



# MULTIPOINT Submeter System

## User Manual

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Visit the Cyber Switching Web site at [www.cyberswitching.com](http://www.cyberswitching.com) to register your product and activate your warranty.

# 1 Overview

## 1.1 Scope

The Multipoint Submeter is a multi-channel device capable of measuring three voltage channels and up to six current channels. The Multipoint's six current input channels allow multiple loads to be measured simultaneously. The three voltage channels and six current channels each have a complete signal path allowing for a full range of measurements. Each input channel are designed to work with Cyber Switching split core 0.33V voltage output current transformers (CTs, product order numbers listed below).

The purpose of this document is to:

- Instruct how to configure the operating software for the Multipoint Submeter Module. This document can be used to support field installations or software setting changes to Multipoint Submeter systems.
- Provide general steps on how to use current tools in the Multipoint Submeter Module operating software.
- Instruct how to set up the Multipoint Submeter Module to communicate with a personal computer and the module's web interface.
- Provide general steps on how to configure various Multipoint Submeter Module settings using the system's web interface via a browser on the computer.

**Important:** Always confirm the locally stored software and related downloads are the latest versions available from Cyberswitching.com before performing any product configuration or software upgrade.

## 1.2 Hardware and Software Requirements

The following hardware and software tools are required to install and configure a Multipoint Submeter Module:

Cyber Switching part number	Descriptions
CS-400-MM-060	Multipoint Submeter module
CS-400-SH-MP	Multipoint Submeter Hub
1014013	SUBMETER Hub OTG cable
CS-400-CTXXX	Cyber Switching current transformer, installed. Available models are: CS-400-CT050 Split Core CT, 50A CS-400-CT100 Split Core CT, 100A CS-400-CT300 Split Core CT, 300A CS-400-CT600 Split Core CT, 600A
--	Laptop or desktop computer that store upgrading software
--	RJ45 Ethernet network cable (length as needed for network connection from installed Multipoint Submeter module to Multipoint Submeter Hub)
	Mounting screws (#6 or M4 suggested)

In addition, the following two tools may be required for software configuration and configuring Multipoint module communication. They can be downloaded from the [Cyber Switching website](#):

- Multipoint Configuration Tool
- Cyber Switching Discoverer Tool

These tools are detailed later in the procedure as needed.

## 2 Installing the Hardware

The following explains how to install the Multipoint Submeter module to a Submeter hub, and then connecting the hub to a standard personal computer. A Multipoint Submeter Module Quick Start Installation Guide listing the same information can also be downloaded from the [Cyber Switching website](http://www.Cyberswitching.com) for easy reference at [www.Cyberswitching.com](http://www.Cyberswitching.com).

### INSTALLATION NOTES:

- The Multipoint Submeter Module comes preconfigured to Meter ID #8. If adding a new Multipoint Submeter Module to a hub that already has a module connected to meter port 8, temporarily disconnect the existing module prior to connecting and configuring the new module. When new module node ID assignment is complete, plug back in the module initially assigned to port 8.
- Accuracy and function of the system requires the use of Cyber Switching Current Transformers. Do not install and configure this system with non-Cyber Switching components.



#### WARNINGS:



- **The Multipoint Submeter Module is to be installed by a licensed electrician. Read all warnings and review instructions prior to initiating installation.**
- Installation and setup of the network should be performed by qualified technicians only.
- Install all equipment following NEC wiring codes and local electrical standards.
- Submeter Module is an open type device intended for installation into a UL-rated electrical cabinet.
- Ensure the neutral of the mains supply system the meter is intended to monitor is earthed.
- De-energize the installation on which the current is measured, or adopt safe operating procedures when working on a hazardous live installation during application, or removal of current sensors or other system components identified in this installation procedure.
- Current sensors and Submeter modules may not be installed in a cabinet where they exceed 75% of the wiring space of any cross-sectional area within the cabinet.
- If the equipment is used in a manner not specified by Cyber Switching, the protection provided by the equipment may be impaired.
- Equipment is intended for installation in a restricted access location only.
- Disconnect all power supply cords before servicing.
- Voltage sense and neutral lead wires are required to be connected on a circuit breakers or other internal switch. For easy access, ensure that the breaker is placed near the module.

The Multipoint Submeter System is comprised of a Multipoint Submeter Hub, Multipoint Submeter Module and Split Core Current Transformers. Figure 1 below shows the Multipoint Submeter Hub, figures 2 and 3 show the module and its integral leadwire and their intended connections:

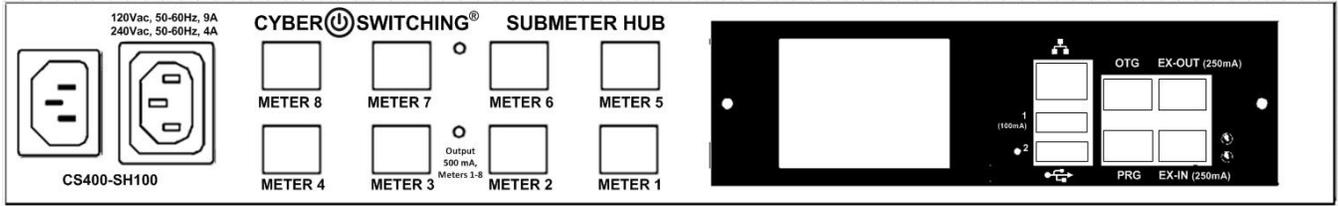


Figure 1: Multipoint Submeter Hub

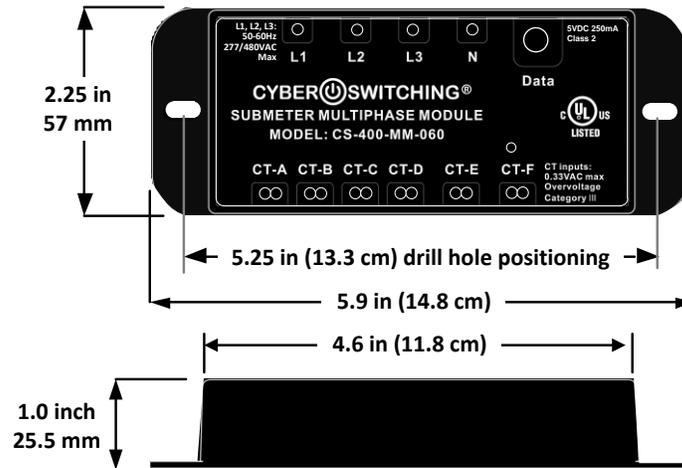


Figure 2: Multipoint Submeter Module

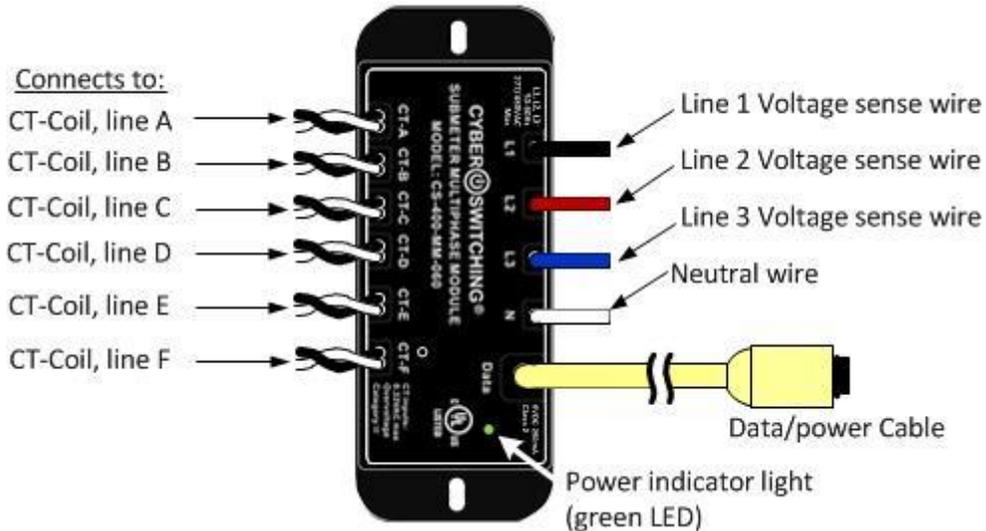


Figure 3: Multipoint Submeter Module Leadwire. Wiring is integral to the module and the intended connection for each leadwire is labeled in the figure.

## 2.1 Installing the Multipoint Submeter Hub and Module

To install the Multipoint Submeter Hub and Multipoint Module:

1. Determine location to mount submeter module inside electrical cabinet, drill clearance holes if required. See figures 4 and 5 below for typical view.
2. Drill 7/8" diameter hole for module data/panel connector. Secure connector to panel.
3. Install module, connect lead-wires for CT-coils and reference voltage. See figure 6 for reference views showing typical installation of module and CT-coils (not included) for single phase, three wire and three phase circuits.
4. After installation of unit, close electrical cabinet. Ensure wire placement is as per local electrical codes and listed warnings.
5. Connect module to hub using RJ45 Ethernet patch cable.
6. Connect the hub to the computer network using RJ45 patch cable.

