

## Overview

The Hammerfall DSP AES-32 is a short-length PCI card with AES/EBU interfaces. It provides eight AES inputs (16 channels) and eight AES outputs (16 channels) at 192 kHz sample rate. The card is also equipped with two MIDI I/O ports, word clock I/O, and can be used with the optional TCO module for synchronization to LTC and video.

The AES-32 is RME's reaction to requests from audio professionals for an AES-based solution with the typical RME features and quality. This audio card is a perfect all-in-one solution for professional users in the fields of broadcast, TV, theater, stage/PA – and in any professional studio.

The card's main board contains word clock I/O and a 25-pin D-sub connector, providing four AES inputs and four AES outputs via standard digital breakout cable (Tascam pinout). The word clock input is galvanically isolated via transformer and operates on Single, Double and Quad Speed signals automatically. The expansion board adds audio channels 9-16 and a connector for a MIDI breakout cable with two MIDI I/Os (four 5-pin DIN connectors). It does not require a PCI slot.

## Connectivity

- 8 x AES/EBU I/O
- 2 x MIDI I/O
- Word Clock I/O
- optional: HDSP TCO (HDSP TCO)
- optional: Breakout Box (BOB-32)

## Features

- TotalMix™
- Instant Memory
- Intelligent Clock Control
- SteadyClock™
- SyncCheck™
- QuickBoot
- MeterBridge
- DigiCheck
- ZLM™
- MultiSync

## Features

The AES-32's remarkable features include:

- Support for 192 kHz at full channel count
- Native support for Double and Quad Wire transfer
- Direct conversion between these formats
- SteadyClock for highest jitter suppression and clock regeneration
- Intuitive and clearly laid-out user interface
- TotalMix: 512 channel mixer with 42 bit internal resolution
- 48 level meter Peak/RMS, hardware-computed



Thanks to the DSP-based TotalMix mixer, all 16 inputs and 16 playback channels can be routed and mixed to 16 physical outputs freely, offering extraordinary monitoring capabilities. Up to 8 fully independent stereo submixes can be created. Routings can be copied and pasted, faders ganged and grouped, which, along with the amazing matrix window, turns the AES-32 into a powerful and easy-to-use redistributor, patchbay, router, converter, and splitter. The hardware-based mixer is fully MIDI-controllable. Furthermore, the DSP hardware calculates RMS and peak level meters for all 48 audio channels, with no measurable CPU load.

The Time Code Option of the HDSP 9632 can also be used with the AES-32 to sync to LTC and video. Thanks to SteadyClock(TM), the TCO not only extracts absolute positions from these signals, but also a very clean low-jitter word clock.

The card's most important settings are stored on the card itself. Rather than operating in a default mode from the moment the computer is switched on until the driver is loaded, the card will immediately activate the last used sampling rate, master/slave configuration and AES format, thus eliminating any startup noise or problems in the clock network, both at system start and reboot.

An optional 19" breakout box is also available. Its innovative design features XLR I/Os that can be accessed from the front or rear in a rack, according to the user's choice. BOB-32 provides D-sub connectors with Tascam and Yamaha pinout, therefore can be used with other devices as digital rack breakout box as well.

Included software:

- HDSP Meter Bridge: Scalable level meter with Peak- and RMS calculation in hardware
- DIGICheck for Windows: Spectral Analyser, professional level meter for 2, 8, or 16 channels, Vector Audio Scope, various other audio analysis tools.
- Drivers: Windows 2000/XP (full ASIO multi-client operation of MME, GSIF 2.0 and ASIO 2.0), Mac OS X (Core Audio and Core MIDI).

## Settings

Just click on the hammer symbol in the systray of the taskbar and the settings dialog of the HDSP AES-32 comes up. The clear structured, easy to understand window plus the unique informative status windows for input signal, clock mode and sample rate make your work with Hammerfall DSP to a real pleasure.

When working with several digital sources it is not only necessary to know if these are properly locked, but also if they are totally synchronized. RMEs exclusive SyncCheck® checks all input signals and displays their actual state, and thanks to our new Intelligent Clock Control (ICC) concept you have all clocks and states under control - with ease.

SteadyClock(TM)SteadyClock™, RMEs unique sync and clock technology allows the HDSP AES-32 to control the sample rate freely on its own. The Settings dialog includes a direct choice of the video and audio world's most often used sample rates. Additionally, two faders can be used to set the sample rate freely and in real-time, within the range of +/- 4% and +/- 0.4%.

Up to 3 HDSP AES-32 and HDSP MADI can be used simultaneously, in any possible combination.

## Tech Specs

**8 buffer sizes/latencies available:** 1.5 ms, 3 ms, 6 ms, 12 ms, 23 ms, 46 ms, 93 ms, 186 ms

**ASIO zero CPU load technology:** 0 (zero!)% CPU load when using ALL channels!

**All settings:** changeable in realtime

**Clock modes:** slave and master

**Automatic and intelligent** master/slave clock control

**Enhanced Zero Latency Monitoring for latency-free submixes and perfect ASIO Direct Monitoring**

**Sync sources:** 8 x AES, word clock, internal

**Varipitch:** by input signal or word clock

**Sample rates:** 32 kHz up to 192 kHz, variable (Sync/word clock)

**Sample rate range:** AES: 28 kHz - 204 kHz, word clock: 28 kHz - 204 kHz

**Jitter:** < 1 ns, internal and all inputs

**Jitter sensitivity:** PLL operates even at 100 ns Jitter without problems

**Comes with DIGICheck:** the ultimate measurement, analysis and test tool

**Input:** 8 x AES, 2 x MIDI, word clock (BNC)

**Output:** 8 x AES, 2 x MIDI, word clock (BNC)

**Input word clock:** BNC, Signal Adaptation Circuit (functional from 1.2 Vpp input signal), termination via jumper

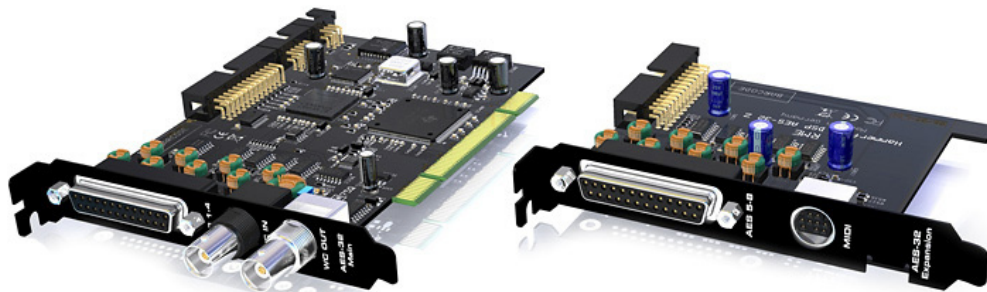
**Output word clock:** BNC, low-impedance driver stage, 4 Vpp into 75 Ohms, short-circuit-proof

**MIDI input and output:** via four 5-pin DIN jacks

## Optional Add-Ons

**HDSP TCO** Timecode Option Modul with enhanced Sync options: 1 x Word Clock I/O, 1 x Video Sync Input (alternative to WC In), 1 x LTC I/O

**BOB-32** Universal Breakout Box with 2 x 8 XLR to 2 SUB-D connectors (supports TASCAM- and YAMAHA formats), Flip Frame Case



Worldwide Distribution

**audio ag**

Am Pfanderling 60 · 85778 Haimhausen · Germany  
Tel.: +49-08133-91810 Fax: +49-08133-9166

[www.rme-audio.de](http://www.rme-audio.de)

3 / 3