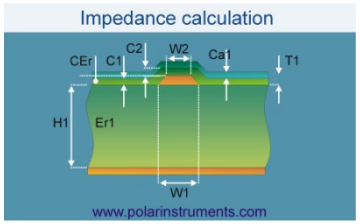
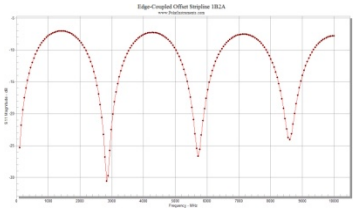
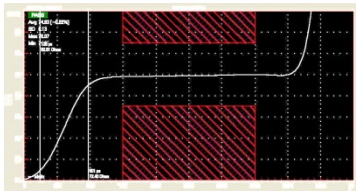
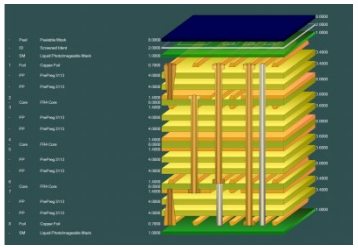
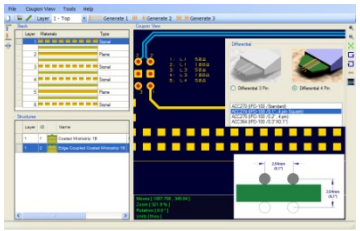










Speedstack 2020 Release

Richard Attrill – January 2020 (Rev 2)

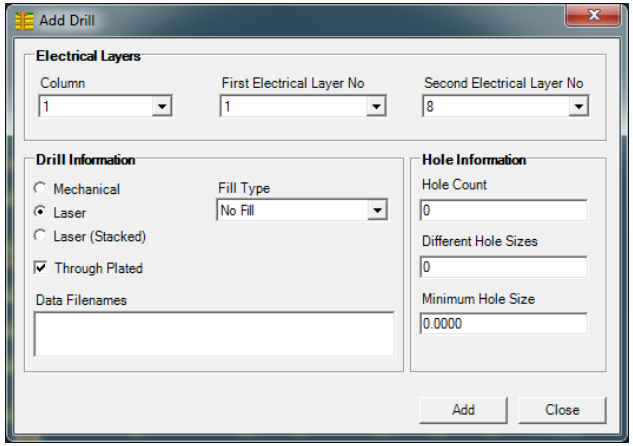
Introducing Speedstack 2020

Welcome to Speedstack 2020.

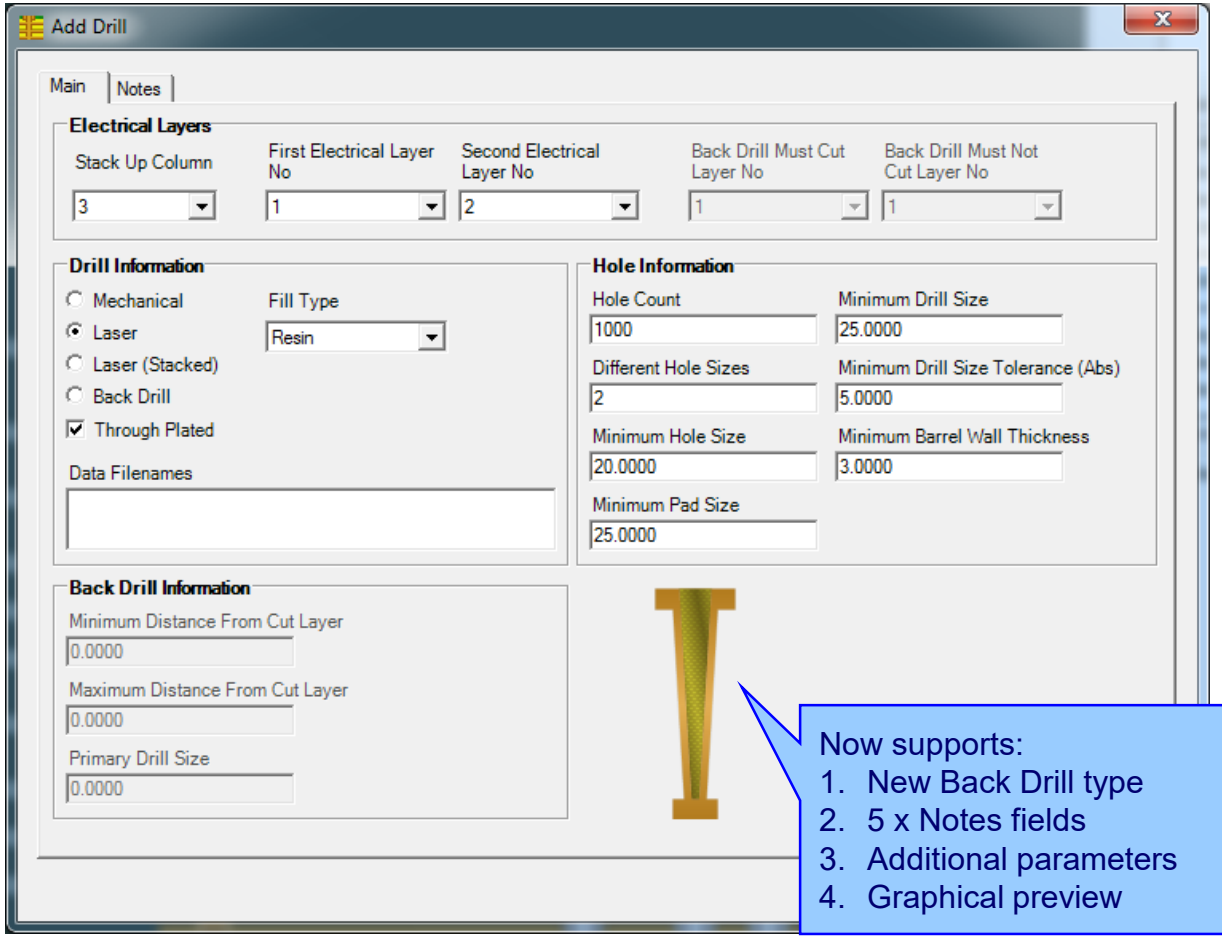
Speedstack 2020's new features include many that have been requested through our Polarcare software maintenance service.

If you would like to have a web-based demonstration please contact your local Polar office, details are shown on the last slide of this presentation.

