Kinwong

To become the most reliable printed circuit board manufacturer in the world.

Stock Code：603228

Milestones

1993
Kinwong Electronic Established

2003
Move to Baoan Xixiang due to sales growth

2004
Shenzhen Flexible PCB

2008
Longchuan Rigid PCB

2010
Longchuan Metal PCB

2013
Longchuan Flexible PCB

2014
Jiangxi Rigid PCB Phase I

2017
IPO (603228)

2018
- Jiangxi Rigid-PCB phase II
- Fushan Flexible PCB

2019
Zhuhai SLP & HLC Plant Foundation

General Profile

28 years experience

1993 ~ 2021

Employees

12000+

Sales Revenue

Net Sales of 2019 USD919M

2020 Sales Target USD1,053M

4 Manufacturing Sites

SZ Shenzhen LC Longchuan

JX Jiangxi ZH Zhuhai

3 Product Lines

PCB Flexible PCB(FPC)

Metal Base PCB(MPCB)

Technical Center

- Established in 2006
- 330+ Patents
- Central lab - ISO17025/CNAS Certification

Global Locations

HQ SZ

Manufacturing Sites

SZ Shenzhen
LC Longchuan
JX Jiangxi
ZH Fushan &
Gaolangang

Sales Office

HK Hongkong
KS Kunshan
FZ Fuzhou
TW Taiwan
EA Korea-Incheon

FAE&BD Office

EA Japan-Tokyo
EU Germany-Munich
UK-Clitheroe
NA US-Salt Lake City
US- San Jose
US-Virginia
MX-Guadalajara

Circuit Connects the World, Internet of Everything

4 Manufacturing Sites Locations

JX Site (On the North of SZ)

- 630km to SZ site, takes 8 hours by car.
- 76km to Jinggangshan Airport, takes 1 hour by car.

LC Site (On the North of SZ)

290km to SZ site, takes 4 hours by car.

ZH Site (On the West of SZ)

Fushan: 170km to SZ site and takes 2.6 hours.

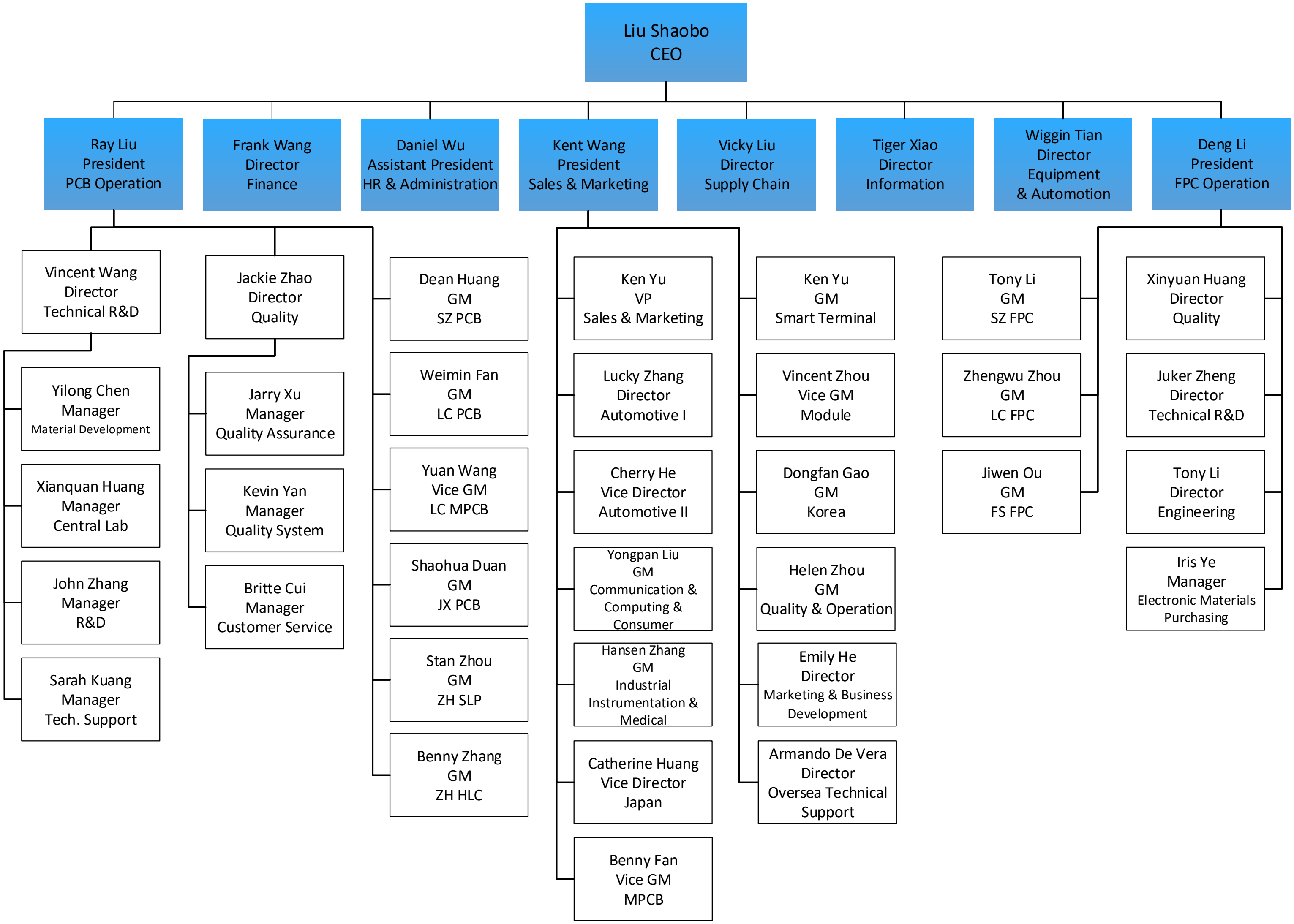
Gaolangang: 192km to SZ site, takes 2 hours and 50 mins.

SZ Site

- 18km to SZ airport, takes 20 mins by car.
- 70km to HK airport, takes 2 hours by car.

