



Universal Format • Digital Video Production Server



Abekas

Universal Format • SD/HD/3D Digital Video

Choose the Mira server model to best fit your live

INSTANT REPLAY

Producing instant replay of live televised sporting events is always a fast-paced and demanding endeavor. Reliability, instant responsiveness, superior image quality and interoperability within the production workflow are critical requirements.

Mira INSTANT REPLAY takes on these tasks and more—since this model of Mira is optimized to handle the very high bandwidth demands of non-stop recording of multiple cameras, with simultaneous instant replay on one or two output video channels.

Mira has LIVE INSTANT REPLAY Covered

A multitude of features are tailored to provide comprehensive, fast and efficient instant replay operations:

Active Instant Replay into recorded live video streams provides quick and efficient replay without the need to “clip off” anything.

Live Input Camera Switching on the active replay channel allows instant live switching between recorded camera angles during live replay or during clip playback, which streamlines replay operations.

Flexible “Clipping” Operations with four methods of clipping off content provided, including one in which IN and OUT points can be auto-marked and the clip saved with just one button press.

List Play provides the ability to stack up clips in the order defined, and to play them out with cuts or dissolves between clips.

Highlights Melt with high-speed media file export gets highlights clip content from any number of play lists into self-contained media files with MOV & MXF file wrappers. File encoding uses popular video codecs that are widely adopted in the television industry.

PRODUCTION

A variety of tasks must be performed during live television productions; whether based in the studio or in the confines of a mobile television production truck. Recording and playback of multiple high-quality video signals is an essential requirement, along with fast media file ingest and export.

The Mira PRODUCTION server is tailored for all of these live television production tasks, with optional features available for specific operational environments. With flexibility as a primary feature, the Mira PRODUCTION server is sure to fit your needs.

Animated Switcher Transitions

Need to play out switcher-triggered animated transitions containing video, key and audio—along with a couple of animated backgrounds during a live television production? The Mira PRODUCTION server can handle that; no sweat. And fast media file import makes it a breeze.

On-Set Plasma Screen Feeds

Is your production set decorated with multiple plasma or LCD screens, displaying animated “eye candy” graphics and on-camera talking heads? The “Flipper” option makes life so much simpler; each video output can be rotated by 90° or 270°, cropped and sized to properly orient this content to fit in vertically mounted on-set screens.

Synchronized Multi-Screen Playback

Record and playback a multi-stream “ISO” clip, which is **a single** clip file that contains up to eight video streams. Since only one ISO clip is needed, clip load and play control is from **one** RS422 port; providing 100% guaranteed synchronized playback of all video streams. No more headaches of loading and sync-rolling multiple video channels!

production requirements...

FLEXIBLE OPERATIONS for Live Instant Replay

The video hardware in Mira can be instantly configured by the user to fit the live instant replay needs of the day:

Two to Six Cameras can be continuously recorded without interruption, with one or two replay video channels. Both cut and dissolve transitions between two replay channels are supported.

Stereoscopic 3D is a standard feature in every Mira INSTANT REPLAY server. With just a click of a mouse, you'll be operating Mira in 3D.

PVW/PGM or PGM/PGM Operation is crucial; some replay operators prefer "PVW/PGM" output with cuts and dissolves in the replay server; others want "PGM/PGM" output with cuts and dissolves taking place in the downstream vision mixer. Mira INSTANT REPLAY handles both styles of replay operation.

Super Slow Motion Cameras are recorded with optional software in the Mira INSTANT REPLAY server. Both "2X" and "3X" super slow motion cameras are supported. In the 8-channel server, recording two 3X cameras with two replay channels with dissolves is possible.

SD, HD & 3D VTR Replacement

Why cripple your production operations with sluggish VTRs when you can jet-streamline your workflow with Mira PRODUCTION servers? Each video channel can be used both for record and playback, always matching the functionality of the video channels to the need at hand.

