

Masterful Mercedes



Achieving a wonderful car audio experience in a vehicle stuffed to the gunwales with BUS-connected gadgetry is not a job for the faint hearted. This Mercedes E220 estate has been seamlessly modified to provide a step-change in driving pleasure thanks to canny FOUR MASTERS application of some clever technology from Audison.

Lifelong audiophile and co-founder of FOUR, Jas Dahele spends most of his waking hours talking to people about car audio and admits that sometimes he can become lonely at parties due to his constant enthusiasm for the subject. He therefore set himself the challenge of building a demonstration vehicle, promising friends that if they gave up some time to listen to it, he would bore them no longer.

The challenge was to design and build a system that would provide a true hi-fi

experience without compromising any of the on-board systems or the look and feel of his pride and joy. Fortunately, Italian manufacturer of high quality car audio products, Audison, offered him access to some clever little boxes, which would help him to achieve his goal.

FOUR MASTERS always advocate the use of high quality interconnects from Connection. This helps to reduce any loss and reject extraneous interference from other on-board devices. Low-level analogue signals between source unit and amplifier input are the most vulnerable to signal degradation but, in this case, the audio signal was picked up at a MOST connector at the rear of the vehicle and fed digitally, utilising an Audison bit 10 interface along with a revolutionary Audison Voce 5.1K amplifier with AV bit IN digital interface. Digital signals are far less vulnerable to degradation by outside interference and the 24 bit/96 kHz digital signal used here actually exceeds the quality of 16 bit CD.

Back to the music, Jas has been around good and bad audio for many years and knows exactly what attributes a

system needs to offer excellent all-round performance across many musical genres, essential for this project. The on-board digital signal processor (DSP) in the Audison bit 10 is able to shape the audio signal coming from the Mercedes' source unit and enables the selection of different settings via the remote control concealed in the ashtray but ultimately, the choice of speakers and amplifier was absolutely critical.

Jas chose a pair of Audison Voce AV-K6 speakers for the factory positions to demonstrate just how much better a properly designed system will work, even given the constraints imposed by the car maker's design team. These most typically revolve around poor speaker placement, which makes good stereo imaging and a solid sound stage near impossible with anything other than high quality speakers driven with a clean signal and plenty of power.

Speaker design continues to improve slowly but significantly and Voce speakers represent the current pinnacle of achievable audio excellence. Cotton fibre



and compressed paper six inch cones are suspended in an open-air basket specifically designed to reduce back-wave reflection and aid transparent reproduction, rather than flavouring the sound by introducing unwanted resonance. Yet they fit into the same positions as the factory speakers and without the ring of LED's used to highlight them in this install, they are completely unnoticeable. Similarly, the silk and cotton dome tweeters are fitted in the factory positions. The tweeters contain proprietary damping technologies enabling them to run up to ultrasonic frequencies without distortion. The result offers unrivalled clarity and an engaging musical sound that allows the listener to hear nuances usually only associated with expensive home systems.

One of the main differences between a run-of-the-mill sound system and the one in Jas' car is separation – the ability to pick out individual instruments from a wall of sound. Separation is only possible with a wide dynamic range (difference between loud sounds and quiet sounds) and that is achieved through distortion-free power. Jas therefore chose the innovative Audison AV-5.1K 5-channel amplifier allowing him to run dedicated power to the tweeters via two class-A channels delivering 75 Watts RMS per side and the six-inch cones (mid-bass) driven by two channels of class-AB amplification at 250 Watts RMS each. This left a single 1,000 Watts RMS, Class-D



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channel to drive a 12-inch subwoofer mounted under the floor in the load space.

Many are put off by the term 'subwoofer', due to its links to huge boxes full of speakers crammed into the back of a hatchback in the 90's, which pumped horrible bass distortion into the atmosphere much to the annoyance of local residents and passers-by. The subwoofer in Jas' car could not be further from this and the bass and sub-bass frequencies reproduced by the Audison Voce AV 12 form a vital part of the overall audio experience. Bass and sub-bass frequencies require the most energy to reproduce, which is why this sub is driven with 1,000 Watts RMS. This is not so that the neighbours can hear it but to keep those power hungry frequencies balanced with the rest of the system. A little power is kept in hand as the rumble from tyre-on-road will effectively drown

Music 4 Driving

Recommended by Jas

Adele - 21

Ed Sheeran - +

Dizzy Rascal - Tongue n Cheek

Ministry of Sound - The Sound of Dubstep 2

Nitin Sawhney - Last Days of Meaning

out these frequencies, leading to the loss of the double bass and the low thunderous element of timpani in orchestral music or bass synthesiser and electric bass guitar in other genres. Good in-car bass reproduction not only needs seemingly unholy amounts of power but also some air space behind the speaker. The amount of air space required has reduced dramatically over the years and the subwoofer in this instance is mounted in a custom enclosure fitted neatly into the redundant spare wheel well. With a can of tyre sealant and run-flat tyres, who needs to specify an expensive spare wheel these days?

Climbing into Jas' car you wouldn't know that it was anything other than straight-from-factory spec. However, listen to a CD and you will forget everything else about the car, the sound sweeps you away to places you simply couldn't drive to. The sound of your favourite artist seems to just appear in front of you and give you a big hug as if saying thank you for listening!

Equipment List

- ▶ Audison VOCE AV 12 subwoofer
- ▶ Audison VOCE 5.1K Amplifier
- ▶ Audison AV bit IN Digital Interface
- ▶ Audison bit 10 Digital Signal Processor
- ▶ Audison Voce AV K6
- ▶ Connection cables and accessories
- ▶ Skinz Expert Damping

