



SEAMARK

Microfocus X-Ray Inspection System Manufacturer



Email: info@seamarksmt.com



19 years

2005 build

19 years

Focus on chip intelligent welding | X-RAY
intelligent detection field

300 workers

R&D 90persons |
Proportion 33.3%

53000square meters

Shenzhen8000square meters |
Hubei 45000square meters



Company Photos

National layout-sales and technical services centers



Shenzhen Headquarter



Peking 3D CT R&D Branch



Hubei Industrial park



Suzhou Branch



Chongqing Branch

Company Profile



Seamark, owned by Shenzhen Zhuomao Technology Co., Ltd., we can offer a full line of Inspection, Rework & Repair Solution for Electronics, Including Inline/off line X-Ray Inspection System, Inline/off line X-Ray SMD Counter, BGA Rework System, Laser LCD Repair System, Reflow Oven, Conveyor, Solder Printer, Glue Dispenser, Fume Extraction System, Mobile LCD Repair Machine. Seamark ZM provides products and services to the manufacturing industry through a network of technology sales reps and distributors.

Our aim is to provide clients with the most valuable and innovative testing solutions at effective cost. Seamark ZM rework & inspection system have won a good reputation in China over the past few years.

Our goal is to become a pioneer in inspection & rework industry. We will keep on innovation, development and production of more cutting-edge industrial equipment to meet your needs.



Competitive Advantage



Leading products

Intelligent detection and intelligent welding equipment have dominated the electronic intelligent equipment industry for many years.

Excellent customer base

Long-term service to global leading companies such as Huawei, ZTE, BYD, and Foxconn



Continuous technological innovation capabilities

R&D continues to maintain technological innovation, launching industry-leading new products and technologies every year, and iterating the product line at least once a year

Strong manufacturing delivery capabilities

The manufacturing and self-supporting processing capacity reaches 80%, and the average batch delivery cycle is 2-3 weeks.



CE Rohs FDA Certifications



Seamark R&D departments



X-RAY machines R&D office



BGA machines R&D office



Battery inspection machines R&D office



X-ray Equipment Demo Room



X-ray Equipment R&D Laboratory



BGA Equipment R&D Laboratory

Seamark Production Facilities



1

More than 30 CNC machining centers of various types

2

Sheet metal workshop: equipped with laser cutting, CNC punching machine, CNC bending machine, etc.

3

Independent welding and spraying workshop

4

Self-supporting processing capacity reaches 80%

5

Average equipment delivery lead time: 2-3 weeks

6

Supply chain management: Preparing materials in advance through rolling forecasts, booking in advance and locking supply through bulk procurement bidding or annual unified negotiation to further reduce costs and ensure accurate delivery.



CNC workshop



X-RAY equipment workshop 1



Sheet metal workshop



X-RAY equipment workshop 2



Welding spray workshop



BGA equipment workshop



Part of
Taiwan
Customer List

Serial number	Buyer/ company Name	product model
1	Kunda	X-RAY counting machine X1000
2	HTC corporation	X-RAY counting machine X1000
3	BYD	X-RAY counting machine X1000
4	Jinshu	X-RAY inspection machine X1200
5	Mingbo Technology	X-RAY inspection machine X6600
6	Kinsus Interconnect Technology	X-RAY inspection machine X1200
7	Shian Yih Electronic Industry Co., Ltd	X-RAY counting machine X1000
8	JI JONQ Technology Co., Ltd	X-RAY counting machine X1000
9	JUNG SHENG TECHNOLOGY CO.,LTD	X-RAY inspection machine X6600
10	Taiwan Minbo Technology	X-RAY inspection machine X6600
11	CERIO Corp	X-RAY counting machine X1000
12	Jean Suen Technology Co., Ltd	X-RAY counting machine X1000
13	HTC Corporation	X-RAY counting machine X1000
14	QUN-DA Technology Co., Ltd	X-RAY counting machine X1000
15	Satem Technology Co., Ltd	X-RAY counting machine X1000
16	Senao Networks, Inc.	X-RAY counting machine X2000
17	Mattech Internation Co	X-RAY inspection machine X5600

Part of
Key
Customer
List

Serial number	Buyer/ company Name	product model
1	ALLIED TELESIS INTERNATIONAL (ASIA) PTE LTD	X-RAY inspection machine X6600
2	Dako Co., Ltd	X-RAY inspection machine X6600A
3	Kaertech	X-RAY inspection machine X6600
4	Premtronic	X-RAY inspection machine X6600
5	Foxconn(Hon Yao FuTechnology Company Limited)	X-RAY inspection machine X6600
6	Shihlin Electric	X-RAY inspection machine X6600
7	Deren	X-RAY inspection machine X6600A
8	Micro Tech Industries PVT LTD	X-RAY inspection machine X6600
9	Cam Guru technology	X-RAY inspection machine X6600
10	Hariff	X-RAY inspection machine X6600
11	Foxconn	X-RAY inspection machine X6600
12	M.A.V.s.r.l.	X-RAY inspection machine X5600
13	Flymaster Avionics, LDA.	X-RAY inspection machine X6600
14	R-Logic Technology Services(India) Pvt Ltd.,	X-RAY inspection machine X7600
15	Philips Lighting iluminacao Ltda	X-RAY inspection machine X6600
16	Mexico Tecnologia y Servicios para la Informatica, S.A de C.V.	X-RAY inspection machine X6600
17	lucid vision labs inc	X-RAY inspection machine X6600
18	Hard-line inc	X-RAY inspection machine X7600

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CNC workshop



X-RAY equipment workshop 1



Sheet metal workshop



X-RAY equipment workshop 2



Welding spray workshop



BGA equipment workshop

Global Exhibition



Global Exhibition





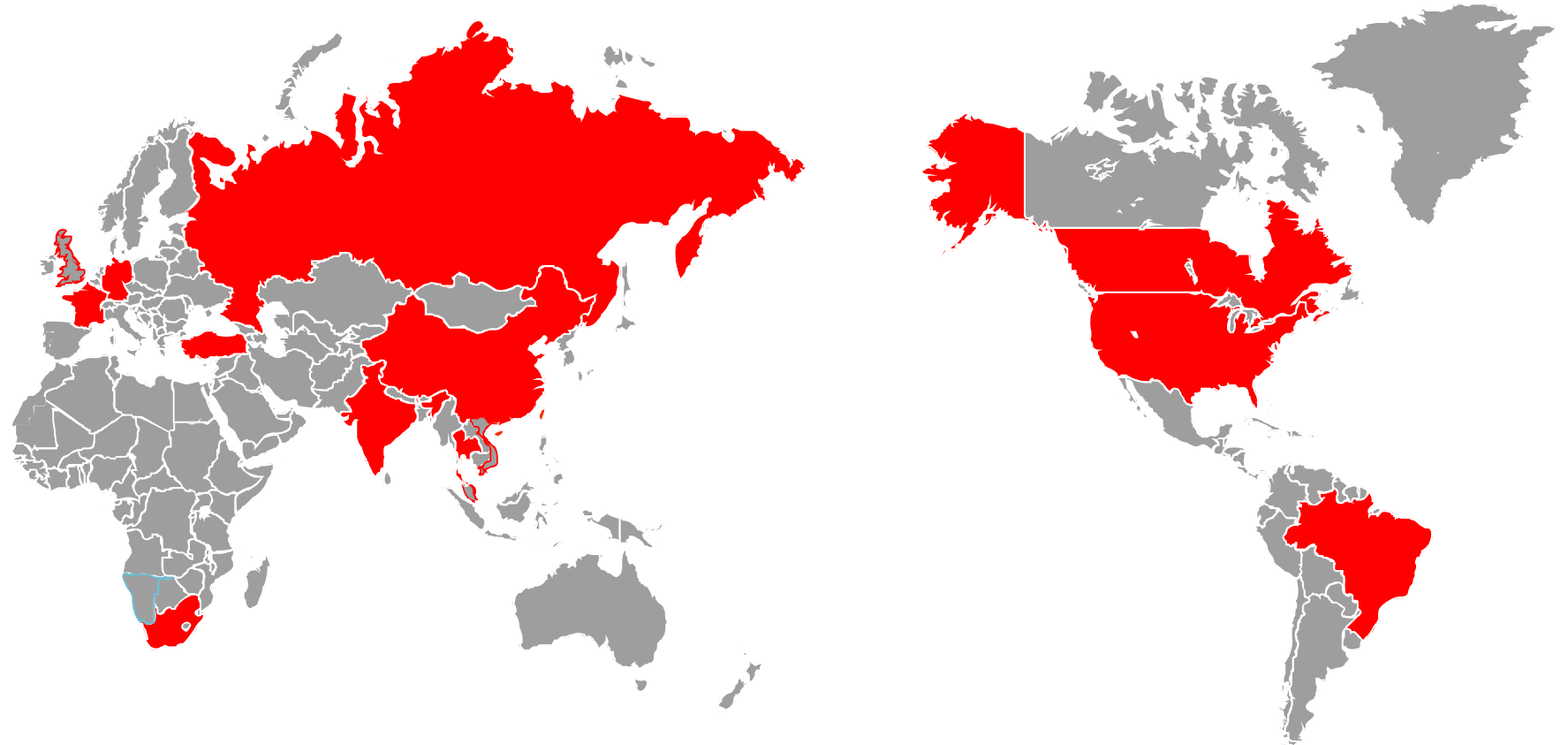
SEAMARK

X-RAY Inspection Machine use site



Global sales and technical services

U. S. A
Mexico
Brazil
Russia
India
Thailand
Malaysia
Vietnam
Singapore
South Africa
Germany
Spain
U. K、
Turkey
France
Italy
Poland



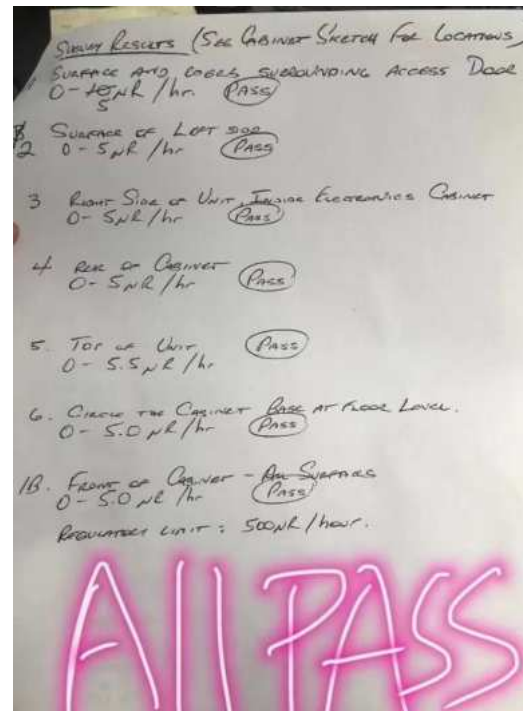
There are more than 50 after-sales engineers, 80% of the after-sales personnel have passports, and 5 of them are resident abroad. We plan to establish an assembly factory in Malaysia and a permanent office in Europe.

Radiation test site:

International acceptable standard: $\leq 1\mu\text{Sv/hr}$

ZM X-RAY Product radiation test value: $< 0.3\mu\text{Sv/hr}$

Consistent with environmental values

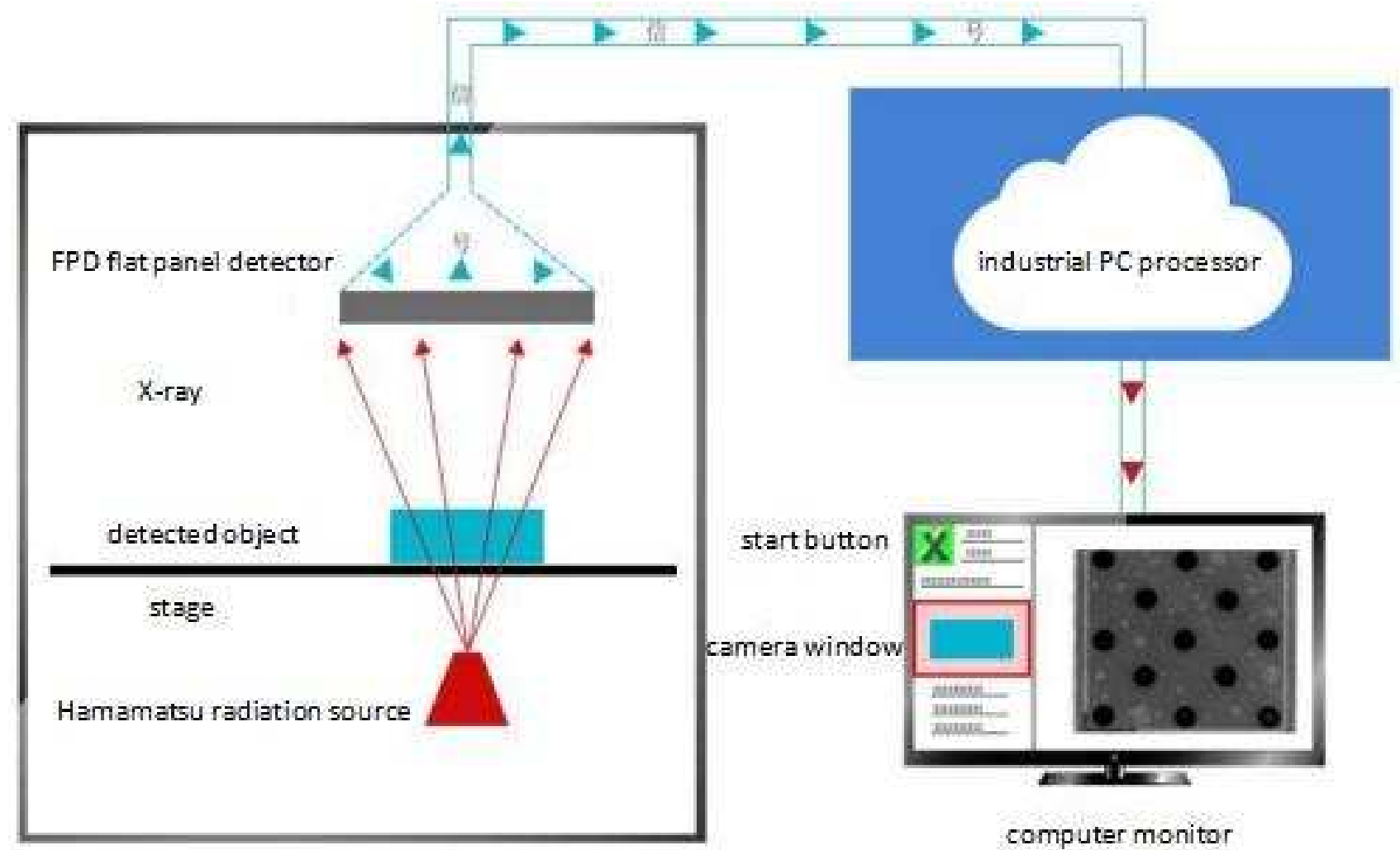


X-RAY Inspection Machine

X6600B Introduction

X-RAY Inspection Machine

Working Principle





X-RAY Inspection Machine Introduction

- **HAMAMATSU X-ray source with extremely long life.**
- **Iray flat panel detector with excellent stability.**
- **The best lead case made for radiation protection.**
- **Super simple operation interface, 5 minutes to learn to use.**
- **High difinition images, easy to find hidden product defects.**
- **CNC array programming, automatic detection.**
- **Image tilt tracking system.**

X-6600B X-RAY Inspection Machine

Five Advantages:

● **HAMAMATSU radiation source (long lifespan)**

(good stability)

● **Steel plate + 5mm stereotype + steel plate (Waiver Letter)**

● **The detector tilts 60° (2.5D) (360 degrees rotation table is optional)**

● **CNC programming automatic calculation (Void percentage)**



X-RAY Inspection
Machine

Basic Parameters

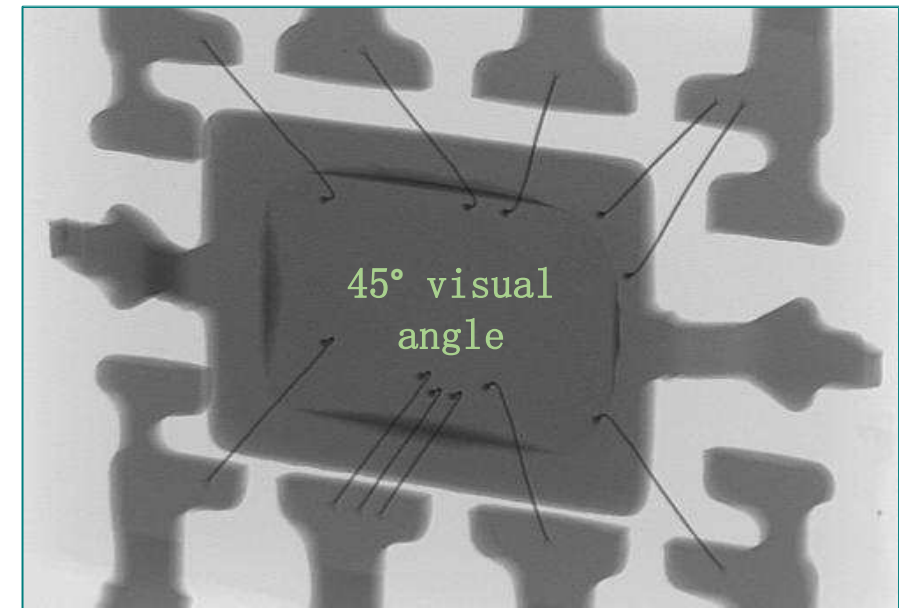
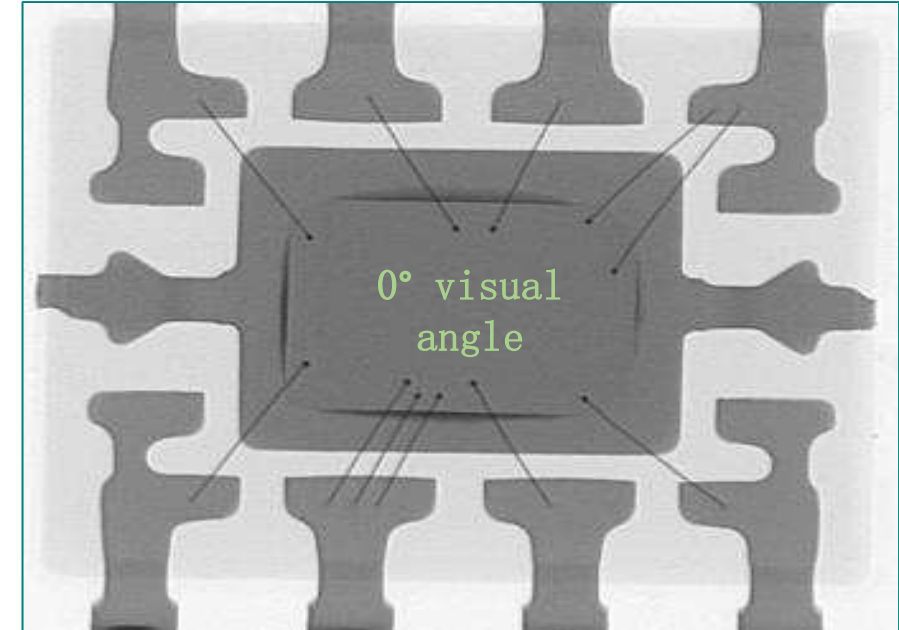
Model No.		ZM-X6600B/X6600BM
X-Ra) Tube	X-Ray TubeType	Reflective sealed micro-focus X-ray source
	TubeVoltage	40-90KV/40-130KV
	TubeCurrent	10-200μA/10-300μA
	Maximum Output Power	8W/39W
	Micro Focus Size	5-15μm
Flat Pane Detector	Flat Panel Type	Amorphous Silicon Flat Panel Detector
	Pixel Matrix	1648x1648
	Field of View	160mmx160mm
	Resolution	5.1Lp/mm
	Image Frame Rate (1X1	30fps
Equipment Specifications	ADConversion nio	16bits
	Input Power	220V 10A 50-60Hz
	Operation System	Industrial Computer Win7 (Win10 optional) 64 bits
	Maximum Sample	620mm×620mm
	Dimensions	L1380mm×W1390mm×H1930mm
	Net Weight	About 1720KG/1845KG

X-RAY Inspection Machine

X-RAY Inspection Machine

Detector tilts 60°

2.5D visual angle

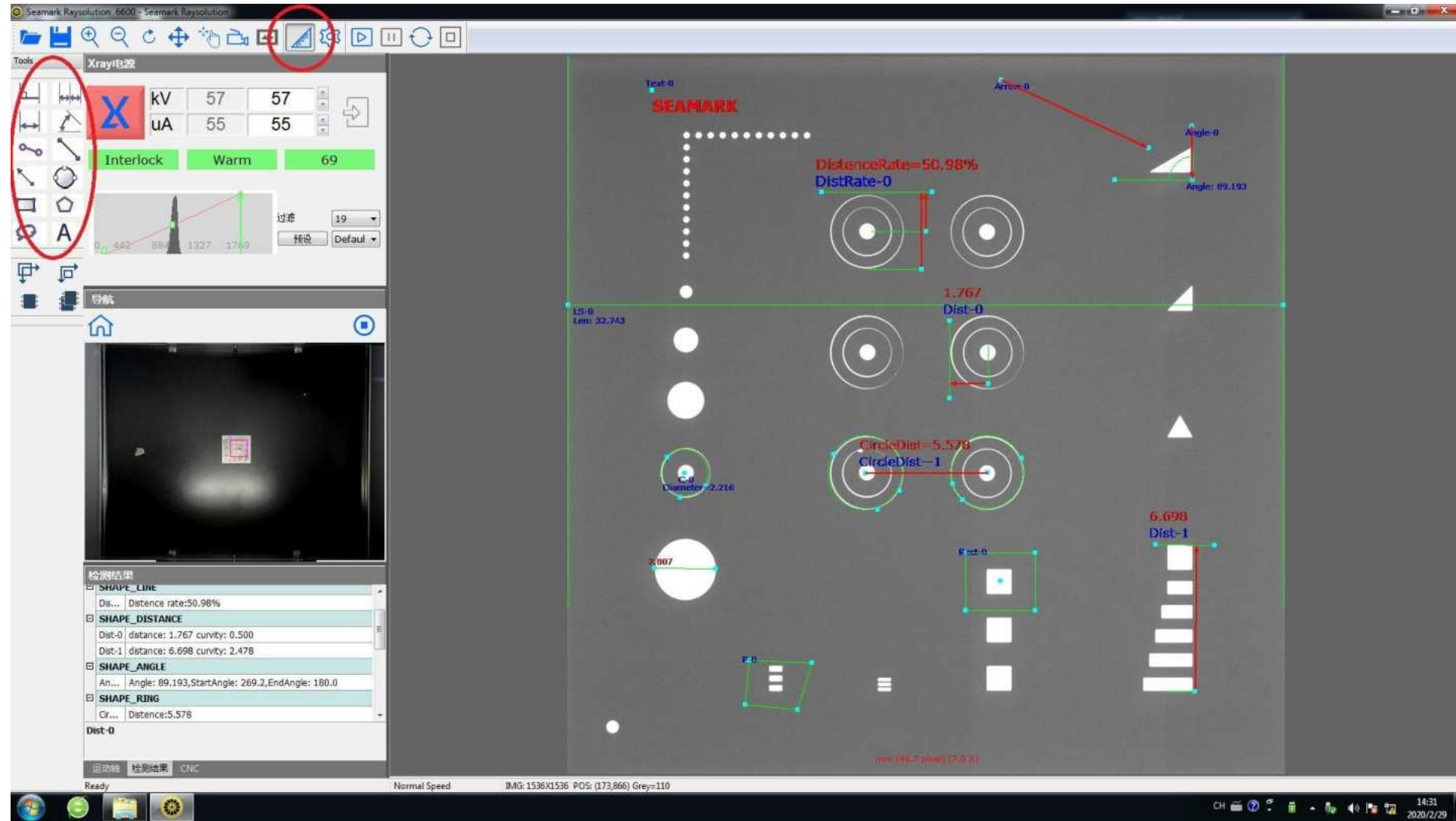


X-RAY Inspection Machine

Introduction to size measurement function

Measurement toolbar:

Distance, distance ratio, line spacing, angle, arrow mark, circle radius, point distance, center distance, circumference, hand-drawn polygon, hand-drawn free-form, add text description.



