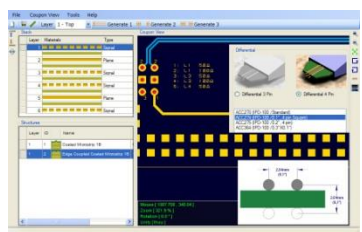
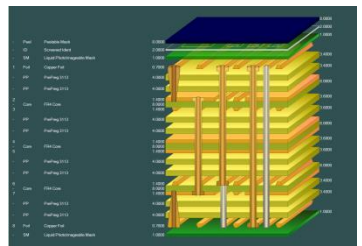
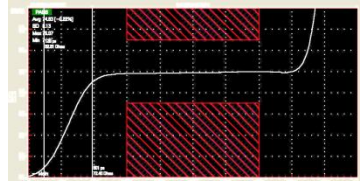
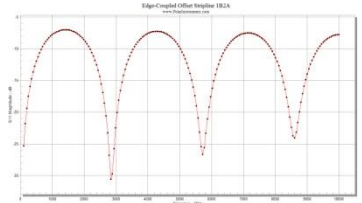
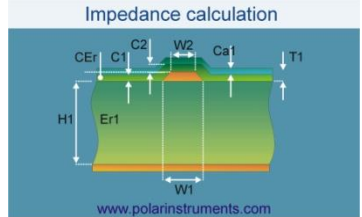


Speedstack 2020 Preview

Richard Attrill – October 2019 (Rev 1)



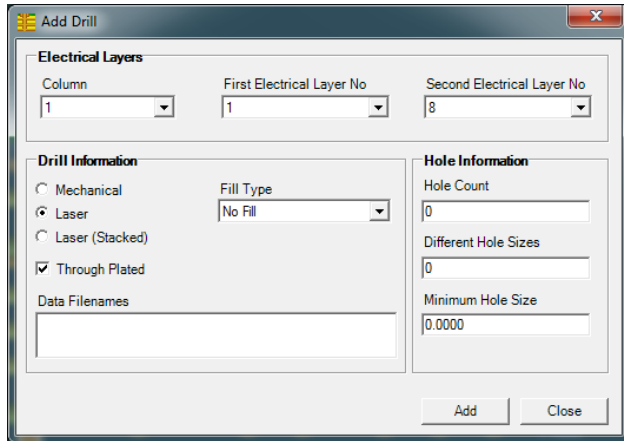
Introducing Speedstack 2020

Welcome to a preview of Speedstack 2020.

