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USB stick optimises sound, battery and much more in the electric car

Pan Acoustics makes a sensational accidental discovery: battery capacity in every electric vehicle can now be optimised unconditionally. Unlocking numerous hidden functions. All it takes is a USB stick.

„Rather by chance, we discovered hidden software functions that can significantly minimise power consumption and also significantly improve the sound system of electric cars,” announces Udo Borgmann, the visionary founder of Pan Acoustics. In the search for optimisation of the multimedia sound data in the bus system of electric cars, the company analysed the data traffic with the specially developed analysis tool „LIRPA.1” and discovered the following: „Via the USB interface, which every electrical vehicle has, not only data commands for the digital playback sound, but also battery storage functions can be queried, controlled and thus optimised”.



CEO of Pan Acoustics, Udo Borgmann, is the inventor of the LIRPA.1 success story.

Examination of the data traffic via the USB interface with analysis tool-LIRPA.1 „Long Integrative Resistive Protocol Analyzer 1”

„Just as overhead cable lines are known to hang between high-voltage pylons in the shape of the cosine hyperbolicus, we tried to replicate this function in the software for acceleration,” says Borgmann, explaining how the chance find came about. The company was thus able to increase the effective range by up to 40 percent. „In another setting, we were even able to optimise the battery charging management for maximum service life,” says Borgmann. „Since batteries are not - as is demonstrably known as a recommendation - only overcharged to 80 percent capacity, but are deliberately overcharged in electric vehicles in order to reduce the service life, we thus manage to double the battery service life to over ten years with gentle marginal charging while maintaining the same range through energy optimisation in the acceleration curve,” sustainability expert Borgmann is pleased to say.

The idea came to him because different acceleration rates are programmed for different countries for electric cars. For example, the American ID4s accelerate more slowly than the German versions. „This means that the power consumption when starting up is lower in American electric cars,” explains the electrical engineer.

Car manufacturer-independent, identical USB interfaces allow hidden functions to be enabled for any electric car thanks to LIRPA.1 USB stick

There are also whistle blowers in the automotive sector, Borgmann knows. The manipulation of exhaust emission tests on the chassis dynamometer has been known among engineers for twelve years. „Since the supplier companies work for many automotive manufacturers at the same time and perform quasi identical work, the software used and thus also the data commands via the bus systems such as USB are similar or even completely identical.“

Thus, any car with ‚keyless entry‘ could be stolen quite easily by radio range extenders freely available on the market, he said. „Our LIRPA.1 stick blocks this possibility of theft. By reprogramming the crypto functions when the USB stick is inserted, the keyless entry is made more secure,“ reports Borgmann. Hull insurance companies have already announced that they will offer a discount, similar to that for a garage vehicle, if this stick is used.

Some processes are being prepared for patent application, and initial talks with interested representatives of electric vehicle OEMs are already underway. An American market leader that wants to build more large plants in Germany in the future has expressed very strong interest, he said. „Who will make the running has not yet been decided. It can therefore make sense for OEMs to quickly contact Pan Acoustics here in Wolfen Valley,“ recommends the head of the company.



LIRPA.1 comes with many features via USB stick.

And what about the sound? „Of course, the LIRPA stick also has presets for sound settings for the ultimate listening pleasure. This sounds best with the car hi-fi surround system from Pan Acoustics installed in the headliner. As a precaution, we have therefore reserved 10,000 USB sticks (optionally up to 100,000 units) for the zero series with our electronics manufacturer from Braunschweig,“ concludes Borgmann.

Pan Acoustics, headquartered in Wolfenbüttel – Germany, is a leading manufacturer of innovative audio solutions for use in challenging acoustic environments. The flag ship „Pan Beam“ is worldwide renowned for outstanding performance and sharp acoustic precision. The products „Made in Germany“ come with a standard 10 years warranty.