



Technical Manual

RosenView VX NA 0604-001

RosenView VX EUR 0604-002



Technical Manual, RosenView® VX

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1. INTRODUCTION

This manual describes how to install the RosenView® VX combination moving map and DVD system onto your aircraft. It contains all information necessary to wire the unit and confirm that all components are functioning correctly.

Note: Installation and service should be performed only by trained and qualified personnel.

1.1. Unpacking

The parts shipped with the RosenView VX depend on the model. Model 0604-001 displays North America maps and Model 0604-002 displays maps of Europe. Parts include:

- Outline and Installation drawing of either the RosenView VX Combo Unit (P/N **0604-001-CD**) or the RosenView VX Europe Combo Unit (P/N **0604-002-CD**)
- RosenView VX Combo Unit (P/N **100641-01** – NA), or RosenView VX Europe Combo Unit (P/N **100641-02**)
- Connector kit (P/N **0300-038**)
- Configuration CD, RosenView VX (P/N **100847**)
- RosenView VX User's Guide – (P/N **100870**) – To be left in the plane
- USB flash drive (P/N **100973**)

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

- Universal Remote with color display (P/N **0500-010 MOD 00**)
- 7-Button Controller (P/N **0300-407**)

NOTICE

The *Outline & Installation* drawings **0604-001-CD** (North America) and **0604-002-CD** (Western Europe) are also available at www.rosenaviation.com.

From the [Rosen Aviation](http://www.rosenaviation.com) home page, select **Products → Source Equipment → RosenView VX**, and then click the appropriate **.PDF** under Technical Drawings.

2. INSTALLATION GUIDELINES

There are three different flange-mounting orientations possible for the RosenView VX: slot horizontal, slot vertical and in an upright position as shown in the figure below.

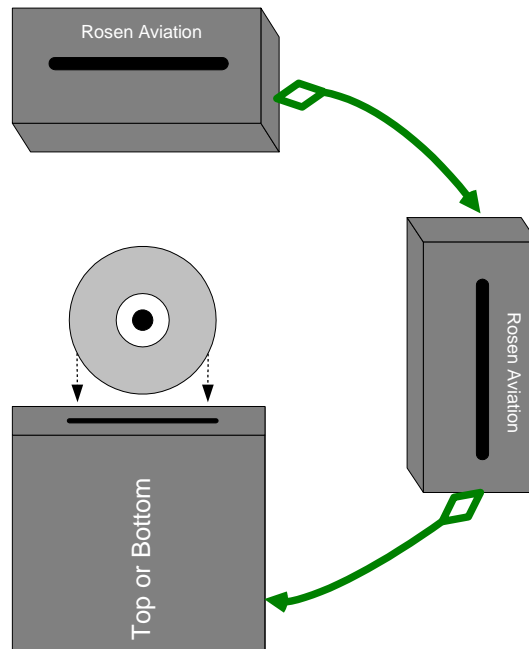


Figure 1 Mounting positions for the RosenView VX

2.1. Mounting Requirements

Three mounting holes are available on each side for 10-32 screws, as shown below, and on the outline and installation drawing. Caution: Do not use the drain holes on the underneath side of the unit for mounting.

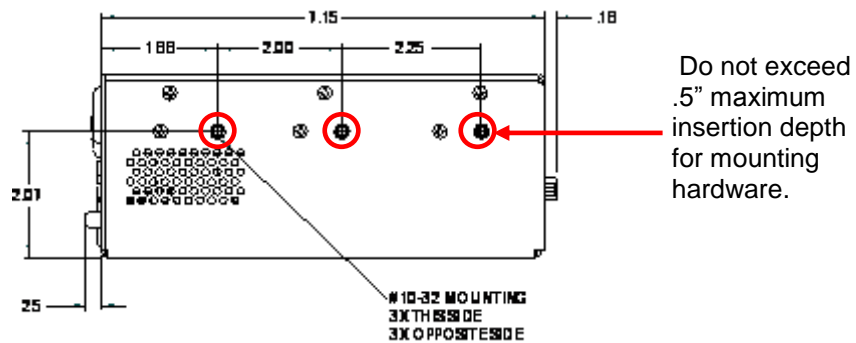


Figure 2 RosenView VX mounting holes

3. ROSENVIEW VX CONNECTORS, LEDS, AND CONTROLS

The front side of the RosenView VX unit houses a USB port, the Reset/Power button, and LED displays. The plug in the lower right covers a connector used only by Rosen Aviation technicians.



