

SYNAPSE

High Channel Density
Networked Audio Interfaces

Dante[®]
AES67



Product Family Overview

The Synapse product family adds high performance, high channel density analog and digital audio connectivity, monitoring and expansion to any Dante™ or AES67-based audio system.

Common Features

- Dante™ and AES67 audio networking with support for Dante™ Domain Manager
- High performance A/D and D/A conversion supporting 16/24 bit, 44.1 kHz to 96 kHz sampling
- Front panel 1/4" headphone output with assignable audio source for confidence monitoring
- High contrast OLED display for audio level metering, device status and setup
- Network redundancy including built-in SFP ports for redundant fiber connectivity
- Optional redundant power with external supply
- Ethernet control with 3rd party control API
- Compact 1 RU form factor delivers high density audio connectivity in a rack space sensitive form factor
- Supported in Unify Control Panel for device configuration and real-time monitoring.



Product

Core Features



Rackmount
Networked Audio
Monitor

- Integrated rackmount speakers with front panel assignment of up to 128 channels Dante™ channels (extended mode)



16x16
Mic/Line Interface

- 16 studio quality mic / line preamps
- 16 balanced outputs
- Available with terminal block or DB-25 connectors



32 Line
Output Interface

- 32 high performance, balanced line outputs
- Available with terminal block or DB-25 connectors



32 Line Input
Interface

- 32 Balanced line inputs
- Switchable pad per bank
- Available with terminal block or DB-25 connectors



32 Mic Level
Input Interface

- 32 studio-grade mic/line preamps

Applications

- Long range signal extension when utilized with integrated SFP expansion ports and fiber modules
- Centralized high density audio on/off ramp for AV matrix switches, wireless mic receivers, video decoders, media servers and multichannel amplifiers
- Audio confidence monitoring at the rack for quick system diagnostics and sound checks equipment



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DM 1

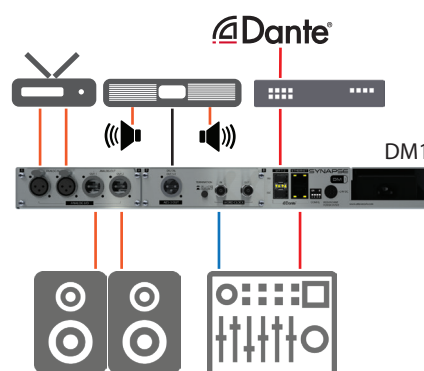


DM1 Overview

The DM1 is a rackmount networked audio monitor for confidence monitoring of networked audio and local sources at the rack via headphones or through the integrated speakers. The DM1 has 2 modes of network audio monitoring: Standard and Extended.

Standard mode features monitoring of any of the 32 channels assigned to the Dante™/AES67 receiver inputs. Extended mode allows subscription based monitoring of up to 128 channels loaded to the DM1 using the Unify Control Panel Software. In both modes, audio may be selected for monitoring by the user via the front panel controls. The DM1 also features AES-3 digital outputs for connectivity to full range powered speakers or amplifiers and 2 channels of analog I/O for local source monitoring and network connectivity.

Application Diagram



THAT Corporation

Specifications

Analog Inputs

- Maximum Input Level: +24 dBu
- Input Impedance: 10 k Ω
- Input Type: 3-pin XLR-F
- Dynamic Range: >105 dB
- THD+N: <0.02% @ -3dBFS
- Frequency Response: 20 Hz to 20 kHz, +/- 0.5 dB

Analog Outputs

- Maximum Output Level: +24 dBu
- Output Impedance: 200 Ohms
- Input Type: 3-pin XLR-M
- Dynamic Range: >110 dB
- THD+N: <0.02% @ -3dBFS
- Frequency Response: 20 Hz to 20 kHz, +/- 0.5 dB

Audio Networking

- Protocol Support: Dante™ with AES67 support
- Channel Count: 32 Dante RX, 2 Dante™ TX
- Modes: Switched or Redundant Mode,
- Latency: 0.250 ms minimum
- Ports: 2 - Gb Copper on RJ-45, 2 - Gb SFP

Headphone Output

- Connector: 1/4" Jack
- Controls: Mute / Volume encoder
- Load: 32 Ω Minimum

Speaker Outputs

- Output Power: 3 W / channel @ 8 ohms
- Frequency Response: 250 Hz - 20 kHz +/- 3 dB

