



POE MANUFACTURING
YOUR GLOBAL TECHNOLOGY
PARTNER

2024
April - June

ONE STOP CONTRACT MANUFACTURING
FACILITY IN CHINA AND USA FOR 1-40 LAYER

PCB / FULLY TURNKEY PCB ASSEMBLY / EMS / OEM



20years pcb production, we have much working
experience from the production to delivery.



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OEM SERVICES FOR PCB AND PCBA SINCE 1996.

Business is about building life-long relationships with attentive service, quality products and honest business practices.

Mr Hu Jiwei
General Manager



POE MANUFACTURING
YOUR GLOBAL TECHNOLOGY
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01 Company introduction

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.

In business since 1996, POE has established itself as a world well known one stop contract fully turnkey PCB assembly factory for quick turn prototype and mass PCB fabrication and PCB assembly services with 700,000 components sourcing ability from 100+ suppliers.

Our PCB manufacturing capabilities enable us to produce a wide range of products, we can make any printed circuit board you can think of, including HDI PCB, Multilayer PCBs (Up to 40layers), High-tech PCB, Thick Copper PCB, Halogen PCB as standard options, and more special PCBs such as Flex-Rigid PCB, Aluminum PCB and Rogers PCB.

3000 m²
highly automated, dust-free factory



POE MANUFACTURING YOUR GLOBAL TECHNOLOGY PARTNER

Currently, POE 4000+customers from 200 countries and regions are primarily in USA, Canada, Europe, South American, Australia, Israel , Asia and China in a wide variety of industries like airplane, medical, telecommunications, airplane recorder, cloud, smart home, solar panel engery ,battery storage, wind, IOT, automobile, computer & database information, industrial automation, photonics, LED products and consumer electronics.

200+
workers facility

4000+
Customers

200+
Countries worldwide

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02

What POE do?

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.

PCB Manufacturing

1-40 layers PCB manufacturing;
Design for Manufacturing(DFM) Checking;
24 hours Quick turn PCB manufacturing;
ISO 9001, ISO 14001, ISO 13485, Reach, UL, RoHS, IPC.

PCB Assembly

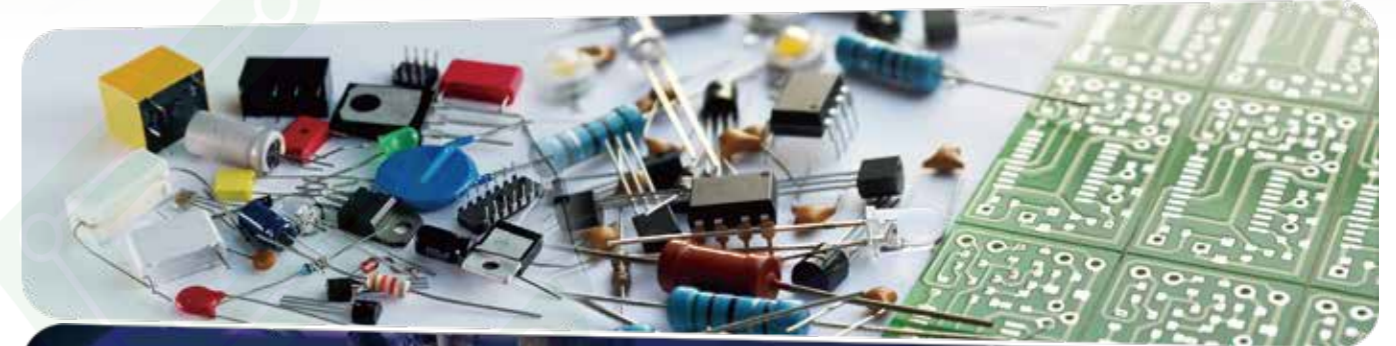
- SMT & THT PCBA, supports low-volume to high-volume PCBA ;
- 100% buy the PCB assembly components according to customers' request, substitutes can be used to save the cost if customers agree ;
- 3D SPI, AOI, FAI, X-Ray etc. Equipment inspect the quality ;
- ISO 9001, ISO 14001, ISO 13485, Reach, UL, RoHS, IPC.

PCB/ PCBA Prototype

24 hours quick turn pcb prototype;
1-2 days quick turn pcb assembly prototype;
ISO 9001, ISO 14001, ISO 13485, Reach, UL, RoHS, IPC;
Lowest 30USD, free Shipping;

Value- Added Service

- ① PCB component sourcing; / ② Conformal coating; / ③ 3D Print Enclosure;
④ Programming and Testing; / ⑥ Kitting Carton Box & Foam Service;



03

Products showcase

April to June PCB/PCBA boards

Layer count: 1-40+ layers

Assembly Type:

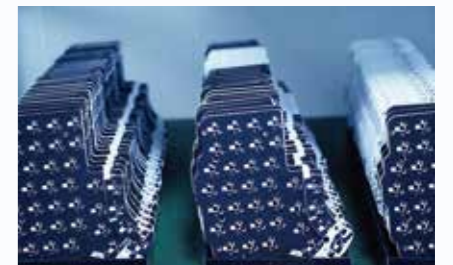
Through-Hole (THT),
Surface Mount (SMT),
Mixed (THT+SMT)

PCB Assembly Standards:

ISO9001:2015; ISO13485:2016;
ROHS, UL 94V0, IPC-600G class II
and IPC-6012B class II standard

Since 1996, POE has established itself as a World well known Turn-Key PCB assembly company for prototype and low-to-large volume PCB fabrication and assembly services.

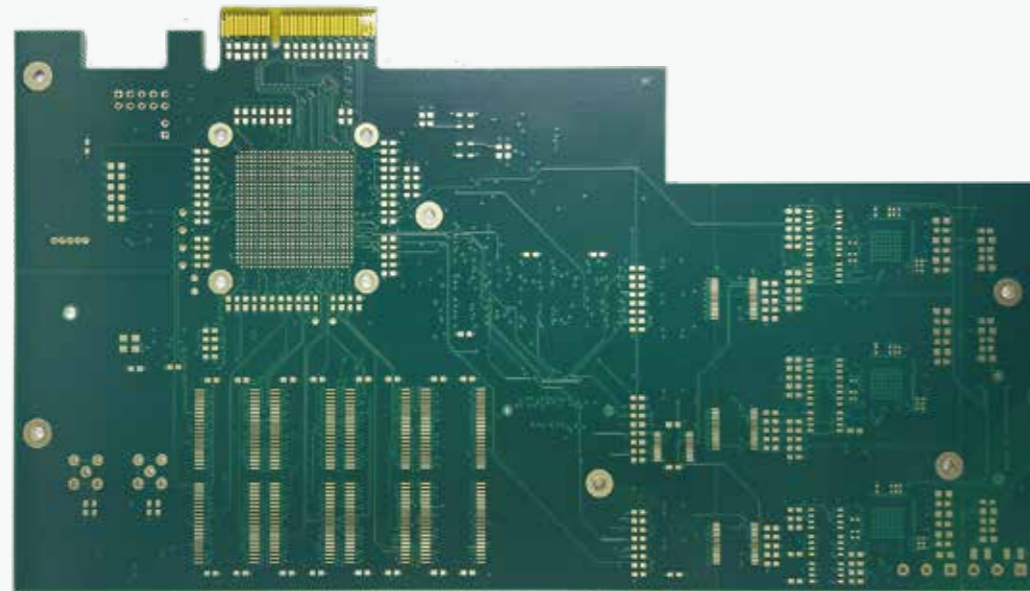
Our PCB manufacturing capabilities enable us to produce a wide range of products, We can make any printed circuit board you can think of including HDI PCB, Multilayer PCB(up to 40 layers), High-tech PCB, Thick Copper PCB, Halogen PCB as standard options, and more special PCBs such as Flex-Rigid PCB, aluminum PCB and Rogers PCB.



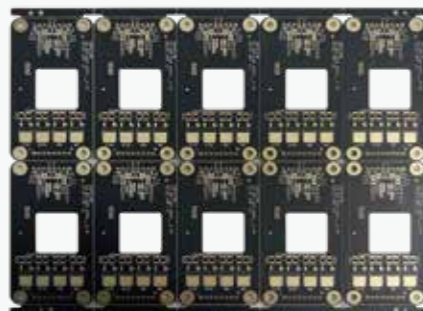
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PCB board →

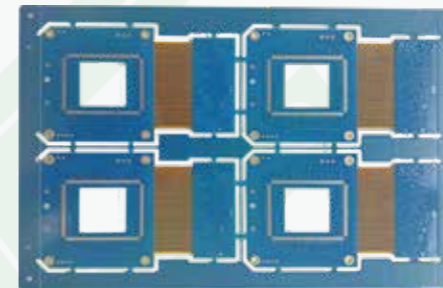
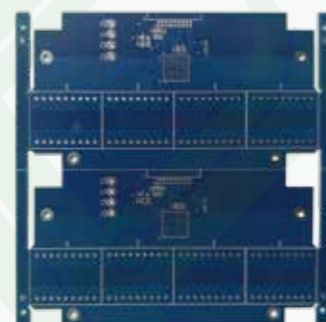


1



2

3



4



5



6



7

1 2 Layer PCB board

Material: FR4
Copper thickness: 1oz
Board thickness: 1.6mm
Finish treatment: HASL(no lead)
 Green Soldermask/white Silkscreen

2 6 Layer PCB board

Material: FR4 TG170
Finish treatment: ENIG
 Matt black soldermask
 white silkscreen

3 6 Layer PCB board

Material: FR4
Copper thickness: 1oz
Board thickness: 1.6mm
Finish treatment: HASL(no lead)
 Blue Soldermask