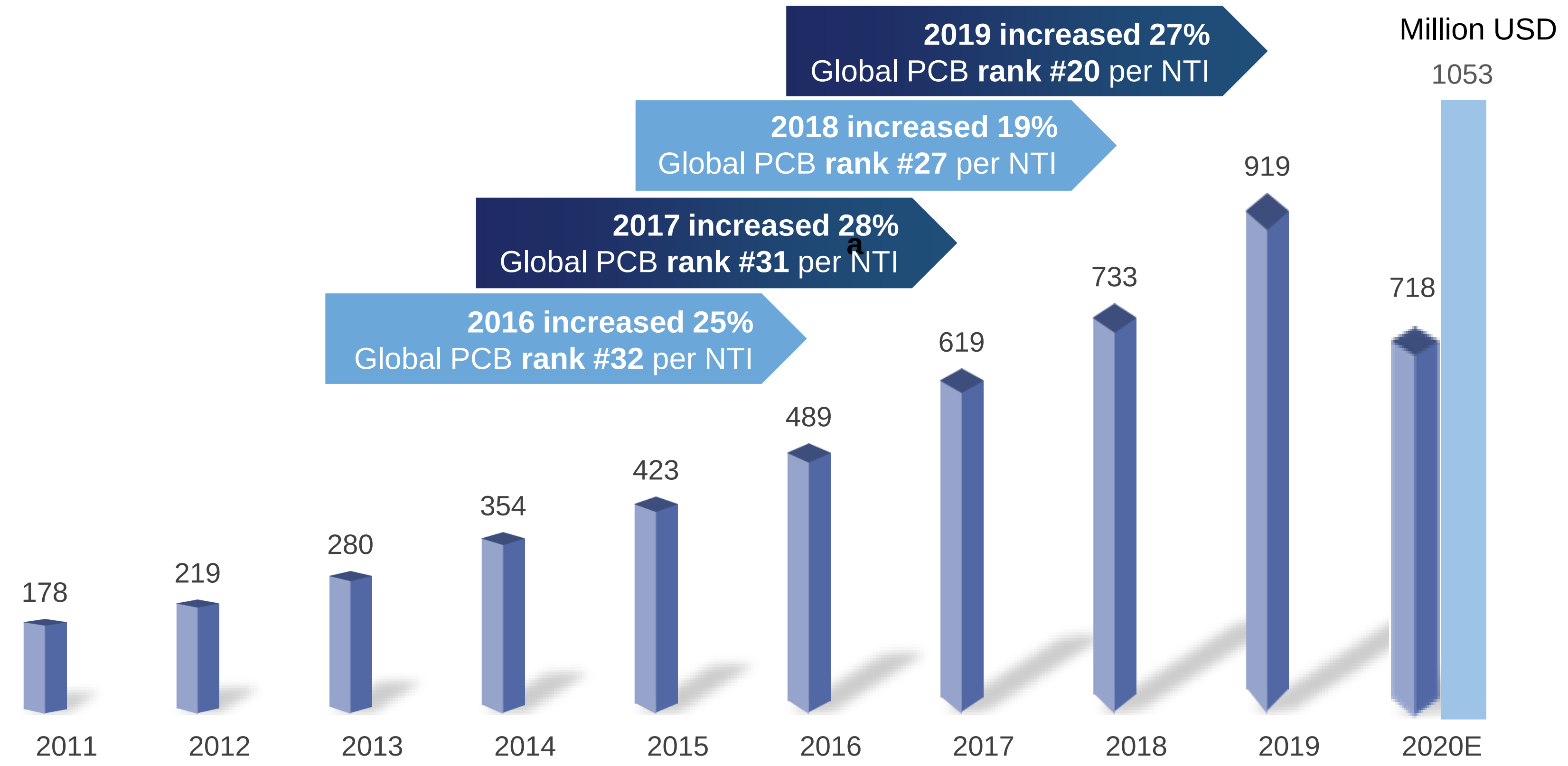
Corporate Organization Chart

KINWONG



- Liu Shaobo
  CEO
  - Ray Liu
    President
    PCB Operation
    - Vincent Wang
      Director
      Technical R&D
      - Yilong Chen
        Manager
        Material Development
      - Xianquan Huang
        Manager
        Central Lab
      - John Zhang
        Manager
        R&D
      - Sarah Kuang
        Manager
        Tech. Support
    - Jackie Zhao
      Director
      Quality
      - Jarry Xu
        Manager
        Quality Assurance
      - Kevin Yan
        Manager
        Quality System
      - Britte Cui
        Manager
        Customer Service
    - Dean Huang
      GM
      SZ PCB
    - Weimin Fan
      GM
      LC PCB
    - Yuan Wang
      Vice GM
      LC MPCB
    - Shaohua Duan
      GM
      JX PCB
    - Stan Zhou
      GM
      ZH SLP
    - Benny Zhang
      GM
      ZH HLC
  - Frank Wang
    Director
    Finance
  - Daniel Wu
    Assistant President
    HR & Administration
  - Kent Wang
    President
    Sales & Marketing
    - Ken Yu
      VP
      Sales & Marketing
    - Lucky Zhang
      Director
      Automotive I
    - Cherry He
      Vice Director
      Automotive II
    - Yongpan Liu
      GM
      Communication & Computing & Consumer
    - Hansen Zhang
      GM
      Industrial Instrumentation & Medical
    - Catherine Huang
      Vice Director
      Japan
    - Benny Fan
      Vice GM
      MPCB
    - Ken Yu
      GM
      Smart Terminal
    - Vincent Zhou
      Vice GM
      Module
    - Dongfan Gao
      GM
      Korea
    - Helen Zhou
      GM
      Quality & Operation
    - Emily He
      Director
      Marketing & Business Development
    - Armando De Vera
      Director
      Oversea Technical Support
  - Vicky Liu
    Director
    Supply Chain
  - Tiger Xiao
    Director
    Information
  - Wiggin Tian
    Director
    Equipment & Automotion
  - Deng Li
    President
    FPC Operation
    - Tony Li
      GM
      SZ FPC
    - Zhengwu Zhou
      GM
      LC FPC
    - Jiwen Ou
      GM
      FS FPC
    - Xinyuan Huang
      Director
      Quality
    - Juker Zheng
      Director
      Technical R&D
    - Tony Li
      Director
      Engineering
    - Iris Ye
      Manager
      Electronic Materials Purchasing

Sales Revenue – Q1-Q3 2020



2019 increased 27%
Global PCB **rank #20** per NTI

2018 increased 19%
Global PCB **rank #27** per NTI

2017 increased 28%
Global PCB **rank #31** per NTI

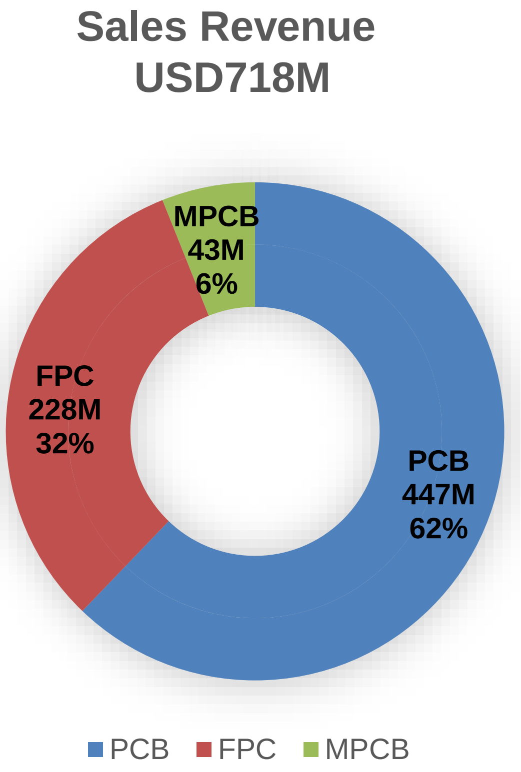
2016 increased 25%
Global PCB **rank #32** per NTI

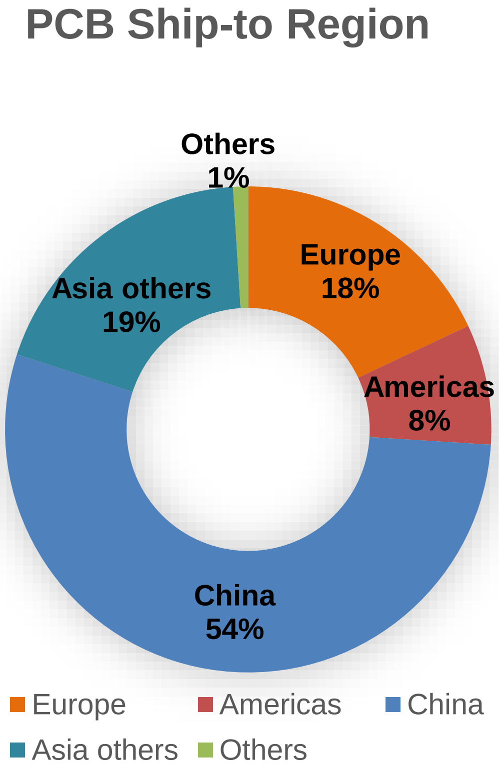
*** CAGR over 20% in the past 10 years, growth achieved by stable quality, competitive price and passion to service.**