Digital I/O

- AES-3: AES-3 digital output on 3-pin XLR-M,
- Word Clock: Sync I/O on BNC with switchable 75 Ohm termination on input

Certifications: FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55022 Class A and EN55024 Class A)

Dimensions: 1 RU form factor, 19" W x 1.75" H x 12.5" D

Weight: 6 lbs

Operating Temperature: 0 to 40° C

Power: 110V-220V AC Input, with optional external 24VDC redundant supply

Power Consumption: <20W



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D16Mio



D16Mio Overview

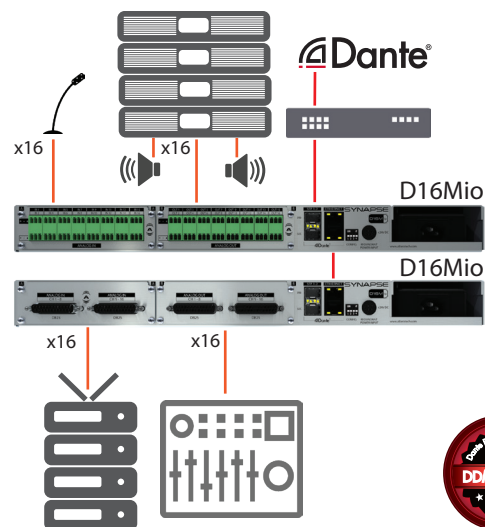
The D16Mio is a high performance, high channel density networked audio interface supporting Dante™ with AES67 interoperability. The D16Mio features 16 channels of studio grade microphone preamplifiers using mic preamp technology, with up to 51 dB of digitally controlled gain in 3 dB steps. Each mic input also supports P48 switchable phantom power and a switchable pad for accommodation of pro line level inputs.

The balanced line level outputs feature digitally controlled output attenuation from 0 to -100 dB. All I/O are available independently via the Dante™ / AES67 network audio interfaces. The D16Mio is available in terminal block or DB-25 options for optimum ease of connectivity and wiring.

The D16Mio is an excellent solution for:

- Audio expansion for any DSP based AV systems
- House of worship and theaters
- Analog and digital snake alternative

Application Diagram



Specifications

Mic/ Line Inputs (16 Channels)

Maximum Input Level: +24 dBu (Pad Active - Line Mode)
Input Impedance: 10 kΩ
Input Type: 3-pin depluggable terminal block or DB-25
EIN: 125 dB @ Max Gain
THD+N: <0.005% (Line), <0.015% (Max Mic Gain)
Frequency Response: 20 Hz to 20 kHz, +/- 1 dB

Analog Outputs (16 Channels)

Maximum Output Level: +24 dBu
Output Impedance: 200Ω
Input Type: 3-pin XLR-M
Dynamic Range: >110 dB
THD+N: <0.02% @ -3dBFS
Frequency Response: 20 Hz to 20 kHz, +/- 1 dB

Headphone Output

Connector: 1/4" Jack
Controls: Mute / Volume encoder
Load: 32Ω Minimum

Audio Networking

Protocol Support: Dante™ with AES67 support
Channel Count: 16 Dante RX, 16 Dante™ TX
Modes: Switched or Redundant Mode
Latency: 0.250 ms minimum
Ports: 2 - Gb Copper on RJ-45, 2 - Gb SFP
Sample Rates: 16/24-bit, 44.1kHz, 48 kHz, 88.2kHz, 96 kHz

Certifications: FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55032 Class A and EN55024 Class A)
Dimensions: 1 RU form factor, 19" W x 1.75" H x 12.5" D
Weight: 6 lbs
Operating Temperature: 0 to 40° C
Power: 110V-220V AC Input, with optional external 24VDC redundant supply
Power Consumption: <20W



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D32o



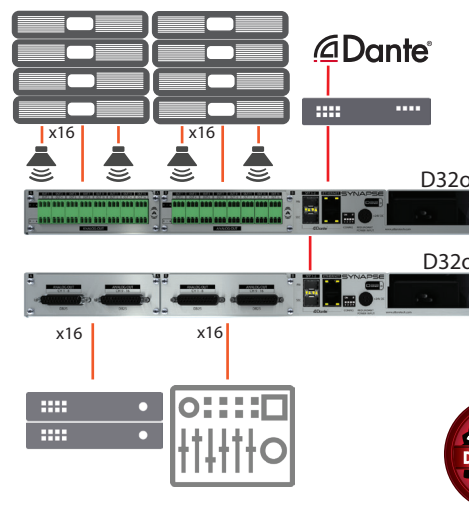
D32o Overview

The D32o is a high performance, high channel density networked audio interface supporting Dante™ with AES67 interoperability. The balanced line level outputs feature digitally controlled output attenuation from 0 to -100 dB. All outputs are available independently for routing from the Dante™ / AES67 network audio interfaces. The D32o is available in terminal block or DB-25 options for optimum ease of connectivity and wiring.

