Aquilon Cmax
AWY-Cmax-RS6+L

ANALOG WAY®
Pioneer in Analog, Leader in Digital

Fully modular and scalable 4K/8K/16K multi-screen presentation system and videowall processor with up to 32x 4K60p inputs, 24x 4K60p outputs and 16x 4K mixing layers

Aquilon AWY-Cmax-RS6+L at a glance

- Industrial grade reliability
- Fully modular and scalable architecture
- Future proof modular design with a full set of field swappable I/O cards: HDMI 2.0, DP 1.2, 12G-SDI, 2.5GbE NDI+12G-SDI
- Ultra-low latency 10/12-bit 4:4:4 video processing
- 160 Megapixels throughput on Program at 10-bit 4:4:4 @60Hz
- Up to 32x 4K60p or 64x 2K/DL inputs depending on installed input cards
- Up to 24x 4K60p outputs
- Up to 16x 4K or 32x 2K/DL mixing layers (+live backgrounds)
- High Frame Rate up to 144Hz
- Real-time 3D-LUT based SDR/HDR10/HLG conversion and color correction
- Intuitive HTML5-based user interface with live source thumbnails
- Native DANTE audio networking hardware and support
- Option to link to up to 3 other LivePremier systems

Up to 32 4K60p inputs	Up to 64 2K/DL inputs	Up to 24 4K60p outputs	2 multi-viewers
HDMI1.4 HDMI2.0 DP1.2	12G-SDI SFP+	Optical fiber	AVoIP: SDVoE, NDI
4K60p 4:4:4 10-12 bit	HFR up to 144Hz	HDR & 3D LUTs	Dante 64x64
Up to 16 4K Mix. layers	Split layers	Web RCS	Link option

Aquilon models	RS alpha	RS1	RS2	RS3	RS4	RS5	RS6	C	C+	Cmax
4K60p input connectors	8	16	16	24	24	32	32	up to 16	up to 24	up to 32
2K/DL input connectors	up to 16[1]	up to 32[1]	up to 32[1]	up to 48[1]	up to 48[1]	up to 64[1]	up to 64[1]	up to 32	up to 48	up to 64
4K60p output connectors	4	8	12	12	16	16	20	up to 16	up to 20	up to 24
Max 4K mixing layers[2]	4	4	8	8	12	12	16	up to 8	up to 12	up to 16
Max 2K/DL mixing layers[2]	8	8	16	16	24	24	32	up to 16	up to 24	up to 32
4K still image channels	12	12	12	24	24	24	24	up to 12	up to 24	up to 24
Build-to-Order (BTO)								✓	✓	✓
Rack units	4	4	4	5	5	6	6	4	5	6

1) using 8-plug input cards, available separately as accessories
2) doubled for split layers

Outstanding performances

Like all the products of the **LivePremier™** series, **Aquilon Cmax** offers versatile 4K digital connectivity, unmatched real-time 10/12-bit 4:4:4 video processing power, best-in-class image quality and pure 4K60p on each input and output with ultra-low latency. Ideally tailored to large scale auditoriums, conference rooms, staging live events, houses of worships, corporate lobbies and sports venues, **Aquilon Cmax** offers almost unlimited possibilities for future applications and possesses enough bandwidth to support evolving requirements, such as 8K and higher framerates.

Versatile for the highest flexibility of configurations

Aquilon Cmax's modular design allows you to configure the system to accommodate a variety of connectivity arrangements and match your source and display requirements. In its largest configuration, **Aquilon Cmax** features up to 32x 4K60p inputs and up to 24x 4K60p outputs, configurable as single screens, edge-blended widescreens or scaled auxiliary outputs, 2 dedicated Multiviewer outputs, up to 16x 4K or 32x 2K/DL freely assignable mixing layers, as well as powerful features that will allow you to handle any creative display configuration, such as Captive PiPs, custom output formats, output rotation, AOI, bezel compensation and pixel pitch management..

Scalability for the largest events and installations LINK

For even more impressive performances, **Aquilon Cmax** can be linked to up to 3 other LivePremier systems of any type and any size, installing the hardware options **OPT-AQL-LINK** and **OPT-AQL-OUT-LINK-QSFP** in the last output slot. The linked system offers up to 64x 4K Program outputs and 16x 4K Auxilary Screens (example of 4 fully loaded **Aquilon Cmax** linked together). Up to 8x 4K or 16x 2K/DL inputs can be shared among the linked units to be displayed anywhere on the multi-chassis pixel canvas. A global multiviewer can be defined to monitor any screens (including multi-chassis screens), auxiliary screens, inputs whatever units they come from. The linked system is controlled by a single web interface., API or console.

