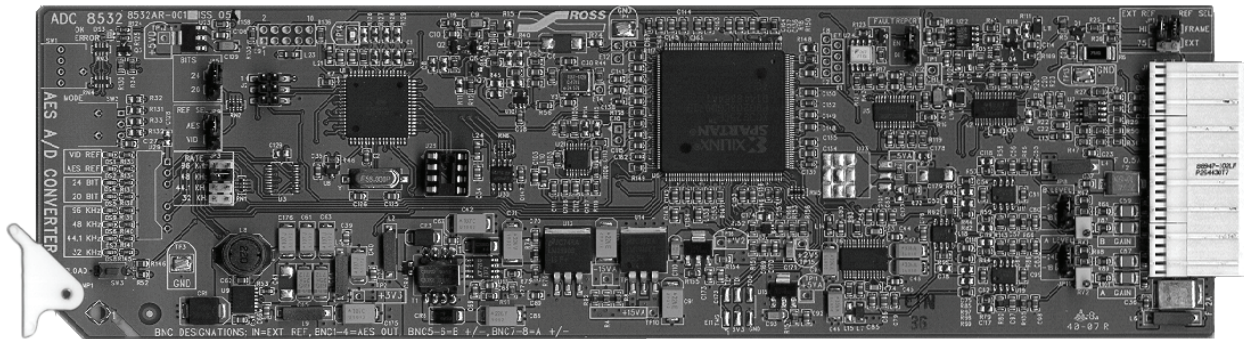


# ADC-8532

## Analog Audio to AES/EBU Converter

### User Manual



Ross Part Number: 8532DR-004  
Issue: 05A

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## ADC-8532 • Analog Audio to AES/EBU Converter User Manual

- Ross Part Number: **8532DR-004**
- Document Issue: **05A**
- Printed in Canada.

The information contained in this User Manual is subject to change without notice or obligation.

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## Important Regulatory and Safety Notices

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



This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage or injury to persons or equipment.



**Warning**

The 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.



**Caution**

The symbol with the word “**Caution**” within the equipment manual indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



**Notice**

The 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**

**Susceptibility**

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



**Caution**

This product is intended to be a component product of the RossGear 8000A series frame. Refer to the RossGear 8000A series frame User Manual for important safety instructions regarding the proper installation and safe operation of the frame as well as it’s component products.



**Warning**

Certain parts of this equipment namely the power supply area still present a safety hazard, with the power switch in the OFF position. To avoid electrical shock, disconnect all A/C power cords from the chassis' rear appliance connectors before servicing this area.



**Warning**

Service barriers within this product are intended to protect the operator and service personnel from hazardous voltages. For continued safety, replace all barriers after any servicing.

This product contains safety critical parts, which if incorrectly replaced may present a risk of fire or electrical shock. Components contained within the product’s power supplies and power supply area, are not intended to be customer serviced and should be returned to the factory for repair.

To reduce the risk of fire, replacement fuses must be the same type and rating.

Only use attachments/accessories specified by the manufacturer.

## **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 numérique 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**

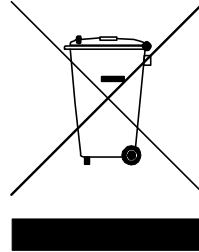
Routine maintenance to this RossGear product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "Contact Us" section on the last page of this manual. All RossGear products are covered by a generous 5-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.





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# Introduction

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## In This Chapter

This chapter contains the following sections:

- A Word of Thanks
- Overview
- Functional Block Diagram
- Features
- Documentation Terms

### A Word of Thanks

Congratulations on choosing the RossGear **ADC-8532 Analog Audio to AES/EBU Converter**. You have purchased a powerful, versatile, and advanced converter. The ADC-8532 is part of a full line of Digital Conversion Products within the RossGear Terminal Equipment family of products, backed by Ross Video's experience in engineering and design expertise since 1974.

You will be pleased at how easily your new ADC-8532 fits into your overall working environment. Equally pleasing is the product quality, reliability and functionality. Thank-you for joining the group of worldwide satisfied Ross Video customers!

Should you have a question pertaining to the installation and operation of your ADC-8532, please contact us at the numbers listed in this publication. Our technical support staff is always available for consultation, training, or service.

## Overview

The RossGear ADC-8532 is a broadcast quality audio converter that is used to convert two analog audio channels to an AES/EBU signal. The ADC-8532 accepts one stereo (A, B) analog audio pair and provides four copies of the AES/EBU signal. The conversion from analog to digital is performed with 20-bit or 24-bit precision. The ADC-8532 supports sampling rates of 32 kHz, 48 kHz, and 96 kHz with a video or AES reference or internal reference, and 44.1 kHz with a 44.1 kHz AES reference signal only. The RossGear ADC-8532 has been designed for use in 75 ohm coaxial SMPTE 276M or AES-3id systems but can be easily used in balanced systems with the use of a 75 ohm to 110 ohm converter, such as the GearLite AES-9523 or AES-9525 AES converters.

The two analog audio signals are input through the CON 8532 Analog Audio Connector Adaptor, which is supplied with the ADC-8532. The ADC-8532 uses a very high quality anti-aliasing filter on its inputs. This assures that the signal has very low noise and distortion artifacts. The A to D conversion process is performed by a state of the art 256X oversampling ADC. Unbalanced coaxial AES/EBU audio is output through BNC connectors on the rear of the frame. Four copies of the signal are provided.

