

# C Spire Wireless 4G LTE Smart USB Modem



**U772**

**User Guide**



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# Get Started

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Congratulations on your purchase of the U772, 4G LTE Smart USB modem. This section gives you all the information you need to set up your device and service the first time.

With the 4G LTE Smart USB Modem, you can access C Spire Wireless 4G LTE network for faster uploads, downloads from your computer. Built-in Wi-Fi tethering function allows you to share up to 100Mbps LTE connection with other Wi-Fi equipped devices such as laptops, tablets, smart phones, and more.

## Features

- Connect to 4G LTE high-speed wireless data with fall-back to 3G CDMA service
- Hostless Connection Manager with Web User Interface and Remote NDIS driver.
- No USB driver or connection manager SW installation
- Two in One device: USB modem as well as Wi-Fi hotspot

## Your Device at a Glance

### Set Up Your Device

### Activate Your Device

### Account Information and Help

Your device as an USB modem or as a Wi-Fi hotspot

## Your Device at a Glance

The 4G LTE Smart USB Modem package includes:

U772  
4G LTE Smart USB

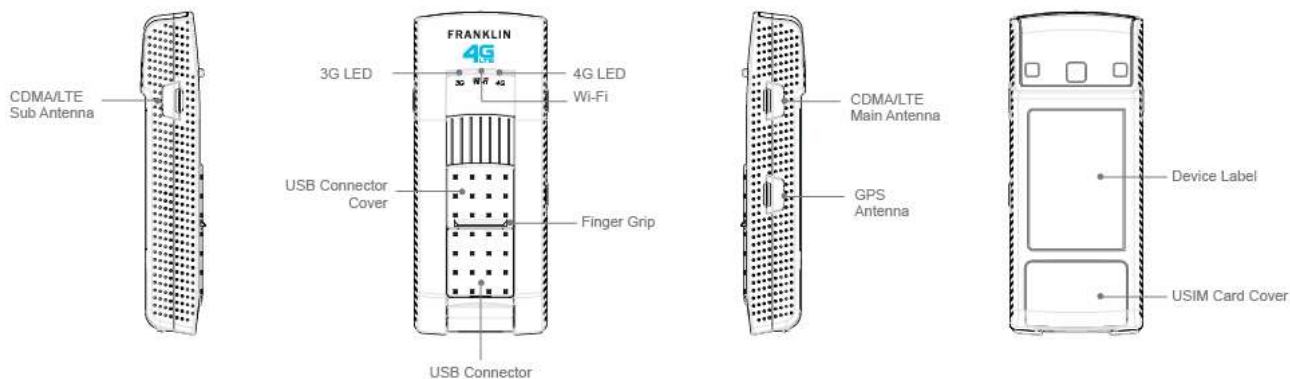


Quick Start Guide (QSG)



AC-to-USB Adapter

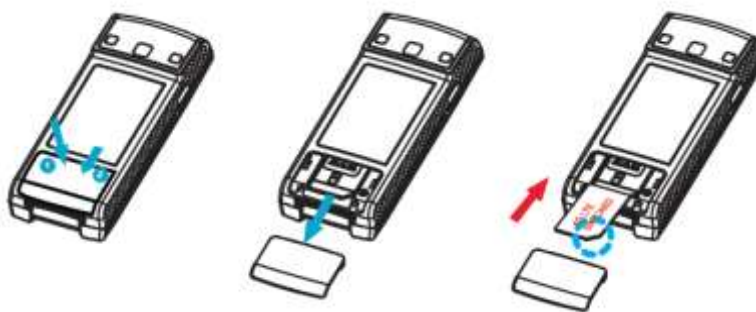




## Insert USIM Card

Please ensure that the C Spire USIM card has been inserted prior to use.

1. To open the USIM cover located on the back, press down firmly(1), and drag down(2) as indicated in the image below.
2. Insert the USIM card as shown in the picture.
3. Replace the cover by pressing down until you hear a click sound.



## Set Up Your Device (*Window XP users only*)

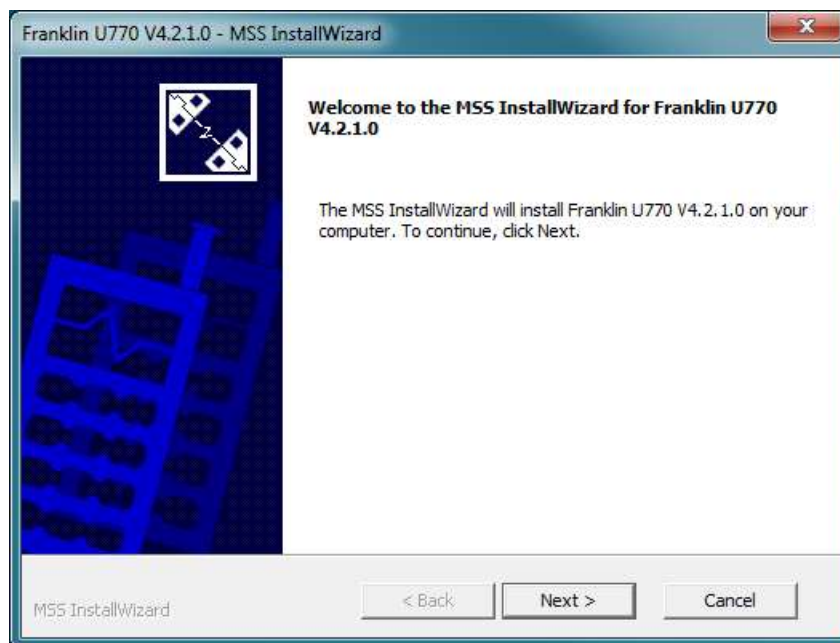
***The following section is for Windows XP users only. Mac, Linux, Windows XP SP3, Windows Vista, and Windows 7 users can skip to the 'Activate Your Device' section.***

To use the 4G LTE Smart USB on your computer, you will need to install the Remote NDIS driver included in the modem memory and configure the device. See the next section for more information on driver installation and device configuration.

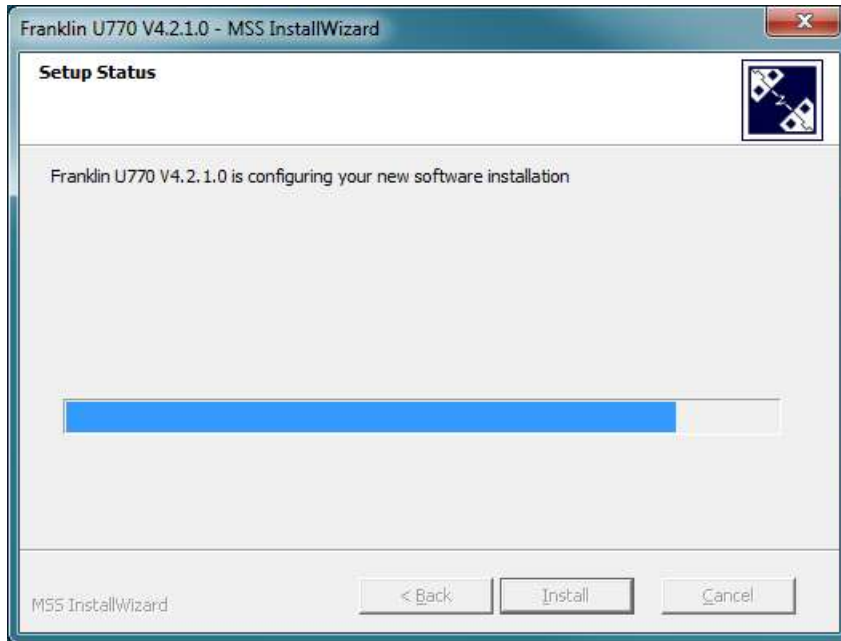
**Note:** If you have inserted the device properly, Windows will inform you that it has found new hardware. Wait until Windows completes the “Found New Hardware” task. It is normal to hear a short beep each time you insert or remove the device. It is an audible notification that your computer recognizes the new hardware.

