Spyder Utility Tool

APPLICATION

This software will allow users to do the following actions on a Spyder device:
1. Upload or read an application from a single device.
2. Download or write an application to multiple devices.
3. Upgrade/Downgrade Firmware on multiple devices.
4. Change LON Node,Subnet and Domain on specific devices.

QUICK START

Follow these steps to download an application to Spyder devices:
1. 1. Connect to an interface device. (LON or BACnet)
2. 2. Scan for devices.
3. 3. Select device or devices to receive application.
4. 4. Press "Download to Device" button
5. 5. Select an application to download to the device(s).
6. 6. Select "Download Application" checkbox.
7. 7. Press "Start Download" button to begin download.
8. 8. Wait for download process to complete.

Follow these steps to download firmware to Spyder devices:
1. 1. Connect to an interface device. (LON or BACnet)
2. 2. Scan for devices.
3. 3. Select device or devices to receive firmware.
4. 4. Press "Download to Device" button
5. 5. Select firmware to download to the device(s).

6. 6. Select "Download Firmware" checkbox.
7. 7. Press "Start Download" button to begin download.
8. 8. Wait for download process to complete.

Both an application and firmware can be downloaded at the same time by selecting both "Download Application" and "Download Firmware"

CONNECT SCREEN

This Connect screen will allow the selection for one on the following types of interfaces:

1. LON

This connection requires a LON U10/U20 USB Network Interface device.

Echelon Open LDV drivers must be installed. These drivers are included with the device or can be downloaded from the Echelon Website.

2. BACnet

This connection type requires a Contemporary Controls BACnet/IP to MS/TP adapter (or equivalent).

Refer to the Connect Screen Diagram for specific information for each field and control contained in the screen.
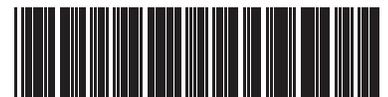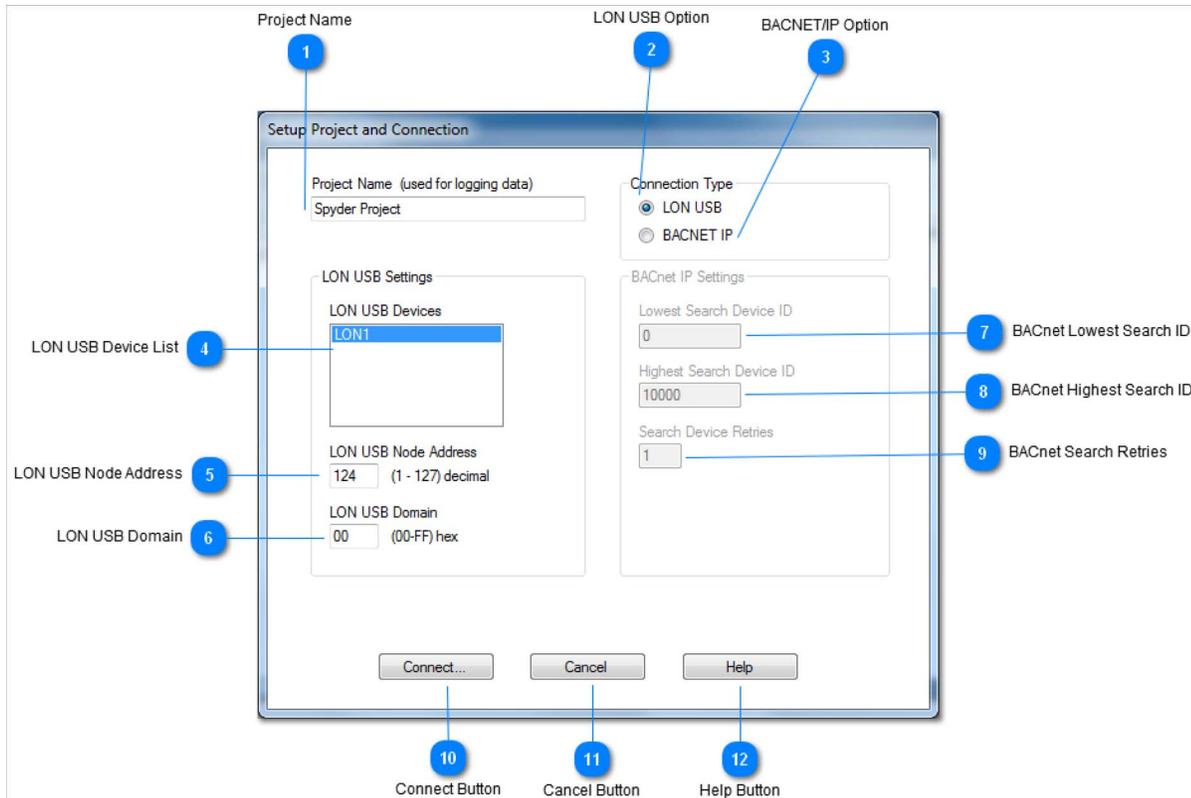
Fig. 1. Connect screen diagram.

