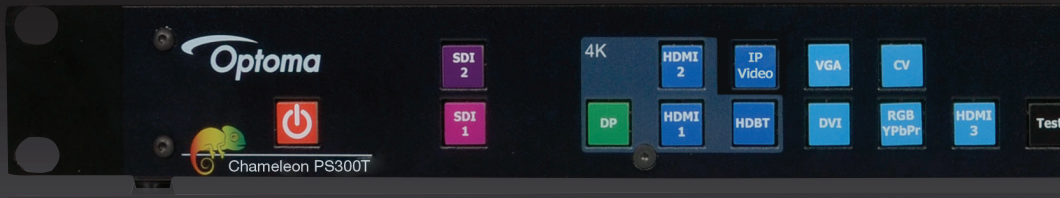
4K Presentation switcher-scaler
Chameleon PS200/300 series
2017



CHAMELEON

HQUltra technology was chosen by the European Broadcast Union for frame rate and standards conversion of the recent FIFA World Cup and Olympic TV broadcasts. The same HQUltra technology powers the Optoma Chameleon range of presentation-switcher products.

The all-in-one solution for professional AV applications

- ✓ Education
- ✓ Corporate AV
- ✓ Hotel
- ✓ Training rooms
- ✓ Events
- ✓ Broadcast
- ✓ IMAG

Chameleon PS200/300 series

4K presentation scaler-switchers

The PS200/300 series are universal video and audio scaler-switchers based on HQUltra 4K image processing technology. HQUltra scaling provides best in class picture quality with low latency video processing.

Each model is able to switch input channels in as little as 0.25 seconds. Three models are available offering an extensive range of input connectivity for today's digitally connected ProAV world, but still can support legacy formats too, all with great image quality.

All models can directly drive loudspeakers in meeting rooms and smaller conference rooms, plus line level balanced stereo outputs to drive an external amplifier or powered loudspeakers.

These models also feature an easy to read front panel menu plus remote control via inbuilt webserver and easy to implement API commands.

For in-camera and broadcast use, a Genlock input is provided compatible with bi or tri-level sync or black & burst.

The complete A/V solution

- Pixel accurate perfect scaling with low-latency 4K best-in-class HQUltra scaling algorithms
- Typically 0.25 seconds input channel switching technology
- Front panel jog-wheel and LCD display for fast easy set-up in the field
- Brightness, contrast, saturation controls for all source types
- RGB calibration controls (not 4:2:0 in to 4:2:0 out)
- Audio de-embed from HDMI, DisplayPort, HDBaseT* and 3G-SDI inputs*, re-embed to HDMI, HDBaseT* and 3G-SDI outputs*
- Multiple outputs for local monitoring of live output feed
- Remote control via webserver or simple API
- Flexible aspect ratio conversion
- Up-to 12 inputs: 2x HDMI 4K, 1x HDMI HD, 1x DisplayPort 4K, 1x HDBaseT 4K*, 2x 3G-SDI*, 1x VGA, 1x CVBS,1x DVI-U (DVI/HDMI & VGA/RGBS/YPbPr)
- Up-to 4 outputs: 1x HDMI 4K, 1x DVI/HDMI, 1x HDBaseT 4K*, 1x 3G-SDI*
- Picture in Picture (PiP)*
- Full Genlock* and source lock for in-camera and broadcast
- Streaming video H.264 via the Gigabit Ethernet Port

Audio

- 8x line level stereo audio inputs
- 2x microphone inputs with phantom power and audio mixer
- Stereo audio power amplifier with 2x 15W RMS loudspeaker outputs
- Stereo balanced line level audio outputs

* On selected models. Refer to the feature comparison table for more details.

Features

Function shortcuts
- Blank: Sets the o/p to black
- Freeze: Freezes the output
- Logo: Displays stored LOGO
- PTZ: Selects portion of the input image to be scaled

Press to toggle functions ON or OFF

Standby

Test patterns
Selects built-in test patterns or stored images.
Use jog wheel to scroll through.

