

ELECTRONIC REVISION
CONTROLLED

“Unrivaled Customer Satisfaction”

ROSEN
AVIATION

Blu-ray DVD Player



Technical Manual

Model 0602-001

Technical Manual, 0602-001 Blu-ray DVD Player**© 2009, 2010 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 written authorization from Rosen Aviation, LLC, except as allowed under copyright laws.

Trademarks

RosenView is a registered trademark of Rosen Aviation, LLC.

Disclaimer of Liability

The information contained in this document is subject to change without notice. Because we are continually 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

Contents

1. WIRING EXAMPLES, TECHNICAL SPECIFICATIONS, INPUTS AND OUTPUTS.....	4
1.1. Technical Specifications / Pinout Information	4
1.2. Wiring Examples	4
1.2.1. Wiring Example for Video Connection.....	4
1.2.2. Wiring Example for 2.1 or 2-Channel Audio	5
1.2.3. Wiring Example for 5.1 Audio	5
1.2.4. Wiring Example for 7.1 Audio	6
1.3. Control Inputs / Outputs	6
1.4. Audio/Video Outputs	7
1.4.1. Four CVBS (Composite) Out	7
1.4.2. One Component (YPbPr) Out	7
1.4.3. DVI/HDMI Out.....	7
1.4.4. Stereo analog Audio Out (fixed volume)	7
1.4.5. 7.1 Analog Audio Out (volume controlled).....	7
1.4.6. SPDIF Digital Audio Out	7
2. SETUP MENU	7
2.1. Setup Menu Access	7
2.2. Setup Menu Options	7
3. INDICATORS, CONTROLS AND CONNECTIONS	11
3.1. Front Case Interfaces	11
3.1.1. Button Controls	11
3.1.2. LED Indicators	12
3.1.3. USB Inputs	13
3.1.4. Ethernet.....	13
3.1.5. Reset.....	13
3.2. Blu-ray DVD Control Setup	13
3.2.1. IR Control	13
3.2.2. RS-485	14
3.2.3. RS-232	15
3.2.4. Restore Defaults.....	15
3.3. Communication Protocol.....	15
4. REVISION HISTORY	16

