





MV-8 Series Router Integrated Multiviewers

Card Options for Sirius 800 Routers

The MV-8 series includes the MV-801, MV-831, MV-841 and MV-851 card options for the Sirius 800 series of enterprise-grade routers. These integrated multiviewers benefit from world-class image processing and scaling that provides an unmatched feature set and unique independent output routing facility, as well as input source streaming and unlimited output expansion capability with the license-enabled MV-8xx-H264 option.

The benefits of integrated multiviewers include:

- · Flexible multiviewer routing configurations
- · No loss of router inputs or outputs
- · No additional space required
- · No signal cabling, simplified installation
- · Reduced power consumption and cooling requirements

Applications

The MV-8 Series integrated multiviewers are ideal for use in any application that benefits from a single or multiple displays:

- · Studio galleries
- · OB trucks
- Playout control rooms
- Multichannel playout
- Post-production suites
- · Signal lines monitoring areas

Architecture

Extend and expand monitoring with additional MV-8xx-H264 license-enabled option, independent from the primary multiviewer outputs.

- MV-801/831/841/851 high-resolution low-latency primary monitoring application
- MV-8xx-H264 secondary monitoring confidence streaming

MV Cluster Manager Service

Ideal for large multiviewer installations, MV Cluster Manager allows operators to group all relevant multiviewers in clusters and treat them as a single multiviewer.

For operators, this speeds up configuration of layouts and displays for their walls. Time-critical changes (for example

before live events and shows) are simplified for on-time production delivery. Layouts and displays can be saved and recalled for the next time a show or event is in that studio or arena.

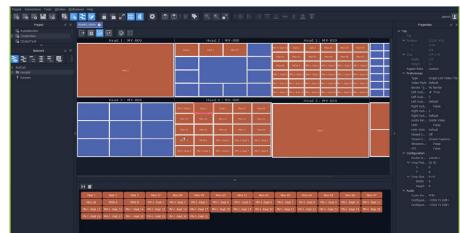
Multichannel Monitoring

The MV-8 series provides high-quality images even when used in advanced multichannel displays. No compromise on quality provides the highest quality picture output for today's broadcast environment.

- Multichannel display with graphical background and channel logos for clear identification
- · Mix on-air, program, preset and key previews
- Full audio metering
- Automation playlist display
- On screen clock with regional time offsets

Advanced Monitoring Capability

With the development of advanced technology within the MV-8 Series integrated multiviewers, we can offer some unique, powerful features including integrated control and monitoring. (See "Control Integration" on page 2.)



KEY FEATURES

Live Production

- Multiple quad splits plus multitile screen layouts (12x HD to 3x 4K UHD outputs)
- UMD and tallies from routing, switchers and third-party controllers
- · Integration with third-party tally systems
- . Dvnamic and static UMDs
- Clock/timers

Transmission

- Multichannel monitoring and exception alarming for early detection of errors
- With the Sirius 800 Multiviewer and Sirius 800 Advanced Hybrid Processing (AHP), a common operator control interface for AHP and the multiviewer allows an operator to rearrange or adjust audio tracks

Playout

- · Multichannel monitoring of video and audio
- · Closed caption and subtitle status
- · Configurable alarms and alerts on failure
- Customize display by adding channel logos, labels, clocks (with configurable offsets)
- Display automation playlists, monitor opt-out feeds, etc.

Desktop Model

MV-8xx-H264 Streaming

A unique addition to the capability of all MV-8 series multiviewers is the MV-8xx-H264 option. This feature utilizes the input streaming capability of the units by allowing the expansion of your system with independent multiviewer heads. Each desktop client can create an independent multiviewer layout using the SD H.264 streams available from an MV-8 Series multiviewer in your system.

Router Integrated Models

MV-801

Uses dedicated MV slots in the Sirius 830/840/850 frames. Ideal for lower-density applications with a maximum of two or three modules per routing frame. Two modules maximum in Sirius 830/Sirius 850 frames. Three modules maximum in Sirius 840 frames.

