

smart X-ray · smart AXI · smart 3D CT

TECHVALLEY



We Make It Visible **TECHVALLEY**
M6 W9K6 If A12IDIG TECHVALLEY



Company Introduction

Name	TECHVALLEY CO.,LTD.
President	KIM HAN SEOK
Establishment	May. 1st 1997
Business	Manufacture of X-Ray inspection and measuring equipments
Awards	<ul style="list-style-type: none"> · Prize awarded \$5Million Export Tower on the 56th Trade Day (President, 2019) · Prize awarded \$3Million Export Tower on the 54th Trade Day (President, 2017) · Prize awarded \$1Million Export Tower on the 52nd Trade Day (President, 2015) · Commendation of excellent company by Hanwha (2013) · Prize awards (Minister of Knowledge Economy, 2012) · Awarded by Minister of Commerce Industry and Energy (2007) · Awarded by Minister of Science and Technology (2005) · Prize awards (Minister of Science and Technology, 2002) · 1st Young Front Awards (Seoul Economic Newspaper and Media, 2002) · Silver awards (International Invention Competition Geneva in 2001)
Certificate	<ul style="list-style-type: none"> · Certification of KOLAS accredited testing agency · Certificate of Designation Small Giant Company (Ministry of SMEs & Startups) · Certificated ISO45001 · Certificated CE on all the products · Certificated ISO14001:2015 · Selected as a military service company (Military Manpower Administration) · Certificated ISO9001:2000 · Certificated KSA9001:2001
Location	<ul style="list-style-type: none"> · HQ : #A-506 Keumkang Penterium IT Tower, 215, Galmachi-ro, Jungwon-gu, Seongnam-si, Gyeonggi-do, South Korea · R&D Center : A-509 Keumkang Penterium IT Tower, 215, Galmachi-ro, Jungwon-gu, Seongnam-si, Gyeonggi-do, South Korea · Education Center : A-908 Keumkang Penterium IT Tower, 215, Galmachi-ro, Jungwon-gu, Seongnam-si, Gyeonggi-do, South Korea · Factory 1 : 33, Jikdong-ro, Gwanju-si, Gyunggi-do, South Korea · Factory 2 : 71-17, Jikdong-ro, Gwanju-si, Gyunggi-do, South Korea · Busan Business Division : 417 Byucksan Megatrium, 206 Bugogoncheoncheon-ro, Geumjeong-gu, Busan, South Korea · VINA Business Division : Au Co Street, Kinh Bac Ward, Bac Ninh City, Bac Ninh Province, Vietnam

Company History

2021 ~ 2022	<ul style="list-style-type: none"> · Obtain KOLAS Certification · Certificate of Designation Small Giant Company (Ministry of SMEs & Startups) · ISO 45001 (Safety and Health Management System) Certification
2019 ~ 2020	<ul style="list-style-type: none"> · ISO 14001 (Environmental Management System) Certification · Prize awarded \$5Million Export Tower on the 56th Trade Day (President) · Selected as a promising export SME (Ministry of SMEs & Startups in Korea)
2017 ~ 2018	<ul style="list-style-type: none"> · Prize awarded \$3Million Export Tower on the 54th Trade Day (President) · Selected Star-product 2017 (28th June by Electronic News) · Vietnam's representative office opened
2015 ~ 2016	<ul style="list-style-type: none"> · In-line AXI/2.5D developed · Prize awarded \$1Million Export Tower on the 52nd Trade Day (President) · Selected as a military service company (Military Manpower Administration)
2013 ~ 2014	<ul style="list-style-type: none"> · AXI (Automated X-ray Inspection) · Prize awards (by IBK) · Selected as a promising export SME (Ministry of SMEs & Startups in Korea) · X-ray chip counter (1st in the World) · Commendation of excellent company by Hanwha
2011 ~ 2012	<ul style="list-style-type: none"> · Prize awards (Minister of Knowledge Economy) · X-ray diffractometry system (XRD), X-ray CT system for internal measurement, X-ray system(PDX) for dental clinic, Small-Angle X-ray Scattering (SAXS) – The 1st in Korea
2009 ~ 2010	<ul style="list-style-type: none"> · Digital X-ray CT system for geological inspection – The 1st in Korea · Achieves sales of 400 equipment units (The 1st accomplishment in Korea)
2007~ 2008	<ul style="list-style-type: none"> · Certificated ISO9001:2000 · Certificated KSA9001:2001 · Automated X-ray inspection system for steel pipe – The 1st in Korea · Selected export promising company (Government in Gyeonggi-do)
2005~ 2006	<ul style="list-style-type: none"> · Selected promising company (by IBK) · 160kV X-ray source developed [1st in Korea] · Awarded by Minister of Science and Technology · Industrial X-ray equipment developed [1st in Korea]
2003~ 2004	<ul style="list-style-type: none"> · PCB hole inspection X-ray system (1st in the World) · Company affiliated research institute certification · Developed 80kV X-ray Source (1st in Korea)
2001 ~ 2002	<ul style="list-style-type: none"> · Prize awards (Minister of science & technology) · 1st Young Front Awards (Seoul economic newspaper & media) · Silver awards (International invention competition Geneva in 2001) · Digital X-ray inspection system for relics – The 1st in Korea · Digital X-ray inspection system for eccentricity of PCB hole – The 1st Korea
1999 ~ 2000	<ul style="list-style-type: none"> · Grand prize of LA Int'n invention fair in USA · Selected as Top 50 company by Venture Korea · Gold prize of LA Int'n invention fair in USA
1997 ~ 1998	<ul style="list-style-type: none"> · Established ('97. 5. 1) · Portable X-ray equipment (1st in the World) · Silver prize of Korea invention fair (Korean Intellectual Property Office)