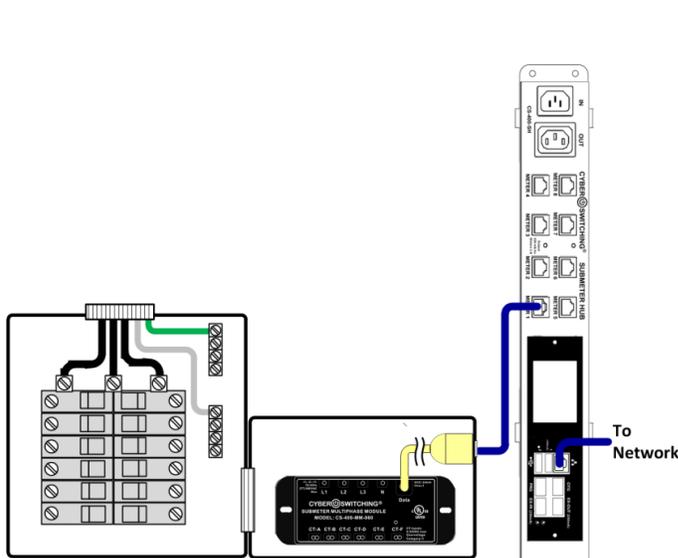


Figure 4: Typical submeter module installation inside Separate box outside electrical subpanel (1, 2)

(1) Submeter module leadwires and CT Coils not shown in figure for clarity.

(2) Not UL approved for installation at service entrance or in manufactured distribution panel unless specified as an approved accessory.

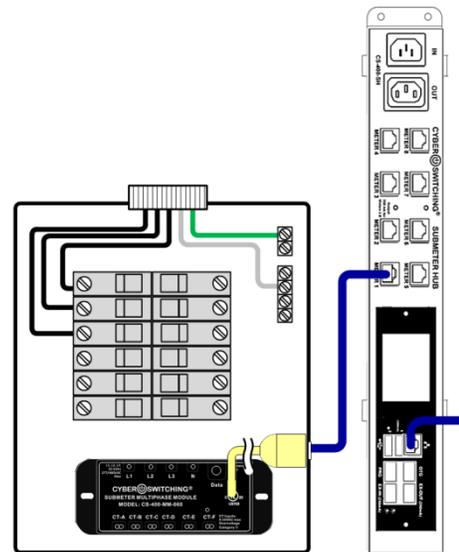
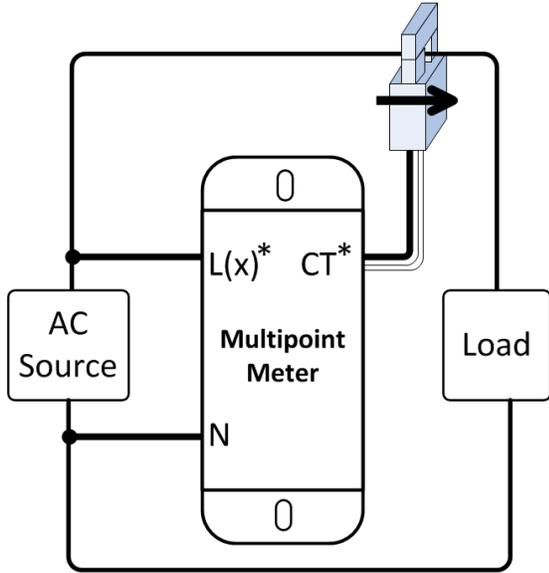
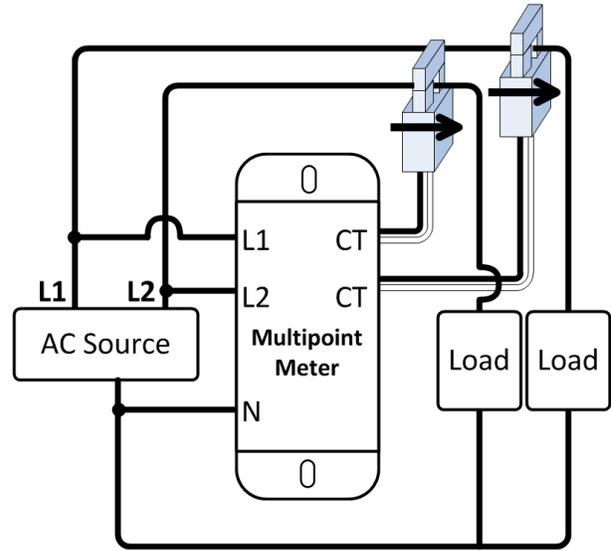


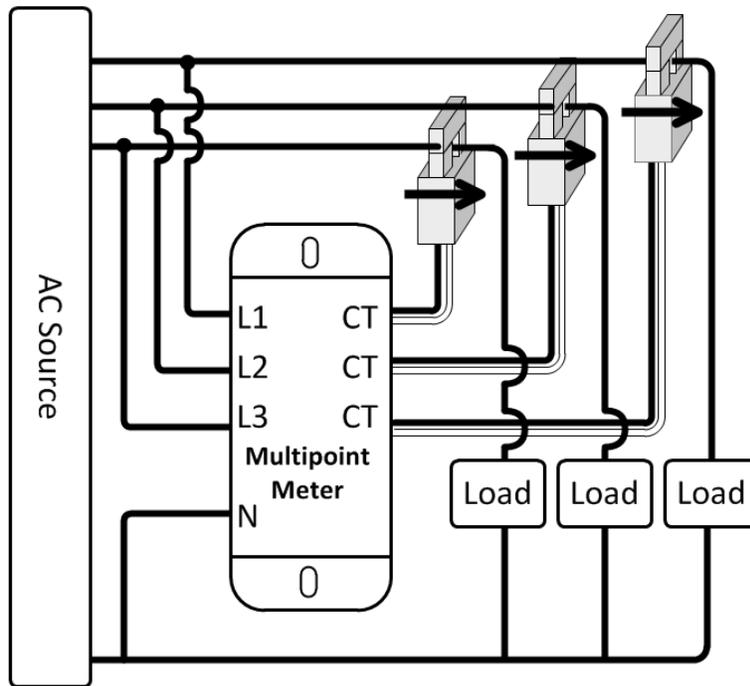
Figure 5: Typical Installation of unit into electrical cabinet (1).



(a) Installation to monitor single phase circuit



(b) installation to monitor single phase / 3-wire circuit



(c) Installation to monitor three phase circuit.

Figure 6: Wiring schematic view for typical installations.

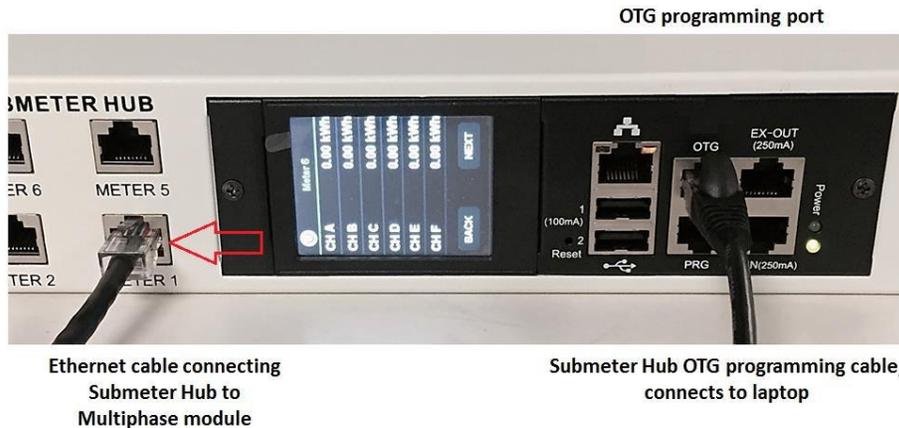
### 3. Configuring the Software

Before configuring the Multipoint Submeter Module, download the latest version of the *Multipoint Configuration Tool.zip* file from the [Cyber Switching website](#), and unzip the contents of the file.

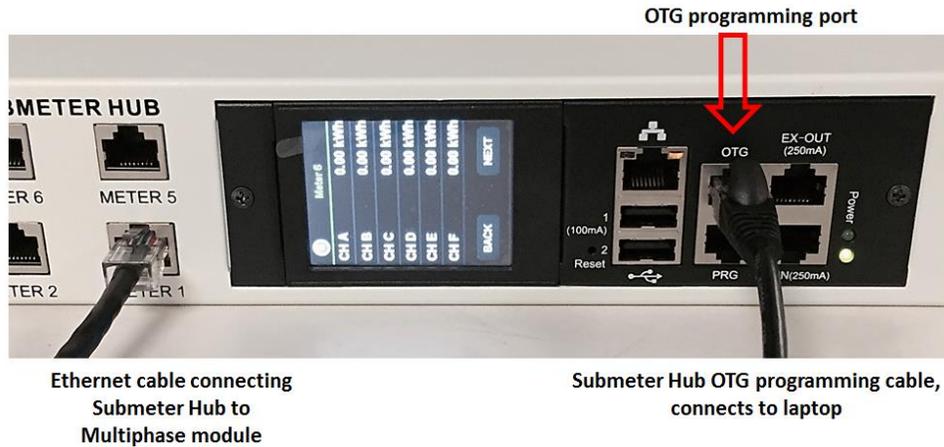
Configuration of the Submeter module requires selection of the CT-coil(s) installed with the Submeter module, voltage settings, meter name and meter (or node) ID.