1. Project Name
Enter a project name in this field. The project name is used as the name of the log files that are generated when download or uploading applications or downloading firmware. The log files are stored in the users document directory.

2. LON USB Option
Select this option for connections to an Echelon LonWorks Network.

An Echelon U10/U20 USB Network Interface device must be installed with the latest Open LDV drivers.

3. BACNET/IP Option
Select this option for connections to a BACnet Network.

A Contemporary Controls BACnet/IP to MS/TP adapter (or equivalent) device must be installed and must be addressable by the PC's Network Interface Card.

4. LON USB Device List
Select one of the USB adapters in the listbox for connection.

If the listbox is empty, it could me that you have not installed the Open LDV Drivers or that you have never connected the USB interface device to the PC.

5. LON USB Node Address
Use this field to change the LON USB Node Address from the default value of 124. The range for this value is 1 to 127.

6. LON USB Domain
Use this field to change the LON USB Domain from the default value of 00. The range for this value is 00 to FF in hexadecimal.

7. BACnet Lowest Search ID
Use the field to change the Lowest Device Search ID from the default value of 0. This value is used as the starting point when searching for BACnet devices on a network. Any BACnet device ID below this value will not be detected during a search operation.

8. BACnet Highest Search ID
Use the field to change the Highest Device Search ID from the default value of 10000. This value is used as the ending point when searching for BACnet devices on a network. Any BACnet device ID above this value will not be detected during a search operation.

9. BACnet Search Retries
Use the field to change the number of search retries required when searching for BACnet devices.

By default the search mechanism will search for devices twice during its operation.

10. Connect Button
Press this button to connect to the interface chosen by the "1" or "2" option above.

11. Cancel Button
Press this button to cancel any connection operation and close the window.

12. Help Button
Press this button to bring up a help screen to describe the different operations on the Connect Screen.

MAIN SCREEN

The main screen allows for the searching of devices, selection of those devices and selection of application and firmware files to be downloaded. The screen contains a scrollable grid list with columns of information for each device.
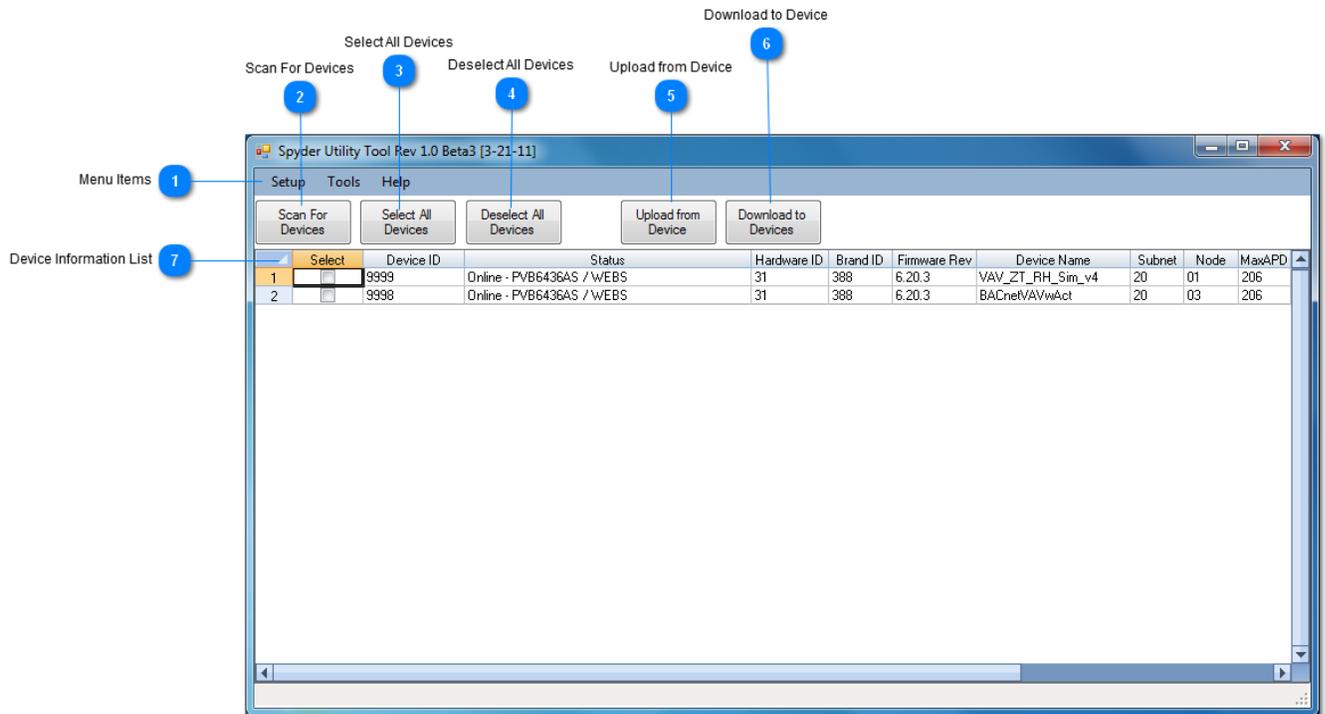
Refer to the Main Screen Diagram for specific information for each field and control contained in the screen.

