

2020

風斯在下



GPA Biz Chain OVERVIEW

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회사소개서

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소개

3.4P

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회사 약도

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제품소개서

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E-PARTS

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Solution Provide

10p

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OEM-ODM

14P

2-5

consumer

14P



- GPA is founded 2002, on the vision of providing the total solution to IT and the company concentrates its efforts to develop the future communication machinery with leading telecommunication skill.

We will develop our business to be a leader of the total Telecommunication industry with continuous investment in the field of R&D, customer satisfaction, financing, reorganizing and maximizing marketing abilities.

- Company : GPA CO.,LTD < Stock company, **Global Parts Access** >
- Date of establishment: September 16, **2002**
- Location : **# 07009** 4F, 188, Sadang -ro, dongjak -gu, Seoul, Korea
- Capital : US \$ 125,000.00
- Category of business: Telecommunication
< PCB Consulting. Marketing. Artwork, PCB trading, EMS>
- Employee : 10 < Advisor 2 > Advisor: Park Dr. (Samsung pcb div. VP , 30y)
Advisor: Mr.Lee (30y Electric field)
PCB : Mr.Kim (25y Electric field)
Parts : Mr.Cho (25y Electric field)
OEM/ODM: Mr.Lee (30y Electric field)



- CEO : Jae Heun , Joung

2017 ~ (주)지피에이 연구개발 전담부서 인증 . 한국산업기술진흥협회장.

2002 ~ 국내 중견기업 컨설팅 및 현재 GPA 대표.

2000 ~ 코스닥,중견업체 이직 , 신상품 개발 / 영업 이사

1999 ~ 미국 삼성전기지사 파견 , 신상품 마케팅, 연구 기획.

1998 ~ BGA/FCBGA PCB개발 < 기술개발상>

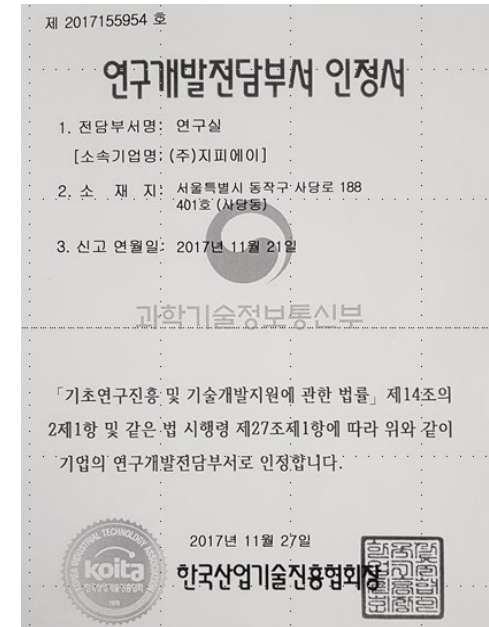
1997 ~ BUILDUP PCB 개발 < **IR52 장영실상** , 삼성그룹상, 삼성전기인상>

1996 ~ Rigid Flex PCB 개발 < 기술개발상 >

1996 ~ 미국 Parlex회사연수 , RIGID/FLEX 연수

1995 ~ 일본ibiden 회사연수 , 설계 및 PCB 연수

1990년1월 삼성그룹입사.





Location

GPA Co., Ltd

07009

4F, 188, Sandang-ro, Dongjak-gu, Seoul Korea

Contact person

02-783-9402

E-mail: gpa@gpa.cc

<http://www.gpa.cc>



2-1

PCBA

Buildup
Rigid/Flex
Metal
Ceramic



2-2

E-Parts

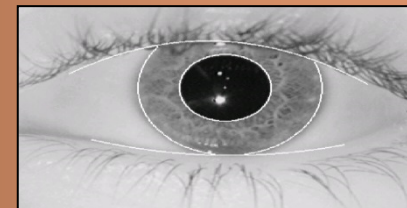
Thermal Solution
LCM
TOUCH
INJECTION
METAL DOME



