



2023

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Office:
Room501-502, Fude life Insurance building, Fuzhong 1st Road, Lianhua street, Futian district, SZ 518034
Factory:
Floor 3, Jinyuan Industrial Park, No.56 Tanglou Avenue, Shiyantown, Bao'an, SZ

WEB1: www.poe-pcba.com
WEB2: www.chinapcbasm.com
WEB3: www.pcbasmake.com

E-mail: sales@poe-pcba.com
E-mail: orders@pcbasmake.com
E-mail: sales@chinapcbasm.com

1-40 LAYER
One Stop Contract Manufacturing Facility

Nov-Dec

智领全球
电子核心
科技

WISDOM LEADS GLOBAL
ELECTRONIC CORE TECHNOLOGY

OEM Services for
PCB and PCBAs
Since 1996

CATALOGUE

GENERAL MANAGER SPEECH

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

Mr Hu Jiwei
General Manager



01 Company Profile

02 PCB Fabrication

03 PCB Production Equipment

04 POE Culture

05 New PCBA Products

Company Profile

At POE, we strive to provide the most satisfied production service and to be your long term "Partner Of your Electronics", your global technology partner. With over 200 diverse, talented and dedicated employees across 5 locations in 4 countries, our vision is to be the most technologically advanced and trusted one stop contract manufacturing solutions provider. We combine an unmatched breadth and depth of end-market experience, technical and design capabilities, manufacturing know-how, supply chain insights and global product management expertise to enable success for the world's leading brands. We are driven by a common purpose to make a positive impact for each other, our communities, and the environment. POE Manufacturing, your global technology partner.



Manufacture

POE do one stop contract manufacturing by making things with global scale and unremitting quality is anything but simple. We do 1-40layer PCB manufacturing, PCB assembly, components sourcing, program , testing, cable assembly, SMT stencil, Carton box, plastic and mental case packaging, 3D case, glue coating and final products ICT test . Managing 700,000+ parts across more than 200 suppliers provides us with key insights into commodity trends, strategies and shortages, so we can mitigate risk for your products. Whether your product requires low-mix/low-volume or high-mix/high-volume manufacturing, we've got those — and everything in between — covered. We make end-to-end product development possible, from hardware to software.



DESIGN

With technology evolving at light speed, time is our most precious commodity. To meet changing needs and new challenges, you need to be able to prototype, test and scale solutions fast. Thanks to our design expertise across numerous industries — including consumer electronics, healthcare, retail, energy and industrial — we can transform blue-sky ideas into practical reality. We bring decades of experience in cutting-edge technologies to reinvent design in every form: for manufacturing, automated assembly, products, additive manufacturing and mechanical engineering.



DELIVER

In pursuing our vision to be the most technologically advanced and trusted manufacturing solutions provider, we deliver speed-to-market, scale, innovative solutions, high-quality products and excellent customer service — all with an eye on building strong relationships, improving efficiencies and helping you reach your most ambitious goals. This is our promise to you. Our China SMT and PCB facilities plus our total supply chain orchestration solutions deliver end-to-end visibility, instant responses and immediate availability in changing conditions. Supply chain and logistics resilience is the delivered result. All of these add up to one, much bigger result: Value. At the end of the day, we measure our success by our ability to deliver unmatched value to all our customers.



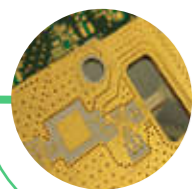
PCB Fabrication

In business since 1996, POE has established itself as a well-known Turn-Key PCB assembly company for prototype low-to-mid volume and large batch PCB fabrication and assembly services.



Our PCB manufacturing capabilities enable us to produce a wide range of products, including HDI PCB, Multilayer PCB, High-tech PCB, Thick Copper PCB, Halogen free PCB as standard options, and more special PCB such as Flexible, Flex-Rigid PCB, and High Frequency PCB. Our scope of PCB products range from Rigid PCB (up to 40layers), Flex PCB (up to 8layers) to Rigid-flex PCB (up to 8layers.)

