



McQ CONNECT® User's Manual

Version 1.5

September 7, 2023

PROPRIETARY INFORMATION: This document contains information that is proprietary to McQ Inc. It is provided to the product user for the purpose of operating the product and shall not be used for any other purpose. The information shall not be disclosed, duplicated or used in whole or in part without prior written permission of McQ Inc.

© Copyright McQ, Inc. 2021-2023 All rights reserved

1551 Forbes Street
Fredericksburg, VA
22405-1603 USA

T: 540.373.2374
F: 540.371.1358
www.mcqinc.com

ISO Registered

Document History

Version	Author	Description	McQ Approval	Date
1.5	D Fish	<ul style="list-style-type: none"> Updated diagrams and pictures Added Section 3.7.2 WiFi Settings Added Section 3.8.3 IP Access Control Updated Section 3.9 for softphone calling Updated instruction for SIM card access Updated kit components and part numbers 	M Rohrer	07 Sep 2023
1.4	D Fish	<ul style="list-style-type: none"> Removed graceful shut down Removed USB camera Added vWatch information. Added McQ CONNECT® mechanical drawing, Figure 26 Added Appendix C RF Output Power 	M Rohrer	11 Jan 2023
1.3	R Fish	<ul style="list-style-type: none"> Added Aviation antenna information 	M Rohrer	02 May 2022
1.2	D Fish	<ul style="list-style-type: none"> Changed the status of McQ CONNECT® from TM to ® Updated temperature for power measurement Updated Figure 1: McQ CONNECT® Kit Added picture of sealed Ethernet cable Added pin information, Table 1 Added part numbers to Figure 5 and Figure 7 Added antenna guidance Added Section 3.8.4 Port Forward 	N Husson	14 Jan 2022
1.1	D Fish	<ul style="list-style-type: none"> Relabeled Figure 5 and Figure 10. Updated 3.1. 	N Husson	20 Sept 2021
1.0	D Fish	<ul style="list-style-type: none"> Initial version 	N Husson	07 Sept 2021

Table of Contents

SECTION 1	Introduction to the McQ CONNECT®	6
1.1	McQ CONNECT® Parts.....	7
SECTION 2	McQ CONNECT® Communications	10
SECTION 3	Set Up and Configuration	11
3.1	Maxtena M1621HCT-HP Antenna Mounting Procedure.....	11
3.2	Sensor Systems S67-1575-414 Antenna Mounting Procedure.....	11
3.3	Set Up.....	12
3.4	McQ CONNECT® Operations.....	15
3.5	McQ CONNECT® Webpage Configuration Screens.....	16
3.5.1	Op State.....	16
3.5.2	Visible.....	16
3.5.3	Signal Bars.....	16
3.5.4	Signal Level.....	17
3.5.5	IP Link Connected.....	17
3.6	McQ CONNECT® Tab.....	18
3.6.1	Status.....	18
3.6.2	Versions.....	18
3.6.3	Update Software Package.....	19
3.6.4	Iridium WAN Data Limit.....	19
3.7	Network Configuration Tab.....	20
3.7.1	Ethernet Settings.....	20
3.7.1.1	DHCP.....	21
3.7.2	WiFi Settings.....	21
3.7.2.1	DHCP.....	21
3.7.3	VPN.....	21
3.7.4	DHCP Lease Info.....	22
3.8	Network Tools Tab.....	22
3.8.1	Ping.....	22
3.8.2	Speed Test.....	23
3.8.3	IP Access Control.....	23
3.8.4	Port Forward.....	23
3.9	Call Management Tab.....	25
3.10	Modem Info Tab.....	26
3.10.1	Modem Information.....	26
3.10.2	Provisioning.....	27
3.10.3	Traffic Statistics.....	27

3.10.4	Update Modem Firmware	27
3.11	Logs Tab	28
SECTION 4	<u>Admin Menu</u>	29
4.1	About	30
4.2	User Manual.....	30
4.3	Manage Users	31
4.4	Change Password	31
SECTION 5	<u>Installing the SIM Card</u>	32
SECTION 6	<u>Technical Support</u>	33
APPENDIX A	<u>FCC Information to the User</u>	34
APPENDIX B	<u>McQ CONNECT® Mechanical Drawing</u>	35
APPENDIX C	<u>RF Output Power</u>	36
APPENDIX D	<u>McQ Limited Product Warranty</u>	37

Table of Figures

Figure 1:	McQ CONNECT® Kit.....	6
Figure 2:	McQ CONNECT® Top View.....	7
Figure 3:	McQ CONNECT® Land Mobile/Maritime Antenna (Maxtena M1621HCT-HP)	7
Figure 4:	McQ CONNECT® Aviation Antenna: S67-1575-414.....	7
Figure 5:	McQ CONNECT® AC-1951.11-3 Power Cable.....	8
Figure 6:	AC-8125 CONNECT RF Cable CA5778UF-2M	9
Figure 7:	AC-2131.6-6 Sealed Ethernet Cable	9
Figure 8:	McQ CONNECT® Communications	10
Figure 9:	S67-1575-414 Mount points	12
Figure 10:	McQ CONNECT® Power Cable Connectors.....	13
Figure 11:	McQ CONNECT® Log In Page.....	14
Figure 12:	McQ CONNECT® Indicators	15
Figure 13:	McQ CONNECT® Status Bar.....	16
Figure 14:	McQ CONNECT® Tab.....	18
Figure 15:	McQ CONNECT® Webpage Network Configuration Tab	20
Figure 16:	McQ CONNECT® Network Tools Tab.....	22

Figure 17: McQ CONNECT® Call Management Tab	25
Figure 18: Modem Info Tab	26
Figure 19: Logs Tab.....	28
Figure 20: Admin Menu	29
Figure 21: Admin Menu: About Screen	30
Figure 22: Admin Menu: Manage Users Screen.....	31
Figure 23: Admin Menu: Change Password Screen	31
Figure 24: CONNECT SIM Card Access Panel	32
Figure 25: SIM Card Access	32
Figure 26: McQ CONNECT® Mechanical Drawing.....	35

SECTION 1 Introduction to the McQ CONNECT®

The McQ CONNECT® is a satellite terminal that provides global Internet and telephone access using the Iridium Satellite constellation via a small form factor, rugged device. The McQ CONNECT® is simple to setup and operate, and provides connectivity for all IP type data transfers.

The CONNECT requires an Iridium Certus SIM card and service to operate. Iridium Certus service is available through authorized service providers that McQ can provide if needed.

There are 3 external connectors on the device: Ethernet, Power and Antenna.



Figure 1: McQ CONNECT® Kit

1.1 McQ CONNECT® Parts



Figure 2: McQ CONNECT® Top View



Figure 3: McQ CONNECT® Land Mobile/Maritime Antenna (Maxtena M1621HCT-HP)



Figure 4: McQ CONNECT® Aviation Antenna: S67-1575-414

NOTE: This antenna is included only in the McQ Connect® Aviation Kit



Figure 5: McQ CONNECT® AC-1951.11-3 Power Cable

Power Connector	Switchcraft 7282-4PG-300
Pin #	Use
1	VPower (12-28 VDC)
2	GND
3	Pwr Control
4	N/C

Table 1: McQ CONNECT® Power Connector Pin Out

Minimum Input Voltage (DC)	11.5 V
Maximum Input Voltage (DC)	33.0 V
Average Input current @ 14V DC (at 23C)	400 milliamps
Maximum Input current @ 14V DC	3 Amps