Products Introduction



2D & 3D In-Line X-ray Inspection **HAWKEYE9020 AXI**

(W)1,392mm X (D)2,105mm X (H)1,529mm / 2,660kg



In-Line X-Ray Inspection for Large sized **HAWKEYE9000L**

(W)2,070mm X (D)2,650mm X (H)1,940mm / 2,900kg



X-ray chip (Reel) counter **HAWKEYE2000**

(W)900mm X (D)1,579mm X (H)1,828mm / 660kg

Entry level CT for micro sized **ARIRANG 130CT**

(W)1,460mm X (D)2,500mm X (H)1,850mm / 2,500kg



High end CT for nano sized **ARIRANG 165CT**

(W)1,554mm X (D)2,139mm X (H)1,785mm / 2,800kg



Entry level CT for large sized **ARIRANG 160CT**

(W)2,500mm X (D)1,900mm X (H)1,900mm / 3,000kg



2D & 2.5D Manual X-ray Inspection **TVX-IM9000F**

(W)1,372mm X (D)1,534mm X (H)1,623mm / 1,600kg





HAWKEYE9020 AXI

2D & 3D In-Line X-ray Inspection

- Operate with ease
- Incomparable ultra high speed
- Trust in results with AI technology
- High definition in image quality
- Reliable solution for better quality and productivity for your merits
- Customer Service Worldwide



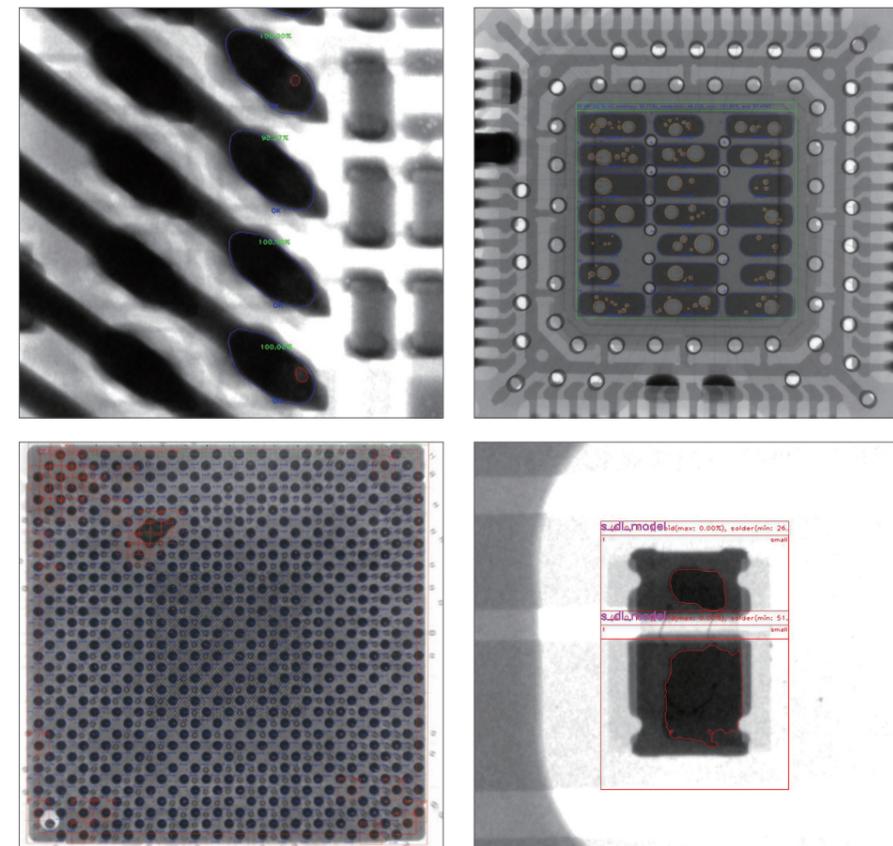
Specification

X-ray Source	110kV / 25W / 5 μ m Focal Spot Size
Image Detection System	6.9M Pixels / 49 μ m Pixel size
Inspection Area	(2D) 380mm X 380mm (H) / (3D) 250mm X 250mm
X-ray Safety	1uSv / hour
Utility	Power : 220VAC / Air : 5kgf/cm ²
Dimension & Weight	(W)1,392mm X (D)2,105mm X (H)1,529mm / 2,660kg

