8000 Series RossGear

8000 Series

- Analog and digital, audio and video distribution, converters, encoders, decoders, synchronization and keyers.

RossGear
Terminal Equipment

ROSS

8000 Series RossGear

8000 Series RossGear

AUDIO AND VIDEO FRAMES & ACCESSORIES

Video

VIDEO DISTRIBUTION & MONITORING

VIDEO CONVERSION

VIDEO FRAME SYNCHRONIZATION & DELAY

VIDEO SWITCHES

VIDEO KEYERS, MIXERS & LOGO INSERTERS

Audio

AUDIO DISTRIBUTION & MONITORING

AUDIO CONVERSION

AUDIO FRAME SYNCHRONIZATION & DELAY

AUDIO SWITCH

AUDIO EMBEDDING & DE-EMBEDDING

> The RossGear product line offers a wide range of analog and digital products to cover all your A/V distribution, conversion and interface needs. Housed in modular 1RU and 2RU frames, all modules are hot-pluggable and are feature packed with the industry's highest performance specifications. Frames offer integrated cooling and single input frame-wide reference distribution, with optional redundant power for guaranteed 24/7 operation.

Table of Contents

DFR-8104A (1RU)

1RU and 2RU Digital Products Frames

Ross Digital Products Frames come in two feature packed formats. The 1RU DFR-8104A frame can accommodate up to 4 cards and one power supply. The 2RU DFR-8110A frame can accommodate up to 10 cards and two power supplies, the second for redundancy. Each frame comes standard with one power supply.

These Ross Digital Products Frames will work with Ross 8000 series, Ross 8500 series and with Leitch 6800 series video modules.

Ross Digital Products Frames were designed with a unique ventilation system, which allows full frames to be stacked one on top of the other. This design provides superior cooling characteristics and saves valuable rack space in your facility.

Other additional features such as heavy-duty frame door hinges, optional fan cooling kit, card retaining bracket, cable support bracket and durable powder-coat paint finish, along with traditional Ross frame features such as the Master Frame Reference input, PowerLock cord retainers, high-quality connectors and our 5-year transferable warranty make the Ross Digital Products Frames your best choice for a digital transition.

Ross Digital Products Frames also incorporate a new universal power supply. The PS-8102 is a power factor corrected supply capable of providing 80 watts of uninterrupted power. As part of this new design, the PS-8102 can sustain a 100ms input voltage glitch while maintaining a full power output. A built-in power fail detection circuit provides an error warning via the SMPTE 269M alarm output on the frame, a very useful feature when using redundant supplies.

FRAME LOADING

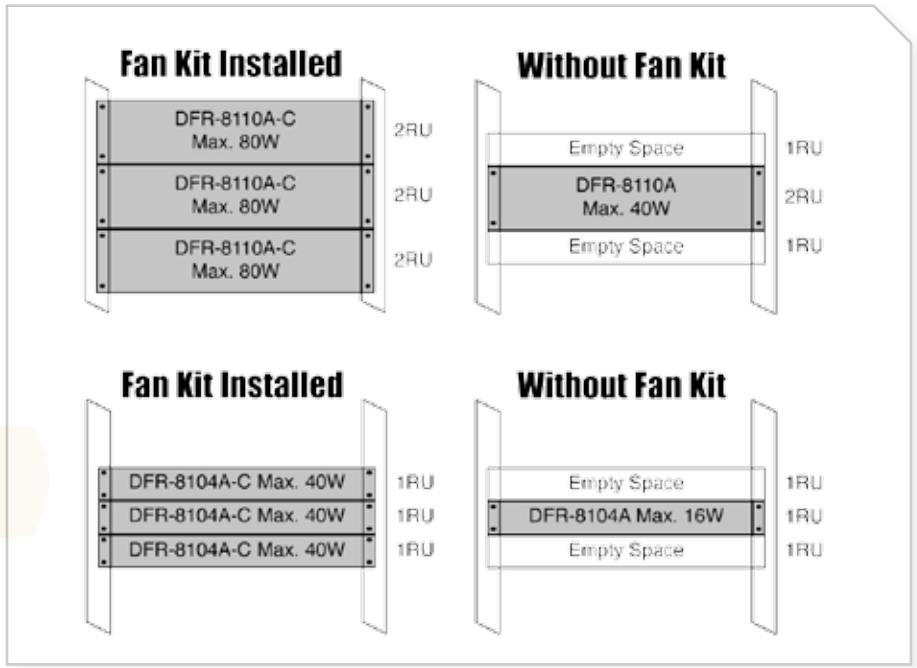
The RossGear DFR-8110A frame is capable of accommodating any combination of cards to a total of 40 watts. For card configurations with power ratings from 40 to 80 watts, the DFR-8110A-C frame (with cooling module) is required. The Cooling Fan Module option, CFM-8110A, is available for users wishing to upgrade their DFR-8110A to the DFR-8110A-C.

The RossGear DFR-8104A frame can also be ordered with the optional Cooling Fan Module (DFR-8104A-C) or upgraded in the field with the installation of the CFM-8104A upgrade option. The DFR-8104A is capable of card configurations to 16 watts, while the addition of the Cooling Fan Module increases this capability to 40 watts.

A big benefit when using the cooling module is the ability to stack the frames one on top of each other, thereby saving valuable rack space in critical installations. Because the cooling module is installed internal to the frame, and airflow is directed within, there is no need for an extra rack space above or below the frame to hold an external 1RU fan assembly.

The diagrams below demonstrate the advantage to using the Ross Cooling Fan Module option.

Recommended Installations



Features and Options

Features:

Leitch Compatible

The following features make the DFR-8104A and DFR-8110A the finest digital product frames on the market today:

- DFR-8104A (and DFR-8104A-C) accommodates 4 modules in 1 rack unit
- DFR-8110A (and DFR-8110A-C) accommodates 10 modules in 2 rack units
- Heavy-duty door hinges
- Durable powder-coat paint finish
- Aluminum construction for increased heat dissipation and weight reduction
- Master Reference Input feeds all module slots
- Power Switch is accessible from front of the rack frame
- Universal Power Supply (PS-8102) for all world standards (85-264 volts)
- PS-8102 sustains a 100ms incoming power glitch while maintaining full output power
- Power supplies are replaceable from the front of the frame without requiring rear frame access
- Power factor corrected supply with power fail detection circuit
- Optional redundant power supply (PS-8102) available for DFR-8110A
- Separate power cords to each supply for power redundancy
- PowerLock cord retainer mechanism guards against accidental power loss
- Optional Cooling Fan Module for increased ventilation
- Fan Fail and Error Indicator LEDs on front of the frame (available with optional Cooling Fan Module)
- 5-year transferable warranty
- DFR-8104A / DFR-8110A accept Ross 8000 series and Leitch 6800 series video modules

Ordering Information:

Standard Equipment

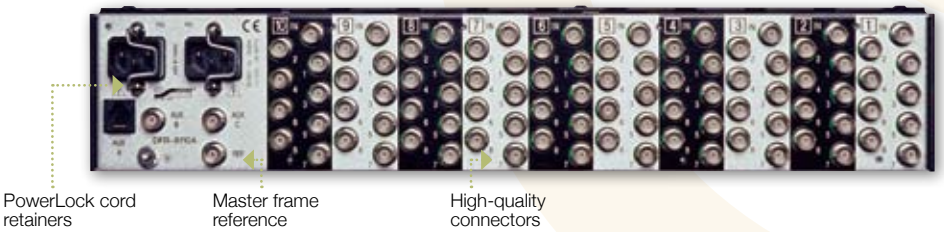
DFR-8104A	Digital Products Frame & Power Supply (PS-8102) (1RU, 4 Card Slots)
DFR-8104A-C	Digital Products Frame & Power Supply (PS-8102) with Cooling Fan Module (1RU, 4 Card Slots)
DFR-8110A	Digital Products Frame & Power Supply (PS-8102) (2RU, 10 Card Slots)
DFR-8110A-C	Digital Products Frame & Power Supply (PS-8102) with Cooling Fan Module (2RU, 10 Card Slots)

Optional Equipment

8110A-DFR-01-MNL	Digital Products Frame & Power Supply (PS-8102) Additional User Manual
CFM-8104A	Cooling Fan Module (upgrade for DFR-8104A)
CFM-8110A	Cooling Fan Module (upgrade for DFR-8110A)
PS-8102	Power Supply (85-264 volts) for Redundant Power
EXT-8100	Extender Board
FSB-7110	Rear Support Bars & Brackets
CRB-8110A	Card Retaining Bracket
CSB-8110A	Cable Support Bracket

DFR-8104A (1RU)

DFR-8110A (2RU)



8000 Series RossGear

Video

Audio

Video Distribution & Monitoring

Page

Serial Auto-Reclocking Equalizing Amplifier

Ideal for systems where the highest quality SDI distribution with reclocking is required.

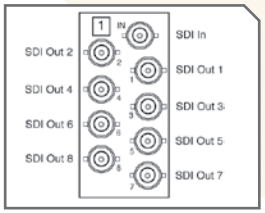
The SRA-8001B detects the input data rate, automatically adjusts the reclocking rate and equalizes up to 305m (1,000 ft.) of 8281 input cable (at 270Mb/s).

Special measures have been taken to ensure excellent return loss both on input and output. This guarantees error-free performance with short cables.

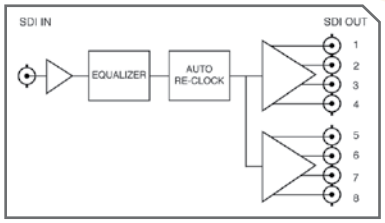
A very useful feature of the SRA-8001B is the indicator which illuminates green to confirm the presence of an input signal capable of full equalization.

All serial standards from 143Mb/s to 360Mb/s are supported.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Automatic detection of input standard (143, 177, 270 or 360Mb/s)
- Data reclocking with excellent jitter performance
- Input standard indicators (143, 177, 270 or 360Mb/s)
- Excellent return loss
- Automatic cable equalization to 305m (1,000 ft.)
- Input signal quality indicator
- 8 outputs
- 5-year transferable warranty
- An alternative to the Leitch VSE-6801 / VSE6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.0 Watts

Serial Equalizing Amplifier

A high-quality SDI amplifier for general distribution use.

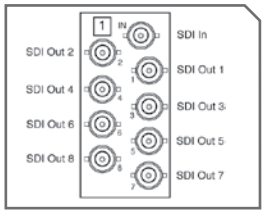
The SEA-8003A suits situations where multiple SDI outputs are required but reclocking is not. Although the amplifier automatically equalizes up to 305m (1,000 ft.) of 8281 input cable at 270Mb/s, 200 meters is the recommended limit due to jitter considerations.

Special measures have been taken to ensure excellent return loss both on input and output. This guarantees error-free performance with short cables.

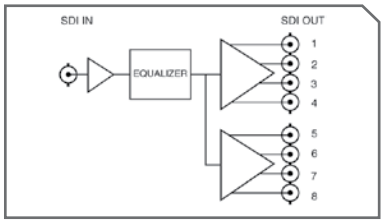
A very useful feature is the indicator which illuminates green to confirm the presence of an input signal capable of equalization.

All serial standards from 143Mb/s to 360Mb/s are supported.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Accommodates SMPTE 259M (143, 177, 270 or 360Mb/s) serial digital standards
- Automatic cable equalization to 305m (1,000 ft.)
- Input signal quality indicator
- Output waveform reshaping
- Excellent return loss
- 8 outputs
- Low cost
- 5-year transferable warranty
- An alternative to the Leitch VSD-6801 / VSD6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 2.0 Watts

Dual Serial Equalizing Amplifier

A great rack-space saver - 2 digital amplifiers on a single DA card.

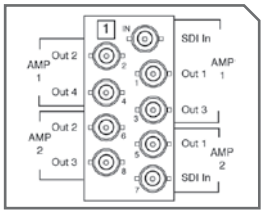
With 2 amplifiers per card (1 in x 4 out and 1 in x 3 out) the DSA-8004A significantly lowers the cost per amplifier and provides high-density distribution with up to 20 amplifiers per 2RUs of space.

The automatic equalization circuit accommodates up to 150m (500 ft.) of 8281 cable at the 270Mb/s rate. The performance with cables specifically designed for SDI use will be even better. All serial standards from 143Mb/s to 360Mb/s are supported.

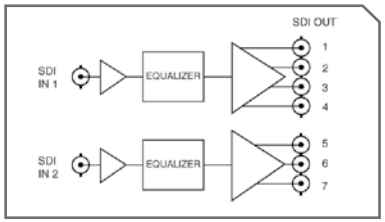
Indicator LEDs have been provided to confirm the presence of input signals capable of error-free equalization.

Special measures have been taken to ensure excellent return loss on input and outputs to eliminate reflections and guarantee error-free performance with short cables.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Two amplifiers on one card
- Twenty amplifiers in 1RU
- Very economical cost per amplifier
- Automatic cable equalization for 150m (500 ft.) of 8281 cable
- Input signal presence indicators
- Output waveform reshaping
- Excellent return loss
- 5-year transferable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 2.7 Watts

Serial Equalizing Amplifier - Non-Inverting

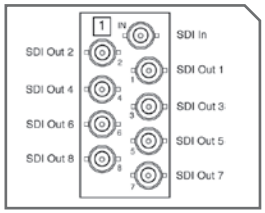
A flexible and cost-effective single card solution for the distribution of polarity-sensitive signals from 143Mb/s up to 360Mb/s.

The SEA-8008 Serial Equalizing Amplifier is intended for general SDI equalizing and distribution use where the outputs must be non-inverting. It suits situations where multiple outputs are required but where reclocking is not required. Although the amplifier automatically equalizes up to 305m (1,000 ft.) of 8281 input cable at 270Mb/s, 200 metres is the recommended limit due to jitter considerations. Special measures have been taken to ensure excellent return loss both on input and outputs. This design guarantees error-free performance within the recommended cable runs.

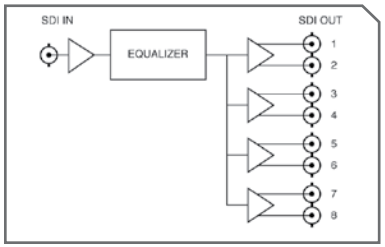
A very useful feature of the SEA-8008 is the green LED indicators, which illuminates to confirm the presence of an input signal capable of equalization.

This amplifier operates on all serial digital standards, from 143Mb/s to 360Mb/s. All eight outputs are non-inverting, enabling the SEA-8008 to be used for the distribution of DVB-ASI signals (at 270Mb/s) as well as SMPTE 259M signals.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Accommodates SMPTE 259M and DVB-ASI streams (at 270Mb/s)
- Automatic cable equalization to 305m (1,000 ft.)
- Input signal quality indicator
- Output waveform reshaping
- 8 non-inverted serial digital outputs
- Low cost distribution
- SMPTE 269M fault reporting
- 5-year transferable warranty
- An alternative to the Leitch VSE-6802
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 1.7 Watts

Dual Serial Auto-Reclocking Equalizing Amplifier

Increased density with 2 digital amplifiers on a single card.

