CapStone™

Reduce Costs 20-30% Over the 5335.

mks | ESI

CapStone provides a laser-based FPC processing solution that utilizes a new generation of laser technology and laser control capabilities to simultaneously deliver high-quality, high-speed via drilling.

The CapStone™ UV-laser drilling system provides leading-edge FPC manufacturers with a high throughput laser-based solution for processing flexible circuit interconnects at higher levels of precision–even on thinner materials. Breakthrough productivity using laser and laser control technology optimized for FPC processing enables flex PCB manufacturers to extend their capabilities and cost-effectively address a wider range of requirements associated with high-volume flex processing at up to and beyond 30% more cost-effectively than the 5335.

Laser control maximizes blind via throughput and yields.

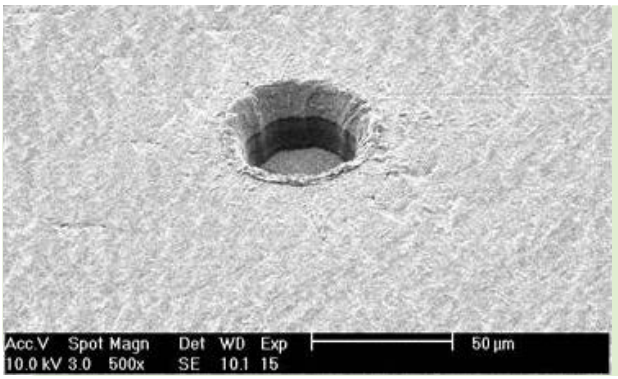
Dramatically increase your blind via processing speeds using ESI's new, patented DynaClean™ feature that turns your multi-pass blind via process into a single pass. Minimize heat effects with up to 10m/s via drilling process velocities using AcceleDrill™ beam positioning technology.

High-performance laser drives efficiency and lowers costs.

Highest UV nsec FPC drilling industry repetition rate with optimized laser characteristics delivers higher throughput and wider process windows. Laser designed and tested in high-volume 24/7 manufacturing environments to extend laser life and reduce maintenance requirements.

Process a wide range of current and next-generation materials.

CapStone applies ESI's decades of laser-material interaction expertise to provide higher performance. This enables FPC manufacturers to drill high-density designs with an increased yield—while limiting incidental damage.



Extend Your Flex Processing Capabilities

- Highest productivity and yields for small blind vias and through vias in thin materials
- High-quality vias down to 25 µm
- Custom optimized laser for wide process window and high productivity

CapStone™ System Specifications

mks | ESI

Laser	
Type	355nm wavelength
Pulse Rate for Via Formation	300 kHz
Average Power	>11.4W @ 300 kHz

Type	Cross-axis with galvanometer (Laser beam moves in XY, part moves in Y axis)
Panel Size	533 mm x 635 mm
Accuracy	± 15um |M|+3s over entire panel area
Maximum Drilling Velocity	10,000 mm/s
Controller	ESI custom DSP-based controller

Main Stage	
Type	Cross axis
Motor Type	Brushless linear motors

Secondary Stage	
Type	XY Galvanometer
Controller	High-speed custom digital control

Tertiary Stage	
Type	XY Acousto Optical Deflectors
Controller	High-speed custom digital control

Laser Power Control	
Long Term Stability	±2.5% + 50 mW
Feedback	Closed Loop
Power Control	Precision Pulse™ real-time

Features:

Third Dynamics™, AcceleDrill™, and DynaClean™

Programmable Z Stage	
Resolution	1 µm
Maximum Average Velocity	>10 mm/s
Repeatability	± 10 µm
Travel	25 mm

Automatic Alignment and Illumination	
Coarse Camera Field of View	30 mm diagonal
Fine Camera Field of View	2 mm diagonal
Detection Device	CCD, monochrome
Illumination	LED

System Control Computer	
Type	IBM® PC compatible
Hard Drive	Dual 500GB in RAID1 configuration
Monitor	17” LCD flat panel
Input Devices	Keyboard and trackball

System Software	
Operating System	Microsoft Windows 7
Network Compatibility	TCP/IP, 10/100/1000 GBE
Toolpath Generation Software	esiCAM
Drill File Formats	DXF, ASCII, Excellon I and II, Sieb & Meier and Gerber

Automation Capability

Software, mechanical and electrical interfaces provide the capability to attach web and panel material handlers to the system.

Ask an Expert! For facilities guidelines, requirements or more information, please contact your local ESI representative or visit www.esi.com.

mks | ESI