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NUCLEUS™

Router Control Option
Configuration and Operation Manual

Edition A
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NUCLEUS™
Router Control Option

Configuration and Operation Manual

Edition A
October 2007

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Chapter 1

Introduction

Overview

The NUCLEUS Router Control option provides NUCLEUS and NUCLEUS-DM the ability to control routing devices including Platinum™, Integrator®, Integrator® Gold, and Panacea™ routers. The Router Control option provides remote switching of router destinations, sources, and levels.

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

Table 1-1. NUCLEUS Software License Control Options

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.
NUCLEUS-TRAX	NUC-OPT-TRAX	Automatically opens a device control window when a specific source is routed to a single, specific destination. In order to enable this option, you must have the NUCLEUS Processing Device 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

About the Manual

This manual provides information about features that are specific to the NUCLEUS™ Router 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 destinations, sources, and levels.

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

Revision History

Table 1-2. Revision History

Edition	Date	Comments
Edition A	October 2007	This manual includes information previously released in the *NUCLEUS Network Control Panel Installation and Operation Manual, Edition C*.

Obtaining Documents

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

Chapter 2

Configuration

Overview

Before you can use NUCLEUS, you must configure it for your customized requirements. NUCLEUS configurations can be carried out using CCS Navigator™ software applications. When NUCLEUS configurations are complete, they can be transferred to the control panel via an Ethernet connection or to external USB memory.

Note

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

This chapter covers the following topics:

About NUCLEUS Configurations

NUCLEUS configurations consist of the assignment of panel controls to perform tasks such as select the destinations, sources, and levels for your routing system. Only CCS software applications, such as Navigator, can be used to create the configuration and make modifications to control assignments.

When a NUCLEUS configuration is accessed on NUCLEUS, all of the configuration information, including routing panel access and routing destination and source selections, become active on the panel. You can then use the NUCLEUS to select destinations, sources, and levels.

NUCLEUS can hold up to five different configurations, although only one can be active at one time. NUCLEUS can simultaneously store configurations that were created for different control options. However, you must activate the software licenses for the control options to use the configurations on the panel.

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.

Configurations can be customized to best suit specific broadcast situations and environments. For example, configurations can be created so that only a small number of regularly accessed sources and destinations are accessible on the panel. More complex configurations can be created to provide access to the full range of destinations and sources in your routing network.

Router System Control Views and Routing Panels

Router System Control Views describe the overall “picture” of an entire routing system. They are created when routing systems are established using a software application such as RouterMapper. Router System Control Views provide NUCLEUS with essential information about the available sources, destinations, and levels that are associated with the routing system. When a router system is added to NUCLEUS, the destination and source names, as well as categories/indexes, become available on the control panel. If salvos have been created for the router system, they are also available on NUCLEUS.

For NUCLEUS configuration and control, router systems are divided into router sub-views called routing panels. Each routing panel can be custom configured, and then added to any NUCLEUS configuration. Routing panels are similar to devices and virtual devices, which are used with processing device control, except that routing panels do not have parameters to assign to panel controls. Only one Router System Control View can be assigned to a NUCLEUS control panel at one time; however, many routing panels that are derived simultaneously from this Router System Control View can be added to NUCLEUS.

For more information about setting up router systems via a RouterMapper database, see your *RouterMapper Utility Reference Guide*.

Creating a New NUCLEUS Configuration

NUCLEUS configurations can only be created using CCS software applications. Using CCS software, router control configurations are created using the Routing Panel Configuration wizard and the NUCLEUS Configuration wizard.

Note

This section assumes that you are familiar with your CCS software application. For more information about using your CCS software application, 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.

Figure 2-1 illustrates a simplified summary of a NUCLEUS configuration that includes routing panel operation.

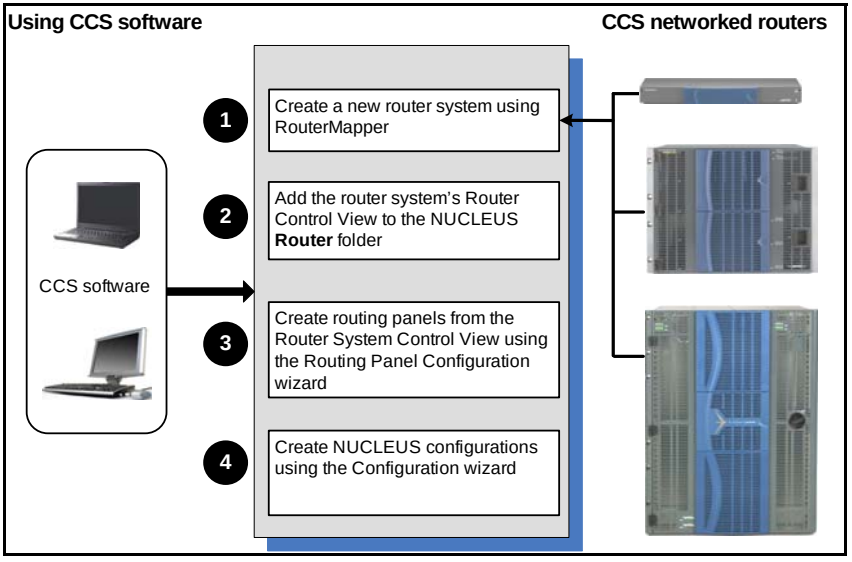

Figure 2-1. NUCLEUS Router Control Configuration Summary

- "Adding Routing Systems to NUCLEUS" on page 7
- "Creating Routing Panels for NUCLEUS" on page 11
- "Starting the NUCLEUS Configuration Wizard" on page 24

Adding Routing Systems to NUCLEUS

The first step in creating a NUCLEUS router control configuration is to add the routing system that you want to control to the NUCLEUS **Router** folder. If you have not already created a routing system, you can create one from an existing router database file, which are also known as DA4. files.You cannot add more than one routing system to a NUCLEUS control panel.

Note

Using RouterMapper, you can create new router database DA4 files. For more information about creating router database files, see your RouterMapper Configuration Utility Reference Guide.

Creating a Routing System

You must have RouterMapper installed on your computer before you can create a new routing system. To create a new routing system for your NUCLEUS configuration, follow these steps:

1. In the Network view of your CCS software application, right-click on the **Routers** folder, and then select **Create** > **Routing System**.

   If **Create** > **Routing System** is not listed in the context menu, you do not have RouterMapper installed on your computer. You must install the software before continuing with creating a routing system. For more information, see your CCS software documentation.

2. In the **Create Routing System** dialog box, under **New Routing System**, type a name for your routing system in the **Name** field.

3. Under **Create Options**, select **Start from an existing RouterMapper DA4 file**.

   If you have not yet created a router database DA4 file, you can do now by selecting **Start from a blank configuration**. See your RouterMapper software documentation for more information.

4. Under **DA4 File**, click [...], and then browse to the location of your router database DA4 file, and then click **Open**.

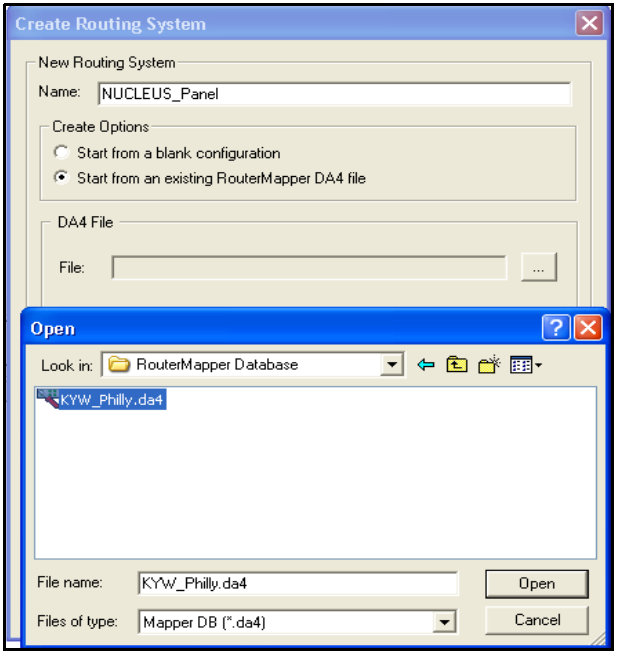

Figure 2-2. Selecting a Router Database DA4 File

5. Click **OK**

   It may take up to one minute for RouterMapper to create your new routing system. When it is complete, a new routing system icon appears in the Router folder.

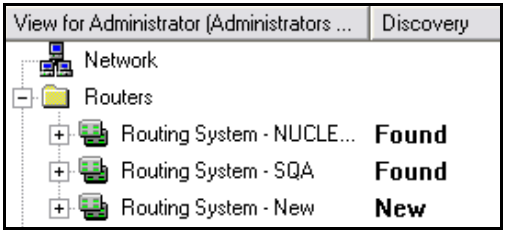

Figure 2-3. New Routing System

Adding a Routing System

After you have created a routing system, you can add it to NUCLEUS configuration. To do this, follow these steps:

1. In the Network view**, Routers** folder, double-click or expand your new **Routing System** icon, or the icon that represents the routing system you want to control with NUCLEUS.
2. Under the selected **Routing System** icon, double-click or expand the **Control View** folder.
3. Select a control view from the **Control View** folder and drag it to the **Router** folder of the NUCLEUS panel you are configuring.

Before you can use the selected Routing System Control View in your NUCLEUS configuration, you must create “routing panels” which can be downloaded and controlled by NUCLEUS. For more information about creating routing panels, see “Creating Routing Panels for NUCLEUS” on page 11.

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

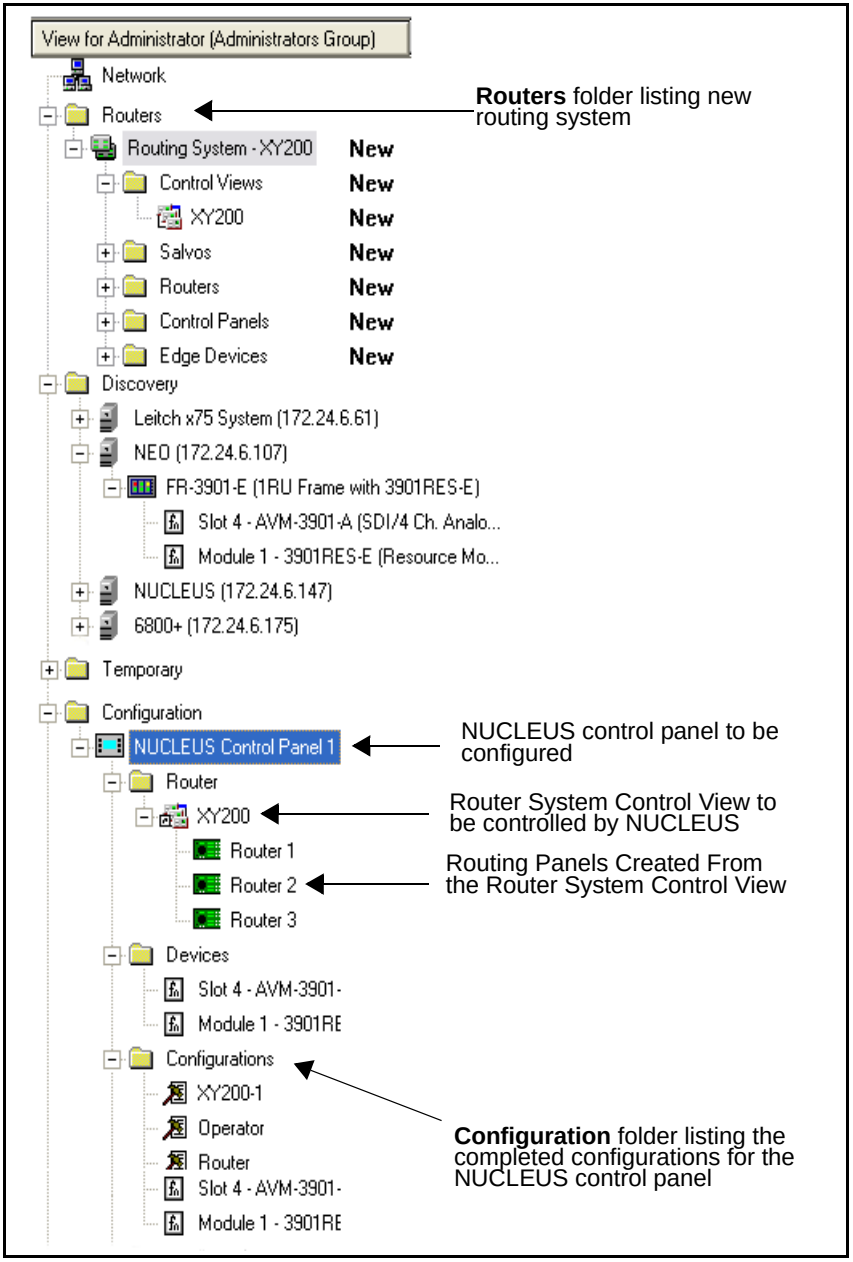

Figure 2-4. CCS Software Navigation Window

Note

If you have purchased the Processing Device Control and the NUCLEUS-TRAX options, you can also configure the control panel to automatically display the control parameters on a device upstream of a selected router input. For more information on configuring NUCLEUS-TRAX, see your *NUCLEUS Processing Device Control Option Configuration and Operation Manual*.

Creating Routing Panels for NUCLEUS

You can create routing panels for NUCLEUS by using the Routing Panel Configuration wizard. Using this wizard, you can select the available destinations and sources of a router system (as defined by its logical database file) to create customized router sub-views (routing panels). Each routing panel can be assigned a unique name and can be configured to function as a single bus device, X/Y device, or multi bus device.

Note

Throughout this manual and in the NUCLEUS Configuration wizard user interface, “X/Y” is used to refer to X—Y type routers. Likewise, “multi bus” is used to refer to multibus type routers.

Each routing device type is described below:

- Single bus devices can control one pre-defined routing destination only. This destination is selected when you create the routing panel and cannot be modified on the control panel.
- X/Y devices can control one routing destination at a time. You can select this destination from a configured list of available destinations.
- Multi bus devices can control multiple routing destinations simultaneously. You can select these destinations from a configured list of available destinations.

You can also choose whether the router destinations and sources are identified by logical names or by category/index. Categories and indexes are established in the Router System Control View.

Note

You cannot specify which levels you want to add to your routing panel. All the levels defined by the Router System Control View are automatically added to the routing panel.

After you have configured a routing panel, it can be added to your NUCLEUS configuration. You can add more than one routing panel to your NUCLEUS configuration; however, only one Router System View can be the source of all the routing panels that are added to a NUCLEUS panel. When the NUCLEUS configuration is loaded into the control panel, each routing panel is automatically assigned an LCD button. After the routing panel is activated on NUCLEUS, the routing destinations, sources, and levels are assigned to LCD buttons for quick activation/selection. Routing panel configurations can be modified at any time using CCS software. For information about modifying routing panel configurations, see “Modifying Configurations Using the Configuration Wizard” on page 38.

Starting the Routing Panel Configuration Wizard

Before starting the Routing Panel Configuration wizard, ensure that you have discovered or created the router system that you want to use. For information about discovering router systems, see “Adding Routing Systems to NUCLEUS” on page 7.

Note

Do not make changes to the Router System Control View that is being used to create your NUCLEUS routing panels. Doing so may lead to a mismatch between data contained in the Router System Control View and your NUCLEUS routing panels.

To start the Routing Panel Configuration wizard, follow these steps:

1. In the CCS software Navigation window, either double-click or expand the **Configuration** folder.
2. Expand the **NUCLEUS** icon, and then either double-click or expand the **Router** folder.

3. Select, and then right-click the Router System Control View icon.

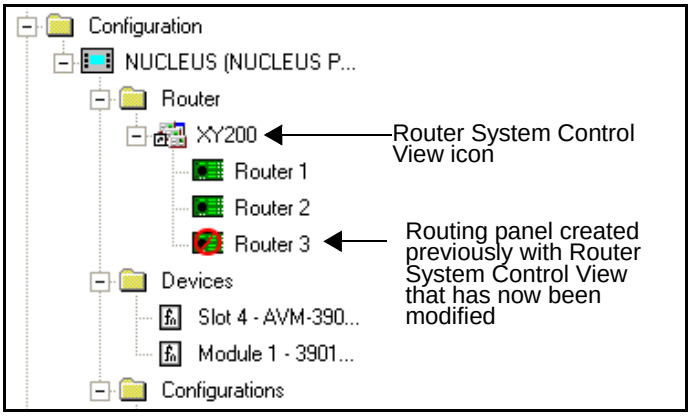

Figure 2-5. Selecting a Router System Control View

Note

If you have made changes to a Router System Control View (using RouterMapper), any routing panels you previously created with this view must be modified using the Routing Configuration wizard.

4. From the context menu, select **Create** > **Routing Panel**.

   The **Routing Panel Configuration** dialog box opens.

The following sections provide information about how to configure your routing control panel.