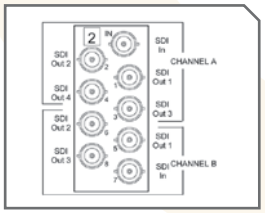
With 2 amplifiers per card (1 in x 4 out and 1 in x 3 out) the DRA-8009 significantly lowers the cost per amplifier and provides high-density distribution with up to 20 amplifiers per 2RUs of space.

The DRA-8009 can be set to automatically detect the input rate or fixed to detect a specific rate with equalization up to 300m (1000 ft.) of 8281 input cable (at 270Mb/s) independent for each channel.

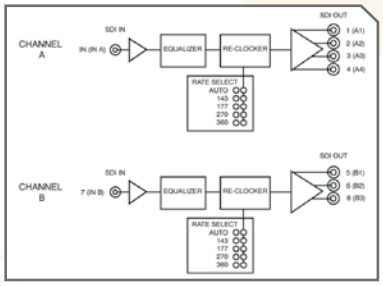
Special measures have been taken to ensure excellent return loss both on input and output. This guarantees error-free performance with short cables.

Indicator LEDs have been provided which illuminate green to confirm the presence of an input signal capable of error-free equalization.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Two amplifiers on card
- Twenty amplifiers in 1RU
- Data reclocking with excellent jitter performance
- Audio detection or fixed jumper selectable input standard (143, 177, 270, 360Mb/s)
- Excellent return loss
- Input signal quality indicators
- Seven serial outputs: 1 in x 4 out and 1 in x 3 out
- 5-year transferrable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.2 Watts

CMA-8011A

SDI Component Monitoring and Reclocking Amplifier

A convenient and cost-effective solution to signal distribution and picture monitoring requirements in SDI systems.

The CMA-8011A provides four composite analog monitoring outputs and can work in either NTSC or PAL environments. In addition to monitoring the digital signal, the CMA-8011A also outputs four reclocked SDI streams. The SDI input has an exceptionally good cable equalizer that will give error-free performance with up to 305m (1,000 ft.) of Belden 8281 cable.

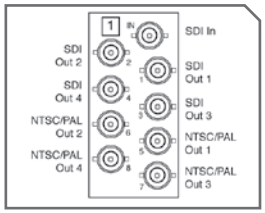
The CMA-8011A addresses high-quality image monitoring requirements by converting the 8 MSb's of the SDI signal to analog composite video. To achieve a low artifact video output, it uses a 10-bit DAC with a 10MHz bandwidth.

The CMA-8011A has several user-selectable settings. Some of the available modes are: monochrome monitoring outputs, 75% color bar test pattern and vertical interval blanking.

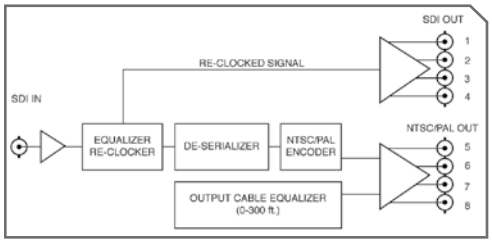
Of special interest on the CMA-8011A is the inclusion of an adjustable analog cable equalizer for the output monitoring signal. This adjustment can be set to equalize up to 90m (300 ft.) of Belden 8281 cable, thus ensuring that the monitoring signal is delivered to the destination without signal loss.

The CMA-8011A has card-edge LED indicators to confirm adequate SDI input signal strength and to indicate monitoring conversion errors.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Four NTSC or PAL analog monitoring outputs
- 4 output serial reclocking DA
- Input equalization for up to 305m (1,000 ft.) of cable
- Excellent chroma modulation accuracy
- Cable equalization for monitor outputs
- Input level / strength detection
- 5-year transferable warranty
- An alternative to the Leitch VSM-6804 / VSM6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.3 Watts

SDI Component Monitoring and Reclocking Amplifier

A flexible and cost-effective version of the CMA-8011A.

The CMA-8011A-7 provides a convenient and cost effective dual purpose solution for signal distribution and picture monitoring requirements.

Outputs are jumper selectable to allow for seven reclocked SDI streams with one composite analog monitoring output or six reclocked SDI streams with two composite analog monitoring outputs.

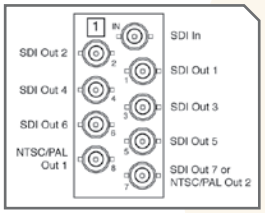
The CMA-8011A-7 addresses high-quality image monitoring requirements by converting the 8 MSb's of the SDI signal to analog composite video. To achieve a low artifact video output, it uses a 10-bit DAC with a 10MHz bandwidth.

The CMA-8011A-7 has several user-selectable settings. Some of the available modes are: monochrome monitoring outputs, 75% color bar test pattern and vertical interval blanking.

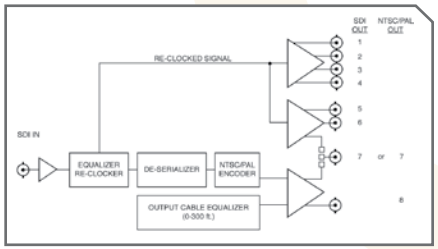
Of special interest on the CMA-8011A-7 is the inclusion of an adjustable analog cable equalizer for the output monitoring signal. This adjustment can be set to equalize up to 90m (300 ft.) of Belden 8281 cable, thus ensuring that the monitoring signal is delivered to the destination without signal loss.

The CMA-8011A-7 has card-edge LED indicators to confirm adequate SDI input signal strength and to indicate monitoring conversion errors.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Configurable one or two NTSC / PAL analog monitoring outputs
- Configurable six or seven reclocked serial outputs
- Input equalization for up to 305m (1,000 ft.) of cable
- Excellent chroma modulation accuracy
- Cable equalization for monitor outputs
- Input level / strength detection
- 5-year transferable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.3 Watts

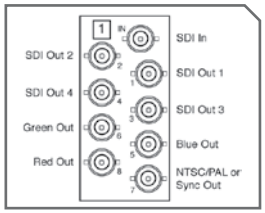
SDI Universal Monitoring Adapter

A flexible and cost-effective single card solution for the distribution and composite / component monitoring of SDI signals.

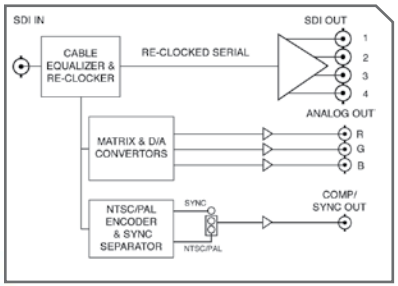
The UMA-8017 is the ideal solution when both monitoring and distribution of an SDI signal is required. The UMA-8017 provides a distribution amplifier with four reclocked serial digital outputs, an RGB component output, as well as a monitoring quality composite video output (NTSC or PAL). Because the RGB output contains sync-on-green, all outputs can operate simultaneously. Alternatively, a separate high-level sync output is available in lieu of the composite video output. Using an adaptive cable input equalizer, the UMA-8017 offers error-free performance for up to 250m (800 ft.) of Belden 8281 cable. If desired, chroma modulation can be removed from the composite video output to produce a higher quality picture on monochrome monitors.

The composite video output (NTSC or PAL) is processed as an 8-bit signal, but is interpolated to 27MHz and converted to analog using a 10-bit DAC, providing 10-bit resolution of the composite output.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Converts 270Mb/s SDI input to RGB component and NTSC / PAL composite video outputs
- RGB output available with sync-on-green
- NTSC / PAL composite video or separate high level sync output (2V or 4V)
- Four reclocked SDI outputs
- Auto reclocking of 143, 177, 270 and 360Mb/s digital video signals
- Advanced interpolation provides a 10-bit composite video output
- 5-year transferable warranty
- An alternative to the Leitch USM-6800
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 4.9 Watts

Quad SDI to Analog Composite Video Monitoring Converter

High-density, high-quality conversion for the monitoring of SDI signals.

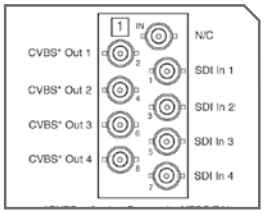
The QMA-8044 Quad Monitoring Amplifier provides a convenient and cost effective solution for multi-channel monitoring requirements in SDI systems. The complete unit occupies only a single card slot in a standard Ross Digital Products frame, and provides four channels of SDI to analog composite video encoding.

The QMA-8044 addresses high-quality imaging requirements by converting the 8 MSb's of the SDI signal to analog composite video. It uses a 10-bit DAC plus special filtering techniques on each channel, thereby achieving a low artifact video output.

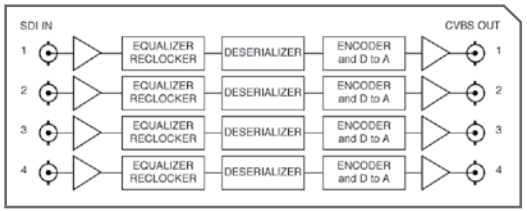
Each QMA-8044 provides four composite analog monitoring outputs (one per SDI input) and can support NTSC, PAL-B/G, or PAL-N environments. The SDI input has a precision cable equalizer that will give error-free performance with up to 200m (656 ft.) of Belden 8281 cable.

Several user-selectable settings are available to place the QMA-8044 into the proper operating mode. Some of these modes are: monochrome output, color bar test, and vertical interval blanking. The QMA-8044 has four card-edge LED indicators to confirm the presence of valid SDI input signals.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Four channels of monitoring conversion on one card
- Forty channels of monitoring in a 2RU frame, 16 channels in a 1RU frame
- Supports NTSC, PAL, and PAL-N
- 8-bit conversion with 10-bit DAC and special output filtering to reduce artifacts
- Color bar test mode available with valid input signal
- Input indicator LEDs (one per channel)
- Input equalization for up to 200m (656 ft.) of cable
- 5-year transferable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: <7.0 Watts

Analog Utility Distribution Amplifier

Very useful in digital systems where there is also a requirement for the distribution of a few analog signals.

The UDA-8005 is an analog general-purpose distribution amplifier that fits into the Ross Digital Products frame. Use of this amplifier will avoid the need to purchase a separate analog frame and power supply in digital installations.

This amplifier may be used in any application where equalization and a differential input is not required.

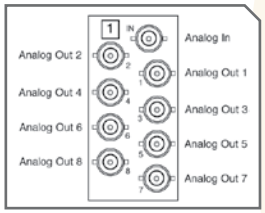
The use of new generation integrated circuits and innovative engineering has resulted in excellent performance combined with economy.

Features:

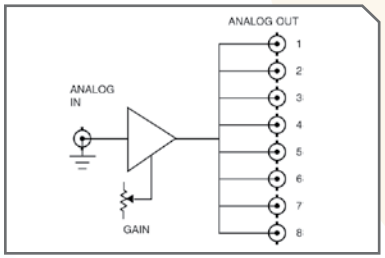
Leitch Compatible

- 8 outputs
- Gain range of +3dB to -1dB
- Economical cost
- Low distortion
- Excellent technical specifications
- 5-year transferable warranty
- An interchangeable alternative to the Leitch VDA-6830 / VDA6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 1.6 Watts

Connector Diagram



Functional Block Diagram



Analog Video Equalizing Amplifier with Clamping

Distribution and equalization of analog signals in a mixed digital / analog system without the need for a separate analog frame.

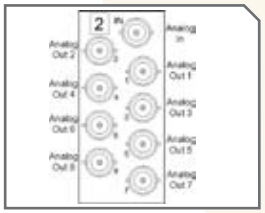
The VEA-8007A analog equalizing amplifier has been specially developed for use with the Ross Digital Products frame. Use of this amplifier avoids the need for a separate analog frame in mixed digital and analog systems.

The amplifier has 8 outputs and provides precision cable equalization for up to 305m (1,000 ft.) of 8281 cable. Versions are available for many other popular cable types.

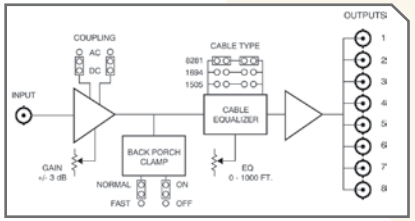
Temperature drift effects are non-existent thanks to the use of the latest in analog ASICs combined with meticulous product engineering. The power to each card is individually fused to prevent failure of any one card from affecting the rest of the cards in the frame.

Because the amplifier is DC coupled, clamping is not required, thus minimizing signal distortion.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Precision equalization of three selectable coaxial cable types up to 305m (1,000 ft.
- Easy single-control equalization for fast installation
- Differential input with AC or DC coupling
- 8 outputs
- Back porch clamping
- Clamping speed jumper selectable
- Supports Tri-Level Sync distribution
- Delay matched for precise interchangeability
- Superb stability of frequency response and color timing
- Power to each card is individually fused
- 5-year transferable warranty
- An alternative to the Leitch VEA_6830 / VEA6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 1.2 Watts

Video TruckAMP

Quick, easy set up of incoming lines to a mobile truck or equipment rack.

The VTA-8060 TruckAMP makes for quick and easy set up of the incoming lines to a mobile truck. The remote controls for Gain and Equalization can be located in any convenient location. For example, using the VRP-7000 Remote Panel and VRC-7000 Remote Modules, the controls for several TruckAMP's can be mounted right above the incoming jackfield for fast confusion-free adjustment. The VTA-8060 incorporates easyFLAT technology. Please see description below.

The remote gain control provides a small gain trim for level setting. But, if you hit a difficult feed, just pull the Gain knob and you'll get a big +/-6 dB range!

The TruckAMP also works well on the truck output to deliver an equalized signal to the microwave, Telco, etc. It has applications in the studio too.

Using the TruckAMP is as simple as turning 2 knobs.
First, set the source to send 75% bars or Pulse & Bar signal. If neither are available, use sync and burst.

GAIN

Turn the Gain knob to get 100 IRE units on the white bar, or for correct video or sync level.

The Gain knob has two settings. The normal range is +/- 0.5 dB when the knob is in the "in" position. This gives a gain trim for normal feeds. When a larger range is needed for non-standard feeds, just pull the knob to the "out" position for a +/- 6 dB range.

EQUALIZATION

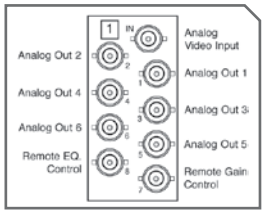
Turn the Equalize knob until the color bar chroma level matches the top of the white bar. If using Pulse & Bar, flatten the bottom of the 12T pulse. Otherwise, just set burst amplitude to 40 IRE units.

