

# iSIC V2 Data Logger – Ethernet Telemetry Configuration

---

Each non-legacy iSIC V2 is equipped with an Ethernet port to enable the sending of data directly to the V2.WQDataLIVE.com cloud data center.

Proceed through this document for network and web setup instructions.



# iSIC V2 Data Logger – Establish Direct Terminal Connection

---

## Required Materials



iSIC V2 Data Logger



UW6-PW (top) **OR** SP6 (bottom)  
12V Power Source



UW6-USB-485P (top) **OR**  
USB-485 Flying Lead Cable (bottom)



Connect Orange to H485A, Yellow to H485B

# iSIC V2 Data Logger – Establish Direct Terminal Connection

---

Click [HERE](#) to Download the free open source terminal program Tera Term (any comparable terminal emulator program is also sufficient).

Select the link for the **teraterm-4.97.exe** file.

Tera Term 4.97 (2 files) <span>Hide</span> <span>🔍</span>					Released at 2017-11-30 06:58
Name ^	Size ↕	Hash	Date ↕	Download count ↕	
<a href="#">teraterm-4.97.exe</a> <span>🔍</span>	13.50 MB	<a href="#">Show</a>	2017-11-30 06:58	186707	
<a href="#">teraterm-4.97.zip</a> <span>🔍</span>	8.29 MB	<a href="#">Show</a>	2017-11-30 06:59	166654	

Download and **Run** the program to complete the installation. Proceed with the Standard Installation and default components.

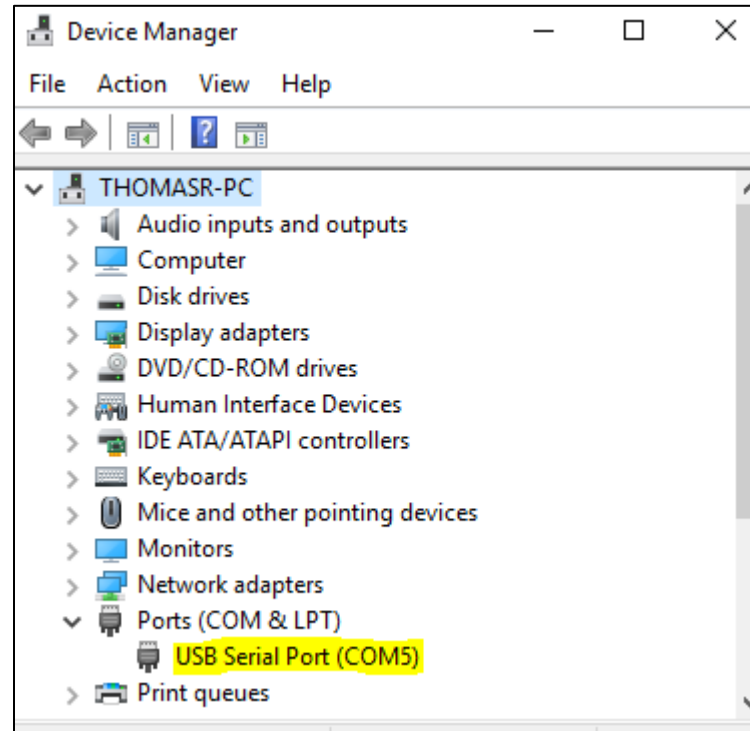
# iSIC V2 Data Logger – Establish Direct Terminal Connection

---

Connect a UW6-USB-485P cable or flying lead USB cable to the Tera Term PC.

