biamp.

ENTERPRISE-WIDE
MEDIA MADE SIMPLE

TESIRA®

YOU'RE BUSY. WE GET IT.

You've got more projects on your schedule than ever before, but the number of hours in a week hasn't changed. That's why Tesira® is here.

Tesira is Biamp's flagship audio and video platform, and a true Networked Media System — uniting the A and V of the AV industry. The Tesira platform is loaded with audio and video processing capabilities, all of which are designed and commissioned from a single software platform, saving you time and resources. The fixed I/O TesiraFORTÉ DSP allows for direct USB connectivity to external soft codecs, while TesiraLUX transports both audio and video signals over a single network. Tesira amplifiers allow you to create more complete solutions with products from a single manufacturer, making even the most complex installations easier to manage. With a single networked platform, Tesira can meet the needs of projects large and small. From enterprise-wide audio and video to everyday AV needs (and everywhere in between), Tesira is there.

Biamp also offers conferencing tools and control options, including Biamp Canvas® control software, the Tesira HD-1 hardware dialer, and the TEC-1 wall controls. Advanced networking tools, including selectable clocks and nameable networks, expand Tesira's power and flexibility even further. Best of all, the Tesira platform allows you to add expanders onto the system as needed, making it a cost-effective solution. By using Audio Video Bridging/Time Sensitive Networking (AVB/TSN) as its networking protocol, the Tesira platform takes your audio and video to the next level. Pair all those capabilities with our legendary support, reliability, and dedication to customer satisfaction, and you've got a powerful set of resources at your fingertips.

NOW MORE THAN EVER, TESIRA IS YOUR IDEAL SOLUTION.


AVB
TSN

The Tesira platform supports popular AV network protocols, including CobraNet®, Dante™, and AVB/TSN. Tesira SERVER and SERVER-IO have the capacity for as many as 420 x 420 AVB channels on a single cable; TesiraFORTÉ supports up to 128 x 128 AVB channels. Tesira SERVER-IO can support cards for all three protocols simultaneously, giving you unmatched flexibility in your system design.

While Tesira devices are built to handle anything from everyday to enterprise audio/video, redundancy can be an important feature in certain installations. For mission-critical audio applications, Tesira SERVER can be deployed in redundant pairs. The redundant SERVER automatically stays in sync with the primary SERVER and seamlessly transitions processing responsibilities, eliminating the risk of costly system downtime while the primary unit is offline.

Tesira audio devices are Avnu™ certified. This is a significant milestone, and demonstrates Biamp's commitment to supporting the adoption of AVB/TSN by providing customers with future-proofed, robust networked media solutions. The Avnu Alliance provides certifications for member products that meet all requirements set forth by the Avnu Certified Logo Program. Avnu performs rigorous testing on all products that are submitted for certification, and only products that pass all tests are accepted. Avnu certified devices provide customers with the confidence that their devices are guaranteed to be interoperable with other certified products, regardless of the manufacturer.

AVB/TSN is a set of open IEEE standards that are becoming increasingly adopted across multiple industries, including the automotive and industrial sectors, and by major companies such as Intel® and Cisco®. With an AVB/TSN backbone, media streams can travel throughout your facility over the corporate network. Tesira can run on a separate network if the customer prefers, but does not require a separate network to operate — AVB/TSN's provision for bandwidth reservation makes converged networks feasible. With this level of scalability, you can add I/O devices to the network, making audio and video available for distribution across the facility: to auditoriums, conference rooms, work areas, and between campus buildings. AVB/TSN has low-latency and time synchronization, giving it a deterministic delivery of both audio and video, which is critical for lip sync. When it comes to future expansion of a Tesira system, the possibilities are only limited by your creativity.

BUILT TO HANDLE ANYTHING.

AUDIO

Sometimes it's the height of a ceiling or the surface of a wall. At other times it's ambient noise from HVAC systems, buses passing, or construction. Biamp's DSP technology works hard to overcome these obstacles, providing the best sound possible for the space. Our embedded technologies take a multitude of variables into account and automatically modify signals so you don't have to. Biamp SpeechSense™ and AmbientSense™ technologies greatly enhance the efficacy of the adaptive processing by distinguishing between human speech and noise. Tesira audio DSPs provide extensive audio processing capabilities, including (but certainly not limited to): signal routing and mixing, equalization, filtering, dynamics, and delay; as well as control, monitoring and diagnostic tools; all configured through the Tesira design software. That means Tesira is an easier and more cost effective choice. Tesira's advantages don't stop there.

sound reinforcement

Sound reinforcement means addressing varied needs in a diverse set of environments. Every day presents a brand new challenge. Whether dealing with acoustics, architectural constraints, multi-use requirements, or solving user control questions, working with a robust set of tools can be critical to satisfying clients and maximizing profit. Sophisticated, adaptive DSP is at the core of what Biamp does and what Tesira delivers. With completely open programming and no restrictive predetermined signal flows, Tesira offers a powerful set of tools for creating innovative and efficient sound reinforcement systems. From a single training room to a campus full of lecture halls to a cutting-edge multipurpose auditorium, Tesira is the DSP platform of choice.