Applicable



Sample images





HAWKEYE9000L

Automated inspection equipment for large sized products

- Automated inspection equipment for large-area products (ex: LED, BLU, etc.)
- High-speed inspection for 1.5 to 2 seconds per 1 point (According to inspection type)
- Operate with ease
- Data management (MES, SPC, Review function etc.)
- Customized automatic inspection algorithms for various products



Specification

X-ray Source	110kV / 25W / 5 μ m Focal Spot Size
Image Detection System	6.9M Pixels / 49 μ m Pixel size
Inspection Area	1,200mm X 500mm
X-ray Safety	1uSv / hour
Utility	Power : 220VAC / Air : 5kgf/cm ²
Dimension & Weight	(W)1,460mm X (D)2,500mm X (H)1,850mm / 2,500kg

Applicable

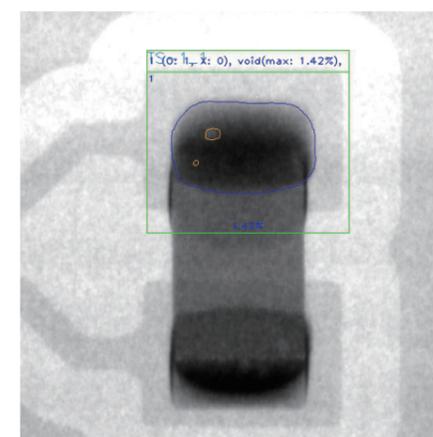
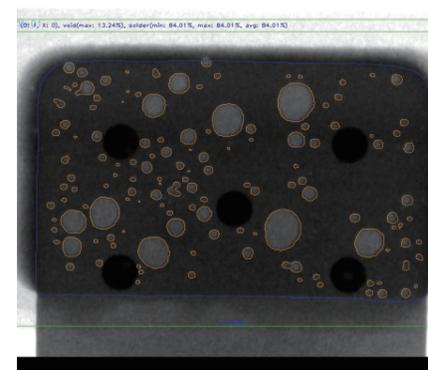
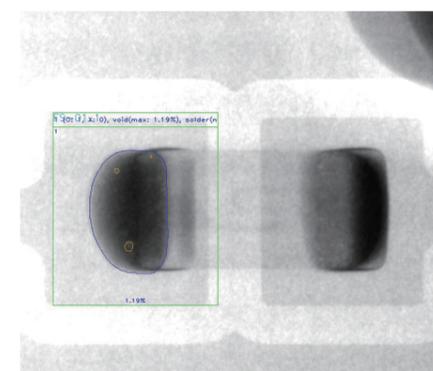
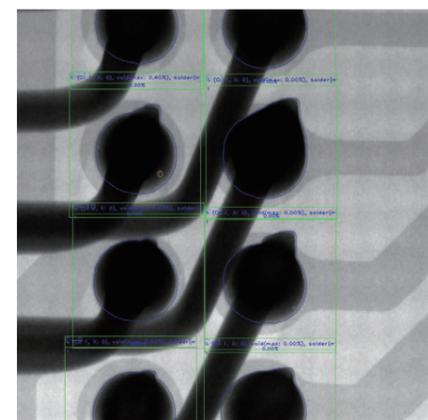


LED



PCB/FPCB

Sample images





ARIRANG 130CT

Entry-level CT machine for micro inspection

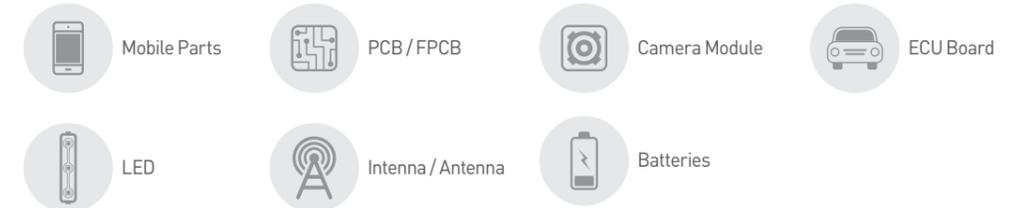
- Precise analysis of Micro-sized inspection
- All in one (2D, 2.5D, 3D inspection available)
- Quick scanning & Reconstruction
- Maintenance-free
- Navigation : Easy operation for locating and positioning



