

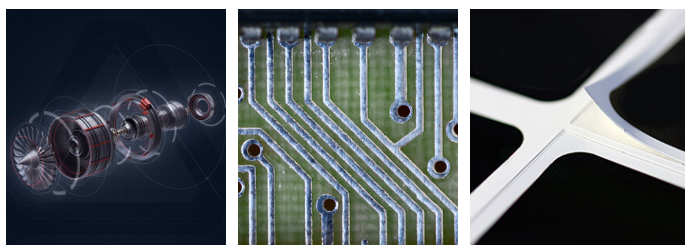
SCANMASTER CONTROLLER

LASER CONTROLLER WITH UNPRECEDENTED POSITION ACCURACY AND OUTPUT

Novanta develops photonics solutions through our globally recognized brands— ARGES, Cambridge Technology, Laser Quantum and Synrad— specializing in cutting-edge components and sub-systems for laser-based diagnostic, analytical, micromachining and fine material processing applications. Powerful lasers, coupled with advanced beam steering and intelligent sub-systems incorporating software and controls, deliver extreme precision and performance, tailored to our customers' demanding applications.

OPTIMIZE LASER CONTROL SCANNING

Engineered by Cambridge Technology, our portfolio of laser control software solutions, ScanMaster, optimizes laser control and scanning performance while providing easy integration with system hardware and software. Our ScanMaster laser controller features proprietary algorithms and predictive controls that increase scanning performance for the most demanding applications such as additive manufacturing, via-hole drilling and high-speed converting.

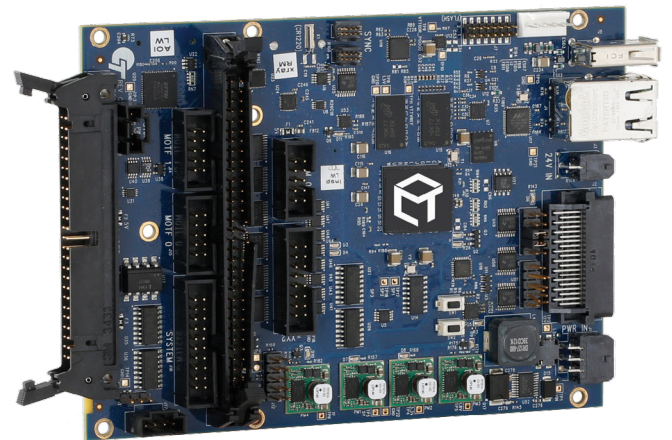


Additive
Manufacturing

Via-Hole-Drilling

Converting

The industry's highest system throughput, resolution, and accuracy are now possible by integrating our ScanMaster Controller (SMC) and ScanMaster Designer (SMD) software with our Lightning™ scan heads. The SMC is designed to synchronize mirror position with laser firing using proprietary ScanPack algorithms or with traditional control schemes. The ScanPack's algorithm optimizes the synchronization process to further increase throughput.



ACHIEVE HIGHEST THROUGHPUT AND UNMATCHED ACCURACY

- Simplified laser integration with plug-and-play laser adaptors
- Unmatched positioning accuracy enabled by the industry's highest 24bit GSBUS command resolution¹
- Uniform laser power density and higher throughput empowered by our proprietary ScanPack algorithm¹
- Optimized laser processing with our adaptive wobble trajectory capability
- Flexible system integration and easy job creation driven by powerful object oriented ScanMaster API
- Standalone operation built in >15M vector commands buffer and 3.5GB on-board memory for job storage, expandable to 256GB

References:

1. When using with fully digital Lightning™ II scan head only.

SCANMASTER CONTROLLER

Specifications	
Galvanometer Control	
Compatible Products	2-Axis and 3-Axis configurations
Max Number of Scan Heads	Two 2-Axis or two 3-Axis scan heads ¹
Control Scheme	Traditional or ScanPack (Lightning™ scan head only) mode
Communication Protocol	16-bit XY2-100 with standard status codes 24-Bit GSBUS with real time status and signal monitoring (Lightning scan head only)
Laser Control	
Interface	Laser-specific adapters for common laser types ² <ul style="list-style-type: none"> • 25-pin fiber laser adapter • Single-ended BNC CO₂ laser adapter • Adapter for RJ45 laser control connector • Adapter with 24V circuitry for high power laser • 68-pin fiber laser adapter
Laser Control Signal	15x Digital output signals 2x 0-10V Analog output signals 6x Digital input signals for status read-back 1x High-speed digital sync input 1x RS-232 serial communication port
System Integration	
Communication	100/1000 BaseT Ethernet 2x RS-232 serial interface ³
Multiple Boards	Any number of SMC boards with Ethernet hub and master/slave synchronization through digital I/O
External Equipment Control	4x 5-24V User-defined digital outputs 4x 5-24V Dedicated status outputs – Busy, Lasing, Ready & Job Active 4x 5-24V Optically-isolated user-defined digital inputs 2x 5-24V Dedicated optically-isolated synchronization inputs 2x Quadrature encoder inputs for Mark-On-The-Fly (MOTF)
Auxiliary I/O Board (optional)	2x XY2-100 Compatible 25-pin D-Sub connectors for dual scan head operation 16x 5-24V User-defined digital outputs 16x 5-24V Optically-isolated user-defined digital inputs
Safety	2x Interlock inputs
Stand-alone Operation	3.5GB On-board Micro SD card for stand-alone jobs
Power Supply	15V to 48V Single supply Separate 24V input for optical isolation circuits (optional)
Dimensions	6.9 in. x 4 in.
Weight	Approx. 0.14 kg
Software Environment	
Application Programming Interface	ScanMaster API (.NET and Win32 DLL) ScanMaster Designer (Optional)

Notes:

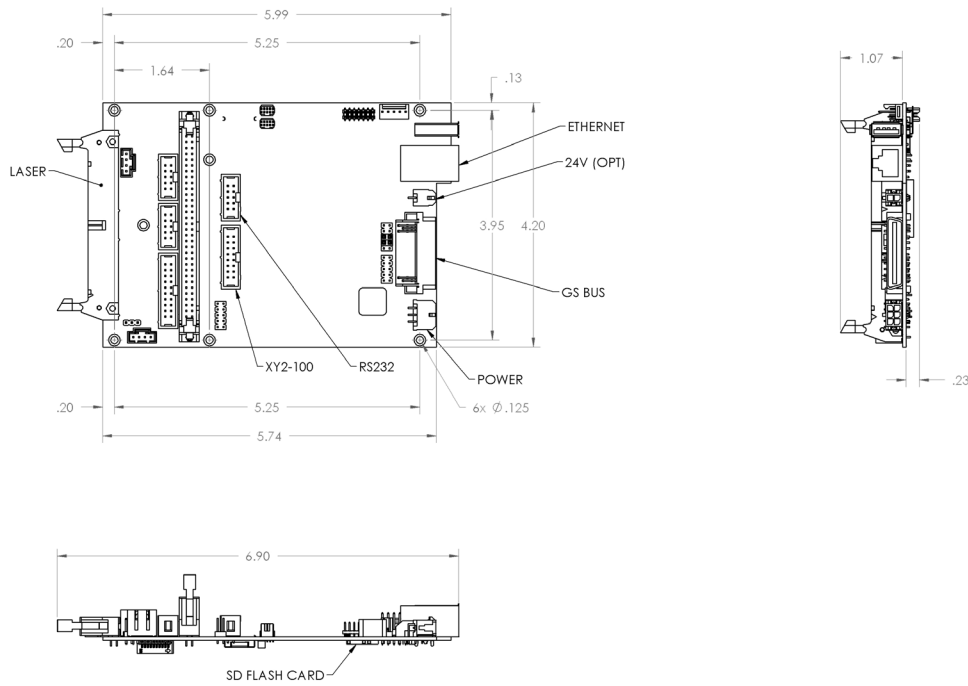
All angles are in optical degrees, unless otherwise noted. All specifications are subject to change without notice.

