Welcome to O-leading

O-Leading strives to be your one stop solution partner <u>Printed circuit boards supplier</u> in EMS supply chain, including PCB design, PCB fabrication and PCB assembly (PCBA), We provide some of the most advanced PCB technology, including HDI PCBs, multilayer PCBs, Rigid-Flexible PCBs. We can support from quick turn prototype to medium & mass Production.

In general, our global customers are very impressed with our services:Rapid response, competitive price and quality commitment.Providing more valuable technical service and overall solution is the way O-leading forward.

Looking to the future, O-leading will concentrate on the innovation and development of electronics manufacturing technology as always, and make persistent efforts on PCB & PCBA one-stop service to provide first-class services and create more value for our customers.

PLEASE CLICK THESE FOR MORE INFORMATION

OEM manufacture Multilayer+PCB Board Printed

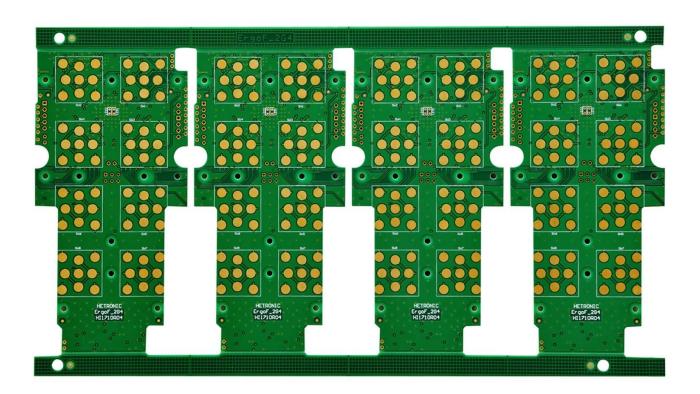
Circuit Boards PCB fabrication



Product Description





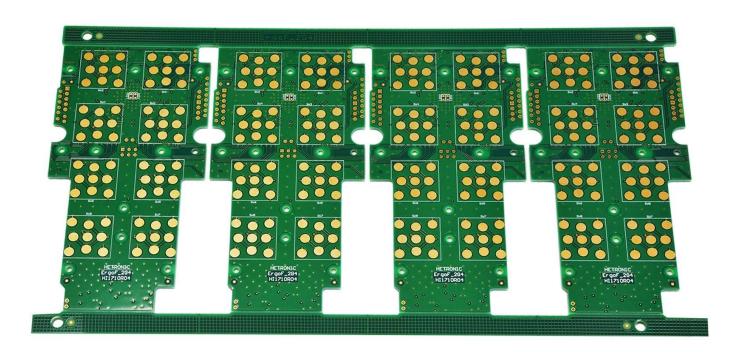


4L PCB WITH HARD GOLD PLATING AU:20U"

MAKE YOUR IDEA COME TRUE





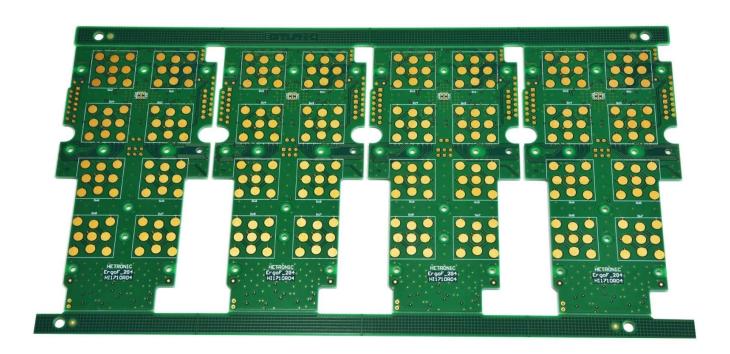


4L PCB WITH HARD GOLD PLATING AU:20U"