Table 2: McQ CONNECT® Power Requirements



Figure 6: AC-8125 CONNECT RF Cable CA5778UF-2M



Figure 7: AC-2131.6-6 Sealed Ethernet Cable

SECTION 2

McQ CONNECT® Communications

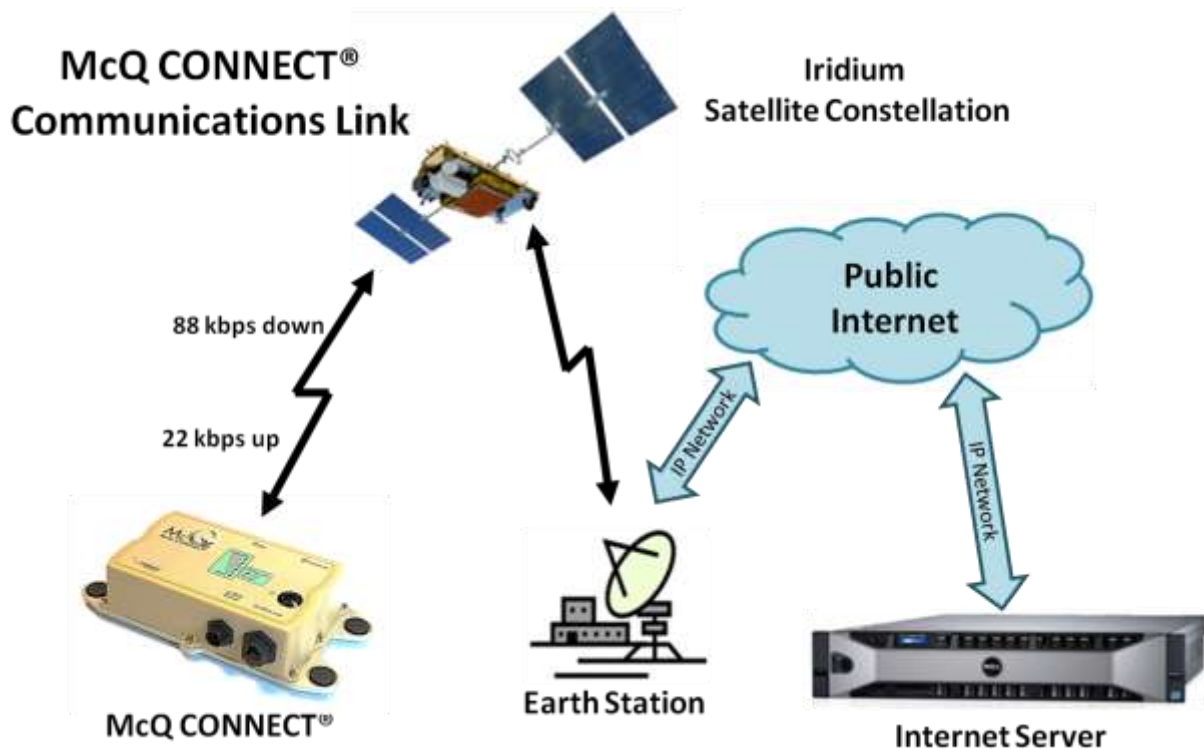


Figure 8: McQ CONNECT® Communications

The McQ CONNECT® is used to connect a user device or devices to the internet via the Iridium satellite network. The McQ CONNECT® supports a standard Ethernet connection using a provided waterproof cable and operates as an Ethernet bridge to the Internet, supporting most IP and ICMP protocols. McQ CONNECT® can also act as a WiFi access point so users can connect devices wirelessly. See Figure 8.

McQ CONNECT® is configured by default to act as a DHCP server, automatically assigning the connected device an IP address and gateway. The default address is 172.16.1.1, which is configurable. The unit also provides a permanent backup address of 172.16.150.1 that is always available. The device is configured via a webpage found at the default IP address. See Section 3.5 for information about configuring the McQ CONNECT®. The default webpage login credentials are:

User name: admin
Password: mcqAdmin

The McQ CONNECT® can provide telephone services using a built in SIP server and a softphone application through a connected device.

SECTION 3

Set Up and Configuration

The McQ CONNECT® is configured via a webpage that is accessible as long as the device remains powered.

3.1 Maxtena M1621HCT-HP Antenna Mounting Procedure

NOTE: Ensure that the antenna is positioned so that it has a clear view of the sky and is not near any metal objects.

1. Determine a suitable location for the antenna. The Iridium Certus antenna is designed to be ground-plane independent. It is certified for use one meter above the ground plane and should be mounted at this height. The location must provide the antenna with an unimpeded view of the sky from horizon to horizon. Ensure that the antenna location is within cable's length of the McQ CONNECT®. The total cable loss between the device and the Maxtena HP antenna should not exceed 1.5dB.
2. Obtain mounting hardware suitable for securing the antenna in the desired location. The mounting hardware should ensure that the antenna is secure and does not move as environmental conditions change.
3. Install the antenna using the mounting hardware.

NOTE: For best results install the antenna in a location that allows a clear view of the sky in all directions and position it away from metal objects.

3.2 Sensor Systems S67-1575-414 Antenna Mounting Procedure

The Sensor Systems Inc. S67-1575-414 (Figure 4) has been granted a TSO for use in aircraft applications. To conform to FAA regulations, the mounting instructions and guidelines provided in [FAA AC 43.13-2B](#) chapter 3 must be followed.

The S67-1575-414 Certus antenna is designed to be ground-plane independent and can be used mounted to a metallic airframe or used in open air. The antenna itself provides the necessary ground plane for correct operation.

1. Determine a suitable location for the antenna.
 - a. The mounting location must provide the antenna with an unimpeded view of the sky from horizon to horizon.

- b. Ensure that the antenna location is within cable's length of the McQ CONNECT®. The total cable loss between the McQ CONNECT® and the S67-1575-414 antenna should not exceed 0.6dB.
2. Obtain mounting hardware suitable for securing the antenna in the desired location. The mounting hardware should ensure that the antenna is secure and does not move as environmental conditions change.

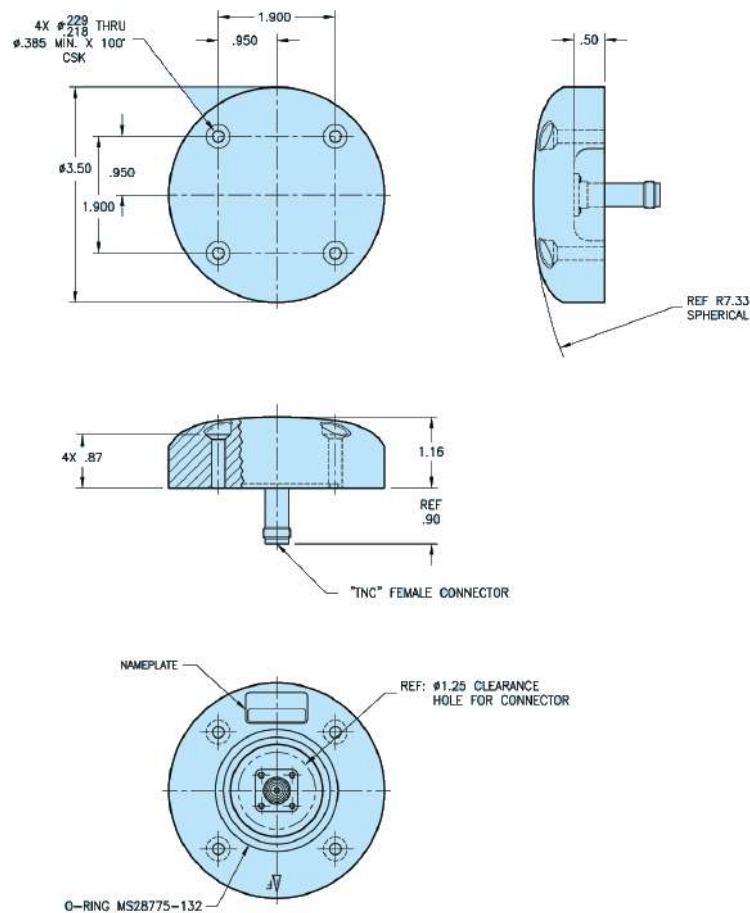


Figure 9: S67-1575-414 Mount points

3.3 Set Up

Follow the steps below to configure the McQ CONNECT®.