4 8 Layer HDI PCB board

Material: FR4 Tg150
Copper thickness: 2oz
Board thickness: 1.6mm
Laser Drill: 0.1mm
 L3-L4 Buried Vias,L5-L6 Blind Vias
Finish treatment: ENIG

5 4 Layer PCB board

Material: Rogers4350B
Finish treatment: ENIG
Copper thickness: 1oz
Board thickness: 0.6mm

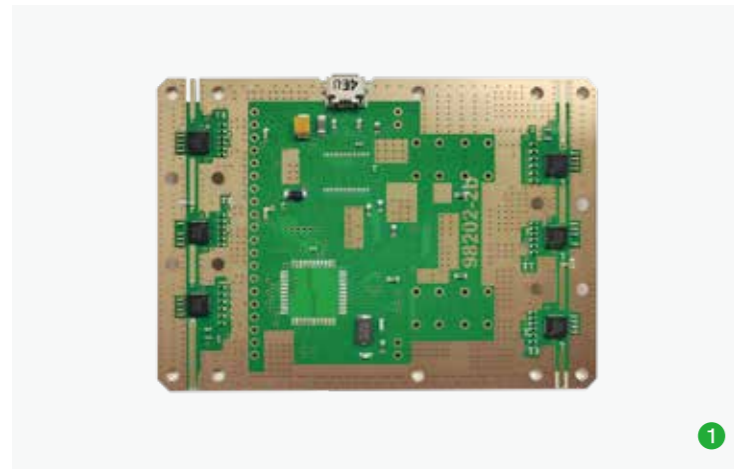
6 2 Layer PCB board

Material: FR4
Finish treatment: ENIG
Copper thickness: 1oz
Board thickness: 1.6mm
Finish treatment: HASL lead free
 Green Soldermask/White silkscreen

7 4 Layer PCB board

Material: FR4
Finish treatment: ENIG
Copper thickness: 1oz
Board thickness: 1.5mm
Finish treatment:
 Black Soldermask/White silkscreen

PCBA board



1 2 Layer PCBA board

Material: Rogers4350B
Finish treatment: ENIG
Copper thickness: 1oz
Board thickness: 0.508mm
Impedance control



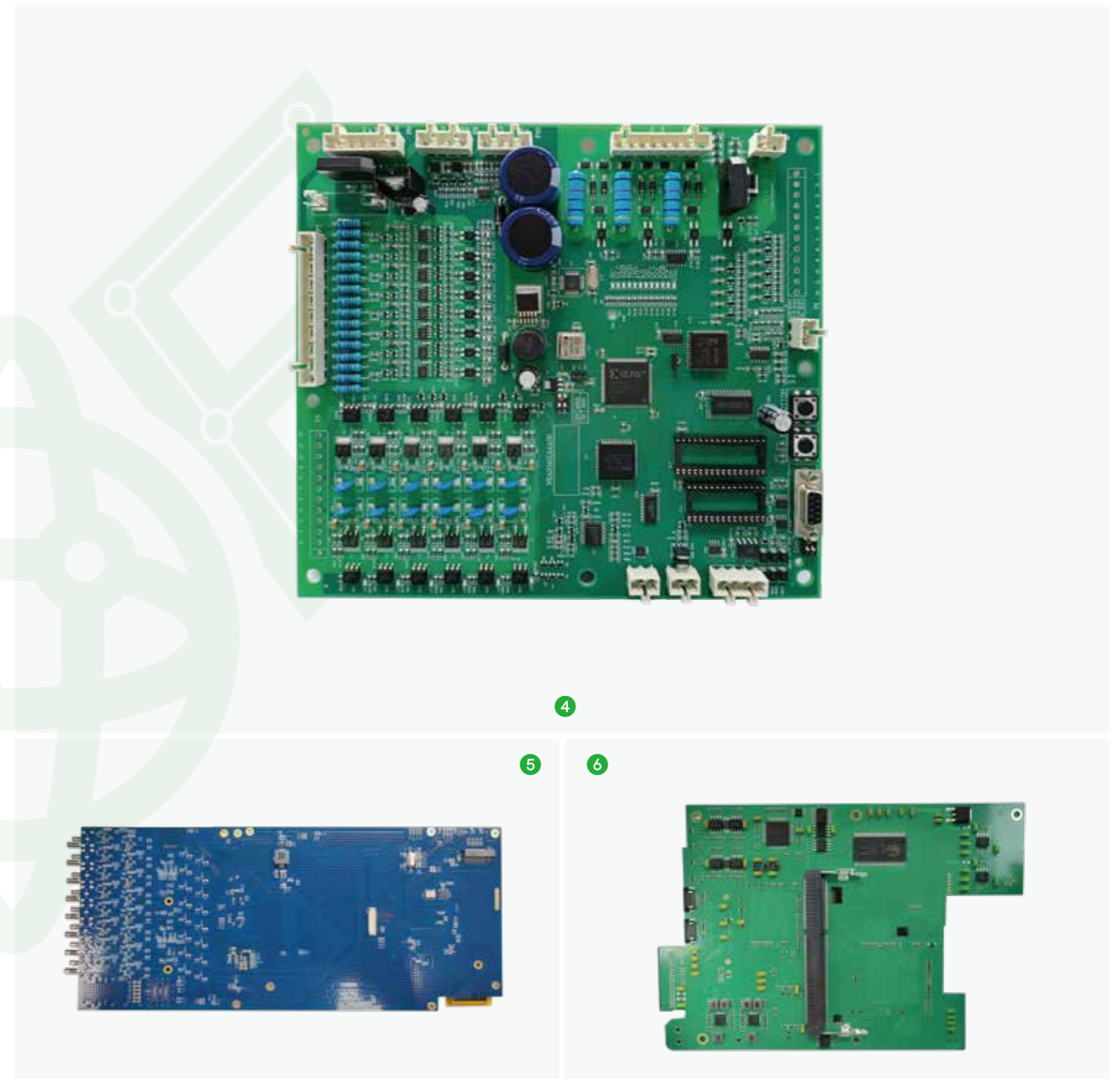
2 4 Layer PCBA board

Material: FR4
Board thickness: 1.6mm
Finish treatment: ENIG
Copper thickness: 1oz
Finish treatment: HASL(no lead)
 Green Soldermask/white Silkscreen



3 12 Layer PCBA board

Material: FR4 Shengyi TG170
Finish treatment: ENIG+Gold finger
Copper thickness: 1oz
Board thickness: 1.6mm
Impedance control



4 4 Layer PCBA board

Material: FR4
Copper thickness: 1oz
Board thickness: 1.9mm
Finish treatment: HASL
 Green Soldermask/white Silkscreen

4

5

6

5 8 Layer PCBA board

Material: MEGTRON6
Finish treatment: ENIG+Gold finger
Copper thickness: 1oz
Board thickness: 1.6mm
Impedance control

6 10 Layer PCBA board

Material: FR4 TG170
Finish treatment: ENIG
Copper thickness: 1oz
Board thickness: 1.6mm

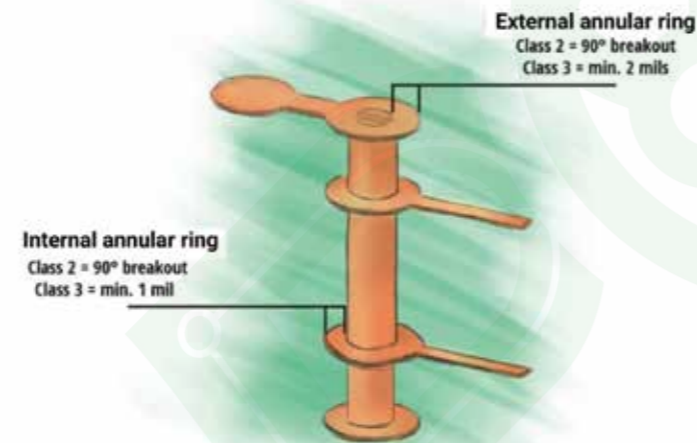
04 IPC Class III

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.

As circuit board manufacturers, designers often ask us about the difference between IPC Class 2 and Class 3. Class 1 does exist although We rarely produce boards that fall into this classification. Most of the time, even if the end-use of the product only requires Class 1, we will make it Class 2 just to ensure a better performance.

Some customer have specific requirement like:we can not accept any scratches on PCB matt black color, or the paste climbing needs be like this 45degree in my drawing, etc. Actually customer is talking that they need manufacturing meet IPC Class III standard.