MV-851/841

Router integrated Sirius 840/850 frames only. Requires two output slots per module. Supports 48 router outputs in addition to multiviewer functionality. Maximum of 12 modules per frame. Ideal for high-density monitoring applications, providing monitoring for up to 576 sources over 144 multiviewer heads.

MV-831

Router integrated Sirius 830 frames only. Requires one input and one output slot per module. Supports 24 router inputs and 24 router outputs in addition

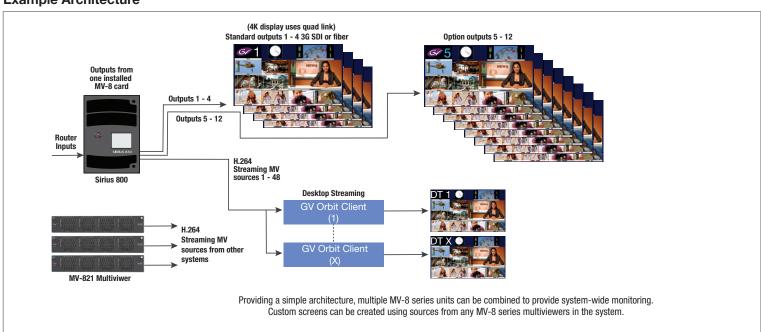
to multiviewer functionality. Maximum of 12 modules per frame. Ideal for high-density monitoring applications, providing monitoring for up to 288 sources and 288 destinations over 144 multiviewer heads.

Control Integration

Grass Valley multiviewers integrate with many Grass Valley routing and switcher products. This allows tallies from router and switcher controllers simultaneously, meaning that all routing hangs on either system are correctly indicated. If tielines are used, the original source name is displayed, not just the source on the local router. Custom alarms can be triggered on screen, with configured text and text box colors, driven from RollCall or other third-party applications, providing system level alarms on the multiviewer outputs.



Example Architecture





MV-801

Integrated Multiviewer and Optional Desktop Software

A fully featured integrated multiviewer for the Sirius 800 router series with optional H.264 streaming.

The MV-801 multiviewer benefits from world-class image processing and scaling that provides an unmatched feature set and unique independent output routing facility, as well as input H.264 source streaming and unlimited output expansion capability.

Benefits

- · Flexible multiviewer routing configurations
- · No loss of router inputs or outputs
- · No additional space required
- · No additional multiviewer cabling
- · Reduced power consumption and cooling requirements

Applications

The MV-801 integrated multiviewer is ideal for use in any application that benefits from a single or multiple display(s):

- Studio galleries
- OB trucks
- · Playout control rooms
- Multichannel playout
- Post-production suites
- Signal lines monitoring areas

Architecture

Extend and expand monitoring with additional MV-801-H264 license-enabled option, independent from the primary multiviewer outputs.

- MV-801 high-resolution low-latency primary monitoring application
- MV-801-H264 secondary monitoring confidence streaming
- Up to 3 modules per routing frame

See the ordering section for more details.

Advanced Monitoring Capability

With the development of advanced technology within the MV-801 integrated multiviewer, we can offer some unique, powerful features including integrated control and monitoring. (See "Control Integration" on page 2).

Multichannel Monitoring

The MV-801 provides high-quality images even when used in advanced multichannel displays. No compromise on quality provides the highest quality picture output for today's broadcast environment.

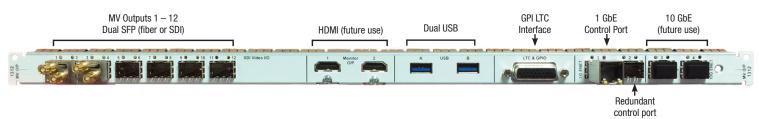
- Multichannel display with graphical background and channel logos for clear identification
- Mix on-air, program, preset and key previews
- Full audio metering
- · Automation playlist display
- · On-screen clock with regional time offsets

KEY FEATURES

- Superior density 48 inputs to 12 outputs
- $-\,4\,\,standard\,\,outputs$
- 5-12 optional license
- · World-class image processing and scaling
- Up to 32 channels of audio metering per source
- . Internal and external UMD and tally support
- · Clock and timers
- Unique H.264 input source streaming

