

ARE FRIENDS ELECTRIC?

Electric cars have been on our mind for a while. What will they do for the music-loving driver? – This fine example has certainly put my mind at rest!





Hertz Mille tweeters and mid-range speakers sit behind the standard grilles

Every now and again in business it is necessary to take stock and carry out a SWOT analysis. The "T" in SWOT stands for "Threats" and I have harboured a secret concern that electric cars would sound the death knell for car audio due to excessive current draw. I was relieved to discover a Tesla with a multi-amplifier system, processor and set of 3-way components and subwoofer installed. Furthermore, the owner of this remarkable vehicle claims not to have noticed any effect on the range. I was invited to take a closer look.

Do Androids Dream Of Electric Sheep? is a novel written by a sci-fi writer called Philip K. Dick in 1968. It was the book that the movie Blade Runner is based on and the same author wrote many challenging stories about how the future may look. Many were dystopian yarns with hidden warnings about how technology would someday overtake the need for human beings. This still hasn't quite happened yet and most of us seem to be regularly called upon to put some effort in to make machines do the most basic of things. Had he not died in 1982, I wonder what he would make of the Tesla. To my mind it pushes the automotive world to the max. Although I am not yet ready to put my life entirely in the hands of a machine, there is no doubt that as an accumulation of technological know

how, it is a realisation of many of the boyhood dreams I had (except for the ability to fly of course).

However, one area that has not changed is that of in-car entertainment, which in this car is not actually very entertaining at all. Yes, there is a fancy control surface that looks like a tablet and you can stream tunes from Spotify although not 320kbps and no CD slot. Speaker positions and quality are as rank as they are in any other car, which is great for the car audio aftermarket providing that we do not over do the power draw. It would be awful if the Tesla slowed down proportionally to the sound level coming out of the audio system or that the range dropped by 50% or something.

Fortunately, we have the best minds at work in the aftermarket. Minds agile enough to come up with ways to minimise any negative effect on the power unit. This coupled with the comparative quiet of an electric motor over an 8-cylinder petrol engine means that there is as much if not more scope to establish a really nice sound stage in the vehicle.

Simon Longmuir, one of several ace installers at FOUR MASTER John Kleis has already achieved this by helping specify and then installing the equipment in this vehicle. Much of the work is similar to that on a normal car including the copious amounts of sound deadening used in the doors. However, Simon did choose to utilise Audison Prima amps due to their power management systems that help to avoid heavy spikes of current consumption via some clever Italian thinking!

Tesla sits at the high-end of electric vehicles. Far from just a city run about, the revolutionary technology in this vehicle equips it for journeys greater than 300 miles at 60 MPH. An expanding network of Tesla superchargers provide free, high-speed charging to lucky owners. Now, this is a £100K vehicle with all of the bells and whistles selected. The after-sales service is fantastic and far reaching including the aforementioned free charging and free airport courtesy parking listed amongst many other benefits.

The vehicle I got to see is a Model S P85D and as the name suggests the battery is capable of providing up to 85KW of power and is astonishingly quick off the mark. In fact, sitting in the passenger seat while my driver for the day launched the car to 60 MPH in less than 3 seconds left my cheeks stretched like I was in a Wallace and Gromit movie. Experiencing that kind of raw power with absolutely no engine noise is very weird but also offers a quiet listening environment - perfect for an audio upgrade.

With even a small amount of scientific knowledge, most people will have worked out that everything added to an electric car that uses electricity is going to affect either performance or the range of the vehicle. I was somewhat



Three Audison Prima amplifiers are situated underneath the bit One housed in an optional stacking tower



Audison bit One processor controls the final sound and allows for fine tuning

surprised that so much amplification had gone into the audio system. However, the system is built around Audison Prima amplifiers. These are not short of the odd ounce of power management technology themselves and are perfect for this vehicle.

Development manager Lorenzo Quattrini of Audison explained to Driving Sounds that Audison has developed a unique current absorption limiter to manage current draw. The main motivation for this development was to allow Audison Prima amplifiers to be run directly from the factory wiring of a head unit allowing for plug and play harnesses to be developed to make installation much easier and quicker.

An algorithm is used to limit current draw momentarily under heavy transient activity within a piece of music. The music is analysed and transient trends are predicted in order to limit current draw at critical “moments” in order to keep average current draw below an installer selectable level. Current draw in the power supply is monitored in real time. As a result, there is no danger of blowing a fuse or damaging the wiring used to power the amplifier. As the monitoring system works in real time, the sonic effects are not noticeable at all. This highly sophisticated system took some four months to hone and make stable.

Such power management systems are perfect for hybrid and electric vehicles and should ensure that high quality audio upgrades have little or no effect on the performance of the vehicle.