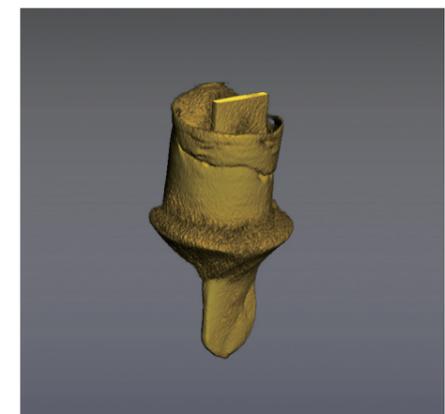
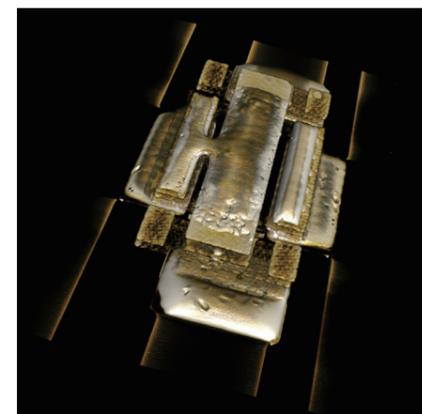
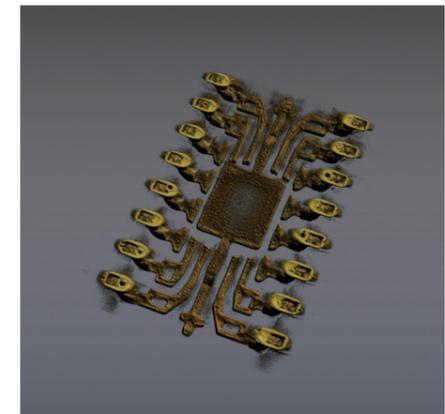
Specification

X-ray Source	130kV / 40W / 8 μ m Focal Spot Size
Image Detection System	6.9M Pixels / 49 μ m Pixel size
Inspection Area	(2D) 340mm X 440mm (H) / (CT) 150mm X 100mm (H)
X-ray Safety	1uSv / hour
Utility	Power : 220VAC
Dimension & Weight	(W)1,460mm X (D)2,500mm X (H)1,850mm / 2,500kg

Applicable



Sample images





ARIRANG 165CT

High-end CT machine for nano-sized inspection

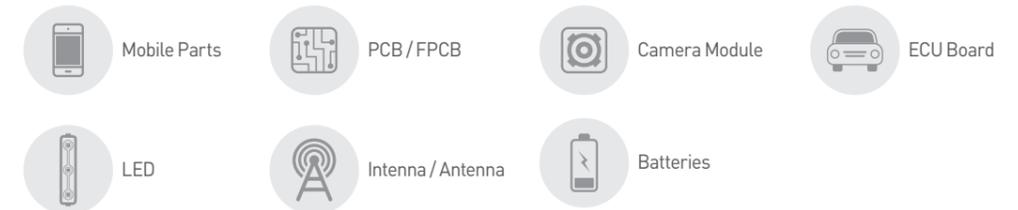
- Precise analysis of Nano-sized inspection
- All in one (2D, 2.5D, 3D inspection available)
- Quick scanning & Reconstruction
- High Definition of quality inspection
- Navigation : Easy operation for locating and positioning



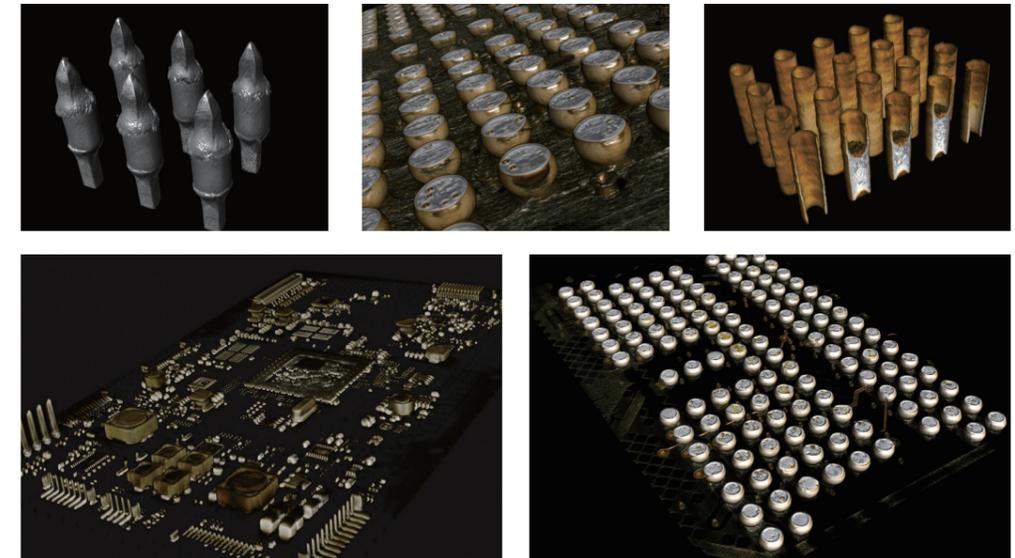
Specification

X-ray Source	160kV / 25W / 0.9 μ m Focal Spot Size
Image Detection System	6.9M Pixels / 49 μ m Pixel size
Inspection Area	(2D) 450mm X 450mm / (CT) 360mm X 360mm
X-ray Safety	1uSv / hour
Utility	Power : 220VAC
Dimension & Weight	(W)1,554mm X (D)2,139mm X (H)1,785mm / 2,800kg

