

VIDEO WALLS

By Mary Bakija

The video wall market appears to be quite strong, and growing, at least according to the Futuresource 2018 report on video wall display solutions, which describes a global market value of \$6.4 billion, and a 47% year-on-year growth in the worldwide market for large-scale displays. The technology is certainly keeping pace with the



Aten VM3200 Modular Matrix Switch

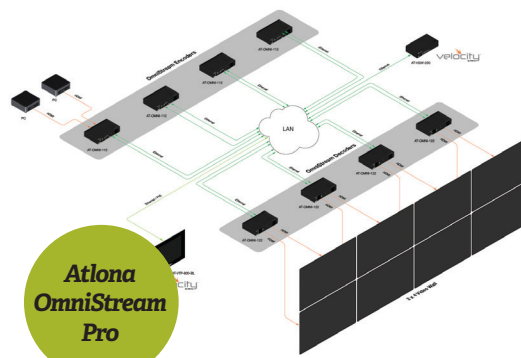


Absen Acclaim Series



Adder CCS PR08 Display Control

demand — here's a look at what's new in the market for the video wall ecosystem.



Atlona OmniStream Pro



Barco UniSee

The **Absen Acclaim Series** is an indoor direct-view LED solution for markets like retail, corporate, transportation hubs, and house of worship thanks to its wide range of pixel-pitch configurations: 1.2mm, 1.5mm, 1.9mm, 2.5mm, and 3.8mm.



Black Box Radian Processor

Acclaim's HD aspect ratio and 27.5 in. diagonal size allows four panels to create a 55 in. display like that of a LCD, but without mullions. The four panels can be installed with a standard VESA mount and allows the end user to work in a standard 16:9 aspect ratio.

The **Adder CCS-PRO8** allows operators to control up to eight machines across eight displays using just one mouse and keyboard. It is ideal for improving ergonomics in a control

setting where space is at a premium or management of multiple computers from one station is required. Featuring FreeFlow technology and USB 3.0, the Adder CCS-PRO8 enables users to move from one display to the next simply by moving the mouse across screen

borders.

ATEN's VM3200 Modular Matrix

Switch was launched as an all-in-one solution offering real-time control of up to 32 video sources and 32 displays simultaneously. Seamless switch technology and a built-in scaler support video wall integration. Users can easily create custom video wall layouts via an intuitive web GUI, and a pre-scheduling feature allows playlists to synchronize with a real-time clock. The modular design



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reduces compatibility and wiring issues while hot-pluggable I/O boards allow for the flexibility to play any combination of digital video formats.

Atlona's OmniStream Pro comprises the classic single- and dual-channel networked AV encoders (AT-OMNI-111, AT-OMNI-121) and decoders (AT-OMNI-112, AT-OMNI-122). Providing the best in ultra-low half-frame latency, uncompromised image quality, and network redundancy, OmniStream Pro brings reliability and value to AV over IP deployments. The firmware upgrade (OmniStream Pro 1.1) provides video wall capability, slate and scrolling text insertion, plus support for encoder grouping.

Barco UniSee takes a completely new approach to seamless LCD video walls. NoGap technology, which makes the inter-tile gap barely noticeable, makes it possible to spread content over multiple tiles without the interruption of a bezel. In order to guarantee the smallest possible gap without damaging the panels' edges, Barco has created the UniSee Mount, a mounting structure that uses the power of gravity to perfectly and automatically align panels, and keep them in place over time. UniSee Mount also eases setup and maintenance efforts, allowing swift undocking of separate panels.

The **Black Box Radian Flex** video engine supports 4K 60fps video up to a resolution of more than one billion pixels, but the company says it is ready for even 8k resolution. Additionally, there is no limit on the number of screens and end points that Radian Flex can display to. The solution also supports an unlimited number of inputs. Radian Flex also includes SmartFrame technology, which ensures optimal use of the video wall display area. This feature provides perfect picture quality and fit to screen with minimal setup time. Other key features of Radian Flex include powerful content manipulation,



system landscape mount ships with rails for each mount. It addresses the most common installation problems: speed, alignment, serviceability, and rigidity. Strut channel install aligns an entire row and removes the need for spacers. Six points of PowerZone tool-free adjustment are all found in one location. Depth can be set anywhere between 4 to 7.3 in. (102-186mm). RapidDraw Display Release gives access to any display. The mounts extend up to 13.7 in. (348 mm).

