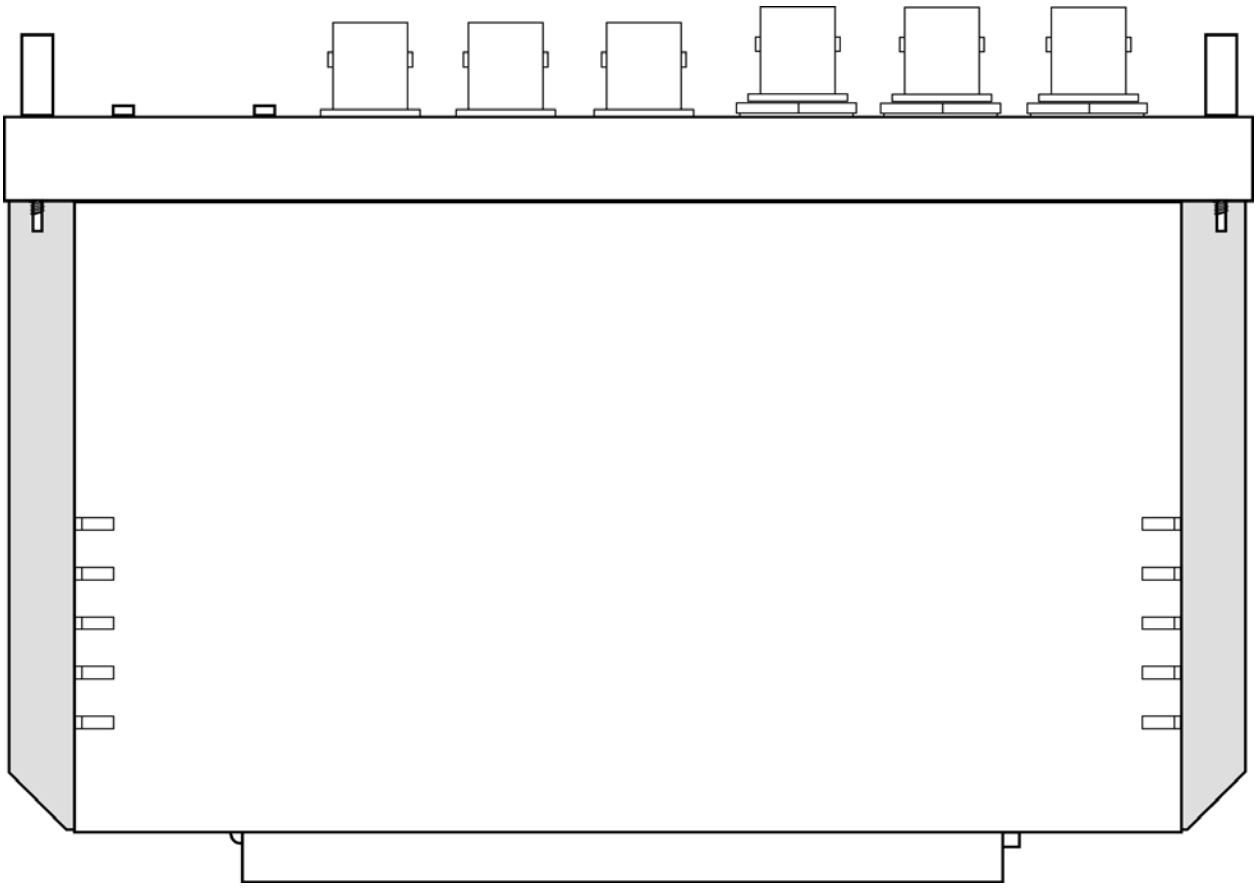
Ross Video Limited

DAC-9213-PVM

Multi-Definition SDI to Analog Component Converter for Sony Monitors

User Manual



Ross Part Number: 9213PVMD-004

Issue: 02B

Cool Practical Technology™

DAC-9213-PVM • Multi-Definition SDI to Analog Component Converter for Sony Monitors User Manual

- Ross Part Number: **9213PVMD-004**
- Document Issue: **02B**
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Trademarks

Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, refer to the "Important Safety Instructions" listed below so as to avoid personnel injury and to prevent product damage.