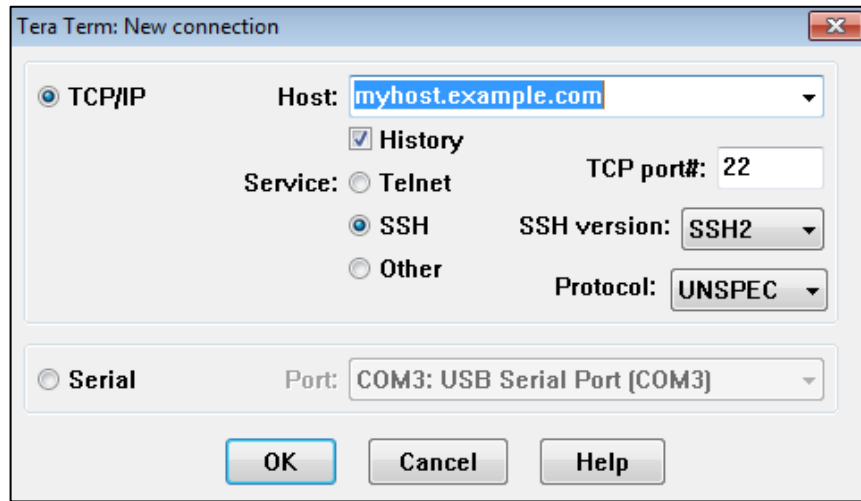
Allow Windows to download the driver automatically.

Verify the COM port assigned to the cable once the driver has installed in Window's Device Manager.



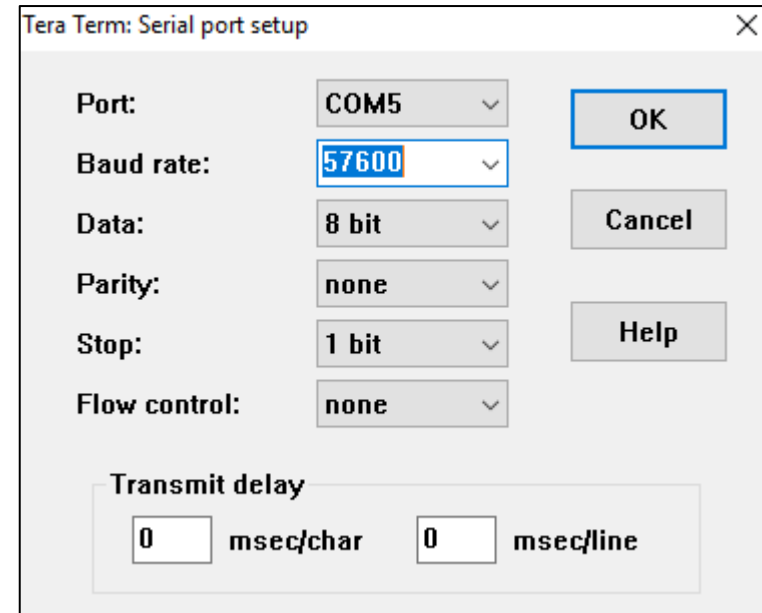
# iSIC V2 Data Logger – Establish Direct Terminal Connection

Launch **Tera Term**. The following screen will appear. Select **Cancel**.



Navigate to **Setup|Serial Port** and select the COM port associated with the USB cable.

Verify all other settings match those shown below, then click **OK**.



