Utah Scientific

UCP Series

Routing Switcher Control Panels

User's Guide

UCP Series User's Guide

- Document Number: **82101-0054**
- Document Version: 4.0
- Date: February 24, 2014
- Printed in U.S.A.

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Utah Scientific

4750 Wiley Post Way
Salt Lake City, Utah 84116-2878 USA

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- EN50081-1 Generic Emission Standard
- EN50082-1 Generic Immunity Standard
- IEC-950 Product Safety
- C-UL 1950 Product Safety
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CE

Important Safeguards and Notices

This section provides important safety guidelines for both the Operator and Service Personnel. Specific warnings and cautions are found throughout the guide where they apply, but may not appear here. Please read and follow the important safety information, noting especially those instructions related to risk of fire, electric shock or injury to persons.

Safety Symbols

Please note the following important safety symbols:

- **Hazardous Voltage** symbol.

- **Caution symbol**: The product is marked with this symbol when it is necessary to refer to the manual to prevent damage to the product.

Warnings

Please observe the following important warnings:

- Any instructions in this guide that require opening the chassis, changing a power supply, or removing a board should be performed by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing unless you are qualified to do so.
- Heed all warnings on the unit and in the operating instructions.
- Do not use this product in or near water. Disconnect AC power before installing any options or servicing the unit unless instructed to do so by this manual.
- This product is grounded through the power cord grounding conductor. To avoid electric shock, plug the power cord into a properly wired receptacle before connecting the product inputs or outputs.

- Route power cords and other cables so that they are not likely to be damaged. Disconnect power before cleaning. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on. Do not insert anything into either of the system's two power supply cavities with power connected.

- Do not wear hand jewelry or watches when troubleshooting high current circuits, such as the power supplies. During installation, do not use the door handles or front panels to lift the equipment as they may open abruptly and injure you.
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- Have qualified personnel perform safety checks after any service.

Cautions

Please observe the following important cautions:

- When installing this equipment, do not attach the power cord to building surfaces. To prevent damage when replacing fuses, locate and correct the trouble that caused the fuse to blow before applying power.

- Use only specified replacement parts. Follow static precautions at all times when handling this equipment.
- Slots and openings in the control panel enclosures are provided for ventilation. Do not block them. Leave the back of the units clear to allow room for cabling — a minimum of 6 inches (15.25 cm) of clearance is recommended.

Notices

Please observe the following important notes:

- When the following symbol is indicated on the chassis, please refer to the manual for additional information.

- For the UCP panels, refer to the “Connecting and Disconnecting Power” for important information regarding the power connector.

Company Information

Utah Scientific, Inc.
4750 Wiley Post Way, Suite 150
Salt Lake City, Utah 84116-2878 USA

- **Telephone**: +1 (801) 575-8801
- **Fax**: +1 (801) 537-3098
- **Customer Support (Voice)**: +1 (800) 447-7204
- **Customer Support (Fax)**: +1 (801) 537-3069
- **E-mail (General Info)**: info@utahscientific.com
- **E-mail (Customer Support)**: service@utahscientific.com
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Chapter

Warranty Policies

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Section 1

Introduction

In This Guide

This guide provides instructions for installing, configuring and operating the UCP Series of Routing Switcher Control Panels. The following chapters and appendices are included:

- Chapter 1, “**Introduction**” summarizes the guide, provides important terms, conventions, and background information on the UCP panels.
- Chapter 2, “**Installation**” provides installation instructions for all panels in the UCP series.
- Chapter 3, “**UCP 2/8 Operations**” provides setup and operating instructions for the UCP 2/8, an eight level, full source, dual destination panel.
- Chapter 4, “**UCP 36/8 Operations**” provides setup and operating instructions for the UCP 36/8, an eight level, single destination, 36 source panel.
- Chapter 5, **“UCP 72/8 Operations”** provides setup and operating instructions for the UCP 72/8, an eight level, single destination, 72 source panel.
- Chapter 6, “**UCP 64/8 Operations**” provides setup and operating instructions for the UCP 64/8, an eight level, single destination 64 source or dual destination 32 source panel.
- Chapter 7, “**UCP XY/16 Operations**” provides setup and operating instructions for the UCP XY/16, a 16 level full XY panel (all sources and all destinations).
- Chapter 8, “**UCP SX/16 Operations**” provides operating instructions for the UCP SX/16, an advanced 16 level full XY panel (all sources and all destinations).
- Chapter 9, “**UCP MX/16 Operations**” provides operating instructions for the UCP MX/16, a 16 level XY panel that operates in both single and multi-destination modes.
- Appendix A, “**Specifications**” lists control, physical, power and environmental specifications for all UCP panels.
- Appendix B, “**Maintenance Functions**” provides a detailed procedure for changing button legends and opening the panel to change the PROM.

How To Use This Guide

The chapters in this guide follow a logical sequence, from introduction through operations:

- Read this chapter (Chapter 1, "**Introduction**") to familiarize yourself with the full line of UCP routing switcher panels.
- Follow the instructions in Chapter 2, "**Installation**" to install your UCP panel(s).
- Use chapters 3 through 9 to learn about setup and operations for your specific UCP routing switcher panel(s).
- Use the appendices for reference, when you need additional information about hardware and keycaps.
- Once you're familiar with the panels, start with the Index when you need additional assistance on a specific subject.

Conventions

The following conventions are used throughout this guide:

- Buttons, knobs and connectors on the UCP panels are indicated in bold-faced upper and lower case text, using a sans-serif font. For example:
  - ~ Press **TAKE** to perform...

- On the UCP Panel LED displays, labels and commands are indicated in bold-faced upper and lower case text, using a sans-serif font. For example:
  - ~ The label **DST** indicates...

Abbreviations

The following abbreviations are used throughout this guide:

Table 1-1. Abbreviations

Abbreviation	Description
ATR	Audio Tape Recorder
CPU	Central Processing Unit
DIP	Dual Inline Package
DTR	Digital Tape Recorder
I/O	Input/Output
IP	Internet Protocol
MX Bus	UTAH router control communications bus
RMS	Router Management System
RU	Rack Unit
U-Net	UTAH control panel communications network
UTP	Unshielded Twisted Pair
VTR	Video Tape Recorder

Terms

The following documentation terms are used throughout this guide:

- "**Operator**" and "**User**" refer to the person using or operating the UCP panels.
- "**System**" refers to the interconnected routing switcher system (such as a UTAH-300) that is controlled by the UCP panels.
- "**Router**" is short for routing switcher.
- "**Chassis**" refers to the metal enclosure that houses an UCP panel.
- "**Input**" refers to an audio or video signal that is connected to a routing switcher.
  - ~ One video input represents a single output from an analog or digital video source.

  - ~ One analog audio input represents a single monophonic track from an analog audio source.
  - ~ One digital audio input represents two tracks (left and right) from a digital audio source.

- "**Source**" refers to an audio/video device whose output signals are connected to one or more routing switcher inputs. Examples of audio/video sources are the output signals originating from ATRs, VTRs, DTRs, cameras, video production switchers, audio mixers, graphics systems, and satellite feeds.
- "**Output**" refers to an audio or video signal that is connected from a routing switcher to a destination device.
- "**Destination**" refers to an audio/video device that receives one or more signals from a routing switcher. Examples of audio/video destinations are the inputs of ATRs, VTRs, DTRs, video production switchers, additional routing switchers, audio mixers, graphics systems, and satellite feeds.
- "**Router Level**" refers to the specific type of audio/video element that a routing switcher is capable of routing. For example, the UTAH-200 system can switch up to eight router levels, which can be any combination of Digital Video, Digital Audio, Analog Video (Composite or Component) or Analog Audio (Left and Right).
- "**Control Panel**" refers to current (and future) physical human interfaces (such as the UCP panels) that are used for system input/output routing assignments.
- "**Display**" refers to the many integral LED indicators on a control panel.
- "**All-follow Take**" refers to the most basic of routing switcher functions. You select a source, select a destination, and then press **Take** to instantly route the source to the input of the selected destination device. An "all-follow take" simply means that all assigned router levels switch simultaneously, and no router levels are broken away.
- "**Breakaway Take**" is a special Take in which a subset of all installed router levels are sent to a destination, or router levels from more than one source are sent to the destination. Each panel supports the ability to program "breakaway takes."
- "**Lock**" refers to a special condition whereby a source-to-destination routing cannot be changed by any user. However, a Lock can be cleared by any panel.
- "**Protect**" refers to a special condition whereby a source-to-destination routing can only be changed by the user at the originating panel (the panel on which the Protect was entered). A Protect can be cleared from the panel that originally set the Protect (or by the RMS).

Routing Switcher Basics

A routing switcher is a specialized form of broadcast switcher that allows you to connect large numbers of source and destination devices together electronically — without patching, without running cables across the floor, and without losing signal quality.

In any type of facility, whether it's broadcast, industrial, or consumer, a routing switcher solves problems and reduces connectivity errors. Instead of running audio and video cables inefficiently throughout your facility (and re-running them each time a routing requirement changes), you simply connect all the "ins" and "outs" from each device to the routing switcher. From that point forward, all equipment interconnections are performed electronically — at the routing switcher's control panel — rather than at each device's rear panel. Please note:

- Routing switchers can switch many router levels simultaneously (typically eight or 16). For example, a *simple* route connects one router level from one source device (such as a VTR) to one destination device (such as a video monitor). A *complex* route connects multiple router levels from one source device (such as a satellite feed) to multiple destinations (such as a group of VTRs and monitors).
- Audio and video router levels can be switched individually or in groups. Any input can be switched to any output (or group of outputs).
- You can switch in an "all-follow" mode (where audio and video switch together), or in a "breakaway" mode (where audio is taken from one source and video from another).
- Routing switchers can be switched manually from control panels (such as the UCP series), or automatically via computer control.

Switching Matrix

A switching matrix is the internal array of inputs, outputs and crosspoints that allows a routing switcher to perform the task of moving signals from sources to destinations. The figure below illustrates a simple 10x10 switching matrix — with 10 inputs and 10 outputs.

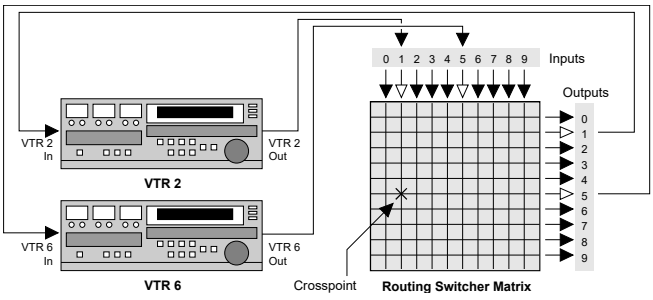


Figure 1-1. Simple 10x10 Switching Matrix

Note the following points regarding the illustration:

- Each VTR is fully-connected to the matrix — all audio/video inputs and all audio/video outputs.
- A crosspoint (represented by an **X**) is the internal intersection of an input and an output, either audio or video. When a crosspoint is turned on, a connection is made between a selected source and one (or more) destinations. The act of turning a crosspoint on or off is known as a **Take**.
- When an entire audio/video array is connected in this manner, from all devices in your facility, you have full routing flexibility. Without re-patching or running new cables, a device can play back one moment (as a source), and record the next moment (as a destination).
- Even though the matrix size shown above is 10x10, in the UTAH-200 and UTAH-300 routers, for example, you can configure much larger matrices.

Router Levels

A "**router level**" represents one of many specific types of audio or video elements that a routing switcher is capable of handling. The UTAH-300, for example, can switch up to eight or 16 router levels, which can be any combination of Digital Video, Digital Audio, Analog Video or Analog Audio (Left and Right). Some systems can be configured with one router level, while others can be configured with multiple router levels.

While the diagram in the previous section shows only one router level, a multi-router level system is capable of routing any combination of the eight levels, each with its own matrix and crosspoints. The figure below illustrates a multi-router level 10x10 system.

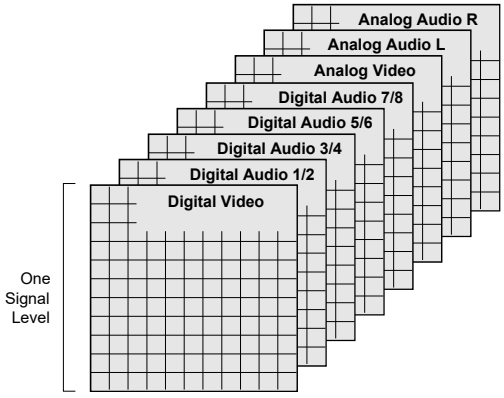


Figure 1-2. Multi-router Level 10x10 Routing Switcher System

The size of the various router level matrices need not be consistent throughout the routing switcher. For example:

- A symmetrical matrix might have 32x32 digital video and digital audio.
- A non-symmetrical matrix might have 32x32 digital video, but only 16x16 analog audio.

Although the concept of a full multi-router level system (with its thousands of crosspoints) may seem complicated, the beauty of a routing switcher system is its operational simplicity. As a user, you need only think about sources and destinations. You can perform all operations using the UCP panels, with ease and convenience, without ever thinking about the underlying concepts, matrices, and electronics.

Introducing the UCP Series Panels

The UCP Series control panels from Utah Scientific are designed for easy and straightforward operation, using a minimum number of keystrokes for each *switch* or *status* operation. The panels connect to an SC-3 or SC-4 controller over high-speed U-Net or Ethernet communication lines (using standard RJ-45 connectors). All UCP panels are designed to switch either 8 or 16 levels (depending on the model), and each panel can be re-programmed over U-Net or Ethernet lines without the need to interrupt system operations, or remove the panel from service. Refer to the ***SC-3 or SC-4 Operations Guide*** for instructions on re-programming UCP panels.

Each rack-mountable panel houses a matrix of buttons and displays, and each includes an internal power supply. Following are brief descriptions of each panel.

UCP 2/8

The **UCP 2/8** is a 16 level, full source panel that is designed to operate as a single or dual bus control panel. Full access is provided to all sources and up to two user-defined destinations.

Figure 1-3. UCP 2/8 Panel

The panel includes the following key features:

- Eight Character LED display for clear indication of selected source names and status.
- 16-level switching and eight-level breakaway capability that includes control within a mixed analog/digital environment. “Attribute” switching is standard.

- Five “Direct Access” buttons for rapid switching of the most commonly used sources.
- “Group Name” capability, for mnemonic flexibility and easy sorting when large numbers of sources are available.
- Output “Protect” and “Lock” modes that prevent unauthorized switching of a destination by other control panels.

Refer to Chapter 3 for complete setup and operating instructions.

UCP 36/8

The **UCP 36/8** is an eight level, single destination, 36 source panel that is designed for fast access to a limited number of sources. All programming is performed with the SC-3 or SC-4.

Figure 1-4. UCP 36/8 Panel

The panel includes the following key features:

- 16-level switching and eight-level breakaway capability that includes control within a mixed analog/digital environment.
- Large pushbuttons provide simple source switching capability, and all button labels have removable inserts for custom labels as required.
- All buttons are backlit for superb legibility, under all light conditions. The backlight intensity is user adjustable.

Refer to Chapter 4 for complete setup and operating instructions.

UCP 64/8

The **UCP 64/8** is a 16-level panel with eight level breakaway capability. The panel provides the same basic functionality as the UCP 36/8 — plus several additional features.

Figure 1-5. UCP 64/8 Panel

In addition to the basic UCP 36/8 feature set, the buttons on the UCP 64/8 can be assigned a new function from U-Con. This panel can be configured to control multiple destinations and/or sources.

Refer to Chapter 6 for complete setup and operating instructions.

UCP 72/8

The **UCP 72/8** is an eight level, dual destination, 72 source panel that is designed for fast access to a limited number of sources. All programming is performed with the SC-3 or SC-4.

Figure 1-6. UCP 72/8 Panel

The panel includes the following key features:

- 16-level switching and eight-level breakaway capability that includes control within a mixed analog/digital environment.
- Large pushbuttons provide simple source switching capability, and all button labels have removable inserts for custom labels as required.
- All buttons are backlit for superb legibility, under all light conditions. The backlight intensity is user adjustable.

Refer to Chapter 4 for complete setup and operating instructions.

UCP XY/16

The **UCP XY/16** is a 16 level XY panel that provides full access to all sources and all destinations connected to your routing switcher, including the monitor bus.

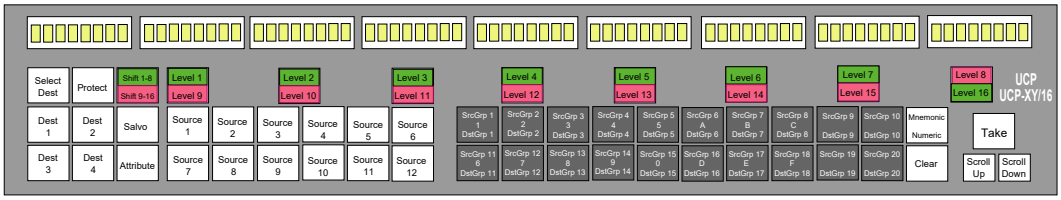


Figure 1-7. UCP XY/16 Panel

The panel includes the following key features:

- Individual group name capability for both sources and destinations. Monitor output switching is standard.
- Eight LED displays are provided for sources, plus one display for the destination. LED intensity is fully adjustable.
- Full 16-level switching capability that includes control within a mixed analog/digital environment.
- “Direct Access” buttons for twelve sources and four destinations. Full output protection modes are provided.

Refer to Chapter 7 for complete setup and operating instructions.

UCP SX/16

The **UCP SX/16** is an advanced 16 level XY panel that includes the core features of the UCP XY/16, plus many additional features.

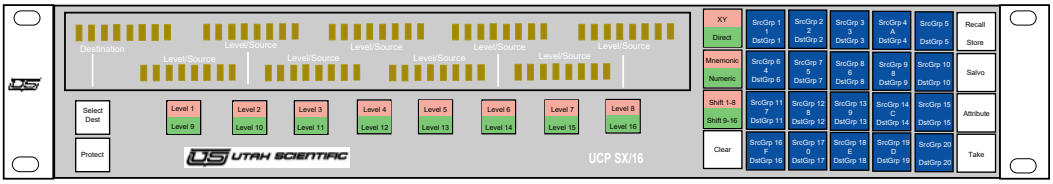


Figure 1-8. UCP SX/16 Panel

The panel includes the following key features:

- Switchable operations between “XY” mode and “Direct Source” mode.

Refer to Chapter 8 for complete setup and operating instructions.

- Ability to store a direct source into one of the direct source buttons from the front panel.
- Ability to store a direct destination into one of the direct destination buttons from the front panel.
- The direct source and direct destinations can be assigned at the panel without using any external software.

UCP MX/16

The **UCP MX/16** is a 16 level XY panel that includes the core features and button layout of the UCP SX/16, plus the ability to operate in single or multi-destination modes.

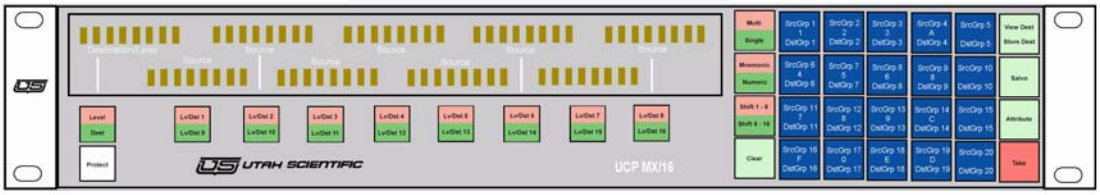


Figure 1-9. UCP MX/16 Panel

The panel includes the following key features:

- Switchable operations between single and multi-destination modes (with the ability to use up to 16 pre-assigned destinations). Up to eight destinations can be displayed at once.
- Breakaway operations up to 16 levels.
- Single or multi-destination takes.
- Audio/video attribute switching, plus numeric or mnemonic operations.
- Salvo operations.

Refer to Chapter 9 for complete setup and operating instructions.

Section 2

Installation

In This Chapter

This chapter provides installation instructions for all panels in the UCP series. The following topics are discussed:

Refer to Appendix A for connector pinout diagrams, and details on individual UCP panel power supplies.

Rear Panel Layout

This section describes the rear panel layouts of all UCP panels. Even though panel height differs between units, the connector arrangement is identical on all panels.

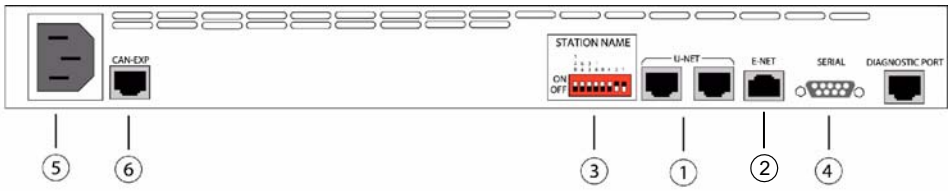


Figure 2-1. Rear Panel Layout, UCP 2/8, UCP 36/8, UCP 72/8

The figure above illustrates the rear panel layout of the UCP 2/8, UCP-XY 36/8, UCP-64, and UCP- 72/8 routing switcher control panels.

The figure below shows the rear panel layout of the UCP XY/16, UCP SX/16 and UCP MX/16 panels.

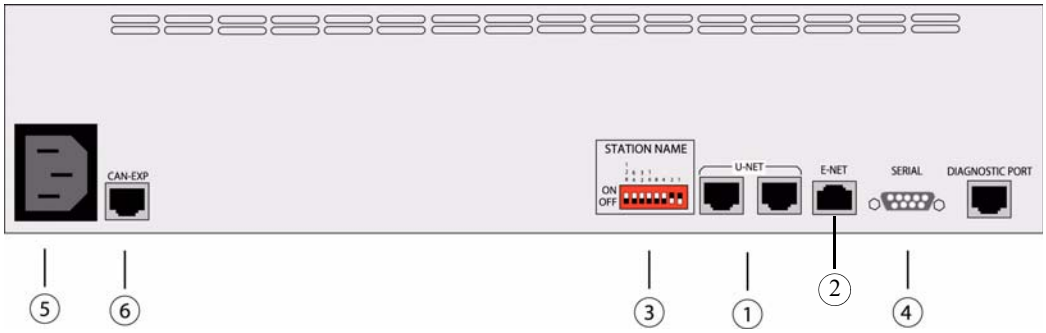


Figure 2-2. Rear Panel Layout, UCP SX/16 and UCP MX/16

1)	U-Net Connectors	3)	Panel ID DIP Switch	5)	Power Connector
2)	Ethernet connector	4)	Serial Port	6)	Canbus expansion

1. U-Net Connectors

The two RJ-45 U-Net connectors are used for inter-system panel communications. U-Net uses category five, 10Base-T cable running on four twisted pairs. Up to 250 control panels can be connected and synchronized to your routing switcher's main frame via U-Net.

- ~ One of the two U-Net ports (either one can be used) connects via U-Net cable to the main frame's U-Net port, or to the previous UCP panel in your system.
- ~ The remaining U-Net port connects to the next standalone control panel, or it is terminated with a special U-Net Terminator plug (if it is the last panel in the chain).

Refer to the "Connecting U-Net" section on page 2-4 for instructions.

2. Ethernet Connector (refer to Ethernet Setup *page 2-8* to configure this port in the panel.)
3. Panel ID DIP Switch

The 8-position Panel ID DIP Switch is used to set a control panel's unique ID number or "address." This number allows the routing switcher to address panels individually, for control purposes and also for mapping special source and destination configurations to each panel. Refer to the "Setting the Panel Address" section on page 2-6 for instructions.

4. Serial Port Connector

The 9-pin "D" RS-232/RS-422 Port is designed for serial communication, and is selectable on the panel's main card. This port communicates with a controller using the RCP1 protocol. The ability to reprogram through the serial port with RCP1 protocol is not available. An Ethernet or U-Net connection must be established prior to reprogramming.

5. Power Connector

The Power Connector is used to connect the external Universal Power Supply. Refer to the "Connecting and Disconnecting Power" section on page 2-11 for instructions.

6. Canbus Expansion

Panel Installation (U-Net)

This section provides instructions for installing control panels in your facility.

Warning: To avoid damage to the system, do not connect the power supply until the hardware is fully installed.

Unpacking and Inspection

When you receive your UCP control panel(s), inspect each shipping carton for signs of damage. Contact your dealer and the shipper immediately if you suspect any damage has occurred during shipping. Check the contents of each box to be sure that all parts are included. If any items are missing, contact your dealer immediately. After unpacking, please save the packing materials for future shipping convenience.

Installing the Panel

Control panels are typically located in edit suite consoles, at various locations in the machine room or transmission room, in studio control rooms, in screening rooms or conference rooms — any place where you are required to route or monitor audio and video signals

Use the following steps to install each control panel:

1. Determine the location for each UCP control panel in your facility.
    - Ensure that each location is within five feet of an AC outlet. This distance is the length of the DC power cord.
    - Select a location that allows for easy cabling and minimum interconnecting U-Net cable lengths.
2. Install each control panel in the destination equipment rack or console. Note that the left and right mounting holes at the front of each panel support the *entire weight* of the unit.

Figure 2-3. UCP Panel Mounting Holes

Because of this front support method, ensure that all screws are tightened securely as you install each panel.

Provide sufficient space behind each panel for running your cables and for performing maintenance if required.

Repeat steps 1 and 2 for each panel that you want to install.

This completes the installation of each UCP control panel. Please continue with the procedure for connecting U-net.

Connecting U-Net

In this procedure, you will interconnect each UCP control panel to the main frame (in "daisy-chain" fashion) using the rear chassis U-Net connectors. U-Net uses category five, 4-pair UTP (unshielded twisted pair) cable with RJ-45 connectors. Up to 250 control panels can be connected to the main frame via U-Net.

Note: When control panels are daisy-chained together, the total length of the entire cable run can not exceed 1000 feet.

- U-Net Cables are not supplied. You can purchase Ethernet cables, or you can construct a custom cable. See Appendix A, "Specifications" for cable specifications and pinouts.
- One U-Net Terminator plug is supplied for each of the 8 ports on the back of the controller.

Use the following diagram for reference throughout the procedure.

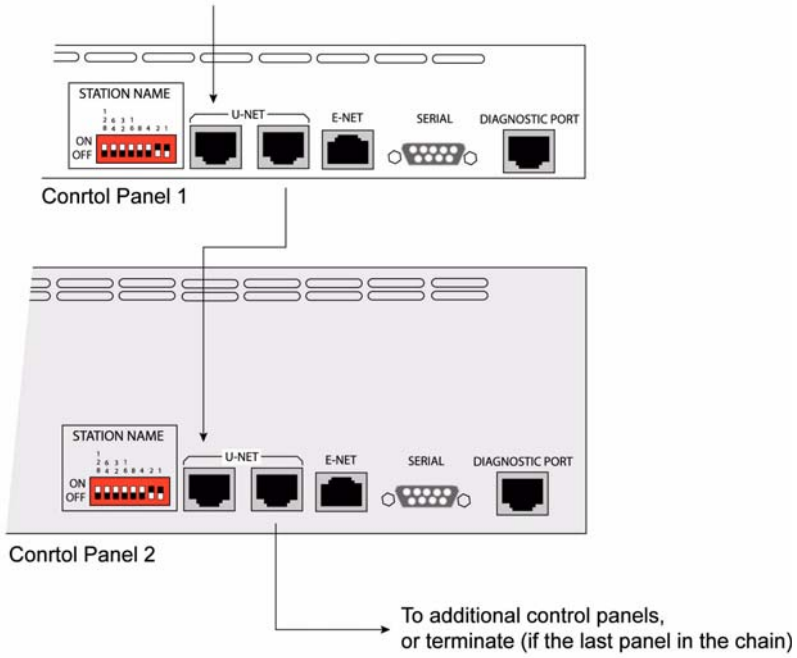


Figure 2-4. U-Net Interconnection Diagram

Use the following steps to interconnect control panels:

1. Locate the U-Net connector on your switcher main frame, or alternately, locate the last control panel in the current daisy chain (of control panels).
2. If you are going to connect to the last control panel in the current chain, remove the U-Net Terminator plug from one of the panel's two U-Net connectors.
3. Using a customer-supplied U-Net Cable, connect either U-Net connector on your new UCP control panel to the Controller's U-Net connector — or to the open U-Net connector on the last panel in the current chain.
4. Using another U-Net Cable, connect the new control panel's open U-Net connector to either U-Net connector on your next UCP control panel.
5. Repeat step 4 for each additional UCP control panel.
6. On the last control panel in the chain, connect the U-Net Terminator plug to the open U-Net connector.

This completes the interconnection of each control panel.

Setting the Panel Address

One 8-position **Panel ID DIP Switch** is provided on the rear panel of each control panel for setting the panel's ID number. The figure below illustrates the DIP switch, and shows the value of each switch (in binary notation).

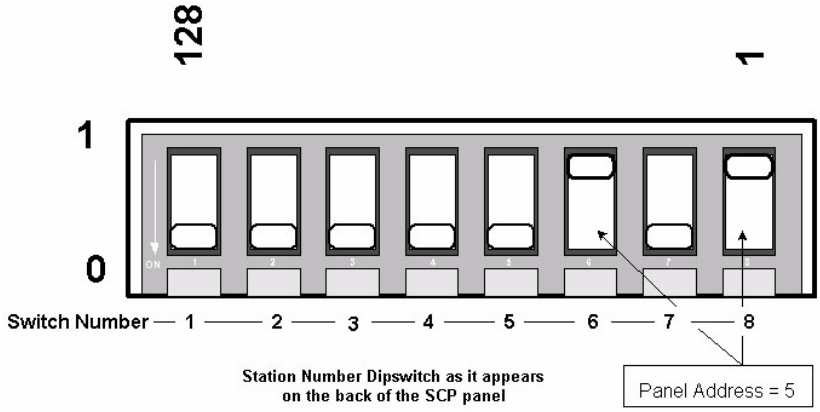


Figure 2-5. Panel ID Dip Switch Values

The following rules apply:

- Every control panel must have a unique ID number. This number allows it to be properly identified by both the routing switcher.
- ID numbers between 1 and 250 can be selected.
- ID numbers 0 and 251 through 255 are reserved.
- The numbers printed above the switch represent the range of the switch bank. The "Binary Values" from Left to Right are 128, 64, 32, 16, 8, 4, 2 and 1. To "build" an ID number:
  - ~ To include the printed value, slide the switch up, towards the printed label.
  - ~ To exclude the printed value, slide the switch down, away from the printed label.
  - ~ Add the values of all the "up" switches together to obtain the desired ID.
- Be sure to power cycle the panel after changing the dipswitch. The panel only reads the switch on power up.

The table below provides several examples.

ID	Switch Positions
1	8 up, 1-7 down
2	7 up, 1-6, 8 down
12	5-6 up, 1-4, 7, 8 down
14	5-7 up, 1-4, 8 down
24	4-5 up, 1-3, 6-8 down

Set the ID for each panel according to its position in the chain, or according to the panel numbering conventions used at your facility. Once you have set the ID, you may wish to make a label that includes the ID, and place it on the rear panel surface.

Repeat the procedure for each control panel in your system.

Mnemonic/Numeric

In the past, typical routing systems contained a relatively simple, single level of analog video with two levels of analog audio. Router wiring was also more consistent. Now, with multiple signal formats, a push to optimize router-space-per-dollar and “stacking” multiple logical levels on one physical router level, the situation has become more complicated. In order to provide operators and engineers with a numeric interface that provides more information and flexibility, the Mnemonic/Numeric button on the UCP panels has been enhanced. Each Mnemonic can control different destinations on each level, though the panels will only show one at a time. To help the user determine which output they want to view when they go between Mnemonic and Numeric modes, we have added some *help* on the displays. By pressing one of the level buttons in combination with the Mnemonic/Number button, the user can select the specific output or mnemonic they want to view.

Though it is possible to have multiple numeric outputs on a single Mnemonic, the panel is only capable of displaying one at a time. The panel will select the first valid output that it finds. Depending on how the destination tables are configured, the panel may not switch back to the same mnemonic that it had when it switched into numeric mode. To resolve this issue, we have given the user the ability to select the output they want to monitor when they switch between Mnemonic and Numeric modes. While the Mnemonic/Numeric button is pushed, the user can press a level button below the display for the desired output. This dual button combination gives the user the ability to select which output they want to monitor instead of having the panel automatically select it for them.

Changing to Numeric Mode - while the panel is in Mnemonic Mode

The source displays change to show the outputs that the Mnemonic is controlling on each level.

Changing to Mnemonic Mode - while the panel is in Numeric Mode

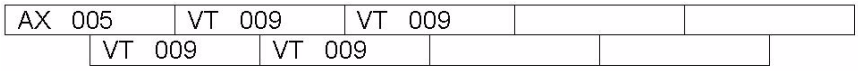
The source displays change to show which Mnemonic values have that numeric number on them.

See the following examples (next):

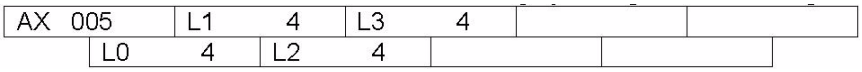
Example 1 - Sample Destination Table

```
AX   005,AX 5,   4,   4,   4,   4,
AX   006,AX 6,   5,   5,   5,   5,
AX   007,AX 7,  25,  25,  25,  25,
AX   008,AX 8,  26,  26,  26,  26,
AX   009,AX 9,  27,  27,  27,  27,
AX   010,AX10,  31,  31,  31,  31,
AX   011,AX11,  32,  32,  32,  -1,
```

Mnemonic Mode

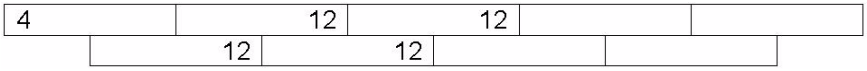


Press and hold the Mnemonic/Numeric button and the displays change to the following:

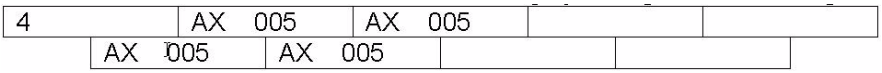


The source displays will show a “4” on each level since those are the outputs that AX 005 is controlling - from the example destination table shown above.

Release the Mnemonic/Numeric button and the displays change to show Numeric sources on destination “4”.



Press and hold the Mnemonic?numeric button and the displays change to the following:



When the panel is in Numeric mode and the user presses the Mnemonic/Numeric button, the displays change to show which Mnemonics contain output “4” (on that level). When the Mnemonic/Numeric button is released, the panel will select the “first” level to switch *to* when entering Mnemonic mode.

Panel Installation (Ethernet)

Control panels are typically located in edit suite consoles, at various locations in the machine room or transmission room, in studio control rooms, in screening rooms or conference rooms — any place where you are required to route or monitor audio and video signals

Use the following steps to install each control panel:

1. Determine the location for each UCP-XY control panel in your facility.

Installation

- Ensure that each location is within five feet of an AC outlet. This distance is the length of the DC power cord.
- Select a location that allows for easy cabling and minimum interconnecting U-Net cable lengths.

2. Install each control panel in the destination equipment rack or console. Note that the left and right mounting holes at the front of each panel support the entire weight of the unit.

Because of this front support method, ensure that all screws are tightened securely as you install each panel.

Note: Provide sufficient space behind each panel for running your cables and for performing maintenance if required.

3. Repeat steps 1 and 2 for each panel that you want to install.

This completes the installation of each UCP control panel. Please continue with the procedure for connecting the Ethernet panel.

Connecting the E-Net Panels

Each panel contains only one E-Net port, and must be attached to the control system using a hub on which the SC3/SC4 is located. There is only one E-Net port on the rear of the panel, and therefore needs to be run directly from its location directly to the hub.

E-Net cables and E-NET hubs/switches are not supplied. The cable is a standard off the shelf (straight through) E-Net cable.

Each panel contains a unique IP address. The IP address must be set to the same subnet as the SC3/SC4 controller, otherwise a gateway address is required.

192.168.221.xxx

UCP Control Panel Ethernet Setup Procedure

In order to configure the Ethernet panels for your intranet, follow the steps below:

Overview

To properly set up a UCP Ethernet panel requires 3 steps

1. Connect a serial port to the control panel
2. Enter the IP Address for the control panel
3. Enter the IP Address(es) for the system controllers used in the system.
4. Enable the Ethernet control interface.

What you will need

1. IBM PC compatible computer with at least 1 RS-232 serial communications port
2. Terminal emulation program such as Hyperterminal or Teraterm pro
3. 9-pin to RJ45 Serial Port adapter labeled MC2020
4. CAT-5 cable long enough to reach from the computer to the control panel being configured.
5. IP Address for the system controller(s) (SC3, SC4, SC400) the panel will control
6. An unused IP Address that can be assigned to the control panel.

Serial Port Setup/Connection

1. Insert 1 end of the CAT 5 cable into the 9-pin to RJ45 adaptor and connect the adaptor to the serial port of the computer.
2. Connect the other end of the CAT 5 cable to the RJ45 connector labeled “DIAGNOSTICS PORT” on the back of the UCP control panel.
3. Start the terminal emulation program and configure the serial port as follows:

   BAUD19200

   Chars8

   ParityNone

   Stop1

Panel Configuration (Ethernet)

For the remainder of this section any text contained within a box is the typical output from the terminal emulation display screen.

1. Enter a ? to see a list of supported commands. The output should be similar to the following:

Table 2-1.

Main Menu	
D	Download File
P	Program into Flash
T	Display Tables
S	Slow Baud 19200
F	Fast Baud 115200
G	Read Scangate
R	Read Flash/Regs
I	Init Default Tables menu
L	Turn logging on/off
O	Comm Interface Select/Configure
V	Version

2. Enter a ‘O’ to select the Comm Interface Select/Configure Menu. Both upper and lower case are supported.

U	Select UNET or Serial Interface
E	Select ETHERNET Interfac
C	Configure ETHERNET Interface
S	Configure Serial Interface
D	Display Interface Settings
A	Set 1st Controller IP Address
B	Set 2nd Controller IP Address
L	Set Local IP Address

3. Enter ‘D’ to see the current communications settings.

INT Type is UNET or Serial

IP 1

IP 2

IP LCL

Serial Port Setup
Baud Rate: 38400
Word Length: 8
Parity: NONE
Stop Bits: 1

NODE-1>

4. Set the IP Address for the first controller. From the main menu enter ‘O’ ‘A’. This will display the current setting. Enter the new address in nnn.nnn.nnn.nnn format followed by the ENTER key to set the new IP Address into the control panel flash memory.

Note: Pressing the ESC key any time during the entry process aborts the operation.

5. Set the IP Address for the local control panel. From the main menu enter ‘O’ ‘L’. Enter the IP Address in the same manner as step 4 above.
6. OPTIONAL STEP FOR SC3. If your system uses a SC3 Controller and you have redundant cards you will have to set the 2nd IP Address in the control panel. To do this, enter ‘O’ ’B’ from the main menu. Now enter the IP Address in the same manner as step 4 above.
7. OPTIONAL STEP FOR SC400. If you system uses a SC400 Controller in a UT200 Chassis and you have redundant control cards you will have to set the 2nd IP Address in the control panel. To do this, enter ‘O’ ’B’ from the main menu. Now enter the IP Address in the same manner as step 4 above.
8. Verify the ip addresses by entering ‘O’’D’ from the main menu. The new IP Address settings will be displayed.
9. If all the data is correct, enable the Ethernet interface by entering ‘O’ ‘E’ from the main menu. This will cause the panel to go through a 5 to 15 second configuration process and then the Ethernet communications will be active.

Connecting the panel to the terminal

In order to run the Ethernet Setup utility you must successfully connect the panel serial port to a terminal or terminal emulator program on a PC. The physical connection is made by using a CAT 5 serial cable. Attach the RJ-45 connector to the diagnostic port on the back of the panel, and the other end to a serial port on a terminal or PC. Set the terminal serial connection for 19200 baud, with 8 data bits, no parity and one stop bit.

Connecting the panel to the network

After resetting the panel, as the panel is booting up, the Ethernet cable can be connected. The LINK light on the back of the panel will light up if the connection is good. Within a few seconds the panel should be active. It can then be reprogrammed via RMS or U-Con, and used to control the router as configured on the SC-3/SC-4. Refer to the SC-3/SC-4 user documentation for further information on configuring the controller for U-Net functionality.

If the panel does not seem to work properly, make sure the LINK light is illuminated, run the ethernet utility and use the SHOW command to verify the network parameters. . You can also use the ping command to verify that the network connection to the controller is good. At a terminal prompt enter the ping command and the IP address of the controller as shown below. When entering the command, replace the IP address below with the IP address of your controller.

/> ping 192.168.4.221

If you cannot ping the panel or controller, it will not be able to work in the system. Contact your network administrator to troubles.

Panel Lock Feature

The Panel Lock feature applies to all panels in the UCP series. To activate panel lock, hold down the **Level Shift** button while pressing the **Level 1** button. If the panel contains a display, the word “Locked” will appear in the status area for two seconds. If you then attempt to press a button that would affect the router, the *Level Shift* and *Level 1* buttons will blink while “Locked” flashes in the display. To unlock the panel, hold down the *Level Shift* button and press the *Level 1* button again. The display will show “UNLocked”, and button activation is again possible.

Note: The UCP-48 and UCP-64 use a different key combination for panel lock and unlock. For specific information, please see Chapter 6 (UCP-64) and Section 5 (UCP-48, within the UCP Series II Guide).

Configuring the Serial Port for RCP1 Protocol

The serial port on the back of the panel can be connected to the SC4 serial port, which is typically used instead of the Ethernet port or the U-NET port. If for some reason the U-NET and the serial port are connected at the same time, the panel will ignore the serial port messages and only respond to the U-NET port messages.

What you will need

1. IBM PC compatible computer with at least 1 RS-232 serial communications port
2. Terminal emulation program such as Hyperterminal or Teraterm pro
3. 9-pin to RJ45 Serial Port adapter labeled MC2020
4. CAT-5 cable long enough to reach from the computer to the control panel being configured.
5. IP Address for the system controller(s) (SC3, SC4, SC400) the panel will control
6. An unused IP Address that can be assigned to the control panel.

