



## DragonFly IV and FLIGHT Software Suite Press Q&A

### **What does AME mean?**

AME stands for Additively Manufactured Electronics

### **What are HI-PEDs®?**

These are High Performance Electronic Devices: Bare or populated PCBs (with or without electronic components) or electronic devices (IOT, Antennas) with high-frequency or high-speed signaling

### **Can I use AME produced devices to replace PCBs in my product?**

For proof-of-concept the answer is yes. For series production the answer is no. The current material, thermal and electrical properties of the AME devices are different from standard PCBs.

### **To what extent are AME devices meeting IPC standards?**

The mechanical, thermal and electrical properties of the AME devices are stated in the available data sheets. Each property is tested by the applicable IPC test method, as noted in the data sheet.

### **If I use the unique 3D capabilities of AME, how do I translate this into conventional manufactured PCBs for use in commercial devices?**

AME technology has some unique capabilities, and these cannot be replicated using traditional manufacturing technologies. In some specific cases, of rather small devices, where the AME material properties fit the final product requirements, the DragonFly IV can be used in the production of the final product.

### **What are the benefits of AME technology for RF applications?**

AME provides a low Dk value (~2.8) which is almost constant in different frequencies and along X, Y and Z directions in the AME device. The new degrees of freedom of the AME technology enable design optimizations for RF such as shorter paths, less interconnects and printed components such as coils and antennas.

### **What are the main performance issues with conventional PCBs that can be overcome with AME technology?**

The main challenges in manufacturing PCB are: Registration between layers, drilling holes and plating holes. These pain points are overcome by AME as it eliminates the need to drill holes, perform filling or plating, and registration between layers is easy to achieve as all layers are printed on same system with the same process. In addition, by utilizing the power of 3D space, AME provides much better control on the electrical parameters of the printed product and minimizes the noise generators.



### **What's the new substrate used for DragonFly IV?**

The new substrate is a Polyimide film. It provide superior thermal capabilities required for the higher process temperatures of the DragonFly IV.

### **What makes DragonFly IV simpler to operate?**

Starting with the design phase, using FLIGHT plan, which enables ECAD/MCAD collaboration to generate electro-mechanical devices; through FLIGHT check, which enables rules-based design verification inside ECAD; to FLIGHT control, which enables the pre-print job preparation in parallel to printing. It uses an entirely new, simple and intuitive user interface, enabling loading 2D and 3D design data for the same print job. The DragonFly software includes several new maintenance and calibration wizards that simplify the machine operation and significantly reduces maintenance requirements.

### **What's the timeline for supporting the various ECAD software integrations in FLIGHT Plan?**

FLIGHT plan will be released with support for Altium (ECAD) and Solidworks (MCAD). FLIGHT check will be released with support for Altium and Allegro. Further ECAD and MCAD support will be available by Q1 2022.

### **Can I print more than one design in a single job now?**

Yes. The new FLIGHT control software enables printing different designs on the same printing job.

### **What applications can you print?**

The DragonFly IV can print electro-mechanical devices using conductive and dielectric materials. Passive components, such as capacitors and coils can be printed and integrated in the printed device. Semi-conductors can't be printed by the DragonFly IV but can be assembled on the printed substrate.

### **When will DragonFly IV be available?**

The DragonFly IV is available immediately. The lead time will be included as part of the quote.