Imagine COMMUNICATIONS™

Configuration and Operation Manual

NUCLEUS™

SNMP Device Control Option

Edition A

175-100150-00

Publication Information

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NUCLEUS™

SNMP Device Control Option

Configuration and Operation Manual

Edition A
November 2009

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Chapter 1

Introduction

Introducing NUCLEUS-SNMP Device Control

The NUCLEUS™ SNMP Device Control option provides NUCLEUS and NUCLEUS-DM the ability to control and monitor any device that communicates using SNMPv1 or SNMPv2c. The SNMP Device control option provides user-configurable access to all product control and status parameters for remote operation.

Like other NUCLEUS options, NUCLEUS SNMP device control requires CCS Navigator to create configuration files. Those configuration files can be transferred to the NUCLEUS control panel using CCS Navigator, or can be transferred to and from a USB storage device.

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Other Options

You can extend NUCLEUS and NUCLEUS-DM control capabilities by purchasing additional software license control options. Table 1-1 describes the NUCLEUS software license control options.

Table 1-1. NUCLEUS Control Panel

NUCLEUS Software License Control Option	NUCLEUS Part Number	Software License Control Option Description
Processing Device Control Option	NUC-OPT-PROC	Provides user-configurable access to processing device controls and parameters.
Routing Panel Control Option	NUC-OPT-RTR	Provides remote switching of routing destinations, sources, and levels.
NUCLEUS-TRAX	NUC-OPT-TRAX	Opens a pre-configured device control window when a specific source or destination is routed. In order to enable this option, you must have the NUCLEUS Processing Device or SNMP Control option activated on NUCLEUS.
IconLogo Control Option	NUC-OPT-LOGO	Provides manual control of IconLogo on-air and off-line operations, as well as access to IconLogo hardware configuration
CENTRIO Control Option	NUC-OPT-CEN	Provides control of PiPs and layouts of CENTRIO Multiviewer systems
SNMP Control Option	NUC-OPT-SNMP	Provides control of devices that communicate using SNMP protocols

About the Manual

This manual provides information about features that are specific to the NUCLEUS SNMP Device Control option. It explains how to create NUCLEUS configurations and how to transfer them to the control panel. It also describes how to use the panel controls to perform tasks such as selecting devices for control and changing parameter settings.

For general operational information, see your *NUCLEUS Installation and Operation Manual*.

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Revision History

Table 1-2. Revision History

Edition	Date	Comments
Edition A	October 2009	Initial release

Obtaining Documents

Product support documents can be viewed or downloaded from our website. Alternatively, contact your Customer Service representative to request a document.

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Chapter 2

Configuration

Note

Except where noted, the term NUCLEUS is used in the manual to refer to both NUCLEUS and NUCLEUS-DM.

Overview

NUCLEUS must be configured before you can use it to control devices. NUCLEUS configurations are created using CCS Navigator in Build mode. When a NUCLEUS configuration is complete, it can be transferred to the control panel via an Ethernet connection, or to an external USB memory key.

NUCLEUS configurations consist of the assignment of panel controls to perform tasks such as accessing devices and setting device parameters. Only a CCS software application, such as Navigator (in Build mode), can be used to create the configuration and make modifications to control assignments.

When a configuration is accessed on NUCLEUS, all of the configuration information, including device parameters and the control assignments (the assignment of parameters to adjustment knobs and adjustment buttons) become active on the panel. You can then use NUCLEUS to control other devices.

NUCLEUS can hold up to five different configurations, although only one can be active at a time. Each configuration is identified by a user-defined configuration name and, optionally, protected by a password, which is assigned when the configuration is created. This password must be entered before the configuration can be accessed on the control panel.

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Configurations can be customized to best suit specific broadcast situations and environments. For example, configurations can be created for operators who require quick access to a small number of device parameters and settings. This type of configuration can be organized to reduce the number of keystrokes that are required to navigate between crucial controls and parameter adjustments. More complex configurations can be created to provide access to the full range of device parameters for setup or test purposes.

Devices, Virtual Devices, and Favorites

You can create NUCLEUS configurations to control individual devices, virtual devices, or a combination of both.

Devices

For NUCLEUS configurations, a device refers to a single physical module, such as a video processor module or an audio signal processor module, or a stand-alone device.

Virtual Devices

Virtual devices are logical groupings of up to five distinct devices. By organizing modules into virtual devices, individual modules can be controlled and monitored as a group. This is useful in situations when different devices are associated with a single signal path. Modules do not have to be from the same product line to be part of the same virtual device, nor do they need to share the same IP address. If you have a NUC-OPT-SNMP license key and a NUC-OPT-PROC license key, a virtual device can include both SNMP and CCS-P devices.

Favorites

Favorites are the device's or virtual device's most commonly used parameters. When you add a device or virtual device to a NUCLEUS configuration, the Favorites parameter lists for all the stand-alone devices are also added to the configuration. 'Favorites' parameter lists allow the administrator to shorten the list of parameters that must be assigned to the control panel. Establishing 'Favorites' for a device or virtual device makes the configuration process quicker. During the configuration process, a window will show all the available parameters. This list is more manageable if 'Favorites' are established in advance.

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Creating a New NUCLEUS Configuration

NUCLEUS configurations can only be created using CCS software applications. The best way to create configurations is to use the Configuration wizard.

Note

This section assumes that you are familiar with CCS Navigator. For more information about using Navigator, see your online help or software user guide.

When the configuration is complete, it is saved as an XML file, and then transferred to your NUCLEUS control panel via an Ethernet connection or by using an external USB memory key.

Figure 2-1 illustrates a simplified summary of a NUCLEUS configuration that includes SNMP device control and operation.

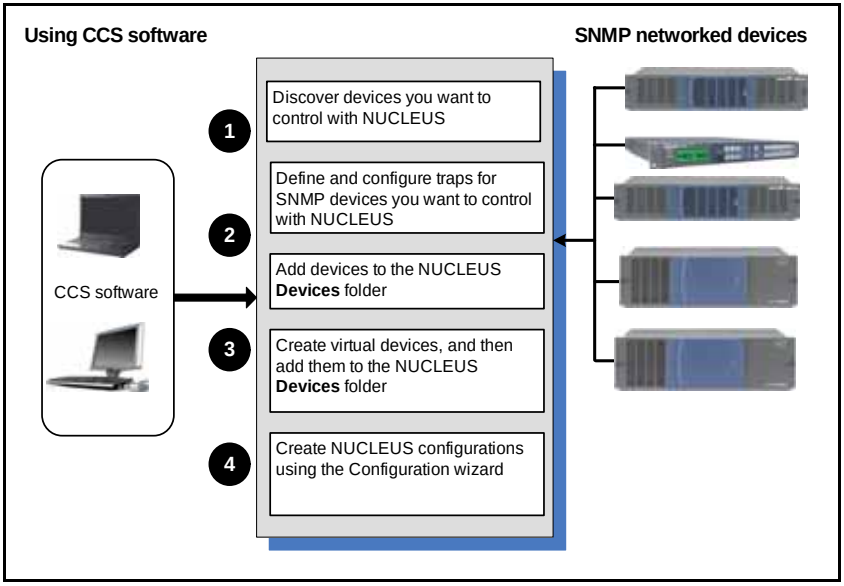

Figure 2-1. Creating a NUCLEUS Configuration

See the following topics for information about creating NUCLEUS configurations:

- “Discovering SNMP Devices” on page 8
- “Configuring Traps for SNMP Devices” on page 10
- “Adding Devices to NUCLEUS” on page 11

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Discovering SNMP Devices

For complete information on discovering devices, see *Volume 1* of your *Navigator User Manual*.

To set host IP addresses for a discovery, complete these steps:

1. Click **Discovery** on the **Options** menu, or click **Options...** in the **Discovery** pane.

   The **Discovery Options** box appears, with the **Hosts** tab on top.

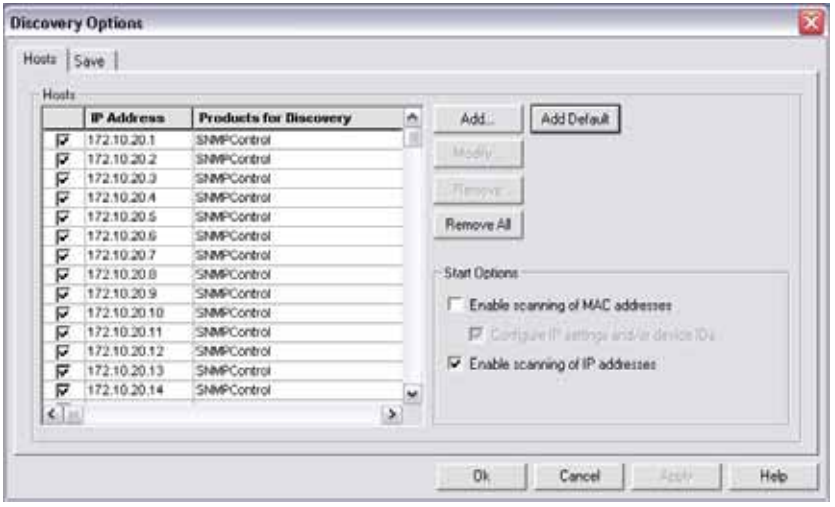

Figure 2-2. Discovery Options Box, Hosts Tab

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2. Select **Enable scanning of IP addresses**.

Note

The PC and the devices you are discovering must be on the same subnet.

3. Click **Add**, and then in the **Add Host** box do either of the following:
   - Add a host IP
   - Add a range of host IPs
4. Under **Select Products for Discovery**, choose **SNMP** and make selection in the following areas to match your network configuration:
   - **Read Community—**Enter the name here if it differs from the default of Public
   - **Port—**Enter a number from 0 to 65535; the default port is 161
   - **Timeout (sec.)—**The period when the discovery will give up on finding the SNMP device can range from 1 to 1000 seconds
   - **Retries—**The number of retries if the discovery fails can range from 1 to 1000
5. Click **OK** to close the **Add Host** dialog box, and then click **OK** to close the **Discovery Options** dialog box.
6. Click **Start** on the **Discovery** pane button bar.

   The **Discovery** tool will ping all IP addresses on the network, and then log the IP addresses and device IDs for all responding SNMP devices in the **Discovery** pane's **Status** dialog box.

   If you do not click **Stop**, the discovery will stop automatically when it finishes searching the network.
7. When the discovery is complete, click **Save** on the **Discovery** pane button bar to transfer the discovery results to the **Discovery** folder in the **Navigation** pane.

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Configuring Traps for SNMP Devices

For more information on SNMP configuration, see *Volume 1* of your *Navigator User Manual*. You must have a NAVIGATOR-SNMP license to configure SNMP devices to work with NUCLEUS.

1. Click **Options** > **SNMP** on Navigator's main menu.

   A dialog box appears:

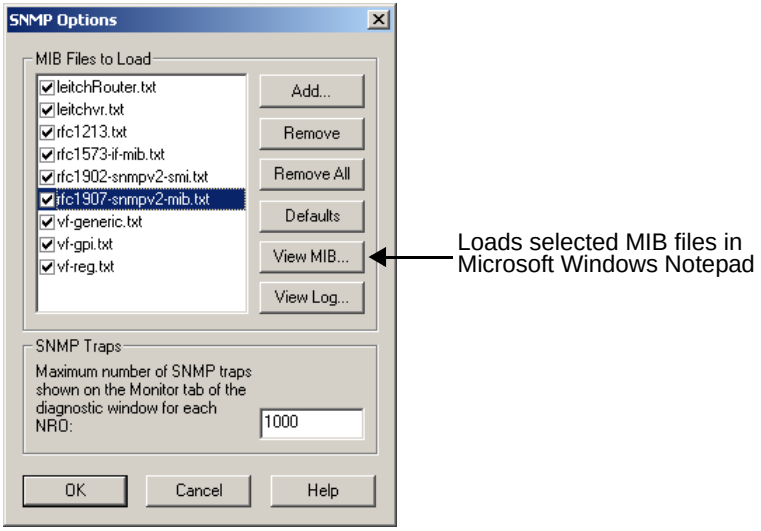

Figure 2-3. SNMP Options Dialog Box

   By default, the **MIB Files to Load** box on the **SNMP Options** box contains a list of MIB files used by compatible equipment. If the MIBs for devices you plan to control do not appear in this list, first download the appropriate MIBs, and then copy them to Navigator's MIB subdirectory:

   ```
   C:\Documents and Settings\All Users\Application Data\Harris\CCS\Files\mib
   ```

2. Click **SNMP** on the **Options** menu to open the **SNMP Options** dialog box.
3. Click **Add** and then select the MIB files you want to open.

   The new MIB files will show under the **MIB Files to Load** list with a check mark. To temporarily disable the loading of a MIB file, clear the check mark beside its name.

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4. If an error occurs when the MIB files are loaded, an alert box will show. Click **OK** to acknowledge the box, then click **View Log** to read the description of the load errors. Either remove the MIB files that caused the error or add any missing MIB files.
5. Click **OK** to accept the changes and close the **SNMP Options** box.

Adding Devices to NUCLEUS

To determine the devices that your NUCLEUS panel will control, you need to add devices to the NUCLEUS configuration's **Devices** folder. You can add

- Online SNMP devices that are currently available for discovery; see "Adding Online SNMP Devices" on page 13

  For best results, discover available devices before adding them to your configuration. See "Discovering SNMP Devices" on page 8.
- Offline SNMP devices that are not available for discovery; see "Adding Offline SNMP Devices" on page 14

  If you add offline devices to your configuration, you will need to update the NUCLEUS configuration when the offline device is available for control. Offline device can also be added to virtual devices.
- Virtual devices from one or more online or offline device (which can include both SNMP and processing devices if your control panel has a NUC-OPT-PROC license in addition to its NUC-OPT-SNMP license); see "Creating a Virtual Device" on page 16

  Any online device you add to a virtual device must first be discovered using the Discovery tool. To add an offline device, you must first set its IP address to a default value (see steps **1** to **7** from "Creating a Virtual Device" on page 16).

  The advantages of using virtual devices in a NUCLEUS configuration include the following:

  - Parameters from different devices can be accessed by selecting a single device name on NUCLEUS.
  - Virtual devices and their corresponding control assignments can be copied to other virtual devices (as long as they are made up of the same devices and favorites lists) and to any number of configurations.

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- Virtual devices are assigned index values, which can be entered into the control panel to provide quick access to its associated devices, parameters, and control assignments.

All of the devices in the **Virtual Device** folder can be included in a NUCLEUS configuration.

Figure 2-4 illustrates the NUCLEUS configuration components, including the **Discovery** folder, **Devices** folder, and the **Virtual Device** folder.

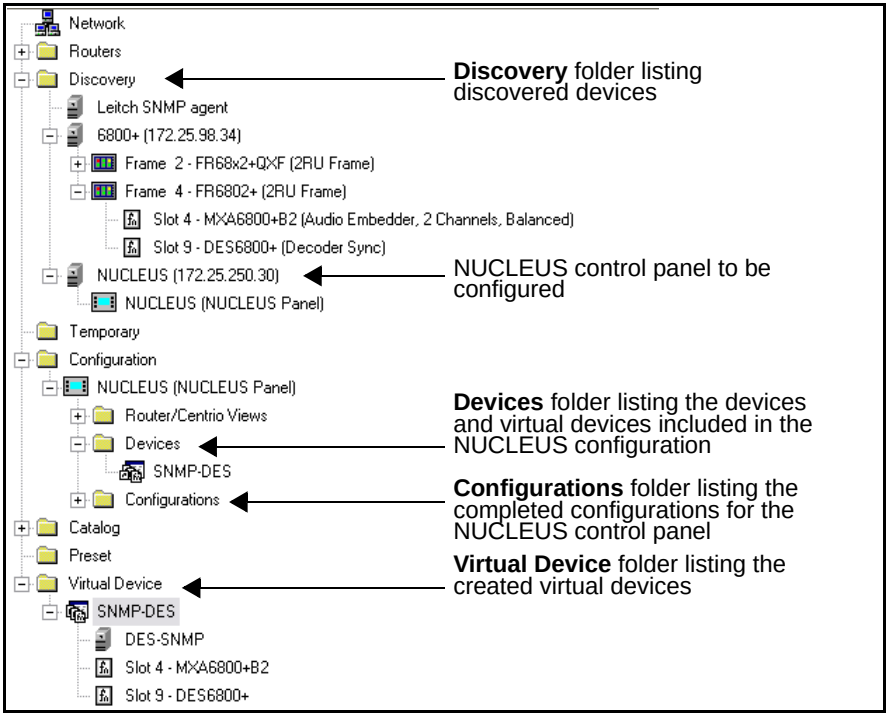

Figure 2-4. CCS Software Navigation Window

Note

If you want to rename your devices, use the **Short Name** option, or rename the devices after you have added them to NUCLEUS' **Devices** folder.

