Utah Scientific

UCP Series II

Routing Switcher Control Panels

User's Guide

UCP Series User's Guide (Volume II)

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Chapter

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Declaration of Conformity

Utah Scientific

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

declare our sole responsibility that the UCP Series Routing Switcher Control Panels are in conformity with the following standards:

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

Following the provisions of the Directive(s) of the Council of the European Union:

- **EMC Directive 89/336/EED**
- **Low Voltage Electrical Directive 72/23/EEC**

Utah Scientific, Inc. hereby declares that the product specified above conforms to the above Directive(s) and Standard(s).

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.
- To avoid fire hazard, use only the specified correct type, voltage and current rating as referenced in the appropriate parts list for this product. Always refer fuse replacement to qualified service personnel.
- 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.

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Chapter

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- Repair or replacement of the software or hardware that does not meet the above warranties and is returned to Utah Scientific under the returned materials authorization (RMA) process with freight and forwarding charges paid.

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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-MM Operations**” description.
- Chapter 4, “**UCP-1 Operations**” description.
- Chapter 5, **“UCP-48 Operations”** provides setup and operating instructions for UCP-48 router control, designed to operate with either the SC-3, SC-4 or SC-400 controllers.
- Chapter 6, **“UCP-UMD Operations”** provides setup and operating instructions for the UCP-UMD (Under Monitor Display).
- Appendix A, “**Specifications**” lists control, physical, power and environmental specifications for all UCP panels.

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 6 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.

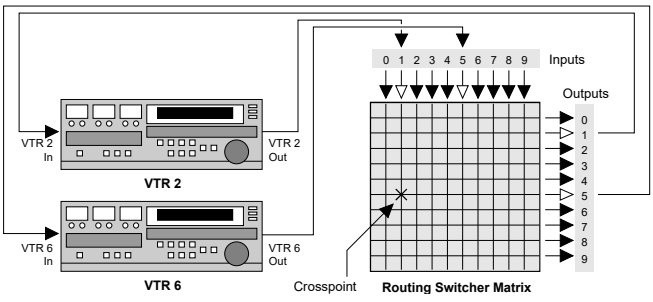


Figure 1-1. Simple 10x10 Switching Matrix

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.

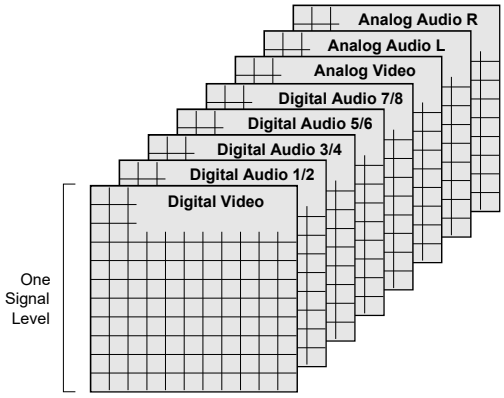


Figure 1-2. Multi-router Level 10x10 Routing Switcher System

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-MM

The UCP-MM provides 16 input selector buttons, each containing an 8-character LCD display along with four high-resolutuion LCD displays with touch-sceen capabilities.

Figure 1-3. UCP-MM Panel

The panel can be configured in a number of operating modes, for multi-bus control or for full-matrix control with direct access to pre-selected sources and destinations.

The panel's four touch-screen LCD display panels offer highly legible read-out of levels, sources, destinations, or router status. The 16 LCD buttons are dynamically re-legendable, allowing them to be used for menu-style selections as well as for direct access to sources and destinations.

Refer to Section 3 for complete setup and operating instructions.

UCP-1

The UCP-1 Full-Matrix Control Panel provides flexible X-Y control of any size routing switcher in one rack unit of space.

Figure 1-4. UCP-1 Panel

The UCP-1 can be programmed to operate as a full-matrix control panel with access to all sources and destinations. Alternatively, the panel's input and output lists can be customized to restrict access to certain sources and/or destinations. As an added feature the panel offers programmable buttons that can be used to provide direct access to certain frequently used sources and/or destinations.

The UCP-1 is offered with a U-Net control interface for connection to the SC-4 or SC-400 system controller. An optional interface board is available to support Ethernet or serial communications for specialized applications.

Refer to Section 4 for complete setup and operating instructions.

UCP-48

The **UCP-48** 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.

The UCP-48 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 1-5. UCP-48 Panel

The UCP-48 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-48 panels per controller UNET port.

Refer to Section 5 for complete setup and operating instructions.

UCP-UMD

The UCP-UMD panel provides a highly readable 20 character display with additional tally indicators for use in a wide variety of display applications.

Figure 1-6. UCP-UMD Panel

Under-Monitor Displays are an important part of a router control system, allowing instant visual identifi cation of the router source that is being fed to a monitor and providing indication of “tally” conditions.

The UCP-UMD panel can be confi gured as a single 20 character display or a dual 8 character display, with independent tally indicators. In addition to the bar-type LED tally indicators, the tri-color LED displays can be caused to fl ash or to change color as indication of a certain tally condition. The UCP UMD connects to the router control system via the existing control network -- U-Net, Ethernet, or serial -- and is programmed through the U-Con System Confi guration utility. In the typical “dynamic” display appliction, the UMD is set to follow the router selections on one or two specifi c output busses, displaying the name of the source that is selected to that bus.

An alternate “static “ display mode is also available where the display is set to show a particular message that can be set by the front panel controls on the display itself or downloaded to the display via the router control network.

Refer to Section 6 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.

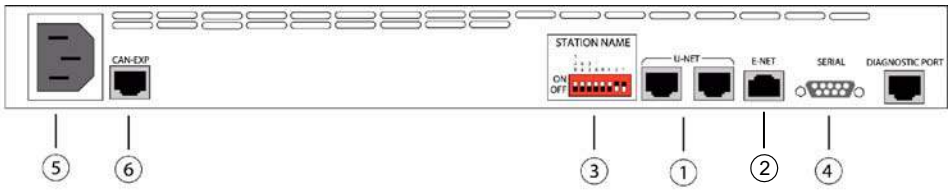


Figure 2-1. Rear Panel Layout, UCP 2/8, UCP 36/8, UCP 72/8

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.

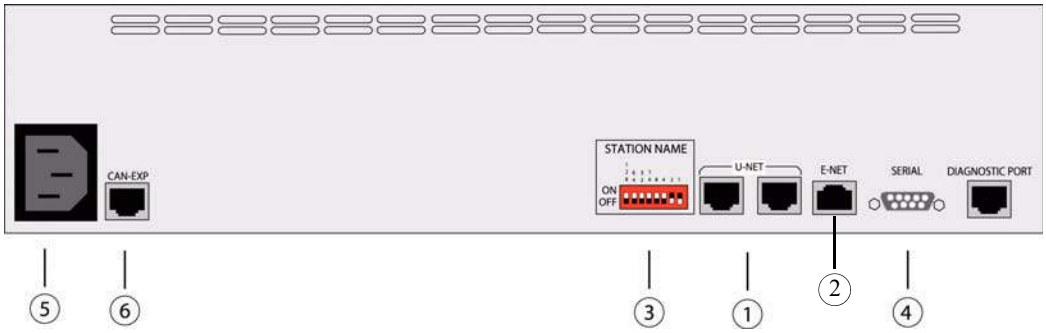


Figure 2-2. Rear Panel Layout, UCP SX/16 and UCP MX/16

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.

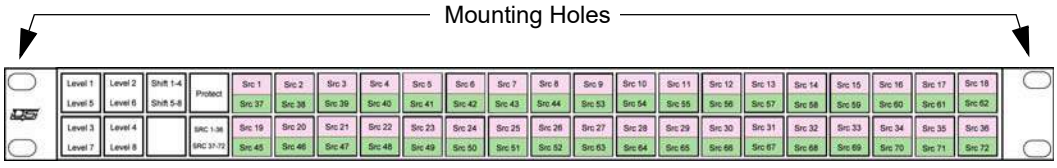


Figure 2-3. UCP Panel Mounting Holes

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.

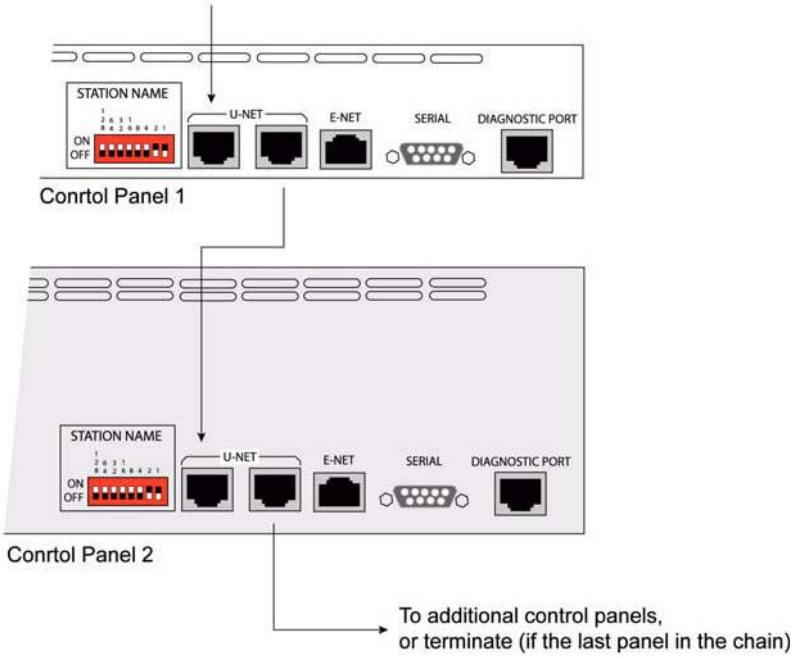


Figure 2-4. U-Net Interconnection Diagram

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).

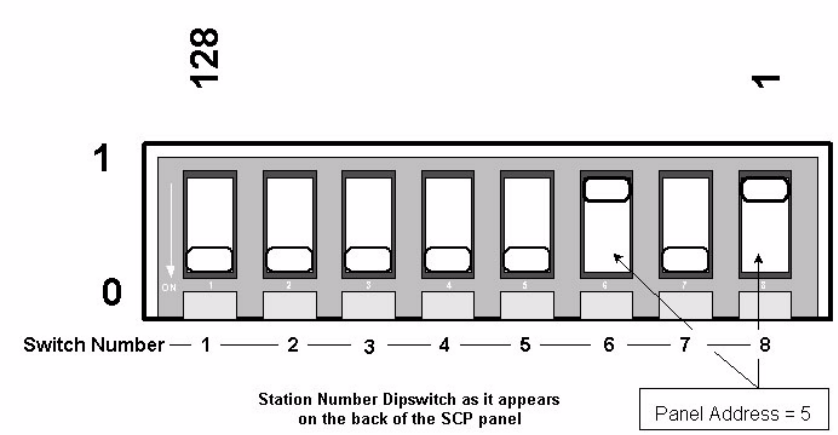


Figure 2-5. Panel ID Dip Switch Values

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

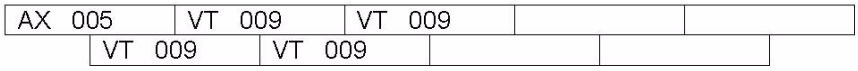
The source displays change to show which Mnemonic values have that numeric number on them.

See the following examples (next):

