

# ScribeSmart™

Stand-Alone Scan and Laser Control



**ScribeSmart™ Controller** is a stand-alone microcontroller that provides high-speed beam positioning and Laser interface. An optional Graphical User Interface application for creating and downloading jobs to the controller is also available.

**ScribeSmart** solution allows you to:

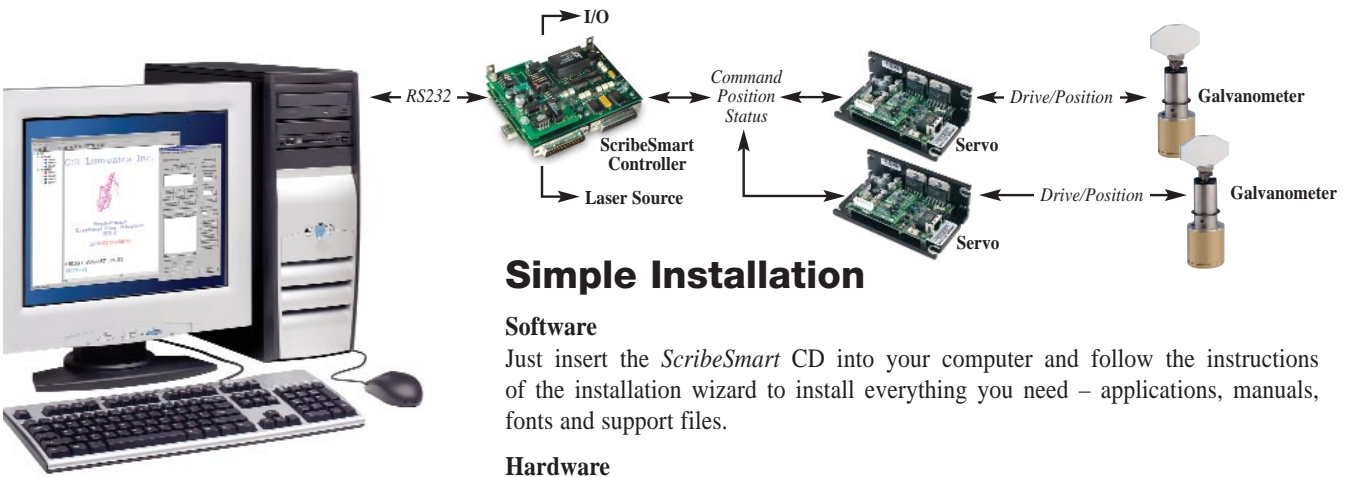
- Create a job by defining and importing graphical images
- Define scanner and laser operating parameters
- Communicate with the hardware controller for job downloading, monitoring and management.
- Run your jobs in a stand-alone mode (without connection to a PC).



lot 367248295

# The Complete Beam Control Solution...

The *ScribeSmart™* controller (consisting of *SC2000* and *Laser Interface Board*) is an embedded controller that provides all necessary functionality to command a two-axis scanning head and is capable of controlling most lasers. The *ScribeSmart* GUI application is optimized to take advantage of the *ScribeSmart* controller functionality, and allows you to create and download jobs into the controller's memory.



ScribeSmart GUI Application

## Simple Installation

### Software

Just insert the *ScribeSmart* CD into your computer and follow the instructions of the installation wizard to install everything you need – applications, manuals, fonts and support files.

### Hardware

As simple as 1... 2... 3...

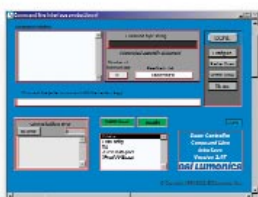
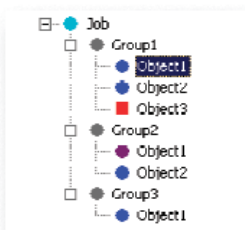
1. Connect the controller to the scan head and laser source.
2. Connect the controller to your computer's serial port.
3. Connect the controller to the external I/O interface (optional). ...and get ready to lase!

