



Dolby® MS10 Multistream Decoder

The Dolby® MS10 Multistream Decoder provides television and set-top box manufacturers with a single-package technology solution for decoding all premium audio formats, including Dolby Digital Plus, Dolby Pulse, Dolby Digital, HE AAC, and all AAC bitstreams. It ensures optimal compatibility with the worldwide installed base of home theater systems and with future broadcast audio standards.



New Content Delivery Models: More Sources, More Formats

Televisions and set-top boxes are rapidly evolving into multipurpose digital media platforms for the home. They will enable viewers to receive content not only from traditional broadcast and operator sources, but also over the Internet or transferred from other media and storage devices such as PCs, game consoles, and mobile devices. Content will include downloadable movies, television programs, or music files using an array of different audio codecs. This poses a challenge for consumer equipment and chip manufacturers who want to implement these codecs to match traditional broadcast and new content delivery models.

Dolby's Comprehensive and Cost-Effective Solution

The Dolby MS10 Multistream Decoder provides a cost-effective solution for IC and consumer electronics manufacturers, decoding all the audio formats required to match worldwide and specific local market broadcast standards. In addition, Dolby simplifies implementation by providing all the necessary deliverables, technical support, and testing. The Dolby Multistream Decoder will decode Dolby Digital Plus, Dolby Pulse, Dolby Digital, HE AAC, and all AAC bitstreams. The Dolby Digital Plus, Dolby Pulse, and Dolby Digital formats all provide full Dolby metadata support to ensure consistent audio delivery from content creation to consumer playback. All of these input signals for the main audio can also be passed through directly for output over HDMI™ interfaces.

Simultaneously, the Dolby Multistream Decoder always creates a decoded two-channel downmix, from any of the multichannel inputs, that feeds the stereo output. This ensures that consumers who listen to broadcasts in stereo or mono will receive a signal that matches their home systems. For maximum compatibility with the worldwide installed base of home theater systems that incorporate Dolby

technologies, and for connectivity over S/PDIF interfaces, the decoder also generates a standard Dolby Digital bitstream output (up to 5.1 channels) from any incoming audio coding format.

Single Package Solution

The Dolby MS10 Multistream Decoder provides IC and consumer broadcast product manufacturers with a universal decoder that reduces the complexity and the cost of integrating multiple audio technologies in new receivers

to meet both traditional broadcast and new content delivery models. It also simplifies product development and testing.

Dolby MS10 Multistream Decoder: Dolby Pulse and Dolby Digital Plus Technologies

Dolby Pulse

Dolby's optimized HE AAC v.2 coding solution, Dolby Pulse, combines the audio coding efficiency of HE AAC with

Table 1 Features and Benefits of the Dolby MS10 Multistream Decoder

Feature	Benefit
Decodes Dolby Digital Plus, Dolby Pulse, Dolby Digital, HE AAC, and AAC bitstreams	Provides a universal solution for TV, STB, and IC chip manufacturers
Dolby supplies all deliverables, testing, and technical support	Easier implementation
Dual technology package*	Lower cost than separate licenses for existing Dolby Digital Plus, Dolby Digital, Dolby Pulse, and transcoder options
Provides a Dolby Digital output	Compatible with existing home theater systems and with all worldwide broadcast transmission formats
Support for audio description services delivered "receiver-mix" style, using two simultaneous decoders	Broadcasters can transmit a single mix rather than multiple mixes
Automatically creates simultaneous stereo downmix	Broadcasters do not have to create a separate stereo signal
Supports Dolby metadata	Ensures consistent audio delivery from content creation to consumer device

* A single license covers all the Dolby technologies in the MS10 Multistream Decoder. However, a separate HE AAC patent license from Via Licensing is also required prior to issuance of the Dolby license. Speak to your Dolby account manager for more information.

