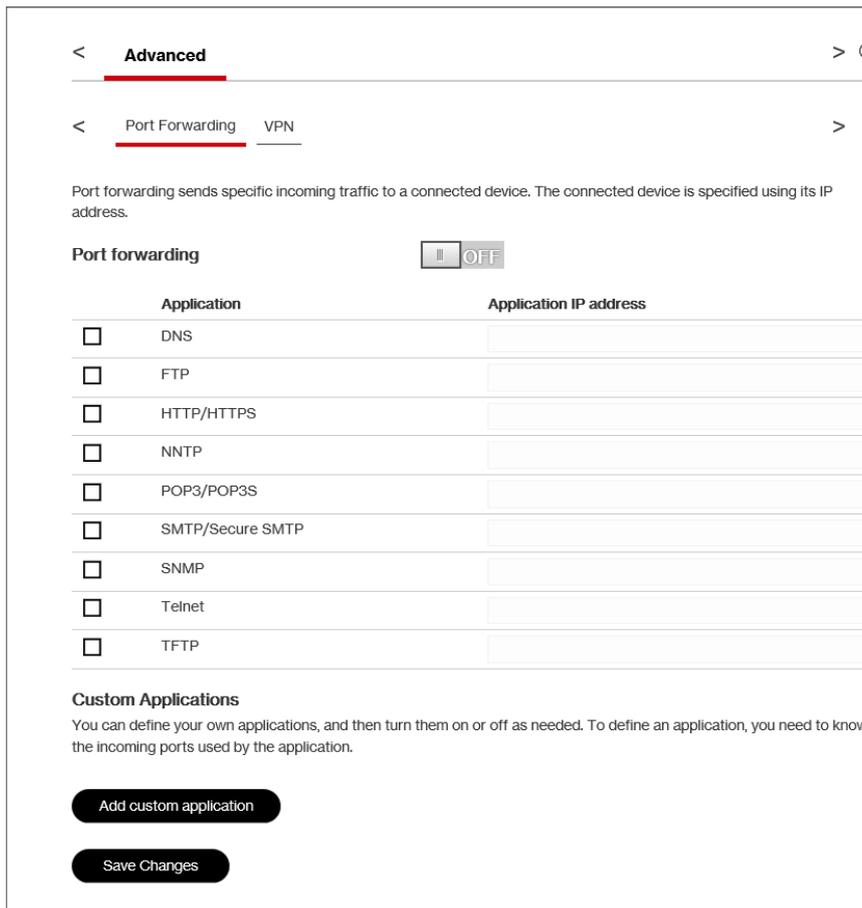
The Custom Port Filtering page uses check boxes to turn on port filtering for custom applications. Similar to the Applications list, you must turn on custom applications so they can connect to the Internet.

- ② Enter the beginning of the range of port numbers used by outgoing traffic for the custom application being added in the **Start Port** field, and the end of the range of port numbers in the **End Port** field. If the port is a single port instead of a range, type the same value for both the **Start Port** and the **End Port**.
- ③ Select the protocol (TCP, UDP, or both) used by each port range from the **Protocol** dropdown menu.
- ④ Select the **Delete** checkbox next to any custom application you wish to delete and click **Save Changes**.

Port Forwarding

Port Forwarding allows incoming traffic from the Internet to be forwarded to a particular computer or device on your Wi-Fi network. Normally, the built-in firewall blocks incoming traffic from the Internet. Use Port Forwarding to allow Internet users to access any server you are running on your computer, such as a Web, FTP, or E-mail server. For some online games, Port Forwarding must be used in order for the games to function correctly. Port Forwarding settings include:

- **ON/OFF** — Slide the ON/OFF button to ON to activate Port Forwarding.
- **Default Applications** — The IP address for the selected application. Choose from DNS, FTP, HTTP, POP3, SMTP, SNMP Telnet and TFTP.
- **Custom Applications**
 - **Add Custom Application** — Allows you to define your own applications. Once defined,



VPN

VPN allows you to establish a tunnel connection to an OpenVPN server and route all traffic on connected devices through the tunnel. When an OpenVPN tunnel is established, Port Filtering and Port Forwarding settings will not be effective.

- **ON/OFF** — Slide the ON/OFF button to ON to automatically establish a VPN tunnel. Select OFF to establish a tunnel manually.
- **VPN Connection** — Displays Connection status and Connection time, and allows you to Connect and view VPN Connection logs.
- **VPN Settings** — Provides VPN Connection Setting options.
 - **Setup files** — Allows you to drag and drop setup files from your VPN provider.
 - **Username** — Enter your Username in the field.
 - **Password** — Enter your Password in the field.
- **Clear all VPN Settings** — Click to delete all VPN Settings.
- **Save Changes** — Click to save all changes.

