



DAC-9516 User Guide

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1. Provide a Superior Customer Experience
 - offer the best product quality and support
2. Make Cool Practical Technology
 - develop great products that customers love

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If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at solutions@rossvideo.com.



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Ross Video Code of Ethics

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1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

DAC-9516 · User Guide

- Ross Part Number: **9516DR-004-03**
- Release Date: February 28, 2018.

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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

Notice

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Safety Notices

Refer to the “**Important Regulatory and Safety Notices**” document that accompanied your product.

Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed.

Compliance documentation, such as certification or Declaration of Compliance for the product is available upon request by contacting techsupport@rossvideo.com. Please include the product; model number identifiers and serial number and country that compliance information is needed in request.

EMC Notices

United States of America - 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 the user will be required to correct the interference at his 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 device complies with Canadian ICES-003 and part 15 of the FCC Rules.

Cet appareil numérique de la classe “A” est conforme à la norme NMB-003 du Canada.

European Union

This equipment is in compliance with the essential requirements and other relevant provisions established under regulation (EC) No 765/2008 and Decision No 768/2008/EC referred to as the “New Legislative Framework”.



Warning — *This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.*

Australia/New Zealand

This equipment is in compliance with the provisions established under the Radiocommunications Act 1992 and Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2008.

Korea

Class A equipment (Broadcasting and communications service for business use).

This device is a business-use (Class A) EMC-compliant device. The seller and user are advised to be aware of this fact. This device is intended for use in areas outside home.

Type of Equipment	User's Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

International

This equipment has been tested under the requirements of CISPR 22:2008 or CISPR 32:2015 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 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 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.

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Introduction

This guide covers the installation, configuration, and use of the DAC-9516. The following chapters are included:

- “**Introduction**” summarizes the guide and provides important terms, and conventions.
- “**Hardware Overview**” describes the DAC-9516 hardware features and physical connections.
- “**Physical Installation**” provides instructions for the basic physical installation of the DAC-9516 in your system.
- “**Cabling**” provides an overview of connecting external devices to the DAC-9516.
- “**Setup**” provides information on the warranty and repair policy for your DAC-9516.
- “**Technical Specifications**” provides the technical specifications for your DAC-9516.

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Edit** dialog, click **Apply**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the **Language** box, enter **English**.

Referenced Guides

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the ***DAC-9516 User Manual***.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads “**File > Save As**,” you would select the **File** menu and then select **Save As**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

- ★ Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your DAC-9516.

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately,

a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Technical Support:** (+1) 613-652-4886
- **After Hours Emergency:** (+1) 613-349-0006
- **E-mail:** techsupport@rossvideo.com
- **Website:** <http://www.rossvideo.com>

Before You Begin

If you have questions pertaining to the operation of DAC-9516, contact us at the numbers listed in the section “**Contacting Technical Support**” on page 7. Our technical staff is always available for consultation, training, or service.

Overview

The DAC-9516 is AES/EBU to Analog Audio Converter is a a broadcast quality modular product used to convert 20bit or 24bit AES-3id (coaxial) signals to balanced analog audio. The DAC-9516 accepts one AES audio signal at 32, 44.1, or 48kHz sample rates, and provides two copies of stereo (A, B) balanced analog audio.

The DAC-9516 provides reclocking of the AES stream as well as a state of the art 128X over-sampled Delta Sigma Modulator DAC to convert to analog audio. Following the D-A conversion, the analog audio passes through a very high quality reconstruction filter, which assures low distortion and noise. Two identical copies of the signal are output through a 12-pin screw-type audio terminal block connector. The DAC-9516 provides automatic input cable equalization for lengths up to and beyond 610m (2000ft).