The D32o is an excellent solution for:

- Audio expansion for any DSP based AV systems
- Network audio connectivity for multichannel amplification systems
- Digital Snake replacements
- Single box audio network upgrade solutions or legacy AV systems

Application Diagram



Specifications

Analog Outputs (32 Channels)

- Maximum Output Level:** +24 dBu
- Output Impedance:** 200Ω
- Input Type:** 3-pin XLR-M
- Dynamic Range:** >110 dB
- THD+N:** <0.02% @ -3dBFS
- Frequency Response:** 20 Hz to 20 kHz, +/- 0.5 dB

Headphone Output

- Connector:** 1/4" Jack
- Controls:** Mute / Volume encoder
- Load:** 32Ω Minimum

Audio Networking

- Protocol Support:** Dante™ with AES67 support
- Channel Count:** 32 Dante™ RX
- Modes:** Switched or Redundant Mode
- Latency:** 0.250 ms minimum
- Ports:** 2 - Gb Copper on RJ-45, 2 - Gb SFP
- Sample Rates:** 16/24-bit, 44.1kHz, 48 kHz, 88.2kHz, 96 kHz

Certifications:

- FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55032 Class A and EN55024 Class A)

Dimensions: 1 RU form factor, 19" W x 1.75" H x 12.5" D

Weight: 6 lbs

Operating Temperature: 0 to 40° C

Power: 110V-220V AC Input, with optional external 24VDC redundant supply

Power Consumption: <20W



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D32i



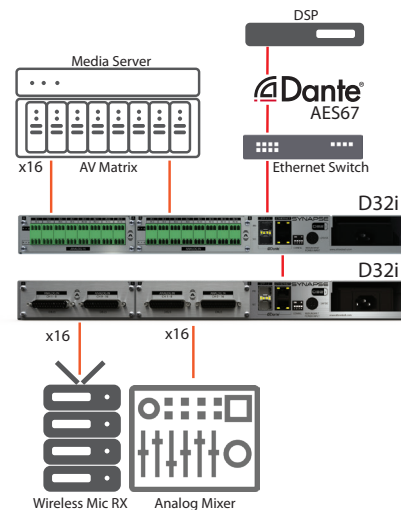
D32i Overview

The D32i is a high performance, high channel density networked audio interface supporting Dante™ with AES67 interoperability. The balanced line level inputs feature a software switchable input pad for each bank to accommodate a mix of line level consumer and professional analog audio input levels. All inputs are available independently via the Dante / AES67 network audio interfaces. The D32i is available in terminal block or DB-25 options for optimum ease of connectivity and wiring.

The D32i is an excellent solution for:

- Audio expansion for any DSP based AV systems
- Network audio connectivity for AV matrices
- Digital Snake replacements
- Cost effective Dante interface for retrofit wireless microphone systems
- Single box audio network upgrade solutions or legacy AV systems

Application Diagram



Specifications

Line Inputs (32 Channels)

- Maximum Input Level:** +24 dBu (Pad Active - Line Mode)
- Input Impedance:** 10 k Ω
- Input Type:** 3-pin depluggable terminal block or DB-25
- Dynamic Range:** >105 dB
- THD+N:** <0.005% @ -3dBFS
- Frequency Response:** 20 Hz to 20 kHz, +/- 0.5 dB

Headphone Output

- Connector:** 1/4" Jack
- Controls:** Mute / Volume encoder
- Load:** 32 Ω Minimum

Audio Networking

- Protocol Support:** Dante™ with AES67 support
- Channel Count:** 32 Dante™ TX, 2 Dante™ RX
- Modes:** Switched or Redundant Mode
- Latency:** 0.250 ms minimum
- Ports:** 2 - Gb Copper on RJ-45, 2 - Gb SFP
- Sample Rates:** 16/24-bit, 44.1kHz, 48 kHz, 88.2kHz, 96 kHz

Certifications:

- FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55022 Class A and EN55024 Class A)
- Dimensions:** 1 RU form factor, 19" W x 1.75" H x 12.5" D
- Weight:** 6 lbs
- Operating Temperature:** 0 to 40° C
- Power:** 110V-220V AC Input, with optional external 24VDC redundant supply
- Power Consumption:** <20W



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D32Mi



D32Mi Overview

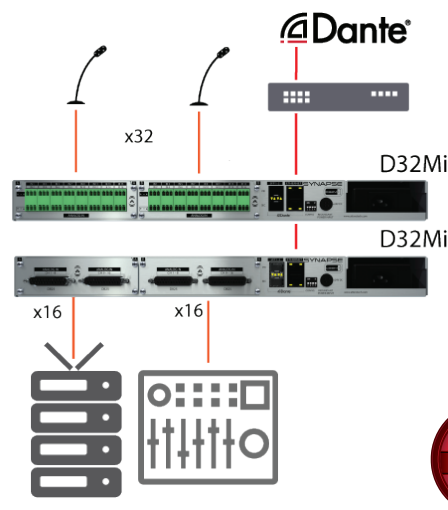
The Synapse D32Mi is a 32 mic/line analog, high channel density Dante/AES67 networked audio input expander for fixed install applications requiring no compromises audio performance and high input channel density in limited rack real estate.

The D32Mi features 32 studio-grade mic/line preamps with line level capability and front panel or network control of mic preamp gain, phantom power and muting. The front panel also features an easily assignable headphone volume control for source selection, which enables local input and Dante™ confidence monitoring at the rack position. The D32Mi is available in terminal block or DB-25 options for optimum ease of connectivity and wiring.

The D32Mi is an excellent solution for:

- Large venue audio connectivity and distribution
 - stadiums, convention centers, universities
- Corporate facilities
- Live and touring rental systems

Application Diagram



Specifications

Mic/ Line Inputs (32 Channels) - 43dBu (Max mix gain)

Maximum Input Level: +24 dBu (Pad Active - Line Mode)

Input Impedance: 2kΩ min (Mic) | 10kΩ (Line)

Input Type: 3-pin depluggable terminal block or DB-25

EIN: 125 dB @ Max Gain

THD+N: <0.005% (Line), <0.015% (Max Mic Gain)

Frequency Response: 20 Hz to 20 kHz, +/- 1 dB

Analog Outputs (16 Channels)

Maximum Output Level: +24 dBu

Output Impedance: 200Ω

Input Type: 3-pin XLR-M

Dynamic Range: >110 dB

THD+N: <0.02% @ -3dBFS

Frequency Response: 20 Hz to 20 kHz, +/- 1 dB

Headphone Output

Connector: 1/4" Jack

Controls: Mute / Volume encoder

Load: 32Ω Minimum

Audio Networking

Protocol Support: Dante™ with AES67 support

Channel Count: 16 Dante RX, 16 Dante™ TX

Modes: Switched or Redundant Mode

Latency: 0.250 ms minimum

Ports: 2 - Gb Copper on RJ-45, 2 - Gb SFP

Sample Rates: 16/24-bit, 44.1kHz, 48 kHz, 88.2kHz, 96 kHz

Certifications: FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55032 Class A and EN55024 Class A)

Dimensions: 1 RU form factor, 19" W x 1.75" H x 12.5" D

Weight: 6 lbs

Operating Temperature: 0 to 40° C

Power: 110V-220V AC Input, with optional external 24VDC redundant supply

Power Consumption: <20W



Architects & Engineers Specifications

Synapse DM1 A & E Specs

The Dante™ interface shall have 32 Dante™ receive channels that may be selected by the user from the front panel for monitoring through the integrated speakers, headphone, AES-3 and analog outputs. The interface shall provide visual indication of audio levels from the front panel display, in both 16 channel bank summary and individual channel views.

The interface shall support master and slave synchronization of external word clock devices via the rear panel BNC connectors.

The interface shall support extended monitoring capabilities of up to 128 channels using remote Dante™ subscription from the device. The rear panel analog inputs shall support local monitoring as well as transmission to the Dante™/AES67 network. The rear panel analog inputs and outputs shall be available on 3 pin XLR connectors.

The Dante™ interface shall support a switched or redundant network mode. The device shall have two integrated Gigabit Ethernet ports on RJ-45 connectors and 2 gigabit SFP expansion slots for connectivity to a Dante network. All parameter changes will be non-volatile and self-restoring in the event of power interruption. The device shall support power redundancy. The device shall be compliant with FCC 47CFR parts 15B and 18 (Class A), EN 55011, ICES-003, RoHS and CE (EN55022 Class A and EN55024 Class A).