MAKE YOUR IDEA COME TRUE



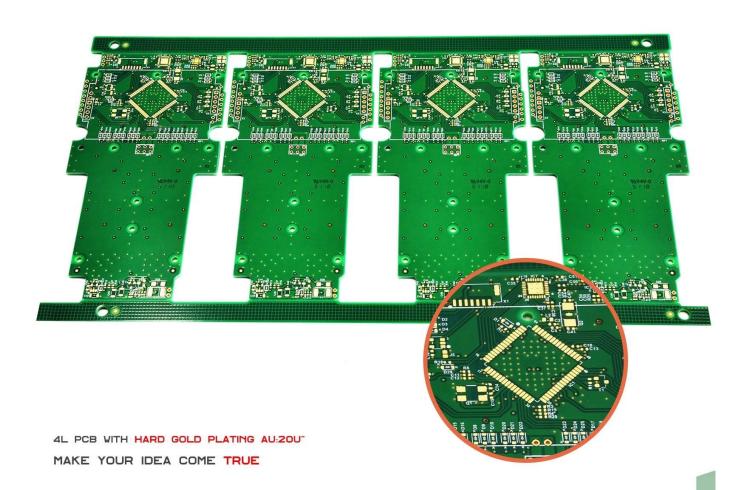




4L PCB WITH HARD GOLD PLATING AU:20U"
MAKE YOUR IDEA COME TRUE

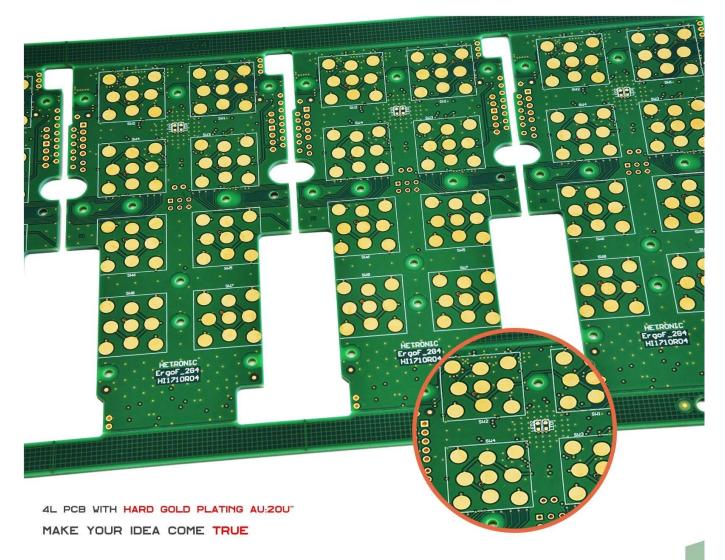






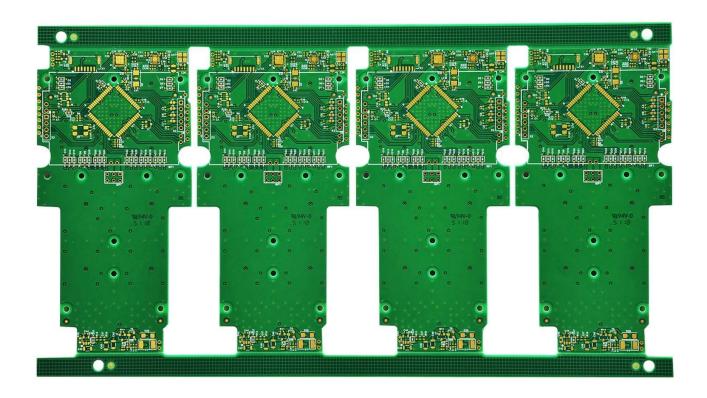








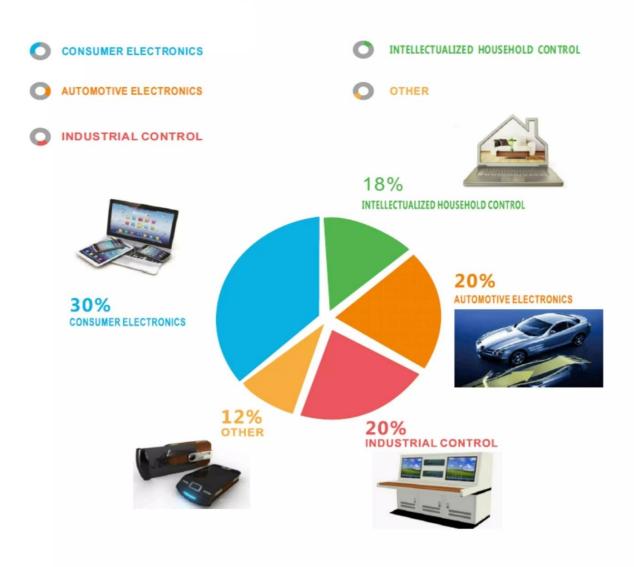




4L PCB WITH HARD GOLD PLATING AU:20U"

