Technical Data

Model： Xmark 8 (Inline X Ray Inspection machine)

Name： Microfocus X-RAY Inspection System

Manufacturer： Shenzhen General Technology Co., Ltd

Professional X-RAY Inspection System Manufacturer

X-Ray Solution Xmark 8

Microfocus X-Ray Inspection System Manufacturer

(1) Applications

Reel Component, reel material

(2) Functions and Features
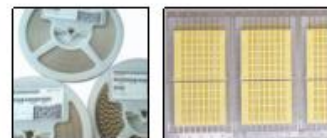
Function	Advantages
Long life X-ray tube, maintenance free for life	Adopt the world's top Japanese Hamamatsu X-ray source
Fault less than 2.5μm can be detected. High detection repeat accuracy.	Easy to distinguish the gold wire bending and break of the semiconductor package.

Powerful CNC Measuring Function, can inspect automatically, testing program can be edited.	Suitable for large-scale inspection and improve detection efficiency.
Small body, easy to place, less space	Can be used in laboratories, materials rooms, etc.
Large navigation view, table will move to where you click the mouse.	Very easy to operate, quickly find item defects and improve detection efficiency

XL5800 is a small precision micro focus spot X-ray inline inspection equipment, with small footprint and compact design, the system can be able to automatic feeding, automatic inspection, automatic sorting and punching marking, it is developed for inspection of reels and trays and inspection in automatic feeding production line.

Application Advantage：

- Compact design, easy to install and operate
- Strong compatibility, the conveyor belt can be adjusted in both directions
- Servo feeding with stability and reliability
- Easy to use software, low operating costs
- Durable long life
- In-line inspection，with automatic sorting of defective products and marking
- Automatic inspection of various reels and trays
- Cut or jet mark the defective products when being inspected

Automatic Void Ratio Calculation

Enhanced BGA inspection function
XL5800 can quickly select and mark a single solder ball, or select the solder balls to be inspected by matrix box ; it can manually or automatically identify BGA solder balls and complete the inspection. Follow the system guidelines to easily complete the inspection process and ensure accurate and reliable inspection results.

Size Measurement

Measuring tools
Distance, distance ratio, lines distance, angle, arrow mark, circle radius, points distance, circle centers distance, circumference, hand-drawn polygon, hand-drawn freeform etc., can add text description.

(3) Hardware Technical Parameters

X-Ray Solution ZM-XL5800 Hardware technical parameters

H A R D W A R E	X-RAY tube	Tube type	Sealed microfocus X-ray tube
		Voltage Range	40-90kV
		Current Range	10-200 µA
		Focal spot size	15µm
		Cooling method	Convection cooling
	Detector	Detector type	HD digital flat panel detector (FPD)
		Field of View	130mm*130mm
		Pixel matrix	1536*1536 pixels
		Magnification	80X
		Image speed	20fps
	Inspection speed and accuracy	Repeated test accuracy	3µm
		Software inspection speed	3.0s/point (Excluding loading and unloading time)
	CNC programming	Test parameters for different products can be stored in categories and called at any time. You can set the detection route or sequence of one or more products, and the program automatically completes the detection and stores the photos.	
	Operating platform	Mouse, keyboard, 2 operating modes	
	Shell	Inner lead plate	5 mm thick lead plate (isolate radiation)
		Dimensions	L1850mm×W1400mm×H1970mm
		Weight	About 1020Kg
	Other parameters	Computer	24 inches Widescreen LCD/I3 CPU/2G Memory/200G hard disk Industrial PC WIN10 64bits
		Power supply	220V 10A/110V 15A 50-60HZ
		Reel and tray width compatible	From 30 to110mm
		Max Object Width Range	30mm-150mm
		Temperature and humidity	22±3℃ 50%RH±10%RH
		Total power	1500W
	Safety	Radiation safety standard	Adopt steel-lead-steel protection structure. Any position 20mm from the shell, radiation≤1µSV/H, in line with international standards
		Safety interlock function	Two high-sensitivity limit switches are set in the door opening position for equipment maintenance. Once the door is opened, the X-ray tube will automatically power off immediately.
		Electromagnetic switch protection	The observation window has an electromagnetic switch, and the observation window cannot be opened when the X-ray tube is in working state.

