June 2010

Polar introduces enhanced hatched plane impedance modeling "XFE" for flex and rigid flex PCBs

Key facts

- **Reduced prototype turns when producing impedance controlled flex PCBs**
- **Provides modeling for impedance controlled lines with mesh ground returns**
- **XFE "Xhatch Flex Enhancement" modeling based on proven Polar BEM solver**
- **Available as an option for Si8000m and Si9000e for lossless transmission line structures**
- **Useful for any PCB type deploying meshed / crosshatched returns – e.g. interposers**

Polar Instruments – a leading manufacturer of high speed PCB design tools for fabricators and OEMs – announces an extension to the capability of Si8000m and Si9000e PCB transmission line field solvers; XFE "Xhatch Flex Enhancement" is designed to be the first easy to use 2d field solver with the capability of modeling crosshatched (meshed) ground return paths on a comprehensive variety of stripline, microstrip and embedded stripline structures.

Martyn Gaudion, CEO, Polar Instruments, explains; "Flex and Rigid flex designers and fabricators have long asked for additional field solver capability to enable modeling of PCB transmission lines with meshed or crosshatched ground return planes. XFE is an extension to the Polar Si8000m and Si9000e which enables the rapid modeling of lossless transmission lines with this type of ground return structure. This is a long awaited enhancement for the flex and flex-rigid community, which will also benefit other PCBs where crosshatching is deployed in order to keep impedance controlled line widths at reasonably manufacturable geometries – as for example on interposers."

XFE employs Polar's proprietary multipass 2d boundary element field solving technology to model the impedance of transmission lines with crosshatched return planes. Modeling from 10% to 100% copper returns on impedance tracks is now as simple to implement as traditional impedance controlled structures. The broader geometrical variations of flex base materials compared with rigid materials mean it is even more important to model the correct design dimensions in order to reduce the amount of prototype turns needed to guarantee yields.

Si8000m and Si9000e with the new optional XFE crosshatch modeling capabilities are available now from Polar Instruments www.polarinstruments.com.

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About Polar Instruments
Polar Instruments is a market leader in designing and manufacturing tools to simplify and enhance the design, fabrication and testing of printed circuit boards (PCBs). Their innovative tools include the industry-standard Controlled Impedance Test System (CITS) which provides the global PCB industry with an easy-to-use test system for high-speed digital and RF boards, as well as class-leading tools for fast and accurate design and testing of controlled impedance in PCBs. Polar also leads the industry in tools for automated PCB layer stackup design and documentation. Polar Instruments was established in 1976 and now has operations in the US, UK, Europe and Asia Pacific.
www.polarinstruments.com

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For more information:

Gwen Merchant
Polar Instruments Europe Ltd
Tel: +44 (0) 1481 253081
E-mail: Gwen.Merchant@polarinstruments.com

Debbie Norton
Napier Partnership Ltd
Tel: +44 (0)1243 531123
E-mail: debbie@napier.co.uk

POL011uk