Features:

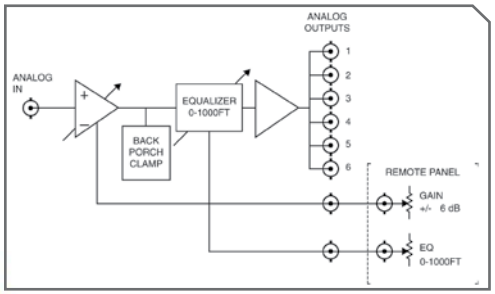
Leitch Compatible

- Remote control of +/- 6 dB gain and 305m (1,000 ft.) of precision cable equalization
- easyFLAT one control adaptive equalizer for fast accurate adjustment
- Two gain ranges; +/-0.5 dB trim and +/-6 dB for non-standard feeds
- 6 outputs
- 4 volts AC hum rejection
- Calibrated remote control modules
- VRP-7000 remote panel holds up to 22 VRC-7000 remote modules
- Local controls jumper-selectable if remote control not required
- Back porch clamping - speed jumper-selectable
- Superb stability of frequency response and color timing
- Excellent isolation between outputs
- Outstanding technical specifications
- 5-year transferable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 1.34 Watts

Connector Diagram



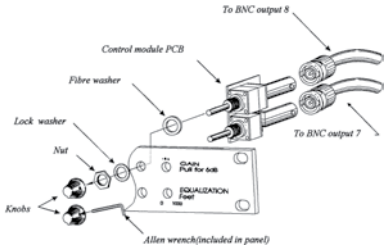
Functional Block Diagram



Installation is easy!

Just install the Remote Control Modules on the Rack Panel, one per TruckAMP. The panel will mount up to 22 Control Modules. Hole plugs are provided to fill unused positions.

Two ordinary coax cables connect each control module to the rack frame. Plug the TruckAMP DA module into either a Ross or Leitch frame. Connect the coax cables for input, output and control. The installation is completed!



EasyFLAT

The products indicated incorporate the revolutionary easyFLAT one control cable equalization technology to provide quick and easy installation.
EasyFLAT guarantees the flattest equalized frequency response in the industry. Installation requires normal available test signals. Precise factory calibration eliminates the need for sweep testing.

8000 Series RossGear

Video

Audio

Video Conversion

Page

SDI to Analog Composite Converter

-S with Frame Synchronizer / -X with Cross Color Reduction (NTSC only) / -SX with Frame Synchronizer and Cross Color Reduction (NTSC only)

A choice of program quality encoders with frame sync operation.

The Ross DAC-8016A is a 10-bit broadcast quality encoder which accepts an SDI input signal and converts to analog NTSC or PAL, providing four outputs. One or two reclocked SDI outputs are also provided.

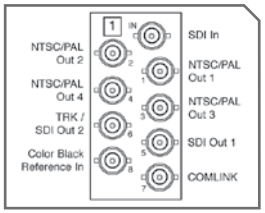
The DAC-8016A uses new techniques in frame synchronization and the latest available encoding technology to provide a high-quality video output. The DAC-8016A has a rich set of features such as: cross color reduction, frame synchronization (5 modes are available), extensive proc amp controls, heads-up video overlay display and a serial port display. Following the Ross tradition to be the leader in single card conversion solutions, all of the features available for the DAC-8016A are contained on a single DA-sized card.

The 10-bit encoding process and full 10-bit signal path provides excellent performance with all types of picture sources. All signal processing and encoding is done entirely in the digital domain to achieve the highest level of precision.

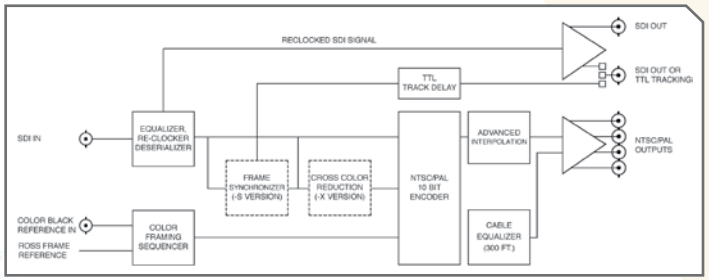
A special feature on the DAC-8016A is the inclusion of adjustable cable equalizer for the analog outputs. This can be set to equalize up to 90m (300 ft.) of 8281 type cable to ensure that the analog outputs are delivered to their destination without signal loss.

Standard selection is automatic between 525-line NTSC and 625-line PAL. All vertical interval signals are passed at correct amplitude and without setup. The start of active video (the end of the vertical interval) is adjustable from line 20 to line 23 in 1/2 line steps sequentially on both fields.

Connector Diagram



Functional Block Diagram



(-S) FRAME SYNCHRONIZER

The DAC-8016A has an optional full frame synchronizer which resides directly on the PCB, eliminating the requirement for a mezzanine board. The DAC-8016A frame synchronizer not only eliminates all system timing issues, but it is a true synchronizer in that it can also accept asynchronous video sources (such as satellite feeds), and synchronize them to house reference with infinite phasing over an entire frame.

The DAC-8016A provides a tracking pulse output which tracks the video delay. This signal can be used with the Ross ADL-8520 Auto-Tracking Audio Delay Unit to ensure perfectly synchronized video and audio.

A unique feature of the Ross DAC-8016A frame synchronizer is its ability to perform field checking on the input video. Field checking ensures constant clean output video.

The frame synchronizer can output black or last frame freeze in the event that the input signal is lost or invalid. Forced freeze frame mode is also available. Frame synchronizer timing is based on an analog color black reference input. Ross Digital Products frames have a unique master reference input which feeds all modules. Optionally, each module can have a separate reference input, using BNC connector #8.

The DAC-8016A has been designed to use default video parameter settings that will work well in most applications. However, in order to have the flexibility to meet a wide variety of situations, each DAC-8016A comes equipped standard with an on-board proc amp.

(-X) CROSS COLOR REDUCTION (NTSC only)

The DAC-8016A achieves a major improvement in the transmitted quality of NTSC pictures with advanced cross color filter circuitry which allows for the reduction of annoying cross-color “flickering rainbow” effects. These effects would otherwise occur whenever the scene contained fine detail in the form of diagonally repetitive patterns.

Features and Options

Features:

Leitch Compatible

- Automatic standard detection - NTSC or PAL
- SDI input (SMPTE 259M-C)
- Two reclocked SDI outputs
- Four analog composite outputs
- 1 or 2 reclocked SDI outputs
- Frame synchronizer
- Extensive proc amp controls
- Heads-Up Video Overlay Display
- Comlink Data Port Display
- Cross Color Reduction Filter for removal of color artifacts
- All signal processing performed in the digital domain
- 12-bit output quantizing with 2X oversampling (27MHz)
- Programmable Vertical Interval (in half-line steps)
- Superblack is passed
- SMPTE 269M fault reporting
- 91m (300 ft.) output video cable equalizer maintains quality to destination
- Low power consumption
- Single card solution on a DA-sized card
- 5-year transferable warranty
- An alternative to the Leitch ENC/ENS/ENX-6801 / ENC/ENS6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: <6.8 Watts

Control:

Control over the following parameters is available:

• Line Delay	• V Delay
• Line Synchronizer	• Superblack
• Frame Delay	• Vertical Interval End
• Frame Synchronizer Mode	• Cross Color Reduction
• Video Gain	• Field Checking
• Chroma Gain	• Heads-Up Display
• Hue Adjust	• Serial Port Display
• Black Level	• Freeze Mode (field 1, field 2, frame)
• Setup	• Forced Freeze
• U Gain	• Input Loss Mode (black, freeze)
• SC/H	• Ho tswitch Mode (black, freeze)
• H Delay	

Heads-Up Display:

To make configuration of the card easier, the DAC-8016A offers a heads-up display mode. The heads-up display, when activated, provides for the parameter currently being adjusted to have its value overlayed onto the output video of the card. This feature is especially convenient during setup and installation or for programming a number of cards that require an identical custom configuration. In addition, all settings can be viewed simultaneously by a PC or terminal connected to the DAC-8016A's COMLINK connector.

Ordering Information:

Standard Equipment

DAC-8016A	SDI to Analog Composite Converter*
DAC-8016A-S	SDI to Analog Composite Converter with Frame Synchronizer*
DAC-8016A-X	SDI to Analog Composite Converter with Cross Color Reduction (NTSC only)*
DAC-8016A-SX	SDI to Analog Composite Converter with Frame Synchronizer and Cross Color Reduction(NTSC only)*

*One User Manual is supplied with each of these RossGear products.

SDI to Analog Component Converter

Quality conversion of 270Mb/s SDI video to an analog component format in order to feed Beta recorders, RGB monitors or other analog component equipment.

The DAC-8013 can output signals in several popular analog component formats. Two sets of analog outputs are provided. The use of high-quality 10-bit conversion and signal processing results in a full broadcast quality output.

The DAC-8013 also functions as a serial distribution amplifier and provides one serial reclocked output. Input cable equalization is exceptionally good, being able to operate fault-free with 305m (1,000 ft.) of 8281 cable.

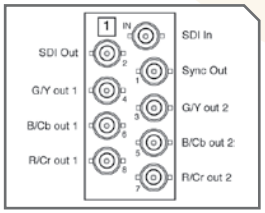
A circuit has been included to monitor certain signal faults and report in SMPTE 269M format. Indicators confirm that the input signal strength is sufficient for fault-free operation.

Features:

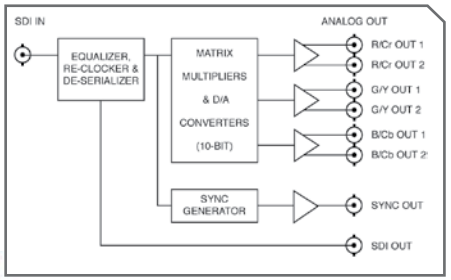
Leitch Compatible

- RGB, Betacam and SMPTE / EBU N10 component modes
- Separate high-level sync output
- 10-bit processing and conversion
- Distribution amplifier with one reclocked serial output
- Sync may be added to the Green or Y output
- 525 / 625 line operation
- SMPTE 269M fault reporting
- Input cable equalization for 305m (1,000 ft.) of cable
- 5-year transferable warranty
- An alternative to the Leitch DAC-6801
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.5 Watts

Connector Diagram



Functional Block Diagram



Dual Analog Composite to SDI Converter

Two channels of high-quality conversion of analog composite signals into 270Mb/s SDI.

The RossGear ADC-8035 Dual Analog Composite to SDI Converter is a 10-bit broadcast quality decoder. It is specifically designed for broadcast or production situations in which an analog NTSC, PAL, PAL-M or PAL-N composite signal must be converted to an SDI signal. The ADC-8035 provides two video decoder streams; Decoder A supplies 4 SDI outputs, Decoder B supplies 3 SDI outputs.

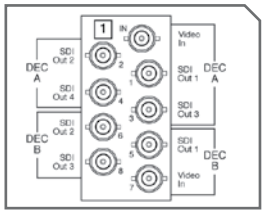
The ADC-8035 fits into the Ross Digital Products frames, with four cards in the DFR-8104A(1RU), and up to ten cards in the DFR-8110A (2RU). This means that a fully loaded RossGear 2RU frame could accommodate twenty analog video input streams and provide seventy SDI outputs.

To make configuration simple and easy, a rich set of broad-level adjustment features is instantly accessible. Simple card-edge switches and controls, in conjunction with front panel LEDs, make setup convenient, especially for programming several ADC-8035 cards with identical configurations.

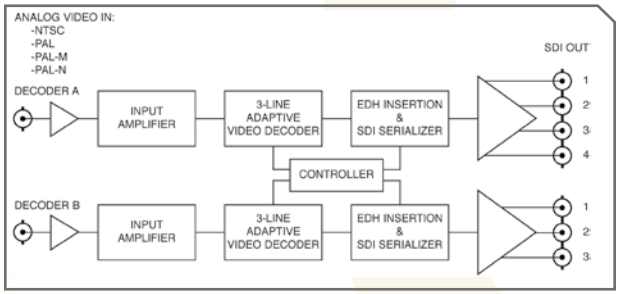
The ADC-8035's 10-bit decoding process provides excellent performance with all types of picture sources including satellite, microwave and VCR feeds. In order to achieve the highest level of precision, all signal processing and decoding is performed entirely in the digital domain. The decoder uses a very sophisticated 3-line comb filter with advanced adaptive control algorithms.

The ADC-8035 Dual Analog Composite to SDI Converter is ideally suited where multi-channel analog composite signal sources are used in an SDI component environment.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Two composite to SDI converters in a single card
- Accepts NTSC, PAL, PAL-N, PAL-M signals
- 10-bit analog to digital conversion
- 10-bit decoding with 3-line adaptive comb filter
- Handles difficult signals such as satellite, microwave or VCR feeds
- Extensive proc amp controls
- Error detection and handling on SDI outputs
- Programmable vertical interval blanking
- Setup adjustment
- Black level offset
- Input and conversion status indicator LEDs on card-edge
- 4 SDI outputs for Decoder A
  3 SDI outputs for Decoder B
- 1 line + 6.0µs delay
- Low jitter
- SMPTE 269M fault reporting
- Compact design on a single DA-sized card
- 5-year transferable warranty
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 6.0 Watts

Analog Composite to SDI Converter

-S with Frame Synchronizer

Superior quality analog-to-digital converter specially designed to handle tough microwave and satellite feeds as well as all general decoding requirements.

Featuring advanced video decoding technologies, the RossGear ADC-8032B analog NTSC / PAL to SDI video decoder sets the new standard for broadcast quality performance. The ADC-8032B auto-detects and decodes NTSC, PAL, PAL-N, and PAL-M video standards. Using adaptive 3D, 3-line and 5-line comb filters with advanced control algorithms, typical broadcast analog video sources are converted to SDI with much higher detail and fewer artifacts than found when using typical 3-line decoding methods. The RossGear ADC-8032B comes standard with a built-in line synchronizer and our advanced digital proc amp. These features will accommodate most system timing and video adjustment requirements with ease.

The ADC-8032B contains circuitry which enables the decoding of non-timebase corrected tape machines and other unstable signals.

All board-level functions and adjustments are available on the card edge. To assist in setting up the card quickly and easily, our unique Heads-Up Display technology can be used to overlay these parameters on the output video, providing a visual indication of the card's status.

The ADC-8032B has been designed with default video parameter settings that will work well in most applications. However, in order to have the flexibility to meet a wide variety of situations, each ADC-8032B comes equipped(standard) with an on-board digital proc amp.