Different materials for PCBs



Rogers



Aluminum



Ferrum



FR4



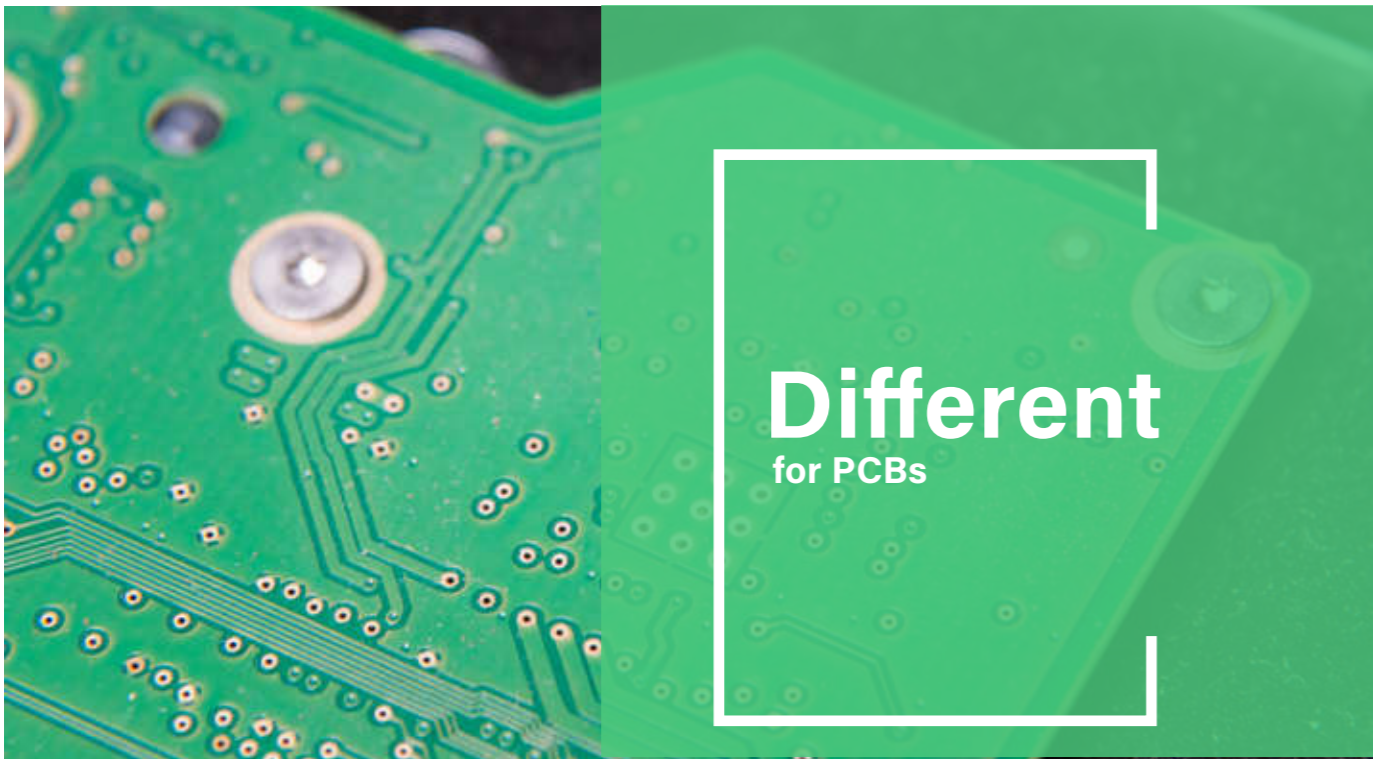
Polyimide Flex

2.1 Multilayer PCB

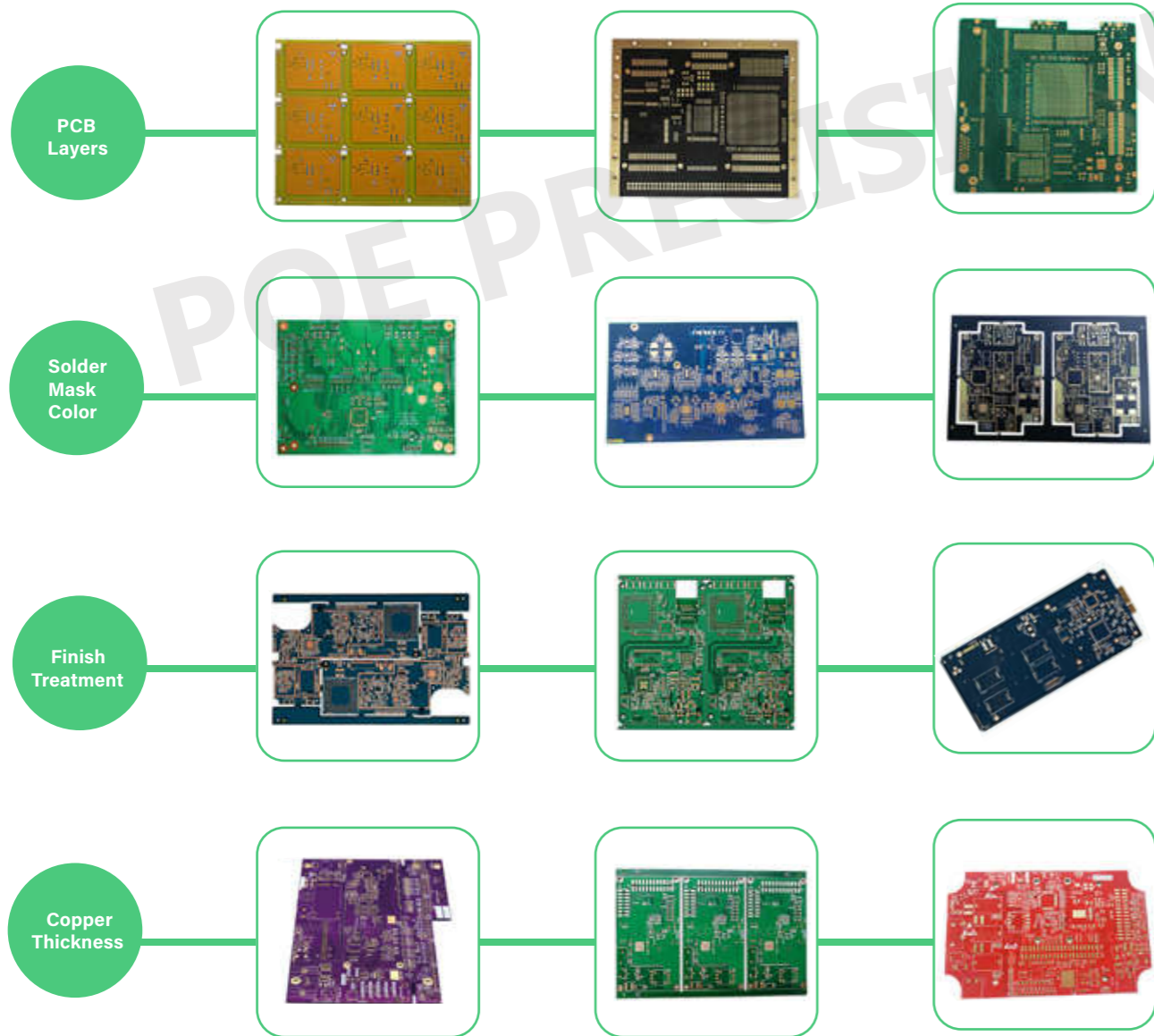
Multilayer PCB are circuit boards composed of two or more conductive layers (copper layers) superimposed on each other. Generally, the requirements for the structure design and process production of multilayer electric boards are very high, and the higher the number of layers, the more difficult it is, and it is suitable for use in more complex circuits. POE can produce PCB from single layer to 40layers. Also we are able to produce multilayer PCB with different solder mask colors, finish treatment, copper thickness and special technical requirements.