Applicable



Sample images

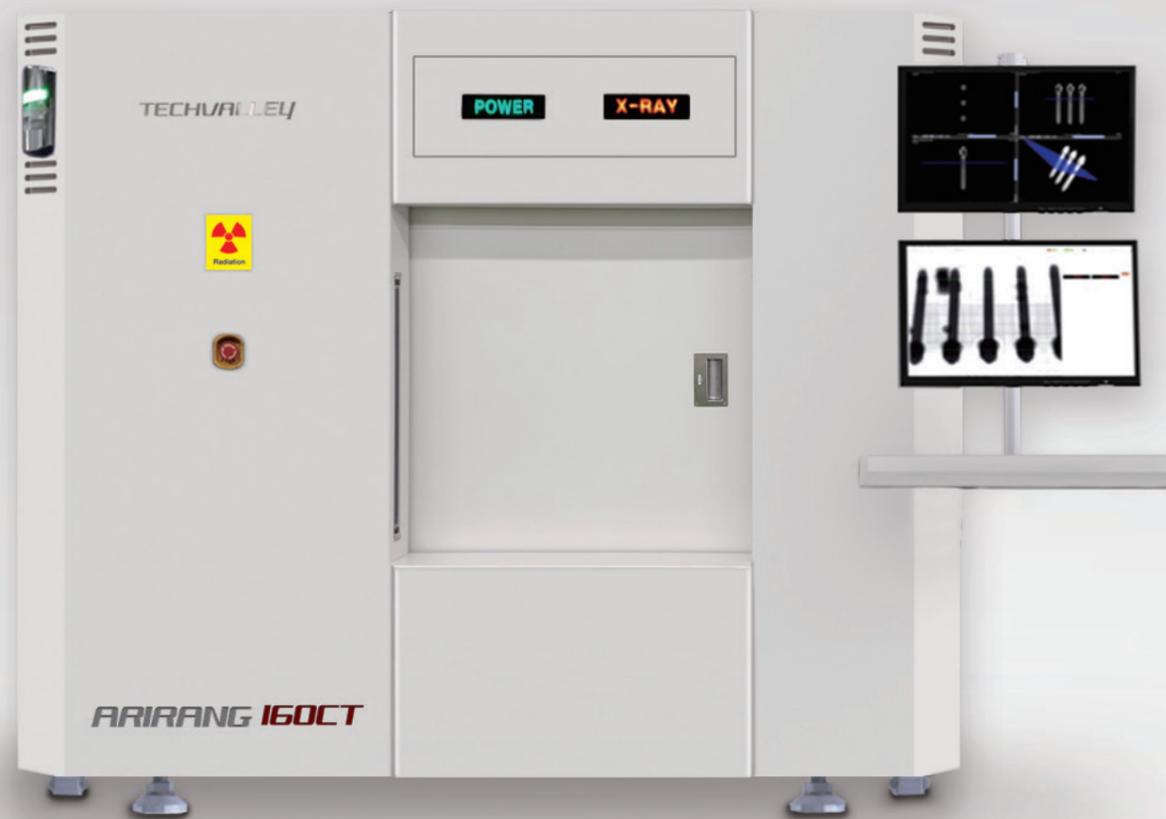




ARIRANG 160CT

Entry-level CT for Large-sized inspection

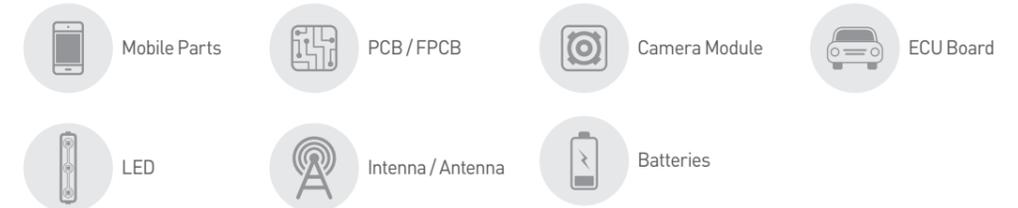
- Precise analysis of Large-sized inspection
- All in one (2D, 2.5D, 3D inspection available)
- Capability to inspect large sample at once
- Maintenance-free
- Navigation : Easy operation for locating and positioning



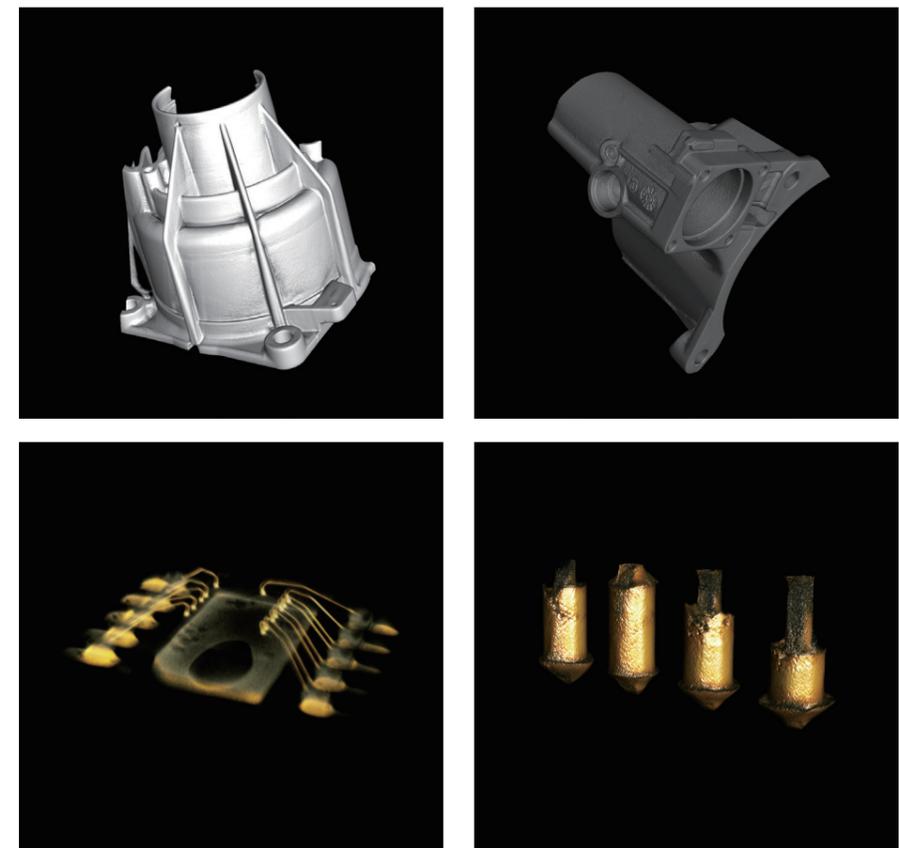
Specification

X-ray Source	160kV / 400W / 400 μ m Focal Spot Size
Image Detection System	430mm X 430mm Large Detector
Inspection Area	(2D) 600mm X 800mm (H) / (CT) 320mm X 520mm (H)
X-ray Safety	1 μ Sv / hour
Utility	Power : 220VAC
Dimension & Weight	(W)2,500mm X (D)1,900mm X (H)1,900mm / 3,000kg

Applicable



Sample images





TVX-IM9000F

Entry model for manual X-ray Inspection Equipment

- 2D & 2.5D Manual equipment capable of inspecting various defects
- High definition in quality
- Intelligent algorithm for auto inspection
- Manual Mode, Macro Mode, Auto-Inspection Mode available



Specification

X-ray Source	110kV / 25W / 5 μ m Focal Spot Size
Image Detection System	6.9M Pixels / 49 μ m Pixel size
Inspection Area	Max. 480mm X 480mm
X-ray Safety	1uSv / hour
Utility	Power : 220VAC
Dimension & Weight	(W)1,372mm X (D)1,534mm X (H)1,623mm / 1,600kg

Applicable



Mobile Parts



PCB / FPCB



Camera Module

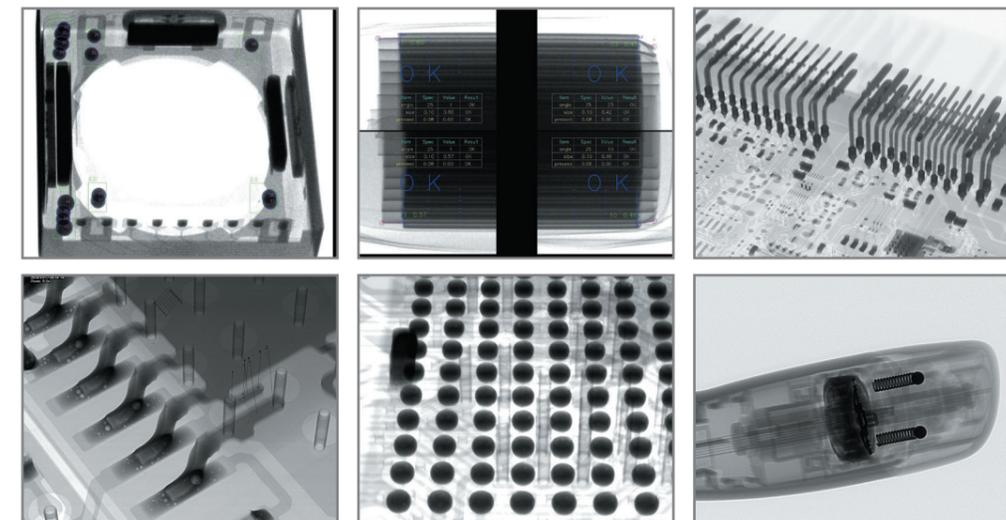


Batteries



Intenna / Antenna

Sample images





HAWKEYE2000

Automated X-ray chip(Reel) counter

- Simple and easy operation
- Count accuracy > 99.9%
- Fast in Counting
- User support mode
- MES / ERP integration
- Automatic barcode scanner (Option)



