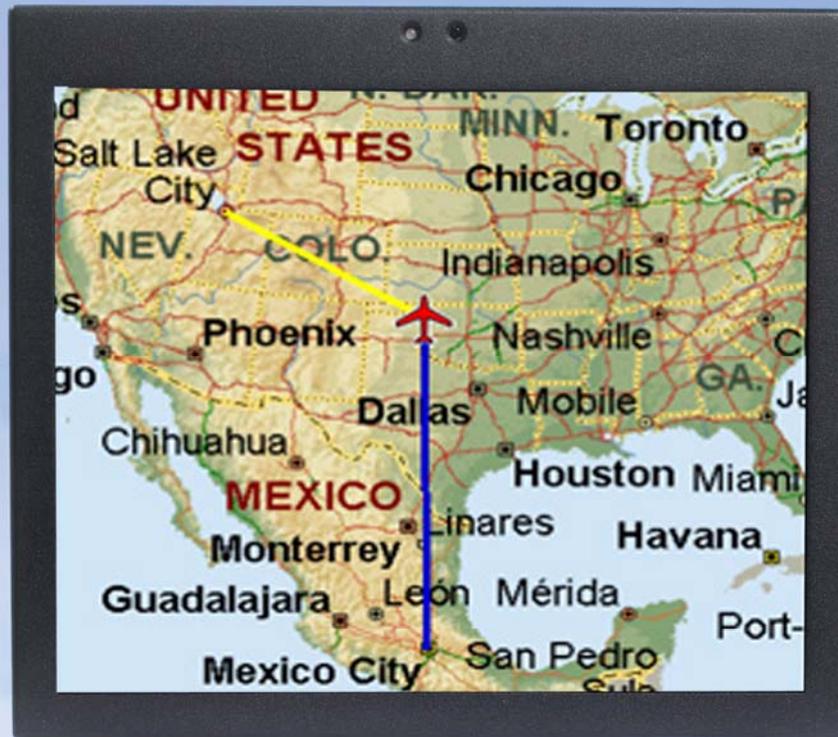


"Unrivaled Customer Satisfaction"

**ROSEN**  
AVIATION

# 10.4" Display Bulkhead



## Technical Manual

**Model 1043**

**ELECTRONIC REVISION  
CONTROLLED**

Document Number 101331 Rev D

**Technical Manual, 1043 Series Display Bulkhead**

© 2008 by Rosen Aviation, LLC

All Rights Reserved

The information contained herein is proprietary to Rosen Aviation, LLC. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the written authorization from Rosen Aviation, LLC, except as allowed under copyright laws.

**Disclaimer of Liability**

The information contained in this document is subject to change without notice. Because we are continuously improving and adding features to our products, Rosen Aviation, LLC reserves the right to change specifications without prior notice. Rosen Aviation, LLC shall not be liable for technical or editorial errors or omissions contained herein.



Rosen Aviation, LLC  
1020 Owen Loop South  
Eugene, OR 97402  
541.342.3802  
888.668.4955  
Fax: 541.342.4912

[www.rosenaviation.com](http://www.rosenaviation.com)

## CONTENTS

<b>1. INTRODUCTION</b> .....	<b>4</b>
1.1. Unpacking.....	4
<b>2. DISPLAY CONNECTIONS</b> .....	<b>4</b>
2.1. System Integration.....	5
<b>3. SYSTEM REQUIREMENTS</b> .....	<b>5</b>
3.1. RS-485 Commands.....	5
<b>4. IR REMOTE CONTROL</b> .....	<b>6</b>
4.1. Main Menu Options.....	7
4.1.1. Auto Adjust.....	7
4.1.2. Image Adjustments Menu.....	8
4.1.3. Advanced Menu.....	10
4.1.4. Aspect Ratio.....	12
4.1.5. Backlight Brightness.....	14
4.1.6. Information.....	14
<b>5. TECHNICIAN MENU</b> .....	<b>14</b>
5.1. Technician Menu→Image Adjustments Menu.....	16
5.1.1. Red.....	16
5.1.2. Green.....	16
5.1.3. Blue.....	16
5.2. RGB Auto Detect.....	17
5.3. RGB Phase Default.....	17
5.4. Source Mode Setup.....	17
5.4.1. Manual Mode.....	18
5.4.2. Constant Switch Mode.....	18
5.5. Source Select Button Mode.....	19
5.6. Select Switch Active Pulse Width.....	20
5.7. Select Switch Repeat Delay.....	20
5.8. RS-485 Address Selection.....	21
5.9. External Power Discrete Setup.....	21
5.10. Information.....	22
<b>6. TECHNICAL REFERENCES AND SUPPORT</b> .....	<b>22</b>
6.1. Troubleshooting.....	22
6.2. DO-160E Qualifications.....	24
6.3. Technical Support.....	24
6.4. Specifications.....	25
<b>7. DEFINITIONS</b> .....	<b>25</b>
<b>8. REVISION HISTORY</b> .....	<b>26</b>

## 1. INTRODUCTION

This manual describes how to install the Rosen 10.4" 1043 series display bulkhead onto your aircraft. It contains everything you need to know to wire the display and confirm that it is functioning correctly.

