

HELIX V EIGHT DSP MK2

The new multi-tool for professionals

The small addition in the product name makes the big difference – the V EIGHT DSP MK2 is the logical evolution of its already more than impressive predecessor. Same look as before but in the inside we brought in all of our expertise to substantially optimize the hardware. The result is an 8-channel amplifier with ten processed DSP channels that is unrivalled in many ways.

Extra speed – thanks to ACO

Faster is better – the particularly powerful 32 Bit ACO platform takes over all control tasks and ensures the decisive speed increase, especially for data communication with our DSP PC-Tool software but also for the lightning-fast switching between up to ten sound setups. But ACO offers much more – fantastic sound effects such as Augmented Bass Processing or RealCenter are implemented as well as a channel-separated Input EQ including the Input Signal Analyzer (ISA) for easy analysis and compensation of input signals of OE radios.

New signal converters for optimized sound quality

Instead of a combined codec, the new V EIGHT DSP MK2 uses separate AD and DA converters of the latest generation from Asahi Kasei with a native resolution of 32 Bit. This ensures maximum signal resolution in the entire signal path from input to output – and thus also guarantees optimal sound quality.

Virtual Channel Processing – that´s how signal routing works today

The adaptation to modern OE sound systems via an increasing number of inputs has a significant impact on the complexity of the signal routing inside the amplifier. Especially when several input signals are mixed together and then split again into multi-way systems, conventional routing concepts quickly reach their limits, both in terms of implementation and usability. Audiotec Fischer's new multi-stage "Virtual Channel Processing", in conjunction with the recognized user-friendly DSP PC-Tool software makes it easy to realize even highly complex system configurations. Besides, it allows to freely assign our proprietary FX sound features such as "RealCenter" or "Augmented Bass Processing".

Maximum connectivity

More and more cars are equipped with factory-provided sound systems. Most of them contain a multi-channel amplifier that cannot be replaced by another amplifier. The adaptation to such a configuration not only requires a lot of input channels but also a particularly wide adjustment range for the input sensitivity. Therefore, the V EIGHT DSP MK2 offers both six RCA / Cinch inputs and eight highlevel inputs with a maximum input voltage from 4 V to 32 V.

In addition the V EIGHT DSP is of course also equipped with the latest generation ADEP.3 circuit.

Power pack in a noble design

Despite its further increased feature set and up to 160 Watts RMS output power per channel

(@ 2 Ohms) the V EIGHT DSP MK2 presents itself in the classic, clean HELIX design which provides ideal preconditions for a quick and easy integration.

High-tech performance could hardly be more noble and elegant!

New features of the HELIX V EIGHT DSP MK2:

Features

- Up to 160 W RMS output power per channel into 2 Ω
- "Pure Class GD" concept for outstanding sound quality combined with best possible efficiency
- Extremely powerful 64 Bit "fixed point" Audio DSP
- ACO – Advanced 32 Bit CoProcessor platform for system and DSP features like:
 - ISA (Input Signal Analyzer) and InputEQ for easy analysis and compensation of input signals
 - SFX sound effects – Augmented Bass Processing, StageXpander, RealCenter & Co.
- High power 8-channel highlevel input with up to 32 V RMS input sensitivity and ADEP.3 circuit
- Two processed RCA / Cinch outputs
- 1 to 1 Input / Output Routing (IOR) – same number of highlevel inputs and amplifier outputs
- Virtual Channel Processing (VCP) allows even more flexible configuration for highly complex sound systems
- HELIX Extension Card slot (HEC) for additional input / output modules like Bluetooth® Audio Streaming, High Resolution Audio Streaming via USB etc.
- Compact design with low heat dissipation thanks to extraordinary efficiency

Special features:

Pure Class GD amplifier technology

Audiotec Fischers proprietary Pure Class GD concept takes the efficiency of conventional Class D amps to the next level. By varying the internal supply voltage depending on the amplifier's input signals, idle losses are significantly reduced and overall efficiency is close to maximum at any time.

So heat dissipation is almost negligible thus allowing smallest heat sinks and most compact form factors. Besides that Pure Class GD amp outperforms conventional Class D designs in terms of sound quality by implementing a fully differential signal path and improved output filter design.

ACO – Advanced 32 Bit CoProcessor

The HELIX V EIGHT DSP MK2 incorporates an extraordinary powerful 32 Bit CoProcessor of the latest generation for all monitoring and communication tasks, both internally and externally. In opposite to the 8 Bit predecessor generation this MCU achieves way higher speeds with respect to setup switching and data communication with our DSP PC-Tool software. A further significant advantage is the integrated, native boot loader of the CoProcessor.

It allows software upgrades of all components of the integrated DSP in order to adjust the microcontroller-controlled ADEP.3 circuit for example to future requirements of the diagnostic system of factory radios or if the device will be extended with additional interfaces. In addition, thanks to the new flash memory, the ACO offers 10 memory locations for sound setups instead of the common two.

Smart highlevel input ADEP.3

Modern, factory-installed car radios incorporate sophisticated possibilities of diagnosing the connected speakers. In particular the latest generation of car radios are equipped with additional monitoring functions so that failure messages and loss of specific features (e.g. fader function) quite often appear if an amplifier will be hooked up – but not with the V EIGHT DSP MK2.

The new ADEP.3 circuit (Advanced Diagnostics Error Protection, 3rd Generation) avoids all these problems without loading the speaker outputs of the OE radio during high volumes unnecessarily.

Start-Stop capability

The switched power supply of the HELIX V EIGHT DSP MK2 assures a constant internal supply voltage even if the battery's voltage drops to 6 Volts during engine crank.

Power Save Mode

The Power Save Mode is incorporated in the basic setup. It allows to significantly reduce the power consumption of the amplifiers that are connected to the HELIX V EIGHT DSP MK2 once there's no input signal present for more than 60 seconds. Please note that in many up-to-date cars with "CAN" or any other internal bus structures it may happen that the radio remains "invisibly" turned on for up to 45 min. even after locking and leaving the car! Once the "Power Save Mode" is active the remote output and therefore the connected amplifiers will be turned off.

The V EIGHT DSP MK2 will reactivate the remote output within a second if a music signal is applied. It is possible to either modify the turn-off time of 60 sec. or completely deactivate the "Power Save Mode" via the DSP PC-Tool software.

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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 a 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.