When an OpenVPN tunnel is established, traffic from all connected devices are sent through the tunnel and as such Port Filtering and Port Forwarding settings will not be effective. There is no need for connected devices to use their own OpenVPN client.

① **Auto-connect VPN**

OFF

VPN Connection

Connection status:

Not configured

Connection time:

VPN Settings

Setup files:

Drag files from your VPN provider here

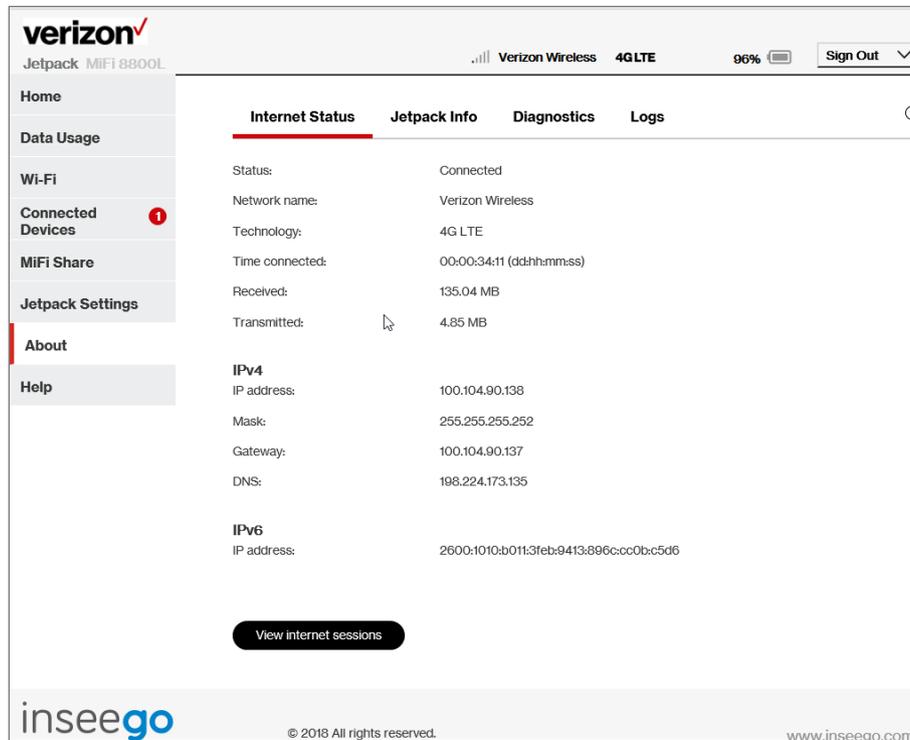
Username:

Password:

About Jetpack

Click **About** on the Menu panel to see detailed information about your Jetpack. This information is divided into 4 tabs:

- **Internet Status**
- **Jetpack Info**
- **Diagnostics**
- **Logs**



Internet Status

From the Internet Status tab, you can find:

Internet Status

- **Status** — The status of the Internet connection, usually **Connected** or **Disconnected**.
- **Network name** — The name of the network to which this Jetpack is currently connected.
- **Technology** — The type of technology used to connect to the Internet.
- **Time connected** — How long the Jetpack has been connected to the network.
- **Transmitted** — The amount of data sent to the network.
- **Received** — The amount of data received from the network.

IPv4

- **IP Address** — The IP address for the Jetpack.
- **Mask** — The subnet mask network setting for the Jetpack. The default value 255.255.255.0 is standard for small (class “C”) networks. If you change the LAN IP Address, ensure you use the correct Subnet Mask for the IP address range containing the LAN IP address.
- **Gateway** — The address of the server used to access the Internet.
- **DNS** — The address of the Domain Name Server (DNS).

IPv6

- **IP address** — The IP address for the Jetpack.

Jetpack Info

The Jetpack Info tab contains detailed information about your Jetpack including:

- **Manufacturer**
- **Model**
- **My Jetpack version**
- **Configuration version**
- **Software Components:**
 - **MiFi OS version** — The Jetpack operating system (OS), including its components, version.
 - **Modem FW version** — The current modem firmware version.
 - **Wi-Fi FW version** — The current Wi-Fi firmware version.
 - **Web UI version** — The web user interface version.
 - **Display UI version** — The current user interface version.
 - **PRI version** — The configuration version currently applied to the Jetpack.

