



Theater Automation WOW!

ROCK V1, PRO & V2

By TAW

OPERATION MANUAL 6/7/04



Theater Automation Wow!

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Introduction

Thank you for purchasing the revolutionary TAW ROCK series video processor. It is the first flash-upgradeable video processor, and allows the owner to upgrade both firmware and hardware as technology evolves. The ROCK allows Internet downloadable firmware upgrades that can include new and improved video deinterlace algorithms. The modular architecture of ROCK allows the ROCK to be returned to the factory for upgrades to future generation products!

Warranty

TAW warrants this equipment for a period of one year from date of purchase. The software in the ROCK series is licensed to the end user. The software license is paid for by TAW for your continued personal use and pleasure. This software may not be duplicated, modified or removed without prior written permission from TAW. The purchaser of the ROCK owns the hardware but licenses the software use only. There are no user-serviceable parts in the ROCK series video processor. There is no need for any consumer to open the unit. If the unit is opened, the warranty on this equipment is immediately null and void.

Manual

The ROCK manual is Copyright © 2001,2,3,4 by TAW Inc. The manual is provided in Acrobat (.pdf) format. You may print this manual for the purpose of setup and operation of ROCK.

This manual contains information for both the older ROCK V1 processors and the new ROCK PRO & V2 processors. Not all features are in both units. Refer to the manual for details. The ROCK processor is unique in its upgradeability therefore addendums and additions to this manual are expected periodically. This manual was written with V2.03 firmware. Newer firmwares will require manual addendums. Stay tuned to the TAW forum www.tawforum.com for future addendums.

If you print this manual in color, All ROCK PRO & V2 addendums will be in blue.



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1

INTRODUCTION

Overview

The ROCK series is designed to be easy and fun to operate. During regular use, most users of the ROCK will not require anything more than **VIDEO INPUT** button between Composite, S-Video and Component video inputs, and perhaps the use of the **ANAMORPHIC** button on the remote control to switch between non-widescreen and widescreen sources.

Please take caution when making ROCK adjustments. For example, the Service Menu adjustments are designed to be operated by a trained professional and should be avoided unless familiar with the adjustments contained within the Service Menu. Other adjustments, such as Resolution, has the potential to exceed the specifications of your display.

This chapter outlines the basics that a user needs to get started operating the ROCK.

Note that the ROCK PRO has additional features not found in the ROCK V1 (version 1). Some of these features are as follows:

1) The ROCK PRO has a true turn on/off using either IR or RS232. To turn the ROCK ON using the IR simply push the "ON" button on the ROCK remote. To turn off push "OFF" . The ROCK will turn off after about 5 seconds. The ROCK will require 30 seconds to initialize on power up, this is normal. When the ROCK is totally intialized two green LEDs will be lit on the front panel. One green POWER and one green RUN. If the ROCK PRO is in standby the POWER LED will be lit Amber awaiting an on command from either IR or RS232.

Any communication on the RS232 will turn the ROCK ON automatically. To turn the ROCK PRO off send a system_stop command. Complete RS232 control codes are in the back of this manual.

1 – INTRODUCTION

Operation of Onscreen Display

All ROCK onscreen display (OSD) menus can be accessed via submenus branching out from the Main Menu.

→ ACCESSING THE MENUS

The Main Menu can be accessed by pressing the **ENTER** button when no menu is being currently displayed. The OSD menus appear on top of the video, and automatically hide after 15 seconds of idle *this time is adjustable in the service menu. An alternative way to access OSD menus is use certain buttons such as the **VIDEO INPUT** button. * PRO ONLY.

→ MENU SELECTION

When an OSD menu is displayed, the **UP/DOWN ARROW** button on the remote should be used to select the current menu option. The current selection is indicated by a bar highlighting the menu option. Press the **ENTER** button to select the currently highlighted menu option.

→ SUBMENU NAVIGATION

When navigating submenus, use **LEFT ARROW** button to go back to the previously displayed menu. You can also use the **RIGHT ARROW** button to go to the next displayed menu. The **LEFT ARROW** button behaves as a "back" button and the **RIGHT ARROW** button behaves as a "forward" button. If you press the **LEFT ARROW** enough times, you'll be back at the first menu, usually the Main Menu. Pressing the **LEFT ARROW** again at this point will turn off the OSD display.

→ SETTINGS ADJUSTMENT

When you press **ENTER** on a settings adjustment option such as Brightness, you can use the **UP/DOWN ARROW** button to adjust the setting. Also, you can hold down the **UP/DOWN ARROW** button to change the setting. The setting adjustment accelerates and changes faster the longer you hold down the button. When you are finished adjusting the setting, press the **RIGHT ARROW** button to return to the menu.

→ DISCRETE MENU OPTION SELECTION FOR UNIVERSAL REMOTES

With a *universal remote control*, such as a Pronto, you may require the ability to select an exact menu item for certain operation. This is accomplished by sending a **3-DIGIT NUMERIC CODE** from the remote. While a menu is being displayed, sending 001 from the remote automatically selects the first menu option of the displayed menu, 002 selects the second option, 003 selects the third option, and so on. If you only need to access menu option number 1 through 9 rather than the 10th menu option and beyond, then you can instead use a **1-DIGIT NUMERIC CODE** for speedier selection of the corresponding menu option.

Note: The ROCK also supports operation by Creston control codes sent via the RS232 serial port, as another method of discrete operation PRO control is OSD number -1 f.

The ROCK PRO changing input to Composite would be INP 0. Changing on a ROCK V1 , it would be INP 1.

The ROCK PRO & V2 has no case sensitivity the ROCK V1 needs to be upper case only. Please refer to the RS232 code set in the back of this manual.

The ROCK PRO has the ability to change the OSD colors, size, time out and position in the service menu under "Other Settings".

1 – INTRODUCTION

Input Select Button on Remote Control

One of the most common ROCK operations is to switch between video inputs. The ROCK allows you to connect multiple video sources directly. A few examples include DVD, LaserDisc, DSS, and VCR.

To switch between inputs, hold down the **VIDEO INPUT** button on the Remote. This automatically switches to the next video input. You can also bring up the Input Select Menu by just tapping the **VIDEO INPUT** button and selecting the video input in the regular manner.

There is also a HDTV passthrough input, to allow passthrough of a HDTV receiver or a computer that is connected to the DSUB 15-pin jack on the rear of the ROCK. Whenever the HDTV Passthrough is selected, the ROCK menus are not visible. Holding down **VIDEO INPUT** at this point will switch out of HDTV Passthrough, at which point the menus become visible again.

For more information, please refer to the Input Select Menu section in this manual.

Anamorphic Button on Remote Control

Another important button to remember on the remote is the **ANAMORPHIC** button.

It is most useful if you have a widescreen display being used with the ROCK. Pressing this button switches between regular 4:3 display, nonanamorphic widescreen display, and anamorphic widescreen display.

4:3 display – Commonly used for television material, as well as older Academy-format movies.
Nonanamorphic – Commonly used for letterboxed material and some older widescreen DVD's.
Anamorphic – Commonly used for most widescreen DVD's.

If unsure how to use this button, you can simply press this button whenever the image proportions look distorted on the screen. Distortion can include horizontally stretching or vertically stretching. In this case, you can simply keep pressing this button until the image looks correct.

Footnote #1: The most important difference between nonanamorphic and anamorphic is the extra resolution available with anamorphic, which leads to improved sharpness. Therefore, it is recommended to enable anamorphic mode in your DVD by configuring it for use with a 16:9 widescreen display. This is even when you do not have a widescreen display. This is to allow the ROCK to take advantage of the extra resolution available with anamorphic DVD's on all high-resolution output displays, even if the display is in 4:3 format. For more information about configuring your DVD player, please consult your DVD player manual.

Footnote #2: Whenever in Nonanamorphic mode with a widescreen display, the ROCK automatically upconverts non-anamorphic material to simulated anamorphic. This can improve the quality of the non-anamorphic material to almost the quality of anamorphic material.

The ROCK PRO and V2 have the ability to show HDTV bypass while the unit is powered down. The ROCK V1 needs to be powered on for bypass to operate. To get out of bypass simply push any remote key on the ROCK PRO and V2. On the ROCK V1, the "VI" button ONLY will remove the ROCK from bypass mode.

1 – INTRODUCTION

Reset Button on Remote Control

In most situations, this button is not needed. However, this may be a critical button in certain situations, especially because it allows sync polarity configuration. Some displays require negative sync polarity, while other displays require positive sync polarity. Additionally, this button allows resetting to 480p if you ever accidentally exceed the specifications of the display while adjusting via other menus in the ROCK:

Press the **RESET** button slowly by the specified number of times:

Two times – Automatically display the Reset Menu. The screen is also automatically centered.

Four times – Automatically switch to 640x480p resolution, positive sync polarity.

Six times – Automatically switch to 640x 480p resolution, negative sync polarity.

2

ESSENTIAL ADJUSTMENTS

Overview

This chapter outlines the main onscreen display menus that most users will need to be aware of, including an overview of the Main Menu.

The ROCK contains a set of inputs, including *Component*, *S-Video*, *Composite*, SDI* and HDTV Passthrough. This allows you to connect multiple devices such as a DVD player, LaserDisc player, satellite box, HDTV tuner, PVR units, S-VHS and VHS recorders, and more. If you have more than one device connected to the ROCK, you will want to become familiar with the **VIDEO INPUT** button on the remote, and the Input Select Menu.

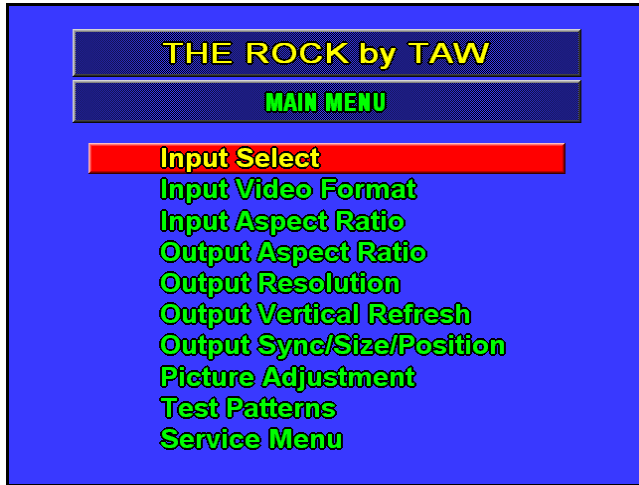
The ROCK is a multiformat scaler, which allows it to support all NTSC and PAL standards, and variants thereof in any country of the world. If you deal with both NTSC and PAL, you will want to become familiar with the **VIDEO FORMAT** button on the remote, and the Input Video Format Menu.

[The ROCK PRO & V2 supports additional video formats over the ROCK V1. Additional formats include PAL/NTSC auto detect, NTSC Japan, PAL 60, PAL -M,N,NC and SECAM.](#)

2 – ESSENTIAL ADJUSTMENTS

Main Menu

ENTER button – when no menu is currently displayed.



This menu can branch out to all other possible ROCK menus.

- ➔ Press the **ENTER** button on remote to show this menu, when no menu is currently displayed.
- ➔ Press the **LEFT ARROW** button on remote to hide this menu.

For more information on the corresponding options in the Main Menu, please refer to the respective menus described later on in this manual.

Footnote: The position of the selection bar in this menu is preserved everytime you display this menu. On hard power off and on, or if the ROCK has been unplugged, the default selection will revert to the topmost option, Input Select. [On the ROCK PRO & V2 the input will revert to the last selected](#)

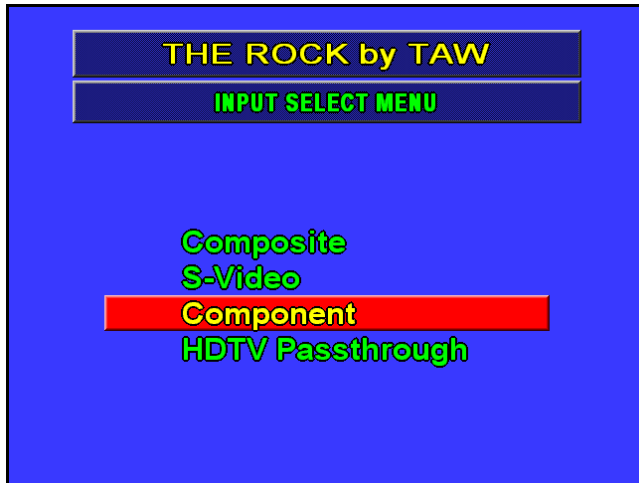
IMPORTANT NOTE:

When the ROCK PRO & V2 units are put into bypass, pushing any remote key will bring the unit out of bypass. Also the last selected input will be displayed. This is different than the ROCK V1. In this unit the V1 will go back to composite after coming out of bypass.

2 – ESSENTIAL ADJUSTMENTS

Input Select Menu

VIDEO INPUT button, or
Main Menu → Input Select



The video of the currently selected input is automatically displayed on the screen, behind the menu.

