



Welcome to Greathome

GREATHOME | Your PCB/FPCB(A)/PCBA Manufacturing Partner





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Company Profile



- **Greathome founded in March 2008**
- **Floor Area: 17500 M²**
- **Sales Revenue in 2021: USD 65 million**
- **Total headcount: 532**
- **Monthly Production Capacity:**
FPC: 0.32 Million Square feet
PCBA: 1.2 Billion point per month
- **Core business:**
FPCB, Rigid-Flex PCB, FPCA, PCB Assembly



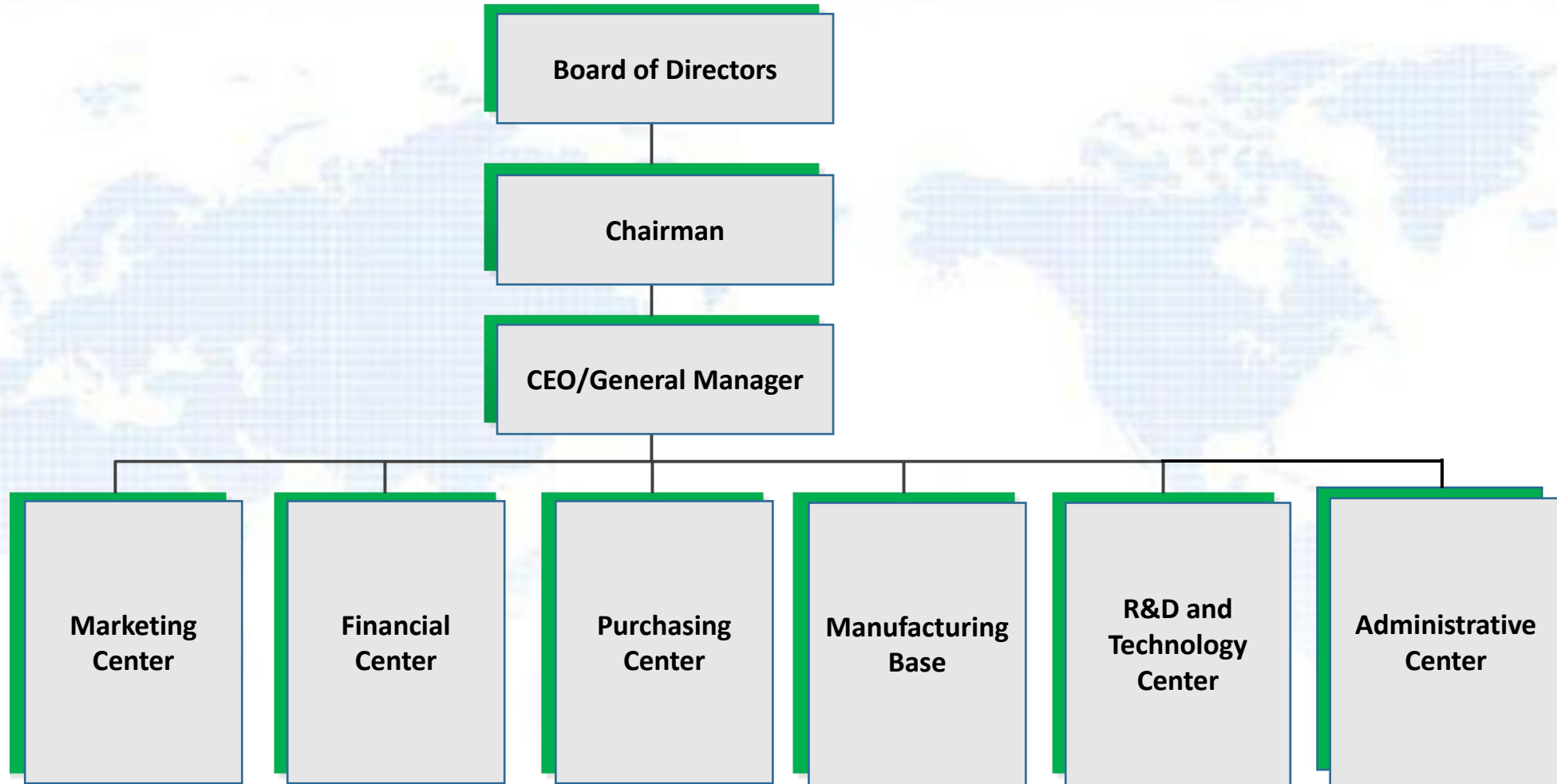
Company Profile



- Greathome Precision Circuit Technology (Shenzhen) Co., Ltd is a manufacturer integrating R&D, manufacturing, and sales of flexible printed circuit (FPC) boards, flexible printed circuit (FPCA) Assembly, and PCB Assembly. Greathome was founded in 2008 and has 532 employees, located in Shenzhen, Guangdong Province, China. The plant area is 17,500 square meters, the annual production capacity for FPC and PCB are 360,000 square meters and 1.2 Billion points per month for FPC Assembly and PCB Assembly.
- Greathome always insists on technological innovation and gives full play to the leading role of core technology in enterprise operation, Our company has a senior professional team of more than 100 engineers engaged in R&D, Design, Production, and Quality Management to meet customers' demand for high-quality products and professional services.
- Greathome focused on manufacturing single-sided FPC, double-sided FPC, multilayer FPC, Rigid-flex PCB, MC PCB, and so on all kinds of PCB products, widely used in LED lighting, New energy battery, Wireless communications equipment, High-end equipment display, Digital camera, Computer and accessories, Smartphone, Smart wearable devices, Automotive electronics, and other industries, we can meet the customized production and PCBA processing (Or finished product assembly) needs of all kinds of products.
- Greathome has advanced automatic manufacturing equipment and testing equipment in the industry, strong technical strength, and a senior professional team. Greathome has passed ISO9001, ISO14001, CQC, SGS, UL, and other certifications. We strictly implement the ISO international quality system, IPC standards, customer requirements, and other requirements to implement production, to fully ensure that products meet customer needs.
- With High-quality products, Fast delivery, Professional customer service, and Technical support, Greathome has won the support and trust of domestic and overseas customers. Greathome Always adhere to shortening the development cycle for customers, reducing costs, providing competitive prices, and value-added services. Greathome Always adhere to providing customers with technical support and services for Free. Greathome Always adhere to creating greater value for Customers, Employees, Society.



Organizational Structure





Development Milestones

May. 2012

Company Moved to Hengzhao Industrial Zone, Focus on FPCB manufacturing (FPC: 1-6 layers)

Oct. 2014

Shenzhen Hi-tech Technology Enterprise Certified

Mar. 2017

Import industrial control type of customer (Rigid-Flex board)

Mar. 2019

The industrial control of Rigid-Flex board into mass production stage

Greathome Group

Nov. 2020

Reorganization of group companies and Renamed Greathome Group.

Mar. 2008

Company Established in Shenzhen

Mar. 2013

ISO9000 Certified

Mar. 2015

UL certified

Nov. 2015

ISO14000 certified

Apr. 2018

Set up FPCA business division to provide FPC Assembly services to customers.