Diagnostics

The Diagnostics tab shows information about the Jetpack firmware and other system-level information. You can also view the system log. This tab is used mostly for troubleshooting and is not required for normal operation. The Diagnostics page contains the following information:

- **Modem**
- **4G LTE Network**
- **UMTS/HSPA Network**
- **3G Network (eHRPD/EVDO/RTT)**
- **Field Test**

Modem

Modem information includes:

- **Phone number (MDN)** — The Phone Number or Mobile Directory Number (MDN) is used by the mobile data network to identify this particular data service.
- **MEID** — The Mobile Equipment Identifier (MEID) is used by the mobile data network to identify this particular modem.
- **IMEI** — The International Mobile Equipment Identity (IMEI) number for the Jetpack.
- **IMEISV** — The International Mobile Equipment Identity (IMEI) combined with an approval number for the Jetpack.
- **FW version** — The modem firmware version.
- **SIM status** — Status of the SIM card. If the SIM card is missing, or this field indicates some form of SIM error, the Jetpack will not be able to connect to the mobile network.
- **ICCID** — The ID number assigned to the SIM Card.
- **MIN (MSID)** — The Mobile Identification Number (MIN) or Mobile Station ID (MSID) is the number associated with the home service provider and the wireless phone number.
- **ESN** — The Electronic Serial Number, which is either blank or a pseudo-ESN which is not guaranteed to be unique for devices that use an MEID.
- **Home SID** — System identifier for the home network.
- **ERI version** — The Enhanced Roaming Indicator version that is currently installed.
- **PRL version** — The version of the Preferred Roaming List (PRL), which tells the modem which non-home carrier towers should provide roaming coverage.

4G LTE Network

The 4G LTE Network section has the following options:

- **Status** — Status of the network (Disabled, Not available, or Available).
- **Network operator** — The vendor that currently provides wireless access.
- **Signal strength** — Indicates the signal strength for LTE.
- **SNR** — A measure of signal quality; the higher the number the better the signal.

UMTS/HSPA Network

The UMTS/HSPA Network information includes:

- **Status** — Status of the network (Disabled, Not available, or Available).
- **Network operator** — The vendor that currently provides wireless access.
- **Technology** — The current technology in use for the UMTS/HSPA network. Possible values, from slowest to fastest are UMTS/HSPA+.
- **PLMN ID** — The name and/or ID of the Public Land Mobile Network.
- **Cell ID** — The value identifies the cell tower currently in use.

- **RSSI** — Indicates the RSSI for the UMTS/HSPA signal. RSSI is a measure of signal strength in decibels, relative to one milliwatt.
- **Roaming** — Indicates if the current connection is a roaming connection.

Field Test

Click **Field Test** to see a list of low-level network parameters which can be helpful for technical support staff when they troubleshoot network connectivity issues.

Logs

From the Logs tab, you can turn logs ON/OFF, and to delete system logs.

NOTE Logs record various operations and are used for troubleshooting and are not needed for normal Jetpack operation.

Turn on Logs

To turn on system logs on or off, click the **Turn on logs** checkbox and then click **Save Changes**:

Delete System Log

To delete a system log:

- ① Select the checkbox next to **Turn on logs**.
- ② Select the appropriate time period for the deletion of system logs from the dropdown menu next to **Delete system log**. The choices are after 1 - 4 days. If the system log is full, then the oldest data is discarded, regardless of this setting. Click **Save Changes**.

Getting Help

The **Help** page provides links to detailed information about using your Jetpack and the Jetpack Admin Website, as well as links to access Jetpack Advanced Features. The Help section provides links to **Using Your Jetpack**, **Jetpack Administrator Web Site Help**, and **Advanced Features**, and contains the following menu options:

- **Using Your Jetpack**
 - **Overview**
 - **Setup**
 - **Tips**
 - **Security Features for Jetpack administrators**
- **Jetpack Administrator Web Site Help**
- **Advanced Features**

The screenshot shows the Verizon Jetpack Admin Website interface. At the top, the Verizon logo is on the left, and the status bar shows 'Verizon Wireless 4G LTE' and '37%' battery. A 'Sign Out' button is in the top right. The left sidebar contains navigation options: Home, Data Usage, Wi-Fi, Connected Devices (with a red notification icon), MiFi Share, Jetpack Settings, About, and Help (which is currently selected). The main content area is titled 'Help' and 'Online Support'. It is divided into three columns: 'Using your Jetpack' with links for Overview, Setup, Tips, and Security features for Jetpack Administrators; 'Jetpack Admin Web Site Help' with links for Data Usage, Connected Devices, Wi-Fi - Settings, Wi-Fi - Primary Network, Wi-Fi - Guest Network, Jetpack Admin Password, Device Preferences, Notification Preferences, User Preferences, Software Update, Backup and Restore, GPS, Messages, MiFi Share, About - Internet status, About - Jetpack info, About - Diagnostics, and About - Logs; and 'Advanced Features' with links for Networks, Manual network selection, Manual DNS, SIM, Firewall, MAC Filter, LAN, Port Filtering, Port Forwarding, and VPN. The footer includes the 'inseego' logo, '© 2018 All rights reserved.', and the website URL 'www.inseego.com'.

