



# Win-House Electronics Co., Ltd.

## Company Introduction

April , 2023



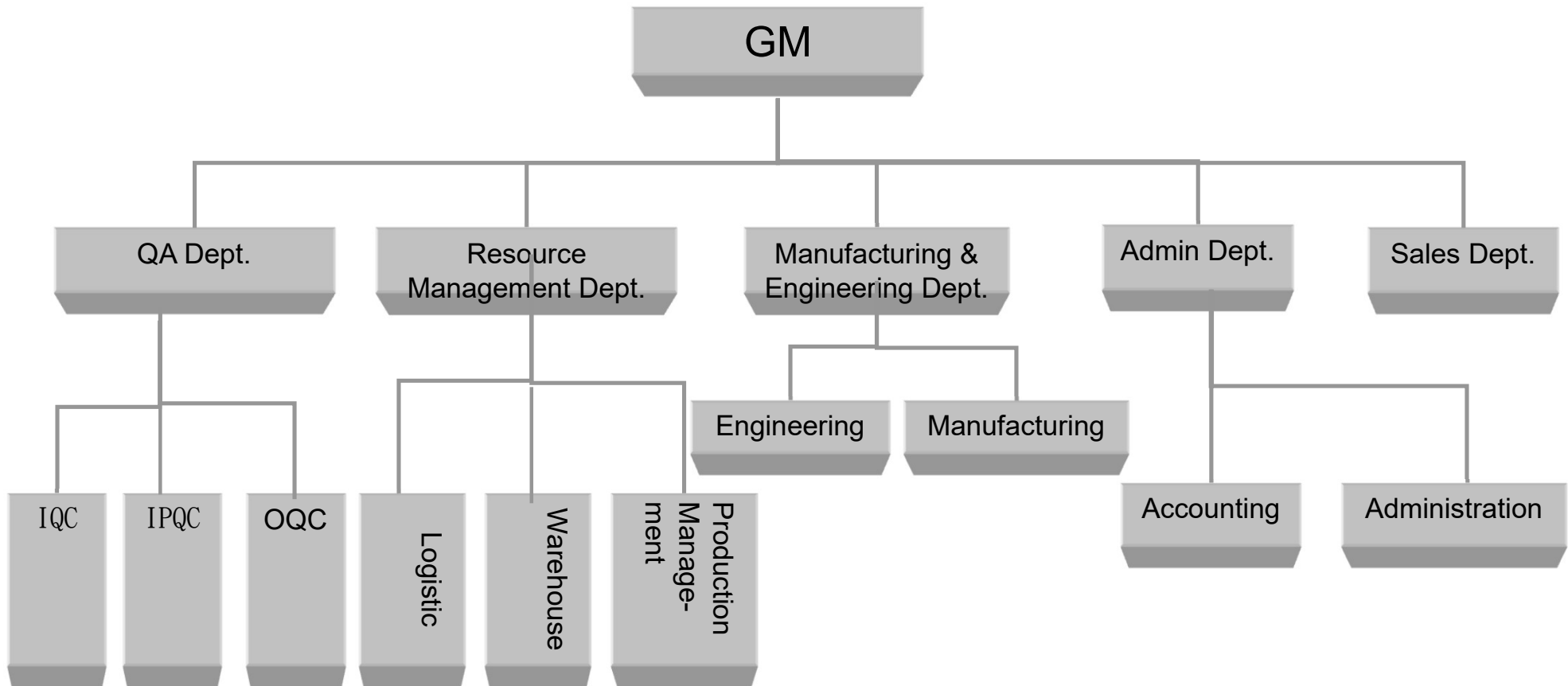
## Company Profile

- Name: Win-house Electronics Co., Ltd.
- Date of Establishment: January 26th, 1996
- Number of Employee: 300
- Site Area : 2117 Square Feet

## Quality Policy

- Attention to Detail,
- Carefulness During the Process,
- Continuous Improvement
- Customer Satisfaction

# Organization Chart



## Milestones

- 1996/12 Establishment of Win-house Electronics Co., Ltd. and Mr. Peter Chang assumed the responsibilities as board director and general manager
- 1996/12 Became a First International Computer selected vendor
- 1999/05 Became an Acer selected vendor
- 2000/07 Increased the registered capital to NT\$ 15 million
- 2000/08 Became **ISO-9002** certified
- 2003/02 Purchased one SIEMENS high-speed SMT production line
- 2003/09 Set up two additional SMT production lines
- 2004/05 Set up one additional SIEMENS SMT production line as the 4th production line in the factory
- 2004/06 Increased the registered capital to NT\$ 50 million
- 2004/08 Became **ISO-9001** certified
- 2004/10 Became a Tatung selected vendor
- 2005/05 SMT 0201 lead-free process qualified by the Chung-li factory of the ASE Group
- 2006/02 Became a SW selected vendor.
- 2006/12 Added one SMT high-speed (FUJI NXT M3x4) production line
- 2008/02 Became **ISO-14001** certified
- 2008/04 Added two SMT high-speed (HITACHI GXH-1S) production lines to equip the factory with a total of 6 SMT production lines
- 2008/05 Added one **Router** board-cutting equipment
- 2008/09 Updated one FUJI NXT2 M3x4
- 2009/02 Added one Router (there are 2 Routers in the factory)
- 2009/10 Added FUJI NXT2 M3x2
- 2009/12 Adopted **ERP** system by Data Systems

## Milestones

- 2010/04 Updated one SMT FUJI NXT2
- 2010/08 Updated one SMT FUJI NXT2 and purchased one DAGE XD7500VR X-ray inspection system
- 2010/12 Added one SMT FUJI NXT2 high-speed production line as the 7th production line in the factory
- 2011/03 Added one SMT FUJI NXT2 high-speed production line, setup by end of March, as the 8th production line in the factory
- 2011/10 Moved to the current address at Yuan-shan Road, Chung-ho, New Taipei City
- 2011/10 Added one SMT FUJI NXT2 high-speed production line. The factory is equipped with a total of 9 production lines
- 2012/08 Added Auto Solder Paste Inspection (TRI-TR7007S II)\*4 during Jan to Aug 2012.
- 2013/10 change new SMT equipment [BTU reflow \*5, Heller reflow \*1]
- 2014/04 change new SMT equipment [multifunction chip mounter Fuji XPF-W 2500chp\*3, add a DIP [wave soldering machine 吉電JT1806580THL], insertion line expansion of two production lines
- 2016/10 Updated TWO SMT FUJI NXT3
- 2017/11 Updated TWO SMT AIMEX 3C
- 2018/10 Became IATF-16949 certified
- 2019/08 Win-house has been rated as a qualified manufacturer by Microsoft
- 2020/09 Updated one SMT FUJI NXT3 high-speed production line as the 9th production line in the factory. Import the Intelligent Sensor Inventory System
- 2021/05 Updated Seven SMT TRI 3D AOI
- 2021/11 Updated one SMT Ersa HOTFLOW and one DIP Ersa POWERFLOW

# Quality Assurance

**ISO 9001**  
QAIC · UKAS

**IATF 16949**  
TÜV Rheinland

*Certificate of Registration*



The Governing Board of  
Q.A. International Certification Limited  
hereby grants to:

**Win-House Electronic Co., Ltd.**  
Registration No.: QAIC / TW / 148004 - A

*(hereinafter called the Registered Company) the right to be listed in the Directory of Registered Companies in respect of the services listed below. These services shall be offered by the Registered Company at or from only the address given below in accordance with the quality management system in compliance with ISO 9001:2015.*

Address to which this Certificate refers:

**5F-4, No. 502, Yuanshan Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)**

Approved Scope to which this Certificate refers:

**The OEM of SMT, DIP, Hand-Welding, Test, Maintenance, Assembly and Packet.**  
*(Please note that the above scope represents the certified activity of the named organization and as such, the organization may undertake additional activities that are not covered under this certification.)*

Signed for and on behalf of the Board

  
 CHIEF EXECUTIVE

  
 SCHEME MANAGER

Certificate Issue Date : 10th December 2021 - Certificate Renewal Before : 9th December 2022  
Date of Initial Registration : 24th January 2014 - Re-Certification Before : 9th December 2023

This Certificate of Registration is granted subject to the Regulations approved by the Board.

**QA INTERNATIONAL**  
QA International Certification Ltd.  
Dudley Court  
Dudley Road  
Darlington  
United Kingdom  
DL1 4GG

Tel: +44 (0)1925 384272  
Fax: +44 (0)1925 480980  
www.qai.co.uk






**Certificate**

Standard	<b>IATF 16949:2016</b> <small>(1st edition, 2016-10-01)</small>
Certificate Registr. No.	<b>01 111 1833719W1</b>
IATF Certificate No.	0438745

Certificate Holder: **Win-House Electronic Co., Ltd.**  
B1 & 3 Floor-5 Floor, No.502, Yuanshan Road,  
Zhonghe District, New Taipei City 23545, Taiwan

Scope: **Manufacturing of PCB Assemblies**  
**Excluding Product Design**

Proof has been furnished by means of an audit that the requirements of IATF 16949:2016 are met.

Validity: The certificate is valid from 2021-12-21 until 2024-12-20.

Release date: 2021-12-22



  
 TÜV Rheinland Cert GmbH  
 Am Grauen Stein · 51105 Köln  
 Germany · NRW

3-IAC-GMC 01003 1 / 1

www.luv.com

**TÜVRheinland®**  
Precisely Right.

# Quality Assurance


**ISO 14001**

QAIC · UKAS

**IECQ QC080000**

KOREA TESTING LABORATORY

*Certificate of Registration*



The Governing Board of  
Q.A. International Certification Limited  
hereby grants to:

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Registration No.: QAIC / TW / 148005 - A

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Address to which this Certificate refers:


**SF-4, No. 502, Yuanshan Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)**

Approved Scope to which this Certificate refers:

**The OEM of SMT, DIP, Hand-Welding, Test, Maintenance, Assembly and Packet & Management of Related Environmental Aspects.**  
*(Please note that the above scope represents the certified activity of the named organization and as such, the organization may undertake additional activities that are not covered under this certification.)*

Signed for and on behalf of the Board

  
**CHIEF EXECUTIVE**



  
**SCHEME MANAGER**


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Tel: +44 (0)1925 384272  
Fax: +44 (0)1925 480990  
www.qa.co.uk



**IEC QUALITY ASSESSMENT SYSTEM (IECQ)**  
covering Electronic Components,  
Assemblies, Related Materials and Processes  
For rules and details of the IECQ visit www.iecq.org

**IECQ Certificate of Conformity**  
**Hazardous Substance Process Management**

IECQ Certificate No.: IECQ-H ARES 22.0005	Issue No.: 1	Status: Current
Supersedes:	Issue Date: 2022/02/16	Org Issue: 2022/02/16
CB Reference No.: ARES/TW021001HSPM	Expiration: 2025/02/17	

Applicable to:

- European Directive 2011/65/EU ("RoHS - Restriction of the use of certain Hazardous Substances") in electrical and electronic equipment, including all published amendments

**Win-House Electronic Co., Ltd.**  
SF-4, No.502, Yuanshan Rd., Zhonghe Dist., New Taipei City 235, Taiwan

The organization has developed and implemented Hazardous Substance Process Management procedures and related processes which have been assessed and found to comply with the applicable requirements for IECQ HSPM organization approval which is in accordance with the Basic Rules IECQ 01 and Rules of Procedure IECQ 03-5 "IECQ Hazardous Substances Process Management" of the IEC Quality Assessment System for Electronic Components (IECQ), and with respect to the IECQ Specification:


- IECQ QC 080000:2017 - Hazardous Substance Process Management System Requirements

This Certificate is applicable to all electronic components, assemblies, related materials and processes for the following scope of activities:  
**The OEM of SMT, DIP, Hand-Welding, Test, Maintenance, Assembly and Packet**

Issued by the Certification Body: **ARES International Certification Co. Ltd.**  
No.12-2, Ln. 187, Wenping Rd., Anping Dist., Tainan City 708 Taiwan

Authorized person:  
**CHOU Guyuwen**

The validity of this certificate is maintained through ongoing surveillance audits by the IECQ CB using this certificate.  
The Certificate of Conformity may be suspended or withdrawn in accordance with the Rules of Procedure of the IECQ System and its Schemes.  
This certificate and any activities may only be re-audited in full.  
This certificate is not transferable and remains the property of the issuing IECQ CB.  
The Status and Authenticity of this certificate may be verified by visiting [www.iecq.org](http://www.iecq.org)



