

# COLOR 3D SPI **SATURN**

3D Inline Solder Paste Inspection System  
3D在线锡膏检测机

[www.pemtron.com](http://www.pemtron.com)  
See the Invisible World.

## Technology and Features 技术特性

### Dual Projection(Option Quad(4) Projection-Semicon 双3D投射 ( Option 4个3D投射-半导体)

Combination of 2D & 3D inspection eliminates common shadow problem with SPI systems.  
2D与3D的完美结合,有效消除了阴影影响,并以高性能的相机提供高质量3D图像,保证测试的高精度和高速度。

### 64 bit Windows 10 Operation System 64位Win 10系统

Fast & stable operating system for high density PCB.  
高速、高稳定性的工业电脑系统配置以满足越来越密集的产品设计。

### User Friendly Graphical Interface 简单明了的用户界面

Self-developed Gerber editor controls the main functions on one page which means it's eliminating the effort of switching between multiple screens. It is also possible to register or edit the data quickly and easily by any users.

自主研发的gerber编辑器,操作简单编程方便,在同一界面可显示所有常用功能,避免了多个界面来回切换的麻烦,简单明了的界面可适合任何水平的作业员操作。

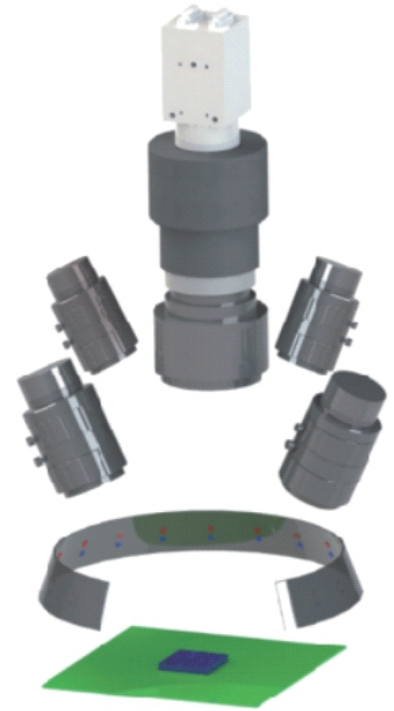
### Color 3D SPI 真彩色3D立体图像

Conventional SPI could only calculate height above silk print levels, but by using patented color enhancing algorithm SATURN could separate the copper, silk and solder paste then can calculate from copper to solder paste.

In additional, a fully rotational 3D view of the solder form is displayed. This enables users to view a life like image of the pad elimination the need to extract the board from the line to view the defect under a microscope.

通常的SPI只能够计算丝印以上部分的高度,但是Pemtron应用其ColorXY的专利技术能够轻易的区分铜箔,绿油 and 锡膏从而精准的找到零基准面。

另外,可显示任意角度旋转的真彩色3D图像,更加容易使用户看到清晰生动的锡膏画面,从而避免了操作者反复在显微镜下确认实物的麻烦。



### High Speed & Performance 高精度线性马达

The use of Linear X and Y stages SATURN provides a high accuracy under  $\pm 3\mu\text{m}$ .

XY方向均应用线性马达, SATURN可达到 $\pm 3\mu\text{m}$ 运动精度。

### SPI Standard Libray SPI标准元件库

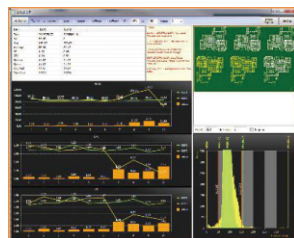
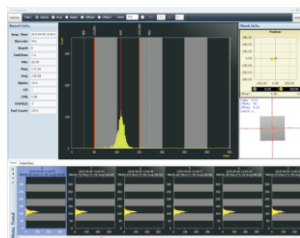
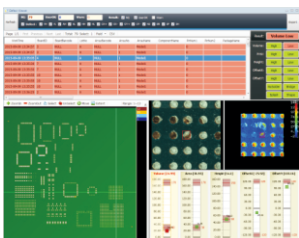
Base on the experience of AOI, PEMTRON firstly import the standard library for SPI. So can Link all the parameter in different programs be the same. When create new program, just one step to finish parameter setting for all pad, reduced the programming time and enhance the accuracy of parament setting.

依照AOI元件库经验,奔创率先引入SPI标准元件库,使SPI参数标准化,即所有程序的参数实现统一化管理。新程序制作时只需一键设置即可完成所有焊盘参数设置,减少编程时间,提高参数的精准性设置。

### Enhanced SPC System 强大的SPC功能

SPC system analyses the defective data and controls the process problems or the production rate at a look. SPC data can be saved in a various file format such as PDF, Excel, Image and etc as users needed. Also with the enhanced SPC server function, data from multiple lanes can be controlled together or individually.

