

# TESIRA<sup>®</sup> PRODUCT CATALOG

PRODUCT OFFERINGS  
EFFECTIVE SEPTEMBER 2019



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# THE POWER OF THE PLATFORM



Tesira is the world's only integrated, networked audio and video processing and distribution platform. With completely open programming and no restrictive, predetermined signal flows, Tesira offers a powerful set of tools for creating extraordinary audiovisual experiences.

## MICROPHONES

The Parlé family of Beamtracking™ microphones offers 360° room coverage with little to no setup or programming time required. They are available in three form factors: ceiling, pendant, and tabletop, and each microphone actively tracks and intelligently mixes conversations from around the room, ensuring a seamless conferencing experience for all involved.

## DIGITAL SIGNAL PROCESSORS

Tesira SERVER and SERVER-IO are configurable I/O digital signal processors (DSPs). Tesira SERVER is built for maximum flexibility, allowing you to build out the rest of your system using expanders, making it a cost-effective choice while supporting future growth. Tesira SERVER-IO is highly configurable, with the option to use AVB, CobraNet, and Dante on a single chassis in combination with analog I/O and VoIP/POTS telephony.

TesiraFORTÉ products are fixed I/O DSP, available in different models optimized for specific applications including background music, court recording, and soft codec integration. TesiraFORTÉ directly connects to soft codec technologies via its USB port, and supports conferencing over VoIP and analog telephony devices.

Complementing Tesira audio DSPs are TesiraLUX video encoders and decoders. TesiraLUX fully integrates digital audio and video on a single network, allowing for automatic lip sync management and end-to-end network transit latencies of 1.5 frames or less. TesiraLUX is a great choice for installations requiring low latency, high-quality, synchronized media distribution.

## EXPANDERS

Tesira's PoE+ powered expanders are compatible with Tesira audio DSPs and support a variety of capabilities including additional analog audio channels, USB audio, and Bluetooth® wireless technology. The EX-MOD device offers remote placement of a larger number of analog I/O channels. All Tesira expanders communicate with the Tesira AVB network for audio networking, configuration, and control.

## AMPLIFIERS

Tesira amplifiers let you create a more complete audio system that can be designed and commissioned from one software platform. Adding amplifier blocks to your design files is a simple drag-and-drop. The innovative AMP-450P and AMP-450BP conferencing amplifiers are PoE+ powered, allowing them to be placed wherever needed, including air-handling spaces.

## SOFTWARE

Tesira's design software helps reduce design and installation time and lowers operation costs. Biamp Canvas® software allows efficient creation and use of customized control screens for Tesira digital audio systems. Biamp SageVue™ is a browser-based monitoring and management platform for technology managers that provides a comprehensive overview of all Tesira, Devio, and Cambridge devices connected to the network, and allows users to perform several system administration tasks.

# AUDIO

At times it's the height of a ceiling or the surface of a wall; at others it's ambient noise from HVAC systems, vehicles passing, or construction.

Biamp's DSP technology works hard to overcome these obstacles, providing the best sound possible for any space. Our embedded technologies take a multitude of variables into account and automatically modifies signals, saving you the trouble of doing so. Biamp SpeechSense™ and AmbientSense™ technologies greatly enhance the efficacy of adaptive processing by distinguishing between human speech and noise, while our Beamtracking microphones provide 360° room coverage and active conversation mixing. 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.

## sound reinforcement

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



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## AEC

Tesira's AEC technology eliminates acoustic echoes during conference calls, improving clarity for individuals on the far end. 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 to maintain clear communication. That's why Tesira AEC is so critical: it facilitates unmatched call clarity and intelligibility, even in dynamic environments.

## paging

Like any good team player, Tesira works well with others. Completely interoperable with Vocia®, our networked paging system, devices from both product lines can work together as a tightly integrated solution. This allows audio to pass between the two platforms seamlessly, providing you with the ability to share resources.

## conferencing

As remote working becomes increasingly common, exceptional conferencing is more important than ever. Many associate teleconferencing with frustrating devices and poor call quality, but the days of wasting valuable meeting time due to uncooperative technology are over. Our Tesira family provides crystal clear audio with minimal hassle, allowing meeting participants to focus on the topic at hand rather than the technology. Tesira also supports the ability to connect to soft codec conferencing tools via USB and is certified by several major VoIP and UC providers. Participants can place calls via VoIP or POTS using the Tesira HD-1 Dialer.

# VIDEO

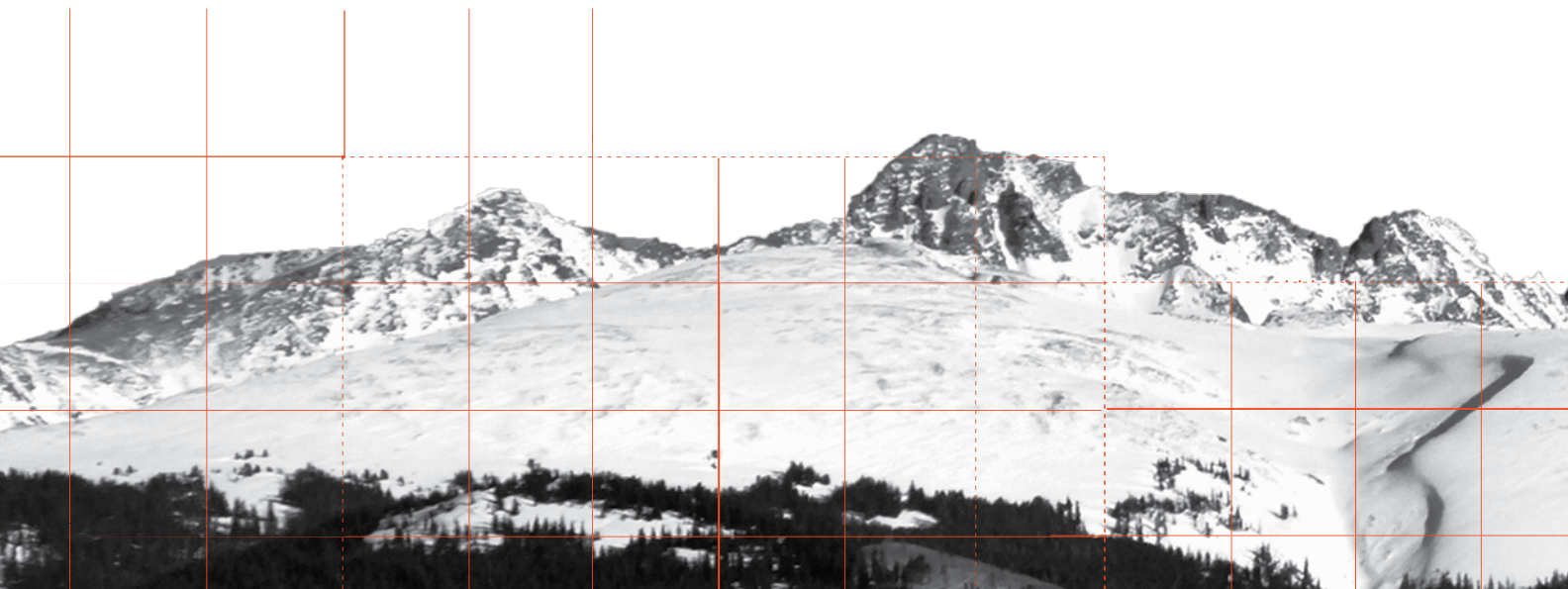
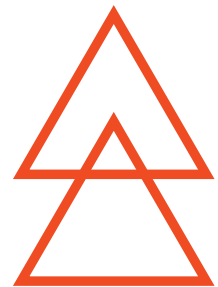
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With the addition of TesiraLUX, Tesira now supports real-time video distribution over the network, with unmatched lip sync capabilities. Since it manages the entire audio and video signal path, Tesira processing recognizes how long it takes for each 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 enables automatic device discovery for rapid configuration and commissioning of projects. For the end user, AVB/TSN's deterministic nature allows networked media systems like 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, allowing system designers to use a single software environment for both audio and video installations. Video I/O blocks, like 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 integrators to make intelligent decisions regarding 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 even indicates 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 can meet 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 enables 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.

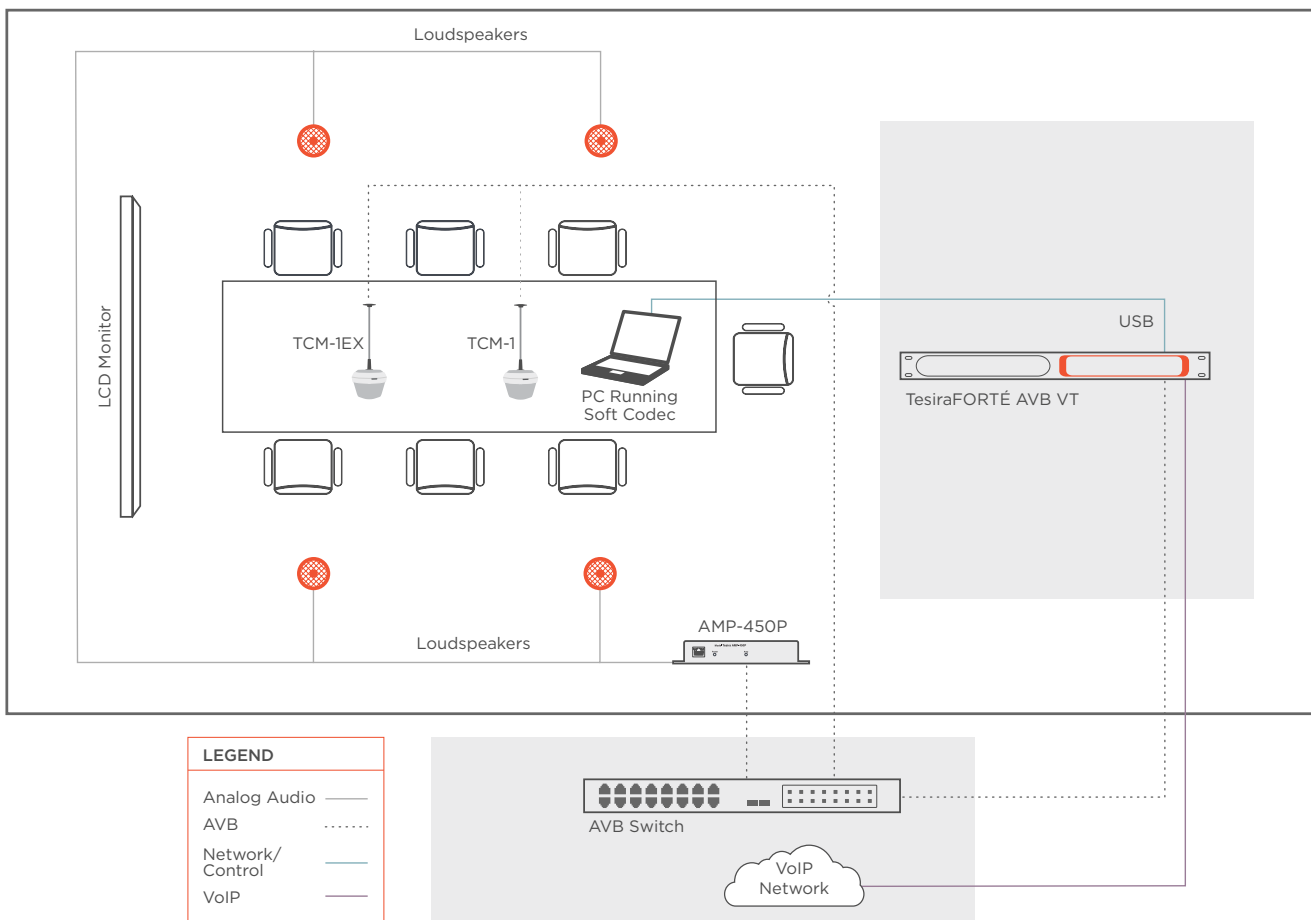
\*25 milliseconds at 60Hz.