1. WIRING EXAMPLES, TECHNICAL SPECIFICATIONS, INPUTS AND OUTPUTS

1.1. Technical Specifications / Pinout Information

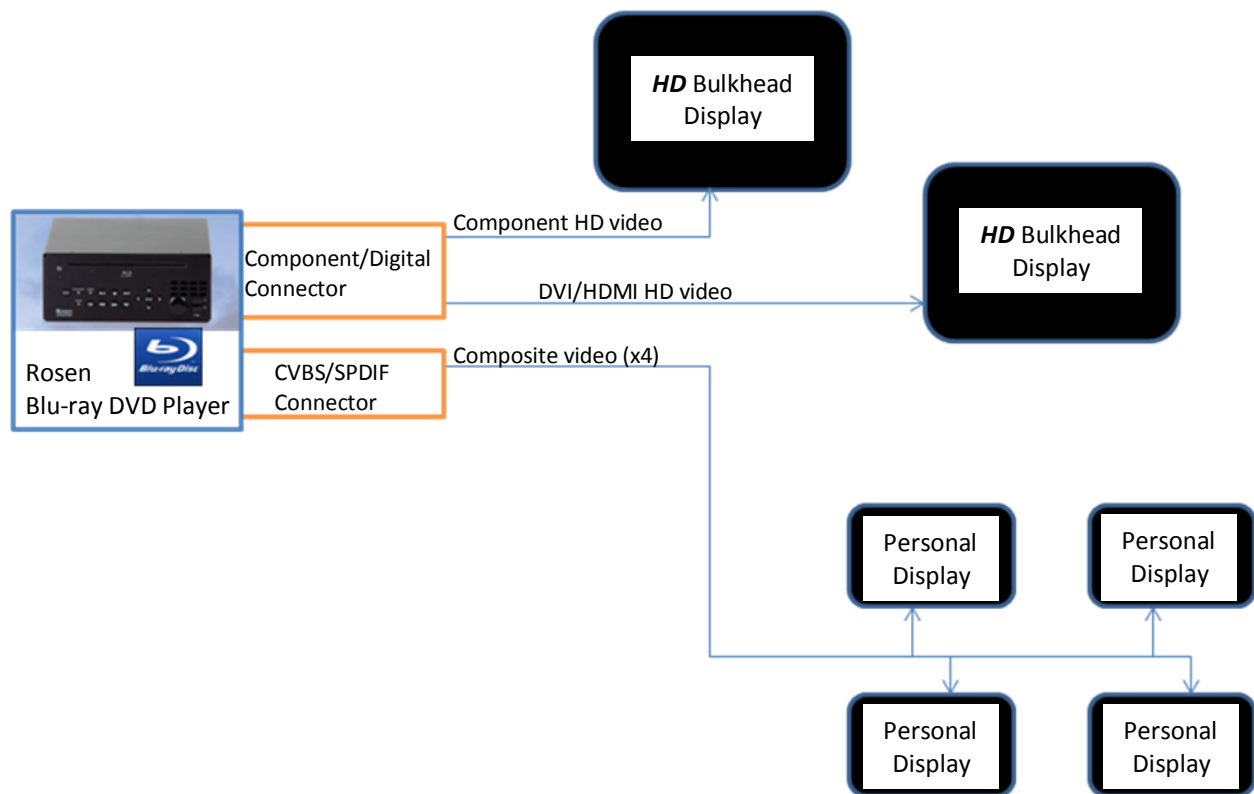


The Blu-ray DVD Player Outline and Installation drawing is located on the Rosen Aviation website: www.rosenaviation.com
 Click on the *Support* tab. Select *Drawings & Pinouts*, and then choose the *Blu-ray DVD Player* link listed under the *Source Equipment* heading.

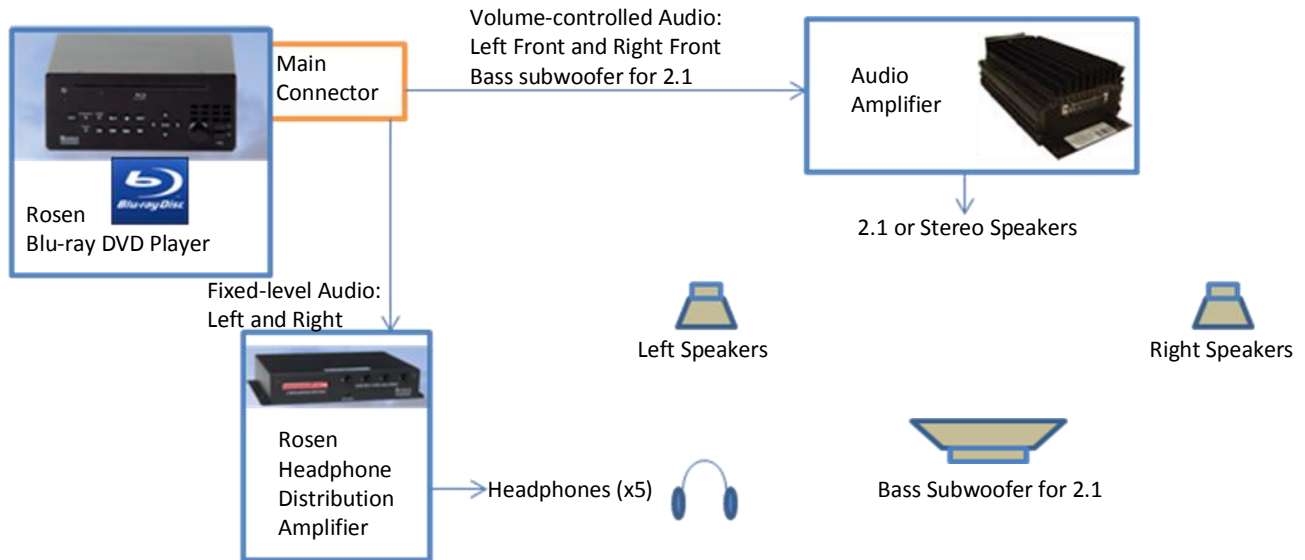
1.2. Wiring Examples

Audio line-level control is available through the setup menu. See below for wiring information.