Figure 3 RosenView VX front panel



3.1. Front Panel Indicators and Controls

You can control the RosenView VX DVD from the front panel controls; however, you cannot control the moving map.

Table 1 RosenView VX DVD buttons

Button	How it Works
Eject ▲	Press to eject or insert a disc.
Menu	Accesses the DVD menu or the DVD player's setup menu if no disc is inserted.
▲ ▼ ◀ ▶	Navigates through DVD menu options.
Enter	Selects a DVD menu option to view.
Play/Pause ►	Pauses and plays the DVD.
Stop ■	Stops the DVD. When ■ is pressed once, press the ► button to resume the movie where it was stopped. If the ■ button is pressed twice, then pressing the ► button will start the movie back at the beginning.
Previous ◀	Previous chapter reverse.
Fast Rewind ◀◀	Moves left in a menu. Hold in while a disc is playing to "rewind." Continue to hold for different rewind speeds.
Fast Forward ▶▶	Moves right in a menu, or hold in while a disc is playing to "fast forward." Continue to hold for different fast forward speeds.
Next ▶	Next chapter forward.

Table 2 RosenView VX system buttons

Control	How it Works
 1	Source Select 1 switches the output on display 1— map, DVD, or auxiliary device.
 2	Source Select 2 switches the output on display 2— map, DVD, or auxiliary device.
USB Port	Connect the USB flash drive with customized files to the USB port to import custom configuration files into RosenView VX, or connect an empty USB flash drive to export a RosenView VX custom configuration to be loaded on to another RosenView VX or saved for later use.
Reset	Resets the map processor and the DVD player, but it does not change the source select button settings. To reset the RosenView VX, press and hold the Reset/Power button for about one second and then release it. The system will cycle power and reboot.

Note: The DVD player default setting is Auto Play.

Table 3 RosenView VX status indicators

LED Indicator	How it Works
Nav Data	Indicates the type of signal received. <ul style="list-style-type: none"> ● Green – valid avionic data transmission; blinks when receiving ARINC data. ● Blue – valid GPS data transmission; blinks when receiving GPS data. ● Red – no data signal present.
Disc Status	Indicates the status of the DVD player. <ul style="list-style-type: none"> ● Green – a disc is in the DVD player. ● Blinking green – inserting or ejecting a disc in the DVD player. ● Red – DVD read error. ● LED off – no disc in the DVD player.
System Status	Indicates when unit is active. <ul style="list-style-type: none"> ● Green – system is operating normally. ● Red – system error.

➡ NOTICE

If the Nav Data LED is RED, either no data is being received or there is a connection/wiring error.

3.2. Rear Connectors

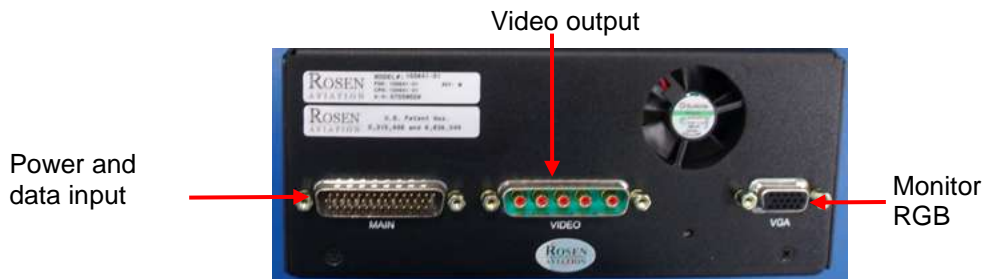


Figure 4 RosenView VX rear panel view

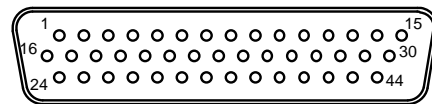
3.2.1. J1 Main Interface Connector Input

Note: The following connector inputs are for reference only. For the latest pinout information, see the Outline and Installation drawing.

Connector Type: DB44-HD Male

Rosen Connector Kit: 0300-038 (included)

Pin #	Signal
1	28V return
2	ARINC-429 in B1
3	ARINC-429 in GND
4	N/ ARINC-429 in B2
5	RS-232 RX1 (Control panel)
6	RS-232 RX2 (GPS)
7	RS-232 2 (GND)
8	Discrete Input 2 (future development)
9	Volume Up Discrete Output [†]
10	Aux1 Audio L Low In
11	Aux1 Audio R Low In
12	Aux2 Audio L Low In
13	Aux2 Audio R Low In
14	DVD Audio L Out
15	DVD Audio R Out
16	28V In
17	NC
18	ARINC-429 In A1
19	ARINC-429 2 GND
20	ARINC-429 In A2
21	RS-232 TX1 (Control panel)
22	RS-232 1 GND
23	GND



Rear view of RosenView VX Main Connector

J1 Main Interface Connector Type: DB44-HD Male cont.