**Important:** Make sure to complete the ejection process before removing the device. If you remove the device improperly, the modem may be damaged.

4. Turn on your computer and close all applications.
5. Insert the device into your USB port.
6. Your computer will recognize the device and install the Remote NDIS driver automatically. If the program does not launch automatically, go to “My Computer,” select ‘Franklin zero CD’ drive and double click the ‘Franklin\_installer.exe’ program.
7. The “Welcome to the Franklin U770 Setup Wizard” screen will then appear. Click **Install** to continue the installation process.



8. Installation of Remote NDIS driver is now complete. Click **Close** to leave the setup program.



## *Activate Your Device*

- When you receive your device, it may or may not be activated and ready to use. If you purchased your device at your service carrier store, it is probably activated and ready to use. Just insert C Spire SIM card into the SIM slot on the back side of the U772 device.
- If you received your device in the mail and it is for a new service account or a new line of service, it is designed to activate automatically. Just insert C Spire SIM card into the SIM slot on the back side of the U772 device.
- If you received your device in the mail and you are activating a new device for an existing number on your account (you're swapping devices), simply remove the SIM card from the old device and insert it into the SIM slot on the back side of the U772 device.

**Note:** If you are having any difficulty with activation, contact C Spire Customer Service by calling **1-855-CSPIRE5 (277-4735)** from any phone.

## *C Spire Account Information and Help*

[C Spire Account Passwords](#)

[Manage Your Account](#)

### *C Spire Account Passwords*

As a C Spire customer, you enjoy unlimited access to your personal account information and your data services account. To ensure that no one else has access to your information, you will need to create passwords to protect your privacy.

## *Account User Name and Password*

If you are the account owner, you will create an account user name and password when you sign on to cspire.com. (Click **My Account** to get started.)

## *Manage Your Account*

Manage your C Spire account from your computer or any phone.

### **Online: cspire.com**

- Access your account information.
- Check your data usage.
- View and pay your bill.
- Enroll in C Spire online billing and automatic payment.
- Purchase accessories.
- Shop for the latest C Spire phones and devices.
- View available C Spire service plans and options.

### **From Any Phone**

- C Spire Customer Service: **1-855-CSPIRE5 (277-4735)**.

## *Your Device; USB modem and Wi-Fi hotspot*

[Use as an USB modem](#)

[Use as a Wi-Fi hotspot](#)

### *Use as an USB Modem*

The first time you insert your device into an available USB port, it is designed to automatically activate and connect to the C Spire network

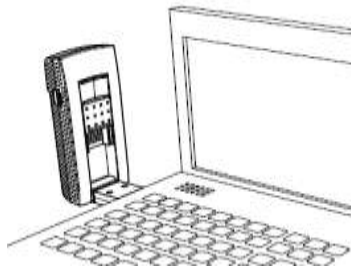
1. Turn on your computer and close all applications.
2. Insert the device's USB connector into an available USB port on your computer. Your device should automatically activate and connect to the C Spire network.
3. If it's not activated or connected automatically, launch your web browser and type <http://cspire-admin> into the address bar and then press Enter to open web user interface. You can find signal strength bars and "Connect" or "Activate" button under the bars. Click the button either to connect or to activate.



**Note:** When the U772 is directly connected to the USB port of your PC, it turns off Wi-Fi hotspot function automatically. The U772 works as a USB modem to your PC only.

Depending on network availability the 3G LED light will flash green or the 4G LED light will flash blue when a connection is made.

When either the 3G or 4G LED light is flashing, you can check your connection by launching your browser and navigating a website.



USB Modem(3G+4G)



Access Piont (Wi-Fi Hotspot)

### *Use as a Wi-Fi Hotspot(only Use AC adapter)*

You can use the device as a Wi-Fi hotspot and share C Spire connection with other Wi-Fi enabled devices including your computer, smart phones, laptops, tablet PCs and more.

1. Connect the device to the USB port of the AC USB adapter (included in the box), and then connect the adapter AC plugs to a power outlet.
2. Your device should automatically turn Wi-Fi on and connect to the C Spire network.
3. From your computer, or from other Wi-Fi enabled devices, select “C Spire 4G LTE Hotspot” from the list of available Wi-Fi services, and then click connect.

**Note:** No security password is set for Wi-Fi access from the factory. You can change Wi-Fi settings from the web user interface. Launch your web browser and type <http://cspire-admin> into the address bar and then press Enter to open web user interface. Click Wi-Fi on the main menu bar.

**Note:** Your device is designed to turn Wi-Fi on automatically when it's connected to external AC power source than your computer.

# *Your Device's Browser Interface*

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This section contains information on your device's browser interface.

The Browser Interface

Opening the Browser Interface

The Landing Page

Connecting to the Network

Device and network menu

The check usage menu

The Wi-Fi menu

The setting menu

The help menu

## *The Browser Interface*

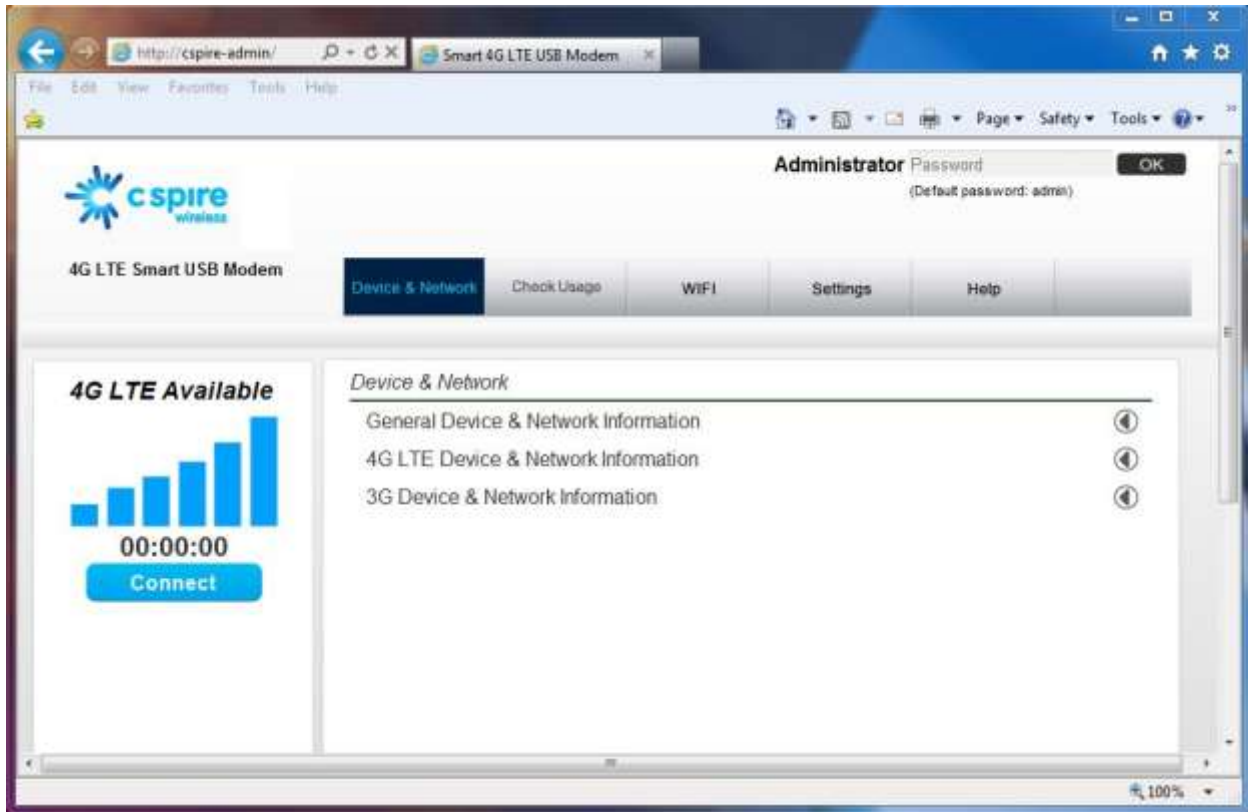
The Web browser interface is a Web-based connection manager for your device. It allows you to manage and monitor the Internet connection between your computer and the wireless network. It has a user-friendly interface and is equipped with many useful features that will enhance your Internet navigation experience.

