

THUNDER | CORE AUDIO INTERFACE

CORE 256



720 input and output channels digital router and monitoring interface with:

- 256 channel Thunderbolt 3 I/O
- 256 channel Dante AoIP I/O
- MADI 64 channel BNC I/O
- 128 channel MADI SFP I/O module option
- 16 channel ADAT dual TosLink I/O
- 512x64 channel Pro|Mon summing and speaker EQ processing
- Sample-rates supported from 44,1 to 384 kHz

CORE 256

Features and specifications

The Thunder|Core-driven Core 256 does not take up much space, but the power you can squeeze out of this little box might make your jaw drop to the floor. With tons of channels, a wide palette of digital connectivity, built-in SPQ processing, Eucon control compatibility, internal summing engine and drivers for macOS and Windows 10, it is a pristine digital audio interface by any measure and for just about any application.

The Tiny Immersive Audio Hero

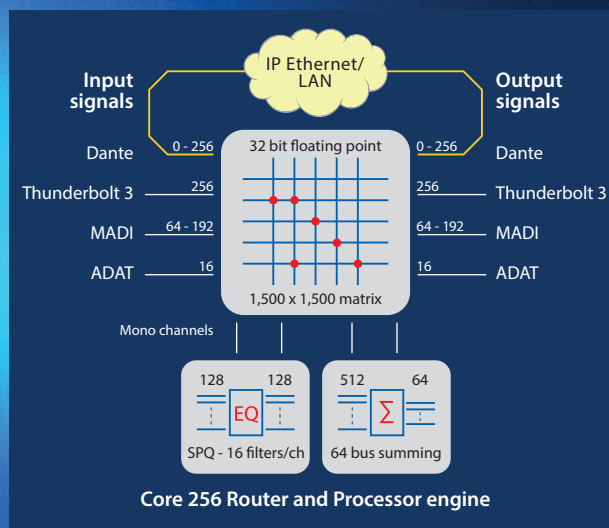
However, there is one application that should be emphasized in particular: Core 256 is simply the perfect Dante and MADI interface for Dolby Atmos™ RMU. The size and shape of Core 256 fits nicely for sharing a 1U rack shelf with a Mac Mini running Dolby Atmos Renderer, Dolby Atmos Production Suite or Dolby Atmos Mastering Suite. For immersive audio post production facilities, this solution will represent the missing link that streamlines and optimizes the multichannel workflows seamlessly.

The Ultimate Digital Bridge

That said, Core 256 is of course ready to take on a wealth of other tasks in the post production, studio and installed audio spheres. With Dante, MADI and ADAT ports onboard and versatile and flexible DADman routing control available, it is also a stellar D/D converter that can grab any digital audio channel – convert it if needed – and route it anywhere.

DAW Interfacing

Another application would be as a dedicated audio interface for your DAW. Whether you run Pro Tools, Logic Pro, Nuendo, Cubase, Ableton Live, Digital Performer or any other DAW, Core 256 can be your super low-latency entrance. With the ADAT, MADI and Dante connectivity, you can easily add analog preamps or insert points to the mix.



Features

The basic I/O configuration for the Core 256 interface is:

- 2 Thunderbolt 3 ports each w. 15W power
- 256 bi-directional channels at 48 & 96 kHz
- ASIO / Core Audio Thunderbolt PCIe drivers
- MADI/BNC-optional 2 x SFP/BNC MADI
- ADAT /Litepipe 16 channels
- DANTE: 256 ch @ 48 kHz, 128 ch @ 96kHz (IP core)
- WC I/O
- SPQ: 128 channel w 16 filters
- Proj|Mon support
- Summing processor 64 output / 512 input busses
- Internal Router: 1,500 x 1,500
- 32bit floating point processing
- Avid Eucon enabled devices via DADman
- APPLE Intel and Silicon M1 compatible Software
- Control via Ethernet or Thunderbolt connection
- 12V DC external Power max 60W
- ½ Rack unit 1U high

The mini-module slot can be mounted with a the an optional dual bi-directional MADI module with optical SFP or mini coax connectors.

19" Rack Mount Bracket

Core 256 can be mounted in a 19" rack using the special DAD bracket. The bracket has a shelf and mounting system for an apple Mac Mini computer.