Approved/Translation: IECQ-H ARES 201801-CN.pdf IECQ-H Rev 18



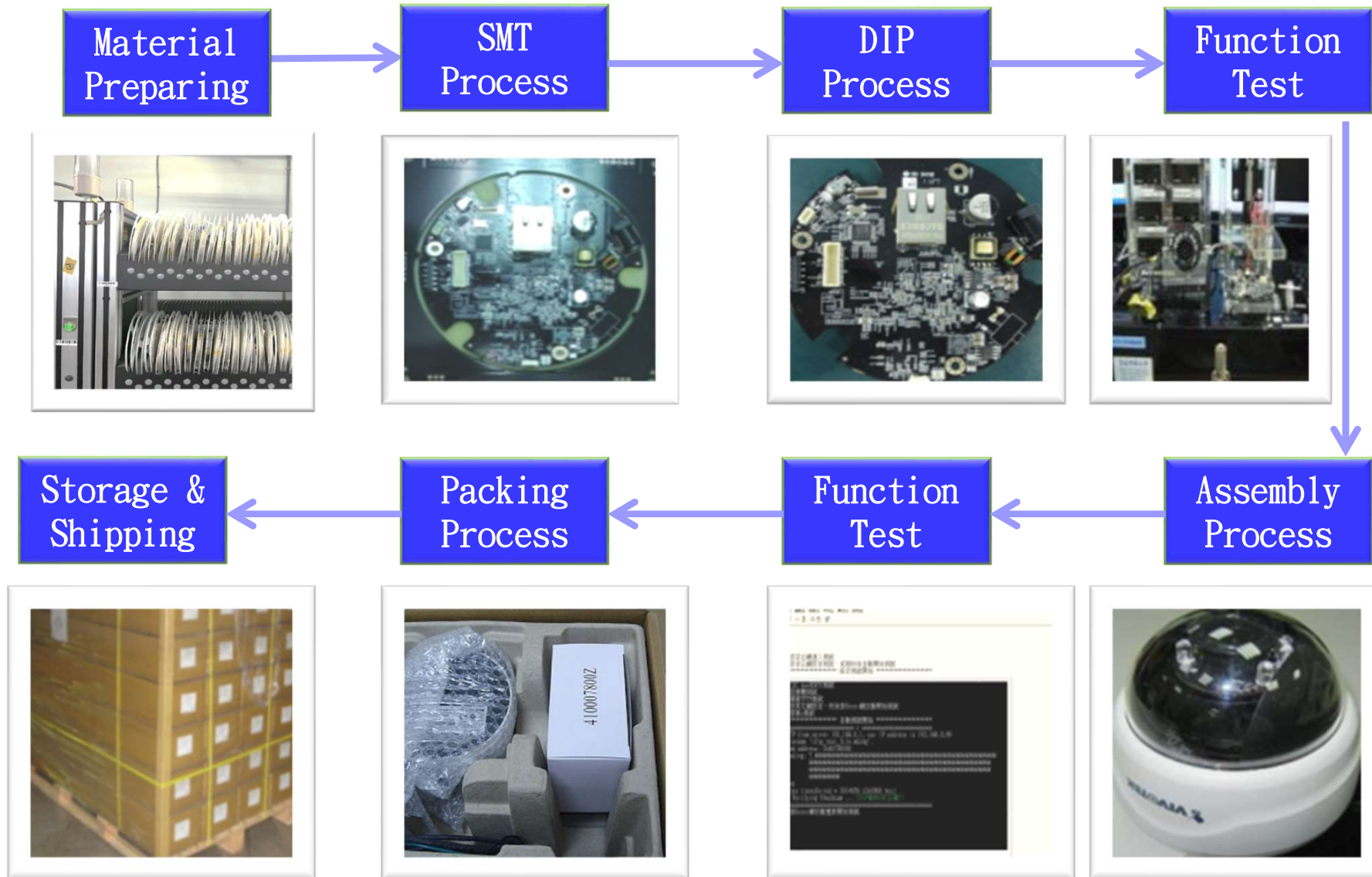
# Factory Floor Distribution

Floor	Process for Production
5F	Testing, Assembling, Packaging
4F	Air, Nitrogen, Water supply system
3F	SMT、DIP
B1	Materials store (Electronic materials、 Assembling and Packaging materials)

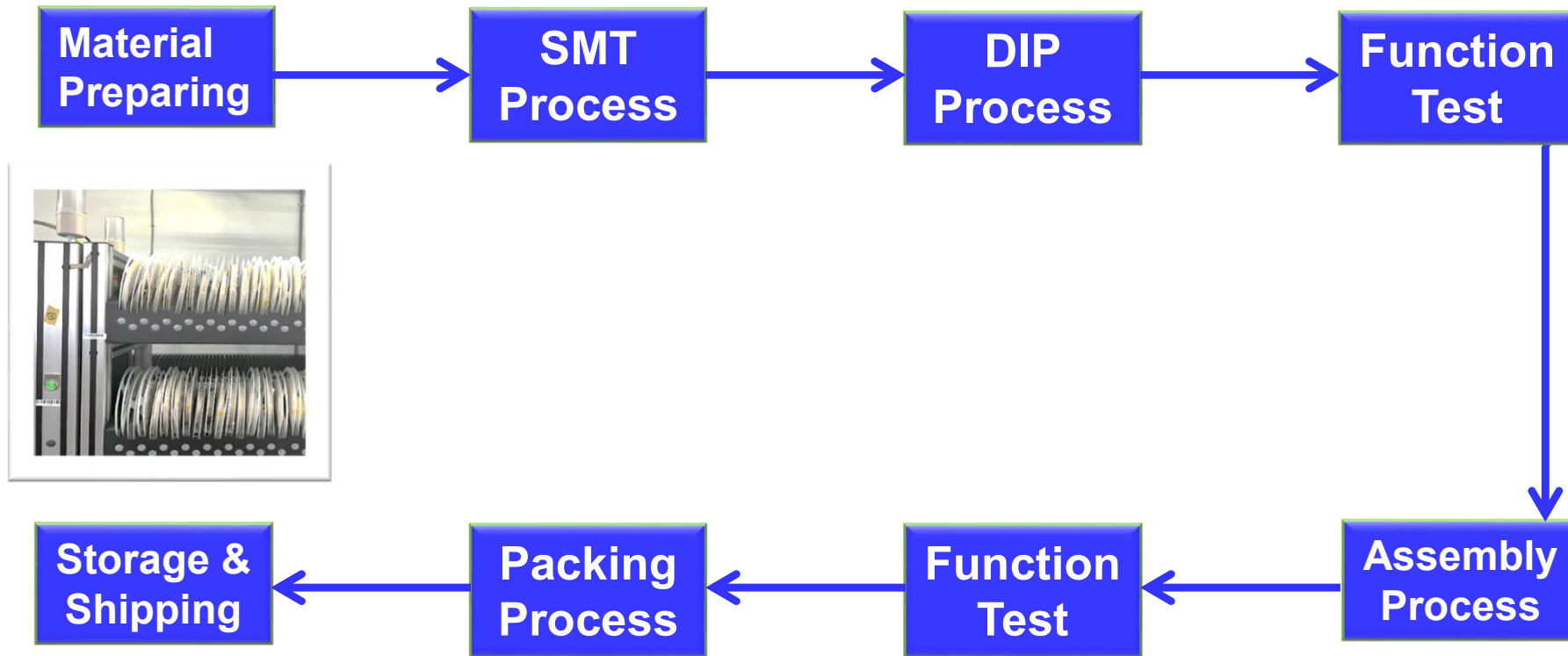




# Product Realization



# Product Realization



# Material Control

Intelligent Sensor Inventory System

ERP Workflow System

First in First out



Temperature and humidity monitoring device



RECEIVING

Scan QR Code for item ID

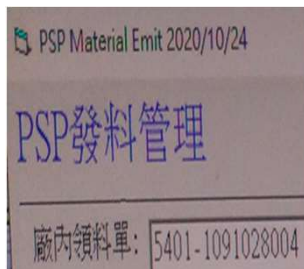


Randomly put Component Reels into Intelligent Sensor Cabinet



Preparing

Enter P.O. #



LED LIGHT in front of needed components will turn on



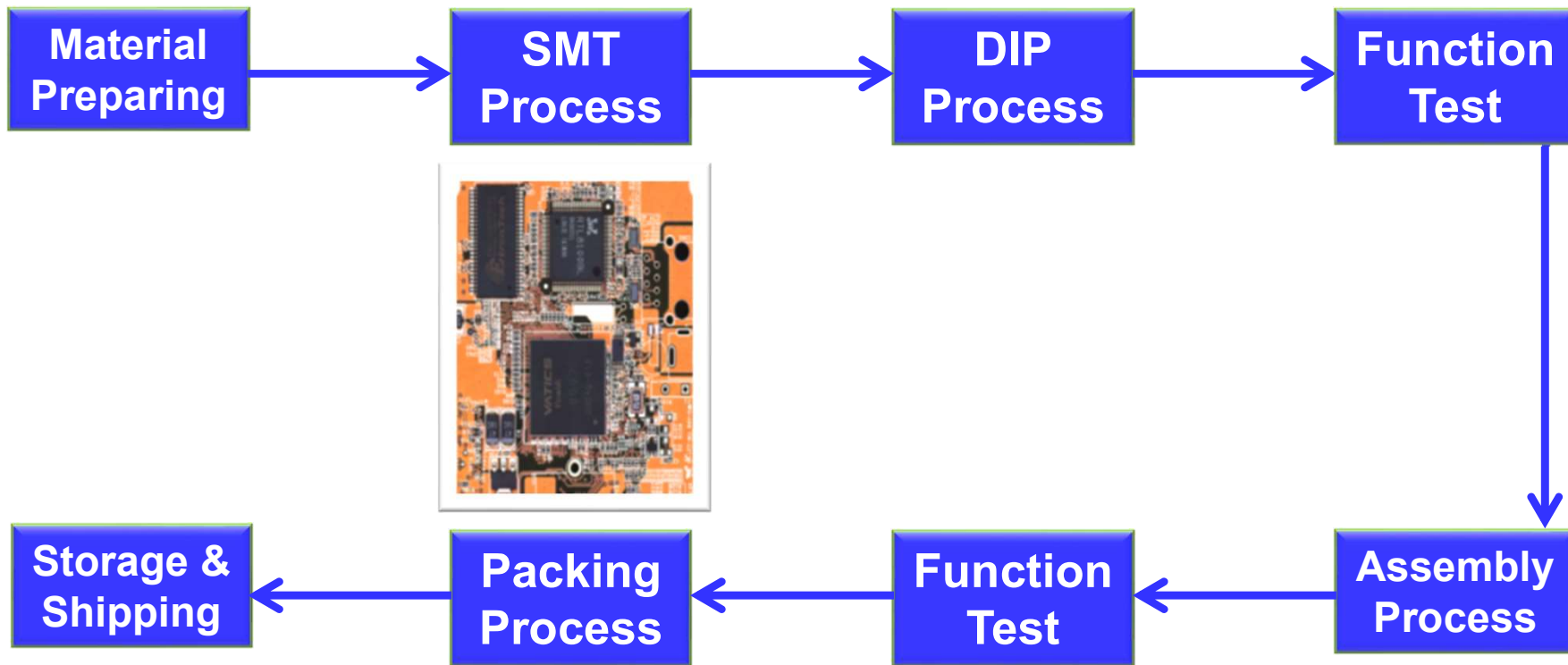
Pick up the components



If picked up a wrong one, the light will turned into red as a warning.