SPC系统可对不良数据及生产情况进行分析,使工程生产过程中的问题一目了然。SPC的数据报告可以输出PDF、Excel或Image等格式,用户可按需要的格式来保存。



Serial	NO_SERIAL_NUMBER	Type	AOI	Surface	Top	Lane	Single	Company	PEMTRON	Language	English	Debug	0
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**MES**

**SMARTRON**

NewFormat

IP	127.0.0.1
ID	root
PWD	pemtronadmin
Port	3306
Folder	D:\Eagle3D_data\iMonitor

**IPC CFX**

Handler	PEMTRON	Broker	amqp://guest:guest@127.0.0.1:5672/
Exchanger	/exchange/ASMExchange	Subscribe	/queue/PEMTRON
Request URL	amqp://localhost:5678/		

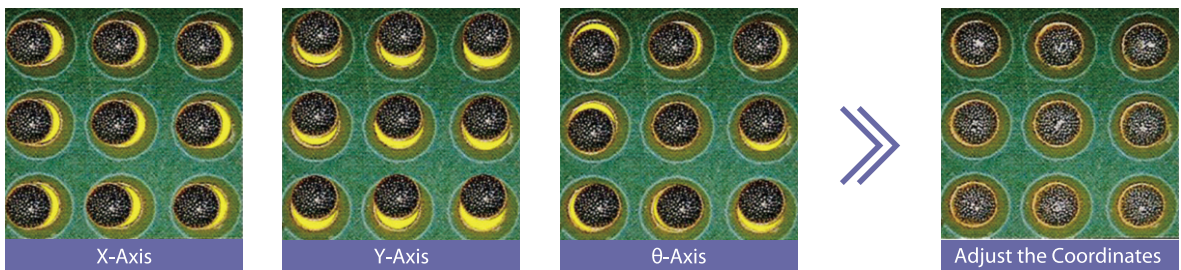
**IPC-HERMES-9852**

MachineID		TimeOut(sec)	60
Machine	C:\Eagle3D_64x\PROGRAM\NetIO\NetIOService.exe		

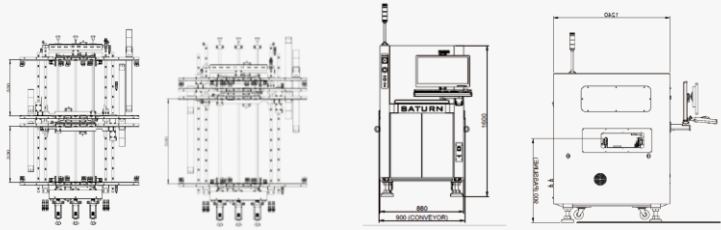
SPI & AOI 3D Link



Inspection Result Information Auto Sync.



## SPECIFICATIONS

Configuration	Standard Version			High Speed Version		
Camera	4MP			10MP		
X/Y PixelResolution	10um	15um	18um	10um	15um	18um
Inspection Speed	16cm <sup>2</sup> /Sec	36cm <sup>2</sup> /Sec	53.5cm <sup>2</sup> /Sec	38.4cm <sup>2</sup> /Sec	86.4cm <sup>2</sup> /Sec	123cm <sup>2</sup> /Sec
FOV Field Of View	20X20mm	30X30mm	36X36mm	32X30mm	48X45mm	57X54mm
Model	SATURN	SATURN L		SATURN D	SATURN DL	
2D Vision Algorithm	2D : Vision Inspection Algorithm					
3D Vision Algorithm	3D : PMP (Phase Measuring Profilometry) Algorithm					
Measurements	Volume,Height,XY Position,Area					
Detection Types	Insufficient Paste,Excessive Paste,Shape Deformity,No Paste,Bridge 2D&3D,Paste Displacement					
Max. PCB Size	330 X 330mm (10um,15um,18um)	510 X510mm (10um,15um,18um)		Dual : 330 X 280mm Single :330 X 500mm	Dual : 510 X330mm Single : 510X 600mm	
Min. PCB Size	50X50mm					
Dimension/Weight	900*1240*1600 mm 760Kg	1080*1410*1600 mm 930Kg		940*1700*1565 mm 1100Kg	1120*1750*1565 mm 1170Kg	
Electrical Requirements	220 ~ 240 Vac , 1 Phase, 50/60Hz					
Power Consumption	2.8KW / 16A	2.8KW / 16A		3.2W / 16A	3.6W / 16A	
Thickness	0.4 ~ 7.0mm					
Bottom Clearance	27 mm					
Height Range / Resolution	0~450um / 0.4um					
Height Accuracy	1 um					
Max PCB Warpage	+/- 5mm					
Motor Type	XY Linear Servo Motor					
Special Size Requirement	SATURN XL					
Max.PCB Size	690*650mm	850*650mm	1200*650mm	1500*650mm		

\* Specifications subject to change without notice.



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