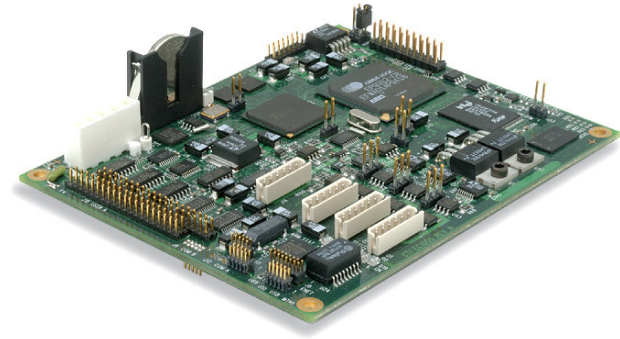


# EC1000



## Single-board, Stand-alone, Real-time Embedded Control Subsystem for Galvanometer-Steered Laser Systems

- State-of-the-Art, Dual-SoC embedded computer architecture
- Can be operated with or without a host PC as a network appliance
- COM-based API Interface and DLL library to third-party and user application software packages. Also fully supports CTI ScanMaster Designer software
- RTC Emulation Library to simplify integration into existing RTC-3/4 systems
- Ethernet host computer interface to download or stream jobs, and to monitor real-time status
- On-board flash memory *without artificial vector list boundaries* and USB port for job storage and media portability
- Dynamic 16-bit 3-axis analog and digital galvanometer control hardware and software supporting simultaneous XYZ scanning
- Synchronous analog and digital laser control providing pulse, intensity, and gating controls for YAG, CO<sub>2</sub>, Fiber, and other lasers.
- Automatic lens distortion correction during microvectoring.
- Optional I/O “rear panel” board to simplify integration and for scan head modularity



EC1000 Stand-alone Ethernet-based controller

## EC1000 The Ultimate Embedded Controller for Galvo-Steered Laser Systems

Cambridge Technology's EC1000 is the next generation in galvo-steered laser control systems. This compact, fully integrated dual system-on-a-chip (SoC) control system is ideal for deployment into modern factory environments with distributed automation. In this environment, a single host computer can supervise a factory of networked laser marking appliances. The EC1000 is designed to be completely embedded into a scanning head and does not require a nearby physical host computer for operation. Remote Access, Remote Control, and Remote Monitoring are fully supported for tetherless operation in a distributed laser marking environment. Factory reliability and EMI immunity are ensured through the use of optically isolated digital control ports.

Reconfigurations or job changes are easily either by downloading via 10/100 base-T Ethernet, temporary connection to a laptop or USB memory stick, or via the optional pendant.

The EC1000 includes a complete library of control features for today's lasers as well as 3-axis of direct dynamic galvanometer servo driver control *without the need for intermediate interface boards such as XY2-100*. The “software agnostic” EC1000 DLL interface to third-party or user software packages simplifies integration into existing automated scanning systems.

### Computer and Peripheral Interface Ports

- 1 Serial Port for Optional Pendant
- 1 Serial Port for Laser Communications
- 2 USB Host Type-A Ports
- 1 10/100 Base-T Ethernet LAN Port

### Galvanometer Control Output Ports

- 3 16-bit DAC outputs (X, Y, Z)
- 1 XY2-100 Port for Dual-Scanning Head Control

### Control Output Ports

- 1 Optically Isolated 8-bit Digital Data Output Control Port for Laser Intensity Control
- 2 12-bit Analog Output Laser Control Ports
- Laser Timing Control Signals

### Additional Optically Isolated Signals and Controls

- 4 user input bits
- 4 user output bits
- 4 Interlock bits
- Synchronization and Status bits (STRTMRK, MRKINPROG, ERROR)

### Software Environment

- COM-based API Interface to Third-Party or User Application Software Packages
- Complete Library of Control Features
- On-line Help and Documentation
- Graphical Editors for Configuration Management

