ETEL

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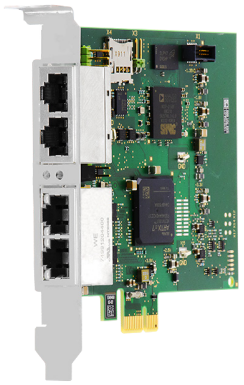


Axes synchronization
With nanosecond level jitter

Slave-to-slave data sharing
Within one TRANSNET cycle

Trajectory management
Synchronized or interpolated motion

ULTIMET+ LIGHT

Motion controllers

Engineered for semiconductor equipment
Suitable for all high-end positioning systems

A smart motion coordinator at the heart of ETEL's decentralized control architecture, ULTIMET+ LIGHT ensures real-time synchronization, fast data exchange, and efficient multi-axis control.

ULTIMET+ LIGHT is ETEL's latest motion controller and the master node of the TRANSNET bus, purpose-built for high-end decentralized control architectures. It enables multi-axis coordination with nanosecond-level synchronization, low-latency communication, and flexible embedded programming, all without becoming a performance bottleneck.

As the backbone of the TRANSNET real-time network, ULTIMET+ LIGHT enables direct slave-to-slave communication, bypassing delays typically introduced by master-routed bus topologies. For instance, this architecture enables ultra-fast real-time compensation between axes, even in complex systems.

NANOSECOND-LEVEL JITTER FOR MORE ACCURACY

In high-dynamic systems, any jitter in axis synchronization can corrupt the data later injected into control loops, degrading overall accuracy. With just 2 ns of jitter, TRANSNET ensures all latching events are perfectly aligned ensuring that positions, velocities, and tracking errors consistently reflect true machine behavior.

REAL-TIME COMPENSATION MADE SIMPLE

Thanks to TRANSNET direct slave-to-slave comunication, latency is minimized, enabling cross-axis compensation to operate faster and more effectively, particularly in tightly coupled systems.

SIMPLE CONTROL DESIGN

By pushing intelligence to the ACCURET+ level and supporting direct data exchange, ULTIMET+ LIGHT allows you to design complex multi-axis behavior with less master-side logic, streamlining development and debugging.

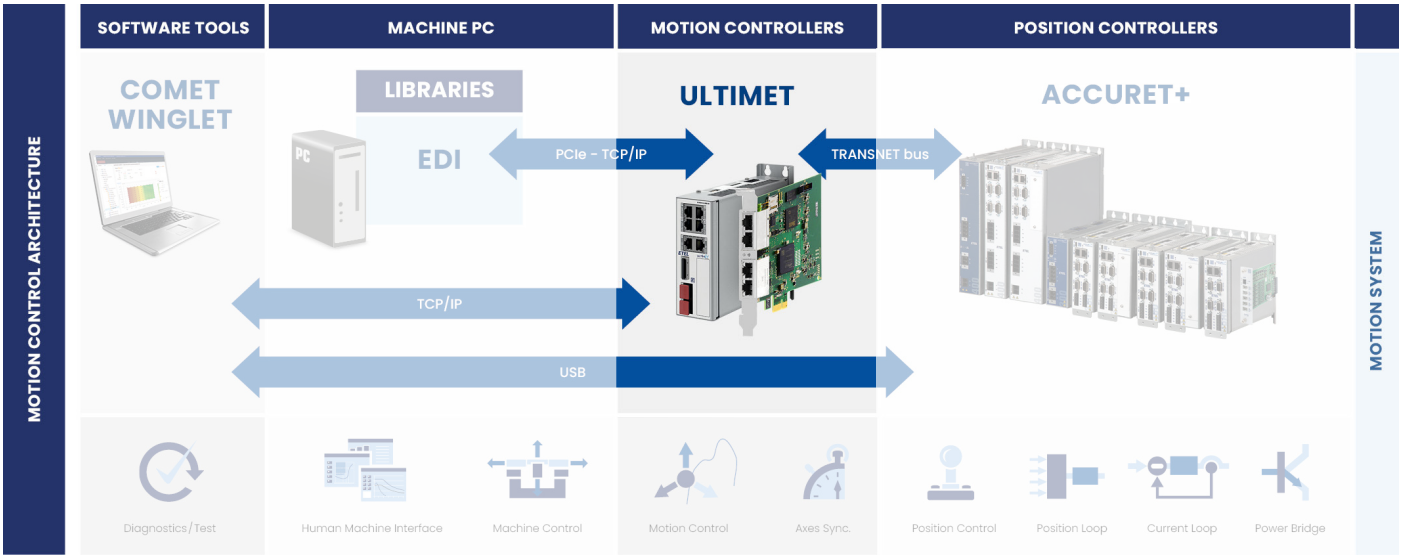
EMBEDDED PROGRAMMING FOR MULTI-AXES ROUTINES

