Product Catalog

BRAINSALT

Product Catalog

B7 Series Software
Software Platform of B7 Audio and Video Server

B7 Series Server
Uncompressed Media Servers

Show Controllers and I/Os
Solid State Show Controller and Network Connected Modules

Digital Signage
Create and Distribute Content to Screens

BRAINSALT

Index

Key Technologies of Media Based Attractions

Introducing our Products and their KEY Features

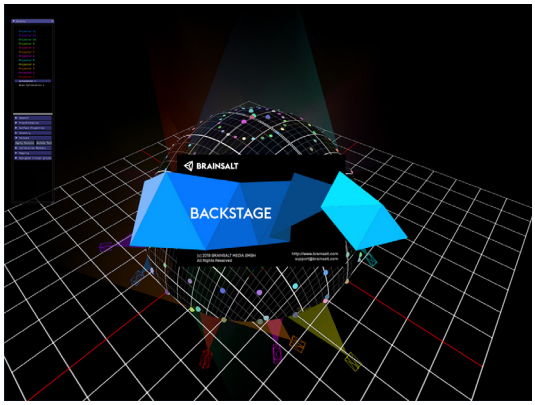
Perfect Media Playout: Playmaker and Backstage

The B7 Series is a complete range of audio and video servers for uncompressed 4:4:4 media playback with up to 120 FPS and 30 Bit color depth. The maximum internal bandwidth is 12 GB/s. Up to 32K x 32K content resolution can be processed in the media workflow. The units are able to operate standalone or play synchronous to timecode – that way any number of playback channels can be perfectly synced. The Genlock option adds genlock inputs to the servers for pixel synchronous video outputs. All units support 2D image warping and blending. 3D mapping can be realized through our Backstage tool. Backstage supports dynamic warping and blending for projection on moving objects. The complete range of audio options is available: Analog, ADAT, MADI, AES, Dante – with up to 256 channels 48KHz or 128/96KHz. DVI, HDMI 2.0 and DP 1.2 capture inputs are available as option. All B7 Series Servers are running an embedded OS, which is write-protected to ensure safe operation over years. All servers do have redundant fans and can be equipped with redundant power supplies

Media Workflow with Media Manager

BRAINSALT covers the complete media workflow from simple single channel playback up to any multi-channel and/or multiple server system content distribution. Huge projects demand true flexibility during their content creation and loading phase. Our system allows content creators to load media on a “per frame” or “shot” basis. Furthermore, it is possible to provide shots in different resolutions: for example starting with low resolution and step by step exchange shots with high resolution content.
Our Media Manager and server system is capable of handling such complex workflows. It allows creating playlists on a “per frame” basis: single frames can be replaced or the movie can be organized in shots. It also supports versioning and the quick switch from one to another version of a shot. It is perfectly prepared for truly demanding projects.

Playmaker



Media Manager

Everything under Control: Conductor with Show Controllers and I/O Modules

Most media based attractions require running effects synchronous to video playback. BRAINSALT created a truly incredible solution called Conductor. Interfacing through our ProCommander show controllers and Pro I/O Modules nearly anything can be controlled in the real world. Conductor provides an easy to use interface and supports various different programming interfaces like keyboard, mouse, joystick, midi faders with force feedback and game controllers. Any slider or button of the interfaces can be mapped to any recording channel and output and programming can be done in real-time. Conductor can also control a BRAINSALT video server cluster during programming. The server system will follow drags of the locator in Conductor, giving the designer and programmers the power to quickly seek, play and adjust motion or effects while seeing media playing on the screen.

Some media based attractions include a complex light show usually created by light designers on their favorite tool: the light desk. BRAINSALT seamless integrates the light desk by timecode into the system. Light designers can concentrate on light programming, media will follow their timecode. Once light programming is done, the light show is recorded through Artnet in Conductor. Any number of Artnet universes can be processed at once. Those recorded shows can then be located in Conductor – parallel to motion and other effects - and will be sent out perfectly synchronous to video playback. Any limits? At the time this document was written, the most complex show that we know of included around 900 control channels and 16 recorded Artnet Universes – so close to 10000 channels in total. And that was far below Conductor's performance limits.

Realtime or Standalone

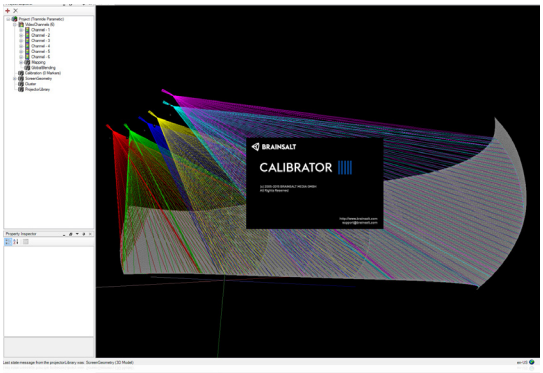
All of our Show Controllers and I/O Modules can operate "live" - receiving updates over network from a video server or programmer's laptop. Alternatively to this realtime operation mode, final shows can be exported to a flash storage to be used with our ProCommander show controllers in standalone mode. Those shows can either run in loop or can be triggered by external inputs or timecode. Multiple shows can run parallel, merged together through merge modes. Complete scenes of a dark ride or preshow elements can be realized with such standalone controllers. For example a preshow element with stereo audio and DMX light can be played from our ProCommander 2. Just connect loudspeakers to the amplified outputs and your DMX cable.

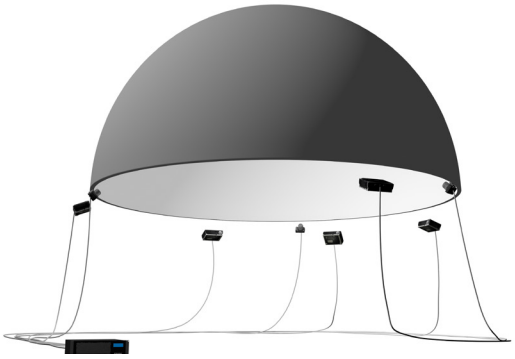
CONDUCTOR

Projections Calibrated at the Push of a Button: Calibrator

In projection systems with multiple projectors it is hard or sometimes even impossible to manually adjust warping and blending parameters to create a seamless looking image. Due to thermal drifts of projectors and structures, such systems have to be readjusted during operation to keep the image quality at a constant, perfect level. BRAINSALT provides an optional calibration system for multi-channel projections that creates perfect image quality at the push of a button.
Any complex screen and projector layout can be realized. The numbers of cameras is theoretically not limited. Unlike other vendors, our cameras can be installed anywhere “hidden” in the attraction - the only precondition is that all cameras in total “see” the entire screen surface. Different to other vendors, our calibration system always guarantees mapping a specific pixel of the content to a defined position on the screen. So it is guaranteed to hit, for example, spezial-effect-nozzles and screen borders always perfectly. The calibration system seamless integrates in the media workflow if slicing of media is required.

Calibrator





Operation and Monitoring

BRAINSALT developed some unique tools for monitoring the correct operation of an attraction. One of the most popular is the “dual use” of cameras from our calibration system: during normal operation, cameras are used to stream a video to a monitoring server that presents those videos and additional health, quality of service and status information on a split screen. Network based observation cameras, a timecode display and other elements can be included on the overview. Events can be defined to send out email notifications, for example, if contact to a video server got lost or if its status is faulty. That way, the operator always has insight of what is going on in the attraction.

Versatile Digital Signage: Presenter

Beside our video servers, that focus perfect video playback, BRAINSALT also provides a Digital Signage solution, which allows simple and easy content-creation for single screens or preshow elements. Videos, slideshows, tickers, clock, streams, capture inputs and other elements are placed in regions of the screen and content is scheduled by time. Push content can be triggered by a control system. Advertisement, show time information, show relevant messages: our Digital Signage products allow our clients to reach their clients via screens. A comfortable and easy handling allows adding custom announcements quickly.

Presenter

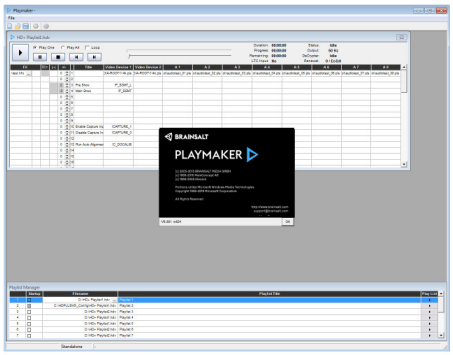
B7 Series Software

Software Platform of B7 Audio and Video Server

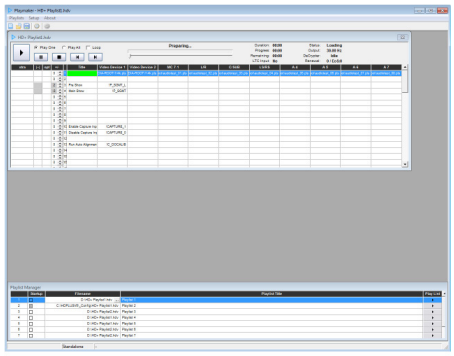
Playmaker

The heart of all BRAINSALT video servers. Either as Standalone instance, as Controller or Time Code Player in a cluster, Playmaker makes sure your show is running and pixels are played perfectly to the screen. Support for most common movie and audio formats is integrated. BRAINSALT's uncompressed formats guarantee pixel perfect playback.