24	Audio Mute/Video Pause Discrete input
25	Volume Down Discrete Output [†]
26	Aux1 Audio L High In
27	Aux1 Audio R High In
28	Aux2 Audio L High In
29	Aux2 Audio R High In
30	DVD Audio GND
31	IR 5V Out*
32	IR In**
33	IR GND
34	GND
35	Source Select 1 Discrete In
36	Source Select 2 Discrete In
37	NC
38	Switched 1 Audio L Out
39	Switched 1 GND
40	Switched 1 Audio R Out
41	Switched 2 Audio L Out
42	Switched 2 GND
43	Switched 2 Audio R Out
44	NC

Notes:

*+5V Out is usually connected to an external IR receiver module, 100mA max.

**Do not connect an un-modulated IR receiver such as a pin diode from an IR repeater.

Contact Rosen for custom configurations of unassigned pins.

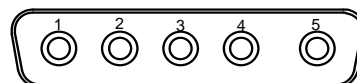
[†]Use these discrete outputs to control the volume of an audio amplifier with discrete volume control capability.

3.2.2. J2 Video Connector Input

Connector Type: 5W5 male

**Rosen Connector Kit: 0300-038
(included)**

Pin #	Signal
1	Moving Map Composite
2	DVD Composite Output
3	Switched 1 Composite Output
4	Switched 2 Composite Output
5	AUX 1 Composite Input



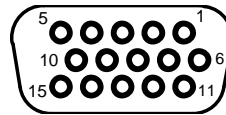
Rear view of J2 Video Connector

3.2.3. J3 - Analog RGB – 15-pin VGA

Connector Type: 15-pin high-density VGA (female)

**Rosen Connector Kit: 0300-026
(included)**

Pin #	Signal
1	Red Signal
2	Green Signal
3	Blue Signal
4	NC
5	GND
6	GND (Red return)
7	GND (Green return)
8	GND (Blue return)
9	NC
10	GND (Sync return)
11	NC
12	DDDA
13	HSYNC
14	VSYNC
15	DDCK



Rear view of RosenView VX VGA Connector




3.3. VX Map Screen – Optional Remote



The RosenView VX provides a standard line-level audio output. The audio outputs are designed to integrate with an audio or headphone amplifier; the audio output is not adjustable in the RosenView VX.












With the optional remote control, you can control the map and source select of the output by touching the remote control's screen. The RosenView VX uses two touch screens: VX Map and VX DVD. Touch either button on the screen to select which device to control. Press the device tabs or hard buttons beneath them to switch keypad screens.

Table 4 VX Map remote control screen buttons

Button	How it Works
Mode	Opens a menu to select map viewing options. When the menu is open, press Mode again to navigate the menu. Allow it to timeout to accept the selection. Where mode was last is what you are selecting.
	Pans the map view north, south, west, or east.
OK	Centers the map view on the aircraft's location.
+	Zooms in on a map view. (Zoom times out after a pre-set time.)
-	Zooms out on a map view. (Zoom times out after a pre-set time.)
	Source Select 1 switches the output on display 1 — map, DVD, or auxiliary device.
	Source Select 2 switches the output on display 2 — map, DVD, or auxiliary device.

3.4. VX DVD Screen – Optional Remote

Table 5 VX DVD remote control screen buttons

Button	How it Works
Eject 	Press once to eject or insert a disc. Allow the player time to eject the disc before pressing eject again.
Menu	Accesses the DVD menu or the DVD player's setup menu if no disc is inserted.
	Navigates through a DVD's menu options.
Play 	Plays the DVD.
Pause 	Pauses the DVD.
Stop 	Stops the DVD.
Previous 	Reverses to previous chapter.
Fast Rewind 	Moves left in a menu. Hold in while a disc is playing to "rewind." Continue to hold for different rewind speeds.
Fast Forward 	Moves right in a menu, or hold in while a disc is playing to "fast forward." Continue to hold for different fast forward speeds.
Next 	Advances to next chapter forward.
Enter	Plays the menu option you select on the DVD.
	Source Select 1 switches the output on display 1 — map, DVD, or auxiliary device.
	Source Select 2 switches the output on display 2 — map, DVD, or auxiliary device.

