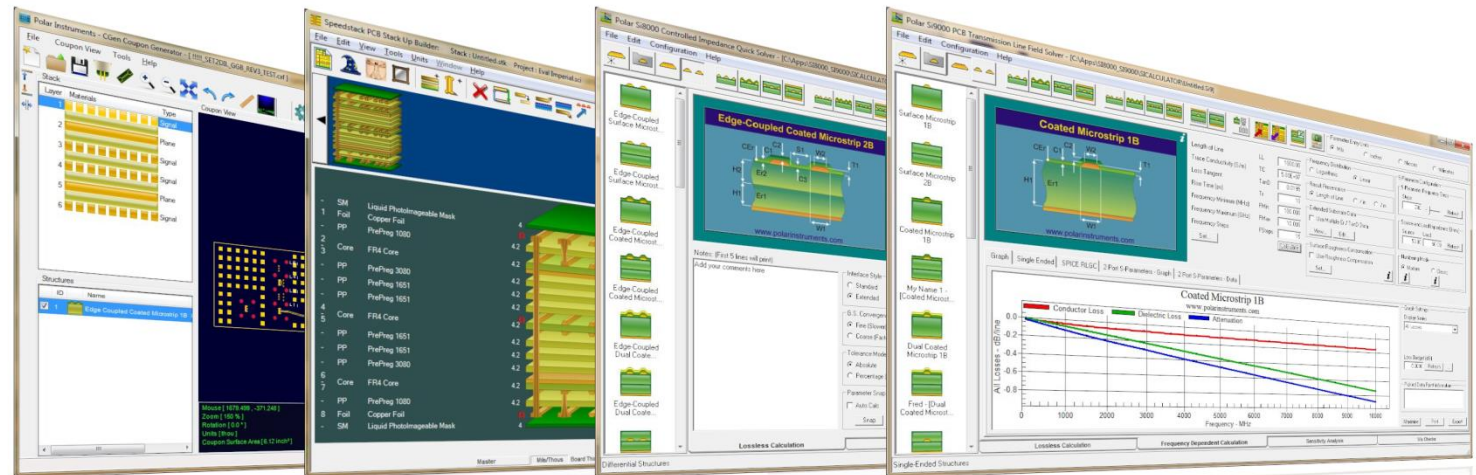
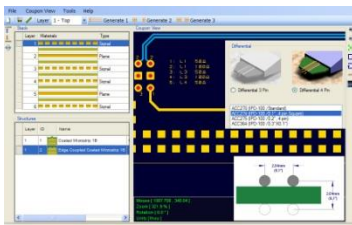
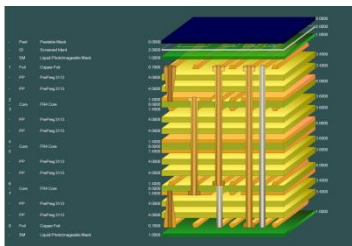
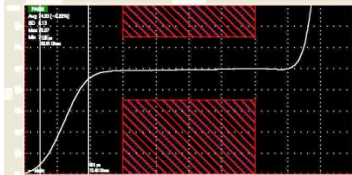
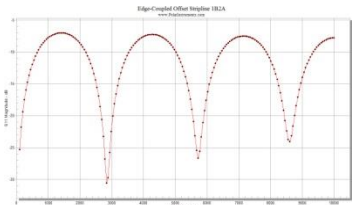
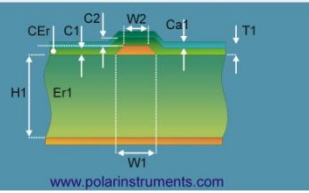