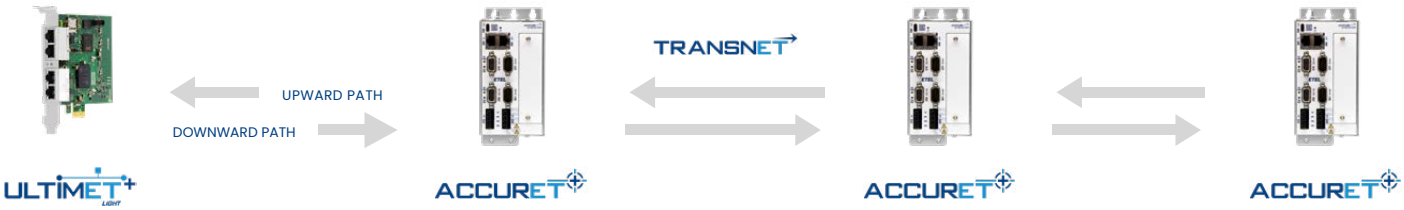
ULTIMET+ LIGHT includes four concurrent threads for user code, running at TRANSNET cycle time with access to all controller registers. Users can embed routines for multi-axis watchdogs, real-time focus control, event polling, and more, without requiring access to machine PC.

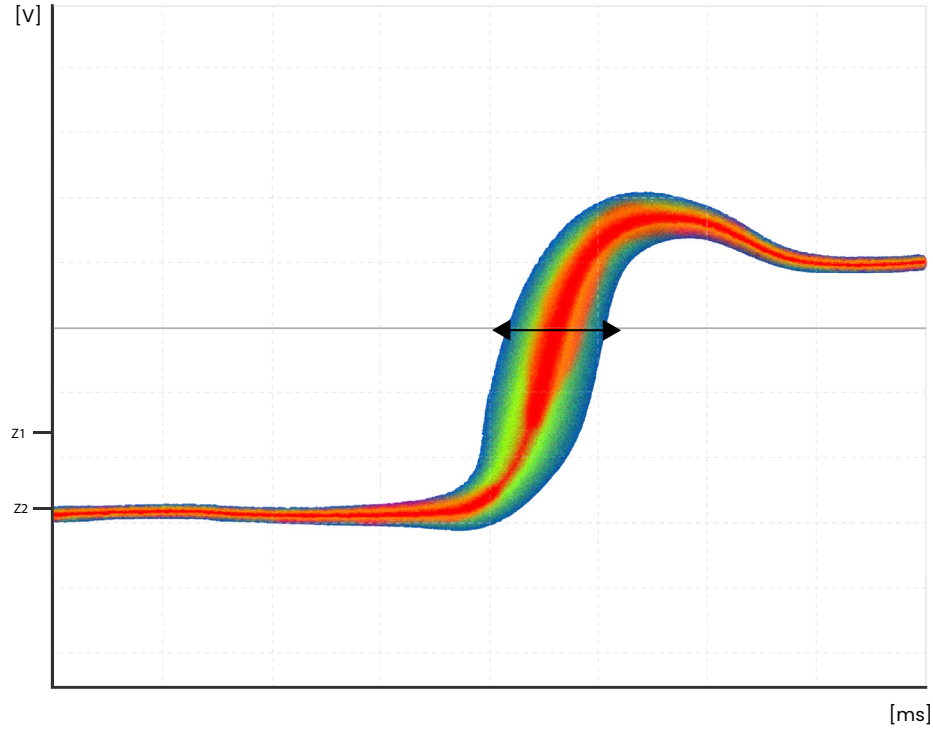
MULTI-AXIS INTERPOLATION

With the "interpolation" variant, ULTIMET+ LIGHT supports two groups of up to four axes each for real-time interpolation among any selected target axes over TRANSNET.

- Master controller for TRANSNET real-time bus
- Supports 50 µs and 100 µs cycle time
- Direct slave-to-slave data communication
- 2 ns jitter synchronization across all axes
- 4 concurrent user threads for programming
- Two variants: Gateway or Interpolation







Measured jitter
2 [ns] over 15 [min]

Nb. of axes connected:
52

More info

Ver. 1.1

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