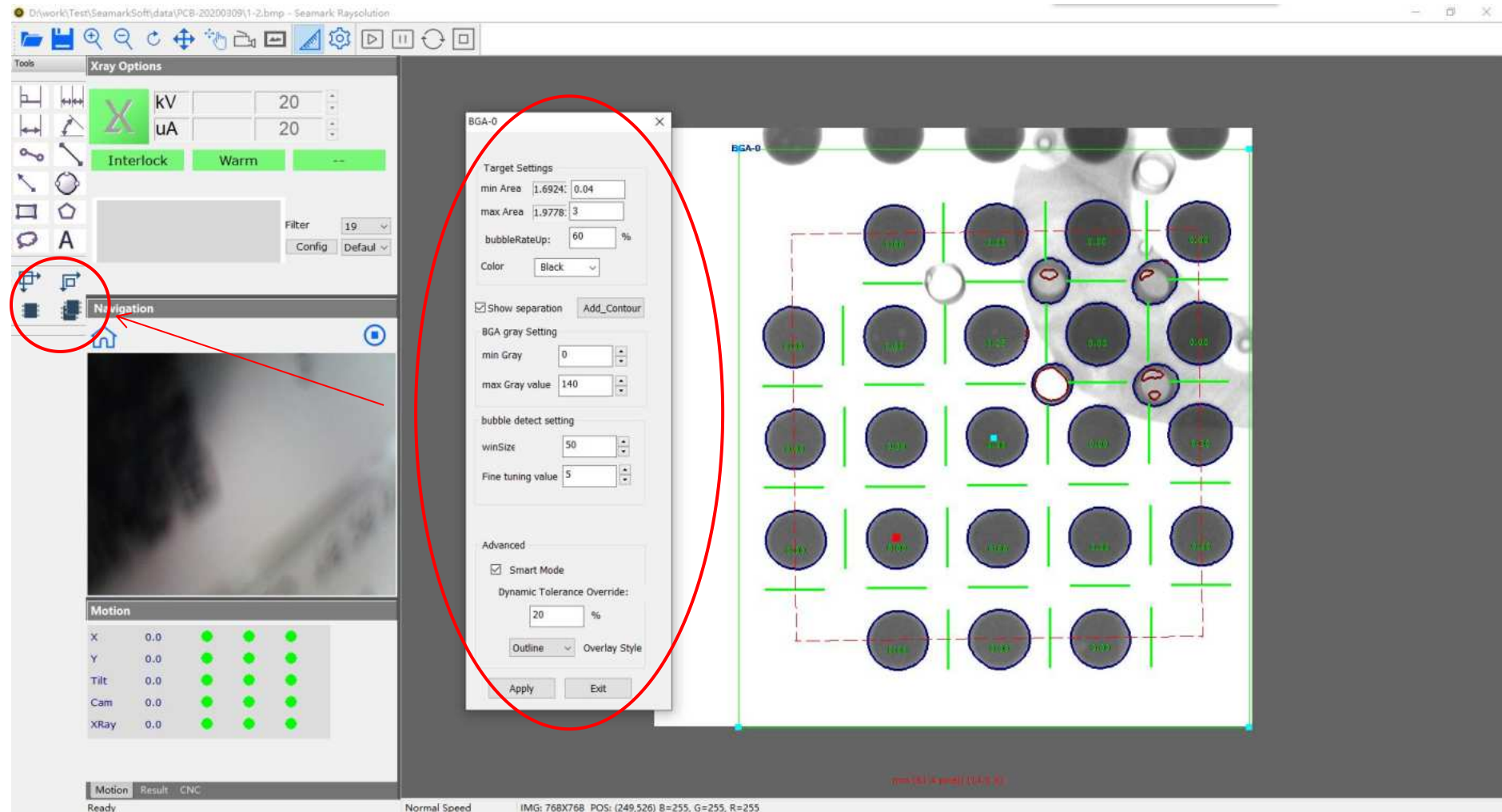
X-RAY Inspection Machine

Introduction to bubble measurement function

Bubble toolbar:

Area, roundness, total bubble ratio, maximum bubble ratio, width, height, gray scale, movement, bridge.

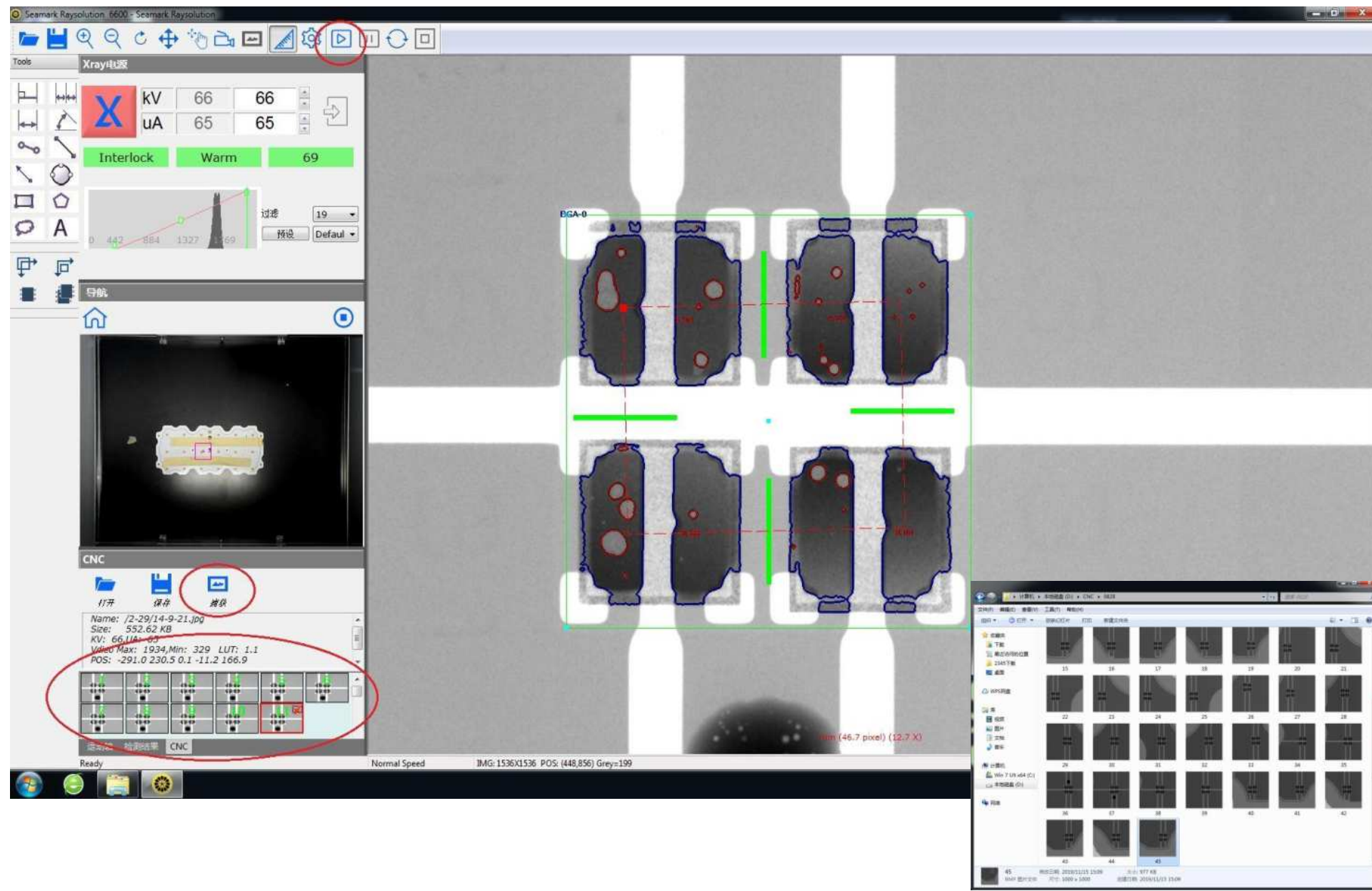
New features: mouse to deline suspicious bubbles, mouse to cancel misjudgment bubbles, mouse to specify outline.



X-RAY Inspection Machine

Introduction to automatic
CNC drawing

Rapid testing
Batch testing



Core Advantages

Ultra-long life



Brand: HAMAMATSU 90KV&130KV
X-ray source model: L11831-01

Ultra-long stability



Brand: IRAY
Digital flat panel detector model: 0505



Hamamatsu Photonics K.K. started as a small firm established in 1953 by Heihachiro Horiuchi who studied under the guidance of Dr. Kenjiro Takayanagi now respectfully called the “father of Japanese television.” Over the past 65 years, they have been consistently engaged in developing photoelectric devices and their application products while moving forward along with the continuing advances in technologies of light.

Just as electrons and electronics brought immeasurable richness to our lives in the 20th century, the 21th century will be the age of photons (particles of light) and photonics. Spurred by the unlimited possibilities of light, photonics technology is increasingly applied in a wide range of fields.

90 kV MICROFOCUS X-RAY SOURCE

HAMAMATSU

PHOTON IS OUR BUSINESS



Founded in 2011 iRay is headquartered in Shanghai-Xinjiniao Hi-tech Zone, with production facilities in Shanghai-Zhangjiang and in Taicang, all in China.

iRay X-ray detectors are used in more than 70 nations, including the United States and many European countries, and iRay has become China's leading manufacturer of flat panel detectors. The total installed base of iRay products now exceeds 40,000 units.

iRay has a very broad technology portfolio, that spans from amorphous Silicon (a-Si) to IGZO (Oxide TFT), flexible substrates and CMOS devices.

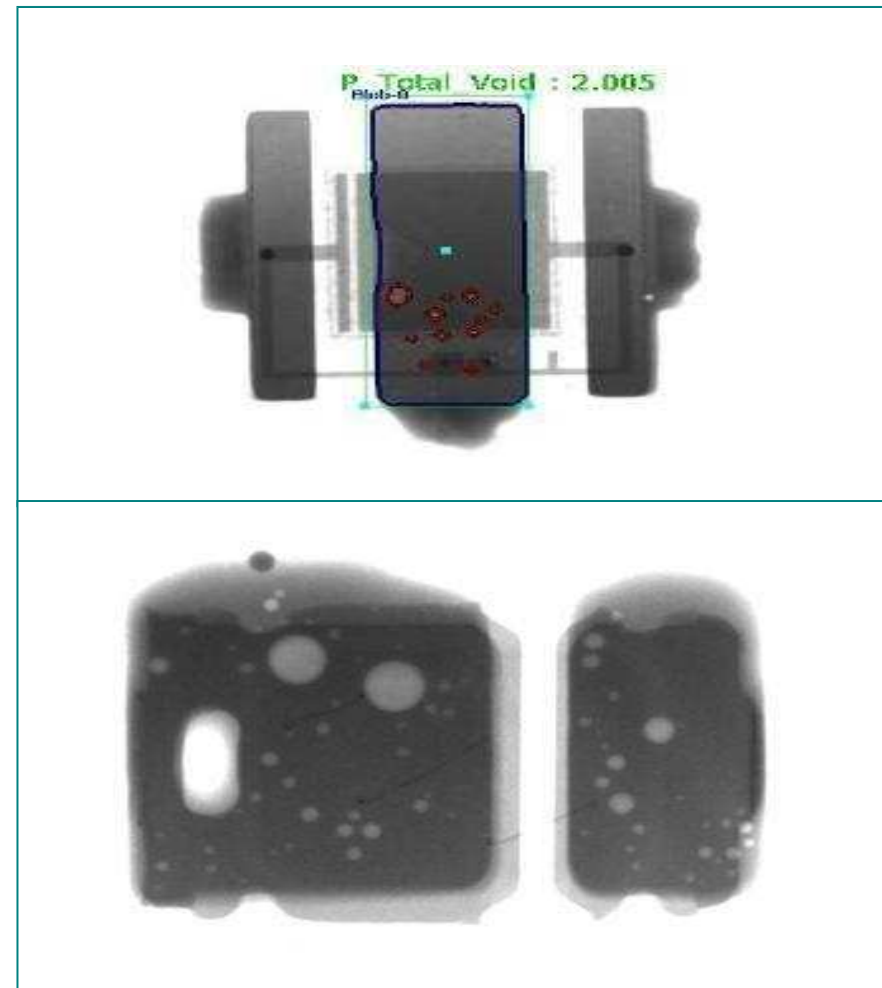
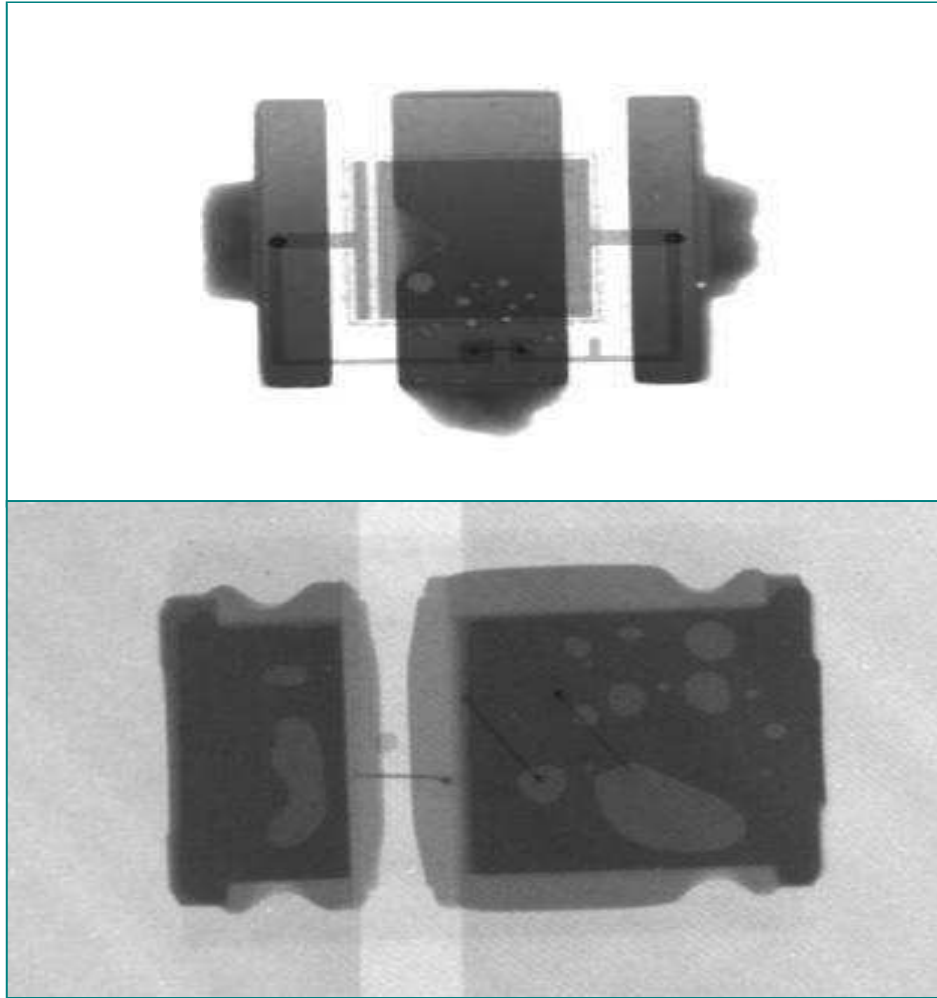
**Image
Detector**