IPC Class 2 VS Class 3: The Different Design Rules



1.General distinction between IPC Class 2 and Class 3

Parameters	Class 2	Class 3
01. Applications	» Laptops, smartphones, tablets, gaming devices	Life support systems, military equipment, automobiles

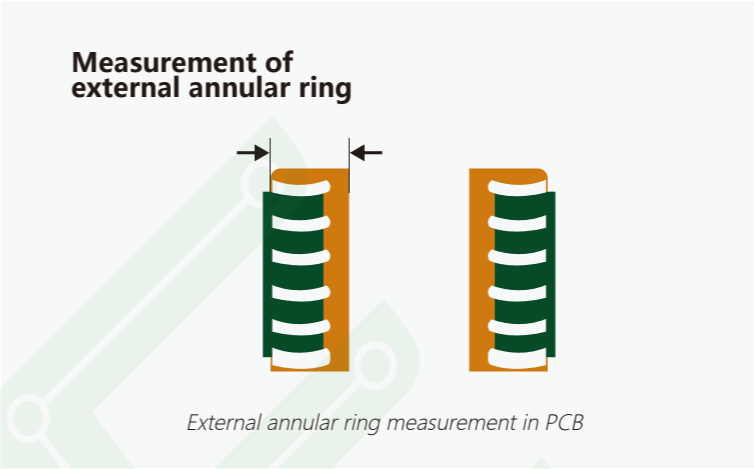
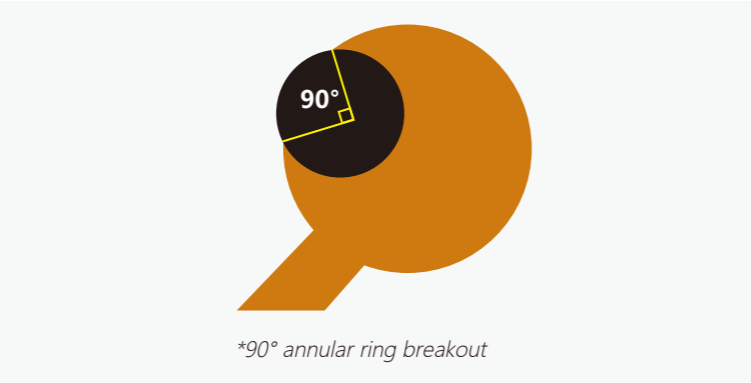
02. Surface-mount components		» Can be slightly placed off pad	No visual flaws are accepted
03. Annular ring breakout		» Allows 90° breakout provided minimum lateral spacing is maintained	Does not accept annular ring breakout
04. Amount of barrel fill [through-hole components]		» 50%	75%
05. Minimum copper wrap requirements		» 5 μm for all kinds of vias	12 μm for standard vias, 6 μm for microvias, and 7 μm for buried vias

*Difference between class 2 and class 3 PCBs

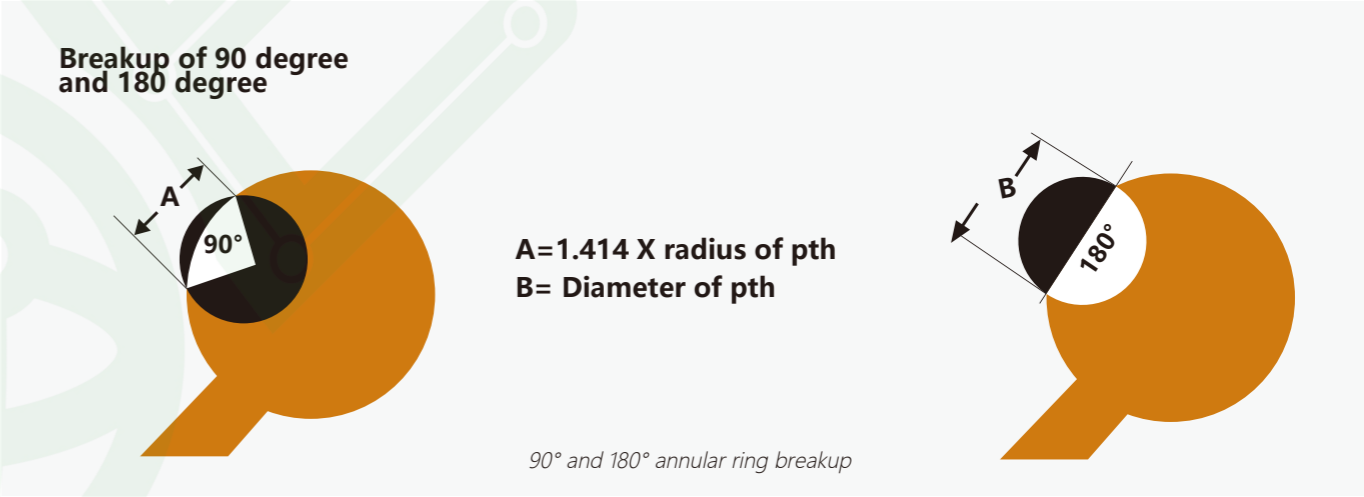
Specifications	Class 2	Class 3
Design rules	These boards are much simpler when compared to class 3. Apart from achieving the desired functions, the specification for via, plating, etc., is much more lenient.	Layout design, and component placements must all be determined through a strict and cautious process to achieve high reliability and functionality.
Manufacturing constraints	They are mostly used in consumer electronics, and the volume of production will be high. Since minor defects are overlooked, manufacturing time and costs are also reduced. It also results in a higher yield. The requirement for high-end manufacturing equipment is also not a necessity.	Other than for automotive and a few medical applications, Class3 boards are not usually mass-produced. Fab houses take great measures to meet the exact specifications. This increases the turnaround time and cost. It can also result in a low yield. Additionally, they are advanced boards that may require high-end equipment.
Inspection methods	The inspection involves a visual examination of the boards for defects like cracks, or broken components. The inspector also performs functional testing to ensure the basic performance requirements.	Class 3 board inspections are more rigorous and involve detailed testing methods. Microscopes and other tools are used to check for defects that are not visible to the naked eye. Apart from performance tests, it can also include environmental stress testing, thermal cycling, and vibration testing. This is to ensure that the board can withstand harsh environments. The inspection process can be expensive and time-consuming when compared to class 2 boards.

2.What are the differences between class 2 and class 3 in PCB manufacturing?

Annular ring and drill breakout



There will be a difference between the designed annular ring and the manufactured/actual annular ring. This is due to shifting in materials during the manufacturing to accurately place the drills.



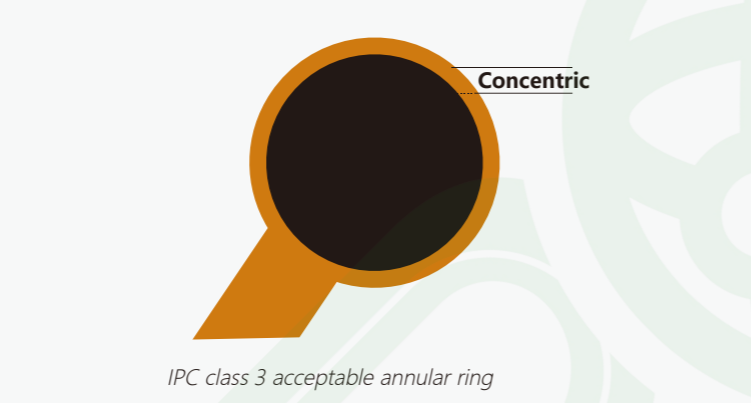
IPC annular ring acceptance criteria

Feature	Class 1	Class 2	Class 3
Plated-through hole	<p>180° annular ring breakout from the land is acceptable provided the minimum lateral spacing is maintained.</p> <p>The land/conductor junction should not be reduced by more than 30% of the minimum conductor width.</p>	<p>90° annular ring breakout from the land is acceptable provided the minimum lateral spacing is maintained.</p> <p>The land/conductor junction should not be reduced by more than 20% of the minimum conductor width.</p> <p>The conductor junction should not be less than 0.05mm or the minimum line width, whichever is smaller.</p>	<p>The minimum annular ring should not be less than 0.05mm.</p> <p>The minimum external annular ring may have a 20% reduction of the minimum annular ring.</p>

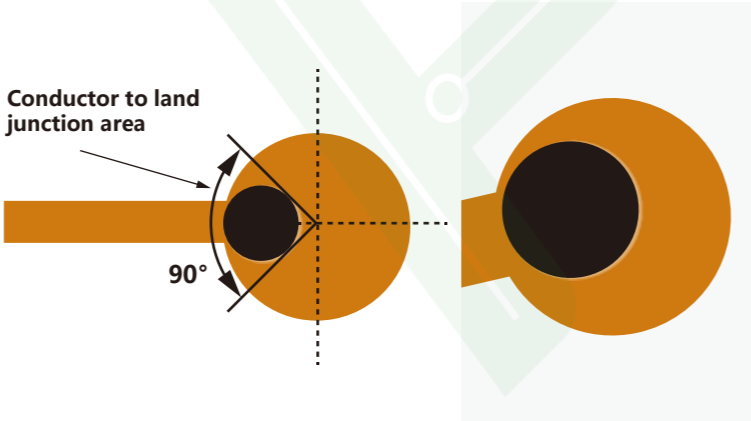
Another factor in which IPC classes differ is drill breakouts. The distinctions are outlined below:

- For class 2, 90 degrees breakout of the hole from the land is allowed, provided minimum lateral spacing is maintained. Class 3 does not accept any lifted or fractured annular rings.

- For class 2, the conductor junction cannot be reduced by more than 20% of the minimum conductor width specified on the engineering drawing. The conductor junction should never be less than 2 mil or the minimum line width, whichever is smaller.



- For class 3, the minimum internal annular ring cannot be less than 1 mil. The external annular ring cannot be less than 2 mil. It is measured from the inside of the PTH barrel to the edge of the land pad and may have a 20% reduction of the minimum annular ring in isolated areas due to defects, like pits, nicks, pinholes, or dents.



3.What are the difference between class 2 and class 3 in assembly ?

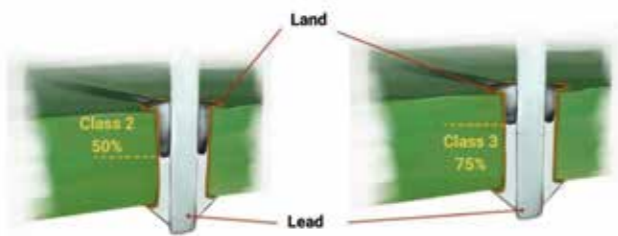
Umut Tosun, Application Technology Manager at Zestron America, explained, "The major differences between class 2 and class 3 are found in component placement for surface-mount components, cleanliness requirements based on residual contaminants on the assemblies, plating thicknesses as defined in plating through-hole and on the surface of PCBs."