The front panel of the DAC-9516 chassis provides the operational controls. Coarse level adjustment headroom switches (18dB or 24dB), and a fine gain adjustment potentiometer (+/-6dB) for each channel, are provided to enable precise matching to your facility's house reference audio level. The DAC-9516 can accommodate any full-scale digital (FSD) level in the -12 to -30dBFS range. Automatic detection of AES/EBU 50/15 s de-emphasis is available for all data rates. In addition, user-selectable settings are available for Emphasis controls. Status indicator LEDs provide visual references for the input signal and power supplied to the module.

The DAC-9516 includes a universal power adapter and line cord suitable for the country of use. Various mounting options are included that enable a wide range of installation choices. The DAC-9516 provides a flexible high quality AES/EBU conversion solution in a compact, stand-alone package. Designed and manufactured to meet the highest quality broadcast industry standards, the DAC-9516 is an ideal, cost effective solution for AES/EBU to analog audio conversion.

Block Diagram

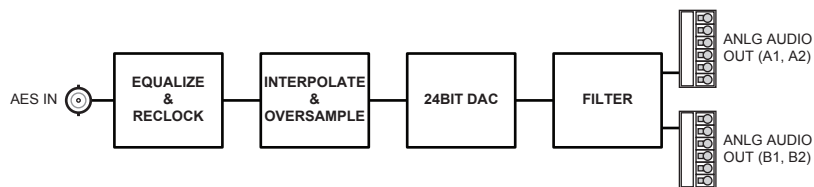


Figure 2.1 Simplified Block Diagram of DAC-9516 Functions

Features

Some features of the DAC-9516 include:

- Supports data rates in the 28kHz to 50kHz range including 32kHz, 44.1kHz, and 48kHz
- 24bit DAC resolution
- Reclocking to reduce jitter and noise
- Conformity to AES-3id 1995 and SMPTE 276M
- Adjustable headroom level
- Input range from 100mV to 2.5V p-p
- Two stereo audio output copies
- Terminating input 75ohms
- Automatic input cable equalization for > 610m (> 2000ft) of Belden 8281
- Visual indicator LEDs for signal presence and power status
- Small brick form factor
- 3-year warranty

Hardware Overview

This chapter presents information on the DAC-9516 hardware components and features.

Chassis Faceplate Overview

The chassis faceplate of the DAC-9516 provides a silk-screen map of the connections available. **Figure 3.1** illustrates the DAC-9516 faceplate label.

The chassis of the DAC-9516 also includes status LEDs that display the status of power, and AES input.

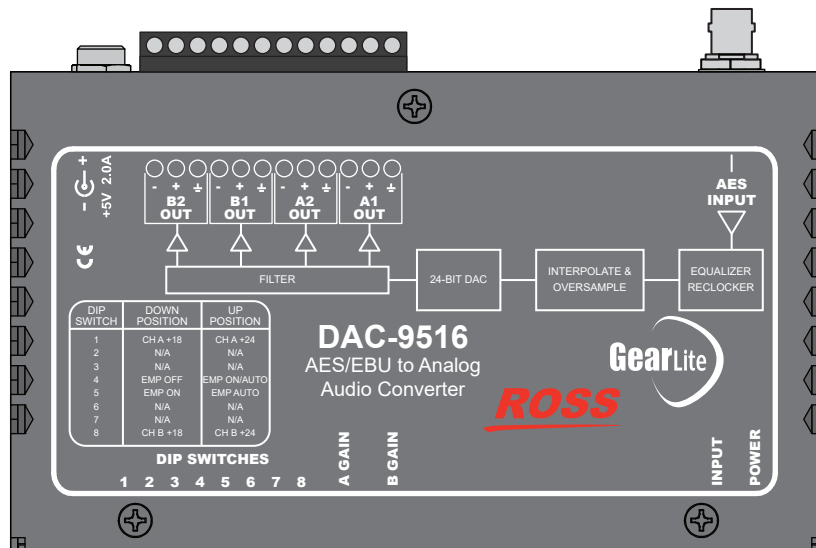


Figure 3.1 DAC-9516 — Faceplate Label

POWER Connection

The DAC-9516 has a standard miniature power jack (center pin positive) that connects to the PS-9000 power supply. (**Figure 3.2**)