# iSIC V2 Data Logger – Establish Direct Terminal Connection

---

**Apply Power** to the iSIC-V2 using either the UW6-PW or SP6. The data logger will emit a beep upon startup.

The Terminal will begin to output text similar to below as the system boots up.

```
COM3 - Tera Term VT
File Edit Setup Control Window Help
2018-01-12 13:29:02, "Loading SI database..."
2018-01-12 13:29:02, "Creating logdata folder 'LOGDATA'..."
G2 Console U1.27.180111-iSIC-U2 (2018-01-12 13:29:02 UTC)
Copyright (C) 2016-2017 NexSens Technology, Inc. All rights reserved.
2018-01-12 13:29:02, "Successfully loaded SI database."
2018-01-12 13:29:02, "SensorInterfaceTask: SleepID=2"
2018-01-12 13:29:02, "Successfully created folder"
2018-01-12 13:29:02, "LoggingTask: SleepID=3"
2018-01-12 13:29:03, "RTC started."
2018-01-12 13:29:03, "Scheduling task starts at 2018-01-12 13:29:03"
2018-01-12 13:29:03, "Next sample at 2018-01-12 13:30:00"
2018-01-12 13:29:03, "Next transmit at 2018-01-12 14:00:00"
2018-01-12 13:29:03, "Next RTC sync at 2018-01-14 00:00:00"
2018-01-12 13:29:03, "Setting next RTC alarm to 2018-01-12 13:30:00"
2018-01-12 13:29:03, "Next alarm type: Sample"
lwip init called
Enter 'wqdatastop' cmd to skip startup posting.
2018-01-12 13:29:04, "iSICTask: SleepID=4"
2018-01-12 13:29:04, "Shell: SleepID=5"
$ 2018-01-12 13:29:13, "WQDataLive Task: SleepID=6"
2018-01-12 13:29:13, "Active WQData URL: 'wqdatalive.com'"
Netif Free heap (bytes): 79848
```

# iSIC V2 Data Logger – Establish Direct Terminal Connection

---

By default the logger will immediately attempt to establish a connection to WQData LIVE to push data.

To prevent this attempt from interrupting with configuring the Network Settings, after disconnecting and re-connecting power, quickly send the **wqdata stop** command.

```
G2 Console U2.02.180718-iSIC-V2 (2018-09-05 22:44:02 UTC)
Copyright (C) 2016-2018 NexSens Technology, Inc. All rights reserved.
2018-09-05 22:44:02, "Successfully loaded SI database. "
2018-09-05 22:44:02, "SITask: SleepID=2"
2018-09-05 22:44:02, "Successfully created folder"
2018-09-05 22:44:02, "LoggingTask: SleepID=3"
2018-09-05 22:44:02, "Shell: SleepID=4"

$ 2018-09-05 22:44:03, "RTC started."
2018-09-05 22:44:03, "Scheduling task starts at 2018-09-05 22:44:03"
2018-09-05 22:44:03, "Next RTC alarm: 2018-09-05 23:00:00; Type: TRANSMIT SENSSAMPLE "
2018-09-05 22:44:03, "Next RTC alarm: 2018-09-05 23:00:00; Type: TRANSMIT SENSSAMPLE "
lwip init called
Enter 'wqdatastop' cmd to skip startup posting.

$ 2018-09-05 22:44:05, "iSICTask: SleepID=5"

$ wqdata stop
$ 2018-09-05 22:44:09, "
Skip WQDataLive startup posting"
2018-09-05 22:44:09, "WQDataLive Task: SleepID=6"
```

# iSIC V2 Data Logger – Configure Network Settings

---

The Network Settings for the iSIC-V2 can be applied in one of two ways:

**Automatically** via DHCP when the setting is turned on and the logger is connected to a network with a DHCP server.

**Manually** by specifying the local network details.

It is strongly recommended to turn on DHCP and attempt the connection automatically, as on many networks this will be successful.

The following pages describe the configuration process for both methods.

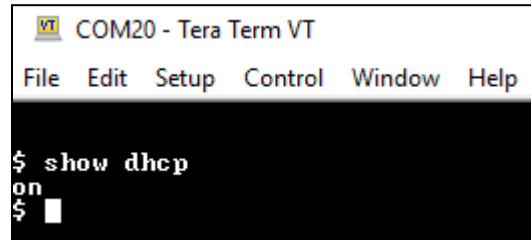
Press **Enter** a couple of times in the terminal to load the **\$** command line prompt and continue.



# iSIC V2 Data Logger – Configure Network Settings

---

Send the **show dhcp** command in the terminal to verify whether this is currently enabled.



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ show dhcp
on
$
```

With DHCP enabled, supported networks will automatically assign an IP address to the iSIC-V2, and it will establish communication with WQData LIVE on its own. If disabled, this can be re-enabled via the **set dhcp on** command.



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set dhcp on
1970-01-01 00:21:28, "SetENETDHCP to Enable"
on
```

# iSIC V2 Data Logger – Test Manual Network Connection

Send the **wqdata upload** command in the terminal.