Drilling enhancements



Current Add Drill dialog



Enhanced Add Drill dialog with improved functionality

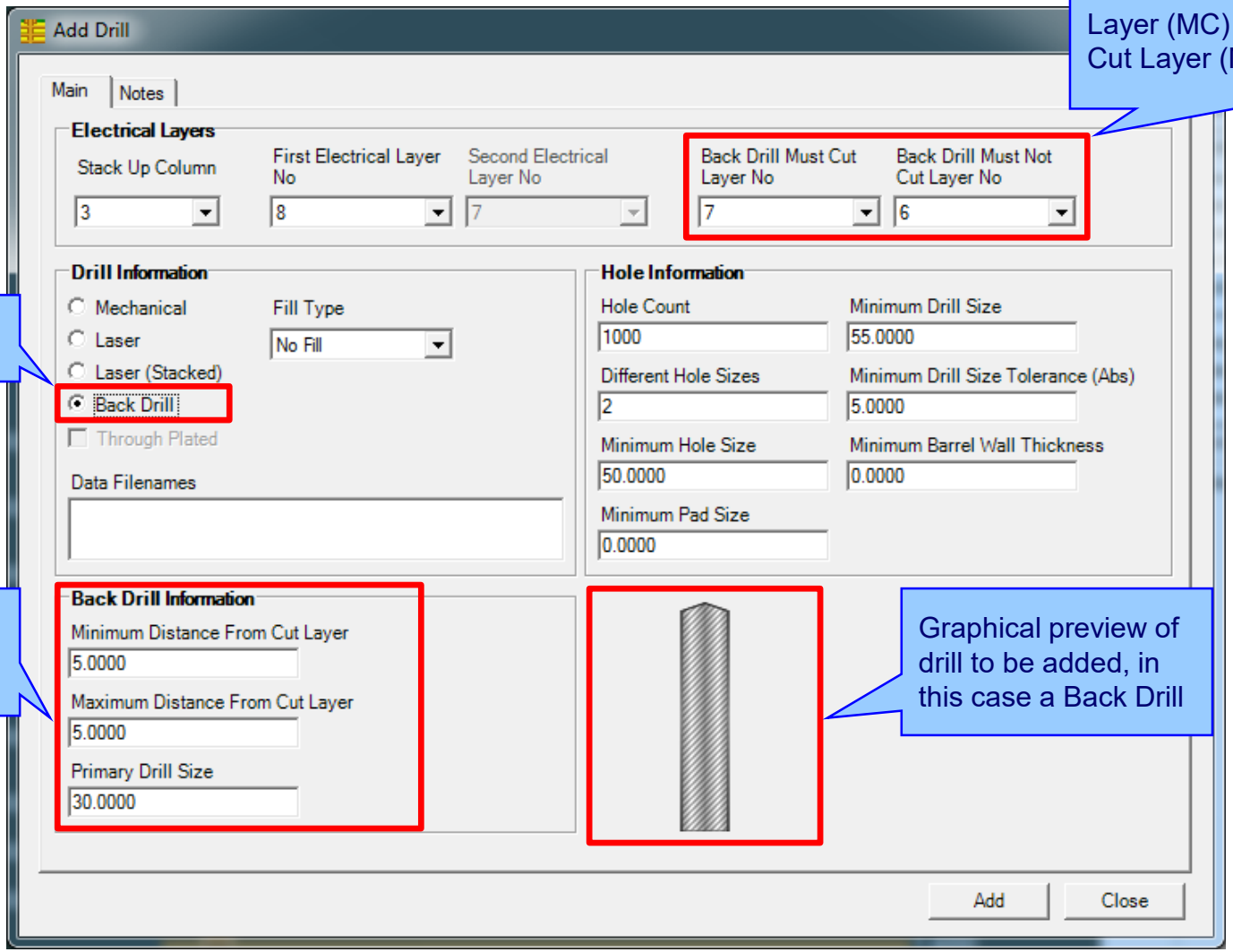
New Back Drill type

Back drills require the nomination of the Must Cut Layer (MC) and Must Not Cut Layer (MNC)

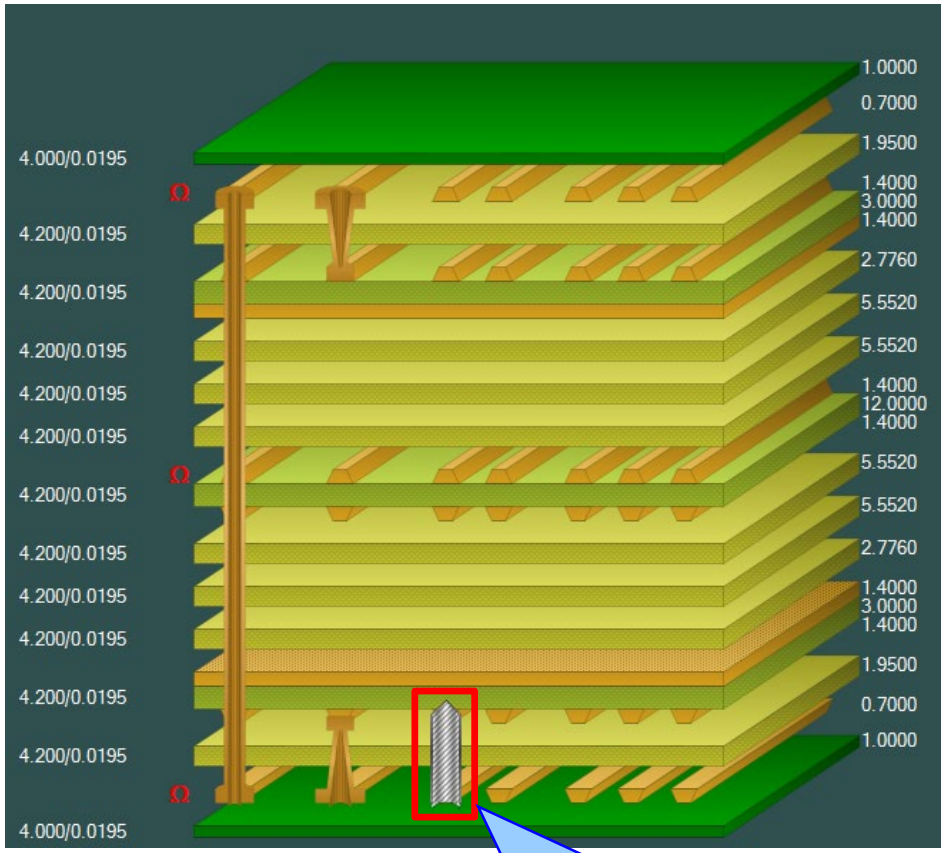
New Back Drill option

Important Back Drill information is entered here

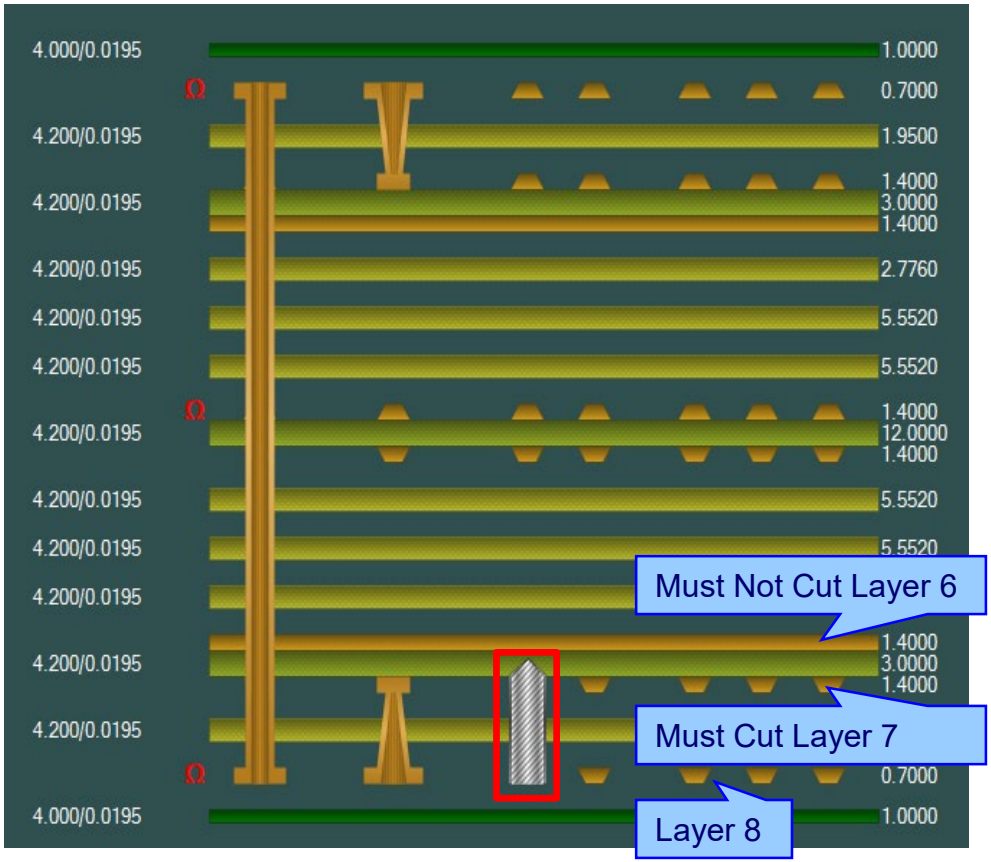
Graphical preview of drill to be added, in this case a Back Drill



