



NV9601

Control Panel

User's Guide



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NV9601 Control Panel—User’s Guide

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Note

Return Material Authorization (RMA) required for all returns.

Change History

The table below lists the changes to the Control Panel User's Guide.

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2.0	29 Mar 09	15703	Rewritten, with format change	DEM

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Miranda is in compliance with EU Directive RoHS 2002/95/EC governing the restricted use of certain hazardous substances and materials in products and in our manufacturing processes.

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This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

Warning

Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any service other than that contained in the operating instructions unless you are qualified to do so.

Symbols and Their Meanings



The lightning flash with arrowhead symbol within an equilateral triangle alerts the user to the presence of dangerous voltages within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle alerts the user to the presence of important operating and maintenance/service instructions.



The Ground symbol represents a protective grounding terminal. Such a terminal must be connected to earth ground prior to making any other connections to the equipment.



The fuse symbol indicates that the fuse referenced in the text must be replaced with one having the ratings indicated.



The presence of this symbol in or on Miranda equipment means that it has been designed, tested and certified as complying with applicable Underwriter's Laboratory (USA) regulations and recommendations.



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General Warnings

A warning indicates a possible hazard to personnel which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Heed all warnings on the unit and in the operating instructions.
- Do not use this equipment in or near water.
- This equipment is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- Do not wear rings or wristwatches when troubleshooting high current circuits such as the power supplies.
- To avoid fire hazard, use only the specified fuse(s) with the correct type number, voltage and current ratings as referenced in the appropriate locations in the service instructions or on the equipment. Always refer fuse replacements to qualified service personnel.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Have qualified service personnel perform safety checks after any service.

General Cautions

A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- When installing this equipment, do not attach the power cord to building surfaces.
- To prevent damage to equipment when replacing fuses, locate and correct the problem that caused the fuse to blow before re-applying power.
- Use only the specified replacement parts.
- Follow static precautions at all times when handling this equipment.
- This product should only be powered as described in the manual. To prevent equipment damage, select the proper line voltage on the power supply(ies) as described in the installation documentation.
- To prevent damage to the equipment, read the instructions in the equipment manual for proper input voltage range selection.
- Some products include a backup battery. There is a risk of explosion if the battery is replaced by a battery of an incorrect type. Dispose of batteries according to instructions.
- Products that have (1) no on/off switch and (2) use an external power supply must be installed in proximity to a main power output that is easily accessible.



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1. Introduction

The NV9601 is an X-Y/multi-destination (MD) control panel. Operators select buttons on the panel to display corresponding lists, such as all devices in a category. Operators can then select items in a list to perform a task related to that item. For example, an operator can select a destination from a list of devices, then select a source, and proceed to press Take to complete a route.

To understand how control panels work, it is important to know certain configuration concepts, such as levels and categories. If you are unfamiliar with these concepts, it is recommended that you review [About Levels, Level Sets and Level Mapping](#) on page 4 and [About Categories](#) on page 6.

Control panels are configured using the NV9000-SE Utilities. This manual discusses overall operation only. For configuration tasks and information, see the NV9000-SE Utilities User's Guide.

Product Overview

The NV9601 panel can be either hardware or virtual (software). The hardware version is 2RU high (3.5 inches, 88.9mm). The virtual version of the NV9601 runs on a computer (see [Panel Requirements](#) on page 2).

Both the hardware panel and virtual panel have identical front interfaces. Unique to the hardware panel are rear connections to a system controller or Ethernet switch and power.



Figure 1-1. NV9601 Control Panel, Hardware (Front view)



Figure 1-2. NV9601 Control Panel, Virtual (Front view)

The front of the panel features a central display area. This area displays lists of devices or menu options. Up to eight lines can appear in the display area at any one time, and each line may contain up to four fields of eight characters each. Each set of eight lines that appear in the display area creates a “page.” If a list has more than 8 lines of text, additional pages can be viewed by using the Page Up and Page Down buttons to scroll forward and back.

The front of the panel also features 45 buttons. Buttons display either in amber or green. In general, amber indicates that the panel is in multi-destination (MD) mode or in destination selection mode.

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Modes of Operation

Green indicates that the panel is in X-Y mode or source selection mode. Buttons only light up when their related functions are active.

The buttons are programmable and enable source selection, destination selection and function control. Buttons legends indicate a button's function.

The functions that a control panel can perform are determined by the configuration. Control panels are configured using the NV9000-SE Utilities. For configuration tasks and information, see the NV9000-SE Utilities User's Guide.

Panel Requirements

The hardware version of the NV9601 requires:

- Power supplied through one AC power connection (90-130/180-250 VAC, 50/60Hz) located on the rear of the panel.
- A controller, such as the NV9000, which runs on proprietary hardware connected to the control panel through an Ethernet switch (see the NV9000 Controller User's Guide).
- NV9000-SE Utilities configuration software (see the NV9000-SE User's Guide).

The virtual version of the NV9601 requires:

- A PC running Microsoft Windows 2000, XP, Vista or a Macintosh running Mac OS X, version 10.4x or newer, with JRE (Java runtime environment) 1.5.0 4.
- A monitor with 1,152 horizontal pixels or greater.
- A controller, such as the NV9000, which runs on proprietary hardware connected to the control panel through an Ethernet switch (see the NV9000 Controller User's Guide).
- NV9000-SE Utilities configuration software (see the NV9000-SE User's Guide).

Modes of Operation

The NV9601 control panel has several modes of operation. Depending on the configuration, the modes for routing signals are X-Y mode only, MD mode only or both X-Y and MD. This manual assumes that the control panel allows both X-Y and MD routing. A single button labeled XY/MD toggles between the modes.

Other modes provide access to salvos, control panel settings and system information.

X-Y Mode

X-Y mode provides full router control of sources and destinations. Any single source (X) can be routed to any single destination (Y). In this mode, to perform a "take," (1) choose a destination, (2) choose a source, and (3) press Take to complete the route (see [X-Y Mode – Take](#) on page 50).

In X-Y mode there is full control of all router levels. A level typically represents a single signal type used in your system, such as AES or HD (see [About Levels, Level Sets and Level Mapping](#) on page 4). The display area shows up to eight levels. If additional levels are available, press Page Up or Page Down to view.

Optional breakaway levels may also be selected. A breakaway is a subset of levels that may be selected for a "take" from the list of available valid levels. For example, if a destination device is

assigned to levels HD, SD and TC, you can select to route to only HD. By default, all valid levels are selected for a “take.” To route to only a subset—to “breakaway”—the levels must be specifically selected. For more information, see [Breakaways](#) on page 33.

Multi-Destination (MD) Mode

MD mode enables you to route one or more sources to multiple destinations at one time. In this mode, you (1) choose a destination, (2) choose a source, and (3) using the Hold button select additional destinations. When Take is pressed, the source is routed to all selected destinations (see [Multi-Destination Mode – Take](#) on page 51).

The display area shows only the primary level so that additional destinations can be viewed instead. Takes are “all levels” and breakaways cannot be performed. “All levels” means that when Take is pressed, the control panel automatically matches as many of the source levels as possible to the available destination levels; a subset of levels cannot be chosen. Individual destinations are selected by using the selection buttons located below the display area.

Up to eight destinations appear in the display area at any one time. Use the Page Up and Page Down buttons to view any additional destinations.

Other Modes

The control panel has modes for managing control panel settings (Menu mode), executing salvos (Salvo mode), setting up the panel (Setup mode), and viewing system messages (Info mode).

Menu Mode

Pressing the Menu button places the NV9601 in Menu mode. Usually Menu mode is used for changing panel settings, such as assigning the panel an ID number or controlling button brightness. For more information, see [Viewing and Updating Panel Settings](#) on page 19.

In this mode, the following menu options are available:

- 1 Software. Displays information about the application loaded onto the control panel.
- 2 User. Displays the user name and user ID.
- 3 Panel. Displays panel name, ID, configuration file, host name, and IP address.
- 4 Illumination. Changes the illumination of the buttons. See [Changing Button Illumination](#) on page 20.
- 5 Salvo. Enables you to start, pause or cancel a salvo record; save a salvo, or clear a local salvo. See [Salvos](#) on page 47.
- 6 Force Release. Enables or disables the ability to force a release of locks or protects. See [Force Release](#) on page 39.
- 7 [not used]
- 8 Exit. Press to exit the currently displayed menu screen. If at the initial screen, pressing the button exits menu mode.

Setup Mode

This mode activates automatically when the NV9601 is first powered up, but is still disconnected from the network. In this mode, the Firmware menu appears and the NV9601’s panel ID can be set. For instructions on setting a panel ID, see [Initializing the Control Panel](#) on page 27.

1. Introduction

Additional Configurable Functions

Salvo Mode

Pressing the Salvo button places the control panel in Salvo mode. A salvo is a predetermined set of actions that are executed in sequence once the salvo is activated. Up to eight salvos show in the display area at one time. Use the Page Up and Page Down buttons to view additional salvos. For more information on creating and running salvos, see [Salvos](#) on page 47.

Info Mode

Pressing the Info button places the NV9601 in Info mode. This mode displays specific system messages in the display area, such as error messages, lock or protect status, tieline information, user ID, etc. When there are system messages ready for viewing, the Info button becomes lit. If there are messages that require more than eight lines of text, the Page Up and Page Down buttons become active enabling the operator to scroll and view additional messages.

Additional Configurable Functions

The NV9601 can be configured to perform the following additional functions:

- Return to a previous source. See [Previous Source](#) on page 44.
- Route to a free source. See [Free Source](#) on page 39.
- Return to a pre-defined (or default) state. See [Default State](#) on page 38.
- Perform breakaways. See [Breakaways](#) on page 33.
- Route to multiple destinations. See [Multi-Destination Mode – Take](#) on page 51.
- Run system salvos and local salvos. See [Salvos](#) on page 47.
- Force release of locked or protected sources or destinations. See [Force Release](#) on page 39.
- Perform broadcast routing in X-Y mode. See [Broadcast Mode](#) on page 34.
- Create level mapping. See [Level Mapping](#) on page 40.
- Change system settings, such as Panel ID or User ID. See [Viewing and Updating Panel Settings](#) on page 19.

About Levels, Level Sets and Level Mapping

A level can either be virtual or physical. A virtual level typically represents a signal type used in your system, such as AES or HD. A physical level represents a physical division and is specific to a router or device. In this manual, the term “level” always refers to a *virtual* level. Unlike physical levels that represent physical divisions and are specific to a router or device, virtual levels are signal type abstractions that can be applied to all routers and devices. A virtual level is, however, *linked with* a physical level. (In other word, it *maps* to a physical level).

Because a single device can manage several types of signals as output or input, each of which is a unique level, a number of levels can be combined together as a “level set”. The level sets usually define the devices in your facility. In general, devices in one level set may not be routed to devices in a different level set. However, inter-level mappings can be defined that override this restriction.

1. Introduction

About Levels, Level Sets and Level Mapping

Inter-level set mapping is used when more than one level set is defined and devices in different level sets need to be connected. Inter-level mapping works by telling the control system exactly how to connect different level sets.

Note

All virtual levels in the affected level sets *must* be in the same physical router (i.e., all signals must be on the same crosspoint module) or tielines are needed.

For information on mapping level sets through the control panel, see [Level Mapping](#) on page 40.