Serial Port Setup/Connection

1. Insert 1 end of the CAT 5 cable into the 9-pin to RJ45 adaptor and connect the adaptor to the serial port of the computer.
2. Connect the other end of the CAT 5 cable to the RJ45 connector labeled “DIAGNOSTICS PORT” on the back of the UCP control panel.
3. Start the terminal emulation program and configure the serial port as follows:

   BAUD19200

   Chars8

   ParityNone

   Stop1

Panel Configuration

For the remainder of this section any text contained within a box is the typical output from the terminal emulation display screen.

1. Enter a ? to see a list of supported commands. The output should be similar to the following:

Table 2-2.

Main Menu	
D	Download File
P	Program into Flash
T	Display Tables
S	Slow Baud 19200
F	Fast Baud 115200
G	Read Scangate
R	Read Flash/Regs
I	Init Default Tables menu
L	Turn logging on/off
O	Comm Interface Select/Configure
V	Version

2. Enter a ‘O’ to select the Comm Interface Select/Configure Menu. Both upper and lower case are supported.

Table 2-3.

U	Select UNET or SERIAL Interface
E	Select ETHERNET Interface
C	Configure ETHERNET Interface
S	Configure SERIAL Interface
D	Display Interface Settings
A	Set 1st Controller IP Address
B	Set 2nd Controller IP Address
L	Set Local IP Address
T	Toggle which Controller IP address to use

3. Select “S” to configure the Serial port. Upon doing so, the following prompts will appear:

Table 2-4.

Default Serial Port Setup	
Baud Rate	38400
Word Length	8
Parity	NONE
Stop Bits	1

Select the desired Baudrate, Parity, Length, and Stop Bits when prompted.

Select the Baud Rate. (Press ENTER for *no change*)

Table 2-5.

0	1200
1	2400
2	4800
3	9600
4	19200
5	38400
6	57600
7	115200
8	230400

Select Parity

Table 2-6.

0	NONE
1	Odd
2	Even

Select Length

Table 2-7.

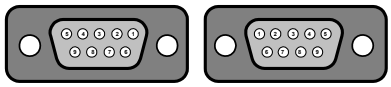
5	5 Chars
6	6 Chars
7	7 Chars
8	8 Chars

Select Stop Bits

Table 2-8.

1	1 Stop Bit
2	2 Stop Bits

Serial Port Pinouts



DB-9S (FEMALE on Chassis) DB-9P (MALE on Cable)

TABLE 3-1.

	RS-232 Mode		RS-422 Mode
1	RI	1	Not used
2	TXD	2	TX-
3	RXD	3	RX+
4	DSR	4	Not used
5	Ground	5	Ground
6	DTR	6	Not used
7	CTS	7	TX+
8	RTS	8	RX-
9	CD	9	Not used

Serial Port Jumper Position (RS-422 and RS-232)

Jumper placement for RS-232 and RS-422 operation is located on the board (JP1, below).

RS-232 operation (panel default) should be strapped toward the front of the panel, while RS-422 operation should be strapped toward the back of the panel.

Figure 2-6. RS-232 Operation

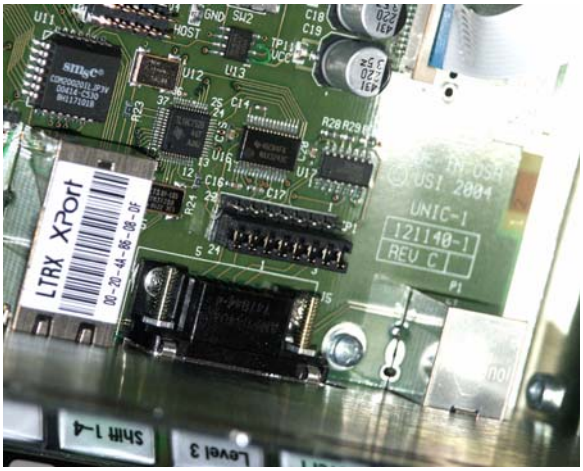


Figure 2-7. RS-422 Operation

Connecting and Disconnecting Power

Each UCP control panel contains an internal Universal Power Supply. The length of the included DC cord is 5 feet.

Use the following diagram for reference throughout the procedure:

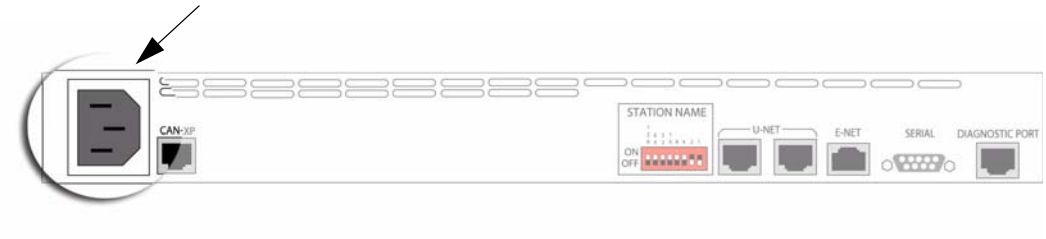


Figure 2-8. Power Connection

Use the following steps to connect control panel power:

1. Connect the male end of the AC Power Cord to a stable power source.
2. On the rear of each control panel, locate the Power connector.
3. Connect the cable to the UCP panel's Power connector and secure. If the AC source's breaker is on, the panel should immediately power up.

Repeat this procedure for each control panel in your system.

Use the following steps to disconnect control panel power (only if required):

1. On the rear of each control panel, locate the Power connector.
2. If the panel does not include a switch, carefully disconnect the supply's cable.
3. If the panel does include a switch, simply toggle the switch to the OFF position.

Repeat this procedure for each control panel in your system.

Refer to Appendix A for connector pinout diagrams and details on individual UCP panel power supplies.

Section 3

UCP 2 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP 2, a sixteen level, 8 level breakaway, full source, dual destination XY panel. The following topics are discussed:

About the UCP 2

The **UCP 2** is a 16 level XY panel that is designed to operate as a single or dual bus control panel. Only eight of the 16 levels can be broken away. Full access is provided to all sources and up to two user-defined destinations.

The figure below illustrates the main buttons and sections of the UCP 2 panel.

Note: For simplicity, numeric labels are shown on the level, source, destination and group buttons below. Your labels will differ depending upon the level, source, destination and group assignments in your facility. As shown below, buttons without labels have no functions assigned.

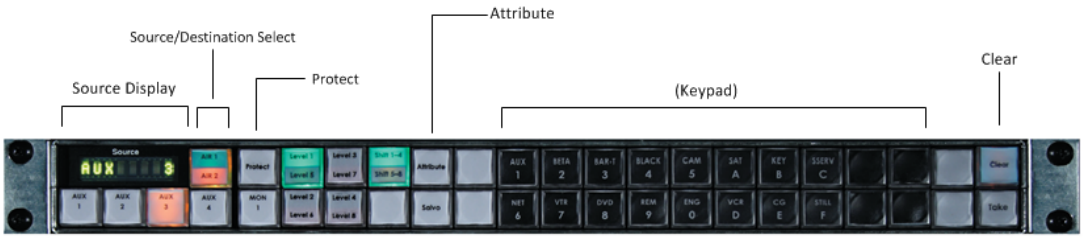


Figure 3-1. UCP 2 Panel

1.Destination Display

The **Destination Display** is an eight-segment LED readout that shows the currently selected destination. The display can be switched between numeric and mnemonic (alphanumeric) modes using the **Display Type** button.

The figure below illustrates a typical mnemonic destination display.

Figure 3-2. Mnemonic Destination Display

In the mnemonic mode, the display typically shows up to five characters plus a three-digit extension, signifying a *group name* plus a specific device within that group.

In the numeric mode, the display typically shows up to three digits, signifying a device's numeric identification (ID) as programmed with the RMS (Router Management System).

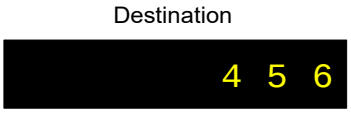


Figure 3-3. Numeric Destination Display

During the destination selection procedure, two other types of displays are used:

- A display consisting of all "dots" indicates the *first step* in the destination selection procedure. At this point, the panel is waiting for data entry.

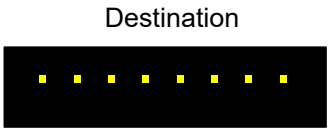


Figure 3-4. Destination "Dots" Display, Awaiting Data Entry

- A display in which a *question mark* appears indicates that a group name has been selected, but an extension has not yet been entered.

Figure 3-5. Destination "Question Mark" Display, Awaiting Extension

Note: Each of the four examples illustrated above *also* apply to the eight **Source Level Status Displays** — mnemonic, numeric, dots and question mark.

2. Source Display

The panel's multi-function **Source Display** is an eight-segment LED readout that shows the current source associated with a selected level. The buttons in the **Level Select Section** (plus the **Level Shift** button) determine which specific level is shown. The display is also used for all-follow and breakaway assignments, attribute selection, protect mode selection, and chop mode rate selection.

3. Protect Button

   The **Protect** button, when lit **Red**, indicates that either a **Lock** or a **Protect** has been enabled for the selected destination.

   - In the "**Protect**" mode, all other panels are prevented from routing sources to a destination — or to a selected *level* of a destination.
   - In the "**Lock**" mode, *all panels* (including the current panel) are prevented from routing sources to a destination — or to a selected *level* of a particular destination.

   When you press **Protect**, the button blinks and allows you to set up a Protect or Lock take.

4. Direct Source Select Section

   Each of the five buttons in the **Direct Source Select Section** can be pre-programmed with a *favorite* (or frequently used) source. By pressing a **Direct Source** button, the source is "taken" and immediately routed to the selected destination, level information (for the selected level) appears in the **Source Display**, and the button lights to indicate that a direct source is in use.

   Note: The button will light *only* if all valid levels match the selected source in an all-follow take situation. If a **Direct Source** button is used in a breakaway take, the button will *not* light after **Take** is pressed, because all valid levels are now different.

   On the UCP 2 panel, each of the five buttons is dedicated to its assigned source, but any of the available sources on the *entire* routing switcher can be assigned. Each **Direct Source** button is programmed from the routing switcher's RMS tool or U-CON utility.

5) **Level Select Section**

Each of the four buttons in the **Level Select Section** is divided in half, and each half can be lit independently. Only *one* of the eight half-button segments can be bright (illumination), but *any number* of segments can be backlit steadily.

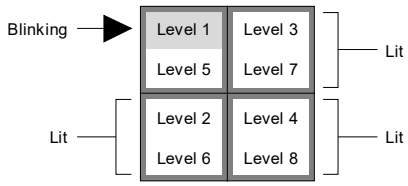


Figure 3-6. Typical Level Select Section Display

The top half of a button displays its level 1-4 assignment, while the bottom half displays the button's level 5-8 assignment (for example, Video, Audio1, Audio2, Timecode, etc.). The **Level Shift** button switches between the two groups of levels (1-4 and 5-8).

The buttons in the **Level Select Section** perform two functions:

- **Status Display**

  In the "all-follow" and "breakaway" modes, the Bold (or bright) button is associated with the source shown in the **Source Display**. This association tells you that the indicated level from the indicated source is currently connected to the selected destination.

- **Breakaway Selection**

  In the "breakaway" mode, the buttons allow you to select the level(s) that you want to include in a pending breakaway take. The *blinking* button segment indicates the most recently selected level. Refer to "**Performing a Breakaway Take**" for more information.

6) **Level Shift Button**

The **Level Shift** button switches the buttons in the **Level Select Section** between the two groups of levels (1-4 and 5-8). The lit portion of the **Level Shift** button indicates the levels that can currently be selected — for either checking status or including a level in a pending breakaway take.

7) **Attribute Button**

The **Attribute** button allows you to change various audio and video attributes of the routing switcher's output signal, and route those changes to the desired destination. For example, by entering the **Attribute Mode**, you could mute analog audio on a particular level, or change the digital video data rate. Refer to "**Changing Attributes**" for more instruction.

8) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source "group" names and extensions. A "group" represents a *category* of devices, and up to 20 source groups can be programmed from the routing switcher's RMS or U-CON utility and used on the UCP 2 panel. Each group can contain hundreds of sources, providing you with a convenient and simple way to address large numbers of devices.

For example, if your facility has 100 VTRs, you could select VTR 98 with two easy steps:

- Select the group name (VTR).
- Select the desired extension (98).

The **Group Select Section** itself includes a keypad for entering extensions in the mnemonic mode, and for entering complete source and destination identifications in the *numeric* mode).

Figure 3-7. Keypad Location

Note: The buttons marked **A** through **F** are also used for entering valid "letter" extensions such as VTR-23A.

9) **Take Button**

Press the **Take** button to conclude a pending procedure on the panel, such as an **All-follow** take, a **Breakaway** take, an **Attribute** selection or a **Protect** take.

Figure 3-8. Take Button

The button blinks to indicate that a procedure is pending.

10) **Clear Button**

The **Clear** button, when pressed during a data entry mode (such as the source or destination selection procedure), safely cancels the mode and returns the panel to a normal "status" condition with no buttons blinking. If an entry was in progress, the **Destination Display** or the array of eight **Source Displays** return to their previous assignment(s). The **Clear** button effectively allows you to begin an entry procedure again.

Displaying Level Status

Whether your panel is in "breakaway" or "all-follow" mode, the four buttons in the **Level Select Section** provide an easy way to check which levels from which sources are currently being routed to the selected destination.

Use the following steps to display level status:

1. Press **Level Shift** to select the group of levels that you wish to "status" (either 1-4 or 5-8). The lit portion of the button indicates the selected group.
2. In the **Level Select Section**, press the desired level button. In the **Source Display**, the source currently associated with that level appears. This level-to-source "pairing" indicates that the selected level from the displayed source is currently routed to the selected destination.
3. Press another **Level Select** button to check its status, or repeat the procedure from step 1 to select a level in the opposite group. Only one level can display status at a time.

Please note:

- The level mapping of each panel can differ, depending upon how each panel is configured. For example, if levels 7 and 8 are invalid on the particular destination device, those levels *may* be rendered inactive on your panel, and thus would not light.
- After an all-follow take is performed, the status of all levels will be identical. After a breakaway take is performed, the status of each level may differ.

Defaulting the Level Select Buttons

In preparation for an all-follow or a breakaway take, the **Level Select Section** buttons should be returned to the default “all-follow” mode. This can be performed with two simple *checks*:

- Press the [bright] **Level Select** button. If all **Level Select** buttons turn *off* and the button segment that you pressed blinks, your panel was *already* in the all-follow mode. To return to the mode, press the blinking **Level Select** button again.
- Press the clear button.
- Press each blinking button segment until all button segments stop blinking. Once all button segments are steady (not blinking), the remaining [brightly illuninated] button will represent ‘statused’ level. In this case, the default ‘All Follow’ mode has been restored.

Performing an All-follow Take

An “all-follow take” is one in which all assigned signal levels switch simultaneously, and no signal levels are broken away. There are two ways to perform an all-follow take on the panel:

- All-follow with the **Direct Source Select** buttons
- All-follow with the **Group Select** buttons

Each selection method is described below.

All-follow with the Direct Source Select Buttons

Use the following steps to perform an all-follow take using the **Direct Source Select** buttons.

1. Ensure that the desired “direct” sources are pre-programmed from the RMS or U-CON, and that all **Direct Source Select** buttons are properly labeled.
2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode. Refer to the “**Defauting the Level Select Buttons**” for further instruction.
3. Press the **Destination Select** button (figure 3.1) to choose the desired destination.

4. Press the desired **Direct Source Select** button.

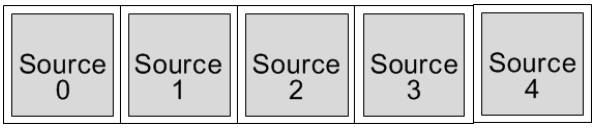


Figure 3-9. Direct Source Select Section

The button lights, the source is automatically selected, and its name appears in the **Source Display**. There is *no need* to press **Take**.

Once the all-follow take has been performed, *all buttons* in the Level Select Section will status the source that was just chosen.

All-follow with the Group Select Buttons

Use the following steps to perform an all-follow take using the **Group Select** buttons.

1.Ensure that the desired source "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.

2. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.

3. Press the **Destination Select** button to choose the desired destination.

4. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display**, the "question mark" readout appears, with the selected group name showing as the prefix.

Figure 3-10. Source "Question Mark" Display, Awaiting Extension

5. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device. The leading zeros do *not* need to be entered. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension.

6. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignment appears in the **Source Display** on all valid levels.

Refer to the “**Cancelling an All-follow Take**” section for additional information.

Cancelling an All-follow Take

To cancel the all-follow take procedure, press the **Clear** button at any time prior to pressing **Take**. This safely cancels the data entry procedure and returns the **Source Display** back to its previous assignment.

> **Note:** If you press **Take** but the source ID is *invalid*, the **Take** button stops blinking and all levels revert to their previous assignments — without taking the new source.

Performing a Breakaway Take

A “breakaway take” is a special Take in which a subset of all available signal levels are sent to a destination. The following topics are discussed in this section:

- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breakaway with the Direct Source Select Buttons
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

Breaking Away One Level From One Source

Use the following steps to break away one level from one source.

1. Ensure that the desired source “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode.
3. Press the **Destination Select** button to choose the desired destination.
4. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the level that you want to break away. When breaking away just one level, its easier to choose the group *prior* to entering the breakaway mode.

5. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. In the **Source Display**, the “dots” display appears — indicating that the level is now awaiting data.

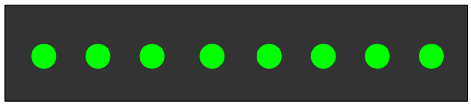


Figure 3-11. Source “Dots” Display, Awaiting Data Entry

The **Level Select Section** is now in the breakaway mode.

~ If the blinking button is the level that you want to break away, no further action is necessary in the **Level Select Section**. Please continue with step 6 below.

~ If the blinking button is *not* the level that you want to break away, press the **Level Select** button for the desired level.

6. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.

7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device — up to three digits. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a “take” is pending.

Note: Remember that the *first* press of a **Group Select** button chooses the group, and the next **keypad** presses select the extension.

8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking, the buttons in the **Level Select Section** return to the default “all-follow” mode, the single source level is routed to the destination, and new status is shown in the **Source Display** for the selected level.

Breaking Away Multiple Levels From One Source

Use the following steps to break away multiple levels from one source.

1.Ensure that the desired source “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.

2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode.

3. Press the **Destination Select** button to choose the desired destination.

4. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the *first level* that you want to break away.

5. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. In the **Source Display**, the “dots” display appears — indicating that the level is now awaiting data. The section is now in the breakaway mode.

   ~ If the blinking button is one of the levels that you want to break away, please continue with step 6.

   ~ If the blinking button is *not* one of the multiple levels that you want to break away, press the **Level Select** button for the desired level.

6. To add additional levels, press each desired **Level Select** button to add it to the breakaway group. Each new button that you press blinks, and the previously blinking button lights steadily. As required, use the **Level Shift** button to change groups.

   In the sample breakaway selection below, levels 1 and 3 are pending for a breakaway take, and level 3 was the last button pressed (because it is blinking).

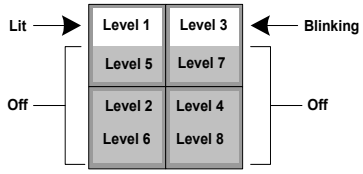


Figure 3-12. Sample Breakaway Mode Display

Note: You can *remove* levels from the breakaway group simply by toggling **Level Select** buttons. Pressing a steadily lit button toggles it off. Pressing the blinking button toggles it off, and causes the last-selected button to blink.

7. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.

8. Using the keypad buttons, enter the extension of the desired source device. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a “take” is pending.

   Note: Remember that the *first* press of a **Group Select** button chooses the group, and the next **keypad** presses select the extension.

9. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking, the buttons in the **Level Select Section** return to the “all-follow” mode, all selected source levels are routed to the destination, and new status is available in the **Source Display** for each selected level.

Breakaway with the Direct Source Select Buttons

The four **Direct Source Select** buttons can be used to simplify the breakaway take procedure as follows.

1.Ensure that the desired “direct” sources are pre-programmed from the RMS or U-CON, and that all **Direct Source Select** buttons are properly labeled.

2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode.

3. Press the **Destination Select** button to choose the desired destination.

4. Using the **Level Shift** button in conjunction with the buttons in the **Level Select Section**, choose the levels that you want to break away.

   Note: You can select and deselect levels as needed — you can even toggle off a previously “enabled” level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

5. Press the desired **Direct Source Select** button. The source is automatically routed to the enabled levels, and new status is available in the **Source Display** for each selected level. There is *no need* to press **Take**.

Breaking Away Multiple Levels from Different Sources

Use the following steps to break away two or more levels from *different* sources.

1.Ensure that the desired source “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.

2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode.

3. Press the **Destination Select** button to choose the desired destination.

4. Using the **Level Shift** button in conjunction with the buttons in the **Level Select Section**, choose the levels that you want to break away from the current source.

   Note: You can select and deselect levels as needed — you can even toggle off a previously “enabled” level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

5. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.
6. Using the keypad buttons, enter the extension of the desired source.
7. Once the first source has been entered for the first set of levels, repeat steps 4 through 6 (as often as required) for each additional set of levels and sources that you want to add to the multiple breakaway. You can breakaway up to 8 levels from 8 different sources.

   Note: If you change your mind, pressing a blinking **Level Select** button (for the first time) returns that level to the “dots” display, allowing you to re-enter a source. Pressing the button while the “dots” display is active toggles the level off.

8. With all valid sources entered, press **Take** to conclude the procedure. The **Take** button stops blinking, the buttons in the **Level Select Section** return to the “all-follow” mode, all selected source/level combinations are routed to the destination, and new status is available in the **Source Display** for each selected level.

Breakaway Take (Starting in All-Follow Mode)

Use the following steps to start a breakaway take in the “all-follow” mode, and then select your desired breakaway sources as required.

1.Ensure that the desired source “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.

2. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode.
3. Press the **Destination Select** button to choose the desired destination.
4. In the **Group Select Section**, select the all-follow source. Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display**, the “question mark” readout appears, with the selected group name showing as the prefix.
5. Using the keypad buttons, enter the extension of the desired device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.

6. Using the **Level Shift** button in conjunction with the **Level Select Section** buttons, choose the levels that you want to break away. See the "**Breaking Away Multiple Levels From One Source**" section on page 3-11 for detailed instructions on selecting levels.
7. In the **Group Select Section**, select the breakaway source by pressing the button for the desired *group* of devices. In the **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
8. Using the keypad buttons, enter the extension of the desired breakaway source device.
9. With a valid extension entered, press **Take** to conclude the procedure.

Note: You can also break away multiple levels and sources. See the "**Breaking Away Multiple Levels from Different Sources**" section on page 3-13 for details.

Cancelling a Breakaway Take

To cancel the breakaway take procedure, two methods are available:

- Press the **Clear** button.
- Toggle *all* blinking **Level Select** buttons off.

Both methods safely cancel the data entry procedure.

Using the Protect Mode

Pressing the red **Protect** button activates the "**Protect Mode**" and causes the button to blink — indicating that the mode is active. In this mode, you can set a **Lock** or a **Protect**, or you can *clear* either of the two modes (if appropriate for the current panel).

Note: Because the **Protect** button by itself does not differentiate between a **Protect** or a **Lock**, you can enter the mode to verify what *type* of protect is enabled, and on what levels.

In the **Protect Mode**, you can perform one of three functions to the selected destination:

- Setting a "**Protect**" prevents all other panels from routing sources to a destination — or to a selected *level*. Only the current panel (that is, the one that *originally* set the **Protect**) can perform takes, and only the current panel (and the RMS) can clear the **Protect**.

The **Protect** mode is indicated by the **"PROTECT"** label in the **Source Display**.

Figure 3-13. Protect Mode Source Display Label

- Setting a "**Lock**" prevents *all panels* (including the current panel) from routing sources to a destination — or to a selected *level* of a particular destination. Any panel (including the RMS) can clear the **Lock**.

  The **Lock** mode is indicated by the **"LOCK"** label in the **Source Display**.

Figure 3-14. Lock Mode Source Display Label

- Setting a "**Clear**" removes either the enabled **Lock** or **Protect**. When you set the **Clear** mode, it is indicated by the **"CLEAR"** label in the **Source Display**.

Figure 3-15. Clear Mode Source Display Label

Each procedure is discussed in detail in the following sections.

Setting a Protect

Use the following steps to set a **Protect** for a destination. This mode prevents all other panels from routing sources to a destination or to a selected *level*.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.
2. Press the **Destination Select** button to choose the destination on which you want to set or change the **Protect**.
3. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display**, one of two labels will appear:
   - If there are no **Protects** or **Locks** currently set, the display will be blank.
   - If a **Protect** or a **Lock** is currently set, the appropriate label will appear.

4. If you want to set a **Protect** for *all levels*, please continue with step 5.

   If you want to set a **Protect** on *selected* levels, use the **Level Shift** button in conjunction with the buttons in the **Level Select Section** to choose the levels that you want to select.

5. Press **Keypad Button 1** to set the **Protect** mode for all levels, or for the selected levels.

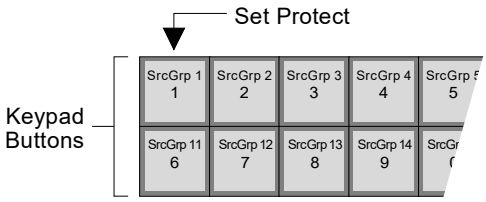


Figure 3-16. Keypad "Set Protect" Button Location

   In the **Source Display**, the **"PROTECT"** label appears.

6. Press **Take** to send the new **Protect** mode to the selected destination.

7. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Protect** mode set, please note:

- All other panels are prevented from routing sources to the destination.
- Only the current panel (the one that *originally* set the **Protect**) can perform takes.
- Only the current panel (and the RMS) can clear the **Protect**.

Setting a Lock

Use the following steps to set a **Lock** for a particular destination. This mode prevents *all panels* (including the current panel) from routing sources to a destination.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.

2. Press the **Destination Select** button to choose the destination on which you want to set or change the **Lock**.

3. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display**, one of two labels will appear:

   - If there are no **Protects** or **Locks** currently set, the display will be blank.

- If a **Protect** or a **Lock** is currently set, the appropriate label will appear.

4. If you want to set a **Lock** for *all levels*, please continue with step 5.

   If you want to set a **Lock** on *selected* levels, use the **Level Shift** button in conjunction with the buttons in the **Level Select Section** to choose the desired levels. The "dots" display appears.

5. Press **Keypad Button 2** to set the **Lock** mode for all levels, or for the selected levels.

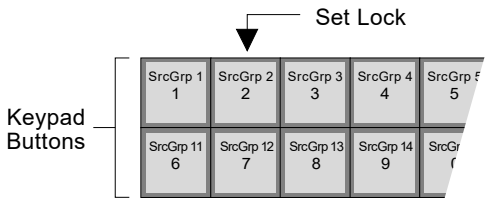


Figure 3-17. Keypad "Set Lock" Button Location

   In the **Source Display**, the **"LOCK"** label appears.

6. Press **Take** to send the new **Lock** mode to the selected destination.

7. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Lock** mode set, please note:

- All panels (including the current one) are prevented from routing sources to the destination.
- All panels (and the RMS) can clear the **Lock**.

Clearing a Lock or Protect

The **Lock** and **Protect** modes can each be cleared (removed) entirely, or selected levels can be cleared individually. Note that if the selected destination has a **Protect** enabled, only the current panel (the one that *originally* set the **Protect**) can clear it. If the selected destination has a **Lock** enabled, any panel can clear it.

Use the following steps to clear a **Lock** or a **Protect**:

1.Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.

2. Press the **Destination Select** button to choose the destination on which you want to clear the **Lock** or **Protect**. Remember that you must be working from the panel that originally set the **Protect** in order to clear it.
3. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display**, the appropriate **Lock** or **Protect** label appears.
4. To clear *all levels*, please continue with step 5.

   To clear *selected* levels, use the **Level Shift** button in conjunction with the buttons in the **Level Select Section** to choose the levels that you want to clear.
5. Press **Keypad Button 3** to set the **Clear** mode for all levels, or for the selected levels.

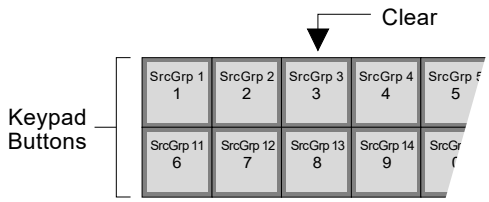


Figure 3-18. Keypad "Clear Lock" Button Location

   In the **Source Display**, the **"CLEAR"** label appears.
6. Press **Take** to send the **Clear** mode to the selected destination.
7. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

Using the Direct Protect Mode

As an easy shortcut, you can use several buttons in the **Direct Source Select Section** to set *any* of the three **Protect** modes.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.
2. Press the **Destination Select** button to choose the desired destination.
3. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display**, one of two labels will appear:
   - If there are no **Protects** or **Locks** currently set, the display will be blank.
   - If a **Protect** or a **Lock** is currently set, the appropriate label appears.

4. In the **Direct Source Select Section** (with **Protect Mode** enabled), the functions of the first three buttons are changed as follows:

    - Press **Direct Source Select Button 1** to set a **Protect**.
    - Press **Direct Source Select Button 2** to set a **Lock**.
    - Press **Direct Source Select Button 3** to set a **Clear**.

    The figure below illustrates the button functions.

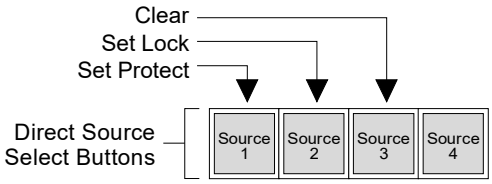


Figure 3-19. Direct Source Select Button Functions in Protect Mode

5. To exit the **Protect Mode**, press the blinking **Protect** button. There is no need to press **Take** using the “direct” method.

Cancelling a Protect Mode Selection

If you need to cancel a **Protect Mode** procedure, two methods are available:

- Press the **Clear** button.
- If there are no “breakaway” **Protect Mode** selections pending, press the blinking **Protect** button to exit the mode.

Protect Mode Notes

Please note the following important point regarding the **Protect Mode** in general.

- When the **Protect Mode** is enabled and you are selecting between the three modes (prior to pressing **Take**), you can not switch directly between **Lock** and **Protect**. You must first clear the **Lock** or **Protect** by sending a **Clear** take, and then choose the alternate mode.

Changing Attributes

The **Attribute Mode** allows you to change various audio and video attributes of the routing switcher's output signals, and route those changes to the desired destination with a **Take**. Attribute changes are performed in "breakaway" fashion to the target signal levels only. For example, changes in audio attributes would *only* be performed on selected audio levels, while changes to the video data rate would only be performed to the digital video level.

> **Note:** Audio attributes always apply to analog stereo pairs, as pre-defined in the RMS. For example, if Level 1 is defined as **Channel 1 Left** and Level 2 is defined as **Channel 2 Right** in the RMS (and *both* are defined as a stereo pair), when an attribute change is made to either Level 1 or 2, the change may affect one or both portions of the stereo pair. In addition, status will be displayed the same for *both levels*, even if the attribute change was performed to one half of the stereo pair only.

Use the following steps to change audio and video attributes.

1. Ensure that all stereo pairs are properly defined in the RMS.
2. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.
3. Press the **Destination Select** button to choose the desired destination.
4. Press the **Attribute** button. The button blinks to show that the **Attribute Mode** is active.
5. Use the **Level Shift** button in conjunction with the buttons in the **Level Select Section** to choose the levels on which you want to change attributes. The "dots" display appears.
6. Using keypad buttons **0** through **9** and buttons **A** through **D**, select the desired attributes that you wish to change. The table below lists each selection. Note that the **Attribute Name** column lists how each attribute appears in the **Source Display**.

Table 3-1. Attribute Selections

Keypad Button	Attribute Name	Description
0	NORMAL	Resets the selected level to normal. Removes any attribute changes.
1	SWAP	Swaps audio left and right signals.
2	MIX	Mixes left and right signals together, and sends a "mixed" signal out each port.
3	MONOLEFT	Sends the left channel out both the left and right ports.

Table 3-1. Attribute Selections

Keypad Button	Attribute Name	Description
4	MONORGHT	Sends the right channel out both the left and right ports.
5	INVTLEFT	Inverts the phase of the left channel.
6	INVTRGHT	Inverts the phase of the right channel.
7	MUTELEFT	Mutes the left channel, and sends "normal" on the right channel.
8	MUTERGHT	Mutes the right channel, and sends "normal" on the left channel.
9	MUTEALL	Mutes both the left and right channels.
A	DV143	Reclocks video data rate to 143 Mhz.
B	DV177	Reclocks video data rate to 177 Mhz.
C	DV270	Reclocks video data rate to 270 Mhz.
D	DV360	Reclocks video data rate to 360 Mhz.

7. Press **Take** to complete the procedure. The **Attribute** button stops blinking, and the new attributes are routed to the selected levels of the destination.

Note: Video data rate changes are specific to the UTAH-300 routing switcher, in which the data rate must be "set" for the output modules. Refer to the ***UTAH-300 User's Guide*** for additional information.

Using the Chop Mode

The **Chop Mode** allows you to toggle between two Takes. When you initiate the mode, the panel alternates between the two sources continuously, at a predetermined rate. The "chop" continues until you cancel it, or until another user on another panel cancels it. The mode is typically used for color-matching cameras, phasing sources, or matching video levels. The Chop Mode can be used in both "all-follow" and "breakaway" conditions.

Setting the Chop Mode Rate

Use the following steps to set the **Chop Mode** rate (that is, the rate at which the system toggles between the two selected sources).

1. Press and *hold* the **Take** button.

2. Using keypad buttons **0** through **9**, select the number for the desired chop rate. The table below lists each selection.

Table 3-2. Chop Rate Selections

Keypad Button	Chop Rate (seconds)
0	Off
1	.25
2	.50
3	.75
4	1.0
5	1.5
6	2.0
7	2.5
8	3.0
9	5.0

When you select a number, the current chop rate appears in the **Source Display**.

3. Release the **Take** button to complete the procedure. The panel is now set to chop between two selected sources at the chosen rate.

Performing an All-follow or Breakaway Chop

Use the following steps to activate the **Chop Mode** between two All-follow Take or Breakaway Take sources:

1. Program the first **All-follow Take** or **Breakaway Take** in the normal manner.
2. Program the second All-follow or Breakaway Take in the normal manner — to the *same destination* as the first Take. Instead of pressing **Take** to conclude the procedure, press and *hold* the **Take** button for two seconds.

   This action places the panel in the **Chop Mode**, and the system switches between both sources on all selected levels continuously (at the current toggle rate). The label in the **Source Display** now alternates between the two selected sources. These alternating labels are your *only indications* that the system is in Chop Mode.
3. To cancel the **Chop Mode**, press *any button* on the panel.

Note: The mode is also automatically cancelled when any other panel sends a normal **Take** (or a breakaway **Take**) to the destination that is currently chopping.

Chop Mode Notes

Note the following important points regarding the Chop Mode:

- **Locks** and **Protects** apply in the normal manner.
- If the Chop Mode is active in "breakaway" condition on a specific signal level, you can perform another breakaway Take to a signal level that is not chopping — without affecting the levels that are chopping. This action can be performed on any other panel except the one that initiated the Chop Mode.

Monitor Matrix Mode

The **Monitor Matrix** mode allows you to conveniently monitor each signal level's outputs — without affecting the router's actual destinations. Each level has a separate Monitor Matrix output that is typically routed to *physical* audio and video monitors in the control room (or machine room). When the UCP 2 panel is in Monitor Matrix mode, and when a particular destination device is chosen, you can monitor that destination *visually and aurally*. You have the ability to *see and hear* the source that is routed to the destination, but you can not determine what the actual source is from the UCP 2 panel itself.

Because the UCP 2 is a dual-destination panel, one of the two destinations can be assigned to the Monitor Matrix function from the RMS or U-CON. This is accomplished by assigning the keyword "**MMTRX**" into one of the panel's two available destination entry boxes on the RMS or U-CON itself. Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP 2 panel functions in the special Monitor Matrix mode — allowing you to monitor any of the router's 20 groups of available destinations.

Note: The following important rules apply when the **Monitor Matrix** mode is selected on the UCP 2 panel:

- The buttons in the **Group Select Section** (which are normally *source* selection buttons), become *destination* selection buttons.
- The normal procedure for taking a *source* becomes the process for taking a *destination*.
- The **Source Display** becomes a **Destination Display**.
- The buttons in the **Level Select Section** function in the normal way, allowing you to view the Monitor Matrix output on *all levels* — or on *selected* levels. Typically, a Monitor Matrix "take" is an all-follow take, but you can split the monitor as required. This would allow you, for example, to see the video routed to destination one (e.g., VTR--021), but hear the audio routed to destination two (e.g., SATELITE).
- The **Protect** and **Attribute** modes are not valid during the Monitor Matrix mode.
- The buttons in the **Direct Source Select Section** are not valid.

Use the following steps to enable and utilize the Monitor Matrix mode:

1. Ensure that the Monitor Matrix mode is properly enabled from the RMS or U-CON for your specific panel, with the keyword "**MMTRX**" entered. The feature will *not* operate otherwise.
2. On the panel, ensure that the correct portion of the **Destination Select** button is *clearly* labeled (for example, **MMTRX** or **Mon Mtrx**).
3. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
4. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.
5. Press the **Destination Select** button to choose the Monitor Matrix destination.
6. In the **Group Select Section** (which now applies to *destinations* rather than sources) press the button for the desired *group* of destination devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display** (which is now a *destination* display), the "question mark" readout appears, with the selected group name showing as the prefix.

7. Using the keypad buttons, enter the extension of the desired destination device.
8. If you want to break away a level (for purposes of monitoring split destinations), perform the following steps:
    - Use the **Level Shift** button in conjunction with the **Level Select Section** buttons to choose the levels that you want to break away. See the "**Breaking Away Multiple Levels From One Source**" section on page 3-11 for instructions on selecting levels.
    - In the **Group Select Section**, select the breakaway destination by pressing the button for the desired *group* of devices. In the **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
    - Using the keypad buttons, enter the extension of the desired breakaway destination.
9. With a valid extension entered, press **Take** to conclude the procedure.

The selected destination is now routed to the Monitor Matrix output, allowing you to monitor the audio and video signals that are routed to the destination's input. Repeat the procedure from step 6 to monitor additional destinations as required.

Panel Lock Feature

The Panel Lock feature applies to all panels in the UCP series. To activate panel lock, hold down the **Level Shift** button while pressing the **Level 1** button. If the panel contains a display, the word "Locked" will appear in the status area for two seconds. If you then attempt to press a button that would affect the router, the *Level Shift* and *Level 1* buttons will blink while "Locked" flashes in the display. To unlock the panel, hold down the *Level Shift* button and press the *Level 1* button again. The display will show "UNLocked", and button activation is again possible.

Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Changing Panel LED Intensity
- Verifying the Software Version
- Verifying the Panel Node
- Verifying the Panel ID

Use the following figure for reference during the procedures listed above. Note that the keypad buttons are highlighted in white for clarity only.

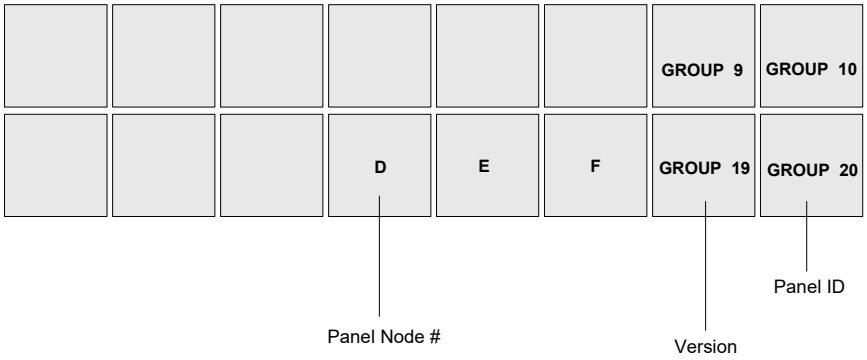


Figure 3-20. Keypad Buttons used for Miscellaneous Panel Modes

Changing Panel LED Intensity

Use the following steps to change the intensity of the panel LEDs.

1. Press and *hold* the **Level Shift** button.
2. While holding, press one of the first seven keypad buttons, as shown in Figure 3-20. Button **1** is the brightest setting; button **7** is the dimmest setting.

   Note: Even on the dimmest setting the LEDs are never completely off.

3. Release the **Level Shift** button to complete the procedure.

Verifying the Software Version

Use the following steps to verify the panel's current software version.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the **GRP 19** button as shown in Figure 3-20. In the **Source Display**, the panel's software version appears.

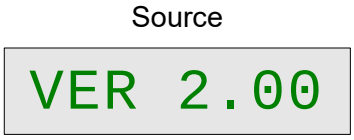


Figure 3-21. Panel Software Version Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel Node

Use the following steps to verify the panel node address, as assigned on the UCP 2's rear panel DIP switch.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the '**D'** button as shown in Figure 3-17. In the **Source Display**, the panel's node address appears.

Figure 3-22. Panel Node Address Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel ID

Using the RMS, you can enter a panel ID (or "name"), up to 32 characters in length.

> **Note:** Since the **Source Display** is only eight characters long, it is recommended that you truncate Panel IDs for the UCP 2.

Use the following steps to verify the panel ID.

1. Press and *hold* the **Level Shift** button.

2. While holding, press the **GRP 20** button as shown in Figure 3-20. In the **Source Display**, the panel's ID appears.