To configure the Multipoint Submeter Module:

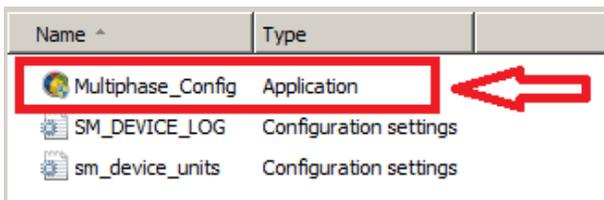
1. Plug the Submeter Hub into a 120 or 208/240V outlet.
2. Ensure from the hardware installation process that the Multipoint module is connected to an available meter port on the hub. The module will power up and a green LED displayed when the Ethernet connection is established with the hub.



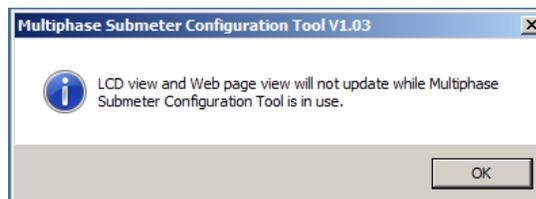
3. Ensure from the hardware installation process that one end of the Submeter Hub OTG cable is connected to the OTG port on the hub, and the other to a USB 2.0 (or greater) port on the computer used to configure the system.



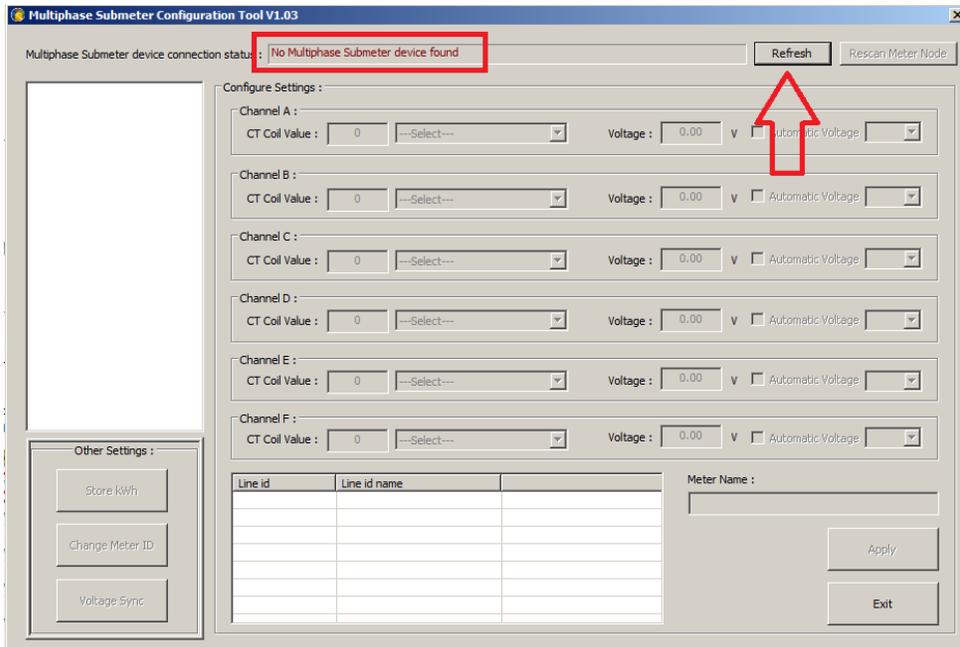
4. Launch the Submeter configuration tool downloaded earlier.



When the configuration program launches, an alert screen will show indicating the SUBMETER Hub LCD view and Web page view will not update during installation. Click **OK** to continue.



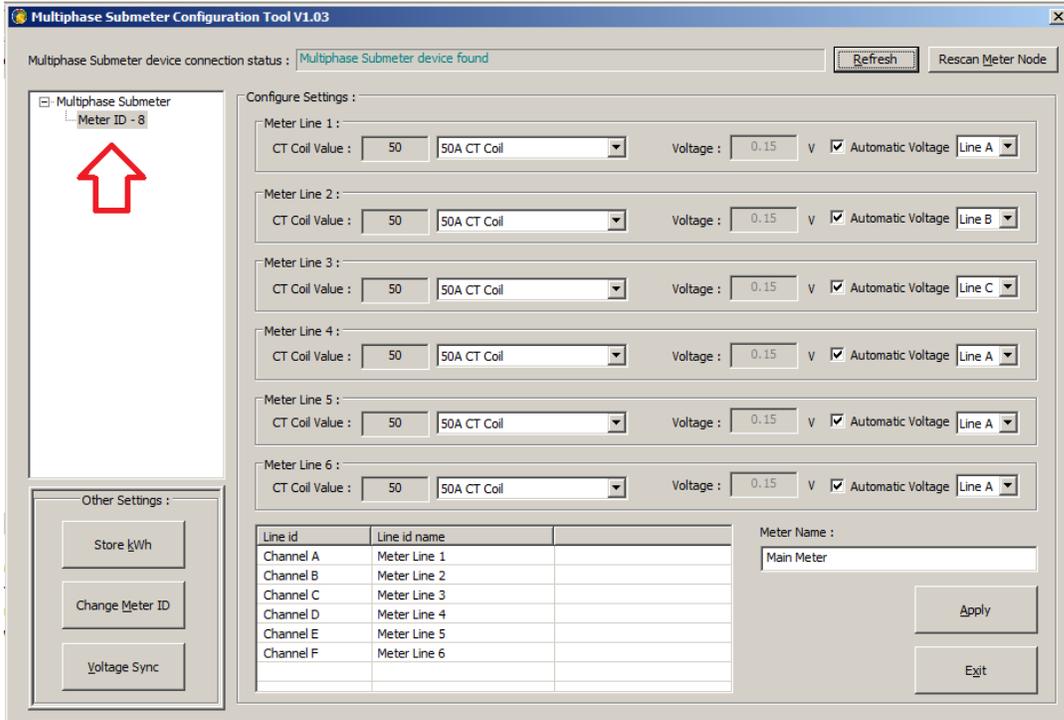
5. The main interface screen for the Multipoint configuration program is displayed. When a connected Submeter is detected, a "Submeter device found" message appears, indicating that a Submeter hub has been detected and is ready to be configured. If "Submeter device not found" is displayed, click **Refresh** to search for a connected Multipoint submeter.



- 6. Click **Rescan Meter Node** to scan for any Multipoint modules currently connected to the hub. During the scan, a processing screen will display.



- 7. Once the Submeter scan is complete, the default configuration (Meter node ID 8) for the Multipoint Submeter module(s) located is displayed.

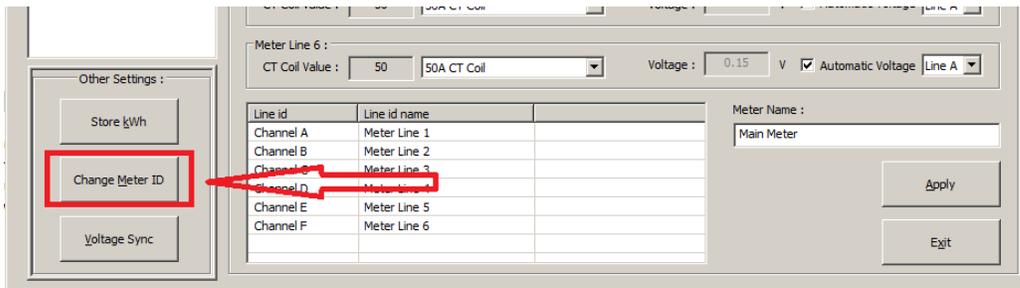


The Meter ID to the software system identification for the Multipoint module. It is recommended that the meter ID (also referred to as NODE ID) of the module match the port of the Multipoint hub to which is the module physically connected

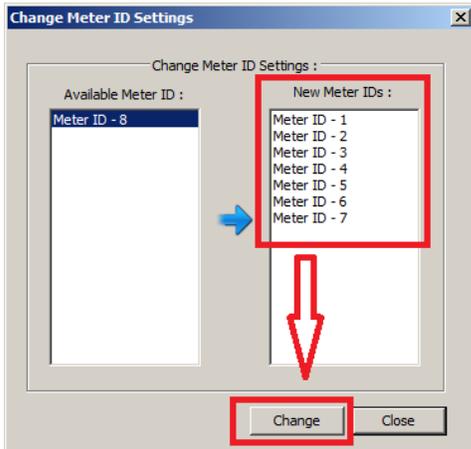
### 3.1 Changing the Meter ID

The Submeter meter node ID can be changed by doing the following:

1. Click **Change meter ID**. A list of available meter IDs is displayed.



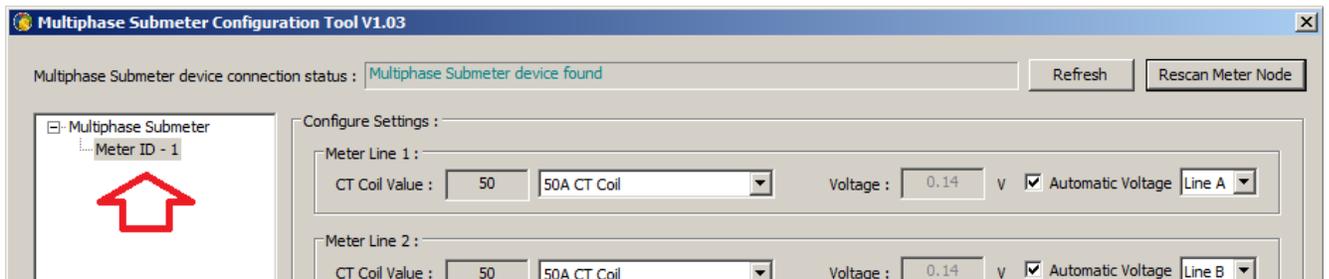
2. Select a new ID from the "New Meter IDs" column.