This is one of the most frequently used menus in the ROCK.

The ROCK PRO & V2 SDI is a standard input. The ROCK PRO has future field installable inputs also, up to 4080 of them. When these inputs are added to the PRO additional input selections will automatically show on this menu.

- Hold down **VIDEO INPUT** button to immediately switch to next input; or
- Tap the **VIDEO INPUT** button to display the above menu; or
- Tap the **VIDEO INPUT** button followed by a number to automatically select corresponding input:
 - 1 for Composite input, the lowest quality input
 - 2 for S-Video input, the higher quality input
 - 3 for Component input, the highest quality input
 - 4 for HDTV Passthrough

To simply switch between inputs, hold down the **VIDEO INPUT** button on the Remote. This automatically switches to the next video input, after holding the button down for more than 0.5 second. You can also bring up the Input Select Menu by just tapping the **VIDEO INPUT** button and selecting the video input in the regular manner using the **UP/DOWN ARROW** and **ENTER** button.

There is also a **HDTV passthrough** input, to allow passthrough of a HDTV receiver or a computer that is connected to the DSUB 15-pin jack on the rear of the ROCK. Whenever the HDTV Passthrough is selected, the ROCK menus are not visible. Holding down the **VIDEO INPUT** button at this point will switch out of HDTV Passthrough and then back to the Composite input, at which point the menus become visible again.

Tip: Right after selecting a video input in this menu, you can press the **UP/DOWN ARROW** to cycle through the previous/next video input. Press the **LEFT** button if you want to redisplay the video input menu.

Footnote: As with most settings in the ROCK, this setting is saved to flash ROM so this setting is preserved even during power off and when disconnecting power from the ROCK⁺.

IMPORTANT ADDITION: The ROCK PRO will show HD bypass when the unit is powered down. NOT SO with the ROCK+ and V1 ROCK. The PRO has additional inputs including RGB component and SDI as standard. Selecting these inputs with RS232 please remember to use the number MINUS 1. Example, Composite will be INP 0 NOT INP 1.

2 – ESSENTIAL ADJUSTMENTS

Input Video Format Menu

VIDEO FORMAT button, or
Main Menu → Input Video Format



The video of the currently selected input and format is automatically displayed on the screen, behind the menu.

If you use multiple video formats,
→ then this becomes an important menu to remember.

If you use only one video format,
→ then you may need to visit this menu once during initial setup in order to configure the preferred video format, if you are using a different video format than the factory default.

- Tap the **VIDEO FORMAT** button to display the above menu; or
- Tap the **VIDEO FORMAT** button, followed by a number to select corresponding video format:
 - 1 for NTSC
 - 2 for NTSC Japan
 - 3 for PAL
 - 4 for PAL60

To simply switch between video formats, press the **VIDEO FORMAT** button on the Remote and use the **UP/DOWN ARROW** and **ENTER** button.

Tip: Right after selecting a video format in this menu, you can press the **UP/DOWN ARROW** to cycle through the previous/next video format.

Footnote #1: All foreign variants of PAL are supported, including PAL-M, PAL-N, and many others. PAL60 is a special PAL color signal with an NTSC 60 Hz refresh rate.

Footnote #2: Automatic video format detection is standard in the ROCK PRO & V2 processors. This feature is not available in the ROCK V1.

IMPORTANT ADDITION:

The ROCK PRO and V2 ROCKs support many more input formats including auto detect PAL/NTSC, PAL N,M,NC,60, Japan 60 and SECAM.

3

ASPECT RATIO CONTROL

Overview

Most of the time, the only aspect ratio control that needs to be done is the **ANAMORPHIC** button on the remote control to switch between non-widescreen and widescreen sources. With this button alone, the ROCK also automatically upconverts non-anamorphic widescreen material into simulated anamorphic. This can significantly improve the viewing experience for non-anamorphic material to be almost anamorphic-quality.

Other than that, during initial configuration when the ROCK is being used for the first time, you may need to do one-time setup of the Output Aspect Ratio Menu to tell the ROCK the aspect ratio of the display you have connected the ROCK to.

However, the ROCK is designed to have very powerful aspect ratio control features, to permit many special and unusual situations including the following:

- ➔ Ability to reposition a widescreen video image at the top or bottom edge of any format screen;
- ➔ Ability to reposition a 4:3 image at the left or right edge of a widescreen display;
- ➔ Ability to easily do constant-height varying-width home theater setups;
- ➔ Ability to use custom non-standard screens, including 2.00:1 and 2.35:1 projection screens;
- ➔ Ability to zoom windowboxed video material to properly fill the whole screen;
- ➔ Ability to use any anamorphic lens, including nonstandard stretch factors;
- ➔ Ability to watch 4:3 and 16:9 material in perfectly proper proportions through any anamorphic lens;
- ➔ Ability to position a reduced-size image at any location on the display;
- ➔ Ability to zoom images up to 500% for closer examination;
- ➔ Ability to reposition a 2.35:1 image at top of a 16:9 display, to view subtitles below the image;
- ➔ Ability to do video walls, including two digital projectors side-by-side.

The ROCK is flexible to allow you to decide to keep these features optional; you can decide to simply stick only to the essentials of the **ANAMORPHIC** button on the remote control. In which case, you may skip this chapter except for the Output Aspect Ratio Menu which normally only needs to be adjusted only once during initial setup of the ROCK.

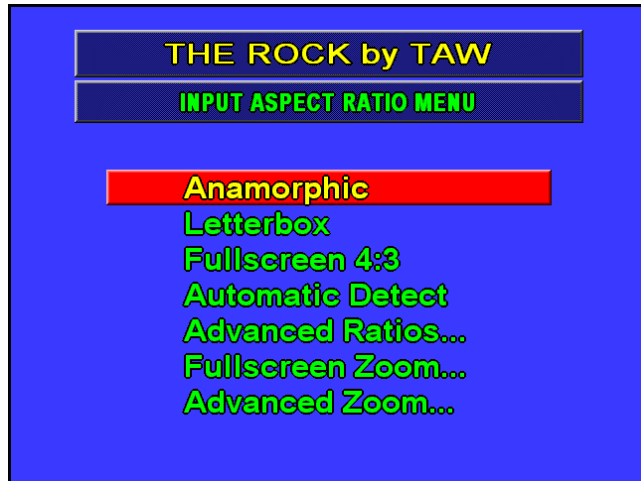
IMPORTANT ADDITION:

The ROCK PRO & V2 will not change the output aspect per input. The ROCK+ & V1 ROCKs will save the Output Aspect ratios per input.

3 – ASPECT RATIO CONTROL

Input Aspect Ratio Menu

INPUT ASPECT button, or
Main Menu → Input Aspect Ratio



Instead of using this menu, you can simply use the **ANAMORPHIC** button on the remote control, which automatically switches between the first three options of this menu.

This menu is useful:

- ➔ If you need to access extra options not accessible via the **ANAMORPHIC** button.
- ➔ If you are using a nonstandard aspect ratio for your display screen rather than a standard 4:3 or 16:9 display screen.
- ➔ If you want to adjust zoom modes.

- ➔ Tap the **VIDEO FORMAT** button to display the above menu and then select:
 - **Anamorphic**, commonly used with most widescreen DVD's.
 - **Letterbox**, commonly used with letterboxed material and some older widescreen DVD's.
 - **Fullscreen 4:3**, commonly used with television material and older Academy-format movies.
 - **Automatic Detect** enables the automatic aspect ratio detection feature.
 - **Advanced Ratios...** takes you to Advanced Input Aspect Ratio Menu. (see next page)
 - **Fullscreen Zoom...** takes you to Fullscreen Zoom Mode Menu. (found later in this chapter)
 - **Advanced Zoom...** takes you to Advanced Zoom Settings Menu. (found later in this chapter)

For more information on *Anamorphic*, *Letterbox*, and *Fullscreen 4:3*, please refer to the section Anamorphic Button on Remote Control.

For more information on *Advanced Ratios*, *Fullscreen Zoom*, and *Advanced Zoom* please refer to the respective sections found later in this chapter.

Automatic Detect is most useful if you are using a widescreen display, if you want ROCK to automatically detect the aspect ratio of the source material via letterbox bar detection.

Footnote #1: Automatic Detect is mainly useful for certain applications, especially when you are mainly using high-quality source material. Please be noted that Automatic Detect is unable to determine the difference between anamorphic and non-anamorphic widescreen. It is generally recommended to leave Automatic Detect disabled, and use the **ANAMORPHIC** button instead for adjustment.

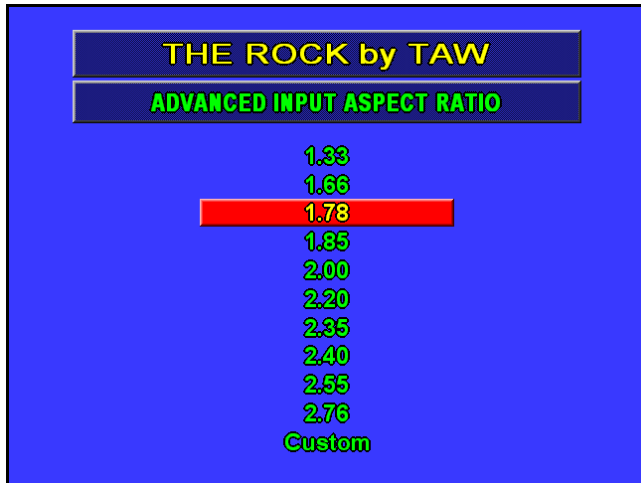
Footnote #2: Make sure that the Output Aspect Ratio Menu is configured correctly for the display that you are using, before using this menu.

TAW recommends not to use Auto-Aspect detect as noisy sources will false the ROCK into the improper aspect ratio. The ROCK PRO and ROCK V2 units have had this feature removed.

3 – ASPECT RATIO CONTROL

Advanced Input Aspect Ratio Menu

INPUT ASPECT button pressed twice, or
Main Menu → Input Aspect Ratio → Advanced Ratios...



This menu is mainly useful:

- If you want to be able to properly reposition widescreen video at the top or bottom of your screen.
- If you're using an anamorphic lens with a projector, such as an ISCO anamorphic lens.
- If you're using a CRT projector with a nonstandard screen, such as a 2.35:1 screen.
- If you're using any kind of display that uses a screen that is not exactly 4:3 or 16:9.

Otherwise, this menu is usually not needed.

This menu allows you to inform the ROCK of the exact aspect ratio the displayed video is currently in. This makes the following ROCK features possible:

- Ability to align any aspect ratio widescreen video at the very top or bottom of any display.
- Ability to align 4:3 video at the left or right edge of any widescreen display.
- Ability to do constant-height varying-width projector setups with all video sources of all aspect ratios.

Right after selecting the desired aspect ratio, you can press the **RIGHT ARROW** button to toggle between anamorphic and non-anamorphic versions of the selected aspect ratio.

If the desired aspect ratio is not listed in the menu, you can select the **Custom** option. This will allow you to adjust aspect ratio in 0.005:1 increments between 1:1 through 3:1, using the **UP/DOWN ARROW** buttons.

For more information about aligning the video image at top/bottom/left/right edges of the screen, please refer to Picture Adjustment Menu.

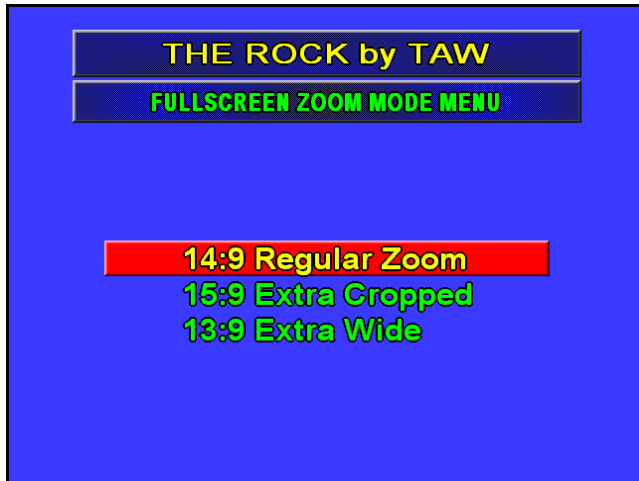
Tip: Right after selecting an aspect ratio in this menu (except **Custom**) you can press the **UP/DOWN ARROW** to cycle through the previous/next aspect ratio.

Footnote: Make sure that the Output Aspect Ratio Menu is configured correctly for the display that you are using, before using this menu.

3 – ASPECT RATIO CONTROL

Fullscreen Zoom Mode Menu

INPUT ASPECT button pressed 3 times, or
Main Menu → Input Aspect Ratio → Fullscreen Zoom ...



This menu is useful only for 4:3 video sources, if you are using a 16:9 widescreen display.