Figure 3-23. Panel ID Display

3. Release the **Level Shift** button to complete the procedure.

General Panel Notes

Note the following important points regarding the UCP 2 panel in general:

- When the UCP 2 panel is being re-programmed, the label "**REPROGRM**" appears in the **Source Display**. The panel is inactive during the reprogramming mode.
- If the panel's U-Net connection is lost, the **Source Display** will show all dashes.
- With the UCP 2 (and with other UCP panels), multiple panels *may* be able to address the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP 2, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.
- This will display only the first (8) characters of the panel ID.

Section 4

UCP 36/8 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP 36/8, an eight level, single destination, 36 source panel. The following topics are discussed:

About the UCP 36/8

The **UCP 36/8** is an eight level, four destination, 36 source panel that is designed for fast access to a limited number of sources. Because the panel is dedicated to a single destination (and typically located *near* the destination itself), the destination is not *electronically* displayed on the panel. It is the user's responsibility to make a note of the destination.

The figure below illustrates the main buttons and sections of the UCP 36/8 panel.

Note: For simplicity, numeric labels are shown on the level and source buttons below. Your labels will differ depending upon the level and source assignments in your facility. Note also that buttons *without* labels have no functions assigned.

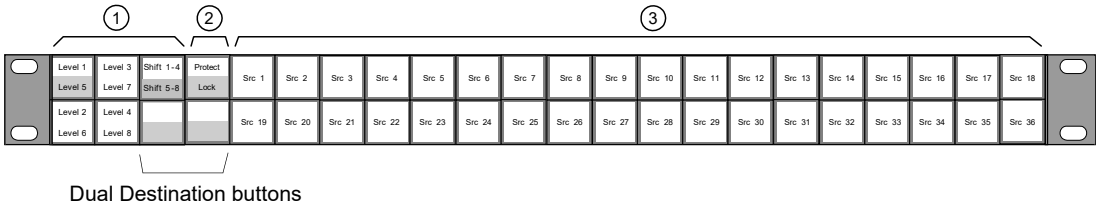


Figure 4-1 UCP 36/8 Panel

1)	Level Select Section	2)	Level Shift Button	3)	Source Section

1) **Level Select Section**

Each of the four buttons in the **Level Select Section** is divided in half, and each half can be lit independently. Only *one* of the eight half-button segments can be blinking, but *any number* of segments can be lit steadily.

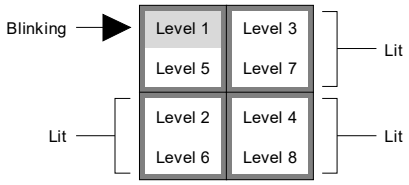


Figure 4-2 Typical Level Select Section Display

The top half of a button displays its level 1-4 assignment, while the bottom half displays the button's level 5-8 assignment (for example, Video, Audio1, Audio2, Timecode, etc.). The **Level Shift** button switches between the two groups of levels (1-4 and 5-8).

The buttons in the **Level Select Section** perform two functions:

- **Status Display**

  In the "all-follow" and "breakaway" modes, the [bright] button is associated with a lit source button (in the **Source Section**). This association tells you that the indicated level from the indicated source is currently connected to the destination. See the "**Displaying Level Status**" section on page 4-4 for details.

- **Breakaway Selection**

  In the "breakaway" mode, the buttons allow you to select the level(s) that you want to include in a pending breakaway take. A half-button segment that is lit steadily is already included in the pending breakaway take selection. The *blinking* button segment indicates the most recently selected level. Refer to the "**Performing a Breakaway Take**" section on page 4-5 for more information.

2) **Level Shift Button**

   The **Level Shift** button switches the buttons in the **Level Select Section** between the two groups of levels (1-4 and 5-8). The lit portion of the **Level Shift** button indicates the levels that can currently be selected — for either checking status or including a level in a pending breakaway take.

3) **Source Section**

   The **Source Section** provides 36 buttons, each of which represents a single source. All 36 sources are programmed (assigned) from the routing switcher's configuration tool. When a source button is pressed, either the "all-follow take" or the "breakaway take" is sent to the dedicated destination. There is no **TAKE** button required.

Note: An "all-follow" take can include up to 16-levels, depending upon how your specific panel is mapped.

Dual Destination Buttons

Dual Destination buttons give the user the ability to configure the panel to control (4) outputs. Press the button once to get the top output. Press it again to get the bottom output. These outputs are configured from RMS or U-Con.

Displaying Level Status

Whether your panel is in “breakaway” or “all-follow” mode, the four buttons in the **Level Select Section** provide an easy way to check which levels from which sources are currently being routed to the destination.

Use the following steps to display level status:

1. Press **Level Shift** to select the group of levels that you wish to “status” (either 1-4 or 5-8). The lit portion of the button indicates the selected group.
2. In the **Level Select Section**, press the desired level button. The source button currently associated with that level lights in the **Source Section**.

   This level-to-source “pairing” indicates that the selected level from the associated source is currently routed to the destination.
3. Press another **Level Select** button to check its status, or repeat the procedure from step 1 to select a level in the opposite group. Only one level can display status at a time.

Please note:

- The level mapping of each panel can differ, depending upon how each panel is configured from the RMS. For example, if levels 7 and 8 are invalid on the particular destination device, those levels *may* be rendered inactive on your panel, and thus would not light.
- After an all-follow take is performed, the status of all levels will be identical. After a breakaway take is performed, the status of each level may differ.

Defaulting the Level Select Buttons

In preparation for an all-follow or a breakaway take, the buttons in the **Level Select Section** should be returned to the default “all-follow” mode. This can be performed with two simple *checks* as follows:

- If any of the Levels are flashing, press the **Clear** button.

Performing an All-follow Take

An “all-follow take” is one in which all assigned signal levels switch simultaneously, and no signal levels are broken away.

Use the following steps to perform an all-follow take on the UCP 36/8:

1. Ensure that the buttons in the **Level Select Section** are in the default “all-follow” mode. Refer to the “**Defaulting the Level Select Buttons**” section on page 4-4 for instructions.

2. Press the desired button in the **Source Section**. All assigned levels from the selected source are routed to the destination.

Once the all-follow take has been performed, *all buttons* in the Level Select Section will status the source that was just chosen.

Performing a Breakaway Take

A "breakaway take" is a special Take in which a subset of all available signal levels are sent to a destination. The following topics are discussed in this section:

- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breaking away multiple levels from different sources
- Canceling a breakaway take

Breaking Away One Level From One Source

Use the following steps to break away one level from a source and route it to the destination:

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode. This is the preferred starting point for a breakaway take. Refer to the "**Defaulting the Level Select Buttons**" section on page 4-4 for instructions.
2. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the level that you want to break away. When breaking away just one level, its easier to choose the group *prior* to entering the breakaway mode.
3. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. The section is now in the breakaway mode.
   ~ If the blinking button is the level that you want to break away, no further action is necessary in the **Level Select Section**. Please continue with step 4 below.
   ~ If the blinking button is *not* the level that you want to break away, press the **Level Select** button for the desired level. The button blinks and the *previously* blinking button lights steadily. Press the steadily lit button to toggle it *off*, leaving only the desired level button blinking.
4. In the **Source Section**, press the desired button to complete the procedure. Only the selected level from the source (that you just pressed) is routed to the destination.

Once the breakaway take has been performed, the buttons in the Level Select Section return to the default "all-follow" mode.

Breaking Away Multiple Levels From One Source

Use the following steps to break away two or more levels from a source:

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode. This is the preferred starting point for a breakaway take. Refer to the "**Defaulting the Level Select Buttons**" section on page 4-4 for instructions.
2. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the *first level* that you want to break away.
3. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. The section is now in the breakaway mode.
   - ~ If the blinking button is one of the levels that you want to break away, please continue with step 4.
   - ~ If the blinking button is *not* one of the multiple levels that you want to break away, press the **Level Select** button for the desired level. The button blinks and the *previously* blinking button lights steadily. Press the steadily lit button to toggle it *off*, leaving only the desired level button blinking.
4. To add additional levels, press each desired **Level Select** button to add it to the breakaway group. Each new button that you press blinks, and the previously blinking button lights steadily. As required, use the **Level Shift** button to change groups.

   In the sample breakaway selection below, levels 1 and 3 are pending for a breakaway take, and level 3 was the last button pressed (because it is blinking).

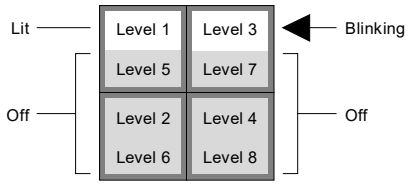


Figure 4-3 Sample Breakaway Mode Display

Note: You can *remove* levels from the breakaway group simply by toggling **Level Select** buttons. Pressing a steadily lit button toggles it off. Pressing the blinking button toggles it off, and causes the last-selected button to blink.

5. In the **Source Section**, press the desired button to complete the procedure. All selected levels from the source (that you just pressed) are routed to the destination.

Once the breakaway take has been performed, the buttons in the **Level Select Section** return to the default "all-follow" mode.

Breaking Away Multiple Levels From Different Sources

The UCP 36/8 does not allow you to break away multiple levels from *different sources* in one single operation. However, this function can easily be accomplished in two or more passes, by selecting a different level and a different source with each breakaway pass.

Use the following steps to break away two or more levels from two or more sources:

1. Follow the procedure for breaking away one level from one source, as outlined in the "**Breaking Away One Level From One Source**" section on page 4-5.
2. Repeat step 1 as many times as required, each time selecting a different level and a different source to route to the assigned destination.

Canceling a Breakaway Take

If you are in the midst of the Breakaway Mode and need to cancel it for any reason (in order to return to the default "all-follow" mode), use the following steps:

1. If only one **Level Select** button is blinking, press it to cancel the breakaway mode and return to the all-follow mode. Use the **Level Shift** button as necessary to change groups.
2. Press the **Clear** button.

Protect Button

Pressing the **Protect** button once sets the 'Protect'.

Pressing the **Protect** button a second time sets a 'Lock' and clears the Protect.

Pressing the **Protect** button a third time clears the 'Lock'.

Changing Panel LED Intensity

The UCP 36/8 includes a simple mode that allows you to change the intensity of the panel LEDs. Use the following steps to change LED intensity:

1. Press and *hold* the buttons illustrated below.
2. Press (a) to decrease the intensity. Press (b) to increase the intensity.

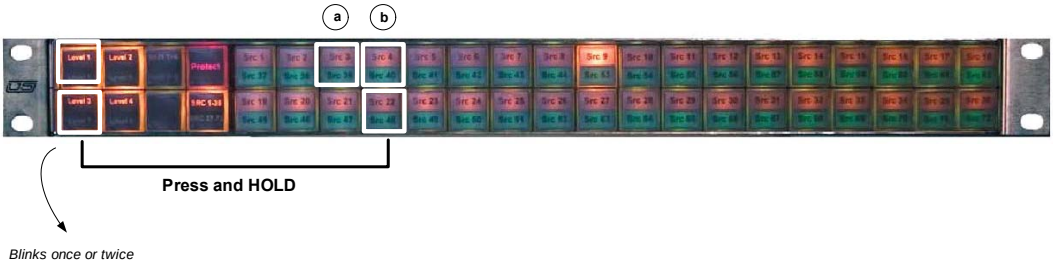


Figure 4-4 Panel Brightness Adjustment

There are seven levels of intensity.

Panel Lock

Software Release 2.06 allows the user to lock the panel so no takes can be made. The panel will still status changes made from other sources.

- The user **Locks** the panel (Reference Figure 4-5) by *pressing and holding* the **Level Shift Button** and then *pressing* the **Level 1 Button** in sequence.
- To **Unlock** the panel repeat the sequence above.

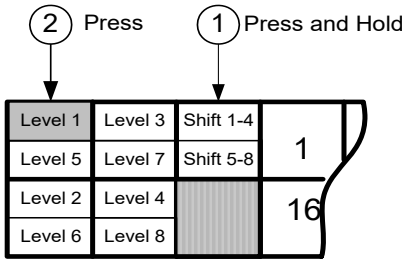


Figure 4-5 Panel Lock Sequence

Revert to All-Follow

This only applies if the panel has the levels buttons defined as a Level Button. The Split Level Button functions always revert back to default. The Status Level and the Levels functions will work with this feature. (Refer to the **U-CON Operations Guide** - *Section 4* - for a more complete description of *Split Level Button*, *Status Level*, and *Levels Function*.)

Complete the following to enable/disable this feature:

- Press and hold down the first and the eighth buttons on the bottom row from the left. Then press the first button from the left on the top row. The button will flash once or twice based on if this feature is turned on or off.
    - The button flashes ONCE if the Revert to All Follow feature it turned OFF.
    - Tue button flashes TWICE if the Revert to All Follow Feature I turned ON.

The Revert to All Follow feature will set the levels back to a default state each time a TAKE switch is made or when the CANCEL button is pressed.

If the Revert to All Follow is OFF the levels will remain in the state that the user has set it to until they change it .

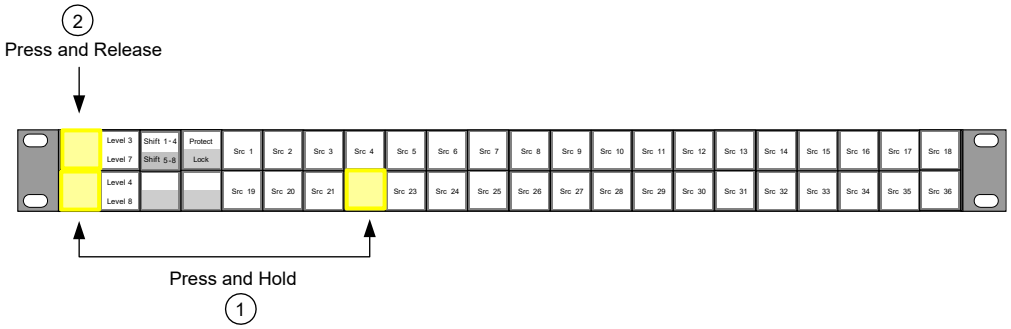


Figure 4-6 Revert to All-Follow button combination

General Panel Notes

Note the following important points regarding the UCP 36/8 panel in general:

- If the panel's U-Net connection is lost, all blinking will stop in the **Level Select Section**.
- With the UCP 36/8 panel (and with other UCP panels), multiple panels *may* be assigned to the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP 36/8, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Section 5

UCP 72/8 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP 72/8. The following topics are discussed:

About the UCP 72/8

The **UCP 72/8** is a 16-level panel with eight level breakaway capability. Using the RMS or U-CON, the panel can be configured with one or two destinations and, 72 source panel.

The figure below illustrates the main buttons and sections of the UCP 72/8 panel.

For simplicity, numeric labels are shown on the level, source, and destination buttons below. Your labels will differ depending upon the level, source, and destination assignments in your facility.

Figure 5-1 UCP 72/8 Panel

1)	Level Select Section	3)	Destination Select Button	5)	Protect LED
2)	Level Shift Button	4)	Source Section	6)	Source Select Button

1) **Level Select Section**

Each of the four buttons in the **Level Select Section** is divided in half, and each half can be lit independently. Only *one* of the eight half-button segments can be blinking, but *any number* of segments can be lit steadily.

The figure below illustrates a typical **Level Select Section**.

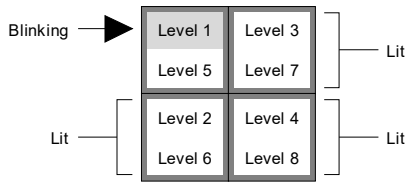


Figure 5-2 Typical Level Select Section Display

The top half of a button displays its level 1-4 assignment, while the bottom half displays the button's level 5-8 assignment (for example, Video, Audio1, Audio2, Timecode, etc.). The **Level Shift** button switches between the two groups of levels (1-4 and 5-8).

The buttons in the **Level Select Section** perform two functions:

- **Status Display**

  In the "all-follow" and "breakaway" modes, the [bright] button is associated with a lit source button (in the **Source Section**). This association tells you that the indicated level from the indicated source is currently connected to the destination. See the "**Displaying Level Status**" section on page 5-4 for more details.

- **Breakaway Selection**

  In the "breakaway" mode, the buttons allow you to select the level(s) that you want to include in a pending breakaway take. A half-button segment that is steadily lit is already included in the pending breakaway take selection. The *blinking* button segment indicates the most recently selected level.

2) **Level Shift Button**

   The **Level Shift** button switches the buttons in the **Level Select Section** between the two groups of levels (1-4 and 5-8). The lit portion of the **Level Shift** button indicates the levels that can currently be selected — for either checking status or for including a level in a pending breakaway take.

3) **Destination Select Button**

   The **Destination Select** button switches between the two assigned destinations. Each destination is programmed (assigned) from the routing switcher's RMS or U-CON utility. The lit half of the button indicates the selected destination.

Note: When you press the **Destination Select** button, the selected source (and the associated level) *may* change accordingly.

4) **Source Section**

The **Source Section** provides 36 buttons, each of which represents a single source. All 72 sources are programmed (assigned) from the routing switcher's RMS tool (Router Management System). When a source button is pressed, either the "all-follow take" or the "breakaway take" is sent to the destination. There is no **TAKE** button required.

Note: An "all-follow" take can include up to 16-levels, depending upon how your specific panel is mapped.

Please note:

- 72 source panels, the labels for sources 1-36 are located on the top half of each button, while labels for sources 37-72 are located on the bottom half. The appropriate *half* segment lights when selected.

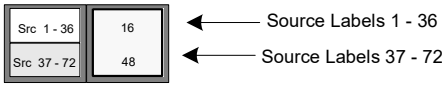


Figure 5-3 Source Label Scheme, Single Destination Panel

5) **Protect LED**

Pressing the **Protect** button once sets the 'Protect'. Pressing the **Protect** button a second time sets a 'Lock' and clears the Protect. Pressing the **Protect** button a third time clears the 'Lock'.

6) **Source Select Button**

The **Source Select** button switches the source buttons between sources 1-36 and 37-72. All sources are programmed (assigned) from the routing switcher's RMS tool or U-CON utility. The lit half of the button indicates the active group of sources.

Displaying Level Status

Whether your panel is in "breakaway" or "all-follow" mode, the four buttons in the **Level Select Section** provide an easy way to check which levels from which sources are currently being routed to the destination.

Use the following steps to display level status.

1. Press the **Destination Select** button to select the destination for which you want to check status.
2. Press **Level Shift** to select the group of levels that you wish to "status" (either 1-4 or 5-8). The lit portion of the button indicates the selected group.

3. In the **Level Select Section**, press the desired level button. The source button currently associated with that level lights in the **Source Section**. This level-to-source "pairing" indicates that the selected level from the associated source is currently routed to the (selected) destination.
4. Press another **Level Select** button to check its status, or repeat the procedure from step 2 to select a level in the opposite group. Only one level can display status at a time.

Please note:

- The level mapping of each panel can differ, depending upon how each panel is configured from the RMS or U-CON. For example, if levels 7 and 8 are invalid on the particular destination device, those levels *may* be rendered inactive on your panel, and thus would not light.
- After an all-follow take is performed, the status of all levels will be identical. After a breakaway take is performed, the status of each level may differ.

Defaulting the Level Select Buttons

In preparation for an all-follow or a breakaway take, the buttons in the **Level Select Section** should be returned to the default "all-follow" mode. This can be performed as follows:

- Press the [bright] **Level Select** button. If all **Level Select** buttons turn *off* and the button segment that you pressed blinks, your panel was *already* in the all-follow mode. To return to the mode, press the blinking **Level Select** button again.
- Press the blinking **Level Select** button. If the button segment turns off and *another* button segment begins to blink, you have just cancelled one breakaway level. Continue pressing the blinking **Level Select** button segment, and if necessary, press **Level Shift** to switch level groups. When all button segments light (and the button that you pressed continues to blink), the default "all-follow" mode has been restored.

Performing an All-follow Take

An "all-follow take" is one in which all assigned signal levels switch simultaneously, and no signal levels are broken away.

Use the following steps to perform an all-follow take on the UCP 72/8.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode.
2. Press the **Destination Select** button to choose the desired destination.
3. Press the **Source Select** button to choose the desired *group* of sources (1-32 or 33-64).

4. Choose the desired source in the **Source Section**. All assigned levels from the selected source are routed to the destination.

Once the all-follow take has been performed, *all buttons* in the **Level Select Section** will status the source that was just chosen.

Performing a Breakaway Take

A "breakaway take" is a special Take in which a subset of all available signal levels are sent to a destination. The following topics are discussed in this section:

- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breaking away multiple levels from different sources
- Cancelling a breakaway take

Breaking Away One Level From One Source

Use the following steps to break away one level from a source and route it to the (selected) destination.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode. This is the preferred starting point for a breakaway take.
2. Press the **Destination Select** button to choose the desired destination.
3. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the level that you want to break away.
4. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. The section is now in the breakaway mode.
   - ~ If the blinking button is the level that you want to break away, no further action is necessary in the **Level Select Section**. Please continue with step 5 below.
   - ~ If the blinking button is *not* the level that you want to break away, press the **Level Select** button for the desired level. The button blinks and the *previously* blinking button lights steadily. Press the steadily lit button to toggle it *off*, leaving only the desired level button blinking.
5. Press the **Source Select** button to choose the desired *group* of sources (1-36 or 37-72).
6. In the **Source Section**, press the desired button to complete the procedure. Only the selected level from the source (that you just pressed) is routed to the destination.

Once the breakaway take has been performed, the buttons in the **Level Select Section** return to the default "all-follow" mode.

Breaking Away Multiple Levels From One Source

Use the following steps to break away two or more levels from a source.

1. Ensure that the buttons in the **Level Select Section** are in the default "all-follow" mode. This is the preferred starting point for a breakaway take.
2. Press the **Destination Select** button to choose the desired destination.
3. Press the **Level Shift** button to choose the group (1-4 or 5-8) that contains the *first level* that you want to break away.
4. In the **Level Select Section**, press the [bright] button. All **Level Select** buttons turn off and the button that you pressed blinks. The section is now in the breakaway mode.
   - ~ If the blinking button is one of the levels that you want to break away, please continue with step 5.
   - ~ If the blinking button is *not* one of the multiple levels that you want to break away, press the **Level Select** button for the desired level. The button blinks and the *previously* blinking button lights steadily. Press the steadily lit button to toggle it *off*, leaving only the desired level button blinking.
5. To add additional levels, press each desired **Level Select** button to add it to the breakaway group. Each new button that you press blinks, and the previously blinking button lights steadily. As required, use the **Level Shift** button to change groups.

   In the sample breakaway selection below, levels 1 and 3 are pending for a breakaway take, and level 3 was the last button pressed (because it is blinking).

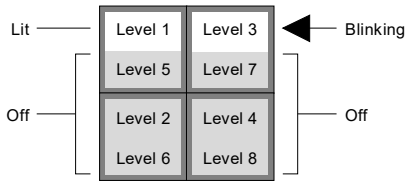


Figure 5-4 Sample Breakaway Mode Display

Note: You can *remove* levels from the breakaway group simply by toggling **Level Select** buttons. Pressing a steadily lit button toggles it off. Pressing the blinking button toggles it off, and causes the last-selected button to blink.

6. Press the **Source Select** button to choose the desired *group* of sources (1-36 or 37-72).
7. In the **Source Section**, press the desired button to complete the procedure. All selected levels from the source (that you just pressed) are routed to the destination.

Once the breakaway take has been performed, the buttons in the **Level Select Section** return to the default "all-follow" mode.

Breaking Away Multiple Levels From Different Sources

The UCP 72/8 does not allow you to break away multiple levels from *different sources* in one single operation. However, this function can easily be accomplished in two or more passes, by selecting a different level and a different source with each breakaway pass.

Use the following steps to break away two or more levels from two or more sources. The instructions apply to both single and dual-destination UCP 72/8 panels.

1. Follow the procedure for breaking away one level from one source, as outlined in the "**Breaking Away One Level From One Source**" section on page 5-6.
2. Repeat step 1 as many times as required, each time selecting a different level and a different source to route to the assigned destination.

Cancelling a Breakaway Take

If you are in the midst of the Breakaway Mode and need to cancel it for any reason (in order to return to the default "all-follow" mode), use the following steps.

1. If only one **Level Select** button is blinking, press it to cancel the breakaway mode and return to the all-follow mode. Use the **Level Shift** button as necessary to change groups.
2. If *more than one* **Level Select** button is lit, press each steadily lit button to toggle it off, then press the remaining blinking button to return to the all-follow mode. Use the **Level Shift** button as necessary to change groups.

Revert to All-Follow

This only applies if the panel has the levels buttons defined as a Level Button. The Split Level Button functions always revert back to default. The Status Level and the Levels functions will work with this feature. (Refer to the **U-CON Operations Guide** - *Section 4* - for a more complete description of *Split Level Button*, *Status Level*, and *Levels Function*.)

To enable/disable this feature on the UCP64, UCP72, UCP36, UCP-48 panels:

Press and hold down the first and the eighth buttons on the bottom row from the left. Then press the first button from the left on the top row. The button will flash once or twice based on if this feature is turned on or off.

The button flashes ONCE if the Revert to All Follow feature it turned OFF.

Tue button flashes TWICE if the Revert to All Follow Feature I turned ON.

The Revert to All Follow feature will set the levels back to a default state each time a TAKE switch is made or when the CANCEL button is pressed.

If the Revert to All Follow is OFF the levels will remain in the state that the user has set it to until they change it .

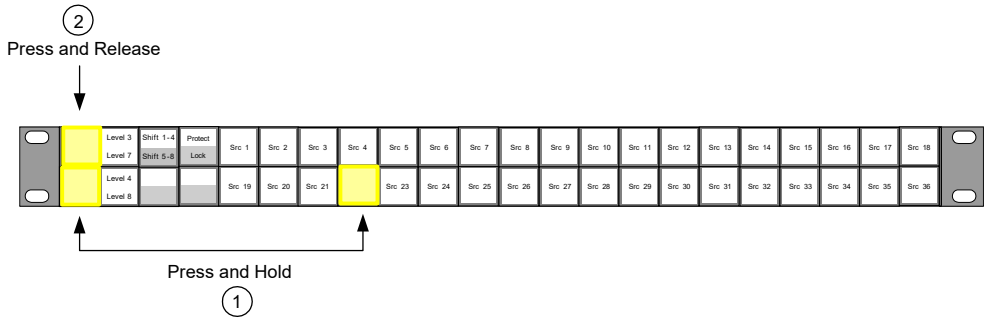


Figure 5-5 'Revert to All-Follow' button combination

Monitor Matrix Mode

The **Monitor Matrix** mode allows you to conveniently monitor each signal level's outputs — without affecting the router's actual destinations. Each level has a separate Monitor Matrix output that is typically routed to *physical* audio and video monitors in the control room (or machine room).

When the UCP 72/8 panel is in Monitor Matrix mode, and when a particular destination device is chosen, you can monitor that destination *visually and aurally*. You have the ability to *see and hear* the source that is routed to the destination, but you can not determine what the actual source is from the UCP 72/8 panel itself.

The assignment of the Monitor Matrix function is performed on the RMS or U-CON by typing the keyword "**MMTRX**" into one of the panel's available destination entry boxes. Once the panel is programmed in this manner, the *entire* UCP 72/8 panel functions in the special Monitor Matrix mode — allowing you to monitor any of the panel's available destinations.

Changing Panel LED Intensity

The UCP 72/8 includes a simple mode that allows you to change the intensity of the panel LEDs. Use the following steps to change LED intensity. The instructions apply to both single and dual-destination UCP 72/8 panels.

1. Press and *hold* the **Level Shift** button.
2. While holding, press one of the first seven source buttons, as shown below.

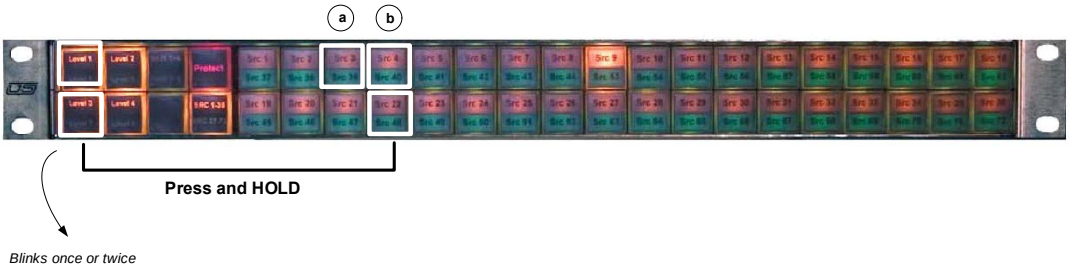


Figure 5-6 Panel Brightness Adjustment

The first button is the brightest setting; the seventh button is the dimmest setting.

Note: Even on the dimmest setting the LEDs are never completely off.

3. Release the **Level Shift** button to complete the procedure.

Panel Lock

This software release allows the user to lock the panel so no takes can be made. The panel will still status changes made from other sources.

- The user **Locks** the panel by *pressing and holding* the **Level Shift Button** and then *pressing* the **Level 1 Button** in sequence.
- To **Unlock** the panel repeat the sequence above.

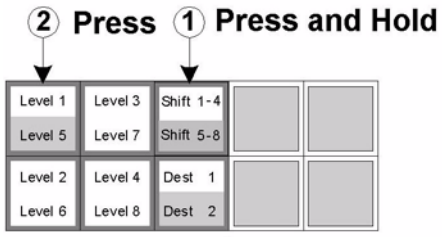


Figure 5-7 Panel Lock Sequence

General Panel Notes

Note the following important points regarding the UCP 72/8 panel in general:

- If the panel's U-Net connection is lost, all blinking will stop in the **Level Select Section**.
- With the UCP 72/8 (and with other UCP panels), multiple panels *may* be assigned to the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP 72/8, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Section 6

UCP 64/8 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP 64/8. The following topics are discussed:

Overview

The UCP-64 features the following:

- Operating software stored in Flash, which allows upgrades to be downloaded.
- Control of up to 56 sources and 8 level-destinations (1 destination, 8 levels).
- LEDs with different states of illumination to quickly determine if a level-destination or source is selected, available for selection, or not a valid choice.
- Ability to daisy-chain up to thirty two UCP-64 panels per controller UNET port.

The UCP-64 Control Panel is capable of accessing all sources and destinations within the router, or a subset of the sources and destinations; according to the system configuration programming. This panel offers 'direct take' buttons that can be pro-programmed for direct access to frequently used sources and destinations. This panel is fully compatible with the U-Con System Configuration Utility, allowing the panel definitions to be updated as the system requirements change.

The UCP-64 control panel provides a basic system for router control and is designed to operate with either the SC-3, SC-4 or SC-400 controllers.

Figure 6-1. UCP-64 Control Panel

This 1RU device operates using an internal power supply and is designed to be used for either local or remote applications—communicating with the router controller via U-NET, Ethernet, or serial communications. It is also possible to daisy-chain multiple panels together on one system via the U-NET ports located on the back panel. The SC-3, because it has eight UNET ports, can support many more panels (a maximum of 250 panels).

The UCP-64 is able to control up to 56 sources and 8 level-destinations using the 64 front panel control buttons.

Note: Note: Programming of the UCP-64 panel is an essential part of the installation and operation of the panel as it configures the device for operation with the controller. This process involves using Utah Scientific's

RMS or U-CON utility to communicate with, and configure the panel through the controller.

Front Panel

Shown below are the components that make up the front panel of the UCP-64 control panel.

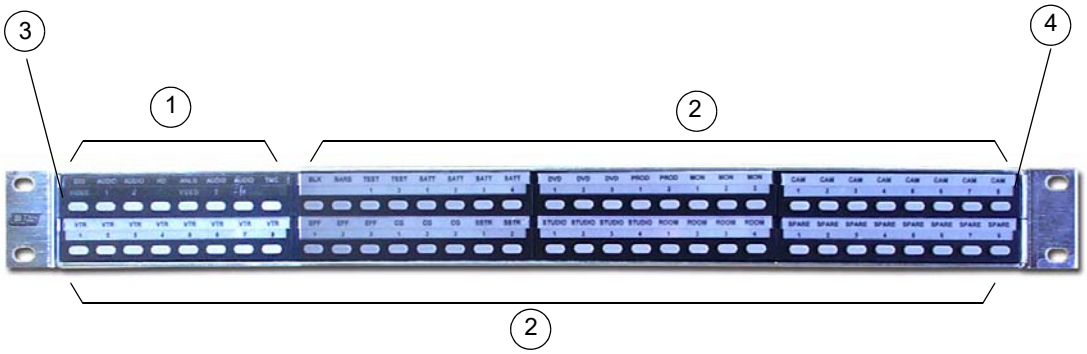


Figure 6-2. UCP-64 Front Panel View

Table 6-1 provides information on the components called out in Figure 6-2.

Table 6-1.

Item	Name	Description
1	Level-Destination LEDs	One row of LEDs representing each of the 8 possible level and/or destination choices.
2	Source LEDs	Two rows of LEDs representing each of the 56 possible source choices.
3	Level-Destination LED Legend Sleeve	Sleeve located in front of the level-destination LEDs for inserting custom LED legend label.
4	Source LED Legend Sleeve	Sleeve located in front of the source LEDs for inserting custom LED legend label.

Front Panel Operation

Once the unit is configured and installed, all router control operations are performed through the front panel, which contains three sections:

- The upper-left group contains the *level-destination* selection LEDs and buttons;

- The remaining groups contain the *source* selection LEDs and buttons;

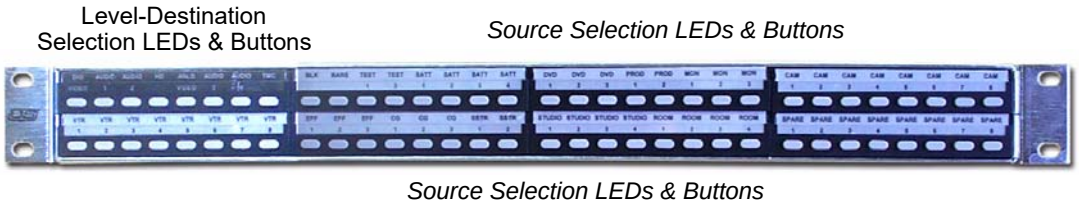


Figure 6-3. UCP-64 Front Panel Sections

To begin understanding how the unit operates as a switch control panel, it is necessary to understand how the selection LEDs and buttons operate.

Selection LEDs

The eight level-destination and fifty-six source selection LEDs operate in three states of illumination as illustrated in Figure 6-3:

- OFF (2) - indicates that this level is not valid for the currently selected destination.
- DIM (3) - indicates that this level will not be used in the direct take when a *direct take* button is pressed.
- BRIGHT (4) - indicates that this level will be used when a direct take button is pressed.

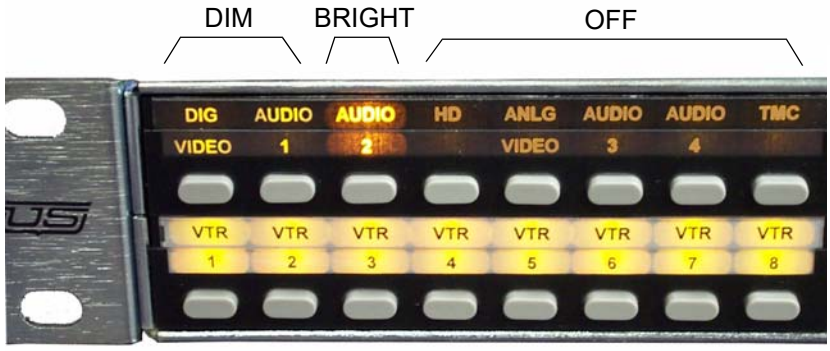


Figure 6-4. LED States of Illumination

In front of both sets of LEDs are sleeves for loading customized LED legend labels that are printed on translucent stock.

Note: Note: The LED legends shown in the device illustrations throughout this manual are very generic and used for illustration purposes only. Customized legends can be generated and inserted into the sleeves using the legend kit supplied with the panel.

Breakaway

The UCP-64 panel allows you to actually *break away* one source level to a specified destination. In a breakaway scenario, you can specify the levels to perform a switch and at the same time determine the levels to ignore the switch. An all-follow take simultaneously performs the switch on all levels.

To breakaway a source (when illuminated on the panel) press the level light (turning the LED off). When a direct source button is pressed, it will only send takes on the levels that are actually lit.

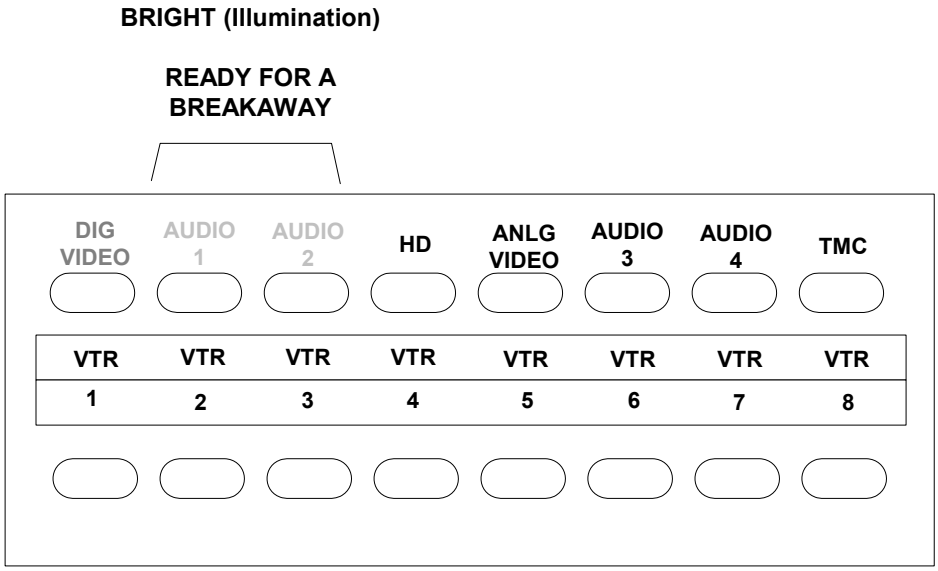


Figure 6-5. Breakaway Memory Functionality

Performing a Breakaway Take

The UCP-64 panel allows you to actually *break away* one source level to a specified destination. In a breakaway scenario, you can specify the levels to perform a switch and at the same time determine the levels to ignore the switch. An all-follow take simultaneously performs the switch on all levels.

To breakaway a source (when illuminated on the panel) press the level light (turning the LED off). When a direct source button is pressed, it will only send takes on the levels that are actually lit.

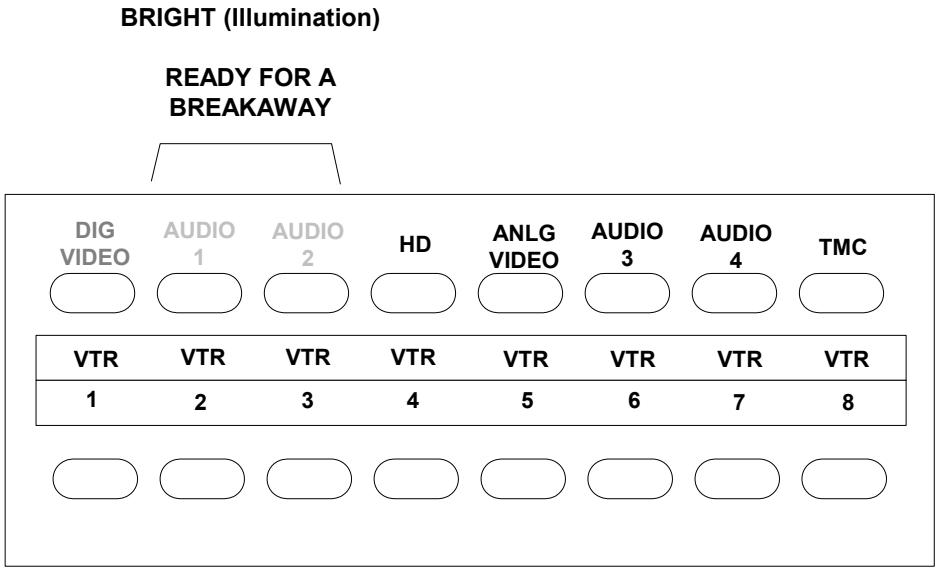


Figure 6-6. Breakaway Memory Functionality

Performing an All-Follow Take (Example)

To send each level of source #2 to each level of destination #14, you would perform an all-follow take.

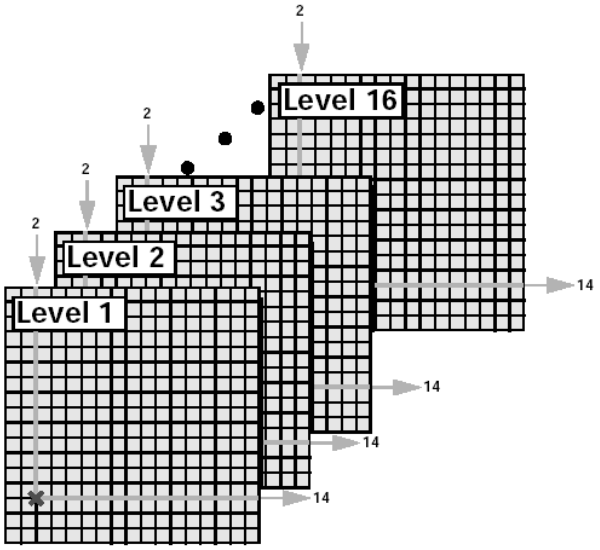


Figure 6-7. Mode 1: All-follow

Select levels:

If the LEDs for all the available levels are Bright, the panel is in an all-follow mode, therefore, this part of the procedure can be ignored. Proceed to *Select source*.

If any of the LEDs are Dim for an available source, the panel is in a breakaway mode and must be changed to an all-follow state by turning on all the levels.

To turn on all levels:

- Press the Level buttons to enable the level. This is done by pressing the button so that it becomes bright.

Select a source:

- Press the second source select button to illuminate the #2 source select LED and complete the take. Source #2 LED is bright: all others are back-lit or off.

Performing a Breakaway Take (Example 2)

If you want the #2 source signal to go to just levels 1 and 8, you would perform a breakaway take by *deselecting* levels 2 - 7.