Visual indicators on the card edge provide information on the current sampling rate, bit rate resolution, error condition, and presence of an external reference, at a glance. The ADC-8532 has the capability to detect a number of configuration errors, making setup, installation, and operation easy.

The ADC-8532 has the ability to phase and frequency lock to an external AES DARS reference (per AES11-1997) or to frequency lock to an external video reference. If there is a loss of reference signal, the unit automatically switches to internal reference and will automatically switch back to the selected reference when present. The ADC-8532 has an internal clock and will free-run without any external reference supplied. When using AES as an external reference input, the ADC-8532 can automatically equalize for cable lengths beyond 2000 ft.

A coarse input attenuator jumper (-18dB or -24dB) and fine input attenuator potentiometers for each channel are provided to precisely match to your facility's house reference audio levels. The ADC-8532 can accommodate a maximum input level in the +28dBu range.

The ADC-8532 is a modular conversion card that fits into the Ross DFR-8110A or DFR-8104A digital frames. Designed and manufactured to meet the highest quality broadcast industry standards, the RossGear ADC-8532 is an ideal and cost effective solution for analog audio to AES/EBU conversion requirements.

## Functional Block Diagram

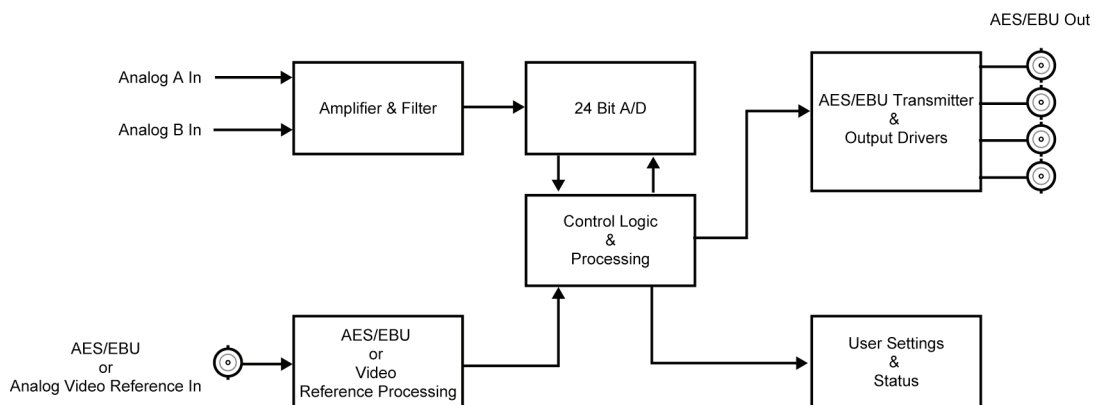


Figure 1. Simplified Block Diagram of ADC-8532 Functions

## Features

The following features make the ADC-8532 Analog Audio to AES/EBU Converter the most flexible, high-quality card for your analog to digital conversion requirements:

- User selectable external reference: AES audio (DARS) or video
- DARS reference signal input defines the AES output sample frequency
- Support for 32 kHz to 96 kHz sample rate using a DARS reference signal
- Output rates of 32 kHz, 48 kHz, or 96 kHz using a video reference or no reference
- LED indicators for reference, output rates, and error conditions
- User selectable 20-bit or 24-bit ADC resolution
- User selectable reference on the frame input or on the card input
- User selectable reference termination into 75 ohm
- Adjustable input level range from +14dBu to +28dBu
- Conformity to AES-3id 1995
- 5 year warranty

## Documentation Terms

The following terms are used throughout this guide:

- “**Frame**” refers to the DFR-8104A and DFR-8110A frames that house the ADC-8532 card.
- All references to the DFR-8104A and DFR-8110A also include the DFR-8104A-C and DFR-8110A-C versions with the cooling fan option. See the respective User Manuals for details.
- “**Operator**” and “**User**” both refer to the person who uses the ADC-8532.
- “**Board**”, “**Card**”, and “**Module**” all refer to the ADC-8532 decoder module itself.
- “**System**” and “**Audio system**” refers to the mix of interconnected digital and analog production and terminal equipment in which the ADC-8532 operates.



# Installation and Setup

---

## In This Chapter

This chapter contains the following sections:

- Static Discharge
- Unpacking
- Board Installation
- BNC Labels
- Cable Connections

### Static Discharge

Whenever handling the ADC-8532 and other related equipment, please observe all static discharge precautions as described in the following note:



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 ADC-8532 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.

## Board Installation

Use the following procedure to install the ADC-8532 in a RossGear 8000 series frame:

1. Refer to the User Manual of the RossGear 8000 series frame, to ensure that the frame is properly installed according to instructions. If this card is to be installed in any compatible frame other than a Ross Video product, refer to the frame manufacturer's manual for specific instructions.
2. After selecting the desired frame installation slot, hold the ADC-8532 card by the edges and carefully align the card edges with the slots in the frame.
3. Fully insert the card into the frame until the rear connection plug is properly seated.

This completes the procedure for installing the ADC-8532 in a RossGear 8000 series frame.