Iray

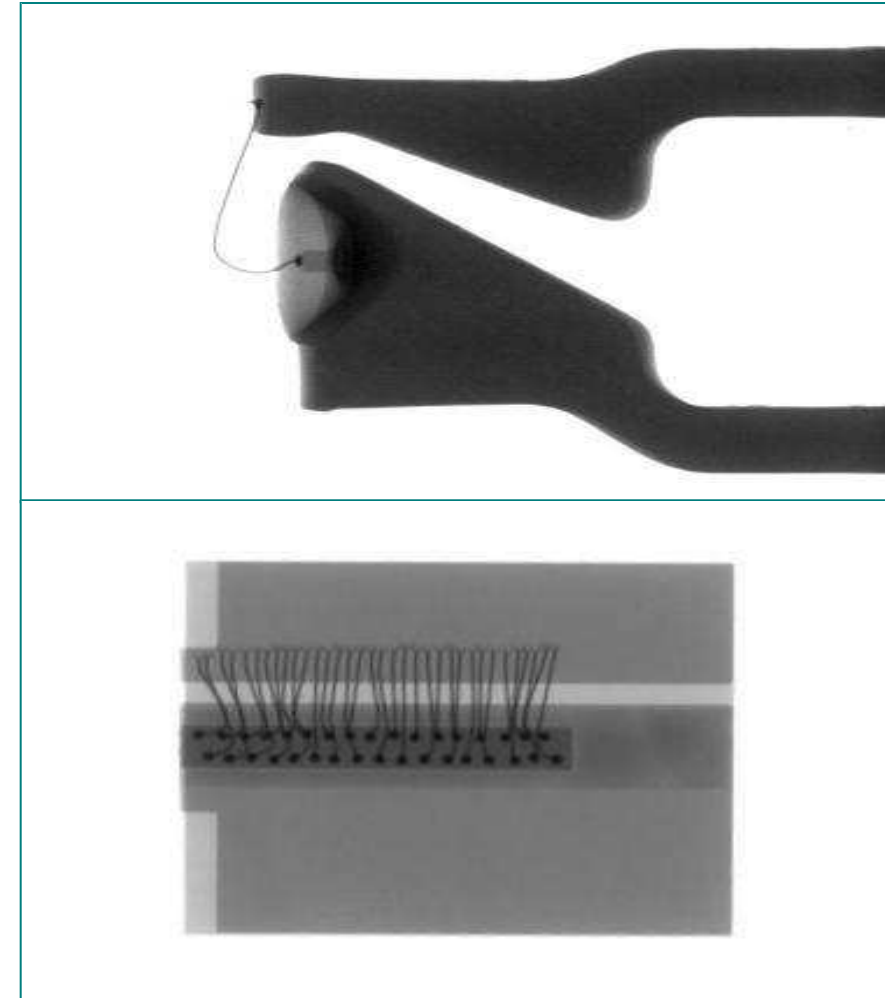


Sample Images

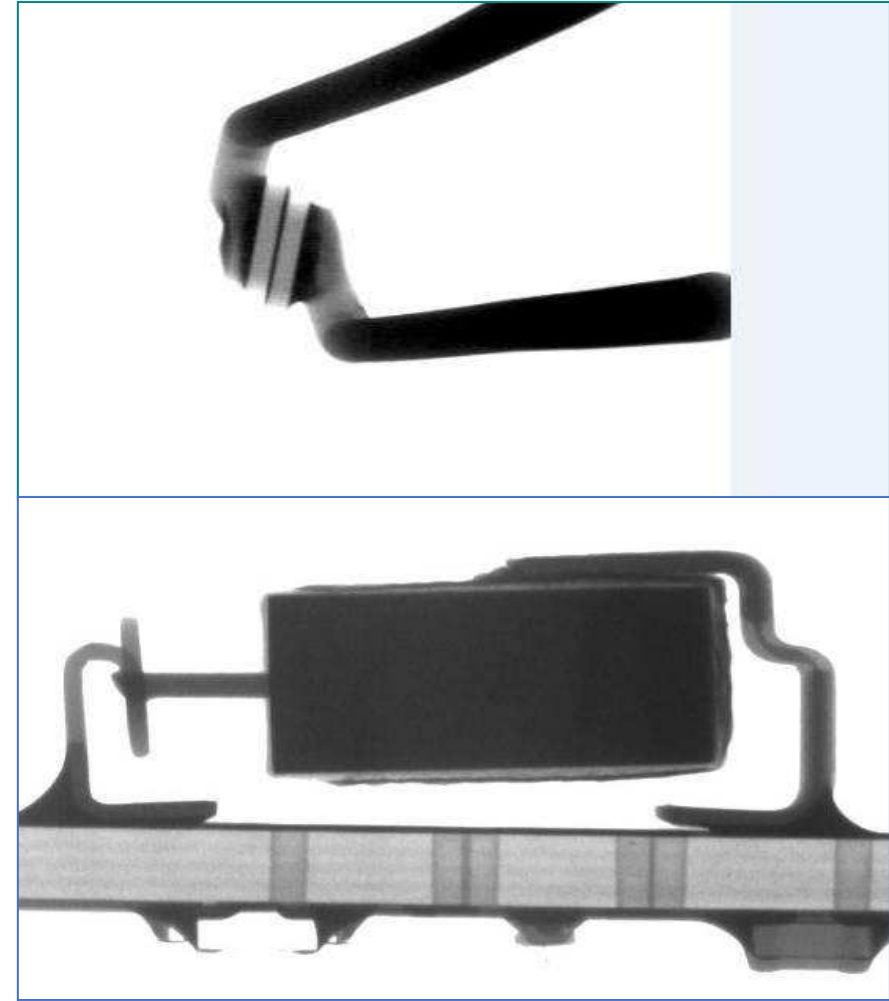
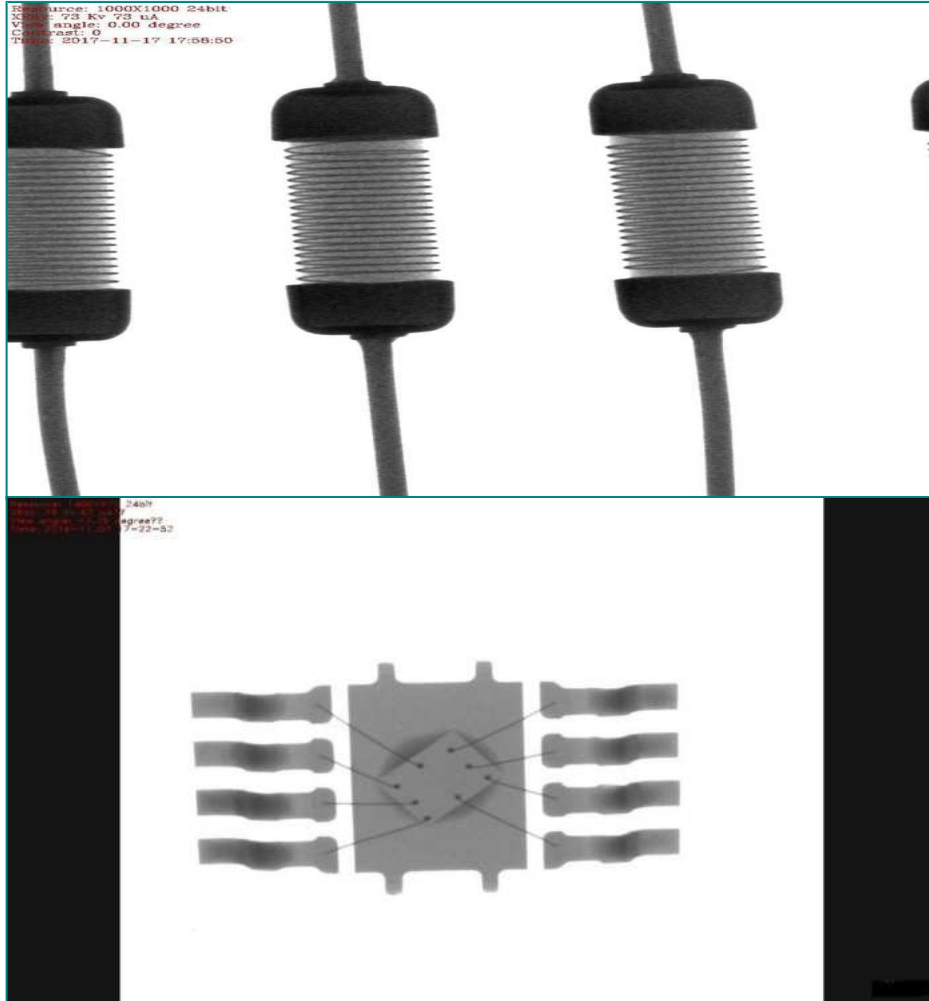
LED Lamp Bead Void Detection Image



LED Lamp Bead Binding Wire Image

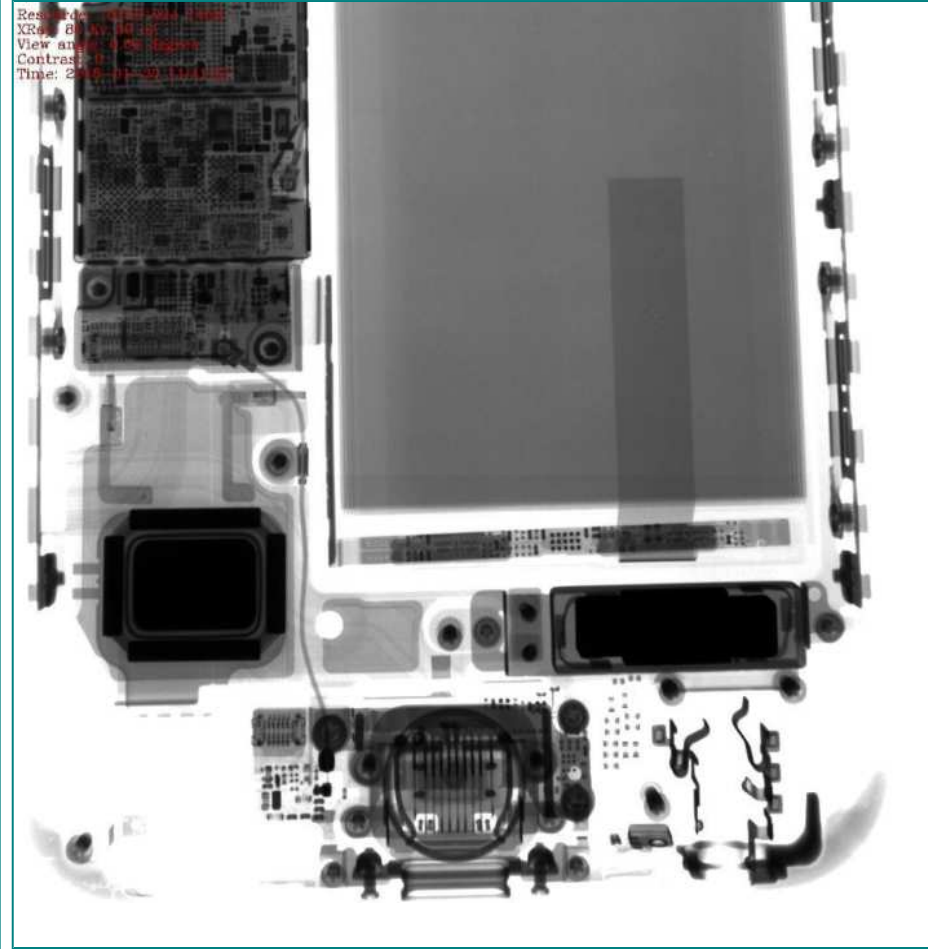


Semiconductor Product Detection Image

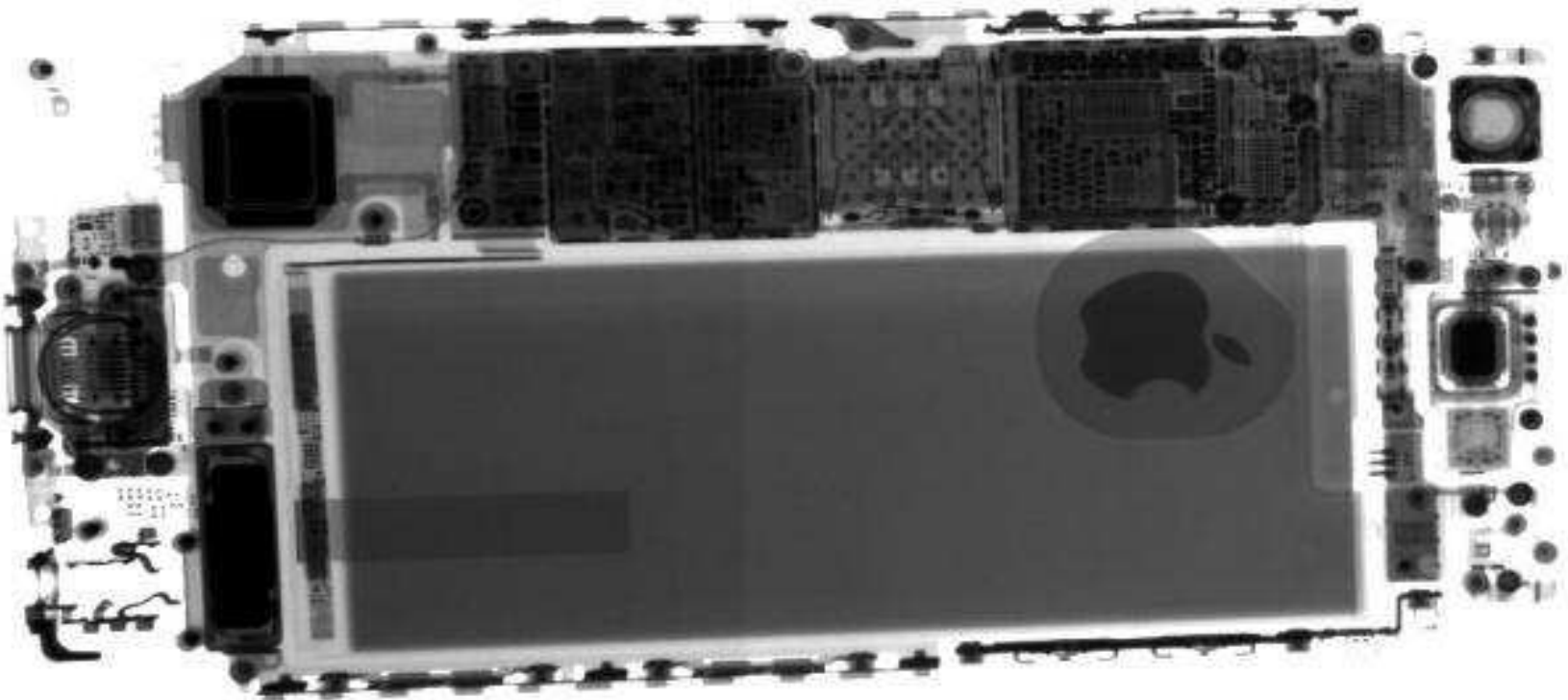


iPhone Mainboard Image

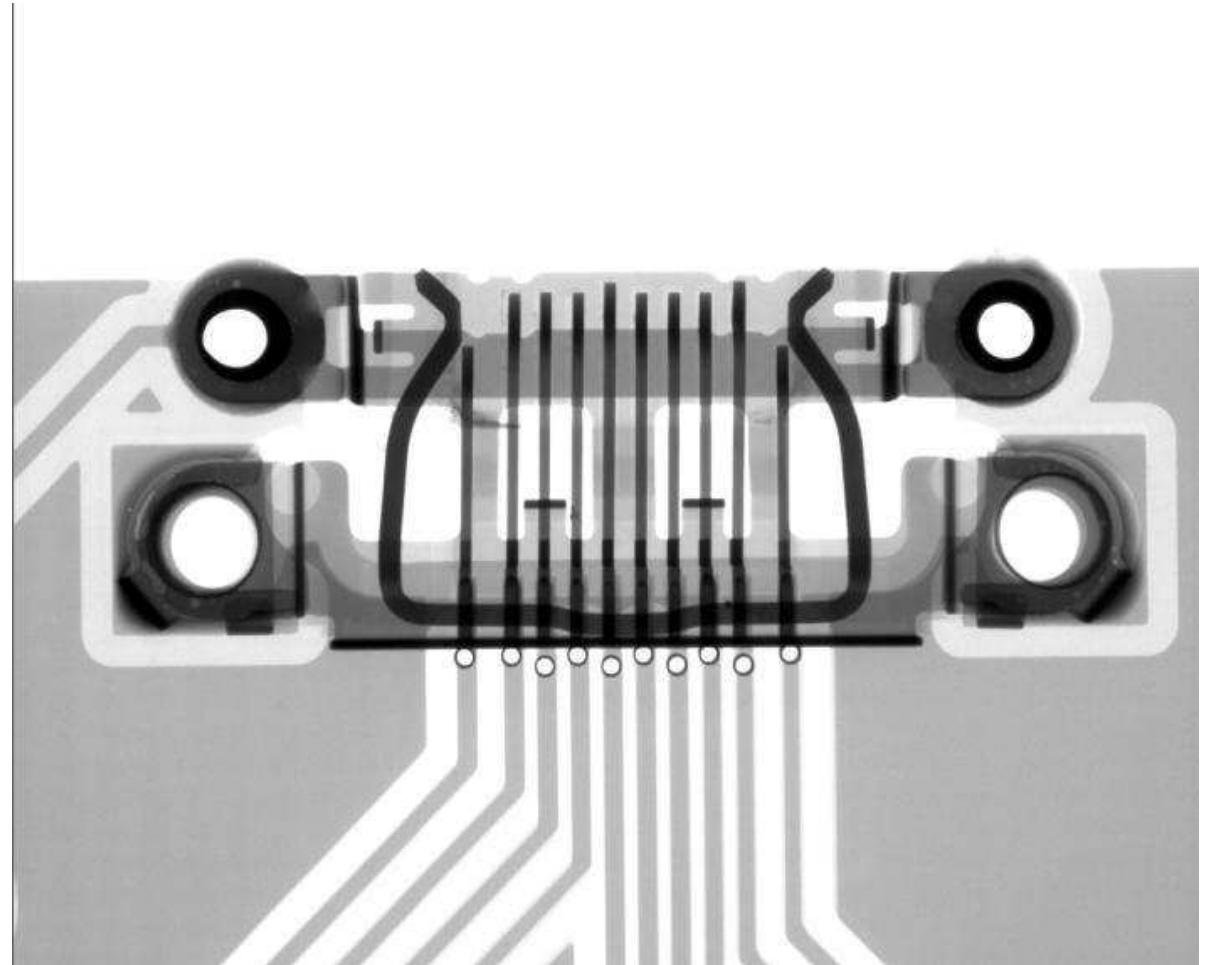
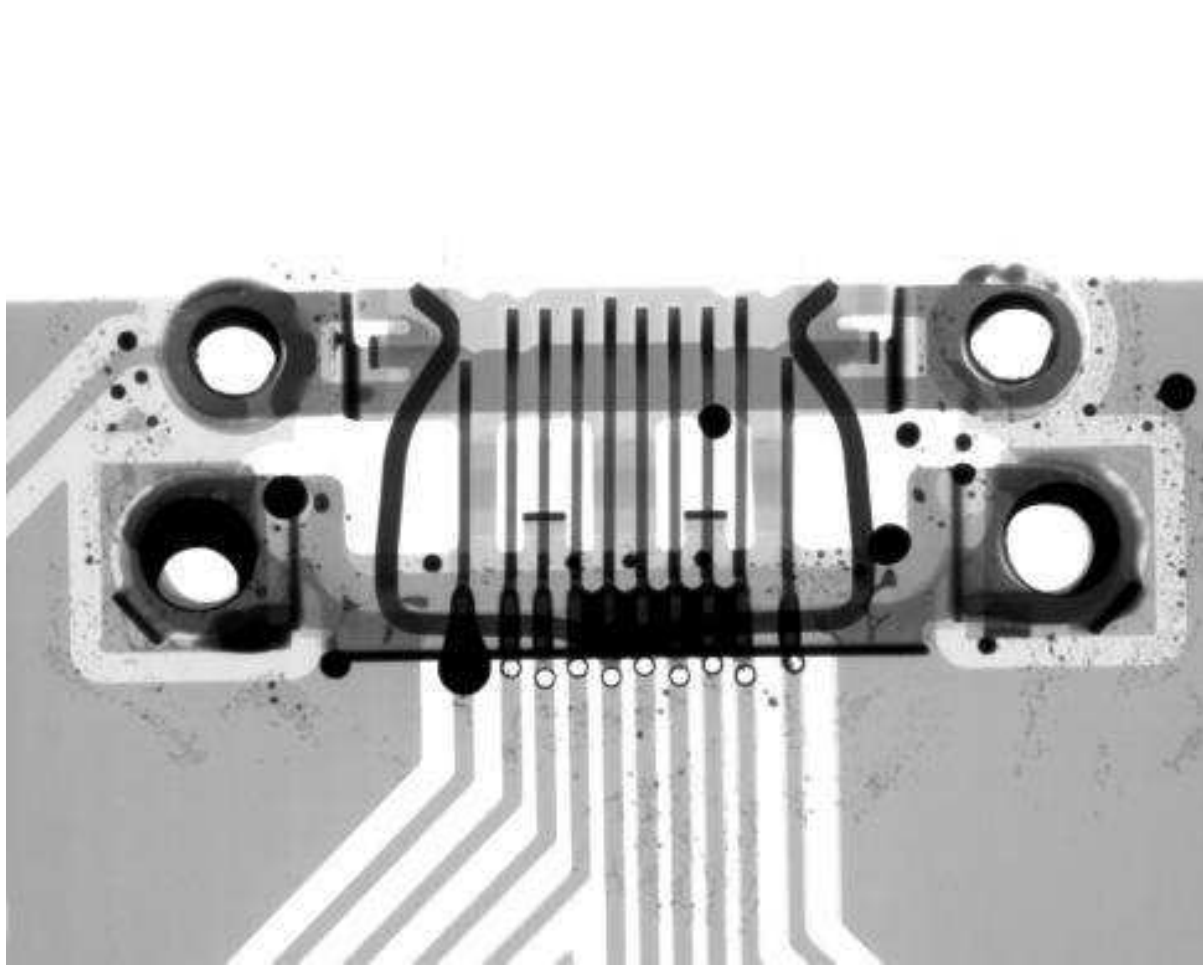
Resource: 1024X1024 24bit
XRay: 80 Kv 30 uA
View angle: 0.00 degree
Contrast: 0
Time: 2016-01-30 11:40:22



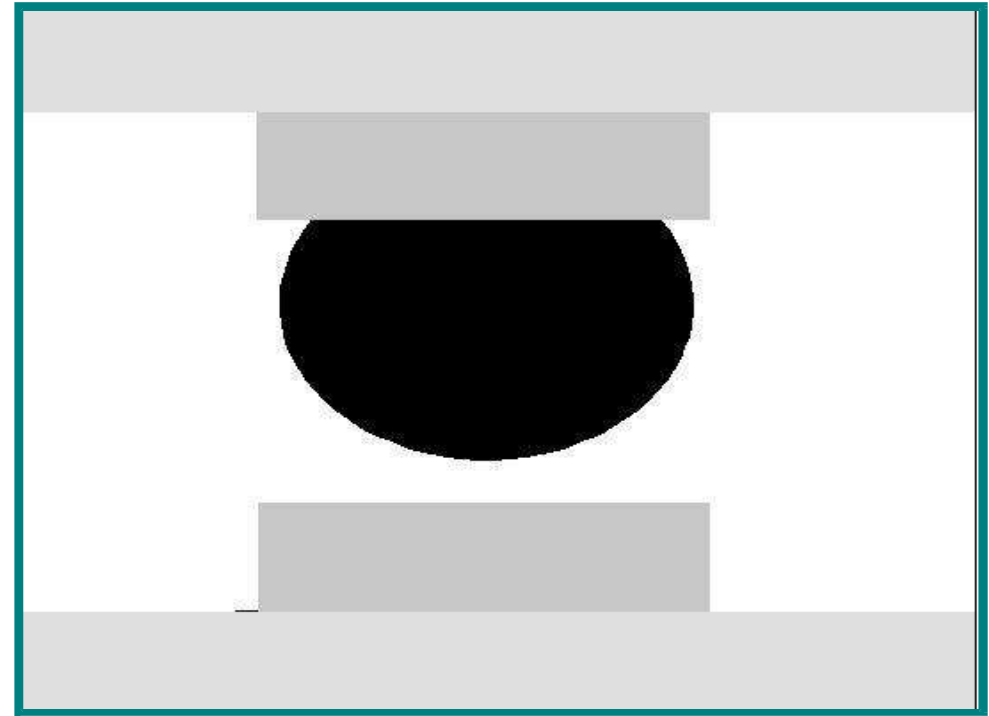
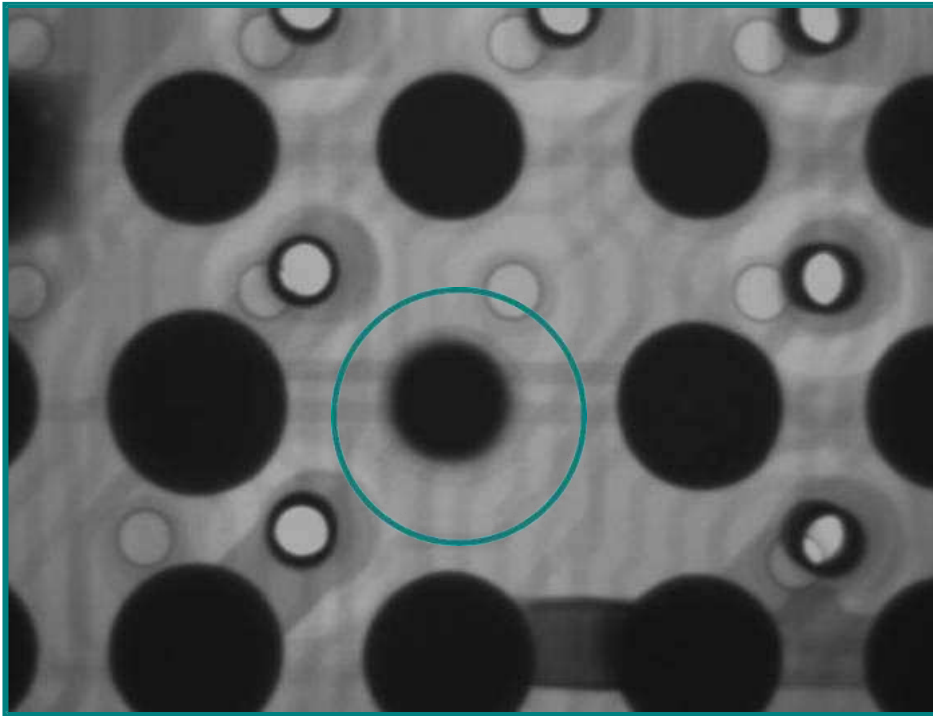
iPhone Mainboard Image



