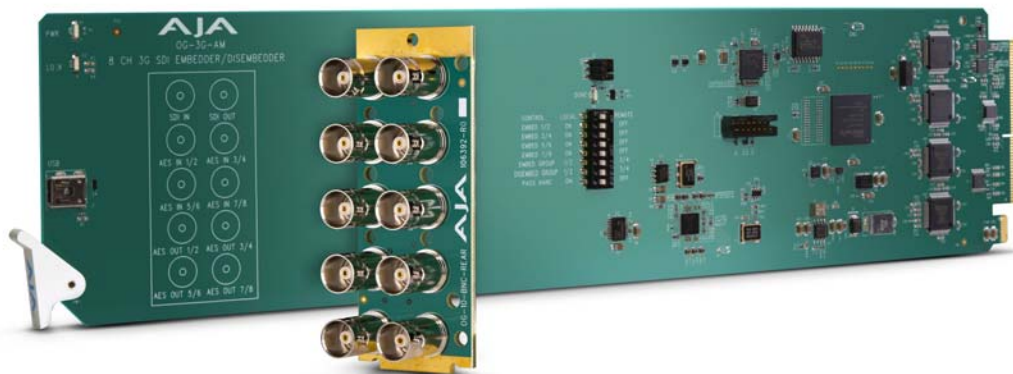# OG-3G-AM

openGear Card

Installation & Operation Guide

Version 1.0

Published: April 11, 2016

openGear

Because it matters.®

AJA
VIDEO SYSTEMS

Table of Contents

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Contacting Support

When calling for support, have all information at hand prior to calling.

To contact AJA for sales or support, use any of the following methods:

Telephone:	+1.530.271.3190
FAX:	+1.530.271.3140
Web:	http://www.aja.com
Support Email:	support@aja.com
Sales Email:	sales@aja.com

Chapter 1: OG-3G-AM

Card Overview

The OG-3G-AM is a triple rate 8 channel AES audio embedder/disembedder. AES audio can be embedded and disembedded simultaneously. The embedder is user selectable, on a channel pair basis, to either "pass" existing SDI input audio or embed AES input audio through the back panel. The ability to pass incoming ancillary data makes it possible to embed up to 16 channels of audio by cascading two units. Horizontal ancillary data (HANC) packets in compliance with SMPTE 291M can also be dropped at the input.

The OG-3G-AM automatically detects and configures to the input video standard. 3G-SDI formats up to and including 2048x1080p 60 YCbCr 4:2:2 are supported (see *"Appendix A: Specifications on page 23"* for a complete listing). The SDI output has minimal video latency and supports up to 16 channels of embedded audio.

NOTE: *2048x1080p/psf 29.97 and 30 formats support a maximum of 8 channels embedded audio.*

Using the Mini-Config application, you can configure data packets to be passed from the AES inputs to embedded ancillary packets un-altered. This, along with minimized embed/disembed latency, ensures 100 percent compatibility with Dolby® bitstreams and other non-PCM data.

Features

- Triple rate 3G, HD, and SD-SDI embedder/disembedder
- 8 Channel AES I/O
- 1 x BNC 3G-SDI input
- 1 x BNC 3G-SDI output
- 4 x BNC AES input
- 4 x BNC AES output
- Setup via DIP switch or PC/Mac using USB port and supplied USB cable (Mini-Config configuration software application available via download from AJA website)

- Hot-swap capable
- Compatible with DFR-8321 and OG3 openGear frames
- Five-year international warranty with unlimited technical support

NOTE: *OG-3G-AM cards do not communicate with the DashBoard Control System.*

OG-3G-AM Simplified Block Diagram

Figure 1. OG-3G-AM Block Diagram
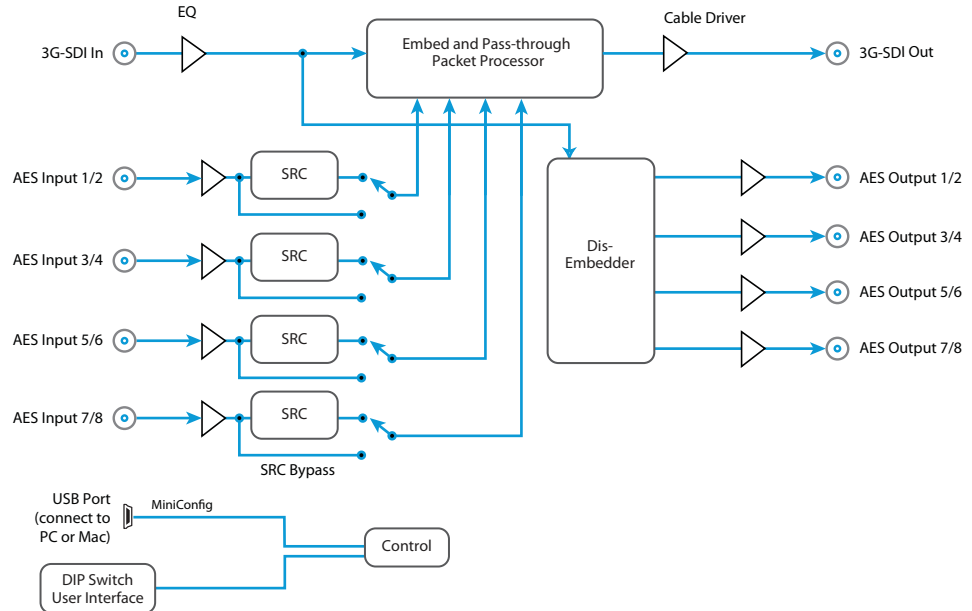
Connectors for OG-3G-AM

Figure 2. Rear View of OG-3G-AM Card Connectors
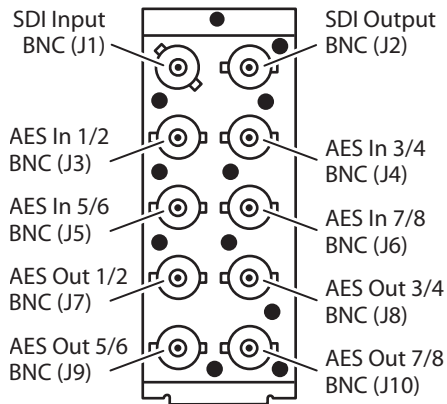
Indicators

LEDs on the front (near door) of the card indicate the presence of power and the type of signal detected on the SDI input as follows (from top to bottom):

- PWR LED illuminates green if DC power is detected.
- HD LOCK LED illuminates green if the input is 1.483Gbps or 1.485Gbps SDI.
- SD LOCK LED illuminates green if the input is 270Mbps SDI.
- Both HD LOCK and SD LOCK LEDs illuminate green if the input is 2.966Gbps or 2.970Gbps SDI.

User Controls

DIP Switches

The OG-3G-AM has an 8 position DIP switch accessible on the card. The DIP switches are used to configure the unit's audio embedding and disembedding, and control ancillary data.

Figure 3. OG-3G-AM DIP Switches
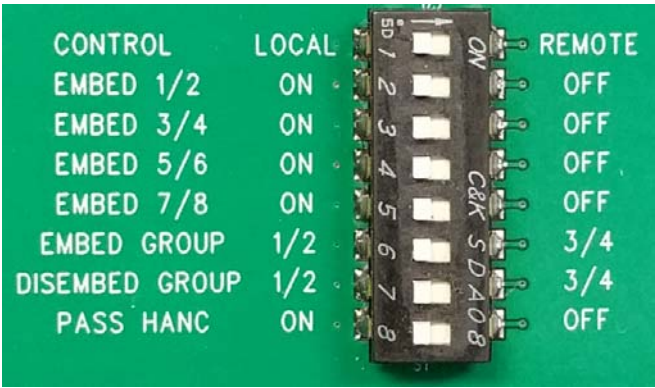
Factory default switch settings are all in the leftmost position.

The exact functions of the DIP switches are described in *"Operation" on page 10*.

openGear and AJA

openGear is an open-architecture, modular frame system designed by Ross Video and supported by a diverse range of terminal equipment manufacturers, including AJA. Ross Video manufactures the frames, power supplies and network cards for openGear.

AJA Video is a leading manufacturer of video interface technologies, converters, digital video recording solutions and professional cameras, bringing high-quality, cost-effective products to the professional, broadcast and post-production markets. AJA products, including openGear cards, are designed and manufactured at our facilities in Grass Valley, California.

