PIXERA

A FUTURE OF INNOVATION

Since the founding of our family owned company more than 40 years ago, we have always been passionate about developing, manufacturing and servicing the best possible products for the AV market.

Together with a constantly growing team of enthusiastic and highly motivated individuals on one side, and an international partner network in over 60 countries on the other side, we have been collectively pushing the technological limits of what is possible for more than four decades.

At the beginning of 2021, Stefanie Niederwimmer and Harry Gladow were appointed as executive directors, tasked with the operative coordination of the projection screens and media server departments.

In this catalogue, we proudly present our latest media server technology line up, which contains groundbreaking products like the new PIXERA show control software, or our powerful solutions for uncompressed 8K realtime-graphics and/or virtual production setups.

Our thanks go out to our partners and friends for their great support. We are looking forward to exciting new projects, combining your professionalism and creativity with our products and service.

Let's make your tech dreams a reality!

Your PIXERA team www.PIXERA.one/team



TOBIAS STUMPFL Managing Director



HARRY GLADOW Executive Director -PIXERA



STEFANIE NIEDERWIMMER Executive Director -Screens



MEDIA SERVER SOFTWARE & HARDWARE

Live | Event | Theater | Installation | 3D Projection Mapping

Our media server hard- and software is used in a great variety of different applications and markets. Whatever your media production, installation or event production requirements are, our systems have been developed to combine premium quality with great usablity.



SOFTWARE

Professional media playback | Media compositing 3D Projection Mapping | Show Control



HARDWARE

High-Performance servers | 24/7 | Uncompressed playback | Scalability | Show Control | Audio

NEXT GENERATION MEDIA SERVER SOFTWARE

PIXERA is a 64-bit system for real-time media processing, compositing and management. It is built around the **key theme of usability**. Users can gradually discover the options and features and can smoothly transition from being a beginner to becoming a true specialist. **Actions in the 2D and 3D space follow the same basic mechanisms**. The system was designed so that users can **execute the most important basic actions in record time** and with only a minimum of effort. A radical new interface logic enables even first time users to **intuitively understand the main software mechanics**.

www.PIXERA.one/PIXERA

- Revolutionary GUI/usability concept
- Integrated projector and LED databases
- Intuitive 2D and 3D projection mapping workflows
- Powerful 8K real-time render engine
- **PIXERA control** show control framework
- XR/VR/AR Virtual production features
- NDI-Streaming
- Previsualization Video Export
- VIOSO camera calibration





SUPERIOR USABILITY

Whether you are working in a 2D or 3D world, understanding this software's main functions is very easy. The GUI design allows for an ultra fast learning process based on a very smooth learning curve. This superior usability is the result of a holistic interface design approach that lets users focus on their actual work instead of forcing them to understand complicated menu structures. Many important basic actions can be performed following a drag & drop functionality.

PROJECTOR & LED DATABASES

PIXERA includes projector and LED databases, so that you can easily simulate the real-life environments and technology components you will be working with. Just choose the appropriate projector or LED display model and drag&drop them into your project. Detailed information like "field of view" etc. will make your life even easier when preparing softedge panoramas or multi-display installations.

3D PROJECTION MAPPING

In addition to offering a great 2D workflow, PIXERA users can also enjoy a state of the art environment for realising advanced 3D projection mapping setups. FBX import, marker calibration and the use of u/v perspective effects are just some of the features that will help users realise breathtaking projection mapping projects.





MAIN INTERFACE TABS

PIXERA's three main interface tabs are called SCREENS, MAPPING and COMPOSITING. Every single tab allows for a different point of view and point of access to the overall creative setup.

Y POWERFUL REAL-TIME RENDER ENGINE

The render engine inside PIXERA is based on a 64-bit system architecture and is so powerful that it allows users to play out up to 4x uncompressed 4K (4:4:4) content streams @60 fps when using AV Stumpfl 8K RAW media servers. The engine includes several base level algorithms, replacing standard operating system and driver functions. Power and reliability make PIXERA a great choice when playing out and synchronising content for multi projector and multi display setups.

Y PREVISUALIZATION

Using a geometrically correct 3D space and having the ability to import high resolution 3D objects becomes even more exciting as a way to previsualize projects with the option of exporting your design as a video file. With PIXERA, you can present your project vision and inspire your customer even before your show has started.

www.PIXERA.one/PIXERA



Screens Mapping Compositing Control 1

MAIN INTERFACE TAB - SCREENS

PIXERA's three main interface tabs are called SCREENS, MAPPING and COMPOSITING. Every single tab allows for a different point of view and point of access to the overall creative setup. SCREENS offers you an overview of your project space where you can arrange your screens, LED walls, objects etc.

