

Mad Hatter™

Audio processing, sound rendering and control, configured for the installation.

SPECIFICATION	CONFIGURATION REQUIREMENT
Engine configuration	64 × 64, 128 × 128 or 256 × 256 audio channels.
Computing platform	Linux and Mac engines. The selected computer and processing design determine capacity.
Network audio and time	Native AES67 audio over an IP network, with PTP (Precision Time Protocol) network timing. Dante integration is available through appropriately licensed interfaces.
Programming	Lua, Python and JavaScript for controls, events, timers and cues, with sound actions scheduled by the audio engine.
Control interfaces	A text protocol over TCP, structured JSON messages and OSC (Open Sound Control), with named controls and event subscriptions.
Equipment integration	Modbus for device communication; PJLink for projectors; DMX over Art-Net for lighting; MQTT messaging; GPIO for general-purpose inputs and outputs; KNX and BACnet for building systems.

Terms in this brief

AES67. Audio Engineering Society standard for interoperable, synchronized audio over a computer network.

PTP. Precision Time Protocol aligns participating systems to a shared network clock.

IP. Internet Protocol provides network addressing and packet delivery.

TCP. Transmission Control Protocol provides an ordered, reliable network connection.

JSON. JavaScript Object Notation is a text format for structured information.

OSC. Open Sound Control exchanges control messages between computers and media devices.

Modbus. A device-communications protocol for measurements, states and commands.

PJLink. A common command interface for compatible projectors.

DMX. Digital Multiplex controls lighting and stage equipment.

Art-Net. Carries lighting-control data and supported timecode over a computer network.

MQTT. A publish-and-subscribe messaging protocol using named topics and a message broker.

GPIO. General-purpose input/output connections read or trigger electrical signals.

KNX. An open standard for commands and state between compatible building devices.

BACnet. Building Automation and Control Networks connects compatible building-control systems.

Mad Hatter™

Timing, hosted processing, listening and measurement.

SPECIFICATION	CONFIGURATION REQUIREMENT
Show control and timecode	TeaParty®, MIDI, MIDI Show Control and RTP-MIDI network transport. Linear timecode (LTC), MIDI timecode (MTC) and Art-Net timecode connect supported timing sources.
Hosted processors	Audio Units and VST3 on Mac; CLAP, VST3 and LV2 on Linux. The host, processor license and processing load define the available configuration.
Mad Presence™	Two loudspeakers per listener position, with head tracking. The working Mac implementation also supports headphone and earbud listening; each installed arrangement establishes its own listening region.
Acoustic measurement	MTCL™, The Microphone That Cannot Listen™, processes sound locally and supplies measurement features under a declared data budget, without exporting an audio stream.

Terms in this brief

MIDI. Musical Instrument Digital Interface carries control and timing messages, rather than sound.

RTP-MIDI. Real-time Transport Protocol for MIDI carries MIDI messages over a computer network.

LTC. Linear timecode is an audio-like signal used as a shared time reference.

MTC. MIDI Time Code sends timing references through MIDI.

Audio Units. Apple's interface for audio plug-ins inside compatible host applications.

VST3. Virtual Studio Technology, version 3, is an audio plug-in interface.

CLAP. CLever Audio Plug-in is an open interface for audio plug-ins and hosts.

LV2. An extensible open standard for audio plug-ins.

MTCL™. The Microphone That Cannot Listen™ processes sound locally and exports only permitted measurements, without an audio stream.

For the installation

Confirm the selected engine, computer, interfaces, processor licenses and listening arrangement. Capacity and acceptance follow that configuration.