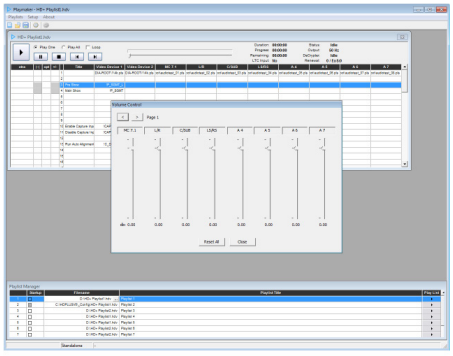
Perfect Linear Video Playback in 2D and 3D
Playmaker was developed for guaranteeing perfect, smooth linear playback of multiple, absolutely synchronous running video channels. To assure jerk free playback, Playmaker takes care of adjusting the video cards output refresh rate to fit to the movies frame rate for every video in the playlist. It also takes care about pixel synchrony for perfect 3D playback. It supports a wide range of common video and audio codecs and its unique, uncompressed frames playlists. Its easy to use graphical user interface lets you manage playlists with 2D and 3D videos, audio files and effect files for each entry. Audio volume of each video can be adjusted in the playlist - individually for every audio channel with certain audio hardware . It supports different playback modes: all entries in a playlist are either played one after another or only one at a time with the option to loop playback. Scripting commands allow non sequential jumps within the playlist and other features.



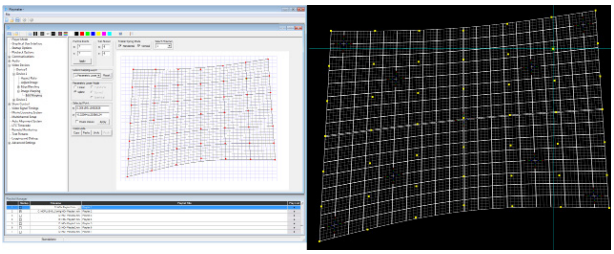
Show and Effect Integration
When combined with BRAINSALT's Conductor, an effect files can be assigned to each playlist entry and will be automatically loaded on start of video. During normal playback, Playmaker controls playback progress of Conductor to assure perfect synchronous playback of video and effects. During show programming, Conductor controls Playmakers playback position thus making it easy and comfortable to program effects synchronous to video: any drag on the locator in Conductor will automatically cause an update of playback position within the video.



2D Image Warping, Edge Blending, Image Enhancement
You can easily adjust warping by editing control points of a spline-based warping mesh or modify every single point of the warping grid manually. Lanczos filtering is used to assure best quality of warped images. The blending curve can be adjusted by gamma for each color – just bring your blending edges parallel with warping and apply the blend mask. In addition, Playmaker can do image enhancements like sharpening, saturation, brightness and contrast. As alternative to manual warping and blending you can



optionally use BRAINSALT's camera based auto alignment software Calibrator to generate warp and blend files – Playmaker will automatically load it and map video in the playlist correspondingly.



Standalone, Controller or TC Player

A single server will use Playmaker in standalone operation mode. When having multiple servers in a playback cluster, there is usually a central unit that manages operation, the Controller and a number of time code synced players, the TC Players. The Controller is used to manage playlist and media. It synchronizes playlists and media on all TC players in the cluster by a click on a button. During playback the controller outputs audio and time code to perfectly synchronize all TC player in the cluster. Furthermore the Controller provides detailed information about quality of service of each playback channel in the cluster.

Integration and Scheduler

Playmaker implements an UDP and RS232 based remote control. Direct integration into Crestron® based media control environment with the network based Crestron CNX interface is possible. With the built-in scheduler you can define playback dates and times for your playlists.

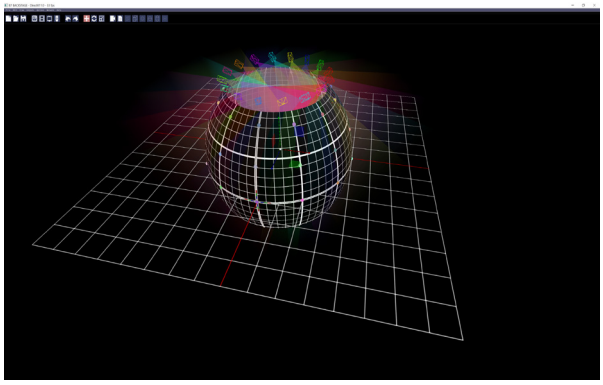
Movie Licensing System

Playmaker implements a proprietary licensing system for copy protected contents. It allows content creators to distribute their movies with a strong encryption and grant playback of the movies on specific servers for a certain durations. The licenses are transferred over the Internet with one of the safest authentication and encryption methods currently available. A lot of well-known 3D and 4D movie creators are using our movie licensing system.

Backstage

Most advanced 3D mapping tool with the ability to project on any screen or object. Easy marker-based projector calibration to math the 3D scene to real world. Dynamic blending and warping for projection on moving screens and objects. Compatible with our camera based Auto Alignment system Calibrator.

3D Scene Modelling and Mapping
Backstage is our newest development and closes the gap between manual 2D warping and blending of Playmaker and static 3D mapping of Calibrator. It allows built a 3D representation of the final scenes with screens, projectors and displays. System integrators can use this tool to verify their projector layout and blend sizes. An intuitive marker based calibration allows to calibrate the real projector parameters and positions with known 3D coordinates in the real world. After that process, the final adjustments can be either done manually or through our camera based auto calibration software Calibrator.
Backstage is prepared to work with quadrant splitters on the server output or can combine multiple outputs to one rendering canvas.



Dynamic Blending, Warping, Masking and Shadow Compensation
Backstage supports dynamic blending and warping to project on moving screens and objects. It also allows to insert “shadow casting” objects, such as railings or parts of visitor platforms. In case a projector hits such shadow object and another projector could also reach the same target pixel on screen, the other projector would dynamically compensate the shadow of the projector. In addition, the image on the screen can be dynamically masked. To compensate any delay of tracking input, Backstage has implemented a prediction filter to generate future positions based on past velocity and acceleration.

Playmaker, NDI, 3rd Party
Backstage can map Playmaker output streams, but also supports to receive network streams and 3rd Party software through shared resources on the same machine.

Media Manager

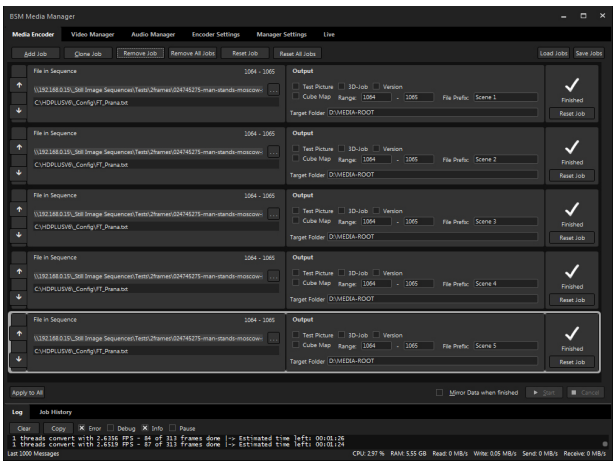
Load audio and video media to BRAINSALTs pixel perfect uncompressed single frames formats. Compose playlists from frame sequences and audio files that can be played as movies with Playmaker. Supports content slicing for server clusters. Rapid deployment of singe frames to a server cluster for real-time content review.

Advanced Media Workflow

Media Manager accepts a wide range of video and numbered still image formats that can be loaded and composed to show playlists. It allows either to load a complete movie or just a range of frames. Multiple jobs can be setup and processed all at once. Playlist are setup on a “per frame” basis - single frames, shots or scenes can be easily replaced. With the help of an integrated version control system you can quickly jump between different versions of each section in your playlist. A “live” mode allows to quickly show 2D or 3D frames on a server or server cluster. An integrated “Frame Viewer” allows to take a close look on every loaded frame.

Multi Channel and Multi Server Workflow

In multi channel, multi server environments with media resolutions beyond 4K, the Media Manager - optionally in combination with BRAINSALT’s camera based Calibrator - is used to slice up the source media to parts that are suitable for each playback channel. The slicing is done without any decrease of image quality.