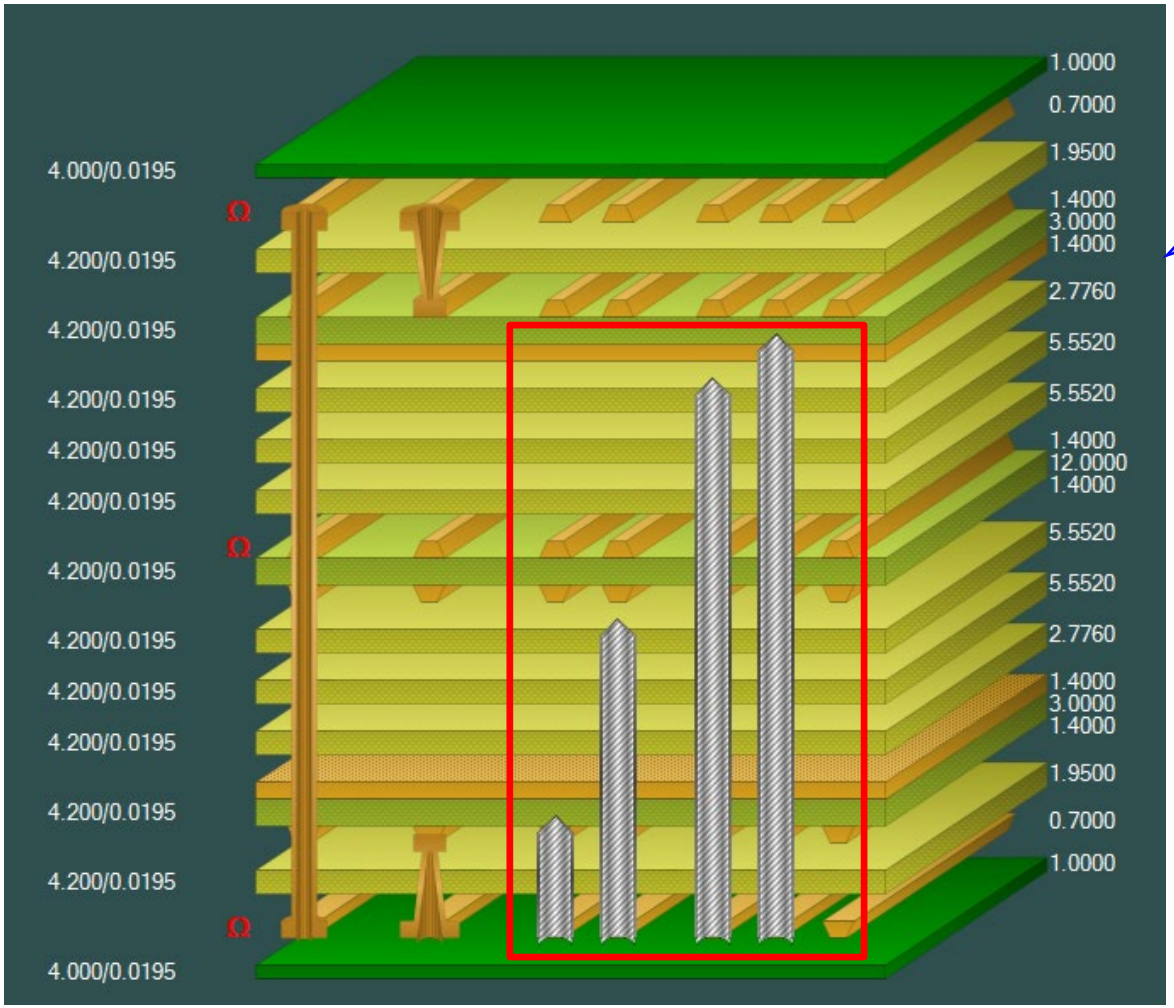
New Back Drill type



Back Drill added to the stack up. 3D and 2D images shown



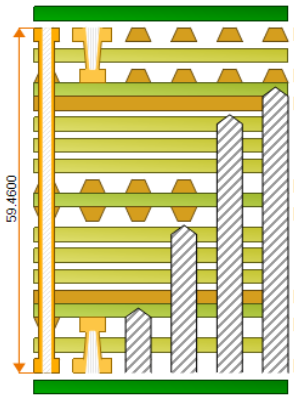
New Back Drill type



Other examples of the new Speedstack Back Drill capability. Although this is not a 'real world' stack up it does show how back drills can be added using the Must Cut / Must Not Cut methodology

New Back Drill type

C:\Program Files\Polar\Speedstack\Samples\Eval Imperial Back Drill v17.sci Units: Mils



Layer	Stack up	Description	Processed Thickness	εr	Loss Tangent	Impedance ID
		Liquid PhotoImageable Mask	1.000	4.000	0.0195	
1		Copper Foil	0.700			1, 2
		PrePreg 1080	1.950	4.200	0.0195	
2			1.400			
		FR4 Core	3.000	4.200	0.0195	
3			1.400			
		PrePreg 3080	2.776	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
4			1.400			3
		FR4 Core	12.000	4.200	0.0195	
5			1.400			
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 3080	2.776	4.200	0.0195	
6			1.400			
		FR4 Core	3.000	4.200	0.0195	
7			1.400			
		PrePreg 1080	1.950	4.200	0.0195	
8		Copper Foil	0.700			4
		Liquid PhotoImageable Mask	1.000	4.000	0.0195	

Copper Thickness = 9.800 | Dielectric Thickness = 49.660 | Solder Mask Thickness = 2.000 | Stack Up Thickness = 59.460 | Stack Up Thickness with Soldermask = 61.460

Impedance ID	Structure Image	Impedance Signal Layer	Ref. Plane 1 in Layer	Ref. Plane 2 in Layer	Lower Trace Width (W1)	Upper Trace Width (W2)	Trace Separation (S1)	Target Impedance	Tol (+/- %)	Calculated Impedance
1		1	3	0	8.500	7.500	8.115	100.000	10.000	100.350
2		1	3	0	4.500	3.500	0.000	75.000	10.000	75.870
3		4	3	6	7.250	6.250	8.500	100.000	10.000	101.280
4		8	6	0	4.500	3.500	0.000	75.000	10.000	75.870

StackName: Master

Drawing No:	Associated Documents:	Revision:	Modification:	Date of Revision:	Editor	Page 1/X
Date:						
Author:						
Department:						
Site:						

