

Musway M4+ - 4-channel DSP power amplifier at an affordable price



Plug&play mit DSP

After amplifiers with 6 and 8 channels, Musway brings the four-channel M4+ with DSP. We put them to the test.

If you cannot or do not want to afford a high-end system with a multi-channel amplifier and sound processor, Musway is the right choice. The recently renovated M6 was already a cheap offer as an entry into the world of DSP power amplifiers, but now the M4+ is another affordable model. With that, there are now three Musway amplifiers with 8, 6

and now 4 amplifier channels, so there is something for everyone. The new M4+ comes in the same housing as the M6, just with 4 amplifier channels, which are a bit more powerful. The DSP has 8 channels, so we have four low-level outputs. This makes the M4+ ideal as a control center for extensive hi-fi

systems in which additional amplifiers, e.g. for rearfill and subwoofers, can be controlled with a processed signal. In order for the integration into the vehicle to be successful, the M4+ has 6 high-level inputs for direct connection to the speaker lines, plus there is a circuit with the EPS (Error Protection System) that works radios with diagnostics



The app offers almost full functionality, here with equalizers and frequency response display



The main window offers everything at a glance. The operation is not a problem on the PC

function immobilised. The inspection of the factory loudspeakers is outwitted, which would otherwise raise an alarm if an aftermarket amplifier is attached to the factory radio instead of the original loudspeaker. For perfect hardware adjustment of the signal levels, there is an internal jumper that controls the input sensitivity and impedance for high or low level operation. Of course, all Musway accessories also work with the M4+. A display remote control, two Bluetooth dongles for audio streaming and app control and a veritable selection of adapters and wiring harnesses for plug&play installation in all vehicle brands are optionally available. Wireless music streaming in particular makes the M4+ extremely attractive in this price range. We also like the digital input, it is

likewise by no means standard in the affordable market segment. The scope of delivery includes a ready-made 2.5 m cable harness on ISO plug connections, if you need something else, as mentioned, you will find an alternative. After unscrewing it, we find one clear structure. A third of the plate surface is occupied by the voltage supply with a flat-wire transformer. Next to it is the power amplifier, of which almost only the four encapsulated coils for recovering the signal after Class D amplification can be seen. The amplifier job is done by two ICs that are mounted on the underside of the circuit board on the heat sink. They are bridgeable types, so the M4+ can also drive two 4 ohm loads in the

can drive bridge operations. Last but not least we find the signal processor on a small daughter board. The 32-bit DSP from Texas Instruments is supported by a converter chip from TI that handles both analog-to-digital and digital-to-analog conversion.



The M4+ is very clearly structured. The DSP components are on an extra circuit board



Technical specifications

- Dimensions 200 x 150 x 44 mm
- inputs
- 6-Kanal High-Level mit Autosense, optionally 6-channel RCA (with adapter)
- 1 x digital S/PDIF (optical)
- 1 x Aux (RCA, Stereo) with Gainregler
- Empfindlichkeit 4,5 V (RCA), 11 V (Hochpegel)
- exits
- 4-channel RCA (processed)
- Remote-out
- DSP software (GV 1.08 in test)
- Equalizer
- Fully parametric EQ on outputs, 31 bands per channel
- 20 – 20kHz, 1Hz steps
- +12 – -12 dB, Q 0,4 – 29
- crossovers
- 20-20k Hz, Butterworth, Bessel, Linkwitz, 1 Hz steps
- Edge steepness up to 48 dB/oct.
- time and level
- Time-of-flight correction (48 kHz), up to 20.4 ms/692 cm, 0.02 ms/7 mm increments
- Phase reversal 0, 180°
- Level adjustment outputs 0.1 dB steps, mute function
- Furnishing
- Inputs and outputs can be routed as required
- Start-stop capability up to 7.3 V
- EPS (Error Protection System) for diagnostic function
- Automatic switching to Bluetooth
- Controllable switching to high-level for vehicle sounds
- Choice of high-level or RCA inputs
- Optional accessories
- Bluetooth-Dongle BTS (Audiostreaming)
- Bluetooth dongle BTA (audio streaming and App control of all functions)
- Remote-Controller DRC1 (volume, bass level, sources, setups)
- RCA-Adapter MPK-RCA6, MPK-RCA6-PP for ISO
- Vehicle wiring harnesses (Mercedes, BMW, Audi, etc.)

