

HELIX P SIX DSP ULTIMATE

Enormous power and progressive DSP technology for the ultimate sound experience.

The P SIX DSP ULTIMATE 6-channel amplifier delivers enormous power and sophisticated DSP technology in perfect harmony. Up to 285 Watts RMS per channel into 2 Ohms and the integrated 12-channel signal processor with doubled processing power guarantee an incomparable sound experience in high-res quality. Our „ULTRA HD Class D“ philosophy focuses on combining the excellent sound characteristics of Class AB technology with the efficiency of a digital amplifier. In addition, the integration of numerous new functions and features, such as the ACO platform, the optical digital output and much more, make one thing clear: The P SIX DSP ULTIMATE is in a league of its own.

State-of-the-art Technology and TwinDSP power for the ultimate High-Res sound experience

The P SIX DSP ULTIMATE is equipped with two of the most powerful 64-Bit audio signal processors from Analog Devices. The incredible processing power of 2.4 billion MAC operations per second, combined with the high sampling rate of 96 kHz and the resulting audio bandwidth of over 40 kHz, as well as the BurrBrown A/D and D/A signal converters, ensure outstanding sound in High-Res quality. In addition, the complete audio signal path, including the new, more powerful power supply, has been optimized down to the last detail.

ACO – Advanced 32 Bit CoProcessor Platform

The P SIX DSP ULTIMATE is equipped with our proprietary 32 Bit ACO platform, which doesn't just take over all control tasks ultra-fast, but also handles a bunch of audio functions: Now, fantastic sound effects such as Augmented Bass Processing or Real Center are implemented as well as a channel-separated Input EQ including Input Signal Analyzer (ISA) for easy analysis and compensation of input signals of OE radios, which already include a sound setup ex works.

Optimal connectivity and flexibility

With its wide range of in- and outputs (6x high level, 6x RCA, 1x optical SPDIF, 1x coaxial SPDIF, 1x HEC slot, 4x line output & 1 x optical output), the P SIX DSP ULTIMATE offers everything for an easy adaption to existing factory radios or multi-channel OE sound systems. Additionally, the extended voltage range up to 32 V RMS allows the combination with almost any imaginable analog signal source, even with high-power OE amplifiers. Furthermore, the integration of the optical digital output enables a completely digital signal chain with downstream amplifiers, for example the P ONE MK2 or P TWO MK2. Last but not least, VCP (Virtual Channel Processing) is now included for the flexible and easy configuration of even highly complex sound systems.

DSP PC-Tool 5 feat. TuneEQ – Powerful features for ultimate sound experiences

Of course, the P SIX DSP ULTIMATE can be easily configured via our new, professional and exceptionally intuitive DSP PC-Tool 5. The well-known, numerous setting options with their extensive sound processing functions leave nothing to be desired and guarantee an extremely precise sound adjustment even under the most difficult conditions. And thanks to our new, easy-to-use TuneEQ function for automated frequency response correction, you also save a lot of time while optimizing your sound.

Special features:

Ultra HD Class D amplifier technology

Compared to conventional Class D amps, this concept achieves an extended frequency response to more than 40 kHz in combination with reduced distortion thanks to an advanced integrated feedback design. Ultra HD Class D achieves outstanding, "Class AB-like" sound quality combined with the efficiency of a Class D amplifier.

TwinDSP Power

The P SIX DSP ULTIMATE contains two of the most powerful 64 Bit audio signal processors from Analog Devices with the outstanding overall calculating power of 2.4 billion MAC operations per second.

The TwinDSP Power concept makes the twelve separately processed channels and the numerous new sound features in combination with the extended sampling rate of 96 kHz (resulting in an audio bandwidth of more than 40 kHz) possible.

Ready for 24 V

It is possible to operate the P SIX DSP ULTIMATE with a supply voltage of 12 Volts or 24 Volts (e.g. as usual in trucks) without the need to make any changes to the unit. In both operating modes the amplifier will have equal performance characteristics. This guarantees maximum flexibility for numerous applications.

ACO – Advanced 32 Bit CoProcessor

The HELIX P SIX DSP ULTIMATE incorporates an extraordinary powerful 32 Bit CoProcessor of the latest generation. This not only takes over all control tasks ultra-fast, but also the lightning-fast switching between up to ten possible sound setups. But ACO offers much more – besides a channel-separated Input EQ including Input Signal Analyzer (ISA) for easy analysis and compensation of input signals of OE radios and fantastic sound effects like Augmented Bass Processing or RealCenter, there is now the revolutionary TuneEQ function for automated adjustment of the output equalizers.

A further significant advantage is the integrated, native boot loader of the CoProcessor. It allows software upgrades of all components of the DSP in order to adjust the microcontroller-controlled ADEP.3 circuit for example at future modifications / changes in the diagnostic system of factory radios or if the device will be extended with additional interfaces.

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 P SIX DSP ULTIMATE.

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 P SIX DSP ULTIMATE 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 P SIX DSP ULTIMATE 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 P SIX DSP ULTIMATE 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.

Automatic Digital Signal Detection

Switching from analog input to one of the digital inputs is done automatically as soon as a signal is detected on the Optical or Coax Input. This feature can be deactivated in the DSP PC-Tool software. Alternatively you can use an optional remote control for manual switching between analog and digital inputs.

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DSP features

TuneEQ

TuneEQ is an extremely flexible and particularly easy-to-use function for automated frequency response correction. A single measurement per audio channel or channel pair with a suitable measurement microphone (e.g. our MTK1) is sufficient for TuneEQ to independently and precisely adjust the equalizers to the desired reference curve. TuneEQ

uses the full function set of the parametric equalizer including center frequency, Q-factor and gain adjustment. And since the highly complex arithmetic operations required for this run in the background, you also save a lot of time when optimizing your sound with TuneEQ.

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.