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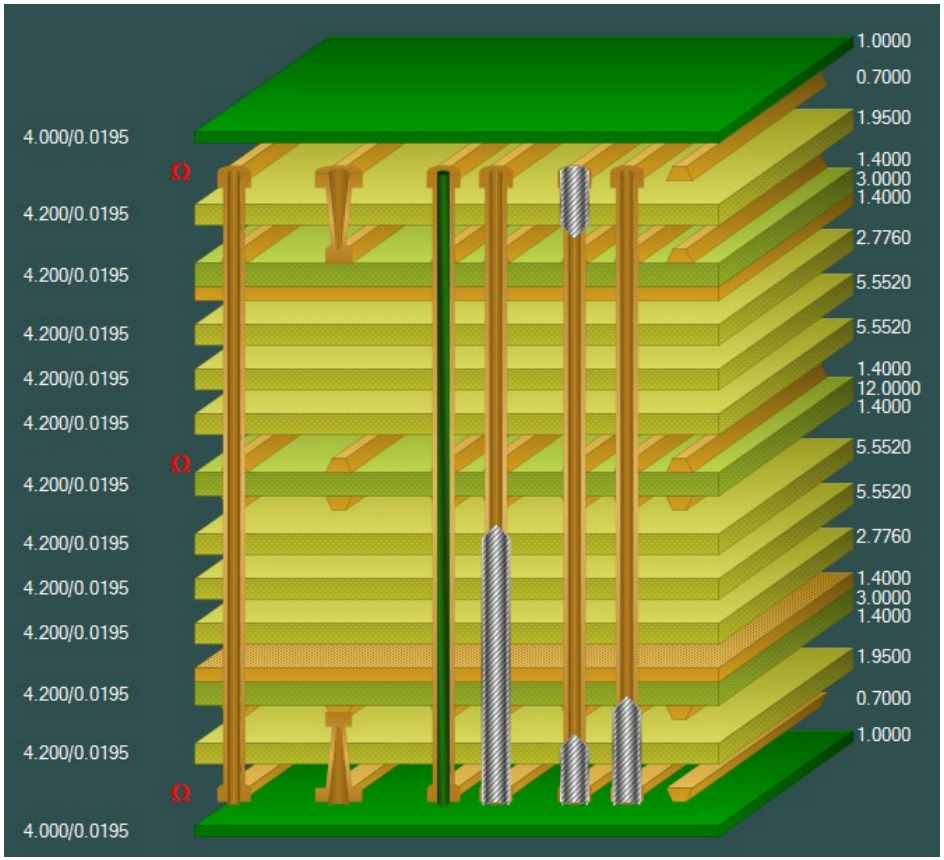
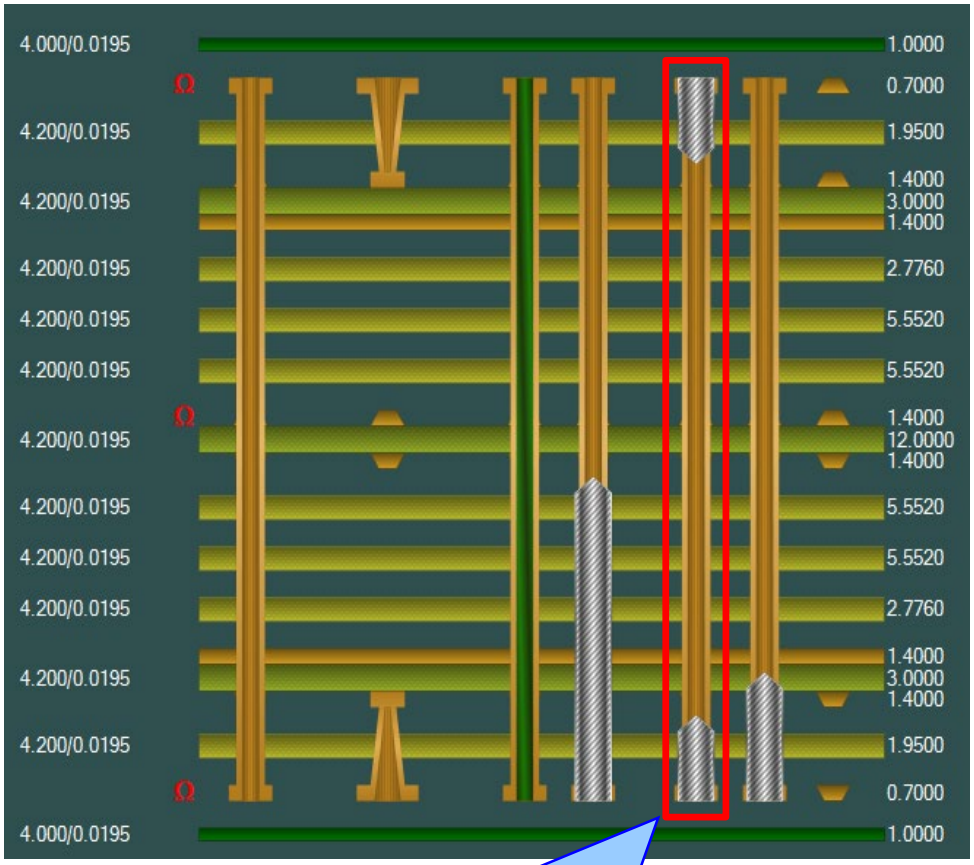
The Speedstack technical report option has been enhanced to document the new Back Drill capability.

New Back Drill type





It is also possible to overlay Back Drills on top of existing through-plated drills, to document the complete back drilled via structure

New Back Drill type

C:\Program Files\Polar\Speedstack\Samples\Eval Imperial Back Drill Keep Vias v17.sci Units: Mils

Layer	Stack up	Description	Processed Thickness	εr	Loss Tangent	Impedance ID
		Liquid Photoimageable Mask	1.000	4.000	0.0195	
1		Copper Foil	0.700			1, 2
		PrePreg 1080	1.950	4.200	0.0195	
2			1.400			
		FR4 Core	3.000	4.200	0.0195	
3			1.400			
		PrePreg 3080	2.776	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
4			1.400			3
		FR4 Core	12.000	4.200	0.0195	
5			1.400			
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 1651	5.552	4.200	0.0195	
		PrePreg 3080	2.776	4.200	0.0195	
6			1.400			
		FR4 Core	3.000	4.200	0.0195	
7			1.400			
		PrePreg 1080	1.950	4.200	0.0195	
8		Copper Foil	0.700			4
		Liquid Photoimageable Mask	1.000	4.000	0.0195	

59.4600

Copper Thickness = 9.800 | Dielectric Thickness = 49.660 | Solder Mask Thickness = 2.000 | Stack Up Thickness = 59.460 | Stack Up Thickness with Soldermask = 61.460

Impedance ID	Structure Image	Impedance Signal Layer	Ref. Plane 1 in Layer	Ref. Plane 2 in Layer	Lower Trace Width (W1)	Upper Trace Width (W2)	Trace Separation (S1)	Target Impedance	Tol (+/- %)	Calculated Impedance
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2		1	3	0	4.500	3.500	0.000	75.000	10.000	75.870
3		4	3	6	7.250	6.250	8.500	100.000	10.000	101.280
4		8	6	0	4.500	3.500	0.000	75.000	10.000	75.870

StackName: Master

Drawing No:	Associated Documents:	Revision:	Modification:	Date of Revision:	Editor	Page 1/X
Date:						
Author:						
Department:						
Site:						

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The technical report showing the complete back drilled via structure