Check POE PCB manufacturing capabilities in the following table:

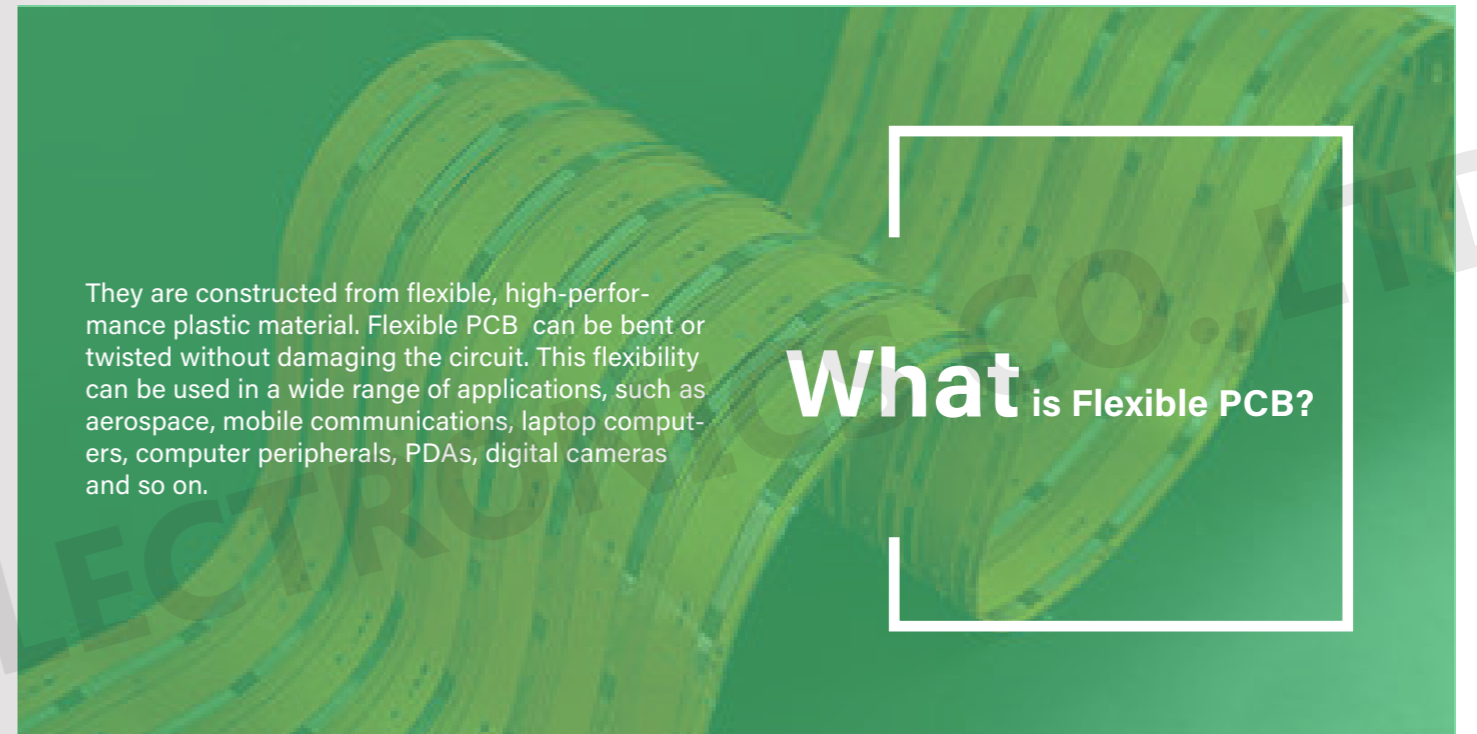
Feature	Capability
Min. Line Width	0.076mm/3mil
Min. Hole Size	0.15mm(mechanical) 0.1mm(laser drilling)
Min. Line Spacing	0.076mm/3mil
Copper Thickness	1oz---13oz
Base Material	Aluminum, FR4, Flex, Flex-rigid, HDI, Rogers,
Board Thickness	0.2mm~7.0mm
Surface Finishing	HASL with lead, HASL Lead-free, Immersion Gold, OSP, Hard Gold
Finish Copper	1-13oz
Solder Mask	Green, Red, Yellow, Blue, White, Black, Purple, Matte Black, Matte green
Silkscreen	White, Black
Testing	Fly Probe Testing (Free) and A.O.I. testing
Build time	24 hours
Layer	1-40layers



Different
for PCBs



2.2 Flexible PCB



What is Flexible PCB?

They are constructed from flexible, high-performance plastic material. Flexible PCB can be bent or twisted without damaging the circuit. This flexibility can be used in a wide range of applications, such as aerospace, mobile communications, laptop computers, computer peripherals, PDAs, digital cameras and so on.

Flexible Layer stack up example

FPC 0.5OZ
Layer Stack-up Information



FPC 10 OZ
Layer Stack-up Information



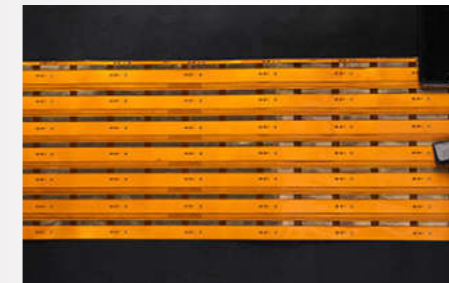
0.5OZ Layer Stack-up	Layer	Thickness (um)
	PI Coverlay	25
	Coverlay Adhesive	25
	Base Copper	18
	Polyimide	25



Flexible PCB Production Capacity :

Item	Regular	Special Capability
Layer	1-6L	Above 8L
Max. Array Size	500*600mm	250*1500mm
Min.board Size	1*1mm	---
Max.Board thickness	0.23mm	0.4mm
Min Board thickness	0.075mm	0.065mm
Max Drill bit	6.5mm	---
Min Drill bit	0.15mm	0.1mm
Routing tolerance	± 0.2mm	± 0.15mm
Min Base Copper	1/3 OZ	1/4 OZ
Max Base copper	2 OZ	4 OZ
Min Coverlay Thickness	1mil(PI 0.5mil+ Ad 0.5mil)	---
Max Coverlay thickness	2.0mil(PI 1mil+ Ad 1.0 mil)	---
Hole Position Deviation(hole-hole)	± 0.05mm	---
Hole Tolerance(PTH)	± 0.07mm	---
Hole Tolerance(NPTH)	± 0.05mm	---

Flexible PCB and Application Display



2.3 Rigid-Flex PCB

Rigid-flex PCB is a special flexible printed circuit board composed of rigid and flexible substrates selectively laminated together, with a tight structure and electrical connections formed by metallized holes. It has the characteristics of high density, thin wire, small aperture, small size, light weight and high reliability, and its performance is still very stable under vibration, shock and wet environment. Flex-rigid pcb, with effective use of installation space, is widely used in mobile phones, digital cameras, digital video cameras and other portable digital products.

What is Rigid-flex PCB?