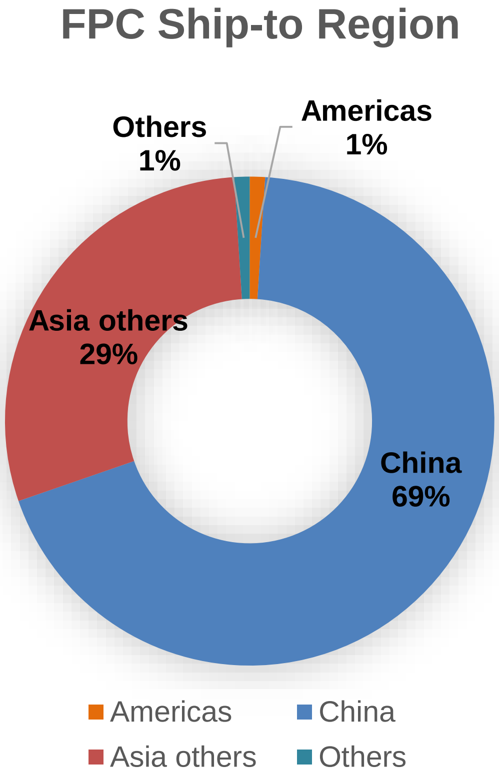
Note: The Revenue is only for main business not including other business revenue with USD13.4M.

Share of Sales – Q1-Q3 2020

KINWONG



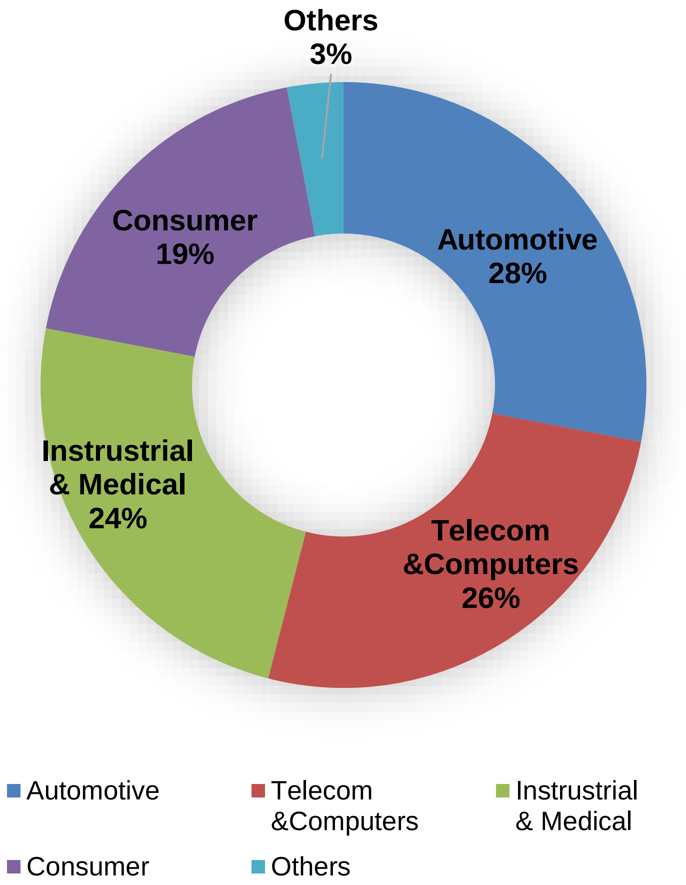




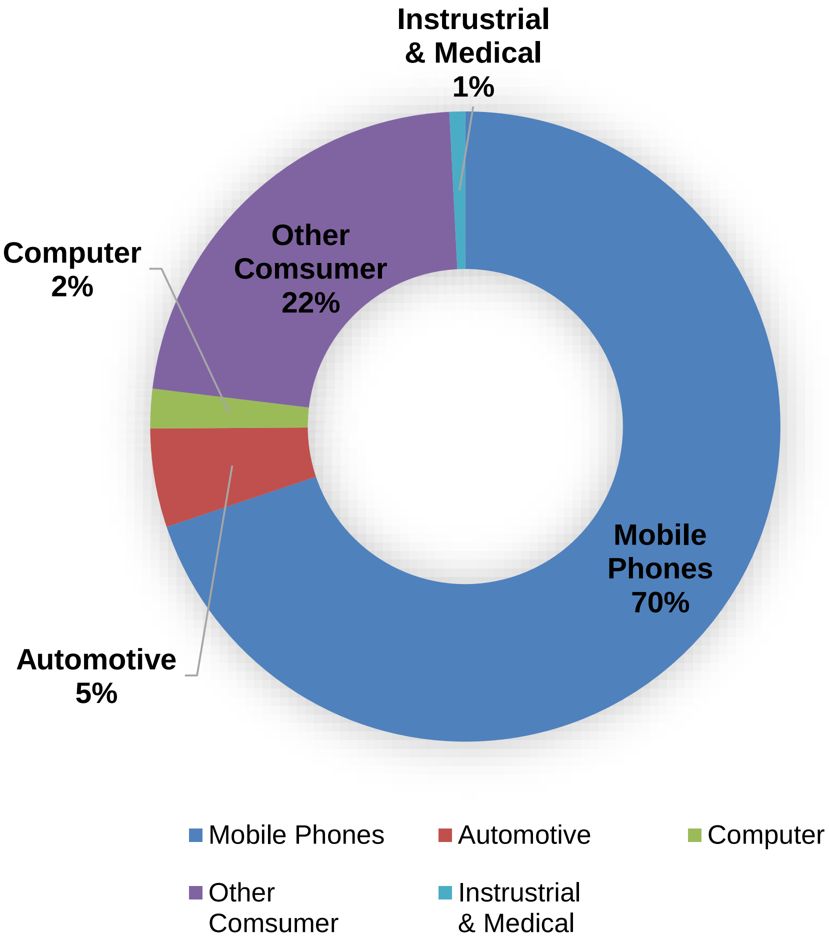
Note: The Revenue is only for main business not including other business revenue with USD13.4M.

Product Application

PCB application in 2019



FPC application in 2019



Four Production Sites (SZ, LC, JX, ZH)

Plant Area

50,000 m^2

F1

SZ Kinwong

- Headquarter
- PCB Division & FPC Division
- Monthly capacity: PCB**63,000**㎡， FPC**25,000**㎡
- Employee: **2,000+**

230,000 m^2

F2

LC Kinwong

- Subsidiary in Heyuan, South China's Guangdong Province.
- Three product lines: PCB, FPC, MPCB
- Monthly capacity: PCB**100,000**㎡, FPCB **80,000**㎡, MPCB**40,000**㎡
- Employee: **3,580+**

240,000 m^2

F3

JX Kinwong

- Subsidiary in Ji'an, east China's Jiangxi Province
- JX PCB Division, world-leading intelligent PCB factory
- Monthly capacity: PCB**290,000**㎡ in 2019,(390,000㎡ in 2020)
- Employee: **2500+**

85,000 m^2

F4-1

ZH Kinwong

Fu Shan

- Subsidiary in Zhuhai, Guangdong Province
- Fushan FPC Division
- Monthly capacity: **40,000**㎡ FPC
- Employee: **1200**

150,000 m^2

F4-2

Gaolangang

- Subsidiary in Zhuhai, Guangdong Province
- High Layer Count & SLP factories are under construction and plan to start production in early of 2021
- Monthly capacity:
  100,000㎡ PCB (High Layer Count), **50,000**㎡ SLP