- · Unlimited desktop multiviewer output expansion capability
- Integrated control and monitoring of system wide external devices as well as internal video and audio sources
- Full audio, video and metadata alarm support
- Multiple display wall control
- SDI and fiber output options
- Mix HD, 3G & 4K UHD sources on HD, 3G and 4K UHD displays simultaneously
- · AFD/WSS auto support
- Full RollCall integration
- For higher density applications, additional MV capability can be added using the MV-851 populated in the output slots of the routing frame for Sirius 850 and Sirius 840, or MV-831 populated in the output slots of the routing frame for Sirius 830

MV-801 Connectivity



DATASHEET

SPECIFICATIONS

Inputs - 48 (from router)

SD 525/59.94 & 625/50

HD 720p (50, 59.94, 60 frames)

HD 1080i (25, 29.97 & 30 frames)

3G 1080p (50, 59.94 & 60 frames)

4K UHD quad link (uses 4 inputs per 4K UHD source)

IP support via Sirius 800 IP router inputs

Outputs

4 video outputs (coax or fiber) (upgradable to 12):

4K UHD, 3G 1080p (50, 59.94 & 60 frames, locked to refer-

1 input field/frame + 1-2 progressive output

Quad link 4K UHD output support

48 inputs encoded as H.264 IP output streams

On-screen Monitoring

Fully flexible layouts: any object can be any size, in any position (48 scalers any scaled source can be duplicated in any position on any output):

Up to 16 audio channels per video signal Bars outside or overlaid on picture

Audio meter scales on/off

Adjustable layering and transparency of objects over video or other objects or background video

Display up to 48 tiles on a single screen, plus additional tiles for clocks and tallies

Programmable color & alarm thresholds

WSS/AFD flags to auto adjust aspect ratio of images within a video tile audio:

Metadata & control

Metering of AES embedded audio, VU, extended VU, DIN, BBC, Nordic scales including Dolby E:

Closed caption & subtitle detection

UMD source names via:

- Grass Valley general remote protocol

- SW-P-08 over IP

- TSL v3.1 or v5 protocol over IP

Alarm Notifications

Border alarm

In-picture message

SNMP, via RollCall

Manufacturers protocol

Master GPO

Video alarms

Video black

Video frozen

Loss of video

Loss of CC

Loss of VITC data

Audio Alarms

Audio over level

Audio under level/loss

Loss of embedded channels

Dolby E

Status Indicators

Input standard

CC standard

Source ID

V-Chip status

Additional Alarms

Test boxes

Alarm Control

Configurable alarms threshold and trigger delays:

Alarm acknowledge from hard and soft panels via RollCall

Alarm acknowledge/clear/previous fault indication (border color or tally alarm box):

Alarm auto-clear after preset delay

ORDERING

Ordered with a Router

When ordered as part of a Sirius 800 system, the part number for the system will include the necessary MV-801 parts.

Ordered as Individual Parts

When ordered as separate parts, the order codes shown are needed to build a complete system.

Order Quantities

Maximum modules per router frame:

Sirius 830: 2 modules

Sirius 840: 3 modules

Sirius 850: 2 modules

5902

Sirius 800 series multiviewer crosspoint

Only one required per Sirius routing frame

MV-801

MV-801 integrated multiviewer module, including 4 output license

Additional licenses required to enable outputs 5-12. Maximum of 2 cards per frame

MV-800-RP

MV800 Multiviewer rear panel

With SFP output cages which will accept coaxial (HD-BNC) or fiber SFP modules. SFP ordered separately