Smart functionalities

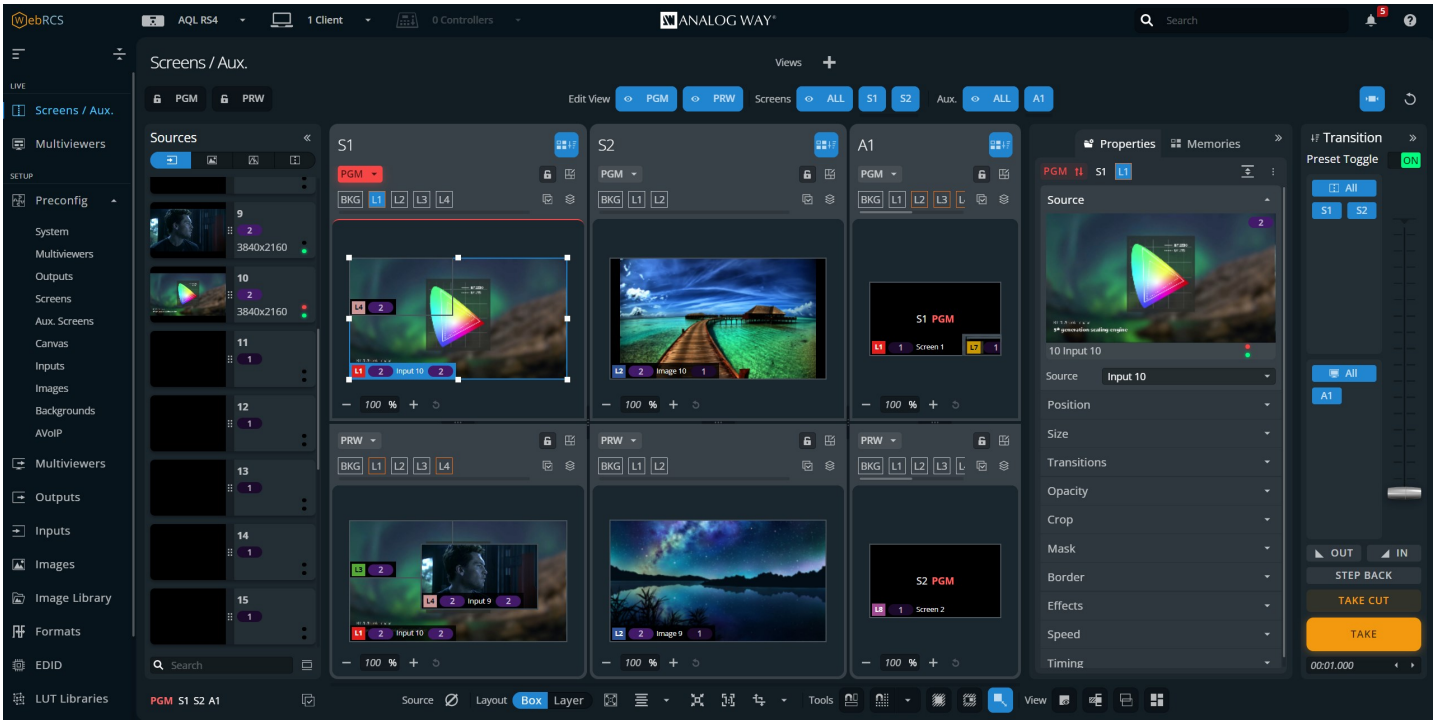
Aquilon Cmax features state-of-the-art real time processing features that will help you to unleash all your creative potential and produce flawless, stunning shows: true seamless switching, real-time LUT based SDR/HDR conversion and color correction, flying layer movement, advanced cut and fill, cutting-edge keying engine… **Aquilon Cmax** also allows to remove external audio de-embedding boxes: In just a few easy clicks, audio can be de-embedded from video sources, routed directly using onboard Dante™ card and re-embedded from external audio processor for sending to display, recording device, or streaming.

Industrial grade reliability

Aquilon Cmax was specifically engineered to perform to the highest standards in mission-critical applications and road-hardened to survive frequent shipping and tough live events. By combining a heavy-duty modular design, the highest quality components selected for their proven reliability, and features such as redundant swappable power supplies and smart thermal management, **Aquilon Cmax** delivers uninterrupted 24/7 performance and peace of mind!

Unrivaled ease of use

For the best ease of setup and to ensure flawless control of multi-screen presentations, **Aquilon Cmax** features a totally new, cutting-edge HTML5-based user interface, the **Web RCS**, compatible with any device or platform including iOS and Android devices. Conceived to greatly increase productivity and reduce learning curve, the **Web RCS** offers dozens of unique features that simplify configuring and operating, such as live resizable program/preview workspaces with high-resolution dynamic thumbnails of connected sources, multi-operator collaboration with password protection, keyword search and much more…



Powerful and Flexible Control Options

In addition to the powerful Web RCS, **Aquilon Cmax** features IP (Ethernet) control via a standard TCP/IP socket connection supported by all major third-party control systems. It can also be controlled by the free Q-SYS, AMX and Crestron drivers as well as by **AW VideoCompositor**, a unique solution that gives system integrators and Crestron developers all the tools they need to easily incorporate the power of LivePremier™ image processors video compositing into a single point of control Crestron touch-screen application. Additionally, **Aquilon Cmax** can be controlled by a comprehensive range of remote control solutions from the **Shot Box²** and the **Control Box³** to the powerful standalone event controller, the **RC400T**, featuring premium buttons with dynamic LCD labels, a T-Bar and a Joystick, that will streamline your control of the LivePremier™ series…