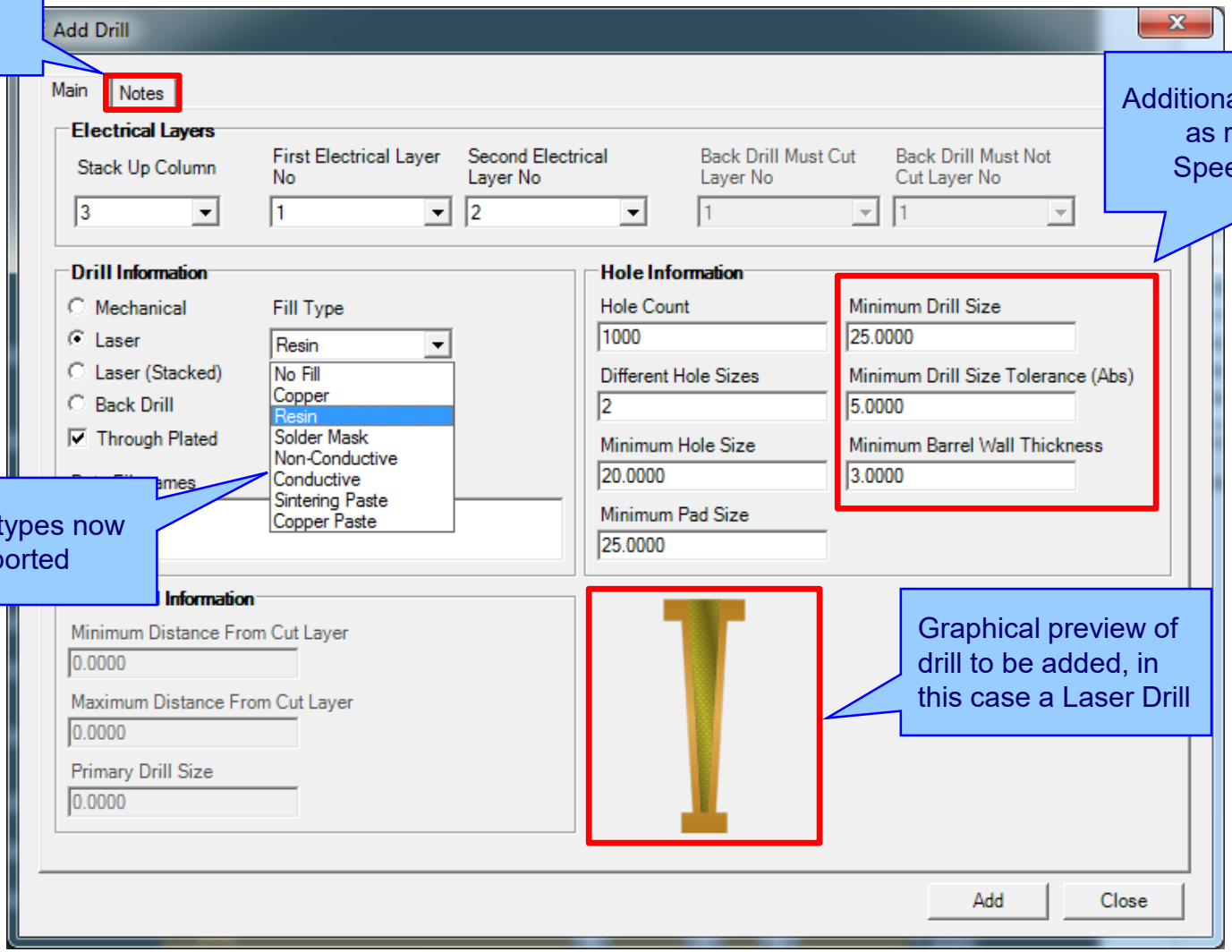
Other Drill enhancements

User-definable Notes feature

Additional drill parameters as requested by Speedstack users

Eight fill types now supported

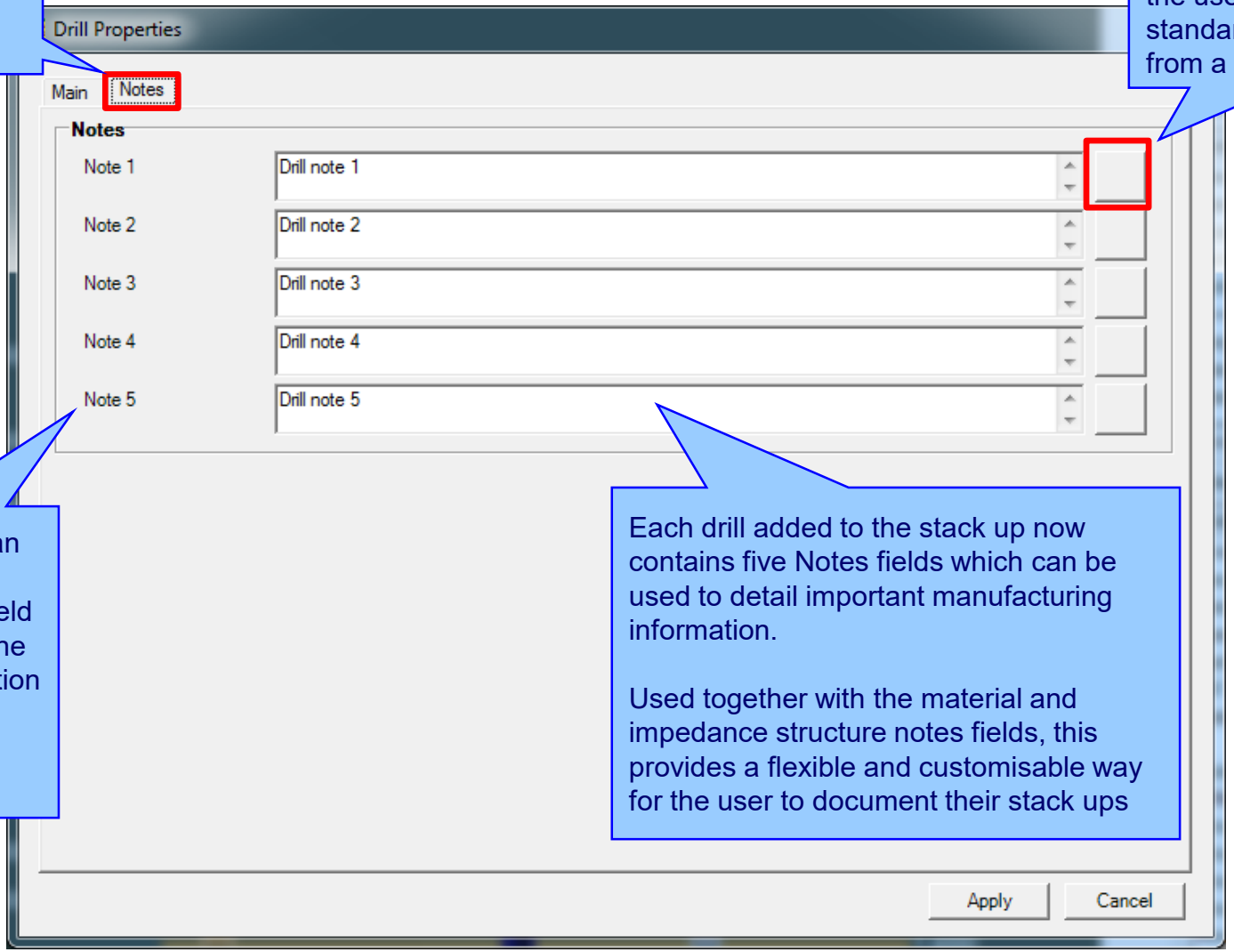
Graphical preview of drill to be added, in this case a Laser Drill