## *Opening the Browser Interface*

To use the Web browser interface, open the Web browser on your desktop and type <http://cspire-admin> or <http://192.168.10.1> into the address window and press **Enter** or **Return**.

## *The Landing Page*

The Web browser will open the main page for the 4G LTE Smart USB Modem as shown below. From this page, you can see and manage available network connections, see your current connection state, and see signal strength at a glance. Detailed menus for status and settings are displayed across the top of the menu.



The main menu appears down across the top of the browser interface and allows for ease of Web browser interface navigation.



Information regarding your current network connection can be seen in the Network Connection Box displayed down the left side of the main page. This box displays both 3G and 4G service signals which are available. The box has the following items:



- Service Type: Not Activated / 4G LTE Available / 4G Connected / 3G Available / 3G Connected
- Signal Strength Bars: The more bars, the stronger is the service signal
- Connection Time: Count starts when connected.
- Connection button: Activate / Connect / Disconnect

Automatic connection mode and preferred service mode can be set from “Setting” menu in the main menu bar (see page ##).

- **Service Type:** Displays service type your modem currently acquires.
- **Signal strength bar:** Displays your current signal strength. Supports 0- 6 levels of signal strength.
- **Connection time:** Displays the time after your device is connected.
- **Connection button:** Connects you to a network available.

The following table provides device status and connection button descriptions.

Status	Connection Button	Description
“Disconnected”	<b>Connect</b>	Radio power is on and device is disconnected. Ready to connect.
“Connected”	<b>Disconnect</b>	Device is connected and available to disconnect the connection.
“Not Activated”	<b>Activate</b>	Device activation is required.




## Connecting to the Network

Once your device is properly configured, connecting to the Internet is as simple as clicking **Connect**. Once connected, **Connect** will change to **Disconnect**. Simply click **Disconnect** to end your current connection. To connect to any other network shown, select it, and then click **Connect**.

## Navigating Web UI menu

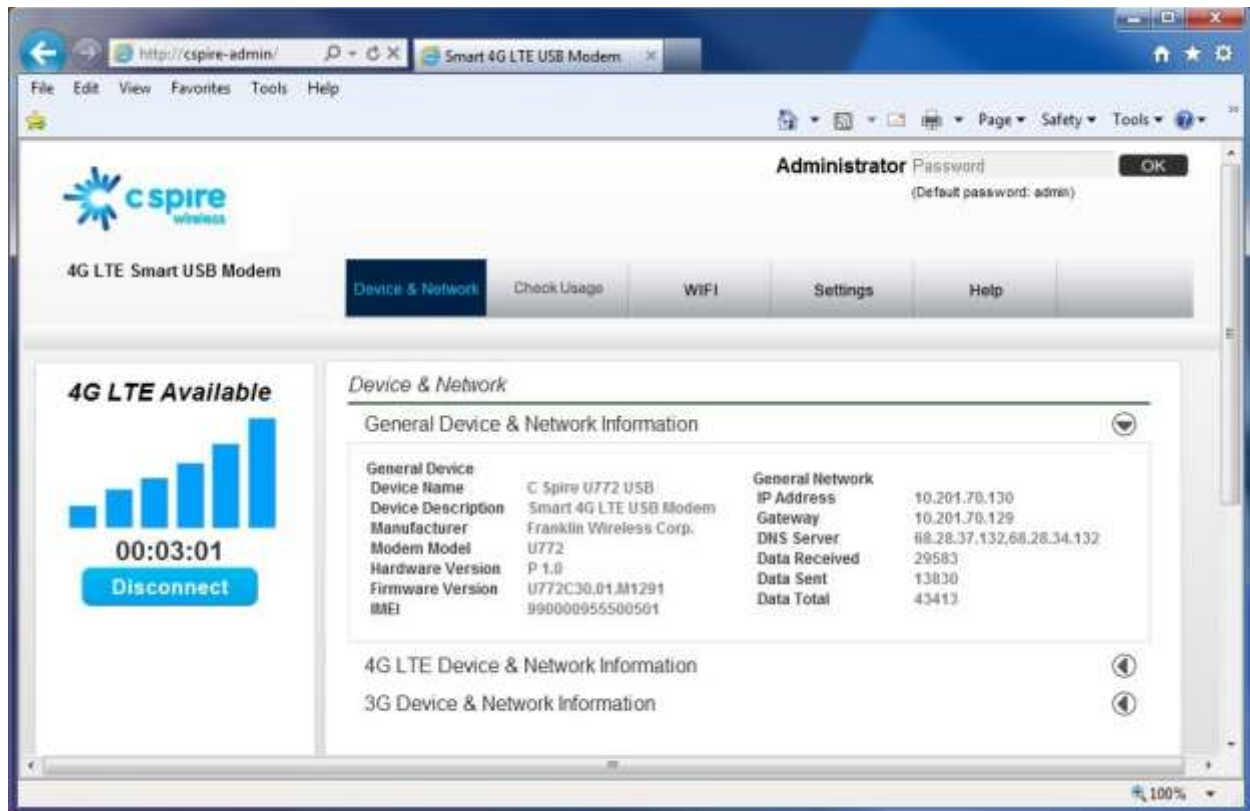
The main menu appears down across the top of the browser interface. Simply click the menu in the main menu bar. The screen will display sub menus under each main menu item.



Click  to open sub menu items. The icon will be changed to . Click  to close the sub menu items.

## The Device & Network Menu

The Device & Network menu allows you to view information about your device and network status.



### General Device and Network Information

#### General Device & Network Information

<b>General Device</b>		<b>General Network</b>	
Device Name	C Spire U772 USB	IP Address	10.201.70.130
Device Description	Smart 4G LTE USB Modem	Gateway	10.201.70.129
Manufacturer	Franklin Wireless Corp.	DNS Server	68.28.37.132,68.28.34.132
Modem Model	U772	Data Received	29583
Hardware Version	P 1.0	Data Sent	13830
Firmware Version	U772C30.01.M1291	Data Total	43413
IMEI	990000955500501		

### General Device

- **Device Name** – name of the device
- **Device Description** – description of the device

- **Manufacturer** – manufacturer of the device
- **Modem Model** – model name of the device
- **Hardware Version** – hardware version
- **CM Version** – current CM version

## General Network

- **IP Address** – the current Internet Protocol address of the device
- **Gateway** – the current network point entrance address
- **DNS Server** – the current Domain Name Server system address
- **Data Received** – the number of bytes received
- **Data Sent** – the number of bytes sent
- **Data Total** – the total data received and sent

## 4G LTE Device and Network Information

### 4G LTE Device & Network Information



4G LTE Device		4G LTE Network	
Technology	LTE	Status	Disconnected
IMSI	311230000001302	SNR	--
ICCID	8901230000000013025	RSRP	--
USIM State	Present - PIN unknown	RSRQ	--
		PLMN ID	000.000

## 4G LTE Device

- **Technology** – Long Term Evolution (LTE)
- **IMSI** – the International Mobile Subscriber Identity (IMSI) number
- **ICCID** – the Integrated Circuit Card ID (ICCID) number
- **USIM State** – the current state of the Universal Subscriber Identity Module (USIM)