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Adding Online SNMP Devices

To add devices that have already been discovered to a NUCLEUS configuration, follow these steps:

1. In Navigator's Navigation pane, select the NUCLEUS control panel icon you want to configure from the **Network** or **Discovery** folder, and then drag it to the **Configuration** folder.
2. Expand the control panel icon, and then drag any stand-alone device you want to control to the control panel's **Devices** folder.
3. Right-click on a device within the **Devices** folder, and then select **Favorites…**.
4. The **Favorites** dialog box opens. This window displays the parameters of the selected device in the form of a table.
5. Place a check mark beside each parameter you would like to appear in the device's parameters list.

Note

You can copy either all the information (known as a Full Copy) or some information (a Partial Copy) from one device to another. For more information, see Volume 1 of your CCS Navigator User Manual.

You can change a default parameter name to a customized parameter name. To do this, click on the parameter name in the **Alias** column, delete it, and then type your new parameter name. This name will be used to identify the parameter on the NUCLEUS display. You can change parameter names so they are in your native language (using a QWERTY keyboard). NUCLEUS does not support double-byte (unicode) characters.

If the parameters for the SNMP device you want to configure do not appear, click **Configure**. See "Adding OIDs for an SNMP Device" on page 18 for more information.

You can add OIDs to an SNMP device by clicking **Configure** on the **Favorites** window. See

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Adding Offline SNMP Devices

To add offline devices to a NUCLEUS configuration, follow these steps:

1. In Navigator's **Navigation** pane, select the NUCLEUS control panel icon you want to configure from the **Network** or **Discovery** folder, and drag it to the **Configuration** folder.

   Under the NUCLEUS item in the **Configuration** folder, three other folders appear:

   - Router/Centrio Views
   - Devices
   - Configurations

2. Drag a **Navigator SNMP Agent** item from the **Discovery** folder to the **Devices** folder.

   When you discover SNMP devices, a **Navigator SNMP Agent** item is automatically added to your **Discovery** folder.

3. Right-click on the device within the **Devices** folder and select **Properties**.
4. From the **Navigation Properties** dialog box, and then click the **Device** tab.
5. Below **Device ID**, click **Set Default**.
6. When asked whether you want to set the device's IP address to a default value, click **Yes**.

   Performing this step sets the offline device's IP address to a default value. When the device is online, you must update the device's IP address.

7. Close the **Navigation Properties** dialog box.

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8. To select the devices parameters, right-click on the device, and then select **Favorites**.

   The **Favorites** dialog box opens. This window displays the parameters of the selected device in the form of a table.

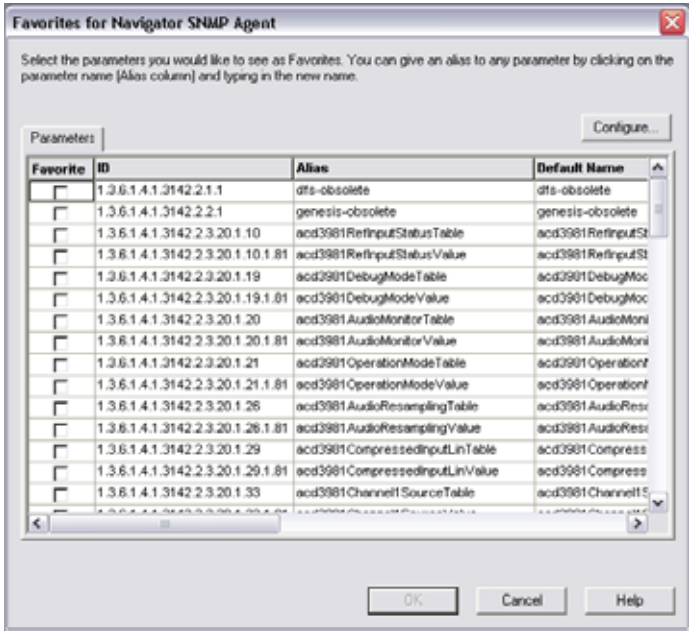

Figure 2-5. Favorites for Navigator SNMP Agent

If the parameters for the SNMP device you want to configure do not appear, click **Configure**. See “Adding OIDs for an SNMP Device” on page 18 for more information.

9. Place a check mark beside each parameter you would like to appear in the device’s parameters list.

Note

You can copy either all the information (known as a Full Copy) or some information (a Partial Copy) from one device to another. For more information, see Volume 1 of your CCS Navigator User Manual.

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You can change a default parameter name to a customized parameter name. To do this, click on the parameter name in the **Alias** column, delete it, and then type your new parameter name. This name will be used to identify the parameter on the NUCLEUS display. In this way, parameter can be named in your native language (using a QWERTY keyboard). NUCLEUS does not support double-byte (unicode) characters.

Creating a Virtual Device

A Virtual device can contain SNMP devices, or a combination of CCS-P devices and SNMP devices if you also have a NUC-OPT-PROC license.

This section explains how to create a virtual device and how to select the Favorites parameter list, which are the parameters most commonly adjusted for each individual device. For more information about Favorites lists, see Volume 1 of your CCS Navigator User Manual.

To create a new virtual device, follow these steps:

1. Right-click on the **Virtual Device** folder in the **Navigation** window, and then select **Create > Virtual Device** from the context menu.

   or

   Drag a device that you want to include in your virtual device from the **Network** or **Discovery** folder to the **Virtual Device** folder.

   A new virtual device containing the device appears in the **Virtual Device** folder.
2. Right-click on the new virtual device, choose **Rename** from the context menu, and then type a name for the new virtual device.
3. Drag other devices from the **Network** or **Discovery** folder and drop them onto the newly created virtual device.
4. Right-click on a stand-alone device within the virtual device, and then select **Favorites…**.

   The **Favorites** dialog box opens. This window displays the parameters of the selected device in the form of a table.

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5. Place a check mark beside each parameter you would like to appear in the virtual device's parameters list.

   

   Note

   You can copy either all the information (known as a Full Copy) or some information (a Partial Copy) from one virtual device to another. For more information, see Volume 1 of your Navigator User Manual.

   To change a default parameter name to a customized parameter name, click on the parameter name in the **Alias** column, delete it, and then type your new name. This name will be used to identify the parameter on the NUCLEUS display. Parameter can be labeled in your native language (using a QWERTY keyboard). NUCLEUS does not support double-byte (unicode) characters.

   If the parameters for the SNMP device you want to configure do not appear, click **Configure**. See "Adding OIDs for an SNMP Device" on page 18 for more information.

6. Repeat steps **4** and **5** for other stand-alone devices included in the virtual device.

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Adding OIDs for an SNMP Device

If the Favorites for a SNMP device do not contain the OIDs and MIBs you need, you can add them. Follow these steps:

1. On the **Favorites** page for your SNMP device, click **Configure**.

   The **SNMP Device Configuration** dialog box opens. This dialog box allows you to add multiple Object ID (OID) root nodes to the favorites for this device. The **Parameters** pane will display all Object IDs (OIDs) listed under these root SNMP nodes (in case the SNMP-managed device provides access to other OIDs implemented in different branches of the SNMP MIB).

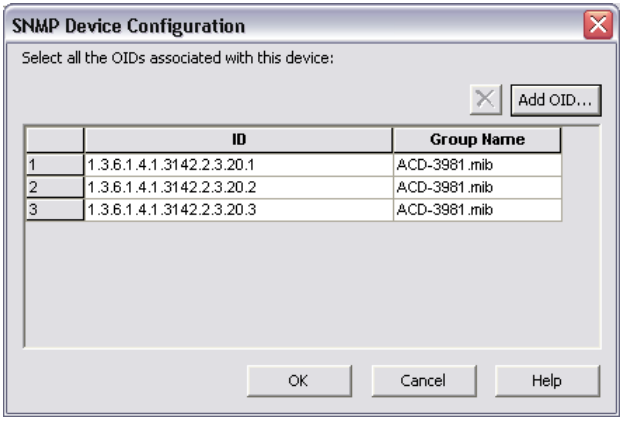

Figure 2-6. SNMP Device Configuration Dialog Box

2. Click **Add OID**.

   If the Object ID you want to include is not listed in the MIB tree, you need to add the MIB that contains this definition before proceeding. Click the **Load MIB** button, as shown in step 3.

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3. In the **SNMP MIB Browser** dialog box, browse to the specific Object (parameter) or Trap (alarm).

   SNMP devices from third-party manufacturers appear according to their own hierarchy. See the documentation for that SNMP-enabled device for more information.

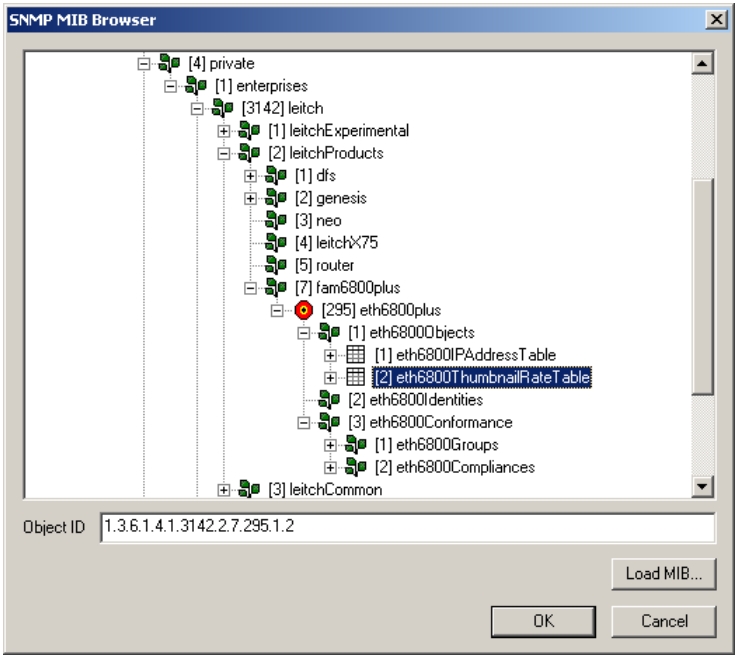

Figure 2-7. SNMP MIB Browser in Navigator

4. Click **OK**.

   The ID is added to the table in the **SNMP Device Configuration** dialog box.

5. Repeat steps 10 and 11 until the **SNMP Device Configuration** dialog box contains all the OIDs that you would select as favorites for that SNMP device.

6. Click **OK** to close the **SNMP Device Configuration** dialog box, and then **OK** to close the **Favorites** dialog box.

   New variables appear in the **Parameters** tab of the **Parameters** pane, and new traps appear in the **Alarms** tab of the **Parameters** pane.

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Using the NUCLEUS Configuration Wizard

The Configuration wizard is the quickest and easiest way to create configurations for your NUCLEUS control panel. The wizard guides you through the configuration and provides information about each configuration step. Additional help can be accessed by clicking the **Help** button in the Configuration wizard dialog boxes.

When creating a NUCLEUS configuration, parameters are assigned to controls by dragging them from a parameter (Favorites) list to a graphical representation of the control panel's adjustment knobs and buttons. You can logically group parameters and provide intuitive names for each parameter menu. The Configuration wizard does not restrict the way in which you choose to assign parameters to controls. Therefore, you must be sure that parameters are assigned to the most appropriate control locations on the panel.

Using categories, device menus, and sub-menus, you can customize the navigational structure of your configuration so that control of important parameters can be accessed quickly.

You can also use the Configuration wizard to modify an existing configuration. For more information about modifying a configuration, see "Modifying NUCLEUS Configurations" on page 49.

Starting the NUCLEUS Configuration Wizard

To start the Configuration wizard, follow these steps:

1. Right-click the control panel icon, and then select **Configuration** from the context menu.

   The **Configuration for NUCLEUS** dialog box opens.

2. Click the **Control Panel** tab.

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3. If you are creating your first NUCLEUS configuration, the **Control Panel Configuration** dialog box opens, and then asks you if you want to use the Configuration wizard to create a panel configuration. Click **Yes** to start the Configuration wizard.

   Otherwise, you can start the Configuration wizard by selecting **(new configuration)** from the **Configuration** list.

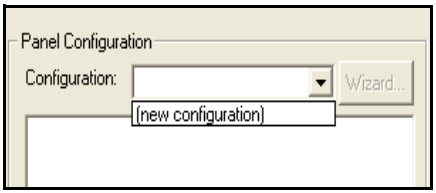

Figure 2-8. Selecting a New Configuration

The following sections provide additional information about each Configuration wizard step.

Selecting a Configuration Type

When the Configuration wizard starts, a dialog box similar to the following appears.

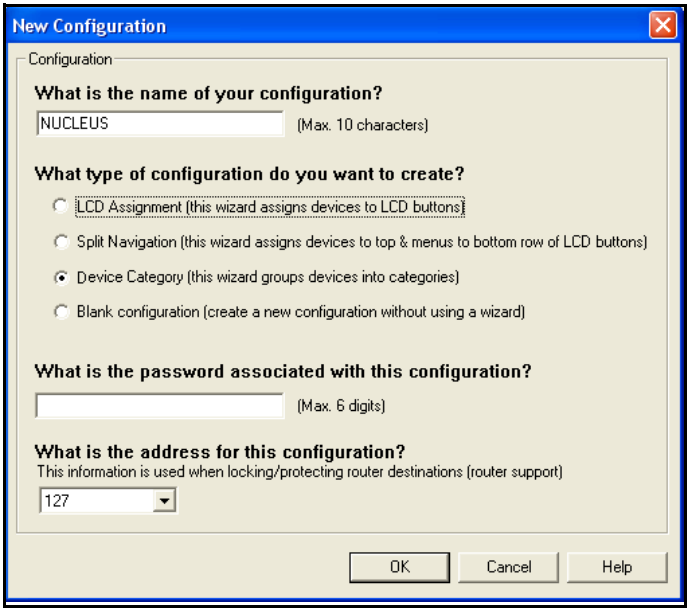

Figure 2-9. New Configuration Dialog Box

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In this step, you select the type of configuration that you want to create. The configuration type you select depends on the way in which you want organize your configuration and how you want to use the control panel's LCD buttons to access devices and device parameters. Each configuration type is described in the following sections.

- **LCD Assignment—**Using this type of configuration, you can organize your device navigation by individual device names. Each device is accessible through the first level of the control panel's LCD button assignment. Figure 2-10 on page 23 illustrates the organization of a LCD Assignment type of configuration.
- **Split Navigation**—Using this type of configuration, devices are accessed using to first row of LCD buttons. The bottom row of LCD buttons provides access to the selected device's control menus and parameters. This configuration type is ideal for an operator-driven environment in which users must quickly jump from device to device. Devices are immediately accessible because the device LCD buttons are always displayed. There is no need to "Exit" out of a device as with the LCD Assignment configuration.

  

  Note

  You can only assign parameters to the lower row of LCD buttons in this mode.

  Figure 2-11 on page 24 illustrates the organization of a Split Navigation type of configuration.
- **Device Category**—Using this type of configuration, you can organize devices and virtual devices into categories. Categories are accessible through the first level of the control panel's LCD button assignment hierarchy. Figure 2-12 on page 25 illustrates the organization of a Device Category type of configuration.
- **Blank Configuration**—Select this option if you don't want to configure your control panel using the Configuration wizard. See Volume 1 of your Navigator User Manual for information about configuring NUCLEUS without the Configuration wizard.

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Figure 2-10 illustrates an LCD Assignment NUCLEUS configuration.