2-3

Solution

IRIS
Face



2-4

OEM / ODM

TABLET
PHONE
IPCAMERA
BT module
Earphone



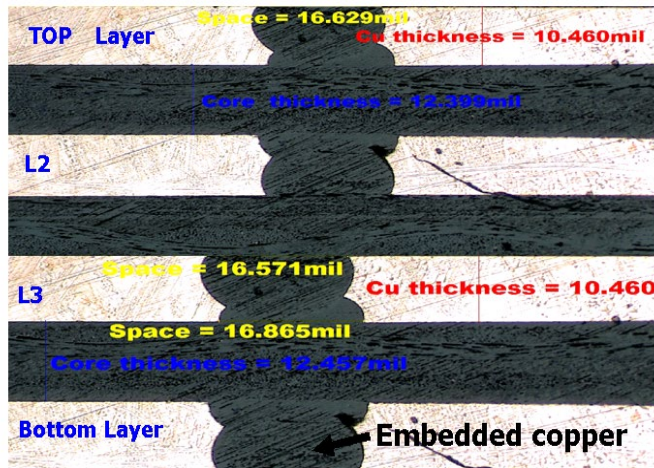
2-5

CONSUMMER

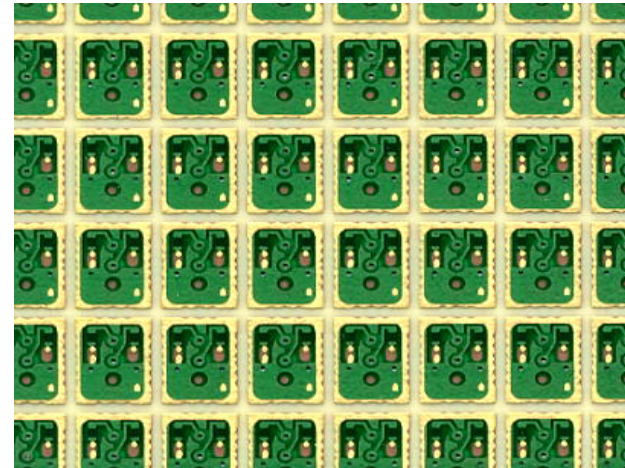
골전도이어폰
체온계
혈당측정기

GPA 2.1 MLB(HYBRID) , MLB

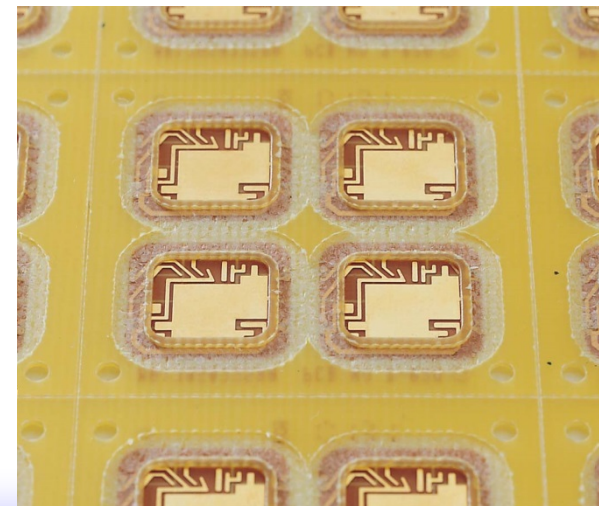
EMBEDED COPPER



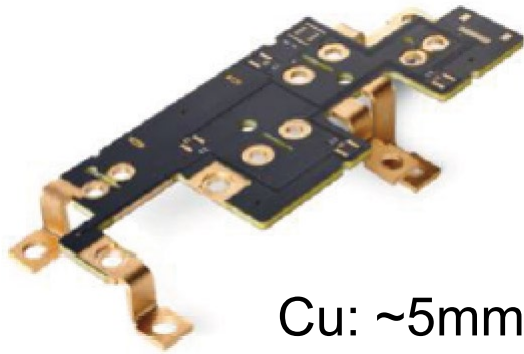
- EMBEDDED C , R



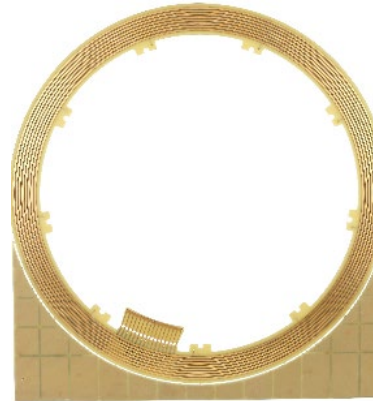
