Ultricore

RCP-ME User Guide

ROSS

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Our mission is to:

1. Provide a Superior Customer Experience
    *   offer the best product quality and support
2. Make Cool Practical Technology
    *   develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross

David Ross
CEO, Ross Video
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Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

RCP-ME · User Guide

- Ross Part Number: **2201DR-200-06**
- Revision: 2
- Release Date: August 28, 2024.

The information contained in this Guide is subject to change without notice or obligation.

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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed.

Compliance documentation, such as certification or Declaration of Compliance for the product is available upon request by contacting techsupport@rossvideo.com. Please include the product; model number identifiers and serial number and country that compliance information is needed in request.

EMC Notices

United States of America - FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in

a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This Class A device complies with Canadian ICES-003 and part 15 of the FCC Rules.

Cet appariel numerique de la classe "A" est conforme a la norme NMB-003 du Canada.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.*

European Union

This equipment is in compliance with the essential requirements and other relevant provisions established under regulation (EC) No 765/2008 and Decision No 768/2008/EC referred to as the "New Legislative Framework".

Warning — *This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.*

Australia/New Zealand

This equipment is in compliance with the provisions established under the Radiocommunications Act 1992 and Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2008.

Korea

This equipment is in compliance with the provisions established under the Radio Waves Act.

Class A equipment (Broadcasting and communications service for business use).

This device is a business-use (Class A) EMC-compliant device. The seller and user are advised to be aware of this fact. This device is intended for use in areas outside home.

Type of Equipment	User's Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is **Industrial (Class A) electromagnetic wave suitability equipment** and seller or user should take notice of it, and this equipment is to be used in the places except for home.

International

This equipment has been tested under the requirements of CISPR 22:2008 or CISPR 32:2015 and found to comply with the limits for a Class A Digital device.

Notice — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

Warranty and Repair Policy

The product is backed by a comprehensive one-year warranty on all components.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.*

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Extended Warranty

For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information, contact your regional sales manager.

Environmental Information

The equipment may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

This appliance may contain a Coin type battery which should not be treated as household waste.

To ensure that the battery will be treated properly use the appropriate take-back systems in your area. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

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Contents

Introduction

This guide is for installers and operators of the Ross Video RCP-ME. It provides instructions on how to connect the panel to your routing switcher system, how to set up a configuration file for the RCP-ME, and how to operate the RCP-ME. It assumes that you are experienced with general broadcast concepts and that you are familiar with the planning requirements for a routing switcher system.

The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Hardware Overview**" provides a summary of the components on the panel chassis.
- "**Getting Started**" provides an overview for creating a routing system with RCP-ME, and general information to keep in mind before installing and configuring your RCP-ME.
- "**Destination and Sources**" provides instructions for specifying the number of outputs/inputs, configuring labels, assigning sources and destinations to buttons, and making switches.
- "**Breakaways and Levels**" provides instructions for using breakaways and levels.
- "**Menus**" enables you to define and use the panel menus available to assign to buttons.
- "**Functions**" defines what a function is, how to assign a function to the buttons on the hard panel.
- "**Macros**" provides instructions for creating and editing macros, assigning a macro to a button, and using macros via the hard panel.
- "**Salvos**" provides instructions to assigning a salvo to a button and how the RCP-ME uses salvos.
- "**Category Index Mode**"
- "**Protects and Locks**" defines when to use a protect and lock, configuring a Protect or Lock button, how to protect a destination, and how to clear protects held by a remote control panel.
- "**Machine Control**" provides instructions on how to set up machine control on the RCP-ME, assigning a MC Key button, configuring and using a De-assign button.
- "**Linking Remote Control Panels**" outlines how to link multiple remote control panels together so they operate as one larger remote control panel.
- "**Cutbus Mode**" provides instructions on how to create a default switching panel that only affects assigned outputs on a particular router.
- "**Managing Panel Configurations**" teaches you how to create, edit, and save configuration files for your remote control panels, and how to update the button mapping and menus on your hard panel.
- "**Monitoring**" provides information on the display options for the buttons, how to monitor the panel via DashBoard, general tips to troubleshoot common problems, and briefly summarizes the steps required to update the firmware on the hard panel.
- "**DashBoard Interface Overview**" briefly summarizes the RCP-ME tabs, menus, and parameters available in DashBoard.
- "**RCP-ME Hexadecimal to Router Level Conversion**" provides a look-up table when using hexadecimal characters for router levels.
- "**Glossary**" provides definitions of commonly used terms and conventions for this guide.

If you have questions pertaining to the operation of your RCP-ME, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

Related Publications

It is recommended to consult the following Ross documentation before installing and configuring your RCP-ME:

- *Acuity and Auxiliary Control Panels Setup Sheet*, Ross Part Number: 4820DR-677
- *DashBoard User Manual*, Ross Part Number: 8351DR-004
- *NK-IPS User Guide*, Ross Part Number: 9807DR-1020
- *NK-NET User Guide*, Ross Part Number: 2201DR-002
- *NK Series User Guide*, Ross Part Number: 9807DR-0100
- *Ultricore BCS User Guide*, Ross Part Number: 2201DR-106
- *ULTRIX-FR1, ULTRIX-FR2, and ULTRIX-FR5 User Guide*, Ross Part Number: 2101DR-004
- *ULTRIX-FR12 User Guide*, Ross Part Number: 2101DR-604
- *Ultrix and Ultricore Database Guide*, Ross Part Number: 2201DR-109
- *Walkabout Application Note*, Ross Part Number: 2201DR-003

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Edit** dialog, click **Insert Above**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the **Language** box, enter `English.`

Referenced Guides

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the *NK-IPS User Guide*.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads "**File** > **Save As**," you would click the **File** menu and then click **Save As**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

★ Contact your IT department before connecting to your facility network to ensure that there are no conflicts.

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Technical Support**: (+1) 613-652-4886
- **After Hours Emergency**: (+1) 613-349-0006
- **E-mail**: techsupport@rossvideo.com
- **Website**: http://www.rossvideo.com

Hardware Overview

The RCP-ME provides flexible connectivity of additional remote control panels and multi-page menu programming.

Front Panel Overview

This section provides a general overview of the RCP-ME front panel features.
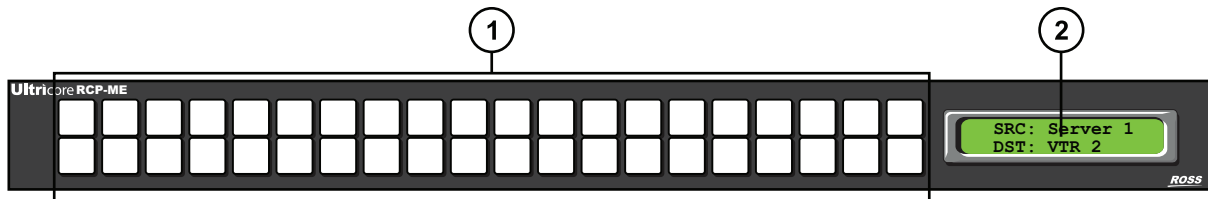
Figure 1 Front Panel of an RCP-ME

1. Source and Destination Buttons

By default, the 20 buttons in the top row of the RCP-ME are assigned as sources and the 20 buttons in the bottom row are assigned as destinations.

2. LCD Screen

The LCD screen shows the current source, destination, and any status indicators.

LCD Screen Overview

For help on adjusting the contrast, refer to "**Adjusting the Contrast for the LCD**".
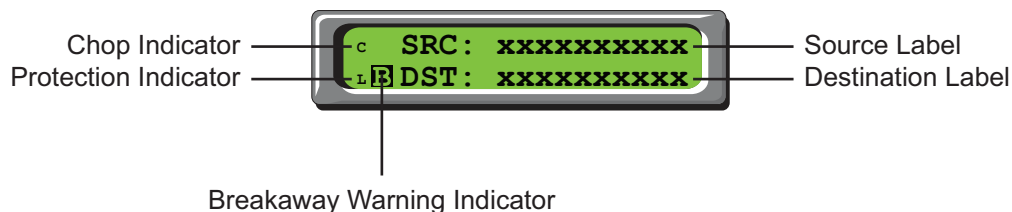
Figure 2 Features of the LCD Screen on the RCP-ME

Default Screen

The default screen shows the currently selected destination and source. If you select another destination, the name of this destination is shown in the bottom line of the screen, the name of the last-selected source for that destination is shown in the top line of the screen, and the corresponding buttons on the RCP-ME are illuminated.

✱ Pressing destination buttons does not cause a routing switcher to switch. A switch is only made when you press a source/crosspoint/macro button then the **TAKE** button if assigned.

Figure 3 Example of a Default Screen

Message Screen

A message screen describes an activity or the status of levels in a breakaway. It returns to the default screen after a brief moment.

```
SDI
00000002
```

```
** MACRO PLAY **
```

Figure 4 Examples of a Message Screen

Error Screen

An error screen appears briefly when the routing switcher sends a response back to the RCP-ME indicating that it cannot complete the request.

```
*PROT BRKWY ERR*
```

```
     SRC: TAKE ?
**** NO RESP ****
```

Figure 5 Examples of an Error Screen

Rear Panel Overview

Each rear panel provides a power supply connection and an ethernet port.
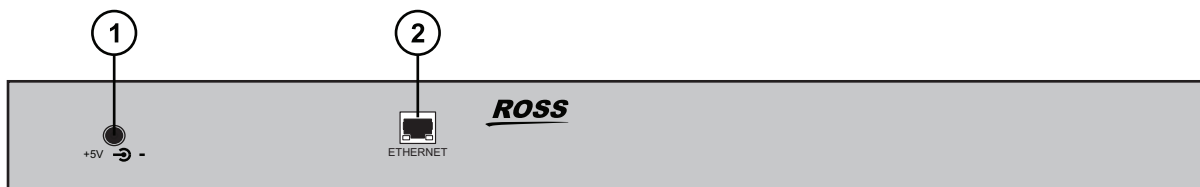
Figure 6 Rear Panel of an RCP-ME

1. PSU Connection

There is one power supply connector located on the rear of each RCP-ME. This connector requires a +5VDC connection to an external power supply.

> **Notice** — *The RCP-ME automatically powers on when power is applied.*

2. Ethernet Port

✶ An Ethernet connection is required for RCP-ME operation.

The Ethernet port is an RJ45 connector used to connect the panel to an external Ethernet network. This port has its RJ45 connector wired as a Network Interface Card (NIC).

> **Notice** — *The Ethernet port does not support Power-over-Ethernet (PoE).*

Physical Dimensions

Table 1 Specifications — Physical Dimensions

Item	RCP-ME
Width	19" (48cm)
Depth	2.0" (4.5cm)
Height	2.0" (4.3cm)
Weight (approx.)	2.2lb (1.0kg)

Getting Started

Thank you for purchasing a Ross Video RCP-ME Remote Control Panel. This remote control panel enables you to control a routing switcher system from one point. With Ross Video's reputation for delivering leading-edge routing switcher equipment and our unsurpassed level of customer service and support, you can look forward to many years of reliable broadcasting. Please read this thoroughly and retain it for future reference.

Features

The RCP-ME is used when you require advanced control functions from a single point. Using DashBoard, you can program up to 250 menus on the same remote control panel. On each menu, the function of particular buttons may change depending on the assignment. These parameters can be saved in a configuration file and sent to an RCP-ME at any time using DashBoard. Therefore, if an RCP-ME is used in a number of different operating scenarios, the configuration can be changed easily and quickly.

The RCP-ME Remote Control Panel provides the following features:

• 40 programmable buttons (sources, destinations, menu navigation, special functions)
• 16 character × 2 line backlit LCD
• operation in XY and cutbus modes
• up to 32 router levels may be controlled
• virtual routing and resource management
• macros
• custom module in DashBoard for easy creation of configuration files
• firmware is fully upgradeable using DashBoard
• custom transparent labels under buttons
• up to 250 pages of programmable menus including navigation buttons
• assignable functions of destination, source, crosspoint, level, breakaway, breakaway step, macro, protect, take, chop, shift, de-assign, machine control, panel lock, menu link, and menu navigation

✱ Salvos require the RCP-ME to be connected to an Ultrix router or Ultricore Central Controller.

Typical System Equipment

Typical equipment that is used in a Ross Video routing switcher system when an RCP-ME is used includes:

• a standard Ethernet 10/100/1000 network with an available range of addresses for fixed IPv4 addressing
• any of the NK Series routing switchers with its appropriate power supply (for more information refer to the documentation provided with your NK Series routing switcher)
• an NK-NET network adapter, NK-IPS, Ultrix router, or Ultricore Central Controller
• a computer running DashBoard, connected via a standard CAT5/5e/6 Ethernet cable to the network
• standard source and destination equipment (for example, cameras, VTRs, servers)

✱ If using an NK-IPS, connecting directly to the NK-IPS is not recommended.

If you are connecting the computer indirectly via an Ethernet switch to the NK-NET, use a standard CAT5/5e/6 Ethernet cable.

System Overview

A routing switcher system may use distributed control across the internet, a LAN, or a VPN. The routing switcher system shown in **Figure 7** has been simplified.
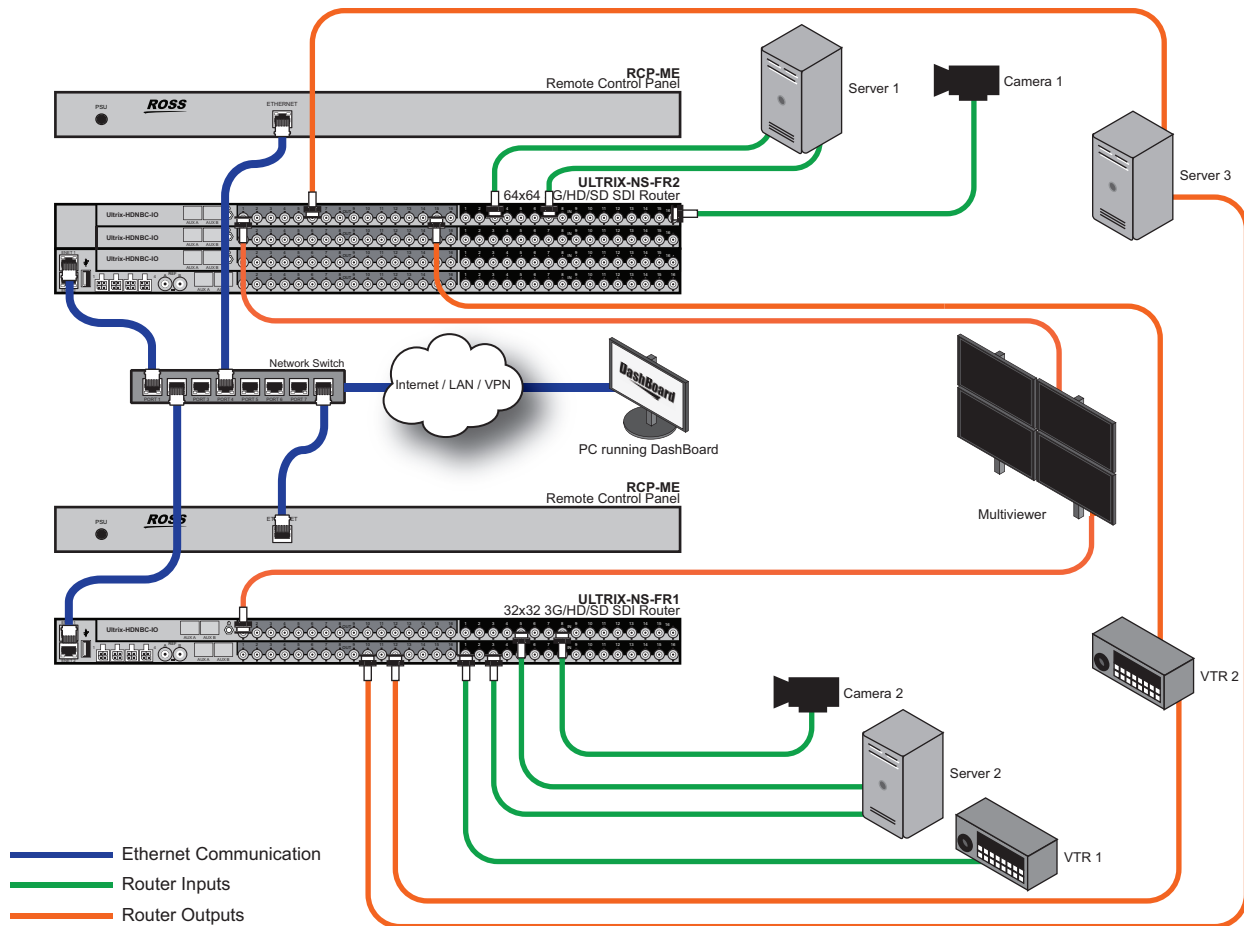
Figure 7 Layout showing a simplified routing switcher system with an RCP-ME

✶ All Ethernet connections use standard CAT5/5e/6 Ethernet cables.

How the RCP-ME and Routing Switchers Communicate

The RCP-ME can operate in two distinct modes; physical and virtual. In physical mode, the RCP-ME sends switch requests directly to the routers (via NK-NET, NK-IPS). The router/s respond via the same method to the RCP-ME and the RCP-ME updates its display according to the result. Physical mode switching restricts SRC button 1 to be physical IN 1 on a router when used with an NK series router.

Virtual mode informs NK-VRC, Ultrix router, or Ultricore Central Controller of the switch request, and they in turn issue physical switch requests to the router(s). Virtual mode switching removes this restriction and NK-VRC, Ultrix routers or Ultricore devices can 'map' this source #1 command to one or more unrelated physical input sockets.

The RCP-ME stores information on the menu, destination, level, breakaway (when used with an NK series router), and machine control status. The router stores the crosspoint status in its internal memory.

When the routing system is powered up, the router restores its crosspoint status. The RCP-ME requests the status of the router. The router sends the status of the crosspoints to the RCP-ME.

Installation and Configuration Overview

The generalized workflow of setting up your RCP-ME is:

1. Implement your routing system plan.
2. Physically install the RCP-ME.

✦ Contact your IT department before connecting to your facility network to ensure that there are no conflicts.

3. Configure the network settings for the RCP-ME.
4. Ensure that DashBoard discovers the RCP-ME on your network.
5. Specify the routing mode (virtual or physical).
6. Configure the button layout for your RCP-ME.

Implementing Your System Plan

An effective routing system takes careful planning. If you intend to use multiple router levels across several input and output devices, it is recommended that you use common input connectors for each source device across the routing switchers and common output connectors for each destination device across the routing switchers. This recommended method is shown in **Figure 8**.
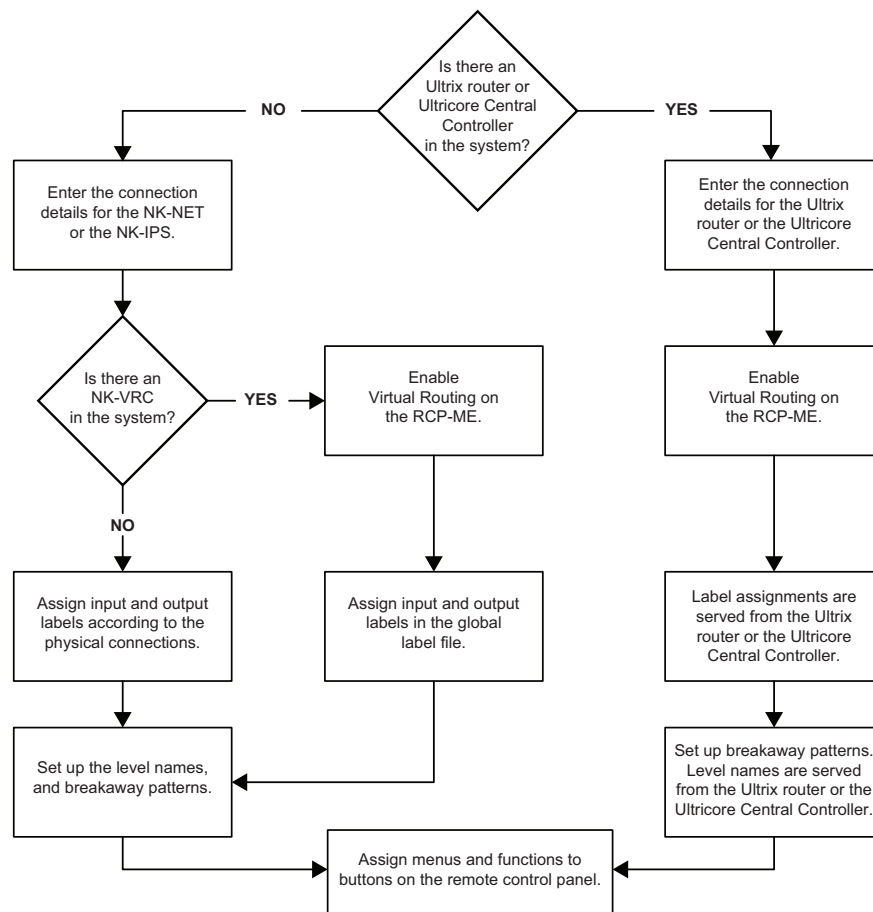
Figure 8 Flow Chart for Setting up the RCP-ME

Physical Installation

✱ We recommend that the equipment is installed to any relevant standards and approvals by qualified and experienced personnel.

Unpacking the Equipment

On receiving your RCP-ME, check the contents against the packing list. Before you start installing the RCP-ME into your system, ensure that all equipment itemized on the packing list is present and that there are no signs of damage.

If anything is missing or damaged, contact your Ross Video office immediately to obtain the correct warranty service procedures. This ensures prompt assistance, minimal turnaround time, and avoids any freight issues.

We recommend that the equipment is installed to any relevant standards and approvals by qualified and experienced personnel.

Before You Begin

These installation guidelines assume the following:

• The relevant NK Series equipment has been installed into a ventilated rack frame. The relative humidity in the environment of the equipment should be < 70% (non-condensing).

• The routing switcher system has been well planned and designed. Consideration must be given to inputs and outputs across multiple router levels and typical operating scenarios for breakaways.

• Where required, correct IP addresses have been assigned to the equipment.

• The routing switchers are connected to physical inputs and outputs and have appropriate power supplies.

Installing the RCP-ME

The RCP-ME uses a TCP network for connection. It connects to any T-BUS routing devices using either the NK-NET or the NK-IPS. The NK-NET receives phantom power from any T-BUS routers to which it is connected. If the device providing power loses power, the NK-NET loses power as well.
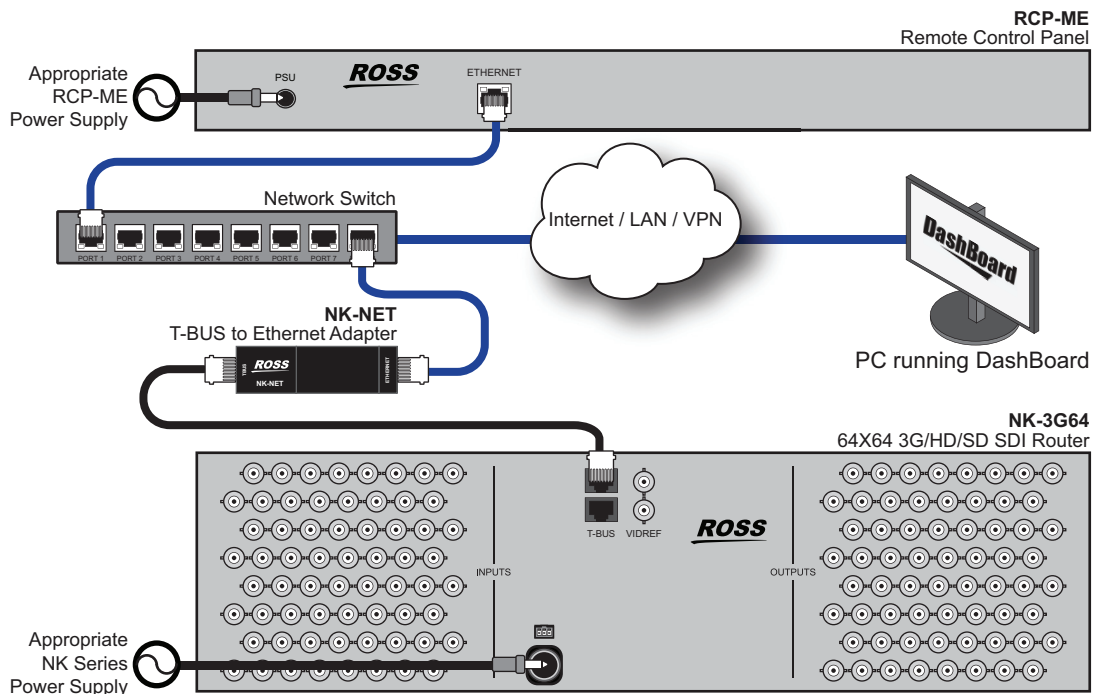
Figure 9 RCP-ME Connected within a Ross NK Routing System

Connecting to a Routing System

✸ The RCP-ME is designed for installation into a standard 19" equipment rack. It has integrated rack ears, allowing it to be screwed in using standard screws and cage nuts.

To connect the remote control panel in the routing system

1. Place the RCP-ME into the rack frame and then fix in place with appropriate fasteners.

2. Connect a standard CAT5/5e/6 Ethernet cable to the **ETHERNET** connector on the rear of the RCP-ME.

3. Connect the other end of the standard CAT5/5e/6 Ethernet cable to the network TCP switch/hub.

Connecting to a Power Source

⚠️ **Warning** — *Ensure that the AC mains supply complies with the PSU specification before making the connection.*

⚠️ **Warning** — *An earthed neutral mains supply and residual current device is recommended for safe operation.*

The RCP-MEis powered using the 5V 2A power supply provided. This power supply connects directly to the AC mains supply.

To connect the remote control panel to a power source

1. Connect the 5V 2A power supply provided to the **POWER** connector on the rear of the RCP-ME.

2. Connect the cable from the power supply to a suitable AC mains supply.

Basic Configuration

Keep the following in mind before proceeding with the basic configuration of your panel:

• The DashBoard client software allows configuration and monitoring of the RCP-ME via a computer connected to the same network as your routing system.

• DashBoard must be run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery.

• You must have an NK-NET, NK-IPS, or Ultricore Central Controller connected to the T-BUS system to connect to NK Series devices.

• The RCP-ME can be added to DashBoard via automatic discovery or manually using the NK-IPS Connection window. Both methods are described below.

• The DashBoard client software can be downloaded from http://www.rossvideo.com/.

Using DashBoard

When the RCP-ME is attached to the network, it is interrogated and its configuration interfaces are made available in the DashBoard window. The RCP-ME interfaces are accessed by expanding the RCP-ME node in the DashBoard Tree View and selecting the appropriate sub-node.

✷ You cannot access the RCP-ME interfaces until the RCP-ME displays in the Tree View in DashBoard.

There are two main RCP-ME interfaces in DashBoard: Connection Editor and the Panel Config. Each interface is represented as a sub-node under the main RCP-ME node.

To launch DashBoard

1. Verify that you have installed the DashBoard client software version 8.2 or higher on a PC connected to the same network as your routing system.

2. Launch DashBoard by double-clicking its icon on your PC desktop.

Accessing the RCP-ME Connection Editor

The RCP-ME Connection Editor takes the panel's configured name and sets the connections to the routing system.

For More Information on...

• the RCP-ME Connection Editor menus, refer to "**RCP-ME Connection Editor Fields**".

To open the RCP-ME Connection Editor

1. Launch DashBoard.

2. Locate the RCP-ME in the Tree View of DashBoard.

3. Expand the RCP-ME node to display a list of sub-nodes in the Tree View.
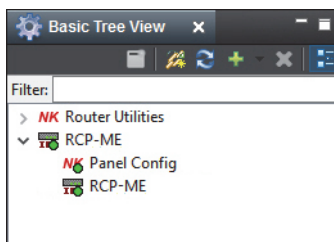
4. Double-click the **Connection** icon (the second sub-node) within the tree.

   The **Connection Editor** opens.
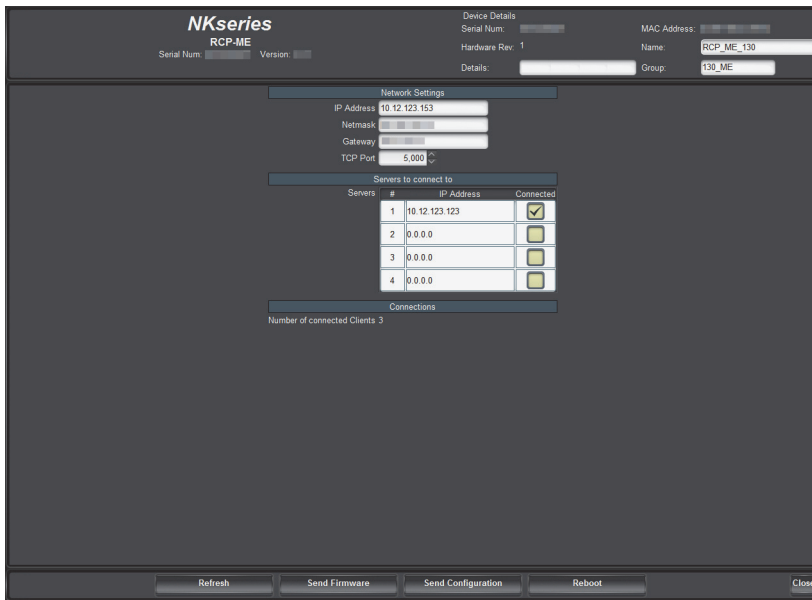
Accessing the RCP-ME Panel Config Interface

The RCP-ME Panel Config interface enables users to configure the panel buttons to suit your requirements.

For More Information on...

• the RCP-ME Panel Config interface menus, refer to "**Panel Config Interface**".

To open the RCP-ME Panel Config interface

1. Launch DashBoard as outlined in the procedure "**To launch DashBoard**".

2. Locate the RCP-ME in the Tree View of DashBoard.

3. Expand the RCP-ME node to display a list of sub-nodes in the Tree View.

4. Double-click the **Panel Config** icon (the first sub-node) within the tree.

   The **Panel Config** interface opens.
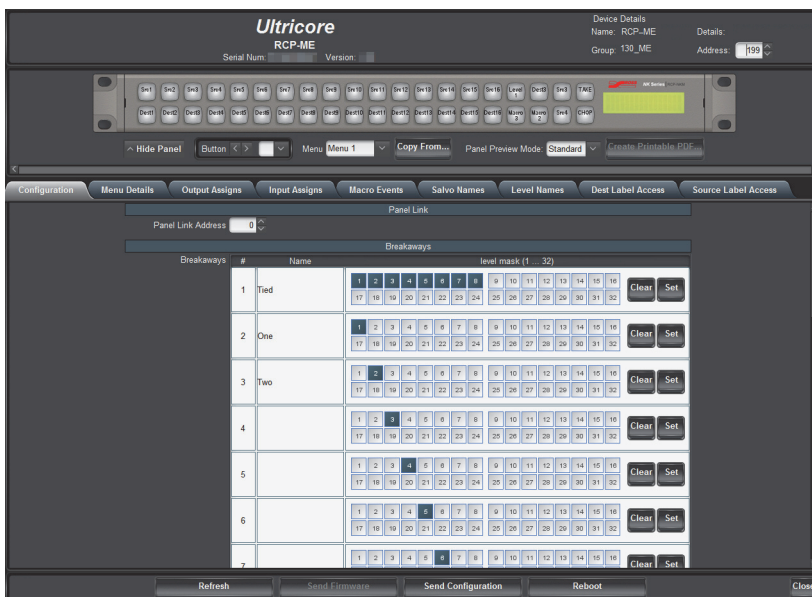
Adding the RCP-ME to the DashBoard Tree View

In order to access the RCP-ME in DashBoard and configure its settings, the RCP-ME needs to be detected and the IP address for the LAN configured for use within a network using Walkabout. Once the network settings are configured in Walkabout, the RCP-ME is visible in DashBoard and you can update the panel device details, button assignments, and a configuration file sent to it.

✶ Ensure that DashBoard has all the latest module updates before proceeding.

For More Information on...

* checking and upgrading firmware, refer to "**Checking the Firmware Version**" and "**Upgrading the Firmware Version**".
* saving parameters to a configuration file, refer to "**Saving the Current Configuration for the RCP-ME**".
* installing and using DashBoard, refer to the ***DashBoard User Manual***.

Adding an RCP-ME to DashBoard via Automatic Discovery

The RCP-ME can be detected in DashBoard using auto discovery via SLP once the IP address for the LAN has been configured for use within a network using Walkabout.

To add an RCP-ME to the Tree View in DashBoard

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File** > **Show Walkabout**.

   The DashBoard window displays the **Walkabout** table.
3. Click **Refresh** to query the network for RCP-ME devices.
4. In the **Walkabout** table, locate the RCP-ME you want to add to DashBoard.
5. Configure the following information if necessary:
   * **Name** – double-click inside the cell to enter a name for the RCP-ME. The default is RCP-ME.
   * **Address** – double-click inside the cell to enter an IP address for the RCP-ME. The default is 192.168.20.130.
   * **Netmask** – double-click inside the cell to enter an IP netmask for the RCP-ME. The default is 255.255.255.0.
   * **Gateway** – double-click inside the cell to enter an IP gateway for the RCP-ME. The default is 192.168.20.1.
6. Refresh the **Basic Tree View**.

   The RCP-ME is added to the devices listed in the **Basic Tree View**.

Manually Adding an RCP-ME to DashBoard

RCP-ME can be added manually to DashBoard by entering its IP address using the NK-IPS Connection window once it has been configured for use within a network using Walkabout.

To manually add an RCP-ME to DashBoard

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File** > **Show Walkabout**.

   The DashBoard window displays the **Walkabout** table.
3. Click **Refresh** to query the network for RCP-ME devices.

4. Locate the RCP-ME you want to add to DashBoard and configure the following information if necessary:

- **Name** – double-click inside the cell to enter a name for the RCP-ME. The default is RCP-ME.
- **Address** – double-click inside the cell to enter an IP address for the RCP-ME. The default is 192.168.20.130.
- **Netmask** – double-click inside the cell to enter an IP netmask for the RCP-ME. The default is 255.255.255.0.
- **Gateway** – double-click inside the cell to enter an IP gateway for the RCP-ME. The default is 192.168.20.1.

5. In **DashBoard**, click **File** > **New** > **NK-IPS Connection**.

The **NK-IPS Connection** window opens.

6. In the **IP Address** box, enter the IP address of the RCP-ME you want to add to DashBoard.

7. Use the **Port** list to select a port number. The default is 5000.

✱ If the port number is changed in Walkabout, the port number in the NK-IPS Connection window must be configured to reflect this change.

8. Click **Finish**.

The **NK-IPS Connection** window closes and the RCP-ME is added to the devices listed in the **Basic Tree View** in the DashBoard window.

Connecting to the Routing System

Once you have established communication between the DashBoard client and the RCP-ME, you will need to connect the panel to the routing system. You can specify multiple devices for the RCP-ME to communicate with, but the panel will only connect to one device at a time (as indicated by the read-only Connected check box beside the IP Address for the device). The RCP-ME will attempt to connect to the first device listed in the table, and move to the next device in the table if communication could not be established.

For More Information on...

- establishing communications with an Acuity production switcher, refer to the ***Acuity and Auxiliary Control Panels Setup Sheet***.

To connect the RCP-ME to the routing system

1. Display the **Connection Editor** as outlined in "**To open the RCP-ME Connection Editor**".

2. Locate the **Servers to Connect to** table.

3. In the first row of the table, use the **IP Address** column to specify the IP Address of the NK-NET, NK-IPS, Ultrix router, or Ultricore Central Controller that the RCP-ME will communicate with.

---

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Changing the Device Details

Once the RCP-ME is added to the Tree View in DashBoard, you can update the panel details, such as the name it displays in the tree view, assign it to a group in your routing system, and provide additional identification details.

To change the details for the RCP-ME

1. Display the **Connection Editor** as outlined in "**To open the RCP-ME Connection Editor**".

2. Locate the **Device Details** area in the top-right corner of the interface.

3. In the **Device Details** area, click inside the field that you want to change.

4. Enter the information as required.

5. Press **Enter**.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✱ You should save the current configuration file regularly.

Default Configuration

Every panel leaves the factory with a default configuration. This default configuration is viewed by opening the editor tab for the device in DashBoard. The parameters for the default configuration are stored within the RCP-ME.

The default configuration may be loaded at any time you wish to return to the factory settings. Refer to "**Resetting Devices**" for more information.

Setting up the Routing Mode

The RCP-ME can be configured for one of two routing modes:

• **Physical mode** — the input (or output) label 1 refers to input socket #1 on the rear of a physical router. Input label #2 refers directly to input socket #2 and so on. The label number or row, maps directly to the input or output physical connection number of a router.

• **Logical (or virtual) routing mode** — the input (or output) label 1 may refer to one or more physical inputs (or outputs). These inputs can be any of the physical router inputs; the label number or row does not relate one-to-one with the physical inputs and outputs of the router. A 'map' in the control system relates a source or destination label with one or more physical inputs or outputs.

An NK series routing system without an NK-VRC can only use physical mode. The switch commands from the RCP-ME are dealt with directly by the NK routers themselves.

An Ultricore Series system or an NK system with NK-VRC uses virtual (logical) routing and 'Virtual Routing' must be enabled for the RCP-ME to function in these setups. The switch command from the RCP-ME is interpreted by the source and destination maps held within the Ultricore control system active database or the NK-VRC device. Once the logical source or destination has been received from the RCP-ME, the control system queries the map to ascertain the physical router

connections involved in the switch command, then forward the physical switch commands to the router/s for execution.

Additionally, resource management may be implemented on the NK-VRC to manage routing of different signal types between one or more routers using external resources. If using resource management, assigning a de-assign to a button will allow the user to park the resource inputs and outputs and de-allocate the resource to be used in other routes.

For More Information on…

• setting up and using an NK-VRC, refer to the ***NK-VRC Virtual Routing Core User Guide***.
• Ultricore databases, refer to the ***Ultrix and Ultricore Database Guide***.

Using Resource Management

If the RCP-ME is installed in an NK series only system (e.g. no Ultricore or Ultrix present), resource management may be configured providing an NK-VRC is configured with the routing system. Resource management allows the routing of different source and destinations via an external resource. The resource may be a signal type conversion or some other processing unit. It may also be a tie-line - a signal cable that connects one part of the routing system to another.

To enable logical (virtual) routing

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Virtual Routing Enabled** check box. (You may need to scroll to the bottom of the tab to view this check box.)

✱ If the RCP-ME detects a connection to an Ultricore Central Controller or an Ultrix router, this option will automatically be selected.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

De-Assigning Resources

De-assigning resources can be done in two ways:

• Route a different source to that destination that does not require a resource. The assigned resource will automatically be de-assigned.
• Use the de-assign button.

To-deassign a resource

1. Select the destination to which the resource is attached.

2. Press **DE-ASIGN**.

   If the selected destination does not include a resource, one of two things will occur:

   • If the panel is in MC mode, park the current destination (switch same source number to destination).
   • If the panel is not in MC mode, it displays the **MC MODE?** message.

✱ The ability of a panel to de-assign a resource using the de-assign button will depend on the priority assigned to the panel and the resource in the NK-VRC virtual routing core.

Resetting Devices

To return the RCP-ME to a known operating state and configuration, perform one of the following:

• send a saved configuration to the RCP-ME (refer to "**Saving the Current Configuration for the RCP-ME**")

• reset the RCP-ME

• reload the factory defaults on the RCP-ME

If the RCP-ME fails to accept any configuration files that are sent to it, then you should reset the device. When you perform a reset, the RCP-ME takes on the last-known operating state and configuration that is stored in memory. If the RCP-ME fails to reset, then reload the factory defaults.

To reset a device

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Click **Reboot**.

To reload a default configuration

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. Select the **Load factory defaults** check box.

4. Click **Send Configuration**.

   The panel will reload factory defaults.

✶ If the RCP-ME is connected to an Ultricore control system, the default labels will be overwritten with the current database. The button assignment will remain as per the default. Refer to the *Ultrix and Ultricore Database Guide* for details on managing your databases.

Destination and Sources

Destination and source buttons map the physical connections on the routing switcher to the RCP-ME. You can provide labels for these physical connections using the Input Assigns and Output Assigns tabs in the Panel Config interface for the RCP-ME.

✱ If the RCP-ME is connected to an Ultrix router or Ultricore Central Controller, the number of inputs and outputs are defined by the Ultrix/Ultricore set up. Changes to Ultrix/Ultricore will overwrite any manual changes made on the remote control panel.

For More Information on...
* the options in the **Output Assigns** and **Input Assigns** tabs, refer to "**Output/Input Assigns Tabs**".

Specifying the Number of Outputs/Inputs

Depending on the size of the routing switchers connected, you may choose to increase or reduce the number of output and input labels to match the size of the routing switcher if virtual routing is not used. The number can be changed in increments of 8.

To change the number of possible inputs and outputs

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Perform one of the following:

    * To change the number of outputs, select the **Output Assigns** tab.
    * To change the number of inputs, select the **Input Assigns** tab.

3. Use the **Number of outputs**/**Number of inputs** box to enter or select the number of outputs/inputs to match the requirements of your routing switcher system.

4. Click **Update**.

5. If you want to transfer this number of outputs/inputs to the other tab, click **Copy to Input Assigns**/**Copy to Output Assigns**. The labels are also copied.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning Output and Input Labels

Source and destination equipment is physically connected to routing switchers. This connection information must be displayed meaningfully on the RCP-ME. This information is set up on the **Input Assigns** and **Output Assigns** tabs.

To assign output and input labels

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Perform one of the following:

    * To change the label for an output, select the **Output Assigns** tab.
    * To change the label for an input, select the **Input Assigns** tab.

3. Click to highlight the text in the **Label** column corresponding to the output/input to which the item of destination/source equipment is connected.

4. Enter the name of the item of destination/source equipment.

---

5. Press **Enter**.

   The name of the item of destination/source equipment appears on the corresponding button on the simulated RCP-ME in DashBoard.

6. Repeat step 1 to 5 until all of the outputs and inputs on the routing switchers have been assigned a label for the connected destination and source equipment.

7. If you want to transfer the labels for the outputs/inputs to the other assigns tab, click **Copy to Input Assigns**/**Copy to Output Assigns**.

   The number of outputs/inputs is also copied.

8. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✶ If there are various router levels using this output or input number, the label may be ambiguous if the destination or source is different for those levels.

   You may rearrange the layout of the labels on the buttons when you assign functions to the buttons (refer to "**Assigning Functions to Buttons on the RCP-ME**").

Assigning a Destination or Source Button

Destination and source buttons map the physical connections on the routing switcher to the RCP-ME. You can provide labels for these physical connections using the **Input Assigns** and **Output Assigns** tabs in the Panel Config interface for the RCP-ME.

Assigning a Destination to a Button

A destination represents the device that receives the physical output from the routing switcher. The destination is selected by pressing the button, but the switch is not made until the required source button is pressed. By default, all 20 buttons in the bottom row of the RCP-ME are assigned as destinations.

If there are no destination buttons assigned to the RCP-ME, it operates according to the Cutbus mode setting (refer to "**Cutbus Mode**").

To assign a destination to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the destination or source.

   The **Button** dialog opens.

3. In the **Button** list, select **Destination**.

4. Use the **Value** list to select the physical output that connects to the item of destination equipment.

   The simulated RCP-ME in DashBoard shows the label for the specified output on the selected button. If you have assigned a name to this output/input using the **Output Assigns** tab, this name appears on the button.

5. Close the **Button** dialog.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✶ You can use the **State** options to assign three physical outputs to the same button: **Default**, **Shift1**, and **Shift2**. When shift buttons are assigned to the RCP-ME, the physical output assigned to that button on that shift page is used for the switch. Refer to "**Assigning a Shift Button**".

If you have virtual routing enabled in the RCP-ME, the output that you enter represents the virtual destination as set up in the NK-VRC Virtual Routing Core or Ultricore control system.

Assigning a Source to a Button

A source represents the device that sends the physical input to the routing switcher. A switch occurs when a source button is pressed and the signal is routed to the currently selected destination.

The function of any source button on a menu is changed when a **TAKE** button is assigned to the menu (refer to "**Assigning a Take Button**").

By default, all 20 buttons in the top row of the RCP-ME are assigned as sources.

To assign a source to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the destination or source.

   The **Button** dialog opens.

3. In the **Button** list, select **Source**.

4. Use the **Value** list to select the physical input that connects to the item of source equipment.

   The simulated RCP-ME in DashBoard shows the label for the specified input on the selected button. If you have assigned a name to this input using the **Input Assigns** tab, this name appears on the button.

5. Close the **Button** dialog.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

   If you have virtual routing enabled in the RCP-ME, the input that you enter represents the virtual destination as set up in the NK-VRC Virtual Routing Core.

Assigning a Crosspoint Button

When you make a switch, you need to select the level(s) that you are switching using a breakaway or level button, the destination, and then the source. This requires three button presses. To reduce this effort and the potential for error, common switch sequences may be set up in a crosspoint.

✸ You should record relevant information for the crosspoint and include this in the label for the button.

To assign a crosspoint to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the crosspoint.

   The **Button** dialog opens.

3. In the **Button** list, select **Crosspoint**.

4. In the **Output** list, select the physical output that connects to the item of destination equipment to which you want to switch.

5. In the **Input** list, select the physical input that connects to the item of source equipment that provides the required signal.

6. In the **Breakaway** list, select the breakaway level that you want to use for the switch.

7. Close the **Button** dialog.

    The simulated RCP-ME in DashBoard shows **X-PNT** on the selected button.

8. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Setting the Retry Time for a Switch Failure

When using an NK series router with an RCP-ME and you make a switch, a switch request is sent from the RCP-ME to the NK-NET (or NK-IPS) and forwarded to the NK routing switcher. If the RCP-ME does not receive a response from the routing switcher, the RCP-ME retries the request after the time specified in the **Comms Retry Delay Factor** field.

Systems require different retry times depending on the transfer of requests and responses between modules.

Table 2 Example Retry Times

System	Retry time (ms)
Dedicated local network with NK-VRC Virtual Routing Core, Ultrix router, or Ultricore BCS	50 or greater
Shared local network (non-dedicated general facility)	100
Remote or VPN connection	250

✱ If switch performance appears slow and the log shows multiple retry and timeout events, you should increase the retry time.

To set the retry time

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, use the **Comms Retry Delay Factor** box to adjust the retry time (in milliseconds) according to the requirements of your routing switcher system (refer to **Table 2**).

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Making a Switch

A switch can be made with or without a **TAKE** button assigned to the menu. If there is no **TAKE** button assigned, a switch is made when the source/crosspoint/macro button is pressed. If a **TAKE** button is assigned to the menu, the switch is made when the **TAKE** button is pressed.

Switching with a Breakaway, Destination, and Source

If you are in Cutbus mode, you cannot select a destination button.

To make a switch

1. Press the button(s) for the level(s) or breakaway that you want to use.

    If you do not select a custom breakaway or level button, the default breakaway is used.

    To de-select a level, press the button again.

✱ You may need to use a **DST SH1** or **DST SH2** button before the destination button.

---

2. Press the destination button that you want to use.

    In the example below, **EDIT 3** is the selected destination.
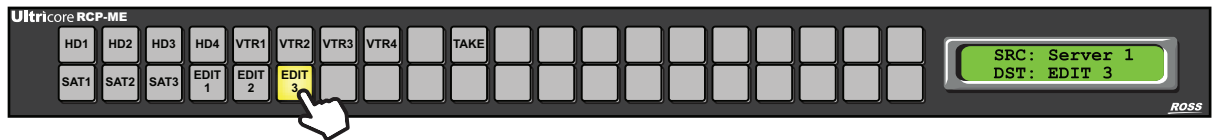
✦ You may need to use a **SRC SH1** or **SRC SH2** button before the source button.

3. Press the source button that you want to use.

    In the example below, **HD1** is the selected source.

    If a **TAKE** button is assigned to the menu, the text on the screen that identifies the source button alternates between **Take ?** and the selected source label. The source button flashes with the **TAKE** button.

4. If a **TAKE** button is assigned to the menu, press **TAKE**.

5. If you want to protect the destination, press the protect button (**PROT**) if it has been assigned (refer to "**Assigning a Protect/Lock Button**").

6. If you have selected the **Breakaway Reset** check box in the configuration file for the RCP-ME, the breakaway returns to the default breakaway after the switch is made.

Switching with a Crosspoint

✦ When you make a crosspoint switch, the corresponding breakaway, destination, and source buttons illuminate.

To make a switch using a predefined crosspoint button

1. Press the crosspoint button.

    If a **TAKE** button is assigned to the menu, the text on the screen that identifies the source button alternates between **Take ?** and the selected source label. The crosspoint button flashes with the **TAKE** button.

2. If a **TAKE** button is assigned to the menu, press **TAKE**.

3. If you want to protect the switch, press the protect button (**PROT**) if it has been assigned (refer to "**Assigning a Protect/Lock Button**").

    If you have selected the **Breakaway Reset** check box in the Configuration tab of the RCP-ME Panel Config interface, the breakaway returns to the default breakaway after the switch is made.

Toggling Between Two Sources

If a chop button has been assigned to the RCP-ME, you can use this button to toggle between two sources.

To toggle between two sources

1. Press the button for the destination on which you want to receive the sources.
2. Press the button for the first source that you want to receive.
3. Press the **TAKE** button, if assigned.
4. Press the button for the second source that you want to receive.
5. Press the **TAKE** button, if assigned.
6. Perform one of the following:

   • Press **CHOP** once to toggle slowly between the two sources (toggle cadence is 1700 ms). The source label on the screen toggles between the two sources. Slow chop is indicated by a lower-case **c**.

   ```
   c   SRC:  Server 1
       DST:  VTR 2
   ```

   ```
   c   SRC:  Camera 1
       DST:  VTR 2
   ```
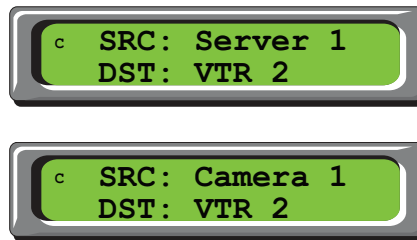
   Figure 10 Toggling between two sources using slow chop

   • Press **CHOP** twice to toggle rapidly between the two sources (toggle cadence is 400 ms). The source label on the screen toggles between the two sources. Fast chop is indicated by an upper-case **C**.

   ```
   C   SRC:  Server 1
       DST:  VTR 2
   ```

   ```
   C   SRC:  Camera 1
       DST:  VTR 2
   ```
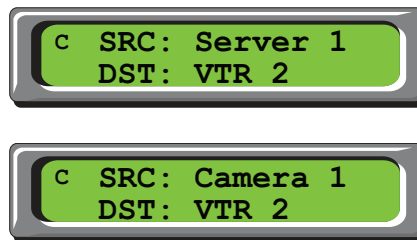
   Figure 11 Toggling between sources using fast chop

7. Do one of the following:

   • If you are in slow chop, press **CHOP** twice to stop toggling between the two sources.
   • If you are in fast chop, press **CHOP** once to stop toggling between the two sources.

   The status of the button returns to **CHOP**.

Breakaways and Levels

This chapter provides instructions for using breakaways and levels.

Overview

Routing systems often compromise many different signal types, and these may be in separate physical units. To control these units collectively or independently, we assign a level so the control system may differentiate between them.

* A level is a single level (or layer) often comprising of a single signal type
* A breakaway (or level mask) is a group of individual levels tied together to respond to a switch command

What is a Breakaway?

Breakaways are groups of levels. Traditionally the default breakaway is the all levels (or TIED). The default RCP-ME TIED breakaway is the first eight levels (this may be edited). The first eight router levels are switched together when requested from the RCP-ME. If your routing switcher system does not use all of the router levels, you should remove the unused levels from the default breakaway. For more information on breakaways, refer to "**Setting Up Breakaways**".

What is a Level?

A specific router level assigned to a button. Pressing a level button selects that router level. Multiple levels can be selected. If a switch is made while a level button is pressed, the switch is made on that router level only.

Setting Up Breakaways

A breakaway selects a group of levels to be switched. The default breakaway for the RCP-ME is the first eight router levels switching together (they are tied). If your routing switcher system does not use all of the predefined router levels (refer to **Table 3**), you should disable those levels that are not used in order to prevent a breakaway warning. If you only want to switch certain router levels, set up a custom breakaway for these levels and then assign this to a button on the RCP-ME (refer to "**To assign a breakaway to a button**"). If you select a breakaway that includes a level for which there is no routing switcher assigned, a breakaway warning is indicated by an inverse 'B' on the second line of the LCD screen on the panel.

To set up the breakaways

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

✱ If the RCP-ME is connected to an Ultrix router or Ultricore Central Controller, the level numbers for setting breakaway pattern correspond to the **ID** column within the Ultricore **Levels** tab.

2. Select the **Configuration** tab.

3. In the **Tied** level mask of the **Breakaways** section, de-select the router levels that are not used in your routing switcher system by clicking on the numbered squares. A selected router level is indicated by a blue square.

   For example, if router levels 2 and 3 are the only levels used, you should de-select levels 1, 4, 5, 6, 7, and 8 in the **Level Mask** column corresponding to **Tied**.

   The **Tied** breakaway is the default. It is breakaway **# 1** in the table.

4. Double-click inside the **Name** column in the breakaway (**# 2**) below **Tied**.

5. Enter a name for the router level that corresponds to the first custom breakaway that you want to define.

   For example, enter `SDI`.

6. Select the corresponding router level(s) in the **Level Mask** column (refer to **Table 3**), and de-select any router levels that are not used.

7. Define the next custom breakaway in the **Name** column below the breakaways that you have defined previously.

8. Repeat steps 3 to 7 until you have defined all the custom breakaways that you want to use.

9. Clear the remaining level masks from unused breakaways in the **Breakaways** table.

10. In the **Configuration** section, use the **Breakaway Warning Mode** list to select the breakaway with which you want to compare the status of the router levels in the current breakaway.

11. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✱ If you click and drag across the level mask, you can rapidly select or de-select router levels.

   The breakaway defined in the first row of the **Breakaway** table is the default breakaway.

   You can combine more than one router level in the same breakaway. Give the breakaway a meaningful name that covers the router levels that you want to use. Limit the name to 8 characters.

   A breakaway warning is caused when there is no response from the routing switcher system on one or more router levels, or a difference in status of any level in the currently selected breakaway when compared with the first level in the breakaway

   The default breakaway and any custom breakaways can now be assigned to buttons on the RCP-ME

For More Information on...

• assigning breakaways to buttons, refer to "**To assign a breakaway to a button**".

Automatically Resetting a Custom Breakaway to the Default Breakaway After a Switch

The default breakaway is defined in the first row of the **Breakaways** table in the **Breakaways** section. Typically, this breakaway is tied and it switches all router levels together. If you want only certain router levels to switch as defined in a custom breakaway, select that breakaway on the RCP-ME and then make the switch. The RCP-ME continues to use that breakaway (as indicated by the button being illuminated) for all further switches until another custom breakaway or the default breakaway is selected. If you want the RCP-ME to reset to the default breakaway immediately after a custom breakaway is used during a switch, then you should set the RCP-ME to reset the breakaway.

To automatically enable the resetting of the breakaway to the default breakaway after a switch

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Breakaway Reset** check box.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Breakaway Button

When you make a switch, you need to select the level(s) that you are switching using a breakaway. The breakaways should be set up before they are assigned to a button.

To assign a breakaway to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the breakaway.

   The **Button** configuration box opens.

3. In the **Button** list, select **Breakaway**.

4. In the **Value** list, select the breakaway that you want to assign to this button.

5. Close the **Button** configuration box.

   The simulated RCP-ME in DashBoard shows the name of the breakaway on the selected button. For example, **Tied**.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Breakaway Step Button

An RCP-ME may have several breakaways defined. If you want to cycle through the breakaways that have a non-zero level mask, a breakaway step button needs to be assigned to the RCP-ME. The button for the breakaway illuminates as it is selected. If you hold the breakaway step button for each breakaway, the levels defined in that breakaway are represented by eight hexadecimal characters on the screen. For help with reading the levels from the hexadecimal characters refer to **Table 22**.

To assign a breakaway step button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the breakaway step.

   The **Button** configuration box opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** field, select **Breakaway Step** as the function to assign to this button.

5. Close the **Button** configuration box.

   The simulated RCP-ME in DashBoard shows the name of the breakaway step (**BRK STEP**) on the selected button.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Router Levels

The RCP-ME sends switch requests to the routing switcher. Each routing switcher is assigned a default level from the factory (or number of levels if it has been partitioned). These level assignments can be changed through the Panel Config interface in DashBoard.

Table 3 Default Router Levels

Router Level	Name
1	Multi-definition 3G/HD/SD SDI digital video
2	SD SDI digital video
3	AES/EBU digital audio 1
4	AES/EBU digital audio 2
5	Analog video
6	Analog audio (left)
7	Analog audio (right)
8	Machine control

✸ When the RCP-ME is connected to an Ultrix router or Ultricore Central Controller, the level names will be overwritten with data from the Ultrix or Ultricore.

Assigning a Level Button

A level button enables you to select one router level per button for a switch. While a breakaway is similar, breakaways can contain more than one router level.

✸ Multiple level buttons can be assigned on a panel.

To assign a level to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the level.

   The **Button** configuration box opens.

3. In the **Button** list, select **Level**.

4. In the **Value** list, select the router level that you want to assign to this button.

5. Close the **Button** configuration box.

   The simulated RCP-ME in DashBoard shows the selected level on the button. For example, **Level 2**.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Selecting Breakaways and Levels

Breakaways are made up of one or more levels that are defined as a level mask and then assigned to a button. You can assign multiple breakaway buttons to an RCP-ME. You can select only one breakaway for a switch.

One level may be assigned to a button. You can assign multiple level buttons to an RCP-ME. You can select multiple level buttons prior to a switch.

To select a breakaway or level

1. Press the corresponding button.

    *   The button illuminates. If you have selected a custom breakaway and separate level buttons are assigned to the RCP-ME, the level buttons corresponding to the levels in the breakaway also illuminate.
    *   When a breakaway is selected, the status of the routing switcher shown on the LCD is the status of the lowest router level in the breakaway.
    *   If a breakaway warning is indicated on the LCD, it shows the routing switcher status in the current breakaway when compared to the router levels defined in the breakaway in the configuration.

✶ You cannot change the configured level mask in a breakaway by pressing a level button. However, the currently active level mask can be added to by pressing a level button.

✶ A breakaway warning is caused by:

› No response from the routing switcher system on one or more router levels.

› A difference in status of any level in the currently selected breakaway when compared with the first level in the breakaway.

To de-select a breakaway

*   Select another custom breakaway, the default breakaway, or a level button.

To de-select a level

*   Press the level button again.

Viewing the Breakaways Assigned to an RCP-ME

You can view the breakaways assigned to an RCP-ME if a breakaway step button is assigned to the RCP-ME. The breakaway step button cycles to the next breakaway in the list each time it is pressed. As each breakaway is selected, the level(s) defined in that breakaway are illuminated if corresponding level buttons have been assigned to the RCP-ME.

To view the breakaways assigned to an RCP-ME

*   Press the breakaway step button repeatedly to cycle through the available breakaways.

    The breakaway step button remains illuminated as you cycle through the breakaways. When the default breakaway is selected, the breakaway step button switches off.

✶ The breakaway button flashes if a warning is indicated.

    If a breakaway warning is current for the selected breakaway, the breakaway warning indicator is shown on the screen.

To view the name and levels of a breakaway

*   Hold the breakaway button.

    The name of the breakaway and an 8-character expression appear on the screen. Each character provides a hexadecimal representation of the use of four levels, from 32 to 29 on the left, through to 4 to 1 on the right. **Table 22** provides a look-up table for reading the levels from the hexadecimal characters.

To view the levels defined in a breakaway

1. Select the breakaway.

2. Hold the breakaway step button.

An 8-character expression appears on the screen. Each character provides a hexadecimal representation of the use of four levels, from 32 to 29 on the left, through to 4 to 1 on the right. **Table 22** provides a look-up table for reading the levels from the hexadecimal characters.

✳ If level buttons have been assigned to the RCP-ME, these illuminate as part of the breakaway. The level buttons are not illuminated when the default breakaway (Breakaway #1) is selected.

Level Mask Mode

Level Mask mode may be thought of as a breakaway (or group of levels) that can be edited by the user on the RCP-ME panel itself. For example, if there is no predefined breakaway assigned to the RCP-ME, or, there is no button assigned for a given breakaway, then you may use Level Mask mode to create the required level pattern prior to a source selection.

✳ Level Mask mode is available in firmware v1.48 or higher.

Assigning the Level Mask Function to a Button

You can assign the Level Mask function to any panel button.

To assign the Level Mask function to a panel button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the Level Mask mode function.

   The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. Use the **Value** list to select **Level Mask**.

5. Close the **Button** dialog.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Using a Level Mask Button

A Level Mask button enables you to quickly view what levels are selected, and edit which levels are included in the next crosspoint switch.

✳ The three buttons between **FOLLOW** and **LEVEL 1** are to retain consistency with Category mode.

Figure 12 Example of the Level Mask Mode Button Mapping

Table 4 summarizes the buttons for Level Mask mode.

Table 4 Level Mask Mode — List of Available Buttons

Button	Description
LEVEL MASK	• Short press to toggle on/off the Level Mask prior to a source selection • Long press to enter Level Mask options
EXIT	Exits Level Mask mode

Table 4 Level Mask Mode — List of Available Buttons

Button	Description
FOLLOW	Quickly selects all available levels
Individual Levels	Toggle on/off levels to be included in the subsequent source selection. The button will be lit to indicate a level is included in the level mask, unlit to indicate exclusion from the level mask.
	The display will briefly report `ADD:<level name>` or `REM:<level name>` as individual level buttons are toggled on/off.
	The availability of levels is determined by the Level Names enabled box on the RCP-ME DashBoard interface.

To use level mask mode

1. To enter Level Mask edit mode, press and hold **LEVEL MASK** for approximately 1 second.

2. Toggle the required levels.

    In the following example, **LEVEL 1** and **LEVEL 2** are selected.

✱   Some levels may be lit from a previous level mask setting.

3. Press **EXIT** to exit from edit mode.

    The user will be returned to the menu that was active prior to the Level Mask edit function.

    The **LEVEL MASK** button will remain lit indicating the next source selection will be executed only on the levels of the routing system as selected whilst in Level Mask edit mode.

✱ A short press of the **LEVEL MASK** button will disable the Level Mask mode and the RCP-ME will return to the previous breakaway (e.g. TIED).

Menus

This chapter summarizes how to define and use the panel menus available to assign to buttons.

Overview

Menus can be used to group together certain functionality within the RCP-ME system. Each menu page provides a new set of 40 buttons that you can assign with new functions.

What is a Menu button?

A specific menu destination assigned to a button. You can set the button to return to **Menu Number 1** (**Home**), the next or previously visited menu, or go up or down a menu as defined on the **Menu Details** tab in the Panel Config interface.
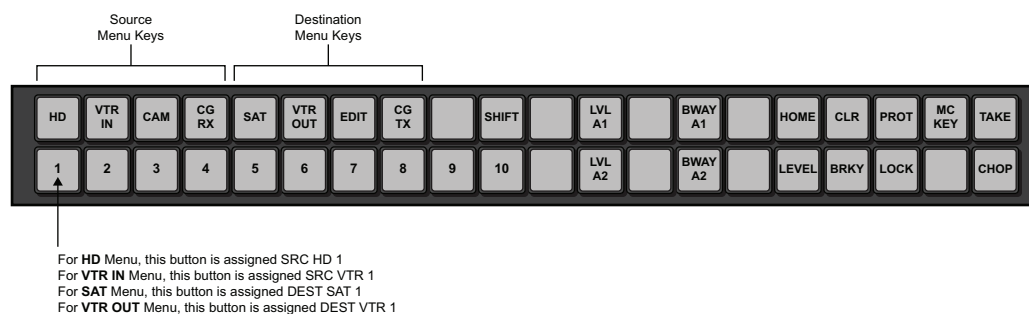
Figure 13 Example of Sources, Destinations, Menus, and Functions Mapped to Buttons

Setting Up Menus

You can store up to 250 menu pages in the RCP-ME. You can also define the Fallback mode. This is what happens after an activity has been performed in a particular menu.

For example, if you set up a menu containing all the breakaways, another menu containing all the destinations, and another menu containing all the sources, you can set up the menus so that once you have selected a breakaway, the menu containing all the destinations is shown so that you can select a particular destination device. Following this, the menu containing all the sources is shown so that you can select a particular source device.

Another use may be to define all the different classes of inputs, then assign these to menu links on the top row of buttons on the RCP-ME for each menu page. This process can then be repeated for outputs. When this configuration is used, the top row of buttons always stays the same for each menu and it is the function of the bottom row of buttons that changes from menu to menu.

✸ By default, the first menu is defined as **Menu 0**, not **Menu 1**.

To set up a menu

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Menu Details** tab.

3. In the **Number of menus** field, enter or select the number of menus to match the requirements of your routing switcher system.

4. Click **Update**.

5. In the **Menu Number 1** row:

   a. Click inside the **Menu Name** column and enter a name for the menu. The name can be up to 8 characters.

      This menu (**Menu 0**) is by default the first menu.

   b. Press **Enter**.

   c. Click the **Fallback Mode** column.

   d. Choose one of the following from the list to select a Fallback mode:

     › **Fallback Off** — After a button in the menu is pressed, the RCP-ME remains on the menu. If you select Fallback Off, the corresponding value in the Fallback Menu column is ignored. You must provide extra menu navigation buttons within the menu so that you can exit from the menu.

     › **First Menu** — After a button in the menu is pressed, the RCP-ME returns to the first menu (Menu 0 in the Menu Name column). If the button that is pressed is assigned as a menu link or a menu navigation button, then the RCP-ME goes to that menu.

     › **Previous Menu** — After a button in the menu is pressed, the RCP-ME returns to the menu that it was on prior to the current menu. If the button that is pressed is assigned as a menu link or a menu navigation button, then the RCP-ME goes to that menu.

     › **Specified Menu** — After a button in the menu is pressed, the RCP-ME returns to the menu specified in the Fallback Menu column. If the button that is pressed is assigned as a menu link or a menu navigation button, then the RCP-ME goes to that menu.

6. If you have selected **Specified Menu** as the Fallback mode, enter the specific menu number in the **Fallback Menu** column.

7. Define the next menu in the **Menu Name** column below the menus that you have defined previously.

8. Repeat steps 5 to 7 until you have defined all of the menus that you want to use.

9. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✸ When you enter the menu page on the RCP-ME, any static labels that you have placed in the buttons may no longer reflect the function of the button.

Assigning a Menu Link Button

A menu link enables access to a predefined menu via a single button press. You can assign a predefined menu to a button on the RCP-ME.

For More Information on...

• how to set up a menu, refer to "**To set up a menu**".

To assign a menu to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the menu link.

   The **Button** dialog opens.

3. In the **Button** list, select **Menu Link**.

4. In the **Value** field, use the list to select the menu you want to assign to the button.

5. Close the **Button** dialog.

The simulated RCP-ME in DashBoard shows the menu on the selected button. For example, **Menu 3**.

6. Click the **Menu** list below the simulated RCP-ME and select the menu that you have just assigned.

7. Assign functions to the buttons in this menu (refer to "**To assign a function to a button**").

   For example, if this menu is for the purpose of selecting a destination, assign the buttons as destinations. You may choose to have this destination menu fall back to a source menu.

8. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning Menu Navigation Button

If you have multiple menus assigned in the RCP-ME, you may want to include some navigation buttons to enhance movement through the menus.

To assign menu navigation to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for menu navigation.

   The **Button** dialog opens.

3. In the **Button** list, select **Menu Navigate**.

4. Use the **Value** list to select one of the following options:
   - **Home** — returns to the menu defined in **Menu Number 1** on the **Menu Details** tab.
   - **Next Menu** — goes to the next menu if one is held in the buffer.
   - **Previous Menu** — goes to the previously used menu if one is held in the buffer.
   - **Up Menu** — goes up a menu as defined on the **Menu Details** tab.
   - **Down Menu** — goes down a menu as defined on the **Menu Details**.
   - **XPoint Layer** — N/A. Displays **XPT DISP** on the LCD screen, but has no function.

5. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the type of navigation on the selected button. For example, **UP MENU**.

6. Send the current configuration file to the device ("**To send the current configuration to a panel**").

Returning to the Home Menu

You can use DashBoard to return to the Home menu if the RCP-ME is not responding to button presses.

To return to the home menu

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Return to Home Menu** check box.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

The RCP-ME returns to the **Home** menu.

Using a Menu

The button corresponding to the current menu is always illuminated.

To use a menu

1. Press the button that has the menu assigned to it.

   A brief message is shown on the screen with the name of the menu.

Figure 14 Example of a Menu Name

2. Press the button that you want to use in that menu.

3. If the menu has been set up to fall back to another menu, the RCP-ME goes to the predefined menu.

✶ Use DashBoard to return to the **Home** menu if the RCP-ME is not responding.

Examples

To select SRC HD1 to DEST VTR3

1. Select the destination by pressing **VTR OUT**.

2. Press **3**.

3. Select the source by pressing **HD**.

4. Press **1**.

To select SRC VTR2 to DEST SAT2

1. Select the destination by pressing **SAT**.

2. Press **2**.

3. Select the source by pressing **VTR IN**.

4. Press **2**.

Functions

This chapter briefly summarizes how to assign a function to one of the buttons on the hard panel.

Overview

The RCP-ME has some special function tasks that can be assigned to any button on the panel. The available functions are detailed below.

Breakaway Step (BRK STEP)

A single button that selects the next breakaway in the Breakaway table on the Configuration tab (refer to "**Assigning a Breakaway Step Button**"). If you want to view the levels used in the current breakaway, hold the breakaway step button (refer to "**Viewing the Breakaways Assigned to an RCP-ME**"). The breakaway step button does not illuminate when the default breakaway is selected. For help reading the levels from the hexadecimal expression, refer to **Table 22**.

Chop (CHOP)

A single button that starts a slow or fast toggle between the two most recently selected sources for a given destination.

Deassign (DE-ASN)

The de-assign button has two-fold functionality: a single button that provides a convenient method for disconnecting machine control ports and, if using virtual routing, a single button that allows you to free up resources when they are no longer needed for a path.

MC Key (MC KEY)

A single button that provides a convenient method for toggling reciprocal switching on and off when machine control is used.

Panel Lock (LOCK)

A single button that provides a convenient method for locking the RCP-ME against accidental or unwanted changes. The panel lock function can also be set by selecting the Panel Locked check box on the Configuration tab of the Panel Config interface or holding down a **Protect** button.

Protect (PROT)

A single button that places a block on the current destination, preventing its use by other sources. The **Protect** button may also be held down to panel-lock the RCP-ME. Refer to "**Protects and Locks**" for details.

Salvo

A salvo is a predefined list of switch events and is executed when a salvo button is pressed. Note that salvos are only applicable if the RCP-ME is connected to an Ultrix router. Refer to "**Salvos**" for details.

Shift

Each source or destination button may be assigned up to three states. A **Shift** button provides access to these additional assignments. A **SRC SH1** button allows access to the second assignment of a button. A **SRC SH2** button allows access to the third assignment of that same button.

For example, a single button is assigned to Source 1, Source 21, or Source 31 depending on whether a **Shift** button is engaged:

* Pressing **SRC 1** accesses Source 1.
* Pressing **SRC SH1** + **SRC 1** accesses SRC 21.
* Pressing **SRC SH2** + **SRC 1** accesses SRC 31.

For More Information on...

* assigning sources and destinations to a button, refer to "**To assign a source to a button**" and "**To assign a destination to a button**" respectively.

Take (TAKE)

The trigger that ends a hold on a switch sequence. This enables you to press the required breakaway, destination, and then source button combination, or crosspoint button or macro button, but not activate the switch until **TAKE** is pressed. If you have a take button assigned on a menu, it affects the behavior of the menu. You must use it to activate any switch that is set up. If you do not have a take button assigned to the menu, then a switch is made as soon as the source/crosspoint/macro button is pressed.

Unassign

A label (**UN-ASN**) indicating that the button does not have any of the button functions assigned to it and therefore does nothing when pressed. Select it to clear a button of any function assignment.

Assigning Functions to Buttons on the RCP-ME

The RCP-ME is programmed in the factory with default button assignments (refer to "**Default Configuration**"). If this default button assignment is not suitable for your routing switcher system, you can easily customize and save the configuration using DashBoard.

The RCP-ME can be programmed with 250 menu pages. Each menu can hold a different set of button functions.

Assigning a Function Button

A function button enables you to assign a specific task to a button on the panel.

To assign a function to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the function.

    The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. Use the **Value** list to select one of the following functions:

- **Take** — the trigger that ends a hold on a switch sequence.
- **Protect** — a single button that places a block on the current destination. It can also be used to lock the panel.
- **Chop** — a single button that starts a slow or fast toggle between the two most recently selected sources for a given destination.
- **Deassign** — a single button that has two-fold functionality: a single button that provides a convenient method for disconnecting machine control ports and, if using virtual routing, a single button that allows you to free up resources when they are no longer needed for a path.
- **MC Key** — a single button that provides a method for enabling reciprocal switching when machine control is used.
- **Panel Lock** — a single button that locks the panel from accidental or unwanted changes.
- **Breakaway Step** — a single button that selects the next breakaway in the **Breakaway** table.

5. Close the **Button** dialog.

The simulated RCP-ME in DashBoard shows the type of shift and shift page on the selected button. For example, **SRC SH2**.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Protect Button

To prevent switching of critical crosspoints by others, assign a protect button for use on the RCP-ME. The protect function ensures that the selected destination can only receive the selected source across the selected levels. Once protected, the selected levels on a destination cannot be switched by other remote control panels (or by the same remote control panel if **Block All Panels** is selected). The source is not protected and can be freely routed to other destinations if required. You can protect any number of destinations.

You can also use the protect button to lock the RCP-ME against all button presses (refer to "**Assigning a Protect/Lock Button**").

To assign a protect button using DashBoard

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the level.

The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** list, select **Protect** as the function to assign to this button.

5. Close the **Button** dialog.

The simulated RCP-ME in DashBoard shows the protect (**PROT**) on the button.

6. Select the **Configuration** tab.

7. In the **Configuration** section, select the mode of protection that you want to use for the protect button. Use the information in **Table 5** as a guide:

Table 5 Protect Mode Descriptions

Protect Mode	Description
Block Other Panels	The protected destination and level(s) *cannot* be switched to another source by other remote control panels.
	The protected destination and level(s) *can* be switched to another source on the current remote control panel.
Block All Panels	The protected destination and level(s) *cannot* be switched to another source by the current remote control panel or other remote control panels.

8. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Take Button

If you want to pre-load a switch sequence but delay the switch, assign a take button on the menu. If a take button is assigned, then all switches on that menu are activated by pressing the **TAKE** button instead of the source/crosspoint/macro button. You should assign a take button on each menu that requires this switching type.

To assign a take button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the take button.

   The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** field, select **Take** as the function to assign to this button.

5. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the take on the selected button.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✸ If a **TAKE** button is assigned, the selected source/crosspoint/macro button and the take button flash to indicate that the remote control panel is waiting for **TAKE** to be pressed.

Assigning a Chop Button

If you want to toggle two different sources to the same destination, assign a chop button to the RCP-ME. For example, the destination may be the monitor that you are viewing, and the sources may be feeds from two different camera locations. When you use the chop button, the toggle rate can be slow or fast (refer to "**To assign a chop button**").

To assign a chop button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the chop button.

   The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** field, select **Chop** as the function to assign to this button.

5. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the chop on the selected button.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Shift Button

A shift button enables the user to access another set of sources or destinations. This is useful for switching larger routing systems. A shift button is applicable to a source or a destination button. Therefore, you need to assign a **Source 1** button or a **Dest 1** button. If you are using two shift pages, you must assign a **Source 1** button and a **Source 2**, and similarly for destinations.

To assign a shift to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the shift.

   The **Button** dialog opens.

3. In the **Button** list, select **Destination** or **Source**.

4. In the **State** field, select one of the following options:

   • **Shift 1**
   • **Shift 2**

5. In the **Value** field, select an output or input assignment for the shift.

6. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the type of shift and shift page on the selected button. For example, **SRC SH2**.

7. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Using a Shift Button

When a shift button is enabled, the **Shift 1** or **Shift 2** value is used for the particular source or destination button instead of the default value.

For example, the user has assigned the following button maps for the sources:
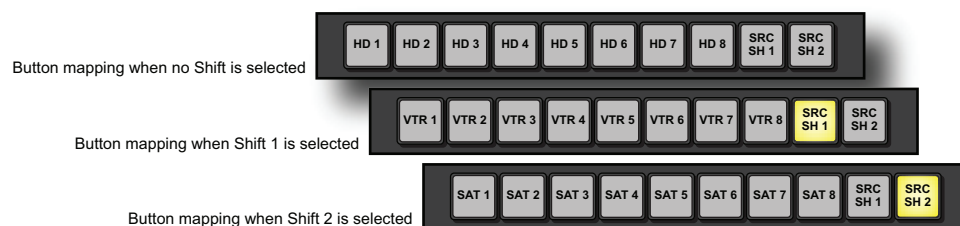
Figure 15 Example of Button Mapping with Shift Buttons

The user would perform the following to select the source **VTR 2**:
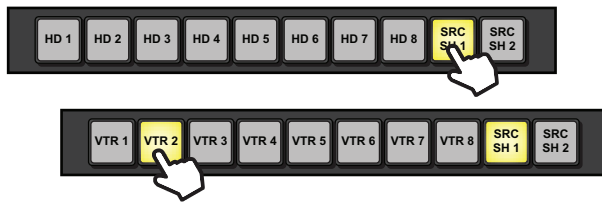
The user would perform the following to select the source **SAT 3**:

Assigning a Panel Lock Button

It may be necessary at times to lock the RCP-ME from access to the front panel. If this function is required, assign a panel lock button. You can also lock the RCP-ME using the **Panel Locked** check box on the **Configuration** tab. When a panel lock is applied, changes to the RCP-ME can still be made through the Panel Config interface in DashBoard.

To assign a panel lock button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the panel lock.

    The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** field, select **Panel Lock** as the function to assign to this button.

5. Close the **Button** dialog.

    The simulated RCP-ME in DashBoard shows the lock on the selected button.

Clearing a Function from a Button

If a button is not used for any function it should be unassigned.

To clear a function from a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button from which you want to clear a function.

    The **Button** dialog opens.

3. In the **Button** list, select **Clear Key**.

4. Close the **Button** dialog.

    The simulated RCP-ME in DashBoard shows **UN-ASN** on the selected button.

5. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Macros

This chapter provides instructions for creating and editing macros, assigning a macro to a button, and using macros via the hard panel.

What is a macro?

A macro is a sequence of events (e.g. switches) that are assigned to a button. If you want to perform several tasks with the press of a single button, assign a macro button to the RCP-ME and then record a macro using this button.

Assigning a Macro Button

If you want to perform several tasks with the press of a single button, assign a macro button to the RCP-ME and then record a macro using this button. You can assign up to 40 macros to an RCP-ME.

To assign a macro to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the macro.

   The **Button** dialog opens.

3. In the **Button** list, select **Macro**.

4. In the **Value** list, select the macro number that you want to assign to this button.

5. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the name of the macro on the selected button. For example, **Macro 1**.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Recording a Macro Using the Panel

Macros can be recorded using the buttons on the RCP-ME. You may record up to 112 button presses in a macro. A macro button must be assigned on the RCP-ME before you can use it to record the macro.

To record a macro using the panel

1. Assign a macro function to a button as described in "**To assign a macro to a button**".

2. On the RCP-ME, hold the **Macro #x** button until the LCD shows **MACRO RECORD** and the button illuminates.

3. Release the button.

   The button flashes slowly, indicating that the RCP-ME is now ready to record a macro.

4. Press the required buttons for the macro in the correct sequence until your task is completed.

   Each button acknowledges that it has been pressed by flashing briefly.

5. Press the **Macro #x** button again to end the recording process.

   The macro is recorded.

6. Press **Refresh** in DashBoard to load the recorded macro into the DashBoard interface.

✴ If you unassign the **Macro #x** button from the macro function, the recorded macro is held in memory. You can reassign the macro to a button using the same macro number under which the macro was recorded.

Editing a Macro using the Panel

You can add extra button sequences to an existing macro or you can join two existing macros together.

To add to a macro using the panel

1. On the RCP-ME panel, press and hold the **Macro #x** button until the button begins to flash rapidly.

2. Release the button.

   The button flashes slowly, indicating that the RCP-ME is now ready to record a macro.

3. Hold the **Macro #x** button again.

   The selected macro is played back internally and is then ready to receive the additional button sequences.

4. Do one of the following:

   • To add an extra button sequence, press the required buttons to add to the macro in the correct sequence until your task is completed.
   • To add an existing macro, press the button for the macro you want to add.

   Each button acknowledges that it has been pressed by flashing briefly.

5. Press the **Macro #x** button again to end the recording process.

   The existing macro is overwritten with the new macro.

Configuring a Macro using DashBoard

Macros can be configured in DashBoard using the **Macro Events** tab.

To configure a macro using DashBoard

1. Assign a macro to a button (refer to "**To assign a macro to a button**").

2. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

3. Select the **Macro Events** tab.

4. In the **Num. Rows.** box of the macro you want to configure, enter or select the number of events to be assigned.

5. Click **Update** to add the events to the **Event** column of the macro.

6. In the **Function** column, use the list to select the function to perform for the event. The options are as follows:

   • **Switch** — performs a standard crosspoint switch.
   • **Macro** — performs a macro within the executed macro. The **Output** column is the macro number and the other columns have no effect.
   • **Protect** — creates a protect condition on the destination of the selected crosspoint (refer to "**To assign a protect/lock button using DashBoard**"). The **Output** column is the output number, the **Input** column is the protect status (0 = release the protect for the output, 1 = take protect for this output), and the **Level** column has no effect.

7. In the **Output** column, perform the following:

    a. Click inside the **Output** table cell.

    b. Enter a destination output number for the event.

8. In the **Input** column, perform the following:

    a. Click inside the **Input** table cell.

    b. Enter a source input number for the event.

9. In the **Level Mask** column, select the level mask(s) for the device affected by the macro. A selected router level is indicated by a blue square.

   Each function can occur on any available level, independent of any other function within the same macro event.

10. Repeat Steps 6 to 9 for any remaining events of the macro.

11. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Using a Macro

You can use macros on the RCP-ME.

To use a macro

1. Create a macro (refer to "**To record a macro using the panel**" or "**To configure a macro using DashBoard**").

2. Press the macro button.

   If a take button is assigned to the menu, the text on the screen that identifies the source button alternates between **Take ?** and the selected source label for the last source button in the macro. The macro button flashes with the **TAKE** button.

3. If a **TAKE** button is assigned to the menu, press **TAKE**.

Salvos

This chapter provides instructions for assigning a salvo to a button and how the RCP-ME uses salvos.

What is a salvo?

A salvo is a predefined list of switch events. Salvos are stored within a central controlling device such as an Ultrix router or Ultricore Central Controller and may be accessed by any Remote Control Panel within the system. Salvo names are handled by the central controlling device and update the RCP-ME salvo names list automatically.

For More Information on...

• creating and using salvos, refer to the **_Ultrix and Ultricore Database Guide_**.

Assigning a Salvo to a Button

✱ This function is only available when connected to an Ultrix router or Ultricore Central Controller.

To assign a salvo to a button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the display.

   The Button dialog opens.

3. In the **Button** list, select **Salvo**.

4. Use the **Value** list to select one of the Salvo names.

5. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Using a Salvo

✱ This function is only available when connected to an Ultrix router or Ultricore Central Controller.

A salvo is a predefined list of switch events. Salvos are stored within a central controlling device such as an Ultrix router or Ultricore and may be accessed by any Remote Control Panel within the system. Salvo names are handled by the central controlling device and update the RCP-QE salvo names list automatically.

To use a salvo

1. Create a salvo as outlined in the **_Ultrix and Ultricore Database Guide_**.

2. Press the assigned **Salvo** macro button. This is the button you configured using the procedure "**Assigning a Salvo to a Button**".

3. If a **TAKE** button is assigned to the menu, press **TAKE**.

Category Index Mode

Category Index mode allows alpha-numeric extensions to labels to 'build up' the final label selection. For example, VTR 1 - 6 may be expressed as a VTR label with numerical extensions 1 through 6. Similarly, alpha extensions may be used, for example, VTR A - E for VTRs A through E.

Destination and source names are split into substrings - the first substring traditionally referred to as the *category*, and subsequent substrings as the *indexes* (i.e. Category VTR index 1 through 6). As source/destination names become more complex, an index may not be the final part of the selection name. For example, consider the source names CG TX 1 and CG TX 2; Category Index mode may be configured so that a user selects **CG**, then **TX**, then either **1** or **2**. This may be extrapolated to cover a large range of sources and destinations.

✦ Category Index mode is available on RCP-ME firmware 1.48 or higher connected to Ultricore v2.0 or higher.

Default Category Button Mapping

The RCP-ME panel has a fixed 40 button layout. The first five buttons are assigned to category navigation, leaving 35 buttons available for categories. The assignment of categories to buttons is an automatic process and cannot be altered.

By default, the category names (from the Ultricore database) are assigned left to right immediately following the navigation buttons. After the category names are accounted for, then the index names will be applied. The assignment of categories and indexes are alpha-numeric in order. (**Figure 16**)
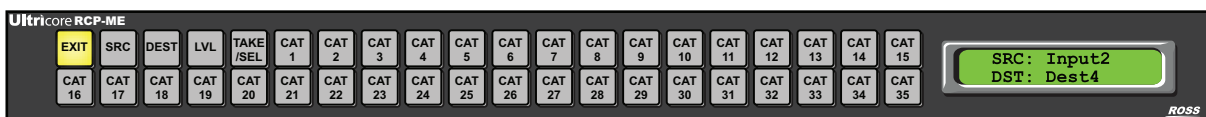
Figure 16 Example of RCP-ME Panel Button Mapping

Figure 17 illustrates the RCP-ME button mapping if the Ultricore database defined five categories and ten indexes.

Figure 17 Example of RCP-ME Panel Button Mapping

For More Information on...

• Category Index mode, refer to the ***Ultrix and Ultricore Database Guide***.

Category Index Example

In this example, the Ultricore provides the following resources.

Sources / Destination Names

CAM 1	SAT A1	CG RX 1	EDIT A	VTR1
CAM 2	SAT A2	CG RX 2	EDIT B	VTR2
CAM 3	SAT A3	CG TX 1	EDIT C	VTR3
CAM 4	SAT B1	CG TX 2	EDIT D	VTR4
CAM 5	SAT B2	CG TX A	EDIT E	VTR5

The possible categories and indexes would be:

Categories	Indexes		
CAM_ [a]	1	5	D
SAT_	2	A	E
CG_	3	B	RX_
EDIT_	4	C	TX_
VTR			

a. The "_" characters represents a blank space. This indicates the category will filter resources with a space in the name (e.g. the CAM_ category will allow resources named CAM 1, CAM 2 but not CAM3).

Figure 18 illustrates the RCP-ME button mapping based on these resources, categories, and indexes.

✦ Upon entering Category Index mode, the Source (SRC) selection filter is selected by default. The RCP-ME panel will only light Category buttons that have defined sources in that category.

Figure 18 Example of RCP-ME Panel Button Mapping

Entering Category Index Mode

Category Index mode may be entered from the default panel multi-page menu based structure by assigning a Category function button (refer to "**Assigning Functions to Buttons on the RCP-ME**"). Alternatively, the RCP-ME panel may be forced to stay in Category Index mode. In this mode, the panel will only be a Category Index panel and have no access to the default multi-page menu structure and assigned buttons.

To configure permanent Category Index Mode

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Permanent Category Mode** box.

3. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✦ When in permanent Category Index mode, the **Exit** button (first button) is no longer required. The Category Index mode then has access to 36 buttons for Category/Index assignment.

Operating in Category Index Mode

This section assumes the category/index assignments outlined in "**Category Index Example**".

To select a destination

1. Press the **DEST** filter button.

   The available destination categories are lit.

2. Press **EDIT**.

   The available EDIT indexes are lit.

3. Press **C**.

4. Press **TAKE/SEL**.

   The display reports `EDIT C` on the second line of the display to indicate the current destination.

✦ Press **DEST** at any stage to return to top-level destination category selection.

To select a source

1. Press the **SRC** filter button.

   The available source categories are lit.

2. Press **CG**.

The available CG indexes are lit.

The display reports `CG_` to indicate an index is required.

3. Press **TX**.

The available CG TX indexes are lit.

The display reports `CG TX_` to indicate an index is required.

4. Press **2**.

The **TAKE/SEL** button flashes to indicate the awaiting selection of source **CG TX 2**.

Protects and Locks

This chapter defines when to use a protect and lock, configuring a Protect or Lock button, how to protect a destination, and how to clear protects held by a RCP-ME. The RCP-ME protect mode may be set either in Protect mode or Lock mode.

What is a Protect?

A single button that places a block on the current destination, preventing it from being controlled (selecting other sources) by any other control devices (e.g soft panels, third-party control devices, remote control panels). The RCP-ME that instigates the protect will be the only control device that may control the protected destination. This will continue until the protect is disengaged.

The **Protect** button may also be held down to panel-lock the RCP-ME.

What is a Lock?

A single button that places a block on the current destination, preventing it from being controlled (selecting other sources) by ALL remote control panels (e.g. soft panels, third-party control devices, remote control panels).

Assigning a Protect/Lock Button

To prevent switching of critical crosspoints by others, assign a protect button for use on the RCP-ME. The protect function ensures that the selected destination can only receive the selected source across the selected levels. Once protected, the selected levels on a destination cannot be switched by other remote control panels (or by the same remote control panel if **Block All Panels** is selected). The source is not protected and can be freely routed to other destinations if required. You can protect any number of destinations.

