miniDSP

Features
- IP Speaker with DSP
- Powered by Audio Video Bridging
- PoE+/12V power scheme

Hardware
- ADSP21489 Sharc DSP
- XMOS XCORE200
- Toslink/USB audio/AVB
- MultiLevel PWM amplifier

Software Control
- 1722.1 compatible
- FIR/IIR, Crossovers, PEQ, Gain control from real time GUI
- Firmware upgradeable
- 4 preset memory
- immerGO compatible for Object-based immersive audio installs

Power
- PoE+/PoE powered
- 12V DC input for non PoE switch

Applications
- Immersive Audio
- Commercial AV
- Multi-room audio

The SPK-4P is a PoE+ full range loudspeaker combining network audio streaming, class D amplification and Digital Signal Processor (DSP). A single CAT5/6 network cable provides power, low latency audio and control for a true Plug&Play experience. The system consists of three key element:

- The Audio Video Bridging (AVB) technology powered by a 500MHz XMOS processor which provides low latency, uncompressed and tightly synchronized streams to each speaker over standard networks. Fully compliant with IEEE 1722.1, it is plug&play with 3rd party AVB devices.
- An on-board 400 MHz Analog Devices SHARC processor also enables substantial signal processing for true high-resolution audio capability and equalization, crossover, and room correction capabilities. All to be accessed and programmed with miniDSP's easy-to-use interface software.
- Finally, a novel multi-level switching audio amplifier technology provides 2x15W for powering 2 speakers (local + height). Each SPK-4P effectively being an amplifier for 2 speaker (Master + slave).

The SPK-4P, a cube speaker that packs a lot.

TYPICAL APPLICATION

immersiveDSP

This diagram represents a template immerGO configuration with multiples SPK-4P speakers all powered from a single CAT5 cable from a PoE+ switch.

An Apple Desktop/Laptop is running a Digital Audio Workstation (DAW) software and streaming multiple channels of audio over AVB.
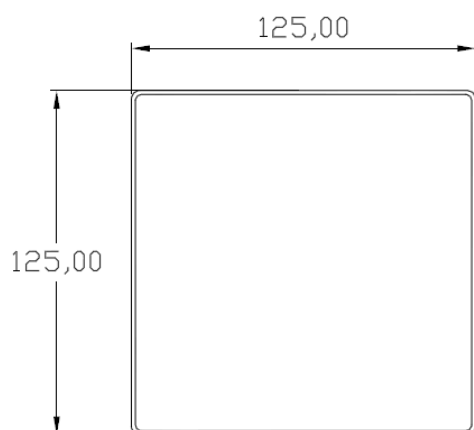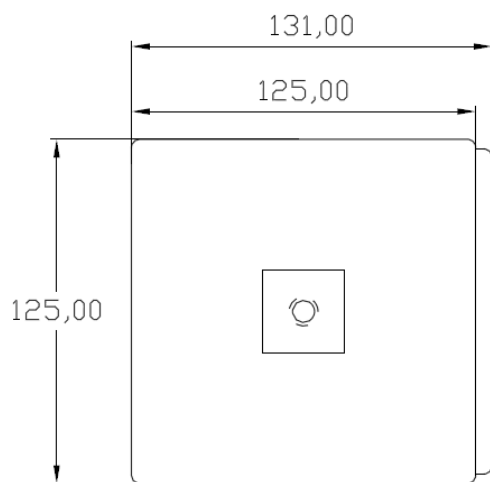
A user can control localization from any position via a mobile device, or on the same computer as the DAW. More than one user can localize different tracks. These capabilities are made possible by the Client/Server configuration of immerGO.

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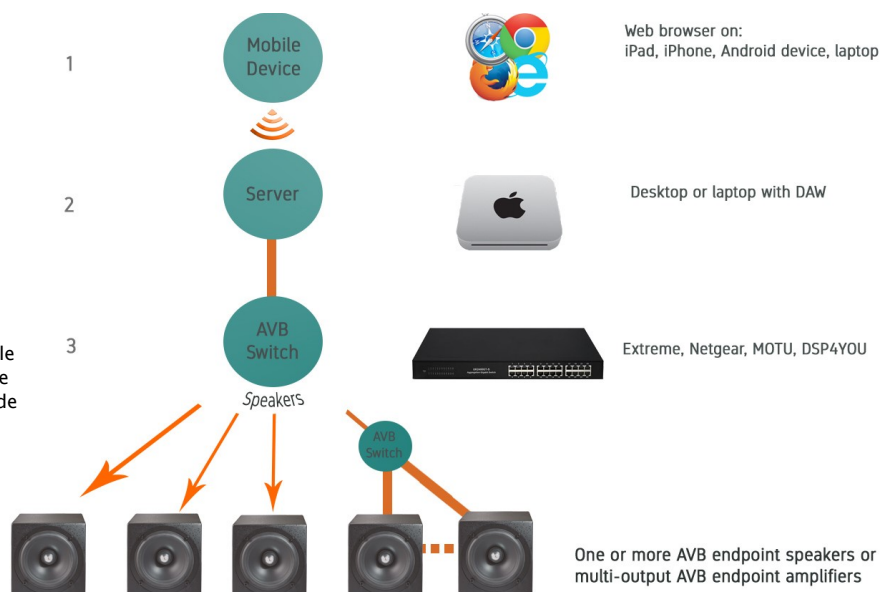
HARDWARE SPECIFICATIONS

Item	Description
Digital Signal Processor	32-bit Floating point Analog Devices SHARC ADSP21489 / 400 MHz
USB / AVB Processor	XMOS XCore200 for digital audio streaming • Asynchronous USB audio UAC2.0, Driverless for Mac OS X, ASIO driver for Windows platforms • Audio Video Bridging (AVB) streaming - Gigabit Ethernet
Digital audio input	TOSLINK optical input. The input signal is processed by a high quality onboard Asynchronous Sample Rate Converter for compatibility with most common sample rates (20–216kHz)
Digital Audio amplifier	Dual channel amplifier for Master + Slave configuration. 2x15W RMS under +12V configuration 2x12W RMS under PoE+ mode (power carried over CAT5/6)
DSP capabilities	FIR filtering with number of taps assignable to each output channel. FIR filters are designed by third-party programs. FIR file format: IEEE 754 single-precision binary floating-point. IIR EQ, gain, level, delay. Configured by real time GUI.
Filter storage	Four on-board presets, selectable by IP control
USB port	USB port type Mini-B for audio streaming (USB audio firmware) Real time control and firmware upgrade
Power supply	12 VDC single supply / 2.1 mm round plug / 45W
Dimensions (H x W x D) mm	125 x 125 x 131mm / 1.3kg
Mounting	• Optional metal bracket, see drawings below for details. • 3/8 mounting thread
Enclosure / Finish	Wood enclosure, black textured paint

MECHANICAL SPECIFICATIONS

Optional Metal Bracket

Features and specifications are subject to change without prior notice