5

Troubleshooting

Overview
Common Problems and Solutions
Technical Support

Overview

When properly installed, the Jetpack is a highly reliable product. Most problems are caused by one of these issues:

- System resources required by the Jetpack are being used by other devices.
- Network coverage is unavailable due to coverage area, an account problem, or a network problem.

The following tips can help solve many common problems encountered while using the Jetpack.

First Steps

- Make sure you are using the Jetpack in the correct geographic region.
- Ensure that your wireless coverage extends to your current location.
- Ensure you have an active data plan.

IMPORTANT Before contacting support, be sure to restart both your computer and your Jetpack MiFi 8800L, and ensure that your SIM card is inserted correctly.

Common Problems and Solutions

The following are some common problems and solutions.

My Jetpack just powered off without my pressing the power button. Why?

This may occur under any of the following circumstances.

- Pressing the Master Reset button
- Jetpack automatically restarting after configuration changes
- Switching profiles
- Restoring the configuration settings
- Battery depletion

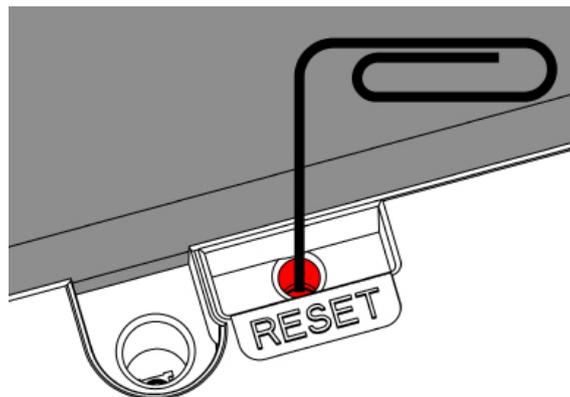
To restore battery power, follow these steps.

- ① Manually press and hold the power button to turn it back on.
- ② If the battery is depleted, charge the Jetpack with the wall charger.

How do I reset the Jetpack back to factory settings?

The master reset button is in a small hole located on the bottom of the Jetpack, underneath the battery cover. This button returns the Jetpack to factory settings, including re-setting the Wi-Fi Name (SSID) and Wi-Fi Password. To reset the Jetpack, follow these steps.

- ① Place one end of an unfolded paper clip into the master reset button hole.
- ② Press the reset button with the unfolded paper clip until the display shows "MiFi Powering Off" (about five to six seconds), then your Jetpack will restart.



WARNING! Resetting your Jetpack overwrites ALL existing settings. If the Wi-Fi settings change, you will lose this connection, and need to reconnect using the new settings.

How do I reset the Access Point and Router settings back to factory settings?

To reset the access point and router settings, follow these steps.

- 1 Connect to the Jetpack Admin Website (<http://my.jetpack> or <http://192.168.1.1>) and go to **Jetpack Settings > Jetpack > Backup and Restore**.
- 2 The Backup and Restore page has a **Restore to Factory Defaults** button. This button resets all Access Point and Router settings to their factory default values. All existing settings are lost.

No service is available.

- Reorient your device. If you are inside a building or near a structure that may be blocking the signal, change the position or location of the device. For example, try moving your device close to a window.
- You are outside your coverage area, or there may be a problem with your account. Check with your network operator.

The Jetpack has no power or the device screen does not display when the power button is pressed.

- Make sure the battery is properly seated in the device.
- Make sure the battery is fully charged. Plug in the AC charger for at least 3 hours.

I forgot my Wi-Fi Password.

- Tap **Wi-Fi Name/Password** to display your Wi-Fi Name (SSID) and Wi-Fi Password.

I forgot my Jetpack Admin website Password.

- Your Jetpack Admin website Password is the same as your Wi-Fi Password.

I cannot connect to my Jetpack.

