openGear

one platform, one control system,
the standard of choice

openGear

Multi-Definition Terminal Equipment

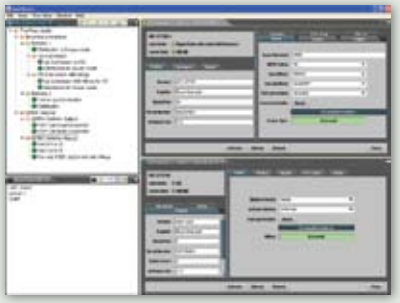
ROSS

openGear Multi-Definition Gear

Ross Video is pleased to lead the industry with the open architecture, openGear platform standard. openGear provides the industry with the most flexible and advanced terminal equipment possible with the opportunity to select products from a wide range of technology leaders, all in one platform under one control system.

- Choices with best in class products
- Wide portfolio from industry leading manufactures
- One Control System!
- No longer a need for multiple frame standards
- No longer single sourced for solutions
- Designed by Ross Video

DashBoard Control & Monitoring



DashBoard Control System

Take control of your Gear with the TCP / IP based, DashBoard Control and Monitoring application.

- Remote control and monitoring
- Java based application
- Automatic discovery of frames and devices
- Practical real time control
- Alarm reporting
- Multiple frames on a single control network
- Multiple DashBoard applications on a single control network
- TCP / IP based communication
- In field upgradability of devices
- Multi-vendor control

SNMP

SNMP allows you to incorporate openGear into a system wide SNMP monitoring application.

- Direct to the Frame (no Gateway required)
- Runs on a separate software port to DashBoard
- Software option (on MFC-8320-N) field upgradeable
- MIB's (Management Information Base) posted on Ross Video website

DFR-8321:
2RU, 20 slot frame

8300 Series Frames

openGear offers the choice of a standard 10 slot frame and a high density 20 slot frame to meet the needs of any application. Common features to the openGear platform are

- Dual reference inputs
- Redundant power supplies
- Locking AC retaining clips
- Front to back cooling
- Ethernet control
- Flexible I/O
- Robust design

For more information, specifications, and manuals on our complete product line, visit us on the web at **www.rossvideo.com**
For more information on the openGear standard, partners, and solutions, visit us on the web at **www.openGear.tv**

Table of Contents

openGear Multi-Definition Digital Products Frame

DFR-8310-C w/ Cooling Fans
DFR-8310-BNC w/ Fixed 10-BNC Rear
DFR-8310-C-BNC w/ Fixed 10-BNC Rear and Cooling Fans

The most flexible frame for all your standard and high-definition terminal equipment.

The DFR-8310 is a 2RU modular frame, designed to accommodate up to 10 modules of our openGear Multi-Definition product family.

MODULAR FRAME ARCHITECTURE

The DFR-8310 blends the simplicity of a fixed rear connector frame and the flexibility of independent rear modules.

For applications which use BNC connectors, the DFR-8310 is available with preloaded 10-BNC rear modules. This frame configuration allows any openGear module using BNC connectors to be installed into any slot, without restrictions. Installation of separate rear modules is not required. Unused slots can be pre-wired into a facility, and installation of card modules can be done at any time without accessing the rear of the frame.

For applications where other types of I/O connections are necessary (such as twisted-pair audio or fibre interfaces), the frame also supports slot-dependent rear I/O modules. Rear modules can be ordered with card modules, and are quick and easy to install.

ROBUST POWER SUPPLIES

The DFR-8310 frame can accommodate two front-loaded PS-8300 power supplies. Although a single supply can fully power a loaded frame, the addition of a second (optional) supply gives the frame full power redundancy. Each supply is fed by a separate power cord, which is held in position to guard against accidental power loss.

Each power supply contains an independent cooling fan, status LED, and a front-mounted power switch.

The frame comes standard with one PS-8300 power supply.

Features

- 2RU frame houses up to 10 modules
- Can house any mix of analog, digital, video and audio modules in the same frame
- Available with preloaded 10-BNC rear modules, or modular I/O panels for connector flexibility
- Heavy-duty hinged front door panel lowers to allow easy card insertion
- Durable powder-coat paint finish
- Aluminum construction reduces overall weight
- Two independent looping Reference Inputs feed all module slots
- SMPTE alarm interface for simple monitoring
- Robust 150 watt power supply with integral cooling fan
- Optional redundant power supply is hot-swappable for 24 / 7 operation
- Power switch is accessible from the front of the rack frame
- Power supplies are replaceable from the front of the frame without requiring rear-frame access
- Separate power cords to each supply for power feed redundancy
- PowerLock cord retainer mechanism guards against accidental power loss
- Optional Cooling Fan Module for increased ventilation and enhanced reliability
- Fan Fail and Error Indicator LEDs on front of the frame (available with optional Cooling Fan Module)
- Optional Ethernet based frame controller for remote setup, monitoring, and control
- 5-year transferable warranty

OPTIONAL COOLING FANS

The frame has been designed with an advanced cooling architecture to increase ventilation. For applications where the total module load is less than 40 watts, the DFR-8310 can be used without cooling fans. Frames should be mounted with 1RU empty space between frames.

For applications where frames are mounted directly above or below other equipment, or where the total module power load is greater than 40 watts, an optional cooling fan kit can be added. These front-door mounted fans provide forced air cooling for all modules, and additional cooling for the power supplies. An intelligent fan controller adjusts fan speed with changes in frame power loading or temperature. Particular attention has been paid to frame acoustics in order to keep fan noise to a minimum.

Ordering

2RU, 10 Card Slot, Single Power Supply

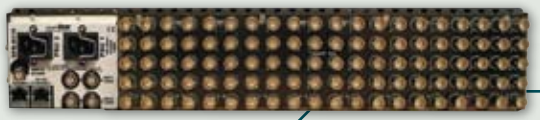
DFR-8310	w/ Modular Rear
DFR-8310-C	w/ Modular Rear and Cooling Fans
DFR-8310-BNC	w/ Preloaded 10-BNC Rear
DFR-8310-C-BNC	w/ Preloaded 10-BNC Rear and Cooling Fans
PS-8300	openGear Digital Products Redundant or Spare Power Supply
CFM-8310	openGear 2RU Cooling Fan Upgrade Kit
MFC-8320-N	openGear 2RU Frame Controller w/ Network Interface
FSB-8310	Rear Support Bars and Bracket

2RU Frame

The DFR-8310 is a 2RU modular frame, designed to accommodate up to 10 modules of our openGear Multi-Definition product family.

Modular Rear I/O Modules

For applications where a mix of BNC, twisted pair, or other connectors are needed, separate rear I/O modules can be ordered with card modules. These rear modules are quick and easy to install.



Preloaded 10-BNC Rear I/O Panel

For applications where only BNC connectors are used, the DFR-8310 is available with preloaded 10-BNC modules. This model eliminates the need for individual slot-dependent rear modules.

Common Frame Features

Two looping reference inputs are buffered and distributed to all module slots. A frame mounted Ethernet port allows a network control module to be added without occupying a module slot. A SMPTE 269M alarm monitoring connection is also provided. PowerLock cord retainers guard against accidental power loss.

openGear High Density Multi-Definition Frame

DFR-8321-C w/ Cooling
DFR-8321-CN w/ Cooling and Network Control
DFR-8321-CNS w/ Cooling, Network Control and SNMP

The most flexible frame for all your terminal equipment needs.

The DFR-8321 is a 2RU high density modular frame, designed to accommodate up to 20 openGear cards. The 21st slot is reserved for network control.

MODULAR FRAME ARCHITECTURE

The DFR-8321 offers the flexibility of independent rear modules for connectivity to a wide array of interfaces such as BNC, twisted-pair audio, and fiber. The DFR-8321 offers a full rear module that offers 10 BNCs per module, or a high density split rear module that offers 5 BNCs per module. Using the split rear module allows for up to 20 independent openGear solutions to be installed.

ROBUST POWER SUPPLIES

The DFR-8321 can accommodate two front-loaded PS-8300 power supplies. A single supply can fully power a loaded frame, the addition of a second (optional) supply gives the frame full power redundancy.

Each power supply contains an independent cooling fan, status LED, and a front-mounted power switch.

COOLING

The frame has been designed with an advanced cooling architecture with increased ventilation. The front-door mounted fans provide forced air cooling to all cards with front to back cooling. An intelligent fan controller adjusts fan speed with changes in power supply loading and temperature.

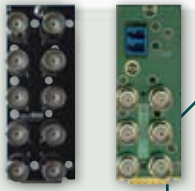
CONTROL

The DFR-8321 offers optional Ethernet connectivity for Control and Monitoring via DashBoard and optional SNMP.

Features

- 2RU frame houses up to 20 openGear cards
- Supports any mix of analog, digital, video and audio modules in the same frame
- Modular I/O panels for connector flexibility
- Removable front door for easy fan servicing
- Frames come standard with cooling
- 2 independent looping References with connection to each card slot
- Robust 150 watt power supply with integral cooling
- Optional redundant power supply, hot-swappable for 24/7 operation
- Power switch is accessible from front of rack frame
- Front loading power supplies
- Optional Ethernet based frame controller for remote setup, monitoring and control
- Optional SNMP control and monitoring
- Power Supply and Ethernet based frame controller common to DFR-8310
- 5-year transferable warranty

2RU Frame
The DFR-8321 is a 2RU modular frame, designed to accommodate up to 20 modules of our openGear Multi-Definition product family.



Modular Rear I/O Modules
Separate rear I/O modules are ordered with card modules offering a mix of BNC, twisted pair and other connections as required. These rear modules are quick and easy to install.

Common Frame Features
Two looping reference inputs are buffered and distributed to all module slots. A frame mounted Ethernet port allows a network control module to be added without occupying a module slot. PowerLock cord retainers guard against accidental power loss.

Ordering

2RU, 20 Card Slot, 1 Ethernet Control Slot, Single Power Supply

DFR-8321-C	w/ Cooling Fans
DFR-8321-CN	w/ Cooling Fans and Network Control
DFR-8321-CNS	w/ Cooling Fans, Network Control and SNMP
PS-8300	Redundant or Spare Power Supply
CFM-8321	Spare 2RU Cooling Fan Kit
MFC-8320-N	2RU Frame Controller w/ Network Control
FSB-8320	Rear Support Bars and Bracket

OPA-8380A — General Purpose Adapter

OPA-8381 — Analog Audio Adapter

openGear Adapters
Leaving no customer behind!

Designed to allow existing customers with RossGear 8000 series products to easily migrate existing solutions to the HD / SD 8300 openGear series frame.

- Distribution and Monitoring
- Synchronization and Delay
- Video Conversion
- Audio Conversion, Embedding / De-Embedding
- Keying

See page 68 for details.

DashBoard

DashBoard Network Control & Monitoring

The DashBoard Control and Monitoring System is a free application, available on the Ross Video website, designed for remote control and monitoring of the open architecture, openGear platform by Ross Video.

Designed from the ground up with TCP / IP connectivity and based on Java, DashBoard is designed to meet the needs of the broadcast industry with the ability to add feature plug-ins allowing end-users to customize the application to meet their needs at a price that fits their budget.

DashBoard is the only application that allows full and complete native control to multiple vendors. All openGear compatible solutions from any of the openGear partners can be controlled using DashBoard without the need to upload custom GUI's or install propriety software.

DashBoard offers the ability to view multiple frames with full control and alarming of all populated slots inside a frame. This simplifies the setup of numerous devices in a large installation and offers the ability to centralize monitoring. The openGear devices define their controllable parameters and layout to DashBoard, so the control interface is always up to date.

Alarms raised by devices in the frame bubble up to the upper most level making it quick and easy to identify potential failures or problems at the frame level.

openGear frames are automatically discovered and are available in the TreeView where they can be custom identified, collapsed to view just the frame or opened to view available devices in the frame.

Device control and monitoring is simple and easy. Ross Video GUI's give a quick summary view window that displays the current state of the device, such as input and reference presences, output standard, etc. Control is simplified with multiple catagories that group common parameters such as Timing Control, Output Configuration, Proc Control and Alarm Configuration. DashBoard also offers the ability to upgrade software on devices in the field without the need to replace any on-board components. Software upgrades are available from the Ross Tech Support Center.

Features

- Remote Control and Monitoring
- Java based application
- Automatic discovery of frames and devices
- Practical real time control
- Alarm reporting
- Multiple frames on a single control network
- Multiple DashBoard applications on a single control network
- TCP / IP based communication
- In-field upgradeability of devices
- Multi-vendor control system

DataSafe

DataSafe dramatically reduces downtime when failed modules are swapped out. All module parameters are stored on the local frame network card and automatically restored when a hot swap is performed.

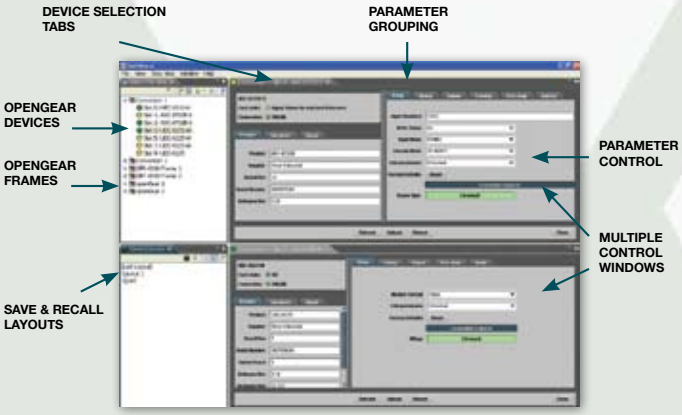
DataSafe also simplifies the setup of numerous identical modules by allowing the configuration of one device to be uploaded and distributed to other identical devices.

Features

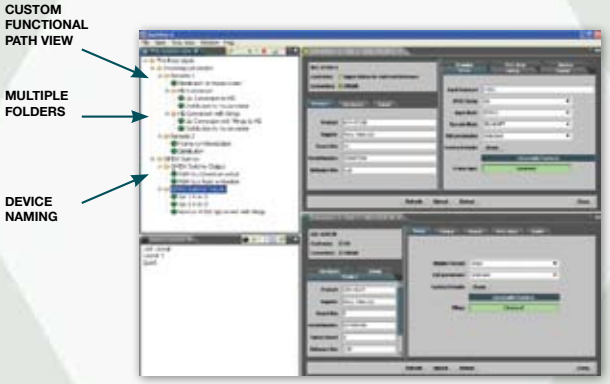
- All parameters stored locally on network card
- Upload configurations to multiple cards

DashBoard allows for multiple control windows to be active and available on one screen which is useful when a functional path involves more than a single device.

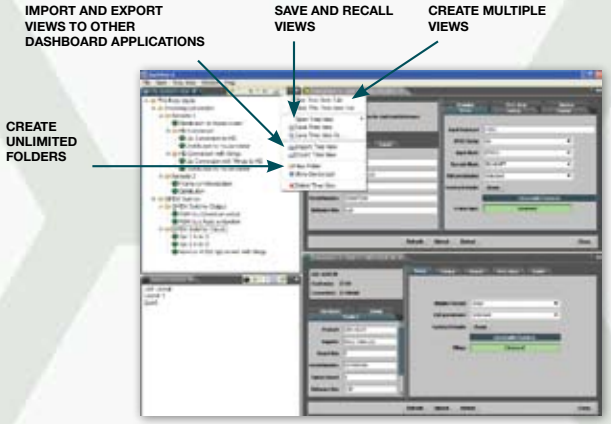
Device selection tabs make it easy to quickly select the device for control. Layout configurations can be saved and recalled using the Save / Recall Layout feature.



Standard DashBoard



DB-VIEW



DB-VIEW

DB-VIEW

The optional DashBoard Enhanced Viewing Plug-In allows for customized views of more complex systems. Custom folders can be created and any device from any frame can be dragged and dropped into the folder to represent logical system functionals. Alarming of devices follow with the logical views making identification of critical issues easy to isolate and identify.

SNMP

openGear supports SNMP offering an industry standard interface for facility wide monitoring applications.

SNMP is loaded direct to the frame eliminating the need for any external gateways and runs on a separate software port allowing for simultaneous control from both DashBoard and SNMP clients. This is useful in applications where system wide monitoring is performed using SNMP and real time control is performed using DashBoard.

Ross Video MIB's are published and available for download from the Ross Video website.

Features

- Direct to the Frame (no Gateway required)
- Runs on a separate software port to DashBoard
- Software option for MFC-8320-N field upgradeable
- MIB's (Management Information Base) posted on Ross Video website

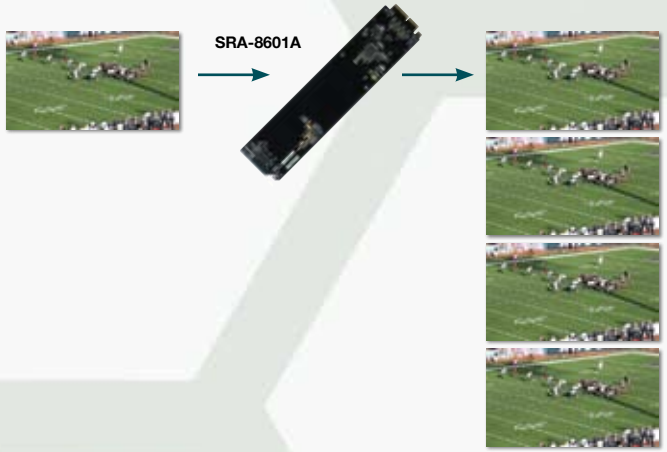
MD-SDI Reclocking Amplifiers - 1x4

Highest quality 3G / HD / SD-SDI reclocking distribution amplifier.

The SRA-8601A is a Multi-Definition SDI distribution amplifier capable of equalizing and reclocking all common serial digital signals. With support for both standard-definition and high-definition signals, the SRA-8601A is the ideal universal SDI distribution amplifier.

The SRA-8601A equalizes the incoming SDI signal, compensating for greater than 300m of cable at 270Mb/s, greater than 120m of cable at 1.485Gb/s, and greater than 80m of cable at 2.97Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates. LED indicators at the front of the card identify the presence of incoming video and the identified signal data rate.

In the 1x4 configuration, the SRA-8601A outputs are non-inverting. The 1x4 configuration is only available in the DFR-8321 using the R2S-8601 rear module.



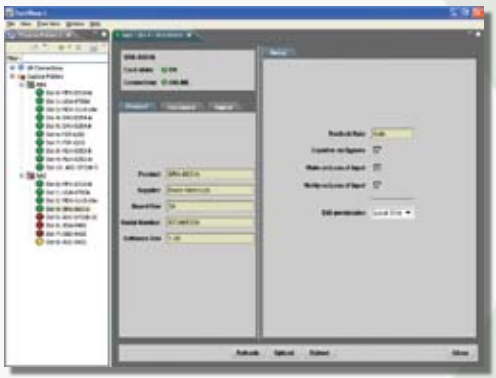
Features

- 1x4 3Gb/s distribution amplifier
- Equalizes and reclocks SDI signals of 270Mb/s, 1.485Gb/s, and 2.97Gb/s
- Equalizes greater than 300m of Belden 1694A cable at 270Mb/s, greater than 120m of cable at 1.485Gb/s, or greater than 80m of cable at 2.97Gb/s
- Automatic detection of incoming data rate
- LED indicators for signal presence and data rate
- Excellent input and output return loss
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 2.9 watts

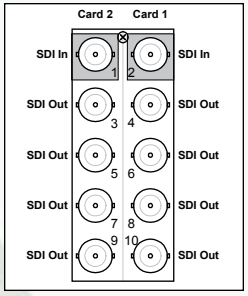
DashBoard

REMOTE CONTROL and MONITORING

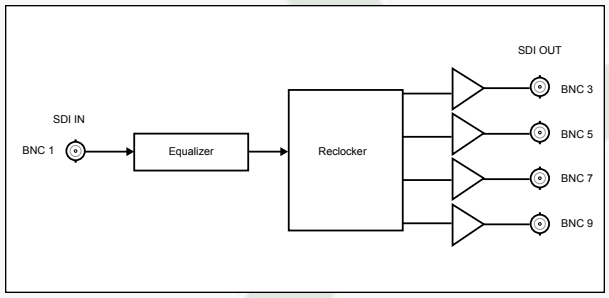
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connections



Functional Block Diagram

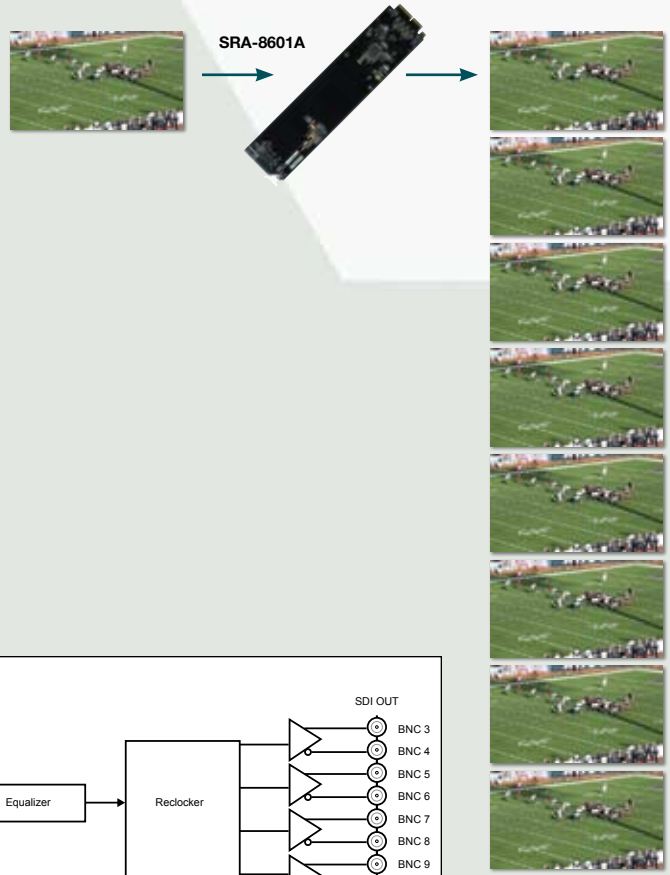


MD-SDI Reclocking Amplifiers - 1x8

Highest quality 3G / HD / SD-SDI reclocking distribution amplifier.

The SRA-8601A is a Multi-Definition SDI distribution amplifier capable of equalizing and reclocking all common serial digital signals. With support for both standard-definition and high-definition signals, the SRA-8601A is the ideal universal SDI distribution amplifier.

The SRA-8601A equalizes the incoming SDI signal, compensating for greater than 300m of cable at 270Mb/s, greater than 120m of cable at 1.485Gb/s, and greater than 80m of cable at 2.97Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates. LED indicators at the front of the card identify the presence of incoming video and the identified signal data rate.



Features

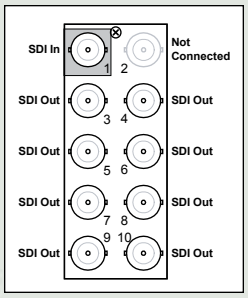
- 1x8 3Gb/s distribution amplifier
- Equalizes and reclocks SDI signals of 270Mb/s, 1.485Gb/s, and 2.97Gb/s
- Equalizes greater than 300m of Belden 1694A cable at 270Mb/s, greater than 120m of cable at 1.485Gb/s, or greater than 80m of cable at 2.97Gb/s
- Automatic detection of incoming data rate
- LED indicators for signal presence and data rate
- Excellent input and output return loss
- 10 DAs in DFR-8321
- 5-year transferable warranty
- Power: 2.9 watts

DashBoard

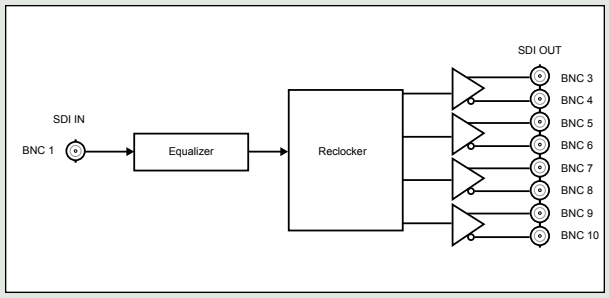
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



Functional Block Diagram



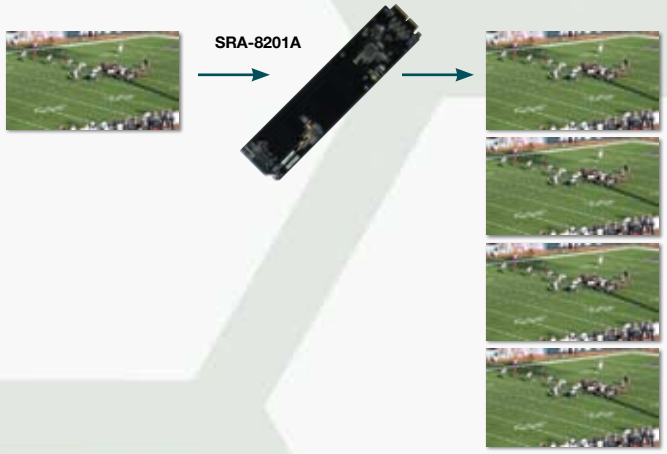
HD / SD SDI Distribution Amplifier - 1x4

Our best HD / SD SDI distribution amplifier for all standard and high-definition SDI signals.