Example:

A system has two router crosspoint matrices, SDI and AES, with physical levels defined as follows:

Level	Inputs	Outputs
1 SDI	1–288	1–576
2 AES	1–512	1–512

In this system are 3 slow-motion cameras and 3 slow-motion VTRs. Each device has 3 SDI signals, phases 1–3, on 3 connectors. Two level sets are defined, one for High Definition video (HD) and one for slow-motion (SLOMO):

Level Set	Virtual Level	Phys Level
HD	SDI	SDI
	AES 1/2	AES
	AES 3/4	AES
	AES 5/6	AES
	AES 7/8	AES

Level Set	Virtual Level	Phys Level
SLOMO	SDI	SDI
	Phase1	SDI
	Phase2	SDI
	Phase3	SDI
	AES 1/2	AES
	AES 3/4	AES
	AES 5/6	AES
	AES 7/8	AES

To route signals from one level set to the other, an inter-level set mapping can be defined as follows:

Inter-Level Set Mapping	Upstream Level Set	Downstream Level Set	Upstream Virtual Levels	Downstream Virtual Levels
HD2SLOMO	HD	SLOMO	SDI	Phase1
			SDI	Phase2
			SDI	Phase3
			AES 1/2	AES 1/2
			AES 3/4	AES 3/4
			AES 5/6	AES 5/6
			AES 7/8	AES 7/8

The mapping shows that virtual level SDI can be connected to phase 1, 2, or 3 of the VTRs. It also shows that the 4 AES levels map identically across the two level sets.

1. Introduction

About Categories

About Categories

Devices can be organized into general categories, usually based on a common feature, such as a device type (monitor, VTR, DVD, etc.) or location (demo room, Facility A, etc.). Category button titles are abbreviated, such as MON for monitor. Certain control panel buttons are assigned a category to help narrow the list of devices from which a source or destination is selected. For example, if the device is a VTR, selecting the VTR category button returns a list of only VTR devices.

Category buttons may include a combination of letters and numbers to more easily identify the correct category. Consider a facility that has 3 VTRs and 2 monitors in each of 20 rooms on 5 floors of 3 buildings. A well thought out combination of characters can identify the device groups by building number, floor number, and room number making it easier to select the device you want.

For information on using the category button, see [Category and Keypad Buttons](#) on page 13.

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Display Area

	Preset	Status	Lev/Dest
Mode	DPS-3	VTR10	SD
Destination Name	DPS-3	VTR10	AES 1/2
Category Name	DPS-3	VTR10	AES 3/4
Index number	DPS-3	VTR10	TC
			+ CTRL

Figure 2-2. Entry Column in LED Display Area

- **Mode**—The first line displays the current mode of operation. In this case, X-Y. The second line displays the selected destination.
- **Destination Name**—The name of the currently selected destination device. When switching from MD mode to X-Y mode, the destination listed is the last one selected in X-Y mode. If no destination is selected ‘No Dest’ displays.
- **Category Name**—Displays the currently selected category.
- **Index Number**—Displays the unique index number assigned to a device. Index numbers are created and assigned using NV9000-SE Utilities (see NV9000-SE Utilities User’s Guide).

Column 2 – Preset

The ‘Preset’ column, directly to the right of Column 1, lists the source devices that are preset (pre-selected) for each level, as shown in Figure 2-2. In other words, the preset sources that belong to the same level as the destination device and can therefore be routed to that destination.

The *destination*, not the source, determines which levels are valid for a “take.” Whenever a new source is preset, the system automatically checks for matching levels from those listed in the ‘Lev/Dest’ column (Column 4). By default, when Take is pressed, those levels associated with the sources listed in the ‘Preset’ column will be included in the “take.”

Please note:

- In “breakaway” mode, a different source may be preset for each level. See [Breakaways](#) on page 33.
- If dashes display, the preset is not valid for a destination.
- A + (plus sign) indicates that additional information is available. See [Information](#) on page 40.
- A ‘L’ indicates that a device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a device has been protected. See [Protect](#) on page 45.

Column 3 – Status

The ‘Status’ column appears to the right of the ‘Preset’ column, as shown in Figure 2-2 on page 8. This column shows the sources currently routed for the destination listed in Column 1. An * (asterisk) indicates that the status is unavailable.

Please note:

- A ‘L’ indicates that a device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a has been protected. See [Protect](#) on page 45.

Column 4—Lev/Dest

The ‘Lev/Dest’ column is the farthest right-hand column. In X-Y mode, this column lists the valid levels for the destination listed in Column 1. The row on which the level appears in the column reflect how the destination device is defined within the level set when being configured (see [About Levels, Level Sets and Level Mapping](#) on page 4).

The squares that appear to the far-right of Column 4 are flags, as shown in Figure 2-2 on page 8. When present, a flag indicates that the level is selected and a preset can be made to that level. By default, all levels are flagged until deselected. When Take is pressed, only those levels that are flagged are included in the route. To remove or add a flag, press the associated selection button (see [Selection Buttons](#) on page 12).

For example, *Example 1* lists destination device VTR102, an HD device. The valid levels for that destination are HD, AES 1/2, AES 3/4, TC and CTRL. In *Example 2*, destination device VTR24 is a SD device. Notice how the valid levels change to SD, AES 1/2, AES 3/4 and TC.

Example 1

Preset	Status	Lev/Dest	Flag
X - Y	VTR05	HD	■
Dest	VTR05	SD	■
VTR102	VTR05	AES 1/2	■
		AES 3/4	■
	VTR05	+ TC	■
	VTR05	CTRL	■

Example 2

Preset	Status	Lev/Dest	Flag
X - Y	-----	HD	
Dest		SD	■
VTR24	VTR05	AES 1/2	■
	VTR05	AES 3/4	■
	VTR05	+ TC	■
	-----	CTRL	

Figure 2-3. Examples of Destinations and Valid Levels in Display Area

Please note:

- A + (plus sign) indicates that additional information is available. See [Information](#) on page 40.
- An ‘I’ indicates that an “implicit” lock has been applied. This only relates to bi-directional machine control data routing because if a lock is applied in one direction, it must also be applicable in the reverse direction.
- A ‘L’ indicates that a destination device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a destination device has been protected. See [Protect](#) on page 45.

Multi-Destination Mode

In MD mode you can route one or more sources to multiple destinations. Up to eight destinations are listed per “page” in the display area. The status shown is only for each destination’s *primary* level: the first level of the level set as determined by the configuration. The data that appears in

2. Using the Control Panel

Display Area

each column of the display area provides information about destination devices, selected sources and current status of devices.

Column 1 — (No Title)

Column 1 displays information about the mode, status and data entry:

	Preset	Status	Lev/Dest
Mode	MultiDest	DPS-1	VTR01
Category Name	VTR05	DPT-2	VTR02
Index number		VTR01	VTR03
Current Page		DPS-2	VTR04

Figure 2-4. Column 1 in the Display Area

- Mode—The first line displays the current mode of operation, MD.
- Category Name—Displays the currently selected category.
- Index Number—Displays the unique index number assigned to a device. Index numbers are created and assigned using NV9000-SE Utilities (see NV9000-SE Utilities User’s Guide).
- Current Page—Displays the currently selected page. Up to 64 pages, with 8 destinations each, can be configured. Press Page Up and Page Down to scroll through the pages.

Column 2—Preset

The ‘Preset’ column, directly to the right of Column 1, lists the source(s) that are preset for the selected destination(s). When Take is pressed, the selected source(s) are routed to the selected destination(s).

Please note:

- There is no “breakaway” in MD mode.
- A ‘L’ indicates that a device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a device has been protected. See [Protect](#) on page 45.

Column 3 – Status

The ‘Status’ column appears to the right of the ‘Preset’ column. This column shows the sources currently routed to the selected destination. However, only the sources for the *primary* level display.

Please note:

- A + (plus sign) indicates that additional information is available. See [Information](#) on page 40.
- An * (asterisk) indicates that the status is unavailable.
- A ‘L’ indicates that a device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a device has been protected. See [Protect](#) on page 45.

Column 4 – Lev/Dest

The ‘Lev/Dest’ column is the farthest right-hand column. This column lists destination devices. The squares that appear to the far-right are “enable” flags. When present, a flag indicates that the destination is selected. Presets can only be routed to flagged destinations. Selection keys light for

all selectable destinations. To remove or add a flag, press the associated selection key. Selection keys can only enable/disable one destination at a time.

When Take is pressed, only those destinations with a flag are included in the switch.

Please note:

- A ‘L’ indicates that a destination device has been locked. See [Locks](#) on page 42.
- A ‘P’ indicates that a destination device has been protected. See [Protect](#) on page 45.
- An ‘I’ indicates that an “implicit” lock has been applied. This only relates to bi-directional machine control data routing because if a lock is applied in one direction, it must also be applicable in the reverse direction.

Salvo Mode

A salvo is a set of pre-recorded activities such that when a salvo is executed, all pre-recorded activities occur in the exact sequence recorded. Salvos are helpful when a certain action, such as a specific “take,” is repeated over and over. Instead of having to create the switch sequence anew each time, the operator can press the Salvo button and select and execute a salvo.

Salvo is a distinct mode, separate from X-Y or MD mode. When Salvo is pressed, salvo menu options appear in the display area. For more information on salvos and Salvo mode, see [Salvos](#) on page 47.

Button Use

The front of the NV9601 features several sets of buttons. Buttons are grouped by the task they perform: selection, function or navigation. The buttons are 24.5mm × 23.5mm with the text portion about 20mm × 16.5mm. The hardware version has buttons that retract when pressed; the software version has buttons that are selected by clicking on the button with a mouse pointer or a touch screen.

The NV9601 panel buttons have both green and amber LEDs. Each button has dual color capability, and each provides either low or high tally.

Each button features the following:

- Number or Text—Each button displays either a number, up to three lines of text, or both. For instructions on creating button text, see [Creating Button Legends](#) on page 27.
- Color—The buttons display in either amber or green:
Amber denotes a destination or destination function; green indicates a source or a source function.
- Brightness—Brightness is managed through Menu mode (see [Changing Button Illumination](#) on page 20).

How a button appears—its “state”—depends on context. Most buttons remain unlit when their functions are disabled. For example, if Menu is pressed to place the control panel in Menu mode, all buttons turn off except the buttons used to select menu options.

2. Using the Control Panel

Button Use

Selection Buttons

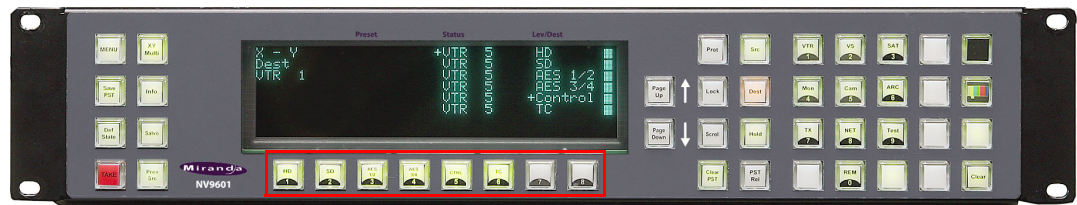
Below the display area are eight numbered buttons, as shown in Figure 2-5 on page 12. These buttons correspond to the eight lines of text that appear in the display area. Pressing a button selects the corresponding line of text. Lines of text are numbered from top to bottom with the topmost line corresponding to number one, and so on. For example, pressing 2 selects the line second from the top.

These buttons are dedicated and cannot be assigned other functions by the configurator.

Selection buttons are toggles. Press once to select and press again to deselect.

What is selected when a button is pressed changes depending on the mode of operation:

- In X-Y mode, the buttons select levels.
- In MD mode, the buttons select destinations.
- In Menu mode, the buttons select menu options.
- In Salvo mode, the buttons select salvos.



Selection Buttons

Figure 2-5. NV9601 Selection Buttons, outlined in red (Front View)

Function Buttons

There are two sets of function buttons, located to the left and right of the display area, as shown in Figure 2-6. Function buttons are typically configured to perform specific tasks, such as placing the panel in an operation mode.

A typical layout uses function buttons 1 through 8 for system commands, such as Menu, XY/MD, Info, Salvo, Take and so on. Functions buttons 9 through 16 are typically configured as source and destination functions, such as Src Mode, Dest Mode, Hold and so on.

All buttons in this section are configurable, but a Take button must be included on the panel usually in one of these two sections. For a description of each button, see [Button Legends and Functions](#) on page 14.