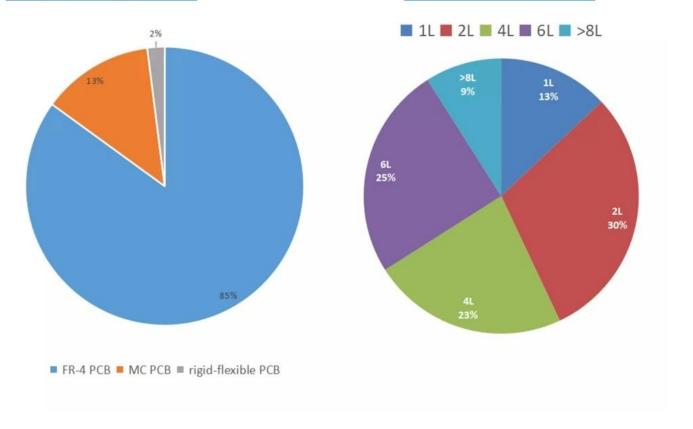
MAKE YOUR IDEA COME TRUE

Market Share



Product types

Product layers



Production Process

18 years experience in one-stop PCB and PCBA, we can make your idea come true,



Our Team



Factory PCB



Automatic vacuum press machine



Drilling Machine



Pattern Plating Machine



Scrubbing Machine



Developing Machine



Routing Machine



High-speed flying probe machine



E-test Machine

Factory SMT













O-LEADING CUSTOMER

To be #ELIABLE

Quality first ,

Customer supreme,

Scientifically management,

Striving for famous brand





THE CUSTOMER IS KING





To be VALUABLE

Science and technology keeps head ,

Put people first,

Be precise and practical,

contribute sincerely





































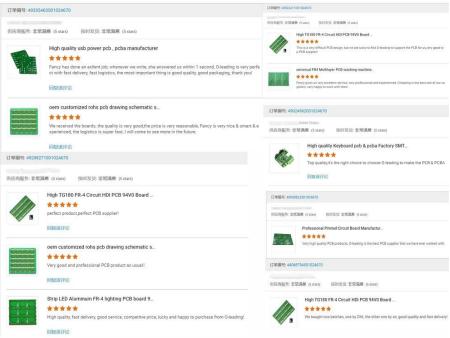


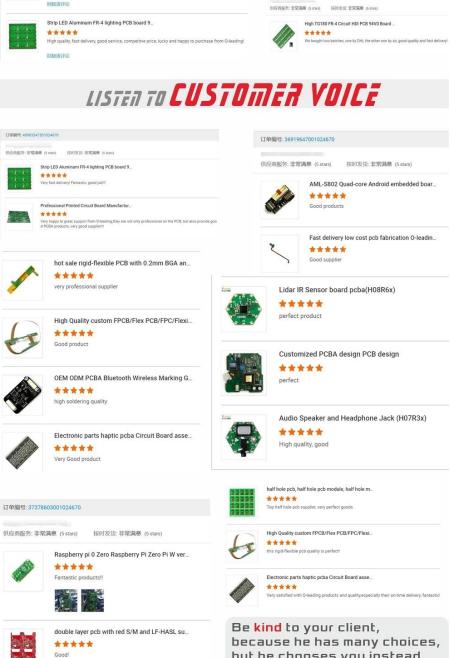




O-LEADING CUSTOMER REVIEW

customea voice is **extremely impoatant** to us





but he chooses you instead.

