Field solving PCB transmission line design system extracts frequency dependent impedance and loss.

PCB transmission line design system extracts full transmission line parameters - especially suitable for modelling of transmission line loss.

With its fast, accurate, frequency-dependent transmission line modelling, the new Si9000e is designed to model loss and extract full transmission line parameters over a wide range of popular PCB transmission lines (over 80 structures). Employing boundary element method field solving the Si9000e extracts RLGC matrices and rapidly plots a range of transmission line information for the structure you are designing. Loss is graphed three ways with clear indication of dielectric, copper and total loss

Single and multiple dielectric builds are catered for, along with the ability to take into account solder mask performance. Mask coverage can be set adjacent, between and above traces.

Frequency dependent modelling   Many Polar customers request frequency dependent impedance modelling, with particular reference to transmission line losses - the result is the Si9000e. The Si9000e is built on the same proven boundary element field solving platform as the PCB fabrication industry standard Si8000m. Increasing numbers of engineers are using the Si8000m as a rapid and accurate design tool for transmission line impedance - the Si9000e extends the output to extract full transmission line parameters.

High layer-count builds   For those working with complex high layer-count builds the Si9000e also links to the Polar SB200 PCB Stackup Design System and is available in the SB9000 package. Using the SB9000 allows you to keep all your stack design data in one convenient file - and you can draw library material from your fabricator or from base material suppliers in the Polar Material Partner program.

Polar

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Offset Coplanar Strips 1B1A

Offset Coplanar Strips 2B1A

Offset Coplanar Waveguide 1B1A

Offset Coplanar Waveguide 2B1A

Diff Surface Coplanar Strips 1B

Diff Surface Coplanar Strips 2B

Designed to save you time compared with traditional methods, the Si9000e lets you choose graphically the structure you need to model and enter the geometric and material data and the range of frequencies under analysis. Select the graphs or table you need and the Si9000e solves for the results. Advanced users may also enter available data for Er and TanD versus frequency - the Si9000e will take these into account.

Single ended:
- Impedance Magnitude
- Skin Depth
- Insertion Loss S21
- Conductor Loss dB
- Dielectric Loss in dB
- Propagation velocity
- Propagation delay
- SPICE RLGC
- 2 Port S-Parameters

Differential:
- Impedance Magnitude

Displayed Columns
- Impedance Magnitude
- Skin Depth
- Insertion loss S21
- Conductor loss dB
- Dielectric loss dB
- Differential prop velocity
- Differential delay
- Odd mode Z Magnitude
- Even modeZ Magnitude
- SPICE RLGC
- 4-Port S-Parameters
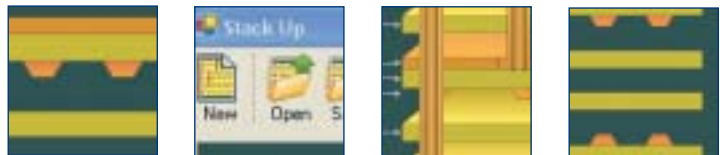
About Polar Instruments

Polar provides innovative and easy to use measurement, test, design tools and utilities for the PCB fabrication industry and related disciplines. Polar is best known for CITS and RITS controlled impedance test systems, and professional impedance calculation tools. Polar also represents PWB Corp Interconnect Stress test systems in Europe and Asia Pacific. The SB200a PCB Stackup Builder adds to the Polar product range by helping simplify the control and documentation of PCB layer stackups for interconnect designers, fabricators and OEMs.