Figure 3.2 DAC-9516 — POWER Connection

POWER LED

The POWER LED is located on the bottom of the chassis. (**Figure 3.3**)

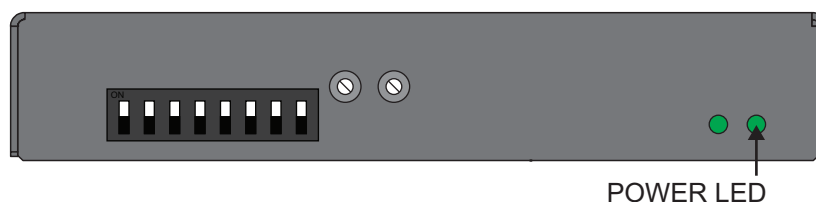


Figure 3.3 DAC-9516 — POWER LED

Table 3.1 describes the behavior the POWER LED.

Table 3.1 POWER LED

Status	Description
Green	When this LED is <i>continually lit</i> green, power is supplied to the DAC-9516
Off	When unlit, this LED indicates a loss of power.

Analog Output Connections

Two balanced analog audio output channels (positive, negative, and ground terminals for each channel) are provided on a 12-pin terminal block. (Figure 3.4)

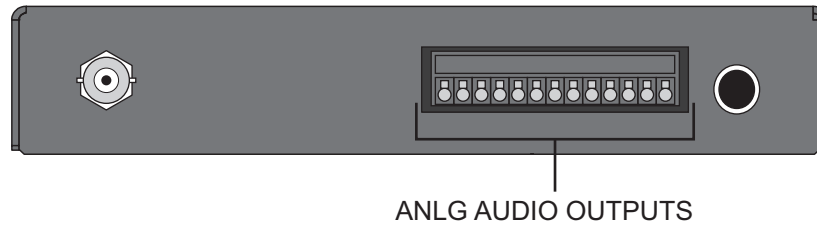


Figure 3.4 DAC-9516 — Analog Output Connector

AES Input Connection

The DAC-9516 provides one AES input via a BNC connector. (Figure 3.5)



Figure 3.5 DAC-9516 — AES Input Connector

INPUT LED

The INPUT LED is located on the bottom of the chassis. (Figure 3.6)

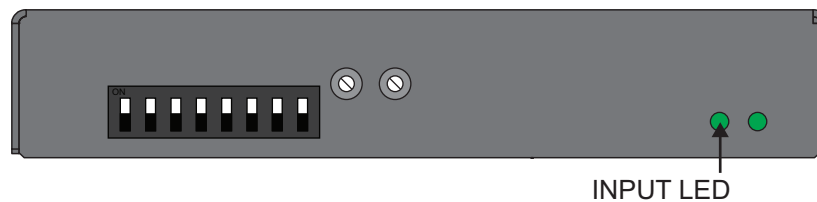


Figure 3.6 DAC-9516 — INPUT LED

Table 3.1 describes the behavior the INPUT LED.

Table 3.2 INPUT LED

Status	Description
Green	When lit, this LED indicates that the AES input is present and valid
Off	When unlit, this LED indicates a loss of the AES input signal.

Physical Installation

If you have questions pertaining to the installation of DAC-9516, please contact us at the numbers listed in the section “**Contacting Technical Support**” on page 7. Our technical staff is always available for consultation, training, or service.

For More Information on...

- the technical specifications for the DAC-9516, refer to the chapter “**Technical Specifications**” on page 25.

Static Discharge

Throughout this chapter, please heed the following cautionary note:



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

Mounting and Installation

The DAC-9516 can be mounted in any convenient location. However, to ensure long life for this product, observe the following precautions and operating requirements:

- Maintain an ambient temperature of 20° to 40°C (68°F – 104°F).
- Allow for air circulation around the chassis for convectional cooling.