Fig. 2. Main screen diagram.

1. **Menu Items**
   The following menu items are available.

   Setup: Select this menu item to create a project name and to connect to a device network.

   Tools:

   The following options are available under the "Tools" menu.

   Upload Application: Select this menu item to upload an application from a device and save the data to your PC. The uploaded file can be used to download to other devices of the same hardware and brand type.

   Download Application and/or Firmware: Select this menu item to download firmware or an application to a group of devices.

   Change LON Node/Subnet/Domain: Select this menu item to change the Node, Subnet and Domain of a particular device. This menu option is only available when connected to a LON network.

   Help: Select this menu item to open this help file.

2. **Scan For Devices**
   Press this button to scan the device network for devices. If any devices are discovered they will be listed below in the device information list.

   If no devices are found for (LON Connection):

   a. Check to make sure that the "Domain" value in the "Connect" screen is correct. The default value for the domain is "00" or "2C".
   b. Check to make sure that the connection from the LON USB network adapter to the physical network is connected properly.

3. **Select All Devices**
   Press this button to select all of the devices found in the device search that are listed in the device information list.

4. **Deselect All Devices**
   Pressing this button will deselect all of the devices listed in the device information list.

5. **Upload from Device**
   Press this button to upload(read) an application from a device. Before pressing this button, make sure only one device in the device information list is selected.

6. **Download to Device**
   Press this button to download an application and/or firmware to a group of devices. Before pressing this button, make sure at least one device in the device information list is selected.

7. **Device Information List**
   This list displays all of the Spyder devices found when the "Scan for Devices" button was pressed.

The following is a list of columns that will be displayed for each device.

Select :

This column is used to tag or select which device is to be used in an upload or download operation.

Only one device can be selected when uploading an application. Multiple devices can be selected when using the download operation.

Neuron/Device ID:

This column displays the devices unique identification number.

Status:

This column displays the current status of a device. After the "Scan for Device" button has been pressed, this column will display the online/offline status as well as its Model/Brand information.

This column will be updated during an upload or download operation.

Hardware ID:

This column displays the device's physical hardware type.

Brand ID:

This column displays the device's brand ID.

Firmware Rev:

This column displays the device's firmware version.

Device Name:

This column displays the device's name loaded in the device.

Subnet:

This column displays the device's subnet address.

Node:

This column displays the device's node address.

Domain:

This column displays the device's domain. (LON only)

Program ID:

This column displays the device's program ID. (LON only)

MaxAPD:

This column displays the device's MaxADP value. (BACnet Only)

MAC Address:

This column displays the device's MAC Address value. (BACnet Only)

Device Type:

This column displays the device's family type.