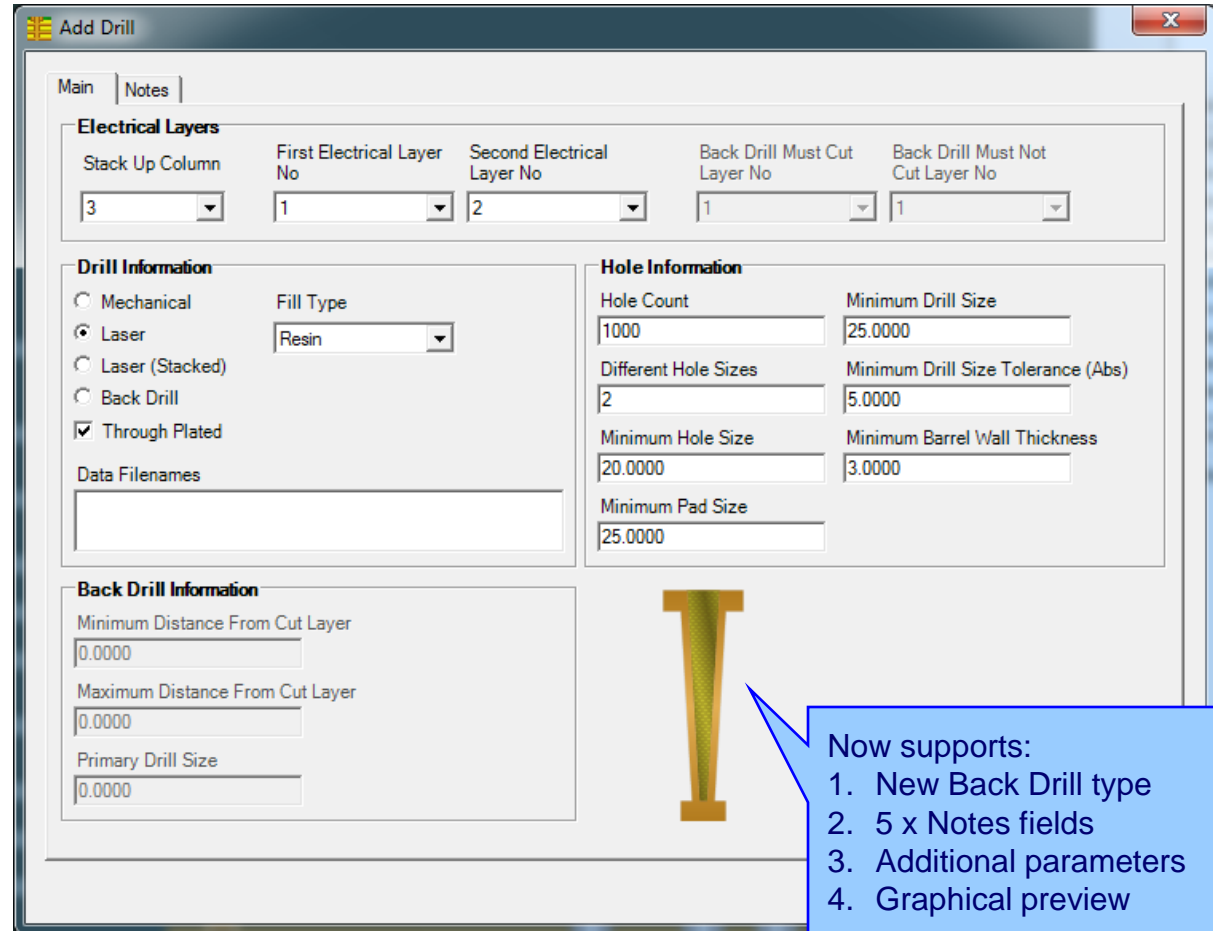
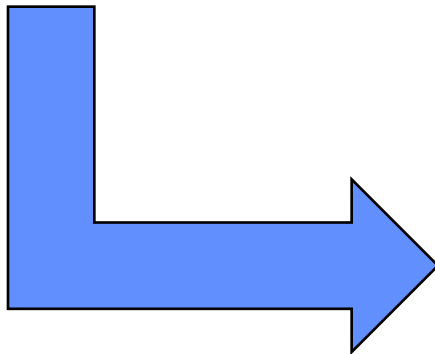
We have introduced a number of new features that have been requested through our Polarcare software maintenance service.

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

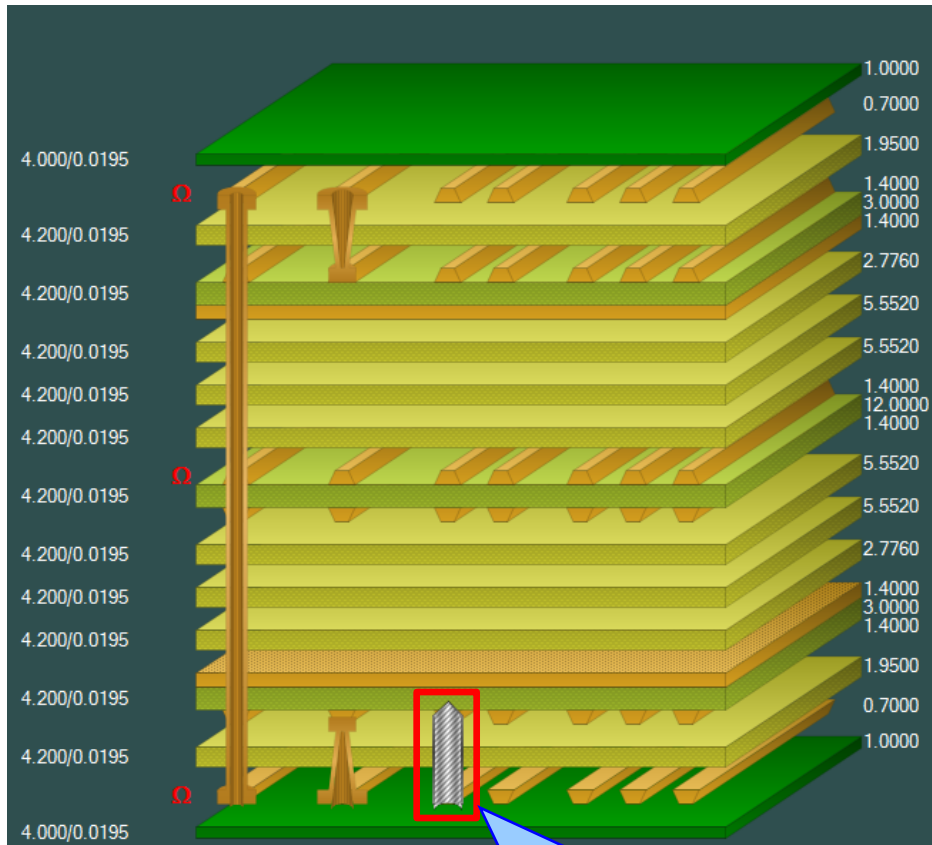
Important Back Drill information is entered here