**Note:** Only trained and qualified personnel should perform installation and service.

### 1.1. Unpacking

The parts shipped with the 10.4" 1043 series display bulkhead

- Outline and Installation Drawing 1043 – specific to each display
- 1043 display bulkhead
- Connector kit (P/N **0300-036**) — 25W3 female
- IR Remote Control Bulkhead Configuration, (P/N **0500-016**)
- Display Manuals CD, (P/N **9003678**)
- User's Guide 10.4" Display Bulkhead – (P/N **101319**) – leave in the plane
- 2 AAA Alkaline batteries (P/N **BAT-AAA**)

Optional Controllers (sold separately) shipped with Remote Controller's, Technical Information (P/N **100434**)

- External 5-button serial controller (P/N **0300-404**)
- Universal color display IR remote (P/N **0500-015**)



---

The *Outline & Installation* drawings—**specific to each display/arm combination**—are also available at [www.rosenaviation.com](http://www.rosenaviation.com).

---

From the [Rosen Aviation](http://www.rosenaviation.com) home page, select **Support**→ **Drawings and Pinouts**, and search for the drawing by model number or browsing by product category.

## 2. DISPLAY CONNECTIONS

There are several ways to connect the 1043 series display to an aircraft's entertainment system.

Use the following pinout descriptions on page 2 of the Outline and Installation drawing to assist in the wiring process. Pay close attention to the pinout information while completing wiring connections.

**Note:** This display is for entertainment purposes only; connect to the non-critical power bus.

## 2.1. System Integration

The typical installation of the 10.4" monitor is one or more monitors on a bulkhead. The following connection diagram illustrates how to configure a single display with multiple video inputs to create a complete cabin entertainment system or integrate a display into an existing system.

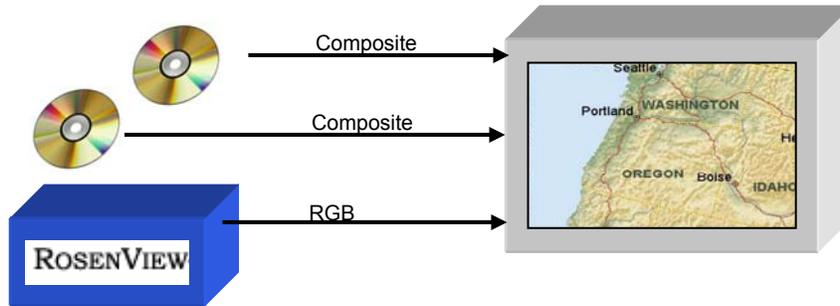


Figure 1 Single monitor installation

In this configuration, the monitor will accept three video sources. Two of these are composite and the third is a RGB graphics signal. Switch sources by pressing SOURCE button on the IR Remote.

RGB menu options will be shown even if the RGB source is disabled.

## 3. SYSTEM REQUIREMENTS

The on-screen menus for the 10.4 bulkhead are controlled through the following options:

- Internal IR
- External IR
- RS-232 serial interface
- RS-485 serial interface

### 3.1. RS-485 Commands

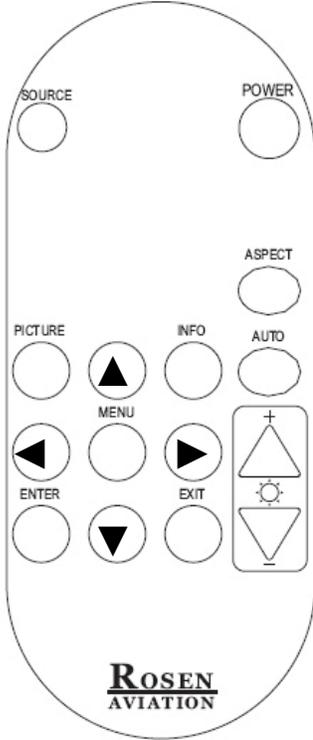
The RS-232 and RS-485 serial interfaces support the following commands:

- Power On
- Power Off
- Select Composite Video 1
- Select Composite Video 2
- Select Analog RGB
- Status response ( RS-485 only )

## 4. IR REMOTE CONTROL

The following table shows the IR remote button layout and the button descriptions.