4. SYSTEM CONNECTIONS

There are several ways to connect the RosenView VX to an aircraft's data systems—either with one of two ARINC-429 inputs or an RS-232 (GPS) input.

The 429 buses can be either low- or high-speed buses (the bus speed is auto-detected). The RS-232 bus speed will auto-detect between 1200 to 9600 baud.

The labels on the ARINC bus are described below:

Data	ARINC Label
UTC Time	125
GMT Time	150
Barro Corrected Altitude	204
Static Air Temp	213
Date	260
Present Position Latitude	310
Present Position Longitude	311
Ground Speed	312
Ground Track	313
True Heading	314
Wind Speed	315
Wind Angle	316
Distance To Destination	351
Time to Destination	352
Destination Local Time	
Offset	353
Destination Airport ID 1*	365
Destination Airport ID 2*	366/364
Equipment ID	371
GAMA Flight Plan	
Data Record Header	74
Active Wpt From/To	75
Record Checksum	113
Wpt Mess. Chars 7-9	301
Wpt Mess. Chars 10-12	302
Waypoint Type	303
Wpt Mess Chars 1-3	304**
Wpt Mess Chars 4-6	305**
Wpt Latitude	306
Wpt Longitude	307

* Rockwell Collins' Proline 21 only

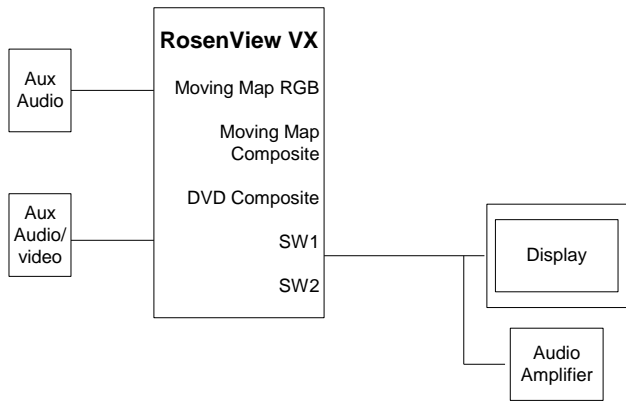
** Rockwell Collins' Proline series

To achieve at least basic operation, labels 125 or 150, 204, 260, 310, 311, 312, and 313 are necessary. Additional labels will provide more information, for example Destination Airport, Outside Air temperature, etc., but they will not be shown if they are not supplied.

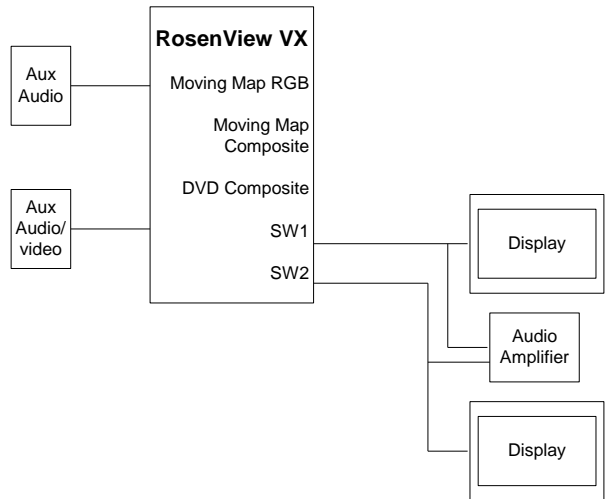
4.1. Audio/Video Connection Diagrams

The RosenView VX Combo will output moving map and DVD content concurrently. The following connection diagrams illustrate different ways to configure the unit's connections to create a complete cabin entertainment system or integrate the unit into an existing system.

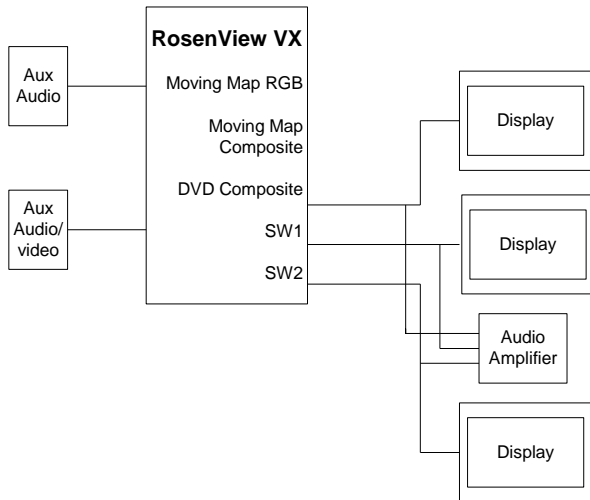
Using RosenView VX as audio/video switching -- one switched display