The RossGear ADC-8032B is designed and manufactured to meet the highest quality broadcast industry standards. Together with our Ross Digital Products frames, the ADC-8032B will meet your most demanding conversion requirements.

(-S) FRAME SYNCHRONIZER

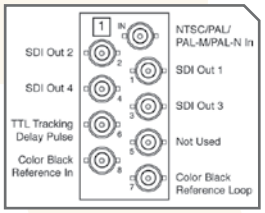
The ADC-8032B has an optional full frame synchronizer which resides directly on the PCB, eliminating the requirement of a mezzanine board.

In installations requiring full frame timing, freeze modes, or applications where decoding of microwave or satellite feeds is required, our on-board full frame synchronizer (-S model) can be ordered. This option is also available as an easy-to-install, plug-in IC field upgrade - no sub-board required!

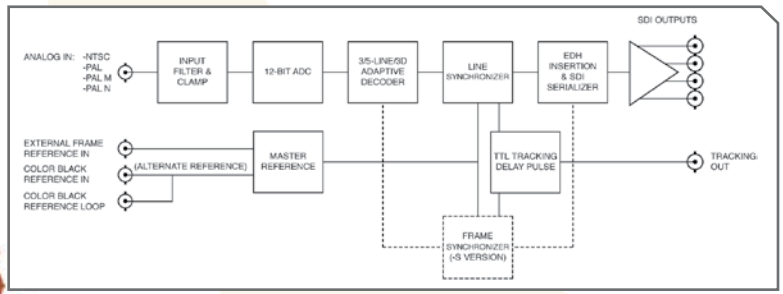
The ADC-8032B also provides a tracking pulse output which tracks the video delay. This signal can be used with the Ross ADL-8520 Auto-Tracking Audio Delay Unit to ensure perfectly synchronized video and audio.

The frame synchronizer can output black or last frame freeze in the event that the input signal is lost or invalid. Forced freeze frame mode is also available. Frame synchronizer timing is based on an analog color black reference input. Ross Digital Products frames have a unique master reference input which feeds all modules. Optionally, each module can have a separate reference input, using BNC connector #8.

Connector Diagram



Functional Block Diagram



Features and Options

Features:

Leitch Compatible

- Advanced adaptive 3D comb filter for near perfect composite decoding
- Oversampled 12-bit A-to-D conversion
- Designed to handle difficult, unstable signals such as off-air and VCR feeds (ADC-8032B-S)
- On-board full frame synchronizer (ADC-8032B-S)
- Advanced proc amp
- Heads-Up Display
- Built-in test signals
- Handles super-black signals
- Low jitter
- EDH insertion
- SMPTE fault reporting circuit
- 5-year transferable warranty
- An alternative to the Leitch DEC/DES-6801 / DEC/DES-6800+
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: <4.2 Watts

Control:

Control over the following parameters is available:

• Line Delay Mode	• AGC
• Line Synchronizer Mode	• H Delay
• Frame Delay Mode	• V Delay
• Frame Synchronizer Mode	• Superblack Pass
• Video Gain	• Vertical Interval End
• Chroma Gain	• Heads-Up Display
• Hue Adjust	• Freeze Mode (field 1, field 2, frame)
• Black Level Adjust	• Forced Freeze
• Setup on/off	• Input Loss Mode (black, freeze)
• CB Gain	• Hotswitch Mode

Heads-Up Display:

To make configuration easier, the ADC-8032B offers a unique heads-up display mode for video parameter and timing adjustments. When activated, the parameter being adjusted can have its value overlaid onto the video output. This mode is especially convenient during setup and installation or for programming a number of cards with identical custom configurations.

Ordering Information:

Standard Equipment

ADC-8032B Analog Composite to SDI Decoder*

ADC-8032B-S Analog Composite to SDI Decoder with Frame Synchronizer*

*One User Manual is supplied with each of these RossGear products.

Analog Component to SDI Converter

-S with Frame Synchronizer

Quality conversion of analog component signals into 270Mb/s SDI.

All YUV and RGB formats are supported, with or without setup.

12-bit 2X oversampling in conjunction with the highest quality digital filters in the signal processing stage achieves superb frequency response in excess of the industry standard specifications.

In the event that RGB inputs do not contain sync, external analog color black or composite sync can be used as the sync source.
Vertical Interval signals from lines 10 to 20 may be passed to the luminance channel or deleted, jumper-selectable. VI and closed caption signals on lines 21 and 22 are also correctly handled.

Card-edge LED indicators confirm the operational status of the unit.

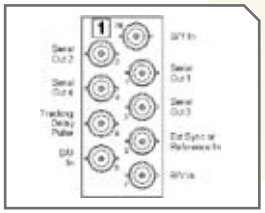
(-S) FRAME SYNCHRONIZER
The ADC-8033A has an optional full frame synchronizer which resides directly on the PCB, eliminating the requirement of a mezzanine board.

In installations requiring full frame timing, freeze modes, or applications where converting asynchronous feeds is required, our on-board full frame synchronizer (-S model) can be ordered. This option is also available as an easy-to-install, plug-in IC field upgrade - no sub-board required!

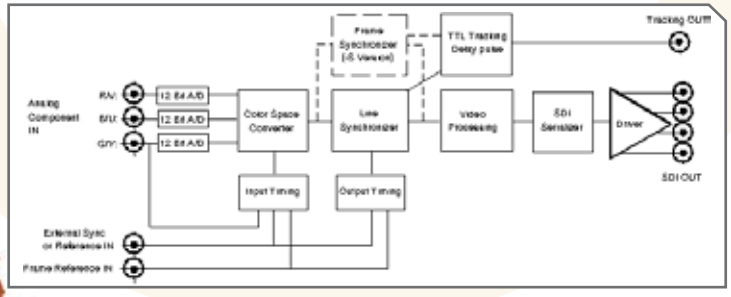
The ADC-8033A also provides a tracking pulse output which tracks the video delay. This signal can be used with the Ross ADL-8520 Auto-Tracking Audio Delay Unit to ensure perfectly synchronized video and audio.

The frame synchronizer can output black or last frame freeze in the event that the input signal is lost or invalid. Forced freeze frame mode is also available. Frame synchronizer timing is based on an analog color black reference input. Ross Digital Products frames have a unique master reference input which feeds all modules. Optionally, each module can have a separate reference input, using BNC connector #5.

Connector Diagram



Functional Block Diagram



Features and Options

Features:

Leitch Compatible

- YUV input from Beta, MII and SMPTE / EBU formats
- All RGB input formats supported
- 12-bit analog to digital conversion
- 2x over-sampling for excellent frequency response
- Four serial outputs
- Optional frame synchronization (no daughter card required)
- Extensive Proc Amp controls with freeze modes
- Horizontal and vertical timing and blanking adjustments
- Choice of reference inputs
- Tracking Delay Output for companion audio synchronizer
- Built-in test signals
- 5-year transferable warranty
- An alternative to the Leitch ADC-6801
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 5.25 Watts

Control:

Control over the following parameters is available:

• Line Delay	• V Delay
• Line Synchronizer	• Superblack
• Frame Delay	• Vertical Interval End
• Frame Synchronizer Mode	• Cross Color Reduction
• Video Gain	• Field Checking
• Chroma Gain	• Heads-Up Display
• Hue Adjust	• Serial Port Display
• Black Level	• Freeze Mode (field 1, field 2, frame)
• Setup	• Forced Freeze
• U Gain	• Input Loss Mode (black, freeze)
• SC/H	• Hotswitch Mode (black, freeze)
• H Delay	

Heads-Up Display:

To make configuration easier, the ADC-8033A offers a unique heads-up display mode for video parameter and timing adjustments. When activated, the parameter being adjusted can have its value overlaid onto the video output. This mode is especially convenient during setup and installation or for programming a number of cards with identical custom configurations.

Ordering Information:

Standard Equipment

ADC-8033A Analog Component to SDI Decoder*

ADC-8033A-S Analog Component to SDI Decoder with Frame Synchronizer*

*One User Manual is supplied with each of these RossGear products.

8000 Series RossGear

V Video

A Audio

Video Frame Synchronization & Delay

Page

SDI Digital Delay Line

Great for solving delay problems in digital facilities.

The DVB-8020A-D is perfectly suited to solve system timing problems where the difference in delay is predictable between two paths. An example of this would be a situation where a subswitcher needs to have clean switches between the output of a production switcher and some of the same input sources as used by the production switcher. Using the DVB-8020A-D to delay the input sources to equal the delay of the production switcher will effectively solve your timing problem.

Use the DVB-8020A-D instead of a frame synchronizer when you only need to delay a few lines.

Another feature of the DVB-8020A-D is an apparent negative delay that can be attained by setting the delay to just short of a full frame.

The DVB-8020A-D drives four SDI outputs. Both 525 line and 625 line video formats are automatically supported. EDH, audio, and other ancillary data are passed through. The DVB-8020A-D processes SDI signals with full 10-bit accuracy.

The DVB-8020A-D can be remotely controlled by a GPI or an optional control panel.

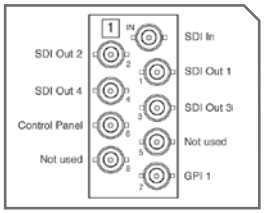
The DVB-8020A-D occupies one slot in the Ross Digital Products frames. It is also fully compatible with the Leitch 6800 series frames.

IDEAL APPLICATIONS

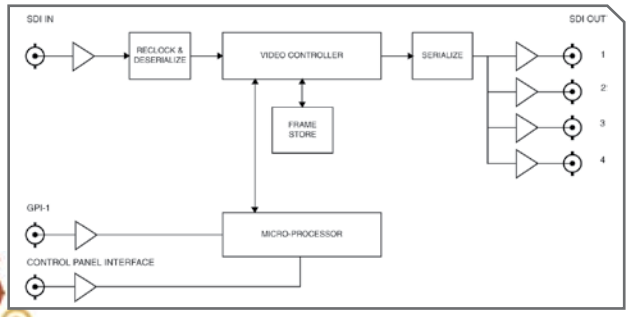
Remote Control

The DCP-8020 Remote Control Panel is available for remote control applications. It allows for remote control of all timing adjustments as well as video pass / freeze capability. Please refer to the DCP-8020 catalog page 21 for more details.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Up to one full frame of SDI delay
- 10-bit signal path
- Horizontal and vertical delay
- 1 SDI input / 4 SDI outputs
- Sub-pixel timing adjustment
- GPI control port
- Optional remote control panel: DCP-8020
- Fits Ross 8000 series and Leitch 6800 series frames
- 5-year transferable warranty
- Power: 8.0 Watts

User Controls

Timing Controls

- Horizontal and Vertical Delay Select*
- +/- Delay Adjust*
- Zero Delay Preset*
- Fine Delay (adjust subpixel timing)

Image Controls

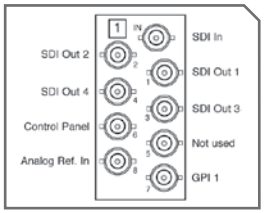
- Display Field 1, Field 2, or Frame*
- PASS / FREEZE (capture button alternates picture between frozen and live video)*
- GRAB (capture button updates frozen video from digital video in)

Indicator Lights

- ERROR (indicates loss of reference)*
- BUSY (indicates card is memorizing delay)*
- OK (indicates card is functioning normally)

*Available also on Remote Control Panel

Connector Diagram



SDI Frame Synchronizer

The ideal solution for synchronizing digital video sources in any facility.

The DVB-8020A-S provides full frame synchronization and adjustable horizontal, vertical and continuously variable sub-pixel timing. These settings are protected in case of a power failure.

The DVB-8020A-S drives four serial digital outputs. Both 525 line and 625 line video formats are automatically supported. EDH and other ancillary data are passed through. The DVB-8020A-S processes SDI signals with full 10-bit accuracy.

The output picture is synchronized to an external analog reference signal. Alternatively, it can be delayed relative to the input digital signal. In either case, the output timing is continuously variable on a sub-pixel basis over a full frame. The timing settings are maintained in the event of a power failure.

The DVB-8020A-S occupies one slot in the Ross Digital Products frame. It is also fully compatible with the Leitch 6800 series frames. Ross Digital Products frames have a master reference input which feeds all modules. Optionally, each model can have a separate reference, using an external BNC input.

IDEAL APPLICATIONS

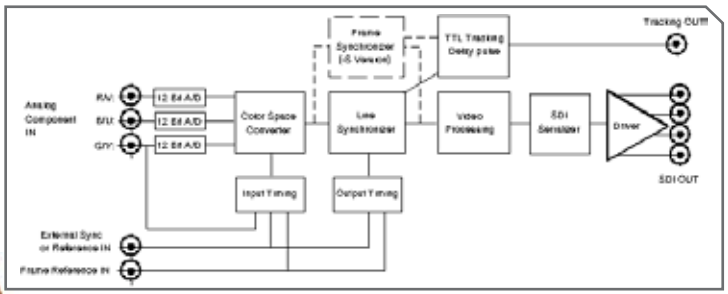
Time Sources within Your System
The DVB-8020A-S solves problems which may occur when equipment inside your plant, such as cameras or VTRs, are not correctly timed with the rest of your equipment.

Synchronize Outside Sources
The DVB-8020A-S can synchronize feeds from a variety of outside sources including satellite downlinks, microwave and remote broadcast feeds.

Test For and Correct Jitter Problems
The DVB-8020A-S acts as a DIGITAL JITTER REMOVER by buffering the data and reclocking it using an external jitter free analog reference source. If you believe you are having signal degradation as the result of jitter, you can confirm this with the DVB-8020A-S and correct it. Simply route your signal through the DVB-8020A-S. If the jitter on the output has been eliminated, there was a jitter problem in your original signal.

Remote Control
The DCP-8020 Remote Control Panel is available for remote control applications. It allows for remote control of all timing adjustments as well as video pass / freeze capability. Please refer to the DCP-8020 catalog page 43 for more details.

Functional Block Diagram



Features:

Leitch Compatible

- Synchronize SDI sources within your facility
- 10-bit signal path
- 1 SDI input / 4 SDI outputs
- GPI control ports
- Optional remote control panel: DCP-8020
- 5-year transferable warranty
- An alternative to the Leitch VFS-6801, VFS6800+
- Power: 6.0 Watts

User Controls

Timing Controls
- Horizontal and Vertical Delay Select*
- +/- Delay Adjust*
- Zero Delay Preset*
- Fine Delay (adjust subpixel timing)

Image Controls
- Display Field 1, Field 2, or Frame*
- PASS / FREEZE (capture button alternates picture between frozen and live video)
- GRAB (capture button updates frozen video from digital video in)

Reference Selection
- SDI / EXT (reference is digital video in or external analog reference)
- REF / FRAME (external analog ref comes from BNC 8 or master rack frame reference)

Indicator Lights
- ERROR (indicates loss of reference)*
- BUSY (indicates card is memorizing delay)*
- OK (indicates card is functioning normally)

*Available also on Remote Control Panel

8000 Series RossGear

Video

Audio

Video Switches

Page

Dual SDI 2x1 or 4x2 Switch

A flexible and economical solution for switching between 2 or 4 serial digital signals.