The **Christie Velvet CorePlus Series LED Video Wall** is available in a range of pixel pitches from 1.2mm to 4.0mm. The full-featured, ADA-compliant (with included direct-mount system) video walls are pitched at fixed installation and digital signage applications and designed for affordability. There's a choice of on-board or remote power and front or rear serviceability for installation options in the field. The 8:9 aspect ratio scales to 16:9. Try Christie's LED designer software to spec a wall.

Datapath's range of VSN wall controllers output sources such as IP streams, video capture, and local applications; the company's **WallControl 10** software provides users with the interface to quickly and effectively manage these

schedule and restore capabilities, real-time control over displayed content, slide show, and more.

Chief's ConnexSys Video Wall Mounting System solves common video wall challenges of speed, alignment, serviceability, and rigidity. The ConnexSys Video Wall Mounting System provides the ability to level each row once by using strut channel to connect multiple mounts together with a simple-to-install system that can handle the largest requirements. The LVS1U ConnexSys Video Wall





FRONT/BACK VIEW

The ANI-2PIP-LOGO HDMI Multiviewer is capable of scaling up to (2) sources and displaying both simultaneously on a single HDMI output within their own windows. This is the ideal solution for monitoring multiple sources simultaneously for use in control rooms, or for flexible display presentations in conference rooms or classrooms. Both inputs support resolutions up to 1920x1200@60Hz and LPCM audio with up to 7.1 channels at 192kHz.

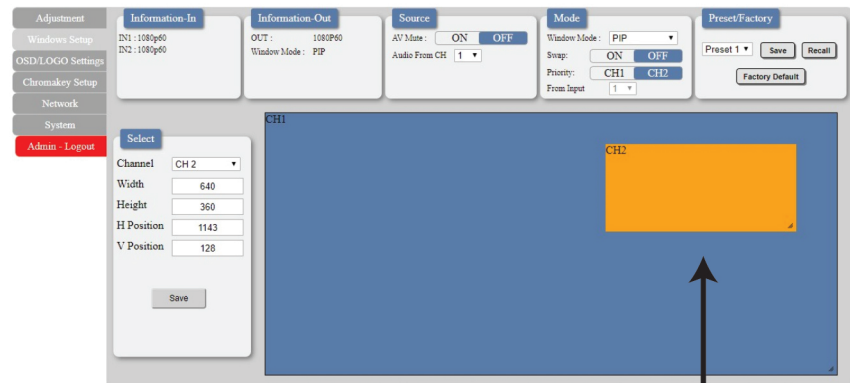
The multi-window output is sent to a single HDMI output at scaled resolutions up to 1920x1200@60Hz along with the selected audio source. The HDMI output supports up to LPCM 7.1 digital audio while the analog audio output supports up to LPCM 2.0. Each of the (2) HDMI sources may be displayed individually, full screen, or they can be displayed using a variety of dual-window modes including Picture-in-Picture, Side-by-Side, or freely positioned (with layer priority control). Each window can also be mirrored, flipped, swapped, or frozen (with live audio). Chroma keying and a custom uploadable logo/graphic are also supported.

External images can be uploaded and overlaid on top and at any position on the live HDMI Output. This unit can be controlled easily by use of the front panel controls (with OSD) as well as by WebGUI, Telnet, RS-232, IR and (8) direct trigger inputs.

FEATURES

- HDMI & HDCP 1.3 compliant
- (2) HDMI inputs and (1) HDMI output
- Inputs and output support HD resolutions up to 1080p@60Hz and PC resolutions up to WUXGA (RB)
- Supports audio pass-through of LPCM 2.0/5.1/7.1 sources via HDMI
- Balanced analog stereo audio extraction support via 5-pin terminal block (LPCM 2.0 only)
- Supports PiP (Picture-in-Picture), Side-by-Side, and free positioning window modes
- Easy individual window size, position and layer priority adjustment
- Supports per-window mirror, flip and image freeze (w/ live audio) functionality
- Chromakey supported
- Uploadable Logo

WEB GUI



The PiP Image can be resized and repositioned dynamically anywhere on the display.

