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## MSX500 X Ray Inspection System

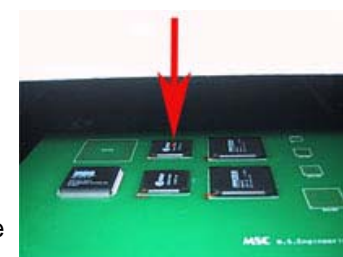


- Reasonable cost system, by new developed X ray generator.
- Easy and safety operation system, by the original radiation prevention cabinet.
- Best inspection system for after reworking of the BGA, by table top body.
- Easy maintenance system, by unit exchange of the X ray generator.
- Variable Image angle is possible, by the model MSX500SW.
- Large size board is possible, by the model MSX500(L)

### Abstract

MSX500 can be continuity operation about 1 hour by the X ray generator of DC inverter of original development. The life of the generator is guaranteed of 1000 hours. and the life time is managed by the counter in the system. The XY table can be controlled by the motor, and position of X ray is displayed by laser pointer. The point can be monitor through the window of the door.

The lamp of top of the system is blinking when the x ray generator is operating. All function of X ray are preserved by the interlock, It is immediately stopped when the door has opened at the system is operating.



Laser Beam



The window of the door

## Information of the X Ray

The X ray is an electromagnetic wave with short wave-length, it can pass through between an atom and atoms. The wavelength of visible is about several microns, but the x ray is about Å. and a penetration is in inverse proportion to the density. Generally, it is managed by the rule of the Government. It is because, the x ray gives a physiologically effect to a live-body.

MSX500 is managed of the radiation less than 1 micro Sv/ Hours / cm. It is lower than the color television, the CRT of the color television is always emitting the several micro Sv/H of radiation. and also there is same levels of radiation in the atmosphere always.

The radiation of MSX500 is controlled by the very safety level. It is very safety zone. Furthermore, MSX500 is used of the X ray in the sealed box. and it is with sufficient interlock function.

## Test Sample Images by MSX500

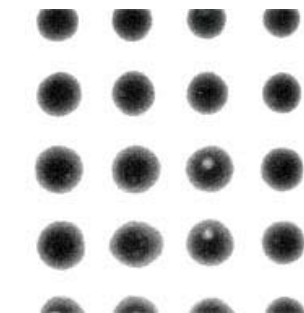
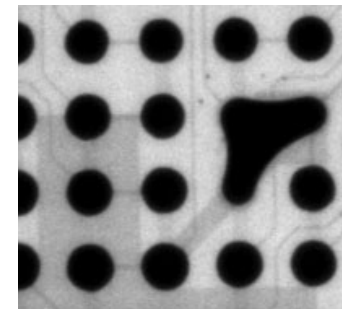
The image on the right is the BGA 1.27mm lead pitch, it has a soldering bridge. and also the image sample of the BGA 1.27mm pitch, it can be check of some void. In this case, the size of the void is about 0.2mm diameters.

X Ray generator can be adjust of the voltage of 7Kv maximum. The penetration power will become strong if the voltage is high. And the current can be adjust of 3 mA maximum. the image will become bright if the current is large.

### Control Panel of MSX500:



MSX500



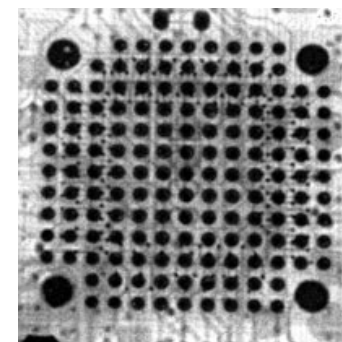
Void on BGA 1.27mm pitch

The X ray tube is by air cooling type, it will be operating continually around one hour. When unnecessary, the switch should be turn off for X ray generator, It will prolong of the life of the system.

The image on the right is the CSP of lead pitch 0.5mm. The size of the CSP is 7.0x7.0mm. In the case, the CSP is successful of soldering.

The image on the monitor of MSX500 obtained about 30 x from the original. Therefore, when an image over from the screen, it checks by moving of the XY table. The XY table is controlled by the switch on the body, however, remote control is also possible as an option.

And if the image needed is obtained, the image data should be saved in the file, then the data can be adjust of the quality of the image by the function of the system.

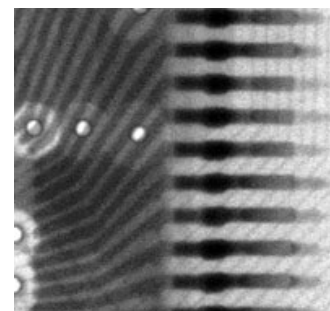


7.0x7.0mm 0.5mm pitch CSP

## Test Sample Image by MSX500SW

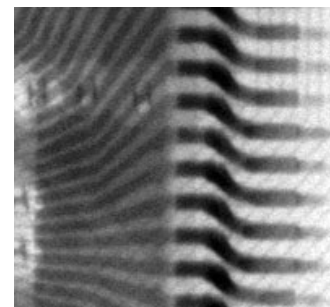


MSX500SW



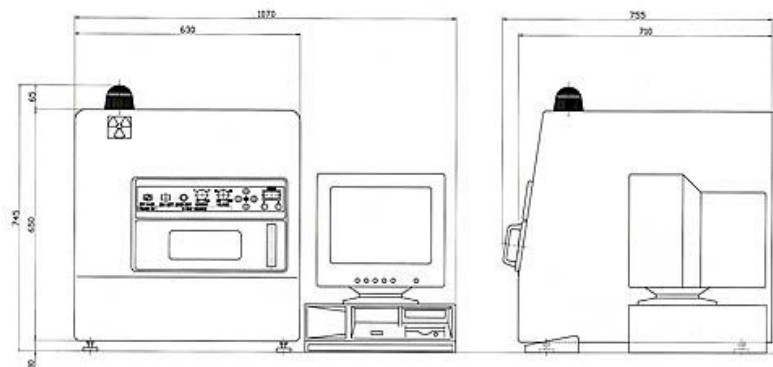
QFP(0.8mm Lead Pitch)

MSX500SW can be made to incline to 45 degrees maximum of the X ray, Other all specification are same as MSX500.



Swung image about 30 degrees.

## Dimensions



MSX500/MSX500SW (L type is 830Wx950Dx740H)

## Specifications

Items	MSX500	MSX500(L)	MSX500SW
Board Size	330x250mm max	400x510mm max	330x250 max
XY Table Stroke	120Yx160Xmm	180Yx180Xmm	120Yx160Xmm
XY Table Control		Motor Controlled	
XY Table Size	350x250mm	450x550mm	350x250mm
Remote Control		Option	Standard
X Ray Source Voltage		70Kv	
X Ray Tube Current		3mA	
Focus Size		0.8mm	
Cooling		Air cooling	
Image Angle		0	0~45 degrees
X Ray Radiation		Less than 1 $\mu$ Sv/H	
X Ray Protection		X Ray protected special Cabinet	
Image Magnification		30 x (on the monitor screen)	
Detector		CCD 2/3 inch	
PC		Desk Top	
CPU		2.4GHz	
Memory		256MHB	
Storage Unit		CD-RW, FDD3.5, HDD40GB	
OS		Windows2000	
LCD		17 inch	
Image Controller		Quality Control. Enhancement Processing Contrast Control Brightness Control	
Power		AC230V 500VA	AC230V 800VA
Body Size	630Wx740Hx755Dmm	900Wx815Hx865Dmm	630Wx740Hx755Dmm
Weight	120Kg approx.	150Kg Approx	130Kg Approx

The specification are subject to change without notice.

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