Four Production Sites Product Types

Location	BU	Monthly Capacity	PCB	FPC	M-PCB	R-Flex	HDI	HLC	RF	Copper Inlay	Module/ Substrate /SIP	FPCA	Factory Specialty
SZ	PCB	63,000㎡	✓			✓	✓	✓	✓				Low Volume, various product technology, special base material, unique processing; Rigid-flex, High Frequency, high layer count heavy copper and HDI covers application field of automotive, telecommunication, industry control, power supply and medical products etc.
	FPC	FPC: 25,000㎡ FPCA: 10KK		✓		✓						✓	Use for Display Module, Touch Screen, Automobile, Industrial Control, UAV, Electronic Cigarette, Smart Home, Medical Industry.
LC	PCB	100,000㎡	✓					✓	✓				Middle & Large Volume; Multi-layer board, applied in telecommunication, power supply, automotive and industrial.
	FPC	FPC: 80,000㎡ FPCA: 60KK		✓		✓						✓	Middle & Large Volume; Use for Automobile, Display Module, Touch Screen, Smartphone, LED backlight, Electronic Cigarette, TWS.
	MPCB	40,000㎡			✓					✓			Middle& Large Volume, Dedicated to thermal management solutions applied in new energy automotive, automotive lighting, power module and other lighting.
JX	PCB	390,000㎡	✓						✓				Large volume normal FR-4 boards; Widely applied in automotive, consumer and telecommunication and etc.,.
ZH	Fu Shan FPC	FPC: 50,000㎡ FPCA: 40KK		✓		✓						✓	Large volume; Use for Medical Industry, Wireless Charging, Touch Screen, Automobile, TWS, Smart Home, Display Module, 5G etc.
	Gao Langang HLC	100,000㎡					✓	✓	✓				Large Volume; Dedicated on high layer count, widely applied in telecommunication, network, server, storage and automobiles.
	Gao Langang SLP	50,000㎡					✓				✓		Large Volume; Dedicated to SLP, applied in telecommunication, consumer products.

Competitive Advantages

Why Kinwong?

Customer Oriented

Public company,
strong financial standing

Professional support
at strategical locations

Robust Quality controls

Multiple Technology
Capabilities
PCB, FPCB, MPCB, SLP, HLC

Kinwong
Core Values

Strong financial
management

Real time technical
and quality support

Received many
outstanding awards
from major customers

9 Facilities in 4
Manufacturing sites

Technical Capability and Roadmap

Automotive-Development Trend & KW Technical Solution

KINWONG

✓ ● High Power ● High Voltage
● High Current
●Thermal Management Solution

Cu/Aluminum-based IMS

- ✓ Cu Pedestal
- ✓ High Thermal Conductivity
- ✓ Excellent thermal performance
- ✓ Good electrical performance

Heavy Copper

- ✓ Less Thermal Stress
- ✓ Max. 6oz base Cu UL recognized

Cu/AIN Inlay

- ✓ “I”,”T”,”U”-shaped Cu Coin
- ✓ Max. ±30um height performance

● Higher Transmission Rate
● Lower Loss ✓

High Frequency Millimeter Wave Radar

- ✓ HC/PTFE-based Raw Material
- ✓ Hybrid | Blind Via
- ✓ High Accuracy Copper Image Pattern （±15um）
- ✓ High Layer Registration(±5mil)

HDI

- ✓ 2+N+2
- ✓ 0.65mm BGA Pitch (Better in 2021 Zhuhai Factory)
- ✓ 60um/60um Trace Width/Spacing

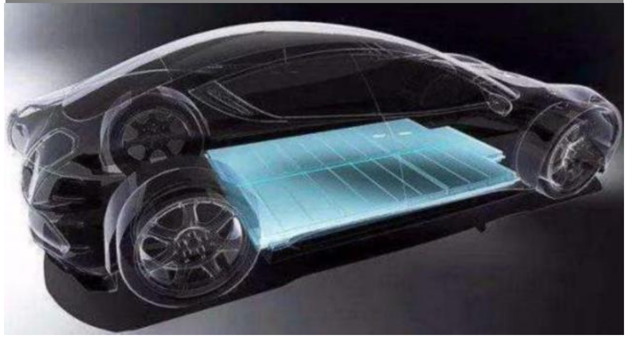
Automotive-Development Trend & KW Technical Solution

Large-size Display Screen FPC

More Feature-rich● Last Longer

- Longer Finger Pitch length (>100mm)
- Surface Finish: ENIG
- Drill Hole Min. 0.1mm,
  Laser Blind Via Min. 0.05mm
- Min. Trace Width/Spacing of 45um/45um
- Impedance Control

Battery Management System FPC



High Heat Resistance ● High Power

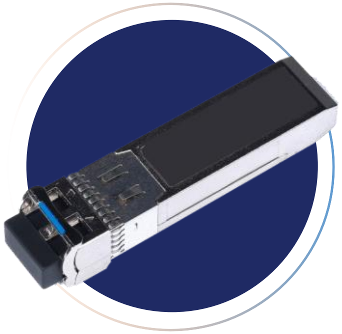
- FPC Length more than 1000mm
- Copper Thickness > 2 OZ
- 3D Stiffener Assemble
- Conformal Coating for Component

5G Development Trend & KW Technical Solution

High Speed ● Super Transmission Rate ● Lower Loss

High Layer Count

- ✓ Large Panel Size
- ✓ Small Hole Backed Drilled
- ✓ POFV
- ✓ Skip Via
- ✓ Impedance Control
- ✓ Insertion Loss



Optical Module

- ✓ ENIG/ENEPIG+G/F
- ✓ High Speed Material
- ✓ Hybrid
- ✓ HDI **|** N+N **|** Cavity
- ✓ Cu Inlay
- ✓ Segmented/Graded G/F
- ✓ Tight Size Tolerance

Antenna

- ✓ 2L~4L
- ✓ High Frequency Material
- ✓ Hybrid
- ✓ Cavity
- ✓ Strict RF Trace Tolerance

TRX/PA/Base Band/Backplane

- ✓ Large Size
- ✓ Back drilling
- ✓ POFV
- ✓ Half-plated Hole
- ✓ Edge Plating

Consumer Product-Development Trend & KW Technical Solution

KINWONG

- High Density ● Small Hole Size
- High Capacity
- Light & Thinner & Much More Mini

HDI

- 3+N+3
- Anylayer (Zhuhai 2021)
- SLP (Zhuhai 2021)
- mSAP (Zhuhai 2023)
- amSAP (Zhuhai 2023)
- Min. Trace Width/Spacing of 30um/30um
- Stack Via/Stagger Via/Step Via
- Min. Board Thickness of 0.2mm

5G Cellphone

5G Antenna FPC
5G Transmission Line FPC

- PTFE/LCP/MPI-based Material
- 3L~4L
- Laser Drilled Blind Via
- Copper Filled Via
- Impedance Control
- Insertion Loss Control
- Signal Simulation
- 3D SUS Stiffener

UAV

UAVs FPC

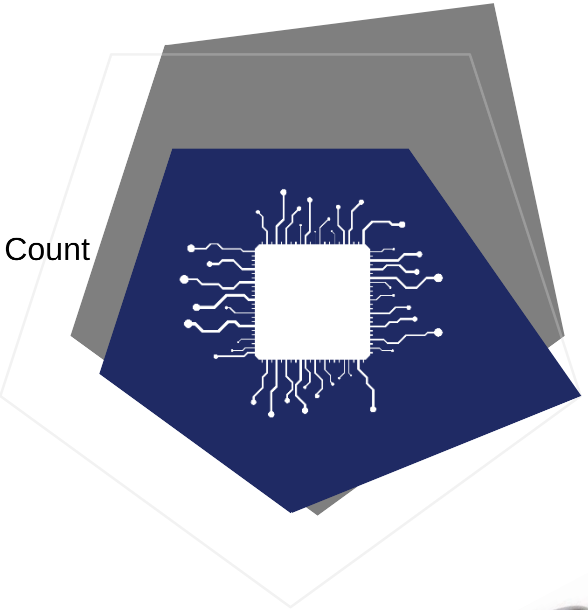
- L1~6L
- Drill Hole min. 0.1mm, Laser Blind Via min. 0.05mm
- Min. Trace Width/Spacing of 45um/45um
- Surface Finish: ENIG & ENEPIG & OSP
- Impedance Control
- 3D SUS Stiffener