Selecting a Configuration Type

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

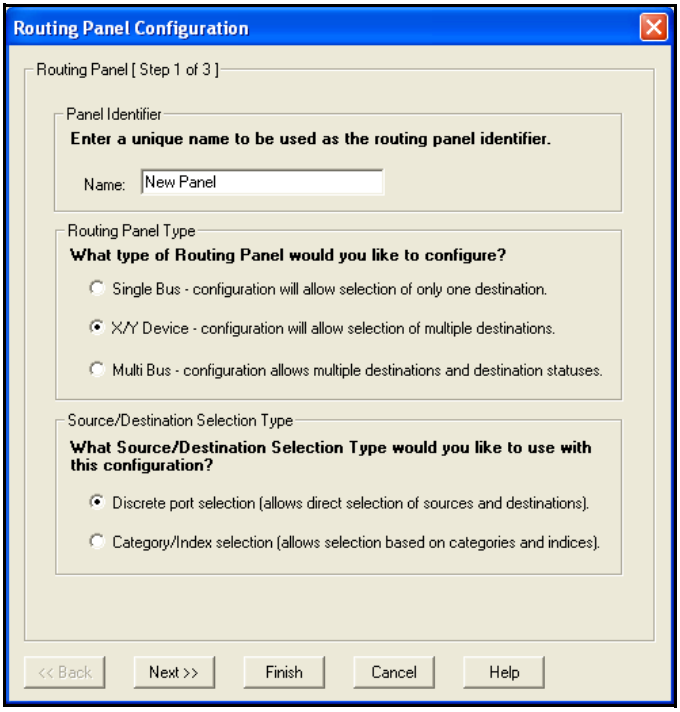

Figure 2-6. Routing Control Panel Configuration Dialog Box

In this step, you can

- Enter a name for your new routing panel.
- Select the type of routing panel you want to configure. The routing panel type you select depends on the number of destinations you want to be able to control.
- Select the source and destination selection type that you want to use for your routing panel. The selection type you choose depends on whether the destinations and sources are identified by logical names or by categories and /indexes.

Each configuration type is described in the following sections.

- **Routing Panel Type—**Selecting the routing panel type determines the capability of your routing panel.
  - **Single Bus**—Using this type of router configuration, you can control a single routing destination only. This destination is selected when you create the routing panel and cannot be modified on NUCLEUS. Figure 2-7 on page 16 illustrates Single Bus type configurations.
  - **X/Y Device—**Using this type of router configuration, you can control one routing destination at a time. You can select this destination from a configured list of available destinations. Figure 2-8 on page 17 illustrates X/Y Device type configurations.
  - **Multi Bus**—Using this type of router configuration, you can control multiple routing destinations simultaneously. You can select these destinations from a configured list of available destinations. Additionally, you can select a number of destinations to status. Figure 2-9 on page 18 illustrates the Multi Bus type configurations.
- **Source/Destination Selection Type—**Depending on the Router System Control View, you can choose between using either discrete port selection or a category/index selection for identifying and selecting destinations and sources for your routing panel. Each selection type is described in the following sections:
  - **Discrete port selection—**Select this option if you want to identify the routing panel destinations and sources by their logical names.
  - **Category/Index selection—**Select this option if you want to identify the routing panel destinations and sources by category and indexes.

After you complete **Step 1** of the routing panel configuration, click **Next** to select the destinations and sources for your routing panel. The number of steps required to complete the routing panel configuration depends on the type of routing panel you are configuring. Figure 2-7 on page 16, Figure 2-8 on page 17, and Figure 2-9 on page 18 illustrate the steps required to complete the configuration for each type of routing panel.

Routing Panel Destinations and Sources

The Routing Panel Type and Selection Type you selected for your routing panel determine the number of steps that are required to complete your configuration. The wizard guides you through the configuration and provides information about each step. Additional help can be accessed by clicking the **Help** button in the Routing Panel Configuration dialog boxes.

If the router system you are using for the configuration has categories and indexes to identify sources and destinations, you can add them to the router panel.

The following illustrations provide a summary of the required steps for configuring your routing panel.

Figure 2-7 illustrates Single Bus routing panel configuration steps.

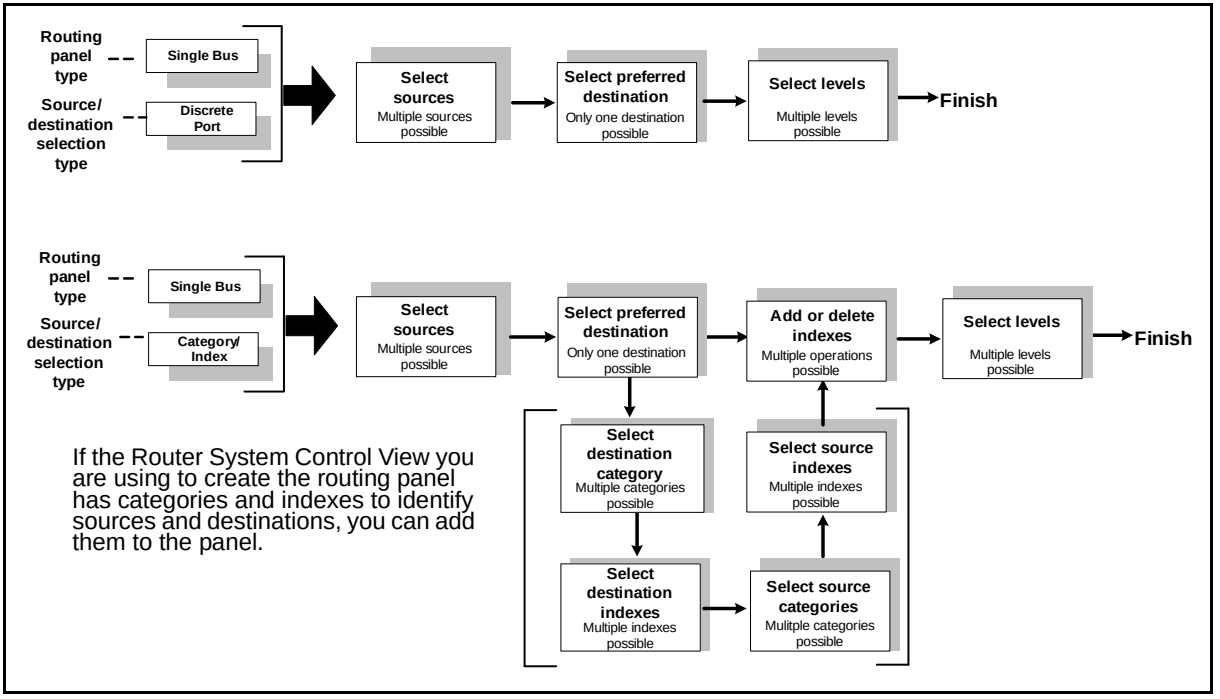

Figure 2-7. Single Bus Type Configurations

Figure 2-8 illustrates X/Y type routing panel configuration steps.

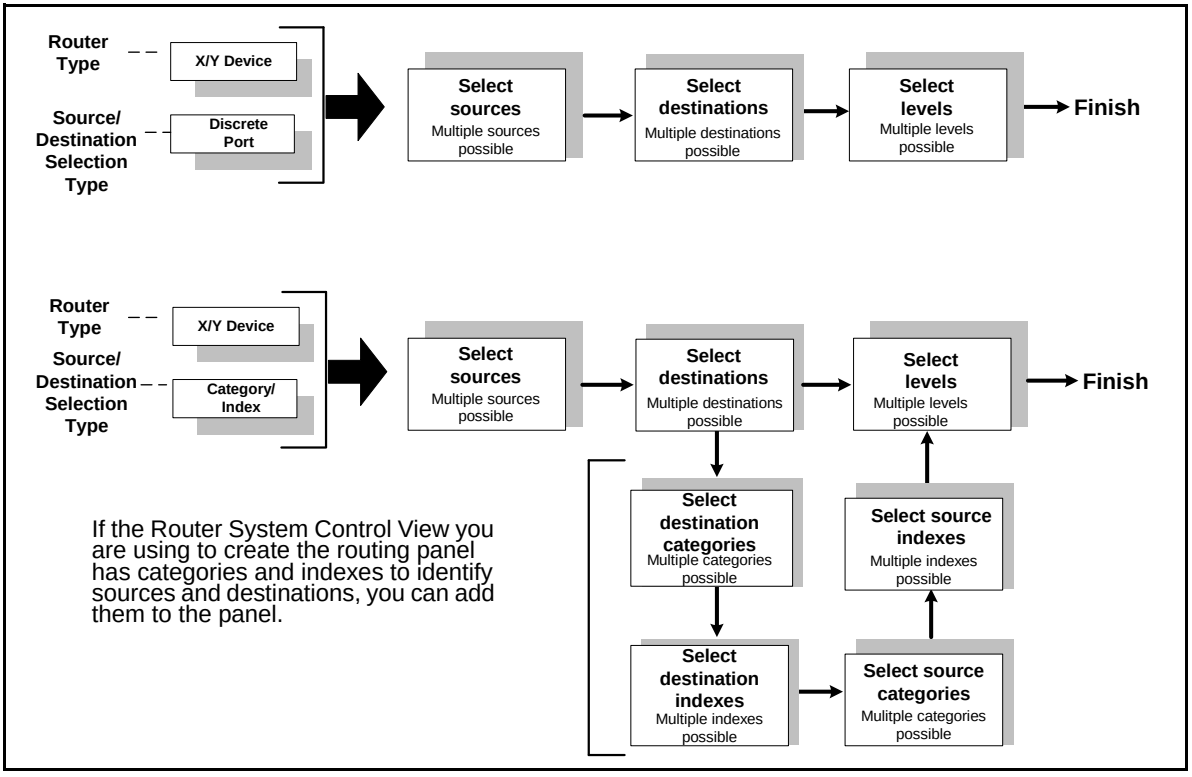

Figure 2-8. X/Y Device Type Configurations

Figure 2-9 illustrates Multi Bus type routing panel configuration steps.

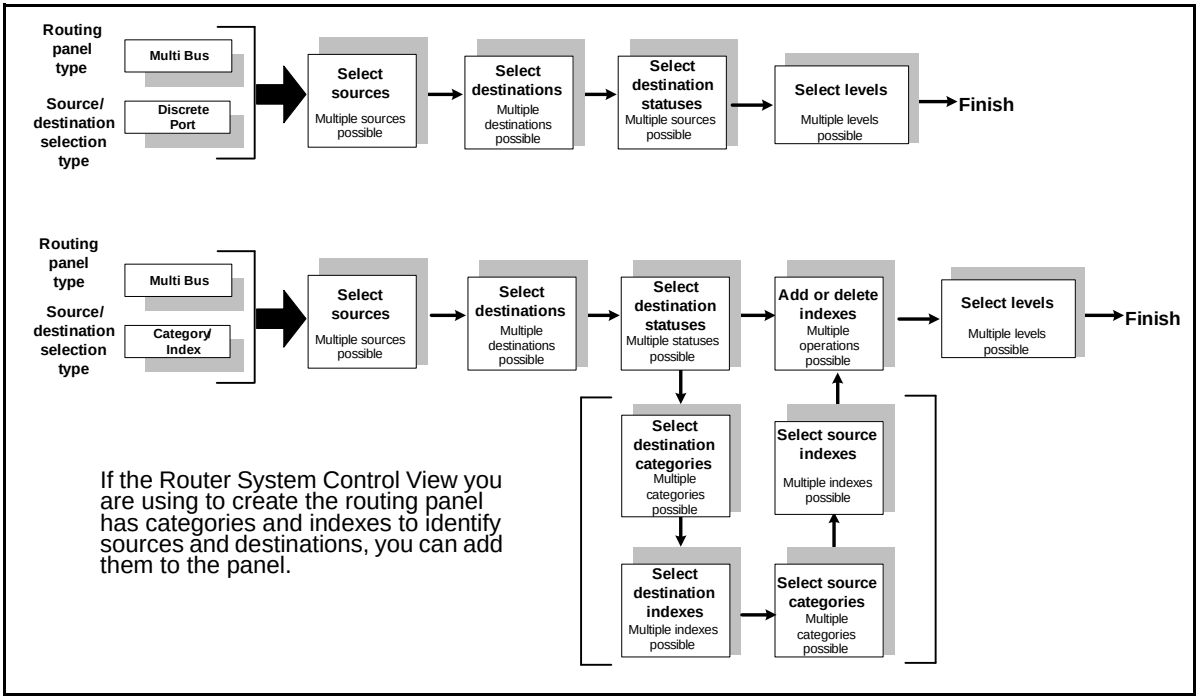

Figure 2-9. Multi Bus Type Configurations

Selecting the Sources for Your Routing Panel

In this step of the configuration, you can select the sources that you want the routing panel to control. All of the sources that are established by the Router System Control View are listed under **Available sources**. From this list, select the sources you want to add to the routing panel, and then click the > button (or, if you want to add all of the sources listed, click the >> button). If you want to remove a source, select the one you want to remove, and then click the < button, or click the << button to remove all sources. You can filter the **Available sources** list by entering a keyword in the **Filter** box.

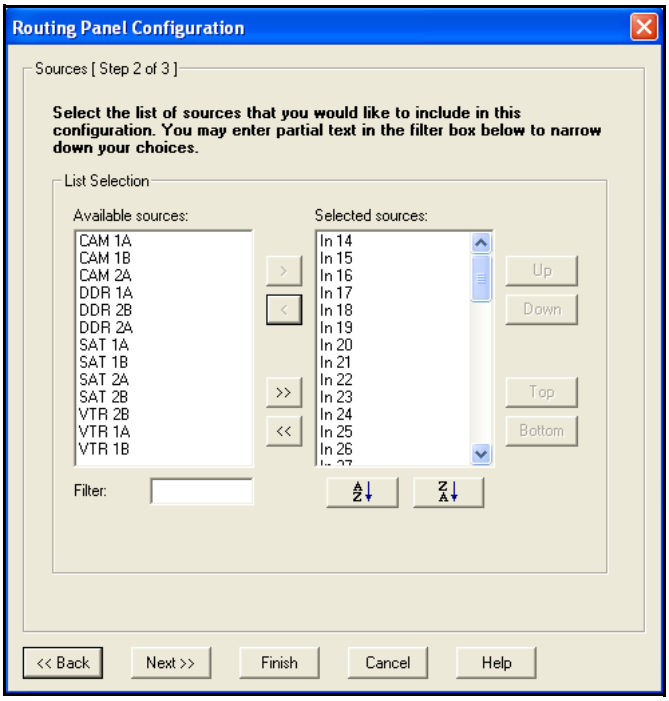

Figure 2-10. Selecting Routing Panel Sources

Selected sources now lists the sources that you can control with the routing panel.

You can determine the order in which the sources appear on NUCLEUS by using the following buttons:

- **Up**—Moves the selected items up one position in the list
- **Down**—Moves the selected items down one position in the list

- **Top**—Moves the selected items to the top of the list
- **Bottom**—Moves the selected items to the bottom of the list
- **A–Z**—Organizes all items in the list by alphanumeric order
- **Z–A—**Organizes all items in the list by reverse alphanumeric order

When you have completed organizing your **Selected sources** list, click **Next**.

Selecting Destinations for Your Routing Panel

In this step of the configuration, you can select the destinations that you want the routing panel to control. All of the destinations that are established by the Router System Control View are listed under **Available destinations**. From this list, select the destinations you want to add to the routing panel, and then click the > button (or, if you want

to add all of the destinations listed, click the >> button). If you want to remove a destination, select the one you want to remove, and then click the < button, or click the << button to remove all destinations. You can filter the **Available destinations** list by entering a keyword in the **Filter** box.

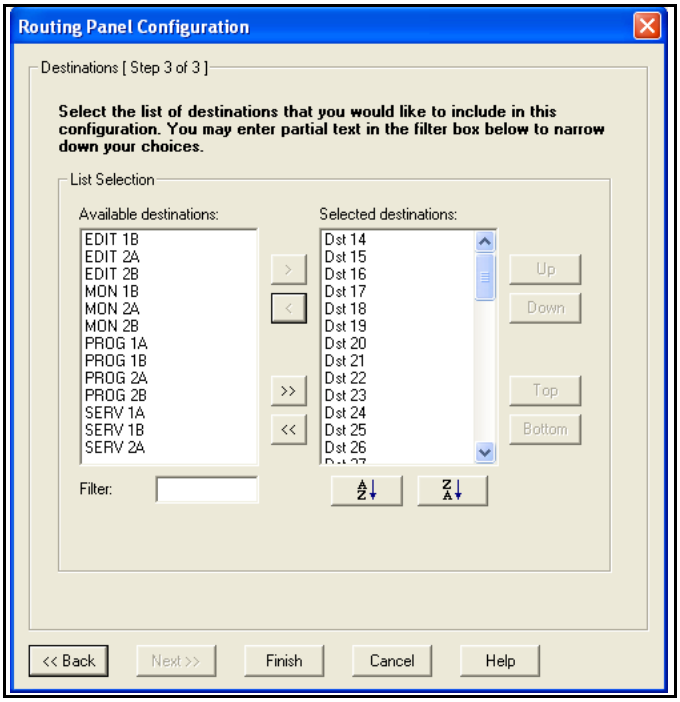

Figure 2-11. Selecting Routing Panel Destinations

Selected destinations now lists the sources that you can control with the routing panel.

You can determine the order in which the destinations appear on NUCLEUS by using the following buttons:

- **Up**—Moves the selected items up one position in the list
- **Down**—Moves the selected items down one position in the list
- **Top**—Moves the selected items to the top of the list
- **Bottom**—Moves the selected items to the bottom of the list
- **A–Z**—Organizes all items in the list by alphanumeric order
- **Z–A—**Organizes all items in the list by reverse alphanumeric order

When have completed organizing your **Selected destinations** list, depending on the routing panel type you are configuring, either click **Next** or **Finish**.

