

Product Bulletin

TMS320DRM300/350 Digital Radio Mondiale Solution

Key Benefits

- TI and Radioscape launch first chips and modules for DRM
- Most complete digital radio solution that includes DRM and DAB on the same chip
- Industry's lowest system cost provided by low-cost baseband and analog parts, especially for radios that include DAB/MP3/WMA

Spurring the worldwide growth of digital radio, Texas Instruments and RadioScape present the world's first chips and modules for the Digital Radio Mondiale (DRM) standard. By making these available, designs may begin on DRM receivers. In addition, TI is the first company to release an integrated digital baseband that supports both DRM and Digital Audio Broadcast (DAB) standards, and RadioScape, using its innovative "Software Defined Digital Radio" approach, is the first company to announce a module supporting not only DRM, but also DAB, FM-RDS and Analogue AM standards. This module approach will speed the development and deployment of multi-standard receivers. Finally, the integration of multiple standards significantly reduces system cost, especially for radios that include MP3 and WMA decode.

What is Digital Radio Mondiale (DRM)?

DRM is the only universal, non-proprietary digital radio system for the short-wave, medium-wave and long-wave AM broadcast bands. Many existing transmitters can be easily modified with an inexpensive upgrade to carry DRM signals, enabling a single tower to

broadcast over a large geographic area so that listeners can receive the same station with near-FM quality sound. Commercial and public international broadcasters, as well as national radio networks and local radio stations, have begun transmitting regular DRM broadcasts and special programs. Combining DAB and DRM into new receivers will extend the range of digital stations to reach new audiences with innovative digital services anywhere in the world.

The Digital Baseband and Receiver System

The TMS320DRM3xx DSP-based digital baseband family is based on TI's innovative digital signal processor (DSP) technology and RadioScape's unique Software Defined Digital Radio approach. The DRM300 baseband supports DRM, while the single-chip DRM350 supports DRM as well as DAB. With the DRM350 baseband, developers can create cost-effective DRM/DAB-based devices with a single chip. New features,

Figure 1. DAB/DRM Solution

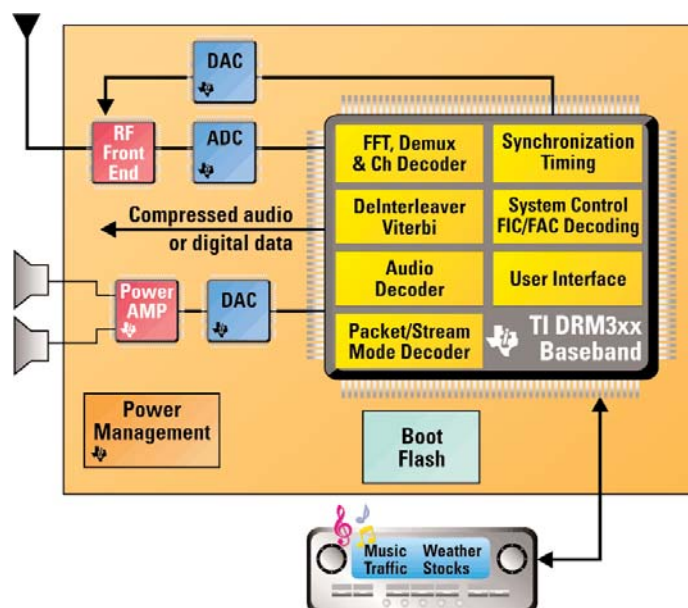


Figure 2. Radioscape DRM Module



customized variants and modifications can be easily implemented on the programmable DSP architecture of the DRM300 and DRM350 baseband, avoiding time-consuming and expensive hard-wired re-spins. This flexibility also allows for future support of digital content playback, including MP3 and Windows Media Audio (WMA).

Figure 1 shows the architecture of the programmable TMS320DRM3xx DSP-based digital baseband and total receiver solution. The DRM-compliant DRM3xx baseband performs channel and source decoding on single chip. In addition, the digital baseband can perform user interface functions.

Other additional features and specifications of the DRM3xx baseband are:

- Can interface to an external

microcontroller or memory (not required for operation)

- For DAB, disturbance-free operation during multiplex sub-channel reconfiguration or ensemble switch
- ADC for keypad interface, battery, etc.
- I²C port
- Real-time clock
- 144-lead TQFP or 179-lead MicroStar BGA™

Module Approach to Design and Applications Targeted

RadioScape's modules based on TI's DRM300 and DRM350 basebands will be available from RadioScape and will also support FM-RDS and AM in software. The first of which is the RS500 (see Figure 2). The RS500 module from RadioScape supplies all the necessary hardware and software

to design and build receivers able to support any combination of DRM, DAB, FM-RDS and AM, cutting down significantly on the development time and resources needed from the manufacturer. The modules enable manufacturers to begin immediate development of multi-standard receivers, including table-top radios, CD boom boxes, micro hi-fis and tuners.

Roadmap

The DRM3xx baseband from TI will redefine digital radio by enabling feature rich and integrated end products, while maintaining low cost and power. Future products will continue this path of integration and feature enhancement. Contact the TI Digital Radio group for more information about the roadmap details at digitalradio@ti.com

Availability and Pricing

Pricing for both the DRM300 and DRM350 basebands starts at U.S. \$18 in sample quantities of 1K or less and are expected to be available in 3Q05. RadioScape's DRM module is also planned to be available in 3Q05.

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

