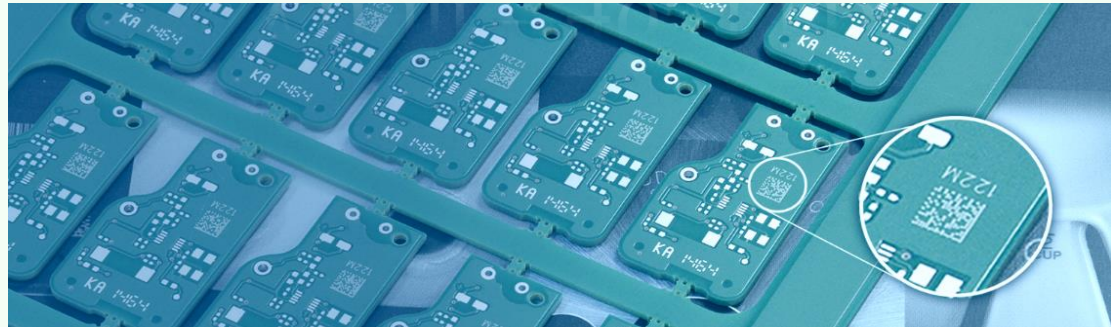




VIPin – 4651TB



PCB Laser Marking Machine
with Top-Bottom Laser Heads

Foreword

As a high-level sign marking, laser marking has been applied for business for over 20 years, while it was not widely used due to its high cost. As technology advances, the cost drops dramatically. The time of popularizing laser marking is approaching, as enterprises recognize the importance of product traceability by laser marking method.

Market Trend

Laser marking will replace the traditional labelling and coding gradually and nothing can prevent this trend. As is analyzed, the future leader in this line will come from our domestic manufacturers. Because the equipment imported can only keep some of their inherent customers, due to the high cost, marketing and other factors etc.

Target - NO.1

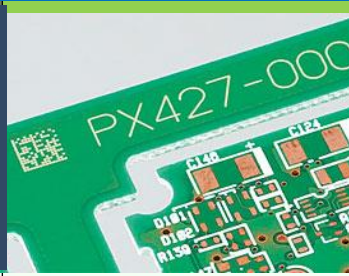
It will take us 2-4 years to enter into the Top Three in the industry. We analyze that the laser marking machine will become the online standard equipment, the same as online AOI and SPI. What's the most important, it 's one of the most important links in the production line 4.0. There are more than 30,000 SMT line in the domestic industry, and there is still large space for imagination.

Cost Comparison

Replace High Temperature Tags



Paper labels



Laser marking

Contrasting		
Line size	millimetre	micron (minimal 0.04mm)
Minimal letter	2mm	0.1mm
Minimal QR Code	2.5*2.5mm	1.3*1.3mm
consumables	yes	no
Strongness	Dropped off or broken easily	Laser marking never disappeared

Output of laser marking

Average time each mark	6s
Average speed (cph/h)	360
Annual output	2376 kd
output of 10Million boards	4-5 sets of machines make it
Cost for 4 sets of laser marking machines	¥ 1.1 million



eg: Annual 10 million Pieces of high Temperature labels with Two manual labelling

	Specification	Price (RMB)	Annual consumable (piece)	Total (RMB)
Label cost	10*10mm	¥ 0.015	3 million	¥ 45k
	15*40mm	¥ 0.05	7 million	¥ 350 k
	Annual			¥395 k
Total Label Cost for 5 years				¥1975k
Labor cost	Manual labors	salary/month/person	Salary/year /person	Annual total
	2	¥ 4,500	¥ 54,000	¥ 108k
	Total Labor Cost for 5 years			¥540 k
Total Cost for 5 years				¥2515 k

Production line

Online model



Online Automatic PCB laser marking machines can be placed at the forefront of the production line, keep continuous laser marking, access to MES, intelligent traceability