Key features

- Based on LivePremier™ platform
- Up to 160 Megapixels throughput at 10-bit 4:4:4 on Program, without restricting Preview or Multiviewer
- True 4K60p 4:4:4 performance on every compliant I/O channel
- Ultra-low latency 10 and 12-bit processing
- High Frame Rate processing (up to 144Hz) for Dual/2K signals
- Real-time SDR/HDR10/HLG conversion and color correction based on 3D LUTs (no additional latency)
- Up to 32x 4K60p inputs or 64x 2K/DL inputs depending on installed input cards
- Up to 24x 4K60p active outputs
- 2x configurable 4K Multiviewers with 64x resizable widgets
- Future proof modular design
- Full set of field swappable input cards available separately for any connectivity arrangements:
  8x HDMI1.4, HDMI 2.0, DP 1.2, 12G-SDI, NDI+12G-SDI, SFP+, Optical, SDVoE
- Full set of field swappable output cards available separately for any connectivity arrangements:
  HDMI 2.0, DP 1.2, 12G-SDI, SFP+, Optical, SDVoE
- Support 4K60p input and output as single, double or quad plugs
- Compatible with Analog Way DPH104 video processor: easily convert one 4K DP 1.2 output to 4 independent full HD outputs (requires a DP output card)
- Almost limitless video canvas space and free positioning of outputs
- Advanced pixel pitch management for LED wall applications
- EDID management on every input and output
- Compatible with HDCP 1.4 and HDCP 2.2
- Rotation capability on each output (90° increment)
- Independent output rates
- Custom output formats for non-standard display applications
- Area of Interest feature to customize active areas of outputs
- Framelock or internal sync. generator
- Optional expandability via simple linking to up to 3 other LivePremier units (ref. OPT-AQL-LINK + OPT-AQL-OUT-LINK-QSFP)
- Up to 16x 4K or 32x 2K/DL mixing layers per system (32x 4K or 64x 2K/DL split layers), depending on the screens setup
- Up to 24x 4K or 48x 2K concurrent still images
- Unscaled seamless background mixer on each output (using instantaneous still images or live sources)
- Flexible layer management (Region Captive PiPs)
- Seamless crossfade on all mixing layers, on all 24 sources
- Scaled 4K60p AUX feature for all non-PGM outputs
- Ability to create layers on AUX outputs without using processing resources
- Inboard clocks, timers and countdowns for screens, auxiliary outputs and multiviewers
- Cut and Fill at the input and layer levels depending on the use case
- Still images supporting variable alpha-channels for transparent background on logos
- Native Dante™ audio networking hardware and support (64x64)
- Web RCS: highly intuitive, lightning-fast web-based user interface based on HTML5 with password protection
- HTTP for standard connection or HTTPS for secure connection
- Live video thumbnails shown on GUI
- Multi operator real-time collaboration
- Easily create and recall preset looks on all your screens and auxiliary outputs
- Fully functional simulator for offline configuration and practice
- Remote services and maintenance
- Backup and restore functions
- Highly ruggedized chassis with cleanable air filter
- Swappable redundant power supplies (2+1)
- Quiet: 49dB average noise at 1m

Technical Specifications

VIDEO PROCESSING

- Based on Analog Way exclusive 5th generation scaling engine
- Ultra-low latency, as low as 1 frame in proper configuration
- BT.601; BT.709; BT.2020 color spaces
- High Frame Rate processing up to 144Hz for Dual/2K signals
- Real-time SDR/HDR10/HLG conversion and color correction based on 3D LUTs for all inputs and outputs
- High-end input keying algorithms: Luma-Key, Chroma-Key and 3D LUT based CremaTTe 3D (requires AW CremaTTe 3D software available on the website)
- Compatible with HDCP 1.4 and HDCP 2.2
- Compatible with Analog Way DPH104 video processor (ref. DPH104 - available separately)

AUDIO PROCESSING

- Audio de-embedding/embedding on every input & output (raw audio)
- De-embed audio from sources and route directly to Dante™ network
- Re-embed audio from external audio processor for sending to display
- 64x64 Dante™ channels @48 kHz or 32x32 Dante™ channels @96 kHz
- Dual redundancy Ethernet ports - AES67 support

