Aquilon RS alpha

Ref. AQL-RS-ALPHA

ANALOG WAY®
Pioneer in Analog, Leader in Digital

Mission-critical 4K/8K multi-screen presentation system and videowall processor with 8x 4K60p inputs and 4x 4K60p outputs, delivering uncompromising presentation experiences to high-end staging and premium system integration

Aquilon RS alpha at a glance

- Industrial grade reliability
- Field-swappable I/O cards
- Future-proof modular design with I/O cards available separately: 8x HDMI1.4, HDMI 2.0, DP 1.2, 12G-SDI, 2.5GbE NDI+12G-SDI, SFP+, Optical Fiber, SDVoE and more to come
- Ultra-low latency 10/12-bit 4:4:4 video processing
- 40 Megapixels throughput on Program at 10-bit 4:4:4 @60Hz
- Up to 4x 4K or 8x DL/2K 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

8 4K60p inputs | **4 4K60p outputs** | **2 multi-viewers** | **4RU**

HDMI 2.0 | **HDCP2.2** | **Up to 4 4K Mix. layers** | **Split layers**

4K60 4:4:4 10-12 bit | **HFR up to 144Hz** | **HDR & 3D LUTs** | **Dante 64x64**

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 RS alpha** 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 worship, corporate lobbies and sports venues, **Aquilon RS alpha** 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 RS Alpha's modular design allows you to easily swap I/O cards to accommodate a variety of connectivity arrangements and your match source and display requirements. **Aquilon RS alpha** offers 8 inputs, 4 outputs configurable as single screens, edge-blended widescreens or scaled auxiliary outputs, 2 dedicated Multiviewer outputs, up to 4x 4K or 8x HD 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. For even more impressive performances, **Aquilon RS alpha** can be linked to up to 3 other LivePremier systems (any type, any size) thanks to the hardware update **OPT-RSX-LINK**.

Industrial grade reliability

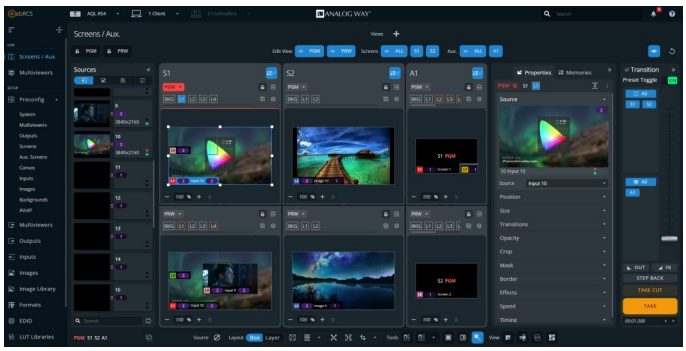
Aquilon RS alpha was specifically engineered to perform to the highest standards in mission-critical applications and road-hardened to survive frequent shipping and tough live events. By combining a heavy-duty modular design, the highest quality components selected for their proven reliability, and features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

Smart functionalities

Aquilon RS alpha 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 RS alpha** also allows you 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 an external audio processor for sending to displays, recording devices, or streaming.

Unrivaled ease of use

For the best ease of setup and to ensure flawless control of multi-screen presentations, **Aquilon RS alpha** 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 RS alpha** 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 RS alpha** can be controlled by a comprehensive range of remote control solutions from the **Shot Box**[2] and the **Control Box**[3] 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
- 40 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)
- 8x 4K60p inputs (8x HDMI 2.0)
- 4x 4K60p active outputs (4x HDMI 2.0)
- 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 HDMI 1.4, 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-RSX-LINK)
- Up to 4x 4K or 8x DL/2K mixing layers per system (8x 4K or 16x DL/2K split layers), depending on the screens setup
- 12x 4K or 24x 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 or 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 (1+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

INPUTS

8x 4K60p inputs via 2 field-swappable input cards:

12x HDMI 2.0	• 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

Input cards available separately: 8x HDMI1.4, HDMI 2.0, DP 1.2, 12G-SDI, NDI+12G-SDI, SFP+, Optical, SDVoE

Support 4K60p input as single, double or quad plugs (including 4x 3G-SDI 2SI)

Support custom input formats such as “8k x 1k” on a single connector

Connector status LEDs for easy troubleshooting

OUTPUTS

4 active 4K60p outputs via 1 field-swappable output cards:

4x HDMI 2.0	• 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

Output cards available separately: HDMI 2.0, DP 1.2, 12G-SDI, SFP+, Optical, SDVoE