HDMI™





sources across video walls of any size, in real-time, utilizing easy templates that can be deployed over a single screen, multiple screens, or across entire video wall. Users can drag and drop different types of sources tag them, set presets, and quickly deploy carousels. Features in the pro version allow multiple walls to be driven by a single VSN system and administrators to grant differing levels of access to certain users. It's designed for mission critical command and control environments such as traffic management hubs, security suites, process control stations, military installations or utility service operations.

Nortek Security & Control is offering the Gefen brand's **4K DisplayPort KVM Over IP Receiver** unit (the EXT-DPKA-LANS-RX). This completes the launch of the 12-model AV over IP line-up. The new line gives commercial integrators a full portfolio to extend and distribute 4K DisplayPort, USB, RS-232, IR, and 2-way audio over a Local Area Network. The EXT-DPKA-LANS-RX features a maximum output resolution of 4K 30 Hz 4:4:4. HDCP 2.2 and 1.4 are also supported. USB, RS-232 2-way IR, and audio can be routed independently between any Sender and Receiver unit, allowing end-users to control any of the sources and the displays within their network. The receiver also features a built-in scaler to help optimize the image



for a variety of displays and different viewing environments, and it includes a powerful video-wall controller that accommodates screen configurations up to 16x16.

Capable of up to 40 video outputs and 64 inputs, the **ICS WC5000BD-11** is a PC-architecture-based video wall processor that provides flexible and economical video wall processing. The WC5000BD-11 is designed for 24/7 operation with an emphasis on reliability, ease-of-use, performance, and flexibility. Capture signal options include DVI, HDMI, SDI, component, DisplayPort, H.264 and VGA. The WC family also supports 4K and HDCP. All ICS products are TAA Compliant.

The **InFocus Jupiter PixelNet 2.0** distributed display wall system is a scalable solution for centralized control of real-time HD or 4K including audio sources. With fiber network capabilities, PixelNet 2.0 can support

an unlimited number of displays and inputs, even from multiple locations and great distances. PixelNet 2.0 connects more sources and displays to a single Input or Output Node, while providing centralized control to support a wide variety of installations with live audio and video, streaming data, and other real-time sources of information.

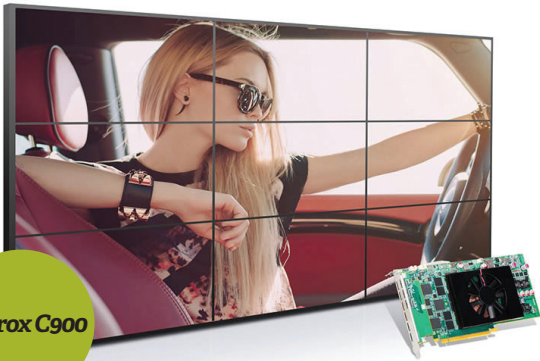
Just before InfoComm, **Leyard** announced WallSync, a set of technologies integrated into the **Clarity Matrix G3 Video Wall System**, which address

a range of common video synchronization needs to help to optimize playback without manual configuration. WallSync works by automatically synchronizing any directly attached video source across the entire video wall, regardless of size. It incorporates synchronization hardware that allows multiple Leyard Video Controllers to be synchronized together and for the video wall to be genlocked to an external house sync or a directly attached video source. WallSync also incor-