References:

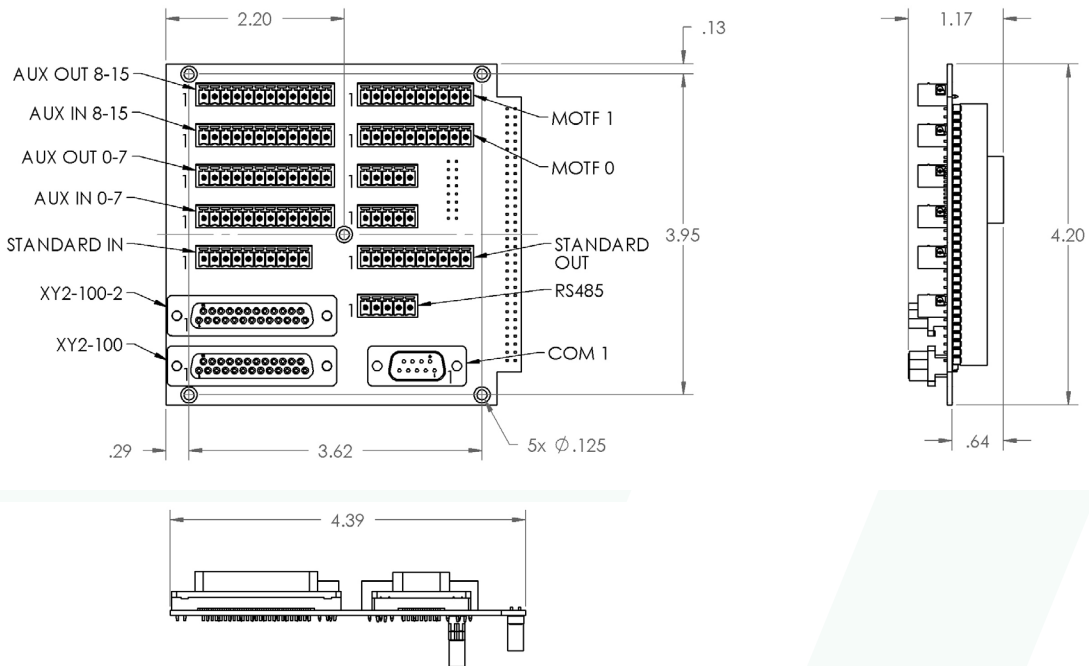
1. When using XY2-100 protocol, a second scan head requires the auxiliary I/O board. 2. Contact Cambridge Technology to discuss availability of other adapters. 3. Second general purpose RS232 is on auxiliary I/O board.

