

Beken Chooses BA22 Processor to Satisfy Tight Constraints in New Mobile Bluetooth Audio Chip

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Corporation in China faced a significant challenge designing its upcoming high-performance Bluetooth audio chip with all the latest innovations but within the mobile device requirements of its OEM customers. Competitive analysis and careful market review led them to choose the [BA22-RT 32-bit Real-Time Embedded Processor IP core](#) available from semiconductor intellectual property provider CAST, Inc.

To enable customers to produce feature-rich Bluetooth audio products with outstanding low-power and low-cost advantages, Beken needed to design a very computation- and memory-efficient system capable of supporting real-time audio decoding plus a Bluetooth stack with the A2DP (Advanced Audio Distribution Profile), AVRCP (Audio/Video Remote Control Profile), and HFP (Hands free Profile) protocols.



The choice of 32-bit embedded processor to handle the Bluetooth algorithms and run application code was most critical to the project's success, and Beken sought to differentiate their offering by looking beyond the most obvious suppliers. They found a key factor to be the size of the programming code each processor required, since [smaller code means smaller physical memory is needed](#), and physical memory size is one of the major determinants of system-wide power consumption and also a critical contributor to the cost of Bluetooth subsystems.

Beken's evaluation determined that their program code for the BA22-RT core fits in a 128KB memory, versus 170KB for the next-closest competitor. This means Beken can use a 128KB memory unit rather than a more expensive 256KB unit, cutting costs in a market where every penny per chip matters.

With the BA22-RT core's performance and other characteristics matching or exceeding other CPUs, Beken decided to license the core from CAST, along with a complement of pre-integrated peripherals that saved them development time. Design and testing is nearing completion, and the new Beken Bluetooth chip is expected to hit the market later this year.

Beken Corporation is a fabless semiconductor design firm specializing in wireless communications. With almost ten years of successful product transceiver experience, the company is headquartered in Shanghai, China and has sales and customer support offices in Shenzhen and Hongkong. Visit www.bekencorp.com to learn more.

The BA22-RT is sourced from [Beyond Semiconductor](#) and is part of CAST's line of MCUs and MPUs, image and video compression codecs, GPUs and graphics accelerators, and other IP cores and subsystems for building competitive FPGA and ASIC systems. To learn more, call +1 201.391.8300, visit www.cast-inc.com, or follow [@castcores](#) on Twitter.

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