1. If this is the first time the device is used, install the SIM card. See Section 5 for information.

2. Use the provided male TNC to SMA male RF Coaxial Cable to connect the antenna to the connector labeled **Antenna**.
3. Ensure that the McQ CONNECT® antenna has a clear view of the sky in all directions.

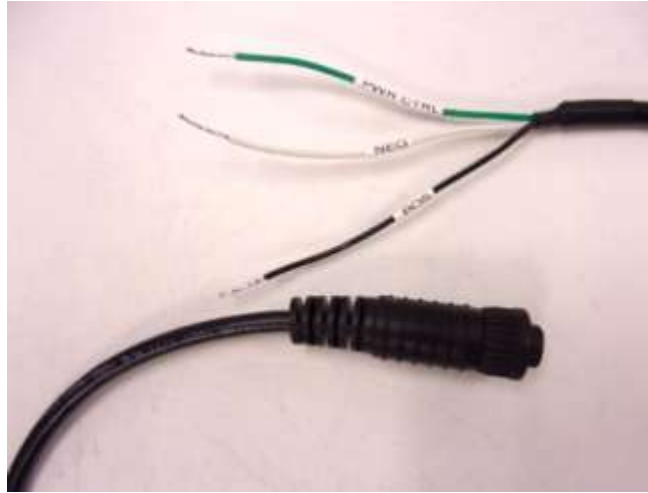


Figure 10: McQ CONNECT® Power Cable Connectors

4. Connect the device to a DC power source using the power cable provided (Figure 10). The black pigtail end is +voltage and the white end is ground.
 - a. A power control 'PWR CTRL' wire is also included with the provided power cable. The power control wire can be used to power and unpower the device automatically in place of the power button.
 - i. If not used the PWR CTRL line should be left unconnected.
 - ii. If used to power the McQ CONNECT®, the PWR CTRL line should be driven to the same voltage as the +POS input (VCC) of the device. The PWR CTRL line has the same input voltage limitations as the McQ CONNECT® (see power input requirements above).
 - iii. To power off the unit, ground the PWR CTRL line.
5. Use the Ethernet cable provided to connect the device to a laptop or other Ethernet enabled device.
6. Once all necessary connections are made to the unit, the device can be powered on by pressing the **Power** button. The **Power** button will illuminate red if the unit successfully powers up. The McQ CONNECT® typically requires about 30 seconds from power on to operation. Using the factory default configuration, the McQ CONNECT® will hand out IP addresses in the range of 172.16.1.100 to 172.12.1.200 for any Ethernet connected devices. The built in DHCP server will also correctly configure the netmask and gateway necessary in order to use the device as an Internet gateway.

The image shows the login page for McQ CONNECT. At the top, there is a header bar with the McQ logo on the left, the text "McQ CONNECT® Login" in the center, and the Iridium logo on the right. Below the header, the page has a tan background. In the center, there are two input fields: "Username" and "Password". Below the "Password" field, there is a "Login" button and a checkbox labeled "Show Password".

Figure 11: McQ CONNECT® Log In Page

7. On the laptop or Ethernet enabled device use a browser to navigate to the McQ CONNECT® webpage. The default address is 172.16.1.1.
8. Enter the following (default) credentials in the Login fields (Figure 11):
 - a. User Name: admin
 - b. Password: mcqAdmin
9. Configure the McQ CONNECT®. See Section 3.5 for configuration instructions.

NOTE: It is recommended that you familiarize yourself with the information in the following sections before attempting to configure the McQ CONNECT®.

3.4 McQ CONNECT® Operations

The McQ CONNECT® has several indicators on the unit that display operational status. See Figure 12.

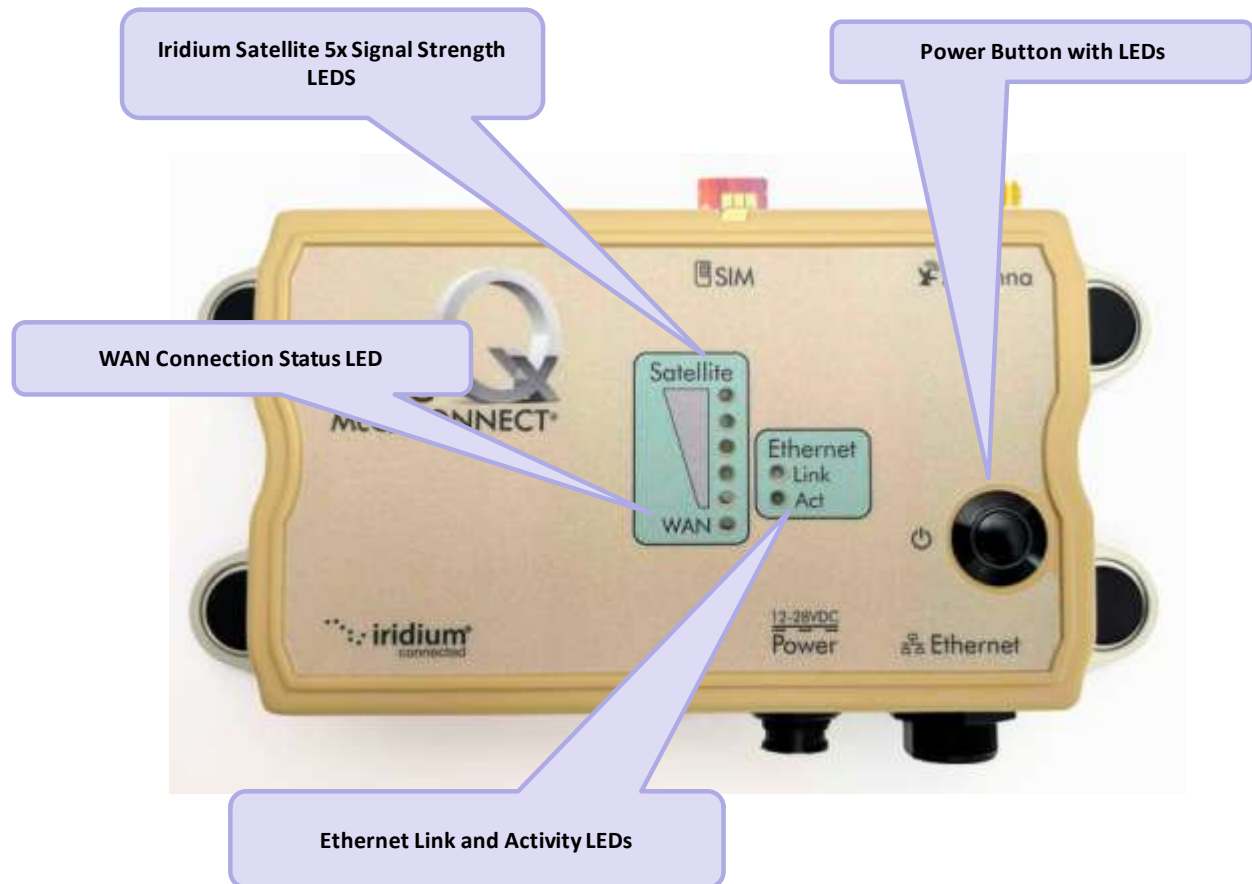


Figure 12: McQ CONNECT® Indicators

The Iridium Satellite Connection Status LED indicates the status of a data connection over the Iridium satellite link. If illuminated (green), a data session is available to transfer all IP data.

The Iridium Satellite LEDs provide a visual indication of the quality of the connection to the Iridium Constellation in a range of 0 (no illuminated LEDS) to 5 (all illuminated red), with 5 bars indicating the best connection quality.