Stereoscopic 3D

Is found as a standard feature in every Mira PRODUCTION server. With just a click of a mouse, you'll be operating Mira in 3D.

Media File Import & Export

The Mira PRODUCTION server easily plugs into a file-based workflow, importing and exporting several varieties of self-contained media files at speeds faster than real-time. Now that's fast and efficient!

List Play

Arrange clips into a playlist to play clips in the order defined. Playlists are easily created with simple and intuitive drag-and-drop operation; and even while a playlist is being aired, users can re-arrange, delete or add new clips to the stack yet to be aired in the active playlist!

Features of Mira INSTANT REPLAY Server

- 2-In/2-Out | 3-In/1-Out | 4-In/2-Out* | 5-In/2-Out* | 6-In/2-Out* Live Instant Replay channel operations
- Quickly configures for Stereoscopic 3D record & replay
- PGM/PGM and PVW/PGM with Mix Transitions
- Unique Live Camera Angle Switching
- Highlights Play Lists Melt & Hi-Speed Media Export
- Integrated Quad-Viewer and Multi-Viewers

Optional features:

- JPEG-2000 or DVCPRO™ native recording
- Choice of 4-Channel or 8-Channel video hardware
- Local media storage options ranging from dozens to hundreds of hours, optimized for Live Instant Replay
- 2X & 3X Super Slow Motion record/play option
- 16-track embedded audio option

* 4-In/2-Out | 5-In/2-Out | 6-In/2-Out | only possible with Mira 8-Channel version

Features of Mira PRODUCTION Server

- Quickly configures for Stereoscopic 3D record & play
- Multi-stream "ISO" clips for synchro-load & play
- List Play with live playlist editing
- Parent/Child Clips to easily create sub-clips
- Media File Import & Export utilities
- Integrated Quad-Viewer and Multi-Viewers

Optional features:

- JPEG-2000 or DVCPRO™ native recording
- Choice of 4-Channel or 8-Channel video hardware
- Choice of Local or SAN media storage options with record time ranging from dozens to hundreds of hours
- "Flipper" option* to feed on-set plasma screens
- 16-track embedded audio option

* Flipper option available only with JPEG-2000 native video hardware



INSTANT REPLAY
PRODUCTION

Choice of Native Recording Video Hardware

Both models of Mira provide you with a choice of native recording video hardware.

JPEG-2000

This video hardware provides the ultimate in superior video image quality. With bit rates of up to ~200Mb/s, it's practically impossible to see the difference between uncompressed video sources and the playback of compressed recorded content.

DVCPro™

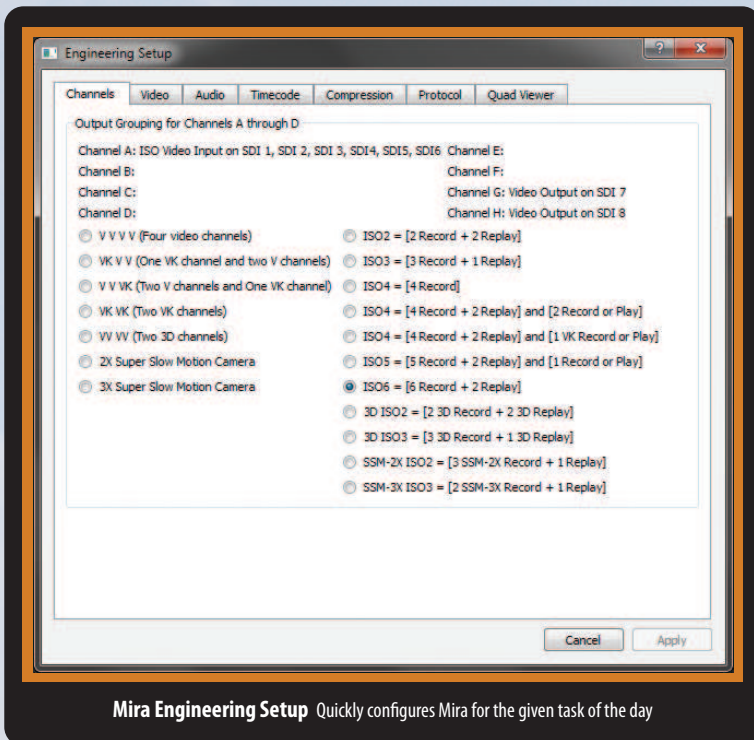
With this choice of video hardware, Mira will record video files with native DVCPro-50 and DVCPro-100 encoding. The resulting benefit is extremely fast media file exchange with external television production gear, including non-linear editing systems. Very high-speed media file import and export enables a highly efficient workflow.