Certifications







Test Report

O-LEADING SUPPLY CHAIN (HK) CO., LIMITED

No. SZXEC1900530401

1313,FLOOR 13, FORTUNE BUILDING, DANSHUI TOWN, HUIYANG DISTRICT, HUIZHOU, GUANGDONG, CHINA

Date: 30 Mar 2019 Page 1 of 6

Test Report No. SZXEC1900530401 Date: 30 Mar 2019 Page 2 of 6

Test Results :

Test Part Description :

 Specimen No.
 SGS Sample ID
 Description

 SN1
 SZX19-005304.001
 Green*PCB**

(1) 1 mg/kg = 1 ppm = 0.0001% (2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC682321-5:2013, IEC62321-7:2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	8
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND
Sum of PBBs	1.000	mg/kg		ND
Monobromobiphenyl		mg/kg	5	ND
Dibromobiphenyl	12	mg/kg	5	ND
Tribromobiphenyl	15	mg/kg	5	ND
Tetrabromobiphenyl		mg/kg	5	ND
Pentabromobiphenyl		mg/kg	5	ND
Hexabromobiphenyl		mg/kg	5	ND
Heptabromobiphenyl		mg/kg	5	ND
Octabromobiphenyl		mg/kg	5	ND
Nonabromobiphenyl	6	mg/kg	5	ND
Decabromobiphenyl		mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg		ND
Monobromodiphenyl ether		mg/kg	5	ND
Dibromodiphenyl ether	12	mg/kg	5	ND
Tribromodiphenyl ether	2	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether		mg/kg	5	ND



in writing, this document is issued by the Company subject to its General Conditions of Service as for accessible at high civere ass convent forms and Conditions again and for electronic ternal doc fishors for Electronic Documents is inter/investage.com/lent ferms end-Conditions[Ferms-e]-Documents missiants of labelity, independentation and jurisdiction insues defined therein, any folder of this docu-

Member of the SGS Group (SGS SA)

The following sample(s) was/were submitted and identified on behalf of the clients as : OSP

SGS Job No. : RP19-005089 - SZ Date of Sample Received : 22 Mar 2019

22 Mar 2019 - 30 Mar 2019 Testing Period :

Test Requested : Selected test(s) as requested by client. Test Method Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion:

Based on the performed tests on submitted sample(s), the results of Lead. Mercury, Cadmium, Hexavalent chiromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBBcs) and Phthalates such as Bis(2-ethylbexyl) phthalate (DBFP). Bibutyl phthalate (DBFP). Tolbutyl phthalate (DBFP), and Diisobutyl phthalate (DBFP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/85/EU.

Signed for and on behalf of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

lina

Tina Fan Approved Signatory



Max

Max

UL Product iQ™



ZPMV2.E490354 - WIRING, PRINTED - COMPONENT

Wiring, Printed - Component

See General Information for Wiring, Printed - Component

Cond Width

O-LEADING SUPPLY CHAIN (HK) CO LTD

E490354

ROOM 1205, 12/F TAI SANG BANK BLDG 130-132 DES VOEUS ROAD CENTRAL, HONG KONG

		Min	Cond	SS/	Area	Solo	der	Oper		Meets	c
	Min	Edge	Thk	DS/	Diam	Lim	its	Temp	Flame	UL796	T
Type	mm(in)	mm(in)	mic(mil)	DSO	mm(in)	c	sec	c	Class	DSR	1
Multilayer (m	Multilayer (mass laminate) printed wiring boards.										
O-LEADING- 401	0.1 (0.004)	0.3 (0.012)	34 (1.34)	DS	12.7 (0.5)	260	10	130	V-0	100	:70
O-LEADING- 407	0.08 (0.003)	0.2 (0.008)	17 (0.67)	DS	9.7 (0.4)	260	10	130	V-0	All	-
Multilayer pri	Multilayer printed wiring boards.										
O-LEADING- 408	0.125 (0.005)	0.125 (0.005)	12 (0.47) Int:136	DS	50.8 (2.0)	280	20	130	V-0	All	*
Single layer p	Single layer printed wiring boards.										
O-LEADING- 002	0.38 (0.015)	1.14 (0.045)	34 (1.34)	SS	19.1 (0.8)	260	10	105	V-0	All	-
O-LEADING- 003	0.38 (0.015)	1.14 (0.045)	34 (1.34)	SS	19.1 (0.8)	260	10	130	V-0	A	128
O-LEADING- 033	0.15 (0.006)	0.3 (0.012)	34 (1.34)	SS	25.4 (1.0)	260	10	120	V-0	All	-
O-LEADING- 205	0.1 (0.004)	0.3 (0.012)	34 (1.34)	DS	69.6 (2.7)	260	10	130	V-0	All	120
O-LEADING- 206	0.15 (0.006)	0.33 (0.013)	17 (0.67)	DS	69.6 (2.7)	260	10	130	V-0	All	==
O-LEADING- D01	0.14 (0.006)	0.15 (0.006)	33 (1.30)	DS	25.4 (1.0)	260	10	130	V-0	All	*
O-LEADING- S01	0.25 (0.010)	0.25 (0.010)	17 (0.67)	SS	25.4 (1.0)	260	4	130	V-0	All	*