COMPREHENSIVE SET OF INPUT AND OUPUT CARDS available

8x HDMI 1.4 input card	• up to 2560x1600 8-bit 4:4:4	• up to 1920x1080 120Hz 8-bit 4:4:4
4x HDMI 2.0 input card / 4x HDMI 2.0 output card 4x Optical Fiber input card / 4x Optical Fiber output card 4x SDVoE input card / 4x SDVoE output card	• up to 4K60p 8-bit 4:4:4 • up to 4K60p 12-bit 4:2:2 • up to 4K30p 12-bit 4:4:4	• up to 2560x1440 144Hz 8-bit 4:4:4 • up to 1920x1080 144Hz 10-bit 4:4:4
4x DisplayPort 1.2 input card / 4x DisplayPort 1.2 output card	• up to 4K60p 10-bit 4:4:4 • up to 4K60p 12-bit 4:2:2 • up to 4K30p 12-bit 4:4:4	• up to 2560x1440 144Hz 8-bit 4:4:4 • up to 1920x1080 144Hz 10-bit 4:4:4
4x 12G-SDI input card / 4x 12G-SDI output card 4x SFP+ cage input card / 4x SFP+ cage output card	• up to 4K60p 10-bit 4:2:2 • compatible with 3G-SDI and 6G-SDI	• up to 2048x1080 120Hz 10-bit 4:2:2
4x 12G-SDI + 1x 2.5GbE NDI-enabled input card	12G-SDI: same as 4x12G-SDI input card +NDI Full bandwidth (2.5GbE network ,TCP): • Up to 4x 2160p30 8-bit 4:2:2 • Up to 3x 2160p60 8-bit 4:2:0	• Up to 4x 1080p60 8-bit 4:2:2 w/ alpha

INPUTS

- 8, 16, 24 or 32 4K60p inputs via 2, 4, 6 or 8 field swappable input connector cards
- Support 4K60p input as single, double or quad plugs (incl. 4x 3G-SDI 2SI)
- Support custom input formats such as “8k x 1k” on a single connector
- Connector status LEDs for easy troubleshooting

OUTPUTS

- Up to 24 active 4K60p outputs via 6 field-swappable output cards
- Support 4K60p output as single, double or quad plugs
- Support custom output formats such as “8k x 1k” on a single connector
- Connector status LEDs for easy troubleshooting

MULTIVIEWER OUTPUTS

2x HDMI 2.0 outputs configurable as:	• up to 2x 4K30p • up to 1x 4K60p + 1 duplicated	• up to 2x 2560x1440@60p

- 64 resizable widgets on each output
- Customizable layouts with 50 memories
- Monitor inputs, still images, screens (PGM & PVW) and inboard clocks, timers and countdowns

Technical Specifications

IMAGES
2 image processing cards - each supporting 12x 4K or 24x 2K concurrent fully resizable still images
Support of alpha-channel
Still image library with 100 memories
Multi-file download/upload via Web RCS
Capture from live inputs, outputs and multiviewers
LAYERS & BACKGROUND
Mixing layers (true seamless transitions) and split layers (Cut or Fade To Black transitions) configurable per screen
Up to 4 video processing cards, each supporting 4x 4K or 8x Dual/2K mixing layers (x2 if split layers) depending on screens setup: ==> Up to 16x 4K or 32x Dual/2K mixing layers per system (x2 if split layers), depending on the screens setup
Layer sources: live inputs, still images, screens (split layers only), inboard clocks, timers and countdowns
One unscaled background mixer per output, with seamless transitions
Background sources: live inputs, still images
SCREENS
Outputs configurable as single screens or edge-blended widescreens
Up to 24x Dual/2K60p program outputs or up to 16x 4K60p program outputs cloneable to any other unused outputs
Ability to place the outputs anywhere on an almost limitless video canvas space for special LED wall applications
Flexible layer management: various content sizes (2K, 4K, …), Region Captive PiPs for resource optimization, screens without layers (background only)
500 master memories, 1000 screen memories and 50 layer memories
Advanced pixel pitch management & bezel compensation
SCALED AUX OUTPUTS
Any unused output configurable as a scaled auxiliary output
Up to 24x 4K60p scaled auxiliary outputs
Can display any input, screen (1:1 or scaled) or inboard clocks, timers and countdowns
Ability to create resizable layers on AUX outputs without using processing resources (using adjacent outputs to increase the layer count)
TRANSITIONS & EFFECTS
True A/B Mix
Misc. layer border effects/colors and separate shadow
Transitions: Cut, Fade, Slide, Wipe, Circle, Stretch, Depth, Flying layer movement with programmable paths
Layer effects: Transparency, Cropping, H&V Flip, Cut and Fill
Colors effects: B&W, Negative, Sepia and Solarize
CONTROL
Web RCS: On-board intuitive web-based user interface
HTTPS for secure connection with downloadable certificate and private key
Shot Box^{2} (ref. SB80-2)/Control Box^{3} (ref SB124T-3): Cost effective control solutions
RC400T (ref. RC400T): Ergonomic event controller
Simple REST API (HTTP) and advanced TCP protocol based on JSON
Q-SYS, AMX and Crestron drivers & AW VideoCompositor (Premium Crestron GUI)
OTHER FEATURES
Tally/GPI-O - EDID management on every input and output
Dedicated BNC with loop out for Framelock, blackburst and tri-level sync
Fully functional simulator for offline configuration & practice

Dimension (in Rack Units - RU)
- 6RU

Dimensions (without rack ears & rack mount)
- W 17.28'' x H 10.39'' x D 27.56''
- L 439.8 mm x H 264 mm x P 700 mm