The SRA-8201A is an HD / SD SDI distribution amplifier, capable of equalizing and reclocking all common serial digital signals. With support for both standard-definition and high-definition signals, the SRA-8201A is the ideal universal SDI distribution amplifier.

The SRA-8201A equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates. The unit's SDI outputs faithfully reproduce the incoming signal, with excellent return loss specifications.

In the 1x4 configuration, the SRA-8201A outputs are non-inverting making it an excellent ASI distribution amplifier. The 1x4 configuration is only available in the DFR-8321 using the R2S-8201 rear module.



Features

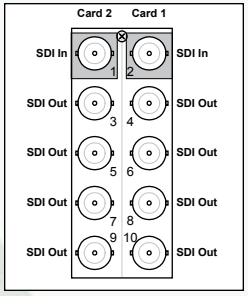
- 1x4 (high density) distribution amplifier
- Non-inverting 1x4 output for ASI
- Equalizes and reclocks all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Automatic detection of incoming data rate
- Signal presence and data rate indicator LED
- DashBoard Monitoring for input presence and data rate
- Excellent input / output return loss specification
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 2.9 watts

DashBoard

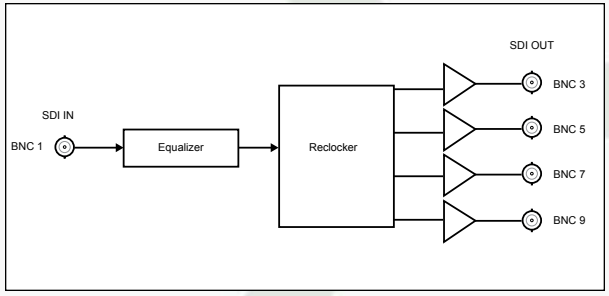
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



Functional Block Diagram

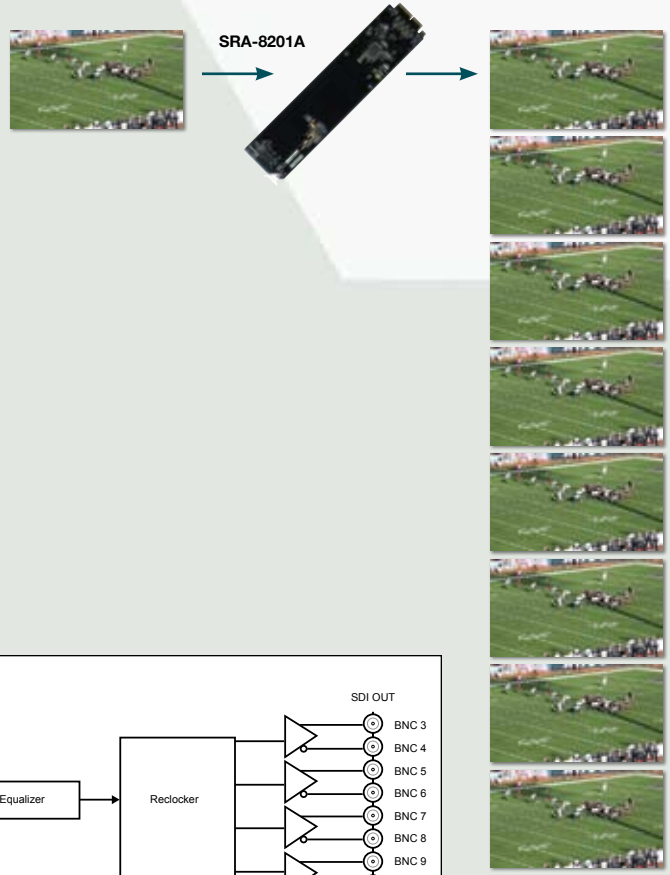


HD / SD SDI Distribution Amplifier - 1x8

Our best HD / SD SDI distribution amplifier for all standard and high-definition SDI signals.

The SRA-8201A is an HD / SD SDI distribution amplifier, capable of equalizing and reclocking all common serial digital signals. With support for both standard-definition and high-definition signals, the SRA-8201A is the ideal universal SDI distribution amplifier.

The SRA-8201A equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates. The unit's SDI outputs faithfully reproduce the incoming signal, with excellent jitter and return loss specifications.



Features

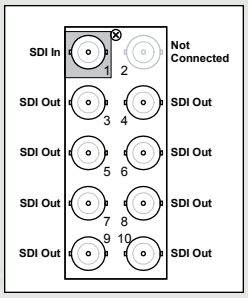
- 1x8 distribution amplifier
- Equalizes and reclocks all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Automatic detection of incoming data rate
- Signal presence and data rate indicator LED
- DashBoard Monitoring for input presence and data rate
- Excellent input / output return loss specification
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 2.9 watts

DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



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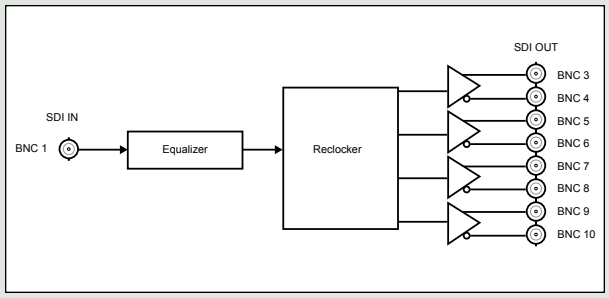


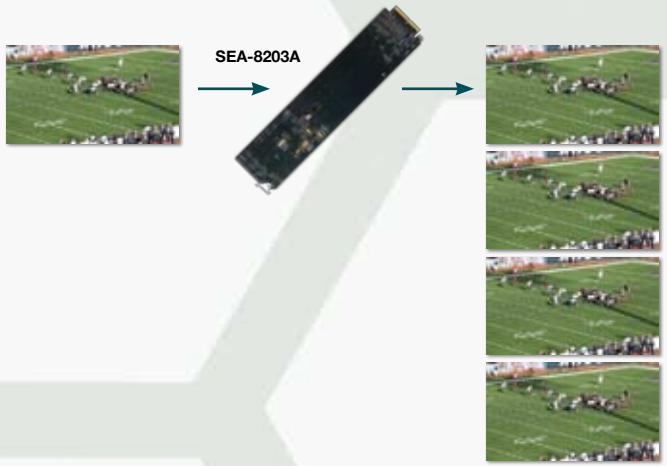
HD / SD SDI Distribution Amplifier - 1x4

A high quality HD / SD SDI equalizing distribution amplifier for all standard and high-definition SDI signals.

The SEA-8203A is an HD / SD SDI distribution amplifier, capable of equalizing all common serial digital signals. With support for both standard-definition and high-definition signals, the SEA-8203A is a great choice for all SDI distribution.

The SEA-8203A equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s.

In the 1x4 configuration, the SEA-8203A outputs are non-inverting making it an excellent ASI distribution amplifier. The 1x4 configuration is only available in the DFR-8321 using the R2S-8203 rear module.



Features

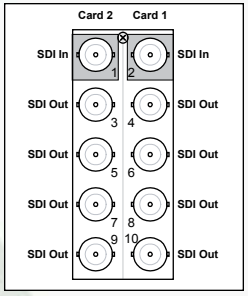
- 1x4 (high density) distribution amplifier
- Non-inverting 1x4 output for ASI
- Equalizes all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Signal presence indicator LED
- DashBoard Monitoring for input presence
- Excellent input / output return loss specification
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 1.5 watts

DashBoard

REMOTE CONTROL and MONITORING

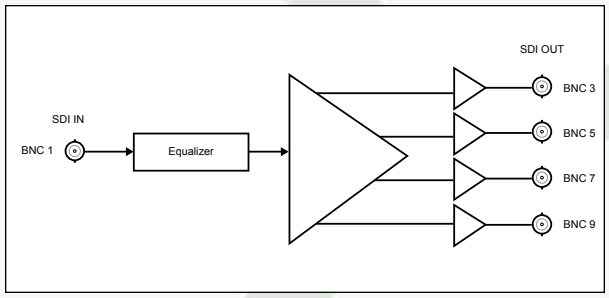
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



1x4

Functional Block Diagram



HD / SD SDI Distribution Amplifier - 1x8

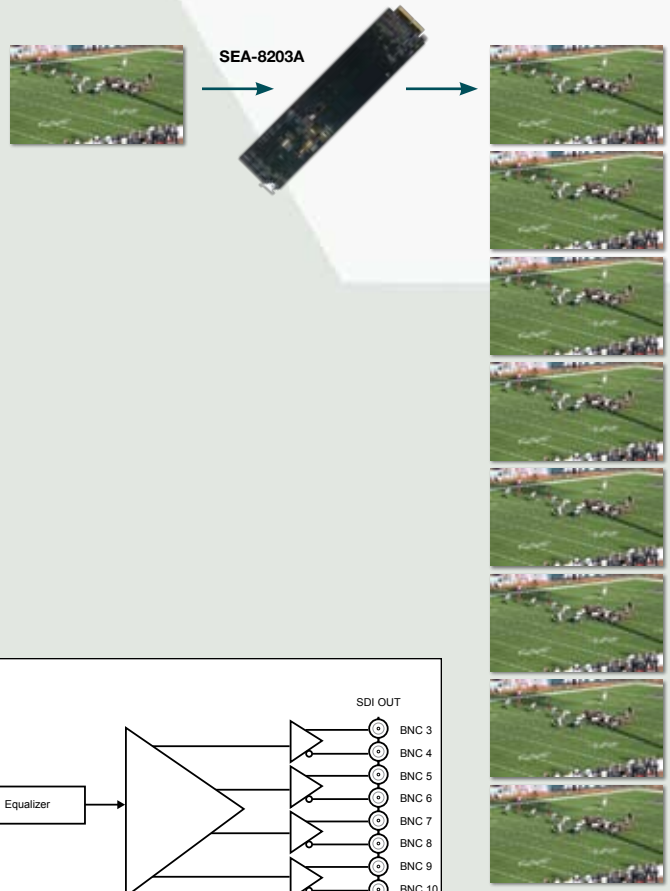
A high quality HD / SD SDI equalizing distribution amplifier for all standard and high-definition SDI signals.

The SEA-8203A is an HD / SD SDI distribution amplifier, capable of equalizing all common serial digital signals. With support for both standard-definition and high-definition signals, the SEA-8203A is a great choice for all SDI distribution.

The SEA-8203A equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s.

Features

- 1x8 distribution amplifier
- Equalizes all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Signal presence indicator LED
- DashBoard Monitoring for input presence
- Excellent input / output return loss specification
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 1.5 watts

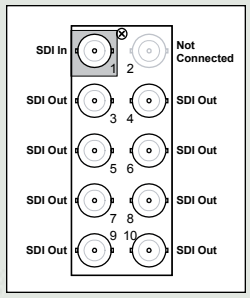


DashBoard

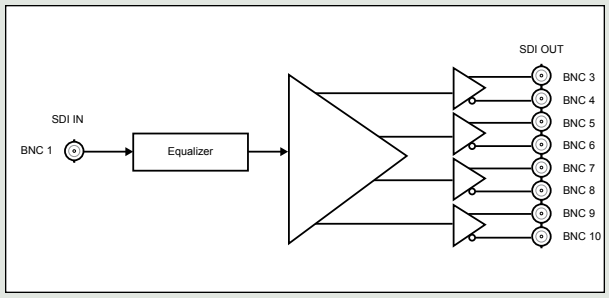
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



Functional Block Diagram



Dual Serial MD-SDI Reclocking Amplifier

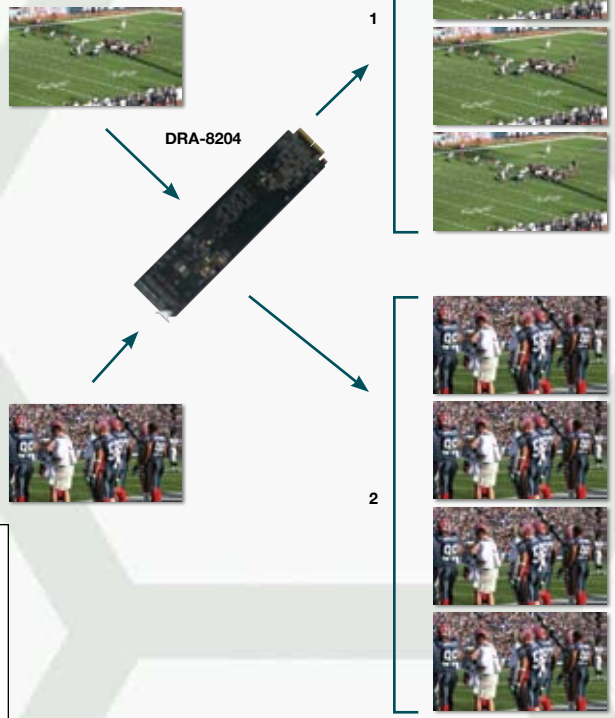
Two independent channels of SDI distribution for standard and high-definition SDI signals.

The DRA-8204 is a two channel Multi-Definition SDI distribution amplifier, capable of equalizing and reclocking all common serial digital signals. With two independent signal channels, the DRA-8204 provides cost-effective distribution at double the density compared to single channel cards. Support for both standard-definition and high-definition signals makes the DRA-8204 a universal SDI distribution amplifier.

Each channel of the DRA-8204 equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates.

A special feature of the DRA-8204 is the ability to operate in a number of different two or one channel modes. By simply changing a jumper, the DRA-8204 can be configured as a single channel 1:8, a dual channel 1:4 + 1:4, or a dual channel 1:6 + 1:2 distribution amplifier. This unique feature makes adapting the DRA-8204 to different installations quite easy. Each channel is fully independent, and can run at different data rates.

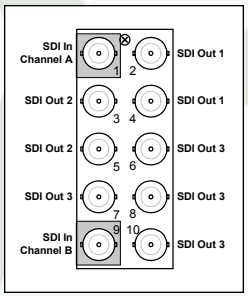
LED indicators at the front of the module identify the presence of incoming video, and the data rate for each independent channel.



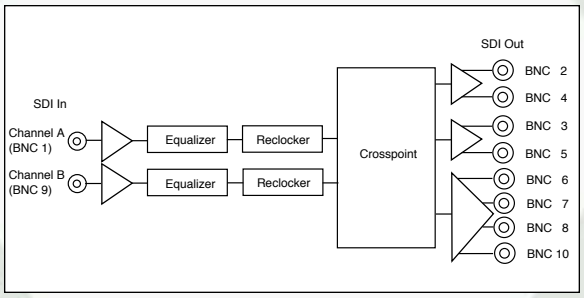
Features

- Two independent channels of SDI distribution on one card!
- Equalizes and reclocks all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Automatic detection of incoming data rate
- Flexible channel configurations:
  - single 1:8 amplifier
  - dual 1:4 + 1:4 amplifiers
  - dual 1:6 + 1:2 amplifiers
- LED indicators for signal presence and data rate for each channel
- Excellent input / output return loss specifications
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 3.7 watts

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Dual Serial MD-SDI Equalizing Amplifier

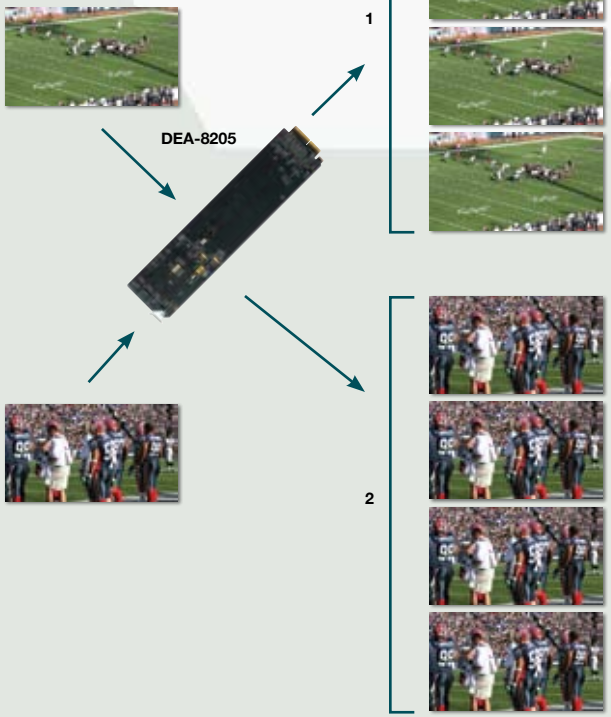
Two independent channels of SDI distribution for standard and high-definition SDI signals.

The DEA-8205 is a two channel Multi-Definition SDI distribution amplifier, capable of equalizing all common serial digital signals. With two independent signal channels, the DEA-8205 provides cost-effective distribution at double the density compared to single channel cards. Support for all data rates between 143Mb/s and 1.485Gb/s makes the DEA-8205 a great choice for high-density SDI distribution.

Each channel of the DEA-8205 equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. Four SDI outputs are provided for each channel.

Special attention has been taken to ensure the SDI outputs faithfully reproduce the incoming signals, with excellent jitter and return loss specifications.

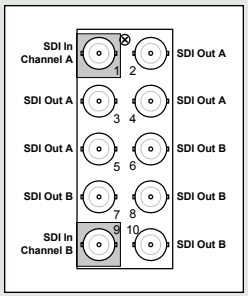
LED indicators at the front of the module identify the presence of incoming video, simplifying system troubleshooting.



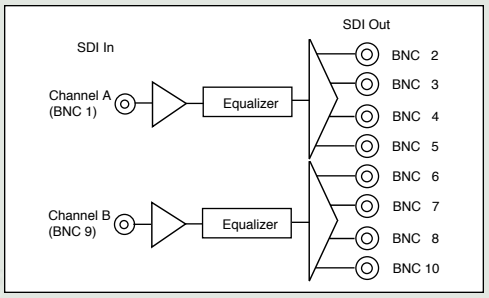
Features

- Two independent channels of SDI distribution on one card!
- Equalizes and distributes all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- LED indicators for signal presence
- Excellent input / output return loss specifications
- 4 SDI outputs for each input channel
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 1.9 watts

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

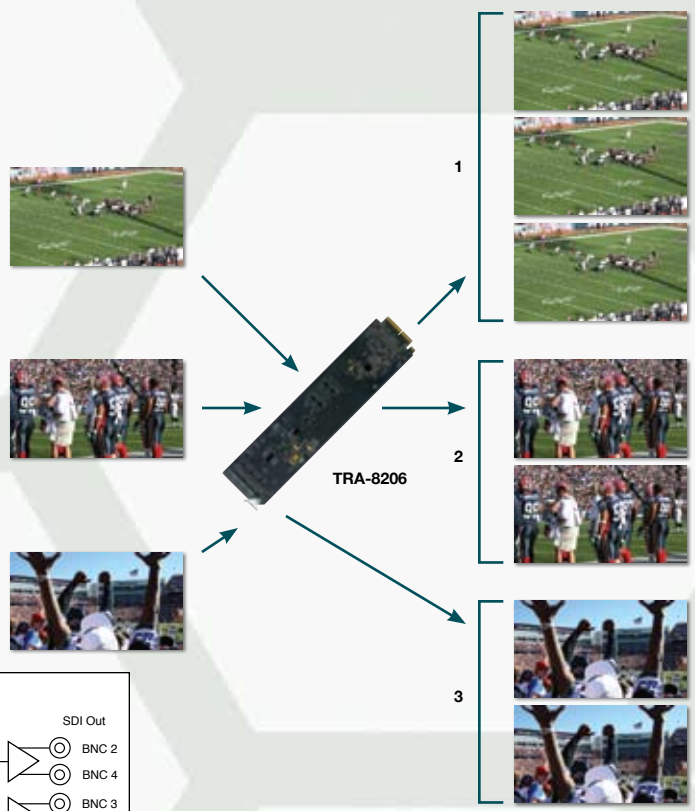
Triple Serial MD-SDI Reclocking Amplifier

Three independent channels of SDI distribution for standard and high-definition SDI signals.

The TRA-8206 is a three channel Multi-Definition SDI distribution amplifier, capable of equalizing and reclocking all common serial digital signals. Support for both standard-definition and high-definition signals makes the TRA-8206 a universal SDI distribution amplifier.

Each channel of the TRA-8206 equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. The signal is then reclocked, with automatic rate detection for all popular data rates. Each channel is fully independent, and can run at different data rates.

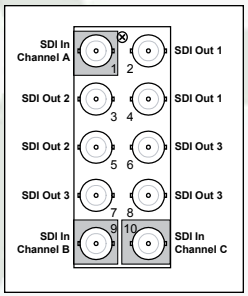
LED indicators at the front of the module identify the presence of incoming video, and the identified signal data rate for each channel.



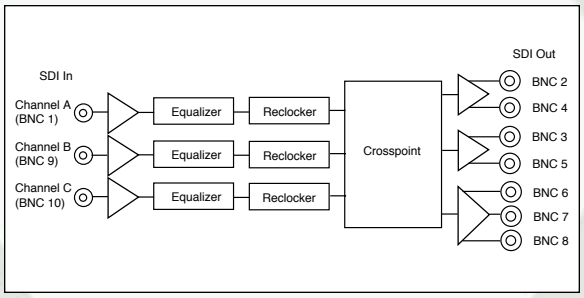
Features

- Three independent channels of SDI distribution on one card!
- Equalizes and reclocks all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Automatic detection of incoming data rate
- Flexible channel configurations:
  - single mode 1:7 amplifier
  - dual mode 1:4 and 1:3 amplifiers
  - dual mode 1:5 and 1:2 amplifiers
  - triple mode 1:2, 1:2, and 1:3 amplifiers
- LED indicators for signal presence and data rate for each channel
- Excellent input / output return loss specifications
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 4.0 watts

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Triple Serial MD-SDI Equalizing Amplifier

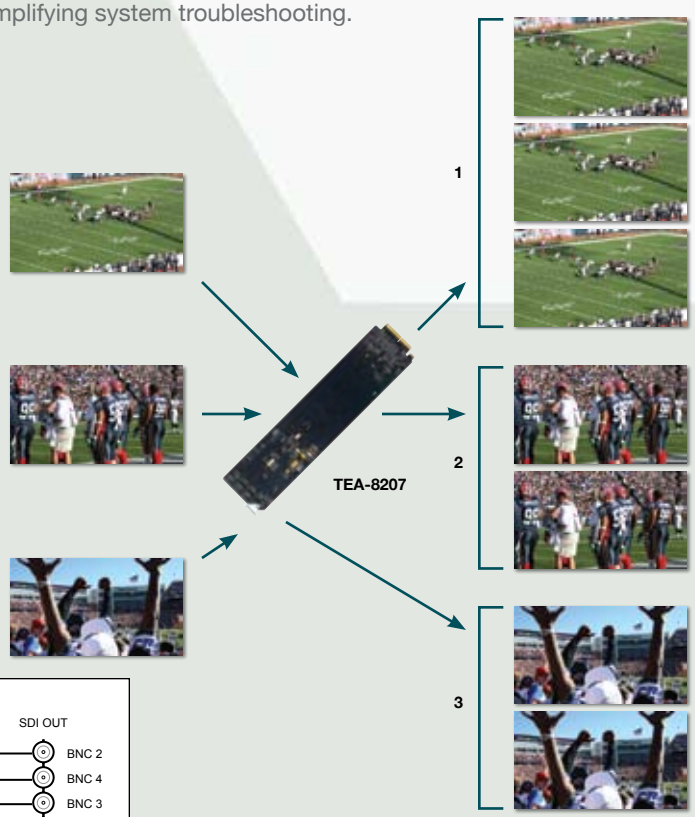
Three independent channels of SDI distribution for standard and high-definition SDI signals.

The TEA-8207 is a three channel Multi-Definition SDI distribution amplifier, capable of equalizing all common serial digital signals. Support for both standard-definition and high-definition signals makes the TEA-8207 an extremely versatile SDI distribution amplifier.

Each channel of the TEA-8207 equalizes the incoming SDI signal, compensating for up to 300m of cable at 270Mb/s and up to 100m of cable at 1.485Gb/s. One SDI channel provides 3 outputs, and the two other SDI channels provide 2 outputs each.

Special attention has been taken to ensure the SDI outputs faithfully reproduce the incoming signals, with excellent jitter and return loss specifications.