## 4G LTE Network

- **Status** – current network status
- **SNR** – the current Signal-to-Noise Ration (SNR)
- **RSRP** – the current Reference Signal Received Power (RSRP)
- **RSRQ** – the current Reference Signal Received Quality (RSRQ)

- **PLMN ID** – the current state of Public Land Mobile Network ID

## 3G Device and Network Information

### 3G Device & Network Information

<b>3G Device</b>			
<b>MEID</b>	A1000027450FA7	<b>Home Carrier Name</b>	C Spire Wireless
<b>Technology</b>	cdma2000(HRPD)	<b>Home Carrier ID</b>	0
<b>Phone Number(MDN)</b>	7697982858	<b>PRL Version</b>	0
<b>MSID(IMSI_S)</b>	6016244719		
<b>3G Network</b>			
<b>Status</b>	Connected	<b>RSSI</b>	-60 dBm
<b>Ec/lo</b>	-0.0 dB		

## 3G Device

- **MEID** – unique number the network uses to identify your device
- **Technology** – type of network you are connected to
- **Firmware** – current internal software version
- **Phone Number (Mobile Data Number (MDN))** – the public ID for your specific wireless service
- **MSID (IMSI\_S)** – internal ID C Spire uses to identify your account
- **Home Carrier Name** – name of the network operator
- **Home Carrier ID** – ID of the network operator
- **PRL Version** – used to verify that your Preferred Roaming List is the most current

## 3G Network

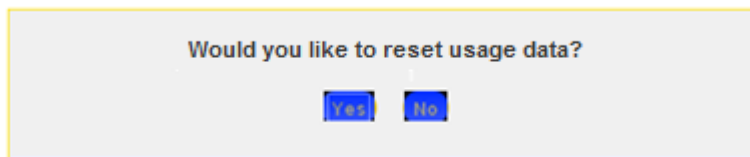
- **Status** – current network status
- **RSSI** – measurement in dBm of current signal strength
- **Ec/lo** – measurement in dB of current Ec/lo

## The Check Usage Menu

The Check Usage menu allows you to review your usage history online. Please ensure that you have an Internet connection. Selecting the Check Usage menu displays your wireless data usage to date.



To reset usage data, click the reset button.

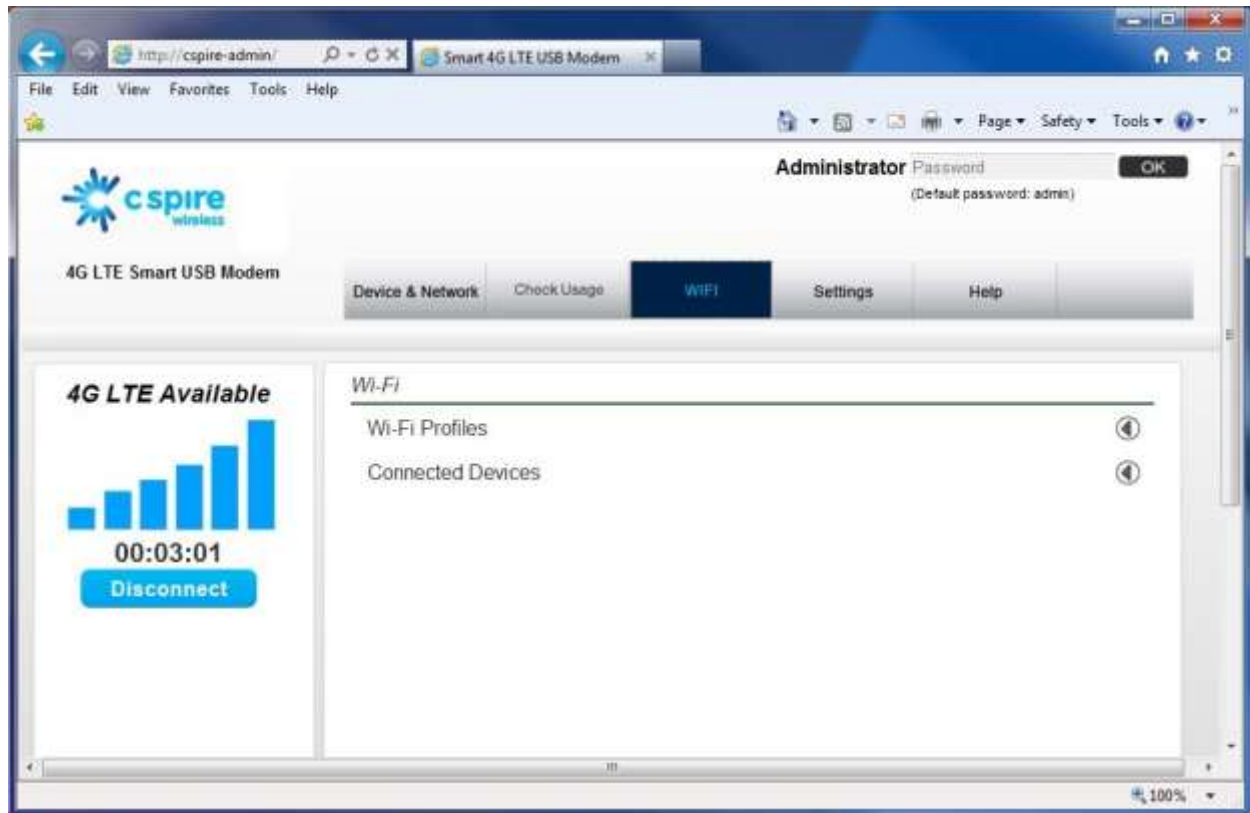


If “Yes” button is clicked, usage data will be reset to 0 and date will be set to the current date.