Parts Lists

Quantity	Description
1	OG-3G-AM Front Card in ESD bag
1	BNC Rear Card

Installation

Summary

Installing an OG-3G-AM card into a DFR-8321 or OG3 openGear frame consists of the following steps:

• Install the Rear BNC Card into the frame,

- insert the Front DA Card in the right (even numbered) slot of the pair,
- connect the BNC cabling.

> **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 wearing synthetic fiber clothing. Always exercise proper grounding precautions when working on circuit boards and related equipment.

Unpacking

Unpack each openGear product you received from the shipping container and ensure that all items are included. If any items are missing or damaged, contact your sales representative or AJA directly.

Rear BNC Card Installation

1. Power down the openGear frame.
2. Ensure that the frame is properly installed.
3. Locate the card frame slot on the rear of the openGear frame into which you wish to install the openGear card.

NOTE: *An OG-3G-AM card occupies two slots in the frame.*

4. Using a Phillips screwdriver, unscrew the top screw from the desired blank rear plate and remove the rear plate.
5. Seat the bottom of the Rear Card in the seating slot at the base of the frame back plane (*Figure 4*).

Figure 4. Rear Card Inserted Into Frame Seating Slot

6. Align the top screw of the Rear Card with the screw hole on the top edge of the frame back plane.
7. Ensure the Rear Card aligns with the desired card slot before tightening the screw.
8. Using a Phillips screwdriver, fasten the Rear Card to the frame back plane. Do not over tighten.
9. Ensure proper frame cooling and ventilation by having all rear frame slots covered with rear modules or blank metal plates if plates are not pre-installed.

Front Card Installation

1. Open the openGear frame door as follows:

    A. Gently pull the side door tabs towards the center of the door, releasing the door from the frame.

    B. Using both hands, pull the door towards you. The door extender arms prevent the door from falling.

2. Locate the Rear Card you installed as described above. The interior slot number is dependent on the slot combinations into which you installed the Rear Card. This allows adequate spacing to avoid damaging the card, the cards installed in the neighboring slots, or both.

3. Hold the card by the edges and carefully align the card edges with the rails inside the frame. The slots are numbered starting from the left-most slot when facing the fame front.

NOTE: *OG-3G-AM cards are installed into the right (even numbered) slot of the pair.*

4. Fully insert the card into the frame until the card is properly seated in the Rear Card. (*Figure 5*).

Figure 5. Front Card Inserted Into Slot
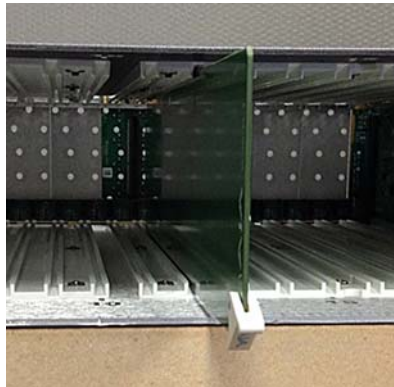
5. Close the frame door as follows:

    A. Slide the door into the frame.

    B. Pull and release the door tabs to ensure the frame door is securely locked to the frame.

Cabling

Refer to *Figure 2 on page 6* to identify the input and output signal connectors.

Chapter 2: Operation

Default Operational Settings

The OG-3G-AM ships from the factory with the following configuration:

• Local (DIP switch) control.

• Input AES audio channel pairs 1/2, 3/4, 5/6, 7/8 are embedded to SDI output channel pairs 1/2, 3/4, 5/6, 7/8, overwriting any existing embedded audio.

• Input SDI embedded audio channel pairs 1/2, 3/4, 5/6, 7/8 are disembedded to AES audio output channels 1/2, 3/4, 5/6, 7/8.

• All HANC packets pass from SDI input to output, except for embedded output audio channels 1/2, 3/4, 5/6, 7/8.

If these settings apply to your requirements, you can simply connect the video and audio input and output signal cables and power up the unit.

For other applications, you can configure the card using its DIP switch settings, or by using the Mini-Config application and a PC or Mac via USB.

DIP Switches

The OG-3G-AM DIP switches configure the audio embedding and disembedding functions, and control ancillary data.

Figure 4. OG-3G-AM DIP Switches
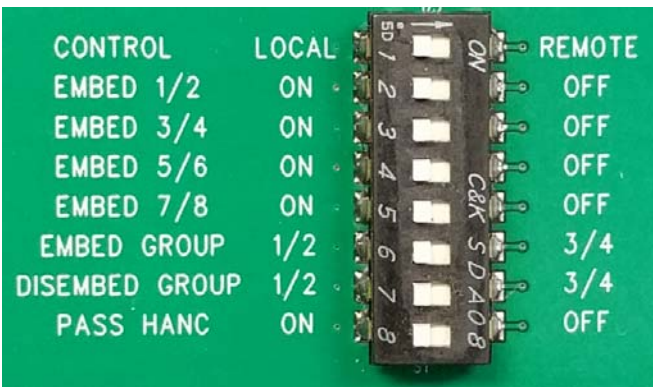
DIP Switch Settings

DIP switch settings used to configure various functions are described below.

Table 3. OG-3G-AM DIP Switch Setting Descriptions

SWITCH	FUNCTION	DIP Set LEFT (default)	DIP Set RIGHT
1	**Control**	Selects **Local** (DIP), and blocks Mini-Config control.	Selects **Remote** (Mini-Config), and disables DIP switches 2-8.
2	Audio Embedding for Channels 1/2 (**EMBD 1/2**)	(**ON**) Overwrite or embed new channel 1/2 packets.	(**OFF**) If AUX (SW 8) is **ON**: Pass any channel 1/2 packets from input SDI. If AUX (SW 8) is **OFF**: Delete all packets from input SDI.
3	Audio Embedding for Channels 3/4 (**EMDB 3/4**)	(**ON**) Overwrite or embed new channel 3/4 packets.	(**OFF**) If AUX (SW 8) is **ON**: Pass any channel 3/4 packets from input SDI. If AUX (SW 8) is **OFF**: Delete all packets from input SDI.
4	Audio Embedding for Channels 5/6 (**EMDB 5/6**)	(**ON**) Overwrite or embed new channel 5/6 packets.	(**OFF**) If AUX (SW 8) is **ON**: Pass any channel 5/6 packets from input SDI. If AUX (SW 8) is **OFF**: Delete all packets from input SDI.
5	Audio Embedding for Channels 7/8 (**EMDB 7/8**)	(**ON**) Overwrite or embed new channel 7/8 packets.	(**OFF**) If AUX (SW 8) is **ON**: Pass any channel 7/8 packets from input SDI. If AUX (SW 8) is **OFF**: Delete all packets from input SDI.
6	Channel Mapping For Embedded Groups (**EMBD GRP**)	Embed to Groups **1/2** as specified in 272M and 299M Refer to *Table 4, "DIP SW 6 Embedded Channel Mapping," on page 12*	Embed to Groups **3/4** as specified in 272M and 299M
7	Channel Mapping For Disembedding Groups (**DISEMBD GRP**)	Disembed from Groups **1/2** as specified in 272M and 299M) Refer to *Table 5, "DIP SW 7 Disembedded Input Channel Mapping," on page 13*	Disembed from Groups **3/4** as specified in 272M and 299M
8	Pass or Drop HANC input packets. (**PASS HANC**)	(**ON**) All incoming HANC packets are passed unless the embedder settings above require all or part of them to be over-written.	(**OFF**) All incoming HANC packets are dropped before embedding any new audio packets. Embedder settings above determine all embedded audio output. Disembedding is not affected.

NOTE: *2048x1080p/psf 29.97 and 30 formats support a maximum of 8 channels of embedded audio. When one of these formats is present and embedding is turned on, the PASS HANC DIP switch will be ignored and all incoming packets will be dropped before embedding any new audio packets.*

Switch 6 Embedded Channel Mapping

The following table shows how switch 6 affects embedded channel mapping.

Table 4. DIP SW 6 Embedded Channel Mapping

DIP SW 6 EMBD GRP	AES Input Channel	SDI Embedded Group	SDI Embedded Output Channel
Left (**1/2**)	1 —>	1	1
	2 —>		2
	3 —>		3
	4 —>		4
	5 —>	2	5
	6 —>		6
	7 —>		7
	8 —>		8
Right (**3/4**)	1 —>	3	9
	2 —>		10
	3 —>		11
	4 —>		12
	5 —>	4	13
	6 —>		14
	7 —>		15
	8 —>		16

Switch 7 Disembedding Channel Mapping

The following table shows how switch 7 affects disembedding channel mapping.

