Control Information

Document Owner	Revision History
Engineering	See last page for Revision History

1. INTRODUCTION

1.1. Purpose

This document defines the type, formats and timing of serial message packets that can be used to control Rosen Aviation equipment through a daisy-chained RS485 serial connection. All RS485 enabled Rosen Aviation monitors and other Rosen Aviation equipment will fully implement the applicable messages in this document. A maximum of 31 devices may be connected on a half-duplex network. Each device should be assigned a unique address from 1 to 31. The method for assigning network addresses varies depending on the specific Rosen Aviation product you are working with. Consult the individual product documentation for more information on setting the network address.

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.

1.2. Scope

This document provides RS485 network message information for end users of applicable Rosen products.

1.3. Communication Protocol

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

1.4. Packet Format

There are typically 3 bytes per message. The first byte is a header byte and the second identifies the specific command. The third byte is the network address. A network address byte of 0 is reserved as the "global" address, in other words all slave units should respond to that command.

1.5. Packet Timing

- Within a message packet, there is a maximum time of 20mSec between bytes. Messages with bytes sent more than 20mSec apart will not be recognized by the receiving unit.
- There should be a minimum elapsed time of 50mSec between any 2 message packets. This allows the given processor sufficient time to process the previous message.

- Messages sent less than 50mSec apart are not guaranteed to be processed by the receiving unit.

1.6. Wiring

Rosen Aviation equipment uses a half-duplex wiring layout. Only two RS485 wires need to be run between each individual unit. On some products, the RS485 wires have been internally daisy-chained so that 4 external pins exist on the connector. **On the 20" SL II monitor, the 2 sets of RS485 A and B wires must be externally connected together. For proper operation connect pin 14 to pin 16 and connect pin 15 to pin 17 on the 21W1 connector.**

2. PACKET FORMAT DESCRIPTIONS

2.1. Universal Lift

- **Lift Up**

Byte 1:	0x97	Lift Command Header
Byte 2:	0x01	Raise lift mechanism command
Byte 3:	network id	
	0x00	reserved for global id (all lift units respond)

- **Lift Down**

Byte 1:	0x97	Lift Command Header
Byte 2:	0x0e	lower lift mechanism command
Byte 3:	network id	
	0x00	reserved for global id (all lift units respond)

- **Lift Status Request**

Byte 1:	0x98	Lift Status Header
Byte 2:	0x55	filler byte
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	

Response:

Byte 1:	*0x99*	*Lift Status Response Header*
Byte 2:	*bits 0-6*	*Device specific status bits*
	Bit 0	*0 = up pos sensor not active, 1 = up pos sensor active*
	Bit 1	*0 = down pos sensor not active, 1 = down pos sensor active*
	Bit 2	*0 = swivel sensor not active, 1 = swivel sensor active*
	Bit 3	*0 = motor not active, 1 = motor active*
	Bit 4	*reserved (not defined)*
	Bit 5	*reserved (not defined)*
	Bit 6	*reserved (not defined)*
	Bit 7	*always 0*

2.2. Display Commands

Note: Some commands may not work with older Rosen Monitors.

Power

- **Power On**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x0f Power on command
  Byte 3: network id
  0x00 reserved for global id (all power slave units respond)

- **Power Off (older units)**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0xf0 Power off command
  Byte 3: network id
  0x00 reserved for global id (all power slave units respond)

- **Power Off**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x10 Power off command
  Byte 3: network id
  0x00 reserved for global id (all power slave units respond)

- **Power Toggle**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x3c Power off command
  Byte 3: network id
  0x00 reserved for global id (all power slave units respond)

Input Source Selection

- **Source Composite Video 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x01 composite 1 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)

- **Source Composite Video 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x02 composite 2 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a 2nd composite video input.

- **Source S-Video**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x03 S-Video command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support an S-Video input.

- **Source Analog RGB 1 (ARGB)**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x04 ARGB 1 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support an analog RGB input.