User-definable Notes fields

User-definable Notes feature

Selecting the button next to each Notes field allows the user to import a standard set of notes from a text file

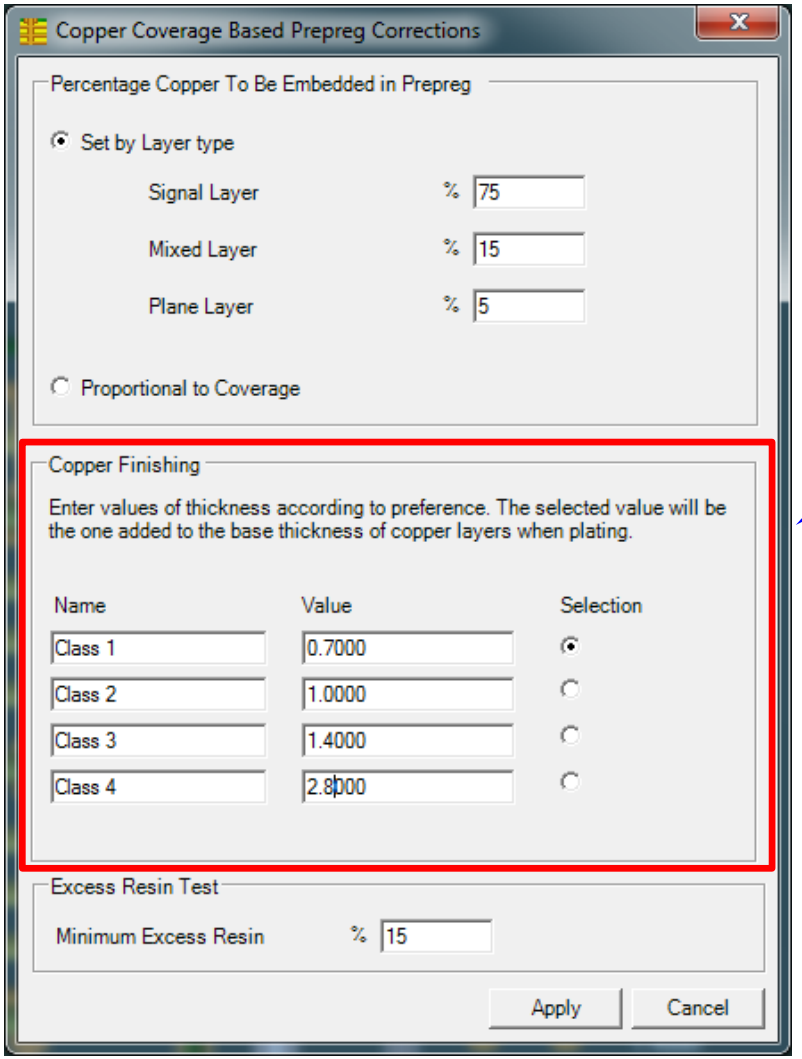


The Notes fields can be used for any purpose. A Note Field Alias capability in the technical report option allows the user to customise the field name printed.

Each drill added to the stack up now contains five Notes fields which can be used to detail important manufacturing information.

Used together with the material and impedance structure notes fields, this provides a flexible and customisable way for the user to document their stack ups