The screenshot shows the 'Add Drill' dialog box with the following fields and callouts:

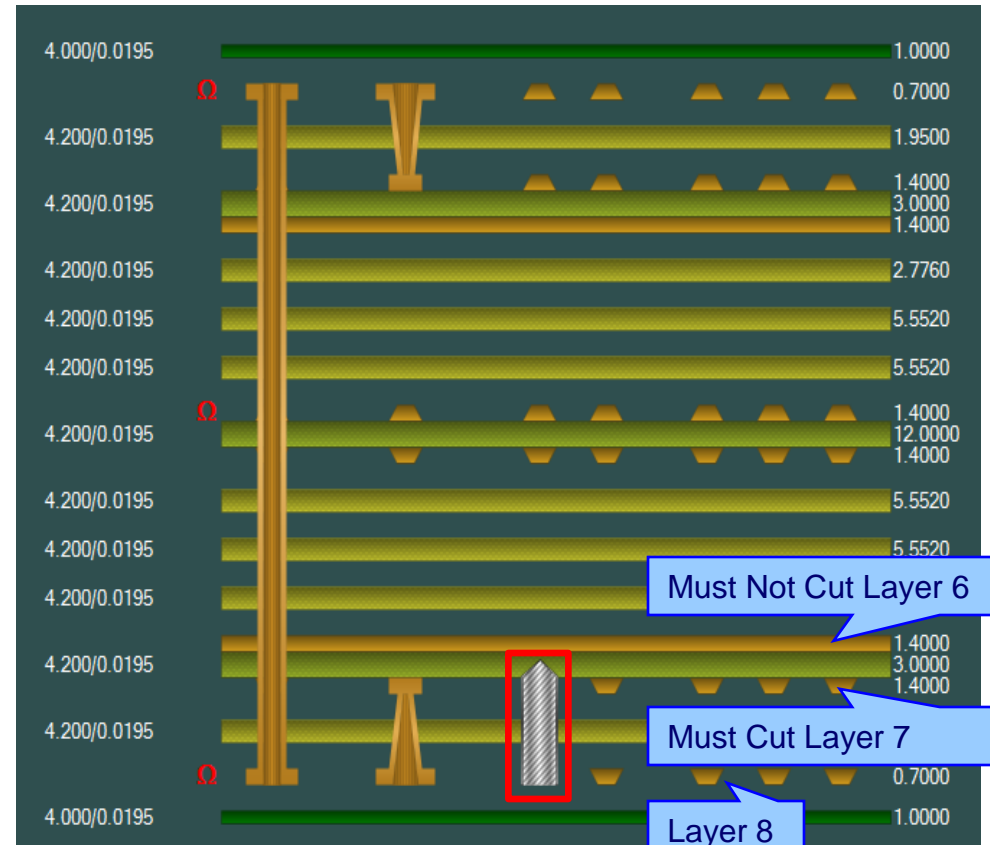
- Electrical Layers:** Stack Up Column (3), First Electrical Layer No (8), Second Electrical Layer No (7), Back Drill Must Cut Layer No (7), Back Drill Must Not Cut Layer No (6). A red box highlights the last two fields.
- Drill Information:** Mechanical, Laser, Laser (Stacked), **Back Drill** (selected and boxed), Through Plated. Fill Type: No Fill.
- Hole Information:** Hole Count (1000), Minimum Drill Size (55.0000), Different Hole Sizes (2), Minimum Drill Size Tolerance (Abs) (5.0000), Minimum Hole Size (50.0000), Minimum Barrel Wall Thickness (0.0000), Minimum Pad Size (0.0000).
- Back Drill Information:** Minimum Distance From Cut Layer (5.0000), Maximum Distance From Cut Layer (5.0000), Primary Drill Size (30.0000). A red box highlights this section.
- Graphical Preview:** A 3D rendering of a back drill, boxed in red.
- Buttons:** Add, Close.