# Conferencing

TesiraFORTÉ is the ideal digital signal processor for all conferencing scenarios, with the tools needed to run clear, collaborative, and efficient meetings. With the TesiraFORTÉ AVB VT, users can manage conference calls via a VoIP system, analog telephone line, or UC solutions including Microsoft Teams®, Zoom®, or Google Hangouts Meet®.

For truly extraordinary conferencing experiences, pair TesiraFORTÉ with our Parlé Beamtracking microphones and PoE+ powered amplifiers; for smaller conference rooms, the Parlé TCM-1A microphone creates an equally compelling audio experience. The TCM-1A includes an integrated PoE+ powered amplifier, so only a single Ethernet cable is needed to connect your DSP to microphones and speakers.

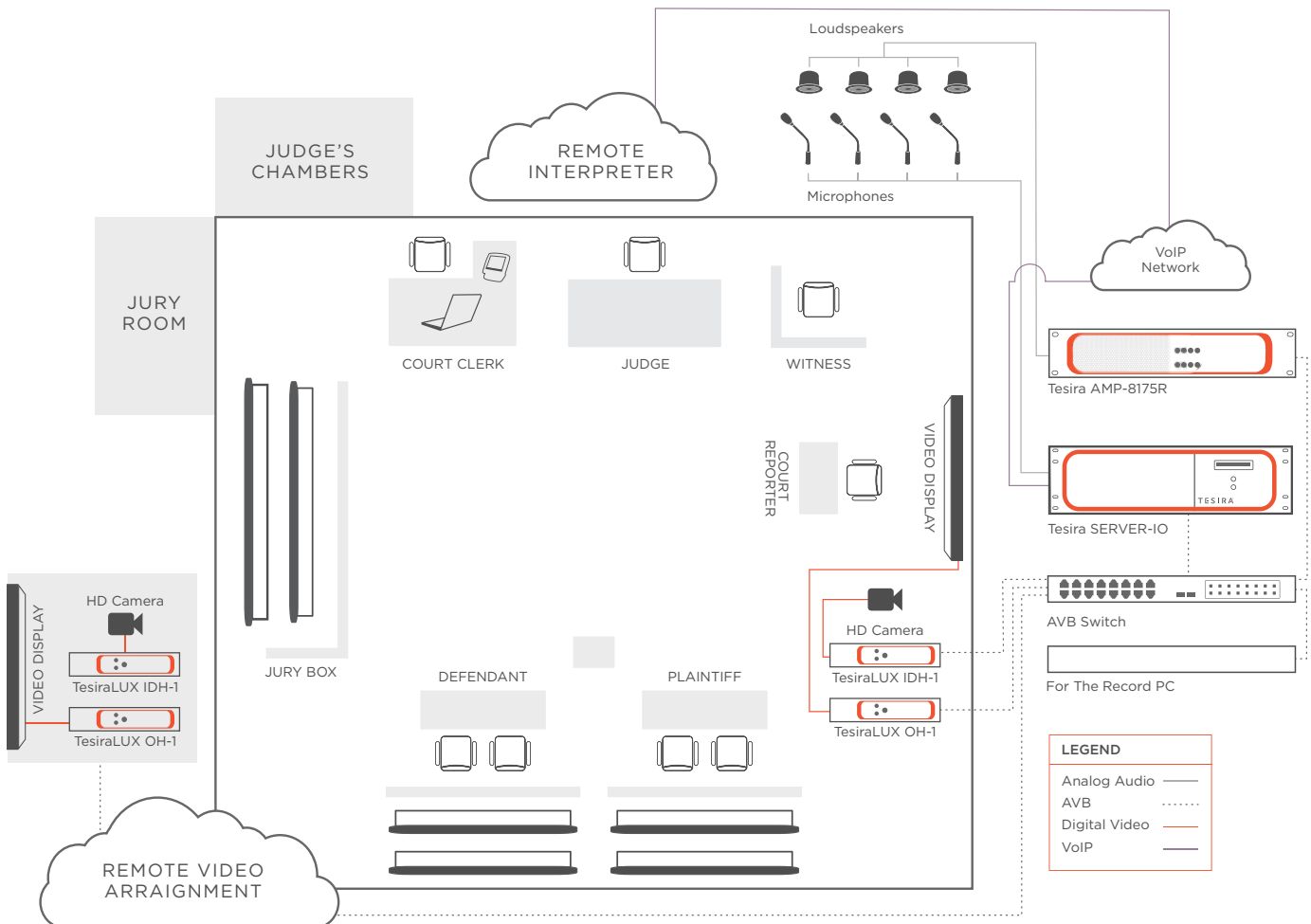




# Legal Proceedings

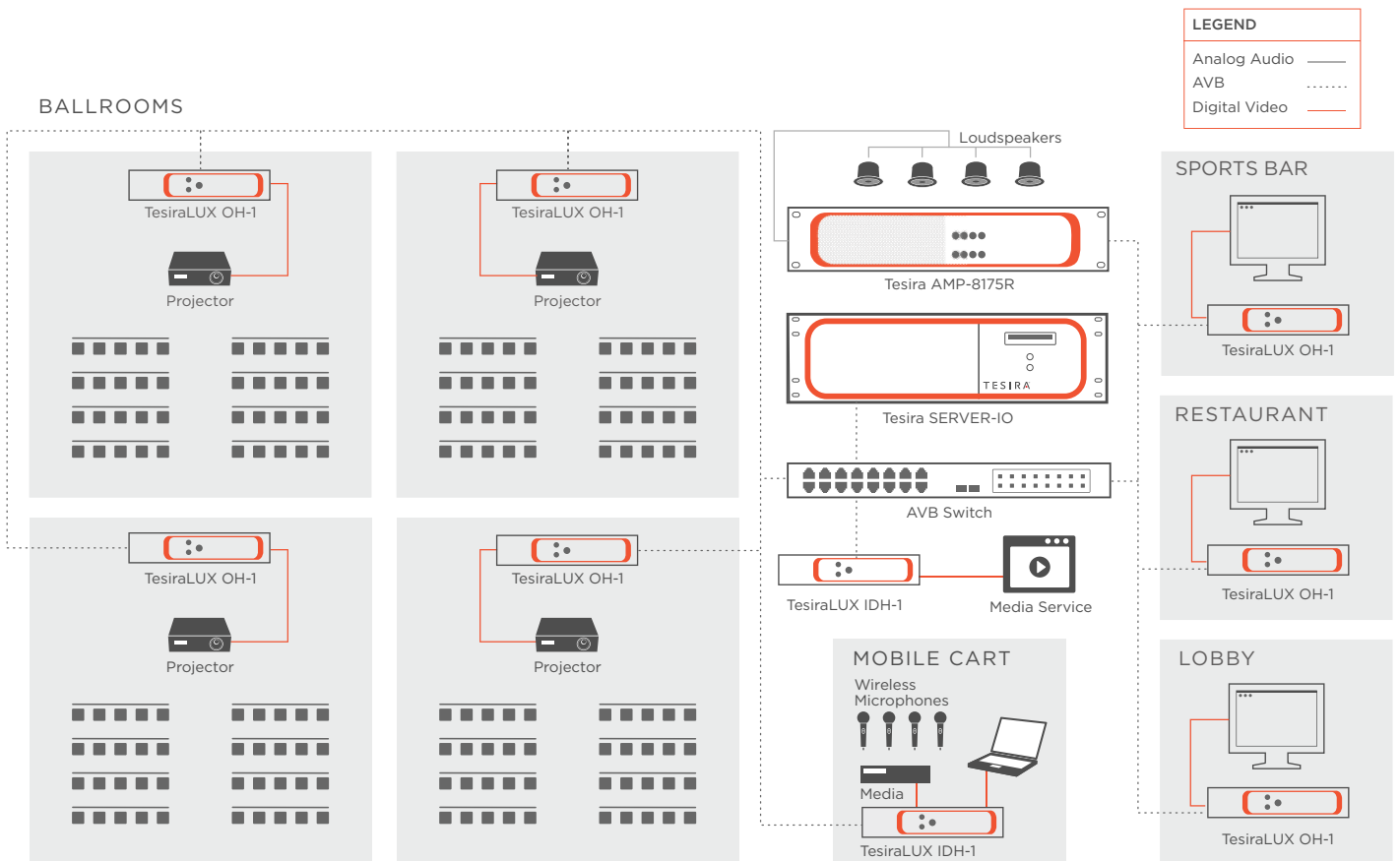
With Tesira SERVER-IO, you can reliably manage audio for all courtroom proceedings, including the levels of speakers and microphones, recording, remote arraignment, and audio playback from multiple sources, including DVDs, MP3 players, recorders, and other devices. Tesira SERVER-IO has enough DSP to 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 as it can help reduce physical transportation costs between the courthouse and local correctional facilities. Adding Tesira amplifiers to the design offers greater flexibility in both 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.