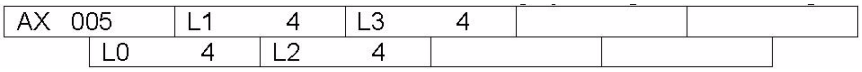
Example 1 - Sample Destination Table

```
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

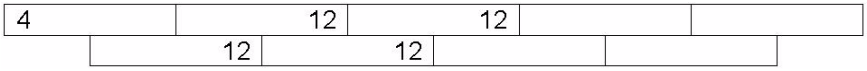


Press and hold the Mnemonic/Numeric button and the displays change to the following:

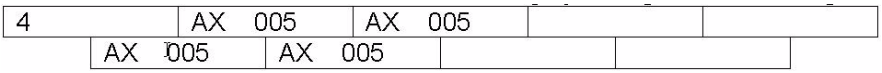


The source displays will show a “4” on each level since those are the outputs that AX 005 is controlling - from the example destination table shown above.

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.

Exception: The UCP-48 and UCP-64 use different key combinations to Lock and Unlock the panel.

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).

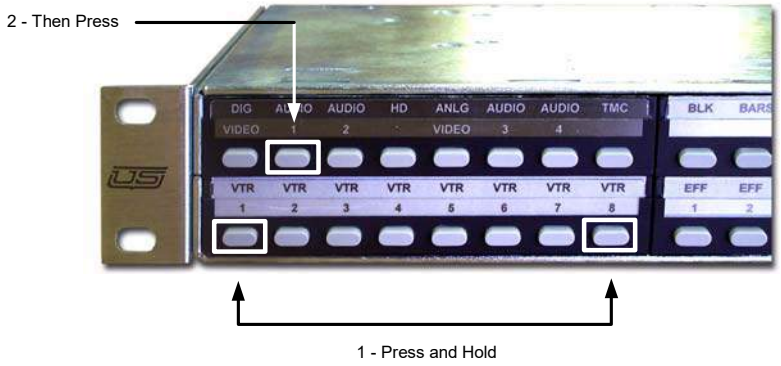


Figure 2-6. Panel Lock button combination

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

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.

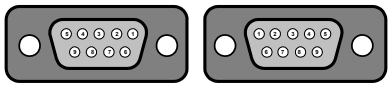
5	5 Chars
6	6 Chars
7	7 Chars
8	8 Chars

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.

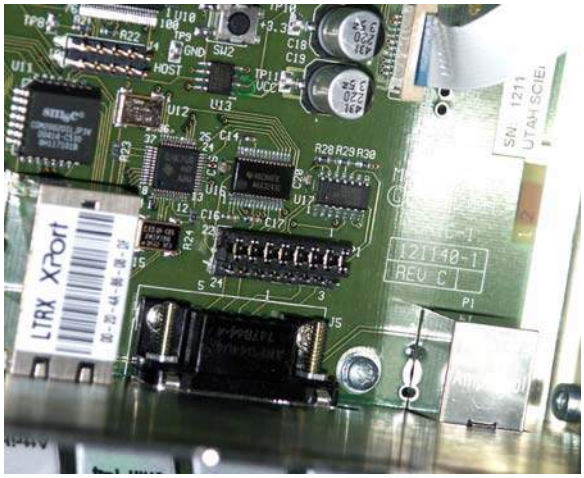


Figure 2-7. RS-232 Operation

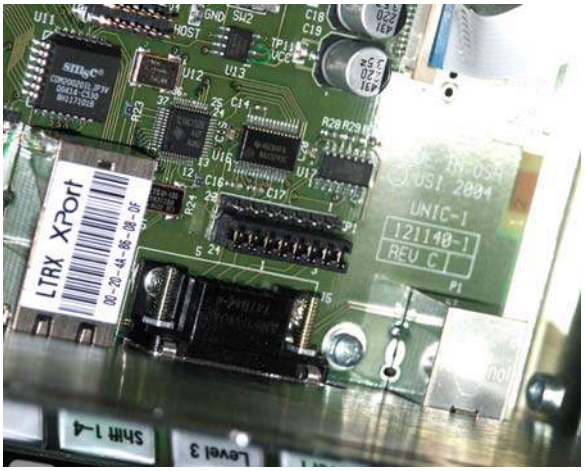


Figure 2-8. RS-422 Operation

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:

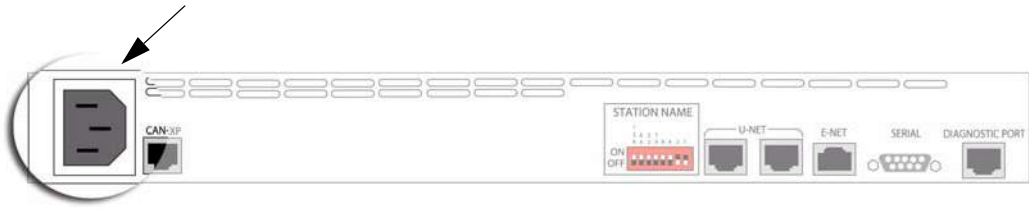


Figure 2-9. Power Connection

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-MM Operations

In This Chapter

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

Basic Operation - *Overview*

The UCP-MM panel operates in two basic modes: **Destination Select** (using Levels), or an All Button Per **Source Mode**, accessed by pressing the Home key. The Destination Select allows you to simply switch through the actual destinations by pressing their corresponding button within the LCDs. The Destination *views* you see in the third and forth LCDs are miniaturized versions of the status displayed in the first LCD (far left). The status present in the second LCD contains pertinent Levels information.

Figure 3-1. UCP-MM Panel

Destination selections are made by tapping the name (within the far left window). The group names will be displayed on the LCD buttons. Once you select a group, the extension will be displayed on the LCDs themselves. After selecting the extension, the flashing name (within the first window) can be tapped, or as an alternate, press the Take button.

You could also make your Destination selection by simply locating it (LCD toggle) within the third or forth window, then selecting it directly by tapping on the screen.

Breakaway takes are accomplished by making the Levels selection (within the second LCD). This will cause the levels within the display to flash. Then select the Source along the bottom button row.

When the *All Button Per Source* mode is used, the Source Select, switches are made with single button [pushes] on an actual source.

Output pages can be scrolled up or down by pressing the corresponding buttons on the panel (illustration).

Once a group selection has been made, takes are accomplished by pressing the corresponding (yellow) button at the bottom of the panel, then the Take button (right side). *The yellow buttons along the bottom row are re-legendable.* Group designations will affect the text contents of the buttons along the bottom row.

The Clear button will reset any switch that is pending.

Holding both the Home and Clear buttons down (left side of panel) will provide version panel version information. You can also adjust the LCDs contrast (while the Home and Clear buttons are pressed) by using the two buttons immediately beneath each LCD (toggling back and forth).

In addition to page scrolling up and down, you can jump to the first page by holding down both Page Up and Page Down buttons.

About the UCP-MM

The **UCP-MM** 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 MM panel.

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.

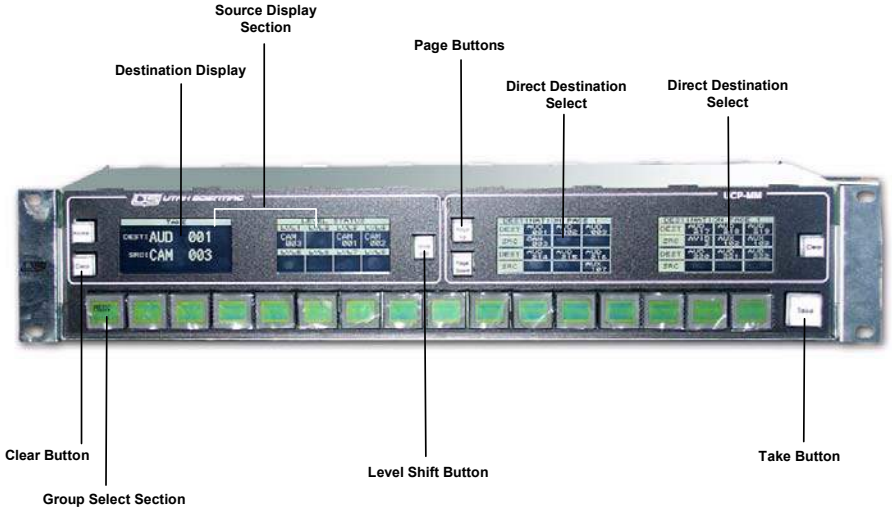


Figure 3-2. UCP-MM Panel Selections

1)	Destination Display	6)	Group Select Section
2)	Direct Destination Select	7)	Take Button
3)	Source Display Section	8)	Page Button
4)	Level Shift Button		
5)	Clear Button		

Basic Operation

The UCP-MM panel operates in two basic modes: **Destination Select** (using Levels), or an All Button Per **Source Mode**, accessed by pressing the Home key. The Destination Select allows you to simply switch through the actual destinations by pressing their corresponding button within the LCDs.

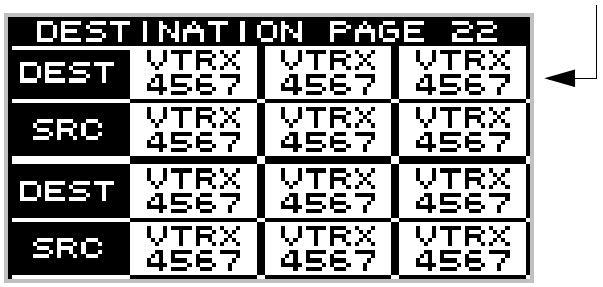


Figure 3-3.

The Destination *views* you see in the third and forth LCDs are miniaturized versions of the status displayed in the first LCD (far left).

Figure 3-4.

The status present in the second LCD contains pertinent Levels information.

Figure 3-5.

Destination selections are made by tapping the name (within the far left window). The group names will be displayed on the LCD buttons. Once you select a group, the extension will be displayed on the LCDs themselves. After selecting the extension, the flashing name (within the first window) can be tapped, or as an alternate, press the Take button.

Figure 3-6.

You could also make your Destination selection by simply locating it (LCD toggle) within the third or fourth window, then selecting it directly.

Output pages can be scrolled up or down by pressing the page up/page down buttons on the panel (illustration).

Additional Notes

Once a Destination selection has been made, takes are accomplished by pressing the group/extension button at the bottom of the panel, then the **Take** button (right side). *The buttons along the bottom row are re-legendable.* Group designations will affect the text contents of the buttons along the bottom row.

The **Clear** button will reset any switch that is pending.

Holding both the **Home** and **Clear** buttons down (left side of panel) will provide panel version information.

Figure 3-7.

You can also adjust the LCDs contrast (while the Home and Clear buttons are pressed) by using the two buttons immediately beneath each LCD (toggling back and forth).

Figure 3-8.

In addition to page scrolling up and down, you can jump to the first page by holding down both Page Up and Page Down buttons.

Breakaway Takes

Breakaway takes are accomplished by making the Levels selection (within the second LCD). This will cause the levels within the display to flash. At this point, select the Source along the bottom button row then press Take to complete the action.

System Operation

1) Destination Display

The **Destination Display** is an eight character readout that shows the currently selected destination.

The figure below illustrates a typical mnemonic destination display.

Figure 3-9. Mnemonic Destination Display

The display typically shows up to eight characters, signifying a *group name* plus a specific device within that group.

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.

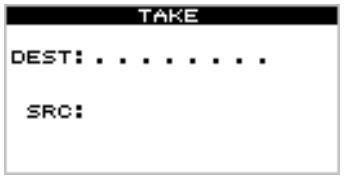


Figure 3-10. Destination “Dots” Display, Awaiting Data Entry

- 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 3-11. Destination “Question Mark” Display, Awaiting Extension

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

2) **Destination Select Button**

Tap the destination on the LCD screen to *begin* or *conclude* the 'destinator' selection. When pressed initially, the display blinks to indicate that the panel is in the "destination select" mode. Please note:

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

3) **Direct Destination Select Section**

Select one of the 12 direct Destinations from the right two LCD screens. The destination that is selected is placed in the main Take LCD window and shows current status in the Level window.

4) **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.

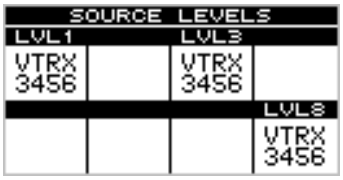


Figure 3-12. Source Display Section

- The eight **Source Level Status Displays** provide status for up to 16 levels. Each display is an eight-character readout that shows the current source associated with that level. The **Level Shift** button switches the eight displays between the two groups of levels (1-8 and 9-16).
- The eight **Level Select** displays indicate which levels are valid for the current destination. The level name is displayed only if the level is valid for the current destination.

- The displays perform the following function:
  - ~ Pressing a valid **Level Select** display allows you to include that level in a breakaway take, and assign a source to that level for routing to the destination.