Layer	Stack Up			Layer Stack			
	Rigid Stack1	Flex_Stack	Rigid Stack2	Name	Material	Thickness	Constant
1				Top Paste			
2				Top Overlay			
3				Top Solder	Solder		
4				Flex_Stack Top Coverlay	FC-001	0.47mil	4
5				Top Layer	Copper	2.76mil	
6				Dielectric 1	FR-4	12.60mil	4.8
7				GND	Copper	1.38mil	
8				Dielectric 2	PP-006	12.60mil	4.1
9				3.3V	Copper	1.38mil	
10				Dielectric 3	PP-006	6.73mil	4.1
11				Senses	Copper	1.38mil	
12				Dielectric 5	PP-006	11.81mil	4.1
13				1.8V	Copper	1.38mil	
14				Dielectric 6	PP-006	6.73mil	4.1
15				Bottom Layer	Copper	2.76mil	
16				Flex_Stack Bottom Coverlay	FC-001	0.47mil	4
17				Bottom Solder	Solder		
18				Bottom Overlay	Resist	0.39mil	3.5
19				Bottom Paste			
Height :		62.28mil	Height :	2.32mil	Height :	40.20mil	

Flex-rigid PCB Layer stack up example

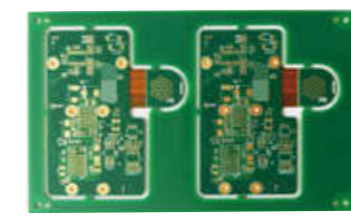
STACK UP	硬板	软板	硬板	PCB (UM)	FPC (UM)
阻焊 (曝光黑油)	SM			20	20
铜层	PLA TIN G			18	18
黄色覆盖膜	AD			13	13
双面软板	CU	ED		15	15
电铸基材 (L1/L2)	PI			18	18
黄色覆盖膜	AD			18	18
不流动PP	PP3			15	15
铜层	CU			13	13
硬板 (L3/L4)	FR4			80	80
铜层	CU			18	18
阻焊 (曝光黑油)	SM			12	1265
总厚度	TOT AL			65	142

Layer	PCB	FPC
L1 (0.016)	Prepreg	Prepreg
L2 (0.016)	Fluxing Epoxy	Fluxing Epoxy
L3 (0.016)	Prepreg	Prepreg
PP		
PP		
L4 (0.016)	Prepreg	Prepreg
L5 (0.016)	Fluxing Epoxy	Fluxing Epoxy
L6 (0.016)	Prepreg	Prepreg
L7 (0.016)	Prepreg	Prepreg
L8 (0.016)	Prepreg	Prepreg
L9 (0.016)	Prepreg	Prepreg
L10 (0.016)	Prepreg	Prepreg
L11 (0.016)	Prepreg	Prepreg
L12 (0.016)	Prepreg	Prepreg
L13 (0.016)	Prepreg	Prepreg
L14 (0.016)	Prepreg	Prepreg
L15 (0.016)	Prepreg	Prepreg
L16 (0.016)	Prepreg	Prepreg
L17 (0.016)	Prepreg	Prepreg
L18 (0.016)	Prepreg	Prepreg
L19 (0.016)	Prepreg	Prepreg
L20 (0.016)	Prepreg	Prepreg
L21 (0.016)	Prepreg	Prepreg
L22 (0.016)	Prepreg	Prepreg
L23 (0.016)	Prepreg	Prepreg
L24 (0.016)	Prepreg	Prepreg
L25 (0.016)	Prepreg	Prepreg
L26 (0.016)	Prepreg	Prepreg
L27 (0.016)	Prepreg	Prepreg
L28 (0.016)	Prepreg	Prepreg
L29 (0.016)	Prepreg	Prepreg
L30 (0.016)	Prepreg	Prepreg
L31 (0.016)	Prepreg	Prepreg
L32 (0.016)	Prepreg	Prepreg
L33 (0.016)	Prepreg	Prepreg
L34 (0.016)	Prepreg	Prepreg
L35 (0.016)	Prepreg	Prepreg
L36 (0.016)	Prepreg	Prepreg
L37 (0.016)	Prepreg	Prepreg
L38 (0.016)	Prepreg	Prepreg
L39 (0.016)	Prepreg	Prepreg
L40 (0.016)	Prepreg	Prepreg
L41 (0.016)	Prepreg	Prepreg
L42 (0.016)	Prepreg	Prepreg
L43 (0.016)	Prepreg	Prepreg
L44 (0.016)	Prepreg	Prepreg
L45 (0.016)	Prepreg	Prepreg
L46 (0.016)	Prepreg	Prepreg
L47 (0.016)	Prepreg	Prepreg
L48 (0.016)	Prepreg	Prepreg
L49 (0.016)	Prepreg	Prepreg
L50 (0.016)	Prepreg	Prepreg

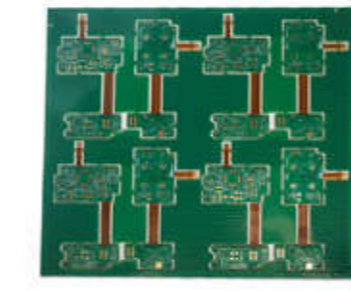
Rigid-flex PCB and Application Display



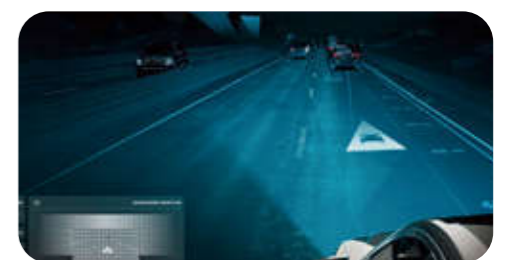
These circuit boards are combination of Rigid and Flexible boards. They are implemented in lighting systems.



POE PCB is used in a variety of aviation equipment including planes, space shuttles, satellites, and radio communications systems.