Selecting Destination and Source Categories and Indexes for Your Routing Panel

If the Router System Control View you are using to create the routing panel has categories and indexes to identify destinations and sources, you can select the categories and indexes that you want the routing panel to control.

Destination and source categories are selected in the same way as destinations and sources. However, you can choose to add or delete indexes from the list. All of the indexes that are established by the Router System Control View are listed under **List of Added Indexes**.

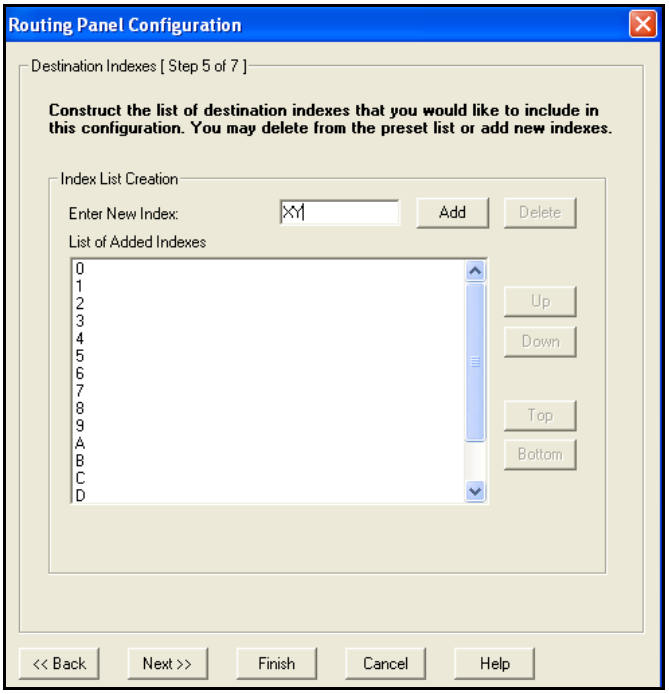

Figure 2-12. Adding and Deleting Indexes

To add indexes to the index list, enter a character in the **Enter New Index** box and click **Add**. To delete an index, select it from the list, and then click **Delete**.

Selecting Levels

If the Router System Control View you are using to create the routing panel has levels, you can select the levels that you want to use in your routing panel to control.

All of the levels that are established by the Router System Control View are listed under **Available levels**. From this list, select the levels you want to add to the routing panel, and then click the > button (or, if you want to add all of the levels listed, click the >> button). If you want to remove a level, select the one you want to remove, and then click the < button, or click the << button to remove all levels.

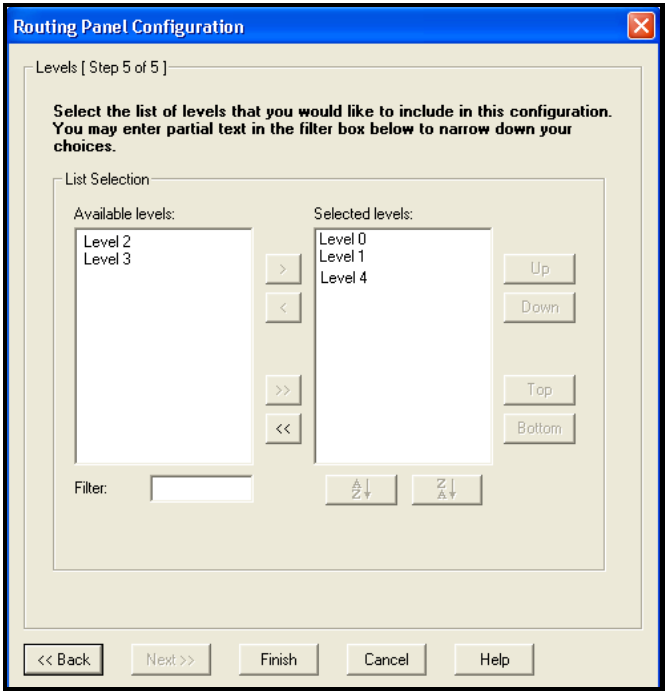

Figure 2-13. Adding Levels

Selected levels now lists the levels that you can control with the routing panel.

After you complete your new routing panel configuration, you can add it to a NUCLEUS configuration. For more information, see “Using the NUCLEUS Configuration Wizard” on page 24.

Using the NUCLEUS Configuration Wizard

You must use the NUCLEUS Configuration wizard to create router control configurations. The wizard guides you through the principal configuration steps and provides information about each configuration step. Additional help can be accessed by clicking the **Help** button in the NUCLEUS Configuration wizard dialog boxes.

Note

Do not make changes to the Router System Control View that is being used to create your NUCLEUS routing panels. Doing so may lead to a mismatch between data contained in the Router System Control View and your NUCLEUS routing panels.

When creating your configuration, you can use the category feature to organize routing panels into logical groups. For router control configurations, routing destinations and sources are automatically assigned to the NUCLEUS's LCD buttons.

You can also use the NUCLEUS Configuration wizard to modify an existing configuration. For more information about modifying a configuration, see "Modifying NUCLEUS Configurations" on page 38.

Starting the NUCLEUS Configuration Wizard

To start the Configuration wizard, follow these steps:

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

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

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

3. If you are creating your first NUCLEUS configuration, the **Control Panel Configuration** dialog box opens asking you if you want to use the NUCLEUS 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.

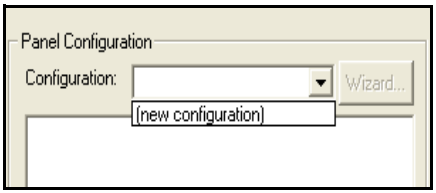

Figure 2-14. Selecting a New Configuration

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

Selecting a Configuration Type

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

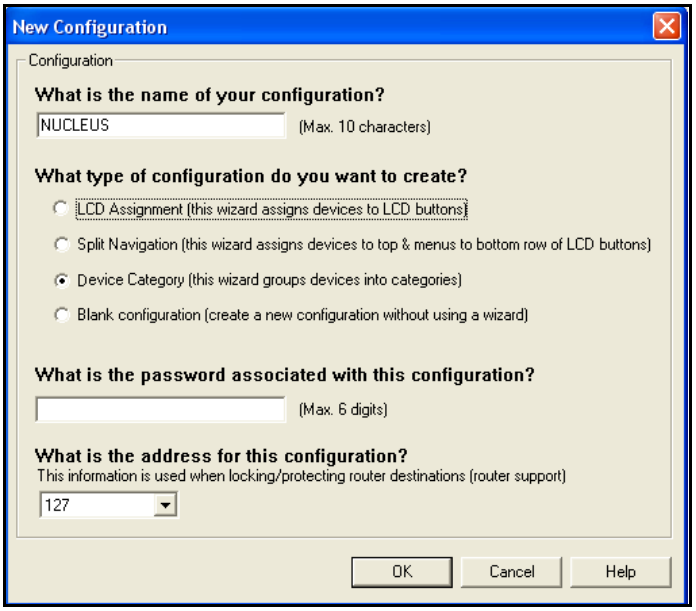

Figure 2-15. New Configuration Dialog Box

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. Each configuration type is described in the following sections.

- **LCD Assignment**—Using this type of configuration, all destinations and sources associated with the selected routing panel are displayed across the control panel's LCD buttons.
- **Split Navigation**—This type of configuration is not supported by router control configurations.
- **Device Category—**Using this type of configuration, you can organize routing panels into categories. Categories are accessible through the first level of the control panel's LCD button assignment hierarchy.
- **Blank Configuration**—Select this option if you don't want to configure your control panel using the NUCLEUS Configuration wizard. You cannot configure NUCLEUS for router control using a Blank Configuration. See your CCS software application user guide for information about configuring NUCLEUS without the Configuration wizard.

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 in the box provided.

   The name you give your configuration is used to identify it after the configuration is added to the control panel's **Configurations** folder.
2. Select the type of configuration that you want to perform.
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, that you want to 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 a CCS software application.
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 information about locking destinations, see “Locking and Protecting Destinations” on page 93.

5. Click **OK**.

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

- If you are creating an LCD Assignment Configuration, go to “Confirming Routing Panel Assignment” on page 30.

  OR

- If you are creating a Device Category Configuration, go to “Adding Categories to the Configuration” on page 28.

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 "Confirming Routing Panel Assignment" on page 30.

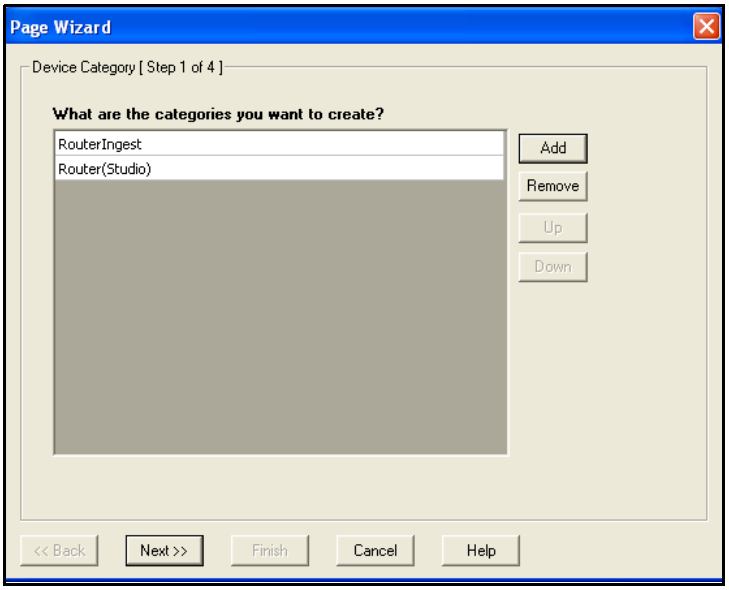

Figure 2-16. Device Category Dialog Box

Click **Add** to create a category for your new configuration. You can add a total of 192 categories to a configuration. To rename the category, double-click it, and then enter a name that has a maximum of 21 alphanumeric characters.

Note

Configuration categories are not the same as or related to the category/index selection that is associated with Router System Control Views. For more information about category/index selection for routing panels, see "Creating Routing Panels for NUCLEUS" on page 11.

Adding Routing Panels to Categories

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

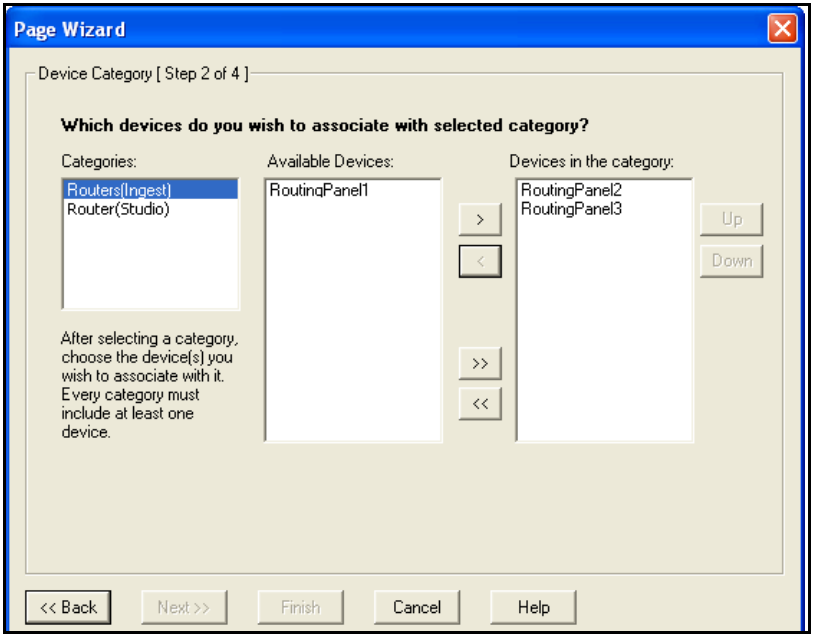

Figure 2-17. Adding Routing Panels to Categories

If a routing panel 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 routing panel name. Each category must include at least one routing panel.

Routing panels are auto-assigned to the control panel LCD buttons in the order in which they appear in the **Devices in the category** list.

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

Confirming Routing Panel Assignment

The **Configuration Wizard** dialog box displays the Category (if you created a Device Category configuration) and the routing panels you want to use in you NUCLEUS configuration.

Note

The **Assign Parameters to Panel Controls** and **Create Device Menu(s)** options are for Process Device Control option configurations only. These options are not supported for routing panel control.

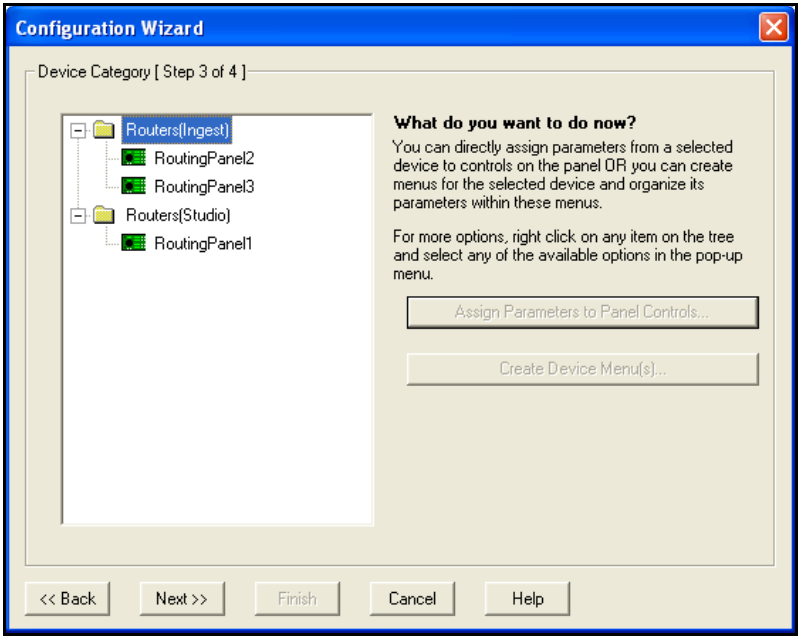

Figure 2-18. Categories and Routing Panel Assignments

If the displayed information is correct, click **Next**. If you want to make changes to your configuration, click **Back**.

Setting Control Panel Options

Using the **Device Category** dialog box, you can set the current configuration as the auto boot configuration as well as set panel access permission and the LCD button auto assignments.

Note

The **Home, Menu Unity** and **Device Unity** options are for Process Device Control option configurations only. These options are not supported for routing panel control.

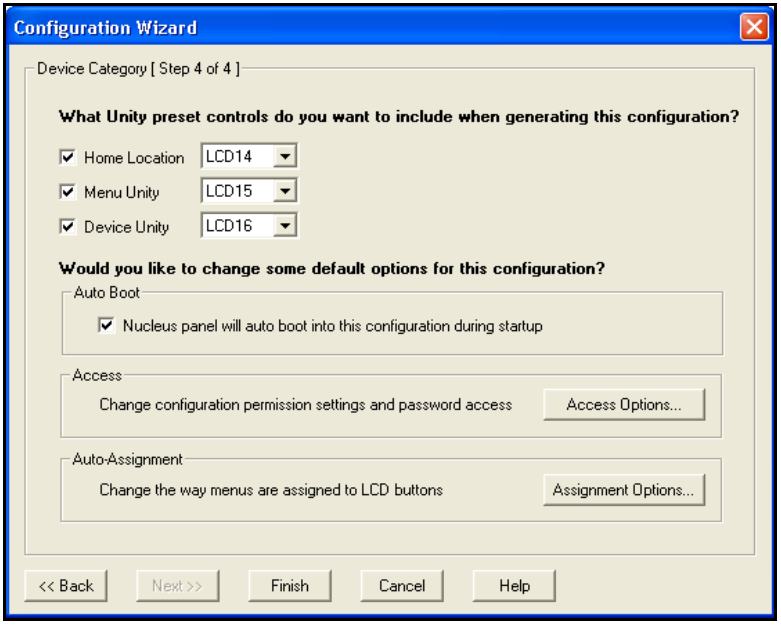

Figure 2-19. Selecting Control Panel Options

- Under **Auto Boot**, select **NUCLEUS panel will auto boot into this configuration during startup** if you NUCLEUS to automatically load the current configuration when the panel is turned on or rebooted.

- Click **Access Options** to set the access permission for copying configurations to and deleting configurations from NUCLEUS. You can also enable the Destination Lock and Protect feature for router control.

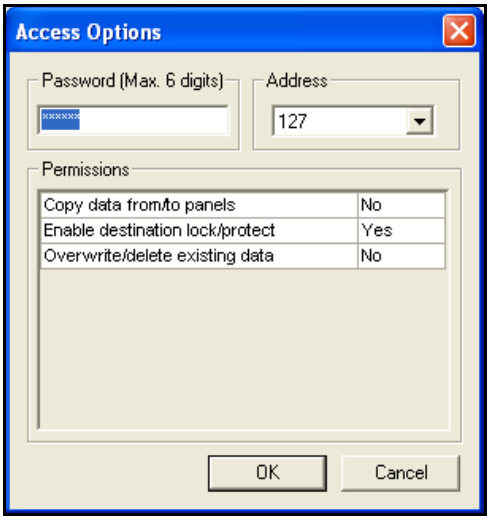

Figure 2-20. Setting Access Options

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

1. Under **Password**, enter a password for the configuration on the NUCLEUS panel.
2. 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. (see "Locking and Protecting Destinations" on page 93).
3. 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 memory key. For information about transferring files to and from NUCLEUS using a USB memory key, see your *NUCLEUS Network Control Panel Installation and Operation Manual*.

