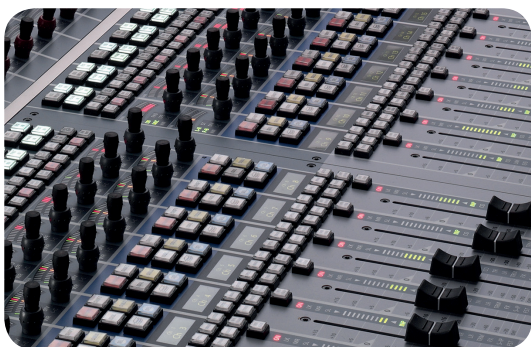
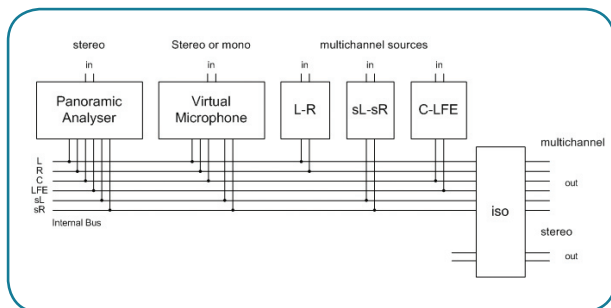


**ISOSTEM -
The professional upmix tool
for perfect surround sound**



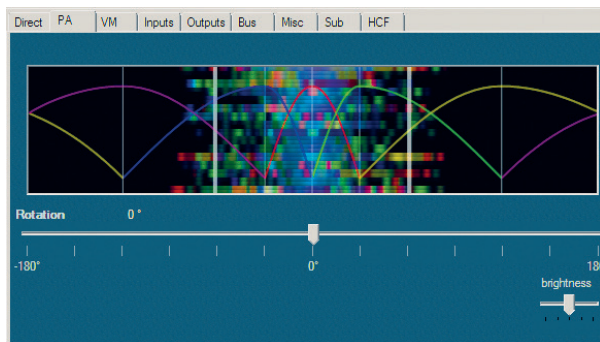
SOFTWARE

The GUI offers various tools for creating the perfect surround sound. The entire upmix process has a latency of 40 ms.



Panoramic Analyzer (PA):

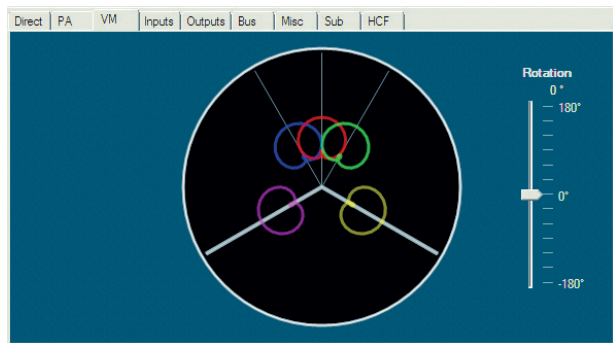
The Panoramic Analyzer distinguishes the parts of a signal containing mainly diffuse or direct sound by identifying the spatial energy distribution. These signal elements are distributed to the surround channels without adding additional signal elements. This guarantees process reversibility.



The PA window features a visualization of the Panoramic Analyzer's dynamic filtering with overlapping filter bands. The angle set in the PA parameter section is represented by two light grey vertical lines. A vertical spectrogram of the incoming stereo source is shown between these lines.

Virtual Microphone (VM):

The Virtual Microphone is another tool for surround sound creation that can be used independently or in combination with the Panoramic Analyzer. Based on an acoustic model, the stereo source information is translated to a virtual 5.0 microphone array.



The VM window features a graphic representation of the virtual 5.0 microphone setup used by the VM module. The angle set in the VM parameter section is represented by two light grey lines; the form of the virtual microphones show the polar pattern set with the "Lobes" parameter.

Multifunctional Area:

Among others the multifunctional area can be used to visualize parameter edits in audio processing modules such as the Panoramic Analyzer or the Virtual Microphone.

Monitoring and Bypass functions:

This section features solo and mute buttons for each channel as well as a monitor source selector that provides access to various signals. Also, certain processing elements can be bypassed using the "Functions" buttons.



HARDWARE

ISOSTEM® is a **professional upmix tool**, that turns stereo signals into **surround sound** in real-time. Direct sound and ambient sound are differentiated by carrying out a spectral analysis of the acoustic intensity and distributed to the five surround channels. The algorithm guarantees that the **downmix** creates the original stereo signal again. This ensures the perfect sound quality for all TV viewers, whether they have stereo or surround at home.

ISOSTEM® offers access to a variety of parameters for creating the perfect stability of Center, LFE, Front and Rear channels. You can get perfect results by merely pressing a button to access several **presets** for different genres.

ISOSTEM® is a 19" unit and available in 2 different hardware versions. It can be integrated into every broadcast chain.



The **ISOSTEM® Expert** version contains the full range of functions and all setting options. Various parameters can be defined individually via a GUI and saved as presets. Up to 6 presets can be saved and retrieved as well as transferred to further ISOSTEM® devices.

The **ISOSTEM® Live** version is ideally suited for use in broadcasting. The setting options are

limited in this version. In addition to pre-defined factory presets, you can also use presets imported out of the ISOSTEM® Expert version.

Both versions have an important backup function: If two devices are connected to one another and one of the devices has a malfunction, the system switches automatically to the covering, operational device.



ISOSTEM Upmix as software plug-in for NEXUS from Stage Tec

The ISOSTEM Upmix algorithm is licenced for the audio network NEXUS from Stage Tec and is integrated as a software plug-in in the XDSP06 audio signal processing card with the following characteristics:

- Optional available on the XDSP board for NEXUS
- Up to two licences can run on one XDSP board
- ISOSTEM Upmix plug-in is equal to the hardware version ,Live‘
- Pre-defined presets can be loaded
- Any number of presets can be saved
- No external hardware required for perfect surround sound
- New presets can be created with ISOSTEM Expert and exported to the NEXUS plug-in



ISOSTEM Upmix as software plug-in for AudioTools Server from Minnetonka

The ISOSTEM Upmix algorithm is licenced for Minnetonka and integrated as plug-in with the following characteristics into the AudioTools Server:

- ISOSTEM Upmix plug-in is equal to the hardware version ,Live‘
- No external hardware required for perfect surround sound
- default presets are delivered with the AudioTools Server installation and can be downloaded from the ISOSTEM website
- New presets can be created with ISOSTEM Expert and exported to the AudioTools Server plug-in



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