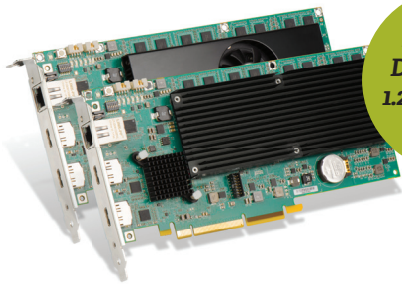


Lightware MMX4x2-HT200





Matrox C900



Matrox Mura IPX DisplayPort 1.2 Video Wall Capture Cards

porates technology that solves the “tearing” artifact that can be seen on video walls displaying content that incorporates fast horizontal pans or in video wall applications where windows are rapidly moved across the video wall. WallSync incorporates what Leyard calls a Smart Genlock feature that automatically ensures synchronized video playback, even in dynamic environments. This feature also works in coordination with Planar Big Picture Plus video scaling to automatically and dynamically sync to any attached video source that has been selected to be scaled across the video wall. Though it is designed to work automatically for most installations, it’s also fully configurable via Leyard WallDirector Software for more sophisticated

applications.

Leyard and Planar’s **Leyard DirectLight X LED Video Wall System** builds on the Leyard DirectLight LED Video Wall System, adding the latest 4K video standards, signal extension, multi-source processing, system monitoring, and modern web-based graphical control software. The result is a complete system that reduces dependence on external processing systems while making the video wall easier to operate and monitor. Leyard DirectLight X features an off-board video controller that offers unrivaled video processing capabilities built into the product. It includes new Leyard WallDirector Software to further simplify video wall installation, monitoring, and management while maintaining precision wall mounting, energy efficiency, and fault tolerant operation.

Pencil-thin **Dual-View Flat and Curved Tiling OLED** displays from **LG** swap or mir-



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VS-15NP160**

ror content on either side. Customizable, arched OLED displays create immersive customer environments. LG OLED delivers perfect black, infinite contrast, and wide viewing angles. With OLED, each of the screen's 8 million pixels can be turned on and turned off. That means blacks rendered by LG's OLED displays are up to 200 times deeper than those of an LCD panel, creating an infinite contrast ratio and bringing colors to life.

The **Lightware MMX4x2-HT200** is a HDBaseT-compatible, single Cat-X-based mini matrix switcher. It includes proprietary Lightware technologies like Pixel Accurate Reclocking and Advanced EDID Management, and also Event Manager, a free, built-in control feature. MMX4x2-HT is a uniquely mini size matrix switcher, with three HDMI inputs and one HDBaseT-compatible TPS input port. It has two independent HDMI outputs. Audio can be de-embedded from the HDMI signal to a balanced 5-pole Phoenix (Euroblock) port and external audio signal can be embedded into the HDMI stream from another 5-pole Phoenix input port. The volume and gain properties of the audio signal can be modified at both input and output. The device has a built-in Event Manager configurable via the Lightware Device Controller software.

LynTec's Remote Power Control (RPC) Series of breaker panels offers easy setup and operation in self-contained panels for intuitive power control of video walls. The RPC combines all the features from LynTec panels with new web enabled control and monitoring capabilities. Based on the G3 Powerlink hardware platform by Square D, the RPC uses remotely operated breakers and can control up to 168 circuit breakers with a single controller. In addition, the RPC's expanded interface



**NEC
F-Series and
Q-Series**



**Peerless-
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DS-VW**

options (DMX, sACN, HTTP, Telnet, RS-232 or BacNET (optional) allow users to monitor and control the system from any remote location.

Matrox C900 is a nine-output graphics card that drives nine 1920x1080 displays for 3x3 video walls. C900's single-slot form factor and low power consumption at 75W offer digital signage and video wall vendors an easy to integrate video wall option. Supporting stretched desktop across all nine synchronized outputs allows users to run any application full screen across a 3x3 video wall. Combine two C900 cards to drive 6x3 or 3x6 video walls from one system, with the board-to-board framelock feature ensuring all displays are synchronized to reduce tearing. Matrox C900, with its high reliability, outstanding performance, and low-power consumption delivers a cost-effective video wall solution.

Honored with multiple awards at their ISE and InfoComm debuts, the **Matrox Mura IPX Display Port 1.2 boards** can capture, encode, stream, record, and decode 4K60 content—including fast-moving video con-

tent and high-frequency desktop graphics and text. Available in passive and active cooling options, these latest Mura IPX capture cards have two full-size DisplayPort 1.2 connectors to natively capture 4Kp60 baseband sources, while the network connector enables the encoding and decoding of up to two 4Kp60, four 4Kp30, eight 1080p60, sixteen 1080p30, or exponentially more SD streams. System designers can satisfy the increasing requirements of multi-4K60 content while mixing and matching from a wide selection of Matrox video wall cards to construct scalable, high-density, low-footprint video walls.

