

# INTRODUCING AMERICA'S SMALLEST, LIGHTEST, FASTEST PCBs

1 MIL (25µM) TRACE/SPACE    REDUCE SIZE, WEIGHT, POWER    INCREASE I/O DENSITY    SI BEYOND 50GHz    MADE IN U.S.A.

## ENABLE NEXT-GEN ELECTRONICS GO BEYOND SUBTRACTIVE PROCESSING

Dramatically increase in PCB circuit density with 1 mil (25µm) trace enabling high-density fanout with 0.4mm pitch BGA.

Improve RF performance over subtractive-etch processes. Improved SI with ratios greater than 1:1 for metal traces.

Dramatically decrease size and weight and increase density while improving reliability and reducing cost.

Current U.S. Capability



Current Asia Capability



NEW CALUMET CAPABILITY



Leveraging  
**Averatek**  
A-SAP™  
TECHNOLOGY

### LIMITATIONS OF U.S. SUBTRACTIVE PROCESSES

3 mil (75µm) trace/space, trapezoidal traces

1.0mm BGAs, up to 4 fanout traces, 3 mil (75µm)

mSAP 1µm/3.0µm base copper

Limited copper feature formation

### NEW CAPABILITIES AT CALUMET ELECTRONICS

1 mil (25µm) trace/space, straight sidewalls

0.4mm BGAs, up to 6 fanout traces, 1 mil (25 µm)

A-SAP™ 0.25µm copper seed layer

High frequency passives, transmission lines, and waveguides

HUBZone | AS9100D | NADCAP | ISO9001 | IPC1791 Trust | MIL-PRF-31032 | MIL-PRF-55110 | ITAR | UL | Cage Code



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25-15 Microns

Supported by  
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A-SAP™

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