Screen management for Virtual Reality systems

Modular 4K and 3D stereo screen management
Combining multiple 3D stereo and mono images onto one or multiple high resolution displays has never been more straightforward.

With the trend of 4K sources with 3D stereo content becoming more and more common, the need for a high-performing 3D display management system has led to the development of specific VR (Virtual Reality) versions of the E2 and S3-4K. These models allow you to enjoy stunning 3D stereo capability while benefiting from the series’ unprecedented performance, expandability and reliability.

Where E2 and E2 Jr. offer most input and output capabilities enabling to drive one or multiple screens with a total pixel space of 20 megapixels, the S3-4K is ideal for simpler configurations with less inputs and driving a pixel space up to 10 megapixels. Both chassis allow combining 3D stereo and 2D mono sources with resolutions up to 4K/UHD per input card. Combining multiple input cards allows addressing even higher resolutions.

Unmatched performance

Barco’s state-of-the-art Athena™ based image processing technology is renowned for its exceptional image quality, fast switching and low processing latency. With native 4K input and output, and the support for 2D and 3D sources, the E2 and S3-4K processors provide impressive pixel processing power. The E2 and the S3-4K are the first screen management systems on the market to manage multiple, blended 4K projectors, with refresh rates up to 60 Hz, without compressed color and processing up to 10 bits per color.

Native or scaled inputs, two connectors or four: the Event Master series can manage your 4K requirements. When HD is the requirement, the 4K processing can be subdivided to create an unmatched amount of HD input and output density, as well as PIP layers.

HDCP compliancy on both inputs as outputs enables the worry-free usage of protected video content. The ability to switch any input to any output, the scaling capabilities and the advanced EDID management creates more flexibility than you would expect from a dedicated matrix switcher.
Built for the future

The Event Master series excels in versatility and flexibility. Link cards allow for expansion by linking E2 to E2, S3-4K to S3-4K, or E2 to S3-4K (requires software version 3.2 or greater). This enables easy expansion beyond the standard amount of inputs and layers without the need for additional external processing or routing to distribute the signals.

Growing as you add, the product family offers all the tools you need to manage the most challenging configurations, serving one or multiple blended projection systems or displays. Future software releases will give you the ability to link 3 or more E2 or S3-4K. The choice is yours.

Straightforward control

The VR versions of the E2 and S3-4K both come with a straightforward cross-platform user interface – the Event Master Toolset – which provides full control of the device.

The ability to store and re-call an enormous amount of presets that are stored on the chassis, makes controlling over Ethernet via third-party systems a breeze.

The Open API allows third-party developers and integrators to create custom control programs and interfaces to meet the specific demands of their customers.

Ultimate reliability

The cards and the dual redundant power supplies make for an extremely reliable solution, and ensure great serviceability in the field. Users can easily swap a specific input or output card in the case of damage, without having to ship or replace the entire box.
E2 VR
Your hero for complex VR display management

The E2 VR is a ground-breaking 4K and 3D stereo management system that offers video professionals unparalleled flexibility to manage the most awe-inspiring visuals. Excelling in image quality, I/O density, expandability and durability, it is the most comprehensive system of its kind.

If the standard configuration packages don’t suit your requirements, the E2 and S3-4K can be ordered in custom input and output configurations using our built-to-order configurator.

Key features -standard VR configuration

- Up to 28 inputs, 14 outputs\(^1\)
- 2 Dedicated Multiviewer outputs
- 8 Program outputs
- Four scaled Aux outputs
- 4K 60p 4:4:4 scaling
- Each I/O card supports 4K
- Up to 16 mixer or up to 32 single layers (software version 3.2)\(^2\)
- HDCP 1.4 compliant
- EDID 1.3 compliant
- Hardware controllers available
- Native resolution background mixer per destination
- Front-to-back forced air cooling
- Dual redundant power supplies
- Field-installable cards
- Expansion via integrated link cards
- Easy-to-use GUI control
- Widescreen blending support
- Seamless AUX switching
- Roadworthy design
- Independent scaling mode per layer
- PNG logo import
- Link E2 and S3-4K (software version 3.2)
- 10 bit per color in ‘single layer’ mode (software version 3.2)\(^2\); 12 bit per color in ‘mixed layer’ mode

