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See The Invisible World.

ATHENA

3D Automated Optical Inspection System



P·E·M·T·R·O·N·

ATHENA Series

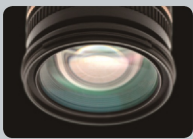
Technology and Features

Advanced High Speed Inspection and Measurement Technology

Shadowfree Phase Measuring Profilometry

ATHENA Series 10Mp 8+4 projector 3D AOI inspect 100% of the PCB in 2D and 3D, Provide a complete optical inspection of a PCB Shadow free and low false call maintaining a high flexibility in system functionally.

Moiré Technology



Over 10 years of integrating Phase Measuring Profilometry Technology into our TROI Solder Paste Inspection Systems has proven the most advanced 3D technology available.

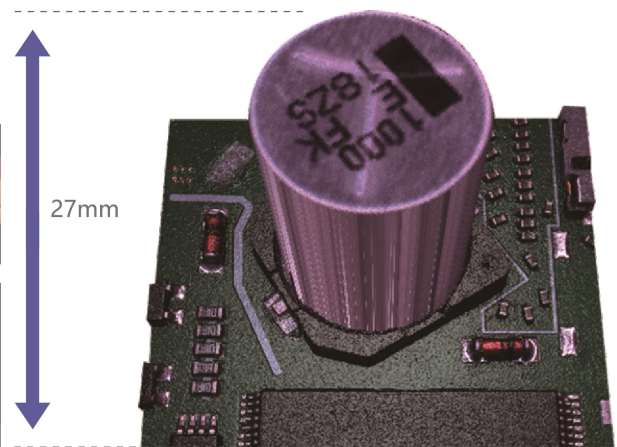
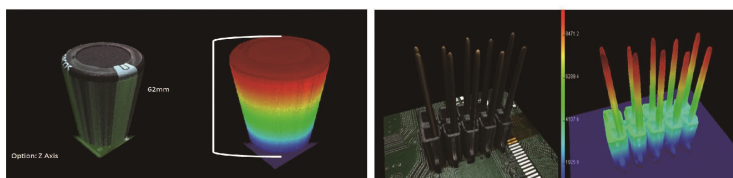
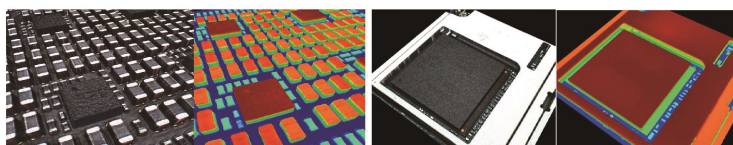
- 8+4 Projection + Three stage 2D lighting
- 2D and 3D simultaneous inspection algorithms
- Telecentric Lens provide higher accuracy and detection
- High Speed GPU and Image Processing
- User Friendly Graphical Interface
- Built in Library Management System
- Offline Real Time Debug System (Option)

High Speed Inspection Technology

ATHENA High Speed Option Inspect in 41cm²/s by utilizing an advanced network of more powerful GPU, Controller boards and our proprietary developed 10MP 15um 180fps camera with telecentric lens.

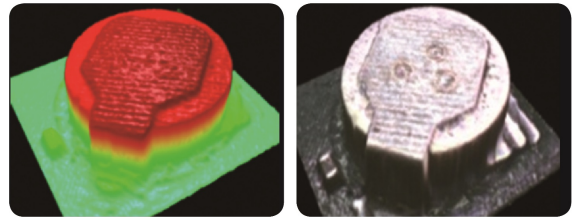
High Component Inspection Technology

ATHENA new 8+4 Way option Projection Technology provide 100% 3D inspection of 27mm and this is the first in the yield.



Shadow free 3D Technology

Eliminates shadow issues on highly populated PCBs and tall components.



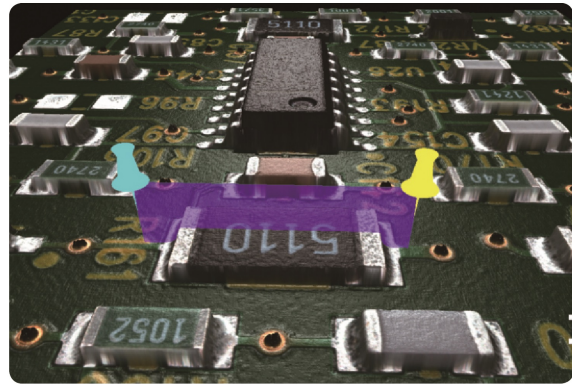
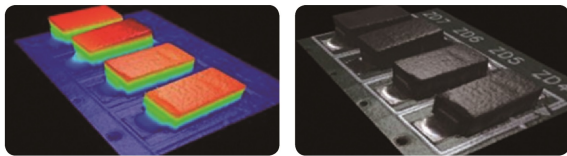
Optical Character Recognition

Recognizes component part characters by using color and pattern algorithms. Ability to add & modify OCR font to optimize inspection condition.