The M4+ offers four processed outputs and the option of Bluetooth and a wired remote control



Software

The software is already known from the other Musway DSP products. In the main window we find the 8 channels lined up next to each other with the settings for level, mute, link, runtime and the routed input. Crossovers and EQs are displayed large for the active channel. There are bandpass crossovers up to 48 dB/octave in three characteristics for all channels. The EQ bands can be set fully parametric, and there is also a runtime correction of the outputs in 7 mm steps corresponding to the sampling rate of 48 kHz. All of this is presented in a very clear manner, so that the installer is never puzzled. The integration features include high-level mixing, with which an automatic fade to vehicle sounds

ask. So come Navi or reversing

warners even when music is being streamed. This gives you access to a variety of factory systems and all the audio functions for a full-fledged car hi-fi system. The Musway only has to fit with really nasty factory systems, because there is no separate input area with corrections for time correction ex works or phases bent by all-passes. Finally, the app should be mentioned, which offers almost the full functionality of the desktop software. With the right Bluetooth dongle, you can not only stream music, but also set the DSP wirelessly.

measurements and sound

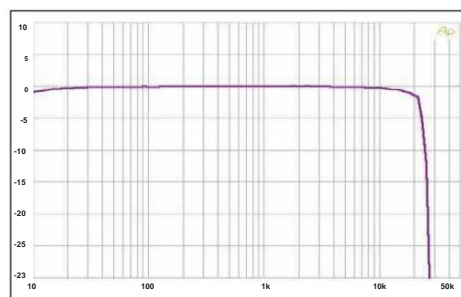
In the measurement laboratory, the M4+ first scores with full performance. 100 and 150 watts are available at 4 and 2 ohms, making the compact M4+ one of the amplifiers with enormous power density. The whole thing takes place mainly between 0.1 and 0.2% distortion, which is ok but not outstanding. All other measurements give no cause for complaint. Fat performance, fat sound? Oh yes, because the M4+ plays powerfully and delivers at all times

rich sound. The bass range pushes nicely and is not stingy with volume, so that it never sounds undercooled. The M4+ accurately reproduces voices and instruments, and the trebles are also pleasing with a wealth of detail, but without exaggerations. The spatial impression is convincing, because the M4+ represents what is happening believably. Overall, it delivers a very good sound performance that should appeal to many listeners.

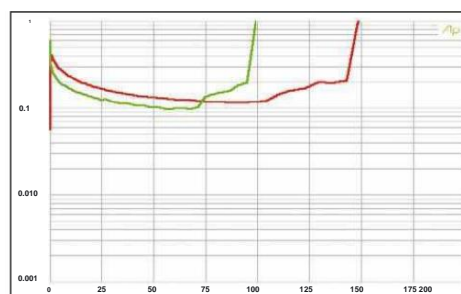
Conclusion

The Musway M4+ scores with amplifier performance, easy connection in the vehicle and its DSP audio features. The inexpensive option of retrofitting Bluetooth streaming and app control makes it particularly attractive.

Elmar Michels



Due to the sample rate, the tear-off edge is at 22 kHz



With 100 watts already at 4 ohms, the small M4+ is a powerful power amp that drives every component. At 2 ohms there's even 150 watts per channel or 300 watts in a 4-ohm bridge

EMV TIP
Undisturbed radio reception
CAR & HiFi 6/2020

Musway M4+

distribution	Audio Design, Kronau	
Hotline	07253 9465-0	
Internet	www.musway.de	
Klang	40 %	1,3 yyyyyy
Bassfundament 8 %		1,0 yyyyyy
neutrality	8 %	1,0 yyyyyy
transparency	8 %	1,5 yyyyyy
spatiality	8 %	1,5 yyyyyy
dynamics	8 %	1,5 yyyyyy
Labor	35 %	1,9 yyyyyy
performance	20 %	2,0 yyyyyy
Damping Factor 5% —		
signal-to-noise ratio 5%		1,5 yyyyyy
Klirrfactor	5 %	2,0 yyyyyy
practice	25 %	0,8 yyyyyy
equipment	15 %	0,5 yyyyyy
proc. Electronics 5% proc.		1,5 yyyyyy
Mechanics 5%		1,0 yyyyyy

Technical specifications

Channels	4
Power 4 ohms	98
Power 2 ohms	146
Power 1 ohm Bridge	0
power 4 ohms Bridge power	292
2 ohms Sensitivity max. mV	0
Sensitivity min. V THD+N (<22 kHz)	1500
5 W THD+N (<22 kHz) Half	4,4
load signal-to-noise ratio dB(A)	0,189
	0,097
	87
Damping factor 20 Hz	-
Damping factor 80 Hz	-
Damping factor 400 Hz	-
Damping factor 1 kHz	-
Damping factor 8 kHz	-

factor 16 kHz Features

Low-pass	10 – 20k Hz
High-pass	10 – 20k Hz
Band-pass	10 – 20k Hz
Bass boost	-12 – 12 dB/10 – 20k Hz
Subsonic filter	via HP
Phase shift High-	0, 180°/LZK via DSP
level inputs • DC	
automatic switch-on (Autoscythe)	
RCA outputs • 4CH processed	
Start-stop capability • (7V)	
Dimensions (L x W x H in mm)	200 x 150 x 44
Miscellaneous DSP, digital input	

valuation

Price	around 550 euros	
Klang	40 %	1,3 yyyyyy
Labor	35 %	1,9 yyyyyy
Practice	25 %	1+ yyyyyy

Musway M4+

Absolute top class	1,4
top class	
upper class	
middle class	
entry level	Price / offer: Very good

CAR & HiFi

"Lots of power and DSP."

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