The DSS-8024 provides a convenient and economical solution when systems require switching of up to 4 SDI video sources to 1 or 2 outputs. It can operate as a pair of independent 2x1 switches or as a pair of 4x1 switches with common inputs. The card may be configured to be controlled by a GPI or by a remote panel. Since two switches share each card, twenty switches can be contained in one DFR-8110A rack frame. All input cables are equalized and can support up to 200 meters of 8281 cable at 270Mb/s. All SMPTE 259M standards are supported.

In GPI mode, the GPI control inputs have individual control over each 2x1 switch. In 4x1 mode, both GPI inputs are used to select inputs 1 through 4, and output 2 follows output 1. Optional mechanical switch module RCS-8120 can be used for GPI control.

When a remote control panel is required, the MRP-8120 can accommodate up to five control modules in a 1RU rack mount panel. Each RCM-8120 control module has four pushbuttons with LED indicators and insertable legends. The flexible module design allows the four buttons to be configured for either dual 2x1 or to control one of the outputs in 4x2 mode. Switch selections are saved in non-volatile memory to be restored in the event of power failure. Using two remote control modules provides independent control of each 4x1 switch.

Each control module can simultaneously control up to 10 switches by looping the coax control cable at the rack frames. Up to three assignable control modules may be used per control cable, one control module being enabled at a time.

The DSS-8024 switcher can be configured in a number of modes. Output 2 can be controlled independently of output 1, or it can be configured to follow output 1. In 4x2 follow mode, output 2 simply follows output 1. In 2x1 follow mode, it can either follow output 1, or more commonly it can select from inputs 3 and 4 when output 1 selects from inputs 1 and 2, respectively. This means that a single control module or GPI can simultaneously control 2 switches.

All switching is done in the vertical interval, timed to an external analog reference (color black or sync pulse).

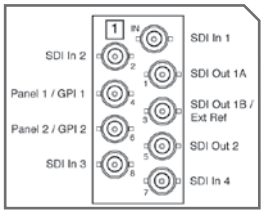
Of special note: Ross Digital Products frames have a connection for a master reference input which is distributed to all cards eliminating the requirement to wire reference to each card individually. An additional reference connector for each card is provided for use with Leitch frames.

Features:

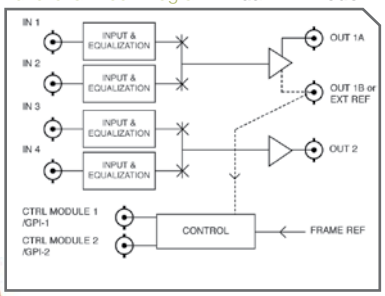
Leitch Compatible

- Supports 143, 177, 270 and 360Mbps signals
- Two switches on one module
- Dual 2x1 or 4x2 modes
- GPI or Panel Control
- Modular assignable remote control modules available
- Vertical Interval Switching timed to external analog video reference
- Automatic input cable equalization
- Remote Control Modules can control 10 switches
- Input presence and selection indicators
- 5-year transferable warranty
- An alternative to the Leitch VSR-4041
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 3.5 Watts

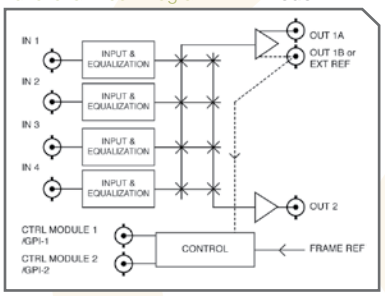
Connector Diagram



Functional Block Diagram - **Dual 2x1 Mode**



Functional Block Diagram - **4x2 Mode**



AVS-8064

Analog Video / AES Dual 2x1 or 4x2 Switch

A cost-effective solution for switching between 2 or 4 unbalanced AES audio or analog video signals.

The AVS-8064 provides a convenient and economical solution when systems require switching of up to four analog video or unbalanced AES sources to one or two outputs. It operates as a pair of independent 2x1 switches or as a pair of shared-input 4x1 switches. It is controlled either through GPI inputs or from a remote control module. Since two switches share each card, twenty switches can be contained in one DFR-8110A rack frame. Video switching is timed to the vertical interval of the current output signal or to an external color black reference.

In GPI mode, the GPI control inputs have individual control over each 2x1 switch. In 4x2 mode, both GPI inputs are used to select inputs 1 through 4, and output 2 follows output 1. Optional mechanical switch module RCS-8120 can be used for GPI control.

When a remote control panel is required, up to five control modules can be mounted in a 1RU rack mount panel. Each RCM-8120 control module has four pushbuttons with LED indicators and insertable legends. The flexible module design allows the four buttons to be configured for either dual 2x1 or to control one of the outputs in 4x2 mode. Switch selections are saved in non-volatile memory to be restored in the event of power failure. Using two remote control modules provides independent control of each 4x1 switch.

Each RCM-8120 control module can simultaneously control up to 10 switches by looping the coax control cable at the rack frames. Up to three assignable control modules may be used per control cable, one control module being enabled at a time via an enable connection to the panel.

The AVS-8064 switcher can be configured in a number of modes. Output 2 can be controlled independently of output 1, or it can be configured to follow output 1. In 4x2 follow mode, output 2 simply follows output 1. In 2x1 follow mode, it can either follow output 1, or more commonly it can select inputs 3 and 4 when output 1 selects inputs 1 and 2, respectively. This means that a single control module or GPI can simultaneously switch two AES audio streams.

All switching is done in the vertical interval, either timed to an external analog reference (color black or sync pulse) or to the current output. AES switching is performed asynchronously but may be timed to switch during the external video vertical reference.

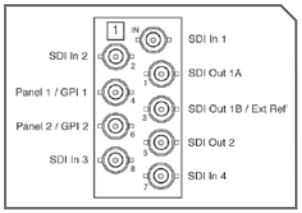
Of special note: Ross Digital Products frames have a connection for a master reference input which is distributed to all cards eliminating the requirement to wire reference to each card individually. An additional reference connector for each card is provided for use with Leitch frames.

Features:

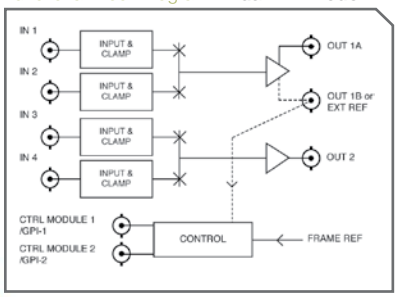
Leitch Compatible

- Analog Video or AES Audio
- Two switches on one module
- Dual 2x1 or 4x2 modes
- GPI or Panel Control
- Modular assignable remote control modules available
- Vertical Interval Switching timed to external analog video reference
- Remote Control Modules can control 10 switches
- Clamping mode for video on all inputs
- Selection indicators on front of card
- 5-year transferable warranty
- An alternative to the Leitch VSM-4041MB-1
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 2.0 Watts

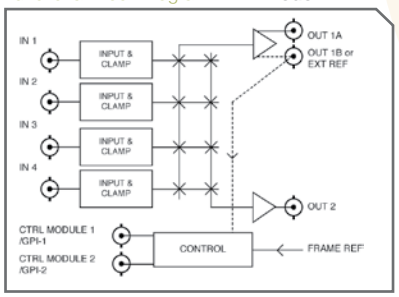
Connector Diagram



Functional Block Diagram - **Dual 2x1 Mode**



Functional Block Diagram - **4x2 Mode**



8000 Series RossGear

Video

Audio

Video Keyers, Mixers & Logo Inserters

Page

SDI Digital Mixer / Keyer

Simultaneous background mixing, external keying, internal animated logo keying, and fade-to-black – with preview.

APPLICATIONS

- "Micro" Master Control Switcher
- Master Control Bypass Mixer
- Multi-Channel Keying
- Content Rating Inserter
- ENG Truck Keyer
- Animated Logo Inserter / Playout
- Edit Suite Mixer
- Downstream Keyer
- Banding / Sponsorship Keyer for Stadiums

The CDK-111A-M is the most advanced single card mixer / keyer on the market. The multi-keying function allows simultaneous compositing of both an external linear key source and an internally generated linear key source. For example, the CDK-111A-M can key an external character generator over the background video and then key an additional internally generated animated logo. The keying order (priority) of the external key and the internal key is user selectable. The internal key source can be a full-frame still or linear key, one of many stored linear key logos, or an animated logo. This makes the insertion of trouble slides, content rating bugs, logos, and animated logos simple and affordable.

The look-ahead Preview output is ideal for live productions providing confidence in the quality and accuracy of the next scene to go to air. The Preview output also allows for live configuration of the CDK-111A-M via an on-screen menu.

All four video channel inputs of the CDK-111A-M have full frame synchronization capability with infinite timing adjustment. This makes it easy to install and eliminates many system timing issues. All video signals can be referenced to analog black or to the digital Background A input, user selectable. With its built-in fail-safe relay design, the CDK-111A-M is the perfect device for critical program stream applications.

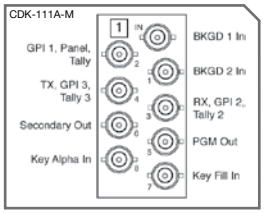
Control over the CDK-111A-M is available via GPI, unbalanced full duplex RS-485 or 0-12V RS-232 compatible interface, on-screen configuration menu (on program or preview), and card-edge pushbuttons for unsurpassed flexibility. Configurable on-air tally outputs are also available. The CDK-111A-M supports both 525 and 625 video formats.

The CDK-111A-M is compatible with Ross DFR-8104A-C and DFR-8110A-C frames.

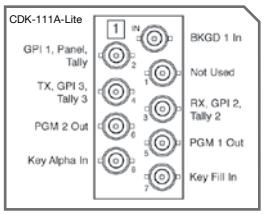
Note that only eight CDK-111A-Ms should be installed in a Ross DFR-8110A-C frame and that the CDK-111A-M should NOT be placed in a Leitch 6800 series frame due to high power consumption and the lack of the frame reference feature.

Please refer to the CDK-111A Ordering Guide for further details.

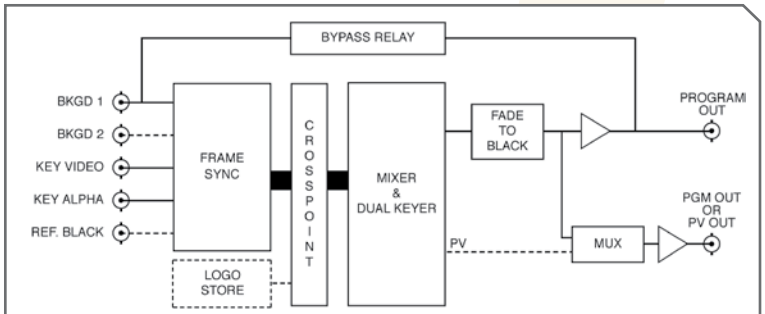
Connector Diagram



Connector Diagram



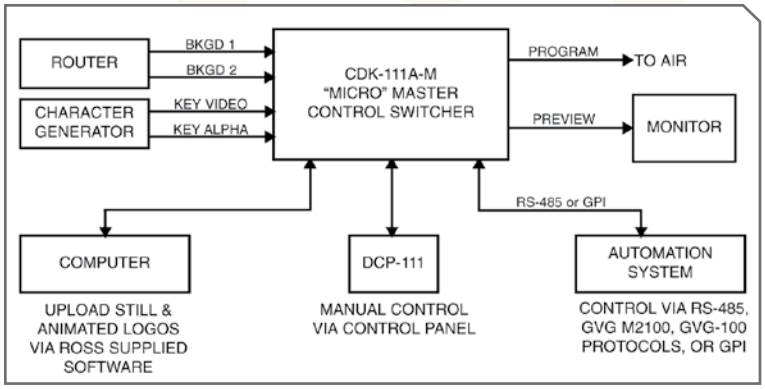
Functional Block Diagram



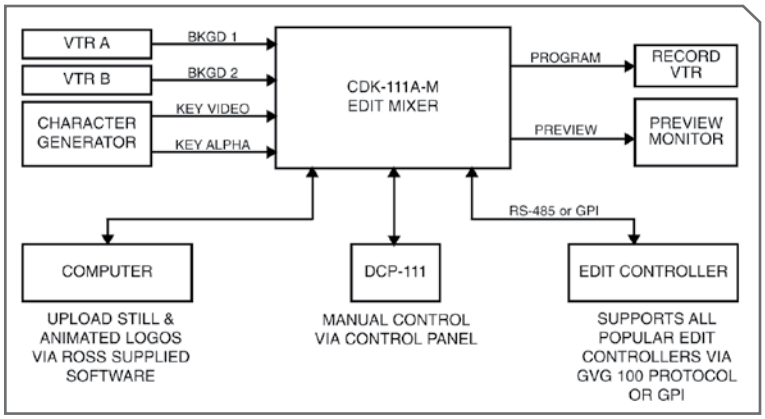
NOTE: Items shown as dotted lines are not present on the CDK-111A-Lite.

NOTE: Items shown as dotted lines are not present on the CDK-111ALite.

Master Control Application Example



Editing Application Example



Features:

- 4 video channel inputs with frame synchronization and delay
- A / B Crossfade
- Storage for multiple still logos, animated logos, and full-screen images
- Simultaneous keying of external and internal key sources
- Preview output
- Fade-to-black
- Program and Preview outputs with EDH insertion
- Fail-safe relay to Program Out on power failure
- Accommodates SMPTE 259M-C component serial digital video signals
- Full 10-bit signal path and processing
- PC image downloads via USB port
- Independent transition controls for both keyers with 0-999 frame transition duration
- Clip, gain, matte fill, and box mask controls
- Control via local panel, GPI, RS-485, on-screen configuration menu, and card-edge pushbuttons
- Supports the following protocols:
  - M2100
  - GVG100
  - Leitch DSK
- Analog external reference
- 5-year transferable warranty
- CDK-111A-M Power: 10 Watts
- CDK-111ALite Power: 9.6 Watts

CDK-111A-Lite Differences

The CDK-111A-Lite is a lower cost variation of the CDK-111A-M for keying applications.

The following features have been removed relative to the CDK-111A-M:

- BKGD 2 input
- A / B mixing
- Logo / image store
- Preview output
- Reference Input

Remote Control Panel

Remote access to the features of the CDK-111A and CDK-111A-Lite cards.

The DCP-111 Control Panel option for the CDK-111A-M and CDK-111A-Lite provides easy remote setup and operation of the card up to 100m away.