During assembly, SMD might be slightly placed off the pad. This is what we call a visual defect since it does not usually affect electrical and mechanical performance. Therefore, it does not matter for class 2 circuit boards. However, class 3 does not accept any imperfection, and this type of assembly misstep will cause the circuit board to fail the inspection.

The solder joints for class 3 boards should not have any voids, cracks, or defects. However, minor visual defects are allowed in class 2.



Soldering defects on a circuit board



IPC class 2 and class3 barrel fill

The amount of barrel fill required for through-hole leads is 50% for class 2 and 75% for class 3. As it can be delicate to get the paste into small plated through-holes (PTH), Sierra's advice is to design your PTH 15 mil over the diameter of the lead. This way, you will have 7.5 mil on each side, which will make it easier for the paste to fill the barrel.

SMT and barrel fill requirements

Factors	Class 2	Class 3
Surface-mount components	Can be slightly placed off pad. (Considered as a visual defect, doesn't affect the electrical and mechanical performance)	Imperfections are not acceptable including visual flaws. This kind of imperfection will cause the circuit board to fail the inspection
Amount of barrel fill	Through-hole leads 50%	Through-hole leads 75%

Key takeaways:

- Class 2 allows minor visual defects in SMD placement but class 3 does not accept any imperfection in component placement.
- Class 3 solder joints must not have voids, cracks, or defects. Minor visual defects are allowed in class 2.
- Class 2 requires 50% fill; class 3 requires 75% fill.

IPC-6012D		IPC-6012D
	Class 2	Class 3
A	Copper overlapping is uniform, without defects along the entire length of the filled hole, up to the end of the ring	Copper overlapping is uniform, without defects along the entire length of the filled hole and extends into the perimeter at least 25 μm, where the perimeter should be present.
B	Height of overlapped copper at least 5 μm	Height of overlapped copper at least 12 μm (Via, blind hole, Burried hole> 2 layers)
C	Height of overlapped copper at least 5 μm	Height of overlapped copper at least 7 μm (Burried sticks 2 layers)
D	Height of overlapped copper at least 5 μm	Height of overlapped copper at least 6 μm (Microvias)
E	20 μm (at the narrowest point 18)	25 μm (at the narrowest point 20)
F	12 μm (at the narrowest point 10) ≤ 250 μm	12 μm (at the narrowest point 10) ≤ 250 μm
G	15 μm (at the narrowest point 13)	15 μm (at the narrowest point 13)

With multiple leading equipments, POE has strong capital to be responsible for customers. These devices not only improve production efficiency, but also ensure the stability and reliability of product quality, allowing customers to have no worries in their cooperation with POE.

3D SPI Machine



3D SPI Machine

A solder paste inspection machine (SPI machine) measures the height, volume, and area on paste deposits. It also computes stencil offsets and finds defects in your PCBs.

This machine can catch defects early in the process, and it can save time and money.

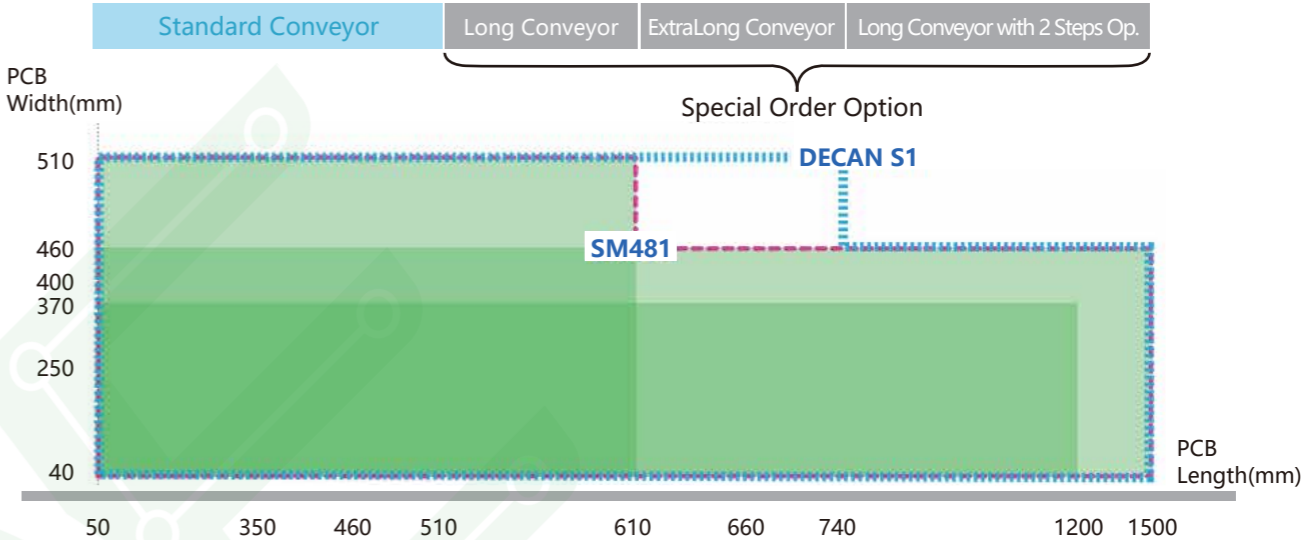
Having the ability to measure the three dimensional aspects of the solder paste on the PCB allows you to find these issues early on so that you can make necessary changes to improve functionality of the PCB, which will reduce your reworks and improve your profits.

技术参数Parameters			
Technology Platform	Type-B/C(Standard TYPE - B/C)	Type-B/C(Dual-track Type-B/C)	(Large platform)
Series	InSPIre / S / F / Hero / Ultra / B / I SERIES		
Model	510B/510C/630/2020	450DL/630DL/2020DL	1200/1500/2000
Measurement Principle	3D white light PSLM PMP(Programmable Spatial Light Modulation, Phase Measurement Profilometry)		
Measurements	volume, acreage, height, XY offset, shape		
Detection of Non-Performing Types	(missing print,insufficient tin, excessive tin, bridging, offset, mal-shapes, surface contamination)		
Lens Resolution	4.5μm/5μm/6μm/8μm/10μm/12μm/15μm/16μm/18μm/20μm		
Accuracy	XY (Resolution): 10μm		
Repeatability	height: ≤1μm (4 Sigma) ;volume/area: <1% (4 Sigma) ;		
Gage R&R	<<10%		
Inspection Speed	0.35sec/FOV-0.5sec/FOV(According to the actual configuration)		
Quantity of Inspection Head	Standard 1, option 2,3		
Mark-point Detection Time	0.3sec/piece		
Maximun Measuring Head	±550μm (±1200μm as option)		
Maximun Measuring Height of PCB Warp	±5mm		
Minimun Pad Spacing	80μm/100μm/150μm/200μm		
Minimum element	01005/03015/008004	01005/03015/008004	0201
Maximun Loading PCB & Detection Size(X*Y)	450x500mm(510B,2020) 470x500mm (510C) 630x686mm(630)	450x310+450x310(450DL,220DL) 630x310+630x310(630DL)	1200x650mm(1200) 1500x500mm(1500) 2000x500 mm(2000)
Conveyor Setup	front orbit (back orbit as option)	1front orbit 2、 3、 4Dynamic Orbit	front orbi _l (back orbit as option)
PCB Transfer Direction	Left to right or Right to left		
Conveyor Width Adjustment	manual & automatic		
SPC/Engineering Statistics	Histogram; Xbar-R Chart; Xbar-S Chart; CP&CPK; %Gage Repartability Data; SPI Daily/Weekly/Monthly Reports		
Gerber & CAD Data Import	support Gerber format (274x, 274d) ,manual Teach model); CAD X/Y, Part No., Package Type input)		
Operating System Support	Windows 10 Professional (64 bit)		
Equipment Diemension and Weight	W1000xD1150xH1530(510B,2020), 965Kg W1000xD1174xH1530(510C), 985Kg W1180xD1330xH1530(630),1160Kg	W1000xD1350xH1530(450DL,2020DL), 1200Kg W1180xD1350xH1530(630DL),1350Kg	W1780xD1450xH1530mm(1200), 1630Kg W2120xD1320xH1530(1500), 1750Kg W2620xD1450xH1530 (2000),2100Kg
Optional	One person controls more machines、 Network SPC (Software only) 、 1D / 2D Barcode scanner, out-line programming software, UPS continuous power supply		

High Speed Pick&Place Machine

Fast & Flexible Mounter
DECAN S1

Max PCB size: 1500mm(L)*460mm(W)



Specifications

Model Name			DECAN s1	
Alignment			Fly Camera + Fix Camera	
The number of spindles			10 spindles x 1 Gantry	
Placement Speed			47,000 CPH (Optimum)	
Placement Accuracy	Chip		±28μm @ Cpk≥ 1.0	
	IC		±35μm @ Cpk≥ 1.0	
Component Range	Fly Camera		03015 ~ □ 16mm	
	Fix Camera		~ □ 42mm (Standard) □ 42mm ~ □ 55mm (MFOV) L55mm ~ L75mm Connector (MFOV)	
	Max. Height		10mm (Fly), 15mm (Fix)	
PCB Size (mm)	Min.		50(L) x 40(W)	
	Max.	Standard	510(L) x 510(W)	
		Option	~ Max. 1,500(L) x 460(W)	
PCB Thickness (mm)			0.38 ~ 4.2	
Feeder Capacity (8mm 基準)		Standard	60ea / 56ea (Fixed feederbase / Docking Cart)	
		Option	120ea / 112ea (Fixed feederbase / Docking Cart)	
Utility	Power		3Phase AC200 / 208 / 220 / 240 / 380 / 415V	
			Max. 3.5kVA	
	Air Consumption		5.0~7.0kgf/cm²	
			50Nℓ/min (真空泵)	
Weight (kg)			Approx. 1,600	
External Dimension (mm)			1,430(L) x 1,740(D) x 1,485(H)	



Nitrogen SMT reflow ovens with 10 temperature zones

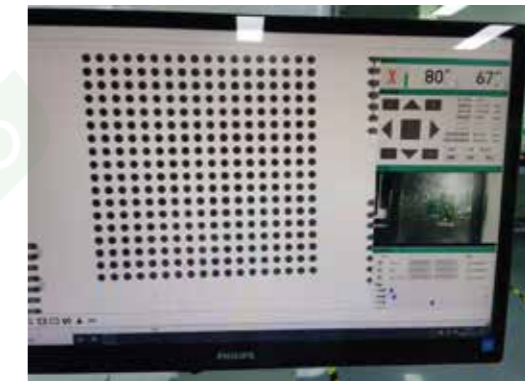


With the increase of assembly density and the appearance of fine spacing assembly technology, Nitrogen filled reflow welding processes and equipment were created to increase the quality and yield of reflow welding.