MULTI FORMAT for Multiple Applications

Mira captures SD-SDI digital video in 525 or 625 line standards with astounding image quality. For HD, video can be captured in 720 or 1080 line standards—with all popular frame rates supported; including interlaced and progressive.



"Mira Explorer" Graphical User Interface With a comprehensive clip management system, tra



Mira Engineering Setup Quickly configures Mira for the given task of the day

Flexible CHANNEL Configurations

The Engineering Setup menu in Mira allows fast and simple re-configuration of Mira's video channels, to match the given tasks and requirements of the day.

Simply click the radio button for the desired operation, and Mira instantly configures the video channels to the new functionality; with no rebooting required. Nothing could be faster or simpler.

Two video channels can be paired for video+key operation. Or groups of video channels can be ganged together to record multiple ISO cameras into a single media clip, which contains multiple video tracks. Such a configuration allows precise, synchronous recording and playback of multiple video streams with only a single control mechanism—which eliminates the worry and headache of sync-rolling multiple video transports.

ISO recording is also used for live instant replay applications, with one or two output video channels performing the instant replay.



Transport controls and live video playback windows for confidence monitoring

Highly Advanced “MIRA EXPLORER” USER INTERFACE

The primary user interface of Mira consists of transport controls for each of the four or eight video channels contained within the server. A small video window in each transport control group provides real-time monitoring for each video channel, so you always know which clips you’re working with.

Comprehensive clip management is provided within Mira Explorer, and is used to manage clip content in the local Mira server, as well as across multiple Mira servers on a local area network (LAN). Metadata for every clip stored on any Mira server within the network can be accessed and modified from one Mira Explorer location. Clip metadata such as Project Name, Comments, Play Repeat flags and more are easily and flexibly managed.

Each transport control clearly indicates the current status of the video channel, with play speed, timecode and clip name prominently displayed.

With straight-forward and intuitive operation, users will quickly learn their way around Mira Explorer in a very short amount of time. And for maximum flexibility, the Mira Explorer application can be installed on remote computers running Windows 7 or Vista operating systems.

4 or 8 VIDEO CHANNELS

Any Mira server can be fitted with either four or eight symmetric video channels. This means every video channel can instantly switch between record and play operation, providing maximum operational flexibility.

Each video channel operates independently of the others, and each features a dedicated RS422 serial control port for external control purposes.