Many different mounting positions are possible with the included mounting hardware. Some installation options are permanent and require careful consideration of the final positioning before installation.

★ In some mounting locations, the power adapter must be affixed in a similar manner as the chassis.

Other possible options include the use of adhesive magnetic sheets (not included) affixed to the chassis and the power adapter, for removable mounting on metal cabinets etc.

Cable ties may be necessary in some applications to relieve strain on the mounting hardware and the connectors.

Surface Mount Strips

The included VELCRO® brand surface mount strips allow the GearLite module and power supply to be affixed to a permanent location during use and easily removed for adjustments. Carefully consider the installation location before proceeding; the adhesive is very aggressive and is not easily removed. The adhesive will cure fully in 24 hours.

To install the Surface Mount Strips

1. Remove the **Protective Backing Film** from the adhesive on the bottom of the two VELCRO® brand **Surface Mount Strips**.
- ★ A third VELCRO® brand **Surface Mount Strip** is available to mount the power adapter.
2. Adhere the **Surface Mount Strips** to the bottom side of the chassis **Figure 4.1**.

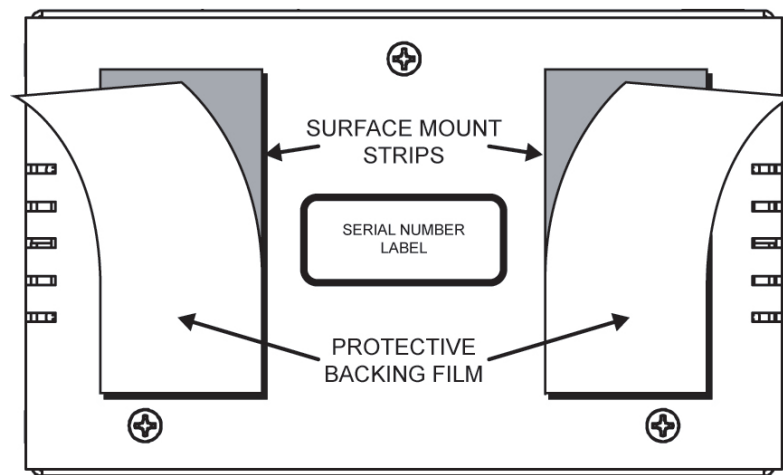


Figure 4.1 Surface Mount Installation Option

3. Remove the **Protective Backing Film** from the other side of the VELCRO® brand **Surface Mount Strips**.
4. Press the chassis into position on the surface you want to mount it to.

Flat Metal Plate

Use the flat metal plate for permanent mounting to a rack, a desk, or any other location where bolts or screws can be applied. Be sure to position the module to allow for operator adjustments, if required.

★ Mounting screws are not provided by Ross Video.

To install the Flat Metal Plate

1. Remove the **2** screws from the bottom of the chassis.
2. Install the **Flat Metal Plate** onto the bottom of the chassis **Figure 4.2** using the screws removed in **Step 1**.