DOWNLOAD APPLICATION AND FIRMWARE

The Download Application and Firmware Screen will write an application and/or firmware to group of one or more devices.

Refer to the Download Application and Firmware Screen Diagram for specific information for each field and control contained in the screen.
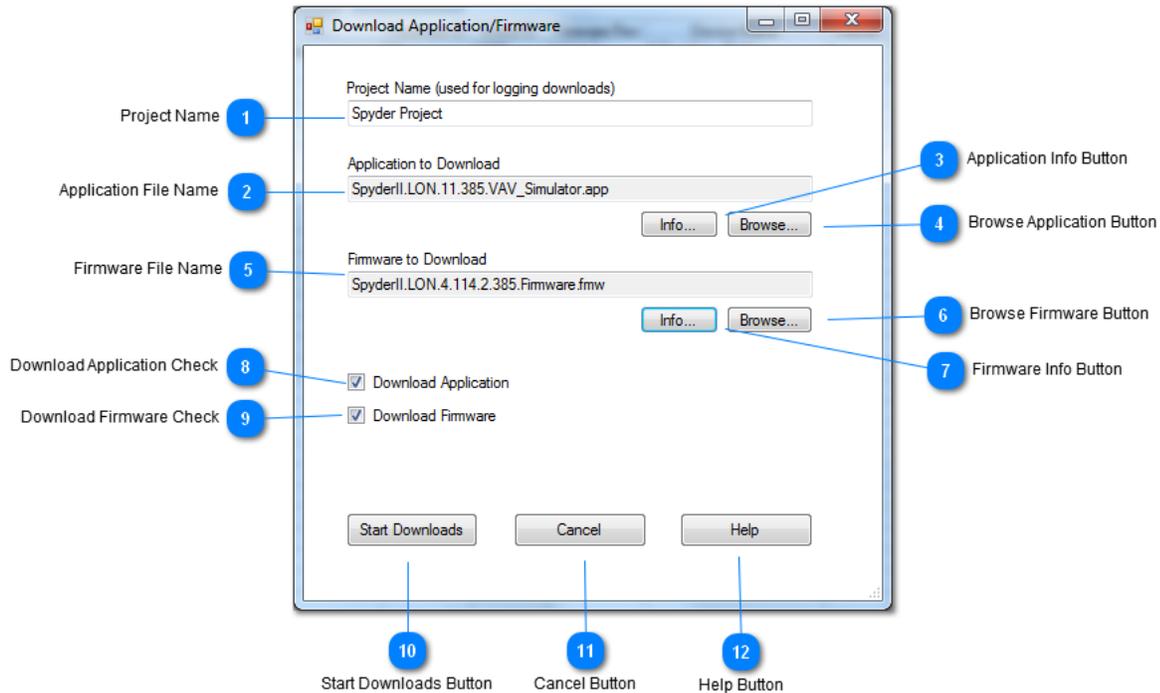

Fig. 3. Download application and firmware screen diagram.

1. **Project Name**
    This field contains the name of the project for this download. All download operations will be logged to files in the User Documents directory with project name as part of the file name.

2. **Application File Name**
    This read only field displays the file name of the application to be written to the device(s). This name can be added/ changed by using the "Browse" button on the bottom right corner of the field. Use the browse button to find the application file.

3. **Application Info Button**
    This button will display additional comments and information stored in the application file. This information can be used to verify if the application is the correct file to download to the device(s).

4. **Browse Application Button**
    This button will open a browse dialog to allow the user to search for an application file to download to the device(s). Once an application file has been located, it will be internally verified for correctness and displayed in the "Application to Download" field.

5. **Firmware File Name**
    This read only field displays the file name of the firmware to be written to the device(s). This name can be added/ changed by using the "Browse" button on the bottom right corner of the field. Use the browse button to find the firmware file.

6. **Browse Firmware Button**
    This button will open a browse dialog to allow the user to search for a firmware file to download to the device(s). Once a firmware file has been located, it will be internally verified for correctness and displayed in the "Firmware to Download" field.

7. **Firmware Info Button**
    This button will display additional comments and information stored in the firmware file. This information can be used to verify if the firmware is the correct file to download to the device(s).

8. **Download Application Check**
    Check this box to download the application to the device(s). This checkbox will be disabled if no application file has been loaded in the "Application to Download" field.