The performance of **Mitsubishi's VS-15NP160** direct view LED makes it a good choice for large-scale control rooms or areas where high ambient light is a challenge. A pixel pitch of 1.5mm ensures the crystal-clear display of fine detail. A patented anti-burn feature allows static graphics to be displayed for long periods of time without adversely affecting LED performance or lifespan. Overall, the display is rated for 100,000 hours of continuous operation, with its antiburn feature ensuring that LED luminance and chromaticity remains uniform over the lifetime of the screen. Dual-loop signal inputs and redundant power supplies ensure the display will continue to function in the unlikely event of an LED unit power failure.

NEC has released a brand new **F-Series** indoor fine pitch direct view LED (dvLED) and **Q-Series** indoor and outdoor dvLED positioned as a complete video wall solution. These are the first NEC Display dvLED products to

be launched from the company's acquisition of S[quadrat] earlier this year. The F-Series offers a bright, 16:9 aspect ratio dvLED panel with a tight pixel pitch from as low as 1.2mm for indoor use in bright areas, supported with up to 18-bit color processing and the option to add HDR10 capability. In addition, its cabinet dimensions match up with a 55 in. large format display (LFD), so customers can easily upgrade an LFD video wall with high-end dvLED panels. The F-Series claims a factory-calibrated display from bin-matched LEDs for color-matching. The F-Series has a standard redundant power supply and optional redundant scan card allowing redundant signal processing at the dvLED panel and data distribution between the controller and the dvLED panel—a key feature for Command and Control. NEC's new Q-Series dvLED panel is larger display, with a 1:1 aspect ratio panel and a wider pixel pitch starting at 2.84mm to



produce seamless images indoors or outdoors at an attractive price point. The **Outdoor Q-Series dvLED panel** features 6000 Cd/m² brightness, factory color-calibration, and seamless panel design. NEC is highlighting calibrated front and rear serviceable panels, and 80,000-hour lifespan of about 10 years as part of the low cost of ownership. The outdoor

model features additional seals to provide an IP 65 dvLED panel that offers protection from the weather. NEC's turnkey dvLED display solutions provide design support, installation assistance, project management and onsite service and repair.

An addition to the SmartMount DS-VW line, **Peerless-AV's SmartMount Supreme**

Atlona Velocity™

Control without programming



- IP-based
- Scalable
- Redundant
- Intuitive



RGB Spectrum Galileo Processor



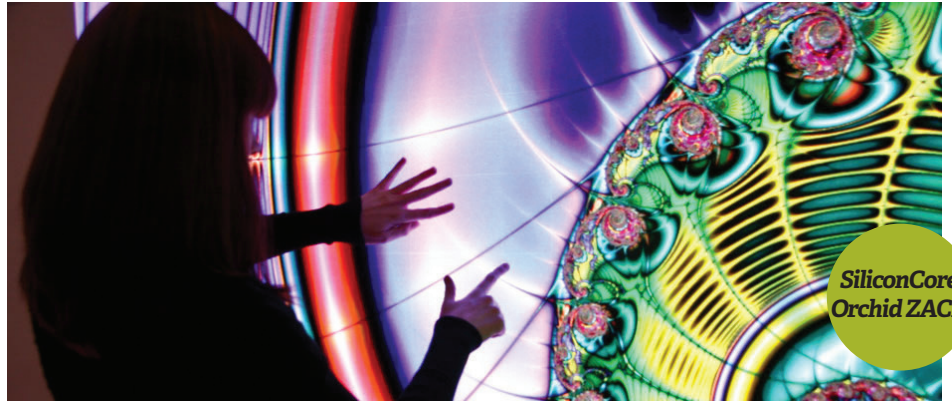
Rose UltraVista Plus



Seneca VWC-PLUS Controller

Full Service Video Wall Mount (DS-VW775), is both lighter and easier to install and service, featuring lateral micro-adjustments, convenient serviceability with a pop-out mechanism, and usability in both portrait and landscape orientations. With the addition of tool-less lateral micro-adjustment, the Supreme offers 1.5in. of fine-tune adjustment on each of the X, Y, and Z axes. Enhanced cable management allows the cables to effortlessly travel in and out with the display, while the quick release accessory provides quick access in recessed applications without risking display damage or searching for hidden pull strings.