AEC

Tesira's AEC technology eliminates acoustic echoes during conference calls, improving call clarity for individuals on the far end of the call. Any changes to the room environment — whether it's the repositioning of a microphone or the noise of someone shuffling papers — require AEC processing to react quickly and accurately in order to maintain clear communication. That's why Tesira AEC is so critical; it leads to unmatched call clarity and intelligibility, even in dynamic environments.

paging

Like any team player, Tesira works well with others. That means it is interoperable with Vocia®, our networked paging system. Tesira and Vocia devices can work together within a single networked media system. Because of this tightly integrated solution, audio can pass between the two platforms seamlessly, giving you the ability to share resources.

distance conferencing

As workforces become more distributed and working remotely increases as a result, conferencing is more important than ever. Many people associate distance conferencing with frustrating devices and poor call quality, but the days of wasting valuable meeting time wrestling with uncooperative technology are over. Our Tesira family provides crystal clear audio with minimal hassle, so meeting participants can focus on the topic of discussion rather than the technology. Tesira also supports the ability to connect to soft codec conferencing tools via USB. In addition, Tesira is certified by several major VoIP providers. Call participants can place calls via VoIP or POTS using the Tesira HD-1 Dialer.

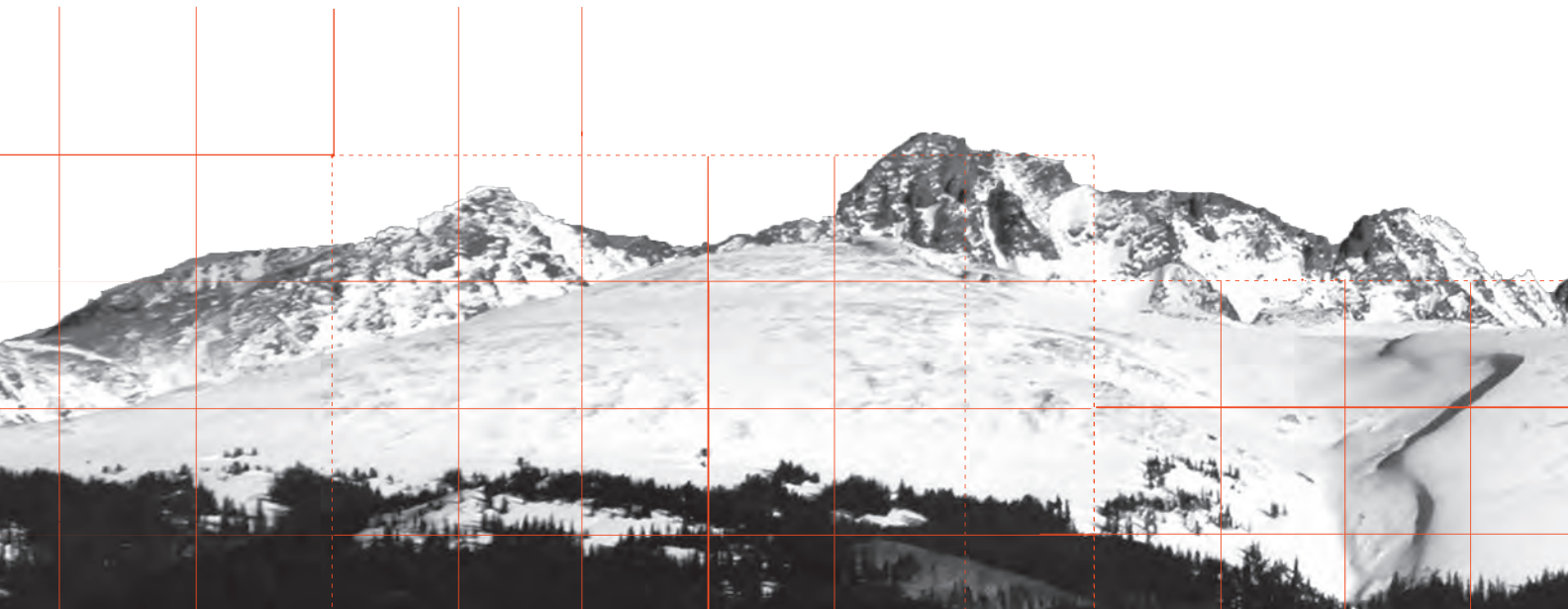
VIDEO

With the addition of TesiraLUX, Tesira now supports real-time video distribution over the network, with unmatched lip sync capabilities. Since Tesira manages the entire audio and video signal path, Tesira processing recognizes how long it takes for each signal to pass over the network, allowing it to accurately synchronize everything.