Function Buttons 1 - 8

Function Buttons 9 - 16

Figure 2-6. NV9601 Function Buttons, outlined in red (Front View)

Page Scroll Buttons

There are two buttons located to the right of the display area. Next to each button is a printed arrow, pointing either up or down, as shown in Figure 2-7.

Because the display area only shows eight lines at a time, if the current selected mode features more than eight items, the information displays on additional pages (see [Display Area](#) on page 7). Press Page Up to scroll up to a previous page and Page Down to scroll down to the next page. Scroll buttons do not become active (remain unlit) until there is a need to scroll up or down. For example, if there are only six lines to view, the Page Up and Page Down buttons remain unlit.

These buttons are dedicated and cannot be assigned a different function by the configurator.



Scroll Buttons

Figure 2-7. NV9601 Page Scroll Buttons, outlined in red (Front View)

Category and Keypad Buttons

When facing the front of the control panel, there is a set of 20 buttons located in the right-hand area of the panel, as shown in Figure 2-8. Ten of the buttons are numbered (0 through 9). These buttons can be used as a standard keypad for numeric data entry. These buttons are also typically used for selecting categories. The buttons usually have both a number and a category abbreviation.

The remaining buttons can also be configured as category buttons, but typically the eight buttons to the right of the ten keypad buttons are assigned additional functions. For a description of possible button functions, see [Button Legends and Functions](#) on page 14.

Category buttons are available in X-Y or MD mode. Category buttons are used as the first step in selecting a source or destination device. The category a button selects may be different if in source selection mode or destination selection mode. For more information about categories in general, see [About Categories](#) on page 6.

Numeric Entry

When using the ten keypad buttons for numeric data entry, entries appear in Column 1 in the display area. If entering a PIN number, asterisks display to ensure privacy. The display is limited to eight digits.



Category Buttons

Figure 2-8. NV9601 Category and Keypad Buttons, outlined in red (Front View).

2. Using the Control Panel

Button Use

Button Legends and Functions

The legend that appears on a button varies with the button's function. Button legends are created by the administrator configuring the panel and can have up to three lines of text, 8 characters long. One or more lines of a button legend can be blank. Because space is limited, the text is often an abbreviation, such as "DEMO3" for demonstration device number 3.

Buttons are also color-coded, either amber or green. In most cases, buttons are high-tally (bright) when active or selected. Buttons are low-tally (dimmed) when inactive or deselected. Buttons that are dark either have no function or are momentarily disabled. For example, the Take button is disabled until you are ready to perform a route. Then, the Take button goes high tally.

Some button functions are dedicated and never change, such as Default State or Chop. Other functions are variable and display lists of corresponding information in the display area. For example, selecting a category button generates a list of all devices assigned to that category, the name of which appears in the display area in the first column, under the destination name.

The following is a list of button types that may display on the control panel. For more information about a particular button, see the related topic listed:

Button	Mode	Description	Related Topic
Broadcast	XY only	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported for the first slave. Pressing the Brd cst button turns off the "source is master" (Src Mstr) button and vice versa. The default button legend is Brd cst.	Broadcast Mode on page 34
Category	XY, MD	Selects a category and displays the name. A category button displays with a source category or a destination category. After selecting the Scroll button (XY mode), press Page Up or Page Down to scroll through the list as needed. The button legend is the name of the category. Green is typically used for sources and amber for destinations.	Category on page 36
Chop	XY only	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing; not used during normal operation. The default button legend is Chop.	Chop on page 36
Clear	XY, MD	Clears a single entry in a sequence of entries from the panel. The panel remains in its current mode of operation. Multiple presses may be used to back out of ("undo") multiple selections. The default button legend is Clear.	Clear on page 37
Clear Preset	XY, MD	Erases all present entries in the panel's 'Preset' column, while leaving the panel in its current operation mode (X-Y or MD). This button also switches off the Save Preset mode. The default button legend is Clear Pst.	Clear Preset on page 38
Default State	XY, MD	Returns the panel to its default state; similar to a "soft reset." Only the panel itself is reset; no routes are effected. The default button legend is Def State.	Default State on page 38

2. Using the Control Panel

Button Use

Button	Mode	Description	Related Topic
Destination Lock	XY, MD	This button is a toggle and either sets or removes a “lock” on a selected destination device. The lock can only be removed at the panel that originally set the lock, at another panel that has the same panel ID, or by a panel that has “force release” enabled. The default button legend is Dst Lock.	Locks on page 42
Destination Mode	XY, MD	This button initiates the destination selection sequence and lights all valid category buttons in amber. The default button legend is Dst Mode.	Destination Mode on page 38
Destination Protect	XY, MD	This button is a toggle and either sets or removes a “protect” on a selected destination device. The protect can only be removed at the panel that originally set the protect, at another panel that has the same panel ID, or by a panel that has Force Release enabled. The default button legend is Dst Prot.	Protect on page 45
Free Source	XY, MD	Selects a phantom device that can be used to release or “free” devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. Use the free source as if it were a source. The default button legend is Free Src.	Free Source on page 39
Hold	XY, MD	This button is a toggle and activates and deactivates Hold mode. You can activate or deactivate Hold mode at any time during a MD selection or a breakaway selection (X-Y only). Hold mode retains your selections between “takes.” If ‘Hold Preset Default’ is set in the configuration, Hold becomes active when the panel is restarted or the Default State button is pressed. The default button legend is Hold Pst.	Hold on page 40
Information	XY, MD	This button is a toggle that activates and deactivates Info mode to display system message in the display area. A “+” sign indicates messages are present. The Info button lights up when messages are available for viewing. The default button legend is Info.	Information on page 40
Level Map	XY, MD	Cross-connects levels (typically in the same physical router). Level mappings are typically used for AES levels. The level map mode is cancelled when the next normal “take” is performed involving the selected devices. The default button legend is Level Map.	Level Mapping on page 40
Lock	XY, MD	This button is a toggle that either sets or removes a “lock” on the current source or destination device. The lock can be removed only at the panel that originally set the lock, or by a panel that has “force release” enabled. The default button legend is Lock.	Locks on page 42
Menu	XY, MD	Places the control panel in Menu mode and displays a list of menu options in the display area.	Viewing and Updating Panel Settings on page 19
Page Down	XY, MD	This button displays a previous or next page (list) in the display area. This button becomes active when there are more than eight lines of text. The default button legend is Page Down and Page Up.	
Page Up	XY, MD		

2. Using the Control Panel

Button Use

Button	Mode	Description	Related Topic
Panel Lock	XY, MD	This button prevents accidental changes to the panel settings. When the panel is locked, the button array becomes blank except for the Panel Lock button. The button is a toggle: pressing the Panel Lock button again reverts the panel to its previous state. The default button legend is Panel Lock.	
Preset Release	XY, MD	Used to remove presets. The default button legend is Pst Rel.	Preset Release on page 44
Previous Source	XY, MD	This button presets the previously selected source for the current destination. You must press Take to restore the source. This function is useful when you make a route in error. Note: The button does <i>not</i> restore the previous destination. If you have changed the destination and press “previous source”, the take will not restore the previous route. The default button legend is Prev Src.	Previous Source on page 44
Protect	XY, MD	Sets or removes a “protect” on a current source or destination device. The protect can only be removed at the panel that originally set the protect, or by a panel that has “force release” enabled. The button legend is Prot.	Protect on page 45
Salvo	Salvo	Setups up a salvo. To execute the salvo, Take must be pressed. The button legend is the salvo’s mnemonic.	Salvos on page 47
Save Preset	XY, MD	This button is a toggle: it enables or disable “save preset” mode. When this function is enabled, whatever is preset is retained after a “take”. When the function is disabled, whatever is on preset is discarded after a “take”. If configured, “save preset” becomes active when the panel is restarted or the “default state” button is pressed. The default button legend is Save Pst.	
Scroll	XY	In X-Y mode, activates the Page Down and Page Up buttons when a category has been selected. Devices belonging to the category are listed in the display area. The default button legend is Scroll.	Scroll on page 49
Source Master	XY, MD	Reverses the direction of data routing. During data (i.e., control) level takes, this button makes the source device the master. Otherwise, the destination is the master. For example, if the destination is the master and the source is the slave, pressing a “source is master” button reverses their roles. The “source is master” button is used to initiate “broadcast” control routes. Pressing the “source is master” button turns off the “broadcast” button and vice versa. The default button legend is Src Mstr.	Source Master on page 49 Broadcast Mode on page 34
Source Mode	XY, MD	This button initiates the source selection sequence, and lights all valid category buttons in green. The default button legend is Src Mode.	Source on page 49

2. Using the Control Panel

Rear Connections (Hardware Version Only)

Button	Mode	Description	Related Topic
Take	XY, MD	Switches the selected preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column in the display area lists the new device(s). The default button legend is Take.	Take on page 50
Undefined	—	An undefined button cannot be used and remains unlit.	
XY / MD Mode	XY, MD	Switches the panel between X-Y and multi-destination modes. The button is green for X-Y mode and amber for multi-destination mode. The default button legend is XY MD.	Modes of Operation on page 2

Rear Connections (Hardware Version Only)

The rear of the NV9601 has three connections:

- Power—One IEC connection to an AC power source (90-130/180-250 VAC, 50/60Hz).
- Ethernet—One '10 Base T' connection to connect the control panel to an Ethernet switch. This enables the control panel to be part of a network and connected to a computer running the configuration application (NV9000-SE Utilities) and a controller (such as the NV9000).
- Diagnostic—One 'RS232 Diagnostic' DB9 connection for performing diagnostics. This is reserved for Miranda use only.

Figure 2-9 shows the rear connections:

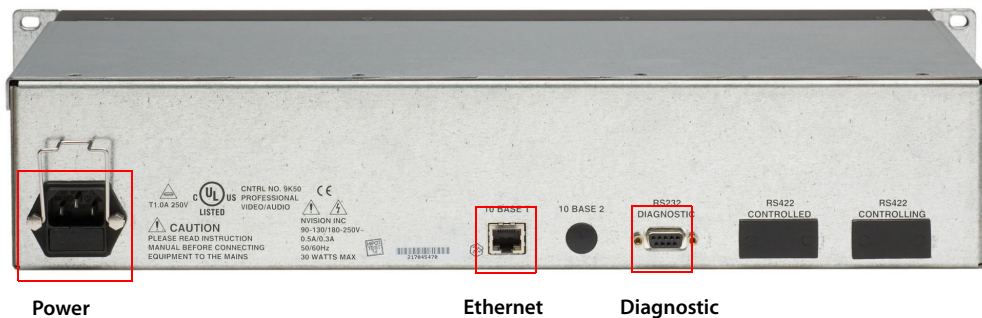


Figure 2-9. NV9601 (Rear)

For instructions on connecting to the rear connections, see [Setting Up the Control Panel for Use](#) on page 23.

2. Using the Control Panel

Panel Display and Behaviors

Panel Display and Behaviors

The person configuring the panel can choose between different default behaviors. Some of these behaviors are obvious from the appearance—or lack—of certain buttons on the control panel. Others you will need to communicate with the configurer for clarification.