Products may require specific equipment, and /or installation procedures be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these Specific requirements.

Symbol Meanings

Warning

This symbol with the word **"Warning"** within the equipment manual indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

Notice

This symbol with the word "**Notice**" within the equipment manual indicates a situation, which if not avoided, may result in major or minor equipment damage or a situation, which could place the equipment in a non-compliant operating state.

ESD Suscep-tibility

This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.

Important Safety Instructions

Warning

Read these instructions.

Keep these instructions.

Heed all warning.

Follow all instructions.

The safe operation of this product requires that a protective earth connection be provided. A grounding conductor in the equipment's supply cord provides this protective earth. To reduce the risk of electrical shock to the operator and service personnel, this ground conductor must be connected to an earthed ground.

Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit in to your outlet, consult an electrician for replacement of the obsolete outlet. Protect the power cord from being walked on or pinching particularly at plugs, convenience receptacles, and point where they exit from the apparatus.

Use only power cords specified for this product and certified for the country of use. Refer to the Product Power Cord Requirement Section that follows.

Indoor Use: “WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE”

Do not block ventilation openings. Install in accordance with manufacturer’s instructions.

Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Do not use this apparatus near water.

Only use attachments/accessories specified by the manufacturer.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Clean only with a dry cloth.

To avoid electrical shock, disconnect the A/C power cord before any servicing.

Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug damage, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Power Cord and Supply Grounding Requirements

North American Line Voltages 100 - 120 Volts

This product is supplied with certified 10A/125V SVT type supply cords.

Conductors are color coded white (neutral), black (line) and green or green/yellow (ground).

Operation of this equipment at line voltages exceeding 130V requires that an alternative supply cord with appropriate voltage and current ratings be used

International Line Voltages 200 - 240 Volts

This product has been designed for use with certified IEC 320- C13 10A/250V - **H03 VV-F3G 1.00mm^2** type line cord.

International product orders are supplied with a certified 10A/250V line cords, utilizing a molded 3-pin IEC 320-C13 type connector at one end and stripped conductors on the other. One line cord is provided. Conductors are CEE color coded; blue (neutral), brown (line), and green/yellow (ground).

Installation by a qualified Electrician, of an appropriately approved A/C wall plug certified for the country of use, is required.

Alternatively, other IEC 320 C-13 type power cords may be used, provided that they meet the necessary safety certification requirements for the country in which they are to be used. Refer to the correctly specified line cord above.

EMC Notices

US FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.


Notice

Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de classe "A" est conforme à la norme NMB-003 du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002** and found to comply with the limits for a Class A Digital device.


Notice

This is a Class A product. In domestic environments this product may cause radio interference in which case the user may have to take adequate measures.

Maintenance/User Serviceable Parts

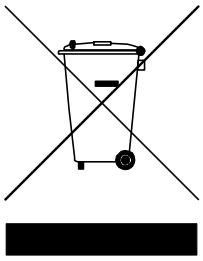
Routine maintenance to this GearLite product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "Contact Us" section on the last page of this manual. All RossGear GearLite products are covered by a generous 3-year warranty and will be repaired without charge for materials or labor within this period. See the "Warranty and Repair Policy" section in this manual for details.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

Contents

Introduction

In This Chapter

This chapter contains the following sections:

- Overview
- Functional Block Diagrams
- Features

Overview

The DAC-9213-PVM Multi-definition SDI to Analog Component Converter for Sony[1] Monitors is a high quality signal conversion solution for High Definition (HD) and Standard Definition (SD) SDI signals and part of a growing family of GearLite Multi-Definition (MD) self-contained, small brick format modules.

The DAC-9213-PVM is designed to fit into an HD-compatible Sony monitor's adapter input slot. The DAC-9213-PVM provides a monitoring-quality MD-SDI component monitoring solution in a small, stand-alone package.