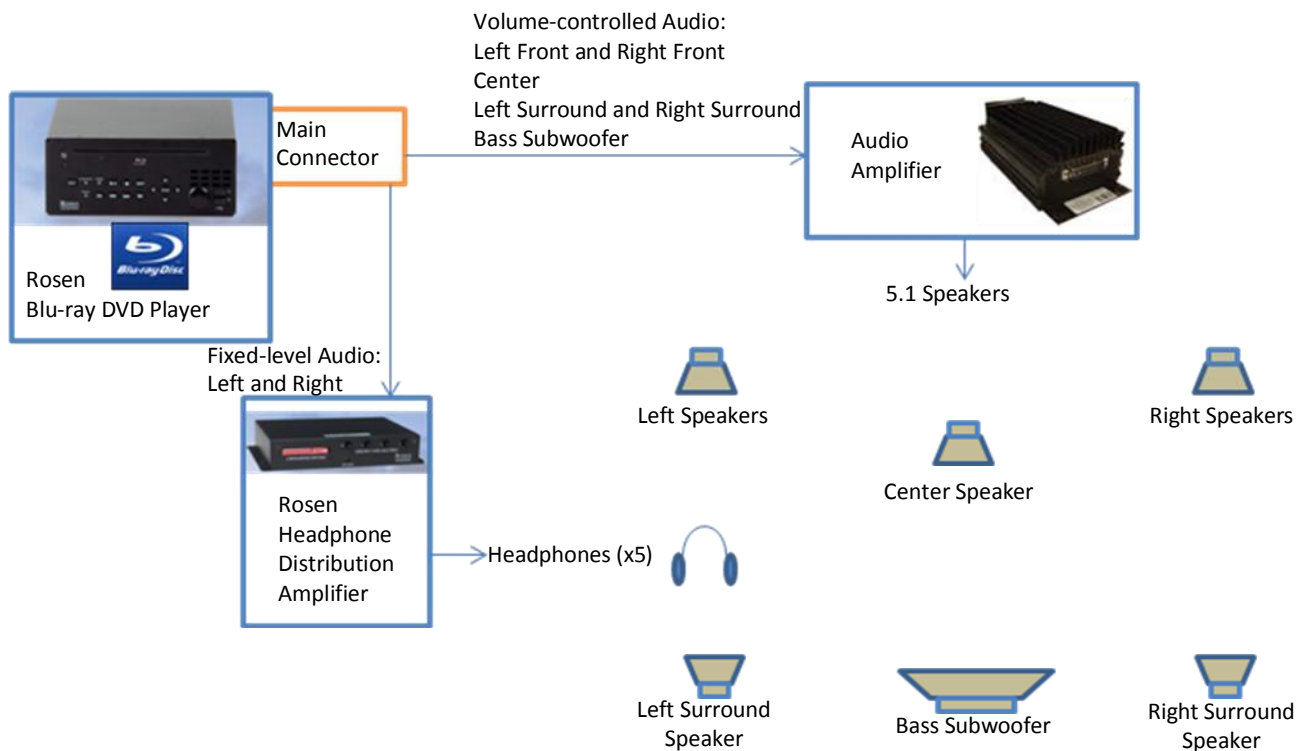
1.2.1. Wiring Example for Video Connection



