ScanSTENCIL™
"Automatic Stencil and Screen Inspection"

What is ScanSTENCIL?

ScanSTENCIL is a fully integrated, stand-alone measurement and inspection workstation for use after stencil and screen fabrication or other machined, etched, e-form or laser cut operations. For stencil and screen users, the system permits in-bound and post cleaning inspection of stencils and screens prior to production.

ScanSTENCIL uses a PC Windows-based software package integrated with a high-resolution, calibrated, A3 size flatbed scanner. This combination allows inspection of both stencils and screens for accuracy and the ability to inspect 100% for absence/presence, position and size of thousands to millions of apertures.

Create stencil fabrication data

ScanSTENCIL adds flexibility to the stencil and screen inspection process. Utilizing its calibrated scanner, ScanSTENCIL inputs actual PCBs, existing stencils, screens, films and technical drawings. With these inputs, ScanSTENCIL is able to automatically create exact Gerber data for stencil/screen production when data is corrupt or missing. Also able to modify Gerber data to exactly match a PCB, thereby creating a "Digital Twin".

Automatic Features

Tired of using slow manual measurement and inspection methods? ScanSTENCIL offers various functions that quickly and automatically create necessary Gerber and verification data:

- Absence/Presence of Apertures
- Confirm Proper Aperture Position
- Confirm Proper Aperture Shape and Size
- Compare Stencil/Screen vs. Gerber
- Compare Stencil/Screen vs. Stencil/Screen
- Compare Stencil/Screen vs. PCB
- Create Stencil Files from Boards/Films
- Automated features to speed inspection process

Verification

Worried about the quality of new or used and just cleaned stencils or screens? Use ScanSTENCIL to verify the accuracy of the parts and (Gerber) data. The "Local Micro Alignment" (LMA) option allows for checking apertures as small as 0.001" diameter (0.025 mm).

Additional applications

ScanSTENCIL creates Gerber files as well as other data used in stencil production, including: Silkscreens, Soldermasks, Padmasters, Stencil Files, Panelized Images, DXF and Gerber-274x files, etc. ScanSTENCIL permits fast and accurate comparison of stencils/screens to bare PCBs bringing automation and increased productivity to QC departments.

Using ScanSTENCIL's hardware "focus" capability, inspect printed and dispensed materials such as solder paste, Glue and Adhesive permitting first article and sampling inspection back to Gerber data.

Why use ScanSTENCIL?

Quality
100% automatic inspection of screen/stencils for absence/presence, position and size of apertures.

Accuracy
NIST traceable calibrated system. Check apertures as small as 0.001" diameter (0.025 mm).

Usability
Adjust Stencil Gerber data to match actual PCB to achieve 43% reduction in Solder Paste defects per published Motorola study in SMT007 Magazine.

Flexibility
Use one system for inspection and measurement of stencils/screens, bare PCBs, pallets, tooling, components, etc.

Traceability
Store images and inspection data for traceability in support of ISO and other compliance programs.
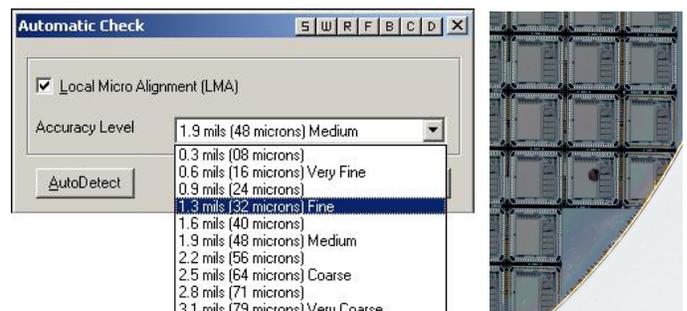
SYSTEM FEATURES

Workstation Desk System

- Contact System
- Scanner Faces Up, Part Faces Down
- Dry or Wet Parts with Standoffs
- Large Part Capability with Multiple Scans

Scanning and Data Input

- Scan Stencils, Screens, PCBs, Films, Pallets, etc.
- Automatic Image Alignment to CAD or Golden Part