The following is a list of the most common default behaviors:

Default Behaviors	Description
Default Mode	The panel starts in a selected default mode, either X-Y or MD.
Default Destination	The panel uses a specified device as the destination after a reset.
X-Y or MD Data Routing Mode	Automatic—If a data level is involved in the route, connects the source to the destination(s), regardless of who is currently using the devices. Semi-automatic (X-Y mode only)—If the device to be acquired is already in use on the data level, alerts the operator—but allows the operator to perform the route by pressing Take a second time. If Take is not pressed again, the route is cancelled. If the device is not in use, the take occurs automatically. Manual—All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.
Number of MD destinations	The maximum number of multi-destination entries allowed. 512 maximum; the default is 8 in increments of 8.
User Programmable ID	The Panel ID can be changed locally at the control panel itself.
Save Preset Default	The Save Preset button becomes active when the panel reverts to its default state (after a Default State button is pressed, or when the panel is restarted).
Hold Preset Default	Makes the Hold button active when the panel reverts to its default state (after a Default State button is pressed, or when the panel is restarted).
Source Master Default	The source is set as the controlling (or “master”) device permanently. By default, ‘destination is master’ is selected. (This option is specifically for use with an NVISION series data router or port switch.)
Hide Unconfigured Sources	The names of all source devices that are not presently configured are hidden. The panel displays asterisks instead.
Deselect All Destinations and Turn off Hold after Take	“Hold” normally has two functions: (1) allow multiple selections prior to a take and (2) retain the selections after the take with “hold” remaining in effect. When this option is selected, pressing Hold performs the first function—allow multiple selections prior to a take—but not the second. Hold deselects all destinations and turns itself off after the take.
Jump to Multidest Selection when switching to XY	If the operator has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.
Flip-flop source to preset after Take	Swaps the preset source and the previously assigned source for this destination after a “take.”

3. Viewing and Updating Panel Settings

Using the Menu mode, certain panel settings can be changed or panel information viewed. The Menu mode enables you to view software information, user names and identification numbers, configuration file and host name details. In addition, the Menu mode allows you to force a release of a lock or protect (if enabled) and change button illumination.

Viewing Software Information

The Software menu option displays software information, including the server software identification number, the software used to boot up the panel, and the software used by the panel system itself. In general, this information is used for administrative purposes.

How to view software information

- 1 Press the Menu button. The display area lists the menu options.
- 2 Press selection button 1 for ‘Software’ (see [Selection Buttons](#) on page 12).
- 3 The following appears:
 - Server—the server application identification.
 - Panel Boot—the application used to boot up the panel when first started.
 - Panel Application—the application used to manage commands from the controller.
- 4 Press selection button 8 to exit the Software menu and return to the main menu page.
- 5 Press selection button 8 again to exit Menu mode.

Viewing User Information

The User menu option displays user name and ID. This information is used when determining who has access to panel functions and/or who is the “owner” of a lock or protect (see [Locks](#) on page 42 and [Protect](#) on page 45). In general, this information is used for administrative purposes.

How to view user information

- 1 Press the Menu button. The display area lists the menu options.
- 2 Press selection button 2 for ‘User’ (see [Selection Buttons](#) on page 12).
- 3 The following appears:
 - User—the user name.
 - User ID—the identification number assigned to the user name.
- 4 Press selection button 8 to exit the User menu and return to the main menu page.
- 5 Press selection button 8 again to exit Menu mode.

3. Viewing and Updating Panel Settings

Viewing Panel Information

Viewing Panel Information

The Panel menu option displays panel information, including panel name, ID, configuration file, host name, and IP address. This information is used to identify the control panel when creating or updating panel configurations.

To update the panel ID, you may need a personal identification number (PIN). If you do not have a PIN number, and you have administrative access rights, contact your system administrator. For instructions on updating a panel ID, see [Initializing the Control Panel](#) on page 27.

How to view panel information

- 1 Press the Menu button. The display area lists the menu options.
- 2 Press selection button 3 for 'Panel' (see [Selection Buttons](#) on page 12).
- 3 The following appears:
 - Panel Name—the name assigned to the control panel.
 - Panel ID—the identification number assigned to the panel.
 - CFG File—the configuration file currently being run on the control panel.
 - Host Name—the name of the server acting as "host" for the control panel.
 - IP Address—the IP address for the control panel itself.
- 4 Press selection button 7 to exit the Panel menu and return to the main menu page.
- 5 Press selection button 8 again to exit Menu mode.

Changing Button Illumination

The Illumination menu option changes the brightness of the control panel buttons from low to high. Select 'Low' or 'High' as instructed and then use the Page Up and Page Down buttons to increase or decrease illumination.

How to change button illumination

- 1 Press the Menu button. The display area lists the menu options.
- 2 Press selection button 4 for 'Illumination' (see [Selection Buttons](#) on page 12).
- 3 The following appears:
 - Low 1—illumination from 0% to 90% brightness (Low must be set 10% lower than High).
 - High 2—illumination from 10% to 100% brightness.
- 4 Select 1 for low or 2 for high and press Page Up to increase illumination or Page Down to decrease illumination (see [Page Scroll Buttons](#) on page 13).
- 5 Press selection button 7 to cancel without saving changes.
 - Or
 - Press selection button 8 to save and exit the Illumination menu and return to the main menu page.
- 6 Press selection button 8 again to exit Menu mode.

Changing Virtual Panel IP Address or Panel ID

Virtual control panels require the entry of the primary system controller's IP address. This enables the control panel and controller to "see" each other. In addition, the ID of the panel configuration needs to be inputted in order to have the configuration applied to the panel. Both pieces of information are entered during initial setup (see [How to install and setup the virtual version of the control panel](#) on page 24). However, this information can be updated at any time, as needed.

How to changes the IP address or Panel ID for a virtual panel

- 1 Launch the virtual control panel (see [How to launch a virtual panel](#) on page 26).
- 2 Right-click anywhere in the black background area of the virtual control panel to display a pop-up menu.
- 3 Select 'Disconnect'. This disconnects the panel from the system controller.
- 4 Select 'Set Parameters'. The 'Panel Options' dialog box appears:

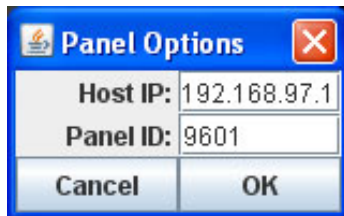


Figure 3-1. Panel Options Dialog Box

- 5 Enter the 'Host IP' address of the primary system controller or the virtual IP used by the redundant pair of controllers (if configured).
- 6 Enter the 'Panel ID' of the panel configuration you want to use for the virtual panel (see NV9000-SE Utilities User's Guide or contact your system administrator).
- 7 Open the pop-up menu again and select 'Connect'. If the IP address and Panel ID are valid, the panel buttons and display area show the correct information and the control panel is connected to the router control system. You cannot change the IP address or Panel ID once the panel is connected. To change it, you must disconnect first.

3. Viewing and Updating Panel Settings

Changing Virtual Panel IP Address or Panel ID

4. Installation

When setting up the NV9601 for the first time, if the hardware version, you must mount the control panel and connect power. For both the hardware version and virtual version, you need to install necessary software and initialize the panel. It is recommended that after initial installation tasks are complete, that you test the control panel to ensure that it is working properly.

Package Contents

If you have ordered one or more NV9601 control panels from Miranda, inspect the shipping container for damage. If you find any container damage, unpack and inspect the contents. If the contents are damaged, notify the carrier immediately.

As you unpack the shipping container, look for the packing slip and compare it against the contents to verify that you received everything as ordered. If anything is missing (or if you find equipment damage unrelated to shipping), please contact Miranda. For Technical Support, refer to [Technical Support Contact Information](#) on page iii.

Depending on your order, the NV9601 items that can ship include:

- One or more NV9601 control panels (either a hardware panel or a CD containing the virtual panel).
- A user's guide (this document), NV9000-SE Utilities software, and other material. You might have to obtain software and documentation through Miranda customer service.
- A quick-start guide (hard copy).
- Optional WC0053 breakout cable.

The package does not contain network cables, power cable, serial cables, or mounting screws.

You do not need to take any special precautions regarding electrostatic discharge (ESD).

This document does not address the shipment or installation of any other equipment or software that can be used in conjunction with the NV9601 (including the NV9000 system controller, NV96xx control panels, EC9700 GUI, EC9710 GUI, and configuration programs such as UniConfig or the NV9000-SE Utilities).

Setting Up the Control Panel for Use

Before using the hardware version of the NV9601, it must be situated in your facility and power and system connections made. The panel is 2RU high (3.5 inches, 88.9mm) and designed to mount in a standard EIA 19" wide (482.6mm) rack. The control panel can also be situated on any flat surface. Be sure to locate the panel within 6' (1.83 meters) of an AC power source.

For the virtual version of the control panel, be sure to have the proper computer and required operating system running before starting installation. See [Panel Requirements](#) on page 2.

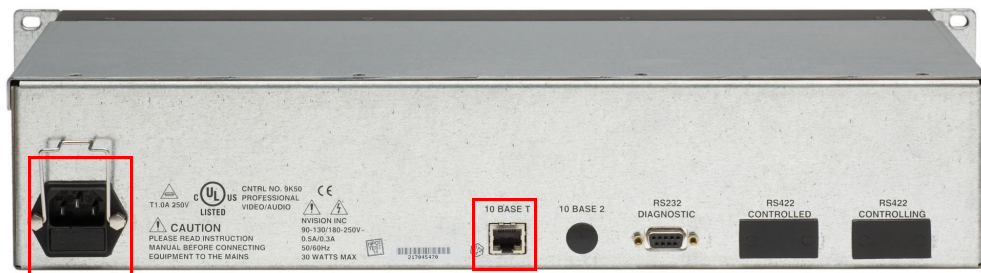
4. Installation

Setting Up the Control Panel for Use

It is not necessary to have a router connected and/or running for installation of a virtual panel or setup of a hardware panel. However, once the virtual panel is installed a router must be connected to apply settings to the virtual panel so that it can communicate with the router.

How to set up the hardware version of the control panel

- 1 Mount and secure the panel in the rack or on a flat, stable surface. If mounting the control panel in a rack, attach the panel to the rack frame using screws appropriate for your rack.
- 2 This installation procedure assumes that you have an Ethernet switch connected to the 'Panel and Router Network' port on your system controller. Facing the **rear** of the control panel, connect an Ethernet cable from the Ethernet switch to the RJ-45 port at the rear of the NV9601 panel:



Power Connection

Ethernet Connection

Figure 4-1. NV9601 Rear View

- 3 Connect the other end of the cable to the Ethernet switch to which the system controller is connected.
- 4 Facing the **rear** of the control panel, connect one end of an AC power cable to the power connection on the control panel, as shown in Figure 4-1.
- 5 Connect the other end of the power cable to a stable source of AC power (90-130/180-250 VAC, 50/60 Hz).

How to install and setup the virtual version of the control panel

Part One— Install the Application

- 1 Locate the virtual panel installation CD (SB0217-01-A1) and load it into the CD drive of the computer.
- 2 Open the appropriate directory for your computer: 'Mac Installers' or 'PC Installers'.
- 3 From the list of control panels, select and open the one you are installing.
- 4 The 'Introduction' screen appears, as shown in Figure 4-2. As directed, quit all software applications before continuing and then click Next.

4. Installation

Setting Up the Control Panel for Use

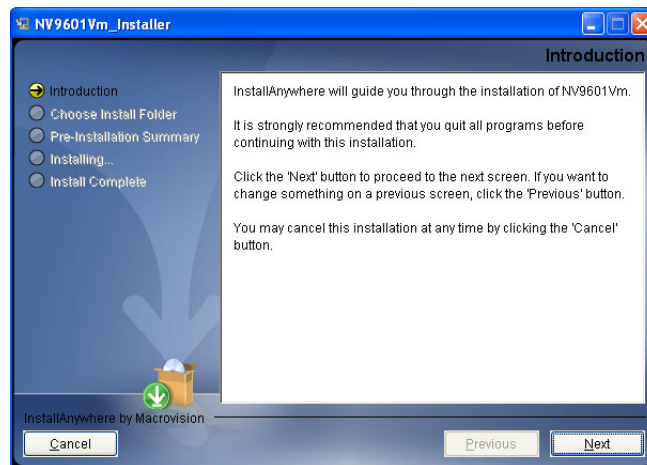


Figure 4-2. Introduction Screen

5 On the 'Choose Install Folder' screen (Figure 4-3), click Next to accept the default location that displays.

Or

Click Browse to select a new location and then click Next.