9. **Download Firmware Check**
    Check this box to download the firmware to the device(s). This checkbox will be disabled if no firmware file has been loaded in the "Firmware to Download" field.

10. **Start Downloads Button**
    Press this button to download the application and/or firmware files into the selected device(s). After pressing the button, the screen will close and a status window will open to display the download status.

11. **Cancel Button**
    Press this button to close this screen. Cancel will not start a download operation.

12. **Help Button**
    Press this button to show this help file.

UPLOAD APPLICATION SCREEN

The Upload Application Screen will read an application from a device and save it to a file so that it can then be later downloaded to other devices.

Refer to the Upload Application Screen Diagram for specific information for each field and control contained in the screen.
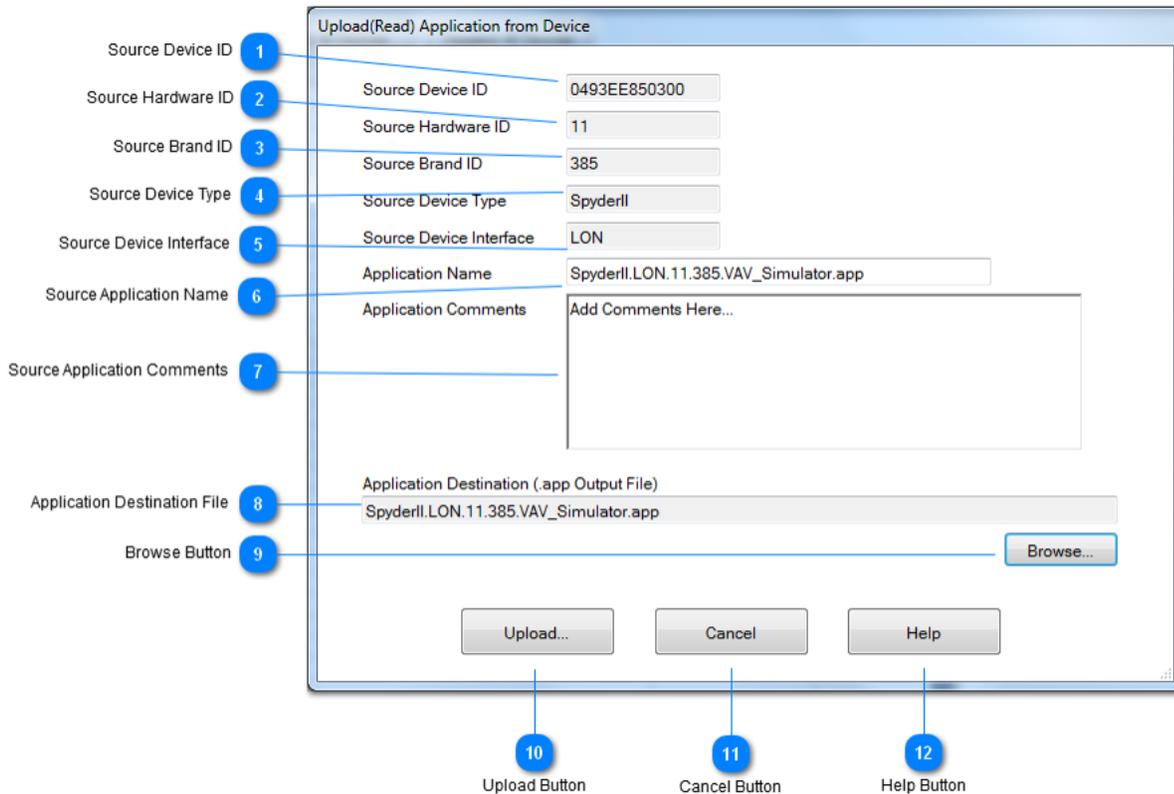
Fig. 4. Upload application from device screen diagram.

1. **Source Device ID**
This read only field identifies the device's neuron/device ID. This information is read from the device that was selected on the main screen.

2. **Source Hardware ID**
This read only field identifies the device's hardware type. This information is read from the device that was selected on the main screen.

3. **Source Brand ID**
This read only field identifies the device's brand type.

This information is read from the device that was selected on the main screen.

4. **Source Device Type**
This read only field identifies the device's family type. This information is read from the device that was selected on the main screen.

5. **Source Device Interface**
This read only field identifies the device's communication interface type. This information is read from the device that was selected on the main screen.