- Cavity down



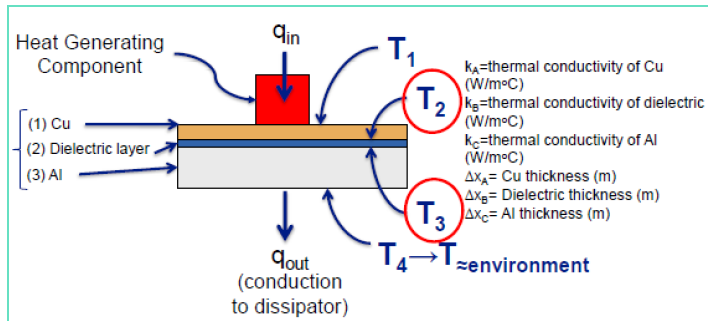
GPA 2.1 MLB(BIG SIZE, HYBRID) , HDI



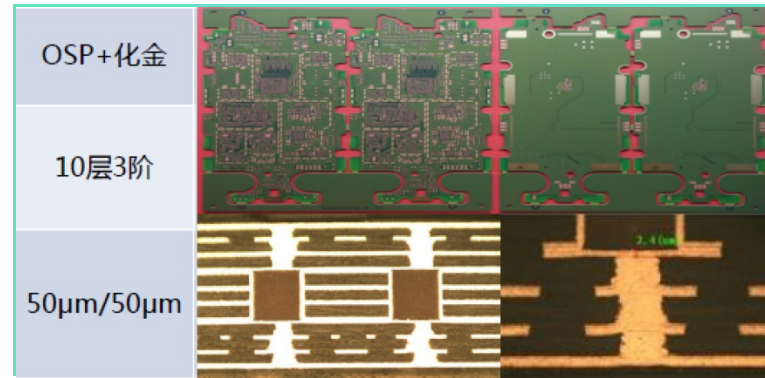
Cu: ~5mm



MLB, Backdrill,
Resin Fill
600*1800mm
8T



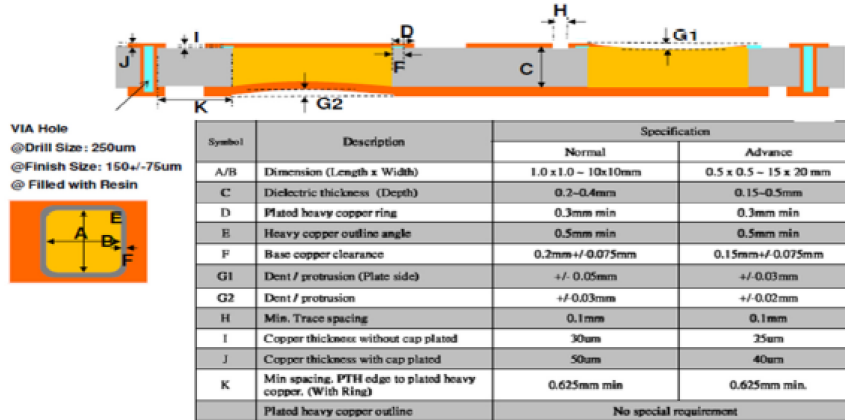
Thermal management
(3w, 35um Dielectric)



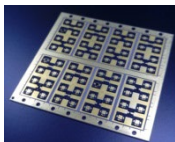
U LED Application (0.78pitch)

GPA 2.1 New Tech

Double side PCB (Plated Copper)