The DCP-111 is a remote control panel that provides the ability to access various features of the CDK-111 A series. It connects directly to the CDK-111A and CDK-111A-Lite through a coax cable. Power is provided from the CDK-111A and CDK-111A-Lite through the coax cable and, therefore, no external power connections are required. The DCP-8020 has a 5-year transferable warranty.

The DCP-111 provides control over the following features when available:

• Dedicated menu access button	• Dedicated Fade to Black button
• Selectable Auto Trans. rate	• Cut or Auto Trans - Key 1 & Key 2
• Cut or Auto Trans. Background (CDK-111A)	

SDI Frame Capture Card

-CK with Key Channel

Permanent image capture on one DA-sized card.
Permanent image and key channel capture and storage on one DA-sized card.

The Ross SDI Frame Capture Card is a multi-feature production tool that easily configures in seconds. The versatility of the DVB-8020A-C/CK allows you to quickly and effectively solve image storage and synchronization problems encountered in any production. Two versions are available. The DVB-8020A-CK includes a key (Alpha) channel.

The DVB-8020A-C/CK processes all video in a RAM frame buffer memory. However, a still image may be transferred from RAM to flash memory and will be retained in the event of power loss until reprogrammed. When power is returned, the image will automatically reload into RAM.

The DVB-8020A-C/CK drives four SDI outputs. Both 525 line and 625 line video formats are automatically supported. EDH and other ancillary data are passed through. The DVB-8020A-C processes SDI signals with full 10-bit accuracy.

The output picture is synchronized to an external analog reference signal. It can also be delayed relative to the input digital signal. In either case, the output phase is continuously variable on a sub-pixel basis over a full frame. The phase settings are maintained in the event of a power failure.

The DVB-8020A-C/CK can be remotely controlled by a GPI or an optional control panel.

The DVB-8020A-C/CK occupies one slot in the Ross Digital Products frames. It is also fully compatible with the Leitch 6800 series frames. Ross digital frames have a master reference input which feeds all modules. Optionally, each model can have a separate reference, using an external BNC input.

IDEAL APPLICATIONS

Bug / Logo Storage
The DVB-8020A-C/CK is an economical way to store still logos for station IDs or program identification. The full screen image can be generated from a computer, video tape, or CG and saved into flash memory. The stored image can be write protected or updated again and again. The CDK 101 digital keyer is the ideal companion for this application of the DVB-8020A-C/CK.

Dual Output (DVB-8020A-CK)
For even greater flexibility, the DVB-8020A-CK has an additional output for a luma key signal. A single DVB-8020A-CK can store a full frame of video for the fill signal, a black and white frame for the key signal, and output both key and fill signals simultaneously. In addition, both key and fill frames are stored in non-volatile memory in case of power loss and automatically restored after power is re-established.

Extra Character Generator Output
Use the DVB-8020A-C/CK as a second character generator output. Grab the output of the CG and freeze it. Your CG operator can proceed to update the next page, allowing graphics to go to air faster with no loss in graphic quality.

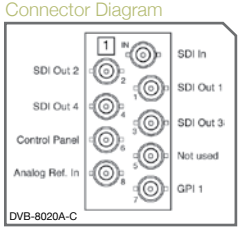
Flexible Test Signal Source
Eliminate the cost of purchasing more than one test signal generator. In situations where more than one test pattern is required out of a single output test generator, the DVB-8020A-C/CK is the answer. Any test signal can be easily captured and stored in DVB-8020A-C/CKs allowing you the freedom to access any number of test signals simultaneously. The images are maintained in the event of a power failure.

Freeze Frames of Video
The DVB-8020A-C/CK will freeze video from any SDI source, and makes a great companion to a production switcher. You can freeze the video by using controls on the card edge by GPI, or using the control panel. Freeze frames are instantly saved and you can view field 1, field 2, or the full frame.

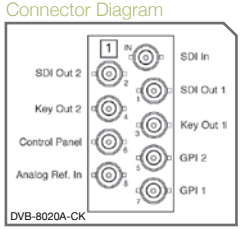
Test For and Correct Jitter Problems
The DVB-8020A-C/CK acts as a DIGITAL JITTER REMOVER by buffering the data and reclocking it using an external jitter free analog reference source. If you believe you are having signal degradation as a result of jitter, you can confirm this with the DVB-8020A-C/CK and correct it. Simply route your signal through the DVB-8020A-C/CK. If the jitter on the output has been eliminated, there was a jitter problem in your original signal.

Remote Control
The DCP-8020 Remote Control Panel is available for remote control applications. It allows for remote control of all timing adjustments as well as video pass / freeze capability. Please refer to the DCP-8020 section on page 43.

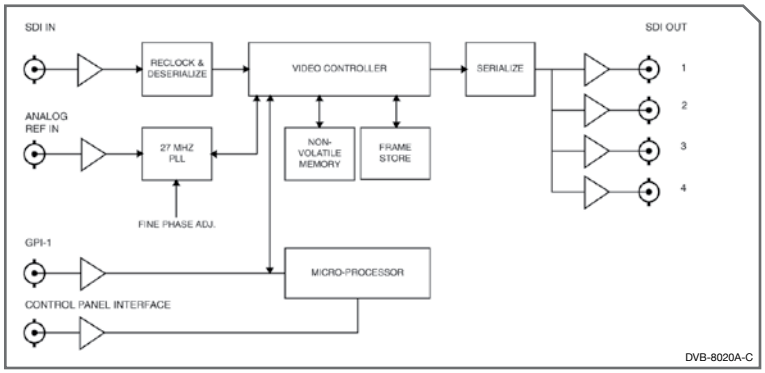
Connector Diagram



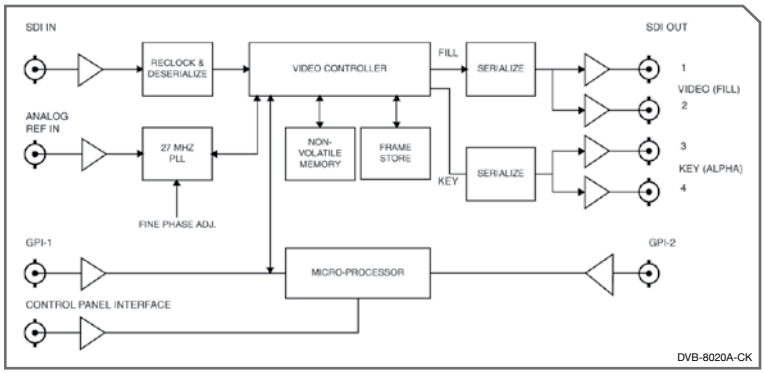
Connector Diagram



Functional Block Diagram



Functional Block Diagram



Features:

Leitch Compatible

- Captures and permanently stores one frame of 10-bit SDI video with key channel
- Flash memory for non-volatile storage
- 1 SDI input / 4 SDI outputs
- GPI control ports
- Optional remote control panel: DCP-8020
- Ideal for bug / logo with key channel storage!
- 5-year transferable warranty
- An alternative to the Leitch VES-6801-1/2
- DVB-8020A-C Power: 8.0 Watts
- DVB-8020A-CK Power: 8.0 Watts

User Controls:

Timing Controls

- Horizontal and Vertical Delay Select*
- +/- Delay Adjust*
- Zero Delay Preset*
- Fine Delay (adjust sub-pixel timing)

Image Controls

- Capture (transfer video to RAM or flash)*
- Display Field 1, Field 2, or Frame*

Function Controls

- STILL (picture comes from flash memory)
- PASS (picture comes from digital input)
- PASS / FREEZE (capture button alternates picture between frozen and live video)
- GRAB (capture button updates frozen video from digital video in)
- WRITE / LOCK (protects flash memory)
- GPI / RX (control is via RS232 or GPI)

Reference Selection

- SDI / EXT (reference is digital video in or external analog reference)
- REF / FRAME (external analog reference comes from BNC 8 or master rack frame reference)

Indicator Lights

- ERROR (indicates loss of reference or bad serial data)*
- BUSY (indicates card is transferring or storing an image)*
- OK (indicates card is functioning normally)

*Available also on Remote Control Panel

Remote Control Panel

Remote access to the features of the DVB-8020A-C, DVB-8020A-CK, DVB-8020A-D, and DVB-8020A-S cards.

The DCP-8020 is a remote control panel that provides the ability to access various features of the DVB-8020A series. It connects directly to the DVB-8020A through a coax cable. Power is provided from the DVB-8020A through the coax cable and, therefore, no external power connections are required. The DCP-8020 has a 5-year transferable warranty.

The DCP-8020 provides control over the following features when available:

• Horizontal delay	• Pass / Freeze
• Vertical delay	• Field 1, field 2 or frame freeze
• Quick adjust (set to minimum delay)	• Main channel (fill) or black and white channel (key) grab

8000 Series RossGear

Video

Audio

Audio Distribution & Monitoring

Page

AES / EBU Reclocking Distribution Amplifier

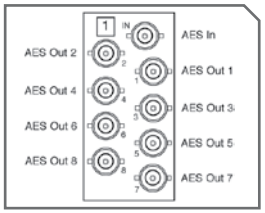
A broadcast quality stream reclocking AES / EBU distribution amplifier suitable for signal rates from 32 to 96 KHz.

The RossGear ADA-8501 AES / EBU Reclocking Distribution Amplifier is a 1 input, 8 output AES / EBU amplifier for use in 75 ohm coaxial (SMPTE 276M / AES-3id) systems. The ADA-8501 reclocks incoming data at 32, 44.1, 48, 88.2 and 96kHz rates and provides automatic cable equalization for lengths beyond 610m (2,000 ft.).

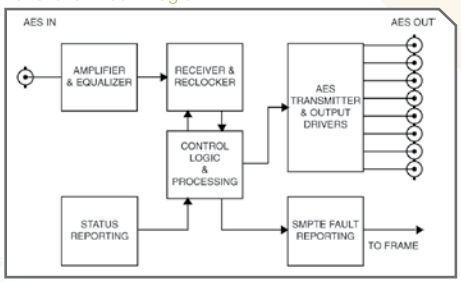
Fitting into the Ross Digital Products frame, the ADA-8501 provides system builders the ability to easily distribute AES / EBU in a SDI facility.

The ADA-8501 has been designed with the capability to report a variety of AES signal errors including No Lock, Coding, Parity, CRC, Slip and Validity errors. These errors can be indicated on a card-edge LED in addition to the SMPTE 269M output to the backplane of the Ross frame.

Connector Diagram



Functional Block Diagram



Features:

Leitch Compatible

- AES / EBU 75 ohm coaxial distribution
- Automatic equalization
- Reclocking ensures signal integrity and low jitter
- LED indication for signal errors
- SMPTE 269M fault reporting circuit
- Input and output return loss >45dB
- Reclocking at 32, 44.1, 48, 88.2, and 96kHz rates
- 5-year transferable warranty
- An alternative to the Leitch AES-6880 / AES6800+
- Power: 1.0 Watts

AES / EBU Fanout Distribution Amplifier

A single or dual configurable AES / EBU fanout distribution amplifier with signal reshaping. Ideal for most general distribution requirements.

The RossGear ADA-8503 AES / EBU Fanout Distribution Amplifier is a configurable dual or single AES / EBU amplifier for use in 75 ohm coaxial (SMPTE 276M or AES-3id) systems. Its flexible configuration makes the ADA-8503 the perfect choice for low cost AES distribution. By moving an on-board jumper, the ADA-8503 can be set as a single amplifier with 1 input and 8 outputs or as a dual amplifier with 1 input to 4 outputs and 1 input to 3 outputs.

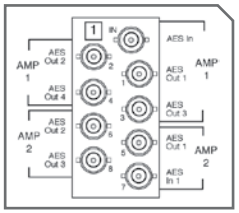
Fitting into the Ross Digital Products frame, the ADA-8503 provides system builders the ability to easily distribute AES / EBU in a SDI facility.

The ADA-8503 has been designed with an input presence detector and indicator. It is also capable of automatically equalizing for cable lengths greater than 610m (2,000 ft.).

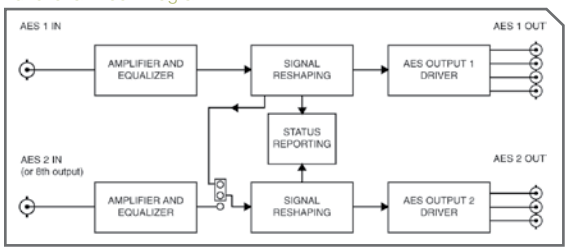
Features:

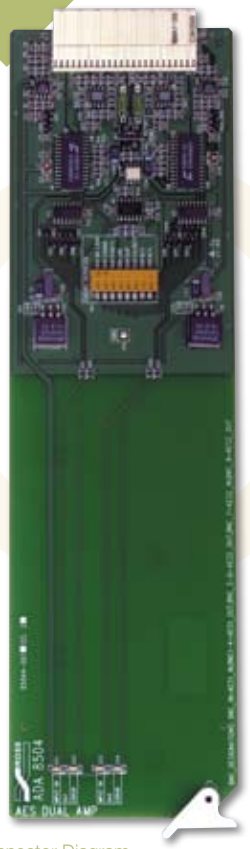
- AES / EBU 75 ohm coaxial distribution
- Dual or single distribution mode
- Signal reshaping ensures signal integrity
- LED indicators for signal errors
- SMPTE 269M fault reporting circuit
- Input and output return loss >45dB
- Operates at all data rates from 22 to 100kHz
- 5-year transferable warranty
- Power: 1.3 Watts

Connector Diagram



Functional Block Diagram





Dual AES / EBU Reclocking Distribution Amplifier

A dual reclocking distribution amplifier that provides a cost-effective and high-density distribution solution for AES systems.

The RossGear ADA-8504 Dual AES / EBU Reclocking Distribution Amplifier has two independent AES / EBU reclocking amplifiers, input 1 provides 4 outputs and input 2 provides 3 outputs. The ADA-8504 is designed for high-density 75 ohm coaxial (SMPTE 276M or AES-3id) distribution in systems where fewer outputs are required. The ADA-8504 reclocks data at 32, 44.1, 48, 88.2 and 96kHz sampling rates and provides automatic cable equalization for lengths over 610m (2,000 ft.).

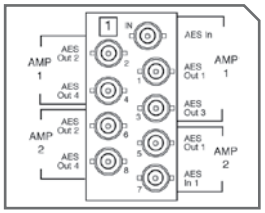
Fitting into the Ross Digital Products frame, the ADA-8504 provides system builders the ability to easily integrate AES / EBU into an SDI facility.

The ADA-8504 has been designed with the capability to report a variety of AES signal errors including No Lock, Coding, Parity, CRC, Slip and Validity errors. These errors can be indicated on a card-edge LED in addition to the SMPTE 269M output to the backplane of the Ross frame.