The DAC-9213-PVM addresses program stream imaging requirements by converting 10-bit MD-SDI video to analog component video (multiple formats). The DAC-9213-PVM has a full 10-bit data path, with 11-bit data processing.

The front panel of the DAC-9213-PVM chassis provides power and status LEDs for visual reference. In addition, user-selectable switch settings are available to select the preferred mode of operation.

The DAC-9213-PVM provides analog conversion of 525i, 625i, 720p, 1080i, and 1080p SDI signals (SMPTE 259M-C and 292M). The DAC-9213-PVM also has two reclocked SDI outputs. Special measures have been taken to ensure excellent return loss at both input and output. This ensures error-free performance with short or long cables.

[1] Sony is a trademark of Sony Corporation

Functional Block Diagram

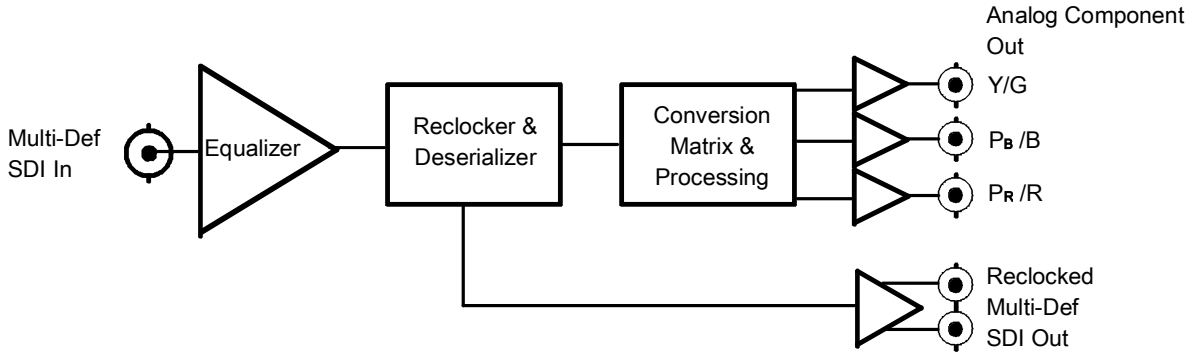


Figure 1. Simplified Block Diagram of DAC-9213-PVM Functions

Features

The DAC-9213-PVM Multi-Definition SDI to Analog Component Converter for Sony Monitors has the following features:

- High Definition and Standard Definition SDI to analog component conversion
- 2 reclocked SDI outputs
- 10-bit DAC resolution
- 11-bit data processing
- Automatic input cable equalization >300m (>984 ft.) of Belden 1694A at SD-SDI rates (270 Mb/s)
- Automatic input cable equalization >100m (>328 ft.) of Belden 1694A at HD-SDI rates (1.485 Gb/s)
- Analog component outputs can be set for $Y/P_B/P_R$ or RGB
- LEDs for power and status
- Sony monitor input slot compatible form factor
- 3-year warranty

Installation

In This Chapter

This chapter contains the following sections:

- Static Discharge
- Unpacking
- Installation

Static Discharge

Whenever handling the DAC-9213-PVM Multi-Definition SDI to Analog Component Converter for Sony Monitors and other related equipment, please observe all static discharge precautions as described in the following note:

Caution

Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments, such as carpeted areas, and when wearing synthetic fiber clothing. Always exercise proper grounding precautions when working on circuit boards and related equipment.

Unpacking

Unpack each DAC-9213-PVM unit you received from the shipping container and check the contents against the packing list to ensure that all items are included. If any items are missing or damaged, contact your sales representative or Ross Video directly.

Installation

The DAC-9213-PVM is compatible with all Sony monitors which can accept Sony model **BKM-120D** SDI and **BKM-142HD** HD-SDI input modules.