3. Click **Change**. An alert screen appears confirming the ID change. Click **OK** to close the configuration program. Disconnect the Multipoint module from the Multipoint Hub meter port to power cycle the unit.



4. Reconnect the module to the Hub and launch the Multipoint Configuration program.
5. Press **Rescan Meter Node** to confirm the new ID number for the meter. In this example, the identification was changed from #8 to #1.

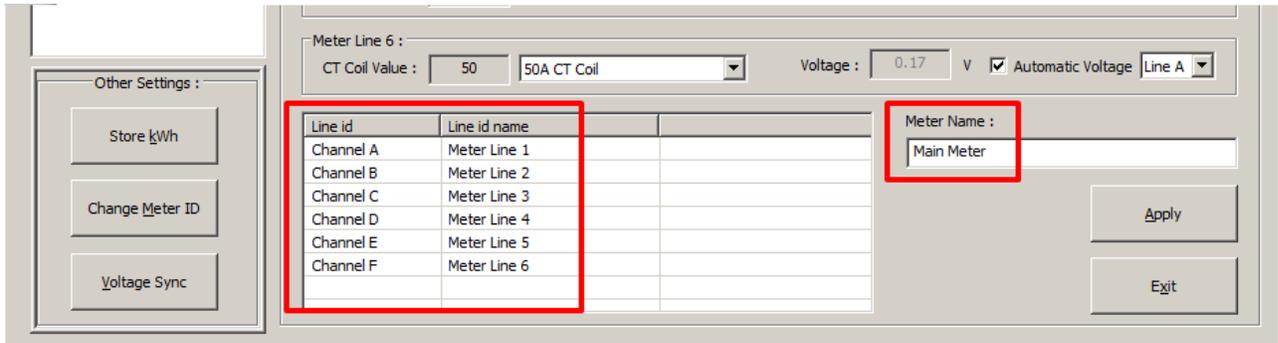


### 3.2 Changing the Meter Name and Channel ID

The default names for the meter channels A through F (large red box) of the Multipoint meter identify the module and the channels in the EMC web interface.

To change the name of the meter:

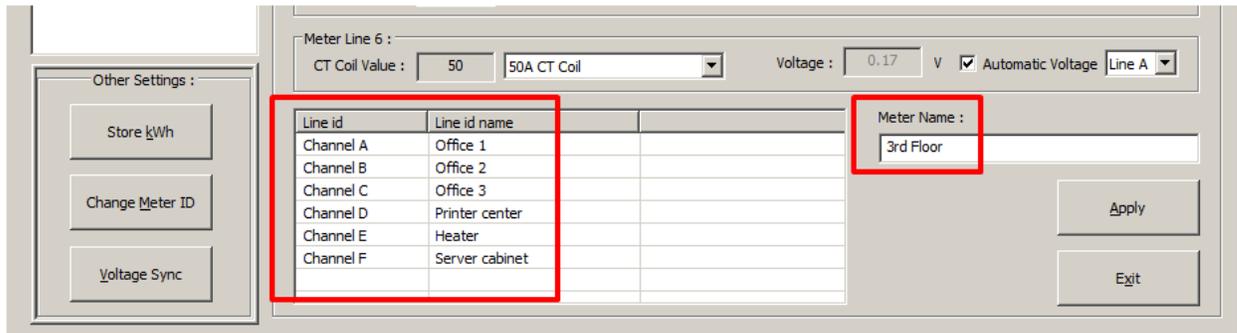
1. Click in the "Meter Name:" box and enter a new name.



2. Click **Apply**.
3. Disconnect the Multipoint module from the Multipoint Hub meter port and reconnect it to power cycle the unit.
4. Press **Rescan Meter Node** to confirm the changes.

To assign a unique name for each channel:

1. Click on the Line id name of a channel and type a new name.



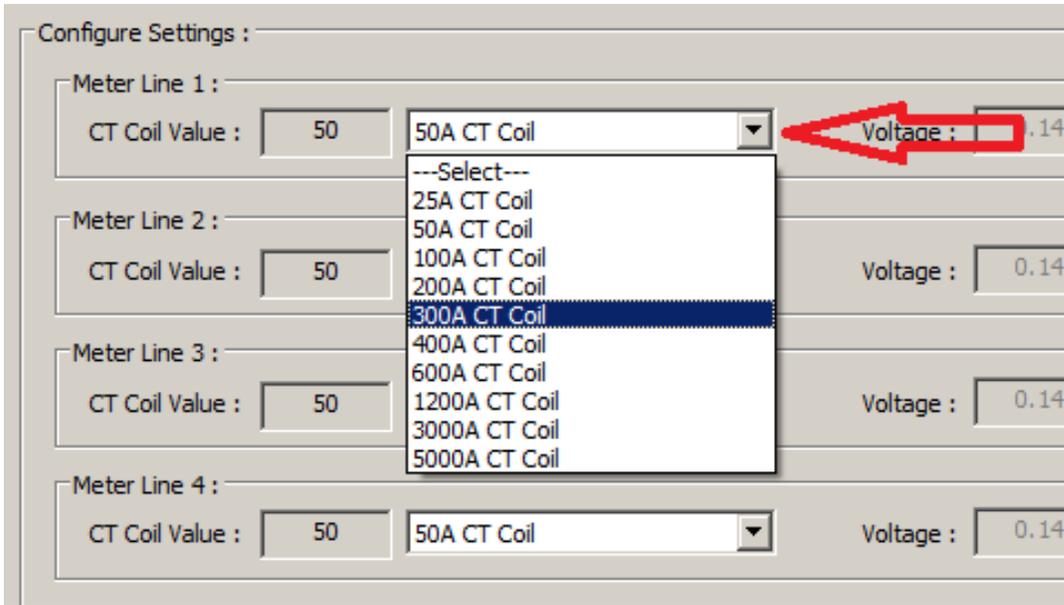
2. Click **Apply**.
3. Disconnect the Multipoint module from the Multipoint Hub meter port and reconnect it to power cycle the unit.
4. Press **Rescan Meter Node** to confirm the changes.

### 3.3 Configuring CT Coil Values

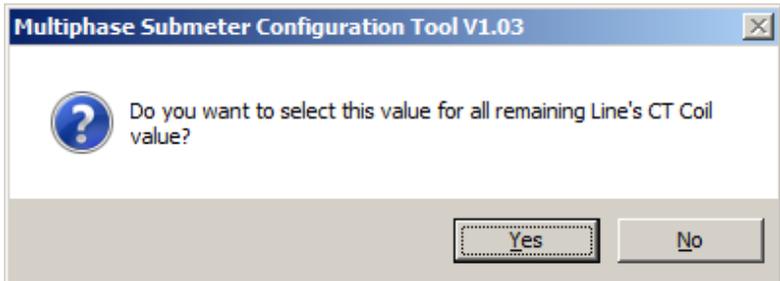
The main screen of the Multipoint configuration program displays the current CT-coil values selected for the Multipoint unit. Default software settings are for 50A CT-coils connected to meter lines 1-6 of the Multipoint module.

To change a CT coil value:

1. Select the desired coil value from the pull-down menu for Line 1, 2, 3, 4, 5 or 6.



- 2. The following Alert window will display when the new Current Level is selected. Press OK if intending to apply the CT coil settings to all 6 meter lines. If not applying this value to the remaining CT coils unassigned, then press now and move onto the next process. (Not getting this)



When "No" is selected, the configuration will show the changed value for Meter Line 1 only. All other lines remain unchanged as shown in the figure below.

Configure Settings :

Meter Line 1 :  
 CT Coil Value : 300 300A CT Coil

Meter Line 2 :  
 CT Coil Value : 50 50A CT Coil

Meter Line 3 :  
 CT Coil Value : 50 50A CT Coil

Meter Line 4 :  
 CT Coil Value : 50 50A CT Coil

Meter Line 5 :  
 CT Coil Value : 50 50A CT Coil

Meter Line 6 :  
 CT Coil Value : 50 50A CT Coil

3. Click **Apply** to save the updated configuration. The processing box will show while the system updates.
4. Disconnect the Multipoint Module from the meter port and reconnect it to power cycle the submeter module to save the setting to firmware.
5. Press **Rescan Meter Node** to confirm that the updated CT-coil selection(s) is displayed on the for each meter line.

### 3.4 Configuring Voltage Information

Voltage information can be configured from either the Voltage setting area on the main screen of the Multipoint configuration tool or by using Voltage Sync.