SCANMASTER CONTROLLER

SCANMASTER CONTROLLER BOARD



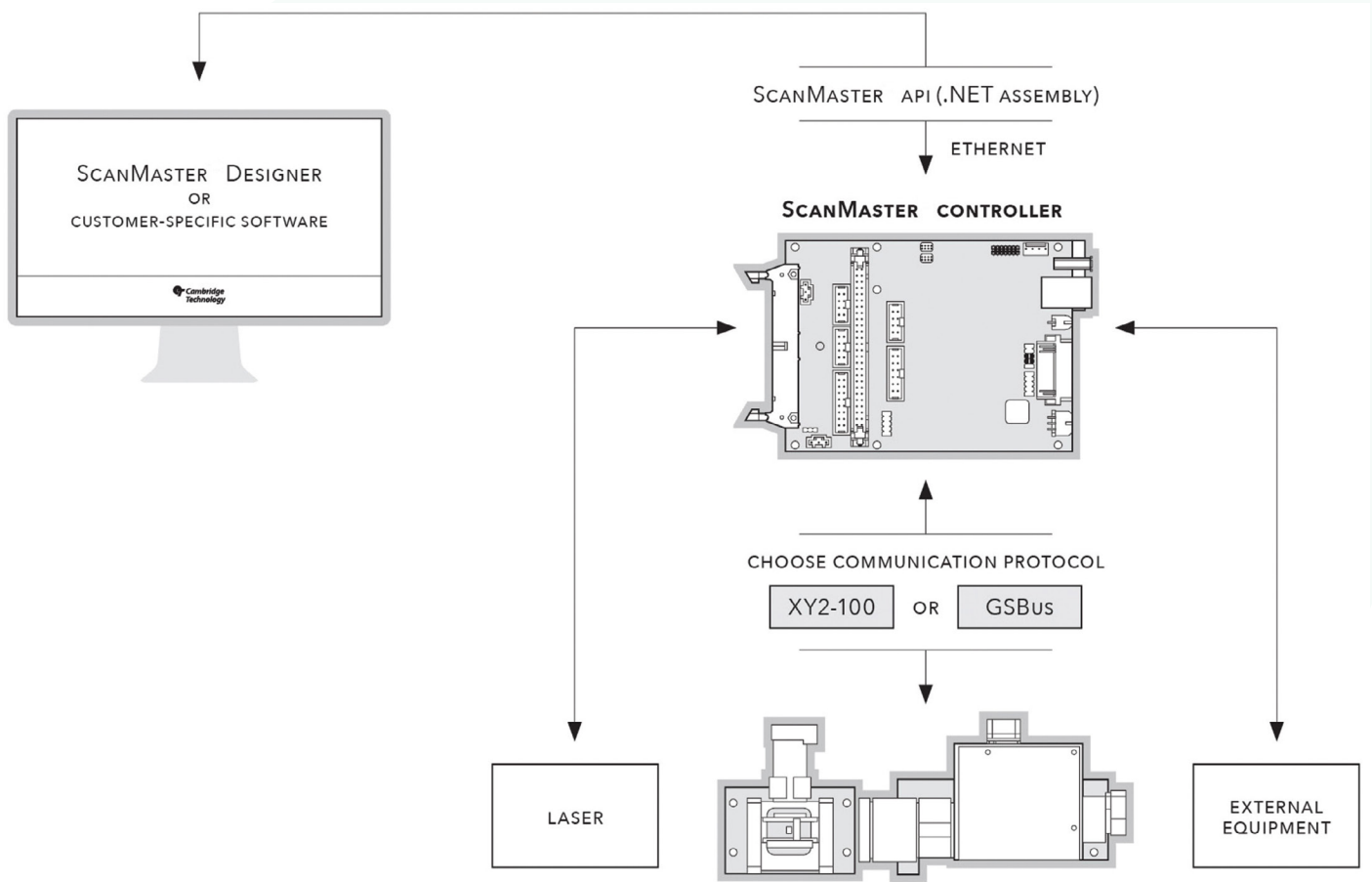
SCANMASTER CONTROLLER AUXILIARY I/O BOARD



Notes:
All angles are in optical degrees, unless otherwise noted. All specifications are subject to change without notice.

SCANMASTER CONTROLLER

INTEGRATION SCHEMATIC



CONTACT US

Americas, Asia Pacific

Novanta Headquarters
Bedford, USA
P +1-781-266-5700

Photonics@Novanta.com

Europe, Middle East, Africa

Novanta Europe GmbH
Wackersdorf, Germany
P +49 9431 7984-0

Milan, Italy
P +39-039-793-710

Photonics@Novanta.com

China

Novanta Sales & Service Office
Shenzhen, China
P +86-755-8280-5395

Suzhou, China
P +86-512-6283-7080

Photonics.China@Novanta.com

Japan

Novanta Service & Sales Office
Tokyo, Japan
P +81-3-5753-2460

Photonics.Japan@Novanta.com