

# Desired sound

Multi-stage sound retrofit in C- and E-Class with Match components



► In the current Mercedes vehicles, there are more than enough demand and opportunities to boost the original sound. Here we present a sound concept that offers suitable upgrade solutions for every budget and every requirement.

The upper middle class of Mercedes fully complies with its premium standards. Especially since the model update in 2018, a new head unit was only placed in the dashboard that offers a lot for the eye and makes

a quite empowering visual impression in general. As for the ear, the vehicles do not meet the actual premium requirements, at least not with the cheaper equipment options. Our test object is a C-Class with a standard radio, in which front speakers, rear speakers and a single bass speaker are installed as default option for this type of vehicles. Anyway, the front system is a two-way system with a separately installed twee-

ter, while in the rear doors there are coaxials. However, the specialty of the C and E series is the installation of the woofer. It is hidden in the footwell and is mounted in the engine spray wall. In case of a smaller equipment, we are speaking about a single 6.5" bass, but there are mounting positions on both the driver's and passenger's side, so retrofitting with two bass drivers is no problem.



The first stage of the sound upgrade requires only the DSP amplifier Match M 5DSP MK2 and a 20 cm UP W8MB series woofer. The plug&play connection cable for Mercedes is available



In our case, there are installation spots for a two-way component system in the front doors of the C-class

## Retrofit with Match

The latest releases of the Schmallenberger Match brand include Mercedes speakers for all possible mounting holes. Of course, all speakers are developed in-house with baskets and parameters designed specifically for Mercedes. The 4" coaxial systems can fit front or rear, there is a two-way component system of front speakers. For vehicles with higher priced factory equipment, there are surround speakers for the very rear column, and a center speaker is also available. Not only does this small broadband fit into the Benz dashboard, it also brings the second voice coil for the SOS emergency call. The basses are also thoughtfully designed and differ considerably from the factory equipment as well as from the competition. Instead of the original 6.5" drivers, they house 8" speakers, that are developed to the point. Due to the mechanically defined stroke limitation, the drivers are fully optimized for efficiency, so that 80 watts are perfectly sufficient for operation. The voice coils are the 4-ohm type, as they are lighter than 2-ohm coils at the end and thus enable more efficiency. They also allow the use of two parallel basses at one single amplifier channel — we will come back to this application later. The installation of the speakers is not rocket science, of course the door panels must be removed, which is, however, not a challenge for a professional installer. The footwell woofers are planted behind the brake pedal or control units, but this installation can be done within a short time.

If you want a little more bass, install 20 woofers on both sides. The standard equipment includes only one footwell woofer.

## Stages of expansion

However, the simplest type of sound retrofitting leaves the original loudspeakers untouched. Only the tiny DSP amplifier Match M 5DSP MK2 (tested in this edition) wanders into the Mercedes, namely to Plug&Play behind the original radio. For this, there is a ready-made harness available that connects the MQS plugs of the vehicle to the Molex strip of the M 5. This installation is done in no time, also because no need to add any new cables. The power amplifier is operated in the midpower mode, so that it does not draw more power than the cables allow. Of course, there is nothing wrong with using the full capacity in high-power mode, but it works better with a new power line connected to the battery. The five channels of the M 5 supply the front, rear and sub, that is one or two footwell woofers. The cooperati-

on with the Mercedes radio is effortless, in our case the analysis function of the inputs (ISA Input Signal Analyzer) has shown that the vehicle provides a somewhat deformed frequency response, which could be straightened in the input EQ of the M 5DSP MK2. In addition to the ISA, the amplifier also has an RTA measurement with an external microphone. Thanks to the DSP you can already create a sound that is fantastically superior to the original. Especially the unique FX algorithms in the "PC Tool" Match software make it possible to get the maximal performance out of it. With the bass processing, you can enhance the output from both woofers and spare the bass speaker.

In addition to the small amplifier, the next step towards a better sound is the bass upgrade with one or two 8" units. The bass quality is definitely profiting from it, and so far



we have a perfect cost-effective upgrade for leased vehicles in front of us, which is likely to be available for less than 1000 euros due to the minimum installation effort. The replacement of the speakers proves that the sound quality is yet far from final. Even the addition of the two-way front system and the coaxial rear system does not cost the earth. The sound at this stage of upgrade can be not only heard, as we managed to find out.

