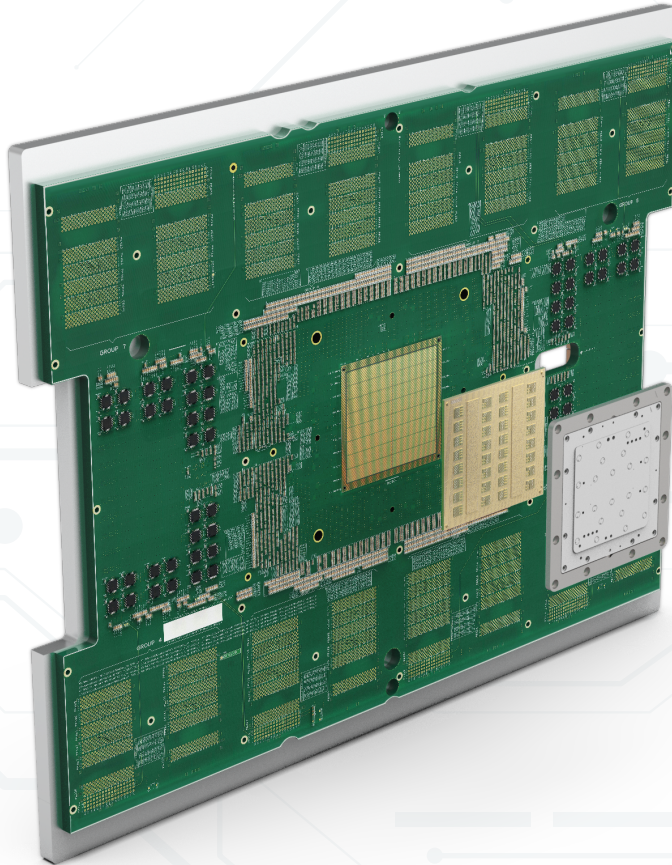


AI-Driven Future



As the world moves into the commercialization of artificial intelligence (AI), high performance computing (HPC), has become more mature and complicated. With upcoming technologies favoring test extremities, it is important to tackle test conditions such as high temperature, high speed, high pin count, and fine pitch applications. Chunghwa Precision Test Tech (CHPT) grabs the spotlight as one of the leading providers of semiconductor test interface products.

Backed by an excellent R&D team that plays an important part in its probe card, substrate, and probe head developments, CHPT's accomplishments included advancing producing and testing its own MEMS, and passing product verification for smartphone application chips, HPC chips, network communication chips, PMIC, and RF chips. CHPT is also working on high-speed needles that are at engineering and mass production stages.