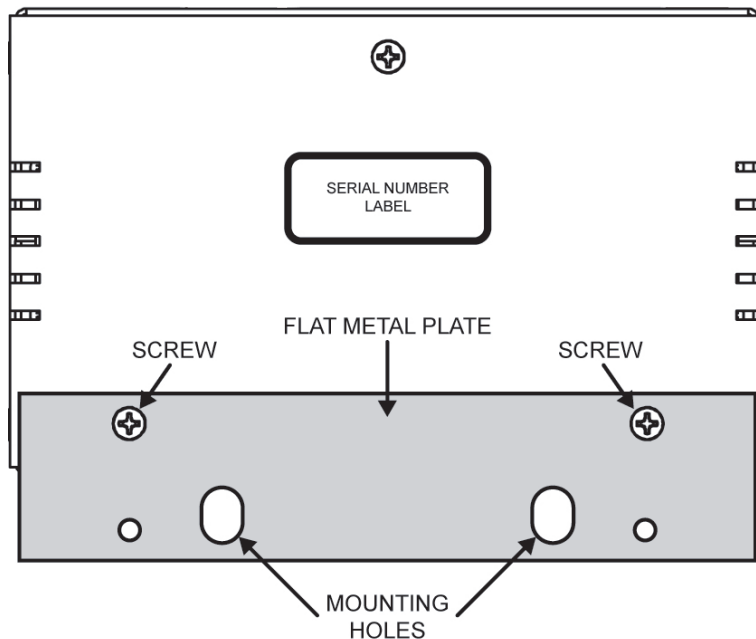


Figure 4.2 Flat Metal Plate Installation Option

3. Install the chassis in the desired location using the **Mounting Holes** on the **Flat Metal Plate**.

Non-Slip Pads

Four non-slip adhesive pads have been supplied for desktop placements. Simply remove the protective backing film from the adhesive and affix one non-slip pad to each of the four corners on the bottom of the chassis.

Optional Mounting Accessories

Ross Video is committed to providing practical solutions for the needs of your high-quality broadcast facility. The following products may be ordered separately to expand your installation options.

BPM-9000

The BPM-9000 Angle Mounting Bracket (**Figure 4.3**) allows a single GearLite module to be installed in positions not possible with the flat metal plate. The bracket has a 90° angle.

★ Mounting screws are not provided by Ross Video.

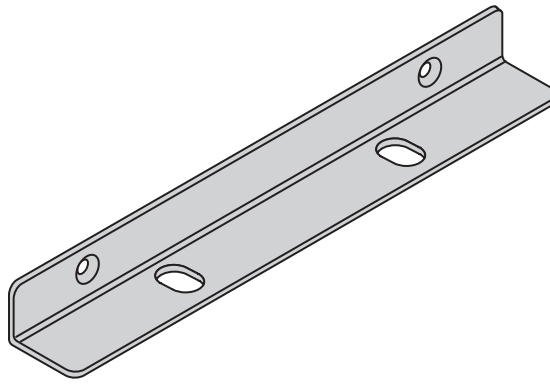


Figure 4.3 BPM-9000 90° Mounting Bracket

Cabling

This chapter provides an overview of connecting external devices to the DAC-9516.

AES Input Cabling

The DAC-9516 can accommodate any full-scale digital (FSD) level in the -12dBFS to -30dBFS range.

Connect the AES/EBU input cable to the DAC-9516 according to the designation indicated on the chassis label. (**Figure 5.1**) The input is internally terminated at 75ohms.

- ★ Although the DAC-9516 may be configured with -30dBFS headroom, a maximum analog audio output of the module (+27dBu) should be observed to prevent clipping of the signal.



Figure 5.1 DAC-9516 — AES Input Connection

Analog Audio Cabling

The 12-pin audio terminal block has slots for the positive, negative, and grounded wires of two balanced analog audio cables. **Table 5.1** indicates the pin numbering and function of the analog connectors.

Table 5.1 DAC-9516 Output Analog Connectors

Outputs	
Pin	Signal
1	B2-
2	B2+
3	GND
4	B1-
5	B1+
6	GND
7	A2-
8	A2+
9	GND
10	A1-
11	A1+
12	GND