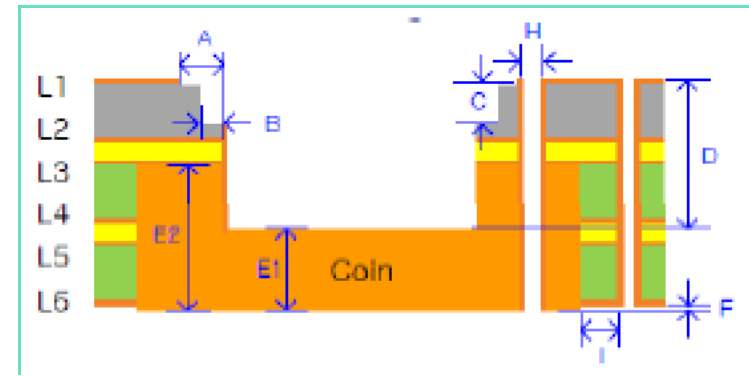


ALN / Al2O3

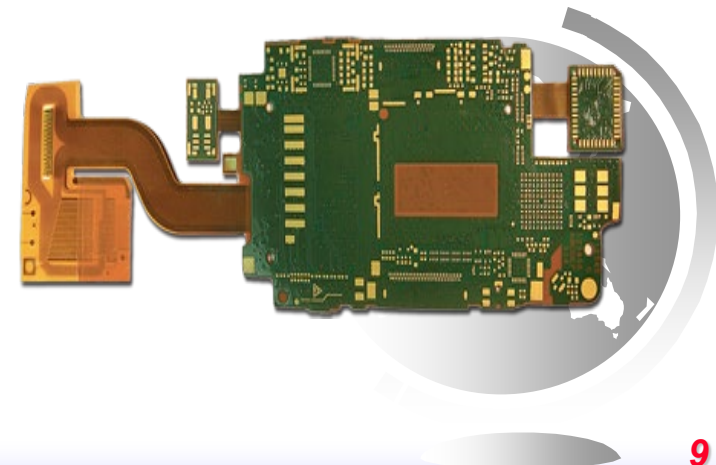


Item	鍍層	化銀,電鍍銀	電鍍金	化鍍鉍金
Substrate	ZTA, Al2O3, AlN			
Thickness(mm)	ZTA/0.25, Al2O3/0.25/0.38/0.5/0.635/1.0, AlN/0.25/0.38/0.5			
Via hole diameter	0.25&0.38/>40um 0.5/>80um	0.25&0.38/>40um 0.5/>80um	0.25&0.38/>40um 0.5/>80um	0.25&0.38/>60um 0.5/>80um
Line width	>100um	>100um	>100um	>100um
Line distance	>75um	>75um	>75um	>100um
Tooling hole tolerance	±30um	±30um	±30um	±30um

Hibride(Coin)

