

V810i S2

Advanced 3D X-ray Inspection (AXI) Series
Superior AXI Solution for SMT Line.



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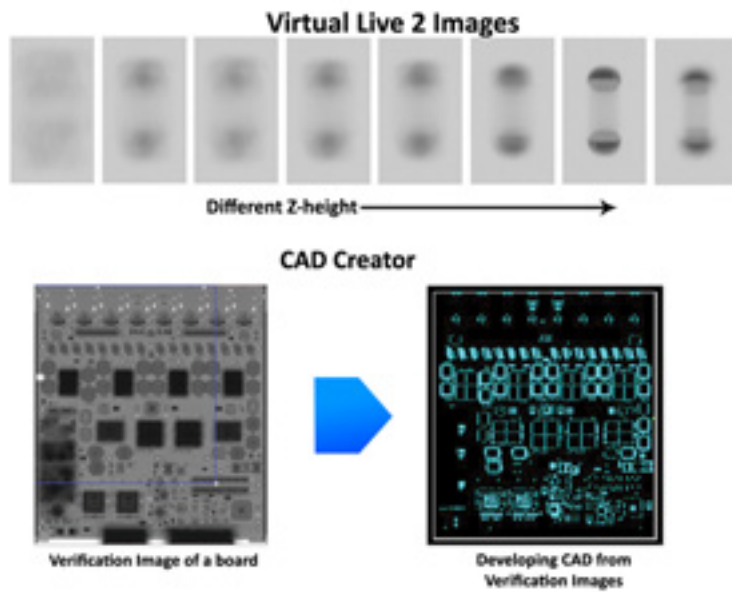
ViTrox 
 ...innovating vision



www.vitrox.com

New Technologies

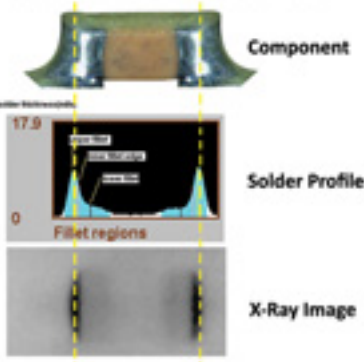
Ease of Programming



- **Custom Focus Region for POP**
Reduce the setup time of POP slice height and improve focus accuracy on POP.
- **Intelligent Initial Learning**
Auto learning feature that reduces program setup time.
- **Package Library**
Intelligently populate package information across production board.
- **Virtual Live 2**
Failure analysis tools to view multiple slices image instantly.
- **CAD Creator**
Capability to create CAD from Printed Circuit Board (PCBA) verification Image or SMT mounter machine's info.

Advance Technologies

Solder Profile Characteristic



DRO

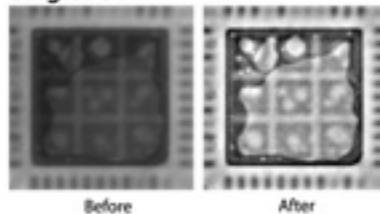
Power Coin Amplifier



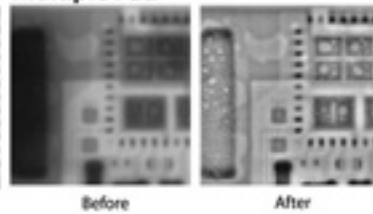
- **Proprietary Hybrid Auto Focus Technology**
Intelligently focus on desired Z-height without any mechanical movement from X-ray or stage.
- **Solder Profile Characteristic**
Provide thorough system information for troubleshooting.
- **Dynamic Range Optimization (DRO)**
Produce high quality X-Ray images on very heavily shaded components and non-uniformly shaded component.