5) **Direct Source Select**

The panel can be placed into Direct Source selection by pressing the Home button.

6) **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 Level Name title 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) **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.

8) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source and destination “group” names (and extensions). The Group Names will change based on the panel’s current selection mode.

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 MM 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).

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, such as an **All-follow** take or a **Breakaway** take.

Figure 3-13. Take Button

The button blinks to indicate that a procedure is pending.

10) **Page Buttons**

The page buttons will scroll up and down through the individual pages of destinations or sources, depending on the mode of the panel. In the Destination Display mode, the page buttons *page* 12 destinations at a time.

In Direct Source mode, the MMA panel *pages* 40 direct sources at a time.

In Direct Source Mode, the MMB panel *pages* 24 direct sources at a time.

Note: Holding down the page UP and page DOWN buttons (at the same time) sets the page back to page 1. Additionally, the destination and Direct Source pages are configured by U-CON.

Displaying Level Status

When you select a destination for a particular purpose, the 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 3-11 for instructions.
- Ensure that none of the eight **Level Select** displays 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** title segments are displayed, 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 two ways to select destinations on the UCP MM panel:

- Selecting a destination with the **Direct Destination Select** display.
- Selecting a destination in mnemonic mode

Each selection method is described below.

Using the Direct Destination Select Display

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 U-CON.
2. Press **Clear** to cancel any pending source or destination procedure.
3. Press the desired **Direct Destination Select** position on the display.

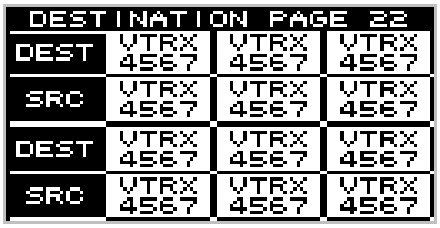


Figure 3-14. Direct Destination Select Section

The destination that is selected flashes for 1 second to indicate that it was selected.

4. Use the page UP or page DOWN buttons to move to other pages.

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 U-CON.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Tap the **Destination** on the display. The display 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.

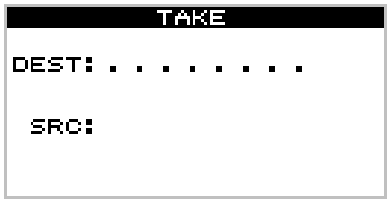


Figure 3-15. Destination “Dots” Display, Awaiting Data Entry

4. 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 3-16. Destination “Question Mark” Display, Awaiting Extension

5. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device within the group. 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* (and so on) presses.

6. With a valid destination entered, tap the **Destination** on the display, or press Take. The **Destination Select** display 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 3-13 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** display. This safely cancels the data entry procedure and returns the **Destination Display** back to its previous assignment.
- Press the **Destination Select** display 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 MM panel. There are two 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

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 U-CON.
2. Select a Source by tapping the screen, or pressing a relegendable Direct Source button.

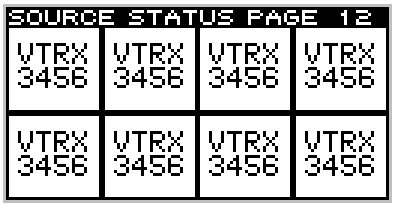


Figure 3-17. Direct Source Select Section

The button lights, or the display reverses to indicate the statused source. 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 Direct Source Select 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 U-CON, and that all panel *group* buttons are properly labeled.
2. Press HOME to ensure the panel is in Direct Destination select mode.
3. Press **Clear** to cancel any pending source or destination procedure.

4. Select a destination — using either the direct or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 3-11 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.

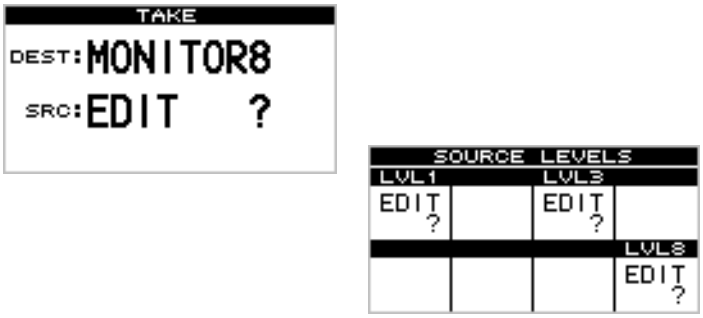
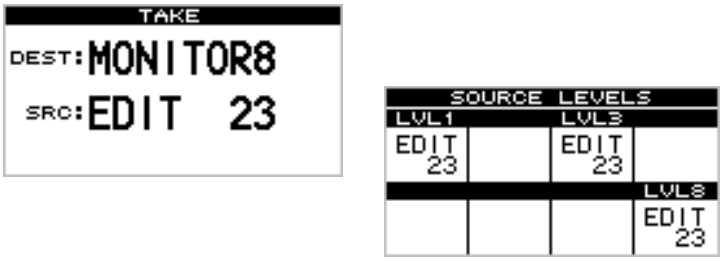


Figure 3-18. Source "Question Mark" Display, Awaiting Extension

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 3-16 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:

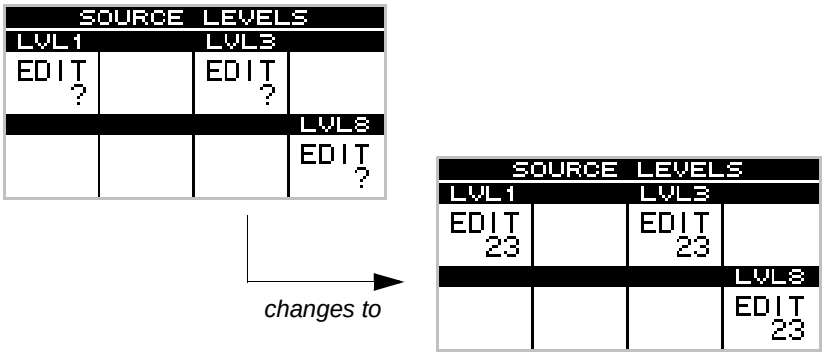
- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breakaway with the Direct Source Select Buttons
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

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 U-CON.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the Destination Select mode. If not, press the HOME button.
4. Select a destination — using either the direct or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 3-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display for the *one level* that you want to break away. Use the **Level Shift** display 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 **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.



after an extension is entered

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 3-22 for additional important information.

Breaking Away Multiple Levels From One Source

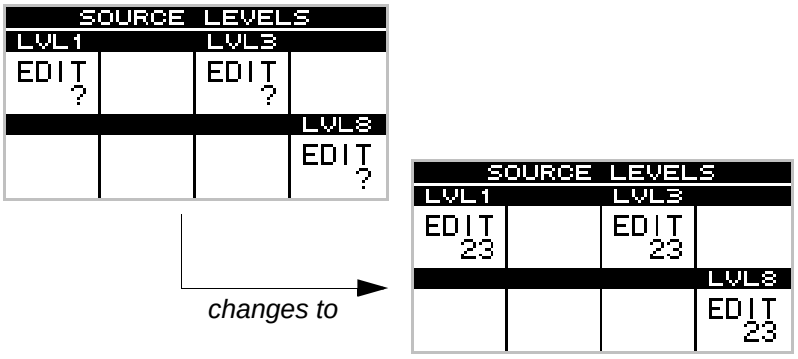
Use the following steps to break away two or more levels from a source.

1. Ensure that the desired destination "groups" are programmed from 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 Destination Select mode. If not, press the HOME button.

4. Select a destination — using either the direct or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 3-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display 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** display 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.



after an extension is entered

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 3-22 for additional important information.

Breakaway with the Direct Source Select Buttons

The **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 U-CON, 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 or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 3-11 for instructions.
4. In the **Source Display Section**, tap the **Level Select** display 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** display 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 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 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 Destination Select mode. If not, press the HOME button.
4. Select a destination — using either the direct or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 3-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display 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** display blinks, and the “dots” display appears in each **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** display (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** displays 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 3-22 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 U-CON, 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 Destination Select mode.If not, press the HOME button.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 3-11 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**, tap the **Level Select** display 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** display 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** displays 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 3-22 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 3-20 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** displays off.

Both methods safely cancel the data entry procedure.

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 3-1. 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 **Destination 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 3-14 or the "**Performing a Breakaway Take**" section on page 3-16 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.
- 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.

Page UP and Page DOWN Buttons

