

Musway Tune12 - 12-channel DSP for complex sound systems



RECOMMENDATION

Sound processor

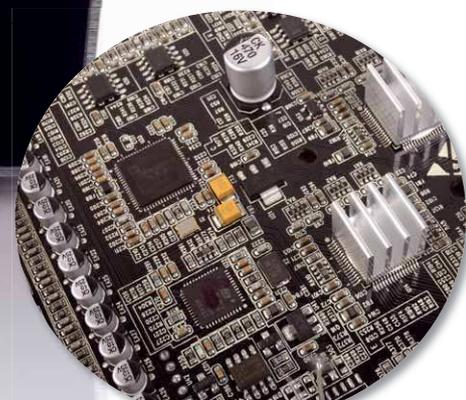
CAR & HiFi 3/2021

DSP für die große Anlage

► This year Musway is setting off a veritable DSP fireworks display. The Tune12 is the second model that we have have to test in the editorial office.

There are only a few wolf-channel DSPs on the market. For a normal car audio system, the eight-channel models are just fine - and there is a good selection of them. But if you want to supply the entire equipment of modern vehicles with DSP power, you need more channels. Multi-way front system, center, rear doors and possibly the rear pillars, factory speakers are installed almost lavishly, at least in high-class vehicles. And subwoofers for the fun factor are also a great thing. It is therefore a good thing that Musway is now one with the Tune12

Bring sound processor, which with 220W offers ample reserves. This makes it possible, for example, to control an active three-way system, rearfill, center and sub completely via DSP. Of course, this requires a lot of computing power, so it's no wonder that the Tune12 is also part of the new 2021 generation at Musway. As with the DSP68, which we presented in the last issue, the Tune12 also relies on completely new hardware. A 32-bit controller controls the device and the ADAU1452 from Analog Devices is used as the DSP chip. This chip with 32/64



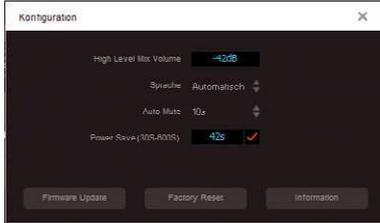
An ADAU1452 DSP creates the 12 channels without compromising on the processing equipment

Bit computing depth is currently the means of choice for audio signal processing and is preferred across the industry. Twelve channels are no problem for the 1452, at least as long as it's not about HiRes audio. The latter requires twice the sampling rate, which also uses twice the computing power. Therefore, the Tune12 (as with all comparable designs) has the good old frequency range up to 22 kHz at the back. This is nothing but CD quality,



Sockets: 12 x output, 6 x low level input and 2 x aux input. The three gain controls handle high-in, low-in and aux

In the main window, the twelve channels are crowded together. Sources, groups EQs, levels and crossovers are clearly displayed



The setup menu contains the sensitivity setting for the high-level mix as well as the time settings for auto mute and power save

so perfectly good enough for the vast majority of users. Of course, the Tune12 needs the appropriate converters for its twelve channels, and the engineers have given it plenty of equipment here. Three 24-bit codecs from Burr Brown, each with six AD and eight DA converters, are available, which is even one more than you would theoretically need.

Furnishing

The Tune12 also shines as one of the few on the market with eight high-level inputs, which can also be used to adapt complex active factory systems that deliver a filtered signal to the numerous loudspeakers. Those who prefer the cinch low-level inputs will find six inputs, plus a stereo aux input as an additional source. Other sources are the digital input, which is luxuriously both optical and electrical / coaxial. The Bluetooth input also serves as a digital source for wireless music streaming, with automatic switching when a signal is received. For this, however, the optional BTS module is required; those who also need programming via smartphone app can access the BTA2.0 directly, which can do both. There is also a recommended display remote control for amenities such as source selection, level control and more. Finally, with the in-house EPS, the Error Protection System is on board, which prevents the otherwise due error message on factory radios with loudspeaker diagnosis by pretending to be a loudspeaker.

software

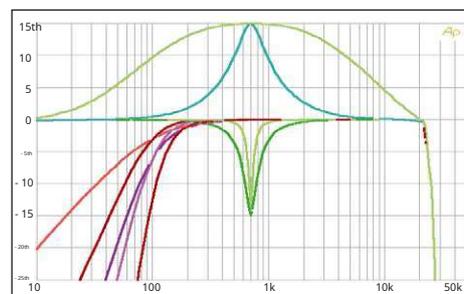
Of course, the Tune12 also comes with the new generation of desktop software, the

in function and presentation there is no mystery. All inputs can be routed to the outputs, with an automatic summation taking place if necessary. To preserve the vehicle tones, there is the high-level mix, which automatically switches back to the factory radio when navigation announcements or parking assistance are received. New goodies are the auto-mute function, which ensures peace and quiet, and the power-save function, which switches off the retrofit system if the factory radio "continues to run" when it is switched off. All of this can be switched on and adjusted individually. Of course, the Tune12 also masters the good old audio functions. Thanks to the powerful DSP, the full program is available for all twelve channels. We have 31 EQ bands per channel, a 0.02 ms / 7 mm time correction and bandpass crossovers up to 48 dB / oct. Edge for each of the twelve outputs. You can live with that, even if there is no possibility of influencing the entrances. Overall, the Tune12 is generously equipped with everything you need to control amplifiers and some integration features.

Conclusion

With its twelve channels, the Musway Tune12 offers the possibility of processing extensive sound systems. One can need.

Elmar Michels



The Tune12 offers a frequency response of up to 22 kHz and fully parametric EQs. The crossover ranges from 6 to 48 dB / oct.

Musway Tune12

price	around 700 euros
distribution	Audio Design, Kronau
Hotline	07253 9465-0
Internet	www.audiodesign.de

Technical specifications

Dimensions	220 x 135 x 38 mm
Entrances	<ul style="list-style-type: none"> • 8-channel high-level with autosense, gain control • 6-channel RCA, gain control • 2 x digital S / PDIF (optical and coaxial) • 1 x Aux (RCA, stereo) with gain control • Sensitivity 8 V (RCA), 24 V (high level)
Outputs	<ul style="list-style-type: none"> • 12-channel RCA • Remote out
DSP software (V 3.1 being tested)	
Equalizer	<ul style="list-style-type: none"> • Fully parametric EQ on outputs, 31 bands per channel • 20 - 20k Hz, 1 Hz steps • + 15 - -15 dB, Q 0.1 - 10
Crossovers	<ul style="list-style-type: none"> • 20 - 20k Hz, Butterworth, Bessel, Linkwitz, 1 Hz steps • Edge steepness up to 48 dB / oct.
Time and level	<ul style="list-style-type: none"> • Time correction (48 kHz), up to 17.7 ms / 601 cm, 0.02 ms / 7 mm steps • Phase reversal 0, 180 ° • Level adjustment of outputs in 0.1 dB steps, mute function
Furnishing	<ul style="list-style-type: none"> • 6 presets • Inputs and outputs can be routed as required • Start-stop capability up to 5.9 V • EPS (Error Protection System) for diagnostic function • Automatic switching to Bluetooth • Controllable switching to high level for vehicle tones • Reversing signal-controlled switching to high level for vehicle tones • Auto-mute function • Power-save shutdown of the system
Optional accessories	<ul style="list-style-type: none"> • Bluetooth dongle BTS (audio streaming) • Bluetooth dongle BTA 2.0 (audio streaming and app control of all functions) • Remote controller RC1 (Volume, bass level, sources, setups)

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Musway Tune12

"Processor power for twelve channels."