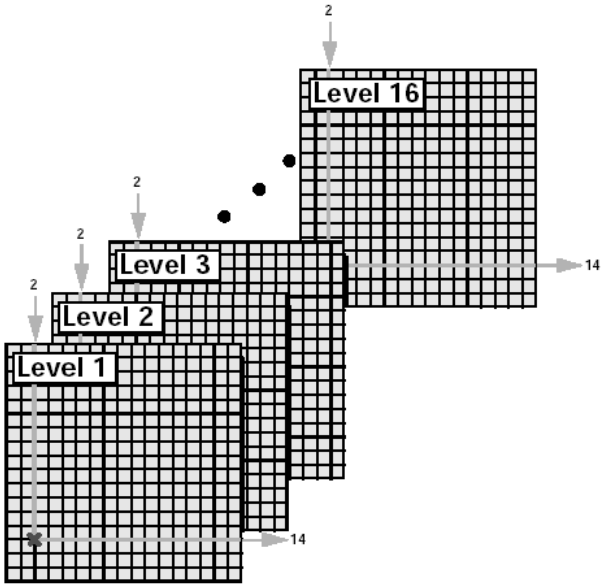


Figure 6-8. Breakaway

Deselect levels 2 - 7:

1. Press the second level select button to deselect the level 2 LED.
2. Repeat step 2 for levels 3 - 7, using the corresponding selection buttons and LEDs. This action deselects levels 3 - 7.

Select source for levels 1 and 8:

3. Press the second source select button to illuminate the #2 source select LED and complete the take.

LED Legend Labels

The UCP-64 panel comes with a default set of LED legend labels that are inserted into the eight label sleeves located in front of the source and level-destination LEDs.

Since the labels are removable, you can create your own customized legend inserts for both sets of LEDs.

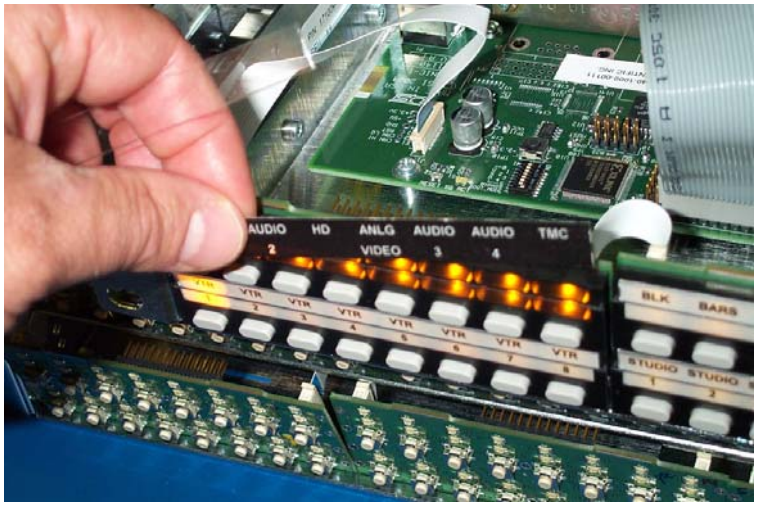


Figure 6-9. LED Legend Insert

The LED legend labels, printed on a translucent paper stock and cut to size, are inserted into the sleeves.

You can create custom labels using any number of software packages or you can use the MicroSoft Word templates that Utah Scientific developed. These templates are included in the LED Legend Kit included with the panel shipment. The templates can also be obtained by contacting Utah Scientific's customer service department.

(see 'Company Information' within the Introduction, or www.utsci.com).

UCP64 *Relegendable* Design

The UCP64 Panels were designed to simplify the *relegending* process. This process entails the inserting and removal of the legend paper that identifies the function of each button. The degree of how often the legends are changed will vary for each customer, depending on their application. The legend stack-up is made up of the legend paper and a clear plastic support window. Some application will need both the paper and the window and others will only need the paper. The following suggestions help describe the best legend stack-up method for several applications.

Frequent Legend Replacement

The legend will consist of a single piece of paper. This will allow for easy removal of the legend paper in the top and bottom positions. (Remove with a small screw driver or tweezers.)

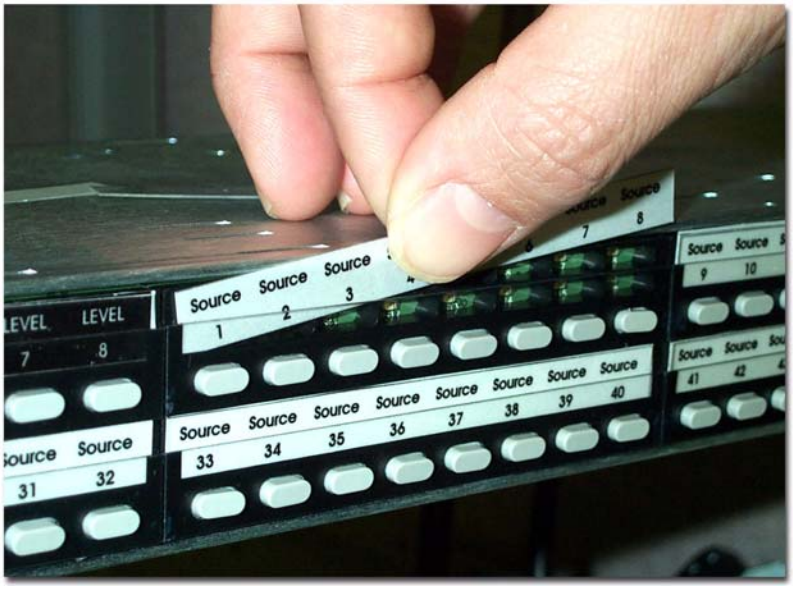


Figure 6-10. Frequent Label Replacement

Occasional Legend Replacement

Legend paper is installed and then four pieces of clear plastic are inserted in the top row of panels. This helps hold the top legends in tightly. The legends in the bottom row are held in by the upper legend assembly.

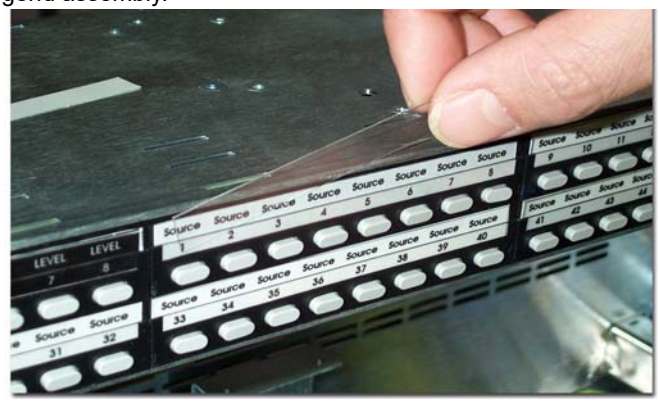


Figure 6-11. Occasional Label Replacement

Rare Legend Replacement

Legend paper is installed and then eight pieces of clear plastic are inserted in the top and bottom rows of panels. This helps hold the top and bottom legends in tightly. (This makes it more difficult to remove legends than the prior legend methods.)

Figure 6-12. Rare Legend Replacement

Gaffers tape for temporary legends

For customers that put tape or labeling over the standard legend assembly for the purpose of temporary button identification; we suggest using a ½" strip of clear tape over the legends. This tape will help support the overlays and ease the removal of the gaffers tape.

The tape should be long lasting, non-drying, non-cracking, and non-yellowing. The tape should be applied over the legends the entire length of the panel, including the rack ears. The gaffers tape could then be frequently applied or removed. This approach works best for customers that have regularly assigned legends that make up the base/standard configuration. In such cases, users could apply the Gaffers tape for short term legend customization. (This makes it difficult to remove legends in the top and bottom rows.)

Figure 6-13. Gaffer tape application

Revert to All-Follow

This only applies if the panel has the levels buttons defined as a Level Button. The Split Level Button functions always revert back to default. The Status Level and the Levels functions will work with this feature. (Refer to the **U-CON Operations Guide** - *Section 4* - for a more complete description of *Split Level Button*, *Status Level*, and *Levels Function*.)

To enable/disable this feature on the UCP64, UCP72, UCP36, UCP-48 panels:

Press and hold down the first and the eighth buttons on the bottom row from the left. Then press the first button from the left on the top row. The button will flash once or twice based on if this feature is turned on or off.

The button flashes ONCE if the Revert to All Follow feature it turned OFF.

Tue button flashes TWICE if the Revert to All Follow Feature I turned ON.

The Revert to All Follow feature will set the levels back to a default state each time a TAKE switch is made or when the CANCEL button is pressed.

If the Revert to All Follow is OFF the levels will remain in the state that the user has set it to until they change it .

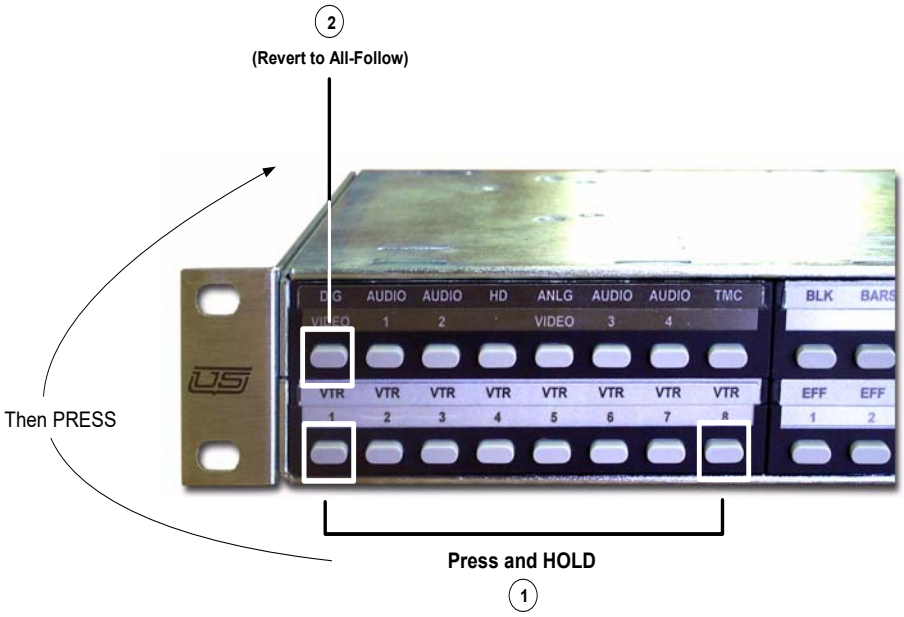


Figure 6-14. 'Revert to All-Follow' button combination

Additional Panel Status Control

LED Intensity

This allows you to raise or lower the LED brightness, or intensity on the panel. To control the intensity, press and hold the first and eighth buttons while pressing either the intensity UP, or intensity DOWN button (see illustration below).

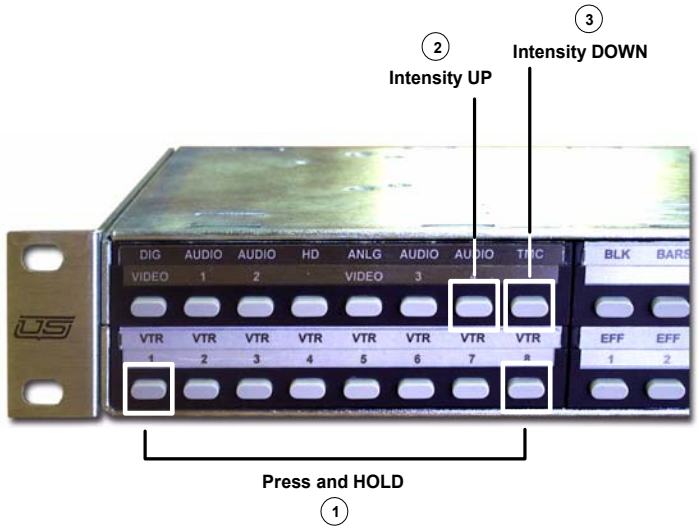


Figure 6-15. LED Intensity UP and DOWN adjustment

Panel Lock Feature

Panel lock allows you to actually lock out the panel and prevent any changes to the output. When in the locked mode, the three buttons (below) will flash whenever any button push is attempted. You can toggle this feature on or off with the same button combination (as illustrated).

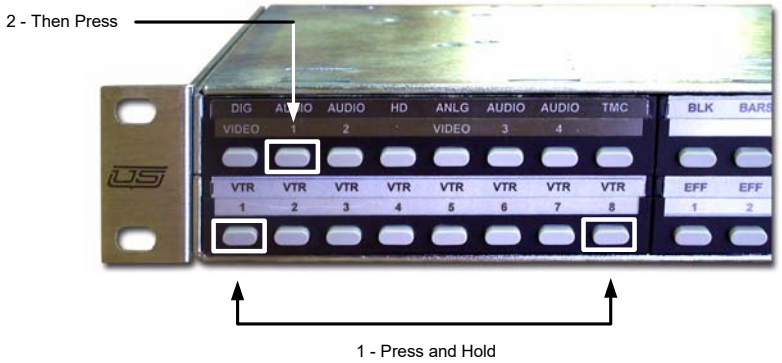


Figure 6-16. Panel Lock button combination

The buttons will flash once to indicate a locked, and will flash twice to indicate an unlocked panel.

CHOP Enable/Disable Feature

This is a simple way to enable or disable the CHOP feature in the panel.

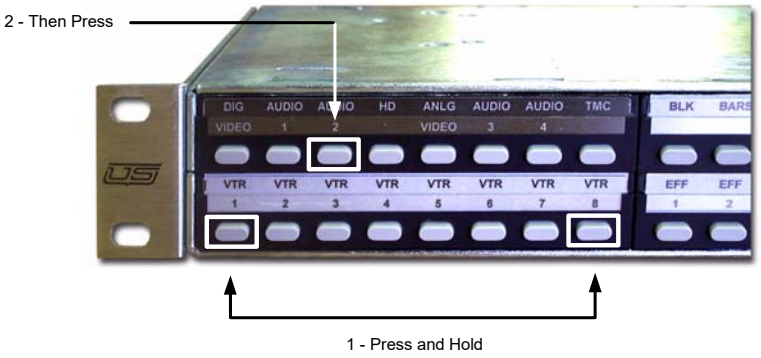


Figure 6-17. CHOP Enable/Disable

A single flash indicates the CHOP mode is disabled, while two flashes indicates the CHOP mode is enabled, and set to toggle at one second.

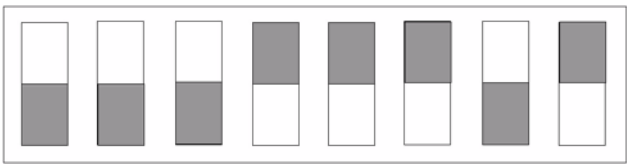
Panel ID

To display the panel number from the front of the panel, press the following buttons:

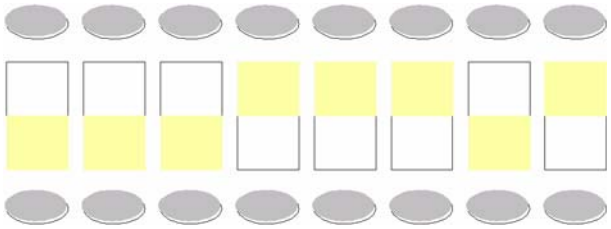
Figure 6-18. Button combo for dip switch setting

The LED's above the buttons will illuminate the top half or bottom half representing the dip switch on the back of the panel.

Example:



Dip Switch Setting (rear)



LED Illumination (front)

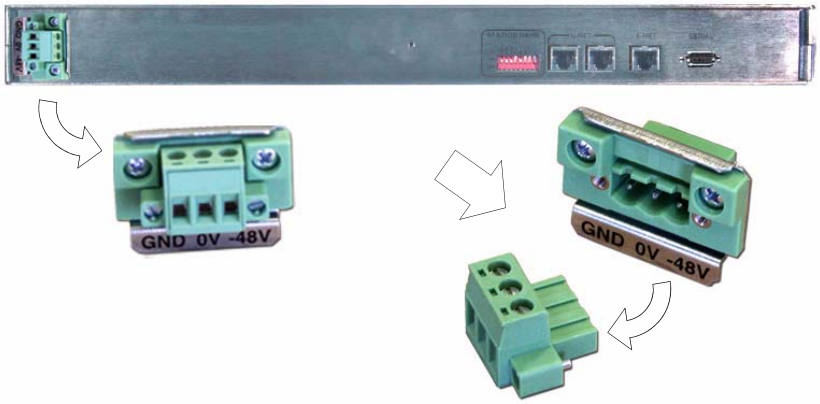
Figure 6-19. Front Panel LED illumination (dip switch setting)

In this way, by pressing the two panel ID buttons, the user can see a representation of exactly how the dip switches are positioned on the back of the panel.

DC Connectivity

The DC input at the rear of the chassis is noticeably different than its AC counterpart. The connection consists of three separate terminals:

- Ground - Frame or chassis grounding point
- 0V - Most positive leg of -48V DC connection.
- -48V - Most negative leg of -48V DC connection.



Note that this configuration is a DC isolated connection.

The terminal strip is a small bracket containing three screws (see 1). Loosen the screws to remove the terminal from the back. This will expose the strip of wire (aprox. 1/4 of an inch).

Proper wire insertion into the removable terminal block

- Turn the screws counter clockwise to allow wire insertion (3 screws on block top).
- Strip 1/4” of the insulation from the new wires.
- Insert wire, then turn screw clockwise to tighten

Use 12 AWG wire (maximum)

General Panel Notes

Note the following important points regarding the UCP 64/8 panel in general:

- If the panel's U-Net connection is lost, the lights will blink in sequence within the **Level Select Section**.
- With the UCP 64/8 (and with other UCP panels), multiple panels *may* be assigned to the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP 64/8, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Section 7

UCP XY/16 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP XY/16, a 16 level XY panel (all sources and all destinations). The following topics are discussed:

About the UCP XY/16

The **UCP XY/16** is a 16 level XY panel that provides full access to all sources and destinations connected to your routing switcher (including the monitor bus).

The figure below illustrates the main buttons and sections of the UCP XY/16 panel.

Note: For simplicity, numeric labels are shown on the level, source, destination and group buttons below. Your labels will differ depending upon the level, source, destination and group assignments in your facility. As shown below, buttons without labels have no functions assigned.

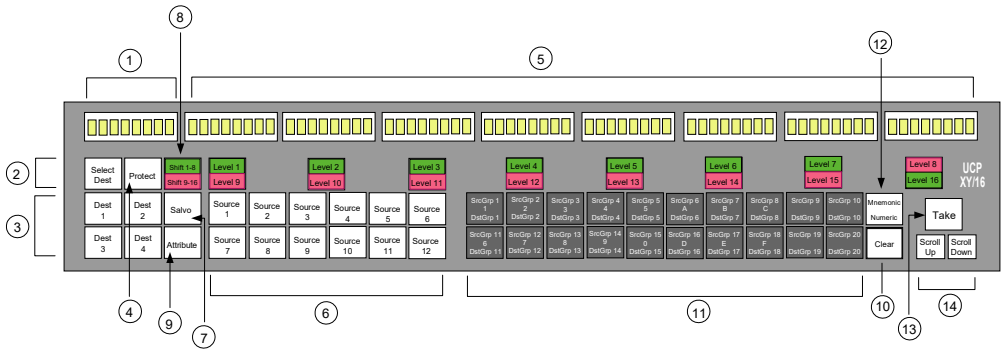


Figure 7-1. UCP XY/16 PanelSections

1)	Destination Display	6)	Direct Source Select Section	11)	Group Select Section
2)	Destination Select Button	7)	Salvo Button	12)	Mnemonic/Numeric button
3)	Direct Destination Select	8)	Level Shift Button	13)	Take Button
4)	Protect Button	9)	Attribute Button	14)	Scroll Buttons
5)	Source Display Section	10)	Clear Button		

1) Destination Display

The **Destination Display** is an eight-segment LED readout that shows the currently selected destination. The display can be switched between numeric and mnemonic (alphanumeric) modes using the **Display Type** button.

The figure below illustrates a typical mnemonic destination display.

Figure 7-2. Mnemonic Destination Display

In the mnemonic mode, the display typically shows up to five characters plus a three-digit extension, signifying a *group name* plus a specific device within that group.

In the numeric mode, the display typically shows up to three digits, signifying a device's numeric identification (ID) as programmed with the RMS (Router Management System).

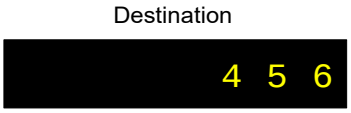


Figure 7-3. Numeric Destination Display

During the destination selection procedure, two other types of displays are used:

- A display consisting of all "dots" indicates the *first step* in the destination selection procedure. At this point, the panel is waiting for data entry.

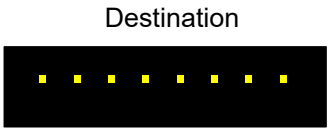


Figure 7-4. Destination "Dots" Display, Awaiting Data Entry

- A display in which a *question mark* appears indicates that a group name has been selected, but an extension has not yet been entered.

Figure 7-5. Destination "Question Mark" Display, Awaiting Extension

Note: Each of the four examples illustrated above *also* apply to the eight **Source Level Status Displays** — mnemonic, numeric, dots and question mark.

2) **Destination Select Button**

The **Destination Select** button begins, concludes or cancels the procedure for selecting a destination *manually* (rather than via a *direct* selection). When pressed initially, the button blinks to indicate that the panel is in the "destination select" mode. Please note:

- If the **Destination Select** button is pressed while an *invalid* destination is displayed, the button stops blinking, the **Destination Display** returns to its default state prior to pressing the button, and the current destination is retained.
- If the **Destination Select** button is pressed while a *valid* destination is displayed, the button stops blinking, the new destination is accepted, and the display updates with the new destination name.

3) **Direct Destination Select Section**

Each of the four buttons in the **Direct Destination Select Section** can be pre-programmed with a *favorite* (or frequently used) destination. By pressing a **Direct Destination** button, the destination is automatically selected, its name appears in the **Destination Display**, and the button lights to indicate that a direct destination is in use.

On the UCP XY/16 panel, each of the four buttons is dedicated to its assigned destination, but *any* of the available destinations on the *entire* routing switcher can be assigned. Each **Direct Destination** button is programmed from the routing switcher's RMS or U-Con tool.

4) **Protect Button**

The **Protect** button, when lit **Red**, indicates that either a **Lock** or a **Protect** has been enabled for the selected destination.

- In the "**Protect**" mode, all other panels are prevented from routing sources to a destination — or to a selected *level* of a destination.
- In the "**Lock**" mode, *all panels* (including the current panel) are prevented from routing sources to a destination — or to a selected *level* of a particular destination.

When you press **Protect**, the button blinks and allows you modify the current mode. Refer to the "**Using the Protect Mode**" section on page 7-21 for more information and complete operating instructions.

5) **Source Display Section**

The **Source Display Section** provides status for all 16 levels of a given destination. You can easily view the sources assigned to each level, check each level's validity, and select various levels for a pending breakaway take.

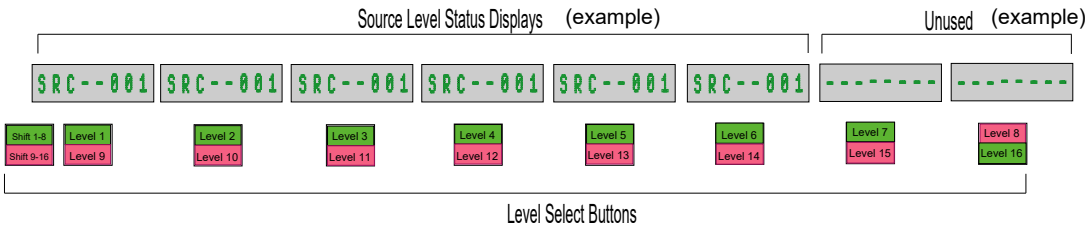


Figure 7-6. Source Display Section

- The eight **Source Level Status Displays** provide status for up to 16 levels. Each display is an eight-segment LED readout that shows the current source associated with that level, in either the numeric or mnemonic (alphanumeric) modes. The **Display Type** button is used to change display modes. The **Level Shift** button switches the eight displays between the two groups of levels (1-8 and 9-16).
- The eight **Level Select** buttons are divided in half, and each segment can be lit independently. The top half displays the button's level 1-8 assignment, while the bottom half displays the button's level 9-16 assignment (for example, Video, Audio1, Audio2, Timecode, etc.).
- The buttons perform two functions.
  - ~ A *lit* segment always indicates a valid level — one that can be selected for a breakaway take. If a segment is not lit, that level is not valid for the current destination, and can not be included in a breakaway take. If all 16 levels were valid, all buttons would be fully lit.
  - ~ Pressing a valid **Level Select** button allows you to include that level in a breakaway take, and assign a source to that level for routing to the destination.

6) **Direct Source Select Section**

Each of the twelve buttons in the **Direct Source Select Section** can be pre-programmed with a *favorite* (or frequently used) source. By pressing a **Direct Source** button, the source is "taken" and immediately routed to the selected destination, all associated level information appears in the **Source Display Section**, and the button lights to indicate that a direct source is in use.

Note: The button will light *only* if all valid levels match the selected source in an all-follow take situation. If a **Direct Source** button is used in a breakaway take situation, the button will *not* light after **Take** is pressed, because all valid levels are now different.

On the UCP XY/16 panel, each of the twelve buttons is dedicated to its assigned source, but any of the available sources on the *entire* routing switcher can be assigned. Each **Direct Source** button is programmed from the routing switcher's RMS tool.

7) **Salvo Button**

A **Salvo** is a group of "**Takes**" or *commands* that are stored, and *programmed* within the U-Con or RMS utility. Salvos are similar to "macro" keys that you can program on a PC. For example, a Salvo Take might be programmed to route bars and tone to 10 different VTRs — at the touch of one button.

Pressing the **Salvo** button on the UCP XY/16 panel allows you to run one of 128 pre-defined command lists. The panel simply chooses the Salvo number and issues the "Take" command. Refer to the "**Performing a Salvo Take**" section on page 7-28 for complete instructions.

8) **Level Shift Button**

The **Level Shift** button switches the displays in the **Source Display Section** between the two groups of levels (1-8 and 9-16). The lit portion serves two functions:

- It indicates the levels that are currently shown on the eight **Source Displays** — for status purposes.
- It indicates the group of levels that can be chosen with the **Level Select** buttons — for including a level in a pending breakaway take.

9) **Attribute Button**

The **Attribute** button allows you to change various audio and video attributes of the routing switcher's output signal, and route those changes to the desired destination. For example, by entering the **Attribute Mode**, you could mute analog audio on a particular level, or change the digital video data rate. All attribute parameters must be pre-mapped on the RMS. Refer to the "Changing Attributes" section (page 29) for instructions.

10) **Clear Button**

The **Clear** button, when pressed during a data entry mode (such as the source or destination selection procedure), safely cancels the mode and returns the panel to a normal "status" condition with no buttons blinking. If an entry was in progress, the **Destination Display** or the array of eight **Source Displays** return to their previous assignment(s). The **Clear** button effectively allows you to begin an entry procedure again.

11) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source and destination "group" names (and extensions). The twenty buttons are divided in half. The top half displays the button's *source* group name, while the bottom half displays the button's *destination* group name.

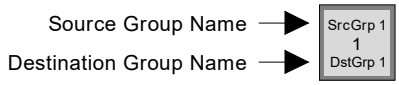


Figure 7-7. Group Select Button Naming Scheme

A "group" represents a *category* of devices, and up to 20 source and 20 destination groups can be programmed from the routing switcher's U-CON utility, and used on the UCP XY/16 panel. Each group can contain many sources or destinations, providing you with a convenient and simple way to address large numbers of devices.

For example, if your facility has 100 VTRs, you could select VTR 98 with two easy steps:

- Select the group name (VTR).
- Select the desired extension (98).

The **Group Select Section** itself includes a keypad for entering extensions in the mnemonic mode, and for entering complete source and destination identifications in the *numeric* mode.

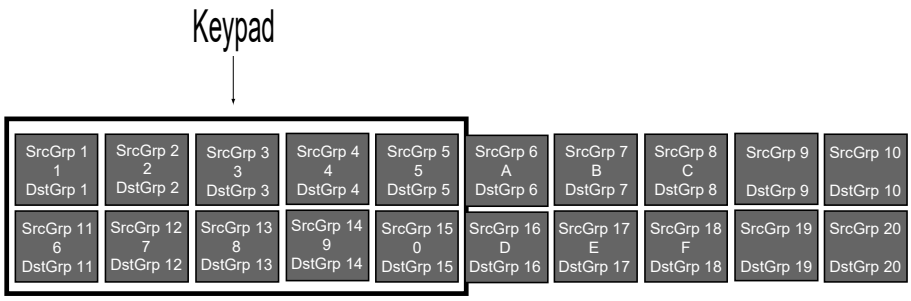


Figure 7-8. Keypad Location

Note: The buttons marked **A** through **F** are also used for entering valid "letter" extensions such as VTR-23A.

12) **Mnemonic/Numeric Button**

The **Display Type** button switches *all displays* on the panel between numeric and mnemonic (alphanumeric) modes. The lit segment indicates the current mode.

- In numeric mode, all displays show a one, two, or three-digit number that represents the desired source or destination.
- In mnemonic mode, all displays provide an alphanumeric source or destination name, up to eight characters in length — as programmed from the RMS.

13) **Take Button**

Press the **Take** button to conclude a pending procedure, such as an **All-follow** take, a **Breakaway** take, a **Salvo** selection, an **Attribute** selection or a **Protect** take.

Figure 7-9. Take Button

The button blinks to indicate that a procedure is pending.

14) **Scroll Buttons**

The two **Scroll** buttons allow you to scroll up and down through lists of selectable items on the panel, rather than use the keypad for the selection procedure.

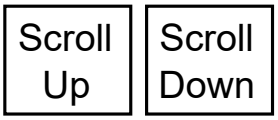


Figure 7-10. Scroll Buttons

Scrolling is supported by all modes that include "lists" of choices. For example, in the **Attribute** mode, you can scroll through the list of all available attributes. In the **Source Select** and **Destination Select** modes, you can scroll through the *entire* list of devices.

Displaying Level Status

When you select a destination for a particular purpose, the buttons and displays within the **Source Display Section** provide status for all 16 of the destination's levels.

To check the status of a particular destination, remember the following rules:

- Choose the destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
- Set the display mode (either numeric or mnemonic) using the **Display Type** button.
- Ensure that none of the eight **Level Select** buttons are blinking (as they would in preparation for a breakaway take). If any are blinking, the associated display will *not* show proper status. In this case, press **Clear** to return to the default "all-follow" mode.
- If any of the **Level Select** button segments are *lit*, that level is valid for the current destination — whether or not there is a source assigned to that level. **Valid** implies that the destination can accept an input on the specific level. For example, on a Type-C VTR, the analog video level is valid but the digital video level is not.
- Use the eight **Source Level Status Displays** to check the status of each valid level. Use the **Level Shift** button to switch the displays between the two groups of levels.

Note: At times, the displays may show "custom" status labels — ones that are not written in the standard "group + extension" format. Custom labels are a *display function* only. Each panel can be customized differently in its own *custom status table* that resides within the U-CON utility. For example, a custom display such

as ***ON-AIR*** could be programmed in your panel's custom status table — to be used whenever **VTR--015** is taken. When you send VTR--015 as a take and the controller takes the source, the panel displays ***ON-AIR*** as status, instead of **VTR--015**.

Selecting a Destination

There are three ways to select destinations on the UCP XY/16 panel:

- Selecting a destination with the **Direct Destination Select** buttons
- Selecting a destination in mnemonic mode
- Selecting a destination in numeric mode

Each selection method is described below.

Using the Direct Destination Select Buttons

Use the following steps to select a destination *automatically* using the **Direct Destination Select** buttons.

1. Ensure that the desired "direct" destinations are pre-programmed from the RMS or U-Con, and that all **Direct Destination Select** buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Press the desired **Direct Destination Select** button.

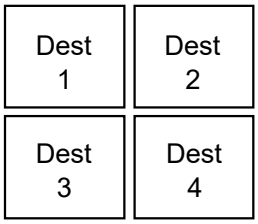


Figure 7-11. Direct Destination Select Section

The button lights, the destination is automatically selected, and its name (or numeric ID) appears in the **Destination Display**.

Note: This procedure works the same in both the numeric and mnemonic modes.

Selecting a Destination in Mnemonic Mode

Use the following steps to select a destination *manually*, with the panel in the mnemonic (alphanumeric) mode.

1. Ensure that the desired destination "groups" are programmed from the RMS or U-Con, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Mnemonic/Numeric** button until the label "**Mnemonic**" is lit.
4. Press the **Destination Select** button. The button blinks and the "dots" display appears in the **Destination Display**, indicating that the panel is now in the *destination select* mode and waiting for data entry.

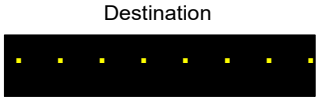


Figure 7-12. Destination "Dots" Display, Awaiting Data Entry

5. In the **Group Select Section**, all destination group names are now active (as labeled on the bottom of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.).

   In the **Destination Display**, the "question mark" readout appears, with the selected group name written as the prefix.

Figure 7-13. Destination "Question Mark" Display, Awaiting Extension

6. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device within the group. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.

   Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension with the *second*, *third* and *fourth* presses.

7. With a valid destination entered, press the **Destination Select** button to conclude the procedure. The **Destination Select** button stops blinking and the new destination appears in the **Destination Display**. In the **Source Display Section**, complete level status for the new destination automatically appears (including breakaways).

Refer to the "**Cancelling a Destination Selection**" section on page 7-12 for additional important information.

Selecting a Destination in Numeric Mode

Use the following steps to select a destination *manually*, with the panel in the numeric mode. In this mode, destinations are selected by their number alone — there are *no* group names or extensions.

1. Ensure that the desired destination numeric IDs are properly programmed.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Ensure that the panel is in the numeric mode. If not, toggle the **Mnemonic/Numeric** button until the label "**Numeric**" is lit.
4. Press the **Destination Select** button. The button blinks and the "dots" display appears in the **Destination Display**, indicating that the panel is now in the *destination select* mode and waiting for data entry.
5. In the **Group Select Section**, use the keypad buttons to enter the source's numeric ID. Up to four digits can be selected, and leading zeros do *not* need to be entered.

   Note: In the numeric mode, the *first*, *second*, *third* and *forth* presses select the first (4) digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

6. With a valid destination ID entered, press the **Destination Select** button to conclude the procedure. The **Destination Select** button stops blinking and the new destination ID appears in the **Destination Display**. In the **Source Display Section**, complete level status for the new destination automatically appears (including breakaways).

Refer to the "**Cancelling a Destination Selection**" section on page 7-12 for additional important information.

Cancelling a Destination Selection

To cancel the destination selection procedure, two modes are available:

- Press **Clear** at any time prior to pressing the **Destination Select** button. This safely cancels the data entry procedure and returns the **Destination Display** back to its previous assignment.
- Press the **Destination Select** button while an *invalid* destination is displayed to exit the mode safely.

Performing an All-follow Take

The “all-follow” take mode is the default mode for the UCP XY/16 panel. There are three ways to perform an all-follow take on the panel:

- All-follow with the **Direct Source Select** buttons
- Performing an all-follow take in mnemonic mode
- Performing an all-follow take in numeric mode

Each selection method is described below.

All-follow with the Direct Source Select Buttons

Use the following steps to perform an all-follow take *automatically* using the **Direct Source Select** buttons.

1. Ensure that the desired “direct” sources are pre-programmed from the RMS or U-Con, and that all **Direct Source Select** buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-10 for instructions.
4. Press the desired **Direct Source Select** button.

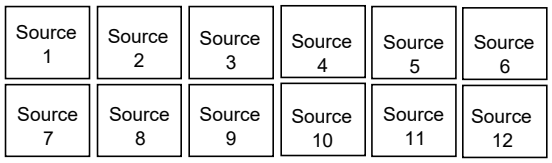


Figure 7-14. Direct Source Select Section

The button lights, the source is automatically selected, and its name (or numeric ID) appears in all valid levels in the **Source Display Section**. There is *no need* to press **Take**.

Note: This procedure works the same in both the numeric and mnemonic modes.

Performing an All-follow Take in Mnemonic Mode

Use the following steps to perform an all-follow take with the panel in the mnemonic mode.

1. Ensure that the desired source "groups" are programmed from the RMS, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
5. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.).

   In all of the *valid* **Source Displays**, the "question mark" readout appears, with the selected group name showing as the prefix.

Figure 7-15. Source "Question Mark" Display, Awaiting Extension

6. Using the keypad buttons, enter the extension of the desired device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension with the *second*, *third* and *fourth* presses.

7. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the "**Cancelling an All-follow Take**" section on page 7-15 for additional important information.

Performing an All-follow Take in Numeric Mode

Use the following steps to perform an all-follow take, with the panel in the numeric mode.

1. Ensure that the desired source numeric IDs are properly programmed from the RMS.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
5. In the **Group Select Section**, use the keypad buttons to enter the source's numeric ID. One, two, or three digits can be selected, and leading zeros do *not* need to be entered. Once the first digit is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: In the numeric mode, the *first, second*, *third*, and *fourth* presses select the first three digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

6. With a valid source ID entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the "**Cancelling an All-follow Take**" section on page 7-15 for additional important information.

Cancelling an All-follow Take

To cancel the all-follow take procedure, press **Clear** at any time prior to pressing **Take**. This safely cancels the data entry procedure and returns all **Source Displays** back to their previous assignments.

Note: If you press **Take** but the source ID is *invalid*, the **Take** button stops blinking and all levels revert to their previous assignments — without taking the new source.

Performing a Breakaway Take

A “breakaway take” is a special Take in which a subset of all available signal levels are sent to a destination. The following topics are discussed in this section:

- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breakaway with the Direct Source Select Buttons
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

Note: Breakaway Takes can be performed in both the numeric and mnemonic modes, simply by toggling the **Display Type** button to the desired label. In the numeric mode, all procedures (with the exception of selecting a group name) are identical to the mnemonic mode. In the interest of brevity, only the mnemonic mode will be discussed in the following sections.

Breaking Away One Level From One Source

With the panel in the mnemonic mode, use the following steps to break away one level from one source.

1. Ensure that the desired destination “groups” are programmed from the RMS, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label “**Mnemonic**” is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-10 for instructions.
5. In the **Source Display Section**, press the **Level Select** button for the *one level* that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). The **Level Select** button blinks, and the “dots” display appears in the adjacent **Source Display** — indicating that the level is now awaiting data.
6. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the selected **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.

7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: Remember that the *first* press of a **Group Select** button chooses the group, and the next **keypad** presses select the extension.

8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** and **Level Select** buttons stop blinking, the single source level is routed to the destination, and new status is shown in the display for the selected level.

Refer to the "**Cancelling a Breakaway Take**" section on page 7-21 for additional important information.

Breaking Away Multiple Levels From One Source

With the panel in the mnemonic mode, use the following steps to break away two or more levels from a source.

1. Ensure that the desired destination "groups" are programmed from the RMS, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
5. In the **Source Display Section**, press the **Level Select** buttons for the levels that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each adjacent **Source Display** — indicating that the levels are now awaiting data.

   Note: You can select and deselect levels as needed — you can even toggle off a previously "enabled" level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

6. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.

7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device — up to three digits. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.
8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 7-21 for additional important information.

Breakaway with the Direct Source Select Buttons

The eight **Direct Source Select** buttons can be used to simplify the breakaway take procedure as follows.

1. Ensure that the desired "direct" sources are pre-programmed from the RMS, and that all **Direct Source Select** buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
4. In the **Source Display Section**, press the **Level Select** buttons for the levels that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each adjacent **Source Display** — indicating that the levels are now awaiting data.

   Note: You can select and deselect levels as needed — you can even toggle off a previously "enabled" level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

5. Press the desired **Direct Source Select** button. The source is automatically routed to the enabled levels, and its name (or numeric ID) appears in all appropriate displays. There is *no need* to press **Take**.

Refer to the "Cancelling a Breakaway Take" section for additional important information.

Breaking Away Multiple Levels From Different Sources

Use the following steps to break away two or more levels from *different* sources.

1. Ensure that the desired destination “groups” are programmed from the RMS, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label “**Mnemonic**” is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-10 for instructions.
5. In the **Source Display Section**, press the **Level Select** buttons for the levels that you want to break away *for the current source*. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the “dots” display appears in each adjacent **Source Display**.

   Note: You can select and deselect levels as needed — you can even toggle off a previously “enabled” level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

6. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In each selected **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.
7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source.
8. Once the first source has been entered for the first set of levels, repeat steps 5 through 7 (as often as required) for each additional set of levels and sources that you want to add to the multiple breakaway. You can breakaway up to 16 levels from 16 different sources.

   Note: If you change your mind, pressing a blinking **Level Select** button (for the first time) returns that level to the “dots” display, allowing you to re-enter a source. Pressing the button while the “dots” display is active toggles the level off.

9. With all valid sources entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the “**Cancelling a Breakaway Take**” section on page 7-21 for additional important information.

Breakaway Take (Starting in All-Follow Mode)

Use the following steps to start a breakaway take in the “all-follow” mode, and then select your desired breakaway sources as required.

1. Ensure that the desired source “groups” are programmed from the RMS, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the button until the label “**Mnemonic**” is lit.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-10 for instructions.
5. In the **Group Select Section**, select the all-follow source. Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). The “question mark” readout appears in all valid **Source Displays**.
6. Using the keypad buttons, enter the extension of the desired device. Leading zeros do *not* need to be entered.
7. In the **Source Display Section**, press the **Level Select** buttons for the levels that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the “dots” display appears in each adjacent **Source Display**.
8. In the **Group Select Section**, select the breakaway source by pressing the button for the desired *group* of devices. In each selected **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.
9. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired breakaway source device.
10. With all valid extensions entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the “**Cancelling a Breakaway Take**” section on page 7-21 for additional important information.

> **Note:** You can also break away multiple levels and sources in this mode. Refer to the “**Breaking Away Multiple Levels From Different Sources**” section on page 7-19 for instructions.