## BNC Labels

Affix the supplied BNC label, as per the included instructions, to the BNC area on the rear of the rack frame.

## Cable Connections

The ADC-8532 uses the CON-8532 analog audio connector adaptor to access the balanced analog audio inputs. The connector plugs onto BNCs 5-8 on the rear of the DFR-8104A or DFR-8110A frames. A locking BNC on the CON-8532 provides a secure fit to the Ross frame. The guiding pin on the CON-8532 ensures proper orientation. The input consists of an A and B channel (left and right). The ADC-8532 is shipped with the CON-8532 terminal block to BNC adaptor to allow the analog audio input.

On the back of the Ross digital rack frame, install the CON-8532 adaptor onto BNC connectors 5-8. Refer to the following diagram for cabling designations.

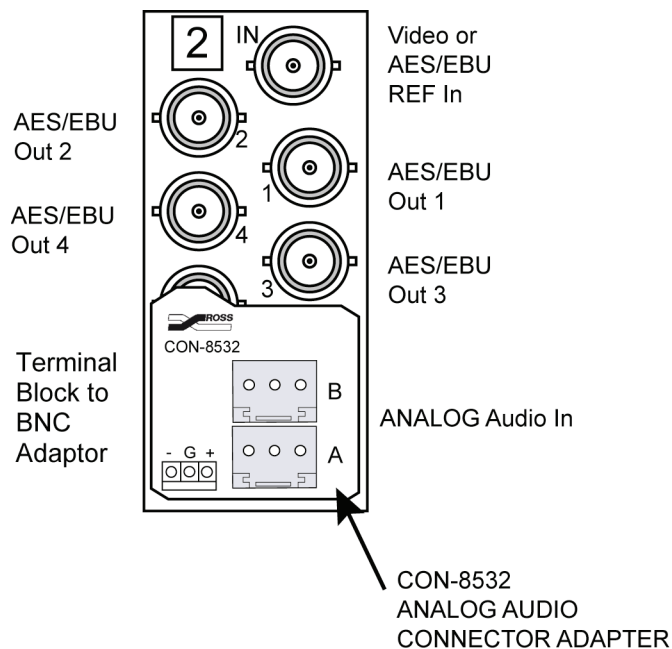


Figure 2. ADC-8532 and CON-8532 Cabling Designations for the RossGear DFR-8110A

## Analog Input Cables

On the CON-8532, there are removable connectors for IN-A and IN-B. Each connector has sockets for the positive, negative, and grounded wires of a balanced analog audio cable. Refer to **Figure 3** when wiring the external cables to the terminal block connectors.

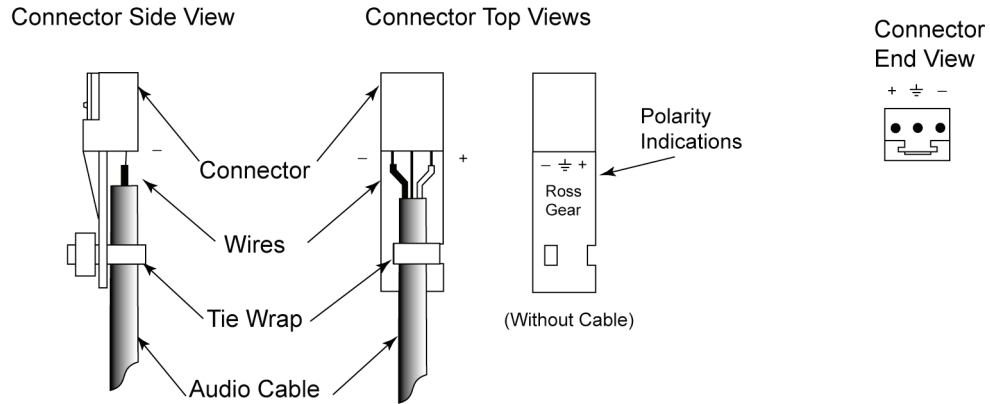


Figure 3. Connector Wiring for the CON-8532 Module

Use the following procedure to wire the external cables to the terminal block connectors:

1. Insert an analog audio wire to the designated polarity slot on the connector.
2. Use a tweaker screwdriver to tighten the corresponding screw on the underside of the connector.
3. Repeat steps 1 and 2 for each wire on each connector.
4. Once the cables have been wired to the connectors, install the connectors to the sockets on the CON-8532 module so that the slotted tongue fits in the grooves on the module socket.

This completes the procedure for wiring the external cables to the terminal block connectors.

## Reference Input

Depending on your requirements, connect the AES or video reference to the card's **BNC IN** or the frame's master reference input.

## AES/EBU Outputs

Four AES/EBU outputs are available on BNC connectors 1, 2, 3, and 4.





# User Controls

---

## In This Chapter

This chapter contains the following sections:

- Jumper Locations
- Jumper Setup
- Gain Adjustment
- LEDs

## Jumper Locations

Refer to the following figure for jumper locations on your ADC-8532.