- Make sure the Network Signal Strength indicator displays at least one bar and that the type of network is displayed on the Jetpack's Home screen.
- Make sure your Windows Wi-Fi adapter/Mac AirPort is turned on. (Refer to your computer's Help if you need assistance.)

- 1 Open your wireless network connection list:

Windows: Right-click icon and select **View Available Networks**.

Mac: Pull down list from AirPort icon.

- 2 Windows: Click **Connect**.

Mac: Select the network name.

When your device is connected to the network, the Connected Devices icon in the status bar will show a connected device.

I see the network name but cannot connect to my Jetpack.

- Go to **Wi-Fi Name/Password** to check that you are using the correct Wi-Fi password.

How do I disconnect from the network?

From the Jetpack device:

- To disconnect from the Wi-Fi network, select **Settings > Wi-Fi > Turn Off**.

From the Jetpack Admin website:

- Click **Sign Out**.

How can I find out how many users are connected to my Jetpack?

From the Jetpack touchscreen:

- Check the **Connected Devices** icon in the status panel on the Home page of your Jetpack. The number of connected devices is displayed to the right of the icon.

From the Jetpack Admin website:

- Check the **Connected Devices** icon in the status panel on the My Jetpack Home page. The number of connected devices is displayed to the right of the icon. To get detailed information on connected and block devices, click **Connected Devices** on the navigation panel.

How can I get detailed information about the devices that are connected to my Jetpack?

From the Jetpack touchscreen:

- ① Select **Connected Devices > Wi-Fi Devices** to display the type, name, and IP address of each device connected to the Jetpack Network.
- ② Select **Connected Devices > USB Tethering** to display the type, name, and IP address of any device connected to the Jetpack via the Universal Charging port.
- ③ From the Jetpack Admin Website, click **Connected Devices** on the Menu panel to see more detailed information for connected devices.

How do I check the firmware version installed on my Jetpack?

- Select **Software Update** to display the current version installed. To check for new update, select **Software Update > Next > Yes**.

How do I check the battery level of my Jetpack?

- Check the battery icon on the status panel on the Home page of the Jetpack device.

How do I turn off my Jetpack?

- Press and hold the Power button until the display shows **MiFi Powering Off**.

How can I tell that my Jetpack is still on after the device screen goes off?

- When the display is off (sleep mode) and the Jetpack is turned on, the white Power indicator on the front panel of the Jetpack blinks.



Technical Support

IMPORTANT Before contacting support, be sure to re-start both your computer and the Jetpack.

Technical Support

Contact your service provider for assistance. When calling, you may be asked for the wireless number of your Jetpack. To find your Jetpack's wireless number, go to **About Jetpack > Jetpack Info** on your Jetpack, or go to **About** on the Jetpack Admin website.

Product Specifications and Regulatory Information

Product Specifications
Regulatory Statements
Wireless Communications
Limited Warranty and Liability
Safety Hazards
Proper Battery Use and Disposal

Product Specifications

General

Name:	Verizon Jetpack® - MiFi® 8800L
Model:	MIFI8800L
Approvals:	FCC (US)
Weight:	162 g / 5.71 oz
Dimensions:	113 mm x 71 mm x 19.15 mm, 4.45 in x 2.8 in x 0.75 in
Wireless Network	LTE, UMTS
Wireless Network – Wi-Fi Mode	Real simultaneous Dual Band 802.11 b/g/a/n/ac 2.4 GHz/5.0 GHz
Display	2.4 in color touchscreen LCD
Default SSID	MIFI8800L-XXXX
Battery	
• Size	4400 mAh Li-Ion
• Time required for full charge	3 hours (when not in use)
• Usage	Up to 24 hours
Chip Set:	QUALCOMM® SDx20
Interface Type:	Type C USB Port for Quick Charge charging port, Universal charging feature, Internet over USB, content access
Memory:	RAM = 128MB, LPDDR FLASH = 256MB, NAND

Technology/Bands

Technology:	LTE, UMTS
Band Designation:	CAT 18 LTE w/5-Carrier CA
Bands:	LTE Bands: B4/B5/B7/B13/B14*/B20/B28/B46/B48/B66 UMTS Bands: B1/B2/B5/B8 Carrier Aggregation - DL CA: B13+B4, B13+B2, B4+B2, B4+B4, B2+B2, B2+B5, B4+B5, B13+B66, B66+B2, B66+B66, B5+B66, B2+B48, B13+B48, B48+B66, B2+B46, B4+B46, B13+B46, B5+B46, B46+B66, B13+B4+B2, B13+B4+B4, B13+B2+B2, B5+B4+B2, B5+B4+B4, B5+B2+B2, B13+B66+B2, B13+B66+B66, B66+B66+B2, B66+B66+B66, B5+B66+B2, B5+B66+B66 UL CA: B13+B4, B13+B2, B13+B66; LAA sGPS/XTRA capable