If you prefer a filled display,

→ You can use this menu to zoom 4:3 video sources to fill the whole screen.

If you prefer original aspect ratio,

→ You can ignore this menu and simply continue to use the **ANAMORPHIC** button. That allows you to center the 4:3 image in the middle of the widescreen display with black sidebox bars.

Select any of the following menu options:

→ **14:9 Regular Zoom**

This is a common zoom mode which stretches the 4:3 image horizontally to 16:9 and stretches the image vertically slightly, cropping 8 percent of the image from each of the top and bottom of the screen.

→ **15:9 Extra Cropped**

Same as 14:9, except more vertical stretch is done to compensate for horizontal stretch. This reduces stretch distortion, but the tradeoff is that more of the image is cropped.

→ **13:9 Extra Wide**

Same as 14:9, except less vertical stretch is done to compensate for horizontal stretch. This reduces cropping, but the tradeoff is that image stretch is more noticeable.

Tip: Right after selecting a zoom mode in this menu, you can press the **UP/DOWN ARROW** to cycle through the previous/next zoom mode. This can allow you to make a quick judgement on which zoom mode you think you may prefer.

IMPORTANT ADDITION:

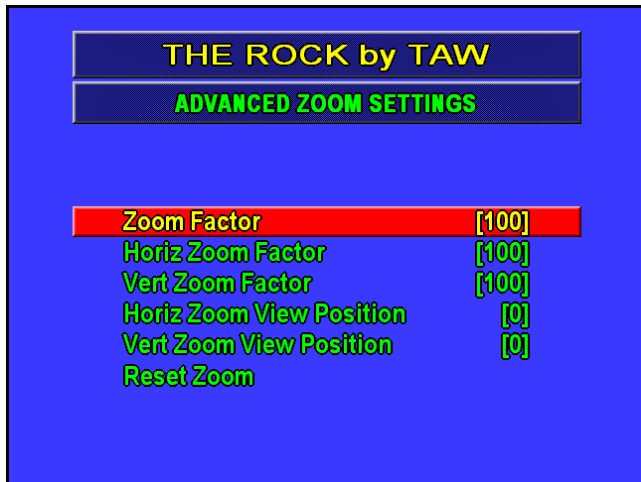
The ROCK PRO & V2 units have the 14:9, 15:9 & 13:9 zoom ratios under "Full Screen Zoom" under the "Input Aspect Ratio" menu.

"Advanced Zoom" menu in the PRO and V2 units allow separate zoom factors of the entire image or just vertical or horizontal in 1% increments. Placement of the zoom window is possible using "Horiz and Vert Zoom View Position" under the "Advanced Zoom Settings" menu,

3 – ASPECT RATIO CONTROL

Advanced Zoom Settings Menu

Main Menu → Input Aspect Ratio → Advanced Zoom ..., or
Main Menu → Service Menu → Sync Timings & Zoom Settings → Zoom Settings ...



This menu can be useful for the following:

- Display a smaller image positioned at a specific place on a screen for special applications, such as a quarter-size image at the upper-left corner.
- Compensate for sideboxed DVD material by zooming the material to fill the whole screen.
Example: Original Blade Runner DVD.
- Zoom an image to fill the screen to examine the image more closely.
Example: closer examination of Instant Replays for sports material by zooming an object of focus to fill the whole screen.
- Video walls, such as two digital projectors side-by-side.

Select any of the following menu options, and then use the UP/DOWN ARROW to adjust:

- **Zoom Factor**
Specifies the percentage that you want to zoom the video image to. This affects both horizontal and vertical zoom factors simultaneously. You can zoom out to 10% original image size, or zoom in to 500% image size, in 1% increments.
- **Horiz Zoom Factor**
Same as above, except zoom only horizontally, leaving vertical zoom factor unchanged.
- **Vert Zoom Factor**
Same as above, except zoom only vertically, leaving horizontally zoom factor unchanged.
- **Horiz Zoom View Position**
After zooming in or out, you can reposition the view position of the image horizontally in steps of 1. Setting this to 0 means leftmost position, 50 means center, and 100 means rightmost position.
For example, you can view the top-right corner of an image zoomed 250 by setting this value to 100.
- **Vert Zoom View Position**
Same as above, except adjust position vertically instead of horizontally. Setting this to 0 means topmost position, 50 means center, and 100 means bottommost position.
- **Reset Zoom**
This will immediately reset the image to original image size (100% factor).

Footnote: Using the ROCK to do video wall setups, such as two digital projector images side-by-side, requires a separate ROCK⁺ per display. The ROCK is capable of more advanced video wall setups; please contact TAW Inc. for more information.

IMPORTANT ADDER:

The PRO & V2 units have Horiz and Vertical Zoom View Position set to 50%. This allows the zoom to be relative to the center of the picture. To move the zoom off center simply change these settings.

3 – ASPECT RATIO CONTROL

Output Aspect Ratio Menu

OUTPUT ASPECT button, or
Main Menu → Output Aspect Ratio



For most setups, this menu only needs to be accessed once during initial configuration for a specific display.

This menu is useful when:

- You are doing initial configuration of the output display that you have connected the ROCK to, to tell it whether you are using a 4:3 or 16:9 display.
- You are using a custom or nonstandard screen that is not a 4:3 or 16:9 aspect ratio.
- You are using an anamorphic lens with a digital projector.
- You like to use the zoom lens of a digital projector.

- Tap the **OUTPUT ASPECT** button on the remote to display the above menu and then select an aspect ratio.
 - Select the 1.33 Screen (TV) option, if using a 4:3 display.
 - Select the 1.78 Screen (HDTV) option, if using a 16:9 widescreen display.
 - For a custom aspect ratio display, select the appropriate aspect ratio listed.

If the desired aspect ratio is not listed in the menu, you can select the **Custom Screen Aspect** option. This will allow you to adjust aspect ratio in 0.005:1 increments between 1:1 through 3:1, using the **UP/DOWN ARROW** buttons.

Footnote: This menu also makes it possible to support virtually any suitable *anamorphic lens*, with any stretch factor. Some home theater setups benefit from the use of an anamorphic lens connected to the front of a digital projector, to convert a 4:3 digital projector into a true 16:9 digital projector. After configuring the display through this menu, you can then watch any material in the correct proportions through any anamorphic lens of nonstandard stretch factors. This allows you to watch any video material in either perfect 4:3 aspect ratio and 16:9 aspect ratio through an anamorphic lens without needing to adjust or remove the anamorphic lens at all between different video material and different aspect ratios.

Footnote #2: There are only very certain cases you will need to access this menu multiple times beyond the initial configuration step. One possible situation, is if you have a digital projector and frequently use the zoom lens to switch between 4:3 and 16:9. In this case, you may want to reconfigure this menu everytime you use the zoom lens on your digital projector so that you are able to properly use special features such as vertical image align of 2.35:1 material at the top/bottom of a 16:9 screen using a 4:3 projector. Vertical image align can be done via the Picture Adjustment Menu.

4

SCANRATE ADJUSTMENTS

Overview

Different displays are optimized for different resolutions, different vertical refresh rates, and different sync polarity settings. All of these are termed scanrate adjustments.

Here are just four different examples:

- ➔ One model of a DILA projector may work best at 1365x1024 resolution, 75 Hz vertical refresh rate.
- ➔ One model of a DLP projector may work best at 800x600 resolution, 72 Hz vertical refresh rate.
- ➔ One model of a Plasma display may function best at 1280x768 resolution, 60 Hz vertical refresh rate.
- ➔ An HDTV television may work best at 720x480 or 960x540 resolution, 60 Hz vertical refresh rate.

For most digital displays, you should select the resolution that matches the number of pixels on the digital display. For CRT displays, please refer to the CRT displayer manufacturer for recommended settings. You can also contact your knowledgeable home theater technician or ISF technician for the recommended setting for resolution and refresh rate. You can also contact TAW Inc. for recommended settings, or visit the support forum at www.tawforum.com.

If you are using a CRT projector, such as a Barco, that requires negative sync polarity, you will want to change the sync polarity from the factory default of positive sync polarity. If you are unable to view onscreen menus, you will want to refer to the **RESET** button on the remote, which switches to positive sync polarity after 4 button presses, and negative sync polarity after 6 button presses.

CAUTION

Setting the resolution or refresh rate beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using any of these features.

In other words as an example: Do not try to make the ROCK⁺ output 2048x1536 to a regular HDTV television set, since this is almost certainly beyond the specifications of the HDTV television set. If you are unfamiliar with the concept of resolution and refresh rate, it is highly recommended to leave this adjustment setting to experienced technicians and people who fully understand these settings.

While some displays have built-in safeguards against exceeded specifications, many displays do not. This warning applies when connecting a ROCK, or any other progressive-scan device, to your display.

IMPORTANT ADDER:

The ROCK PRO default for Sync Polarity is - Horiz. / - Vert.

4 – SCANRATE ADJUSTMENTS

Output Resolution Menu

SCAN RATE button, or
Main Menu → Output Resolution



The factory default is 720x480.

The ROCK may have been preconfigured to your specific display by a technician, depending on where you purchased your ROCK.

- Use the **UP/DOWN ARROW** button to select the desired resolution that was recommended for your particular display, and then press **ENTER**.
- If the recommended resolution is not listed here, select the **More...** option and refer to the next page.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter!
TAW assumes no liability to display damage when using this menu.

Tip #1: Refresh rate is automatically preserved by default. Please exercise caution to make sure that the display is able to support the current refresh rate at the new resolution.

Tip #2: If your display cannot do 480p but only supports higher resolutions, you will have to configure the output resolution manually since you will be unable to see this menu. This is required for certain models of older HDTV sets that only work with 540p / 1080i and not 480p as is the factory default. To do this, press the **SCAN RATE** button on your remote followed by the number key corresponding to the menu option. Therefore, in order to select 960x540 for an older HDTV television set, then press **SCAN RATE** followed by 3 on the remote control.

Footnote: The "p" suffix at the end of a resolution means progressive scan. This means the same thing as non-interlaced.

4 – SCANRATE ADJUSTMENTS

More Output Resolution Menu

SCAN RATE button, *then* More..., or
Main Menu → Output Resolution → More...



Most specialized DILA, LCD and Plasma resolutions are accessible by going through this menu. Extra CRT projector resolutions can also be found here.

All of the options in this menu automatically go to other submenus.

Select any of the following menu options:

- **DILA (G-Series)**
Select this option to go to the DILA Resolutions Menu (G-Series).
Select this option if you have a JVC G-Series projector or another compatible DILA model branded under another manufacturer.
- **DILA (M2000)**
Select this option to go to the DILA Resolutions Menu (M2000).
Select this option if you have a JVC M-Series projector.
- **LCD / PLASMA**
Select this option to go to the LCD / Plasma Resolutions Menu.
Select this option if you have a display with a resolution not listed in the main Output Resolutions Menu. Also, some of the resolutions listed via this menu are also useful for some CRT projectors too.
- **OTHER**
Select this option to go to the Other Resolution Menu.
This menu contains less common resolutions, mainly useful for CRT displays, as well as the highest 2048x1536p resolution that the ROCK⁺ is capable of.
- **Custom...**
Select this option to go to the Novice Timings & Resolution Menu.
This is a feature that allows you to create virtually any custom resolution in 2-pixel increments vertically and 8-pixel increments horizontally. For more information, see the Service Menu chapter.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter!
TAW assumes no liability to display damage when using this menu.

Tip: Refresh rate is automatically preserved by default in V1 units.
In the PRO & V2 units the Vrefresh being preserved is an option in the service menu. Default is off.

4 – SCANRATE ADJUSTMENTS

DILA Resolutions Menu (G-Series)

SCAN RATE button, *then* More... → DILA (G-Series), *or*
Main Menu → Output Resolution → More... → DILA (G-Series)



All options on this menu are optimized for 1365x1024 DILA projectors based on the JVC G-Series DILA projector.

The ability to do custom 16:9 and 2.35:1 screens very easily with DILA projectors, is a feature of the ROCK.

The Top/Center/Bottom alignment feature allow you to easily use floor mounting or ceiling mounting, without ever needing to readjust the zoom lens. This is useful whenever switching between any aspect ratio, including 4:3 and 16:9 material, even in constant-height varying-width screen setups.

- Use the **UP/DOWN ARROW** button to select the desired resolution that was recommended for your particular DILA configuration, and then press **ENTER**.
- You can also optimize your DILA projector using the DILA Calibration Test Pattern. For more information, please see Focus & Tracking Test Patterns.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter!
TAW assumes no liability to display damage when using this menu.

Tip #1: Most DILA G-Series projectors and compatibles were designed to run best at 75 or 75.1 Hz vertical refresh rate. For more information on setting the vertical refresh rate, please refer to the Output Vertical Refresh Menu.

Tip #2: Refresh rate is automatically preserved by default. Please exercise caution to make sure that the display is able to support the current refresh rate at the new resolution.