This will force the iSIC V2 to attempt a connection to WQData LIVE and reveal whether or not the network connection was successful

In addition to the terminal output, connection status is revealed by 2 or 3 consecutive beeps, indicating connection success and failure, respectively.

```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ wqdata upload
2018-09-06 12:51:14, "Active WQData URL: 'wqdatalive.com'"
$ Netif Free heap (bytes): 91128
Started DHCP request (Ok.)
Current DHCP State : 6
Current DHCP State : 6
Interface is up : 10
IP 192.168.1.135
NM 255.255.255.0
GW 192.168.1.1
DNS1: 192.168.1.1
DNS2: 8.8.4.4
Active Free heap (bytes): 91672
Successfully binded IP
2018-09-06 12:51:17, "Processing WQDataLIVE upload event..."
2018-09-06 12:51:17, "Getting last upload time..."
2018-09-06 12:51:17, "Uploading 0 data points"
2018-09-06 12:51:17, "Data upload length: 0"
2018-09-06 12:51:18, "Uploading 0 data points"
2018-09-06 12:51:18, "Data upload length: 0"
2018-09-06 12:51:18, "Finished uploading data"
Local Port: 20512
Successfully binded IP
Successfully connected to WQData
Successfully sent data
```

Example of a successful connection with DHCP

# iSIC V2 Data Logger – Test Network Connection

After a successful connection, refresh the project page on WQData LIVE to verify the Last Contact time updates..

The screenshot displays the WQData LIVE web interface. At the top, the logo 'WQData LIVE' and 'Environmental Datacenter' are visible, along with navigation links for 'DASHBOARD', 'REPORT', and 'ADMIN'. The user is logged in as 'G2 Test Account'. The main area features a satellite map of Byron, Ohio, with a red pin indicating the location of the 'Ethernet Test - UNKNOWN-00000-0000' project. A sidebar on the right shows a list of projects under the heading 'G2 Test', including 'Utah DWQ', 'Navy Rain Repair', 'Hydrozonix', 'Ethernet Test', and 'UNKNOWN-00000-0000'. Below the map, the project details are shown: 'Ethernet Test - UNKNOWN-00000-0000 | 39.7826961, -83.993743'. The 'System Monitor' section is currently empty. The 'Meta Data' section is also empty. The 'Diagnostic Data' section shows a green checkmark icon and the text 'Last Contact' with a timestamp of '2018-09-05 18:50:18'.



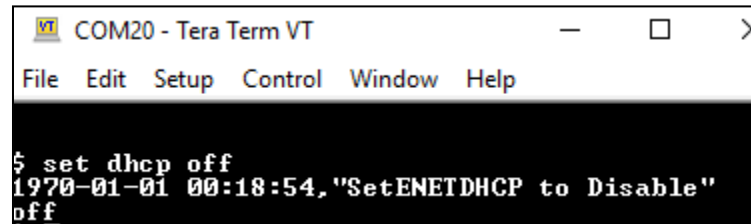
If the logger has not been claimed into a project on WQData LIVE, follow the instructions [here](#).

# iSIC V2 Data Logger – Manually Configure Network Settings

---

To manually assign network settings to the iSIC V2, send the **set dhcp off** command.

If this is not done, all user-set inputs for IP address, subnet mask, gateway etc will be ignored.



