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# 视觉检测设备

# INSPECTION

## JT 劲拓股份

深圳市劲拓自动化设备股份有限公司  
SHENZHEN JT AUTOMATION EQUIPMENT CO., LTD.

劲拓自动化工业园:  
JT Automation Industrial Park  
深圳市宝安区航城街道鹤洲工业区北八路劲拓自动化工业园  
JT Industrial Park, Beiba Rd., Hezhou Industrial Zone, Hangcheng, Baoan, Shenzhen

劲拓光电产业园:  
JT Opto-Electronics Industrial Park  
深圳市宝安区石岩街道水田社区石岩外环路劲拓光电产业园  
JT Opto-electronics Industrial Park, ShiYanWaiHuanRd., ShuiTian, ShiYan, BaoAn, ShenZhen.

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公众号



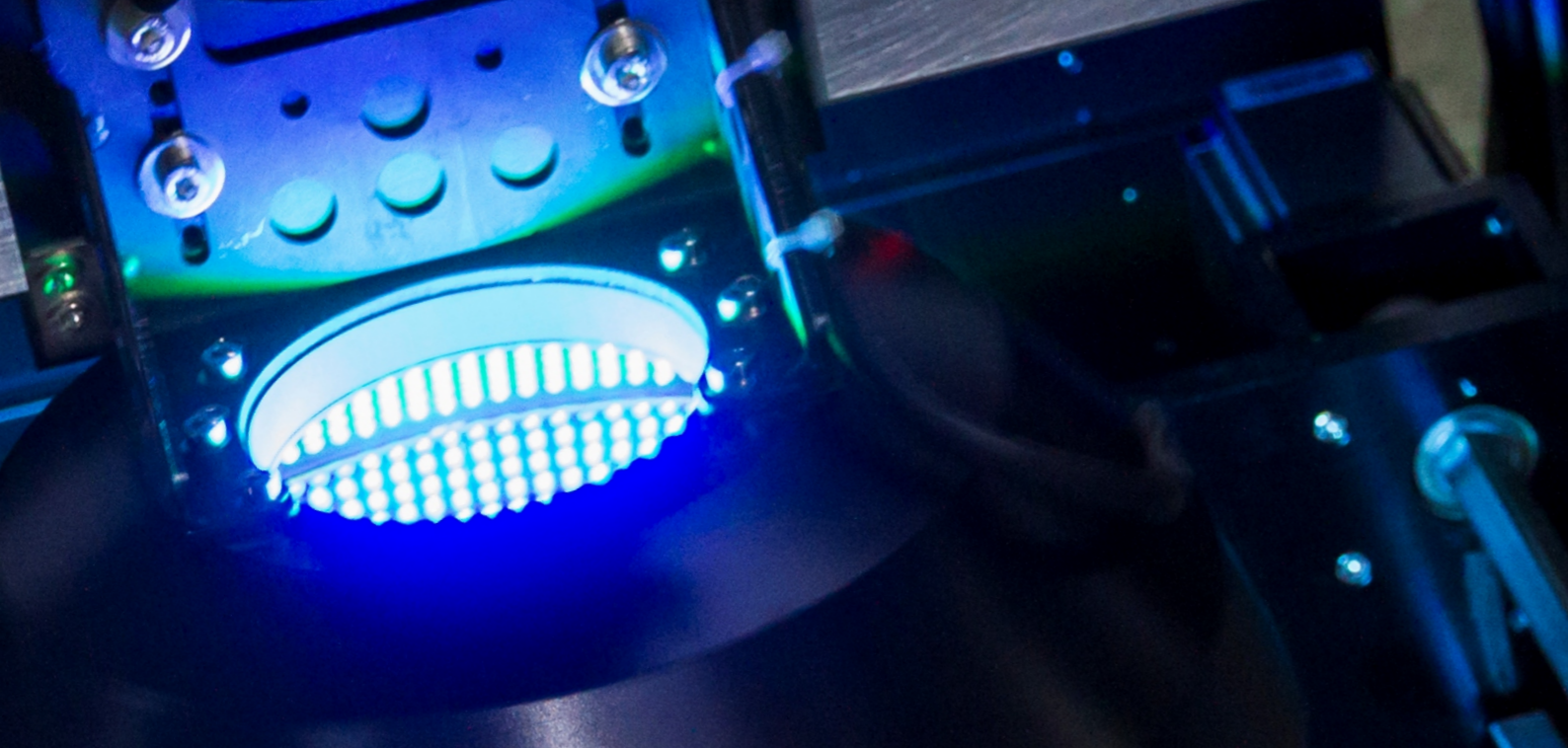
www.jt-ele.com

## JT 劲拓股份

股票代码:300400

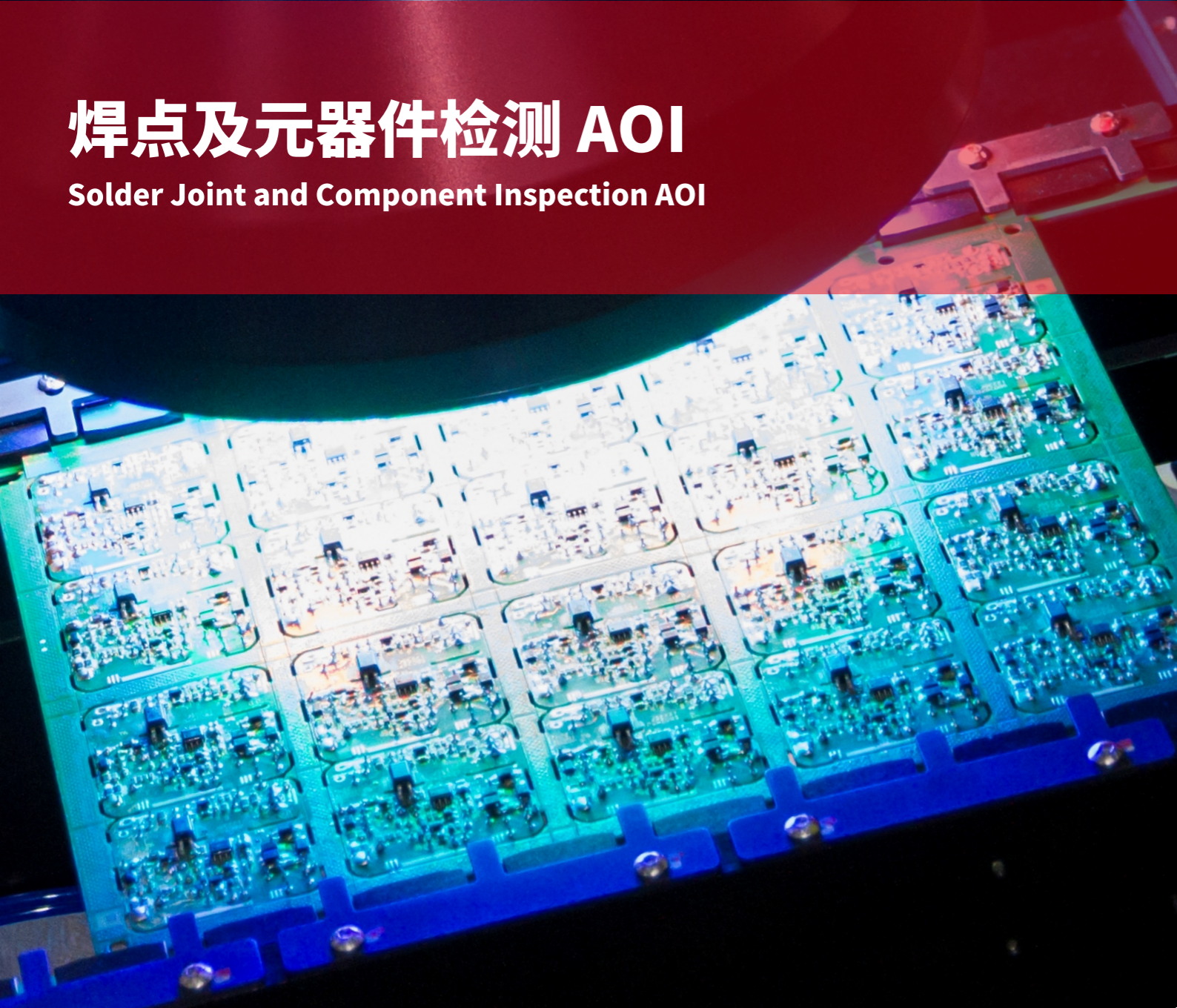
深圳市劲拓自动化设备股份有限公司  
SHENZHEN JT AUTOMATION EQUIPMENT CO., LTD.





# 焊点及元器件检测 AOI

Solder Joint and Component Inspection AOI



## 焊点及元器件检测 AOI

Solder Joint and Component Inspection AOI

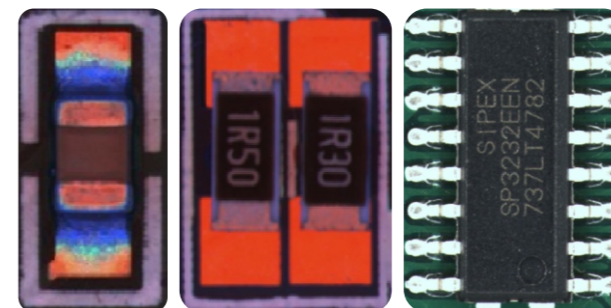
### JUTI-X

- 高性价比在线AOI
- 500万像素高速彩色相机
- 分辨率15um (10um,12um可选)
- High cost performance in line AOI.
- 5Mega-pixel high-speed camera.
- Resolution 10um (12um,15um is option).