Image Quality

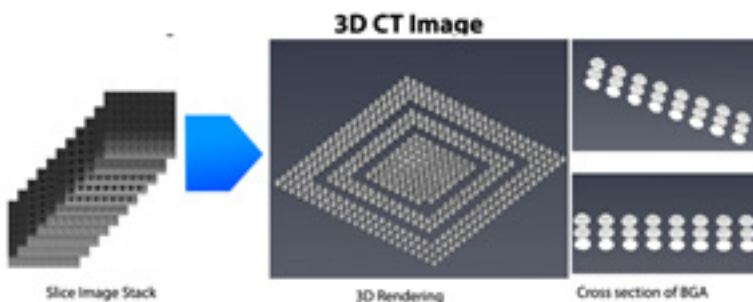
Single Pad



Multiple Pad

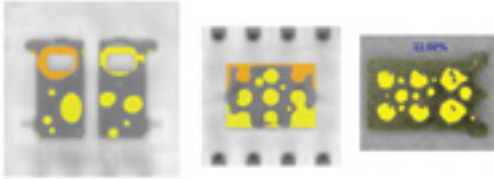


- **Image Enhancement**
Multiple image enhancer techniques to improve image clarity on multi layers component for void detection and visual verification.
- **3D CT Image**
3D modeling viewer at V810 and VVTS repair station.
- **Point Spread Function (PSF)**
Improve image clarity on 2.5D and help operator to make better judgement.

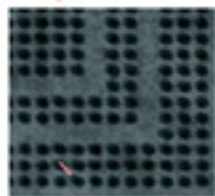
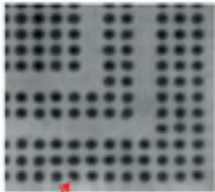


Improve Test Coverage

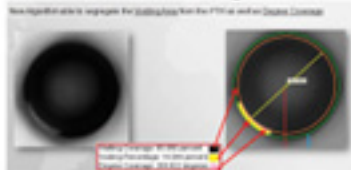
Voiding Algorithm



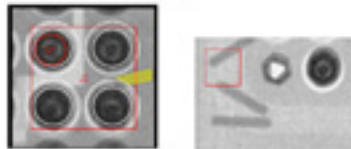
BGA



PTH Wetting



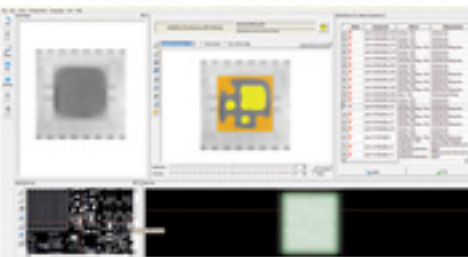
Broken Pin Algorithm



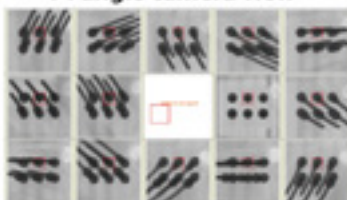
- Advanced algorithm with more than 20 joint types selection.
- **Phase Shift Profilometry (PSP 2)**
Improve accuracy and test coverage on 100% Pressfit and PTH board.
- **New Voiding Algorithm**
Improve the accuracy of detecting various type of voids on the component especially on large pad greater than 1 inch.
- **PTH Detection**
PTH wetting fully compliance with IPC wetting standard. Can define up to 10 slices to determine barrel fill percentage on PTH.
- **BGA**
Additional 3 user-defined slices to improve HIP detection.
- **Broken Pin Algorithm**
Capability to detect broken pin within PTH area and its surrounding area.

Ease of Buy Off

ViTroX Verification Tool Solution (VVTs)



14 angle camera view



ViTroX Verification Tool Solution (VVTs) Repair Station

A clear and user friendly defect verification tool allows the operator to review inspection result easily and accurately.

- **Auto Reject**
Automatically reject defective joints without operator buyoff.
- **Good Image Comparison**
Effectively improve operator disposition experience.
- **Diagnostic Image**
Highlight voiding area and show voiding area percentage.
- **2.5D PTH & BGA Angle View**
Provide most angle view images in market.