AVB/TSN offers two fundamental advantages over other Ethernet implementations when deploying video networks. For integrators, it offers automatic device discovery, enabling rapid configuration and commissioning of projects. For the end user, AVB/TSN's deterministic nature allows networked media systems such as TesiraLUX to provide guaranteed network transit latency of 2ms over seven network hops for both audio and video content. These characteristics ensure dependable performance, as well as superior handling of audio and video signal synchronization. The result? Content and conversations that are both visually lossless and perfectly in time.

video partitions

TesiraLUX is completely integrated with the rest of the Tesira platform. This lets system designers use a single software environment for both their audio and video installations. Video I/O blocks similar to their audio counterparts are available, and since Tesira coordinates signal distribution, there's no need to manually add audio delays for lip sync, saving significant design time. The new video partitions behave just like their audio cousins, allowing a modular approach to system design and commissioning.



bandwidth management

TesiraLUX allows the integrator to make intelligent decisions about what to send over the network and helps them treat content types appropriately, resulting in visually lossless transmissions. Multiple software-based options are available for managing bandwidth over the network, including setting maximum resolution, frame rate floor, and/or a rate of compression. With both a 1Gb (RJ-45) and a 10Gb (SFP+) media port available, designers have a wide range of transmission options from which to choose. The software will even indicate when a stream may be too large for TesiraLUX's media port's capacity.

forward looking

TesiraLUX's feature set has been designed with the future in mind, and is capable of meeting the ever-growing video needs of even the most complex facilities. TesiraLUX supports High Dynamic Range (HDR), can accept up to 16-bit color depth and 4:4:4 chroma subsampling, and supports the Rec. 2020 color space. It also supports 8-channel PCM audio for embedding and de-embedding, as well as managing EDID automatically between the TesiraLUX device and the input source/output display thanks to scaling in both the encoder and decoder. TesiraLUX also features a low network transit latency (including scaling) of 1.5 frames* or less.

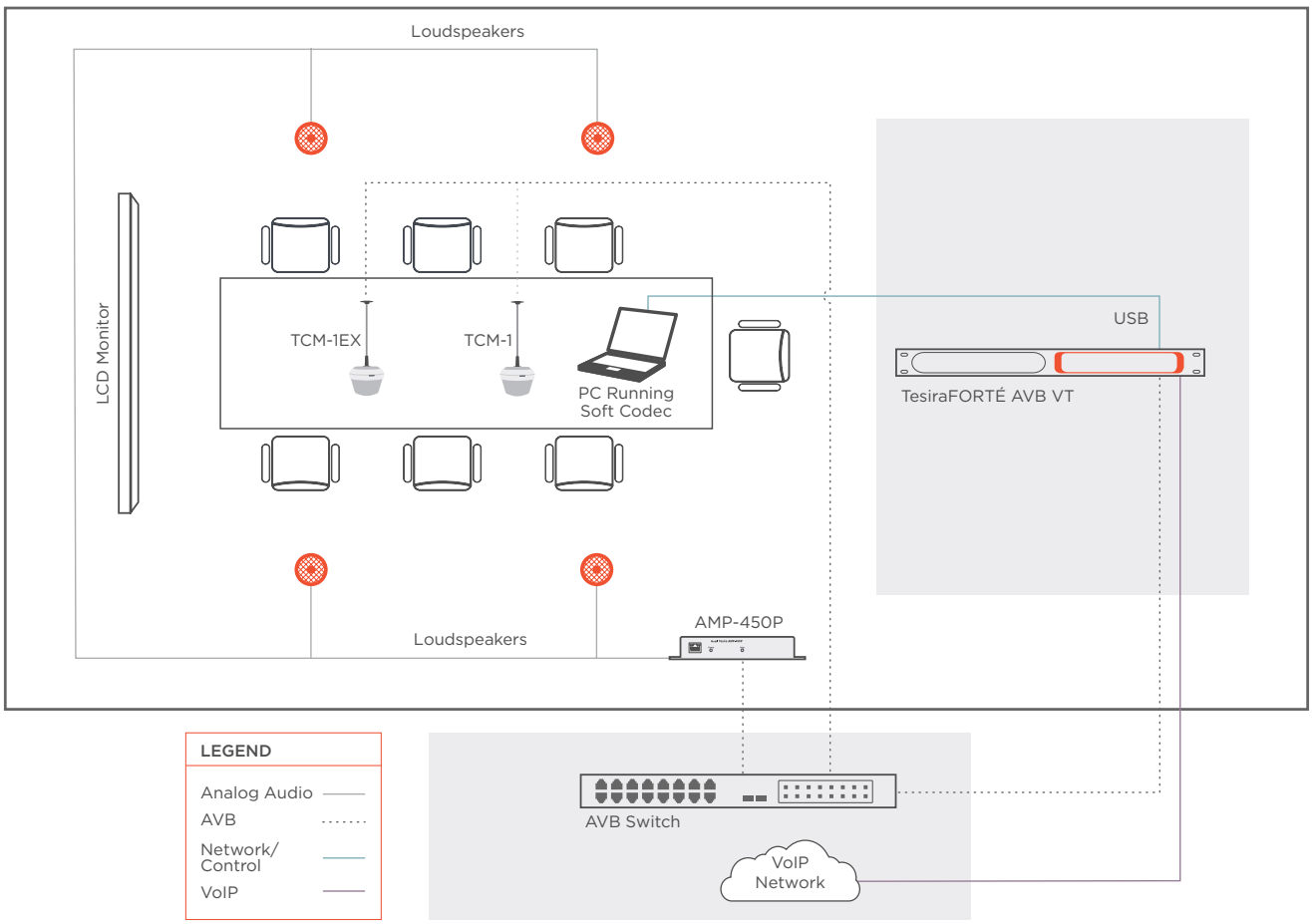
The future looks bright indeed.