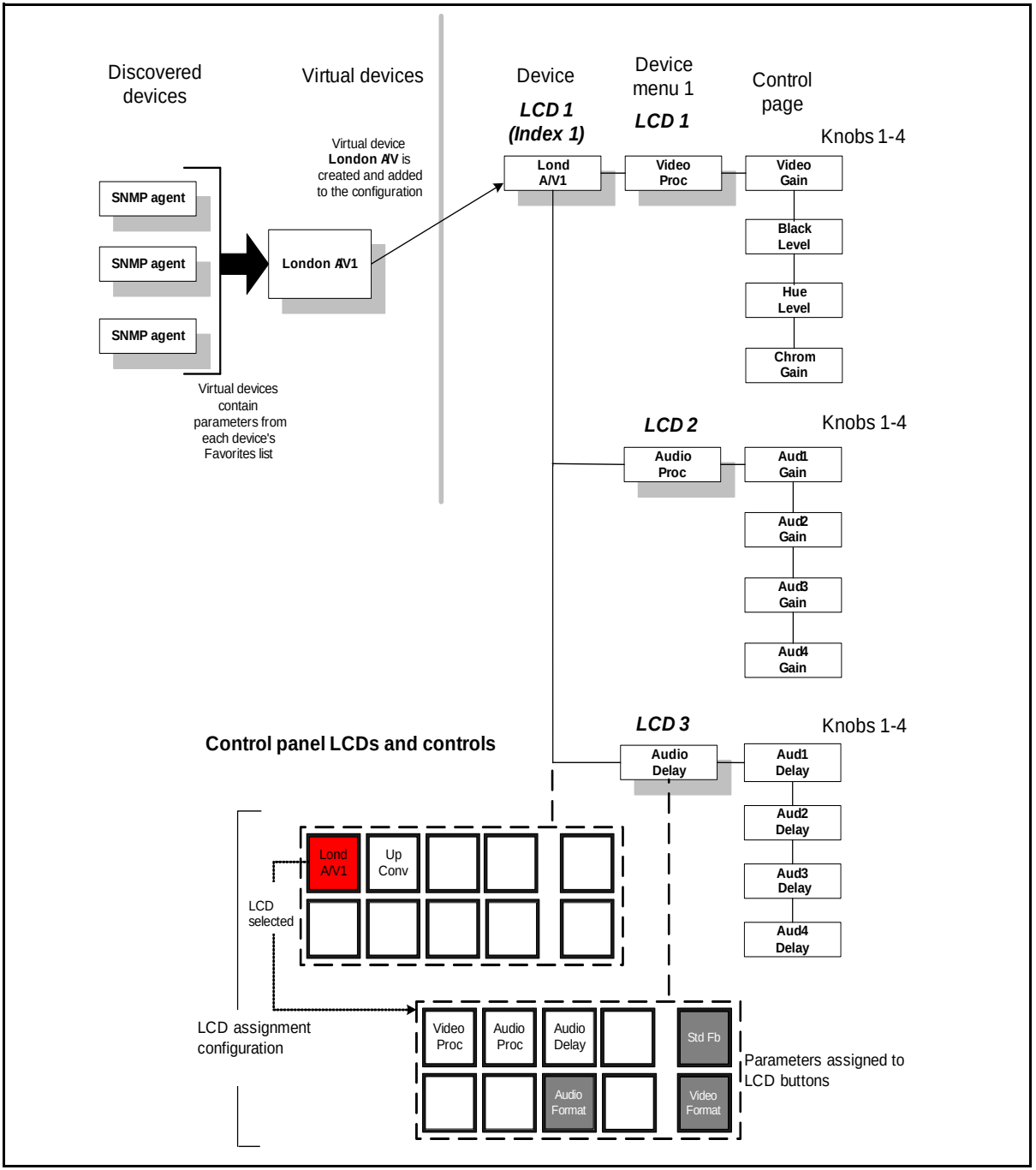

Figure 2-10. LCD Assignment Configuration

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Figure 2-11 illustrates a Split Navigation NUCLEUS configuration.

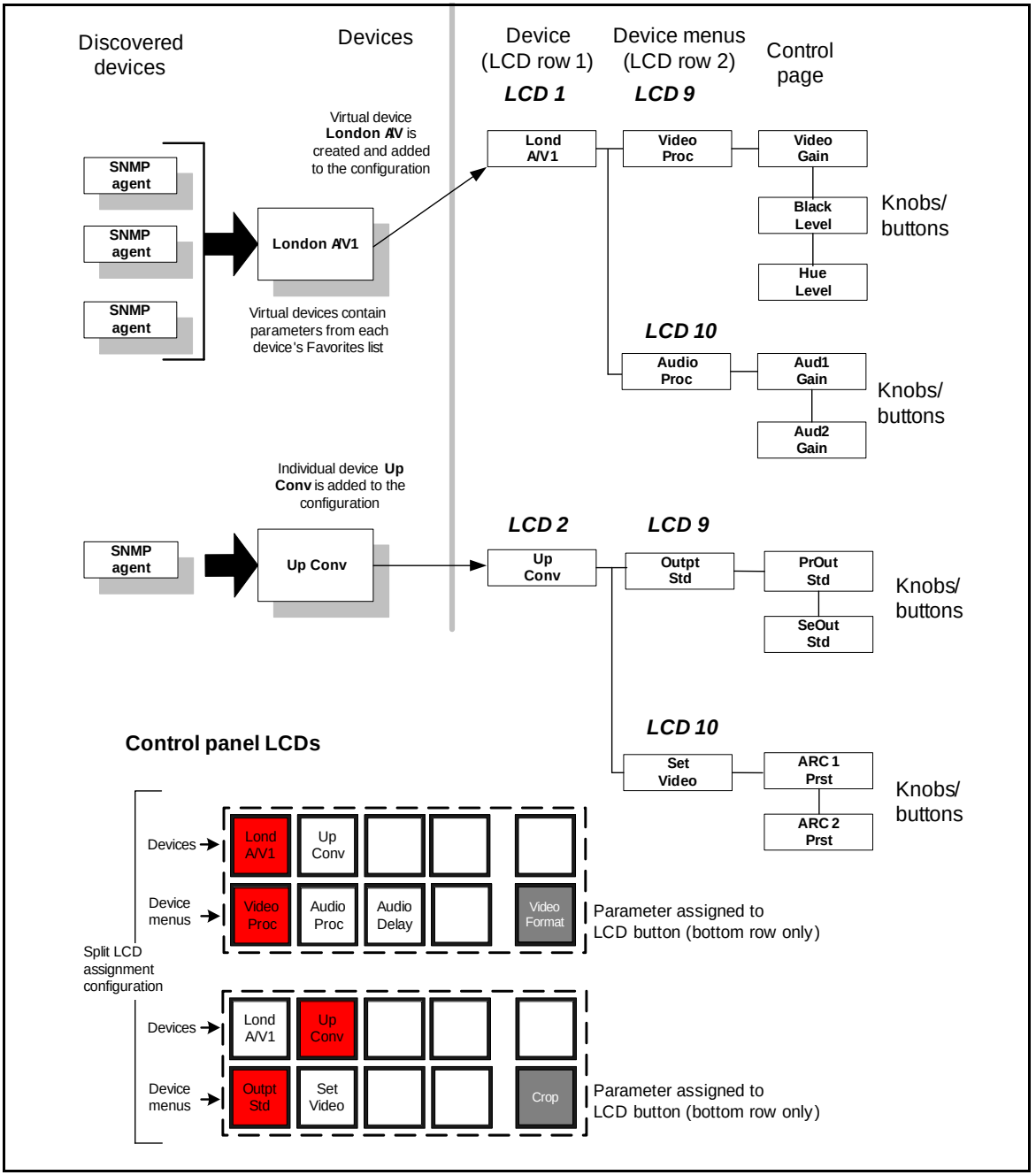

Figure 2-11. Split Navigation Configuration

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Figure 2-12 illustrates a Device Category NUCLEUS configuration.

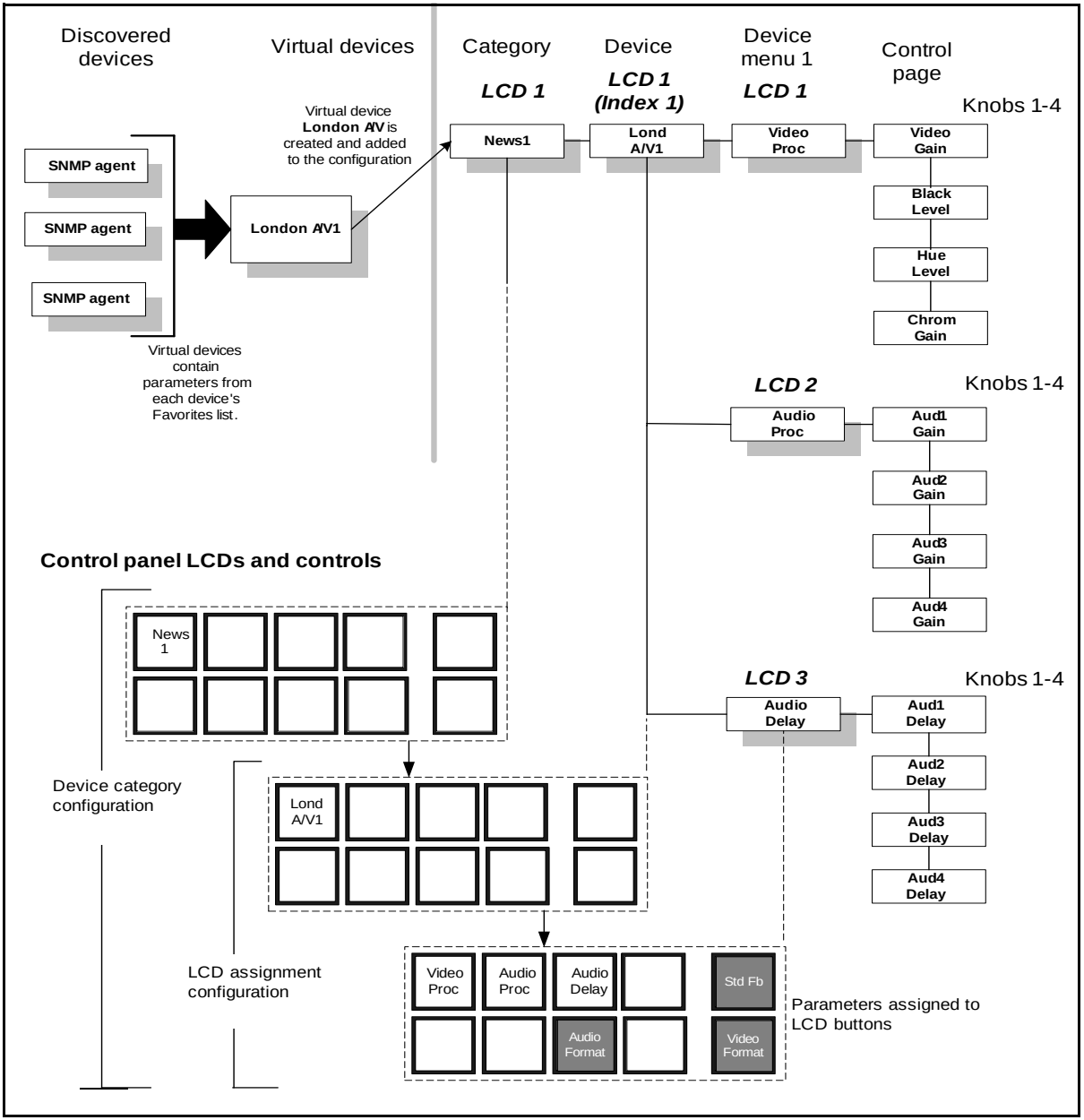

Figure 2-12. Device Category Configuration

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To complete this step:

1. Under **What is the name of your configuration?**, enter a name that has a maximum of 10 alphanumeric characters for your new configuration.

   The name you give your configuration is used to identify it within the control panel's **Configurations** folder.

2. Select the type of configuration layout that you want to set up.

3. If you want to password-protect the configuration, under **What is the password associated with this configuration?**, enter a password using up to six numeric characters. The password will only be associated with your new configuration.

   If you use this feature, you will be prompted to enter this password into NUCLEUS before you can use the configuration on the control panel and before you can open the configuration in CCS Navigator.

4. Under **What is the address for this configuration?**, select a panel address for the configuration from the list. This address will be used by the CCS network to identify the control panel when the destination lock and protect feature is used for routers.

   
   Note

   The **What is the address for this configuration?** selection is used only with Router Control option configurations. It is not used with SNMP Device Control option configurations.

5. Click **OK**.

The next step of your new configuration depends on the configuration type you want to create. For information about the next Configuration wizard step, do one of the following:

- If you are creating an LCD Assignment or a Split Navigation configuration, go to "Adding Device Menus and Assigning Parameters to Panel Controls" on page 29.

  OR

- If you are creating a Device Category configuration, go to "Adding Categories to the Configuration" on page 27.

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Adding Categories to the Configuration

If you are creating a Device Category configuration, the **Device Category** dialog box opens.

Note

If you are creating an LCD Assignment Configuration, go to “Adding Device Menus and Assigning Parameters to Panel Controls” on page 29.

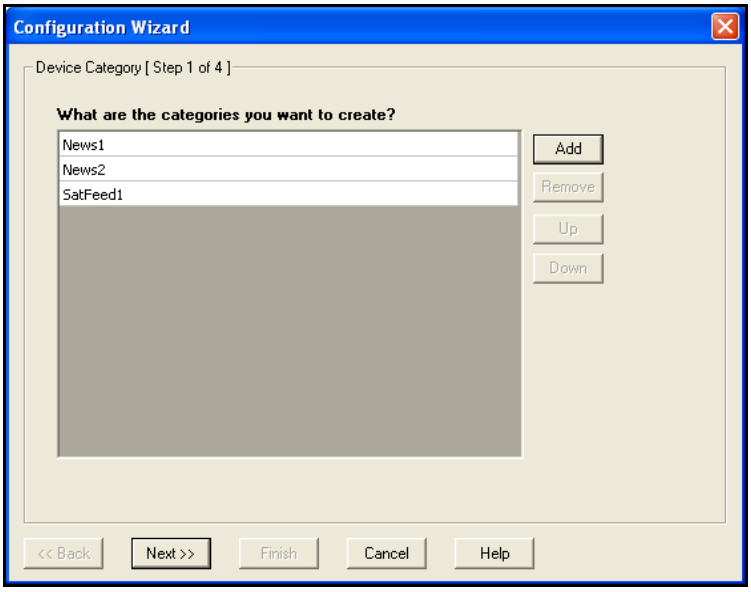

Figure 2-13. Device Category Dialog Box

Click **Add** to create a category for your new configuration. You can add a total of 1024 categories to a configuration. To rename the category, double-click it, and then enter a name that has a maximum of 21alphanumeric characters.

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Adding Devices to Categories

You can add any device to the categories that you have created. In the **Device Category** dialog box, select the devices you want to add from the **Available Devices** list, and then click the > button (or if you want to add all devices to a category, click the >> button). The same device can appear in multiple categories. If you want to remove a device from a category, select the device you want to remove, and then click the < button, or click the << button to remove all devices from a category.

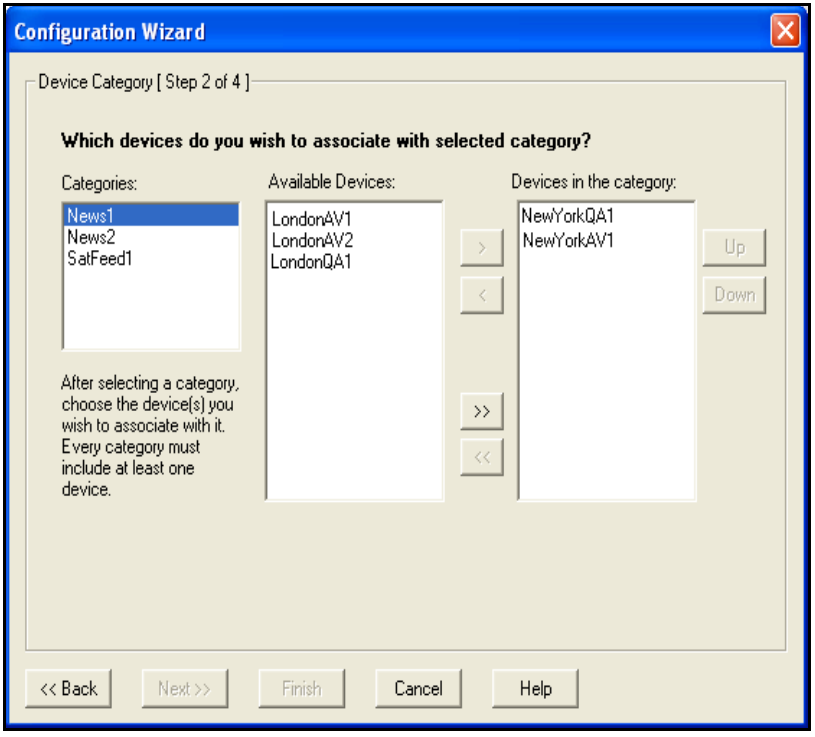

Figure 2-14. Adding Devices to Categories

If a device in the **Available Devices** column has not been added to the currently selected category (for example, Category 2), but is included in another category (for example, Category 1) that category name (Category 1) is appended to the device name. Each category must include at least one device.