Speed Improvement

5 in 1 Super Server



V810i S2
10% - 45%
speed improvement
compare to V810
Series 1

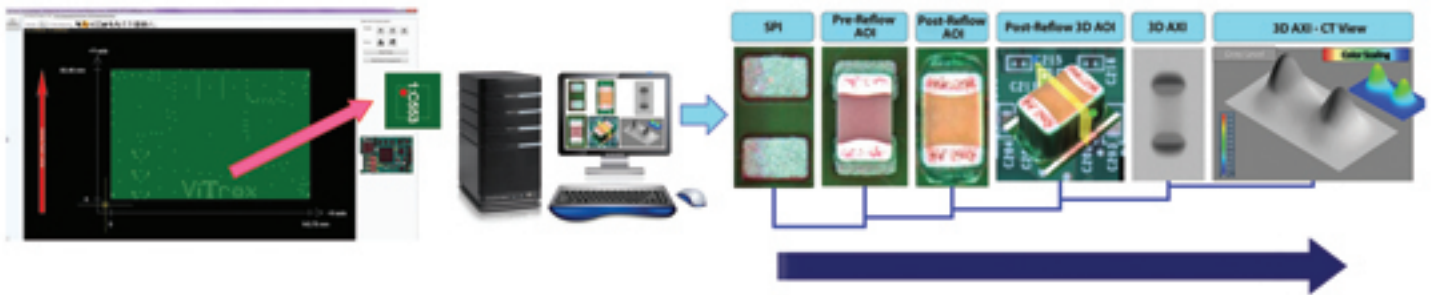
- **Real Time Predictive Slice Height (PSH)**
Reduce inspection time by running PSH simultaneously during standard inspection.
- **SUMO**
Improve hardware utilization, with improved and optimized multicore processing.
- **SPAM with Variable Scan Path**
Merge hardware scanning path and eliminate scanning path on non inspected region.
- **64 bits Image Reconstruction Processor (IRP)**
Larger memory access helps to reduce image reconstruction time.

Why ViTrox's AXI?

- World Fastest AXI System for All Kinds of PCBA
- 9 Award Winnings in 6 Years
- Widest Test Coverage with New Package Type Inspection
- User Friendly Programming Environment with Package Library and Database
- Low False Calls with Ease of Maintenance
- Highly Compatible with X6000 & 5DX