Multiphase Submeter Configuration Tool V1.01

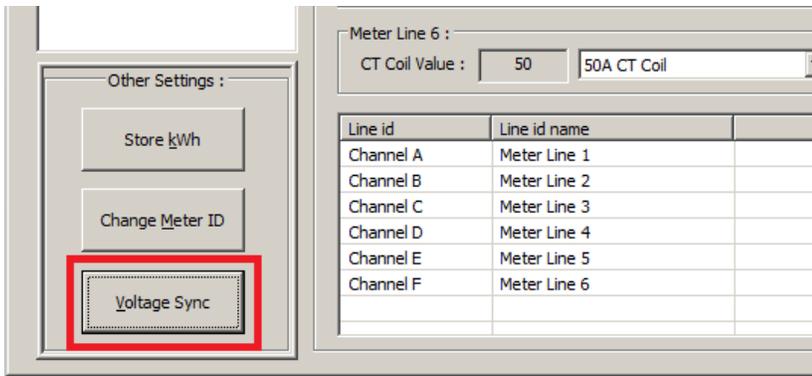
Submeter device connection status : Submeter device found Refresh Rescan Meter Node

Multiphase Submeter  
 Meter ID - 1

Configure Settings :

Meter Line 1 :  
 CT Coil Value : 300 300A CT Coil  
 Voltage : 0.17 v  Automatic Voltage Line A

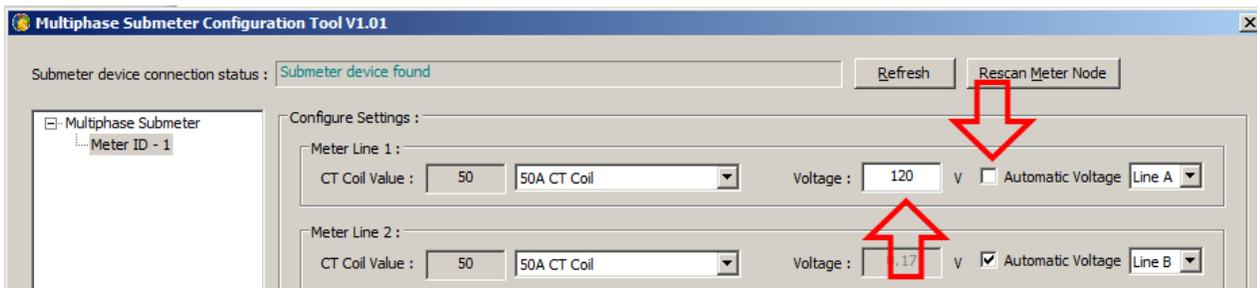
Meter Line 2 :  
 CT Coil Value : 50 50A CT Coil  
 Voltage : 0.18 v  Automatic Voltage Line B



### 3.4.1 Adjusting Voltage Configuration Settings

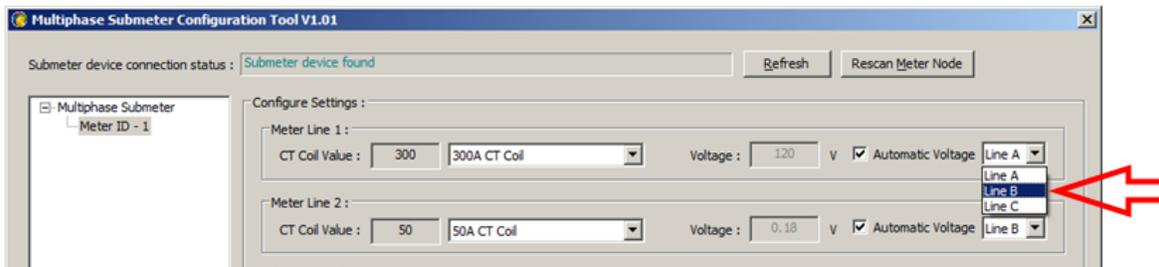
The default setting for each voltage is "Automatic" and is indicated by a checked box. An automatic setting is used if the module is monitoring voltage. Manual settings are used when referencing a specific voltage level and not a direct voltage measurement.

If a specific voltage is to be used, uncheck "Automatic Voltage" and type in the value for each Voltage line. Note that this is not required if Voltage Sync is to be used.



To use Automatic Voltage:

1. Check the **Automatic Voltage** box.
2. Select the phase for the reference voltage using the drop down menu. Select from either A (default), B or C. Repeat for all meter lines to change.



3. Click **Apply** to set new voltage configurations.

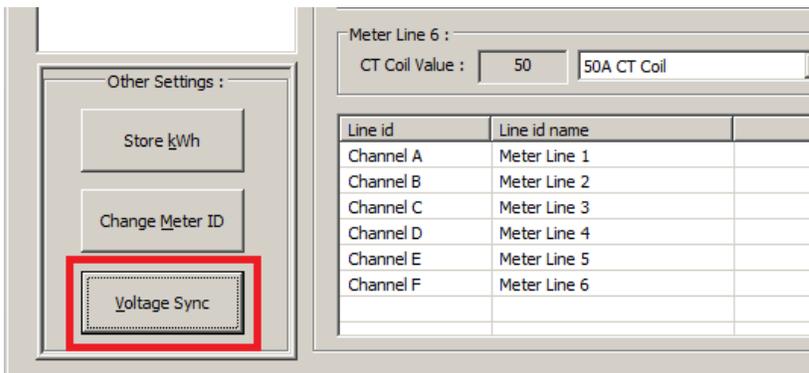
4. Disconnect the Multipoint Module from the meter port and reconnect it to power cycle the submeter module to save the setting to firmware.
5. Press **Rescan Meter Node** to confirm that the voltage configurations have been updated.

### 3.5 Using Voltage Sync

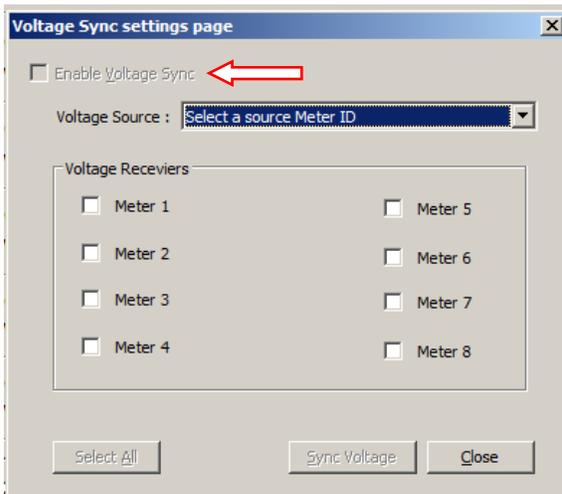
The Voltage Sync function configures the Multipoint module to receive voltage information from a separate Multipoint module connected to the same Multipoint Submeter Hub.

To configure voltage information using Voltage Sync:

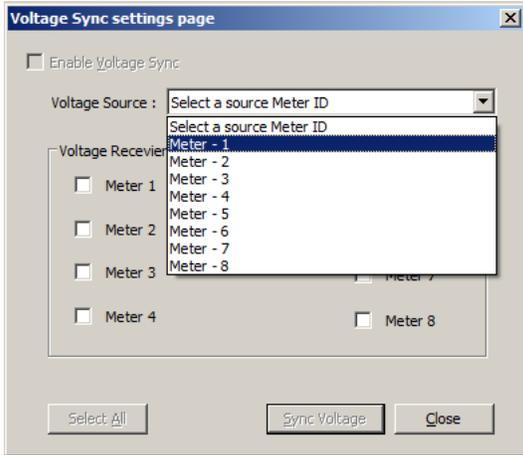
1. Click **Voltage Sync** from the main screen of the Multipoint Configuration Tool.



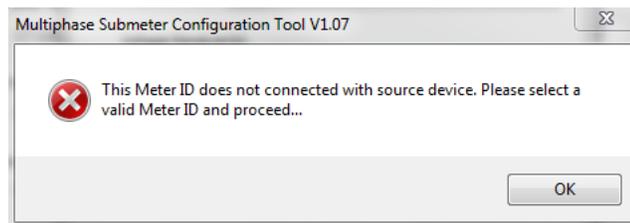
2. Check the **Enable Voltage Sync** box.



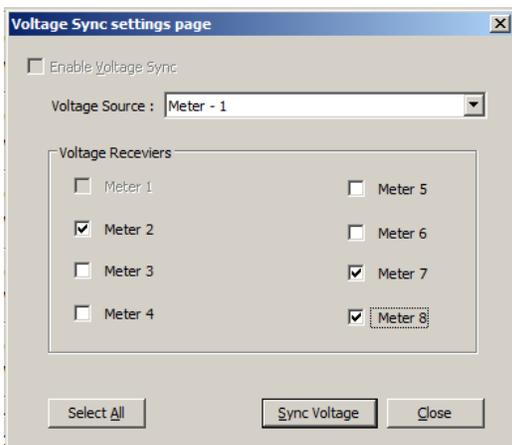
3. Select the Multipoint meter directly connected to the source voltage from the "Voltage Source" pull-down menu. In this example "Meter 1" is being selected as the Voltage Source meter.



**Note:** The following error message is displayed if the source meter ID is not connected to a device.



- All meters on the hub able to receive voltage information from the source meter (Meter-8 in this example) are displayed. Unavailable meters are grayed out. Select the Meters to receive the voltage source information from "Meter 1". In the example below Meters 2, 7 and 8 are selected.

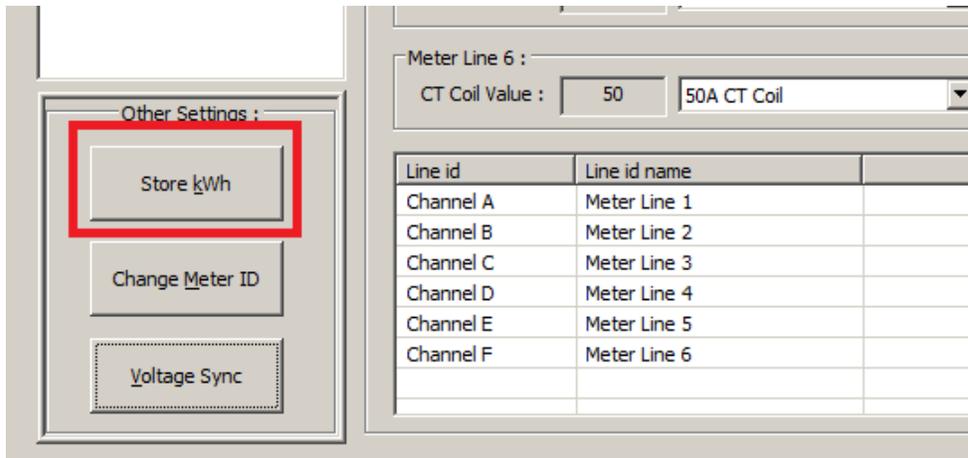


- Click **Sync Voltage**.
- Disconnect the Multipoint Module from the meter port and reconnect it to power cycle the submeter module to save the setting to firmware.
- Press **Rescan Meter Node** to confirm that the voltage configurations have been updated.

