

Agritechnica 2023: Marquardt presents PnD3

Keyless-Go also for agricultural machinery

- PnD3 platform from Marquardt makes access via smartphone suitable for off-road vehicles as well
- Cyber-secure integration of smartphones via digital key
- High flexibility with UWB, NFC and BLE

Rietheim-Weilheim, November 2023 – Drivers and operators of agricultural machinery should be able to concentrate on the essentials. With short and clocked harvesting times, efficiency, reliability and safety play a decisive role in agriculture. With the PnD3 drive authorization system, mechatronics expert Marquardt is presenting an obvious solution at Agritechnica in Hanover: Vehicle key and mobile phone in one.

PnD3, as the system is called, combines the latest ultra-wideband technology (UWB) with NFC (Near Field Communication) and BLE (Bluetooth Low Energy). It thus seamlessly closes the gap between smartphone and driver authorization system. This not only provides agricultural machinery manufacturers with a highly flexible, modular solution for different vehicle types. The system also offers advantages in terms of work safety: for example, the light of the vehicle connected to PnD3 is activated as soon as the operator approaches. The secure transfer of the digital key also opens up new possibilities for agricultural machinery rental companies and service providers, for example for maintenance, cleaning, loading and refueling.

Flexible architecture for numerous applications

The flexible PnD3 architecture, consisting of an electronic vehicle key or a smartphone app, enables both simple and highly complex applications, for passenger cars as well as for agricultural machinery of all kinds. Marquardt is thus making keyless-go technology via smartphone suitable for mass use and cost-effective, also for

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manufacturers of agricultural machinery. In addition to the BLE-based standard configuration, the number of UWB modules and also the provision of NFC can be selected. With the Software Development Kit (SDK), unlimited smartphone applications can be adapted to the design of agricultural machinery manufacturers. Marquardt offers the central, easy-to-integrate control unit (ECU) as a waterproof variant especially for agricultural machinery. Other components in the interaction are NFC readers, start-stop button as well as sensors for door handles.

Focus on security and user benefits

Security against hacker attacks was at the forefront of the development of the PnD3 platform. At the core is the new ultra-wideband technology based on the Car Connectivity Consortium Standard (CCC), which has been supported by Apple among other smartphone manufacturers since 2019. It enables the cyber-secure storage of the digital vehicle key in the smartphone - and in combination with the precise UWB driver localization, opens up completely new application possibilities.

"We invested in UWB technology early on and therefore have very deep expertise," explains Wolfgang Stehle, Head of Product Segment "Entry and Authorization Systems" at Marquardt. "Thus, with a smaller number of UWB modules on the vehicle, we achieve a secure and faster localization of the smartphone near the vehicle thanks to our algorithm. And the one hundred percent compatibility of all our components results in optimally synchronized processes - even in critical situations."

As a TIER1 supplier, Marquardt has many years of expertise in driving authorization systems. As early as 2001, Marquardt introduced the first keyless go system, and in 2019 the mechatronics specialist presented the first secure UWB system.

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Future standard: digital key sharing

Thanks to the integration of the smartphone into the driving authorization systems, gestures can also be recognized in the future with the help of UWB technology. Windows or doors can be opened without the use of additional sensors. "The possibility of sharing the digital key simply but securely via 'key sharing' also offers quick help in the event of a lost key. It makes it much easier for agricultural machinery rental companies or fleet managers to hand over and return vehicles," says Jörg Fischer, Global Product Line Manager Smart Access at Marquardt.

World's largest trade fair for agricultural technology

Agritechnica, organized by the German Agricultural Society (DLG), is considered the world's largest trade fair for agricultural technology. It will take place in Hanover from 12 to 18 November 2023. Under the motto "Cultivating The Future", Marquardt will be presenting its solutions in Hall 17, Stand E57.

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Press images:



Marquardt_PnD3: With the PnD3 system from Marquardt, the vehicle key merges with the smartphone - practical also for operators of agricultural machinery.

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Marquardt_PnD3: The digital key for modern vehicle communication and secure drive authorization systems for agricultural machinery.

About Marquardt

Marquardt, a family-owned company founded in 1925 and headquartered in Rietheim-Weilheim, is one of the world's leading manufacturers of mechatronic switching and operating systems. The products of the mechatronics specialist - including operating components, vehicle access, drive authorization and battery management systems for electrically powered vehicles - are used by many well-known customers in the automotive industry. Marquardt systems can also be found in household appliances, industrial applications and power tools. The company has around 11,000 employees worldwide at 22 locations on four continents. The turnover in the 2022 financial year was around 1.4 billion euros. Every year, Marquardt invests around ten percent of its turnover in research and development.

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