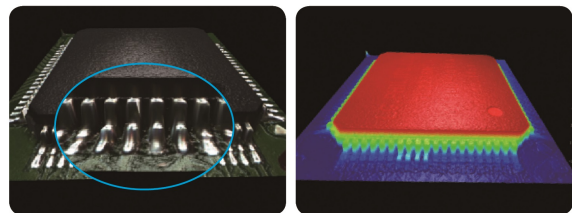
3D Solder & Height Measurement

Using our advanced 3D technology, the ATHENA is able to take inspection to levels that are limited by conventional 2D system. Adding solder height, volume and part coplanarity inspection provides enhanced defect detection capabilities.



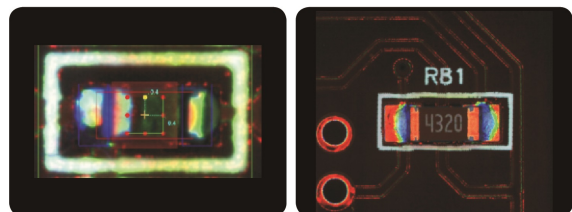
3D Lead Inspection

3D measurement algorithms enable the ATHENA to measure lead height and volume of solder proving full-high quality 3D images.



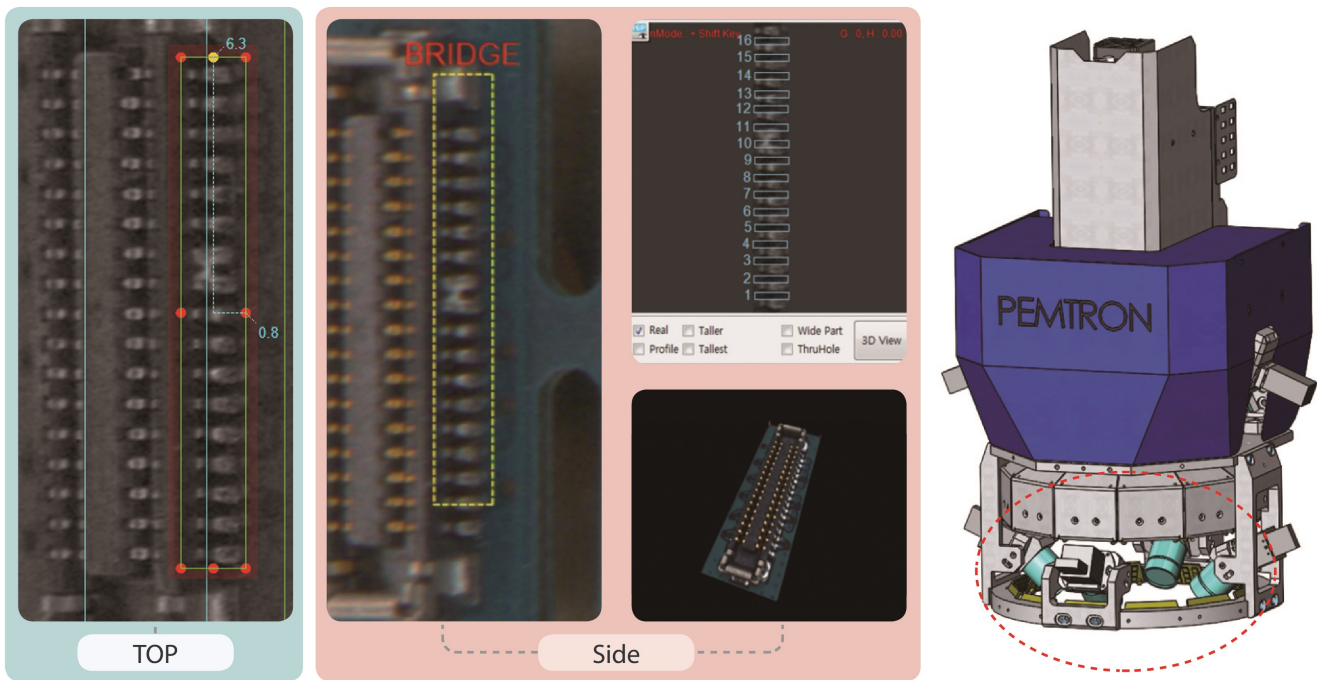
2D RGB Algorithms

Through the RGB distinguish, operator can easily confirm the failures such as cold joint and lift lead.