Cancelling a Breakaway Take

To cancel the breakaway take procedure, two methods are available:

- Press **Clear** at any time prior to pressing **Take**, or prior to pressing a **Direct Source Select** button.
- Toggle *all* blinking **Level Select** buttons off.

Both methods safely cancel the data entry procedure.

Using the Protect Mode

Pressing the red **Protect** button activates the "**Protect Mode**" and causes the button to blink — indicating that the mode is active. In this mode, you can set a **Lock** or a **Protect**, or you can *clear* either of the two modes (if appropriate for the current panel).

Note: Because the **Protect** button by itself does not differentiate between a **Protect** or a **Lock**, you can enter the mode to verify what *type* of protect is enabled, and on what levels.

In the **Protect Mode**, you can perform one of three functions to a selected destination:

- Setting a "**Protect**" prevents all other panels from routing sources to a destination — or to a selected *level*. Only the current panel (that is, the one that *originally* set the **Protect**) can perform takes, and only the current panel (and the RMS) can clear the **Protect**.

  The **Protect** mode is indicated by the "**PROTECT**" label on all protected levels (mnemonic mode), or by the number "**1**" (numeric mode).

  P R O T E C T

  Figure 7-16. Protect Mode Source Display Label

- Setting a "**Lock**" prevents *all panels* (including the current panel) from routing sources to a destination — or to a selected *level* of a particular destination. Any panel (including the RMS) can clear the **Lock**.

  The **Lock** mode is indicated by the "**LOCK**" label on all protected levels (mnemonic mode), or by the number "**2**" (numeric mode).

  l o c k

  Figure 7-17. Lock Mode Source Display Label

- Setting a "**Clear**" removes either the enabled **Lock** or **Protect**. When you set the **Clear** mode, it is indicated by the **"CLEAR"** label on all protected levels (mnemonic mode), or by the number "**3**" (numeric mode).

C L E A R

Figure 7-18. Clear Mode Source Display Label

Each procedure is discussed in detail in the following sections.

Setting a Protect

Use the following steps to set a **Protect** for a particular destination. This mode prevents all other panels from routing sources to a destination or to a selected *level*.

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Determine your destination requirements:
    - If you want to set or change a **Protect** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
    - If you want to set or change a **Protect** for the *current* destination, please continue with step 4.
4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
    - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
    - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
5. If you want to set a **Protect** for *all levels*, please continue with step 6.

    If you want to set a **Protect** on *selected* levels, in the **Source Display Section** press the **Level Select** buttons for the desired levels (just as you would do for breakaway selections). Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.

6. Press **Keypad Button 1** to set the **Protect** mode for all levels, or for the selected levels.

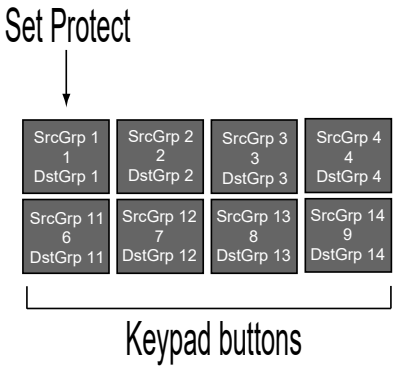


Figure 7-19. Keypad "Set Protect" Button Location

In all selected displays, the "**PROTECT**" label appears (mnemonic mode) or the number "**1**" appears (numeric mode).

7. Press **Take** to send the new **Protect** mode to the selected destination.
8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Protect** mode set, please note:

- All other panels are prevented from routing sources to the destination.
- Only the current panel (the one that *originally* set the **Protect**) can perform takes.
- Only the current panel (and the RMS) can clear the **Protect**.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 7-27 for additional important information.

Setting a Lock

Use the following steps to set a **Lock** for a particular destination. This mode prevents *all panels* (including the current panel) from routing sources to a destination.

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Determine your destination requirements:

- If you want to set or change a **Lock** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
- If you want to set or change a **Lock** for the *current* destination, please continue with step 4.

4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
   - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
   - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
5. If you want to set a **Lock** for *all levels*, please continue with step 6.

   If you want to set a **Lock** on *selected* levels, in the **Source Display Section** press the **Level Select** buttons for the desired levels. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.
6. Press **Keypad Button 2** to set the **Lock** mode for all levels, or for the selected levels.

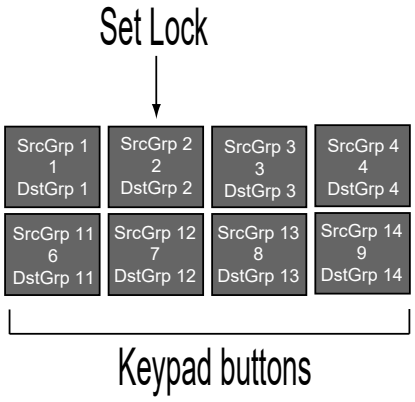


Figure 7-20. Keypad "Set Lock" Button Location

In all selected displays, the "**LOCK**" label appears (mnemonic mode) or the number "**2**" appears (numeric mode).

7. Press **Take** to send the new **Lock** mode to the selected destination.

8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Lock** mode set, please note:

- All panels (including the current panel) are prevented from routing sources to the destination.
- All panels (and the RMS) can clear the **Lock**.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 7-27 for additional important information.

Clearing a Lock or Protect

The **Lock** and **Protect** modes can each be cleared (removed) entirely, or selected levels can be cleared individually. Note that if the selected destination has a **Protect** enabled, only the current panel (the one that *originally* set the **Protect**) can clear it. If the selected destination has a **Lock** enabled, any panel can clear it.

Use the following steps to clear a **Lock** or a **Protect**:

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Call up the destination on which the **Lock** or **Protect** is enabled. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions. Remember that you must be working from the panel that originally set the **Protect** in order to clear it.
4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, the appropriate **Lock** or **Protect** labels will appear in each affected **Source Display**.
5. To clear *all levels*, please continue with step 6.

   To clear *selected* levels, in the **Source Display Section** press the **Level Select** buttons for the levels that you want to clear. Use the **Level Shift** button to choose the *group* of levels. Each selected button blinks, and the "dots" display appears.

6. Press **Keypad Button 3** to set the **Clear** mode for all levels, or for the selected levels.

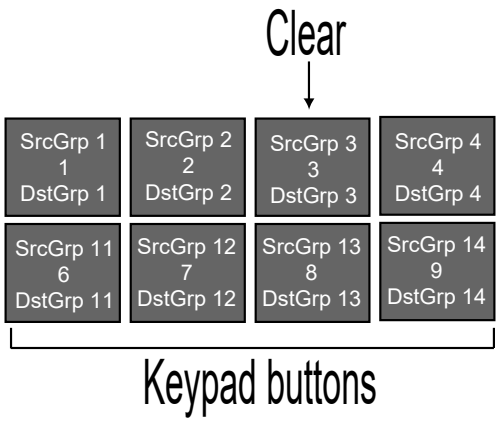


Figure 7-21. Keypad "Clear Lock" Button Location

In all selected displays, the "**CLEAR**" label appears (mnemonic mode) or the number "**3**" appears (numeric mode).

7. Press **Take** to send the **Clear** mode to the selected destination.
8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 7-27 for additional important information.

Using the Direct Protect Mode

As an easy shortcut, you can use several buttons in the **Direct Source Select Section** to set *any* of the three **Protect** modes.

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Call up the desired destination. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:

    - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.

- If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.

5. In the **Direct Source Select Section** (with **Protect Mode** enabled), the functions of the first three buttons are changed as follows:

   - Press **Direct Source Select Button 1** to set a **Protect**.
   - Press **Direct Source Select Button 2** to set a **Lock**.
   - Press **Direct Source Select Button 3** to set a **Clear**.

   The figure below illustrates the button functions.

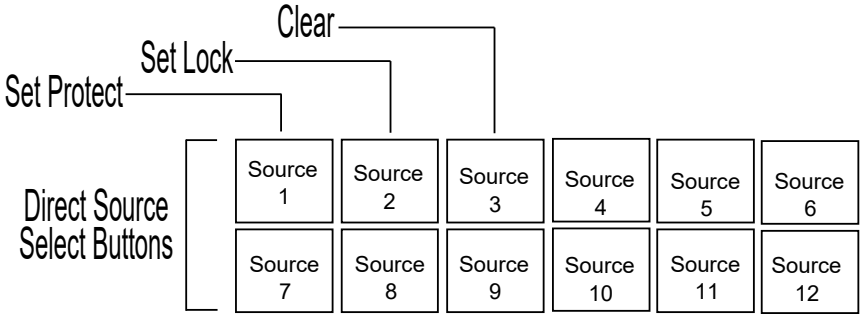


Figure 7-22. Direct Source Select Button Functions in Protect Mode

6. To exit the **Protect Mode**, press the blinking **Protect** button. There is no need to press **Take** using the "direct" method.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 7-27 for additional important information.

Cancelling a Protect Mode Selection

If you need to cancel a **Protect Mode** procedure, two methods are available:

- If any "breakaway" **Protect Mode** selections are pending, press **Clear** at any time prior to pressing **Take**. Then press the blinking **Protect** button to exit the mode.
- If there are no "breakaway" **Protect Mode** selections pending, press the blinking **Protect** button to exit the mode.

Protect Mode Notes

Please note the following important points regarding the **Protect Mode** in general.

- When the **Protect Mode** is enabled and you are selecting between the three modes (prior to pressing **Take**), you can not switch directly between **Lock** and **Protect**. You must first clear the **Lock** or **Protect** by sending a **Clear** take, and then choose the alternate mode.
- You can perform a "**Take**" to a destination in which only certain levels are locked or protected. In this situation, only the *unlocked* or *unprotected* levels will accept the **Take**.
- If you attempt a "**Take**" on a locked or protected destination, the panel's **Source Displays** blink (four times) with the label "**PROTECT**" to indicate that the requested function is not permitted.

Performing a Salvo Take

A **Salvo** is a list of "Takes" that are stored (and programmed) in the RMS, but which are run from the SC-4 controller. Each Salvo consists of a group of commands that comprise both *source and destination* instructions.

Use the following steps to perform a Salvo Take. The procedure is identical in both mnemonic or numeric modes.

1. Ensure that the desired Salvo command lists are properly programmed in the RMS.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Press the **Salvo** button. The button blinks to indicate that the **Salvo Select Mode** is active. In the **Destination Display**, the Salvo label appears:

Figure 7-23. Salvo Display, Awaiting Data

4. Using the keypad buttons (within the **Group Select Section**), enter the number of the desired Salvo (from 0 to 31). After the first digit is entered, the **Take** button blinks.
5. Press **Take** to execute the selected Salvo list. The **Take** and **Salvo** buttons stop blinking, and the SC-4 controller runs the selected list.

Changing Attributes

The **Attribute Mode** allows you to change various audio and video attributes of the routing switcher's output signals, and route those changes to the desired destination with a **Take**.

Attribute changes are performed in "breakaway" fashion to the target signal levels only. For example, changes in audio attributes would *only* be performed on selected audio levels, while changes to the video data rate would only be performed to the digital video level.

Note: Audio attributes always apply to analog stereo pairs, as pre-defined in the RMS. For example, if Level 1 is defined as **Channel 1 Left** and Level 2 is defined as **Channel 2 Right** in the RMS (and *both* are defined as a stereo pair), when an attribute change is made to either Level 1 or 2, the change may affect one or both portions of the stereo pair. In addition, status will be displayed the same for *both levels*, even if the attribute change was performed to one half of the stereo pair only.

Use the following steps to change audio and video attributes.

1. Ensure that all stereo pairs are properly defined in the RMS.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Select the desired destination. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions.
4. Press the **Attribute** button.

Figure 7-24. Attribute Button

The button blinks to indicate that the **Attribute Mode** is active.

5. In the **Source Display Section**, press the **Level Select** buttons for the audio or video levels on which you want to change attributes. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each adjacent **Source Display**.

6. Using keypad buttons **0** through **9** and buttons **A** through **D** (or the **Scroll** buttons), select the desired audio or video attributes that you wish to change. The table below lists each selection. Note that the **Attribute Name** column lists how each attribute appears in the **Source Displays**. Remember that audio attributes apply to the stereo pair.

Table 7-1. Attribute Selections

Keypad Button	Attribute Name	Description
0	NORMAL	Resets the selected level to normal. Removes any attribute changes.
1	SWAP	Swaps audio left and right signals.
2	MIX	Mixes left and right signals together, and sends a “mixed” signal out each port.
3	MONOLEFT	Sends the left channel out both the left and right ports.
4	MONORGHT	Sends the right channel out both the left and right ports.
5	INVTLEFT	Inverts the phase of the left channel.
6	INVTRGHT	Inverts the phase of the right channel.
7	MUTELEFT	Mutes the left channel, and sends “normal” on the right channel.
8	MUTERGHT	Mutes the right channel, and sends “normal” on the left channel.
9	MUTEALL	Mutes both the left and right channels.
A	DV143	Reclocks video data rate to 143 Mhz.
B	DV177	Reclocks video data rate to 177 Mhz.
C	DV270	Reclocks video data rate to 270 Mhz.
D	DV360	Reclocks video data rate to 360 Mhz.

7. Press **Take** to complete the procedure. The **Attribute** button stops blinking, and the new attributes are routed to the selected levels of the destination.

Note: Video data rate changes are specific to the UTAH-300 routing switcher, in which the data rate must be “set” for the output modules. Refer to the ***UTAH-300 User’s Guide*** for additional information.

Using the Chop Mode

The **Chop Mode** allows you to toggle between two Takes. When you initiate the mode, the panel alternates between the two sources continuously, at a predetermined rate. The “chop” continues until you cancel it, or until another user on another panel cancels it. The mode is typically used for color-matching cameras, phasing sources, or matching video levels. The Chop Mode can be used in both “all-follow” and “breakaway” conditions.

Setting the Chop Mode Rate

Use the following steps to set the **Chop Mode** rate (that is, the rate at which the system toggles between the two selected sources).

1. Press and *hold* the **Take** button.
2. Using keypad buttons **0** through **9**, select the number for the desired chop rate. The table below lists each selection.

Table 7-2. Chop Rate Selections

Keypad Button	Chop Rate (seconds)
0	Off
1	.25
2	.50
3	.75
4	1.0
5	1.5
6	2.0
7	2.5
8	3.0
9	5.0

When you select a number, the current chop rate appears in the **Source Display**.

3. Release the **Take** button to complete the procedure. The panel is now set to chop between two selected sources at the chosen rate.

Performing an All-follow or Breakaway Chop

Use the following steps to activate the **Chop Mode** between two All-follow Take or Breakaway Take sources:

1. Program the first **All-follow Take** or **Breakaway Take** in the normal manner. Refer to the "**Performing an All-follow Take**" section on page 7-13 or the "**Performing a Breakaway Take**" section on page 7-16 for instructions.
2. Program the second All-follow or Breakaway Take in the normal manner — to the *same destination* as the first Take. Instead of pressing **Take** to conclude the procedure, press and *hold* the **Take** button for two seconds.

   This action places the panel in the **Chop Mode**, and the system switches between both sources on all selected levels continuously (at the current toggle rate). The labels in all appropriate **Source Displays** now alternate between the two selected sources. These alternating labels are your *only indications* that the system is in Chop Mode.
3. To cancel the **Chop Mode**, press *any button* on the panel (such as **Clear**).

   Note: The mode is also automatically cancelled when any other panel sends a normal **Take** (or a breakaway **Take**) to the destination that is currently chopping.

Chop Mode Notes

Note the following important points regarding the Chop Mode:

- **Locks** and **Protects** apply in the normal manner. Refer to the "Using the Protect Mode" section for full details.
- If the Chop Mode is active in "breakaway" condition on a specific signal level, you can perform another breakaway Take to a signal level that is not chopping — without affecting the levels that are chopping. This action can be performed on any other panel except the one that initiated the Chop Mode.

Scroll Button

The scroll buttons are used to assist the user in finding a source or destination. IF either of the scroll buttons are pressed the panel will start scrolling from where the panels output is currently switched to.

The user can select an input group and then press the scroll buttons to scroll through the tables starting at that group name.

The user can scroll the destination by pressing the “Select Dest” button then pressing a group button the start scrolling from that point or just press the scroll button before they press a group button.

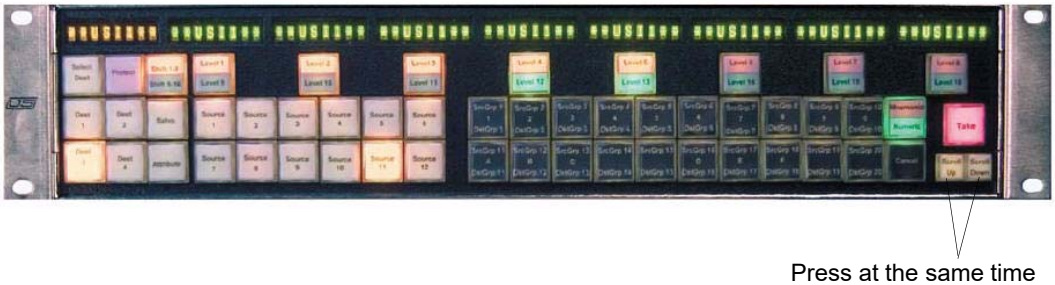
Refer to the Source/Destination scroll toggle feature that allows the user to switch between scrolling the sources or destinations when the scroll button is pressed.

Dest/Source Scroll Toggle

This allows the users of the UCP-XY panel to scroll through the destinations by default instead of the Sources. Normally the panel will scroll the sources when a Scroll button is pressed. By switching the panel to scroll the Destination instead of the sources the user can quickly scroll through the destinations and get stats on each destination as they scroll.

To toggle between destination and source scroll:

Press down both scroll buttons at the same time. The panel will display “ScrllDST” or “ScrllSRC”.



Press at the same time

Each time the scroll buttons are pressed [at the same time] the panel will toggle between scrolling destinations or sources.

Monitor Matrix Mode

The **Monitor Matrix** mode allows you to conveniently monitor each signal level's outputs — without affecting the router's actual destinations. Each level has a separate Monitor Matrix output that is typically routed to *physical* audio and video monitors in the control room (or machine room). When the UCP XY/16 panel is in Monitor Matrix mode, and when a particular destination device is chosen, you can monitor that destination *visually and aurally*. You have the ability to *see and hear* the source that is routed to the destination, but you can not determine what the actual source is from the UCP XY/16 panel itself.

Because the UCP XY/16 is a full XY panel, any of the 20 available destination groups can be assigned to the Monitor Matrix function from the RMS or U-Con. This is accomplished by typing the keyword "**MMTRX**" into the desired destination group's entry box on the U-Con (or RMS) itself. Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP XY/16 panel functions in the special Monitor Matrix mode — allowing you to monitor any of the router's remaining 19 groups of available destinations.

Note: The following important rules apply when the **Monitor Matrix** mode is selected on the UCP XY/16 panel:

- The **Destination Display** label reads "**MMTRX**" to identify the mode.
- The **Source Displays** becomes **Destination Displays**.
- The normal procedure for taking a *source* becomes the process for taking a *destination*.
- The **Level Select** and **Level Shift** buttons function in the normal way, allowing you to view the Monitor Matrix output on *all levels* — or on *selected* levels. Typically, a Monitor Matrix "take" is an all-follow take, but you can split the monitor as required. This would allow you, for example, to see the video routed to destination one (e.g., VTR--021), but hear the audio routed to destination two (e.g., SATELITE).
- The **Protect**, **Attribute** and **Salvo** modes are not valid during the Monitor Matrix mode.
- The buttons in the **Direct Source Select Section** are not valid.
- The buttons in the **Direct Destination Select Section** function in the normal way. You can even assign a **Direct Destination** button to the Monitor Matrix function from the RMS.
- The **Display Type** button functions in the normal way. However, even in numeric mode, the **Destination Display** label reads "**MMTRX**."

- The Scroll buttons function in the normal way, allowing you to scroll through the list of available destinations.

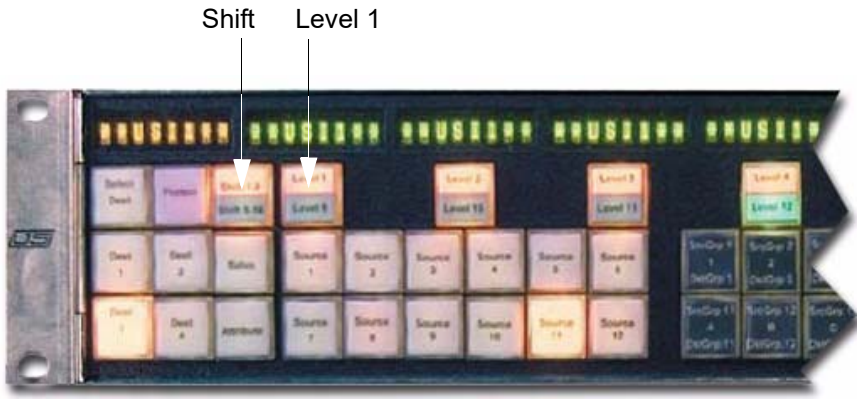
Use the following steps to enable and utilize the Monitor Matrix mode:

1. Ensure that the Monitor Matrix mode is properly enabled from the RMS for your specific panel, with the keyword "**MMTRX**" entered. The feature will *not* operate otherwise.
2. On the panel, ensure that the selected Monitor Matrix destination button (in the **Group Select Section**) is *clearly* labeled (for example, **MMTRX** or **Mon Mtrx**).
3. Ensure that the desired destination "groups" are programmed from the RMS.
4. Select numeric or mnemonic mode as desired with the **Mnemonic/Numeric** button.
5. Press **Clear** to cancel any pending source or destination procedure.
6. Select the Monitor Matrix destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-10 for instructions. The **Destination Display** label reads "**MMTRX**."
7. To select the destination that you wish to monitor *directly*, press the desired button in the **Direct Destination Select** section. There is no need to press **Take** in this mode. To select a destination manually, please continue with step 8.
8. In the **Group Select Section** (which now applies to *destinations* rather than sources) press the button for the desired *group* of destination devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display Section** (which is now a *destination* display section), the "question mark" readout appears in all valid displays, with the selected group name showing as the prefix.
9. Using the keypad buttons, enter the extension of the desired destination device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.
10. If you want to break away a level (for purposes of monitoring split destinations), perform the following steps:
    - Use the **Level Shift** button in conjunction with the **Level Select** buttons to choose the levels that you want to break away.
    - In the **Group Select Section**, select the breakaway destination by pressing the button for the desired *group* of devices. In the **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
    - Using the keypad buttons, enter the extension of the desired breakaway destination.
11. With a valid extension entered, press **Take** to conclude the procedure.

The selected destination is now routed to the Monitor Matrix output, allowing you to monitor the audio and video signals that are routed to the destination's input. Repeat the procedure from step 5 to monitor additional destinations as required.

Panel Lock Feature

The Panel Lock feature applies to all panels in the UCP series. To activate panel lock, hold down the **Level Shift** button while pressing the **Level 1** button. If the panel contains a display, the word "Locked" will appear in the status area for two seconds. If you then attempt to press a button that would affect the router, the *Level Shift* and *Level 1* buttons will blink while "Locked" flashes in the display. To unlock the panel, hold down the *Level Shift* button and press the *Level 1* button again. The display will show "UNLocked", and button activation is again possible.



Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Changing Panel LED Intensity
- Verifying the Panel Node
- Verifying the Panel ID
- Verifying the Software Version

Use the following figure for reference during the procedures listed above. Note that the buttons are highlighted in white for clarity only.

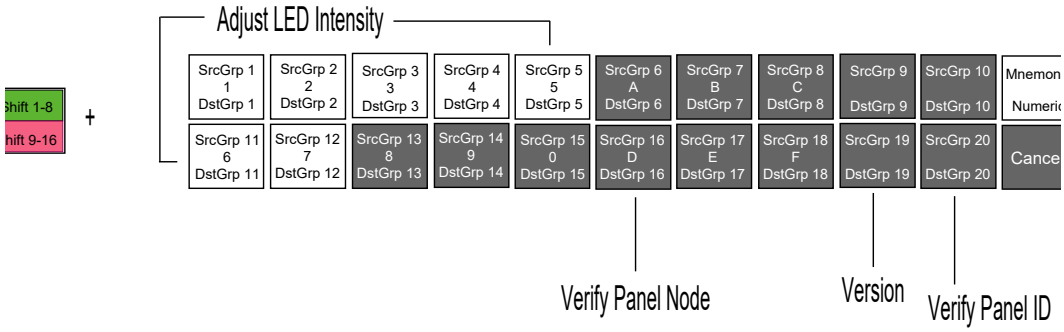


Figure 7-25. Keypad Buttons used for Miscellaneous Panel Modes

Changing Panel LED Intensity

Use the following steps to change the intensity of the panel LEDs.

1. Press and *hold* the **Level Shift** button.
2. While holding, press one of the first seven keypad buttons, as shown in Figure 7-25. Button **1** is the brightest setting; button **7** is the dimmest setting.

   Note: Even on the dimmest setting the LEDs are never completely off.

3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel Node

Use the following steps to verify the panel node address, as assigned on the UCP XY/16's rear panel DIP switch.

1. Press and *hold* the **Level Shift** button.
2. While holding, press keypad button **D** as shown in Figure 7-25. (This button may also be labeled as the **Group 19** button.) In the **Destination Display**, the panel's node address appears.

Figure 7-26. Panel Node Address Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel ID

Using the RMS, you can enter a panel ID (or "name"), up to 32 characters in length. Use the following steps to verify the panel ID.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 20** button as shown in Figure 7-25. In the first three **Source Displays**, the panel's ID appears.

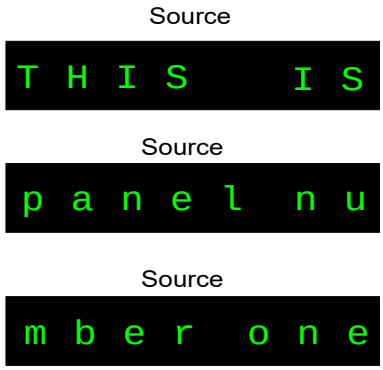


Figure 7-27. Panel ID Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Software Version

Use the following steps to verify the panel's current software version.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 15** button, as shown in Figure 7-25. In the **Destination Display**, the panel's software version appears.

Figure 7-28. Panel Software Version Display

3. Release the **Level Shift** button to complete the procedure.

General Panel Notes

Note the following important points regarding the UCP XY/16 panel in general:

- When the UCP XY/16 panel is being re-programmed from the RMS or U-Con, the label "**REPROGRM**" appears in the **Destination Display**. The panel is inactive during the reprogramming mode.
- If the panel's U-Net connection is lost, all **Source Displays** will show dashes.
- With the UCP XY/16 (and with other UCP panels), multiple panels *may* be able to address the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP XY/16, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Section 8

UCP SX/16 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP SX/16, an advanced 16 level full XY panel. The following topics are discussed:

About the UCP SX/16

The **UCP SX/16** is an advanced 16 level XY panel that includes the core features of the UCP XY/16, plus many additional conveniences. Refer to the "**SCP SX/16**" section on page 1-10 for a brief description of the panel's main features.

The figure below illustrates the main buttons and sections of the UCP SX/16 panel.

Note: For simplicity, numeric labels are shown on the level, source, destination and group buttons below. Your labels will differ depending upon the level, source, destination and group assignments in your facility.

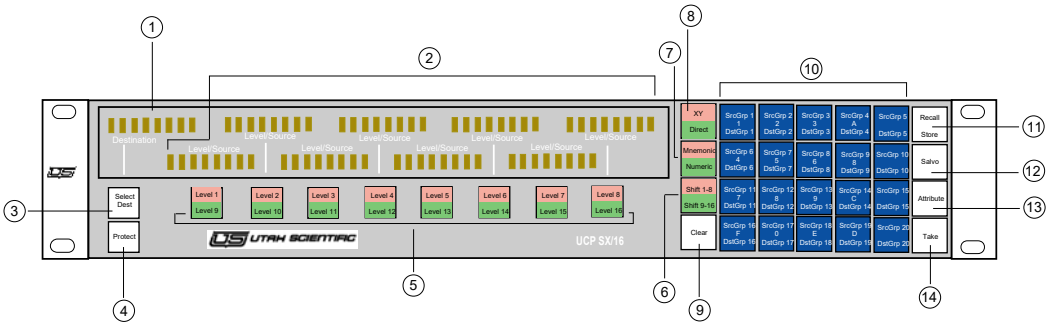


Figure 8-1. UCP SX/16 Panel

1)	Destination Display	6)	Level Shift Button	11)	Store/Recall Button
2)	Source Display Section	7)	Display Type Button	12)	Salvo Button
3)	Destination Select Button	8)	Panel Mode Button	13)	Attribute Button
4)	Protect Button	9)	Clear Button	14)	Take Button
5)	Level Select Section	10)	Group Select Section		

1) **Destination Display**

The **Destination Display** is an eight-segment green LED readout that shows the currently selected destination. The display can be switched between numeric and mnemonic (alphanumeric) modes using the **Display Type** button.

The figure below illustrates a typical mnemonic destination display.

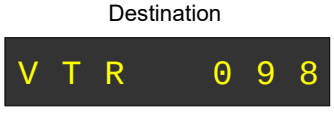


Figure 8-2. Mnemonic Destination Display

In the mnemonic mode, the display typically shows up to five characters plus a three-digit extension, signifying a *group name* plus a specific device within that group.

In the numeric mode, the display typically shows up to three digits, signifying a device's numeric identification (ID) as programmed with the RMS or U-CON utility.

Figure 8-3. Numeric Destination Display

During the destination selection procedure, two other types of displays are used:

- A display consisting of all "dots" indicates the *first step* in the destination selection procedure. At this point, the panel is waiting for data entry.

Figure 8-4. Destination "Dots" Display, Awaiting Data Entry

- A display in which a *question mark* appears indicates that a group name has been selected, but an extension has not yet been entered.

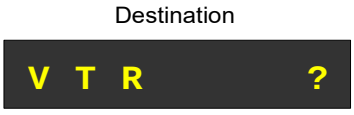


Figure 8-5. Destination "Question Mark" Display, Awaiting Extension

Note: Each of the four examples illustrated above *also* apply to the eight **Source Level Status Displays** — mnemonic, numeric, dots and question mark.

2) **Source Display Section**

The **Source Display Section** provides status for all 16 levels of a given destination, plus additional level data depending upon the selected mode (e.g., protect, attributes).

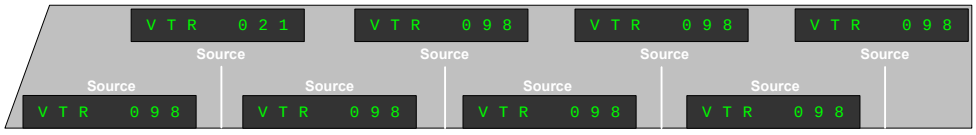


Figure 8-6. Source Display Section

Section 8

Each **Source Display** is an eight-segment amber LED readout that is positioned *directly* above its associated **Level Select** button. Moving from left to right, display 1 provides status for levels 1 or 9, display 2 provides status for levels 2 or 10, etc. The **Level Shift** button switches the eight displays between the two groups of levels (1-8 and 9-16).

The eight displays show the current source associated with each level, in either the numeric or mnemonic (alphanumeric) display modes.

3) **Destination Select Button**

The **Destination Select** button begins, concludes or cancels the procedure for selecting a destination *manually* (rather than via a *direct* selection). When pressed initially, the button blinks to indicate that the panel is in the "destination select" mode. Please note:

- If the **Destination Select** button is pressed while an *invalid* destination is displayed, the button stops blinking, the **Destination Display** returns to its default state prior to pressing the button, and the current destination is retained.
- If the **Destination Select** button is pressed while a *valid* destination is displayed, the button stops blinking, the new destination is accepted, and the display updates with the new destination name.

4) **Protect Button**

The **Protect** button, when lit **Red**, indicates that either a **Lock** or a **Protect** has been enabled for the selected destination.

- In the "**Protect**" mode, all other panels are prevented from routing sources to a destination — or to a selected *level* of a destination.
- In the "**Lock**" mode, *all panels* (including the current panel) are prevented from routing sources to a destination — or to a selected *level* of a particular destination.

When you press **Protect**, the button blinks and allows you modify the current mode. Refer to the "**Using the Protect Mode**" section on page 8-20 for more information.

5) **Level Select Section**

The **Level Select Section** includes eight **Level Select** buttons that provide a variety of important panel functions.

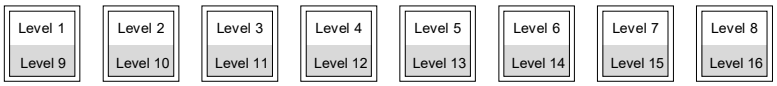


Figure 8-7. Level Select Section

The eight buttons are divided in half, and each segment can be lit independently. The top half displays the button's level 1-8 assignment, while the bottom half displays the button's level 9-16 assignment (for example, Video, Audio1, Audio2, Timecode, etc.). The **Level Shift** button (located immediately to the right of the section) switches the eight displays between the two groups of levels (1-8 and 9-16).

Each button is positioned *directly* below its associated status display for convenience when checking status or programming a take.

- The **Level Select** buttons perform three functions.
  - ~ A *lit* segment always indicates a valid level — one that can be selected for a breakaway take. If a segment is not lit, that level is not valid for the current destination, and can not be included in a breakaway take. If all 16 levels were valid, all buttons would be fully lit.
  - ~ Pressing a valid **Level Select** button allows you to include that level in a breakaway take, and assign a source to that level for routing to the destination.
  - ~ In "Direct" mode, the **Level Select** buttons become direct source selection buttons, allowing you to select one of 16 "favorite" sources with one keystroke.

6) **Level Shift Button**

The **Level Shift** button switches the displays in the **Source Display Section** and the buttons in the **Level Select Section** between the two groups of levels (1-8 and 9-16). The button is positioned *in-line* with the **Level Select** buttons as a convenient visual cue.

The lit portion of the **Level Shift** button serves two functions:

- It indicates the levels that are currently shown on the eight **Source Displays** — for status purposes.
- It indicates the group of levels that can be chosen with the **Level Select** buttons — for including a level in a pending breakaway take.

7) **Display Type Button**

The **Display Type** button switches *all displays* on the panel between numeric and mnemonic (alphanumeric) modes. The lit segment indicates the current mode.

- In numeric mode, all displays show a one, two, or three-digit number that represents the desired source or destination.
- In mnemonic mode, all displays provide an alphanumeric source or destination name, up to eight characters in length — as programmed from the RMS or U-CON utility.

8) **Panel Mode Button**

The **Panel Mode** button toggles the function of the **Level Select Section** and the **Source Display Section** between the "XY" and "Direct" modes. The lit portion of the button indicates the current mode.

Figure 8-8. Panel Mode Button

- In the default **XY** mode, the **Level Select** buttons choose levels for breakaway takes, and the associated displays provide level status in the normal manner.
- In the special **Direct** mode, the **Level Select** buttons become direct source selection buttons. In conjunction with the **Level Shift** button, you can select one of 16 "favorite" sources with one keystroke. Each associated **Source Display** indicates the name of the direct source.

  Direct sources and destinations are programmed on the UCP SX/16 panel itself for operator convenience — *not* within the RMS or U-CON. You can easily store, modify, recall, clear and transfer any direct button assignment as desired.

Refer to the "**Using Direct Selection**" section on page 8-32 for complete instructions on all "direct" modes.

9) **Clear Button**

The **Clear** button, when pressed during a data entry mode (such as the source or destination selection procedure), safely cancels the mode and returns the panel to a normal "status" condition with no buttons blinking. If an entry was in progress, the **Destination Display** or the array of eight **Source Displays** return to their previous assignment(s). The **Clear** button effectively allows you to begin an entry procedure again.

10) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source and destination "group" names (and extensions). The twenty buttons are divided in half. The top half displays the button's *source* group name, while the bottom half displays the button's *destination* group name.

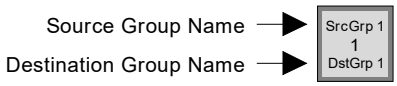


Figure 8-9. Group Select Button Naming Scheme

A "group" represents a *category* of devices, and up to 20 source and 20 destination groups can be programmed from the routing switcher's RMS or U-CON utility, and used on the UCP SX/16 panel. Each group can contain up to 1000 sources or destinations, providing you with a convenient and simple way to address large numbers of devices.

For example, if your facility has 100 VTRs, you could select VTR 98 with two easy steps:

- Select the group name (VTR).
- Select the desired extension (98).

The **Group Select Section** itself includes a keypad for entering extensions (up to three digits) in the mnemonic mode, and for entering complete source and destination identifications in the *numeric* mode.

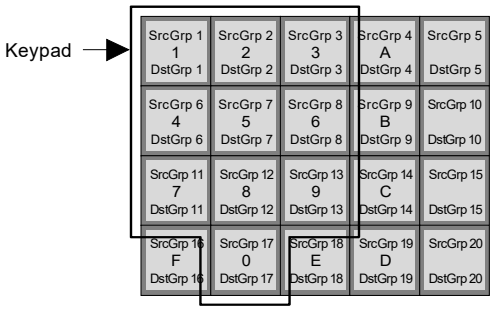


Figure 8-10. Keypad Location

Note: The buttons marked **A** through **F** are also used for entering valid "letter" extensions (if programmed as such from the RMS or U-CON) such as VTR-23A.

11) **Store/Recall Button**

The **Store/Recall** button is used to perform two different functions in preparation for the "direct" mode of operation.

Figure 8-11. Store/Recall Button

- **Store** a direct selection — this function allows you to store up to 32 memory registers; 16 sources and 16 destinations.
- **Recall** a direct selection — this function allows you to recall an all-follow or breakaway take register for modification, to transfer to another register, or to "take" it in the normal manner.

Refer to the "**Using Direct Selection**" section on page 8-32 for complete instructions on all "direct" modes, and the use of the **Store/Recall** button.

12) **Salvo Button**

A **Salvo** is a group of "**Takes**" or *commands* that are stored in the SC-3, SC-4, or SC-400 and are *programmed* within the utility (RMS or U-CON). Salvos are similar to "macro" keys that you can program on a PC. For example, a Salvo Take might be programmed to route bars and tone to 10 different VTRs — at the touch of one button.

Pressing the **Salvo** button on the UCP SX/16 panel allows you to run one of 32 pre-defined command lists. The panel simply chooses the Salvo number and issues the "Take" command. Refer to the "**Performing a Salvo Take**" section on page 8-25 for complete instructions.

13) **Attribute Button**

The **Attribute** button allows you to change various audio and video attributes of the routing switcher's output signal, and route those changes to the desired destination. For example, by entering the **Attribute Mode**, you could mute analog audio on a particular level, or change the digital video data rate. All attribute parameters must be pre-mapped on the RMS or U-CON. Refer to the "**Changing Attributes**" section on page 8-26 for instructions.

14) **Take Button**

Press the **Take** button to conclude a pending procedure, such as an **All-follow** take, a **Breakaway** take, a **Salvo** selection, an **Attribute** selection or a **Protect** take.

Figure 8-12. Take Button

The button blinks to indicate that a procedure is pending.

Displaying Level Status

When you select a destination for a particular purpose, the buttons and displays within the **Source Display Section** and **Level Select Section** provide status for all 16 of the destination's levels.

To check the status of a particular destination, remember the following rules:

- Choose the destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
- Set the display mode (either numeric or mnemonic) using the **Display Type** button.

- Ensure that none of the eight **Level Select** buttons are blinking (as they would in preparation for a breakaway take). If any are blinking, the associated display will *not* show proper status. In this case, press **Clear** to return to the default "all-follow" mode.
- If any of the **Level Select** button segments are *lit*, that level is valid for the current destination — whether or not there is a source assigned to that level. **Valid** implies that the destination can accept an input on the specific level. For example, on a Type-C VTR, the analog video level is valid but the digital video level is not.
- Use the eight **Source Displays** to check the status of each valid level. Use the **Level Shift** button to switch the displays between the two groups of levels.

Note: At times, the displays may show "custom" status labels — ones that are not written in the standard "group + extension" format. Custom labels are a *display function* only. Each panel can be customized differently in its own *custom status table* that resides within the RMS or U-CON. For example, a custom display such as ***ON-AIR*** could be programmed in your panel's custom status table — to be used whenever **VTR--015** is taken. When you send VTR--015 as a take and the controller takes the source, the panel displays ***ON-AIR*** as status, instead of **VTR--015**.

Selecting a Destination

There are three ways to select destinations on the UCP SX/16 panel:

- Selecting a destination in mnemonic mode.
- Selecting a destination in numeric mode.
- Selecting a destination using the "**Direct Selection**" method. Refer to the "**Using Direct Selection**" section on page 8-32 for instructions.

The first two selection methods are described below.

Selecting a Destination in Mnemonic Mode

Use the following steps to select a destination *manually*, with the panel in the mnemonic (alphanumeric) mode.

1. Ensure that the desired destination "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.

3. Press **Clear** to cancel any pending source or destination procedures.
4. Press the **Destination Select** button. The button blinks and the “dots” display appears in the **Destination Display**, indicating that the panel is now in the *destination select* mode and waiting for data entry.

Figure 8-13. Destination “Dots” Display, Awaiting Data Entry

5. In the **Group Select Section**, all destination group names are now active (as labeled on the bottom of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.).

   In the **Destination Display**, the “question mark” readout appears, with the selected group name written as the prefix.

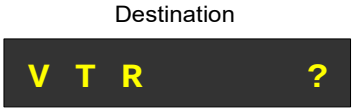


Figure 8-14. Destination “Question Mark” Display, Awaiting Extension

6. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device within the group.

   Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension.

7. With a valid destination entered, press the **Destination Select** button to conclude the procedure. The **Destination Select** button stops blinking and the new destination appears in the **Destination Display**. In the **Source Display Section**, complete level status for the new destination automatically appears (including breakaways).

Refer to the “**Destination Selection Notes**” section on page 8-12 for additional information.