The page buttons will perform differently based on the panel's current mode.

Destination Select Mode

- Ensure the panel is in Destination select mode by pressing the HOME button until the right 2 displays show destination status within.
- Page UP moves the destination pages to the next set of 12 destinations as programmed from U-CON.
- Page DOWN moves the destination pages down the list to the next set of 12 destinations as programmed from U-CON.

Direct Source Select Mode

- Ensure the panel is in Direct Source mode by pressing the HOME button until the panel changes to the Direct Source Select mode.
- The page UP page DOWN buttons move the direct sources to the next page as programmed from U-CON.

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 MM 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 MM panel itself.

Because the UCP MM is a full XY panel, any of the 20 available destination groups can be assigned to the Monitor Matrix function from U-CON. This is accomplished by typing the keyword "**MMTRX**" into the desired destination group's entry box on the U-CON itself. Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP MM 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 MM 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** displays and **Level Shift** button functions 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 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 U-CON.
- 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 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 U-CON.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Select the Monitor Matrix destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 3-11 for instructions. The **Destination Display** label reads "**MMTRX**."
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 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.
7. Using the keypad buttons, enter the extension of the desired destination device. Leading zeros do *not* need to be entered.
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** displays 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.
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 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** display. 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* display again. The display will show “UNLocked”, and button activation is again possible.

Figure 3-19. Panel Lock combination

Home Button

This button toggles the panel between the two different modes. The Destination Select mode and the Direct Source Select mode.

The panel can monitor 12 destinations at a time in the Destination Select mode.

Direct Source Select Mode

The panel can contain up to 40 direct sources at a time for the UCP-MMA, or 24 direct sources for the UCP-MMB.

Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Verifying the Panel Node, Panel ID, and software version
- Changing the LCD Display Contrast
- Changing the Touch Panel - Beep and Click volume

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

Figure 3-20. Miscellaneous Panel Modes button combo - HOME and CLEAR

Verifying the Panel Node, Panel ID, and Software Version

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

1. Press and *hold* the **Home** and **Clear** buttons (previous illustration).

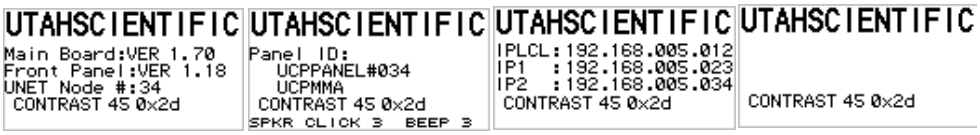


Figure 3-21. Panel Node Address Display

2. Release the **Home** and **Clear** buttons to complete the procedure.

Changing the LCD Contrast

1. Hold down the HOME and CLEAR buttons.
2. Press the contrast adjustment buttons below each display. One increases the contrast and the other decreases the contrast.

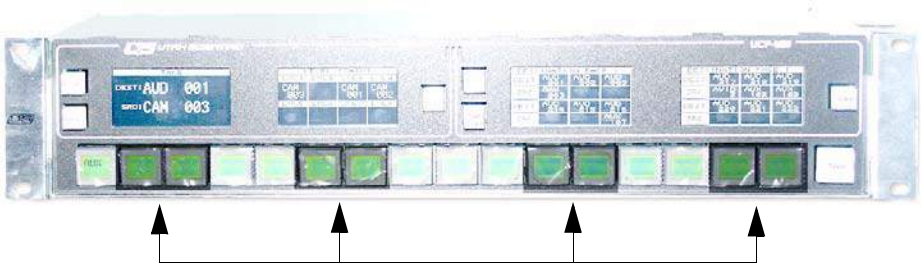


Figure 3-22. Contrast Adjustment - MMA Panel

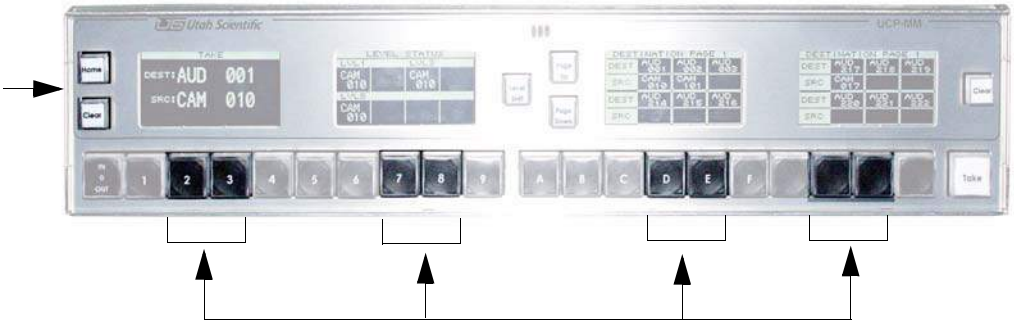


Figure 3-23. Contrast Adjustment - MMB Panel

Changing the Touch Panel - Beep and Click Volume

1. Hold down the HOME and CLEAR buttons.
2. For the MMA panel, press button 9 for Click volume, or button 10 for Beep volume.

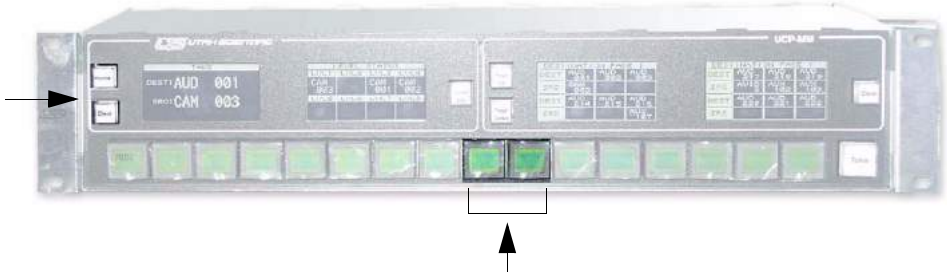


Figure 3-24. UCP-MMA Panel - Beep and Click volume adjustment

3. For the MMB panel, press button 11 for Click volume, or button 12 for Beep volume.

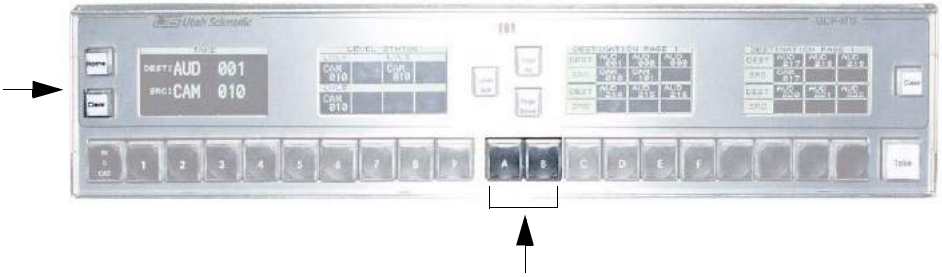


Figure 3-25. UCP-MMB Panel - Beep and Click volume adjustment

Changing the Relegendable Button Contrast on the UCP-MMA

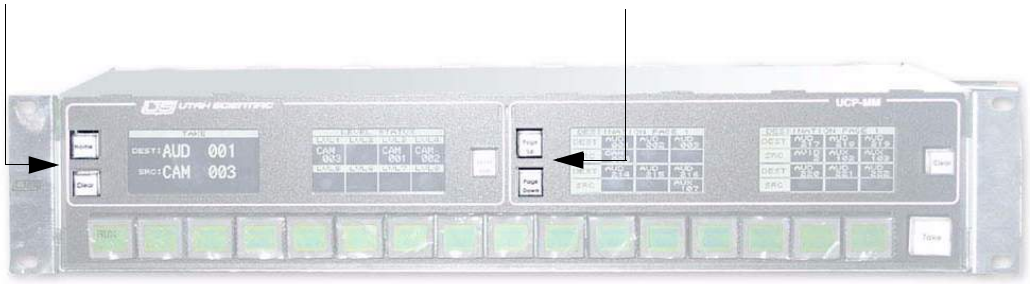


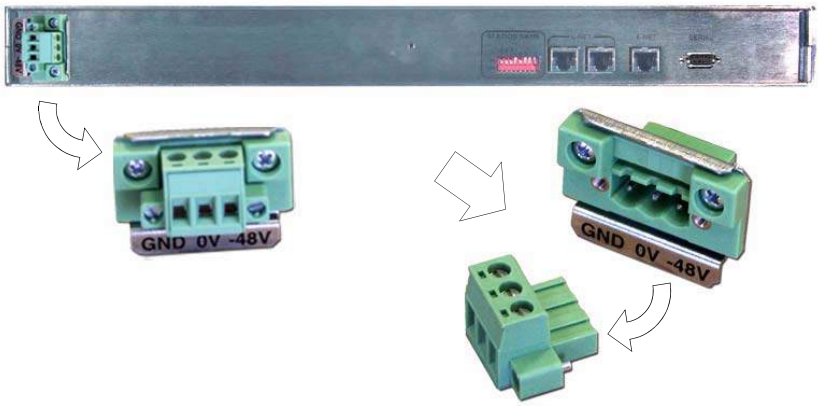
Figure 3-26. Contrast Adjustment

1. Press and hold the Home and Clear buttons.
2. Press the Page Up / Page Down buttons to change the contrast on the relegendable buttons.

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 MM panel in general:

- When the UCP-MM panel is being re-programmed from 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 MM (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 MM, 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.

4

Section 4

UCP 1 Operations

In This Chapter

This section provides setup and operating inst1ructions for the UCP 1; a sixteen level, 8 level breakaway, full source, dual destination XY panel. The following topics are discussed:

About the UCP 1

The **UCP-1** 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 1 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.

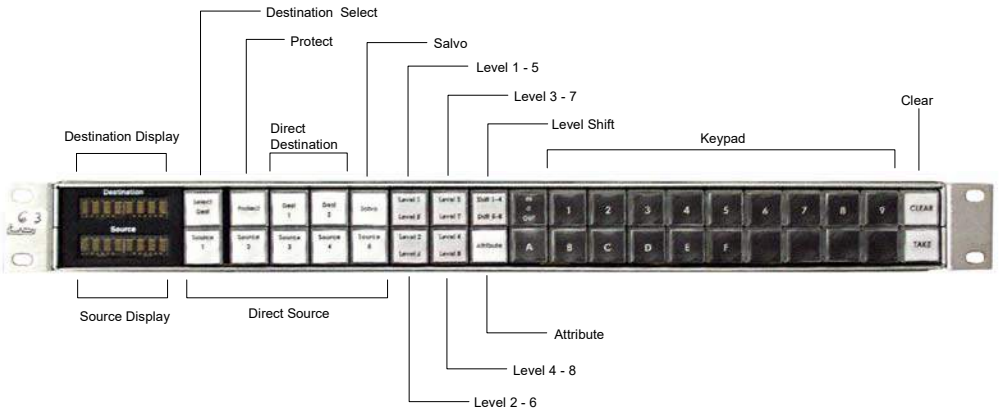


Figure 4-1. UCP 1 Panel

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 4-2. 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 4-3. 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.

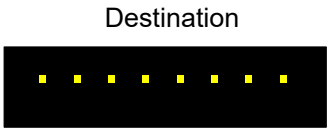


Figure 4-4. Destination "Dots" Display, Awaiting Data Entry

- 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 4-5. 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 1 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.

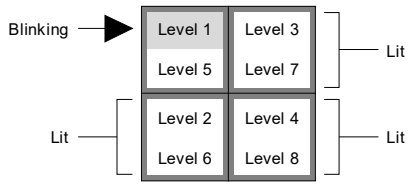


Figure 4-6. Typical Level Select Section Display

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 1 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 4-7. 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 4-8. 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 to choose the desired destination.
4. Press the desired **Direct Source Select** button.

Figure 4-9. 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 4-10. 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 4-11. 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).

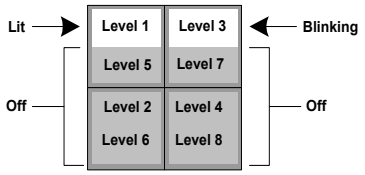


Figure 4-12. Sample Breakaway Mode Display

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 4-11 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 4-13 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**.

  P R O T E C T

  Figure 4-13. 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**.

  l o c k

  Figure 4-14. 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**.

  C L E A R

  Figure 4-15. 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.

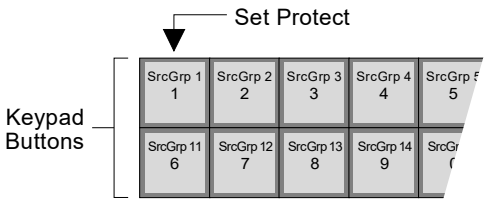


Figure 4-16. Keypad "Set Protect" Button Location

    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.

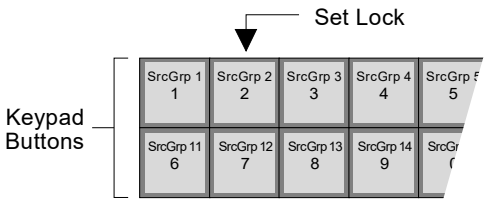


Figure 4-17. Keypad "Set Lock" Button Location

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.

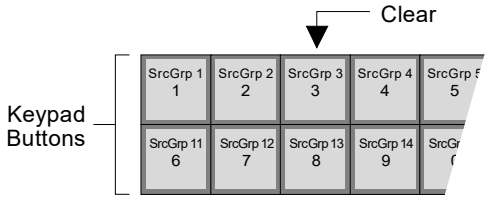


Figure 4-18. Keypad "Clear Lock" Button Location

   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.

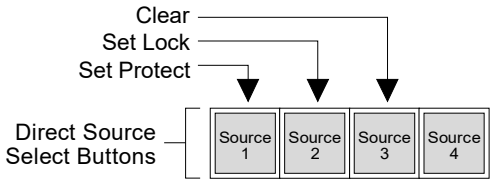


Figure 4-19. Direct Source Select Button Functions in Protect Mode

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 4-1. 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.

Table 4-1. Attribute Selections

Keypad Button	Attribute Name	Description
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 4-2. 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 1 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 1 panel itself.

Because the UCP 1 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 1 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 1 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:

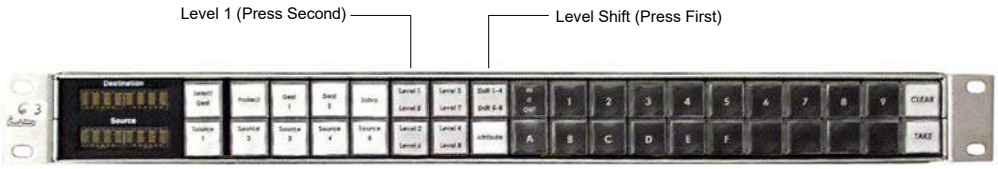
    - Use the **Level Shift** button in conjunction with the **Level Select Section** buttons to choose the levels that you want to break away. See the "**Breaking Away Multiple Levels From One Source**" section on page 4-11 for instructions on selecting levels.
    - In the **Group Select Section**, select 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.

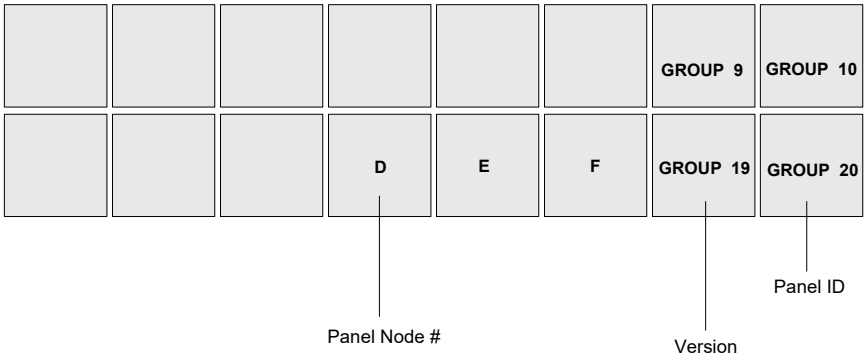