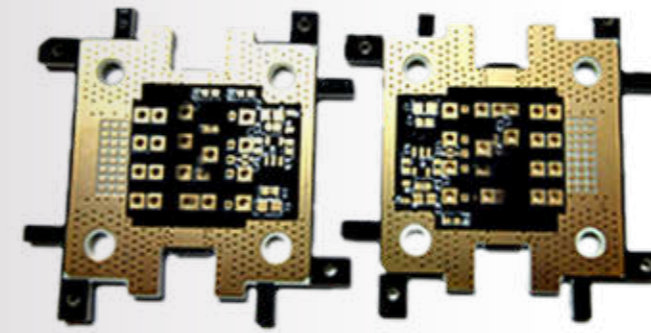
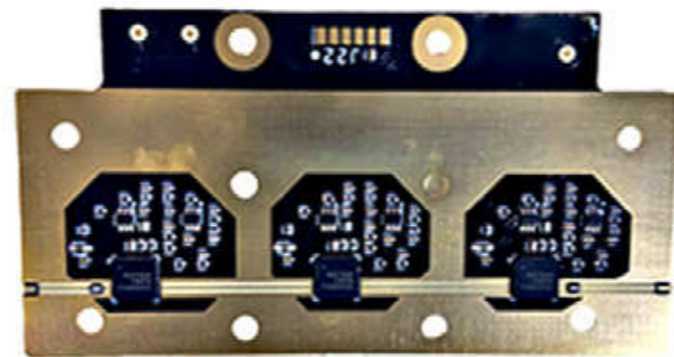
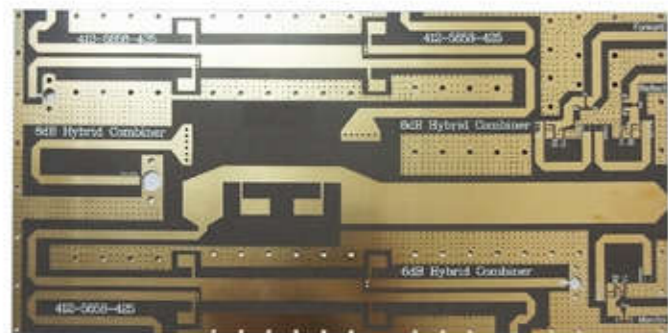
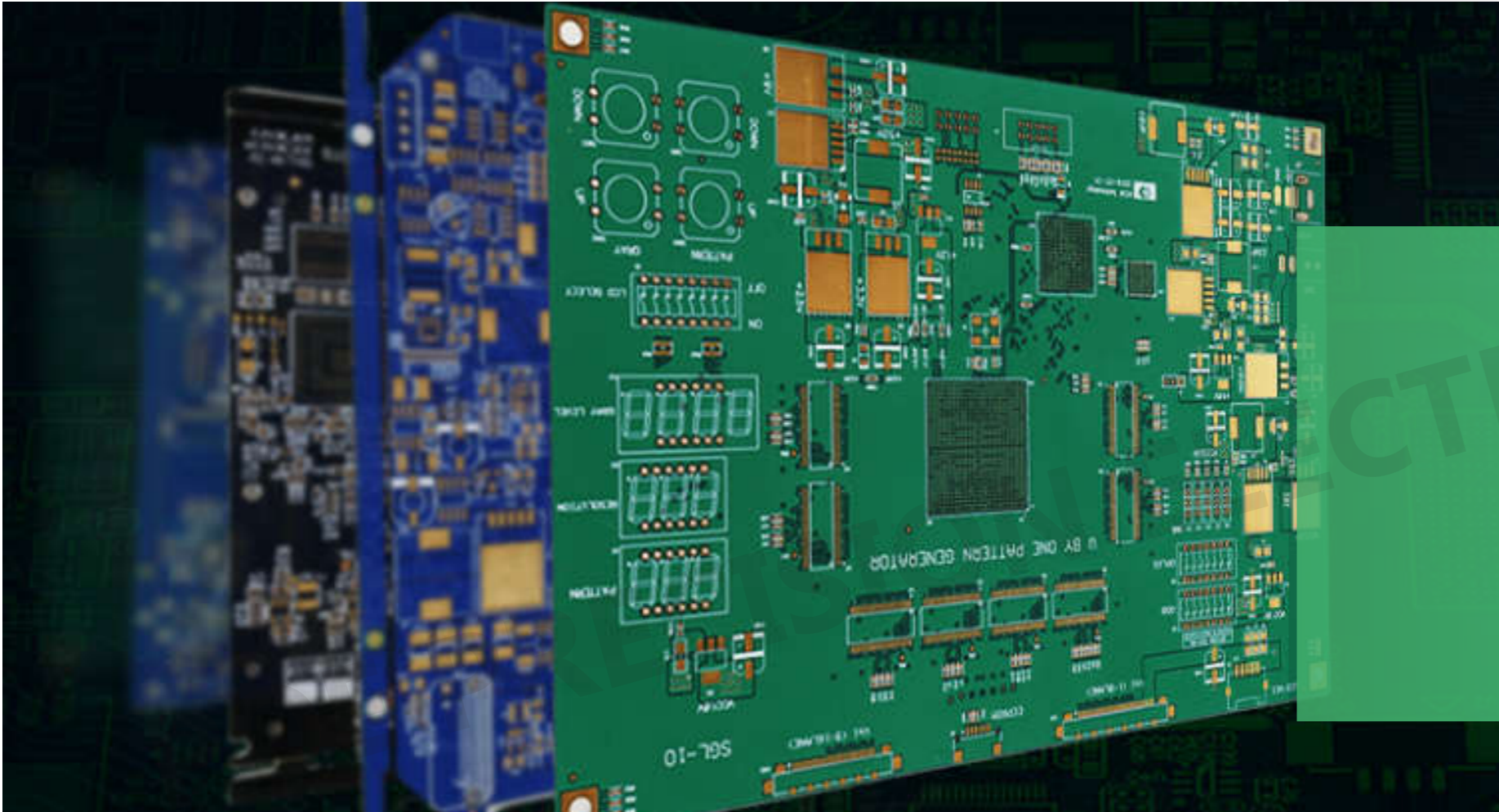
Rigid and flexible boards are usually implemented in light systems LED lighting, medical device, communication, aviation, industrial control, automobile and so on.



2.4 High Frequency PCB

A high frequency PCB is a special type of PCB with high electromagnetic frequencies. Generally speaking, a high frequency PCB can be defined as a PCB with a frequency above 1GHz. The substrate material needs to have excellent electrical properties, good chemical stability, and with the increase of the power signal frequency, the loss on the substrate is very small, so the importance of high frequency PCB is highlighted. High-frequency PCB circuit boards with induction heating technology have been widely used in the communication industry, network technology field promotion and high-speed information processing systems, meeting the requirements of many high-precision parameter instruments.