The Ethernet Activity LEDs provide an indication of activity on the device's Ethernet Port. The Link LED (green) indicates a good Ethernet connection. The Act LED (yellow) flashes when data transfer is taking place.

3.5 McQ CONNECT® Webpage Configuration Screens



Figure 13: McQ CONNECT® Status Bar

The Status Bar is found near the top of the webpage screen. The status bar updates once per second, and it displays the following data about the CONNECT's current state:

3.5.1 Op State

The operational state of the McQ CONNECT®

- **Active:** This is the normal state of the McQ CONNECT® and indicates the device and satellite transceiver are operating normally.
- **Inactive:** the device is in this state when the modem is not yet registered, the SIM card is invalid or there is no SIM card present.
- **Firmware upload:** the device enters this state when modem firmware upload begins. A modem-firmware update is only initiated by a user from the device webpage (see updating modem firmware below)
- **Fault:** A fault state indicates an internal issue with either the satellite transceiver or the device. The built in software will attempt to recover from any fault state detected, so this state will not be visible for long (or ever).

3.5.2 Visible

- **Yes/No**
- Indicates whether or not the device can see the Iridium satellite constellation.
- Lack of visibility must be corrected in order for the McQ CONNECT® to function. Lack of visibility is an indication of an antenna issue, either an antenna cable problem or lack of a clear view of the sky. If a lack of visibility is indicated by the device; power off the unit, ensure all antenna and cable connections are correct and tight, and ensure the antenna has a clear view of the sky and is not blocked by terrain or other solid objects (buildings, vehicles, etc.)

3.5.3 Signal Bars

- Indicates the quality of the device's view of the Iridium satellites

- Ranges from 0 to 5 bars with 5 being the best and 0 indicating that the device is not interacting with the satellite. Signal bars can vary greatly from second to second.

3.5.4 Signal Level

- Received signal strength from the currently visible satellite.
- Reported in negative values of dBm
- Values closer to positive represent higher strengths, e.g. -102 dBm represents higher signal strength than -118 dBm.
- Typical ranges are from -122dBm to -99dBm. RSSI values can vary greatly from second to second.

3.5.5 IP Link Connected

- Yes/No
- Indicates whether the Ethernet enabled device has a valid data connection to the Internet.
- There are numerous reasons that this connection might not be present, e.g. the SIM card must support the type of data that is being transferred. In this case, signal level and bars would indicate favorable conditions, but no connection would be present.

3.6 McQ CONNECT® Tab

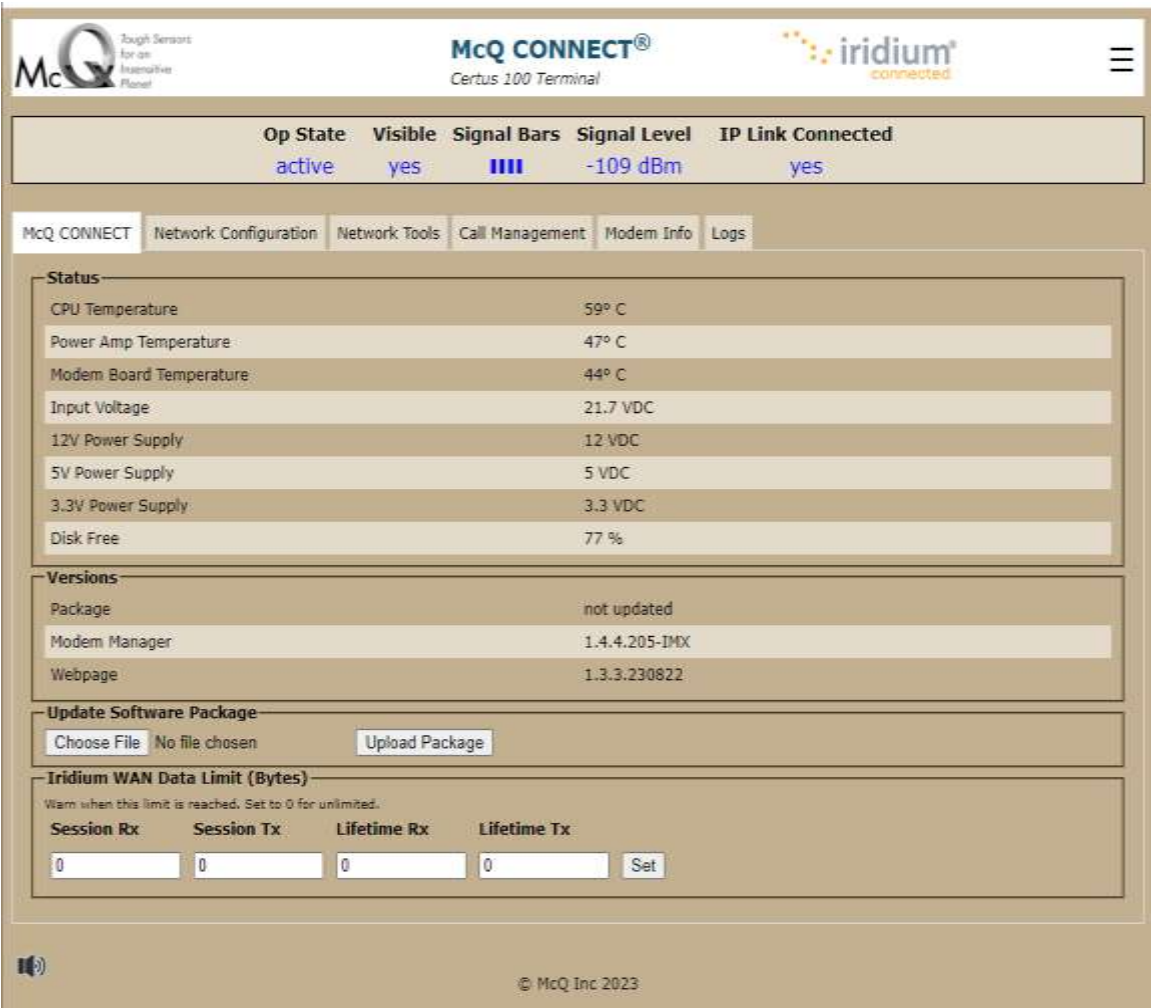


Figure 14: McQ CONNECT® Tab

3.6.1 Status

This pane provides information about internal temperatures of the McQ CONNECT® and available disk space on the unit. The CPU temperature is the current operating temperature of the device's processor. The **Power Amp Temperature** and **Modem Board Temperature** are the current operating temperature of the internal satellite transceiver.

3.6.2 Versions

This pane contains information about the software components that make up the McQ CONNECT® unit.

3.6.3 Update Software Package

McQ provides updates to customers as needed. Use these buttons to upload update files provided by McQ.