Si8000m / Si9000e / Speedstack / CGen 2016 Preview

January 2016 - Richard Attrill / John Lee

Impedance calculation



Si8000m / Si9000e 2016 : New Structures

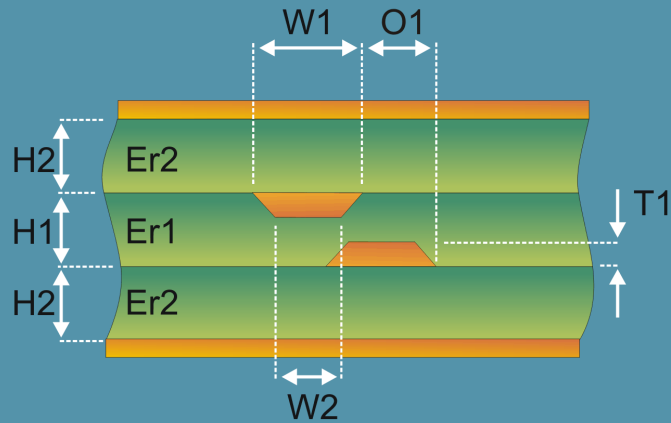
Two new 'broadside over prepreg' style structures – for stackups where the two signal traces of the broadside are on separate core materials

Seven new differentials without grounds (no reference planes)

Aimed at low layer count stackups commonly used in the flex market, to be used only when no reference planes exist within stack up

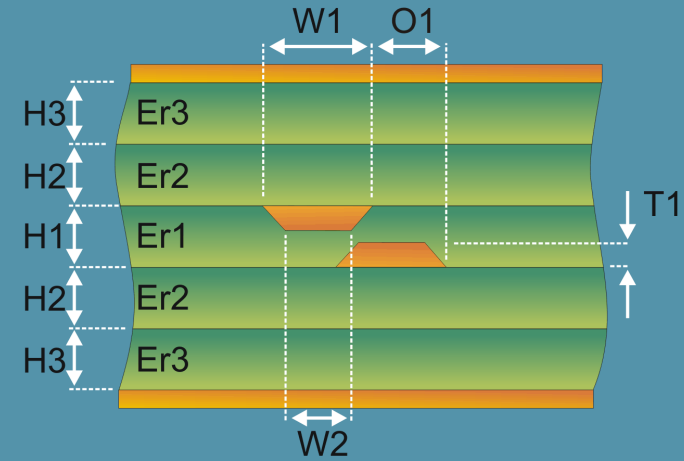
Broadside over prepreg structures – two new structures

Broadside-Coupled Stripline 1E2S



www.polarinstruments.com

Broadside-Coupled Stripline 1E3S



www.polarinstruments.com

Broadside over prepreg structures

Polar SI9000 PCB Transmission Line Field Solver - [C:\Apps\SI8000_SI9000\SICALCULATOR\Untitled.Si9] [C:\Apps\SI8000_SI9000\SICALCULATOR\Untitled.SIP]

File Edit Configuration Help

Parameter Entry Units
 Mils Inches Microns Millimetres

Edge-Coupled Offset Stripli...

Edge-Coupled Offset Stripli...

Edge-Coupled Offset Stripli...

Edge-Coupled Offset Stripli...

Broadside Stripline 2S

Broadside Stripline 1E2S

Broadside Stripline 3S

Broadside Stripline 1E3S

Broadside-Coupled Stripline 1E2S

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			Tolerance	Minimum	Maximum	
Substrate 1 Height	H1	4.2500	± 0.0000	4.2500	4.2500	Calculate
Substrate 1 Dielectric	Er1	4.2000	± 0.0000	4.2000	4.2000	Calculate
Substrate 2 Height	H2	4.2500	± 0.0000	4.2500	4.2500	Calculate
Substrate 2 Dielectric	Er2	4.2000	± 0.0000	4.2000	4.2000	Calculate
Lower Trace Width	W1	7.0000	± 0.0000	7.0000	7.0000	Calculate
Upper Trace Width	W2	6.0000	± 0.0000	6.0000	6.0000	Calculate
Trace Offset	O1	0.0000	± 0.0000	0.0000	0.0000	Calculate
Trace Thickness	T1	1.2000	± 0.0000	1.2000	1.2000	Calculate
Differential Impedance	Zdiff	31.57		31.57	31.57	Calculate More...