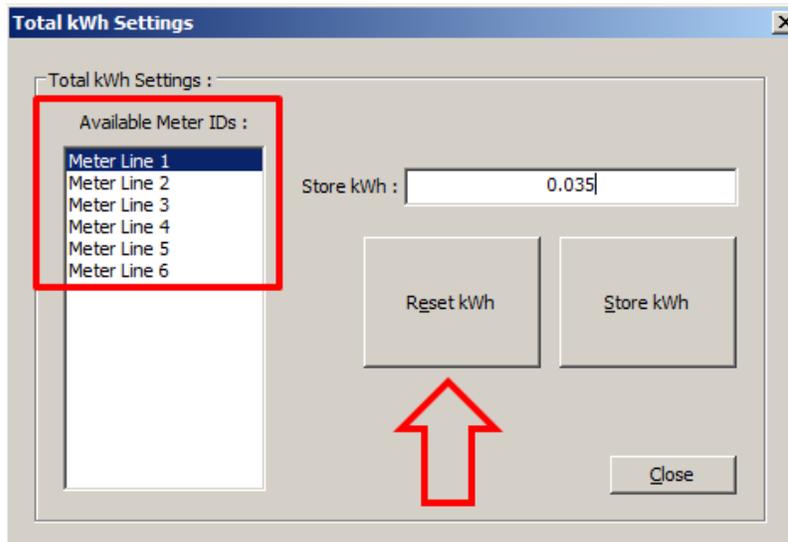
### 3.6 Storing or Resetting kWh Values

To enter a specific starting kWh value onto the source meter, or to reset the kWh value to "0":

1. Click **Store kWh** on the main Multipoint Configuration tool window.



2. Select the Submeter meter node ID from the "Available Meter IDs" window.



3. Click **Store kWh**.

**Note:** The kWh value can be reset to "0" by clicking **Reset kWh**.

8. Disconnect the Multipoint Module from the meter port and reconnect it to power cycle the submeter module to save the setting to firmware.
9. Press **Rescan Meter Node** to confirm that any kWh settings have been updated.

## 4. Configuring Initial Multipoint Submeter Communication

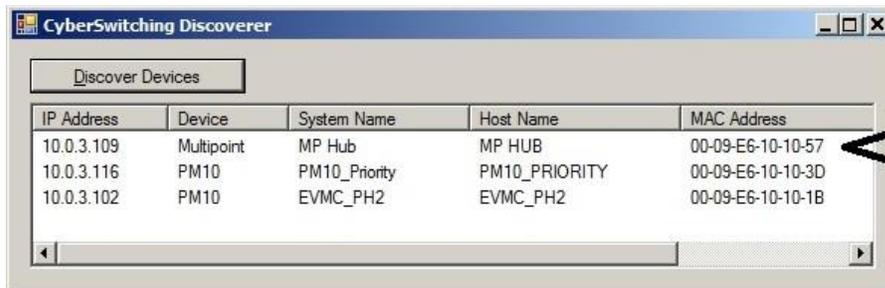
The Multipoint Submeter Hub is web enabled and the device interface can be reached using a standard browser to do the following:

- View Meter and Line Details
- Using Voltage Sync
- Changing User Settings
- Using SNMP
- Setting Date and Time with NTP
- Enabling and Disabling an HTTP Connection
- Rebooting or Resetting the System

The Multipoint Submeter Hub is DHCP enabled and can obtain an IP from the network hub once the device is powered up. The MAC address for the hub is listed on the unit label (look for 00:09:E6:XX:XX:XX). For static IP networks, the default static IP for the hub is 192.168.0.2.

The Cyber Switching Discoverer tool can be downloaded and used to find Cyber Devices on your network. Simply download the program from the Cyber Switching website and install on your desktop.

1. Launch the *Cyber Switching Discoverer* tool. All Cyber Switching devices found are displayed. Double-click on the Multipoint device (example shown below).



2. Enter a valid User Name and Password when prompted and click **OK**.



The Multipoint Submeter device home page opens and lists all available Meters and Outlets for the selected device.

## Multipoint Submeter

Home
Voltage Sync
Users
Settings
System

Current User: admin Logout

Temperature : NC    Pressure : NC    Humidity : NC

Meter 1 <span style="float: right;">✎ Edit</span>				
Line	Voltage	Current	Frequency	
Channel A (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel B (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel C (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel D (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel E (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel F (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Meter 2 <span style="float: right;">✎ Edit</span>				
Line	Voltage	Current	Frequency	
Channel A (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel B (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel C (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel D (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel E (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Channel F (0.00 kWh)	0.00 V	0.00 A	0.00 Hz	
Meter 3 <span style="float: right;">✎ Edit</span>				

## 4.1 Using the Web Interface

The Multipoint Submeter is designed to record and show accurate metering data in real time.

Both meter details and individual line details can be viewed from the Multipoint Submeter device home page.

### 4.1.1 Changing the Name of a Meter

The name of any of the listed meters can be changed by doing the following:

1. Click **Edit** next to the meter name to change.



2. Click in the "Meter Name" text box and enter a new name for the meter.



3. Click **Change**.

#### 4.1.2 Viewing Line Details

To view information on a specific line or change the name of a line:

1. Click on the line to view.

The screenshot shows the 'Multipoint Submeter' interface with the 'Voltage Sync' tab selected. It displays three meters, each with an 'Edit' button and a table of channel data. The tables for Meter 1 and Meter 2 are shown below.

Meter 1			
Line	Voltage	Current	Frequency
Channel A (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel B (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel C (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel D (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel E (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel F (0.00 kWh)	0.00 V	0.00 A	0.00 Hz

Meter 2			
Line	Voltage	Current	Frequency
Channel A (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel B (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel C (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel D (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel E (0.00 kWh)	0.00 V	0.00 A	0.00 Hz
Channel F (0.00 kWh)	0.00 V	0.00 A	0.00 Hz

2. The "Metering Values" screen opens:

The 'Metering Values' screen for Meter 1 displays the following configuration:

- Meter Name: Meter 1
- Voltage: 0.00 V,  Automatic Voltage, Line A (dropdown)
- CT Coil Value: 0.00, --Select-- (dropdown)
- Current: 0.00 A
- Power Factor: 0.00
- Frequency: 0.00 Hz
- Total kWh Demand: 0.00 kWh, [Reset](#)
- Real Time kW Load: 0.00 kW
- kWh Demand (Previous 15 min period): 0.00 kWh, 00-00-0 00:00
- Peak kWh Demand (Previous 15 min period): 0.00 kWh, 00-00-0 00:00, [Reset](#)
- kW Historic Peak Demand: 0.00 kW, 00-00-0 00:00, [Reset](#)
- Channel Name: Channel A, [Change](#)

[Change details](#)

The "Metering Values" screen provides the following information:

- Name of the meter.

- Current voltage in Line. If **Automatic Voltage** is selected, the voltage value is automatically taken from the Line. If unchecked, the voltage value must be entered manually.
- The CT Coil value Coil according the CT Coil physically connected. The following values are available for selection:

Metering Values	
Meter Name	Meter 1
Voltage	N/A V <input checked="" type="checkbox"/> Automatic Voltage
CT Coil Value	0.00 <div style="border: 1px solid black; padding: 2px;">                     --Select--                      25A CT Coil                      50A CT Coil                      100A CT Coil                      200A CT Coil                      300A CT Coil                      400A CT Coil                      600A CT Coil                      1200A CT Coil                      3000A CT Coil                      5000A CT Coil                 </div>
Current	0.00 A
Power Factor	N/A
Frequency	N/A Hz

- The current value in Line
- The Power factor of the Line
- The frequency of the Line
- Total KWh Demand with reset option, Click **Reset** to reset to "0"
- Real Time KW Load
- KWh Demand (previous 15 minute period) with a time stamp for every 15 minutes.
- Peak kWh Demand (previous 15 minute period) with a time stamp for every 15 minutes and a reset option. Click **Reset** to reset to "0".
- kW Historic Peak Demand with Time Stamp for every 15 minutes and a reset option. Click **Reset** to reset to "0".
- Name of the Line To change the Line name, click in the "Channel Name" text box and enter a new name up to 14 characters.

## 4.2 Using Voltage Sync

Voltage Sync functionality can be enabled or disabled for specific meters. A typical installation in a Submeter hub device contains up to eight sub meter metering devices. Each sub meter device typically connected to a voltage source though a circuit breaker for each device. When the meter is connected to same voltage source then cost of installation goes up. Voltage Sync (Sharing) reads voltage from one source and synchronize to other meters in the same hub.