# Product Realization





# SMT Process

## SMT plant layout



# SMT process

## SMT Equipments 、 SMT in-process flow

Printer  
Dek ELA



Solder Paste  
Inspection  
(SPI) TR7007SII



High speed Mounter  
Fuji NXT M3II + M6



Flexible Mounter  
Fuji XPF AIMEX



SMT process  
product



Inspect  
40X Microscope



AOI  
TR-7700Q-SIII



Reflow Oven  
Ersa HOTFLOW 3/20

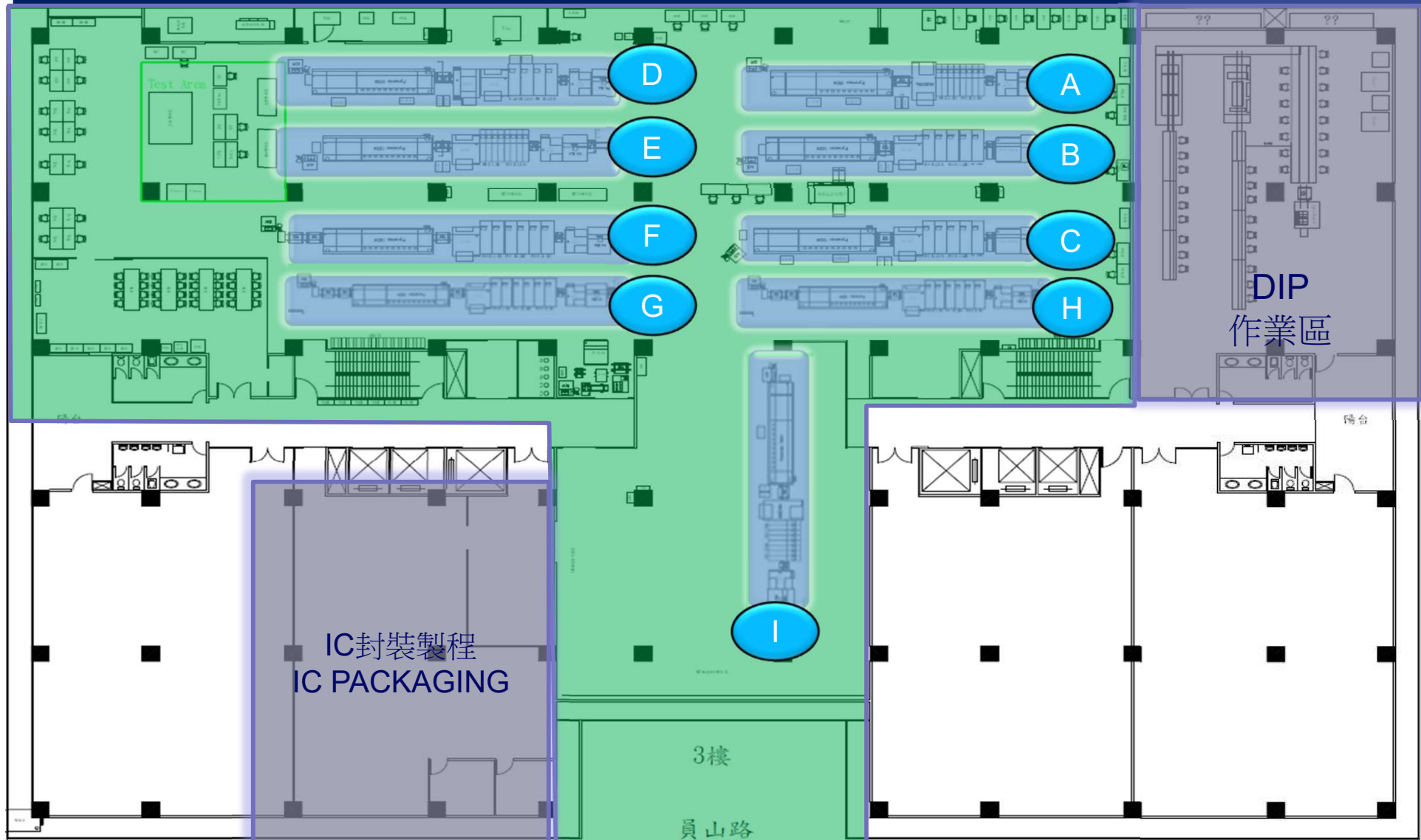


# SMT Process

3F-SMT Area: 9 SMT LINE

Daily productivity(22Hr): 31,437,560 chips

Monthly Productivity (28 days) : 880,251,560 chips





# SMT Process

# SMT Facilities and Productivities

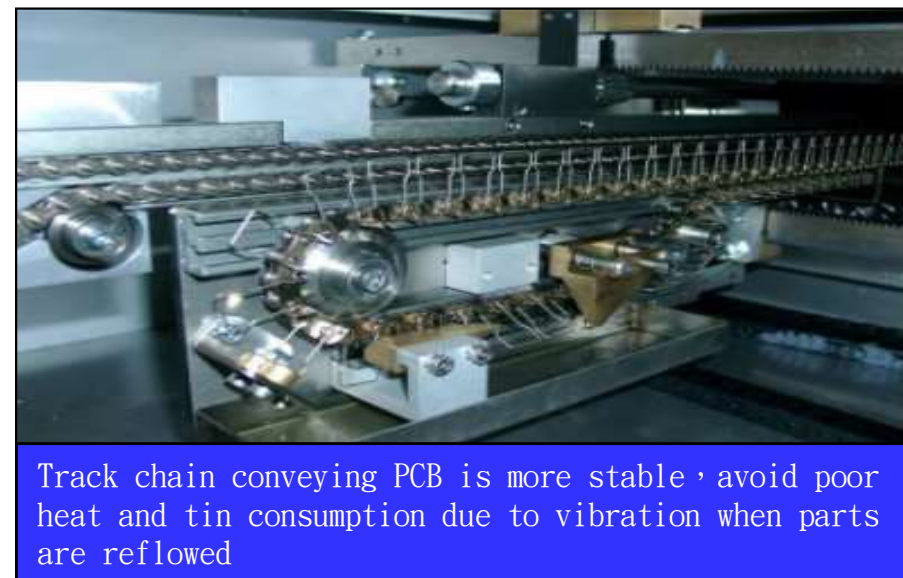
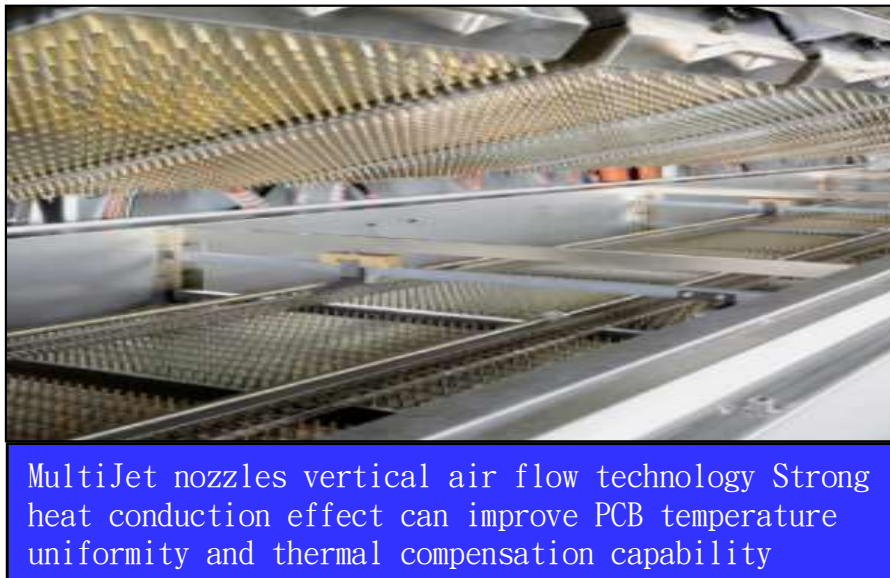
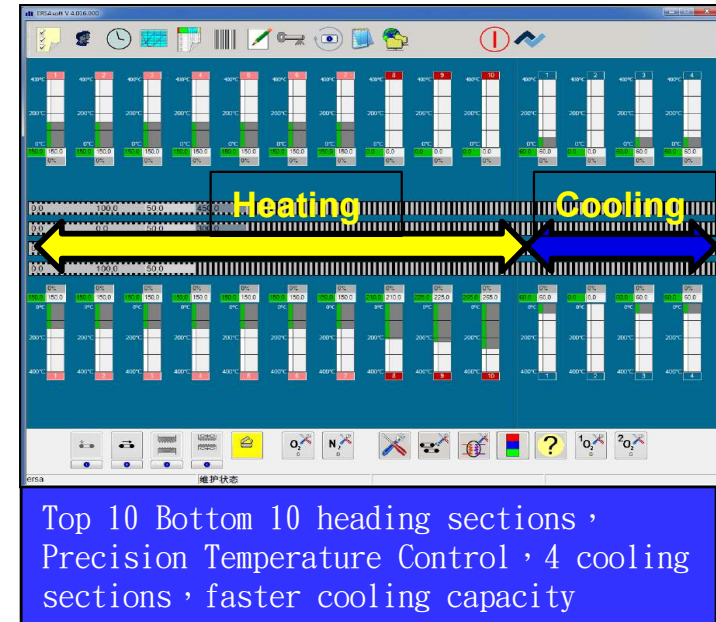
## Productivities of Taipei Factory

Daily Productivities (22hrs): 31,437,560 chips , Monthly Productivities(28days): 880, 251, 560 chips

LINE	SMT Facilities						Workstation	Reflow Oven	AOI	Daily Productivities	
Taipei Factory	A	Fuji NXTIII M3(H24)*4 144000cph 50x50~534X610(mm)	Fuji NXTIII M3(V12)*3 (12HS)*1 100000cph 50x50~534x610(mm)	Fuji NXTIII M6(DX)*1 22000cph 50x50~534X610(mm)	AIMEX IIIc, Tray 22000cph 50x50~508x400(mm)			德佳DER-1000L 50x50~450x410 (mm)	BTU Pyramax 150N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	4435200
	B	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(V12)*2 52000cph 50x50~534x610(mm)	Fuji XPF-W 25000cph with Tray 50x50-686x508(mm)			Sunsda(1M) 50x50~620x620 (mm)	BTU Pyramax 125N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	3357200
	C	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(V12)*2 52000cph 50x50~534x610(mm)	Fuji XPF-W 25000cph with Tray 50x50-686x508(mm)			Sunsda (1M) 50x50~620x620 (mm)	BTU Pyramax 150N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	3357200
	D	Fuji NXTIII M3(H24)*4 144000cph 50x50~534X610(mm)	Fuji NXTIII M3(V12)*3 (12HS)*1 100000cph 50x50~534x610(mm)	Fuji NXTIII M6(DX)*1 22000cph 50x50~534X610(mm)	Fuji XPF-L 25000cph with Tray 50x50~457x356(mm)			德邦TSA-402 50x50~450x250 (mm)	BTU Pyramax 150N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	4481400
	E	Fuji NXTIII M3(H24)*4 144000cph 50x50~534X610(mm)	Fuji NXTIII M3(V12)*4 52000cph 50x50~534X610(mm)	AIMEX IIIc, Tray 27000cph 50x50~508x400(mm)	德律 TR-7700 III 50x50~330x250(mm)	英華達(0.6M) 50x50~450x350(mm)	Fuji NXTII M6(H01) 4200cph 50x50~534X610( mm)	昇士達SWT- 100A 50x50~450x250 (mm)	BTU Pyramax 125N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	4992680
	F	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(V12)*2 44000cph 50x50~534x610(mm)	Fuji XPF-W 25000cph with Tray 50x50-686x508(mm)	Fuji NXTII M6(H01) 4200cph 50x50~534X610(mm)		Sunsda (1M) 50x50~620x450 (mm)	ERSA Hotflow 3/20 50~480(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	3298680
	G	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(V12)*2 52000cph 50x50~534X610(mm)	Fuji XPF-W 25000cph with Tray 50x50-686x508(mm)			Sunsda (1M) 50x50~620x350 (mm)	BTU Pyramax 125N 50~450(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	3403400
	H	Fuji NXTIII M6(H24)*1 36000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*1 36000cph 50x50~534X610(mm)	Fuji NXTIII M6(H24)*2 72000cph 50x50~534X610(mm)	Fuji NXTIII M6(V12)*1 26000cph, (DX)*1 26000cph 50x50~534X610(mm)	AIMEX III, Tray 27000cph 50x50~774x710(mm)		德佳DER-1000L 50x50~450x410 (mm)	BTU Pyramax 150N 50~450(mm)	德律 TR-7500-SIII 50x50~330x250(mm)	3434200
	I	Fuji NXTIII M6(H24, H04) 42000cph 50x50~534X610(mm)						SSWTM-1M 50x50~450x250 (mm)	BTU Pyramax 125N 50~450(mm)	德律 TR-7500DT 50x50~330x250(mm)	677600
Kaohsiung Factory	A	Fuji NXTII M3(V12)*2 52000cph 50x50~534X250(mm)	Fuji NXT M3*2 33000cph 50x50~534X260(mm)	Fuji NXT M3*2 33000cph 50x50~534X260(mm)				SSWTM-1M 50x50~450x250 (mm)	Heller 1913 MKIII 50~350(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	1555400
	B	Fuji NXTII M3(V12)*2 52000cph 50x50~534X250(mm)	Fuji NXT II M3(V12)*2 (H02)*2 68000cph 50x50~534X260(mm)					德佳DER-1000L 50x50~450x410 (mm)	Heller 1809 MKIII 50~350(mm)	德律 TR-7700Q-SIII 50x50~510x460(mm)	1848000

# SMT 製程

## Ersa Reflow (N2)



# SMT Process



SPI

## Solder Paste Inspection (SPI)

- ◆ Inspect all solder paste thickness on PCB(100%)
- ◆ Inspect the volume of solder paste on BGA pad, to prevent no wetting 、 short 、 solder insufficient 。



Component : RA2\_175  
 Type : YC12(8.8)  
 Mass: 0.116 (ShMO: 33.2%)  
 Mass: 0.107 (ShMO: 3.1%)  
 Height: 0.894744 (95)

Total Inspection Solder Fail Statistics:			
1	Scan: 11.2 sec	Inspect: 4.6 sec	
Volume	Over: 5 (0.6%)	Under: 133 (17.6%)	
Area	Over: 0.2	Under: 28 (0.4%)	
Height	Over: 0	Under: 529 (70.2%)	
Bridge	58 (7.7%)		
X Shift	0		
Y Shift	0		
Total	753		

Board Yield Statistics:			
DATE/TIME	2010-03-15 17:23:22		
No. of Tested	2		
No. of Pass	0	0%	
Confirm Fail	2	100%	
Confirm Pass	0	0%	

**FAIL**

Fail Status

ERROR COMPONENTS

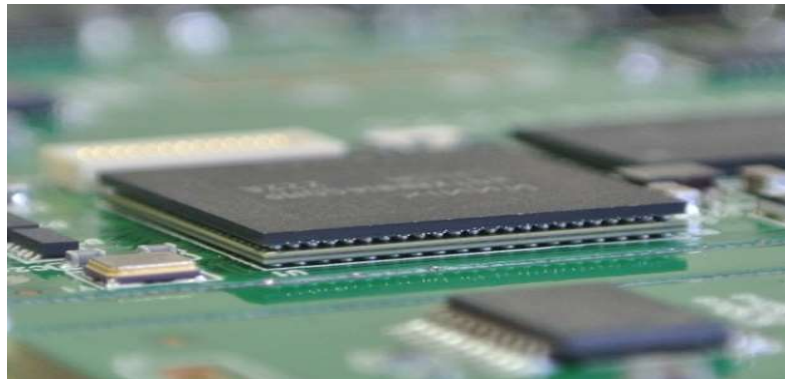
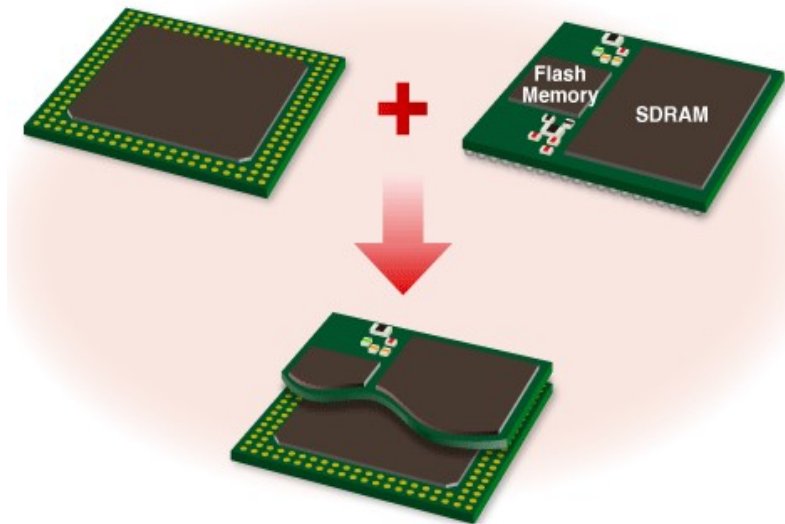
- RA04\_(CIRCLE25) HEIGHT UN...
- C826\_20(603)\_FOR\_C() VOLUME I...
- W1\_VOLUME UNDER(0.005, 4)
- C12\_20(603)\_FOR\_C() HEIGHT U...
- W70\_2CT50(48) BRIDGE
- C161\_10(201)\_FOR\_C() VOLUME I...
- C376\_10(201)\_FOR\_C() VOLUME I...
- R96\_10(201)\_FOR\_3() AREA UNDE...
- C392\_1C(01005) HEIGHT UNDER
- C409\_1C(01005) VOLUME UNDER
- C485\_1C(01005) HEIGHT UNDER
- C491\_1C(01005) HEIGHT UNDER
- C590\_1C(01005) HEIGHT UNDER