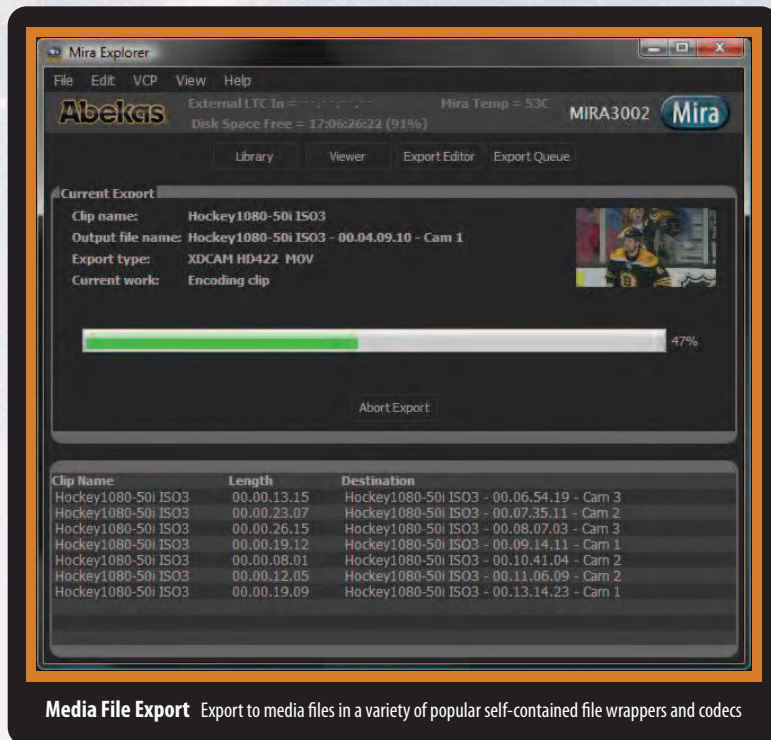
All video channels have access to the shared clip library, so one video channel can be recording into a clip while another channel is playing that same clip.

Media File IMPORT & EXPORT

Mira features high-speed media file import and export utilities which accommodate a wide variety of popular “self-contained” media files with MXF and QuickTime MOV media file wrappers.

By employing Mira’s internal real-time video/audio processing hardware, the Import and Export utilities import and export most media files at speeds approaching or even exceeding real-time, depending upon the content and codecs used to create the files.

When working in HD, the Mira media file import process will automatically re-size the video contained within the media file to match the current video format and frame rate in which the Mira server is operating. For example, when Mira is operating in the HD 1080/59.94i video format, a 720/59.94p media file will be automatically re-sized to 1080/59.94i during the media file import operation.



Media File Export Export to media files in a variety of popular self-contained file wrappers and codecs

Abekas. When “Take two” is not an option.

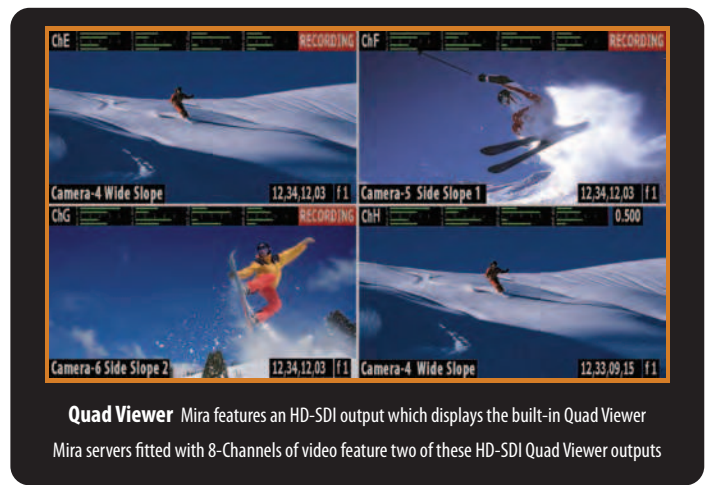


Multi Viewer Integrated right into the Mira Explorer user interface

Integrated MULTI-VIEWER

The Mira Explorer graphical user interface features an integrated multi-viewer displayed right on the desktop DVI/VGA output. Provided are real-time video monitoring and audio metering for all channels operating inside Mira, along with critical clip information.

This multi-viewer acts as the primary user interface during live instant replay operations in the Mira INSTANT REPLAY server.

