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ZMAN - Versatile Audio Network Module for RAVENNA / AES67 Ecosystems

The ZMAN family of modules is first and foremost designed to provide a high performance media transport that is tightly synchronized (ultra-low jitter and wander), deterministic, and low latency for Networked I/O end-points. What sets them apart from other offerings is the additional processing capabilities that are built-in, with 2 x ARM CPUs and serious FPGA real-estate. Merging is strongly committed to foster the adoption of AES67 networking capability by making available, as a simple to integrate module, all required functionalities for OEMs to take advantage of this rapidly evolving market.

Features

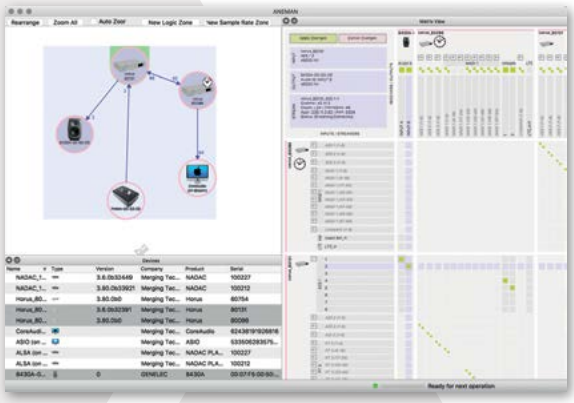
- High resolution sample rates up to 384kHz PCM, DXD and DSD256
- Up to 32 RAVENNA/AES67 streams, 256 audio channels
- AES3 I/O up to 192kHz
- Channel based audio routing (512 x 512 Matrix)
- Ultra-low latency on-chip mixing engine (128 inputs x 32 outputs)
- 28 freely assignable EQ bands
- On-board ultra-low jitter and ultra-low phase noise clock
- Fully compatible RAVENNA/AES67 protocols over Gigabit Ethernet
- Web-based network remote control
- Pin compatible to Dante Brooklyn II (Mini-PCI)

Benefits

- Compact Mezzanine board, small form factor 59.6 x 44.5 mm
- Ultra-low phase noise clock
- PTPv2 Master or Slave, IEEE-1588-2008 standard
- Support for industry standard SMPTE 2110
- Automatic device network discovery (Bonjour)
- Channel based internal routing
- Built-in ARM processors + abundant FPGA-based DSP in a single chip
- Compatible with any RAVENNA/AES67 device on network
- SDK and API for easy integration
- Use case examples through configuration scripts
- Simple firmware update via network
- Optimized compatibility with Merging Technologies products portfolio

Complete suite of software tools & drivers

- Windows® ASIO driver
- Mac® OSX CoreAudio driver
- Linux ALSA drivers
- ANEMAN (Audio Network Manager) full support



Audio Specifications

- Sample Rate 44.1kHz/48kHz, 88.2kHz/96kHz, 176.4kHz/192kHz
- Optional high resolution support for DXD, 384kHz, DSD64, DSD128 and DSD256
- Word lengths 16, 24, or 32 bits per sample
- I2S/TDM Audio format
- Network input audio buffer up to 16k samples
- Up to 32 RAVENNA/AES67 I/O streams, up to 256 network audio channels
- Word clock IO for synchronization

Hardware Specifications

- Single Power supply 3.3V, under 5W
- Xilinx SoC Zynq based design
- Dual core ARM Cortex A9 processors, ARMv7-A architecture
- DDR3 Memory (512 MB)
- NOR Flash (128 MB)
- Standardized RGMII interface for Gigabit Ethernet switches or PHY, IEEE Std 802.3
- High quality, on board clock management
- Mezzanine connectors (3 x 80 pins)
- Card edge test header (Mini-PCI)