# SMT Process

## SMT Process Interrelated Facility

### POP---Package on Package



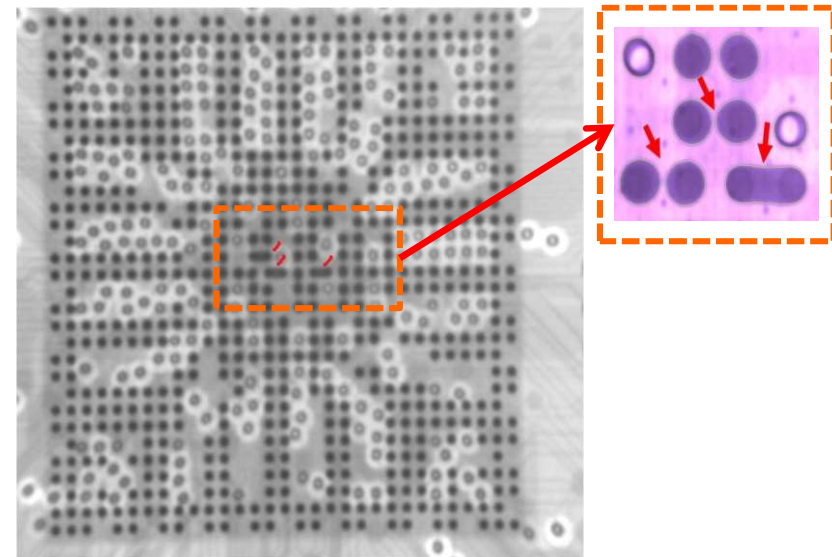
# SMT Process

# SMT Process Interrelated Facility

X-ray machine (2.5D)



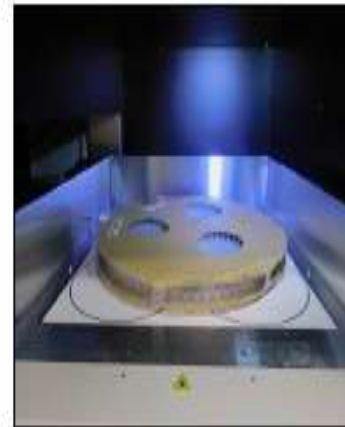
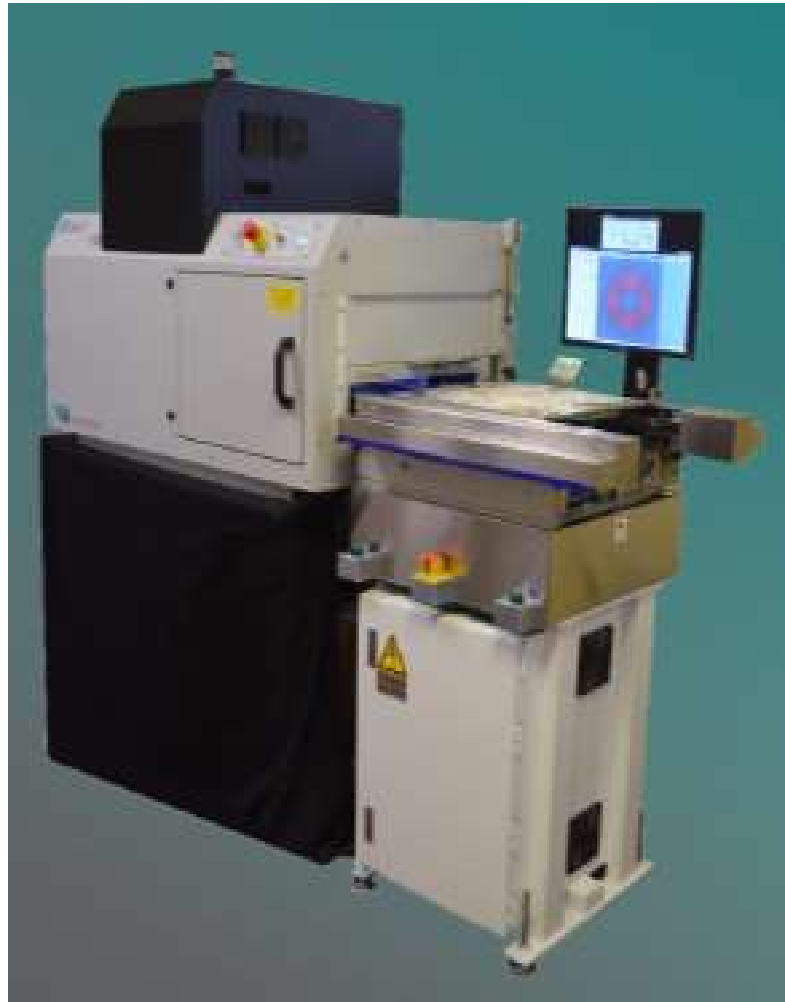
Dage VR X-ray  
TubeHigh Resolution – 950nm (0.95m) A  
vertical system configuration with the X-  
ray tube sitting below the isocentric  
'move and tilt' of the detector,  
providesthe collision-free, high  
magnification inspection required for  
today' s inspection tasks



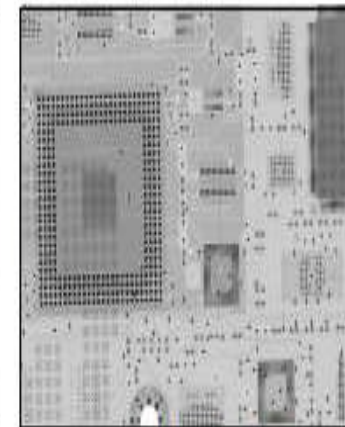
# SMT Process

## SMT Process Interrelated Facility

X Quik II Auto-Load



15" REELS



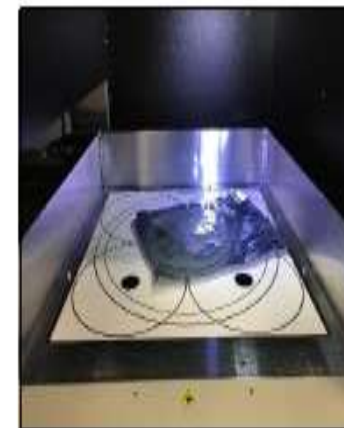
PCB INSPECTION



QUADCOUNT



01005 COMPONENTS



ESD AND MOISTURE SENSITIVE BAGS



WAFFLE PACKS

# SMT Process

## Auto Programmer

### SMT Process Interrelated Facility



The Programmer is designed automatically multi-function to programming all kind of IC package , such as WLCSP, LQFP, BGA, QFN, TSOP, SOP...etc.



# SMT Process

## Stencil Cleaner



## SMT Process Interrelated Facility

## Solder paste thickness checker(01005)



# SMT Process

N2 oven

## SMT Process Interrelated Facility



# SMT process

## SMT Process Interrelated Facility

Nitrogen gas supply system:

Supply nitrogen pressure of 5 to 7 Kg / cm <sup>2</sup>, >=100 ppm.

Supply [Pressure] 5 ~ 8 Kg / cm <sup>2</sup>.