Selecting a Destination in Numeric Mode

Use the following steps to select a destination *manually*, with the panel in the numeric mode. In this mode, destinations are selected by their RMS or U-CON number alone — there are *no* group names or extensions.

1. Ensure that the desired destination numeric IDs are properly programmed from the RMS or U-CON.

2. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Press the **Destination Select** button. The button blinks and the "dots" display appears in the **Destination Display**, indicating that the panel is now in the *destination select* mode and waiting for data entry.
5. In the **Group Select Section**, use the keypad buttons to enter the source's numeric ID. One through four digits can be selected, and leading zeros do *not* need to be entered.

   Note: In the numeric mode, the *first, second*, *third*, and *fourth* presses select the first four digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

6. With a valid destination ID entered, press the **Destination Select** button to conclude the procedure. The **Destination Select** button stops blinking and the new destination ID appears in the **Destination Display**. In the **Source Display Section**, complete level status for the new destination automatically appears (including breakaways).

Refer to the "**Destination Selection Notes**" section on page 8-12 for additional information.

Destination Selection Notes

Note the following important points regarding destination selection:

- The destination selection procedure functions the same in both the "**XY**" and "**Direct**" panel modes. Refer to the "**Using Direct Selection**" section on page 8-32 for more information on the **Direct** mode
- To cancel the destination selection procedure, two modes are available:
  - ~ Press **Clear** at any time prior to pressing the **Destination Select** button. This safely cancels the data entry procedure and returns the **Destination Display** back to its previous assignment.
  - ~ Press the **Destination Select** button while an *invalid* destination is displayed to exit the mode safely.

Performing an All-follow Take

The “all-follow” take mode is the default mode for the UCP SX/16 panel. There are three ways to perform an all-follow take on the panel:

- Performing an all-follow take in mnemonic mode.
- Performing an all-follow take in numeric mode.
- Performing an all-follow take using the “**Direct Selection**” method. Refer to the “**Using Direct Selection**” section on page 8-32 for instructions.

The first two selection methods are described below.

Performing an All-follow Take in Mnemonic Mode

Use the following steps to perform an all-follow take with the panel in the mnemonic mode.

1. Ensure that the desired source “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label “**Mnemonic**” is lit.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 8-10 for instructions.
5. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.).

   In all of the *valid* **Source Displays**, the “question mark” readout appears, with the selected group name showing as the prefix.

Figure 8-15. Source “Question Mark” Display, Awaiting Extension

6. Using the keypad buttons, enter the extension of the desired device. Leading zeros do *not* need to be entered. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a “take” is pending.

   Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension.

7. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the “**Cancelling an All-Follow Take**” section on page 8-15 for additional important information.

Performing an All-follow Take in Numeric Mode

Use the following steps to perform an all-follow take, with the panel in the numeric mode.

1. Ensure that the desired source numeric IDs are properly programmed from the RMS or U-CON.
2. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
5. In the **Group Select Section**, use the keypad buttons to enter the source's numeric ID. One, two, or three digits can be selected, and leading zeros do *not* need to be entered. Once the first digit is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: In the numeric mode, the *first, second*, *third*, and *fourth* presses select the first three digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

6. With a valid source ID entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the "**Cancelling an All-Follow Take**" section on page 8-15 for more information.

Cancelling an All-Follow Take

To cancel the all-follow take procedure, press **Clear** at any time prior to pressing **Take**. This safely cancels the data entry procedure and returns all **Source Displays** back to their previous assignments.

Note: If you press **Take** but the source ID is *invalid*, the **Take** button stops blinking and all levels revert to their previous assignments — without taking the new source.

Performing a Breakaway Take

A "breakaway take" is a special Take in which a subset of all available signal levels are sent to a destination. The following topics are discussed in this section:

- Breaking away one level from one source

- Breaking away multiple levels from one source
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

Breakaway Takes can also be performed using the "**Direct Selection**" method. Refer to the "**Using Direct Selection**" section on page 8-32 for instructions.

Note: Breakaway Takes can be performed in both the numeric and mnemonic modes, simply by toggling the **Display Type** button to the desired label. In the numeric mode, all procedures (with the exception of selecting a group name) are identical to the mnemonic mode. In the interest of brevity, only the mnemonic mode will be discussed in the following sections.

Breaking Away One Level From One Source

Use the following steps to break away one level from one source.

1. Ensure that the desired destination "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
3. Press **Clear** to cancel any pending source or destination procedures.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
5. In the **Level Select Section**, press the **Level Select** button for the *one level* that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). The **Level Select** button blinks, and the "dots" display appears in the adjacent **Source Display** — indicating that the level is now awaiting data.
6. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

Note: Remember that the *first* press of a **Group Select** button chooses the group, and the next **keypad** press selects the extension.

8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** and **Level Select** buttons stop blinking, the single source level is routed to the destination, and new status is shown in the display for the selected level.

Refer to the "**Cancelling a Breakaway Take**" section on page 8-20 for additional important information.

Breaking Away Multiple Levels From One Source

Use the following steps to break away two or more levels from a source.

1. Ensure that the desired destination "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
3. Press **Clear** to cancel any pending source or destination procedures.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
5. In the **Level Select Section**, press the **Level Select** buttons for the levels that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each adjacent **Source Display** — indicating that the levels are now awaiting data.

   Note: You can select and deselect levels as needed — you can even toggle off a previously "enabled" level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

6. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.
8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 8-20 for additional information.

Breaking Away Multiple Levels From Different Sources

Use the following steps to break away two or more levels from *different* sources.

1. Ensure that the desired destination “groups” are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label “**Mnemonic**” is lit.
3. Press **Clear** to cancel any pending source or destination procedures.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 8-10 for instructions.
5. In the **Level Select Section**, press the **Level Select** buttons for the levels that you want to break away *for the current source*. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the “dots” display appears in each adjacent **Source Display**.

   Note: You can select and deselect levels as needed — you can even toggle off a previously “enabled” level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

6. In the **Group Select Section**, press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In each selected **Source Display**, the “question mark” readout appears with the selected group name written as the prefix.
7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source.
8. Once the first source has been entered for the first set of levels, repeat steps 5 through 7 (as often as required) for each additional set of levels and sources that you want to add to the multiple breakaway. You can breakaway up to 16 levels from 16 different sources.

   Note: If you change your mind, pressing a blinking **Level Select** button (for the first time) returns that level to the “dots” display, allowing you to re-enter a source. Pressing the button while the “dots” display is active toggles the level off.

9. With all valid sources entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 8-20 for more information.

Breakaway Take (Starting in All-Follow Mode)

Use the following steps to start a breakaway take in the "all-follow" mode, and then select your desired breakaway sources as required.

1. Ensure that the desired source "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
2. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
5. In the **Group Select Section**, select the all-follow source. Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). The "question mark" readout appears in all valid **Source Displays**.
6. Using the keypad buttons, enter the extension of the desired device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.
7. In the **Level Select Section**, press the **Level Select** buttons for the levels that you want to break away. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each adjacent **Source Display**.
8. In the **Group Select Section**, select the breakaway source by pressing the button for the desired *group* of devices. In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
9. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired breakaway source device.
10. With all valid extensions entered, press **Take** to conclude the procedure. The **Take** button plus all **Level Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 8-20 for more information.

Note: You can also break away multiple levels and sources in this mode. Refer to the "**Breaking Away Multiple Levels From Different Sources**" section on page 8-18 for instructions.

Cancelling a Breakaway Take

To cancel the breakaway take procedure, two methods are available:

- Press **Clear** at any time prior to pressing **Take**.
- Toggle *all* blinking **Level Select** buttons off.

Both methods safely cancel the data entry procedure.

Using the Protect Mode

Pressing the red **Protect** button activates the "**Protect Mode**" and causes the button to blink — indicating that the mode is active. In this mode, you can set a **Lock** or a **Protect** for a destination, or you can *clear* either of the two modes (if appropriate for the current panel).

Note: Because the **Protect** button by itself does not differentiate between a **Protect** or a **Lock**, you can enter the mode to verify what *type* of protect is enabled, and on what levels.

In the **Protect Mode**, you can perform one of three functions to a selected destination:

- Setting a "**Protect**" prevents all other panels from routing sources to a destination — or to a selected *level*. Only the current panel (that is, the one that *originally* set the **Protect**) can perform takes, and only the current panel (along with the programming utility) can clear the **Protect**.

  The **Protect** mode is indicated by the "**PROTECT**" label on all protected levels (mnemonic mode), or by the number "**1**" (numeric mode).

  P R O T E C T

  Figure 8-16. Protect Mode Source Display Label

- Setting a "**Lock**" prevents *all panels* (including the current panel) from routing sources to a destination — or to a selected *level* of a particular destination. Any panel (including the RMS or U-CON) can clear the **Lock**.

  The **Lock** mode is indicated by the **"LOCK"** label on all protected levels (mnemonic mode), or by the number "**2**" (numeric mode).

  l o c k

  Figure 8-17. Lock Mode Source Display Label

- Setting a "**Clear**" removes either the enabled **Lock** or **Protect**. When you set the **Clear** mode, it is indicated by the "**CLEAR**" label on all protected levels (mnemonic mode), or by the number "**3**" (numeric mode).

C L E A R

Figure 8-18. Clear Mode Source Display Label

Each procedure is discussed in detail in the following sections.

Note: You can also use the "**Direct Selection**" method to store and apply **Locks**, **Protects** and **Clears**. Refer to the "**Using Direct Selection**" section on page 8-32 for complete instructions.

Setting a Protect

Use the following steps to set a **Protect** for a particular destination. This mode prevents all other panels from routing sources to a destination or to a selected *level*.

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Determine your destination requirements:
    - If you want to set or change a **Protect** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
    - If you want to set or change a **Protect** for the *current* destination, please continue with step 4.
4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
    - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
    - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
5. If you want to set a **Protect** for *all levels*, please continue with step 6.

If you want to set a **Protect** on *selected* levels, press the desired **Level Select** buttons (just as you would for breakaway selections). Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.

6. Press **Keypad Button 1** to set the **Protect** mode for all levels, or for the selected levels.

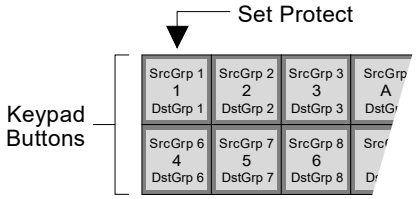


Figure 8-19. Keypad "Set Protect" Button Location

In all selected displays, the **"PROTECT"** label appears (mnemonic mode) or the number "**1**" appears (numeric mode).

7. Press **Take** to send the new **Protect** mode to the selected destination.
8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Protect** mode set, please note:

- All other panels are prevented from routing sources to the destination.
- Only the current panel (the one that *originally* set the **Protect**) can perform takes.
- Only the current panel (and the programming utility) can clear the **Protect**.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 8-25 for more details.

Setting a Lock

Use the following steps to set a **Lock** for a particular destination. This mode prevents *all panels* (including the current panel) from routing sources to a destination.

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Determine your destination requirements:

- If you want to set or change a **Lock** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
- To set or change a **Lock** for the *current* destination, please continue with step 4.

4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
   - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
   - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
5. If you want to set a **Lock** for *all levels*, please continue with step 6.

   If you want to set a **Lock** on *selected* levels, press the desired **Level Select** buttons. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.
6. Press **Keypad Button 2** to set the **Lock** mode for all levels, or for the selected levels.

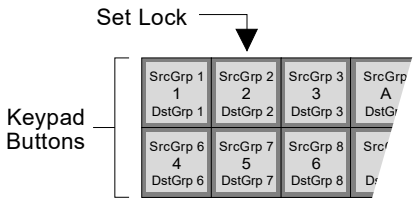


Figure 8-20. Keypad "Set Lock" Button Location

In all selected displays, the "**LOCK**" label appears (mnemonic mode) or the number "**2**" appears (numeric mode).

7. Press **Take** to send the new **Lock** mode to the selected destination.
8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Lock** mode set, please note:

- All panels (including the current panel) are prevented from routing sources to the destination.
- All panels (and the original programming utility) can clear the **Lock**.

Clearing a Lock or Protect

The **Lock** and **Protect** modes can each be cleared entirely, or selected levels can be cleared. If the destination has a **Protect** enabled, only the current panel (the one that *originally* set the **Protect**) can clear it. If the selected destination has a **Lock** enabled, any panel can clear it.

Use the following steps to clear a **Lock** or a **Protect**:

1. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Call up the destination on which the **Lock** or **Protect** is enabled. Refer to the "**Selecting a Destination**" section on page 8-10 for details. Remember — you must be working from the panel that originally set the **Protect** in order to clear it.
4. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, the appropriate **Lock** or **Protect** labels will appear.
5. To clear *all levels*, please continue with step 6.

   To clear *selected* levels, press the desired **Level Select** buttons. Use the **Level Shift** button to choose the *group* of levels.
6. Press **Keypad Button 3** to set the **Clear** mode for all levels, or for the selected levels.

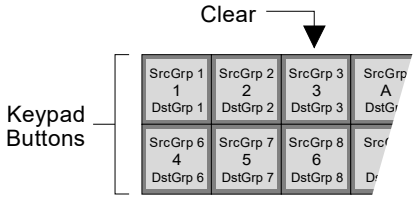


Figure 8-21. Keypad "Clear Lock" Button Location

In all selected displays, the "**CLEAR**" label appears (mnemonic mode) or the number "**3**" appears (numeric mode).

7. Press **Take** to send the **Clear** mode to the selected destination.
8. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

Refer to the "**Cancelling a Protect Mode Selection**" section on page 8-25 for more details.

Cancelling a Protect Mode Selection

If you need to cancel a **Protect Mode** procedure, two methods are available:

- If any "breakaway" **Protect Mode** selections are pending, press **Clear** at any time prior to pressing **Take**. Then press the blinking **Protect** button to exit the mode.
- If there are no "breakaway" **Protect Mode** selections pending, press the blinking **Protect** button to exit the mode.

Protect Mode Notes

Please note the following important points regarding the **Protect Mode** in general.

- When the **Protect Mode** is enabled and you are selecting between the three modes (prior to pressing **Take**), you can not switch directly between **Lock** and **Protect**. You must first clear the **Lock** or **Protect** by sending a **Clear** take, and then choose the alternate mode.
- You can perform a "**Take**" to a destination in which only certain levels are locked or protected. In this situation, only the *unlocked* or *unprotected* levels will accept the **Take**.
- If you attempt a "**Take**" on a locked or protected destination, the panel's **Source Displays** blink (four times) with the label "**PROTECT**" to indicate that the requested function is not permitted.

Performing a Salvo Take

A **Salvo** is a list of "Takes" that are stored (and programmed) in the RMS or U-CON, but which are run from the SC-4 controller. Each Salvo consists of a group of commands that comprise both *source and destination* instructions.

Use the following steps to perform a Salvo Take. The procedure is identical in both mnemonic or numeric modes.

1. Ensure that the desired Salvo command lists are properly programmed in the RMS or U-CON.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Press the **Salvo** button. The button blinks to indicate that the **Salvo Select Mode** is active. In the **Destination Display**, the Salvo label appears:

```
S a l v o  0 2 3
```

Figure 8-22. Salvo Display, Awaiting Data

4. Using the keypad buttons (within the **Group Select Section**), enter the number of the desired Salvo (from 0 to 31). After the first digit is entered, the **Take** button blinks.
5. Press **Take** to execute the selected Salvo list. The **Take** and **Salvo** buttons stop blinking, and the SC-4 controller runs the selected list.

Changing Attributes

The **Attribute Mode** allows you to change various audio and video attributes of the routing switcher's output signals, and route those changes to the desired destination with a **Take**.

Attribute changes are performed in "breakaway" fashion to the target signal levels only. For example, changes in audio attributes would *only* be performed on selected audio levels, while changes to the video data rate would only be performed to the digital video level.

> **Note:** Audio attributes always apply to analog stereo pairs, as pre-defined in the RMS or U-CON. For example, if Level 1 is defined as **Channel 1 Left** and Level 2 is defined as **Channel 2 Right** in the RMS or U-CON (and *both* are defined as a stereo pair), when an attribute change is made to either Level 1 or 2, the change may affect one or both portions of the stereo pair. Status will be displayed the same for *both levels*, even if the attribute change was performed to one half of the stereo pair only.

Use the following steps to change audio and video attributes.

1. Ensure that all stereo pairs are properly defined in the RMS or U-CON.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Select the desired destination. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
4. Press the **Attribute** button. The button blinks to indicate that the mode is active.
5. In the **Level Select Section**, press the **Level Select** buttons for the audio or video levels on which you want to change attributes. Use the **Level Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Level Select** button blinks, and the "dots" display appears in each associated **Source Display**.

6. Using keypad buttons **0** through **9** and buttons **A** through **D**, select the desired audio or video attributes that you wish to change. The table below lists each selection. Note that the **Attribute Name** column lists how each attribute appears in the **Source Displays**.

Table 8-1. Attribute Selections

Keypad Button	Attribute Name	Description
0	NORMAL	Resets the selected level to normal. Removes any attribute changes.
1	SWAP	Swaps audio left and right signals.
2	MIX	Mixes left and right signals together, and sends a “mixed” signal out each port.
3	MONOLEFT	Sends the left channel out both the left and right ports.
4	MONORGHT	Sends the right channel out both the left and right ports.
5	INVTLEFT	Inverts the phase of the left channel.
6	INVTRGHT	Inverts the phase of the right channel.
7	MUTELEFT	Mutes the left channel, and sends “normal” on the right channel.
8	MUTERGHT	Mutes the right channel, and sends “normal” on the left channel.
9	MUTEALL	Mutes both the left and right channels.
A	DV143	Reclocks video data rate to 143 Mhz.
B	DV177	Reclocks video data rate to 177 Mhz.
C	DV270	Reclocks video data rate to 270 Mhz.
D	DV360	Reclocks video data rate to 360 Mhz.

7. Press **Take** to complete the procedure. The **Attribute** button stops blinking, and the new attributes are routed to the selected levels of the destination.

Note: Video data rate changes are specific to the UTAH-300 routing switcher, in which the data rate must be “set” for the output modules. Refer to the ***UTAH-300 User’s Guide*** for additional information.

Using the Chop Mode

The **Chop Mode** allows you to toggle between two Takes. When you initiate the mode, the panel alternates between the two sources continuously, at a predetermined rate. The “chop” continues until you cancel it, or until another user on another panel cancels it. The mode is typically used for color-matching cameras, phasing sources, or matching video levels. The Chop Mode can be used in both “all-follow” and “breakaway” conditions.

Setting the Chop Mode Rate

Use the following steps to set the **Chop Mode** rate (that is, the rate at which the system toggles between the two selected sources).

1. Press and *hold* the **Take** button.
2. Using keypad buttons **0** through **9**, select the number for the desired chop rate. The table below lists each selection.

Table 8-2. Chop Rate Selections

Keypad Button	Chop Rate (seconds)
0	Off
1	.25
2	.50
3	.75
4	1.0
5	1.5
6	2.0
7	2.5
8	3.0
9	5.0

When you select a number, the current chop rate appears in the **Source Display**.

3. Release the **Take** button to complete the procedure. The panel is now set to chop between two selected sources at the chosen rate.

Performing an All-follow or Breakaway Chop

Use the following steps to activate the **Chop Mode** between two All-follow Take or Breakaway Take sources:

1. Program the first **All-follow Take** or **Breakaway Take** in the normal manner. Refer to the "**Performing an All-follow Take**" section on page 8-13 or the "**Performing a Breakaway Take**" section on page 8-15 for instructions.
2. Program the second All-follow or Breakaway Take in the normal manner — to the *same destination* as the first Take. Instead of pressing **Take** to conclude the procedure, press and *hold* the **Take** button for two seconds.

   This action places the panel in the **Chop Mode**, and the system switches between both sources on all selected levels continuously (at the current toggle rate). The labels in all appropriate **Source Displays** now alternate between the two selected sources. These alternating labels are your *only indications* that the system is in Chop Mode.
3. To cancel the **Chop Mode**, press *any button* on the panel (such as **Clear**).

Note: The mode is also automatically cancelled when any other panel sends a normal **Take** (or a breakaway **Take**) to the destination that is currently chopping.

Chop Mode Notes

Note the following important points regarding the Chop Mode:

- **Locks** and **Protects** apply in the normal manner. Refer to the "Using the Protect Mode" section for full details.
- If the Chop Mode is active in "breakaway" condition on a specific signal level, you can perform another breakaway Take to a signal level that is not chopping — without affecting the levels that are chopping. This action can be performed on any other panel except the one that initiated the Chop Mode.

Monitor Matrix Mode

The **Monitor Matrix** mode allows you to conveniently monitor each signal level's outputs — without affecting the router's actual destinations. Each level has a separate Monitor Matrix output that is typically routed to *physical* audio and video monitors in the control room (or machine room). When the UCP SX/16 panel is in Monitor Matrix mode, and when a particular destination device is chosen, you can monitor that destination *visually and aurally*. You have the ability to *see and hear* the source that is routed to the destination, but you can not determine what the actual source is from the UCP SX/16 panel itself.

Because the UCP SX/16 is a full XY panel, any of the 20 available destination groups can be assigned to the Monitor Matrix function from the RMS or U-CON. This is accomplished by typing the keyword "**MMTRX**" into the desired destination group's entry box on the RMS or U-CON itself. Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP SX/16 panel functions in the special Monitor Matrix mode — allowing you to monitor any of the router's remaining 19 groups of available destinations.

Note: The following important rules apply when the **Monitor Matrix** mode is selected on the UCP SX/16 panel:

- The **Destination Display** label reads "**MMTRX**" to identify the mode.
- The **Source Displays** becomes **Destination Displays**.
- The normal procedure for taking a *source* becomes the process for taking a *destination*.
- The **Level Select** and **Level Shift** buttons function in the normal way, allowing you to view the Monitor Matrix output on *all levels* — or on *selected* levels. Typically, a Monitor Matrix "take" is an all-follow take, but you can split the monitor as required. This would allow you, for example, to see the video routed to destination one (e.g., VTR--021), but hear the audio routed to destination two (e.g., SATELITE).
- The **Protect**, **Attribute**, **Salvo** and **Store/Recall** modes are not valid during the Monitor Matrix mode.
- The **Direct Source Selection** mode is not valid, however, the **Direct Destination Selection** mode is. You can even assign the Monitor Matrix destination to a direct destination register if desired. Refer to the "**Working with Direct Destinations**" section on page 8-37 for details.
- The **Display Type** button functions in the normal way. However, even in numeric mode, the **Destination Display** label reads "**MMTRX**."

Use the following steps to enable and utilize the Monitor Matrix mode:

1. Ensure that the Monitor Matrix mode is properly enabled from the RMS or U-CON for your specific panel, with the keyword "**MMTRX**" entered. The feature will *not* operate otherwise.
2. On the panel, ensure that the selected Monitor Matrix destination button (in the **Group Select Section**) is *clearly* labeled (for example, **MMTRX** or **Mon Mtrx**).
3. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
4. Select numeric or mnemonic mode as desired with the **Display Type** button.
5. Press **Clear** to cancel any pending source or destination procedure.
6. Select the Monitor Matrix destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions. The **Destination Display** label reads "**MMTRX**."
7. To select the destination that you wish to monitor *directly*, use the direct destination selection method. Refer to the "**Performing a Direct Destination Selection**" section on page 8-39 for instructions. There is no need to press **Take** in this mode. To select a destination *manually*, please continue with step 8.
8. In the **Group Select Section** (which now applies to *destinations* rather than sources) press the button for the desired *group* of destination devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Source Display Section** (which is now a *destination* display section), the "question mark" readout appears in all valid displays, with the selected group name showing as the prefix.
9. Using the keypad buttons, enter the extension of the desired destination device. Leading zeros do *not* need to be entered.
10. If you want to break away a level (for purposes of monitoring split destinations), perform the following steps:
    - Use the **Level Shift** button in conjunction with the **Level Select** buttons to choose the levels that you want to break away.
    - In the **Group Select Section**, select the breakaway destination by pressing the button for the desired *group* of devices. In the **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
    - Using the keypad buttons, enter the extension of the desired breakaway destination.
11. With a valid extension entered, press **Take** to conclude the procedure.

The selected destination is now routed to the Monitor Matrix output, allowing you to monitor the audio and video signals that are routed to the destination's input. Repeat the procedure from step 5 to monitor additional destinations as required.

Using Direct Selection

The UCP SX/16 panel allows you to store, recall and select "**direct**" sources, destinations, protect modes and attributes *directly* on the panel — without having to program them on the RMS or U-CON. A direct source, destination, protect or attribute is essentially a "favorite" — one that is used frequently. In the **Direct Mode**, the **Level Select** buttons become direct store, recall or selection buttons, and the **Source Display Section** shows you the *name* of each memory register (but not the entire contents of the register). In conjunction with the **Level Shift** button, you can select one of 16 memory registers as follows:

- In the **Direct Destination** mode, you can store or select one of 16 destinations.
- In the **Direct Source** mode, you can store, modify, recall or select one of 16 sources, protect modes or attributes with one keystroke — *without* the need to press **Take**.

The **Direct Mode** also provides complete flexibility in regards to modifying, recalling, clearing and transferring "direct" registers.

Note: All 16 "direct" memory registers are stored in non-volatile memory. If the power fails accidentally, all registers are protected.

Working with Direct Sources

The following topics are discussed in this section:

- Storing a Direct All-Follow Source
- Storing a Direct Breakaway Source
- Recalling a Direct Source
- Clearing a Direct Source Register
- Performing a Direct All-Follow or Breakaway Take

Storing a Direct All-Follow Source

Use the following steps to store a direct all-follow source in one of the 16 available "direct source" registers.

1. Use the **Display Type** button to select the numeric or mnemonic mode as desired.

   Note: The selected *display type* is stored in the register (and recalled from the register) along with the source. For example, if you are currently working in **mnemonic** mode but you recall a direct register that was stored in **numeric** mode, the panel automatically switches to **numeric** mode when the "recall" occurs.

2. Press **Clear** to cancel any pending source or destination procedure.
3. In the **Group Select Section**, select the source group name and extension (that you want to store) in the normal manner.
4. Press and hold the **Store/Recall** button. The **Source Display Section** changes to show the *contents* of each direct source register, as shown in the sample display below.

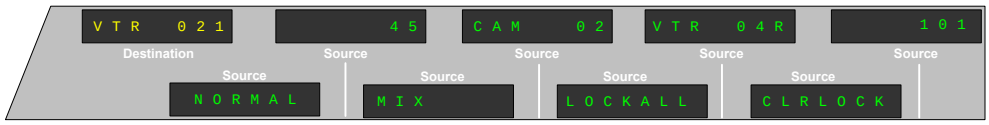


Figure 8-23. Source Display Section during "Store" Mode

   Note: The sample register display above shows a *combination* of **Protect**, **Attribute** and **Source** registers (both numeric and mnemonic). The 16 registers are *shared* among the three register types, and can be allocated in any way desired.

5. Press the desired **Level Select** button to store the all-follow source in the associated register. Use the **Level Shift** button as needed to access (and display) the alternate group of registers (1-8 or 9-16). Selecting a register that already contains data *overwrites* it.

   Note: Upon selection, the name of the *first valid source level* (as detected by the RMS or U-CON) appears in the register upon selection. This rule applies in both numeric and mnemonic modes.

6. Release the **Store/Recall** button to complete the procedure. The pending "take" is cancelled, and the source is now stored and available for use during the **Direct Mode**. The **Source Display Section** returns to its previous level status display.

Note the following important points regarding the "all-follow store" procedure.

- If you change your mind and want to "edit" the pending source prior to storing it, simply release the **Store/Recall** button prior to selecting a register, then revise the pending source in the normal manner.

- If you want to cancel the entire procedure, release the **Store/Recall** button prior to selecting a register, then press **Clear**.
- The "store" procedure only functions when there is a pending take. If you press **Store/Recall** when a take is not pending, the panel enters the "recall" mode.

Storing a Direct Breakaway Source

Use the following steps to store a direct breakaway source in one of the 16 available "direct source" registers.

1. Use the **Display Type** button to select the numeric or mnemonic mode as desired.
2. Press **Clear** to cancel any pending source or destination procedure.
3. In the **Level Select Section**, press the **Level Select** buttons for the levels that you want to break away (and store). Use the **Level Shift** button as required. Each **Level Select** button blinks, and the "dots" display appears in each associated display.
4. In the **Group Select Section**, select the group name and extension for the breakaway source that you want to store.

   Note: You can select a single or multiple-level breakaway, or a combination of multiple levels from different sources. However, remember that the name of the *first valid source level* (as detected by the RMS or U-CON) will appear in the display.

5. Press and hold the **Store/Recall** button. The **Source Display Section** changes to show the *contents* of each direct source register.
6. Press the desired **Level Select** button to store the breakaway source in the associated register. Use the **Level Shift** button as needed to access the alternate group of registers. The name of the *first valid source level* appears in the register.

   Note: Selecting a register that already contains data *overwrites* it.

7. Release the **Store/Recall** button to complete the procedure. The pending "take" is cancelled, and the breakaway source is now stored and available for use. The **Source Display Section** returns to its previous level status display.

Note the following important points regarding the "breakaway store" procedure.

- If you change your mind and want to "edit" the breakaway source prior to storing it, release the **Store/Recall** button prior to selecting a register, then revise the pending breakaway source in the normal manner.

- If you want to cancel the entire procedure, release the **Store/Recall** button prior to selecting a register, then press **Clear**.
- The "store" procedure only functions when there is a pending take. If you press **Store/Recall** when a take is not pending, the panel enters the "recall" mode.

Recalling a Direct Source Register

The "Recall" mode allows you to recall the contents of a direct source register, for purposes of modifying it, transferring it to another register or "taking" it in the normal way.

Note: The "Recall" function itself does *not* perform a take. It is used simply to recall the contents of a selected register back to the panel.

Use the following steps to recall a direct source register.

1. Press **Clear** to cancel any pending source or destination procedure.
2. Press the **Store/Recall** button. The **Store/Recall** button blinks, and the **Source Display Section** changes to show the *contents* of each direct source register.
3. Press the desired **Level Select** button to recall the contents of the associated register. Use the **Level Shift** button to access the alternate group of registers as needed.

   Note: When you select a register, the system recalls its contents to the panel, the **Store/Recall** button stops blinking and the **Take** button begins to blinks. The panel is now set up for a pending source or breakaway take *in the normal way.* Note also that if the selected register was stored in the numeric or mnemonic mode, the panel automatically switches to the respective mode upon recall.

4. Once the register is recalled, choose one of three options:
   - **Modify** — change (or "edit") the contents of the register in the normal way, then re-store the source into the same register or into a different register. Simply press and hold the **Store/Recall** button, select a register with the **Level Select** buttons then release the **Store/Recall** button.
   - **Transfer** — without modifying the contents of the register, press and hold the **Store/Recall** button, select a register and release the **Store/Recall** button.
   - **Take** — press **Take** to route the all-follow or breakaway source to the destination.

Clearing a Direct Source Register

Use the following steps to clear a direct source register.

1. Press **Clear** to cancel any pending source or destination procedure.
2. Select the **Direct** mode of operation by toggling the **Panel Mode** button until the label "**DIRECT**" is lit. The **Source Display Section** changes to show the *contents* of each direct source register
3. Press and hold the **Clear** button.
4. Press the desired **Level Select** button to clear the contents of the associated source register. Use the **Level Shift** button to access the alternate group of registers as needed. Upon clearing, the associated display goes blank.
5. Release the **Clear** button to conclude the procedure.

> **Note:** There is no "clear all" procedure, nor is there an "undo" procedure if you accidentally erase a needed register.

Performing a Direct All-Follow or Breakaway Take

Use the following steps to perform a direct all-follow or breakaway take.

1. Press **Clear** to cancel any pending source or destination procedure.
2. Ensure that all direct all-follow or breakaway sources are properly programmed.
3. Select a destination in the normal manner. Refer to the "**Selecting a Destination**" section on page 8-10 for instructions.
4. Select the **Direct** mode of operation by toggling the **Panel Mode** button until the label "**DIRECT**" is lit.

Figure 8-24. Panel Mode Button in "Direct" Mode

The **Source Display Section** changes to show the *contents* of each direct source register.

5. Press the desired **Level Select** button to automatically route the direct source to the current destination. Use the **Level Shift** button to access the alternate group of registers as needed. There is no need to press **Take**.

Please note the following important points.

- Once the direct take is performed, the **Level Select** button (that you pressed) will only light if all valid levels match on the destination. The button will not light when you send a direct breakaway take.
- The UCP SX/16 panel remains in the direct mode until changed. To view the status of all levels in the **Source Displays** (for the take that you just performed), press the **Panel Mode** button to re-select the "XY" mode.

Working with Direct Destinations

The following topics are discussed in this section:

- Storing a Direct Destination
- Clearing a Direct Destination Register
- Performing a Direct Destination Selection

Storing a Direct Destination

Use the following steps to store a direct destination in one of the 16 available "direct destination" registers.

1. Use the **Display Type** button to select the numeric or mnemonic mode as desired.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Press the **Destination Select** button. The button blinks and the "dots" display appears in the **Destination Display**. In addition, the **Source Display Section** changes to show the *contents* of each direct destination register.
4. In the **Group Select Section**, select the group name and extension for the destination that you want to store.
5. Press and hold the **Store/Recall** button.
6. Press the desired **Level Select** button to store the destination in the associated register. Use the **Level Shift** button as needed to access the alternate group of registers. Upon selection, the name of the destination appears in the selected register.

Note: If the selected destination is not valid, the label "**NOTVALID**" appears in the **Destination Display**.

7. Press the **Destination Select** button (or the **Clear** button) to exit the destination selection mode. The “direct” destination is now stored and available for use, and the **Source Display Section** returns to its previous level status display.

> **Note:** There is no “Recall” mode associated with direct destination selection.

Clearing a Direct Destination Register

Use the following steps to clear a direct destination register.

1. Press **Clear** to cancel any pending source or destination procedure.
2. Press the **Destination Select** button. The button blinks, and the **Source Display Section** changes to show the *contents* of each direct destination register.
3. Press and hold the **Clear** button.
4. Press the desired **Level Select** button to clear the contents of the associated destination register. Use the **Level Shift** button to access the alternate group of registers as needed. Upon clearing, the associated display goes blank.
5. Release the **Clear** button to conclude the procedure. At this point, note that the panel is still in the destination selection mode. To exit the mode, press **Clear** again, or continue with another destination selection function in the normal manner.

> **Note:** There is no “clear all” procedure, nor is there an “undo” procedure if you accidentally erase a needed register.

Performing a Direct Destination Selection

Use the following steps to perform a direct destination selection.

1. Press **Clear** to cancel any pending source or destination procedure.
2. Ensure that all direct destinations are properly programmed.
3. Press the **Destination Select** button. The button blinks, and the **Source Display Section** changes to show the *contents* of each direct destination register.
4. Press the desired **Level Select** button to automatically select the direct destination. Use the **Level Shift** button to access the alternate group of registers as needed.

   This action "takes" the selected destination, clears the display back to status, and the **Destination Select** button stops blinking.

Please note the following important point.

- If the selected destination register was stored in the numeric or mnemonic mode, the panel automatically switches to the respective mode upon selection.

Panel Lock Feature

The Panel Lock feature applies to all panels in the UCP series. To activate panel lock, hold down the **Level Shift** button while pressing the **Level 1** button. If the panel contains a display, the word "Locked" will appear in the status area for two seconds. If you then attempt to press a button that would affect the router, the *Level Shift* and *Level 1* buttons will blink while "Locked" flashes in the display. To unlock the panel, hold down the *Level Shift* button and press the *Level 1* button again. The display will show "UNLocked", and button activation is again possible.

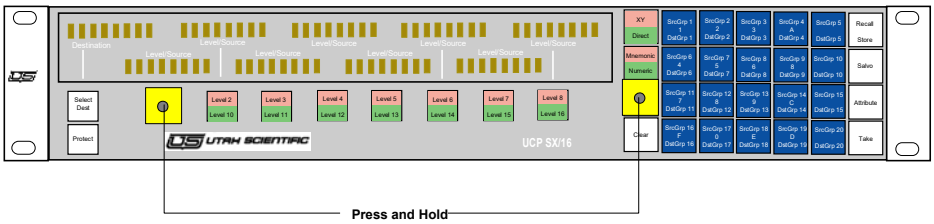


Figure 8-25. Panel Lock button combination

Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Changing Panel LED Intensity *
- Verifying the Panel Node
- Verifying the Panel ID
- Verifying the Software Version
- Using **E** or **L** *
- Using **F** or **R** *
- Use One or Two Destinations *
- Custom All-follow Mode *
- Enable/Disable Protect Mode *
- Status at a Glance

Use the following figure for reference during all procedures listed above (except for **Custom All-follow** and **Enable/Disable Protect** modes). Note that the keypad buttons are highlighted in white for clarity only.

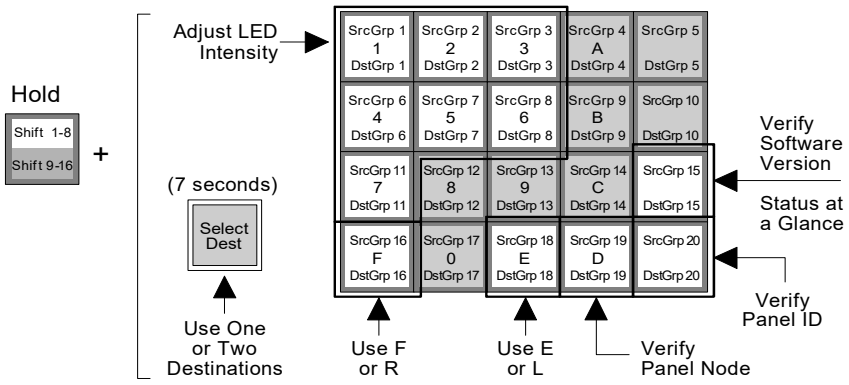


Figure 8-26. Panel Buttons used for Miscellaneous Panel Modes

Changing Panel LED Intensity

Use the following steps to change the intensity of the panel LEDs.

1. Press and *hold* the **Level Shift** button.
2. While holding, press one of the first seven keypad buttons, as shown in Figure 8-26. Button **1** is the brightest setting; button **7** is the dimmest setting. (Even on the dimmest setting the LEDs are never completely off.)
3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel Node

Use the following steps to verify the panel node, as assigned on the rear panel DIP switch.

1. Press and *hold* the **Level Shift** button.
2. While holding, press keypad button **D** as shown in Figure 8-26. (This button may also be labeled as **Group 19**.) In the **Destination Display**, the panel's node address appears.

Figure 8-27. Panel Node Address Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Panel ID

Using the RMS or U-CON, you can enter a panel ID (or "name"), up to 32 characters in length. Use the following steps to verify the panel ID.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 20** button as shown in Figure 8-26. In the first three **Source Displays**, the panel's ID appears.

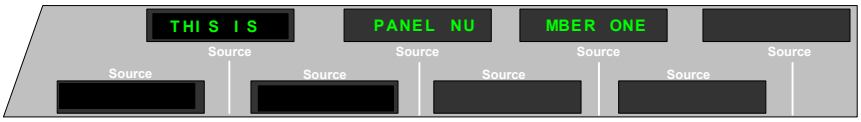


Figure 8-28. Panel ID Display

3. Release the **Level Shift** button to complete the procedure.

Verifying the Software Version

Use the following steps to verify the panel's current software version.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 15** button, as shown in Figure 8-26. In the **Destination Display**, the panel's software version appears.

Figure 8-29. Panel Software Version Display

3. Release the **Level Shift** button to complete the procedure.

Using E or L

The buttons **A** through **F** surrounding the keypad can be used for "alpha" extensions instead of numeric extensions. The panel allows you to toggle the function of the **E** button (the **Group 18** button) between extensions **E** and **L**. For example, you could select **VTR--19E** or **AUDIO33L** (e.g., an abbreviation for the *Left* channel).

Use the following steps to toggle between alpha extensions **E** and **L**.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 18** button for 2 seconds, as shown in Figure 8-26. The panel toggles the extension between **E** and **L**, and the **Destination Display** shows the current button assignment.

Figure 8-30. Alpha Extension "Use L" Display

3. Release the **Level Shift** button to complete the procedure. Repeat the procedure from step 1 to toggle to the alternate function.

Using F or R

The panel allows you to toggle the function of the **F** button (the **Group 16** button) between extensions **F** and **R**. For example, you could select **VTR--21F** or **AUDIO33R** (e.g., an abbreviation for the *Right* channel or for *Record*).

Use the following steps to toggle between alpha extensions **F** and **R**.

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 16** button for 2 seconds, as shown in Figure 8-26. The panel toggles the extension between **F** and **R**, and the **Destination Display** shows the current button assignment.

Figure 8-31. Alpha Extension "Use R" Display

3. Release the **Level Shift** button to complete the procedure. Repeat the procedure from step 1 to toggle to the alternate function.

Use One or Two Destinations

The **Panel Mode** button can be *preset* to use one destination or two:

- When set to "**One Destination**," the *entire panel* uses one destination only, regardless of whether the panel is in the "**XY**" or the "**Direct**" mode. Switching modes does not switch the destination that is shown in the **Destination Display**.
- When set to "**Two Destinations**," the panel uses one destination in the "**XY**" mode and a *second* destination in the "**Direct**" mode. Each is programmed in the normal manner when you are working in that particular panel mode (XY or Direct).

Use the following steps to use one destination or two.

1. Press and *hold* the **Level Shift** button.
2. Press and *hold* the **Destination Select** button for *seven seconds,* as shown in Figure 8-26. The panel toggles between one destination and two, and the **Destination Display** shows the current mode — either "**USE ONE**" or "**USE TWO**."

Figure 8-32. Current Number of Panel Destinations in Use

3. Release both buttons to complete the procedure.

Repeat the procedure from step 1 to toggle to the alternate destination mode.