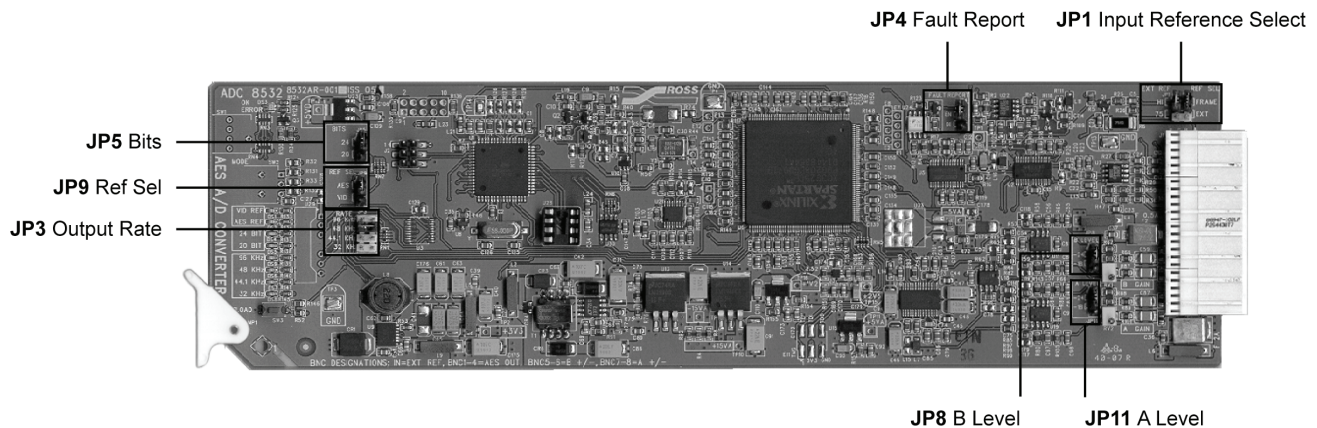


Figure 4. ADC-8532 Jumper Locations

## Jumper Setup

Use the following sections to set up the jumpers on your ADC-8532. These settings are performed *before* installing the unit in the frame, but may be repeated as required.

### **JP1—Input Reference Select**

**JP1 — Input Reference Select** selects the reference source. The default is **FRAME**.

Set the **REF SEL** to one of the following:

- **FRAME** — Use this setting to provide the reference source from the Frame Master Reference BNC.
- **EXT** — Use this setting to provide the reference source from the IN BNC connector.

**JP1** also selects termination impedance of the external reference, if you set **REF SEL** to **EXT**. The default is **75Ω**.

Select one of the following settings:

- **HI** — no termination impedance
- **75Ω** — termination

### **JP4 — SMPTE Fault Reporting**

Select SMPTE 269M Fault Reporting, ENABLE or DISABLE, via **JP4**. The default is **ENABLE**. Refer to Chapter 5, “SMPTE 269M Fault Reporting” for information on fault reporting.

### ***JP9 — Ref Sel***

**JP9 — Ref Sel** selects an AES or video reference. The default is **VID**.

Select one of the following settings:

- **AES** — Use this setting for external DARS reference. The card follows the same AES rate as the AES/DARS reference.
- **VID** — Use this setting for external video reference, or internal reference if no external reference signal input.

### ***JP3 — Output Rate***

**JP3 — Output Rate** selects an output rate. The default is **48 kHz**.

#### ***Using an AES Reference***

Note the following if **JP9** is set to **AES**:

- If you set **JP9** to **AES** and have a valid AES signal, the **JP3** settings are ignored.
- On loss of the AES reference signal, the ADC-8532 switches to internal reference at a 48 kHz sampling rate regardless of what **JP3** is set to.

#### ***Using a Video Reference***

Note the following if **JP9** is set to **VID**:

- If you set **JP9** to **VID**, jumper **JP3** sets the output rate when using an external video reference or internal reference.
- On loss of the reference signal, the ADC-8532 will free run at the selected rate (**JP3**).

If **JP9** is set to **VID**, select one of the following output rate settings using **JP3**:

- **96 kHz**
- **48 kHz**
- **32 kHz**

### ***JP5 — Bits***

**JP5 — Bits** sets the word length resolution to either 20-bits or 24-bits per audio sample. The default setting is **24 bits**.

Select one of the following settings:

- **24 Bits**
- **20 Bits**

### ***JP11 — A Level***

**JP11 — A Level** sets the coarse level adjustment (-24 dB or -18 dB) for Channel A. The default setting is **-24 dB**. The **RV2** potentiometer adds continuous fine adjustment for Channel A.

### ***JP8 — B Level***

**JP8 — B Level** sets the coarse level adjustment (-24 dB or -18 dB) for Channel B. The default setting is **-24 dB**. The **RV1** potentiometer adds continuous fine adjustment for Channel B.

## Gain Adjustment

Refer to the following figure for potentiometer locations on your ADC-8532.