Supported Still Image Formats

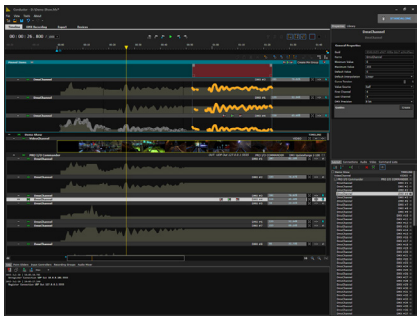
List of Supported Formats: DPX, PNG, BMP, DDS, EXR, HDR, JPEG/JIF, JPEG-2000, JPEG-XR, KOALA, RAW, SGI, TARGA, TIFF. Since transfer of content is often done over Internet and also transfer speed to a locally installed drive depends on file sizes, we suggest to use a lossless compression for each frame, for example PNGs.

Supported Audio Formats

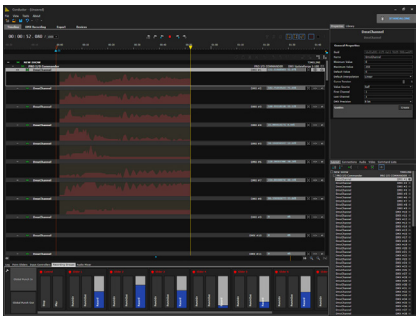
Dependent on the system configuration, stereo or mono WAV files with for example 48 or 96KHz, 16, 24 or 32 Bit can be loaded and managed through the Media Manager.

Conductor

Graphical, timeline based effect and show programming. Artnet, Udp, RS232, Multichannel Audio devices. DMX, Analog, Digital, Relay and Servo outputs through BRAINSALT PRO I-O devices. Artnet and DMX monitoring and recording. Realtime programming through mouse, keyboard, MIDI, joystick, gamepads or similar. Frame accurate with BRAINSALT server or standalone operation.



Timeline Editing



Live Recording and Timeline Editing

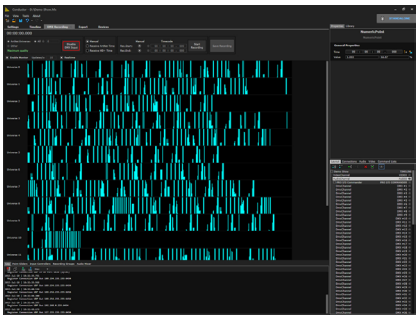
Multi Channel Audio with Volume Control

Conductor is a timeline based show programming software that visualizes every numeric output (any analog, digital or DMX output) through a curve. Commands can be placed along the timeline in commands channels. A numeric channel can have different interpolation modes: step, linear or curve. Just add control points by double clicking into to channel, edit value and time by dragging the point or enter accurate values through the quick edit command. If you need to interface with hardware, you can use BRAINSALT's network connected ProCommander or Pro I-O devices. Although ProCommanders can be used as solid state controllers, they are also capable to operate in real-time together with Conductor and they provide various output types from one device. Pro I-O devices with DMX, analog, digital, relay or servo outputs are available. Any number of Pro Commanders and Pro I-O devices can be used.

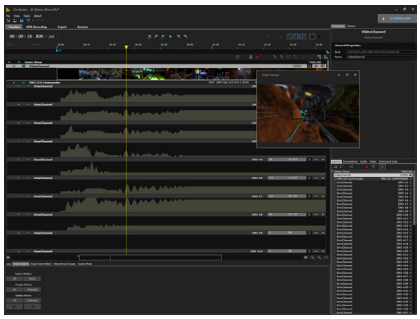
Live Recording and Timeline Editing
You can map and record an external devices like mouse, keyboard, joystick, MIDI faders and game controllers to any or multiple channels and program your show in real-time. Punch In/Out can be set per group - you decide to record to all or single channels. Input values can be scaled or inverted and you can define ease-in and -out times for devices with no force feedback, to avoid any jumps in the recording data.

Keyframe Sliders
As an alternative to direct point manipulation, the keyframe sliders allow you to jump from point to point and adjust the value of the point with the slider

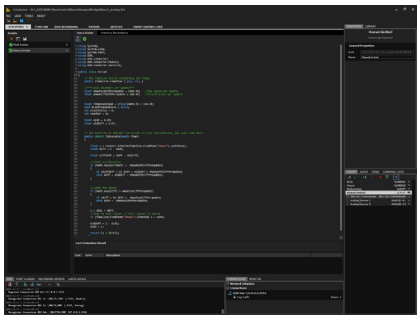
Multi Channel Audio with Volume Control
Load and route audio to up to 16 audio channels. Volume envelopes can be put to every audio file.



Artnet/DMX Recording



Multi Channel Audio with Volume Control



C# Scripts

Artnet & DMX Recording

Record and monitor up to 16 Artnet universes at once or one universe through PRO-IO DMX interface and assign the recorded data to any Artnet or PRO-IO DMX output device. The recorded data can also be extracted for editing. Recording is synchronized either through BRAINSALT's cluster timecode, Artnet timecode or can be triggered by the first changing DMX channel or by hitting a button.

Offline Editing

Import video and have a frame accurate preview for offline editing.

C# Scripts

Conductor allows to access channel values through C# and modify it programmatically. Any output channel can then refer to the result of the C# script. This allows to add mathematical calculations between programming curves and output values.

Operation with BRAINSALT Server or Cluster

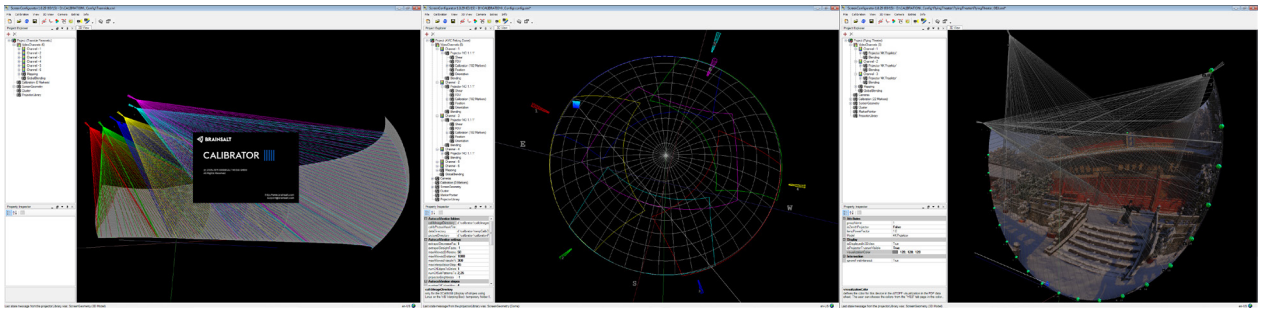
For show operation, Conductor runs parallel to Playmaker on the video server or cluster controller. For show editing, Conductor can run on a separate laptop and can control the server or server cluster over network. Any drag of the locator in Conductor will let the video on the screen follow within milliseconds. The final show is then copied back on the BRAINSALT server. Playmaker will manage Conductor to load the correct effect file for each entry in the video playlist.

Editions

Use our Conductor Full Edition for show creation and programing. If just playout of an existing show together with Playmaker on our video servers is needed, you can use the "Play" edition.

	Full	Play
Max. ProCommander per showfile	unlimited	unlimited
Max. Pro I/O modules as ProCommander slaves per showfile	unlimited	unlimited
Max. standalone Pro I/O modules per showfile	unlimited	unlimited
DMX recording	√	×
DMX output	unlimited	unlimited
Artnet recording	√	×
Artnet devices in Conductor	√	√
Input controller for programing	√	×
C# script channels, custom plugins	√	√
Import and export CSV files, import Open-Hex files	√	×
Sync to external timecode (possible inputs: Pro Commander, LTC reader on computer, Playmaker on video server	√	Playmaker only
Remote control of Conductor through UDP commands	√	Playmaker only
Saving enabled	√	×

Calibrator



Camera based Alignment of warping and blending of projected images

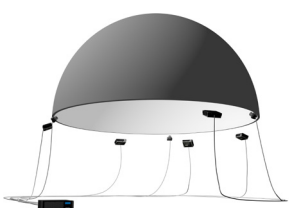
Perfectly Calibrated Projection System
In projection systems with multiple projectors it is hard or sometimes even impossible to adjust warping and blending parameters to create a seamless looking image manually. Furthermore, this system has to be maintained during operation to keep the image quality good. This means your customer would need well-trained technicians and again, keeping this system aligned manually is sometimes impossible.

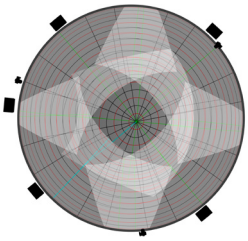
Special projection scenarios like domes need content mapping and advanced parameters, like the head position of the visitors, which impact mapping and warping content on the screen surface. High-resolution content beyond 4K must be sliced into pieces and then correctly displayed on each projector.