Custom All-follow Mode

The UCP SX/16 has a special mode that allows you to *customize* the levels that appear when you perform an all-follow take. For example, suppose a digital VTR has four valid levels: **Digital Video**, **Audio 1/2**, **Audio 3/4** and **Timecode**. Each time you perform a normal all-follow take, the system routes sources to each of the four levels.

However, suppose that for a particular broadcast you want to *disable* the **Timecode** level, such that when an all-follow take is requested in the normal way, only the first three levels will accept a source — without having to perform a breakaway take. The "**Custom All-follow Mode**" allows you to include or exclude any of the 16 available levels *without restriction*.

Use the figure below for reference during the procedure.

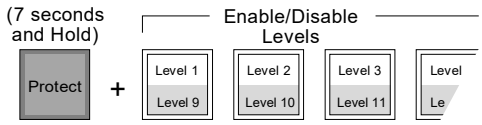


Figure 8-33. Panel Buttons used for Custom All-follow Mode

Use the following steps to customize the levels that appear in an all-follow take.

1. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
2. Press and *hold* the **Protect** button for *seven seconds*. *Continue* to hold the button.

   In the **Destination Display**, the label "**AllLVLTk**" (All Level Take) appears, indicating that the panel is in the custom all-follow mode. In the **Source Display Section**, each level shows its current custom status — either "**Enabled**" or "**Disabled**."

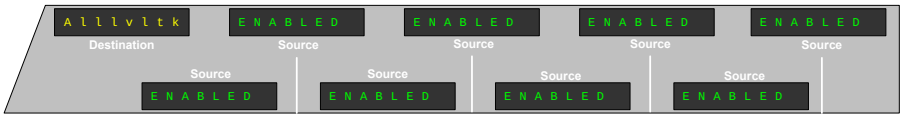


Figure 8-34. Custom All-follow Source and Destination Status

3. While holding in the **Protect** button, press the desired **Level Select** button(s) to enable or disable levels. Each associated display toggles between "**Enabled**" and "**Disabled**. Use the **Level Shift** button to switch between the two groups of levels (1-8 and 9-16).
4. To complete the procedure, release the **Protect** button.

The next time an all-follow take is performed, only the enabled levels will accept data. Repeat the procedure from step 1 to change the custom settings, or to restore all levels to "**Enabled**."

Note: Even with a customized level selection on line, you can still enter the **Breakaway Mode** and re-establish (or break away) levels in the normal manner.

Enable/Disable Protect Mode

The UCP SX/16 has a special mode that allows you to enable or disable the ability to send a **Lock** or a **Protect** take. If one of the modes is disabled, an operator is prevented from locking or protecting a particular destination. Refer to the "**Using the Protect Mode**" section on page 8-20 for more information on each protect mode.

Use the figure below for reference during the procedure.

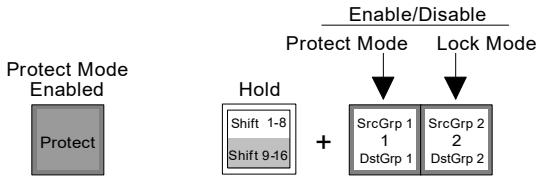


Figure 8-35. Panel Buttons used to Enable/Disable Protect Modes

Use the following steps to enable or disable the **Lock** or **Protect** modes.

1. Press the **Protect** button to enter the **Protect Mode**.
2. Press and *hold* the **Level Shift** button.
3. Select the mode that you want to enable or disable. (Note that the **Clear** mode can *not* be disabled.)

    - To enable or disable the **Protect** mode, press the keypad **Group 1** button for 2 seconds. The **Destination Display** label reads "**PROT OFF**" or "**PROT ON**" respectively.

P R O T O N

Figure 8-36. Protect Mode Disabled Indication

- To enable or disable the **Lock** mode, press the keypad **Group 2** button for 2 seconds. The **Destination Display** label reads "**LOCK OFF**" or "**LOCK ON**" respectively.

L O C K O N

Figure 8-37. Lock Mode Disabled Indication

4. To complete the procedure, release the **Level Shift** button, then press **Protect** again to exit the **Protect Mode**.

Repeat the procedure from step 1 to enable or disable the **Lock** or **Protect** mode as required.

Status at a Glance

Because the UCP SX/16 has so many special operating modes, the "**Status at a Glance**" mode allows you to verify the status of all modes at one time. This mode is a display function only — if you want to change a particular mode, the appropriate "miscellaneous" procedure must be followed in the normal way.

Use the following steps to display "**Status at a Glance**."

1. Press and *hold* the **Level Shift** button.
2. While holding, press the keypad **Group 15** button, as shown in Figure 8-26. In the **Source Display Section**, the status of each special mode appears.

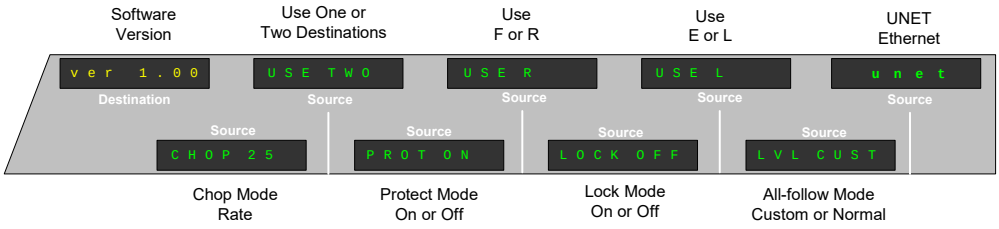


Figure 8-38. Status at a Glance Display

3. Release the **Level Shift** button to complete the procedure, and return the displays to the previous level status view.

General Panel Notes

Note the following important points regarding the UCP SX/16 panel in general:

- When the UCP SX/16 panel is being re-programmed from the RMS or U-CON, all **Source Displays** change to *all dashes*, and the label "**REPROGRM**" appears in the **Destination Display**. The panel is inactive during the reprogramming mode.
- If the panel's U-Net connection is lost, all **Source Displays** will show dashes.
- With the UCP SX/16 (and with other UCP panels), multiple panels *may* be able to address the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP SX/16, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Section 9

UCP MX/16 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP MX/16, a 16 level XY panel that operates in both Single Destination and Multi-destination modes. The following topics are discussed:

About the UCP MX/16

The **UCP MX/16** is a 16 level XY panel that includes the core features of the UCP SX/16, plus the ability to operate in both Single and Multi-destination modes. Refer to the page 1-11 within this guide for a brief description of the panel's main features. Please note:

- The **Single Destination** mode allows you to select a single destination and perform all-follow takes, breakaway takes and all other panel functions *without restriction*.
- The **Multi-Destination** mode allows you to select and utilize up to 16 destinations simultaneously, without using the RMS or U-CON utility. You can perform single or multiple all-follow takes, but breakaway takes are not permitted. Other Multi-destination mode restrictions are noted throughout this chapter.

The figure below illustrates the main buttons and sections of the UCP MX/16 panel.

Note: For simplicity, numeric labels are shown on the level, source, destination and group buttons below. Your labels will differ depending upon the level, source, destination and group assignments in your facility.

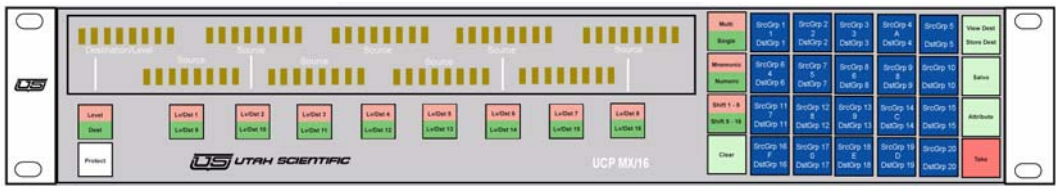


Figure 9-1. UCP MX/16 Panel

1)	Destination/Level Display	6)	Shift Button	11)	View/Store Button
2)	Source Display Section	7)	Display Type Button	12)	Salvo Button
3)	Destination/Level Select Button	8)	Panel Mode Button	13)	Attribute Button
4)	Protect Button	9)	Clear Button	14)	Take Button
5)	Select Section	10)	Group Select Section		

1) **Destination/Level Display**

The **Destination / Level Display** is an eight-segment green LED readout that shows the currently selected destination (in Single Destination mode), or the currently selected level (in Multi-destination mode).

The **Panel Mode** button is used to switch between Single and Multi-destination modes. The display itself can be switched between numeric and mnemonic (alphanumeric) modes using the **Display Type** button.

The figures below illustrate a typical **Destination/Level Display**.

- In the mnemonic mode, the display shows up to five characters plus a three-digit extension, signifying a *group name* plus a specific device within that group.

Figure 9-2. Mnemonic Destination/Level Display

- In the numeric mode, the display typically shows up to three digits, signifying a device's numeric identification (ID) as programmed with the RMS or U-CON.

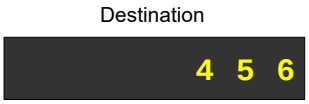


Figure 9-3. Numeric Destination/Level Display

During the destination selection procedure (in both Single and Multi-destination modes), two other types of displays are used:

- A display consisting of all "dots" indicates the *first step* in the destination selection procedure. At this point, the panel is waiting for data entry.

Figure 9-4. Destination "Dots" Display, Awaiting Data Entry

- A display in which a *question mark* appears indicates that a group name has been selected, but an extension has not yet been entered.

Figure 9-5. Destination "Question Mark" Display, Awaiting Extension

Note: Each of the four examples shown above *also* apply to the eight displays in the **Source Display Section** — mnemonic, numeric, dots and question mark.

Section 9

2) **Source Display Section**

The figure below illustrates the **Source Display Section**, which *changes function* depending upon whether the Single Destination or Multi-destination mode is selected.

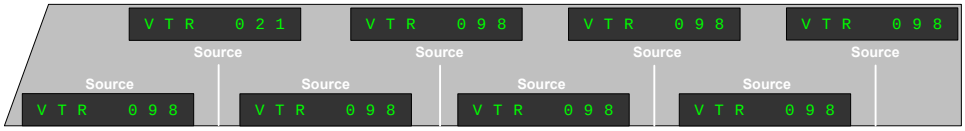


Figure 9-6. Source Display Section

Each **Source Display** is an eight-segment amber LED readout that is positioned *directly* above its associated **Select** button. Moving from left to right, display 1 provides status for level 1/destination 1 or level 9/destination 9, display 2 provides status for level 2/destination 2 or level 10/destination 10, etc. Depending upon the current mode (Single or Multi), the **Shift** button switches the eight displays between the two groups of levels or the two groups of destinations (1-8 and 9-16 in each case).

- In Single Destination mode, the **Source Display Section** provides status for the sources that are routed to all 16 levels of *one* selected destination. The selected destination is shown in the **Destination/Level Display**. Additional level data can also be shown, depending upon the mode (e.g., protect, attributes). Only eight levels can be shown at one time.
- In Multi-destination mode, the **Source Display Section** provides status for the sources that are routed to all 16 destinations — for the one selected level. Only eight destinations can be shown at one time. The selected level is shown in the **Destination/Level Display**.

3) **Destination/Level Select Button**

The **Destination/Level Select** button begins, concludes or cancels the procedure for selecting a destination or selecting a level, depending on the current mode (Single or Multi). The button is divided in half as shown below.

Figure 9-7. Destination/Level Select Button

- In Single Destination mode, only the lower **Destination** portion of the button is valid, as levels are chosen with the eight buttons in the **Select Section**. When pressed initially in Single mode, the lower portion blinks to indicate that the panel is in the "destination select" mode. You can now enter a destination in the normal manner.
- In Multi-destination mode, both portions of the button are valid.
  - ~ When pressed initially in Multi mode, the upper **Level** portion blinks to indicate that the panel is in the "level select" mode. You can now select a level with the keypad. Press the **Destination/Level Select** button again to accept the new level. Once accepted, all current destinations will show status in the **Source Display Section** for the newly selected level.
  - ~ If you do not select a level with the keypad, pressing the **Destination/Level Select** button *again* causes the lower **Destination** portion of the button to blink. This indicates that the panel is in the "destination select" mode, allowing you to enter a destination in the normal manner.

When the panel is in the "destination select" mode, the following rules apply in both the Single Destination and Multi-destination modes:

- If the **Destination/Level Select** button is pressed while an *invalid* destination is displayed, the button stops blinking, the **Destination/Level Display** returns to its default state prior to pressing the button, and the current destination is retained.
- If the **Destination/Level Select** button is pressed while a *valid* destination is displayed, the button stops blinking, the new destination is accepted, and the display updates with the new destination name.

4) **Protect Button**

Applies to: Single Destination mode only.

The **Protect** button, when lit **Red**, indicates that either a **Lock** or a **Protect** has been enabled for the selected destination.

Figure 9-8. Protect Button

- In the "**Protect**" mode, all other panels are prevented from routing sources to a destination — or to a selected *level* of a destination.
- In the "**Lock**" mode, *all panels* (including the current panel) are prevented from routing sources to a destination — or to a selected *level* of a particular destination.

When you press **Protect**, the button blinks and allows you modify the current mode. Refer to the "**Using the Protect Mode**" section on page 9-27 for more information.

5) **Select Section**

The **Select Section** includes eight **Select** buttons whose functions vary depending upon the current mode of operation (Single Destination or Multi-destination). A sample labeling scheme is shown below.

Figure 9-9. Select Section

The eight buttons are divided in half, and each segment can be lit independently.

- In Single mode, the top half displays and selects the button's level 1-8 assignment (for example, Video, Audio1, Audio2, Timecode, etc.).
- In Multi mode, the top half displays and selects destinations 1-8 (for example, VTR-098, STUDIO or MMTRX).
- In Single mode, the bottom half displays and selects the button's level 9-16 assignment.
- In Multi mode, the bottom half displays and selects destinations 9-16.
- The **Shift** button (located immediately to the right of the section) switches the eight buttons between the two groups of levels (1-8 and 9-16) or the two groups of destinations.

Each button is positioned *directly* below its associated status display for convenience when checking level status (in Single mode), checking the source assigned to a destination (in Multi mode) or programming a take (in both modes).

- The **Select** buttons perform the following functions.

~ In Single mode, a *lit* segment always indicates a valid level for the current destination — one that can be selected for a breakaway take. If a segment is not lit, that level is not valid, and can not be included in a breakaway take. If all 16 levels were valid, all buttons would be fully lit. Pressing a valid **Select** button causes the button segment to blink, allowing you to include that level in a breakaway take, and assign a source to that level.

~ In Multi mode, a *lit* segment always indicates that a destination is stored in that particular register (1-8 or 9-16). When lit, the destination can be selected for an all-follow take, or *multiple* destinations can be selected for a multiple all-follow take. If a button segment is not lit, no destination is stored in the register. Pressing a valid **Select** button causes the button segment to blink, allowing you to include that destination in a take.

Tip: Because the eight **Select** buttons are dual-function depending upon the panel mode, you have many choices in regards to labeling them, as shown below. Be sure to discuss the various labeling options with the panel users in your facility, prior to printing and installing the labels.

~ If you choose to leave the buttons *unlabeled* for simplicity, you can rely on the panel's "view" mode to remember each destination. You may also need to use a chart in order to remember level assignments.

Figure 9-10. Sample Button Labels

~ If you label the buttons as indicated in example (1) above, use the panel's "view" mode as required to verify destination assignments. This scheme also allows you to *change* destinations, without having to re-label. Although levels are indicated numerically, a chart may be helpful in order to remember level assignments.

~ If your destinations are relatively permanent, you can provide *full labeling* as indicated in example (2). Be sure to use a small yet legible font. Here, you may also want to leave several destinations unlabeled (or labeled "spare") in case several positions change from day to day.

~ If you use the panel exclusively in Multi mode, you may want to label as shown in example (3). As in example (2), you may want to provide several "spare" slots, and keep a chart handy for remembering level assignments.

6) **Shift Button**

The **Shift** button switches the displays in the **Source Display Section** and the buttons in the **Select Section** between the two groups of levels (in Single mode) or the two groups of destinations (in Multi mode). The button is positioned *in-line* with the **Select** buttons as a convenient visual cue.

The lit portion of the **Shift** button serves two functions:

- It indicates the group of levels or destinations that are currently shown on the eight **Source Displays** — for status purposes.
- It indicates the group of levels or destinations that can be chosen with the **Select** buttons — for including a level in a pending breakaway take (in Single mode), or for selecting a destination for an all-follow take (in Multi mode).

7) **Display Type Button**

The **Display Type** button switches *all displays* on the panel between numeric and mnemonic (alphanumeric) modes. The lit segment indicates the current mode. The button operates identically in both Single Destination and Multi-destination modes.

- In numeric mode, all displays show a one, two, or three-digit number that represents the desired source or destination.
- In mnemonic mode, all displays provide an alphanumeric source or destination name, up to eight characters in length.

8) **Panel Mode Button**

The **Panel Mode** button toggles the function of the **Select Section** and the **Source Display Section** between the Single Destination and Multi-destination modes. The lit portion of the button indicates the current mode.

Figure 9-11. Panel Mode Button

- In the Single mode, the **Select** buttons choose levels for breakaway takes, and the associated displays provide level status in the normal manner. Each **Source Display** names the source on the associated level.

- In the Multi mode, the **Select** buttons become destinations. In conjunction with the **Shift** button, you can select any of 16 destinations for an individual or multiple all-follow take. Each **Source Display** indicates the name of the source currently routed to the assigned destination.

9) **Clear Button**

The **Clear** button operates identically in both Single and Multi modes.

Figure 9-12. Clear Button

When pressed during a data entry mode (such as the source or destination selection procedure), **Clear** safely cancels the mode and returns the panel to a normal "status" condition with no buttons blinking. If an entry was in progress, the **Destination/Level Display** or the array of eight **Source Displays** return to their previous assignment(s). The **Clear** button effectively allows you to begin an entry procedure again.

10) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source and destination "group" names (and extensions). The twenty buttons are divided in half. The top half displays the button's *source* group name, while the bottom half displays the button's *destination* group name.

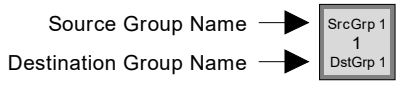


Figure 9-13. Group Select Button Naming Scheme

A "group" represents a *category* of devices, and up to 20 source and 20 destination groups can be programmed from the routing switcher's RMS or U-CON utility, and used on the UCP MX/16 panel. Each group can contain up to 1000 sources or destinations, providing you with a convenient and simple way to address large numbers of devices.

For example, if your facility has 100 VTRs, you could select VTR 98 with two easy steps:

- Select the group name (VTR).
- Select the desired extension (98).

The **Group Select Section** itself includes a keypad for entering extensions (up to three digits) in the mnemonic mode, and for entering complete source and destination identifications in the *numeric* mode.

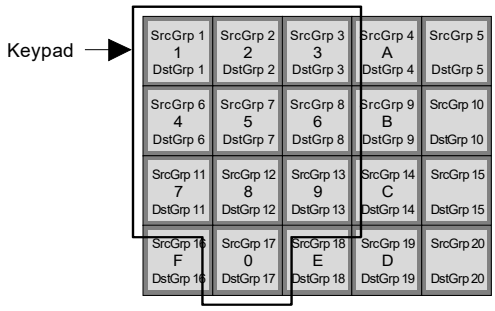


Figure 9-14. Keypad Location

Note: The buttons marked **A** through **F** are also used for entering valid "letter" extensions (if programmed as such from the RMS or U-CON) such as VTR-23A.

11) **View/Store Button**

The **View/Store** button performs two different destination-related functions.

Figure 9-15. View/Store Button

- In Single or Multi mode, when a destination selection is pending, pressing **Store** allows you to store the destination in one of the 16 available destination registers (as chosen with the **Select** buttons). The bottom half of the **View/Store** button lights.
- In Multi mode, when *no* source or destination take is pending, pressing **View** activates the **View Mode**. The displays in the **Source Display Section** change to show you the actual destinations assigned to the **Select** buttons. The top half of the **View/Store** button lights.

12) **Salvo Button**

The **Salvo** button operates identically in both Single and Multi modes.

Figure 9-16. Salvo Button

A **Salvo** is a group of "**Takes**" or *commands* that are stored in the SC-3, SC-4, or SC-400 and *programmed* in the RMS or U-CON. Salvos are similar to "macro" keys that you can program on a PC. For example, a Salvo Take might be programmed to route bars and tone to 10 different VTRs — at the touch of one button.

Pressing the **Salvo** button on the UCP MX/16 panel allows you to run one of 128 pre-defined command lists. The panel simply chooses the Salvo number and issues the "Take" command. Refer to the "**Performing a Salvo Take**" section on page 9-32 for instructions.

13) **Attribute Button**

Applies to: Single Destination mode only.

The **Attribute** button allows you to change various audio and video attributes of the routing switcher's output signal, and route those changes to the desired destination. For example, by entering the **Attribute Mode**, you could mute analog audio on a particular level, or change the digital video data rate. All attribute parameters must be pre-mapped on the RMS or U-CON. Refer to the "**Changing Attributes**" section on page 9-33 for instructions.

14) **Take Button**

The **Take** button functions in both Single and Multi modes (although it applies to procedures which are only valid in certain modes).

Figure 9-17. Take Button

Press the **Take** button to conclude a pending procedure, such as an **All-follow** take, a **Breakaway** take, a **Salvo** selection, an **Attribute** selection or a **Protect** take. The button blinks to indicate that a procedure is pending.

Displaying Level Status

When you select a destination, the buttons and displays in the **Source Display Section** and **Select Section** provide level status — showing you the specific source assigned to a particular level. The method for checking level status differs between the Single Destination and Multi-destination modes.

For *both* modes, set the display mode (either numeric or mnemonic) using the **Display Type** button and choose the desired destination(s) in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.

Each method of checking level status is discussed below.

Level Status in Single Mode

In Single Destination mode, to check the status of a particular destination, remember the following rules:

- The **Panel Mode** button must be set to **Single**.
- The current destination is shown in the **Destination/Level Display**.
- The eight **Select** buttons represent the destination's level assignments (for example, Video, Audio1, etc.). The eight associated displays show the sources that are routed to each particular level.
- Ensure that none of the eight **Select** buttons are blinking (as they would in preparation for a breakaway take). If any are blinking, the associated display will *not* show proper status. In this case, press **Clear** to return to the default "all-follow" mode.
- If any of the **Select** button segments are *lit*, that level is valid for the current destination — whether or not there is a source assigned to that level. **Valid** implies that the destination can accept an input on the specific level. For example, on a Type-C VTR, the analog video level is valid but the digital video level is not.
- Use the eight **Source Displays** to check the status of each valid level. Use the **Shift** button to switch the displays between the two groups of levels.

Level Status in Multi Mode

In Multi-destination mode, to check the status of a particular destination, remember the following rules:

- The **Panel Mode** button must be set to **Multi**.

- The eight **Select** buttons represent the 16 available destinations, and a *lit* button segment indicates that a destination is currently stored in that register. Press **Shift** to toggle between destinations 1-8 and 9-16.
- Ensure that none of the eight **Select** buttons are blinking (as they would in preparation for an all-follow take). If any are blinking, the associated display will *not* show proper status. In this case, press **Clear** to return to the status mode.
- Use the eight **Source Displays** to check the *sources* that are routed to each destination — *for the current level*. If a particular destination does not have the selected level defined, the display will be blank.
- The current level is shown in the **Destination/Level Display**.
- To check status on another level, press the **Destination/Level Select** button once. Enter the desired level on the keypad (1 to 16), then press the **Destination/Level Select** button again. Each **Source Display** updates with status for the new level.
- To display the first valid level for each destination, enter level 0 (zero) on the keypad. In this case, since the levels on each destination may differ, the **Destination/Level Display** reads "**1st LVL**."

A Word About Custom Status Labels

In Single and Multi modes, the displays often show "custom" status labels — ones that are not written in the "group + extension" format. Custom labels are a *display function* only. Each panel can be customized differently in its own *custom status table (*on the RMS or U-CON). For example, a custom display such as ***ON-AIR*** could be programmed in your panel's custom status table, to be used whenever **VTR--015** is taken. When you send VTR--015 as a take and the controller takes the source, the panel displays ***ON-AIR*** as status, instead of **VTR--015**.

Selecting, Storing and Clearing Destinations

The following topics are discussed in this section:

- Selecting a destination in mnemonic mode (Single Destination mode only).
- Selecting a destination in numeric mode (Single Destination mode only).
- Selecting and storing a destination in Single Destination mode.
- Selecting and storing a destination in Multi-destination mode.
- Clearing a destination register (Single and Multi-destination modes).

Each topic is described in detail below.

Selecting a Destination in Mnemonic Mode

Applies to: Single Destination mode only.

Use the following steps to select a destination in the mnemonic (alphanumeric) mode.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired destination "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Press **Clear** to cancel any pending source or destination procedures.
5. Press the **Destination/Level Select** button. The button blinks and the "dots" display appears in the **Destination/Level Display**, indicating that the panel is now in the *destination select* mode and waiting for data entry.

Figure 9-18. Destination "Dots" Display, Awaiting Data Entry

In the **Source Display Section**, all displays momentarily change to show you the contents of each destination register.

6. In the **Group Select Section**, all destination group names are now active (as labeled on the bottom of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In the **Destination/Level Display**, the "question mark" readout appears, with the selected group name written as the prefix.

Figure 9-19. Destination "Question Mark" Display, Awaiting Extension

7. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device within the group. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.

Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension.

8. With a valid destination entered, press the **Destination/Level Select** button to conclude the procedure. The **Destination/Level Select** button stops blinking and the new destination appears in the **Destination/Level Display**. In the **Source Display Section**, complete level status for the new destination automatically appears.

Refer to the "**Destination Selection Notes**" section on page 9-18 for additional information.

Selecting a Destination in Numeric Mode

Applies to: Single Destination mode only.

Use the following steps to select a destination in the numeric mode. Here, destinations are selected by their RMS or U-CON number alone — there are *no* group names or extensions.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired destination numeric IDs are properly programmed from the RMS or U-CON.
3. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Press the **Destination/Level Select** button. The button blinks and the "dots" display appears in the **Destination/Level Display**.

   In the **Source Display Section**, note that all displays momentarily change to show you the contents of each destination register.

6. In the **Group Select Section**, use the keypad buttons to enter the destination's numeric ID. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.

   Note: In the numeric mode, the *first, second*, *third*, and *fourth* presses select the first three digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

7. With a valid destination ID entered, press the **Destination/Level Select** button to conclude the procedure. The **Destination/Level Select** button stops blinking and the new destination ID appears in the **Destination/Level Display**. In the **Source Display Section**, complete level status for the new destination automatically appears.

Refer to the "**Destination Selection Notes**" section on page 9-18 for additional information.

Selecting and Storing Destinations in Single Destination Mode

Applies to: Single Destination mode only.

In the Single Destination mode, destinations can be selected and then stored in one of the 16 available destination registers — for use during Multi-destination mode procedures. Use the following steps to select and store a destination in the Single mode.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
3. Use the **Display Type** button to select either "**Mnemonic**" or "**Numeric**" mode.
4. Press **Clear** to cancel any pending source or destination procedures.
5. Press the **Destination/Level Select** button. The button blinks and the "dots" display appears in the **Destination/Level Display**. In the **Source Display Section**, all displays momentarily change to show you the contents of each destination register.
6. Select the desired destination in the **Group Select Section**:
    - For **Mnemonic** operations, enter the desired group name and extension.
    - For **Numeric** operations, enter the destination's numeric ID (up to 3 digits).
7. Press and hold the **View/Store** button, then press one of the eight **Select** buttons to store the pending destination in that register.

    You can store to an empty register, or overwrite any register that currently has a destination stored. Press **Shift** to access the other eight registers if required. Once selected, the destination name appears in the display.
8. Release the **View/Store** button to complete the procedure. The displays return to the status mode, and the newly stored destination is now available for use in Multi mode.

Refer to the "**Destination Selection Notes**" section on page 9-18 for additional information.

Selecting and Storing Destinations in Multi-destination Mode

Applies to: Multi-destination mode only.

In the Multi-destination mode, destinations can be selected and then stored in one of the 16 available registers — for use during Multi-destination mode procedures. Unlike the Single mode, pending destinations *must* be stored in a register.

Use the following steps to select and store a destination in the Multi mode.

1. Ensure that the panel is set to Multi-destination mode. If not, toggle the **Panel Mode** button until the label "**Multi**" is lit.
2. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
3. Use the **Display Type** button to select either "**Mnemonic**" or "**Numeric**" mode.
4. Press **Clear** to cancel any pending source or destination procedures.
5. Press the **Destination/Level Select** button *twice*. The bottom portion of button blinks and the "dots" display appears in the **Destination/Level Display**. All source displays momentarily change to show you the contents of each destination register.
6. Select the desired destination in the **Group Select Section**:
    - For **Mnemonic** operations, enter the desired group name and extension.
    - For **Numeric** operations, enter the destination's numeric ID (up to 3 digits).
7. Press and hold the **View/Store** button, then press one of the eight **Select** buttons to store the pending destination in that register. You can store to an empty register or overwrite an existing one. Press **Shift** to access the other eight registers if required. Once selected, the destination name appears in the display.
8. Release the **View/Store** button to complete the procedure. The displays return to their default status mode, and the newly stored destination is now available for use.

Refer to the "**Destination Selection Notes**" section on page 9-18 for additional information.

Clearing a Destination Register

Applies to: Single and Multi-destination modes.

Use the following steps to clear a destination register.

1. Press **Clear** to cancel any pending source or destination procedure.

2. Access the *destination select* mode:

    - In Single mode, press the **Destination Select** button once.
    - In Multi mode, press the **Destination Select** button twice.

    In each case, the button blinks and the **Source Display Section** changes to show you the contents of each destination register.

3. Press and hold the **Clear** button.
4. Press the desired **Select** button to clear the contents of the associated destination register. Use the **Shift** button to access the alternate group of registers as needed. Upon clearing, the associated display goes blank.
5. Release the **Clear** button to conclude the procedure. At this point, note that the panel is still in the destination selection mode. To exit the mode, press **Clear** again, or continue with another destination selection function in the normal manner.

Note: There is no "clear all" procedure, nor is there an "undo" procedure if you accidentally erase a needed register.

Destination Selection Notes

Note the following important points regarding destination selection:

- In both Single and Multi-destination modes, there are two ways to cancel the destination "selection" procedure:
    - ~ Press **Clear** at any time prior to pressing the **Destination/Level Select** button. This safely cancels the data entry procedure and returns the **Destination/Level Display** back to its previous assignment.
    - ~ Press the **Destination/Level Select** button while an *invalid* destination is displayed to exit the mode safely.
- In both Single and Multi-destination modes, to cancel the destination "storage" procedure, release the **View/Store** button prior to pressing a **Select** button, then press **Clear**.

Performing an All-follow Take

The following topics are discussed in this section:

- Performing an all-follow take in mnemonic mode (Single Destination mode only).

- Performing an all-follow take in numeric mode (Single Destination mode only).
- Performing an all-follow take in Multi-destination mode.
- Cancelling an all-follow take (Single and Multi-destination modes).

Each topic is described in detail below.

Performing an All-follow Take in Mnemonic Mode

Applies to: Single Destination mode only.

Use the following steps to perform an all-follow take with the panel in the mnemonic mode.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired source "groups" are programmed from the RMS or U-CON, and that all panel *group* buttons are properly labeled.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices (for example, EDIT, VTR, MON, CAM, etc.). In all of the *valid* **Source Displays**, the "question mark" readout appears, with the selected group name showing as the prefix.

Figure 9-20. Source "Question Mark" Display, Awaiting Extension

7. Using the keypad buttons, enter the extension of the desired device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

Note: The *first* press of a **Group Select** button chooses the group. After the first press, the **keypad** buttons activate, allowing you to choose the extension.

8. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the "**Cancelling an All-Follow Take**" section on page 9-22 for additional important information.

Performing an All-follow Take in Numeric Mode

Applies to: Single Destination mode only.

Use the following steps to perform an all-follow take, with the panel in the numeric mode.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired numeric source IDs are properly programmed from the RMS or U-CON.
3. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Group Select Section**, use the keypad to enter the source's numeric ID. One, two, or three digits can be selected, and leading zeros do *not* need to be entered. Once the first digit is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: In the numeric mode, the *first*, *second*, *third*, and *fourth* presses select the first three digits of the ID, respectively. If you press a keypad button a *fifth* time, the cycle repeats and the first digit is once again selected.

7. With a valid source ID entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignments appear in *all valid* **Source Displays**.

Refer to the "**Cancelling an All-Follow Take**" section on page 9-22 for more information.

Performing an All-follow in Multi-destination Mode

Applies to: Multi-destination mode only.

In Multi-destination mode, you can perform an all-follow take to one destination, or to a group of destinations (up to 16, simultaneously). When multiple destinations are used, the same source is routed to each.

Use the following steps to perform an all-follow take in Multi-destination mode.

1. Ensure that the panel is set to Multi-destination mode. If not, toggle the **Panel Mode** button until the label "**Multi**" is lit.
2. Ensure that the desired source "groups" and IDs are programmed from the RMS or U-CON.
3. Use the **Display Type** button to select either "**Mnemonic**" or "**Numeric**" mode.
4. Press **Clear** to cancel any pending source or destination procedure. Check that the source displays are now showing you status for the currently selected level.
5. Ensure that the desired destination(s) are properly stored in the 16 available destination registers. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. Press the **Select** button(s) for the desired destination(s). Up to 16 can be selected. Use the **Shift** button to access the alternate group of registers if required. As each destination is selected, the "dots" display appears in its associated **Source Display**, indicating that the destination is now waiting for a source entry.
7. Select the desired source in the **Group Select Section**:
   - For **Mnemonic** operations, enter the desired group name and extension.
   - For **Numeric** operations, enter the source's numeric ID (up to 3 digits).

   The **Take** button blinks to let you know that a "take" is pending.
8. With a valid source ID entered, press **Take** to conclude the procedure. The **Take** button stops blinking and the new source assignment(s) appear in all selected **Source Displays**.

Refer to the "**Cancelling an All-Follow Take**" section on page 9-22 for more information.

Cancelling an All-Follow Take

Applies to: Single and Multi-destination modes.

To cancel the all-follow take procedure, press **Clear** at any time prior to pressing **Take**. This safely cancels the data entry procedure and returns all **Source Displays** back to their previous assignments.

Note: If you press **Take** but the selected source ID is *invalid*, the **Take** button stops blinking and all levels revert to their previous assignments — without taking the new source.

Performing a Breakaway Take

A “breakaway take” is a special Take in which a subset of all available signal levels are sent to a destination. The feature only works in Single Destination mode. The following topics are discussed in this section:

- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

Note: Breakaway Takes can be performed in both the numeric and mnemonic modes, simply by toggling the **Display Type** button to the desired label. In the numeric mode, all procedures (with the exception of selecting a group name) are identical to the mnemonic mode. In the interest of brevity, only the mnemonic mode will be discussed in the following sections.

Breaking Away One Level From One Source

Applies to: Single Destination mode only.

Use the following steps to break away one level from one source.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label “**Single**” is lit.
2. Ensure that the desired destination “groups” are programmed from the RMS or U-CON.

3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Press **Clear** to cancel any pending source or destination procedures.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Select Section**, press the **Select** button for the *one level* that you want to break away. Use the **Shift** button as required to choose the *group* of levels (1-8 or 9-16). The **Select** button blinks, and the "dots" display appears in the adjacent **Source Display** — indicating that the level is now awaiting data.
7. In the **Group Select Section**, all source group names are now active (as labeled on the top of each button). Press the button for the desired *group* of devices. In the selected **Source Display**, the "question mark" readout appears with the group name written as the prefix.
8. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired source device — up to three digits. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.

   Note: Remember that the *first* press of a **Group Select** button chooses the group, and the next **keypad** press selects the extension.

9. With a valid extension entered, press **Take** to conclude the procedure. The **Take** and **Level Select** buttons stop blinking, the single source level is routed to the destination, and new status is shown in the display for the selected level.

Refer to the "**Cancelling a Breakaway Take**" section on page 9-26 for additional details.

Breaking Away Multiple Levels From One Source

Applies to: Single Destination mode only.

Use the following steps to break away two or more levels from a source.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.

4. Press **Clear** to cancel any pending source or destination procedures.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Select Section**, press the **Select** buttons for the levels that you want to break away. Use the **Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Select** button blinks, and the "dots" display appears in each adjacent **Source Display** — indicating that the levels are now awaiting data.

   Note: You can select and deselect levels as needed — you can even toggle off a previously "enabled" level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

7. In the **Group Select Section**, all source group names are now active. Press the button for the desired *group* of devices. In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
8. Using the keypad buttons, enter the extension of the desired source device — up to three digits. Once the *first digit* of the extension is entered, the **Take** button blinks to let you know that a "take" is pending.
9. With a valid extension entered, press **Take** to conclude the procedure. The **Take** button plus all **Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 9-26 for additional information.

Breaking Away Multiple Levels From Different Sources

Applies to: Single Destination mode only.

Use the following steps to break away two or more levels from *different* sources.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.

4. Press **Clear** to cancel any pending source or destination procedures.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Select Section**, press the **Select** buttons for the levels that you want to break away *for the current source*. Use the **Shift** button to choose the *group* of levels. Each **Select** button blinks, and the "dots" display appears in each adjacent display.

   Note: You can select and deselect levels as needed — you can even toggle off a previously "enabled" level. However, if you toggle off the *last remaining level*, you will exit the breakaway selection mode and return to previous status.

7. In the **Group Select Section**, press the button for the desired *group* of devices. In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
8. Using the keypad buttons, enter the extension of the desired source — up to three digits.
9. Once the first source has been entered for the first set of levels, repeat steps 6 through 8 (as often as required) for each additional set of levels and sources that you want to add to the multiple breakaway. You can breakaway up to 16 levels from 16 different sources.

   Note: If you change your mind, pressing a blinking **Select** button (for the first time) returns that level to the "dots" display, allowing you to re-enter a source. Pressing the button while the "dots" display is active toggles the level off.

10. With all valid sources entered, press **Take** to conclude the procedure. The **Take** button plus all **Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown in the display for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 9-26 for more information.

Breakaway Take (Starting in All-Follow Mode)

Applies to: Single Destination mode only.

Use the following steps to start a breakaway take in the "all-follow" mode, and then select your desired breakaway sources as required.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that the desired source "groups" are programmed from the RMS or U-CON.

3. Ensure that the panel is in the mnemonic mode. If not, toggle the **Display Type** button until the label "**Mnemonic**" is lit.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Select a destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
6. In the **Group Select Section**, select the all-follow source. Press the button for the desired *group* of devices. The "question mark" readout appears in all valid displays.
7. Using the keypad buttons, enter the extension of the desired device. One, two, or three digits can be selected, and leading zeros do *not* need to be entered.
8. In the **Select Section**, press the **Select** buttons for the levels that you want to break away. Use the **Shift** button as required to choose the *group* of levels. Each **Level Select** button blinks, and the "dots" display appears in each adjacent display.
9. In the **Group Select Section**, choose the breakaway source by pressing the button for the desired *group* of devices. In each selected **Source Display**, the "question mark" readout appears with the selected group name written as the prefix.
10. Using the keypad buttons, enter the extension of the desired breakaway source device.
11. With all valid extensions entered, press **Take** to conclude the procedure. The **Take** button plus all **Select** buttons stop blinking, all selected source levels are routed to the destination, and new status is shown for all selected levels.

Refer to the "**Cancelling a Breakaway Take**" section on page 9-26 for more information.

> **Note:** You can also break away multiple levels and sources in this mode. Refer to the "**Breaking Away Multiple Levels From Different Sources**" section on page 9-24 for instructions.

Cancelling a Breakaway Take

> **Applies to:** Single Destination mode only.

To cancel the breakaway take procedure, two methods are available:

- Press **Clear** at any time prior to pressing **Take**.
- Toggle *all* blinking **Select** buttons off.

Both methods safely cancel the data entry procedure.

Using the Protect Mode

Pressing the red **Protect** button activates the "**Protect Mode**" and causes the button to blink — indicating that the Protect mode is active. In this mode, you can set a **Lock** or a **Protect** for a destination, or you can *clear* either of the two modes (if appropriate for the current panel). The feature only works in Single Destination mode.

Note: Because the **Protect** button by itself does not differentiate between a **Protect** or a **Lock**, you can enter the mode to verify what *type* of protect is enabled, and on what specific levels.

In the **Protect Mode**, you can perform one of three functions to a selected destination:

- Setting a "**Protect**" prevents all other panels from routing sources to a destination — or to a selected *level*. Only the current panel (that is, the one that *originally* set the **Protect**) can perform takes, and only the current panel (and the RMS or U-CON) can clear the **Protect**.

  The **Protect** mode is indicated by the "**PROTECT**" label on all protected levels (mnemonic mode), or by the number "**1**" (numeric mode).

  P R O T E C T

  Figure 9-21. Protect Mode Source Display Label

- Setting a "**Lock**" prevents *all panels* (including the current panel) from routing sources to a destination — or to a selected *level* of a particular destination. Any panel (including the RMS or U-CON) can clear the **Lock**.

  The **Lock** mode is indicated by the **"LOCK"** label on all protected levels (mnemonic mode), or by the number "**2**" (numeric mode).

  l o c k

  Figure 9-22. Lock Mode Source Display Label

- Setting a "**Clear**" removes either the enabled **Lock** or **Protect**. When you set the **Clear** mode, it is indicated by the **"CLEAR"** label on all protected levels (mnemonic mode), or by the number "**3**" (numeric mode).

  C L E A R

  Figure 9-23. Clear Mode Source Display Label

Each procedure is discussed in detail in the following sections.

Setting a Protect

Applies to: Single Destination mode only.

Use the following steps to set a **Protect** for a particular destination. This mode prevents all other panels from routing sources to a destination or to a selected *level*.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Determine your destination requirements:
    - If you want to set or change a **Protect** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
    - If you want to set or change a **Protect** for the *current* destination, please continue with step 5.
5. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
    - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
    - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
6. If you want to set a **Protect** for *all levels*, please continue with step 7.