MV-801-OP56

License upgrade to enable outputs 5 & 6

SFP ordered separately

MV-801-OP78

License upgrade to enable outputs 7 & 8

SFP ordered separately

MV-801-OP910

License upgrade to enable outputs 9 & 10

SFP ordered separately

MV-801-OP112

License upgrade to enable outputs 11 & 12

SFP ordered separately

CC-TTH-3G-N

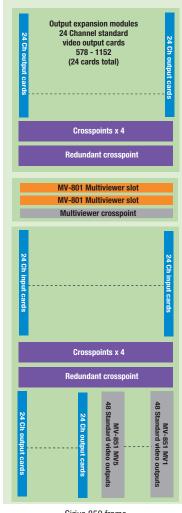
Dual output HD-BNC coaxial SFP module

ST31ST31-3

Dual output fiber SFP module (1310 nm single mode LC/PC)

MV-801-H264

License-enabled option for H.264 streaming of multiviewer inputs



Sirius 850 frame

MV-851 and MV-841

Integrated Multiviewer and Optional Desktop Software

Fully featured integrated multiviewers for the Sirius 850 and Sirius 840 routers with optional H.264 streaming. The MV-851 and MV-841 populate two output slots in the routing frame, and offer 48 router outputs, maintaining the routing capability of the slots and offering true destination monitoring.

The MV-851 and MV-841 multiviewers benefit from world-class image processing and scaling that provides an unmatched feature set and unique independent output routing facility, as well as input H.264 source streaming and unlimited output expansion capability.

Benefits

- Flexible multiviewer routing configurations
- · No loss of router inputs or outputs
- · No additional space required
- · No signal cabling, simplified installation
- · Reduced power consumption and cooling requirements

Applications

The MV-851 and MV-841 integrated multiviewers are ideal for use in any application that benefits from a single or multiple display(s):

- · Studio galleries
- OB trucks
- · Playout control rooms
- · Multichannel playout
- Post-production suites
- Signal lines monitoring areas

Architecture

Extend and expand monitoring with additional MV-851/841-H264 licenseenabled option, independent from the primary multiviewer outputs.

- MV-851 and MV-841 high-resolution low-latency primary monitoring application
- MV-851/841-H264 secondary monitoring confidence streaming
- Up to 12 modules per routing frame

See ordering section for more details.

Advanced Monitoring Capability

With the development of advanced technology within the MV-851 and MV-841 integrated multiviewer, we can offer some unique, powerful features including integrated control and monitoring. (See "Control Integration" on page 2).

Multichannel Monitoring

The MV-851 and MV-841 provide high-quality images even when used in advanced multichannel display. No compromise on quality provides the highest quality picture output for today's broadcast environment.

- Multichannel display with graphical background and channel logos for clear identification
- · Mix on-air, program, preset and key previews
- · Full audio metering
- · Automation playlist display
- On screen clock with regional time offsets

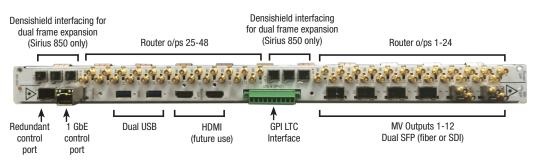
KEY FEATURES

- Superior density 48 multiviewer inputs to 12 multiviewer outputs
- 4 standard outputs
- 5-12 optional license
- 48 router outputs per card (the MV-851 and MV-841 uses two routing output slots while maintaining 48 routing outputs)
- World-class image processing and scaling
- Up to 32 channels of audio metering per source
- Internal and external UMD and tally support

- Clock and timers
- Unique H.264 input source streaming
- Unlimited desktop multiviewer output expansion capability
- Integrated control and monitoring of system wide external devices as well as internal video and audio sources
- Full audio, video and metadata alarm support
- · Multiple display wall control
- SDI and fiber output options

- Mix HD, 3G & 4K UHD sources on HD, 3G and 4K UHD displays simultaneously
- AFD/WSS auto support
- Full RollCall integration
- Maximum 12 MV-851 and MV-841 modules per Sirius 850 or Sirius 840 frame
- Additional MV capability can be added using the MV-801 populated in the dedicated multiviewer slots of the frame

MV-850-RP Connectivity For use with MV-850 and MV-851



SPECIFICATIONS

Inputs - 48 (from router)

SD 525/59.94 & 625/50

HD 720p (50, 59.94, 60 frames)