Table 5. DIP SW 7 Disembedded Input Channel Mapping

DIP SW 7 DISEMBD GRP	SDI Embedded Input Group	SDI Embedded Input Channel	AES Output Channel
Left (**1/2**)	1	1 —>	1
		2 —>	2
		3 —>	3
		4 —>	4
	2	5 —>	5
		6 —>	6
		7 —>	7
		8—>	8
Right (**3/4**)	3	9 —>	1
		10 —>	2
		11 —>	3
		12 —>	4
	4	13 —>	5
		14 —>	6
		15 —>	7
		16 —>	8

USB Control and Setup—Using AJA *Mini-Config*

Your AJA openGear card can be used with its default configuration settings for some applications since it is designed to recognize inputs and perform standard actions automatically by default. However, to use its full capability, you must use AJA's Mini-Config software application for PCs and Macs. This same application can be used to update to new Mini-Converter software released by AJA.

NOTE: *DIP switch 1 must be ON (Remote, Right) to permit Mini-Config control of the unit.*

Connecting the USB Cable to the USB Port on the OG-3G-AM Card

Connect the USB cable to the USB port located on the front of the OG-3G-AM card, as shown in .

Figure 5. OG-3G-AM USB Port

USB Connector →
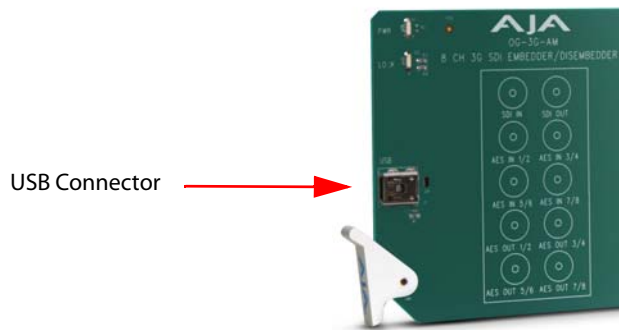
Acquiring Mini-Config

AJA's Mini-Config application is available for download from the AJA website.

To download the latest Mini-Config package, which includes the Mini-Config application, Mini-Converter firmware, and documentation, go to:

https://www.aja.com/en/products/mini-converters/mini-config-software

Select either the Windows or Mac icon to download the desired version.

Mini-Converter Documentation

Included with the Mini-Config package is a complete set of documentation for all Mini-Converters supported by Mini-Config. A .PDF of the *Installation and Operation Guide* for the currently connected Mini-Converter can be accessed from the Mini-Config UI via the **Help/Manual** drop-down menu.

Documentation for all AJA Mini-Converters that use Mini-Config can also be accessed directly in the Mini-Config download package Documentation folder, and via the Documentation icon available on the Mac installer.

Documentation (and firmware) included with the Mini-Config application are the versions available at the time of distribution. However, Mini-Converter software, firmware and documentation are updated regularly, so newer versions may exist.

To download the latest documentation for an individual Mini-Converter, go to:

https://www.aja.com/en/category/mini-converters

and navigate to the Support webpage of that Mini-Converter.

Installing Mini-Config

PC Installation

To install Mini-Config on a Windows PC:

1. Download the application from the AJA website (select the Windows icon on the Mini-Config Support webpage).
2. Open the AJA_MiniConfig.zip file
3. Double-click on the MiniInstaller.msi file.
4. A Setup Wizard will guide you through the installation.

Figure 6. Mini-Config PC Setup Wizard

5. Click **Next** to begin. Answer the questions in the subsequent dialogues. When finished, an AJA Mini-Config shortcut will be installed on the desktop, and you will be able to locate the Mini-Config application in the AJA folder in the Programs listing.

NOTE: *If the Mini-Config application already exists on the PC, a different Setup Wizard appears.*

Figure 7. Mini-Config Setup Wizard, Reinstallation
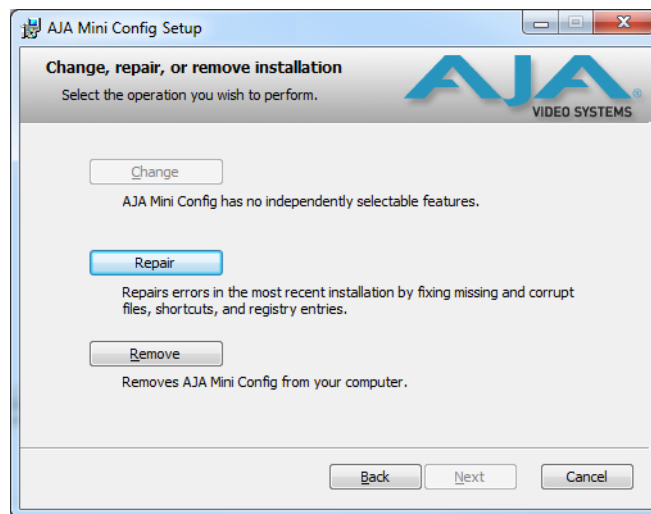
With this screen you can **Repair** (reinstall) or **Remove** (uninstall) Mini-Config on the PC.

Mac Installation   To install the application on a Mac:

NOTE: *Macintosh computers must be Intel-based (G5, G4 and earlier models will not work with Mini-Config).*

1. Download the application from the AJA website (select the Apple icon on the Mini-Config Support webpage).
2. Open the AJA_MiniConfig folder.
3. Double-click on the AJAMiniConfig.dmg file.
4. Answer the prompt and a utility program will be launched.

Figure 8. Mini-Config Mac Installer
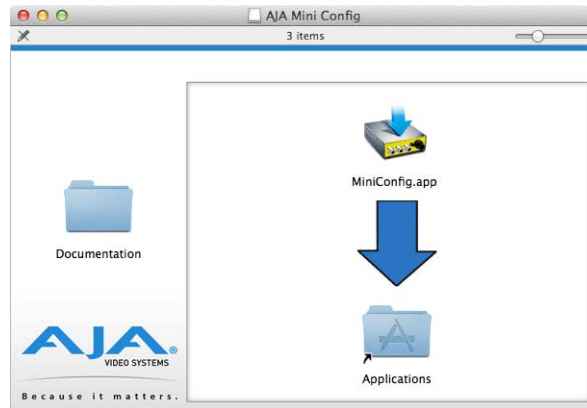
5. To complete the installation drag the "MiniConfig.app" icon to the Applications folder.

Running Mini-Config

Connect the Mini-Converter to the PC or Mac via the supplied USB cable. Connect the external power supply (supplied) to the Mini-Converter.

PC Startup

To run Mini-Config on a PC, double-click on the AJA Mini-Config icon on your desktop, or open the AJA folder in the program list and click on the AJA Mini-Config application located inside the Mini-Config folder.
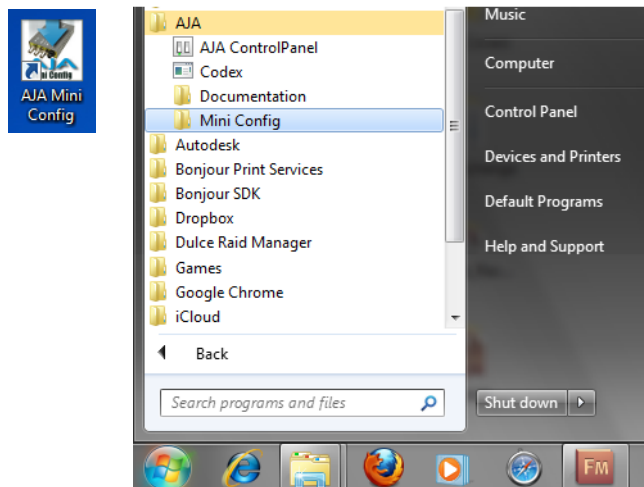
Mac Startup

To run Mini-Config on a Mac, open the Applications folder and locate the AJA Mini-Config application. Double-click the application to launch it.

Saving Setups

A **File** drop down menu on the Mini-Config application bar allows you to save the current state of the Mini-Converter to a preset file for later recall.
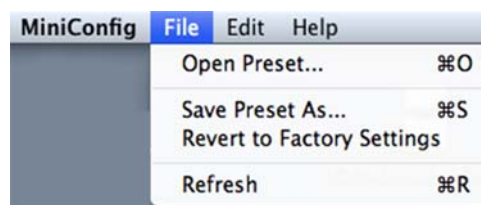
Using this feature you can set up the converter for different applications, storing each configuration (**Save Preset As...**) with a unique name for easy recall (**Open Preset...**).