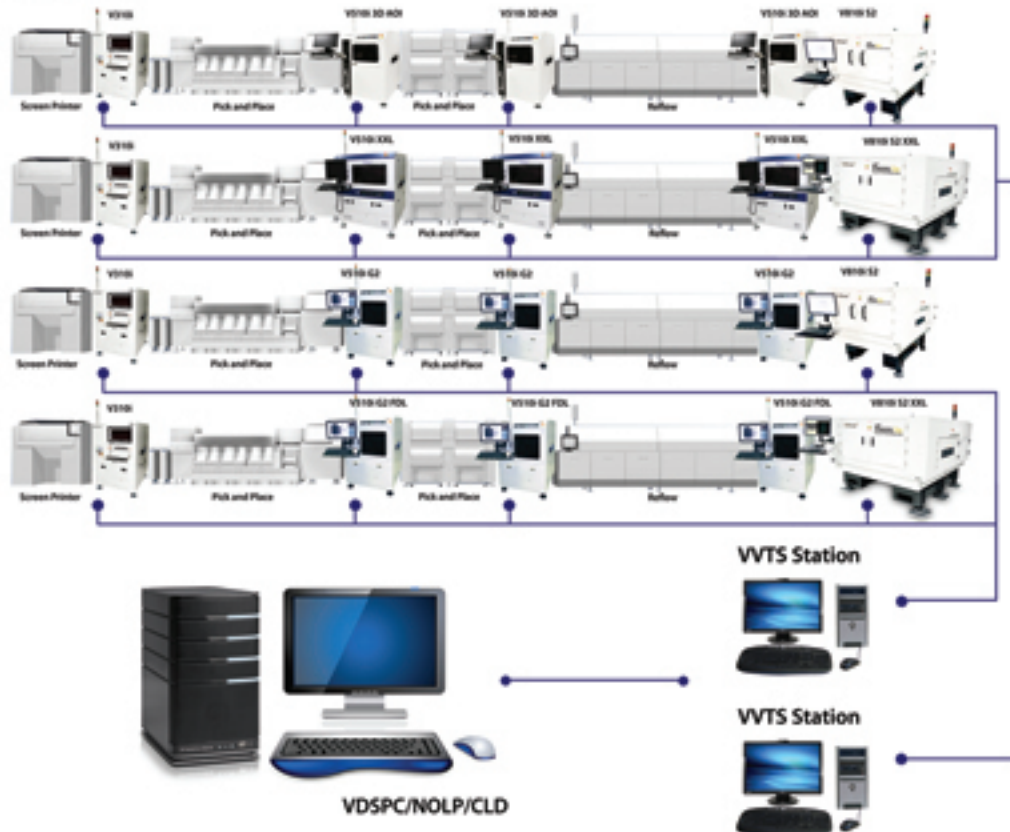
/ Series | Intelligent Link

/ Series incorporated Intelligent System which introduces new features on statistics, self-learning algorithms and advanced Graphic Interface via intelligent link at the end of line.



Closed Loop Feedback & Monitoring

The illustrated centralized management method allows more effective defect images collection, centralized programming, as well as fine-tuning. Moreover, one operator is now possible to manage multiple production lines, and in return brings great cost-saving for the company.



LESS Operator to Manage Multiple AXIs



REDUCE LABOUR
REDUCE OPERATING
COST

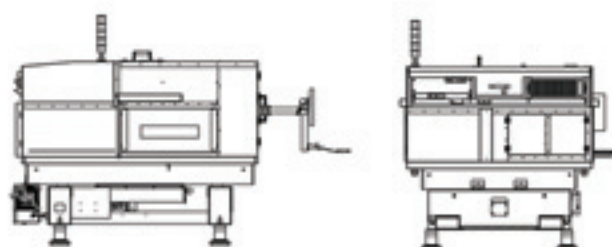
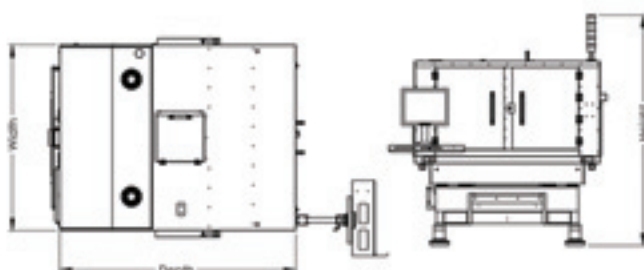
Operation Without Stopping Line