Compatible Monitors

The following monitor models accept the DAC-9213-PVM:

Model	Description
BVM-D9H1U / 5U	9”, 4x3, HD Capable
BVM-D14H1U / 5U	14”, 4x3, HD Capable
BVM-14L5/1	14”, 4x3, HD Capable
BVM-20L5/1	20”, 4x3, HD Capable
PVM-14L5/1	14”, 4x3, HD Capable
PVM-20L5/1	20”, 4x3, HD Capable

Procedure

Use the following steps to install the DAC-9213-PVM module.

1. Power off the monitor.
2. On the rear of the monitor, locate the adapter input slot(s).
3. Using your fingers or a slot screwdriver, unscrew the thumbscrews at the top and bottom of the leftmost input slot cover.
4. Remove the cover and store it in a convenient location.
5. Insert the DAC-9213-PVM in the leftmost slot until the edge connector on the rear of the module seats firmly in the monitor’s connector socket.

Note

> If any other SONY option modules are installed, THEY must be installed from the left, and THEN the DAC-9213-PVM is installed.
>
> Sony monitors will only recognize option modules from the left towards the right. If the Sony finds an option slot empty, it will not recognize any other Sony modules to the RIGHT of the empty slot.

6. When the DAC-9213-PVM is seated level and flush with the monitor’s rear surface, tighten the thumbscrews to secure the module.

Figure 2. DAC-9213-PVM installed in Sony PVM/BVM monitor - rear view

Setup and Operation

In This Chapter

This section provides details of all operating modes and features.

The following topics are discussed:

- Cable Connections
- User Controls
- Setup and Configuration
- Function Setup and Configuration Menu Table
- Function Menu Notes

Note

Throughout this section, the term SDI is used universally to indicate either SD-SDI or HD-SDI signals.

Cable Connections

Input Cabling

Connect the system signal to the SDI IN BNC.

Output Cabling

Connect the reclocked output BNCs to other devices as required. It is not necessary to terminate unused outputs.

Using the supplied **CBL-3BNC-MM, 2M** 3BNC male to 3BNC male two meter cable or equivalent, connect the component video output from the DAC-9213-PVM to the corresponding component analog monitor input according to the designations indicated on the chassis faceplate and the monitor's input BNCs. See Figure 3.

Note

The Sony monitor's component input must be selected, and the monitor must be set up for the same format as the DAC-9213-PVM'S output video format.