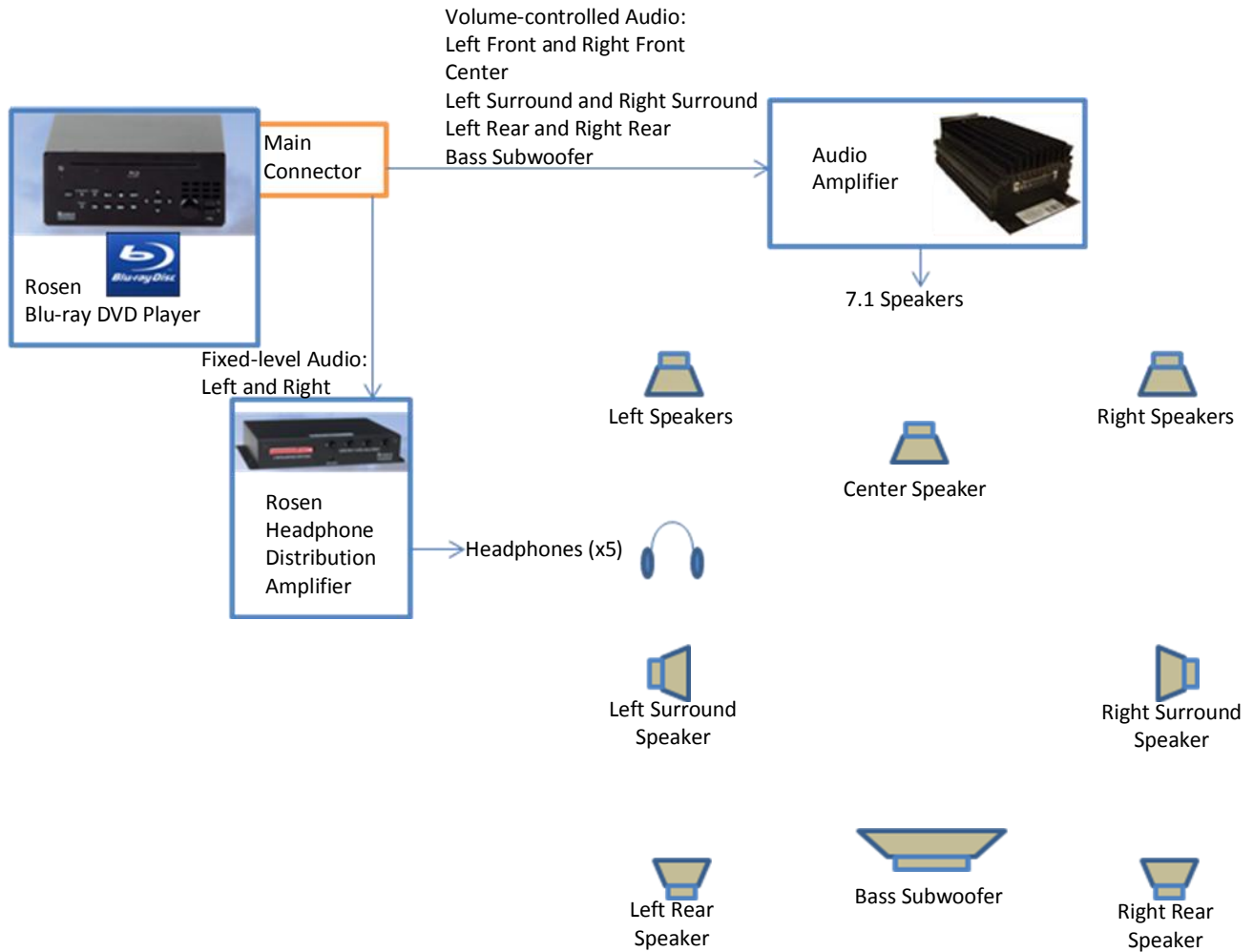
1.2.2. Wiring Example for 2.1 or 2-Channel Audio



1.2.3. Wiring Example for 5.1 Audio



1.2.4. Wiring Example for 7.1 Audio



1.3. Control Inputs / Outputs

- RS-485 (see [Section 3.2.2 RS-485](#))
- RS-232 (see [Section 3.2.3 RS-232](#))
- IR Remote Input (see [Section 3.2.1 IR Control](#))
- Cabin Brief / Pause Input

The Cabin Brief / Pause option can be controlled by a switch or by the cabin entertainment system. The Blu-ray DVD player stays in pause while the cabin briefing pause input is held low.