Oct. 2019

Set up PCBA factory in Dongguan, Full-service provider of PCB Assembly (SMT + DIP Manufacturing and Assembly or finished products)

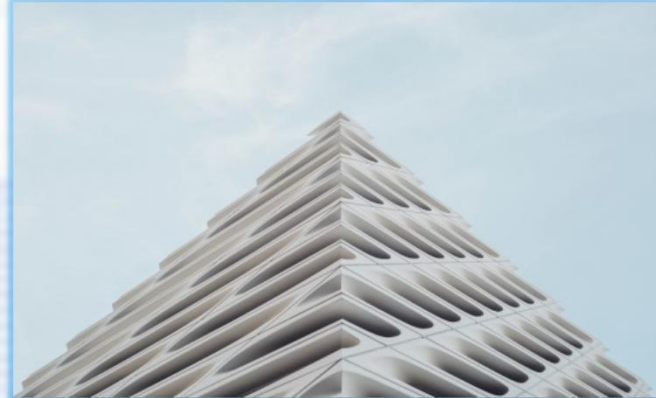


Corporate Culture



Management Philosophy

- ◆ Abide by Rules and Discipline
- ◆ Respect for Personality
- ◆ Unity
- ◆ Dedication and Gratitude



Business Philosophy

- ◆ People-oriented
- ◆ Quality Win
- ◆ Integrity and Law-abiding
- ◆ Win-Win Cooperation



Quality Policy

- ◆ Quality first
- ◆ Full Participation
- ◆ Excellence
- ◆ Pursuit of Excellence



Core Team Show

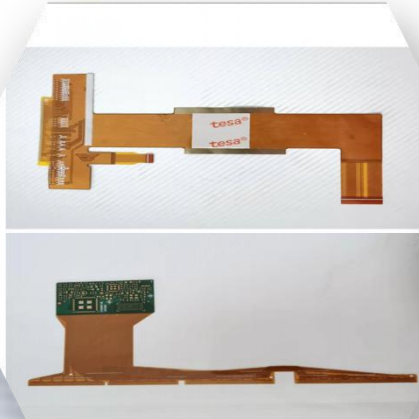




Scope of Business

Flexible printed circuit (FPC)

- ✓ Polyimide, PET, Kapton
- ✓ Stiffener (FR-4, PI, PET, Steel, Al, Adhesive Tape)
- ✓ 1-12 layers FPC
- ✓ Rigid-Flex PCB (2-16 layers)



Flexible printed circuit Assembly (FPCA)

- ✓ R&D
- ✓ Flexible PCB assembly
- ✓ PCBA Testing
- ✓ Packing
- ✓ Aging testing



PCB Assembly (PCBA)

- ✓ SMT + DIP assembly
- ✓ BGA assembly
- ✓ Chip on Board assembly
- ✓ Aluminum PCB assembly
- ✓ PCB + Cables/Metal parts/Plastic parts
- ✓ Assembly or finished products



LED Lighting / Products

- ✓ R&D
- ✓ Flexible LED strip
- ✓ COB Flexible LED strip
- ✓ Neon strip
- ✓ Wash the wall LED strip
- ✓ Indoor/Outdoor lighting
- ✓ AI / Face recognition/ Smart home products etc





Major Customers



VIVO

Honeywell

BOE



Build Your Dreams

OSRAM
Opto Semiconductors

embedded
ACOUSTICS

Valeo



BACKER



华星光电
CSOT

INNOLUX
群創光電



TOUCHINTERNATIONAL

DAREN HIGH
TECH
达人高科



LURUN

HIKVISION®

RICOH
imagine. change.



Sales Distribution

2021

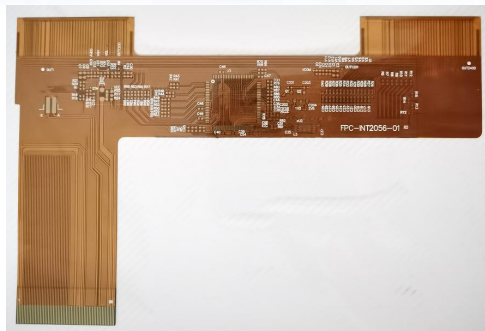
By Layer	Last Year Sales
1 Layer	26.5%
2 Layers	30.0%
4 Layers	20.0%
6 Layers	10.5%
8 Layers	7.5%
10 Layers	3.5%
≥12 Layers	2.0%
Total	100.0%

By Region	Last Year Sales
China	48%
Europe	21%
East Asia/ Southeast Asia	16%
America	4%
Africa	1.5%
Others	9.5%
Total	100%

By Product	Last Year Sales
LED strip	17.5%
Smart phone/wear	16%
Wireless communication	14%
LCD/LCM	12.5%
PC & Peripherals	10%
New energy battery	10%
Automobile	7%
Digital Camera	4%
Others	9%
Total	100%



Products Show



2 layers FPC cables Module



2 layers battery protection board



2 layers sculptured board



4 layers Rigid-Flex for High battery



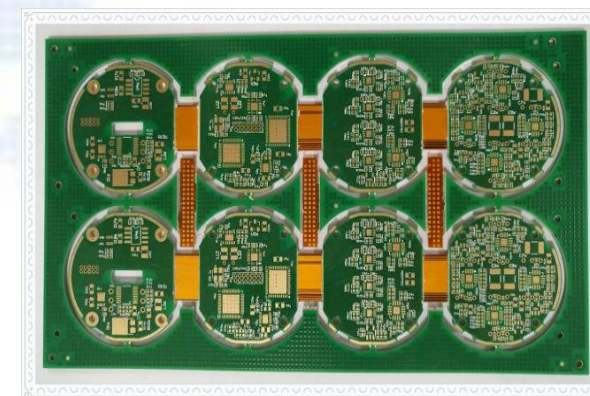
2 layers Fingerprint identification



2 layers RFID / Antenna



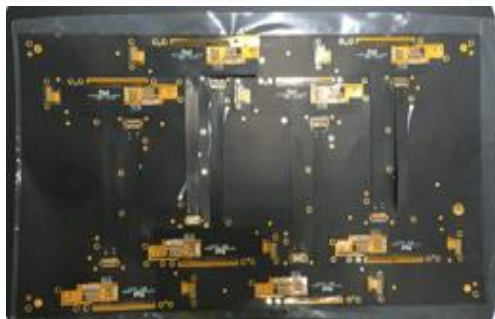
2 layers Precision circuit TP Module
(VIA:0.1mm/ width&space:0.045)