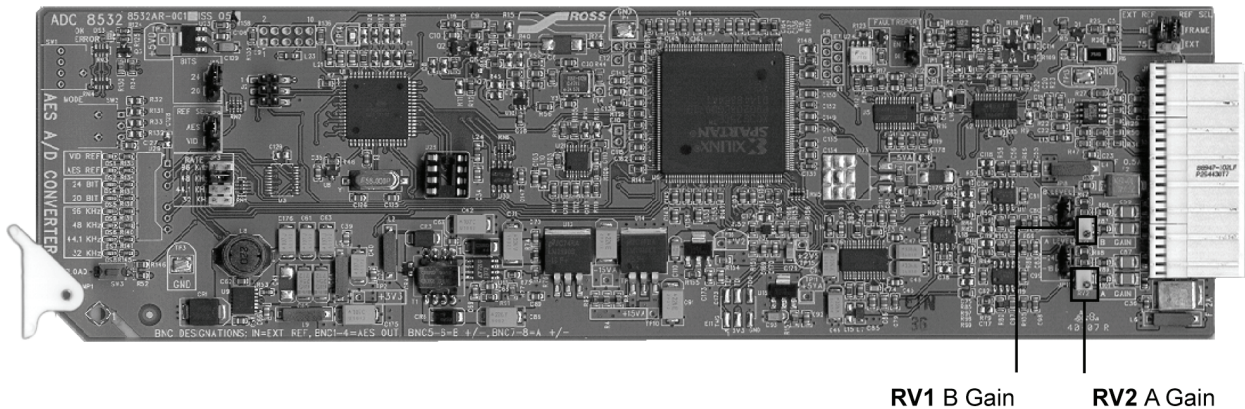


Figure 5. Potentiometer Locations

The fine input level and headroom adjustment is made using the **RV2 (A Gain)** and **RV1 (B Gain)** potentiometers. These potentiometers, in conjunction with the jumpers, provide a total gain adjustment from  $-14$  dB to  $-28$  dB.

If necessary, use a tweaker screwdriver to adjust the fine analog audio input and output levels of each channel. Refer to **Figure 5** for potentiometer locations.

### Note

All fine levels are factory set for unity gain and should not need adjusting. An EXT-8100 is required to adjust potentiometer settings. Refer to the section, “**Ordering Information**” for details.

### **RV2 — A Gain**

This potentiometer sets fine level adjustment for Channel A.

### **RV1 — B Gain**

This potentiometer sets fine level adjustment for Channel B.

## LED Locations

The front edge of the card features LEDs that display the status of the input signals. Refer to the following figure for the location of each LED on the ADC-8532.

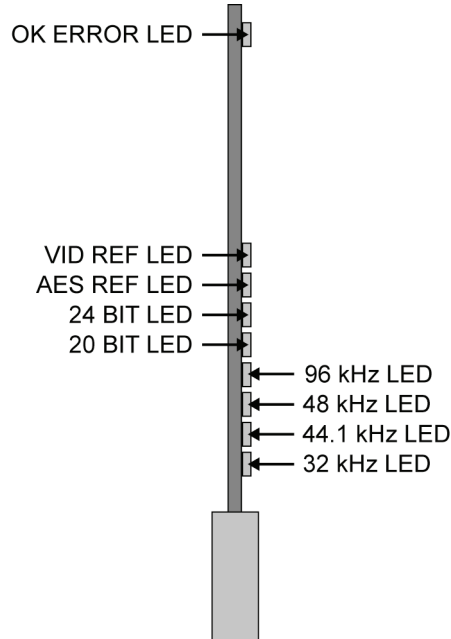


Figure 6. ADC-8532 LED Locations

For information and descriptions on the LEDs and status, refer to **Table 1**.

## LED Status Descriptions

The following table describes the selection and status of each LED on the ADC-8532.

Table 1. Selection and Status LED Descriptions

LED	Condition	Description
<b>OK ERROR</b> (Red)	Solid	Indicates one of the following configuration or card errors: <ul style="list-style-type: none"> <li>44.1 kHz selected on <b>JP3</b> with video reference selected on <b>JP9</b>.</li> <li>No valid reference.</li> </ul>
<b>VID REF</b> (Green)	Solid	Indicates presence of valid external video reference.
<b>AES REF</b> (Green)	Solid	Indicates presence of valid external AES reference.
<b>24 BIT</b> (Yellow)	Solid	Indicates 24 bit resolution.

<b>LED</b>	<b>Condition</b>	<b>Description</b>
<b>20 BIT</b> (Yellow)	Solid	Indicates 20 bit resolution.
<b>96 kHz</b> (Yellow)	Solid	Indicates output sample rate of 96 kHz.
<b>48 kHz</b> (Yellow)	Solid	Indicates output sample rate of 48 kHz.
<b>44.1 kHz</b> (Yellow)	Solid	Indicates output sample rate of 44.1 kHz.
<b>32 kHz</b> (Yellow)	Solid	Indicates output sample rate of 32 kHz.

# Upgrades

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## In This Chapter

This chapter provides instructions to properly upgrade your ADC-8532, and contains the following sections:

- Equipment Supplied
- Socket Location
- Chip Removal
- Software or Firmware Upgrades

### Equipment Supplied

- One **ADC-8532 User Manual**
- Required upgrade chip

## Socket Location

Refer to the following diagram when upgrading the ADC-8532 card.