Video inputs
- 1x DisplayPort 4K
- 2x HDMI 4K
- 1x HDBaseT 4K
- 1x DVI/RGB YPbPr
- 1x Streaming video
- 1x VGA
- 1x CV
- 2x3 G-SDI
- 1x HDMI HD

Menu navigation
- Menu sel: Enter or select a menu
- Esc: Exit the menu or jump to exit item
- Display: 4-line high contrast LCD display
- Jog wheel: Scroll through the menu, change value or press to enter a selection

Audio inputs
- 2x Microphones
- 8x Stereo analogue audio

Genlock input

Speaker/line output

Outputs
- 1x HDMI 4K
- 1x 3G-SDI
- 1x HDBaseT 4K
- 1x DVI/HDMI

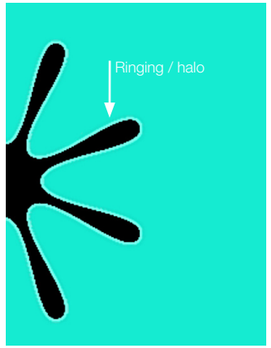
Control
- 1x TCP/IP DHCP default, port 30000
- 1x RS232: 115200,1,8, no parity, off
- 2x USB

Image shown is of Chameleon PS300T

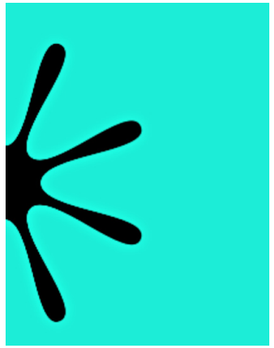
HQUltra 4K scaling

The PS200/300 scaler-switchers are based on class-leading 4K image processing technology. Scaling provides the best in class picture quality with low latency video processing.

- HQUltra technology offers the sharpest and clearest images, even at high scaling factors - as illustrated in the image
- The HQUltra image is sharp, clear and free of any halo-effects



Competitor scaling

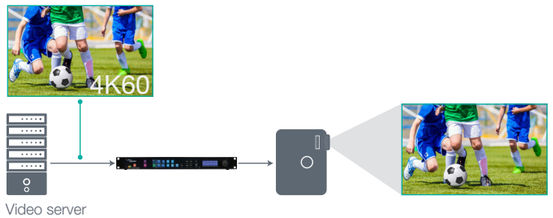


HQUltra scaling

HQUltra 4K at 50/60Hz

The PS200/300 series accept 4K inputs at 50/60Hz refresh rates and downscale to any lower resolution. These models also up-scale any signal to 4K 50/60Hz.

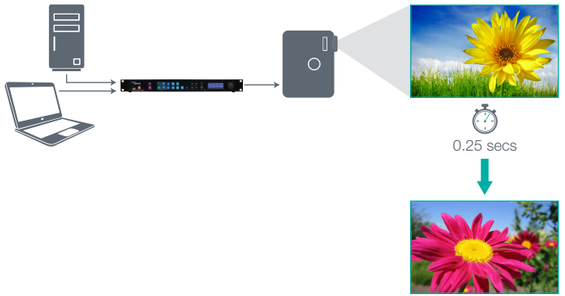
- 4K format offers the highest resolution video with the best clarity and sharpness. In addition to 4K scaling, processing at 50/60Hz refresh frame rate allows for fast motion video to be viewed with exceptional smoothness
- Sporting events and fast motion video need to be displayed at full 50/60Hz for the motion to look natural and smooth



Ultra-fast switching

Switching between different sources typically takes 0.25 seconds

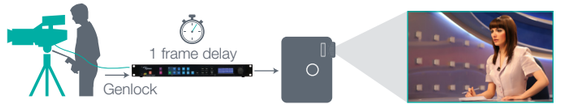
- Based on HQUltra technology, these scaler-switchers promise ultra-fast switching transitions for a seamless on screen appearance
- Similar single channel competitive switchers which can take up to 3 to 4 seconds



Low delay for IMAG

Input video is processed with only one frame delay.