8 layers Rigid-Flex for Medical



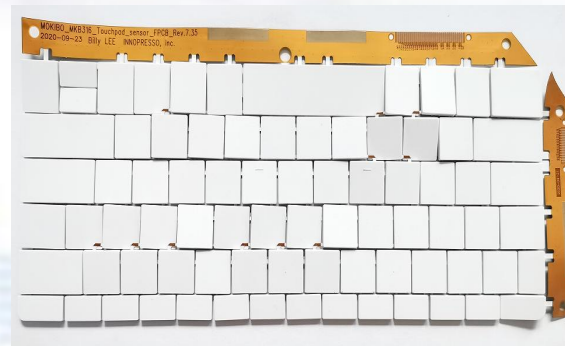
Products Show



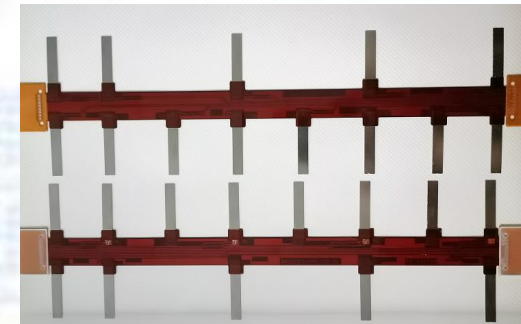
2 layers FPC LCM (IC)



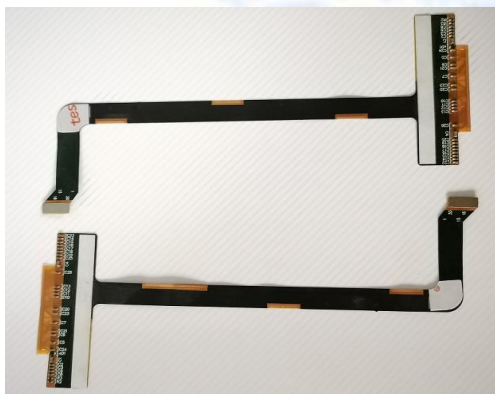
1 layers headset



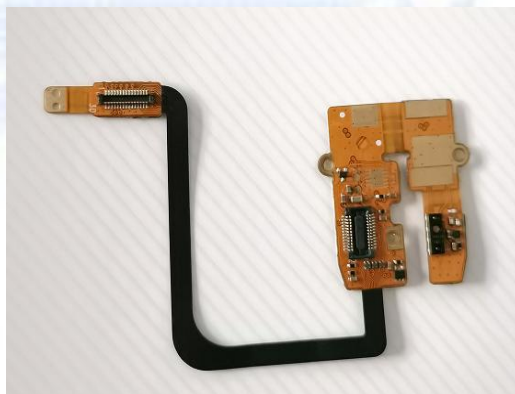
2 layers keyboard



2 layers New energy battery



2 layers connector (FPCA)



4 layers phone module (FPCA)



2 layers Camera module (FPCA)

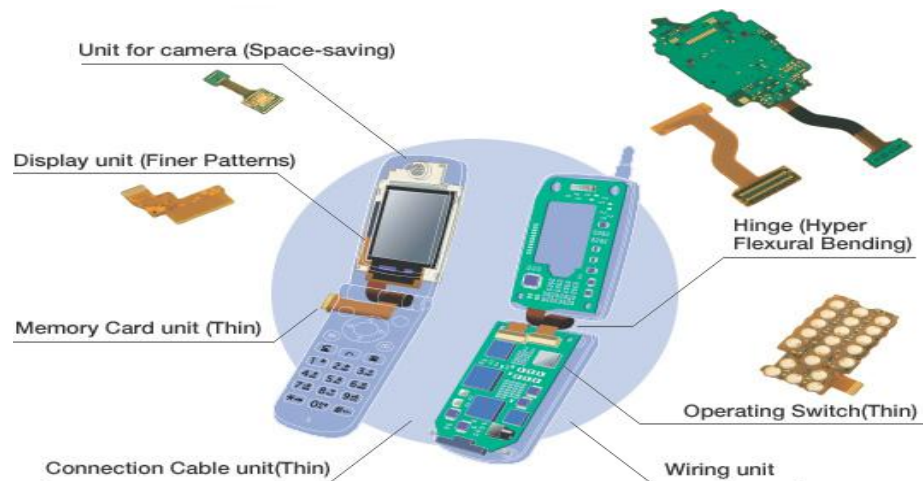


Rigid-Flex for Fingerprint identification module (FPCA)