IMPORTANT ADDER:

In the PRO & V2, if the display goes out of sync simply push the "RESET" button marked "R" 4 times slowly. Once per second. the unit will reset picture adjustments with 2 pushes of the "R" button. All settings will be reset with 4 pushes.

4 – SCANRATE ADJUSTMENTS

DILA Resolutions Menu (M2000)

SCAN RATE button, *then* More... → DILA (M2000), or
Main Menu → Output Resolution → More... → DILA (M2000)



All options on this menu are optimized for 1365x1024 DILA projectors based on the JVC M2000 DILA projector.

The ability to do custom 16:9 and 2.35:1 screens very easily with DILA projectors, is a feature of the ROCK⁺.

The Top/Center/Bottom alignment feature allow you to easily use floor mounting or ceiling mounting, without ever needing to readjust the zoom lens. This is useful whenever switching between any aspect ratio, including 4:3 and 16:9 material, even in constant-height varying-width screen setups.

- Use the **UP/DOWN ARROW** button to select the desired resolution that was recommended for your particular DILA configuration, and then press **ENTER**.
- You can also optimize your DILA projector using the DILA Calibration Test Pattern. For more information, please see Focus & Tracking Test Patterns.

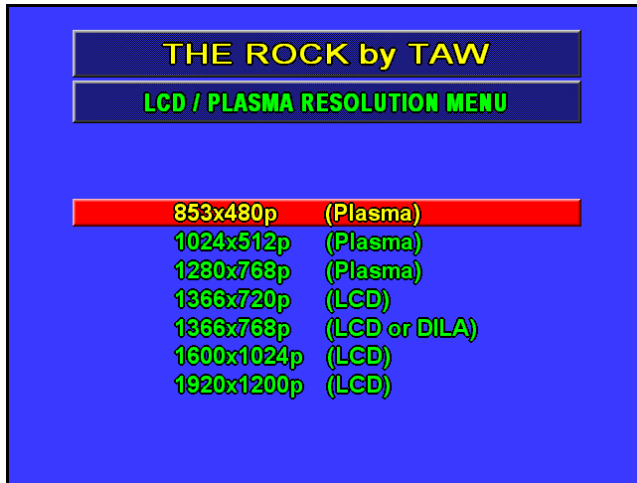
CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter!
TAW assumes no liability to display damage when using this menu.

Tip #1: Refresh rate is automatically preserved by default In V1 units.
The ROCK PRO & V2 units have an option to preserve Vrefresh in the service menu. Default is off.

4 – SCANRATE ADJUSTMENTS

LCD / Plasma Resolutions Menu

SCAN RATE button, *then* More... → LCD / PLASMA, or
Main Menu → Output Resolution → More... → LCD / PLASMA



This menu is optimized for LCD / Plasma displays and projectors. Some of the resolutions in this menu are also useful for CRT projectors.

→ Use the **UP / DOWN ARROW** button to select the desired resolution that was recommended for your particular display, and then press **ENTER**.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu.

Tip: Refresh rate is automatically preserved by default. Please exercise caution to make sure that the display is able to support the current refresh rate at the new resolution.

4 – SCANRATE ADJUSTMENTS

Other Resolutions Menu

SCAN RATE button, *then* More... → OTHER, or
Main Menu → Output Resolution → More... → OTHER



This menu is optimized for LCD / Plasma displays and projectors. Some of the resolutions in this menu are also useful for CRT projectors.

→ Use the **UP/DOWN ARROW** button to select the desired resolution that was recommended for your particular display, and then press **ENTER**.

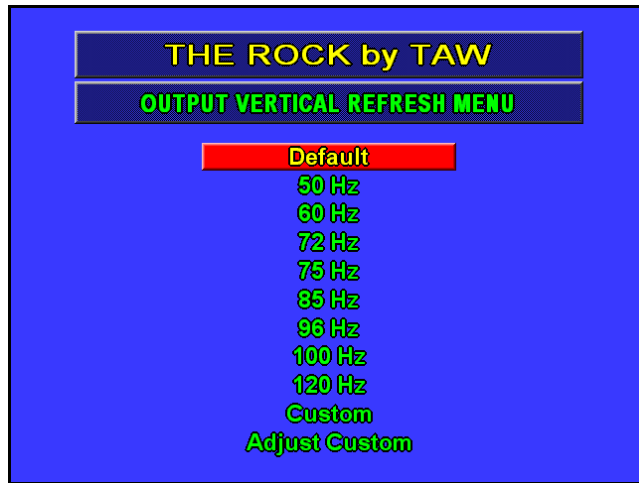
CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu.

Tip: Refresh rate is automatically preserved by default. Please exercise caution to make sure that the display is able to support the current refresh rate at the new resolution.

4 – SCANRATE ADJUSTMENTS

Output Vertical Refresh Menu

Main Menu → Output Vertical Refresh



The factory default is normally 60 Hz (Default). Most displays function at Default or 60 Hz vertical refresh rate.

The ROCK may have been preconfigured to your specific display by a technician, depending on where you purchased your ROCK.

It is recommended not to change this setting unless you are sure that the display that you are using, supports the desired vertical refresh rate at the currently configured resolution. However, if you need to change the refresh rate:

- Use the **UP/DOWN ARROW** button to select the desired vertical refresh rate that was recommended for your particular display, and then press **ENTER**.
- In the special event you need to use a custom vertical refresh rate;
 - Select the **Adjust Custom** option to go into adjustment.
 - Use **UP/DOWN ARROW** button to set refresh in 0.1 Hz increments between 48 Hz and 150 Hz.
 - Use the **LEFT ARROW** button to return back to the Output Vertical Refresh Menu.
 - Select the **Custom** option to immediately use the specified custom vertical refresh rate.Changing the Custom setting is not recommended unless you are familiar with vertical refresh rates.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu.

Tip #1: If you mainly watch movie-based material in NTSC territory, you will likely prefer the 72 Hz vertical refresh rate, provided that you are very sure that the specific display you are using performs fully properly at that particular refresh rate. If you mainly watch video-based material in NTSC territory and infrequently watch movies, you should keep the setting at Default or 60 Hz. If you are in PAL territory, you will likely want to use 50 Hz or 75 Hz. Please consult your display's specifications before adjusting the vertical refresh rate! Also, exceptions can occur – for example, certain DILA projectors often function better at 75 Hz than at 72 Hz even for NTSC movie sources.

Tip #2: Never use anything other than 'Default' or '60 Hz' for most HDTV television sets! Most HDTV television sets cannot support any refresh rate other than 60 Hz. Unless your HDTV television set manufacturer says otherwise, do not attempt to use any other vertical refresh rate.

Footnote: The vertical refresh rate of most NTSC sources is actually exactly 59.94 Hz which the ROCK takes into account of. For simplicity, the user interface rounds this value off to 60 Hz.

4 – SCANRATE ADJUSTMENTS

Other Resolutions Menu

SCAN RATE button, *then* More... → OTHER, or
Main Menu → Output Resolution → More... → OTHER



This menu is optimized for LCD / Plasma displays and projectors. Some of the resolutions in this menu are also useful for CRT projectors.

→ Use the **UP/DOWN ARROW** button to select the desired resolution that was recommended for your particular display, and then press **ENTER**.

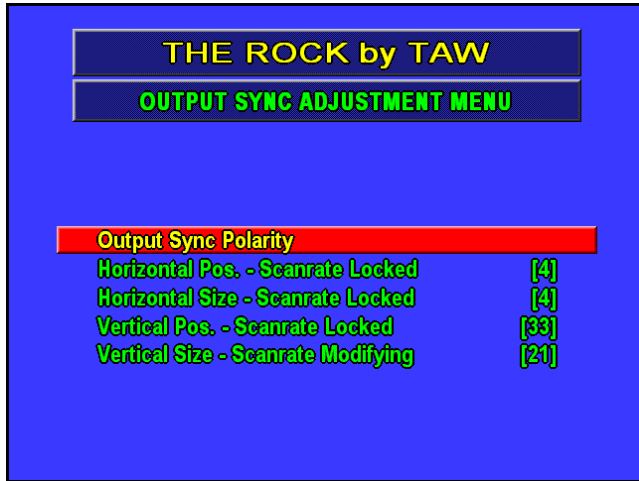
CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu.

Tip: Refresh rate is automatically preserved by default. Please exercise caution to make sure that the display is able to support the current refresh rate at the new resolution.

4 – SCANRATE ADJUSTMENTS

Output Sync / Size / Position Menu

Main Menu → Output Sync/Size/Position



The Horizontal and Vertical Size and Position adjustments can be very useful with CRT displays.

With CRT displays, you can:

- Center the image in the middle of a screen, so that there is no cropping.
- Fill the whole screen width uniformly.
- Fill the whole screen height uniformly.

If you are able to view the onscreen display, it is usually not necessary to change the Output Sync Polarity. Certain displays such as certain Barco projectors will require configuring Output Sync Polarity.

For more information, refer to the next page.

Select any of the following menu options:

- **Output Sync Polarity**
This brings you to the Output Sync Polarity Menu described on the next page.
- **Horizontal Pos. - Scanrate Locked**
Select this item to adjust the horizontal image position using the UP/DOWN ARROW button.
- **Horizontal Size . - Scanrate Locked**
Select this item to adjust the horizontal image size using the UP/DOWN ARROW button.
- **Vertical Pos. - Scanrate Locked**
Select this item to adjust the vertical image position using the UP/DOWN ARROW button.
- **Vertical Size . - Scanrate Locked**
Select this item to adjust the vertical image size using the UP/DOWN ARROW button.

All the Scanrate Locked adjustments preserves the current vertical refresh rate and horizontal refresh rate (horizontal scan rate), while the setting is being adjusted. The Vertical Size - Scanrate Modifying adjustment will affect horizontal refresh rate (horizontal scan rate) when this setting is adjusted, so please take extra caution when adjusting this particular setting to ensure that you do not exceed the scan rate specifications of the display.

CAUTION: If the display goes blank or becomes scrambled, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu.

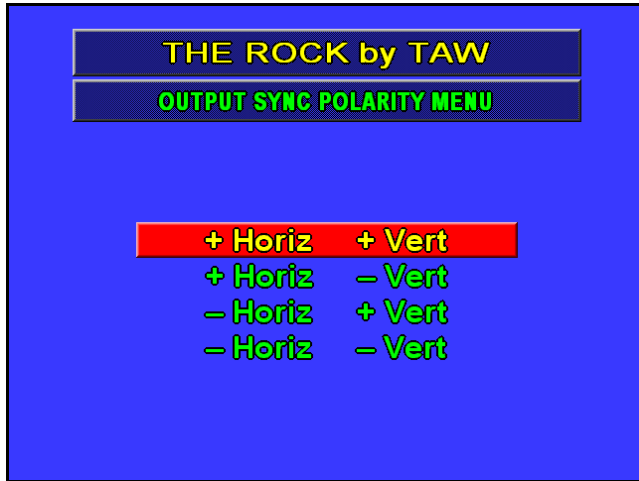
Tip #1: If you must adjust image size on a HDTV television set, always adjust only the Scanrate Locked adjustments. This means you must avoid adjusting the Vertical Size, because that changes the scanrate which can be unsafe for certain HDTV sets.

Tip #2: If there is any image distortion or the image disappears while adjusting, you should immediately press the **RESET** button on the remote two times to reset image size and position back to defaults.

4 – SCANRATE ADJUSTMENTS

Output Sync Polarity

Main Menu → Output Sync/Size/Position → Output Sync Polarity



If you are able to view the onscreen menu, it is usually not necessary to make an adjustment unless your display manufacturer recommends a specific sync polarity.

Changing the sync polarity may be needed with certain projectors in order to be able to view the image from the ROCK⁺.

If you are unable to view the menu because of an incorrect sync polarity setting, you can use the **RESET** button on the remote to switch between positive and negative sync polarity.

Select any of the following menu options:

→ + Horiz + Vert

Positive horizontal sync polarity and positive vertical sync polarity.

This is generally called positive sync polarity, referring to both horizontal and vertical.

This is the default setting.

→ + Horiz - Vert

Positive horizontal sync polarity and negative vertical sync polarity.

This is a hybrid sync polarity setting.

This setting is rarely used.

→ - Horiz + Vert

Negative horizontal sync polarity and positive vertical sync polarity.

This is a hybrid sync polarity setting.

This setting is rarely used.

→ - Horiz - Vert

Positive horizontal sync polarity and positive vertical sync polarity.

This is generally called negative sync polarity, referring to both horizontal and vertical.

Some projectors, such as certain Barco models, require this setting.

Tip: If you are unable to view the display because the ROCK is configured to a sync polarity that your display cannot support, you can use the **RESET** button on the remote to configure sync polarity: Pressing the **RESET** button four times switches to 640x480p, 60 Hz, positive sync polarity. Pressing the **RESET** button six times switches to 640x480p, 60 Hz, negative sync polarity.

