

ART::HUB 2

PRECISION & PERFORMANCE FOR AMBITIOUS INSTALLATIONS

Overview

Revolutionise your audio installations with the ART::Hub 2, the insignia hardware of the ART::Performance Line. Purpose-built for ambitious, large-scale projects, the ART::Hub 2 delivers unmatched precision and reliability for theatres, concert halls, and other large venues. With support for cutting-edge Active Acoustics and Immersive Audio Performance systems, ART::Hub 2 scales seamlessly to meet the demands of even the most complex installations.

KEY BENEFITS

- Seamlessly scales to meet the needs of large, complex projects
- Works with existing audio systems
- Use with any loudspeaker brand
- Active Acoustics and Immersive Audio modules can run simultaneously

Processing to power every performance

At the heart of the ART::Performance Line, the ART::Hub 2 is powered by advanced audio algorithms and innovative electroacoustic design. With low latency (3.9ms) and robust Dante I/O capabilities, it ensures unparalleled performance for enhancing room acoustics, achieving dynamic spatialisation, and supporting flawless speech intelligibility. Designed for scale, the ART::Hub 2 offers effortless control with integrated support for both Active Acoustics Performance and Immersive Audio Performance licenses, making it the ideal solution for ambitious installations.

SPECIFICATIONS

Product Name	ART::Hub 2
Active Acoustics Inputs	Up to 64
Immersive Audio Inputs	Up to 64
Simultaneous Active Acoustics & Immersive Audio	Yes
Loudspeaker Outputs	Up to 128
Active Acoustics Processing	Performance*
Immersive Audio Processing	Performance*
Sample Rate	48 kHz (with current version), soon available in 96kHz
Server Grade Hardware	Medical Grade 24h Operation
Redundant Power	2x 100-240 VAC 550 W (80+) redundant
Warranty	2 years
Dimensions	88 mm x 482 mm x 430 mm (2U x 19" x 16.93")

*Performance is our most advanced signal processing with more features and higher precision

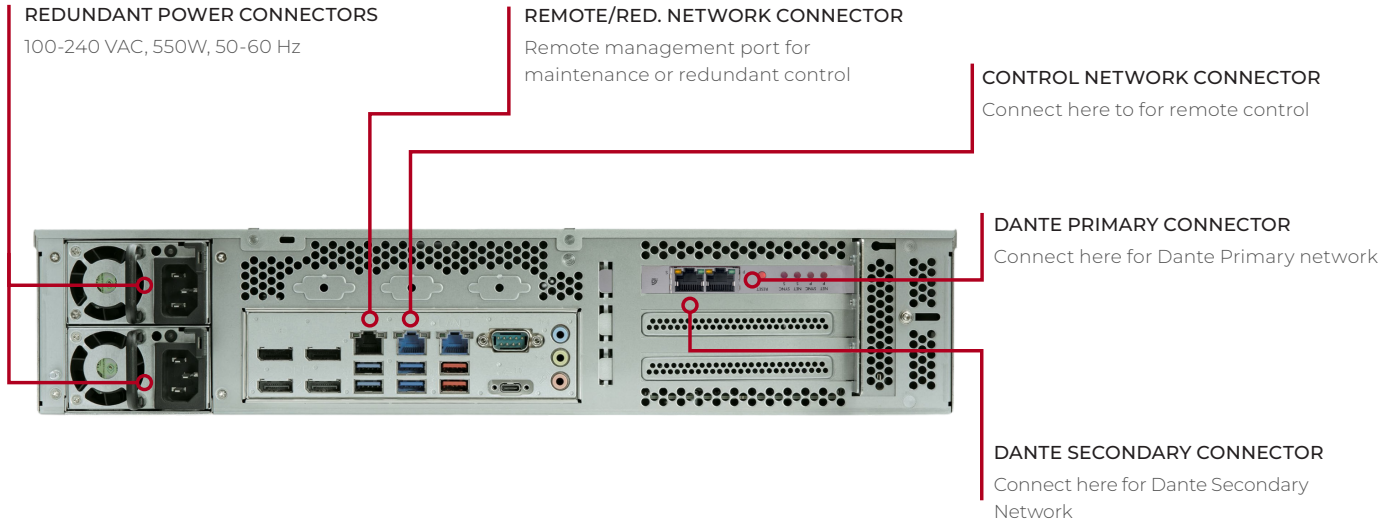
WHERE SOUND
MEETS ART

AMADEUS::ART

A comprehensive ecosystem of software, hardware, services and content, for a range of applications from immersive audio experiences to advanced room acoustics.