Environmental

Operating Temperature:	-10° C to 55° C (14°F to 131° F)
Storage Temperature:	-30° C to 70° C (-22° F to 158° F)
Battery Charging	0° C to 40° C (32° F to 104° F)
Relative Humidity	The device shall be fully operational up to a maximum of 93% relative humidity (non-condensing).
Drop:	<p>The device accessories (battery and charger) shall withstand drop from 1.5m onto hard surface (stone, concrete, metal) without mechanical, electrical, or functional damage, except for slight scratches or mars.</p> <p>The housing will withstand drop from 1.25m onto hard surface (stone, concrete, metal) without mechanical, electrical, or functional damage, except for slight scratches or mars</p>
Electrostatic Discharge	The device shall be able to withstand the following ESD: 8kV contact / 15kV air discharge.
Vibration Stability:	The device shall be able to withstand the following vibration profile: 10-2000Hz, 1.5G acceleration, 3 axes.

Regulatory Statements

Federal Communications Commission Notice (FCC – United States)

Electronic devices, including computers and wireless modems, generate RF energy incidental to their intended function and are therefore subject to FCC rules and regulations.

This equipment has been tested to, and found to be within the acceptable limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment.

This equipment generates radio frequency energy and is designed for use in accordance with the manufacturer's user manual. However, there is no guarantee that interference will not occur in any particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are 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 the 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/television technician for help.

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions.

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

WARNING: DO NOT ATTEMPT TO SERVICE THE WIRELESS COMMUNICATION DEVICE YOURSELF. SUCH ACTION MAY VOID THE WARRANTY. THE Jetpack MODEM IS FACTORY TUNED. NO CUSTOMER CALIBRATION OR TUNING IS REQUIRED. CONTACT INSEEGO CORP TECHNICAL SUPPORT FOR INFORMATION ABOUT SERVICING YOUR WIRELESS COMMUNICATION DEVICE.

FCC CAUTION: Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

MODIFICATIONS: The FCC requires that you be notified that any changes or modifications made to this device that are not expressly approved by Inseego Corp. may void your authority to operate the equipment.

NOTE: The Radio Frequency (RF) emitter installed in your modem must not be located or operated in conjunction with any other antenna or transmitter, unless specifically authorized by INSEEGO CORP.

RF Exposure Content

FCC Equipment Authorization ID: PKRNVWMIFI8800

This device is authorized for use in mobile and portable applications.

This product has been evaluated for SAR and meets the FCC Guidelines for exposure to radio waves.

For better signal reception, coverage range and data throughput, do not place the router near any physical obstruction, including in a pocket or in close proximity of any object. For RF Safety, a mandatory minimum of 10 mm (1 cm) should be maintained between the device and any part of a human body when using the device. Increasing the separation between the device and the body will result in better reception and reduced exposure to radio energy.

Wireless Communications

IMPORTANT Due to the transmission and reception properties of wireless communications, data occasionally can be lost or delayed.

This can be due to the variation in radio signal strength that results from changes in the characteristics of the radio transmission path. Although data loss is rare, the environment where you operate the modem might adversely affect communications.

Variations in radio signal strength are referred to as fading. Fading is caused by several different factors including signal reflection, the ionosphere, and interference from other radio channels.

INSEEGO CORP or its partners will not be held responsible for damages of any kind resulting from the delays or errors in data transmitted or received with the Jetpack device, or failure of the MiFi 8800L device to transmit or receive such data.

Limited Warranty and Liability

Inseego Corp. warrants for the 12-month period immediately following receipt of the Product by Purchaser that the Product will be free from defects in material and workmanship under normal use. THESE WARRANTIES ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The exclusive remedy for a claim under this warranty shall be limited to the repair or replacement, at INSEEGO CORP' option, of defective or non-conforming materials, parts or components. The foregoing warranties do not extend to (I) non conformities, defects or errors in the Products due to accident, abuse, misuse or negligent use of the Products or use in other than a normal and customary manner, environmental conditions not conforming to INSEEGO CORP' specification, of failure to follow prescribed installation, operating and maintenance procedures, (II) defects, errors or nonconformities in the Product due to modifications, alterations, additions or changes not made in accordance with INSEEGO CORP' specifications or authorized by INSEEGO CORP, (III) normal wear and tear, (IV) damage caused by force of nature or act of any third person, (V) shipping damage, (VI) service or repair of Product by the purchaser without prior written consent from INSEEGO CORP, (VII) products designated by INSEEGO CORP as beta site test samples, experimental, developmental, reproduction, sample, incomplete or out of specification Products, or (VIII) returned products if the original identification marks have been removed or altered.