To blindly set the output sync polarity without the OSD (On Screen Display).

Push the following keys after pushing the left arrow key several times to back out of the menu.

MENU 711 +H/+V

MENU 712 +H/-V

MENU 713 -H/+V

MENU 714 -H/-V

5

PICTURE ADJUSTMENTS

Overview

The ROCK has a large number of picture adjustments to allow you to improve the picture quality on the display. The ROCK is flexible enough to give you a choice of the following:

- ➔ Leave the picture adjustment settings at factory defaults, if the picture looks great;
- ➔ Adjust the picture using a calibration DVD disc such as AVIA or Video Essentials;
- ➔ Hire a reputable trained technician (ISF-trained) to professionally calibrate the picture of the ROCK for you;

The settings in the Picture Adjustment Menu should be used in conjunction with a calibration DVD disc, such as AVIA or Video Essentials for best results. The best picture results can be device-dependent; you may require different settings in the Picture Adjustment Menu between a DVD player and a DSS box, and even between two different models of DVD players.

It is important to note that the display itself, may need to be calibrated first to reference levels before adjusting the ROCK. If it is not practical to do this step first, you can use the ROCK picture adjustments to compensate for current display characteristics.

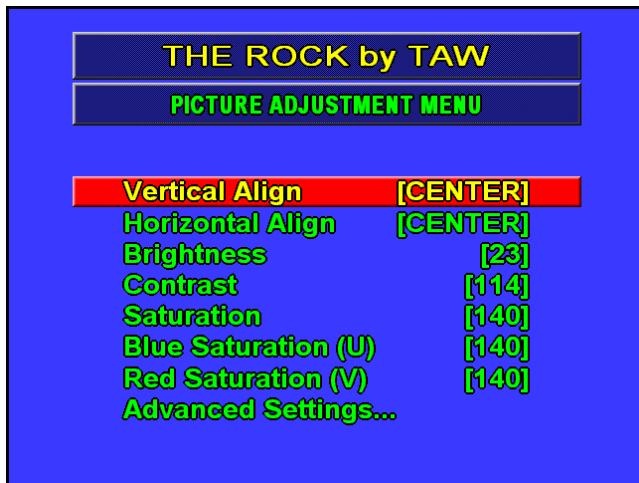
IMPORTANT ADDER:

The ROCK PRO and V2 have both Gamma and Sharpness additions to the ROCK V1 units.

5 – PICTURE ADJUSTMENTS

Picture Adjustment Menu

PIC ADJUST button, *or*
Main Menu → Picture Adjustment Menu



The factory default settings for the Component Video Input are currently shown in this image of the Picture Adjustment Menu.

These settings are memorized in ROCK on a per-video-input and per-video-format basis.

IMPORTANT ADDER:

The ROCK PRO & V2 have both a film filter to improve vertical judder in film mode and Video Temporal filter that removes horizontal judder on video sources.

Select any of the following menu options, and then use the **UP/DOWN ARROW** to adjust:

- **Vertical Align**
Gives you a choice of *TOP / CENTER / BOTTOM*.
This allows you to align a widescreen image at the top or the bottom of your display.
For this feature to work, you have to have the correct Input Aspect Ratio currently selected.
- **Horizontal Align**
Gives you a choice of *LEFT / CENTER / RIGHT*.
This allows you to align a 4:3 image at the leftmost or rightmost edge of a widescreen display.
For this feature to work, you have to have the correct Input Aspect Ratio currently selected.
- **Brightness**
Adjusts the brightness of the picture.
- **Contrast**
Adjusts the contrast of the picture.
- **Saturation**
Adjusts the overall color saturation of the picture.
- **Blue Saturation (U)**
Adjusts the blue saturation of the picture. (Also called blue push or U chroma intensity)
This setting is useful if you have too little or too much blue in your picture.
- **Red Saturation (V)**
Adjusts the red saturation of the picture. (Also called red push or V chroma intensity)
This setting is useful if you have too little or too much red in your picture.
- **Advanced Settings...**
This brings you to the Advanced Picture Settings Menu described on the next page.

After adjusting a specific setting, you can press the **LEFT ARROW** button to go back to this menu.

IMPORTANT ADDER:

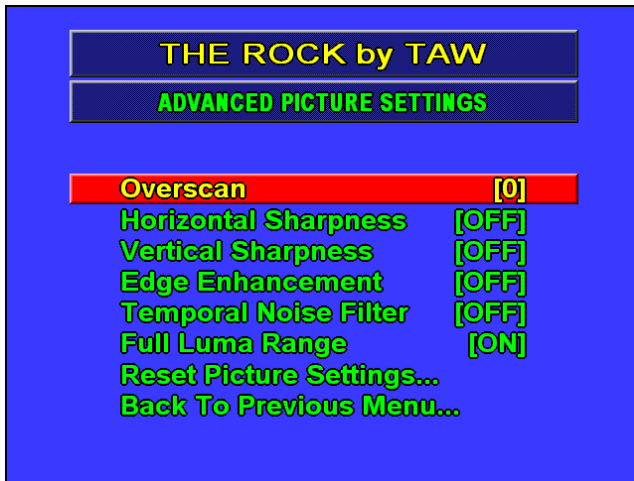
The ROCK PRO has Gamma in feature selection #6. This is adjustable from .5 - 3.00 Gamma. This is a multiplier of the input gamma table. Gamma will adjust the brightness from the center point of the gamma curve.

Sharpness is also provided in +/- 256 point increments.

5 – PICTURE ADJUSTMENTS

Advanced Picture Settings Menu

PIC ADJUST button pressed twice, or
Main Menu → Picture Adjustment Menu → Advanced Settings...



The factory default settings are currently shown in this image of the Advanced Picture Settings Menu.

The Overscan and Full Luma Range settings are memorized in ROCK on a per-video-input basis.

Select any of the following menu options, and then use the **UP/DOWN ARROW** to adjust:

→ **Overscan**

Adjust the amount of overscan for a video image.

Most DVD players work fine with an Overscan setting of 0. However, some television and DSS sources require a moderate Overscan setting, such as 10 since some channels on some these sources may contain junk at one or more outer edges of the video images. If you see distortion at the edges of an image that is caused by one of your sources, you may want to adjust this setting.

IMPORTANT ADDER:

Due to the advanced nature of the ROCK PRO & V2 many of the features found in the V1 units are no longer needed.

In the ROCK PRO & V2 the advanced menu will show:

- 1) Overscan - this feature will zoom out the input frame in the output frame timing. Adjusting too far will result in the picture cropping. Proper adjustment is to set larger numbers until the image stops growing in its physical size. Further adjustment will not allow the picture to grow but will crop the image.
- 2) Horizontal Align - Moves the image reference from left to center to right. The image may not move if using a digital display and all the available panel is being used.
- 3) Vertical Align - Moves the image reference from top to center to bottom. The image may not move if using a digital display and all the available panel is being used.
- 4) Input Horiz Sync Delay - Allows horizontal compensation for sources with out of phase horizontal sync pulses.
- 5) Input Vertical Sync Delay - Allows vertical compensation for sources with out of phase vertical sync pulses.

On DigiLink I source set to +1 with the ROCK PRO & V2 units.

On DigiLink II source set to -8 with the ROCK PRO & V2 units.

6

TEST PATTERNS

Overview

If you have no interest in test patterns, and your display is well-adjusted, you may skip this chapter. However, this chapter is very useful if you want to improve the picture quality of the display that the ROCK is currently connected to. Trained calibration technicians will be especially interested in reading this chapter.

The ROCK has dozens of test patterns that can assist in calibrating a CRT, LCD, DLP, Plasma, or any other display. The ROCK can also be used as a multipurpose test pattern generator. The Test Patterns in the ROCK is designed to be used in conjunction with the following:

- ➔ CRT displays using convergence, electronic & mechanical focus, astig, and geometry adjustments.
- ➔ Digital displays using lens focus, image alignment, and phase & tracking adjustments.

Whenever you select a test pattern on the ROCK, and it is currently being displayed, you can use the remote control buttons to make adjustments to test patterns:

- | | |
|--------------------------|---|
| ➔ UP / DOWN ARROW button | Cycle through previous / next test pattern |
| ➔ LEFT ARROW button | Return to the Test Pattern menu. |
| ➔ 1 numeric button | Toggle red electronic cutoff. |
| ➔ 2 numeric button | Toggle green electronic cutoff. |
| ➔ 3 numeric button | Toggle blue electronic cutoff. |
| ➔ 0 numeric button | Toggle between normal, inverted, and transparent overlay modes. |
| ➔ ENTER button | Toggle displaying the name of test pattern at bottom of test pattern. |

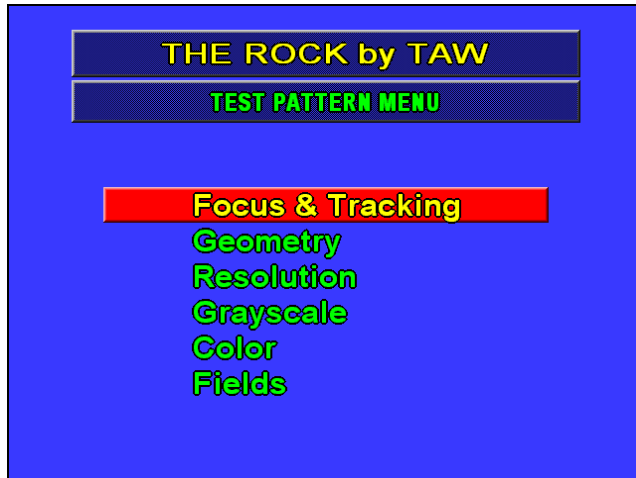
The 1, 2, 3 buttons are useful if you want to filter out all primary colors except 1 or 2 of them. For example, when adjusting red-green convergence on a CRT projector.

The 0 button is useful if you want to use an inverted version of the currently displayed test pattern, or if you want to transparently overlay a test pattern on top of the video. For example, overlaying a ROCK generated grid or overscan test pattern on top of a DVD image.

6 – TEST PATTERNS

Test Pattern Menu

Main Menu → Test Pattern Menu



This is the main Test Pattern Menu. All the listed options branches out to submenus containing groups of test patterns.

Select any of the following menu options, to branch to the following submenus:

- **Focus & Tracking**
Submenu contains Focus (5 different), Crosshatch, Tracking & Phase.
- **Geometry**
Submenu contains Cross Lines, Grid (3 different), Dots (3 different), Circles (2 different), Overscan.
- **Resolution**
Submenu contains Horizontal Lines (3 different), Vertical Lines (3 different)
- **Grayscale**
Submenu contains Horizontal Grayscale Bars, Vertical Grayscale Bars, Black Level, White Clipping.
- **Color**
Submenu contains 75 IRE Color Bars (2 different), 100 IRE Color Bars (2 different)
- **Fields**
Submenu contains grayscale fields from 100 IRE down to 0 IRE in 10 IRE increments.

For more information about each category of test patterns, please refer to sections found within this chapter.

6 – TEST PATTERNS

Focus & Tracking Test Pattern Menu

Main Menu → Test Pattern Menu → Focus & Tracking



Select any of the following menu options to display a test pattern:

- Focus Pattern 1
- Focus Pattern 2
- Focus Pattern 3
- Focus Pattern 4

These are different fine-grained test patterns that are useful for calibrating the focus of any CRT projector or any other CRT-based display. These test patterns are also useful for adjusting lens focus on a digital projector as well.

- Focus Combo

This is a single focus test pattern that contains elements of all above 4 Focus Patterns.

- Crosshatch

This is pixel-level checkerboard test pattern, containing alternating black and white pixels. It is useful for checking for moiré artifacts on any display.

- DILA Tracking/Phase Called simply Tracking /Phase in the ROCK PRO & V2 units.

This is a specially designed test pattern to make it easy to adjust tracking and phase in a DILA projector, or any other digital display. Adjust Tracking until all vertical banding disappears, then adjust Phase until all noise disappears. Repeat Tracking adjustment if vertical bands reappear whenever adjusting the Phase adjustment.

Tip: Your DILA projector may already be calibrated with the correct Tracking & Phase setting, so if you see no vertical banding, it is not necessary to adjust DILA Tracking/Phase.