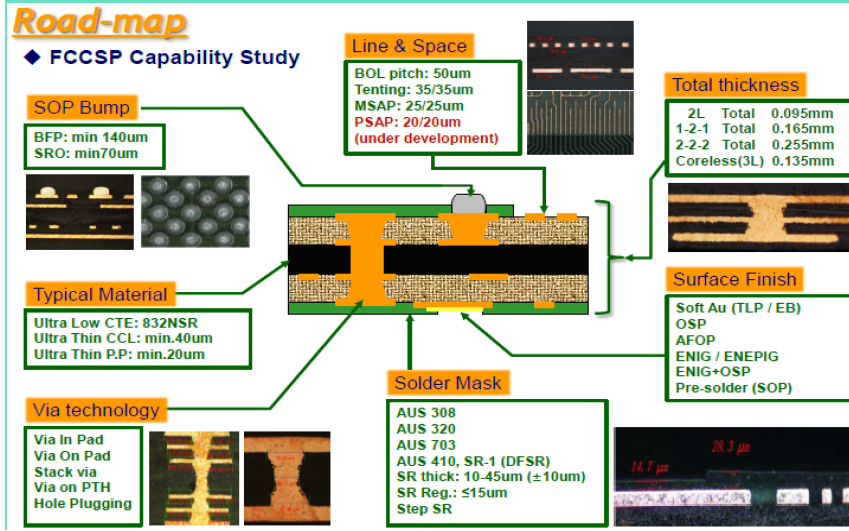


Rigid/Flex

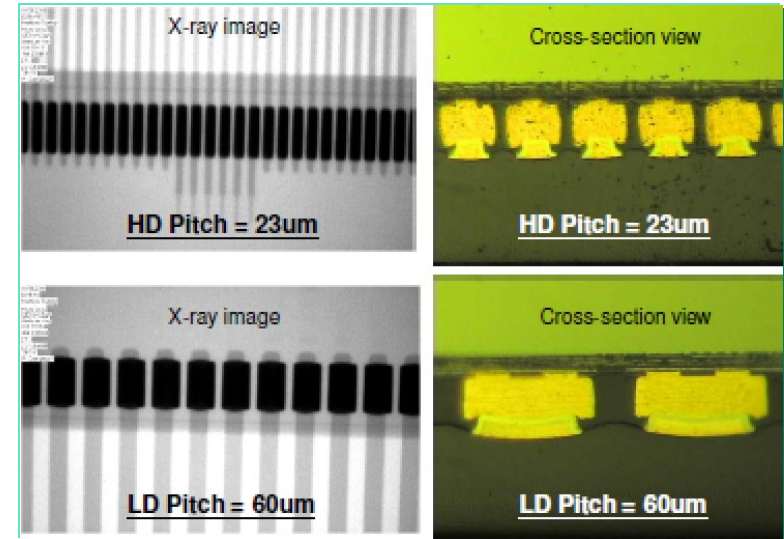


GPA 2.1 Substrate

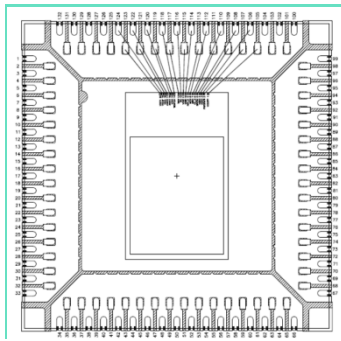
Rigid



Flex



Lead frame



<i>Etching Process Capability</i>				
Material Thickness (T)	10mil	8mil	6mil	5mil
Inner lead width (Min.)	80% of dimension on drawing	80% of dimension on drawing	80% of dimension on drawing	80% of dimension on drawing
Inner lead space (Min.)	60% of dimension on drawing	60% of dimension on drawing	60% of dimension on drawing	60% of dimension on drawing
Anchor hole (Max.)	10 mil (1.0T)	8 mil (1.0T)	5.4 mil (0.9T)	4.5 mil (0.9T)
Half etch depth (Max.)	5.0 mil (0.5T)	4.0 mil (0.5T)	3.0 mil (0.5T)	2.5 mil (0.5T)
Radius (Max.)	10 mil / (9 mil)	9 mil / (8 mil)	4.8 mil / (4.2 mil)	4.0 mil / (3.5 mil)
Pilot hole	± 1mil	± 1mil	± 0.75mil	± 0.75mil
External lead width	± 1mil	± 1mil	± 1mil / (± 0.75mil)	± 1mil / (± 0.75mil)
Inner dambar to dambar	± 1.5mil	± 1.5mil	± 1mil	± 1mil
Inner rail to rail	± 1.5mil	± 1.5mil	± 1mil	± 1mil
Total length	± 4mil	± 4mil	± 4mil	± 4mil
Total width	± 2mil	± 2mil	± 2mil	± 2mil
Mismatch (Misalignment) Max.	0.8mil	0.8mil	0.6mil	0.6mil
Inner lead pitch - lead width (Fine Pitch)	N/A	N/A	0.200 / 0.080 mm	0.180 / 0.075 mm
	N/A	N/A	(0.170 / 0.060 mm)	(0.150 / 0.055 mm)

Material type : A42 / (Copper)

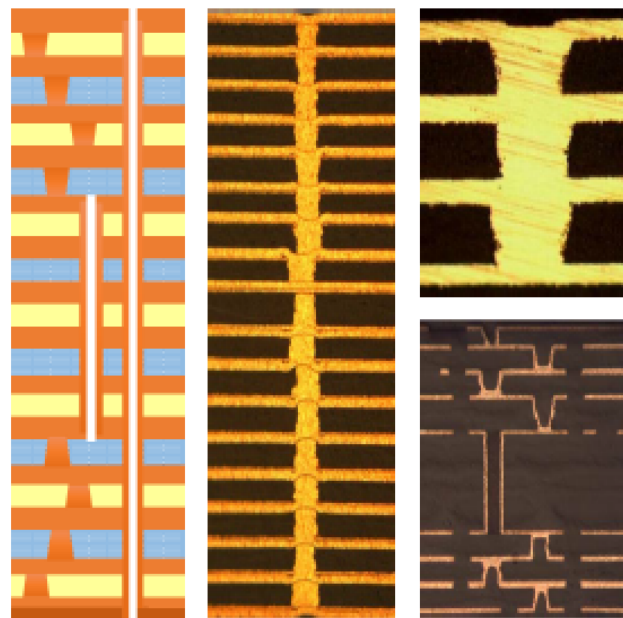


제품군

-고다층 기판 (BACK DRILL, RESIN PLUG, COPPER SLUG , BUILDUP)