SOFTWARE | HARDWARE | SERVICES | CONTENT

- Hardware based on your processing and connectivity requirements
- Add software modules for active acoustics and immersive audio
- Combine our expertise where needed from design/tuning/ongoing maintenance
- Use our growing selection of content for immersive audio applications



PROCESSING ELEMENTS

Input stage

MICROPHONE INPUTS:

- UDP metering
- 8-band parametric equalizers, dynamic processing, level & delay adjustment
- Vector shaping for active acoustics
- **Amadeus Autotune** for automatic input tuning
- Relative input grouping for all parameters
- Copy/paste for all parameters
- Proprietary feedback control for extreme acoustical settings (e.g., cathedral-like acoustics)

IMMERSIVE AUDIO INPUTS:

- OSC Control for position, size and algorithm
- Proprietary Plugin for all DAW for source control
- Integration for Q-Sys, Q-lab, Grapes and a number of mixing consoles

Acoustic Module

GEOMETRIC VECTOR ENGINE:

- **Room-Specific Acoustic Modeling:** Creates a unique 3D acoustic signature based on the venue's inherent passive characteristics
- **Hybrid Regenerative System:** Enhances natural reverberation seamlessly

MULTICHANNEL GEOMETRIC REVERB ENGINE:

- **High-Resolution Reverb:** 128-channel decorrelated algorithmic reverb using neutral Feedback Delay Networks (FDNs)
- **Passive Room Integration:** Merges reverb output with the room's natural acoustics for a smooth blend
- **Advanced Parameter Control:** Tuning of time structure, density, envelope, shape, and spectral parameters for precise acoustic design

ROOM SHAPING:

- **Energy Distribution Control:** Independently manage sound energy from various source positions to optimize projection, whether from the stage or specific areas

TIME SHAPING:

- **Targeted Reflections:** Enhance volume and reflections precisely where needed
- **Adjustable Room Dimensions:** Scale room size, wall, and ceiling placement geometrically, with tailored adjustments for ADA-compliant zones like under-balconies or stalls

SPECTRAL SHAPING:

- **Customizable Spectral Balance:** Individually adjust tonal characteristics for the vector matrix and late reverb layers

VOICE LIFT:

- **Optimized Voice Distribution:** Advanced algorithms ensure clear and even vocal projection across the space

EFFECT PRESETS:

- **Dynamic Acoustic Effects:** Pre-configured settings for specific scenes, such as cave-like echoes, outdoor ambiance, or dramatic effects

PERFORMANCE ENGINE:

- **Unlimited Acoustic Presets:** Configure and store presets for various source positions, content types, and artistic preferences
- **Seamless Show Integration:** Synchronize with show control systems via OSC (Open Sound Control)
- **Smooth Preset Interpolation:** Enables seamless transitions between presets during live performances
- **Detailed Acoustic Control:** Adjust all acoustic parameters in real-time via OSC for unparalleled flexibility

PROCESSING ELEMENTS

Immersive Audio Module

SOUND LOCALIZATION:

- **Audience-Wide Accuracy:** Ensures consistent sound source localization across all seating, eliminating reliance on a “sweet spot”
- Two optimized algorithms for each Immersive Audio Source:
 - **i) Amadeus Wavefield Panning:** Delivers precise delay & amplitude panning for immersive spatial audio
 - **ii) Amadeus Amplitude Panning:** Delivers zero delay amplitude panning for immersive spatial audio

DYNAMIC MOVEMENTS:

- **Smooth Motion Control:** Delay interpolation enables fluid sound movements. Algorithms are automatically optimized for different movement speeds, getting rid of artifacts even for sensitive source types (like singers)
- **Customizable Focus:** Adjust sound width and blur by targeting individual or multiple speakers for tailored audio projection

VIRTUAL SURROUND SOUND:

- **Immersive Layout Simulation:** Supports virtual setups including 5.1, 7.1.4 or other configurations, delivering cinematic-quality soundscapes

ENHANCED 3D BASS MANAGEMENT:

- Optimize low-frequency performance for clarity and impact, time-aligned and auto-managed depending on the source position

Output Stage

- UDP metering
- 8-band parametric equalizers, level & delay adjustment

- Vector size for active acoustics
- Relative output grouping for all parameters
- Copy/paste for all parameters
- Speaker test engine with internal oscillator

GUI

- Quick control of presets, acoustics parameters, individual microphone, and loudspeaker channels
- Group controls with an intuitive user interface
- Simplified web-based control for preset selection, meter control, and 2D venue representation

Control and Integration

- Integration for Q-Sys, Q-lab, Grapes and a number of mixing consoles and media control systems
- OSC Control for position, size and algorithm
- Proprietary Plugin for all DAW for source control