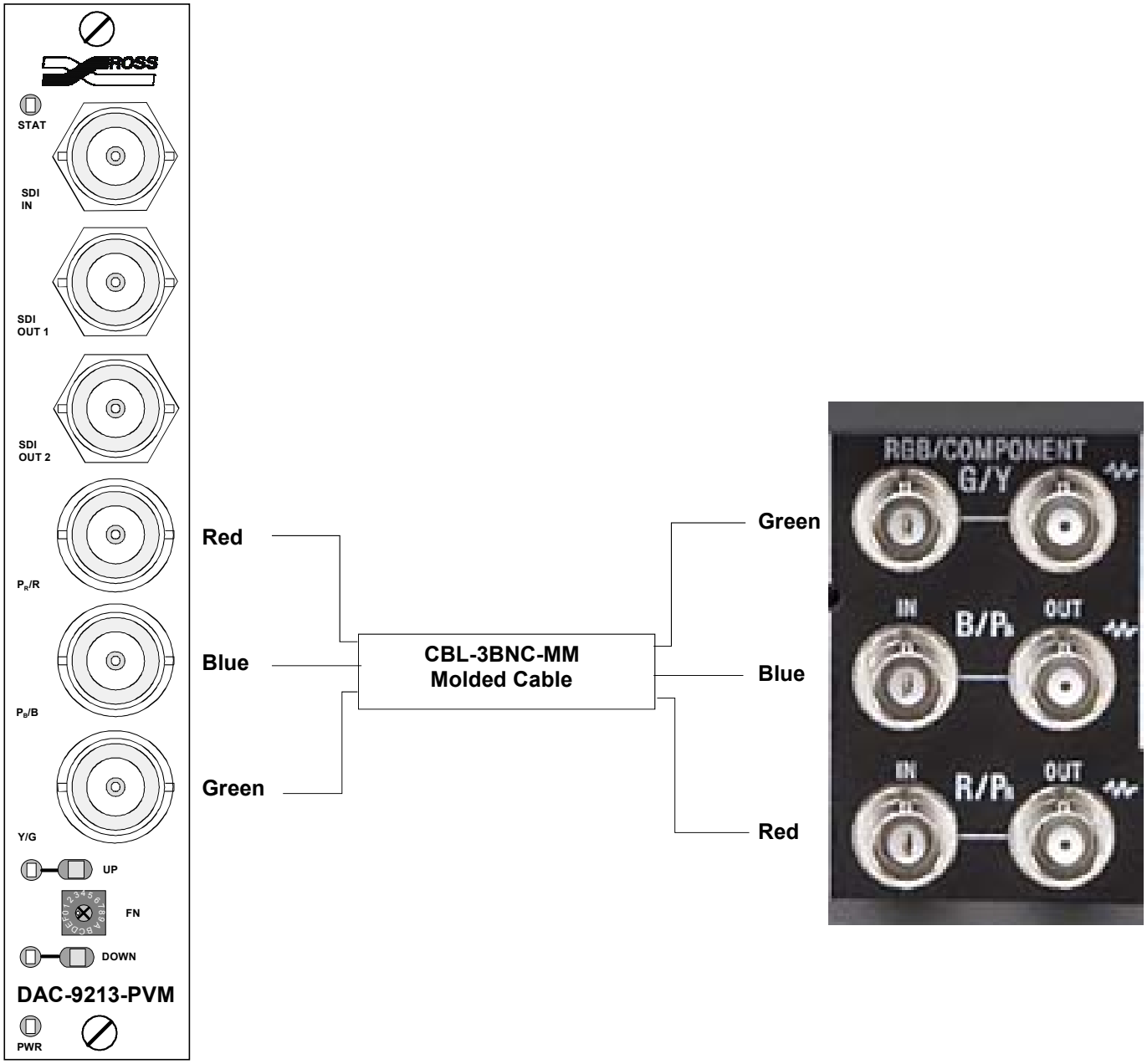


Figure 3. DAC-9213-PVM/BVM Cable Connections and User Controls

User Controls

The DAC-9213-PVM has the following front edge user controls:

- Status LED (**STAT**)
- Function Select switch (**FN**)
- Up and Down Selector buttons and LEDs
- Power LED (**PWR**)

Status and Selection LEDs

The front panel of the module has four LEDs (STAT, UP, DOWN, PWR) that display the status of the input signal, and indicate menu function and configuration selections. The LED displays are described in the following table:

Table 1. Selection and Status LED Descriptions

LED	Reference	Function
Status (Green)	On	LED will be *continually lit* when a valid* input signal is present and no anomalies have been detected. The unit is functioning normally.
	Flashing	When LED is flashing, there is a problem between the SDI input standard and the selected input standard (menu item 1).
	Off	When off, this LED indicates that a loss of power has occurred.
Up (Yellow)	Function Menu	For menu items that have **multiple selections**, the LED will be in a state as indicated in the **Function Setup and Configuration Menu**.
Down (Yellow)	Function Menu	For menu items that have **multiple selections**, the LED will be in a state as indicated in the **Function Setup and Configuration Menu**.
Power (Green)	On	When continuously lit, this LED indicates that the unit has power.
	Off	When off, this LED indicates that a loss of power has occurred.

* A valid signal is defined as any SD or HD SDI signal standard, input into the DAC-9213-PVM, which matches the setting of the **Video Standard** that has been selected in the Function Setup and Configuration Menu. In other words, if the converter is set for 525i video, then only a 525i video signal input will cause the Status LED to be lit.
Any other analog, SD or HD SDI signal, of a different standard (625i, 1080i, etc.), that is input into the converter will be invalid and the Status LED will be flashing.