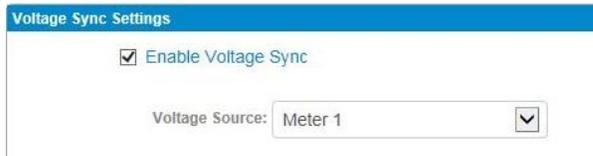
**Note:** For higher accuracy, it is recommended to connect a voltage source for each individual meter.

To use Voltage Sync:

1. Click on the **Voltage Sync** menu.



2. Click in the **Enable Voltage Sync** check box.



Voltage Sync Settings

Enable Voltage Sync

Voltage Source: Meter 1

Select the Voltage source from the Meter list (Meter 1 to Meter 8) using the “Voltage Source” pull-down menu.

3. Under “Voltage Receivers”, click in the check box next to the meter(s) to synchronize with the “Voltage Source” selected in step 2.



Voltage Receivers:

Meter 1

Meter 2

Meter 3

Meter 4

Meter 5

Meter 6

Meter 7

Meter 8

Save

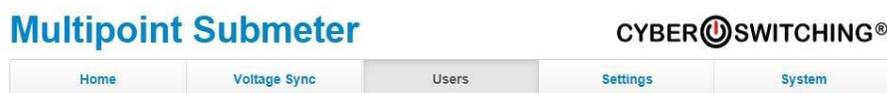
4. Click **Save**.

### 4.3 Changing User Settings

Admin and user passwords can be changed from the User menu.

To change an admin password:

1. Click on the **Users** menu.



2. Enter the old password in the "Old Password" text box under "Administrator Settings".

The screenshot displays two sections of a web interface. The top section, titled "Administrator Settings", contains three text input fields labeled "Old Password:", "New Password:", and "Confirm New Password:". Below these fields is a blue button labeled "Change Password". The bottom section, titled "User Settings", contains three text input fields labeled "Old User Password:", "New User Password:", and "Confirm New User Password:". Below these fields is a blue button labeled "Change User Password".

3. Enter a new password in the "New Password" text box under "Administrator Settings". Re-enter it to confirm.
4. Click **Change Password**.

To change a user password:

1. Click on the **Users** menu.



2. Enter the old password in the "Old Password" text box under "User Settings".

The image shows a screenshot of a web interface with two sections: "Administrator Settings" and "User Settings". The "User Settings" section is highlighted with a red border. It contains three text input fields: "Old User Password:", "New User Password:", and "Confirm New User Password:". Below these fields is a blue button labeled "Change User Password".

3. Enter a new password in the "New Password" text box under "User Settings". Re-enter it to confirm.
4. Click **Change Password**.

#### 4.4 Editing Network Settings

By default, the Multipoint Submeter attempts to contact a DHCP server to obtain an IP address and other network settings. These settings may be left unchanged, which will not affect the performance of the Multipoint Submeter, or they may be changed to better communicate with the rest of the network.

The following can be changed:

- Network Settings
- SNMP
- System information
- NTP
- HTTP

### 4.4.1 Changing Network Settings

If a service in the Multipoint Submeter requires a domain name such as email notification, SNMP, or NTP, the DNS servers must be configured. This requires the DNS server address for the local system being used, which can be provided by a system administrator.

DCHP settings can be configured automatically by clicking in the **Enable DHCP** check box. To manually enter network settings, ensure the **Enable DHCP** check box is unchecked, enter all pertinent information, and click **Save Network Settings**.

Note that changing the IP address will result in the loss of network connectivity with this device. After changing the network settings, manually enter the new IP address to re-connect to this device.

Network Settings

MAC Address: 00:09:E6:92:84:65

Host Name: SUBMETER 3P HUB

Enable DHCP

IP Address: 10.0.3.107

Subnet Mask: 255.255.255.0

Gateway: 10.0.3.1

Primary DNS: 10.0.2.12

Secondary DNS: 10.0.2.10

Save Network Settings

In addition, the Host Name can be edited by clicking in the **Host Name** text box. Click **Save Network Settings** once all changes have been made.

### 4.4.2 Using SNMP

The following SNMP versions are supported in the Multipoint Submeter system:

- **SNMP v2c:** Enables communication with an SNMP manager using SNMP v1 or v2c protocol.
- **SNMP v3:** Enables communication with an SNMP manager using SNMP v3 protocol. The SNMP v3 protocol allows for encrypted communication. To take advantage of this, users need to have an Authentication Pass Phrase and Privacy Pass Phrase, which act as shared secrets between them.

To use SNMP v2c

1. Click the **Settings** menu.



2. Click in the **SNMP v2c** bubble.



To use or SNMP v3:

1. Click the **Settings** menu.



2. Click in the **SNMP v3** bubble.

The screenshot shows the 'SNMP Settings' page. At the top, there are two radio buttons: 'SNMP v2c' and 'SNMP v3'. The 'SNMP v3' radio button is selected and highlighted with a red box. Below this, there is a section titled 'SNMP v3 Settings' with a light blue background containing the text: 'If you click on Save SNMPv3 settings then it will save both SNMPv3 User name and selected Authentication level.' Below this text, there is a text input field for 'SNMP v3 User' containing the value 'snmpadmin'. Underneath, it shows 'Current Authentication Level : Authentication and Privacy' and a dropdown menu for 'Change Authentication Level' currently set to 'NoauthNopriv'. At the bottom, there is a blue 'Save SNMP Settings' button.

3. Enter a user name in the "SNMP v3 User" field.

This screenshot is identical to the previous one, but the text input field for 'SNMP v3 User' containing 'snmpadmin' is now highlighted with a red box.

4. Select a authentication level from the "Change Authentication" pull-down menu.

This screenshot is identical to the previous one, but the 'Change Authentication Level' dropdown menu is open, showing three options: 'NoauthNopriv', 'authNopriv', and 'authpriv'. The 'NoauthNopriv' option is highlighted with a blue background and is also enclosed in a red box.

- NoauthNopriv: No Authentication and No Privacy
- authNopriv: Enable Authentication and No Privacy
- authpriv: Enable both Authentication and Privacy

5. Click Save **SNMP Settings**.

#### 4.4.3 Changing System Settings

To change the name, location and contact information for the system:

1. Click the **Settings** menu.



2. Enter a new system name, location or contact information in their respective text fields.

The screenshot shows the "General Settings" form. It has a blue header with the text "General Settings". Below the header, there are three text input fields: "System Name:" with the value "Submeter 3P Hub", "System Location:" with the value "Cyber Switching Inc..", and "System Contact:" with the value "http://www.cyberswitch". At the bottom of the form is a blue button labeled "Save General Settings".

3. Click **Save General Settings**.

#### 4.4.4 Setting Date and Time with NTP

Date and time settings are used by the scheduled events program to determine whether an event is active or not. By default, date and time are set to get their data from an NTP server and will not need any further configuration. The date and time can be manually entered, however.

To set the date and time using NTP:

1. Click the **Settings** menu.



2. Enter server information. Only one server is required, but all three are recommended. When one server is not reached it will use the next available.

**NTP Settings**

Enable NTP to set date/time

NTP Servers:

NTP Server2:

NTP Server3:

Time Zone:  ▼

If NTP is disabled, then manually set date and time

Set Date and Time :

3. Select a time zone from the "Time Zone" pull-down menu.

**NTP Settings**

Enable NTP to set date/time

NTP Servers:

NTP Server2:

NTP Server3:

Time Zone:  ▼

If NTP is disabled, then manually set date and time

Set Date and Time :

4. Click the **Enable NTP to set date/time** check box to have the NTP server automatically set the date and time.

**NTP Settings**

Enable NTP to set date/time

NTP Servers: pool.ntp.org

NTP Server2: nist1.symmetricom.cor

NTP Server3: nist1-sj.ustiming.org

Time Zone: GMT -8:00 Pacific Time (US & Canada) ▼

If NTP is disabled, then manually set date and time

Set Date and Time : 11-30-2015 15:04

Save NTP Settings

**Note:** To manually enter a date and time, uncheck **Enable NTP to set date/time** and click on the calendar icon next to "Set Date and Time" to select the desired day and time.

Enable NTP to set date/time

NTP Servers: pool.ntp.org

NTP Server2: nist1.symmetricom.cor

NTP Server3: nist1-sj.ustiming.org

Time Zone: GMT -8:00 Pacific Time (US & Canada) ▼

If NTP is disabled, then manually set date and time

Set Date and Time : 01-07-2016 12:55

Save NTP Settings

January 2016						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

12 : 55

OK Cancel

5. Click **Save NTP Settings**.

#### 4.4.5 Enabling and Disabling an HTTP Connection

Users have the option to utilize an HTTP connection or to disable it.

To enable/disable an HTTP connection:

1. Click the **Settings** menu.



2. Click in the **Enable HTTP connection** check box to use an HTTP connection. Uncheck it to disable HTTP.



Click **Save Http Settings**.

## 4.5 Rebooting or Resetting the System

An admin has the capability to perform a system reboot or reset the system to the factory defaults.