Specification

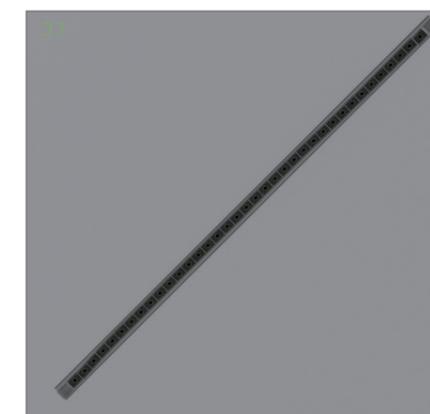
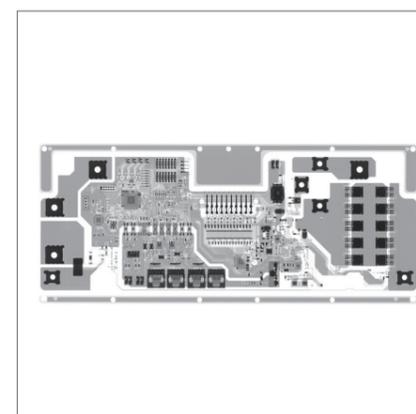
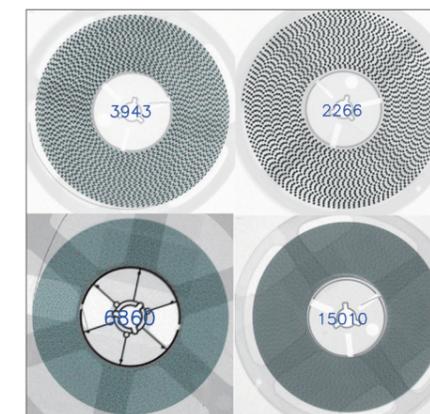
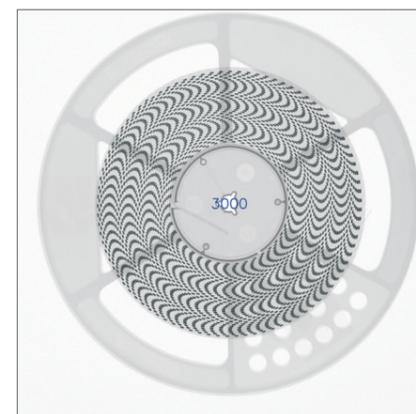
X-ray Source	55kV / 110W / 400 μ m Focal Spot Size
Image Detection System	17inch FPXD / 140 μ m Pixel size
Inspection Area	Max. 380mm Reel / Min. 180mm Reel / Min. 0201 Chip
X-ray Safety	1uSv / hour
Utility	Power : 220VAC
Dimension & Weight	(W)900mm X (D)1,579mm X (H)1,828mm / 660kg
User support mode	Auto Smart 4 Reels Mode, Cloud System, Black and White List, Barcode Selection, Wireless barcode scanner, Automatic barcode scanner (Optional)
Etc.	Barcode reader & Label printer

Applicable



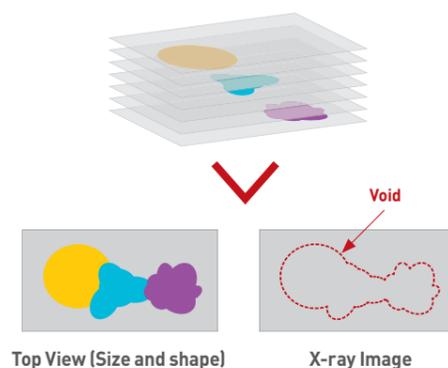
Reel Counting

Sample images



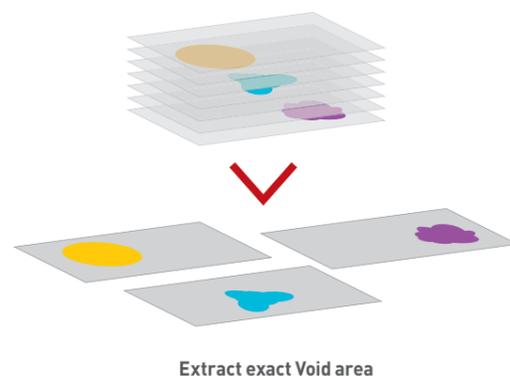


2D & 2.5D Inspection



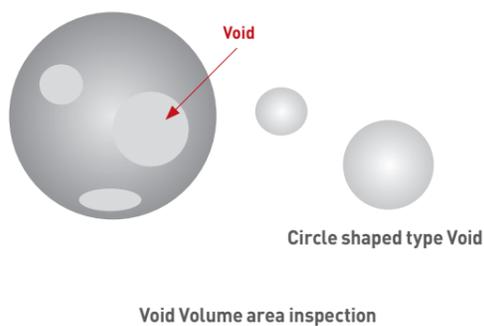
- iTOP implements precise analysis and the fastest inspection on overlapped patterns based on Artificial intelligence technology for better productivity and quality.
- Automated inspection with iTOP specialises in In-Line total inspection.

3D Slice CT Inspection



- The function for extraction of exact layers to examine defects more precisely such as HIP based on Laminography method made to overcome the limit of previous 2D & 2.5D inspection method.
- By scanning once, all the layers of sample can be seen that makes it possible that better inspection result and time efficiency.