WIRING, PRINTED - COMPONENT | UL Product iQ

O-LEADING- S02	0.2 (0.008)	0.2 (0.008)	17 (0.67)	SS	25.4 (1.0)	260	4	130	НВ	A	*
O-LEADING- S03	0.25 (0.010)	0.25 (0.010)	34 (1.34)	SS	25.4 (1.0)	260	4	130	V-0	All	*

 $[\]mbox{\ensuremath{\star}}$ - CTI marking is optional and may be marked on the printed wiring board.

Marking: Company name or file number and type designation. May be followed by a suffix to denote factory identification or burning test classification.

并不是所有出现在本数据库中的公司名称和产品都满足了UL 跟踪检验服务的要求。只有带有 UL 标志的产品,才应该被视为经过UL认证,并满足UL 跟踪检验服务的要求。注意查看产品上的标志。

UL 允许在线认证目录中所含材料的复制遵循以下条件: 1.指南信息、装配、构造、设计、系统和/或认证(文件)必须在不篡攻任何数据(或图纸)的情况下完整且无误导性地呈现。2."经 UL 允许从在线认证目录转载"声明必须出现在所摘取材料的邻近位置。此外,转载材料必须包含以下格式的版权声明:"© 2019 UL LLC"

Process Capability						
PCB Production Capabilities						
Layer Count	1Layer-32Layer					
Finished copper thickness	1/3oz-12oz					
Min Line width/spacing internal	3.0mil/3.0mil					
Min Line width/spacing external	4.0mil/4.0mil					
Max Aspect Ratio	10:1					
Board thickness	0.2mm-5.0mm					
Max Panel size(inches)	635*1500mm					
Minimum Drilled Hole Size	4mil					
Plated Hole Tolerance	+/-3mil					
BIind/Buried Vias (AII Types)	YES					
Via Fill(Conductive,Non-Conductive)	YES					
Base Material	FR-4,FR-4high Tg.Halogen f	ree material,Rogers,Aluminium base,Polyimide,Heavy Copper				
Surface finishes	HASL,OSP,ENIG,HAL-LF,lm	mersion silver,lmmersion Tin,Gold fingers,Carbon ink				
SMT Production Cap	abilities					
PCB Material		FR-4,CEM-1,CEM-3,Aluminum-based board,FPC				
Max PCB size		510x1500mm				
Min PCB size		50x50mm				
PCB Thickness		0.5mm-4.5mm				
Board thickness		0.5-4mm				
Min Components size		0201				
Standard chip size component		0603 and larger				
Component max height		15mm				
Min lead pitch		0.3mm				
Min BGA ball pitch		0.4mm				
Placement precision		+/-0.03mm				

Packaging & Delivery

Shipping service











	Quick Turn Lead Time				
Layer Count:	Lead Tim	Special Requirement			
1L/2L	2-3days	24 Hours,48 Hours			
4L	3-4days	48 Hours			
6L	4-5days	72 Hours			
8L	5-6days	NA			
10L	6-7days	NA			
12L	7-8days	NA			
14L	8-9days	NA			

	Standard Lead Time				
Layer Count:	Sample Lead Time	Volume order lead time			
2L	4 days	10 days			
4L	5 days	11 days			
6L	6 days	12 days			
8L	8 days	14 days			
10L	10 days	16 days			
12L	12 days	18 days			
14L	14 days	20 days			
16-32L	18 days	24 days			

FAQ

1. How do O-Leading ensure quality? Our high quality standard is achieved with the following.

- 1.1 The process is strictly controlled under ISO 9001:2008 standards.
- 1.2 Extensive use of software in managing the production process
- 1.3 State-of-art testing equipments and tools. E.g. Flying Probe, X-ray Inspection, AOI (Automated Optical Inspector) and ICT(in-circuit testing).
- 1.4.Dedicated quality assurance team with failure case analysis process
- 1.5. Continuous staff training and education

2. How do O-Leading keep your price competitive?

Over the last decade, prices of many raw materials (e.g. copper, chemicals) had doubled, tripled or quadrupled; Chinese currency RMB had appreciated 31% over US dollar; And our labor cost also increased significantly.