- Status Output

Status output is normally open. The status output connects to ground when the player is in error mode, such as over-temperature.

1.4. Audio/Video Outputs

1.4.1. Four CVBS (Composite) Out

1V peak-to-peak (p-p), into 75 ohms. NTSC or PAL.

1.4.2. One Component (YPbPr) Out

Y: 1 Vp-p into 75 ohms, Pr/Pb: 0.7 Vp-p into 75 ohms.

1.4.3. DVI/HDMI Out

TMDS with HDCP. Digital video and up to 7.1 Digital audio.

1.4.4. Stereo analog Audio Out (fixed volume)

2V RMS, adjustable volume. (Fixed volume adjustment may cause brief video glitch while command is set.)

1.4.5. 7.1 Analog Audio Out (volume controlled)

2V RMS, user adjustable volume. Audio delay is adjustable for lip-sync.

1.4.6. SPDIF Digital Audio Out

Coaxial.

2. SETUP MENU

2.1. Setup Menu Access

The setup menu requires line of sight to the display in order to view OSD options.

There are two ways to access the setup menu:

- Using the Blu-ray player front button panel, enter the following sequence:
up, down, left, right, up, down, left, right, up, up, up
-or-
- Using the universal color display remote control (P/N **0500-015**), take the stylus and press on the bottom right corner of the touch-screen display. Select the *system settings* icon to enter the system setting page.

2.2. Setup Menu Options

Setup menu offers the following setup options:

Audio Language: Select the preferred audio language to play, if supported by the disc. Choices include English, French, Spanish, and Chinese. This setting's usability is disc dependent and sometimes will not automatically function according to setup. In such cases, enter the disc setting menu to choose the option.

Audio output differs depending on the media type and disc format, the connected output jack, and the selected audio settings.

Some discs with special features may not be fully supported by the player; this is not a malfunction of the unit. Occasionally some playback operations of Blu-ray discs and Digital Video discs may be intentionally set by software producers. Since this player plays both media formats according to the disc content that the software producers designed, some playback features may not be available.

Subtitle Language: Select the preferred subtitle language to play, if supported by the disc. Choices include English, French, Spanish, Chinese, Japanese, and Korean. This setting's usability is disc dependent and sometimes will not automatically function according to setup. In such cases, enter the disc setting menu to choose the option.

Menu Language: Select the preferred menu language to play, if supported by the disc. Choices include English, French, Spanish, and Chinese. This setting's usability is disc dependent and sometimes will not automatically function according to setup. In such cases, enter the disc setting menu to choose the option.

OSD Language: Select the OSD (On Screen Display) language to display. Choices include English, French, Spanish, and Chinese.

Display Type: Select the type of display output signals. Choices include NTSC (60Hz) or PAL (50Hz). This setting controls all CVBS, Component YPbPr, and DVI/HDMI refresh rates; however, Display Film Mode "On" overrides the "Display Type" setting.

Display Aspect: Select the aspect ratio of the display output signal. Choices include 16:9 Wide, 16:9 Pillarbox, 4:3 Letterbox and 4:3 Pan & Scan.

Notes:

16:9 Wide is for a widescreen display, and stretches 4:3 images horizontally to eliminate black bars on the left and right.

16:9 Pillarbox is for a widescreen display, but attempts to correctly display the 4:3 image ratio.

4:3 Letterbox is for a non-widescreen display, and shows 16:9 images with black bars on top and bottom. This aspect ratio is intended for use with 480i/576i or 480p/576p.

4:3 Pan & Scan is for a non-widescreen display. It attempts to eliminate black bars on 16:9 images by cropping left and right portions of the image. Some black bars will still be present on 2.35:1 images. This aspect ratio is intended for use with 480i/576i or 480p/576p.

Display Resolution: Select the resolution of the DVI/HDMI display output signal. Choices include HDMI Auto, 1080p, 1080i, 720p, 480p/576p, and 480i/576i.