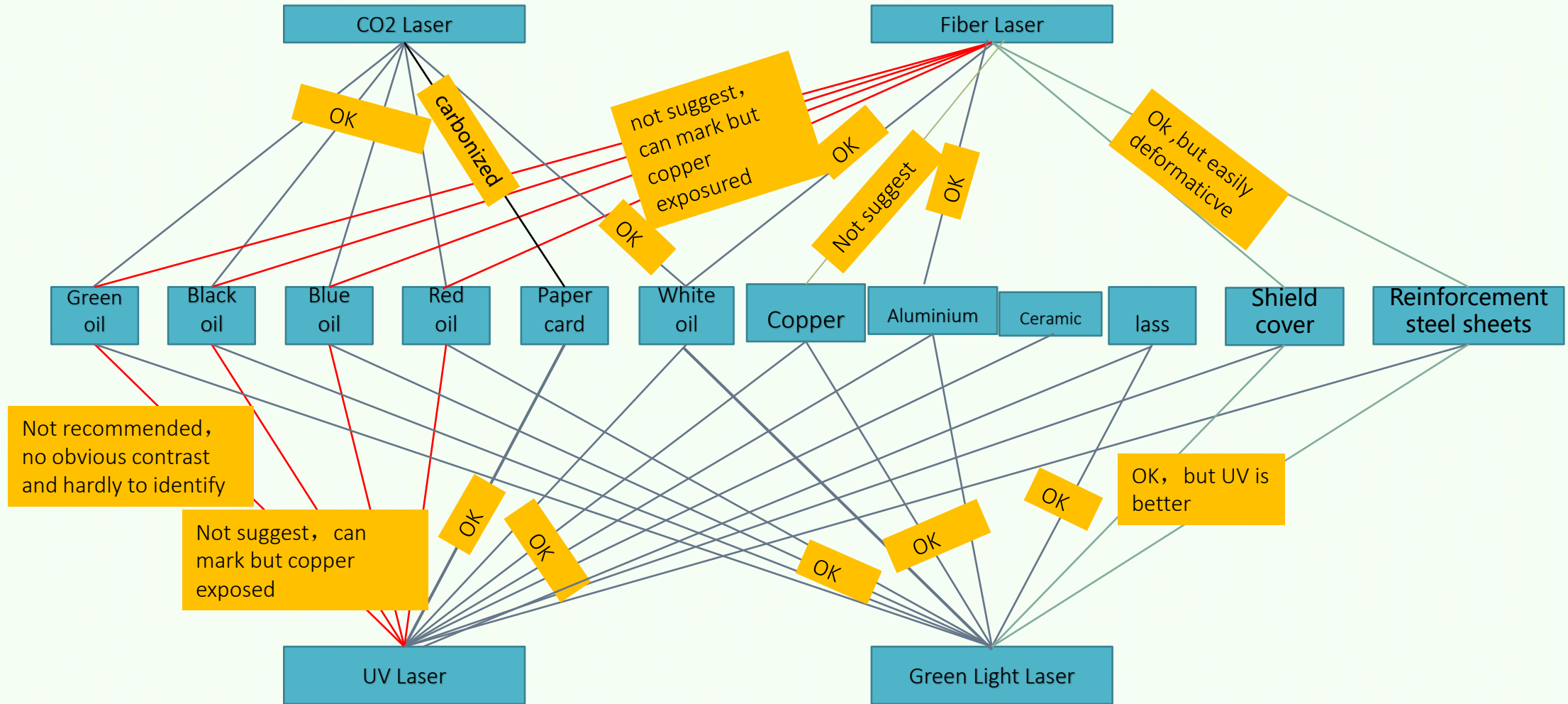
Offline model for boards with components



Offline model - for bare boards



Comparison – Laser and Material



Laser

American Synrad Laser CO2 Laser Head

Laser type	CO2 10W
Laser lifespan	≥50000 hours
Laser spot size	0.13
Minimum marking size	1.3*1.3mm
Output fluctuation	< 3%
Laser wave length	10.6μm

American Inno Laser UV Laser Head

Laser type	UV 5W
Laser lifespan	≥15000 hours
Laser spot size	0.04mm
Minimum marking size	0.8*0.8
Output fluctuation	< 3%
Laser wave length	355nm