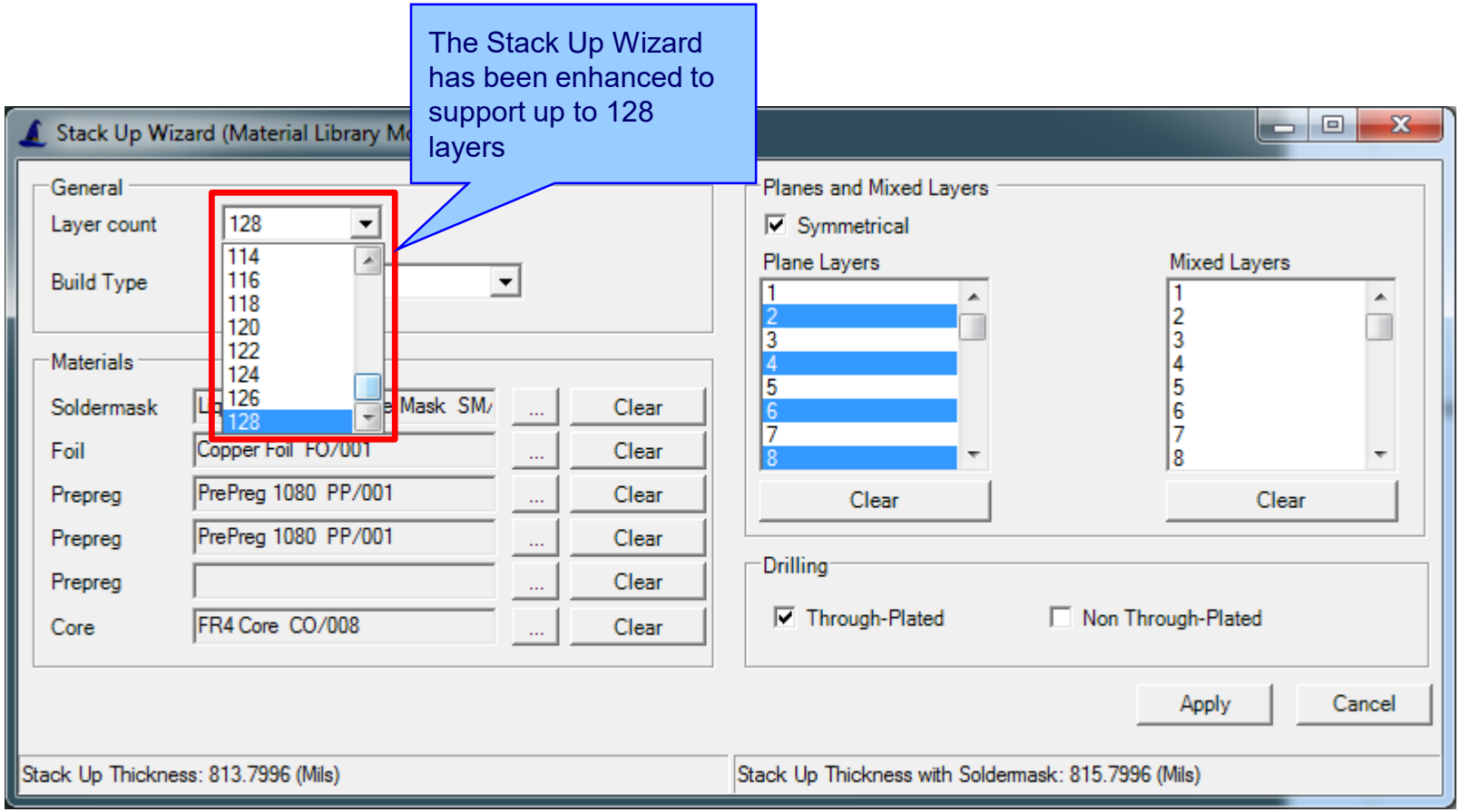
Copper Finishing enhancements



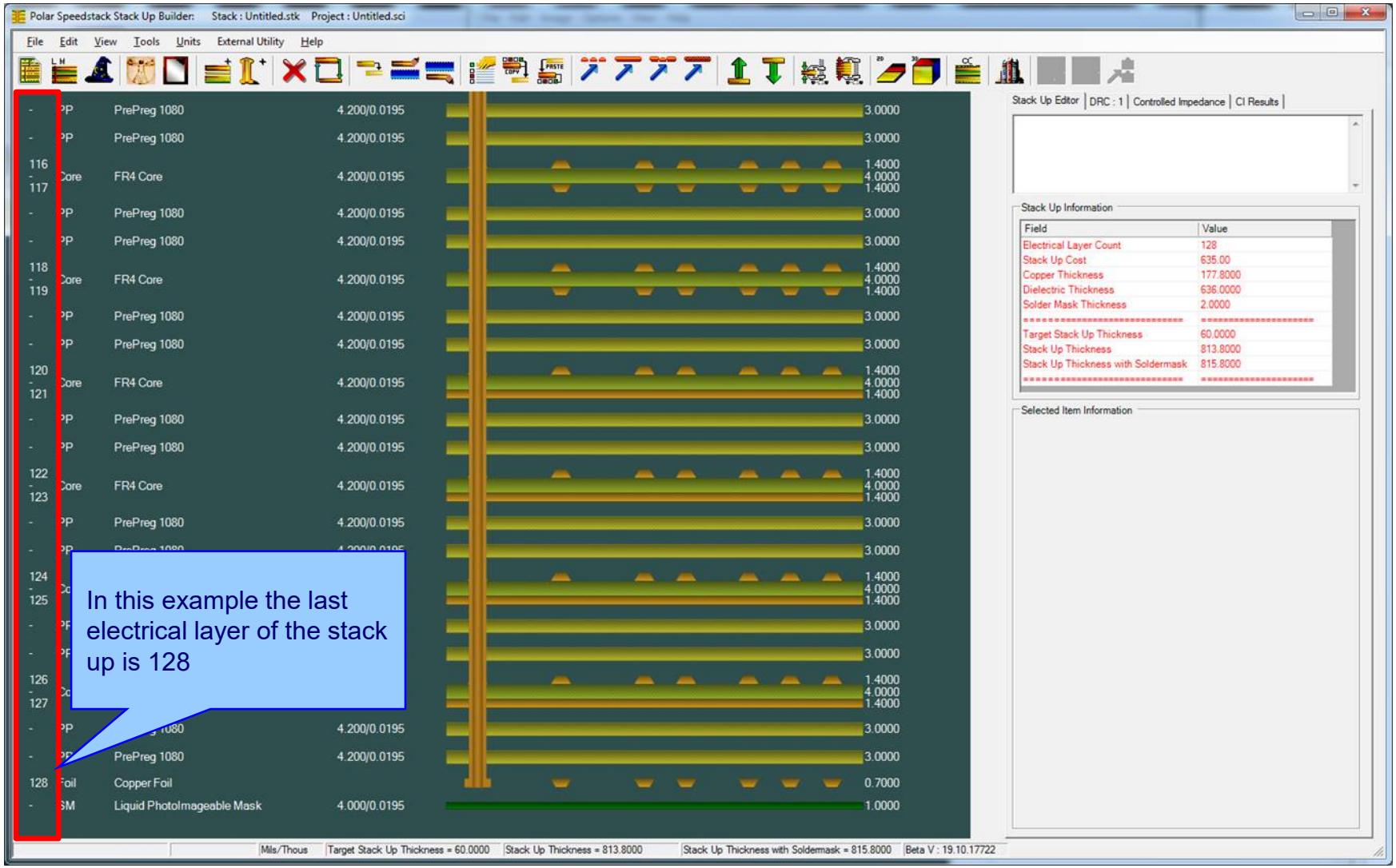
The Apply Finishing option now supports multiple user-nominated copper finishing values.

Depending upon the PCB Class selected, a different amount of copper plating is applied to the base copper

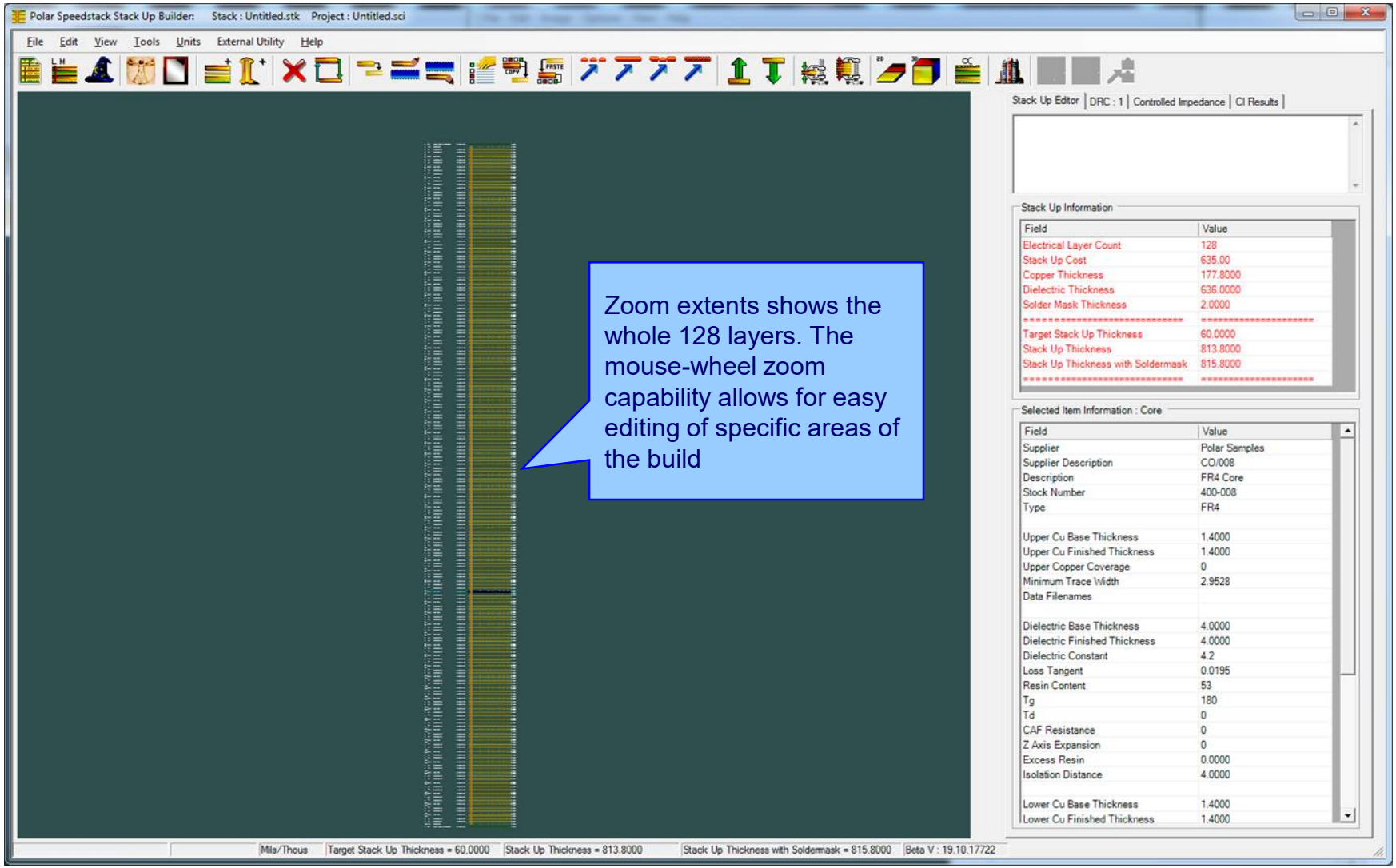
Stack Up Wizard – now supports build up to 128 layers