As a premium upgrade, we replace the small M 5DSP MK2 with a Match UP 7DSP, whose 7 amplifier channels offer more possibilities, and which also brings in a bit more power. The seven channels are distributed on Stereo Front, Stereo Rear, Stereo Woofer and Center. This gives us a chance to fully enjoy the power of the sound processor. This upgrade level is not only recommended for lovers of a real center channel, which is generated here again with the FX algorithms of the PC-Tool. For example, this can also be implemented in a family car. The UP 7DSP can be retrofitted with Bluetooth audio streaming, which you can easily route to the rear speakers for holiday trips. Thus, the rear seat passengers enjoy their entertainment while in the front there is navigation and radio. But even as a pure hi-fi retrofit, the UP 7, in combination with the speakers and the correct DSP setup, delivers an impression that convinces even critical listeners.

### Hearing Check 1

But first we allow this small unit to show what's going on. Our C-Class features the M 5DSP MK2, Match front and rear speakers and a single 8" bass driver. The first impression

is that there is already more than enough bass. The system plays flawless tones, and it's a pleasure to listen to sophisticated pieces. Nice creaky male voices sound great and there is nothing to complain about with the high-pitched details. Then we add the second bass to it, and the sound becomes even more mature. We take care of the sound balance via the app, as the WIFI Control module is docked to the M 5DSP MK2, so that the sound control always on time. The bass now appears more contoured and somewhat drier, and the staging has improved. As for SPL, the whole thing is already very impressive, especially the bass power is amazing for such a small equipment. At this point, we already have a sound that can clearly be labeled as „nothing left to be desired“ and brings a lot of sound for a component price of 1130 to 1350 euros.

### Hearing Check 2

The second part is the full upgrade stage, consisting of a UP 7DSP, two-way front system, rear system, center and two 8" bass drivers. When the music is playing, there is no doubt that the sound has taken another good step forward. The small equipment was already impressively good, but now with UP 7 & Co. it is really brought on the top level. The sound comes incredibly dynamically to the ear and it is really amusing to play with the volume control. The best part is that even if everything is switched on to the limits, the system still plays clearly and undistorted. This is ensured by the dynamic bass processing, which still works even if the bass controller is switched even higher up on the Mercedes radio. Compared to the small solution, not only does the dynamics

increase, but the voices also get a bit more mellifluousness and the two 8" woofers are delivering a hell of performance and a clean bass that you could hardly imagine. The stage mapping gains more presence through the center and impresses with enormous stability. Overall, the system makes music at a very high level, not bad for a "quick and simple" retrofit solution.

### Conclusion

The combination of an easy-to-connect DSP amplifier and vehicle-specific loudspeakers results in a retrofit kit that can be used to conjure up convincing sound in your Mercedes car. The Match components have proven themselves excellently, be it due to the almost infinite features of the DSP amplifiers or simply thanks to the good sound. Thus, inexpensive, retrofittable and excellent sounding sound upgrades can be made to suit every demand and budget.

Elmar Michels



### Mercedes C220d

Installer	Audiotec Fischer, Schmallenberg		
Hotline	02972 9788 0		
Internet	audiotec-fischer.com		
▶ Sound	70 %	1,0	■■■■■
Bass foundation	14 %	1,0	■■■■■
Neutrality	14 %	1,0	■■■■■
Transparency	14 %	1,0	■■■■■
Soundstage	14 %	1,0	■■■■■
Dynamics	14 %	1,0	■■■■■
▶ Practice	30 %	1,3	■■■■■
Installation	15 %	1,5	■■■■■
Features	7,5 %	1,0	■■■■■
Handling	7,5 %	1,0	■■■■■

### Components

Headunit	original	-
Amplifier	Match UP7DSP	
Front speakers	Match UP C42MB-FRT	
Foot well woofers	Match UP W8MB-S4 LHD	
Center speaker	Match UP S4MB-CTR	
Rear speakers	Match UP X4MB-FRT	

### Rating

System price			
Sound	70 %	1,0	■■■■■
Practice	30 %	1,3	■■■■■

### Mercedes C220d

**Top Class**  
Price-Performance:  
excellent

**1,1**

**CAR & HiFi**

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„Modular upgrade concept for Mercedes“