

# Pulse 4K

Ref. PLS-4K



**ANALOG WAY**<sup>®</sup>  
Pioneer in Analog, Leader in Digital

## 4K60 multi-layer video mixer and seamless presentation switcher, with ten inputs, two PGM outputs and one dedicated Multiviewer



### Versatile 4K Connectivity

The **Pulse 4K** is a powerful 4K60 multi-layer mixer and seamless presentation switcher equipped with ten inputs, including eight 4K60 inputs (four HDMI 2.0, two 12G-SDI and two DisplayPort 1.2) and two 1080p inputs with user-selectable HDMI and 3G-SDI connectors. The **Pulse 4K** has two 4K60 mirrored HDMI and SDI outputs that can be configured either as Program & AUX or as two independent Program outputs. In addition, the **Pulse 4K** has a dedicated multiviewer to monitor your Program and Preview screens as well as all your inputs.

### Quality without Compromise

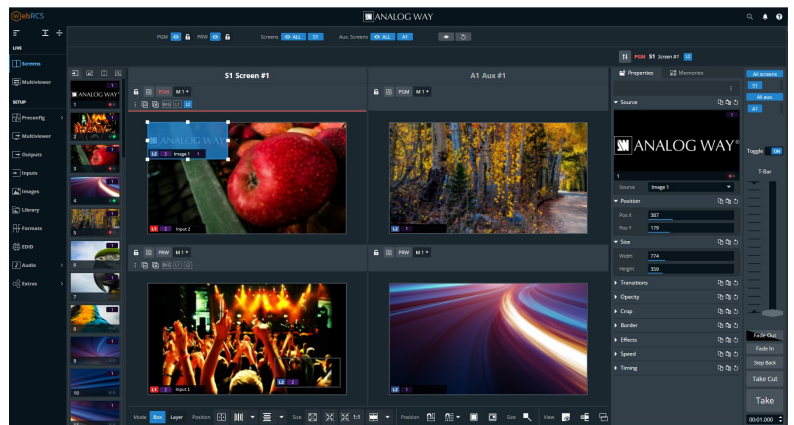
Based on the extremely robust and reliable **Midra™ 4K** platform as well as on the 5th generation scaling engine inherited from the LivePremier™ series, the **Pulse 4K** features ultra-low latency 4K60 10-bit 4:4:4 image processing, uncompromising video quality, true seamless switching, HDR support and HDCP 2.2 compatibility, which makes it an ideal solution for your medium-sized live events and fixed installations.

### Smart Functionalities

The **Pulse 4K** offer dozens of powerful functionalities that will help you to produce elegant AV presentations: custom output formats, Luma/Chroma keying, AOI, advanced video effects... The **Pulse 4K** also allows to de-embed or embed digital audio on all the inputs and outputs. An audio option is available to add Dante™ 32x32 audio networking support to the **Pulse 4K**.

### Powerful and Flexible Control Options

The **Pulse 4K** has been designed to be entirely operated from the easy-to-use front panel. You can also use the on-board intuitive HTML5-based user interface, the Web RCS, designed to allow for the ease of setup and to ensure flawless control of your presentations. The **Pulse 4K** also features Ethernet control via a standard TCP/IP socket connection supported by all major third-party control systems. The **Pulse 4K** can also be controlled by the free Crestron® driver as well as by AW VideoCompositor, a unique drag and drop customizable Crestron® user interface. Additionally, the **Pulse 4K** can be operated by a comprehensive range of remote control panel options such as the powerful event controller RC400T or the compact Control Box<sup>2</sup> and Shot Box<sup>2</sup>. The **Pulse 4K** is also compatible with various control software such as Universe or Companion.