The sections and preference pane consists of PIXERA's main programming tabs: Screens, Mapping and Compositing.

- Screens database, LED database and Scenery. Scenery shows all objects placed within the 3D space.
- Geometrically correct 2D+3D Workspace including the navigation cube tool.
- Workspace controls. From left to right: Auto Transform, Edit Mesh, Grid activation, Show all objects, reset camera.

Inspector: Screens, LED, and display properties as well as additional information can be found here.



Screens Mapping Compositing Control





MAIN INTERFACE TAB - MAPPING

MAPPING is where warping, softedge adjustment and output routing happens.

- 1 Projector database & Live Systems. All PIXERA systems are visible here. Their outputs can be allocated to the projectors in the workspace.
- 2 The Mapping workspace refers to the exact same workspace as the one already shown as part of the Screens tab. Viewed from the Mapping tab perspective, this is where the pixel mapping, warping and projector set up happens as part of the same unified workflow.
- Warping \rightarrow Warping & Projector properties: e.g. position, lens, throw ratio and lens shift.
- 4 Softedge and masking for multiple projector setups.
- 5 Marker: The marker calibration can be used for calibrating projector positions within the 3D space.



MAIN INTERFACE TAB - COMPOSITING

Within the COMPOSITING tab you can be creative and use content to create and program your shows.

- Resources: Users can manage and import resources -> content, effects, live inputs, 3D models, Notch Blocks etc.
- Timelines: Here you can create multiple timelines and modify their settings for multi-timeline setups.
- Workspace with the Compositing workspace controls
- The Inspector shows information, settings and controls of the selected sub-structure, e.g. content settings, timeline settings or keyframe settings.
- Timeline: A layer based timeline



Screens Mapping Compositing Control

Media

Models

Effects

Live Inputs



Screens Mapping Compositing Control Screens : / 田[시] 의 LED Panel Projectors Name Displays Barco LED Panels Canon Absen Casio W 0.40 Alabama AOTO Display Values per Square Meter Barco Epson Panel Resolution Big-Bear Hitachi Vertical Horizontal Christie > JVC Clay-Paky ▶ LG Vertical Daktronics NEC DigiLed Norxe **Pixel Pitch** Pixelcount Ekta Esdlumen Vertical ▶ F-P Horizontal Philips ▶ G-Lec Brightness (nits) Weight Galaxia Pearl Hibino Vivitek Power Average Power Max Inarex Acer Infiled ▶ Generic Innlights Kindwin CooLux Everest Led-Project ▶ Favi ▶ PRG Wolf Cinema ROE

PROJECTOR & LED DATABASES

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3D PROJECTION MAPPING



NEW PIXERA FEATURES





This powerful feature lets you edit timelines in the preview window while the output shows content from a different section of the timeline. This allows changes to running shows to be previewed by the operator and then blended into the output on the fly.

DYNAMIC SOFTEDGE

A softedge blend can be calculated automatically per frame, using the projector and screen information. This leads to a very quick setup time for static surfaces as well as giving users the ability to use blends on moving surfaces.



GAME ENGINE INTEGRATION

PIXERA can natively host both Unity and Unreal game engines. This gives users the ability to use projects they have created with these powerful authoring and rendering environments

DIRECT-API TRACKING SUPPORT

A new area of the PIXERA API gives more direct access to objects as they are rendered by the engine. It is now possible to realise advanced tracking scenarios. The acclaimed Stage Precision tracking system has been directly integrated into PIXERA.







BLEND TO TIME / BLEND TO CUE

Click anywhere in the timeline while the show is running and perform a smooth blend to the new position. Perfect for changes on the fly during live shows!

NDI STREAMING

Networked live inputs. Integration of NDI streaming for distributed live applications. The PIXERA outputs can also be sent via NDI.

VIDEO EXPORT

With the video export feature, you can render and export either the complete 3D venue to impress your customer with a vision of the programmed show, or you could render the content of specific screens to reduce the number of necessary layers as part of a complex composition.

ART-NET PIXEL PATCHING

Pixel patching tools are seamlessly integrated into the UI. They allow users to reposition content pixels on the output as needed and to patch the result to Art-Net channels.



SELECTIVE TARGET RENDERING

To optimize your playback performance for large and complex projects, rendering targets can be assigned to screens, servers, or outputs. Additionally layer content playback can be limited to specific servers.