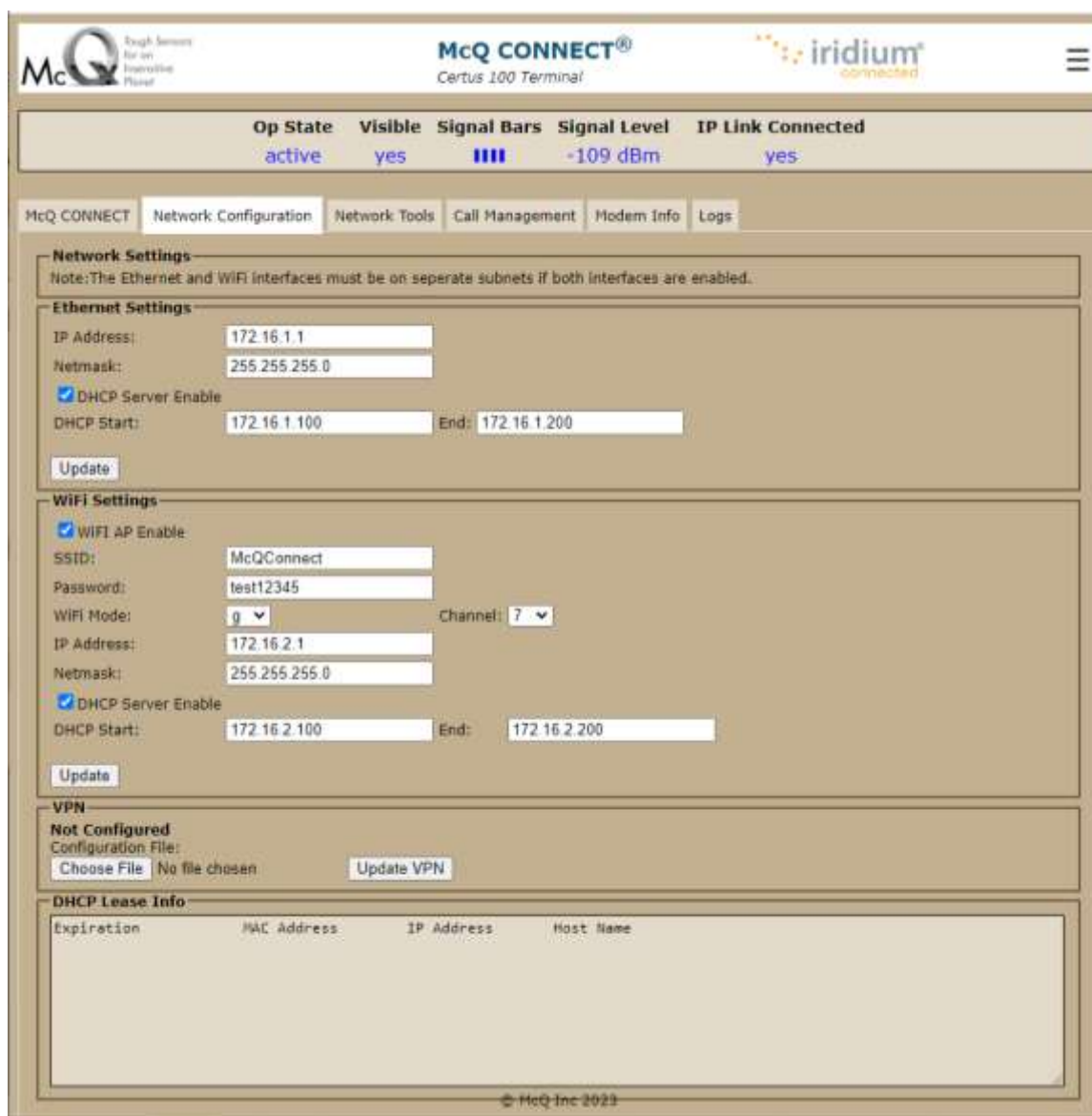
- Click the **Choose File** button.
- Navigate to the desired update file and click **Open** to select it.
- Click the **Upload Package** button to load the new software.

3.6.4 Iridium WAN Data Limit

- Provides the ability to set an alert to notify you when you reach an assigned data limit over the satellite link. The alert will be displayed on the webpage, but the webpage and the device will continue to function. Data is entered as Bytes. Enter the Rx and Tx limits and click the **Set button**.
- **Session Rx/Session Tx:** These limits track data usage per session. A session is the time between power cycles with Rx being data received over the satellite connection and Tx the data transmitted.
- **Lifetime Rx/Lifetime Tx:** These limits track data until reset by clicking the WAN reset button on the **Modem Info tab** (Figure 18). These totals persist over power cycling.

3.7 Network Configuration Tab

NOTE: The Ethernet and WiFi interfaces must be on separate subnets if both interfaces are enabled.



The screenshot shows the McQ CONNECT web interface for a Certus 100 Terminal. At the top, there are logos for McQ, Iridium, and the product name. Below the logos is a status bar showing: Op State: active, Visible: yes, Signal Bars: four bars, Signal Level: -109 dBm, and IP Link Connected: yes. A navigation menu includes: McQ CONNECT, Network Configuration (selected), Network Tools, Call Management, Modem Info, and Logs.

Network Settings
 Note: The Ethernet and WiFi interfaces must be on separate subnets if both interfaces are enabled.

Ethernet Settings
 IP Address: 172.16.1.1
 Netmask: 255.255.255.0
☒ DHCP Server Enable
 DHCP Start: 172.16.1.100 End: 172.16.1.200
 Update

WiFi Settings
☒ WiFi AP Enable
 SSID: McQConnect
 Password: test12345
 WiFi Mode: g Channel: 7
 IP Address: 172.16.2.1
 Netmask: 255.255.255.0
☒ DHCP Server Enable
 DHCP Start: 172.16.2.100 End: 172.16.2.200
 Update

VPN
 Not Configured
 Configuration File: Choose File No file chosen Update VPN

DHCP Lease Info

Expiration	MAC Address	IP Address	Host Name

© McQ Inc 2023

Figure 15: McQ CONNECT® Webpage Network Configuration Tab

3.7.1 Ethernet Settings

- **IP address and Netmask:** the IP address and net mask of the McQ CONNECT®.

- These will be the default values unless they have been changed by the user.

3.7.1.1 DHCP

- This checkbox turns on or off the DHCP server in the device for the Ethernet connection.
- If using DHCP fill in **Start** and **End** values to define the range of IP addresses for the DHCP server to hand out. The entered ranges must be consistent with the device's IP address and net mask.
- The McQ CONNECT® hands out leases that are identified as a metered link so that operating systems can decide whether to use that connection for purposes like updates or similar.

3.7.2 WiFi Settings

WiFi AP Enable: This checkbox turns on or off the WiFi access point. If the WiFi AP is on, configure the following settings:

- Enter the name of the Wi-Fi network in the SSID field
- Enter a password for the Wi-Fi network
- **Wi-Fi Mode** and **Channel:** Select the mode and channel. Available channels depend on the mode selected.
- **The McQ CONNECT® provides WiFi and channels that can operate in 2.4GHz (b/g/n or 5GHz (mode ac). WiFi Channel availability will depend on the mode selected.**
- **IP address** and **Netmask:** the IP address and net mask of the WiFi AP on the McQ CONNECT®.
- These will be the default values unless they have been changed by the user.

3.7.2.1 DHCP

- This checkbox turns on or off the DHCP server in the device on the WiFi AP.
- If using DHCP fill in **Start** and **End** values to define the range of IP addresses for the DHCP server to hand out. The entered ranges must be consistent with the device's WiFi IP address and net mask.
- The McQ CONNECT® hands out leases that are identified as a metered link so that operating systems can decide whether to use that connection for purposes like updates or similar.

3.7.3 VPN

- The McQ CONNECT® can communicate with the server via an OpenVPN connection.
- Click the **Choose File** button.
- Navigate to the desired .ovpn file and click **Open** to select it.
- Click the **Update VPN** button to load the new configuration.

3.7.4 DHCP Lease Info

If the device's DHCP server is enabled, this list will be populated with information about the leases it has handed out.