6. **Source Application Name**
This field is the name of the application that is being upload. This name should be clear to what the application is, since it will be part of the file name.

7. **Source Application Comments**
This textbox allows comments to be attached to the application file. Add comments to help identify the application at a later date. You should include things like what kind of

application, a version number, when it was created and any other information that might be useful for someone to reference when downloading it to a device in the future.

8. **Application Destination File**
This field is the name of the file that will be created and will contain all of the files that comprise a device application.

9. **Browse Button**
Press this button to search for a location to store the application upload file.

10. **Upload Button**
Pressing this button will start the application upload process. This screen will close and the main screen will show the status of the application upload. Wait until the upload process is complete before starting another operation.

11. **Cancel Button**
Press this button to cancel uploading an application. The screen will close and the main screen will be shown.

12. **Help Button**
Press this button to show this help file.

CHANGE LON NODE/SUBNET/ DOMAIN

The Change LON Node/Subnet/Domain screen allows the modification of the LON device's node address and subnet address and domain.

This screen expects that only one device is selected on the main screen. This screen will only change the device that is selected.

Refer to the Change LON Node/Subnet/Domain Screen Diagram for specific information for each field and control contained in the screen.
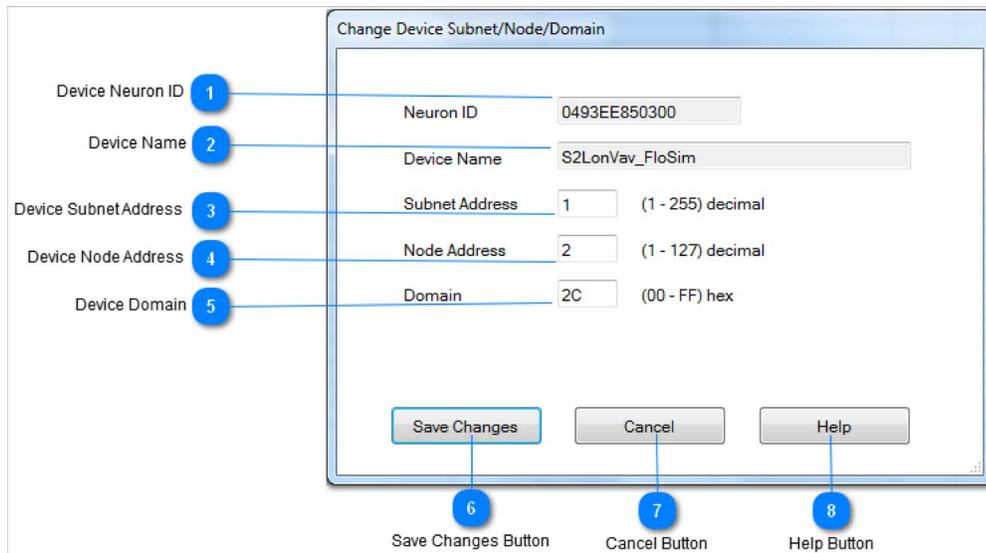

Fig. 5. Change Device Node/Subnet screen diagram.

1.   Device Neuron ID
This read only field will show the Neuron ID of the device to be changed. This device is selected from the main screen. Only one device can be selected on the main screen for the screen to recognize a device.

2.   Device Name
This read only field is the device's name that is stored in the device. This field will help identify the correct device to modify.

3.   Device Subnet Address
This field is the subnet address for the device. The device can have any subnet address from 1 to 255. The factory default is 1. It is important that the subnet and node address is unique for every device on a network otherwise message between devices will be lost or sent to the wrong device.

4.   Device Node Address
This field is the node address for the device. The device can have any node address from 1 to 127.

The factory default is 1. It is important that the subnet and node address is unique for every device on a network otherwise message between devices will be lost or sent to the wrong device.

5.   Device Domain
This field is the domain for the device. The device can have any domain from 00 to FF. The factory default is 00 or 2C. It is important that the domain is the same for every device on a network otherwise message between devices will be lost. Use the same domain number when connecting to the device (see the connect screen).

6.   Save Changes Button
Press this button to save changes to the device and close the screen.

The device's changes will be shown on the main screen in the device list grid.

7.   Cancel Button
Press this button to cancel any changes to the device.

This operation will close this screen.

8.   Help Button
Press this button to bring up this help file.

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