Safety Hazards

Do not operate the Jetpack in an environment that might be susceptible to radio interference resulting in danger, specifically:

Areas where prohibited by the law

Follow any special rules and regulations and obey all signs and notices. Always turn off the host device when instructed to do so, or when you suspect that it might cause interference or danger.

Where explosive atmospheres might be present

Do not operate your device in any area where a potentially explosive atmosphere might exist. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Be aware and comply with all signs and instructions.

Users are advised not to operate the device while at a refueling point or service station. Users are reminded to observe restrictions on the use of radio equipment in fuel depots (fuel storage and distribution areas), chemical plants or where blasting operations are in progress.

Areas with a potentially explosive atmosphere are often but not always clearly marked. Potential locations can include gas stations, below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine.

Near medical and life support equipment

Do not operate your device in any area where medical equipment, life support equipment, or near any equipment that might be susceptible to any form of radio interference. In such areas, the host communications device must be turned off. The device can transmit signals that could interfere with this equipment.

On an aircraft, either on the ground or airborne

In addition to FAA requirements, many airline regulations state that you must suspend wireless operations before boarding an airplane. Please ensure that the modem is turned off prior to boarding aircraft in order to comply with these regulations. The modem can transmit signals that could interfere with various onboard systems and controls.

While operating a vehicle

The driver or operator of any vehicle should not operate a wireless data device while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some countries, operating such communications devices while in control of a vehicle is an offense.

Electrostatic discharge (ESD)

Electrical and electronic devices are sensitive to electrostatic discharge (ESD). Macintosh native connection software might attempt to reinitialize the device should a substantial electrostatic discharge reset the device. If the software is not operational after an ESD occurrence, then restart your computer.

Proper Battery Use and Disposal

IMPORTANT In event of a battery leak:

- Do not allow the liquid to come in contact with the skin or the eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.
 - Seek medical advice immediately if a battery has been swallowed.
 - Communicate the appropriate steps to be taken if a hazard occurs. Due to the transmission and reception properties of wireless communications, data occasionally can be lost or delayed.
-

Please review the following guidelines for safe and responsible battery use.

- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- Do not modify or remanufacture, attempt to insert a foreign object into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Only use the battery for the system for which it was specified.
- Only use the battery with a charging system that has been qualified with the system per this standard. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.
- Do not short circuit a battery or allow a metallic or conductive object to contact the battery terminals.
- Replace the battery only with another battery that has been qualified with the system per this standard. Use of an unqualified battery may present a risk of fire, explosion, leakage, or other hazard.
- Promptly dispose of used batteries in accordance with local regulations.
- Battery usage by children should be supervised.
- Avoid dropping the Jetpack or battery. If the Jetpack or the battery is dropped, especially on a hard surface, and the user suspects damage, take it to a service center for inspection.
- Improper battery use may result in a fire, explosion, or other hazard.

Glossary

Glossary

- **3G** — Third Generation. 3G refers to the third generation of mobile telephony technology. 3G telecommunication networks support services that provide an information transfer rate of at least 200 kbit/s. However, many services advertised as 3G provide higher speed than the minimum technical requirements for a 3G service. 3G finds application in wireless voice telephony, mobile Internet access, fixed wireless Internet access, video calls and mobile TV.
- **4G LTE** — Fourth Generation Long Term Evolution. LTE is a standard for wireless data communications technology and an evolution of the UMTS standards. The goal of LTE is to increase the capacity and speed of wireless data networks using new DSP (digital signal processing) techniques and modulations that were developed around the turn of the millenium. A further goal is the redesign and simplification of the network architecture to an IP-based system with significantly reduced transfer latency compared to the 3G architecture. The LTE wireless interface is incompatible with 2G and 3G networks, so that it must be operated on a separate wireless spectrum.
- **802.11 (a, b, g, n, ac)** — A set of WLAN communication standards in the 2.4, 3.6 and 5 GHz frequency bands.
- **bps** — Bits per second. The rate of data flow.
- **Broadband** — High-capacity high-speed transmission channel with a wider bandwidth than conventional modem lines. Broadband channels can carry video, voice, and data simultaneously.
- **DHCP** — Dynamic Host Configuration Protocol. Software found in servers and routers that automatically assigns temporary IP addresses to clients logging into an IP network.
- **DHCP Server** — A server or service with a server that assigns IP addresses.
- **DNS** — Domain Name System. A system for converting host names and domain names into IP addresses on the Internet or on local networks that use the TCP/IP protocol.
- **Firmware** — A computer program embedded in an electronic device. Firmware usually contains operating code for the device.
- **GB** — Gigabyte. A multiple of the unit byte for digital information storage. Usage depends on context. When referring to disk capacities it usually means 10^9 bytes. It also applies to data transmission quantities over telecommunication circuits.
- **Hotspot** — A Wi-Fi (802.11) access point or the area covered by an access point. Used for connecting to the Internet.
- **HTTP** — Hypertext Transfer Protocol. An application-level protocol for accessing the World Wide Web over the Internet.
- **IEEE** — Institute of Electrical and Electronics Engineers. An international technical/professional society that promotes standardization in technical disciplines.
- **IMEI** — International Mobile Equipment Identity. Used in LTE networks to identify the device. It is usually printed on the device and can often be retrieved using a USSD code.
- **IP** — Internet Protocol. The mechanism by which packets are routed between computers on a network.

