 UltimET Overview
For many decades, ETEL has focused on the development of high-end position controllers together with all the associated elements to ensure that they can communicate in a high performance network.

To achieve the best possible synergy between multiple motion axes, ETEL developed the proprietary TransnET communication bus and its master, the motion controller called UltimET light. This provides a fast, reliable, real-time communication as well as high performance level between all AccurET controllers regardless of the number of axes required. UltimET is a key element of the ETEL Motion Control product range and already has a proven worldwide track record for its unique performance in areas such as:

- Wafer process control
- Lithography
- Wafer and die level packaging
- Photovoltaic
- Test and control equipment
- Printing / scanning
- Placement machines
- Flat panel display (FPD)

UltimET manages the gigabit based fieldbus TransnET ensuring real-time command management, nanosecond synchronization and interpolation of axes for elaborate motion profiles. High-level features support the tuning of advanced motion systems without the need to work at the level of the individual axes.

Features such as 3D mapping can be easily managed using UltimET to provide the required precision at the machine tool point whatever the mechanical arrangement of the axes. For gantry systems, a Gantry Acceleration Feedforward over TransnET can be used to anticipate the motor forces according to the tool point position. This feature significantly increases machine throughput thanks to a dramatic reduction in settling times.

To fit with all types of machine control architecture, UltimET is available in hardware formats such as PCI, PCIe (PCI Express) and embedded TCP/IP. Both PCI versions are designed for installation in a PC and are especially suited to high speed applications requiring real-time deterministic communication. The embedded version is designed for installation in the AccurET position controller and is recommended for standalone machines that do not require real-time communication with the machine control PC.

### MOTION CONTROL ARCHITECTURE

<table>
<thead>
<tr>
<th>MACHINE PC</th>
<th>LIBRARIES</th>
<th>MOTION CONTROLLERS</th>
<th>POSITION CONTROLLERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human Machine Interface</td>
<td>Motion Control</td>
<td>Motion Controllers</td>
</tr>
<tr>
<td></td>
<td>Motion Control</td>
<td>Axis Sync.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ADVANCED FEATURES

Interpolation and control of several motion axes with complex motion constraints is not an easy task. With UltimET light, ETEL provides a simple way to maximize the performance of complex machines without the need for detailed management of timing considerations. Time deterministic communication between all controllers ensures repeatable and stable performance as well as flexibility in machine designs integrating up to 63 axes.

UltimET manages the gigabit based fieldbus TransnET ensuring real-time command management, nanosecond synchronization and interpolation of axes for elaborate motion profiles. High-level features support the tuning of advanced motion systems without the need to work at the level of the individual axes.

Features such as 3D mapping can be easily managed using UltimET to provide the required precision at the machine tool point whatever the mechanical arrangement of the axes. For gantry systems, a Gantry Acceleration Feedforward over TransnET can be used to anticipate the motor forces according to the tool point position. This feature significantly increases machine throughput thanks to a dramatic reduction in settling times.

To fit with all types of machine control architecture, UltimET is available in hardware formats such as PCI, PCIe (PCI Express) and embedded TCP/IP. Both PCI versions are designed for installation in a PC and are especially suited to high speed applications requiring real-time deterministic communication. The embedded version is designed for installation in the AccurET position controller and is recommended for standalone machines that do not require real-time communication with the machine control PC.

### MOTION CONTROL ARCHITECTURE

![MOTION CONTROL ARCHITECTURE Diagram]

---

For more information, consult our AccurET Modular leaflet.