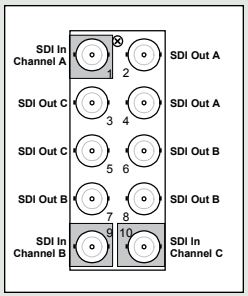
LED indicators at the front of the module identify the presence of incoming video, simplifying system troubleshooting.



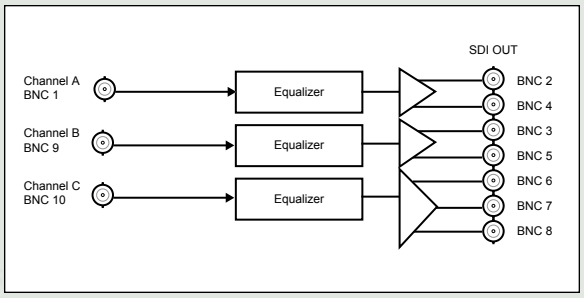
Features

- Three independent channels of SDI distribution on one card!
- Equalizes and distributes all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- LED indicators for signal presence
- Excellent input / output return loss specifications
- One channel provides 3 SDI outputs and the remaining two channels provide 2 SDI outputs each
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 2.3 watts

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

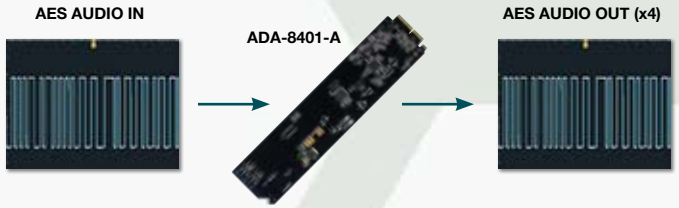
AES / EBU Distribution Amplifier - 75Ω - 1x4

Broadcast quality reclocking AES / EBU distribution amplifier suitable for rates from 30kHz to 192kHz.

The ADA-8401-A is an AES / EBU distribution amplifier designed for broadcast use. It provides eight copies of the incoming signal when used with the R1A-8401 and R2A-8401 Rear Modules or four copies of the incoming signal when used with the R2AS-8401 Rear Module.

The ADA-8401-A supports audio sampling frequencies from 30kHz to 192kHz. Cable equalization and reclocking techniques enable the ADA-8401-A to recover the incoming digital audio signal reliably.

The 1x4 configuration is only available in the DFR-8321 using the R2AS-8401 rear module.



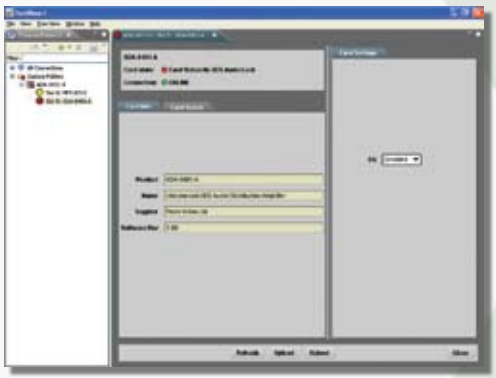
Features

- 1x4 (high density) AES distribution amplifier
- Ideal for distributing Dolby® E and Dolby Digital signals
- Cable equalization and data reclocking on the incoming AES / EBU signal
- Supports audio sampling frequencies from 30kHz to 192kHz
- 75Ω unbalanced I/O
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 2 watts

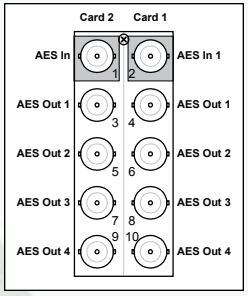
DashBoard

REMOTE CONTROL and MONITORING

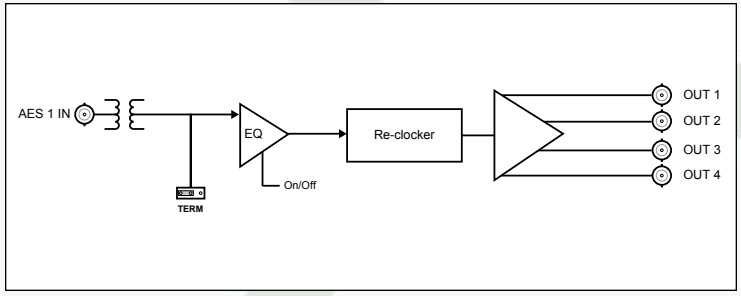
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram

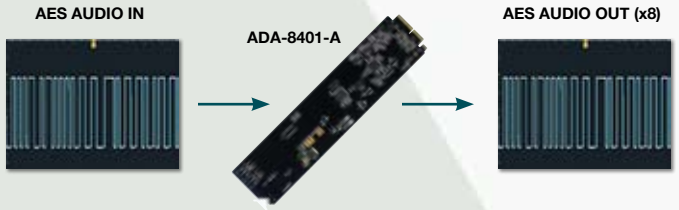


AES / EBU Distribution Amplifier - 75Ω - 1x8

Broadcast quality reclocking AES / EBU distribution amplifier suitable for rates from 30kHz to 192kHz.

The ADA-8401-A is an AES / EBU distribution amplifier designed for broadcast use. It provides eight copies of the incoming signal when used with the R1A-8401 and R2A-8401 Rear Modules or four copies of the incoming signal when used with the R2AS-8401 Rear Module.

The ADA-8401-A supports audio sampling frequencies from 30kHz to 192kHz. Cable equalization and reclocking techniques enable the ADA-8401-A to recover the incoming digital audio signal reliably.



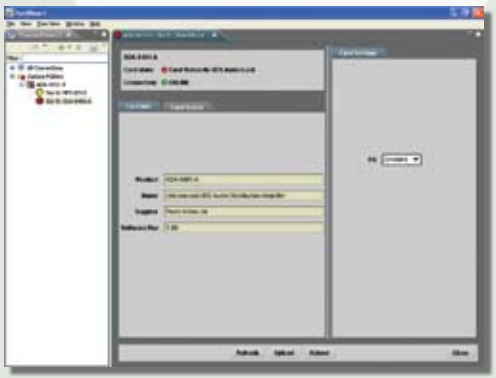
Features

- 1x8 AES distribution amplifier
- Ideal for distributing Dolby® E and Dolby Digital signals
- Cable equalization and data reclocking on the incoming AES / EBU signal
- Supports audio sampling frequencies from 30kHz to 192kHz
- 75Ω unbalanced I/O
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 2 watts

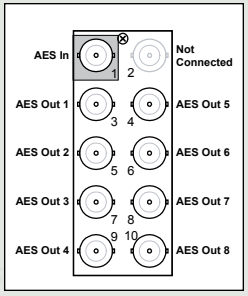
DashBoard

REMOTE CONTROL and MONITORING

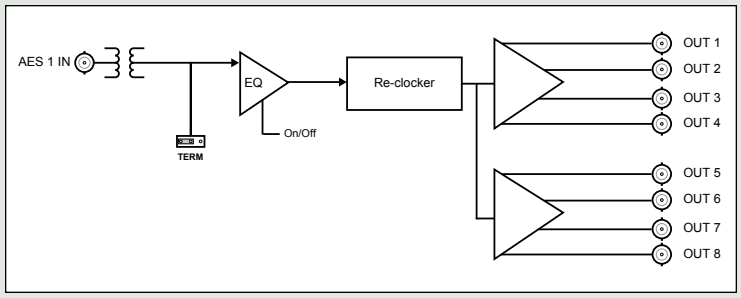
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

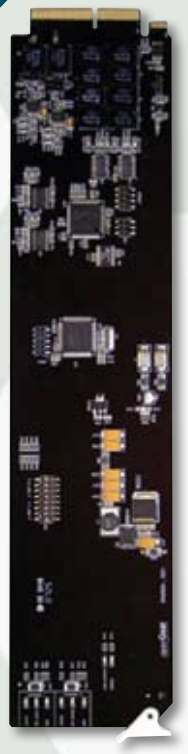


Rear Connection



Functional Block Diagram





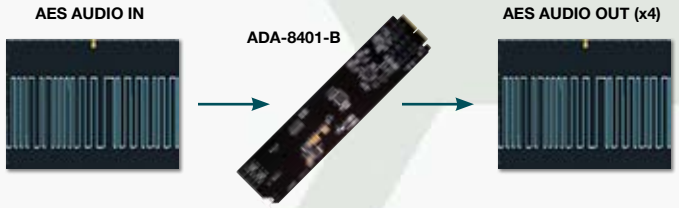
AES / EBU Distribution Amplifier - 110Ω - 1x4

Broadcast quality reclocking AES / EBU distribution amplifier suitable for rates from 30kHz to 192kHz.

The ADA-8401-B is an AES / EBU distribution amplifier designed for broadcast use. It provides eight copies of the incoming signal when used with the R1B-8401 and R2B-8401 Rear Modules or four copies of the incoming signal when used with the R2BS-8401 Rear Module.

The ADA-8401-B supports audio sampling frequencies from 30kHz to 192kHz. Cable equalization and reclocking techniques enable the ADA-8401-B to recover the incoming digital audio signal reliably.

The 1x4 configuration is only available in the DFR-8321 using the R2BS-8401 rear module.



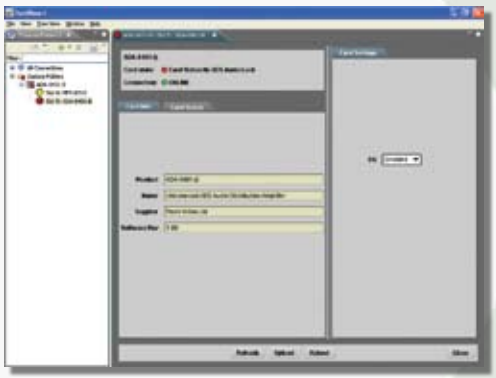
Features

- 1x4 (high density) AES distribution amplifier
- Ideal for distributing Dolby® E and Dolby Digital signals
- Cable equalization and data reclocking on the incoming AES / EBU signal
- Supports audio sampling frequencies from 30kHz to 192kHz
- 110Ω balanced I/O
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 2 watts

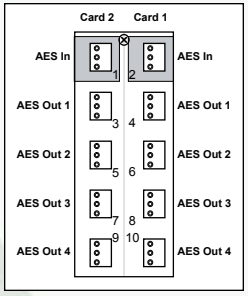
DashBoard

REMOTE CONTROL and MONITORING

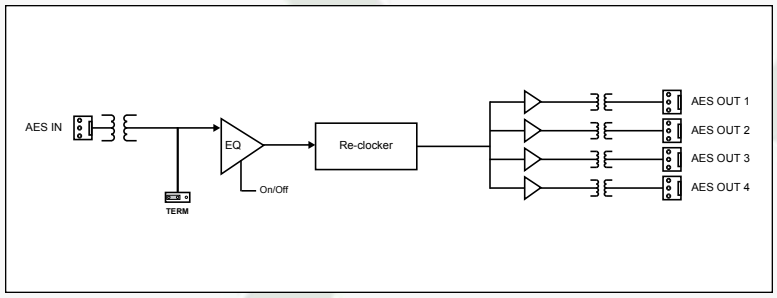
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

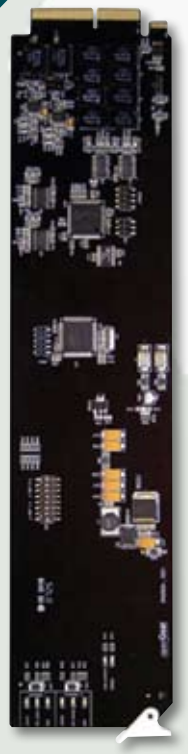


Rear Connection



Functional Block Diagram



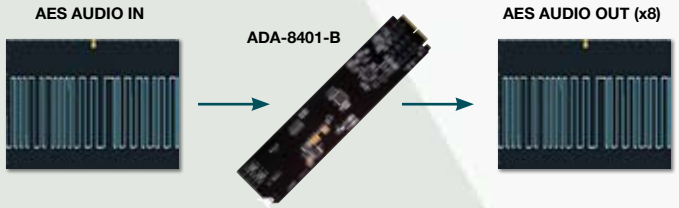


AES / EBU Distribution Amplifier - 110Ω - 1x8

Broadcast quality reclocking AES / EBU distribution amplifier suitable for rates from 30kHz to 192kHz.

The ADA-8401-B is an AES / EBU distribution amplifier designed for broadcast use. It provides eight copies of the incoming signal when used with the R1B-8401 and R2B-8401 Rear Modules or four copies of the incoming signal when used with the R2BS-8401 Rear Module.

The ADA-8401-B supports audio sampling frequencies from 30kHz to 192kHz. Cable equalization and reclocking techniques enable the ADA-8401-B to recover the incoming digital audio signal reliably.



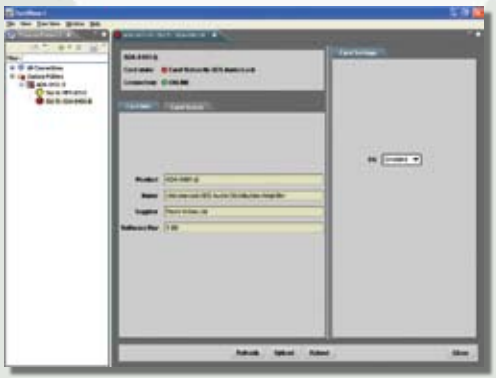
Features

- 1x8 AES distribution amplifier
- Ideal for distributing Dolby® E and Dolby Digital signals
- Cable equalization and data reclocking on the incoming AES / EBU signal
- Supports audio sampling frequencies from 30kHz to 192kHz
- 110Ω balanced I/O
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 2 watts

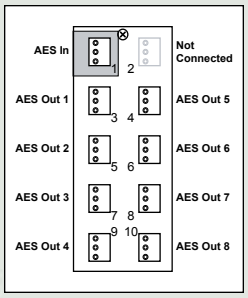
DashBoard

REMOTE CONTROL and MONITORING

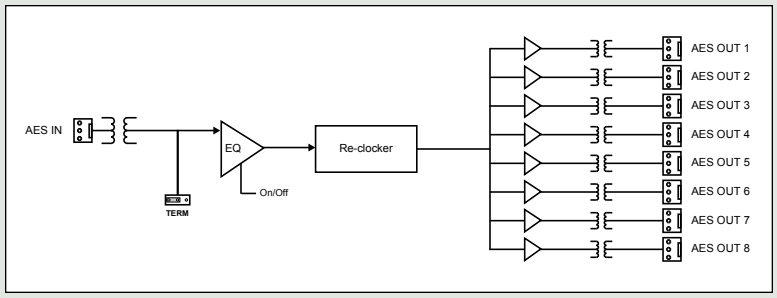
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

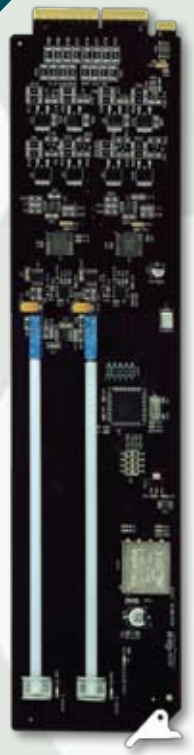


Rear Connection



Functional Block Diagram





Universal Analog Audio Distribution Amplifier - 1x4

Distribution of stereo / mono analog audio signals in a mixed digital / analog system without the need for a separate analog frame.

The ADA-8404-C is an analog audio distribution amplifier designed for broadcast use. It offers excellent common-mode rejection with very low distortion and adjustable gain control from +18dB to -14dB. The ADA-8404-C can be used as either a mono or two channel (stereo) audio DA. It provides four copies of the single (mono) input signal or two copies each of the two (stereo) inputs. For high density applications, the Split Mono Rear Module (R2CSM-8404) is used, allowing 20 individual DAs configured as 1x4 to fit inside a single 2RU frame. For even higher density installations, the ADA-8404-C can be used with the Split Stereo Rear Module (R2CSS-8404) to provide dual 1x3 channels per slot, resulting in 20 stereo channels or 40 mono channels inside a single 2RU frame.

The 1x4 configuration is only available in the DFR-8321 using the R2CSM-8404 and R2CSS-8404 rear modules.

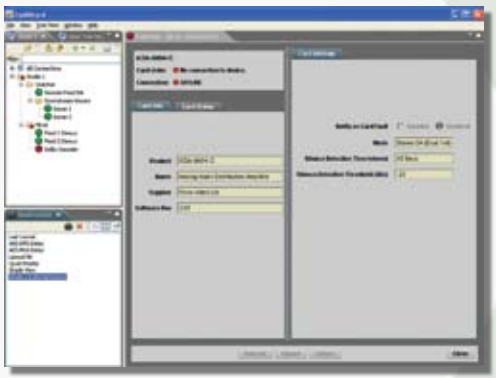
Features

- Analog audio distribution
- Handles mono or stereo signals
- Summing capability
- Silence detection
- +18dB to -14dB Adjustable Gain
- Excellent common-mode rejection
- Very low distortion
- Card-edge trim pot gain adjustment
- Up to 20 stereo or 40 mono channels in a single 2RU frame
- 20 DAs in DFR-8321
- Balanced I/O
- 5 year transferable warranty
- Power: 3 watts

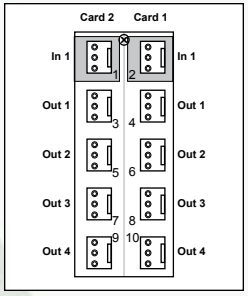
DashBoard

REMOTE CONTROL and MONITORING

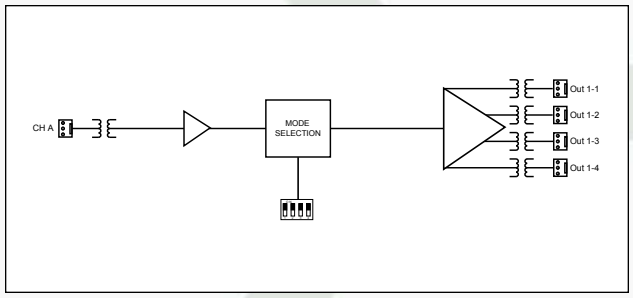
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

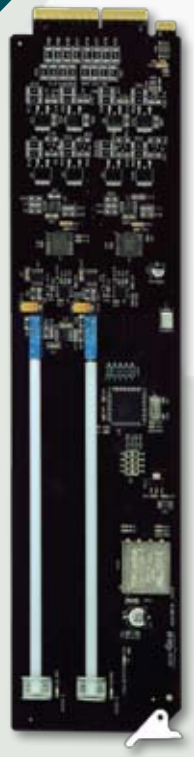


Rear Connection



Functional Block Diagram

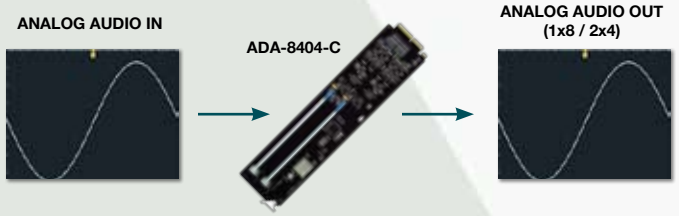




Universal Analog Audio Distribution Amplifier - 1x8

Distribution of stereo / mono analog audio signals in a mixed digital / analog system without the need for a separate analog frame.

The ADA-8404-C is an analog audio distribution amplifier designed for broadcast use. It offers excellent common-mode rejection with very low distortion and adjustable gain control from +18dB to -14dB. The ADA-8404-C can be used as either a mono or two channel (stereo) audio DA. It provides eight copies of the single (mono) input signal or four copies each of the two (stereo) inputs.



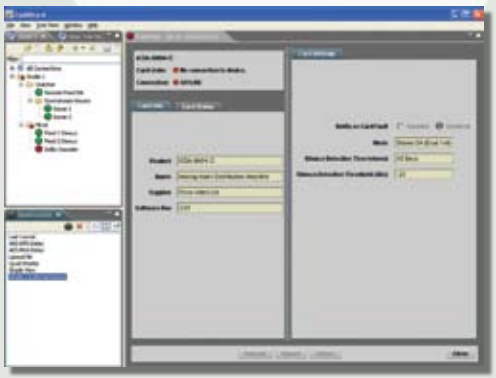
Features

- Analog audio distribution
- Handles mono or stereo signals
- Summing capability
- Silence detection
- +18dB to -14dB Adjustable Gain
- Excellent common-mode rejection
- Very low distortion
- Card-edge trim pot gain adjustment
- Up to 10 stereo or 20 mono channels in a single 2RU frame
- 10 DAs in DFR-8310 or DFR-8321
- Balanced I/O
- 5 year transferable warranty
- Power: 3 watts

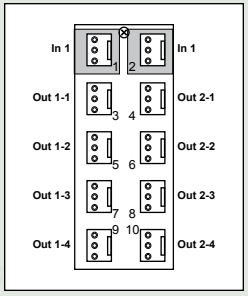
DashBoard

REMOTE CONTROL and MONITORING

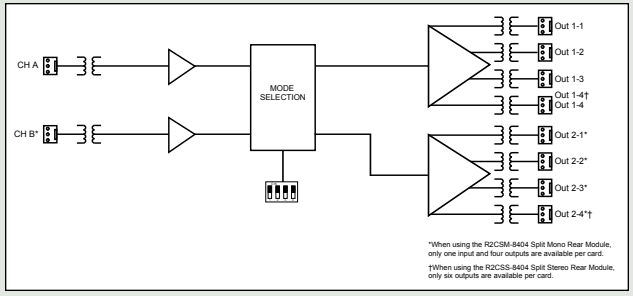
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Analog Utility Distribution Amplifier - 1x4

A very useful device in HD / SD digital systems where there is a requirement for analog signal distribution.

The UDA-8705A is an analog general-purpose distribution amplifier that fits into the openGear platform. 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, an excellent device for composite and tri-level sync distribution. The use of new generation integrated circuits and innovative engineering has resulted in excellent performance combined with economy.

The 1x4 configuration is only available in the DFR-8321 using the R2S-8705 rear module.

Features

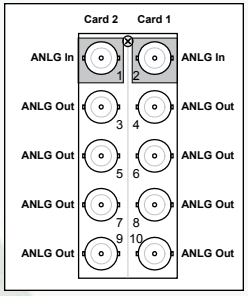
- 1x4 analog distribution amplifier
- DC Coupled
- Wide adjustable gain range of ±3dB
- Low distortion
- Excellent isolation between outputs
- Power to each card is individually fused
- 20 DAs in DFR-8321
- 5-year transferable warranty
- Power: 1.5 watts

DashBoard

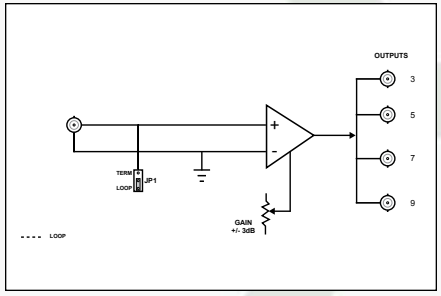
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connection



Functional Block Diagram

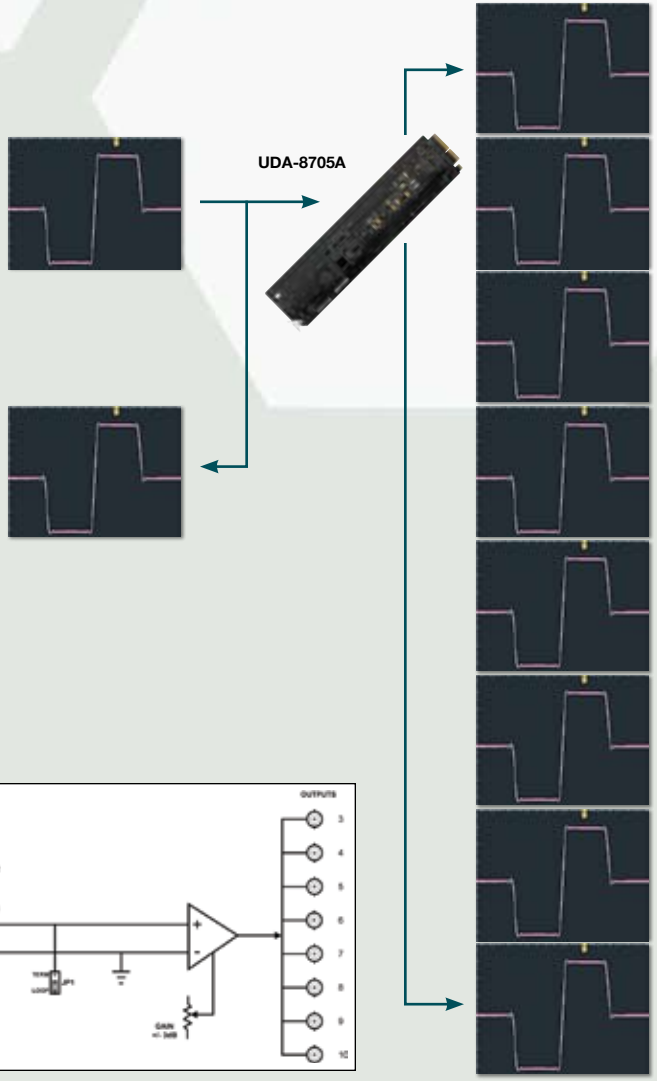


Analog Utility Distribution Amplifier - 1x8

A very useful device in HD / SD digital systems where there is a requirement for analog signal distribution.