3.8 Network Tools Tab

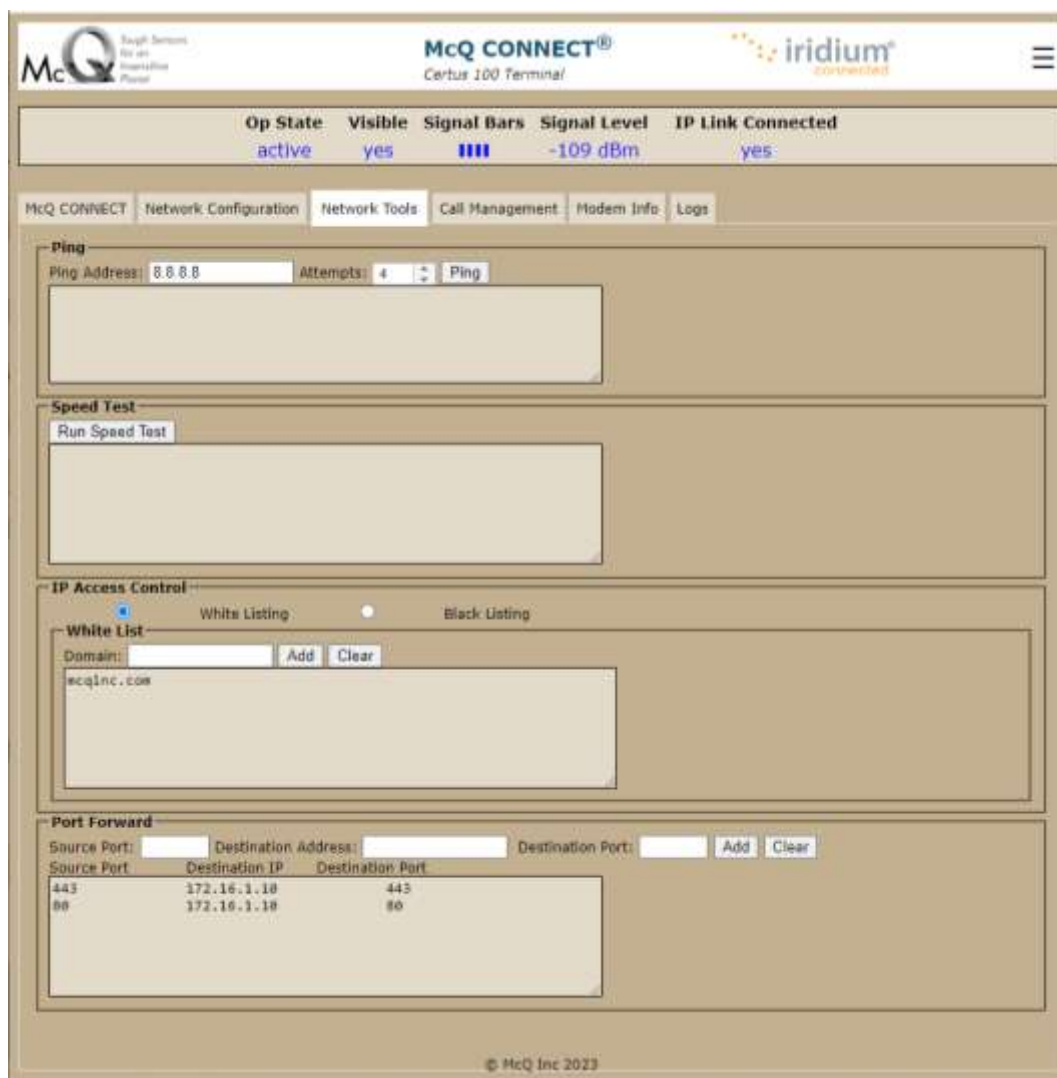


Figure 16: McQ CONNECT® Network Tools Tab

3.8.1 Ping

- Allows you to Ping a local or remote internet address and display the results using the standard ping tool.

NOTE: Some Iridium service providers block outgoing ping to the Internet at their gateway.

- To use, enter the IP address or FQDN that you wish to ping and the number of attempts and click the Ping button. Results will be displayed in the box directly below the controls.

Note: The use of ping accrues air time charges.

3.8.2 Speed Test

- Runs a speed test using a built in speed test tool and provides results
- To run a speed test, simply click the **Run Speed Test** button. The built in speed test tool will attempt to identify the 'best' server to communicate with and then upload and download data to that server. Results of the speed test (bytes per second) are shown in the box directly below the button. Depending on the quality of your satellite view, the speed test can take 30 seconds or more to complete.

Note: The use of speed test accrues air time charges.

3.8.3 IP Access Control

- You can select White Listing or Black Listing but not both
- When using White Listing
 - Only domain names entered in the white list will be accessible
- When using black listing
 - Only IP addresses that are added to the black list are blocked, all other connections are allowed
- Select white or black listing using the radio buttons and enter the domain name or IP address. Click the **Add button**. The **Clear button** clears the selected list.
- This can be helpful in preventing air time charges for things like auto updates.
- Updates to the white or black list take affect within 30 seconds
- Updates to the white or black list will not affect connections already established

3.8.4 Port Forward

The Iridium system provides for isolation of networks from the Public Internet to the internal network used for the transfer IP data over the Certus system to connected units. This isolation prevents inbound connections from the Internet to Certus-connected systems. Your Iridium Certus service can provide the ability to enable inbound connections, allowing connectivity from your applications on the Internet to a McQ CONNECT® unit. The Certus provider can establish a static public IP address that can route to your McQ CONNECT® unit, as well as rules for inbound connections. Contact your Iridium service provider for details.

The McQ CONNECT® also provides firewall capabilities, preventing connections from the public Internet (via the Iridium system) to reach the private Ethernet network maintained by the device. Once an inbound connection is configured and available from your service provider, it is necessary to also provide port forwarding rules on the device itself. A port forward rule allows a connection from the public internet, through the McQ CONNECT® unit to the local Ethernet network. The McQ CONNECT® provides the ability to add multiple port forward rules under the **Network Tools tab** (Figure 16). Port forwarding is only required for connections that are initiated from the public internet to the McQ CONNECT® network. Data connections from the McQ CONNECT® network to the public internet do not require any rules; all outbound ports are open.

To add a port forward rule:

1. Input the **Source Port** (the public port the external application wants to connect to (e.g. 80 for http, 443 for https).
2. Add the local **Destination Address** of the computer or device on the McQ CONNECT® local network along with the **Destination Port**, the IP port that is listening
3. Press the **Add button**.

Once added, Port Forwarding rules on the McQ CONNECT® forward both IP and UDP traffic.

3.9 Call Management Tab



Figure 17: McQ CONNECT® Call Management Tab

The McQ CONNECT® is equipped with a Session Initiation Protocol (SIP) server that allows calls using a softphone, sending VOIP through the Connect to the satcoms over the Iridium Voice Channel.

- Configure the softphone on your attached device to point to the base address of the interface you are attached to.
- Log in to the CONNECT's SIP server using the following credentials:
 - Username: Connect
 - Password: waffles
- Use the softphone on your connected device to place or receive calls.

Note: Since the McQ CONNECT® can operate globally, country code prefixes are required to complete a call.

- You can also call the McQ CONNECT®. Your connected softphone will ring for incoming calls.
- This tab will indicate any call progress in the Call Status section (e.g. dialing, remote_ringing, etc.)

