

## BRAX DSP

### Features

- Three extraordinary powerful “fixed point” Sigma350 audio DSP's with 64 Bit resolution and a total of 3.6 billion MAC operations per second calculating power
- State-of-the-art Asahi Kasei "Velvet Sound" A/D and D/A converters with a native resolution of 32 Bit
- 192 kHz sample rate for ultra High-Res audio bandwidth up to 80 kHz
- Benchmark specifications for e.g. signal-to-noise ratio and total harmonic distortion, close to measuring limits
- Modular 8-channel in / 12-channel out concept with exchangeable stereo analog or digital input / output modules for covering all possible system configurations
- 4 stereo input modules with either analog RCA / Cinch and Highlevel or digital optical / coaxial SPDIF input
- 6 stereo output modules with either analog RCA / Cinch or digital optical / coaxial SPDIF outputs
- Output modules with switchable sampling rate of 48, 96 or 192 kHz
- Analog output modules with variable filter characteristics and switchable output voltage of 2, 4 or 8 Volts
- Muting of the analog output stages via relays with gold-plated contacts
- Additional stereo SPDIF input (optical / coaxial) as well as a Link module for system extensions
- Double BRAX Extension Card slot (BEC) for optional input / output modules like Bluetooth® Audio Streaming, High Resolution Audio Streaming via USB etc.
- Unique DSP Sound Effects such as the “Augmented Bass Processing” which dynamically optimizes the bass response of the subwoofer, the “StageXpander” that significantly widens the stereo perspective, the “RealCenter” function, which allows a perfectly focussed sound staging for both driver and co-driver and much more
- Incomparably complex power supply concept with a total of 55 voltage regulators and start-stop capability
- DiSAC (Digital Signal Analog Controlled) volume control in combination with BRAX MX4 PRO
- ACO – Advanced 32 Bit CoProcessor for all control and communication tasks
  - 10 internal memory locations for sound setups
  - Setup switching within milliseconds
  - High-speed data transfer and improved usability
- Solely made from the very best components with lowest tolerances, fitted in a rock-solid aluminum housing
- Eight-fold layer main PC board for ultra-low impedance signal and power supply transmission
- Analog audio signal transmission solely on the in- and output modules

### DSP features

#### RealCenter

The "RealCenter" feature is an algorithm, developed by Audiotec Fischer, that emphasizes the music information which is present in both the left and right front channel to create an unique center signal. In contrast to common procedures, in which only the channels are summed up, the intensity of the center signal is also dynamically controlled by the stereophonic informational content of the left and right channel.

Sounds complicated but this effect is astonishing: That means if solely the left or right channel delivers an audio signal, the center channel will not reproduce a signal. In the case of common algorithms, the volume level of the center channel is only reduced by 6 dB (= half volume level). Audiotec Fischer's "RealCenter" allows a unique, broadened sound staging for both driver and co-driver at the same time! Therefore, the disadvantages of a conventional center channel, such as an intrusive, small sound stage, are things of the past.

## **Augmented Bass Processing**

Audiotec Fischer's proprietary "Augmented Bass Processing", consisting of the two revolutionary sound features "Dynamic Bass Enhancement" and "SubXpander", has been especially developed to dramatically improve the bass reproduction of subwoofers. The "Dynamic Bass Enhancement" ingeniously combines maximum deep bass and highest sound pressure - regardless of the music style or the tone controls in the head unit. Depending on the input signal, the "Dynamic Bass Enhancement" gains the lower frequency range and varies the cut-off frequency of the subsonic filter. The result is a significantly more powerful and deeper bass response at low and medium volume levels without the risk of overloading the subwoofer neither mechanically nor electrically at high volume levels. It is simply fascinating which bass performance is suddenly possible.

If you want an even lower and "darker" bass reproduction, the "SubXpander" can be additionally activated. Therefore, subharmonic tones are added to the fundamental tones in the frequency range between 50 and 100 Hz.

## **StageXpander**

Depending on the speaker arrangement in the vehicle, a more or less wide stereo sound stage can be created on the front seats. A center speaker may limit the spatial reproduction of the music additionally. This is where Audiotec Fischer's new "StageXpander" comes into play - a sound feature which seems to break the acoustic limitations and thus allows to create a way broader stereo base without negatively affecting the precision of the localization of voices or instruments!

The effect can be adjusted according to your personal preferences in four steps.

## **ClarityXpander**

You are looking for more transparency and substance in the treble reproduction? With the "ClarityXpander" Audiotec Fischer is now offering the right tool. Properly adjusted (and therefore selectable in three steps) the feature adds additional harmonics in the upper frequency range - this is especially useful if the original speakers lack some brilliance in the treble response. The extra treble-kick is not only available for the two front channels but also separately adjustable for the center channel. Even better - the center channel allows to activate an automatic and dynamic control so that music with "loads" of treble doesn't fatigue your hearing.