The UDA-8705A is an analog general-purpose distribution amplifier that fits into the openGear platform. Use of this amplifier will avoid the need to purchase a separate analog frame and power supply in digital installations.

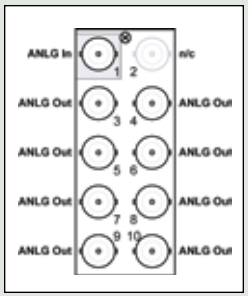
This amplifier may be used in any application where equalization and a differential input is not required, an excellent device for composite and tri-level sync distribution. The use of new generation integrated circuits and innovative engineering has resulted in excellent performance combined with economy.

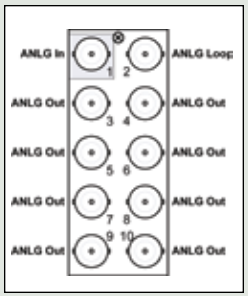


Features

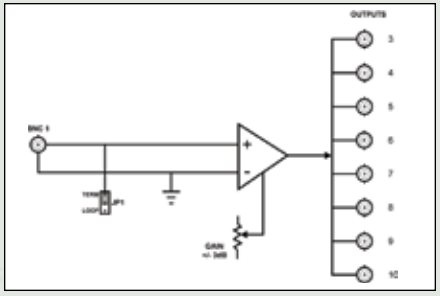
- 1x8 analog distribution amplifier
- Optional looping input
- DC Coupled
- Wide adjustable gain range of ±3dB
- Low distortion
- Excellent isolation between outputs
- Power to each card is individually fused
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 1.5 watts

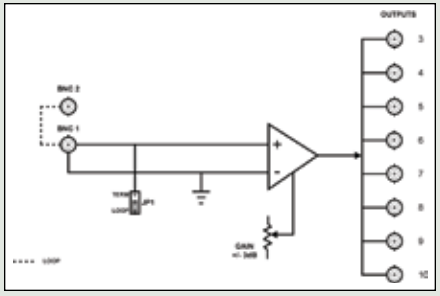
Rear Connection





Functional Block Diagram





DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

MD-SDI Universal Up / Down / Cross Format Converter

Provides broadcast quality conversion between any standard and high-definition formats.

The UDC-8225A is a universal cross-converter designed for broadcast use. It can provide SD to HD up-conversion, HD to SD down-conversion, as well as HD to HD cross-conversion.

The UDC-8225A supports all popular standard-definition and high-definition video formats including 480i, 576i, 720p, 1080i. The format of incoming video is automatically detected, simplifying system setup.

The UDC-8225A converts the incoming SDI video to any other video definition. Using advanced video de-interlacing algorithms, dynamic edge detection, adaptive noise reduction circuitry and full 10-bit processing, format conversion is performed with the highest possible picture quality.

As part of the format conversion process, a flexible aspect ratio converter allows the video to be resized to a number of standard as well as user definable aspect ratios.

The UDC-8225A incorporates a video frame synchronizer, allowing the output video to be timed to a local or frame-wide video reference.

For simplified setup and monitoring, a composite NTSC / PAL monitoring output is provided. This output can display both the video as well as a comprehensive Heads-Up menu system. Status and operating parameters can be overlayed on the video and settings can be adjusted easily using the card-mounted finger joystick.

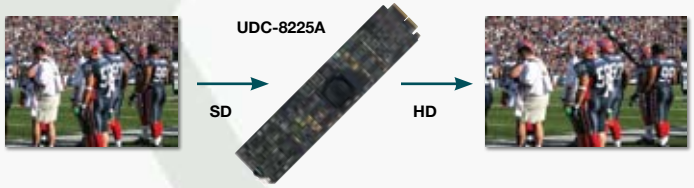
Proc Amp and full timing controls are provided.

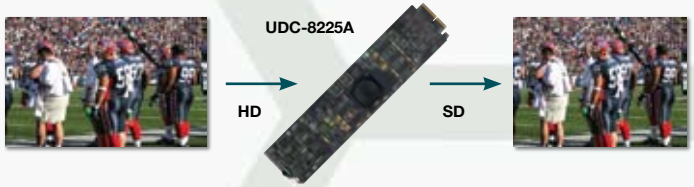
Features

- Converts between all common SD (270Mb/s) and HD (1.485Gb/s) formats
- Automatically detects the incoming video format and converts to an assigned output format
- Embedded audio pass through of all 4 audio groups between SDI and HD-SDI
- Closed captioning pass through
- Advanced video processing algorithms maintain the highest quality cross-conversion
- Flexible aspect ratio control
- Built-in frame synchronizer times output to a local or frame-wide reference
- NTSC / PAL monitoring output with Heads-Up Display menu system
- 1 reclocked and 2 processed SDI outputs
- 5-year transferable warranty
- Power: 13.5 watts

Heads-Up Display

To make configuration easier, the UDC-8225A Format Converter offers a unique Heads-Up Display on a separate NTSC / PAL monitoring output. When activated, card status and parameters can be viewed and adjusted using the card-mounted finger joystick and an easy to use menu system.





DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

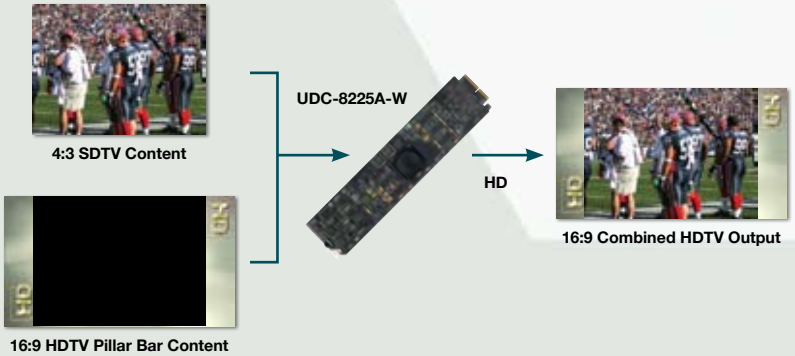
MD-SDI Universal Up / Down / Cross Format Converter with Letter / Pillar Bar Content Insertion

Provides broadcast quality conversion with letter / pillar insertion between any standard and high-definition formats.

The UDC-8225A-W combines all of the great features of the UDC-8225A with a second input for letter / pillar bar insertion. This is an excellent solution for applications where 4:3 aspect ratio is maintained through the up conversion to a 16:9 aspect ratio. In these applications the second input is provided as a fill for the letter / pillar bar area.

The UDC-8225A-W automatically inserts the fill without the need for an alpha channel simplifying configuration and graphic creation. Cropping of the fill insertion is offered to remove any edge effects.

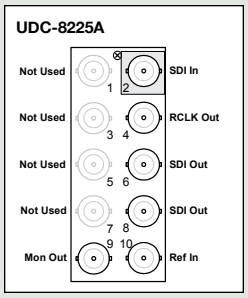
The letter / pillar bar insertion is a field upgradeable option to the UDC-8225A.

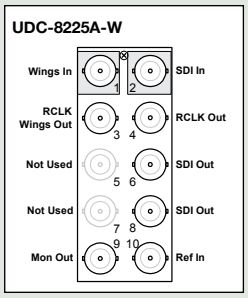


Features

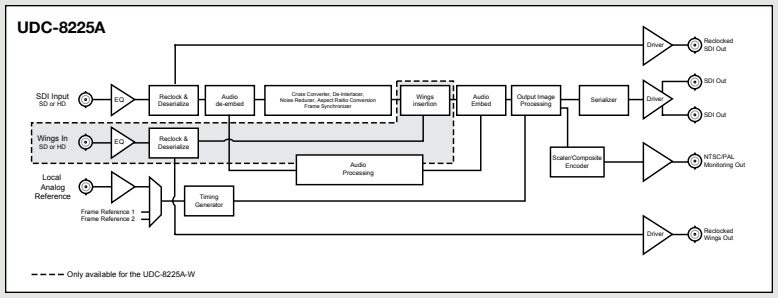
- Up / Down / Cross conversion of all popular formats 480i, 576i, 720p, 1080i
- Dedicated fill input for letter / pillar bar insertion
- Ideal for solutions where SD 4:3 is maintained into a 16:9 upconverted image
- Embedded audio pass through of all 4 audio groups between SDI and HD-SDI
- Closed captioning pass through
- Integrated Proc Amp
- Aspect ratio conversion
- Built-in frame synchronizer
- Analog monitoring output
- 5-year transferable warranty
- Power: 13.5 watts

Rear Connection





Functional Block Diagram



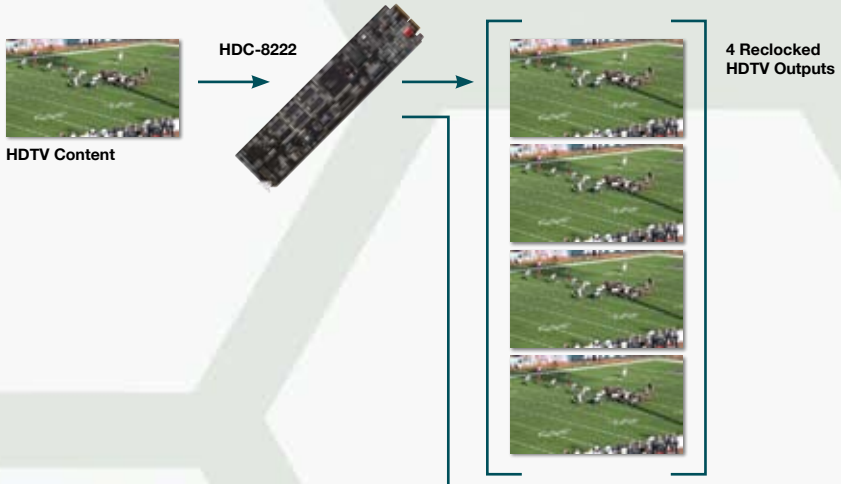
HD Down Converter and Distribution Amplifier

An excellent solution for HD down conversion and distribution with configurable SD and / or composite analog outputs.

The HDC-8222 is a high quality 1 in 4 out reclocking HD / SD distribution amplifier combined with 4 configurable analog composite or SDI digital outputs of high quality 10-bit HD down conversion.

The HDC-8222 incorporates full aspect ratio conversion on the output with reticule overlays for full aperture and safe area in both 16x9 and 4x3. Embedded audio, timecode and EIA-608 captions are preserved and passed to the outputs.

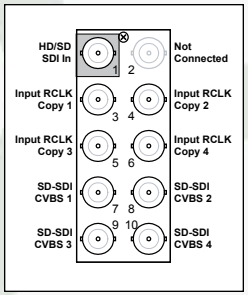
The HDC-8222 supports all popular standard-definition and high-definition video formats including 8080psF/.98, 1080pSF/23.98, 1080p/29.97, 1080p/25,1080p/23.98, 1080i/29.97, 1080i/25, 720p/25, 720p/29.97, 720p/50, 720p/59.94, 486i/29.97, 576i/25.



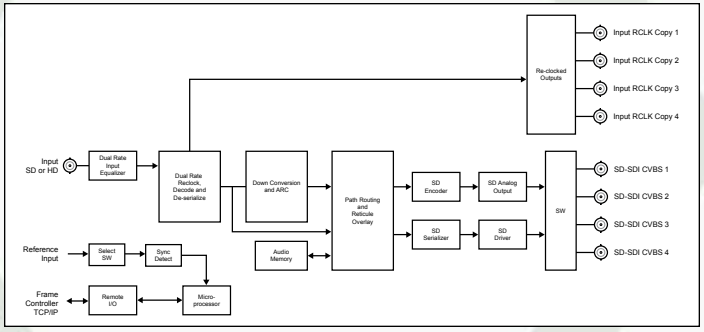
Features

- Supports all popular formats: 1080pSF/23.98, 1080p/29.97, 1080p/25, 1080p/23.98, 1080i/29.97, 1080i/25, 720p/25, 720p/29.97, 720p/50, 720p/59.94, 486i/29.97, 576i/25
- 4 reclocked DA outputs
- 4 selectable SDI digital / analog composite outputs
- Full HD to SD ARC functionality on output 16:9, 14:9, 4:3 center cut
- SD to SD ARC functionality 16:9 / 4:3
- Reticule overlay with safe area and cross-hair
- Embedded audio, timecode and EIA-608 preserved from input to output
- Integrated Proc Amp
- 5-year transferable warranty
- Power: 8 watts

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Up / Down / Cross, ARC Conversion

MD-SDI Frame Synchronizer

Video frame synchronizer for all standard and high-definition SDI signals.

The SFS-8221 is a multi-definition SDI frame synchronizer designed for re-timing applications in both standard and high-definition environments.

The SFS-8221 supports all popular standard-definition and high-definition video formats including 480i, 576i, 720p, 1080i. The format of incoming video is automatically detected, simplifying system setup.

The SFS-8221 accepts an SDI signal of either standard-definition (270Mb/s) or high-definition (1.485Gb/s), automatically equalizing for cable loss and providing a reclocked SDI output. The video is then synchronized to either a frame-wide reference or a local reference. A delay mode is also available for adding fixed delay to the incoming video.

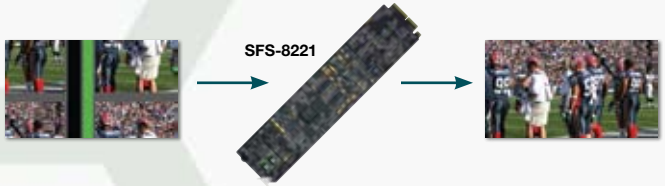
openGear frames support a distributed frame reference, allowing a single incoming reference sync signal to feed timing information to all modules in a frame. Thus, a single composite or tri-level sync signal can be used for multiple frame synchronizers. Alternatively, each frame synchronizer accepts an additional local reference signal to provide additional system timing flexibility.

Ancillary data (VANC) is protected, and is passed from input to output, ensuring data is not lost during the frame sync operation.

Proc Amp and full timing controls are provided.

Features

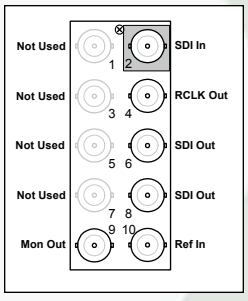
- Handles all popular formats of SD (270Mb/s) and HD (1.485Gb/s) signals
- Automatically detects the incoming video format
- Re-times incoming video to a local or frame-wide reference signal
- Delay mode to solve system timing problems
- Cleanly handles hot switching on the input
- Provides up to 105 frames in SD, 18 frames in 1080i/30,14 frames in 1080i/25
- Passes ancillary (VANC) data
- NTSC / PAL monitoring output with Heads-Up Display menu system
- 1 reclocked and 2 processed SDI outputs for each video channel
- 5-year transferable warranty
- Power: 10.5 watts



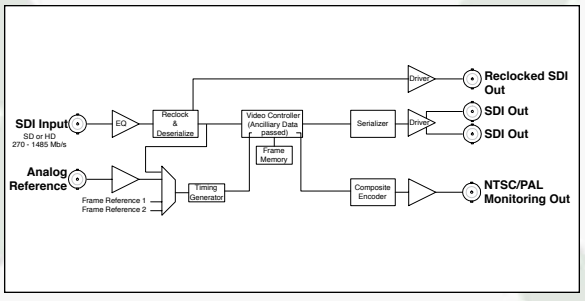
Heads-Up Display

To make configuration easier, the SFS Frame Synchronizer offers a unique Heads-Up Display on a separate NTSC / PAL monitoring output. When activated, card status and parameters can be viewed and adjusted using the card-mounted finger joystick and an easy to use menu system.

Rear Connection



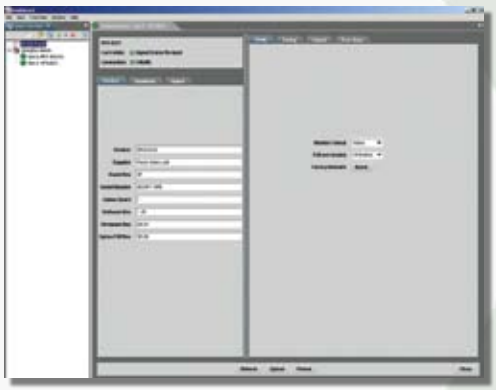
Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



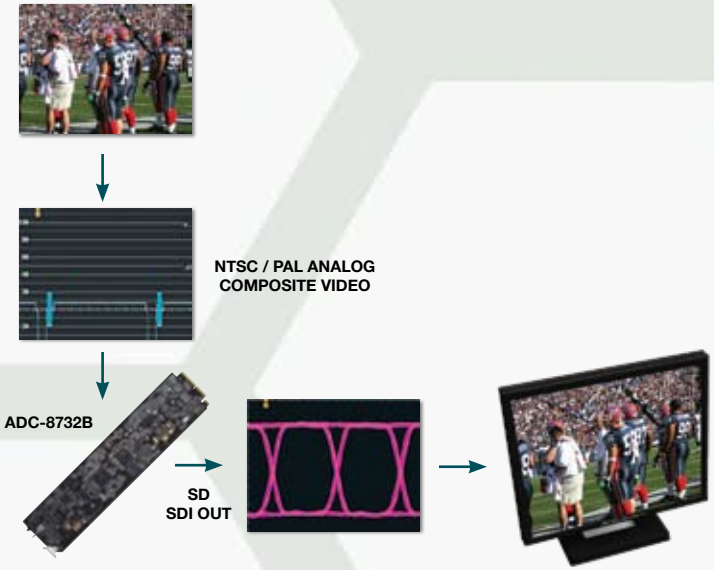
Analog Composite to SDI Converter

A superior quality analog to digital converter designed to handle tough microwave and satellite feeds as well as all general decoding requirements.

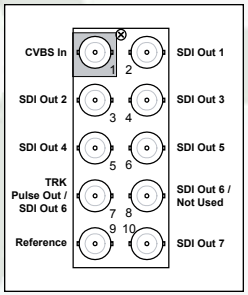
The ADC-8732B is an advanced NTSC / PAL to 10-bit SDI video decoder designed to manage normal and difficult analog feeds. The adaptive comb filter converts analog feeds to SDI with much higher detail and fewer artifacts than found with traditional 3-line decoding. The ADC-8732B comes standard with a built-in line synchronizer, advanced digital Proc Amp and timebase corrector for decoding non-timebase corrected tape machines or other unstable signals.

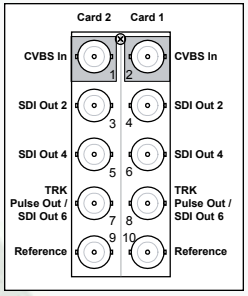
The ADC-8732B can optionally be equipped with a full frame synchronizer (-S option) for applications where decoding of microwave or satellite feeds is required.

A tracking pulse output is available for input to the ADL-8520 Audio Tracking Delay Unit to ensure perfectly synchronized video and audio.

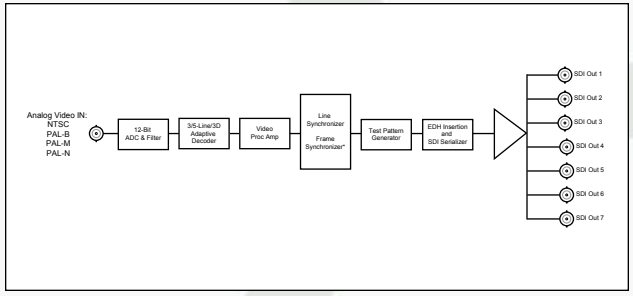


Rear Connection





Functional Block Diagram



Features

- 12 bit A to D quantization
- On-board TBC
- 4X Oversampling
- 3D adaptive NTSC decoding
- 5-line adaptive PAL decoding
- Designed to handle difficult, unstable signals
- Passes super-black
- Low jitter
- DashBoard Control and Monitoring
- On-board optional frame sync
  Input Loss Mode (black, freeze)
  Hotswitch Mode (black, freeze)
- 5-year transferable warranty
- Power: 4 watts

DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Analog Composite with 4 Channels of Analog Audio to SDI Converter

A superior quality analog to digital converter with 4 channels of audio designed to handle tough satellite feeds and general decoding requirements.

The ADC-8732B-C (-SC) is a 10-bit broadcast quality video decoder with a 12-bit analog to digital converter supporting four channels of analog audio embedding. It is specifically designed for broadcast or production situations in which an analog PAL-B, PAL-M, PAL-N, or NTSC composite signal must be converted to a component SD-SDI signal. Four SD-SDI outputs with embedded audio are provided. Analog audio is converted at 24-bit resolution and offers adjustable +/-10dBu of gain and delay up to 5 seconds.

ADC-8732B-C: includes the audio processing daughter card and features four channels of analog audio embedding plus all the ADC-8732B features.

ADC-8732B-SC: includes a Frame Synchronizer in addition to all the features available on the ADC-8732B and ADC-8732B-C.

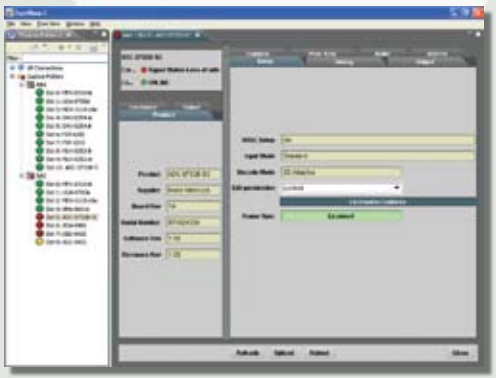
Features

- 12-bit analog to digital conversion
- 10-bit decoding with 3-line / 5-line / 3D adaptive comb filters
- 4 channels of analog audio A / D with embedding
- Optional Frame Synchronization
- Freeze modes
- Horizontal and vertical timing adjustments
- Programmable vertical interval blanking
- Proc Amp controls
- 24-bit audio ADC resolution, adjustable gain and delay
- Status indicator LEDs on card-edge
- Choice of reference inputs
- 5-year transferable warranty
- Power: 7.8 watts

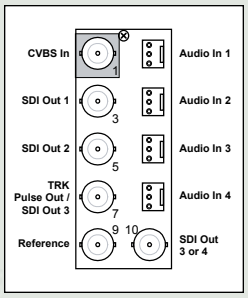
DashBoard

REMOTE CONTROL and MONITORING

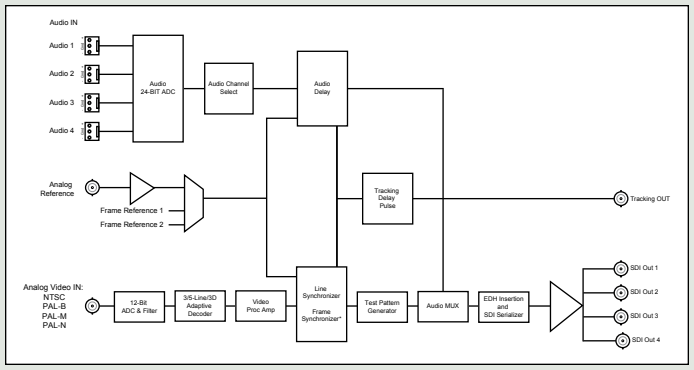
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



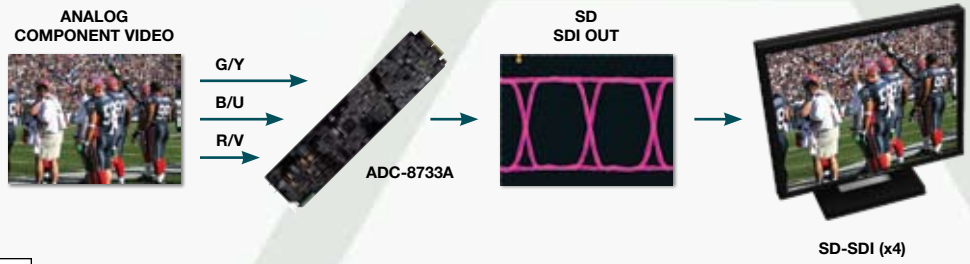
Analog Component to SDI Video Converter

High quality conversion of analog component signals in to 270Mb/s SDI.

The ADC-8733A(-S) is the perfect solution for converting analog component (YUV / RGB) sources such as VTRs, cameras, and character generators for use in the digital realm. The component YUV / RGB video signal, with or without setup, is converted to four SD-SDI (SMPTE-259M) outputs employing 2X over-sampled 12-bit A-D conversion and high quality digital filtering to ensure superb frequency response.