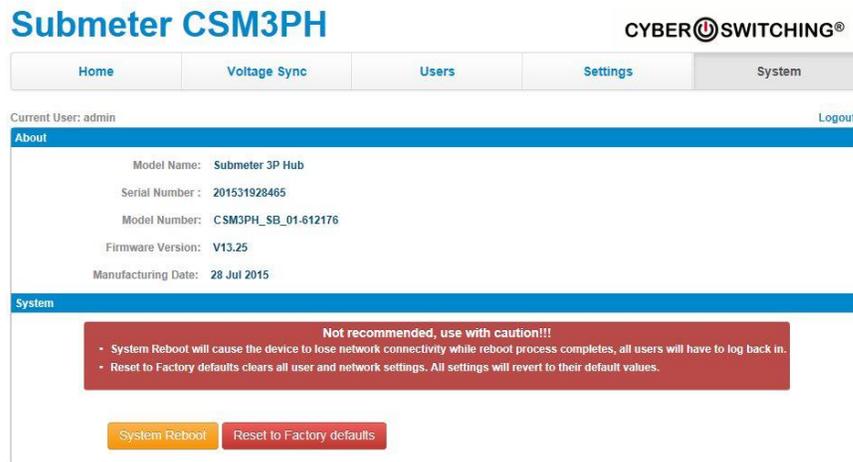
Once a system reboot is completed, all users must log back in. Resetting the system to the factory defaults clears all user and network settings and reverts them to their default values.

To reboot or reset a system:

1. Click the **System** menu.



2. Click **System Reboot** or **Reset to Factory defaults**.



**Important!** Note the **Cautions** shown on the screen before performing a reboot or reset.

The following system information is also available from the System menu:

- Model name
- Serial number
- Model number
- Firmware version
- Manufacturing date

## 5 Using the Multipoint Submeter Hub LCD Interface

The LCD interface on the Submeter Hub can be used to do the following:

- View meter information and values
- Reset a meter values
- View line information and values
- Reset line values
- Enable/disable DHCP
- Configure static information
- Enable/disable NTP settings
- View sensor information

Once the Submeter hub boots up, the Main Menu appears.



Return to the Main Menu from any screen by pressing the Cyber Switching icon  in the upper left corner of the screen.

### Note:

The firmware for the submeter hub automatically updates the values in the LCD screen. A progress bar is seen as the system updates. The LCD is not available during update; however data can be accessed through the website during this process



### 5.1 Viewing General Submeter Information

Press **About** from the Main Menu to display the current Firmware version. Press the Cyber Switching icon  to return to the Main Menu.



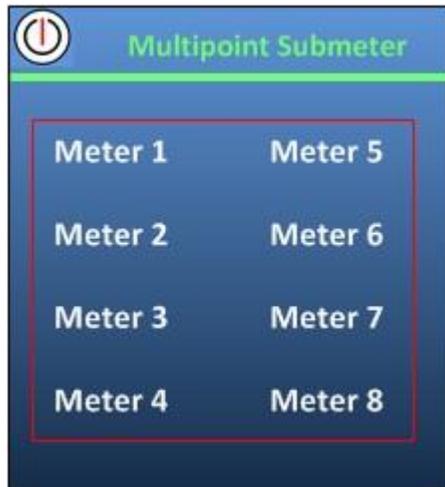
### 5.2 Viewing Meter Information

To view Meter information:

1. Press **Meter** from the Main Menu to display all available meters.



2. Press on a meter to view information on the channels within it.



Power usage data for the meter chosen is shown for each channel line.

The screenshot shows a mobile application interface titled "Meter 1". At the top left is a power button icon. Below the title is a table with six rows, each representing a channel line (CH A through CH F) and its corresponding power usage in kWh. At the bottom of the screen are two buttons: "BACK" and "NEXT".

Channel	Power Usage (kWh)
CH A	1468 kWh
CH B	0 kWh
CH C	3333334 kWh
CH D	4444446 kWh
CH E	5555556 kWh
CH F	7777778 kWh

Press on **Back** and **Next** to navigate through the remaining meters.

### 5.3 Viewing Channel Line Information

The following information for each channel line is available to view:

- Voltage
- Current
- Power
- Frequency
- CT Coil
- kWh details (peak, historic demand, real-time load numbers)

To view channel line information:

1. Press on the desired channel line to view (**CH A – CH F**).



The screenshot shows a mobile application interface for 'Meter 1'. At the top left is a power icon. The title 'Meter 1' is in green. Below the title is a list of six channels, each with a label and a kWh value. A red box highlights the 'CH A' row. At the bottom are two buttons: 'BACK' and 'NEXT'.

Channel	kWh
CH A	1468 kWh
CH B	0 kWh
CH C	3333334 kWh
CH D	4444446 kWh
CH E	5555556 kWh
CH F	7777778 kWh

Detailed information is displayed for that channel line:



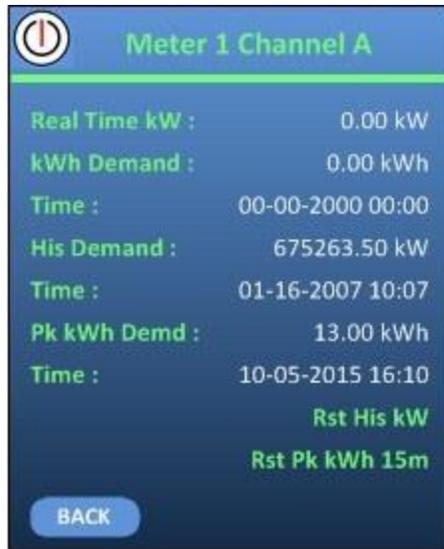
The screenshot shows a mobile application interface for 'Meter 1 Channel A'. At the top left is a power icon. The title 'Meter 1 Channel A' is in green. Below the title is a list of parameters and their values. At the bottom are two buttons: 'BACK' and 'NEXT'.

Voltage :	0.35 V
Automatic :	YES
Current :	24.57 A
Power Factor :	0.00
Frequency :	0.00 Hz
CTCell Value :	99999.00 A
Total kWh :	1468 kWh
Reset kWh	

The following can be done from this screen:

- Click **Total kWh** to reset the "Total kWh" reading to "0".
- Click **Back** or **Next** to navigate through the remaining channel lines.

2. Press **Next** to view additional kW information:



The following can be done from this screen:

- Click **Rst His kW** to reset the historic kW reading to "0".
- Click **Rst Pk kWh 15m** to reset the 15 minute time stamp period to "0".

## 5.4 Selecting Submeter Settings

Select how Network settings should be obtained, and enable NTP settings using the "Settings" menu.

### 5.4.1 Using DHCP and Static

DHCP or Static can be used to obtain network settings.

To select DHCP:

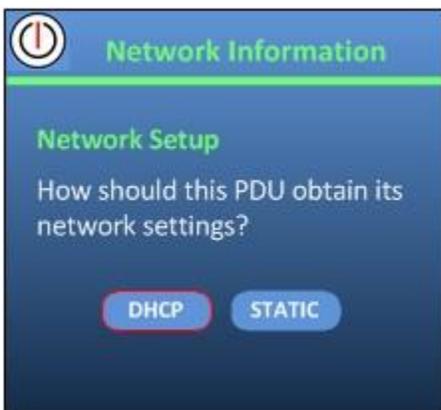
1. Press **Settings** from the Submeter Main Menu.



2. Press **Network Settings**.



3. Press **DHCP**.



IP configuration is now in automatic mode, and "Enabled" appears next to "DHCP".



To select Static, press **Reconfigure** or do the following:

1. Press **Settings** from the Submeter Main Menu.



2. Press **Network Settings**.



3. Press **Static**.



4. Enter an IP Address and press **Next**.



IPv4: IP Address

BACK NEXT

192.167.20.168

1	2	3
4	5	6
7	8	9
.	0	DEL

5. Enter an IP Subnet mask value and press **Next**.



IPv4: IP Subnet mask

BACK NEXT

255.255.0.0

1	2	3
4	5	6
7	8	9
.	0	DEL

6. Enter an IP Gateway value and press **Next**.



IPv4: IP Gateway

BACK NEXT

192.167.20.247

1	2	3
4	5	6
7	8	9
.	0	DEL

7. Enter a DNS Server value and press **Next**. (Repeat if more than one DNS Server exists).



IPv4: DNS Server 1

BACK NEXT

192.167.20.247

1	2	3
4	5	6
7	8	9
.	0	DEL

IP configuration is now in static mode.

## 5.5 Entering NTP Setting Information

NTP is used to store the local date and time in the Submeter hub. This can be done automatically or manually.

To have NTP values displayed automatically:

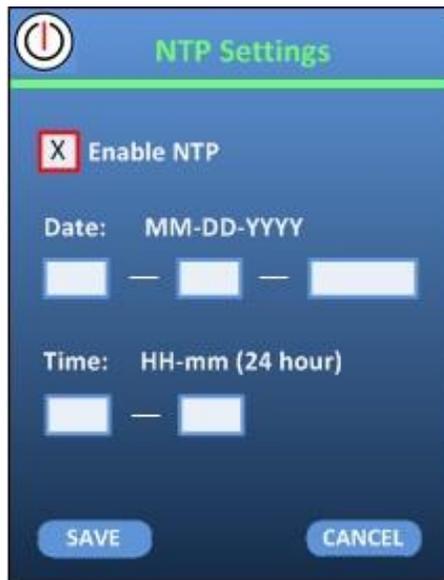
1. Press **Settings** from the Submeter Main Menu.



2. Press **NTP Settings**.



3. Press in the **Enable NTP** box to activate it.



4. Press **Save**.

To manually enter NTP values, uncheck **Enable NTP**, enter date and time values in their respective fields and press **Save**.

## 5.6 Viewing Sensor Information

Temperature, Pressure and Humidity values of the sensor connected to USB Port 1 is displayed using the Sensor feature. Click **Sensor** from the Submeter Main Menu.



The following screen is observed:

