openGear

MC1 Master Control

MC1-MK

Master Control Switcher
Operation Manual

ROSS
Video Production Technology

MC1-MK Operation Manual

- Ross Part Number: MC1MKDR-004B-04
- Release Date: October 22, 2012.

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

Copyright

Patents

This product is protected by the following US Patents: 4,205,346; 5,115,314; 5,280,346; 5,561,404; 7,304,886; 7,508,455; 7,602,446; 7,834,886; 7,914,332. This product is protected by the following Canadian Patents: 2039277; 1237518; 1127289. 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.

Trademarks

Important Regulatory and Safety Notices to Service Personnel

Before using this product and nay associated equipment, refer to the "**Important Safety Instructions**" listed below to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

Symbol Meanings

This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage to persons or equipment.

Warning — *The symbol with the word "**Warning**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.*

Caution — *The symbol with the word "**Caution**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.*

Notice — *The symbol with the word "**Notice**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in major or minor equipment damage or a situation which could place the equipment in a non-compliant operating state.*

ESD Susceptibility — *This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.*

Important Safety Instructions

Caution — *This product is intended to be a component product of the DFR-8300 series frame. Refer to the DFR-8300 Series Frame User Manual for important safety instructions regarding the proper installation and safe operation of the frame as well as its component products.*

Warning — *Certain parts of this equipment namely the power supply area still present a safety hazard, with the power switch in the OFF position. To avoid electrical shock, disconnect all A/C power cords from the chassis' rear appliance connectors before servicing this area.*

Warning — *Service barriers within this product are intended to protect the operator and service personnel from hazardous voltages. For continued safety, replace all barriers after any servicing.*
This product contains safety critical parts, which if incorrectly replaced may present a risk of fire or electrical shock. Components contained with the product's power supplies and power supply area, are not intended to be customer serviced and should be returned to the factory for repair. To reduce the risk of fire, replacement fuses must be the same time and rating. Only use attachments/accessories specified by the manufacturer.

Warning — *This product includes an "Ethernet Port" which allows this product to be connected to a local area network (LAN). Only connect to networks that remain inside the building. Do not connect to networks that go outside the building.*

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 their own expense.

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

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

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

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of CE Directive 93/68/EEC.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002**, 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.*

Maintenance/User Serviceable Parts

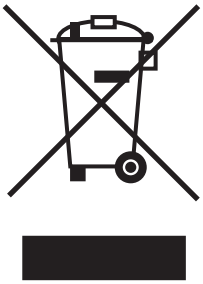
Routine maintenance to this openGear product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "Contact Us" section on the last page of this manual. All openGear products are covered by a generous 5-year warranty and will be repaired without charge for materials or labor within this period. See the "Warranty and Repair Policy" section in this manual for details.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It 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 wheelie 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 performance of our products.

Company Address

Ross Video Limited
8 John Street
Iroquois, Ontario, K0E 1K0
Canada

Ross Video Incorporated
P.O. Box 880
Ogdensburg, New York
USA 13669-0880

General Business Office: (+1) 613 • 652 • 4886
Fax: (+1) 613 • 652 • 4425
Technical Support: (+1) 613 • 652 • 4886
After Hours Emergency: (+1) 613 • 349 • 0006
E-mail (Technical Support): techsupport@rossvideo.com
E-mail (General Information): solutions@rossvideo.com
Website: http://www.rossvideo.com

Contents

On Air Control Overview

In This Chapter

This chapter provides a basic introduction to the MC1-MK, including an overview of the different areas of the On Air Control interface, using the menu system, as well as a brief summary of how video is controlled by the MC1-MK.

The following topics are discussed:

- Navigating to the On Air Control Interface
- Menu System Basics
- Switcher Basics

Navigating to the On Air Control Interface

This section provides a brief overview of navigating the MC1-MK interface in DashBoard.

To launch DashBoard

1. Ensure that you are running DashBoard software version 5.0.0 or higher. The software and ***DashBoard User Manual*** are available from the Ross Video website.
2. Launch DashBoard by double-clicking its icon on your desktop.
3. Locate the MC1-MK in the Basic Tree View of DashBoard. If the card does not appear, consult the ***MFC-8300 Series User Manual*** and ***DashBoard User Manual***.

To access the MC1-MK On Air Control interface

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.

To set the MC1-MK On Air Control interface to full-screen

1. Press **Shift+F11** to display the interface in full-screen mode. You can also select **Window > Full Screen** from the DashBoard toolbar.
2. To exit out of full-screen mode, press **Shift+F11** again.

To lock the MC1-MK interface

1. To lock the interface, select the **Lock** button located in the upper right corner of the On Air Control interface. You can also press **Shift+F4**.
2. To unlock the interface, use the provided **Unlock** spinner.

Menu System Basics

The **On Air Control** interface enables you to set up and perform transitions, configure keyers, monitor and control audio levels. This section provides a brief overview of the controls available in this interface.

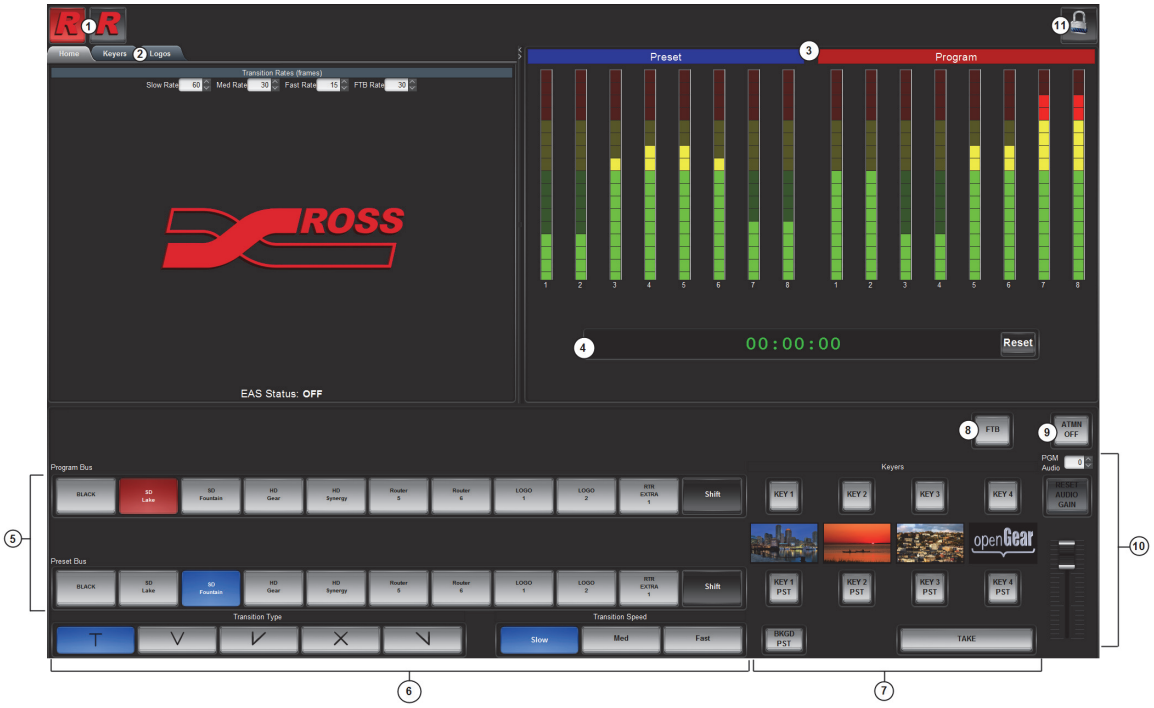


Figure 1.1 *MC1-MK — On Air Control Interface*

1) Channel Select Buttons	5) Crosspoint Buses	9) ATMN Button
2) Setup Tabs	6) Transition Area	10) PGM Audio Area
3) Audio Meters	7) Keyer Area	11) Lock Button
4) Timer Display	8) FTB Button	

1. Channel Select Buttons

This area includes buttons that allow you to toggle between multiple MC1-MK interfaces. Selecting a button displays the corresponding MC1-MK **On Air Control** interface in DashBoard. A lit button indicates that the corresponding On Air Control interface is the currently (active) one in DashBoard. The icons on these buttons can be changed as described in the ***MC1-MK Installation Manual***.

By default, and after a factory default reset is performed, these buttons do not display an icon (the button faces are blank).

2. Setup Tabs

The tabs located near the top left of the interface provide options for configuring the keyers, on-air controls, and selecting logo channel sources. Refer to the chapter "**Appendix A. DashBoard Menus**" on page 6-1 for a list of the tabs and parameters available.

3. Audio Meters

The **On Air Control** interface displays an audio meter for the first eight audio channels of Program and Preset (note that display will not be real-time). The meter scale ranges from 0 to -120dBFS. Refer to the section "**Audio Features**" on page 4-2 for details.

4. Timer Display

This display is a free running timer that counts to a maximum of 23:59:59 (hh:mm:ss) and can be reset to 00:00:00 using the **Reset** button.

5. Crosspoint Buses

This area is used to select the video sources for each bus. Each crosspoint button will display the name of its source on the button face. The last button of the row is a **Shift** button, which provides access to 10 additional selectable crosspoints. The default bus mapping is outlined in the ***MC1-MK Installation Manual***. The following buses are available:

- **Program Bus** — The Program Bus is used to select the video source that will show as the Background on the Program output. After performing a factory default reset, the first unshifted router source (**Router 1**) is selected on this bus.
- **Preset Bus** — The Preset Bus is used to select the video source that is visible on the Preview output. After performing a factory default reset, the second unshifted router source (**Router 2**) is selected on this bus.

6. Transition Area

This area provides the options for selecting transition rates (slow, medium, fast), and type (take, fade-fade, take-fade, mix, and fade-take). Refer to the chapter "**Transitions**" on page 3-1 for details.

7. Keyer Area

This area includes the four keyers that place a key "downstream" of the MC1-MK system output. This "top level" effect can consist of a logo channels and/or character generator text. Note that the last Keyer is automatically assigned to an EAS source when used (EAS is enabled in the **Remote Control** tab).

8. FTB Button

Use this button to fade the Program bus to black. The FTB rate is specified in the **Home** tab. After performing a factory default reset, this button is toggled off (unlit).

9. ATMN Button

Toggling this button on (button will be lit) allows an Automation System to control the MC1-MK. After performing a factory default reset, this button is toggled off (unlit).

10. PGM Audio Area

This area includes an audio fader that enables you to control the Program audio gain. The slider is set by default to 0 and has a range of -72 to +12dB. Use the **Default** button to reset the audio gain. You can also configure an option in the **Personality** tab to automatically reset the audio gain to 0dB after any Background transition. Refer to the ***MC1-MK Installation Manual*** for details on configuring the option.

11. Lock Button

Use this button to lock the interface so that users are locked-out of the interface. This prevents anyone from changing settings on this MC1-MK interface. To lock the interface, select the button. To unlock, use the provided **Unlock** rotary spinner.

Switcher Basics

This section gives an overview of how video is controlled by the MC1-MK. This includes video sources, video layering, and preview. For information on setting up crosspoints and video inputs, refer to the ***MC1-MK Installation Manual***.

Video Sources

The MC1-MK has access to two basic types of video sources: external and internal. All video sources can be assigned to video source (crosspoint) buttons. By pressing a crosspoint button on a bus, the video source assigned to that button is selected.

- **External** — External video sources come from a router.
- **Internal** — Internal video sources come from internally generated video, such as any of the four internally generated Logo channels, or an internally generated black.

To select a video source on a bus, you must identify the bus you want to assign a video source to and then press the crosspoint button you want to select on that bus.

Video Layering

Key layering is fixed for the MC1-MK and starts with Background and proceeds to Keyer 4.

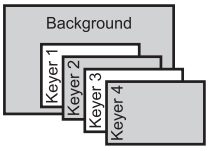


Figure 1.2 *Video Layering*

Video Preview

Video preview allows you to use an additional monitor to preview what the next shot is going to be. The Preset bus of MC1-MK shows what is selected for the next transition. This includes the keys and background video sources that will be on-air after the next transition.

Overlay

The overlay feature provides one layer of text, in real time, as a source for any Keyer. The text can be from an EAS.

Multiple MC1-MK Operation

DashBoard enables you to have multiple On Air Control interfaces open with each interface for a specific MC1-MK Master Control Switcher. Refer to the ***MC1-MK Installation Manual*** for details on setting up multiple cards.

Keying

In This Chapter

Keying is the term used to describe when you insert (or electronically cut) portions of one screen into another, or place titles over background images. Keys are made up of two basic components: an alpha (that cuts the hole in the background video), and a fill (that fills the hole with different video). This chapter provides a summary of the MC1-MK keying features.

The following topics are discussed:

- Keyers Overview
- Configuring a Key

Keyers Overview

MC1-MK includes four high quality HD/SD-SDI video keyers. In addition to the external Key Video and Key Alpha source, there are also four internal static/animation playout channels. An excellent device for keying external devices such as character generators, graphic systems and EAS devices into a program feed and/or keying with four internal logo channels.

The card offers full key control with shaped and unshaped keying, self key or auto key, with clip and gain control.

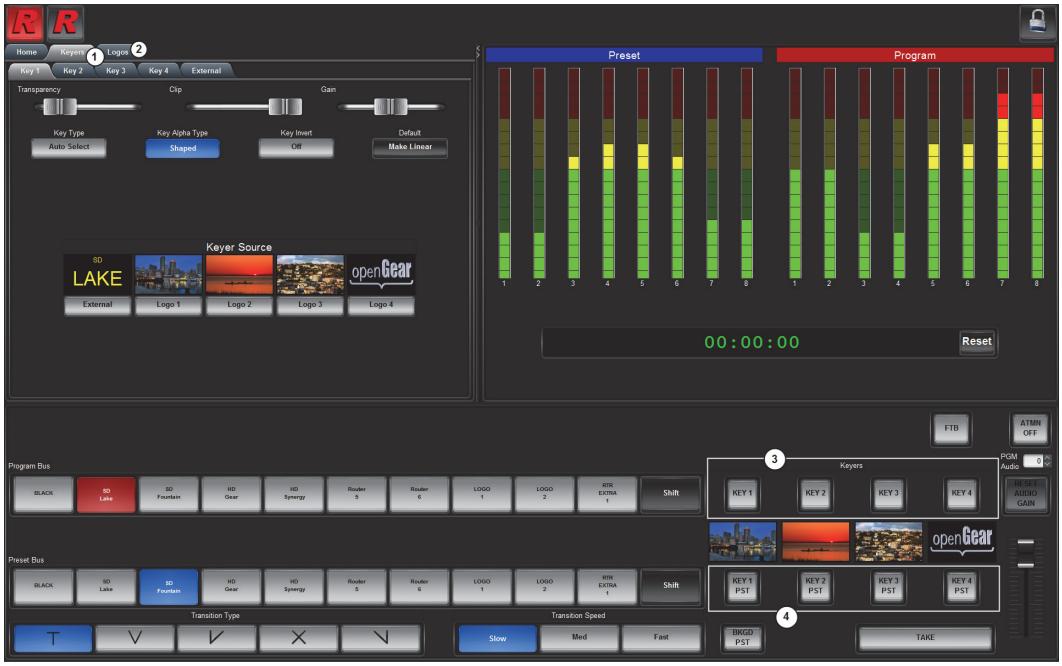


***Figure 2.1** Keyer Controls*

1) Keyers Tab	3) Program Keyer Select Buttons
2) Logos Tab	4) Preset Keyer Select Buttons

1. Keyers Tab

Each keyer has a sub-tab that enables you to select video sources, key types, and adjust transparency, clip, and gain. The MC1-MK supports Auto Select and Self keys. The External sub-tab enables you to specify the router source that feeds input on BNC 2 or 4 used as the **External** source when configuring keyers.

2. Logos Tab

Each logo channel has a sub-tab in the Logos tab that enables you to specify the media files the channel uses. Refer to the section "**Loading Media Files**" on page 5-2 for details.

3. Program Keyer Select Buttons

When lit red, a button indicates that specific keyer is currently on-air on the Program bus. Selecting a button will immediately perform cuts on that keyer.

4. Preset Keyer Select Buttons

These buttons are used to choose which keyer is included in the next transition. Note that depending on a Personality tab setting, once a transition is performed, the button(s) are no longer lit.

Configuring a Key

The MC1-MK provides the ability to associate each keyer (1-4) with the following sources: external key/key fill, and logo channel. This section briefly describes how to set up Key Alphas, Auto Keys, adjust the clip and gain values.

For More Information on...

- the **Keyers** menu items, refer to **Table 6.2** on page 6-3.
- loading media files to logo channels, refer to the section "**Loading Media Files**" on page 5-2.
- performing transitions, refer to the section "**Performing Transitions**" on page 3-4.

Overview

This section outlines the key types and key alpha types supported by the MC1-MK.

Key Types

The MC1-MK supports the following key types:

- **Auto Select** — An Auto Select Key uses two video signals: the Key Alpha is used to cut the hole in the video, and the Key Video is used to fill the hole. For external keying, the source on BNC 2 is the Key Video and the source on BNC 4 is the Key Alpha. For internal sources, the Key Video and Alpha are generated internally (BNC 2 and BNC 4 are not used). Note that the **Key Alpha Type** is automatically set to **Shaped**.
- **Self** — A Self Key uses only one video signal: the luminance (or brightness) of the Key Video is used as the Key Alpha. For external keying, the source on BNC 2 is used as the Key Video and the Key Alpha (BNC 4) is not used. For internal sources, the Key Video is internally supplied (BNC 2 nor BNC 4 are used). Note that the **Key Alpha Type** is automatically set to **Unshaped**.

Key Alpha Types

You can specify a key alpha as one of the following:

- **Unshaped** (multiplicative keying) — With an Unshaped Key, the Key Alpha luminance value mixes linearly the Key Video with the Background. Shades of gray, in the Key Alpha, are translated into transparency levels, giving the key a soft edge. Self Keys are set to Unshaped by default.
- **Shaped** (additive keying) — With a Shaped Key, the Key Alpha cuts a hole in the Background based on the luminance value of the Key Alpha and adds the Key Video to the Background hole. Shaped Key alphas are sometimes used with Character Generators to cut very precise holes for the Key Video fill. Auto Select keys are set to Shaped by default.

Configuring Key Sources

You can assign any of the four logo channels or a router crosspoint as the source for a keyer. The specific router crosspoint assigned to the Key Video source can be selected using the options in the External tab.

Note — *Ross Video strongly recommends leaving Logo 4 assigned to Key 4 to ensure that EAS text crawls output properly.*

To configure a key

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Select the **Keyers** tab.
4. From the **Keyers** tab, select the tab for the key you wish to configure.
5. From the **Keyer Source** area, select the button for the video source you want to assign to the Keyer. The button for the selected source is now lit. If you selected External, you may also need to specify the router crosspoint as outlined in the section "**To specify a router crosspoint as the External Keyer source**" below.
6. Toggle the **Key Type** button to set the Key Type to Auto Select or Self.
7. If required, toggle the **Key Alpha Type** button to set the Key Alpha Type to Unshaped or Shaped.
8. Adjust the **Clip** and **Gain** values of the key using the corresponding sliders.

Note — *Ross Video strongly recommends leaving the Clip and Gain values at the default settings to avoid undesirable effects.*

9. Use the **Transparency** slider to adjust the transparency level of the key.
10. Toggle the **Key Invert** button to specify whether the key is inverted.

To specify a router crosspoint as the External Keyer source

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Select the **Keyers** tab.
4. Select the **External** tab.
5. From the **External Sources** row, select the button for the router crosspoint you want to assign as the External source. The button is now lit and this crosspoint will be used whenever External is selected as the source for any Keyer. The crosspoint is identified by the default name displayed on the button in the **External** sub-tab.

Transitions

In This Chapter

This chapter provides a summary of performing transitions in DashBoard.

The following topics are discussed:

- Transition Area
- Performing Transitions

Transition Area

Transitions are used to change the background video and take keys on and off-air. A transition can include any combination of Background video, and keys. The Background A and B inputs allows for background dissolves and V-Fades behind the external key source. All four inputs have line synchronization, locked to an external analog reference, to ease system timing requirements.

***Figure 3.1** Transition Area*

1) Keyer Area	3) Transition Speed Buttons	5) TAKE Button
2) Transition Type Buttons	4) BKGD PST Button	

1. Keyer Area

The Keyer Area enables you to add, or remove, keyers in transitions. This area includes the following controls:

- The top row of buttons, labeled **Key 1-4**, are used to perform cuts on the specified keyer directly on the Program Bus, without affecting their inclusion in the next transition. A lit button indicates that the specified keyer is currently on-air.
- The middle row displays thumbnails of the video source selected for that keyer when possible. Note that images are only provided for the internal logo sources and not for external router sources.
- The bottom row of buttons, labeled **Key 1-4 PST**, are used to add, or remove, the specified keyer to the next transition. Selecting the button toggles the keyer on/off and selects/removes the keyer to the Preset Bus respectively. Once the transition is executed, and depending on a Personality tab setting, the button(s) are no longer lit in this row but are lit red in the top row.

2. Transition Type Buttons

The following **Transition Type** buttons are available (from left to right):

- ⊤ — Select this button to perform a cut transition from one source to the next.

- ⋁ — Select this button to perform a V-Fade transition from the Program source to Black to the Preset source. The MC1-MK fades down from one source to black and then transitions to the next source. During a hot-punch transition, the video performs a CUT while the audio performs a V-Fade.
- ⩗ — Select this button to perform a cut to black, then fade up to the next source.
- ✕ — Select this button to perform a gradual fade from one source to the next. The MC1-MK performs a cross fade between sources. Note that this button is selected after performing a factory default reset.
- ⩘ — Select this button to fade from one source to black and then cut to the next source.

3. Transition Speed Buttons

These buttons apply the rate (slow, medium, fast) to the next transition. The transition rates are specified in the **Home** tab. Note that the **Slow** button is selected after performing a factory default reset.

4. BKGD PST Button

The **BKGD PST** button is used to add, or remove, the BKGD from the next transition. Toggling this button will immediately affect the Background video that is visible on the Preset output.

5. TAKE Button

Selecting the **TAKE** button performs the transition between the sources selected in the Program and Preset buses, using the specified **Transition Type** and **Transition Speed**. These sources can include any of the BKGD and Keyers depending on the state of the corresponding buttons in the Keyers Area.

Performing Transitions

You can perform transitions in one of the following manners: hot-punching a crosspoint on the Program bus, selecting a Keyer (1-4) button from the Keyer Area to transition a keyer on or off air, and using the options in the **Transition Area** to add elements to the transition.

To set the transition rate

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Select the **Home** tab.
4. Specify the rate, in number of frames, as required, in the **Slow Rate**, **Medium Rate** and **Fast Rate** fields.
5. Set the Fade to Black transition rate using the **FTB Rate** field.

To perform a transition

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. In the **Transition Area**, select the elements you want to add to the next transition by selecting the **BKGD PST** button to add the Background video source, and the **Key 1-4 PST** buttons to add the required keyer(s).
4. On the **Preset** bus, select the video source you want to take on-air.
5. Select a **Transition Speed** button (Slow, Medium, or Fast).
6. Select a **Transition Type** button.
7. Select **Take**.

To perform a Fade to Black

The **FTB** button allows you to fade to black, where the Program bus is faded to black at the **FTB** rate. This rate is set in the **Home** tab as outlined above. When the **FTB** button is selected, or lit, the MC1-MK performs an Auto transition to black.

Transition Notes

Keep the following in mind when performing transitions:

- To allow for audio cross fading, a cut takes two frames. One frame is used for the audio fade down, the video is then cut, followed by the one frame audio fade up.
- The speed at which the Auto transition is performed, in number of frames, is determined by the Transition Rate (Slow, Medium, or Fast) set in the **Transition Rate** area. Before proceeding, ensure the **Transition Type** is set to the desired type. When switching between router sources, there is an additional time after the (visible) transition, while the router sources are switched.
- If a crosspoint or transition button is selected while a transition is in progress, the original transition continues as subsequent button presses are ignored.
- Verify how the Toggle Program/Preset Bus and Disarm Preset Keyers options are configured in the Personality tab. Refer to the ***MC1-MK Installation Manual*** for details on configuring these options.

Audio

In This Chapter

This chapter provides a summary of the audio features.

The following topics are discussed:

- Audio Features
- Audio Transitions

Audio Features

This section briefly summarizes the audio monitoring and controls available in the On Air Control interface for the MC1-MK.

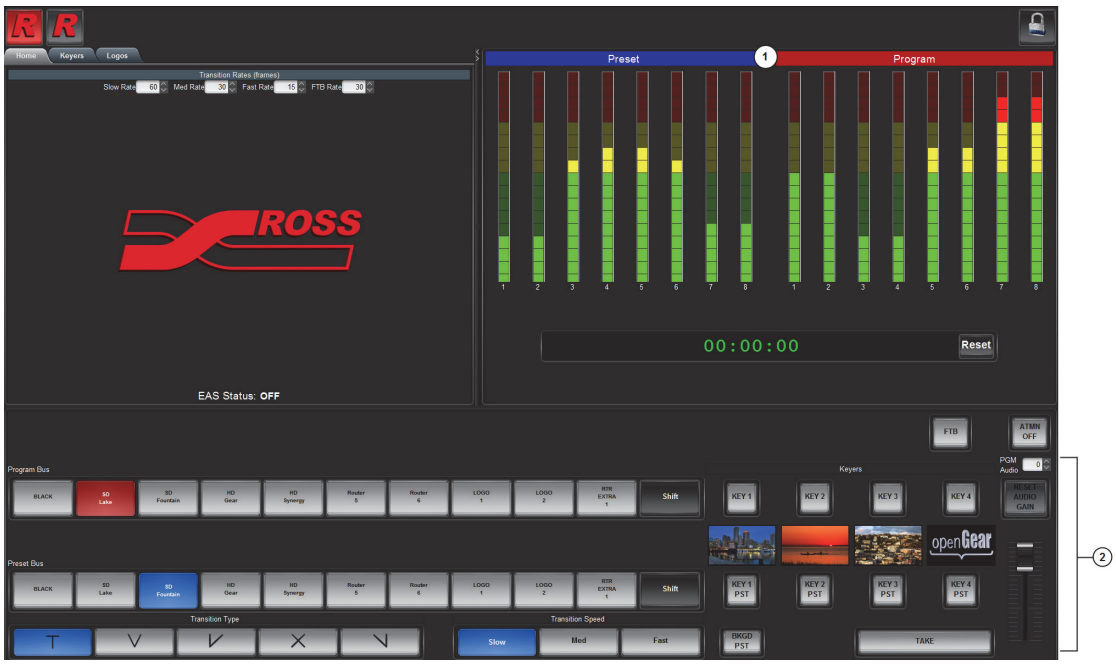


Figure 4.1 *On Air Control Interface — Audio*

1) Audio Meters	2) Audio Fader Controls

1. Audio Meters

This area displays Preset and Program audio peak level measurements for eight channels. The first eight channels of each bus (Preset and Program) are metered. Measurement units are in dBFS (decibel full scale) where 0dBFS is the maximum digital value. Each audio meter displays audio level information as illustrated in **Figure 4.2**.

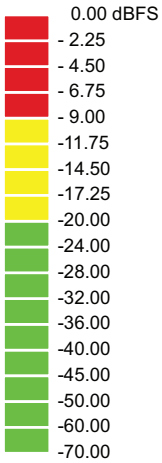


Figure 4.2 *Illustrative Example of Audio Level Information*

2. Audio Fader Controls

Use the slider to apply an audio gain value on the Program and Preset bus. The gain range is -72dB to +12dB. Use the **Reset Audio Gain** button to set the gain value to 0.

Audio Transitions

The MC1-MK processes embedded audio on all four inputs. You can specify which audio groups present on the inputs are carried through to the outputs (by default all groups are included). During transitions, the audio ramps smoothly between Program and Preset sources, matching the video transition.

To set the Master Audio level

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Specify the audio gain value using the **Audio Gain** slider. The numerical gain value may also be entered directly next to the **PGM Audio** field. You can select the **Reset Audio Gain** button to set the audio gain to 0dB, the factory default value.

Performing Transitions

Keep the following in mind when performing transitions:

- A two-frame V-Fade is performed on the audio if a different source is hot-punched on the Program bus.
- Audio transitions are Mix or V-Fade (on video fade, and cuts). However, during Cut transitions, the audio transition is a V-Fade.
- The MC1-MK allows A/B audio mix on 16 channels between Program and Preset bus.
- Depending on how the Reset Audio Gain feature is configured, the audio gain level may be reset to 0dB after a transition. Refer to the ***MC1-MK Installation Manual*** for details.

For More Information on...

- performing transitions, refer to the section "**Transition Notes**" on page 3-4.

EAS Audio

The MC1-MK supports embedding Emergency Alert (EAS) audio using an embedded audio source from BNC 4 on the rear module.

- Sixteen channels of audio are passed for AES in a stream.
- When EAS is active, all audio channels on the Program shall be adjusted by a value specified on the **Audio** tab. The default is to reduce the gain by 10dB.
- EAS audio will be mixed into the Program path on the stage just before the final fade to silence.
- When using a Sage Digital ENDEC EAS, the MC1-MK reacts to the Sage Push To Talk (PTT) relay closure to activate audio voice over. While the PTT relay is closed, the MC1-MK applies the EAS Duck Level specified on the Audio tab to the incoming Program audio and performs a cut transition by mixing the incoming audio from the Key Alpha channel at full level.

Media File Management

In This Chapter

DashBoard enables you to select and configure the four Logo channels in the MC1-MK. Each Logo channel has a sub-tab that enables you to assign a media file to the specified logo channel, view a thumbnail that represents the media file currently loaded, and adjust on-air properties. This chapter provides information on managing the images and animations using the DashBoard options available for the MC1-MK.

The following topics are discussed:

- Loading Media Files
- Managing Media Files
- Adjusting On-Air Properties
- Displaying Timecode in a Logo Channel

Loading Media Files

The MC1-MK features four Logo channels (Logos 1-4) into which you can load files from the CompactFlash® Card physically installed on the MC1-MK. Each card has 2GB of DDR playout memory. **Table 5.1** lists an estimation of how many uncompressed frames can fit into the playout memory of the MC1-MK.

Table 5.1 Full Frame Animation

Format	Image Size	No Alpha	With Alpha
1080i	1920x1080	388	256
720p	1280x720	872	580
PAL	720x576	1940	1292
NTSC	720x486	2300	1532

Note — *Very large animations may take several minutes to load.*

Loading a Media File

From the **Directory** menu in the each **Logo** sub-tab, files may be loaded from the following:

- **[PATTERNS] —** A virtual directory containing timecode overlays and EAS text crawls. Refer to the section "**To display timecode in a logo channel**" on page 5-7 for information on loading timecode files.
- **[RAM CACHE]** — A virtual directory that displays media files that are already loaded in the playout memory. Selecting this directory enables you to quickly access a pre-loaded file from the memory.
- **[ROOT]** — This is the default directory and represents the top-most directory on the CompactFlash® Card. You can manage files on the CompactFlash Card using an FTP connection. Refer to the section "**Managing Media Files**" on page 5-3 for details.
- **ross** — Refer to the ***MC1-MK Installation Guide*** for information on managing the icon images used by the Tree View node, **Home** tab, **Channel Select** buttons, and **On Air Controls** node for your MC1-MK.
- **User created directories** — A list of user-created directories using an FTP connection.

To load a media file into a Logo channel

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Select the **Logos** tab, then select the **Logo** sub-tab for the logo channel you want to load the media file for.
4. If files were added or re-named using an FTP connection, select **Rescan** to update the list of directories and filenames.
5. From the **Directory** menu, select the directory you wish to load a file from. When changing directories, it may take a few moments for the **Filename** list to be updated.
6. From the **Filename** menu, select the file. You can clear the Logo channel by selecting **[NONE]** from the **Filename** menu.

Managing Media Files

Media files, such as animations and still images, can be transferred to and from the CompactFlash Card using an FTP connection. Once transferred to the CompactFlash Card, you use the options in the Logos tab to load the files and assign them to a Logo channel. This section outlines the specifications for media files and provides general information on using the CompactFlash Card and an FTP connection.

For More Information on...

- assigning media files to Logo channels, refer to the section "**Loading a Media File**" on page 5-2.

Media File Notes

The following tips and restrictions apply when managing your media files:

- Media files, such as stills and animations, are transferred to and from the MC1-MK using FTP protocol. The media files are stored on a CompactFlash card that is installed on the MC1-MK.
- If you select an image size that is larger than the current video format, only a portion of the image will be visible.
- When a media file is loaded, metadata, such as X/Y position, is also loaded, if it exists. Otherwise, default values are used. For animations, parameters are recalled after the last frame is loaded. Metadata is stored with the image on the CompactFlash Card, and is therefore no affected by loading factory default values.
- When using Mac OS X™ to transfer files to the CompactFlash Card via an FTP server, you may only have read-only access. Refer to your Mac OS X™ documentation for details.

Image Specifications

Media files used on the MC1-MK must meet the specifications outlined in **Table 5.2**.

Table 5.2 Media File Specifications

Parameter	Specification
File Type	BMP, GIF, JPEG, PNG, TGA
Compression	compressed and uncompressed
Interlaced formats (1080i, 480i, 576i)	Max. Image Width: 32,768 pixels
	Max. Image Height: dependent on available memory
Progressive formats (720p)	Max. Image Width: 65,536 pixels
	Max. Image Height: dependent on available memory
Animation Maximum Length	10,000 frames

For More Information on...

- the specifications for the files located in the **ross** directory, refer to the ***MC1-MK Installation Manual***.

File Naming Specifications

The name can contain letters, numbers, and spaces, but cannot contain symbols such as ! @ # & * ( ) ? / , ‘ “.

Animation consist of multiple files, each must be numbered in the sequence that it will play out. The following restrictions apply to file names for animations:

- Each file can use a minimum 3-digit number, including all the leading zeros. The numbering can start from any value.
- The file name must consist of: the characters that are constant for this animation sequence, followed by an underscore (_), followed by three or more digits, followed by a period, followed by the filename extension.
- Each file in the sequence must have the same numbering scheme.
- Files are loaded in numerical order.

The following is an example of a 10-frame animation using a typical numbering scheme:

- DTVB_000.tga
- DTVB_001.tga
- ...
- DTVB_009.tga

Connection using FTP

You can use an FTP connection to transfer media files to and from the CompactFlash Card of the MC1-MK. You can also use an FTP client to delete images on the CompactFlash Card and re-name images.

To access the MC1-MK via FTP

- Have the IP address from Config > Ethernet.
- Ensure an ethernet cable is connected to the MC1-MK rear module. Refer to the ***MC1-MK Installation Manual*** for connection details.

An FTP connection to the MC1-MK should be established by your IT department. The following information is required to create an FTP connection:

- **User Name — user**
- **Password — password**

Connection using RossLinq™

RossLinq enables you to transfer still images directly from the XPression™ to a MC1-MK Logo channel. You can transfer files into any of the directories for any of the Logo channels on the card. There are four directories, each corresponding to a specific Logo channel on the card. The file can be a format as listed in **Table 5.2**. Note that the transfer of animations is not supported at this time.

Note — *The RossLinq™ channel in XPression must be set as a passive FTP connection in order to set up communications between XPression and the MC1-MK. Refer to the XPression documentation for details.*

To connect to the XPression via RossLinq, establish an FTP connection using the following information:

- **IP Address** — Refer to the **Ethernet** tab in the MC1-MK **Configuration** interface.
- **User Name — xpression**
- **Password — password**

Note — *If using an EAS, Logo 4 channel is automatically reserved for the EAS use and you should not attempt to transfer files via RossLinq into Logo channel 4.*

CompactFlash® Card

The following tips and restrictions apply when using the CompactFlash Card:

- the CompactFlash Card must be installed on the MC1-MK before the board powers up and must remain inserted.
- if you wish to remove the CompactFlash Card for programming, you must re-boot the MC1-MK when you re-install the CompactFlash Card. This allows the MC1-MK to recognize that a new CompactFlash Card is available.
- the CompactFlash Card is 2GB in size, the number of files you can store depends on the type of file (PNG, TGA, JPG). The **CompactFlash Status** field in the **Hardware** tab displays how much space is available on the CompactFlash Card.
- refer to the ***MC1-MK Release Notes*** for information on formatting the CompactFlash.

Adjusting On-Air Properties

The **Logos** tab in DashBoard allows you to adjust the position and play modes of media files. The following features are supported:

- **Auto Play** — When set, the animation will play from the first frame when it is brought to air. When clear, bringing the animation to air does not affect playback.
- **Looping** — When set, the animation will cycle continuously (from the last frame back to the first) in an endless loop. When cleared, the animation plays once, and freezes on the last frame.

For More Information on...

- the **Logos** menu items, refer to **Table 6.3** on page 6-5.

To adjust the on-air properties of a media file

1. Load a media file as outlined in the section "**Loading a Media File**" on page 5-2.
2. Adjust the position of a still image in the viewing area of the screen using the **X** and **Y Position** sliders.
3. Adjust the characteristics of an animation using the **Auto Play** and **Looping** boxes.
4. Select how an image is displayed by selecting an option from the **Play Mode** menu.

Note — *The **Play Mode** feature only applies to Interlaced video formats and has no effect when using Progressive video formats.*

Displaying Timecode in a Logo Channel

The **Logos** and **Keyers** tabs in DashBoard enable you to assign an LTC input to a Logo channel, then assign that Logo channel to an output. This section summarizes the steps required to configure an output to display LTC text, and provides additional configuration information.

Overview

The timecode information displays on-screen in one of the following formats:

--:--:--:--	This format is used when no LTC input signal is received.
HH:MM:SS:FF	This is the standard format. The timecode is displayed in Hours, Minutes, Seconds, and Frames. The drop-frames is not active.
HH:MM:SS;FF	This is the drop-frame format. The timecode is displayed in Hours, Minutes, Seconds, and Frames. The drop-frame is active.

Frame Count Range

The frame count range depends on the video format you are using:

- When using **480i 59.94Hz** and **1080i 59.94Hz**, the range is from 00 to 29.
- When using **576i 50Hz** and **1080i 50Hz**, the range is from 00 to 24.
- When using **1080pSF 23.98Hz** and **1080pSF 24Hz**, the range is from 00 to 23.
- When using **720p 50Hz**, the range is from 00 to 49.
- When using **720p 59.94Hz**, the range is from 00 to 59.

Note — *When using a progressive video format, the LTC standard only provides a count of every second frame, but the MC1-MK will increment and display the frame count on every frame.*

To display timecode in a logo channel

1. From the **Tree View**, expand the node for the MC1-MK you wish to access.
2. Select the **On Air Control** node to display the interface in the right-half of DashBoard.
3. Select the **Logos** tab.
4. Select the sub-tab for the Logo channel you want to load the timecode file for.
5. Select a timecode file to load to the Logo channel as follows:
   - From the **Directory** menu, select **[PATTERNS]**.
   - From the **Filename** menu, specify the display font size (e.g. Select **Time code - small** to display text in a small font size).
6. Select the **Keyers** tab.
7. Select the sub-tab for the Keyer you wish to use to display timecode.
8. Adjust the transparency and other on-air properties for the output as described in the section "**Configuring a Key**" on page 2-3. It is recommended to set the **Key Type** to **Auto Select** and the **Key Alpha** to **Unshaped**.
9. From the **Keyer Source** area, select the Logo channel to assign it to the output.

10. From the **On Air Control** interface, enable the Keyer which was configured in the previous steps.
11. To adjust the on-screen position of the timecode, return to the Logos tab and use the **X** and **Y Position** sliders.

Configuration Notes

Keep the following in mind when configuring a Logo channel for displaying LTC on-screen:

- The **Status** field on the **Logos** tab indicates the dimensions of the timecode file in the number of pixels. Note that this value changes depending on the video format you are using.
- To assign the same LTC to multiple outputs, configure a Logo channel with the LTC and then assign that Logo channel to multiple key sources.

  For example, to assign LTC to the Logo 3 channel and then assign it to multiple outputs:

  › Configure **Logo 3** to display LTC.

  › Select **Logo 3** as the **Keyer Source** box for Key 1, Key 2, Key 3, and Key 4.
- Should you attempt to load the same LTC to a second Logo channel, an error occurs and a message is displayed in the **Status** field of the second Logos tab.
- You can transition between the keys, or the Background when using an MC1-MK. This can be used to transition the LTC on and off air.

Appendix A. DashBoard Menus

In This Appendix

This appendix briefly summarizes the menus, items, and parameters available from the DashBoard Control System™ for the MC1-MK. Default values are noted with an asterisk (*).

The following topics are discussed:

- Home Tab
- Keyers Tabs
- Logos Tabs

Note — *Before proceeding, ensure that you are running DashBoard software version 5.0.0 or higher. The DashBoard Control System software and user manual are available to download from the Ross Video website.*

Home Tab

Table 6.1 summarizes the **Home** tab options available in DashBoard.

Table 6.1 Home Tab Options

Menu Title	Item	Parameters	Description
Transition Rates	Slow Rate	1 to 999[a]	Defines the Slow Rate in frames
	Medium Rate	1 to 999[b]	Defines the Medium Rate in frames
	Fast Rate	1 to 999[c]	Defines the Fast Rate in frames
	FTB Rate	1 to 999[d]	Defines the Fade to Black Rate in frames
	Station Logo image		Displays an image of the station logo (using the file: `station_logo_large.png`)
	EAS Status:	ON[e]	Indicates that an installed EAS is providing content to the MC1-MK text overlay; the text is displayed in this area when the EAS is active.
		OFF	Indicates that EAS content is not provided to the MC1-MK text overlay

a. The default value is 60 frames (2 seconds) when using 59.94Hz formats. When using 50Hz formats, the default value is 50 frames.
b. The default value is 30 frames (1 second) when using 59.94Hz formats. When using 50Hz formats, the default value is 25 frames.
c. The default value is 15 frames (0.5 second) when using 59.94Hz formats. When using 50Hz formats, the default value is 12 frames.
d. The default value is 30 frames (1 second) when using 59.94Hz formats. When using 50Hz formats, the default value is 25 frames.
e. Followed by color-coded text.

Keyers Tabs

Table 6.2 summarizes the **Keyers** tab options available in DashBoard. Each key has a sub-tab to select which key is to be modified.