Interface Specifications

- 1x I2S in 1x I2S out (Master/Slave) with 8 data lines each
- 1 x I2C Master
- 1 x SPI Slave and 1 x SPI Master
- 1 x RGMII
- 1 x UART (up to 921'600 bauds)
- GPIO
- Differential clock input to support OCXO, Atomic clock or GPS disciplined oscillator

Price-Performance Options

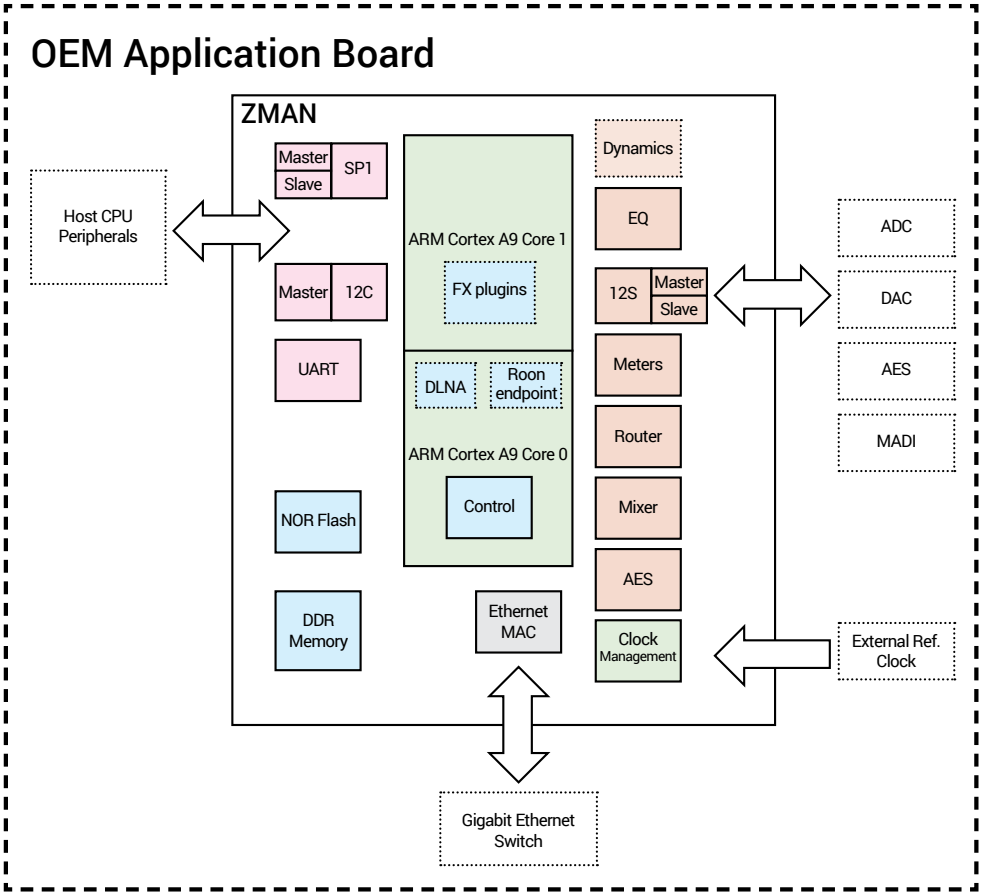
ZMAN 010

- 64 x 64 I/O@1FS
- 80 DSP slices (FPGA)

ZMAN 020

- 256 x 256 I/O@1FS
- 220 DSP slices (FPGA)

Block Diagram



ZMAN + ZOEM

Audio Networking and Processing development kit. The quick-start Platform for initial Evaluation.

Evaluation kit ZOEM for ZMAN

- Single power supply
- Easy mezzanine prototyping
- Fully exposed GPIO and audio I/O
- On board Gigabit Ethernet switch and PHY
- Dual Ethernet copper ports & SFP Fiber port
- 1 stereo AES-EBU input and 1 stereo AES-EBU output
- Debug console available on standard micro USB port
- Out of the box DAC-like Web remote UI

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