Dante
HC REFERENCE DESIGN

The Future of Digital Media Networking - Today

Dante HC™

High Channel Count, High Capacity, High Performance

Audinate's tradition of creating innovative and cutting-edge solutions continues, with the introduction of Dante HC™, the industry's highest-capacity networked audio solution for professional AV systems. Dante HC supports up to 512 x 512 redundant bi-directional uncompressed audio channels on a single Xilinx® FPGA. Dante HC expands Audinate's broad portfolio of audio networking platforms, which OEMs can build upon to create cost-effective AV products.

The Dante HC reference design is ideal for AV equipment products requiring high channel capacity, such as audio matrix routers, large format consoles, public address and evacuation systems and large scale DSPs. Dante HC is a comprehensive reference design product that includes all the tools and resources required to rapidly integrate Dante into the AV manufacturer's products, allowing high capacity networked products or Dante interface blades to be built. Applications include real-time streaming for broadcast, commercial installation, live sound, public address, intercoms and transportation communications deployments.

Scalability with Flexibility

Dante facilitates the rapid convergence of AV and IT, eliminating the limitations imposed by point-to-point cabling. Even digital point-to-point legacy audio signal distribution technologies such as AES3, TDIF, ADAT and MADI have disadvantages, in that they require separate wiring, increasing the cost of deployments. With Dante, audio is converted to digital audio over IP Ethernet packets, allowing audio signals to be software-routed over standard IP networks.

Dante systems can easily scale from a simple pairing of a console to a computer, to large capacity networks running thousands of audio channels. One cable does it all. Dante does away with heavy, expensive analog or multicore cabling, replacing it with low-cost, readily available CAT5e, CAT6, or fiber optic cable for a simple, lightweight, and economical solution. Dante integrates media and control for your entire system over a single, standard IP network.

Simplified Signal Routing

High capacity does not mean high complexity. Audio routing and device configuration in Dante is made incredibly simple with Dante Controller, a free software application that automatically discovers all end-points within seconds, and enables endpoint-to-endpoint channel connectivity with a single click. Because Dante uses logical routes instead of physical point-to-point connections, the network can be expanded and reconfigured at any time with just a few mouse clicks.

Dante_HC_28-Jan-2021

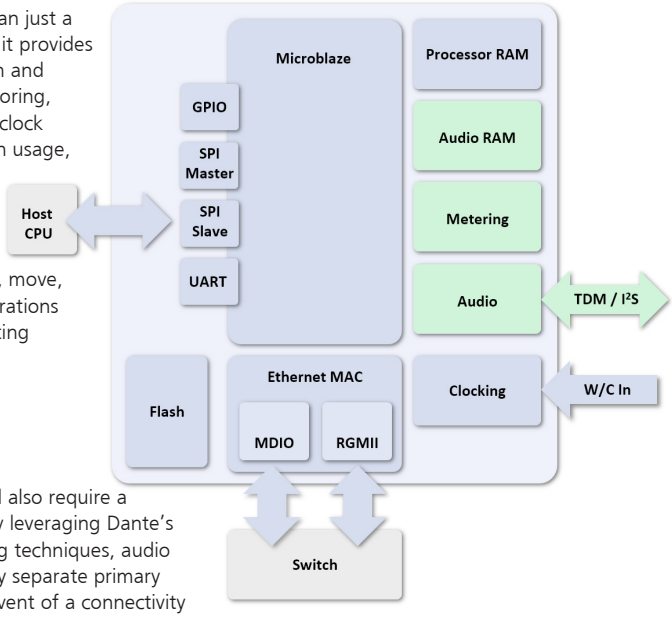
Audinate
MEDIA NETWORKING TECHNOLOGY

FEATURES & BENEFITS

- **Compact, powerful, most capable Dante design yet**
- **Very high capacity**: Up to 512x512 channels in/out, up to 128x128 simultaneous multichannel audio flows with redundancy, up to 32 TDM lines in and out
- **Complete Sample Rate Support:** Up to 512x512 channels at 44.1/48kHz, 256x256 at 88.2/96kHz and 128x128 at 176.4/192kHz
- **Full audio bit depth support:** 16, 24 or 32 bits per sample
- **AES67** audio transport protocol support
- **Audio buffering**: Up to 512 samples per channel
- **Wide range of interface options:** SPI, I2C, RS232 and configurable GPIO
- **High availability:** Glitch-free redundancy via secondary network support
- **Clocking flexibility:** Use high-accuracy onboard Dante word clock or external word clock
- **Powerful onboard microprocessor:** Local control and management without the need for an additional CPU
- **Plug and Play:** Fully compatible with any other Dante device on the network
- **Highly customizable:** Proven set of powerful development tools
- **Real time signal visibility:** Monitor all channels from anywhere on the network
- **Fully-supported development:** Industry experts on hand to guide you through the development process
- **Patented Dante media networking:** Low latency, tightly synchronized transport of uncompressed audio over IP networks using off-the-shelf Gigabit switches
- **Supports video applications:** Pull-up/down supported at all sample rates
- **Supports Device Lock**: Lock and unlock Dante HC devices remotely using Dante Controller