    If you want to set a **Protect** on *selected* levels, press the desired **Select** buttons (just as you would for breakaway selections). Use the **Shift** button to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.

7. Press **Keypad Button 1** to set the **Protect** mode for all levels, or for the selected levels.

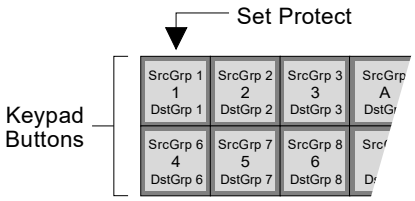


Figure 9-24. Keypad "Set Protect" Button Location

In all selected displays, the "**PROTECT**" label appears (mnemonic mode) or the number "**1**" appears (numeric mode).

8. Press **Take** to send the new **Protect** mode to the selected destination.
9. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Protect** mode set, please note:

- All other panels are prevented from routing sources to the destination.
- Only the current panel (the one that *originally* set the **Protect**) can perform takes.
- Only the current panel (and the RMS or U-CON) can clear the **Protect**.

Refer to the "Cancelling a Protect Mode Selection" section for more details.

Setting a Lock

Applies to: Single Destination mode only.

Use the following steps to set a **Lock** for a particular destination. This mode prevents *all panels* (including the current panel) from routing sources to a destination.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Determine your destination requirements:

- If you want to set or change a **Lock** for a *different* destination, select the new destination in the normal manner. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions.
- To set or change a **Lock** for the *current* destination, please continue with step 5.

5. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, one of two displays will appear:
   - If there are no **Protects** or **Locks** currently set for the destination, all **Source Displays** will be blank.
   - If a **Protect** or a **Lock** is currently set for the destination, the appropriate label will appear in each affected **Source Display**.
6. If you want to set a **Lock** for *all levels*, please continue with step 7.

   If you want to set a **Lock** on *selected* levels, press the desired **Select** buttons. Use the **Shift** button to choose the *group* of levels (1-8 or 9-16). Each selected button blinks, and the "dots" display appears.
7. Press **Keypad Button 2** to set the **Lock** mode for all levels, or for the selected levels.

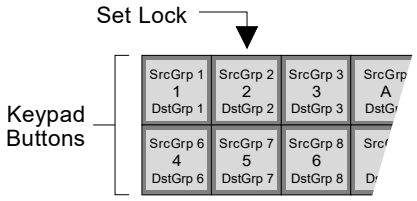


Figure 9-25. Keypad "Set Lock" Button Location

   In all selected displays, the **"LOCK"** label appears (mnemonic mode) or the number "**2**" appears (numeric mode).
8. Press **Take** to send the new **Lock** mode to the selected destination.
9. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

With the **Lock** mode set, please note:

- All panels (including the current panel) are prevented from routing sources to the destination.
- All panels (and the RMS or U-CON) can clear the **Lock**.

Clearing a Lock or Protect

Applies to: Single Destination mode only.

The **Lock** and **Protect** modes can each be cleared entirely, or selected levels can be cleared. If the destination has a **Protect** enabled, only the current panel (the one that *originally* set the **Protect**) can clear it. If the selected destination has a **Lock** enabled, any panel can clear it.

Use the following steps to clear a **Lock** or a **Protect**:

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Use the **Display Type** button to set the panel to either mnemonic or numeric mode.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Call up the destination on which the **Lock** or **Protect** is enabled. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for details. Remember — you must be working from the panel that originally set the **Protect** in order to clear it.
5. Press the red **Protect** button. The button blinks to indicate that the **Protect Mode** is active. In the **Source Display Section**, the appropriate **Lock** or **Protect** labels will appear.
6. To clear *all levels*, please continue with step 7.

   To clear *selected* levels, press the desired **Select** buttons. Use the **Shift** button to choose the *group* of levels.
7. Press **Keypad Button 3** to set the **Clear** mode for all levels, or for the selected levels.

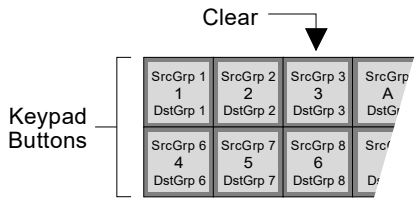


Figure 9-26. Keypad "Clear Lock" Button Location

In all selected displays, the **"CLEAR"** label appears (mnemonic mode) or the number "**3**" appears (numeric mode).

8. Press **Take** to send the **Clear** mode to the selected destination.

9. To exit the **Protect Mode**, press the blinking **Protect** button. The button will remain lit if the current destination has a **Protect** or a **Lock** enabled.

Cancelling a Protect Mode Selection

Applies to: Single Destination mode only.

If you need to cancel a **Protect Mode** procedure, two methods are available:

- If any "breakaway" **Protect Mode** selections are pending, press **Clear** at any time prior to pressing **Take**. Then press the blinking **Protect** button to exit the mode.
- If there are no "breakaway" **Protect Mode** selections pending, press the blinking **Protect** button to exit the mode.

Protect Mode Notes

Applies to: Single and Multi-destination modes.

Please note the following important points regarding the **Protect Mode** in general.

- You can *not* set or clear a Lock or Protect in Multi-destination mode. However, the panel will alert you (in both Single and Multi-destination mode) if a **Lock** or **Protect** is present on a destination. If you attempt a "**Take**" on a locked or protected destination, the panel's **Source Displays** blink (four times) with the label "**PROTECT**" to indicate that the requested function is not permitted. In Multi-destination mode, press **View** (to activate the **View Mode**) to show the actual destinations assigned to the **Select** buttons.
- When the **Protect Mode** is enabled and you are selecting between the three modes (prior to pressing **Take**), you can not switch directly between **Lock** and **Protect**. You must first clear the **Lock** or **Protect** by sending a **Clear** take, and then choose the alternate mode.
- You can perform a "**Take**" to a destination in which only certain levels are locked or protected. In this situation, only the *unlocked* or *unprotected* levels will accept the **Take**.

Performing a Salvo Take

Applies to: Single and Multi-destination modes.

A **Salvo** is a list of "Takes" that are stored (and programmed) in the RMS or U-CON, but which are run from the SC-4 controller. Each Salvo consists of a group of commands that comprise both *source and destination* instructions.

Use the following steps to perform a Salvo Take. The procedure is identical in both mnemonic or numeric modes.

1. Select either Single or Multi-destination modes as desired.
2. Ensure that the desired Salvo command lists are properly programmed in the RMS or U-CON.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Press the **Salvo** button. The button blinks to indicate that the **Salvo Select Mode** is active. In the **Destination/Level Display**, the Salvo label appears:

Figure 9-27. Salvo Display, Awaiting Data

5. Using the keypad buttons (within the **Group Select Section**), enter the number of the desired Salvo (from 0 to 31). After the first digit is entered, the **Take** button blinks.
6. Press **Take** to execute the selected Salvo list. The **Take** and **Salvo** buttons stop blinking, and the SC-4 controller runs the selected list.

Changing Attributes

Applies to: Single destination mode only.

The **Attribute Mode** allows you to change various audio and video attributes of the routing switcher's output signals, and route those changes to the desired destination with a **Take**.

Attribute changes are performed in "breakaway" fashion to the target signal levels only. For example, changes in audio attributes would *only* be performed on selected audio levels, while changes to the video data rate would only be performed to the digital video level.

Note: Audio attributes always apply to analog stereo pairs, as pre-defined in the RMS or U-CON. For example, if Level 1 is defined as **Channel 1 Left** and Level 2 is defined as **Channel 2 Right** in the RMS or U-CON (and *both* are defined as a stereo pair), when an attribute change is made to either Level 1 or 2, the change may affect one or both portions of the stereo pair. Status will be displayed the

same for *both levels*, even if the attribute change was performed to one half of the stereo pair only.

Use the following steps to change audio and video attributes.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Ensure that all stereo pairs are properly defined in the RMS or U-CON.
3. Press **Clear** to cancel any pending source or destination procedure.
4. Select the desired destination. Refer to the "Selecting, Storing, and Clearing Destinations" for instructions.
5. Press the **Attribute** button. The button blinks to indicate that the mode is active.
6. In the **Select Section**, press the **Select** buttons for the audio or video levels on which you want to change attributes. Use the **Shift** button as required to choose the *group* of levels (1-8 or 9-16). Each **Select** button blinks, and the "dots" display appears in each associated **Source Display**.
7. Using keypad buttons **0** through **9** and buttons **A** through **D**, select the desired audio or video attributes that you wish to change. The table below lists each selection. Note that the **Attribute Name** column lists how each attribute appears in the **Source Displays**.

Table 9-1. Attribute Selections

Keypad Button	Attribute Name	Description
0	NORMAL	Resets the selected level to normal. Removes any attribute changes.
1	SWAP	Swaps audio left and right signals.
2	MIX	Mixes left and right signals together, and sends a "mixed" signal out each port.
3	MONOLEFT	Sends the left channel out both the left and right ports.
4	MONORGHT	Sends the right channel out both the left and right ports.
5	INVTLEFT	Inverts the phase of the left channel.
6	INVTRGHT	Inverts the phase of the right channel.

Table 9-1. Attribute Selections

Keypad Button	Attribute Name	Description
7	MUTELEFT	Mutes the left channel, and sends "normal" on the right channel.
8	MUTERGHT	Mutes the right channel, and sends "normal" on the left channel.
9	MUTEALL	Mutes both the left and right channels.
A	DV143	Reclocks video data rate to 143 Mhz.
B	DV177	Reclocks video data rate to 177 Mhz.
C	DV270	Reclocks video data rate to 270 Mhz.
D	DV360	Reclocks video data rate to 360 Mhz.

8. Press **Take** to complete the procedure. The **Attribute** button stops blinking, and the new attributes are routed to the selected levels of the destination.

Note: Video data rate changes are specific to the UTAH-300 routing switcher, in which the data rate must be "set" for the output modules. Refer to the ***UTAH-300 User's Guide*** for additional information.

Using the Chop Mode

The **Chop Mode** allows you to toggle between two Takes. When you initiate the mode, the panel alternates between the two sources continuously, at a predetermined rate. The "chop" continues until you cancel it, or until another user on another panel cancels it. The mode is typically used for color-matching cameras, phasing sources, or matching video levels.

Setting the Chop Mode Rate

Applies to: Single Destination mode only.

Use the following steps to set the **Chop Mode** rate (that is, the rate at which the system toggles between the two selected sources).

1. Press **Clear** to cancel any pending source or destination procedure.
2. Press and *hold* the **Take** button.

3. Using keypad buttons **0** through **9**, select the number for the desired chop rate. The table below lists each selection.

Table 9-2. Chop Rate Selections

Keypad Button	Chop Rate (seconds)
0	Off
1	.25
2	.50
3	.75
4	1.0
5	1.5
6	2.0
7	2.5
8	3.0
9	5.0

When you select a number, the current chop rate appears in the **Source Display**.

4. Release the **Take** button to complete the procedure. The panel is now set to chop between two selected sources at the chosen rate.

Performing an All-follow Chop in Single Destination Mode

Applies to: Single Destination mode only. You can *not* perform an all-follow chop in Multi-Destination mode.

Use the following steps to perform an all-follow **Chop** between two sources, in Single Destination mode:

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Program the first **All-follow Take** in the normal manner. Refer to the "**Performing an All-follow Take**" section on page 9-18 for instructions.

3. Program the second All-follow Take in the normal manner — to the *same destination* as the first Take. Instead of pressing **Take** to conclude the procedure, press and *hold* the **Take** button for two seconds.

   This action places the panel in the **Chop Mode**, as the system switches between both sources continuously (at the current toggle rate). The labels in all valid **Source Displays** alternate between the two selected sources. These alternating labels are your *only indications* that the system is in Chop Mode.

4. To cancel the **Chop Mode**, press *any button* on the panel (such as **Clear**).

   Note: The mode is also automatically cancelled when any other panel sends a normal **Take** (or a breakaway **Take**) to the destination that is currently chopping.

Performing a Breakaway Chop in Single Destination Mode

Applies to: Single Destination mode only.

Use the following steps to activate the **Chop Mode** between two Breakaway Take sources, in Single destination mode. This function can *not* be performed in Multi-destination mode.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Program the first **Breakaway Take** in the normal manner. Refer to the "Performing a Breakaway Take" section for instructions.
3. Program the second Breakaway Take in the normal manner — to the *same destination* and the *same levels* as the first Take. Instead of pressing **Take** to conclude the procedure, press and *hold* the **Take** button for two seconds.

   This action places the panel in the **Chop Mode**, and the system switches between both sources on *all selected levels* continuously (at the current toggle rate). The labels in all appropriate **Source Displays** alternate between the two selected sources.

4. To cancel the **Chop Mode**, press *any button* on the panel (such as **Clear**).

   Note: The mode is also automatically cancelled when any other panel sends a normal **Take** (or a breakaway **Take**) to the destination that is currently chopping.

Chop Mode Notes

Applies to: Single destination mode only.

Note the following important points regarding the Chop Mode:

- **Locks** and **Protects** apply in the normal manner. Refer to the "Using the Protect Mode" section for full details.
- If the Chop Mode is active in "breakaway" condition on a specific signal level, you can perform another breakaway Take to a signal level that is not chopping — without affecting the levels that are chopping. This action can be performed on any other panel except the one that initiated the Chop Mode.

Monitor Matrix Mode

Applies to: Single-destination mode only.

The **Monitor Matrix** mode allows you to conveniently monitor each signal level's outputs — without affecting the router's actual destinations. Each level has a separate Monitor Matrix output that is typically routed to *physical* audio and video monitors in the control room (or machine room). When the UCP MX/16 panel is in Monitor Matrix mode, and when a particular destination device is chosen, you can monitor that destination *visually and aurally*. You have the ability to *see and hear* the source that is routed to the destination, but you can not determine what the actual source is from the UCP MX/16 panel itself.

Because the UCP MX/16 is a full XY panel, any of the 20 available destination groups can be assigned to the Monitor Matrix function from the RMS or U-CON. This is accomplished by typing the keyword "**MMTRX**" into the desired destination group's entry box on the RMS or U-CON itself.

Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP MX/16 panel functions in the special Monitor Matrix mode — allowing you to monitor any of the router's remaining 19 groups of available destinations.

Note: The following important rules apply when the **Monitor Matrix** mode is selected on the UCP MX/16 panel:

- The **Destination/Level Display** label reads "**MMTRX**" to identify the mode.
- The **Source Displays** becomes **Destination Displays**.
- The normal (Single Destination mode) procedure for taking a *source* becomes the process for taking a *destination*.

- The **Select** and **Shift** buttons work in the normal way, allowing you to view the Monitor Matrix output on *all levels* — or on *selected* levels. Typically, a Monitor Matrix "take" is an all-follow take, but you can split the monitor as required. This would allow you, for example, to see the video routed to destination one (e.g., VTR--021), but hear the audio routed to destination two (e.g., SATELITE).
- The **Protect**, **Attribute** and **Salvo** modes are not valid during the Monitor Matrix mode.
- The **Display Type** button functions in the normal way. However, even in numeric mode, the **Destination/Level Display** label reads "**MMTRX**."

Use the following steps to enable and utilize the Monitor Matrix mode:

1. Ensure that the Monitor Matrix mode is properly enabled from the RMS or U-CON for your specific panel, with the keyword "**MMTRX**" entered. The feature will *not* operate otherwise.
2. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
3. On the panel, ensure that the selected Monitor Matrix destination button (in the **Group Select Section**) is *clearly* labeled (for example, **MMTRX** or **Mon Mtrx**).
4. Ensure that the desired destination "groups" are programmed from the RMS or U-CON.
5. Select numeric or mnemonic mode as desired with the **Display Type** button.
6. Press **Clear** to cancel any pending source or destination procedure.
7. Select the Monitor Matrix destination — using either the numeric or mnemonic methods. Refer to the "**Selecting, Storing and Clearing Destinations**" section on page 9-13 for instructions. The **Destination/Level Display** label reads "**MMTRX**."
8. In the **Group Select Section** (which now applies to *destinations* rather than sources) press the button for the desired *group* of destination devices. In the **Source Display Section** (which is now a *destination* display section), the "question mark" readout appears in all valid displays, with the selected group name showing as the prefix.
9. Using the keypad buttons, enter the extension of the desired destination device.
10. If you want to break away a level (for purposes of monitoring split destinations), perform the following steps:
    - Use the **Shift** button in conjunction with the **Select** buttons to choose the levels that you want to break away.
    - In the **Group Select Section**, select the group and extension of the desired breakaway destination.

11. With a valid destination entered, press **Take** to conclude the procedure.

The selected destination is now routed to the Monitor Matrix output, allowing you to monitor the audio and video signals that are routed to the destination's input. Repeat the procedure from step 8 to monitor additional destinations as required.

Panel Lock Feature

The Panel Lock feature applies to all panels in the UCP series. To activate panel lock, hold down the **Level Shift** button while pressing the **Level 1** button. If the panel contains a display, the word "Locked" will appear in the status area for two seconds. If you then attempt to press a button that would affect the router, the *Level Shift* and *Level 1* buttons will blink while "Locked" flashes in the display. To unlock the panel, hold down the *Level Shift* button and press the *Level 1* button again. The display will show "UNLocked", and button activation is again possible.

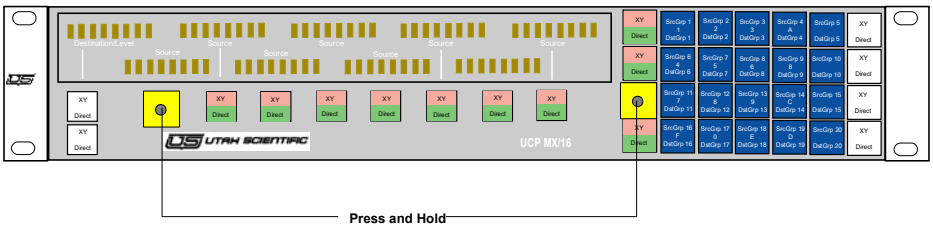


Figure 9-28. Panel Lock button combination

Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Changing Panel LED Intensity
- Verifying the Panel Node
- Verifying the Panel ID
- Verifying the Software Version
- Using **E** or **L**
- Using **F** or **R**
- Custom All-follow Mode
- Enable/Disable Protect Mode
- Status at a Glance

Use the following figure for reference during all procedures listed above (except for **Custom All-follow** and **Enable/Disable Protect** modes).

Note that the keypad buttons are highlighted in white for clarity only.

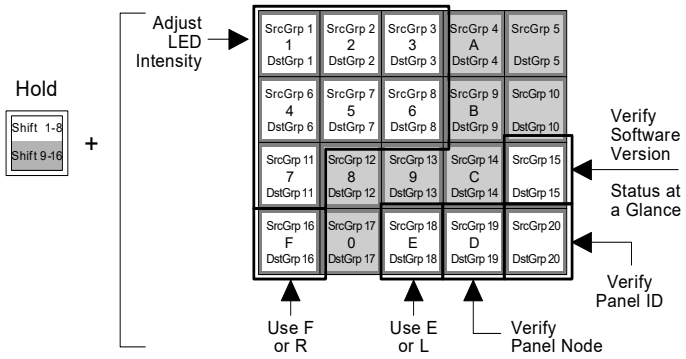


Figure 9-29. Panel Buttons used for Miscellaneous Panel Modes

Section 9

Changing Panel LED Intensity

Applies to: Single and Multi-destination modes.

Use the following steps to change the intensity of the panel LEDs.

1. Press and *hold* the **Shift** button.
2. While holding, press one of the first seven keypad buttons, as shown in Figure 9-29. Button **1** is the brightest setting; button **7** is the dimmest setting. (Even on the dimmest setting the LEDs are never completely off.)
3. Release the **Shift** button to complete the procedure.

Verifying the Panel Node

Applies to: Single and Multi-destination modes.

Use the following steps to verify the panel node, as assigned on the rear panel DIP switch.

1. Press and *hold* the **Shift** button.
2. While holding, press keypad button **D** as shown in Figure 9-29. (This button may also be labeled as **Group 19** on your panel.) In the **Destination/Level Display**, the panel's node address appears.

Figure 9-30. Panel Node Address Display

3. Release the **Shift** button to complete the procedure.

Verifying the Panel ID

Applies to: Single and Multi-destination modes.

Using the RMS or U-CON, you can enter a panel ID (or "name"), up to 32 characters in length. Use the following steps to verify the panel ID on the UCP MX/16 panel.

1. Press and *hold* the **Shift** button.

2. While holding, press the keypad **Group 20** button as shown in Figure 9-29. In the first three **Source Displays**, the panel's ID appears.

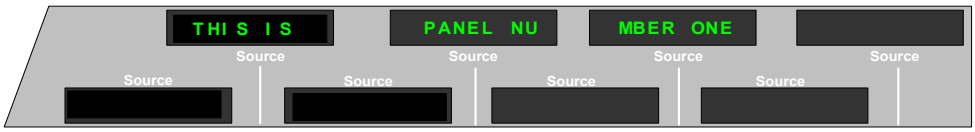


Figure 9-31. Panel ID Display

3. Release the **Shift** button to complete the procedure.

Verifying the Software Version

Applies to: Single and Multi-destination modes.

Use the following steps to verify the panel's current software version.

1. Press and *hold* the **Shift** button.
2. While holding, press the keypad **Group 15** button, as shown in Figure 9-29. In the **Destination/Level Display**, the panel's software version appears.

Figure 9-32. Panel Software Version Display

3. Release the **Shift** button to complete the procedure.

Using E or L

Applies to: Single and Multi-destination modes.

The buttons **A** through **F** surrounding the keypad can be used for "alpha" extensions instead of numeric extensions. The UCP MX/16 panel allows you to toggle the function of the **E** button (the **Group 18** button) between extensions **E** and **L**. For example, you could select **VTR--19E** or **AUDIO33L** (e.g., an abbreviation for the *Left* channel).

Use the following steps to toggle between alpha extensions **E** and **L**.

1. Press and *hold* the **Shift** button.

2. While holding, press the keypad **Group 18** button for 2 seconds, as shown in Figure 9-29. The panel toggles the extension between **E** and **L**, and the **Destination/Level Display** shows the current button assignment.

Figure 9-33. Alpha Extension "Use L" Display

3. Release the **Shift** button to complete the procedure. Repeat the procedure from step 1 to toggle to the alternate function.

Using F or R

Applies to: Single and Multi-destination modes.

The panel allows you to toggle the function of the **F** button (the **Group 16** button) between extensions **F** and **R**. For example, you could select **VTR--21F** or **AUDIO33R** (e.g., an abbreviation for the *Right* channel or for *Record*).

Use the following steps to toggle between alpha extensions **F** and **R**.

1. Press and *hold* the **Shift** button.
2. While holding, press the keypad **Group 16** button for 2 seconds, as shown in Figure 9-29. The panel toggles the extension between **F** and **R**, and the **Destination/Level Display** shows the current button assignment.

Figure 9-34. Alpha Extension "Use R" Display

3. Release the **Shift** button to complete the procedure. Repeat the procedure from step 1 to toggle to the alternate function.

Custom All-follow Mode

Applies to: Single and Multi-destination modes. However, the mode can only be *configured* in Single Destination mode.

The UCP MX/16 has a special mode that allows you to *customize* the levels that appear when you perform an all-follow take. For example, suppose a digital VTR has four valid levels: **Digital Video**, **Audio 1/2**, **Audio 3/4** and **Timecode**. Each time you perform a normal all-follow take, the system routes sources to each of the four levels.

However, suppose that for a particular broadcast you want to *disable* the **Timecode** level, such that when an all-follow take is requested in the normal way, only the first three levels will accept a source — without having to perform a breakaway take. The "**Custom All-follow Mode**" allows you to include or exclude any of the 16 available levels *without restriction*.

Use the figure below for reference during the procedure.

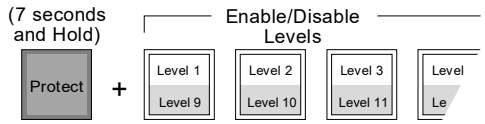


Figure 9-35. Panel Buttons used for Custom All-follow Mode

Use the following steps to customize the levels that appear in an all-follow take.

1. Select Single Destination mode.
2. Ensure that the panel is in the numeric mode. If not, toggle the **Display Type** button until the label "**Numeric**" is lit.
3. Press and *hold* the **Protect** button for *seven seconds*. *Continue* to hold the button.

   In the **Destination/Level Display**, the label "**AllLVLTk**" (All Level Take) appears, indicating that the panel is in the custom all-follow mode. In the **Source Display Section**, each level shows its current custom status — either "**Enabled**" or "**Disabled**."

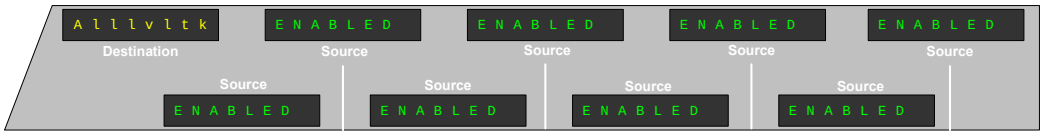


Figure 9-36. Custom All-follow Source and Destination Status

4. While holding in the **Protect** button, press the desired **Select** button(s) to enable or disable levels. Each associated display toggles between "**Enabled**" and "**Disabled**. Use the **Shift** button to switch between the two groups of levels (1-8 and 9-16).
5. To complete the procedure, release the **Protect** button.

The next time an all-follow take is performed, only the enabled levels will accept data. Repeat the procedure from step 1 to change the custom settings, or to restore all levels to "**Enabled**."

Note: Even with a customized level selection on line, you can still enter the **Breakaway Mode** and re-establish (or break away) levels in the normal manner.

Enable/Disable Protect Mode

Applies to: Single destination mode only.

The UCP MX/16 has a special mode that allows you to enable or disable the ability to send a **Lock** or a **Protect** take. If one of the modes is disabled, an operator is prevented from locking or protecting a particular destination. Refer to the "**Using the Protect Mode**" section on page 9-27 for more information on each protect mode.

Use the figure below for reference during the procedure.

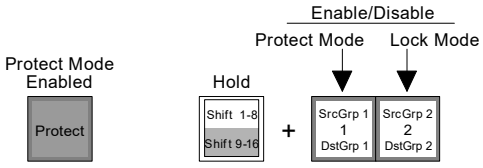


Figure 9-37. Panel Buttons used to Enable/Disable Protect Modes

Use the following steps to enable or disable the **Lock** or **Protect** modes.

1. Ensure that the panel is set to Single Destination mode. If not, toggle the **Panel Mode** button until the label "**Single**" is lit.
2. Press the **Protect** button to enter the **Protect Mode**.
3. Press and *hold* the **Shift** button.
4. Select the mode that you want to enable or disable. (**Clear** mode can *not* be disabled.)

- To enable or disable the **Protect** mode, press the keypad **Group 1** button for 2 seconds. The **Destination/Level Display** label reads "**PROT OFF**" or "**PROT ON**" respectively.

P R O T O N

Figure 9-38. Protect Mode Disabled Indication

- To enable or disable the **Lock** mode, press the keypad **Group 2** button for 2 seconds. The **Destination/Level Display** label reads "**LOCK OFF**" or "**LOCK ON**" respectively.

L O C K O N

Figure 9-39. Lock Mode Disabled Indication

5. To complete the procedure, release the **Shift** button, then press **Protect** again to exit the **Protect Mode**.

Repeat the procedure from step 1 to enable or disable the **Lock** or **Protect** mode as required.

Status at a Glance

Applies to: Single and Multi-destination modes.

Because the UCP MX/16 has so many special operating modes, the "**Status at a Glance**" mode allows you to verify the status of all modes at one time. This mode is a display function only — if you want to change a particular mode, the appropriate "miscellaneous" procedure must be followed in the normal way.

Use the following steps to display "**Status at a Glance**."

1. Press and *hold* the **Shift** button.

2. While holding, press the keypad **Group 15** button, as shown in Figure 9-29. In the **Source Display Section**, the status of each special mode appears.

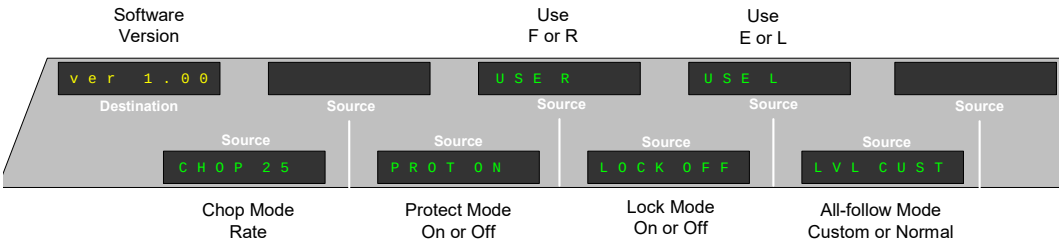


Figure 9-40. Status at a Glance Display

3. Release the **Shift** button to complete the procedure, and return the displays to the previous level status view.

General Panel Notes

Note the following important points regarding the UCP MX/16 panel in general:

- When the UCP MX/16 panel is being re-programmed from the RMS or U-CON, all **Source Displays** change to *all dashes*, and the label "**REPROGRM**" appears in the **Destination/Level Display**. The panel is inactive during the reprogramming mode.
- When the UCP MX/16 panel first powers up, the label "**????**" appears in the **Destination/Level Display**. This label clears as soon as a destination is chosen.
- If the panel's U-Net connection is lost, all **Source Displays** will show dashes.
- With the UCP MX/16 (and with other UCP panels), multiple panels *may* be able to address the same destination. In this case, changes made to a destination *from another remote panel* will track on the UCP MX/16, even though the changes were not made on the local panel itself. Changes made on *your* panel will also track on a remote panel (that is assigned to the same destination). Each panel will display the same status information in regards to levels and sources.

Appendix A

Specifications

In This Appendix

This appendix lists control, physical, power and environmental specifications for all UCP panels. The following topics are discussed:

UCP 2/8 Specifications

The table below lists specifications for the UCP 2/8 panel.

Table A-1. UCP 2/8 Panel Specifications

Parameter	Specification
Dimensions	1.75 (h) x 19.00 (w) x 5.50 (d), inches
RU	1
Weight	3.5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz Power consumption is < 15W
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (UNET) (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

UCP 36/8 Specifications

The table below lists specifications for the UCP 32/8 panel.

Table A-2. UCP 32/8 Panel Specifications

Parameter	Specification
Dimensions	1.75 (h) x 19.00 (w) x 5.5 (d), inches
RU	1
Weight	3.5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz Power consumption is < 15W

Table A-2. UCP 32/8 Panel Specifications

Parameter	Specification
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

UCP 64/8 Specifications

The table below lists specifications for the UCP 64/8 panel.

Table A-3. UCP 64/8 Panel Specifications

Parameter	Specification
Dimensions	1.75 (h) x 19.00 (w) x 5.5 (d), inches
RU	1
Weight	3.5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz Power consumption is < 15W
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

UCP XY/16 Specifications

The table below lists specifications for the UCP XY/16 panel.

Table A-4. UCP XY/16 Panel Specifications

Parameter	Specification
Dimensions	3.50 (h) x 19.00 (w) x 5.5 (d), inches
RU	2
Weight	5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz Power consumption is < 15W
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

UCP SX/16 Specifications

The table below lists specifications for the UCP SX/16 panel.

Table A-5. UCP SX/16 Panel Specifications

Parameter	Specification
Dimensions	3.50 (h) x 19.00 (w) x 5.5 (d), inches
RU	2
Weight	5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz Power consumption is < 15W

Table A-5. UCP SX/16 Panel Specifications

Parameter	Specification
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

UCP MX/16 Specifications

The table below lists specifications for the UCP MX/16 panel.

Table A-6. UCP MX/16 Panel Specifications

Parameter	Specification
Dimensions	3.50 (h) x 19.00 (w) x 5.5 (d), inches
RU	2
Weight	5 lbs.
Environmental	10-45 degrees C 0-90% relative humidity, (non condensing)
Power	117/220 VAC, 50/60 Hz 36 to 72V DC, (5V @ 5.0A) Power consumption is < 15W
Connections	Low Voltage Port (2) RJ-45 Looping Control LAN connectors (1) RJ-45 LAN connector (Ethernet) (1) RJ-45 Diagnostic connector (serial RS-232) (1) 9-pin D connector (serial) (1) RJ-45 connector (CANBUS)

Appendix B

Maintenance Functions

In This Appendix

This appendix provides a detailed procedure for changing button legends. The following topics are discussed:

Changing Button Legends

The buttons on each UCP panel have legends (labels) that can be changed easily, or which can be *customized* if the sources and destinations in your facility change. A button legend "kit" is provided with each panel.

The button legend kit includes the following item:

Table B-1. Legend Kit Components

Part Number	Quantity	Description
08101-0046	1	1.44MB floppy disk, containing the legend template document (**08101-0061.DOC**). This Microsoft® Word document contains the default templates for each of the five UCP panels, plus instructions.

The following item can be purchased separately from Utah Scientific in the event customized labels are to be prepared by the user:

00198-0123	5 (sheets)	Frosted paper, specially designed to diffuse light.

This item should be purchased separately if needed for customized labels:

	1	Clear Spray Fixative, specially designed to prevent the laser print from transferring to the button's lens.

The procedures (next) provide detailed instructions for using the Word template, and inserting the new legends in the buttons.

Using the Template

The legend template document allows you to modify the default legends for each selected panel, to meet your system requirements.

Use the following steps to change or modify button legends:

1. Locate the (supplied) Utah Scientific floppy disk that contains the template document (**08101-0061.DOC**), and insert the disk in your PC's floppy drive. Open the drive's directory, and copy the file to a new folder on your hard drive.
2. Ensure that Microsoft Word is installed on your PC.
3. Open the template document, and scroll down to locate the template for panel whose legends you want to modify.
4. Place your cursor in the desired cell and click.

For reference, the figure below illustrates a portion of the UCP XY/16 template.

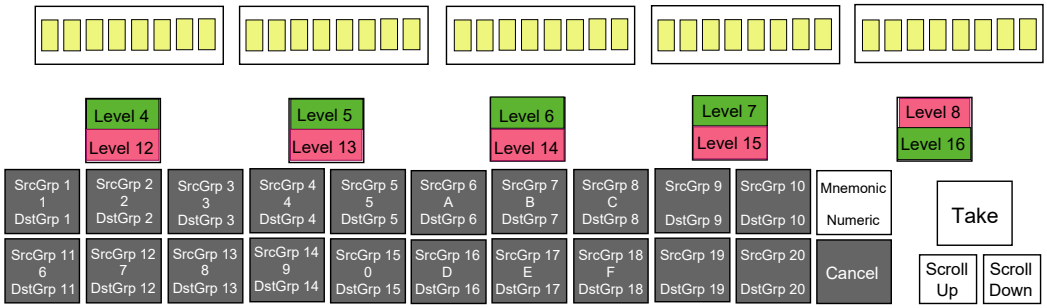


Figure B-1. Portion of UCP XY/16 Template

5. Type the desired legend in the cell.

Please note the following points regarding the template:

- The legend is automatically centered. You can place up to three lines of text in a cell by pressing **ENTER** at the end of each line.
- The default text is 10 point Avant Garde MD BT. If you have a compact legend, you may be able to increase the font size to 11 points, or you may have to decrease the font size to 9 points if additional characters are required on a line.

6. Once you have completed (and proof-read) your template, print the page on a Laser Printer using the special (supplied) frosted paper.
7. If you want to keep the old template intact, save the modified file under a new name using the “save as” procedure.
8. To improve the long term quality of the legend, and to prevent the laser print ink from transferring to the button’s lens, it is recommended that you apply a clear spray fixative as follows:
    - Lay the printed template on a flat, horizontal surface.
    - Spray the template lightly and uniformly with the fixative, and allow it to dry completely.
9. Use a scissors (or Exacto-knife) to cut each new legend cell at its boundaries.

This completes the procedure for modifying legends. Please continue with the “**Inserting Legends in Buttons**” procedure.

Removing and Inserting button legends

Use the following figure for reference during this procedure. The tool/legend-replacement assembly is Utah Scientific Part # 42610-0012.

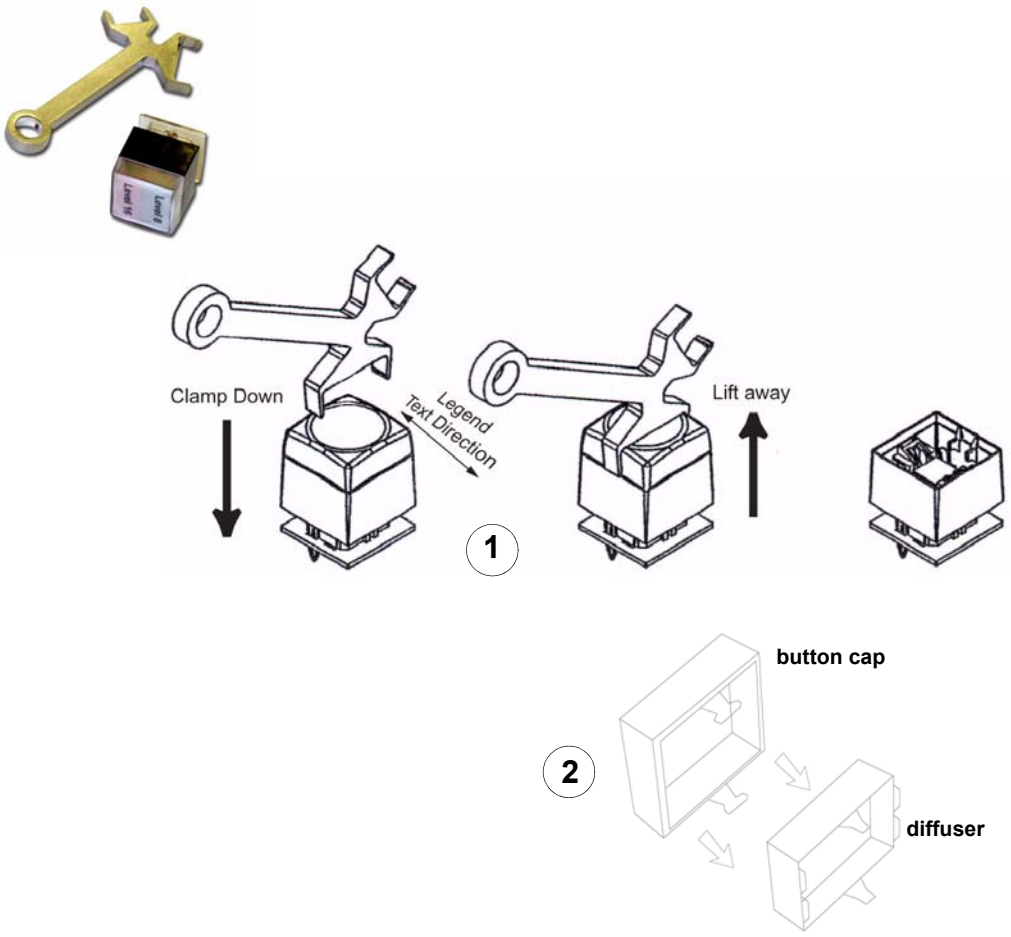


Figure B-2. Legend removal procedure

1. Using the provided tool, clamp down on the button top and carefully remove it from the switch case by gently pulling it outwards.
2. Carefully pull the inner diffuser out from the button cap to expose the legend assembly.

3. Remove the old legend and/or bi-color slip from the button cap, then replace with the new one(s). You may need a small pic to pry the legend loose.
4. Reverse the above procedure to re-assemble the button.
5. Repeat the procedure from step 1 for each legend that you want to change.

Ordering Parts

Utah Scientific, Inc.
4750 Wiley Post Way
Salt Lake City, Utah 84116-2878 USA

- **Telephone**: +1 (801) 575-8801
- **Customer Support (Voice)**: +1 (800) 447-7204
- **Customer Support (Fax)**: +1 (801) 537-3009

Appendix C

UCP Version Upgrade Procedure

Checking the Current Version - UCP Panel

(This procedure must be done using a serial connection to the diagnostic port on the UCP panel)

1. Connect the 9 pin serial port on the PC running TeraTerm to the RJ-45 to 9 pin adapter (9 pin side) provided by Utah Scientific (labeled SC4/2020).

   NOTE: if this is a laptop from Utah Scientific then connect to the 9 pin serial port on the USB to serial cable provided with the laptop.

2. Connect the UCP diagnostic serial port to the RJ-45 to 9 pin adapter (RJ45 side) provided by Utah Scientific (labeled SC4/2020) using a standard straight through CAT 5 cable.
3. Launch Tera Term Pro and open the Setup menu and select ‘Serial Port’.
4. Select the computer COMM port that is being used.
5. Set the baud rate to 19200.
6. Set the Data to 8 bit.
7. Set the Parity to None.
8. Set the Stop to 1 bit.
9. Set Flow Control to None.
10. Click OK.

11. At the prompt you should see the Node number of the panel you are connected to.
12. Type the letter V and then press 'Return' to see the current version.
13. Close Tera Term before performing the upgrade.

Upgrade Procedure

(Use this procedure for all UCP panel types)

1. Navigate to the folder called release-ucp found on the system CD and open it.
2. Double click the setup.bat file. This will create a new folder called ucp located in C:\usi.
3. Open the new folder from step 2 and then open the folder with the highest version number. (Example: v1.93)
4. Make sure there are no sessions of TeraTerm running at this time and then open the Unic807 folder and double click the UcpUpgrade.bat file.

   NOTE: The only time the Unic803 folder is to be used is if there are UCP-64 style control panels that need to be upgraded. In this case refer to the next section for the procedure.

5. The upgrade will run automatically from here and prompt you that it is done.
6. Use the procedure above to check that the new version has been loaded successfully.

Upgrade Procedure for UCP-64 Style Panels with the UNIC803 Chip Set

(Use this procedure only for UCP-64 panel types)

1. Use the procedure above for checking the version type.
2. After typing the letter V you will see the version number and at the end of that line it will either have an 803 or an 807 which is the chip type.
3. If it is an 803 then follow the same upgrade procedure found above only in step 4 open the Unic803 folder and proceed from there.

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