- **Source Analog RGB 2 (ARGB)**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x12 ARGB 2 command
  Byte 3: network id

0x00 reserved for global id (all video slave units respond)
*not all monitors support an analog RGB input.

- **Source Component Video 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x05 Component Video 1 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a component video input.

- **Source Component Video 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x14 Component Video 2 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a component video input.

- **Source DVI 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x06 DVI 1 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a DVI input.

- **Source DVI 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x13 DVI 2 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a DVI input.

- **Source SDI 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x07 SDI 1 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a SDI input.

- **Source SDI 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x08 SDI 2 command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support a SDI input.

- **Auto SDI**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x15 Auto SDI command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
  *not all monitors support the Auto SDI function.

- **Source Next**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x10 Next command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)

- **Source Next Scaling**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x11 Next scaling command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)

- **Button Left**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x01 Button Left command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Right**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x02 Button Right command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Up**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x03 Button Up command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Down**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x04 Button Down command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Menu**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x05 Menu command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Brightness up**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x11 Brightness up command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Brightness Down**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x12 Brightness down command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Contrast Up**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x13 Contrast up command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Contrast Down**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x14 Contrast Down command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Hue Up**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x15 Hue up command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)
- **Button Hue Down**
  Byte 1: 0x83 Video Source Header
  Byte 2: 0x16 Hue Down command
  Byte 3: network id
  0x00 reserved for global id (all video slave units respond)

- **Button Sharpness Up**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x17 Sharpness up command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Sharpness Down**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x18 Sharpness down command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Saturation Up**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x19 Saturation Up command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Saturation Down**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x1a Saturation Down command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Swap**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x23 PIP swap command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Ok**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x24 Ok command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Exit**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x25 Exit command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Button Tech Menu**
  - Byte 1: 0x83 Video Source Header
  - Byte 2: 0x26 Tech Menu command
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)

Rosen Control Functions

- **RJ-45 Cable Compensation ON**
  - Byte 1: 0x85 Rosen Control Header
  - Byte 2: 0x01 RJ-45 Cable Compensation ON (Pre-Emphasis)
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **RJ-45 Cable Compensation OFF**
  - Byte 1: 0x85 Rosen Control Header
  - Byte 2: 0x02 RJ-45 Cable Compensation OFF (Pre-Emphasis)
  - Byte 3: network id
    0x00 reserved for global id (all video slave units respond)
- **Operation Mode Standard**
  - Byte 1: 0x85 Rosen Control Header

Byte 2: 0x03 Operation Mode Standard
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

- **Operation Mode Auto SDI**

Byte 1: 0x85 Rosen Control Header
Byte 2: 0x04 Operation Mode Auto SDI
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

- **SDI Overscan Enable**

Byte 1: 0x85 Rosen Control Header
Byte 2: 0x05 Enable SDI-overscan
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

- **SDI Overscan Disable**

Byte 1: 0x85 Rosen Control Header
Byte 2: 0x06 Disable SDI-overscan
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

- **Increase SDI Overscan**

Byte 1: 0x85 Rosen Control Header
Byte 2: 0x07 Increase SDI-overscan
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

- **Decrease SDI Overscan**

Byte 1: 0x85 Rosen Control Header
Byte 2: 0x08 Decrease SDI-overscan
Byte 3: network id
0x00 reserved for global id (all video slave units respond)

2.3. RosenView

Control Commands

Enter

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x02 "enter" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Left

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x03 "left" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Right

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x04 "right" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Up

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x05 "up" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Down

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x06 "down" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Menu

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x07 "menu" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Zoom In

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x08 "zoom in" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Zoom Out

Byte 1: 0xA0 RosenView Control Header
Byte 2: 0x09 "zoom out" button command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Briefing Commands

Play Briefing 1

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x01 Play Briefing 1
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 2

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x02 Play Briefing 2
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 3

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x03 Play Briefing 3
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 4

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x04 Play Briefing 4
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 5

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x14 Play Briefing 5
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 6

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x15 Play Briefing 6
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 7

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x16 Play Briefing 7
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 8

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x17 Play Briefing 8
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 9