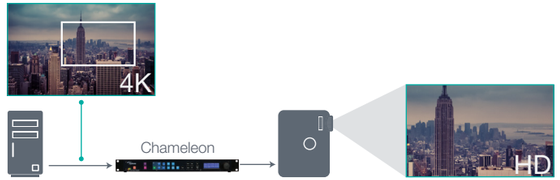
- In live performances, this is a must have feature to avoid the unwanted effect when there is a mismatch between what the audience views on the display and the live scene in front of them



PTZ (pan-tilt-zoom)

Any portion of the input image can be selected, scaled and presented to the output. Adjustments can be done on percentage or in pixels increments.

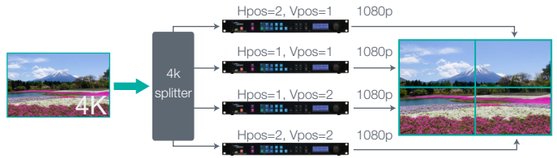
- This feature provides the user with great flexibility. Users are not limited in scaling the whole image, but they can choose the section they would like to scale



Video wall

This feature provides controls to set up multiple units in a multi-screen application. Control is provided for up-to 4x4 configurations.

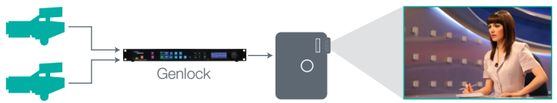
- This feature allows for splitting up a large image and drive synchronously multiple displays



Colour adjustment

Colour from each input can be fully adjusted to match video signals from different sources.

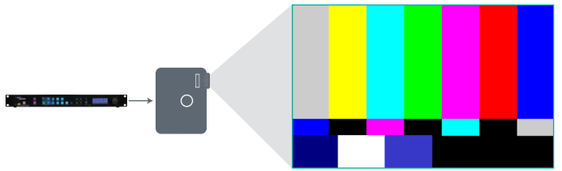
- In many situations, an input signal may need an adjustment before it is displayed – if the source material is too dark, or the image colour is not right
- For example, in live events the colour and brightness from two cameras aiming at the same scene may not look the same. Users can adjust each input signal so the displayed image has the same colour and brightness and switching between the two cameras is smooth



Built-in test patterns (TP)

Several build-in test patterns, including a moving cross, are available to verify that valid video is present on the output. Test patterns can be enabled even when there are no input signals connected to the unit.

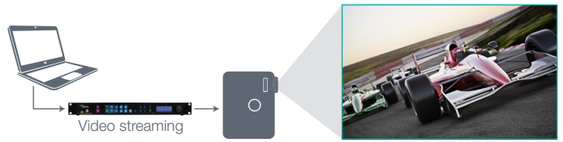
- Test patterns can be used to perfectly size the unit's output to the display area
- Up-to four additional custom test patterns can be loaded to the unit through the web interface, allowing users to download their own test patterns



Streaming video

Units fitted with the streaming option can accept 1080p H.264 streaming video via the Gigabit Ethernet port and route it to the output.

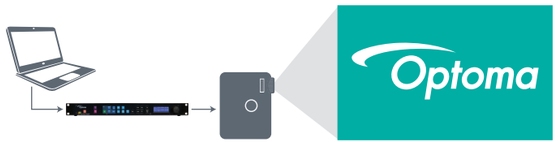
- This provides additional flexibility by allowing it to accept contact from a pre-created file or a streaming source. Therefore, the input signal doesn't need to come from an external hardware device such as a PC or a video server



Logo

Any image in PNG format can be downloaded from the computer and used as a logo.

- The image size limitation is 64MB
- Before an event starts or during breaks, this feature allows the customer's company logo to appear on the screen



Unit control

The unit can be controlled via the front panel, a web page built-in into the unit or an API protocol interface.