To wire the cables for the analog audio signals

1. Gently pull the block from the connector on the DAC-9516 chassis.

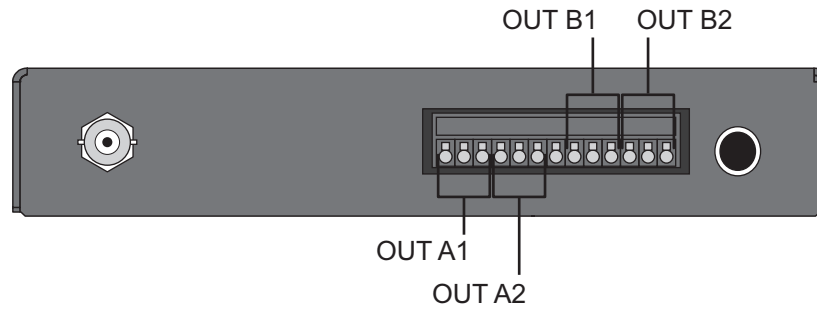


Figure 5.2 DAC-9516 — ANALG Audio Connections

2. Verify the silk-screen on the DAC-9516 chassis and **Figure 5.2** to locate the pins for each input (A, B).
3. Insert an analog audio wire into the designated polarity slot on the block.
4. Use a tweaker screwdriver to tighten the slot's connector clamp on the block.
5. Repeat steps 3 and 4 for each wire on each input.
6. Insert the block back onto the unit so that the slotted tongues fit in the grooved side on the block socket.

Power Adapter and Supply

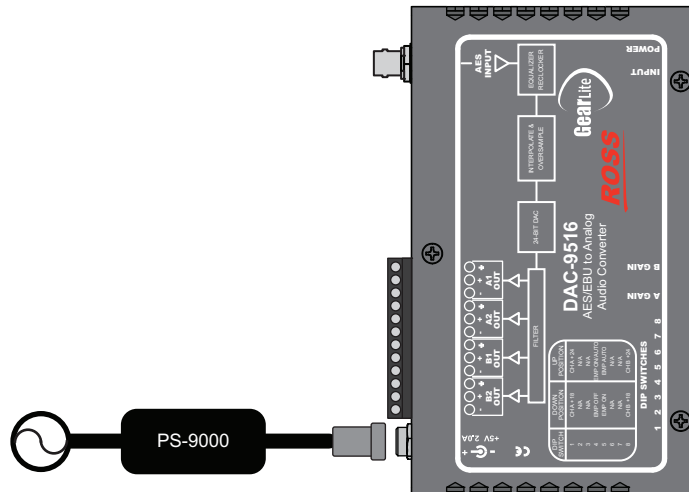
Connect the PS-9000 power adapter to the power supply connector. The PS-9000 provides regulated +5V DC (5%) @ up to 2A. The DC power cord has a locking connector that securely fastens into the power supply DC jack on the DAC-9516. The DAC-9516 has a standard miniature power jack (center pin positive).



Caution — Use of improper adapters may damage the SMC-9901 and will void the warranty.

To connect the DAC-9516 to the PS-9000

1. Connect the female end of the PS-9000 cable into the socket marked **POWER** on the DAC-9516 chassis.



Note: It is recommended that you always connect the PS-9000 to the DAC-9516 before connecting to Mains Power.

Figure 5.3 DAC-9516 — Power Connection

2. Connect the PS-9000 to Mains Power.

Setup

The DIP Switches on the bottom of the DAC-9516 enable you to further setup your module.

Using the DIP Switches

The top of the DAC-9516 chassis includes a label that provides a condensed DIP switch settings chart. This chart is intended as a quick reference guide. Refer to for DIP Switch locations.

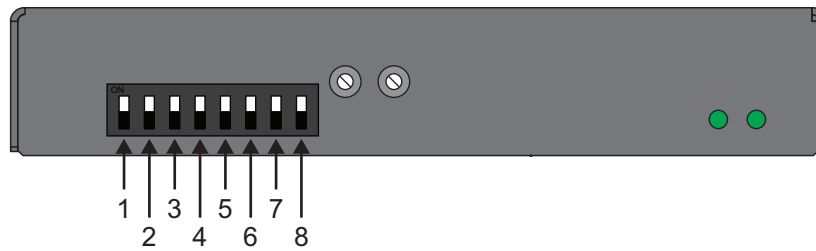


Figure 6.1 DAC-9516 — DIP Switch Locations

Table 6.1 outlines how to set **SW1-8** and the following conventions are used:

- ↑ Set the DIP switch in the UP position
- ↓ Set the DIP Switch in the DOWN position (near the number)