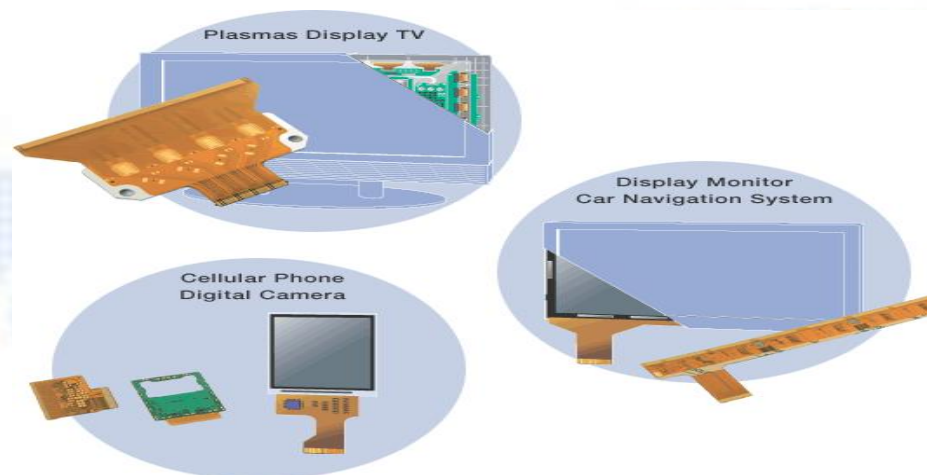


Products and Application Field

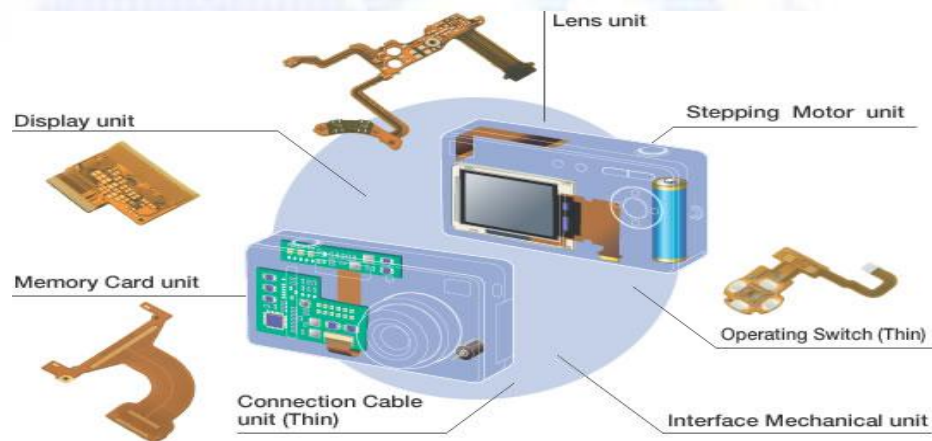
Wireless Communication



High-end Equipment LCD/LCM



Digital Camera



PC & Peripherals





Products and Application Field

Smart Wearable Devices

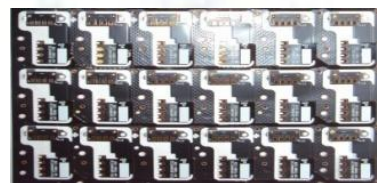


Heart-rate control board

New Energy Power Battery



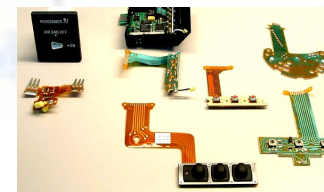
Smartphone / Battery



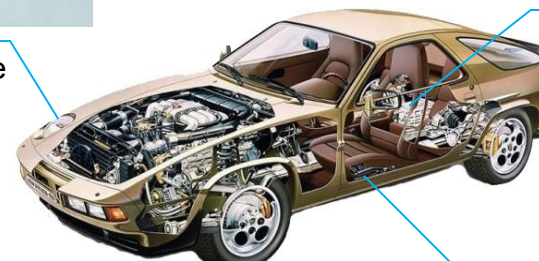
Automobile Products



Automotive LED lamp



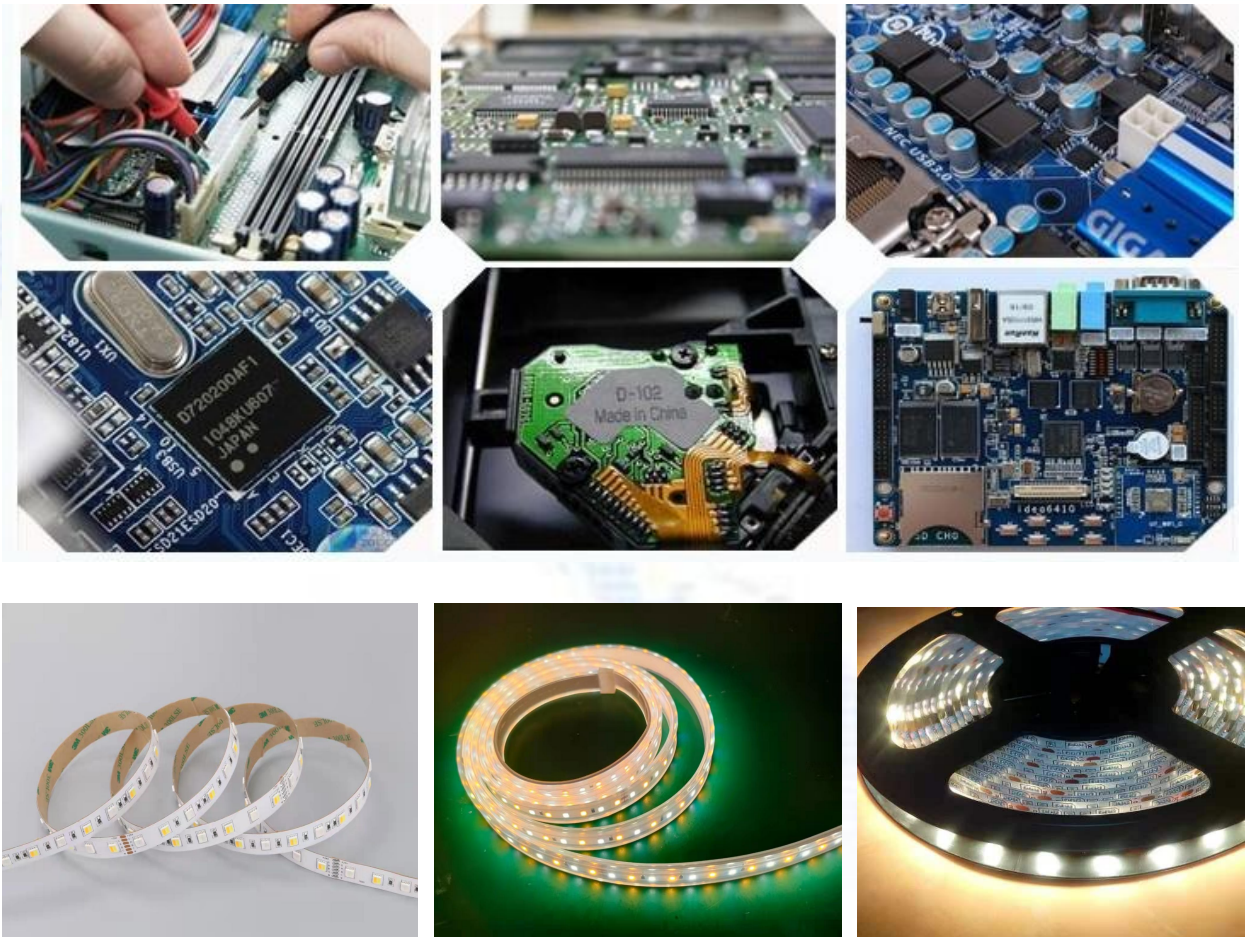
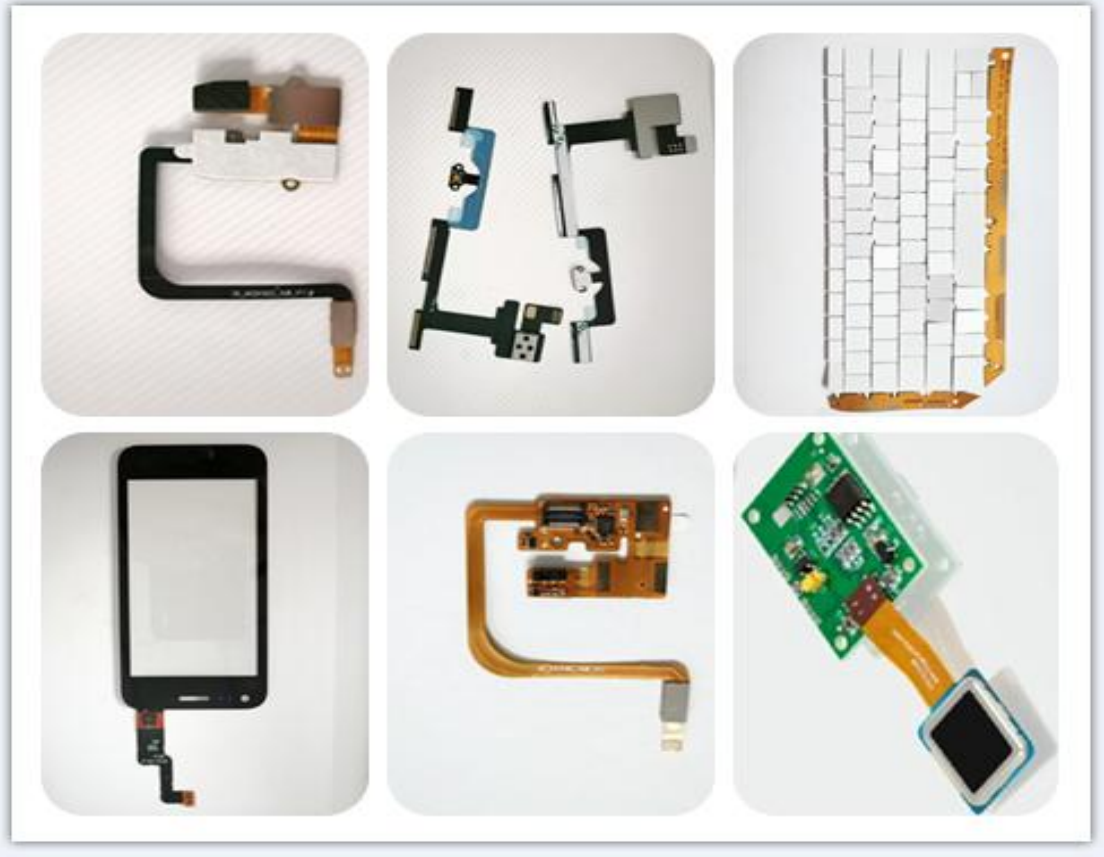
Sensor



Door lock



Products and Application Field





Finished Products Show



POS Machine



POS Machine



Meters



AI sound



Face recognition automatic temperature measuring instrument.