Industrial & Medical-Development Trend & KW Technical Solution

Long Term Reliability ● High Stability

Rigid-Flex

- ENIG/LF HASL/OSP
- Max.16L
- Max. 6L Flexible Layer Count
- Flexible Area with Different Layer Count
- CVL at Rigid
- HDI
- Gold Finger Design
- Dispensing
- ±10% Impedance Control



Semi-flex

- Max. 2L Bendable Layer
- Bending Area Thickness 0.25mm±0.05mm
- Bending Angle 0~180°

Portable ● Miniaturized ●Intelligent

Rigid-flex

- Bendable and 3D assembly for small size
- Middle/High Tg Base Material
- Soldermask Plugging

PCB Technology Roadmap

KINWONG

Technology items	2020	2021	2022
Max.Layer Count	18L	24L	32L
Max. Delivery Panel Size	594*699mm	620*950mm	620*950mm
Min.Core Excl.Cu Thickness	0.075mm	0.05mm	0.05mm
Final Board Thickness	0.4~3.6mm	0.4~4.5mm	0.4~5.0mm
Min.Inner Layer Trace Width/Spacing	0.076mm/0.076mm	0.06mm/0.06mm	0.06mm/0.06mm
Min.Outer Layer Trace Width/Spacing	0.076mm/0.076mm	0.065mm/0.076mm	0.065mm/0.076mm
Min.Mechanically Drilled Hole Size	0.2mm	0.15mm	0.15mm
Min.Laser Drilled Hole Size	0.1mm	0.1mm	0.1mm
Max.Aspect Ratio for Mechanically Drilled Through Hole	12:1	18:1	20:1
Max.Aspect Ratio for Laser Drilled Blind Via	0.8:1	1:1	1:1
HDI Type	3+N+3	3+N+3	3+N+3
Soldermask Registration	+/-0.05mm	+/-0.040mm	+/-0.040mm
Min.Soldermask Dam	0.075mm	0.05mm	0.05mm
Min. BGA Pitch	0.65mm	0.5mm	0.40mm
Depth Control Routing Tol.	±0.10mm	±0.05mm	±0.05mm
Min.Single-ended Impedance Tol.	+/-10%	+/-8%	+/-8%
Min.Differential Impedance Tol.	+/-10%	+/-8%	+/-8%
Surface Finish	LF HASL, HASL, ENIG, Immersion Tin, Immersion Ag, OSP, Gold Finger, ENEPIG		
Base Material	General Tg, Middle Tg, High Tg, Haolgen Free, High Frequency(Low Dk/Df), High Speed (Middle/Low/Very Low/Ultra Low Loss), High Thermal Conductivity , High CTE and so on.		

FPC Technology Roadmap

KINWONG

Technology items		2020	2021	2022
Finished Board Thickness		0.05~0.8mm	0.05~0.8mm	0.05~0.8mm
Min.Laser Drilled Hole Size		Ø0.05mm	Ø0.05mm	Ø0.035mm
Min.Mechanical Drilled Hole Size		Ø0.1mm	Ø0.1mm	Ø0.1mm
Max.Mechanical Drilled Hole Size		Ø6.3mm	Ø6.3mm	Ø6.3mm
Min.Trace Width/Spacing		0.045mm/0.045mm	0.045mm/0.045mm	0.035mm/0.035mm
Min.Annular Ring of Single/Double-sided Borard		0.1mm(Panel Plating) 0.125mm(Button Plating)	0.1mm(Panel Plating) 0.125mm(Button Plating)	0.1mm(Panel Plating) 0.1mm(Button Plating)
Min.Inner Layer Annular Ring of Multi-layer Borard		0.125mm	0.125mm	0.1mm
Min.Outer Layer Annular Ring of Multi-layer Borard		0.1mm(Panel Plating) 0.125mm(Button Plating)	0.1mm(Panel Plating) 0.125mm(Button Plating)	0.09mm(Panel Plating) 0.125mm(Button Plating)
Min.Coverlay Bridge		0.3mm	0.3mm	0.3mm
Min.Soldermask Opening		0.3mm	0.3mm	0.25mm
Min.Single-ended Impedance Tolerance		±8%	±7%	±6%
Min.Differential Impedance Tolerance		±8%	±7%	±7%
Min.Coverlay Opening		Ø0.5mm	Ø0.5mm	Ø0.5mm
		0.5mm*0.5mm	0.5mm*0.5mm	0.5mm*0.5mm
Coverlay Registration	Manul Alignment	±0.1mm	±0.1mm	±0.1mm
	Fixture	±0.1mm	±0.1mm	±0.1mm
Max.Layer Count	Flex Board	6L	6L	8L
	Stratified Board	6L	6L	6L
	Rigid-flex Board	8L	10L	12L
	Rigid-flex Board HDI	8L	10L	12L
Surface Finish		Gold Plating、ENIG、OSP、ENIG+OSP、Gold Plating+OSP、Gold Plating+ENIG		

MPCB Technology Roadmap

Technology items		2020	2021	2022
Max. Layer Count		6L	8L	8L
Max. Delivery Panel Size		500*740mm	500*740mm	500*740mm
Metal Base Thickness		0.5~4.0mm	0.5~4.0mm	0.5~4.0mm
Min. Dielectric Thickness		0.038mm	0.038mm	0.038mm
Min. FR4 Core Thickness excl.Cu		0.1mm	0.075mm	0.075mm
Etching Tolerance		±15% (Width≥0.15mm)	±30um（@1oz）	±30um（@1oz）
		±20% (Width＜0.15mm)	±40um（@2oz）	±40um（@2oz）
			±50um（@3oz）	±50um（@3oz）
			±15%（＞3oz）	±15%（＞3oz）
Min. Inner Layer Trace Width/Spacing		0.1mm/0.076mm	0.076mm/0.076mm	0.076mm/0.076mm
Min. Outer Layer Trace Width/Spacing		0.1mm/0.076mm	0.076mm/0.076mm	0.076mm/0.076mm
Min. Drilled Hole Size	Aluminum Base	0.55mm (≥1/2 of board thickness）	0.55mm (≥1/2 of board thickness）	0.55mm (≥1/2 of board thickness）
	Copper Base	0.60mm (≥3/4 of board thickness）	0.60mm (≥3/4 of board thickness）	0.60mm (≥3/4 of board thickness）
Drilling Hole Tolerance		+ 0.05/-0mm	+ 0.05/-0mm	+ 0.05/-0mm
Puching Hole Tolerance		+ 0.03/-0mm	+ 0.03/-0mm	+ 0.03/-0mm
Min.Counter-sink Hole	1/3/5 Series Aluminum Base	0.6mm	0.6mm	0.6mm
	6 Series Aluminum Base/Copper Base	0.8mm	0.8mm	0.8mm
Countersink Hole Depth Tolerance		±0.05mm	±0.04mm	±0.03mm
Soldermask Registration		±0.04mm	±0.04mm	±0.04mm
Breakdown Voltage of Raw Material		6KVAC	6KVAC	6KVAC
Metal Base Type		Aluminum Base, Copper-Base, Stainless Steel Base, Iron Base		
T/C(Thermal Conductivity)		D5470：1-3W/m.K T0220：1-8W/m.K	D5470：1-3W/m.K T0220：1-12W/m.K	D5470：1-3W/m.K T0220：1-12W/m.K
Surface Finish		OSP, ENIG, Immersion Ag, Immersion Tin, HASL, LF HASL, ENEPIG, Ag Plating		