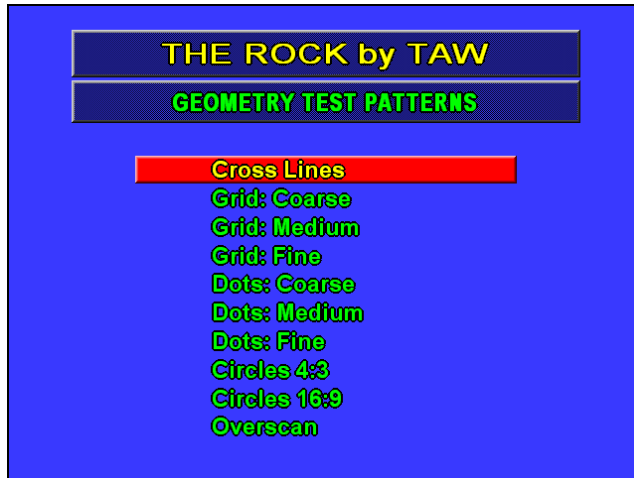
IMPORTANT ADDER:

The Tracking/Phase test pattern is an important test screen to insure proper tracking and phase using a digital display. To adjust your display simply move the tracking with this test pattern displayed. Vertical bands should spread further apart until they finally disappear. Tracking is now set properly. Phase now needs to be adjusted until the horizontal noise streaks disappear. Your display is now properly calibrated. Note the ROCK needs to be set to the proper native rate of the display and be set to 60 Hz for this pattern to work properly.

6 – TEST PATTERNS

Geometry Test Patterns

Main Menu → Test Pattern Menu → Geometry



Select any of the following menu options to display a test pattern:

- **Cross Lines**
Displays a vertical line and a horizontal line that crosses the center of the screen.
Useful for image centering on any display, and for static convergence on a CRT display.
- **Grid: Coarse**
Grid: Medium
Grid: Fine
Displays a grid of the specified granularity.
Useful for adjusting the geometry of a CRT display.
- **Dots: Coarse**
Dots: Medium
Dots: Fine
Displays a matrix of dots of the specified granularity.
Useful for adjusting astig of the electron beam in a CRT display.
- **Circles 4:3**
Displays a 4:3 aspect ratio grid with a big circle in the middle, and smaller circles at four corners.
Useful for verifying the geometry of a display in 4:3 aspect ratio.
- **Circles 16:9**
Displays a 16:9 aspect ratio grid with a big circle in the middle, and smaller circles at four corners.
Useful for verifying the geometry of a display in 16:9 aspect ratio.
- **Overscan**
Displays an overscan test pattern.
Useful for verifying the amount of display-generated overscan, and whether the display is centered within its overscan region.

Footnote: The Overscan test pattern measures the overscan generated by the display itself. This is completely separate from the Overscan adjustment in the Advanced Picture Settings Menu, which adjusts the overscan for the source signal itself.

6 – TEST PATTERNS

Resolution Test Pattern Menu

Main Menu → Test Pattern Menu → Resolution



Select any of the following menu options to display a test pattern:

- **Horizontal Lines: Fine**
Horizontal Lines: Coarse
Displays alternating black and white horizontal lines of the specified granularity.
This is useful for checking the display's sharpness in resolving the horizontal lines clearly.
- **Horizontal Lines: Multilevel**
Displays groups of alternating black and white horizontal lines, at multiple different granularities on the same screen.
- **Vertical Lines: Fine**
Vertical Lines: Coarse
Displays alternating black and white vertical lines of the specified granularity.
This is useful for checking the display's sharpness in resolving the horizontal lines clearly.
- **Vertical Lines: Multilevel**
Displays groups of alternating black and white vertical lines, at multiple different granularities on the same screen.

6 – TEST PATTERNS

Grayscale Test Pattern Menu

Main Menu → Test Pattern Menu → Grayscale



Select any of the following menu options to display a test pattern:

- **Horizontal Grayscale Bars**
Displays a series of horizontal grayscale bars in 10 IRE steps.
Useful for checking for linearity of grayscale on any display.
- **Vertical Grayscale Bars**
Displays a series of vertical grayscale bars in 10 IRE steps.
Useful for checking for linearity of grayscale on any display.
- **Black Level**
Displays a screen similar to a PLUGE test pattern.
This is a 3 IRE vertical bar inside a 0 IRE whole-screen full-black field.
Useful for setting the reference black level of a display by adjusting the display before adjusting the ROCK⁺ via the Picture Adjustments Menu for video-source specific picture settings.
- **White Clipping**
Displays an inverse version of the above
This is a 97 IRE vertical bar inside a 100 IRE whole-screen full-white field.
Useful mainly for digital projectors, this allows you to adjust the display so that white clipping is not being done. It is also recommended to adjust or verify the display with this pattern as well, before adjusting the ROCK⁺ via the Picture Adjustments Menu for video-source specific picture settings.

6 – TEST PATTERNS

Color Test Pattern Menu

Main Menu → Test Pattern Menu → Color



Select any of the following menu options to display a test pattern:

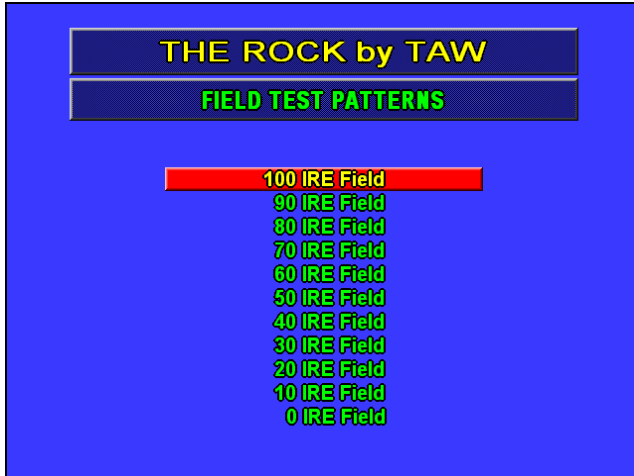
- 75 IRE Color Bars
Displays seven full-screen-height vertical color bars, at 75 IRE intensity.
- 75 IRE Split Color Bars
Displays an SMPTE color bars test pattern, with color bars of 75 IRE intensity at the top.
- 100 IRE Color Bars
Displays seven full-screen-height vertical color bars, at 100 IRE intensity.
- 100 IRE Split Color Bars
Displays an SMPTE color bars test pattern, with color bars of 100 IRE intensity at the top.

These test patterns can be useful for reference color adjustments on the display, before adjusting the ROCK via the Picture Adjustments Menu for video-source specific picture settings.

6 – TEST PATTERNS

Field Test Pattern Menu

Main Menu → Test Pattern Menu → Fields



Select any of the following menu options to display a full-screen grayscale field test pattern of the specified IRE value.

These test patterns can be useful for calibrating a display for reference grayscale before adjusting the ROCK via the Picture Adjustments Menu for video-source specific picture settings.

7

SERVICE MENU

Overview

This chapter is for advanced users, trained service technicians, and factory use. The Service Menu contains huge amounts of advanced and specialized adjustments, some of which are purely diagnostic in nature, while others affect picture quality.

Most users of the ROCK can skip this chapter.

CAUTION

Setting the resolution or refresh rate beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting custom timings and resolutions described within this chapter! TAW assumes no liability to display damage when using any of these features.

The ROCK PRO & V2 uses TAWs exclusive Pixel Perfect Video Processing. Thus Processing mode has been removed. The ROCK PROs Pixel Perfect deinterlacer is vastly superior to the V1 ROCK units Clear Matrix or Clear Matrix Pro.

Noise filter Settings in the PRO have been removed as they are no longer needed due to Pixel Perfects advanced noise reduction techniques.

The ROCK PROs Service Menu reads:

- 1) Chroma Settings. - Where you can set both vertical and horizontal chroma shift in sub pixel increments. The ROCK V1 does not support sub-pixel increments of Chroma Delay like the ROCK PRO & V2 units.
- 2) Sync Timings & Zoom - Where you can set custom scan rates. When setting custom resolutions the ROCK PRO & V2 will automatically shut down and restart to initialize the new custom timing. This is normal.
- 3) Other Settings - Where you can set the Baud rate from 1200 - 115200, turn on/off IR reception, Remove Pedestal from Component improving black levels on component sources that do not support blacker than black. OSD display using RS232, change OSD colors, Advanced menu lock out will allow just Aspect and input control locking out all other features. You can unlock the menu by entering 0TAW on a phone pad (0829). OSD timeout adjustable from 1 - 60 seconds, permanent OSD (no timeout)
- 4) Reset - Where you can reset picture, sync, zoom or pulldown settings to factory default.
- 5) Pulldown settings - This is an advance menu not supported in this manual. These settings should be attempted by qualified personnel only and only after direct instructions from TAW.

7 – SERVICE MENU

Service Menu

Main Menu → Service Menu



All of the menu options listed in the Service Menu lead to submenus.

The current firmware version is also displayed at the top of the Service Menu.

Select any of the following menu options:

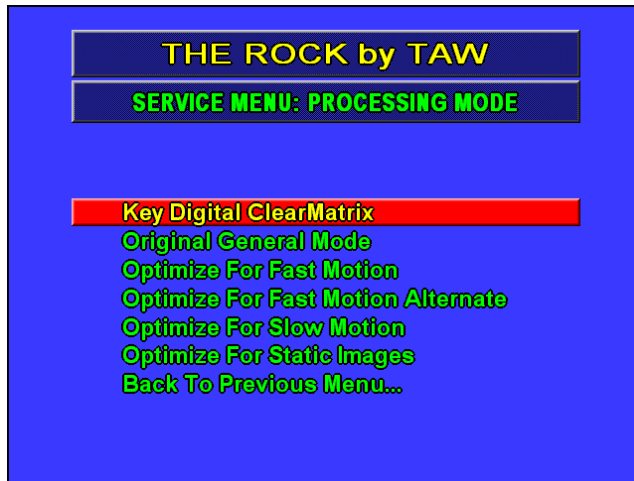
- **Video Processing Mode...**
Submenu that lists a choice of video deinterlace algorithms that can be used for video-based sources.
- **Pull-down Detection Settings...**
Submenu that configures 3:2 and 2:2 pull-down detection related settings for film-based sources.
- **Chroma Settings...**
Submenu that configures Chroma Delay and Chroma Vertical Shift settings.
- **Noise Filter Settings...**
Submenu that configures Temporal Noise Filter thresholds..
- **Sync Timings & Zoom Settings...**
Submenu that configures Custom Timings & Resolution settings, Zoom settings, and Lock Refresh Rate During Resolution Change.
- **Other Settings...**
Submenu that configures Automatic Aspect Detect Sensitivity, Aspect Ratio Image Clipping, and infrared remote sensor disable.
- **Reset..**
Submenu that allows resetting certain settings to defaults.

For more information about these menus, please refer to the corresponding sections found within this chapter.

7 – SERVICE MENU

Video Processing Mode Menu

Main Menu → Service Menu → Video Processing Mode...



On the ROCK, it is strongly recommended to leave the video processing mode setting to the default, Key Digital ClearMatrix. It is the algorithm that automatically optimizes for the best picture quality on the widest range of video sources.

Only in certain situations, you should select an alternative deinterlace algorithm.

IMPORTANT ADDER:

The ROCK PRO & V2 units no longer have this menu. The ROCK PRO & V2 units include TAWs exclusive and superior Pixel Perfect processing mode outperforming any mode in the older V1 models.

PIXEL PERFECT IS SUPERIOR TO CLEAR MATRIX , CLEAR MATRIX PRO , FAST, SLOW and STATIC ALGORITHMS.

Select any of the following menu options:

- **Key Digital ClearMatrix**
The best video processing algorithm as of Firmware 2.2.5 for the ROCK⁺.
Replaced by Pixel Perfect in the ROCK PRO and ROCK V2 for vastly superior performance.
- **Original General Mode**
The old default video processing algorithm available in previous Firmwares before Version 2.0.0.
Not needed in the ROCK PRO & V2 units..
- **Optimize For Fast Motion**
Mainly useful for fast motion images such as sports and music videos.
- **Optimize For Fast Motion Alternate**
Mainly useful for fast motion images such as sports and music videos.
Not needed in the ROCK PRO & V2 units.
- **Optimize For Slow Motion**
Mainly useful for images that contains small amounts of motion.
Not needed in the ROCK PRO & V2 units.
- **Optimize For Static Images**
Mainly useful if you are displaying still images, photographs, or video test patterns.
This setting does a simple weave algorithm.
- **Back To Previous Menu...**
Returns to the main Service Menu.

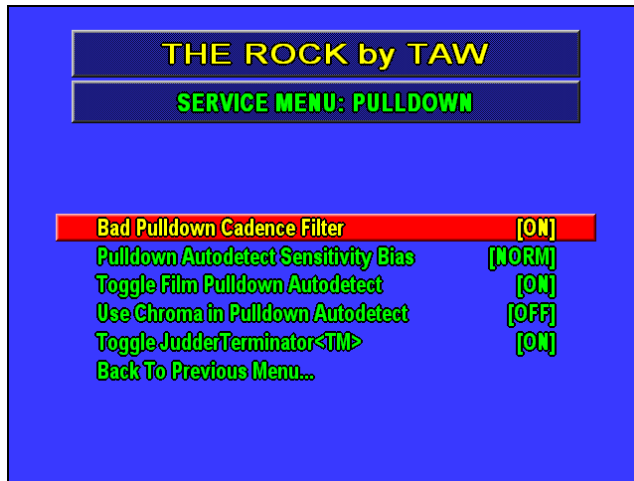
Footnote: If you are using the original TAW ROCK that has not been upgraded to ROCK, then enabling Key Digital ClearMatrix will automatically disable the Chroma Delay adjustments. If you watch movies more often than video-based material, or if you have a severe Chroma Delay problem, you may want to select a different processing mode other than Key Digital ClearMatrix in order to re-enable Chroma Delay adjustments. In this case, select either Original General Mode or Optimize For Fast Motion.