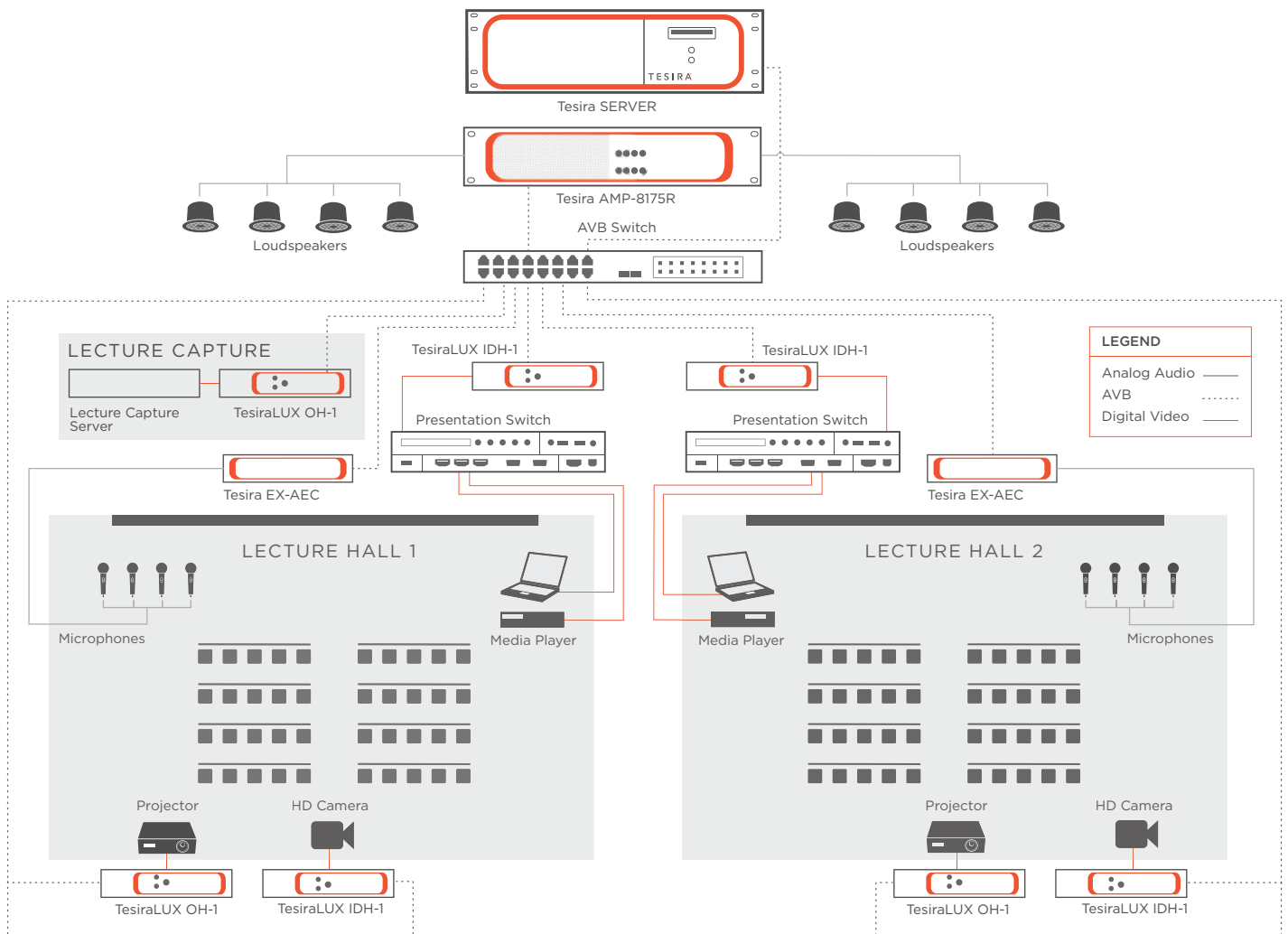
# Hospitality

Tesira can manage and distribute audio and video across an entire hotel or convention hall. Integrating 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 hotel scenarios, Tesira manages the audio systems in ballrooms, dining facilities, lobbies, 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 the needs of individual instructors. TesiraLUX interfaces with lecture capture devices, allowing instructors 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 as they can receive a signal from anywhere in the audio network.



# MICROPHONES

## PARLÉ TCM-X

The Parlé TCM-X is an AVB low profile ceiling microphone for use in Tesira systems. Comprising a network box and a ceiling microphone, each microphone includes Beamtracking technology with four 90-degree zones, providing full 360-degree coverage of the meeting space. Each network box has its own digital signal processing module and comes with an additional RJ-45 connector to add an optional TCM-XEX to the network box. A maximum of two microphones are permitted per network box (one TCM-X or TCM-XA with one TCM-XEX). The TCM-X is well suited for variety of room types and sizes with a ceiling height of 10' or lower.

- › Low profile surface-mount ceiling mic 5.75 inches (146mm) in diameter
- › Network box which includes DSP for Beamtracking
- › Uses only one channel of AEC per mic
- › Single cable connection via CAT cable
- › Beamtracking technology works out-of-box without any lobe aiming or room mapping
- › LED mute status indicator
- › Available in either black or white
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Additional RJ-45 connection for daisy chain of TCM-XEX
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## PARLÉ TCM-XA

The Parlé TCM-XA is an AVB low profile ceiling microphone and PoE+ (IEEE 802.3at Class 4 30W) amplifier for use in Tesira systems. Comprising a network box and a ceiling microphone, each microphone includes Beamtracking technology with four 90-degree zones, providing full 360-degree coverage of the meeting space. Each network box has its own digital signal processing module and comes with an additional RJ-45 connector to add an optional TCM-XEX. A maximum of two microphones are permitted per network box (one TCM-X or TCM-XA with one TCM-XEX). The TCM-XA is well suited for variety of room types and sizes with a ceiling height of 10' or lower.

- › Low profile surface-mount ceiling mic 5.75 inches (146mm) in diameter
- › Network box which includes DSP for Beamtracking and a PoE+ Amplifier
  - Two channels
  - Burst mode to handle peak signals in accordance with ANSI/CTA-2006-B; supports up to 40 watts (4Ω load) or 30 watts (8Ω load) per channel
  - Software selectable power vs. channel count
  - Includes internal limiter function
- › Uses only one channel of AEC per mic
- › Single cable connection via CAT cable
- › Beamtracking technology works out-of-box without any lobe aiming or room mapping
- › LED mute status indicator
- › Available in either black or white
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Additional RJ-45 connection on network box for TCX-XEX
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## PARLÉ TCM-XEX



The Parlé TCM-XEX is an expansion AVB ceiling microphone for use in Tesira systems. Each low-profile ceiling mount microphone includes Beamtracking technology with four 90-degree zones, providing full coverage of the meeting space. The Tesira TCM-XEX is intended to be used as a second microphone in conjunction with the TCM-X or TCM-XA; it cannot operate as a standalone device.

- › Must be used with a Parlé TCM-X or TCM-XA microphone
- › Low profile surface-mount ceiling mic 5.75 inches (146mm) in diameter
- › Beamtracking technology actively tracks and intelligently mixes conversations
- › Uses only one channel of AEC per mic
- › Single cable connection via CAT cable
- › Beamtracking technology works out-of-box without any lobe aiming or room mapping
- › LED mute status indicator
- › Available in either black or white
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## PARLÉ TTM-X



The Parlé TTM-X is an AVB low profile tabletop microphone for use in Tesira systems. Comprising a network box and a desktop microphone, each microphone includes Beamtracking technology with four 90-degree zones, providing full 360-degree coverage of the meeting space. Each network box has its own digital signal processing module and comes with an additional RJ-45 connector to add an optional TTM-XEX. A maximum of two microphones are permitted (one TTM-X with one TTM-XEX).

- › Low profile surface-mount desktop mic 4.7 inches (120mm) in diameter
- › Network box which includes DSP for Beamtracking
- › Uses only one channel of AEC per mic
- › Single cable connection via CAT cable
- › Beamtracking technology works out-of-box without any lobe aiming or room mapping
- › LED mute status indicator
- › Available in either black or white
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Additional RJ-45 connection for TTX-XEX
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## PARLÉ TTM-XEX



The Parlé TTM-XEX is an expansion AVB tabletop microphone for use in Tesira systems. Each low-profile desktop microphone includes Beamtracking technology with four 90-degree zones, providing full coverage of the meeting space. The Tesira TTM-XEX is intended to be used as a second microphone in conjunction with the TTM-X; it cannot operate as a standalone device.

- › Must be used with a Parlé TTM-X microphone
- › Low profile surface-mount desktop mic 4.7 inches (120mm) in diameter
- › Uses only one channel of AEC per mic
- › Single cable connection via CAT cable
- › Beamtracking technology works out-of-box without any lobe aiming or room mapping
- › LED mute status indicator
- › Available in either black or white
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

# MICROPHONES



## PARLÉ TCM-1

The Parlé TCM-1 is an AVB pendant microphone for use in Tesira systems. Comprising a pendant microphone and plenum box, each microphone includes Beamtracking technology with three 120-degree zones, providing full 360-degree coverage of the meeting space. The plenum box is equipped with an additional RJ-45 connector for daisy-chain connections; a maximum of three microphones are permitted per daisy chain (one TCM-1 or TCM-1A required, plus up to two TCM-1EX).

- › Beamtracking technology actively tracks and intelligently mixes conversations
- › Three 120° zones for 360° coverage
- › Plenum box includes DSP for Beamtracking
- › LED mute status indicator
- › User-adjustable mic height
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Additional RJ-45 for daisy-chain connection to a TCM-1EX microphone (maximum of three mics per daisy chain)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## PARLÉ TCM-1A

The Parlé TCM-1A is an AVB pendant microphone and PoE+ amplifier for use in Tesira systems. Comprising a pendant microphone and plenum box, each microphone includes Beamtracking technology with three 120-degree zones, providing full 360-degree coverage of the meeting space. The plenum box is equipped with an additional RJ-45 connector for daisy-chain connections; a maximum of three microphones are permitted per daisy chain (one TCM-1 or TCM-1A required, plus up to two TCM-1EX). The 2-channel PoE+ amplifier includes an internal limiter, selectable power, and a burst mode to handle peak signals.

- › Beamtracking technology actively tracks and intelligently mixes conversations
- › Three 120° zones for 360° coverage
- › Plenum box includes a PoE+ amplifier
  - › Two channels; 4W continuous per channel
  - › Burst mode to handle peak loads; supports up to 40W (4Ω) or 30W (8Ω) per channel
  - › Software-selectable power vs. channel count
  - › Includes internal limiter function
- › LED mute status indicator
- › User-adjustable mic height
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Additional RJ-45 for daisy-chain connection to a TCM-1EX microphone (maximum of three mics per daisy chain)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## PARLÉ TCM-1EX

The Parlé TCM-1EX is an expansion AVB pendant microphone intended to be used as a second and third microphone in conjunction with a TCM-1 or TCM-1A; it cannot operate as a standalone device. Each microphone includes Beamtracking technology with three 120-degree zones, providing full 360-degree coverage of the meeting space. The plenum box is equipped with an additional RJ-45 connector for daisy-chain connections; a maximum of three microphones are permitted per daisy chain (one TCM-1 or TCM-1A required, plus up to two TCM-1EX).