### 多光谱超高速可编程光学系统

Multispectral High-Speed Programmable Optical System

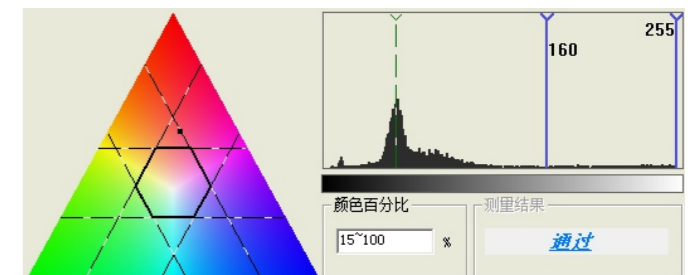
- 专利技术多光谱超高速可编程光学系统, 保证检测效率的前提下, 每个检测视野采集多张图像, 完美兼容各种缺陷检测、实现高检出率及低误报。
- The patented technology of multispectral high-speed programmable optical system could collect multiple photos for each inspection vision and realize high detected probability and low false report by an effective detection.



### 特征矢量算法

Feature Vector Algorithm

- 采用与人眼最相似的颜色空间, 结合特征矢量算法, 实现高精度的检测同时降低程序调整时间。
- To achieve high precision and reduce the program adjustment time by adopting the most similar color space of naked eyes combine with feature vector algorithm.





# 焊点及元器件检测 AOI

## Solder Joint and Component Inspection AOI

### 强大的条形码识别功能

Powerful Barcode Recognition Function

- 兼容各类型的条形码识别
- Compatibility across different barcode recognition.



### 三点照合查询功能

Three-point-verification Query Function

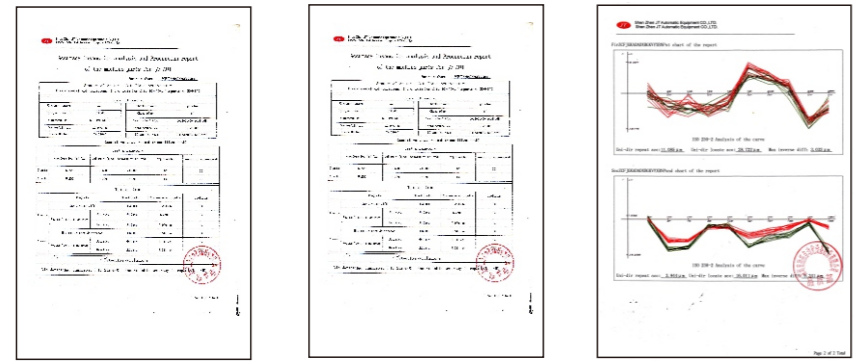
- 综合SPI、炉前AOI、炉后AOI数据，精确定位工艺不良环节
- Combination of the data from SPI, Pre-reflow and Post-reflow AOI, the NG technical link can be located precisely.



