Fraunhofer
IIS

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

MPEG SURROUND
HIGH-QUALITY SURROUND SOUND AT STEREO BIT-RATES

BENEFITS

EXCITING NEW NEXT GENERATION SERVICES

MPEG Surround enables new services such as surround music streaming or high-quality surround broadcasts over low bandwidth channels

SIX FOR THE PRICE OF TWO

MPEG Surround offers multi-channel audio at stereo bit-rates which makes it easy to upgrade any stereo transmission system for multi-channel applications

ONE FILE FOR ALL

MPEG Surround content can be played back on stereo and surround loudspeaker systems or ordinary headphones

Fraunhofer
MPEG Surround

MPEG SURROUND TECHNOLOGY EXTENDS ANY EXISTING AUDIO DISTRIBUTION CHAIN FROM MONO OR STEREO TO HIGH-QUALITY, MULTI-CHANNEL AUDIO WHILE REMAINING FULLY COMPATIBLE WITH EXISTING RECEIVERS. IT ALSO ENABLES THE CREATION OF NEW SURROUND SERVICES THAT WERE NOT POSSIBLE WITH LEGACY FORMATS.

MARKETS & APPLICATIONS

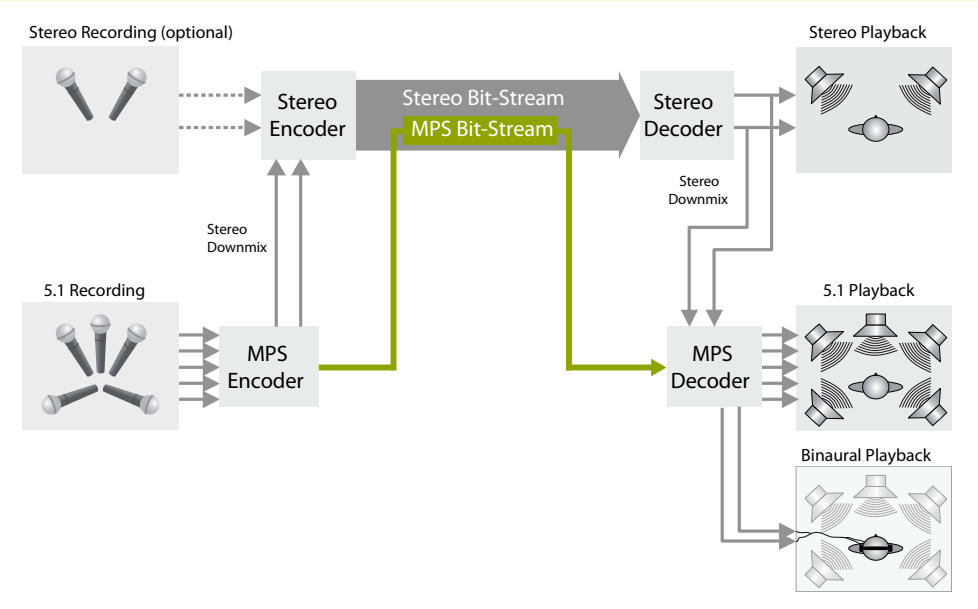
Broadcast Services and Devices

Will your broadcast service deliver the audio experience consumers know from DVD or Blu-ray?

With MPEG Surround, high-quality 5.1 surround sound can be broadcast at stereo bit-rates over all existing and future distribution channels – for example, digital radio, mobile TV and IPTV. Recently MPEG Surround was included in the new Japanese Mobile TV/Radio standard ISDB-Tmm. Broadcasters can offer stereo and surround programs in a single broadcast feed making simulcasts obsolete. As a result, all legacy receivers continue to play the signal in stereo, while new receivers play the same signal in multi-channel sound. Furthermore, broadcasters have the ability to integrate MPEG Surround into their existing broadcast systems easily and cost-effectively. For mobile services, MPEG Surround supports a binaural mode to play back surround sound over conventional stereo headphones.