Notes: (First 5 lines will print)
 Add your comments here

Interface Style
 Standard
 Extended

G.S. Convergence
 Fine (Slower)
 Coarse (Faster)

Tolerance Mode
 Absolute
 Percentage (%)

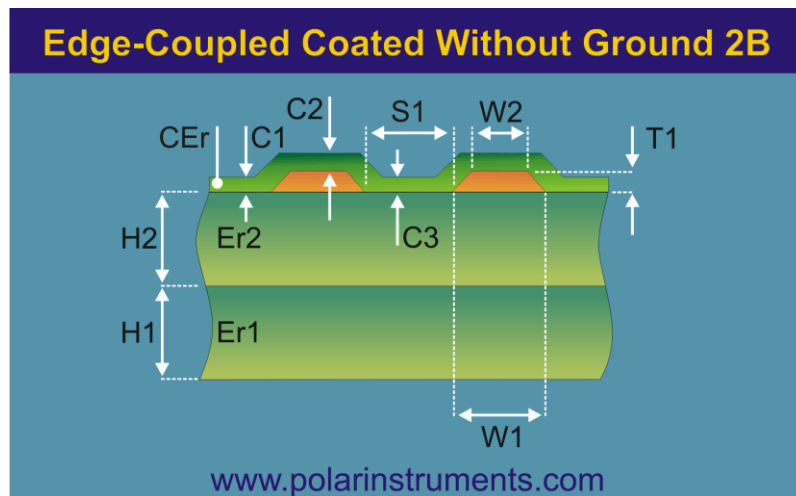
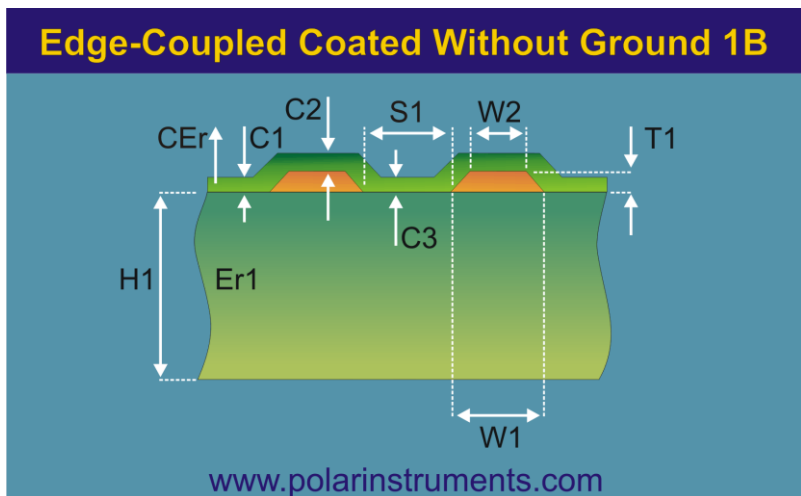
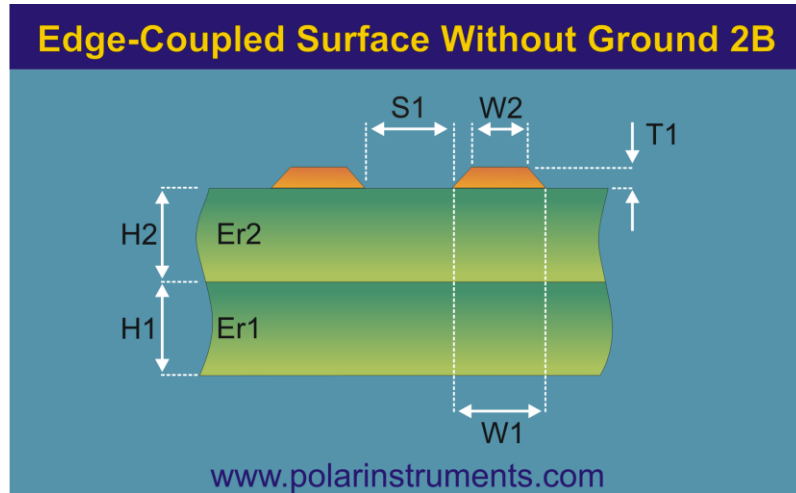
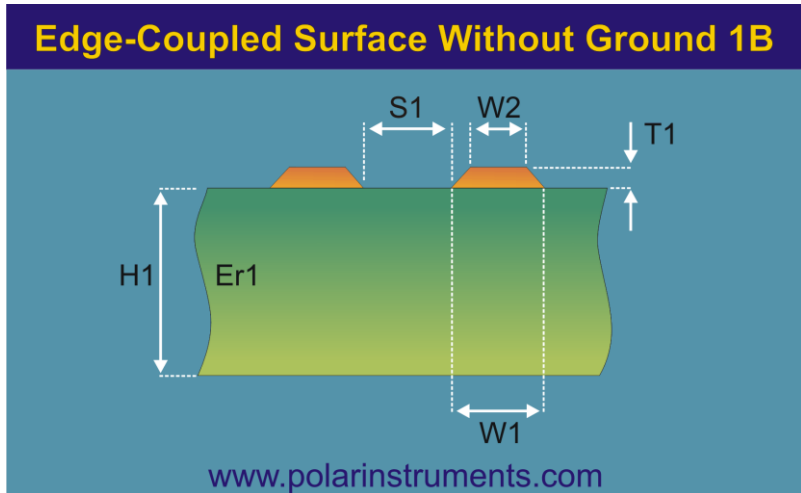
Parameter Snap
 Auto Calc