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set dhcp off
1970-01-01 00:18:54, "SetENETDHCP to Disable"
off
```

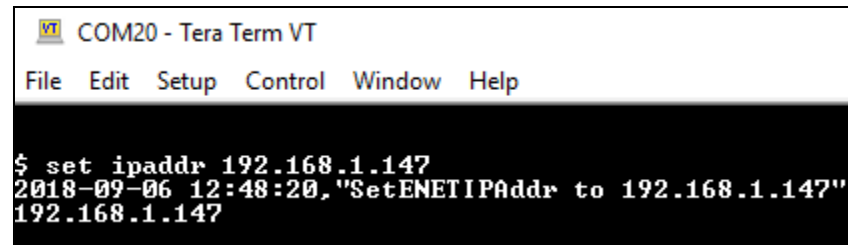
# iSIC V2 Data Logger – Manually Configure Network Settings

---

Set Static **IP Address** via the **set ipaddr <address>** command.

Note the set address must be currently unassigned on the network. Contact local Network IT for details.

Ex. Setting the IP address to 192.168.1.147



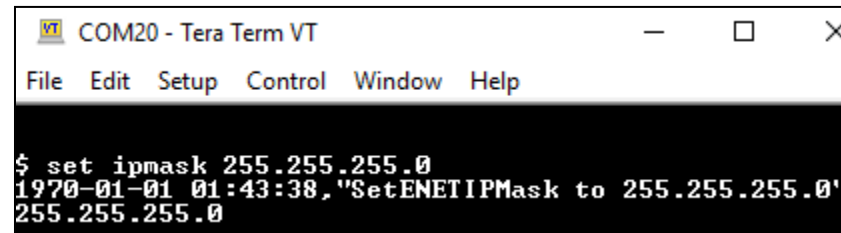
```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set ipaddr 192.168.1.147
2018-09-06 12:48:20, "SetENETIPAddr to 192.168.1.147"
192.168.1.147
```

# iSIC V2 Data Logger – Manually Configure Network Settings

---

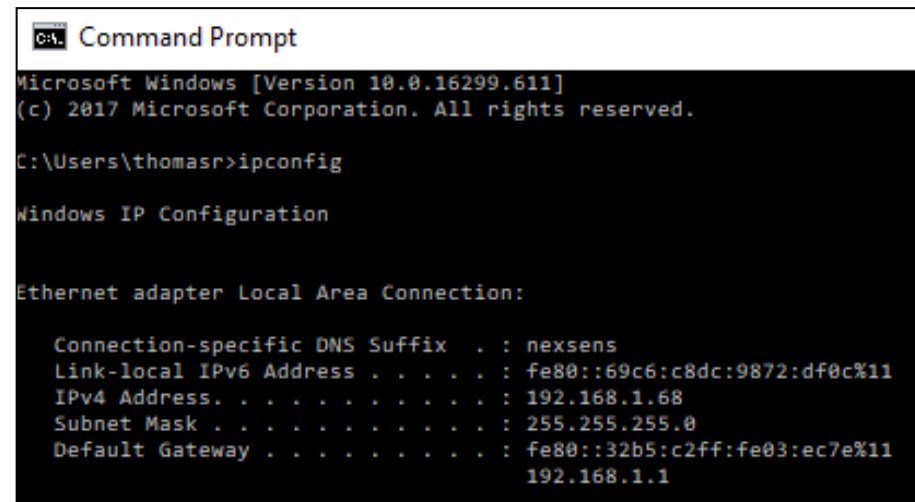
Set **Subnet Mask** via the **set ipmask <address>** command.

Ex. Setting the Subnet Mask to 255.255.255.0



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set ipmask 255.255.255.0
1970-01-01 01:43:38,"SetENETIPMask to 255.255.255.0"
255.255.255.0
```