### 高精度机架平台

High Precision Support Frame Platform

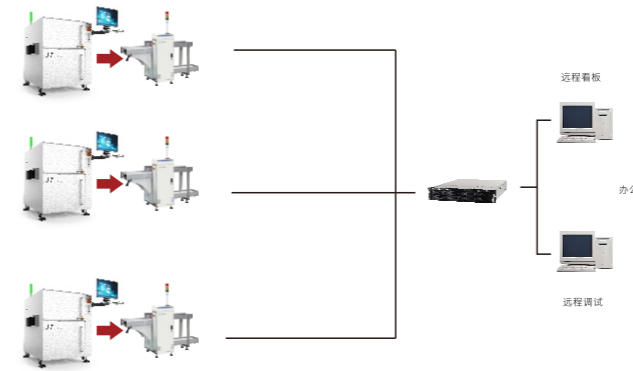
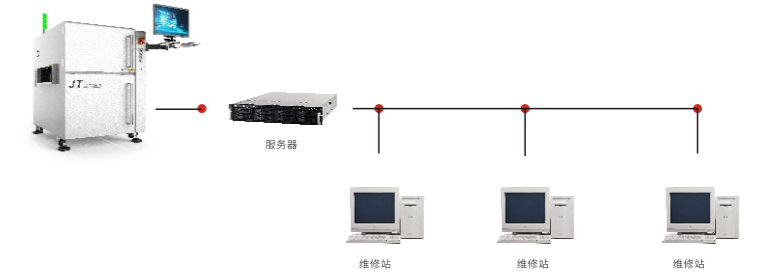
- 整体铸造平台配合闭环伺服驱动以及高精度滚珠丝桿保证检测平台的高精度及稳定性，劲拓AOI通过德国CTQ各项精度检测指标，每台设备在出厂前都经过严格的检测，确保平台的精度。
- With the inblock cast platform, closed loop servo drive and high precision ball screw, which ensures the high precision and stability of the inspection platform. JT guarantees the platform's precision because each machine should be strictly tested before delivery with German standard of CTQ.



### 面向工业4.0的智能在线系统

Intelligent System Face To on Industry 4.0

- 多维修站模式，实现不同类型元件的差异化维修
- 支持Shopfloor/MES系统的连接及交互
- Multi-repair stations ensure modification to be executed by different station.
- Support connection and interaction of shopfloor/MES

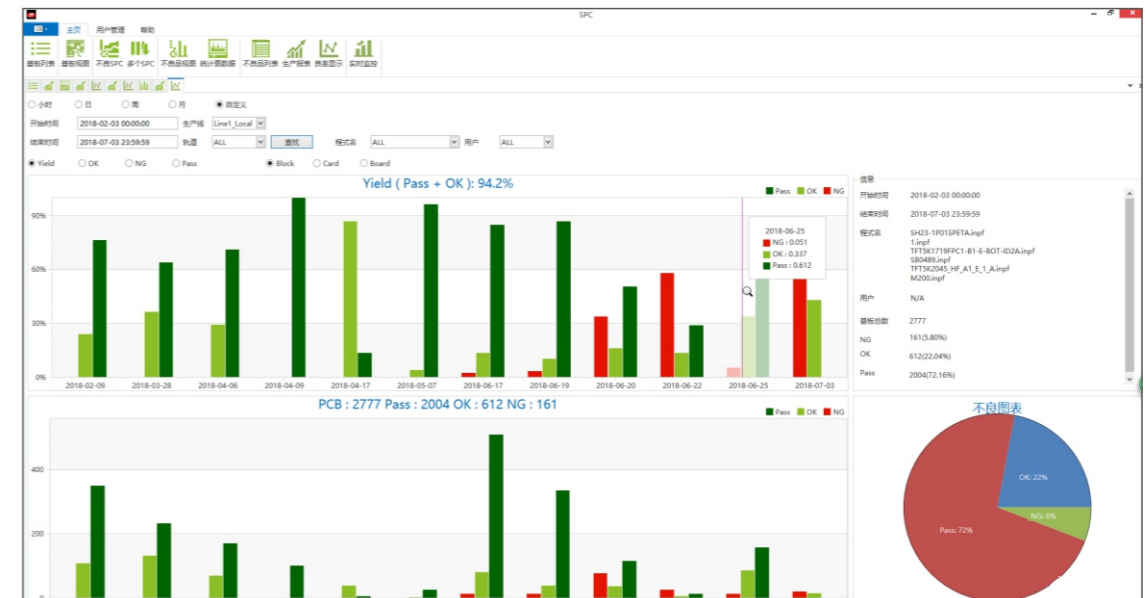


- 集中管理，分散控制。
- 远程调试功能实现不停机编程调试，
- 智能控制中心配合NG缓存机实现无人化车间
- Centralized Management
- Decentralized Control Remote adjustment function provide non-stop programming and debugging operation
- Unmanned production line Can be realized by Smart control center with NG buffers

### 统计过程分析控制

(SPC) Statistic Process Control

- 全面的SPC功能包含了各类统计报表的生成和输出功能；
- Comprehensive SPC function includes many kind of diagrams generation and out put



# 焊点及元器件检测 AOI

Solder Joint and Component Inspection AOI



## JTA-JUTI-MX

- 高速度、高精度
- 高分辨率
- FPC专用检查逻辑
- 炉前与炉后讯息通信
- 不良原因分析
- 专业SPC数据分析处理
- 集中管理减少人员配置
- 多台机不停机远程调试与程式更新
- 可选配双轨
- Super speed, high-precision
- High resolution
- FPC special detection logic
- Message communication between front and rear of oven
- Defect analysis
- Professional SPC data analysis and processing
- Centralized management, reduce manpower
- Multiple machines remote debugging and program updates
- Optional dual-rail