v16.x Beta January 2016

Lossless Calculation Frequency Dependent Calculation Sensitivity Analysis Via Checks

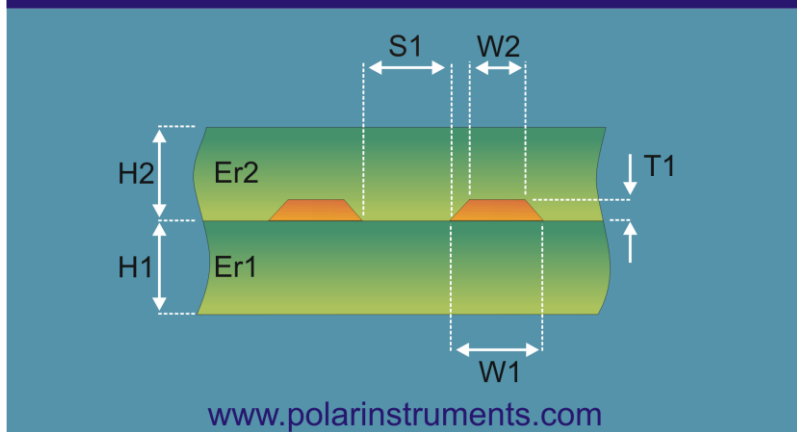
Differential Structures

Differential without ground (no reference planes) – seven structures

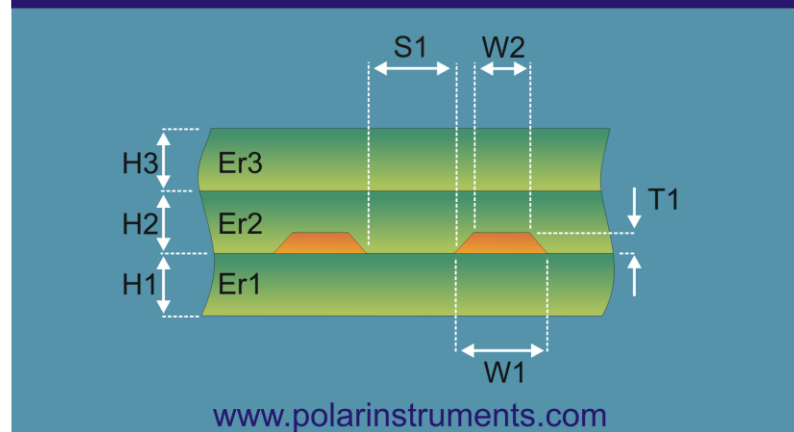


Differential without ground (no reference planes) – seven structures

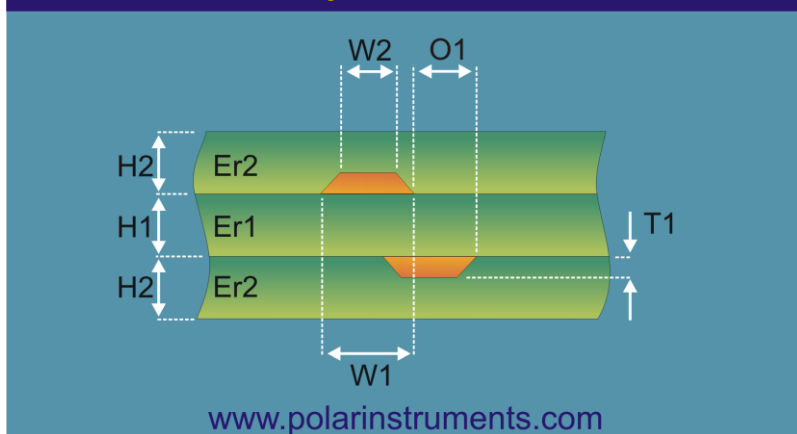
Edge-Coupled Embedded Without Ground 1B1A