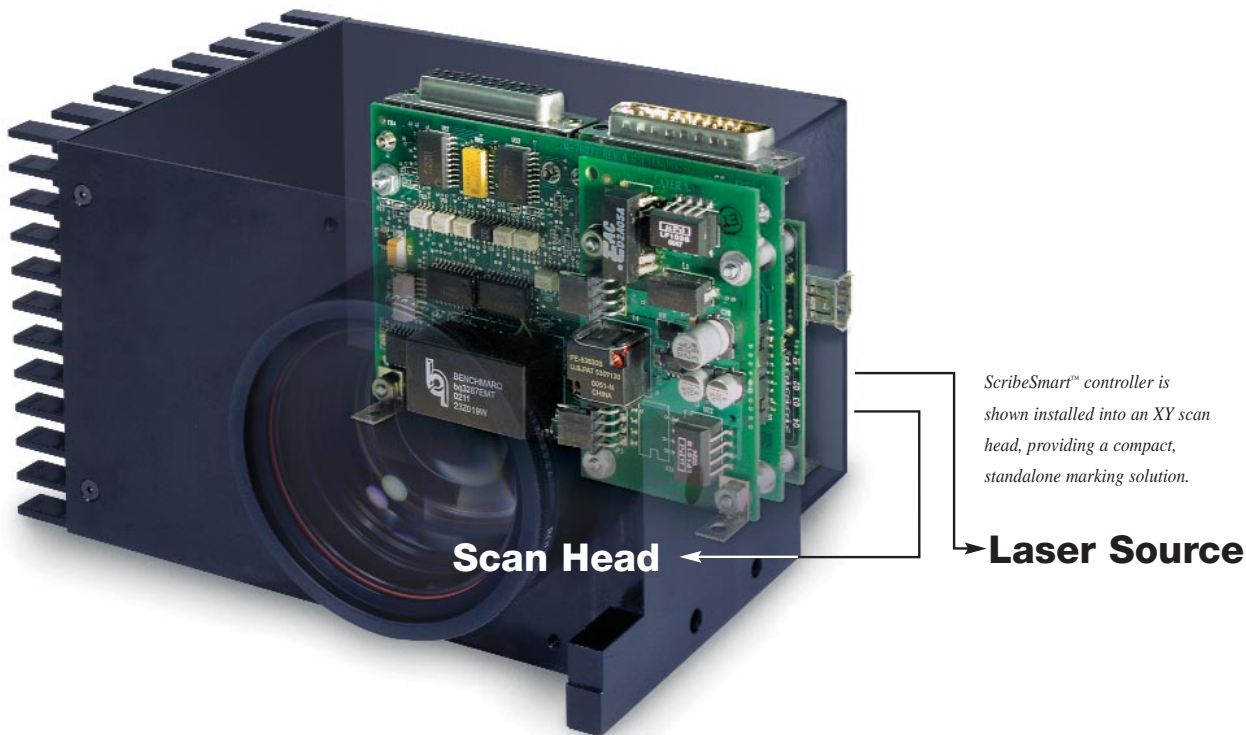
## Simple Operation

- Use the GUI to position and scale various objects (text, graphics, date, time and serial number) in the work area.
- Set the laser controls for each object independently.
- Organize the objects into group hierarchy.
- Define a binning group to mark a different object selected through hardware-controlled inputs.
- Define handshaking settings for the job.

## Simple Diagnostics

- The *ScribeSmart* GUI's control panel can be used to define communication settings, check hardware status and monitor memory utilization.
- The Command Line Interface (CLI) application is used to support end-user programming of the *ScribeSmart* hardware.