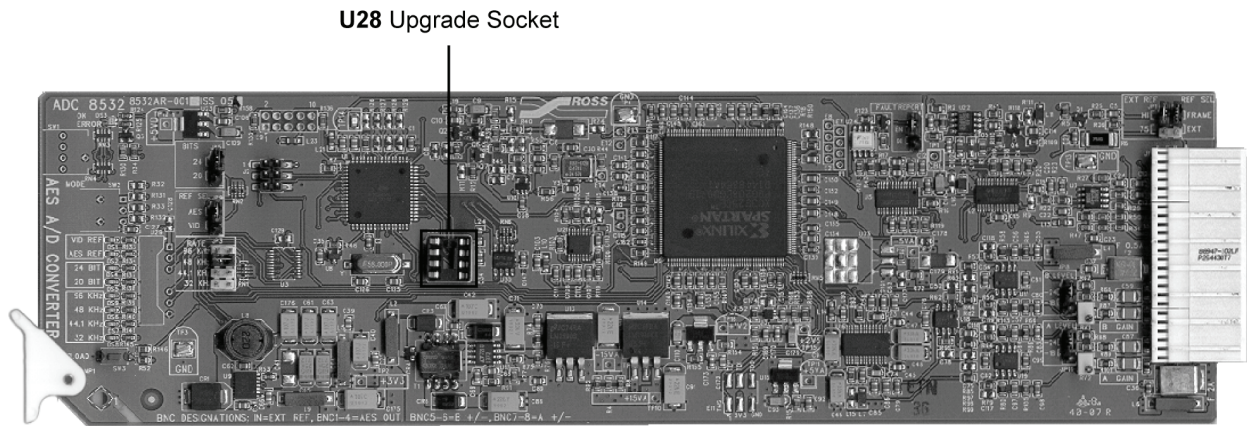


Figure 7. ADC-8532 Upgrade Socket

## Chip Removal

If there is a chip already inserted into the **U28** socket, remove it as follows:

1. With the card out of the frame, refer to **Figure 7** and the card labeling to locate **U28**.
2. Use an IC chip removal tool to gently pry the chip out of the socket.
3. Store the chip in a labeled static-free container.

## Software or Firmware Upgrade

The following procedure applies to any software or firmware upgrade you may perform on the ADC-8532. If you are upgrading multiple cards, repeat this procedure for each card.

Use the following procedure to upgrade the software or firmware of the ADC-8532 card:

1. With the card out of the frame, refer to **Figure 7** and the card labeling to locate **U28**.
2. If the **U28** socket is occupied, complete the **Chip Removal** procedure.
3. Carefully remove the new chip from the packaging.
4. Align the new chip over the socket with the keyed sides together and the legs over the socket holes.
5. Gently and firmly press the chip into the socket.
6. Press the **Bootload (SW3)** button while inserting the card into the powered frame and wait for the upgrade to start.
  - When the **OK LED** starts flashing, the upgrade is in progress and you can release the **Bootload** button. The **OK LED** flashes at various rates throughout the upgrade. The upgrade is complete when the LED stops flashing.
  - When upgrading software, the LED flashes for up to 15 seconds. When upgrading firmware, the LED flashes for up to 60 seconds.
7. Remove the ADC-8532 card from the frame and complete the **Chip Removal** procedure.

This completes the procedure for upgrading the software or firmware of the ADC-8532 card.



# SMPTE 269M Fault Reporting

## In This Chapter

This chapter contains the following sections:

- Overview
- Jumper Setup
- Frame Connections
- Details

## Overview

The SMPTE 269M Fault Reporting system, also known as an SMPTE “alarm”, provides indication if one or more frame modules encounter a fault or an abnormal condition. The ADC-8532 provides a jumper to enable SMPTE 269M fault reporting. The card connects by means of an internal interface circuit to an auxiliary telco connector on RossGear 8000 and 8000A series frames. When the frame connection is interfaced with a customer-designed system of LEDs or audible alarms, faults can be traced to a specific frame when a card fault occurs within that frame.

The following diagram illustrates a general arrangement for SMPTE 269M alarm reporting:

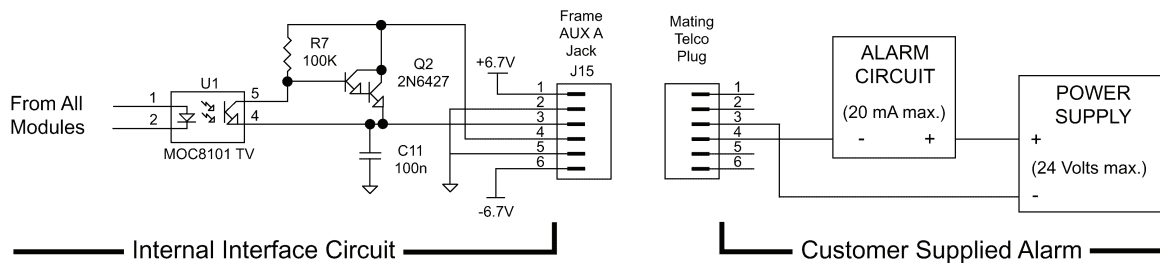


Figure 8. SMPTE 269M Alarm Reporting: Internal interface and typical connections

## Jumper Setup

If fault reporting for the ADC-8532 is desired, use **JP4 - FAULT REPORT** to set up the card.

1. To access the jumper, remove the card from the frame by pressing down the white card ejector tab and pulling the card from the frame slot.
2. Observing all static discharge and handling precautions, place the card, with the components side facing up, on a clean flat surface.
3. To enable SMPTE fault reporting, set jumper **JP4** to the **ENABLE** position.
4. To disable SMPTE fault reporting, set jumper **JP4** to the **DISABLE** position.

Refer to the section, “**Jumper Locations**”, for jumper location details.