A **Revert to Factory Settings** menu item similarly allows you to change the settings back to AJA's factory defaults.

Operating Mini-Config

The Mini-Config application provides a graphic interface for viewing settings and updating software. It consists of an information area at the top that shows the available Mini-Converters attached to the computer via USB, with a graphical rendering of the selected Mini-Converter showing all the connectors and their current state.

Colored text next to the connectors indicates the signal type and what the Mini-Converter is doing:

- Blue text indicates the values automatically selected
- Black text indicates values that you have manually selected
- Red text indicates the Mini-Converter is not detecting a signal, or cannot operate with the current user settings.

NOTE: *Even if no output device is detected, the SDI connector text still shows the signal it is outputting.*

NOTE: *Configuration settings in red will change based on the attached output device as well as input signals. For improved accuracy and reliability, you should configure the Mini-Converter only when the target output device is attached and input signals are supplied at the inputs.*

Screens are virtually the same on both PC and Mac, with subtle differences that reflect the general look of the platform environment.

Running Multiple Mini-Converters

Mini-Config can manage multiple AJA Mini-Converters connected via USB—even when they are of differing types. However it only connects to one at a time. You can choose which Mini-Converter you wish to control using the pulldown menu in the upper right hand corner. If you want to configure multiple Mini-Converters in parallel, you can do it by running multiple instances of the Mini-Config application and have each control a different Mini-Converter.

NOTE: *During a Mini-Converter firmware update, only one Mini-Converter should be connected to the computer via USB.*

NOTE: *The version 1.0 Mini-Config user interface displays an image of the 3G-AM Mini-Coverter, which has the same feature set as the OG-3G-AM card.*

Figure 9. Example Mini-Config Screen

Select a USB port and an attached Mini-Converter (name in parentheses)

The input and output are labeled with the signals currently detected or manually selected.

Firmware version

Tabbed screens

Message Showing Status
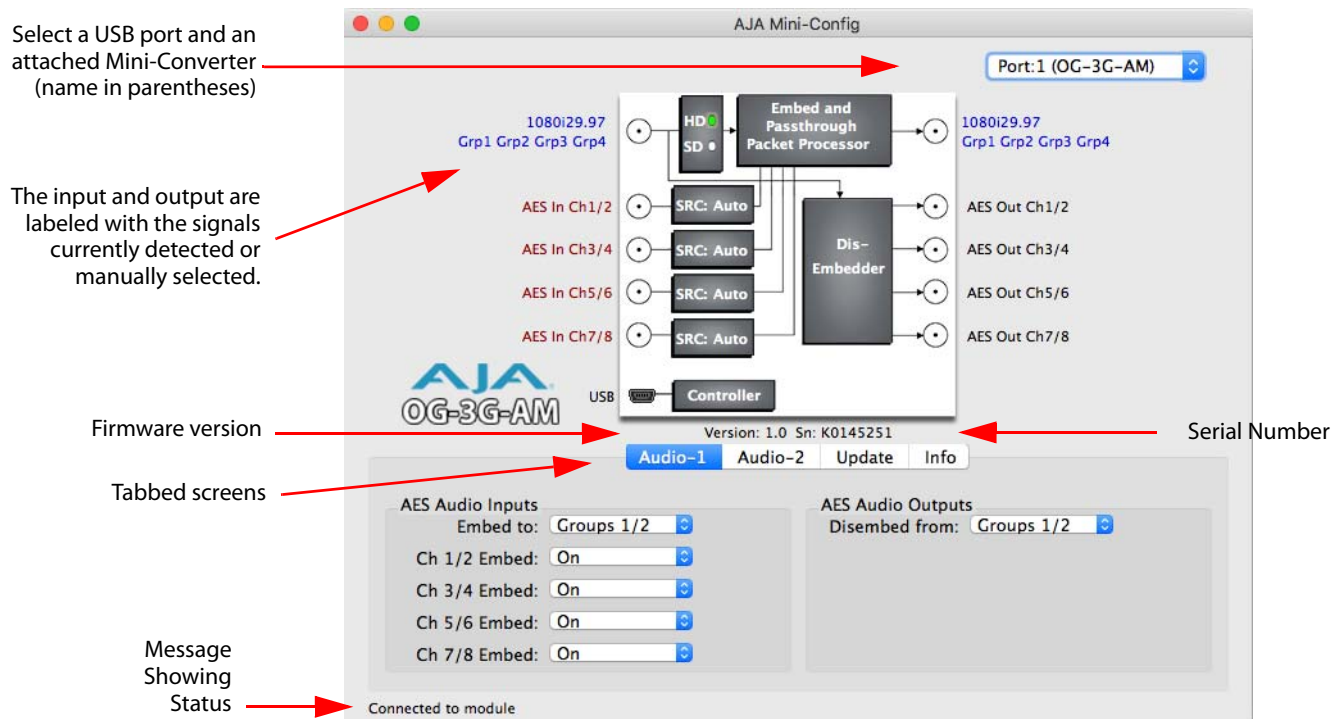
Serial Number

Selecting a Mini-Converter with the pulldown menu causes this application to connect to the selected converter. The graphic of Mini-Converter and text below it provides:

• Type of converter

• Firmware version

• Serial number of the unit.

A status field at the bottom of the screen shows if your application is connected and communicating with the Mini-Converter.

When configuring the Mini-Converter, select it from the top pulldown, view the current settings and change any values. Making a change communicates that new value to the Mini-Converter's non-volatile memory.

Tabbed Screens

The Tabs delineate control screens with groups of controls for each type of task to be performed.

The controls for the actual configuration parameters are specific to each Mini-Converter type. When you Click on any of the tab buttons, the pane below the tabs will change to match your tab selection. Any changes you make are immediately applied and will be saved, overwriting previous settings.

Audio-1 Screen
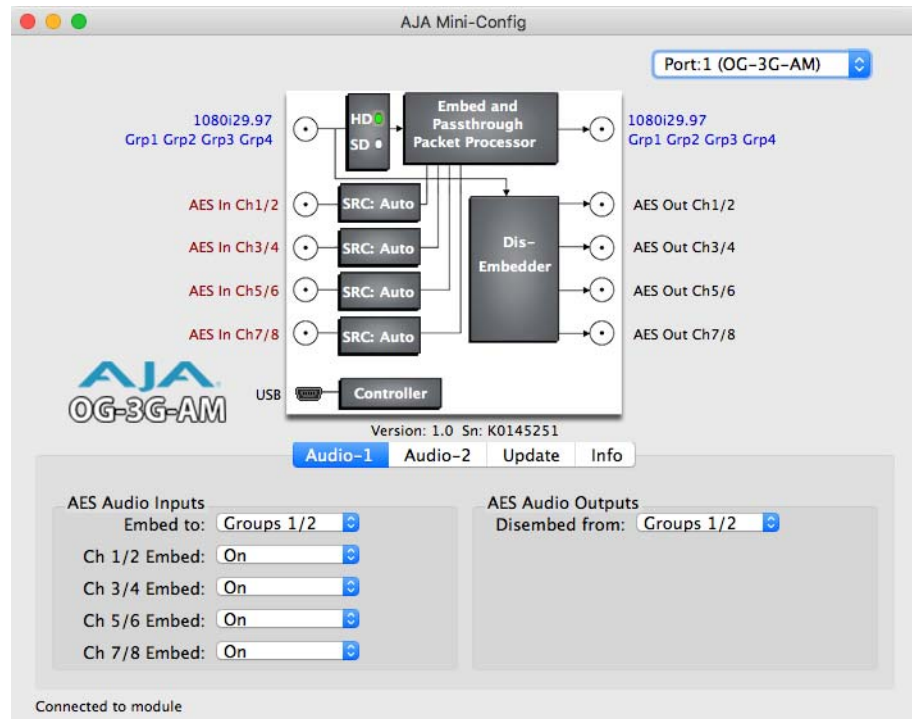
Click on the Audio-1 tab to view and make changes to the audio embedding and disembedding settings.

AES Audio Inputs

Embed to: Choose which SDI embedded audio groups will embed incoming AES audio:
  • Groups 1/2 (Ch 1-8), or Groups 3/4 (Ch 9-16).