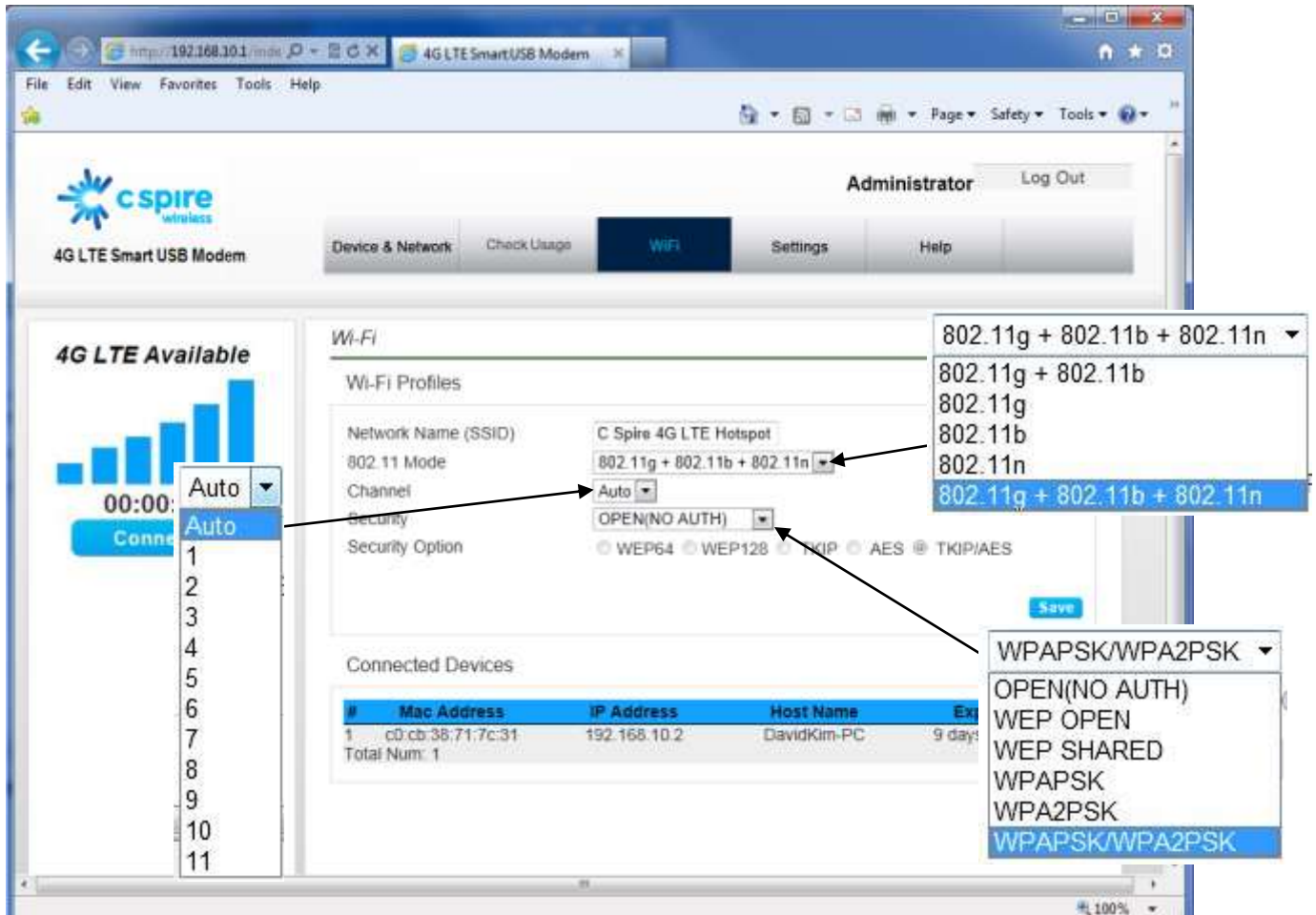
## The Wi-Fi Menu

The Wi-Fi menu allows you to review and change your device Wi-Fi tethering configuration. Please ensure that you have your device connected to external AC USB adapter. When your device is connected to the USB port on your PC, Wi-Fi won't turn on. In order to see Wi-Fi menu, you have to login Admin with the password **Administrator** Password  **OK** first. Default password is "admin". You can change Admin password from the Setting menu.



## Wi-Fi Profile

When you open the Wi-Fi Profile menu, the following choices are available:



To modify the Wi-Fi Profile:

1. Enter new Network Name (SSID). Default SSID is C Spire 4G LTE Hotspot.
2. Click arrow button and select proper 802.11 Mode. Default mode is 802.11b/g/n.
3. Click Wi-Fi channel number. Default setting is Auto.
4. Enter your Wi-Fi security level. Default setting is EPA2 Personal PSK (AES)
5. Enter your Wi-Fi password. Password requires at least 8 characters. For greater security, use a mixture of digits, upper case, lower case and other symbols.
6. Click **Save**

## Connected Devices

When you open the “Connected Devices” you can see the devices currently connected to U772 through Wi-Fi connection. The Connected device section has the following ;

- **Hostname** – The network name for the connected device (if available)

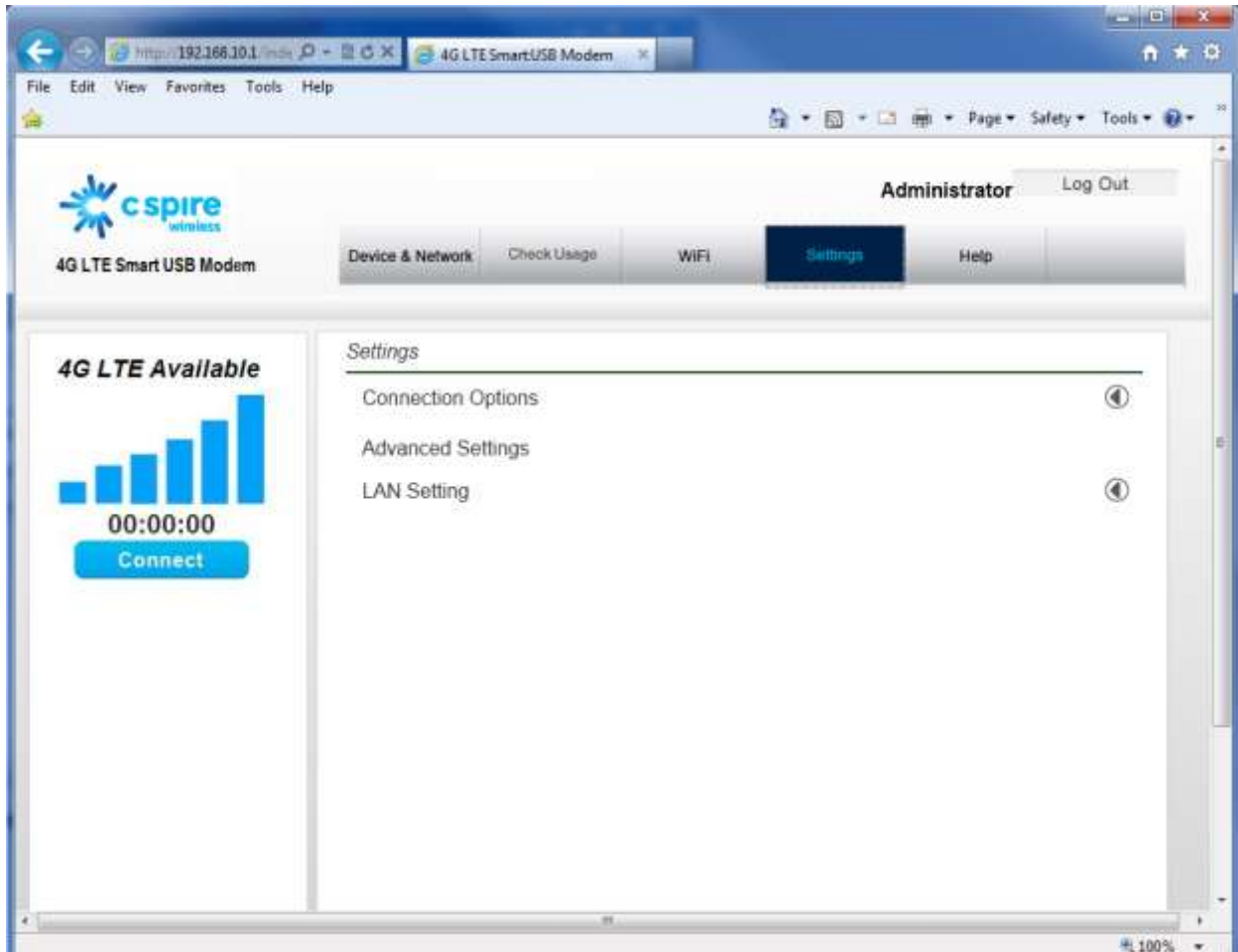
- **Date/Time** – The date/time the device was detected by the network.
- **MAC Address** – The Media Access Controller or physical address of the device
- **IP Address** – The IP address assigned to the device by U772

Click Refresh button to renew the connected device list.

## The Settings Menu

The Settings menu allows you to set your Connection Options and your Advanced Settings. In order to see Advanced Settings, you have to login Admin with the password

**Administrator** Password   first. Default password is “admin”. You can change Admin password from the Setting menu.



## Connection Options

When you open the Connection Options menu, the following choices are available:

Connection Options ▼

Enable Auto Connection **Save**

Automatic

4G LTE Only

3G Only

**Save**

### *Enable Auto Connection*

1. Select or clear the **Enable Auto Connection** check box.
2. Click **Save**.

**Note:** If you click **Connect**, **Enable Auto Connection** will be cleared automatically regardless of whether **Enable Auto Connection** was selected before rebooting the device.