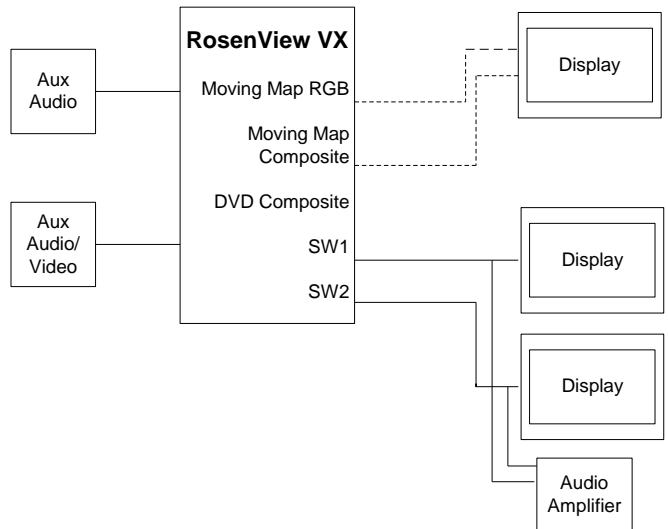
Using RosenView VX as audio/video switching -- two switched displays



Using RosenView VX as audio/video switching --
 • two switched displays
 • one DVD only

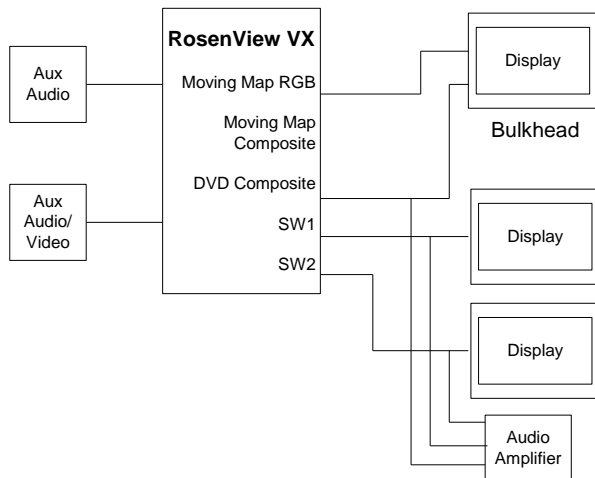


Using RosenView VX as audio/video switching --
 • two switched displays
 • one moving map (composite or RGB)



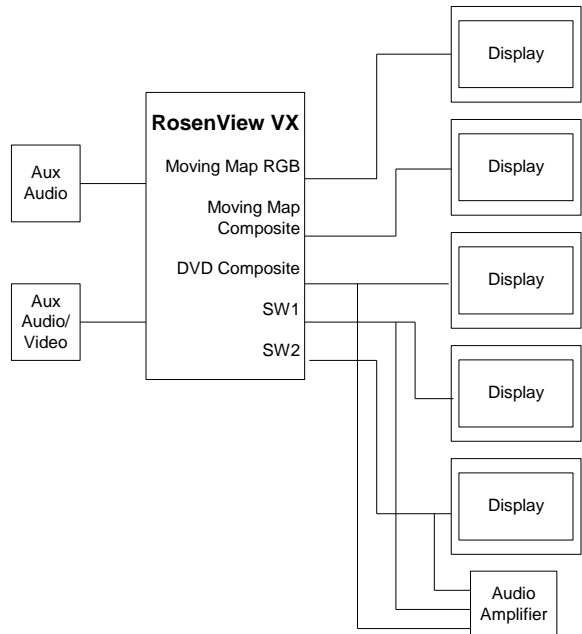
Using RosenView VX as audio/video switching --

- two switched displays
- one bulkhead (DVD composite/map RGB display switched)