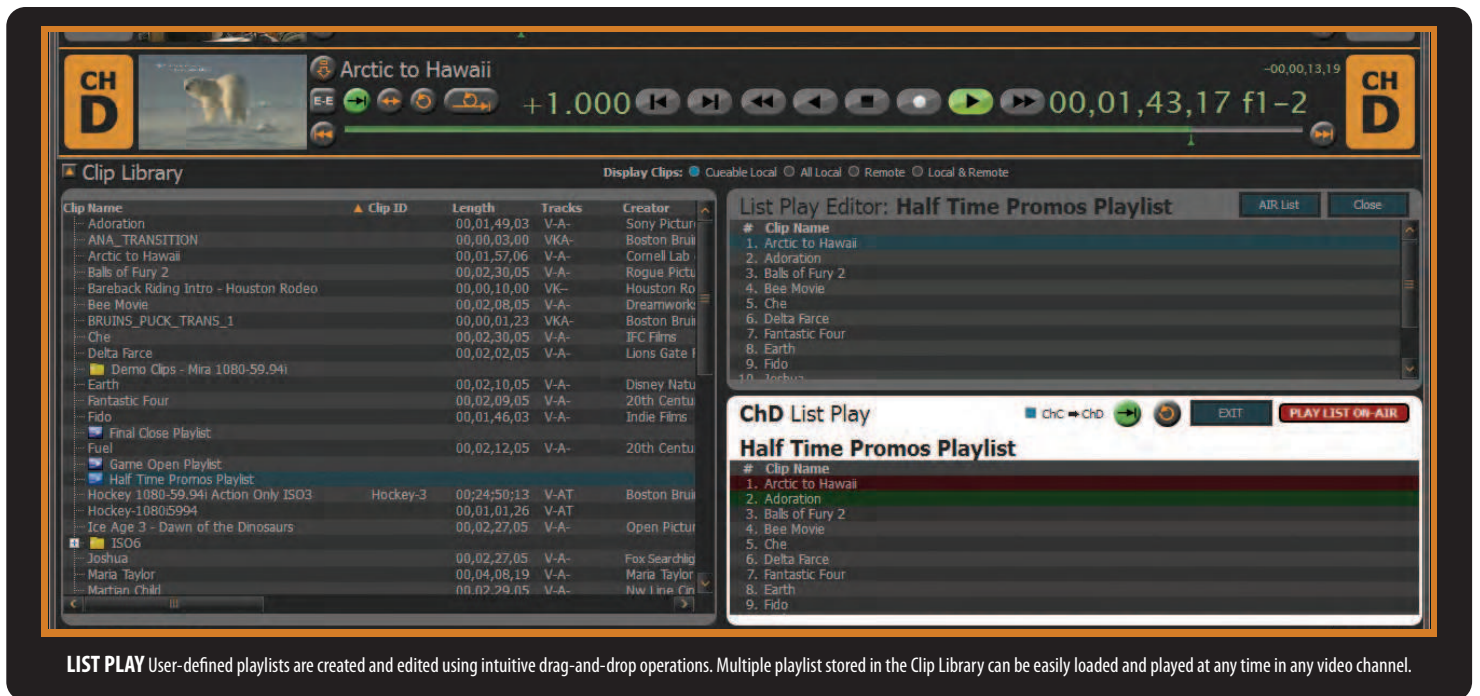


Quad Viewer Mira features an HD-SDI output which displays the built-in Quad Viewer
Mira servers fitted with 8-Channels of video feature two of these HD-SDI Quad Viewer outputs

Built-In QUAD-VIEWER

In addition to the Multi-Viewer, this quad-split is output on HD-SDI (1.5Gb/s), supplying real-time monitoring of all video/audio channels operating inside Mira, with character overlays to provide critical clip information.

This quad viewer is typically fed to a monitoring wall for use by operators on other equipment in the live production workflow.



LIST PLAY User-defined playlists are created and edited using intuitive drag-and-drop operations. Multiple playlist stored in the Clip Library can be easily loaded and played at any time in any video channel.