The ADC-8733A comes standard with a built-in Line Delay and Line Synchronizer as well as advanced Proc Amp controls.

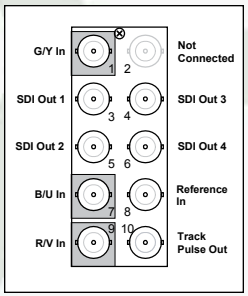
The ADC-8733A-S version comes with Frame Synchronizer and Frame Delay modes, capable of synchronizing incoming video to house reference. Various timing modes are available to accommodate most situations. New techniques in frame synchronization contribute to the low power requirements and compact design.

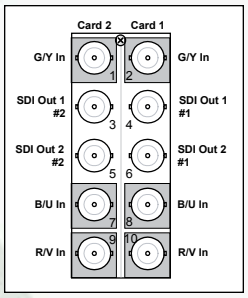


Features

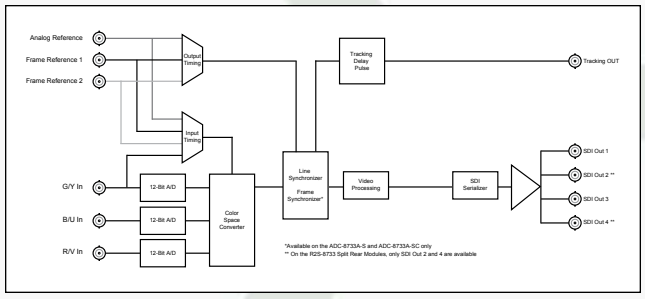
- YUV input from Betacam, MII and SMPTE / EBU formats
- All RGB input formats supported
- Field-upgradeable Frame Synchronization option available
- Programmable vertical interval blanking and signal pass-through
- Extensive Proc Amp controls, pass or clip Super Black
- Freeze modes, horizontal and vertical timing adjustments
- Tracking Delay Output for companion audio synchronizer
- Built-in test signals (FF color bars, SDI Checkfield)
- 5-year transferable warranty
- Power: 4.5 watts

Rear Connection





Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Video Conversion

Analog Component with 4 Channels of Analog Audio to SDI Converter

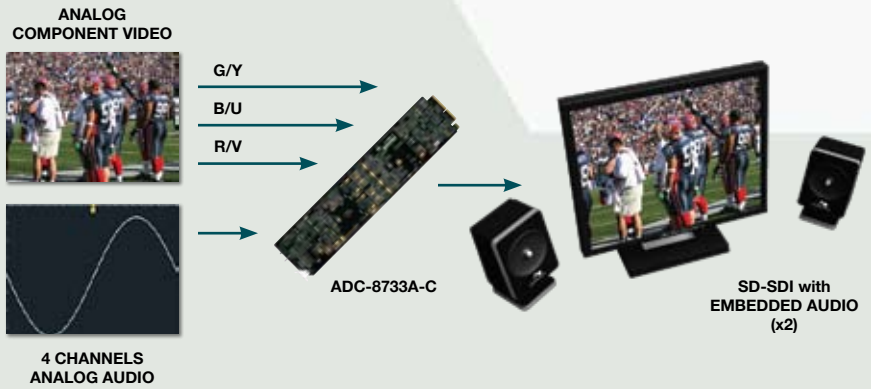
High quality conversion of analog component signals with 4 channels of audio to 270Mb/s SDI.

The ADC-8733A-C (-SC) is the perfect solution for converting analog component (YUV / RGB) sources with audio such as VTRs, into the digital realm. The component YUV / RGB video signal, with or without setup, is converted to digital using a 2X over-sampled 12-bit A-D conversion and high quality digital filtering to ensure superb frequency response. Analog audio is converted at 24-bit resolution and offers adjustable +/-10dBu of gain and delay up to 5 seconds.

ADC-8733A-C: includes the audio processing daughter card and features four channels of analog audio embedding plus all the ADC-8733A features.

ADC-8733A-SC: includes a Frame Synchronizer in addition to all the features available on the ADC-8733A and ADC-8733A-C.

The ADC-8733A-C comes standard with a built-in Line Delay and Line Synchronizer as well as advanced Proc Amp controls. The ADC-8733A-SC version comes with a Frame Synchronizer, capable of synchronizing incoming video and audio to house reference. Various timing modes are available to accommodate most situations. New techniques in frame synchronization contribute to the low power requirements and compact design.



Features

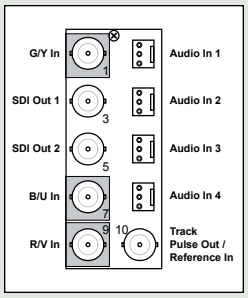
- Component video with 4 analog audio conversion to SDI input from Betacam, MII and SMPTE / EBU formats
- All RGB input formats supported
- Automatic 525/625-line selection
- Programmable vertical interval blanking and signal pass-through
- Extensive Proc Amp controls
- Freeze modes, horizontal and vertical timing adjustments
- 4 channels of analog audio embedded
- 24-bit audio ADC resolution, adjustable gain and delay
- 5-year transferable warranty
- Power: 8.5 watts

DashBoard

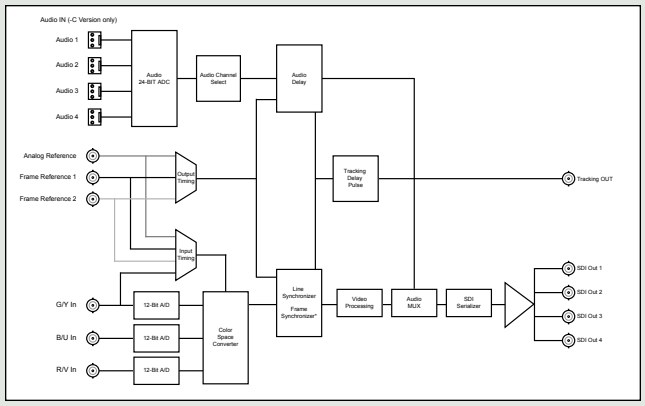
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connection



Functional Block Diagram



Analog to AES / EBU Digital Audio Converter

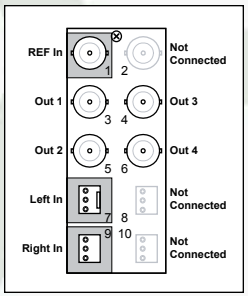
Analog to AES / EBU converter with 24-bit resolution.

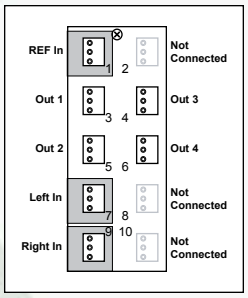
The openGear ADC-8432 is a broadcast quality Analog Audio to AES / EBU Converter used to convert two analog audio channels to an AES / EBU signal. The ADC-8432 accepts one stereo (Left, Right) analog audio pair and provides four copies of the AES / EBU signal. The conversion from analog to digital is performed with 24-bit precision. The ADC-8432 supports sampling rates of 32kHz to 192kHz with AES (DARS) reference or internal reference. The AES output frequency (32kHz to 192kHz) can be automatically determined by the reference selected as long as it is a valid DARS Audio reference or set manually when no reference is present.

Features

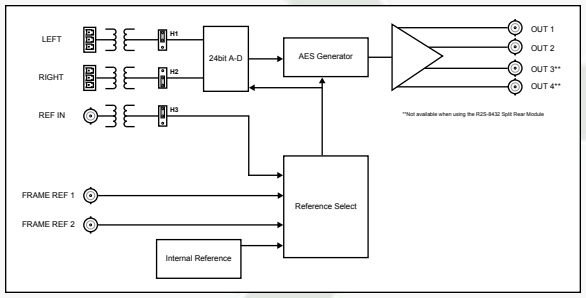
- Converts analog audio to AES / EBU digital audio and provides AES / EBU signal distribution
- Synchronize to frame or external Digital Audio Reference Signal (DARS) audio reference signals
- Internal clock generates audio sampling frequencies of 32kHz, 44.1kHz, 48kHz, 96kHz or 192kHz
- 24-bit technology provides the highest quality signal conversion
- Suitable for 75Ω or 110Ω environments by selecting the required rear module
- Higher density with up to 20 cards in a DFR-8321 series frame
- 10 converters in DFR-8310 or 10 / 20 converters in DFR-8321
- 5-year transferable warranty
- Power: 4 watts

Rear Connection





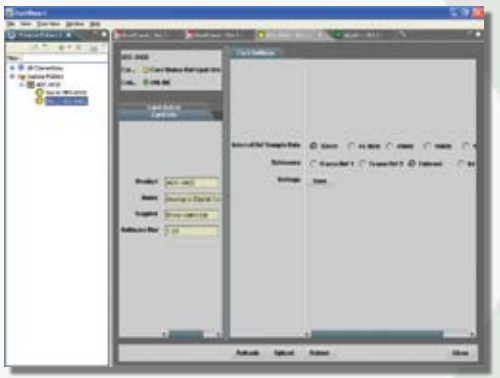
Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

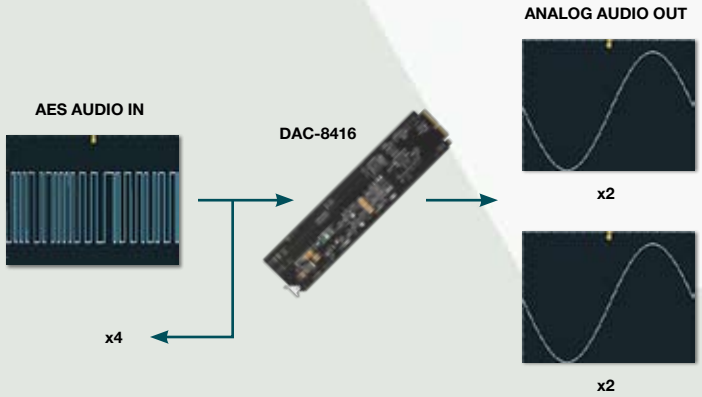


AES / EBU to Analog Audio Converter

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

The openGear DAC-8416 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-8416 accepts one 32, 44.1, 48, 96 or 192kHz sample rate unbalanced AES signal and provides 4 re-clocked AES outputs and 2 analog stereo outputs (A, B).

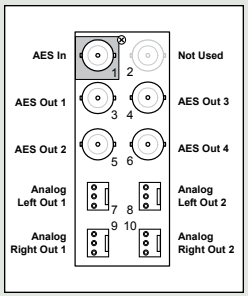
The DAC-8416 provides 4 re-clocked copies of the input with the option of equalization, and 2 copies of the converted analog stereo output. In addition to the conversion the DAC-8416 incorporates an internal tone generator. Processing and monitoring of incoming audio is available via DashBoard or card-edge control.

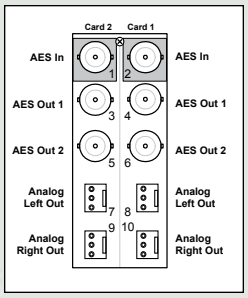


Features

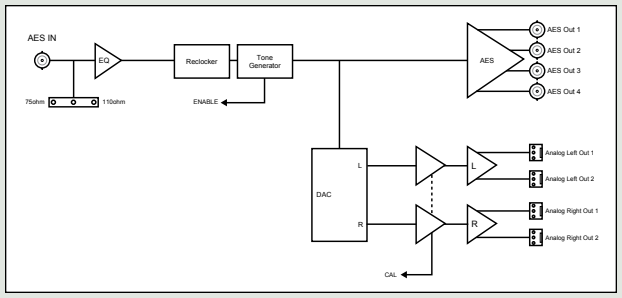
- 24-bit resolution
- Operates at 32, 44.1, 48, 96 and 192kHz sampling rates
- EQ for >610m (2,000 ft)
- Low jitter performance throughout EQ range
- Input OK and error indicators on card-edge
- DashBoard Control and Monitoring
- 2 stereo audio outputs
- 4 re-clocked copies of the input
- Higher density with up to 20 cards in a DFR-8321 frame
- 10 converters in DFR-8310 or 10 / 20 converters in DFR-8321
- 5-year transferable warranty
- Power: 4 watts

Rear Connection





Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

AES / EBU Audio Multiplexer

The ideal solution for multiplexing 8 AES streams into an HD / SD SDI signal.

The MUX-8258-A is a high quality program audio multiplexer capable of embedding up to 8 AES / EBU pairs (16 audio channels) into an HD / SD SDI signal. Audio Proc Amp control on each input allows for audio processing with independent channel sample rate conversions, gain of +/-20dB, audio delay up to 1 second and channel phase invert and summing capability. The MUX-8258-A is extremely flexible in handling channel assignments and channel remapping as well as fully configurable append and overwrite capability for existing channels. Various configuration options are available for backup scenarios should a loss of input occur.

The MUX-8258-A features 8 AES 75Ω unbalanced inputs.

Features

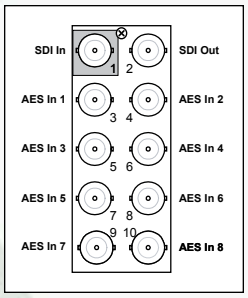
- 16 Channel Audio embedding for all popular HD-SD SDI formats
- Audio Proc Amp controls; gain, invert, delay and sum, sample rate conversion
- Full control over channel assignments, primary and backup sources
- Configurable overwrite and append capability for existing embedded audio
- Programmable video output on SDI input loss
- Backup audio insertion on audio input loss
- Programmable silence detection and timeout thresholds
- No audio breakout cables required
- 5-year transferable warranty
- Power: 8.5 watts

DashBoard

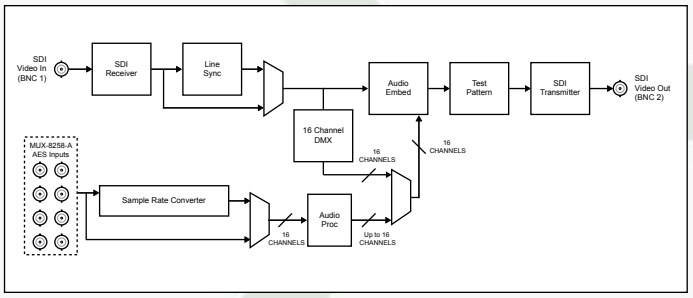
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



Functional Block Diagram

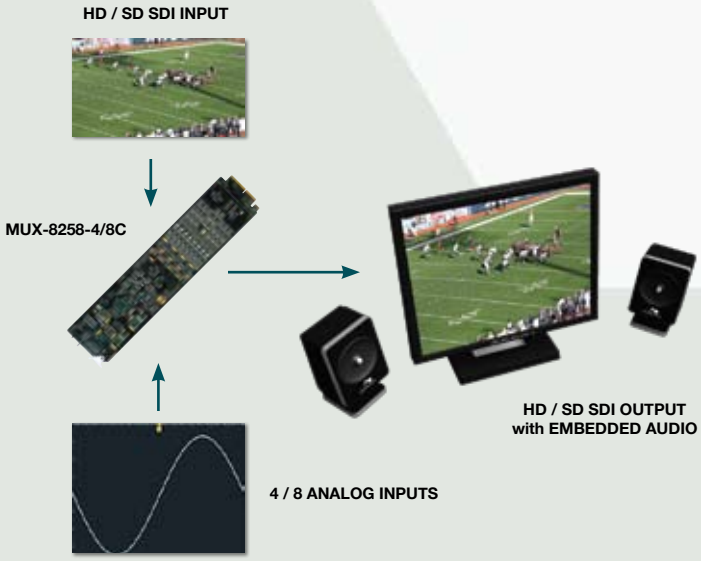


Analog Audio Multiplexer

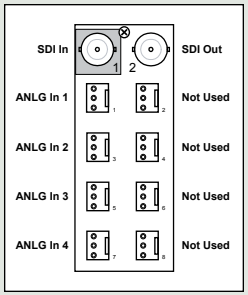
The ideal solution for multiplexing 4 or 8 analog audio sources into an HD / SD SDI signal.

The MUX-8258-4/8C is a high quality program analog audio multiplexer capable of embedding up to 8 analog audio channels into an HD / SD SDI signal. Audio Proc Amp control on each input allows for audio processing with independent channel sample rate conversions, gain of +/-10dB, audio delay up to 1 second and channel phase invert and summing capability. The MUX-8258-4/8C is extremely flexible in handling channel assignments and channel remapping as well as fully configurable append and overwrite capability for existing channels. Various configuration options are available for backup scenarios should a loss of input occur.

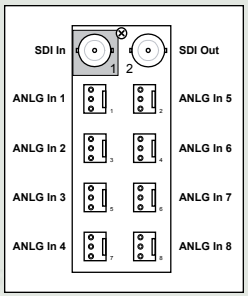
The MUX-8258-4C features 4 analog inputs and the MUX-8258-8C features 8 analog inputs.



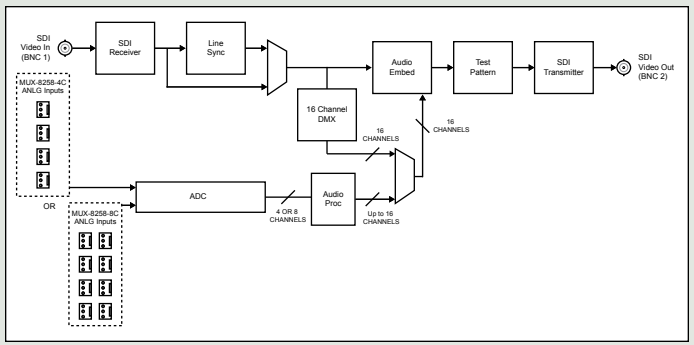
MUX-8258-4C



MUX-8258-8C



Functional Block Diagram



Features

- Analog Audio embedding for all popular HD-SD SDI formats
- Analog gain done entirely in the analog domain
- Audio Proc Amp controls; gain, invert, delay and sum
- Full control over channel assignments, primary and backup sources
- Configurable overwrite and append capability for existing embedded audio
- Programmable video output on SDI input loss
- Backup audio insertion on audio input loss
- Programmable silence detection and timeout thresholds
- No audio breakout cables required
- 5-year transferable warranty
- MUX-8258-4C Power: 9.5 watts
  MUX-8258-8C Power: 11 watts

DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

AES / EBU Multiplexer

The ideal solution for embedding 4 balanced AES audio streams into an HD / SD SDI signal.

The MUX-8252-B is a high quality program AES / EBU audio mulitplexer that embeds 2 selectable groups (8 channels) of audio into an HD / SD SDI signal. Audio Proc Amp control on the input allows for audio processing with independent channel sample rate conversions, gain of +/-18db, audio delay up to 1 second and channel phase invert with AES processing for sum, swap, and shuffle.

The MUX-8252-B offers 4 AES inputs, 1 reclocked output, 2 HD / SD SDI processed embedded audio outputs, and 1 analog composite output with the Ross Heads-Up Display for local control.

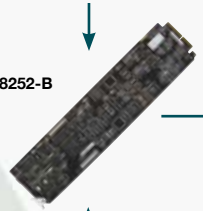
The MUX-8252-B features 4 AES 110Ω balanced inputs.

Features

- HD / SD SDI SMPTE-292M, 1.485Gb/s and SMPTE 259M, 270Mb/s
- Audio embedding for all popular formats 480i, 576i, 720p, 1080i
- 2 selectable audio groups with selection of overwrite or append
- 4 AES / EBU balanced inputs
- 2 SDI processed outputs
- Audio Proc Amp controls; gain, phase, delay AES controls, sum, swap, shuffle
- Analog video monitoring output
- DashBoard Control with audio alarming
- 5-year transferable warranty
- Power: 10 watts

SDI OUTPUT
HD or SD

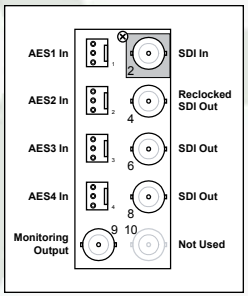
MUX-8252-B



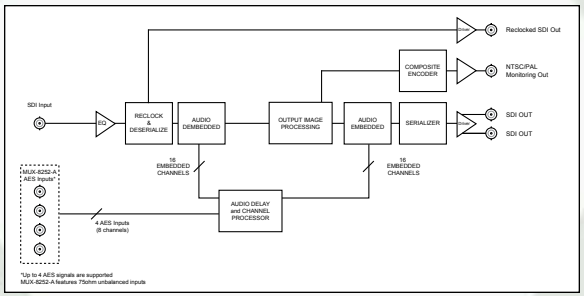
SDI OUTPUT with
EMBEDDED AUDIO

4 AES INPUTS

Rear Connection



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

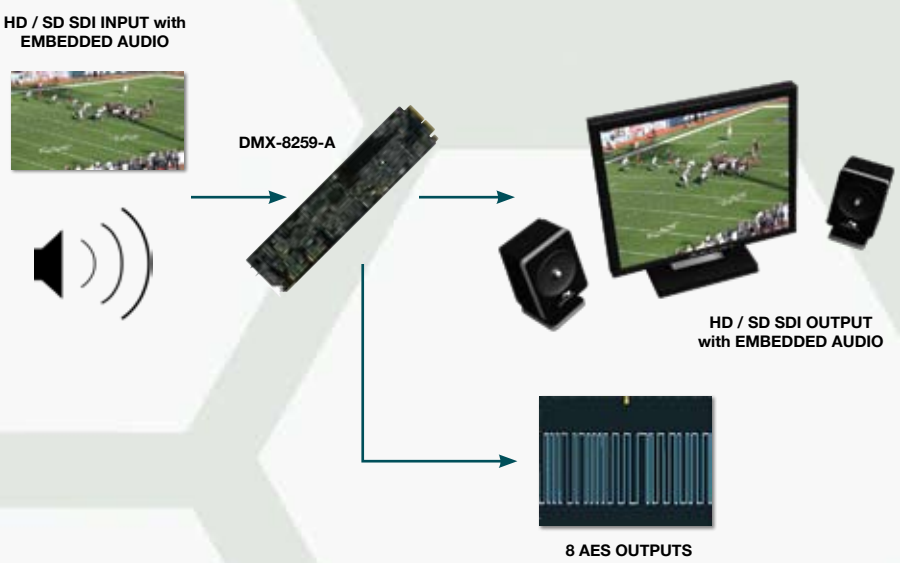
Audio Embedding / De-Embedding

AES / EBU Audio De-Multiplexer

The ideal solution for de-multiplexing 8 AES streams from an HD / SD SDI signal.

The DMX-8259-A is a high quality program audio de-multiplexer capable of de-embedding up to 8 AES / EBU pairs (16 audio channels) from an HD / SD SDI signal. Audio Proc Amp control on each channel allows for audio processing with gain of +/-20db, audio delay up to 1 second and channel invert. The DMX-8259-A supports full channel assignment to the discrete outputs. Various configuration options, including internally generated patterns and tones, are available for audio and video output scenarios should a loss of input occur.

The DMX-8259-A features 8 AES 75Ω unbalanced outputs.



Features

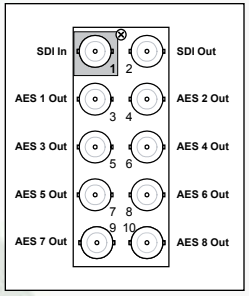
- 16 Channel Audio de-embedding for all popular HD-SD SDI formats
- Audio Proc Amp controls; gain, invert, and delay
- Assign any embedded channel to any discrete audio output
- Ability to re-map channels in embedded video stream
- Programmable video output on SDI input loss
- Silence output on loss of audio input
- Programmable silence detection and timeout thresholds
- No audio breakout cables required
- 5-year transferable warranty
- Power: 8.5 watts

DashBoard

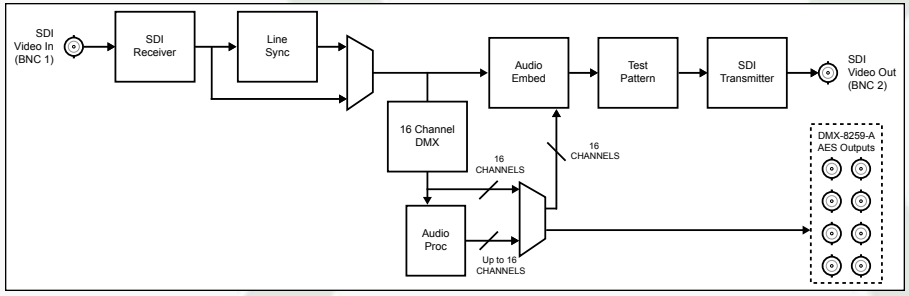
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connections



Functional Block Diagram

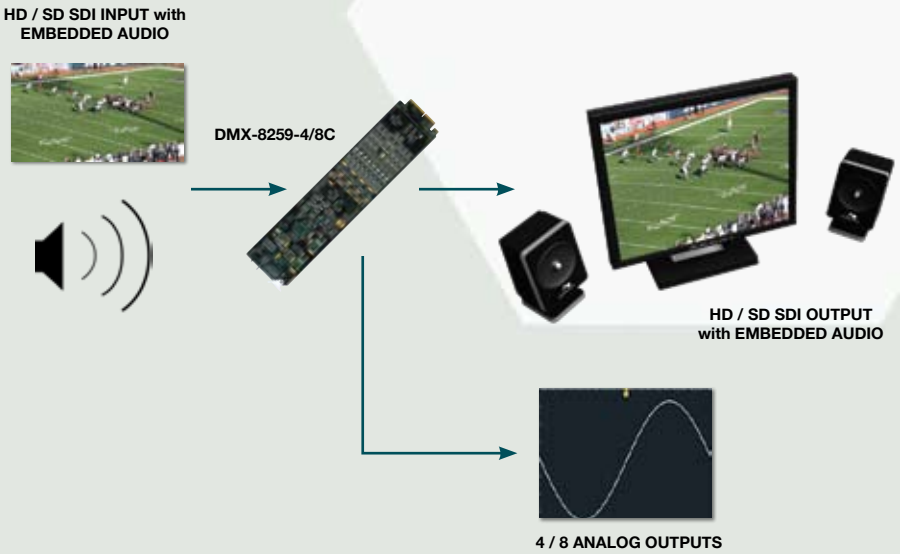


Analog Audio De-Multiplexer

The ideal solution for de-multiplexing 4 or 8 analog audio sources from an HD / SD SDI signal.