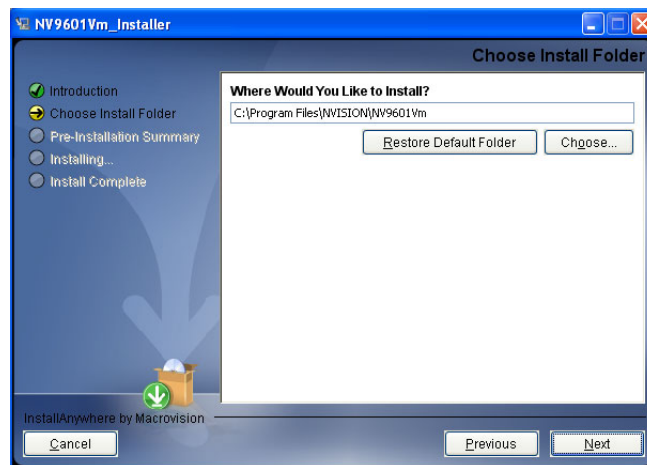


Figure 4-3. Choose a Folder Screen

6 On the 'Pre-installation Summary' screen (Figure 4-4), review the location for installation and then click Install. If the location is incorrect, click Back and update the directory location on the 'Choose Install Folder' screen.

4. Installation

Setting Up the Control Panel for Use

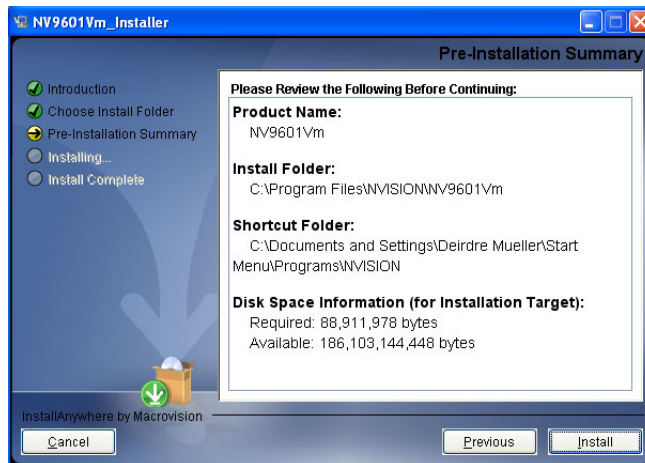


Figure 4-4. Pre-Installation Summary Screen

- 7 The installation process begins. Installation takes a few seconds. When complete the 'Installation Complete' screen appears. Click Done. The virtual control panel launches.

Part Two—Initial Setup

Note

The computer must be connected to your router control system to complete setup.

- 1 Launch the virtual control panel (see [How to launch a virtual panel](#) on page 26).
- 2 Right-click anywhere in the black background area of the virtual control panel to display a pop-up menu.
- 3 Select 'Set Parameters'. The 'Panel Options' dialog box appears:

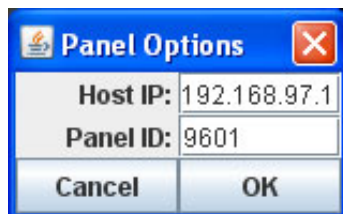


Figure 4-5. Panel Options Dialog Box

- 4 Enter the 'Host IP' address of the primary system controller or the virtual IP used by the redundant pair (if configured). Enter the 'Panel ID' of the panel configuration you want to upload to the virtual panel (see NV9000-SE Utilities User's Guide or contact your system administrator).
- 5 Open the pop-up menu again and select 'Connect'. If the IP address and Panel ID are valid, the panel buttons and display area show the correct information and the control panel is connected to the router control system. You cannot change the IP address or Panel ID once the panel is connected. To change it, you must disconnect first.

Launching, Disconnecting and Exiting a Virtual Panel

How to launch a virtual panel

Either double-click on the control panel icon on the desktop or select the control panel from the menu of software running on the computer.

How to disconnect a virtual panel

Right-click in the black background area of the virtual panel and from the pop-up menu, select 'Disconnect'.

How to exit from a virtual panel

Right-click in the black background area of the virtual panel and from the pop-up menu, select 'Exit'.

Or

Click the X in the upper right hand corner of the control panel.

Creating Button Legends

If using the hardware version of the NV9601, you can create button legends at any time using a desktop publishing application. The legends should be transparent and no larger than 0.40" × 0.40" (10mm square). A 3/8" (9.5mm) square insert allows for a little clearance. The clear plastic material used for overhead transparencies is suitable for printing legends.

Button legends that appear on the virtual version of the NV9601 are created using the NV9000-SE Utilities configuration application. For more information on updating panel configurations, see the NV9000-SE Utilities User's Guide.

For a list of default text that appears on buttons, see [Button Legends and Functions](#) on page 14.

How to create button legends for hardware panels

Gently pull the clear plastic cap from the button, insert the label in the cap, and replace the cap. The caps come off easily. No tools are required. It is recommended that you avoid using any adhesive.

Initializing the Control Panel

Before the system controller can communicate or a configuration be applied to the control panel, you must assign the control panel a unique panel ID. This task is called "initialization."

After the control panel is initialized, it can be configured using NV9000-SE Utilities and the configuration uploaded to the NV9601. When a configuration is uploaded, the panel ID entered in NV9000-SE Utilities designates the actual panel. If no actual panel has that ID, the upload cannot occur. See the NV9000-SE Utilities User's Guide for details.

There are two ways to assign a panel ID: through Setup mode (via the 'Firmware' menu) or through Menu mode. In Menu mode, a Personal Identification Number (PIN) may be required to make changes. In Setup mode, the panel ID can be changed at any time without a PIN. However, if the configuration does not allow the panel ID to be changed, the corresponding panel button does not light.

4. Installation

Initializing the Control Panel

How to assign a panel ID (initialize) when disconnected

Note

In this procedure, the control panel is disconnected from the network, but connected to power.

- 1 Disconnect the panel from the Ethernet, but keep connected to power. After approximately 30 or 40 seconds, a single button lights on the panel.
- 2 Press the button. 'Firmware Menu' appears in the display area.
- 3 Press selection button 1 for 'Panel ID' (see [Selection Buttons](#) on page 12).
- 4 'Use Keypad to change ID' appears in the display area and the keypad buttons light. (If this function has not been allowed in the configuration, the keypad buttons do not light.)
Using the keypad buttons (see [Category and Keypad Buttons](#) on page 13), enter a panel ID number and then press selection button 8 to save and clear the screen.
Or
Press selection button 7 to cancel and return to the previous screen.
- 5 Reconnect the Ethernet cable. Within a few seconds the system controller detects the control panel.

How to assign a panel ID (initialize) when connected

- 1 Press the Menu button. The display area lists the menu options.
- 2 Press selection button 3 for 'Panel' (see [Selection Buttons](#) on page 12).
- 3 The following appears:
Panel Name—the name assigned to the control panel.
Panel ID—the identification number assigned to the panel.
CFG File—the configuration file currently being run on the control panel.
Host Name—the name of the server acting as Host for the control panel.
IP Address—the IP address for the control panel itself.
Enter PIN 6.
- 4 Press selection button 6 for 'Enter PIN'.
- 5 'Use Keypad to enter PIN' appears in the display area. Using the keypad buttons (see [Category and Keypad Buttons](#) on page 13), enter your PIN number and then press selection button 8.
Or
Press selection button 7 to cancel and return to the previous screen.
- 6 Press selection button 7 to exit the Panel menu and return to the main menu page.
- 7 Press selection button 8 again to exit Menu mode.

Verification

A panel test/verification function is available when the NV9601 is disconnected from the system controller. Use it to determine the health of your NV9601.

How to test panel functions

Note

In this procedure, the control panel is disconnected from the network, but connected to power.

- 1 Disconnect the panel from the Ethernet, but keep connected to power. After approximately 30 or 40 seconds, a single button lights on the panel.
- 2 Press the button. 'Firmware Menu' appears in the display area.
- 3 Press selection button 3 for 'Test' (see [Selection Buttons](#) on page 12). The display area automatically lights up to show that all points are illuminating correctly.
- 4 Perform the following:
 - a A single button lights. Press the button. All buttons should light up in green, low tally.
 - b Press the same button again. All buttons should light up in green, high tally.
 - c Press the same button again. All buttons should light up in amber, low tally.
 - d Press the same button again. All buttons should light up in amber, high tally.
 - e Press the same button again. The 'Firmware Menu' appears.
 - f Press the same button again to exit the 'Firmware Menu'.
- 5 Reconnect the Ethernet cable. Within a few seconds the system controller detects the control panel.

4. Installation

Verification



5. Configuration

The NV9601 is configured using NV9000-SE Utilities. NV9000-SE Utilities is a separate application that displays virtual representations of the control panel. Once the control panel is configured virtually, the configuration is uploaded to the control panel the operator will use.

All configuration tasks are discussed in detail in the NV9000-SE Utilities User's Guide.

5. Configuration

6. Operation

This section is intended for the operator of the control panel. The section is organized by either task name (e.g., Breakaway) or button name (e.g., Take), and is organized in alphabetical order for quick reference.

The buttons that display on the control panel can change dramatically from panel to panel depending on the configuration. Because there is no one panel configuration, it is impossible to describe all operations in great detail. However, this section does provide general advice and specific information on the behavior of the different button types and operational modes.

For hardware control panels, the buttons can have arbitrary legends and the legend might or might not indicate its function. It is important to communicate with the configurer to find out the meaning of the buttons on your particular control panel. For virtual panels, the button legends are set in the configuration editor (NV9000-SE Utilities).

Before using the NV9601, it is recommended that you review configuration concepts (see [Introduction](#) on page 1) and panel layout and operation modes ([Using the Control Panel](#) on page 7).

Breakaways

Breakaways are only available in X-Y mode. A breakaway is when you route to a subset of available valid levels, not to all valid levels. By default, all valid levels are automatically selected when preparing for a “take.” By creating a breakaway, you route only to the levels you have individually selected. For more information, see [About Levels, Level Sets and Level Mapping](#) on page 4.

Individual levels are selected by using the selection buttons (see [Selection Buttons](#) on page 12). The buttons act as toggles, selecting or deselecting the corresponding level in the display area. After a “take”, the control panel returns to the default state in which all levels are selected. If you want to have the subset of levels selected for the breakaway retained even after Take is pressed, press Hold prior to Take to retain your presets. When the “take” is complete, your previously selected levels are held for the next session (see [Hold](#) on page 40).

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been cleared. Or, press Clear Pst to clear the sources that display in the ‘Preset’ column (see [Clear Preset](#) on page 38).

If needed, press Scroll and then Page Up and Page Down to view all devices.

For simplicity, this procedure discusses selecting a destination before a source.

6. Operation

Broadcast Mode

How to perform a breakaway

Note

Remember that the current destination appears in Column 1, the source that is routed to that destination appears in the 'Status' column, and the destination's associated levels appear in the 'Lev/Dest' column.
Press Clear at any time to undo your last selection.

- 1 Press XY/MD to place the panel in X-Y mode. The panel buttons turn green.
- 2 Select the desired destination device (If already selected, go to Step 3):
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired 'Category' button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c Select a device. Press Scroll and then Page Up or Page Down to scroll through the list of devices by index number or using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13).
The index number for the device appears in the 'Dest' field in Column 1. The levels associated with that device appear in the 'Lev/Dest' column:
- 3 Preset the desired source:
 - a Press Src Mode. All buttons associated with source selection light in green.
 - b From the display area, select those levels you want included in the "take" by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the level in the 'Lev/Dest' column. By default, all levels are included unless deselected. Selection buttons are toggles: press to select; press again to deselect.
 - c Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - d Select a device. Press Scroll and then Page Up or Page Down to scroll through the list of devices by index number or using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13).
The index number for the device appears in Column 1. The levels associated with that device appear in the 'Lev/Dest' column.
- 4 (Optional) To retain the subset of levels selected, press Hold. After the "take" is performed only the levels selected in Step 4 remain flagged rather than defaulting to all valid levels being flagged.
- 5 Press Take. The source(s) in the 'Preset' column are routed to the destination(s) listed in Column 1. The 'Preset' and 'Status' columns update to reflect the route, as shown in Figure 6-2 on page 51.