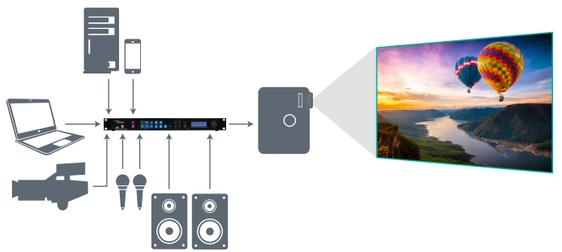
- These control methods provide a wide flexibility to interface with the unit whether the user is close by or far away
- All functions and features can be accessed using all three methods

Front panel control | Built-in webpage control | API control

Audio

Audio models are fitted with eight-line level stereo audio inputs plus two microphone inputs with phantom power. Each unit also includes a built-in mixer and a stereo 30W amplifier with two loudspeaker outputs. Two additional stereo balanced line level outputs are also available.

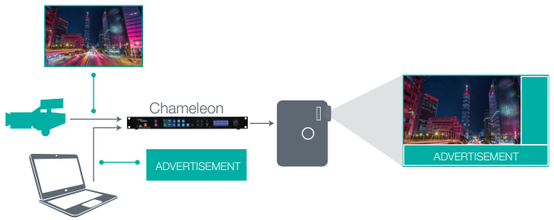
- Each audio and mic inputs can be assigned separately to any of the video inputs
- With the addition of the audio feature these models are the perfect all-in one presentation box
- The unit can satisfy any A/V requirement for any event in a corporate boardroom, hotel conference room, lecture hall or house of worship



PiP

This feature enables two input sources to be displayed simultaneously.

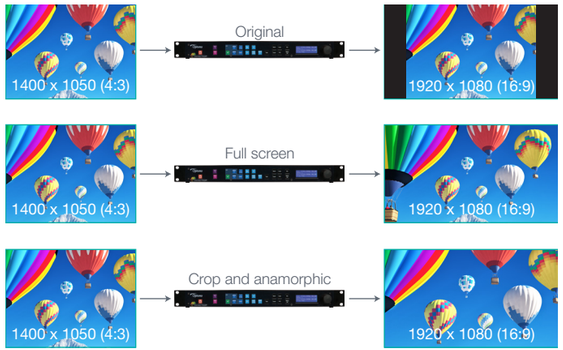
- Users can reduce the area where the image is displayed and use the outline area to display titles, messages or advertisements depending on the application



Picture format

This allows the user to format the output image when the input aspect ratio is different to the display panel's aspect ratio. Four formats are available: original, full screen, crop and anamorphic.

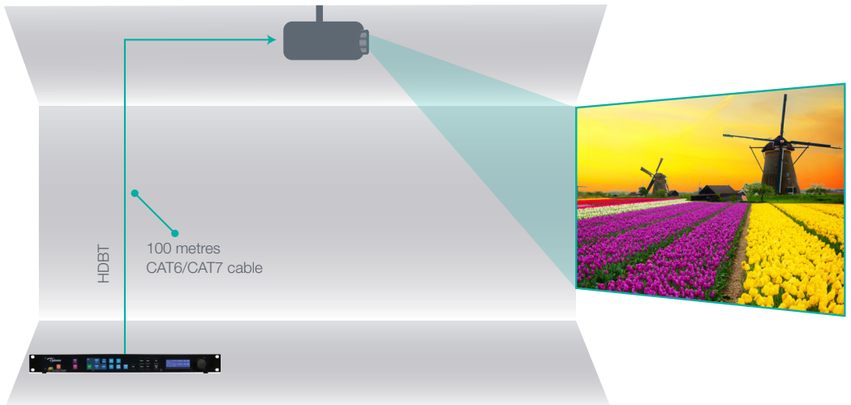
- **Original:** the input image is scaled to fit the display area either horizontally or vertically without any distortion. The input aspect ratio is preserved and unused areas on the top/bottom or left/right are set black
- **Full screen:** the input image is scaled to completely fit the display area without preserving the aspect ratio of the source. This will cause distortion but no black areas will be visible
- **Crop:** the input image is scaled to completely fit the display area while preserving the aspect ratio of the source. Portions of the input image on the top/bottom or left/right will be cropped out of the output image
- **Anamorphic:** the image will be treated as in crop, but it is always scaled to a 16:9 aspect ratio
- The images on the right provide examples of how an input image 1400x1050 (4:3) is scaled to an 1920x1080 (16:9) output with the four available formats



HDBT PS200T and PS300T only

Units fitted with the HDBT option can accept and output video in the HDBT format.