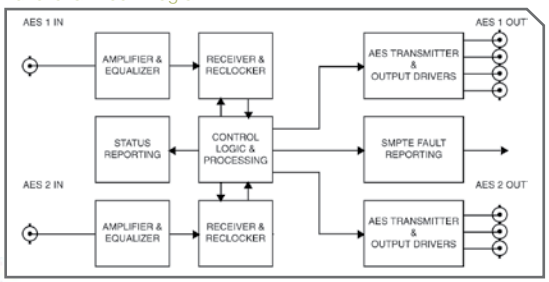
Features:

- Dual AES / EBU 75 ohm coaxial distribution
- 1 in by 3 out, 1 in by 4 out
- Automatic equalization
- Reclocking ensures signal integrity and low jitter
- LED indication for signal errors
- Input and output return loss >45dB
- Reclocking at 32, 44.1, 48, 88.2, and 96kHz rates
- 5-year transferable warranty
- Power: 1.5 Watts

Connector Diagram



Functional Block Diagram



AES / EBU Distribution Amplifier and Converter

A high-quality AES Distribution Amplifier and AES / EBU to Analog Audio Converter with 24-bit DAC and adjustable outputs.

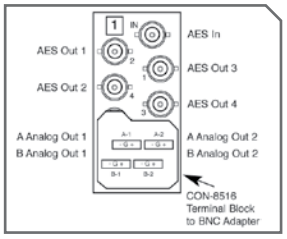
The RossGear AMA-8511 is a high-quality AES / EBU Reclocking Distribution Amplifier and AES / EBU to Analog Audio Converter which provides a common pair of analog stereo outputs in addition to 4 reclocked AES / EBU streams. The AMA-8511 is designed for use in 75 ohm coaxial (SMPTE 276M or AES-3id) systems at 32, 44.1 and 48kHz sampling rates. Cable lengths beyond 610m (2,000 ft.) are automatically equalized and the analog output channels are adjustable from –12 to –30dBu.

Fitting into the Ross Digital Products frame, the AMA-8511 provides system builders the ability to easily convert and distribute AES / EBU audio all on one card.

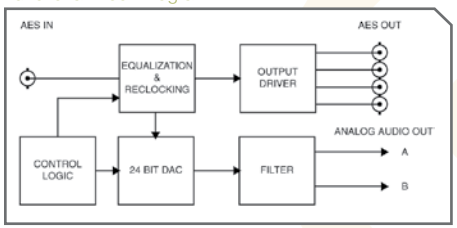
Features:

- Stereo analog outputs (2 copies)
- 4 reclocked AES outputs
- Adjustable audio output level -12 to -30dBFS
- Supports 32, 44.1, and 48kHz sampling rates
- Auto cable equalization
- 24-bit conversion
- 5-year transferable warranty
- Power: 1.5 Watts

Connector Diagram



Functional Block Diagram



8000 Series RossGear

V Video

A Audio

Audio Conversion

Page

AES / EBU to Analog Audio Converter

Program stream AES / EBU to analog audio conversion with 24-bit DAC resolution.

The RossGear DAC-8516 AES / EBU to Analog Audio Converter is a broadcast quality modular product used to convert 20 or 24-bit AES-3id (coaxial) signals to analog audio. The DAC-8516 accepts one 32, 44.1 or 48kHz sample rate unbalanced AES signal and provides two outputs of stereo (A, B) analog audio.

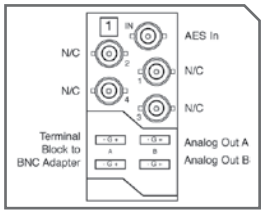
Digital AES / EBU audio is input through a BNC connector on the rear of the frame. The signal is auto-equalized, relocked and then converted to analog audio using a state-of-the-art 128X oversampled Delta Sigma Modulator. Two identical copies of the signal are output via the plug-on module BNC to terminal block adapter. Input signal and internal processing errors are detected and reported on the SMPTE 269M fault reporting bus. Error presence is displayed on a card-edge LED.

A combination of Headroom jumper (18dB or 24dB) and Level Adjust potentiometers (+/-6dB, one for each channel) provide an output level range of +12 dBu to +27 dBu. Auto-detection Digital De-emphasis is available for all data rates.

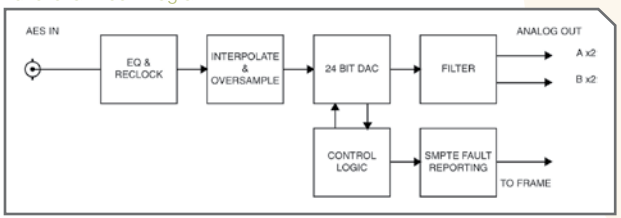
Features:

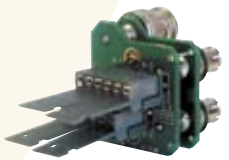
- 24-bit DAC resolution
- Operates at 32, 44.1 and 48kHz sampling rates
- Auto EQ >610m (2,000 ft.)
- Low jitter performance through EQ range
- Input range from 100mV to 2.5V pp
- Adjustable audio output level -12 to -30dBFS
- Input OK and error indicators
- Two stereo audio outputs
- 5-year transferable warranty
- Power: 3.5 Watts

Connector Diagram



Functional Block Diagram





Rear Frame
Plug-on Connector

AES / EBU Distribution Amplifier and Converter

A high-quality AES Distribution Amplifier and AES / EBU to Analog Audio Converter with 24-bit DAC and adjustable outputs.

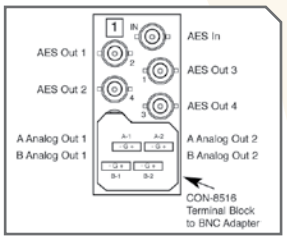
The RossGear AMA-8511 is a high-quality AES / EBU Reclocking Distribution Amplifier and AES / EBU to Analog Audio Converter which provides a common pair of analog stereo outputs in addition to 4 reclocked AES / EBU streams. The AMA-8511 is designed for use in 75 ohm coaxial (SMPTE 276M or AES-3id) systems at 32, 44.1 and 48kHz sampling rates. Cable lengths beyond 610m (2,000 ft.) are automatically equalized and the analog output channels are adjustable from –12 to –30dBu.

Fitting into the Ross Digital Products frame, the AMA-8511 provides system builders the ability to easily convert and distribute AES / EBU audio all on one card.

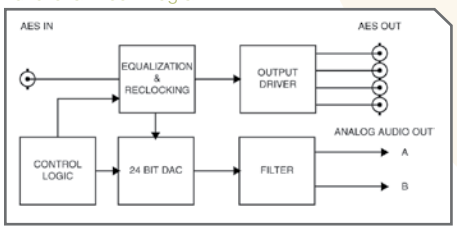
Features:

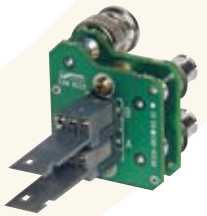
- Stereo analog outputs (2 copies)
- 4 reclocked AES outputs
- Adjustable audio output level -12 to -30dBFS
- Supports 32, 44.1, and 48kHz sampling rates
- Auto cable equalization
- 24-bit conversion
- 5-year transferable warranty
- Power: 1.5 Watts

Connector Diagram



Functional Block Diagram





Rear Frame
Plug-on Connector

ADC-8532

Analog Audio to AES / EBU Converter

A 24-bit analog to AES / EBU converter. Perfect for broadcast stream conversion applications.

The RossGear ADC-8532 Analog Audio to AES / EBU Converter is a broadcast quality modular product used to convert analog audio to 20 or 24-bit AES-3id (coaxial) signals. The ADC-8532 accepts one stereo (A, B) analog audio input and outputs four unbalanced AES signals at 32, 44.1 or 48 kHz sample rates.

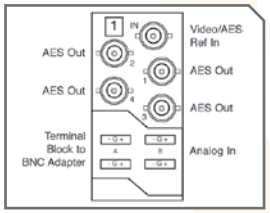
The balanced analog audio signal is input through a terminal block to BNC adapter module on the rear frame. Infinitely variable input level adjustments from +14 to +30dBu are available for the input analog audio signal. The A to D converter uses a state-of-the-art 256X oversampling Delta Sigma Modulator and filtering circuit to produce four identical high-quality AES streams. Reference signal or processing errors are detected and reported on the card-edge LEDs.

For 48kHz AES, the RossGear ADC-8532 is capable of referencing to either an external analog video or AES (DARS) reference. Referencing to the external AES reference guarantees a properly phased AES output.

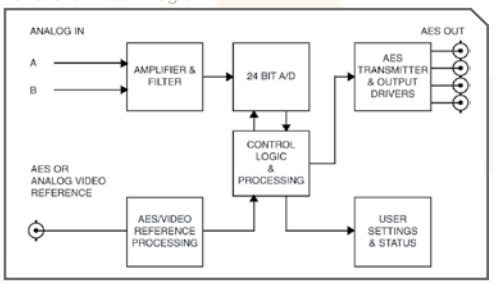
Features:

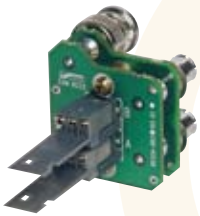
- 24-bit conversion
- Selectable 32, 44.1, 48kHz sampling rates
- +14 to +30dBu adjustable input range
- 106dB S/N un-weighted
- AES / Video Ref Input OK and error indicators
- Jitter <1ns
- Four AES outputs
- 5-year transferable warranty
- Power: 5.0 Watts

Connector Diagram



Functional Block Diagram





Rear Frame
Plug-on Connector

8000 Series RossGear

Video

Audio

Audio Frame Synchronization & Delay

Page

AES / EBU Auto-Tracking Audio Delay Unit

A broadcast quality digital audio delay unit ideal for correcting lip-sync errors and tracking video frame synchronizer delay.

The RossGear ADL-8520 is an ideal solution for solving problems related to audio / video synchronization. The ADL-8520 accepts a coaxial AES / EBU signal (AES-3id), delays the signal in a number of flexible ways, and provides four coaxial AES-3id signal outputs.

The ADL-8520 can be used as a fixed audio delay. In this mode, the ADL-8520 will delay incoming audio up to a total of 20 seconds, adjustable with millisecond accuracy or quickly in field increments. In the Auto-Tracking mode, the unit automatically tracks the delay of a separate video frame synchronizer, aligning the audio with the video with a minimum of audio pitch change.

In the mixed tracking mode, a fixed delay can be added to the Auto-Tracking mode, providing additional audio correction for other video processing equipment.

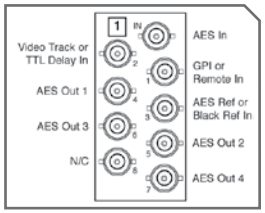
An ideal companion to the RossGear ADC-8032B-S (Analog Composite to SDI Convertor with Frame Synchronizer) and the ADC-8033A-S (Analog Component to SDI Converter with Frame Synchronizer, the ADL-8520 is designed to solve even the most demanding lip-sync problems with ease.

Features:

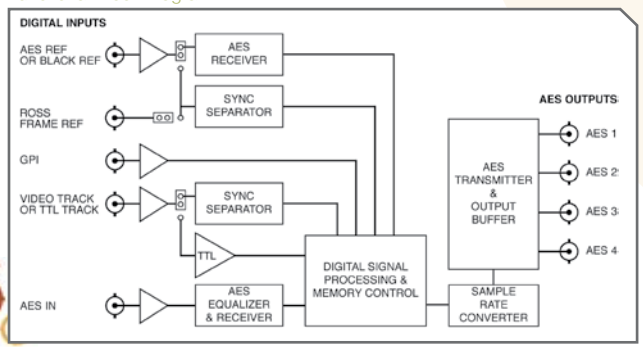
Leitch Compatible

- Digital audio delay
- Works as a fixed delay or auto-tracks video frame synchronizer delay
- Up to 20 seconds total delay
- AES / EBU input is auto-equalized >610m (2,000 ft.)
- Operates at 32, 44.1, and 48kHz input sampling rates
- 48kHz output sample rate
- Locks to AES or external analog video frame reference
- 4 AES / EBU outputs
- Low jitter performance
- 5-year transferable warranty
- An alternative to the Leitch ADS6800+
- Power: 3.7 Watts

Connector Diagram



Functional Block Diagram



AES / EBU Auto-Tracking Audio Delay Unit

Digital audio delay with a choice of analog or AES inputs.

The RossGear ADL-8520-A provides the same audio delay features as the ADL-8520, with support for analog audio inputs.

Two balanced analog audio inputs are provided using an included rear frame plug-on module.

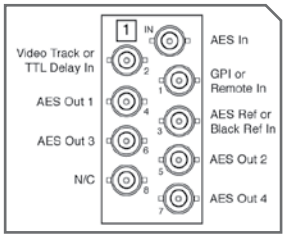
Analog inputs are digitized using 24-bit A to D conversion circuitry, with selectable 20 or 24-bit signal encoding. A fixed 48kHz sample rate is used, and can be locked to the incoming AES signal or an external analog video reference.

Features:

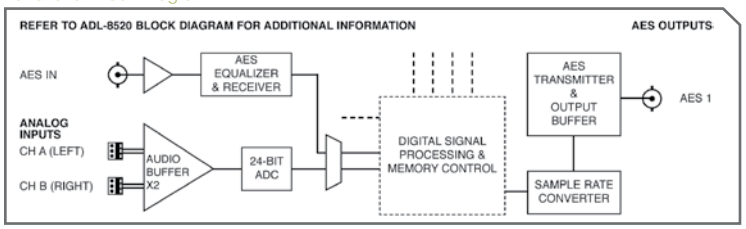
ADL-8520 features with the addition of 2 analog input channels

- 24-bit A to D conversion with fixed 48kHz sample rate
- Selectable AES or analog input
- 1 AES / EBU output
- Power: 6.0 Watts

Connector Diagram



Functional Block Diagram



Rear Frame Plug-on Connector

AES / EBU Auto-Tracking Audio Delay Unit

Digital audio delay with a choice of analog or AES inputs and analog outputs.

The RossGear ADL-8520-B provides the same audio delay and analog input features as the ADL-8520-A, with analog outputs.

Two balanced analog audio outputs are provided, along with the analog audio inputs, using an included rear frame plug-on module.

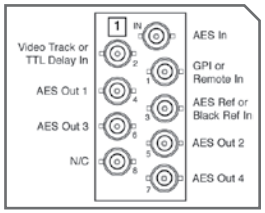
Analog outputs are generated with 24-bit D to A conversion circuitry.