The network's subnet mask and gateway can be determined by sending the **ipconfig** command on any Windows PC connected to the same local network as the iSIC V2.



```
Command Prompt
Microsoft Windows [Version 10.0.16299.611]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\thomasr>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

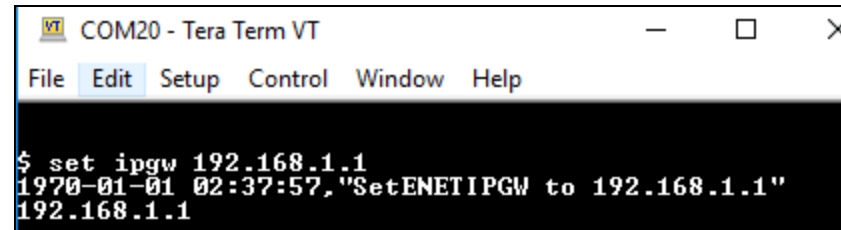
    Connection-specific DNS Suffix . . : nexsens
    Link-local IPv6 Address . . . . . : fe80::69c6:c8dc:9872:df0c%11
    IPv4 Address. . . . . : 192.168.1.68
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::32b5:c2ff:fe03:ec7e%11
                                192.168.1.1
```

# iSIC V2 Data Logger – Configure Network Settings

---

Set **Default Gateway** via the **set ipgw <address>** command.

Ex. Setting the Default Gateway to 192.168.1.1



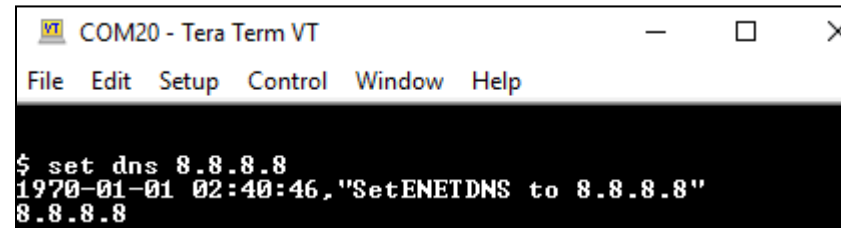
```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set ipgw 192.168.1.1
1970-01-01 02:37:57, "SetENETIPGW to 192.168.1.1"
192.168.1.1
```

# iSIC V2 Data Logger – Configure Network Settings

---

Set **Preferred DNS** via the **set dns <address>** command.

Ex. Setting the Primary DNS to 8.8.8.8



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set dns 8.8.8.8
1970-01-01 02:40:46, "SetENETDNS to 8.8.8.8"
8.8.8.8
```

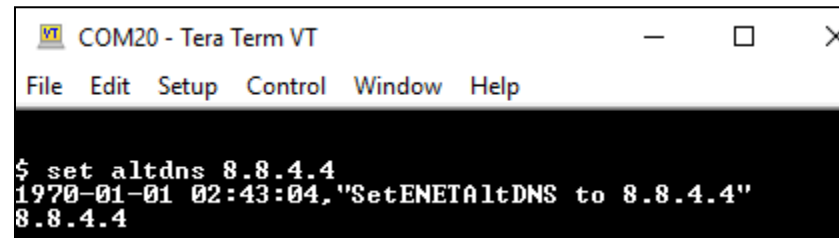


# iSIC V2 Data Logger – Configure Network Settings

---

Set **Secondary DNS** via the **set altdns <address>** command.

Ex. Setting the Secondary DNS to 8.8.8.4