- › Must be used with a Parlé TCM-1 or TCM-1A microphone
- › Beamtracking technology actively tracks and intelligently mixes conversations
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › Three 120° zones for 360° coverage
- › Additional RJ-45 for daisy-chain connection to another TCM-1EX microphone (maximum of three mics per daisy chain)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## CM1-6W ▪ CM1-6WS

The CM1-6W and CM1-6WS are miniaturized condenser microphones with a fully integrated preamp designed with very high sensitivity for distance miking. They have complete immunity from RF interference caused by cell phones and GSM devices. A cardioid capsule (CM1-6W), or supercardioid capsule (CM1-6WS) is available, allowing these microphones to be used in a wide variety of applications.

- › High output for distance miking
- › Optimized for voice recognition
- › Immunity from RF interference
- › Operates on 18-52 volts phantom power
- › Point and shoot directivity
- › Miniaturized integrated preamp circuitry
- › No external power adapter needed
- › 12 mm gold vapor diaphragm
- › Extremely low noise, high sensitivity
- › Available with a cardioid or supercardioid capsule
- › Optional junction box available
- › Covered by three-year warranty

# AUDIENCE ENGAGEMENT

## CROWD MICS



Crowd Mics empowers audience interaction by turning smartphones into wireless microphones. Crowd Mics is comprised of two apps — one for event attendees and the other for moderators — and a small, pre-configured hardware host device, the ATOM.

The ATOM serves as the central connection point between the attendee and moderator apps and the room's AV system. It supports four audio output interfaces: 3.5mm minijack, Euroblock connector, HDMI embedded audio, and USB audio. Any combination of these outputs can be used simultaneously. Optionally, the ATOM can be connected to the room's displays via HDMI to project poll results or other event content.

The ATOM also allows moderators to see a full participation log of each event including questions asked and poll results, and can be remotely monitored and managed via SageVue.

Both Crowd Mics apps are supported on Apple® mobile devices running iOS® v12.0 or newer, and the attendee app is also supported on Android devices running v8.0 or newer.

Crowd Mics is perfect for the participants and moderators of presentations, lectures, panel discussions or other similar events ranging in size up to 1000 attendees.

### BENEFITS FOR ATTENDEES

- › Three ways to participate
- › No waiting for a microphone
- › Intuitive user interface
- › Get involved without talking
- › Easy-to-use polling

### BENEFITS FOR MODERATORS

- › Streamlines audience interactions
- › Choose who speaks next
- › Deactivate attendee mics
- › Create polls and publish results
- › Measure audience engagement

### CROWD MICS ATOM FEATURES

- › Audio output via Euroblock, HDMI embedded audio, 3.5 minijack, or USB
- › Video output via HDMI
- › Two HDMI connections for display mirroring
- › Can be monitored and managed via SageVue
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' two-year warranty





# DIGITAL SIGNAL PROCESSORS

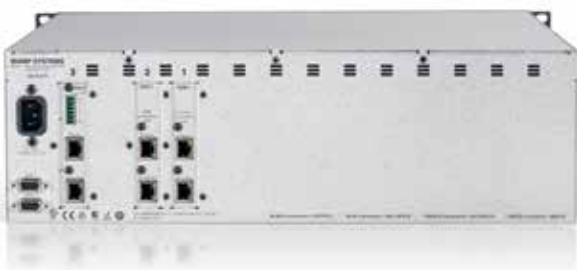
## CONFIGURABLE I/O



### TESIRA SERVER

The Tesira SERVER is a configurable I/O DSP, factory configured with one DSP-2 card and with the ability to accept up to a total of eight DSP-2 cards. The SERVER is also factory configured with one AVB-1 card and has a second slot that can be outfitted with an additional AVB-1 card, a 32 x 32 channel SCM-1 CobraNet card, a 64 x 64 channel DAN-1 Dante™ card, or a standard I/O card for four channels of local I/O. The SERVER is the core of a Tesira digital audio system and can be used with Tesira expanders to form a highly scalable audio network. Two Tesira SERVERs can also be designed as a redundant pair, carrying identical processing and card configurations. The secondary SERVER stays 'live' with the primary, updating runtime parameters. If the primary SERVER should need maintenance, the secondary takes over with no loss of continuity or downtime.

- › Supports up to eight DSP-2 cards
- › Up to 420 x 420 channels of digital I/O over AVB
- › Optional 32 x 32 CobraNet audio networking
- › Optional 64 x 64 Dante audio networking
- › Configuration and control networking over Ethernet
- › Supports redundant processing pairs
- › Local GPIO connections
- › Front panel OLED display for device and system information
- › Processing algorithm: SpeechSense
- › Signal processing via intuitive software allows configuration and control for: signal routing and mixing, equalization, filtering, dynamics and delay, and much more
- › Extensive expansion devices (input, output, logic, etc.) available as part of the Tesira digital audio networking platform
- › Rack mountable (3RU)
- › CE marked, UL listed, RoHS compliant
- › Covered by Biamp Systems' five-year warranty

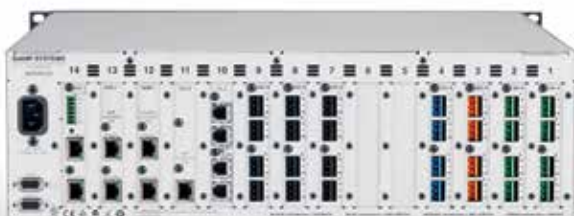




## TESIRA SERVER-IO

The Tesira SERVER-IO is a configurable I/O DSP, factory configured with one DSP-2 card and capable of handling up to two additional DSP-2 cards. The SERVER-IO has capacity for up to three total audio networking cards per chassis. The combinations of networking cards can include up to two AVB-1 Audio Video Bridging network cards, up to two SCM-1 CobraNet network cards, and up to two DAN-1 Dante network cards in any configuration. The SERVER-IO can support up to 12 standard Tesira I/O cards for up to 48 channels of audio I/O (e.g. mic and line level, VoIP, and telephone interface). The SERVER-IO can be used as a standalone or with Tesira expanders to form a highly scalable audio network.

- › Supports up to three DSP-2 cards
- › Up to 12 I/O cards with a maximum of 48 channels of audio
- › Up to 420 x 420 channels of digital I/O over AVB
- › Optional 32 x 32 CobraNet audio networking
- › Optional 64 x 64 Dante audio networking
- › Configuration and control networking over Ethernet
- › Supports network redundancy
- › Local GPIO connections
- › Front panel OLED display for device and system information
- › Processing algorithm: SpeechSense
- › Signal processing via intuitive software allows configuration and control for: signal routing and mixing, equalization, filtering, dynamics and delay, and much more
- › Wide selection of I/O cards available
- › 4-channel Acoustic Echo Cancellation card (also includes AGC and ANC) and Ambient Noise Compensation card available
- › Extensive expansion devices (input, output, logic, etc.) available as part of the Tesira digital audio networking platform
- › Rack mountable (3RU)
- › CE marked, UL listed, RoHS compliant
- › Covered by Biamp Systems' five-year warranty



# DIGITAL SIGNAL PROCESSORS

## CONFIGURABLE I/O CARDS



### TESIRA AVB-1

The Tesira AVB-1 is a modular digital audio networking card for use with Tesira SERVER and SERVER-IO devices. The AVB-1 allows a Tesira system to send and receive digital audio over an Ethernet network utilizing AVB enabled switches. AVB/TSN (Audio Video Bridging/Time Sensitive Networking) is an open standard protocol compliant with IEEE standards. In addition to allowing up to 420 x 420 channels of interconnectivity over AVB from any other compliant device, Tesira uses AVB/TSN as the interconnect between DSPs and remote expander devices.

- › Up to 420 x 420 channels of digital I/O over AVB
- › Very low network latencies
- › Media and control data managed on a single network
- › Covered by Biamp Systems' five-year warranty
- › IEEE Standards based
  - 802.1AS
  - 802.1Qav
  - 802.1Qat
  - 1722
  - 1722.1



### TESIRA DAN-1

The Tesira DAN-1 is an optional digital audio networking card for Tesira SERVER or SERVER-IO and allows for interfacing to other audio devices utilizing Dante networking protocol from Audinate®. The DAN-1 card can be factory installed or installed in the field. Featuring the Brooklyn II Module, the DAN-1 allows for up to 64 x 64 channels of digital audio into and out of a Tesira system. This interface takes full advantage of the Tesira platform while interfacing to devices equipped with Dante networking.

- › 64 x 64 channels of Dante
- › Dual RJ-45 connections for Primary and Secondary
- › Up to 32 x 32 simultaneous flows
- › Explicit Dante Input and Output blocks in Tesira Software
- › Can be installed in conjunction with AVB-1 and SCM-1
- › System configuration and control via Ethernet
- › Covered by Biamp Systems' five-year warranty



### TESIRA SCM-1

The Tesira SCM-1 is a modular digital audio networking card for use with Tesira SERVER and SERVER-IO devices. The SCM-1 allows a Tesira system to send and receive digital audio using the CobraNet networking standard. Each SCM-1 CobraNet card allows for interconnectivity of 32 x 32 channels of digital audio. Implementing the SCM-1 allows a Tesira system to share audio with Biamp Audia® and Vocia® systems as well as other devices operating on a CobraNet network.

- › 32 x 32 channels of digital audio interconnectivity
- › Allows for sharing of digital audio with Audia and Vocia systems
- › Covered by Biamp Systems' five-year warranty



## TESIRA DSP-2

The Tesira DSP-2 card is a modular digital signal processing card for use with Tesira SERVER and SERVER-IO devices. DSP-2 cards add extra resources and processing power to a Tesira system. As the necessary processing increases for larger systems, DSP-2 cards can be added in the field or at the Biamp factory. The Tesira SERVER can accommodate up to eight DSP-2 cards while SERVER-IO can support up to three.

- › Adds additional processing power to Tesira systems
- › Each DSP-2 card has the power of one AudiaFLEX
- › DSP resources managed via Tesira software
- › RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## TESIRA SIC-4

The Tesira SIC-4 is a modular analog input card for use with Tesira SERVER and SERVER-IO devices. Each SIC-4 provides four channels of mic or line level audio input. The inputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each input includes gain with clip indicator, +48V phantom power, mute, level, and signal invert.

- › Four channels of balanced mic or line level input
- › Plug-in barrier strip connectors
- › 0 – 66dB gain, adjustable in 6dB increments
- › Clip indicator
- › +48V Phantom Power
- › 100 to +12dB fader range for level
- › Signal invert for reverse polarity
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



## TESIRA SOC-4

The Tesira SOC-4 is a modular analog output card for use with Tesira SERVER and SERVER-IO devices. Each SOC-4 provides four channels of mic or line level audio output. The outputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each output includes mute, level, signal invert, and full-scale output reference.