Dante™

Dante Controller is much more than just a configuration and routing matrix; it provides essential device status information and powerful real-time network monitoring, including device-level latency and clock stability stats, multicast bandwidth usage, and customized event logging, enabling you to quickly identify and resolve any potential network issues. You can also quickly and easily backup, restore, move, and reuse Dante network configurations using Presets, and edit Dante routing configurations offline.



Glitch-free Redundancy

Many large-scale deployments will also require a solution that is highly available. By leveraging Dante's unique high-availability networking techniques, audio can be duplicated across physically separate primary and secondary networks. In the event of a connectivity problem on the primary network, endpoints will continue to receive audio via the secondary network, and will maintain play-out with no interruption and no glitches. This allows OEMS to build highly available high-capacity solutions for live sound or life-safety public announcement systems that must transport audio and messages with 100% integrity.

Dante HC is the new heavyweight champion of the world-leading Dante range, delivering impressive power, functionality and flexibility in a compact design. Contact **sales@audinate.com** for more information.

SPECIFICATIONS

Audio Capabilities	
Sample Rates	44.1 / 48 / 88.2 / 96 / 176.4 / 192kHz
Audio Channels In/Out (44.1/48kHz)	Up to 512 in x 512 out simultaneous audio channels
Audio Channels In/Out (88.2/96kHz)	Up to 256 in x 256 out simultaneous audio channels
Audio Channels In/Out (176.4/192kHz)	Up to 128 in x 128 out simultaneous audio channels
Audio Flows In/Out	Up to 128 x 128 simultaneous streams with redundancy
Digital Audio Formats	TDM, I2S (16 or 32 TDM lines in and out)
Audio Transport Formats	Dante Audio over IP, AES67 RTP
Sample Bit Depth	16, 24 or 32 bits per sample
Audio Buffering	Up to 512 samples per channel (10ms device latency @ 48kHz)
Clocking	Onboard word clock or external word clock

Hardware	
Form Factor	Reference Design
FPGA	High performance Xilinx Spartan6 FPGA
Microprocessor	Soft-core Microblaze processor
Clock	High quality, low jitter onboard SiLabs clock chip
Ethernet	Dual 1GBps network interfaces via Marvell 88E6352 switch
Power	6W max

Interfaces	
Control Interfaces	SPI Leader and Follower
Network	1Gbps dual RJ45

Ordering Information	
Part number	DHC-01-512

Audinate

MEDIA NETWORKING TECHNOLOGY

APPLICATIONS

- **Real-time streaming and communications in broadcast:** Dante HC enables a new approach to building cost-effective, integrated systems that scale to replace channel-limited, inflexible MADI matrix routers
- **Public address and intercoms:** Ideal for large transportation communications deployments that need flexible 'any-to-any' routing from paging stations and intercoms
- **Large-scale live sound, entertainment and events:** Perfect for centralized mixing and DSP functions for very large venues
- **Audio / video post-production:** An easier approach to building large-format consoles with very high channel counts

Corporate HQ
Audinate Ltd
Level 7, 64 Kippax Street
Surry Hills NSW 2010
AUSTRALIA
Tel: +61 2 8090 1000

US Corporate Office
Audinate Inc
1200 NW Naito Parkway
Suite 630
Portland, OR 97209
USA
Tel: +1 503 224 2998

European Office
Audinate Ltd
Suite 104
Werks Central
15-17 Middle St
Brighton, BN1 1AL
UNITED KINGDOM
Tel: +44 (0) 1273 921695

Asia Pacific Office
Audinate Ltd
Suite 1106-08
11/F Tai Yau Building
181 Johnston Road
Wanchai
HONG KONG
Tel: +852 3588 0030

info@audinate.com
www.audinate.com