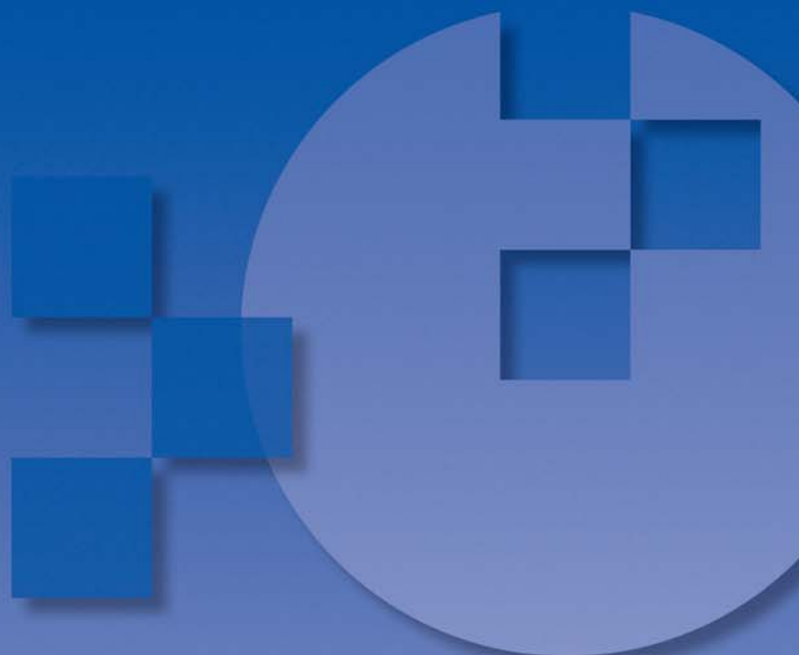


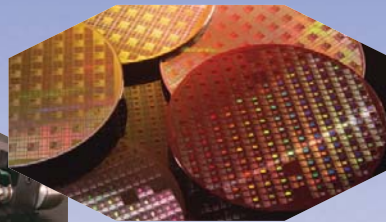
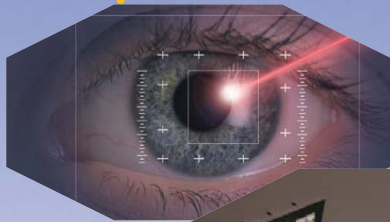


**Lightning**<sup>™</sup>  
Digital Scanners



# Invention > Evolution > Revolution

## A Breakthrough in Optical Scanners and How You Use Them





**Lightning™**  
Digital Scanners

# Introducing the Lig

## Invention

### MPower Motor Technology

- Smaller size for more compact designs
- Higher speed for greater throughput
- Improved accuracy for higher quality
- Higher efficiency reduces power consumption
- Higher sensitivity provides improved control
- Improved thermal performance reduces drift

## Evolution

### Digital Servo Technology

- Higher bandwidth for faster scanning
- Lower noise for increased accuracy
- Higher sample rate for improved control
- Improved thermal stability for greater accuracy
- Enhanced monitoring for improved diagnostics
- Advanced filtering to optimize application performance
- Automated tuning reduces development, manufacturing, and support costs

## Revolution

### TuneMaster Optimization Software

- Reduces time to market by cutting application development time
- Reduces production costs by minimizing inventories and equipment requirements
- Improves system reliability by enabling system re-optimization
- Improves QA and traceability by automating all documentation
- Reduces sales cycles by enabling customization and application optimization on the spot

## We Invented the Optical Scanner.

## Then We Refined It... And Now We Have Revolutionized It.

The Lightning Digital Scanner platform is a new concept in optical scanner technology. Not just a motor and driver, the Lightning Digital platform includes our third- and fourth-generation family of high performance motors, our second generation digital servo electronics, plus the industry's only software toolset, TuneMaster™. As a system, Lightning will do for scanner-based designs what 3D CAD software did for manual drafting, bring it to a new level of performance... Lightning will enable the rapid development of application-specific tunes. It will reduce manufacturing costs while improving unit-to-unit consistency. Lightning will even maintain a system's optimal performance over its service life. Bottom line, the Lightning Digital Scanner platform is so advanced, it will revolutionize the way you develop, manufacture, support, and sell high-performance scanner-based systems.