## JTA-JUTI-DX

- 手机板双轨线专用检测逻辑
- 炉前与炉后设备兼容, 讯息通信
- 高速度、高精度、高分辨率
- 制程不良原因分析
- 专业SPC数据分析处理
- 集中管理, 减少人员配置
- 多台机不停机远程调试与程式更新
- Special detection logic for smart phone
- Equipment compatibility, message communication
- Super speed, high-precision, high resolution
- Analysis of defective process
- SPC data analysis and processing
- Centralized management, reduce manpower
- Multiple machines remote debugging and program updates

型号 Model	JTA-JUTI-X	JTA-JUTI-MX	JTA-JUTI-DX	JTA-JUTI-MXL	JTA-JUTI-DXL
基板规格 PCB Spec	PCB 尺寸 Dimension	50x50mm - 440x480mm		双轨 Double Rail 50x50mm -440x300mm(标配) 单轨 Single Rail 50x50mm -440x690mm(选配)	50x50mm -620x690mm
	PCB 厚度 Thickness	0.5mm - 5mm(标配 Std)			
	PCB 元件高度 Height	下上 : Top 25mm : Bottom 50mm			
	PCB 翘曲高度 Bent	±3mm			
光学参数	分辨率 Resolution	15μm (标配Std); 10μm/12μm可选配,Option	12μm (标配Std); 5/10 可选配,Option	12μm (标配Std); 5/10/15可选配,Option	
	速度 Speed	0.25 sec/FOV			
Optical Parameter	摄像头 Camera Spec.	500W高速彩色相机 High Speed Color Camera	1200W 高速彩色相机 12M High Speed Color Camera		
	光学镜头 Optical Lens	远心光学镜头 Telecentric Optical Lens			
	光源 Light-Source	多光谱超高速RGBW六通道光源 Multis pectral Super speed RGB+W Light Source			
可检测类型 Inspection Category	元件检查 Component Inspection	缺件, 反转, 偏移, 极性, 错件, 破损, AI 元件弯脚, PCB 板异物, 金手指沾锡, 溢胶 Missing, Rolling, Shifting, Polarity Error, Wrong Part, Damaged, Bended, PCB Abnormal, Residua, Glue Overflow			
	焊接检查 Solder Inspection	锡多锡少, 侧立, 立碑, 虚焊, 虚脚, 翘脚, 锡球, 波峰焊后焊接 (含插件) Excess Solder, Insufficient Solder, Bridging, Lifting, Solder Balls, Soldering Abnormal			
	特殊检测项目 Special Inspection Items	可检查锡膏制程, 红胶制程及波峰焊后的 PCB 上元件的装配焊接质量, 3D 可测元件高度, 引脚翘起虚焊, 做高度检测 Can Check Solder Paste and Epoxy Glue Process, Soldering Quality; Checking Floating Components and Cold Joint by 3D			
硬件配置 Hardware	X, Y 平台重复定位精度 Table Positioning Accuracy	+/- 0.01mm			
	X, Y 平台移动速度 Table Speed	1000mm/s			
	进出板类型 PCB Loading	Defined Mode: R->L or L->R, L->L, R->R 标配, Standard)			
	PCB调宽方式 PCB Width Adjustment	自动调宽 By Auto+手动调宽By Manual(标配 Standard)			
	设备主机结构 Main Frame Body	铸铁整体铸造 Whole Cast Iron			
	丝桿 Screwing-shaft	高精度滚珠丝桿 High precision ball screw			
	导轨 Rail	P级高精度导轨 High Level Rail			
	驱动 Driver	交流伺服电机 AC Servo Motor			
	操作系统 Operating System	Win 7 Professional			
	显示器 Display	22" LCDs			
电源 Power Supply	AC 200-240V1Φ 50/60Hz Single-phase				
功率 Power	1.7KW		2.2KW	1.7KW	2.2KW
气压 Pressure	0.5Mpa				
设备外观尺寸 Dimension (W * D * H)	947 x 1321 x 1547 mm		947x1433x1547 mm	1157 x 1433 x 1548 mm	
重量 Weight (KG)	1050KG +/- 10KG			1580KG +/- 10KG	
检测算法 Inspection Method	特征矢量分析法, 丝印 OCV 算法 The Eigenvector Analysis & OCV Silkscreen Algorithm				
多角度检测 Inspection Angle Area	0-360°, 检测精度 Accuracy=1°				
标记功能 Marking Function	整板Mark, PCB 拼板 Mark, 坏板 Mark 等One Board Marking & Multi-pieces Board Marking & Bad Marking, etc.				
编程模式 Programming Mode	1. CAD 坐标自动导入 CAD Coordinate Loading 2.自动索引元件库 Component Database Auto-index 3.软件自动编程 Auto-programming by Intelligent Software				
远程控制 Remote Control	通过网络实现: 离线编程; 远程实时调试; 远程查看 / 远程控制操作设备等 Network Monitoring: Offline Debugging, Online Monitoring & Manipulating, Remote Realized Examing				
记录功能 Data Recording	自动生成统计分析 (SPC) 及数据报表 Auto-generated Statistical Process Controlling Data (SPC) & Report				
全程质量跟踪 (选项) Quality Tracing (Option)	远程调试系统 Offline Programming System (PC)		离线编程系统 Offline Programming System (PC)		
三点照合系统 (选项) Three-point-verification System (Option)	相机读取条码 1D/2D Barcode Reading (S/W + License)		系统连接功能 MES/Shop Floor		
选项 Option	条码机读取条码 1D/2D Barcode Scanner(H/W)	顶针PIN 装置 Equipment		光源校正板 Light Source Corrector	

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!