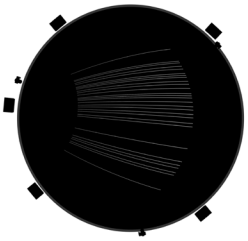
Warping, Blending, Masking, Slicing
The CALIBRATOR software takes care of all these tasks. The only additional hardware you need to install is a number of digital photo cameras that are able to “see” the entire screen surface. They can be located anywhere, either on top of the screen or integrated. There are no restrictions or limitations. For a typical dome shape screen you will need 3 cameras.

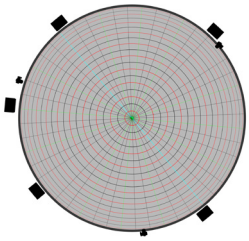
Curved, Spherical, Dome or 3D Model – Any Shape of Screen
The projection system must be constructed in the software first. The 3D Model includes the screen (can be of any shape), projectors and cameras. If everything would have been built and placed in real as planned, you would have an aligned picture already after this construction phase – but this is theory. In fact, all buildings have tolerances and that’s where the camera based auto alignment starts its work: several test images are projected on each projector and the cameras take pictures of them. Our software analyses the offset and wrong warping of the projected images and perfectly adjusts warping and blending to have a seamless image on the screen shape.

Re-Align by Pressing a Button
Since all projected images and big screen structures tend to move due to thermal influences, the picture in a dome must be calibrated from time to time. Dependent on the quality needs, the calibration can be done by simply pressing a button, even every day. This assures that all projected pixels match to each other and guarantees a perfectly aligned image during all time of operation.


Auto Alignment with 3 Cameras


Unaligned Image


Auto Alignment in Progress


Aligned Image

System Tools

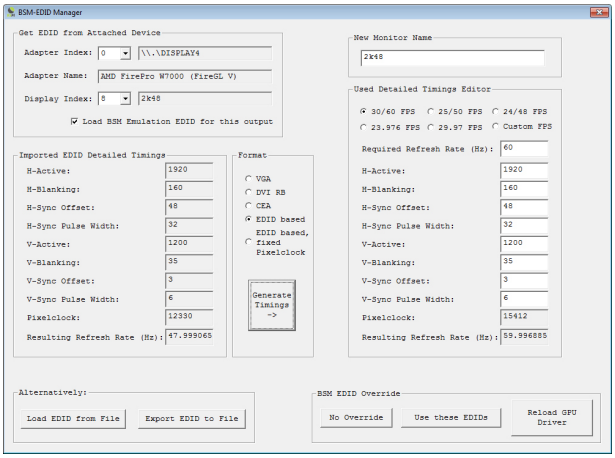
BRAINSALT video servers are running a write protected, embedded operating system. Tools for EDID Management and EDID Emulation, Gen lock Watchdog and 4K Output Mode setup are installed. During boot these tools automatically set the correct display layout and system settings to guarantee proper operation.

Embedded OS

BRAINSALT Video Servers are using an embedded Operation System. This allows to write protect the system files and system settings to avoid unexpected modifications during operation. If 3rd party software must be installed, the write protection can be temporarily disabled during setup.

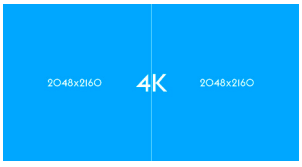
EDID Management

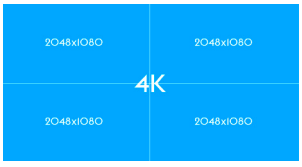
Our EDID Manager allows to read the currently connected EDIDs, modify them and override the outputs with emulated EDIDs. During system startup and even on video load (if change of output frequency is necessary to match to video's frame rate) the EDIDs are automatically loaded. Thus, regardless what happens on the servers output, it will always provide a signal with the timings specified in the emulated EDID.



KVM Output Emulation

All Briansalt Video Servers do have a control monitor output where BIOS messages and the OS primary outputs is shown. This ensures, that such system information does not appear on the video outputs. This output is usually connected to a Control Monitor or KVM switch. However,
if there is no monitor connected to the servers control monitor output at startup, an EDID is automatically loaded to emulate a monitor. This allows remote connection through VNC without disturbing normal operation.





4K Output Mode

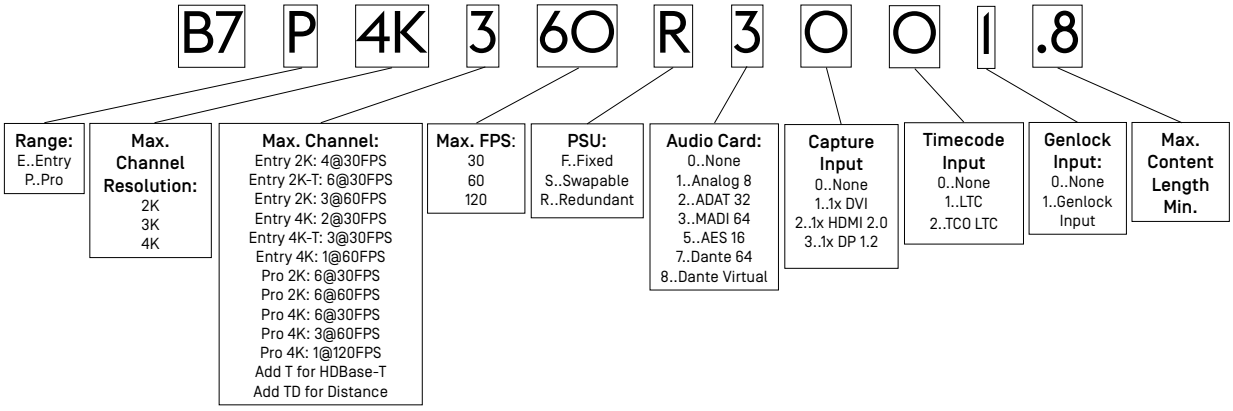
4K Projektors usually are feed in quadrant or column mode. Both modes can be set and are automatically setup on startup.

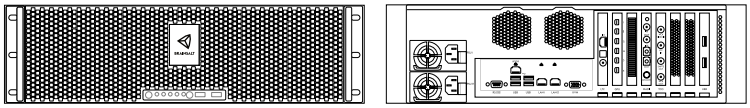
B7 Series Server

B7 Series Server

Uncompressed 4:4:4, high resolution, high framerate, high bitdepth - the key features of our B7 Series Servers. 2K, 3K and 4K DP 1.4 or HD-BaseT outputs, redundant fans, swappable or redundant PSU, acoustic and visual alarm, touch screen for basic setup, monitoring over network (full specs on next page)

Naming Convention / Type specifications. Please contact us for full server list and options





Front and Example Back View

Specifications

Outputs *1)
- Output connectors: Up to 6x DisplayPort 1.4
- Output connectors: Up to 6x HDBase-T
- Control monitor: 1x VGA through IPMI, also accessible through iKVM
- Video channels 4K: up to 6@30FPS, up to 3@60FPS, 1@120FPS
- Video channels 2K: up to 6@60FPS, up to 4@120FPS
- Outputs can be configured for 4K single or 2 x columns output
- Frame rates: 23.976, 24, 25, 29.97, 30, 48, 50, 59.94, 60, 95.904, 96, 100, 119.88, 120, 144
- Supports all standard output resolutions up to UHD/4K and custom resolutions

Codecs
- Uncompressed 4:4:4 30-bit
- Display of various still image formats
- Most other popular video formats can be imported through Media Manager

Playmaker
- Perfect video playback
- Manage playlists
- Scheduler for unattended operation
- 2D Warping with Lanczos filtering
- Edge Blending

Media Manager
- Load an manage audio and video content
- Media resolution up to 32K x 32K
- Supports single frame sequences and most popular video and audio formats
- Allows composing of videos from frame sequences or even single frames
- Supports slicing of media for cluster systems if needed
- Analyze and rapid review media

Backstage
- Mapping to 3D Geometry for Playmaker and NDI Network streams
- Manual Marker Based Projector Calibration or import from Calibrator or 3rd party Calibration tools
- Multi-User capable
- Warping with Lanczos filtering
- Edge Blending
- Optional Realtime Warp and Blend for moving screens and objects

Conductor Option
- Compose and edit effects and shows synchronous to media playback
- Run effects and shows synchronous to media playback (PLAY ONLY license)

Calibrator Option
- Camera Based Auto Alignment
- Adjust warping and blending automatically to always guarantee perfect image and image location on the screen over time

System Tools
- EDID Management and Emulation

Control
- Easy integration with UDP and RS232

Sync Options
- LTC time code input
- Genlock Input

Capture Options
- Single DVI Single Link
- Dual HDMI 2.0
- Dual DP 1.2
- NDI over network

Audio Options
- Integrated: DP / HDBASE-T
- 8 channel analog
- 16 channel ADAT
- 64 channel MADI
- 16 channel AES
- 64 channel DANTE redundant
- 64 channel DANTE virtual

Audio Converter Options
- 16 channel ADAT AD/DA with Genlock
- 16 channel ADAT/MADI AD/DA with Genlock
- 16 channel ADAT/MADI AD/DA with Genlock and DANTE
- 32 channel ADAT/MADI AD/DA with Genlock
- 32 channel ADAT/MADI AD/DA with Genlock and DANTE

Media Storage
- Up to 30TB raid stroage with up to 8 GB/s effective throuhgput

Operating System
- Microsoft Windows 7 Standard Embedded

Hardware
- 3U 19“ chassis
- Rails included
- Power supply *1): up to 2 x 550W redundant, 100V - 240V
- Dimensions (WxHxD): 8.3 x 13.2x 67.5 cm
- Shipping dimensions (WxHxD): 61.7 x 29 x 83.3cm
- Weight: 28 kg

*1) Depending on server configuration

B7 Series Audio Converter

A16 AD/DA Converter

Professional 16 channel audio AD/DA converter, 16 balanced inputs, 16 balanced outputs, 2x optical MADI and 4 x ADAT interfaces, optional Dante support, input and output level displays, routing, level and gain adjustment.