Prysm's new LPD 6K Series is a unique interactive single panel, large-format display that offers a panoramic image without seams or bezels above 100 in., with screen sizes available at 135 and 190 in. Prysm compares its power consumption to a commercial coffee maker. It supports content in 6K x 2K resolution; .08mm vertical pixel pitch and 90 percent fill power. Compatible with Prysm's



SiliconCore Orchid ZACH



tvONE C3-503 CORIOmaster micro

visual collaboration platform which consolidates applications, content, video conferencing and web into a touch-interactive workspace, it is targeted at experience/briefing centers, premium conference rooms and large format digital signage. The LPD 6K Series is cool to the touch, shatter-resistant, flexible and rollable for transport, which greatly increases ease of transport and installation.

RGB Spectrum's Galileo Display Processor is an IP-enabled video wall processor with remote desktop capabilities, 24/7 reliability, and real-time performance. Integration with Milestone's SmartClient allows third-party products such as alarms, access control, GIS, and more to be displayed alongside Milestone video in one consolidated, easy-to-manage view. The Galileo Display Processor adds the benefits of PC-based systems, such as IP inputs and the ability to run applications natively. It supports a full range of input and output types (IP, analog, DVI/HDMI, 3G/

HD-SDI). This PC-based video wall processor can also deliver HDCP protected content.

The **UltraVista 4K60** from **Rose Electronics** supports an HDMI input resolution of up to 4K at 60Hz (YUV 4:4:4). Each of the four DVI/HDMI outputs has an independent controllable display area that can be resized, rotated, positioned, and scaled. Stereo audio output is provided.

The unit learns EDID from the default resolution table, or from direct connection. Controller software is included and is connected with the USB or Ethernet ports. Units can be cascaded for larger video wall and control desk applications. The versatile front panel allows instant changing between standard or custom configurations. With UltraVista Plus, a vertical 4x1, horizontal 1x4, or 2x2 video wall can be created, making it a powerful tool for constructing or supplementing video wall systems.

The **Seneca VWCPLUS** video wall controller accommodates four full-length graphics cards for 28 video inputs/outputs or up to 32 independent video outputs. Capture and distribution are supported with custom parallel sync technology and HDCP compliance. It features true 4K display, 7.1 surround sound, analytic capture, and a quiet and cool design. Its convenient 4U chassis easily converts to a tower. Additionally,



Unilumin Unano



tuned OS, Custom BIOS and balanced drivers ensure best-in-class performance.

With full HD resolution achieved at 165in. diagonal measurement with an exact 16:9 aspect ratio, the **SiliconCore Orchid-HD** 1.9mm also provides seamlessness to ensure that no crucial details are lost in the margins (or hidden by bezels). The development of SiliconCore's Common Cathode LED tech-

operation while achieving a fivefold increase in pixel processing. The technology reduces power and heat dissipation by up to 40 percent, resulting in a lifespan of more than 100,000 hours. The Z.A.C.H. Z(Impedance) Adjustment for Color Homogeneity driver chip provides accurate color reproduction and low brightness uniformity. The high dynamic range provides a vivid and more accurate



nology sets a benchmark in low power

image reproduction, and the higher refresh rates allow for a more comfortable viewing experience.

tvONE's C3-503 CORIOmaster micro is an ultra-compact member of the CORIOmaster product range. This half-rack unit delivers the same bandwidth and functionality of CORIOmaster with the capability to accept up to three modules. Along with its smaller size, the CORIOmaster micro adds audio support as well as front-panel buttons for source routing and pre-set recalling. Multiple windows can

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