The DMX-8259-4/8C is a high quality program audio de-multiplexer capable of de-embedding up to 8 analog audio channels from an HD / SD SDI signal. Audio Proc Amp control on each channel allows for audio processing with gain of +/-10dB, audio delay up to 1 second and channel invert. The DMX-8259-4/8C supports any channel assignment to the discrete inputs and can remap any of the existing embedded channels. Various configuration options, including internally generated patterns and tones, are available for audio and video output scenarios should a loss of input occur.

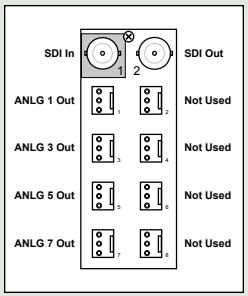
The DMX-8259-4C features 4 analog outputs and the DMX-8259-8C features 8 analog outputs.



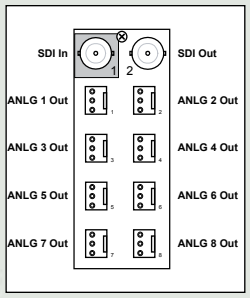
Features

- Analog Audio de-embedding for all popular HD-SD SDI formats
- Audio Proc Amp controls; gain, invert, and delay
- Analog gain done entirely in the analog domain
- Assign any embedded channel to any discrete audio output
- Ability to re-map channels in embedded video stream
- Programmable video output on SDI input loss
- Silence output on loss of audio input
- Programmable silence detection and timeout thresholds
- No audio breakout cables required
- 5-year transferable warranty
- DMX-8259-4C Power: 9.5 watts
  DMX-8259-8C Power: 11 watts

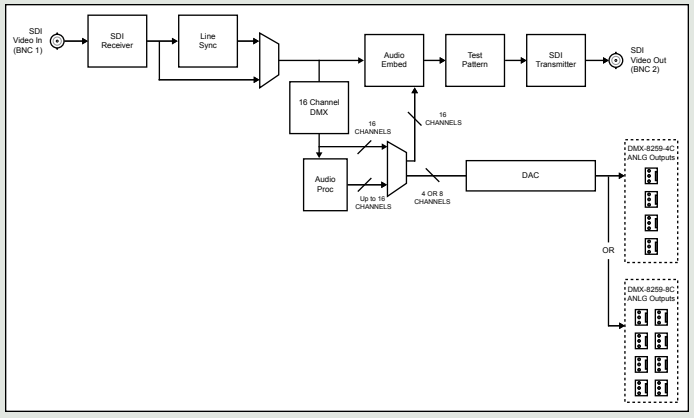
DMX-8259-4C



DMX-8259-8C



Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

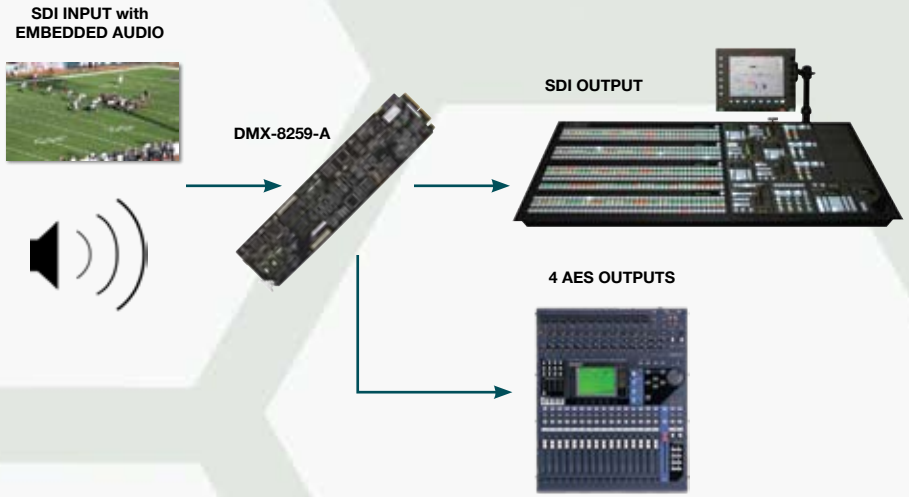
AES / EBU Demultiplexer

The ideal solution for demultiplexing 4 balanced AES streams from an HD / SD SDI signal.

The DMX-8254 is a high quality program AES / EBU audio de-mulitplexer that can extract any 2 groups (8 channels) of audio from an embedded stream. Audio Proc Amp control allows for audio processing with independent channel gain of +/-18db, audio delay up to 1 second and channel phase invert with AES processing for sum, swap, and shuffle.

The DMX-8254 offers 1 reclocked output, 2 HD / SD SDI processed outputs with embedded audio, 4 AES outputs, and 1 analog composite output with the Ross Heads-Up Display for local control.

The DMX-8254-B features 4 AES 110Ω balanced outputs.



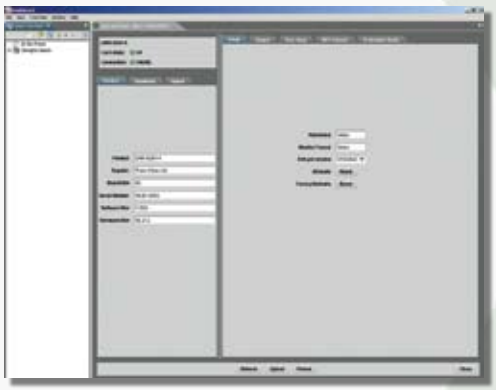
Features

- HD / SD SDI SMPTE-292M, 1.485Gb/s and SMPTE 259M, 270Mb/s
- Audio de-embedding from all popular formats 480i, 576i, 720p, 1080i
- 2 selectable audio groups
- 4 AES / EBU balanced ouputs
- 2 SDI processed outputs
- Audio Proc Amp controls; gain, phase, delay AES controls, sum, swap, shuffle
- Analog video monitoring output
- DashBoard Control with audio alarming
- 5-year transferable warranty
- Power: 10 watts

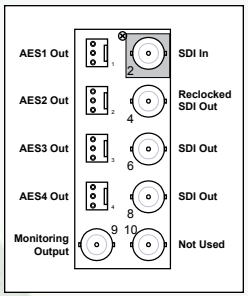
DashBoard

REMOTE CONTROL and MONITORING

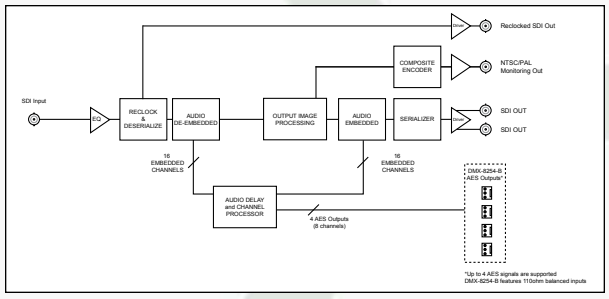
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Audio Embedding / De-Embedding

Single Optical to Electrical Converter

Future proofed optical products supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FSR-6601 is a fiber optic reciever to serial digital SDI converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked providing excellent jitter and return loss specifications.

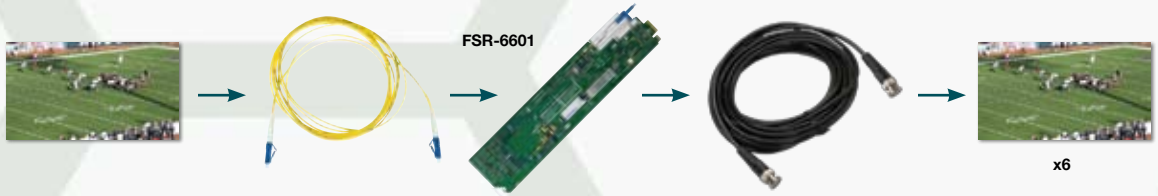
The FSR-6601 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

FSR-6601-R2
In this configuration, the DFR-8321 supports 10 independent single channel solutions with one optical LC input with 6 SDI reclocked outputs.

The R2-6601, two slot passive rear module supports one FSR-6601 in the DFR-8321.

Features

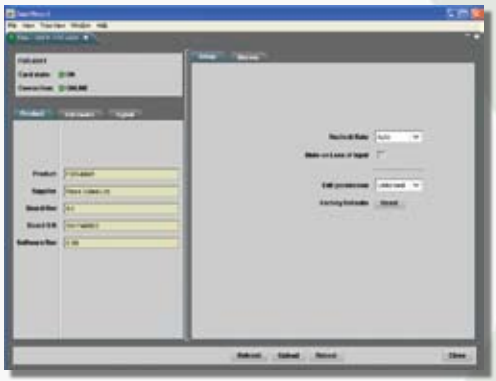
- Optical to Electrical for all SMPTE 424M, SMPTE 292M, and SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical input range 1270nm to 1610nm
- Optical input sensitivity -18dBm
- Optical input connection: LC / UPC
- 6 SDI reclocked outputs
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- DashBoard alarming for signal presence, receiver input sensitivity
- 5 year transferable warranty
- Power: 4.5 watts



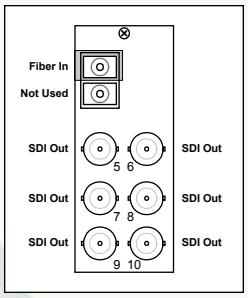
DashBoard

REMOTE CONTROL and MONITORING

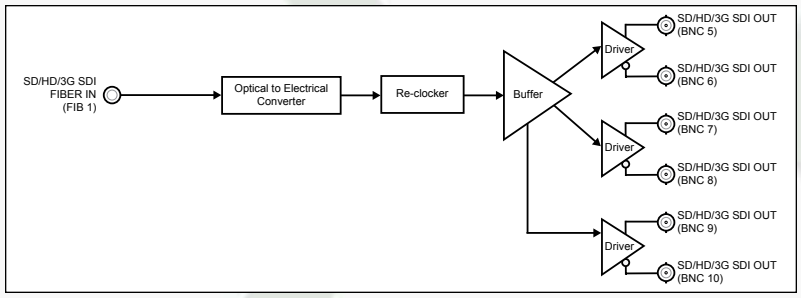
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



High Density Single Optical to Electrical Converter

Future proofed optical products supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FSR-6601 is a fiber optic reciever to serial digital SDI converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked providing excellent jitter and return loss specifications.

The FSR-6601 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

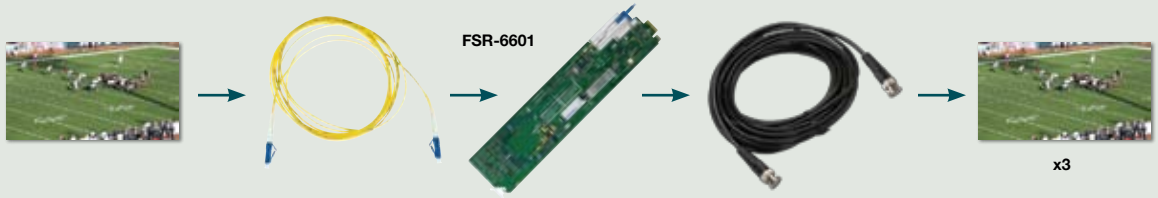
FSR-6601-R2S

In this configuration, the DFR-8321 supports up to 20 independent single channel solutions with one optical LC input and 3 SDI reclocked outputs.

The R2S-6601, two slot passive rear module supports 2 independent FSR-6601 maximizing the number of conversions available in the DFR-8321.

Features

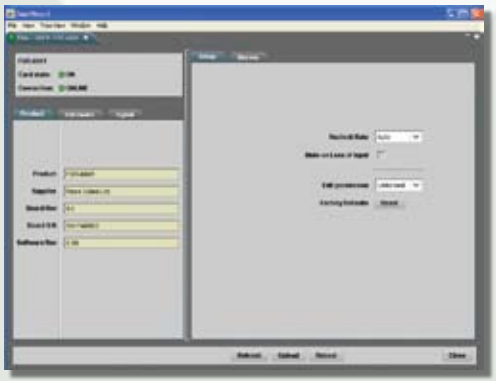
- Optical to Electrical for all SMPTE 424M, SMPTE 292M, and SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical input range 1270nm to 1610nm
- Optical input sensitivity -18dBm
- Optical input connection: LC / UPC
- 3 SDI reclocked outputs using the R2S-6601
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- DashBoard alarming for signal presence, receiver input sensitivity
- 5 year transferable warranty
- Power: 4.5 watts



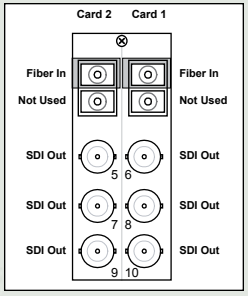
DashBoard

REMOTE CONTROL and MONITORING

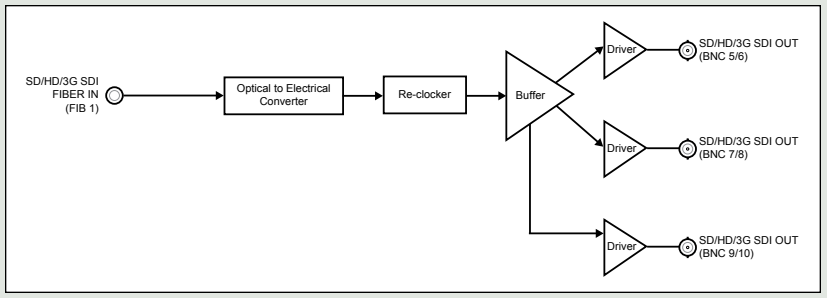
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Single Electrical to Optical Converter

Future proofed optical products supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FST-6602 is a serial digital SDI to fiber optic transmitter converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked copies of the input providing excellent jitter and return loss specifications.

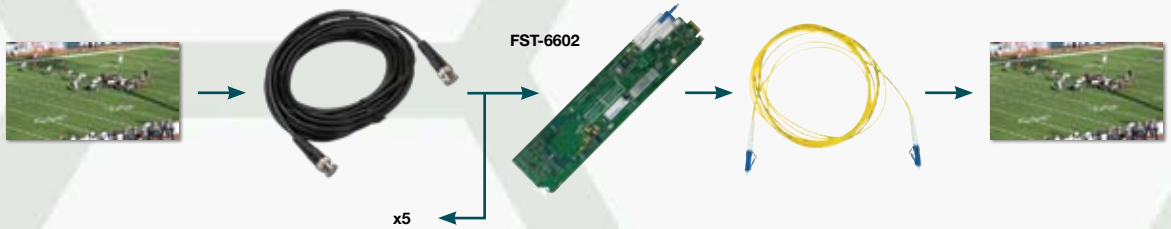
The FST-6602 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

FST-6602-R2
In this configuration, the DFR-8321 supports up to 10 independent single channel solution with one optical LC output and 5 SDI reclocked outputs.

The R2-6602 passive rear module supports one FST-6602 in the DFR-8321.

Features

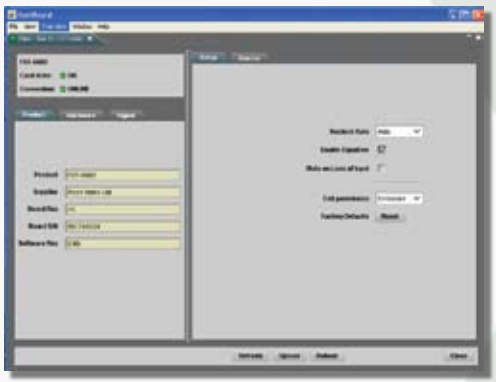
- Electrical to Optical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical output power -7dBm
- Optical wavelength 1310nm
- Optical output connection: LC / UPC
- 5 reclocked copies of SDI input
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and optical faults
- 5-year transferable warranty
- Power: 4.5 watts



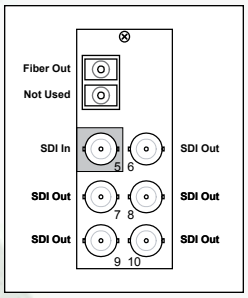
DashBoard

REMOTE CONTROL and MONITORING

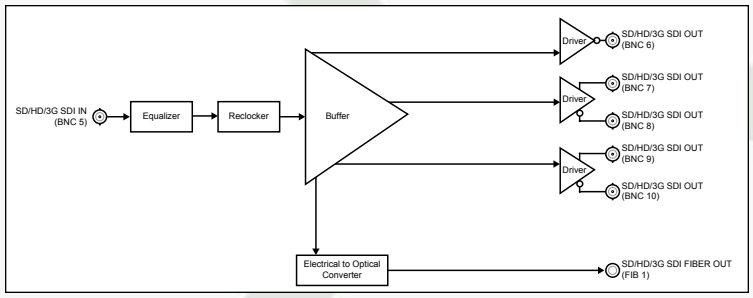
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



High Density Single Electrical to Optical Converter

Future proofed optical products supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FST-6602 is a serial digital SDI to fiber optic transmitter converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked copies of the input providing excellent jitter and return loss specifications.

The FST-6602 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

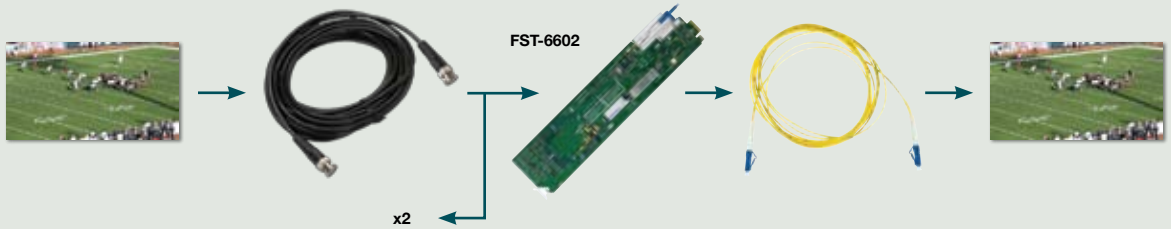
FST-6602-R2S

In this configuration, the DFR-8321 supports up to 20 independent single channel solution with one optical LC output and 2 SDI reclocked outputs.

The R2S-6602 passive rear module supports 2 independent FST-6602 maximizing the number of conversions available in the DFR-8321.

Features

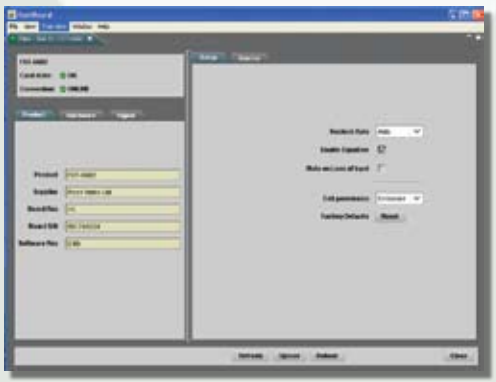
- Electrical to Optical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical output power -7dBm
- Optical wavelength 1310nm
- Optical output connection: LC / UPC
- 2 reclocked copies of SDI input
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and optical faults
- 5-year transferable warranty
- Power: 4.5 watts



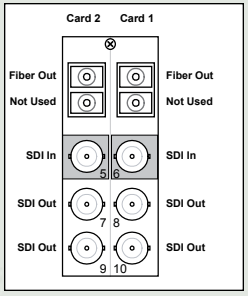
DashBoard

REMOTE CONTROL and MONITORING

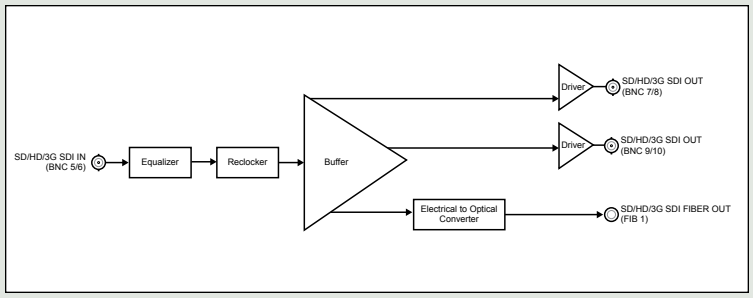
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Dual Optical to Electrical Converter

Future proofed optical products with 2 channels of conversion on a single card supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FDR-6603 is a dual fiber optic reciever to serial digital SDI converter providing 2 channels of conversion on a single card supporting serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked providing excellent jitter and return loss specifications.

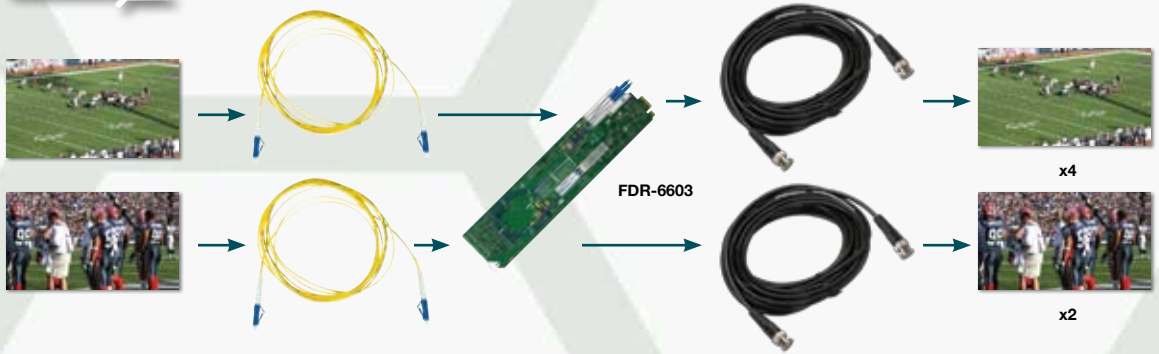
The FDR-6603 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

FDR-6603-R2
In this configuration, the DFR-8321 supports up to 10 independent dual channel solutions with 2 optical LC inputs, 4 SDI reclocked outputs for input 1 and 2 SDI reclocked outputs for input 2.

The R2-6603 passive rear module supports one FDR-6603 in the DFR-8321.

Features

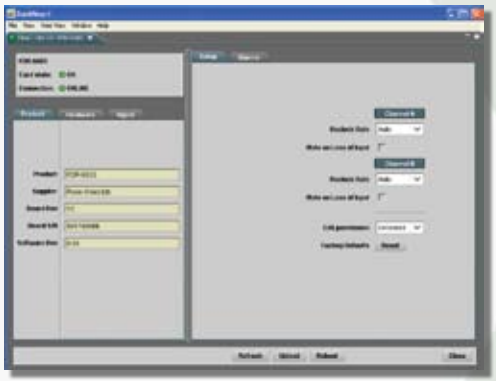
- Optical to Electrical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical input range 1270nm to 1610nm
- Optical input sensitivity -18dBm
- Optical input connection: LC / UPC
- Reclocked SDI outputs
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and input sensitivity
- 5-year transferable warranty
- Power: 5.5 watts



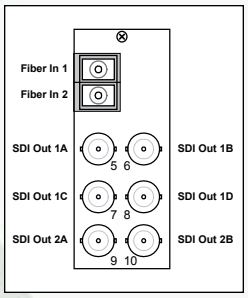
DashBoard

REMOTE CONTROL and MONITORING

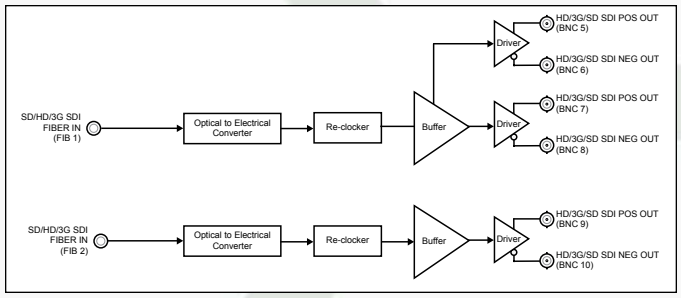
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Ultra High Density Dual Optical to Electrical Converter

Future proofed optical products with 2 channels of conversion on a single card supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FDR-6603 is a dual fiber optic reciever to serial digital SDI converter providing 2 channels of conversion on a single card supporting serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked providing excellent jitter and return loss specifications.