Integrated LIST PLAY

The Mira Explorer user interface features an integrated List Play feature, allowing users to construct playlists of clips using simple drag-and-drop from the Clip Library. The playlists are also stored in the Clip Library, and can be loaded and played in any available video channel. Clips specified in a playlist will play in the order defined—but even while a playlist is being aired, users can re-arrange, delete or add new clips to the stack yet to be aired in the active playlist! And if that content needs to play repeatedly for a long time, any playlist can be “looped” during payout.

When two video channels are available for playlist payout, users can specify PVW/PGM payout with dissolves between channels.



INSTANT REPLAY

PRODUCTION

Mira™

DUAL-REDUNDANT Power Supply

To ensure maximum reliability, every Mira server comes standard with dual-redundant hot-swap power supplies. In the unlikely event of a power supply failure, the system automatically changes over to the redundant power supply module. The failed module can then be hot-swapped with a replacement, without interrupting any of the server operations.

SSD System Disk

Mira comes standard with a Solid-State Disk (SSD) system disk. In the unlikely event of a system disk failure, a cloned image of the system disk is available on the media disk array, which can be used for very fast recovery from a system disk failure.

Third-Party CONTROL

The Mira server has been tested and confirmed to operate with external third-party controllers via RS422, whether that controller is a control panel, a production switcher or an automation system. BUF, DNF Controls, Dixon Sports, Hi-Tech and Lance Designs all provide control panels confirmed to operate with Mira. Switchers from FOR-A, Sony, Snell, Ross and Grass Valley are also qualified with Mira. And any automation system which supports Odetics or Louth VDCP protocol will control Mira with confident ease.

Mira is also well-suited for operation within online edit suites using edit controllers such as the Abekas Axial/MX™ and the Editware FasTrack™. Shared storage across multiple video channels with instant media access provides extremely fast and efficient online editing—with workflow efficiencies an order of magnitude greater than achieved with conventional “non-linear” editing systems.

RAID-6 / SATA-2 Media Disk Array

All Mira servers feature “hot-swap” removable SATA-2 media disk drives with fast and direct access, allowing simple media disk exchange right from the front of the server chassis during times of media disk drive failure—without the need for any hand tools.

With redundant, fault-tolerant RAID-6 protection, the Mira server accommodates up to two media disk drive failures at the same time, with absolutely no loss of recorded media.

True plug-and-play capability allows a failed media disk drive to be easily identified through the service user interface. The failed disk can be removed, a fresh new disk installed in its place, and rebuilding of media data in the replacement disk drive occurs automatically and silently in the background.

RAID-6 is a standard feature in Mira local media storage arrays, as well as in the SAN storage option in Mira PRODUCTION servers.

SAN Option Exclusively for MIRA PRODUCTION

The Mira PRODUCTION model offers optional SAN media storage, which greatly expands both the number of video channels sharing the recorded media content, as well as expanding the total amount of storage time. With more server video channels sharing the same content, the need to duplicate media for use at several locations within the live television production environment is eliminated, thus increasing the efficiency of your production workflow.

With the SAN option, Mira PRODUCTION server chassis connect to the SAN media storage array via high-speed fibre-channel interconnect. Operations are therefore efficient and robust.

Welcome to the future of truly flexible, ultra high-quality digital video recording.

Specifications



STANDARD & OPTIONAL FEATURES (Features are optional only when indicated as such)