Devices are auto-assigned to the control panel LCD buttons in the order in which they appear in the **Devices in the category** list. You can use the **Up** or **Down** selection buttons to reorder device assignments.

To proceed to the next configuration step, click **Next**.

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Adding Device Menus and Assigning Parameters to Panel Controls

In this step of the configuration (Step 1 for LCD Assignment and Split Navigation type configurations and Step 3 for Device Category type configurations) you can add device menus and sub-menus to your configuration and assign parameters to panel controls.

Note

When creating a Device Category configuration, the **Add Parameters to Panel Controls** and **Add Device Menus** commands are unavailable for a selected category. These commands can be used only for devices or device menus.

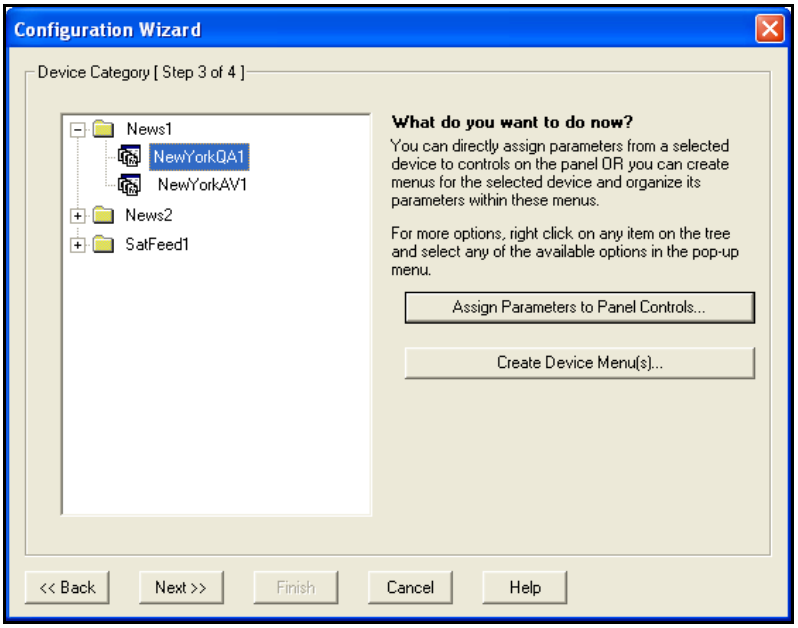

Figure 2-15. Adding Device Menus and Assigning Parameters to Panel Controls

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Each option is described in the following sections.

- **Adding Device Menu(s)** Adding device menus to your configuration provides a way in which you organize the access to device controls. You can add device menus that provide access to the controls of a stand-alone device or virtual device. Each device menu provides four adjustment knobs and four adjustment buttons to which parameters can be assigned. LCD buttons are automatically assigned to device menus to provide direct access to the menu's control assignment. A maximum of 5500 device menus can be added to a configuration.

Note

If you are creating a Split Navigation type configuration, you can only add a maximum of eight device menus/sub-menus to each device in your configuration.

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To add device menus to your configuration, select the device to which you want to add device menus, and then click **Add Device Menu(s)...**.

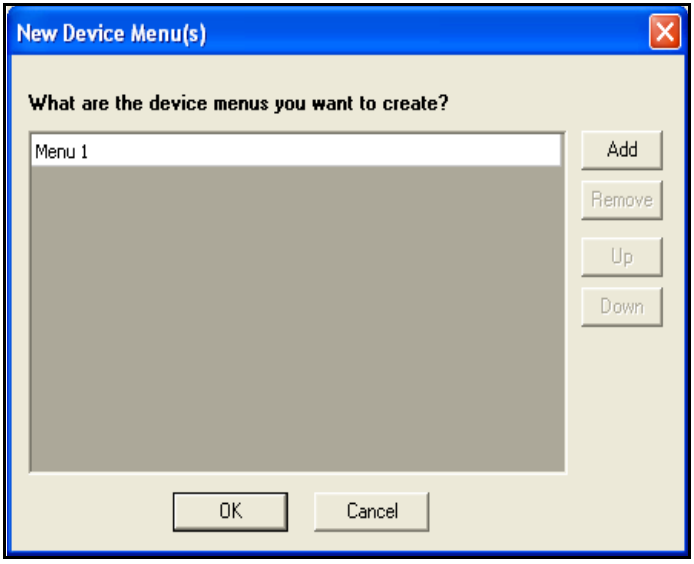

Figure 2-16. Adding Device Menus

Note

If you are creating a Split Navigation type configuration, you can only add a maximum of eight device menus/sub-menus to each device in your configuration.

After you create a device menu, you can rename it and assign device parameters to the panel controls. You can also add sub-menus to a device menu. For information about adding sub-menus, see page 32. For information about assigning device parameters to the panel controls, see “Assigning Parameters to Panel Controls” on page 33.

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- **Adding Sub-menus** If the number of available adjustment knobs and adjustment buttons in a device menu cannot accommodate all of the parameters that could be logically assigned to a menu, you can add sub-menus to the configuration hierarchy to expand the number of available controls.

  Note

  If you are creating a Split Navigation type configuration, you can only add eight device menus/sub-menus to each device in your configuration.

  Sub-menus represent the lowest level in a NUCLEUS configuration assignment hierarchy. To ensure that important parameters are accessed quickly, try to keep sub-menus one level deep. LCD buttons are automatically assigned to sub-menus to provide direct access the menu's control assignment. Figure 2-17 describes the guidelines you must follow when adding sub-menus to other device menus. Note that this figure is taken from the **Panel Configuration** pane of a completed NUCLEUS configuration.

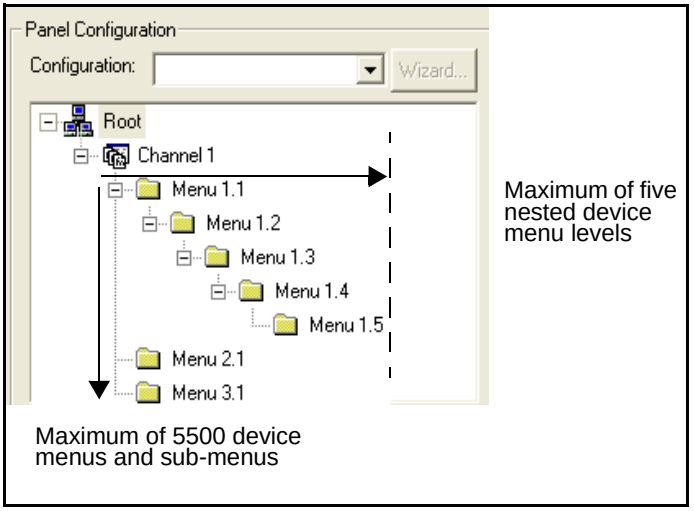

Figure 2-17. Guidelines For Adding Device Menus and Sub-Menus

To add a sub-menu, select the device menu to which you want to add a sub-menu, and then click **Add Device Menu(s)...**. You can then assign device parameters to the panel controls for each sub-menu that you have added. For information about assigning device parameters to the panel controls, see page 33.

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- **Assigning Parameters to Panel Controls** To assign device parameters to panel controls, select the device or device menu, and then click the **Add Parameters to Panel Controls** button to open the **Parameter Assignment** dialog box.

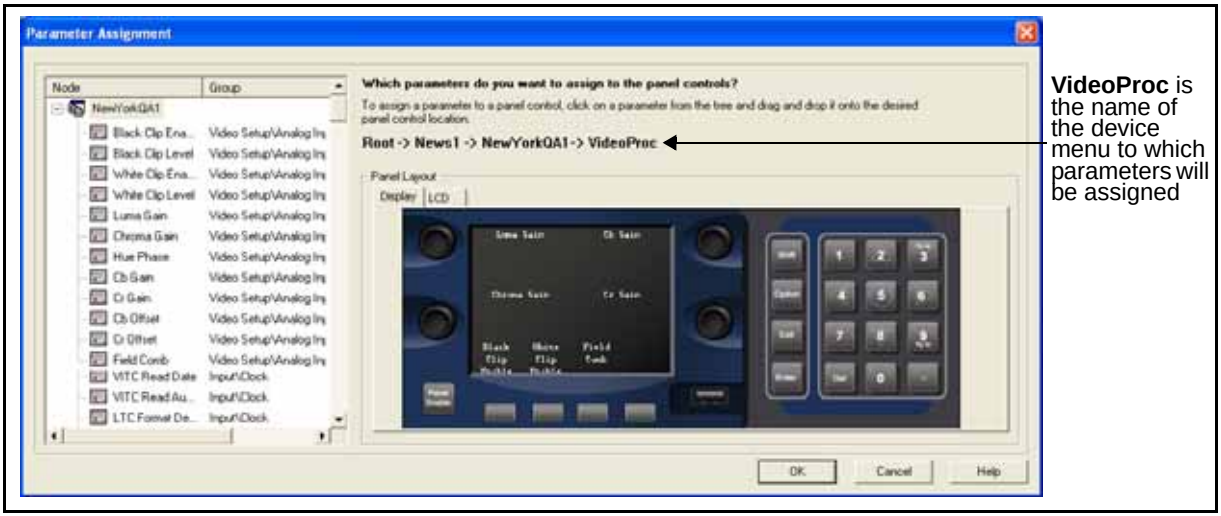

Figure 2-18. Parameter Assignment Dialog Box

To assign device parameters to controls, drag parameters from the left pane of the dialog box to the graphical representations of adjustment knobs, adjustment buttons, and LCD buttons. Each knob or button can be assigned one parameter only.

- To assign a parameter to an adjustment knob or button, drag it from the list on the left to the control on the **Display** tab.

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- To assign a parameter to an LCD button, first switch to the **LCD** tab, and then drag it from the list on the left and drop it on a button.

When assigning an SNMP value parameter to a control, the following dialog box will appear:

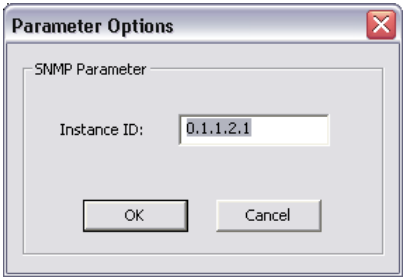

Figure 2-19. SNMP Parameter Instance ID Dialog Box

Enter the instance ID of the device that you intend to control with this parameter.

Note

SNMP table parameters do not require you to enter the instance ID to identify the device to be controlled. Table parameters instead provide an LCD for each possible device for that parameter. When you select a device, the display shows the individual control(s).

To complete this configuration step, continue to assign parameters to all other menus and sub-menus that have been created for the device. Repeat the steps described above for each device.

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Setting Control Panel Options

Using the **Device Category** dialog box, you can configure NUCLEUS' LCD buttons with additional functionality, such as navigating to a Home location in your configuration or recalling menu and device unity settings. In this configuration step, you can also set control panel access options.

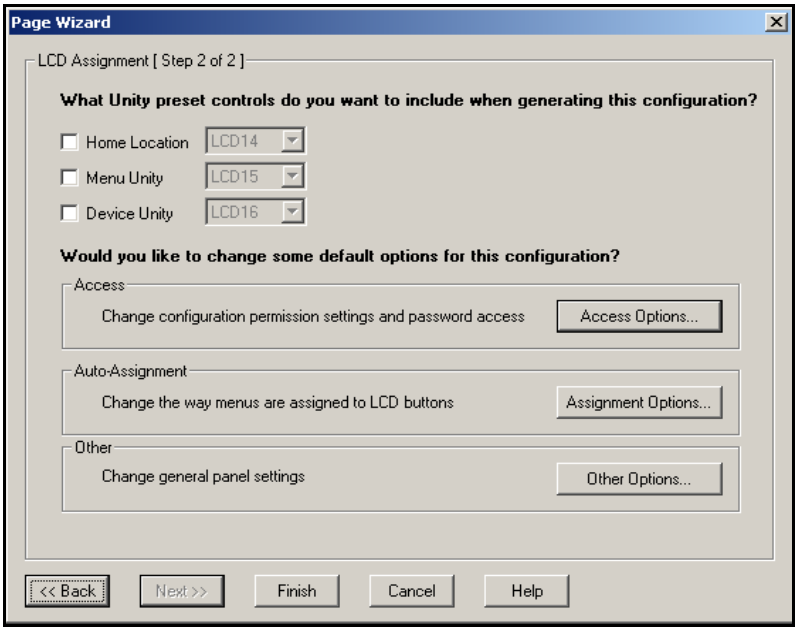

Figure 2-20. Selecting Control Panel Options

To configure NUCLEUS' LCD buttons with additional functionality, make the following selection:

- **Home Location**—Select this option to assign an LCD button to a pre-defined Home location in the configuration hierarchy. From the **LCD** button list, select the button you want to assign as the configuration's Home button. The selected LCD button is exclusively reserved for the purpose of navigating to the configuration's Home location. For information about defining NUCLEUS Home locations, see "Using a NUCLEUS Home Location" on page 76.
- **Menu Unity**—Select this option to assign an LCD button to setting the selected device menu or sub-menu parameters to unity values. You can set unity values for all the parameters controlled by the selected device menu using the control panel. From the **LCD** button list, select the button you want to assign as the configuration's Menu Unity button. The selected LCD button

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is exclusively reserved on all devices for this purpose only. For information about recalling page unity values, see “Using Device Unity and Menu Unity” on page 73.

- **Device Unity—**Select this option to assign an LCD button to setting the currently selected virtual device to unity values. You can set unity values for all parameters controlled by the selected device using the control panel. From the **LCD** button list, select the button you want to assign to Device Unity. The selected LCD button is exclusively reserved on all devices for this purpose only. For information about recalling device unity values, see “Using Device Unity and Menu Unity” on page 73.
- Under **Access**, click **Access Options** to set user access permission for copying configurations to and deleting configurations from NUCLEUS directly from the NUCLEUS’ Options menu.

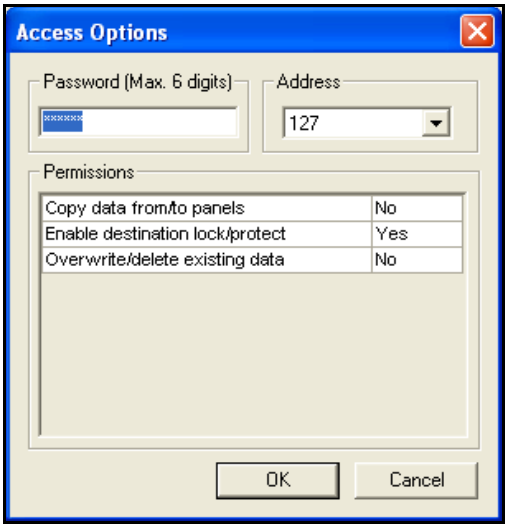

Figure 2-21. Setting Access Options

To set or change the configuration access options, make the following selections:

- Under **Password**, enter a password for the configuration on the NUCLEUS panel.
- Under **Address**, select a panel address for the configuration from the list. This address will be used by the CCS network to identify the control panel when the destination lock and protect feature is used.

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The **Address** selection is used only with Router Control option configurations. It is not used with SNMP Device Control option configurations.

- Under **Permissions**, select the permissions you want to assigned to the configuration password.
  - **Copy data from/to panels** permits the configuration user to use the NUCLEUS USB File Manager to transfer configurations between the control panel and USB drives. For information about transferring files to and from NUCLEUS using a USB drive, see your *NUCLEUS Network Control Panel Installation and Operation Manual*.
  - **Enable destination lock/protect** (used for Routing Panel Control Option only)
  - **Overwrite/delete existing data** permits the configuration user to use the NUCLEUS USB File Manager to delete or overwrite configurations on the panel. For information about deleting configuration files from NUCLEUS, see your *NUCLEUS Network Control Panel Installation and Operation Manual*.