Completely 3D Measurement Solution

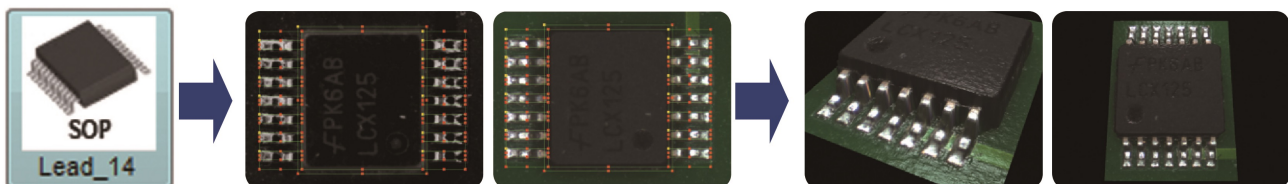
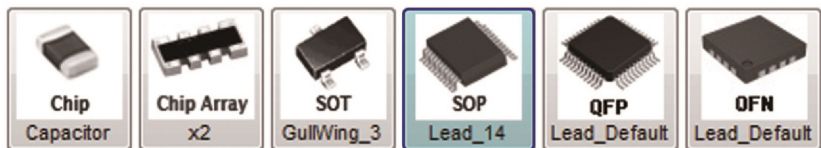
An accurate and convenient Inspection by using Side Camera.



- 4-Way Side Camera (Option)
- Possible to detect inside bridge which it cannot detect with Top camera
- Possible to detect Connector inside area
- Convenient Teaching by using existing Algorithm

Ease of programming (Auto Teach Function)

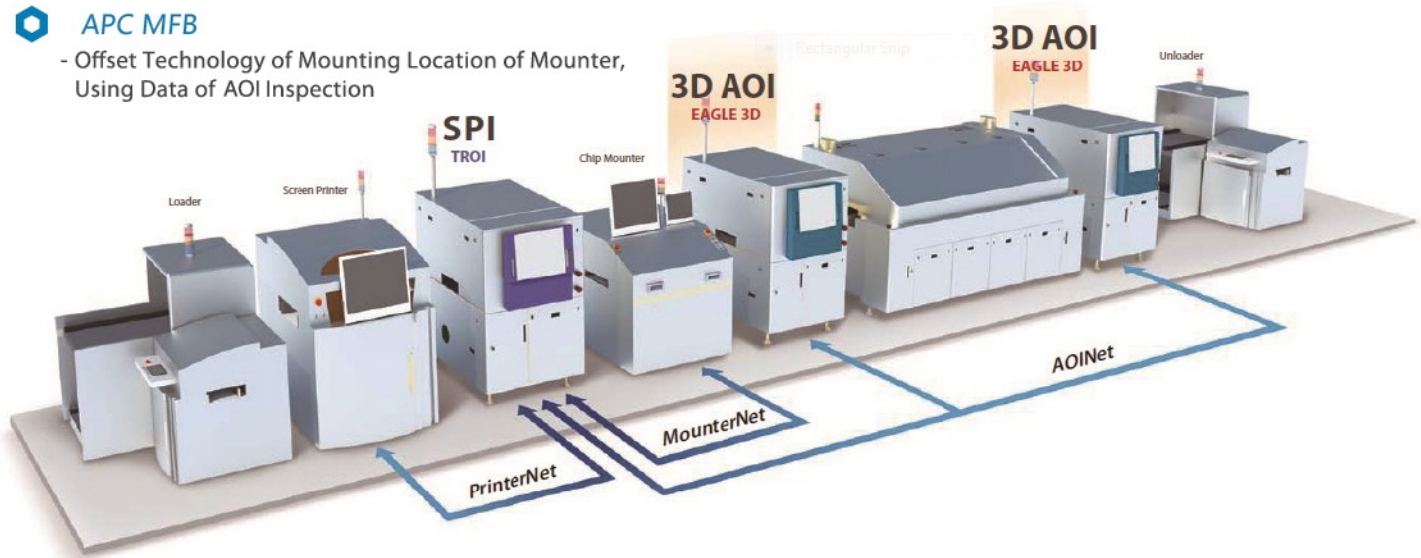
Advanced 3D imaging technology allows us to measure and recognize the geometric shapes of PCB components and automatically link them to our built in parts library.



Real-Time Process Management Quality Management Solutions

Inspection Result Information Auto Sync.