What is High Frequency PCB?



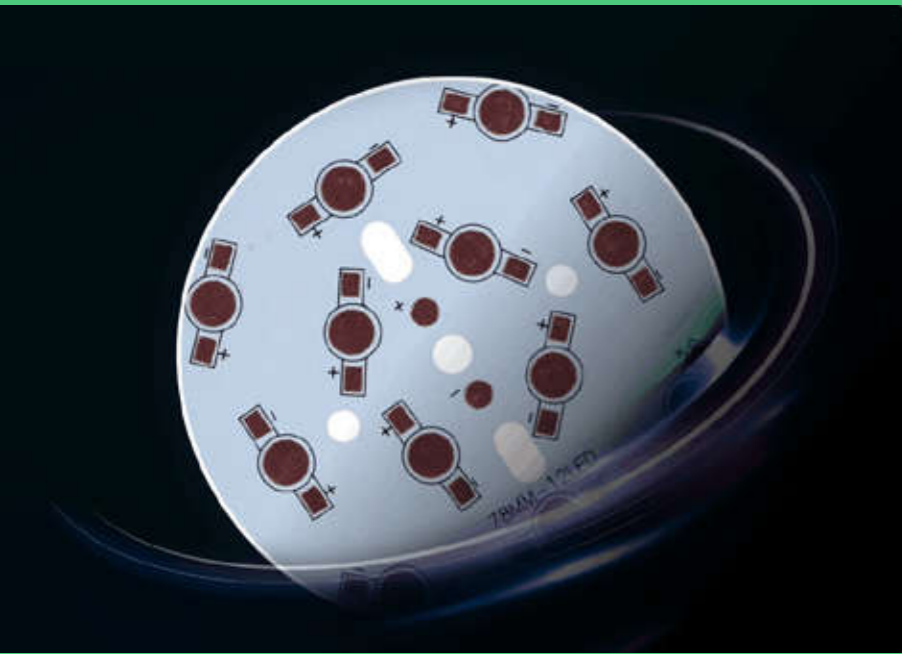
PRODUCT SHOW



2.5 Aluminum PCB

The aluminum PCB is a metal based copper clad laminate with good thermal conductivity, electrical insulation properties and mechanical processing properties. Generally, it is a single-sided panel consists of three-layer structure, which are circuit layer (copper foil), insulating layer and metal base layer. And it is widely used in televisions, radios, computers, mobile communications, LED lighting and other products.

What is Aluminum PCB?



Aluminum PCBs - Technical specification

Feature	Technical specification
Number of layers	1 - 4 layers standard
Technology highlights	Aluminum plates and high heat -conducting insulating materials, high thermal conductivity, can be used as 8 layer hybrid aluminum substrate
Solder mask	Green, red, yellow, blue, white, black, purple, matte black,matte green
Aluminum	Standard, high performance, halogen free
Copper weights (finished)	0.5 OZ - 10.0 OZ
Minimum track and gap	0.075mm / 0.075mm
Finish copper weight	1-10 OZ
Maximum dimensions	610mm X 450mm; dependent upon laser dilling machine
Surface finishes available	OSP, ENIG, Immersion tin, immersion silver, gold fingers
PCB board thickness	0.4-3.2mm
Via process	Tenting vias, plugged vias, vias not covered

Aluminum PCB Display



PCB Equipments



Drilling Machine



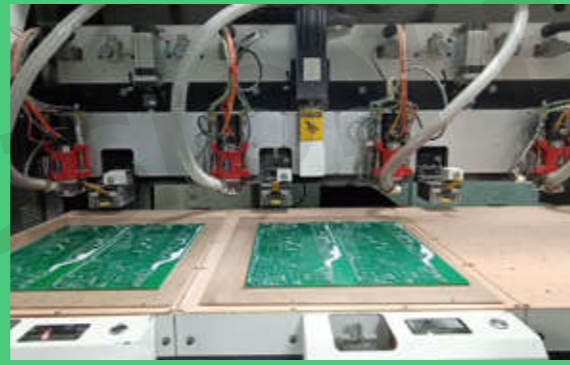
PTH Plated



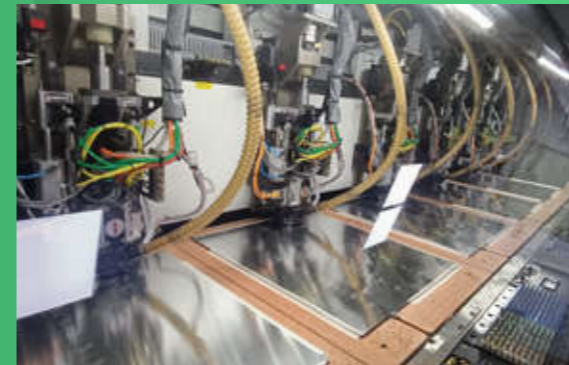
Circuit Etching



CNC Outline



CNC Outline



Drilling



Drilling



LDI



Sink Copper

POE Culture



POE's Travel of the Year 2023

In the melodious folk melody, we set foot on a long journey about the land of abundance. Chengdu, it is a city with a beautiful story, it uses the warmest rhythm, let us enjoy the scenery of this holiday. POE has found a unique charm in every corner of the city. Let's explore this vibrant city and immerse our hearts in this poetic land.





Merry Christmas!

POE organized Christmas activity from festive to fun, from exciting to relaxing.

In order to let everyone feel a strong holiday atmosphere, POE team carefully prepared a variety of Christmas theme decoration. Every detail of the lovely Christmas tree, flashing lights, exquisite Santa Claus, snowman ornaments and so on is full of festive joy and warmth. These decorations not only let the friends feel the warmth and happiness of home, but also show the intentions and enthusiasm of the POE team.



Birthday

Party

Happy Birthday! POE Grows Together with You!
POE monthly birthday party coming again.

Through this activity, employees' sense of belonging and identification with the company has been greatly enhanced, thereby maintaining a better work attitude and growing and developing together with the company.