Dimensions (with handles)
- W 18.89'' x H 10.39'' x D 27.59''
- L 482.4 mm x H 264.2 mm x P 701 mm

Weight without accessories
- 45 kg / 992 lbs

Shipping weight (accessories included)
- 64 kg / 141.1 lbs

Operating conditions
- Temperature: 0 to 40°C (32 to 104°F)
- Humidity: 10% to 80%, non-condensing

Noise (@1,6m height @25°C)
- Front: 52 dBA@1m
- Rear: 54 dBA@1m

Thermal dissipation
- 5120 BTU/h (fully loaded with SDVoE input and output cards)

Power Supply
- 100-240 VAC, 12-7A 50/60Hz
- Swappable redundant power supplies (2+1)
- Max consumption: 1500 W (fully loaded with SDVoE input and output cards)

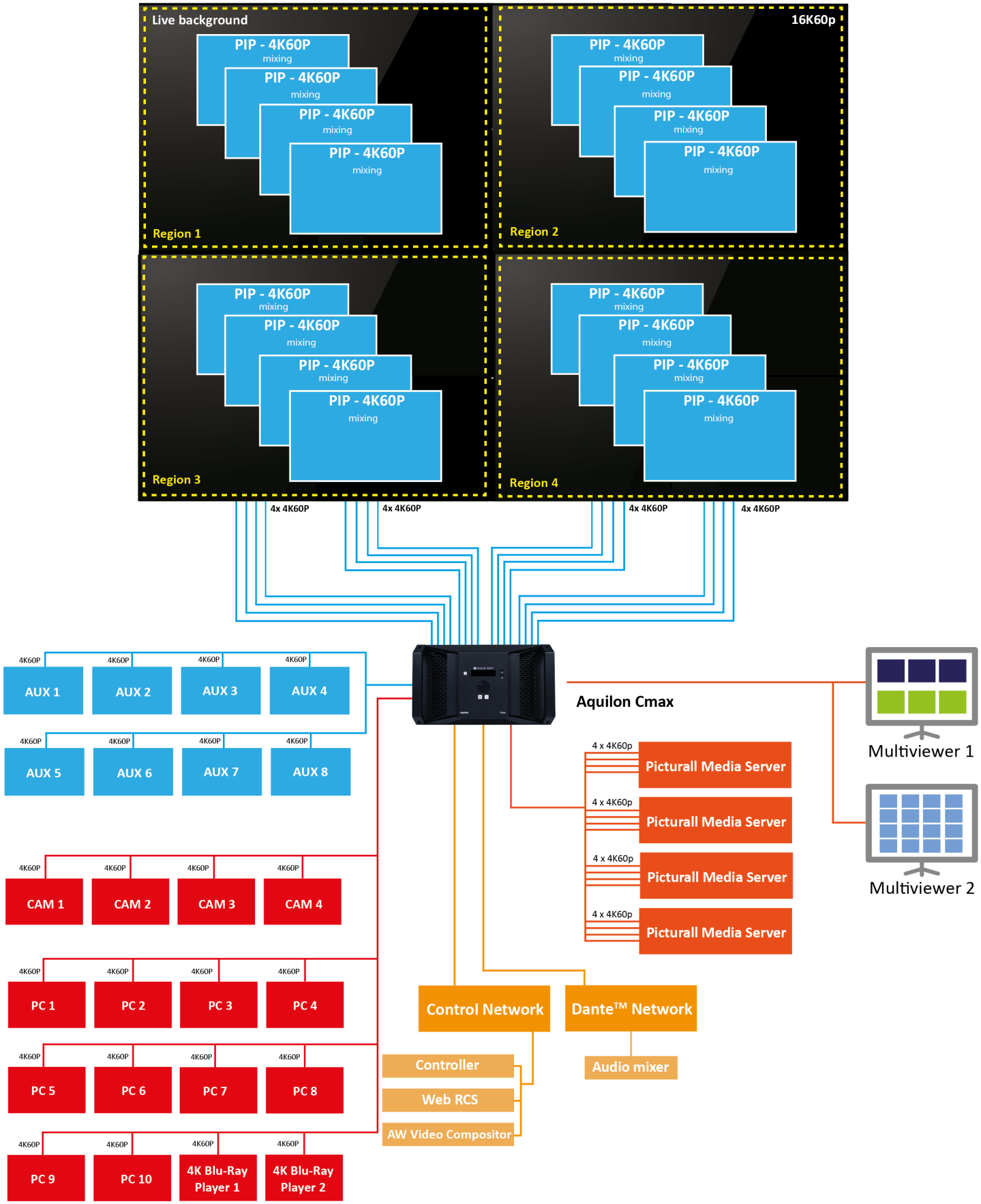
EMC & Environmental Compliance
- EN55032, EB55024, EN61000, FCC part15, ICES

Warranty
- 3-year warranty on parts and labor back to factory excluding I/O connector cards which are warranted for 1 year
- Broken connectors are not covered by warranty