The main purpose of nitrogen reflow welding is to limit the amount of oxygen in the reflow furnace thereby decreasing the oxidation that is common during this process. This process is mainly used to enhance the weld quality where oxidation can affect the ability of components to adhere to the flux. As the name suggests, this is achieved by filling the reflow chamber with nitrogen during the heating process. This is done by pumping nitrogen into the chamber. Since nitrogen is lighter than oxygen, it forces the oxygen to the bottom of the chamber and reduces the exposure of the reflowing parts to oxygen. which will reduce your reworks and improve your profits.



Passing through the air furnace,
there are white bubbles



The nitrogen furnace is completely
black without any bubbles

Using a nitrogen reflow technique has the following advantages:

- (1) Prevents oxidation in components during heating
- (2) Improves the wetting power of welding and speed up the wetting speed
- (3) Reduces the generation of solder balls, bridging and obtain better welding quality
- (4) Avoid solder balls, bridging and assure best solder joint quality
- (5) 99.99% nitrogen in the reflow oven shines the solder pads and reach the best performance
- (6) Assure stable soldering and speed up the soldering speed
- (7) Prevent oxidation during reflow heating





AOI Machine

AOI test can be applied to detect a lot of surface defects including scratches, nodules, stains, opens, shorts, insufficient or excessive solder, incorrect components, missing components, incorrect polarity of components etc.

Working Principle of AOI Equipment:

AOI equipment takes high-resolution photos of PCBA through an optical system composed of a camera and a light source. These images are transmitted to a computer system for analysis and comparison through image processing algorithms. The AOI system can detect the location, shape, defects, polarity and other information of solder joints, compare the test results with standard images, and identify potential problems.



Advantages of AOI equipment:

- **Automated inspection:** AOI equipment can realize automated inspection on high-speed production lines, replacing traditional manual visual inspection, greatly improving inspection efficiency and accuracy.
- **Improve production efficiency:** Due to the high-speed automatic inspection of AOI equipment, a large number of PCBA inspections can be completed in a short time, effectively improving production efficiency and shortening production cycles.
- **Improve product quality:** AOI equipment can detect minor welding defects, component offsets, polarity errors and other problems, and promptly discover and correct these problems to ensure product quality and stability.
- **Reduce manual errors:** Manual inspection may be affected by visual fatigue and subjective factors, while AOI equipment is not troubled by these problems and can perform inspections more accurately, reducing the possibility of manual errors.
- **Data analysis and traceability:** AOI systems can store inspection results and images to form detailed data reports. These data can be used to improve the production process and trace product quality, helping companies to continuously improve and optimize production processes.

Detectable items:

- **No components:** AOI can detect whether there are missing components on the PCBA, regardless of the PCBA type.
- **Misalignment (detachment):** AOI can detect whether the components are aligned and whether they are detached.
- **Reverse polarity:** AOI can detect whether the polarity of the components is correct and whether there is a reverse polarity.
- **Upright:** AOI can detect whether the components are upright and whether there are problems such as poor welding.
- **Welding fracture:** AOI can detect whether there is welding fracture.
- **Component flip:** AOI can detect whether the components are flipped, that is, there are different features on the top and bottom.
- **Misplaced components:** AOI can detect whether there are different features between components and whether there is misplacement.
- **Less tin:** AOI can detect whether there is less tin.
- **Lifted feet:** AOI can detect whether there is lift.
- **Connected soldering:** AOI can detect connected soldering of 20μm and above.
- **No solder:** AOI can detect whether there is no solder.
- **Excessive tin:** AOI can detect whether there is excessive tin.



X-ray AX-8200 MAX

X-ray inspection for SMT assembly

To use x-ray light machine to detect the quality of welding especially for products have BGA, FBGA, QFN, or small parts like 0201 package. As AOI can not see through to detect the bottom of the solder ball welding, while x-ray see through to detect whether its false welding, empty welding and other issues. Also PCBA used for such as Automotive electronics, avionics, high precision medical electronics and other high-end industries will have X-ray testing demand.





FAI Machine

FAI refers First Article Inspection, it allows simple inspection of the first board, which is particularly important for volume production.

First article inspection can fulfill the process validation requirement of a quality management system such as ISO9001 : 2015.

Fast Speed

High Precision

Efficient

Easy Management



High inspection efficiency

The JCX-830 intelligent first piece inspection system is a new solution for reducing manpower and increasing efficiency in the SMT first piece confirmation process. By integrating BOM, CAD, and drawing to automatically generate inspection programs, the system quickly and accurately checks each component one by one and automatically determines the results. With this system, only one person needs to operate independently, reducing inspection time by more than 50%. More importantly, it reduces human errors, improves the accuracy and traceability of first piece inspection, and ensures the quality of production.

True reflection of measured values

Using the customer's original BOM and CAD files, directly importing them into the system, generating a testing program to ensure the absolute accuracy of the first piece inspection data.

The data read by LCR is automatically recorded in the system and can generate reports, which are displayed intuitively and cannot be manually modified.

The operation is very simple

During the inspection, the operator holds a probe in one hand for measurement, and the system automatically records the data, requiring only one person to operate (while traditional complex circuit boards usually require two people to cooperate). Practice has proven that using the JCX-830 first board inspection system can improve work efficiency by about 50%, greatly saving valuable time for SMT.

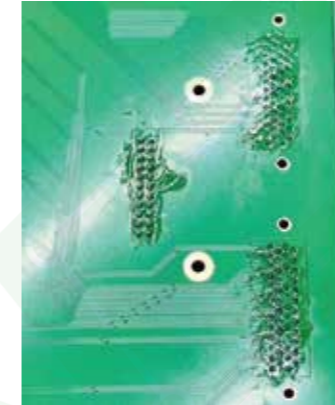
The machine controls all SMD components up to 0201 and traditional THT components. Fault coverage includes the verification of the component presence, the polarity, the XY shift and rotation, the reading of the marking, the errors of re-occurrence and package color variations. Any modification of sizing, rotation, polarity and positioning can be adjusted using the appropriate fields in the CAD conversion file. The file conversion tool is compatible with most CAD and SMT machines. The error reports for each board can be viewed, printed, saved or emailed to customers for quick prototype reviews.

The file conversion tool is compatible with most CAD and SMT machines.

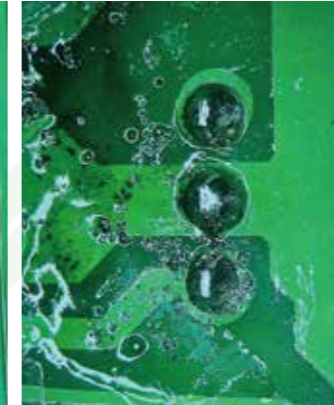
Dry ice cleaning Machine

Dry ice cleaning machine is an efficient and environmentally friendly cleaning equipment.