Measurement & Inspection Functions

- Compare Parts against Gerber or Golden Part
- Verify feature absence/presence as small as 0.001" (0.025mm)
- Check Gerber Image against Scanned Image
- Compare Gerber Image against Gerber Image
- Design Rule Check
- 15+ inspection algorithms
- Masking capability
- Ability to overlay 90+ images & 90+ CAD layers

Automatic Functions

- Pad Recognition: Circle, square, oval, rectangle
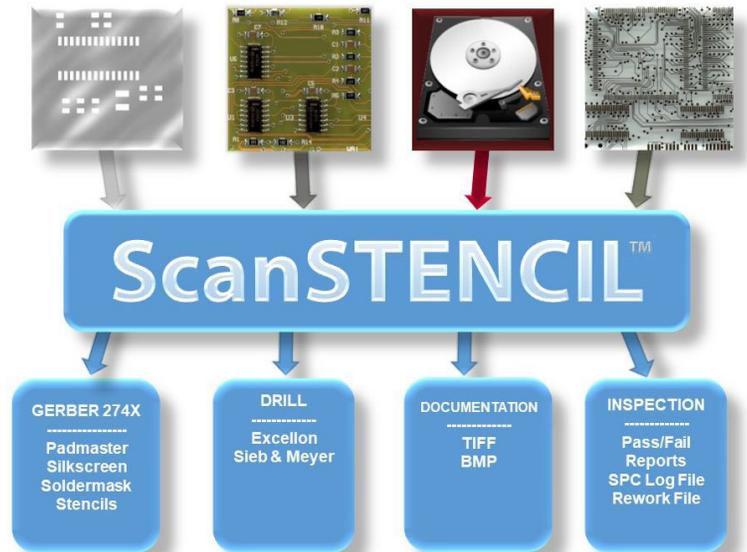- Special SHAPE functions
- Pads on Grid

Output

- Pass/Fail Inspection Report
- System log files in support of SPC
- Rework File Generation
- Gerber Files (274D & 274X)
- Comprehensive Aperture Tables
- Stencil Files
- DXF
- BMP, TIFF images

Image and Data Editor

- Multi-Color Display
- Multi-Level Zoom Function
- Customized Aperture Tables
- Snap-to: Pad Center
- Snap-to-Grid: Pads
- Multi-Layer Display
- Macros: Create & Store
- Automatic Text Function
- Metric or Inch

Data Creation (Optional)

- Automation CAD data creation
- Reverse Engineer from existing parts
- Destructive and non-destructive processes
- Ability to import X-ray, CT-scan, SEM images

ScanSTENCIL™

GERBER 274X	DRILL	DOCUMENTATION	INSPECTION
Padmaster Silkscreen Soldermask Stencils	Excellon Sieb & Meyer	TIFF BMP	Pass/Fail Reports SPC Log File Rework File

Technical specifications

Scanner
- High-Resolution Color Flatbed Scanner, Size A3: (400/1000/1600/2000/2400/3200/4000/4800 dpi)
- Calibrated Accuracy: ± 0.0010" (± 0.0254mm)
- A3-Scanning Area: 11.7" x 16.5" (297mm x 419mm)
- Unlimited Work Area

Computer*
- Multi Core Processor - 3 GHz
- 1 TB 7200 RPM HDD, 16 GB RAM (Additional 256GB SSD recommended for higher performance)
- FHD (1920x1080) Flat Panel Monitor
- Ethernet Connection
- Windows 10 - 64-Bit
- 2 available USB2 or USB3 ports

*Recommended customer-supplied minimum PC requirements.

- **Additional System Components**
- Precision Glass Calibration Grid (NIST Certified)
- Scanner Interface Cable
- Software Protection Key
- Scanning Accessory Package
- Custom Desk
- Custom Transmissive Lighting Package
- Extra Seat - Software-only (Optional)
- Service and Support Contracts (Optional)
- Multi-layer PCB Delamination System (Optional)

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