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

Multiviewer card with two DP 1.2 outputs available separately - each compatible with Analog Way DPH104 video processor (ref. DPH104)

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

12x 4K or 24x 2K concurrent still images - fully resizable

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 4x 4K or 8x 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 4x 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 4x 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

EXPANDABILITY

Expansion via simple linking possible (ref. OPT-RSX-LINK)

Dimension (in Rack Units - RU)
- 4RU

Dimensions (without rack ears & rack mount)
- W 17.28'' x H 6.97 x D 27.56''
- L 439.8 mm x H 177 mm x P 700 mm

Dimensions (with handles)
- W 18.89'' x H 6.97'' x D 27.59''
- L 482.4 mm x H 177 mm x P 701 mm

Weight without accessories
- 23.9 kg / 52.69 lbs

Shipping weight (accessories included)
- 42.9 kg / 94.57 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: 49 dBA@1m
- Rear: 51 dBA@1m

Thermal dissipation
- 1365 BTU/h

Power Supply
- 100-240 VAC, 12-7A 50/60Hz
- Swappable redundant power supplies (1+1)
- Max consumption: 400 W

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

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

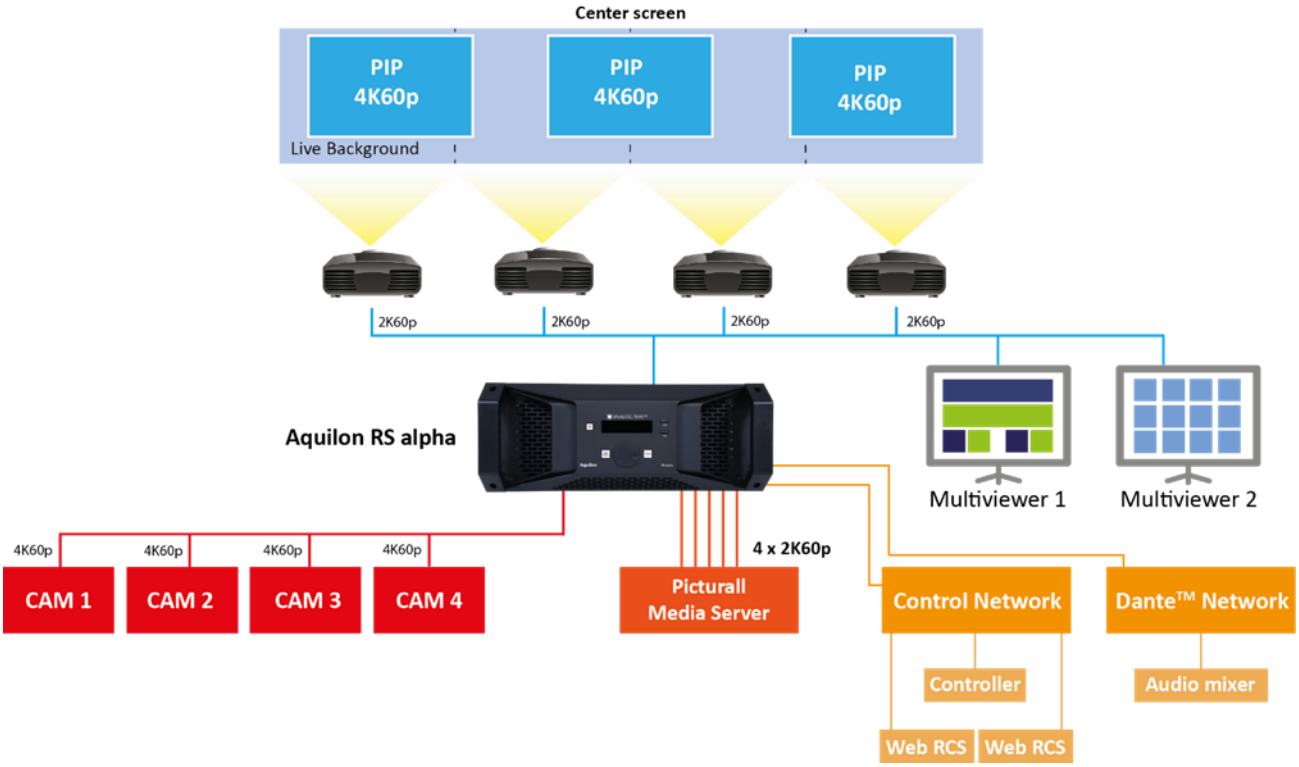
Safety Compliance
- IEC/UL/EN 62368-1, CSA22.2 #62368-1