## Invention

### The MPower Motor Strategy



General Scanning invented the optical scanner, an enabling technology that has become essential to industries as diverse as medical equipment and semi-conductor manufacturing. Now, we are setting a new performance benchmark with an innovative design concept called the MPower Motor strategy. It works like this: Rather than optimizing individual scanner motor elements, we optimize the mirror, the mount, and the motor as an integrated working unit. This ensures that all the inertial elements of the MPower Motor are performance-matched to give you the ultimate in speed and accuracy. The MPower Motor strategy is the basis for our 4th generation motors. Also available is our improved line of 3rd-generation VMPLUS scanner motors.

Refer to the MPower Motors brochure for details.

## Evolution

### Second Generation Digital Electronics

General Scanning led the industry with the first driver based on digital servo technology. Now, utilizing our second-generation 16-bit driver technology, Lightning offers even more advantages. For example, it achieves 50% higher bandwidth than analog drivers for dramatically improved speed and accuracy. In addition, it opens the door to another enabling technology by interfacing to our TuneMaster software toolset.

Refer to the Lightning Servo Driver brochure for details.



# Lightning™ Digital Scanner Platform



The Lightning Digital Scanner platform has three elements: Our MPower Motors, a family of mirrors, mounts and motors optimized as working units, our 16 bit digital servo driver, and the revolutionary TuneMaster software.

## Revolution

### TuneMaster, the Software that Changes Everything

Lighting's software is nothing short of revolutionary. Named TuneMaster, it allows you to perform tuning-related activities while your system runs the actual application.

We call it working in the "Application Domain," and it is where you achieve the best performance. With TuneMaster, X Y scanners are matched to each other while they are tuned to your application requirements. And it is all done automatically.

Even more impressive are the process improvements TuneMaster brings to your business:

- The **TuneMaster Creator** module can reduce tune development time up to 90%.
- On the production floor, **The MatchTune Generator** module can improve productivity and reduce costs by enabling the use of archived tune recipes and automated scanner optimization.
- TuneMaster is equally valuable as a customer support tool. Using the **Support Toolbox** module, you can perform maintenance or re-optimize a system without cumbersome test gear. All you might need is a laptop computer. In addition, TuneMaster eliminates the need to stock pre-tuned spares. You can replace a scanner set with an off-the-shelf unit, download the application tune from the master library, click the "Retune" button, and your system will be up and running in minutes.
- The **Function Library** module provides convenient access to key functions in the system's Application Domain or working environment.
- TuneMaster can also become a major contributor to your quality program. The automated tuning process increases unit-to-unit consistency, regardless of the operator's skill level. In addition, documentation for product traceability is compiled automatically over the life of a unit with each use of the software.
- TuneMaster can even shorten your sales cycles. Use it to optimize your system during a demonstration for an unbeatable competitive advantage.

Refer to the TuneMaster brochure for a complete description.



To learn more about the Lightning Digital Scanner platform, MPower Motors, and other General Scanning products, visit: [www.gs-scanners.com](http://www.gs-scanners.com) for all the details.

To learn more about GSI Group, visit our corporate website: [www.gsig.com](http://www.gsig.com)

General Scanning is the world's leading optical scanner company with offices in major industrial centers around the globe. As one of fourteen product brands that comprise GSI Group, we deliver enabling technology that brings advanced applications to life in the medical, semiconductor, electronics and industrial markets.

**A World of Enabling Technologies**

Bringing Your Advanced Manufacturing Applications To Life

**Enabling Technology**

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