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x18 Play Briefing 9
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 10

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x19 Play Briefing 10
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 11

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x1A Play Briefing 11
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 12

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x1B Play Briefing 12
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 13

Byte 1: 0xA3 RosenView Briefing Header
Byte 2: 0x1C Play Briefing 13
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Play Briefing 14

Byte 1:	0xA3	RosenView Briefing Header
Byte 2:	0x1D	Play Briefing 14
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	

Play Briefing 15

Byte 1:	0xA3	RosenView Briefing Header
Byte 2:	0x1E	Play Briefing 15
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	

Play Briefing 16

Byte 1:	0xA3	RosenView Briefing Header
Byte 2:	0x1F	Play Briefing 16
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	

Cancel Briefing

Byte 1:	0xA3	RosenView Briefing Header
Byte 2:	0x0f	Cancel briefing playback
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	

Status Request

Byte 1:	0xA8	RosenView Status Request Header
Byte 2:	0x55	filler byte
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	
Response:		
Byte 1:	*0xA9*	*RosenView Status Response Header*
Byte 2:	*bits 0-6*	*Device specific status bits*
	Bit 0	*reserved (not defined)*
	Bit 1	*0 = PC not booted, 1 = PC booted*
	Bit 2	*0 = temperature normal, 1 = temperature out of range*
	Bit 3	*0 = no briefing active, 1 = briefing active*
	Bit 4	*reserved (not defined)*
	Bit 5	*0 = no ARINC data, 1 = ARINC 429 data active*
	Bit 6	*0 = no GPS data, 1 = GPS data active*
	Bit 7	*always 0*

Please note regarding RosenView addressing:
RosenView units are shipped by default set to network address 31 (0x1F in hex).

2.4. Single Disc DVD

Control Commands

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x01 "enter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x02 "menu left" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x03 "menu right" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x04 "menu up" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x05 "menu down" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x06 "eject" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x07 "stop" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x08 "next chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x09 "previous chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0A "subtitle" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0D "Source" command, toggles auxillary output between internal and external source
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0E "Fast Forward" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0F "Reverse" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x10 "play" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x11 "play-pause" toggle command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x13 DVD "menu" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x20 '"DVD power toggle" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

DVD General Status Request

Byte 1: 0xB8 DVD Status Request Header
Byte 2: 0x01 request general status
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Response:

Byte 1: 0xB9 DVD Status Response Header

Byte 2: Bits 0-6 Device specific status bits
Bit 0 0 = disc not loaded, 1 = disc loaded
Bit 1 0 = disc paused or stopped, 1 = disc playing
Bit 2 0 = temperature normal, 1 = temperature out of range
Bit 3 0 = self test passed, 1 = self test failure
Bit 4 source selection, 0 = internal, 1 = external
Bit 5 PA/Briefing override status, 0 = input low, 1 = input high
Bit 6 Unit Power Status, 0 = standby, 1 = on
Bit 7 always 0

Please note regarding DVD addressing:
Single Disc DVD players are shipped by default set to network address 20 (0x14 in hex). Following the instructions in the setup manual you can change the address to any one of 8 possible values in the range from 20 to 27 (0x14 to 0x1B).

2.5. Single Blu-ray DVD

Control Commands

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x01 "enter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x02 "menu left" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x03 "menu right" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x04 "menu up" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x05 "menu down" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x06 "eject" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x07 "stop" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x08 "next chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x09 "previous chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0A "subtitle Toggle" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0E "Fast Forward" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0F "Reverse" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x10 "play" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x11 "pause" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x2B "play/pause Toggle" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x12 Mute command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x13 DVD "menu" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x14 Title menu command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x16 Stereo Volume Up command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x17 Stereo Volume Down command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x19 Repeat Title command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1C Repeat Chapter command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB8 DVD Status Request Header
Byte 2: 0x01 request general status
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 Control Header
Byte 2: 0x0B Volume Up
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0C Volume Down
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1E Green Button

Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1F Yellow Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x23 Blue Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1D Red Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x26 About
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x25 Back Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x28 Set Blu-ray To Region A
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x29 Set Blu-ray To Region B
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x2A Set Blu-ray To Region C
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x24 Factory Reset
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Note: The following commands are used to send numeric values to the Dual Blu-ray player for assigning the IP Address of the player.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x70 Numeric value – '0'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x71 Numeric value – '1'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x72 Numeric value – '2'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x73 Numeric value – '3'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x74 Numeric value – '4'

Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x75 Numeric value – '5'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x76 Numeric value – '6'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x77 Numeric value – '7'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x78 Numeric value – '8'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x79 Numeric value – '9'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Response:

Byte 1: 0xB9 DVD Status Response Header

Byte 2: Bits 0-6 Device specific status bits
Bit 0 0 = disc not loaded, 1 = disc loaded
Bit 1 0 = disc paused or stopped, 1 = disc playing
Bit 2 0 = temperature normal, 1 = temperature out of range
Bit 3 0 = self test passed, 1 = self test failure
Bit 4 source selection, 0 = internal, 1 = external
Bit 5 PA/Briefing override status, 0 = input low, 1 = input high
Bit 6 Unit Power Status, 0 = standby, 1 = on
Bit 7 always 0

Please note regarding Blu-ray DVD addressing:
Single Disc Blu-ray DVD players are shipped by default set to network address 20 (0x14 in hex). Following the instructions in the setup manual you can change the address to any one of 8 possible values in the range from 20 to 27 (0x14 to 0x1B).

2.6. Dual Blu-ray DVD

Control Commands

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x01 "enter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x02 "menu left" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x03 "menu right" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header

Byte 2: 0x04 "menu up" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x05 "menu down" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x06 "eject" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x07 "stop" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x08 "next chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x09 "previous chapter" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0A "subtitle Toggle" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0E "Fast Forward" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0F "Reverse" command
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x10 "play" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x11 "pause" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x2B "play/pause Toggle" command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x12 Mute command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x13 DVD "menu" command

Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x14 Title menu command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x16 Stereo Volume Up command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x17 Stereo Volume Down command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x19 Repeat Title command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1C Repeat Chapter command
Byte 3: network id
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB8 DVD Status Request Header
Byte 2: 0x01 request general status
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 Control Header
Byte 2: 0x0B Volume Up
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x0C Volume Down
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1E Green Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1F Yellow Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x23 Blue Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x1D Red Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x26 About
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x25 Back Button
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x28 Set Blu-ray To Region A
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x29 Set Blu-ray To Region B
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x2A Set Blu-ray To Region C
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x24 Factory Reset
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x4F Power Toggle
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Note: The following commands are used to send numeric values to the Dual Blu-ray player for assigning the IP Address of the player.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x70 Numeric value – '0'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x71 Numeric value – '1'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x72 Numeric value – '2'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x73 Numeric value – '3'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x74 Numeric value – '4'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x75 Numeric value – '5'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x76 Numeric value – '6'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x77 Numeric value – '7'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header

Byte 2: 0x78 Numeric value – '8'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header
Byte 2: 0x79 Numeric value – '9'
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Request General Status Response:

Byte 1: 0xB9 General Status Response Header

Byte 2: Bits 0-6 Device specific status bits
Bit 0 0 = disc not loaded, 1 = disc loaded
Bit 1 0 = disc paused or stopped, 1 = disc playing
Bit 2 0 = temperature normal, 1 = temperature out of range
Bit 3 0 = self test passed, 1 = self test failure
Bit 4 always 0
Bit 5 PA/Briefing override status, 0 = input low, 1 = input high
Bit 6 Unit Power Status, 0 = standby, 1 = on
Bit 7 always 0

Please note regarding Dual Blu-ray DVD addressing:

By default, units are shipped with the top Blu-ray player set to a network address of 20 (0x14 in hex) and the bottom Blu-ray player set to a network address of 21 (0x15 in hex). Following the instructions in the setup manual you can change the address to one of 8 possible values in the range from 20 to 27 (0x14 to 0x1B).