3D Volume Inspection (BGA)

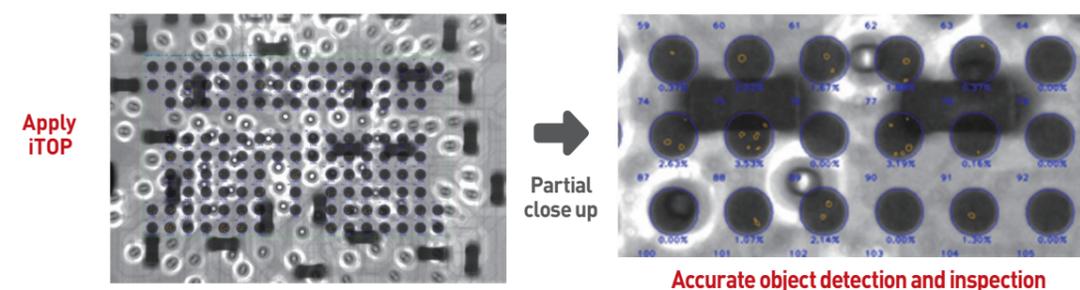
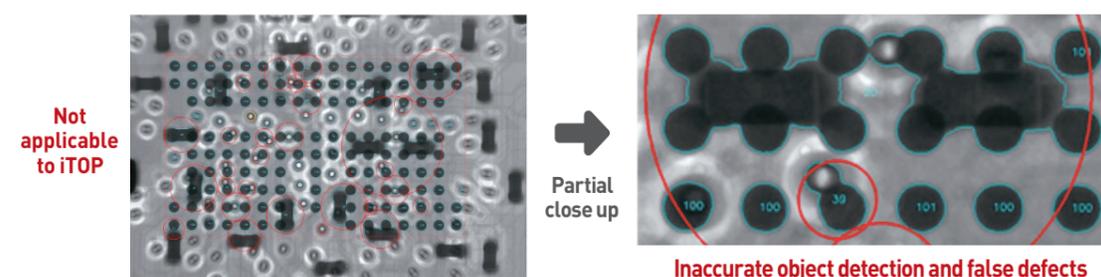


- The Best solution to examine overlapped patterns in precise way is 3D rendered images.
- 3D rendering inspection (CT) gives images volume to overcome the limit of 2D inspection method and implement precise result.
- It need to choose right type of CT machine (Oblique, Cone beam types) depending on samples' type (PCB, Die casting etc.)

iTOP (Inspection Technology of Overlapped Pattern)

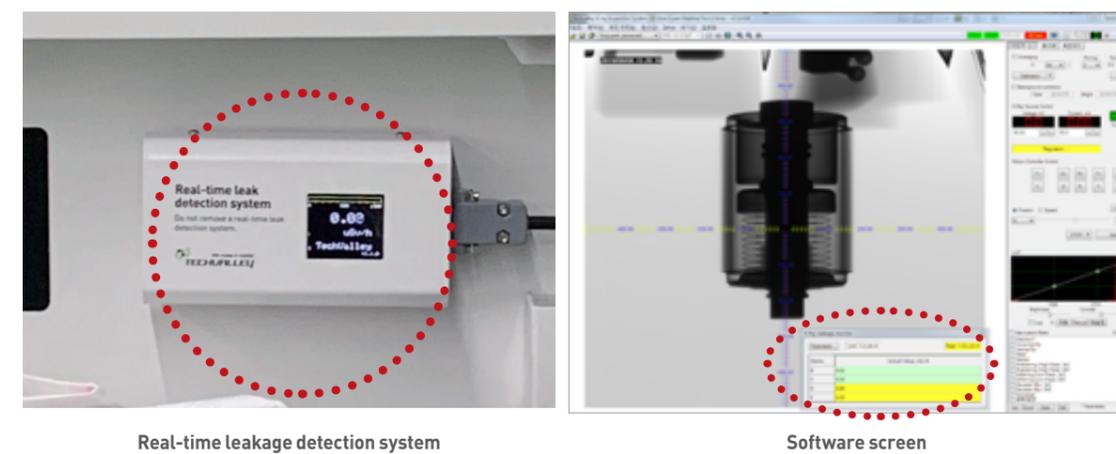
- iTOP (Inspection Technology of Overlapped Pattern) inspection method is based on Artificial intelligence system that make it possible that an only single image needed on overlapped patterns inspection. Which was considered impossible to inspect without false defect unless using 3D CT or Laminography that takes much longer time compared to iTOP. This iTOP technology will provide you better productivity and quality as the best solution.

※ Laminography is a general inspection method used to inspect overlapped patterns such as multi-layered PCB etc. It needs a long time for inspection based on applying a particular imaging process by taking many images only for one point. But Techvalley finally applied AI to overlapped patterns inspection based on the best experience on automatic inspection industry that can meet manufacturers' needs for tact time.



Real-time radiation leakage detection system

- Real-time radiation leakage detection system guarantees users' safety in any case detecting radiation leakage around machines 24/7 by shutting down X-ray emission automatically in emergency.





— Europe



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