- **Enable destination lock/protect** permits the configuration user to use the Lock and Protect features associated with routing panels on the control panel. For information about the Lock and Protect features, see “Locking and Protecting Destinations” on page 93.
- **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*.

4. Click the **Assignment Options** button 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**

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.

5. Click **Finish** to complete the configuration.

Creating a Router Gateway

You can use the **Router Gateway Settings** dialog box to set up a router gateway file consisting of up to 10 IP addresses. Creating a router gateway allows up to 10 NUCLEUS control panels to simultaneously communicate with a router through its Ethernet connection. Creating router gateway is an optional method of connecting with a router.

If you create a router gateway file, it will be transferred to the control panel along with the NUCLEUS configuration file. When a router gateway file is transferred to NUCLEUS, the panel will use the gateway IP addresses contained in the file to connect with the router associated with the configuration. This means that router connection information contained in the NUCLEUS configuration file will not be used to connect with the router.

Only one router gateway file at a time can be added to NUCLEUS. If a router gateway file already exists on the panel when you transfer your new NUCLEUS configuration file (and associated router gateway file), you will be prompted before the new file overwrites the existing gateway file.

To set up a router gateway file, follow these steps:

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

   The Router Gateway Settings dialog box opens.

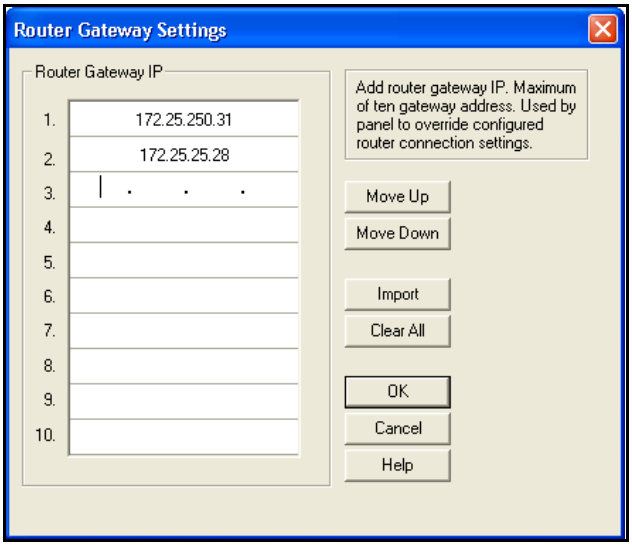

Figure 2-21. Setting Up a Router Gateway

2. To set up gateway IP addresses, in the **Router Gateway Settings** dialog box, do one of the following:

   - Click in the first IP field, and then type an IP address.

     To add another IP address, click in the next available field, or up the **Move Up** and **Move Down** buttons to navigate through the list.

   OR

   - To import a text .txt file containing an IP addresses, click the **Import** button, and then browse to the location of the text file.

     Clicking **Open** imports the IP addresses into the available IP address fields.

3. To delete all of the listed IP addresses, click the **Clear All** button.
4. When you have finished adding IP addresses, click **OK**.

Transferring Configurations to NUCLEUS

Once the configuration has been completed, it must be transferred to a control panel via an Ethernet connection. You can also save configurations as .xml files to a designated local or network drive or to a USB memory key. Before you attempt to transfer configurations to NUCLEUS, make sure that you are connected to the control panel via a valid Ethernet connection. Note that a total of five configurations can be transferred to the control panel.

To transfer a configuration to 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 transfer from the **Local Configuration** list, and then click **Send to Panel**. You can also drag the configuration that you want to transfer from the **Local Configuration** to the **Send to Panel** list.

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

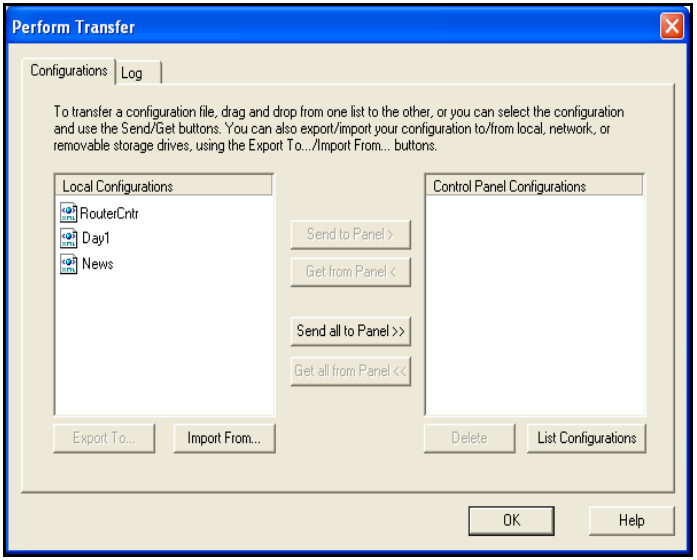

Figure 2-22. Transferring Configurations to NUCLEUS

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.

4. To save your configuration to a network drive or external USB memory key, select the configuration you want to export from the **Local Configuration** list, and click **Export To**.

   Browse to the designated local or network drive and click **Save**.

5. To copy files from an external storage device, click **Import From**.

   Browse to the designated local or network drive and click **Open**.

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 NUCLEUS Configuration wizard to modify your completed configuration or you can modify it manually in the **Control Panel** page. You can use the Routing Panel Configuration wizard to modify a routing panel's list of available sources and destinations. For information about modifying a routing panel configuration, see "Modifying Routing Panel Configurations" on page 40.

Modifying Configurations Using the Configuration Wizard

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

1. In the **Navigation** window of your CCS software application, 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.

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 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 your CCS software application, 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.

Make the necessary modifications to your configuration.

For information about modifying LCD assignment options, see “Modifying LCD Assignment Options” on page 41. For information about saving modified configurations, see “Saving Modified Configurations” on page 42.

Modifying Routing Panel Configurations

To modify a routing panel using the Routing Panel Configuration wizard, follow these steps:

1. In the **Navigation** window of your CCS software application, locate the NUCLEUS control panel that you have associated with the configuration you want to modify.
2. Expand or double-click the **Router** folder, and then select the Routing System Control View icon that is the source of the routing panel you want to modify.
3. Expand the Routing System Control View icon, and then select the routing panel you want to modify.
4. Either right-click the routing panel and select **Configuration** from the context menu, or double-click the routing control panel.
5. Make appropriate modifications to your routing panel.

After you complete your changes, you must add the modified routing panel to the NUCLEUS configuration.

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.

Note

If you have made changes to a Router System Control View (using RouterMapper), any routing panels you previously created with this view must be modified using the Routing Configuration Wizard.

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 available. Using 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 39.

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** window, 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**.

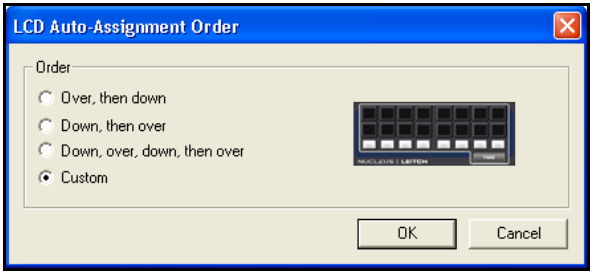

Figure 2-23. Selecting New LCD Assignment Order

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

Using Custom LCD Assignment

If you selected **Custom**, 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:

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

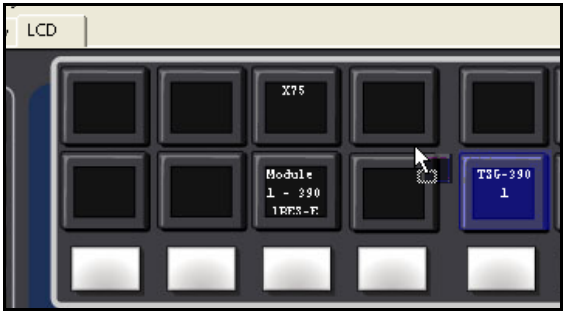

Figure 2-24. Using Custom the LCD Assignment Option

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 that 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, you can ensure that your configuration is saved if you click **Finish** in the last configuration step.

If you manually modified your configuration, such as changing the LCD assignment options, following 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.

Chapter 3

Operation

Overview

This chapter explains how to use NUCLEUS to remotely operate routers. It describes the layout of the panel display and how to use the controls to switch routing destinations, sources and levels.

Note

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

The following topics are found in this chapter:

Using Panel Controls

After you have transferred your NUCLEUS configurations to the control panel, you can select a configuration and enter a password to gain access to the routing panels in your configuration. The following sections describe the layout and function of the panel controls.

Note

You must configure the panel before operating it. For details, see "Chapter 2: Configuration" on page 3.

The Routing Panel Display

When operating routing panels with NUCLEUS, the QVGA TFT-LCD display shows the available router destinations and sources, as well as routing panel options such as breakaway and salvo modes. When NUCLEUS is turned on, the display starts at the user logon screen. When a routing panel is selected, depending on the routing panel type, either the Destination Select or Source Select mode is displayed. Figure 3-1 shows the display for an X/Y device type router.

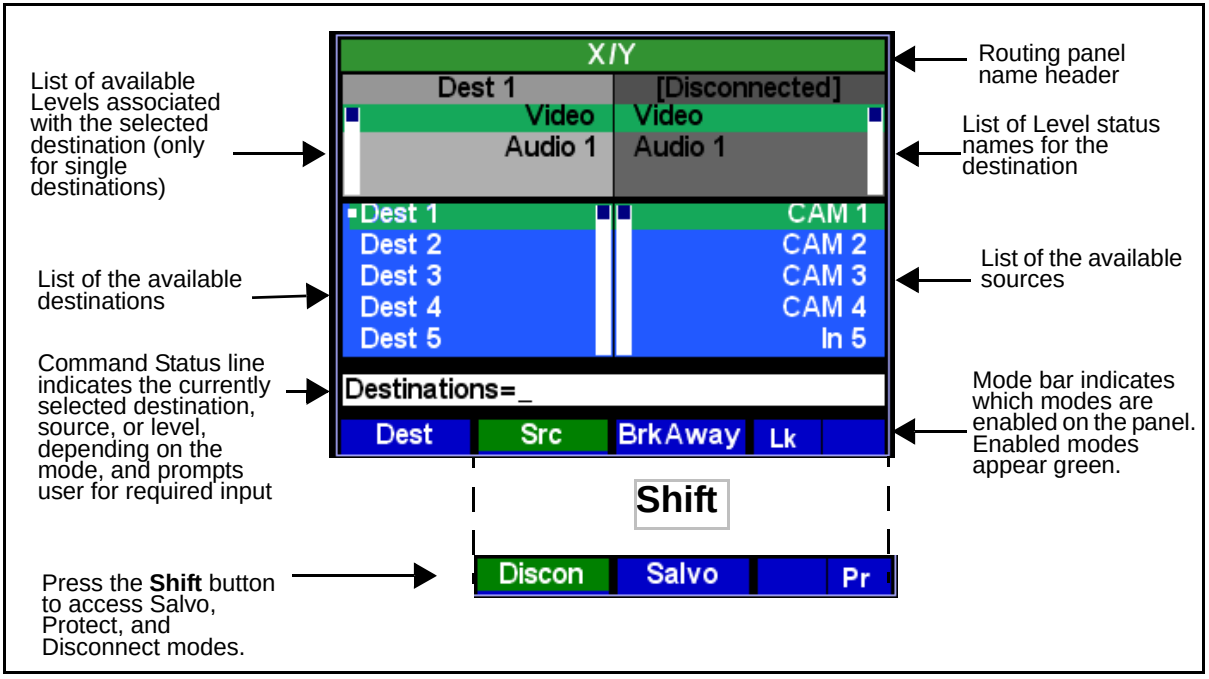

Figure 3-1. Display Layout For X/Y Device Type Router

For router control, use these items to scroll through and select routing destinations, sources, and levels, as well as to select routing panel options.

Note

Throughout this manual and in the NUCLEUS control panel display, “X/Y” is used to refer to X—Y type routers. Likewise, “multi bus” is used to refer to multibus type routers.

Scroll Knobs

You can use the scroll knobs to scroll through and select routing destinations, sources, and levels. In most cases, pressing scroll knob will produce the same result as pressing the **Enter** button.

Selection Buttons

You can use the selection buttons to select routing panel modes. The name of the modes assigned to the selection button appear in the QVGA display. For information about routing panel modes, see “Routing Panel Operational Modes” on page 50.

Using the Panel’s Dynamic Controls

The layout and function of the dynamic controls are specific to the routing panel type that you are using on the panel. The following sections describe the functions of the panel’s dynamic controls.

LCD Buttons

When operating routing panels, the LCD buttons are managed by NUCLEUS. Destination, source, and level names, as well as categories and indexes, are automatically transferred from the Router System Control View to the LCD buttons as opposed to being configured by the user directly. As specified in the configuration, the LCD buttons can be used to select routing ports for crosspoint takes. Depending on the router device type, the LCDs change color and appearance to indicate the status and availability of destinations and sources. Figure 3-2 illustrates and describes these LCD button colors and appearances.

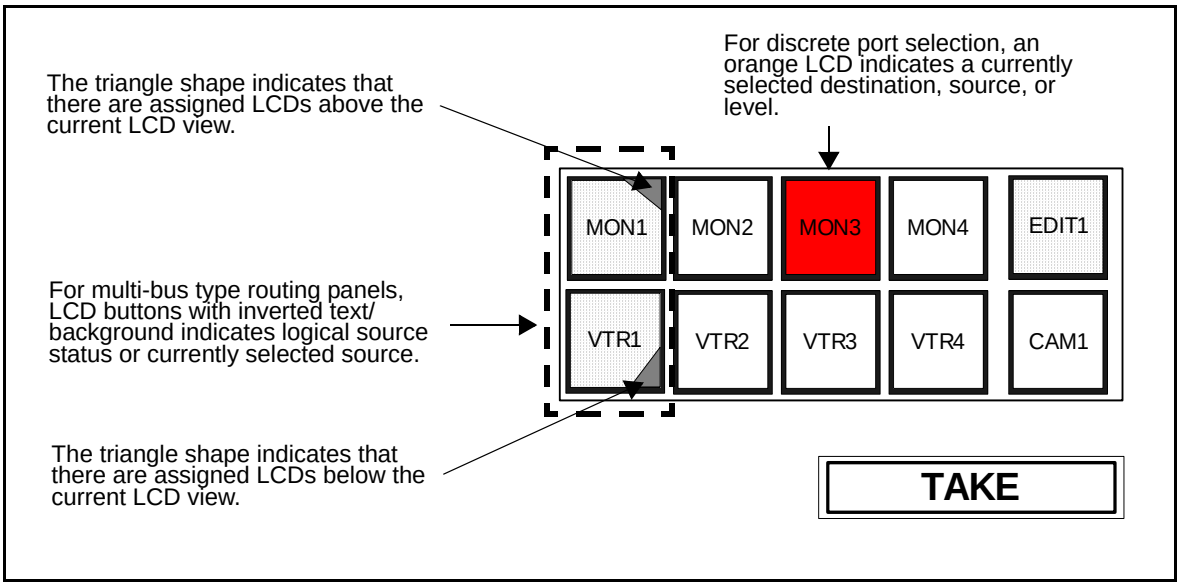

Figure 3-2. LCD Button Color and Pattern Meanings

Multiple pages of 16 LCD buttons can be used. Triangle shapes appear in the first top and bottom LCD to indicate that there are assigned LCD buttons above and below the current LCD view.

Use the page up button 

and the page down button 

to navigate through multiple LCD button pages.

Preset Buttons

The preset buttons can be used to set and execute salvo presets as well as provide quick access to preset destinations and sources. The preset buttons are not configurable using CCS software applications. For information on creating salvo presets and preset destinations and sources, see “Using Salvo Learn Mode” on page 86 and “Using the Preset Buttons” on page 81.

TAKE Button

The **TAKE** button is used to navigate the routing device. After destinations, sources, or levels are selected by the user, the **TAKE** button also lights up to indicate the selection is valid for a crosspoint take.

Function Buttons

Many of the buttons on the control panel have multiple functions assigned to them. Different tasks can be selected using the multi-function buttons. Pressing the Shift button provides access to the various routing panel operational modes. The **Shift** button flashes when the shift function is active.

Operating Routing Panels with NUCLEUS

NUCLEUS supports different types of routing panels—single bus, X/Y device, and multi bus. The type of routing panel that you are using and the way the panel is configured determine how you operate the routing panel to select destinations and sources for crosspoint takes. Each type of routing panel is described below:

- **Single Bus**—Using this type of routing panel, you can select one source for crosspoint takes to a single, predefined destination. This destination is selected when you create the routing panel and cannot be modified on NUCLEUS.
- **X/Y Device**—Using this type of routing panel, you can select one source for a crosspoint take to a single destination.
- **Multi Bus**—Using this type of routing panel, you can select one source for a crosspoint take to multiple routing destinations simultaneously.