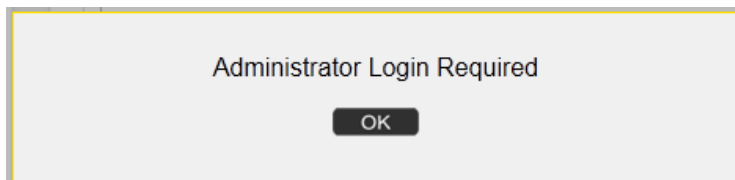
### *Change Your Connection Options*

1. Select a connection option.
2. Click **Save**.

**Note:** If the device is not activated, the options will be unavailable (grayed out).

## *Advanced Settings*

In order to see Advanced Settings, you have to login Admin with the password **Administrator**  **OK** first. Default password is “admin”. You can change Admin password from the Setting menu. If you click Advanced Settings before login, the following window will pop up.



## Advanced Settings

---

General Settings



Manual Configuration



Updates



Engineering

Equipment

## General Settings

Selecting the General Settings tab displays the following options:

### Advanced Settings

---

General Settings



**LED Control**

Disable LED **Save**

**Advanced Settings Password**

Original Password(Default is admin)

New Password

Confirm New Password

**Save**

**USIM PIN Lock**

Enable PIN Lock **Save**

**PIN Code**

Original PIN Code

New PIN Code

Confirm New PIN Code

**Save**

### LED Control

LED Control allows you to turn the LED on or off.

To turn the LED on or off:

1. Select or clear the **Disable LED** check box.
2. Click **Save**.

**Note:** Refer to Appendix 1 for details about your device's LED lights.

### *Advanced Settings Password*

The Advanced Settings Password allows you to change the password.

To change your password:

1. Enter the original password in the **Original Password** field.
2. Enter your new password in the **New Password** field.
3. Re-enter your new password in the **Confirm New Password** field.
4. Click **Save**.

### *USIM PIN Lock*

The USIM PIN Lock allows you to turn the USIM PIN Lock on or off.

To turn the USIM PIN Lock on or off:

1. Select or clear the **Enable PIN Lock** check box.
2. Click **Save**.

### *PIN Code*

The PIN Code allows you to change your PIN Code.

To change your PIN Code:

1. Enter the original code in the **Original PIN Code** field.
2. Enter your new code in the **New PIN Code** field.
3. Re-enter your new code in the **Confirm New PIN Code** field.
4. Click **Save**.

### *Manual Configuration*

Selecting the Manual Configuration tab displays the following options:

Manual Configuration ▼

**LTE Configuration**

**LTE Profile**

3:profile3 ▼

**Save**

**3G Configuration**

**eHRPD Profile**

Profile Number 104 ▼

**Save**

Manual Configuration consists of three submenus (**LTE Configuration / 3G Configuration**).

### *LTE Configuration*

The **LTE Configuration** box allows you to change the 4G LTE profile.

To modify the LTE profile:

1. Select proper profile in the list.
2. Click Save button.

**Note:** Changing profile can result in LTE connection malfunction. Please refer to your service provider's recommendation.

### *3G Configuration*

The **3G Configuration** box allows you to modify the 3G device configuration.

To modify the 3G configuration:

1. Select Profile Number
2. Click **Save**

## *Updates*

When you open the Updates menu, it displays the following options:



Updates

**Check System Upgrade**

Upgrade Server URL	<input type="text" value="http://update.diffon.com/updates/cspire_u772"/>
Current Software Version	U772C30.02.A1410
Newest Software Version	<input type="button" value="Check Now"/>

**Software Update**

Update software to device

Needs C Spire's input how to host new software, and URL info.

### Check System Upgrade

The Check System Upgrade tab reflects your current software version and allows you to upgrade the Web browser interface as needed. To get the latest Web browser interface:

1. Click **Check Now**.
2. If a newer version is available, you will see the following dialog:



3. Click **Yes** and select a folder to save the Web browser update.

### Software Update

To update:

1. Click **Choose file** for the Web browser update.
2. Click **Browse** and select system update file.
3. Click **Start Upgrade**.

**Important:** The system upgrade takes a few minutes. **DO NOT** unplug the device before the browser refreshes the page automatically or if the refresh dialog is still open.

### LAN Setting

When you open the LAN Setting menu, the following choices are available:

## Settings

Connection Options

Advanced Settings

LAN Setting

IP Address	192	.	168	.	10	.	1
Subnet Mask	255	.	255	.	255	.	0
Enable DHCP Server	<input checked="" type="checkbox"/>						
Start DHCP Address Range	192	.	168	.	10	.	2
End DHCP Address Range	192	.	168	.	10	.	254
							<b>Save</b>

### Custom DNS

Enable Custom DNS	<input type="checkbox"/>						
Custom DNS Address	192	.	168	.	10	.	1
							<b>Save</b>

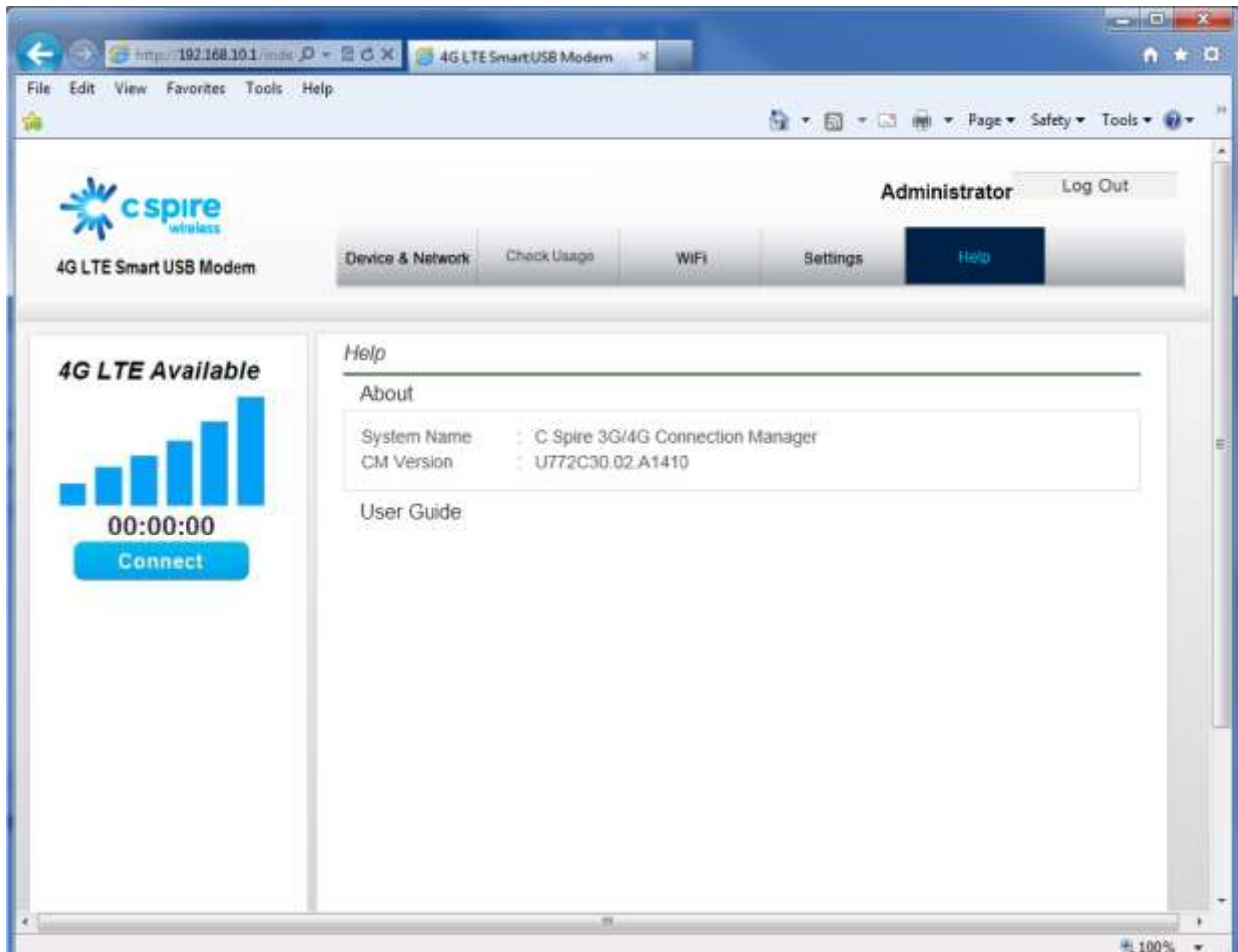
- **IP Address** – IP Address that your PC is assigned by your device
- **Subnet Mask** – Subnet Mask that your PC is assigned by your device
- **Enable DHCP Server** – Enable it to automatically assign IP address to other Wi-Fi client devices.
- **Start DHCP Address** – Your device will assign IP address from this IP address
- **End DHCP Address Range** – The range of IP addresses that your device can assign to other Wi-Fi client devices.
- **Custom DNS** - allows you to use a customized DNS rather than the one assigned by your network.