3.10 Modem Info Tab

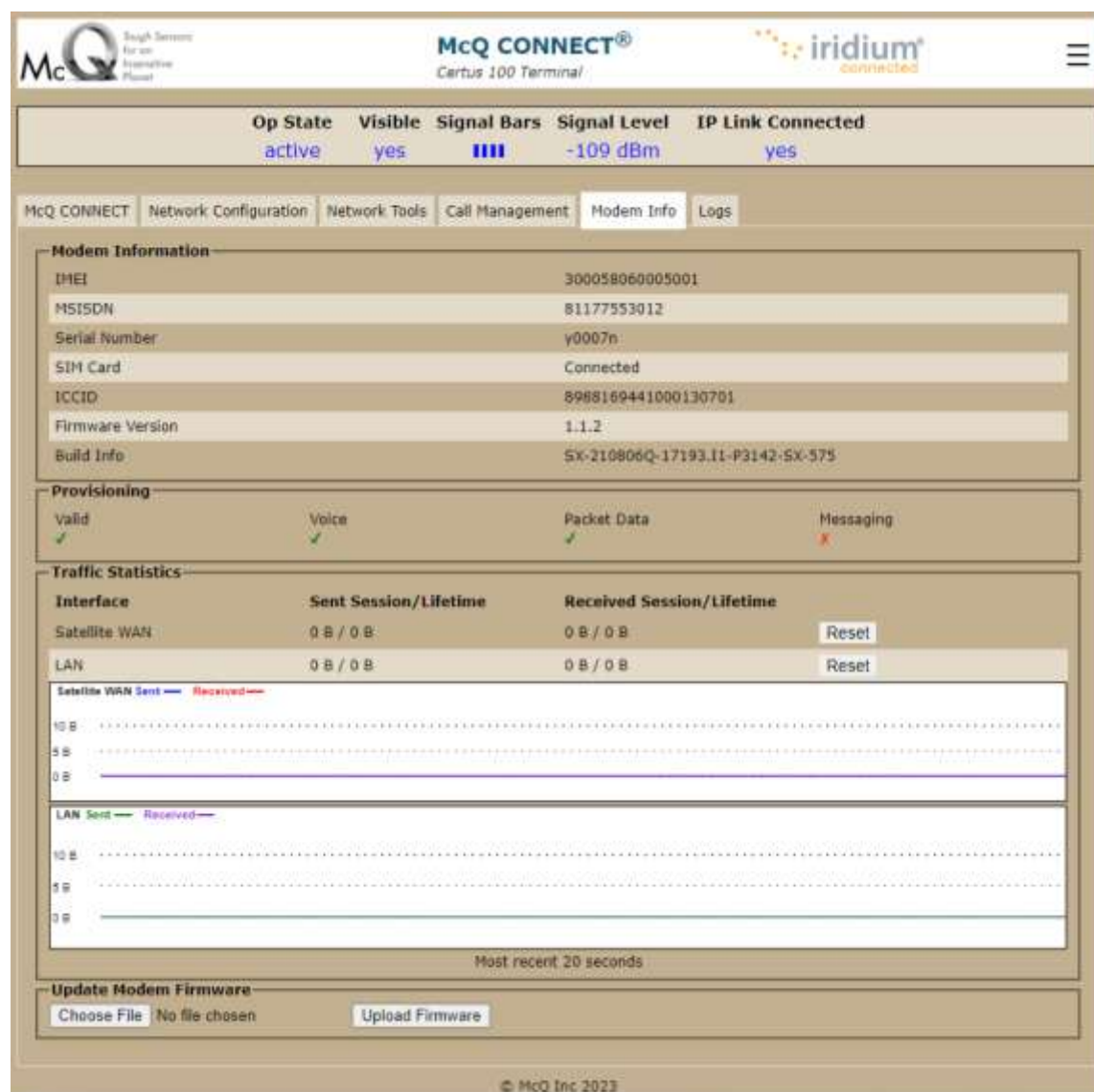


Figure 18: Modem Info Tab

3.10.1 Modem Information

- Information is retrieved from the modem and SIM card in the McQ CONNECT®.
- Provides information about the internal satellite transceiver and information about the SIM card currently in the unit. To obtain any support from McQ or the service provider, please include all of this information

3.10.2 Provisioning

- These fields indicate the provisioning that the installed SIM card can allow based on the services you purchased and what the satellite service is currently allowing.
- When the device is first powered on, all the **Provisioning** fields will contain red Xs while the modem registers and negotiates with the Iridium services.
- These fields do not auto refresh. Use the refresh button on your browser to update the **Provisioning** fields.
- As long as the webpage shows a red X in the **Voice** field, the **Call Management tab** will indicate that voice calling is unavailable.

Provisioning Fields:

- Valid: SIM card is valid
- Voice: SIM card supports voice calling
- Packet Data: SIM card supports data
- Messaging: Future enhancement; not currently available

3.10.3 Traffic Statistics

- Displays the data traffic over both of the device's communications interfaces: satellite WAN (over Iridium satellite network) or LAN (Ethernet)
 - **Sent Session/Lifetime:** the total amount of data sent during the current session and over the lifetime of the connection
 - **Received Session/Lifetime:** the total amount of data received during the current session and over the lifetime of the connection.
- As with data limits, a session is defined by power cycling while lifetime totals accumulate until reset using the **Reset button**.
- The graph at the bottom shows data usage as a real time plot as data is transferring.

3.10.4 Update Modem Firmware

- Over the lifetime of the McQ CONNECT® it may be necessary to update the firmware that operates the internal satellite transceiver. Only use firmware provided by McQ or your service provider to modify the unit.
- Allows you to update the Iridium modem firmware.
- Use **Choose File** to browse to the appropriate file then click the **Upload Firmware button**.
- The upload process can take three to five minutes. Do not cycle power on the device until the process is completely finished.

3.11 Logs Tab



Figure 19: Logs Tab

The **Logs tab** (Figure 19) contains two data logs: a **Call log** and an **Error log**.

- You can download the logs to a location of your choice using the **Download button**.
- You can clear all data in the logs using the **Clear button**. Once cleared the data cannot be retrieved.

SECTION 4

Admin Menu

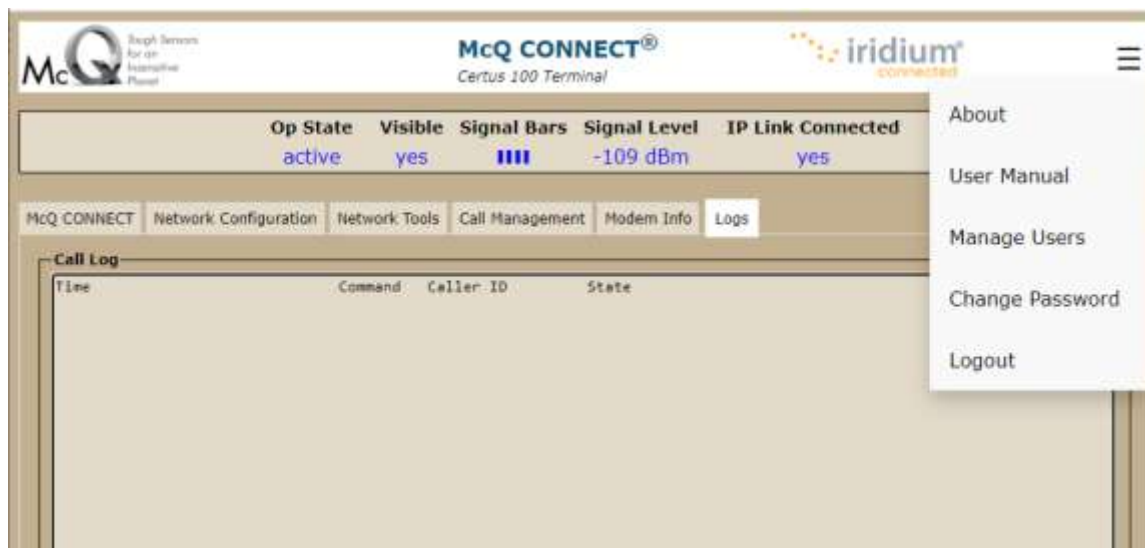


Figure 20: Admin Menu

NOTE: The Admin Menu options are available only to users assigned administrative privileges.

Click on the **Menu icon** at the top right of the webpage to access the **Admin Menu** (Figure 20).

4.1 About



Figure 21: Admin Menu: About Screen

The About screen (Figure 21) contains copyright information, liability and warranty information.

Click on **McQ CONNECT®** at the top center of the screen to display all tabs.

4.2 User Manual

Click this option to display the McQ CONNECT® user's manual. Use the browser's back arrow to close the manual and navigate back to the device webpage.

4.3 Manage Users



Figure 22: Admin Menu: Manage Users Screen

The **Manage Users screen** (Figure 22) displays a list of users authorized for the McQ CONNECT® device.