Edge-Coupled Embedded Without Ground 1B2A



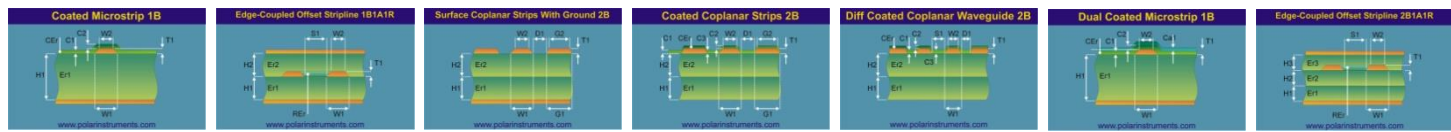
Broadside-Coupled Without Ground 2S



Summary

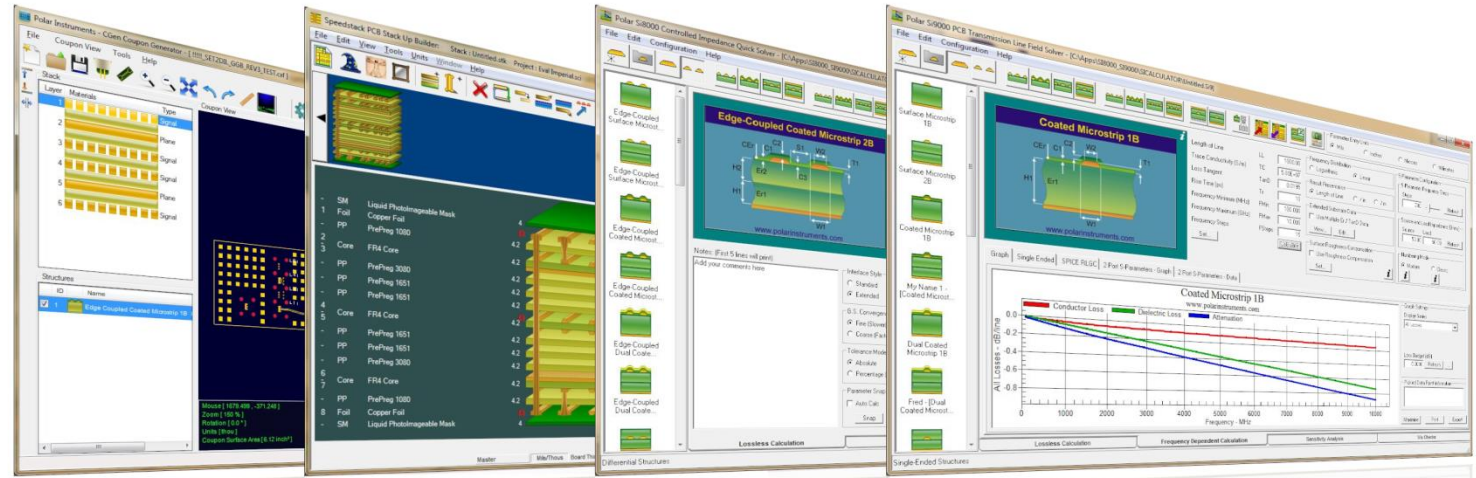
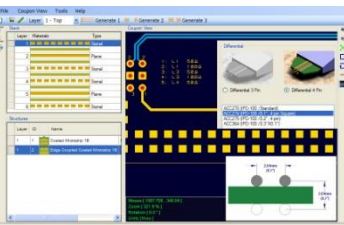
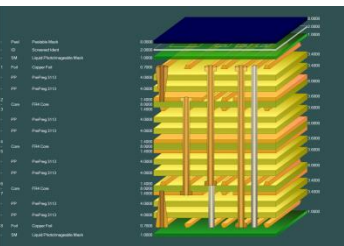
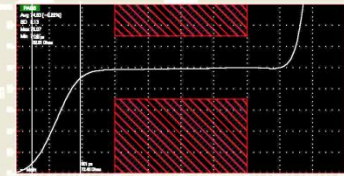
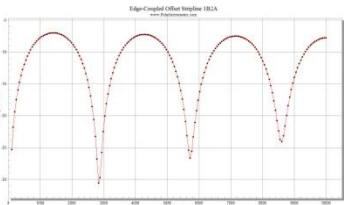
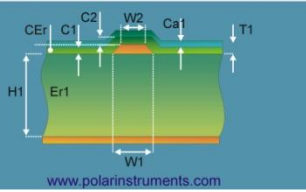
Differential without ground structures do not return even / common mode so will work differently to the other differential structures