Smart home control panel



Face recognition visual intercom public gate machine



AI smart tiger



FPC & Rigid-Flex PCB Process Capability

Flex & Rigid-Flex PCB Process Capability (2021)			
Serial	Items		Rigid-Flex PCB
1	Layers Counts		2-16 Layers
2	Material Type		PI+FR-4
3	Material Brand		SHENGYI, TAIFLEX, ITEQ, DuPont etc
4	Stiffener Material Type		FR-4, PI, PET, Steel, Al, Adhesive Tape
5	Min Board Thickness	1 Layer	0.05mm(2mil)
		2 Layers	0.10mm(4mil)
6	Max Board dimension		250*1000mm (9.84*39.37 inches)
7	Min Trace Width/ Trace Spacing	Copper thickness: 0.5 oz	0.05/0.05mm(2/2mil)
		Copper thickness: 0.5 oz-1oz	0.075/0.075mm(3/3mil)
		Copper thickness: 1oz	0.10/0.10mm(4/4mil)
8	Min Hole Diameter (Mechanical drill)		0.15mm(6mil)
9	Min Hole Diameter (Laser drill)		0.10mm(4mil)

10	Min Annular Ring (Outer layers)	1 Layer	0.10mm(4mil)
		2 Layers	0.10mm(4mil)
11	Min Annular Ring (Inner layers)	≥4Layers	0.10mm(4mil)
	Min Annular Ring (Outer layers)		0.10mm(4mil)
12	Coverlay thickness		12.5um, 25um, 50um
13	Min Coverlay Opening		0.40*0.40mm(16*16mil)
14	Min Solder mask Opening		0.15mm(6mil)
15	Min Coverlay Bridge		0.20mm(4mil)
	Min Solder mask Bridge		0.13mm(5mil)
16	Via Type		Through Hole, Blind, Buried
17	Tolerance	PTH Hole	±0.075mm(±3mil)
		NPTH Hole	±0.05mm(±2mil)
		Outline	±0.10mm(±4mil)
		Outside edge to Circuit	±0.10mm(±4mil)
18	Surface finished		ENIG, OSP, Immersion Silver, Immersion Tin, Glod Plating, Gold Plating+ENIG, Gold Plating+OSP



Advanced Equipment for FPC Manufacturing



Auto Drilling machine

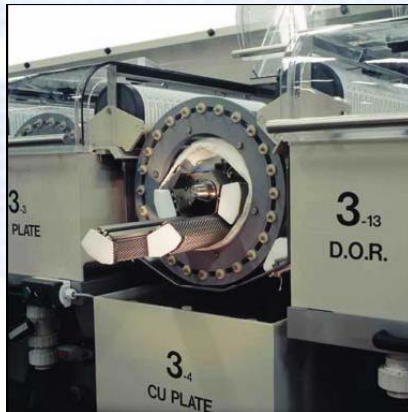


Auto Laser Drilling machine



Advanced Equipment for FPC Manufacturing

Horizontal Plating Equipment





Advanced Equipment for FPC Manufacturing



Dry Film Exposure machine



Roll to Roll Exposure machine



Advanced Equipment for FPC Manufacturing



D.E.S Line



D.E.S Preprocessing Line



Advanced Equipment for FPC Manufacturing



Black Hole Line



Pressure film machine



Soldermask Exposure machine



Soldermask Preprocessing Line



Soldermask developing Line



Automatic printing machine



Advanced Equipment for FPC Manufacturing



Automatic Silkscreen Jet printer



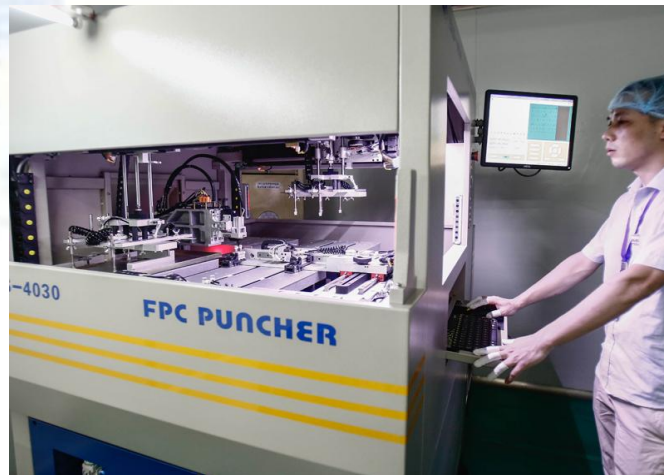
Rapid Lamination Machine



High temperature Lamination Machine



Laser Router Machine



FPC Auto Puncher



A.O.I



Checking and Testing Equipment for FPC Manufacturing



3D Measurement Instrument



Flying Probe Test Machine



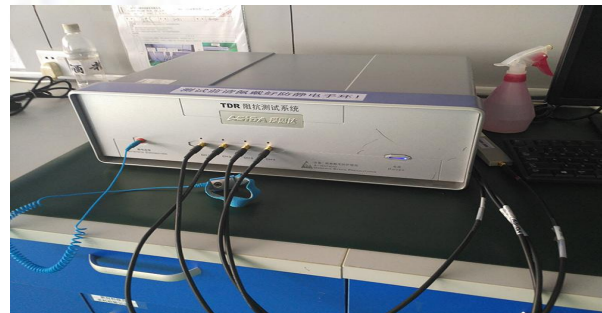
Constant Temperature and Humidity machine



High and Low Temperature Test chamber



Three-wheel rolling tester



TDR for Impedance Test



Inspection under Microscope

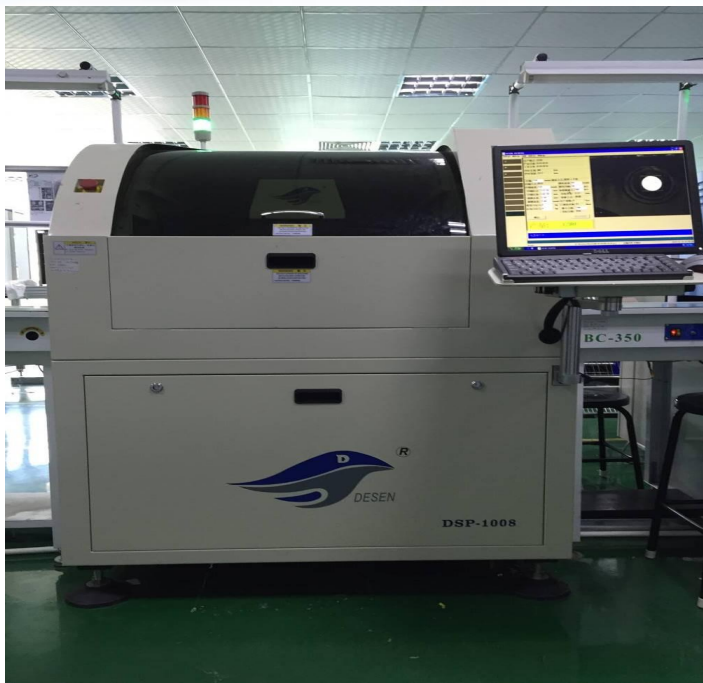


PCBA Factory Show (PCBA Equipment)