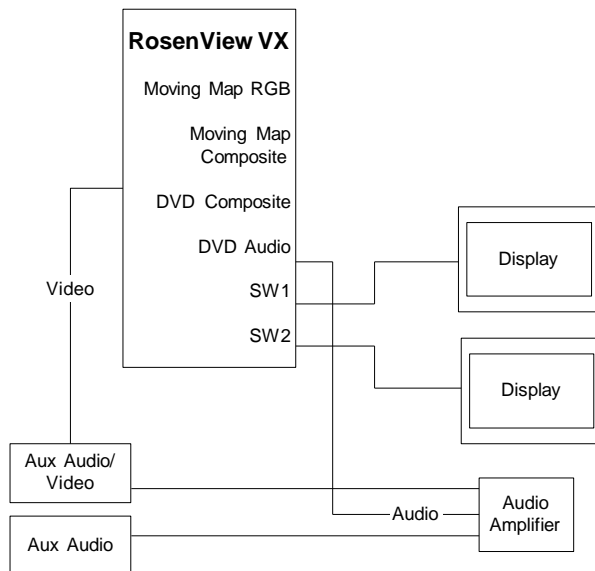


Using RosenView VX as audio/video switching --

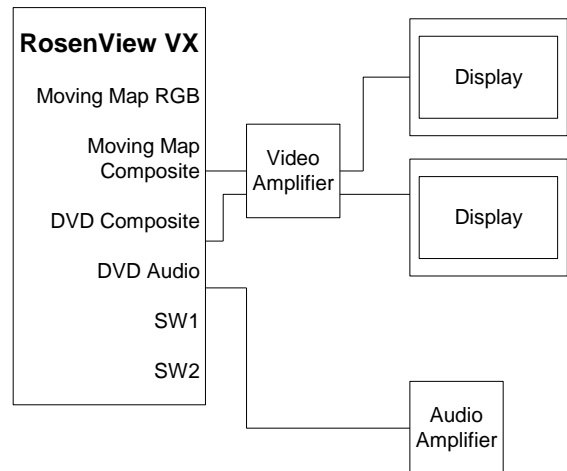
- two switched displays
- one DVD dedicated
- one moving map composite (dedicated)
- one moving map RGB (dedicated)



Using RosenView VX as video switching only



Using RosenView VX with a video amplifier used for switching



4.2. Moving Map Connection Options

Option 1

The best option is to connect to the ARINC-429 bus from the FMS or bus concentrator that contains the labels shown previously. This can be connected to either of the ARINC-429 inputs.

Option 2

Connect two different 429 buses. For example, connect to your GPS for most information, and to another bus (airdata computer) to get the additional information.

Option 3

Connect to a NMEA-183 GPS RS-232 output from a GPS unit. This will yield less information since some of the GPS units do not output route information with this, and many do not output altitude.

Option 4

Connect to one or two ARINC-429 buses, and then connect to an RS-232 output from an airdata computer or GPS (aviation RS-232 format) to get altitude and waypoint information.

With ARINC-429 connected, RosenView VX will always try to use the data there first, and then it will look to the RS-232 connection if connected. Some GPS's output altitude in the type 1 (non-NMEA) information string, but not on their ARINC bus.

Option 5

Connect the RS-232 input to a NMEA-183, ARNAV, or Shadin output from a GPS or other instrument outputting this type of information.

4.3. Acceptable Input Formats for RS-232

4.3.1. NMEA – 183

The following information is an example of NMEA – 183:

```
$GPRTE,2,1,c,0,PBRCPK,PBRTO,PTELGR,PPLAND,PYAMBU,PPFAIR,PWARRN,  
PMORTL,PLISMR*73  
$GPRTE,2,2,c,0,PCRESY,GYRIE,GCORIO,GWERR,GWESTG,7FED*34
```

\$GPRTE	Route info
C	Number of sentences in sequence
C	Sentence number
c/w - 'c'	Current active route, 'w' = waypoint list starts with destination waypoint
	Name or number of the active route onwards
	Names of waypoints en route

4.3.2. Type 1 Format (ARNAV format)

The Type 1 output sentences shall have the following general format:

Id	item designator (single ASCII alphabetic character)
Dddd	item data (1 to 10 printable ASCII characters)
CR	ASCII carriage return character (0D hex)
LF	ASCII line feed character (0A hex)

4.3.3. Shadin Formats (Altitude Sentence, Airdata Z, Airdata G, Airdata S)

Only Shadin S format has most of the data required to run the RosenView VX. Formats Z and G do not have positional information, and none of the Shadin formats have destination information.

4.4. Control Inputs



For controller information, access www.rosenaviation.com. Click on the **Products** tab, and then select **Accessories** → **Ext. Controllers**. Scroll down to view the RosenView external controllers.

The RosenView VX IR receiver uses NEC-style 32-bit encoding. In this encoding format, there are 16 bits of actual information transmitted as part of a 32-bit frame. The 16 bits of information are divided into two parts: an 8-bit device code and an 8-bit function code.

Each 8-bit portion of the transmitted code is followed by the same code with each bit inverted. Most IR remotes using this format will have the same device code for each button on the remote, and a unique function code for each button.