Music and Video Downloads / Streaming

Physical media is increasingly becoming a thing of the past. Today and in the future music and video content will be purchased from online stores or enjoyed through streaming services. At the same time, consumers expect the same quality experience known from physical media. With MPEG Surround, 5.1 content becomes conveniently available everywhere through download or streaming. The same content can be enjoyed in great quality on conventional stereo devices as well as surround products at home, in the car or on the move. Service providers with Fremium models can use MPEG Surround to differentiate their Premium subscription offerings from the free, basic stereo service. With the binaural mode of MPEG Surround, multi-channel audio becomes accessible on portable media players that can play surround sound over stereo headphones, allowing users to enjoy a compelling sound experience on mobiles at any time and in any location.



How MPEG Surround (MPS) works

TECHNOLOGY

In essence, a compact set of parameters representing the spatial image of the original surround signal is transmitted along with an automatic mono or stereo downmix. On the decoding side, the transmitted downmix signal is expanded into high-quality, multi-channel output based on the spatial parameters. MPEG Surround offers an impressive sound quality similar to that provided by discrete systems and substantially beyond that of traditional matrix-based surround systems commonly found in the marketplace today. An illustrative example is provided by the MPEG and EBU listening test ISO/IEC JTC 1/SC 29/WG 11 N8851.

MPEG SURROUND SOLUTIONS BY FRAUNHOFER IIS

Commercial software for MPEG Surround encoders and decoders, com-bined with HE-AAC or MPEG Layer-2, is available from Fraunhofer IIS as product-ready libraries for desktop computers (running under Windows, Linux and Mac OS), and as Core Design Kits (CDKs) for embedded solutions based on fixed-point or floating-point processor cores.

KEY FEATURES

VERY LOW BIT-RATE REPRESENTATION OF HIGH-QUALITY SURROUND AUDIO

FULLY COMPATIBLE TO LEGACY DEVICES AND STEREO INFRASTRUCTURE

HIGHLY EFFICIENT BINAURAL DECODER MODE FOR SURROUND SOUND OVER STEREO EARPHONES

VARIABLE NUMBER OF CHANNEL CONFIGURATIONS (2.0, 5.1, 7.1, AND MORE)

SURROUND QUALITY COMPARABLE TO DISCRETE SYSTEMS AT SUBSTANTIALLY LOWER BIT-RATES AND SUPERIOR TO MATRIX-BASED SYSTEMS

WIDE, SCALABLE BIT-RATE RANGE SUITABLE FOR MULTIPLE APPLICATION SCENARIOS

03/2012 K.Brohasga

For more information about MPEG Surround, please visit

WWW.IIS.FRAUNHOFER.DE/AMM

Fraunhofer Institute for Integrated Circuits IIS

Director
Prof. Dr.-Ing. Albert Heuberger

Am Wolfsmantel 33
91058 Erlangen

www.iis.fraunhofer.de

Contact
Matthias Rose
Phone +49 9131 776-6175
amm-info@iis.fraunhofer.de

Fraunhofer USA, Inc.
*Digital Media Technologies**

100 Century Court
Suite 504
San Jose, California 95112
www.dmt.fraunhofer.org

Contact
Phone +1 408 573 9900
codecs@dmt.fraunhofer.org

* Fraunhofer USA Digital Media Technologies, a division of Fraunhofer USA, Inc., promotes and supports the products of Fraunhofer IIS in the U. S.

About Fraunhofer IIS

The Fraunhofer IIS Audio and Multimedia division, based in Erlangen, Germany, has been working in audio coding technology for more than 20 years and remains a leading innovator of technologies for cutting-edge multimedia systems. Fraunhofer IIS is the main inventor of mp3 and universally credited with the co-development of AAC (Advanced Audio Coding) as well as technologies for the media world of tomorrow, including MPEG Surround and the Fraunhofer Audio Communication Engine.

Through the course of more than two decades, Fraunhofer IIS has licensed its audio codec software and application-specific customizations to at least 1,000 companies. Fraunhofer estimates that it has enabled more than 5 billion commercial products worldwide using its mp3, AAC and other media technologies.

The Fraunhofer IIS organization is part of Fraunhofer-Gesellschaft, based in Munich, Germany. Fraunhofer-Gesellschaft is Europe's largest applied research organization and is partly funded by the German government. With nearly 20,000 employees worldwide, Fraunhofer-Gesellschaft is composed of 60 Institutes conducting research in a broad range of research areas.