However, O-Leading have kept our pricing steady. This owns entirely to our innovations in reducing cost, avoiding wastes and improving efficiency. Our prices are very competitive in the industry at the same quality level.

We believe in a win-win partnership with our customers. Our partnership will be mutually beneficial if we can provide you anedgeon cost and quality.

3. What kinds of boards can O-Leading process?

Common FR4, high-TG and halogen-free boards, Rogers, Arlon, Telfon, aluminum/copper-based boards, PI, etc.

4. What data are needed for PCB & PCBA production?

- 4.1 BOM (Bill of Materials) with reference designators: component description, manufacturer's name and part number.
- 4.2 PCB Gerber files.
- 4.3 PCB fabrication drawing and PCBA assembly drawing.
- 4.4 Test procedures.
- 4.5 Any mechanical restrictions such as assembly height requirements.

5. What's the typical process flow for multi-layer PCB?

Material cutting → Inner dry film → inner etching → Inner AOI → Multi-bond → Layer stack up Pressing → Drilling → PTH → Panel Plating → Outer Dry Film → Pattern Plating → Outer etching → Outer AOI → Solder Mask → Component Mark → Surface finish → Routing → E/T → Visual Inspection.

6. What's the key equipments for HDI manufacturing?

Key equipment list is as following: Laser drilling machine, Pressing machine, VCP line, Automatic Exposing machine, LDI and etc. The equipments we have are the best in the industry, laser drilling machines are from Mitsubishi and Hitachi, LDI machines are from Screen(Japan), Automatic Exposing machines are also from Hitachi, all of them make we can meet customer's technical requirements.

7. How many types of surface finish O-lead can do?

O-the leader has the full series of surface finish, such as: ENIG, OSP, LF-HASL, gold plating (soft/hard), immersion silver, Tin, silver plating, immersion tin plating, carbon ink and etc. .. OSP, ENIG, OSP + ENIG commonly used on the HDI, we usually recommend that you use a client or OSP OSP + ENIG if BGA PAD size less than 0.3 mm.

8. What's your capability for FPC? Can O-Leading provide SMT service also?

O-Leading can fabricate FPC from single layer to 8layer, the working panel size can be as large as 2000mm*240mm, please find the details in the page "Flex Capability". We also provide SMT one stop service to customer.

9. What are the main factors which will affect the price of PCB?

Material:

Surface finish;

Technology difficulty;

Different quality criteria;

PCB characteristics;

Payment terms;

Different manufacturing countries.

10. What's the definition of PCB, PWB and FPC and what's the difference?

PCB is short for Printed Circuit Board;

PWB is short for Printed Wire Board, same meaning as Printed Circuit Board;

FPC is short for Flexible Printed Board.

11. What factors should be considered when choosing the material for a PCB board?

Below factors should be considered when we choose the material for PCB:

The material's Tg value should be greater than the operation temperature;

Low CTE material has good performance of thermal stability;

Good thermal resistance performance: Normally PCBs are required to resist 250°C for at least 50s.

Good flatness; In consideration of the electrical properties, low loss/high permittivity material is used on high frequency PCB;

Polyimide glass fiber substrate used for flexible PCB; Metal core is used when the product has strict requirement of heat dissipation.

12. What's the merits of O-leading's rigid-flex PCB?

O-leading's rigid-flex PCB has the characters of both FPC and PCB, so it can be used in some special products. Some part is flexible while the other part rigid, it can help save product's interior space, reduce product volume and improve performance.

13. How to you make the impedance calculation?

The impedance control system is done using some test coupons, the SI6000 soft and the CITS 500s equipment from POLAR INSTRUMENTS. The equipment measures the impedance on a representative track configuration coupon of which the client has given us a determinate value and tolerance.