- Change the administrator password by typing a new password in the field next to the admin user. Click the **Update button** to change the password.
- Reset a user's password by typing a new password in the field next to the user's name. Click the **Update button** to change the password. Click **Done** to exit the **Manage Users screen**.
- Click on **McQ CONNECT®** at the top center of the screen to display all tabs.

4.4 Change Password



Figure 23: Admin Menu: Change Password Screen

Allows you to reset your admin password for this device. Click on **McQ CONNECT®** at the top center of the screen to display all tabs.

SECTION 5 Installing the SIM Card



Figure 24: CONNECT SIM Card Access Panel



Figure 25: SIM Card Access

1. To install the SIM card, remove the access panel on the side of the CONNECT (Figure 24). The screws are not captive; use caution to ensure that they are not lost.
2. Insert the SIM card notched end first and contacts facing toward the rear face of the CONNECT (Figure 25).
3. Replace the access panel and secure with screws. When replacing the access panel, ensure that the gasket is properly aligned.

SECTION 6 Technical Support

The purpose of this manual is to provide an overview of the McQ CONNECT[®]. McQ Inc. provides training on setting up and maintaining communications for specific installations. Call McQ Inc. at (866-373-2374), or email info@mcqinc.com for more information.

APPENDIX A FCC Information to the User

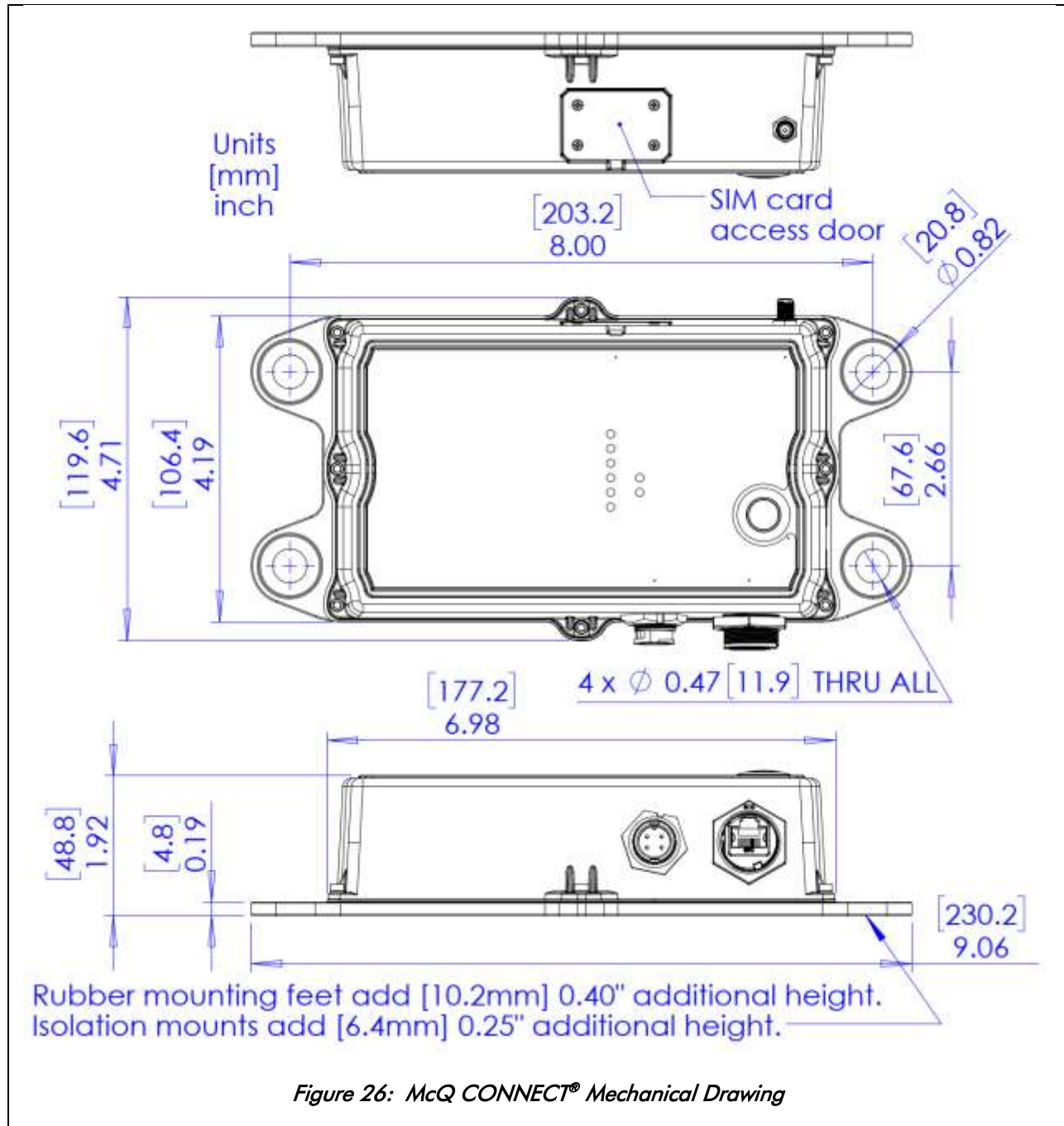
This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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 on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

CAUTION: <<< In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. >>>>

APPENDIX B McQ CONNECT® Mechanical Drawing



NOTE: .STEP files are available from McQ Inc. upon request.

APPENDIX C

RF Output Power

The maximum output power from the McQ CONNECT[®] is 9 Watts ERP. This output is pulsed in 90msec transmit windows and is not continuous. From Iridium's FCC filing the following information is publicly available regarding the waveforms in use:

Lower Freq MHz	Upper Freq MHz	Input Power (watts) ¹	ERP (watts) ²	Mean/Peak	Freq Tolerance (%)	Station Class
1618.725	1626.0	1.8	4.8	M	0.0021	FX
1618.725	1626.0	1.8	4.8	M	0.0021	FX
1618.725	1626.0	1.8	4.8	M	0.0021	FX
1618.725	1626.0	6.0	9.0	M	0.0021	FX
¹ NOTE: defined as the nominal mean power input from the 9770 into the antenna						
² NOTE: ERP (dBW)=EIRP (dBW)-2.15 dB						

Table 3: Particulars of Operation

Emission Designator	Modulating Signal	Necessary Bandwidth (KHz) ¹
41K7Q7W	25,000	41.7
41K7Q7W	30,000	41.7
83K0Q7W	60,000	83.0
333KQ7W	175,000	333.33

Table 4: Emission Data

APPENDIX D McQ Limited Product Warranty

McQ provides a variety of sensor system components to meet customer requirements. Any unit of the system which proves to be defective in material or workmanship within one year of delivery will be repaired or replaced at no charge. Failure due to unauthorized modifications, accidental damage or abuse is not covered by the provisions of this limited warranty. McQ shall not be responsible for damage to property or injury to person(s) based on a failure of or defect in the product, or use of the product for purposes other than those intended by McQ. After the initial one year warranty period, McQ will negotiate, on an annual basis, a fixed repair/replacement charge for each failed unit and maintenance service charges to support customer requirements. McQ recommends a customer spare unit inventory out of which failed units are replaced to restore system operations. The failed units can then be returned to McQ for repair or replacement. This approach eliminates the customer's cost of establishing a maintenance training program, a maintenance personnel pipeline, and acquiring and maintaining unique test equipment needed to repair the system.

This McQ product is part of an integrated family of system components designed to provide end to end capabilities for our customers. These include activity detection, communication of the information to the user, display of the information to the user, storage of the information for replay and use of the data for system trouble shooting. McQ system training and support is based on the authorized system units provided by McQ to the customer. Use of components or devices not authorized by McQ will void the warranty provisions. When components that are not part of the McQ product line are used they must be independently tested by McQ and receive a McQ "Usage Authorization" to retain the warranty provisions. Contact McQ to obtain a "Usage Authorization" agreement prior to the use of any non McQ components.