Listed below are the default codes in hexadecimal format used with RosenView VX:

Table 6 Default codes used with the RosenView VX.

Control	Device Code	Function Code
Enter Button:	0xE7	0x0D
Pan Up:	0xE7	0x08
Pan Down:	0xE7	0x09
Pan Left:	0xE7	0x11
Pan Right:	0xE7	0x10
Zoom In:	0xE7	0x52
Zoom Out:	0xE7	0x40

As an example, the actual transmission of the Enter button would consist of the following bit sequence:

Table 7 Enter button bit sequence

Lead In Period	Device Code	Inverted Device Code	Function Code	Inverted Function Code
→	d0 d1 d2 d3 d4 d5 d6 d7 1 1 1 0 0 1 1 1	d0 d1 d2 d3 d4 d5 d6 d7 0 0 0 1 1 0 0 0	f0 f1 f2 f3 f4 f5 f6 f7 0 0 0 0 1 0 1 1	f0 f1 f2 f3 f4 f5 f6 f7 1 1 1 1 0 1 0 0

Note: Within each byte transmitted, the least significant bit is transmitted first.

If you need assistance in configuring a universal remote control to work with the RosenView VX, please contact Rosen Aviation at 541.342.3802.

4.5. Audio/Video Outputs

RosenView VX has three available video output formats and one stereo audio output.

1. **Analog RGB Moving Map Output:** Analog RGB connects to the 15-pin high density connector. Analog RGB will produce the best results when using displays sized 10” or larger.

Note: When used with Rosen Aviation bulkhead displays, a cabin controller can switch between composite and analog RGB via the source input on the display’s external switch controller’s connector. See the applicable display’s technical manual for specific source input toggle information.

2. The RosenView VX resolution is set to 1024x768 by default when shipped from the factory. The Analog RGB resolution can be changed to either 640x480 or 800x600 by inserting a USB drive into the RosenView VX that contains a script to change the resolution. For downloads and instructions about how to run the script, visit the Rosen Aviation website (www.rosenaviation.com) and select **Products**→**Source Equipment**→**RosenView VX**.
3. **Composite Moving Map Video Output:** There is one fixed composite moving map output.
4. **Composite DVD Video Output:** There is one fixed composite video output.
5. **Switched Audio/Video Outputs:** Two separate switched outputs can individually toggle between AUX inputs, DVD, and the moving map. The output of each switched output will be as shown in Table 8.

Table 8 Switched outputs

Select	Video	Audio
0	Moving Map	Aux Audio 2
1	DVD Video	DVD Audio
2	AUX Video 1	AUX Audio 1

5. TECHNICAL REFERENCES AND SUPPORT



Refer to the *Outline and Installation Drawing* (P/N **0604-001-CD** – North America or P/N **0604-002-CD** – Western Europe) for pinout specifications on your product CD or at www.rosenaviation.com.

From the [Rosen Aviation](http://www.rosenaviation.com) home page, select **Products** → **Source Equipment** → **RosenView VX**, then click the appropriate **.PDF** under Technical Drawings.

Table 9 Technical References

Document Title	Part Number	Location
Remote Control, Color Display	0500-010	www.rosenaviation.com
7-Button Controller	0300-407	www.rosenaviation.com

5.1. Troubleshooting

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

Note: Always use an oscilloscope to verify the video signal and a multimeter to verify voltages. Check actual results against the requirements described in this manual.

Table 10 Troubleshooting tips and solutions

Problem	Possible Solutions
No video	<ul style="list-style-type: none"> Verify that a signal is reaching the display using an oscilloscope or another display. Verify that the display is turned on. Verify that the pinout is correct.
Screen is black	<ul style="list-style-type: none"> Verify that the display is receiving power. Verify that the pinout is correct. Verify all connections between the source and the display.
Image flickers	<ul style="list-style-type: none"> Verify that the signal cable is secure. Verify that the vertical frame frequency is 75 HZ or less.
Image is distorted	<ul style="list-style-type: none"> Verify pinouts. Verify that a signal is reaching the display using an oscilloscope or another display. Examine the display for pinched or damaged cables.
Nav Data LED is RED	<ul style="list-style-type: none"> No data is being received or there is a connection/wiring error.
Nav Data is not being displayed	<ul style="list-style-type: none"> Check ARINC or GPS input data/wiring.
IR control not working	<ul style="list-style-type: none"> Verify that IR control is enabled. Check IR wiring and pinout (external only).