Function Selection Switch and Down/Up Buttons

The Function Select switch is a 16-position rotary switch used to select specific functions. The Function Select switch works in conjunction with the Down and Up buttons.

First, the function category is selected with the rotary switch, and then the Down and Up buttons are used to select modes or level settings within that function category. The following Setup and Configuration section provides complete details on the available functions and their options.

Setup and Configuration

Use the Function Select switch and the Down and Up buttons to configure the DAC-9213-PVM to convert SDI signals to analog component. Settings are described in Table 2.

General Operating Rules

Please note the following important operating rules for the DAC-9213-PVM:

- The unit is properly powered.
- The unit always powers-up in the last configuration used.

Function Selection

The factory-set default modes of operation are:

- Input Video Standard = Auto Detect.
- Output Video Format = YP_BP_R, N10 (no setup)

In general only the Output Video Format needs to be set as desired. The default Auto-Detect input setting is extremely versatile. However, fixed mode settings are provided for user convenience.

Function Setup and Configuration Menu Table

A single press of the Down and Up buttons is a “momentary” click of the button unless indicated by “(h)”.

Table Legend

+	Press Up button from default position
-	Press Down button from default position
(h)	Hold Up or Down button for 2 - 3 seconds for faster adjustment or special function
*	Factory Default state
○	Lit LED display
●	Unlit LED display
☼	Flashing LED display

Table 2. Function Setup and Configuration Menu

Function Selection Switch Position	Function Menu	Up/Down Buttons Mode Selection Menu See Table Legend for symbol meanings		LED Display See Table Legend for symbol meanings	
				Down (yellow)	Up (yellow)
0	**Operation**	Buttons perform no action		•	•
1	**Input Video Standard**	525i	+	•	☼
		625i	+	○	☼
		720p	+	•	○
		1080p/23.98sf, 1080p/24sf	+	○	○
		1080i/50	+	○	•
		1080i/59.94, 1080i/60	+	☼	○
		Auto detect *		☼	•
2	**Output Video Format**	RGB (NTSC Related)	+	•	☼
		RGB (MII)	+	○	☼
		RGB N10 (No Setup)	+	☼	○
		$Y/P_B/P_R$ N10 (No Setup) *		☼	•
3	**Output Video Level**	Max Gain	+ (h)	•	☼
		Gain between Unity and Max	+ (h)	•	○
		Unity *	± (h)	○	○
		Gain between Min and Unity	- (h)	○	•
		Min Gain	- (h)	☼	•
4	**Force Mono** (See Function Menu Notes)	On	+	•	☼
		Off *		☼	•
5	**Setup On** (See Function Menu Notes)	On*		•	☼
		Off	-	☼	•
6	**Sync on All**	On	+	•	☼
		Off *		☼	•
7	**Disable Auto Mute**	On	+	•	☼
		Off *		☼	•
8	**N/A**				
9	**N/A**				
A	**N/A**				

Function Selection Switch Position	Function Menu	Up/Down Buttons Mode Selection Menu See Table Legend for symbol meanings	LED Display See Table Legend for symbol meanings	
			Down (yellow)	Up (yellow)
B	**N/A**			
C	**N/A**			
D	**N/A**			
E	**N/A**			
F	**Default Set** (See Function Menu Notes)	Reset All User Settings to Factory Default state (Unity) +(h)	See Notes	

Function Menu Notes

Some of the menu items in the Function Setup and Configuration Table are explained here in further detail as follows:

Operation

In this menu position, the Down and Up buttons are disabled.

Input Video Standard

Use this menu item to select the video standard that matches the incoming SDI signal's video standard.

In Auto Detect mode, the module will attempt to detect any of the supported incoming High Definition or Standard Definition SDI video standards. See Table 2 for supported standards. When a supported standard is detected, the appropriate analog output format is selected. If the module is unable to determine the input standard, the Status LED will flash and the module will mute the analog outputs.

Note

If Disable Auto Mute = On with an input/output mismatch, the DAC-9213-PVM will output an invalid analog signal and the Status LED will flash.