- Click **Assignment Options** to change the pattern used when LCD buttons are auto-assigned. You can choose from the following LCD button assignment patterns:
  - **Over, then down** 
  - **Down, then over** 
  - **Down, over, down, then over** 

 Note

Assignment options are not supported with Split Navigation type configurations.

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- Click **Other Options** to change the way the panel behaves during routine actions.

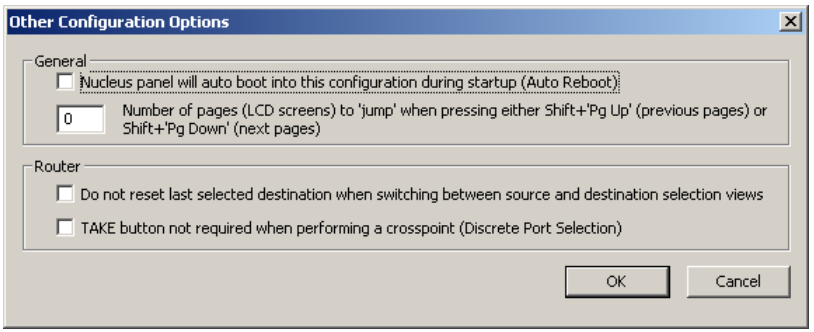

Figure 2-22. Other Configuration Options

  - Place a check beside NUCLEUS **panel will auto boot into this configuration during startup** if you want NUCLEUS to automatically load the current configuration when the panel is turned on or rebooted.

    When a configuration with this setting is transferred to the NUCLEUS Control Panel, this option will override any previous **Auto Boot to Configuration** settings previously applied to the control panel either from a configuration file or at the control panel.
  - **Number of pages to jump** - Indicates the number of LCD pages to jump over when pressing Shift Pg Up (previous pages) or Shift Pg Dn (next pages). The default is 5.

  The other options on this screen apply to router configurations only. See the *NUCLEUS Router Control Option Configuration and Operation Manual* for more information.

These options can be changed at any time by right-clicking in the **Properties** page of the **Panel Configuration** pane, or in the **Panel Layout** pane by selecting **Options** from the context menu. For information about changing the LCD assignments for a configuration, see “Modifying LCD Assignment Options” on page 50.

Click **Finish** to complete the configuration.

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Adding NUCLEUS-TRAX To Your Configuration

NUCLEUS-TRAX is a software keyed option for your NUCLEUS control panel. When you add TRAX to your NUCLEUS configurations, you create direct links or “control display jumps” to pre-assigned device controls. These jumps automatically open a device control window when a specific source is routed to a specific destination. When these conditions are met, after the crosspoint take is executed, NUCLEUS jumps to the device menu associated with selected source and/or destination. You can then make parameter adjustments for the devices. NUCLEUS-TRAX is linked to router crosspoint take commands. You do not need the NUCLEUS router control option to enable NUCLEUS-TRAX.

Note

You can enter the NUCLEUS-TRAX license key using the **Device** tab of the **Configuration for** NUCLEUS dialog box in CCS Navigator, or you can enter the key directly on the control panel.

For more information about purchasing NUCLEUS-TRAX features, contact your NUCLEUS sales representative. For information about using TRAX on the control panel, see “Using NUCLEUS-TRAX” on page 66.

Using the TRAX Configuration dialog box, you can define the conditions that trigger NUCLEUS to jump from the routing panel to the device menu. Before you can add NUCLEUS-TRAX to the configuration, you must have a Router System Control View in NUCLEUS’ **Router** folder.

TRAX works in two different modes:

- Single Destination mode is designed to have the selected destination as a QC station. Devices connected to the sources are displayed in NUCLEUS.
- Multiple Destination mode shows the input (upstream) and output (downstream) devices in a ‘vertical split mode’ scenario. This allows easier adjustment of parameters on either side of the router which will allow operators to quickly adjust video without having to specifically key in a given device.

To add NUCLEUS-TRAX to your NUCLEUS configuration, follow these steps:

1. In the NUCLEUS **Configuration** window Control Panel tab, under **Panel Configuration**, select a configuration from the list.

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2. In the NUCLEUS **Configuration** window, click the **TRAX** button.

   The **TRAX Configuration** dialog box opens.

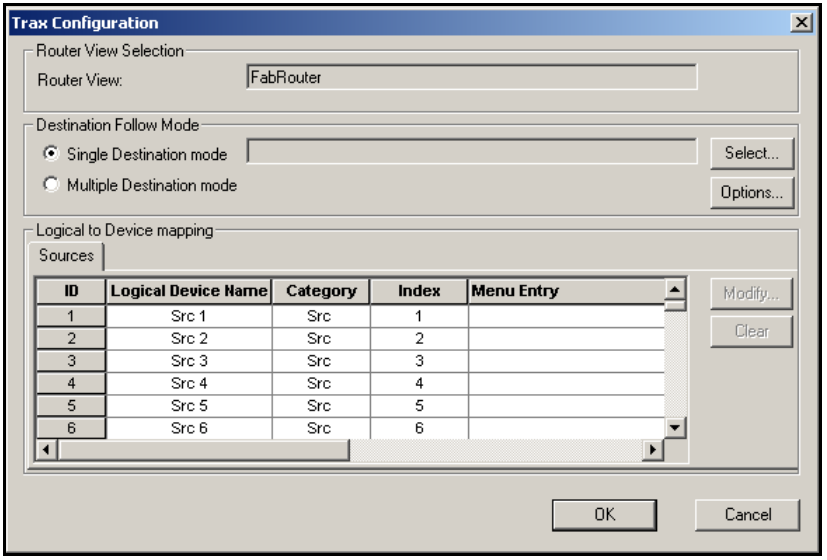

Figure 2-23. Adding TRAX to a NUCLEUS Configuration

3. Choose a mode under **Destination Follow Mode**.

   If you chose **Single Destination Mode**, follow these steps:

   a. Click **Select** to choose the destination for which you want to have TRAX automatically open device controls.

   b. From the **Logical Destination list**, select a destination, and then click **OK**.

   If you chose **Multiple Destination mode**, the **Logical to Device Mapping** table contains a **Sources** tab and a **Destinations** tab. Both need to be completed.

4. Select a row in the **Map Logical Source to Device** table.

Note

To remove a link to a device, click a row in the **Logical Source to Device** table on the **TRAX** tab, and then click **Clear**. This deletes the link from the **Menu Entry** column of the selected row. You can make multiple selections to remove several assignments at one time.

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5. Click **Modify…**

   The **Device Selection** dialog box opens. The contents of this box are the same as the **Panel Configuration** pane, and show the menu structure of the current NUCLEUS configuration.

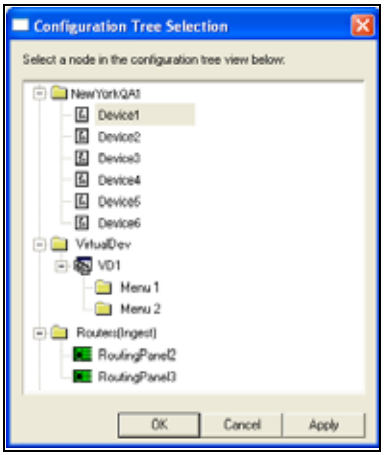

Figure 2-24. Device Selection Dialog

Note

You can only select a non-routing device or virtual device.

6. Select the device that you would like to open when the source is connected to the destination, and then click **OK**.

   The menu's name appears in the **Menu Entry** field of the **Map Logical Source to Device** table.

7. Repeat steps 2 - 4 for each row in the configuration.

   In Multiple Destination mode, complete both the **Source** and **Destination** tabs.

When you load this configuration file to your NUCLEUS control panel and switch an input to a destination, the control panel will load the assigned menu or menus.

By default, a trax jump occurs when the switch matches the lowest destination level. See "Setting the TRAX Options" for information about changing this setting.

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Setting Destination Mode Options

Use Destination Mode options to set the conditions that determine whether or not a TRAX jump occurs based on the available levels. These settings apply to both single and multiple destination modes.

To open the NUCLEUS **TRAX Options** dialog box, from the **Trax Configuration** dialog box, click **Trax Options...**.

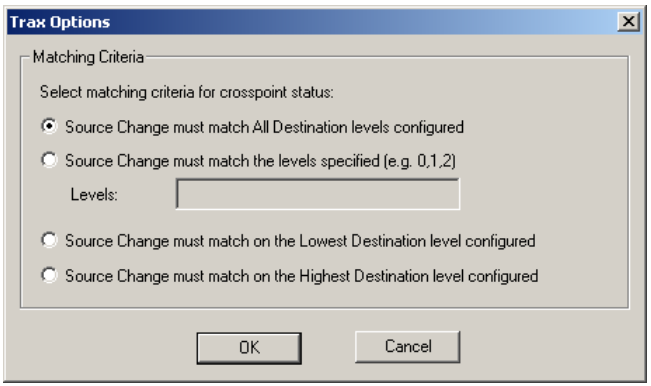

Figure 2-25. TRAX Options Dialog Box for NUCLEUS

This setting determines which level or levels must be switched to the target destination in order to trigger TRAX to update the menu that appears on your NUCLEUS control panel.

Table 2-1. TRAX Options

Option	Result
Source Change must match all Destination levels configured	TRAX is triggered when all of a router destination's levels are included in a crosspoint take. If any destination level is in a breakaway state, the TRAX jump does not execute.
Source Change must match on the levels specified (e.g., 0,1,2)	TRAX is triggered only when the specified level(s) is included in the crosspoint take. When you enter a level in the Level box, the TRAX jump executes on this level.
Source Change must match on the lowest Destination level configured	TRAX is triggered only when the lowest level is included in the crosspoint take.
Source Change must match on the highest Destination level configured	TRAX is triggered only when the highest level is included in the crosspoint take.

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Setting the TRAX Options

Using the **TRAX Options** dialog box, you can set the conditions that determine whether or not a TRAX jump occurs based on the selected levels that are associated with the crosspoint take.

To set your TRAX options, follow these steps:

1. From the **TRAX Configuration** dialog box, click **TRAX Options**.

   The **TRAX Options** dialog box opens.

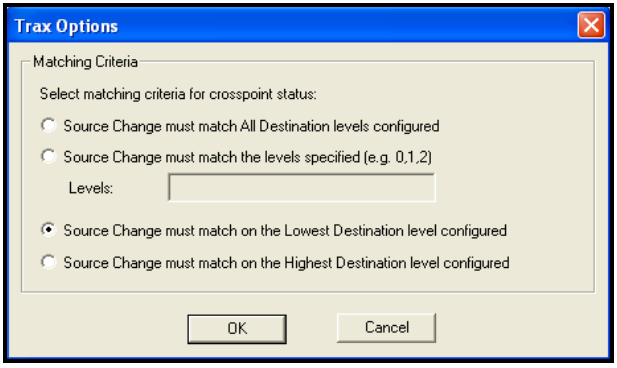

Figure 2-26. NUCLEUS TRAX Options Dialog Box

2. Under **Matching Criteria**, select one of the following options:
   - **Source Change must match all Destination levels configured** Select this option to trigger TRAX only when all levels are included in the crosspoint take. If any destination level is in a breakaway state, the TRAX jump does not execute.
   - **Source Change must match the levels specified** Select this option to trigger TRAX only when the specified destination level(s) are included in the crosspoint take. When you enter a level(s) in the **Level** box, the TRAX jump executes only if the specific levels are switched (breakaway condition).
   - **Source Change must match on the lowest Destination level configured** Select this option to trigger TRAX when the lowest level is included in the crosspoint take.
   - **Source Change must match on the highest Destination level configured** Select this option to trigger TRAX when the highest level is included in the crosspoint take.

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Saving NUCLEUS Configurations

Configurations are automatically saved from the NUCLEUS Configuration wizard when you click **Finish** in the last configuration step. They are saved as XML files in the default location, which is usually

```
C(Local Drive):\Documents and Settings\All
Users\Application Data\Harris\CCS\Files\Panels\100374
```

Saving a Configuration to the Default Location

If you manually modified your configuration, for example by changing the LCD assignment options, follow these steps to save it.

1. After you have completed modifying your configuration, under **Panel Configuration**, select the configuration you have just modified from the **Configuration** list.

   A dialog box opens, informing you that your configuration has been modified.

2. Click **Yes** to save the configuration.

Saving a Configuration to an Alternate Location

You can save configurations XML files to a designated local or network drive or to a removable storage device (such as a USB memory stick).

To save a configuration to an alternate location, follow these steps:

1. On the **Control Panel** tab of the NUCLEUS Configuration window, click **Transfer**.
2. Under **Local Configuration**, select the configuration you want to save, and then click **Export To**.
3. Browse to the designated local or network drive and click **Save**.

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Transferring Files to NUCLEUS

After the configuration has been created, it must be transferred to a control panel via an Ethernet connection, as described in “Transferring Configurations to NUCLEUS” on page 45.

If the configuration contains SNMP devices, you must transfer the MIBs for those devices separately from the configuration. See “Transferring MIBs to NUCLEUS” on page 47 for more information. To view the list of MIBs on the NUCLEUS control panel, see “SNMP Management Options” on page 64.

Transferring Configurations to NUCLEUS

Before you attempt to transfer configurations to NUCLEUS, make sure that you are connected to the control panel via a valid Ethernet connection. A total of five configurations can be stored on the control panel at one time. (For information about deleting configurations, see “Transferring MIBs to NUCLEUS” on page 47.)

To transfer a configuration to NUCLEUS, follow these steps:

1. On right side of the Control Panel page, click **Transfer**.

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2. In the **Perform Transfer** dialog box, select the configuration(s) you want to transfer from the **Local Configurations** list, and then click **Send to Panel**. You can also drag the configuration that you want to transfer from the **Local Configurations** to the **Send to Panel** list.

   The configuration(s) should now appear in the **Control Panel Configurations** list.

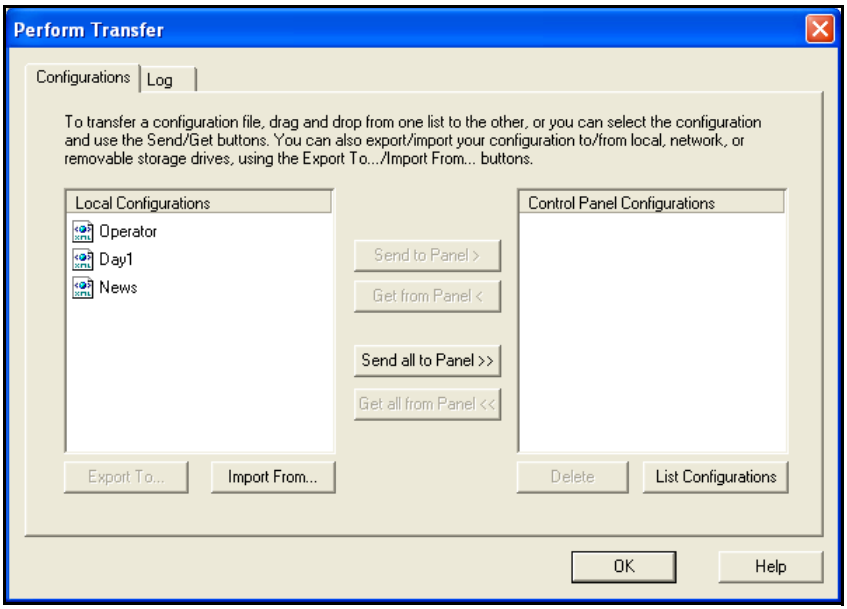

Figure 2-27. Transferring Configurations to NUCLEUS

3. Click **List Configurations** to see a list of the configurations that are currently loaded into the control panel.

   This ensures that the control panel loads the new configuration.

On the **Perform Transfer** dialog box, you can also complete the following tasks:

- Save your configuration to a network drive or external USB memory key.
  a. Select the configuration you want to export from the **Local Configuration** list, and click **Export To**.
  b. Browse to the designated local or network drive and click **Save**.
- Copy files from an external storage device.
  a. Click **Import From**.
  b. Browse to the designated local or network drive and click **Open**.\

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You can also save configurations XML files to a designated local or network drive or to a removable storage device (such as a USB memory stick).

Transferring MIBs to NUCLEUS

The NUCLEUS control panel must have all the MIBs for all the devices it is being used to control. See the documentation for individual devices to find out the MIBs required for each device. MIBs are normally provided by the manufacturer of the device.

Transfer MIBs to the NUCLEUS control panel using the **File Transfer** tab of the NUCLEUS **Configuration** dialog box.