- ⬢ **Printer Net**
 - Closed Loop Solution with Screen Printer
- ⬢ **Mounter Net**
 - Closed Loop Solution with Mounter
 - Bad Mark Mounter Sync and Adaptive Process Control
- ⬢ **APC MFB**
 - Offset Technology of Mounting Location of Mounter,
 Using Data of AOI Inspection
- ⬢ **PEMTRON SPI & AOI Closed Loop Function**
 - Real time defect confirm
- ⬢ **SMARTRON**
 - Control a maximum of twelve



SPI & AOI Linkage



Statistical Process Control



SMT LINE 1

SMT LINE 2

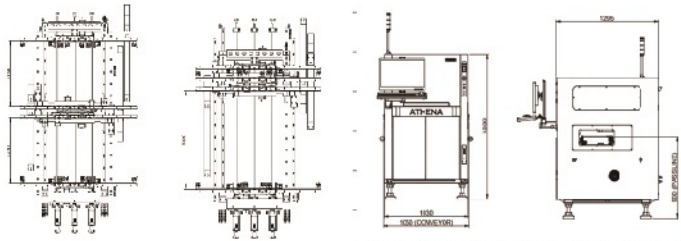
SMT LINE 3

- Pemtron's SPC module collects and analyses the inspection data, calculates and displays the data at a glance. A robust SQL driven database lends the user the flexibility of sorting and exporting the desired production results in a multitude of ways.
- The optional SPC Server collects data from multiple inspection systems over SMT lines, all in one system and interface.

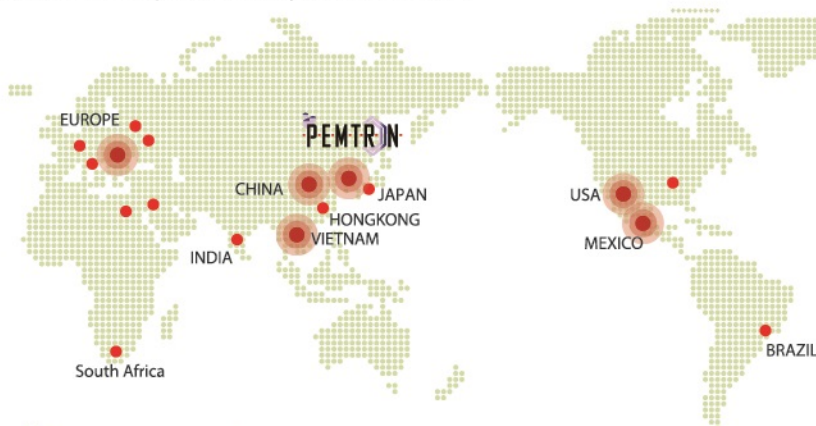
ATHENA Series

SPECIFICATIONS

Configuration				
Camera	10MP			12MP
X/Y Pixel Resolution	10um	15um	18um	15um
Inpsection Speed	19cm ² /Sec	41cm ² /Sec	59cm ² /Sec	52.65 cm ² /Sec
FOV (Field Of View)	33X30 mm	49X45 mm	59X54 mm	45X60 mm
Model	ATHENA	ATHENA L	ATHENA D	ATHENA DL
Max. PCB Size	330*330mm	510*510mm	Dual : 330*280mm Single : 330*500mm	Dual : 510*330mm Single : 510*600mm
Min. PCB Size	50*50mm			
Dimension/Weight	1050*1295*1550mm 900kg	1230*1485*1550mm 1050kg	1050*1895*1600mm 1120kg	1230*1935*1600mm 1240kg
Electrical Requirements	220 ~ 240 Vac , 1 Phase, 50/60Hz			
Power Consumption	3.5KW(16.0A Max)			
Thickness	0.4 ~ 7.0 mm			
Top Clearance	50 mm			
Bottom Clearance	50 mm			
Height Range	0~5.5 mm(Option 27mm / Z Axis)			
Height Accuacy	+/-3%			
Max PCB Warpage	+/- 3 mm			
Motor Type	XY Linear Servo Motor			
Conveyor Type	1 Stage Standard		3 Stage & Extension Rail Support	
Control Unit	PC(I7-8700 , 2TB+500G , 32G memory) / Monitor(24 inch)			
Option	<ul style="list-style-type: none"> • Offline Editor • 3D Target (KTL) • NG Buffer 	<ul style="list-style-type: none"> • Inline Debugging • 2D Glass Board JIG • NG Conveyor 	<ul style="list-style-type: none"> • Rework Station • i-PEMTRON Closed Loop • Bottom Side Barcode 	<ul style="list-style-type: none"> • SMARTRON • 4 Angles Side Camera • UPS
Special Size Requirement	ATHENA XL	ATHENA UXL	ATHENA YXL	Dual Lane Available
Max.PCB Size	690*650mm	850*650mm	1200*650mm	



* Specifications Subject To Change Without Notice



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