To set the custom DNS:

1. Select **Enable Custom DNS**.
2. Enter your Custom DNS IP address.
3. Click **Save**.

## The Help Menu

The Help menu allows you to view system information and the online user guide.



### About

When you open the **About**, it displays the following device information:

#### Help

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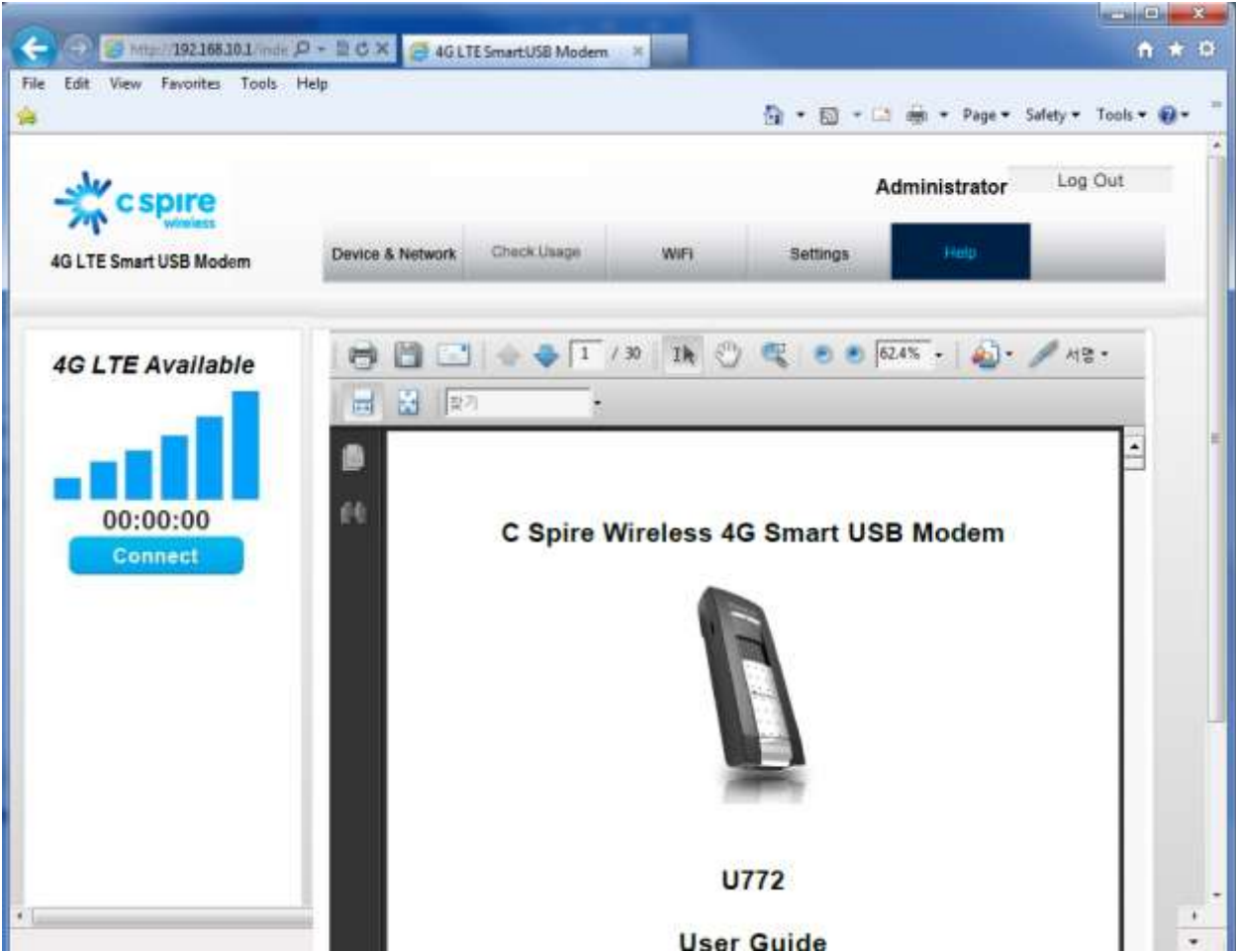
##### About

System Name	: C Spire 3G/4G Connection Manager
CM Version	: U772C30.02.A1410

- **System Name** – the current system name
- **CM Version** – the current Web browser interface version

# User Guide

When you open **User Guide**, it downloads the user guide on the host system.



# Regulatory Information

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## WARRANTY

### **Manufacture's Limited One-Year Warranty:**

Franklin Wireless (the company) warrants to the original retail purchaser of this device, that should product or any part thereof, during normal consumer usage conditions, be defective in material or workmanship that results in product failure within the first twelve (12) month period from the date of purchase, such defects will be repaired or replaced (with new or refurbished) product at the Company's discretion, without charge for parts and labor directly related to the defect(s). This warranty extends to consumers who purchase the product in the United States or Canada and it's not transferable or assignable. This warranty does not apply to:

- (a) Product subject to abnormal use or conditions, accident, mishandling, neglect, unauthorized alteration, misuse, improper installation or repair or improper storage;
- (b) Products whose mechanical serial number or electronic serial number has been removed, altered, or defaced;
- (c) Damage from exposure to moisture, humidity, excessive temperature or extreme environment conditions;
- (d) Damage resulting from connection to, or use of any accessory or other product not approved or authorized by the company;
- (e) Defects in appearance, cosmetic, decorative or structural items such as framing and non-operative parts;
- (f) Product damaged from external causes such as fire, flooding, dirt, sand, weather conditions, battery leakage, blown fuse, theft or improper usage of any electrical source.

The Company disclaims liability for removal or reinstallation of the product, for geographic coverage, for inadequate signal reception by the antenna or for communications range or operation of the cellular system as a whole.

When sending your wireless device to Franklin Wireless' authorized distributions for repair or service, please note that any personal data or software stored on the device may be inadvertently erased or altered. Therefore, we strongly recommend you make a back up copy of all data and software contained on your device before submitting it for repair or service. This includes all contact lists, downloads (i.e. third-party software applications, games and graphics) and any other data added to your device. Franklin Wireless is not responsible for and does not guarantee restoration of any third-party software, personal information or memory data contained in, stored on, or integrated with any wireless device, whether under warranty or not, returned to Franklin Wireless" authorized distributors for repair or service. To obtain repairs or replacement within the terms of this Warranty, the product should be delivered with proof of Warranty coverage (e.g. dated bill of sale), the consumer's return address, daytime phone number and/or fax number and complete description of the problem, transportation prepaid, to the Company at the address shown below or to the place of purchase for repair or replacement processing. In addition, for reference to an authorized Warranty station in your area, please call (800)959-3558 in the United States.