For More Information on...

• on protecting destinations, refer to "**To protect a destination**".

• using the **Protect** button to lock the RCP-ME against all button presses, refer to "**To lock the RCP-ME using a protect button**".

To assign a protect/lock button using DashBoard

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, click the button that you want to use for the level.

    The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** list, select **Protect** as the function to assign to this button.

5. Close the **Button** dialog.

    The simulated RCP-ME in DashBoard shows the protect (**PROT**) on the button.

6. Select the **Configuration** tab.

7. In the **Configuration** section, select the mode of protection that you want to use for the **Protect** button. Use the information in **Table 6** as a guide.

Table 6 Protect Mode Descriptions

Protect Mode	Description
Block Other Panels (Protect)	The protected destination and level(s) *cannot* be switched to another source by other remote control panels.
	The protected destination and level(s) *can* be switched to another source on the current remote control panel.
Block All Panels (Lock)	The protected destination and level(s) *cannot* be switched to another source by the current remote control panel or other remote control panels.

8. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Panel Lock Button

It may be necessary at times to lock the RCP-ME from access to the front panel. If this function is required, assign a panel lock button. You can also lock the RCP-ME using the **Panel Locked** check box on the **Configuration** tab. When a panel lock is applied, changes to the RCP-ME can still be made through the Panel Config interface in DashBoard.

To assign a panel lock button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for the panel lock.

   The **Button** dialog opens.

3. In the **Button** list, select **Function Key**.

4. In the **Value** field, select **Panel Lock** as the function to assign to this button.

5. Close the **Button** dialog.

   The simulated RCP-ME in DashBoard shows the lock on the selected button.

Locking an RCP-ME

You can use DashBoard to lock a remote control panel against accidental and unwanted changes. The remote control panel can only be unlocked locally if you have assigned a panel lock or protect button. If these buttons have not been assigned, then the remote control panel may only be locked/unlocked via DashBoard.

Locking via the Panel Config Interface

Keep the following in mind:

• If a panel lock button is not assigned, the RCP-ME can only be unlocked by clearing the **Panel Locked** check box in DashBoard and then sending the configuration file to the device.

• If a protect button is assigned, it can be pressed and held to unlock the RCP-ME.

• If neither of these buttons are assigned, you can lock the RCP-ME if a panel lock or protect button has been assigned to the RCP-ME.

• The protect button must be held to lock the RCP-ME.

To lock the RCP-ME via the Panel Config interface

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Panel Locked** check box.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

   The RCP-ME is locked.

✱ If a panel **LOCK** button is assigned, it can be pressed to unlock the RCP-ME.

To lock the RCP-ME using a panel lock button

• Press the panel **LOCK** button.

   The panel **LOCK** button illuminates. A brief **KEY LOCK** message is shown on the screen.

   Every button on the RCP-ME becomes inactive except for the panel **LOCK** button.

To unlock the RCP-ME using a panel lock button

• If you want to unlock the RCP-ME, press the panel **LOCK** button.

   The panel **LOCK** button switches off. A brief **KEY UNLOCK** message is shown on the screen.

To lock the RCP-ME using a protect button

• Hold the **PROTECT** button for 3 seconds.

   A brief **KEY LOCK** message is shown on the screen.

   If a panel **LOCK** button is assigned to the RCP-ME, this button illuminates.

   Every button on the RCP-ME becomes inactive, except for the **PROTECT** button and panel **LOCK** button, if assigned.

To unlock the RCP-ME when locked by a protect button

• If the RCP-ME is locked using a protect button and you want to unlock it, hold the protect button or press the panel lock button, if assigned.

   A brief **KEY UNLOCK** message is shown on the screen.

✱ The **PROTECT** button does not illuminate.

Protecting a Destination

You can use a protect button to prevent switching of critical crosspoints by others. The protect function ensures that the selected destination can only receive the selected source across the selected levels. Once protected, the selected levels on a destination cannot be switched by other remote control panels (or by the same remote control panel if **Block All Panels** is selected). The source is not protected and can be freely routed to other destinations if required. You can protect any number of destinations.

You can set the extent of protection that is used via DashBoard, such as protected against other remote control panels or protected against all remote control panels (refer to "**Locking an RCP-ME**").

To protect a destination

1. Make the switch.

2. Press the **PROTECT** button.

   The **PROTECT** button and the protected crosspoint are illuminated. The screen indicates that a protect is in place by showing the protection indicator at the bottom left of the screen.

```
┌─────────────────────┐
│   SRC:  Server 2    │
│ ʟ DST:  Monitor     │
└─────────────────────┘
```

Figure 19 Protected Crosspoint and Protection Indicator

✦ If you are protecting a destination on a level for which a routing switcher does not respond, a protect breakaway error (***PROT BRKWY ERR***) occurs.

To remove the protection from a destination

1. Press the button for the protected destination.

2. Press the **PROTECT** button.

   The protection indicator is removed from the screen.

Clearing Protects Held by an RCP-ME

A protect that is held by an RCP-ME prevents the crosspoint being changed by another user. A protect can be sent to the routing switcher from any connected remote control panel. Protects can be applied at any time and are only visible when the particular destination is selected.

To clear one protect from an RCP-ME

1. Press the destination button that has the protection applied.

   The protection indicator is shown at the bottom left of the screen.

```
┌─────────────────────┐
│   SRC:  Server 2    │
│ ʟ DST:  Monitor     │
└─────────────────────┘
```

Figure 20 Protection Indicator for Destination

2. Press the **PROTECT** button.

To clear all of the protects from an RCP-ME

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Clear Protect(s)** check box.

4. Send the current configuration to the device (refer to "**To send the current configuration to a panel**").

✦ Protects may be held by other remote control panels. Each remote control panel attached to a routing switcher.

Machine Control

This chapter provides instructions on how to set up machine control on the RCP-ME, assigning a MC Key button, configuring and using a De-assign button.

Overview

When configuring the RCP-ME, you have the option to enable Machine Control, and to add a Machine Control button to the panel.

What is Machine Control?

Typically, the ports on a data router (such as the NK-M series routers) are bi-directional where there is both a transmit (input to output) and reciprocal receive connection that is made for each port. For example, a switch from port 1 to port 2 involves a forward path (from port 1 input to port 2 output) and the reciprocal connection from (port 2 input to port 1 output).

In some cases however, there is a need to connect on the port's input to several ports' output (e.g. one device commanding many target devices) without making the reciprocal connection. This allows the commanding device to just broadcast commands and not receive from the many devices it communicates with.

Setting Up Machine Control

If your routing switcher system uses a machine control routing switcher to provide reciprocal switching of RS-422 signals, your RCP-ME must be set up to handle these switches. Machine control must be enabled in the RCP-ME and the router level used for machine control must match that set in the machine control routing switcher.

To set up machine control

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Machine Control Enabled** check box.

4. Use the **Machine Control Level** box to enter or select the machine control level to match the level that the machine control routing switcher has been assigned.

5. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Assigning a Machine Control Button

If your master device controls multiple slave devices, you need a machine control button to temporarily disable reciprocal switching until the last slave device is routed.

To assign a machine control button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button that you want to use for machine control.

   The **Button** configuration box opens.

3. In the **Button** list, select **Function Key**.

4. Use the **Value** list to select **MC Key**.

5. Close the **Button** configuration box.

   The simulated RCP-ME in DashBoard shows **MC KEY** on the selected button.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Configuring a De-assign Button

De-assign will disconnect a reciprocal machine control path through a machine control router, parking sources to their respective destinations. Similarly, if using resource management, de-assigning will park the resource inputs and outputs and de-allocate the resource to be used in other routes.

To assign a de-assign button

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. On the simulated RCP-ME, select the button from which to de-assign a machine control port.

   The **Button** configuration box opens.

3. In the **Button** list, select **Function Key**.

4. Use the **Value** list to select **Deassign**.

5. Close the **Button** configuration box.

   The simulated RCP-ME in DashBoard shows **DE-ASN** on the selected button.

6. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

De-Assigning a Machine Control Port

If you want to stop machine control on a particular port temporarily, you can park the port by de-assigning it.

To de-assign a machine control port

1. Press the button for the machine control port that you want to park.

2. Press **DE-ASN**.

To unpark the machine control port

• Make a machine control switch.

Linking Remote Control Panels

If your routing switcher system is extensive, control of the entire system may not be possible through just one remote control panel. If this is the case, additional remote control panels may be added. You can choose to operate the remote control panels individually, or you can link the remote control panels together so they operate as one larger remote control panel.

✦ You may link up to 10 remote control panels together.

Before You Begin

✦ When multiple remote control panels are linked, the **Address** field must be the same for all linked remote control panels, and the **Panel Link Address** field must be different for each remote control panel.

You may link RCP-ME, RCP-QE, RCP-NKM, and RCP-NKQ remote control panels together. You cannot link the RCP-NK1 with an RCP-ME, RCP-QE, RCP-NKM, or RCP-NKQ.

The **Panel Address** and **Panel Link Address** must be different within each remote control panel. For example, if you have three RCP-ME panels but only want to link two panels, you would assign the Panel Address and Panel Link Addresses as outlined in Table 7. In this example, the first and second panels are linked to form one logical remote control panel.

Table 7 Example of Linked Panel Addresses

	First RCP-ME	Second RCP-ME	Third RCP-ME
Setup	Linked		Unlinked
Address	100	100	120
Panel Link Address	1	2	0

Configure a Link Between Multiple Remote Control Panels

✦ RCP-ME panel linking requires a connection to either an NK-NET, an Ultrix router, or an Ultricore Central Controller. The NK-IPS does not support panel linking.

To link remote control panels together

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. In the **Address** field of the **Device Details** area, enter the common address (between 2 and 255) that you want all the linked remote control panels to use.

3. Select the **Configuration** tab.

4. In the **Panel Link Address** field of the **Panel Link** area, enter the individual address (between 1 and 254) that you want this specific remote control panel to use. By default, the **Panel Link Address** of a remote control panel is set to zero (0).

✦ If a panel has a **Panel Link Address** of **0**, it cannot have the same address of another panel or other NK series device. If it does, the results will be unpredictable.

5. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

6. Repeat this process for all the remote control panels that you want to link together.

Operating Linked Remote Control Panels

You can link multiple RCP-MEs together, or link them with one or more RCP-ME, RCP-NKMs, or RCP-NKQs, or a combination thereof. The remote control panels must have Panel Link Addresses set, as outlined in "**Linking Remote Control Panels**". Once these addresses are set correctly, the remote control panels transfer status, request, and response information between them. Up to 10 remote control panels may be linked together to form one large remote control panel.

For example, if you want to operate an 80-button remote control panel with the inputs and outputs of a 32x32 router mapped to the default menu buttons, you may link two RCP-MEs together (one for destinations and a second for sources).

✸ The input and output labels should be identical across all remote control panels.

Function Buttons

Once remote control panels are linked, they operate in a manner similar to their unlinked operation. If a special function button (CHOP, DE-ASSIGN, or a PANEL LOCK, PROTECT, Breakaway, Breakaway Step, or machine control) is assigned to one remote control panel, it is effective across all linked remote control panels, regardless of the location of other relevant buttons.

• A TAKE button does not operate across menus within the same remote control panel. However, it does operate across linked remote control panels as long as it is on a current menu at the time that the source/crosspoint/macro button is pressed. For example, a TAKE function will only operate if it is on a currently visible menu on any of the linked remote control panels. If a TAKE button is not visible, then the TAKE function will not operate.

• If a TAKE button is assigned, the selected source/crosspoint/macro button and the TAKE button flash to indicate that the remote control panel is waiting for TAKE to be pressed.

• Only a single CHOP button is supported.

• Only a single button is supported for any given MACRO.

• A PROTECT will operate across linked panels to each linked panels current protect mode. For example, if a PROTECT is issued from a linked panel with a Protect mode of "`block_all`", but a linked panel has a Protect mode of "`block_others`" then the two linked panels will interpret the PROTECT function differently. This may have unintended consequences. It is recommended that all panels in the linked panel setup are configured with the same Protect mode.

Destinations and Sources

Destinations and sources from different remote control panels may be selected. For example, a destination button is pressed on one linked panel, then a source selected on another linked panel will result in the router(s) switching that source to that destination on the current breakaway.

Crosspoints

A crosspoint button is a source, destination, and breakaway all in one button offering single button press router switching. Crosspoints can only be programmed to a remote control panel via DashBoard. Crosspoint buttons operate normally in linked panel mode.

Switching

When a breakaway, destination, and source are sent in a switch request from a remote control panel, each linked remote control panel receives the level mask (levels that make up the breakaway), destination and source information via a linked panel message, and either reflects the status, or behaves accordingly (for example, locking the remote control panel or entering macro record mode).

Breakaways

Breakaway numbers are not sent in the switch request, thus removing the need for identical breakaway definitions across linked remote control panels. As such, breakaway step is not available across linked remote control panels.

You can view the breakaways within the same remote control panel, in line with unlinked behavior.

Menus

Menus and menu navigation keys are only effective on the remote control panel to which they are assigned.

Macros

Macros may be recorded or added to across linked remote control panels.

Cutbus Mode

This chapter provides instructions on how to create a default switching panel that only affects assigned outputs on a particular router.

Overview

Cutbus is a configuration that creates a default switching panel that only affects assigned outputs on a particular router. The RCP-ME has three modes of cutbus operation: cutbus off, cutbus normal, or multi.

Setting Up Cutbus Normal Mode

The panel operates in either single cutbus mode or dual cutbus mode.

- Single Cutbus Mode — on the Configuration tab in DashBoard, Cutbus Dest 1 equals Cutbus Dest 2. The display shows the cutbus status on the top row and cutbus destination on the bottom row.
- Dual Cutbus Mode — on the Configuration tab in DashBoard, Cutbus Dest1 does not equal Cutbus Dest 2. The display shows the cutbus status for the first destination on the top row and the cutbus status for the second destination on the bottom row.

To set up normal cutbus operation

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").
2. Ensure that there are no destinations or crosspoints assigned to any buttons on the RCP-ME at any menu level.
3. Select the **Configuration** tab.
4. In the **Configuration** section, select **Normal** as the **Cutbus Mode**.
5. In the **Cutbus Dest 1** box, enter or select the destination output for the top row of buttons.
6. In the **Cutbus Dest 2** box, enter or select the destination output for the bottom row of buttons to use dual cutbus mode. Set the destination to the same destination as Cutbus Dest 1 if you want to use single cutbus mode.
7. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Setting Up Multi Cutbus Mode

In Multi Cutbus mode, the crosspoint buttons are used to access three or more cutbus destinations. Set the destination on groups of crosspoint buttons to control an output. The display is the same as dual cutbus mode, except the bottom row (cutbus destination) changes when a crosspoint button is pressed.

Once the Cutbus mode is set to Multi, the panel operates as a collection of crosspoint buttons that, when selected, will display source and destination information about the selected crosspoint on the LCD screen.

To set up multi cutbus operation

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").
2. Ensure that there are no destinations assigned to any buttons on the RCP-ME at any menu level.

3. Select the **Configuration** tab.

4. In the **Configuration** section, select **Multi** as the **Cutbus Mode**.

5. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

Managing Panel Configurations

The parameters that you have set up on the Panel Config interface for an RCP-ME are stored to a configuration file on your DashBoard client PC. A configuration file can be recalled and applied to other remote control panels communicating with your DashBoard client PC. This chapter outlines how to create, edit, and save configuration files for your remote control panels, and how to update the button mapping and menus on your hard panel.

Saving the Current Configuration for the RCP-ME

When you have finished making changes to the configuration of the RCP-ME, you should save the configuration file and then add the location of this file to the **File Navigator** pane so that you can open it later.

To save a new configuration file

1. Select the Panel Config interface containing the configuration that you want to save.

2. From the main toolbar in DashBoard, click **Save As** (🖫) to save the current configuration.

3. Navigate to the folder in which you want to save the configuration file.

✻ The default location is Desktop\Documents.

4. Click **Save**.

To save an existing configuration

1. Select the Panel Config interface containing the configuration that you want to save.

2. In the **File Navigator** pane, select the configuration file to which you want to save the current configuration.

3. Click 🖫 to save the current configuration.

Adding a Directory to File Navigator Pane

You can create a directory (folder) in the tree view in the File Navigator pane in the DashBoard window to store your configuration files. This enables you to group configuration files into a single folder, allowing quick access to your files. This method is optional, you can still access your configuration files without creating a directory in the File Navigator pane.

For More Information on...

• the File Navigator pane in DashBoard, refer to the *DashBoard User Manual*.

To add the configuration file location to the File Navigator panel

1. Display the **File Navigator** pane in the DashBoard window as follows:

   a. Click Views in the DashBoard main toolbar.

   b. Click **File Navigator**.

      The **File Navigator** pane displays in the lower left corner of the DashBoard window.

2. In the toolbar of the **File Navigator** pane, click ➕.

   The **Browse For Folder** window opens.

3. Navigate to the folder where you saved the configuration file.

4. Select the folder.

5. Click **OK**.

Editing a Configuration File

Any saved configuration files can be accessed and opened via the **File Navigator** pane in the DashBoard window. You can also open a saved configuration file, make changes to it, save it, and then send it to a panel.

To edit a saved configuration file

1. In the **File Navigator** pane, navigate to the saved configuration file that you want to open.

2. Double-click the icon for the file.

   The saved Panel Config interface displays in the right pane of the DashBoard window with the name of the file displayed in the interface tab.

3. Update the settings in the Panel Config interface as required.

4. Follow the procedure "**Sending a Configuration File to a Device**".

Sending a Configuration File to a Device

When you have made changes to the configuration of a panel, the changes are not activated in that panel until those changes are sent to the hard panel. You can also choose to send the same configuration to multiple panels without using the File Navigator pane in DashBoard.

To send the current configuration to a panel

1. Configure your panel using the tabs and options in the Panel Config interface.

✦ If you want to send the default configuration to a panel, open the default configuration file from the **File Navigator** pane.