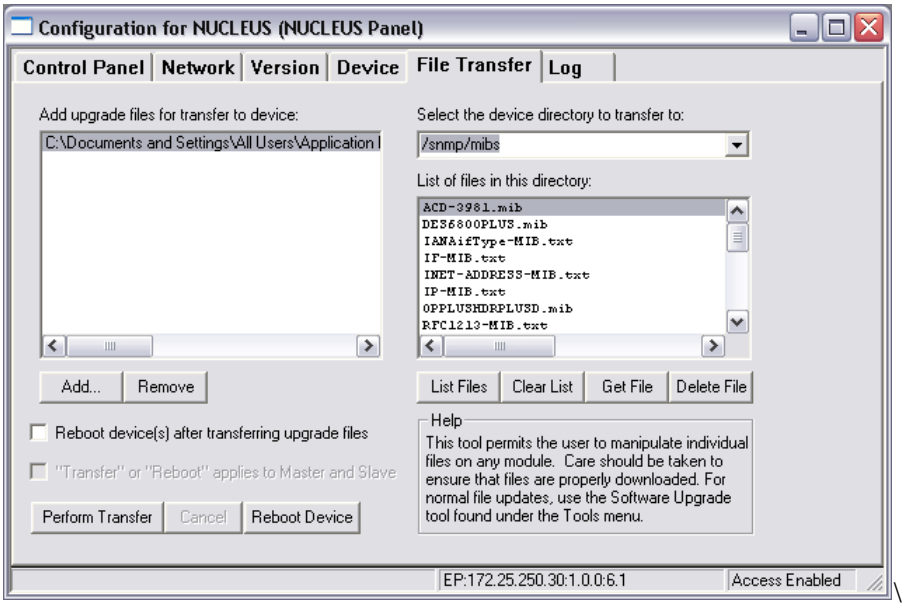

Figure 2-28. File Transfer Tab of NUCLEUS Configuration Dialog Box

To transfer MIBs to NUCLEUS, follow these steps:

1. In the **File Transfer** tab of the **NUCLEUS Configuration** dialog box, under **Select the device directory to transfer to**, choose `snmp/mibs`.
2. Remove pre-existing files that are in the **Add upgrade files to transfer to device** list, if there are any, by selecting each file and then clicking Remove.
3. Click **Add**.

   A **Browse** dialog box opens, with the CCS/files/MIBs folder selected.

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4. Choose the MIBs you need to transfer.

   Hold down the SHIFT key to select a range of files, or the CTRL key to select multiple individual files.

5. Click **OK**.

   The files appear in the **Add upgrade files to transfer to device** list.

6. Click **Perform Transfer**.

Deleting MIBs from a NUCLEUS Control Panel

Some MIBs are very large. Deleting large, unused MIBs frees up memory for other, more useful MIBs.

To delete MIBs from NUCLEUS, follow these steps:

1. In the **File Transfer** tab of the **NUCLEUS Configuration** dialog box, under **Select the device directory to transfer to**, choose `snmp/mibs`.
2. If the list does not update with the names of all MIBs stored on the NUCLEUS, click **List Files**.
3. Click a MIB you want to delete, and then click **Delete File**.

   MIBs can only be deleted one at a time.

Deleting NUCLEUS Configurations

You can use the **Perform Transfer** dialog box to delete configurations from NUCLEUS. If there are five configurations stored on the panel, you will need to delete one of them before transferring new configurations. To delete configurations from NUCLEUS, follow these steps:

1. On right side of the Control Panel page, click **Transfer**.
2. In the **Perform Transfer** dialog box, select the configuration(s) you want to delete from the **Control Panel Configurations** list, and then click **Delete**.

   The selected configuration(s) should no longer appear in the **Control Panel Configurations** list

You can also delete configurations using the control panel's File Manager menu. For information, see your NUCLEUS *Network Control Panel Installation and Operation Manual*.

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Rebooting NUCLEUS

If any of the configurations you transfer to NUCLEUS include routing panels, you must reboot the control panel before using the configuration. To reboot NUCLEUS follow these steps:

1. On the control panel, press the **Option** button.
2. From the **Option** menu, select **Setup**.
3. From the **Setup** menu, select **Reboot**.

Modifying NUCLEUS Configurations

After creating a configuration, you can open it in your CCS application and modify it. You can use the Configuration wizard to modify your completed configuration or you can modify it manually in the **Control Panel** page.

Modifying Configurations Using the Configuration Wizard

To modify a configuration using the Configuration wizard, follow these steps:

1. In the **Navigation** window of CCS Navigator, locate the NUCLEUS control panel that you have associated with the configuration you want to modify.
2. To open the configuration that you want to modify, do one of the following:
   - Select the NUCLEUS control panel, right-click its icon, and then select **Configuration** from the context menu.

     OR
   - Expand the **Configurations** folder under the control panel, and then double-click the configuration that you want to modify.

   The **Configuration for...** dialog box opens.
3. Click the **Control Panel** tab to open the Configuration page.
4. Under **Panel Configuration**, click the 

icon to open the Configuration wizard.

   If you have used the context menu to open the **Configuration for...** dialog box, you will need to select the configuration that you want to modify from the **Configuration** list.

   Follow the instructions provided by the Configuration wizard to complete the modifications to your configuration.

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Modifying Configurations in the Control Panel Page

You can modify NUCLEUS configurations directly in the Control Panel page using various right-click context menus. Control assignments can be modified by dragging parameters from the **Devices/Parameter** to either the controls in the **Panel Layout** pane or to controls listed in the **Properties** page of the **Panel Configuration** pane.

Note that any modifications to a configuration only take place locally on the PC that is being used to make the changes. You must transfer the modified configuration to NUCLEUS before the changes take effect on the panel itself.

To open a NUCLEUS configuration for modification, follow these steps:

1. In the **Navigation** window of CCS Navigator, locate the NUCLEUS control panel that you have associated with the configuration you want to modify.
2. To open a configuration for modification, do one of the following:
   - Select the NUCLEUS control panel, right-click its icon, and then select **Configuration** from the context menu.

     OR
   - Expand the **Configurations** folder under the control panel, and then double-click the configuration that you want to modify.

   The **Configuration for...** dialog box opens.

Make the necessary modifications to your configuration.

For information about modifying LCD assignment options, see “Modifying LCD Assignment Options” on page 50. For information about saving modified configurations, see “Saving Modified Configurations” on page 52.

Modifying LCD Assignment Options

You can modify the LCD assignment option that was selected for a configuration. When modifying a configuration, the **Custom** assignment option becomes available (The **Custom** option is not available when you create the configuration.). With the custom assignment option you can drag devices, menus, and sub-menus to and from any available LCD button.

Note

If the NUCLEUS configuration you want to modify is not currently open in the **Configuration for** NUCLEUS dialog box, see “Modifying Configurations in the Control Panel Page” on page 50.

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To modify LCD assignment options, follow these steps:

1. To access the Options menu, from which you can change the configuration's LCD assignment options, do one of the following:
   - In the **Properties** pane, right-click anywhere, and then select **Options** for the context menu.

   OR

   - In the **Panel Layout** pane, right-click anywhere, and then select **Options** for the context menu.
2. In the **Options** dialog box, under **Auto-Assignment**, click **Assignment Options**.
3. In the **LCD Auto-Assignment Order** dialog box, select your new LCD assignment setting, and then click **OK**.

Figure 2-29. Selecting New LCD Assignment Order

4. Click **OK** the exit the **Options** dialog box.

Using Custom LCD Assignment

If you selected **Custom** as your **Assignment Option**, you can drag devices, menus, and sub-menus to any unassigned LCD.

Note

You cannot re-assign the LCD buttons that you previously assigned as Home, Device Unity, or Menu Unity buttons.

To assign LCD buttons using **Custom** LCD assignment option:

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- In the **Panel Layout** pane, click the **LCD** tab.

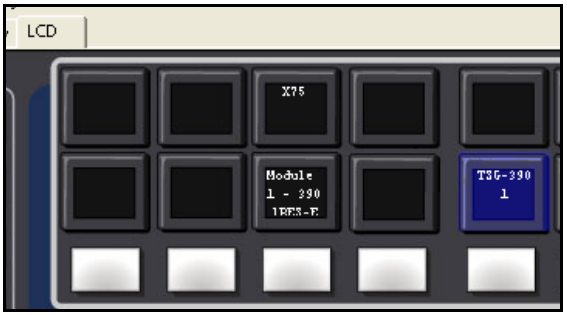

Figure 2-30. Using the Custom LCD Assignment Option

You can now drag and drop devices, menus, and sub-menus to any available LCD assignment.

Saving Modified Configurations

After you have modified your NUCLEUS configuration, you can save it to the same location where the NUCLEUS Configuration wizard saves your other configurations. Saving your configuration ensures that your modifications will be in the configuration when it is transferred to the panel.

If you have modified your configuration using the NUCLEUS Configuration wizard, ensure that your configuration is saved by clicking **Finish** in the last configuration step.

If you manually modified your configuration, for example by changing the LCD assignment options, follow these steps to save it.

1. After you have completed modifying your configuration, under **Panel Configuration**, select the configuration you have just modified from the **Configuration** list.
2. A dialog box opens, informing you that your configuration has been modified. Click **Yes** to save the configuration.

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Chapter 3

Operation

Note

Except where noted, the term NUCLEUS is used in the manual to refer to both NUCLEUS and NUCLEUS-DM.

Controlling SNMP Devices With NUCLEUS

You must configure the panel before operating it. For details, see “Chapter 2: Configuration” on page 5.

After you have transferred your NUCLEUS configurations to the control panel, you can select a configuration to gain access to devices and device parameters. The following sections describe the layout and function of the panel controls for controlling SNMP devices.

Note

When more than one NUCLEUS panel is sharing a device, and a panel is in communicating with a device using point-to-point mode, you may not see messages sent to other devices.

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Using the Display Area

The NUCLEUS displays shows the Options menu items, control assignments, parameter settings, and device information. When NUCLEUS is first powered up, the display starts at the user log on screen. When a device is selected, control assignments for the NUCLEUS configuration appear on the display similar to Figure 3-1 below.

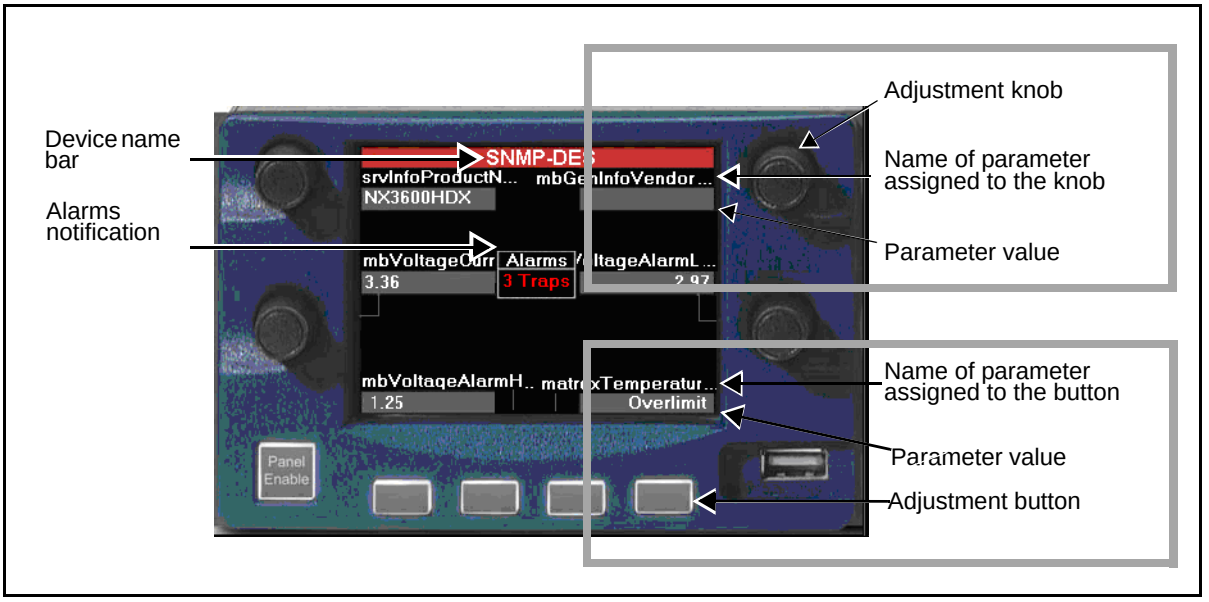

Figure 3-1. NUCLEUS Display

If a device has an active major alarm, the device name bar is red. For active minor alarms, the device name bar is yellow, and if no alarms are active, the device name bar is green. For more information about active alarms, see your *NUCLEUS Network Control Panel Installation and Operation Manual*.

In addition, if the device is a virtual device (see "Creating a Virtual Device" on page 16), if one or more of the devices that comprise the virtual device is not present, then the device name bar is yellow and indicates (partially online).

A variable display intensity and screen saver are available to extend the life of the display. For more information about adjusting display intensity, see your *NUCLEUS Network Control Panel Installation and Operation Manual*.

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Adjustment Knobs

You can use the adjustment knobs to navigate menus, scroll through and select options, and adjust various parameters and settings. In most cases, pressing an adjustment knob performs the same action as pressing the **Enter** button. If you press the adjustment knob while working with numerical range parameters that have a range pop-up window, you can toggle between the fine and coarse adjustment modes. For more information, see “Numeric Parameters” on page 59.

The name of the parameter assigned to the knob appears in the QVGA display. Parameter assignments are inherited from the NUCLEUS configuration that is being accessed on the panel. For information about assigning parameters to the adjustment knobs, see “Adding Device Menus and Assigning Parameters to Panel Controls” on page 29.

Adjustment Buttons

You can use the adjustment buttons to adjust various parameters and settings. The name of the parameter assigned to the button appears in the QVGA display. Parameter assignments are inherited from the NUCLEUS configuration that is being accessed on the panel. For information about assigning parameters to the adjustment buttons, see “Adding Device Menus and Assigning Parameters to Panel Controls” on page 29.

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Using the Panel's Dynamic Controls

The layout and function of the dynamic controls are specific to the control option that you are using on the panel. The following sections describe the functions of the panel's dynamic controls. Figure 3-2 displays the dynamic controls.

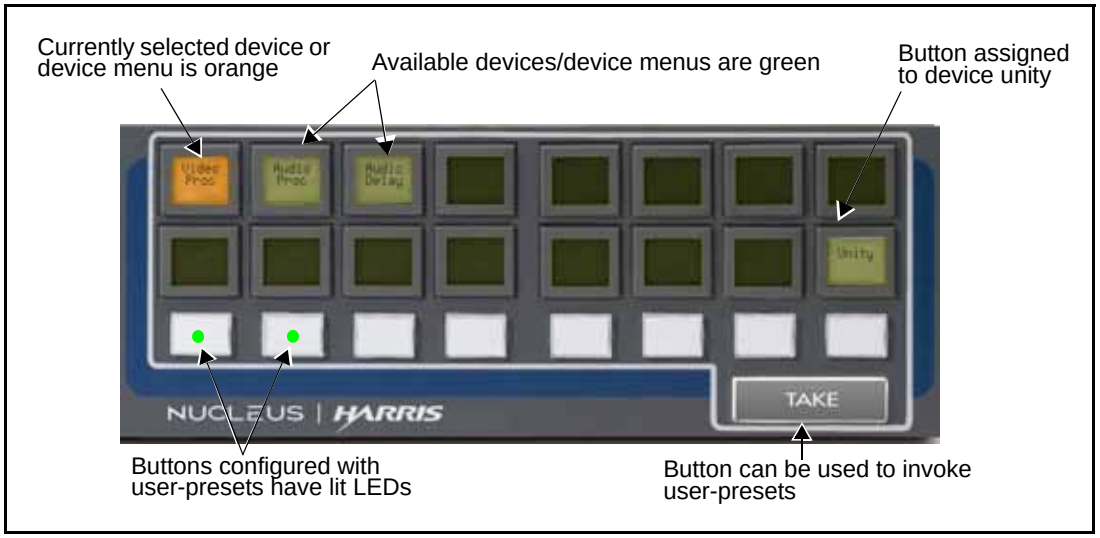

Figure 3-2. Dynamic Controls

User-Programmable LCD Buttons

When controlling devices, the 16 user-programmable LCD buttons are used to access categories, devices, and device parameter sub-menus. LCD buttons that are green are configured to provide access to devices, device menus, and parameters. LCD buttons that are currently selected are orange. LCD buttons that are not configured are not lit. The name assigned to a category, device, or parameter in the NUCLEUS configuration appears on the LCD button face.