Table 1 1043 IR remote

 <p>PICTURE and INFO buttons are not used.</p>	<b>How it Works</b>
	<p><b>POWER</b></p> <p>Turns the power on and off to the display. The LED indicator is red when the power is off, and green when the power is on. Previously adjusted settings of brightness and scaling mode are retained in memory when power is turned off, or when aircraft power is removed.</p>
	<p><b>ASPECT</b></p> <p>Two aspect ratio modes: Normal and Vertical Stretch change the proportions of the composite picture depending on the DVD format. See <a href="#">Aspect Ratio</a> in Section 4.1.4 on page 12 for details.</p>
	<p><b>AUTO</b></p> <p>(RGB source only) Performs the Auto Adjust function without a menu. Forces the display to stop and look at the RGB signals and ensure it is interpreting them correctly. Also available in the Main Menu.</p>
	
	<p>Adjusts the picture brightness without opening a menu. For more information, see <a href="#">Brightness</a> in Section 4.1.2.1 on page 8 for details.</p>
	<p><b>EXIT</b></p> <p>Exits all menus and saves setting changes with one button press.</p>
	<p><b>MENU</b></p> <p>Opens the Main Menu to access other settings and fine-tune the display's picture quality. For details about the on-screen menus, see <a href="#">Main Menu Options</a> in Section 4.1 on page 7.</p>
	
<p>Controls the navigation in the on-screen display menus.</p>	
<p><b>ENTER</b></p> <p>Selects menu options and closes the screens.</p>	
<p><b>SOURCE</b></p> <p>Changes between any enabled video sources (composite or RGB). Press this button to switch sources. See <a href="#">Source Mode Setup</a> in Section 5.4 on page 17. You will hear a relay click, which indicates the source changed and image will change momentarily.</p>	

## 4.1. Main Menu Options

To open the Main Menu and access the submenu settings, press the **MENU** button, as shown below. Press the **▼** and **▲** buttons to select (highlight) an option, and press **ENTER** to select it.

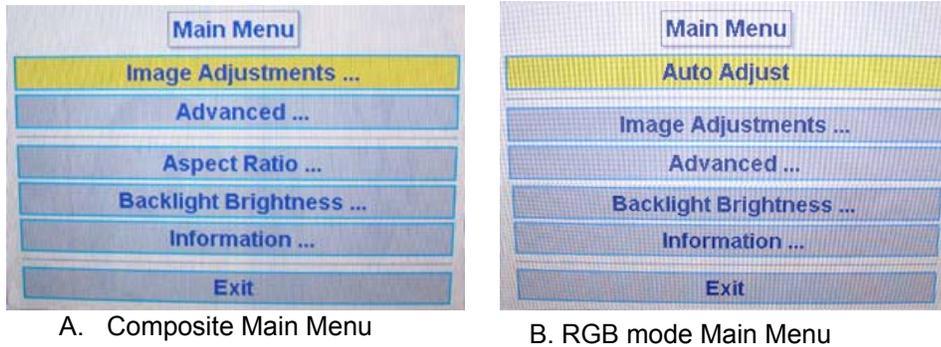


Figure 2 Main Menu options for each video source

Selected options will be highlighted in yellow. The menu options that are available depend on which source signal is active: composite or RGB. Before changing the display settings, try both default color modes first to determine which set of default colors you like best. See [Restore Factory Defaults](#) in Section [4.1.3.1](#) on page [11](#) for more information.

**Note:** The on-screen menus will timeout and close automatically after no screen activity for a preset amount of time, which is adjustable in the Advanced → [Menu Timeout](#) screen. See Section [4.1.3.2](#) on page [11](#).

### 4.1.1. Auto Adjust

**(RGB only)** Use Auto Adjust when the RGB source is active to force the display to stop and look at the RGB signals and ensure it is interpreting them correctly. To perform an Auto Adjust, press the **AUTO** button. The screen will go black momentarily while the signals adjust.

#### 4.1.2. Image Adjustments Menu

**Note:** If the screen colors are not what you expect, try changing the default color modes to determine which one you like best before adjusting the other screen settings. See section [4.1.3.1, Restore Factory Defaults](#), on page [11](#) for details.

Use the Image Adjustments menu options, as shown below, to control the color and picture quality. Press the **MENU** button, select the option, and then press **ENTER** to open the menu. Close the menus using the Back option, or press **EXIT** or wait for the menu to close.



Figure 3 Image Adjustments menu

##### 4.1.2.1. Brightness

To adjust the picture brightness, press **MENU** and the ▼ arrow to select **Image Adjustments**→**Brightness**, and then press **ENTER** to open the screen below.

Press the ◀ or the ▶ buttons to change the brightness on the LCD accordingly.

Press **EXIT** to set the brightness and exit the screen.



Figure 4 Picture brightness settings

##### 4.1.2.2. Contrast

To adjust the contrast, press **MENU** and the ▼ arrow to select **Image Adjustments**→**Contrast**, and then press **ENTER** to open the screen below.

Press the ◀ or the ▶ button to raise or lower the contrast.

Press **EXIT** to set the contrast and exit the screen.



Figure 5 Contrast screen

#### 4.1.2.3. Tint (Hue)

To adjust the color hues, press the **MENU** button and the ▼ arrow to select **Image Adjustments → Tint (Hue)**, and then press **ENTER** to open the screen below.

Press the ◀ or the ▶ buttons to change the color hues in the image.

Press **EXIT** to set the tint and exit the screen.



Figure 6 Tint settings screen

#### 4.1.2.4. Saturation

(Available only when a composite source is active). To adjust the color saturation, press the **MENU** button and the ▼ arrow to select **Image Adjustments → Saturation**, and then press **ENTER** to open the screen below.

Press the ◀ or the ▶ buttons to change the color levels.

