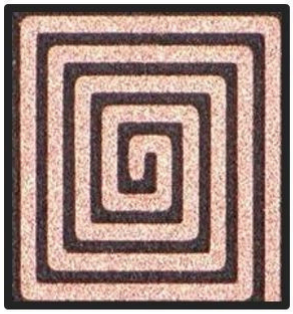
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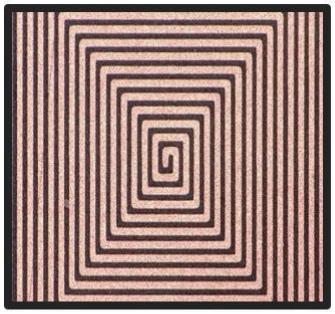
Ultra High Density Interconnects (UHDI)

How Is Ultra HDI different from HDI?

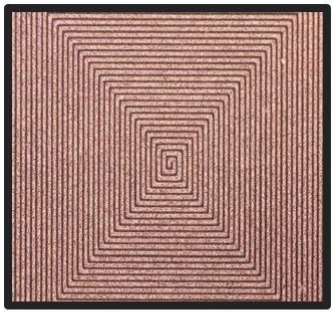
	HDI	Ultra HDI
	Boards with high layer count, micro vias, sub-asemblies	**Added complexity for increased capacity**
Line width/spacing	to 75 microns	to 12.5 microns
Hole sizes/Micro vias	6 mil+/4 mil+	4 mil+/2 mil+
BGA component pitch	at or below 1mm or 0.8mm	BFA component pitch 0.8 and lower
Layer Count	>40	No limit to layer count



75 micron
1x density
Subtractive Etch



25 micron
9x density
Asia Capability



12.5 micron
36x density
ASC UHDI Capability

UHDI Advantages

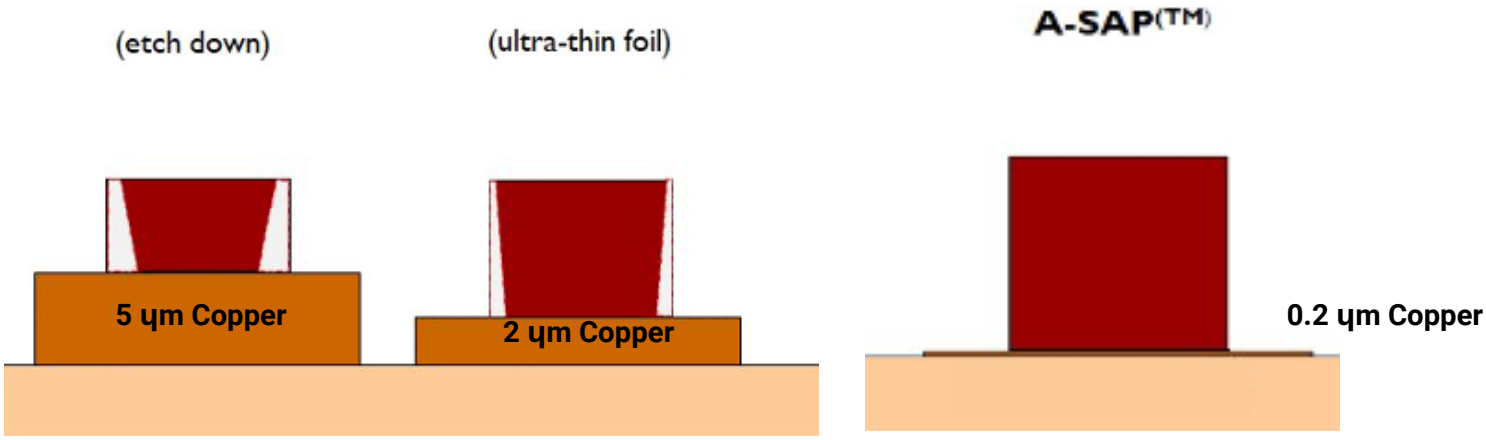
- Dramatic size and weight reduction
- Improved Reliability - with reduced layer count, microvias and lamination cycles
- Improved Signal Integrity - aspect ratios greater than 1:1 for metal traces
- Improved RF performance over traditional subtractve-etch process
- Lower over all cost

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Ultra High Density Interconnects (UHDI)

How Is Ultra HDI different from HDI?

Ball Pitch	Routing Layers Required	Trace and Space (minimum feature size	Trace and Space (minimum feature size)
0.5 mm	12	1	75 µm
0.5 mm	2	6	19 µm



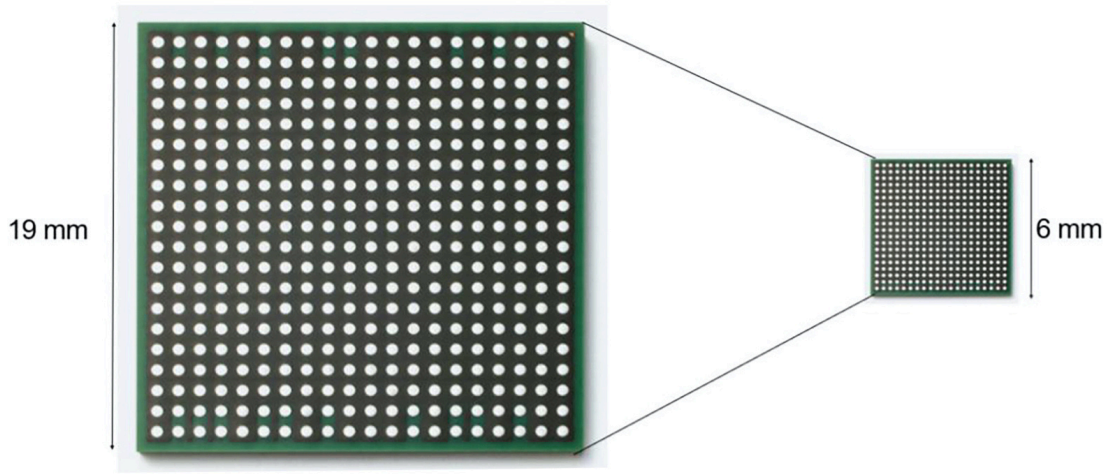
How is Ultra HDI A Quantum Leap From HDI

Conventional processes can only reduce line and space down to 3 mils: going from there to below 1 mil is *ultra* - because it requires new technology using ultra-thin, ultra-dense chemistries

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Ultra High Density Interconnects (UHDI)

How Is Ultra HDI different from HDI?



0.8mm pitch 20 x 20 grid
3 routing layers using standard PCB
with L/S 3mil/3mil

0.3mm pitch 20 x 20 grid
3 routing layers using
A-SAP™ PCB with L/S 1mil/1mil

Did You Know That.....

ASC Semi-Additive Processes (SAP) can also produce larger feature sizes.

Conventional processes can only reduce line and space down to 3 mils: going from there to below 1 mil is *ultra* - because it requires new technology using ultra-thin, ultra-dense chemistries

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