

BAUMA 2022

## Introducing ECUs for construction and off-highway machinery

At the Bauma 2022 construction machinery trade show in Munich, Germany from October 24 to 30, TTControl will introduce the TTC 2030 ECU family as part of the TTC 2000 ECU series. In this TTC 2000 series, the TTC 2300 with four CAN FD interfaces is already available.

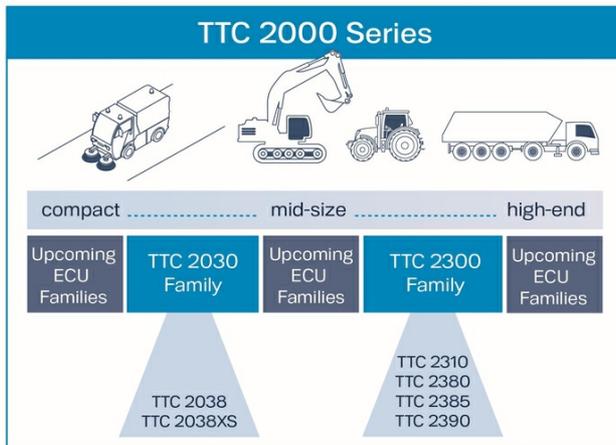


Diagram of the TTC 2000 series (Source: TTControl)

The growing TTC 2000 series consists of compatible electronic control unit (ECU) families of different sizes, but with the same modular building blocks. This ensures that the right number of interfaces and the right amount of processing power is available for each mobile machine application, while reducing time-to-market and maintenance for the vehicle manufacturer, explained the company.

The TTC 2030 and the TTC 2300, both are resistance to extreme temperatures with an output current from -40 °C to +85 °C, said the company. Future automation and operator assistance systems are supported by the internal memory. The transmission of smart sensor data is enabled via various communication interfaces such as CAN. This enables operators of construction machinery, for example, to define operating areas for excavators or limit the reach and load moment of cranes.

### The growing TTC 2000 series

Both the TTC 2030 and TTC 2300 ECU families fulfill safety standards in the construction, agricultural, and automotive industries and help reduce certification costs for vehicle manufacturers, explained the company. The mixed criticality approach allows safety-critical and non-safety-critical code to run on the same CPU (central processing unit) without reducing the overall safety level. The real-time operating system PXROS enables full use of the CPU multicore architecture and ensures safety through freedom of interference and a reduced development effort, the company continued. Both ECU families are equipped with Infineon's latest processor, the second-generation Aurix Tricore.

The TTC 2300 comes with a real-time operating system and can either be programmed in C or in Codesys Safety SIL 2 including support for CANopen Safety. Up to 60 configurable I/Os are available and can be initialized at the application level as different types of inputs or outputs. Beside analog and digital timer inputs, the ECU is also equipped with HS PWM and PVG outputs. This ensures that the various hydraulic valves used in the off-highway machines can be controlled, making the product suitable for hydraulics control. Part of the design are several current measurement feedback loops and plausibility checks which enable runtime self-diagnosis of the vehicle and various safety architectures. The ECU comes with four CAN FD interfaces (bit rate of up to 2 Mbit/s) and features Wake-Up over CAN and Isobus compatibility.



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The TTC 2030 family which will be introduced at the Bauma 2022 exhibition (Source: TTControl)