Part3-HDI加工能力

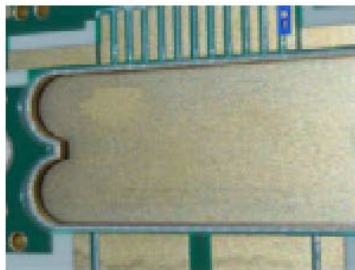
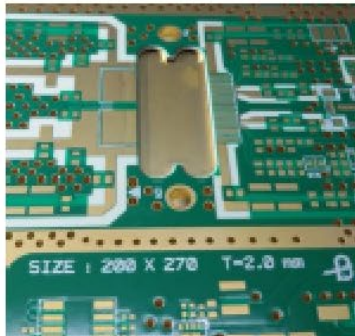
項目 /Items	批量	2019-2020
最大层数 Max. layer of PCB(L)	20 L	30L
阶数 ELIC Level	6+N+6	7+N+7
最大尺寸 Max size of PCB(mm)	500*580	500*580
最大板厚 Max. board thickness (mm)	3.2mm	4.0mm
最小芯板厚度 Min core thickness (mm)	0.025mm	0.025mm
最小线宽线距 Min Line width/spacing(μm)	45/45	40/40
最小焊盘 Min pad of Via (μm)	200	200
最小机械孔 Min mechanical PTH hole (mm)	0.15	0.15
最大厚径比 (通孔) Max aspect ratio(PTH)	8:1	8:1
最小激光孔径 Min laser hole(μm)	75	75
最大激光厚径比 Max aspect ratio for laser-drill	1:1	1:1
最大电镀填孔凹陷度 Max Dimple of plating fill via(μm)	10	10
背钻精度 Accuracy of back-drill(μm)	±75	±75
最小阻焊桥 Min soldermask dam(μm)	50	40
阻焊对准度 Registration of soldermask(μm)	40	30
最小BGA中心距 Min pitch of BGA (mm)	0.35	0.30
最小SMT焊盘间距 Min space between SMT pads(mm)	0.15	0.15
阻抗控制公差 Tolerance of Impedance controlled	+/-5%	+/-5%
板翘曲度(max) Max warpage (bow&twist)	≤0.5%	≤0.5%



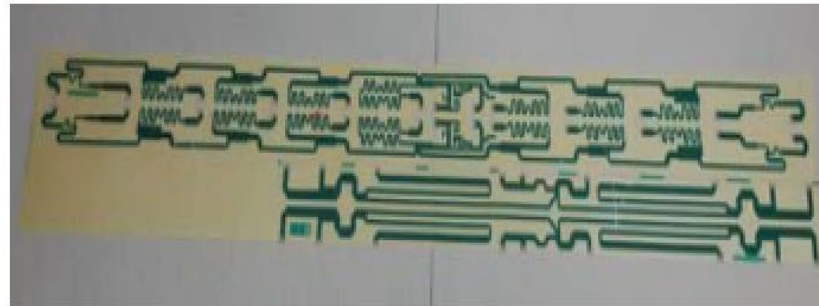
Layer Count: 14L-4 step HDI
 Material: EM-370(5)
 Finished board thickness: 1.0mm
 Min Line width and space: 3/3mil
 Controlled impedance: Single line 50+/-8%
 Differential impedance: 100+/-8%
 Finish: ENIG

제품군
-METAL / 특수기판

Part4-高频板加工能力

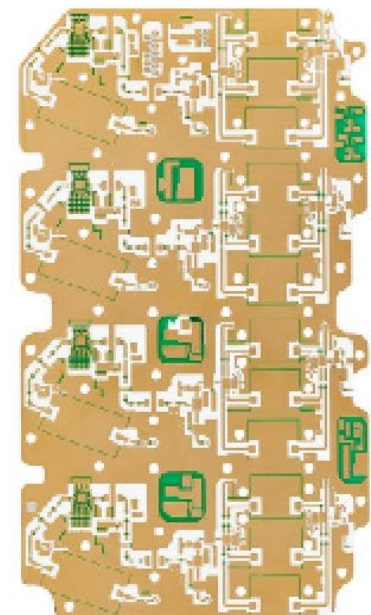


FR4+Ro4350B
6L+ Copper billet
POFV, Steps, Cavity
Special embedded coin
hybrid construction
Copper Surface Roughness <20um
Cold and Heat 500 Cycle -45 °C -125 °C