While designing the system Simon heavily researched the power limitations of the vehicle and chose Prima specifically for their power management handling and efficiency. Simon, like the rest of us, has become a huge fan of Hertz Mille Legend speakers. Fortunately, he discovered that the three-way set fitted as standard could be replaced with drop in replacements from the Mille Legend range. An added bonus was the discovery that the woofer in the door is mounted on-axis and is 7” in diameter for which there is a direct replacement in the ML 1800.3. The other speaker positions were populated with the very excellent ML 280.3 tweeter and ML 700.3 mid-range.

Simon’s preference is always to persuade customers to run speakers actively and use an Audison “bit” processor to replace the work usually performed by a passive crossover. This gives more scope for fine-tuning, which helps when aiming to delight a customer. In this case, Simon plumped for the highly versatile Audison bit One processor. Two Audison Prima AP 4D amplifiers power the

Legends with four channels driving the tweeters and mid-range. This leaves another four channels that are bridged to run the 7” woofers.

Amazingly, Simon has employed an Audison Prima APBX 10DS 10” subwoofer in an extremely robust and not unattractive enclosure to add sub bass to the system. This has its own dedicated amplifier, an Audison Prima AP 1D. This has the same footprint as the AP 4D’s and all three amplifiers are stacked using an optional “tower” kit for space efficiency. The resulting tower of power is hidden away in the luggage compartment along with the bit One processor. As for the APBX 10DS, this sits in a handy well in the floor of the boot and takes up very little room. This is the first time I have heard this particular box and I was incredibly impressed with the musicality of the sound and the way it blended seamlessly with the front-end. You can read more specifics on this range of products elsewhere in this issue.

A large screen dominates the dashboard of the Tesla. This takes care of just about every function you can think of in the vehicle including the audio system. It works like a very busy iPad with many functions accessible at a finger press. As with anything new, it took me a while to accustom myself to the controls, but once I had discovered where everything was I was fairly confident that it would be simple to use on the move and not distracting at all, provided you limit yourself to primary functions rather than drilling down into menus. This car streams Spotify as standard. However, this is not Spotify Premium and it

SIMON LONGMUIR'S
TOP FIVE
DRIVING
SOUNDS

- I Can Explain**
Rachelle Ferrell
- And I'm Telling**
You I'm Not Going
Jennifer Hudson
- Turn Back the Time**
Camo & Krooked
- Back to Forever**
Lissie
- Their War Here**
Batman V Super-
man (Soundtrack)

“THE HERTZ MILLE LEGENDS OFFER VERY PLEASING SPACE AND AIRINESS!”

Fortunately, the standard speaker mounting position was able to accommodate the larger-sized Mille ML 1800.3 woofer

is fairly easy to tell that there is a lot more that can be squeezed out of a tune than Spotify manages. I made allowances while listening to a wide selection of music including some high definition tracks stored on a USB stick plugged into a slot on the centre console.

The first track I listened to was “Back to Forever” by Lissie. I know this to be a regular tune-up track of Simon’s. The intro is covered in outside sounds including children, birdsong and a dog! There was a heavy and out of place thud accompanying the naked guitar introduction that indicated that someone had been having a party with the sub control. Sure enough the subwoofer control on the Audison DRC remote controller was turned up full. Acoustic guitar can be tricky like that. Low bass sounds emanate from the woodwork of an acoustic guitar and are not necessarily meant to be heard. Once corrected, the track sounded much better with great definition in the mid frequencies even if the Spotify rendering was somewhat spoiling the high frequencies. Pity as this is a great test tune full of emotion and a fine vocal.

Next up was a 24bit, 96kHz version of “Hotel California”. This sounded completely different. Clean, beautifully defined high frequencies and smooth transitions across the entire audio spectrum. Although not a bass heavy track, the subwoofer was blending in very nicely with the front-end. The image sat at ear height for me and was extremely wide. I was struck by the sparkly guitar intro and well-defined drum hits from 50 seconds. The nicely

separated instrumentation helped build excitement as the track moved towards its climax and those magical Felder and Walsh guitar solos at 4m20s. The fade always seems to come a bit too soon!

London Grammar have become a bit of a favourite system audition band for me as the minimalist instrumentation allows me to concentrate on tonality and articulation and listen out for the many layers of reverb. I played “Strong” which has a truly great vocal as well as some low bass tones booming way down low in the mix. I wanted to check the subwoofer for subtlety. This was most apparent and even at full chat, never became rude or overpowering. Again the rendering from standard Spotify spoils the performance a little due to endemic distortion and a bit of compression was evident.

All in all, this system is a triumph. The Hertz Mille Legends offer very pleasing space and airiness thanks to the clean and precise power delivered expertly by the Audison Prima amplifiers. As always, Simon’s work gets the very best out of the equipment and overcomes any issues presented by speaker placement. I would avoid using the on-board Spotify streaming though or see if it can be upgraded to the Premium version, or just go HD all the way, but then I would say that!

If you are genuinely interested, I understand this vehicle can be made available for pre-booked demonstrations. Call FOUR MASTER, John Kleis on: 0118 986 6224 to book a demonstration. □