Output Video Format

Use this menu to select the output component video format. Please note that not all output formats support all SDI input signal standards. For example, RGB (NTSC Related) is only supported on 525i.

See Table 3 for a complete list of supported formats vs. input standards.

Note

The Sony monitor's component input must be selected, and the monitor must be set up for the same format as the DAC-9213-PVM'S output video format.

Table 3. Supported Formats and Input Standards

Digital Input Standard	Signal	Analog Output Format			
		RGB			YP_BP_R
		SMPTE/ EBU N10	MII	NTSC Related	SMPTE/ EBU N10
525i	Y/G (setup)	0 to 700mV	0 to 700mV (54 to 700mV)	0 to 714mV (54 to 714mV)	0 to 700mV
	P_B/B (setup)	0 to 700mV	0 to 700mV (54 to 700mV)	0 to 714mV (54 to 714mV)	-350mV to +350mV
	P_R/R (setup)	0 to 700mV	0 to 700mV (54 to 700mV)	0 to 714mV (54 to 714mV)	-350mV to +350mV
	Sync	0 to -300mV	0 to -300mV	0 to -286mV	0 to -300mV
625i	Y/G	0 to 700mV			0 to 700mV
	P_BP_R/RB	0 to 700mV			-350mV to +350mV
	Sync	0 to -300mV			0 to -300mV
HD (1080i, 720p)	Y/G	0 to 700mV			0 to 700mV
	P_BP_R/RB	0 to 700mV			-350mV to +350mV
	Sync	-300mV to +300mV			-300mV to +300mV

Output Video Level

Use this menu to adjust the component video output level by up to ± 25%. This setting affects all input standards and output formats. Pressing, or holding, the Up button will increase the output video level on all three analog output signals. Pressing, or holding, the Down button will decrease the output levels. This menu has a 2 button quick default to unity, the default value. Press both Down and Up buttons at the same time and hold for three seconds.

Force Mono

Use this menu to blank the P_B and P_R component output signals. This option has no function in RGB format. Note that if the DAC-9213-PVM is setup in RGB mode, and Force Mono is enabled, then the unit is switched to YP_BP_R mode, the P_B and P_R channels will be blanked (i.e. the unit "remembers" option settings even though they may not affect the current operating mode).

Setup On

Use this menu to control the blanking level of RGB signals in 525i mode only. Setup is only valid in the 525i RGB (MII) and 525i RGB (NTSC Related) output formats.

Sync On All

Use this menu to enable horizontal synchronization pulses (bi-level sync or tri-level sync), on all three RGB signals (Sync On All = On) or just on the Green channel (Sync On All = Off).

Note

This control has no effect on $Y/P_B/P_R$ signals.

Disable Auto Mute

Use this menu to disable automatic muting of the analog outputs when a standard mismatch occurs. When automatic muting is enabled (Disable Auto Mute = Off) the DAC-9213-PVM will automatically mute the analog outputs when the input video standard selected by the user differs from the video standard detected at the SDI input.

Note

If Disable Auto Mute = On with an input/output mismatch, the DAC-9213-PVM will output an invalid analog signal and the Status LED will flash.

Default Set

Use this menu item to reset all user settings to the factory defaults. Holding down the Up button for three seconds will reset the user settings to the default values given in Table 2.

When selecting this option, the state of the Up LED will indicate if any settings are not in their default states. If the Up LED is flashing, it indicates there is at least one user setting that is not in its default state. If the Up LED is lit solid, the user settings are in default state.

Specifications

In This Chapter

This chapter contains the Technical Specifications table.