IMPROVE EFFICIENCY,
REDUCE DOWNTIME

Specifications

System	V810i S2	V810i S2 XXL
System controller	Integrated controller with 8 Core Intel Xeon processors	Integrated controller with 8 Core Intel Xeon processors
Operating system	Windows 8 (64 bits)	Windows 8 (64 bits)
Test Development Environment		
User interface	Microsoft Windows based software solution with easy-to-use GUI and password-protected user levels	
Off-line test development software	Optional for off-line	
CAD Conversion Tools	Optional software available to translate CAD data to ViTroX's format	
Typical test development time	4 hours to 1.5 days to convert raw CAD file and develop application	
Line Integration		
Transport heights	V810i S2: 823 mm - 980 mm	V810i S2 XXL: 919 mm - 1014 mm
Line communication standard	SMEMA	
Barcode readers	Compatible with most industry standard barcode readers	
Performance Parameters *		
Total panel test cycle time	51.68 cm ² /sec (8 in ² /sec) at 19um	
Typical Image Acquisition Rate	500 - 1000 ppm	
False call rates	500 - 1000 ppm	
Minimum features detection capability		
Joint pitch ¹	0.3 mm and above	
Short width ²	0.045 mm	
Solder thickness	0.0127 mm	
Allowable panel characteristics **		
Maximum Panel size	V810i S2: 457mm X 610mm (18"x24")	V810i S2 XXL: 660mm X 965mm (26"x38")
Minimum Panel size	V810i S2: 76mm X 76mm (3" x 3")	V810i S2 XXL: 76mm X 76mm (3" x 3")
Maximum Panel inspectable area	V810i S2: 434mm X 610mm (17.1"x24")	V810i S2 XXL: 654mm X 965mm (25.75"x38")
Maximum Panel thickness	V810i S2: 4mm (160mils), 7mm (280mils) with carrier 3.5mm (140mils) for Dual magnification system	V810i S2 XXL: 12.7mm (500mils)
Minimum Panel thickness	V810i S2: 0.5mm (20mils)	V810i S2 XXL: 0.5mm (20mils)
Panel warp	V810i S2: Downside < 2.0mm; Upside < 1.0mm	V810i S2 XXL: Downside < 3.3mm; Upside < 3.3mm
Maximum Panel weight	V810i S2: 4.5kg	V810i S2 XXL: 15kg
Minimum Panel weight	V810i S2: 0.03kg	V810i S2 XXL: 0.03kg
Board top clearance	V810i S2: 25mm @ 19um resolution, 15mm @ 13um resolution, 10mm @ 11um resolution * Calculated from belt surface	V810i S2 XXL: 25mm @ 19um resolution, 15mm @ 13um resolution * Calculated from board Top surface
Board bottom clearance	V810i S2: 50mm	V810i S2 XXL: 80mm
Panel edge clearance	V810i S2: 3.0mm	V810i S2 XXL: 3.0mm
Panel width tolerance	V810i S2: +/-0.7mm	V810i S2 XXL: +/-0.7mm
System resolution	V810i S2: 19um/11um	V810i S2 XXL: 19um/13um
100% Press-fit testability	V810i S2: Yes (With PSP2 feature)	V810i S2 XXL: Yes (With PSP2 feature)
Maximum acceptable panel temperatures	V810i S2: 40 Deg C	V810i S2 XXL: 40 Deg C
Power and environmental		
Voltage requirement	V810i S2: 200 - 240 VAC three phase; 380 - 415 VAC three phase wye (± 5) (50Hz or 60 Hz)	V810i S2 XXL: 200 - 240 VAC three phase; 380 - 415 VAC three phase wye (± 5) (50Hz or 60 Hz)
Air requirement	V810i S2: 552 kPA (80 psi) compressed air	V810i S2 XXL: 552 kPA (80 psi) compressed air
System footprint (Width X Depth X Height)	V810i S2: 1520mm X 1940mm X 1890mm	V810i S2 XXL: 2240mm X 2460mm X 1980mm
Total system weight	V810i S2: ~3220kg	V810i S2 XXL: ~5500kg



*** Note :**

- Assuming pad width is 50% of pitch.
- The reported values for minimum feature detection assume that the feature is in a single plane of focus and that there are no X-ray absorbers in the X-ray path or in the immediate area of the feature other than those found in a typical multi-layer printed circuit board.

**** Note :**

- Panels are handled on width edges. Panels with edge cut outs may require the use of a carrier.
- Maximum panel size dimensions and weight must include carrier if applicable.
- Smaller panels are possible with the use of panel carriers.
- With panels of this thickness, imaging results can be affected by PCBA layout.
- Measured from the bottom of the panel including a maximum warp.