The device shall be the Attero Tech Synapse DM1.

Synapse D32o A & E Specs

The Dante™ interface shall have 32 balanced line level outputs available on terminal blocks or DB-25 connectors. The output attenuation level shall be configurable in 1 dB increments from 0 to -100 dB. The front panel display shall show received network audio input levels and allow assignment of any assigned network audio receiver channel to the front panel mounted headphone jack for monitoring.

The Dante™ interface shall support a switched or redundant network mode. The device shall have two integrated Gigabit Ethernet ports on RJ-45 connectors and 2 gigabit SFP expansion slots for connectivity to a Dante™ network. All parameter changes will be non-volatile and self-restoring in the event of power interruption. The device shall support power redundancy. The device shall be compliant with FCC 47CFR parts 15B and 18 (Class A), EN 55011, ICES-003, RoHS and CE (EN55022 Class A and EN55024 Class A).

The device shall be the Attero Tech Synapse D32o.

Synapse D16Mio A & E Specs

The Dante™ / AES67 interface shall have 16 balanced mic/line level inputs available on terminal blocks or DB-25 connectors. The mic/line preamps for each channel shall support up to 51 dB of digitally controlled gain in 3 dB increments with switchable phantom power. A switchable attenuator pad provides support for line level signals levels of up to +24dBu when active. The front panel display shall show audio inputs and allow assignment of any analog input to the front panel mounted headphone jack for monitoring.

The interface shall have 16 balanced line level outputs available on terminal blocks or DB-25 connectors. The output attenuation level shall be configurable in 1 dB increments from 0 to -100 dB.

The Dante™ interface shall support a switched or redundant network mode. The device shall have two integrated Gigabit Ethernet ports on RJ-45 connectors and 2 gigabit SFP expansion slots for connectivity to a Dante™ network. All parameter changes will be non-volatile and self-restoring in the event of power interruption. The device shall support power redundancy. The device shall be compliant with FCC 47CFR parts 15B and 18 (Class A), EN 55011, ICES-003, RoHS and CE (EN55032 Class A and EN55024 Class A).

The device shall be the Attero Tech Synapse D16Mio.



Architects & Engineers Specifications (cont.)

Synapse D32i A & E Specs

The Dante™ interface shall have 32 balanced line level inputs available on terminal blocks or DB-25 connectors. The input sensitivity shall be configurable in 16 channel banks for connectivity to pro (+4 dBu nominal) or consumer (-10 dBV nominal) line level inputs. The front panel display shall show audio inputs and allow assignment of any analog input to the front panel mounted headphone jack for monitoring. The Dante™ interface shall support a switched or redundant network mode. The device shall have two integrated Gigabit Ethernet ports on RJ-45 connectors and 2 gigabit SFP expansion slots for connectivity to a Dante™ network. All parameter changes will be non-volatile and self-restoring in the event of power interruption. The device shall support power redundancy. The device shall be compliant with FCC 47CFR parts 15B and 18 (Class A), EN 55011, ICES-003, RoHS and CE (EN55032 Class A and EN55024 Class A).

The device shall be the Atterotech Synapse D32i.

Synapse D32Mi A & E Specs

The Dante™ / AES67 interface shall have 32 balanced mic/line level inputs available on terminal blocks or DB-25 connectors. The mic/line preamps for each channel shall support up to 51 dB of digitally controlled gain in 3 dB increments with switchable phantom power. A switchable attenuator pad provides support for line level signals levels of up to +24dBu when active. The front panel display shall show audio inputs and allow assignment of any analog input to the front panel mounted headphone jack for monitoring.

The interface shall have 32 balanced line level outputs available on terminal blocks or DB-25 connectors. The output attenuation level shall be configurable in 1 dB increments from 0 to -100 dB.

The Dante™ interface shall support a switched or redundant network mode. The device shall have two integrated Gigabit Ethernet ports on RJ-45 connectors and 2 gigabit SFP expansion slots for connectivity to a Dante™ network. All parameter changes will be non-volatile and self-restoring in the event of power interruption. The device shall support power redundancy. The device shall be compliant with FCC 47CFR parts 15B and 18 (Class A), EN 55011, ICES-003, RoHS and CE (EN55032 Class A and EN55024 Class A).

The device shall be the Atterotech Synapse D32Mio.