5.1.1. Test Mode

1. To enter test mode, remove 28V power from RosenView VX.
2. While pressing and holding in the **Reset** button, turn on the 28V power supply.
3. Continue to hold in the **Reset** button for a couple seconds and then release.
4. After booting up, Test Mode will run on the monitor.

The Nav Data LED is amber when RosenView VX is in Test Mode. This mode will only work if there is no input data (ARINC or RS-232 GPS data).

5.1.2. Emergency Disc Removal



Testing has shown that use of discs with paper labels may jam and potentially be irretrievable from the DVD player.

Industry research indicates that use of discs with paper labels may render discs unreadable.

Emergency Eject Feature: If a disc becomes jammed in the player, shut off DVD power for an hour, then turn it on and press the eject button. If the disc is still stuck, press and hold the eject button for ten seconds and the eject motor will be forced on for 5 seconds.

If the emergency eject feature fails to eject the disk, contact Rosen Aviation Technical Support at 541.342.3802 and request the disc removal tool (P/N **100690**) and instruction (P/N **100691**).

5.1.3. Disc Compatibility Issue

A problem with Sony's copy-protection system on new DVD movies causes some DVD players, including the RosenView VX, to not play the disc.

Sony Pictures Home Entertainment announced that a recent update of their ARccOS copy-protection system onto approximately 20 new movie titles is responsible for the disc incompatibility. Since then, the studio has corrected the problem by updating the ARccOS system and re-issuing these DVDs. Sony's customer service department will replace affected DVDs for customers who experience problems.

Sony Pictures Home Entertainment will replace DVDs to customers who have had problems. Please contact Sony's customer service at 800-860-2878, Monday-Friday between 8:00 a.m.-8:00 p.m. CDT, to arrange for a replacement disc free of charge.

5.2. DO-160E Qualifications

Table 11 DO 160E test criteria to which we test the RosenView VX

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	A
Power Input	16.0	Z,B
Voltage Spike	17.0	B
Audio Frequency Conducted Susceptibility – Power Inputs	18.0	Z
Induced Signal Susceptibility	19.0	AC
Radio Frequency Susceptibility (Radiated and Conducted)	20.0	TT
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	26.0	C

5.3. Specifications

Table 12 RosenView VX specifications

Mechanical packaging: Weight	3.5 lbs
Power Requirements	28V DC
Audio/Video Outputs: DVD Video Out DVD Audio Out Auxiliary Video In Auxiliary Audio Line In	1V peak-to-peak, 75 ohms 1V RMS (0db FS), 600 ohms 1V p-p, 75 ohms 1V RMS nominal, 4.7k ohms; Max Input Voltage 5.8V p-p
Switched Video Out	1V p-p, 75 ohms; unity gain from auxiliary video input
Switched Audio Out	Unity gain from auxiliary audio input is 600 ohms
Operating Temperature	0°C - 50°C
Warranty	2 year

5.4. Technical Support

If you need assistance in configuring a RosenView VX, please contact Rosen Aviation at 541.342.3802 or 888.668.4955.

6. DEFINITIONS

- AC** Alternating Current – voltage from an aircraft alternator.
- ARINC** Aeronautical Radio, Incorporated. Data bus standard for transmission of avionics data on a differential serial bus.
- ARNAV** Alternate format for GPS data, where each ASCII sentence is preceded with a hex value of 0x02.
- CVBS** Composite Video Base-band Signal.
- DC** Direct Current – voltage from an aircraft battery or generator.
- DVI** Digital Visual Interface. A video interface standard designed to maximize the visual quality of digital display devices such as LCDs.
- EOL** End of Life.
- FMS** Flight Management System.
- GPS** Global Positioning System.
- HD** Hard Drive.
- HDCP** High-bandwidth Digital Content Protection.

- IR** Infrared.
- LCD** Liquid Crystal Display.
- LED** Light-emitting Diode.
- Macrovision** An analog video-scrambling technique (ACP-DVD) that is required on all commercial content-playing DVD units.
- MTBF** Mean Time Between Failure.
- NMEA** National Marine Electronics Association.
- 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 worldwide.
- 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).
- 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.
- Vpp** Volts peak-to-peak.
- YPbPr** Analog component video consisting of three inputs with one brightness (Y) and two color (Pb, Pr) channels.

7. REVISION HISTORY

Revision	Date	Revision Description	EC #
A	07/02/07	New release	07052
B	08/29/07	Update J1 Connector pinouts 24 & 37	07348
C	01/14/08	Update mounting screw information and volume control notes	07465
D	9/16/08	Add volume control with audio amp and change screen resolution	08345