Table 6.1 DIP Switch Positions

DIP Switch	Position	Function
1	↑	Channel A headroom adjust +24dBu
	↓	Channel A headroom adjust +18dBu
2	Not implemented	
3	Not implemented	
4	↑	Emphasis On/Auto
	↓	Emphasis Off
5	↑	Emphasis Auto
	↓	Emphasis On
6	Not implemented	
7	Not implemented	
8	↑	Channel B headroom adjust +24dBu
	↓	Channel B headroom adjust +18dBu

Headroom Select

There are two copies of the analog stereo signal output from the 12-pin connector. Each output consists of an A and B channel (Left and Right).

To adjust the output level

1. Select the approximate FSD level (18dB or 24dB) using the headroom DIP switches (A Level and B Level).
2. Turn the potentiometers (A GAIN and B GAIN) to trim the FSD level (± 6 dB) to your installation's standard.
 - 24dB or 18dB Switch selectable for AES A and AES B
 - ± 6 dB continuous adjustment for AES A and AES B

De-Emphasis Select

Set the Emphasis DIP switches (**SW4**, **SW5**) as described in **Table 6.2**, based on your requirements.

Table 6.2 Emphasis Selection — SW4, SW5

SW4	SW5	Emphasis
↑	↑	• Auto • 50/15μs de-emphasis curve applied according to: the current sampling rate, and the AES Professional Channel Status Bits
↑	↓	• On • Forced de-emphasis according to current sampling rate
↓	↑ or ↓	• Off • No de-emphasis filtering

Potentiometers

There are two copies of the analog stereo signal output from the 12-pin connector. Each output consists of an A and B channel (Left and Right).

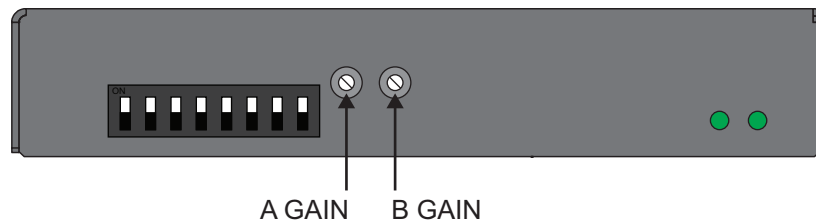


Figure 6.2 DAC-9516 — Potentiometer Locations

To adjust the output level

1. Select the approximate FSD level (18dB or 24dB) using the headroom DIP switches (A Level and B Level).
2. Turn the potentiometers (A Gain and B Gain) to trim the FSD level (± 6 dB) to your installation's standard. Refer to **Table 6.3**.

Table 6.3 Emphasis Selection — SW4, SW5

Potentiometer	Label	Function
RV1	A Gain	Use to set fine level adjustment for Channel A
RV2	B Gain	Use to set fine level adjustment for Channel B

Audio Levels

Figure 6.3 and **Figure 6.4** illustrates that amplitude vs. distortion for analog and digital audio equipment show that digital audio does not gradually degrade (become more distorted) as the amplitude increases.

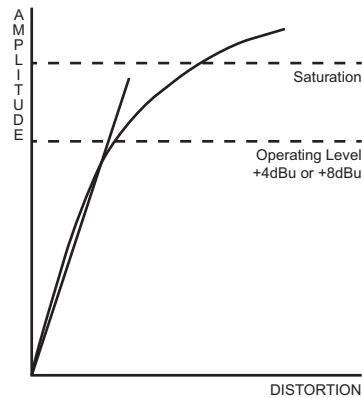


Figure 6.3 Analog Audio

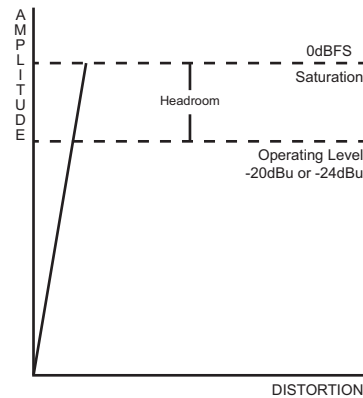


Figure 6.4 Digital Audio

Likewise, the digital audio signal does not exist above 0dBFS. For these reasons, the interface between existing analog house reference standards and digital audio standards are as shown in **Table 6.4**.