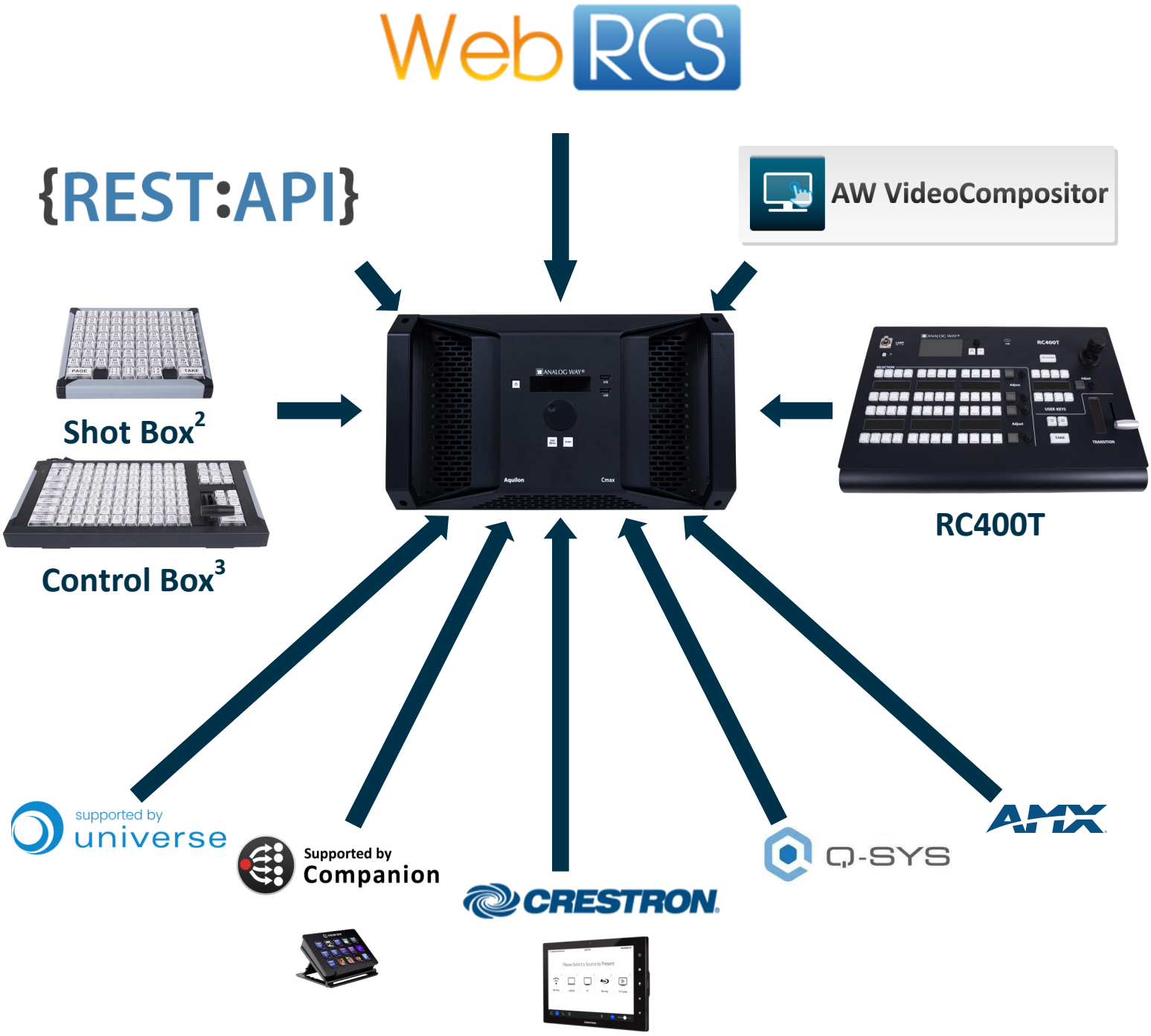
Safety Compliance
- IEC/UL/EN 62368-1, CSA22.2 #62368-1

ⓘ Specifications subject to change without prior notice

Aquilon Cmax can drive a 16K60p LED wall with up to 16x 4K mixing layers and eight 4K60p AUX outputs



Aquilon Cmax has an extensive ecosystem for control and management



Hybrid 2.5GbE / 12G-SDI input card for LivePremier™ series

Ref. ACC-AQL-IN-IP-SDI

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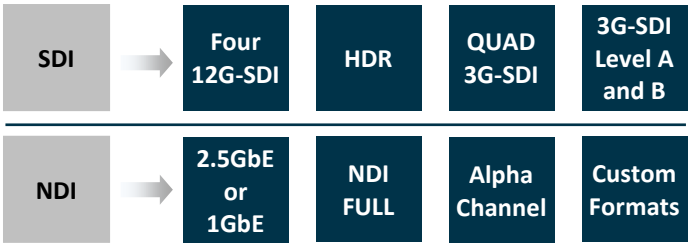
Field swappable input card for LivePremier™ series with four 12G-SDI ports and one NDI-enabled 2.5GbE port



Overview

The Analog Way **ACC-AQL-IN-IP-SDI** input card comes equipped with four 12G-SDI ports and a 2.5GbE network connector. Compatible with any LivePremier™ live presentation switcher, it allows you to accommodate up to four NDI 'Full Bandwidth' sources in parallel over one single network cable, or four 12G-SDI sources, or any combination NDI and SDI (up to 4). In addition to supporting 8 audio channels for each input source (SDI or NDI), this card supports custom NDI formats such as 8K x 1K. Most importantly, the **ACC-AQL-IN-IP-SDI** input card allows direct decoding of NDI streams with alpha channel which eliminates the need for input and layer masks on your Aquilon. This feature makes this card the perfect match for advanced NDI graphics tools like SPX available on all Picturall media servers.