In addition to the different types of routing panels, each routing panel can display destination(s) and sources either as a discrete port selection or as a category/index selection. The names, categories, and indexes of the destination and sources originate from the Router System Control View. Each selection type is described below:

- **Discrete port selection—**Destinations and sources are identified on the routing panel by the logical names that have been established in the Router System Control View (router database).
- **Category/Index selection—**Destinations and sources are identified on the routing panel by the categories and indexes that have been established in the Router System Control View (router database).

Routing Panel Operational Modes

There are five operation modes that you can use to perform routing operations. These routing panel operational modes are described below:

- **Destination Selection mode**—Using this mode, you can select destinations (depending on the routing panel type) for the crosspoint take. In the display, the area around **Dest** is green when the routing panel is operating in Destination Selection mode. This mode is not used for single bus routing panels. For information

about using Destination Selection mode, see “Workflow 1: Making Discrete Port Selections” on page 53 and “Workflow 2: Making Category/Index Selections” on page 58.

Note

You can use the preset buttons to select preset destinations. For more information, see “Using the Preset Buttons” on page 81.

- **Source Selection mode—**Using this mode, you can select sources for the crosspoint take. The panel automatically switches to Source Selection mode after a destination is selected and accepted. In the display, the area around **Src** is green when the routing panel is operating in Source Selection mode. For information about using Source Select mode, see “Workflow 1: Making Discrete Port Selections” on page 53 and “Workflow 2: Making Category/Index Selections” on page 58.

Note

You can use the preset buttons to select preset sources. For more information, see“Using the Preset Buttons” on page 81.

- **Destination Status mode**—Using this mode, you can select destinations that are statused. When the routing panel is operating in Destination Status mode, the display and LCD buttons show only destinations that are configured with status. This mode is a variant of Destination Select mode, and is only available for multi bus routing panels. For information about using Destination Status mode, see “Workflow 3: Using Destination Status Mode” on page 64
- **Breakaway mode**—Using this mode, you can select destination and source levels for a crosspoint breakaway. The available levels are defined by the Router System Control View that was used to create the Routing Panel. For information about using Breakaway mode, see “Workflow 4: Using Breakaway Mode” on page 69.

- **Salvo mode**—Using this mode, you can execute salvos from the routing panel. To use this mode, salvos must be included in the Router System Control View. For information about using Breakaway mode, see "Workflow 5: Executing Salvos with NUCLEUS" on page 78.

Note

You can create new salvo presets on the control panel, and then execute them using NUCLEUS' preset buttons. Salvo presets are not associated with the salvos included in a Router System Control View. You cannot execute salvo presets using Salvo mode. For more information about creating salvo presets, see "Using Salvo Learn Mode" on page 86.

Table 3-1 describes which operation modes are supported by each type of routing panel, and provides the reference to the workflow number that describes how to use each of the routing panel operational modes.

Table 3-1. Operating Routing Panels

Routing Panel/ Selection Type	Routing Panel Operation Mode				
	Dest Status	Dest Select	Src Select	Breakaway	Salvo
Single Bus Discrete Port	— — — — — — — →		Workflow1	Workflow 4	Workflow 5
X/Y Device Discrete Port	— — — →	Workflow1		Workflow 4	Workflow 5
Multi Bus Discrete Port.	Workflow 3	Workflow1		Workflow 4	Workflow 5
Single Bus Category/Index	- - - - - - - →		Workflow 2	Workflow 4	Workflow 5
X/Y Device Category/Index	- - - - →	Workflow2		Workflow 4	Workflow 5
Multi Bus Category/Index	Workflow 3	Workflow2		Workflow 4	Workflow 5

For illustrated descriptions of the workflows listed in the table above, see the following topics:

- "Workflow 1: Making Discrete Port Selections" on page 53
- "Workflow 2: Making Category/Index Selections" on page 58

Workflow 1: Making Discrete Port Selections

When your routing panel is configured for discrete port selection, destinations and sources are identified and selected by a single logical name. Names for destinations and sources come from the Router System Control View that was used to create each routing panel (filtered by the choices made when defining the router device).

Table 3-2 describes the valid selection scenarios for each router type.

Table 3-2. Valid Selection Scenarios

Router Type	Destination Selections	Source Selections
Single Bus	Single, fixed	Single, selectable
X/Y Device	Single, selectable	Single, selectable
Multi Bus	Multiple, selectable	Single, selectable

The following sections illustrate and describe the process of making destination and source selections for a multi bus routing panel. The process of a making destination and source selections for single bus and X/Y device routing panels is similar to the one provided below. Any exceptions are noted.

When using a multi bus routing panel, you can use Destination Status mode to display the most frequently used destinations only. For information about using Destination Status mode, see "Workflow 3: Using Destination Status Mode" on page 64.

The selection of levels in Breakaway mode is not illustrated or described here. For information about using Breakaway mode, see "Workflow 4: Using Breakaway Mode" on page 69.

Step 1: Selecting a Destination

After you select a X/Y device routing panel, the display and LCD buttons show the panel in Destination Selection mode, which appears similar to Figure 3-3.

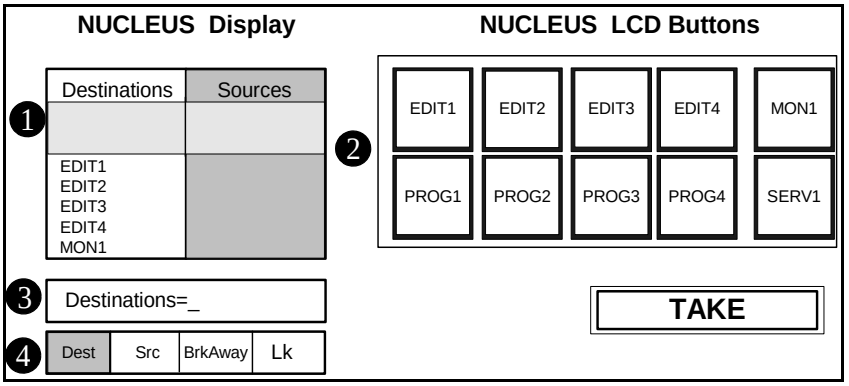

Figure 3-3. Selecting a Routing Destination

1. Available destinations are listed under **Destinations**. Use the adjustment knobs to scroll through the list.
2. The available destinations are displayed on the LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through pages of additional destinations.
3. The Command Status line prompts you to select a routing destination.
4. The Mode bar indicates that the router is now in Destination Selection mode, meaning that it is ready to accept your destination selection.

To select the routing destination for the crosspoint take, do one of the following:

- Press the LCD button for the routing destination you want to use.

  OR

- Use a knob to scroll through the **Destinations** list of and then press the knob to select a destination.

  Exceptions

  If you are using a Single Bus type routing panel, the routing destination is predefined and no selection is possible.

Step 2: Accepting the Selected Destination

After you select a destination, the display and LCD buttons appear similar to Figure 3-4.

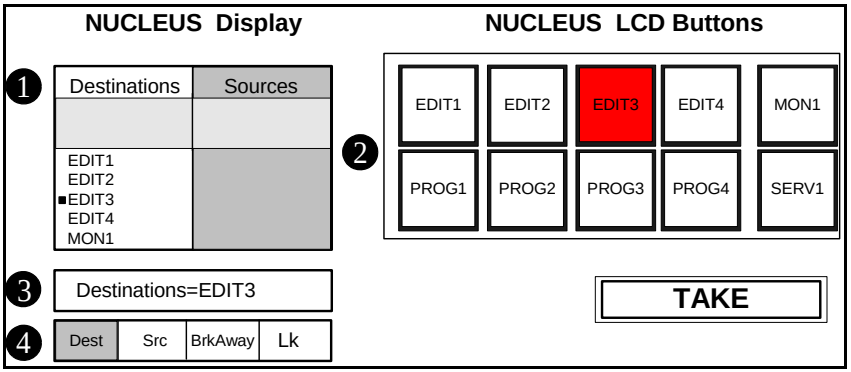

Figure 3-4. Executing the Crosspoint Take

1. A bullet appears beside the selected destination on the display.
2. The selected destination LCD button changes to orange.
3. The selected destination is listed in the Command Status line.
4. The Mode bar indicates that routing panel in still in Destination Selection mode.

To accept the destination selection, press the **TAKE** button. You can change the destination that you have selected at any time before you press the **TAKE** button.

Step 3: Selecting a Source

After you have selected a destination, the display and LCD buttons appear similar to Figure 3-5.

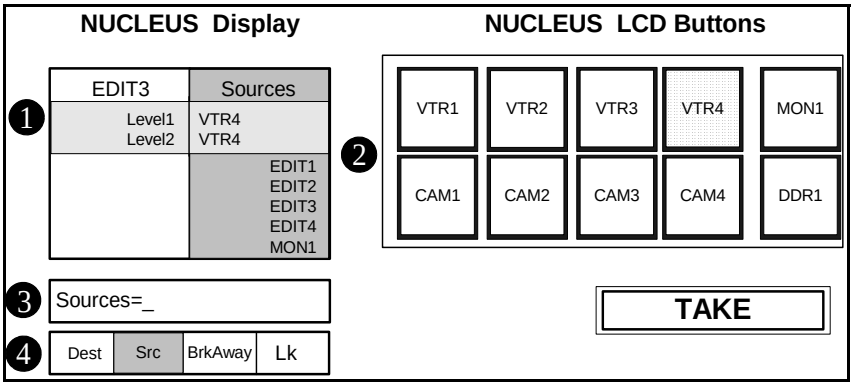

Figure 3-5. Selecting Routing Sources

1. Available sources are listed under **Sources**. Use a knob to scroll through the list. The current source status for the selected destination is also shown.
2. The available sources are now displayed on the LCD buttons. A shaded LCD indicates that its corresponding source is currently connected to the destination. If no LCD buttons are shaded, all the sources are either in a breakaway condition, or there are no valid sources to select. You can use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through pages of additional sources.
3. The Command Status line prompts you to select a source.
4. The Mode bar indicates that the router is now in Source Selection mode.

To select the routing source for the crosspoint take, do one of the following:

- Press the LCD button of the routing source you want to use for the crosspoint.

  OR

- Use a knob to scroll through the **Source** list, and then press the knob to select a source.

Step 4: Executing the Crosspoint Take

After you select a source, the display and LCD buttons appear similar to Figure 3-6.

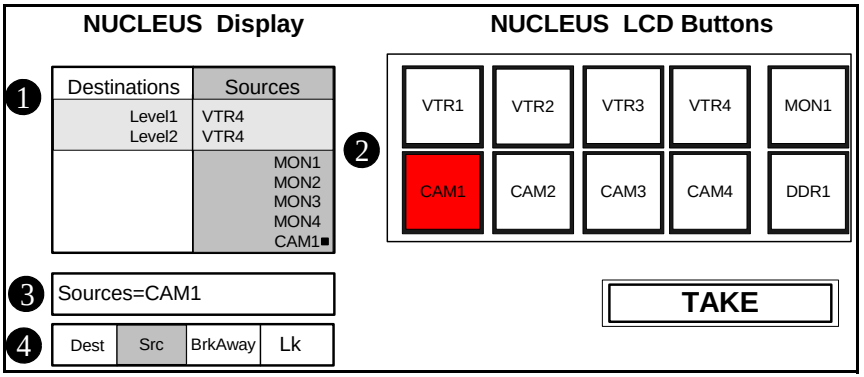

Figure 3-6. Selecting a Source

1. A bullet appears beside the selected source.
2. The selected source LCD button changes to orange.
3. The selected source is listed in the Command Status line.
4. The Mode Bar indicates that the routing panel is still in Source Selection mode.

To execute the crosspoint, press the **TAKE** button.

After NUCLEUS executes the crosspoint take, the display and LCD buttons appear similar to Figure 3-5. To select another source, repeat **Step 3** and **Step 4**. To select another destination, press the selection button below **Dest,** and then follow the instructions provided in "Step 1: Selecting a Destination" on page 54.

Workflow 2: Making Category/Index Selections

Category/index selection provides a way to perform switching based on categories and indexes. Category/index groups are useful in systems with very large number of inputs and outputs.

For a more detailed explanation of category/indexing, see your *RouterMapper Configuration Utility Reference Guide*.

When controlling a routing panel that is configured with category/index type selection, select a category. NUCLEUS then filters the available sources or destination lists based on the selected category name.

The following sections illustrate and describe the process of making category/index destination and source selections for an X/Y device type routing panel. The process of making destination and source selections for single bus and multi bus routing panels is similar to the one provided below. Any exceptions are noted.

The selection of levels using Breakaway mode is not illustrated here. For information about using Breakaway mode, see “Workflow 4: Using Breakaway Mode” on page 69.

Step 1: Selecting a Destination Category

After you select the routing panel, the display and LCD buttons appear similar to Figure 3-7.

Exceptions

- If you are using a single bus type routing panel, the routing destination is predefined and no selection is possible. Therefore, the first step is to select a desired source category.

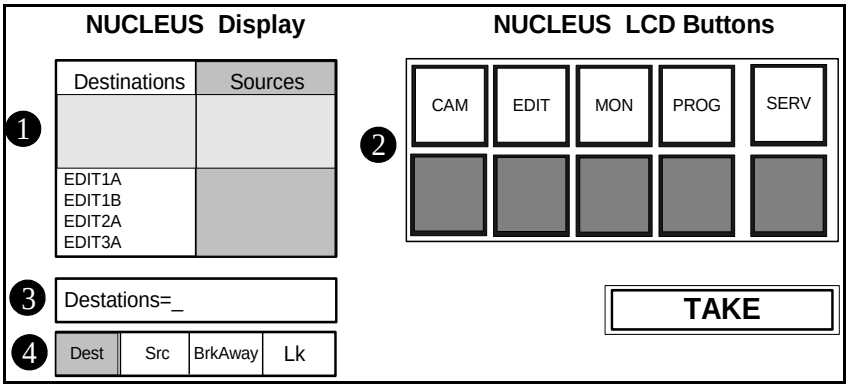

Figure 3-7. Selecting a Destination Category

1. Available destinations are listed by category under **Destinations**. Use a knob to scroll through the list.
2. The available destination categories are displayed by the LCD buttons. You can use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through additional pages of destination categories.
3. The Command Status line prompts you to select a routing destination category.
4. The Mode bar indicates that the router in now in Destination Selection mode, meaning that it is ready to accept your destination selection.

To select the destination category, press the LCD button of the destination category you want to use.

You can also select the final destination using an adjustment knob. To do this, scroll through the list of available destination categories, and then press the knob to select a category. If you use a knob to select the routing destination, you do not need to select the destination index. To continue with the crosspoint take, go to "Step 5: Selecting a Source Category" on page 63.

Step 2: Selecting a Destination Index

After you select a destination category (in this example EDIT is selected), the display and LCD buttons appear similar to Figure 3-8.

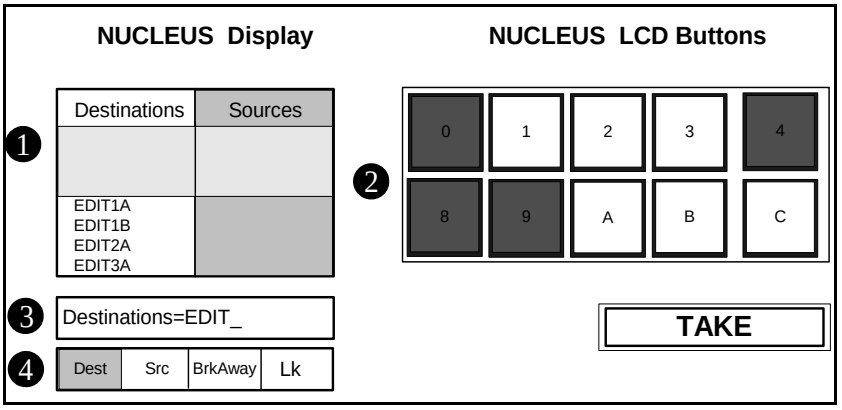

Figure 3-8. Selecting a Destination Index

1. The available destinations that are associated with the selected category are listed by index under **Destinations**. In this example, **EDIT** is selected as the destination category.
2. The available destination indexes are displayed by the LCD buttons. You can use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through additional pages of destination indexes. Indexes that are not valid for the destination are not lit.
3. The selected destination category is listed in the Command Status line. You are now prompted to select a destination index character.
4. The Mode bar indicates that routing panel in still in Destination Selection mode.

To select an index, press the LCD button for the desired index.

The panel will sequentially build a final destination selection using the indexes you select (See “Step 3: Selecting a Destination Index (second level index)” on page 61). You can go back one level in your index selection by pressing the **4** (left cursor) button on the numeric keypad.

You can also select the final destination using an adjustment knob. To do this, scroll through the list of available destination categories, and then press the knob to select a category. If you use a knob to select the routing destination, you do not need to select the destination index. To continue with the crosspoint take, go to “Step 5: Selecting a Source Category” on page 63.

Step 3: Selecting a Destination Index (second level index)

If you used an LCD button to select a first index, NUCLEUS now displays the available destinations that are identified by the selected category and the first index. In this example, **3** was selected as the first index character. The display and LCD buttons appear similar to Figure 3-9.