*25 milliseconds at 60Hz.

Conferencing

TesiraFORTÉ is the ideal digital signal processor for many conferencing scenarios, enabling you to comfortably run meetings that are clear, collaborative, and efficient. With the TesiraFORTÉ AVB VT, you can conduct conference calls via a VoIP system, analog telephone line, or web-based conferencing systems like Skype for Business® or Zoom®. For an exceptional conferencing experience, consider pairing TesiraFORTÉ with our new beamtracking™ ceiling microphones and PoE+ conferencing amplifier.

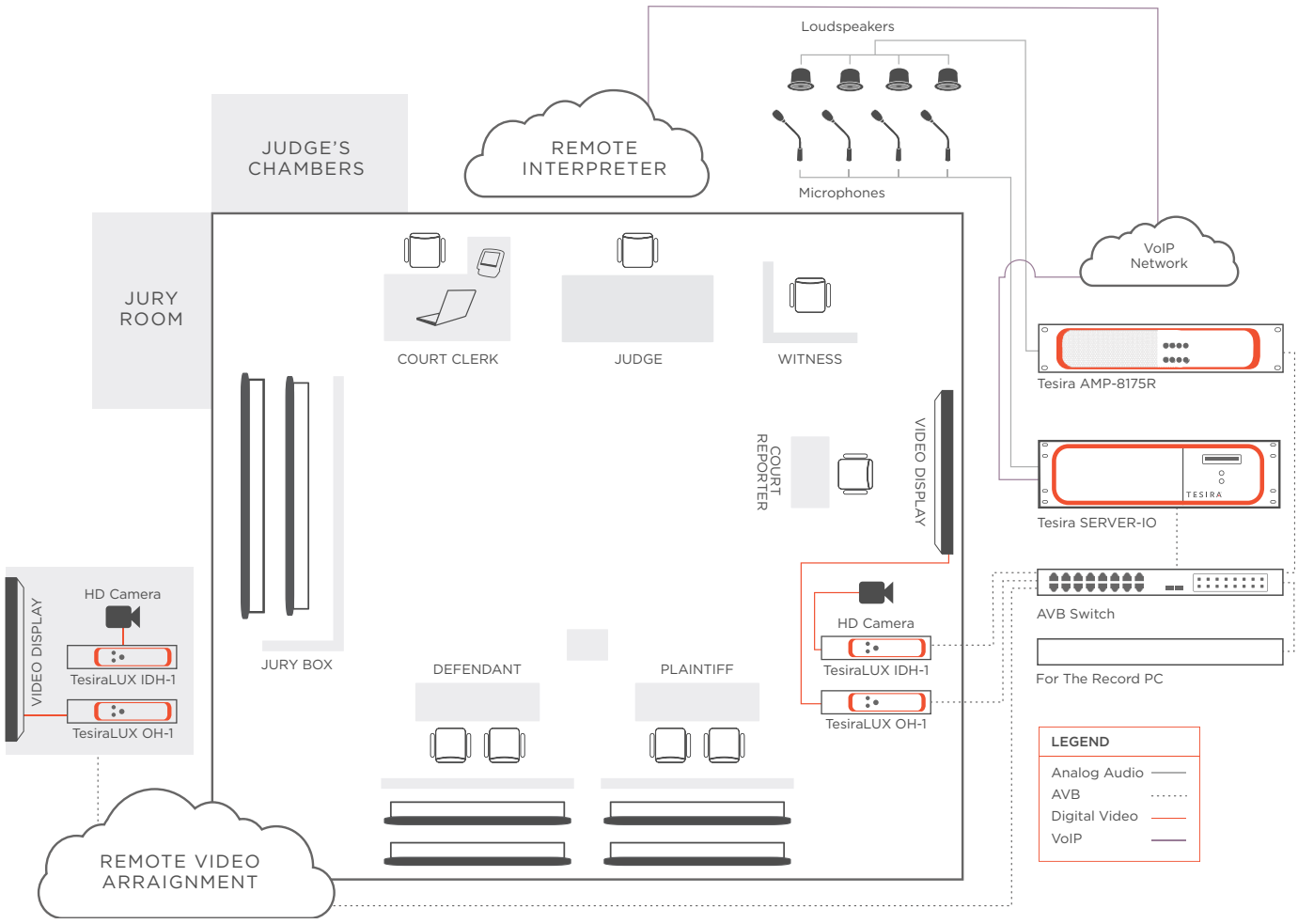
For smaller conference rooms, consider using the TesiraFORTÉ AVB VT4 in conjunction with the Tesira TCM-1A beamtracking ceiling microphone for an equally compelling audio experience. TheTCM-1A includes an integrated PoE+ amplifier, so only a single Ethernet cable is needed to connect your DSP to your microphones and speakers.