The FDR-6603 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need for uses to access the back of the rack frame.

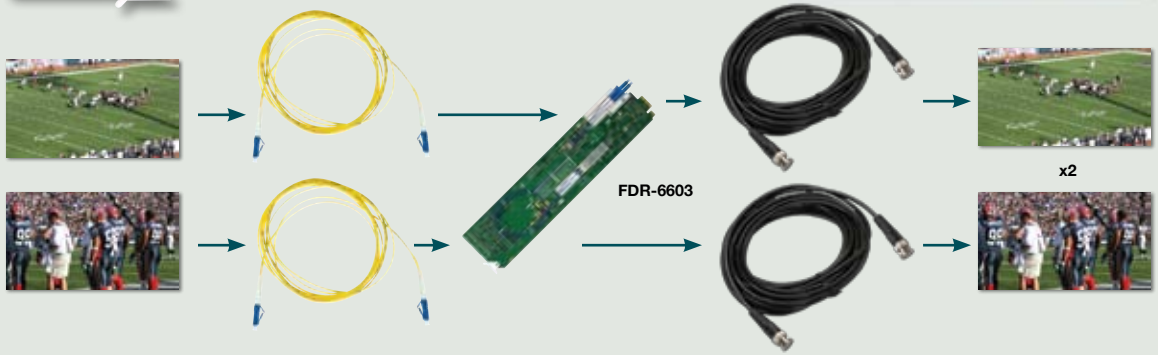
FDR-6603-R2S

In this configuration, the DFR-8321 supports up to 20 independent dual channel solutions for a total of 40 channels of conversion. Card 1 offers 2 SDI reclocked outputs of input 1 and 1 SDI reclocked output of input 2. Card 2 offers 2 SDI reclocked outputs of input 1 and 1 SDI reclocked output of input 2.

The R2S-6603 passive rear module supports two FDR-6603 in the DFR-8321.

Features

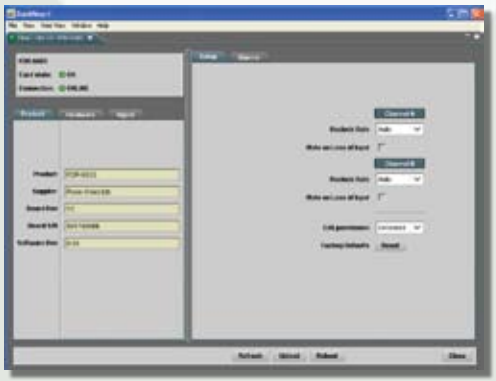
- Optical to Electrical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical input range 1270nm to 1610nm
- Optical input sensitivity -18dBm
- Optical input connection: LC / UPC
- Reclocked SDI outputs
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and input sensitivity
- 5-year transferable warranty
- Power: 5.5 watts



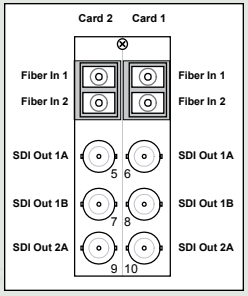
DashBoard

REMOTE CONTROL and MONITORING

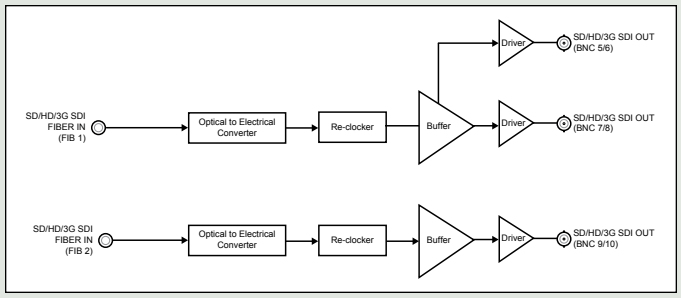
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Dual Electrical to Optical Converter

Future proofed optical products with 2 channels of conversion on a single card supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FDT-6604 is a serial digital SDI to fiber optic transmitter converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked copies of the input providing excellent jitter and return loss specifications.

The FDT-6604 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

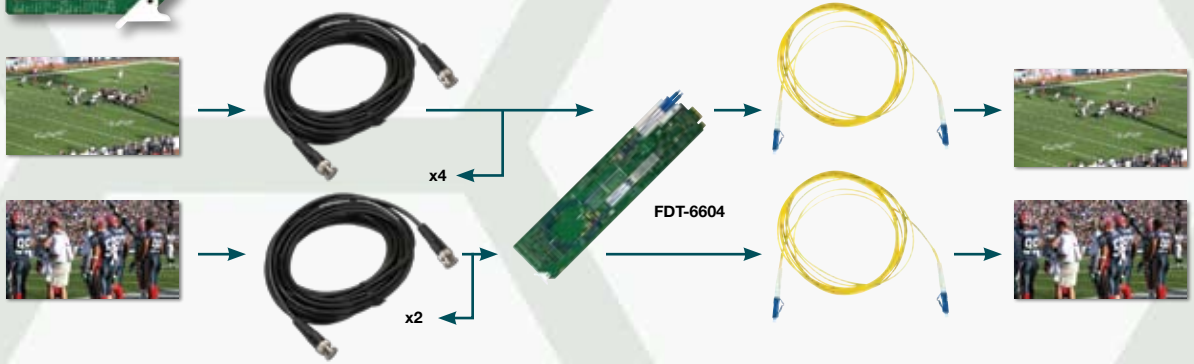
FDT-6604-R2

In this configuration, the DFR-8321 supports up to 10 independent dual channel solutions with 2 optical LC outputs, 3 SDI reclocked outputs for input 1 and 1 SDI reclocked output for input 2.

The R2-6604 passive rear module supports one FDT-6604 in the DFR-8321.

Features

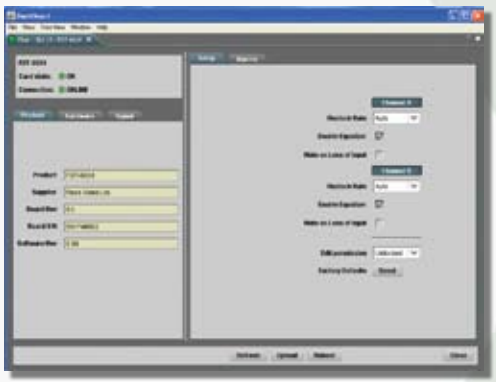
- Electrical to Optical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical output power -7dBm
- Optical wavelength 1310nm
- Optical output connection: LC / UPC
- Reclocked SDI outputs
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and optical faults
- 5-year transferable warranty
- Power: 4.5 watts



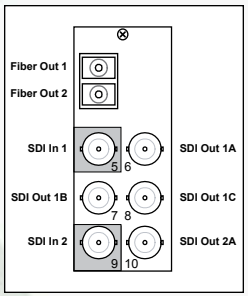
DashBoard

REMOTE CONTROL and MONITORING

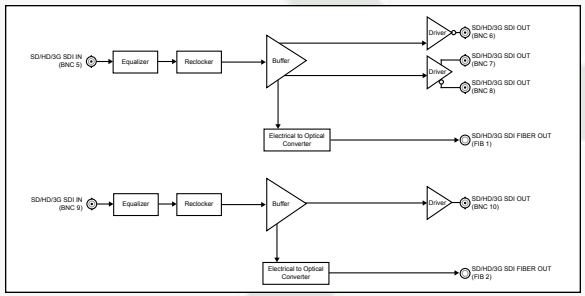
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



Fiber

Ultra High Density Dual Electrical to Optical Converter

Future proofed optical products with 2 channels of conversion on a single card supporting data rates from 143Mb/s to 3Gb/s (1080p).

The FDT-6604 is a serial digital SDI to fiber optic transmitter converter that supports serial digital data rates from 143Mb/s up to 2.97Gb/s (1080p). SDI outputs are reclocked copies of the input providing excellent jitter and return loss specifications.

The FDT-6604 is fully hot swappable with all active components on the front removable module. No active components are installed on the rear I/O connection module. This design greatly reduces down time eliminating any need to access the back of the rack frame.

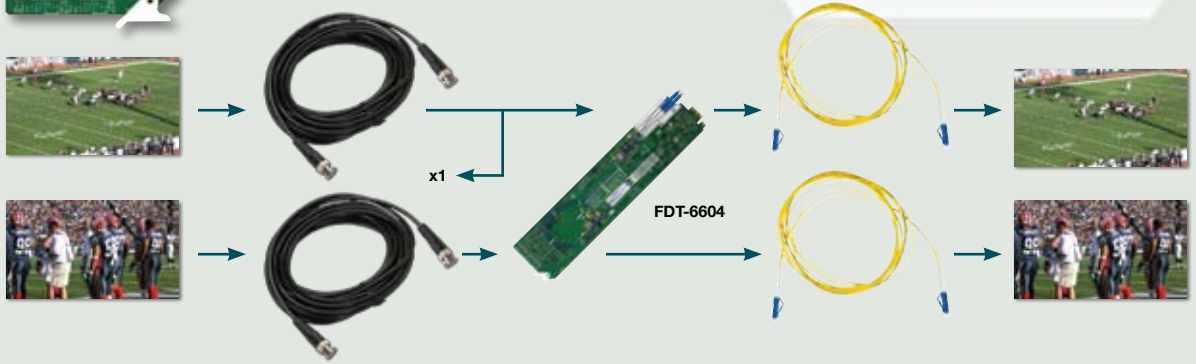
FDT-6604-R2S

In this configuration, the DFR-8321 supports up to 20 independent dual channel solutions for a total of 40 channels of conversion. Card 1 and Card 2 both offer 1 SDI reclocked output of input 1.

The R2S-6604 passive rear module supports two independent FDR-6604 maximizing the number of conversions available in the DFR-8321.

Features

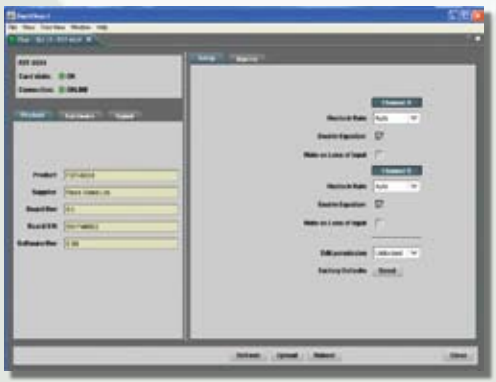
- Electrical to Optical for all SMPTE 424M, SMPTE 292M, SMPTE 259M-C standards
- Future proofed design 3Gb/s (1080p)
- Supports single-mode fiber
- Hot swappable from front of frame with no external connect / reconnect required
- Optical output power -7dBm
- Optical wavelength 1310nm
- Optical output connection: LC / UPC
- Reclocked SDI outputs
- Reclocking on all outputs at 270Mb/s, 1.483Gb/s, 1.485Gb/s, 2.967Gb/s, 2.970Gb/s
- Alarming for signal presence and optical faults
- 5-year transferable warranty
- Power: 4.5 watts



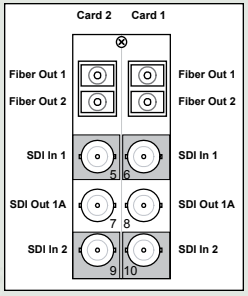
DashBoard

REMOTE CONTROL and MONITORING

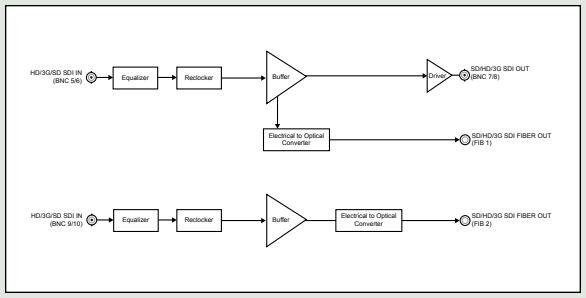
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



AES / EBU Audio Multiplexer with Fiber Optic Output

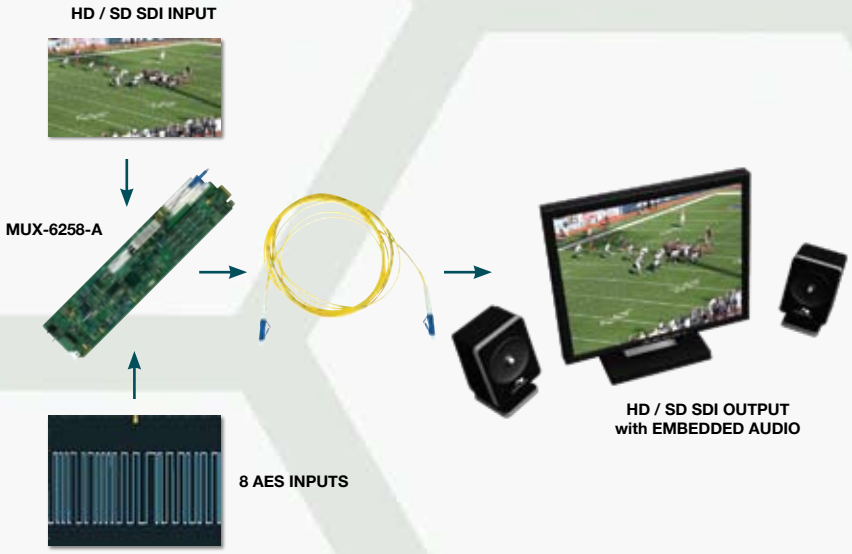
The ideal solution for multiplexing 8 AES streams into an HD / SD SDI signal with optical output.

The MUX-6258-A is a high quality program audio multiplexer capable of embedding up to 8 AES / EBU pairs (16 audio channels) into an HD / SD SDI signal.

The fiber output is ideal for signal paths exceeding 100m. A single card solution meeting the needs for all audio embedding applications.

Audio proc control on each input allows for audio processing with independent channel sample rate conversions, gain of +/-20dB, audio delay up to 1 second and channel phase invert and summing capability. The MUX-6258-A is extremely flexible in handling channel assignments and channel remapping as well as fully configurable append and overwrite capability for existing channels. Various configuration options are available for backup scenarios should a loss of input occur.

The MUX-6258-A offers a fiber output and one coax output.



Features

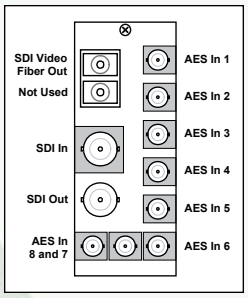
- 16 Channel Audio embedding for all popular HD-SD SDI formats with fiber output
- Audio Proc Amp controls; gain, invert, delay and sum, sample rate conversion
- Full control over channel assignments, primary and backup sources
- Configurable overwrite and append capability for existing embedded audio
- Programmable silence detection and timeout thresholds
- Optical output power -7dBm
- Optical wavelength 1310nm
- Optical output connection: LC
- 5-year transferable warranty
- Power: 9.5 watts

DashBoard

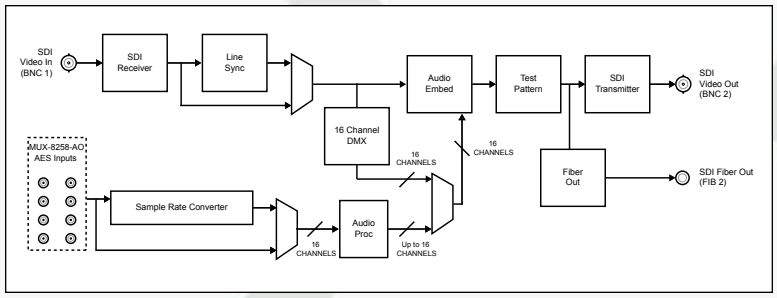
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connection



Functional Block Diagram



Fiber

AES / EBU Audio De-Multiplexer with Fiber Optic Input

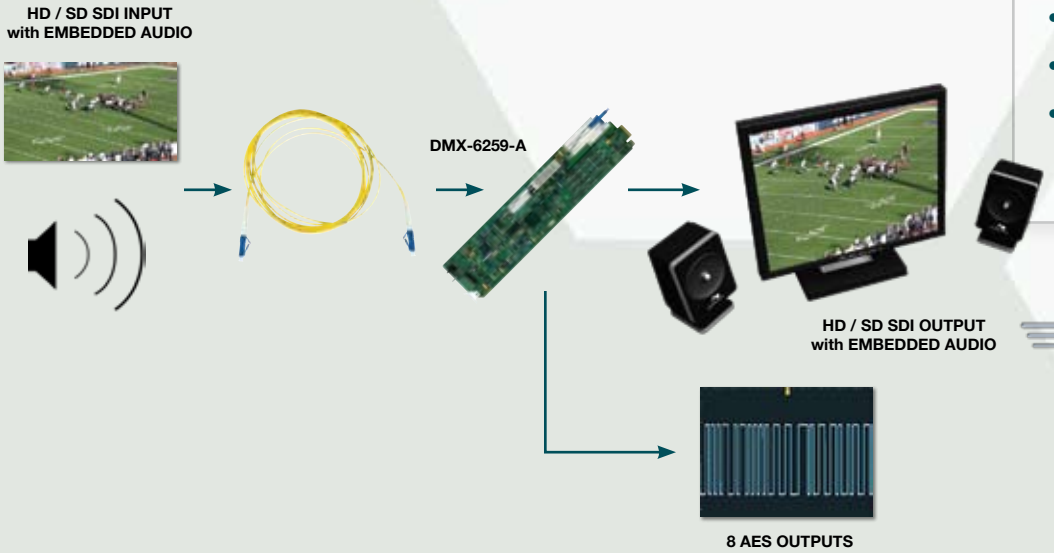
The ideal solution for de-multiplexing 8 AES streams from an HD / SD SDI signal with optical input.

The DMX-6259-A is a high quality program audio de-multiplexer capable of de-embedding up to 8 AES / EBU pairs (16 audio channels) from an HD / SD SDI signal.

The fiber input is ideal for signal paths exceeding 100m. A single card solution meeting the needs for all audio de-embedding applications.

Audio proc control on each channel allows for audio processing with gain of +/-20db, audio delay up to 1 second and channel invert. The DMX-6259-A supports full channel assignment to the discrete outputs. Various configuration options, including internally generated patterns and tones, are available for audio and video output scenarios should a loss of input occur.

The DMX-6259-A offers a selectable fiber / coax input.



Features

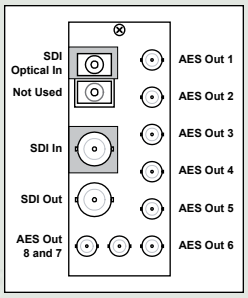
- 16 Channel Audio de-embedding for all popular HD-SD SDI formats with fiber input
- Audio Proc Amp controls; gain, invert, and delay
- Assign any embedded channel to any discrete audio output
- Ability to re-map channels in embedded video stream
- Programmable silence detection and timeout thresholds
- Optical input range 1270nm to 1610nm
- Optical input sensitivity -19dBm
- Optical input connection: LC
- 5-year transferable warranty
- Power: 9.5 watts

DashBoard

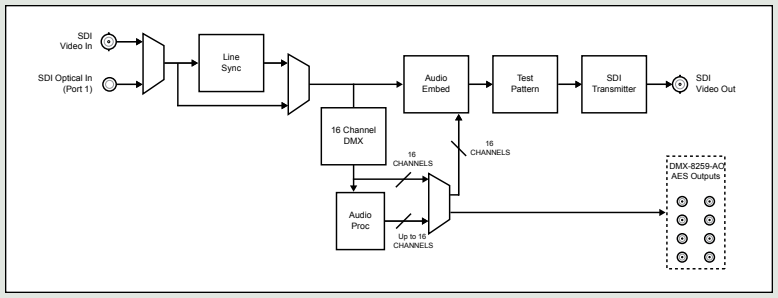
REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connection



Functional Block Diagram



Multi-Definition Dual 2x1 or 4x2 HD / SD SDI Switch

A convenient and economical solution for systems requiring switching of up to 4 input video sources, SDI and / or HD SDI, to 1 or 2 outputs.

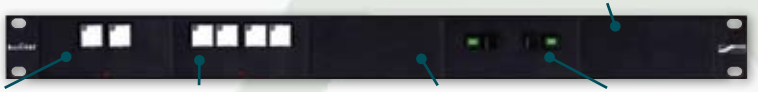
The DSS-8224 can be configured as a pair of independent 2x1 switches or as a pair of 4x1 switches with common inputs. The DSS-8224 accepts common serial digital signals at 143, 270, 360, 540Mb/s and 1.485Gb/s. All switches are performed in the vertical interval, timed to an external reference. Each switch can be controlled locally at the card-edge, by an optional RCM-8120 control module, or by GPI. DashBoard and optionally SNMP monitoring is provided for input presence, reference present and output status.

The DSS-8224 can be combined, on a common control system, with the AVS-8764 to perform multi-level, analog video, AES audio, and HD / SD SDI switching.

The DSS-8224 can be configured in auto-changeover mode. In this mode, the secondary input is selected when the primary is lost or lock cannot be achieved.

Remote Control Options

MRP-8120: Rackmount Control Panel
1RU Control Panel, holds up to 5 RCM-8120, RCM-8120-1, BPM-8120 or RCS-8120 control modules.



RCM-8120-1
2 button control of DSS-8224, DSS-8024, AVS-8064, AVS-8764 and ADS-7864.

RCM-8120
4 button control of DSS-8224, DSS-8024, AVS-8064, AVS-8764 and ADS-7864 configurable for 4x1 or Dual 2x1 operation.

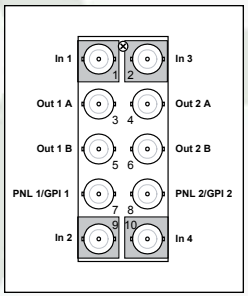
BPM-8120
Blank cover plate.

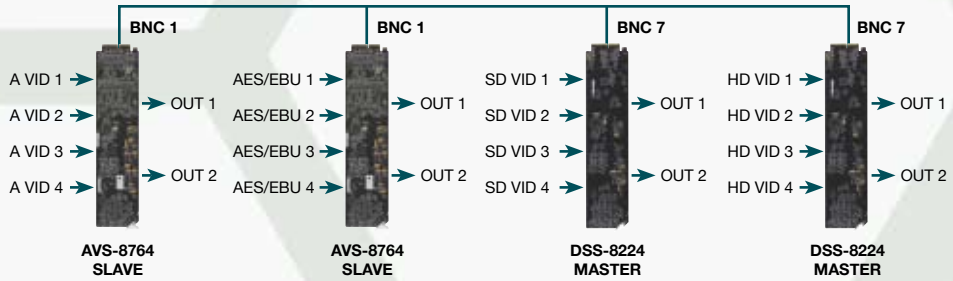
RCS-8120
Dual Remote Control Selector (Mechanical indicators and mechanical latching).

Features

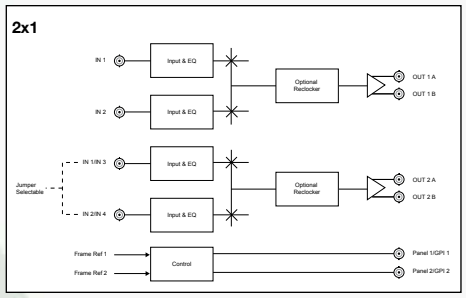
- Dual 2x1 or 4x2 modes
- Two switches on a single module
- Switches HD SDI and SD serial digital video (143Mb/s to 1.485Gb/s)
- 4 multi-definition inputs, 2 re-clocked outputs
- Configurable to 4x2, 4x1, 2x1, or dual 2x1 switch
- 20 2x1 / 10 4x2 switches in 2RU
- Input selection saved to non-volatile RAM
- Vertical interval switching compliant with SMPTE RP168-2002
- Indicators for input signal presence and reference
- Flexible control, remote RCM-8120 module, GPI, card-edge
- 5-year transferable warranty
- Power: 4.5 watts

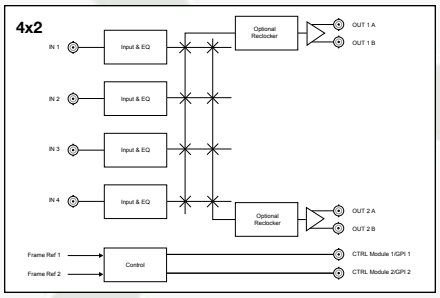
Rear Connection





Functional Block Diagram

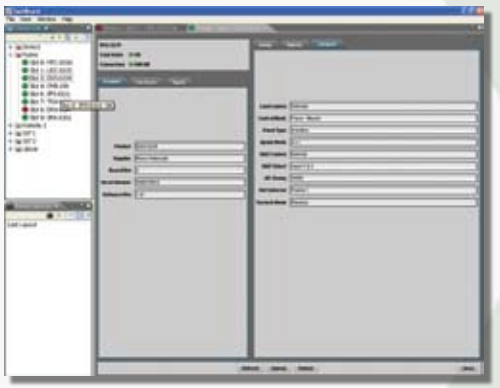




DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Switching

AES / Analog Video Dual 2x1 or 4x2 Switch

Provides a convenient and economical solution for systems that require switching of up to 4 input AES audio signals or analog video sources, to 1 or 2 outputs.