10  
inputs

2 PGM  
outputs

4K60  
4:4:4  
10-bit

1  
Multi-  
viewer

HDR

up to  
4 layers  
4K

HDMI  
2.0

DP  
1.2

12G-SDI

2RU

#### Pulse 4K at a glance

- ▶ Compact 2RU rugged chassis
- ▶ Ten inputs (8x 4K60 + 2x 1080p inputs) + two 4K60 multiplug outputs
- ▶ 2 modes : Matrix (2 PGM) or Switcher (1 PGM + 1 AUX)
- ▶ Dedicated multiviewer with resizable widgets
- ▶ Real-time 10-bit 4:4:4 video processing compliant with HDR10 & HLG
- ▶ Up to four 4K split layers (or two 4K mixing layers)
- ▶ Intuitive HTML5-based user interface with live source thumbnails
- ▶ Advanced audio processing and dynamic routing
- ▶ Optional analog and Dante™ audio networking card (32x32 channels)

Midra™ 4K models	QuickVu 4K	QuickMatrix 4K	Pulse 4K	Eikos 4K
Inputs	10	10	10	10
Mirrored outputs (HDMI + SDI)	2	2	2	2
Dedicated multiviewer	✓	✓	✓	✓
Mixer mode (1x PGM + 1x AUX)	✓		✓	✓
Matrix mode (2x PGM)		✓	✓	✓
Edge-blending mode (1x PGM)				✓
Background layer	image	image	image	live source
4K split layers per system	2	4	4	4
4K foreground layer (still image)	✓	✓	✓	✓

# Pulse 4K

## Key features

10 seamless inputs including 8x 4K60 inputs and 2x 2K60 inputs

Two 4K60 PGM outputs with mirrored 12G-SDI and HDMI 2.0 plugs

### Mixer mode:

- ▶ 1 PGM output up to 4K60, with 1 still image background + 2 mixing 4K layers (or 4 split layers) + 1 foreground 4K image layer
- ▶ 1 AUX output up to 1080p60

### Matrix mode:

- ▶ 2 PGM outputs up to 4K60, with 1 still image background + 1 mixing 4K layer (or 2 split layers) + 1 foreground 4K image layer per output

1 dedicated multiviewer with resizable widgets, including clocks, countdown and timers (max. resolution 2560x1600@60)

4K60 10-bit 4:4:4 processing - ultra low latency (16 msec @60Hz)

Compliant with HDR10 and HLG - Built-in SDR/HDR converters

Seamless crossfade on all sources

Versatile 4K connectivity: HDMI 2.0, DP1.2, 12G-SDI

8x 4K concurrent still images with alpha channel support

Advanced EDID management

Compatible with HDCP 1.4 and HDCP 2.2

Web RCS: highly intuitive HTML5-based user interface

Live video thumbnails shown on GUI

Fully configurable and operable from the front panel

Advanced audio processing and dynamic routing

Innovative 'Quick Preset' feature

Custom output formats for non-standard display applications

Area of Interest feature to customize active areas of outputs

Easily create and recall memories on your screen and AUX outputs

Fully functional simulator for offline configuration and practice

Quiet: 45dB average noise at 1m

Dedicated BNC with loop for Genlock, Blackburst and tri-level sync

Remote services and maintenance

Backup and restore functions

## Optional Analog and Dante™ audio networking card

- ▶ De-embed audio from sources and route directly to Dante™ network
- ▶ Re-embed audio from external audio processor for sending to display
- ▶ 32x32 Dante™ channels @48 kHz
- ▶ Dual redundancy Ethernet ports
- ▶ 2 analog stereo mini jack line inputs 1/8" (3.5 mm)
- ▶ 2 analog stereo mini jack line outputs 1/8" (3.5 mm)