Audio Converter
The A16 is a 16 + 16 channel AD/DA converter with high quality, professional analog and digital I/O's and outstanding user interface. Using two TFT displays makes configuration and control of this interface a breeze. ADAT and MADI interfaces allow to connect the A16 to your professional equipment. Flexible routing possibilities and individual control over gain/levels of each channel allows integration in an easy way. The A16 Dante version allows conversion from and to digital audio networks.

Time code Distributor and Gen lock Signal Generator
In BRAINSALT systems with multiple video servers, the A16 is typically used as time code distributor and Gen lock Signal Generator. The balanced outputs assure an error-free time code distribution. The audio channels not needed for time code distribution can be used for conventional audio playback. During final on-site audio editing, A16 can interface to the audio production desk. It can also be used to receive and route time code from an external source (like audio or light desk) to a BRAINSALT server cluster. With optical or coaxial MADI, up to 4 units can be daisy chained to output up to 64 audio channels.

Specifications

Analog Interface
- 16 balanced inputs, 32kHz -192kHz
- 16 balanced outputs, 32kHz -192kHz

Digital Interface
- 2 x optical MADI (incl. MIDI over MADI)
- 8 x ADAT
- Optional 2 x Dante

System Interfaces
- BNC wordclock input
- BNC wordclock output
- Genlock signal generator (24 - 120 Hz)
- MADI over MIDI

Front Panel
- Two TFT displays show the high resolution level meters of all inputs and outputs
- Preset management
- Keyboard lock
- Detailed status display for monitoring all inputs
- Graphical adjustment of levels and gains
- Routing editor
- SMUX control

Technical Specifications

MADI I/O Optical Interface
- 64 channels @32kHz, 44.1kHz, 48kHz
- 32 channels @96kHz
- 16 channels @192kHz
- Delay: 2 samples
- Embedded MIDI

ADAT I/O
- 4 + 4 optical interfaces
- 32 channels @32kHz, 44.1kHz, 48kHz
- 16 channels @96kHz
- N/A channels @192kHz

Wordclock
- BNC 1 x input, 1 x output
- 75 Ohm termination
- 1 x Wordclock, rising edge
- Sync generator frequencies: 24, 25, 30, 48, 50, 60, 72, 75, 90, 96, 100, 120 Hz

Headphone Output
- Independent channel
- Select any mono or stereo source
- Select one of 5 mixes of all inputs and outputs
- Digital volume control

A/D Conversion
- 2 x CS5368 (Cirrus Logic)
- 16 x 6.3mm phone jack, balanced
- Max. input level: +20dBu
- Digital gain: +20dBu...-8dBu, 1dB steps
- S/N: 114dB
- THD+N: -105dB
- Interchannel isolation: 110dB
- Latency @32kHz, 44.1kHz, 48kHz: 12/fs (0.25ms @48kHz)
- Latency @64kHz, 88.2kHz, 96kHz: 9/fs (0.09375ms @96kHz)
- Latency @128kHz, 176.4kHz, 192kHz: 5/fs (0.026ms @192kHz)
- OpAmps: RC4580 + OPA1664
- Level indicator: TFT screen, 28 levels

D/A Conversion
- 2 x CS4365 (Cirrus Logic)
- 16 x 6.3mm phone jack, balanced
- Max. output level: +20dBu
- Digital gain: +20dBu...-8dBu, 1dB steps
- S/N: 114dB (A-weighted)
- THD+N: -100dB
- Interchannel isolation: 110dB
- Latency @32kHz, 44.1kHz, 48kHz: 7.8/fs (0.1625ms @48kHz)
- Latency @64kHz, 88.2kHz, 96kHz: 5.4/fs (0.05625ms @96kHz)
- Latency @128kHz, 176.4kHz, 192kHz: 6.6/fs (0.034375ms @192kHz)
- OpAmps: RC4580 + OPA1664
- Level indicator: TFT screen, 28 levels

Lock Feature
- Unit can be (un-) locked using a factory set secret 6 digit number

Power Supply
- 1 x input jack with screw lock
- 1 x power supply included, 12V, 3A

A32 AD/DA Converter

Professional 32 channel audio AD/DA converter, 32 balanced inputs, 32 balanced outputs, 2x coaxial and optical MADI, 8 x optical ADAT interfaces, optional Dante support, input and output level displays, routing, level and gain adjustment, redundant power supply.

Audio Converter
The A32 is a 32 + 32 channel AD/DA converter with highest quality, professional analog and digital I/O's and outstanding user interface. Using four TFT displays makes configuration and control of this interface a breeze. ADAT and MADI interfaces allow to connect the A32 to your professional equipment. Flexible routing possibilities and individual control over gain/levels of each channel allows integration in an easy way. The A32 Dante version allows conversion from and to digital audio networks.

Time code Distributor and Gen lock Signal Generator
In BRAINSALT systems with multiple video servers, the A32 is typically used as time code distributor and Gen lock Signal Generator. The balanced outputs assure an error-free time code distribution. The audio channels not needed for time code distribution can be used for conventional audio playback. During final on-site audio editing, A32 can interface to the audio production desk. It can also be used to receive and route time code from an external source (like audio or light desk) to a BRAINSALT server cluster. With optical or coaxial MADI, up to 2 units can be daisy chained to output up to 64 audio channels.

Specifications

Analog Interface
- 32 balanced inputs, 32kHz -192kHz
- 32 balanced outputs, 32kHz -192kHz

Digital Interface
- 2 x coaxial and 2 x optical MADI (incl. MIDI over MADI)
- 8 x ADAT
- Optional 2 x Dante

System Interfaces
- BNC wordclock input
- BNC wordclock output
- Gen lock signal generator (24 - 120 Hz)
- MADI over MIDI
- Physical MIDI connectors for remote

Front Panel
- Four TFT displays show the high resolution level meters of all inputs and outputs
- Preset management
- Keyboard lock
- Detailed status display for monitoring all inputs
- Graphical adjustment of levels and gains
- Routing editor
- SMUX control

Technical Specifications

MADI I/O Optical Interface
- 64 channels @32kHz, 44.1kHz, 48kHz
- 32 channels @96kHz
- 32 channels @192kHz (16 optical + 16 coaxial)
- Delay: 3 samples
- Embedded MIDI
- Automatic switching between optical <-> coax MADI when signal lost

ADAT I/O
- 4 + 4 optical interfaces
- 32 channels @32kHz, 44.1kHz, 48kHz
- 16 channels @96kHz
- N/A channels @192kHz

S/PDIF
- ADAT 4 I/O can be reconfigured as S/PDIF
- Input has sample rate converter included (performance of SRC: -128dB)
- Output follows A32 sample frequency

Wordclock
- BNC 1 x input, 1 x output
- 75 Ohm termination
- 1 x Wordclock, rising edge
- Sync generator frequencies: 24, 25, 30, 48, 50, 60, 72, 75, 90, 96, 100, 120 Hz

MIDI I/O/T
- DIN5 jacks: in/out/true

Headphone Output
- Independent channel
- Select any mono or stereo source
- Select one of 5 mixes of all inputs and outputs
- Digital volume control

USB
- USB 2.0 for remote, update

A/D Conversion
- 4 x CS5368 (Cirrus Logic)
- 4 x DSub25 / Tascam
- Analog switches: +20dBu, +13dBu, +4dBu
- Digital gain: +20dBu...-8dBu, 1dB steps
- S/N: 114dB
- THD+N: -105dB
- Iterchannel isolation: 110dB
- Latency @32kHz, 44.1kHz, 48kHz: 12/fs (0.25ms @48kHz)
- Latency @64kHz, 88.2kHz, 96kHz: 9/fs (0.09375ms @96kHz)
- Latency @128kHz, 176.4kHz, 192kHz: 5/fs (0.026ms @192kHz)
- OpAmps: RC4580 + OPA1664
- Level indicator: TFT screen, 28 levels