HD 1080i (25, 29.97 & 30 frames)

3G 1080p (50, 59.94 & 60 frames)

4K UHD quad link (uses 4 inputs per 4K source)

IP support via Sirius 800 IP router inputs

Outputs

4 video outputs (coax or fiber) (upgradable to 12)

4K UHD, 3G 1080p (50, 59.94 & 60 frames, locked to reference)

Video delay - 3 fields interlaced, 3 frames progressive

Quad link 4K UHD output support

48 inputs encoded as H.264 IP output streams

48 router outputs providing true destination monitoring. Multiviewer inputs mapped 1:1 to router outputs

On-screen Monitoring

Fully flexible layouts: any object can be any size, in any position (48 scalers any scaled source can be duplicated in any position on any output)

Up to 32 audio channels per video signal Bars outside or overlaid on picture

Audio meter scales on/off

Adjustable layering and transparency of objects over video or other objects or background video

Display up to 48 tiles on a single screen, plus additional tiles for clocks and tallies:

Programmable color & alarm thresholds

WSS/AFD flags to auto adjust aspect ratio of images within a video tile audio:

Metadata & control

Metering of AES embedded audio, VU, extended VU, DIN, BBC, Nordic scales including Dolby E:

Closed Caption & Subtitle detection

UMD source names via:

- Grass Valley general remote protocol
- SW-P-08 over IP
- TSL v3.1 or v5 protocol over IP

Alarm Notifications

Border alarm

In-picture message

SNMP, via RollCall

Manufacturers protocol

Master GPO

Video alarms

Video black

Video frozen

Loss of video

Loss of CC

Loss of VITC data

Audio Alarms

Audio over level

Audio under level/loss

Loss of embedded channels

Dolby E

Status Indicators

Input standard

CC standard

Source ID

V-Chip status

Additional Alarms

Test boxes

Alarm Control

Configurable alarms threshold and trigger delays:

Alarm acknowledge from hard and soft panels via RollCall interface

Alarm acknowledge/clear/previous fault indication (border color or tally alarm box):

Alarm auto-clear after preset delay

ORDERING

Ordered with a Router

When ordered as part of a Sirius 800 system, the part number for the system will include the necessary MV-8 parts

Ordered as Individual Parts

When ordered as separate parts, the order codes shown are needed to build a complete system

Order Quantities

Maximum modules per router frame:

Sirius 840: 12 modules Sirius 850: 12 modules

MV-851

MV-851 Integrated Multiviewer Module, including 4 output license

Additional licenses required to enable outputs 5-12. Maximum of 12 cards per frame

MV-850-RP

MV850 Multiviewer Rear Panel

With SFP output cages which will accept coaxial (HD-BNC) or fiber SFP modules. SFP ordered separately. Module includes 48 HD-BNC router outputs. MV-850-RP is for use with MV-850 and MV-851

MV-841

MV-841 Integrated Multiviewer Module, including 4 output license

Additional licenses required to enable outputs 5-12. Maximum of 12 cards per frame

MV-840-RP

MV840 Multiviewer rear panel

With SFP output cages which will accept coaxial (HD-BNC) or fiber SFP modules. SFP ordered separately. Module includes 48 HD-BNC router outputs. MV-840-RP is for use with MV-840 and MV-841

MV-851-OP56

License upgrade to enable outputs 5 & 6

SFP ordered separately

MV-851-OP78

License upgrade to enable outputs 7 & 8

SFP ordered separately

MV-851-OP910

License upgrade to enable outputs 9 & 10

SFP ordered separately

MV-851-OP112

License upgrade to enable outputs 11 & 12

SFP ordered separately

CC-TTH-3G-N

Dual output HD-BNC coaxial SFP module

ST31ST31-3

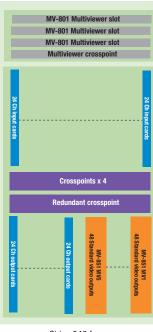
Dual output fiber SFP module (1310 nm single mode LC/PC)

MV-851-H264

License-enabled option for H.264 streaming of multiviewer inputs

MV-841-H264

License-enabled option for H.264 streaming of multiviewer inputs



Sirius 840 frame

Maximum of 12 modules per Sirius 850 and Sirius 840 frames



Sirius 850 frame

6



MV-831

Integrated Multiviewer and Optional Desktop Software

The MV-831 multiviewer benefits from world-class image processing and scaling that provides an unmatched feature set and unique independent output routing facility, as well as input H.264 source streaming and unlimited output expansion capability.