PCBA Factory Show (PCBA Equipment)





PCBA Factory Show (PCBA Equipment)



Burn-In Room 60°C



Drop Tester
Height : 0.3m ~ 1.5m



Thermal Cycle Chamber
-40°C~150°C
0% ~ 99% RH



Thermal Shock Chamber
High Temp : 60~150°C
Low Temp : -30~-65°C



Aging (Temp. & Moisture)



AOI Inspection



X-RAY



3D measurement



PCBA Factory Show (Laboratory)










PCBA Manufacturing Capability

SMT Manufacturing Capability (2021)			
Serial	Item	Manufacturing Capability in process	Manufacturing Method
1	Production size(Min/Max)	50×50mm / 510×460mm	
2	Production board thickness	0.20~6.00mm	
3	Printing solder paste	Support method	Magnetism fixture, Vacuo platform
		Clamping method	Sticking up by vacuo, clamping on both sides ,flexible clamping with sheet, flexible clamping with thick board
		Cleaning Method of printing solder paste	Dry method+ wetting method+ Vacuo method
		Accuracy of printing	±0.02mm
4	SPI	Repeated accuracy of volume	<1% at 3σ
5	Mounting component	Components size	0603(Option) L75mm Connector
		Pitch	0.15mm
		Repeated accuracy of volume	±0.01mm
6	AOI	FOV size	61×45mm
		Test speed(mm ² /Sec)	9150
7	3D X-ray	Shooting angle(degrees)	0-45 degree

DIP Manufacturing Capability (2021)	
1	All plug-in components are tested for errors, omissions and misplacement of components using AOI to strictly control the pass rate of DIP processing.
2	Experienced soldering hands with strict training can control welding speed and quality.
3	According to the production status of PCB Assembly, a temporary storage area with independent identification should be equipped around the pull wire, such as waiting for plug-in area, waiting for maintenance area, waiting for QC inspection area, defective product area, waiting for QA inspection area, etc., to avoid the appearance of mixed boards.
4	Strict IPQC and QA LOT sampling inspection standards to ensure the reliability of DIP processing.
DIP Manufacturing equipment is as follows:	
1	DIP Production lines x 2 sets.
2	AOI Equipment (Used to check DIP): Check for defects in plug-in components and solder joints.
3	Wave soldering x 2 sets.
4	Rear weld pull wire x 36 station.
5	Board washing machine x 1 set

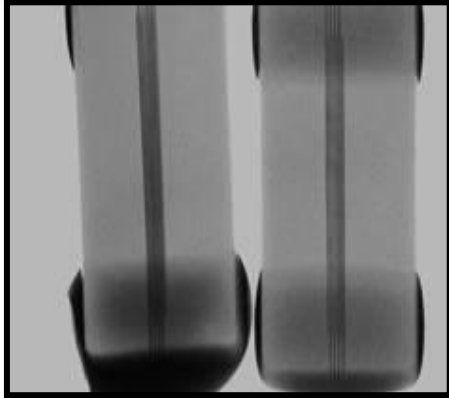


Key Equipment Parameter

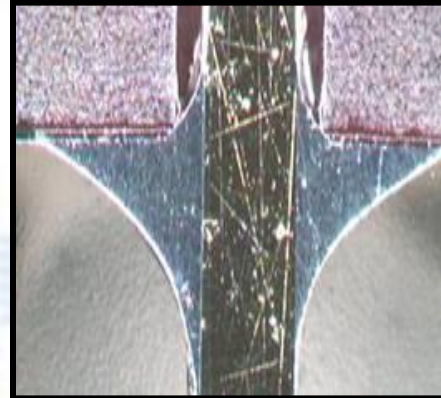
Picture	Brand	Type	key parameter & capability
	Desen	DSP1008	PCB Size: min : 50*50mm ,max: 400*340mm; PCB Thickness : 0.5-6.0mm; Repeat positioning Accuracy: +/-0.008mm; Printing accuracy : +/-0.02mm; Cycle Time : 9s
	Yamaha	YS12*2	PCB Size:min: 50*50mm,max: 510*460mm; Mounter Accuracy : absolute accuracy: +/-0.05mm/chip. Repeat Accuracy : +/-0.03mm/chip Component range : 01005~32mm Component type : 120 (convert to taping 8mm max) Mount speed : 36000CPH (optimal condition)
	Yamaha	YS12	PCB Size: min:50*50mm,max: 510*460mm Mounter Accuracy :absolute accuracy: +/-0.05mm/chip. Component range : 01005~45*100mm Component heigh : 15mm Component type : 48 (convert to taping 8mm max) Mount speed : 2000CPH (optimal condition)
	Hao Bao	HS0802	Dimension :5310*1353*1496mm PCB range :50-400mm hot zone(quantity): each 8set betwwen top&bottom PCB heigh (max): each 25mm between top&bottom Hot zone length : 3121mm Cooling zone (quantity): 2set (cold air internal recycle)
	Omron	VT-RNSII	PCB Size : min: 50*50mm ,max: 333*255mm Camera : 3CCD Image resolution :10,15,20um Component quantity (inspection): 10000/PCB (max) Standard inspection time: 250ms/image



Quality and Engineering (FMEA)