- › Four channels of balanced mic or line level output
- › Plug-in barrier strip connectors
- › -100 to +12dB fader range for level
- › Signal invert for reverse polarity
- › Selectable full-scale output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu) for best interface/performance
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

# DIGITAL SIGNAL PROCESSORS

## CONFIGURABLE I/O CARDS



### TESIRA SEC-4

The Tesira SEC-4 is a modular analog input card for use with Tesira SERVER and SERVER-IO devices. Each SEC-4 provides four channels of mic or line level audio input with Acoustic Echo Cancellation and also features Biamp SpeechSense technology, which enhances speech processing by more accurately identifying human voices..

- › Four channels of balanced mic or line level input with AEC (Acoustic Echo Cancellation)
- › SpeechSense processing algorithm
- › Processing includes High-Pass Filter
- › Additional noise reduction on AEC outputs
- › Doesn't use processing resources from SERVER or SERVER-IO DSP
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



### TESIRA SAC-4

The Tesira SAC-4 is a modular analog input card for use with Tesira SERVER and SERVER-IO devices. Each SAC-4 provides four channels of mic or line level audio input with Ambient Noise Compensation. The ANC processing features the Biamp algorithm, AmbientSense, which intelligently distinguishes ambient noise from program material or announcements, thus greatly improving performance over traditional ambient noise compensation.

- › Four channels of balanced mic or line level input
- › Four channels of Ambient Noise Compensation using Biamp's proprietary AmbientSense algorithm
- › Automatically adjusts levels for program material or announcements, based on changes in ambient level
- › Up to four "sense" inputs per card
- › Does not use processing resources from SERVER or SERVER-IO DSP
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



## TESIRA SVC-2

The Tesira SVC-2 is a modular Voice over Internet Protocol (VoIP) card for use with Tesira SERVER and SERVER-IO devices. The SVC-2 allows a Tesira system to connect directly to IP-based telephone systems. When used in conjunction with Acoustic Echo Cancellation (AEC) processing, Tesira becomes a powerful, flexible, and affordable conferencing platform.

- › Control via Tesira software or third-party control
- › Logic control within Tesira or RCB devices
- › Caller ID, Hold capability, Redial, 16-entry Speed Dial
- › Adjustable auto-answer
- › Country-specific tone plans
- › SIP v2 (RFC 3261 and companion RFCs)
- › SIP authentication
- › Voice activity detection
- › On-hook dialing
- › Multiple CODEC support
- › RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## TESIRA STC-2

The Tesira STC-2 is a modular telephone interface card for use with Tesira SERVER and SERVER-IO devices. The STC-2 allows a Tesira system to connect directly to standard analog telephone lines. Each channel includes line-echo cancellation, noise suppression, caller ID decoding, ring detection/validation, DTMF decoding, and call progress tone decoding. When used in conjunction with Acoustic Echo Cancellation (AEC) processing, Tesira becomes a powerful, flexible, and affordable conferencing platform.

- › Initiate outgoing calls
  - DTMF tone dialing - Redial
  - Speed-dialing - Flash
- › Detect and answer incoming calls
- › Line echo cancellation
- › TouchTone™ decoding Caller ID reception
- › Call progress detection
- › Line intrusion detection
- › Noise suppression filter
- › Continuous line status and fault monitoring
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

# DIGITAL SIGNAL PROCESSORS

## FIXED I/O



## TESIRAFORTÉ AI

The TesiraFORTÉ AI is a fixed I/O DSP with 12 analog inputs and 8 analog outputs, and includes up to 8 channels of configurable USB audio. TesiraFORTÉ AVB AI adds AVB/TSN digital audio networking. The AVB model can be used as a standalone device or combined with other Tesira AVB DSPs, expanders, amplifiers, and controllers. TesiraFORTÉ DAN AI adds Dante digital audio networking.

- › 128 x 128 channels of AVB (AVB model only)
- › 32 x 32 channels of Dante (DAN model only)
- › 12 mic/line level inputs, 8 mic/line level outputs
- › Gigabit Ethernet port
- › RS-232 serial port
- › 4-pin GPIO
- › 2-line OLED display with capacitive-touch navigation
- › Rack mountable (1RU)
- › System configuration and control via Ethernet
- › Internal universal power supply
- › Signal processing via intuitive software allows configuration and control for signal routing, mixing, equalization, filtering, and delay
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



(AVB Model Shown)





## TESIRAFORTÉ CI

The TesiraFORTÉ CI is a fixed I/O DSP with 12 analog inputs and 8 analog outputs, including Acoustic Echo Cancellation (AEC) technology on all 12 inputs. It also features up to 8 channels of configurable USB audio. TesiraFORTÉ AVB CI adds AVB/TSN digital audio networking. The AVB model can be used as a standalone device or combined with other Tesira AVB DSPs, expanders, amplifiers, and controllers. TesiraFORTÉ DAN CI adds Dante digital audio networking.

- › 128 x 128 channels of AVB (AVB model only)
- › 32 x 32 channels of Dante (DAN model only)
- › 12 mic/line level inputs with AEC, 8 mic/line level outputs
- › Gigabit Ethernet port
- › RS-232 serial port
- › 4-pin GPIO
- › 2-line OLED display with capacitive-touch navigation
- › Rack mountable (1RU)
- › System configuration and control via Ethernet
- › Internal universal power supply
- › Signal processing via intuitive software allows configuration and control for signal routing, mixing, equalization, filtering, and delay
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



(AVB Model Shown)

# DIGITAL SIGNAL PROCESSORS

## FIXED I/O



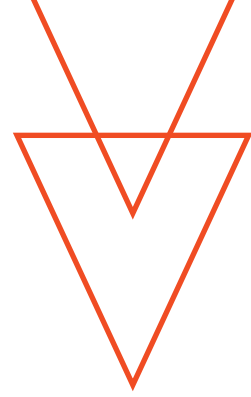
## TESIRAFORTÉ VT

The TesiraFORTÉ VT is a fixed I/O DSP with 12 analog inputs and 8 analog outputs, including Acoustic Echo Cancellation (AEC) technology on all 12 inputs. It features up to 8 channels of configurable USB audio, a 2-channel VoIP interface, and a standard FXO telephone interface. TesiraFORTÉ AVB VT adds AVB/TSN digital audio networking. The AVB model can be used as a standalone device or combined with other Tesira AVB DSPs, expanders, amplifiers, and controllers. TesiraFORTÉ DAN VT adds Dante digital audio networking.

- › 128 x 128 channels of AVB (AVB model only)
- › 32 x 32 channels of Dante (DAN model only)
- › 12 mic/line level inputs with AEC, 8 mic/line level outputs
- › Gigabit Ethernet port
- › RS-232 serial port
- › 4-pin GPIO
- › 2-line OLED display with capacitive-touch navigation
- › Rack mountable (1RU)
- › System configuration and control via Ethernet
- › Internal universal power supply
- › SIP VoIP interface via RJ-45 connector
- › Standard FXO telephone interface via RJ-11 connector
- › Signal processing via intuitive software allows configuration and control for signal routing, mixing, equalization, filtering, and delay
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



(AVB Model Shown)



## TESIRAFORTÉ VT4

The TesiraFORTÉ AVB VT4 and TesiraFORTÉ DAN VT4 are fixed I/O DSPs with 4 analog inputs and 4 analog outputs, including Acoustic Echo Cancellation (AEC) technology on all 4 inputs. Each model also features up to 8 channels of configurable USB audio, a 2-channel VoIP interface, and a standard FXO telephone interface. TesiraFORTÉ AVB VT4 includes AVB/TSN digital audio networking, and can be used as a standalone device or combined with other Tesira AVB DSPs, expanders, amplifiers, and controllers. TesiraFORTÉ DAN VT4 includes Dante digital audio networking.

- › 128 x 128 channels of AVB (AVB model only)
- › 32 x 32 channels of Dante (DAN model only)
- › 4 mic/line level inputs with AEC, 4 mic/line level outputs
- › Gigabit Ethernet port
- › RS-232 serial port
- › 4-pin GPIO
- › 2-line OLED display with capacitive-touch navigation
- › Rack mountable (1RU)
- › System configuration and control via Ethernet
- › Internal universal power supply
- › SIP VoIP interface via RJ-45 connector
- › Standard FXO telephone interface via RJ-11 connector
- › Signal processing via intuitive software allows configuration and control for signal routing, mixing, equalization, filtering, and delay
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



(AVB Model Shown)

# DIGITAL SIGNAL PROCESSORS

## VIDEO ENCODERS AND DECODERS

### TESIRALUX IDH-1



The TesiraLUX IDH-1 is an AVB/TSN enabled video encoder capable of transmitting video signals up to and including 4K60. The IDH-1 functions as a video DSP in a Tesira media system and is configured through the Tesira configuration software. Acting as an AVB talker, the IDH-1 fully integrates digital audio and video on a single network, allowing for automatic lip sync management and end-to-end network transit latencies of 1.5 frames or less. Multiple software-based options are available for managing bandwidth, including setting maximum resolution, minimum frame rate, and/or a rate of compression. The AVB/TSN streams can be transmitted over 1Gb or 10Gb ports while control signals are managed via a separate 1Gb Ethernet port. The IDH-1 accepts 8 channels of PCM audio for embedding/de-embedding, and includes 2 mic/line level analog inputs. The TesiraLUX IDH-1 can be used as a standalone device (paired with a TesiraLUX OH-1) or combined with other Tesira DSPs, expanders, amplifiers, and controllers.

- › Includes one HDMI® port and one DisplayPort™ 1.2 port
- › Accepts video signals up to and including 4K60
- › Flexible color space including Rec. 2020
- › Automatic lip sync management
- › Supports 8 channel PCM audio for embedding/de-embedding
- › Automated EDID management between TesiraLUX and the input source
- › Flexible bandwidth management options
- › 2 mic/line level analog audio inputs
- › 4 logic connections can be used as inputs or outputs
- › Optional mounting accessories available
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

### TESIRALUX OH-1



The TesiraLUX OH-1 is an AVB/TSN enabled video decoder capable of outputting video signals up to and including 4K60. The OH-1 functions as a video DSP in a Tesira media system and is configured through the Tesira configuration software. Acting as an AVB listener, the OH-1 fully integrates digital audio and video on a single network, allowing for automatic lip sync management and end-to-end network transit latencies of 1.5 frames or less. The AVB/TSN streams can be received over 1Gb or 10Gb ports while control signals are managed via a separate 1Gb Ethernet port. The OH-1 accepts 8 channels of PCM audio for embedding/de-embedding, and includes 2 mic/line level analog outputs. The TesiraLUX OH-1 can be used as a standalone device (paired with a TesiraLUX IDH-1) or combined with other Tesira DSPs, expanders, amplifiers, and controllers.