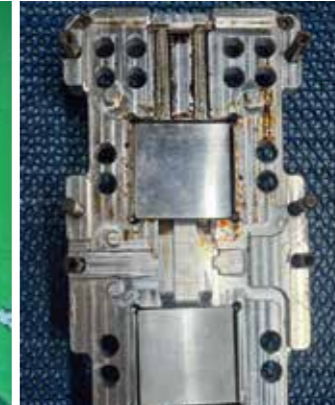
TM-128



Flux cleaning



Tin slag cleaning



Fixture cleaning



Burr cleaning

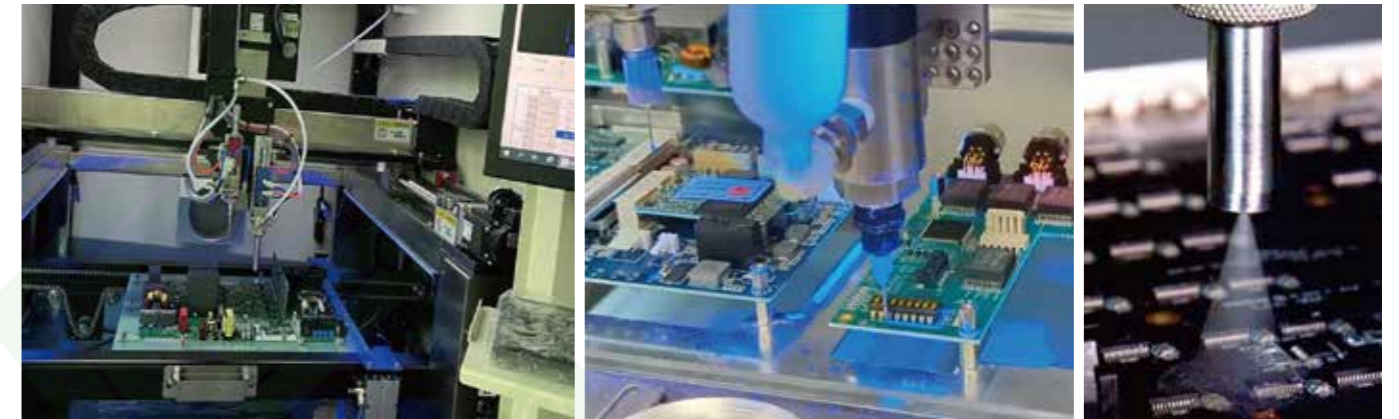
Dry ice cleaning has the following advantages:

- (1) Can quickly remove dirt in a short time, improve cleaning efficiency.
- (2) Dry ice will evaporate completely during the cleaning process without any residue, avoiding secondary cleaning.
- (3) Dry ice is a renewable resource, does not produce any pollutants, can be used repeatedly, and meets environmental protection requirements.
- (4) Dry ice cleaning uses solid dry ice (solid carbon dioxide). Due to the low-temperature characteristics of dry ice, it can easily remove dirt and impurities on the circuit board without causing any damage or corrosion to the circuit board itself and components.
- (5) The dry ice plate washer can accurately control the cleaning temperature and time, and the cleaning effect is stable and reliable.

In contrast, dry ice cleaning PCBA has the advantages of high efficiency, safety, stability, environmental protection and reusability, and can effectively improve the quality and reliability of PCBA.

Conformal Coating Machine

A PCB conformal coating machine is used to apply conformal coatings onto a PCB to protect the board and its components from corrosion and environmental contaminants.



A PCB conformal coating machine is used to apply conformal coatings onto a PCB to protect the board and its components from corrosion and environmental contaminants.

Conformal coating is a lightweight material applied to PCBs that acts as a protective layer. It protects circuit boards and components against various environmental factors, including heat, humidity, moisture, ultraviolet light, chemical contaminants, and abrasive materials. Conformal coatings also have thermal and electrical insulation properties to help manage your circuit's operating characteristics.

The key benefit of applying a conformal coating is that the protection will extend your circuit board's life and reduce component failure rates due to environmental factors. This protection consequently improves the reliability of your device, reducing costs associated with replacing hardware that has prematurely failed.



06 You may care about

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.

1. Mechanical tasks like enclosure milling and mounting
2. Solving testing issues
3. Quality guaranteed services
4. Precision BGA Mounting Technology
5. Expedited service
6. After sales service

1. Mechanical tasks like enclosure milling and mounting.

POE also provide special service including enclosure milling, and mounting to meet customer demand.

POE always adheres to the principle of customer first, not only striving for excellence in routine business, but also actively expanding into special service areas. Among them, shell milling and installation services are particularly noteworthy. POE has advanced milling equipment and an experienced technical team that can accurately mill shells of various materials and shapes, ensuring that every detail meets high quality requirements. In the installation process, POE professionals rely on their superb skills and rigorous work attitude to provide customers with efficient and reliable installation services. Whether it's complex industrial equipment casings or exquisite electronic product casings, POE can meet customers' diverse needs with its excellent service and create greater value for them.



Before



After





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2. Solving testing issues

Many customer want to know how good are POE electronic engineers? We have received many newly designed orders, are we capable of solving the issue which may happen no matter on design or manufacturing ?



POE has senior engineer team over longest 15 years experiences, they focus on the raw material quality control, Process, functional testing, quality issues analyse etc.

Circuit board testing is a very important part of the electronic product development process. It mainly tests the function, reliability and stability of the circuit board, Electrical performance testing, Software testing. Through testing, the quality stability and reliability of electronic products can be guaranteed, and the competitiveness of electronic products can be improved more effectively.

3. Quality guaranteed services:

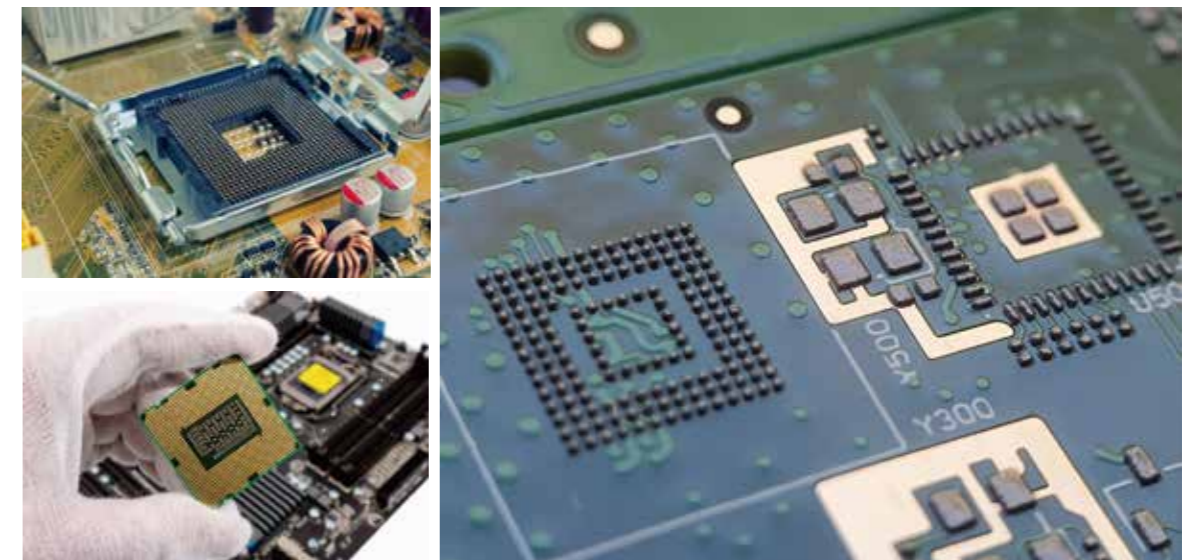
Follow the ISO9001: 2015 Quality system, we strengthen raw material quality control all the time, optimize production processes, strengthen inspection and testing, establish a quality traceability system, strengthen employee training and conduct regular internal audits to strictly control quality and improve product quality and customer satisfaction.



In addition, POE certified with ISO13485 : 2016, ISO14001: 2015 to meet customer various demands.

4. Precision BGA Mounting Technology

In order to ensure the process quality and reliability of BGA assembly, POE control the soldering temperature and time strictly , select appropriate solder paste and pads design, ensure the flatness of the PCB boards, and strengthen quality control and testing. Of course, all of these need to be based on high precision SMT equipment, POE have such capability.



5. Expedited service



Expedite service for PCB

PCB layer	Regular Lead time	Expedite service
1-2 Layer	5 Days	24 hour
4 Layer	6 Days	48 hour
6 Layer	7 Days	48 hour
8 Layer	8 Days	72 hour
10 Layer	9 Days	72 hour
12 Layer	10 Days	96 hour
14 Layer	12 Days	7 Days
16 Layer	13 Days	8 Days
18 Layer	14 Days	10 Days



*Note:

- Working days only.
- Shipping time is not included.
- Expedite service is valid only for PCB without blind&buried hole,no special layerstack,resin plugging or other special specification need extra process.

Expedite service for PCB-Assembled

Extreme service is 7working days, please send Gerber&BOM to check in advance.

6. After sales service

How do we deal with customer complaint?

1. Customer describe the issue while testing,also provide images or videos will be better.
2. Our engineer analyse and if needed,will discuss with customer engineer by building up group chat of video meeting so as to find possible reason cause the issue.
3. Offer satisfying solution to customer.



Dear Sayid, thank you for your pleasure to work with you, we're pleased with quality consistency and good support from you to me. I will communicate this to my company. Thank you. Have a nice day.

Hello Jessie,
I hope that you have had a pleasant holiday!
Yes, we received them in Tuesday because Monday was also holiday here.
It was a nice surprise that you could make the X4 board as well.
All X4 boards display function are tested one by one and all of them works properly.
Thanks once again for a grate service!
I owe you a present next time I ship components to you:)

Best regards
Artin

Dear Joy,
Any final decision could take more than 2 weeks.
But let me inform you that you have a very competitive price, so please be patient. For sure I'll keep you posted.
Have a good week!

Hi Emma,
I have received the shipment and will start testing the PCBs tomorrow. The packaging is perfect, thank You.

Best regards
Dan

Hi Tan,
Yes, we received package, and all was good.
Everything works great, so far. We will create second revision and will order a bigger batch. Thanks for your work and pleasure to cooperate with you.

Hi Carlo,
I have good news. The PCB's passed all of our tests. We can continue with the assembly of all the PCB's we ordered.

Dear Abbie,
To let you know that we are happy with the boards. They work well and the finish is very good.