Network Setup

Ping Address

The Ping Address message is used by a "master" device to identify all the attached devices on a network.

Byte 1: 0x88 Ping Message Header
Byte 2: 0x55 Filler byte
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Response:
Byte 1: 0x77 Ping Response Header

Byte 2: bits 0-3 Device Identification
0000 = 5.6" monitor
0001 = 8.4" monitor
0010 = 12" monitor
0011 = 15" monitor
0100 = 17" monitor
0101 = 17"WS monitor
0110 = 20" SL II monitor
0111 = 24"WS monitor
1000 = 7" monitor
1001 = 6.5" monitor
1100 = Universal Lift
1101 = DVD player
1110 = Blu-ray DVD Player
1111 = RosenView unit

bits 4-7
0001 = Display, power slave only
0010 = Display, video slave only
0011 = Display, power and video slave
0100 = RS485 Master
0000 = other (DVD, Universal Lift or RosenView)

Byte 3: *(for monitor)*
bits 0-3 = current source
0001 = composite 1
0010 = S-Video
0011 = ARGB
0100 = DVI
0101 = Component
0110 = Composite 2
bit 4 1 = power on, 0 = power Off

Byte 3: *(for universal lift)*
Bit 0 0 = up pos sensor not active, 1 = up pos sensor active
Bit 1 0 = down pos sensor not active, 1 = down pos sensor active
Bit 2 0 = swivel sensor not active, 1 = swivel sensor active
Bit 3 0 = motor not active, 1 = motor active
Bit 4 reserved (not defined)
Bit 5 reserved (not defined)
Bit 6 reserved (not defined)
Bit 7 always 0

Byte 3: *(for RosenView)*
bits 0-6 Device specific status bits
Bit 0 reserved (not defined)
Bit 1 0 = PC not booted, 1 = PC booted
Bit 2 0 = temperature normal, 1 = temperature out of range
Bit 3 0 = no briefing active, 1 = briefing active
Bit 4 reserved (not defined)
Bit 5 0 = no ARINC data, 1 = ARINC 429 data active
Bit 6 0 = no GPS data, 1 = GPS data active
Bit 7 always 0

Byte 3: *(for DVD and Blu-ray DVD players)*
bits 0-6 Device specific status bits
Bit 0 0 = disc not loaded, 1 = disc loaded
Bit 1 0 = disc paused or stopped, 1 = disc playing
Bit 2 0 = temperature normal, 1 = temperature out of range
Bit 3 0 = self test passed, 1 = self test failure
Bit 4 reserved (not defined)
Bit 5 reserved (not defined)
Bit 6 reserved (not defined)
Bit 7 always 0

example: If the responding unit is a 24" display set as a video slave, with the power on and S-Video selected, the ping response bytes would be 0x77, 0x27, and 0x12.

3. REVISION HISTORY

NOTICE 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	5/2/05	New Release	05165
B	8/5/05	update section 2.3 per redlines, reformat the control information table, add a new header and footer, add the appendix for revision history	05285
C	12-28-05	Replace FliteView occurrences with RosenView	05054
D	1-18-06	Add single disc DVD info Section 2.4	06016
F	1-20-06	reformat control command Section 2.3	06022
G	1-30-06	Update Section 2.4 to add DVD in place of RosenView	06028
H	10/24/06	Remove volume commands from DVD section	06282
J	1/30/07	Added DVD command and new briefing commands for RosenView	07035
K	10/30/09	Add Blu-ray Information Section 2.5, incorporate updated template	09415
L	04/22/10	Update section 2.5 control commands	10217
M	01/19/11	Updated section 2.2 added new 485 commands for displays	11042
N	03/29/11	Added section 2.6 for the Dual Blu-ray Player RS485 commands	11233
P	2/10/12	Added RJ-45 cable compensation ON/OFF commands	12-0065
R	04/02/12	Added Operation Mode command	12-0193
T	04/30/12	Updated Single and Dual Blu-ray Commands	12-0249
U	01/31/13	Added overscan enable, disable, increase, and decrease commands.	13-0038