		Observation window	With an observation window, the sample can be observed directly from the window while the machine is running.
		Emergency stop	The emergency stop is set in the prominent position of the operation console and the equipment body, can be pressed to quickly cut off the power supply system.
		X-ray tube automatic protection	Five minutes after the machine has no operation, the X-ray tube will automatically power off and enter the protection state.
		Automatic machine protection	Once any door or window of the machine is turned on, the machine immediately enters the shutdown protection state, and any operation cannot be performed.

(4) Software technical parameters

X-Ray Solution ZM-XL5800 Software technical parameters			
Full-featured X-ray image analysis software, including image contrast enhancement and filtering functions, measurement functions, and CNC programming			
S O F T W A R E	Bad welding judgment	BGA short	Preset NG images, software contrasts and recognizes automatically
		BGA cold solder	Preset NG images, software contrasts and recognizes automatically
		BGA voids	Preset NG images, software contrasts and recognizes automatically
		BGA false solder	Preset NG images, software contrasts and recognizes automatically
	CNC function	Motion mode programming (CNC)	Test parameters of different products, can be classified and stored, call at any time
			Can set the inspection route or sequence of one or more products
	Navigation window	The picture of the table is displayed on the screen in real time, Click any position of the picture to control the movement.	
	Voids measurement	Voids rate measurement	Optional manual/automatic measurement, single/multi-ball measurement mode. The bubble area standard can be preset for automatic measurement.
		Report generation	The judgment result can be directly marked on the picture, or directly generate a CSV file or a report document according to the analysis results.

	Measurement function	Area measurement	Preset area size standard, NG product prompt function.
		Size measurement	Distance, gold line curvature, slope, angle, etc.
	Motion control	Automatic positioning	Power on table auto zero function, system reset
		Batch test	Import pre-production program to realize fast automatic positioning function, convenient for large-scale inspection and product series management
		Field of view switching	The interface can be quickly switched between 2 inches and 4 inches to realize the two detection requirements of large field of view browsing and partial detail observation, saving detection time and improving detection efficiency.
		Control mode	CNC Automatic control, manual control keyboard, mouse, 3 modes are optional.
	Auxiliary positioning	Laser positioning	Red dot laser positioning, double auxiliary, easy to navigate
	Navigation magnifier	It can enlarge the product detection points in the navigation window, which is easy to accurately locate and improve the detection efficiency.	