NEW

PIXERA CONTROL

PIXERA control is a distributed integration and control framework that empowers users to seamlessly host new functionalities within PIXERA and to control all aspects of an extended project environment. Anything you create and integrate can be distributed across your connected systems and shares itself.



HIGH QUALITY TEXT

Texts in PIXERA are rendered on the GPU - extremely fast and in an unlimited resolution, no matter how large the individual letters are.

NOTCH

PIXERA users can use exciting Notch projects as part of their PIXERA project workflow.





VIRTUAL PRODUCTION

WHAT DO WE MEAN WHEN USING TERMS LIKE XR/AR/VR?

Extended Reality (XR) is an umbrella term that encompasses all available technologies, both **software and hardware based**, that can be combined to extend or augment one's interactions with reality.

Depending on what approach one follows to realise a certain project, other terms like **Augmented Reality (AR)**, **Virtual Reality (VR) or Mixed Reality (MR)** might be more appropriate.

WHY SHOULD I CARE ABOUT "XR STAGES" ETC.?

Whilst it is true that the recent covid-19 pandemic is without doubt one of the major reasons that **XR stages** and related **broadcast setups** suddenly have become extremely popular household names, the rapid technological developments of the last few years in the realm of **real-time graphics**, **unprecedented hardware processing power** and the exponential global growth of **3D software engine** usage are equally responsible for the meteoric rise of **XR applications**.

Building an impressive and **fully immersive XR stage setup** is without doubt a job for tech professionals, but it has never been easier to create **inspiring live production environments** with the potential to positively impact your particular audience.

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VIRTUAL PRODUCTION SETUP (UNREAL/UNITY)

- One PIXERA two RT director is needed as a master for your preview.
- Each one of the LED walls needs its own PIXERA two RT for the background and back projected camera frustum.
- UNREAL (plug-in) and UNITY (API direct) render on PIXERA RT as a "resource-as-compositing" integration.
- For mixing the camera live signal and foreground, a dedicated PIXERA two RT server with a live capture card is necessary.

- The mixed output can then be fed to your video switcher.
- Stage Precision is used to feed tracking data (Mosys, Stype, Optitrack,...) via direct API to PIXERA.
- Genlock has to be connected to your camera, tracking system, LED processors and one of the PIXERA clients.
- Framelock has to be used to sync the client servers.

Screens Mapping Compositing Control

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RESOURCE AS COMPOSITING

"Resource as Compositing" is a workflow feature that empowers PIXERA users to employ and interact with 3D worlds originating with other software environments (e.g. Unreal, Unity, Notch) in a simple and extremely effective way. PIXERA users have had the opportunity to "dive into" virtual screens since version 1.0, where they would find a full 3D compositing space, that does not only allow for the implementation of video content, but of textured 3D objects as well.

With version 1.8, resources that contain their own 3D worlds have been integrated in a way so that their compositing is seamlessly combined with PIXERA. Navigating inside the preview, editing perspectives inside the virtual world and a host of other functionalities all happen by using familiar PIXERA tools. It's even possible to place 3D objects and videos from PIXERA inside a compositing originating with one of the aforementioned resources. The ability to handle 3D scenes from different engines as compositing lays the foundation for using these resources as part of PIXERA based productions in a user-friendly and truly effective way.

UNREAL CONTENT PLUG-IN



By using the "Resource as Compositing" feature, **Unreal scenes can be displayed within PIXERA**. In addition to this, AV Stumpfl developed a **dedicated plug-in for the Unreal Engine** that makes it possible to **edit scene properties directly from PIXERA**. The plug-in can be used to e.g. move Unreal objects or adjust lighting settings.

The scene properties appear in PIXERA as part of a layer onto which the resource has been placed. This way, PIXERA users can use timeline tools to manipulate the virtual worlds before them. One could summarise the possibilites within PIXERA in this regard as creating a powerful and integrated editing environment, that allows for concentrating on the ultimate project/show experience to be created.

PIXERA CONTROL

PIXERA users will notice a new tab in the main PIXERA interface. This "control" tab is your gateway to a user friendly and versatile platform that allows you to **interact more directly with the incredibly powerful PIXERA API**.