Legal Proceedings

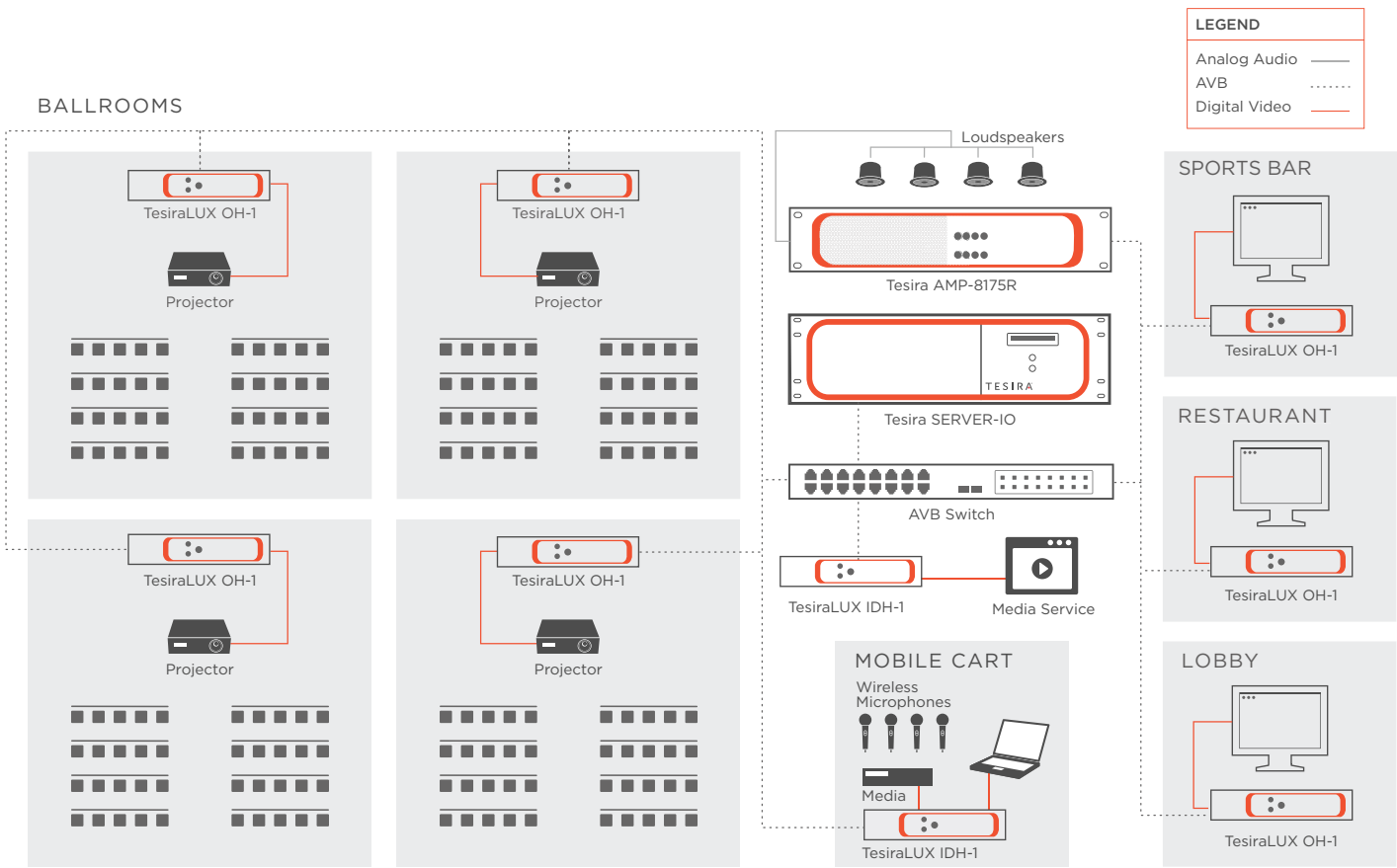
With Tesira SERVER-IO, you can reliably manage the audio for all courtroom proceedings, including the levels of speakers and microphones, recording, remote arraignment, and audio playback from multiple sources, including DVDs, MP3 players, recorders, and other devices. Tesira SERVER-IO has enough DSP to handle multiple courtrooms, and because Tesira is an integrated platform, devices can share resources in processing, VoIP, and amplification. In this scenario, TesiraLUX operates as a remote video arraignment system, which is more economical for the court system because it can help reduce physical transportation costs between the courthouse and local correctional facilities. Adding Tesira amplifiers to the design offers greater flexibility in sound reinforcement and distribution.