Table 6.2 Keyers Tab Items

Tab Title	Item	Parameters	Description
Key #	Transparency	0* to 100	Adjusts the transparency level of the key: • 0 — The key is completely opaque; there is no difference between the original key and the key with the transparency effect applied to it. • 100 — The key is completely transparent; the key is not visible on the screen.
	Clip	#	Adjusts the clip values; default is 92% (the maximum luminance range not including Super White).
	Gain	0 to 100	Adjusts the gain values; default is 50.
	Key Type	Auto Select*	A Key which uses two video signals (Alpha and Fill); the Key Alpha Type is automatically set to Shaped. For external key source, the source on BNC 2 is assigned as the Key Video and the source on BNC 4 is the Key Alpha. If you configure an internal Logo channel as Auto Select, the associated alpha (not BNC 2 or BNC 4) signal is used.
		Self	A Key that uses the luminance values of the key source for the alpha; the Key Alpha Type is automatically set to Unshaped. When using an external key source, the source on BNC 2 is assigned as the Key Video, and its own luminance as the Key Alpha. If you configure an internal Logo channel as Self, the luminance value of the associated alpha is used.
	Key Alpha Type	Unshaped	The card performs a multiplicative key. The Key Alpha luminance value mixes linearly the Key Video with the Background. Shades of gray, in the Key Alpha, are translated into transparency levels, giving the key a soft edge.
		Shaped*	The card performs an additive key. The Key Alpha cuts a hole in the BKGD and the Key Video is added to the BKGD. Shaped Key alphas are sometimes used with Character Generators to cut very precise holes for the Key Video fill.
	Key Invert	On	Reverses the polarity of the Key Alpha. A Key Invert can be applied to any key type.
		Off*	The Key Alpha is not inverted
	Default	Make Linear	Resets the clip and gain values to the default settings
	Keyer Source[a]	External	Assigns the external key source as the keyer output
		Logo #[b]	Assigns the selected Logo media file as the keyer output

Table 6.2 Keyers Tab Items

Tab Title	Item	Parameters	Description
External	#		Selecting a button specifies that router source as the External source; a lit button indicates that the source is being used as the External. The default External Source for the External Key is the first unshifted router source.
	Shift		Select this to shift the sources

a. The default Keyer Source is as follows: Key 1 is Logo 1; Key 2 is Logo 2; Key 3 is Logo 3; Key 4 is Logo 4.
b. When using an EAS device, Logo 4 is automatically assigned to Key 4 for EAS text crawls.

Logos Tabs

Table 6.3 summarizes the **Logos** tab options available in DashBoard. Each logo has a sub-tab to select which logo is to be modified.

Table 6.3 Logos Tab Options

Tab Title	Item	Parameters	Description
Logo #	Video Image	Displays a thumbnail image	• Displays a small image that represents the currently loaded media file. For animations, the fifth frame is displayed. • Only available when the card ethernet port is connected and properly configured • A black box with text indicates that no image is currently loaded
	Alpha Image	Displays a thumbnail image	• Displays a small image that represents the Alpha channel of the currently loaded media file. For animations, the fifth frame is displayed. • A blank area indicates that the current image has no alpha channel
	File (read-only)	xxx_####.yyy	• Indicates the full path of the currently loaded file where: • xxx represents the file path • #### represents the duration of the file if it is an animation • yyy represents the file extension
	Status (read-only)	Loading frame X of Y	• Displays information about the channel in both the number of frames (integer), and in the number of seconds (fractional) • Any errors during loading are also displayed • When the file(s) have loaded, this field displays the dimensions of the image (e.g. 1920x1080)
		Animation loaded (#)	
		Single image loaded (#)	
		Idle	
	Selected on (read-only)	###	Indicates all the key(s), or backgrounds, that currently have the media file selected
		None	
	On Air (read-only)	###	Indicates the on-air key(s), or backgrounds, that have this media file selected
	Directory	[PATTERNS]	Provides a list of virtual files loaded in the card memory, such as timecode information
		[RAM CACHE]	• The field displays the directory the currently selected media file is located in • Provides a list of all of the directories on the CompactFlash card
		[ROOT]*	
		ross	

Table 6.3 Logos Tab Options

Tab Title	Item	Parameters	Description
Logo #	Filename	#	• Displays the name of the currently selected media file • Animation filenames include an underscore followed by three or more digits. The number of frames, and duration in seconds, is displayed in brackets after the filename. • Updated when a new Directory is selected in the **Directory** menu • Provides a list of all the media files in the currently selected directory. Note that animations appear as a single entry.
		[NONE]	Selecting this option clears the logo channel. This item is automatically selected, without clearing the channel, when the user switches to a new directory.
	File List	Rescan	Pressing the button: • updates the Directory menu options • updates the Filename menu options
	X Position[a]	## to ##[b]	• Adjusts the position of the image along the X-axis in number of pixels • The range varies depending on the output video format
	Y Position	## to ##[b]	• Adjusts the position of the image along the Y-axis in number of pixels • The range varies depending on the output video format
	Auto Play[c]	Selected*	The animation automatically starts to play when it is taken on-air.
		Cleared	The animation starts playing as soon as the animation is loaded to the bus
	Looping[d]	Selected*	The animation starts over when it reaches the last frame of the animation
		Cleared	The animation stops when it reaches the last frame of the animation
	Play Mode	Normal*	The entire frame of the image is displayed
		Swap Fields	Field 1 and Field 2 of the image are swapped when they are displayed
		Field 1 Only	Field 1 of the image is displayed
		Field 2 Only	Field 2 of the image is displayed

a. These settings only apply when there is an image loaded in the Logo channel. When the Logo channel is empty, these settings have no effect.
b. Default value is 0 which represents the top-left corner of the active picture area.
c. This option is only applicable when an animation file is selected.
d. This option is only applicable when an animation file is selected.

Index

T

U

Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

Technical Support	Telephone:	+1 613 • 652 • 4886
	After Hours Emergency:	+1 613 • 349 • 0006
	Email:	techsupport@rossvideo.com
General Information	Telephone:	+1 613 • 652 • 4886
	Fax:	+1 613 • 652 • 4425
	Email:	solutions@rossvideo.com
	Website:	http://www.rossvideo.com

Visit Us

Visit our website for:

- Company information and news
- Related products and full product lines
- Online catalog
- Testimonials

Video Production Technology