Broadcast Mode

Broadcast mode (default legend Brd cst) is only available in X-Y mode. The control panel must have Brd cst, Src Mstr and Save Prst buttons present in order to perform this function.

This mode is used to assign a "master" device and connect it to multiple "slave" devices. In this manner, a broadcast route is created. A data (control) router is required for this route. For example,

routing VTR1 to VTRs 2 through 10, and sending audio, video and control from the source (master) to all destinations (slaves). In sum, the source controls all destinations.

In this mode, the master device issues commands to all slave devices, but only one slave device (the first one assigned to the broadcast group) can communicate back to the master. All other slave devices only receive commands; no status information is sent back to the master device.

Before performing a take, verify the following:

- None of the devices to be included have a lock or protect (see [Locks](#) on page 42 or [Protect](#) on page 45).
- Ensure that the data router has been configured for “data forward” so that the source controls the destination (see the NV9000-SE Utilities User’s Guide).

There is no way to view the devices that compose a broadcast group. If another operator uses your master or primary slave device for another “take,” the entire group collapses. It is recommended that you lock or protect these devices (see [Locks](#) on page 42 or [Protect](#) on page 45).

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been cleared. Or, press Clear Pst to clear the sources that display in the ‘Preset’ column (see [Clear Preset](#) on page 38).

How to create a broadcast group

- 1 Press XY/MD to place the panel in X-Y mode. The panel buttons turn green.
- 2 Select the desired destination device (If already selected, go to Step 3):
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired ‘Category’ button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the ‘Lev/Dest’ column.

Or

Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Press Take. The device becomes the first “slave” device in the route.
- 4 Preset the desired source:
 - a Press Src Mode. All buttons associated with source selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the ‘Lev/Dest’ column.

Or

Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.

The ‘Preset’ column lists source devices that are in valid levels for routing.
- 5 Press Src Mstr to enable Source Master mode.
- 6 Press Save Prst to save the sources that display in the ‘Preset’ column. Depending on your configuration, there may be defaults that override presets whenever a new “take” is performed.

6. Operation

Category

- 7 Press Take again to complete the first link in the broadcast route, which is the master device linked to the primary slave device.
- 8 Select the next slave device by repeating Step 2.
- 9 Press Brd cst to enable Broadcast mode.
- 10 Press Take again. This action adds the slave selected in Step 8 to the broadcast group.
- 11 Repeat Steps 8 through 10 until all slave devices have been added.

How to remove a single slave device

To remove a single slave device from the group, select it as a source or destination and then route it to another device that is *not* in the group (e.g. Free Source) and then press Take.

How to clear an entire broadcast group

To clear the entire broadcast group, select the master device and route it to another device that is *not* in the group (e.g. Free Source) and then press Take.

Category

Category buttons are available in X-Y or MD mode. Category buttons are used as the second step in selecting a source or destination device (The first step is to select Destination Mode or Source Mode). Before a source or destination can be selected, the category to which it belongs must first be selected. Categories are created during configuration and are broad sets of devices grouped by a related feature, such as function or location. The control panel can only access devices that have been assigned to a category. For more information about categories in general, see [About Categories](#) on page 6. For more information on category buttons, see [Category and Keypad Buttons](#) on page 13.

When a category button is pressed, the name of the category (usually an abbreviation) appears in Column 1 in the display area. At this point either a device's index number can be entered using the keypad or a device selected from the display area using the Page Up and Page Down buttons.

Chop

The Chop button (default legend 'Chop) is only available in X-Y mode. The Chop button enables you to switch rapidly (usually within milliseconds; the rate is set in NV9000-SE Utilities) between the current source device and a preset source device for a given destination. This mode is used to test system timing and not used for normal operations.

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been cleared. Or, press Clear Pst to clear the sources that display in the 'Preset' column (see [Clear Preset](#) on page 38).

How to perform a "chop"

- 1 Press XY/MD to place the panel in X-Y mode. The panel buttons turn green.
- 2 Select the desired destination device (If already selected, go to Step 3):

- a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired 'Category' button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the 'Lev/Dest' column.
- Or
- Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Preset the desired source:
 - a Press Src Mode. All buttons associated with source selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the 'Lev/Dest' column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.

The 'Preset' column lists source devices that are in valid levels for routing.
 - 4 Press Chop to enable Chop mode.
 - 5 Select a second source by repeating Step 3.
 - 6 Press Take. The Chop mode is activated between the two sources.

How to clear a "chop"

- 1 Press Chop, ensuring that it is off (unlit).
- 2 Route any source to the destination device used in the chop, including those sources used to create the chop.
- 3 Press Take.

Clear

The Clear button (default legend Clear) is available in X-Y and MD mode. The Clear button clears the last selection action. Each button press clears one previous action, eventually clearing each action all the way to clearing the category.

When Clear is pressed:

- The last selection action is cleared.
- The panel remains in source selection (Src Mode) or destination selection (Dst Mode) mode, whichever was the last current mode.
- The panel remains in its current mode of operation: X-Y, MD or Salvo.
- Data remains in the 'Preset' column.

6. Operation

Clear Preset

Clear Preset

The Clear Preset button (default legend Clear Pst) is available in X-Y and MD mode. The Clear Pst button clears the presets that appear in the 'Preset' column and returns you to the first step in selected devices.

When Clear Pst is pressed:

- The 'Preset' column and Column 1 are cleared.
- The panel remains in its current mode of operation.
- In X-Y mode, all breakaways are cancelled because all flags are removed and the panel returned to the default mode (all levels "flagged").
- In MD mode, all destinations are deselected; all flags are removed in the 'Lev/Dest' column.

Default State

The Default State button (default legend Def State) is available in X-Y and MD mode. The Def State button returns the panel to its default state as defined in the configuration file. This function is useful when you are unsure of the panel's current state. Press Def State to return it to its initial configured state.

When Def State is pressed:

- The 'Preset' and Column 1 are cleared.
- Only the panel is reset; no routes are effected.
- All pending, but not executed "takes" are cancelled.

Destination Mode

The Destination Mode button (default legend Dst Mode) is available in X-Y and MD mode. The Dst Mode button is the first step in the destination selection process. (The second step is to select a Category.) Once Dst Mode is pressed, the panel lights change to amber and all buttons related to destination device selection light.

Destination Lock

See [Locks](#) on page 42.

Destination Protect

See [Protect](#) on page 45.

Force Release

A lock or protect can be applied to a configuration to avoid accidental changes. A forced release is when a lock or protect is removed by someone other than the person who originally set the lock. To force a release, you may need a personal identification number (PIN). If you do not have a PIN, and have administrative access rights, contact your system administrator.

How to verify and force a lock/protect release

- 1 Press Menu. The display area lists menu options.
- 2 Press selection button 6 for 'Force Release' (see [Selection Buttons](#) on page 12).
- 3 If Force Release is currently enabled, Column 1 displays 'Disable Force Release'.
Or
If Force Release is not currently enabled, Column 1 displays 'Enable Force Release'. Press selection button 1.
- 4 'Use Keypad to enter PIN' appears in the display area. You must have a personal identification number (PIN) to perform a forced release. Using the category buttons (see [Category and Keypad Buttons](#) on page 13), enter your PIN number and then press selection button 8.
Or
Press selection button 7 to cancel and return to the previous screen.
- 5 Press selection button 8 to exit the Force Release menu.
- 6 Press the selection button 8 again to exit Menu mode.

Free Source

The Free Source button (default legend Free Src) is available in X-Y and MD mode. The Free Src button is typically used to disconnect routes on the control level.

When Free Src is pressed:

- In X-Y mode, presets the designated free source for the current destination. When Take is pressed, selected levels of the free source are routed to the destination's level set and any level mapping removed.
- In MD mode, presets the designated free source for the current destination.

How to route to a free source

- 1 Press XY/MD to place the panel in the mode you want. The panel buttons turn green for X-Y mode and amber for MD mode.
- 2 Select the desired destination device(s):
For X-Y mode, see [X-Y Mode – Take](#) on page 50, Step 2.
For MD mode, see [Multi-Destination Mode – Take](#) on page 51, Steps 2.
- 3 Press Free Src. "Free" appears in the 'Preset' column in the display area for each valid level (X-Y mode) or all enabled destinations (MD mode).
- 4 Press Take. The free source is routed to the destination(s).

6. Operation

Hold

Hold

The Hold button (default legend Hold) is available in X-Y and MD mode. In X-Y mode, the Hold button retains the levels selected for a breakaway (see [Breakaways](#) on page 33). In MD mode, Hold retains one or more destination selections for a “take.” When Hold mode is off, the panel returns to the default condition.

The Hold button is a toggle. Press it once to activate Hold mode; press it again to deactivate Hold mode.

You can activate or deactivate Hold mode at any time during a MD selection or a breakaway selection. Your selection remains intact and the panel subsequently operates in Hold mode or non-Hold mode according to the Hold button state.

When Hold is pressed:

- In X-Y mode, the selected levels for a breakaway are retained after Take is pressed so that the levels do not have to be selected again.
- In MD mode, more than one destination is “held” and selected to be included in the “take.”
- In both X-Y and MD mode, Hold must be pressed *before* Take.

Information

The Info button (default legend Info) is available in X-Y and MD mode. When a “+” appears in a column in the display area it indicates that there is more information available for that item. Press Info to view additional information. Pressing Info again returns you to the previous display. Info mode also lists the virtual levels when level mapping (see [Level Mapping](#) on page 40) or the sources involved in a Chop (see [Chop](#) on page 36).

Level Mapping

Level mapping is available in X-Y mode only. Level mapping enables you to map one level to another level. Typically, level mapping is used for AES levels, for example, connecting level AES1/2 to level AES3/4 (normally AES1/2 maps to AES1/2 only). To put it another way, level mapping is a way to “remap” source virtual levels to different destination virtual levels rather than to destinations on the same level as the source. For more information on levels, see [About Levels, Level Sets and Level Mapping](#) on page 4. If the control panel does not have a Level Map button, this functionality is not available on this panel.

You can only map compatible signal (level) types. For example, you can map AES1/2 to AES5/6, but not AES1/2 to HD.

Level mappings are cancelled whenever the next normal “take” is performed involving the selected devices.

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been

cleared. Or, press Clear Pst to clear the sources that display in the ‘Preset’ column (see [Clear Preset](#) on page 38).

How to create a level mapping

- 1 Press XY/MD to place the panel in X-Y mode. The panel buttons turn green.
- 2 Select the desired destination device (If already selected, go to Step 5):
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired ‘Category’ button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the ‘Lev/Dest’ column.
Or
Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Preset the desired source:
 - a Press Src Mode. All buttons associated with source selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the ‘Lev/Dest’ column.
Or
Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
The ‘Preset’ column lists source devices that are in valid levels for routing.
- 4 Press Level Map and follow the instructions that display in Column 1, as follows:
 - a Press the corresponding selection button to ‘Select Source Level’ (see [Selection Buttons](#) on page 12). The control panel changes to Destination Mode.
 - b Press the corresponding selection button to ‘Select Destination Level’.
- 5 Press Take to execute the level mapping. A “+” appears. Press Info to see details and confirm that the mapping is correct.
Or
Repeat Step 4 to create an additional level mapping. When all levels have been mapped, press Take.

How to remove a level mapping

A level mapping is removed by performing a “take” that routes the levels to their default state. See [Take](#) on page 50.

6. Operation

Locks

Locks

A “lock” prevents *anyone*—even the user who issued the lock—from routing to the destination or source. A “protect” prevents *others* from routing to a destination or source, but not the user who created the protect. Locks and protects are useful for preventing accidental routes. For more information on “protects”, see [Protect](#) on page 45.