Note

If you are using a Split Navigation type configuration, the top row of LCD buttons is reserved for device access, and the bottom row is reserved for device controls access.

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Multiple pages of 16 LCD buttons can be assigned.

Use the Page Up button 

and the Page Down button 

to navigate through multiple LCD button pages.

- Use the Shift button and then the Page Up or Page Down button to skip pages, thereby navigating through multiple pages of options more quickly. The number of pages to be skipped is defined per configuration. See “Setting Control Panel Options” on page 35 for more information.
- Hold the Page Up button or the Page Down button for more than one second on the panel to jump to the first page or last page of LCD buttons.

You can designate LCD buttons to navigate to a Home location in a configuration or recall the menu unity and device unity settings, respectively, for SNMP devices. For more information about menu unity and device unity, see “Using Device Unity and Menu Unity” on page 73.

User-Assignable Preset Buttons

Eight user-assignable preset buttons can be used to quickly set user-defined device preset values. These presets are configured and saved at the control panel. The preset buttons are not configurable using CCS Navigator. For information on configuring and recalling user presets, see “Configuring User Presets” on page 70.

Take Button

When controlling a device, the **Take** button can be pressed to invoke a preset. To do this, press the preset button, then press the **Take** button to invoke the preset values.

Function Buttons and Numeric Keypad

With NUCLEUS-SNMP or a NUC-OPT-SNMP license, the function buttons and numeric keypad operate as described in the NUCLEUS Installation and Operation Manual, with the following additional function:

Press the Shift button and number **5** button simultaneously to access the panel’s Home location. For information about setting the control panel’s Home location, see “Using a NUCLEUS Home Location” on page 76.

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Selecting Devices and Device Menus

The arrangement of LCD buttons on NUCLEUS and how they are used to access devices and device menus depends on the configuration type that is being used. The following sections describe how to select devices and device menus for each NUCLEUS configuration type.

LCD Assignment and Device Category Configurations

For LCD Assignment and Device Category type configurations, the top and bottom rows of LCD buttons provide access to devices, categories, and device menus. LCD buttons display the device name and the names that are given to the categories (for Device Category type configurations only) and device menus when the configuration was created. You can navigate forward through each configuration hierarchy by pressing an LCD button. You can navigate back through the configuration hierarchy by pressing the **Exit** button. For an illustration of LCD Assignment and Device Category configurations, see Figure 2-10 on page 23 and Figure 2-12 on page 25.

Split Navigation Configurations

For Split Navigation type configurations, the top row of LCD buttons provides access to devices, while the bottom row of LCD provides access to device menus, sub-menus, and parameters. In addition to displaying device and device menu names, the currently selected LCD button turns orange when pressed. When a device is selected (in the top row of LCD buttons), only the device menus and parameters associated with the selected device are displayed in the bottom row of LCDs.

- To navigate forward through the desired menus/submenus, press the bottom row LCDs.
- To navigate back through the menus/submenus, press the **Exit** button.

You do not need to press **Exit** to navigate from device to device. When navigating between devices using the top row of LCD buttons, you are returned to the last visited device menu (location in the configuration hierarchy) for the selected device. For an illustration of Split Navigation configurations, see Figure 2-11 on page 24.

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Read-Only and Adjustable Parameters

The display on the remote control panel shows two types of parameters:

- *Read-only* parameters, which provide status information, but cannot be changed
- *Adjustable* parameters, which can be modified

Since you cannot change read-only parameters using the control panel, these parameters are highlighted in dark grey.

Parameters can be assigned to the adjustment knobs and buttons surrounding the NUCLEUS display, or they can be assigned to LCD buttons.

Adjustable Parameters

There are four types of adjustable parameters on the control panel. Each type is described in the following sections.

Numeric Parameters

Numeric parameters are values represented by a sliding bar on the display screen. Numeric parameter changes are always immediate. As you adjust a numeric parameter, the value is immediately set on the product. Pressing the adjustment knob while setting numeric parameters toggles between the fine and coarse adjustment modes.

Figure 3-3 provides an example of a numeric parameter.

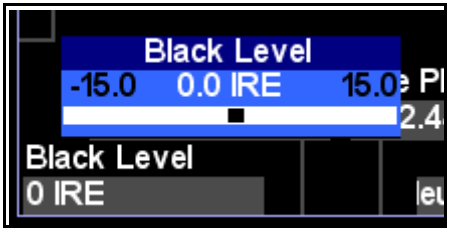

Figure 3-3. Example of a Numeric Parameter

If the parameter is assigned to an LCD button, to adjust that parameter, first press the LCD button. Then you can use any of the adjustment knobs surrounding the NUCLEUS display to change the value of the parameter.

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Enumeration Parameters

Enumeration parameters are a list of possible values for a specific parameter. Enumeration parameter changes are always delayed. When you set an enumeration parameter, the changes will not take effect until press the **Enter** button.

Figure 3-4 provides an example of an enumeration parameter.

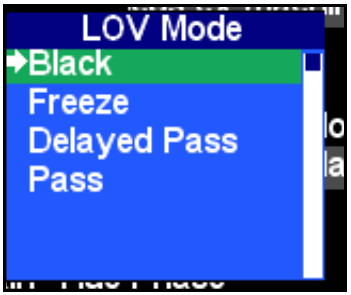

Figure 3-4. Example of an Enumeration Parameter

If the parameter is assigned to an LCD button, to adjust that parameter, first press the LCD button. The parameter options will appear both on the LCD buttons, and on the NUCLEUS display. The current parameter value is Orange on the LCD, and marked with an arrow on the NUCLEUS display. If there are more than 16 values for the parameter, use the Pg Up and Pg Dn buttons to browse all the value options.

String Parameters

String parameters are items that can be renamed using text characters. String parameter changes do not take effect until the entire string has been modified. For information about modifying string parameters, see “Modifying String and String-List Parameters” on page 61.

Figure 3-5 provides an example of a string parameter.

Figure 3-5. Example of a String Parameter

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String-List Parameters

String-list parameters are a list of possible selectable items that can be renamed using text characters. String-list parameter changes do not take effect until the entire string has been modified. For information about modifying string parameters, see “Modifying String and String-List Parameters” on page 61.

Figure 3-6 provides an example of a string-list parameter.

Figure 3-6. Example of a String List Parameter

Modifying String and String-List Parameters

To modify string and string-list parameters, follow these steps:

1. Using the appropriate adjustment knob or button, select the string or string-list parameter you want to modify.
2. To modify the string, do one of the following:
   - If you are modifying a string or string-list parameter for an adjustment knob, press the **Shift** button, and then press the adjustment knob that controls the parameter you want to change.

   OR

   - If you are modifying a string or string-list parameter for an adjustment button, press the adjustment button that controls the parameter you want to change.
3. A cursor appears underneath the first character.

   Use the 

and 

buttons to move to the character position, and then use an adjustment knob to select a new character.
4. To save your changes, press the **Enter** button.
5. To exit the string parameter editing mode, press the **Exit** button.

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Modifying SNMP Table Parameters

When using SNMP table parameters, you choose the device at the control panel. To control a specific device with a table parameter, follow these steps:

1. Click on the table parameter button you want to control.

   The table parameter can be assigned to a control knob, control button, or LCD button.

   The LCD buttons update to display the instance IDs of the various devices that are associated with the MIB associated with the selected parameter.

2. Press the LCD button related to the instance ID of the device you want to control.

   The NUCLEUS display updates to show the various controls associated with that device and that parameter.

3. Use the controls, as described in “Modifying String and String-List Parameters” on page 61, to adjust the parameter setting.

This does not apply to SNMP value parameters, because the instance ID of the specific device to be controlled is defined during the configuration process (see “Adding Device Menus and Assigning Parameters to Panel Controls” on page 29).

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SNMP Traps and Alarms

Each SNMP device in your network has a list of traps.

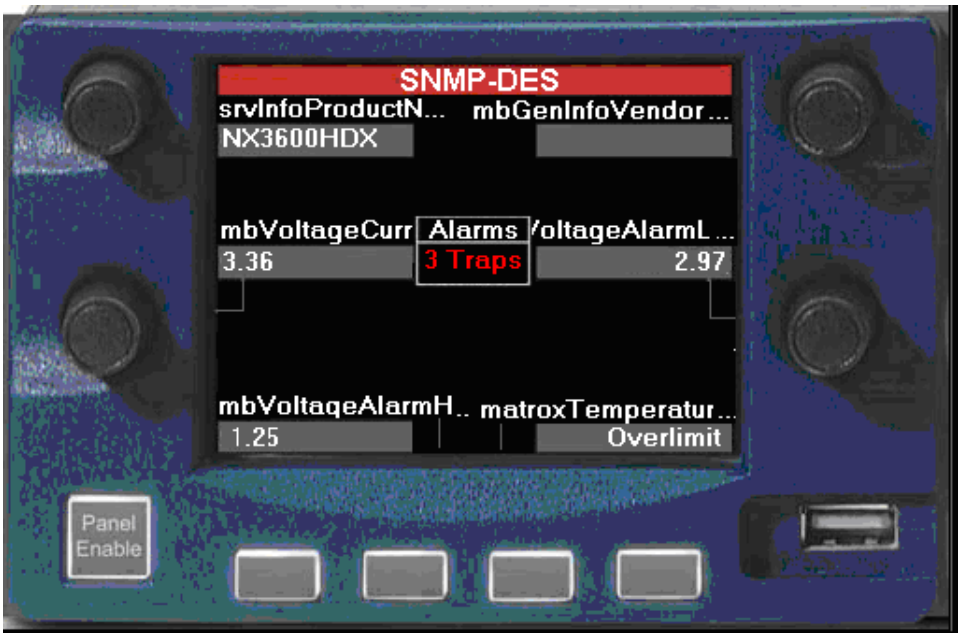

Figure 3-7. SNMP Trap Summary on NUCLEUS Control Panel

Value changes (traps) are not normally seen by SNMP managers (such as NUCLEUS) unless the control panel performs a get function to poll SNMP devices. You can configure the frequency with which polling takes place using the **Options** menu **SNMP Management** tools. See “SNMP Options Sub-Menu Items” on page 65.

Using the NUCLEUS control panel’s **Active Alarms** and **Configure Alarms** menus, you can view information about traps; you can enable, disable, and configure any traps that are received at the control panel. These menus are accessed from the **Options** menu.

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A trap for which the MIB is available and the device is configured will decode the information, as in Figure 3-8.

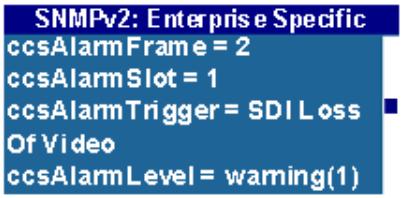

Figure 3-8. Active SNMP Trap on NUCLEUS Control Panel

If the MIB is not available, the parameter OID information is not decoded, as in Figure 3-9.

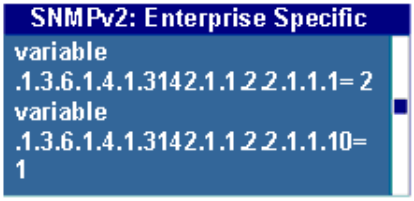

Figure 3-9. SNMP Trap on NUCLEUS When MIB is Missing

To acknowledge a trap, press **Enter**. Acknowledging a trap removes it from the Active Alarms lists. Pressing **Exit** does not acknowledge the trap, so it remains in the Active Alarms list until the alarm log reaches its maximum capacity. This capacity is determined by the **Max Trap Number** setting in the SNMP Management options. See "SNMP Options Sub-Menu Items" on page 65 for more information.

SNMP Management Options

To view or change the SNMP management options on your NUCLEUS control panel:

1. Select the **Option** function button.
2. Scroll down to the **SNMP Management** selection, and then click **Enter**.

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The SNMP Management options, their functions, and their options, appear in Table 3-1. Default settings in the **Options** column are in **bold**.

Table 3-1. SNMP Options Sub-Menu Items

Menu Name		Menu Description	Options
Refresh		Forces a poll of configured SNMP devices	
Polling			
	Polling Mode	Determines whether NUCLEUS automatically polls SNMP devices (when disabled, in order to receive SNMP traps, you must Refresh)	• **Enable** • Disable
	Polling Timeout	Determines how frequently NUCLEUS polls SNMP devices Note: Whenever a SET action is performed, it is automatically followed by a GET action to confirm the change.	• 5 seconds • 10 seconds • **15 seconds** • 30 seconds • 1 minute • 5 minutes
Trap Maximum Number		Determines the number of traps that NUCLEUS will store; when the number of traps exceeds the maximum, older traps are deleted	• 16 • 32 • 64 • **128** • 256
MIB		Lists all the MIBs loaded onto the control panel	
MIB Log		Lists any errors that occur in loading or parsing MIBs on the panel	

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Using NUCLEUS-TRAX

If the configuration you are using is configured for NUCLEUS-TRAX, control display jumps to device control automatically occur when a specific source is routed to a single specific destination.

For information about adding NUCLEUS-TRAX to a configuration, see “Adding NUCLEUS-TRAX To Your Configuration” on page 39. You must purchase a NUCLEUS-TRAX license key and enter the license into the panel to use this feature.

Before using NUCLEUS-TRAX on the panel, it must be enabled. When NUCLEUS-TRAX is enabled, you can choose to have the control panel alert you of a TRAX jump to the device menu of the source before the crosspoint take is executed. NUCLEUS-TRAX options are enabled using the control panel’s **Set Up** menu.

Enabling NUCLEUS-TRAX

To enable NUCLEUS-TRAX, follow these steps:

1. Press the **Options** button.
2. Select **Set Up** from the list, and then press **Enter**.

   The **Set Up** menu appears.

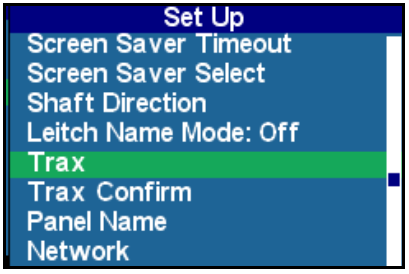

Figure 3-10. Set Up Menu

3. Select **TRAX** from the menu, and then press **Enter**.
4. To enable NUCLECUS-TRAX, select **On**, and then press **Enter**.

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Operating With TRAX Activated

When a crosspoint is taken in Navigator or NUCLEUS, this can trigger a TRAX jump on a NUCLEUS control panel in a parameter control view or a router control view. After the crosspoint take is executed, NUCLEUS jumps to the device menu associated with the selected source and/or destination.

You can make parameter adjustments for the devices, and then return to displaying all devices after exiting TRAX mode.

There are two possible configurations for NUCLEUS TRAX:

Single Device Mode

When only a source or a destination is defined for a particular crosspoint, the menus and parameters for that device span the entire 16 LCD buttons.

All eight presets for that device can be used.

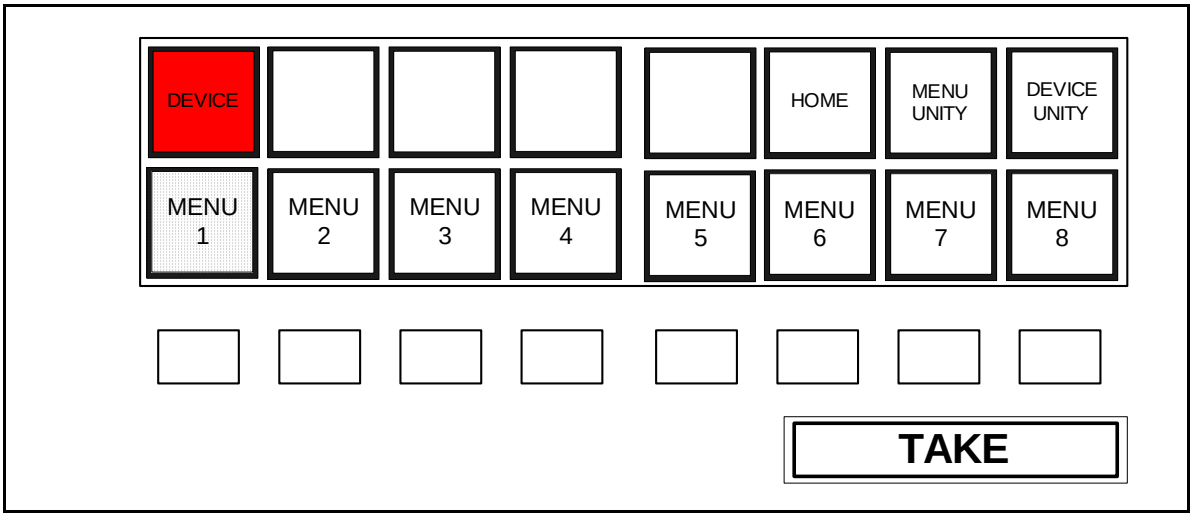

Figure 3-11. Trax Mode Activated With a Single Device Configured

The <PG UP> and <PG DN> buttons switch to the previous or next eight non-empty menus in the device. You can configure NUCLEUS to skip some menus by pressing <SHIFT> <PG UP> and <SHIFT> <PG DN>, or go to the first or last page by holding the <PG UP> or <PG DN> button for one second.