Slated for release Si8000m / Si9000e 2016 by February/March



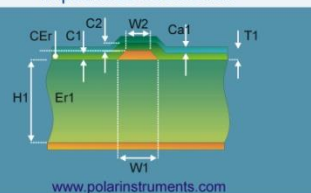
Thank you

Impedance calculation



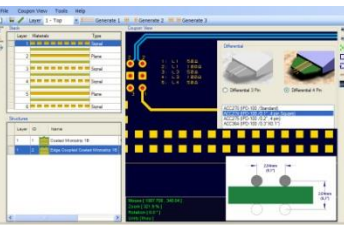
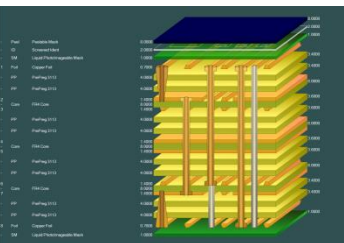
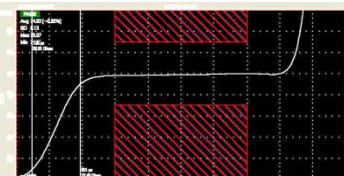
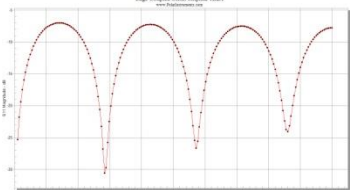


Impedance calculation



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Edge-Coupled Offset Stripline 1B1A



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