Air Compressor

Dryer Nitrogen Generator

N2 Booth & Purifier





# SMT process

# SMT process accessory equipment

Water supply system- >1M  $\Omega$

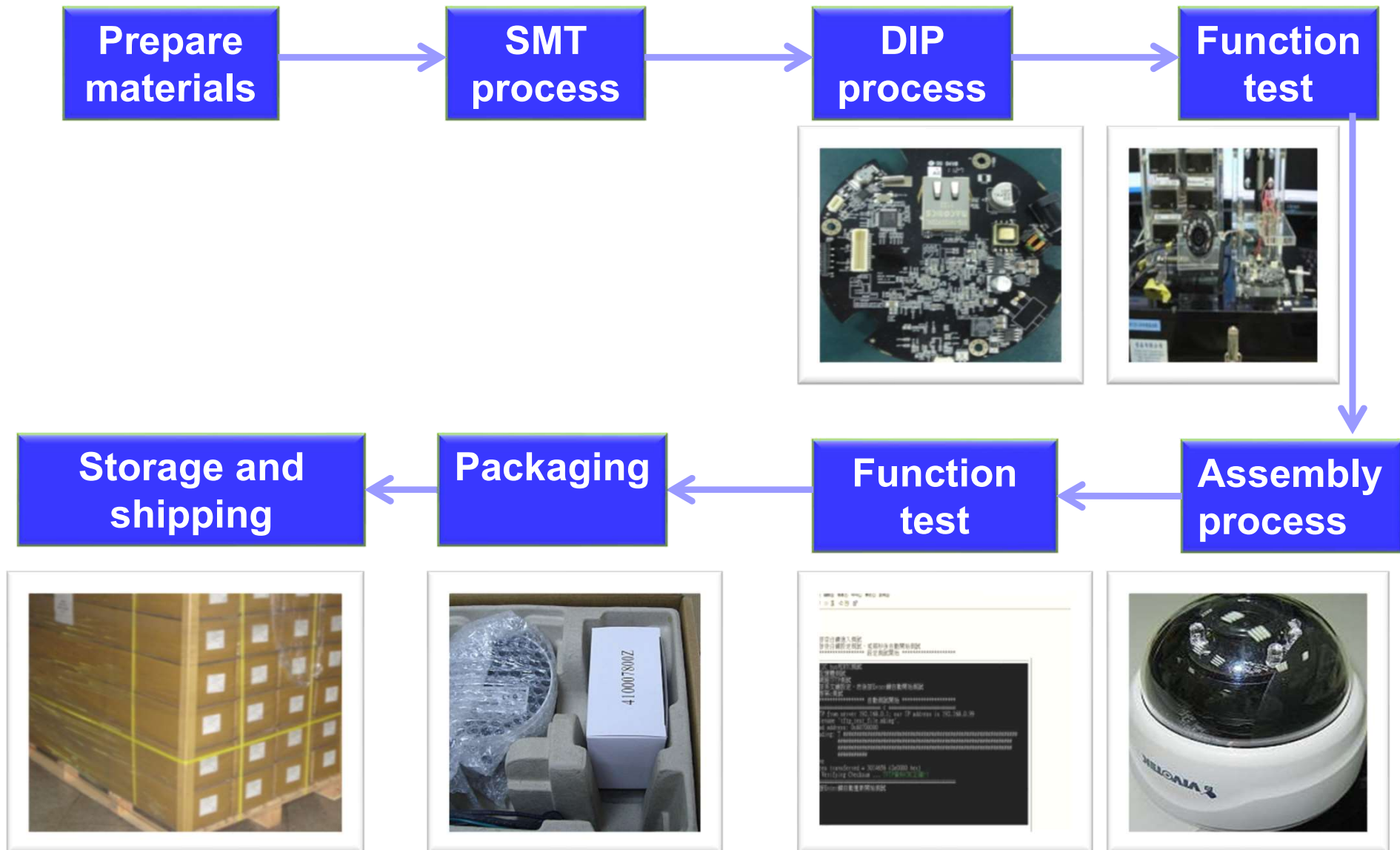


**SGS** 台灣檢驗科技  
行政院環保署許可證字第  
水質樣品

委託單位：文穎電子股份有限公司  
業 別：\*  
樣品基質：放流水



# Win-house OEM- Production Process





# DIP生產流程

Manual Insertion Line  
+Ersa Wave Soldering



The troubleshooting  
and hand-solder line



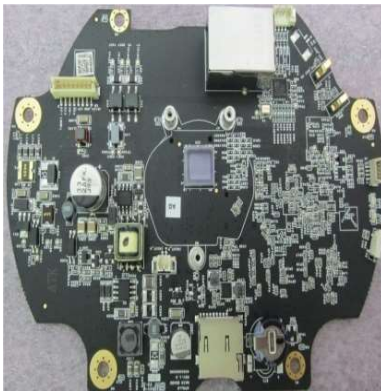
Visual inspection  
Magnifier



QC Inspection



DIP PCBA



QC Inspection



Visual inspection  
Magnifier



Router



# DIP Process

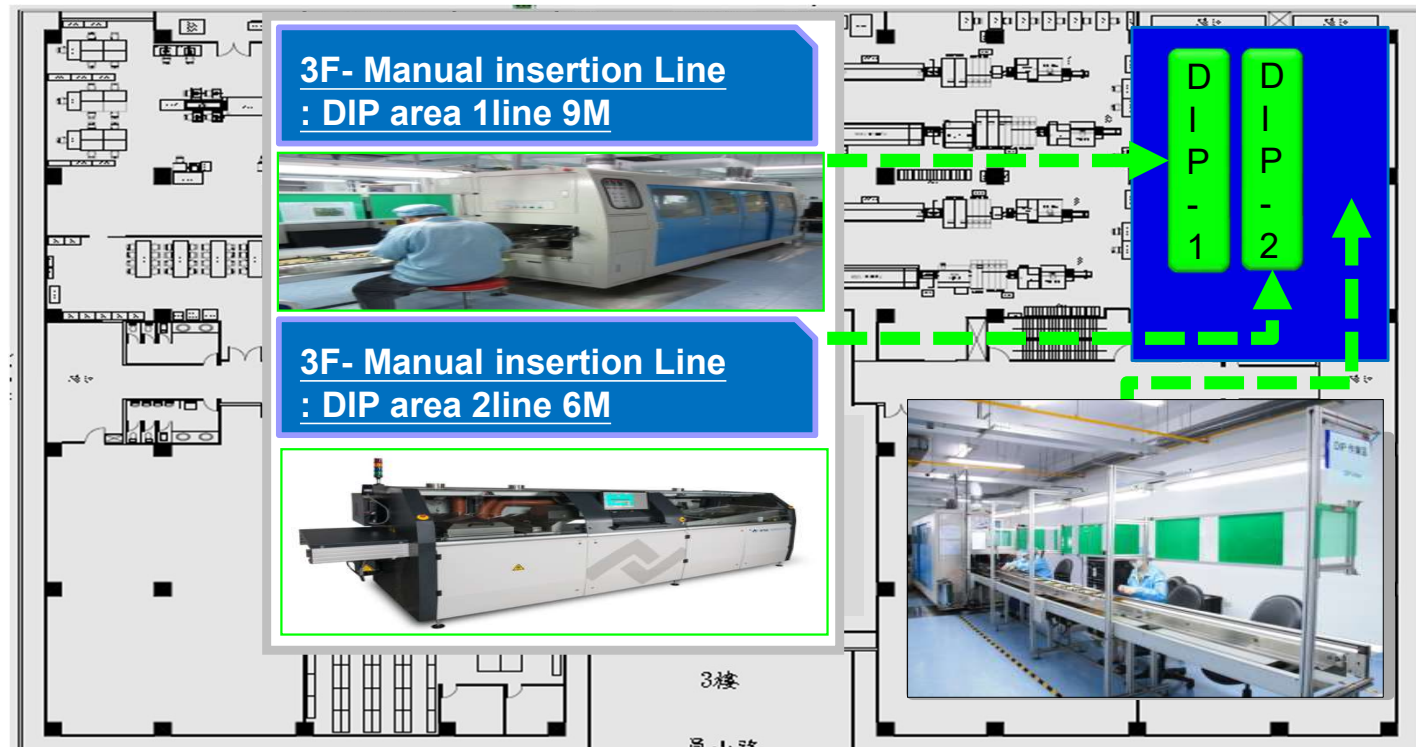
## DIP equipments list&Factory map

Process	Equipment Name	Brand
DIP	Wave solder	Ersa*1、JYIDIANN*2
	Manual insertion Line	9M*1、6M*1
	Touch up /Assembly	14M*1
	Router	ER 7000AT*3

Wave solder \* 3



Router \* 3





# DIP Process

## Accessory Equipment

### Automatic soldering machine



Advantage of automatic soldering machine, the aesthetic and consistency of solder joints, to avoid reduce the yield cause by labour and quality issue.

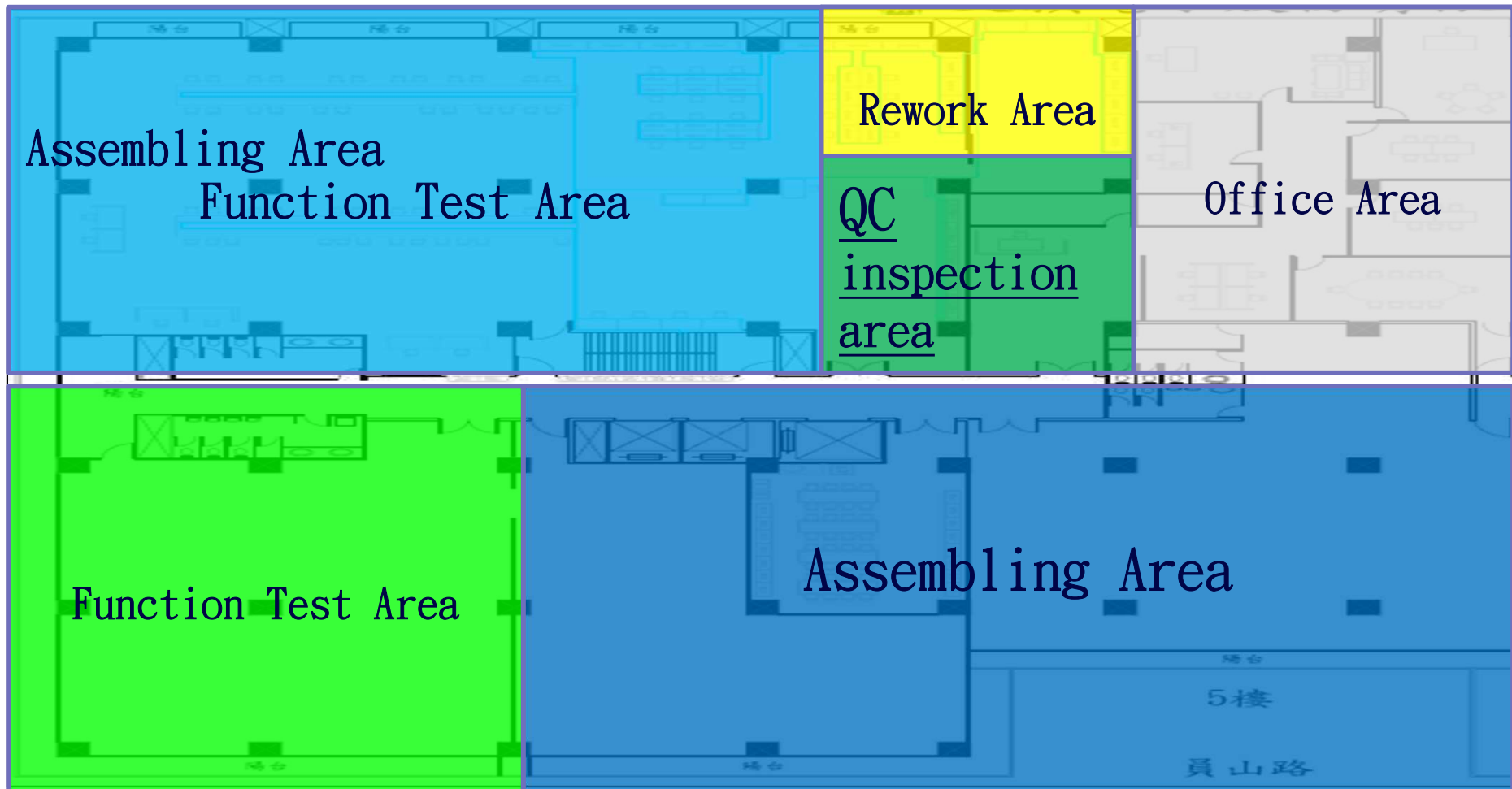
PCB Max Size : 265\*300 mm  
component gap > 3mm  
precision control of solder wire 0.02mm  
Filling rate > 75%

# Process of testing 、 assembling 、 packaging

## 5F-Graphic Card Production area



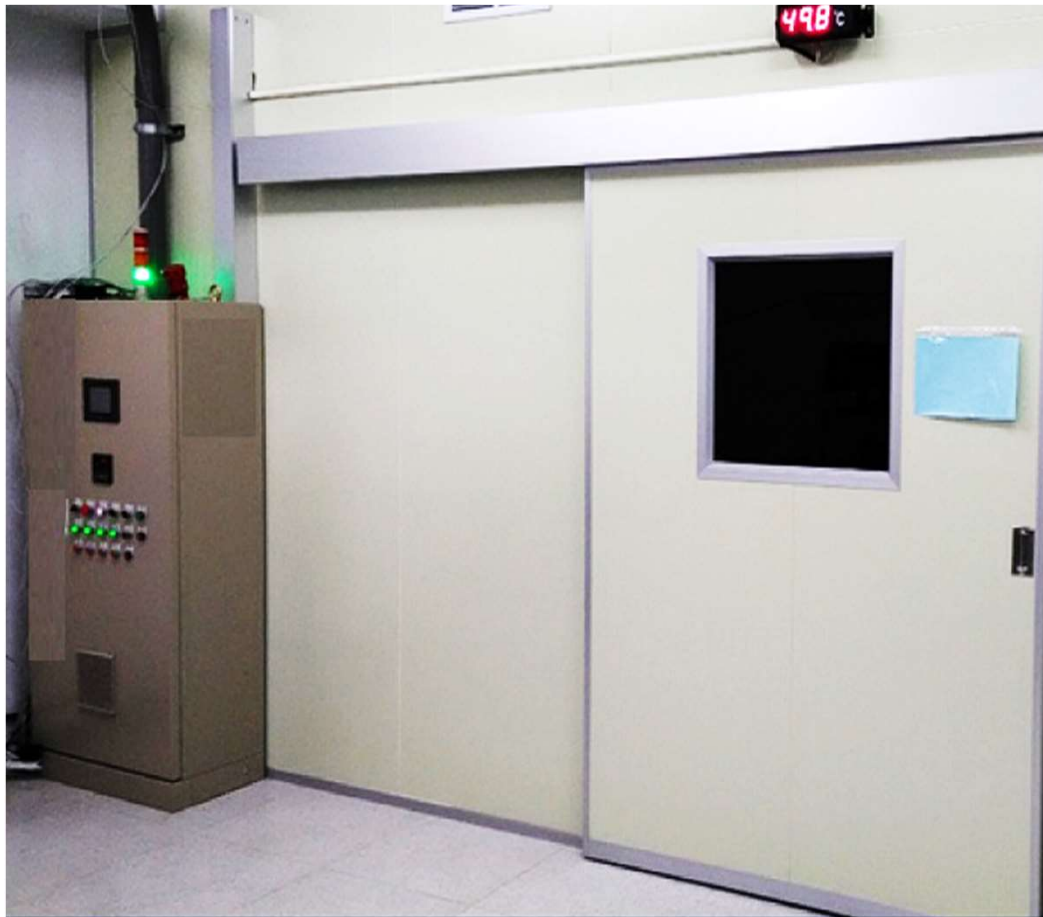
High-end graphic card process  
Dayly(22Hr) capacity 6,000 sets  
Monthly(28days) capacity 168,000 sets



# Test Process





## Major Equipment for Testing

Burn-in room (equipment temperature setting range 99.9°C, operating temperature setting  $\leq 70^\circ\text{C}$ )



# Major Equipment for Assembling 、 Testing 、 Packing

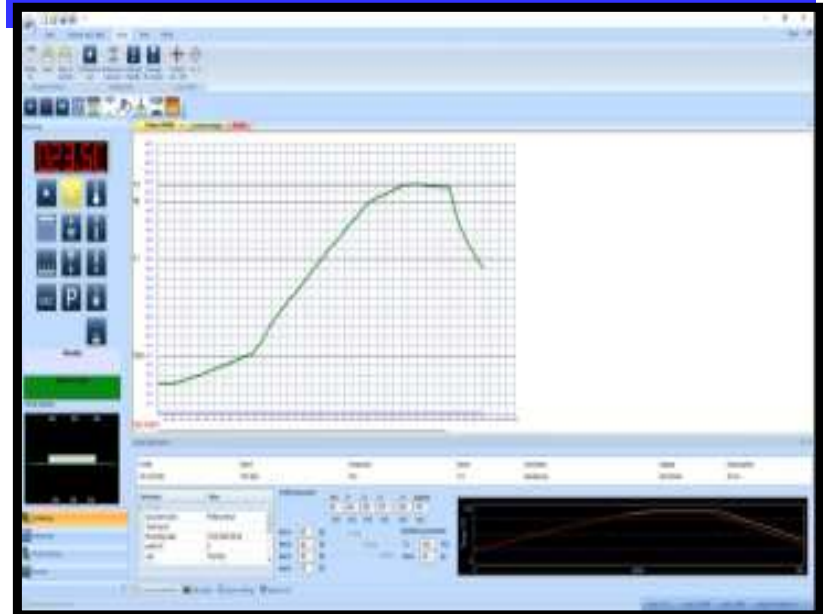
Process	Equipment Name	Brand	Quantity
<b>Assembling 、 Testing 、 Packing</b>	Board Testing ICT(In-Circuit Tester )	TRI	2
	BGA Rework / BGA Reflow machine BGA	美帝/Ersa	2
	X-ray machine (3D) X-RAY	Dage	1

Board Testing ICT	IR BGA Rework Machine	Ersa HR600 BGA Rework Machine	X-ray machine (2.5D)
			

BGA rework station (Ersa HR600)



Monitoring the temperature of BGA, uniform and safe heating system, flexible required heating power, can be done BGA rework, to protect PCB over heating.