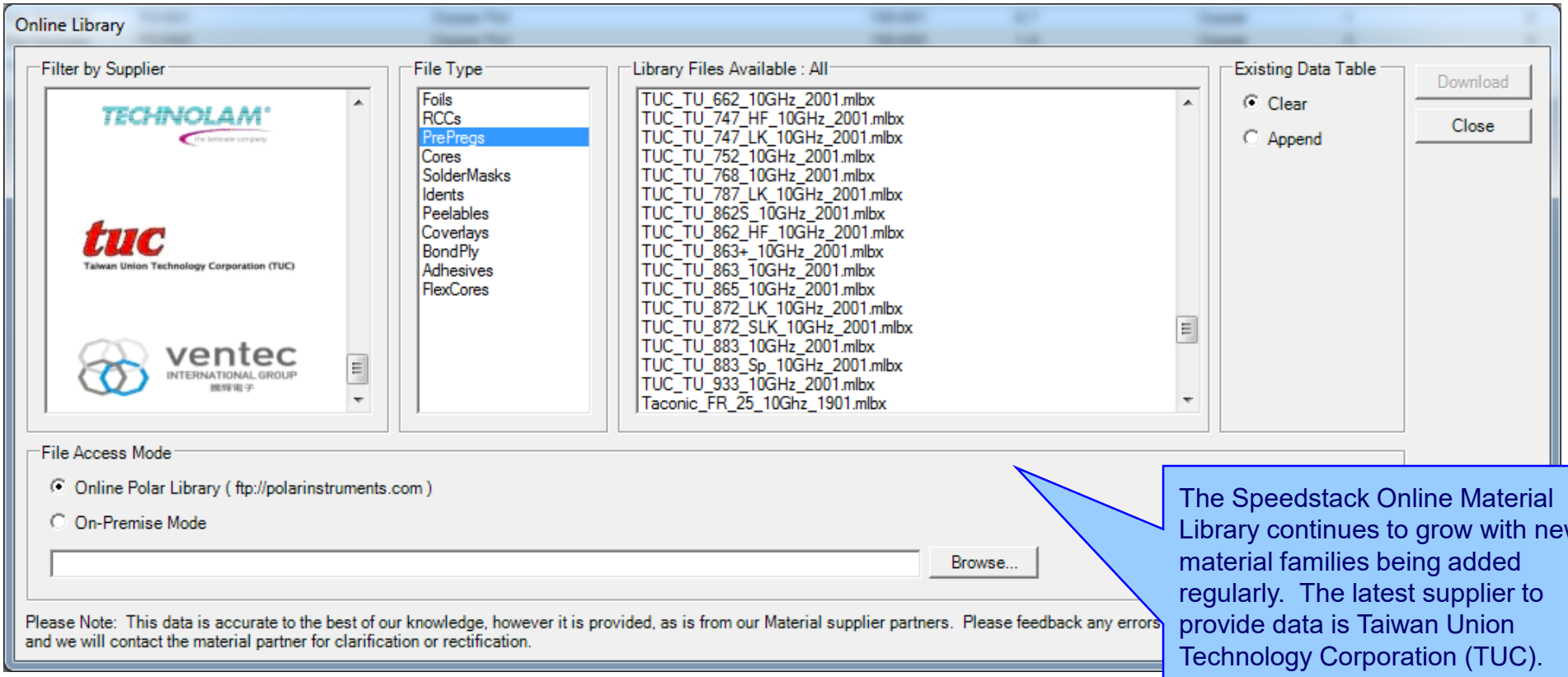
Stack Up Wizard – now supports build up to 128 layers



Stack Up Wizard – now supports build up to 128 layers



Online Material Library



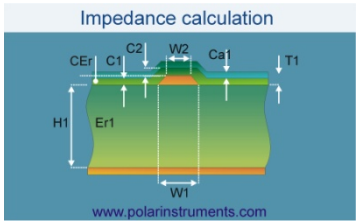
The Speedstack Online Material Library continues to grow with new material families being added regularly. The latest supplier to provide data is Taiwan Union Technology Corporation (TUC).

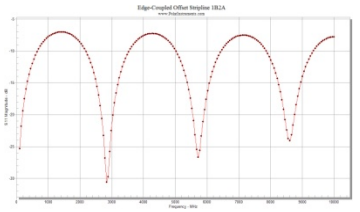
The material information is instantly available to all Speedstack users with an active Polarcare contract.

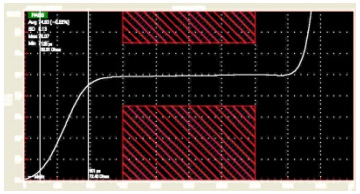
Import / Export enhancements

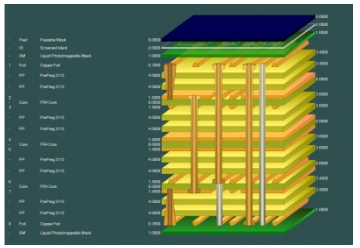
The following Import / Export options have been updated to support new fields introduced with Speedstack 2020:

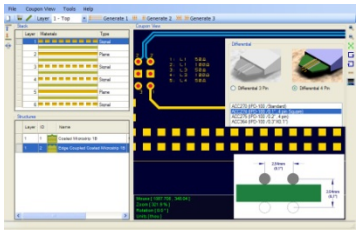
- XML STKX v17.00 and SSX v7.00 import / export options
- CSV export option



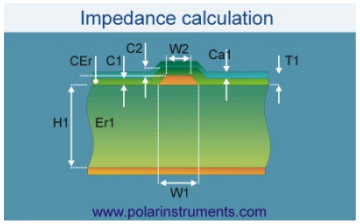


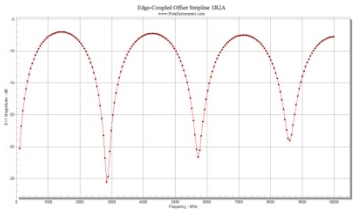


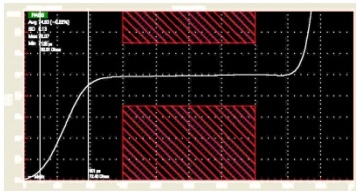


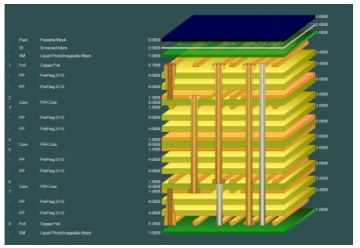


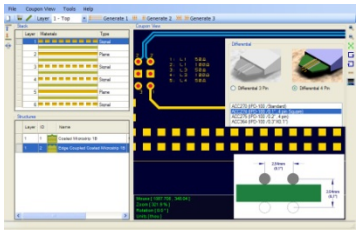
Thank you for viewing this introduction to Speedstack 2020.
If you have questions we would be delighted to help you.
Your local contact information is contained on the following slide

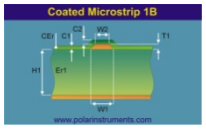


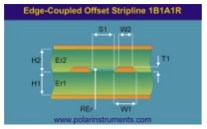


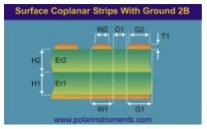


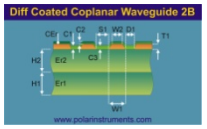


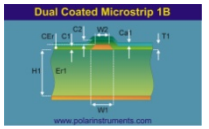


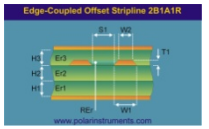












For more information:

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