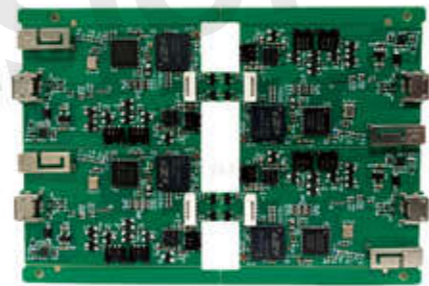
New PCBA Products

With Imported State-of-the-Art fully automatic production machines and our professional international sales team, purchasing team and engineering team, we are able to offer our customers low-cost and one-stop PCB Assembly Services.

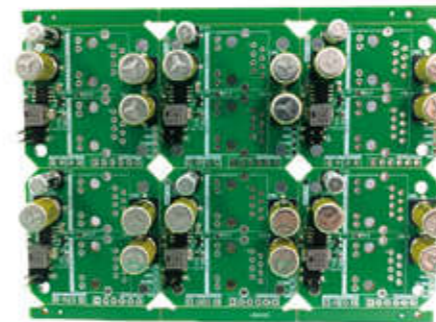
P&E



P&E



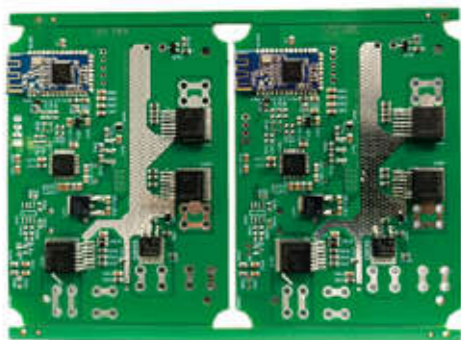
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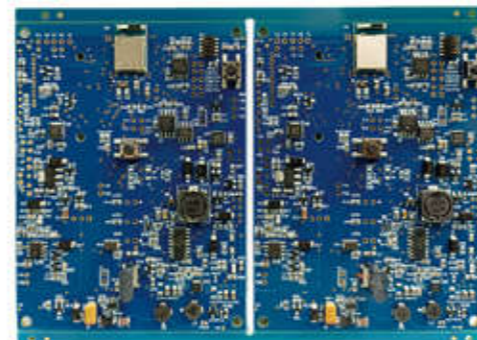
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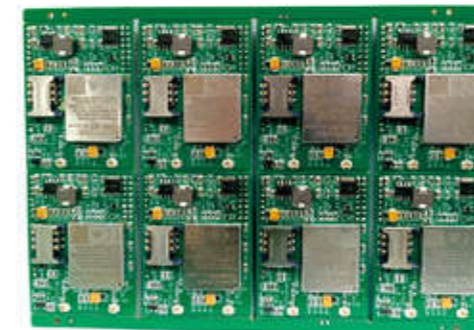
P&E



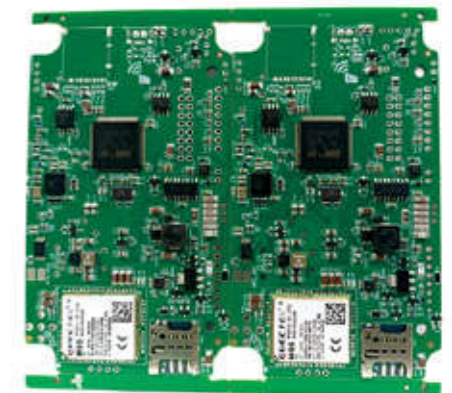
P&E



P&E



P&E



Product Application

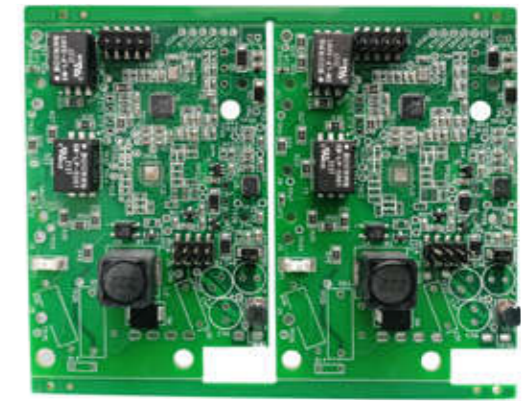
8 Layer PCB
Finish Treatment: ENIG
Material: FR4 TG150
Copper Thickness: 1OZ
Board Thickness: 2MM
Silkscreen: White
Soldermask: Green



Application:
Computer Montherboard



8 Layer PCB
Finish Treatment: ENIG
Material: FR4 TG150
Copper Thickness: 1OZ
Board Thickness: 2MM
Silkscreen: White
Soldermask: Green

