

SX PRO – THE FLEXIBLE STEREO TO SURROUND UP-MIX SOLUTION



BENEFITS

UPGRADE YOUR STEREO TO SURROUND CONTENT

Owners of 5.1 systems want to enjoy the surround experience with all kinds of content. SX Pro is a stereo to surround up-mix solution based on an intelligent analysis of stereo content. It creates a natural-sounding surround image without any artificial processing. As a result, it outperforms all automatic up-mix technologies.

FULL CONTROL WITH LITTLE EFFORT

Up-mix preferences are every bit as diverse as the applications of up-mix technologies. No matter what your requirements, SX Pro always delivers the best stereo to surround up-mix quality. For ease of use it is possible to choose between five modes, individually optimized for different up-mix preferences. For full control, users can alter up to 150 parameters in order to define the precise characteristics of their up-mix.

SX PRO IS THE BEST CHOICE FOR ANY TYPE OF APPLICATION WHERE TWO-CHANNEL LEGACY CONTENT IS CONVERTED, BROADCAST OR PLAYED BACK IN A MULTI-CHANNEL ENVIRONMENT.



MARKETS & APPLICATIONS

Broadcast Equipment

SX Pro is the ideal solution for all types of broadcasting equipment during the transition from stereo to multi-channel broadcasting.

SX Pro supports a flexible, real-time upmix process. Broadcasters can use the fully automated mode as an efficient way to save time and effort. In addition, they can fine-tune the automated up-mix manually to adapt it to an individual up-mix concept.

When integrated into MPEG Surround, SX Pro offers even more benefits for broadcasters. MPEG Surround is a high-quality, low bit-rate, multi-channel standard that operates on top of perceptual audio codecs. Combining SX Pro and MPEG Surround, broadcasters can upgrade their stereo programs to surround sound at stereo bit-rates. The surround program is fully compatible with existing mono or stereo receivers, which will play back the original unaltered stereo file, avoiding simulcasting the stereo and surround program.

Alternatively, SX Pro may also ideally be integrated into the mp3 Surround transmission scheme to achieve multi-channel distribution over stereo channels while being fully compatible with conventional mp3 stereo devices.

Surround Content Creation

Through the integration of SX Pro, audio software manufacturers provide a high-quality, flexible tool to create multi-channel versions of stereo material for professional and semi-professional users. They can offer different levels of creative control of all aspects of the up-mix process to achieve

the desired output. Users of the software can benefit from a high-quality default processing up-mix. Alternatively, they may select from a variety of typical upgrade modes in order to fulfil their specific requirements.

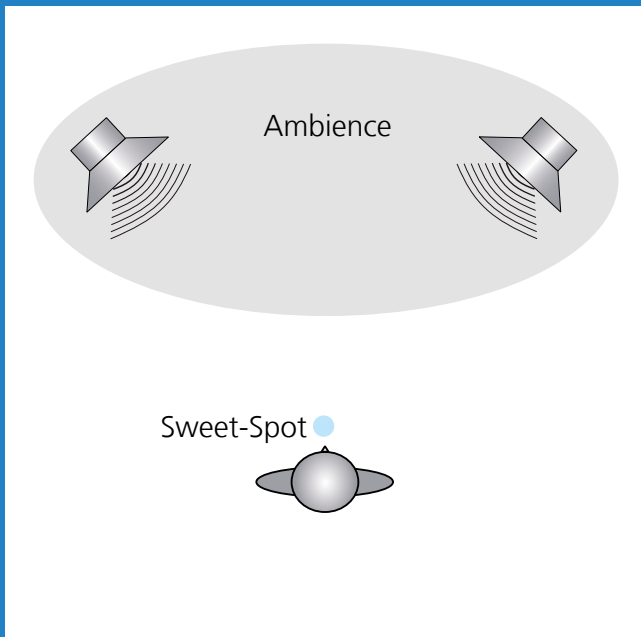
Surround Playback Software

Manufacturers of audio playback software can enhance their products towards surround sound playback even for stereo content using SX Pro technology. With SX Pro, the playback software provides a high-quality automated up-mix, including several enhancement options. SX Pro upgrades any kind of audio format found in the content collection of every user.

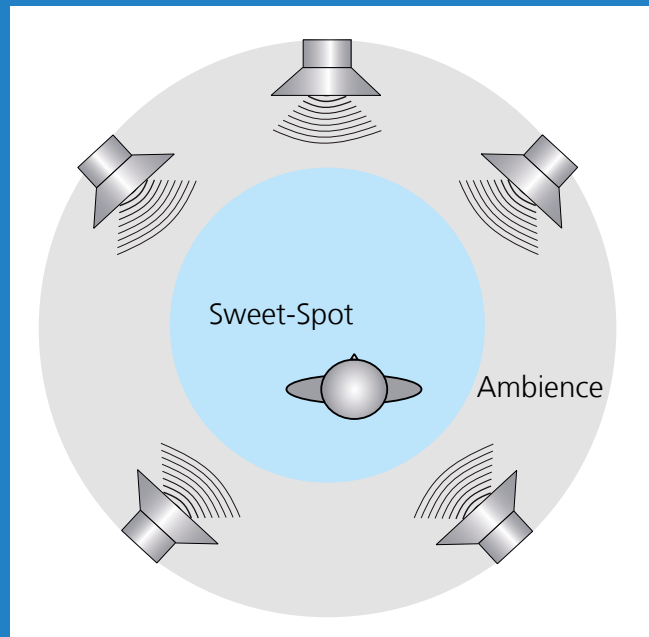
Home Entertainment Devices

SX Pro is an ideal extension for home entertainment devices, including AV-receivers, set-top-boxes, DVD-players and more. With SX Pro technology, home theater systems can be used to play back stereo content in excellent surround sound providing different upgrade concepts to match each individual taste.

TECHNOLOGY



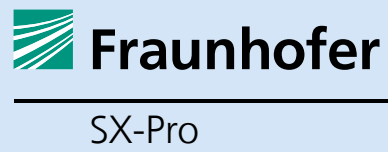
Stereo reproduction without SX Pro



Surround reproduction with SX Pro up-mix

The intelligent integration of the center channel provides a stable front sound image together with a significantly increased sweet-spot. Additionally, the front sound impression remains perceptually similar to the original stereo signal. Ambient-like sound components already present in the stereo source are used to create an impressive feeling of envelopment, resulting in a natural surround sound experience. The core algorithm is based on a semantic analysis of the stereo signal, allowing the desired processing of the key components (such as ambience signals) of the input signal. The perceived spatial envelopment is created without using artificial processing (such as room simulation).

SX Pro either allows a manual up-mix mode with a high degree of creative control over the resulting sound image or a fully automatic mode where no specific content adaptation is required. Due to the intelligent semantic and fine granularity analysis of the stereo signal and the flexibility in the up-mix design, SX Pro is superior to existing matrix based technologies.



**DID YOU KNOW THAT YOU HAVE AN
EXTENSIVE SURROUND MUSIC
COLLECTION IN YOUR CD ARCHIVE?**

For more information about SX Pro, please visit

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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.