Figure 4-20. Keypad Buttons used for Miscellaneous Panel Modes

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 4-20. 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 4-20. In the **Source Display**, the panel's software version appears.

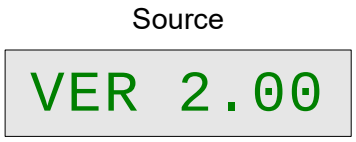


Figure 4-21. Panel Software Version Display

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 1'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 4-22. 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 1.

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 4-20. In the **Source Display**, the panel's ID appears.

Figure 4-23. Panel ID Display

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

General Panel Notes

Note the following important points regarding the UCP 1 panel in general:

- When the UCP 1 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 1 (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 1, 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.

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)

Section 5

UCP 48 Operations

In This Chapter

This chapter provides setup and operating instructions for the UCP 48. The following topics are discussed:

Overview

The UCP-48 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-48 panels per controller UNET port.

The UCP-48 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-48 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 5-1. UCP-48 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-48 is able to control up to 56 sources and 8 level-destinations using the 48 front panel control buttons.

Note: Note: Programming of the UCP-48 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-48 control panel. For a more detailed explanation of the components, refer to Chapter 3, "Using the UCP-48".

Figure 5-2. UCP-48 Front Panel View

Table 11-1 provides information on the components called out in Figure 11-2.

Table 5-1.

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;

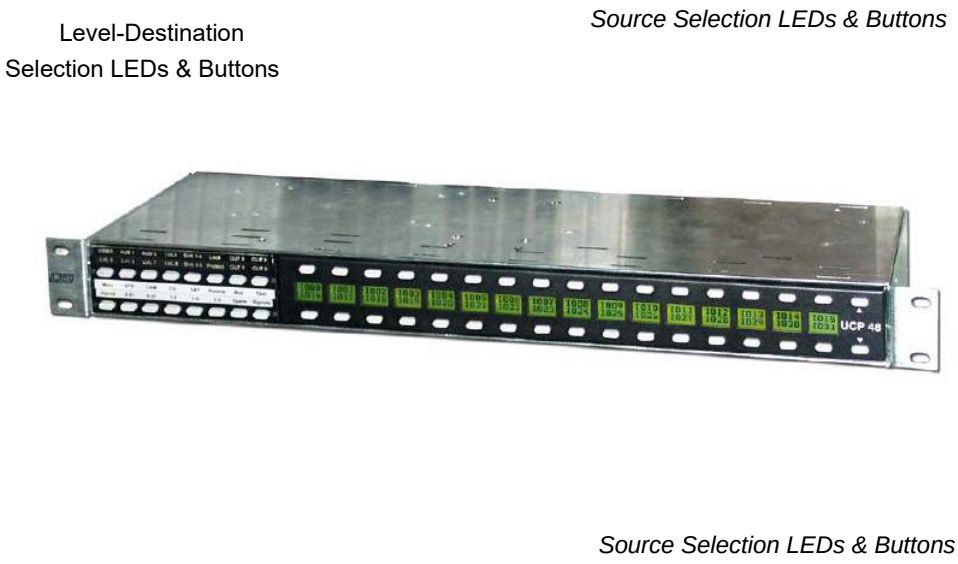


Figure 5-3. UCP-48 Front Panel Sections

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 11-3:

- 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.

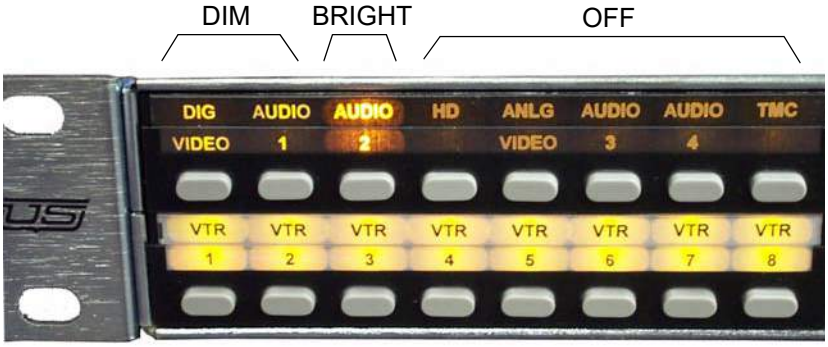


Figure 5-4. LED States of Illumination

Figure 3-3 illustrates that level 3 of the destination is selected and that levels 4 - 8 are not available for selection. All other levels and destinations are available for selection.

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-48 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.

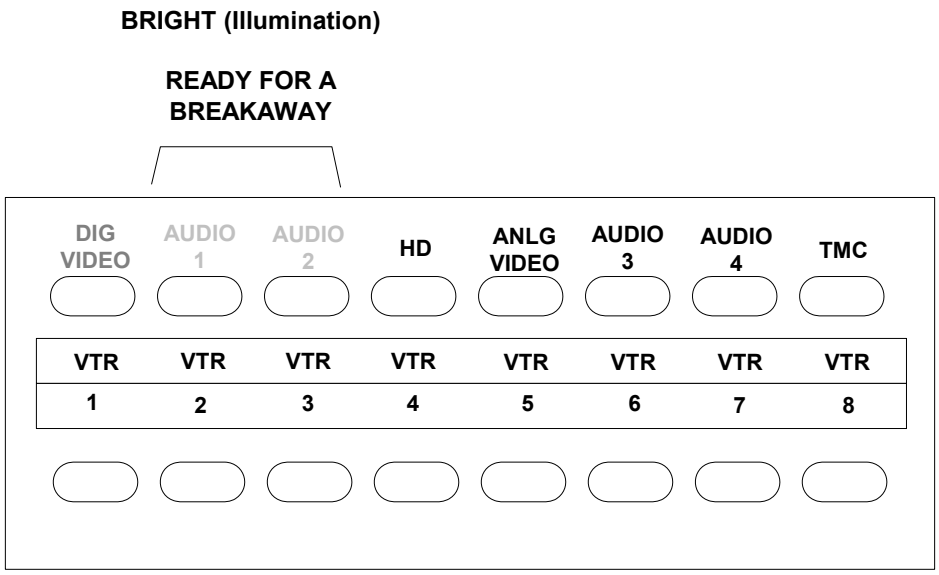


Figure 5-5. Breakaway Memory Functionality

Performing a Breakaway Take

The UCP-48 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.

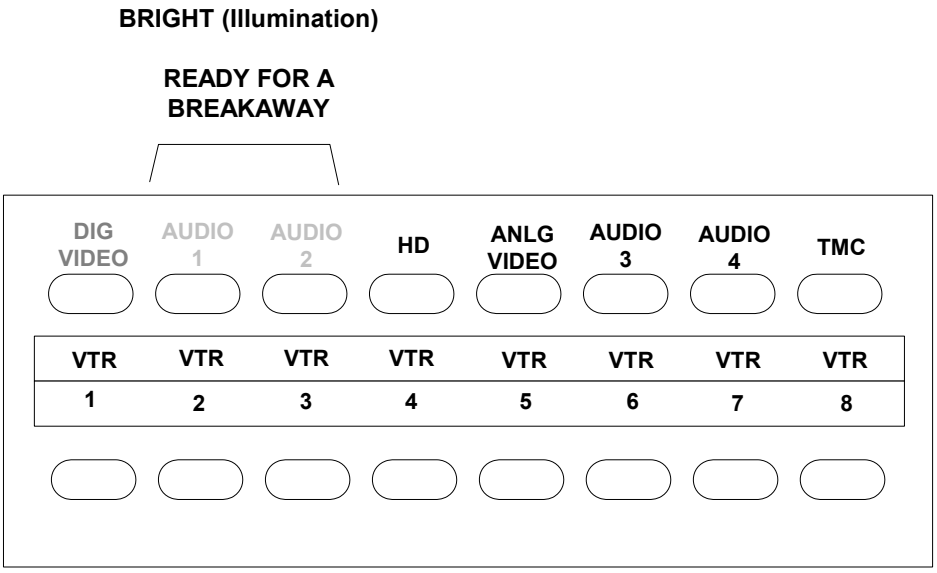


Figure 5-6. Breakaway Memory Functionality

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.

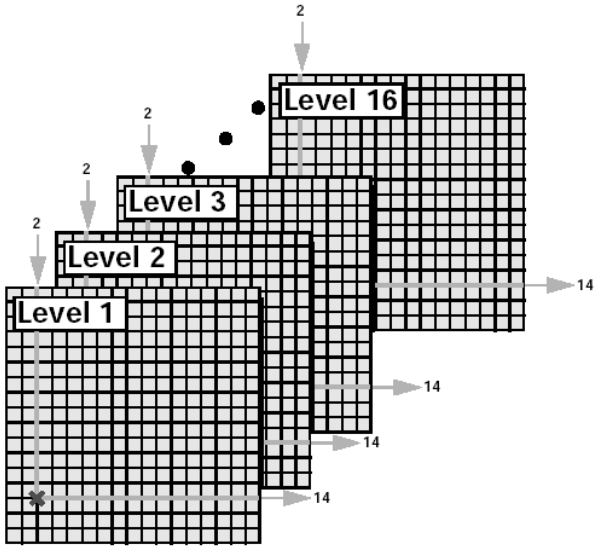


Figure 5-7. Mode 1: All-follow

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.

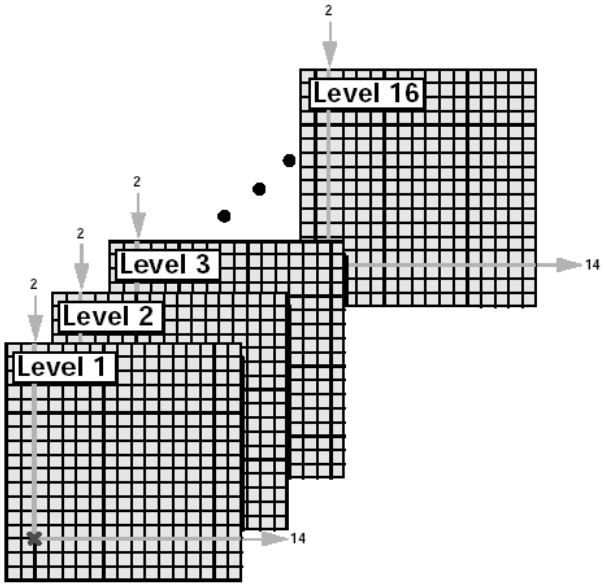


Figure 5-8. Breakaway

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.

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, or, the second button from the left along the bottom row (see figure below). 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.

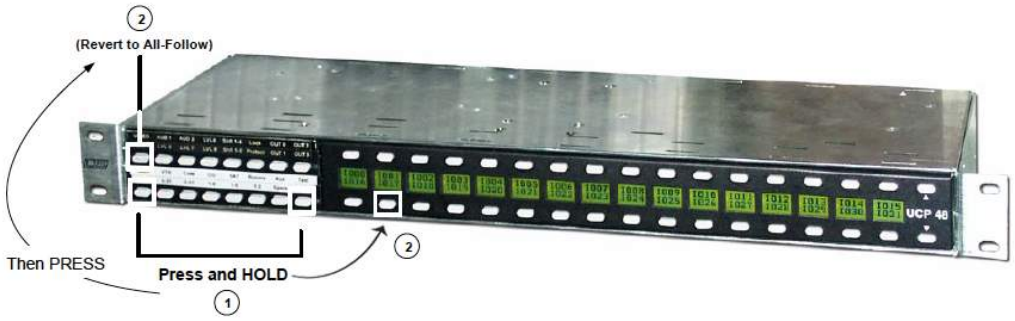


Figure 5-9. 'Revert to All-Follow' button combination

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).

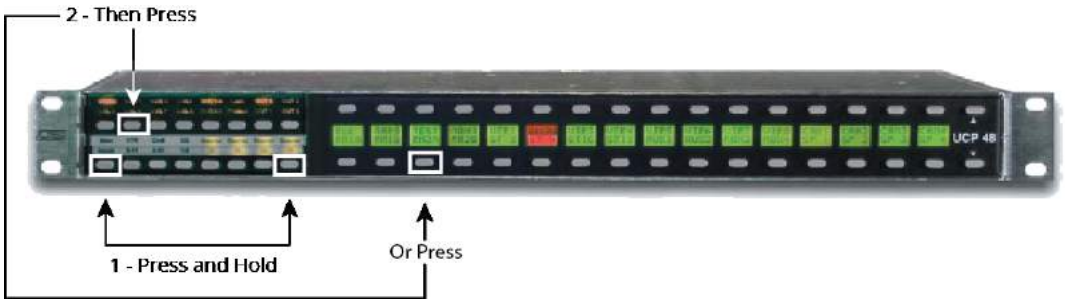


Figure 5-10. Panel Lock button combination

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.

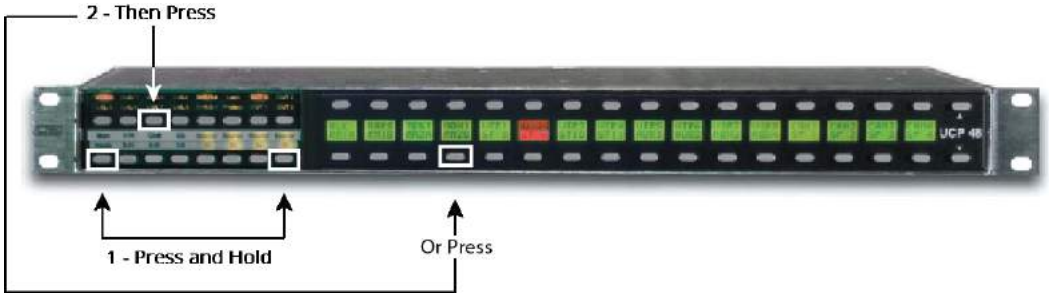


Figure 5-11. CHOP Enable/Disable

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.

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).

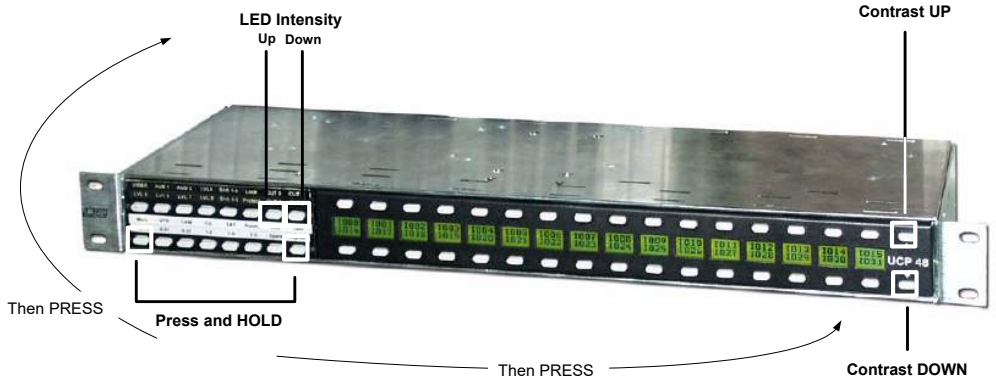


Figure 5-12. LED Intensity and CONTRAST UP and DOWN adjustment

Contrast Adjustment

This allows the LCD screen contrast to be adjusted UP or DOWN. Press and hold the first and eighth buttons, then press either the Page-up or Page-down buttons on the right side of the panel.

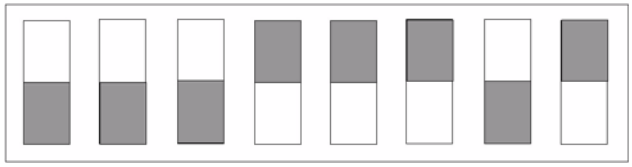
Panel ID

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

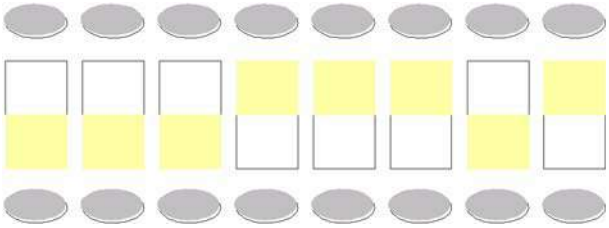
Figure 5-13. Button combo for dip switch setting

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 5-14. 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.

With the panel showing the ID, the small LCD displays indicate the following:

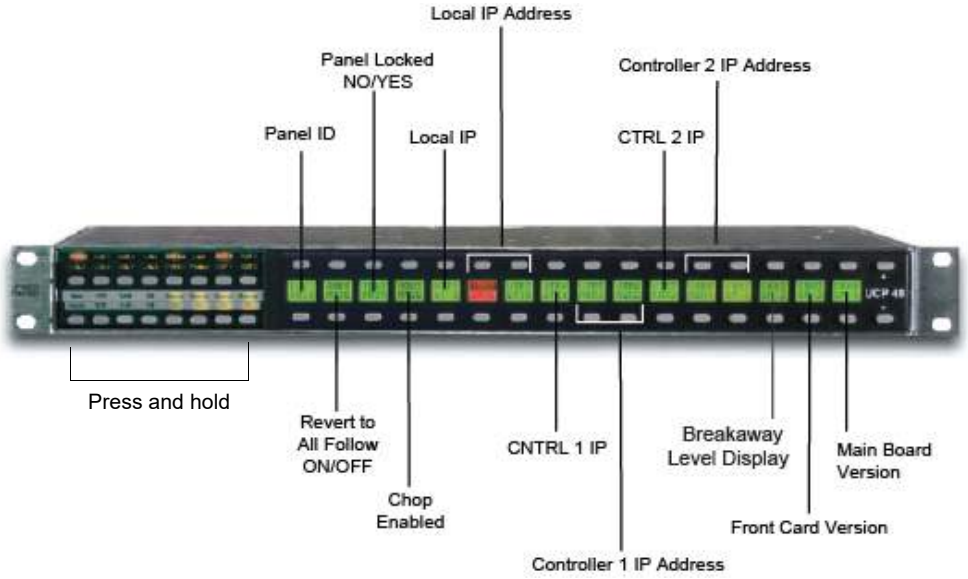


Figure 5-15. LCD Displays

Breakaway Level Display

This is a simple way to disable or enable the panel's level breakaway display feature. When a second source it taken and causes a breakaway condition from the first source's encoding (e.g. an audio only source is taken after a video and audio source is selected), the display shows the first source in Orange, and the second source in reverse text.

Figure 5-16. Breakaway Level Enable/Disable

Press and hold the two buttons (shown at left), then press the single button on the right. This will toggle the option ON and OFF.

Heave this text?

This display will toggle between BWLV ON and BWLV OFF each time the button is pressed.

LED Legend Labels

The UCP-48 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.

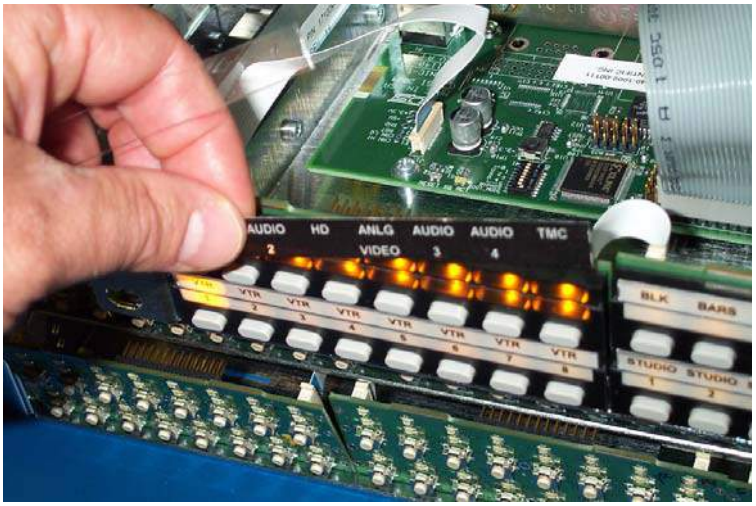


Figure 5-17. LED Legend Insert

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.utahscientific.com).

UCP48 *Relegendable* Design

The UCP48 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.)

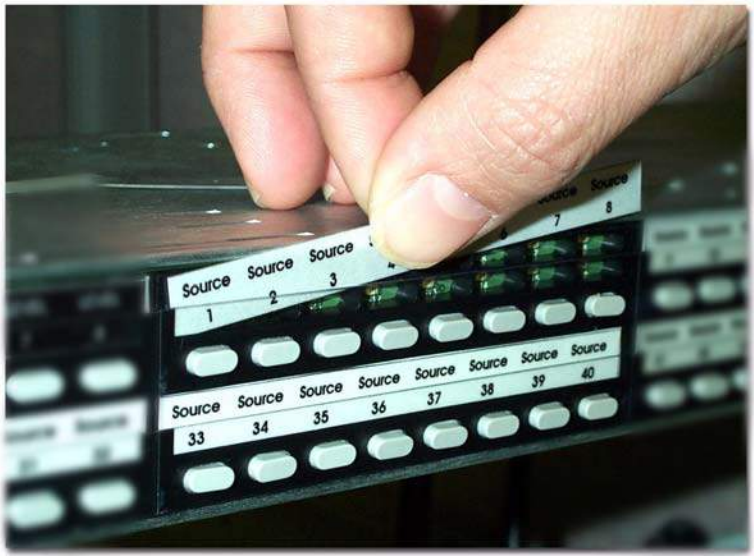


Figure 5-18. Frequent Label Replacement

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.

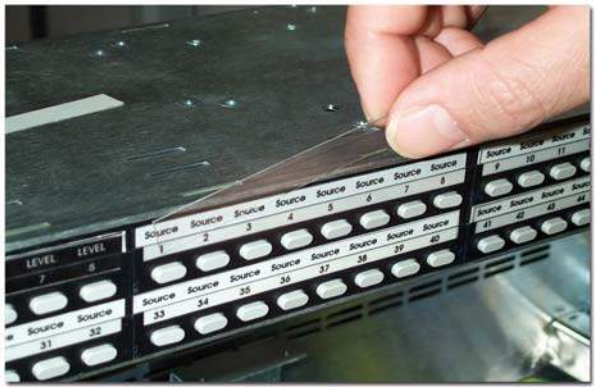


Figure 5-19. Occasional Label Replacement

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.)

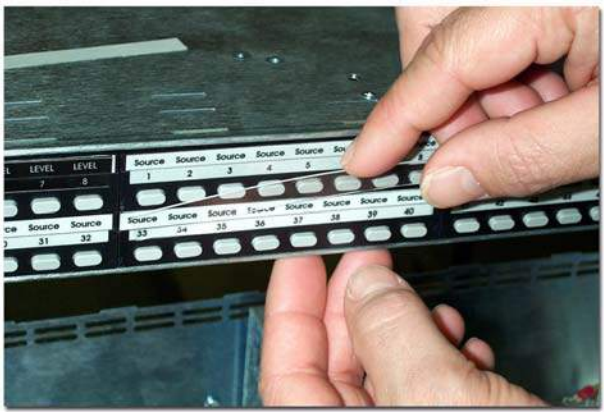


Figure 5-20. Rare Legend Replacement

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 5-21. Gaffer tape application

General Panel Notes

Note the following important points regarding the UCP 48/8 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 48/8 (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 48/8, 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-UMD Operations

In This Chapter

This brief chapter provides setup and operating instructions for the UCP-UMD (Under Monitor Display). The following topics are discussed:

About the UCP-UMD

The UCP-UMD panel is an under monitor display that helps the operator identify the sources or destinations that are switched directly to a monitor. The UMD panels can be configured as dynamic, static, or both. As a static panel it can display up to 20 characters of information for monitor labeling. The UCP-UMD panel is flexible enough to support several types of configurations eliminating the need for different variations of the product. (e.g., Dynamic, Static, 1-3 outputs, 1-3 messages, and flexible tally assignments.) Because the UCP-UMD can be configured or reconfigured at any time, it can be placed anywhere in the facility and set to match its supporting equipment.

There are three tally inputs located at the rear of the panel, each input can be assigned to a type of tally indications. The methods of tally indications are as follows:

1. Change to the character colors
2. Change to a tally message
3. Illuminate the bar above the characters
4. Any combination of the previous

UCP-UMD Panel Software Level

The current version of this panel provides two locations for source status (two outputs), two static messages, or the combination of both.

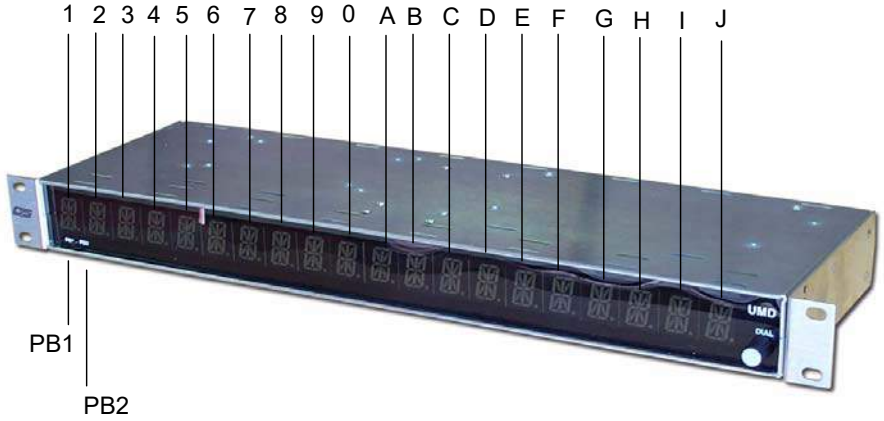


Figure 6-1. Panel Front

- 1-J are the alphanumeric displays. (2-0=1st message, B-I=2nd message)

- PB1-2 are push buttons for static panel configuration and panel ID assignment
- DIAL is for static panel configuration

Note: The current version of panel software does not support the static panel configurations from the front panel.

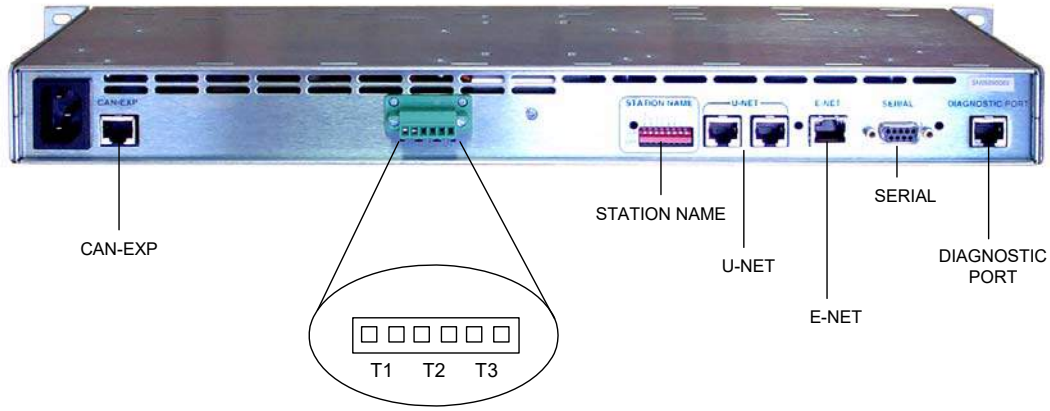


Figure 6-2. Panel Rear

- Tally T1-3 are the tally inputs. Shorting/Connecting the two (T1-3) pins will cause the corresponding tally indication to occur.
- Tally input terminal block should be wired to the tally device or equipment. The tally-triggering device should provide a relay closure.

Note: The current version of the software supports the following configuration for the 3 tallys.