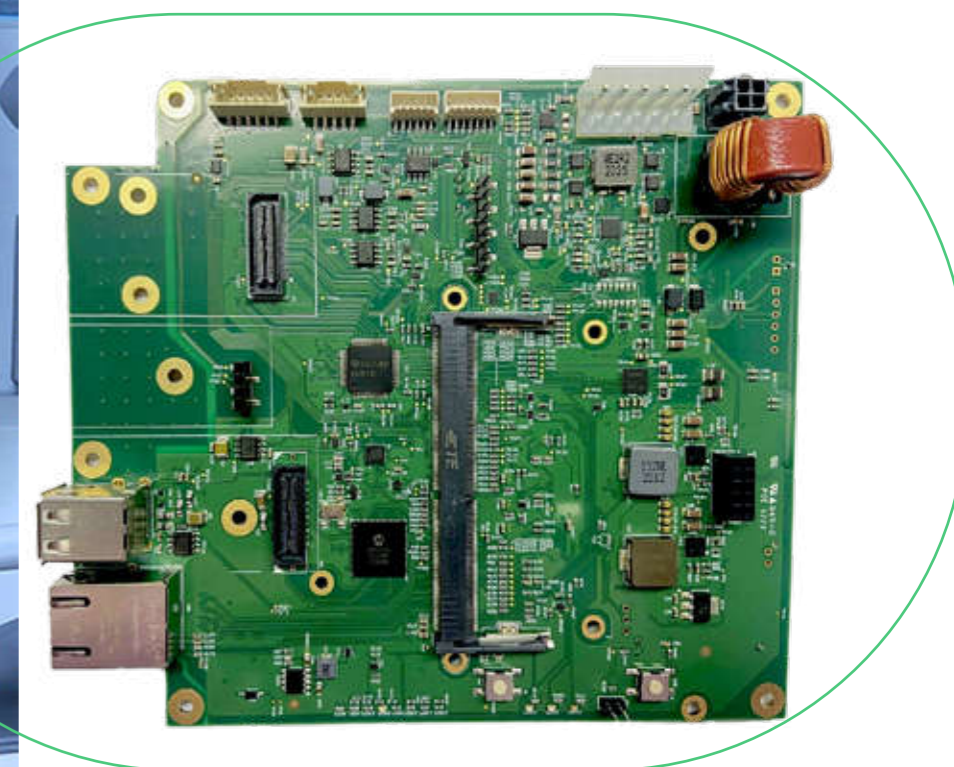


Application:
Wireless Irrigation Controller

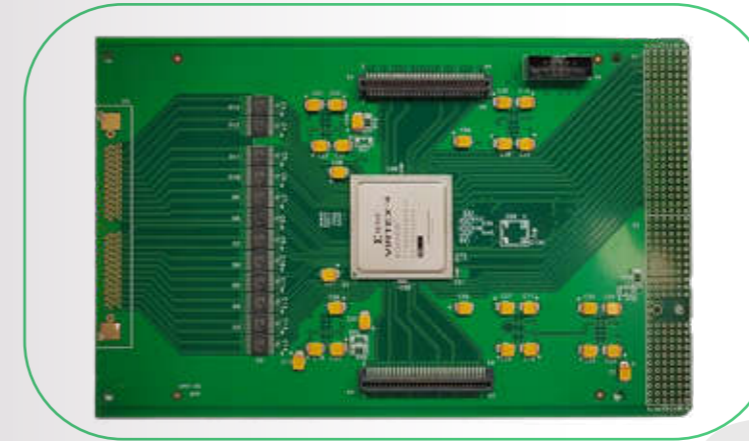




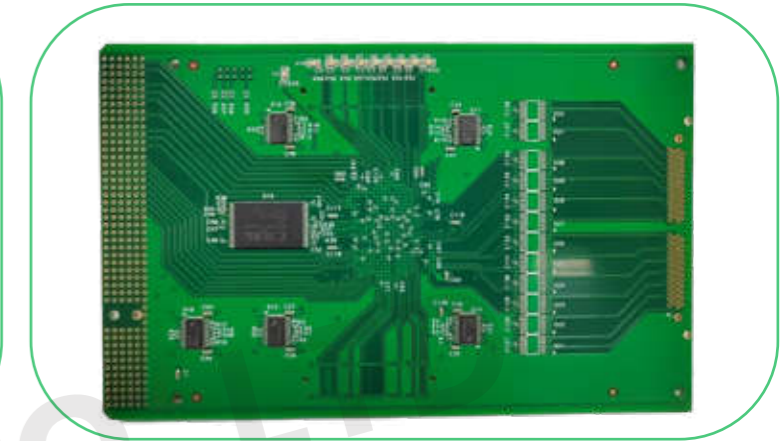
8 Layer PCB
Finish Treatment: ENIG
Material: FR4
Components on Both Side
Board Thickness: 1.6MM
Silkscreen: White
Soldermask: Green



Application:
Medical Equipment



1



2

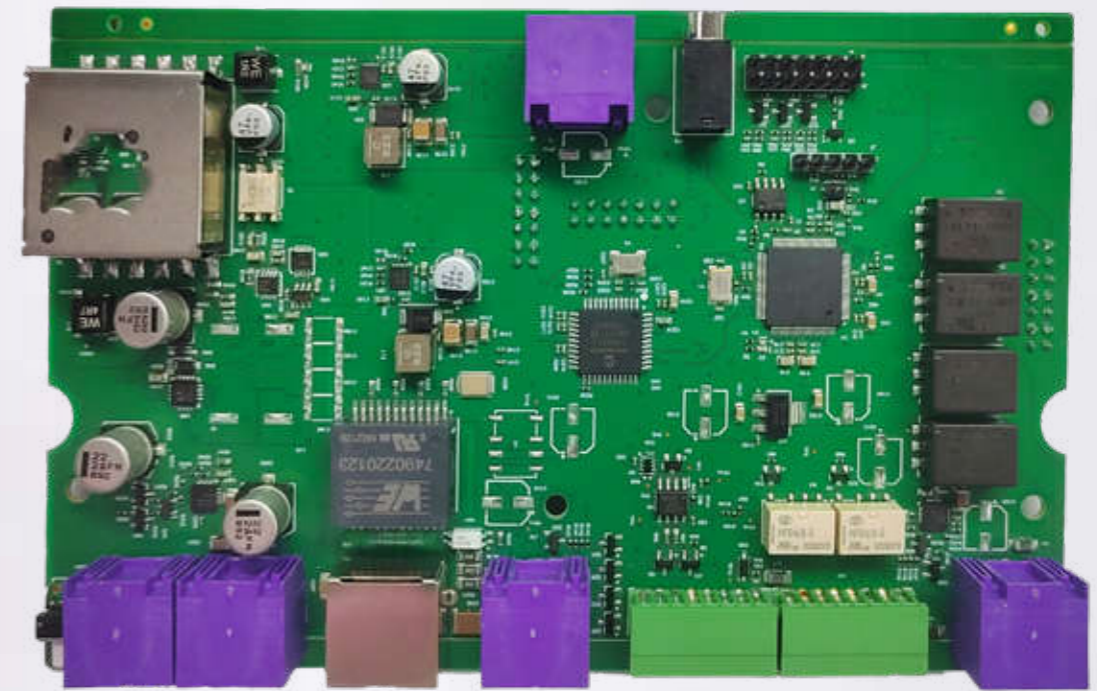
Application:
Signal Detection System

18 Layer PCB
Material: FR4 TG140
Copper Thickness: 1OZ
Board Thickness: 2MM
Silkscreen: White
Soldermask: Green



4Layer PCB
Material: FR4 TG140
Copper Thickness: 1OZ
Silkscreen: White
Soldermask: Green

Application:
Education Equipment



8 Layer PCB
Material: FR4
Finish Treatment: ENIG
Copper Thickness: 1OZ
Board Thickness: 1.6MM

Application:
Medical Equipment





4 Layer PCB
Finish Treatment: ENIG
Material: FR4 TG150
Copper Thickness: 1OZ
Board Thickness: 1.6MM
Silkscreen: White
Soldermask: Green

Application:
Solar Tracker