One could also call it a **distributed integration and control framework** that empowers users to seamlessly **host new functionalities** within PIXERA and to **control all aspects of an extended project environment**. Anything you create and integrate can be distributed across your connected systems and shares itself.

www.PIXERA.one/PIXERAcontrol





PIXERA CONTROL LICENSE OPTIONS

PIXERA control GATE	PIXERA control CORE	PIXERA control ENTERPRISE		
 included in every PIXERA version Import of custom modules Restricted to 10 Modules used in a project Restricted to 1 master (local) PIXERA module remoting from PIXERA CORE/ ENTERPRISE 	 All the GATE functionality plus: Unlimited amounts of modules in a project Export and share custom created modules Unlimited PIXERA module remoting on multiple masters Standalone: Timeline for Data Layers 	 All the CORE functionality plus: ▲ Advanced remoting access ▲ Portal/ User Access Management ▲ Unlimited remoting of all individual modules on multiple masters 		

PIXERA control **DEMO**

Included in PIXERA Demo versionBased on the PIXERA control GATE license



www.PIXERA.one/control

PIXERA CONTROL INTEGRATION



Discover the exciting world of **BECKHOFF's new automation technologies** and take your next-gen system control setups to the next level by **interfacing directly** with the PIXERA control API via a dedicated BECKHOFF Automation module.





RECOMMENDED HARDWARE COMPONENT





IOCORE2 GPIO interface module

A dedicated module within the PIXERA control interface allows for **easy access to the compact loCore2** unit's inputs and outputs.

The IoCore2 is a **network-based solid-state interface for GPIO signals**. It features eight GPI ports that can be configured as digital contact-closures or analog 0-10V level inputs. The IoCore2 also has eight GPO ports that are fitted with potential free relay switches. Furthermore, it has a RS-232 port, a bi-directional DMX-512 port and supports many Ethernet based protocols.

PIXERA SOFTWARE



PIXERA SOFTWARE LICENSE OVERVIEW

Y PIXERA DIRECTOR

The PIXERA Director license can be used for pre-visualizing projects and for offline programming, in order to prepare and pre-program shows and content playout scenarios. It also features Master functionality, so that it can be used for controlling multiple PIXERA clients.

Y PIXERA PLAYER

The PIXERA PLAYER license is a versatile and powerful option for a great variety of applications. Please note that image sequences cannot be imported with this license option and that users can use a maximum of two timelines.

Y PIXERA SERVER

The PIXERA SERVER license offers users all features of a standard PLAYER license without timelines being limited and with the ability to import image sequences. This license option is installed on all AV Stumpfl hardware products and is perfectly suited for using uncompressed content (Full HD, 4K, 8K depending on hardware).

Should you have any more questions regarding license options or related topics, please contact us directly: pro-sales@avstumpfl.com

PIXERA DEMO VERSION

INSTALLATION GUIDE PIXERA DEMO VERSION:

- **STEP 1:** Download the PIXERA Demo Version. (www.PIXERA.one/PIXERAdemo)
- STEP 2: Install the PIXERA software on your computer, at this point you will receive a unique serial number.
- STEP 3: Now please fill in the form below including the serial number.
- **STEP 4:** You'll receive your licence code as soon as we have approved your request.
- STEP 5: Go back to PIXERA and enter the licence code.
- STEP 6: HAVE FUN testing our PIXERA software.

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s	OFTWARE						
INSTALLATION GUIDE PIXERA DEMO VERSION							
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PIXERA Setup 1.6.53 See changelog here.

> 364 MB 27. July 2021

Software & Hardware brochure 03. February 2020



lease note: this document may contain shortcuts to



442 KB 08. November 2019

PIXERA License Comparison 2 MB

YOUR PIXERA COMMUNITY





TUTORIALS www.PIXERA.one/pixera-tutorials



USER FORUM Technicalforum.AVstumpfl.com



FACEBOOK www.PIXERA.one/usergroup





AUTOMATIC CAMERA BASED CALIBRATION

Have you ever aligned multiple projectors with softedge blending and geometry correction? Have you thought about how cool it would be if media servers could automatically warp and blend the projectors using a camera? This has become reality already.





INITIAL SETUP

All projectors are set up and mechanically roughly aligned. Better mechanical alignment leads to more resolution being available for the final content. The cameras are positioned so that they can "see" the entire projection surface.



AUTOMATIC CALIBRATION

The software will now project different calibration patterns which are analyzed by the system. Based on that information the software calculates the geometry correction and the softedge blending of the overlapping areas. There are different calibration modes available depending on the intended projection surface: Flat or curved screens, 3D models and irregular surfaces such as building facades or rocks.



FINAL RESULT

Once the calibration is finished the resulting total output is mapped onto the projection surface. The calibration is stored and can be recalled anytime.

PIXERA integrates this fascinating auto-calibration technology from VIOSO.

PIXERA mini

compact and powerful

PIXERA mini is an ultra-compact media server perfect for digital signage and multi-display applications. The PIXERA mini is a 1U and ½ 19" product. Two PIXERA mini servers can be installed in a 1U 19" rack.