The AVB/TSN card installed in the computer running court recording software (such as For The Record) provides seamless capture and recordings of audio court proceedings.



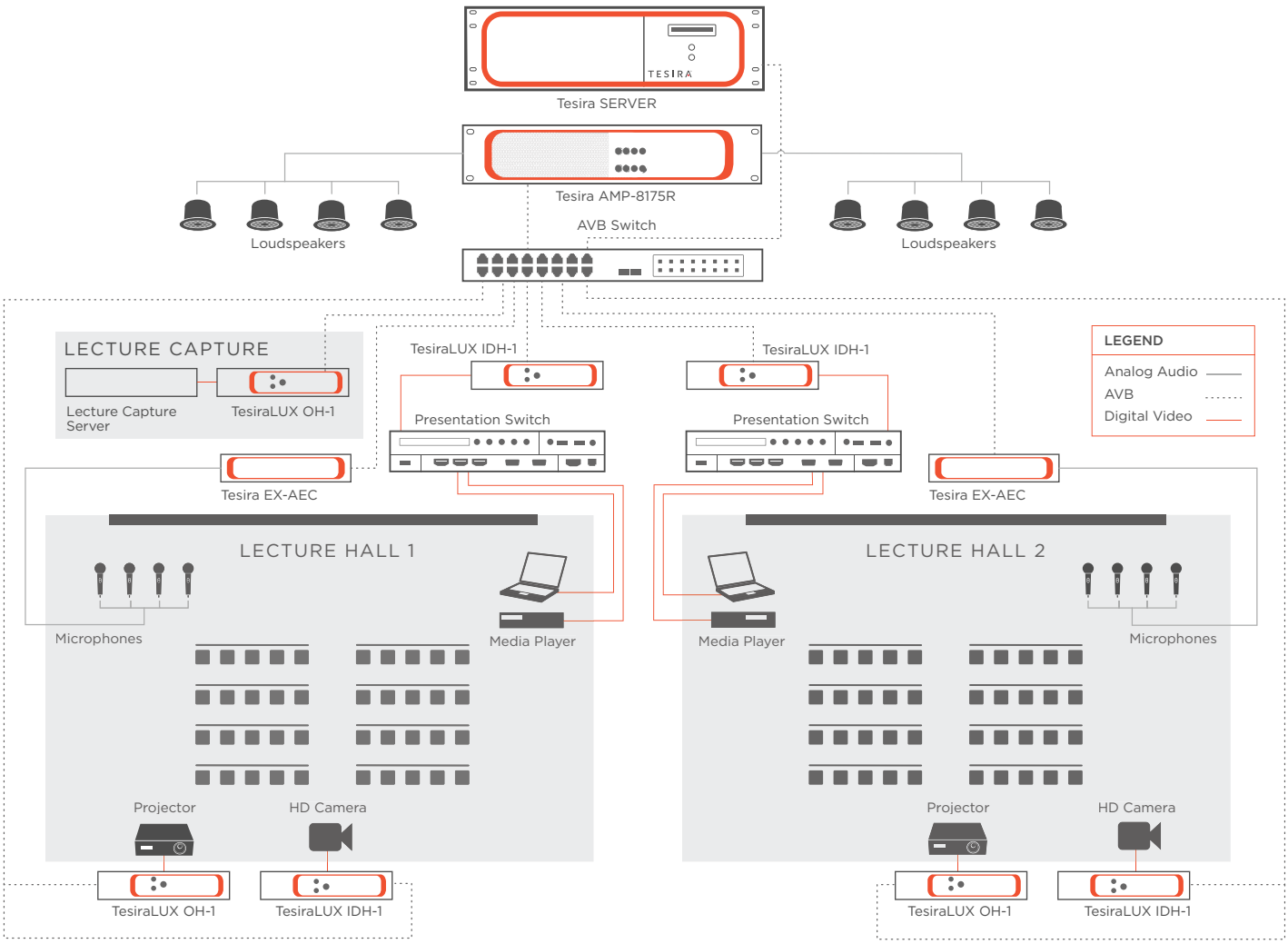
Hospitality

Tesira can manage and distribute your audio and video across an entire hotel or convention hall. Integrating ambient noise compensation allows the audio volume to adjust automatically to the space's ambient volume. With TesiraLUX, staff members can broadcast high-quality audio and video, with exceptional lip sync, to screens or monitors anywhere in the building. In a hotel scenario, Tesira manages the audio systems in the ballrooms, dining facilities, lobby, and small meeting spaces. In addition, Tesira can support and manage other protocols like CobraNet and Dante seamlessly.