## Frame Connections

The SMPTE 269M Fault Reporting connection on RossGear 8000 series frames is provided by the auxiliary telco connector, **AUX A**, for interfacing with a customer-designed alarm system.

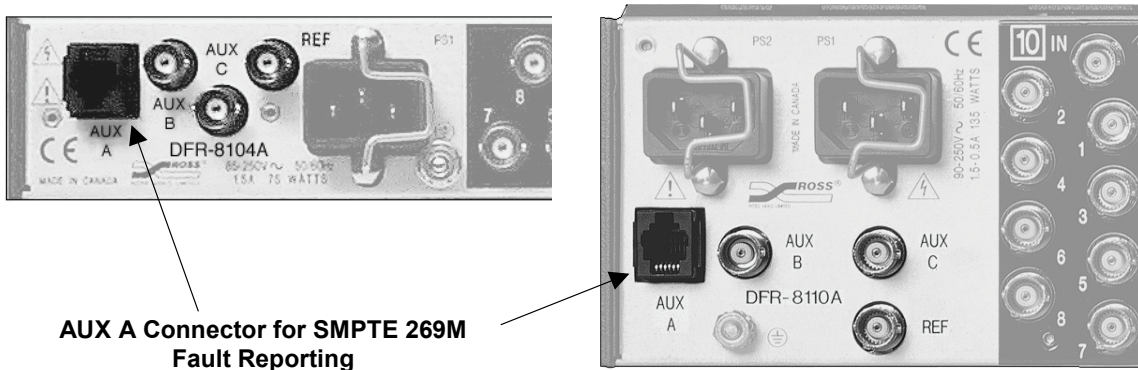


Figure 9. SMPTE 269M Alarm Reporting Frame Connections

## Details

The fault report contacts are closed when the card detects an internal failure or a power loss condition. The fault report pulses off for 1ms to 2ms about every 16ms if the SDI video input signal is missing, or if both AES signals are missing.

Some internal failures are:

- Failure of the card to initialize
- Failure in the fault reporting circuitry
- Failure to detect a valid video input signal to the card
- Failure to detect a valid AES input signal to the card with AES selected on **JP9**

For additional information on alarm system design, refer to the SMPTE document “*ANSI/SMPTE 269M – 1999*”.

# Specifications

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## In This Chapter

This chapter contains the following sections:

- Technical Specifications
- Channel Status Data

## Technical Specifications

The following table summarizes all technical specifications for the ADC-8532.

Table 2. ADC-8532 — Technical Specifications

Category	Parameter	Specification
<b>Analog Audio Input</b>	Number of Inputs	2 balanced channels (1 stereo pair)
	Connector	Removable Terminal Block to BNC Adapter Module
	Input Impedance	>25k $\Omega$
	Max. Input Level Range	+14 to +28dBu continuously variable
<b>Reference Input</b>	Reference Signal	Audio – AES-3id 20kHz – 100kHz Video – Analog composite
	Input Impedance	75 $\Omega$ or High Impedance
	Input Return Loss	>35dB (0.1 to 6MHz)
	AES Input Level	100mV p-p minimum 2.5V p-p maximum
<b>AES/EBU Output</b>	Number of Outputs	4 AES-3id (coaxial) SMPTE-276M
	Connector	BNC
	Sample Rate	AES Ref: 20kHz – 100kHz Video Ref: 32kHz, 48kHz, or 96kHz
	Output Impedance	75 $\Omega$
	Output Level	1.0V p-p +/- 10%
	Output Return Loss	>45dB (0.1 to 6 MHz)
<b>Performance</b>	Quantization	20 or 24 bits
	Frequency Response	$\pm 0.05$ dB @ 48kHz (20Hz to 20kHz)
	Signal to Noise Ratio Measured at -20dBFS	-113dB unweighted -116dB 'A' weighted -122dB CCITT weighted
	THD+N	-106dB (<0.004%) Measured at -20dBFS @ 1kHz
	Linearity	2.5dB to -120dBFS
	Phase Linearity	<1.2 $^{\circ}$ (20Hz to 20kHz)
	Crosstalk	-100dB
	Output Isolation	48dB
	AES Reference Phase Error	<5% of frame period per AES11-1997
	Delay	0.936ms
	Power Consumption	3W
	Jitter	<20mUI peak @ 48kHz (Video reference)
<b>Environmental</b>	Operating Range	5 $^{\circ}$ C - 35 $^{\circ}$ C ambient

\* Specifications are subject to change without notification.

\* All measurements performed at 48k sampling rate unless otherwise noted.

## Channel Status Data

The following table indicates fixed and configurable channel status bit information.