Key features

- Four inputs to choose from 12G-SDI and NDI Full signals as needed
- One 2.5GbE network connector supporting up to four NDI Full streams
- Four 12G-SDI input ports supporting formats up to 4K60 4:2:2
- Supports 4K60 input as single, double or quad ports (four quadrant 3G-SDI or 4x 3G-SDI 2SI)
- High Frame Rate up to 120Hz
- HDR compliant with HDR10 and HLG (SDI only)
- Supports up to 8 embedded audio channels per input (PCM)
- Connector status LEDs for easy troubleshooting
- Field swappable card (not hot swappable)

TYPICAL NDI DECODING PERFORMANCES (with audio)

With 2.5GbE network (TCP)

- Up to 4x 1080p60 8-bit 4:2:2 with alpha channel
- Up to 3x 2160p60 8-bit 4:2:0
- Up to 2x 2160p60 8-bit 4:2:0 + 2x 1080p60 8-bit 4:2:2
- Up to 4x 2160p30 8-bit 4:2:2
- Up to 3x 2160p30 8-bit 4:2:2with alpha channel

With 1GbE network (TCP)

- Up to 4x 1080p60 8-bit 4:2:2
- Up to 3x 1080p60 8-bit 4:2:2 with alpha channel
- Up to 2x 2160p60 8-bit 4:2:0 + 1x 1080p60 8-bit 4:2:2
- Up to 3x 2160p30 8-bit 4:2:2 with alpha channel

12-SDI Technical Specifications

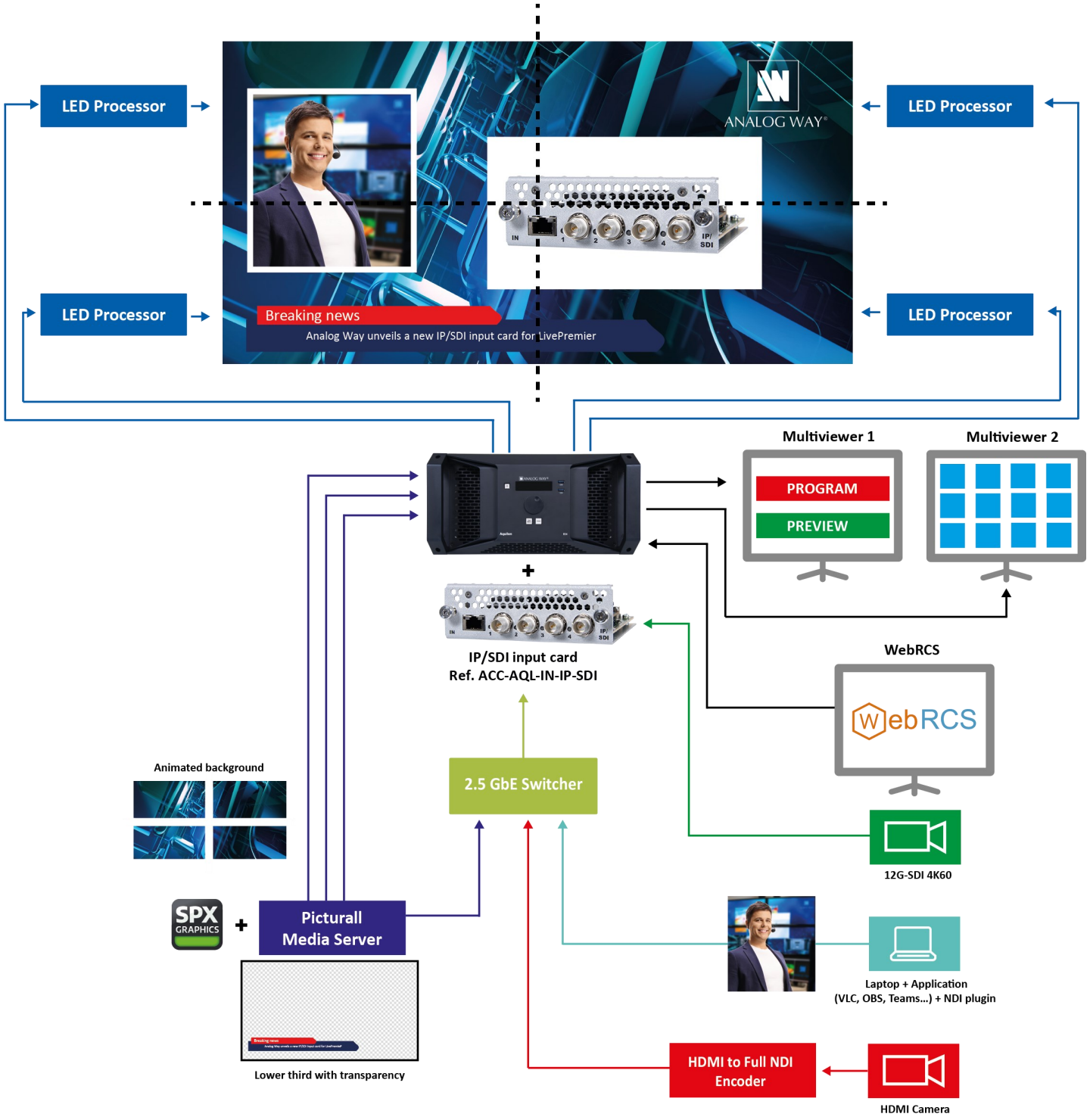
Four 12G-SDI input ports – up to 12Gbps bandwidth per port	
10-bit formats up to:	• 4K60 4:2:2 • 4K30 4:4:4
Also compatible with:	• SD-SDI • HD-SDI • 3G-SDI (Level A and B) • 6G-SDI • 4 x 3G-SDI 2SI
Supports BT.709 and BT.2020 color spaces	
Supports up to 8 audio channels per port	