Assembling、Testing、Packing

Major production equipment

## UV Laser engraving machine



UV Laser engraving machine connect with MES system, auto generate 2D barcode, avoid duplicated barcode, wrong barcode, poor barcode, monitoring process status with barcode and traceability.

### Device Parameter

PCB Max Size	510mm*460mm /
PCB Min Size	50*50mm
PCB Thickness	0.5-3mm
PCB Top/Bottom clearance	15mm
Laser spot diameter/minimum 2D barcode size	0.03mm /10*10mm
Barcode types	1D, 2D, picture and text
Material	Wood, glass, Mattel, ceramics, plastic, paper



Assembling、Testing、Packing

Major production equipment

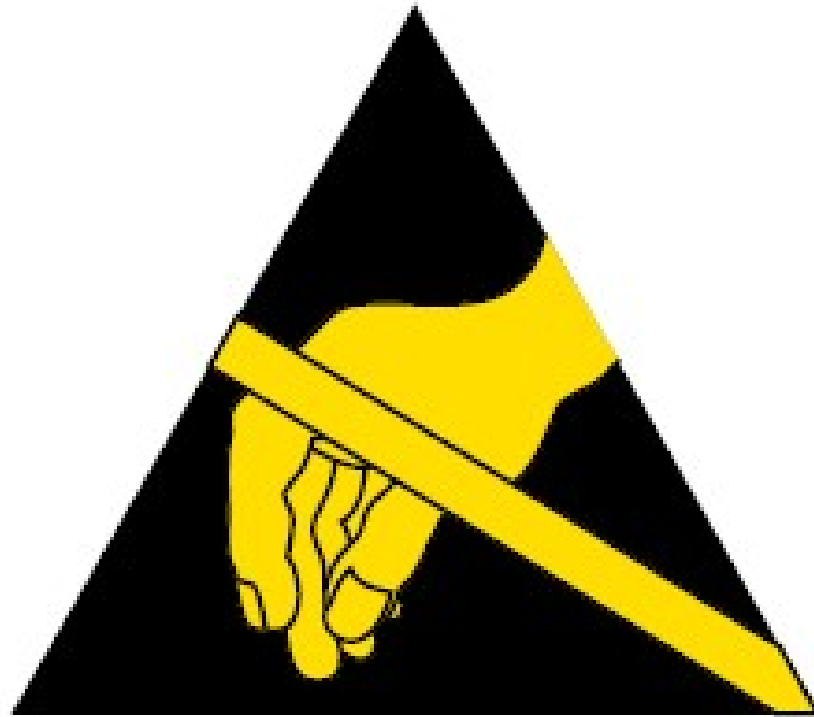
## 2.5D Image measure instrument



2.5D image measure instrument: non contact measurement system, measure length, angle, height, size. Maximum size 300×200mm precision 0.001mm

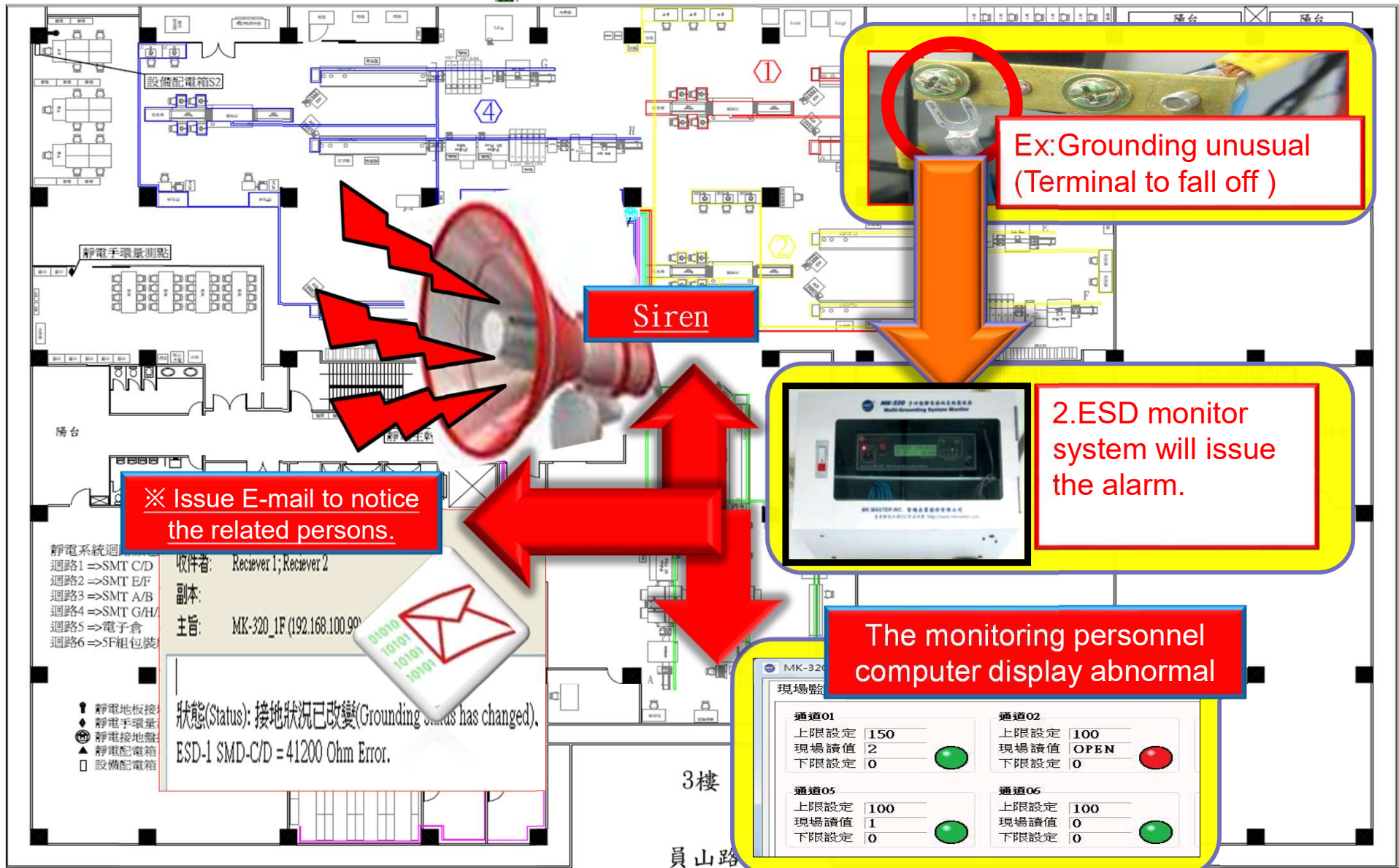


# ESD Electrostatic Protection



# ESD Electrostatic Protection

# MK320 ESD monitoring system



# ESD protection

**[表面阻抗]量測值記錄表** Rev.A F-0404-08

品名	靜電桌布	標準規格	7.5×10 <sup>5</sup> ~1×10 <sup>10</sup> Ω				
3F	ESD-B-001	2012/4/1	4.8×10 <sup>7</sup> Ω	趙天壽	華淑芬	OK	3F-製造部
3F	ESD-B-002	2012/4/1	3.4×10 <sup>7</sup> Ω	趙天壽	華淑芬	OK	3F-製造部

**RT-1000**  
(Digital surface impedance tester)



# ESD Static facilities [measuring devices]

**[靜電消除器]記錄表** Rev.A F-0404-11

品名	離子風扇	標準規格	< ±100V							
5F	離子風扇	ESD-D-001	2012/4/1	54	52	34	趙天壽	華淑芬	OK	尺寸: 108.6*10.2*17.1cm
5F	離子風扇	ESD-D-002	2012/4/1	4	16	1	趙天壽	華淑芬	OK	尺寸: 85*8*21cm

**FMX-003**  
(Dual-use portable static voltage tester)

5F	離子風扇	ESD-D-001	2012/4/1	54	52	34	趙天壽	華淑芬	OK	尺寸: 108.6*10.2*17.1cm
5F	離子風扇	ESD-D-001	2012/4/1	54	52	34	趙天壽	華淑芬	OK	尺寸: 108.6*10.2*17.1cm
5F	離子風扇	ESD-D-001	2012/4/1	54	52	34	趙天壽	華淑芬	OK	尺寸: 108.6*10.2*17.1cm
5F	離子風扇	ESD-D-001	2012/4/1	54	52	34	趙天壽	華淑芬	OK	尺寸: 108.6*10.2*17.1cm
3F	離子風扇	ESD-D-002	2012/4/1	4	16	1	趙天壽	華淑芬	OK	尺寸: 85*8*21cm
3F	離子風扇	ESD-D-002	2012/4/1	4	16	1	趙天壽	華淑芬	OK	尺寸: 85*8*21cm





# Smart rack ESD grounding

## Grounding impedance]Conductive floor wire



[接地阻抗]量測值記錄表

年月日 場所 圖號 圖名 圖說 備註

日期	項目	設備編號	標準規格	檢閱日期	測量值	檢閱人員	審核人員	判定結果
2012/4/1	聯機架內聯機架內接地板1	ESD-T-001	$1.0 \times 10^5 - 1.0 \times 10^6 \Omega$	2012/4/1	$2.5 \times 10^5 \Omega$	施天華	廖淑芬	OK
2012/4/1	聯機架內聯機架內接地板2	ESD-T-002	$1.0 \times 10^5 - 1.0 \times 10^6 \Omega$	2012/4/1	$2.1 \times 10^5 \Omega$	施天華	廖淑芬	OK
2012/4/1	聯機架內聯機架內接地板3	ESD-T-003	$1.0 \times 10^5 - 1.0 \times 10^6 \Omega$	2012/4/1	$2.4 \times 10^5 \Omega$	施天華	廖淑芬	OK
2012/4/1	聯機架內聯機架內接地板4	ESD-T-004	$1.0 \times 10^5 - 1.0 \times 10^6 \Omega$	2012/4/1	$2.7 \times 10^5 \Omega$	施天華	廖淑芬	OK

## Staff import and export install [Conductive beads]



## Smart rack ESD grounding



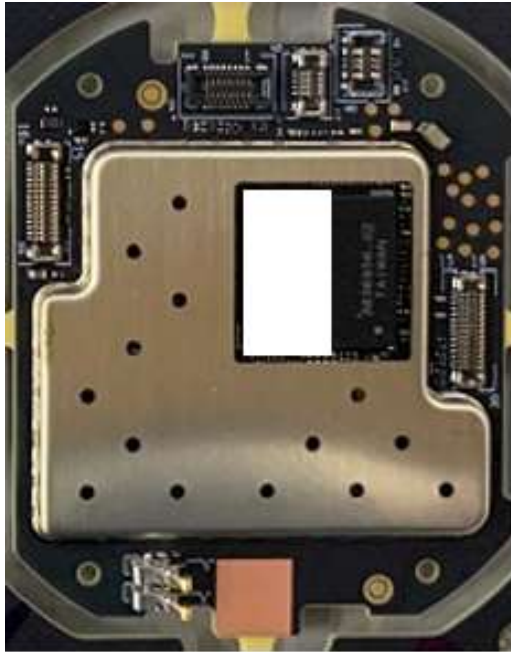




# Customer Product

## Customer Product

### Smart Watch (5G)



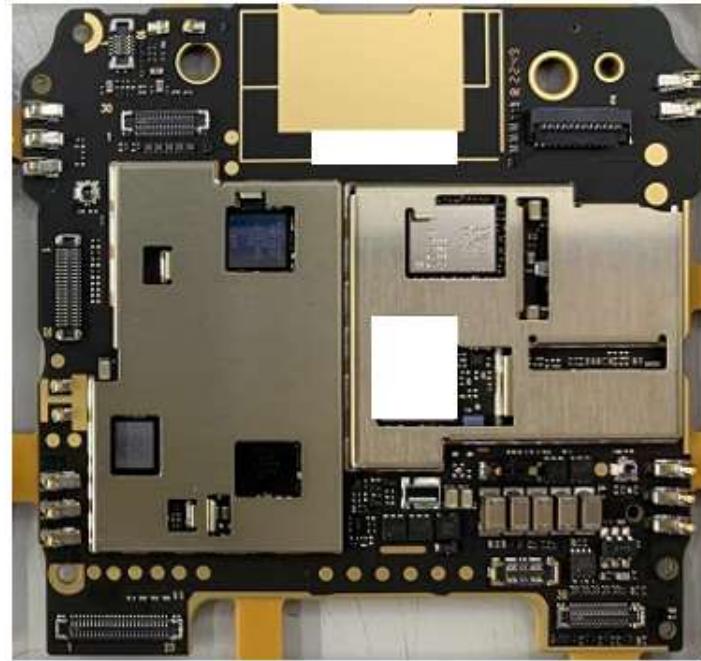
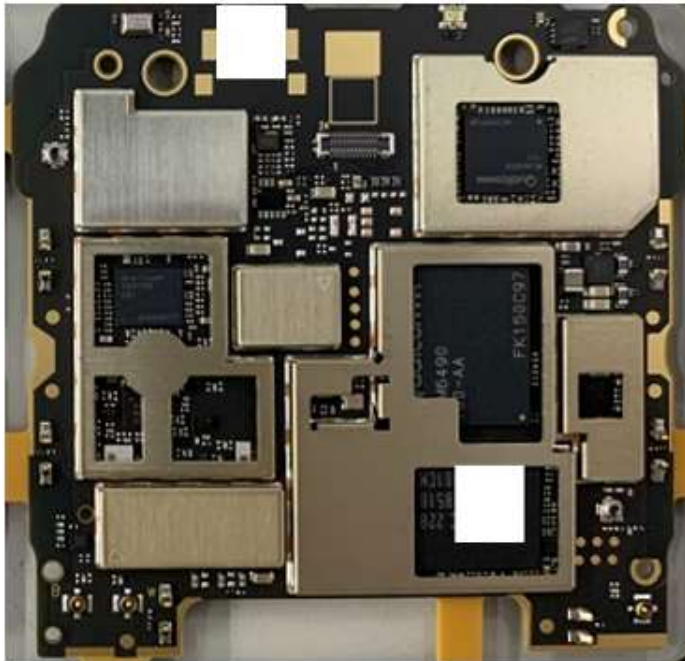
SMD parts number : 578