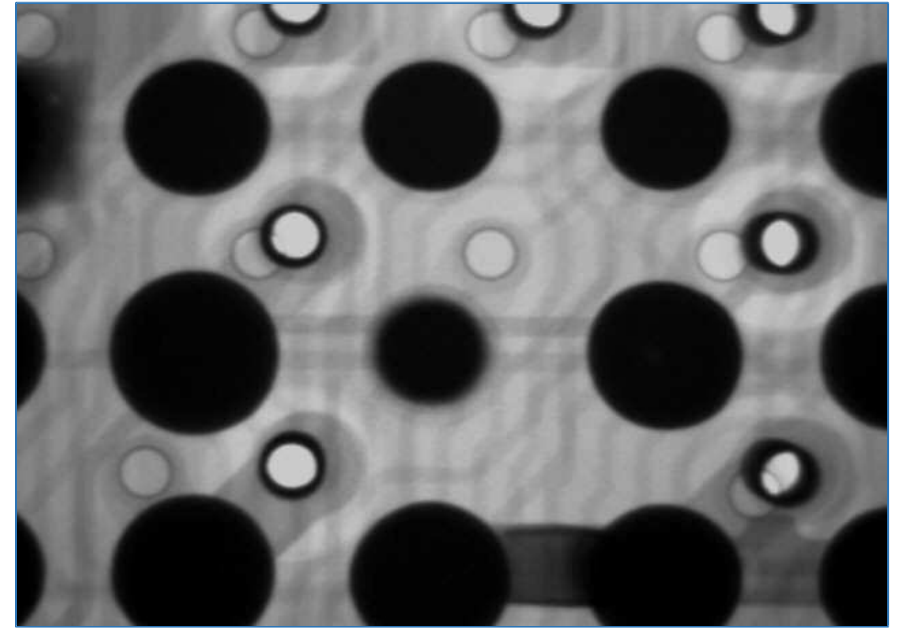
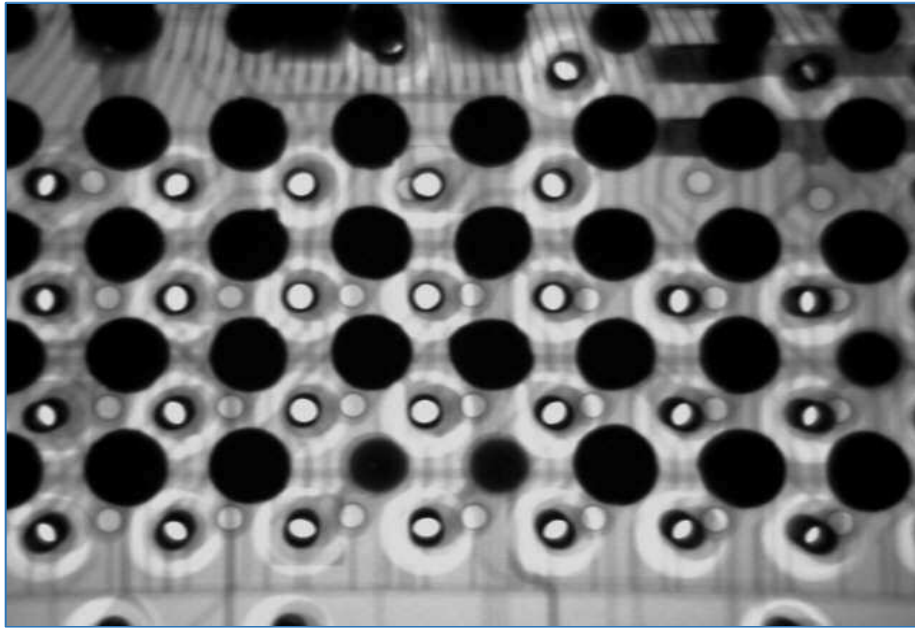
iPhone Charging Head Image



The Manifestation of BGA Open

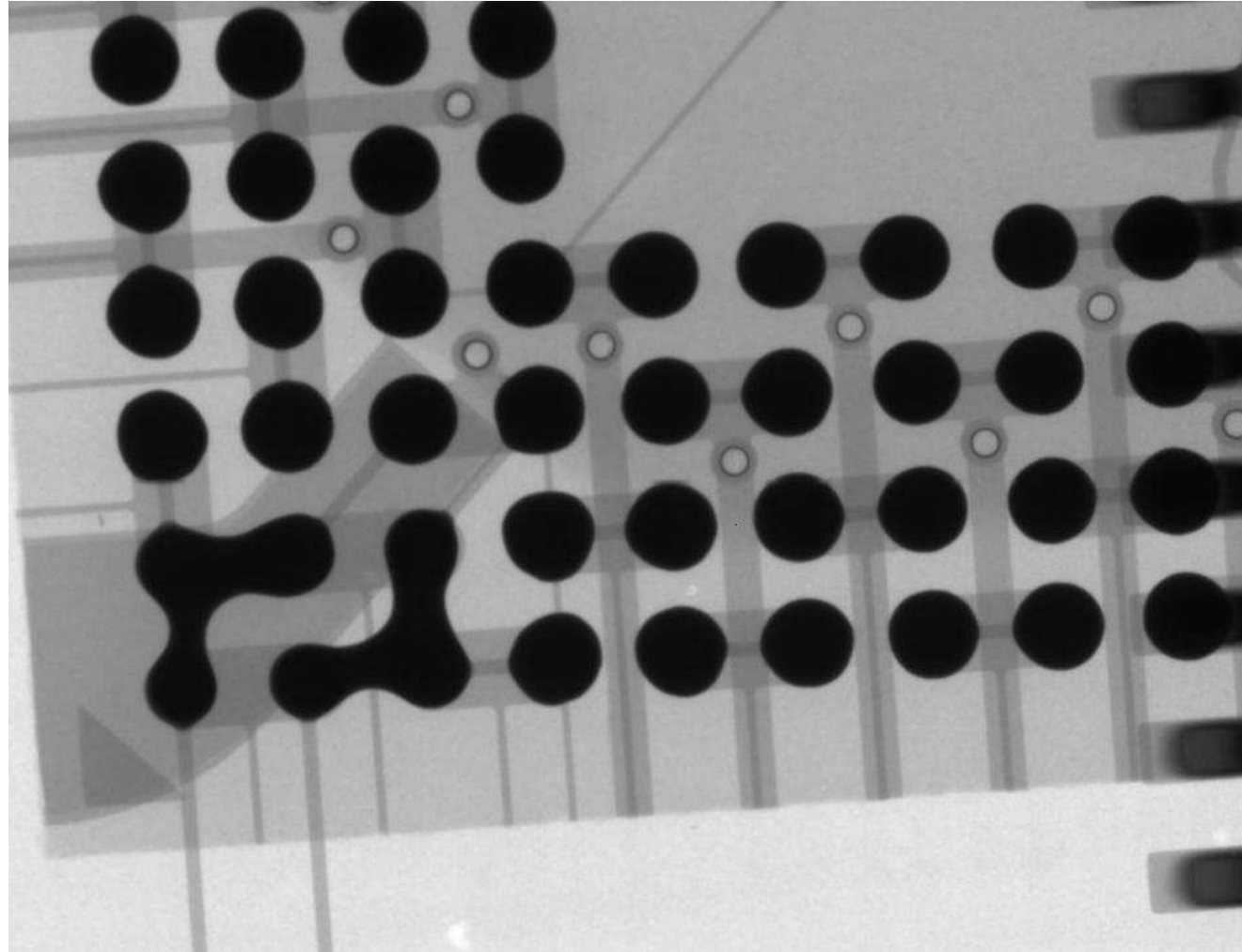


The Manifestation of BGA Open



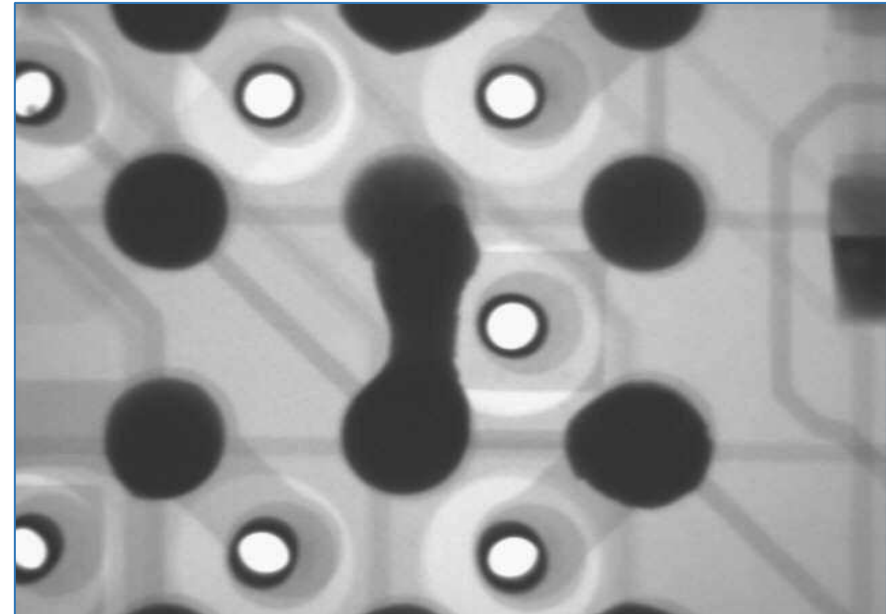
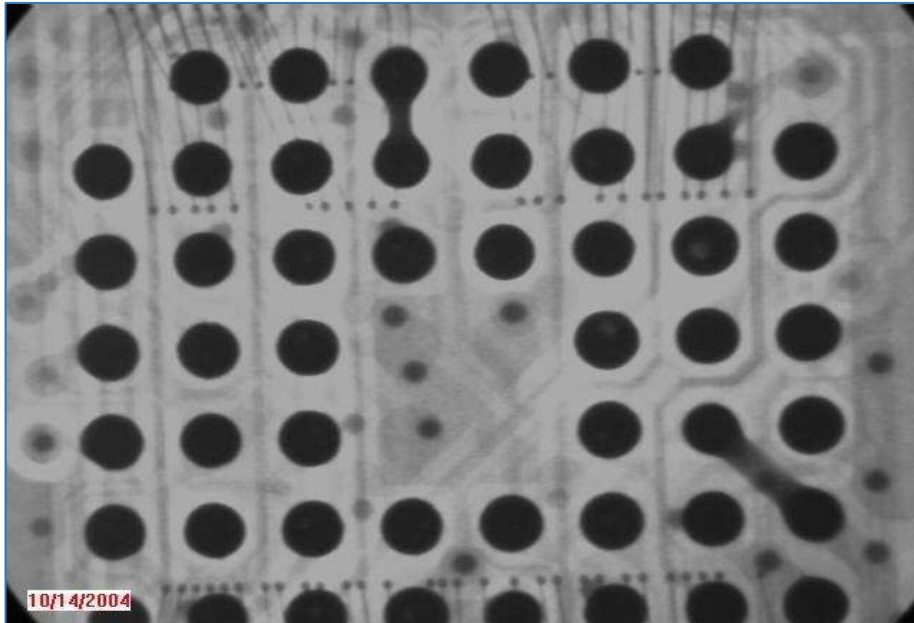
BGA Short Bridge

Short bridge means that the BGA is short-circuited, which can be easily found under X-ray.



BGA Short Bridge

Short bridge means that the BGA is short-circuited, which can be easily found under X-ray.



BGA voids

The generation of bubbles:

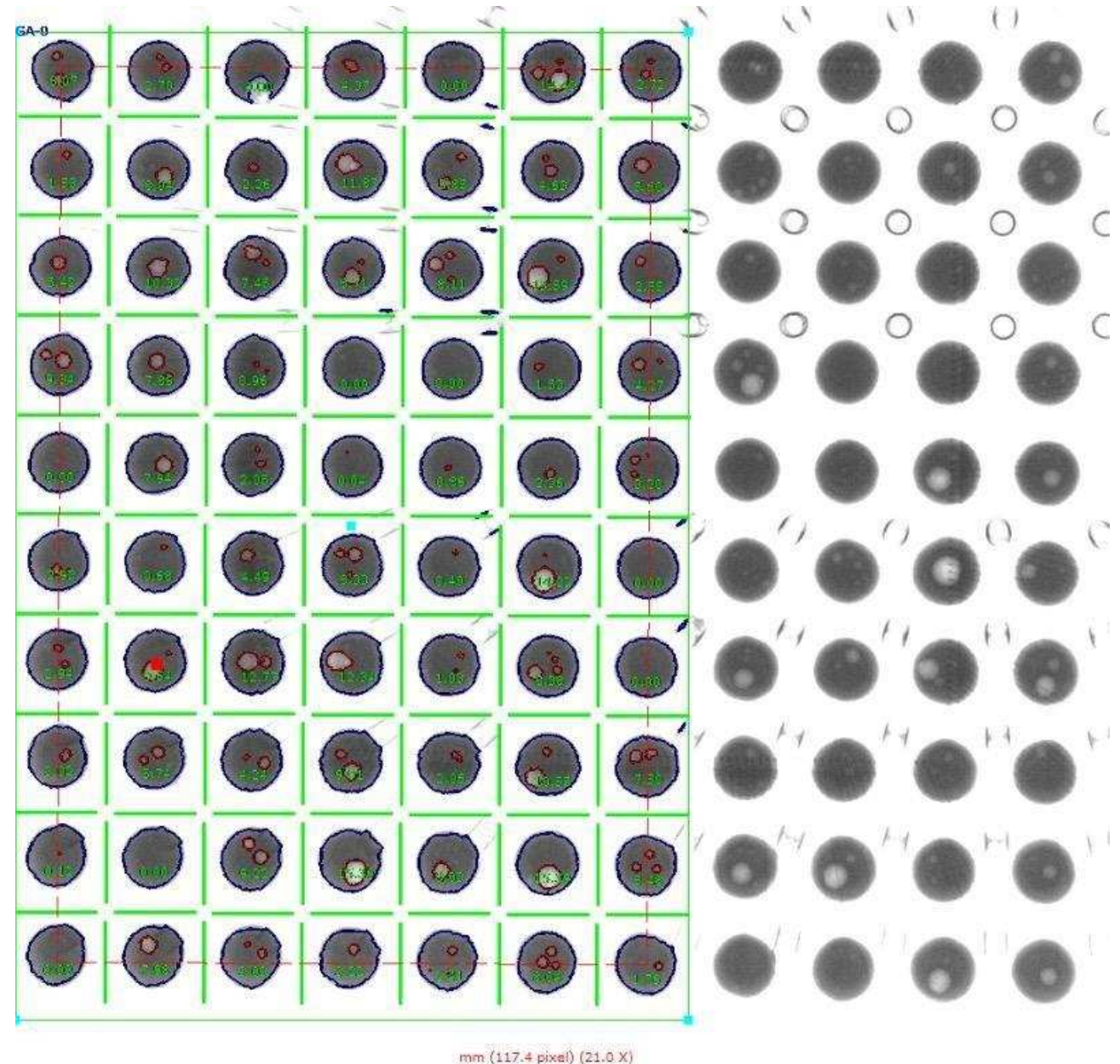
The bubbles are mainly caused by the flux and moisture of the solder paste, and the bubbles mostly appear at the bottom of the BGA ball, and the problem will follow. If the bubbles are too large, it will affect the stability of the BGA and cause tin cracks. This is also open.

Allowable bubble value:

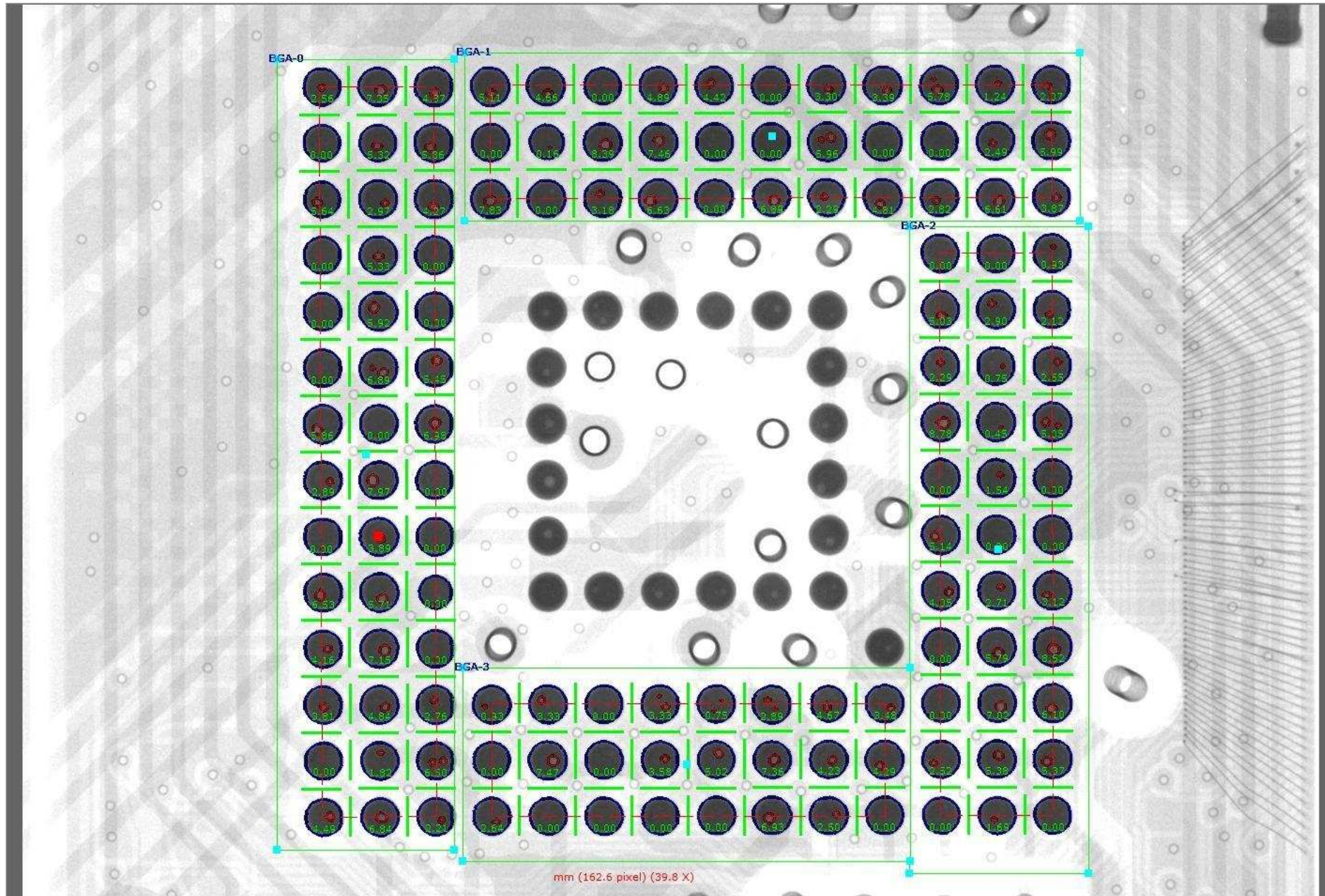
Industry standards and IPC specifically defined that the bubble area must be controlled within **25%**, and the software can set the value range freely.

X-ray measurement method of bubbles:

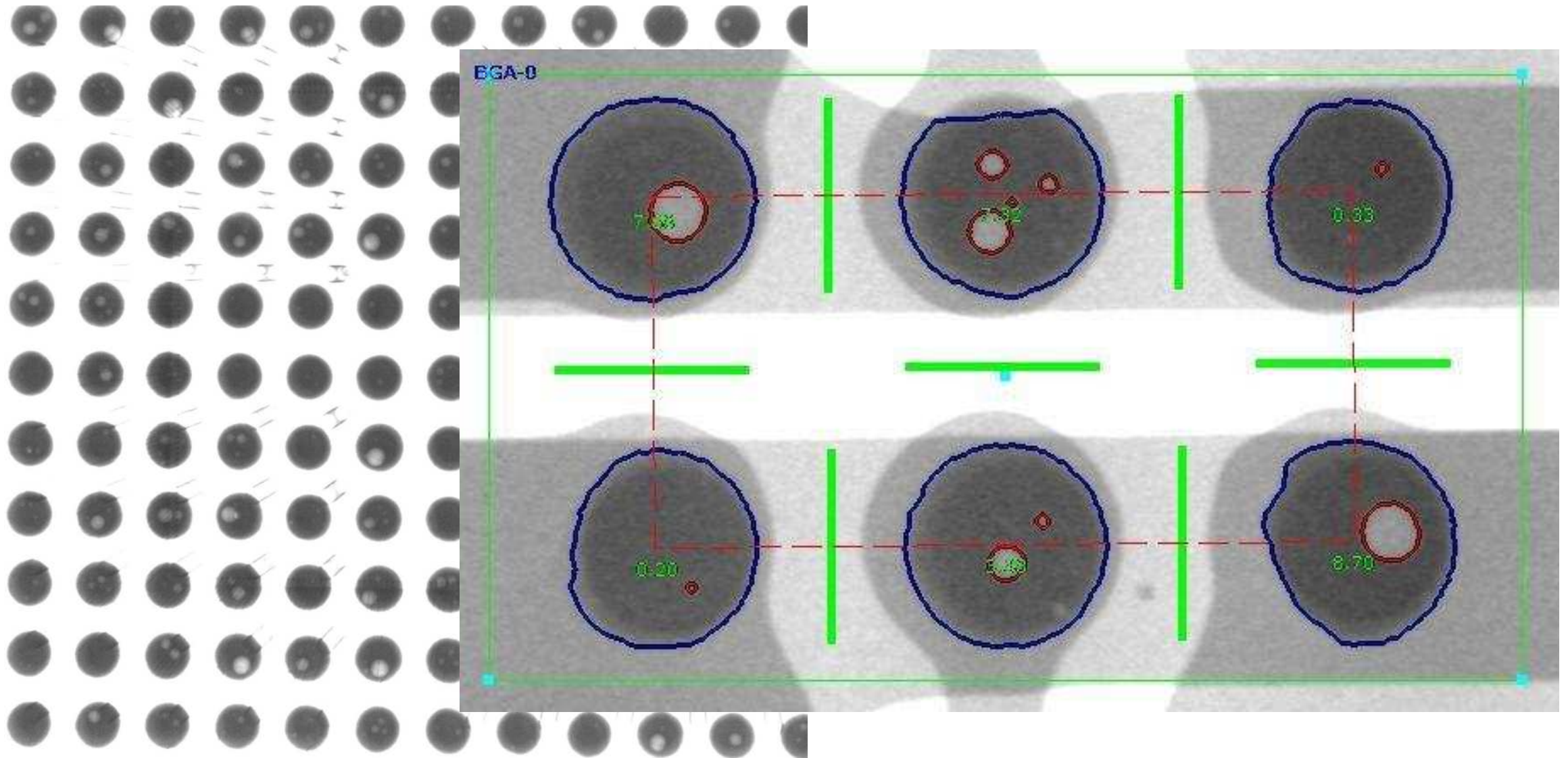
Before the measurement, the X-ray power must be increased to break through the solder ball bubbles, then they will appear as whitening bubbles.



