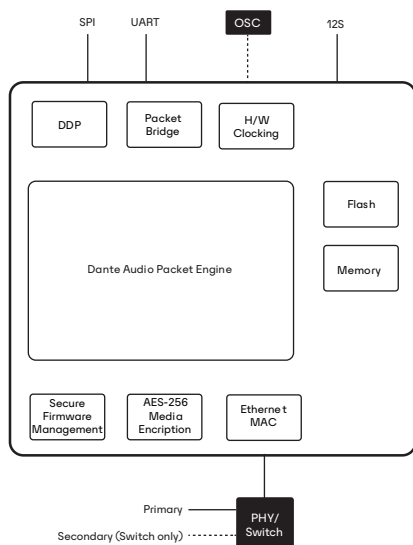




Feature Rich Network Audio

Dante Pro S1
Block Diagram



Network Everything

Audinate's range of Dante Pro solutions enable Professional AV manufacturers with interoperability across the Dante ecosystem – connecting to over 4,000 devices from more than 400 manufacturers.

Dante Pro has been optimized for cost-effective system designs leveraging scalable processing platforms for high-volume solutions. To support all types of integrations Dante Pro is available as a chip and as an SDK.

Dante-on-a-Chip

Dante Pro S1 extends the Dante-on-chip product line with a compact footprint for small form factor and low-channel count applications. The solution features industry standard interfaces for network, audio and control to simplify AV system design and implementation.

Small Footprint

Dante Pro S1 has been designed for compact and power efficient audio solutions. The chip is a versatile TFBGA100 8mm x 8mm package and requires minimal external components. The underlying micro controller is more power efficient than previous Dante solutions resulting in improved power efficiency and capacity for new Dante features.

Plug-and-Play with Industry Standard Interfaces

System designs can easily integrate Dante Pro S1 through a 100 Mbps RMII network interface, I2S and SAI audio pins, and control over UART and SPI. These industry standard interfaces simplify the design process and reduce development costs and time to market.



Features

- Tiny TFBGA100 8x8mm package allows for integration in compact audio designs
- Up to 4-in + 4-out channels of Dante audio at 44.1/48 kHz
- Up to 96 kHz audio sampling rate with 2-in + 2-out channels
- 16-, 24- and 32-bit audio via I2S interface connects directly to wide variety of ADC, DAC, DSP and amplifier ICs
- 100 Mbps RMIII network interface suitable for single- and dual-channel audio equipment designs
- 1 ms minimum latency
- Low-jitter audio clock synthesis
- Local control via SPI, UART, or GPIO
- Support for AES67
- Supports AES-256 encryption of control and media

IoT Security Ready

The latest generation of Dante endpoint solutions bring an increased level of security to the products and networks where they are deployed.

Dante Pro S1 includes secure firmware management to ensure the authenticity of the software running on the device. The solution is also fully supported by Dante Updater, simplifying firmware management through product life cycles.

When used in managed networks with Dante Director, the control and media traffic from Dante Pro S1 can be fully encrypted. Dante Media Encryption implements industry-leading protection with no impact to audio latency.

Dante Pro S1 Evaluation Kit

An evaluation kit is available for developers to prototype system designs using Dante Pro S1. The kit is based on the

Dante Pro S1 reference design and includes XLR connectors for analog I/O and swappable network interfaces modules for a range of PHY and switch ICs.

Technical Documentation

Technical documentation for Dante Pro S1 including technical datasheets, manufacturing guides, reference schematics and programmer guides are available on the Dante Networking Alliance portal. Contact your Audinate sales representative for more information.

Core Dante Benefits

- Plug-and-play automatic discovery of network devices
- Real-time monitoring of latency, clock and signal presence statistics with Dante Controller application
- Network management and user authentication administered through Dante Domain Manager or Dante Director

Applications



Gooseneck & table mics



Ceiling & pendulum mics



Boundary mics



Powered speakers



Amplifiers & studio processors



Paging stations



Personal monitoring systems



AV wall plates

Specifications

Hardware

100 pin TFBGA (8 mm x 8 mm)
3.3 VDC @ TBD W Max
High quality, low jitter clock generation

Network Interface

Standard 100Mbps Ethernet with external PHY RMIII Ethernet interface with MDIO
Hardware time-stamping, supporting sample-accurate sync accuracy
Transmit flows: 2 (unicast or multicast)
Receive flows: 2 (unicast or multicast)
Configurable latency : 1-10ms

Audio Interface

2x2 or 4x4* audio channels
PS digital audio format
16, 24 or 32-bit audio samples (per device or per channel) 44.1 kHz, 48kHz, 88.2kHz** and

96kHz** sample rates

Sample rate pull-up/down (+4.1667, +0.1, -0.1, and -4.0%)

Provides LRCLK, SCLK, MCLK

Control Interfaces

2x UARTs: A and B, console on UART-A
SPI peripheral interface
8x GPIO pins for user controls and/or watchdog signal
LED control pins for 'System', 'Sync', and 'Error' indicators

* 4x4 channels support up to 48 kHz
** 88.2/96 kHz supported for 2x2 channels only

Note: All information within this document is subject to change without notice