# 焊點及元器件检测 AOI

Solder Joint and Component Inspection AOI



## JTA-660B

- 中国首家DIP制程在线AOI。
- 无需翻板, 实现波峰焊后焊点的在线检测。
- 超高速: 100%满足DIP制程产能。
- 大幅度降低人员配置。
- 实现智能修复: 连接焊接机器人。

## JTA-660TB

- China's first DIP process online AOI.
- Inspection after soldering without turning over PCB.
- High speed Inspection: Fully satisfied DIP production.
- It can reduce manpower greatly.
- Intellectual self-repairing technology: Connectable to soldering robot.
- DIP制程中PCB正反面同时检测
- 超高景深光学系统
- 超高速: 100%满足DIP制程产能。
- 大幅度降低人员配置。
- Simultaneous Inspection for both sides of PCB during DIP in-process SMT & DIP Component.
- High depth of field optical system.
- High speed inspection : Fully satisfied DIP process productivity.
- It can reduce manpower greatly.

型号 Model	JTA-660B	JTA-660TB	
基板规格 PCB Spec.	PCB尺寸 Dimension	50x50mm - 430x460mm	50x50mm-450x450 mm
	PCB厚度 Thickness	0.5mm - 5mm( 标配 Standard) (5~20mm可定制 Customized)	
	PCB元件高度 Component height	上: Top 110mm下: Bottom 25mm	上: Top 25mm 下: Bottom 25mm
	PCB翘曲高度 PCB Warp	±3mm	
光学参数 Optical Parameter	分辨率 Resolution	23 μm(标配 Standard)	上: Top23 μm下: Bottom23μm
	速度 Speed	0.25 sec/FOV	
	摄像头 Camera Spec.	500W高速彩色相机 5M High Speed Color Camera	上: Top 500W 下: Bottom 500W
	光学镜头 Optical Lens	远心光学镜头 Telecentric Optical Lens	
可检测类型 Inspection Category	光源 Light-Source	多光谱超高速 RGBW六通道光源 Multispectral Super speed RGB+W Light Source	
	元件检查 Component Inspection	缺件, 反转, 偏移, 极性, 错件, 破损, AI 元件弯脚, PCB 板异物, 金手指沾锡, 溢胶 Missing, Rolling, Shifting, Polarity Error, Wrong Part, Damaged, Bended, PCB Abnormal, Residua, Glue Overflow	
	焊接检查 Solder Inspection	锡多锡少, 侧立, 立碑, 锡桥, 虚焊, 翘脚, 锡珠, 波峰焊后焊接(含插件) Excess Solder, Insufficient Solder, Bridging, Lifting, Solder Balls, Soldering Abnormal	
	特殊检测项目 Special Inspection Items	可检查锡膏制程, 红胶制程及波峰焊后的 PCB 上元件的装配焊接质量 Can Check Solder Paste and Epoxy Glue Process, Soldering Quality	
硬件配置 Hardware	X, Y平台重复定位精度 Table Positioning Accuracy	±0.01mm	
	X, Y Table Speed	1000mm/s	
	进出版类型 PCB Loading	Defined Mode: R->L / L->R	
	PCB调宽方式 PCB width adjustment	自动调宽 AUTO	
	设备主机结构 Main Frame Body	铸铁整体铸造 Whole Cast Iron Modeling	
	丝杆 Screwing-shaft	高精度滚珠丝杆 High precision ball screw	
	导轨 Rail	P级高精度导轨 High Level Rail	
	驱动 Driver	交流伺服电机 AC Servo Motor	
	操作系统 Operating System	Win 7 Professional	
	显示器 Display	22" LCD Monitor	
	电源 Power Supply	AC 200-240V1Φ 50/60 HZ	
	功率 Power	1.8KW	3.6KW
气压 Pressure	0.5MPa		
设备外观尺寸 Dimension (W * D * H)	1039 x 1483 x 1550 mm	1148x1389x1604mm	
重量 Weight (KG)	1000KG +/- 10KG	1600KG +/- 10KG	
检测算法 Inspection Method	特征矢量分析法, 丝印OCV算法 The Eigenvector Analysis & OCV Silkscreen Algorithm		
多角度检测 Inspection Angle Area	0-360°, 检测精度 Accuracy=1°		
标记功能 Marking Function	PCB整板Mark, 拼板Mark, 坏板Mark等 One Board Marking & Multi-pieces Board Marking & Bad Marking, etc.		
编程模式 Programming Mode	1. CAD坐标自动导入 CAD Coordinate Loading 2. 自动索引元件库 Component Database Auto-index 3. 软件自动编程 Auto-programming by Intelligent Software		
远程控制 Remote Control	通过网络实现: 离线编程; 远程时间调试; 远程查看/远程控制操作设备等 Network Monitoring: Offline Debugging, Online Monitoring & Manipulating, Remote Realized Examing		
记录功能 Data Recording	自动生成统计分析(SPC)及数据报表 Auto-generated Statistical Process Controlling Data (SPC) & Report		
全程质量跟踪(选项) Quality Tracing (Option)	远程调试系统 Offline Programming System (PC)	离线编程系统 Offline Programming System (PC)	
三点照合系统(选项) Three-point-verification System (Option)	相机读取条码 1D/2D Barcode Reading (S/W + License)	MES/Shop Floor 系统连接功能	
选项 Option	条码机读取条码 1D/2D Barcode Scanner (H/W)	顶PIN装置 Pin Support	
		光源校正板 Light Source Corrector	

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# 焊點及元器件检测 AOI

Solder Joint and Component Inspection AOI



## JTA-D100

- 通用于插件后焊接前的外观检查, 可检测元件缺件、极性、错件、多插、异物等
- 不停机检测, 不影响产能速度
- 嵌入生产线, 灵活安装
- 生产线为选配项, 可按客户现场实际情况制造
- Use for PCBA inspection after insertion and before soldering, Missing Part, polarity, wrong part, excessive part, foreign particle detectable
- Non-Stop inspection without any effect of production capacity
- Embedded in production line, easy to install
- The conveyor is option, According to the customer production line.



## JTA-518M/JTA-518L

## JTA-518D

- 双工作台, 实现不停机交互进板测试, 节省取板放板时间
- 提高生产效率
- 可同时检测2种不同PCB板
- DIP制程可正背面同时检测
- Double-Table, realizing Mutual Board Enter Testing at No Stop Situation, Saving the Time of Board Taking and putting;
- High Production Efficiency;
- Two Different PCB Inspected at the Same Time;
- DIP process front and back simultaneously inspection.