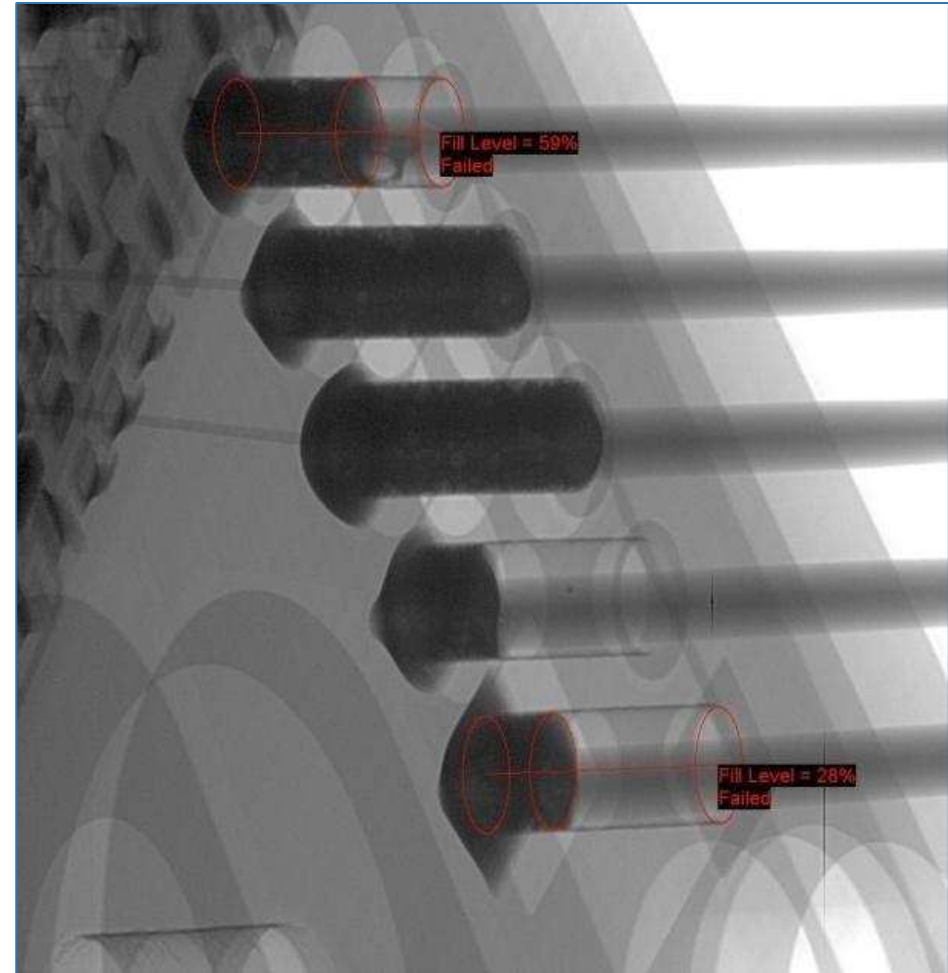
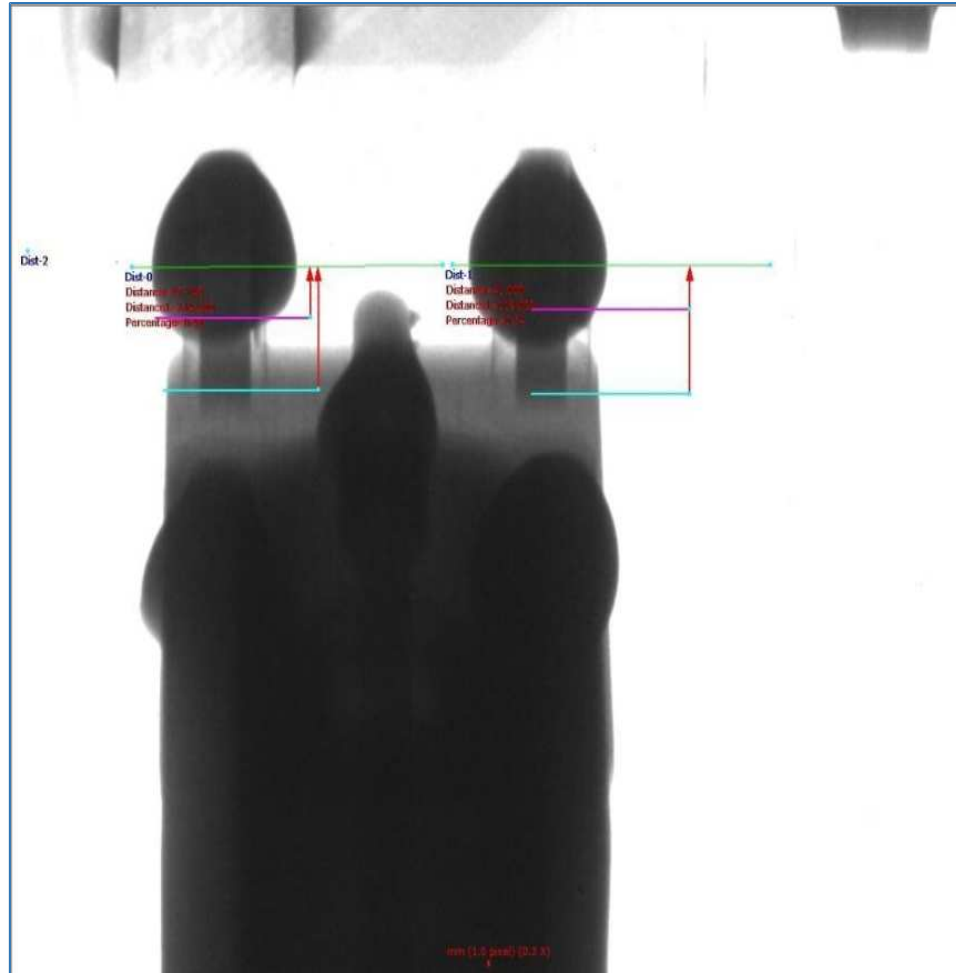
BGA Bubbles



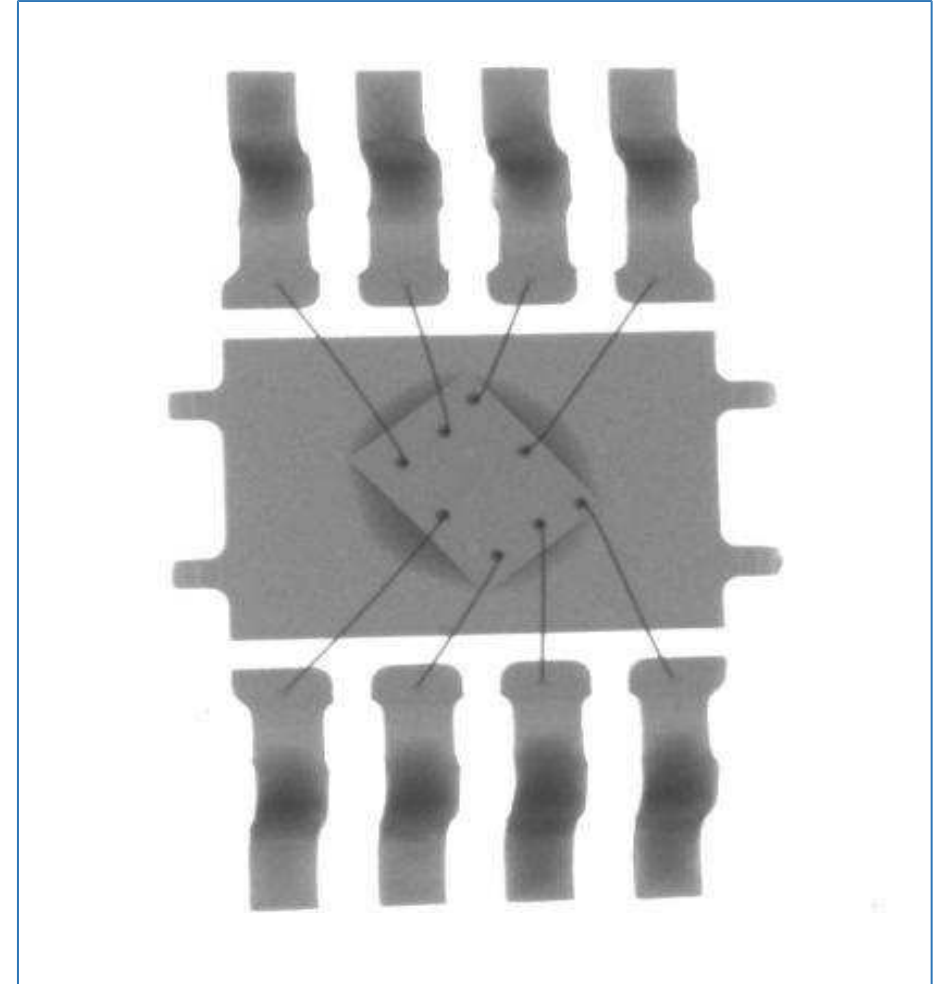
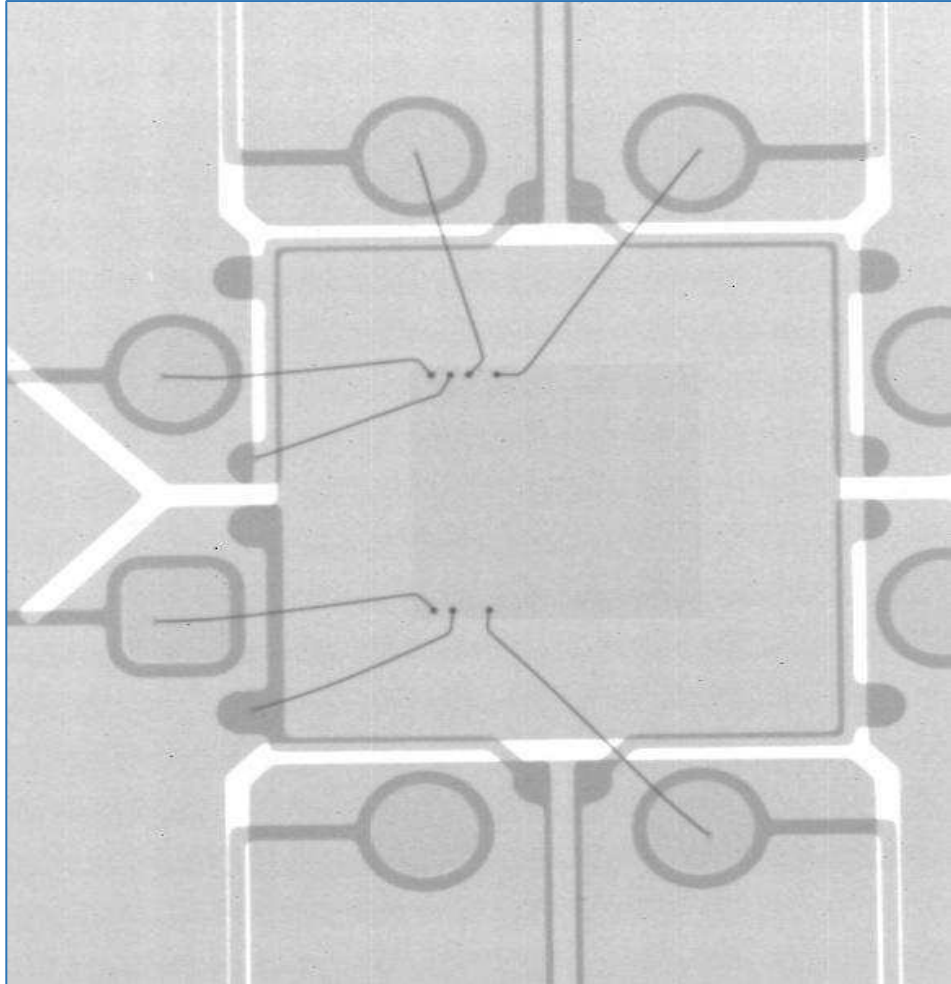
BGA Bubbles



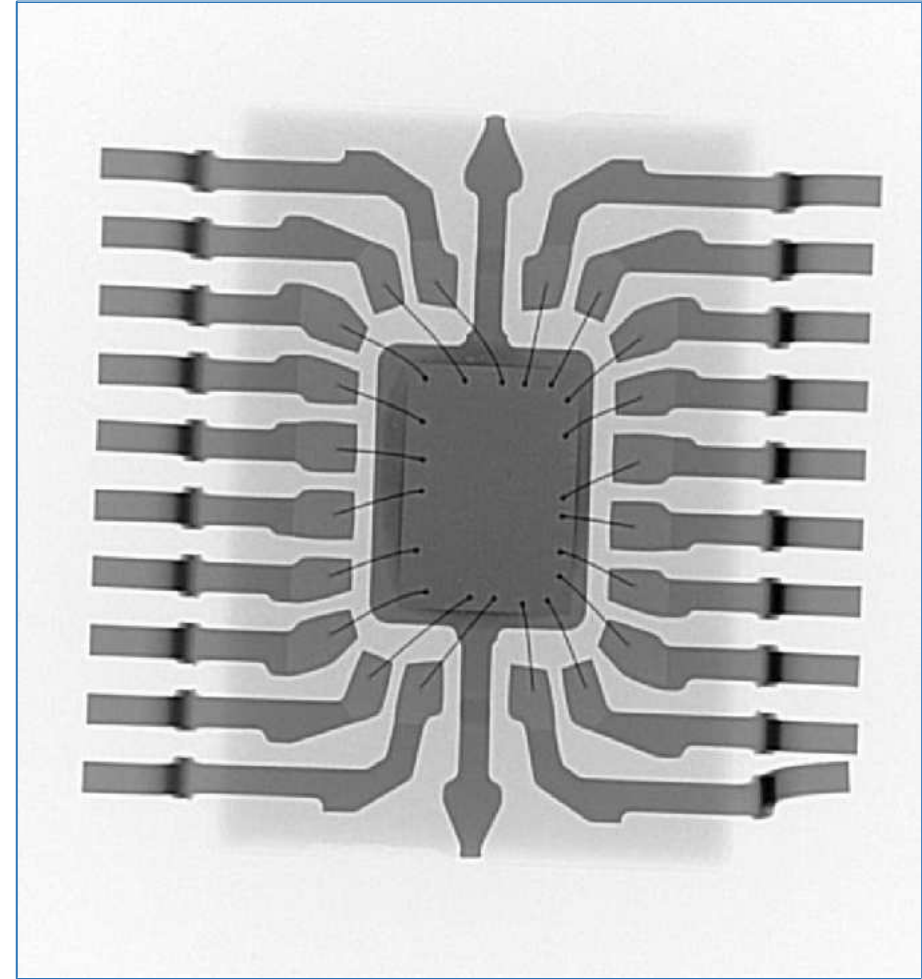
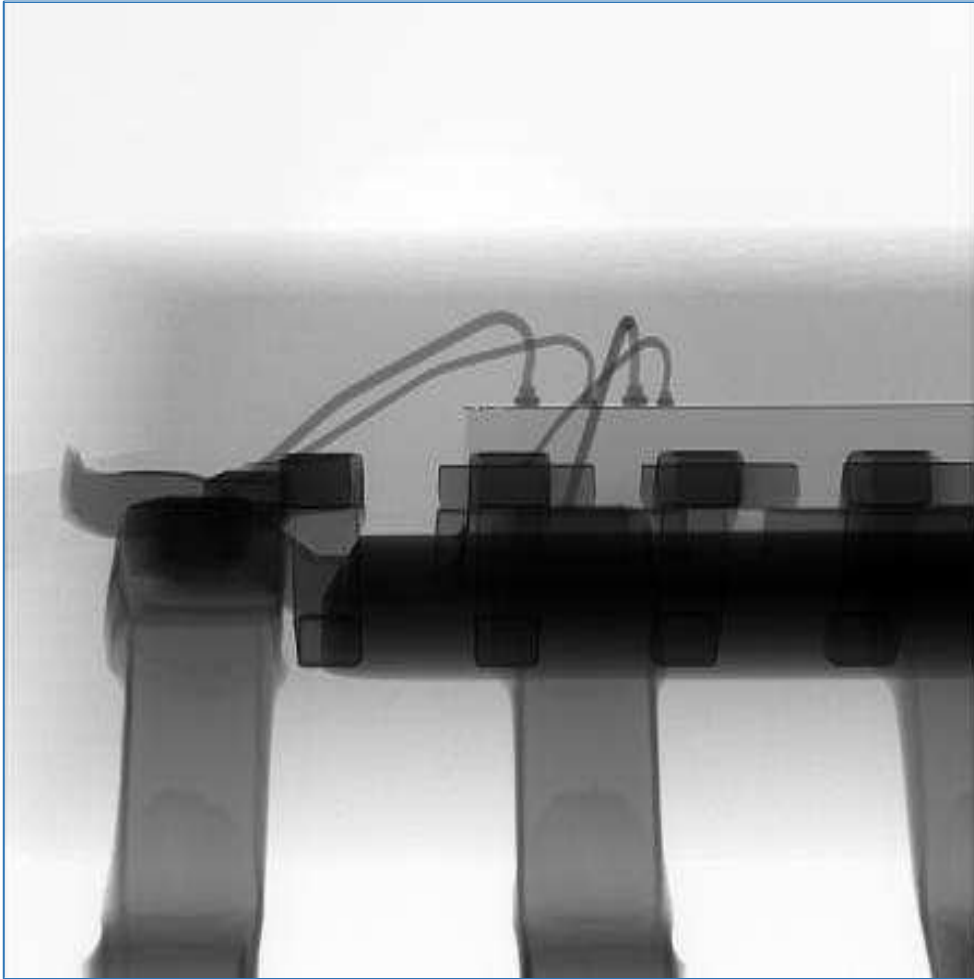
Tin in the Hole Measurement Image



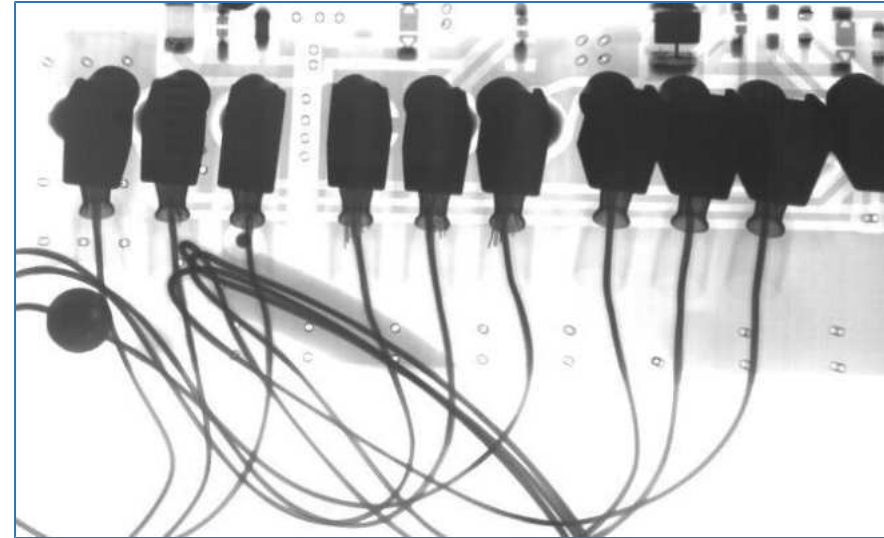
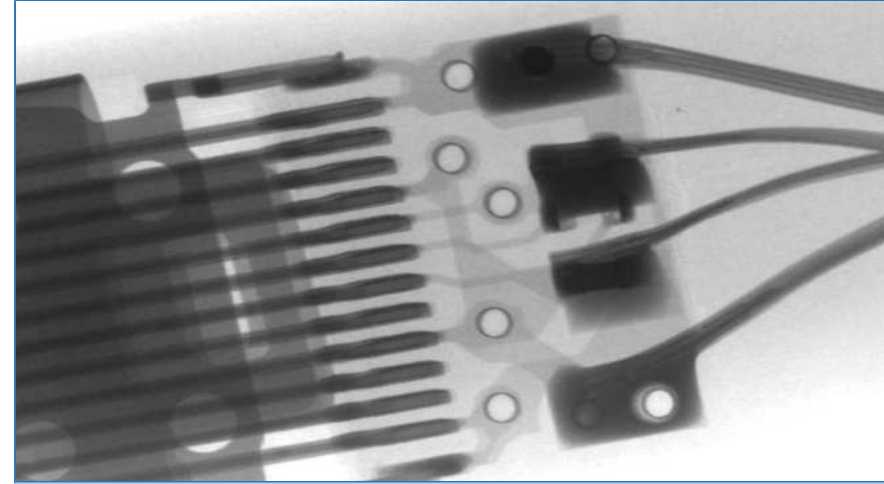
Gold Wire Inspection Image