The benefits of an integrated multiviewer include:

- Flexible multiviewer routing configurations
- · No loss of router inputs or outputs
- · No additional space required
- No additional multiviewer cabling
- · Reduced power consumption and cooling requirements

Applications

The MV-831 integrated multiviewer is ideal for use in any application that benefits from a single or multiple displays:

- · Studio galleries
- OB trucks
- · Playout control rooms
- · Multichannel playout
- · Post-production suites
- · Signal lines monitoring areas

Architecture

Extend and expand monitoring with additional MV-831-H264 license-enabled option, independent from the primary multiviewer outputs.

- MV-831 high-resolution low-latency primary monitoring application
- MV-831-H264 secondary monitoring confidence streaming
- Up to 12 modules per routing frame

See ordering section for more details.

Advanced Monitoring Capability

With the development of advanced technology within the MV-831 integrated multiviewer, we can offer some unique, powerful features including integrated control and monitoring. (See "Control Integration" on page 2.)

Multichannel Monitoring

The MV-831 provides high-quality images even when used in advanced multichannel display. No compromise on quality provides the highest quality picture output for today's broadcast environment.

- Multichannel display with graphical background and channel logos for clear identification
- Mix on-air, program, preset and key previews
- · Full audio metering
- · Automation playlist display
- On screen clock with regional time offsets

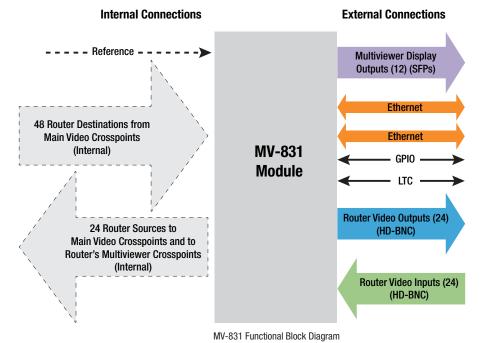
Modes of Operation

Redundant

 48 inputs to multiviewer comprised of 24 from input and 24 mirroring router outputs

Non-redundant

- 48 inputs selected from 24 inputs and 48 crosspoint connections
- In this mode the crosspoint interfaces are driven independently to offer greater flexibility in the multiviewer operation
- · Combines true source and destination monitoring in a single unit

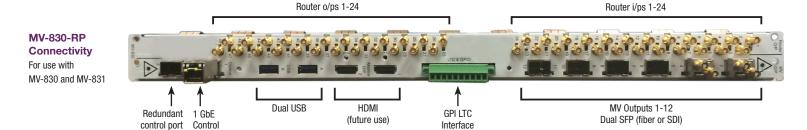


KEY FEATURES

- Superior density 48 multiviewer inputs to 12 multiviewer outputs:
- 4 standard outputs
- 5-12 optional license
- 24 router inputs and outputs per card the MV-831 uses two routing slots while maintaining 24 routing inputs and 24 routing outputs
- · World-class image processing and scaling
- Up to 32 channels of audio metering per source
- Internal and external UMD and tally support
- · Clock and timers

- Unique H.264 input source streaming
- · Unlimited desktop multiviewer output expansion capability
- · Integrated control and monitoring of system-wide external devices as well as internal video and audio sources
- Full audio, video and metadata alarm support
- · Multiple display wall control
- . SDI and fiber output options
- Mix HD, 3G & 4K UHD sources on HD, 3G and 4K UHD displays simultaneously

- AFD/WSS auto support
- Full RollCall integration
- Maximum 12 MV-831 modules per Sirius 830
- · Additional multiviewer capability can be added using the MV-801 populated in the dedicated multiviewer slots of the