If you own a ROCK PRO or V2 unit, processing mode is never needed as TAWs Pixel Perfect is enabled.

7 – SERVICE MENU

Pulldown Detection Settings Menu

Main Menu → Service Menu → Pulldown Detection Settings...



The ROCK does full 3:2 pulldown detection for NTSC movie material and 2:2 pulldown detection for PAL movie material.

This menu permits the adjustment of the behaviour of the pulldown detection.

For the best picture quality, it is strongly recommended to leave the settings at the shown factory default settings, unless you have a familiar understanding of these settings.

Select any of the following menu options, and then use the **UP / DOWN ARROW** to adjust:

→ **Bad Pulldown Cadence Filter**

Turns *ON / OFF* the bad pulldown cadence detection filter.

Certain movie sources contain interrupted pulldown sequences during scene changes, while poorly telecined movies on television can contain lots of inconsistency in their 2:2 or 3:2 pulldown sequence. **ON** – Eliminates image defects (combing artifacts) especially during scene changes. Default setting. **OFF** – May cause image defects (combing artifacts) except on DVD and LaserDiscs with perfect pulldown sequence throughout. On these titles, the pulldown detection lock may be slightly stronger.

→ **Pulldown Autodetect Sensitivity Bias**

Allows adjustment of the sensitivity of the pulldown autodetection.

CAUTIOUS – Optimized for very high-quality video sources.

NORM – The default setting, for the best all-around pulldown autodetection.

SENSITIVE – Optimized for poor-quality video sources.

→ **Toggle Film Pulldown Autodetect**

Turns *ON / OFF* the pulldown automatic detection feature.

If this setting is turned **OFF**, the ROCK will use regular video deinterlacing all the time.

→ **Use Chroma in Pulldown Autodetect**

Turns *ON / OFF* the usage of Chroma during pulldown autodetect.

By default, the ROCK only does pulldown autodetect is done only on the Luma part of the image. Enabling this setting will cause Chroma to be included in pulldown autodetect. This may improve performance on certain types of material, while it may worsen performance on other types of material as a trade off.

→ **Toggle JudderTerminator<TM>** THE ROCK PRO & V2 have **JUDDER EXTERMINATOR <TM>**

Turns *ON / OFF* the JudderTerminator™ feature. JudderTerminator™ is a feature that smoothes out movie motion as much as possible during any vertical refresh rate. JudderTerminator™ performs the best when doing integral multiples of the movie framerate, such as 72 Hz for NTSC or 75 Hz for PAL. JudderTerminator™ is a registered trademark of TAW Inc.

→ **Back To Previous Menu...**

Returns to the main Service Menu.

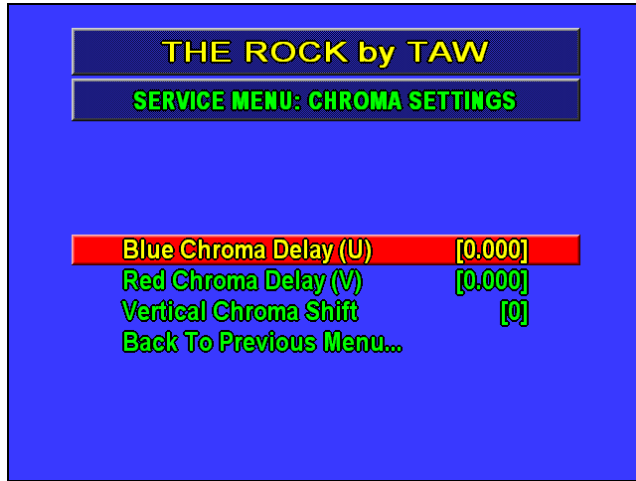
IMPORTANT ADDER:

The ROCK PRO & V2 no longer needs this menu as the PRO includes TAWs exclusive JUDDER EXTERMINATOR <TM>. This Judder elimination algorithm greatly improves on judder elimination by a factor of 10 over the older ROCK V1 with JudderTerminator.

7 – SERVICE MENU

Chroma Settings Menu

Main Menu → Service Menu → Chroma Settings...



It is recommended to use the Y/C Delay test pattern on the AVIA calibration disc in conjunction with the adjustments in this menu.

Depending on your setup, adjusting the Chroma Delay settings with the Y/C Delay test pattern can lead to a sharper picture, since different DVD players and cables can have different Chroma Delay characteristics.

If you are frequently observing reddish or bluish colored fringing around the edges of objects, then these settings should be properly calibrated.

Select any of the following menu options, and then use the **UP/DOWN ARROW** to adjust:

- **Blue Chroma Delay (U)**
Adjust the horizontal shift of the blue Chroma in one-eighth pixel increments.
- **Red Chroma Delay (V)**
Adjust the horizontal shift of the red Chroma in one-eighth pixel increments.
- **Vertical Chroma Shift**
Adjust the vertical shift of both red/blue Chroma.
- **Back To Previous Menu...**
Returns to the main Service Menu.

Footnote: If you are using the original TAW ROCK that has not been upgraded to ROCK, then enabling **Key Digital ClearMatrix** will automatically disable the **Chroma Delay** adjustments. If you watch movies more often than video-based material, or if you have a severe Chroma Delay problem, you may want to select a different processing mode other than **Key Digital ClearMatrix** in order to re-enable Chroma Delay adjustments. In this case, select either **Original General Mode** or **Optimize For Fast Motion**.

This footnote does not apply to the ROCK which can do both **Key Digital ClearMatrix** and **Chroma Delay**.

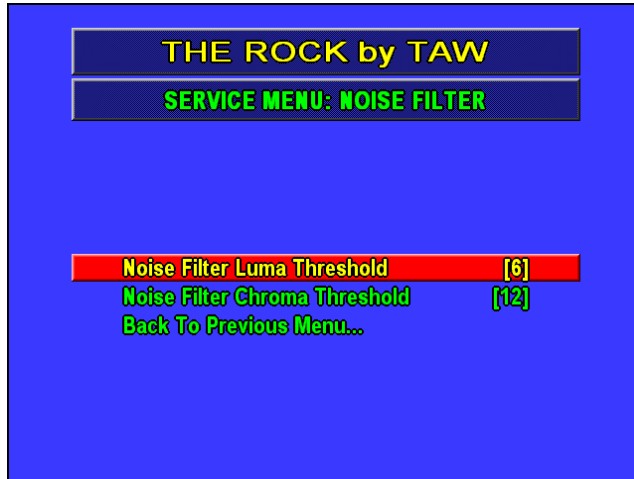
IMPORTANT ADDER:

The ROCK PRO allows sub pixel chroma delay in both the H&V axis. The V1 ROCK does not have subpixel adjustments.

7 – SERVICE MENU

Noise Filter Settings Menu

Main Menu → Service Menu → Noise Filter Settings...



The settings in this menu affects the Temporal Noise Filter that can be enabled via the Advanced Picture Settings Menu in Chapter 5.

Select any of the following menu options, and then use the UP/DOWN ARROW to adjust:

- **Noise Filter Luma Threshold**
Adjust the threshold of noise filtering on the Luma portion of the image. The higher the value, the more noise is filtered. However, if this value is set too high, there will be excessive smearing artifacts during fast motion.
- **Noise Filter Chroma Threshold**
Adjust the threshold of noise filtering on the Chroma portion of the image. Normally, it is recommended to set this value to about twice the value of the Luma Threshold. However, for noisy composite video sources that contains noticeable reddish and bluish noise, it can be advantageous to use a much higher value for the Chroma Threshold than the Luma Threshold.
- **Back To Previous Menu...**
Returns to the main Service Menu.

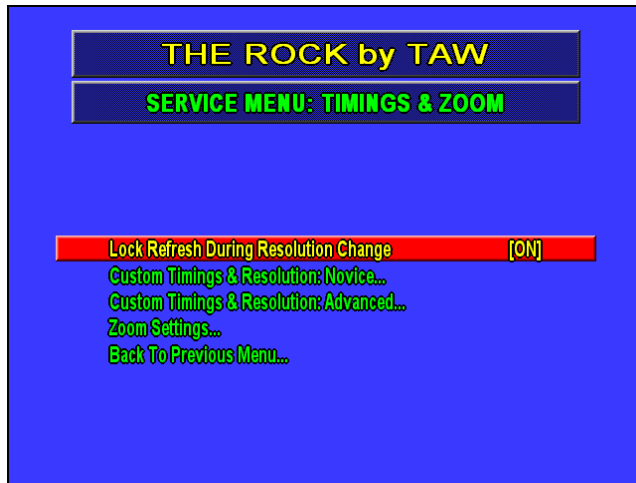
If you want to see the effects of adjustments to these settings, you should enable the Temporal Noise Filter via the Advanced Picture Settings Menu in Chapter 5.

The ROCK PRO & V2 units no longer need these adjustments so this menu has been removed.

7 – SERVICE MENU

Sync Timings & Zoom Settings Menu

Main Menu → Service Menu → Sync Timings & Zoom Settings...



Select any of the following menu options:

- **Lock Refresh During Resolution Change**
Toggle *ON / OFF* the vertical refresh rate locking feature.
By default, this setting is ON, which means the ROCK+ will preserve the current vertical refresh rate everytime you switch between different resolutions via the Output Resolution Menu in Chapter 4.
- **Custom Timings & Resolution: Novice...**
Goes to the Novice Timings & Resolution Menu described later in this chapter.
This allows creating of custom resolutions.
- **Custom Timings & Resolution: Advanced...**
Goes to the Advanced Timings & Resolution Menu described later in this chapter.
This also allows creating of custom resolutions, but with more control over sync timings adjustments.
- **Zoom Settings...**
Goes to the Advanced Zoom Settings Menu, described in Chapter 3.
This allows adjustment the zoom factor of the image in 1% increments.
- **Back To Previous Menu...**
Returns to the main Service Menu.

7 – SERVICE MENU

Novice Timings & Resolution Menu

Main Menu → Service Menu → Sync Timings & Zoom Settings... → Custom Timings & Resolution: Novice...



This menu allows you to setup any desired custom resolution in an easy way.

Select any of the following menu options, and then use the UP/DOWN ARROW to adjust:

- Horiz Resolution
Sets any desired horizontal resolution in 8 pixel increments anywhere between 640 and 2048.
- Vert Resolution
Sets any desired vertical resolution in 2 pixel increments anywhere between 400 and 1536.
- Horiz Scan Rate (Khz)
Sets the desired horizontal refresh rate in 0.1 Khz increments.
Please be noted that horizontal and vertical scanrate affects each other;
- Vert Scan Rate (Hz)
Sets the desired vertical refresh rate in 0.1 Hz increments, anywhere between 48 and 150 Hz.
- Apply...
Initialize the configured custom timings & resolution immediately.
- Advanced...
Goes to the Advanced Timings & Resolution Menu described on the next page.
This also allows creating of custom resolutions, but with more control over sync timings adjustments.

CAUTION: If the display goes blank or becomes scrambled right after you select Apply..., immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the timings and/or resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu or any other menu.

Footnote: Horiz Scan Rate and Vert Scan Rate affects each other. The higher the horizontal scanrate, the higher the vertical scanrate. You can simply leave this setting untouched, and adjust only the Vert Scan Rate (Vertical Refresh Rate). After adjusting Vert Scan Rate, the ROCK will automatically calculate the new horizontal refresh rate value and display the new value next to Horiz Scan Rate.

7 – SERVICE MENU

Advanced Timings & Resolution Menu

Main Menu → Service Menu → Sync Timings & Zoom Settings... → Custom Timings & Resolution: Advanced...



This powerful menu makes it possible to fine-tune the ROCK to the optimal native scanrate of a particular display.

This menu is for advanced users and system technicians that have a good understanding of Timings & Resolution adjustments.

Select any of the following menu options, and then use the UP/DOWN ARROW to adjust:

→ Horiz Resolution

Vert Resolution

Horiz Scan Rate (Khz)

Vert Scan Rate (Hz)

These settings are identical to the ones in the Novice Timings & Resolution Menu on the previous page. Please note, readjusting the resolution will force a recalculation of all below porch and sync values.

→ Horiz Front Porch

Horiz Sync Pixels

Horiz Back Porch

The Horiz Sync Pixels setting specifies the number of pixels in the horizontal sync signal. The Horiz Front Porch are the unused pixels that comes right before the horizontal sync interval. The Horiz Back Porch are unused pixels that comes right after the horizontal sync interval. The sum of all three figures is the total number of pixels in the overall horizontal retrace interval.