PCB Size : 34mm\*42mm

Min. component size : 01005

# Customer Product

## Smartphone (5G)



SMT parts number : 1316  
PCB Size : 61mm\*58mm

## OEM Products

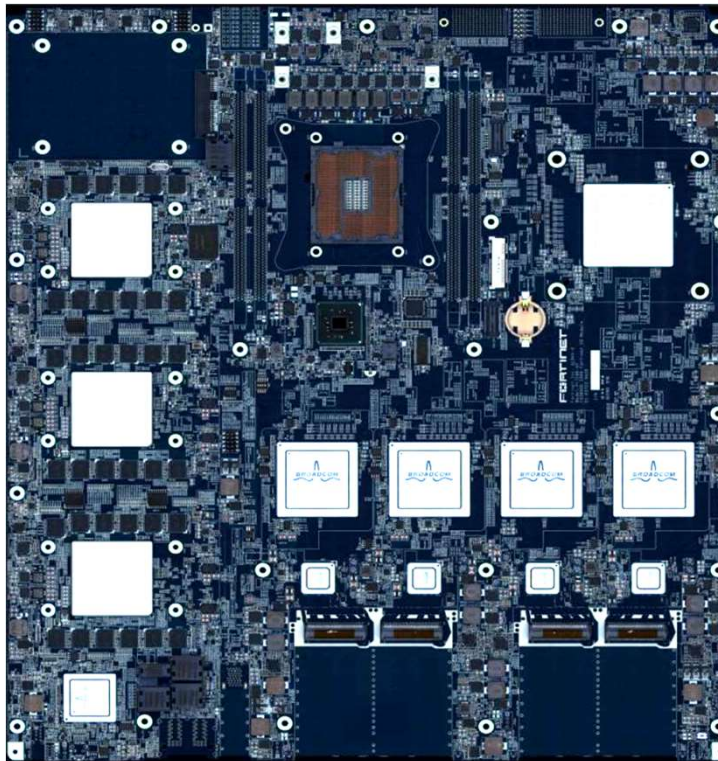
### Webcams



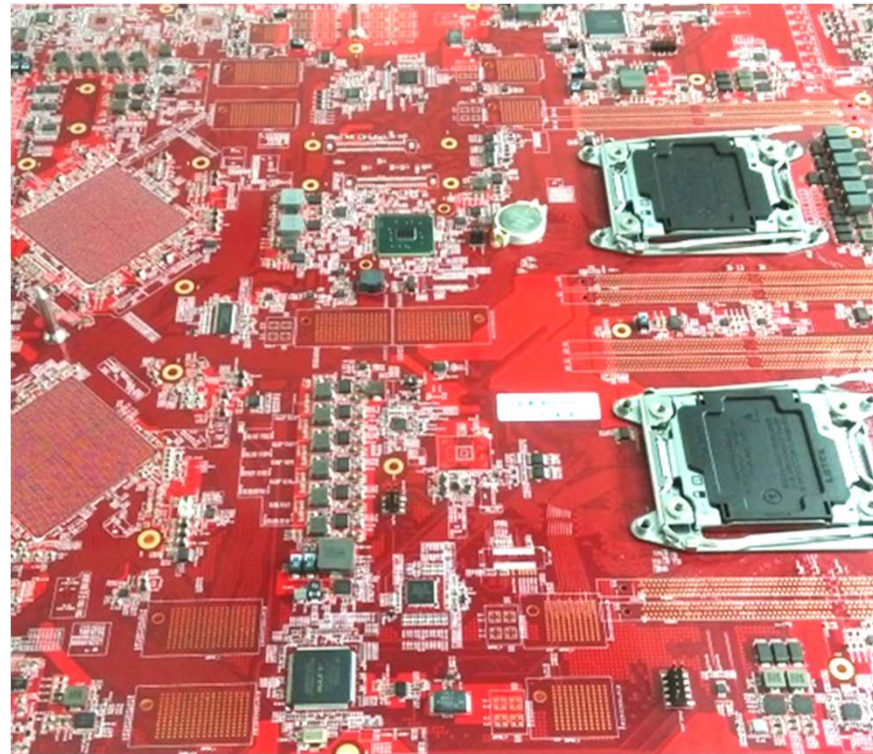


## Customer Product

# IPC(Industrial Personal Computer)



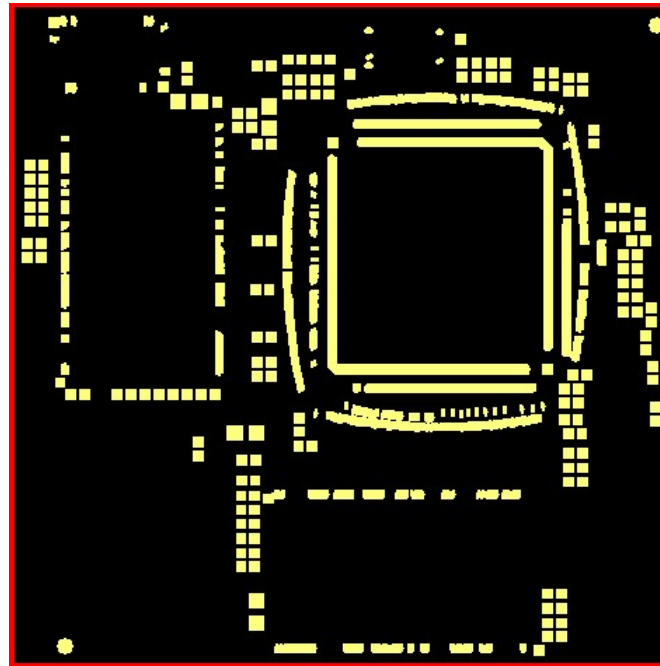
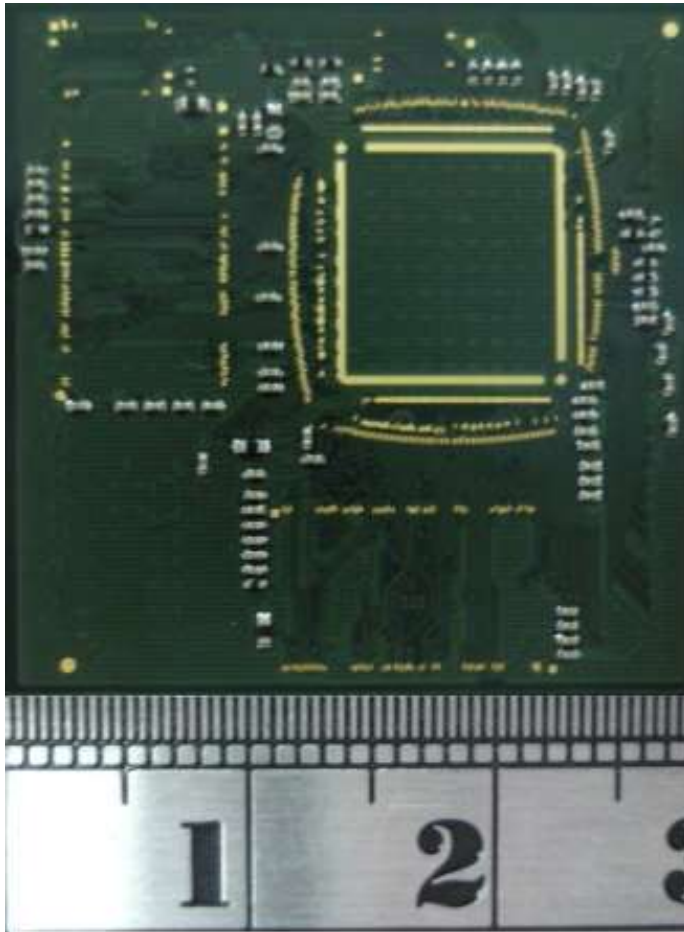
The total number of parts : 11006  
PCB Size : 458mm\*405mm



The total number of parts : 7681  
PCB Size : 528mm\*443mm

## Customer Product

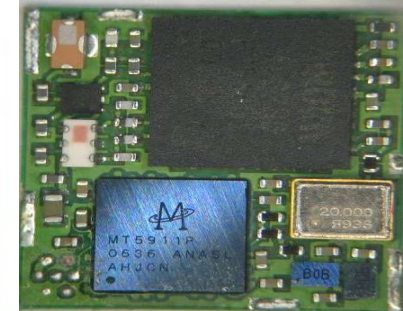
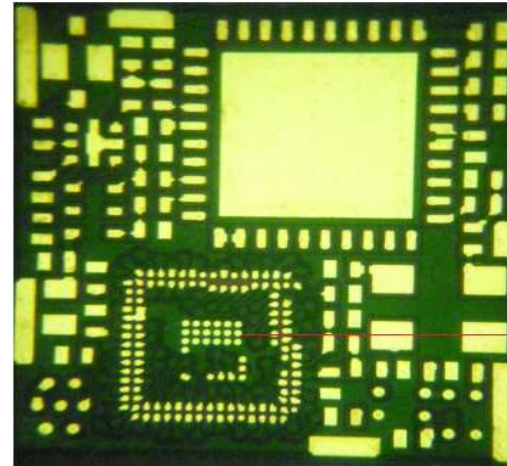
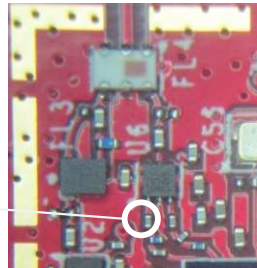
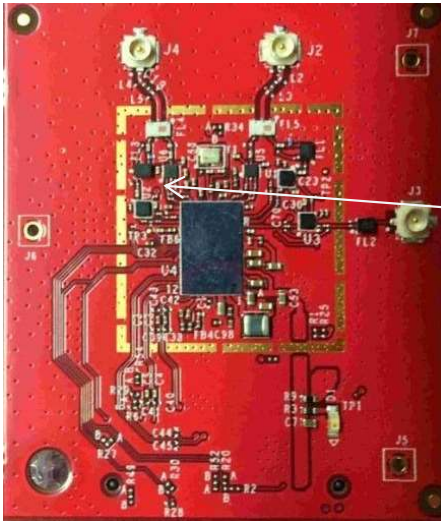
### SIP---Module : A



- PCB:28.3x28.3mm
- SMD parts number : 77 chips
- Min. component size: 0201
- Process: Lead free & water soluble

# OEM Products

## SIP-Module



$\Phi=0.15\text{mm}$   
 $P=0.2\text{mm}$

- \* PCB:46x43mm
- \* SMD parts number:53
- \* Minimum parts size :01005
- \* Process: SMT

- PCB:9x9mm
- SMD parts number:42 、 Minimum parts size:0201
- Process:
  - SMT
  - Shielding Case
  - Laser Mark
  - Die Saw
  - Function Test
  - Vacuum Pack