Notes:

HDMI Auto selects a resolution according to the display EDID.

Both Digital (DVI/HDMI) and Component video outputs are affected, as seen in this table:

<u>DVI/HDMI & Component Video Output Formats</u>				
<u>Blu-ray</u>				
HDMI Cable Connected	Resolution	HDMI	Component	Composite
	480i	480i	480i	480i
	480p	480p	480p	480i
	720p	720p	720p	480i
	1080i	1080i	1080i	480i
	1080p	1080p60	480i	480i
	1080p film	1080p60	480i	480i
	HDMI Auto	Auto	Auto	Auto
HDMI Cable Disconnected	Resolution	HDMI	Component	Composite
	480i	480i	480i	480i
	480p	480p	480p	480i
	720p	720p	720p	480i
	1080i	1080i	1080i	480i
	1080p	1080i	1080i	480i
<u>Commercial DVD</u>				
HDMI Cable Connected	Resolution	HDMI	Component	Composite
	480i	480i	480i	480i
	480p	480p	480i	480i
	720p	720p	480i	480i
	1080i	1080i	480i	480i
	1080p	1080p60	480i	480i
	1080p film	1080p60	480i	480i
	HDMI Auto	Auto	Auto	Auto
HDMI Cable Disconnected	Resolution	HDMI	Component	Composite
	480i	480i	480i	480i
	480p	480p	480p	480i
	720p	480p	480p	480i
	1080i	480p	480p	480i
	1080p	480p	480p	480i

Display Color Space: Select the color space of the DVI/HDMI display output signal. Choices include xvYCC, YCC and RGB.

Note: Many displays become confused by xvYCC and YCC, and display purple.

Display Film Mode: Enable 24Hz refresh rate on a 1080p DVI/HDMI display output signal. Choices include Off and On.

Note: The 24Hz refresh rate on a 1080p DVI/HDMI display output signal is only for 24Hz disc content and for the Setup Menu. Disc content that is 50Hz or 60Hz will be played back as though Display Film Mode were Off.

Digital Audio Output: Select the format of the digital audio output signals (HDMI and SPDIF). Choices include PCM 7.1, Bitstream HD, Bitstream Legacy, Bitstream Mixed, PCM 5.1 and PCM Stereo.

⇒ NOTICE Using Bitstream Mixed overrides all other speaker settings

Digital Audio PCM Downsampling: Select the sampling rate of PCM digital audio output signals (HDMI and SPDIF). Choices include 48Hz, 96Hz and Off. (Off allows various sampling rates, depending on the disc.)

Dynamic Range Control: Enable range compression, which attempts to level the volume throughout the movie, making it easier to hear. Choices include On, Auto and Off.

Front L&R Speakers: Select the size of front speakers. Choices are Large and Small.

Center Speaker: Enable and select the size of center speaker. Choices include Large, Small and Off.

Surround L&R Speakers: Enable and select the size of surround speakers. Choices include Large, Small, and Off.

⇒ NOTICE Disabling the Surround L&R Speakers will also disable the Rear L&R Speakers. This will not be reflected in the setup menu, where the Rear L&R speakers will show as large or small.

Rear L&R Speakers: Enable and select the size of rear speakers. Choices include Large, Small and Off.

⇒ NOTICE Rear L&R Speakers will not function when Surround L&R Speakers are disabled.

Subwoofer Speaker: Enable the Subwoofer speaker. Choices are On and Off.

Bass Crossover Frequency: Enable the Bass Crossover. Choices include Off, 80Hz, 100Hz and 120Hz.

Parental: (This will not be useable.)

NOTICE

Technicians/Installers should not attempt to access Parental Control. The menu requests a four-digit access code, and there is no way to enter the code or back out of the menu. This forces the user to exit setup and then re-enter.

System Reset Settings: Restore factory defaults (Must be done with no disc in player).

Clear BD Storage: (This will not be useable.)

BD-Live Internet Access: (This will not be useable.)