D/A Conversion
- 4 x CS4365 (Cirrus Logic)
- 4 x DSub25 / Tascam
- Analog switches: +20dBu, +13dBu, +4dBu
- Digital gain: +20dBu...-8dBu, 1dB steps
- S/N: 114dB (A-weighted)
- THD+N: -100dB
- Interchannel isolation: 110dB
- Latency @32kHz, 44.1kHz, 48kHz: 7.8/fs (0.1625ms @48kHz)
- Latency @64kHz, 88.2kHz, 96kHz: 5.4/fs (0.05625ms @96kHz)
- Latency @128kHz, 176.4kHz, 192kHz: 6.6/fs (0.034375ms @192kHz)
- OpAmps: RC4580 + OPA1664
- Level indicator: TFT screen, 28 levels

Lock Feature
- Unit can be (un-) locked using a factory set secret 6 digit number

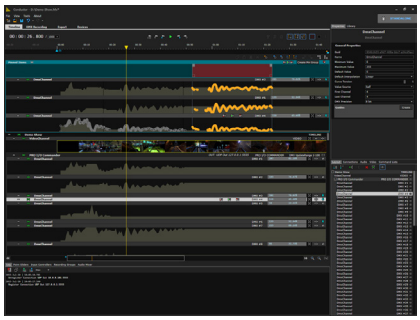
Power Supply
- 2 x input jacks with screw lock for redundant power voltage supervision, warning message on screen when PSU input fails
- 2 x power supply included, 12V, 3A

Show Controllers and I/Os

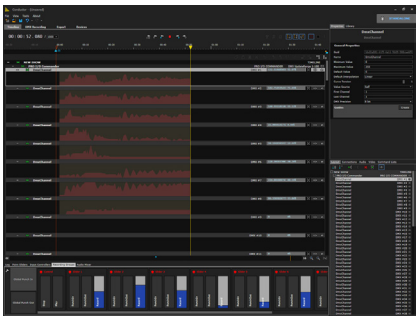
Solid State and Network Connected

Conductor
for Show Controllers

Graphical, timeline based effect and show programming for ProCommander and Pro I-O Series show controller and I/Os. Export shows to ProCommander show controller. Artnet and DMX monitoring and recording. Real-time programming through mouse, keyboard, MIDI, joystick, gamepads or similar.



Timeline Editing



Live Recording

Multi Channel Audio With Volume Control

Conductor is a timeline based show programming software that visualizes every numeric output (any analog, digital or DMX output) through a curve. Commands can be placed along the timeline in commands channels. A numeric channel can have different interpolation modes: step, linear or curve. Just add control points by double clicking into channel, edit value and time by dragging the point or enter accurate values through the quick edit command.

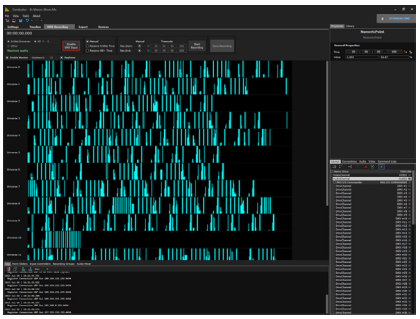
Live Recording and Timeline Editing
You can map and record external devices like mouse, keyboard, joystick, MIDI faders and game controllers to any or multiple channels and program your show in real-time. Punch In/Out can be set per group - you decide to record to all or single channels. Input values can be scaled or inverted and you can define ease-in and -out times for devices with no force feedback, to avoid any jumps in the recording data.

Keyframe Sliders
As an alternative to direct point manipulation, the keyframe sliders allow you to jump from point to point and adjust the value of the point with the slider.

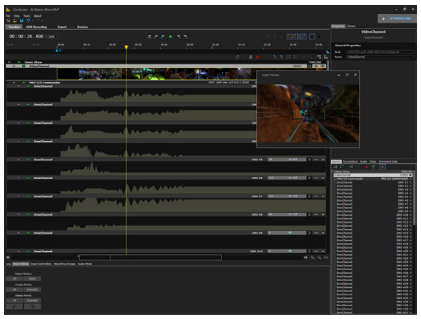
Multi Channel Audio With Volume Control
Load and route audio up to 16 audio channels. Volume envelopes can be put to every audio file.

Artnet & DMX Recording
Record and monitor up to 16 Artnet universes at once or one universe through Pro I-O DMX interface and assign the recorded data to any Artnet or Pro I-O DMX output device. The recorded data can also be extracted for editing. Recording is synchronized either through Artnet timecode or can be triggered by the first changing DMX channel or by hitting a button.

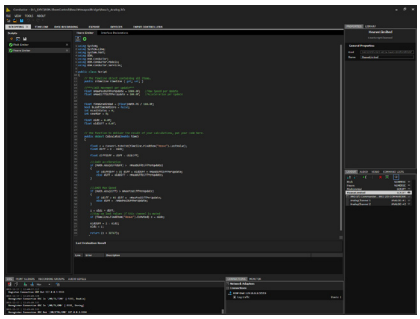
Offline Editing
Import video and have a frame accurate preview for offline editing, if your final show should run synchronous to video.



Artnet & DMX Recording



Video Import



C# Scripts

C# Scripts

Conductor allows to access channel values through C# and modify it programmatically. Any output channel can then refer to the result of the C# script. This allows to add mathematical calculations between programming curves and output values.

Upload and run from ProCommander show controllers

Final shows can be exported to flash card or deployed to ShowCommander(s) over network. During export you can choose the start mode of each show, if for example it should play immediately after power on or on an external trigger. Shows can be mixed: while a main show is running, multiple other shows can be started that run parallel to the main show. A powerful script language with the support of variables allows you to create simple show logic on the ProCommander show controllers.

Editions

We offer different versions to meet project requirements and budget. Please contact us for details.

	ConductorPro Editions for ProCommander Show Controller			**Conductor** Full Show Control and Creation
	Starter	**Basic**	**Advanced**	**Full**
Max. ProCommander per showfile:	1	1	1	unlimited
Max. Pro I/O modules as ProCommander slaves per showfile:	0	10	32	unlimited
Max. standalone Pro I/O modules per showfile:	0	0	0	unlimited
DMX recording:	×	√	√	√
DMX output:	1 universe	1 universe	5 universe	unlimited
Artnet recording:	×	√	√	√
Artnet devices in Conductor:	×	×	×	√
Supported audio formats for export to flash card:	OGG	OGG	AAC, OGG	AAC, OGG
Max. number of shows per export to flash card:	5	unlimited	unlimited	unlimited
Input controller for programing:	keyboard and mouse only	√	√	√
C# script channels, custom plugins:	×	×	√	√
Import and export CSV files, import Open-Hex files:	×	×	√	√
Sync to external timecode (possible inputs: Pro Commander, LTC reader on computer, Playmaker on video server:	×	Pro Commander only	Pro Commander only	√
Remote control of Conductor through UDP commands:	×	×	×	√
Saving enabled:	√	√	√	√

Show Controller and I/Os

Show Controller and I/Os

The ProCommander and Pro I-O Series is a set of solid-state show controllers and network connected I/O Modules that allows you to interface with nearly any device you need to control. Conductor is used to create and export shows to ProCommanders

The ProCommanders are solid-state show controllers with a flash memory card slot. Different shows can be stored on a card and either run automatically, triggered by an external event or scheduled at a specific time. The ProCommanders can be daisy chained with one or multiple Pro I-O Modules - just add modules for every interfaces you need.

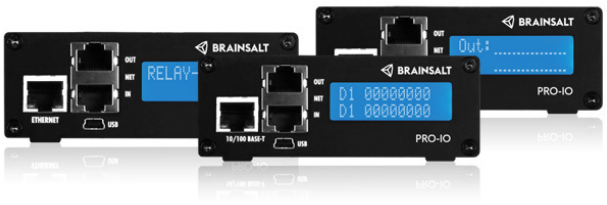
Both, ProCommanders and Pro I-O Modules can be accessed through our show programming software Conductor. Alternatively to run shows live from Conductor on a BRAINSALT video server, Conductor allows to upload show data to ProCommander show controllers. Shows on a ProCommander can be set to loop on power-up, be triggered internally by other timelines (digital or analog inputs), wait to sync with incoming SMPTE timecode or simply begin from a UDP command.

ProCommander Series

The ProCommander Series features solid-state show controllers built for playback of synchronous audio, animation, lighting, and mechanical action. The flexible architecture options and open control protocols allow inspired attractions to be designed without hardware limitations.