Features:

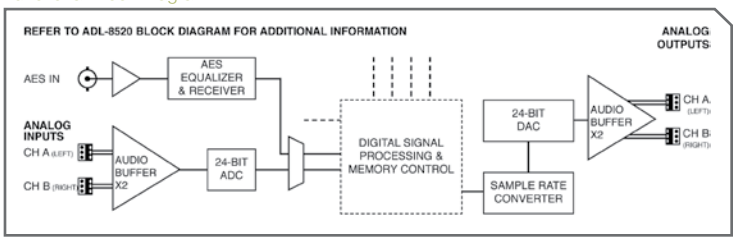
see ADL-8520-A features with analog output signals

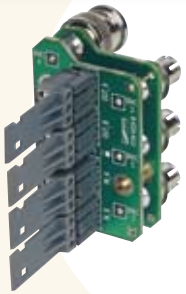
- 24-bit D to A conversion
- Selectable AES or analog input
- Power: 6.0 Watts

Connector Diagram



Functional Block Diagram





Rear Frame Plug-on Connector

8000 Series RossGear

Video

Audio

Audio Switch

Page

AES / Analog Video Dual 2x1 or 4x2 Switcher

A cost-effective solution for switching between 2 or 4 unbalanced AES audio or analog video signals.

The AVS-8064 provides a convenient and economical solution when systems require switching of up to four analog video or unbalanced AES sources to one or two outputs. It operates as a pair of independent 2x1 switches or as a pair of shared-input 4x1 switches. It is controlled either through GPI inputs or from a remote control module. Since two switches share each card, twenty switches can be contained in one DFR-8110A rack frame. Video switching is timed to the vertical interval of the current output signal or to an external color black reference.

In GPI mode, the GPI control inputs have individual control over each 2x1 switch. In 4x2 mode, both GPI inputs are used to select inputs 1 through 4, and output 2 follows output 1. Optional mechanical switch module RCS-8120 can be used for GPI control.

When a remote control panel is required, up to five control modules can be mounted in a 1RU rack mount panel. Each RCM-8120 control module has four pushbuttons with LED indicators and insertable legends. The flexible module design allows the four buttons to be configured for either dual 2x1 or to control one of the outputs in 4x2 mode. Switch selections are saved in non-volatile memory to be restored in the event of power failure. Using two remote control modules provides independent control of each 4x1 switch.

Each RCM-8120 control module can simultaneously control up to 10 switches by looping the coax control cable at the rack frames. Up to three assignable control modules may be used per control cable, one control module being enabled at a time via an enable connection to the panel.

The AVS-8064 switcher can be configured in a number of modes. Output 2 can be controlled independently of output 1, or it can be configured to follow output 1. In 4x2 follow mode, output 2 simply follows output 1. In 2x1 follow mode, it can either follow output 1, or more commonly it can select inputs 3 and 4 when output 1 selects inputs 1 and 2, respectively. This means that a single control module or GPI can simultaneously switch two AES audio streams.

All switching is done in the vertical interval, either timed to an external analog reference (color black or sync pulse) or to the current output. AES switching is performed asynchronously but may be timed to switch during the external video vertical reference.

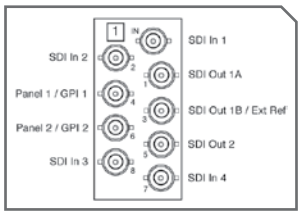
Of special note: Ross Digital Products frames have a connection for a master reference input which is distributed to all cards eliminating the requirement to wire reference to each card individually. An additional reference connector for each card is provided for use with Leitch frames.

Features:

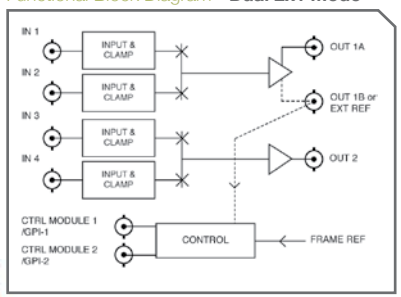
Leitch Compatible

- AES Audio or Analog Video
- Two switches on one module
- Dual 2x1 or 4x2 modes
- GPI or Panel Control
- Modular assignable remote control modules available
- Vertical Interval Switching timed to external analog video reference
- Remote Control Modules can control 10 switches
- Clamping mode for video on all inputs
- Selection indicators on front of card
- 5-year transferable warranty
- An alternative to the Leitch VSM-4041MB-1
- Fits Ross 8000 series and Leitch 6800 series frames
- Power: 2.0 Watts

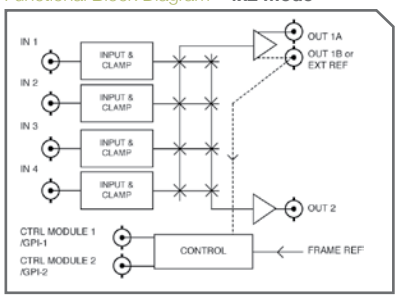
Connector Diagram



Functional Block Diagram - **Dual 2x1 Mode**



Functional Block Diagram - **4x2 Mode**



8000 Series RossGear

Video

Audio

Audio Embedding & De-Embedding

Page

AES / EBU Multiplexer

The ideal solution for embedding 2 AES audio streams into an SDI signal. Available with an analog audio input option.

The RossGear MUX-8552A uses the latest technology to provide high-quality AES / EBU multiplexing into a SDI video stream. Four discrete audio channels (2 AES channels) are embedded into the SDI output streams with selection of group placement available for each channel. Model MUX-8552A-C adds analog audio input using 24-bit ADCs allowing easy integration into a hybrid analog / digital environment. EDH is inserted into each SDI output.

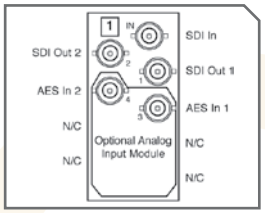
Designed and manufactured to meet the highest quality broadcast industry standards, the RossGear MUX-8552A is the ideal, cost-effective solution for your audio multiplexing requirements.

Features:

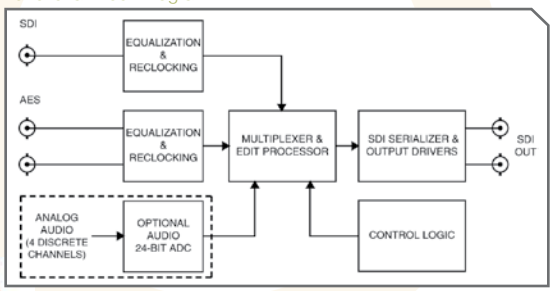
Leitch Compatible

- 2 AES inputs
- Provides 2 SDI outputs with embedded audio
- Multiplexed audio can be set to any AES group
- Optional analog audio input with 24-bit ADC (MUX-8552A-C)
- -6 to +24dBu input range on analog audio option
- EDH insertion into SDI outputs
- 5-year transferable warranty
- An alternative to the Leitch MXA6800+
- MUX-8552A Power: 2.8 Watts
- MUX-8552A-C Power: 6.5 Watts

Connector Diagram



Functional Block Diagram



MUX-8552A-C Analog Audio Input

Rear Frame Plug-on Connector

AES / EBU Demultiplexer

Precision demultiplexing of 2 AES streams. Also available with analog audio outputs.

The RossGear DMX-8554A is a program quality AES / EBU de-multiplexer which uses the latest technology available. Four discrete audio channels (2 AES channels) are demultiplexed from the SDI stream. In addition, 2 reclocked SDI outputs are available. Model DMX-8554A-C adds an analog audio output using 24-bit DACs, the 2 analog stereo channels allow for easy integration into a hybrid analog / digital environment.

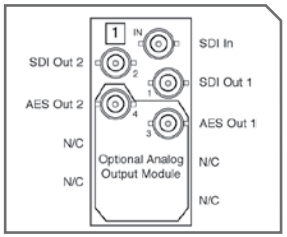
Designed and manufactured to meet the highest quality broadcast industry standards, the RossGear DMX-8554A is the ideal, cost-effective solution for your audio demultiplexing requirements.

Features:

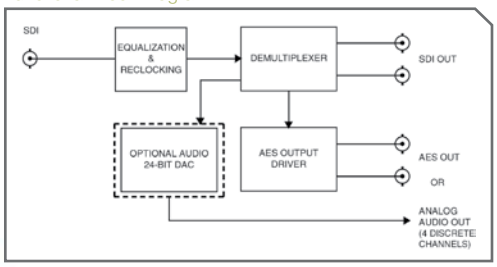
Leitch Compatible

- 2 AES outputs (1 group)
- Supports 48kHz audio
- 2 SDI outputs
- Optional 2 stereo pair analog outputs (DMX-8554A-C)
- 24-bit DAC for high-quality analog audio output
- 5-year transferable warranty
- An alternative to the Leitch DMX6800+
- DMX-8554A Power: 2.8 Watts
- DMX-8554A-C Power: 6.5 Watts

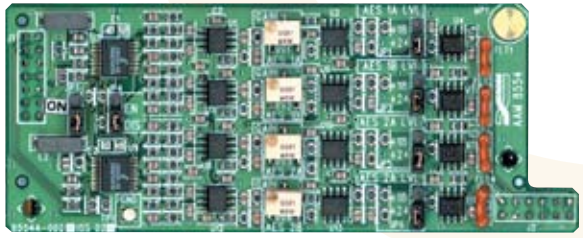
Connector Diagram



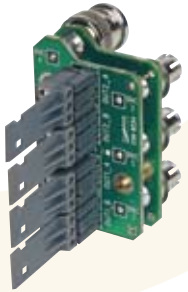
Functional Block Diagram



DMX-8554A-C Analog Audio Output



Rear Frame Plug-on Connector



8000 Series RossGear

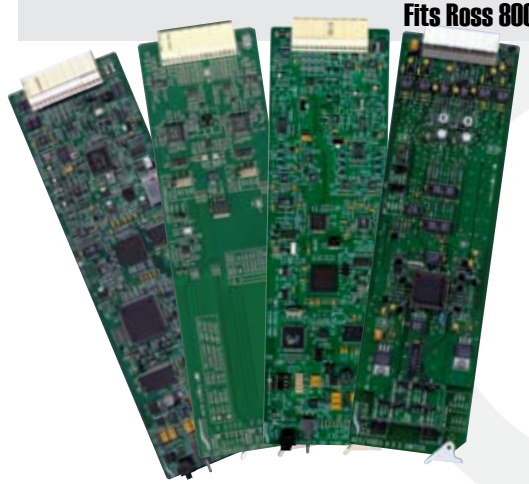
8000 Series RossGear

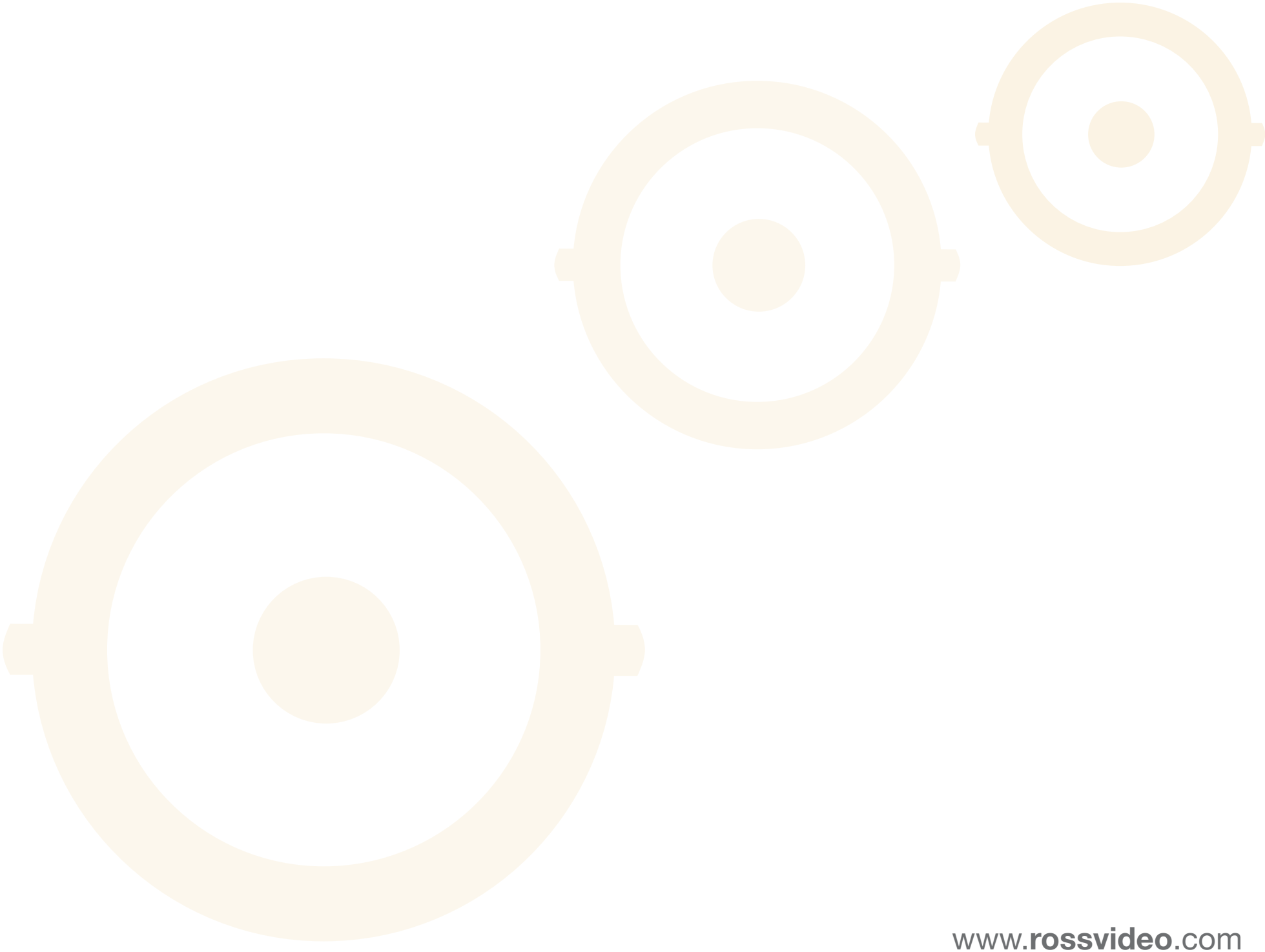
Video

Audio

Fits Ross 8000 Series and Leitch 6800 Series Frames

Fits Ross 8000 Series Frames





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Warranties

openGear, RossGear, and GearLite terminal equipment products are built to last. They're tough and ready to handle years of demanding, continuous use. Which is why Ross' warranty policy is one of the best in the industry - Ross Video stands behind their products.

Ross offers 5-year transferable warranties on our openGear product line. 3 and 5-year transferable warranties on our RossGear product line and 3-year warranties on our GearLite product line.

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

www.rossvideo.com

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