

Discovery™ 6 AOI System

Simple, Intelligent, Powerful



Excellence in AOI made easy with Discovery 6, the world's most intuitive system for advanced, mid-volume PCB production

Powered by Orbotech's new SIP Technology™, Discovery 6 delivers Simple, Intelligent and Powerful AOI performance. Introducing ground-breaking new Push-to-Scan™ – the easiest, most user-friendly AOI operation on the market – together with Visual Intelligence™ for detecting ALL the defects you want and ONLY what you want.

This next generation AOI system offers minimized false calls and maximum up-time for a major impact on your bottom line results.

Excellent AOI Results Every Shift



SIP Technology™

PCB Production Solutions

Orbotech®

SIP Technology

Designed with SIP Technology, Discovery 6 introduces a fresh approach to AOI combined with a totally new user experience.

Easy to operate and simple to maintain, Discovery 6 is an intelligent and powerful AOI system built for your bottom line.



Simple



Push-to-Scan

- A “no setup” setup process
- Top AOI results with minimal effort or training
- The easiest user-friendly interface

Intelligent



Visual Intelligence

Detect ALL You Want and ONLY What You Want

- Total detection engine
- No more trade-off between detection and false calls
- No more wasting time on non-critical defects

Powerful



Impact Your Bottom Line

- Focus on Real AOI throughput
- Minimized training, setup and optimization requirements
- Maximum up-time with high Mean-Time-Between-Failures (MTBF)

Push-to-Scan

With the system's innovative Push-to-Scan operation, even the most complicated AOI tasks are made easy.

Our new SIP Technology allows you to achieve top AOI results with minimal effort or training. Featuring an ultra-fast setup process, you simply complete a few parameters, using interactive guidance and you are ready to start inspecting panels in batch mode. There is no more need for endless interactions - job optimization is now automatic. The all-new, straightforward wizard-based interface is the ultimate in ease-of-use. With just 5 hours of training, even a beginner can become an expert.

The Ultimate in Ease-of-Use with Excellent Results Everytime, Anytime

Visual Intelligence

Detect ALL You Want and ONLY What You Want

Using SIP Technology, Discovery 6 changes the detection paradigm. Featuring Visual Intelligence, a total detection engine, you no longer have to choose between detection and false calls or waste time on non-critical defects. For the first time in AOI, you can detect ALL you want and ONLY what you want.

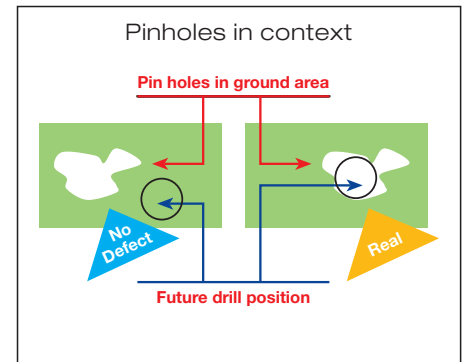
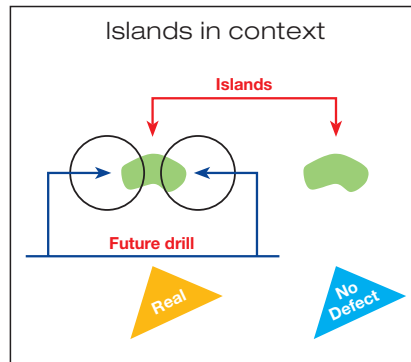
Detect ALL you want:

- Context-based detection provides the right sensitivity for every feature
- Pay Attention™ high resolution image re-examination technique for fine defects
- Automatic fine tuning

Detect ONLY what you want:

- Full multi-layer panel understanding and feature specific algorithms know critical vs. non-critical defects
- No cross-influence between features, parameters are element specific
- Adjustments are easy and intuitive

Are these defects?

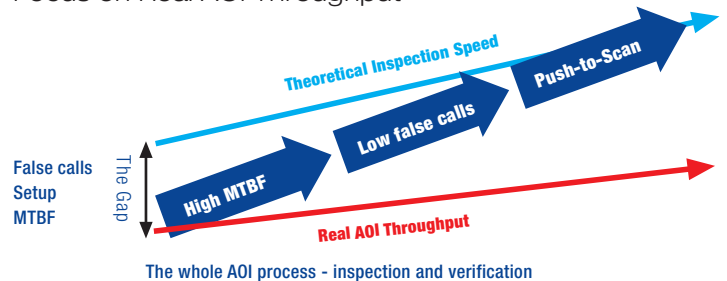


**No Trade-off Between Detection and False Calls
No Wasting Time on Non-Critical Defects**

Impact Your Bottom Line

Discovery 6 is a powerful solution that focuses on Real AOI throughput. Most of your time on the system is spent inspecting panels – a better investment of your valuable resources. Other on-system activities, including setup and system optimization procedures as well as training, are greatly reduced. Logic false calls are virtually eliminated and overall false calls are minimized. The system's all-new design achieves exceptional MTBF for maximum availability.

Focus on Real AOI Throughput



It's the "Always-On" Machine, Ready for Production



Discovery™ 6 AOI System

S p e c i f i c a t i o n s

Technology Range	Down to 2 mil (50 µm) line & space															
Products Inspected	Inner layers: Signal, power & ground, mixed, cross shielding, inner with holes, buildup Outer layers: Signal, mixed, cross shielding, buildup Build-up layers: Laservias (conformal and non-conformal masks) Phototools: Artwork															
Materials Inspected	Conventional: Bare copper (shiny, matte), etched additive or plated copper, reverse treated foil (RTF), double-treated copper, gold-plated conductors Any laminate including FR4, Tetra function, Teflon, Roger etc. Flex material: Polyimide, polyester Advanced build-up board materials: Any laminate including RCC Photoresist: Blue, purple & brown Artwork: Phototool films (silver halide, diazo using white background)															
Defects Detected	Shorts, opens, minimum line/space violations, nicks, protrusions, dishdowns, copper splashes, pinholes, missing or excess features, wrong size and position of features, clearance and split plane violations, blocked holes, annular ring violations, SMT violations															
Inspection Methods	Full reference comparison <ul style="list-style-type: none"> • SIP – model-based and contour comparison • Specific criteria per feature • Full multi-layer panel understanding 															
Panel Dimensions	Thickness range: 2-300 mil (50-7500 µm) Max. Panel size: 26" x 24" (660 x 610 mm) Max. Inspected area: 26" x 24" (660 x 610 mm)															
Throughput	<table border="1"> <tr> <td>Line width (mil) ></td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> </tr> <tr> <td>(µm) ></td> <td>125</td> <td>100</td> <td>75</td> <td>50</td> </tr> <tr> <td>Sides/hour</td> <td>175</td> <td>150</td> <td>120</td> <td>80</td> </tr> </table> <p>Based on panel size: 18" x 24" (457 mm x 610 mm) with 1" margin, including load/unload.</p>	Line width (mil) >	5	4	3	2	(µm) >	125	100	75	50	Sides/hour	175	150	120	80
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Sides/hour	175	150	120	80												
Defect Verification	Verification and repair stations: VRS™-5m, VRS-5, VRS-5st, VRS-4Pro, VeriSmart™ On-system verification: built-in video camera															
Setup Data Sources	CAM															
Panel Registration Method	Pinless registration – panel edge alignment															

Specifications are subject to change without notice.

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