Maiman Laser GR Laser Head

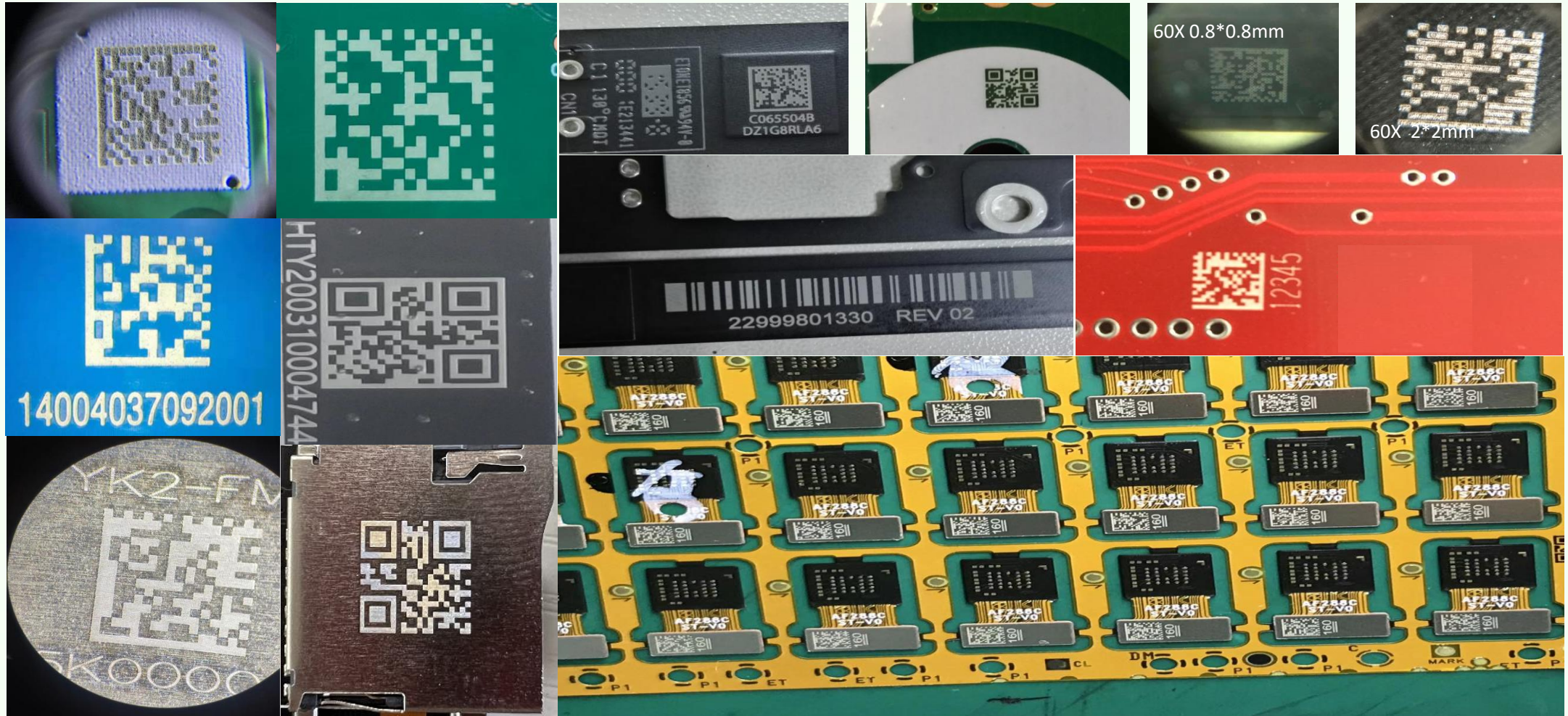
Laser type	GR 5W
Laser lifespan	≥15000 hours
Laser spot size	0.06mm
Minimum marking size	1*1
Output fluctuation	< 3%
Laser wave length	532nm

German IPG /MAX Laser Fiber Laser Head

Laser type	Fiber20W/30W(optinal)
Laser lifespan	≥50000 hours
Laser spot size	0.07mm
Minimum marking size	0.8*0.8mm
Output fluctuation	< 3%
Laser wave length	1064nm