2. Click **Send Configuration**.

   The **Send Configuration** dialog opens.
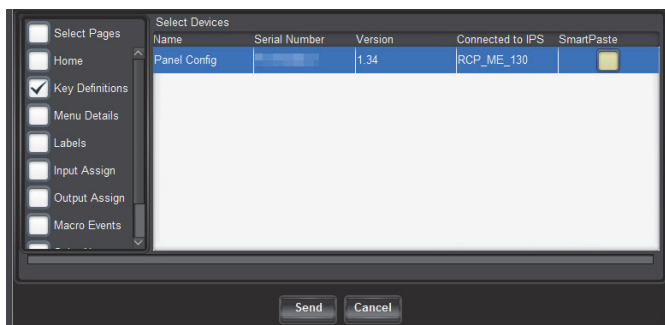
3. From the list in the left column of the dialog, select the tab settings that you want to send to the device.

4. In the **Select Devices** list, select the panel to which you want to send the current configuration.

5. Click **Send**.

6. In the **Basic Tree View** in the DashBoard window:

   a. Right-click the panel node.

   b. Select **Reload**.

   The panel is reloaded with the new configuration.

Loading the Factory Defaults Using DashBoard

If you need to return the RCP-ME to a known configuration, you can use DashBoard to load the factory defaults.

✶ This defaults the RCP-ME panel configuration (Panel Config interface settings) only, and not the connection configuration (Connection Editor).

To load the factory defaults

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Load Factory Defaults** check box.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

✶ Ensure that only the **Home** page box is selected in the **Send Configuration** dialog. De-select all other pages or they will be sent to the device as well, thus changing the factory defaults.

The factory defaults are loaded.

Monitoring

This chapter provides information on the display options for the LCD, how to monitor the panel via DashBoard, general tips to troubleshoot common problems, and briefly summarizes the steps required to update the firmware on the hard panel

Adjusting the Contrast for the LCD

You can fine tune the display contrast of the LCD on the front panel.

To adjust the contrast

1. Insert a Phillips head screwdriver into the **Display Contrast** trim-pot on the rear panel of the RCP-ME.

2. Adjust the trim-pot until the contrast suits your environment and viewing requirements.

Viewing Status and Alarms in DashBoard

An indication that alarms are present for a device is visible in the **Basic Tree View** pane. If a device has one or more alarms, a small circle appears in the icon for the device.
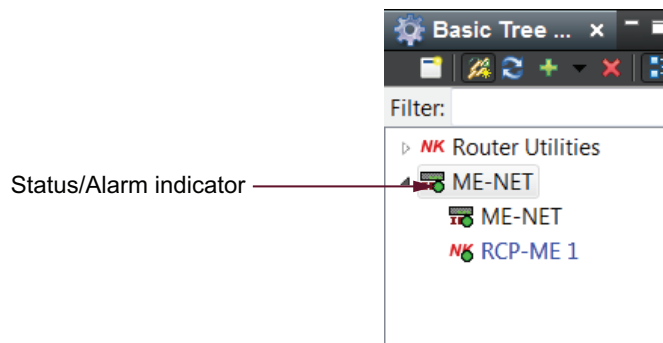
Figure 21 Basic Tree View pane showing device with status/alarm indication

The status and alarms are also viewable in the Configuration tab of the Panel Config interface.

To view the status and any alarms for an RCP-ME

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. View the status and alarms in the **Alarms** area.

    The status of the RCP-ME is shown via a number of colored buttons and labels:

    • **Green** – device is connected and operational.
    • **Yellow** – alarm is active. For example, a protect is active on the panel.
    • **Red** – device has been rebooted. Refresh the **Basic Tree View** in DashBoard to clear this status.
    • **Orange** – no active DashBoard connection. A forced connection is required.

Troubleshooting

This section provides general information and tips for troubleshooting.

Table 8 Troubleshooting

Problem	Cause	Action
I am stuck on a menu with no way back.	A return loop was not set up when the menu was defined.	Use DashBoard to return to the Home menu.
RCP-ME is not responding to DashBoard.	Information stored in the RCP-ME has been corrupted.	Try the following until the RCP-ME responds: • Reset the RCP-ME • Send the default configuration file to the RCP-ME • Load the factory defaults via DashBoard.
The RCP-ME is not switching correctly.	The NK Series devices are not set up correctly to operate with or without virtual routing.	Use DashBoard to set up the devices with virtual routing enabled or disabled as required.
I get a **PROT BRKWY ERR** when I press the **Protect** button.	At least one crosspoint across the router levels defined in the current breakaway does not exist.	Determine which level is causing the breakaway warning and then: • connect the source and destination equipment so that the particular crosspoint will work, or • remove the router level from the breakaway definition.

Loading the Factory Defaults via DashBoard

If you need to return the RCP-ME to a known configuration, you can use DashBoard to load the factory defaults.

✶ This defaults the RCP-ME panel configuration (Panel Config interface settings) only, and not the connection configuration (Connection Editor).

To load the factory defaults

1. Open the RCP-ME Panel Config interface (refer to "**To open the RCP-ME Panel Config interface**").

2. Select the **Configuration** tab.

3. In the **Configuration** section, select the **Load Factory Defaults** check box.

✶ Ensure that only the **Home** page box is selected in the **Send Configuration** dialog. De-select all other pages or they will be sent to the device as well, thus changing the factory defaults.

4. Send the current configuration file to the device (refer to "**To send the current configuration to a panel**").

   The factory defaults are loaded.

Upgrading the Software

The RCP-ME can be upgraded in the field via DashBoard. Note that DashBoard version 8.2.0 or higher is required for this procedure.

✶ Contact Ross Technical Support for the latest software file for the RCP-ME.

Checking the Firmware Version

Firmware may be updated easily using DashBoard. To check for the latest firmware versions, contact Ross Video Technical Support.

To check the firmware version of a RCP-ME using DashBoard

1. Launch **DashBoard**.

2. In the **Basic Tree View**, expand the node for the required RCP-ME.

3. Double-click the **Panel Config** node.

   The **Panel Config** interface opens.

   The firmware version is shown in the **Version** field located at the top of the interface.

Upgrading the Firmware Version

Firmware upgrade files can be obtained by contacting Ross Video Technical Support.

To upgrade the RCP-ME firmware

1. Launch **DashBoard**.

2. In the **Basic Tree View**, expand the node for the required RCP-ME.

3. Double-click the **Panel Config** node.

   The **Panel Config** interface opens.

4. Click **Send Firmware**.

   The **Open** file dialog opens.

5. Navigate to where you have stored the firmware file and select it.

6. Click **Open**.

   The **Confirm Upload** dialog opens.

7. Click **Continue**.

   A progress bar displays. When the upload has completed, a confirmation dialog opens.

8. Click **OK**.

9. Click **Reboot** to restart the device and activate the new firmware.

Troubleshooting the Upgrade

If you encounter problems when upgrading your RCP-ME, verify the following:

• Your network settings on the RCP-ME are valid.
• The ethernet cable is properly connected.
• The file you are attempting to load is the correct file for the panel you are upgrading.

DashBoard Interface Overview

This chapter outlines the interfaces, menus, and parameters available in DashBoard for the RCP-ME.

RCP-ME Connection Editor Fields

The RCP-ME Connector Editor interface displays in DashBoard when you double-click the second sub-node listed in the RCP-ME tree. This interface enables users to establish the RCP-ME network settings, such as the IP Address and TCP Port, assign the panel to a router group, and specify a unique identifier for the panel to be used in the DashBoard interfaces.

✸ The RCP-ME can have up to three more NK-NETs configured as backups in the event that connection is lost to the primary NK-NET.

Figure 22 Example of the RCP-ME Connection Editor

Device Details Area

The Device Details area is located in the top portion of the RCP-ME Connection Editor. This area displays information that identifies the RCP-ME within your routing system. **Table 9** briefly summarizes the fields displayed in the Device Details area.

Table 9 Device Details Area

Item	Parameters	Description
Serial Num (read-only)	#	The serial number is set in the factory before shipping and is unique to each device.
Version (read-only)	#.#	Displays the software/firmware version
Hardware Rev (read-only)	#	The hardware version of the RCP-ME

Table 9 Device Details Area

Item	Parameters	Description
Details	<text>	Assigned by the user to give an RCP-ME specific details. For example, a physical location or a brief description of its use. This field has a maximum of 16 characters and is used for description and identification only.
MAC Address (read-only)	#	The Media Access Control address (MAC address) is the unique hardware address for the RCP-ME on a network. This parameter is not user configurable
Name	<text>	This field can be assigned by the user to uniquely name an RCP-ME. This field has a maximum of 16 characters and is used for description and identification only. The DashBoard tree view uses the text in this field as the device tree name.
Group	#	A group number can be assigned by the user to organize devices into groups. For example, users can assign separate group numbers for devices in different physical areas. This field has a maximum of 10 characters and by default is blank.

Configuration Options

✶ Newly assigned IP addresses and net masks are checked for valid values before being applied to an RCP-ME. If the new values are invalid they will be discarded silently. Only a refresh of the RCP-ME Connection Editor will show that the values were not set.

The bottom half of the RCP-ME Connection Editor is organized into three areas: Network Settings, Servers to Connect to, and Connections. A toolbar at the bottom of the RCP-ME Connection Editor provides buttons for updating the panel.

Network Settings Area

Table 10 summarizes the options for specifying the network settings for the RCP-ME.

Table 10 Network Settings Area

Item	Parameters	Description
IP Address	#.#.#.#	Enter or edit the IP address of the device
Netmask	#.#.#.#	Enter or edit the IP netmask of the device
Gateway	#.#.#.#	Enter or edit the IP gateway of the device
TCP Port	#	Enter or select the Transmission Control Protocol port number used for network communication. By default, the TCP Port is 5000, and any client devices/apps should be set up with the same port number

Servers to Connect to Area

Table 11 summarizes the options for configuring communications between the RCP-ME and a server.

✱ In the event that the RCP-ME is unable to connect to a server or loses connectivity, it will attempt to connect to the next server after 10 seconds. For each server that the RCP-ME fails to connect to, it will attempt to connect to the next available server until it arrives back at the original server to which it attempted to connect.

Table 11 Servers to Connect to Area

Item	Parameters	Description
Servers	#	The order priority of the servers
IP Address	#.#.#.#	The IP address of the server
Connected (read-only)	Selected	There is a connection to the specified server
	Cleared	No valid connection to the specified server

Connections Area

Displays the number of clients connected to the RCP-ME.

Bottom Toolbar

The bottom toolbar of the RCP-ME Connection Editor displays the following buttons:

• **Refresh** — Reverts to the configuration previously sent to the RCP-ME. The RCP-ME Connection Editor will display the last settings that were sent to the RCP-ME via the **Send Configuration** button.

• **Send Firmware** — Opens a file browser to select a software/firmware file to send to the RCP-ME.

• **Send Configuration** — Uploads the settings to the RCP-ME.

✱ All configuration items become active only after uploading by sending the configuration to the device.

• **Reboot** — Reboots the RCP-ME. This function does not clear the RCP-ME settings.

• **Close** — Closes the RCP-ME Connection Editor in DashBoard.

Panel Config Interface

The Panel Config interface enables you to setup device details, assign panel button, menus, I/O, and macros.
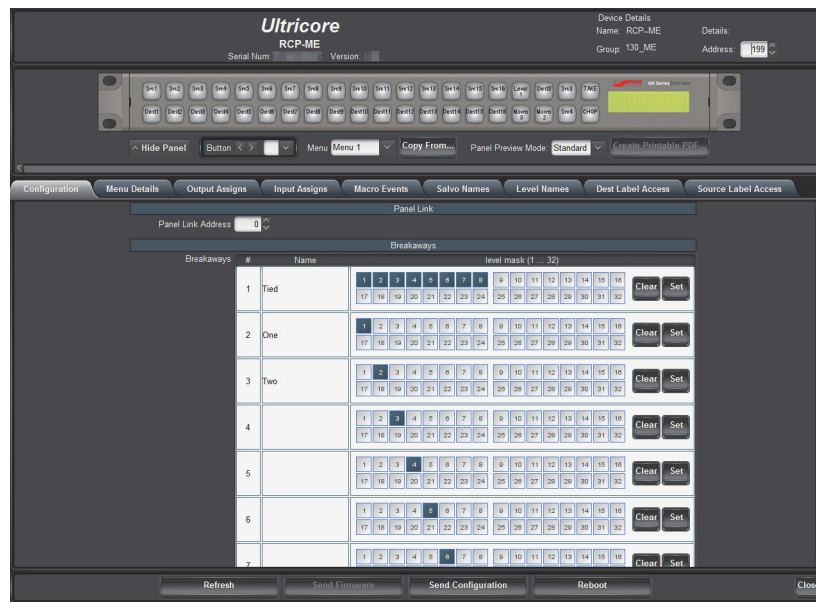
Figure 23 Example of the RCP-ME Panel Config Interface

Top Toolbar

The Device Details area is located in the top-right corner of the RCP-ME Panel Configuration Editor. This area displays information that identifies the RCP-ME within your routing system. **Table 12** briefly summarizes the fields displayed in this Device Details area.

Table 12 Device Details Area

Item	Parameters	Description
Serial Num (read-only)	#	Displays the serial number is set in the factory before shipping and is unique to each device
Version (read-only)	#.#	Displays the software/firmware version
Device Details		
Name (read-only)	<text>	Displays the unique identifier for the RCP-ME as specified in the RCP-ME Connection Editor.
Group (read-only)	#	Displays the group number assigned by the user to organize devices into groups. For example, users can assign separate group numbers for devices in different physical area.
Details (read-only)	<text>	Displays the additional information the user provided in the RCP-ME Connection Editor. For example, a physical location or a brief description of its use.
Address	#	This address is used within the overall control system to identify NK devices using resource management and protects. Each device must be given a unique T-BUS address to avoid communication conflicts[a]. The valid value range for assigning an individual device T-BUS address is 1-255

a. Except when panel-linking is used.

Simulated RCP-ME Panel Area

The RCP-ME Panel Config interface displays a representation of the RCP-ME hard panel. (**Figure 24**)
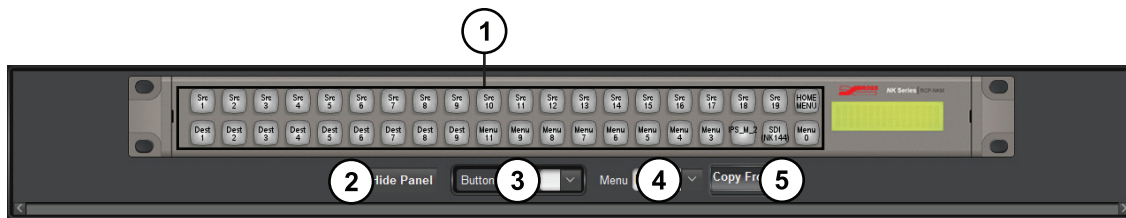
Figure 24 Example of an RCP-ME Hard Panel in DashBoard

1. Function Buttons

This area represents the function, source, and/or destination buttons configured for the RCP-ME. Click a button to open the **Button** menu to assign a function to the button.

2. Hide Panel Button

Click this button to hide the simulated RCP-ME panel.

3. Button < > Field

Click the arrow buttons to select a button from the panel or use the list to select a specific button. The available button functions are listed in the **Button** configuration box. Click a button on the simulated panel to open the **Button** configuration box. Selecting a function from the button list will display the configurable aspects of that particular function to the right of the list. The following universal fields are also available in the **Button** configuration box:

› **Auto-Advance** — select this check box to automatically select the next button on the panel. This function advances across the panel from left to right, top to bottom.

› **Maintain Selection** — select the this check box if the **Auto-Advance** check box is selected and you wish to remain on the selected button.

› **Quick Find** — type a function into the box to rapidly access that function from the button list.

4. Menu Field

Use the list to select a specific menu configuration for the panel.

5. Copy From... Button

Click this button to open the Copy Menu From dialog box to select a menu configuration to copy.

6. Panel Preview Mode

Select between multi-page menu or Ultricore category assignment views.

Configuration Tab

The RCP-ME Panel Config interface displays a series of tabs below the simulated panel area. This section outlines the options displayed when the Configuration tab is selected.
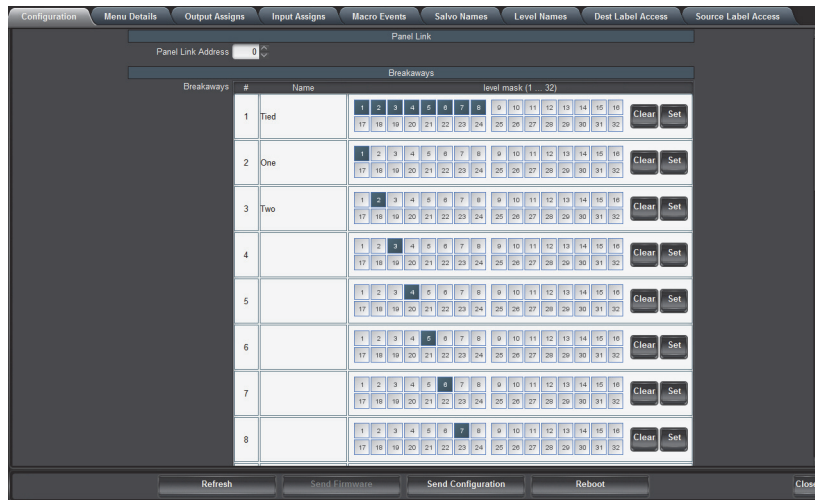
Figure 25 Panel Config — Configuration Tab

Table 13 summarizes the options displayed in the **Configuration** tab.