(5) X-Ray Working Principle
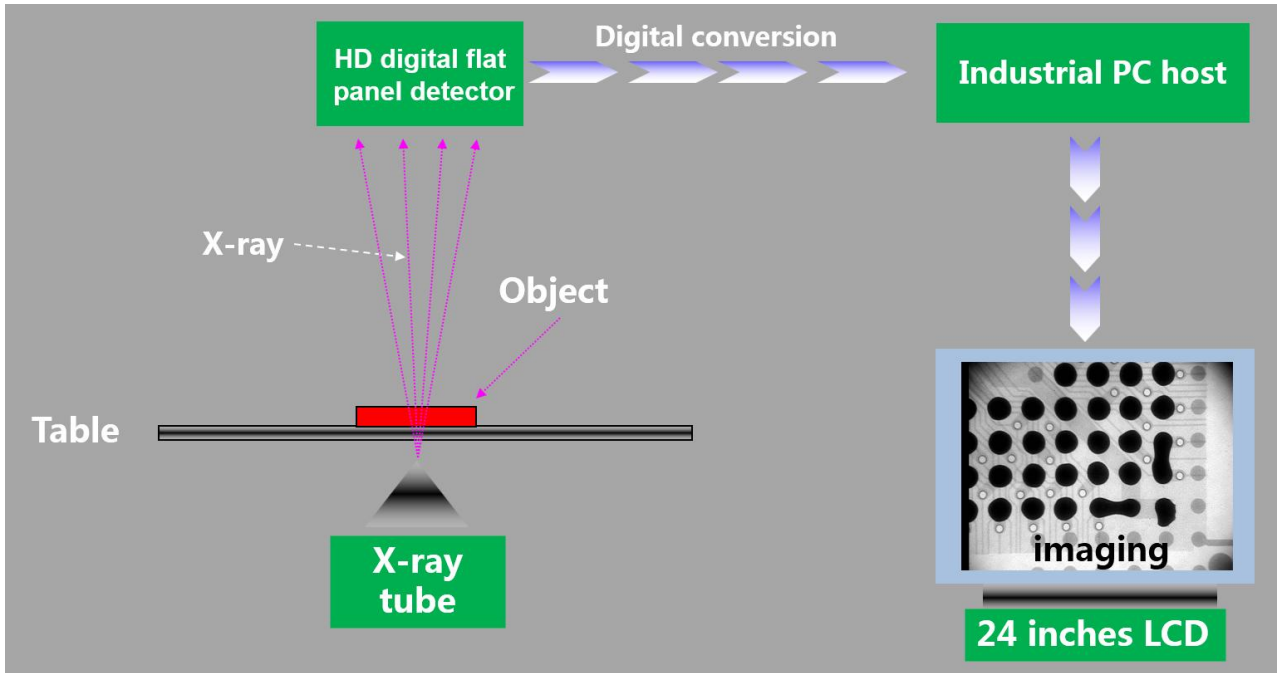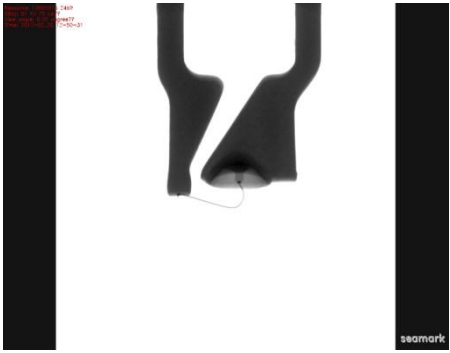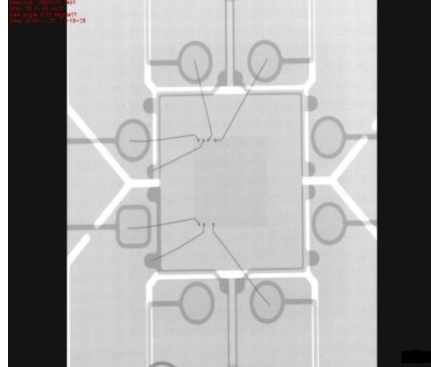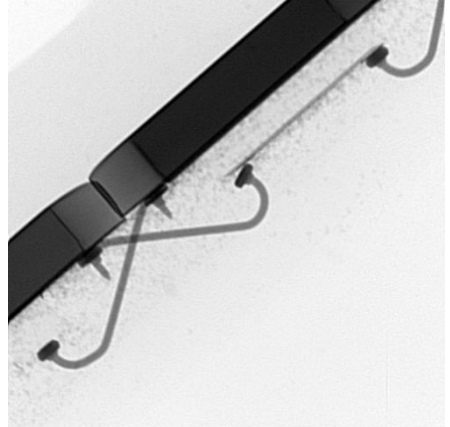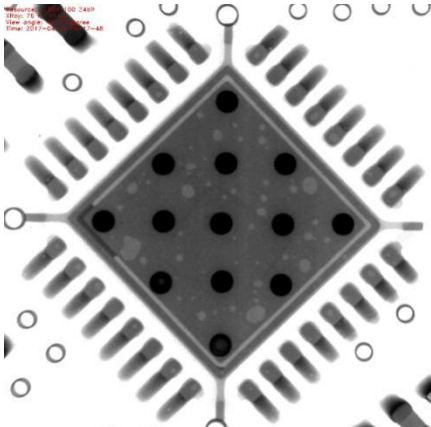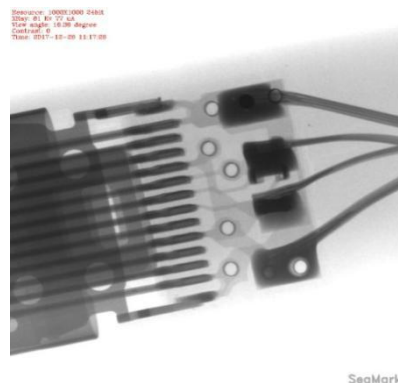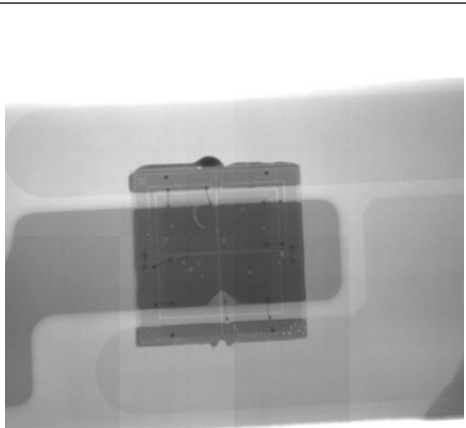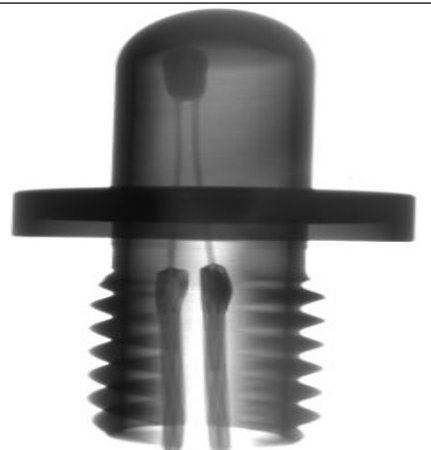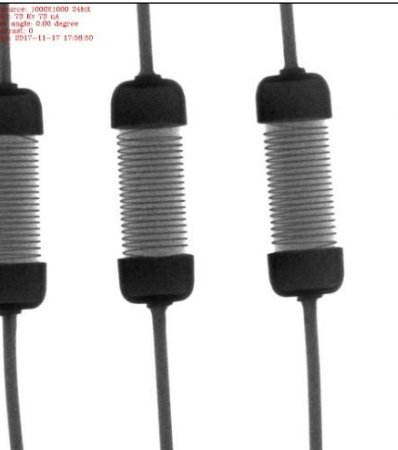
（6）X-RAY applications

PCB BGA	PCB BGA	iPhone camera
Diode	**IC gold wire**	**Connector**
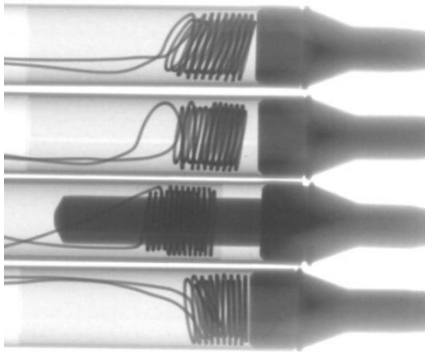
LED bonding wire	**IC voids**	**USB connector**

LED light	**Thermal sensor**	**Diode capacitance**
Soldering iron	**iPhone mainboard**	**Chip gold wire**

LED light voids	**High power semiconductor IGBT module**	**Luxury clothing fastener voids**

Too many application cases to illustrate.