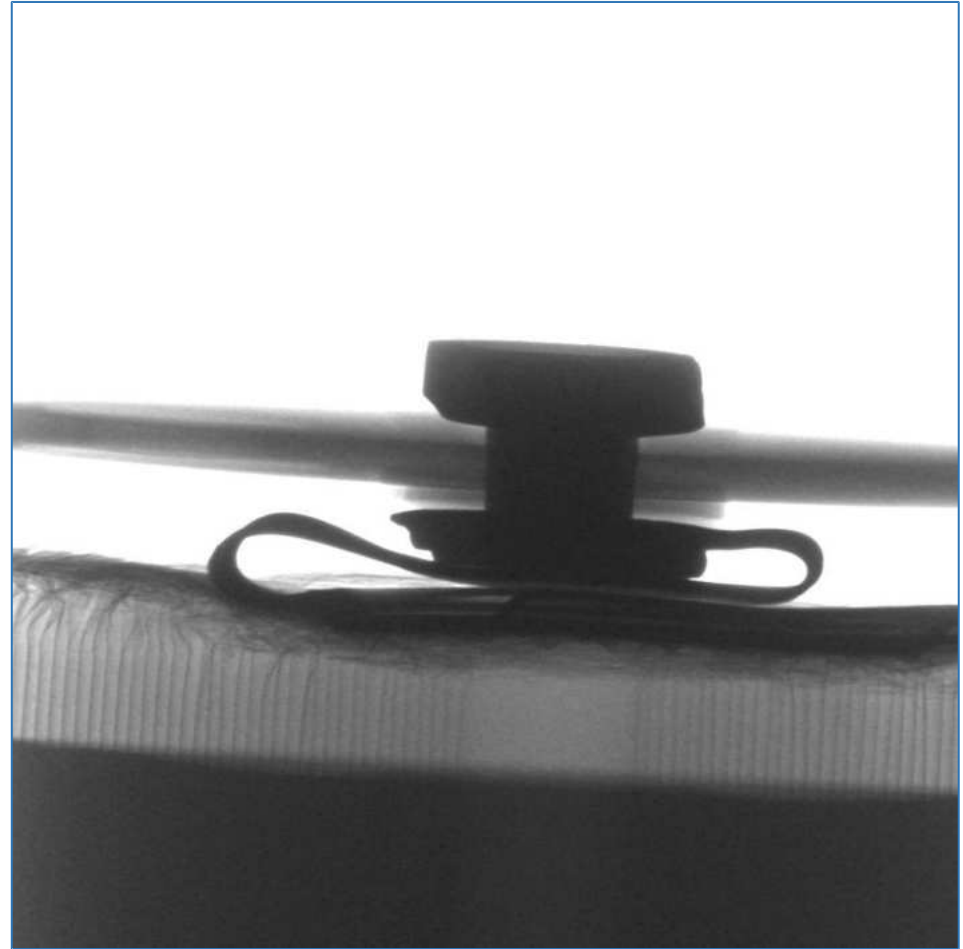
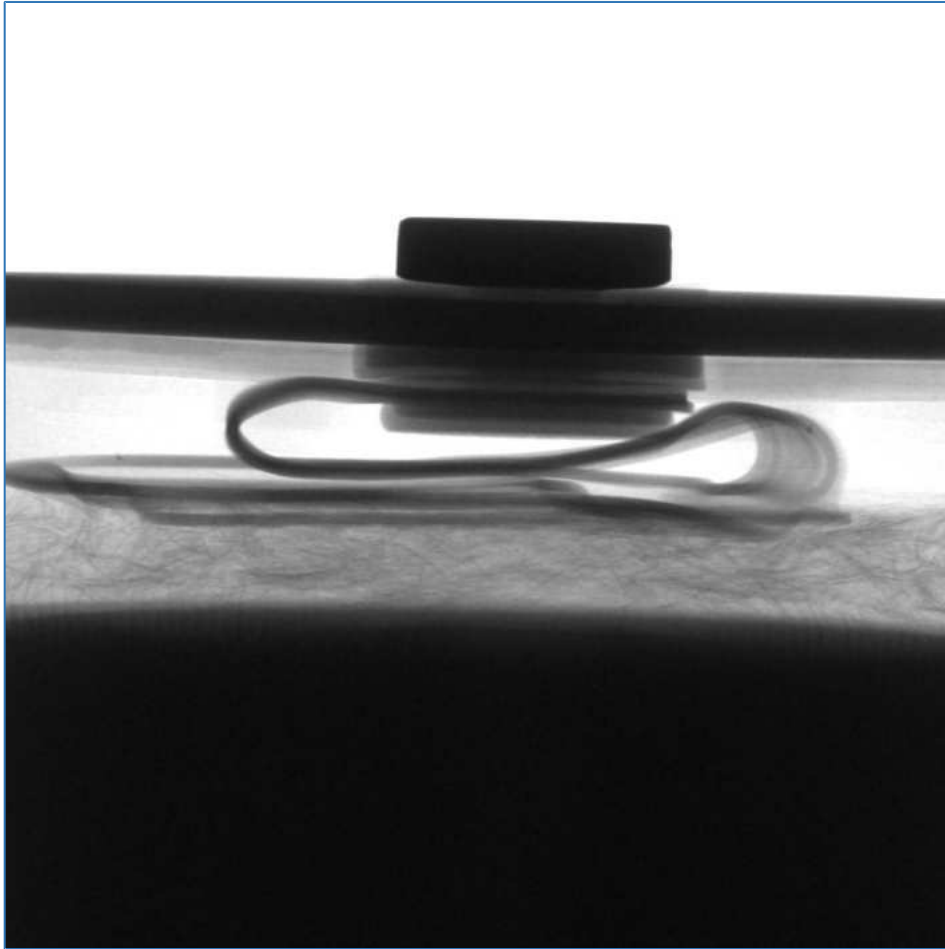
Gold Wire Inspection Image



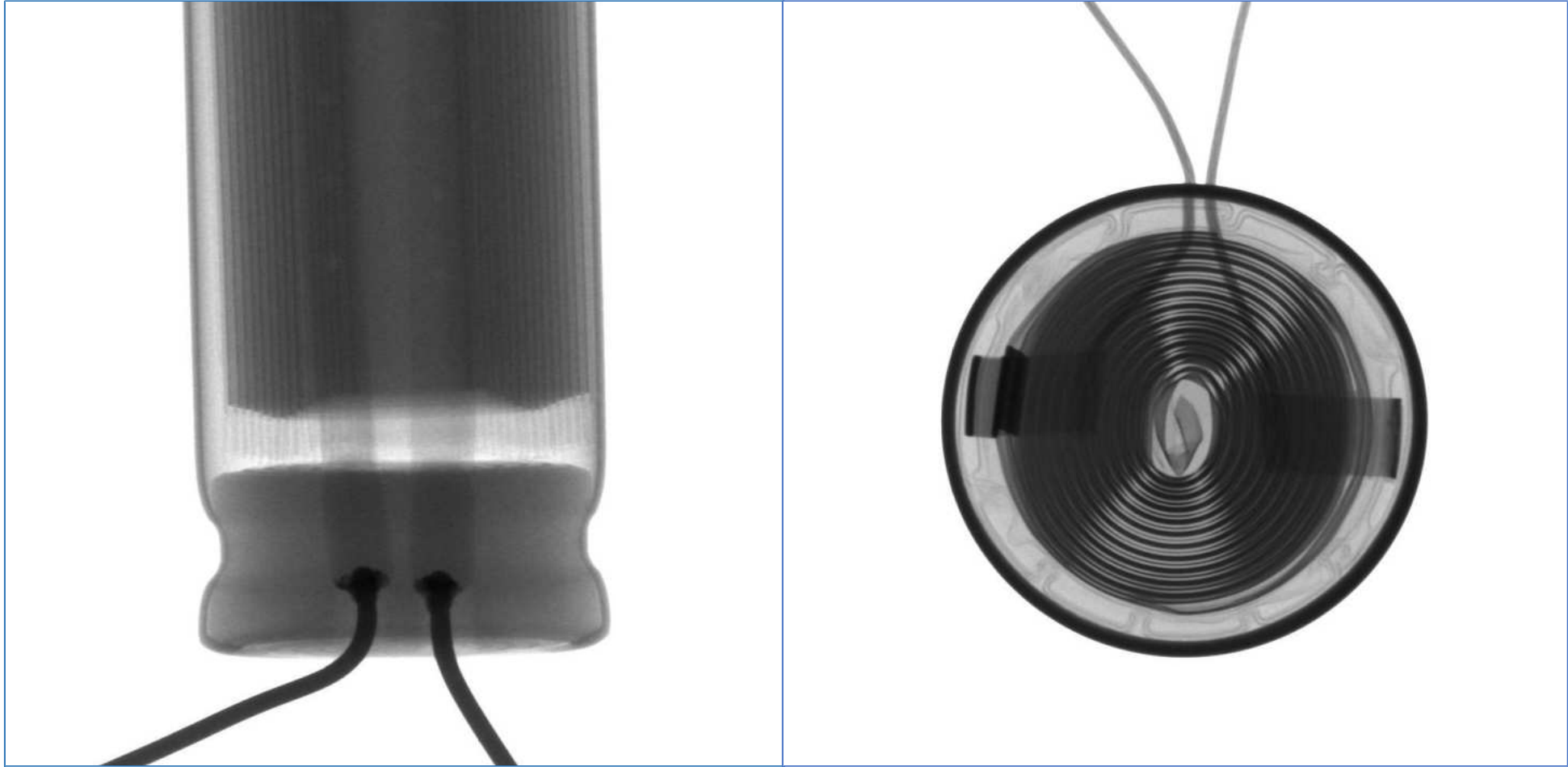
Wiring Harness and Plug Image



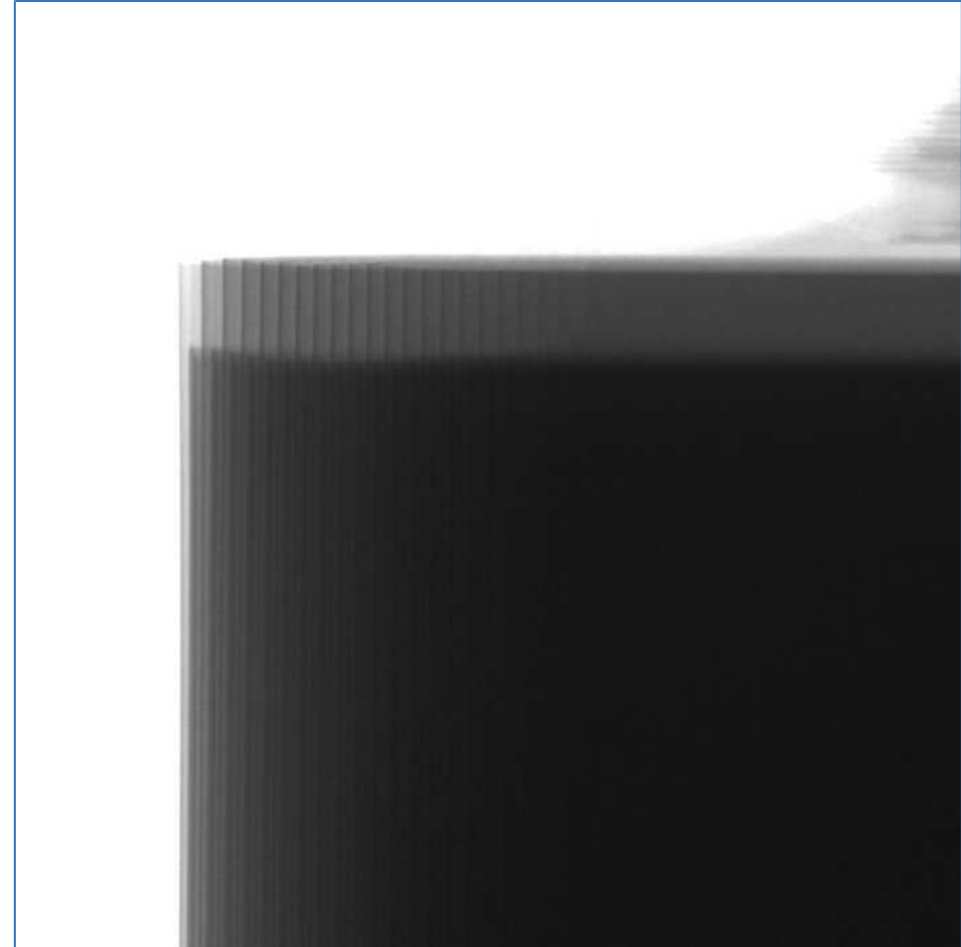
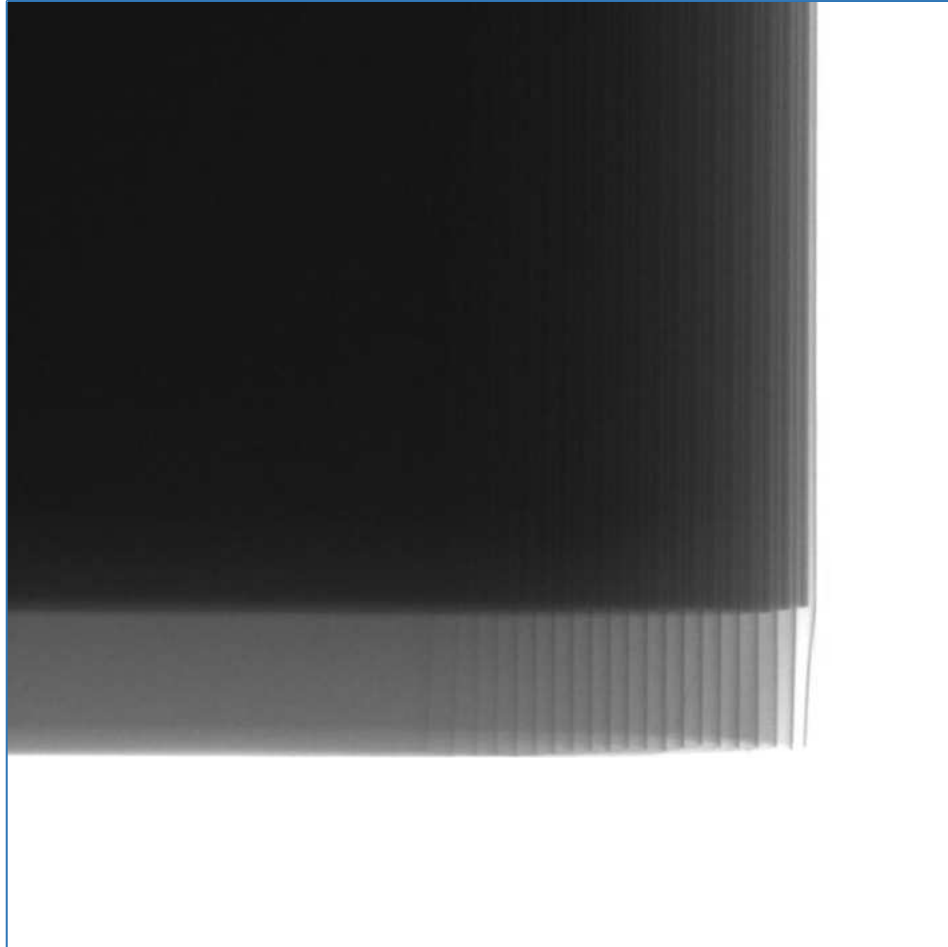
Cylindrical Battery Image



Battery Image



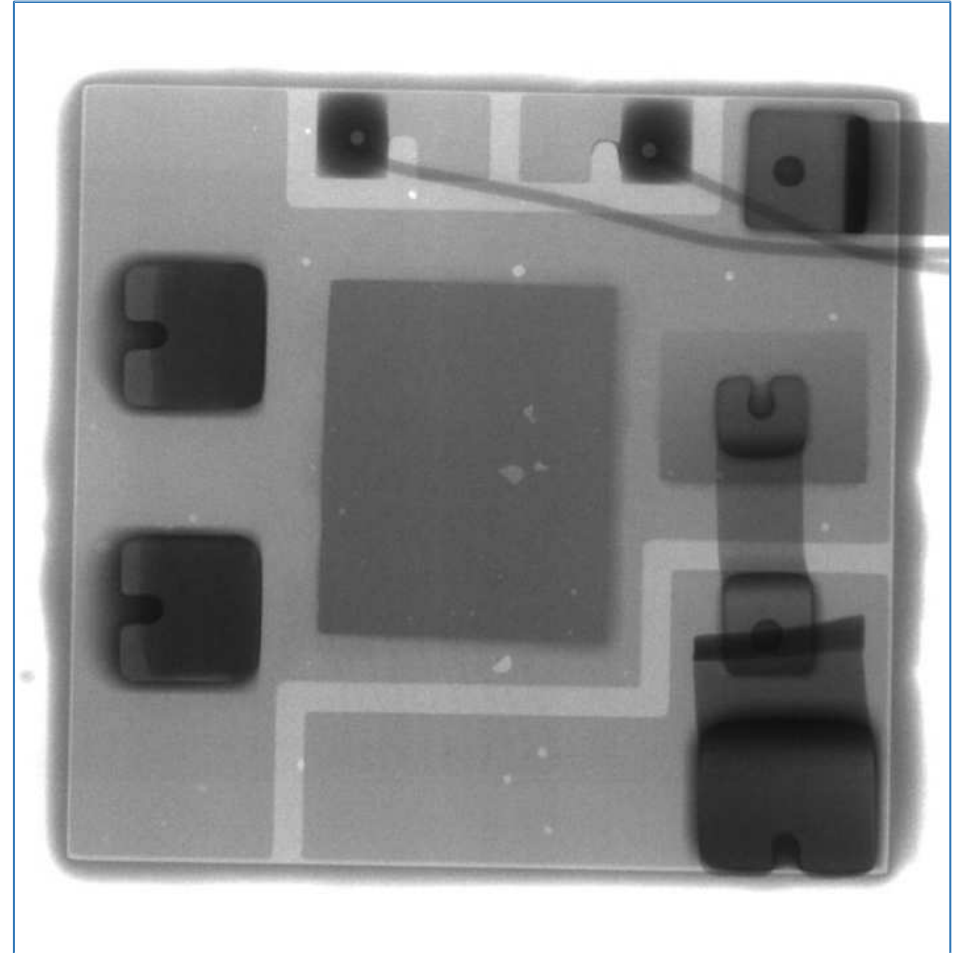
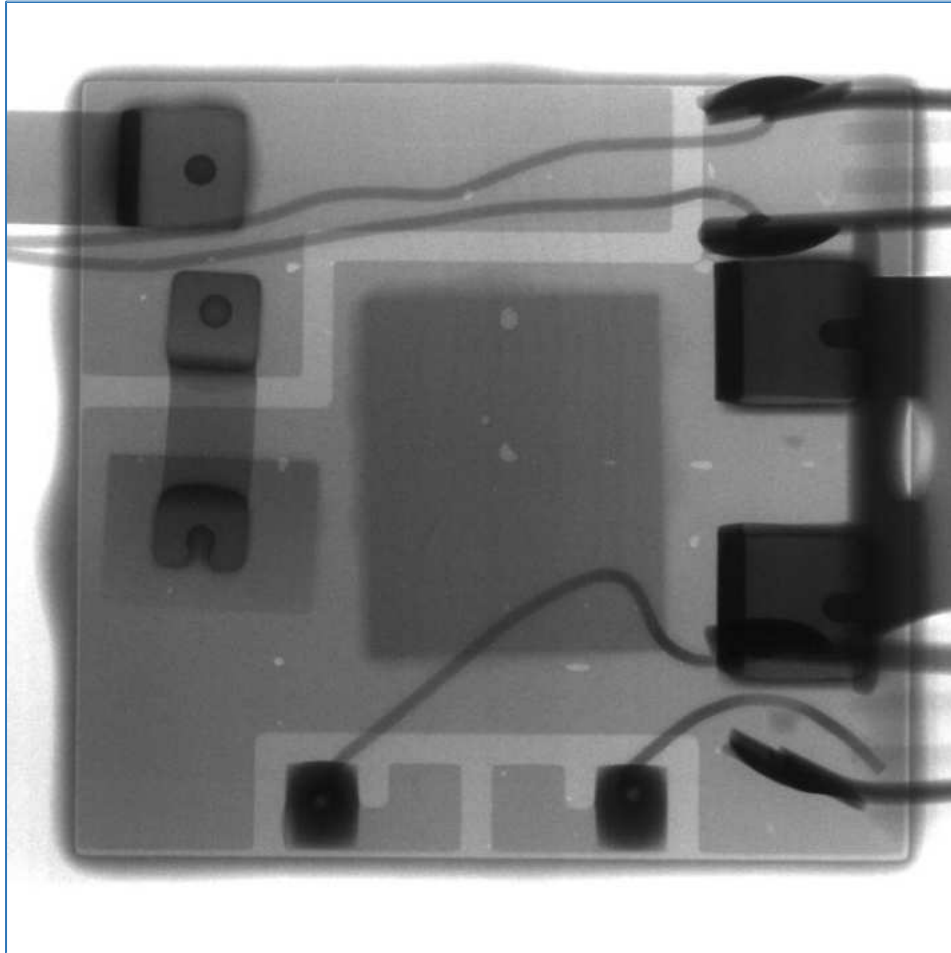
Soft Pack Wound Battery Image