Ch1-2 Embed: **On** embeds AES audio Ch 1/2 pair in the first two channels of the Groups selected above.

Ch 3-4 Embed: **On** embeds AES audio Ch 3/4 pair in the next two channels of the Groups selected above.

*Ch 5-6 Embed:* **On** embeds AES audio Ch 5/6 pair in the next two channels of the Groups selected above.

Ch 7-8 Embed: **On** embeds AES audio Ch 7/8 pair in the last two channels of the Groups selected above.

AES Audio Outputs

Disembed from: Choose which SDI embedded audio group will disembed its audio and send it to the four AES audio outputs:
  • Group 1/2 (Ch 1-8), Group 3/4 (Ch 9-16).

Audio-2 Screen
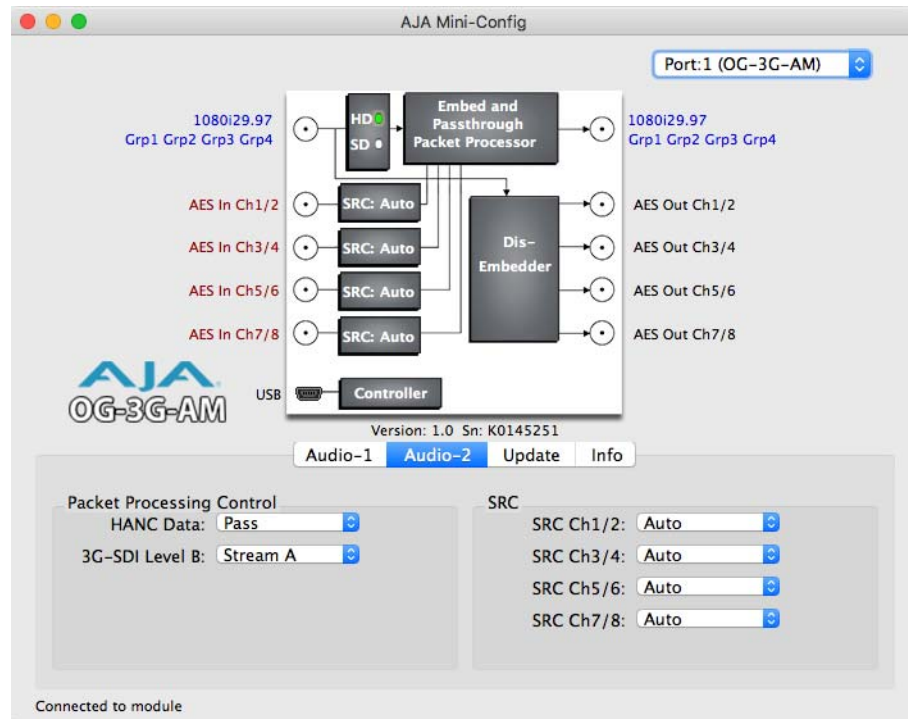
Click on the Audio-2 tab to view and make changes to the packet processing and audio level settings.

Packet Processing Control

HANC Data: When **Pass** is selected, all incoming HANC packets are passed unless the embedder settings require all or part of them to be over-written.

When **Remove** is selected, all incoming HANC packets are dropped before embedding any new audio packets. The embedder settings determine all embedded audio output. Disembedding is not affected.

NOTE: *2048x1080p/psf 29.97 and 30 formats support a maximum of 8 channels of embedded audio. When one of these formats is present and embedding is turned on, the PASS HANC setting will be ignored and all incoming packets will be dropped before embedding any new audio packets.*

3G-SDI Level B: For 3G Level B signals, this control selects either the 16 audio channels of input **Stream A** or the 16 channels of input **Stream B** for disembedding. This setting also controls whether output Stream A or output Stream B will receive embedded audio. This control has no effect if a 3G Level B signal is not detected.

SRC   This setting determines whether AES audio inputs are passed through the sample rate converter before embedding. Turn this setting Off for compatibility with non-PCM bitstreams such as Dolby-E or Dolby-B.

Choose **Auto**, **On**, or **Off** for each of the indicated input channel pairs: (Ch 1/2, Ch 3/4, Ch 5/6, Ch 7/8).

• Auto - Automatically selects whether incoming AES audio is sample rate converted. If channel status bits are detected that indicate the audio is PCM (normal digital audio), the audio will be passed through the sample rate converter. If compressed audio (such

as Dolby) bits are detected, the sample rate converter is bypassed (it would corrupt the compressed data).

- On - Pass all input AES audio through the sample rate converter before embedding (for example, for use with PCM audio). AES inputs are sample rate converted to a 48KHz rate synchronous to the video input.

- Off - Do not pass any input AES audio through the sample rate converter before embedding (for example, for use with Dolby® Digital from a synchronous source).

NOTE: *For proper operation with SRC Off, the AES input timing must be externally synchronized to the input SDI.*

About SRC Settings   48KHz synchronous ancillary packets are disembedded and passed unaltered to the AES outputs regardless of the SRC setting. With the SRC setting Off, data packets are passed from the AES inputs to embedded ancillary packets un-altered, according to SMPTE 337M. All AES3-2003 defined channel status bits are passed through unaltered in both the embed and dis-embed directions—except for the sample rate field, which is always set to 48KHz. The channel status CRC is re-calculated and inserted into the bitstream. This ability, along with a very small audio embed/disembed latency, ensures 100 percent compatibility with Dolby® bitstreams.

Update Screen
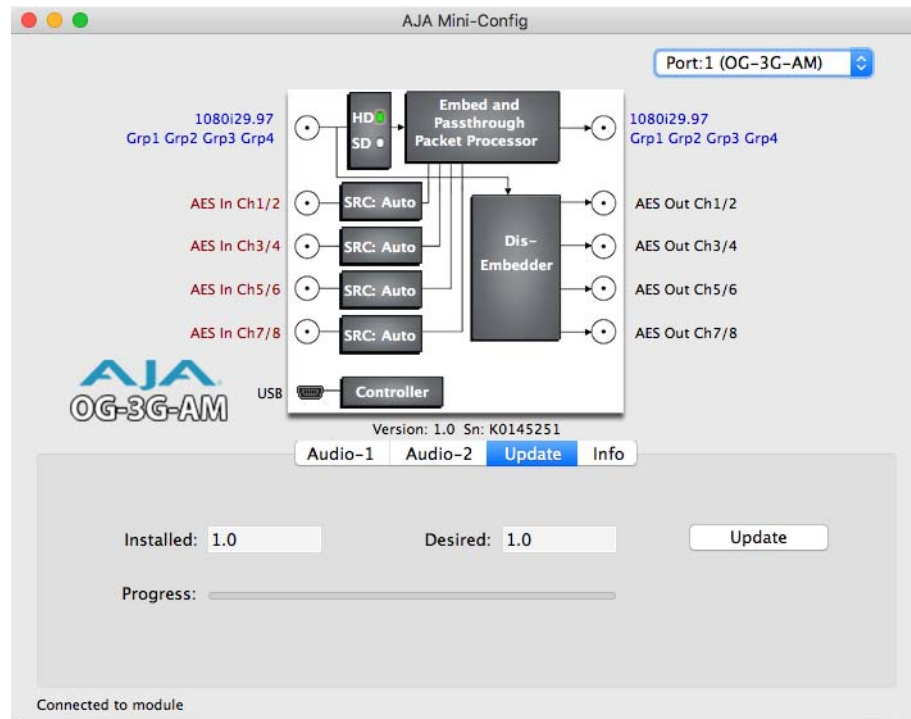
Use this Update screen to view the software version currently installed on the converter or install new software.

NOTE: *When discussing Mini-Converters, "Firmware" is software that will be stored in the Mini-Converter's non-volatile memory and used when it is powered up. This is something different than the Mini-Config application software. The version numbers shown in the Update screen refer only to the firmware.*

The following fields and control are present in this screen:

Installed: This field shows the version of the firmware currently installed inside the Mini-Converter.

Desired: This field shows the version of firmware embedded in the Mini-Config application which you can install into the Mini-Converter by clicking the *Update* button.

Update   This button initiates a software update operation loading the "Desired" version of firmware into the Mini-Converter's non-volatile memory.

Progress: This indicator bar shows the progress of software being installed.

Software Update Procedure

1. Check the AJA website for new Mini-Config software for your Mini-Converter. If new software is found, download it and uncompress the file archive (zip). Here is the URL to use when checking:

   http://www.aja.com/en/products/mini-converters/mini-config-software

2. Connect the Mini-Converter to a Mac or PC via a USB port on the computer and run the new Mini-Config software just downloaded.