Zhuhai HLC Technology Roadmap

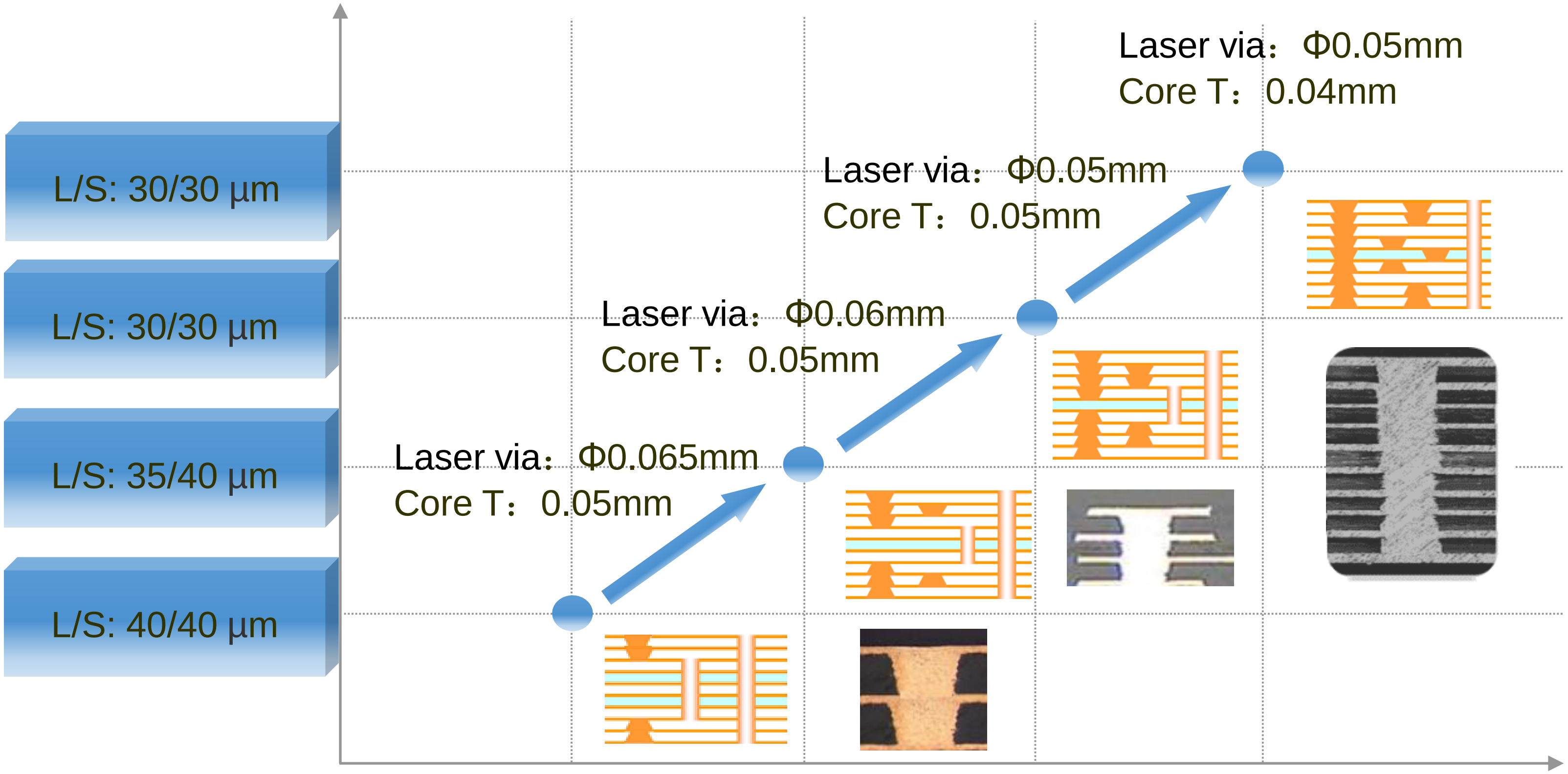
Technology items	2021	2022	2023
Layer count (max)	24	32	40
Working panel size (max)	24.5"*37.5" (620mmX950mm)	24.5"*37.5" (620mmX950mm)	24.5"*37.5" (620mmX950mm)
Board thickness（max）	4.0mm	4.0mm	5.0mm
Min Line W/S	I/L: 2.5mil/2.5mil O/L: 4mil/4mil(POFV)	I/L: 2.5mil/2.5mil O/L: 3.5mil/4mil(POFV)	I/L: 2.0mil/2.0mil O/L: 3.5mil/3.5mil(POFV)
Min DHS(mil)	6mil	6mil	6mil
Aspect ratio (by drill bit)	18:1	20:1	22:1
Min core thickness	2mil	2mil	1mil
Overall layer registration	5mil	5mil	5mil
Impedance tolerance	+/-8%	+/-7%	+/-5%
Back drill stub	2-10mil	2-10mil	2-8mil
POFV	Yes	Yes	Yes
Skip-via(L1-3)	No	Yes	Yes
N+N	Yes	Yes	Yes
Embedded Coin	Yes	Yes	Yes
Embedded capacitor	No	Yes	Yes
High-speed Material	Mid loss: TU862HF,IT-170GRA1,EM828G,M2,S7040G; Low loss: M4/M4S, S7439, TU872SLK, IT958G, NPG-170D, TU863+, I-speed, EM888S; Very low loss: M6, IT968,TU883, Synamic 6, EM891, EM528,Meteorwave1000/2000,I-Tera ; Ultra low loss: M7NE, TU933+, Synamic 6N,EM890K,Meteorwave3000/4000,Tachyon100G		
High Frequency Material	Ceramic: RO4350B,S7136H,RO4730G3,Aerowave300 PTFE: TC350,RO3003,TLX		

Zhuhai HLC_HDI Technology Roadmap

KINWONG

Technology items	2021	2022	2023
Layer count (max)	24	28	32
HDI Structure	3+N+3	3+N+3	3+N+3
Working panel size (max)	24.5"*28.5" (620X720mm)	24.5"*28.5" (620X720mm)	24.5"*28.5" (620X720mm)
Min Line W/S	I/L: 2.5mil/2.5mil O/L: 4mil/4mil(POFV)	I/L: 2.5mil/2.5mil O/L: 3.5mil/4mil(POFV)	I/L: 2.0mil/2.0mil O/L: 3.5mil/3.5mil(POFV)
Board thickness（max）	3.5mm	4.0mm	5.0mm
Min DHS	6mil	6mil	6mil
Aspect ratio	18:1	20:1	22:1
Min Microvia size & Aspect ratio	4mil&0.8:1	4mil&1:1	3mil&1:1
Min core thickness	2mil	2mil	1mil
Overall layer registration	5mil	5mil	5mil
Impedance tolerance	+/-8%	+/-7%	+/-5%
Back drill stub	2-10mil	2-10mil	2-8mil
Copper fill	Yes	Yes	Yes
POFV	Yes	Yes	Yes
Skip-via(L1-3)	No	Yes	Yes
Embedded Coin	Yes	Yes	Yes
Embedded capacitor	NO	Yes	Yes
High-speed Material	Mid loss: TU862HF,IT-170GRA1,EM828G, S7040G; Low loss: M4S, S7439, IT958G, TU863+, EM888S; Very low loss: M6, IT968, Synamic 6, EM891, EM528,Meteorwave1000/2000 ; Ultra low loss: M7NE, TU933+, Synamic 6N,EM890K,Meteorwave3000/4000		

