## **NEWS**



## New Audio Sample Rate Converter (ASRC) IP Core from CAST Offers Versatility with High Fidelity

Synchronous and asynchronous ASRC has a broad channel capacity, high conversion ratios, and fast performance, all with outstanding low distortion.

**Woodcliff Lake, New Jersey** — **April 29, 2025** — Semiconductor intellectual property core provider CAST today introduced a high-performance Audio Sample Rate Converter (ASRC) IP core that delivers real-time and batch-mode sample rate conversion with exceptional signal integrity, ultra-low distortion, and unmatched scalability. The company believes the new Audio Sample Rate Converter (ASRC) IP

core offers the best combination of capabilities, performance, and hardware efficiency available on the market today.

The new multi-channel digital audio sample rate converter core provides



Sample audio rate conversion from 44.1 to 96 kHz, illustrating the different input and output samples calculated by the core and the minimal resulting signal delay.

competitive features in either FPGA or ASIC implementations, including:

- Scalable Performance, with both synchronous and asynchronous modes, conversion ratios from 1:24 to 24:1, and the scalable handling of tens to hundreds of audio channels without hardware replication.
- Studio-Grade Audio Quality, with a Total Harmonic Distortion Plus Noise (THD+N) averaging -130 dB—and never exceeding -126 dB for conversions between 8kHz and 192kHz—plus prevention of artifacts caused by jitter or drift.

- Fast Operation, with a short synchronization time of <100ms with a 100Mhz clock, and a low input-to-output delay, e.g., a latency of just 50µs converting a 44.1kHz signal to 96kHz.</li>
- **Memory-Optimized Filtering**, using an innovative linear interpolation method to calculate filter coefficients (filter taps) on the fly—no massive precomputed lookup table is needed—to reduce memory requirements, maintain high-quality filtering, and minimize implementation size and power.
- Easy Integration, using standard AMBA<sup>®</sup> bus interfaces or a generic microcontroller interface—with other interfaces available—plus the reliability, complete deliverables, and great support that come with all the cores from CAST.

Sourced from partner IObundle (<u>www.iobundle.com</u>), the new ASRC IP core builds on advanced digital audio research performed at Portugal's esteemed Instituto Superior Técnico while also satisfying CAST's high standards for IP quality, reliability, and reusability.

"With this new core, we have more than met our goal to develop one of the best available ASRCs while also supporting the widest range of audio sampling situations, with hardware that can meet the performance, power, and silicon requirements of nearly any audio system project," said Dr. Jose T. de Sousa, founder and general manager of IObundle.

The potential applications of the ASRC core are wide ranging. Its unique dual-mode operation means it can support asynchronous, real-time rate conversion as well as synchronous conversion suitable for batch audio processing. Its high fidelity and fast operation benefit professional and broadcast-level systems, while its reliability and efficiency suit automotive, telecommunications, mission-critical, and other stringent environments.

The new ASRC IP core is available now for ASICs and FPGAs, with flexible licensing including royalty-free terms. It joins the existing I2S/TDM Multichannel Audio Transceiver core in CAST's growing <u>Audio Interfaces IP family</u>. Visit the <u>ASRC IP</u> Core product page or contact CAST Sales for more information.

## About CAST

Computer Aided Software Technologies, Inc. (CAST) is a silicon IP provider founded in 1993. The company's ASIC and FPGA IP product line includes security primitives and comprehensive SoC security modules; microcontrollers and processors; compression engines for data, images, and video; interfaces for automotive, aerospace, and other applications; and various common peripheral devices. Learn more by visiting <u>www.cast-inc.com</u>.

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