- › Includes one HDMI port
- › Outputs video signals up to and including 4K60
- › Flexible color space including Rec. 2020
- › Automatic lip sync management
- › Supports 8 channel PCM audio for embedding/de-embedding
- › Automated EDID management between TesiraLUX and the output display
- › 2 mic/line level analog audio outputs
- › 4 logic connections can be used as inputs or outputs
- › Optional mounting accessories available
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



# EXPANDERS

## TESIRA EX-IN



The Tesira EX-IN is a half-rack expander box for use with AVB-enabled Tesira DSPs. The EX-IN is a 4-channel mic or line level audio input expander. The expander communicates with the Tesira AVB network for audio networking, configuration, and control, and is powered by PoE+.

- › Four channels of balanced mic or line level input
- › 0 – 66dB gain, adjustable in 6dB increments
- › +48V Phantom Power
- › -100 to +12dB fader range for level
- › Audio and control networking over AVB/TSN
- › Powered by PoE+
- › Plug-in barrier strip connectors
- › Front panel LEDs for device status indications
- › Half-rack chassis
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

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## TESIRA EX-OUT



The Tesira EX-OUT is a half-rack expander box for use with AVB-enabled Tesira DSPs. The EX-OUT is a 4-channel mic or line level audio output expander. The expander communicates with the Tesira AVB network for audio networking, configuration, and control, and is powered by PoE+.

- › Four channels of balanced mic or line level output
- › -100 to +12dB fader range for level
- › Signal invert for reverse polarity
- › Selectable full-scale output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu) for best interface/performance
- › Audio and control networking over AVB/TSN
- › Powered by PoE+
- › Plug-in barrier strip connectors
- › Front panel LEDs for device status indications
- › Half-rack chassis
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

## TESIRA EX-AEC

The Tesira EX-AEC is a half-rack expander box for use with AVB-enabled Tesira DSPs. The EX-AEC is a 4-channel mic or line level audio input expander with AEC (Acoustic Echo Cancellation). The expander communicates with the Tesira AVB network for audio networking, configuration, and control, and is powered by PoE+.



- › Four channels of balanced mic or line level input with AEC (Acoustic Echo Cancellation)
- › 0 – 66dB gain, adjustable in 6dB increments
- › +48V Phantom Power
- › -100 to +12dB fader range for level
- › Audio and control networking over AVB/TSN
- › Powered by PoE+
- › Plug-in barrier strip connectors
- › Front panel LEDs for device status indications
- › Half-rack chassis
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

## TESIRA EX-IO

The Tesira EX-IO is a half-rack expander box for use with AVB-enabled Tesira DSPs. The EX-IO is a 4-channel input and output expander. The expander features two channels of mic or line level audio input and two channels of mic or line level audio output. The expander communicates with the Tesira AVB network for audio networking, configuration, and control, and is powered by PoE+.



- › Two channels of balanced mic or line level input
- › Two channels of balanced mic or line level output
- › 0 – 66dB gain, adjustable in 6dB increments on inputs
- › Selectable full-scale output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu) for best interface/performance
- › +48V Phantom Power on inputs
- › Powered by PoE+
- › Half-rack chassis
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty

# EXPANDERS

## TESIRACONNECT



TesiraCONNECT serves as the central connection point for all Biamp devices in a conference room. It simplifies conferencing installations by providing power and media over a single category cable between devices such as Tesira AVB DSPs, USB extenders, PoE+ amplifiers, and microphones. Four of the five Gigabit RJ-45 ports provide PoE+ power (IEEE 802.3at Class 4, 30W) to connected endpoints, while the remaining RJ-45 port is used for DSP connection or daisy chaining TesiraCONNECT devices together. TesiraCONNECT eliminates the need for third-party switches; it works out-of-the-box with Tesira products and does not require any device configuration. The small form factor allows it to be easily mounted to a wall or under a table, or placed above the ceiling or inside a credenza in the conference room.

- › Five 1 Gbps RJ-45 ports
- › Four ports support PoE+ power (IEEE 802.3at Class 4, 30W)
- › Up to 4 TesiraCONNECT devices can be daisy chained together
- › Front panel LEDs indicate port connections, device status, and fault conditions
- › Fault reporting and device monitoring supported in SageVue
- › Out-of-the-box compatibility with Tesira conferencing products
- › External universal power supply
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## TESIRA EX-UBT



The EX-UBT can transport USB digital audio reliably throughout a customer's network and is not limited by the specification-defined maximum USB connection length of 5 meters. This makes the EX-UBT ideal for installations requiring USB connections not located in a rack or near other equipment; installations requiring multiple USB audio inputs; or in projects using Tesira SERVER or SERVER-IO as the DSP since they have no on-board USB connection.

Powered by PoE, the EX-UBT expander supports up to eight channels of configurable USB audio as well as Bluetooth® wireless technology, which is enabled and configured through the Tesira software. With Bluetooth, the EX-UBT provides a cable-free solution for teleconferencing using soft codecs, continuing a mobile phone call into a meeting room, or for supplying background music in a hospitality setting. It's the perfect solution for a variety of room types and sizes that require USB audio, such as conference rooms or multi-purpose spaces

- › Supports up to eight channels of configurable USB audio
- › Supports Bluetooth wireless technology
- › LED indicators for power and wireless status
- › Configurable via Tesira software
- › PoE powered
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty





## TESIRA EX-MOD

The Tesira EX-MOD is a modular expander device that is designed for use with AVB-enabled Tesira DSPs. It can be configured with up to three 4-channel input and/or output cards for a maximum of 12 channels. The expander communicates with the Tesira AVB network for audio networking, configuration, and control.



- › Can be configured with up to three I/O cards
- › Up to 12 channels of analog audio
- › AVB/TSN connection to Tesira system for audio networking, configuration and control
- › Plug-in barrier strip connections on cards
- › Front panel LEDs for device status indications
- › Internal universal power supply
- › Rack mountable (1RU)
- › CE marked, UL listed, RoHS compliant
- › Covered by Biamp Systems' five-year warranty

# EXPANDERS

## EX-MOD EXPANDER CARDS



### TESIRA EIC-4

The Tesira EIC-4 expander card is an optional card that can be installed in the Tesira EX-MOD, AMP-4175R, AMP-4300R CV, AMP-4350R, and AMP-8175R. Each EIC-4 provides four channels of mic or line level audio input. The inputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each input includes gain with clip indicator, +48V phantom power, mute, level, and signal invert.

- › Four channels of balanced mic or line level input
- › Plug-in barrier strip connectors
- › 0 – 66dB gain, adjustable in 6dB increments
- › Clip indicator
- › +48V Phantom Power
- › -100dB to +12dB fader range for level
- › Signal invert for reverse polarity
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



### TESIRA EOC-4

The Tesira EOC-4 expander card is an optional card that can be installed in the Tesira EX-MOD, AMP-4175R, AMP-4300R CV, AMP-4350R, and AMP-8175R. Each EOC-4 provides four channels of mic or line level audio output. The outputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each output includes mute, level, signal invert, and full-scale output reference.

- › Four channels of balanced mic or line level output
- › Plug-in barrier strip connectors
- › -100dB to +12dB fader range for level
- › Signal invert for reverse polarity
- › Selectable full-scale output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu) for best interface/performance
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



## TESIRA EEC-4

The Tesira EEC-4 expander card is an optional card that can be installed in the Tesira EX-MOD. Each EEC-4 provides four channels of mic or line level audio input with AEC (Acoustic Echo Cancellation). The inputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each input includes gain with clip indicator, +48V phantom power, mute, level, and signal invert.

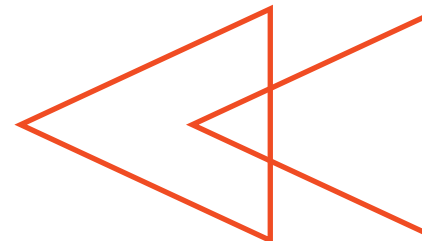
- › Four channels of balanced mic or line level input with AEC (Acoustic Echo Cancellation)
- › Plug-in barrier strip connectors
- › 0 – 66dB gain, adjustable in 6dB increments
- › Clip indicator
- › +48V Phantom Power
- › -100dB to +12dB fader range for level
- › Signal invert for reverse polarity
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



## TESIRA EIOC-4

The Tesira EIOC-4 expander card is an optional card that can be installed in the Tesira EX-MOD, AMP-4175R, AMP-4300R CV, AMP-4350R, and AMP-8175R. Each EIOC-4 provides two channels of mic or line level audio input and two channels of mic or line level audio output. The inputs and outputs are electrically balanced and provided on plug-in barrier strip connectors. Software control of each input includes gain with clip indicator, +48V phantom power, mute, level, and signal invert; whereas control for each output includes mute, level, signal invert, and full-scale output reference.

- › Two channels of balanced mic or line level input
- › Two channels of balanced mic or line level output
- › 0 – 66dB gain, adjustable in 6dB increments on inputs
- › +48V Phantom Power on inputs
- › Selectable full-scale output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu) for best interface/performance
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



# AMPLIFIERS



## TESIRAXEL 1200.1

TesiraXEL 1200.1 is an AVB/TSN enabled, digital networked, four-channel amplifier. The 1200.1 leverages a unique power distribution architecture allowing users to distribute 1-100% of available power to any channel. To streamline installations, the 1200.1 includes an audible locate function on the front panel to validate connected loudspeaker runs without requiring the amplifier to be configured. The TesiraXEL 1200.1 comes with a software-configurable media interface, allowing designers to choose their preferred network topology — redundancy, daisy chain, single-cable, or separate control and media are all supported.

- › 100% asymmetrical loading per channel
- › Selectable impedance per channel: 4Ω, 8Ω, 70V, 100V
- › Configurable media interface: support for daisy chain, network redundancy, and single cable
- › Audible locate available from the front panel
- › Auto standby mode
- › Supports delay equalization per channel
- › Supports port authentication via IEEE 802.1X
- › Configurable via Tesira software
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## TESIRAXEL 1200.2

TesiraXEL 1200.2 is an AVB/TSN enabled, digital networked, four-channel amplifier. The 1200.2 is equipped with two 1200W power banks; each bank supports two channels to provide greater power density per rack unit. It leverages a unique power distribution architecture allowing users to distribute 1-100% of available power across the power bank. To streamline installations, the 1200.2 includes an audible locate function on the front panel to validate connected loudspeaker runs without requiring the amplifier to be configured. The TesiraXEL 1200.2 comes with a software-configurable media interface, allowing designers to choose their preferred network topology — redundancy, daisy chain, single-cable, or separate control and media are all supported.