Education

Thanks to Tesira SERVER, you can share DSP processing and hardware across multiple rooms, which supports instruction and collaboration by allowing a single professor to lead a session in more than one classroom. Tesira SERVER offers the flexibility to serve the entire facility while also meeting individual instructors' needs. TesiraLUX interfaces with lecture capture devices, allowing professors to record high quality audio and video from their lessons for later use. Advanced software capabilities like auto mixers and dynamic processing eliminate the need for manual adjustment of volume levels. Tesira amplifiers offer greater flexibility in sound reinforcement and distribution because they can receive a signal from anywhere in the audio network.



PRODUCTS

DIGITAL SIGNAL PROCESSORS

CONFIGURABLE I/O DSP

SERVER	Factory-configured with 1 AVB-1 card, 1 DSP-2 card (plus capacity for 7 more), and support for 1 additional audio networking or I/O card.
SERVER-IO	Supports up to 48 channels of analog I/O, plus capacity for up to 3 total audio networking cards per chassis. Ships with 1 DSP-2 card, plus capacity for 2 more.

CONFIGURABLE SPECIALTY CARDS

AVB-1	AVB/TSN network card capable of up to 420x420 channels
DAN-1	Dante networking card; 64x64 channels
SCM-1	CobraNet networking card; 32x32 channels
DSP-2	DSP card with 2 DSP processors

CONFIGURABLE I/O CARDS

SIC-4	4-channel mic/line input card
SOC-4	4-channel mic/line output card
SEC-4	4-channel mic/line input card with AEC
SAC-4	Ambient noise compensation card
SVC-2	2-line VoIP card
STC-2	2-line POTS interface card

FIXED I/O DSP

TesiraFORTÉ AI[1]	Fixed I/O configuration of 12 mic/line level inputs and 8 mic/line level outputs. Supports up to 8 channels of configurable USB audio.
TesiraFORTÉ CI[1]	Fixed I/O configuration of 12 mic/line level inputs with AEC and 8 mic/line level outputs. Supports up to 8 channels of configurable USB audio.
TesiraFORTÉ VT[1]	Fixed I/O configuration of 12 mic/line level inputs with AEC, 8 mic/line level outputs, 1 channel of analog telephony, and 2 channels of VoIP telephony. Supports up to 8 channels of configurable USB audio.
TesiraFORTÉ AVB VT4	Fixed I/O configuration of 4 mic/line level inputs with AEC, 4 mic/line level outputs, 1 channel of analog telephony, and 2 channels of VoIP telephony. Supports up to 8 channels of configurable USB audio.
TesiraFORTÉ DAN VT4	Fixed I/O configuration of 4 mic/line level inputs with AEC, 4 mic/line level outputs, 1 channel of analog telephony, and 2 channels of VoIP telephony. Supports up to 8 channels of configurable USB audio.

VIDEO ENCODERS AND DECODERS

TesiraLUX IDH-1	AVB video encoder; includes one HDMI® port and one DisplayPort™ 1.2 port. Accepts 8 channels of embedded PCM audio and includes 2 mic/line level analog inputs.
TesiraLUX OH-1	AVB video decoder; includes one HDMI port. Outputs 8 channels of embedded PCM audio and includes 2 mic/line level analog outputs.

[1] *AVB-enabled models, as well as Dante-enabled models, are also available.*

AMPLIFIERS, EXPANDERS, AND MORE

AMPLIFIERS	
AMP-4175R	4-channel, 175W, supports optional I/O card
AMP-8175R	8-channel, 175W, supports 2 optional I/O cards
AMP-4350R	4-channel, 350W, supports optional I/O card
AMP-4300R CV	4-channel, 300W, constant voltage, supports optional I/O card
AMP-A460H	4-channel, 60W amplifier
AMP-450P	4-channel PoE+ conferencing amplifier

EXPANDERS[2]	
EX-IN	PoE+ 4-channel mic/line input expander
EX-AEC	PoE+ 4-channel mic/line input expander with AEC
EX-OUT	PoE+ 4-channel mic/line output expander
EX-IO	PoE+ 2-channel mic/line input and 2-channel mic/line output expander
EX-MOD	Modular expander that can be configured with up to three I/O cards

MICROPHONES	
CM1-6W	Miniaturized gooseneck ceiling microphone, cardioid capsule
CM1-6WS	Miniaturized gooseneck ceiling microphone, supercardioid capsule
TCM-1	AVB beamtracking™ ceiling microphone
TCM-1A	AVB beamtracking ceiling microphone with PoE+ amplifier
TCM-1EX	Expansion AVB beamtracking ceiling microphone

CONTROLS	
EX-LOGIC	PoE controller with 16 logic GPIO
HD-1	Hardware dialer with 12-key standard dial pad and 4 navigation buttons
TEC-1i	PoE Ethernet control - in-wall mount
TEC-1s	PoE Ethernet control – surface mount

[2] *Expanders are only compatible with AVB-enabled DSPs.*

CONTROL OPTIONS

Biamp Canvas

Biamp Canvas design and control software enables you to efficiently create and use customized control screens for the Tesira family of audio products. Biamp Canvas provides a flexible graphic control interface that can be tailored to meet the exact needs of the installation environment. With drag-and-drop functionality, you can place objects directly from the system design file into the software, creating pre-assigned control surfaces. We also added a variety of drawing tools to the software for customized graphic manipulation of controls, backgrounds, and labeling.