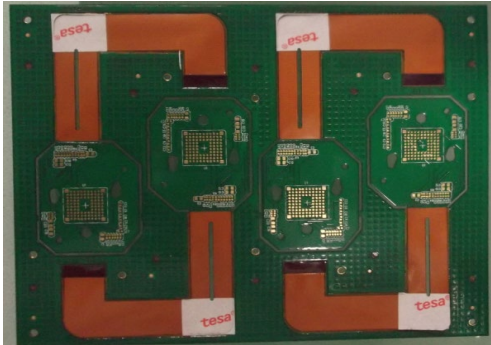


Top: Size 1200mm*250mm
Isola FR408 HR
Thickness 0.25mm

Bottom: Size 1100mm*380mm
PTFE
Thickness 0.90mm



RO4350B+RO4450F
6L + buried via and through via
Thickness 0.90mm
Min Line&Space 4/4 mil
Plating Pure gold



六层软硬结合板 (相机)

6-layer Flex-rigid Print Board

层数:6

Layer Count:6

外形公差: $\pm 0.1\text{mm}$

Outline Tolerance: $\pm 0.1\text{mm}$

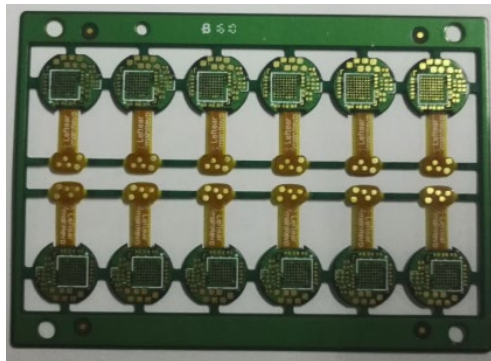
基板材料: FR4两层、PI四层

BaseMaterial:FR4 2layer 4layer

表面处理: 化金0.025-0.07um

Surface Finishing:Immersion

Au0.025-0.07um



五层HDI软硬结合板 (耳机)

5-layer HDI Flex-rigid Print Board

层数:5

Layer Count:5

外形公差: $\pm 0.1\text{mm}$

Outline Tolerance: $\pm 0.1\text{mm}$

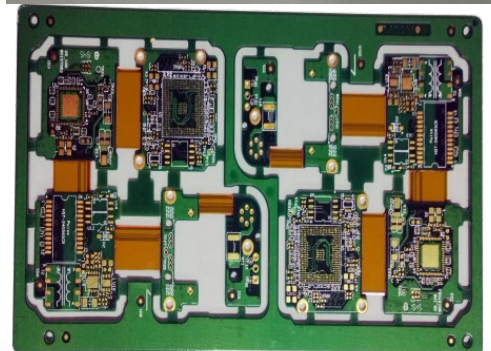
基板材料: FR4四层、PI两层

BaseMaterial:FR4 4layer, PI 2layer

表面处理: 化金0.025-0.07um

Surface Finishing:Immersion

Au0.025-0.07um



八层HDI软硬结合板 (工控)

8-layer HDI Flex-rigid Print Board

层数:8

Layer Count:8

外形公差: $\pm 0.1\text{mm}$

Outline Tolerance: $\pm 0.1\text{mm}$

基板材料: FR4四层、PI四层

Base Material:FR4 4layer, PI 4layer

表面处理: 化金0.025-0.07um

Surface Finishing: Immersion

Au0.025-0.07um

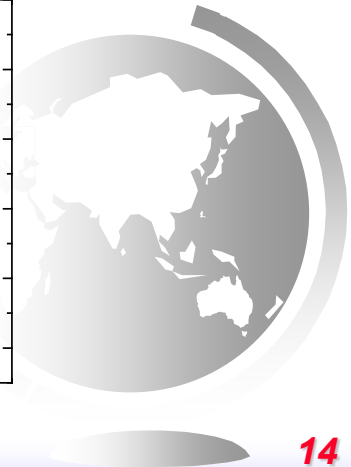
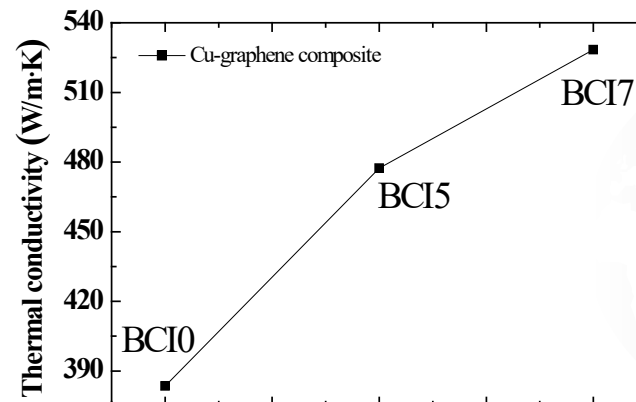
2.2 E-PARTS