- T-1 - This turns on the LED bar for LEDs numbered 1 through 0.
- T-2 - This turns on the LEDs above the buttons numbered A through J.
- T-3 - Turns on all the LEDs across the panel and makes them flash (1 through J).

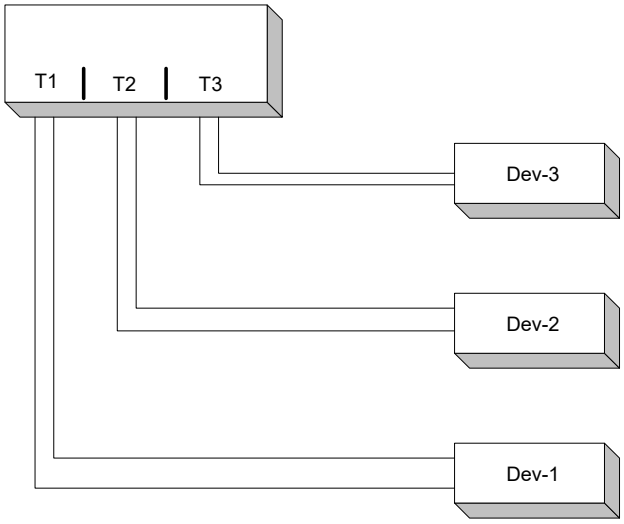


Figure 6-3. Tally Wiring

UCP-UMD Configuration

Refer to the U-CON or RMS manuals for the UCP-UMD configuration details.

Section 7

UCP-DT Operations

In This Chapter

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

Basic Operation - *Overview*

The UCP-DT panel operates in two basic modes: **Destination Select** (using Levels), or an All Button Per **Source Mode**, accessed by pressing the Mode/Clear key. The Destination Select allows you to simply switch through the actual destinations by pressing their corresponding button within the LCDs. The status present in the second LCD contains pertinent Levels information.

Figure 7-1. UCP-DT Panels

Destination selections are made by tapping the name (within the far left window). The group names will be displayed on the LCD buttons. Once you select a group, the extension will be displayed on the LCDs themselves. After selecting the extension, the flashing name (within the first window) can be tapped, or as an alternate, press the Take button.

You could also make your Destination selection by pressing the Destination button and then selecting a destination by tapping on the screen. Page Up and Down will move you through the pages of destinations.

Breakaway takes are accomplished by making the Levels selection (within the second LCD). This will cause the levels within the display to flash. Then select the Source along the bottom button row.

When the *All Button Per Source* mode is used, the Source Select, switches are made with single button [pushes] on an actual source.

Press the Take button (right side) once a group selection has been made. *The buttons along the bottom row are re-legendable.* Group designations will affect the text contents of the buttons along the bottom row.

The Clear button will reset any switch that is pending.

Holding both the Destination Select and Clear buttons down (left side of panel) will provide panel version information. You can also adjust the LCDs contrast (while the Destination Select and Clear buttons are pressed) by using the two buttons immediately beneath each LCD (toggling back and forth).

In addition to page scrolling up and down, you can jump to the first page by holding down both Page Up and Page Down buttons.

About the UCP-DT

The **UCP-DT** 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 DT panel.

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.

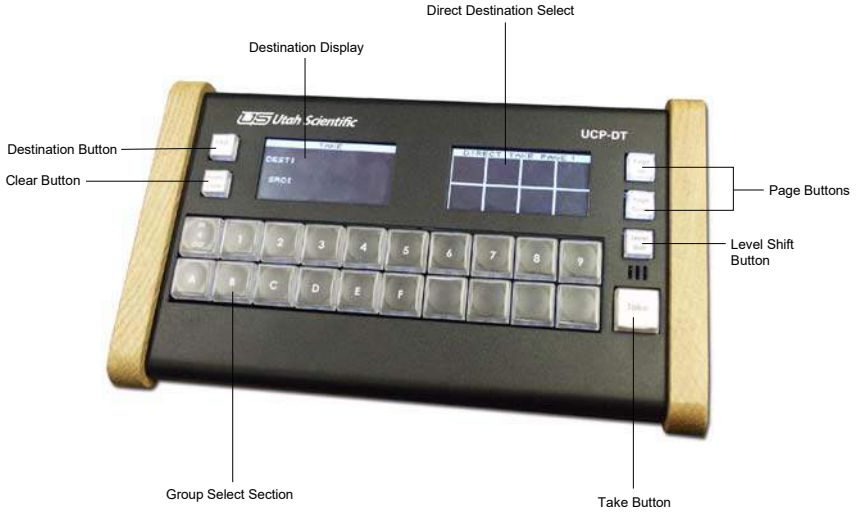


Figure 7-2. UCP-DT Panel Selections

Basic Operation

The UCP-DT operates in two basic modes. Full XY mode or button-per-source mode. In XY mode, the group names and extensions are used to set up a take before the take button is pressed. In button-per-source mode, a single press on a direct take button will send the take.

The panel also contains a mode that allows the user to select a direct destination. Press the “Dest” button, then select a destination by tapping on the screen.

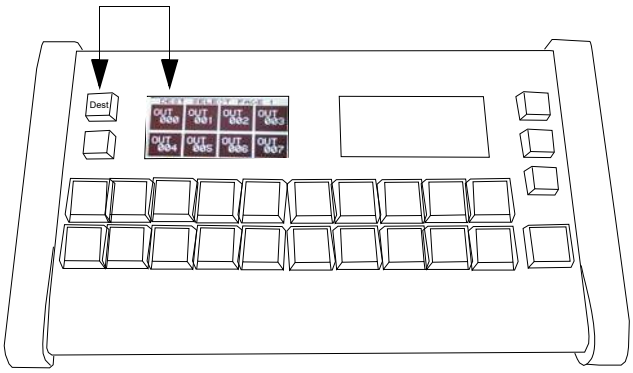


Figure 7-3. Direct Destination select

Destination selections are made by tapping the name (within the far left window). The group names will be displayed on the LCD buttons. Once you select a group, the extension will be displayed on the LCDs themselves. After selecting the extension, the flashing name (within the first window) can be tapped, or as an alternate, press the Take button.

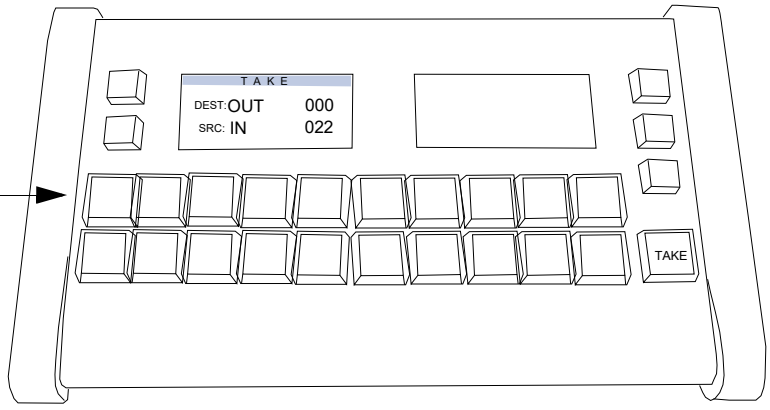


Figure 7-4.

Output pages can be scrolled up or down by pressing the page up/page down buttons on the panel (illustration).

Additional Notes

Once a Destination selection has been made, takes are accomplished by pressing the group/extension button at the bottom of the panel, then the **Take** button (right side). *The buttons along the bottom row are re-legendable.* Group designations will affect the text contents of the buttons along the bottom row.

The **Clear** button will reset any switch that is pending.

Holding both the **Dest** and **Clear** buttons down (left side of panel) will provide panel version information.

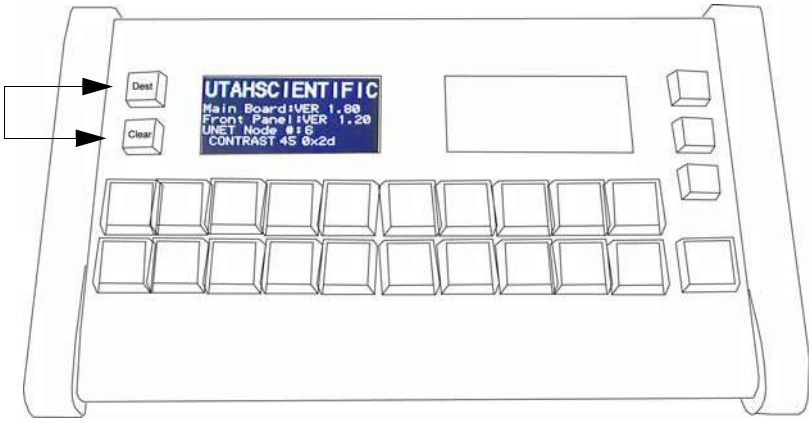


Figure 7-5. Version display

You can also adjust the LCDs contrast (while the **Dest** and **Clear** buttons are pressed) by using the two buttons immediately beneath each LCD (toggling back and forth).

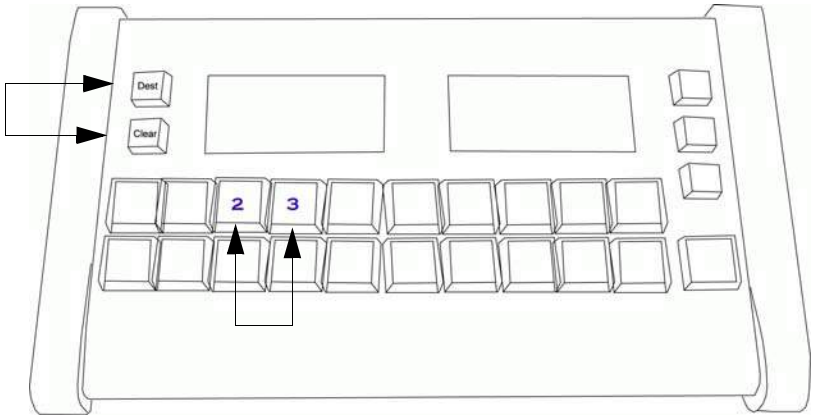


Figure 7-6. Contrast display

In addition to page scrolling up and down, you can jump to the first page by holding down both Page Up and Page Down buttons.

Breakaway Takes

Breakaway takes are accomplished by making the Levels selection (within the second LCD). This will cause the levels within the display to flash. At this point, select the Source along the bottom button row then press Take to complete the action.

System Operation

1) **Destination Display**

The **Destination Display** is an eight character readout that shows the currently selected destination.

The figure below illustrates a typical mnemonic destination display.

Figure 7-7. Mnemonic Destination Display

The display typically shows up to eight characters, signifying a *group name* plus a specific device within that group.

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.

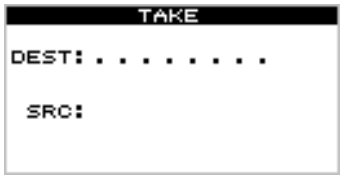


Figure 7-8. Destination “Dots” Display, Awaiting Data Entry

- 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 7-9. Destination “Question Mark” Display, Awaiting Extension

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

2) **Destination Select Button**

Tap the destination on the LCD screen to *begin* or *conclude* the 'destinator' selection. When pressed initially, the display blinks to indicate that the panel is in the "destination select" mode. Please note:

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

3) **Direct Destination Select Section**

Press the "Dest" button and the displays will change to show the direct destination pages. Tap on a destination on one of the screens to select that destination. The panel will then return to its previous mode.

4) **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.

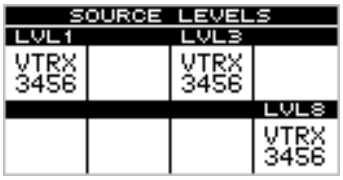


Figure 7-10. Source Display Section

- The eight **Source Level Status Displays** provide status for up to 16 levels. Each display is an eight-character readout that shows the current source associated with that level. The **Level Shift** button switches the eight displays between the two groups of levels (1-8 and 9-16).
- The eight **Level Select** displays indicate which levels are valid for the current destination. The level name is displayed only if the level is valid for the current destination.

- The displays perform the following function:
  - ~ Pressing a valid **Level Select** display allows you to include that level in a breakaway take, and assign a source to that level for routing to the destination.

5) **Direct Source Select**

The panel can be placed into Direct Source selection by pressing the Mode/Clear button.

6) **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 Level Name title 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) **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.

8) **Group Select Section**

The buttons in the **Group Select Section** allow you to select source and destination “group” names (and extensions). The Group Names will change based on the panel’s current selection mode.

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 DT 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).

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, such as an **All-follow** take or a **Breakaway** take.

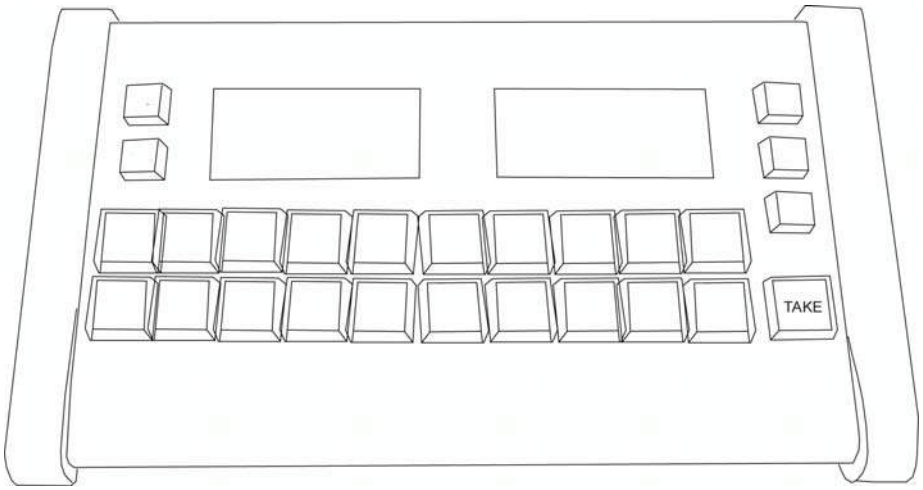


Figure 7-11. Take Button

The button blinks to indicate that a procedure is pending.

10) **Page Buttons**

The page buttons will scroll up and down through the individual pages of destinations or sources, depending on the mode of the panel.

In Direct Source mode, the DTA panel *pages* 16 direct sources at a time.

In Direct Source Mode, the DTB panel *pages* 8 direct sources at a time.

Note: Holding down the page UP and page DOWN buttons (at the same time) sets the page back to page 1. Additionally, the destination and Direct Source pages are configured by U-CON.

Displaying Level Status