- › 100% asymmetrical loading per power bank
- › Selectable impedance per channel: 4Ω, 8Ω, 70V, 100V
- › Configurable media interface: support for daisy chain, network redundancy, and single cable
- › Audible locate available from the front panel
- › Auto standby mode
- › Supports delay equalization per channel
- › Supports port authentication via IEEE 802.1X
- › Configurable via Tesira software
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## TESIRA AMP-450P



The Tesira AMP-450P is a four channel PoE+ conferencing amplifier. The output channels are software configurable, including selectable power versus channel count. The AMP-450P includes an internal limiter and can provide 3 watts of continuous power to all four channels. The Tesira AMP-450P is also capable of operating in a burst mode to handle peak signals, providing up to 50 watts (4Ω) or 30 watts (8Ω) per channel.

- › Four channels
- › Burst mode to handle peak signals; supports up to 50W (4Ω) or 30W (8Ω) per channel
- › PoE+ powered
- › Class D amplifier topology
- › Fanless operation
- › Software-selectable power versus channel count
- › Includes internal limiter function
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › LED indicators for power/status and amp status
- › Configurable via Tesira software
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## TESIRA AMP-450BP



The Tesira AMP-450BP is an AVB/TSN enabled, four-channel PoE+ conferencing amplifier. Capable of mounting directly to the back of the desono C-IC6 ceiling loudspeaker, the AMP-450BP reduces cost by minimizing cabling between the ceiling devices and the rack room. The Tesira AMP-450BP is capable of operating in a burst mode to handle peak signals, providing up to 50 watts (4Ω) or 30 watts (8Ω) per channel.

- › Four channels
- › Burst mode to handle peak signals; supports up to 50W (4Ω) or 30W (8Ω) per channel
- › PoE+ powered
- › Class D amplifier topology
- › Fanless operation
- › Software-selectable power versus channel count
- › Includes internal limiter function
- › Evaluated to the requirements of UL 2043 and is suitable for use in air handling spaces
- › LED indicators for power/status and amp status
- › Configurable via Tesira software
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

## AMP-A460H



The AMP-A460H is a four-channel amplifier delivering 60 watts per channel in a sleek, compact design. A half-rack, D-class amplifier that operates in near silence with no need for internal cooling fans, the AMP-A460H ships with a rack mounting kit for a single unit installation or for mounting two units side-by-side.

- › Four channels; 60W per channel
- › Bridgeable channels
- › Class D amplifier topology
- › Three manual switches provide: constant voltage operation, bridging channels, and a high-pass filter option
- › Supports both 70V and 100V Constant Voltage Systems
- › LED indicators for each output channel
- › Rack mountable; includes mounting kit
- › No additional software needed
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

# AMPLIFIERS



## TESIRA AMP-4175R

The Tesira AMP-4175R is a four-channel digital networked amplifier, fully AVB/TSN enabled and capable of delivering 175 watts per channel. Rack mountable and part of an integrated Tesira audio network, the Tesira AMP-4175R also offers fault reporting, impedance monitoring, and optional analog failover.

- › Four channels; 175W per channel
- › Impedance monitoring
- › Configurable via Tesira software
- › Dual AVB ports
- › Bridgeable channels
- › Optional analog failover
- › Optional I/O expander card slots
- › Front panel OLED display
- › Front panel capacitive touch navigation
- › Front panel control of individual and chassis-wide mutes/levels (defeatable)
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## TESIRA AMP-4300R CV

The Tesira AMP-4300R CV is a four-channel digital networked, constant voltage 70V/100V amplifier. It is AVB/TSN enabled and delivers 300 watts per channel, is rack mountable, and serves as part of an integrated Tesira audio network. The Tesira AMP-4300R CV also offers fault reporting, impedance monitoring, and optional analog failover.

- › Four channels; 300W per channel
- › Impedance monitoring
- › Configurable via Tesira software
- › Dual AVB ports
- › Bridgeable channels
- › Optional analog failover
- › Optional I/O expander card slot
- › Front panel OLED display
- › Front panel capacitive touch navigation
- › Front panel control of individual and chassis-wide mutes/levels (defeatable)
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty





## TESIRA AMP-4350R

The Tesira AMP-4350R is a four-channel digital networked amplifier. It is AVB/TSN enabled and delivers 350 watts per channel, is rack mountable, and serves as part of an integrated Tesira audio network. It also offers fault reporting, impedance monitoring, and optional analog failover.

- › Four channels; 350W per channel
- › Impedance monitoring
- › Configurable via Tesira software
- › Dual AVB ports
- › Bridgeable channels
- › Optional analog failover
- › Optional I/O expander card slot
- › Front panel OLED display
- › Front panel capacitive touch navigation
- › Front panel control of individual and chassis-wide mutes/levels (defeatable)
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty



## TESIRA AMP-8175R

The Tesira AMP-8175R is an eight-channel digital networked amplifier, fully AVB/TSN enabled and capable of delivering 175 watts per channel. Rack mountable and part of an integrated Tesira audio network, the Tesira AMP-8175R also offers fault reporting, impedance monitoring, and optional analog failover.

- › Eight channels; 175W per channel
- › Impedance monitoring
- › Configurable via Tesira software
- › Dual AVB ports
- › Bridgeable channels
- › Optional analog failover
- › Optional I/O expander card slots
- › Front panel OLED display
- › Front panel capacitive touch navigation
- › Front panel control of individual and chassis-wide mutes/levels (defeatable)
- › Rack mountable (2RU)
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

# LOUDSPEAKERS

## C-IC6 CEILING LOUDSPEAKER



The desono C-IC6 is a low-profile, two-way passive coaxial loudspeaker optimized for speech reproduction in conferencing applications. Designed with the installer in mind, the C-IC6 loudspeaker supports audio connections via either standard category cable or traditional speaker cable. They can be blind-mounted from below the ceiling, and feature a magnetic grill for easy toolless installation and removal. The grill plates are available in white, black, or red, or can be painted to match the room decor. The C-IC6 also directly integrates with the Tesira® AMP-450BP—a four-channel “backpack” PoE+ amplifier—which reduces wiring requirements and installation time. The desono C-IC6 loudspeakers are an ideal choice for any conferencing space that demands superior speech reproduction.

- › 60W with a peak power of 120W
- › Low profile passive loudspeaker, less than 6 inches (151mm) total depth
- › 8-ohm nominal impedance
- › 130° coverage angle optimized for low ceilings
- › Supports both standard category cables and traditional speaker wiring for audio connections
- › Directly integrates with the AMP-450BP (PoE+ amplifier)
- › Bridge-mounted 1 inch (25mm) soft dome tweeter
- › 6.5 inch (165mm) treated paper woofer mechanically isolated from the high frequency driver
- › Integrated flex conduit knockouts
- › Evaluated to the requirements of UL 1480a and UL 2043 and is suitable for use in air handling spaces
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems’ seven-year warranty





## P6 PENDANT LOUDSPEAKER



The desono P6 is a two-way passive coaxial loudspeaker intended for full range music reproduction in distributed audio applications. It delivers high intelligibility coupled with a wide coverage area; designers can use fewer speakers in a space while maintaining acceptable levels of speech intelligibility.

The desono P6 utilizes a 6-position switchable transformer ranging from 1.875W to 60W with low-impedance bypass for constant-voltage operation, making it an excellent choice for large areas of BGM.

The desono P6 is rated for outdoor splash applications such as patios or concourses, and an ideal choice for both indoor and outdoor distributed audio applications that demand superior speech intelligibility and full range music reproduction.

- › 60W continuous output with a peak power of 240W
- › Traditional "raindrop" profile
- › 6-ohm nominal impedance
- › 130° coverage angle
- › 6-position constant voltage tap (1.875W, 3.75W, 7.5W, 15W, 30W, 60W) with low impedance bypass
- › Bridge-mounted 1-inch (25mm) soft dome tweeter
- › 6.5-inch (165mm) polypropylene woofer mechanically isolated from the high frequency driver
- › Suitable for indoor and outdoor use
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

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## P6-SM PENDANT LOUDSPEAKER



The desono P6-SM is a low-profile, two-way passive pendant loudspeaker intended for full range music reproduction in distributed audio applications. It delivers high intelligibility coupled with a wide coverage area; designers can use fewer loudspeakers in a space while maintaining acceptable levels of speech intelligibility.

The desono P6-SM utilizes a 6-position switchable transformer ranging from 1.875W to 60W for low-impedance bypass and constant-voltage operation, making it an excellent choice for large areas of BGM.

The desono P6-SM is rated for outdoor splash applications such as patios or concourses, and an ideal choice for both indoor and outdoor distributed audio applications that demand superior speech intelligibility and full range music reproduction.

- › 60W continuous output with a peak power of 240W
- › Low-profile "sunshine" form factor
- › 6-ohm nominal impedance
- › 130° coverage angle
- › 6-position constant voltage tap (1.875W, 3.75W, 7.5W, 15W, 30W, 60W) with low impedance bypass
- › Bridge-mounted 1-inch (25mm) soft dome tweeter
- › 6.5-inch (165mm) polypropylene woofer mechanically isolated from the high frequency driver
- › Suitable for indoor and outdoor use
- › CE marked, UL listed, and RoHS compliant
- › Covered by Biamp Systems' five-year warranty

# CONTROLS



## TESIRA EX-LOGIC

The Tesira EX-LOGIC is a half-rack logic box for use with Tesira DSPs. The EX-LOGIC 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. 12 of the connections are designed as logic connections only; the remaining four connections can also be used for logic connections or as variable voltage control inputs (e.g. interface to a potentiometer). The expander communicates with the Tesira AVB network for audio networking, configuration, and control, and is powered by PoE.

- › 16 total logic connections that can be used as inputs or outputs
- › 4 of the 16 connections can be used as voltage control inputs
- › Inputs can control actions within the software including: presets, mutes, ducking, room combining, paging functions, and much more
- › Outputs can trigger status relays or indicators, or provide logic input to other controllable equipment
- › PoE powered
- › Half-rack chassis
- › RoHS compliant and AES grounded
- › Covered by Biamp Systems' five-year warranty



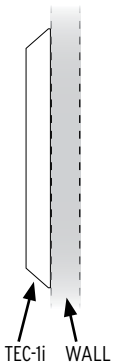
The TEC-1s surface-mounts to any wall; multiple mounting options accommodate international back boxes

## TESIRA TEC-1s • TESIRA TEC-1i

The Tesira TEC-1s and TEC-1i are Ethernet control devices for use with all Tesira and TesiraFORTÉ systems. Both devices offer a simple, intuitive interface for end users and can be installed and configured to fit the unique needs of a specific application. These devices connect via standard CAT-5/6/7 cabling and are powered over Ethernet, eliminating the need for custom cabling and local power sources. Multiple remote control panels can be connected over large distances using standard network technology.

The TEC-1s is surface-mounted while the TEC-1i can be flush-mounted into any wall.