- Choice of JPEG-2000 compression or DVCPro™ compression video hardware
- Choice of (4) or (8) symmetric video channel hardware (all channels can record and play)
- 3DTV 10-Bit YUV 4:2:2+4:2:2 Dual-Link 1.5G or Single-Link 3G SDI Video I/O (formats below)
- HDTV 10-Bit YUV 4:2:2 HD-SDI Video I/O (formats below)
- SDTV 10-Bit YUV 4:2:2 SD-SDI Video I/O (525/625)
- RAID-6/SATA-2 Video & Audio Disk Storage (dozens to hundreds of hours of HD/SD/3D media storage times at bit rates of 100Mb/s--with longer storage times at lower bit rates)
- SAN media storage via Fibre-Channel *Optional hardware feature for Mira PRODUCTION servers only*
- Digital Audio Storage (Uncompressed; with Dolby-E bit stream support):
 - 8-Track Embedded digital audio per video channel
 - 8-Track AES digital audio per video channel via 1RU panels *Optional hardware feature*
 - 16-Track Embedded digital audio per video channel *Optional software feature*
- Solid-State System Disk (SSD) with emergency clone recovery image on media disk array
- Hot-swap media disk drives with background rebuild for replaced disk drives
- Hot-swap dual redundant power supply reduces chance of total power supply failure
- LTC In for Time of Day timecode
- ATC embedded timecode In/Out in 3D/HD video formats
- LTC discrete timecode In/Out on each video channel *Optional hardware feature*
- Super Slow Motion HD/3D camera support *Optional software feature for Mira INSTANT REPLAY servers only*
- "Flipper" video manipulator on video output *Optional hardware feature for Mira PRODUCTION J2K servers only*
- Graphical user interface (GUI) with comprehensive clip management and live video thumbnails
- Integrated Quad-Viewer on HD-SDI and Multi-Viewer on DVI/VGA
- Integrated Graphics File Import and Export Utilities
- Integrated List Play for playlist payout on any video channel with PVW/PGM on two channels
- (4) or (8) RS422 ports with Sony / Louth VDCP / Odetics protocol for slave control
- (2) Gigabit Ethernet Ports with TCP/IP (supports 10-T / 100-T / 1000-T)
- Normal, looping and ping-pong play repeat modes
- Vertical interpolator with four-line filtering for very smooth slow motion playback

SUPPORTED VIDEO FORMATS

- 3D/HD Video:** JPEG-2000 Compression = 25Mb/s to 200Mb/s (ten presets)
 DVCPro Compression = 100Mb/s
- 1920x1080: /59.94i /50i /23.98pSF (J2K Only) /24pSF (J2K Only)
 - 1280x720: /59.94p /50p
- SD Video:** JPEG-2000 Compression = 15Mb/s to 145Mb/s (ten presets)
 DVCPro Compression = 50Mb/s
- 720x486 (525): /59.94i (ITU-R/BT.601-4)
 - 720x576 (625): /50i (ITU-R/BT.601-4)

SAFETY & EMISSIONS

- TUV / CE
- FCC Class A / EN55103

CHASSIS PHYSICAL & ELECTRICAL

- 3RU Main Server Chassis Dimensions:
 W=19.0 in (48.3 cm) / H=5.25 in (13.3 cm) / D=25.0 in (63.4 cm) [body W=17.0 in (43.2 cm)]
- 3RU Main Server Chassis Maximum Weight: 75 lbs. (34 kg.)
- 3RU Main Server Chassis Power: <500 Watts / 100-240 VAC / 50-60Hz (Auto-sensing power input)
- OPTIONAL 1RU AES Digital Audio Breakout Panel (DABP); 1RU Serial RS422 Breakout Panel (SRBP):
 Mira 4CH servers: QTY (1) DABP and QTY (1) SRBP included in AES Audio Option
 Mira 8CH servers: QTY (2) DABP and QTY (1) SRBP included in AES Audio Option
 Size: W=19.0 in (48.3 cm) / H=1.75 (4.4 cm) in / D=2.50 in (6.4 cm) [body W=17.0 in (43.2cm)]
 Weight = 3.0 lbs (1.5 kg)
 Power = D.C. via main chassis

ANALOG REFERENCE INPUT (1) Female BNC

- Tri-level HD or Composite Analog SD; Terminating

DIGITAL VIDEO INPUT Mira 4CH=(4) or Mira 8CH=(8) Female BNC

Stereoscopic 3D High-Definition:

- HD-SDI SMPTE 424M (10-bit at 3.0 Gb/s) Uses (2) or (4) of these BNC's

High-Definition:

- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s) Uses (4) or (8) of these BNC's

Standard-Definition:

- SD-SDI SMPTE 259M (10-bit at 270 Mb/s) Uses (4) or (8) of these BNC's

DIGITAL VIDEO OUTPUT Mira 4CH=(4) or Mira 8CH=(8) Female BNC

Stereoscopic 3D High-Definition:

- HD-SDI SMPTE 424M (10-bit at 3.0 Gb/s) Uses (2) or (4) of these BNC's

High-Definition:

- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s) Uses (4) or (8) of these BNC's

Standard-Definition:

- SD-SDI SMPTE 259M (10-bit at 270 Mb/s) Uses (4) or (8) of these BNC's

DIGITAL VIDEO QUAD-VIEWER & MULTI-VIEWER OUTPUTS

High-Definition (only):

- HD-SDI SMPTE 292M Quad-Viewer Mira 4CH=(1) or Mira 8CH=(2) Female BNC

High-Definition & Standard-Definition:

- DVI / VGA Multi-Viewer on desktop graphical user interface (1) Female DVI/VGA

DIGITAL AUDIO INPUTS

(8-track AES Audio I/O on each video channel is available via "DABP" break-out panels hardware option)

Stereoscopic 3D High-Definition, each video channel:

- Embedded in 3G HD-SDI video: 16-tracks (8 stereo pairs); 48kHz at 24-bits (32-tracks w/software option)

High-Definition, each video channel:

- Embedded in HD-SDI video: 8-tracks (4 stereo pairs); 48kHz at 24-bits (16-tracks w/software option)

Standard-Definition, each video channel:

- Embedded in SD-SDI video: 4-tracks (2 stereo pairs); 48kHz at 20-bits

DIGITAL AUDIO OUTPUTS

(8-track AES Audio I/O on each video channel is available via "DABP" break-out panels hardware option)

Stereoscopic 3D High-Definition, each video channel:

- Embedded in 3G HD-SDI video: 16-tracks (8 stereo pairs); 48kHz at 24-bits (32-tracks w/software option)

High-Definition, each video channel:

- Embedded in HD-SDI video: 8-tracks (4 stereo pairs); 48kHz at 24-bits (16-tracks w/software option)

Standard-Definition, each video channel:

- Embedded in SD-SDI video: 4-tracks (2 stereo pairs); 48kHz at 20-bits

ANALOG AUDIO MONITORING OUTPUT Mira 4CH=(1) or Mira 8CH=(2) Female 3.5mm

- Unbalanced, line-level at: -10 dBV
- 2-Tracks (1 stereo pair) / Selectable to monitor any output stereo pair

ANALOG LTC I/O

- LTC Input (Time of Day), unbalanced (1) Female XLR
(LTC I/O for each video channel is available via "DABP" 1RU break-out panel hardware option)

DATA / CONTROL

- RS422 Serial Control Mira 4CH=(4) or Mira 8CH=(8) Female RJ45
 Sony, Louth VDCP & Odetics protocols; Slave Ports
F-RJ45 to F-D9 adaptor provided for each port. When "AES Digital Audio hardware option" is ordered, both F-D9 and F-RJ45 ports are provided for each video channel via included 1RU "Serial RS422 Breakout Panel" (SRBP)
- DVI Output (1280x1024 resolution required, up to 1920x1200 supported) (1) Female DVI-D
- VGA Output (1280x1024 resolution required, up to 1920x1200 supported) (1) Female D15
- Gigabit Ethernet (10-T / 100-T / 1000-T) Female RJ45
- USB 2.0 Hi-Speed "Series A" Receptacle Female USB-A
- eSATA Port Female eSATA
- QWERTY Keyboard & Mouse set (included with each Mira Server) PS/2 or USB-A



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