Zhuhai SLP Roadmap



L/S: 30/30 µm

L/S: 30/30 µm

L/S: 35/40 µm

L/S: 40/40 µm

Laser via：Φ0.065mm
Core T：0.05mm

Laser via：Φ0.06mm
Core T：0.05mm

Laser via：Φ0.05mm
Core T：0.05mm

Laser via：Φ0.05mm
Core T：0.04mm

2021

2022

2023

2024

2+N+2
3+N+3
Anylayer

2+N+2
3+N+3
Anylayer
mSAP

Zhuhai SLP Technology Roadmap

Category	Technology Item	2021	2022	2023
Structure	Max. Layer Count	14	14	14
	Technology	2+N+2 3+N+3 Any layer	2+N+2 3+N+3 Any layer	2+N+2 3+N+3 Any layer mSAP
	PNL Size	18”X24.5”, 20”X24.5”, 21.5”X24.5”,		
Board Thickness	Min. Core Thickness	50µm	50µm	40µm
	PP Type	1027	1027	1017
Circuit Formation	Min. L/S	40µm/40µm	35µm/40µm	30µm/30µm
	Copper Thickness	12µm	12µm	15µm
Inter Connection	Micro Via (Via Diameter/pad)	65µm/140µm	60µm/120µm	50µm/110µm
Solder Mask	Min. S/M Dam	45µm	40µm	35µm
	S/M Registration	20µm	15µm	15µm
CNC	Routing	±100µm	±75µm	±75µm
Dk		3.4	3.2	3.0
Df		0.011	0.008	0.003
Material Availability		EM-285, EM-370(5), S1150G, IT-150G, IT-168G, IT-170GRA1, EM-355 (D)		
		/	EM-390, E-78G, RA555, EM-526, EM528K, R5575	

JiangXi Operational Excellence and Zhuhai New Plant

JiangXi Operational Excellence

Quality, Cost and Efficiency Come from the Perfect Process Layout!

Quality

- Chemical Analysis On-line
- Parameter Collection
- Copper THK and board THK test On-line
- Traceability by Lot
- Smart Warehouse

Cost

- Electricity and water dose monitor
- Energy saving system

Efficiency

- Board Cutting - Trimming - Rounding – Cleaning - Baking
- Inner Layer Pretreatment – Coating – Exposure – DES - Brown Oxidation
- Pressing - PP Cutting - Pre-lay – Composing – Lamination - Decomposing
- AGV Logistics

JiangXi Intelligent Manufacturing

1

Realize material FIFO

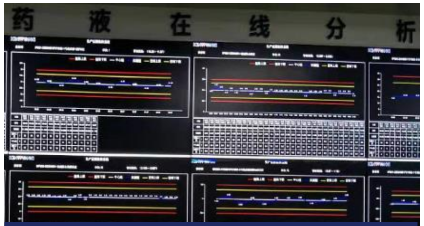
2

Dynamic inventory with real time control

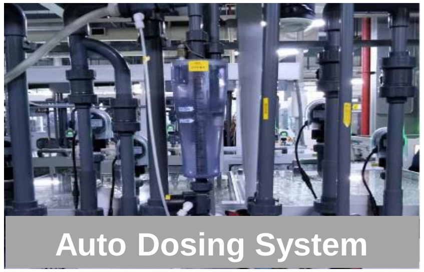
3

EBS seamless interfaced with smart warehouse

The application of smart warehouse ensures the speed and accuracy of data input in all aspects of warehouse management, realizing FIFO and quality assurance of raw materials.



SPC for Chemical



Auto Dosing System

On-line Chemical Analysis

Concentration : On line chemical analysis, Auto-dosing system can add or adjust.

Lot Control & Traceability

1

CCD reading code

CCD reading code to identify product info in whole process

2

Capture code after product cleaning finished

Stack by lot No.# and date code

3

Capture code before Packaging

Distinguish lot No.# and date code

Realize lot management in the whole PCB process by on line reading code and classification system, which can avoid different product mixed, and same product but in different date code mixed when shipping.

AGV Logistics

1

Adjust the route flexibly according to requirement

2

Order with Reasonable distribution

3

Reduction of scratch caused by handling

AGV logistics can make the transportation in high-efficiency, transferring the raw materials/semi-finished products to production line at beginning process, then end process to WIP or finished product warehouse, and the material output after sorting, which can reduce the possibility of handling, as well as the scrap .

ZH HLC & SLP New Plant

HLC(High Layer Count)

Capacity planning: 100Km²/Month

Equipment Installation and Full Process Trial Run — Jan, 2021

Ramp up Plan Km²/Month

2021.4	2021.12	2022.6	2022.12
20	50	70	100

SLP (Substrate Like PCB)