- › Adjustment and/or initiation of 32 selectable system volumes and actions
- › Volumes are any individual or grouped system levels, including inputs, outputs, matrix cross-points, etc.
- › Actions are any individual or grouped system operations, including presets, source selection, mutes, ducking, combining, etc.
- › Control functions are programmed in the Tesira system design software
- › High contrast OLED display with a wide viewing angle
- › The display brightness can be adjusted to fit the ambient light present in the application and automatically dims when not in use
- › Capacitive touch technology eliminates protruding and moving parts to increase product reliability and longevity while simplifying cleaning
- › 330' (100m) Ethernet cable length can be extended with standard PoE network technology (routers, switches, hubs, media converters)
- › Connects with standard RJ-45 or IDC connector
- › Covered by Biamp Systems' five-year warranty



The TEC-1i flush-mounts to any wall; mounts using the retrofit plate (included) or installs in a Raco® 254 box for North American installations (not included)



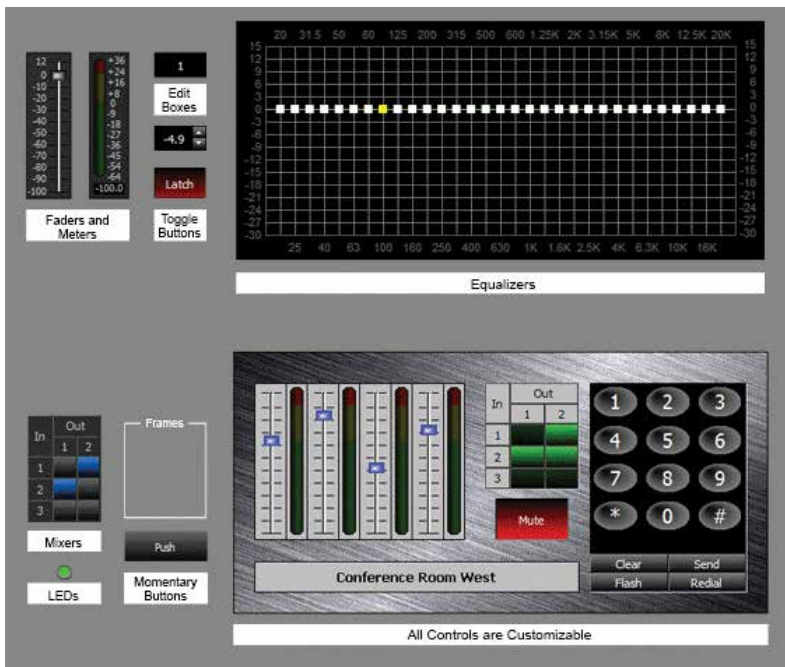
## TESIRA HD-1

The Tesira HD-1 is a hardware dialer for Tesira DSPs. The HD-1 is compatible with Tesira SERVER and SERVER-IO with STC-2 or SVC-2 cards installed, as well as TesiraFORTÉ VT, TesiraFORTÉ AVB VT, TesiraFORTÉ DAN VT, TesiraFORTÉ AVB VT4, and TesiraFORTÉ DAN VT4 devices.

- › Telephony control over Ethernet
- › LCD display
- › 12-button dial pad
- › 100 programmable speed dial numbers
- › 4 navigation buttons
- › Power over Ethernet (PoE)
- › Covered by Biamp Systems' five-year warranty

## 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.



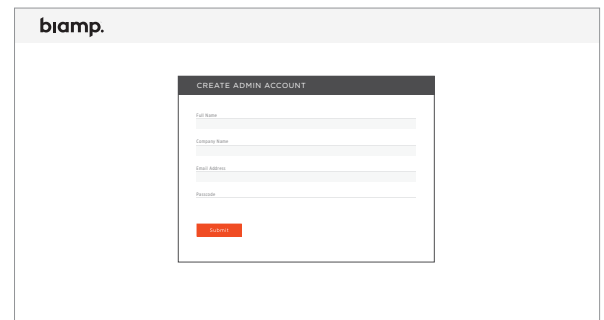
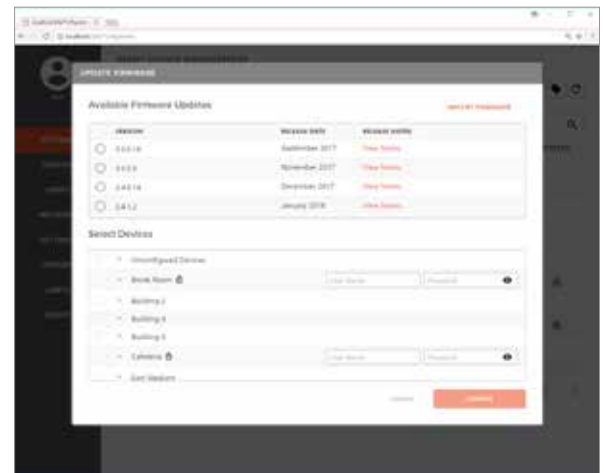
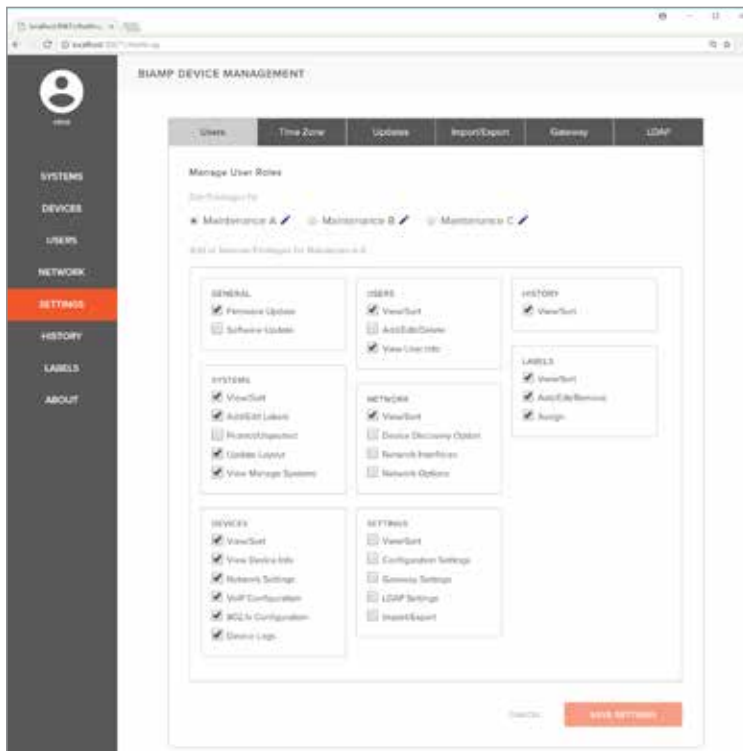
## FEATURES

- › Create system control surfaces for PC/touch-screen
- › Place controls and assign them to system functions
- › Copy controls directly from system design objects
- › Customize control layout, function, and appearance
- › Control support for room combiners
- › Create/navigate multiple pages of operation
- › Restrict access to controls/pages via passwords
- › Works simultaneously with other system controls
- › Drag and drop programming
- › Update preset settings directly in Biamp Canvas

# MANAGEMENT SOFTWARE

## BIAMP SAGEVUE

Biamp SageVue™ is a browser-based monitoring and management platform for network-connected Tesira, Devio, and Cambridge devices, as well as Crowd Mics ATOMs. It is a self-contained web app deployed at a customer's site, enabling technology managers and designated end users to review system status and perform several system administration tasks. Granular access control levels are available, and can be associated with the organization's existing Active Directory users and groups. SageVue also includes a RESTful API which can be used to build custom dashboards, or be integrated with third party monitoring applications.



## FEATURES

- › Provides a single, comprehensive view of Tesira, Devio, Cambridge, and Crowd Mics devices connected to the network
- › Monitors the status of network-connected Tesira, Devio, Cambridge, and Crowd Mics devices
- › Sorting and tagging tools are available to help organize and filter data
- › Tesira firmware can be updated remotely, either in groups or on a device-by-device basis
- › Provides access to the VoIP configuration functions of Tesira VoIP-enabled devices
- › Users can view both the user and advanced logs of Tesira devices
- › Configurable access levels are available, with support for Active Directory integration
- › Allows configuration of network properties for Tesira devices, including IP addressing and 802.1x port management
- › Features a full log of user activity for traceability

# DESIGN SOFTWARE

## TESIRA SOFTWARE

Tesira software is the interface for all system configurations. Creating the processing and system design for the application is done through a simple drag-and-drop interface. Toolbars allow control of processing, control, and diagnostic elements. Making audio and logic connections is fast and easy, and several options are available for displaying connection lines. System tools allow for easy device discovery and system configuration uploads.



## FEATURES

- › Complete system configuration and control
- › Configuration engine confirms design, details hardware requirements for system
- › Partitions allow parts of the design to be kept separate from each other (although audio connections can be made between partitions)
- › Partitions compile separately, allowing unchanged partitions to stay online running while other partitions are changed, recompiled, and reloaded
- › A single partition can span multiple devices; a single device can have multiple partitions
- › New processing blocks; Über Filter and FIR Filter, Gain Sharing Automixer, Automatic Gain Control (AGC)
- › Many new line styles and features
- › Drag and drop creation and editing of presets
- › Logic Simulation
- › Enhanced Text Protocol includes data point monitoring
- › Selectable sample rates (48/96 kHz)

# CONTACT US



## SUPPORT

When you need help, you don't want long hold times or confusing voicemail systems. That's why we've streamlined our 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 <http://www.biamp.com/how-to-get-help> to find the support phone number for your region or time zone.

Prefer to troubleshoot on your own? Check out Cornerstone, our online technical support knowledgebase, at [support.biamp.com](http://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 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. It's easier than ever to get the training and technical support you need from Biamp.

## TRAINING

Biamp is committed to continuing education within 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 can be difficult to get out of the office for in-person trainings. That's why our Tesira certification training is completely available in a self-paced online format.

However, we're still believers in the value of hands-on equipment training, which is why we created the AV Lab advanced course. The AV Lab is designed to provide you with the knowledge needed 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](http://biamp.com/training).

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DEVICE: BRC CR1 Unit #1  
HOSTNAME: brcr1tsrns01 (172.23.247.100)

- power
- alarm
- activity
- status
- ok

Navigation buttons: up arrow, down arrow, and a circular 'select' button.

TESIRA SERVER-IO

BIAMP

BRC CR1 Unit #2  
brcr1tsrns02

- power
- alarm
- activity
- status
- ok

TESIRA SERVER-IO

BIAMP

BRC CR1 Unit #1  
brcr1tsrns01

- power
- alarm
- activity
- status
- ok

TESIRA SERVER-IO

BIAMP

**biamp.**

**HEADQUARTERS**

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