Applications

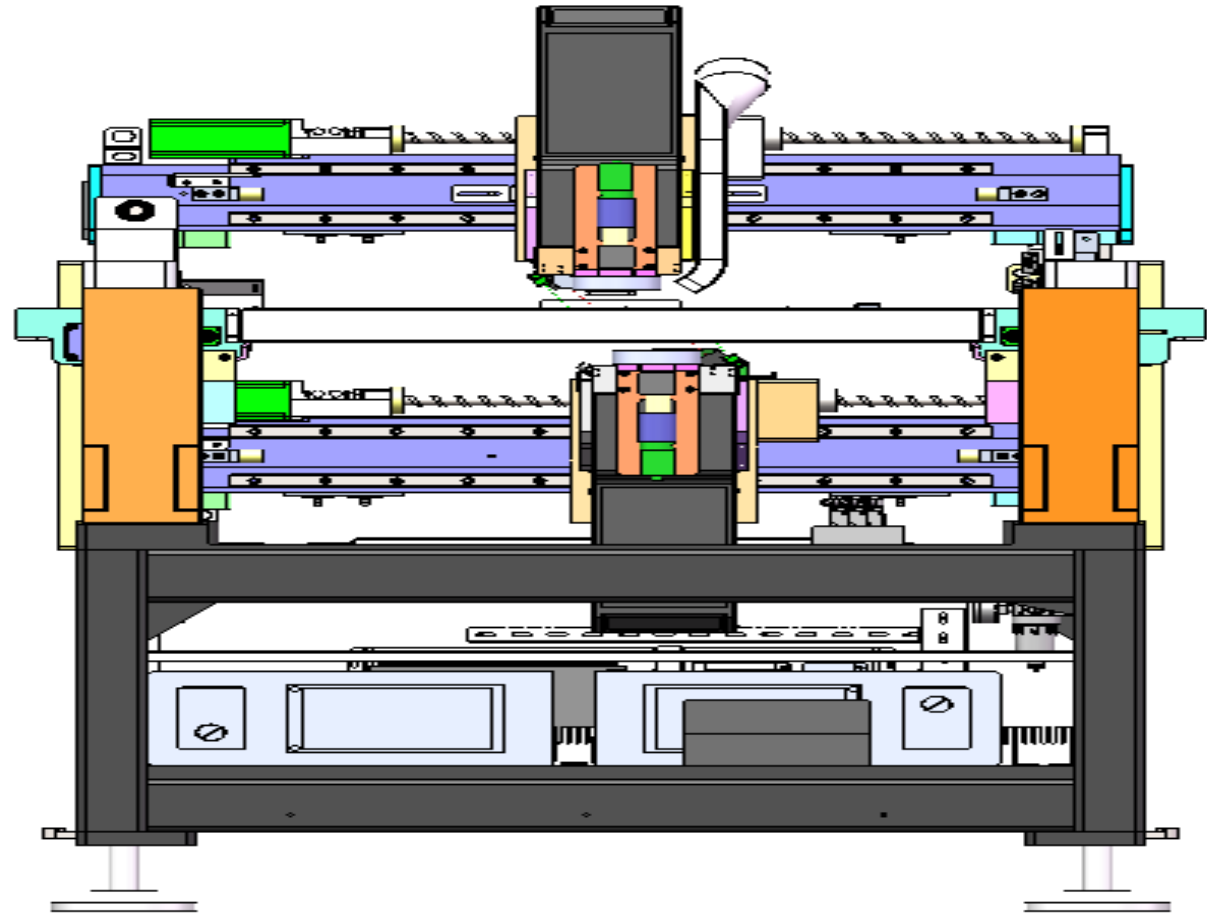
It is mainly used to mark QR code, barcode, characters and other information on PCB with various kinds of oil, such as white oil, green oil, black oil, blue oil, and red oil, as well as on products of reinforcement steel sheets and shielding cover. It can be read and verify the code after the marking process.



Configuration

Top and Bottom
Laser Heads
Synchronized
Marking Machine

Marking Machine
Synchronized
Laser Heads



Configuration-Parameter

1. Materials and colours of the PCB;
2. Whether the PCB is with white oil or black oil;
3. Whether the PCB boards with components;
4. The maximum size of the PCB;
5. The thickness of the PCB;
6. Whether the PCB requires dual-sided marking;
7. The minimal size of QR code and how many characters included;
8. A sample needed to choose the right laser source;
9. Whether to connect to MES;
10. Whether smoke purification system, loading and unloading equipment required (offline model).

Equipment Parameters

Serial number	Type	VIPin-4651TB
1	Laser type	UV/CO2/GREEN Laser
2	Laser power	5W/10W/5W (Output fluctuation rate <3%)
3	Laser Wavelength	355nm/10640nm/532nm
4	Laser Cooling Method	Water Cooling/Air cooling
5	Minimum point diameter	0.13mm
6	Engraving Angle	0-360°
7	Repeat Accuracy	±0.02mm
8	XY axis movement speed	0-500mm/s
9	QR code size (minimun)	1.5mm×1.5mm
10	Marking content	QR Code/Micro QR Code/IQR Code/Data Matrix/GS1 Data/Matrix/PDF417CODE39/CODE128/ITF/NW-7/JAN(EAN)/UPC/English Uppercase /English lowercase /Figure/Katakana /Chinese Chatacters
11	Equipment flow	Left-right / Right-left
12	Circuit board size range	50mm×50mm-460mm×510mm
13	Board thickness range	0.5-7mm
14	Working height	900±50mm
15	Targeting	MARK+CCD camera positioning
16	Software function	It has the functions of laser engraving clear code and cipher code; it has the function of reading two-dimensional code; it has the function of anti-duplication and code complement; it has the function of detecting BadMark; it has the function of custom coding rules
17	Option	Simultaneous typing and simultaneous reading, reserved hardware structure / QR code recognition and classification function / MES / Smoke purification system
18	Operating power of the whole machine	220VAC,50/60Hz
19	Total Weight	920kg
20	Appearance size (length/width/height)	1130mm×1130mm×1730mm