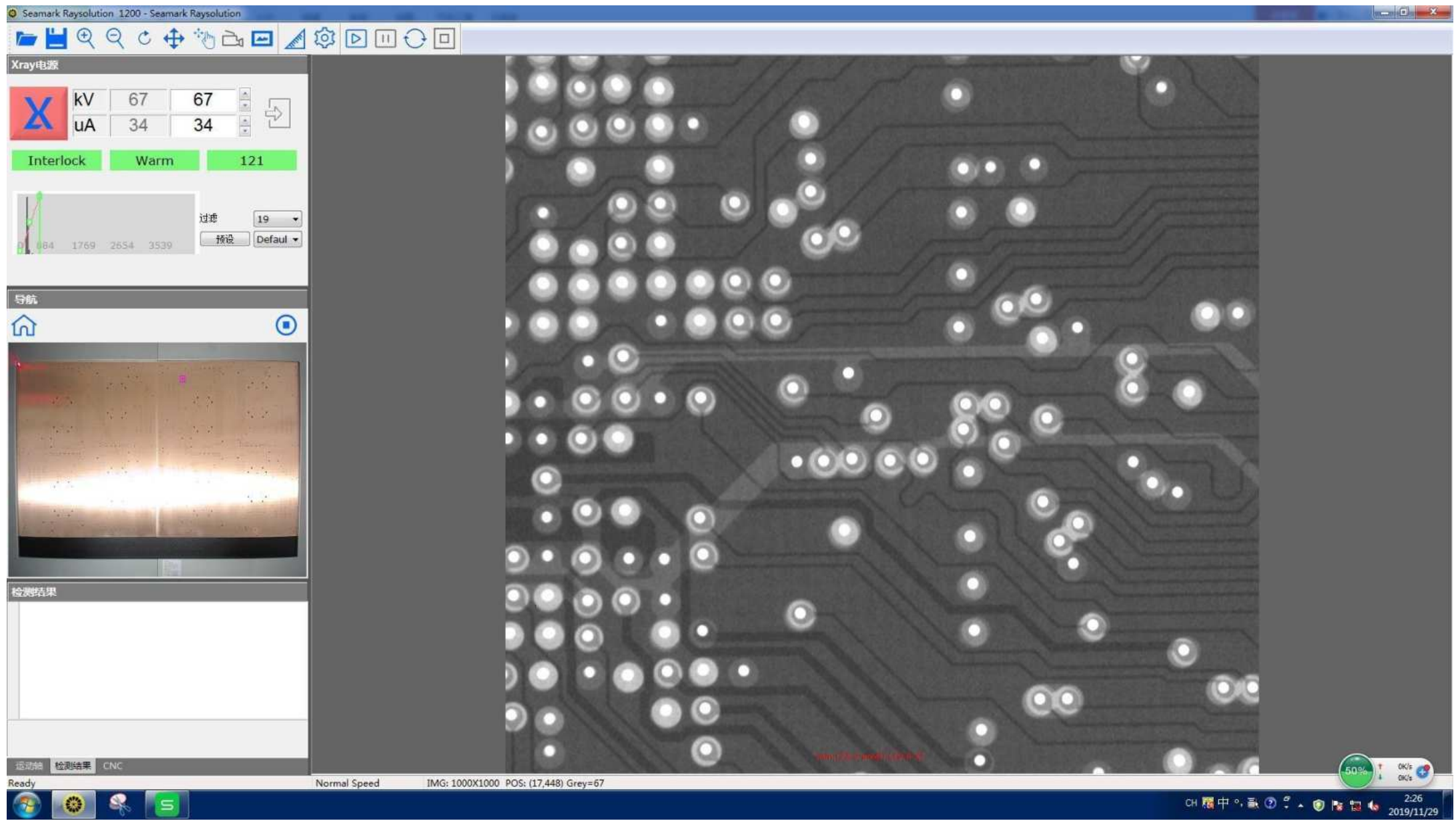
Temperature Sensitive Device Image



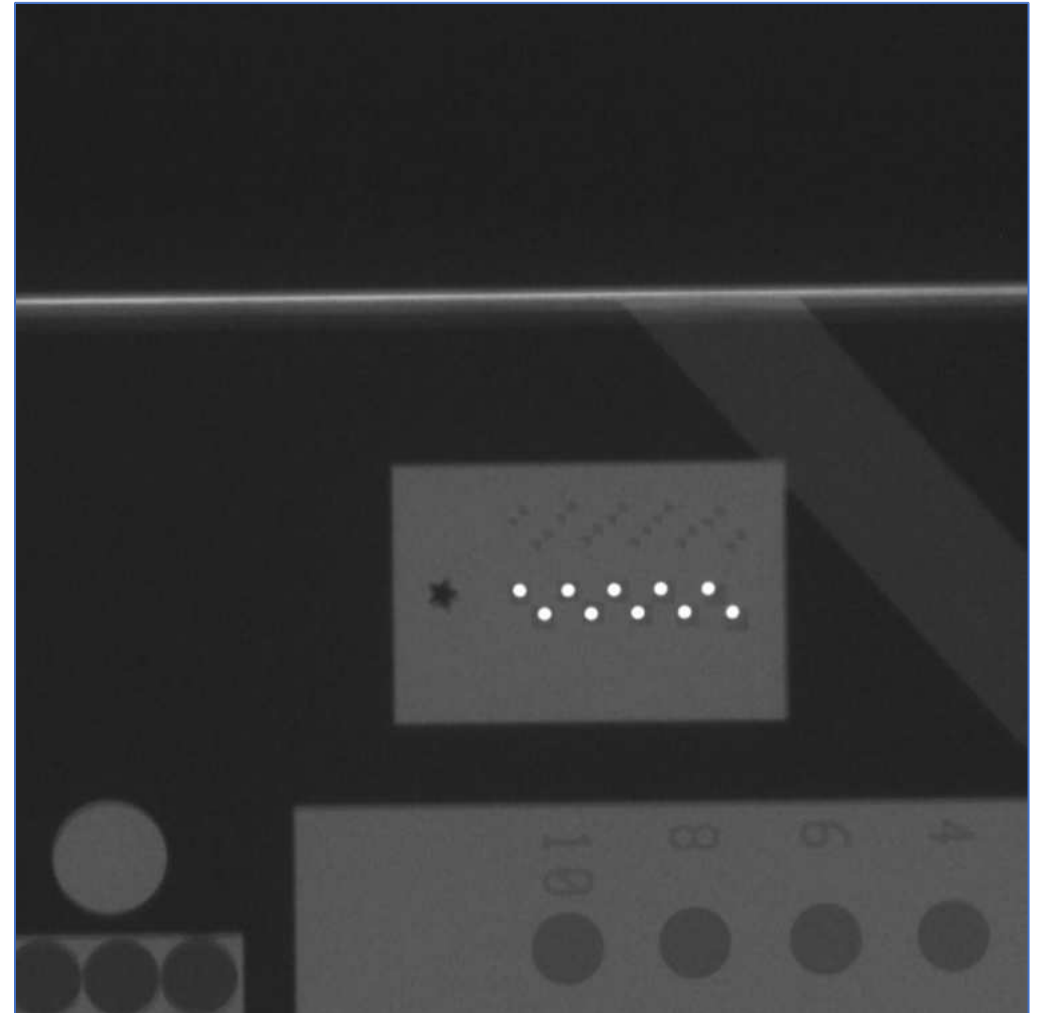
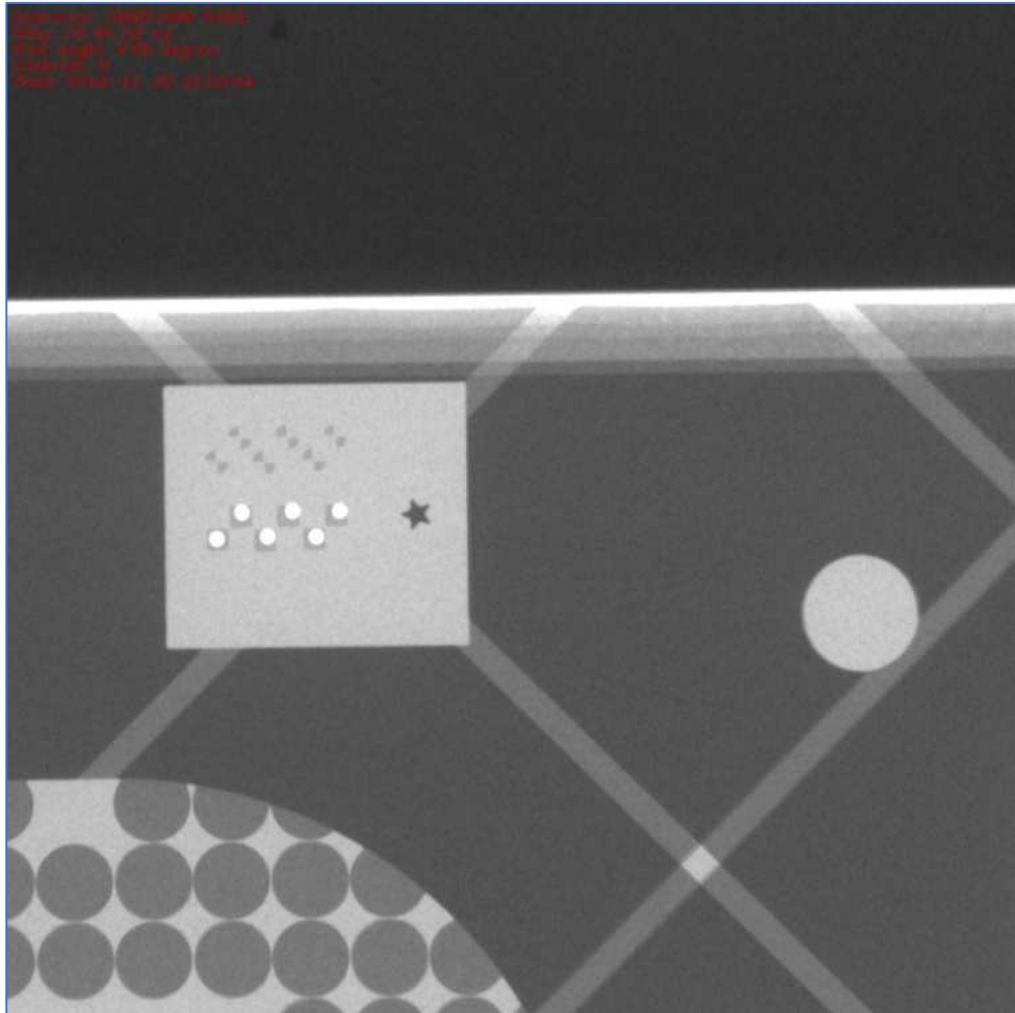
IGBT Image



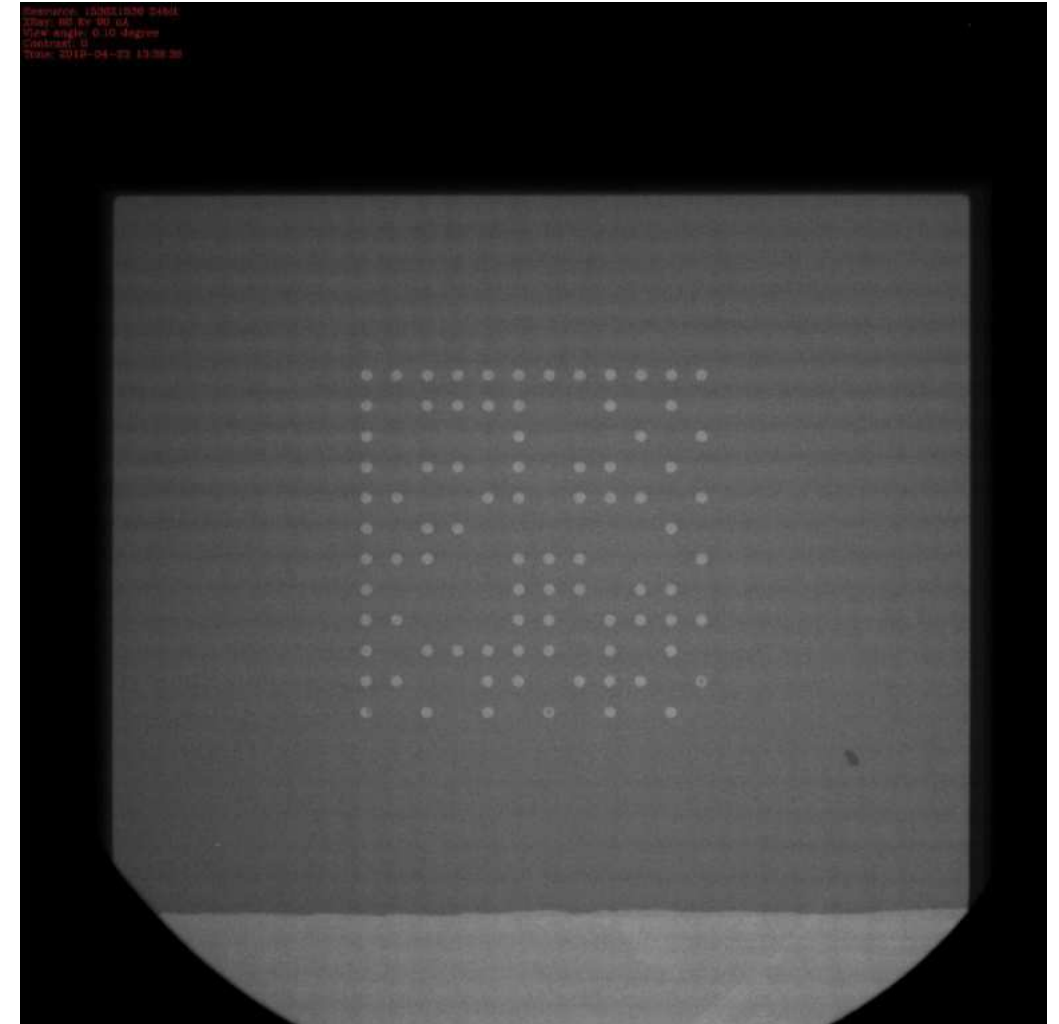
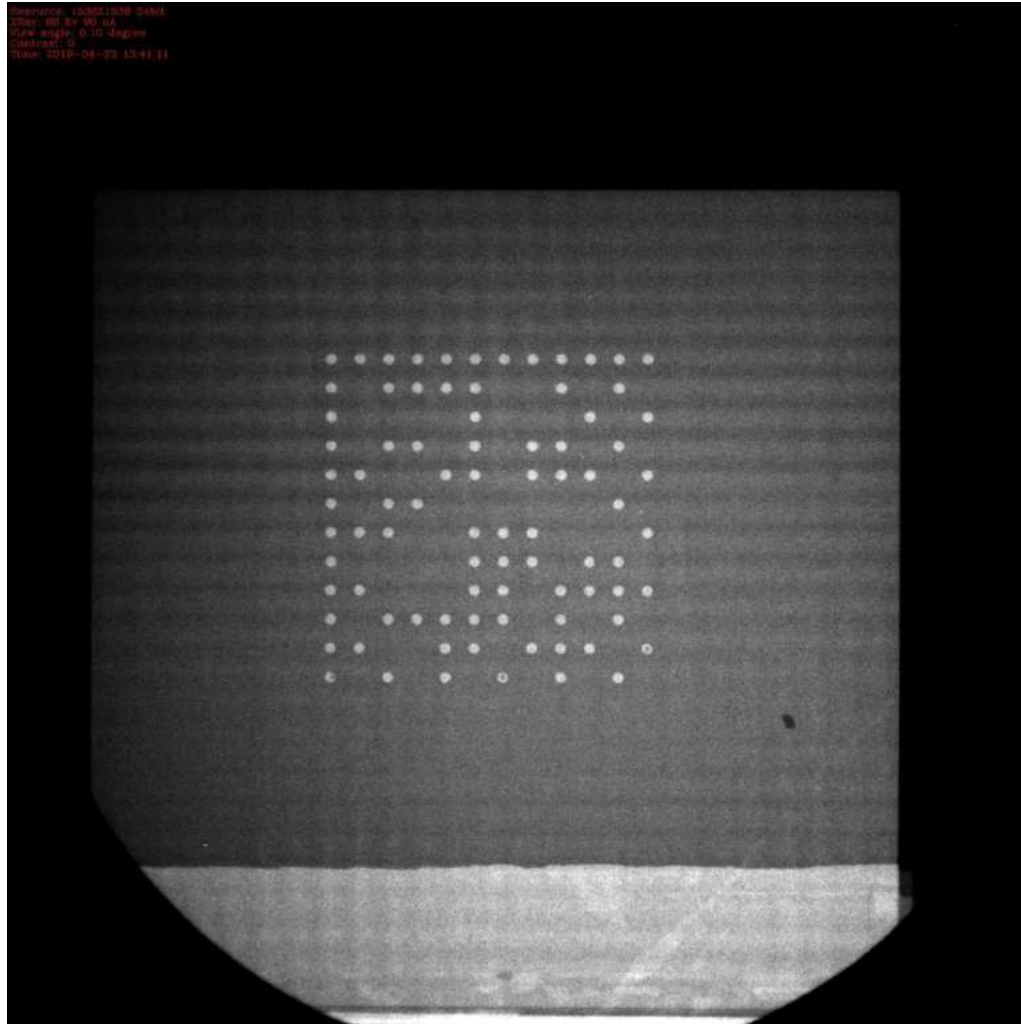
PCB Pressing Hole Image