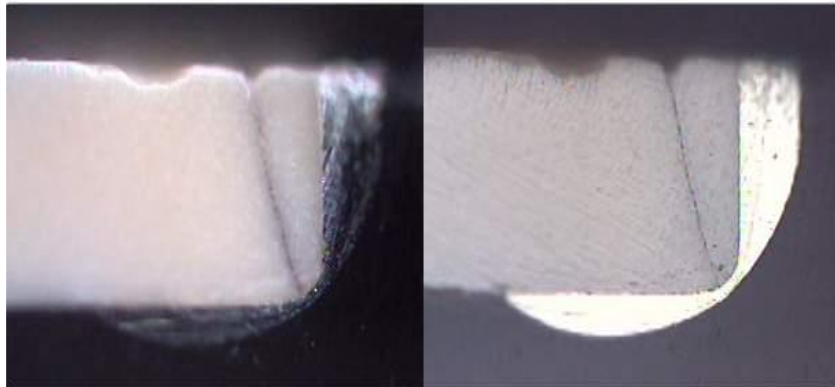
Material Defect Analysis



X-Section Analysis



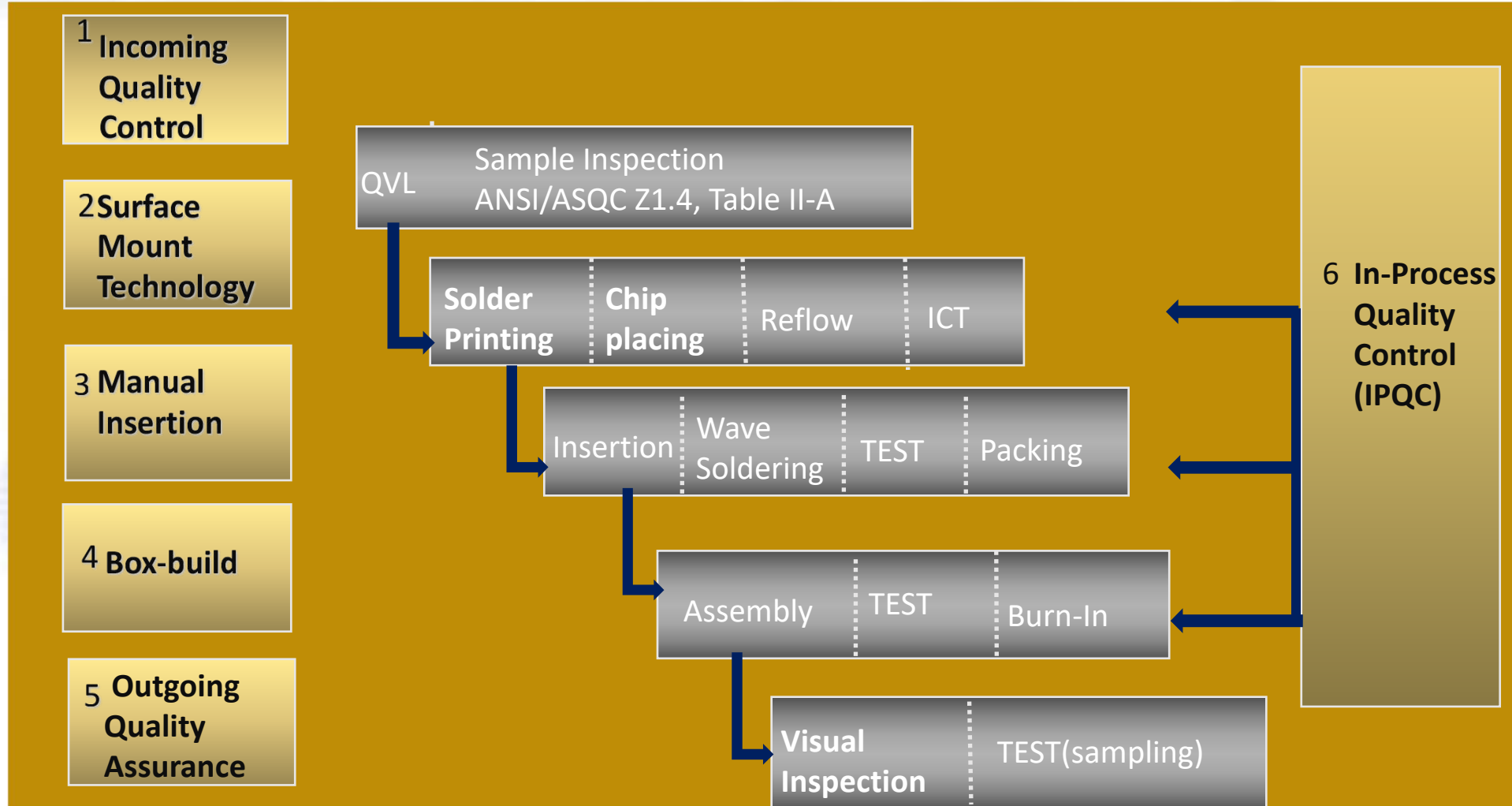
3D X-Ray Machine



- Material Damage Analysis
- Solder Joint Reliability Analysis
- GR&R Implementation
- SQC Improvement and QCC

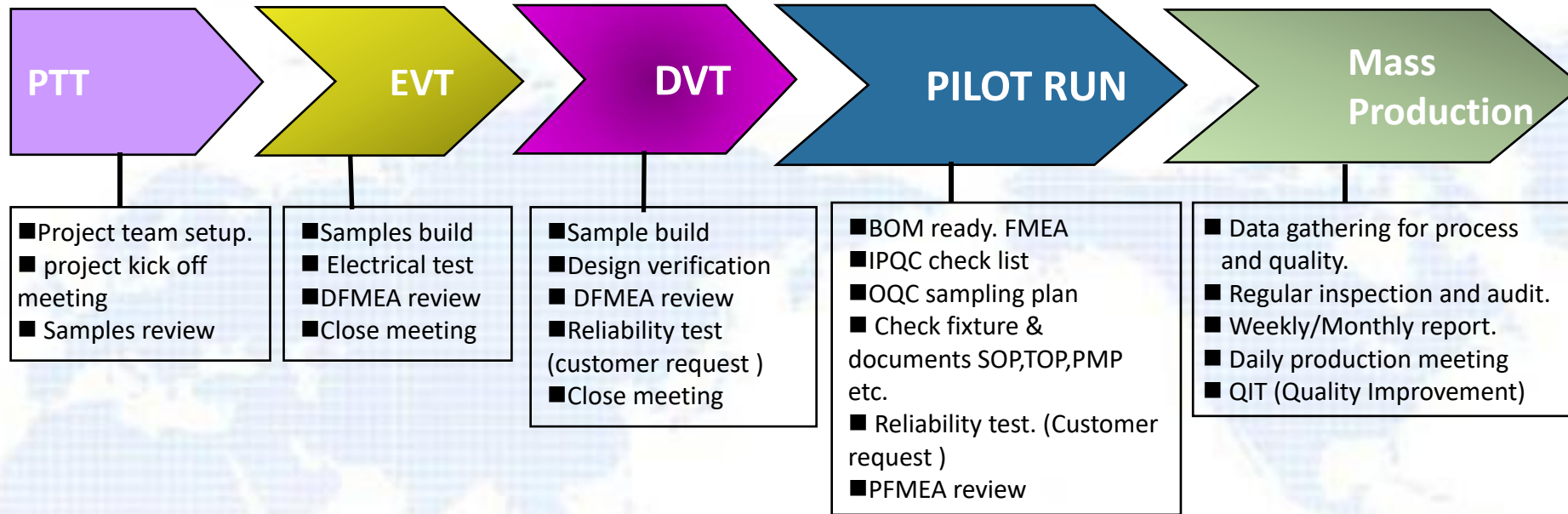


One Step Solution for Assembly





Quality System



PM, QA, PE, IE, Mfg.

<100 pcs
> 99% Yield



PM, QA, PE, IE, Mfg.

