

Product Brief

Eureka DAB Digital Radio Solution

Key Benefits

- Industry's lowest system costs – low-cost baseband and analog parts
- Easy to design new products with turn-key reference design and comprehensive support. Evaluation board also available
- Quick updates to products via software – adding MP3 to DAB chip is easy
- Low baseband and lowest system power consumption

Texas Instruments (TI) delivers the first open, software-driven Eureka DAB digital radio receiver solution. This enables the most cost-effective and power-efficient products in the industry today.

The TI Eureka Digital Audio Broadcasting (DAB) solution for OEMs includes:

- TI DSP-based digital baseband and TI analog parts
- Evaluation board
- Turn-key reference design

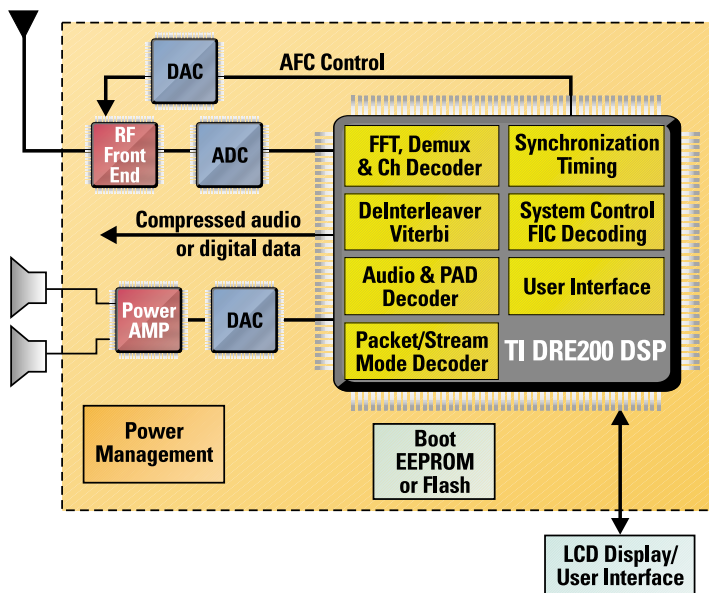
Digital baseband and receiver system

Figure 1 shows the architecture of the programmable, TMS320DRE200 DSP-based digital baseband and total receiver solution. The ETSI 300 401-compliant DRE200 DSP baseband performs channel and source decoding on a single chip. In addition, the digital baseband can decode all Eureka modes and perform user-interface functions. TI also builds the ADC, DAC, power amplifier, and various power-management devices for this application. TI's evaluation board and reference design resembles Figure 1.

Features and specifications of the DRE200 DSP baseband are:

- Compatible with standard audio DAC interfaces
- Does not require external memory for DAB operation
- Can interface to an external microcontroller or memory (not required for operation)
- Disturbance-free operation during multiplex sub-channel reconfiguration or ensemble switch
- Can feed data to external TPEG or MOT decoder and external memory
- Baseband <175 mW, standby <1 mA
- 1.6-V operation
- 144-pin TQFP or 144-pin μ *BGA™
- -40 to +85°C operation

Figure 1. Eureka DAB Digital Radio Solution



Benefits of TI's total solution

- Industry's lowest cost baseband and lowest total system BOM
 - < \$40 for total BOM cost for a DAB receiver
 - Integrated baseband leveraging TI's DSP economy of scale and process technology
 - No DRAM/ SRAM, microcontroller required for audio and PAD decoding
 - Software implementation minimizes cost to add new features
- Ease of use due to:
 - Turn-key reference design: designers can start building DAB products in 3–6 months
 - Process: license turn-key reference design → customize user interface → manufacture
- TI and third-party support can customize reference design
- Complete evaluation board
- Local support worldwide
- One-stop shopping for a number of ICs in the receiver
- Software driven, open and scalable platform gives:
 - Flexibility to replace/add any feature software modules with TI's DSP tools (e.g. adding MP3 to DAB on the DRE200 DSP).
- Power efficiencies resulting from:
 - 175 mW of baseband power and lowest system power

Roadmap

The DRE200 DSP baseband enables low-cost basic radios. The future baseband products from TI will

Applications

In addition to car and home digital radios, the DRE200 DSP enables battery-powered devices.

redefine digital radio by enabling feature-rich and integrated end products.

Pricing and availability

An evaluation board based on the DRE200 DSP baseband is available to OEMs for \$5,000. The DRE200 DSP samples and production volumes are also available. For volume pricing on the DRE200 DSP, please contact your TI field sales representative.

For more information, please contact the nearest TI sales office or visit our website at:
<http://www.ti.com/sc/digitalradio>