Table 6.4 Analog House Reference and Digital Audio Interface

Reference	Headroom	Max. Input	Application
0dBu	14dB	+14dBu	AES/EBU for Audio Production
+4dBu	20dB	+24dBu	AES/EBU for Audio Production
+8dBu	18dB	+26dBu	AES/EBU for 525 Video
+4dBu	18dB	+22dBu	AES/EBU for 625 Video
+4dBu	22dB	+26dBu	AES/EBU for 625 Video

The coarse input level headroom adjustment is made with the 'A Level' and 'B Level' switches. These switches put the available headroom of the D/A Converter in the +18dBFS or +24dBFS range.

The fine input level, headroom adjustment is made using the 'A Gain' (RV1) and 'B Gain' (RV2) potentiometers. These pots provide ± 6 dB adjustment on the +18dBFS and +24dBFS switch settings. Using these adjustments, the total headroom is adjustable over the -12dBFS to -30dBFS range.

This means that for a -20dBFS input, the analog outputs may be set to -8dBu to +10dBu. Likewise, for a -18dBFS input, the output may be set anywhere in the range of -6dBu to +12dBu. Keep in mind that the maximum output level (1% THD+N) is 27dBu (@ 1kHz).

Warranty and Repair

The DAC-9516 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-9516 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 DAC-9516 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 DAC-9516 User Manual provides all pertinent information for the safe installation and operation of your RossGear Product. Ross Video policy dictates that all repairs to the DAC-9516 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 DAC-9516, 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 DAC-9516. 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.

Technical Specifications

This chapter provides technical information for DAC-9516.

★ Specifications are subject to change without notice.

Analog Audio Output

Table 8.1 Technical Specifications — Analog Audio Output

Item	Specifications
Number of Outputs	2 balanced stereo pair copies (A1 and B1, A2 and B2) via removable terminal block strips
Impedance	66ohm
Max. Output Level	+27dBu into 10kohm
Connector Type	12-pin screw-type terminal block strip

AES Input

Table 8.2 Technical Specifications — AES/EBU Input

Item	Specifications
Number of Inputs	1 AES-3id
Standards Supported	SMPTE 276M
Sample Rate	32kHz, 44.1kHz, 48kHz
Impedance	75ohm terminating
Input Level	Minimum: 100mV Maximum: 2.5Vp-p
Return Loss	<-38dB (0.1 to 6MHz)
Connector	BNC

Performance

Table 8.3 Technical Specifications — Performance

Item	Specifications
Quantization	8 to 24bits
Frequency Response	20Hz - 20kHz
Signal to Noise Ratio	±100dB (22Hz-20kHz AES 17 filter) 48kHz - 20dBFS
THD	<0.01% >100dB @ -20dBFS
IMD	<0.002% SMPTE/4:1

Table 8.3 Technical Specifications — Performance

Item	Specifications
Nominal Analog Output Levels	-8dBu to +10dBu for -20dBFS
Crosstalk	<-98dB to 20kHz
Audio Delay	0.7ms (AES IN to ANLG AUDIO OUT)

Power

Table 8.4 Technical Specifications — Power

Item	Specifications
Required Voltage	+5V DC (5% regulation)
Power Consumption	<3.4W typical

Environment

Table 8.5 Technical Specifications — Environment

Item	Specifications
Maximum Ambient Temperature	20°C to 40°C (68°F to 104°F) ambient, non-condensing

Dimensions

Table 8.6 Technical Specifications — Dimensions

Item	Specifications
Physical Dimensions	13cm x 9cm x 2.5cm (5" x 3.5" x 1")
Weight	312b (11oz)