Supplied with:
- 2x Power supply cords
- 1x Web-based remote control software
- 1x Rackmount kit
- 1x Ethernet cross cable
- 3x MCO 5 pin connectors
- 1x User manual (PDF)
- 1x Quick start guide + safety instructions

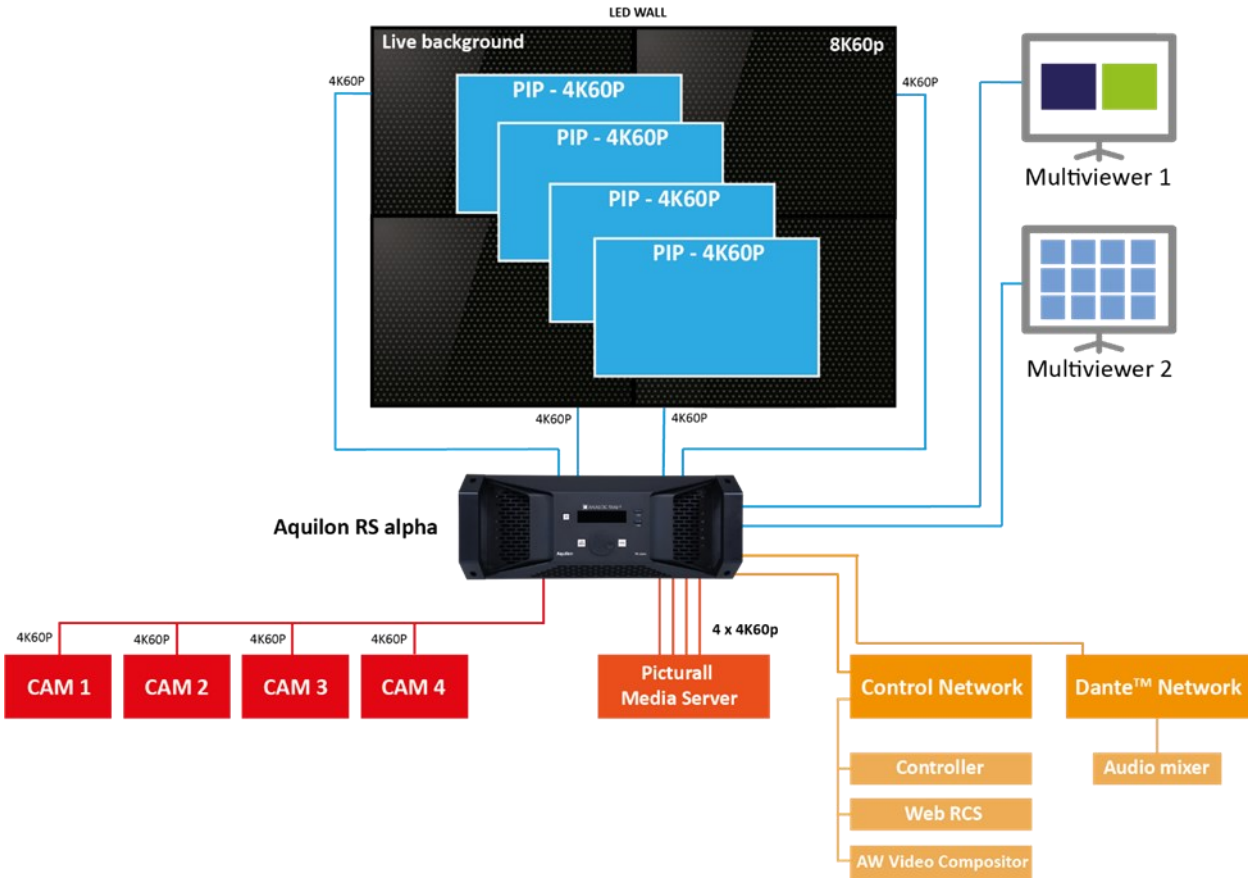
ⓘ Specifications subject to change without prior notice

AQL-RS-ALPHA_EN-01/03/2024

Aquilon RS alpha can drive a wide screen with four 2K60p outputs and up to four 4K PIPs



Aquilon RS alpha can drive one 8K60p LED wall with up to four 4K PIPs



Aquilon RS Alpha has an extensive ecosystem for control and management