Thermal Material Solution

- Cu graphene
- Graphene Modified Palstic (PA6: ~10W)



sample	material
1	Pure copper (BCI0)
2	Cu-graphene 1 (BCI5)
3	Cu-graphene 2 (BCI7)



2.2 E-PARTS

LCD Module / TOUCH

-OLED

-E-PAPER

-TFT



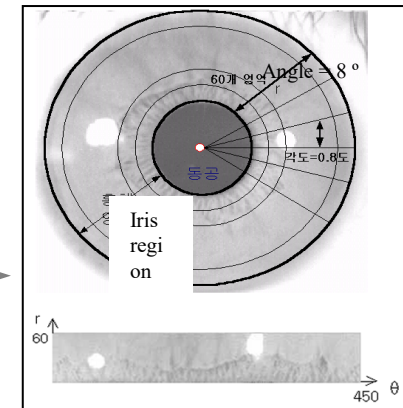
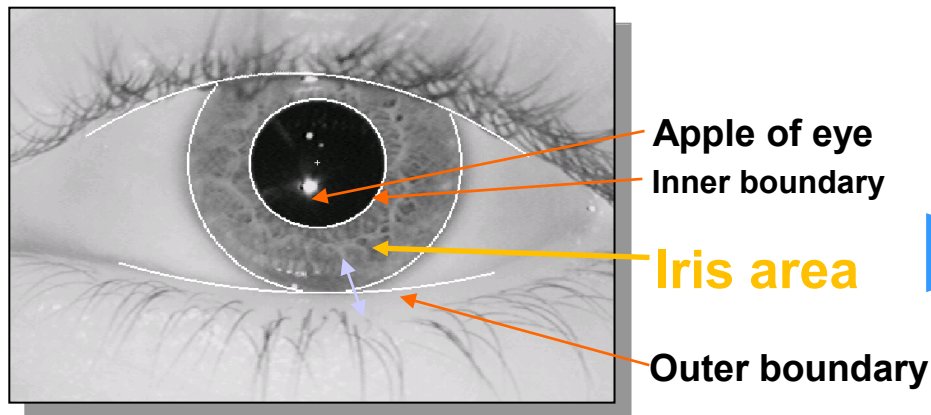
Injection / mold

도시바



2.3 Solution Provide (IRIS)

- IRIS
 - **Stable** : No change since 18 months from birth
 - **Unique** : Possibility of same iris pattern ($1/10^{78}$)
 - **Reliable** : No forgery, Non-Reproduce (Dynamic Live ID)
 - **Flexible** : Multi applicable (Security, Healthcare: Iridology)
 - **Non-Invasive** : Fast, Non-contact, Hygienic from MERS, EBOLA)
 - Accuracy: 10 times more than Fingerprint (10 Finger=1 iris)
- Core Tech.
 - Affordable to provide multi-modal & multi-variant function (Iris & Face recognition)
 - Offers its own s/w to be used as a
 - bundled package for a fast customer maintenance service
 - Long distance , 2M / 1M
 - AI applied



2.4 OEM / ODM



BCT



Wireless charger



MP3 USB 16G



Blood sugar checker
<none blood>



IRIS



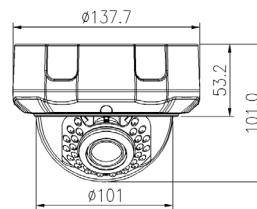
Bluetooth MODULE



720degree
camera



IP camera



Tablet / Phone



AMP

2.5

- 골전도이어폰



GPA9+



- 체온계



- 혈당측정기



- 유선종진단기



Closing & Expectation

- Synergy Effect by Both Companies' Strengths
- Long term Technology Partner
- Capacity for Volume Production Requirement



Thanks !