Pro I-O Modules

Pro I-Os offer powerful features in a small form factor. The integration of analog and digital PWM, contract closure outputs, standard ArtNet and DMX gives you the opportunity to expand the capabilities of the Conductor and ProCommander Series anywhere on a regular network system.



ProCommander 2/3

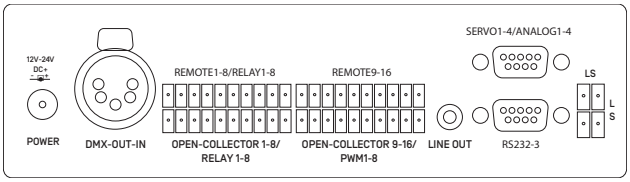
Features

- 16 digital outputs at 48VDC/500mA
- 16 digital inputs OR 8 digital and 8 analog
- 3 x RS-232 serial ports
- 512 channels of DMX output
- On-board ethernet
- 4 x servo outputs
- User replaceable chipsets
- Mounts in 1/2 rack space
- Battery, solar and charging capable
- 8 x high powered relays optional
- IR remote control available
- High powered on-board class-D stereo amp
- Integrated DMX merger with LTP, HTP modes
- Integrated MicroSD storage for audio/timeline data

Hardware

- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 16.5 x 4.6 x 10.5 cm
- Shipping dimensions (WxHxD): 18 x 8,5 x 28 cm
- Weight: 1.2 kg

BACK VIEW



ProCommander PHX

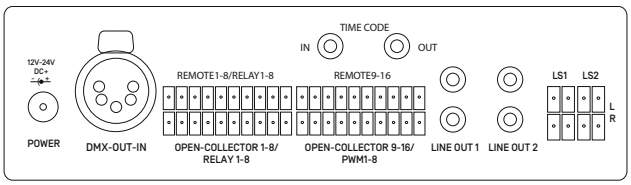
Features

- Polyphonic audio layering
- Dual-zone support
- UDP audio mix control
- SMPTE timecode in & out
- Real time clock & scheduler
- 16 digital outputs at 48VDC/500mA
- 16 digital inputs
- 2 x RS-232 serial ports (1 RS-485 capable with adapter)
- 512 channels of DMX input
- 512 channels of DMX output
- On-board ethernet
- PNP positive driver optional
- 8 x high powered relays optional
- IR remote control available
- 4-channel line out through RCA connectors
- 4-channel integrated amplifier
- Integrated DMX merger with LTP, HTP modes
- Integrated MicroSD storage for audio/timeline data

Hardware

- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V Output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 16.5 x 4.6 x 10.5 cm
- Shipping dimensions (WxHxD): 18 x 8,5 x 28 cm
- Weight: 1.2 kg

BACK VIEW



ProCommander ES

Features

- A full universe of DMX512 output
- 8x digital in
- 8x digital out
- Stereo out
- High powered on-board class-D stereo amp
- Network ready
- On-board ethernet
- Mounts in 1/4 rack space
- Integrated MicroSD storage for audio/timeline data
- High power mofset transistor

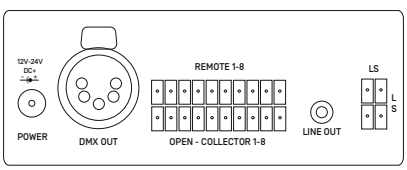
Technical Highlights

- Network jack for UDP messaging and show file uploads
- Play up to 6 timelines (1 audio playback stream concurrently) to allow management of a variety of tasks around your exhibit
- Powerful class-D amplifier provides in place amplification throughout the exhibit space

Hardware

- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 10.6 x 4.1 x 10.9 cm
- Shipping dimensions (WxHxD): 18.5 x 6 x 25 cm
- Weight: 0.8 kg

BACK VIEW



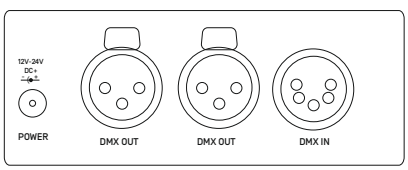
PRO I-O DMX 512

Features
- Full universe of 512 DMX channels
- 3 pin and 5 pin XLR output connector
- 5 pin XLR input
- DMX recording
- DMX merging (HTP, LTP, ADD, change & combine)
- Selectable DMX frame rate from 10fps to 44fps
- Display of 16 selectable DMX channels in alpha numeric display

Common Features for Pro I-O Modules
- Ethernet connection
- USB connection
- ArtNet Support
- RS485 in/out for daisy chain connection
- 19" rack mount adapter available
- Din-rail mount available

Hardware
- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 10.6 x 4.1 x 10.9 cm
- Shipping dimensions (WxHxD): 18.5 x 6 x 25 cm

BACK VIEW



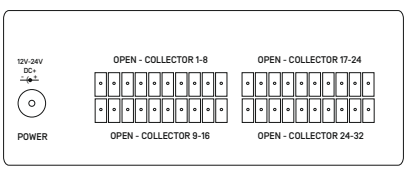
PRO I-O DIGITAL 32

Features
- 32 open collector digital channels outputs
- Up to 400mA per channel
- Available with NPN (negative) or PNP (positive) output driver
- Display of ON/OFF status of the outputs
- DMX read in for DMX to digital out conversion (via ArtNet)
- Overvoltage protection
- Short circuit protection with PNP driver output
- 48V/500mA output driver

Common Features for Pro I-O Modules
- Ethernet connection
- USB connection
- ArtNet support
- RS485 in/out for daisy chain connection
- 19" rack mount adapter available
- Din-rail mount available

Hardware
- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 10.6 x 4.1 x 10.9 cm
- Shipping dimensions (WxHxD): 18.5 x 6 x 25 cm
- Weight: 0.8 kg

BACK VIEW



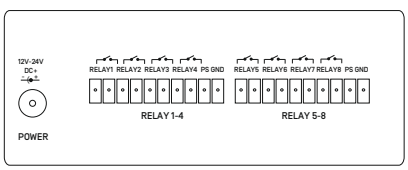
PRO I-O Relay 8

Features
- 8x relay outputs
- 48V/3A switching load
- Display of ON/OFF status of the outputs
- DMX read in for DMX to relay conversion (via ArtNet)

Common Features for Pro I-O Modules
- Ethernet connection
- USB connection
- ArtNet support
- RS485 in/out for daisy chain connection
- 19" rack mount adapter available
- Din-rail mount available

Hardware
- Power requirements: 36 W, 12V - 24V
- External power supply: 110V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 10.6 x 4.1 x 10.9 cm
- Shipping dimensions (WxHxD): 18.5 x 6 x 25 cm
- Weight: 0.8 kg

BACK VIEW



PRO I-O Analog 8

Features

- 8x 0-10V analog outputs
- Up to 300mA per output channel
- 50mA output driver
- On screen level display for each output
- DMX read in for DMX to analog conversion (via ArtNet)
- Short circuit protection

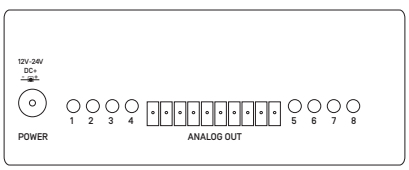
Common Features for Pro I-O Modules

- Ethernet connection
- USB connection
- ArtNet support
- RS485 in/out for daisy chain connection
- 19" rack mount adapter available
- Din-rail mount available

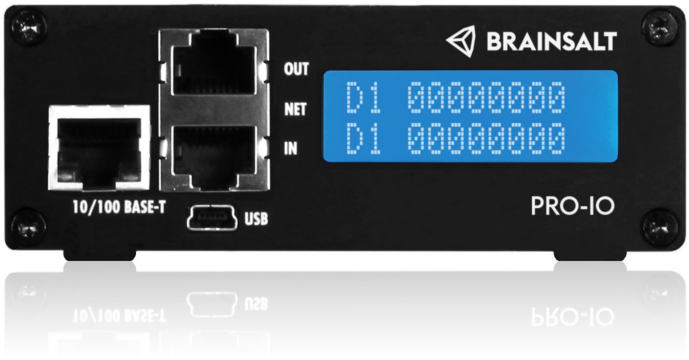
Hardware

- Power requirements: 36 W, 12V - 24V
- External power supply: 100V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
- Dimensions (WxHxD): 10.6 x 4.1 x 10.9 cm
- Shipping dimensions (WxHxD): 18.5 x 6 x 25 cm
- Weight: 0.8 kg

BACK VIEW



PRO I-O Remote 16



Features
- 16x digital inputs
- Onboard storage for ASCII scripting
- Send serial or network messages to any network device

Common Features for Pro I-O Modules
- Ethernet connection
- USB connection
- ArtNet support
- RS485 in/out for daisy chain connection
- 19" rack mount adapter available
- Din-rail mount available

Hardware
- Power requirements: 36 W, 12V - 24V
- External power supply: 110V - 240V, 24V output
- Operating temperature range 0°C - 40°C (32°F - 104°F)
- Operating relative humidity range 8% - 80% (non-condensing)
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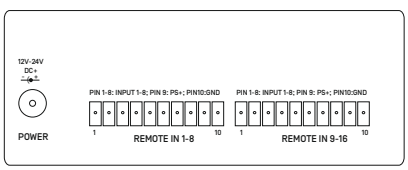
BACK VIEW



Digital Signage

Create and Distribute Content to Screens

Presenter

Our Presenter Software enables you to compose and distribute content to screens easily. Simply draw regions on your desktop and put videos, slideshows, webpages, video capture, ticker and clock into their playlist. When done editing, schedule playback and distribute either locally or via BRAINSALT CMS Cloud to internet connected Presenter Players.