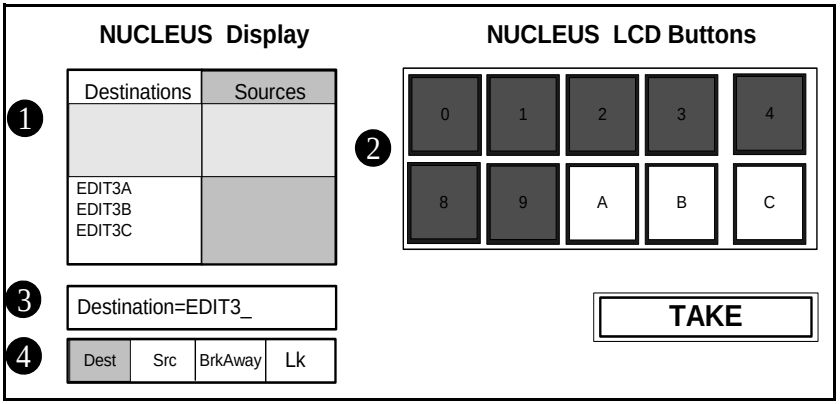

Figure 3-9. Selecting the Second Destination Index Value

1. The available destinations that are associated with the selected category and the first index are listed under **Destinations**. In this example, **EDIT3** has been selected as the destination category and index.
2. The available destination indexes are displayed by the LCD buttons. You can use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through additional pages of destination indexes.

3. The selected destination category and the first index character are listed in the Command Status line. You are now prompted for a second index.

4. The Mode bar indicates that the routing panel is still in Destination Selection mode.

To complete the destination selection, do one of the following:

- Press the LCD button that displays the final index that is used to identify the destination you want to use. You can go back one level in your index selection by pressing the **4** (left cursor) button on the numeric keypad.

  OR

- Use the adjustment knob to scroll through the list, and then press the knob to select a destination.

Step 4: Accepting the Destination

After you select the routing destination, the display and LCD buttons appear similar to Figure 3-10.

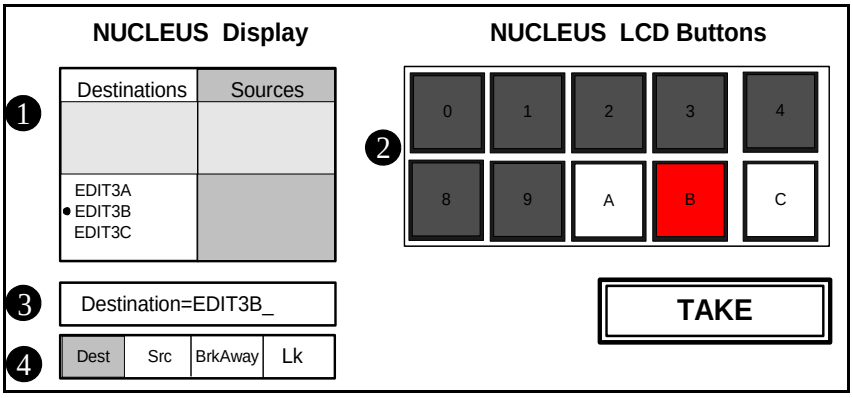

Figure 3-10. Selecting Routing Sources

1. A bullet appears beside the selected routing destination.

2. The valid destination indexes are displayed by the LCD buttons.

3. The selected routing destination is listed in the Command Status line.

4. The Mode bar indicates that the routing panel is still in Destination Selection mode.

To accept the destination selection, press the **TAKE** button.

Step 5: Selecting a Source Category

After the destination(s) are accepted, NUCLEUS displays Source Selection and LCD buttons similar to Figure 3-11.

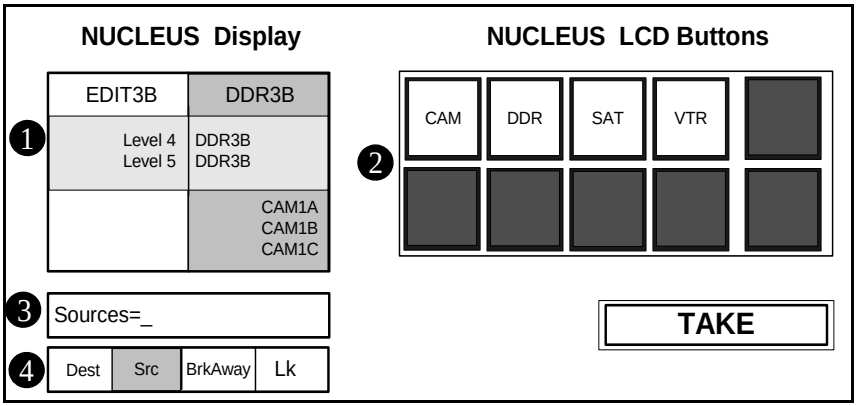

Figure 3-11. Selecting a Source Category

1. Available sources are listed by category under **Source**. Use the adjustment knobs to scroll through the lists.
2. The available source categories are displayed by the LCD buttons. You can use the page down (**Pg Dn**) and page up (**Pg Up**) buttons buttons to navigate through additional pages of source categories.
3. The Command Status line prompts you to select a routing source category.
4. The Mode bar indicates that the router is now in Source Selection mode.

To select a source category, press the LCD button of the source category you want to use.

You can also select the final source using an adjustment knob. To do this, scroll through the list of available selection categories, and then press the knob to select a category. If you use a knob to select the routing source, you do not need to select the source index.

To select indexes for the source selection, follow “Step 2: Selecting a Destination Index” on page 60 through “Step 4: Accepting the Destination” on page 62. Note that these sections describe destination selection, but the workflow is identical for source selection.

Workflow 3: Using Destination Status Mode

Using a multi bus routing panel, you can control multiple destinations for crosspoint takes simultaneously. When you select a multi bus routing panel, by default, you make destination selections in Destination Status mode. Destination Status mode displays the LCD buttons of only user-selected destinations that have been configured (using the Routing Panel Configuration wizard) for source status. This mode is useful when you want to monitor the source connection status of a relatively small number of destinations at the same time. For more information about configuring your multi bus routing panel, see “Creating Routing Panels for NUCLEUS” on page 11.

If you want to select additional destinations that are not included in the user-selected list of statused destinations, meaning destinations that were not configured with statuses, in addition to any previously selected statused destination(s), you must enter Destination Select mode. To do this, press the selection button below **Dest** (Destination Selection mode) on the display. You can then make discrete port or category/index selections in the same way as you would with a X/Y device routing panel.

The following sections illustrate and describe the process of making destination and source selections for a multi bus routing panel.

For information about making discrete port selections for single bus and X/Y device routing panels, see “Workflow 1: Making Discrete Port Selections” on page 53. For information about making category/index selections for single bus and X/Y device routing panels, see “Workflow 2: Making Category/Index Selections” on page 58.

Step 1: Selecting Statused Destinations

After you select a multi bus routing panel, the display and LCD buttons appear similar to Figure 3-12.

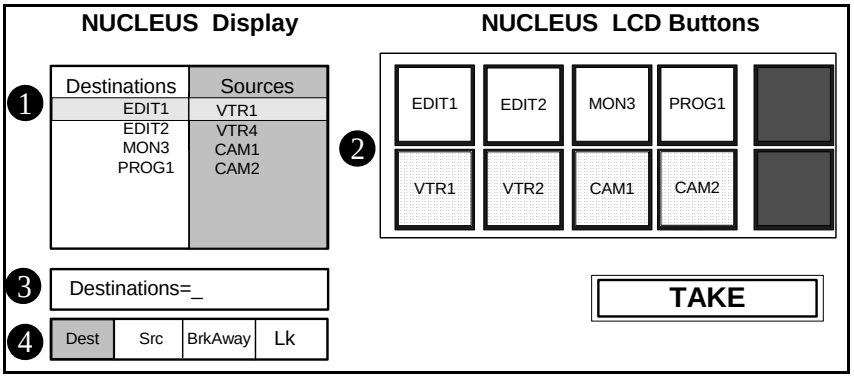

Figure 3-12. Selecting Routing Destinations

1. The destination and source statuses are listed under **Destinations** and **Sources**, respectively. You can use the adjustment knobs to scroll through these lists.
2. The destinations are displayed in the top row of LCD buttons. The source statuses for these destinations are displayed in the bottom row of LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of destination and source statuses.
3. The Command Status line prompts you to select one or more destinations.
4. The Mode bar indicates that the router is now in Destination Selection mode.

To select statused destinations, do one of the following:

- Press the LCD button of each routing destination you want to use for the crosspoint.

  OR

- Use a knob to scroll through the list of displayed **Destinations**, and then press the knob to select a destination.

Step 2: Selecting Non-Statused Destinations

After you select the destinations, the display and LCD buttons appear similar to Figure 3-13.

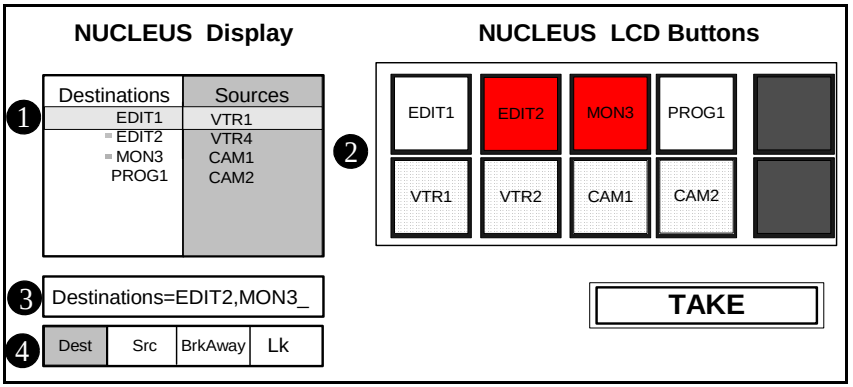

Figure 3-13. Selecting Statused Destinations

1. A bullet appears beside the selected routing destination(s).
2. The LCD buttons for the selected destinations change to orange.
3. The selected routing destinations are listed in the Command Status line.
4. The Mode bar indicates that the routing panel is in Destination Selection mode.

To complete your destination selection, do one of the following:

- To select a non-statused destination, press the button below **Dest**.

  If your routing panel is configured for discrete port selection, see "Step 3: Selecting Non-Statused Destinations Using Discrete Port Selection" on page 67.

  If your routing panel is configured for category/index selection, see "Step 3: Selecting Non-Statused Destinations Using Category/ Index Selection" on page 68.

  OR

- To accept the destination selection(s), press the **TAKE** button. To select sources, see "Step 4: Selecting Sources" on page 69.

Step 3: Selecting Non-Statused Destinations Using Discrete Port Selection

If your routing panel is configured for discrete port selection, after pressing the adjustment button, the display and LCD buttons appear similar to Figure 3-14.

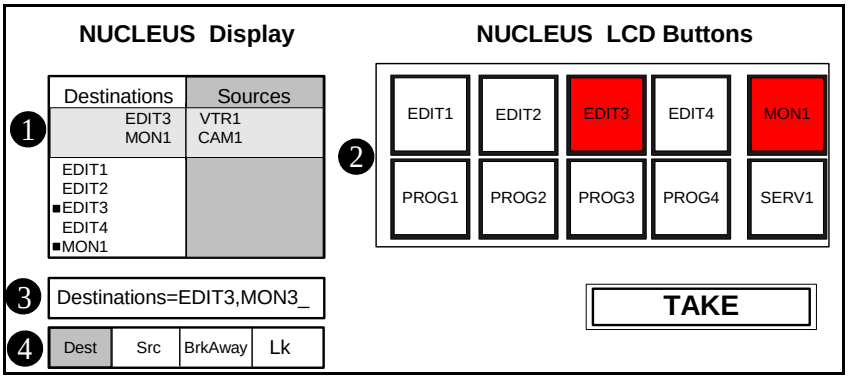

Figure 3-14. Selecting Non-Statused Destinations

1. Non-status destinations, along with their current connections' status, are listed under **Destinations**. The available destinations are still listed. You can use a knob to scroll through the lists.
2. The available destinations are displayed in the top and bottom rows of LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of sources.
3. The Command Status line prompts you to select a destination.
4. The Mode bar indicates that the router is in Destination Selection mode.

To complete your destination selection, follow these steps:

1. To select a non-statused destinations, do one of the following:
   - Press the LCD button of the routing destination you want to use for the crosspoint.

     OR
   - Use a knob to scroll through the **Destinations** list, and then press the knob to select a destination.
2. To accept the destination selection(s), press the **TAKE** button. To select a source, see "Step 4: Selecting Sources" on page 69.

Step 3: Selecting Non-Statused Destinations Using Category/Index Selection

If your routing panel is configured for category/index selection, after pressing the adjustment button, the display and LCD buttons appear similar to Figure 3-15.

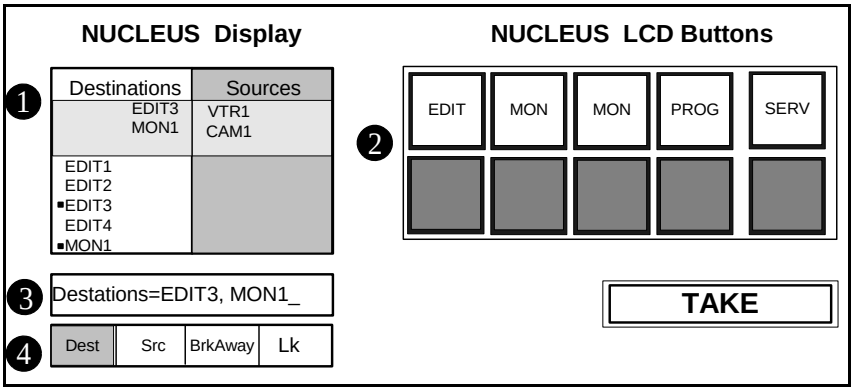

Figure 3-15. Selecting Routing Destinations

1. Non-status destination categories, along with their current sources' status, are listed under **Destination** along with their current source status. The available destinations are still listed. You can use an adjustment knobs to scroll through the lists.
2. The available destination categories are displayed in the top and bottom rows of LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of destinations.
3. The Command Status line prompts you to select a destination.
4. The Mode bar indicates that the router is in Destination Selection mode.

To complete your destination selection, follow these steps:

1. To select a non-statused destinations, use a knob to scroll through the **Destinations** list, and then press the knob to select destinations. If you use the LCD button to select a destination category, you can only select one destination. For information about selecting category/index destinations, see"Workflow 2: Making Category/ Index Selections" on page 58.
2. To accept the destination selection, press the **TAKE** button.

Step 4: Selecting Sources

After you have selected the destinations, depending on the selection type you are using, see one of the following:

- If you want to select a source using discrete port selection, see “Step 3: Selecting a Source” on page 56.
- If you want to select a source using category/index selection, see “Step 5: Selecting a Source Category” on page 63.

Workflow 4: Using Breakaway Mode

Using Breakaway mode, you can select destinations and levels for a breakaway takes to selected sources.

Breakaway mode provides the ability to execute multiple breakaways simultaneous in the same take. This means that you can select different destination levels and route them to different sources in one take. When making multi-level breakaway takes, observe the following guidelines:

- If your routing panel is configured as a multi-bus panel, you can select multiple destinations for the breakaway
- The same levels for each selected destination are routed to the selected source.
- After your first level and source selection (for the selected destinations), you can select another level and source. Both breakaways can be executed/taken simultaneously.

Figure 3-16 illustrates these guidelines for a multi bus type routing panel.

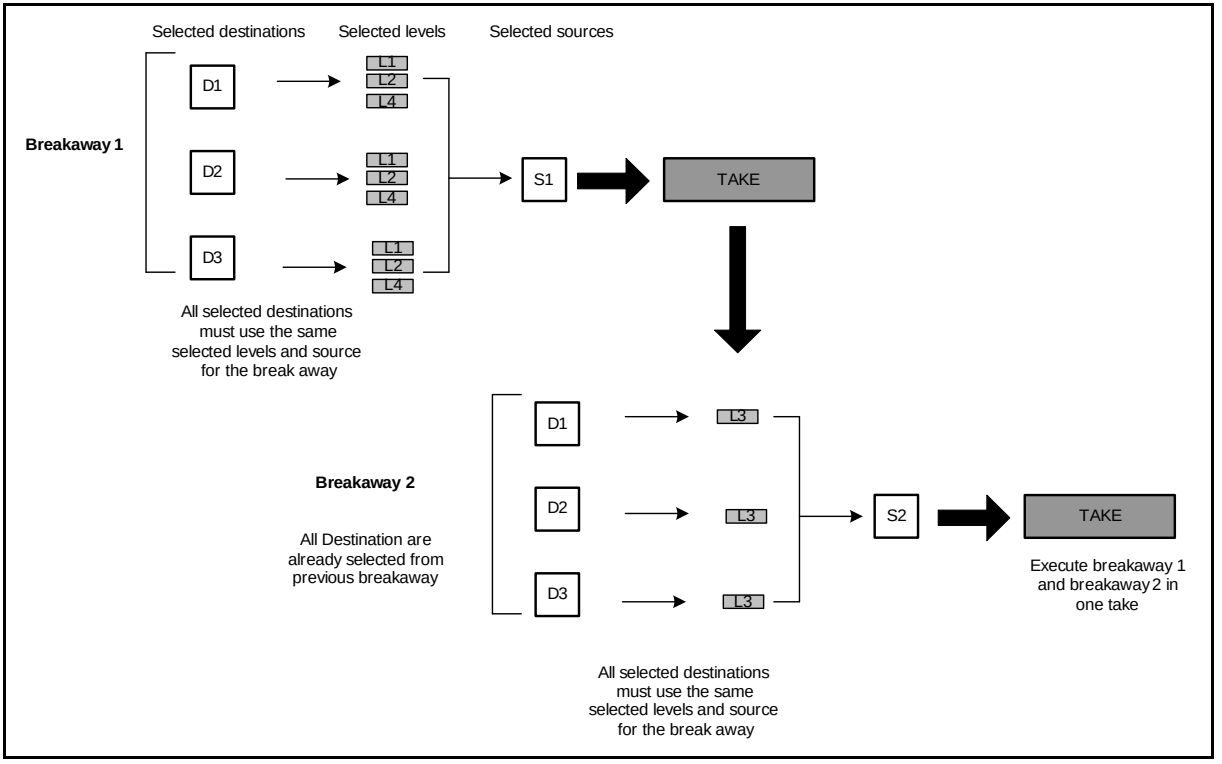

Figure 3-16. Multiple Level Breakaway Takes on Multi Bus Routing Panel

For Breakaway mode, destination and source levels are defined by the Router System Control View and cannot be modified. For information about defining levels for your router system, see your *RouterMapper Utility Reference Guide*.