Press **EXIT** to set the saturation and exit the screen.



Figure 7 Color saturation screen

#### 4.1.2.5. Sharpness

To adjust the picture sharpness, press the **MENU** button and the ▼ arrow to select **Image Adjustments → Sharpness**, and then press **ENTER** to open the screen below.

Press the ◀ or the ▶ buttons to adjust the focus.

Press **EXIT** to set the sharpness and exit the screen.



Figure 7 Sharpness settings screen

#### 4.1.2.6. RGB Phase

Use RGB Phase to adjust the monitor to a different phase value when a laptop is connected via the RGB input. Each RGB video source can have different phase values. The phase difference can result in the RGB video image appearing to jitter. The RGB Phase selection allows you to adjust the monitor to display the RGB video image without any jitter.

To adjust the picture sharpness, press the **MENU** button and the **▼** arrow to select **Image Adjustments → RGB Phase**, and then press **ENTER** to open the screen below.

Press the **◀** or the **▶** buttons to adjust the focus.

Press **EXIT** to set the sharpness and exit the screen.

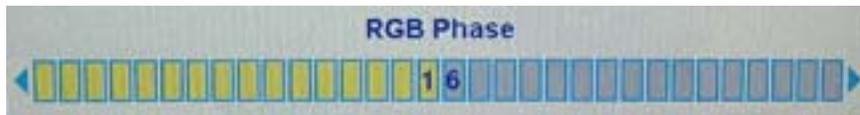


Figure 8 RGB Phase settings screen

#### 4.1.3. Advanced Menu

Use the Advanced menu options, as shown below, to control the display's functionality. Press the **MENU** button and the **▼** arrow to select an option, and then press **ENTER** to open the menu. Close the menus using the Back option, press **EXIT**, or wait for the menu to close automatically.

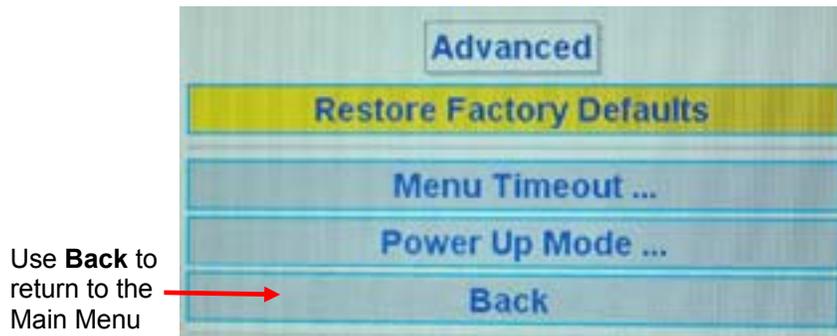


Figure 9 Advanced menu

#### 4.1.3.1. Restore Factory Defaults

Restores the default screen settings. In RGB video mode, a message “Restoring” displays on the screen while the screen signals adjust.

In composite video mode, there are two factory color modes: Vivid and Natural. Try both modes to determine which one you like best before adjusting the other picture quality settings.

From the Advanced submenu, press the **ENTER** button to open the Restore Factory Defaults screen to open the screen below.

Change the color settings mode with any arrow button, and then press **EXIT**. A Restoring message will display on screen while the screen settings change.



Figure 10 Restore Factory Defaults screen (Composite only)

#### 4.1.3.2. Menu Timeout

Use this option to set the amount of time the menu screens are visible, without making any changes, before they timeout and close automatically.

From the Advanced submenu, press the ▼ button to select **Menu Timeout** and then press **ENTER** to open the screen below.

Press the ◀ or ▶ button to select an option.

Press **EXIT** to set the timeout and exit the screen.

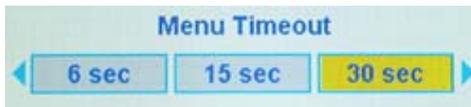


Figure 11 Menu timeout options screen

#### 4.1.3.3. Power Up Mode

Choose from different options of turning on the display.

From the Advanced submenu, press the ▼ button to select **Power Up Mode** and then **ENTER** to open the screen shown below. Restore Previous starts the display in the previously selected power state after a power interruption, regardless of the length of the power interruption.

Press either ◀ or ▶ button to select the mode.

Press **EXIT** to set the Power Up Mode and exit the screen.



Figure 12 Power Up mode options screen

#### 4.1.4. Aspect Ratio

(**Note:** This setting is available only when a composite source is active; in RGB, the screen will not appear.) Press the **Aspect Ratio** button (shown below) to adjust the picture expansion to most closely match the encoding of the source image. Press the ◀ or the ▶ button to switch the display between aspect ratio modes (described below). Highlight the optimal mode for the image source and press **EXIT** to set the mode and exit the screen.



Figure 13 Aspect ratio screen

#### Normal Mode

Displays standard 4:3 aspect video and widescreen 16:9 video without alteration. A standard 4:3 image will fill the screen without distortion, as shown in Figure 14.