THEY SAID “

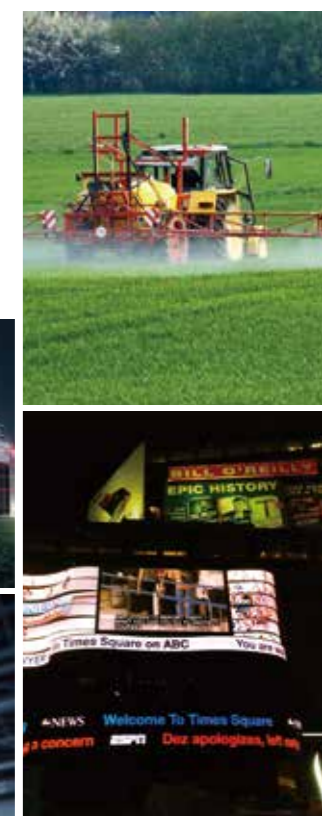
Massive word-of-mouth and genuine feedback

07 Industries POE serve

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.

- Automation PCBA
- Hi-Tech Agricultural PCBA
- Aerospace PCBA
- Security system PCBA
- LED Lighting PCBA

With over ten years development and experiences, we've gained global top customers' recognition and made great achievement in the market. Our products are widely applied in various fields, including Automation, Hi-Tech Agricultural, LED Lighting, Aerospace and Security system etc. There is no end on POE developing road. Every successful project is not only the core of harvesting, but also the start where we surpass ourselves. We are the pioneer to many impossibilities, and we are the creator to many possibilities. Because of concentration and persistence, we are convinced that a walker is boundless.





PCBA FOR AUTOMATION

Automation PCBA

The following are some typical application areas of Automation PCBA:

Industrial automation control: In industrial control systems such as production lines, assembly lines, robots, PLCs (Programmable Logic Controllers), Automation PCBAs serve as the core control unit responsible for handling control logic, data acquisition, motion control and process monitoring to realize the automation of the production process.

Smart home system: PCBA in smart home is used to control lighting, security, temperature control, entertainment and other systems, interacting with user devices through wireless communication technology (e.g. Wi-Fi, Zigbee, Bluetooth) to realize remote control and intelligent scene linkage.

Intelligent instrumentation and measurement equipment: In the power, water treatment, environmental monitoring and other industries, Automation PCBA integrates precision sensors and data processing units for real-time monitoring and recording of key parameters, supporting remote monitoring and data analysis.

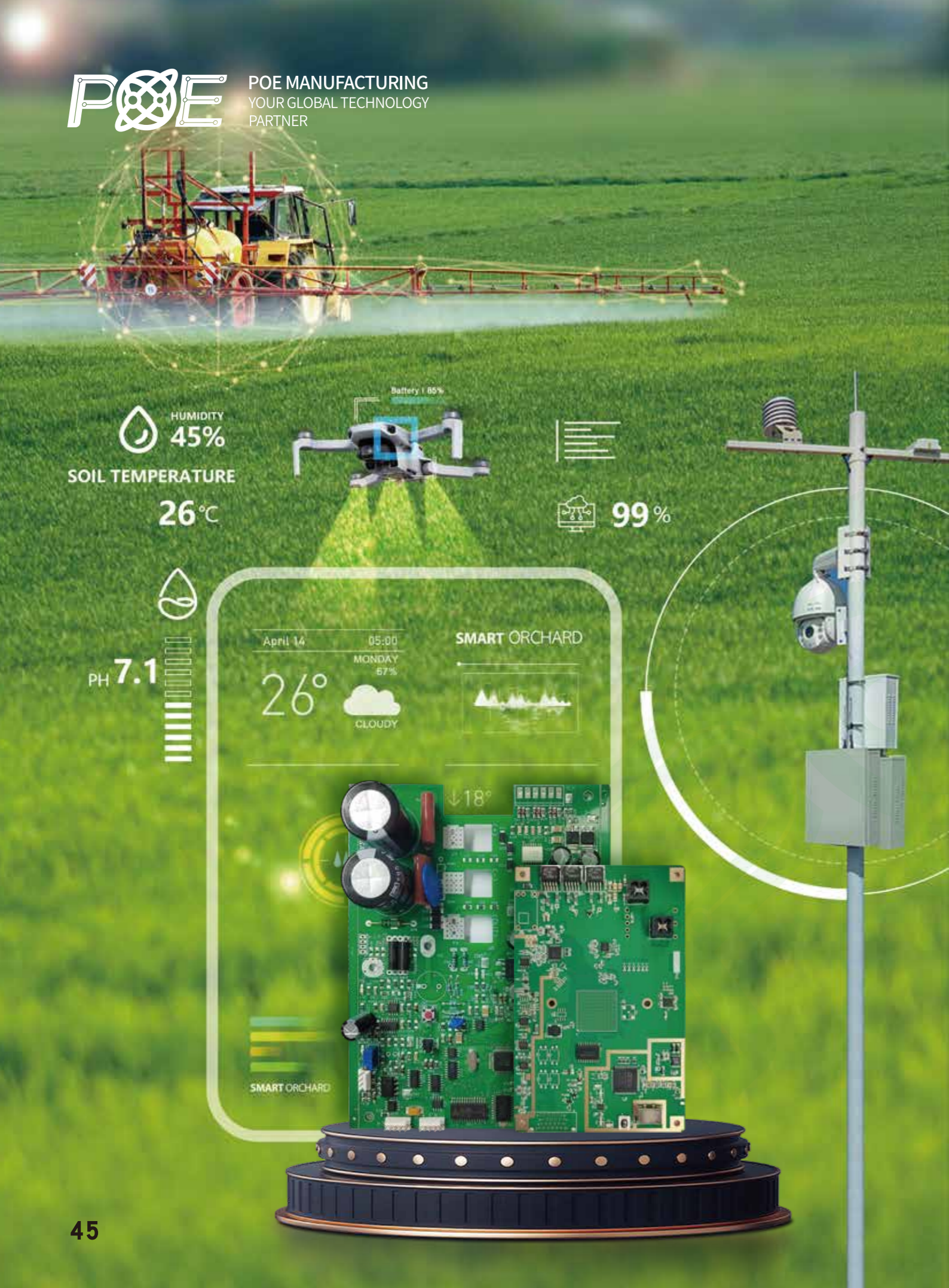
Automatic driving and intelligent transportation systems: Vehicles in the ADAS and the future of the autonomous driving system relies on highly complex PCBA to deal with sensor data, path planning, vehicle control and other tasks, at the same time, traffic signal control, monitoring systems are also widely used in this kind of PCBA in order to enhance the efficiency of traffic and safety.

Drones and robots: Drones and a variety of service robots in the PCBA is responsible for flight control, navigation, image processing, obstacle avoidance and other functions, is the core of these devices can operate autonomously.

Agricultural automation: Intelligent irrigation systems and crop monitoring equipment used in modern agriculture rely on Automation PCBAs to collect environmental data, perform precision agricultural operations, and improve agricultural production efficiency and sustainability.

Security monitoring system: Video surveillance, intrusion alarm, access control and other security systems in the PCBA, integrated video processing, face recognition, behavioral analysis and other functions, to achieve intelligent security protection.





Hi-Tech Agricultural PCBAs

Hi-Tech Agricultural PCBAs, applied to high-tech agriculture, are an important part of developing smart and precision agriculture. These PCBAs integrate advanced sensor technology, microprocessors, wireless communication modules, and other electronic components, providing powerful technical support for realizing agricultural automation and intelligent management.

- Sensor Technology
- GPS and GIS Technology
- Automated Machinery
- Drones and UAVs
- IoT (Internet of Things) Devices
- Automated Irrigation Systems



Key factors in production of high-tech Agricultural PCBs:

Materials selection: Characteristics of high temperature resistance, moisture, corrosion, such as the use of FR-4 high-grade board.

Surface treatment: Gold plating, Lead Free HASL or Electroless nickel immersion gold, can enhance the PCB's corrosion resistance.

Environmental Adaptation: Considering that the agricultural equipment may be exposed to the outdoors, the circuit board and its package should reach a high level of protection (e.g. IP65 and above) to prevent the intrusion of moisture and dust and prolong the service life. Meanwhile, we can also provide waterproof gluing service, which can effectively extend the life of the equipment.



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PCBA FOR AEROSPACE

Production strength and scope, as well as case studies



Aerospace PCBA

Aerospace PCBAs, or printed circuit board assemblies for aerospace applications, are designed for extreme environments and high reliability requirements. These types of PCBAs play a vital role in the aerospace industry, ensuring the safety, reliability and efficient operation of aircraft. The following are some specific application examples of Aerospace PCBAs:



Flight control systems: PCBAs integrate complex circuits for processing data from various sensors (e.g. gyroscopes, accelerometers, altimeters) to control the attitude, navigation and stabilization systems of an aircraft or spacecraft.

Engine control: The engine management of spacecraft and aircraft relies on highly accurate electronic control units (ECUs), which consist of PCBAs that monitor engine performance, fuel injection, thrust control, and so on.

Communications and Navigation Systems: These include satellite communications, GPS navigation, radio and data link systems, all of which require PCBAs to process signals, perform coding and decoding.

Environmental monitoring and life support systems: environmental control systems and life support systems within the spacecraft, such as oxygen supply, temperature and humidity control, all rely on PCBAs for real-time monitoring and regulation.

Test and Diagnostic Equipment: During the development, assembly and maintenance phases of the vehicle, PCBAs in various test and diagnostic tools are used for data analysis, troubleshooting and performance evaluation.

Monitoring and Data Recording: In the black box (flight data recorder and cockpit voice recorder) and other data recording systems, PCBA is responsible for collecting and storing important data in flight for accident investigation and performance analysis.

Aerospace electronics: Electronic systems on satellites, rockets and space stations, including power management, altitude control, scientific experiment devices, etc., require special PCBAs that are radiation-resistant and resistant to high or low temperatures.