- **IP Type** — The type of service provided over a network.
- **IP address** — Internet Protocol address. The address of a device attached to an IP network (TCP/IP network).
- **ISP** — Internet Service Provider. Also referred to as the service carrier, an ISP provides Internet connection service. (*See* Network Operator)
- **LAN** — Local Area Network. A type of network that lets a group of computers, all in close proximity (such as inside an office building), communicate with one another. It does not use common carrier circuits though it can have gateways or bridges to other public or private networks.
- **MAC Address** — Media Access Control. A number that uniquely identifies each network hardware device. MAC addresses are 12-digit hexadecimal numbers. This is also known as the physical or hardware address.
- **Mbps** — Megabits per second. The rate of data flow.
- **MSID** — Mobile Station IDentifier. A number for a mobile phone that identifies that phone to the network. These numbers are carrier specific.
- **Network Operator** — The vendor who provides your wireless access. Known by different names in different regions, some examples are: wireless provider, network provider, and service provider.
- **Network Technology** — The technology on which a particular network provider's system is built; such as LTE.
- **Port** — A virtual data connection used by programs to exchange data. It is the endpoint in a logical connection. The port is specified by the port number.
- **Port Forwarding** — A process that allows remote devices to connect to a specific computer within a private LAN.
- **Port Number** — A 16-bit number used by the TCP and UDP protocols to direct traffic on a TCP/IP host. Certain port numbers are standard for common applications.
- **PRL** — Preferred Roaming List. A list that your wireless phone or device uses to determine which networks to connect with when you are roaming. (Network operator specific).
- **Protocol** — A standard that enables connection, communication, and data transfer between computing endpoints.
- **Proxy** — A firewall mechanism that replaces the IP address of a host on the internal (protected) network with its own IP address for all traffic passing through it.
- **Router** — A device that directs traffic from one network to another.
- **SIM** — Subscriber Identification Module. Found in LTE network technology, the SIM is a card containing identification information for the subscriber and their account. The SIM card can be moved to different devices.
- **SSID** — Service Set IDentifier. The name assigned to a Wi-Fi network.
- **TCP/IP** — Transmission Control Protocol/Internet Protocol. The set of communications protocols used for the Internet and other similar networks.

- **USB** — Universal Serial Bus. A connection type for computing device peripherals such as a printer, mobile modem, etc. USB connectors may be used for data transfer or charging.
- **USB Port Types** — The USB ports on computers and hubs have a rectangular Type A socket, and peripheral devices have a cable with a Type A plug. Peripherals that do not have an attached cable have a rotationally symmetrical Type C connector on the device and a separate cable with a Type A and Type C plug. Ports and connectors are available in different sizes (for example, standard, mini, and micro).
- **VPN** — Virtual Private Network. A secure private network that runs over the public Internet. Commonly used to connect to an office network from elsewhere.
- **WWAN** — Wireless Wide Area Network. A public network that extends beyond architectural, geographical, or political boundaries (unlike a LAN, which is usually a private network located within a room, building, or other limited area).
- **Wi-Fi** — Wireless Fidelity. Any system that uses the 802.11 standard developed and released in 1997 by the IEEE.
- **Wi-Fi Client** — A wireless device that connects to the Internet via Wi-Fi.
- **WPA/WPA2** — Wi-Fi Protected Access. A security protocol for wireless 802.11 networks from the Wi-Fi Alliance.