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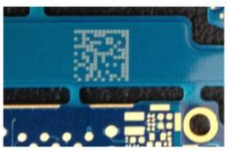
R6 Series UPKTECH Laser Marking Machine

I. Description:

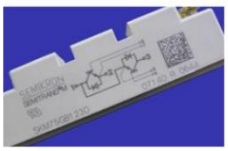
Laser marking machine is a professional equipment that uses laser to mark one-dimensional codes, two-dimensional codes text, symbols or graphics on the surface of PCB . It consists of laser marking system, XY precision motion platform, MARK+CCD precise positioning system, automatic adjustment system of transmission track, and online reading system.

II. Application:

Laser PCB marking Laser component marking Laser ceramic marking Laser plastic marking Laser metal marking


激光PCB打標


激光元件打標


激光陶瓷打標


激光塑膠打標


激光金屬打標

III. Features:

- Fully automatic control, PC+QC software control, Windows 10 operating system.
- CO2/FAYB /UV laser marking system can be optionally configured , with XY precise positioning and CCD+MARK precise positioning. The marking position accuracy is within 0.02mm .
- It can engrave Chinese characters, English, numbers, charts, serial numbers, LOGO , bar codes, QR codes and other contents.
- Can be connected to shopflo or \M E S system.
- Supports the import of Geber, DXF and other documents.
- Supports marking various types of PCB , FPC , non-metal and other different material surfaces.
- It has the characteristics of high quality, high yield, high stability, and no production consumables.

Software operation features :

- The visual operation of editing the template is displayed on the PCB board in real time, so the editor can adjust the size, text position, text spacing, etc. while watching the marking area. The user-friendly operation is very strong. It is quick to operate and adapts to various barcode rules. It takes about 3 minutes to edit a template.
- All editing uses CCD visual image operation, which is intuitive, simple and convenient.
- It has the function of preventing data from being re-engraved to avoid repeated imprinting of barcode information.
- Barcode marking has an array function, which is simple and fast. It is convenient to engrave multi-link boards or multiple specifications of barcodes on one board.

- You can drag the barcode to any position on the PCB board, and realize the function of moving to that position in real time and engraving the current position. There is no need to measure the coordinates, and there is no need to change the coordinate data when modifying the data. Instead, you can intuitively drag the barcode to the corresponding position. That’ s it, the operation is very intuitive.

