MATCH UP 10DSP

The premium sound upgrade for multi-channel factory systems

The new UP 10DSP is a real problem solver when it comes to upgrading premium sound systems in today's vehicles. Even though more and more vehicles are equipped with complex multi-channel sound systems ex works, the sound quality does not always meet one's expectations.
In many cases, a replacement is no longer possible, so that only an amplifier with a large number of highlevel inputs and sophisticated technology can be considered for upgrading the system. And here the new UP 10DSP offers the perfect solution.

Maximum connectivity

For optimal adaptation to existing multi-channel sound systems, the UP 10DSP is equipped with not less than 8 highlevel inputs (two high power inputs with up to 32 Volts), an optical digital input, a MATCH extension card slot, 10 amplifier outputs and a total of 11 processed DSP channels.
In addition, intelligent technologies, such as the proprietary ADEP.3 circuit and 32 Bit ACO platform, ensure safe operation.

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". But the UP 10DSP, thanks to its enormous number of channels in combination with the optional MEC ANALOG IN module, is also a prime example for applications where 1 to 1 routing (IOR) makes sense.

Speed is everything – thanks to ACO

Such a huge number of channels requires ultra-fast hardware – Audiotec Fischer's proprietary 32 Bit ACO platform takes care of 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.

Powerhouse in a compact format

Despite its huge output power of 8 x 65 Watts at 4 Ohms and 2 x 90 / 160 Watts at 4 / 2 Ohms at the Sub Outs, as well as the enormous feature set, the UP 10DSP comes in an extremely compact design, so that installation is possible even in confined spaces.

Features

- Ultra efficient 10-channel amplifier with 1-channel line output and 11-channel DSP
- Perfect for upgrading multi-channel factory sound systems
- Optional cable harnesses for easy integration into existing multi-channel factory sound systems
- 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 ADEP.3 circuit – two channels with up to 32 V RMS input sensitivity
- 1 to 1 Input / Output Routing (IOR) in combination with the optional MEC ANALOG IN module – same number of highlevel inputs and amplifier outputs
- Virtual Channel Processing (VCP) allows even more flexible configuration for highly complex sound systems
- MATCH Extension Card slot (MEC) for additional input / output modules like Bluetooth® Audio Streaming, High Resolution Audio Streaming via USB etc.
- Optical input in SPDIF format with sampling rate between 12 and 96 kHz
- Mono RCA output for the connection of an external amplifier e.g. subwoofer amplifier
- SCP (Smart Control Port) for optional accessory like WIFI CONTROL, DIRECTOR, CONDUCTOR & Co.
- Auto Remote switch
- Start-Stop capability down to 6 Volts supply voltage
- Compact design with low heat dissipation thanks to extraordinary efficiency

Spezielle Features

Class GD technology

Audiotec Fischer´s proprietary Class GD concept takes the efficiency of conventional Class D amps to the next level. By varying the internal supply voltage in several steps 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.

ACO – Advanced 32 Bit CoProcessor

The MATCH UP 10DSP amplifier 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 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. 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 a common amplifier will be hooked up - but not with the UP 10DSP.
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 MATCH UP 10DSP assures a constant internal supply voltage even if the battery's voltage drops to 6 Volts during engine crank. If the supply voltage drops below 10.5 Volts for more than five seconds the amplifier goes to "Protect mode" (Status LED lights up red) in order to avoid any further discharge of the car's battery.

Automatic Digital Signal Detection

The UP 10DSP allows signal-controlled switching between the analog inputs and the digital input. As son as an input signal is detected on the Optical Input, the amplifier automatically switches to this 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.

Power Save Mode

The Power Save Mode is incorporated in the basic setup. It allows to significantly reduce the power consumption of the UP 10DSP and potentially connected amplifiers 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 MATCH UP 10DSP 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..

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.