The AVS-8764 can be configured as a pair of independent 2x1 switches or as a pair of 4x1 switches with common inputs. The AVS-8764 accepts analog video or AES / EBU audio with the option of unbalanced 75Ω or balanced 110Ω. All switches are performed in the vertical interval, timed to an external reference. Each switch can be controlled locally at the card-edge, by an optional RCM-8120 control module, or by GPI. DashBoard and optionally SNMP monitoring is provided for input presence, reference present and output status.

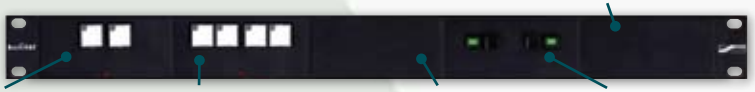
The AVS-8764 can be combined, on a common control system, with the DSS-8224 to perform multi-level, analog video, AES audio, and HD / SD SDI switching.

Features

- Dual 2x1 or 4x2 modes
- Two switches on one module
- Analog Video or AES Audio
- 20 2x1 / 10 4x2 switches in 2RU
- Configurable to 4x2, 4x1, 2x1, or dual 2x1 switch
- 2 selectable frame wide references
- 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
- Flexible control, remote RCM-8120 module, GPI, card-edge
- 5-year transferable warranty
- Power: 2.2 watts

Remote Control Options

MRP-8120: Rackmount Control Panel
1RU Control Panel, holds up to 5 RCM-8120, RCM-8120-1, BPM-8120 or RCS-8120 control modules.



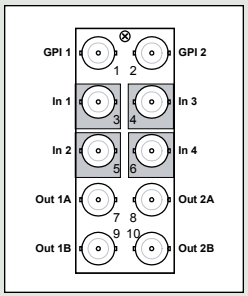
RCM-8120-1
2 button control of DSS-8224, DSS-8024, AVS-8064, AVS-8764 and ADS-7864.

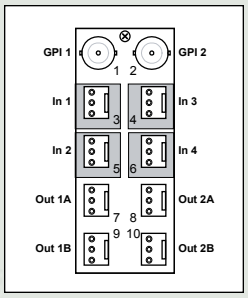
RCM-8120
4 button control of DSS-8224, DSS-8024, AVS-8064, AVS-8764 and ADS-7864 configurable for 4x1 or Dual 2x1 operation.

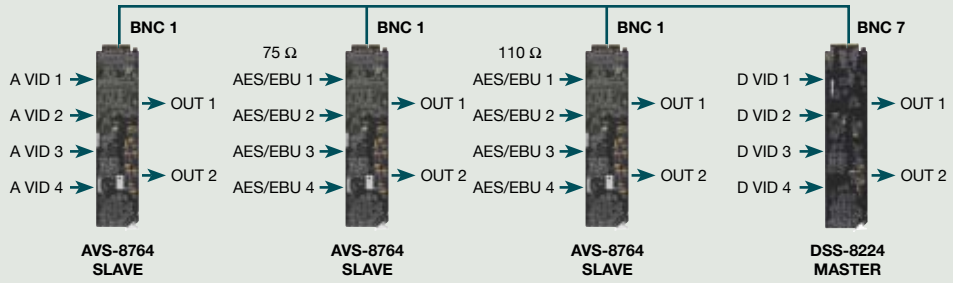
BPM-8120
Blank cover plate.

RCS-8120
Dual Remote Control Selector (Mechanical indicators and mechanical latching).

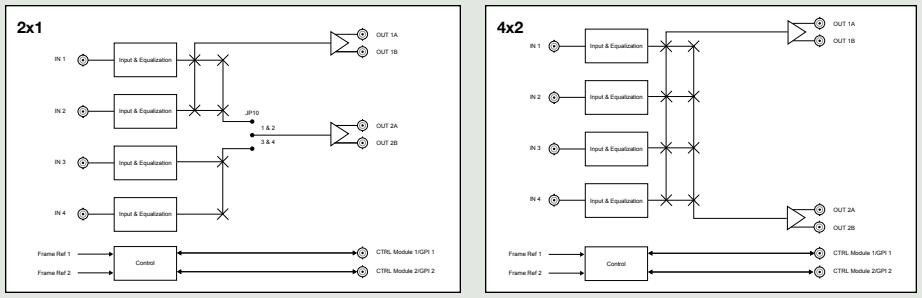
Rear Connection







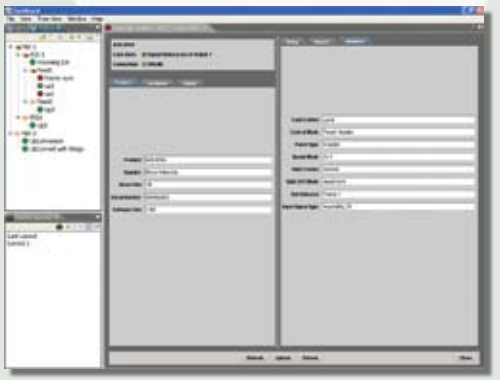
Functional Block Diagram



DashBoard

REMOTE CONTROL and MONITORING

- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



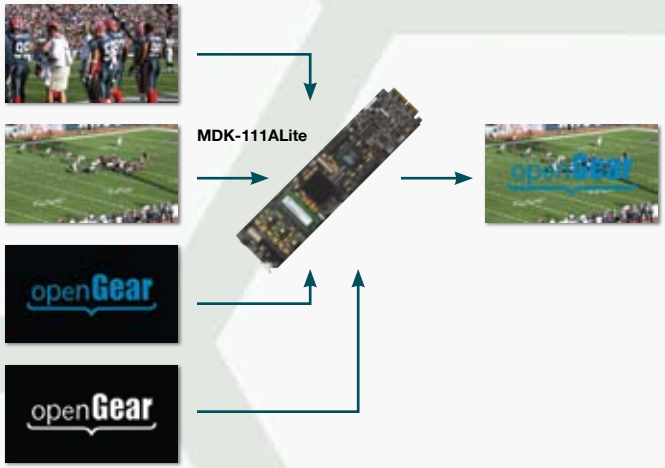
HD / SD SDI Mixer / Keyer

Simultaneous A / B background mixing with external keying.

The MDK-111ALite is a high quality HD / SD SDI video keyer with A / B background inputs for additional background mixing. An excellent device for keying external devices such as character generators, graphic systems and EAS devices into a program feed. The MDK-111ALite offers full key control with shaped and unshaped keying, self key or alpha key, transparency, gain and clip control, mask and matte fill. The additional background A & B inputs allows for background dissolves and Vfades in behind the external key source. All four inputs have line synchronization, locked to an external reference, to ease system timing requirements. Outputs for PGM, Preview, and Clean offer independent Proc Amp control with FTB capability.

The MDK-111ALite offers a wide range of control with a total of 8 programmable GPI inputs or tally outputs, M2100 serial control and full DashBoard Control and Monitoring.

Built in bypass relay from A input to PGM protects your air feed when the device is taken off-line to ensure critical program content is not lost.



Features

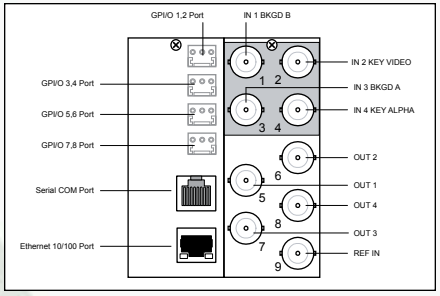
- HD / SD SDI
  SMPTE-292M, 1.485Gb/s
  and SMPTE 259M, 270Mb/s
- A / B Mix / Vfade with external key
- 4 inputs: A, B, Key Video, Key Alpha
- 4 outputs: 2 PGM, 1 Preview, 1 Clean
- Independent Proc Amp control on outputs
- FTB (fade-to-black)
- Bypass relay from A input to PGM out
- GPI / GPO, serial, DashBoard Control
- Key, transparency, gain, clip
  Shaped / Unshaped
  Alpha / Self
  Mask
- 5-year transferable warranty
- Power: 11 watts

DashBoard

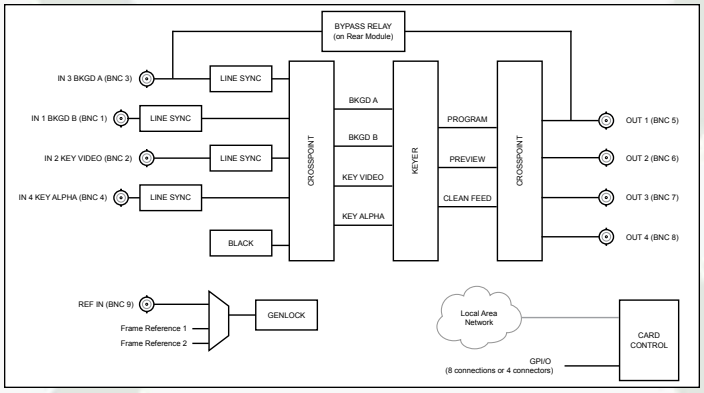
REMOTE CONTROL and MONITORING

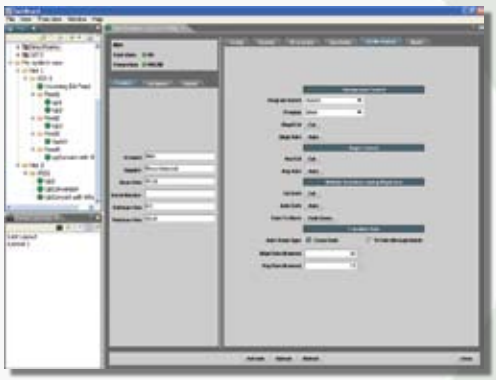
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™

Rear Connection



Functional Block Diagram





HD / SD Mixer / Keyer with Internal Logo Insertion

Four keyers with simultaneous background mixing, external keying, three internal animated logo keys, fade to black – with preview.

Applications

- Animated Channel Branding Inserter
- Mini-Master Control Switcher
- Master Control Bypass Mixer
- Rating Inserter
- Downstream Keyer / Branding Engine
- Branding / Sponsorship keyer for Stadiums

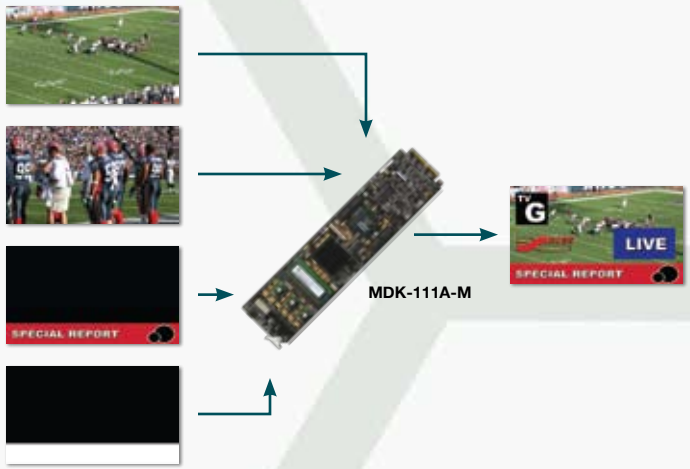
The MDK-111A-M is the most advanced HD / SD single card mixer / keyer on the market. The multi-keying function allows simultaneous compositing of both an external key source with up to 3 internally generated logo key sources plus background mixing. For example, the MDK-111A-M can key an external character generator like our Ross XPression, over the background video and then key up to three internally generated animated logos. Transition control to any layer; BKGD, external key, and / or internal keys is independently controllable. The internal key sources can be any size up to full-screen and can be positioned anywhere. This makes the insertion of trouble slides, content rating bugs, station logos and EAS simple and affordable.

The MDK offers 4 configurable outputs with selections for PGM / PREVIEW and CLEAN. The look-ahead PREVIEW is ideal for live productions providing confidence in quality and accuracy of the next scene to go to air.

The MDK-111A-M offers a wide range of control with a total of 8 configurable GPI/O, M2100 serial interface and full DashBoard Control and Monitoring. The flexible control makes automating logo insertion simple anywhere in the program stream.

Built in bypass relay from BKGD A to PGM protects your air feed when the device is taken off-line to ensure critical program stream content is not lost.

Compact Flash is provided at the card-edge for local near line storage of logo content with scalable on-board, on-line memory for logo play out. The system is delivered with 512Mb standard for both Compact Flash and on-line memory.



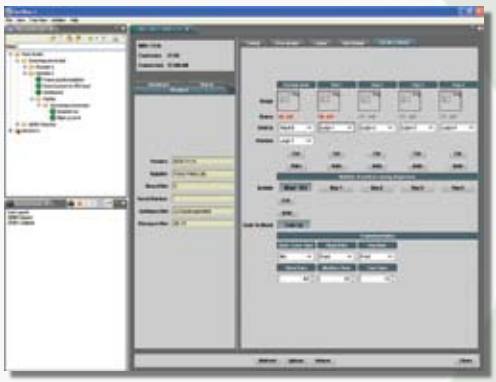
Features

- 4 Keyers: 1 external key / fill, 3 internal animation keyers
- Bkgd A and Bkgd B inputs with Video and Audio Vfade and Mix
- Bypass relay for Bkgd A to PGM out
- Configurable outputs with Program, Preview, Clean
- Fade to Black / Silence
- Flexible control, 8 GPI/O, M2100 serial, DashBoard
- On-board ethernet for logo file transfers
- Full look ahead preview
- Local compact flash storage
- Independent transition controls for each keyer
- 5 year transferable warranty
- Power: 18.4 watts

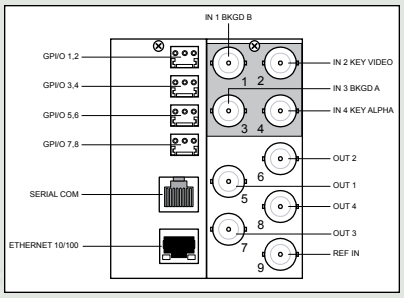
DashBoard

REMOTE CONTROL and MONITORING

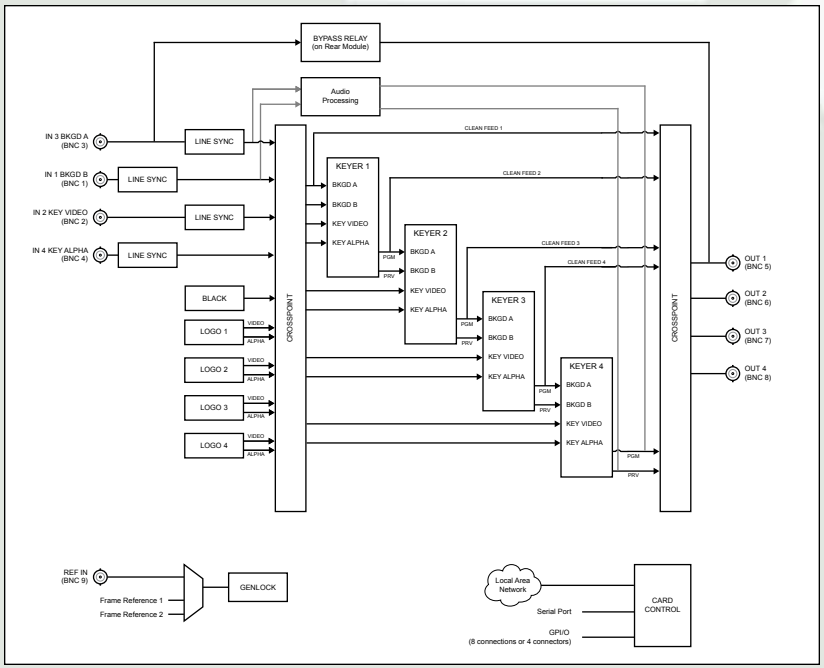
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



HD / SD Quad Logo Inserter

Four independent input /output streams with one dedicated logo inserter per stream.

Applications

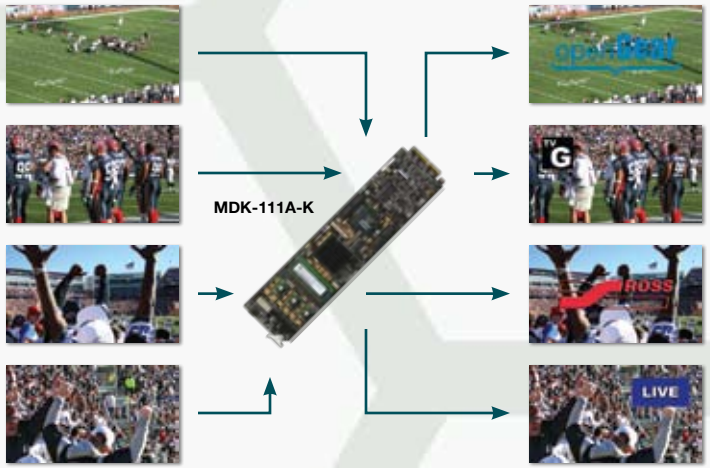
- Animated Channel Branding Inserter
- Rating Inserter
- Downstream Bug Inserter
- Trouble Slide Inserter
- Branding / Sponsorship Keyer for Stadiums

The MDK-111A-K is an advanced high density 4 channel quad logo inserter providing cost effective channel branding. Each of the four input streams can independently have an animated logo inserted. For example, the MDK-111A-K can take four different input streams, key a logo on each of the streams, outputting four streams each with their own unique branding. Each stream has complete independent transition control over the logo insertion. The internal key sources can be any size up to full-frame and can be positioned anywhere on screen. This makes the insertion of trouble slides, content rating bugs, and station id logo's simple and very cost effective.

The MDK-111A-K offers a total of 8 configurable GPI/O with full DashBoard Control and Monitoring. The GPI/O interface is ideal for simple key in / key out transitions.

Compact Flash is provided at the card-edge for local near line storage of logo content with scalable on-board, on-line memory for logo play out. The system is delivered with 512Mb standard for both Compact Flash and on-line memory.

The MDK-111A-K supports TGA, PNG, BMP and JPG file formats with a dedicated ethernet connection for transferring images direct to the MDK-111A-K.



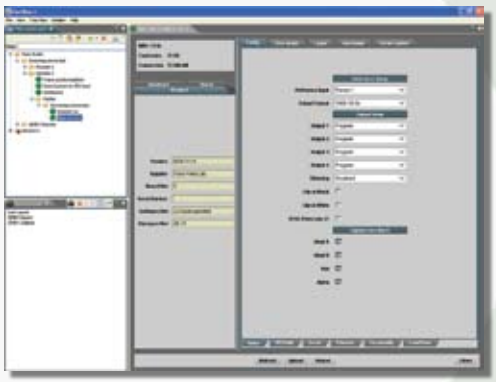
Features

- 4 HD / SD inputs / outputs
- Cost-effective branding
- 4 internal animation keyers, one per stream
- Flexible control with 8 GPI/O and DashBoard
- On-board ethernet for logo file transfers
- Local compact flash storage
- Storage for multiple still logos, animated logos, and full screen images
- Independent transition controls for each keyer
- 5 year transferable warranty
- Power: 18.4 watts

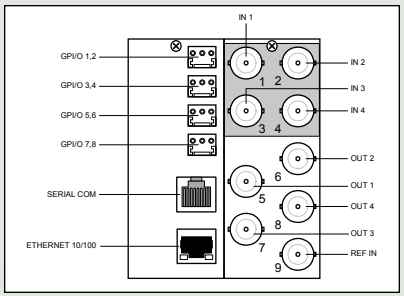
DashBoard

REMOTE CONTROL and MONITORING

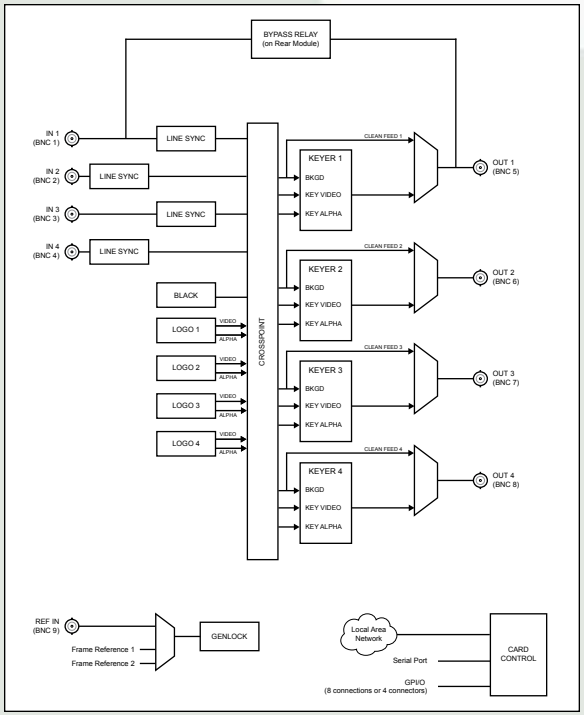
- Ethernet 10/100 Mbit network control
- SNMP support
- Compliant with DataSafe™



Rear Connection



Functional Block Diagram



OPA-8380A

General Purpose Adapter

Leaving no customer behind!

The OPA-8380A openGear adapter is designed to allow existing customers, with RossGear 8000 series products, to easily migrate existing solutions to the HD / SD 8300 openGear series frames.

The OPA-8380A can also be used in situations where cost effective SD only solutions are required.

The adapter supports the products listed and may be ordered separately or with an 8000 series card by using the –OG extension.

Note: The OPA-8380A is not controllable under the DashBoard Control System.

OPA-8381

Analog Audio Adapter

Leaving no customer behind!

The OPA-8381 openGear adapter is designed to allow existing customers, with RossGear Analog Audio 8000 series products, to easily migrate existing solutions to the HD / SD 8300 openGear series frames.

The OPA-8381 can also be used in situations where cost effective SD only solutions are required.

The adapter supports the products listed and may be ordered separately or with an 8000 series card by using the –OG extension.

Note: The OPA-8381 is not controllable under the DashBoard Control System.

8000 Series Products supported by the openGear platform:

Distribution and Monitoring

SRA-8001B	Serial Auto-Reclocking Equalizing Amplifier
SEA-8003A	Serial Equalizing Amplifier
DSA-8004A	Dual Serial Equalizing Amplifier
DRA-8009	Dual Reclocking Amplifier
CMA-8011A	SDI Component Monitoring and Reclocking Amplifier
CMA-8011A-7	SDI Component Monitoring and Reclocking Amplifier
QMA-8044	Quad SDI to Analog Composite Video Monitoring Amplifier
VTA-8060	Video TruckAMP
VEA-8007A	Analog Video Equalizing Amplifier
UDA-8005A	Analog Utility Distribution Amplifier
ADA-8501	AES / EBU Reclocking Distribution Amplifier
ADA-8503	AES / EBU Fanout Distribution Amplifier
ADA-8504	Dual AES / EBU Reclocking Distribution Amplifier

Synchronization and Delay

DVB-8020B-S	SDI Frame Synchronizer
DVB-8020B-D	SDI Digital Delay Line
ADL-8520A	AES / EBU Auto-Tracking Audio Delay Unit
ADL-8520A-A	adds 2 Analog Input Channels to ADL-8520
ADL-8520A-B	adds Analog Output Signals to ADL-8520-A

Video Conversion

DAC-8016A Series	SDI to Analog Composite Converter
ADC-8032B Series	Analog Composite to SDI Converter
ADC-8033A Series	Analog Component to SDI Video Converter
ADC-8035	Dual Analog Composite to SDI Converter

Audio Conversion, Embedding / De-Embedding

MUX-8552A	AES / EBU Multiplexer
MUX-8552A-C	adds Analog Audio Output
DMX-8554A	AES / EBU Demultiplexer
DMX-8554A-C	adds Analog Audio Output

Keying

CDK-111A-M	SDI Digital Mixer / Keyer
CDK-111Lite	SDI Digital Mixer / Keyer

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.

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