Locking a destination prevents any user, including the panel’s owner, from switching the locked source to any other device. Similarly, locking a source prevents any user, even the panel owner, from routing from a source device any destination.

Locks are applied by an “owner” of a panel. The owner is identified by the User Name. To users of other control panels, when a device is locked a “+” appears in the ‘Preset’ column in the display area. The user can press Info to learn which user applied the lock (see [Information](#) on page 40). If a lock was applied by the current user of a control panel, no “+” displays. To remove a lock applied by another user, Forced Release mode must be enabled. For instructions, see [Force Release](#) on page 39.

The ‘Dst Lock and ‘Lock buttons are toggles. Press the button to lock a device. Press the button again to release the lock. In addition to having a Lock button on the control panel, Lock mode must be enabled in the Panel Options (‘Enable Source Lock’; ‘Enable Destination Lock’) (see NV9000-SE Utilities User’s Guide).

Locking and Unlocking Sources

How a source is locked depends on whether you are in X-Y or MD mode. Only the user that applied the lock can remove it unless Forced Release mode has been enabled (see [Force Release](#) on page 39). Once locked, the source cannot be routed to any destinations until the source is unlocked.

When a lock is applied to a source, the following displays:

- ‘L’ in ‘Status’ column when the lock is initially set by owner at owner’s panel.
- ‘L’ in ‘Preset’ column when source is preset by owner at owner’s panel.
- ‘L+’ in ‘Preset’ column when lock set by another user.
- ‘I’ appears if applying a lock to a machine control (data) device indicating that an implicit lock has been applied.

How to lock a source in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y mode or MD mode.
 - 2 If needed, preset desired source devices:
 - a Press Src Mode. All buttons associated with destination selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the ‘Lev/Dest’ column.
- Or
- Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.

- 3 If not already in Source Mode, press Src Mode. All buttons associated with source selection light in green.
- 4 Press Lock.

How to release a locked source in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y mode.
- 2 Select the device being released:
 - a Press Src Mode. All buttons associated with destination selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the 'Lev/Dest' column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 If the lock was set by the current user:
 - If it appears in the 'Status' column, press Src and then press Lock.
 - If it appears in the 'Preset' column, press Src and then press Prst Rls.

If the lock was set by another user, the Force Release function must be enabled to perform a release (see [Force Release](#) on page 39).

Locking and Unlocking Destinations

How a destination is locked depends on whether you are in X-Y or MD mode. Only the user that applied the lock can remove it unless Forced Release mode has been enabled (see [Force Release](#) on page 39). Once locked, no sources can be switched to the locked destination until the destination is unlocked.

When a lock is applied to a destination, a 'L' appears next to the device in the 'Lev/Dest' column.

How to lock a destination in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y or MD mode.
- 2 If needed, select a destination device:
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the 'Lev/Dest' column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Press 'Dst Lock' to lock the destination device.

6. Operation

Preset Release

How to release a locked destination in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y or MD mode.
- 2 Select the device being released:
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the 'Lev/Dest' column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 If the lock was set by the current user, select the destination device and:

Press Dst Mode and then press 'Lock'.

Or

Press Dst Rls.

If the lock was set by another user, the Force Release function must be enabled to perform a release (see [Force Release](#) on page 39).

Preset Release

The Preset Release button (default legend Pst Rel) is only available in X-Y mode. The Pst Rel button is used to clear source locks and protects that appear in the 'Preset' column in the display area.

Locks are denoted by a 'L' (see [Locks](#) on page 42) and protects are denoted by a 'P' (see [Protect](#) on page 45) next to the device in the 'Preset' column.

How the Pst Rel button functions depends on your access rights:

If no "+" appears next to the device, then the lock or protect was set at the current panel. To remove the lock or protect, select the device using the selection button (see [Selection Buttons](#) on page 12) and then press Pst Rel.

Or

If a "+" appears next to the device, the lock was set by another user or at another panel. Press Info to learn information about the user ([Information](#) on page 40). To remove the lock or protect, select the device using the selection button and press Pst Rel. However, the Forced Release function must be enabled to activate the release (see [Force Release](#) on page 39).

Previous Source

The Previous Source button (default legend Prev Src) is available in X-Y and MD mode. The Prev Src button loads the previously switched source for the current destination. The source appears in the 'Preset' column in the display area. To complete a "take" using the source and destination(s) listed, press Prev Src and then press Take. The previous source's level mapping is used whenever Prev Src is selected (see [Level Mapping](#) on page 40)

Prev Src is helpful when you want to quickly return to the previous source that was routed, such as when a route was made in error, or when toggling between two sources. For example, you routed VTR1 to VTR2 in error, by pressing Prev Src you can immediately return to VTR1 and make the correct route (in this case, VTR3).

Note

The previous source may *not* have been switched at your control panel. Another user may have made a route at another panel. For example, if another panel routed VTR1 to VTR2, but you accidentally changed the source from VTR1 to VTR3 at your panel, press Prev Src and then Take to re-establish the correct route (VTR1 to VTR2).

Protect

A “protect” prevents *others* from routing to a destination or source, but not the user who initiated the protect status. Protects are applied by an “owner” and is based on the user ID entered in the control panel (see [Viewing User Information](#) on page 19). When applied, other users at other control panels are unable to switch to the protected destination or source. However, a user at the control panel from which the protect originated can switch the protected source or destination without clearing the protect.

Protects are useful for preventing accidental routes and acts as a warning to others. When a device is protected a ‘+’ appears in the ‘Preset’ column in the display area. Press Info to learn which user applied the protect. If a protect was applied by the current user of a control panel, no ‘+’ displays. Force Release enables other users, other than owner, to remove the protect (see [Force Release](#) on page 39). To prevent anyone from performing a different route, apply a lock instead (see [Locks](#) on page 42).

There are two buttons that apply protects: Prot protects a source or destination. Dst Prot protects only destinations. The configurator may choose to have one or both appear on the control panel, depending on your facility needs.

The ‘Dst Prt and Prot are toggles. Press the button to protect a destination. Press the button again to release the protects status.

Protecting and Releasing Sources

How a source is protected depends on whether you are in X-Y or MD mode. Only the user that applied the protect can remove it unless Forced Release mode has been enabled (see [Force Release](#) on page 39).

The protected source cannot be switched to any other destination by users on other control panels, however, the user of the current control panel can still route using the source.

When a protect is applied to a source, the following displays:

- ‘P’ in ‘Status’ column when a protect is initially set by owner at owner’s panel.
- ‘P’ in ‘Preset’ column when source is preset by owner at owner’s panel.
- ‘P+’ in ‘Preset’ column when protect set by another user.
- ‘I’ appears if applying a protect to a machine control (data) device indicating that an implicit protect has been applied.

6. Operation

Protect

How to protect a source in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y mode or MD mode.
- 2 If needed, preset desired source devices:
 - a Press Src Mode. All buttons associated with destination selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the 'Lev/Dest' column.Or
Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 If not already in Source Mode, press Src Mode. All buttons associated with source selection light in green.
- 4 Press Prot.

How to release a protected source in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y mode.
- 2 Select the device being released:
 - a Press Src Mode. All buttons associated with destination selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the 'Lev/Dest' column.Or
Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 If the lock was set by the current user:
 - If it appears in the 'Status' column, press Src and then press Prot.
 - If it appears in the 'Preset' column, press Src and then press Prst Rls.

If the lock was set by another user, the Force Release function must be enabled to perform a release (see [Force Release](#) on page 39).

Protecting and Releasing Destinations

How a destination is protected depends on whether you are in X-Y or MD mode. Only the user that applied the protect can remove it unless Forced Release mode has been enabled (see [Force Release](#) on page 39).

The protected destination cannot be switched to any other source by users at other control panels, however, the user of the current control panel can route using the protected destination.

When a protect is applied to a destination a 'P' appears next to the device in the 'Lev/Dest' column.

How to protect a destination in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y or MD mode.
- 2 If needed, select a destination device:

- a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the ‘Lev/Dest’ column.
- Or
- Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Press Dest Prot or Prot to lock the destination device.

How to release a protected destination in X-Y or MD mode

- 1 Press XY/MD to place the panel in X-Y mode.
- 2 Select the device being released:
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device in the ‘Lev/Dest’ column.

Or

Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 If the protect was set by the current user, press Dst Prot or Prot.

If the lock was set by another user, the Force Release function must be enabled to perform a release (see [Force Release](#) on page 39).

Salvos

A salvo is a set of pre-recorded activities such that when a salvo is executed, all pre-recorded activities occur in the exact sequence recorded. Salvos are helpful when a certain action, such as a specific “take,” is repeated over and over. Instead of having to create the switch sequence anew each time, you can just press one button.

Salvo is a unique mode, separate from X-Y or MD mode. When the Salvo button is pressed, ‘Salvo Execute’ appears in the display area along with a salvo-related menu. The Salvo button runs both local and system salvos. Using the salvo menu, you can create, save and clear local salvos. System salvos are created when the control panel is configured.

Local salvos are only executed by the control panel through which the salvo was created, and only the panel that created the salvo can delete it. System salvos can only be altered or deleted through the configuration software (see the NV9000-SE Utilities User’s Guide).

How to create and save a local salvo

- 1 Press Menu to activate Menu mode. Menu options appear in the display area.
- 2 Press selection button 5 to select the Salvo menu option.

6. Operation

Salvos

- 3 Press selection button 1 for 'Start Salvo Record'. This activates the recording function and a large dot appears in Column 1. All control panel button presses you make are now recorded. The menu option changes to 'Stop Salvo Record'.
- 4 Press Menu to exit Menu mode and return to the previous control panel mode: X-Y or MD.
- 5 Perform the action you want to record, pressing all buttons in the sequence you would normally for that activity (see [X-Y Mode – Take](#) on page 50 or [Multi-Destination Mode – Take](#) on page 51).
- 6 When you have finished, press Menu to return to Menu mode.
- 7 Press selection button 5 to return to the Salvo menu.
- 8 Press selection button 1 to 'Stop Salvo Record'.
- 9 Press selection button 3 to 'Save Salvo'. Saved salvos appear in the display area. If more than eight are saved, press Page Up or Page Down to view all.
- 10 Press the selection button that corresponds to an empty slot on the display area. You can only save a salvo to an empty slot.

Or

Press Clear to cancel the action and return to the Menu screen.

When a salvo has been recorded, but not saved, a "dot" appears in the display area:

Preset	Status	Lev/Dest
X - Y	VTR05	SD
Dest ●	VTR05	AES 1/2
VTR04	VTR05	AES 3/4
	VTR05	TC
	VTR05	+CTRL

Figure 6-1. Display Area Showing "dot" that Salvo is Recording

- 11 Press Menu to complete the procedure and return to the Menu screen.

How to pause, cancel or clear a salvo

To pause while recording a salvo, press the selection button 2 for 'Pause Salvo Record'. The text changes to 'Resume Salvo Record'. To resume recording, press 2 again.

To cancel a salvo that has not yet been saved, press selection button 4 for 'Cancel Salvo Record'.

How to execute a salvo

- 1 Press Salvo. Both local and system salvos appear in the display area along with the Execute Salvo Menu.
- 2 Press Page Up or Page Down to scroll through the list of available salvos.
- 3 Press the corresponding selection button to execute that salvo. An flag appears next to the salvo indicating that it is enabled and the Take button lights.
- 4 Press Take. The salvo is executed.
- 5 Repeat Steps 2 through 4 for any additional salvos you want to execute.
- 6 Press Salvo to return the control panel to the most recently selected mode.

Scroll

The Scroll button (default legend Scroll) is used for X-Y mode only, although it lights in MD mode too. The Scroll button is used to activate the Page Up and Page Down buttons enabling you to scroll through a list of devices that appears in the display area for a specific category. This function is only enabled when a category button is pressed.

After a category is selected, all devices that belong to that category appear in the display area. Press Scroll and then the Page Up or Page Down button to scroll up or down in the list of devices. The display area shows up to eight devices at a time. If there are not more than eight devices, the Page Up and Page Down buttons do not light and are not active.