双工作台  
Double Work Table

型号 Model	JTA-D100	
视觉系统 Vision System	检测方法 Inspection Method	特征识别, 图像对比等 Feature recognition, image contrast, etc.
	相机 Camera	2600W Colour Camera 彩色相机
	光源 Illuminant	内置白色LED面光源 Built-in white LED light source
检测相关 Detection Related	检测内容 Detection Content	缺件、极性反、错件、多插、异物等 Missing parts, polarity reversal, wrong parts, multiple inserts, foreign bodies, etc.
	可测PCB尺寸 Measurable PCB Dimension	Max: 390X390 mm
电脑规格 Computer Specifications	工控主机 Industrial Computer	CPU Intel i7 processor
	显卡 Video Card	集成显卡 Integrated graphics
	存储 Memory	4G DDR, 1TB硬盘
	显示器 Indicator	22" LCD
外观/电气 Outline/ Electrical	操作系统 Operating System (OS)	64Bit Win10
	安装方式 Installation Method	落地式, 可嵌入产线 Stand Type, can be embedded in production line
	外形尺寸 (宽X深X高) Outline Dimension	757x871x1440mm
	重量 Weight	Approx. 150±kg
	电源 Source	AC220V 1Φ 50HZ
	功率 Power	750W
	工作环境 Work Environment	5-40°C

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!

型号 Model	JTA-518M	JTA-518L	JTA-518D	
基板规格 PCB Spec.	PCB 尺寸 PCB Size	50x60mm - 400x320mm	50x60mm - 650x520mm	50x60mm - 250x320mm
	PCB厚度 PCB Thickness	0.5mm - 5mm		
	PCB元件高度 Height	上: Top 25mm 下: Bottom 110mm		
	PCB翘曲高度 Bent	±3mm		
	功率 Power	1.3KW		1.7KW
光学参数 Optical Parameter	分辨率 Resolution	15μm(标配Standard); 10/23μm可选配, Option		
	速度 Speed	0.25 sec/FOV		
	摄像头 Camera Spec.	500W高速彩色相机 5M High Speed Color Camera		
	光学镜头 Optical Lens	远心光学镜头 Telecentric Optical Lens		
可检测类型 Inspection Category	光源 Light-Source	多光谱超高速 RGBW六通道		
	元件检查 Component Inspection	缺件, 反转, 偏移, 极性, 错件, 破损, AI 元件弯脚, PCB 板异物, 金手指沾锡, 溢胶 Missing, Rolling, Shifting, Polarity Error, Wrong Part, Damaged, Bended, PCB Abnormal, Residua, Glue Overflow		
	焊接检查 Solder Inspection	锡多锡少, 侧立, 立碑, 锡桥, 虚焊, 翘脚, 锡珠, 波峰焊后焊接 (含插件) Excess Solder, Insufficient Solder, Bridging, Lifting, Solder Balls, Soldering Abnormal		
硬件配置 Hardware	特殊检测项目 Special Inspection Items	可检查锡膏制程, 红胶制程及波峰焊后的 PCB 上元件的装配焊接质量 Can Check Solder Paste and Adhesive Glue Process wave, Soldering Quality		
	设备外观尺寸 Dimension (W * D * H)	905 x 1210 x 1472 mm	1124 x 1547 x 1484 mm	1136 x 1452 x 1405 mm
	重量 Weight (KG)	Approx. 550KG	Approx. 750KG	Approx. 600KG

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!



# 自动3D锡膏检测SPI

## 3D Solder Paste Inspection SPI

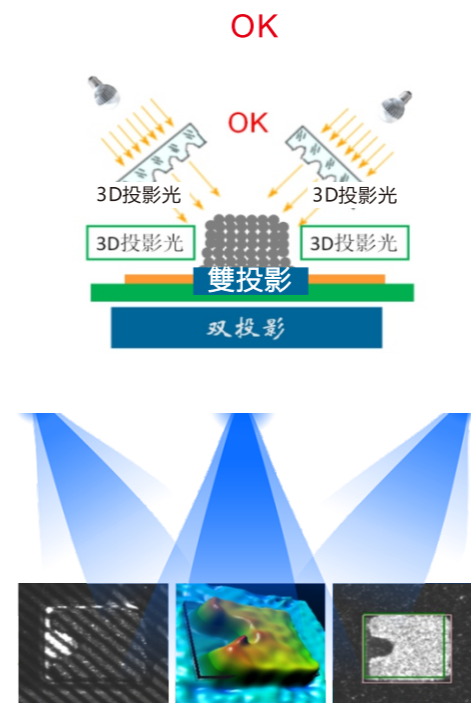
### 自动3D锡膏检测SPI

3D Solder Paste Inspection SPI

#### 产品描述

Product Description

- 基于白光正弦条纹PMP技术的3D锡膏测量;
- 锡膏高度检测精度可达1um;
- 自动重建PCB表面焊盘的3D数据, 计算出每块锡膏的体积、面积、高度及偏位等。
- 3D solder paste inspection based on white-light sine stripe PMP technology;
- Solder paste height inspection accuracy reaches 1 um;
- Auto-restore pad 3D data on PCB surface, calculate the volume, area, height and deviation of every solder paste.
- 多方向,多角度3D PMP检测  
Multi-direction,multi-angle 3D PMP inspection.



- 生动易用的图形交互界面, 功能全面且操作简便;
- 可导入Gerber文件编程, 亦可采用离线图像编辑模式, 随时编辑及调试。
- Vivid and easy to used graphic interaction interface, comprehensive function and easy to handle;
- In addition to programming with Gerber file, image-oriented edit mode can also realize off-line programming and debugging.