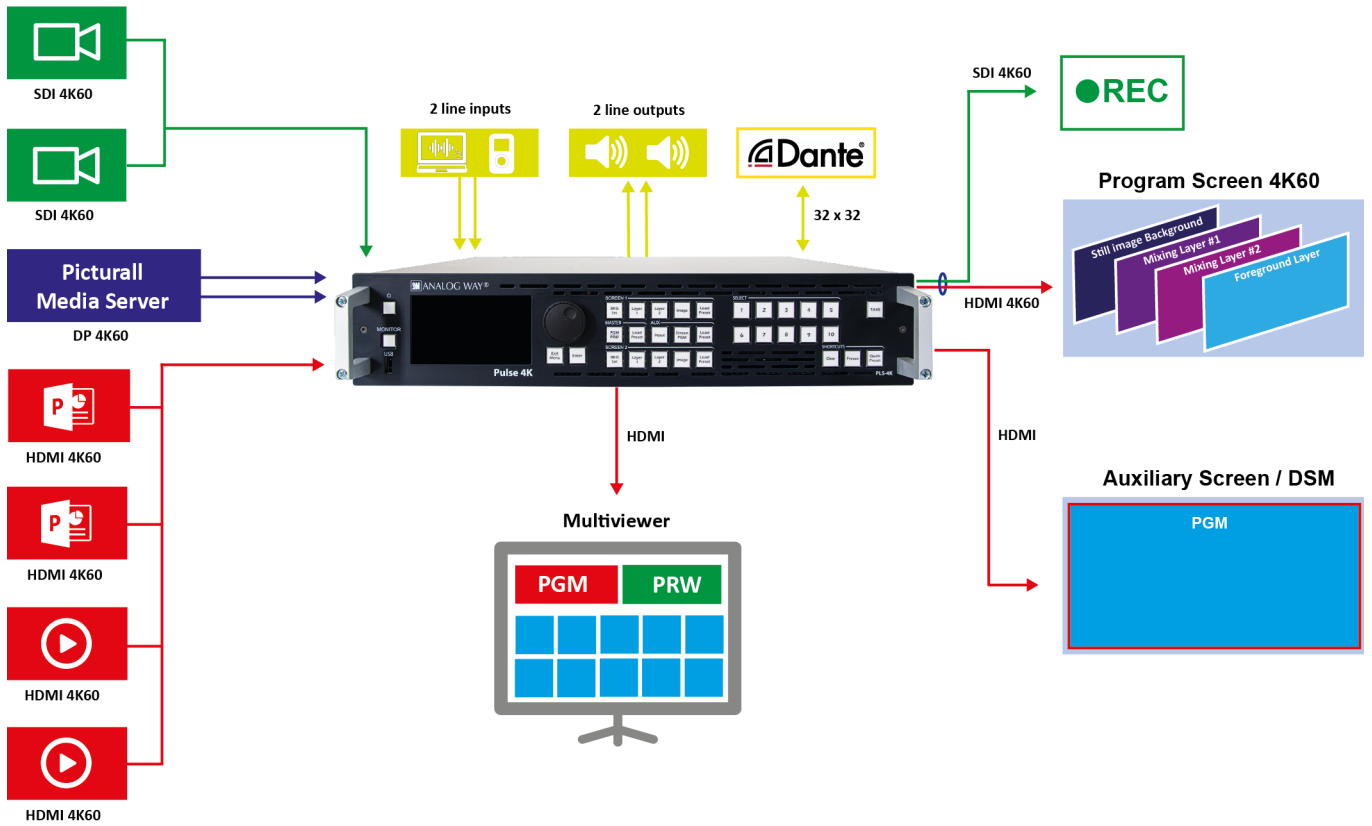


## The Pulse 4K has an extensive ecosystem for control and management

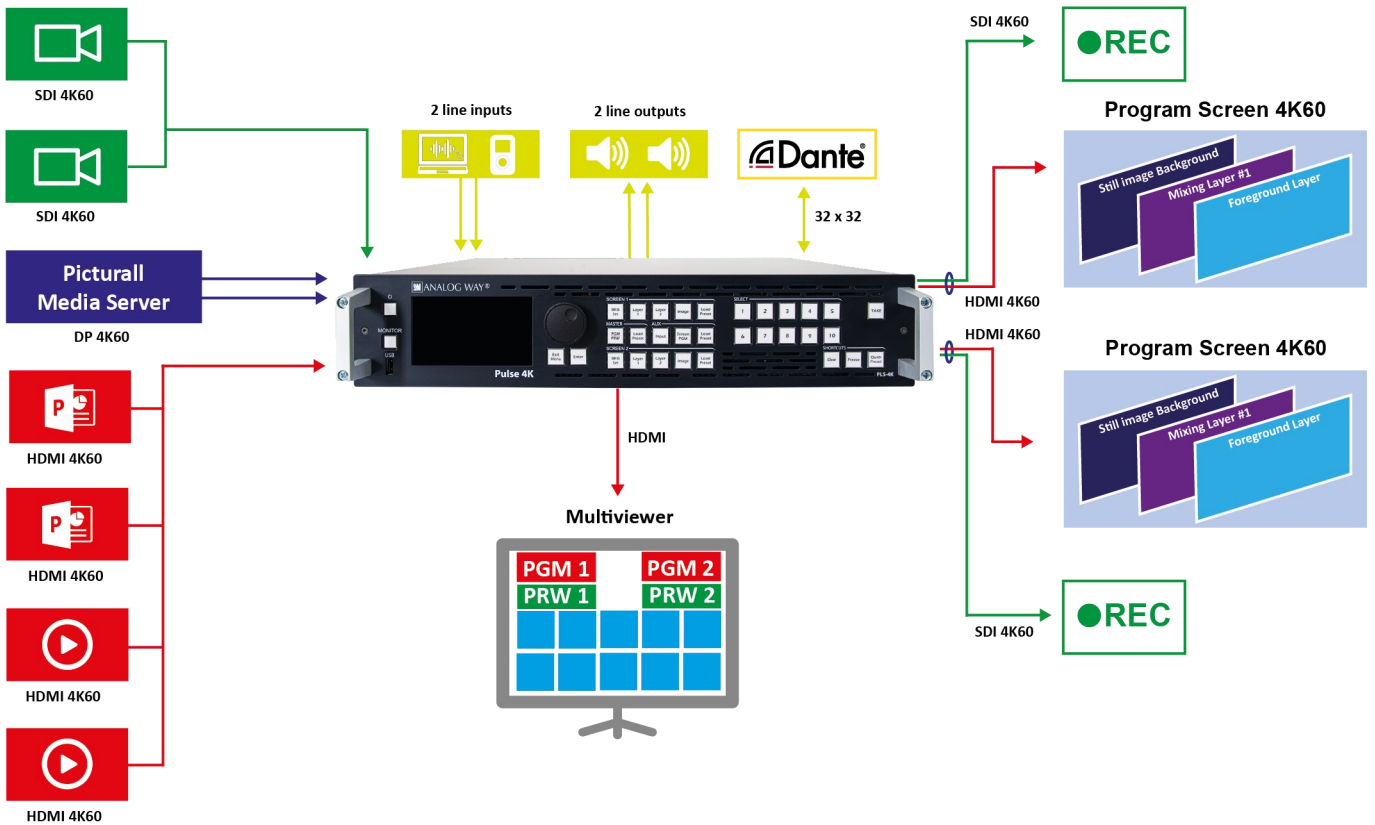


*Creston driver, AW VideoCompositor, Universe and Companion not supported in v1.0*

### Pulse 4K - Mixer mode with Dante audio option



### Pulse 4K - Matrix mode with Dante audio option



## Technical specifications

### 10 SEAMLESS INPUTS

4x HDMI 2.0

- ▶ up to 4K60 8-bit 4:4:4 or 4K60 12-bit 4:2:2

2x DisplayPort 1.2

- ▶ up to 4K60 10-bit 4:4:4 or 4K60 12-bit 4:2:2

2x 12G/6G/3G-SDI (level A & B)

- ▶ up to 4K60 10-bit 4:2:2

2x HDMI 1.4 or 3G-SDI (user selectable input plug)

- ▶ up to 2K60 10-bit 4:4:4 (HDMI) or 2K60 10-bit 4:2:2 (SDI)

Support custom input formats up to 4096 width

### 2 HDMI OUTPUTS + 2 MIRRORED SDI OUTPUTS

2x HDMI 2.0 + 2x mirrored 12G/6G/3G-SDI (level A & B) connectors

- ▶ up to 4K60 8-bit 4:4:4 or 4K60 12-bit 4:2:2 (HDMI)

- ▶ up to 4K60 10-bit 4:2:2 (SDI)

- ▶ support custom output formats up to 4096 width

### MIXER MODE (1 PGM + 1 AUX)

1 PGM output with 1 still image background + 2 mixing 4K layers (or 4 split layers) + 1 foreground 4K image

1 AUX output up to 1080p60

- ▶ can downscale and display any input or the PGM output

### MATRIX MODE (2 PGM)

2x independent PGM outputs with 1 still image background + 1 mixing 4K layer (or 2 split layers) + 1 foreground 4K image per output

### 1 MULTIVIEWER OUTPUT

1x HDMI 1.4 + 1x mirrored 3G-SDI up to 2560x1600@60 8-bit 4:2:2

17 resizable widgets - customizable layouts with 20 memories

Monitor the Program and Preview screens and all the inputs

Built-in clocks, countdown and timers

### ADVANCED AUDIO PROCESSING

De-embed/embed audio channels on all inputs/outputs (PCM)