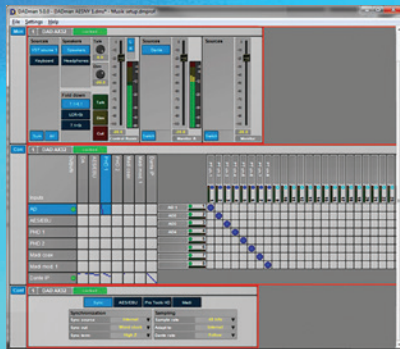
This mount provides a power full audio solution with the computer and the Core 256 audio interface.



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Control

The Thunder|Core Audio interface is controlled via the DADman software. DADman can connect to the Thunder|Core interface either via Ethernet or via a communication channel in the Thunderbolt connection. More units can be daisy chained via the Thunderbolt connection, and each unit will appear in DADman. Using control over Ethernet the two RJ45 connectors act as a switch for connection to more units. The Dante /AES67 audio is also passed on the two RJ45 connectors.



Thunder|Core

The DAD Thunder|Core Technology provides a Thunderbolt 3 connection with near-zero latency for interfacing between audio applications on MacOS or Windows computers and the Thunder|Core audio hardware. The interface provides a fast Thunderbolt 3 connection and a data transfer with 2 samples latency on the connection and a total of 9 samples in the digital interface as a total including EQ and summing processing in the unit. The channel capacity is up – to 256 audio channels @ 48 and 96 kHz, and the latency @96kHz is 95 micro seconds.

The total round trip latency with an audio software application will depend on the buffer size set for the application. With a buffer size of 32 samples the latency is 670 micro seconds at 96 kHz.

Key specifications

- 2 x Thunderbolt 3 ports w. 15W power source each
- 256 bi-directional channels at 44.1/48 kHz
- 256 channels at 88.2/96 kHz
- 128 Channels at 176.4/192 kHz
- 64 Channels at 352.8/384 kHz
- Control connection for DADman

Core Audio Thunder|Core audio driver

- Compatible with Apple Intel and Silicon (M1) Big-Sur and forward
- Core Audio Aggregates for more Applications I/O
- Control connection for DADman

ASIO Thunder|Core audio driver

- Compatible with Windows 10 and forward
- One Application can connect to the driver
- Control connection for DADman

Functionality

The Thunder|Core products have been designed with a unique router core based on 32bit floating point processing and a low latency and highly reliable FPGA based matrix structure, with a time stamp mechanism providing equal latency for all signals routed through the core. The Core 256 has a total capacity of 4,096 x 4,096 non-blocking cross points, which provides a capacity of 848 x 848 cross points on the I/O and processing level.

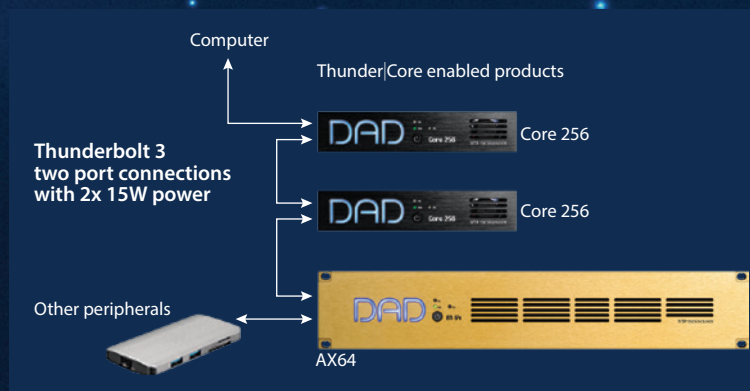
The matrix provides fixed latency routing of all inputs to one or more outputs with a latency of 7 audio samples and supports sample rates from 44,1 to 384kHz. The channel processor provides for all input and output channels a signal detection logic, PPM level measurement as well as level control.

All inputs and outputs have processing for level adjustment and the core have additionally a summing/mixing processor with 64 output busses and 512 inputs, which can be allocated to sets of input and output signals managed by the Pro|Mon monitor control functionality in DADman. SPQ speaker EQ management is available native in the core with 1.024 filters combined into 128 channels with 16 filters, each with adjustable delay.

Summary

The Core 256 Audio Interface provides 256 channels of Thunderbolt 3, Dante and MADI as well as ADAT.

Core 256 is a digital router and monitoring interface with 256 ch. Thunderbolt 3 I/O, 256 ch. Dante/AoIP I/O, MADI 64 ch. BNC I/O, 128 ch. MADI SFP I/O module option and 16 ch. ADAT dual TosLink I/O with 256x64 ch. Pro|Mon summing and speaker EQ processing.



MULTI-FORMAT I/O



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