Table 13 Configuration Tab

Item	Parameters	Description
Panel Link		
Panel Link Address	#	Two or more remote control panels may be linked to form a larger physical panel. This is known as panel linking. Panels are linked when they have the same master address and different panel link addresses.
Breakaways		
Breakaways	#	The list number of the breakaway (read-only)
Name	<text>	The name assigned for the breakaway. The names are user configurable
level mask (1…32)	1-32	Click a router level to: • assign a level mask (1) or • de-select a level mask (1) If using with an Ultricore, these level numbers correlate to the Level ID in the Ultricore database. Refer to the ***Ultrix and Ultricore Database Guide*** for information on using Level IDs in your database.
Clear		Click this button to clear all level masks for a given breakaway
Set		Click this button to apply all selected level masks for a given breakaway

Table 13 Configuration Tab

Item	Parameters	Description
Cutbus Mode	Off	Turn off cutbus mode
	Normal	Single or dual cutbus. Cutbus operation is automatically invoked when there are no destination buttons or crosspoints set on the RCP-ME.
	Multi	Advanced cutbus mode that utilizes crosspoint buttons to support an arbitrary number of cutbus outputs. Cutbus operates as a collection of crosspoint buttons that, when selected, will display source and destination information about the selected crosspoint on the LCD screen
Permanent Category Mode	Off	Panel is in standard multi-page menu layout with optional category mode assignment
	On	Panel is permanently in Category mode. No multi-page menus or other key assignments are available.
Cutbus Dest 1	#	Enter or select an output from the top row of buttons for the cutbus destination if using Normal Cutbus Mode
Cutbus Dest 2	#	Enter or select an output from the bottom row of buttons for the cutbus destination if you want to use dual Normal Cutbus Mode. For single cutbus mode, this must be set to the same destination as Cutbus Dest 1.
On Brightness	#	Enter or select a brightness level between 1 and 8 for the buttons when they are selected (with 1 being the dimmest and 8 being the brightest).
Off Brightness	#	Enter or select a brightness level between 0 and 8 for the buttons when they are not selected (with 0 turning off brightness, 1 being the dimmest, and 8 being the brightest)
Breakaway Reset	Selected	Return to the default breakaway after every switch. The default is Breakaway 1.
	Cleared	Disables this feature
Breakaway Warning Mode	Current	if there is a level mismatch compared to the current breakaway, a breakaway warning is shown when displaying the status
	Default	if there is a level mismatch compared to the default breakaway (Breakaway 1), a breakaway warning is shown when displaying the status
Panel Locked	Selected	Locks the panel buttons
	Cleared	Unlocks the panel buttons
Machine Control Enabled	Selected	Uses machine control to provide reciprocal switching of RS-422 signals
	Cleared	Disables this feature

Table 13 Configuration Tab

Item	Parameters	Description
Machine Control Level	#	Specify a router level for machine control
Virtual Routing Enabled	Selected	Enable virtual routing. Virtual routing requires an NK-VRC in an Ross NK series router system. Virtual routing must be enabled for the RCP-ME to function with an Ultrix router or Ultricore Central Controller.
	Cleared	Disables this feature
Comms Retry Delay Factor	#	Specifies a retry delay factor in milliseconds. Systems require different retry times depending on the transfer of requests and responses between modules. A value of 50 to 100ms is recommended.
Protect Mode	Block Other Panels	The protected destination and level(s) cannot be switched to another source by other remote control panels or control devices. The protected destination and level(s) can be switched to another source on the current remote control panel.
	Block All Panels (Lock)	The protected destination and level(s) cannot be switched to another source by any control device
Clear Protect(s)	Selected	Clears all protects from the panel
	Cleared	Protects are not cleared from the panel
Return to Home Menu	Selected	Forces the panel to its home menu configuration
	Cleared	Panel will continue showing its current menu/page
Load Factory Defaults	Selected	Loads the factory defaults of the panel. This box is cleared immediately upon sending to a panel.
	Cleared	Panel default layout will not be loaded
Protect	No Protect (Green)	Indicates that there is no crosspoint protect enabled on the panel
	Protect(s) (Yellow)	Indicates that a crosspoint protect is enabled on the panel

Menu Details Tab

The Menu Details tab enables you to specify:

• the maximum number of menus (button maps) the panel can access
• a hierarchy of the menus in the system
• the name for each menu
• the fallback mode for each menu
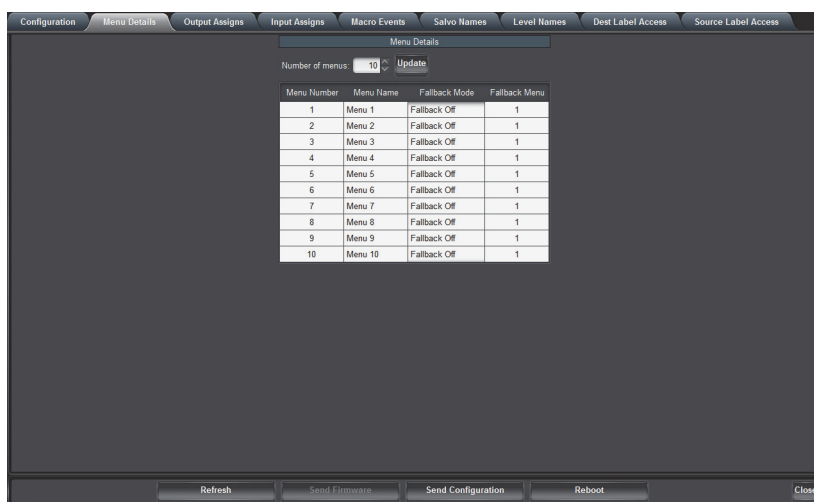
Figure 26 Panel Config — Menu Details Tab

Table 14 summarizes the options displayed in the **Menu Details** tab.

Table 14 Menu Details Tab

Item	Parameters	Description
Number of Menus	#	Specify a number of menus to use for the panel
	Update	Updates the amount of menus used for the panel
Menu Number (read-only)	#	Displays the list order number of the menu
Menu Name	<text>	Enter or edit a name for the selected menu
Fallback Mode	Fallback Off	After a button in the menu is pressed, the RCP-ME remains on the menu the panel is currently on
	First Menu	After a button in the menu is pressed, the RCP-ME returns to Menu Number 1
	Previous Menu	After a button in the menu is pressed, the RCP-ME returns to the menu that was active prior to the current menu
	Specified Menu	After a button in the menu is pressed, the RCP-ME returns to the menu specified in the Fallback Menu column
	Fallback Menu	If using Specified Menu as the fallback mode, click inside the table cell to enter a menu number to return to after a button is pressed
Fallback Menu	#	Specifies the Menu Number the Fallback Mode will use

Output/Input Assigns Tabs

✦ If the RCP-ME is configured to connect to an Ultrix router or Ultricore Central Controller, the output and input assignments are managed from those devices. Any editing on the RCP-ME tabs will be overwritten.
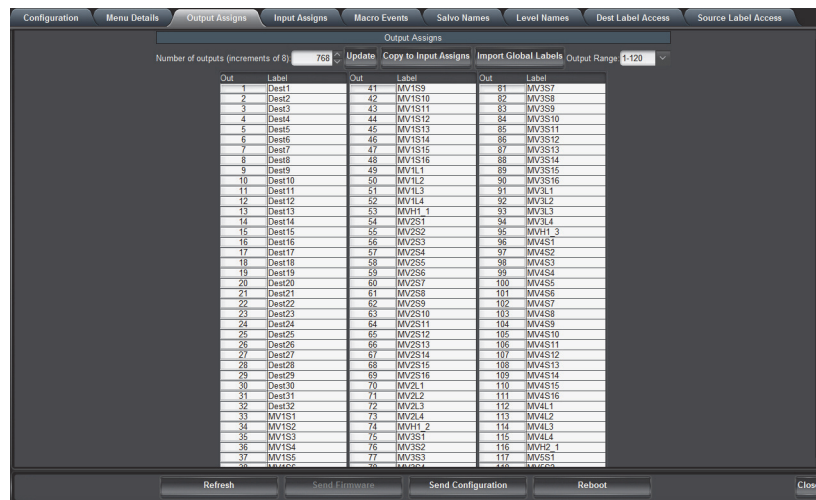
Figure 27 Panel Config — Output Assigns Tab

Table 15 summarizes the options displayed in the **Output Assigns** and **Input Assigns** tabs.

Table 15 Output/Input Assigns Tab

Item	Parameters	Description
Number of outputs/inputs	#	Specifies a number of outputs/inputs. The number must be changed in increments of eight.
Update	Updates the output/input assigns	
Copy to Input/Output Assigns	Transfers the number of outputs/inputs to the other assigns tab. The labels are also imported.	
Import Global Labels	Imports global labels (a file create and managed by DashBoard) for the input/output labels	
Output/Input Range	#	Specifies the range of outputs/inputs to view in the Output/Input Assigns. The Assigns tab will only display the ranges in blocks of 120 outputs/inputs at a time, with each block selectable in the list.
Out/In (read-only)	#	Displays the output/input number
Label	Edit or enter a name for the output/input. If you have configured global labels, the labels can also be filled in by clicking the Import Global Labels button.	

Macro Events Tab

The **Macro Events** tab enables you to configure the macros the hard panel will use.
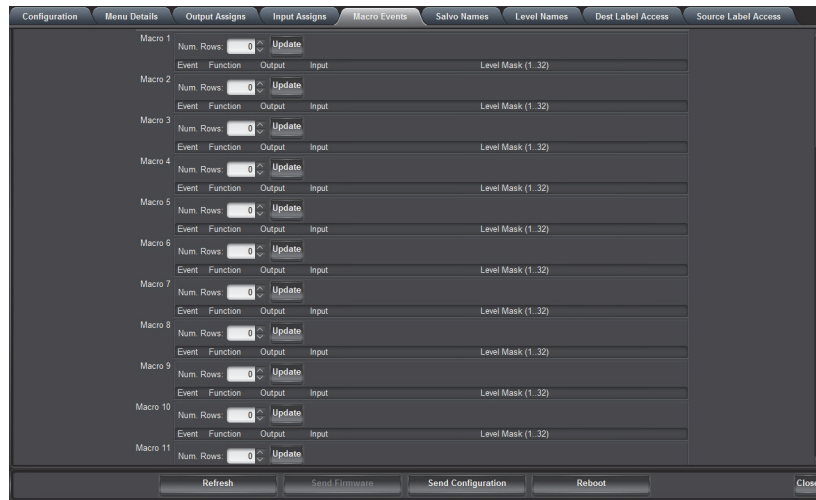
Figure 28 Panel Config — Macro Events Tab

Table 16 summarizes the options displayed in the **Macro Events** tab.

Table 16 Macro Events Tab

Item	Parameters	Description
Macro # (read-only)	#	Specifies the macro number
Num. Rows	#	Specifies the number of events to add to the macro
	Update	Updates the macro with the number of rows entered in the Num. Rows field
Event (read-only)	#	Displays the macro event number. Triggering the macro will trigger events in this order.
Function	Switch	Performs a standard crosspoint switch
	Macro	Performs a macro within the executed macro
	Protect	Creates a protect condition on the destination of the selected crosspoint
Output	#	Specifies the destination output
Input	#	Specifies the source input
Level Mask (1...32)	#	Specifies the level mask(s) for the device affected by the macro
Clear	Clear the level mask(s)	
Set	Set the level mask(s)	

Salvo Names Tab

✦ Only applicable when the routing system includes an Ultrix router or Ultricore Central Controller.

The **Salvo Names** tab enables you to assign a new label, to be used only on this hard panel, to the salvos available in the router database.

Table 17 summarizes the options displayed in the **Salvo Names** tab.

Table 17 Salvos Names Tab

Item	Parameters	Description
Salvo # (read-only)	#	Displays the list order number of the salvo
Name (read-only)	<text>	Name of the salvo as defined by the connected Ultrix router or Ultricore Central Controller database. Refer to the ***Ultrix and Ultricore Database Guide*** for details on creating salvos.
Enabled	This option is not implemented	

Level Names Tab

The **Level Names** tab enables you to assign a new label, to be used only on this RCP-ME, to the levels available in the router matrix. You can also choose to enable or disable individual levels for this panel.

Table 18 summarizes the options displayed in the **Level Names** tab.

Table 18 Level Names Tab

Item	Parameters	Description
# (read only)	#	Displays the list order number of the level name entry
Name (read-only)	<text>	Displays the name of the Level as defined in connected Ultrix router or Ultricore Central Controller. Refer to the ***Ultrix and Ultricore Database Guide*** for details on defining the levels in a database.
Enabled	Enable/disable this level in any Category mode	

Destination/Source Label Access Tabs

The Label Access tabs allow or deny a panel access to a label. Even if a button is assigned with a specific source or destination label, and if the label access is denied (the box is unchecked), then a "**NoAcc**" message is displayed if the button is pressed.

Table 19 summarizes the options displayed in the **Destination/Source Label Access** tabs.

Table 19 Destination and Source Label Access Tabs

Item	Parameters	Description
# (read only)	#	Table row number

Table 19 Destination and Source Label Access Tabs

Item	Parameters	Description
Label (read-only)	<text>	Displays the source or destination label as defined by the Ultricore database or the Input/Output assigns tab (if no Ultricore system). Refer to the *Ultrix and Ultricore Database Guide* for details on assigning labels.
Enabled		Enable/disable access for this label

Bottom Toolbar

The bottom toolbar provides the following buttons:

• **Refresh** — click this button to revert to the configuration previously sent to the RCP-ME. The RCP-ME Connection Editor will display the last settings that were sent to the RCP-ME via the Send Configuration button.

• **Send Firmware** — click this button to open a file browser to select a software/firmware file to send to the RCP-ME.

• **Send Configuration** —click this button to upload the settings to the RCP-ME. All configuration items become active only after uploading.

• **Reboot** — click this button to reboot the RCP-ME. This function does not clear the RCP-ME settings.

• **Close** — click this button to close the RCP-ME Connection Editor in DashBoard.

Send Configuration Dialog

The **Send Configuration** dialog is used to apply the changes made in DashBoard to the hard panel. The dialog is divided into two areas:

• a column that lists the tabs that have unsent parameters

• the Select Devices list that enables you to specify which panels to send the new configuration to.

This dialog is displayed when the **Send Configuration** button is clicked on the Panel Config interface.
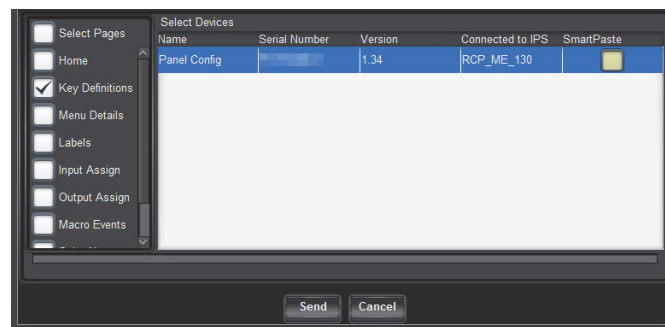

Figure 29 Example of a Send Configuration Dialog

Table 20 lists the tab check boxes available in the **Send Configuration** dialog.

Table 20 Send Configuration — Pages List

Page	Description
Select Pages	Selecting this selects every tab, including the Function and Key button definitions to send to the device.

Table 20 Send Configuration — Pages List

Page	Description
Home	The information contained in the **Device Details** frame and the **Configuration** tab.
Key Definitions	The information defining how the SRC/DEST buttons have been assigned.
Menu Details	The information contained on the **Menu Details** tab.
Labels	The information contained in the combined pool of input and output labels.
Output Assign	The information contained on the **Output Assigns** tab.
Input Assign	The information contained on the **Input Assigns** tab.
Macro Events	The information contained on the **Macro Events** tab.
Salvo Names	The information contained on the **Salvo Names** tab
Level Names	The information contained on the **Level Names** tab
Function Definitions	The information defining how the Function buttons have been assigned

Table 21 lists the items in the Select Devices Area in the Send Configuration dialog.

Table 21 Send Configuration — Select Devices Area

Page	Description
Name	Displays the name assigned to the device.
Serial Number	Displays the serial number of the device.
Version	Indicates the software version the device is currently running.
Connected to IPS	Indicates if the device is communicating with the RCP-ME via a specific NK-IPS
SmartPaste	The check box is automatically selected when electing to send the current configuration to devices other than being currently edited. Only the Panel Configuration options (not panel details), are transferred to other devices of the same type.

RCP-ME Hexadecimal to Router Level Conversion

The router level is represented by eight hexadecimal characters. For each hexadecimal character, read the corresponding binary representation across the table.

For each '1' that appears in the binary representation, drop down to the Level row to read the actual router level included in the mask. For example, 0AB50221 represents levels 28, 26, 24, 22, 21, 19, 17, 10, 6, and 1.

Table 22 Look-up table for hexadecimal to router level conversion

Hexadecimal	1st character				2nd character				3rd character				4th character			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
2	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
3	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
4	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
6	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
7	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1
8	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
9	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
A	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
B	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1
C	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0
D	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1
E	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0
F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Level	**32**	**31**	**30**	**29**	**28**	**27**	**26**	**25**	**24**	**23**	**22**	**21**	**20**	**19**	**18**	**17**

Hexadecimal	5th character				6th character				7th character				8th character			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
2	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
3	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
4	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
6	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
7	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1
8	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
9	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
A	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
B	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1
C	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0
D	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1
E	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0
F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Level	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Glossary

The following terms are used throughout this guide:

Breakaway — an act of performing a switch on only some of the signals grouped together under one label.

Connection Point — setting to define a communication connection between RCP-ME and a device in the routing system.

Crosspoint — a switch within a matrix. For example, the connection of signal IN 1 to OUT 1 requires one crosspoint.

Destination — a logical label representing an output or group of outputs from the routing system.

IP Address — a setting that defines the Internet protocol address of a device within a network.

Label — text that is used by control displays to identify a signal as an input or output.

Level (**Layer**) — refers to a section of a routing system. For example, a video router would be one level and an audio router would be a second level.

Lock — a function preventing any control device from changing the source of a specific destination.

Logical (**Virtual**) **Label** — a name for a group of routing system inputs or outputs.

Logical (**Virtual**) **Routing** — the action of switching a group of otherwise unrelated signals via a common label (name).

Macro — a recorded sequence of Remote Control Panel operations (local to the panel).

Map — a table that defines the allocation of logical names (labels) to routing system physical input and output sockets.

Matrix — the part of the routing system that performs the actual signal switching tasks.

Partition — matrices may be partitioned to behave as smaller independent matrices.

Protect — a function preventing other control devices from changing the source of a specific destination.

Remote Control Panel (RCP) — a physical hardware panel of buttons that is used to control the routing system.

Salvo — a system wide sequence of matrix control operations and crosspoint actions.Salvos are only available via Ultricore control systems.

Source — a logical label representing an input or group of inputs to the routing system.

T-Bus — the Ross Video proprietary routing communication method via a defined physical interface.

Tied (**Audio Follow Video**) — the default breakaway name referring to all routing system levels.

Virtual Routing — the action of switching a group of otherwise unrelated signals via a common label (name).