SPECIFICATIONS

Inputs - 48 (from router)

SD 525/59.94 & 625/50

HD 720p (50, 59.94, 60 frames)

HD 1080i (25, 29,97 & 30 frames)

3G 1080p (50, 59.94 & 60 frames)

4K UHD quad link (uses 4 inputs per 4K UHD source)

IP support via Sirius 800 IP router inputs

Outputs

4 video outputs (coax or fiber) (upgradeable to 12):

4K UHD, 3G 1080p (50, 59.94 & 60 frames, locked to refer-

Port

Video delay -3 fields interlaced, 3 frames progressive

Quad link 4K UHD output support

48 inputs encoded as H.264 IP output streams

24 router inputs and 24 router outputs providing true source and destination monitoring: router outputs mapped 1:1 to multiviewer inputs

On-screen Monitoring

Fully flexible layouts: any object can be any size, in any position (48 scalers any scaled source can be duplicated in any position on any output)

Up to 16 audio channels per video signal

Bars outside or overlaid on picture

Audio meter scales on/off

Adjustable layering and transparency of objects over video or other objects or background video

Display up to 48 tiles on a single screen, plus additional tiles for clocks and tallies:

Programmable color & alarm thresholds

WSS/AFD flags to auto adjust aspect ratio of images within a video tile audio:

Metadata & control

Metering of AES embedded audio, VU, extended VU, DIN, BBC, Nordic scales including Dolby E:

Closed caption & subtitle detection

UMD source names via:

- Grass Valley general remote protocol
- SW-P-08 over IP
- TSL v3.1 or v5 protocol over IP

Alarm Notifications

Border alarm

In-picture message

SNMP, via RollCall

Manufacturers protocol

Master GPO

Video alarms

Video black

Video frozen Loss of video

Loss of CC Loss of VITC data **Audio Alarms**

Audio over level

Audio under level/loss

Loss of embedded channels

Dolby E

Status Indicators

Input standard

CC standard

Source ID

V-Chip status

Additional Alarms

Test boxes

Alarm Control

Configurable alarms threshold and trigger delays:

Alarm acknowledge from hard and soft panels via RollCall interface

Alarm acknowledge/clear/previous fault indication (border color or tally alarm box):

Alarm auto-clear after preset delay

ORDERING

Ordered with a Router

When ordered as part of a Sirius 800 system, the part number for the system will include the necessary MV-8 parts.

Ordered as Individual Parts

When ordered as separate parts, the order codes shown are needed to build a complete system.

Order Quantities

Maximum modules per router frame:

Sirius 830: 12 modules

MV-831

MV-831 Integrated Multiviewer Module, including 4 output license

Additional licenses required to enable outputs 5-12. Maximum of 12 cards per frame

MV-830-RP

MV-830 Multiviewer Rear Panel

With SFP output cages which will accept coaxial (HD-BNC) or fiber SFP modules. SFP ordered separately. Module includes 24 router inputs and 24 router outputs HD-BNC

MV-830-RP is for use with MV-830 and MV-831

MV-831-OP56

License upgrade to enable outputs 5 & 6

SFP ordered separately

MV-831-OP78

License upgrade to enable outputs 7 & 8

SFP ordered separately

MV-831-OP910

License upgrade to enable outputs 9 & 10

SFP ordered separately

MV-831-OP112

License upgrade to enable outputs 11 & 12

SFP ordered separately

CC-TTH-3G-N

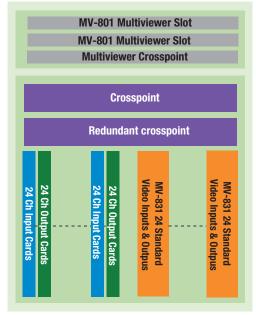
Dual output HD-BNC coaxial SFP module

ST31ST31-3

Dual output fiber SFP module (1310 nm single mode LC/PC)

MV-831-H264

License-enabled option for H.264 streaming of multiviewer inputs



Sirius 830 frame





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