

# MATCH M 5.4DSP

## Miniature amplifier for powerful sound upgrades

The new M 5.4DSP is a true giant in terms of power, while being barely larger than a smartphone. With incredible 400/ 800 Watts RMS/ Max. output power and the latest DSP technology, it dramatically improves every standard sound system and brings real hifi sound into your car.

## Ultra-compact installation

In modern vehicles, the space available for sound upgrades is becoming increasingly limited and presents new challenges to installers. Thanks to its minimal dimensions, the M 5.4DSP can be mounted even in the most difficult space conditions and opens up new, unimagined possibilities in the choice of installation location.

In addition, the all-new Smart Control Port (SCP) offers a significantly more space-saving connection due to its extremely compact and securely locking connector. Via the SCP, all Audiotec Fischer remote controls – such as CONDUCTOR or URC.3 – can be connected and easily placed even in the smallest installation positions. In addition, the new Smart Control Port (SCP) offers a significantly more space-saving connection thanks to its extremely compact, securely locking connector. A direct power supply to the controller via the SCP is also possible, which makes an additional power cable unnecessary and simplifies installation even more.

## Performance & real Plug & Play on demand

The M 5.4DSP features two power modes, allowing it to run either in “HighPower” mode for maximum performance or in “MidPower” mode with reduced output power and lower power consumption for Plug & Play applications without a separate power supply cable. The MATCH range of accessories offers a large number of pre-assembled adapter cables for simple plug & play connection – and is therefore 100% upgradeable without leaving any traces.

## Maximum flexibility

The extremely powerful 64 Bit audio signal processor offers nine DSP channels. Four freely configurable RCA outputs allow the connection of additional amplifiers, such as the MATCH M 2.1AMP amplifier. This enables complex and space-saving multi-channel systems with enormous performance.

## Virtual Channel Processing – the new era of signal routing

To handle the mass of DSP channels and configure them in a user-friendly way the M 5.4DSP is equipped with Audiotec Fischer's innovative Virtual Channel Processing. Modern factory sound systems with an increasing number of inputs have a significant impact on the complexity of the signal routing inside the amplifier. Especially when several input signals are first mixed and afterwards split again into multi-way systems, conventional routing

concepts quickly reach their limits. Audiotec Fischer's new multi-stage "Virtual Channel Processing", in conjunction with the well-known and user-friendly DSP PC-Tool software, makes highly complex system configurations look easy. On top, it allows to freely assign our proprietary FX sound features such as "RealCenter" or "Augmented Bass Processing".

## **ACO – Advanced 32 Bit CoProcessor platform**

The M 5.4DSP features the extremely powerful 32 Bit ACO platform. It takes care of all control tasks and is faster than traditional systems, especially in data communication with our DSP PC-Tool software. The ACO Platform even introduces lightning-fast switching between up to 10 sound setups. But ACO offers much more – fantastic sound effects such as Augmented Bass Processing or RealCenter are easy ways to maximize the sound experience. Additionally, the channel-separated Input EQ including the Input Signal Analyzer (ISA) allows easy analysis and compensation of input signals provided by modern radios and head units.

## **Features**

- Ultra efficient 5-channel amplifier with 4 line outputs and 9-channel DSP
- Minimum dimensions for stealth installation concepts
- Two power options: "HighPower" mode for maximum performance and "MidPower" mode with reduced output power and lower power consumption for Plug & Play applications
- Plug & Play installations without separate power supply in "MidPower" mode
- Extremely powerful "fixed point" audio DSP with 64 Bit resolution
- 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.
- Optical input in SPDIF format with sampling rates between 12 and 96 kHz
- Smart highlevel input with ADEP.3 circuit and Auto Turn-On function
- VCP (Virtual Channel Processing) allows even more flexible configuration for highly complex sound systems
- Auto Remote switch
- Start-Stop capability down to 6 Volts supply voltage
- Freely configurable 4-channel line output for the connection of additional amplifiers
- Subwoofer connection cable for MATCH Plug & Play and conventional subwoofers included in delivery
- SCP (Smart Control Port) for optional accessory like WIFI CONTROL, DIRECTOR, CONDUCTOR & Co.

## **Special 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 M 5.4DSP 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.

## **Start-Stop capability**

The switched power supply of the MATCH M 5.4DSP assures a constant internal supply voltage even if the battery´s voltage drops to 6 Volts during engine crank.

## **Two power options**

The M 5.4DSP has two power modes – the “HighPower” mode for maximum performance and “MidPower” mode with reduced output power and lower power consumption for Plug & Play applications.

## **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 is 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 M 5.4DSP.

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.

## **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.