Specifications

Systems

System controller	Integrated controller with 8 Core Intel Xeon processors
Operating system	Windows 8 (64 bits)

Test Development Environment

User interface	Microsoft Windows based software solution with easy-to-use GUI and password-protected user levels
Off-line test development software	Optional for off-line PC
Test sight developer	Optional software available to translate CAD data to ViTroX's format
Typical test development time	4 hours to 1.5 days to convert raw CAD file and develop application

Line Integration

Transport heights	865mm-1025mm
Line communication standard	SMEMA
Barcode readers	Compatible with most industry standard barcode readers

Performance Parameters *

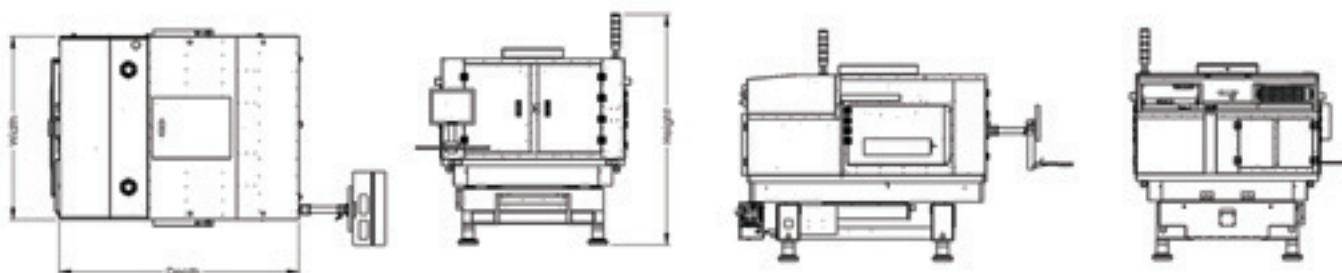
Total panel test cycle time	51.68cm ² /sec (8 in ² /sec) at 19um
Typical Image Acquisition Rate	500 - 1000 ppm
False call rates	
Minimum features detection capability	
Joint pitch ¹	0.3 mm and up
Short width ²	0.045 mm
Solder thickness	0.0127 mm

Allowable panel characteristics **

Maximum Panel size	482mm X 610mm (19"x24")
Minimum Panel size	76mm X 76mm (3" x 3")
Maximum panel inspectable area	474mm X 610mm (18.7" X 24")
Maximum Panel thickness	7mm(276mils)
Minimum Panel thickness	0.5mm (20mils)
Panel warp	Downside<3mm,upside< 1.5mm (PSP)
Maximum Panel weight	4.5kg
Minimum Panel weight	0.03kg
Board top clearance	50mm @ 23um resolution, 38mm @ 19um resolution 11mm @ 11um resolution * Calculated from board top surface
Board bottom clearance	70mm
Panel edge clearance	3.0mm
Panel width tolerance	+/-0.7mm
System resolution	11um, 19um, 23um
100% Press-fit testability	Yes (With PSP2 feature)
Maximum acceptable panel temperatures	40 Deg C

Power and environmental

Voltage requirement	200 - 240 VAC three phase; 380 - 415 VAC three phase wye (± 5) (50Hz or 60 Hz)
Air requirement	552 kPa (80 psi) compressed air
System footprint (Width X Depth X Height)	1566mm X 2145mm X 1972mm
Total system weight	~3500kg



* Note :

1. Assuming pad width is 50% of pitch.
2. The reported values for minimum feature detection assume that the feature is in a single plane of focus and that there are no X-ray absorbers in the X-ray path or in the immediate area of the feature other than those found in a typical multi-layer printed circuit board.

** Note :

1. Panels are handled on width edges. Panels with edge cut outs may require the use of a carrier.
2. Maximum panel size dimensions and weight must include carrier if applicable.
3. Smaller panels are possible with the use of panel carriers.
4. With panels of this thickness, imaging results can be affected by PCBA layout.
5. Measured from the bottom of the panel including a maximum warp.