Table 2 Multichannel Format Requirements in European HDTV Specifications, June 2009

High Definition Terrestrial Specification	Dolby Digital Plus	HE AAC with Transcoder
DTG HD Digital Terrestrial (UK)	√	√ (transcoder not required)
EBU (Tech 3333)	√	√
EICTA (known as Digital Europe)	√	√
France HD DTT	√	√
Ireland HD DTT	√	√
Italy HD DTT	√	√
NorDig HD DTT (Denmark, Finland, Iceland, Norway, and Sweden)	√	√
Poland HD DTT	√	
RiksTV (Norwegian Terrestrial Broadcast)		√
Slovenia HD DTT	√	√
Spain HD DTT	√	√

Note: DTT=Digital Terrestrial Television. Visit www.dolby.com/EuroHDTVSpecs for the latest updates.

Dolby's proven quality and broadcast expertise. The Dolby Pulse system adds Dolby metadata capability to the optimum-efficiency HE AAC v.2 core. Metadata parameters match those in Dolby Digital and Dolby Digital Plus, assuring broadcasters and content creators that their content will deliver a reliable, consistent experience on every consumer device. And upstream Dolby products and technologies will fully support Dolby Pulse.

Dolby Pulse lets broadcasters deliver stereo and 5.1-channel audio at the lowest bandwidth rates while maintaining high audio quality. That makes Dolby Pulse perfect for applications where there are significant bandwidth constraints. Because it includes Dolby metadata, Dolby Pulse is also the one HE AAC solution that eliminates the need for a stereo simulcast along with the 5.1 broadcast, further reducing bandwidth.

Finally, Dolby Pulse helps manufacturers meet the requirements for HE AAC in HD receivers, as specified by major European standards bodies including EICTA, the French, Spanish, British HD forums, and NorDig (See Table 2.)

Dolby Digital Plus

Dolby Digital Plus is a versatile digital audio coding technology that extends the capabilities of Dolby Digital, giving broadcasters the flexibility they need to create the highest-quality audio experience for existing and next-generation applications.

Dolby Digital Plus delivers up to 7.1 channels of surround sound, providing an enhanced audio experience similar to that available on Blu-ray Disc™. It also offers scalable sound delivery, advanced services like bitstream mixing, associated services such as those for the visually impaired, and a wide range of bit rates ensuring optimized sound quality and efficiency for available bandwidth.

Using Dolby Digital Plus, broadcasters can provide a richer and more enveloping audio experience via HDTV, IPTV, cable, satellite, online streaming, or terrestrial broadcast television.

Only from Dolby

Dolby Laboratories is one of the world's most recognized and trusted brands in entertainment. More than 500 consumer electronics manufacturers and software development licensees, located in nearly 30 countries, use Dolby technologies, including them in more than 2.8 billion products.

Dolby has a long history of developing innovative technologies for every step of the content chain, from production to playback, in broadcast, cinema, and home entertainment. Dolby focuses on providing the best technology solutions to ensure maximum efficiency, consistency, and compatibility.

WHAT TO TELL YOUR CUSTOMERS

For your customers, the essential benefits of a TV or set-top box incorporating the Dolby MS10 Multistream Decoder solution come from the ingredient technologies: Dolby Pulse, Dolby Digital Plus, and Dolby Digital. Together, these ensure the best possible surround sound through any home theater system incorporating Dolby technologies, regardless of the broadcast transmission format. The following points can provide some guidelines for talking to your customers:

- Dolby Digital Plus and Dolby Pulse enable optimal surround sound playback on your home theater system
- Broadcasters are implementing various formats to meet new DTV audio standards worldwide. Dolby Pulse and Dolby Digital Plus ensure that your TV or set-top box is ready for all of today's programming and future programming as well.
- Dolby Digital Plus and Dolby Pulse are fully compatible with current home theater systems that include Dolby Digital technology. This allows your customers to retain their existing home theater systems, since the Dolby Multistream Decoder always provides a Dolby Digital compatible output regardless of the broadcast transmission format.

Get Started on a License

For more information about the Dolby MS10 Multistream Decoder, visit our website at www.dolby.com/get-licensed, or contact licensinginquiries@dolby.com.

You can also get more information about the Dolby Multistream Decoder, including a comprehensive technical paper, at www.dolby.com/ms10.



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