Immersion®

RSI 3D Laser for MicroScribe® G2 and MX Digitizers

The new laser scanner from RSI for six degrees-of-freedom (6DOF) MicroScribe systems sets a new price/performance point, supplying a fast, non-contact laser scanning solution for 3D applications including:

- 3D graphics for artistic presentation, animation, education, and training
- Reverse engineering and rapid prototyping for industrial design and production
- Metrology for industrial inspection and quality control
- Physical analysis for product development, materials evaluation, research, and development

Fast, convenient, and affordable 3D scanning

For a fraction the cost of comparable laser scanners, the MicroScribe digitizer and RSI laser system quickly collects point-cloud data of 3D objects. Where conventional point-and-click digitizing or measurement may take hours or days, laser scanning can produce the same or higher resolution data in minutes. Software transforms point cloud data into polygon data stored in industry-standard file formats. Polygons are sufficient for many applications including rendering and visualization, rapid prototyping, and physical analysis.

In addition to being fast, the MicroScribe laser solution is lightweight, compact, and convenient. It is just 6-inches square (15 cm) and weighs about 15 pounds (7 kg). The scanner controller is palm-sized, not a big and bulky box as with most other scanning lasers.

Highlights

- Fits 6DOF MicroScribe systems
- Dramatically reduces digitizing time
- Includes software for transforming point-cloud data into industry-standard formats
- Supplies compact portability and easy setup and use
- Costs far less than most comparable laser systems

More Info: microScribe.ghost3d.com

Easy to use

A MicroScribe digitizer with a 6DOF touch probe is needed to maneuver the laser for data capture. Instead of point-and-click, data collection is more like spray painting, with the laser collecting up to 28,000 points per second.

As you sweep the laser to profile the surface, captured points appear in real-time within MicroScan Tools software, allowing you to see where point density should be increased. You can switch from the long to the short laser line to increase density and better resolve high curvature regions. The system lets you efficiently digitize parts of even great complexity and size.

MicroScribe MLX

High-resolution data of complex parts

As nothing touches the model during data collection, the laser scanner is also particularly useful for very small, deflectable, delicate, or complex parts, and parts with holes that may be too small for a touch probe to accurately digitize. Using a touch probe alone to digitize delicate or complex parts can be tedious, time-consuming, or even impossible, but the laser solution can very quickly and easily provide high resolution 3D data without touching the part or model.

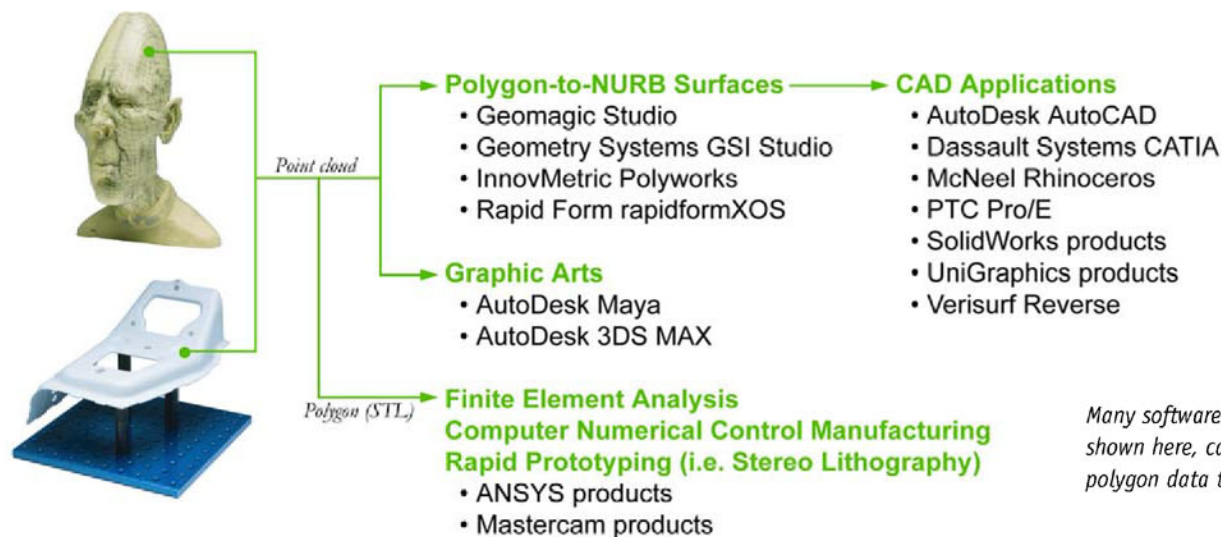## Convenient and powerful MicroScan Tools Software

Whenever you reposition the model to scan another of its surfaces, you create a new scan file. Laser and MicroScribe system outputs are synchronized and transferred to MicroScan Tools software for real-time visualization and subsequent processing. This includes discrete point-and-click measurements that can better capture sharp edges or corners. The software processes the scanned raw data, performing much of the necessary cleanup for noise reduction and hole filling, triangulation, registration, decimation, and merging of the files to provide a unified data set.

High accuracy

With a point density of around 0.0039-inch (0.1 mm), RSI's laser can capture objects with a high level of detail. Because the point cloud contains an equal distribution of points lying above and below the ideal surface, the quality of the final surface is determined by the post-processing software and the statistics of the measurement process rather than the scanner's tolerance or the digitizer's accuracy. The software uses sophisticated algorithms to align the scanned profiles, which themselves have a higher accuracy than the traditional MicroScribe system using a touch probe. As a result, overall system accuracy and resolution equals or exceeds that of the MicroScribe touch probe system.

Software compatible

RSI laser-scanned data is compatible with almost every software application supporting point or polygon import. Many third-party software programs can be used to transform the data into CAD-editable formats for manipulation or analysis, such as a comparison between a laser-scanned first manufactured article and the original CAD design.

About Immersion Corporation

Founded in 1993, Immersion develops software and hardware technologies that improve the way people interact with digital devices. Immersion MicroScribe products are the fast, flexible way to capture 3D measurements from a physical model.

For More Information
Visit: www.MicroScribe.Ghost3D.com

For enquiries & orders, please contact:

ghost 3D™

GHOST 3D, LLC
17155 Robey Drive
Castro Valley, CA 94546
Web: http://www.ghost3d.com
E-mail: g3dsystems@ghost3d.com
Authorized Immersion Distributor & OEM Partner

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Point cloud

Polygon (STL)

Polygon-to-NURB Surfaces ──→ CAD Applications

- Geomagic Studio
- Geometry Systems GSI Studio
- InnovMetric Polyworks
- Rapid Form rapidformXOS

CAD Applications
- AutoDesk AutoCAD
- Dassault Systems CATIA
- McNeel Rhinoceros
- PTC Pro/E
- SolidWorks products
- UniGraphics products
- Verisurf Reverse

Graphic Arts
- AutoDesk Maya
- AutoDesk 3DS MAX

**Finite Element Analysis
Computer Numerical Control Manufacturing
Rapid Prototyping (i.e. Stereo Lithography)**
- ANSYS products
- Mastercam products

Many software packages, such as those shown here, can convert point cloud and polygon data to other formats.