\(^1\) Software allows for two E2 to be linked together for up to 28 outputs in total.
\(^2\) Not all screen configurations support 16 mixers or 32 single layers.
Expansion cards
- 2 High speed CXP connectors per card

Dual redundant power supplies

DVI inputs
- 2 DVI-I connectors per card
- Single / Dual link formats
- Each card supports one 4K/UHD signal
- HDCP 1.4 / EDID 1.3

Genlock with loop-through

DisplayPort/HDMI inputs
- 2 DisplayPort 1.1 and 2 HDMI 1.4a connectors per card
- Formats up to 2,048 x 2,160@60, 2,560 x 1,600@60, 3,840 x 1,200@60
- Each card supports one 4K/UHD signal
- HDCP 1.4 and EDID 1.3

HDMI outputs
- 4 HDMI connectors
- Formats up to 1,920 x 1,080@60 and 1,920 x 1,200@60
- Dual output

Multiviewer outputs
- 4 HDMI connectors
- Formats up to 1,920 x 1,080@60 and 1,920 x 1,200@60
- Dual output

Notes
1 Refer to the product specification for 4K/UHD formats

Typical applications
- PowerWall solutions for design or engineering reviews
- PowerWall solutions for prototyping
- Multi-window display walls for research activities
- Large display walls for presentations (showing multiple 2D sources and/or 3D stereo sources)

Ethernet
Connect to the PC/GUI via a ruggedized lockable RJ45 connector

3D stereo sync in/outputs
- 4 x 3-pin mini-DIN (in)
- 2 x 3-pin mini DIN (out)

3D stereo sync in/outputs
- 4 x 3-pin mini-DIN (in)
- 2 x 3-pin mini DIN (out)

Notes
1 Refer to the product specification for 4K/UHD formats

Typical applications
- E2 Jr rear connectivity slots

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Typical applications
- PowerWall solutions for design or engineering reviews
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Notes
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Typical applications
- E2 Jr rear connectivity slots

Notes
1 Refer to the product specification for 4K/UHD formats
S3-4K VR
Your hero for small VR display systems

The S3-4K VR is E2’s more compact sidekick, but one that can hold its own in less complex installations. Unparallelled flexibility, excellent image quality, incredible I/O density and durability to create moments that last, all in a compact and road-worthy enclosure.

The S3-4K VR utilizes the same modular cards as the E2 VR. In addition to being serviced in the field, this feature makes the S3-4K ready for future signal interfaces.

Key features S3-4K VR

- 12 inputs
- 4 PGM outputs
- 4 AUX outputs
- 2 Dedicated Multiviewer outputs
- Genlockable
- 4 mixable 2K PIPs
- Up to 4 mixing layers or up to 8 single layers (software version 3.2)
- HDCP 1.4 compliant
- EDID 1.3 compliant
- 4-projector blend from a single box
- Hardware controllers available
- Native resolution background mixer per destination
- Front-to-back forced air cooling
- Dual redundant power supplies
- Field-installable cards
- Expansion via integrated link cards
- Easy-to-use, cross platform GUI control
- Widescreen blending support
- Seamless AUX switching
- Roadworthy design
- 10 bit per color in ‘single layer’ mode (software version 3.2) ; 12 bit per color in ‘mixed layer’ mode
Expansion card
- 2 High speed CXP connectors

Dual redundant power supplies

Video processing cards
- DisplayPort/HDMI inputs
  - 2 DisplayPort and 2 HDMI connectors (compatible with many locking adapters)
  - Formats up to 2,048 x 2,160@60, 2,560 x 1,600@60 and 3,840 x 1,200@60
  - Each card supports one 4K/UHD signal
  - HDCP 1.4 and EDID 1.3

Typical applications
- PowerWall solutions for design or engineering reviews
- PowerWall solutions for prototyping
- Multi-window display walls for research activities
- Large display walls for presentations (showing multiple 2D sources and/or 3D stereo sources)

Notes
1 Refer to the product specification for 4K/UHD formats
Order numbers:
- E2 VR Single
- E2 VR Linked
- E2 Jr VR
- 3DS License E2 VR
- S3-4K VR Single
- S3-4K VR Linked
- 3DS License S3-4K VR

Any item contained in this datasheet may change without notice.