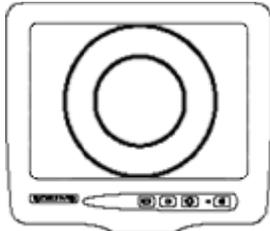


Figure 14 Standard 4:3 aspect test pattern in Normal Mode

A widescreen 16:9 image will appear with black bars on the top and bottom of the image, as shown in Figure 15.



Figure 15 Widescreen 16:9 aspect test pattern in Normal Mode

### Vertical Stretch Mode

Expands the source video in the vertical dimension to fill the display screen. The top and bottom of a standard 4:3 image will be cropped and circles will appear as ovals, as shown in Figure 16.

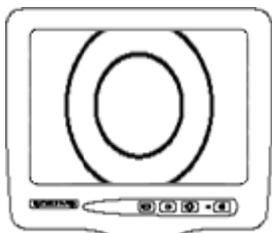


Figure 16 Standard 4:3 aspect test pattern in Vertical Stretch Mode

Widescreen 16:9 videos will not exhibit black bars above and below the image but circles will appear as ovals, as shown in Figure 17.

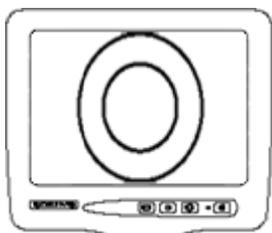


Figure 17 Widescreen 16:9 aspect test pattern in Vertical Stretch Mode

#### 4.1.5. Backlight Brightness

Use this setting to adjust the intensity of the LCD backlight.

From the Advanced submenu, press the ▼ button to select Backlight Brightness and then press **ENTER** to open the screen shown below.

Press the ◀ or the ▶ buttons to change the image on the LCD accordingly.

Press **EXIT** to set the brightness and exit the screen.



Figure 18 Picture brightness settings

#### 4.1.6. Information

Use the Information screen to review operating status of the display. From the Main Menu, press the ▼ button to select **Information** and then press **ENTER**.

Press **EXIT** to close the screen.



Figure 19 Read-only screen about temperature status

### 5. TECHNICIAN MENU

To protect the display from accidental or unintentional adjustments, the Technician Menu is accessible only with a special button combination. To avoid repeating this button sequence after each change, the menu remains active until you manually close it.

The Technician Menu is slightly different depending on the current video source (composite or RGB), as shown in Figure 20 A and B on page [15](#).

**Note:** The Main Menu options are not selectable while the Technician Menu is open.

To open the Technician Menu, start with the display on, and press the following buttons in this order:

1. Press **MENU**.
2. Press the ▼ button to select the **Information** option on the Main Menu and press **ENTER**.
3. Inside the Information screen, press the arrow buttons in this order: ◀, ▶, ◀◀, ▶▶.
4. Then press **MENU** and **ENTER**.
5. The Technician Menu opens.



A. Main Menu Composite

B. Main Menu RGB mode

Figure 20 Technician Menus for each video source

Restore Factory Defaults is also available from the Main Menu→Advanced submenu. For information about how this option works, see Section [4.1.3.1](#) on page [11](#).

The Image Adjustments submenu in the Technician Menu has different options from those in the Main Menu, and it is available only when the display is connected to a composite video source.

To select a menu option, press any arrow button to highlight and press **ENTER**. To close the Technician menu, press the **EXIT** button or allow the screen to timeout and close automatically. To open the Technician Menu again, press the **MENU** button.

To exit the Technician Menu Mode and return to the Main Menu, repeat steps **2–4** (above). The Main Menu will open.

## 5.1. Technician Menu→Image Adjustments Menu

(Composite source only.) Use the following options to adjust the intensity of the three primary colors when running the display in composite mode.



Figure 21 Image Adjustments menu

### 5.1.1. Red

Adjusts the low-level registers of the red values in the picture. From the Technician Menu→Image Adjustments Menu, press the ▼ button to select **Red** and then press **ENTER** to open the screen shown below. Press the ◀ button several times; the image should show more cyan tones. Press the ▶ button several times to intensify the red tones. Press **EXIT** to set the value and exit the screen.



Figure 22 Red settings screen

### 5.1.2. Green

Adjusts the low-level registers of the green values in the picture. From the Technician Menu→Image Adjustments Menu, press the ▼ button to select **Green** and then press **ENTER** to open the screen shown below. Press the ◀ button several times; the image should show more magenta tones. Press the ▶ button several times to intensify the green tones. Press **EXIT** to set the value and exit the screen.



Figure 23 Green settings screen

### 5.1.3. Blue

Adjusts the low-level registers of the blue values in the picture. From the Technician Menu→Image Adjustments Menu, press the ▼ button to select **Blue** and then press **ENTER** to open the screen shown below. Press the ◀ button several times; the image should show more yellow tones. Press the ▶ button several times to intensify the blue tones. Press **EXIT** to set the value and exit the screen.



Figure 24 Blue settings screen

### 5.2. RGB Auto Detect

Use RGB Auto Detect to automatically switch to RGB when the source is connected instead of manually selecting the RGB source with the Source Select button.