Table 3. Channel Status Data

Byte	Bit	Function	Transmitted
0	0	Professional or Consumer use of Channel Status Block	Professional (1)
	1	Normal Audio or Non-Audio Mode	Normal Audio (0)
	5	Source Sampling Rate Locked (0 or 1)	
	6-7	Sampling Rate: User Selectable	Set according to current sampling rate 32kHz (11) 44.1kHz (10) 48kHz (01)
1	0-3	Channel Mode	2 channel stereo (0001)
	4-7	User Bit Mode	192-bit (0001)
2	0-2	Auxiliary Bit Usage	20-bit audio sample, Aux bits undefined (000) 24-bit audio sample (001)
	3-5	Sample Word Length: User Selectable	20 bits (011) 24 bits (101)
3	0-7	Multichannel Modes (0)	
4	0-7	AES 11 Sync Reference (0)	
5	0-7	Reserved (0)	
6-9		ASCII Source ID (0)	
10-13		ASCII Destination ID (0)	
14-17		Local Sample Address (0)	
18-21		Time of Day Address (0)	
22	0-7	Reliability flags (0000 0111)	
23	0-7	CRCC	



# Service Information

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## In This Chapter

This chapter contains the following sections:

- Troubleshooting Checklist
- Warranty and Repair Policy

### Troubleshooting Checklist

Routine maintenance to this RossGear product is not required. In the event of problems with your ADC-8532, the following basic troubleshooting checklist may help identify the source of the problem. If the module still does not appear to be working properly after checking all possible causes, please contact your Ross Video products distributor, or the Ross Video Technical Support department at the numbers listed under the “**Contact Us**” section at the end of this manual.

- **Visual Review** — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the module, the frame, and any associated peripheral equipment for signs of trouble.
- **Power Check** — Check the power indicator LED on the distribution frame front panel for the presence of power. If the power LED is not illuminated, verify that the power cable is connected to a power source and that power is available at the power main. Confirm that the power supplies are fully seated in their slots. If the power LED is still not illuminated, replace the power supply with one that is verified to work.
- **Reseat the Card in the Frame** — Eject the card and reinsert it in the frame.
- **Check Control Settings** — Refer to the Installation and Operation sections of the manual and verify all user settings.
- **Input Signal Status** — Verify that source equipment is operating correctly and that a valid signal is being supplied.
- **Output Signal Path** — Verify that destination equipment is operating correctly and receiving a valid signal.
- **Module Exchange** — Exchanging a suspect module with a module that is known to be working correctly is an efficient method for localizing problems to individual modules.

## Warranty and Repair Policy

The RossGear ADC-8532 is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of **FIVE (5)** years from the date of shipment from our factory. In the event that your RossGear ADC-8532 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 ADC-8532 has failed after your warranty period has expired, we will repair your defective product for as long as suitable replacement components are available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the FIVE (5) 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 ADC-8532 Analog Audio to AES/EBU Converter 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 ADC-8532 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 ADC-8532, 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 ADC-8532. A temporary replacement module, if required, 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 this equipment.



# Ordering Information

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## ADC-8532 and Related Products

Your **ADC-8532** Analog Audio to AES/EBU Converter is a part of the RossGear family of products. Ross Video Limited offers a full line of RossGear terminal equipment including distribution, conversion, monitoring, synchronizers, encoders, decoders, AES, keyers, control switchers, as well as analog audio and video products.

### ***Standard Equipment***

- **ADC-8532** Analog Audio to AES/EBU Converter
- **8532DR-004** Analog Audio to AES/EBU Converter User Manual

### ***Optional Equipment***

- **8532DR-004** Analog Audio to AES/EBU Converter User Manual (additional User Manual)
- **EXT-8100** Extender Board (module servicing extension)
- **DFR-8104A** Digital Products Frame and Power Supply (PS-8102)\* (1RU, holds 4 modules, includes 1 power supply)
- **DFR-8104A-C** Digital Products Frame with Cooling Fan Module and Power Supply (PS-8102)\* (1RU, holds 4 modules, includes 1 power supply)
- **DFR-8110A** Digital Products Frame and Power Supply (PS-8102)\* (2RU, holds 10 modules, includes 1 power supply)
- **DFR-8110A-C** Digital Products Frame with Cooling Fan Module and Power Supply (PS-8102)\* (2RU, holds 10 modules, includes 1 power supply)
- **CFM-8104A** Cooling Fan Module (cooling kit for standard DFR-8104A)
- **CFM-8110A** Cooling Fan Module (cooling kit for standard DFR-8110A)

- **PS-8102** Power Supply (85-264 volts)  
(redundancy option power supply for Ross 8000 series 2RU digital product frames)
  - **FSB-7110** Rear Support Bars and Brackets  
(additional support for rear frame-to-rack mounting)
  - **CRB-8110A** Card Retaining Bracket  
(module retainer used in field installations such as mobile trucks etc.)
  - **CSB-8100** Cable Support Bracket  
(cable support bar for rear of digital frames)
- \* One User Manual is supplied with each of these RossGear products.

**Notes:**

# 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

<b>PHONE</b>	<b>General Business Office and Technical Support</b>	613 • 652 • 4886
	<b>After-hours Emergency</b>	613 • 349 • 0006
	<b>Fax</b>	613 • 652 • 4425
<b>E-MAIL</b>	<b>General Information</b>	solutions@rossvideo.com
	<b>Technical Support</b>	techsupport@rossvideo.com
<b>POSTAL SERVICE</b>	<b>Ross Video Limited</b>	8 John Street, Iroquois, Ontario, Canada K0E 1K0
	<b>Ross Video Incorporated</b>	P.O. Box 880, Ogdensburg, New York, USA 13669-0880

## Visit Us

Please visit us at our website for:

- Company information
- Related products and full product lines
- On-line catalog
- Trade show information
- News
- Testimonials

[www.rossvideo.com](http://www.rossvideo.com)

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