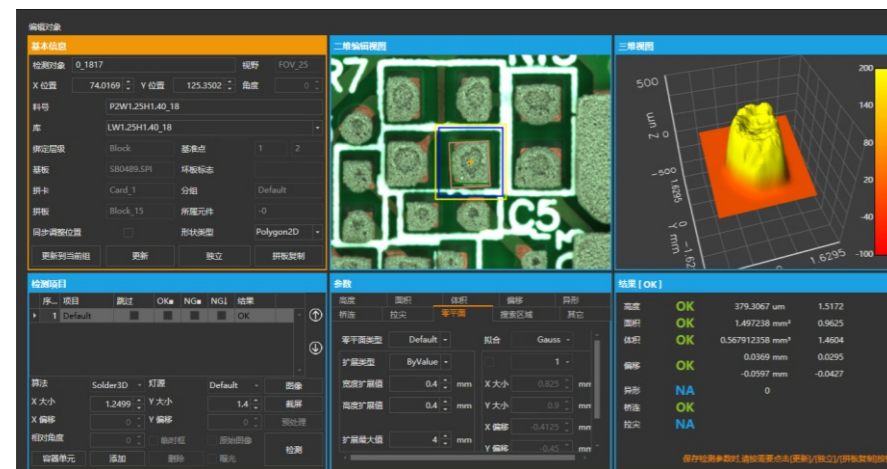
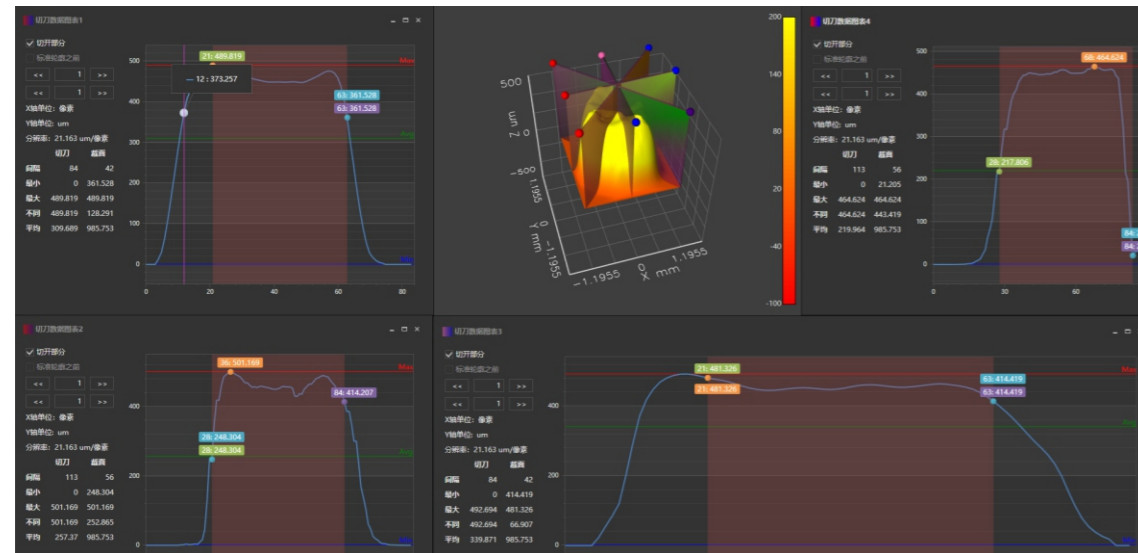




# 自动3D锡膏检测SPI

## 3D Solder Paste Inspection SPI

- 多切刀截面3D高度分析.  
Multi Cross-section 3D Height Analysis .



- 多点触摸功能实现图像旋转与2D图像缩放,方便观察和确认锡膏情况.

- Multi-touch function can realize 3D image rotation and 2D image resizing, convenient to check and confirm solder paste condition

- 全面的SPC功能包含了各类统计报表的生成和输出功能;

- 多项卡的图像加速运算;

- 一体化铸铁框架结构,具有优异的刚性,不易受外界震动干扰.

- Comprehensives SPC function includes many kind of diagrams generation and output;

- Image accelerate calculations base on multi-GPU;

- Integrated cast iron frame structure, high rigidity can avoid outside vibration interference.

设备型号 Model	REFINE-XS	REFINE-LS	REFINE-DL
检测模块 Inspection Module			
相机配置 Camera Specification	500万像素工业相机, 超高帧数 (出厂时设定) 1200万可选配 5M High-frequency Industrial Camera, High Frame Number (Factory Setting)		
像素大小 Pixel	20μm, 15μm ( 出厂时设定 Factory Setting)		
FOV(单个视野) 范围	40x40 mm, 30x30 mm ( 出厂时设定 Factory Setting)		
光源 LED	RGB + TOP		
高度检测范围 Light Source	0 - 550 μm		
高度检测分辨率 Height Inspection Resolution	0.36 μm		
高度检测精度 Height Inspection Accuracy	1μm (基于实际锡膏/校正块Based on the actual solder paste / calibration block)		
检查项目 Inspection Item	异体积、面积、高度、XY位置、形状等 Volume, Area, Height, X/Y Position, Bridging, Shape, etc		
不良种类 Defective Type	多少锡、漏印、锡膏拉尖、桥连、偏移、异形、异物等 Excessive /Insufficient/Missing paste,Bridge ,2D & 3D Paste displacement, Shape deformity, Dust, etc		
体积、高度、面积测量重复性 Repeatability (Volume, Area, Height)	< 1% @3sigma		
GR & R (Gauge Reproducebility and Repeatability)	< 10% (@6sigma tolerance = +/- 50%)		
测试速度 Inspection Speed	0.35Sec / FOV		
轨道与 PCB 尺寸 Conveyor & PCB Size			
最大板尺寸 Max PCB Size	460x410 mm	620x690mm	620x320 mm
最小板尺寸 Min PCB Size	50x50 mm		
PCB 上方净高 PCB Up-Clearance	30 mm		
PCB 上方净空 PCB Bottom-Clearance	30 mm		
可适应PCB厚度 PCB Thickness	0.5 - 5 mm		
PCB 最大弯曲 Max PCB Warp	± 3 mm		
元件至板边最小距离 PCB Transfer Height	2.5mm		
轨道高度范围 PCB Transfer Height	900±20 mm		
最大板重量 Max PCB Weight	5KG		
框架与其它 Frame & Others			
底座与框架 Base & Frame	整体铸铁底座框架, 整体成型, 坚固稳定 Integral steel casting frame, firmly, ensure the high accuracy of inspection		
设备长宽高与重量 Dimensions and Weight	947 x 1321 x 1600 mm (W x D x H); 950KG	1157 x 1433x 1548mm (W x D x H) 1070KG/	1157 x 1572 x 1548 mm (W x D x H); 1120KG
电源 Power Supply	AC 220V 1Φ 50 / 60Hz		
功率 Power	2.2KW		2.7KW
通讯界面 Communication Interface	SMEMA		
气源 Air Supply	4-6bar, 5L/min		
操作温度与湿度 Operating Condition	5-40 °C, 15-90 % RH		
选配件 Options			
1、Barcode识别器 / Barcode Reader	4、维修站 (含计算机) / Repair Station (PC)		
2、3D校正块 / 3D Calibration Target	5、人机交换系统 (电容触摸LCD显示器 + 声控) / Infared Muti-touch LCD + Voice Control		
3、2D校正玻璃 / 2D Calibration Glass	6、离线编辑软件 (含加密锁) / Offline Editing Software (License Key)		