Due to the rigors of the aerospace environment, Aerospace PCBAs are often required to undergo stringent testing and certification to ensure that they can function properly under extreme temperature changes, vibration, radiation, barometric pressure changes, and other conditions. In addition, these PCBAs are often constructed with high-quality materials, reinforced designs, and redundant systems to increase their reliability and durability.



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Security

POE Security PCBA

Printed Circuit Board Assemblies
for security applications

POE Security PCBA

Security PCBAs, or Printed Circuit Board Assemblies for security applications, are the core electronic components that make up a variety of security systems and devices. These PCBAs integrate cryptographic processors, sensors, communication modules, and proprietary security algorithms to provide security for homes, commercial establishments, government agencies, and critical infrastructure. The following are some typical application areas for Security PCBAs:



Access control system : Including smart door locks, biometric readers (fingerprints, facial recognition), magnetic card/RFID readers, etc. PCBA is responsible for identity verification, rights management, and access records.

Video surveillance system: PCBA inside the HD camera handles image capture, encoding, transmission, and storage, and supports intelligent analysis functions such as motion detection, face recognition, and abnormal behavior recognition.

Intrusion alarm system: Used for home and business security, the PCBA controls the sensor network (door and window magnets, infrared detectors, vibration sensors, etc.) to notify the user or the security center as soon as the alarm is triggered.

Fire alarm and emergency evacuation system: PCBA monitors the status of smoke detectors and heat detectors, responds quickly to fire signals, activates sirens, and controls evacuation lights to guide people to safe evacuation.

Network security equipment: Such as firewalls, secure routers, encryption gateways, etc., whose PCBA performs functions such as network traffic monitoring, packet filtering, malware protection, and encrypted communication.

Asset tracking and protection: Security labels and tracking devices for valuables or important documents, with built-in PCBAs to locate and monitor the status of items via GPS, Bluetooth, or RFID technology.

Smart home security: PCBAs integrated into smart doorbells, security cameras, smart lighting, and automation control systems provide security and convenience functions such as remote monitoring, voice control, and scenario linkage.

ATM and financial security: PCBAs for banks and self-service terminals implement transaction processing, encrypted communications, anti-fraud detection, and physical security controls.

Security is a primary consideration in the design and manufacture of Security PCBAs, including hardware-level encryption, tamper-proof design, and resistance to physical attacks. In addition, stringent certification standards such as FCC, CE, and UL are required to ensure product compliance in the global marketplace. Software updates and firmware upgrade mechanisms are also critical to maintain the long-term stability and security of the system.

Applications of LED PCBA



Applications of LED PCBA

Lighting industry: This is the most widely used field of LED PCBA, covering home lighting, commercial lighting, industrial lighting, street lighting, as well as landscape lighting and so on.



Display technology: Including indoor and outdoor LED display, TV walls, billboards, stadiums, large screens, etc.

Automotive lighting: Inside and outside the car lighting system, such as headlights, taillights, interior ambient lighting, etc.

Backlighting applications: Electronic display devices such as cell phones, tablet PCs, laptops, LCD TVs, etc.

Signs and signaling systems: Including traffic signals, emergency exit signs, aviation runway lights, etc. LED PCBAs are the most ideal choice because of their high brightness and long life.

Medical equipment: Surgical lights, microscope lighting, medical testing instruments, etc.



08 POE Events

Wanfeng circuit (HK) Co.,Ltd. / Shenzhen wanfeng technology Co.,Ltd.



POE EVENTS
2024 04.01-06.30



POE Quarterly Summary Conference

Thoroughly review the work of the previous quarter, summarize lessons learned, clarify the direction and goals for the next quarter, and continuously optimize POE's customer service to enhance customer experience and value.



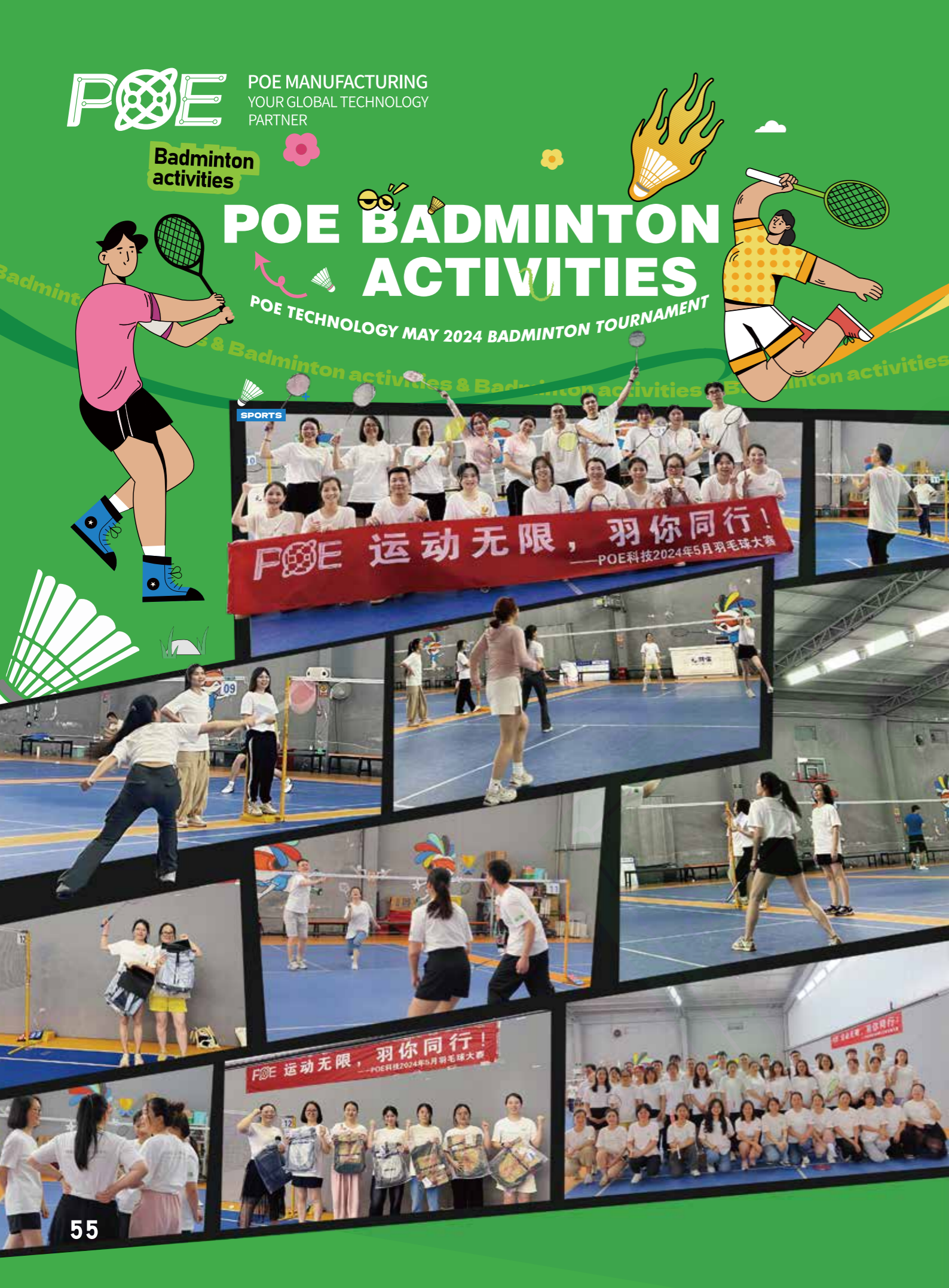


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Badminton
activities

POE BADMINTON ACTIVITIES

POE TECHNOLOGY MAY 2024 BADMINTON TOURNAMENT



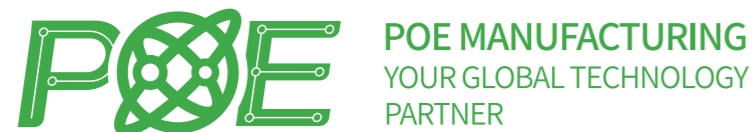
Hello! Happy birthday!

Birthday Party Celebration!

Everyone's birthday is worth remember and celebrate!
It was a day filled with happiness, laughter, and wonderful memories. Let's take a moment to reflect on the highlights of our fantastic celebration.

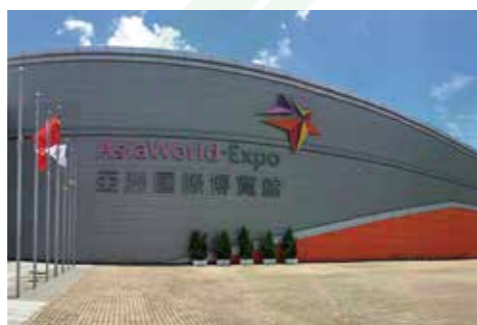
A big thank you to everyone who made efforts for the company. Your presence and enthusiasm make all the difference.

Happy Birthday!



POE 2024 (April to June) EXHIBITION SHOWCASE

POE will regularly participate in some PCB international exhibitions and introduce our current technology and innovations to new and old customers, as well as global advanced solutions in related fields. We are always trying to improve our service quality to meet clients' requirements to the fullest.



**APEX
EXPO**
IPC 2024
25TH ANNIVERSARY

MARCH 15-20
MEETINGS + COURSES
MARCH 18-20
CONFERENCE + EXHIBITION
ANAHEIM CONVENTION CENTER / CA

global sources

Consumer Electronics



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EXHIBITION



electronica
ELECTRONICA 2024
EXHIBITION SHOW IN GERMANY

2024 ▸ **11.12**
11.15

New Munich Exhibition
and Trade Center

Welcome customers
to visit our exhibition
show in Germany

EXHIBITION