When you select a destination for a particular purpose, the 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 7-11 for instructions.
- Ensure that none of the eight **Level Select** displays 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** title segments are displayed, 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 two ways to select destinations on the UCP DT panel:

- Selecting a destination with the **Direct Destination Select** display.
- Selecting a destination in mnemonic mode

Each selection method is described below.

Using the Direct Destination Select Display

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

1. Press the **Destination** button to switch the panel into Direct Destination Select mode.

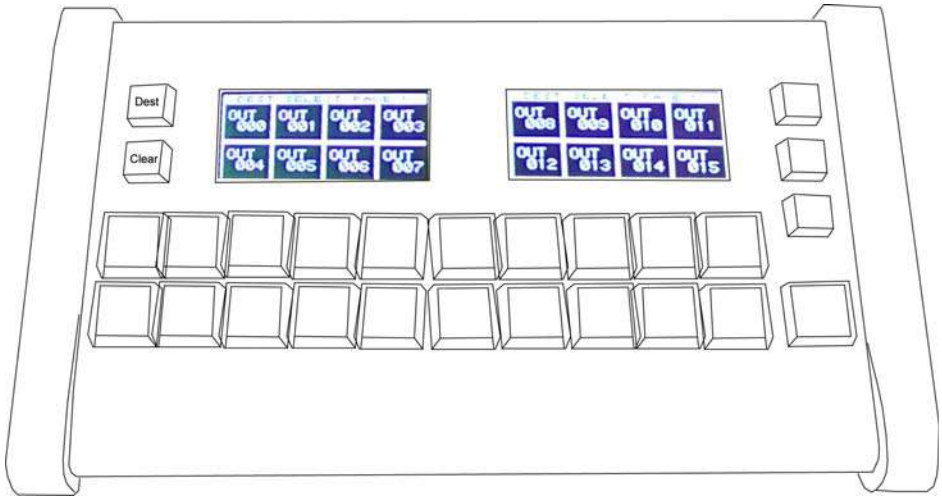


Figure 7-12. Direct Destination Select Section

2. Use the page UP or page DOWN buttons to move to other pages.
3. Tap the destination on the screen to switch the Panel to that destination.

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 U-CON.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Tap the **Destination** on the display. The display 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.

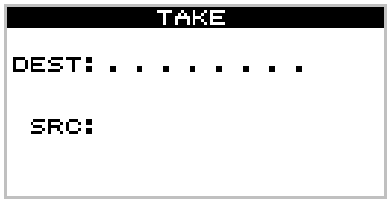


Figure 7-13. Destination “Dots” Display, Awaiting Data Entry

4. 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 7-14. Destination "Question Mark" Display, Awaiting Extension

5. Using the keypad buttons (within the **Group Select Section**), enter the extension of the desired device within the group. 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* (and so on) presses.

6. With a valid destination entered, tap the **Destination** on the display, or press Take. The **Destination Select** display 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 7-13 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** display. This safely cancels the data entry procedure and returns the **Destination Display** back to its previous assignment.
- Press the **Destination Select** display 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 DT panel. There are two 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

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 U-CON.
2. Press the Mode/Clear button to switch the panel into Direct Source mode.
3. Select a Source by tapping the screen, or pressing a relegendable Direct Source button.

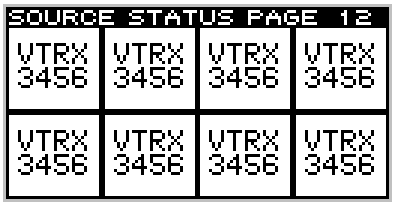


Figure 7-15. Direct Source Select Section

The button lights, or the display reverses to indicate the statused source. 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 Direct Source Select 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 U-CON, and that all panel *group* buttons are properly labeled.
2. Press **Clear** to cancel any pending source or destination procedure.

3. Select a destination — using either the direct or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-11 for instructions.

4. 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.

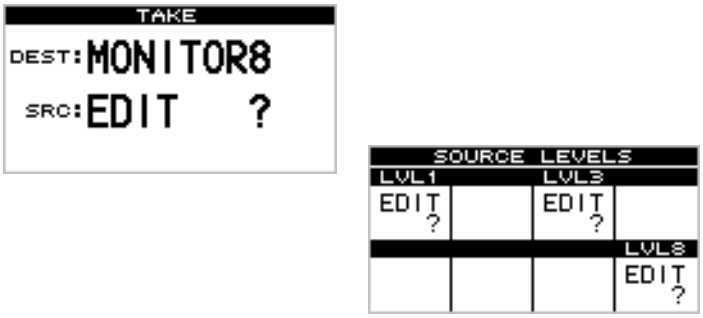
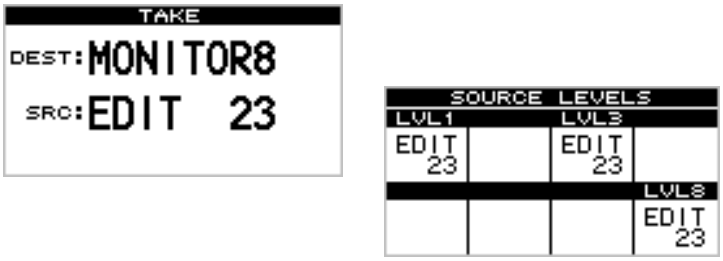


Figure 7-16. Source "Question Mark" Display, Awaiting Extension

5. 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.



6. 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 7-16 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:

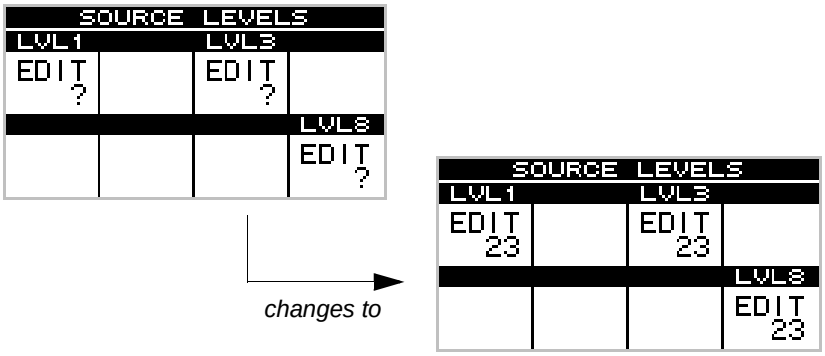
- Breaking away one level from one source
- Breaking away multiple levels from one source
- Breakaway with the Direct Source Select Buttons
- Breaking away multiple levels from different sources
- Breakaway take, starting in all-follow mode

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 U-CON.
2. Press **Clear** to cancel any pending source or destination procedures.
3. Ensure that the panel is in the Destination Select mode. If not, press the HOME button.
4. Select a destination — using either the direct or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display for the *one level* that you want to break away. Use the **Level Shift** display 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 **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.



after an extension is entered

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 7-22 for additional important information.

Breaking Away Multiple Levels From One Source

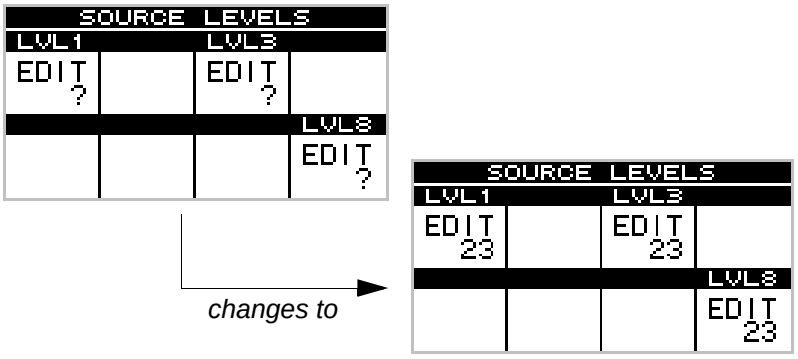
Use the following steps to break away two or more levels from a source.

1. Ensure that the desired destination "groups" are programmed from 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 Destination Select mode. If not, press the HOME button.

4. Select a destination — using either the direct or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display 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** display 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.



after an extension is entered

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 7-22 for additional important information.

Breakaway with the Direct Source Select Buttons

The **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 U-CON, 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 or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-11 for instructions.
4. In the **Source Display Section**, tap the **Level Select** display 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** display 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 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 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 Destination Select mode. If not, press the HOME button.
4. Select a destination — using either the direct or mnemonic methods. Refer to the “**Selecting a Destination**” section on page 7-11 for instructions.
5. In the **Source Display Section**, tap the **Level Select** display 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** display blinks, and the “dots” display appears in each **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** display (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** displays 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 7-22 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 U-CON, 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 Destination Select mode.If not, press the HOME button.
4. Select a destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-11 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**, tap the **Level Select** display 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** display 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** displays 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 7-22 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 7-20 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** displays off.

Both methods safely cancel the data entry procedure.

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 7-1. 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 **Destination 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 7-14 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.
- 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.

Page UP and Page DOWN Buttons

The page buttons will perform differently based on the panel's current mode.

Destination Select Mode

- Ensure the panel is in Destination select mode by pressing the DEST button.
- Page UP moves the destination pages to the next set of destinations as programmed from U-CON.
- Page DOWN moves the destination pages down the list to the next set of destinations as programmed from U-CON.

Direct Source Select Mode

- Ensure the panel is in Direct Source mode by pressing the Mode/Clear button until the panel changes to the Direct Source Select mode.
- The page UP page DOWN buttons move the direct sources to the next page as programmed from U-CON.

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 DT 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 DT panel itself.

Because the UCP DT is a full XY panel, any of the 20 available destination groups can be assigned to the Monitor Matrix function from U-CON. This is accomplished by typing the keyword "**MMTRX**" into the desired destination group's entry box on the U-CON itself. Once the panel is programmed in this manner, when you switch to the Monitor Matrix destination, the *entire* UCP DT 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 DT 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** displays and **Level Shift** button functions 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 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 U-CON.