The extent of the company's liability under this warranty is limited to the repair or replacement provided above and, in no event, shall the company's liability exceed the purchase price paid by purchaser for the product.

Any implied warranties, including any implied warranty of merchant ability or fitness for a particular purpose, shall be limited to the duration of this written warranty. Any action for breach of any warranty must be brought within a period of 18 months from date of original purchase, but in no case shall the company be liable for a special consequential or incidental damages for breach of this or any other warranty, express or implied, whatsoever. The company shall not be liable for the delay in pending service under this warranty or loss of use during the time the produce is being repaired or replaced. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product. Some states or provinces do not allow limitations on how long an implied warranty lasts on the exclusion or limitation of incidental or consequential damage so the above limitation or exclusions may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights, which vary from state to state or province to province.

Franklin's Authorized Service Center Address:  
6205 Lusk Blvd., San Diego, CA 92121, U.S.A.

# SAR INFORMATION

## **THIS MODEL MODEM MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.**

Your wireless modem is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The exposure standard for wireless mobile modem employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. \* Tests for SAR are conducted with the modem transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the modem while operating can be well below the maximum value. This is because the modem is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output. Before a modem model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model modem when tested for use near the body, as described in this user guide, is 1.38 W/Kg. While there may be differences between the SAR levels of various modems and at various positions, they all meet the government requirement for safe exposure. The FCC has granted an Equipment Authorization for this model modem with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model modem is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID: RB2-U772. Additional information on Specific Absorption Rates (SAR) can be found on the Cellular Telecommunications Industry Association (CTIA) web-site at <http://www.wow-com.com>. \* In the United States and Canada, the SAR limit for mobile modems used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.

# SAFETY INFORMATION

## **SAFETY INFORMATION FOR FIXED WIRELESS TERMINALS POTENTIALLY EXPLOSIVE ATMOSPHERES**

Turn your modem OFF when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

## **INTERFERENCE TO MEDICAL DIVICES**

Certain electronic equipment may be shielded against RF signal from your wireless modem (pacemakers, Hearing Aids, and so on). Turn your modem OFF in health care facilities when any regulations posted in these areas instruct you to do so. RF signals may affect improperly installed or inadequately shielded electronic system in motor vehicles.

## **EXPOSURE TO RF ENERGY**

Use only the supplied or an approved replacement antenna. Do not touch the antenna unnecessarily when the modem is in use. Do not move the antenna close to, or coupling any exposed part of the body when making a call.

## **NEAR BODY OPERATION**

This device was tested for typical near body operations with the back of the modem kept 0.5 cm from the body. To maintain compliance with FCC RF exposure requirements, it must have a minimum distance including the antenna of 0.5 cm from the body during normal operation

# U.S.A.

## **U.S. FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT INFORMATION TO THE USER**

NOTE: This equipment has been tested and found to comply with the 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if Not installed

and used in accordance with the instructions, may cause harmful Interference to radio communications. However, there is no guarantee that interference will not occur in a particular Installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet of a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for assistance.

Changes or modification not expressly approved by the party responsible for Compliance could void the user's authority to operate the equipment. Connecting of peripherals requires the use of grounded shielded signal cables.

## ***FCC Compliance Information***

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

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

## ***RF Exposure Statement***

FCC ID: RB2-U772



Warning: Exposure to Radio Frequency Radiation The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact during normal operation is minimized. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna should not be less than 20 cm during normal operation as a plug-in-wall-adaptor access point as 3G/4G and Wi-Fi transmit simultaneously in this configuration.

# Appendix 1: LED Operation

Your device has LED lights that indicate the following details.

USB Modem powered by	LED Colors		3G LED Color (Left)	4G LED Color (Right)	Wi-Fi LED Color (Center)
	LED Status				
HOST Computer	3G Mode		3G Enabled	4G Disabled Shutdown Mode	
	3G in service and Stand by Ready to Connect		ON	OFF	OFF
	Power ON Boot and Reset		OFF	OFF	OFF
	3G out of service or is still acquiring service		Flash every 1sec	OFF	OFF
	3G CDMA No service		Flash every 1sec	OFF	OFF
	3G Data Connected Active		Flash every 0.5sec	OFF	OFF
	3G Data Connected Dormant		Flash every 3sec	OFF	OFF
	4G Mode(LTE)		3G Disabled Low Power Mode	4G Enabled	
	4G(LTE) in service and no activity Ready to connect 4G		OFF	On	OFF
	4G(LTE) out of service or is still acquiring service (every 1 sec)		OFF	Flash every 1sec	OFF
	4G(LTE) Data Connected Active		OFF	Flash every 0.5sec	OFF
	4G(LTE) Data Connected No Data activity, Idle Mode		OFF	OFF	OFF
	4G(LTE) Data Shout Down Mode For Power Saving		OFF	OFF	OFF
External USB power sources (AC-USB adapter)	3G Mode		3G Enabled	4G Disabled Shutdown Mode	
	3G in service and Stand by Ready to Connect		ON	OFF	ON
	Power ON Boot and Reset		OFF	OFF	OFF
	3G out of service or is still acquiring service		Flash every 1sec	OFF	ON
	3G CDMA No service		Flash every 1sec	OFF	ON
	3G Data Connected Active		Flash every 0.5sec	OFF	Flash every 0.5sec
	3G Data Connected Dormant		Flash every 3sec	OFF	Flash every 3sec
	4G Mode(LTE)		3G Disabled Low Power Mode	4G Enabled	
	4G(LTE) in service and no activity Ready to connect 4G		OFF	ON	ON
	4G(LTE) out of service or is still acquiring service (every 1 sec)		OFF	Flash every 1sec	ON
	4G(LTE) Data Connected Active		OFF	Flash every 0.5sec	Flash every 0.5sec
	4G(LTE) Data Connected No Data activity, Idle Mode		OFF	OFF	Flash every 3 sec
	4G(LTE) Data Shout Down Mode For Power Saving		OFF	OFF	ON





## Appendix 2: Glossary

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- **1X:** Internet at lower speed than EV-DO. Technical max speed is 153kbps.
- **3G:** Third generation, referring to the 3<sup>rd</sup> generation wireless cellular technology.
- **4G:** Fourth Generation, referring to the 4th generation of wireless cellular technology.
- **802.11 b/g/n:** A set of WLAN communication standards.
- **bps:** Bits per second. The rate of data speed.
- **Broadband:** High-capacity transmission channel with a wider bandwidth than conventional modem lines.
- **CDMA:** Code Division Multiple Access.
- **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.
- **EV-DO Rev 0:** CDMA EV-DO Rev. 0 is a wireless technology with higher data rates and higher system capacity. Rev 0 provides access to mobile devices with forward link speeds of up to 2.4 Mbps, and reverse link speeds up to 152 kbps.
- **EV-DO Rev A:** CDMA EV-DO Rev. A is a wireless technology with higher data rates and higher system capacity. Rev A provides access to mobile devices with forward link speed of up to 3.1 Mbps, and reverse link speeds up to 1.8 Mbps.
- **Firmware:** A computer program embedded in an electronic device.
- **Hotspot:** A Wi-Fi (802.11) access point or the area covered by an access point.
- **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.
- **IP address:** Internet Protocol address. The address of a device attached to an IP network (TCP/IP network).
- **ISP:** Internet Service Provider.
- **Kbps:** Kilobits per second. The rate of data flow.

- **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 Technology:** The technology on which a particular network provider's system is built; such as CDMA or EVDO.
- **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.
- **Router:** A device that directs traffic from one network to another.
- **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.
- **USIM:** Universal Subscriber Identification Module. Found in LTE and GSM network technology, the USIM is a card containing identification information for the subscriber and their account. The USIM card can be moved to different devices
- **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).
- **WEP:** Wired Equivalent Privacy. An IEEE standard security protocol for 802.11 networks. Superseded by WPA and WPA2.
- **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.