NDI Technical Specifications

2.5GbE or 1GbE connectivity (compatible with multi-gigabit switches)
Supports Full-Bandwidth NDI v5 (not compatible with NDI HX)
Supports 8-bit formats up to 2160p30 4:2:2 or 2160p60 4:2:0
Supports SHQ0 , SHQ2 and SHQ7 codecs
Supports alpha channel
Supports custom resolutions up to 8192 pixel width / 8192 line height
Supports high frame rates up to 120Hz
Supports BT.709 color space
Supports up to 8 audio channels per stream

Hybrid 2.5GbE / 12G-SDI input card for LivePremier™ series

Aquilon equipped with an ACC-AQL-IN-IP-SDI card configured as three NDI inputs and one 12G-SDI input



Dimensions
- W 5.10'' x H 1.66'' x D 5.80''
- L 129.7 mm x H 42.3 mm x P 147.4 mm

Weight without accessories
- 0.40 kg / 0.88 lbs

Shipping weight accessories included
- 0.59kg / 1.30 lbs

Operating conditions
- Temperature: 0 to 40°C (32 to 104°F)
- Humidity: 10% to 80%, non-condensing

Warranty
- 3-year warranty on parts and labor back to factory
- Broken connectors are not covered by warranty

Power supply
- Powered from LivePremier™ switcher

Safety Compliance
- IEC/UL/EN 62368-1
- CSA22.2#62368-1
- (UL Listed E359143)

Specifications subject to change without prior notice

Four 12G-SDI output card for LivePremier™ series

Ref. ACC-AQL-OUT-SDI

ANALOG WAY®
Pioneer in Analog, Leader in Digital

Field swappable output card for LivePremier™ series with four 12G-SDI ports

4K60 4:4:4 | **12G-SDI** | **HDR** | **HFR up to 120Hz** | **QUAD 3G-SDI**

Overview

The Analog Way **ACC-AQL-OUT-SDI** is a field swappable output card with four 12G-SDI ports and designed to work with any **LivePremier™** live presentation switcher. Each output port supports resolutions up to 4K60 10-bit 4:2:2. The card supports up to 8 embedded audio channels per output.

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Key features

- Four 12G-SDI output ports
- Field swappable card (not hot swappable)
- True 4K60 4:2:2 performance on every output port
- Supports 4K60 OUTput as single, double or quad ports (four quadrant 3G-SDI)
- Connector status LEDs for easy troubleshooting
- HDR compliant with HDR10 and HLG
- High Frame Rate up to 120Hz
- Supports up to 8 embedded audio channels per output (PCM)

Technical Specifications

Four 12G-SDI output ports	
Up to 12Gbps bandwidth per port	
10-bit formats up to:	• 4K60 4:2:2 • 4K30 4:4:4
Compatible with SD-SDI, HD-SDI, 3G-SDI (Level A and B),6G-SDI	
Supports BT.709 and BT.2020 color spaces	

Dimensions
- W 5.10'' x H 1.66'' x D 5.80''
- L 129.7 mm x H 42.3 mm x P 147.4 mm

Weight without accessories
- 0.26 kg / 0.57 lbs

Shipping weight accessories included
- 0.45kg / 0.99 lbs

Operating conditions
- Temperature: 0 to 40°C (32 to 104°F)
- Humidity: 10% to 80%, non-condensing

Warranty
- 3-year warranty on parts and labor back to factory
- Broken connectors are not covered by warranty

Power supply
- Powered from LivePremier™ switcher

Safety Compliance
- IEC/UL/EN 62368-1
- CSA22.2#62368-1
- (UL Listed E359143)

Specifications subject to change without prior notice