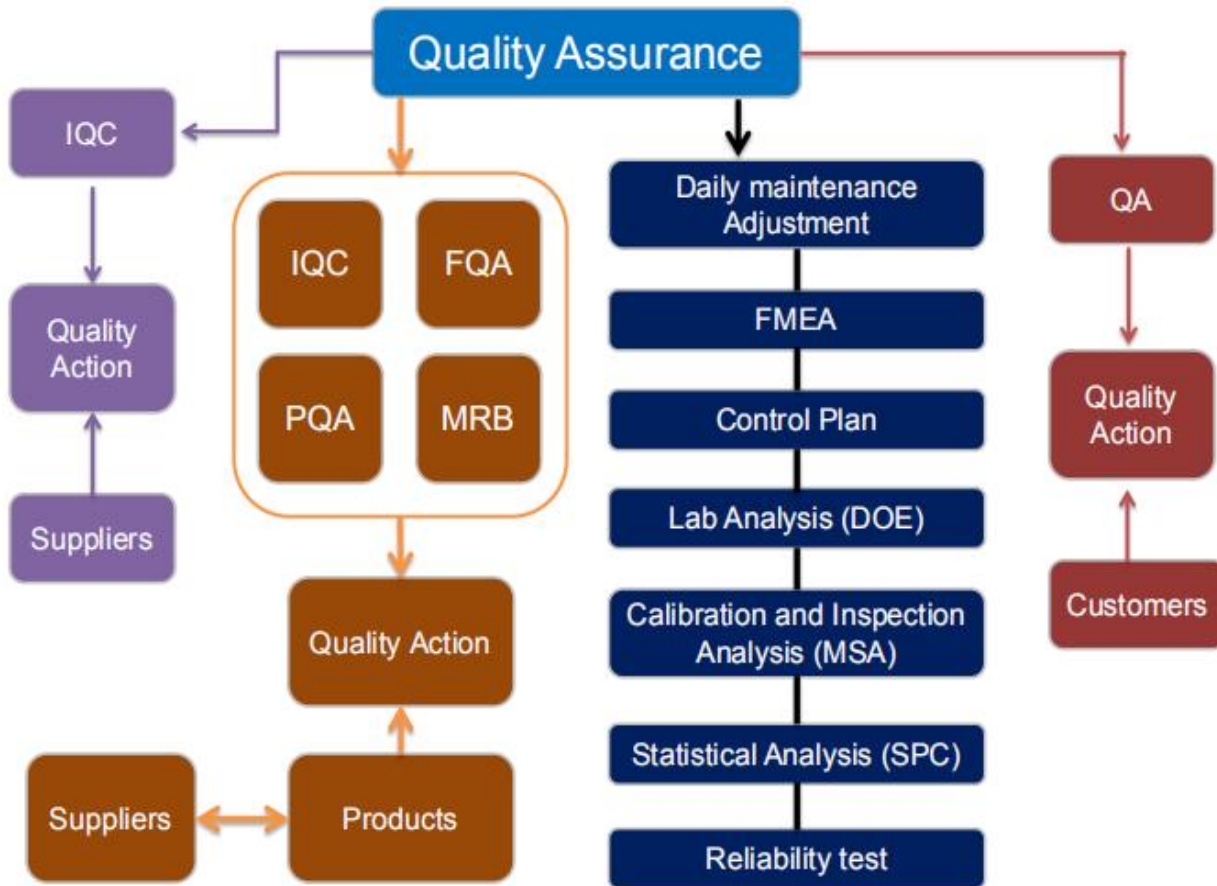
>1K pcs
> 99.5% Yield



QA, PE, IE, Mfg.



Quality Assurance Flow Chart



Perfect Quality Control System

Greathome strictly implements the requirements of the international ISO quality system, 6S system, IPC standards, to fully ensure that customers' requirements on all aspects of products are met.

Let "Customer Satisfaction" become the goal of quality management.

- ✓ UL, ISO9001:2015, ISO14001:2015 Certified
- ✓ Advanced QA system, strictly control the whole process flow
- ✓ 100% Test and Inspection, Following IPC-6013 and IPC/JPCA-6202 Standard
- ✓ 100% Double Inspection

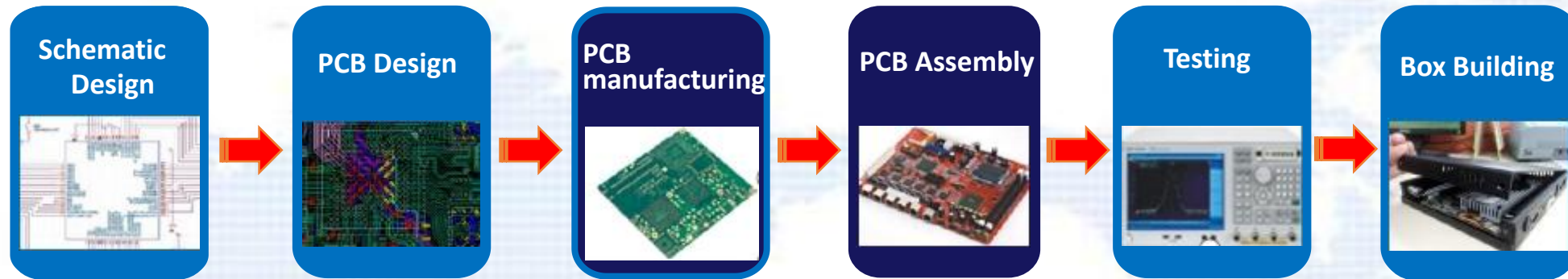


Our Core Value





Our Advantage



- One-stop Service, from design to finished product
- More than 100 R&D engineers, fully support your ideas
- Reduce Overall manufacturing costs
- Improve production process and yields
- Identify failures and support root cause analysis
- Assist engineering with DFT analysis
- An immersive experience in customer's application scenarios to help customers with technology evolution



Our Commitment

- ◆ Improving technical level expertly, Implementing quality management practicably.
- ◆ Creating the best products together, Satisfying customers' requirements with all our strength.
- ◆ Strictly abide by national laws, regulations, and related requirements.
- ◆ Establishing and continuously improving environmental management system, reducing and preventing environmental pollution.






Lead Time

FPC & FPCA(SMT+DIP+Assembly)



**Quick Delivery, Quick Response,
Strong capacity, All-weather production**

Description	Lead Time			 <ul style="list-style-type: none"> ✓ RFQ: < 4 Working hours ✓ EQ: < 8 Working hours ✓ Customer complaint response: < 4 Working hours ✓ Professional technical support with 24 hours ✓ 24-hours Production Running ✓ 24-hours delivery service ✓ Professional customized Service
	FPC Prototype (≤1m ²)	FPC Standard Turn (≥10m ²)	SMT Assembly	
Single-sided FPC	2-4 Working days	6-8 Working days	2-4 Working days	
Double-Sided FPC	3-5 Working days	8-10 Working days	2-4 Working days	
Multilayer/Airgap FPC	5-7 Working days	10-12 Working days	2-4 Working days	
Rigid-Flex Board	8-10 Working days	12-15 Working days	2-4 Working days	

Remarks: 1. The lead time can be adjusted by the customer's requirement.

2. The delivery date of mass batch production is subject to the specific order Forecast and pre-determined by both parties.



Global logistics --- Fast arrival



THANK YOU SO MUCH!

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