PIXERA mini is available with 2 or 4 outputs.

www.PIXERA.one/PIXERAmini









PIXERA one

Compact, Flexible and User-Friendly

PIXERA one is a compact 1U server model, that can play back **uncompressed 4K at 60fps**. With a depth of only 45cm, the PIXERA one is perfect for installation environments.

PIXERA one is available with 2 or 4 outputs. www.PIXERA.one/PIXERAone



- super compact with a depth of only 45cm, perfect for installations.
- can be upgraded for Uncompressed 4K (4:4:4) 60fps content playback.
- many à la carte options for specifying hardware components
- available with 2 or 4 outputs
- supports Flex technology



PIXERA two

Reliable and versatile

PIXERA two is a compact 2U media server system, that can play back **uncompressed 4K at 60fps**. It offers even more customization options than PIXERA one and comes with a redundant power supply.

This new media server model is available with 2, 4 or 8 outputs. www.PIXERA.one/PIXERAtwo



- super compact with a depth of only 46cm, perfect for installations.
- can be upgraded for Uncompressed 4K (4:4:4) 60fps content playback.
- many à la carte options for specifying hardware components
- available with 2, 4 or 8 outputs
- redundant power supply
- supports Flex technology





Virtual Production Studio Vienna, 2021

PIXERA two RT

Fast and Powerful

The PIXERA two RT server offers **unprecedented data read speed and processing power** for extremely demanding **real-time graphics projects**.

This new media server model is available with 4 outputs. www.PIXERA.one/PIXERAtwoRT



- extreme processing power for ultra-demanding realtime graphics project
- fastest comparable media server on the market
- ultra fast NVMe read speed of up to 10GB/s
- playout of up to six simultaneous uncompressed 4k60 8-bit content streams or four uncompressed 4k60 10-bit content streams
- compact chassis

PIXERA four

4K and 8K's new best friend

PIXERA four is an incredibly powerful media server hardware system, perfect for **highly demanding real-time graphics** applications and **XR/AR broadcast setups**.

This new media server can be used as a Director server or as a 2 or 4 licensed output server. www.PIXERA.one/PIXERAfour



- powerful, flexible and reliable 4K and 8K media server
- 12G-SDI I/O support
- 10GB/s data read default rate
- five PCI 4.0 slots offer great configuration flexibility
- compact with a depth of only 46cm, perfect for installations
- uncompressed 8K (4:4:4) 60fps content playback

- AMD Performance CPU and 128GB RAM
- great ROI for XR, rental/staging and installations
- available with 2 or 4 outputs
- redundant power supply
- up to 61TB storage with 20GB/s available
- dual 25Gbit/s network available





PIXERA four RS

A new standard

In order to be able to offer our customers a special **pre-configured** version of our powerful PIXERA four, **perfect for cross rental scenarios**, we created the PIXERA four RS.

> The **RS** stands for **rental & staging** in this context. www.PIXERA.one/PIXERAfourRS



- PIXERA four QUAD
- PIXERA control CORE License
- 16TB NVMe-SSD Storage
- 1GbE Quad Network Card
- 25GbE Dual Network Card

- 12G-SDI Input/Output or 4x 3G-SDI
- 1x HDMI 2.0 Input
- Framelock and Genlock
- Dante Virtual Sound Card



PIXERA UNCOMPRESSED 8K POWER

Extreme render performance and reliability combined.

PIXERA offers uncompromising and **superior playback quality**. Whether you need to handle uncompressed **8K 8192 x 4320, 10/12Bit, 4:4:4 or HDR** content, we can offer you superior playback systems for your professional high-end project needs.

www.PIXERA.one/uncompressed8K



POWERFUL 8K PERFORMANCE

Leading LED manufacturers and customers in the automotive indutry regularly use our media servers for their high profile trade fair presentations around the world.



MAXIMUM COLOR DEPTH

By reducing the number of colors used in videos, the amount of data and processing time is massively reduced. However, this way of doing things comes at a price, since the picture quality also suffers. With our powerful hardware and software solutions however, you can enjoy the beauty of 10-Bit or 12-Bit color depth.







HARDWARE CONFIGURATOR

FIND THE PERFECT SERVER FOR YOUR PROJECTS

PIXERA server hardware offers you a lot of choices when it comes to the specific configuration of the server models that fit your project requirements. In order to make finding the perfect configuration easy and fun, we created a versatile hardware configurator tool, which you can access on our website.

www.PIXERA.one/configurator



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WEEE-Reg. NR.: DE 24145251 Edition 06-2022. We reserve the right to make modifications in the interest of technical progress.