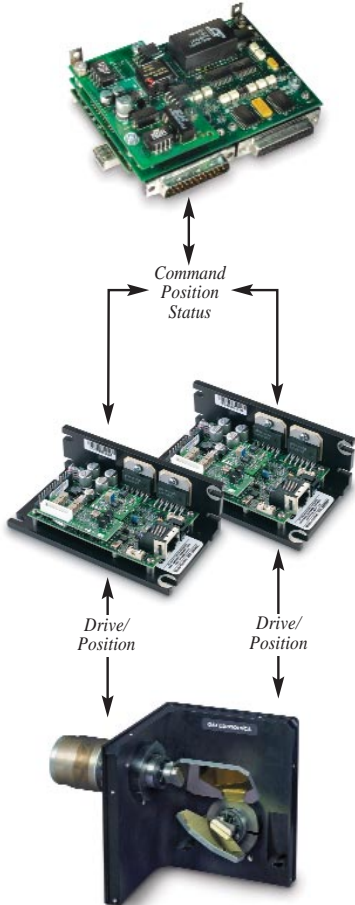


*ScribeSmart™ controller is shown installed into an XY scan head, providing a compact, standalone marking solution.*

**Scan Head**

**Laser Source**

*Job is stored in the on-board memory*



## Simple Execution

### PC-linked

Operate *ScribeSmart* while connected to your PC to continually download and process new jobs (unlimited number).

### Stand-alone

Let the controller do the job for you!  
Once the job is stored in the on-board memory, the computer may be disconnected and the *ScribeSmart Controller* can run continuously without a PC!

## Other Advantages

### Download grid table

A grid calibration table is a file that corrects the scanning field from distortions in the rectangular field caused by mirror and lens effects to a perfectly squared field.

### Real time clock

An on-board real time clock allows marking of real date and time objects in the stand-alone operation mode. An on-board lithium battery maintains time and date when system is powered down.

### Mark on-the-fly

Quadrature encoder input synchronizes laser processing with product in motion. The encoder inputs (for X and Y axis) are active while scanning, for a dynamic MOF.

### Laser control parameters

First Pulse Suppression (FPS), Tickle Pulse, and PWM settings to support most laser source types.



## ScribeSmart™ Features

The ScribeSmart™ solution provides the following features:

- Stand-alone operation
- Real-time command of beam positioning and Laser control (Opto-isolated)
- On-board memory (Flash and RAM)
- 254 program capability and 64 object binning
- Real-time clock for time and date coding
- Serialization
- Dynamic mark-on-the-fly capability
- Handshaking with external equipment

## ScribeSmart™ Specifications

Software	<ul style="list-style-type: none"> <li>• Windows based GUI application</li> <li>• Visual Basic® assembler</li> <li>• Command line interface for programming and debugging end user software</li> </ul>
System requirements	<ul style="list-style-type: none"> <li>• Windows® 2000™, XP™, ME™ or NT™ 4.0 operation system</li> <li>• 20 MB available disk space</li> </ul>
User I/O	<ul style="list-style-type: none"> <li>• 6-Bit binning input port</li> <li>• 4 handshaking signals (Begin_Mark, Abort_Mark, Mark_In_Progress, Mark_Error)</li> <li>• 2 quadrature encoder inputs</li> <li>• Isolated 5 V power output</li> <li>• RS232 communication port (up to 115 K baud)</li> </ul>
Laser interface	<ul style="list-style-type: none"> <li>• First pulse suppression output</li> <li>• PWM laser modulation/Tickle Pulse output</li> <li>• Laser shutter (command input and 2 contacts)</li> <li>• 8-Bit digital laser power control port</li> <li>• +10 V 8-bit DAC laser power output</li> </ul>
2-axis servo interface	<ul style="list-style-type: none"> <li>• ±3 V, 16-bit position-command D/A output</li> <li>• 16-bit position-feedback A/D</li> <li>• Servo_Enable and Servo_Ready hand-shaking</li> </ul>
On-board DSP control	<ul style="list-style-type: none"> <li>• Host interface or fully stand-alone operation</li> <li>• 43 khz scanner-command update rate</li> <li>• &lt;50 µS response to I/O signals</li> <li>• Flexible instruction set, optimized for scanner-based system control</li> <li>• 128 K RAM and 384 K FLASH memory</li> </ul>
Power requirements	<ul style="list-style-type: none"> <li>• Supply voltage: ± 15 V to ± 25 V, 500 mA (typical)</li> </ul>

Specifications are subject to change. Consult GSI Group for details



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