The following sections illustrate and describe the process of using Breakaway mode to make breakaway takes. In the example, the routing panel has been configured as a multi bus panel with discrete port selection.

The process of using Breakaway mode to make a breakaway switch for single bus and X/Y routing panels is similar to the one provided below. The only exception is that with single bus and X/Y type panels, you can only select one destination for each breakaway take.

For information about making discrete port destination and source selections, see “Workflow 1: Making Discrete Port Selections” on page 53. For information about making category/index selections, see “Workflow 2: Making Category/Index Selections” on page 58.

Step 1: Selecting Destinations for the Breakaway Take

For a multi bus routing panel, the display and LCD buttons appear similar to Figure 3-17.

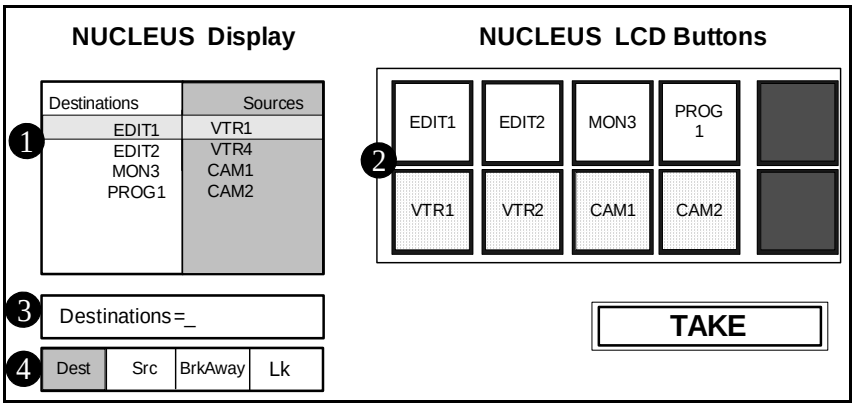

Figure 3-17. Using Breakaway Mode

1. The destination and source statuses are listed under **Destinations** and **Sources**, respectively. You can use the adjustment knobs to scroll through these lists.
2. The destinations are displayed in the top row of LCD buttons. The source statuses for these destinations are displayed in the bottom row of LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of destination and source statuses.
3. The Command Status line prompts you to select one or more destinations.
4. The Mode bar indicates that the router is now in Destination Selection mode.

To select the destination(s) that you want to use in the breakaway crosspoint take, do one of the following:

- Press the LCD button of each routing destination you want to use for the crosspoint.

OR

- Use a knob to scroll through the list of displayed **Destinations**, and then press the knob to select a destination.

Step 2: Enabling Breakaway Mode

After you select the destinations, the display and LCD buttons appear similar to Figure 3-18.

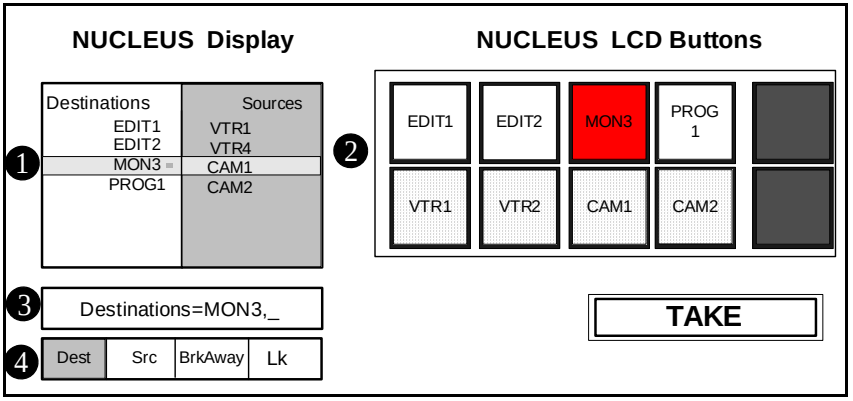

Figure 3-18. Selecting Destinations

1. A bullet appears beside the selected routing destination(s).
2. The LCD buttons for the selected destinations change to orange.
3. The selected routing destinations are listed in the Command Status line.
4. The Mode bar indicates that the routing panel is in Destination Selection mode.

To complete your destination selection and enable Breakaway mode, follow these steps:

1. To accept the selected destinations for a breakaway take, press the **TAKE** button.
2. To enable Breakaway mode, press the selection button below **BrkAway**.

Step 3: Selecting Levels

After you have enabled Breakaway mode, the NUCLEUS display and LCD buttons appear similar to Figure 3-19.

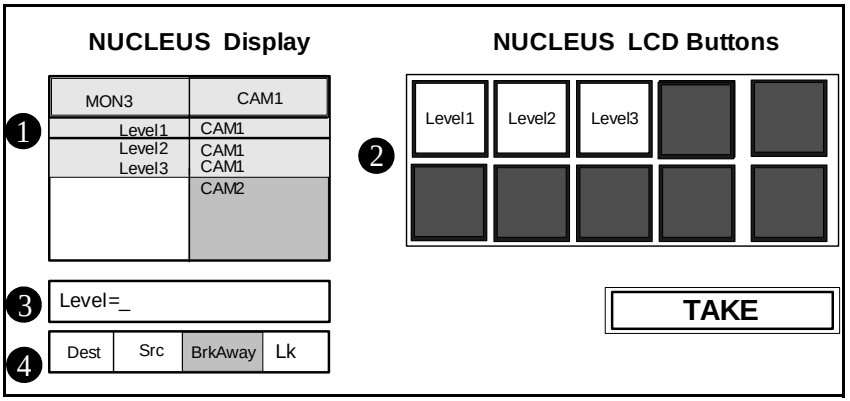

Figure 3-19. Selecting Levels

1. The available levels and level statuses are listed under the destination and source names.
2. The available levels are displayed by the LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of levels.
3. The Command Status line prompts you to select a level.
4. The Mode bar indicates that the routing panel is in Breakaway mode.

To select level(s), do one of the following:

- Press the LCD button that displays the levels that you want to use for the breakaway switch.

  OR

- Use a knob to scroll through the list of available levels, and then press the knob to select the levels that you want to use for the breakaway switch.

Note

If you select more than one level in this step, the level will be routed to the same selected source (see next step).

Step 4: Accepting Level Selection

After you have selected the desired breakaway levels, the display and LCDs appear similar to Figure 3-20.

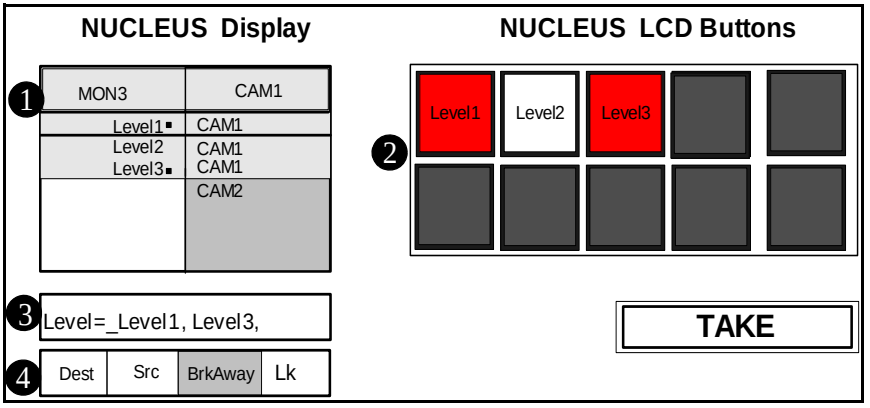

Figure 3-20. Accepting Level Selection

1. The selected levels are highlighted in the list.
2. The available sources are displayed by the LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of sources.
3. The Command Status line displays your selected levels.
4. The Mode bar indicates that the routing panel is in Breakaway mode.

To accept the selected levels, and continue to source selection, press the **TAKE** button.

If you want to change your level selection, press the **Exit** button, and repeat "Step 3: Selecting Levels" on page 73.

Step 5: Selecting a Source

After accepting the levels for the crosspoint take, the display and LCD buttons appear similar to Figure 3-21.

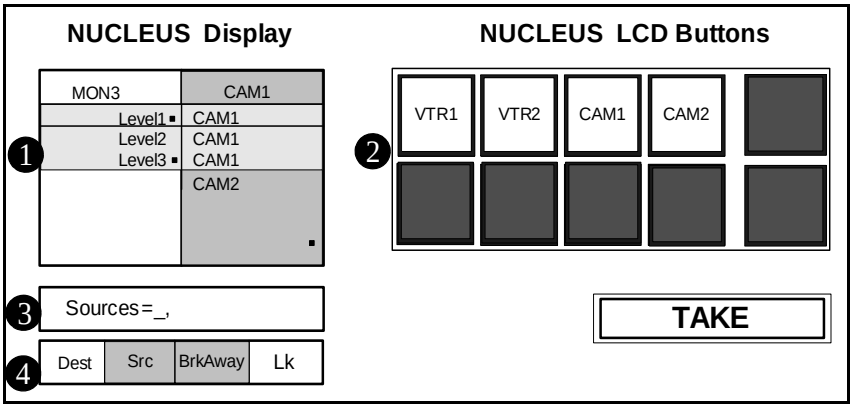

Figure 3-21. Selecting a Source

1. Bullets appears beside the levels that are to be routed to the selected source.
2. The available sources are displayed by the LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of sources.
3. The Command Status line prompts you to select a source.
4. The Mode bar indicates that the router is still in Breakaway mode and Source Selection mode.

To select a source for the selected levels of the breakaway switch, do one of the following:

- Press the LCD button of the routing source you want to use for the crosspoint.

  OR

- Use a knob to scroll through the **Sources** list, and then press the knob to select a source.

Step 6: Accepting the Selected Source

After you select the source, the display and LCDs appear similar to Figure 3-22.

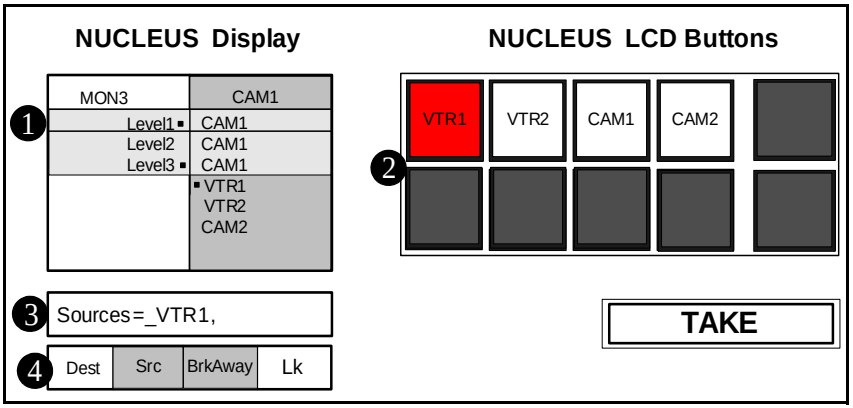

Figure 3-22. Accepting the Selected Source

1. Bullets still appear beside the selected levels and the selected source.
2. The selected source LCD button turns orange.
3. The Command Status line displays the selected a source.
4. The Mode bar indicates that routing panel is in Source Selection mode (and Breakaway mode).

To accept the source for the breakaway take, press the **TAKE** button. To change your source selection, press the **Exit** button.

Step 7: Executing the Breakaway Take and Selecting Additional Levels

After you have selected the levels and sources for the breakaway take, the display and LCDs appear similar to Figure 3-23.

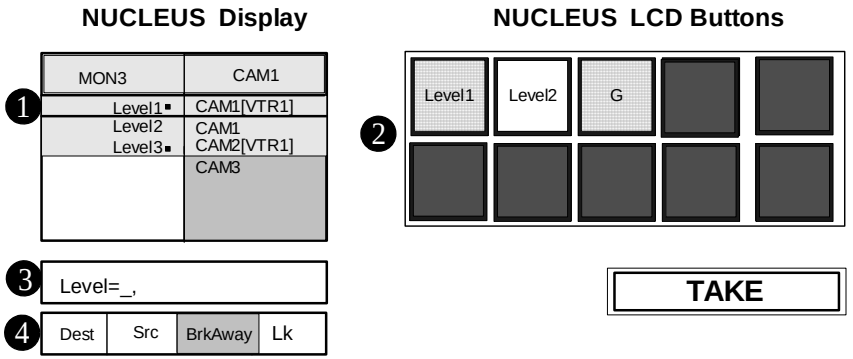

Figure 3-23. Executing the Breakaway Take

1. Bullets still appear beside the selected levels. The new breakaway sources are display the new breakaway sources in brackets [VTR1] under the current source.
2. The LCD buttons of the levels that are to be routed to the selected source have a mesh pattern.
3. The Command Status line prompts you to select another level.
4. The Mode bar indicates that routing panel is in Breakaway mode.

You can either select another level (and breakaway source for the level), or you can complete the breakaway with the currently selected levels and source. To continue, do one of the following:

- To complete the breakaway take for the selected levels and source, press the **TAKE** button.

  OR

- To select another level and source for a second breakaway take, press the LCD button, or use a knob to select the level for the second breakaway take.

  OR

- To cancel the level selection, press the number pad's **Delete** button.

  After you selected additional levels for a second breakaway take, To complete another level and source selection, follow "Step 4: Accepting Level Selection" on page 74 to "Step 7: Executing the Breakaway Take and Selecting Additional Levels" on page 77.

Workflow 5: Executing Salvos with NUCLEUS

If the Router System Control View that you used to create your routing panel included pre-established router salvos, you can use NUCLEUS's Salvo mode to execute them.

Salvo mode works the same in NUCLEUS regardless of the way you have configured your routing panel. For example, if the routing panel is configured as a single bus type router, you can execute a salvo that includes crosspoint takes to multiple destinations.

Note

You can create new salvo presets on the control panel, and then execute them using NUCLEUS' preset buttons. Salvo presets are not associated with the salvos included in a Router System Control View. You cannot execute salvo presets using Salvo mode. For more information about creating salvo presets, see "Using Salvo Learn Mode" on page 86.

For information about creating salvos for your router system, see your *RouterWorks Router Control Software Reference Guide*.

The following sections illustrate and describe how to execute a salvo. In the example, the routing panel has been configured as an X/Y device routing panel with discrete port selection. The process of using Salvo mode with single bus and multi bus routing panels is similar to the one provided below. Any exceptions are noted.

Step 1: Accessing Salvo Mode

After you select a routing panel, the display and LCD buttons appear similar to Figure 3-24.

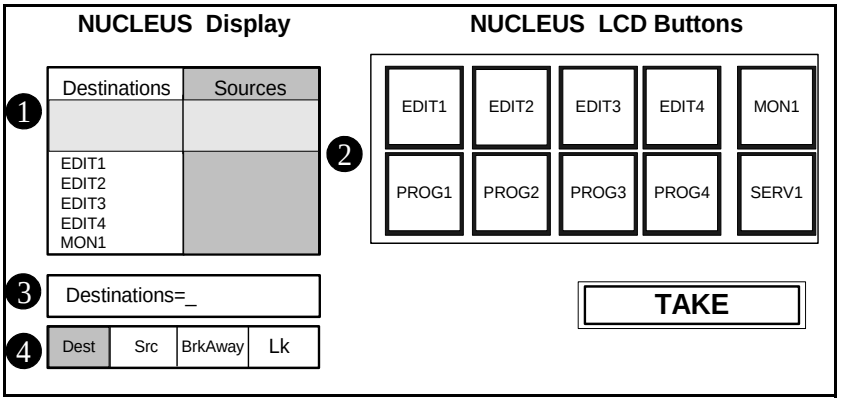

Figure 3-24. Accessing Salvo Mode

1. Available destinations are listed under **Destinations**. Use the adjustment knobs to scroll through the list.
2. The available destinations are displayed on the LCD buttons. Use the page down (**Pg Dn**) and page up **(Pg Up**) buttons to navigate through the pages of destinations.
3. The Command Status line prompts you to select a routing destination.
4. The Mode bar indicates that the router is now in Destination Selection mode, meaning that it is ready to accept your destination selection.