To open this setting, press **MENU** to open the Technician Menu, press the ▼ button to select **RGB Auto Detect**, and then press **ENTER**. Use any arrow button to choose the setting, and then click **EXIT** to close the screen. The action of the display changes based on what you select.



Figure 25 RGB Auto Detect settings screen

### 5.3. RGB Phase Default

(**RGB source only.**) Use RGB Phase Default selection to adjust the default phase value used for RGB signals. Each RGB video source can have different phase values. The phase difference can result in the RGB video image appearing to jitter. The RGB Phase Default selection enables you to adjust the RGB video image without any jitter.

From the Technician Menu, press the ▼ button to choose **RGB Phase Default** and then press **ENTER** to open the screen, as shown below.

Press the ◀ button to decrease the RGB phase value, or the ▶ button to increase it until the jittering stops.

Press **EXIT** to set the phase value and exit the screen.



Figure 26 RGB Phase Default screen

### 5.4. Source Mode Setup

Use Source Mode Setup to turn off any extra video source signals that are not available or being used, and to confirm those sources that are available.

To open the Source Mode Setup screen, press **MENU** to open the Technician Menu, press the ▼ button to select **Source Mode Setup**, and then press **ENTER**.

Press the ▼ button to choose the setting, and then click **EXIT** save the setup and close the screen.

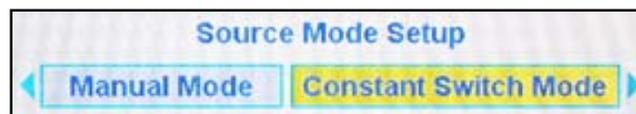


Figure 27 Source Mode Setup screen

### 5.4.1. Manual Mode

Use Manual Mode to turn off any extra video source signals that are not available or being used, and to confirm those sources that are available.

To open the Manual Mode screen, press **MENU** to open the Technician Menu, press the **▼** button to select **Manual Mode**, and then press **ENTER**.

Use the **▼** or **▲** buttons to choose a source, and then click **ENTER** to open the sub-dialog.

Use any arrow button to choose **Enabled** or **Disabled** and then press **EXIT**.

**Note:** You cannot disable all sources; at least one must be enabled at all times.

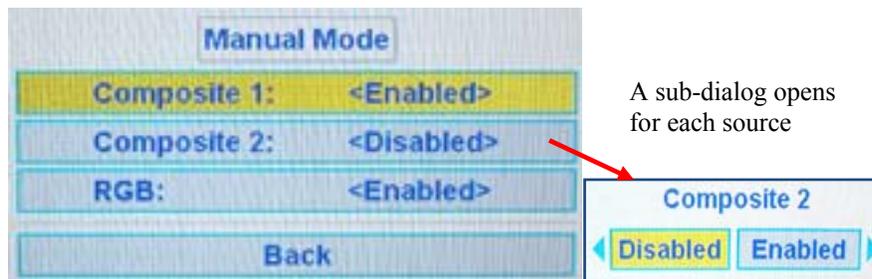
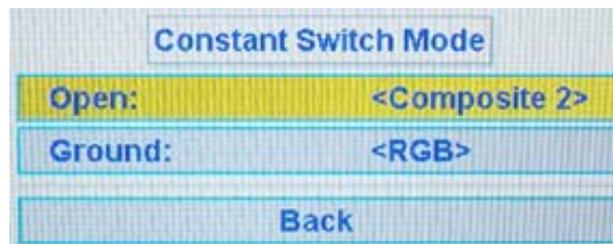


Figure 28 Manual Mode screen

### 5.4.2. Constant Switch Mode

Use Constant Switch Mode to configure which video source signal is displayed when the constant switch input is set to open or ground. For each state (ground or open), one of the video source signals can be selected (Composite 1, Composite 2, or RGB). When the constant switch input is grounded, the video source will switch to the video source signal selected for the ground state. Similarly, when the constant switch input is open, the video source will switch to the video source signal selected for the open state.



Figures 30 and 31 shows the sub-dialogs that opens for each state

Figure 29 Constant Switch Mode screen

### Open State

Use the ▼ or ▲ buttons to choose a source, and then click **ENTER** to open the sub-dialog.

Use any arrow button to choose the source and then press **EXIT**.



Figure 30 Constant Switch Mode – Open sub dialog

### Ground State

Use the ▼ or ▲ buttons to choose a source, and then click **ENTER** to open the sub-dialog.

Use any arrow button to choose the source and then press **EXIT**.

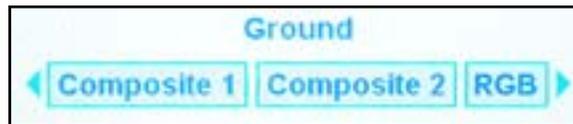


Figure 31 Constant Switch Mode – Ground sub dialog

## 5.5. Source Select Button Mode

Use Source Select Button Mode to connect an external control source for selecting the monitor source only.

To open the Source Select Button Mode screen, press **MENU** to open the Technician Menu, press the ▼ button to select **Source Select Button Mode**, and then press **ENTER**.