- ▶ 8 channels per HDMI 2.0, 12G-SDI or DisplayPort 1.2 input

- ▶ 4 channels per 3G-SDI input and 2 channels per HDMI 1.4 input

- ▶ 8 channels per active output

Level control, Mute, Balance, Delay, 1kHz Sinus Pattern features

Fixed or dynamic routing (breakaway or top layer)

Optional Analog and Dante™ audio networking card

- ▶ 2 analog stereo mini jack line in and line out 1/8" (3.5 mm)

- ▶ 32x32 Dante™ audio channels @48kHz

- ▶ Dual redundancy Ethernet ports - AES67 support

### PROCESSING

Based on Analog Way exclusive 5<sup>th</sup> generation scaling engine

Ultra low latency (16msec @60Hz)

BT.601; BT.709; BT.2020 color spaces support

Split layers mode: double the live layer count (no crossfade effect)

Advanced EDID management

Area of Interest and advanced output/screen test patterns

Layer and screen freeze feature

Compliant with HDR10 and HLG - Built-in SDR/HDR converters

Compatible with HDCP 1.4 and HDCP 2.2

### QUICK PRESET FUNCTION

3 Quick Preset modes available: Black, Image or Master Preset

Audio routing configurable to follow the Quick Preset mode

### STILL IMAGES

4x 4K concurrent still images for the foreground layer

4x 4K concurrent still images for the background

Alpha-channel support

Still image library with 50 memories

Multi-file download/upload via Web RCS

Capture from live inputs

### TRANSITIONS & EFFECTS

True A/B mix effect

Layer border effects and colors with separate shadow

Multiple transition effects - Luma and Chroma Keying

Layer effects: H/V Flip, Transparency...

Color effects: B&W, Negative, Sepia and Solarize

### CONTROL

Full-featured Front Panel with 480x272 color LCD screen

Web RCS: on-board intuitive web-based user interface

Shot Box<sup>2</sup> / Control Box<sup>2</sup>: Cost effective control solutions

RC400T: Ergonomic event controller

Compatible with Companion and Universe control solutions

Simple REST API (HTTP) and advanced JSON TCP protocol

Creston drivers & AW VideoCompositor (Premium Creston GUI)

### OTHER FEATURES

Live monitoring of inputs & PGM on the large color TFT LCD display

200 user definable screen memories and 50 master memories

Dedicated BNC with loop for Genlock, Blackburst and tri-level sync

I/O connector status LEDs for easy troubleshooting

USB host type A: firmware update, configuration import/export...

Fully functional simulator for offline configuration & practice

Gigabit Ethernet via Neutrik RJ45

#### Dimension (in Rack Units – RU)

- ▶ 2RU

#### Dimension (without rack ears & mounting)

- ▶ W 17.32" x H 3.46" x D 17.08"

- ▶ L 440 mm x H 88 mm x P 434 mm

#### Dimension (with handles)

- ▶ W 19" x H 3.46" x D 18.66"

- ▶ L 482.5 mm x H 88 mm x P 474 mm

#### Weight without accessories

- ▶ 7.60 kg / 15.43 lbs

#### Shipping weight (accessories included)

- ▶ 10.60 kg / 22.04 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: 45 DBa@1m

- ▶ Rear: 45 DBa@1m

#### Thermal dissipation

- ▶ 273 BTU/hr

#### Warranty

- ▶ 3-year warranty on parts and labor back to factory

#### Power Supply

- ▶ 100-240 VAC, 3A 50/60Hz

- ▶ Fuse cartridge F4A 250VAC 5x20mm

- ▶ Max consumption: 80 W

#### Safety compliance

- ▶ IEC/UL/EN 62368-1, CSA22.2#62368-1, UL Listed E359143)

#### Supplied with

- ▶ 1x Power supply cord

- ▶ 1x Remote Control Software (Web RCS)

- ▶ 1x Rackmount kit

- ▶ 1x Ethernet cross-cable

- ▶ 1x User Manual (pdf)

- ▶ 1x Quick Start Guide including safety instructions