Technical Specifications

Table 4. DAC-9213-PVM - Technical Specifications

Category	Parameter	Specification
Power	Required Voltage	+6V DC, supplied by Sony monitor
	Current Consumption	<750mA typical
	Total Power	<4.5W typical
Other	Warranty	3-year transferable
	Thermal Environment	20 – 40ºC (68 – 104ºF) non-condensing
Serial Digital Video Input	Number of Inputs	1
	Signal Standards Supported	SMPTE 259M-C (270Mb/s) SMPTE 292M (1.4835 Gb/s, 1.485 Gb/s)
	Signal Formats Supported	SD: 525i/59.94, 525i/60, 625i/50 HD: 720p/59.94, 720p/60, 1080p/23.98sf, 1080p/24sf, 1080i/50, 1080i/59.94, 1080i/60
	Input Impedance	75Ω terminating
	Return Loss	>20dB to 270 MHz >15dB to 1.485 GHz
	Equalization	>300m of Belden 1694A cable @ 270 Mb/s >100m of Belden 1694A cable @ 1.485 Gb/s

Category	Parameter	Specification
Reclocked Serial Digital Video Output	Number of Outputs	2 Reclocked
	Signal Standards Supported	Follows SDI input, SMPTE 259M-C (270Mb/s) SMPTE 292M (1.4835 Gb/s, 1.485 Gb/s)
	Output Impedance	75Ω terminating
	Return Loss	>18dB to 270 MHz >16dB to 1.485 GHz
	Signal Level	800mV ± 10%
	DC Offset	<± 50mV
	Rise & Fall Time	SD: < 700ps typical HD: < 270ps typical
	Overshoot/Undershoot	<10% typical
	Outputs Short Circuit Protected	Yes
Analog Component Output	Number of Outputs	3
	Video	Component Analog Video YP_BP_R or RGB
	Supported Video Levels	YP_BP_R: SMPTE, RGB: SMPTE, MII, Beta
	Output Impedance	75Ω
	Output Return Loss	>45 dB to 6MHz >28 dB to 30MHz
	DC Offset for RGB or Component Video	<± 50mV
	Frequency Response	± 0.5 dB to 20 MHz ± 1.0 dB to 30 MHz
	Group Delay	SD: < 20ns to 6 MHz HD: < 6ns to 30 MHz
	Outputs Short Circuit Protected	Yes
	RMS Noise (unweighted)	SD: < -55 dB, 0 - 6.0 MHz

Specifications are subject to change without notification.

Service Information

In This Chapter

This chapter contains Warranty and Repair Policy information.

Warranty and Repair Policy

The RossGear DAC-9213-PVM is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of **THREE (3)** years from the date of delivery to the customer. In the event that your RossGear DAC-9213-PVM proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this RossGear DAC-9213-PVM has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the THREE (3) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This RossGear DAC-9213-PVM Multi-Definition SDI to Analog Component Converter for Sony Monitors User Manual of our Digital Products line provides all pertinent information for the safe installation and operation of your RossGear Product. Ross Video policy dictates that all repairs to the RossGear DAC-9213-PVM are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your RossGear DAC-9213-PVM, please contact the Ross Video Technical Support Department. (Contact information is supplied at the end of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your RossGear DAC-9213-PVM. If required, a temporary replacement module will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

Ordering Information

In This Chapter

This chapter contains ordering information for the DAC-9213-PVM and related products.

Standard Equipment

- **DAC-9213-PVM**, Multi-Definition SDI to Analog Component Converter for Sony Monitors, including:
  - one User Manual
  - **CBL-3BNC-MM, 2M,** 3BNC male to 3BNC male two meter cable

Optional Equipment

- **9213PVMD-004**, additional User Manual
- **CBL-3BNC-MM, 2M,** 3BNC male to 3BNC male two meter cable
- **CON-BNCF-RCAM,** BNC Female to RCA Male adaptor

Your **DAC-9213-PVM** Multi-Definition SDI to Analog Component Converter for Sony Monitors is part of the GearLite line of the RossGEAR family of products. Ross Video Limited offers a full line of RossGEAR digital terminal equipment including distribution, conversion, monitoring, synchronizers, encoders, decoders, amplifiers, keyers, switchers, as well as analog audio and video products**.**

Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

PHONE	**General Business Office and Technical Support**	613 • 652 • 4886
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