Capacity planning: 50Km²/Month

Equipment Installation and Full Process Trial Run — May 2021

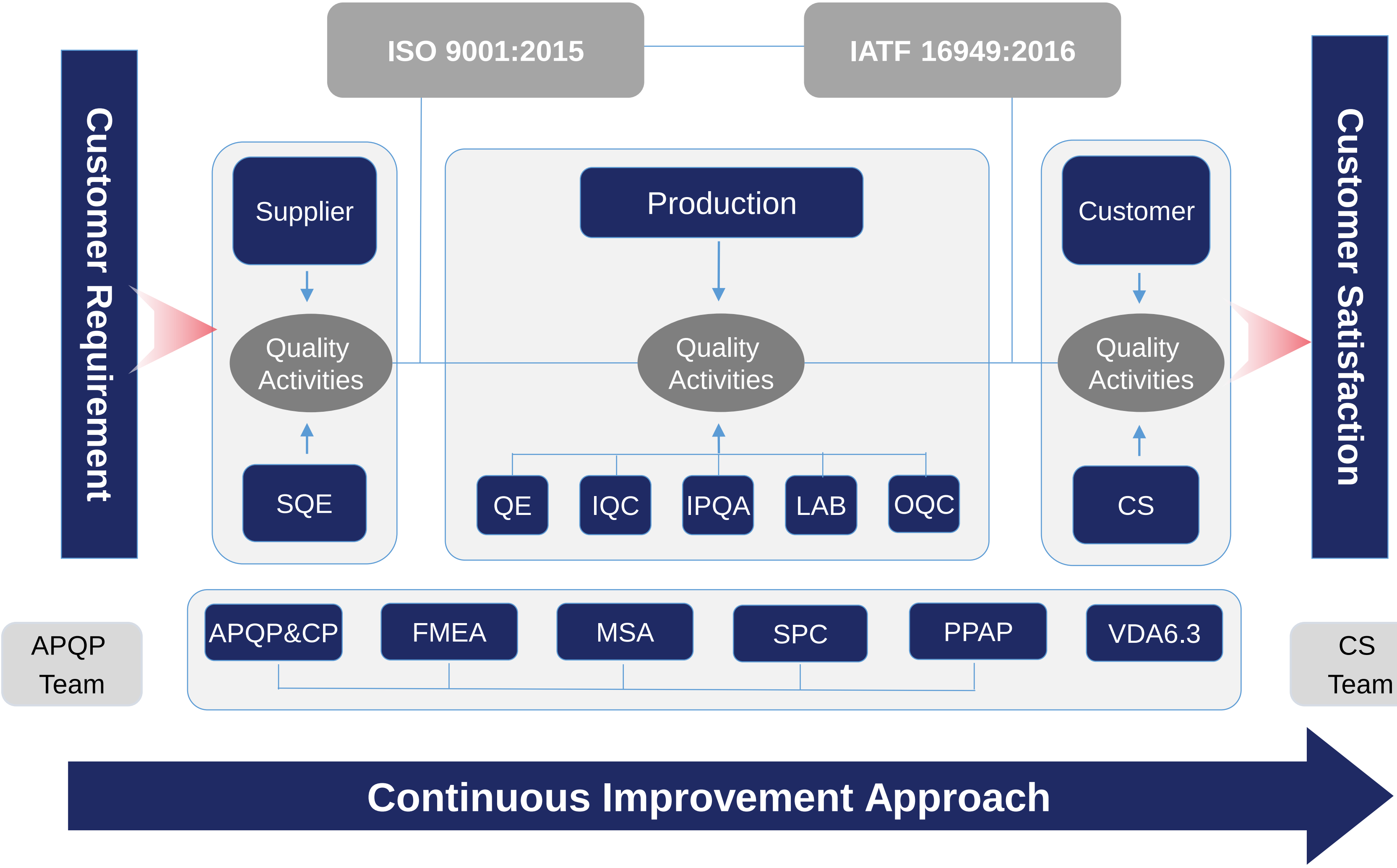
Ramp up Plan Km²/Month

2021.6	2022.3	2022.9	2023.9
10	20	36	50

* Remark: HLC and SLP buildings were roofed on Jul 11, 2020.

Quality System and Laboratory Equipment

Quality System



Customer Requirement

ISO 9001:2015

IATF 16949:2016

Supplier

Quality Activities

SQE

Production

Quality Activities

QE

IQC

IPQA

LAB

OQC

Customer

Quality Activities

CS

Customer Satisfaction

APQP Team

APQP&CP

FMEA

MSA

SPC

PPAP

VDA6.3

CS Team

Continuous Improvement Approach

Kinwong System Management

QMS

General
ISO9001

bsi
ISO 9001
Quality Management Systems
CERTIFIED

Automotive
IATF16949

bsi
IATF 16949
Automotive Quality Management
CERTIFIED

Medical
ISO13485

bsi
UKAS
MANAGEMENT SYSTEMS
0003

CSR

Environment
ISO14001

CERTIFICATION
SSCC

OHS system
ISO45001

CERTIFICATION
SSCC

Energy system
ISO50001

WIT ASSESSMENT
萬泰認證

HSPM
IECQ QC080000

SAI GLOBAL

ISMS

ISMS
ISO27001

bsi
ISO/IEC 27001
Information Security Management
CERTIFIED

Other systems

CNAS
IEC/ISO17025

ilac-MRA
CNAS

Industry Certificates

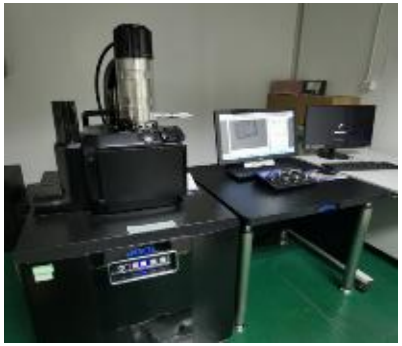
KINWONG

Plant	**ISO9001: 2015 Quality**	**IATF16949: 2016 /TS16949 Automotive**	**ISO13485: 2016 Medical**	**ISO27001: 2013 ISMS**	**IECQ QC080000: 2017 HSPM**	**ISO14001: 2015 EMS**	**ISO45001: 2018**	**GB/T23331-2012 Energy**	**GB/T23001-2017 I&I**	**ISO/IEC17025: 2017 CNAS**
Shenzhen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Original Registration Date	2006-5-18	2006-4-20	2015-11-2	2019-12-25	2016-1-5	2008-12-24	2009-10-16	2018-12-20	2019-1-8	2017-1-3
Longchuan	✓	✓	✓	✓	✓	✓	✓			
Original Registration Date	2008-7-6	2008-7-6	2019-5-22	2019-12-25	2014-3-11	2008-7-14	2013-4-22			
Jiangxi	✓	✓	✓	✓	✓	✓	✓			
Original Registration Date	2014-9-8	2015-6-8	2018-11-1	2019-12-25	2015-7-14	2014-8-29	2016-1-4			
Zhuhai	✓	✓			✓	✓				
Original Registration Date	2017-9-14	2017-9-14			2016-5-27	2019-6-29				

Central Lab - ISO17025/CNAS Certification

CAF Test System

On-line Thermal Shock

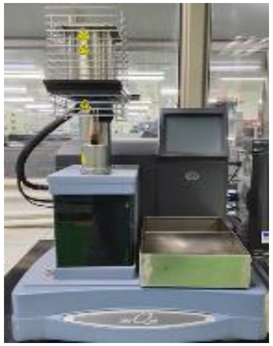


SEM+EDS

Laser Scanning Confocal Microscope

Vector Netlist Analysis + Dk & Df Test System

DMA



TMA

Part of the customer awards and Vendors

Awards

2020	Huawei HiSilicon FPC Best Supplier Quality Assurance Award
2019~2015	Hella Best Supplier
2019	Plexus Supplier Excellence
2019~2018	Sungrow Excellent Quality
2018	Logitech Social and Environmental Responsibility performance
2018	HiRain Best Supplier
2018	Artesyn Best Vendor
2018~2014	Honeywell Best Supplier
2018	TIANMA Excellent Quality
2017	Huawei Quality Excellence Award
2017&2015	IMI Best Supplier
2017	VIVO Quality Award
2017	DSBJ Supplier Excellence
2017	O-film Best Service

Valued Vendors

PCB

- 生益科技 SYTECH
- ITEQ
- isola
- EMC
- ROGERS CORPORATION
- tuc Taiwan Union Technology Corporation
- Panasonic
- NAN YA
- ventec INTERNATIONAL GROUP 騰輝電子
- NIHON SUPERIOR
- ATOTECH
- THE BERGQUIST COMPANY
- SHIKOKU
- MacDermid
- PETERS Special Lacquers For Electronics
- TAIYO INK®
- TAMURA channels your energy
- HUNTSMAN Enriching lives through innovation

FPC

- NIPPON STEEL
- TAIFLEX SCIENTIFIC CO., LTD. 台虹科技股份有限公司
- ThinFlex 新揚科技
- ITEQ
- AEM
- DOOSAN
- umicore
- TAIYO INK®
- UYEMURA
- 冠品化學股份有限公司 TeamChem Materials Company
- TAMURA channels your energy

Environmental Policy

- Environmental rule & law compliance, Reduce cost & waste
- Keep cleanness & safety production
- Continuous improvement on environmental protection

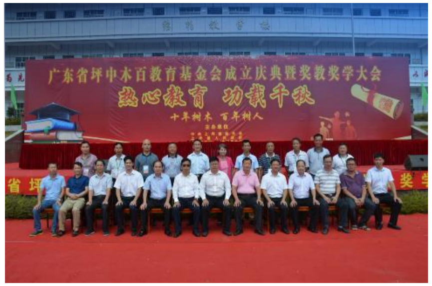
- Contribute to the environmental protection and the sustainable development of human society.

Social Responsibility

Kinwong
Business Philosophy

- People foremost
- Manufacturing competitive products
- Expanding the enterprise
- Repaying the society.

Kinwong participates in social charities on a routine basis, which ranges from financial donations for education, civil donations that help them build bridges and repair roads, and helping the elderly and children via young people volunteering their time and care.



KINWONG
景旺电子

THANKS

To become the most reliable printed circuit board manufacturer in the world.