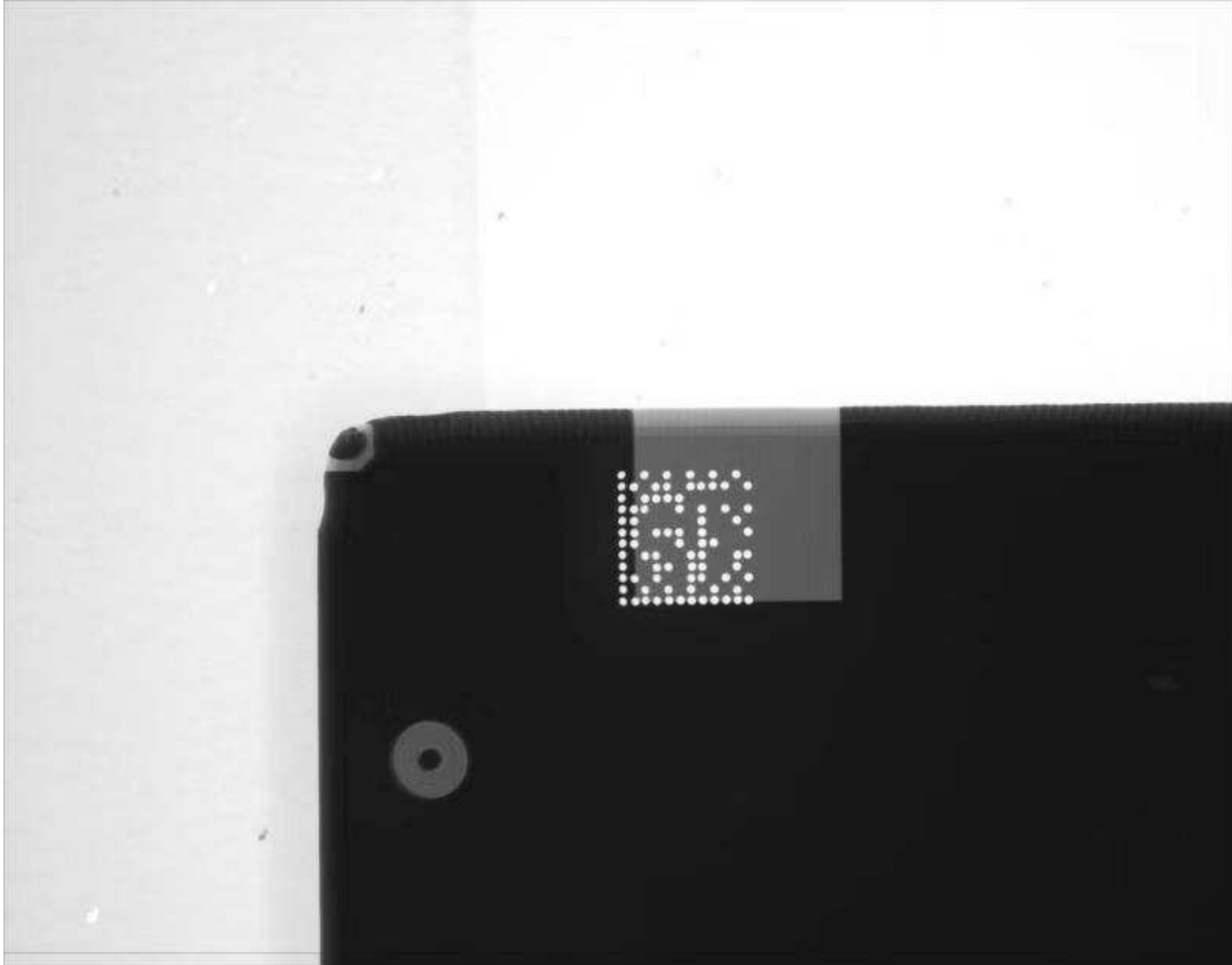
PCB Pressing Hole Image



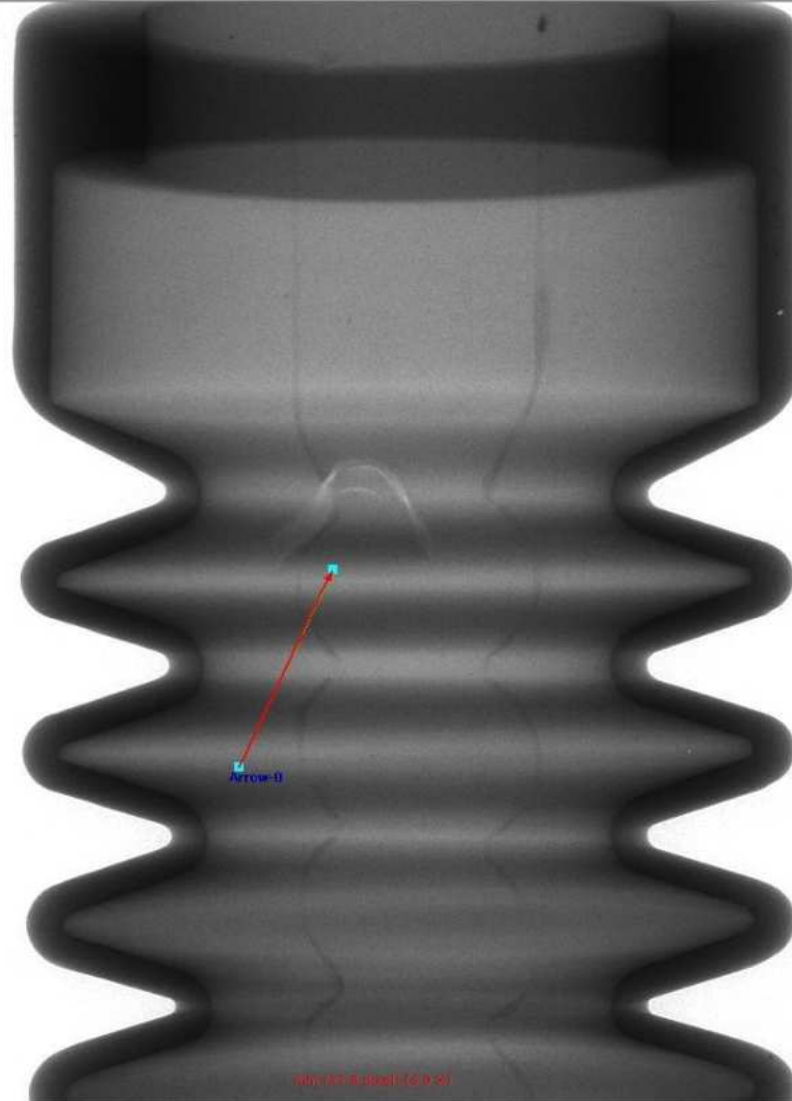
PCB QR Code Image



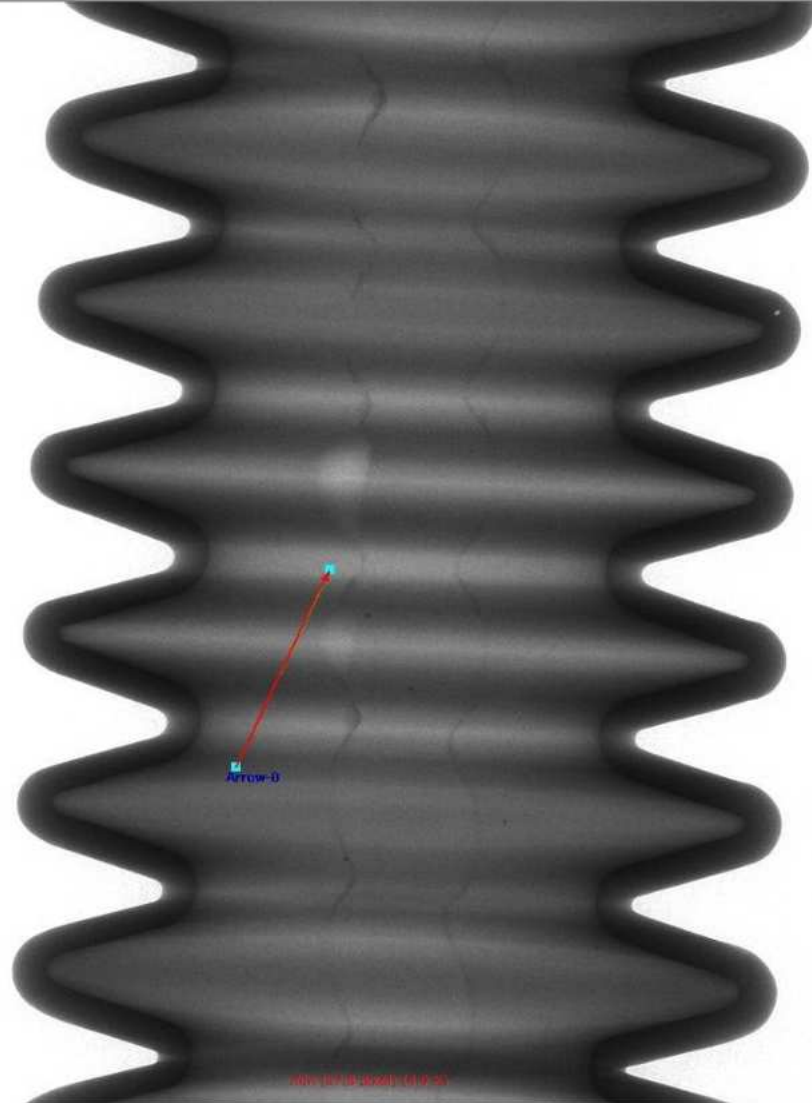
PCB QR Code Image



Rubber Tube Crack Image



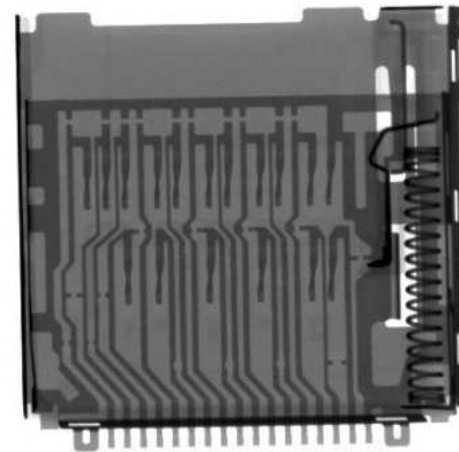
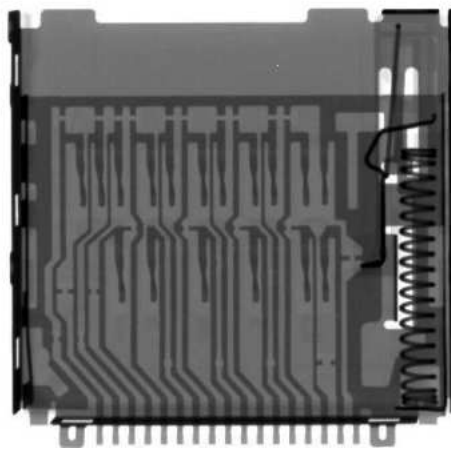
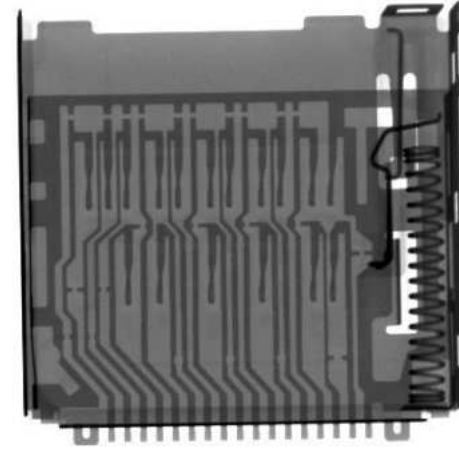
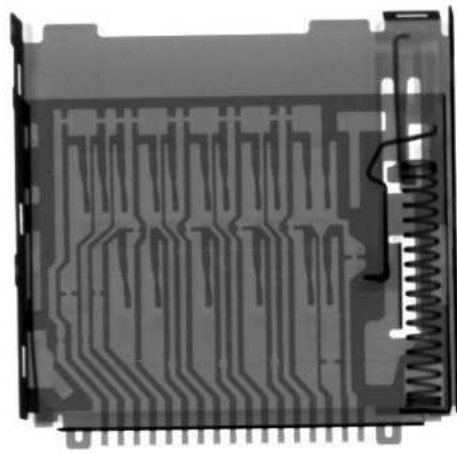
Rubber Tube Crack Image



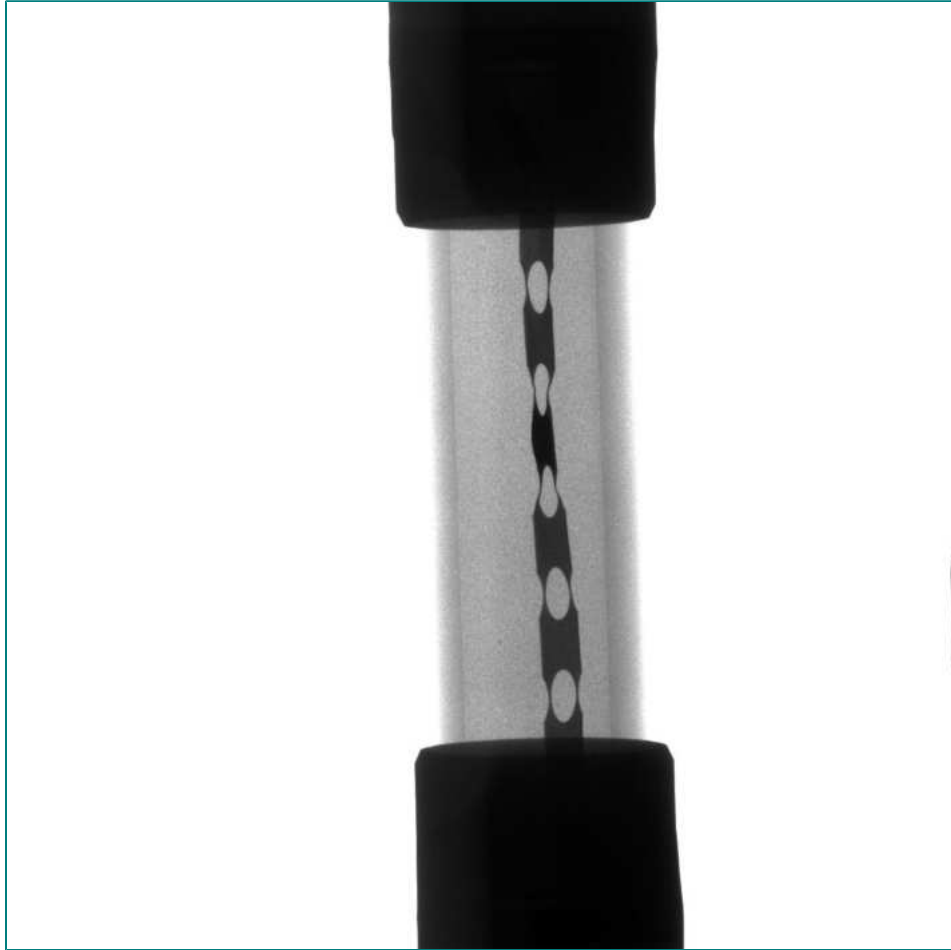
Plastic Tube Bubble Image



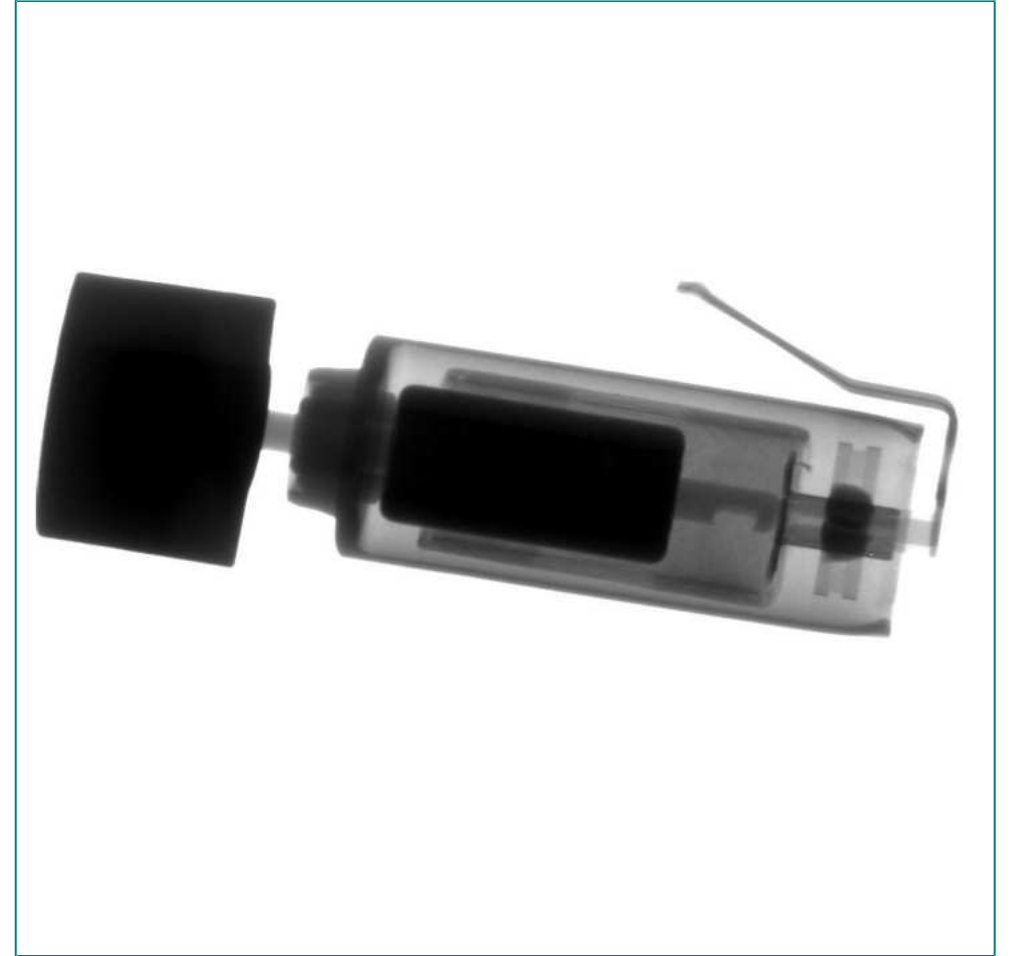
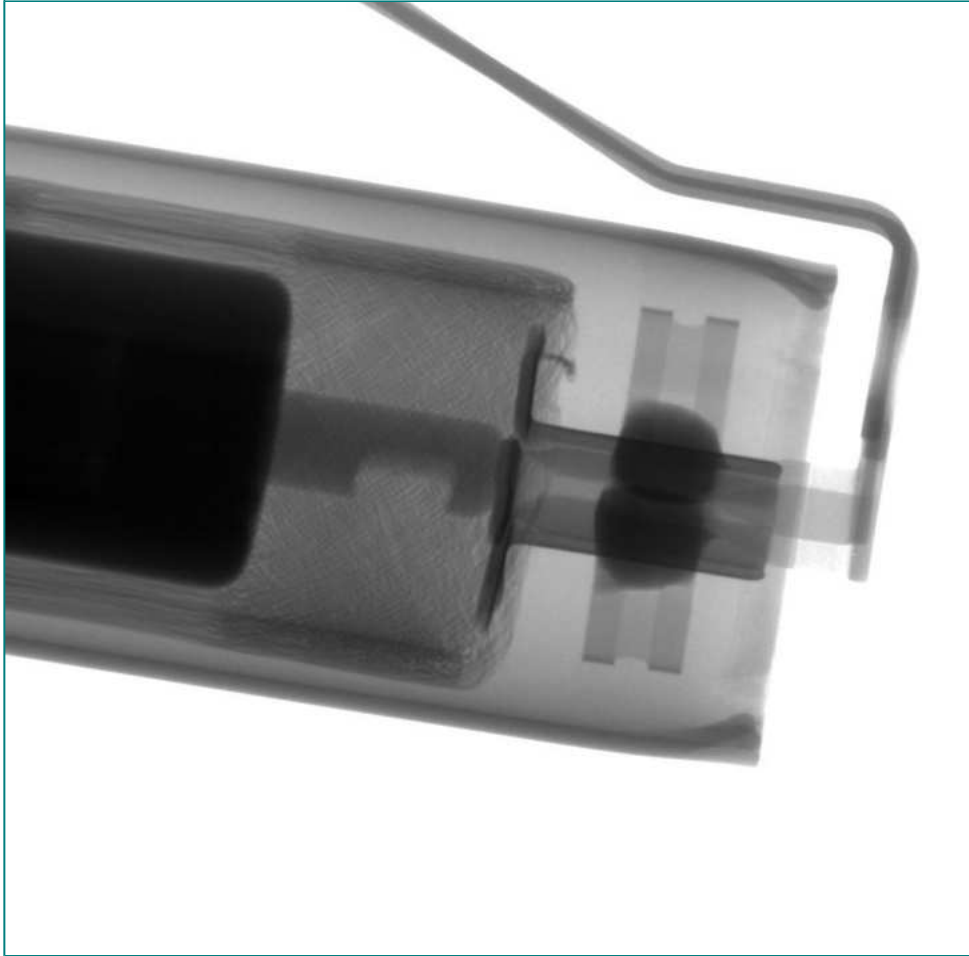
Memory Card Slot Image



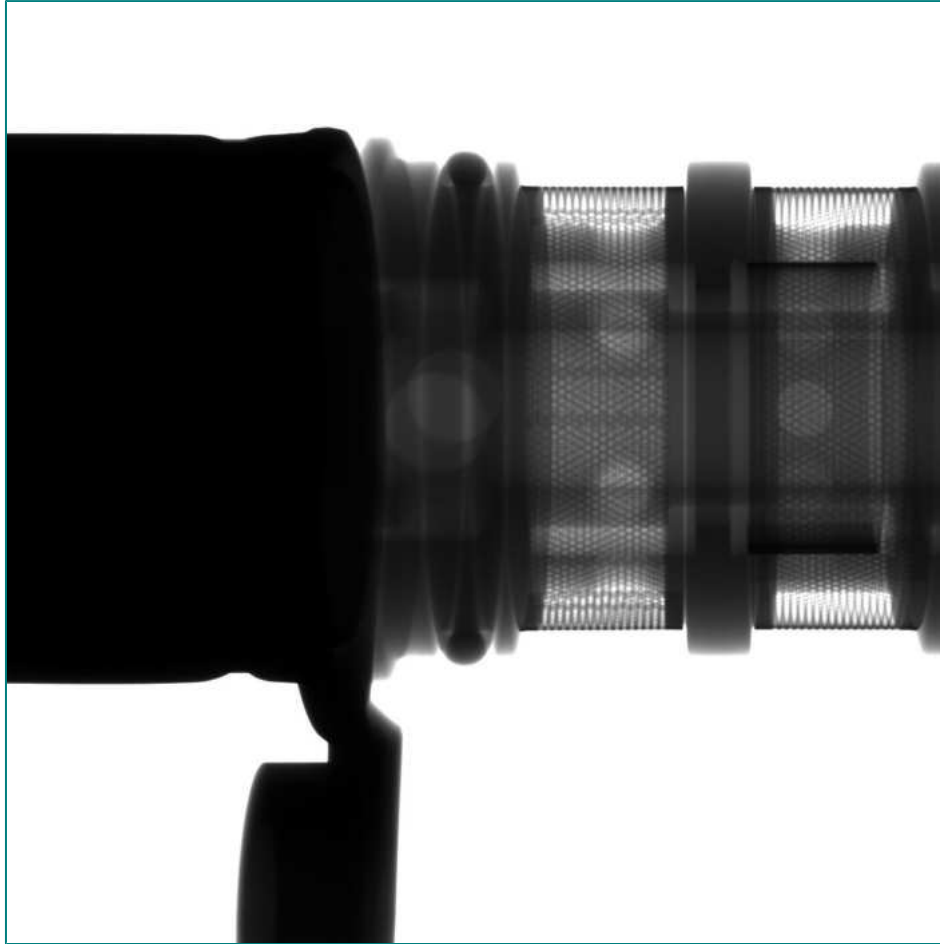
Fuse Image



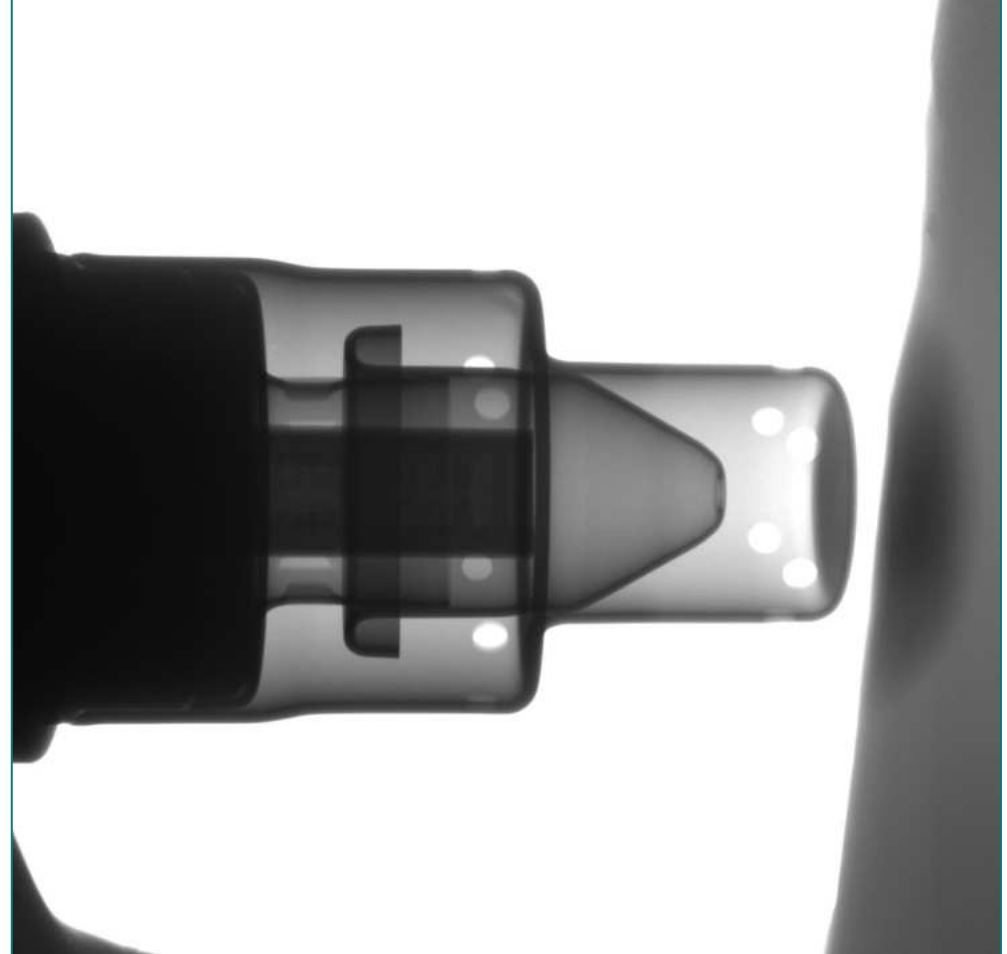
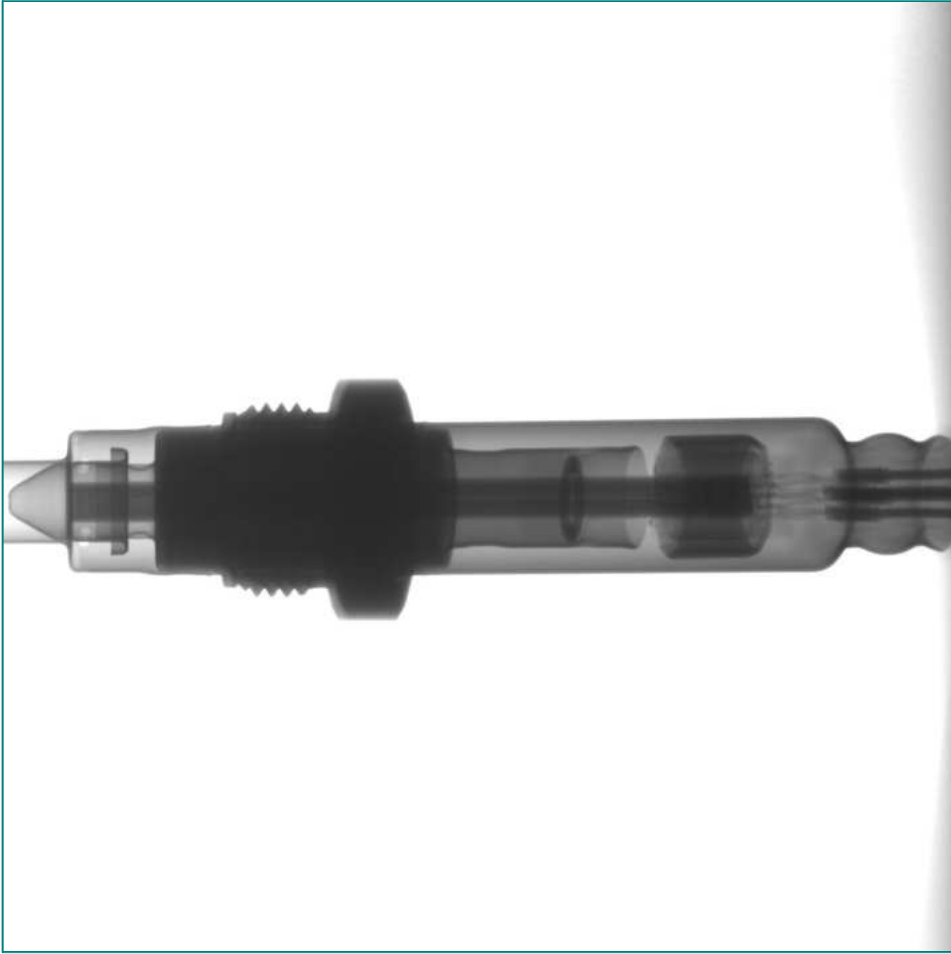
Micro Vibration Motor Image



Throttle Valve Image



Cummins Three-way Catalytic Sensor Image



THANK YOU



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