- HDBT format allows transmission of digital signals over long distances via the cost-effective CAT6/CAT7 cables
- Transmitting a digital signal (HDMI/DP/DVI) over long distances, such on a ceiling mounted projector, can be problematic due to the distance limitations of the DP/HDMI and DVI standards. This problem is solved by outputting and transmitting HDBT signal over CAT6/CAT7 cable up-to 100 metres



Specification

Inputs
- 2x HDMI 4K
- 1x HDMI HD
- 1x DisplayPort 4K
- 1x HDBT 4K*
- 2x 3G-SDI*
- 1x DVI-U supporting VESA modes, SD, HD, can be configured as fourth HDMI input. DVI-U input also simultaneously supports VGA/RGBS/YPbPr legacy analogue formats with suitable cable
- 1x VGA analogue
- 1x Composite PAL/NTSC/SECAM
- 1x Genlock reference sync input, supports. bi/tri-level or blackburst 50/59.94/60Hz formats*

HDCP supported on all HDMI/DVI/DisplayPort I/O

Supported digital input and output formats:
- 4K/UHD (HDMI 4K/DisplayPort /HDBaseT only) 3840x2 0p23.97/24/25/29.94/30/50/59.94/60; 4096x2160p23.97/24
- UHD/4K 50/59.94/60p modes supported in 4:2:0 format
- HD 1280x720p, 1920x1080i, 1920x1080psf, 1920x10 0p23.97/24/25/29.94/30/50/59.94/60
- 2048x1080p23.97/24/25/29.94/30/50/59.94/60
- ED 480p, 576p (not via SDI), SD 625i (576i), 525i (480i)
- Common VESA graphics formats from VGA to 4K, (Modes higher than WUXGA on 4K capable input channels only)

Outputs
- 1x HDMI 4K via HDMI connector
- 1x DVI/HDMI via DVI connector
- 1x 3G-SDI (disabled with HDCP-encrypted input and for incompatible output modes)
- 1x S/PDIF digital audio via RCA

All outputs are available simultaneously, with the same image shown on each.

Supported switching and sync modes
- Input switching in Genlock and free-run modes. Also supports source lock when not required
- User controls
- Front panel jog-wheel and LCD menu display for fast set-up
- Keypad for direct input selection and integral indicator LEDs
- Remote control via RS232, TCP/IP API and webserver
- Gigabit Ethernet for webserver and remote control API

Power requirements
- 100-264VAC, 65W typical

Warranty
- 3-year return to base warranty covers parts and labour

* On selected models. Refer to the feature comparison table for more details.

Feature comparison

Model	PS200	PS200T	PS300T
HDMI 4K inputs	•(2)	•(2)	•(2)
HDMI HD input	•	•	•
DVI/HDMI HD input	•	•	•
HDBaseT 4K input	-	•	•
DisplayPort 4K input	•	•	•
Component input	DVI-U	DVI-U	DVI-U
Composite input(s)	•	•	•
VGA Analog input	•	•	•
3G-SDI input(s)	-	-	•(2)
Streaming video input (via network port)	•	•	•
Analogue audio input and outputs	•	•	•
Power amp 2 x 15W (RMS)	•	•	•
DVI / HDMI HD output	•	•	•
HDMI 4K output	-	•	•
HDBaseT 4K output	-	•	•
3G-SDI output	-	-	•
3G-SDI audio embed/de-embed and SPDIF	-	-	•
HQUltra 4K low-latency processing	•	•	•
HQUltraFast high speed input switching	•	•	•
Picture in Picture (PiP)	-	-	•
TCP/IP webserver and API control	•	•	•
Genlock – H and V or crosslock	-	-	•
Pan, zoom, tilt	•	•	•
Videowall mode with auto PTZ	•	•	•

Models

PS200

PS200T

Models

PS300T

V5-21030317

Optoma

www.optoma-center.at