To access Salvo mode, press the **Shift** button, and then press the selection button under **Salvo**.

Step 2: Selecting a Salvo

In Salvo mode, the display and LCD buttons appear similar to Figure 3-25.

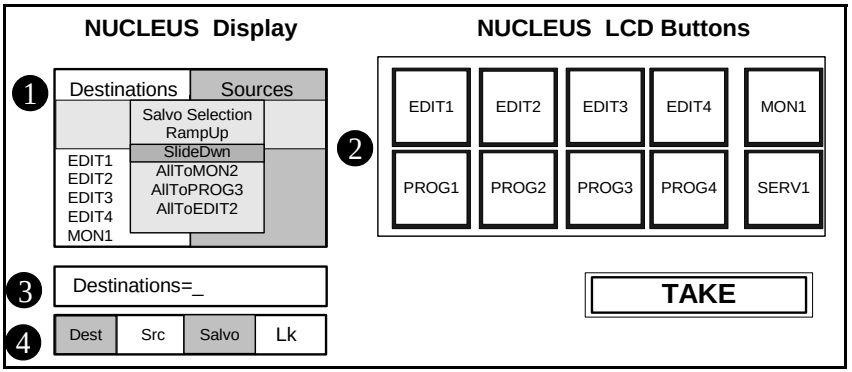

Figure 3-25. Selecting a Salvo

1. The **Salvo Selection** list appears in the display.
2. The available destinations are displayed on the LCD buttons. Use the page down (**Pg Dn**) and page up (**Pg Up**) buttons to navigate through the pages of additional destinations.
3. The selected destination is listed in the Command Status line.
4. The Mode bar indicates that routing panel is in Destination Selection mode and in Salvo mode.

To select a salvo, follow these steps:

1. Use a knob to scroll through the **Salvo Selection** list.
2. To execute the select salvo, either press the **TAKE** button or press the adjustment knob.

After the salvo is executed, the salvo window closes and you return back to the routing panel display.

Using the Preset Buttons

You can configure NUCLEUS' preset buttons to select preset destinations and sources as well as execute salvo presets created by Salvo Learn mode. When these presets are saved to the control panel, they can be recalled for a crosspoint take whenever the configuration is accessed.

A preset button has a red and a green LED that indicate 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 3-3 describes the meaning of the preset button LEDs.

Table 3-3. 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 a preset.

You can retrieve destinations and sources (as well as execute salvos) either by using the preset buttons or by using the control panel's **Options** menu. For information about destination, source, and salvo presets, see the following sections:

- For saving and retrieving parameter destination and source presets using the preset buttons, "Saving Destination and Source Presets" on page 82.
- For information about saving destination and source presets using the **Options** menu, see "Deleting and Renaming Destination and Source Presets" on page 84.
- For information using presets to create salvos with Salvo Learn mode, see "Using Salvo Learn Mode" on page 86.

Saving Destination and Source Presets

Destination and source presets can only be saved using NUCLEUS' preset buttons. Presets can, however be retrieved using either a preset button or the **Options** menu. The following sections describe how to save destination and source presets.

Note

Destination and source presets can only be deleted and renamed using the **Options** menu's **Preset/Unity** sub-menu. For information about deleting and renaming presets, see "Deleting and Renaming Destination and Source Presets" on page 84.

To save a preset destination or source to a preset button, follow these steps:

1. Select the destination(s) or source that you want to save to the preset. To do this, do one of the following:
   - Press the LCD button of each routing destination or source you want to save.

     OR
   - Use a knob to scroll through the list of displayed **Destinations** and **Sources**, and then press the knob to select the destination(s) or source you want to save.

Note

Make sure that NUCLEUS is in Destination Selection mode when saving a preset destination and in Source Selection mode when saving or retrieving a preset source. For more information, see "Routing Panel Operational Modes" on page 50.

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

   The **Save Preset** box is displayed, indicating that the destination or source preset is being saved.

   A green LED on the preset button is now on, indicating that the button has a saved preset.

Note

To use this preset button to save a different destination or source, the existing preset must be deleted using the **Options** menu. You can also use the **Options** menu to rename your destination or source preset. For information about deleting and renaming a destination or source preset, see "Deleting and Renaming Destination and Source Presets" on page 84.

Retrieving Destination and Source Presets

Destination and source preset can be retrieved either by pressing the preset button to which the salvo was saved, or by using the **Options** menu. The following sections describe how to retrieve presets using the preset button and by using the **Options** menu.

Make sure that NUCLEUS is in Destination or Source Selection mode before you try to retrieve a destination or source preset. For more information, see "Routing Panel Operational Modes" on page 50.

Retrieving a Destination or Source Preset Using the Preset Buttons

Preset buttons that are configured with destination, source, or salvo presets display a green LED (For information about salvo presets, see "Using Salvo Learn Mode" on page 86.).

To retrieve a destination or source preset using a preset button, follow these steps:

1. While in either in Destination mode or Source selection mode, press the preset button to which the destination or source is saved.

   The **Load Preset** displays the preset's name.

2. To load the preset, press the button a second time.

   The preset button now displays a green and a red LED indicating the preset has been retrieved.

Retrieving Destination and Source Presets Using the Options Menu

You can use the **Options** menu to retrieve destination and source presets that were saved using a preset button. You cannot save presets using the **Options** menu. To retrieve a preset, follow these steps:

1. Depending on whether you want to retrieve a destination or source preset, make sure that NUCLEUS is in Destination Selection mode or Source Selection mode respectively.
2. Press the **Option** button.
3. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.
4. From the presets list, select the preset that you want to retrieve, and then press **Enter**.
5. Select **Retrieve**, and then press **Enter**.

   The **Load Preset** displays the preset's name.
6. To retrieve the preset, press the **Enter** or **TAKE** button.

Deleting and Renaming Destination and Source Presets

Destination and source presets can only be deleted and renamed using the **Options** menu's Preset/Unity sub-menu.

To access the **Preset/Unity** menu, follow these steps:

1. Press the **Option** button.
2. Select **Preset/Unity**, from the list. and then press **Enter**.
3. Select the preset that you want to delete or rename, and press **Enter**.

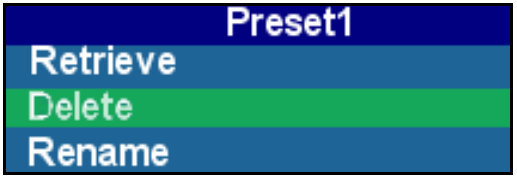

Figure 3-26. Deleting and Renaming Presets

Deleting a Destination or Source Preset

To delete a preset, follow these steps:

1. From the select preset menu, select **Delete**, and then press **Enter**.

   The **Delete Preset** box is displayed, indicating that the preset is to be deleted.

2. To confirm, press **Enter** again.
3. Press **Exit** to go back to the **Preset/Unity** menu.

Renaming a Destination or Source Preset

To rename your preset, follow these steps:

1. From the select preset menu, select **Rename**, and then press **Enter**.

   The **Rename Preset** box is displayed, indicating that the preset is to be deleted.

2. In the **Rename** box, use the  and  buttons to move to the character position, and then use a knob to select a new character. You can use up to 14 characters for a preset name.
3. Press **Enter** to save your new preset name.
4. Press **Exit** to go back to the **Preset/Unity** menu.

Using Salvo Learn Mode

You can use Salvo Learn mode to create salvo presets directly on the control panel, and then execute them using NUCLEUS' preset buttons. A salvo is a list of predefined crosspoint operations that occur simultaneously. Salvo presets are not associated with salvos included in a Router System Control View. For information about executing salvos that are included in a Router System Control view, see "Workflow 5: Executing Salvos with NUCLEUS" on page 78.

Salvos are saved using NUCLEUS' preset buttons, but can be executed using either a preset button or the **Options** menu. You can also use the **Options** menu to delete and rename salvo presets. See the following sections for information about using Salvo Learn mode.

- "Creating Salvos Using Salvo Learn Mode"
- "Executing a Salvo Preset" on page 88
- "Deleting and Renaming Salvo Presets" on page 89

Creating Salvos Using Salvo Learn Mode

Before you create a salvo preset, NUCLEUS must be in Destination Selection mode with no destinations selected. To create a salvo using Salvo Learn mode, follow these steps:

1. To put NUCLEUS in Destination Selection mode with no destinations selected, press the selection button below **Dest**, and then press the **Delete** button.
2. Press, and then hold the preset button you want use to execute your salvo until the control panel beeps (approximately three seconds).

   A message appears telling you that NUCLEUS is operating in Salvo Learn mode. The LEDs of the selected preset button begin to flash. While in Salvo Learn mode, NUCLEUS records your selected destination and source crosspoints, and then executes the take when the salvo preset button is pressed.
3. Select the destination(s) you want to include in your salvo by doing one of the following:
   - Press the LCD button of each routing destination, and then press the **TAKE** button.

     OR

- Use a knob to scroll through the list of displayed **Destinations,** and then press the knob to select the destination(s), and then press the **TAKE** button.

4. To include a breakaway take in your salvo, press the selection button below **BrkAway**.

   If you do not want to include a breakaway take in your salvo, go to step **6** to select a source.

5. Select the level(s) you want to include in your salvo by doing one of the following:

   - Press the LCD button of each level, and then press the **TAKE** button.

     OR

   - Use a knob to scroll through the list of displayed **Levels,** and then press the knob to select the level(s), and then press the **TAKE** button.

6. Select the source you want to include in your salvo by doing one of the following:

   - Press the LCD button of the source, and the press the **TAKE** button.

     OR

   - Use a knob to scroll through the list of displayed **Sources,** and then press the knob to select the source, and then press the **TAKE** button.

   

   Note

   You can make multiple breakaway takes in the salvo. Either select another level and source, or press **TAKE**.

7. Press the **TAKE** button.

8. Press, and then hold the preset button again (the LEDs of the selected preset button should no longer be flashing).

   After you have finished defining your salvo preset, the panel exits Salvo Learn mode.

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

To execute your salvo preset, you can now use either the preset button to which the salvo has been saved, or the **Options** menu. Salvos can only be deleted using the **Options** menu. See "Executing a Salvo Preset" for information about executing salvos. For information about deleting or renaming salvos, see "Deleting and Renaming Salvo Presets" on page 89.

Executing a Salvo Preset

You can execute a salvo preset that was created using Salvo Learn mode whenever the configuration is accessed. Salvo presets can be executed either by pressing the preset button to which the salvo was saved, or by using the **Options** menu. The following sections describe how to execute a salvo using the preset button and by using the **Options** menu.

Executing a Salvo Preset Using the Preset Buttons

Preset buttons that are configured to execute salvos display a green LED. To execute a salvo preset using a preset button, follow these steps:

1. Press the preset button to which the salvo is saved.

   The **Load Preset** displays the salvo's name.
2. To load the salvo, press the preset button a second time.

   The preset button now displays a green and a red LED, indicating the salvo is ready has been executed.

Executing a Salvo Using the Options Menu

You can use the **Options** menu to can execute salvo presets that were created using Salvo Learn mode. You cannot save or create salvos using the **Options** menu. To execute a salvo, follow these steps:

1. Press the **Option** button.
2. From the **Options** menu, select **Preset/Unity**, and then press **Enter**.

3. From the presets list, select the salvo preset that you want to execute, and then press **Enter**.
4. Select **Retrieve**, and then press **Enter**.

   The **Load Preset** displays the salvo's name, and then executes the salvo.

Deleting and Renaming Salvo Presets

Salvos can only be deleted and renamed using the **Options** menu's **Preset/Unity** sub-menu.

To access the **Preset/Unity** menu, follow these steps:

1. Press the **Option** button.
2. Select **Preset/Unity**, from the list. and then press **Enter**.
3. Select the salvo preset that you want to delete or rename, and then press **Enter**.

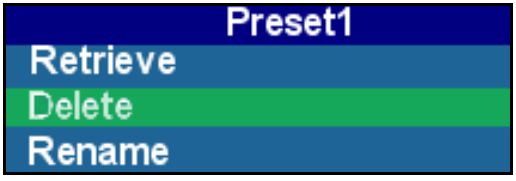

Figure 3-27. Deleting and Renaming Salvo Presets

Deleting a Salvo Preset

To delete your salvo preset, follow these steps:

1. From the select preset menu, select **Delete**, and then press **Enter**.

   The **Delete Preset** box is displayed, indicating that the preset is to be deleted.
2. To confirm, press **Enter** again.
3. Press **Exit** to go back to the **Preset/Unity** menu.

Renaming a Salvo Preset

To rename your salvo preset, follow these steps:

1. From the select preset menu, select **Rename**, and then press **Enter**.

   The **Rename Preset** box is displayed, indicating that the preset is to be deleted.

2. In the **Rename** box, use the  and  buttons to move to the character position, and then use a knob to select a new character. You can use up to 14 alphanumeric characters for a preset name.
3. Press **Enter** to save your new preset name.
4. Press **Exit** to go back to the **Preset/Unity** menu.

Using a NUCLEUS Home Location

You can configure NUCLEUS to navigate directly to a predefined Home location in the routing panel. You can set one NUCLEUS Home location for each routing panel. The advantage of defining a NUCLEUS Home location for your routing panel is that you can quickly access a source or multiple destinations and levels for a crosspoint take.

When a NUCLEUS Home location is saved on the control panel, you can use NUCLEUS' designated **Home** button (**SHIFT**+ ) to navigate directly to the location.

 Note

Configured Home locations are only associated with the control panel that they are created on. This means that Home locations cannot be transferred to other NUCLEUS control panels.

Saving and Retrieving a Home Location

You can use the NUCLEUS' designated **Home** button (**SHIFT**+**5**) to save and retrieve a predefined Home location in your routing panel.

Saving a Home Location

To save a Home location, follow these steps:

1. Navigate to the routing panel level that you want to use as your NUCLEUS Home location.
2. Press the **SHIFT** button.

   The **SHIFT** button should now flashes.

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

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

You can now use the Home button to immediately load this Home location from anywhere in the routing panel.

Retrieving a Home Location

To retrieve a Home location, follow these steps:

1. Press the **SHIFT** button.

   The **SHIFT** button should now flashes.

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

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

Locking and Protecting Destinations

You can use the Lock and Protect feature to prevent unexpected/unwanted changes to a selected routing destination(s). Locking or protecting a destination ensures that the NUCLEUS configuration that enabled this feature has exclusive control of the routing destination. Within the CCS network/routing network, the address of the NUCLEUS configuration is used to identify the control panel that has this exclusive control. When a destination is locked, the source and destination connection is maintained and cannot be changed until it is unlocked by the panel that locked it. When a destination is protected, only the control panel that protected the destination can control it.

On NUCLEUS, the Mode bar indicates whether a selected destination is locked or protected. Table 3-4 shows the destination lock and protect indicators.

Table 3-4. Destination Lock and Protect Status

Lock/Protect Status	Mode Bar Indicator
All selected destinations are unlocked	
All selected destinations are locked	
At least one of the selected destinations is/are locked	
All selected destinations are unprotected	
All selected destinations are protected	
At least one of the selected destinations is/are protected	

By default, the Lock and Protect feature is enabled when you create the NUCLEUS configuration. For information about disabling the Lock and Protect feature, see “Setting Control Panel Options” on page 31.

The following sections describe how to lock or protect a destination.

Locking or Protecting a Destination

To lock or protect a destination, follow these steps:

1. Use the LCD buttons or a scroll knob to select the destination(s) that you want to lock or protect.
2. Depending on whether you want to lock or protect the selected destination(s), do one following:
   - To lock the selected destinations, press the selection button below **Lk** (on the Mode bar).

     OR
   - To protect the destination, press the **Shift** button, and then press the selection button below **Pr** (on the Mode bar)

   The Mode bar indicates that the selected destination(s) are locked or protected (see Table 3-4 on page 93 for details).

Unlocking or Unprotecting a Destination

To unlock or unprotect a destination, follow these steps:

1. Use the LCD buttons or a scroll knob to select the locked or protected destination(s).
2. Depending on whether you want to unlock or unprotect the selected destination(s), do one following:
   - To unlock the selected destinations, press the selection button below **Lk** (on the Mode bar).

     OR
   - To unprotect the destination, press the **Shift** button, and then press the selection button below **Pr** (on the Mode bar).

   The Mode bar indicates that the selected destination(s) are unlocked or unprotected (see Table 3-4 on page 93 for details).

You can enable the force-unlock feature when destinations need to be controlled by another control panel. To force-unlock a destination, select it, and then press and hold the selection button below **Lk** for five seconds. When you release the button, the destination is unlocked.

Disconnecting Destinations

You can use the Disconnect feature to disconnect a destination from any sources to which it is connected. Disconnecting destinations works when one or more of the destinations are currently selected.

To disconnect a destination, follow these steps:

1. To select the routing destination(s) you want to disconnect, do one of the following:
   - Press the LCD button of each routing destination you want to disconnect.

     OR
   - Use a knob to scroll through the list of available destinations, and then press the knob to select the destination you want to disconnect.
2. Press the **TAKE** button.
3. To access Disconnection mode, press the **Shift** button.

   The Mode bar indicates that Disconnect mode is accessible.
4. Press the selection button below **Discon**, and press the **TAKE** button.
5. To disconnect the selected destinations, press the **TAKE** button a second time.

   The display indicates the selected destinations are no longer connected to a source.

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