Polaris
UniverseOne
™ Motion
Controller

A Universal, High-End Motion Controller for all Applications

The Polaris UniverseOne™ motion controller is precise, powerful and easy to use. It has been designed for CNC machine tool applications and for advanced custom machines of all kinds. It is used for multi-axis CNC applications that coordinate and synchronize mechanical stage motion, Galvo scanner motion and laser control. It is also used for custom machines and high-throughput data acquisition systems of all kinds.

Real Time Motion Control

Processes that need to run in real-time are accomplished in hardware and they run with extreme speed. Multi axis setpoint rates of 100,000 per second are achieved easily for many axes. Because hardware is used for real-time tasks, software is not burdened and runs more effectively for greater throughput. High throughput data acquisition rates in the multiple Gbps are achieved simultaneously.

Gbps Real Time Network for Optimal Motion Control

Our patented Gbps real time network, Mercury™, is optimized for motion control, simultaneous data acquisition and it is used to provide high speed communication between the controller, all of the servo drives and other devices in the network such as the Galvo scanner interfaces and the I/O modules.

Intel™ Multi-core Processing

At the heart of our precision motion controller is a multi-core Intel processor that provides the power needed to perform smooth trajectory generation for multi-axis linear, circular, and spline interpolation. Three, five and nine axis CNC machining are supported as are multiple Galvoscanner sets.

Linux OS

Standard technologies are used such as the Linux operating system for guaranteed support well into the future. By employing standard, non real-time Linux common software tools are available making it easy for OEMs who need to write in their own customer processes. The required real-time processes are isolated and they execute in super fast FPGA hardware.