CO2 laser

Laser: Synrad's48-series

Rugged &reliable

50,000 applications worldwide

Service life greater than 40,000 hours

UV Laser

Brand: Inno

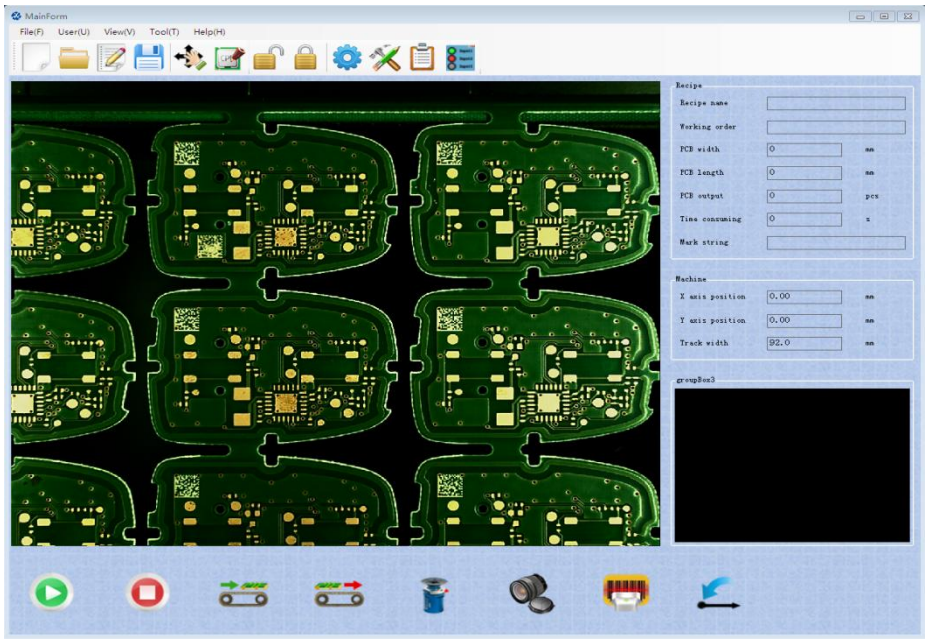
Rugged &reliable

More than 50,000 applications worldwide

Service life greater than 20,000 hours

Operating software

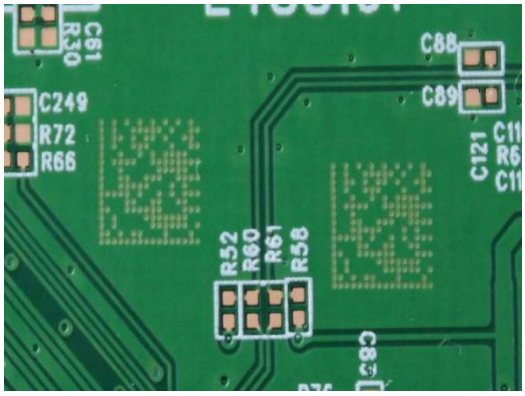
The vivid and easy-to-use graphical interactive interface is comprehensive in functions and simple to operate. Gerber files can be imported for programming. Offline image editing mode is optional for editing and debugging at any time.

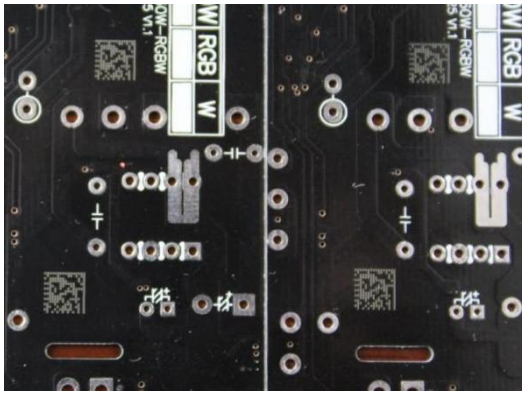


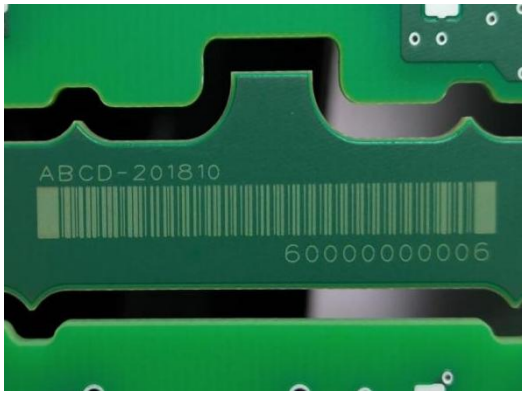
CCD system

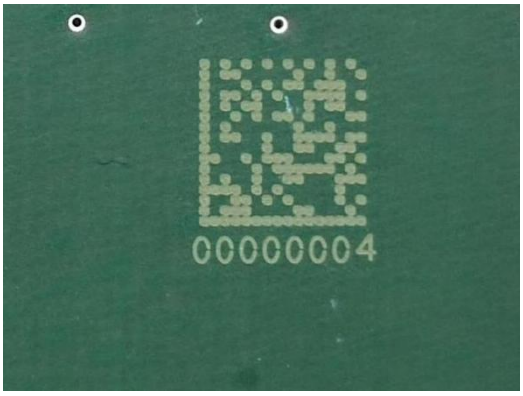
High-resolution color industrial camera + visual image processing system + CCD positioning system, barcode reading and inspection system.