Tesira HD-1

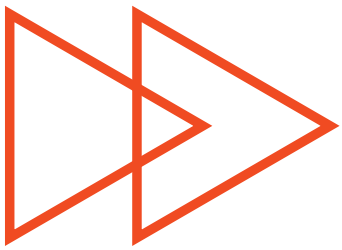
Our Tesira HD-1 hardware dialer is designed to streamline setups and facilitate conferencing with Tesira products — making conferencing installations easier to commission and install, as well as less complicated for end users to operate.

Tesira EX-LOGIC

Tesira EX-LOGIC is a half-rack logic box for use with Tesira DSPs. This device provides both logic inputs and outputs and, through software, can be configured as a control interface. There are 16 total connections that can be used as inputs or outputs, four of which are configured for interfacing with potentiometers.

Tesira TEC-1

Tesira remote Ethernet control devices give you a choice of surface-mounted or in-wall styles, with a simple and intuitive interface that can be configured to fit a specific application. From display brightness that dims automatically to capacitive touch technology that eliminates protruding and moving parts, Tesira TEC-1 control devices are as attractive as they are functional.



SOFTWARE

Tesira software is designed to streamline installations and allow easy changes or upgrades to a Tesira system. Advantages of Tesira software include:

Partitions

Tesira's intuitive design software allows you to design and expand systems incrementally, floor-by-floor, phase-by-phase, using Tesira's revolutionary partitions. With partitions you can configure distinct areas — and add, maintain, or update them separately — while other areas remain up and running. Audio and video partition tools in Tesira make it easy to build in phases and perform any necessary upgrades or maintenance. Software partitions in Tesira are software-only boundaries that can be used to separate parts of a system file. Elements can be grouped by function, specific location, or a mix of groupings. All partitions can go on- and offline independently of each other. For instance, if the ballrooms in a convention center are in a single partition, it can be brought offline, changed, and then recompiled without affecting the other partitions running the remainder of the facility. When the updated file is uploaded to the system, the other partitions never have to stop running. Partitions make it easy to integrate and control both audio and video.

Configuration Engine

With our unique configuration engine, you simply design even the most sophisticated media system and click "compile." The configuration engine validates your design — ensuring the audio and video connections are going to the right places — and computes the most efficient hardware scenario that can operate the design file, listing exactly which Biamp devices are needed. It also establishes the necessary AVB streams for transporting media within the design, connecting and managing listeners and talkers. No intervention or manual input from the system designer is required. In addition, the configuration engine keeps track of your partitions and records any changes that have occurred, and will only replace changed partitions when you create an updated file. This reduces compile time dramatically.

FOR THE LOVE OF SOUND™

Support

When you need help, you don't want long hold times or confusing voicemail systems. That's why we've streamlined our support process and created a dedicated support phone number. You can reach our award-winning Support team 24 hours a day, from anywhere in the world. If you're located in the U.S. or Canada, dial 1-877-242-6796 (1-877-BIAMP-XO). If you're located elsewhere, we'd still love to hear from you. Please visit our website at biamp.com/how-to-get-help to find the support phone number for your region or time zone.

Prefer to troubleshoot on your own? That's great too. Check out Cornerstone, our online technical support knowledgebase, at support.biamp.com. You'll find dozens of detailed articles designed to help you stay on track.

For training and how-to videos, visit the Biamp channel on YouTube. Our channel is optimized to help you quickly find what you're looking for. Trainings are organized by topic and we've crafted playlists to help you find groups of videos that pertain to a certain topic. Now, it's easier than ever to get the training and technical support you need from Biamp.

Training

Biamp is committed to the continuing education of the pro AV industry. By understanding how to use Biamp products more effectively, you can build more efficient systems at a faster pace, allowing you to better manage time and resources by minimizing post-installation customer support costs.

We know you're busy, and it's difficult at times to get out of the office for in-person training. That's why all of our Tesira certification training is available in a self-paced online format.

However, we're still big believers in the value of hands-on equipment training, which is why we created the AV Lab advanced course. Our goal with the AV Lab is to provide you with the knowledge you need to complete even the most complex installations effectively and efficiently.

We also offer instructor-led webinars covering a variety of topics useful to beginners and advanced AV technicians alike. To learn more about our training offerings and webinars, visit biamp.com/training.

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