3. Click on the Update tab screen.

4. Check the Installed version level against the Desired version level. If the Desired is newer, then click the **Update** button to download the new firmware to the Mini-Converter; progress will be shown via the "Progress" thermometer bar.

Info Screen
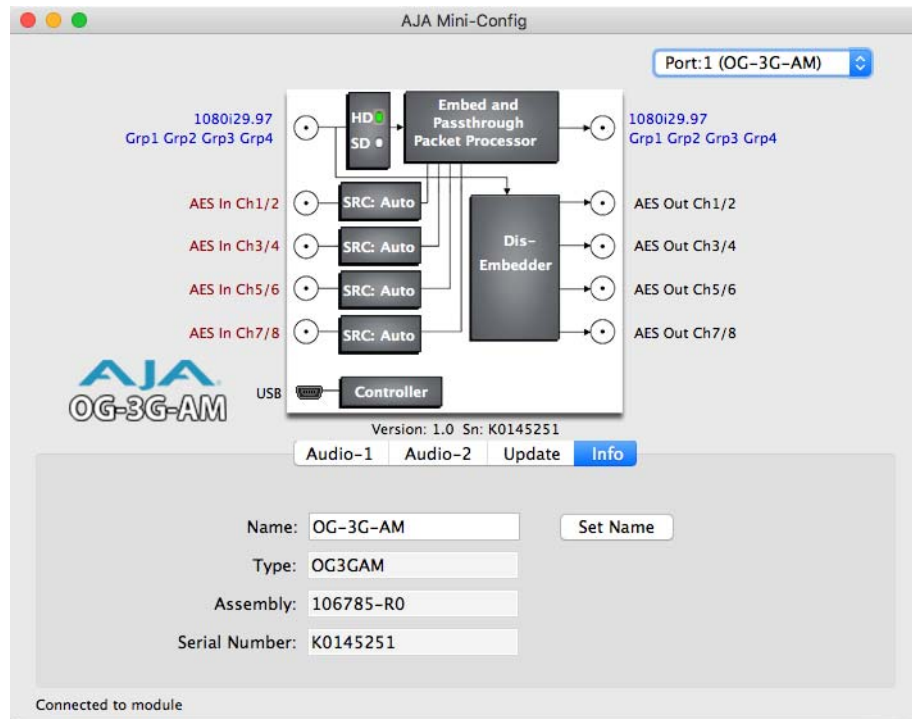
This screen provides basic information about the Mini-Converter. This information is mostly useful when calling AJA Support for service or technical support.

Name   This field allows you to give your Mini-Converter a name. This may be useful if you have several Mini-Converters attached to a Mac/PC via USB so you can distinguish one of them easily (especially if they're the same model).

Type: This is the factory set model name of the Mini-Converter (OG-3G-AM).

Assembly: This is the factory assembly number.

Serial Number: This is the factory set unique serial number of your OG-3G-AM. If you ever call AJA Support for service, you may be asked for this number.

Appendix A: Specifications

Video Formats

1 x 3 Gb SDI (level A or B)	• (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	• (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
	• (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	• (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
	• (HD) 1920 x 1080i 25, 29.97, 30
	• (HD) 1280 x 720p 50, 59.94, 60
1 x 1.5 Gb SDI	• (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
	• (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
	• (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30
	• (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
	• (HD) 1920 x 1080i 25, 29.97, 30
	• (HD) 1280 x 720p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
1 x 270 Mb SDI	• (SD) 525i
	• (SD) 625i

Video Input Digital
- 1 x 3G-SDI BNC, SMPTE-259/292/424

Video Output Digital
- 1 x 3G-SDI BNC, SMPTE-259/292/424

Audio Input Digital
- 4 x BNC

Audio Data Formats
- AES3 2003
- SMPTE ST 337

Digital Audio Converters
- 24-bit

Embedded Audio
- SDI embedded audio, 24-bit, 16-Channel*
- SMPTE ST 272 (SD): 20-bit, 48 KHz synchronous
- SMPTE ST 299 (3G/HD): 24-bit, 48 KHz synchronous
- Incoming embedded audio can be passed, removed, or overridden

*NOTE: 2048 x 1080p/PsF 29.97 and 30 formats support a maximum of 8-Channels embedded audio

Audio Output Digital	• SDI embedded audio, 24-bit, 8-channel • 4 x BNC
Embed Path Audio Latency	(Time measured between audio input and video output connector): • 1500 usec (SRC ON) • 400 usec (SRC OFF)
Disembed Path Audio Latency	(Time measured between video input and audio output connector): • 210 usec
User Interface	• AJA Mini-Config software (via USB on front panel)
Slots	• Two slots required for each card
Size	• openGear standard form-factor, front slot and rear card • Rear Card: OG-10-BNC-Rear • 10 x BNC, SMPTE-259/292/424
Weight	• 0.5 lb
Power	• openGear frame compatible, 5.0 watts max per card
Environment	• Operating Temperature: 0C to 40C (32F to 104F) • Storage Temperature: -40C to 60C (-40F to 140F) • Operating Relative Humidity: 10-90% non-condensing • Operating Altitude: <3,000m (<10,000ft)

Appendix B: Safety and Compliance

Federal Communications Commission (FCC) Compliance Notices

Class A Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian ICES Statement

Canadian Department of Communications Radio Interference Regulations

This digital apparatus does not exceed the Class A limits for radio-noise emissions from a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. This Class A digital apparatus complies with Canadian ICES-003.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada. Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

European Union and European Free Trade Association (EFTA) Regulatory Compliance

This equipment may be operated in the countries that comprise the member countries of the European Union and the European Free Trade Association. These countries, listed in the following paragraph, are referred to as The European Community throughout this document:

AUSTRIA, BELGIUM, BULGARIA, CYPRUS, CZECH REPUBLIC, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, MALTA, NETHERLANDS, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, SWEDEN, UNITED KINGDOM, ICELAND, LICHTENSTEIN, NORWAY, SWITZERLAND

Declaration of Conformity

Marking by this symbol indicates compliance with the Essential Requirements of the EMC Directive of the European Union 2004/108/EC.

CE   This equipment meets the following conformance standards:

Safety: EN 60065: 2002 + A1: 2006 + A11: 2008 + A2: 2010 + A12: 2011 (Bauart License)

IEC 60065: 2001 + A1: 2005 + A2: 2010 (CB Scheme Report/Certificate)

Additional licenses issued for specific countries available on request.

Emissions: EN 55032: 2012, CISPR 22: 2008, EN 55022: 2010, EN 61000-3-2: 2009, EN 61000-3-3:2008

Immunity: EN 55103-2: 2009, EN 61000-4-2:2009, EN 61000-4-3:2010, EN 61000-4-4:2010, EN 61000-4-5:2005, EN 61000-4-6:2009 , EN 61000-4-11:2004

Environments: E2, E3 and E4

The product is also licensed for additional country specific standards as required for the International Marketplace.

> ⚠️ **Warning!**
> This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take appropriate measures.
>
> Achtung! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.
>
> Attention! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l?utilisateur de prendre les mesures spécifiques appropriées.

Recycling Notice

This symbol on the product or its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste for recycling, please contact your local authority, or where you purchased your product.

Korean KCC Compliance Statement

A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A (Broadcasting Communication Equipment for Office Use)	As an electromagnetic wave equipment for office use (Class A), this equipment is intended to use in other than home area. Sellers or users need to take note of this.

Taiwan Compliance Statement

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

This is a Class A product based on the standard of the Bureau of Standards, Metrology and Inspection (BSMI) CNS 13438, Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japanese Compliance Statement

1. Class A ITE

この装置は、クラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害

を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求され

ることがあります。ＶＣＣＩ－Ａ

This is a Class A product based on the standard of the VCCI Council (VCCI V-3/2015.04). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Translated Warning and Caution Messages

The following caution statements, warning conventions, and warning messages apply to this product and manual

Warning Symbol   Hazard Symbol   Caution Symbol

Before Operation Please Read These Instructions

	Warning!
	Read and follow all warning notices and instructions marked on the product or included in the documentation.
	Avertissement ! Lisez et conformez-vous à tous les avis et instructions d'avertissement indiqués sur le produit ou dans la documentation.
	Warnung! Lesen und befolgen Sie die Warnhinweise und Anweisungen, die auf dem Produkt angebracht oder in der Dokumentation enthalten sind.
	¡Advertencia! Lea y siga todas las instrucciones y advertencias marcadas en el producto o incluidas en la documentación.
	Aviso! Leia e siga todos os avisos e instruções assinalados no produto ou incluídos na documentação.
	Avviso! Leggere e seguire tutti gli avvisi e le istruzioni presenti sul prodotto o inclusi nella documentazione.