Choose External Select only if you want to connect to an external source; otherwise, leave set to Internal Select, for example, to use with a remote control.

Press the ▼ button to choose the setting, and then click **EXIT** to close the screen.



Figure 32 Source Select Button Mode settings screen

### 5.6. Select Switch Active Pulse Width

Use Select Switch Active Pulse Width to set the pulse width of the source select signal. Pulse width is the amount of time the switch is closed. Not applicable for bulkhead displays.

From the Technician Menu, press the ▼ button to choose **Select Switch Active Pulse Width** and then **ENTER** to open the screen, as shown below.

Press the ◀ button to decrease the pulse width, or the ▶ button to increase the pulse width.

Press **EXIT** to set the pulse width and exit the screen. Each increment changes the pulse width by 50mSec. The maximum pulse width is 1.1 second.



Figure 33 Select Switch Active Pulse Width settings screen

### 5.7. Select Switch Repeat Delay

Use Select Switch Repeat Delay to change the time delay between source select clicks on the display.

From the Technician Menu, press the ▼ button to choose **Select Switch Repeat Delay**, and then **ENTER** to open the screen, as shown below.

Press the ◀ button several times to shorten the time delay between repeats, or press the ▶ button several times to lengthen the repeat delay time.

Press **EXIT** to set the repeat delay time and exit the screen.



Figure 34 Select Switch Repeat Delay settings

### 5.8. RS-485 Address Selection

Use the RS485 Address Selection to control the display from another control source on the aircraft that uses an RS-485 serial bus and outputs RS-485 commands; for example, a RosenView Briefing Controller. This setting enables you to turn the display's power on and off from that equipment instead of from the display itself.

From the Technician Menu, press the ▼ button to select the **RS485 Address Selection**, and then press **ENTER** to open the screen, as shown below.

Press any **arrow** button several times to select an address between 1 and 31 for the display, and then press **EXIT**.

The bus will have the control source of the display.



Figure 35 RS-485 Address Selection settings

### 5.9. External Power Discrete Setup

Use External Power Discrete Setup to configure the operation of the external power discrete (pin 22). There are two configuration settings: constant or momentary mode.

From the Technician Menu, press the ▼ button to select the **External Power Discrete Setup**, and then press **ENTER** to open the screen, as shown below.

Press the ▼ button to choose the setting, and then click **EXIT** to close the screen.

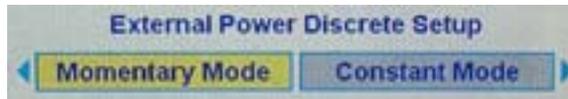


Figure 36 External Power Discrete Setup

When Momentary Mode is selected, the LCD power will toggle between powered on and powered off after the external power discrete is momentarily grounded.

When Constant Mode is selected, the LCD will be powered up when the external power discrete is grounded. When the external power discrete is open, the LCD will be powered off.

### 5.10. Information

To review the operating status information about the display, open the Technician Menu, press the ▼ button to select **Information**, and then press **ENTER**. Press **EXIT** to close the screen.

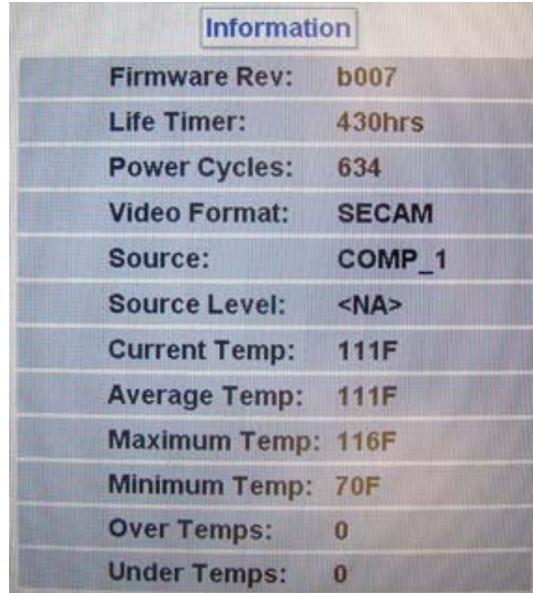


Figure 37 Read-only screen about the display's operating status

## 6. TECHNICAL REFERENCES AND SUPPORT



The *Outline & Installation* drawing is also available at [www.rosenaviation.com](http://www.rosenaviation.com).

From the [Rosen Aviation](http://www.rosenaviation.com) home page, select **Support**→ **Drawings and Pinouts**, and search for the drawing by model number or browsing by product category.

### 6.1. Troubleshooting

If the display does not function properly, refer to the following troubleshooting tips for symptoms and possible solutions before contacting Rosen Aviation field support.

Table 2 Troubleshooting tips and solutions

Problem	Possible Solutions
Power LED does not illuminate (neither RED nor GREEN)	Verify pinout to power input connection is correct Verify voltage to monitor is correct Check the connectors for damaged pins Monitor not turned on
Power LED is red	If pushing the power button does not turn the power LED green, the display failed. Please call customer service.