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!

## LED产品、长基板专用机型

Special type of LED products、long PCB



### 自动3D锡膏检测SPI

3D Solder Paste Inspection SPI

- 针对LED行业如背光源或长基板等锡膏3D测量；
- 一次性完成检测、无需分段检测，减少接驳空间保证速度及精度；
- 基板长度max.1.2M。
- For LED Industry Backlight, Long PCB etc solder paste inspection;
- One-Step inspection, ensure inspection accuracy.
- PCB Length max.1.2M.

### 焊点及元器件检测AOI

Solder Joint and Component Inspection AOI

- 针对LED行业如背光源或长基板等焊点及贴装精度检测；
- 一次性完成检测、无需分段检测，减少接驳空间保证速度及精度。
- 基板长度max.1.2M。
- For LED Industry Backlight, Long PCB etc solder joint inspection;
- One-Step inspection, ensure inspection accuracy;
- PCB Length max.1.2M.



设备型号 Model	REFINE-1200
相机配置 Camera Specification	500万像素工业相机, 超高帧数 (出厂时设定) 1200万可选配 5M High-frequency Industrial Camera, High Frame Number (Factory Setting)
像素大小 Pixel	20μm, 15μm ( 出厂时设定 Factory Setting)
FOV(单个视野) 范围	50x40 mm, 38x30 mm ( 出厂时设定 Factory Setting)
光源 LED	RGB + TOP
高度检测范围 Light Source	0 - 550 μm
高度检测分辨率 Height Inspection Resolution	0.36 μm
高度检测精度 Height Inspection Accuracy	1μm (基于实际锡膏/校正块Based on the actual solder paste / calibration block)
检查项目 Inspection Item	体积、面积、高度、 XY位置、形状等 Volume, Area, Height, X/Y Position, Bridging, Shape, etc
不良种类 Defective Type	多少锡、漏印、锡膏拉尖、桥连、偏移、异形、异物等 Excessive /Insufficient/Missing paste,Bridge ,2D & 3D Paste displacement, Shape deformity, Dust, etc
测试速度 Inspection Speed	0.35Sec / FOV
最大板尺寸 Max PCB Size	1200x410 mm
最小板尺寸 Min PCB Size	50x50 mm
PCB 上方净高 PCB Up-Clearance	30 mm
PCB 下方净空 PCB Bottom-Clearance	30 mm
通讯界面 Communication Interface	SMEMA
轨道高度范围 PCB Transfer Height	900±20 mm
设备长宽高与重量 Dimensions and Weight	1900 x 1410 x 1640mm (W x D x H) , 1200KG
电源 Power Supply	AC 220V 1Φ 50 / 60Hz
功率 Power	2.7KW
气源 Air Supply	0.5Mpa
选配件 Options	
1、Barcode识别器 / Barcode Reader	4、维修站 (含计算机) / Repair Station (PC)
2、3D校正块 / 3D Calibration Target	5、人机交换系统 (电容触摸LCD显示器 + 声控) / Infared Muti-touch LCD + Voice Control
3、2D校正玻璃 / 2D Calibration Glass	6、离线编辑软件 (含加密锁) / Offline Editing Software (License Key)

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!

型号 Model	JTA-JUTI-1200
基板规格 PCB Spec	PCB 尺寸 Dimension 50x50mm - 1200x410mm PCB 元件高度 Height Top 25mm ;Bottom 30mm
光学参数 Optical Parameter	分辨率 Resolution 15μm(标配 Std ); 10μm/12μm可选配,Option 摄像头 Camera Spec. 500W高速彩色相机 High Speed Color Camera 光源 Light-Source 多光谱超高速RGBW六通道光源 Multispectral Super speed RGB+W Light Source
硬件配置 Hardware	X, Y 平台重复定位精度 Table Positioning Accuracy +/- 0.01mm X, Y 平台移动速度 Table Speed 1000mm/s 进出板类型 PCB Loading Defined Mode: R->L or L->R, L->L, R->R ( 标配, Standard) PCB调宽方式 PCB Width Adjustment 自动调宽 By Auto+手动调宽By Manual(标配 Standard) 操作系统 Operating System Win 7 Professional 功率 Power 2.4KW 设备外观尺寸 Dimension (W * D * H) 1900 x 1410 x 1640 mm 重量 Weight (KG) Approx. 1500KG
软件系统 Software	检测算法 Inspection Method 特徵矢量分析法, 丝印 OCV 算法 The Eigenvector Analysis & OCV Silkscreen Algorithm 编程模式 Programming Mode 1. CAD 坐标自动导入 CAD Coordinate Loading 2. 自动索引元件库 Component Database Auto-index 3.软件自动编程 Auto-programming by Intelligent Software 远程控制 Remote Control 通过网络实现: 离线编程; 远程实时调试; 远程查看 / 远程控制操作设备等 Network Monitoring: Offline Debugging, Online Monitoring & Manipulating, Remote Realized Examining
选项 Option	条码机读取条码 1D/2D Barcode Scanner (H/W) 顶 针PIN 装置 Equipment 光源校正板 Light Source Corrector

备注: 参数若有更改, 恕不另行通知! The above contents are subject to change without further notice!



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