Probe Card Capability

MEMS PH

Fine Pitch

- Pitch: 35um

Mix Needle

- BR+NS / BR+BR / BKS+BKS

Pin counts: 70,000pin

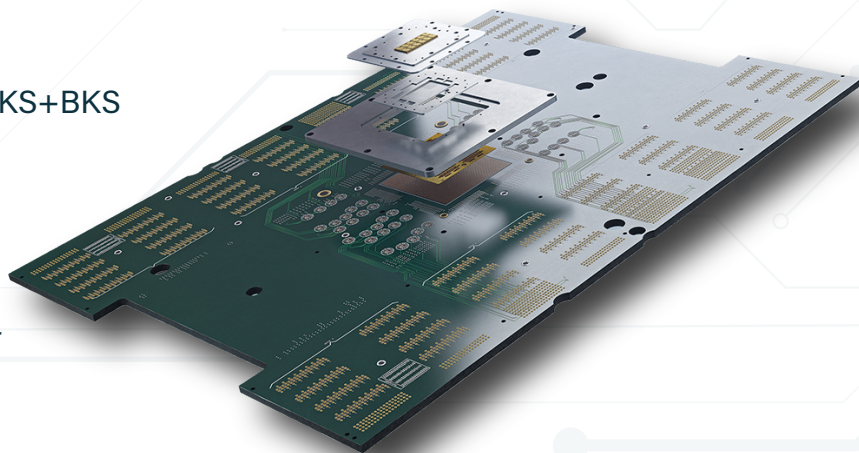
High Speed

- 112Gbps PAM4
- 32Gbps PCIE5
- 64Gbps PCIE6 PAM4

Space Transformer

Fine Pitch

- Pitch: 35um



Simulation

Electrical Simulation

- ANSYS SIwave / HFSS
- Keysight ADS

Mechanical Simulation

- ANSYS Workbench

Thermal Simulation

- ANSYS Icepak

Interface Board

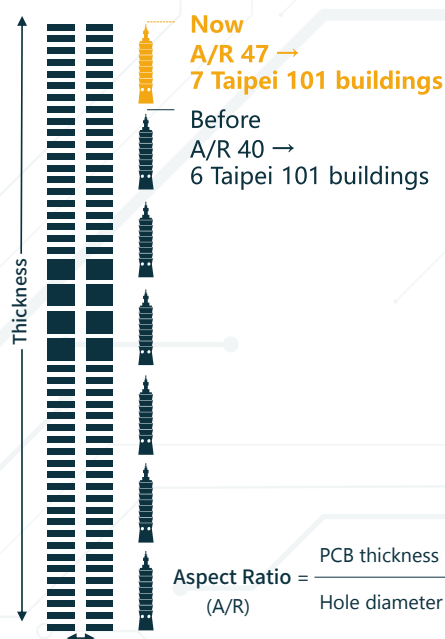
Capability

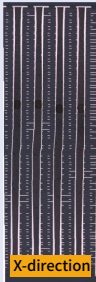
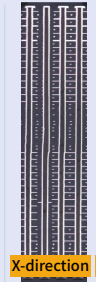
- A/R : 47
- BGA Fine Pitch : 0.15mm
- Layers : 100
- Materials : FR4, Megtron 6/7/8, EM-892K/K2, MW2000/4000/8000

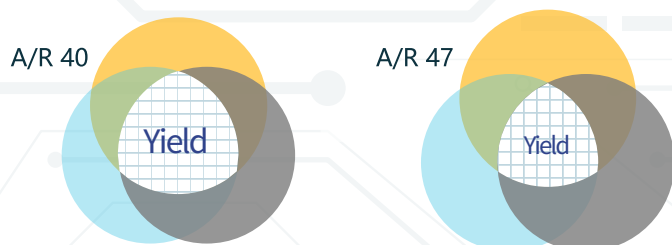
Probe Specifications

Needle Type Category	Probe Head				Socket
	NS Series	BR Series	BKS Series	SS Series	Coaxial Socket
Pitch (um)	35~100	100~200	80~200	110-200	650~1,000
Temperature(°C)	-40~180	-40~180	-40~180	-40~180	-40~125
Tip Type	Point / Flat	Point / Flat	Point / Flat	Point / Flat	Point /Crown

High Aspect Ratio Technology

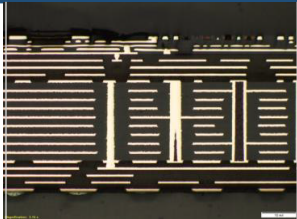
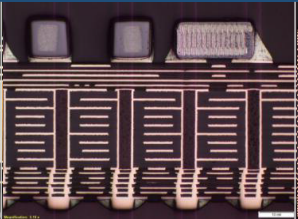
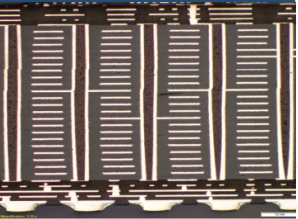


Minimum Pitch(mm)	0.40	0.35	0.30	25
PCB cases				
	X-direction	Y-direction	X-direction	Y-direction
A/R	46.8	47.7	41.0	38.0
Thickness(mm) (after lamination)	7.02	5.97	4.10	2.85
Hole diameter(mm)	0.150	0.125	0.100	0.075
Hole counts	18181	16911	9663	Production Test



The higher the aspect ratio, the more difficult the manufacturing, which means the in-spec-yield intersection zone is getting smaller.

Space Transformer

Type	TF	AMLO	AF	MLO
Cross Section				
Limit Pitch	45 um	70um	35 um	150 um
Maximum Size	90 mm×90 mm	90 mm×200 mm	200 mm× 200mm	200 mm× 200mm
Materials	Multi Core /Build Up /TF	1. Multi Core /RCC / PCF 2. Multi Core/PCF	1. Multi Core/RCC /ABF 2. Multi Core/ABF	Multi Core /Build Up
Thickness	0.85mm - 3.8 mm	0.6 mm -4.5 mm	0.6 mm -4.5 mm	0.6 mm -4.5 mm
Line/Space Width	15 um /15 um (10 um / 10 um Advanced)	15 um /15 um	15 um /15 um (10 um / 10 um Advanced)	55 um/ 55 um
Limit BGA pitch	350 um	350 um	250 um	350 um
Stack Up	8/5/30/5	8/5/30/5/8	9/5/30/5/9	8/30/8
Thermal Reliability	240°C × 6	240°C × 6	260°C × 6	240°C × 6
CTE	16 - 17 ppm/°C	16 - 17 ppm/°C	15 - 16 ppm/°C	16 - 17 ppm/°C

Global Locations

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