→ Vert Front Porch

Vert Sync Pixels

Vert Back Porch

The Vert Sync Pixels setting specifies the number of pixels in the vertical sync interval. The Vert Front Porch are the unused pixels that comes right before the vertical sync interval. The Vert Back Porch are unused pixels that comes right after the vertical sync interval. The sum of all three figures is the total number of scanlines in the overall vertical retrace interval.

→ Dot Clock

Configures the dot clock of the video output.

This can be useful if a digital display performs best at a specified dot clock.

Be noted, adjusting the Dot Clock setting affects the Horiz Scan Rate and Vert Scan Rate.

→ Apply...

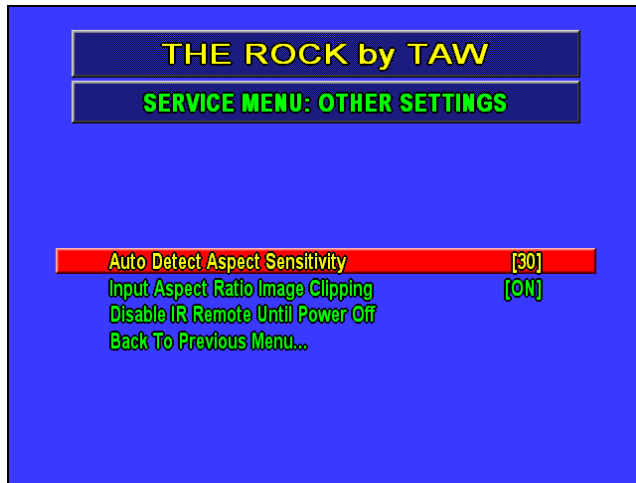
Initialize the configured custom timings & resolution immediately.

CAUTION: If the display goes blank or becomes scrambled right after you select **Apply...**, immediately press the **RESET** button on the remote at least four times to revert back to 640x480p at 60 Hz vertical refresh rate. Setting the timings and/or resolution beyond your display's capabilities may cause a scrambled or invisible image, and possibly damage to the display after prolonged exposure to exceeded specifications. Please consult your display's specifications before adjusting any of the menus in this chapter! TAW assumes no liability to display damage when using this menu or any other menu.

7 – SERVICE MENU

Other Settings Menu

Main Menu → Service Menu → Other Settings...



Select any of the following menu options:

→ **Auto Detect Aspect Sensitivity**

Adjust sensitivity of aspect ratio automatic detection. This setting affects the behaviour of the Automatic Detect in the Input Aspect Ratio menu in Chapter 3. The default setting of 30 is optimized for DVD movies. If using high Brightness / Contrast settings, or using regular television source, it is desirable to increase this sensitivity to a higher value such as 50. Be noted, that a higher sensitivity value can cause incorrect aspect ratio changes to occur during dark video material.

→ **Input Aspect Ratio Image Clipping**

Toggle *ON* / *OFF* the image clipping feature during aspect ratio control.

By turning this setting *OFF*, the image is not clipped. This setting can be useful if you are aligning a 2.35:1 video image at the top of a 16:9 display and want to be able to see subtitles that is displayed within the bottommost letterbox bar.

→ **Disable IR Remote Until Power Off**

Selecting this causes the ROCK⁺ to stop responding to the remote control, until the next power cycle. This is a useful feature for exhibitions and for child-proofing when everything is fully setup.

→ **Back To Previous Menu...**

Returns to the main Service Menu.

IMPORTANT NOTE:

The ROCK PRO & V2 units do not have auto detect aspect ratio. The feature was found not to be accurate therefore it was eliminated.

7 – SERVICE MENU

Reset Menu

RESET button pressed twice, or

Main Menu → Service Menu → Reset..., or

Main Menu → Picture Settings → Advanced Picture Settings → Reset Picture Settings...



IMPORTANT NOTE:

The ROCK PRO & V2 units have a simplified reset procedure. To reset the ROCK PROs picture adjustments simply push the reset "R" button twice slowly.

To reset all the ROCK PROs settings simply push the reset "R" button four times slowly. Once per second. The ROCKs yellow IR indicator will light ever other reset command.

Select any of the following menu options:

- Reset Picture Settings (1.5.0) **NOT NEEDED FOR THE ROCK PRO**
Resets the settings in the Picture Adjustment Menu and Advanced Picture Settings Menu to factory defaults.
- Reset Picture Settings (1.4.5) **NOT NEEDED FO THE ROCK PRO**
Same as above, except reset the settings to Firmware 1.4.5 defaults.
This is useful if you preferred the Firmware 1.4.5 picture settings.
- Reset Picture Settings (1.4.0) **NOT NEEDED FOR THE ROCK PRO**
Same as above, except reset the settings to Firmware 1.4.0 defaults.
This is useful if you preferred the Firmware 1.4.0 picture settings.
- Reset Service Settings
Resets the settings in the Processing Mode Menu, Pulldown Settings Menu, Noise Filter Settings Menu, and Other Settings Menu.
- Reset Sync Timings **UNDER SERVICE MENU RESET IN ROCK PRO**
Resets the size and position related settings in the Output Sync/Size/Position Menu.
- Reset Zoom Settings **UNDER SERVICE MENU RESET IN ROCK PRO**
Resets the zoom settings in the Advanced Zoom Menu.
- Back To Main Menu...
Goes to the Main Menu.

Footnote: Pressing the **RESET** button the following number of times:

RESET pressed two times: Display the Reset Menu and automatically resets picture size and position.

RESET pressed four times: Switch to 640x480p at 60 Hz vertical refresh rate, positive sync polarity.

RESET pressed six times: Switch to 640x480p at 60 Hz vertical refresh rate, negative sync polarity.

The ability to switch polarity via the **RESET** button is useful when you are unable to view the image due to the sync polarity being incorrect. For example, when connecting the ROCK for the first time to certain models of Barco projectors that require negative sync polarity.

RGBHV / DVI output addendum

The ROCK PRO / V2 units have both RGBHV and DVI outputs as standard. Only one of these outputs can be used at a time. The ROCK auto detects which output is connected to a display on power up. If both RGBHV and DVI have a display connected then neither will be output.

The ROCK PRO follows EDID 3.0 standards and may have problems outputting to displays with improper EDID. When a projector or other display has an improper EDID it will usually make the display either not sync to the DVI or cause the ROCK to output in an incorrect resolution. The symptoms of this occurring are easy to identify. If you set the ROCK PRO / V2 to a certain resolution and on power up the resolution changes magically on its own, it's the projector/displays EDID directing the PRO to change its resolution to what the display thinks it wants.

Unfortunately TAW has found many display devices to have the incorrect EDID.

Displays that have been identified as such are:

- 1) Immersive Virtuoso DLP projector
- 2) Studio Experience HD50 DLP projector
- 3) Seleco/Simm2 DLP projectors
- 4) Sharp DLP projectors

We will add to this list as projectors/displays are identified.

TAW urges you the consumer to request these manufacturers to revise and correct their displays allowing the ROCK to properly display on these devices.

ROCK PRO & V2 RS232 CODES

Feature	Long Form	Short
Full Screen Zoom	FullScreenZoom	fsz
Zoom Factor	ZoomFactor	zfa
Zoom Horizontal Factor	ZoomXFactor	zxf
Zoom Vertical Factor	ZoomYFactor	zyf
Zoom Horizontal Position	ZoomXPos	zxp
Zoom Vertical Position	ZoomYPos	zyp
Input Aspect Ratio	InputAspect	ina
Custom Input Aspect	CustomInputAspect	cia
Anamorphic	Anamorphic	ana
Input Select	InputSelect	inp
Input Format	Format	fmt
Output Aspect Ratio	outputaspect	oua
Custom Output Aspect Ratio	CustomOutputAspect	coa
Output Resolution	Resolution	rez
Output Polarity	Polarity	pol
Horizontal Position	HorizPos	hpo
Horizontal Size	HorizSize	hsz
Vertical Position	VertPos	vpo
Vertical Size	VertSize	vsz
Vertical Refresh	Refresh	ref
Picture Overscan	Overscan	ovr
Horizontal Align	HorizAlign	hal
Vertical Align	VertAlign	val
Picture Brightness	Brightness	bri
Picture Contrast	Contrast	con
Picture Saturation	Saturation	sat
Picture Gamma	Gamma	gam
Sharpness	Sharpness	sha
sys_stop		
sys_start		
Chroma Delay on Blue	ChromaDelayBlue	cdb
Chroma Delay on Red	ChromaDelayRed	cdr
Lock Refresh on rez change	LockRefresh	lrr
Baud rate change	Baud	
Aspect Ratio Clipping	AspectClipping	acl
Infrared on/off	Infrared	inf
Remove Pedestal	RemovePedestal	rmp
OSD on off with RS232	SerialOSD	sos
	nop	
	system	
	version	
	RomDate	

Example/Comment

ina 1.33 sets input aspect to 1.33
cia 1.34 sets to a custom 1.34 aspect

inp YUV sets to component or use number on input menu
fmt 0 = NTSC fmt 1 = PAL fmt 2 = AUTO
oua 1.33 sets output aspect to 1.33
coa 1.34 sets output aspect to 1.34
rez 640X480 or use the numbers on the rez. menu
pol H+V+ or the number on the polarity menu

ref 72 sets to 72 hz or use the refresh menu number
ovr 8 sets the overscan to 8
hal top sets to top of 4:3 aspect output
val right sets to the right of a 16:9 output
bri 150 sets the brightness at 150
con 128 sets contrast to 128
sat 128 sets saturation to 128
gam 1.0 sets gamma to 1.0 (range .5-3.00)
sha 200 sets shrpness to 200 (range -255+255)
sys_stop turns off video
sys_start turns on video

acl on turns on picture clip on aspect ratio
inf off disables infrared until next power up
remp 0 Enhanced Black level (blackier than black)
sos 0 turns off OSD on RS232 commands
Quick test returns a "1" if communicating

RS232 Codes

The ROCK PRO will handle any of the below commands.
The PRO is case INSENSITIVE.

In addition to the below commands, any command can be incremented or decremented through its menu with a "+" or "-" after the command.
Any command followed by space "?" will return its present value.

All commands and values are seperated by one or more spaces.

Wiring is identical to the ROCK+ and baud rates are identical. Default is 38400 , N,8,1 as with the ROCK+:

RS232 COMMUNICATION PARAMETERS:

code:-----
Baudrate = 38400
(Configurable via Service Menu from 1200 - 115K baud)

Parity = N
DataBits = 8
StopBits = 1
RTS/CTS = ON
XON/XOFF = OFF
XMODEM =
OFF/[SIZE]-----

Each command should be delimited by a standard carriage return, which is normally done automatically by your control system for ASCII Crestron Commands. No other delimiters are needed.

NULL MODEM CABLE REQUIRED:

code:-----

A null modem cable pin out is as follows:

FG (Frame Ground) 1 <-> 1 FG
TD (Transmit Data) 3 <-> 2 RD
RD (Receive Data) 2 <-> 3 TD
RTS (Request To Send) 7 <-> 8 CTS
CTS (Clear To Send) 8 <-> 7 RTS
SG (Signal Ground) 5 <-> 5 SG
DSR (Data Set Ready) 6 <-> 4 DTR
DTR (Data Term Ready) 4 <-> 6 DSR

Pin 9 is not connected but ALL others are.

EASY TEST USING PC:

In windows Hyper terminal after com line is confirmed operational:

type

"NOP" (without quotes)

The ROCK will return a "1" on the screen.
If a "1" returns on the screen the ROCK is communicating.

www.tawinc.net/images/rockpro/RS232%20codes.pdf

We attempted to keep most of the commands the same as the ROCK but some had to change.

ROCK IR CODES FOR ALL ROCK SERIES PROCESSORS

KEY DESCRIPTION	IR CODE
InputAspect	c7 38 70 0 0 0
On	c6 18 70 0 0 0
OutputAspect	ce 1c 70 0 0 0
Reset	8e 3c 70 0 0 0
Off	c6 1c 70 0 0 0
Anamorphic	8f 38 70 0 0 0
0	96 56 9a 0 0 0
1	97 e6 81 0 0 0
2	96 16 9e 0 0 0
3	95 16 ae 0 0 0
4	97 16 8e 0 0 0
5	94 96 b6 0 0 0
6	96 96 96 0 0 0
7	95 96 a6 0 0 0
8	97 96 86 0 0 0
9	94 56 ba 0 0 0
ScanRate	cf 38 70 0 0 0
VideoInput	94 d6 b2 0 0 0
PictureAdjust	97 36 8c 0 0 0
VideoFormat	95 c6 a3 0 0 0
Up	94 26 bd 0 0 0
Left	96 36 9c 0 0 0
Right	94 36 bc 0 0 0
Down	94 46 bb 0 0 0

These IR codes work for both the older V1 ROCK and newer ROCK PRO and V2 units.