After you have located the device you want, use the corresponding selection button to select it (see [Selection Buttons](#) on page 12).

Source

The Source button is available in X-Y and MD mode. The button has a specific source device assigned and the button legend reflects the name of the device. When pressed, the source and corresponding levels display. What source is assigned to the button is determined when the panel is configured. For more information, see NV9000-SE Utilities User's Guide.

Source Mode

The Source Mode button (default legend Src Mode) is available in X-Y and MD mode. The Src Mode button is the first step in the source selection process. (The second step is to select a Category.) When Src Mode is pressed, the panel lights change to green and all buttons related to source device selection light.

Source/Destination Mode

The Source/Destination mode button (default legend Src/Dst) toggles between source mode and destination mode.

Source Master

The Source Master button (default legend Src Mstr) is available in X-Y mode only. The Src Mstr button forces the direction of routing for devices used in data (machine control routers) takes. This function is used with machine control (data) routers where there is a master (controlling) device and slave (controlled) devices. Usually the master routes to the slave. To reverse the order, such that the slave routes to the master device, press Src Mstr before pressing Take.

Src Mstr is used when performing using Broadcast mode (see [Broadcast Mode](#) on page 34).

6. Operation

Take

Take

Pressing Take executes the route currently selected. How a “take” is performed and occurs differs depending on whether you are in X-Y mode or MD mode. The following procedures assume that you are performing a “take” without any additional enabled functions, such as ‘Lock’ or ‘Protect’.

X-Y Mode – Take

In X-Y mode you can route one set of preset sources to one destination. X-Y mode allows you to select a source and destination in any order, but the destination device determines the valid levels and the resulting preset sources that may be included in the “take.” A “take” can only occur if the destination and source devices are members of the same level set. For example, if a destination device is a member of the HD level set only and the source device is a member of the SD level set only, the two cannot be routed. However, if the destination device is a member of the HD level *and* SD level, then the routing can occur. One exception is if the two levels have been mapped (see [Level Mapping](#) on page 40).

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been cleared. Or, press Clear Pst to clear the sources that display in the ‘Preset’ column (see [Clear Preset](#) on page 38).

If needed, press Scroll and then Page Up and Page Down to view all devices.

For simplicity, this procedure only discusses selecting a destination before a source.

The “take” occurs for all valid levels, whether or not flagged in the ‘Lev/Dest’ column. To route only to specific levels and not all valid levels, perform a breakaway. See [Breakaways](#) on page 33.

How to perform a “take” in X-Y mode

- 1 Press XY/MD to place the panel in X-Y mode.
- 2 Select the desired destination device (If already selected, go to Step 3):
 - a Press Dst Mode. All buttons associated with destination selection light in amber.
 - b Press the desired ‘Category’ button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the ‘Lev/Dest’ column.

Or

Using the keypad, enter the device’s index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.
- 3 Preset the desired source:
 - a Press Src Mode. All buttons associated with source selection light in green.
 - b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.
 - c From the display area, select a device by pressing the Page Up and Page Down buttons. A flag appears next to the device in the ‘Lev/Dest’ column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13). The Index number appears in Column 1.

The 'Preset' column lists source devices that are in valid levels for routing.

- 4 Press Take. The source(s) in the 'Preset' column are routed to the destination(s) listed in Column 1. The 'Preset' and 'Status' columns update to reflect the route, as shown in Figure 6-1 on page 48.

Note

The “take” occurs for all valid levels, whether or not flagged in the 'Lev/Dest' column. To route only to specific levels and not all valid levels, perform a break-away. See [Breakaways](#) on page 33.

Example 1 is prior to “take” and *Example 2* is immediately after the “take”.

Example 1

	Preset	Status	Lev/Dest	
X - Y	VTR05	VTR18	SD	■
Dest	VTR05	VTR18	AES 1/2	■
VTR01	VTR05	VTR18	AES 3/4	■
VTR	VTR05	VTR18	TC	■
___5	VTR05	VTR18	CTRL	■

Example 2

	Preset	Status	Lev/Dest	
X - Y		VTR05	SD	■
Dest		VTR05	AES 1/2	■
VTR01		VTR05	AES 3/4	■
		VTR05	TC	■
		VTR05	CTRL	■

Figure 6-2. Example of display changes when a “take” occurs

Multi-Destination Mode – Take

In MD mode you can route one or more sources to one or more destinations. Unlike X-Y mode that allows you to select a source and destination in any order, in MD mode you must select the destination *prior* to selecting the source.

At any time while selecting a destination or source, you can press Clear to clear the last entry. Press Clear again to clear the entry prior to that, and so on until all the entries you want to clear have been cleared. Or, press Clear Pst to clear the sources that display in the 'Preset' column (see [Clear Preset](#) on page 38).

How to perform a “take” in MD mode – Single Source

- 1 Press XY/MD to place the panel in MD mode. The panel buttons turn amber.
- 2 Select the first destination device:
 - a Press Dst Mode. If needed, press Page Up or Page Down to view all available destination devices.

6. Operation

Take

b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.

c Press the selection button that corresponds to the device you want (see [Selection Buttons](#) on page 12). A flag appears next to the device in the 'Lev/Dest' column.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13).

d To route one source to multiple destinations, press Hold and repeat Step 2, selecting additional destination devices.

3 Select a source:

a Press Src Mode. All buttons associated with source selection light in green.

b Press the desired category button (see [Category and Keypad Buttons](#) on page 13). The category appears in Column 1.

c Press Page Up or Page Down to view all available source devices in the display area. To select a device, press the corresponding selection button (see [Selection Buttons](#) on page 12). A flag appears next to the device.

Or

Using the keypad, enter the device's index number (see [Category and Keypad Buttons](#) on page 13).

4 Press Take. The 'Preset' and 'Status' columns update to reflect the route, as shown in Figure 6-2 on page 51.

Example 1 shows a single source preset for two destinations. *Example 2* is immediately after the "take".

Example 1

	Preset	Status	Lev/Dest	
MultiDest	DPS-3	VTR02	VTR01	■
	DPS-3	VTR01	VTR02	■
		VTR01	VTR03	
		VTR01	VTR04	
DPS				
___3				
Page 1				

Example 2

	Preset	Status	Lev/Dest	
MultiDest		DPS-3	VTR01	■
		DPS-3	VTR02	■
		VTR01	VTR03	
		VTR01	VTR04	
Page 1				

Figure 6-3. Example of display changes when a "take" occurs

5 If needed, press Hold to turn off Hold mode.

User Definable or Selectable Destinations

When a control panel configuration is created, the configurer can choose to have destination devices definable by the operator, selectable by the operator, or neither. This applies to MD mode only. The default is to have destinations both definable and selectable.

“User definable” means that the operator can select and then change a destination that appears in the ‘Lev/Dest’ column. “User selectable” means that the operator can select the device (using the selection buttons) and preset a new source.

A destination slot is the vertical position of a destination on the display. These slots are assigned when configuring the control panel.

There is no indication on the control panel whether a destination is user-definable. You can check the configuration file, simply try it, or speak with the configurer.

6. Operation

User Definable or Selectable Destinations



7. Part Numbers

PS0001	12V power supply, 4-pin Molex connector, with cord, and cord retention strap.
WC0053	Optional Breakout Cable for the Tally Interface
SB0033	Software and documentation CD.

7. Part Numbers

8. Technical Details

This section provides electrical and mechanical specifications for the NV9601.

Power Specifications

Power specifications for the NV9601 control panels.

Specification	Detail
AC power	90–264 VAC (127–300 VDC), 47–447 Hz.
Power consumption	30 Watts (maximum)
Regulatory	UL listed and CE compliant.

Physical Specifications

Physical specifications for the NV9601.

Specification	Detail
Dimensions	3.50" (88.9 mm), EIA Standard (2 RU high) and 19.0" (482.6 mm) wide
Depth	8.55" (217.2 mm)
Weight	6.6 lbs. (3.0 kg), maximum
Connectors	Power: 1, IEC Filtered AC Ethernet: 1 connector, 10/100BaseT, RJ-45 jack. RS-232: 1 connector, 9-pin D type, for diagnostics and upgrades. RS-422: 1 connector, 9-pin D type, reserved for future use. RS-422: 1 connector, 9-pin D type, reserved for future use.
GPIO	Input: ≤ 5 VDC continuous; ≤ 48 VDC for less than 5 seconds; 1.2 mA when on. Output: ≤ 150 mA; ≤ 200 VAC.
Grounding terminal	None.

Environmental Specifications

Environmental specifications for the NV9601.

Specification	Detail
Operating temperature	0–40°C, ambient.
Relative humidity	0 to 90%, non-condensing.
Cooling	No fan required.

8. Technical Details

Environmental Specifications

9. Glossary

AES/EBU	(Audio Engineering Society/European Broadcasting Union). AES and EBU are standards organizations.
Breakaway	Selecting a subset of virtual levels for a route.
Category	A category represents a set of devices. (The concept of categories exists to make it easier to select devices at a control panel.) A category can contain sources, destinations, or devices that are both sources and destinations. Each device in the category has a unique selection index within that category. Each category has a mnemonic ID associated with it.
Data Routing	Data routing (a.k.a., machine control routing) is a bidirectional form of routing. Routes are characterized by a controlling device and controlled device(s). The NV9601 provides certain data routing options including a 'Broadcast' button.
Device	A "device" is a grouping of input and output ports that define a logical entity. (The logical entity often represents a real device, but it does not have to be a real entity.) For example, a system might have 3 levels: video, AES, and time code. A hypothetical device in this system is Camera 1, which consists of video on input port 1 of the video router, AES on input port 5 of the AES router, and time code on input port 8 of the time code router.
GPIO	General Purpose Input and Output. A generic term for the NV9601's tally interface. The tally interface is called the "GPI Interface" at the rear of the NV9601.
Level set	A level set is a group of virtual levels that are commonly used together when switching devices. A level set also defines the mapping of each virtual level within the level set to a single physical level. All levels in a level set have a unique display index within that level set.
Multi-Destination (Mode)	A mode on an NV9000 control panel that presents many destinations at once, in contrast to X-Y mode. An operator may route sources to multiple destinations in a single Take. Multi-destination mode does not permit the selection of breakaway levels.
Operator	The term operator (a.k.a. user) usually refers to users other than the system administrator or configurer. An operator is responsible for making the routes.
Physical Level	Multiple routers provide different "physical levels" on which to switch the signals of devices. Any particular device might send or receive HD, SD, AES, time-code, or machine-code signals.
PIN	The system administrator may create a single "super user" personal identification number (PIN) that functions as a passcode. A PIN is 4–6 digits in length. The PIN allows certain operators to perform functions such as (1) forced release on a control panel that is configured for normal release or (2) changing the ID of a control panel.
Port	A port is the physical connection on a router. A port can only be an input port or an output port.
Salvo	A salvo is a stored group of commands that can be recalled and executed at a NV9000 control panel.
Source/ Destination	The term "source device" is used interchangeably with "source" and the term "destination device" is used interchangeably with "destination." A source is a device that is connected to one or more

9. Glossary

input ports. A destination is a device that is connected to one or more output ports. An example of such a device would be a monitor.

A device can be both a source and destination. An example of such a device is a VTR.

System administrator	The system administrator is the person responsible for installing, configuring, and maintaining a router control system.
Tally	High or low button illumination.
Virtual level	Virtual levels allow the system administrator to define a single physical router level as multiple levels. Within a physical level, any port can be mapped to any virtual level. For example, an AES matrix could be divided into AES 1/2 and AES 3/4 <i>virtual</i> levels.
X-Y (mode)	A mode on a control NV9000 control panel that switches one destination at a time, in contrast to multi-destination mode. In X-Y mode, some panels can display the virtual levels for the selected destination. Operators using those panels can perform breakaway level selection and level mapping.

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