



Calumet Electronics was the first PCB manufacturing company to introduce the revolutionary Averatek Semi-Additive Process: A-SAP™ with 25 micron space/trace

**Our discussion centers on winning the race to market leadership: gaining a competitive edge through innovation**

**Meredith, can you share a few thoughts on factors that led to your decision to lead the marketplace with A-SAP™?**

Calumet Electronics was first introduced to this technology through an IPC APEX presentation in 2019. This presentation introduced **a new technology that could be utilized to drop the SWaP (size, weight, and power) - while still manufacturing printed circuit boards or other advanced packaging in the standard manufacturing and equipment ecosystem.**

There were many factors that went into the Calumet Electronics decision to partner with Averatek, but at the very top:

1. **The elegance of the solution** to advance electronics quickly for domestic advanced technology needs.
2. The partnership-driven team at Averatek to launch the technology into the domestic marketplace.
3. The intelligence and support of the Averatek team.
4. The potential for Calumet Electronics and other PCB manufacturers to have an available **solution that is competitive with - and exceeds - the solutions in low-cost regions of the world.**



**DR. MEREDITH LABEAU**

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**Director of Process Engineering and R&D,  
Calumet Electronics**

**You are reaching out to organizations that need fine feature sizes. What stands out to you, regarding market reaction and receptiveness to a new technology?**

In all the discussions, what stands out most is the dire **need for a technology that can achieve fine lines and spaces, while also utilizing some of the most advanced HDI features, along with extremely low loss material.** These customers often must look overseas for manufacturing, which comes at a cost: long lead times, or re-designing the boards to meet the current domestic technology, often dumbing-down the backbone of the electronics system.

The use of this innovative and transformative manufacturing method requires a **new approach to design: with manufacturing instead of for manufacturing.** Together, the designer and manufacturer can develop a collaborative approach, to Drop the SWAP - while increasing the reliability and robustness of the PCB for next-generation electronics systems.

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The Averatek process provides a robust, reliable, and elegant solution to meet the current and next-generation demands sought by the electronic system designers. These customers, regardless of the end-use market, require advanced PCBs as they continue to advance the electronics requirements along with the IC substrates. The market is ecstatic about the potential of this technology, providing light at the end of the tunnel for many.



**TARA DUNN**

VP Marketing &  
Business Development,  
Averatek Corporation

**I often hear you say that collaboration is critical in order to utilize the full potential of technology. How do you facilitate high-quality communication, and what is your advice for those who want all the advantages of A-SAP™ capabilities?**

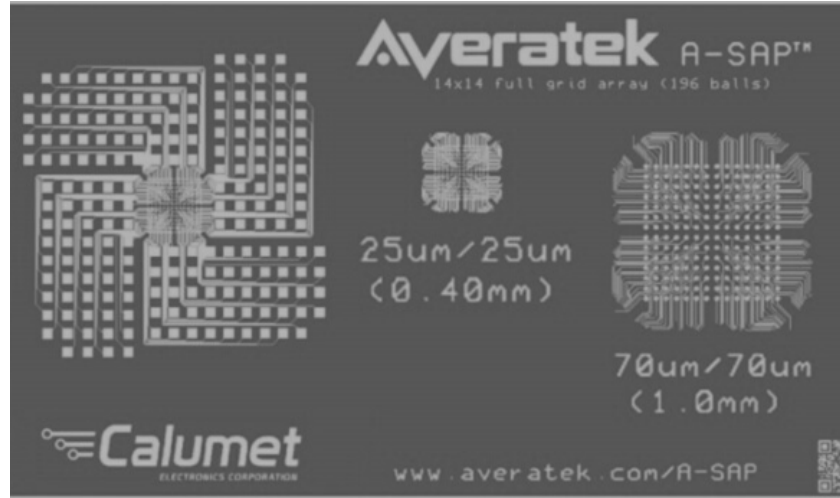
When utilizing a transformative manufacturing process, one must fully understand its advantages, as it applies to both design and the product requirements. With a market-changing technology, the manufacturer and designer must work in collaboration to gain all the benefits - while not increasing the cost.

**The Averatek process allows a designer to simplify designs by using finer traces and spaces, greater line width control and impedance control.** If the designer understands this, **you can re-set the technology curve: simplifying designs in order to make the process and end-product more reliable and robust, while reducing risks of lead time or yield delays.**

**Calumet Electronics has a vision for the future: you have implemented the A-SAP™ process, brought in new materials and equipment, and expanded your facilities.**

Calumet Electronics does have a driving vision for the future: to advance the technology within the electronics ecosystem, through a combination of standard and new technologies, in partnership with OEMs and electronics assemblers to compete on the world stage. We want to bring the United States back to designing and manufacturing the most state-of-the-art printed circuit boards to meet the rugged domestic demands. In concert with this vision, is also our goal to bring engineering back to focus on PCB manufacturing, by working in collaboration to advance Manufacturing Readiness Levels (MRLs) of our customers' product - from concept to volume production.

Calumet is focused on developing a world class staff to meet the technological needs of the electronics supply chain. In addition, we are focused on the PCBs that must be made domestically, which include applications for RF, microwave, beamforming, high precision tolerancing and fine lines and spaces.



**You are out to win the race to market leadership, and one of your extra-curricular activities is fascinating: serving as Director for a 150-mile dogsledding race. Can you tell us a little about that?**

Living in the Copper Country in Upper Michigan, you come to really understand the concept of community. The harsh winters teach you to dig in, work hard and support your neighbors. This sense of community development endeared me to an organization, the CopperDog 150. This organizational utilizes a sled-dog race to showcase the natural winter beauty around the Copper Country as well as bring folks out together in the community to cheer on the rugged toughness of sled dogs. I joined the group in 2010, and within a year was assisting the current race director on every facet of a large-scale race and community event. This director happens to now be my boss and mentor, Todd Brassard, our COO. I eventually took over the reins. For many years, I have enjoyed working with these unsung athletes, but most importantly breathing life into the sleepy towns of the Keweenaw Peninsula - to bring in vital tourism and increasing pride of our communities!