Content Editing
Presenter runs on Windows 7.0 Operating System or later. Content editing can be done on any PC running Windows 7 or later. If you purchase a Presenter Player, you get one license for an “editing station” (for example your office PC) for free.

Compose Regions and Content

BRAINSALT Presenter Software lets you tile the display in regions by dragging and scaling a window on your desktop. Each region can be filled with any type of supported media in any order. You can play one or multiple videos followed by some images or a live captured video input and a webpage. Regions can always be modified during editing. The position of each region in the region-list defines the visibility of overlapping regions (z-order). This allows you, for example, to permanently overlay a logo. One primary region controls the timing of the composition: if its playlist has finished, the next composition is loaded or the current is looped. You can enable a “live” preview of each playlist item in each region’s content. This allows you to inspect content of each region separately.

The live preview mode shows your composition and gives you the possibility to adjust your layout in real-time. Once editing is done, you can preview the entire composition. After creating one or multiple compositions, you create a schedule for them as preparation for content distribution.

Schedule and Push Content
Your compositions can be scheduled to be played permanently or at certain times. Multiple compositions can be arranged to playback in a loop. A schedule of a day can be easily copied to multiple days until an end date. Push Content is a library for compositions that can be triggered on an external event to be immediately shown on the screen. The actual playing schedule is paused and the triggered Push Content composition is shown.

Distribute
Schedules and Push Content will be distributed directly to players in the local network or to a BRAINSALT Presenter CMS Server in the local network or through the internet. BRAINSALT also operates a CMS server in the internet and offers to use this CMS cloud for content distribution over internet. For this service, BRAINSALT charges a monthly fee per player.

Presenter Pro
Extends the functionality of Presenter with support of video capture cards and remote control possibilities. It supports split screens with up to 6 displays and bezel compensation. Presenter Pro can also be used to create “control room like operation” where multiple capture inputs and network cameras are displayed on multiple outputs.

Supported Media
- Video: MPEG1, MPEG2, H.264, AVC
- Images: PNG (including transparency), JPG, BMP, GIF, TGA, TIFF
- Webpages including Flash
- Static Ticker and RSS feeds
- Analog and digital clock
- Database access through C# live scripting function

Presenter Player

Presenter Passive Cooling

Specification

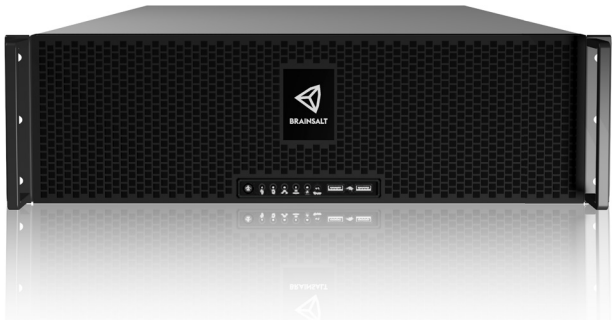
- Passive cooled player, no fans
- Player hardware including Windows 8 Embedded 64 bit
- Up to 4K output resolution, up to 4K@30 FPS media playback
- BRAINSALT Presenter Software installed, license key installed
- Passive cooling, 80 GB SSD, 2 x miniDP, 1 x Lan, 1 x audio, 4 x USB, 1 x COM, 0 x WLAN (Optional), 0 x bluetooth (optional), Vesa mount, external power supply 100-240V, 65W
- 200 x 150 x 47 mm (DxWxH)
- Operating 0°C ~ +50°C, Storage -20°C ~ +70°C

Presenter

Specifications

- Player hardware including Windows 7 Embedded
- BRAINSALT Presenter Software installed, license key installed
- Active fan, 30 GB SSD, 1 x mini DP, 1 x mini HDMI 1.4a, Lan, 4 x USB, 1 x stereo audio, Vesa mount, external power supply 100V - 240V; 65W, Windows Embedded Standard 7.0 64 bit, 115 x 115 x 50 mm

Presenter Pro 2, 4 or 6



Specifications

- Player hardware including Windows 7 Embedded
- BRAINSALT Presenter or Presenter Pro Software installed, license key installed
- 2, 4 or 6 channel DisplayPort outputs, up to 2560x1600@60 or 3840x1080 each output
- Adapter to 4K HDMI 2.0 available
- 400W power supply 100V-240V
- 9”, 3U Rackmount chassis

Presenter CMS Server

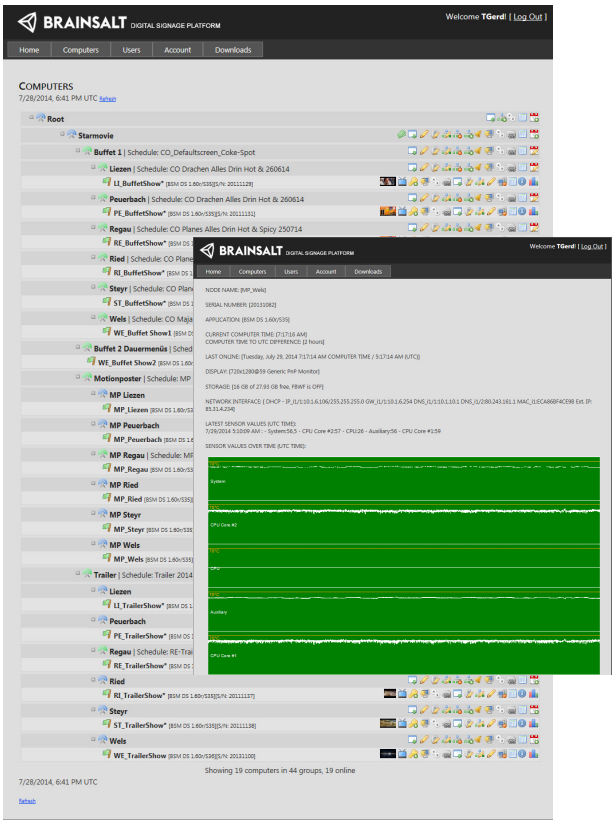
The BRAINSALT Presenter CMS Server is used to organize and distribute content to groups of players in a local network or over internet. It keeps track of the status of the players and provides detailed system and health information.

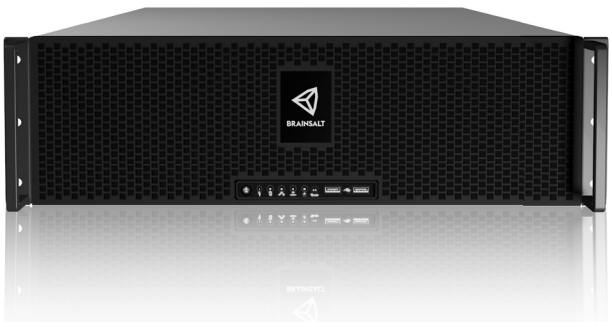
Player network, content distribution
The players can be organized in a tree-like topology; Content can be uploaded to every node of the tree. Players in that node or in a node beneath of that node will automatically download the new content. If necessary, content delivery can be restricted to certain times of the day (f.e. nightly updates only).

User management
Users with different access levels and access nodes can be created. As example: a media creation user might only have the right to upload new content and set that active to a certain group, while an administrative user can move players to different groups, remote connect to it and change the group topology.

Status and health tracking
Each player is in permanent contact to the CMS Server and is reporting its status. The information includes data like: network configuration, display resolution, storage status and temperature sensor values. Several notification events can be set, f.e. if a temperature exceeds a critical point or the player does not connect to the CMS server anymore, a warning email can be set out to the administrator.

Remote access
The CMS server also acts as a repeater for remote connections to a player connected through the internet. If an administrator wants to log into a player, the player is actively opening a remote control session to the CMS server and the remote control session is routed through the CMS server to the software on the administrator's computer. That way, router and firewall at the player's end do not need to be specially configured.





Specifications

- CMS software, 3U rackmount, redundant fans and power supply, hardware raid controller, 2 x 1 GBit NIC, 10 TB Raid 5, Windows Web Server 2008, Microsoft SQL Server, 6 Core 2.66 Ghz, 12GB Ram, 30 GB system SSD
- Country of origin: Austria, Customs tariff number: 84718000

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