Optical Disc AutoPlay: Enable disc autoplay on insertion. Choices are Off and On.

Network IP Mode: (This will not be useable.)

Network Test Connectivity: (This will not be useable.)

Network Current I.P. Address: (This will not be useable.)

3. INDICATORS, CONTROLS AND CONNECTIONS



Figure 1 Rosen Blu-ray DVD Player front case showing LEDs and control buttons

3.1. Front Case Interfaces

3.1.1. Button Controls

Menu Press Menu to access the disc menu.

▶|| Press this control to pause, play or resume play.

◀ Press this control to skip to previous chapter on a disc.

◀◀ Press this control to fast-reverse the disc.

▶| Press this control to skip to next chapter on a disc.

▶▶ Press this control to fast-forward the disc.

▲, ▼, ◀, ▶ Press these controls to navigate up, down, left and right in menus.

ENTER When navigating through a menu, press ENTER to select menu options.

■ Press this control to stop the movie. When pressed once, the ▶| button can be used to resume the movie from where it was stopped. (Some discs do not allow the resume feature.) If the ■ button is pressed twice, then pressing the ▶| button will start the movie back at the beginning.

EJECT Press the eject button to eject a disc. Although it is not required, we recommend that you remove the disc before powering off the player.

Note: The Blu-ray DVD player default setting is Auto Play.

3.1.2. LED Indicators

Power LED: The Power LED indicates the general status of the Blu-ray DVD Player. The following table describes the Power LED operation. This LED will also blink when an IR command is received.

Power	Power LED
OFF	OFF
ON - no disc	WHITE
ON - Blu-ray disc loaded	BLUE
ON - DVD loaded	GREEN
ON - CD loaded	AMBER
Booting up	slow flashing WHITE
ERROR	slow flashing RED

Component and Digital LED: The following table describes the Component LED and Digital LED operation.

Resolution	Component LED	Digital LED
AUTO	LIGHT BLUE	LIGHT BLUE
480i/576i	GREEN	GREEN
480p/576p	PINK	PINK
720p	AMBER	AMBER
1080i	WHITE	WHITE
1080p24		VIOLET
1080p60		DARK BLUE

3.1.3. USB Inputs

Use the USB inputs A & B to update the Blu-ray disc player firmware. Firmware instructs the player how to operate per the disc's format. Much like a computer, Blu-ray players occasionally need an update to support the latest disc features.

Rosen provides firmware updates to help guarantee high-quality performance of your Blu-ray DVD player. To confirm that your player has the latest firmware, issue an **About** command from the RS-232 or RS-483. From the Universal remote control (P/N **0500-015**), press **Info**. Either method will display the current operating firmware on screen.

Firmware updates and instructions about how to update your Blu-ray player firmware is available on the Rosen Aviation web site at www.rosenaviation.com. From the [Rosen Aviation](#) home page, select the **Products→Source Equipment** tab and browse by product category to locate Instructions and Updates.

3.1.4. Ethernet

Ethernet is for factory use only.

3.1.5. Reset

Beneath the IR eye is a recessed button used to reset power to the player.

3.2. Blu-ray DVD Control Setup

Individual control for up to eight Rosen Blu-ray DVD players is possible. Control options include IR, RS-485, and RS-232.

3.2.1. IR Control

Rosen Blu-ray DVD player can be controlled using one of several of Rosen Aviation's pre-programmed remote controls. Visit www.rosenaviation.com for details.

Some Rosen IR remote controls have configuration files available that allow separate control for several Blu-ray DVD players. Such controls require a unique network address for each Blu-ray DVD player.

Rosen Blu-ray DVD players have eight optional network addresses (1-8). The default network address is 1. Complete the following to change the default network address.