- 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 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 U-CON.
4. Press **Clear** to cancel any pending source or destination procedure.
5. Select the Monitor Matrix destination — using either the direct, numeric, or mnemonic methods. Refer to the "**Selecting a Destination**" section on page 7-11 for instructions. The **Destination Display** label reads "**MMTRX**."
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 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.
7. Using the keypad buttons, enter the extension of the desired destination device. Leading zeros do *not* need to be entered.
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** displays 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.
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 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** 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* display again. The display will show “UNLocked”, and button activation is again possible.

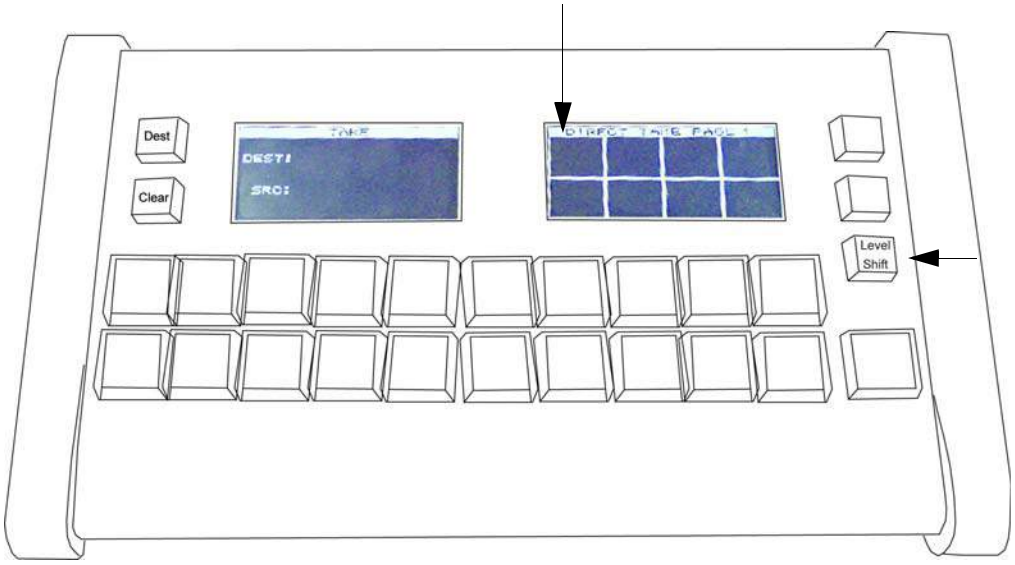


Figure 7-17. Panel Lock combination

Mode/Clear Button

This button toggles the panel between the two different modes. The XY Select mode and the Direct Source Select mode.

Direct Source Select Mode

The panel can display up to 16 direct sources at a time for the UCP-DTA, or 8 direct sources for the UCP-DTB.

Miscellaneous Panel Modes

This section provides instructions for the following miscellaneous panel modes:

- Verifying the Panel Node, Panel ID, and software version
- Changing the LCD Display Contrast
- Changing the Touch Panel - Beep and Click volume

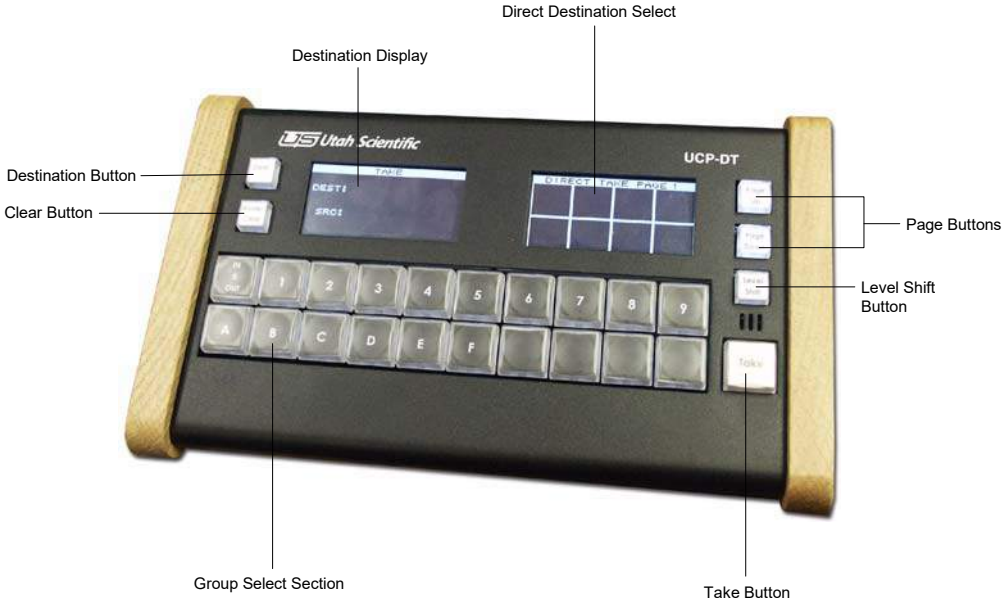


Figure 7-18. UCP-DT basic button configuration

Verifying the Panel Node, Panel ID, and Software Version

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

1. Press and *hold* the **Dest** and **Clear** buttons (previous illustration).

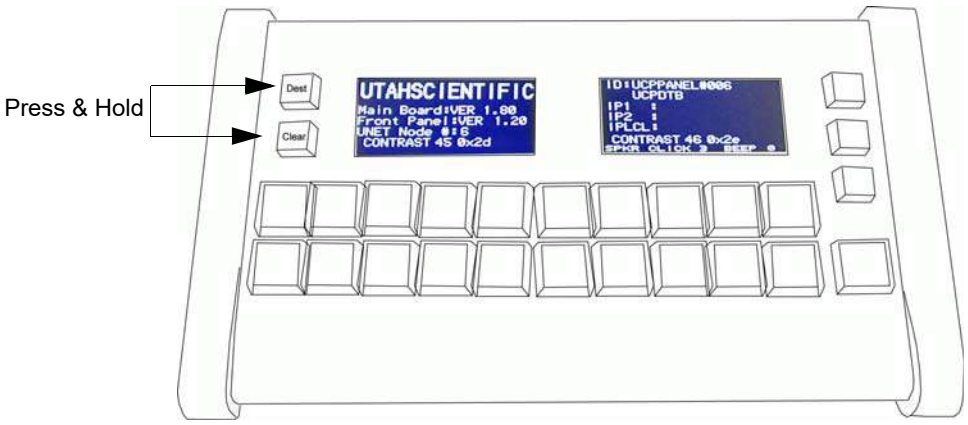


Figure 7-19. Panel Node Address Display

2. Release the **Dest** and **Clear** buttons to complete the procedure.

Changing the LCD Contrast

1. Hold down the DEST and CLEAR buttons.
2. Press the contrast adjustment buttons below each display. One increases the contrast and the other decreases the contrast.

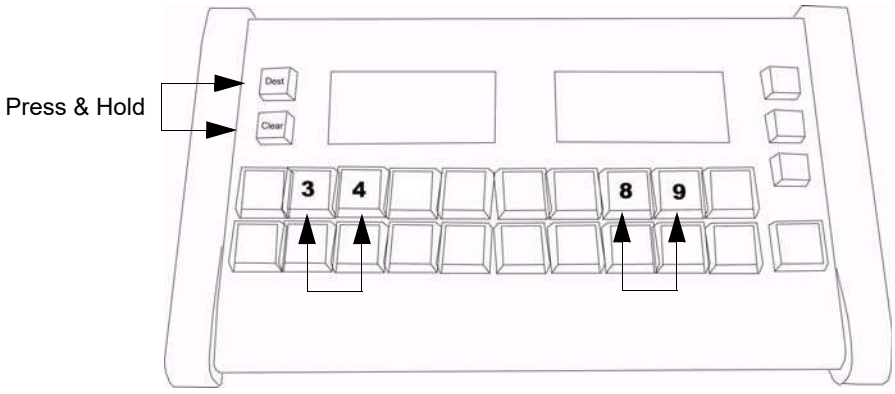


Figure 7-20. Contrast Adjustment - DTB Panel

The UCP-DTA's contrast is adjusted by pressing buttons 2 and 3 while holding down the DEST and CLEAR buttons.

Changing the Touch Panel - Beep and Click Volume

1. Hold down the DEST and CLEAR buttons.
2. For the DTA panel, press button 9 for Click volume, or button 10 for Beep volume.
3. For the DTB panel, press button 11 for Click volume, or button 12 for Beep volume.

Changing the Relegendable Button Contrast for the UCP-DTA

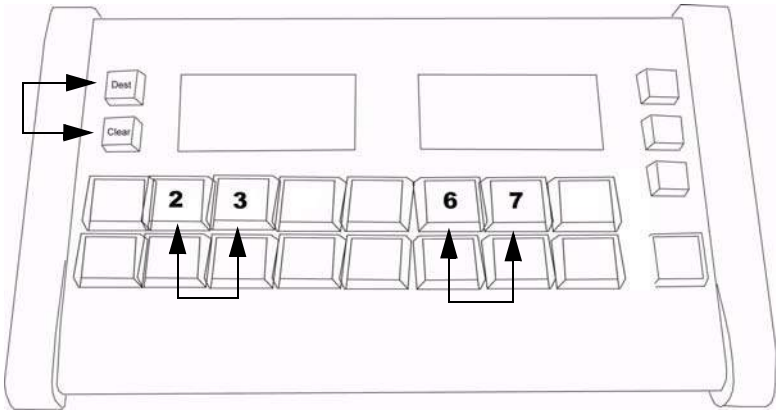


Figure 7-21. Contrast Adjustment - DTA Panel

Press the DEST and CLEAR buttons.

Press Page Up / Page Down (buttons 2 and 3, or 6 and 7) to adjust the contrast on the relegendable buttons.

General Panel Notes

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

- When the UCP-DT panel is being re-programmed from 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 DT (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 DT, 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 MM Specifications

The table below lists specifications for the UCP-MM panels.

Table A-1. UCP-MM 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 1 Specifications

The table below lists specifications for the UCP 1 panel.

Table A-2. UCP 1 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 1 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 48 Specifications

The table below lists specifications for the UCP 48 panel.

Table A-3. UCP 48 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 DT Specifications

The table below lists specifications for the UCP DT panel.

Table A-4. UCP DT Panel Specifications

Parameter	Specification
Dimensions	3.5” (h) x 10.00” (w) x 5.5” (d)
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

Appendix B

The UCP-GPIO Control Panel

Overview

The UCP-GPIO Control Panel is designed to provide a U-Net or Ethernet based interface point for triggering opto-isolated inputs and controlling relay closure outputs. The panel provides sixteen GPIs and sixteen GPOs located on the rear of the 1RU chassis.

The UCP-GPIO is programmable from the U-Con software for mapping the individual contacts to specific source/destination combinations.

The UCP panel in this example is configured in Take Mode. In this mode the panel receives a voltage on one of the GPIs and initiates the Take that corresponds to that Source/Destination combination. The associated GPO will close to *status* the success of the Take made on the indicated Source/Destination combination.

Rear Panel Layout

The rear panel layout has the GPIs 1-16 located on the left and GPOs 1-16 on the right.

FIGURE B-1 Rear panel layout

GPI Triggering

Current flow across the GPI pins will trigger the optos. The recommended voltage to activate the opto is 5-12V. There are no polarity requirements on these pins (the voltage can be positive or negative).

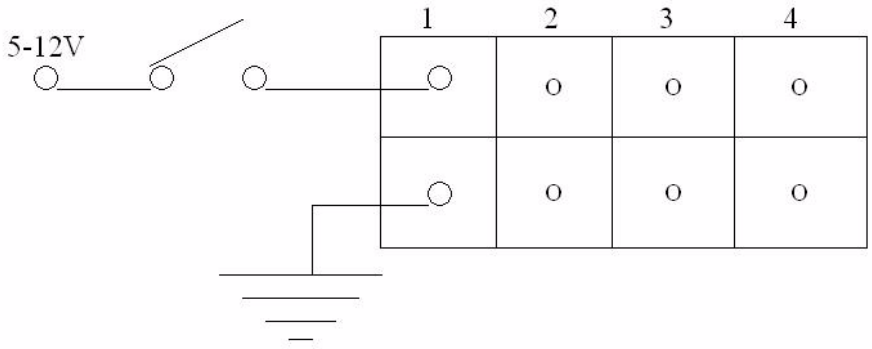


FIGURE B-2 GPI triggering

A source of 5 volts is provided on the rear panel. This voltage can be used as the trigger voltage for one or all of the 16 GPI circuits.

FIGURE B-3 UCP Series rear panel view

Configuration (Using UCON v3.XX)

The UCP-GPIO will currently be configured as a UCP-36 from U-CON. Only the first sixteen button locations will be used for this panel; all other locations should be ignored. The following layout represents the U-CON mapping for the GPIOs one through sixteen.

UCP-36/8

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

FIGURE B-4 configuration

Appendix B

UCP Panel View (GPIO)

For Use Only with UCON v3.XX)

The UCP-36 panel must be properly set up before GPIO operation can take place. Complete the following once the UCP-36 is called up within the U-CON interface:

- Drag Sources from the Button Function List to the first (16) buttons on the control panel. (These are the buttons that are presently green in the illustration.)

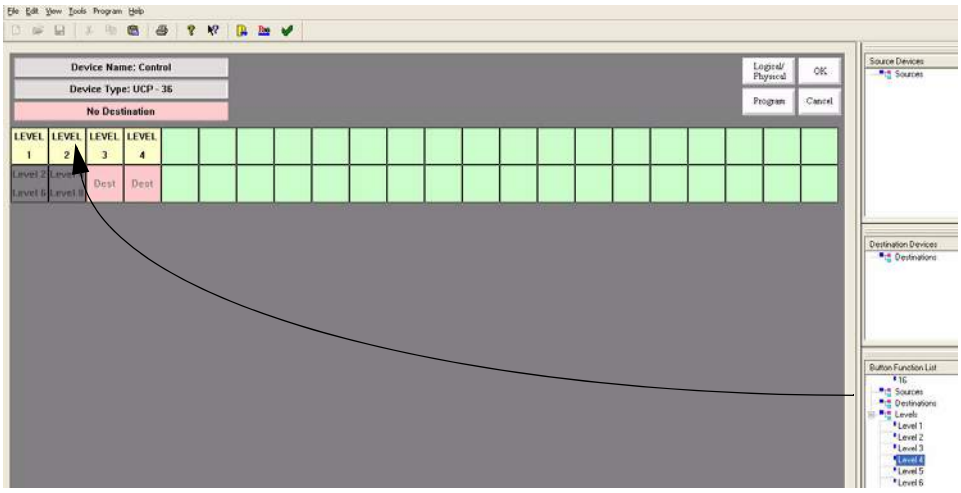


FIGURE B-5 UCP-36 view

- From the 16th button forward, turn each one OFF by dragging ‘Light Off’ from the Button Function List. (You can either drag ‘Light Off’ to each button, or double-click ‘Light Off’ once the first Off designation has been made.)

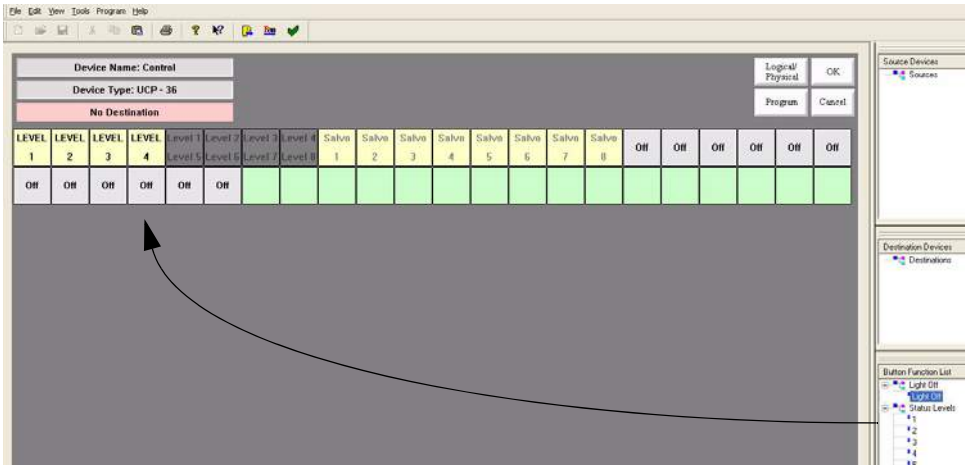


FIGURE B-6 Activating the ‘Light Off’ on each button

- Apply a Destination to this panel by dragging a selection from the ‘Destination Devices’ listing to the light red button located immediately above the UCP-36 layout. This will be the default destination, and will indicate ‘No Destination’ if no designation has been made.

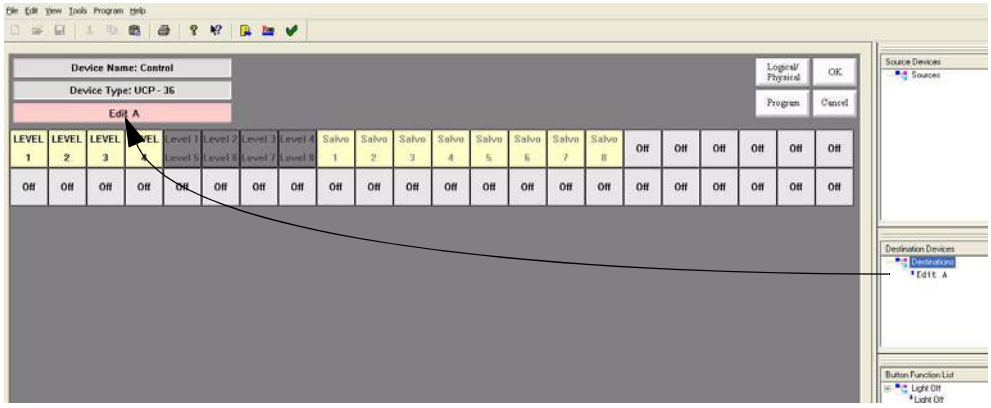


FIGURE B-7 Indicating the Default Destination

Appendix B

Your panel layout should appear as follows once the above changes have been made, and is an example of configuring a UCP-GPIO panel as a UCP-36.

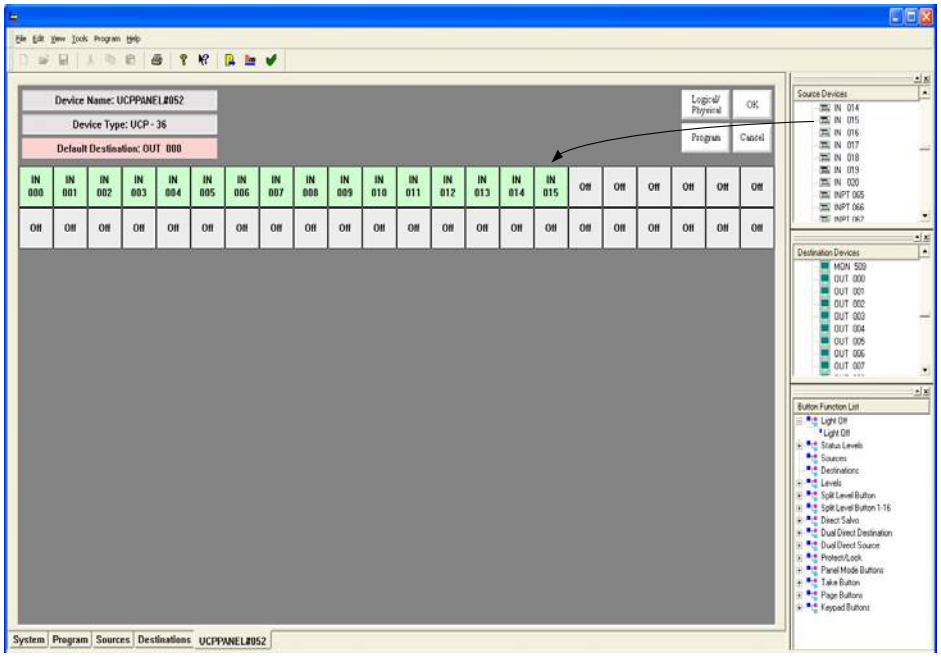


FIGURE B-8 Configured UCP-36 panel (U-CON)

Configuration (Using UCON v4.XX)

The GPIO will be configured as a UCON GPIO panel.

GPIO Panel View (For use only with UCON v4.XX)

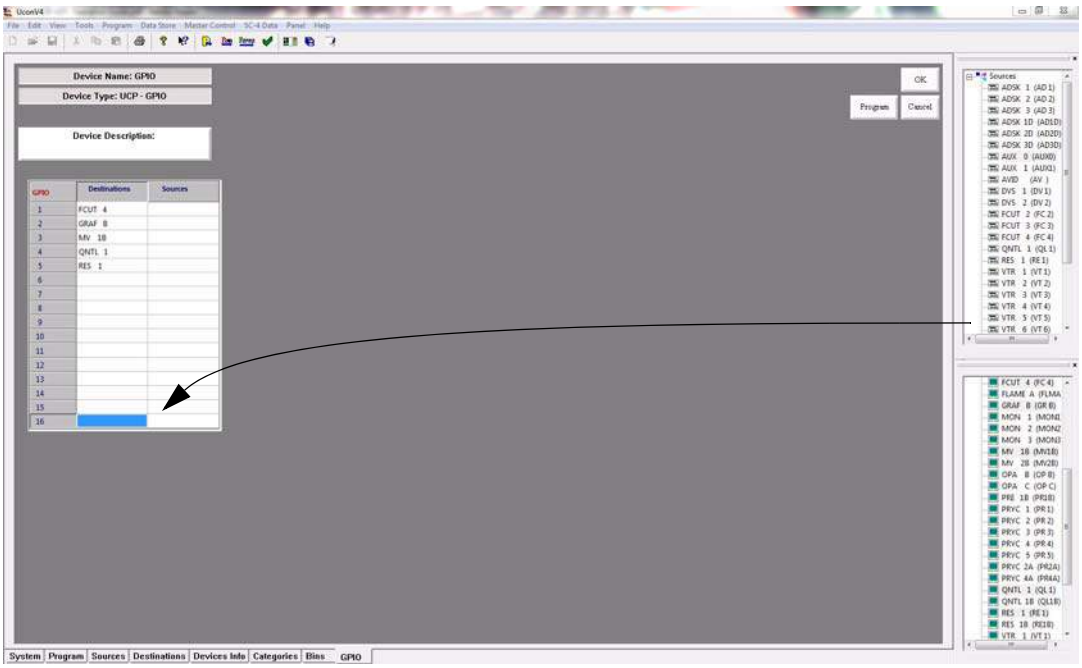


FIGURE B-9

Input Designation

Sources are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the input area.

The GPIO panel must be properly set up before GPIO operation can take place. Complete the following once the GPIO is called up within the UCON interface.

To begin this process, drag the GPIO panel to the system screen when it appears in the lower right “Active Device List.” Then double click to open the panel editor.

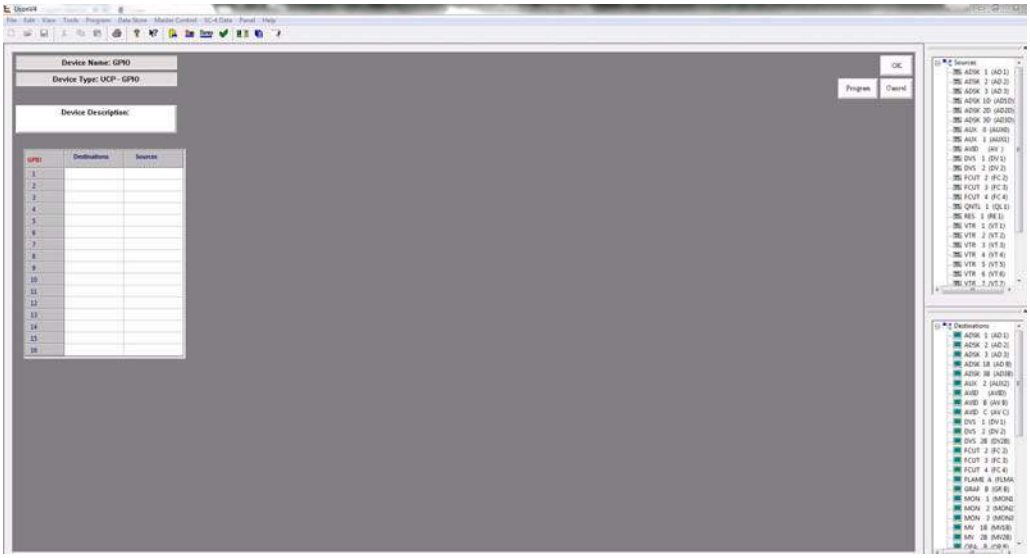


FIGURE B-10

Output Designation

Destinations are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the output area.

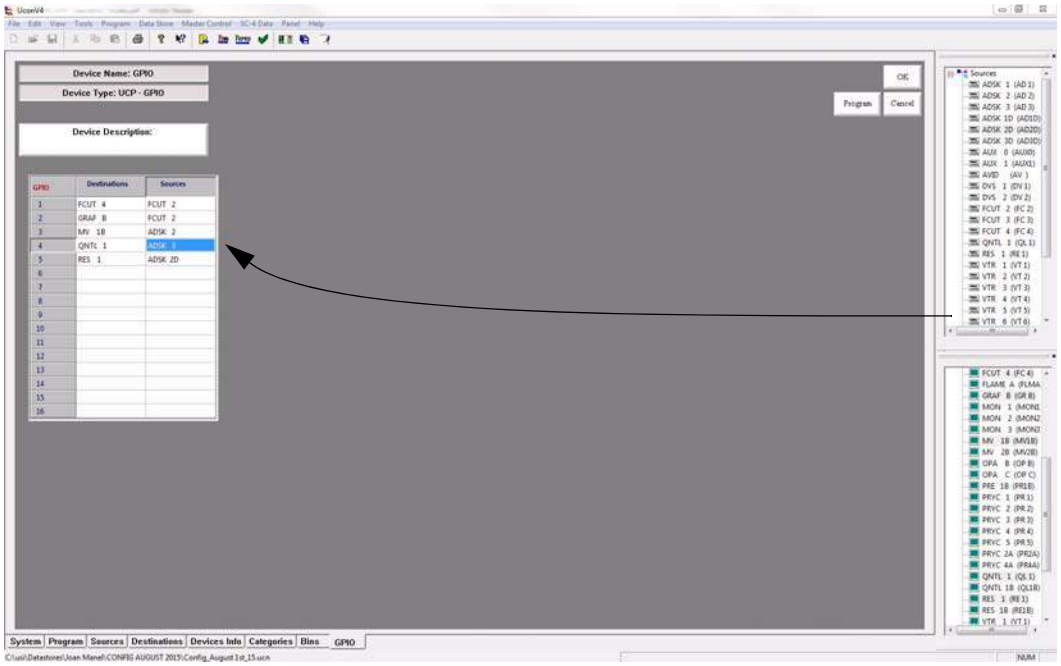


FIGURE B-11

Save and Program

The OK button saves the configuration to a uniquely named file in a specified directory. This is useful if multiple versions of the panel configuration are needed.

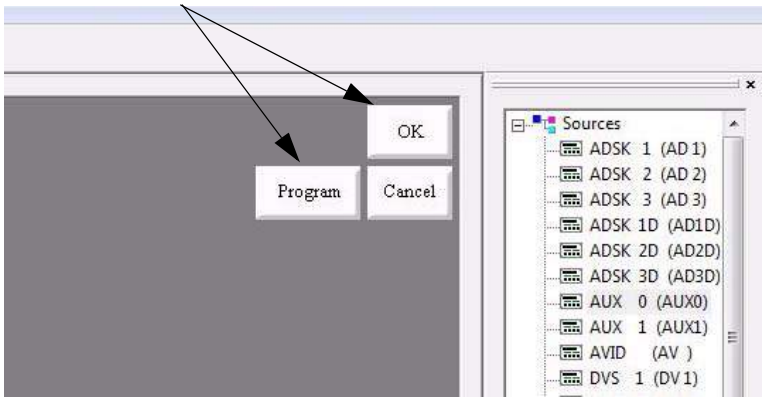


FIGURE B-12

Program commits any modifications to the router.

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.

U

V