	Warning!
	Do not use this device near water and clean only with a dry cloth.
	Avertissement! N'utilisez pas cet appareil près de l'eau et nettoyez-le seulement avec un tissu sec..
	Warnung! Das Gerät nicht in der Nähe von Wasser verwenden und nur mit einem trockenen Tuch säubern.
	¡Advertencia! No utilice este dispositivo cerca del agua y límpielo solamente con un paño seco.
	Aviso! Não utilize este dispositivo perto da água e limpe-o somente com um pano seco.
	Avviso! Non utilizzare questo dispositivo vicino all'acqua e pulirlo soltanto con un panno asciutto.

> ⚠️ **Warning!**
> Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
>
> **Avertissement !** Ne bloquez aucune ouverture de ventilation. Suivez les instructions du fabricant lors de l'installation.
>
> **Warnung!** Die Lüftungsöffnungen dürfen nicht blockiert werden. Nur gemäß den Anweisungen des Herstellers installieren.
>
> **¡Advertencia!** No bloquee ninguna de las aberturas de la ventilación. Instale de acuerdo con las instrucciones del fabricante.
>
> **Aviso!** Não obstrua nenhuma das aberturas de ventilação. Instale de acordo com as instruções do fabricante.
>
> **Avviso!** Non ostruire le aperture di ventilazione. Installare in conformità con le istruzioni del fornitore.

> ⚠️ **Warning!**
> Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
>
> **Avertissement !** N'installez pas l'appareil près d'une source de chaleur telle que des radiateurs, des bouches d'air de chauffage, des fourneaux ou d'autres appareils (amplificateurs compris) qui produisent de la chaleur.
>
> **Warnung!** Nicht in der Nähe von Wärmequellen wie Heizkörpern, Heizregistern, Öfen oder anderen Wärme erzeugenden Geräten (einschließlich Verstärkern) aufstellen.
>
> **¡Advertencia!** No instale cerca de fuentes de calor tales como radiadores, registros de calor, estufas u otros aparatos (incluidos amplificadores) que generan calor.
>
> **Aviso!** Não instale perto de nenhuma fonte de calor tal como radiadores, saídas de calor, fogões ou outros aparelhos (incluindo amplificadores) que produzam calor.
>
> **Avviso!** Non installare vicino a fonti di calore come termosifoni, diffusori di aria calda, stufe o altri apparecchi (amplificatori compresi) che emettono calore.

	Warning!
⚠️	Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.
	Avertissement ! Référez-vous au personnel de service qualifié pour tout entretien. L'entretien est exigé quand l'appareil a été endommagé de quelque manière que ce soit, par exemple lorsque le cordon d'alimentation ou la prise sont endommagés, que du liquide a été versé ou des objets sont tombés dans l'appareil, que l'appareil a été exposé à la pluie ou à l'humidité, ne fonctionne pas normalement ou est tombé.
	Warnung! Das Gerät sollte nur von qualifizierten Fachkräften gewartet werden. Eine Wartung ist fällig, wenn das Gerät in irgendeiner Weise beschädigt wurde, wie bei beschädigtem Netzkabel oder Netzstecker, falls Flüssigkeiten oder Objekte in das Gerät gelangen, das Gerät Regen oder Feuchtigkeit ausgesetzt wurde, nicht ordnungsgemäß funktioniert oder fallen gelassen wurde.
	¡Advertencia! Consulte al personal calificado por cuestiones de reparación. El servicio de reparación se requiere cuando el dispositivo ha recibido cualquier tipo de daño, por ejemplo cable o espigas dañadas, se ha derramado líquido o se han caído objetos dentro del dispositivo, el dispositivo ha sido expuesto a la lluvia o humedad, o no funciona de modo normal, o se ha caído.
	Aviso! Remeta todos os serviços de manutenção para o pessoal de assistência qualificado. A prestação de serviços de manutenção é exigida quando o dispositivo foi danificado mediante qualquer forma, como um cabo de alimentação ou ficha que se encontra danificado/a, quando foi derramado líquido ou caíram objectos sobre o dispositivo, quando o dispositivo foi exposto à chuva ou à humidade, quando não funciona normalmente ou quando foi deixado cair.
	Avviso! Fare riferimento al personale qualificato per tutti gli interventi di assistenza. L'assistenza è necessaria quando il dispositivo è stato danneggiato in qualche modo, ad esempio se il cavo di alimentazione o la spina sono danneggiati, è stato rovesciato del liquido è stato rovesciato o qualche oggetto è caduto nel dispositivo, il dispositivo è stato esposto a pioggia o umidità, non funziona correttamente o è caduto.

	Warning!
⚠️	Disconnect the external AC power supply line cord(s) from the mains power before moving the unit.
	Avertissement! Retirez le ou les cordons d'alimentation en CA de la source d'alimentation principale lorsque vous déplacez l'appareil.
	Warnung! Trennen Sie die Wechselstrom-Versorgungskabel vom Netzstrom, bevor Sie das Gerät verschieben.
	¡Advertencia! Cuando mueva la unidad desenchufe de la red eléctrica el/los cable(s) de la fuente de alimentación CA tipo brick.
	Advertência! Remova os cabos CA de alimentação brick da rede elétrica ao mover a unidade.
	Avvertenza! Scollegare il cavo dell'alimentatore quando si sposta l'unità.

	Hazard Warning!
	High Voltage. This situation or condition can cause injury due to electric shock.
	Avertissement! Tension élevée. Cette situation ou condition peut causer des blessures dues à un choc électrique.
	Warnung! Hochspannung. Diese Situation oder Bedingung kann zu Verletzungen durch Stromschlag führen.
	¡Advertencia! Alto voltaje . Esta situación o condición puede causar lesiones debidas a una descarga eléctrica.
	Aviso! Alta Tensão . Esta situação ou condição pode causar danos devido a choques elétricos.
	Avviso! Alta tensione. Questa situazione o condizione può causare lesioni a causa di scosse elettriche.

	Warning!
	Only use attachments and accessories specified and/or sold by the manufacturer.
	Avertissement! Utilisez seulement les attaches et accessoires spécifiés et/ou vendus par le fabricant.
	Warnung! Verwenden Sie nur Zusatzgeräte und Zubehör angegeben und / oder verkauft wurde durch den Hersteller.
	¡Advertencia! Utilice solamente los accesorios y conexiones especificados y/o vendidos por el fabricante.
	Aviso! Utilize apenas equipamentos/acessórios especificados e/ou vendidos pelo fabricante.
	Avviso! Utilizzare soltanto i collegamenti e gli accessori specificati e/o venduti dal produttore.

> ⚠️ **Warning!**
> Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
>
> **Avertissement!** La sécurité de la prise polarisée ou de la prise de type mise à la terre ne doit en aucun cas être empêchée de fonctionner. Une prise polarisée a deux broches, l'une étant plus large que l'autre. Une prise de type mise à la terre a deux broches et une troisième broche pour la mise à la terre. La broche large ou la troisième broche sont fournies pour votre sécurité. Si la prise fournie ne s'insère pas dans votre prise femelle, consultez un électricien pour le remplacement de la prise femelle obsolète.
>
> **Warnung!** Der Sicherheitszweck des gepolten bzw. Schukosteckers ist zu berücksichtigen. Ein gepolter Stecker verfügt über zwei Pole, von denen einer breiter als der andere ist. Ein Schukostecker verfügt neben den zwei Polen noch über einen dritten Pol zur Erdung. Der breite Pol bzw. der Erdungspol dienen der Sicherheit. Wenn der zur Verfügung gestellte Stecker nicht in Ihren Anschluss passt, konsultieren Sie einen Elektriker, um den veralteten Anschluss zu ersetzen.
>
> **¡Advertencia!** No eche por tierra la finalidad del tipo de enchufe polarizado con conexión a tierra. Un enchufe polarizado tiene dos espigas, una más ancha que la otra. Un enchufe con conexión a tierra tiene dos espigas iguales y una tercera espiga que sirve para la conexión a tierra. La expiga ancha, o la tercera espiga, sirven para su seguridad. Si el enchufe suministrado no encaja en el tomacorriente, consulte con un electricista para reemplazar el tomacorriente obsoleto.
>
> **Aviso!** Não anule a finalidade da segurança da ficha polarizada ou do tipo ligação terra. Uma ficha polarizada tem duas lâminas sendo uma mais larga do que a outra. Uma ficha do tipo de ligação à terra tem duas lâminas e um terceiro terminal de ligação à terra. A lâmina larga ou o terceiro terminal são fornecidos para sua segurança. Se a ficha fornecida não couber na sua tomada, consulte um electricista para a substituição da tomada obsoleta.
>
> **Avviso!** Non compromettere la sicurezza della spina polarizzata o con messa a terra. Una spina polarizzata ha due spinotti, di cui uno più largo. Una spina con messa a terra ha due spinotti e un terzo polo per la messa a terra. Lo spinotto largo o il terzo polo sono forniti per motivi di sicurezza. Se la spina fornita non si inserisce nella presa di corrente, contattare un elettricista per la sostituzione della presa obsoleta.