1. Supply power to the Rosen Blu-ray DVD player and ensure that there is no disc inserted.
2. The sequences shown below define how to establish the eight possible network addresses. The sequences are completed by pressing the front panel buttons. (sequence must be done with no disc in player)

net1 = {Λ, V, <, >, Λ, V, <, >, <, <, <}

net2 = {Λ, V, <, >, Λ, V, <, >, <, <, ►||}

net3 = {Λ, V, <, >, Λ, V, <, >, <, <, ■}

net4 = {Λ, V, <, >, Λ, V, <, >, <, <, Menu}

net5 = {Λ, V, <, >, Λ, V, <, >, <, <, |◀}

net6 = {Λ, V, <, >, Λ, V, <, >, <, <, ◀◀}

net7 = {Λ, V, <, >, Λ, V, <, >, <, <, ►►}

net8 = {Λ, V, <, >, Λ, V, <, >, <, <, ►|}

Note: The power status LED blinks at the end of the sequence to verify the setting. For example, if you enter the net3 sequence, the power status LED will blink three times at completion of sequence to verify the setting.

⇒ NOTICE

If you choose to restore defaults, the network address will automatically reset to net1. Restore defaults must be done with no disc in the player.

3.2.2. RS-485

Rosen Blu-ray DVD player can be controlled with RS-485. For specifications see *RS485 Network Message Definitions* document (PN [9002933](http://www.rosenaviation.com/downloads/9002933.pdf)), located on our website <http://www.rosenaviation.com/downloads/9002933.pdf>.

⇒ NOTICE

The Blu-ray DVD player is set to address 20 by default.

Please note that Rosen Aviation equipment is not specifically designed to operate as part of a network with other manufacturers equipment unless the other equipment meets the requirements defined in this document.

RS485 Network Address Selection:

For the purposes of controlling multiple Blu-ray units from a single cabin management system or button panel, each device must be assigned a unique address on the RS-485 network.

To avoid adding switches to the back panel of the unit, we use a front panel key sequence to select a network address for each unit. This is only necessary for installations in which multiple Blu-ray units will be addressed on the same RS-485 bus. The Blu-ray mechanism must be unloaded (no disc inserted) for the key sequences to be acknowledged. This changes both the Device ID for the IR as well as the RS485 network address.

Key sequences for selecting RS-485 network addresses are identical to the sequences shown for IR control Section [3.2.1](#).

3.2.3. RS-232

Rosen Blu-ray DVD player can also be controlled with RS-232. For specifications, please contact Rosen Aviation technical support at 541.342.3802.

3.2.4. Restore Defaults

Full Factory Reset sets every setting back as it shipped from the factory. There are four ways to complete a Full Factory Reset:

1. Front panel key sequence to complete a Full Factory Reset:
up, down, left, right, up, down, left, right, down, down, down
2. Universal IR (Pronto) Remote Full Factory Reset available through the system setting page
3. RS-485 Full Factory Reset command available through interface
4. RS-232 Full Factory Reset command available through interface

3.2.4.1. Restore Defaults through the Setup Menu

Factory Reset through the Setup Menu sets every setting back as it shipped from the factory **with exception to the RS485 and the IR address settings**. Use the following key sequence to access the Setup Menu:

up, down, left, right, up, down, left, right, up, up, up

Once you are in the Setup Menu, select **System** and then **Reset Settings**.

3.3. Communication Protocol

- 9600 baud
- 8 data bits
- 1 stop bit
- no parity

4. REVISION HISTORY



Revision E is limited to draft or prototype documents. Revisions I, O, Q, S, X and Z are not to be used

Revision	Date	Revision Description	EC
A	8/12/08	New Release	09312
B	10/30/09	Update LED indicator definitions	09415
C	1/18/2010	Update LED indicator definitions, add Ethernet use and update BD live info, add layout wiring examples in section 1, add display resolution formats table, add pause between pressing Enter on access codes and update section 2.2 menu Options with Notice information	10006
D	2/24/2010	Update set up menu access sequence, added aspect ratio notes in section 2.2, added section 3.2.4 for restore defaults clarification, and change nomenclature from tech menu to setup menu for consistency with OSD	10018
F	10/29/10	Added instructions for firmware updates and disc-related troubleshooting notes	10450