



ETEL S.A.

Zone Industrielle
2112 Môtiers
Switzerland

T +41 32 862 01 00

etel@etel.ch - www.etel.ch



Motion Control

UltimET Advanced

ETEL

version 1.0 - 02/21 - subject to modifications without previous notice

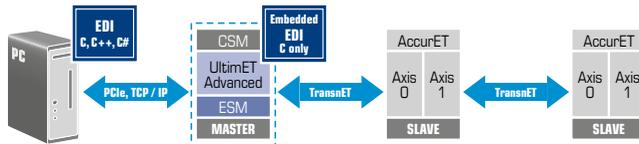
ETEL



The UltimET Advanced is a powerful and versatile multi-axis motion controller reinforcing the existing UltimET family product portfolio from the high-end side. With the UltimET Advanced, not only ETEL introduces a new motion controller with outstanding intrinsic performance, but it brings on the market a new level of flexibility in controlling advanced motion system.

This new motion controller is fitted with a quad-processor from which one core is fully dedicated to the user for running the so called “Customer Software Module” (CSM). CSM is executed in a real-time operating system (namely FreeRTOS) that allows implementation of user-designed control algorithms and/or diverse functionalities based on provided EDI (ETEL Device Interfacing).

The UltimET Advanced can also host ETEL made plug-ins called “ETEL Software Modules” (ESM) that provide enhancements to ETEL motion system platforms. Thanks to the multi-core structure, ESM operates without compromising the user’s available computation power.



The customer core is fitted with an embedded version of EDI so that the user can code “from the UltimET Advanced” as he was used to code from his own computer. It has direct and full access to a TCP/IP connection and one standard Serial Peripheral Interface (SPI) connection to communicate with external devices. In addition, the user has access to local storage through an SD-Card. All this allows local or remote data storage without impacting the motion control being executed in parallel.

Naturally, all this is provided on top of the basic function expected from a motion controller, which is connecting your multi-axes motion system to the machine control PC in a fast and time deterministic manner no matter the numbers of devices present on the communication bus.

MAIN CHARACTERISTICS

- **More computation power:** The UltimET Advanced brings more computation power within the ETEL real-time control architecture. It runs complex computations/algorithm locally, thus saving communication time and latencies related to the use of a PC to execute these time critical tasks.
- **More data processing:** The UltimET Advanced real-time operating system allows the implementation of local data (pre-) processing without any impact on the precise motion control of the machine that is occurring in parallel. This information can then be either stored locally in the SD-Card or shared with the main PC via a dedicated channel (thus not impacting at all the motion control performance and timings).
- **More interfacing:** The extended interfacing capabilities of the UltimET Advanced allows the user to add many more sensing devices directly in the control loop. With dedicated TCP/IP connection and pre-configured SPI channel, one can interface the UltimET Advanced with different devices and use their inputs in real-time to improve both process throughput and/or accuracy.
- **Free real-time operating system:** The UltimET Advanced embedded operating system is free! In multiple time-critical processes, users are forced to invest in either a dedicated HW (extra PC) or allocate some processor cores on their PC to run a real-time operating system (e.g. RTX). Using the UltimET Advanced for the real-time part of the process would save these costs by moving the real-time computation inside the motion controller.

HARDWARE ENVIRONMENT

The UltimET Advanced is a standalone “box format” that has the same footprint and mounting principle as the AccurET48 position controller. It enables an easy mounting and the possibility to upgrade existing configurations with minimal efforts.