```
VT COM20 - Tera Term VT
File Edit Setup Control Window Help
$ set altdns 8.8.4.4
1970-01-01 02:43:04, "SetENETAltDNS to 8.8.4.4"
8.8.4.4
```

# iSIC V2 Data Logger – Configure Network Settings

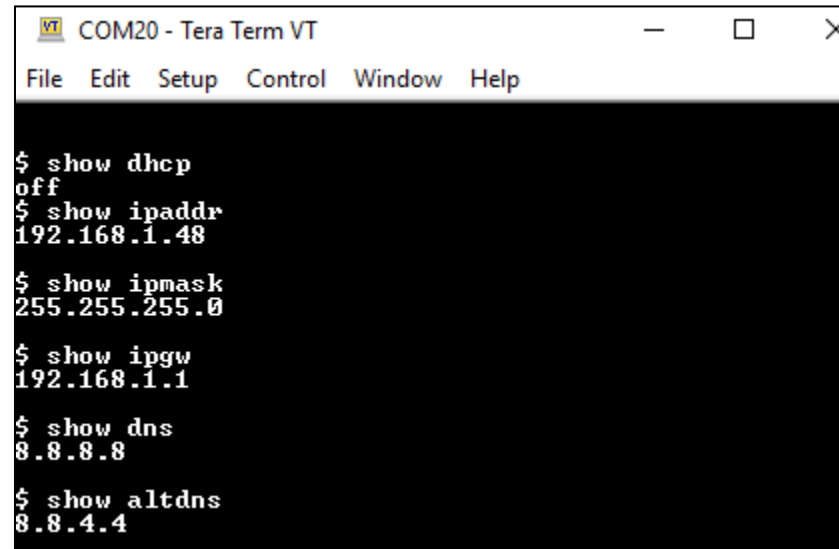
---

Once finished with the manual setup, send the **reset** command to restart the logger.

Send the **wqdatastop** immediately to prevent the iSIC-V2 from attempting a web connection.

After this is complete send the **show** command for each Network setting to verify all changes were committed successfully.

Ex. Checking all iSIC-V2 network settings



```
COM20 - Tera Term VT
File Edit Setup Control Window Help
$ show dhcp
off
$ show ipaddr
192.168.1.48
$ show ipmask
255.255.255.0
$ show ipgw
192.168.1.1
$ show dns
8.8.8.8
$ show altdns
8.8.4.4
```

# iSIC V2 Data Logger – Test Manual Network Connection

---

Send the **wqdata upload** command in the terminal.

This will force the iSIC V2 to attempt a connection to WQData LIVE and reveal whether or not the network connection was successful

In addition to the terminal output, connection status is revealed by 2 or 3 consecutive beeps, indicating connection success and failure, respectively.

```
COM20 - Tera Term VT
File Edit Setup Control Window Help

$ wqdata upload
2018-09-06 12:44:48,"Active WQData URL: 'wqdatalive.com'"

$ Netif Free heap (bytes): 91400
IP 192.168.1.147
NM 255.255.255.0
GW 192.168.1.1
DNS1: 8.8.8.8
DNS2: 8.8.4.4
Active Free heap (bytes): 91320
Successfully binded IP
2018-09-06 12:44:48,"Processing WQDataLIVE upload event..."
2018-09-06 12:44:48,"Getting last upload time..."
2018-09-06 12:44:48,"Uploading 0 data points"
2018-09-06 12:44:48,"Data upload length: 0"
2018-09-06 12:44:49,"Uploading 0 data points"
2018-09-06 12:44:49,"Data upload length: 0"
2018-09-06 12:44:49,"Finished uploading data"
Local Port: 25182
Successfully binded IP
Successfully connected to WQData
Successfully sent data
```

Example of a successful connection with manual settings

# iSIC V2 Data Logger – Test Network Connection

After a successful connection, refresh the project page on WQData LIVE to verify the Last Contact time updates..

The screenshot displays the WQData LIVE web application interface. At the top, the logo 'WQData LIVE' and 'Environmental Datacenter' are visible, along with navigation links for 'DASHBOARD', 'REPORT', and 'ADMIN'. The user is logged in as 'G2 Test Account'. The main area features a satellite map of Byron, Ohio, with a red pin indicating the location of the 'Ethernet Test - UNKNOWN-00000-0000' project. A sidebar on the right lists several test types: 'Utah DWQ', 'Navy Rain Repair', 'Hydrozonix', 'Ethernet Test', and 'UNKNOWN-00000-0000'. Below the map, the project details are shown, including the name 'Ethernet Test - UNKNOWN-00000-0000' and its coordinates '39.7826961, -83.993743'. The 'System Monitor' section is currently empty. The 'Diagnostic Data' section shows a 'Last Contact' status with a green checkmark and the timestamp '2018-09-05 18:50:18'.



If the logger has not been claimed into a project on WQData LIVE, follow the instructions [here](#).