# Intelligent Power Module Bonding

Solder printing



P&P



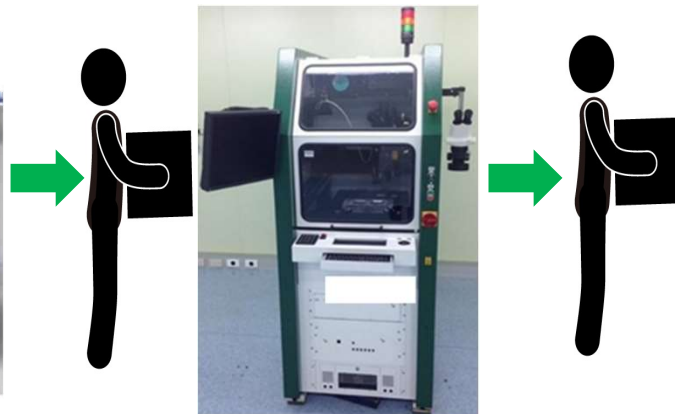
Vacuum reflow



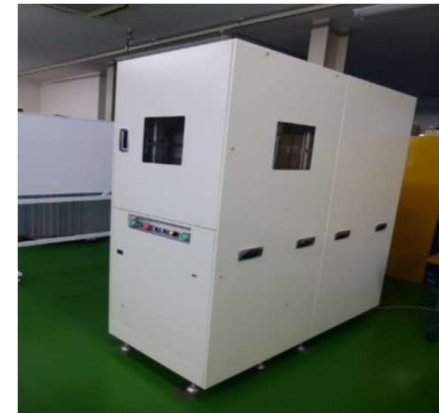
Clean



Wire bonding



Molding

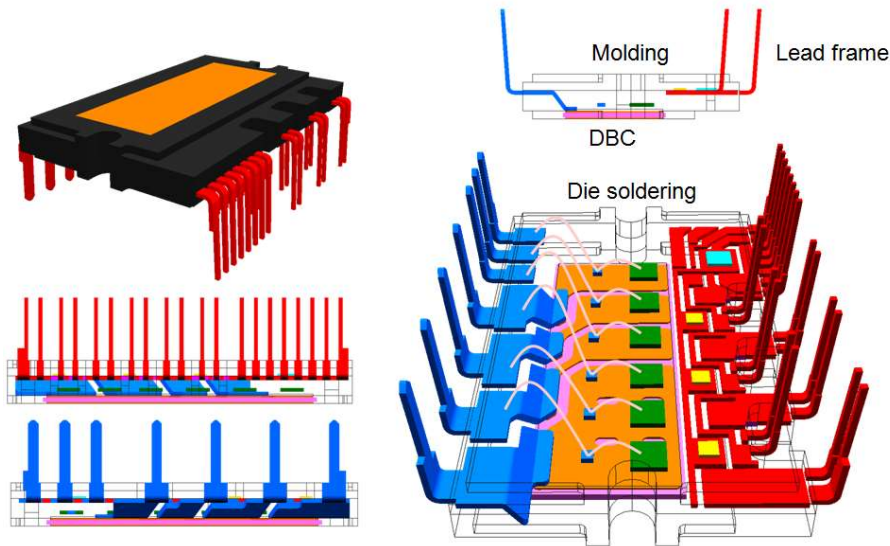


Trim & Form

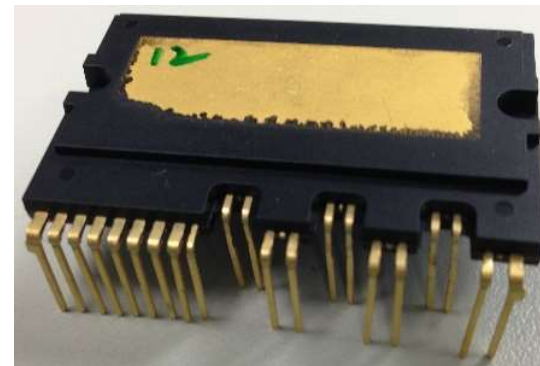
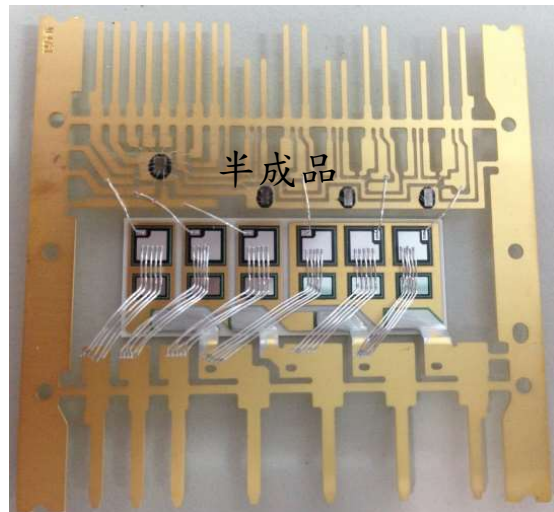




# Integrated Circuit Packaging

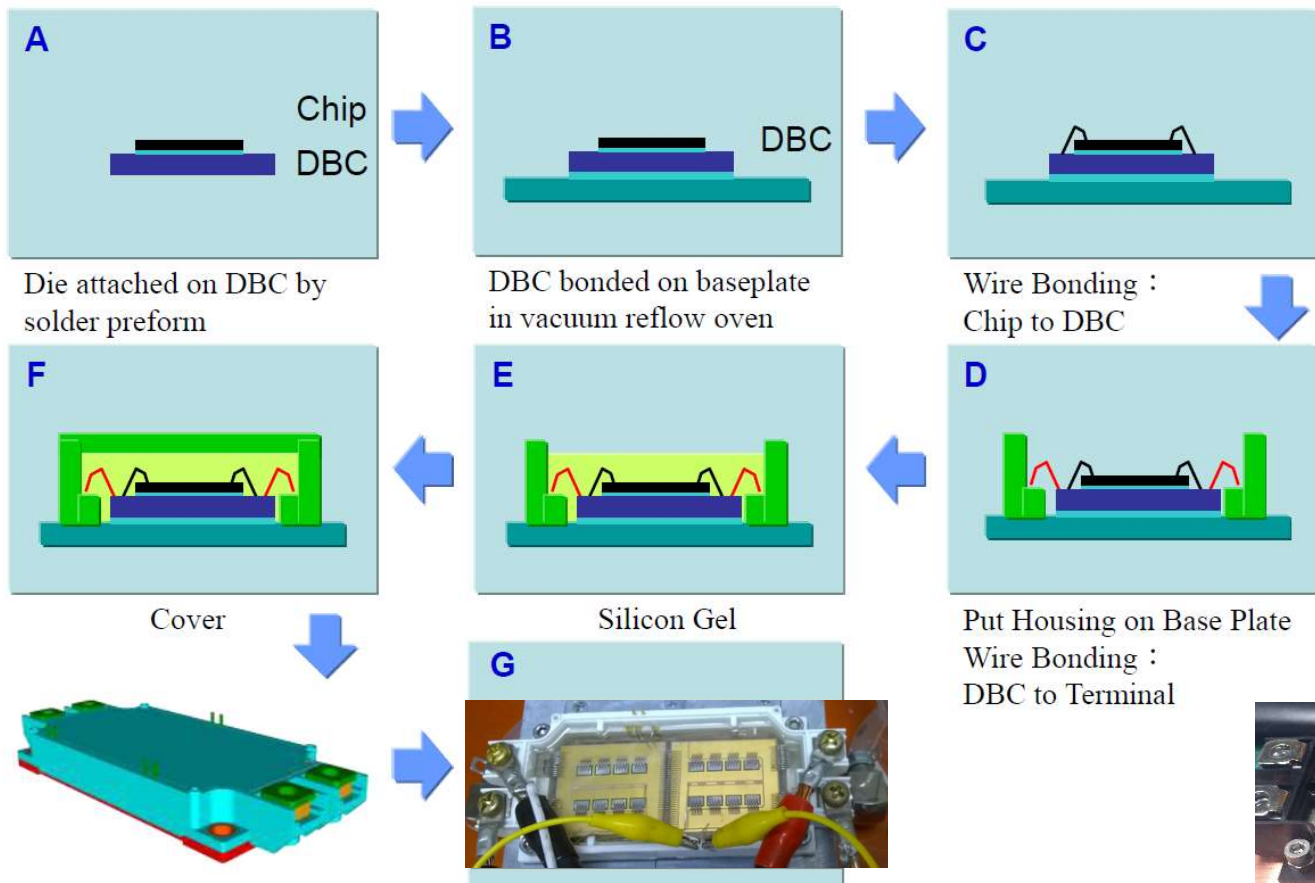


Process		Material
Die attaching	Power chip	Lead-free Solder
	Gate driver	Underfill、Silver glue
Wire bonding	Power chip	25 $\mu$ m、50 $\mu$ m 125 $\mu$ m、150 $\mu$ m 200 $\mu$ m、380 $\mu$ m
	Gate driver	1 mil Au wire 1 mil Al wire
Molding		Epoxy-based

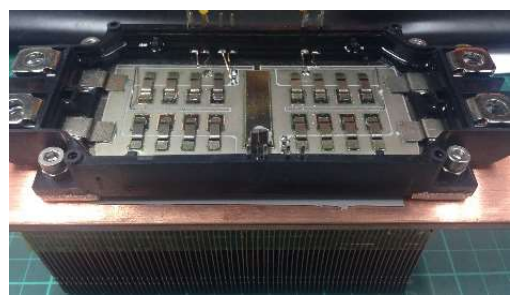


Item/ Sample	Ices Vces	Iges Vges	Vge(th) Ic	Vce(sat) Ic	Vf If
IPM	1uA 697V	458pA 20V	6.067V 430uA	2.1V 30A	2.1V 30A

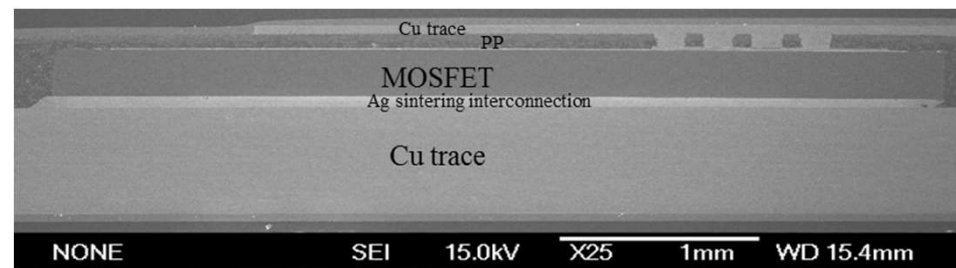
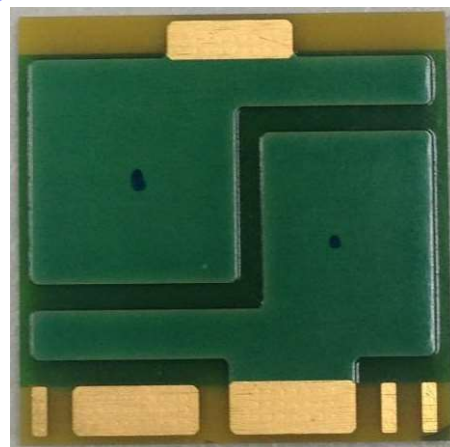
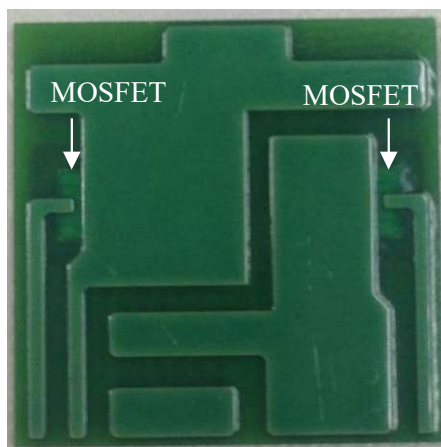
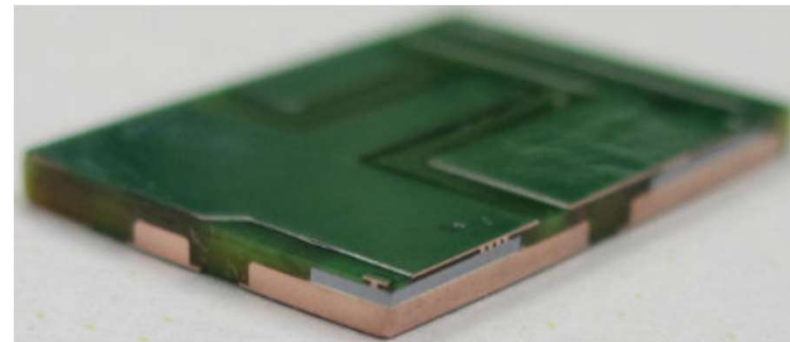
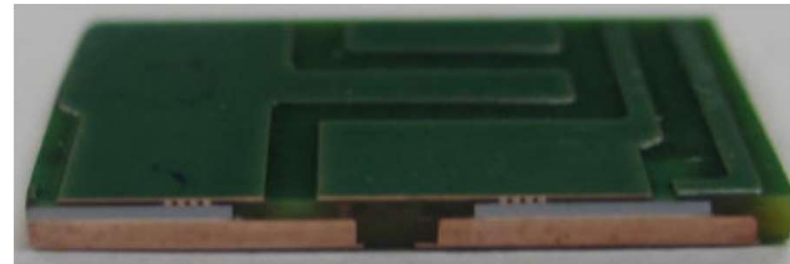
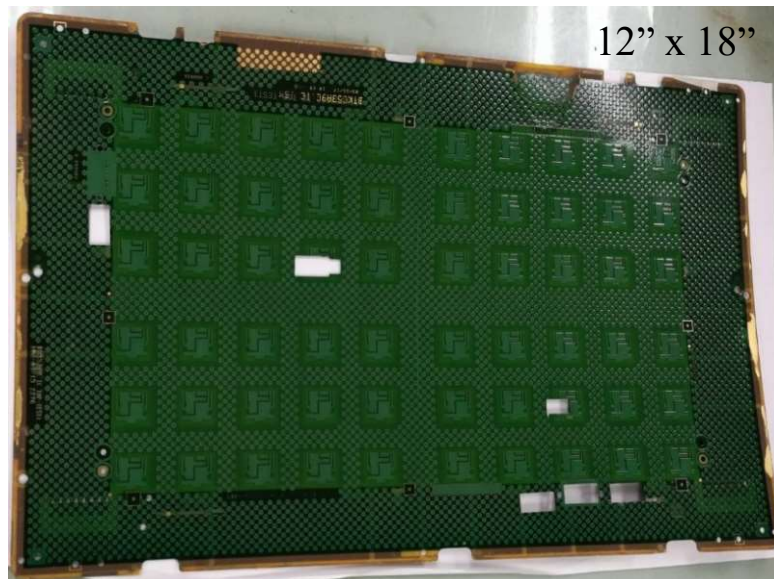
# Intelligent Power Module



Low Impedance  
Value Package  
Technology



# Panel level embedded package



Bonding Technology :  
Ag Sintering, SLID, Lead-free solder



# Thank You !

- Attention to Detail
- Carefulness During the Process
- Continuous Improvement
- Customer Satisfaction