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Source and Destination Device Mode (SUPERTRAX)

When both a source and a destination are defined for a particular crosspoint, the source device, menus, and parameters appear on the left eight LCD buttons, and the destination device, menus, and parameters appear on the right eight LCD buttons. If designated in the configuration file, each device has MENU UNITY and DEVICE UNITY buttons. There is no HOME button when in this mode.

Note

If multiple destinations are defined for a crosspoint, and you take that crosspoint in MultiBus mode, the panel will jump to the first matched destination device.

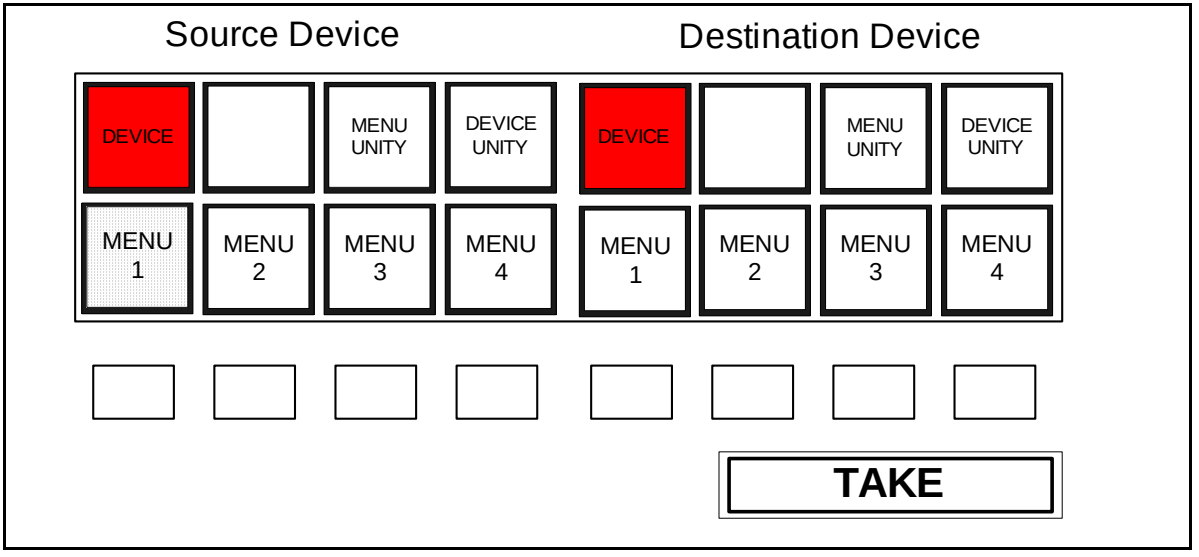

Figure 3-12. TRAX Mode Activated With Both Source and Destination Options Configured

In this mode, only one device can be controlled at a time. When you click a menu for a device, that becomes the controlled device. You can use all eight presets for the active device.

When you click on a destination device's LCD button, the destination device becomes the controlled device. The NUCLEUS panel screen, knobs, and buttons will loaded with the configuration for the destination device. The <PG UP> and <PG DN> buttons switch to the previous or next four non-empty menus in the destination.

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When you click on a source device's LCD button, the source device becomes the controlled device. The NUCLEUS panel screen, knobs, and buttons will loaded with the configuration for the source device. The <PG UP> and <PG DN> buttons switch to the previous or next four non-empty menus in the source device.

You can configure NUCLEUS to skip some menus by pressing <SHIFT> <PG UP> and <SHIFT> <PG DN>, or go to the first or last page by holding the <PG UP> or <PG DN> button for one second.

The menus will not change for both the source and destination devices at the same time. When you switch between the source device and the destination device, the menus for the device that is no longer active revert to the first page of menu options.

Enabling TRAX Confirm

When you enable the TRAX Confirm feature, you receive a message informing you that a TRAX jump is about to occur. To enable the TRAX Confirm option, follow these steps:

1. Press the **Options** button.
2. Select **Set Up** from the list, and then press **Enter**.
3. Select **TRAX Confirm** from the menu, and then press **Enter**.
4. To enable TRAX Confirm, select **On**, and then press **Enter**.

Temporarily Enabling/Disabling TRAX

To temporarily toggle the TRAX setting, press <SHIFT> and <.>. This does not change the TRAX setting in the Options menu.

To reset TRAX back to its Options menu setting, press <SHIFT> and <.> again.

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Configuring User Presets

You can configure NUCLEUS' user-assignable preset buttons to recall specific parameter setups for any device. When preset values are saved to the control panel, they can be recalled whenever the configuration is accessed. The user-preset buttons are not used for routing panel control.

A preset button has a red and a green LED that signal whether or not the preset button has been configured with presets, and whether or not those presets are currently recalled for use by the control panel. Table 3-2 describes the meaning of the preset button LEDs.

Table 3-2. Preset Button LEDs

LED Color	Meaning
Red and Green	The preset button has been pressed, and its preset values have been recalled.
Green	The button is configured with preset values, but they are not currently recalled.
No LED	The button is not configured with preset values.

You can save and retrieve parameter presets either by using the preset buttons, or by using the control panel's Options menu. For information about saving and retrieving parameter presets using the preset buttons, see the next section, "Saving and Retrieving Presets Using the Preset Buttons". For information about saving and retrieving parameter presets using the Options menu, see "Saving and Retrieving Presets Using the Options Menu" on page 71.

Saving and Retrieving Presets Using the Preset Buttons

The following sections describe how to save and retrieve parameter presets using the control panel's preset buttons. The preset buttons are not used for routing panel control.

Saving a Preset Using a Preset Button

To save preset parameter values to a preset button, follow these steps:

1. Make all the control panel parameter adjustments you want the preset button to recall when it is pressed.

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2. Press, and then hold the preset button you want to use to recall preset values until the control panel beeps (approximately three seconds).

   If a preset button displays a green LED before it is pressed, it has already been configured with presets. To overwrite the parameter preset, press and hold the preset button for three seconds. Press the **Enter** button a second time to acknowledge the preset overwrite.

3. The **Save Preset** dialog box opens, displaying a default name for your new preset. To rename the preset, use the  and  buttons to move to the character position, and then use an adjustment knob to select a new character. You can use up to 14 characters for a preset name.

4. Press **Enter** to save your new preset name.

You can also use the Options menu's **Preset/Unity** item to overwrite, delete, or rename presets (see "Saving and Retrieving Presets Using the Options Menu").

Retrieving a Parameter Preset

Preset buttons that are configured to recall parameter presets display a green LED. Pressing a preset button once displays the preset's name. If no parameter presets are saved to the preset, a message appears to indicate that no data has been saved to the button.

To load the selected preset, either press the preset button a second time, or press the **Enter** button or the **Take** button. The preset button displays a red and a green LED when its parameter presets are retrieved.

Saving and Retrieving Presets Using the Options Menu

Using the **Preset/Unity** menu, you can retrieve, save, overwrite, delete, and rename presets. The **Preset/Unity** menu is accessed through the control panel **Options** menu.

Saving a Parameter Preset

Using the **Preset/Unity** menu, you can save user-defined parameter preset values to a selected preset button. To save a parameter preset, follow these steps:

1. Make all the control panel parameter adjustments you want the preset button to retrieve when it is pressed.
2. Press the **Option** button.
3. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.

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4. From the list, select the preset button to which you want to save the current parameter presets, and then press **Enter**.
5. Select **Save/OverWrite**, and then press **Enter**.

Figure 3-13. Saving a Parameter Preset

If parameter presets are already saved to the button, a message is displayed that asks if you want to overwrite the current saved preset values.

6. The **Save Preset** dialog box opens, displaying a default name for your new preset. To rename the preset, use the  and  buttons to move to the character position, and then use an adjustment knob to select a new character. You can use up to 14 characters for a preset name.
7. Press **Enter**.

You can also overwrite, delete, and rename presets using the **Preset/Unity** menu.

Retrieving a Parameter Preset

Using the **Preset/Unity** menu, you can retrieve saved parameter preset values. To do this, follow these steps:

1. Press the **Option** button.
2. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.
3. From the list, select the Preset you want to retrieve, and then press **Enter**.
4. Select **Retrieve**, and then press **Enter**.

   If no parameter presets are saved to the preset button, a message appears to indicate that no data has been saved to the button.
5. Press **Enter** to retrieve the parameter preset values.

   The preset button displays a red and a green LED when its parameter presets are retrieved.

You can also overwrite, delete, and rename presets using the **Preset/Unity** menu.

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Using Device Unity and Menu Unity

You can configure NUCLEUS to recall user-defined device unity and menu unity values. Device unity values include all parameters values associated with the selected device. Menu unity values include only parameter values associated with the selected device menu or sub-menu. Menu unity values are a sub-set of a device's device unity values. This means that when menu unity values are set or changed, the corresponding device unity values are automatically updated with the new settings. Device and menu unity are not used for routing panel control.

You can save and retrieve device unity and menu unity values using an assigned **Device Unity** button (LCD) and the **Menu Unity** button (LCD). You can also use the control panel's **Option** menu to save and retrieve device and menu unity values.

Saving and Retrieving Unity Values Using LCD Buttons

To configure device unity and menu unity values using the panel LCD buttons, you must assign an LCD buttons to Device Unity and Menu Unity when you create the configuration. For more information see "Setting Control Panel Options" on page 35.

Saving Device/Menu Unity Values Using an LCD Button

You can use the **Device Unity** LCD button and the **Menu Unity** LCD button to save unity values that can be later retrieved when these LCD buttons are pressed. To do this, follow these steps:

1. Make all the control panel parameter adjustments you want the **Device Unity** and **Menu Unity** buttons to retrieve when pressed.
2. Press, and then hold the **Device Unity** or **Menu Unity** button (depending on the unity value you are saving) until the control panel beeps (approximately three seconds).

   If unity values are already saved to the **Device Unity** or **Menu Unity** buttons, a message is displayed that asks if you want to overwrite the current saved unity values.

You can also use the **Options** menu's **Preset/Unity** item to retrieve, save, overwrite or delete unity values (see "Saving and Retrieving Unity Values Using the Options Menu" on page 74).

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Retrieving Device and Menu Unity Values

Device Unity and **Menu Unity** LCD buttons appear green when configured to recall unity values. To retrieve unity values, press the **Device Unity** or **Menu Unity** button. If no unity values are saved to the LCD button, a message appears to indicate that no data has been saved to the button.

Press the button a second time to confirm that you want to retrieve the unity values. The LCD button turns orange to signal that the unity values have been retrieved.

Saving and Retrieving Unity Values Using the Options Menu

Using the **Preset/Unity** menu, you can retrieve, save, overwrite, or delete device and menu unity values, including device unity and menu unity values that were saved using the **Device Unity** and **Menu Unity** LCD buttons. You cannot, however, use the **Preset/Unity** menu to assign LCD buttons to retrieve device and menu unity values. You must specify the assignment of these LCDs when you create the configuration. For more information see “Setting Control Panel Options” on page 35.

The **Preset/Unity** menu is accessed through the control panel **Options** menu.

Saving Unity Values

Using the **Preset/Unity** menu, you can save user-defined unity values to the **Device Unity** and **Menu Unity** LCD buttons. To save a unity value follow these steps:

1. Make all the control panel parameter adjustments you want as device unity and menu unity values.
2. Press the **Option** button.
3. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.
4. From the list, select either **Device Unity** or **Menu Unity,** and then press **Enter**.

   If unity values are already saved to the **Device Unity** or **Menu Unity** buttons, a message is displayed that asks if you want to overwrite the current saved unity values.

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5. Select **Save/OverWrite,** and then press **Enter**.

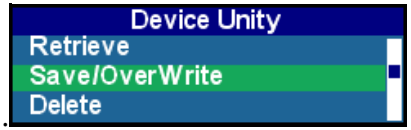

Figure 3-14. Saving Device Unity

After NUCLEUS saves your new unity values, they are automatically retrieved.

You can also delete unity values using the **Preset/Unity** menu.

Retrieving Device Unity and Menu Unity Values

Using the **Preset/Unity** menu, you can retrieve device unity and menu unity values. The **Preset/Unity** menu is accessed through the control panel **Options** menu. To retrieve unity values, follow these steps:

1. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.
2. From the list, select either **Device Unity** or **Menu Unity**, and then press **Enter**.
3. Select **Retrieve**, and then press **Enter**.

You can also delete unity values using the **Preset/Unity** menu.

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Using a NUCLEUS Home Location

You can configure NUCLEUS to navigate directly to a pre-defined Home location in the NUCLEUS configuration hierarchy. You can set your Home location to the highest navigation level in your navigation, such as a list of available devices, or you can set it to any other level in your configuration, such as the most commonly used device menu or sub-menu. You can set one NUCLEUS Home location for each configuration.

The advantage of saving a NUCLEUS Home location for your configuration is that you can quickly navigate through multiple levels of a configuration without having to use the **Exit** and LCD buttons to navigate backwards or forwards one level at a time.

When a NUCLEUS Home location is saved on the control panel,

you can use NUCLEUS' designated **Home** button to navigate directly to the location.

In addition to using the panel's designated Home button, you can configure an LCD button as a Home button. In order to use an LCD button as the Home button, you must assign it as a Home button when you create the configuration. For more information see "Setting Control Panel Options" on page 35.

Home locations can be saved and retrieved using either the designated Home button or the Home LCD button. Either button can be used to overwrite the existing Home location with a new one.

Saving and Retrieving a Home Location Using the Home Button

You can use the NUCLEUS' designated **Home** button (**Shift** + **5**) to save and retrieve predefined Home location in your NUCLEUS configuration.

Saving Home Locations Using the Designated Home Button

To save a Home location, follow these steps:

1. Navigate to the level in your configuration hierarchy that you want to use as your NUCLEUS Home location.
2. Press the **Shift** button.

   In response, the **Shift** button will flash.

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3. Press and hold the  button until the control panel beeps (approximately three seconds).

   A message is displayed telling you that NUCLEUS is saving the current view as the new home location.

You can now use the **Home** button or LCD Home button (if assigned) to immediately load this **Home** location from any where in the configuration hierarchy.

Retrieving Home Locations Using the Designated Home Button

To retrieve a Home location, follow these steps:

1. Press the **Shift** button.

   The **Shift** button should now be flashing.

2. Press the  button.

   If a Home location has been saved to the panel, a message indicates that the Home location will be loaded.

   If Home location has not been saved, a message indicates that no data has been saved to the button.

3. Press the  button again to confirm that you want to load the Home location.

Saving and Retrieving a Home Location Using an LCD Home Button

If you designated an LCD button as a Home button when you created your configuration, you can use the button to save and retrieve a Home locations.

Saving a Home Location Using an LCD Home Button

To save a Home location, follow these steps:

1. Navigate to the level in your configuration hierarchy that you want to use as your NUCLEUS Home location.
2. To save the location, press, then hold the LCD **Home** button until the control panel beeps (approximately three seconds).

   A message is displayed telling you that NUCLEUS is saving the current view as the new home location.

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Retrieving a Home Location Using an LCD Home Button

To retrieve a Home location, follow these steps:

1. To retrieve a Home location, press the LCD **Home** button.

   If a Home location has been saved to the panel, a message indicates that the Home location will be loaded.

   If Home location has not been saved, a message appears to indicate that no data has been saved to the button.

2. Press the button a second time to confirm that you want to retrieve the Home location.

   The LCD button turns orange to signal that the Home location has been loaded.

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