IV. Marking example pictures are as follows:









V. Specification:

Item	Parameter
Laser type	CO2 laser , wavelength 10600nm / UV laser, wavelength 355nm
Laser power	10W (CO^2)/5W (UV)
Laser spot diameter	0.08mm (CO^2)/0.03mm (UV)
Scanning range of laser scanning head	40mm * 40mm
Laser scanning field lens standard focal length	f=100mm
Repeatable marking accuracy	±0.02mm in up/down/left/right direction
Barcode compatible	One-dimensional code, two-dimensional code, graphics, text, etc.
Marking time (single QR code size: 4*4mm)	About 7s (including entry and exit board + mark positioning + coding + code reading)
Minimum QR code size	1.2*1.2mm
Minimum line width	0.08mm (CO^2)/ 0.04mm (UV)
Minimum characters	0.3mm (CO^2)/ 0.2mm (UV)
Weight	Approx 550 KG
Power supply	single phase 220VAC, 50Hz,1.8 KW
Air source	5-7Kgf/cm2 / 0.5-0.7MPa
Transport height	900±20mm (adjustable)
Lens height focus adjustment	Manual adjustment:±10mm Auto focus (optional)
Assembly line width adjustment method	CNC automatic adjustment

Transmission direction	Left → Right / Right → Left (optional)
Smoke exhaust pipe	2.5 inches
PCB Size	50*50 - 510*460mm, Thickness: 0.5-5 mm, max wight: ≦2 KG
Allowable deformation of PCB	<2mm
Transmission speed	50-300mm / s
Maximum height of components	Front:25mm, Rear:15mm
XY movement speed	1000mm/s
System access	To access intelligent management systems such as Shopfloor, MES, IMS etc.
printing angle	360 degrees
cooling method	Forced air cooling
GPS	CCD+mark positioning
Online code reading function	have
Control System	PC+motion axis card+servo motor
computer operating system	Windows 10 Simplified Chinese version
Engraving operation software	R-TEK independently develops software
Computer supported network types	Ethernet
Environment	natural environment
Temperature	0-40℃, no condensation or icing
Humidity	35-85%RH, no condensation and no icing

Transportation and storage environment	This series of machines can be transported and stored within the range of -25~55℃. Within 24 hours, it can withstand high temperatures not exceeding 65°C.
Exhaust air volume	≥5 cubic meters/min
Optional Function	**Flip function**

R6-C

Main configuration list		
project	brand	Remark
laser	American Synrad	
Industrial computer	Lenovo industrial computer	
industrial camera	Hikvision	
Galvanometer	Jiat/Gavotech	
Field lens	Nanjing Wavelength	
Lead screw	Taiwan TBI	
Slide rail	Zhongchuang	
servo motor	Huichuan	
transport motor	solid card	
light eye	Panasonic	

Motion control card	Gaochuan motion control card	
Marking card	Golden Orange PCIE digital card	
Controlling software	R-TEK independently developed	

R6-U

Main configuration list		
project	brand	Remark
laser	Inno	
Industrial computer	Lenovo industrial computer	
industrial camera	Hikvision	
Galvanometer	Jiat/Gavotech	
Field lens	Changsheng	
Lead screw	Taiwan TBI	
Slide rail	Zhongchuang	
servo motor	Huichuan	
transport motor	solid card	
light eye	Panasonic	
Motion control card	Gaochuan motion control card	

Marking card	Golden Orange PCIE digital card	
controlling software	R-tek independently developed	

FAQ:

Q: What's the Mini QR code size ?

A: 1.2mm*1.2mm.

Q: What's the engraving type ?

A: It can engrave Chinese characters, English, numbers, charts, serial numbers, LOGO , bar codes, QR codes and other contents.

Q: What's your laser power range?

A: 5-20W

Q: What is your marking cycle time?

A: About 7s (including entry and exit board + mark positioning + coding + code reading)

Q：What is the control system?

A: Fully automatic control, PC+QC software control, Windows 10 operating system.

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Q: What feature of CCD and Mark positioning in your machine ?

A: CO2/FAYB /UV laser marking system can be optionally configured , with XY precise positioning and CCD+MARK precise positioning. The marking position accuracy is within 0.02mm .