> ⚠️ **Warning!**
> Since the Mains plug is used as the disconnection for the device, it must remain readily accessible and operable.
>
> **Avertissement!** Puisque la prise principale est utilisée pour débrancher l'appareil, elle doit rester aisément accessible et fonctionnelle.
>
> **Warnung!** Da der Netzstecker als Trennvorrichtung dient, muss er stets zugänglich und funktionsfähig sein.
>
> **¡Advertencia!** Puesto que el enchufe de la red eléctrica se utiliza como dispositivo de desconexión, debe seguir siendo fácilmente accesible y operable.
>
> **Aviso!** Dado que a ficha principal é utilizada como a desconexão para o dispositivo, esta deve manter-se prontamente acessível e funcional.
>
> **Avviso!** Poiché il cavo di alimentazione viene usato come dispositivo di sconnessione, deve rimane prontamente accessibile e operabile.

> ⚠️ **Warning!**
> Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.
>
> **Avertissement!** Protégez le cordon d'alimentation pour que l'on ne marche pas dessus ou qu'on le pince, en particulier au niveau des prises mâles, des réceptacles de convenance, et à l'endroit où il sort de l'appareil.
>
> **Warnung!** Vermeiden Sie, dass auf das Netzkabel getreten oder das Kabel geknickt wird, insbesondere an den Steckern, den Steckdosen und am Kabelausgang am Gerät.
>
> **¡Advertencia!** Proteja el cable de energía para que no se le pise ni apriete, en especial cerca del enchufe, los receptáculos de conveniencia y el punto del que salen del equipo.
>
> **Aviso!** Proteja o cabo de alimentação de ser pisado ou de ser comprimido particularmente nas fichas, em tomadas de parede de conveniência e no ponto de onde sai do dispositivo.
>
> **Avviso!** Proteggere il cavo di alimentazione in modo che nessuno ci cammini sopra e che non venga schiacciato soprattutto in corrispondenza delle spine e del punto in cui esce dal dispositivo.

> ⚠️ **Warning!**
> Unplug this device during lightning storms or when unused for long periods of time.
>
> **Avertissement!** Débranchez cet appareil pendant les orages avec éclairsou s'il est inutilisé pendant de longues périodes.
>
> **Warnung!** Das Gerät ist bei Gewitterstürmen oder wenn es über lange Zeiträume ungenutzt bleibt vom Netz zu trennen.
>
> **¡Advertencia!** Desenchufe este dispositivo durante tormentas eléctricas o cuando no se lo utilice por largos periodos del tiempo.
>
> **Aviso!** Desconecte este dispositivo da tomada durante trovoadas ou quando não é utilizado durante longos períodos de tempo.
>
> **Avviso!** Utilizzare soltanto i collegamenti e gli accessori specificati e/o venduti dal produttore, quali il treppiedi e l'esoscheletro.

	Warning! Ensure Mains Power is disconnected before installing the OG-3-FR modules into the frame, or installing and removing options. If a Mains switch is not provided, the power cord(s) of this equipment provide the means of disconnection. The socket outlet must be installed near the equipment and must be easily accessible.
	Avertissement ! Avant d'installer des modules OG-3-FR dans la structure, ainsi qu'avant d'installer ou d'enlever des options, assurez-vous d'avoir déconnecté l'alimentation électrique. S'il n'y a pas d'interrupteur électrique, il faut débrancher les câbles électriques de l'équipement. La prise électrique doit être située à proximité de l'équipement et doit être aisément accessible.
	Achtung! Sicherstellen, dass die Netzleitung entkoppelt ist, bevor die OG-3-FR Module in das Gestell eingebaut oder Wahlteile eingebaut bzw. ausgebaut werden. Wenn kein Netzschalter vorgesehen ist, dient das bzw. dienen die Netzkabel dieser Vorrichtung als Entkopplungsmittel. Die Steckdose muss in der Nähe der Vorrichtung installiert und leicht zugänglich sein.
	Avvertenza. Accertarsi che l'alimentazione di rete sia scollegata prima di installare i moduli OG-3-FR nel frame o di installare e rimuovere componenti opzionali. Se non è presente un interruttore di accensione/spegnimento, occorre scollegare il cavo (o i cavi) di alimentazione di questo apparecchio dalla presa di corrente. La presa di corrente deve essere situata presso l'apparecchio e facilmente accessibile.
	Aviso! Certifique-se que a fonte principal de energia elétrica está desconectada antes de instalar os módulos OG-3-FR no bastidor ou antes de instalar e remover opções. Se o interruptor principal não existir, o cabo elétrico deste equipamento proporciona o meio de desconexão. A tomada elétrica deverá ser instalada perto do equipamento e deverá ser de fácil acesso.
	¡Advertencia! Asegúrese que la red de alimentación está desconectada antes de instalar los módulos OG-3-FR en el marco, o la instalación y extracción de opciones. Si no se proporciona un conmutador de red, el cable de alimentación de este equipo proporciona los medios de desconexión. El zócalo tomacorriente debe estar instalado cerca del equipo y debe ser fácilmente accesible.

	Warning!
⚠️	Dual Power Cord Notice-please read this. To reduce the risk of electrical shock,disconnect both power cords before servicing equipment.
	Avertissement ! Avis concernant la double alimentation électrique - à lire soigneusement. Pour éviter tout risque d'électrocution, débranchez les deux câbles électriques avant d'intervenir sur l'équipement.
	Achtung! Hinweis auf Doppel-Netzkabel-bitte lesen. Um das Risiko eines Elektroschocks zu verringern, müssen beide Netzkabel ausgestöpselt werden, bevor die Vorrichtung gewartet wird.
	Avvertenza. Avviso concernente il cavo di alimentazione doppio - leggere attentamente. Per ridurre il rischio di elettrocuzione, scollegare entrambi i cavi di alimentazione prima di eseguire la manutenzione o riparazioni di questo apparecchio.
	Aviso! Aviso de Cabo Elétrico Duplo - por favor, leia isto. Para reduzir o risco de choque elétrico, desconecte ambos os cabos elétricos antes de fazer manutenção ao equipamento.
	¡Advertencia! Aviso del doble cable de alimentación - leer esto por favor. Para reducir el riesgo de descarga eléctrica, desconecte ambos cables de alimentación antes de dar servicio al equipo.

	Caution!
❌	The OG-3-FR front fan door is heavy. Remove with Caution.
	Attention! La porte du ventilateur avant OG- 3 - FR est lourd. Retirer avec précaution.
	Achtung! Die OG -3- FR -Frontlüfter Tür ist schwer. Bitte vorsichtig entfernen.
	¡Precaución! LLa puerta del ventilador frontal OG- 3 -FR es pesado. Extraer con precaución.
	Atenção! A porta do ventilador frontal OG -3- FR é pesado. Remova com cuidado.
	Attenzione! La porta ventola anteriore OG -3 - FR è pesante. Rimuovere con cautela.

Warranty Information

Limited Warranty

AJA Video Systems, Inc. (AJA Video) warrants that this product will be free from defects in materials and workmanship for a period of five years from the date of purchase. If a product proves to be defective during this warranty period, AJA Video, at its option, will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify AJA Video of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by AJA Video, with shipping charges prepaid. AJA Video shall pay for the return of the product to the Customer if the shipment is to a location within the country in which the AJA Video service center is located. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. AJA Video shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than AJA Video representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non-AJA Video parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product.

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