Problem	Possible Solutions
Power LED is green but no video displays (black screen)	<p>Verify pinout to base receptacle is correct.</p> <p>Check the arm and base receptacle connectors for damaged pins (video input connection)</p> <p>Verify that video source is on and displaying video</p> <p>Verify that video source is in play mode</p> <p>Verify video signal at monitor connector</p> <p>Check for damaged pins in base</p>
Distorted image	<p>Verify the pinout is correct.</p> <p>Verify that the signal is present and accurate</p> <p>Examine the display for pinched or damaged cables.</p> <p>Verify NTSC input</p> <p>Check the connector for damaged pins</p> <p>Ensure the internal system temperature is not above or below the allowed parameters.</p> <p>Try changing the aspect ratio. See <a href="#">Aspect Ratio</a> in Section <a href="#">4.1.4</a> on page <a href="#">12</a> for more information.</p>
Wrong colors	<p>If the screen colors are not what you expect, change modes in <b>Advanced Menu</b>→<b>Restore Factory Defaults</b>. Two modes are available: <b>Normal</b> and <b>Vivid</b>. Try both modes to determine the one you like best before adjusting the other screen settings. See <a href="#">Restore Factory Defaults</a> in Section <a href="#">4.1.3.1</a> on page <a href="#">11</a> for more information.</p>

## 6.2. DO-160E Qualifications

Table 3 DO 160E Test Criteria to which we test the 1043 series displays

Description	DO-160E Section	DO-160E Category
Temperature and Altitude	4.0	A1
Temperature Variation	5.0	C
Humidity	6.0	A
Operational Shocks & Crash Safety	7.0	B
Vibration	8.0	S, Curve B
Explosive Atmosphere	9.0	N/A
Waterproofness	10.0	N/A
Fluids Susceptibility	11.0	N/A
Sand and Dust	12.0	N/A
Fungus Resistance	13.0	N/A
Salt Fog	14.0	N/A
Magnetic Effect	15.0	Z
Power Input	16.0	Z,B
Voltage Spike	17.0	A
Audio Frequency Conducted Susceptibility – Power Inputs	18.0	Z
Induced Signal Susceptibility	19.0	AC
Radio Frequency Susceptibility (Radiated and Conducted)	20.0	T
Emission of Radio Frequency Energy	21.0	B
Lightning Induced Transient Susceptibility	22.0	N/A
Lightning Direct Effects	23.0	N/A
Icing	24.0	N/A
Electrostatic Discharge (ESD)	25.0	A
Fire, Flammability tested to 14 CFR 25.853 Appendix F, 12-second vertical burn test		

## 6.3. Technical Support

If you need assistance with an installation, please contact Rosen Aviation at 541.342.3802 or 888.668.4955.

## 6.4. Specifications

Table 4 1043 display specifications

Size	10.4" diagonal, 4 : 3 format
Resolution	1024 x 768
Viewing Angle (U/D/L/R)	88/88/88/88
Brightness	400 cd/m <sup>2</sup>
Contrast Ratio	1200 : 1
Video Input	1Vp-p, 75 ohms
Video Standards	NTSC, PAL, SECAM
Graphics Standards	XGA
Weight	3.2 lbs [1.4515 kg] (monitor only)
Dimensions	9.42" (W) x 7.69" (H) x 1.25" (D) [23.93 cm (W) x 19.53 cm (H) x 3.18 cm (D)]
Power Requirements	28V DC
Operating Temperature	0°C - 50°C
Warranty	2 year

## 7. DEFINITIONS

- DC** Direct Current – voltage from an aircraft battery or generator.
- GND** Ground
- IR** Infrared
- LCD** Liquid crystal display
- LED** Light emitting diode
- NTSC** North American Television Standards Committee – the analog video specification used in North American countries
- OSD** On screen display – a menu of user options
- PAL** Phase alternate (by) line – the analog video specification used by most European countries and their former colonies world wide
- PCB** Printed circuit board – an electronics assembly that performs tasks
- PS2** Personal system 2 (trademarked IBM keyboard specification)
- RS-232** Standard for transmitting serial information using single-ended signaling (data lines referenced to ground).
- RS-485** A physical layer electrical specification of a two-wire, half-duplex, multipoint serial connection. The standard specifies differential signaling to improve noise immunity over RS-232.
- RGB** Red, green, blue. An abbreviation commonly used for analog computer graphics video that transmits the three primary colors on separate wires.

**SECAM** (*Séquentiel couleur à mémoire*. French for "sequential color with memory"), an analog color video system first used in France

**USB** Universal serial bus. A high-speed differential signaling serial bus typically used to connect peripheral devices to a personal computer.

**Vp-p** Volts peak-to-peak; the maximum range of a sine wave.

## 8. REVISION HISTORY

Revision	Date	Revision Description	EC #
A	05/06/08	New release	08190
B	07/16/08	Change source mode setup menu	08216
C	08/13/08	Update DO – 160E, Section 15 from A to Z	08337
D	6/8/09	Add video standards and graphic standards to section 6.4	09205