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

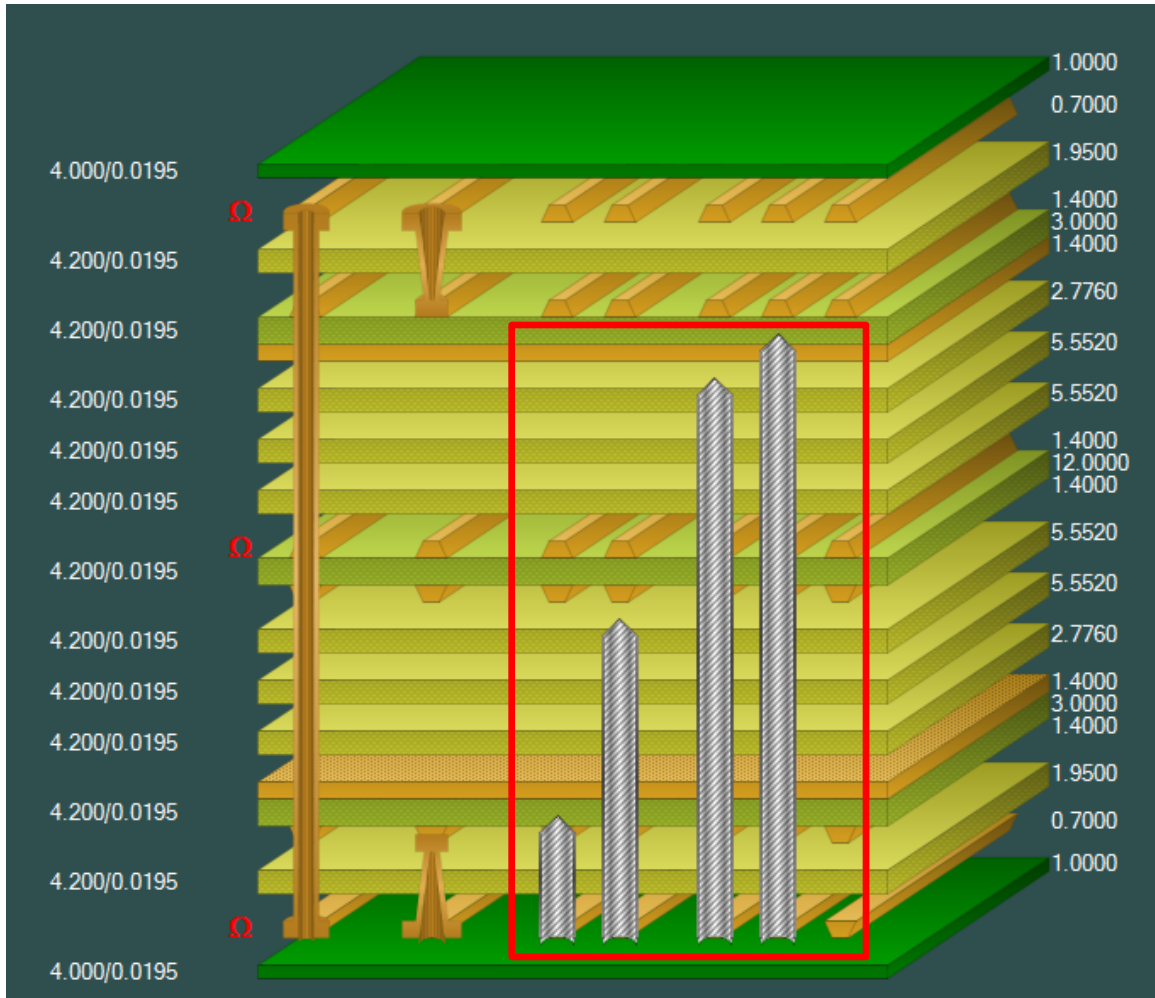
New Back Drill type



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

Other Drill enhancements

The screenshot shows the 'Add Drill' dialog box with several callouts:

- User-definable Notes feature:** A callout points to the 'Notes' tab in the top navigation bar.
- Additional drill parameters as requested by Speedstack users:** A callout points to a red-bordered box containing 'Minimum Drill Size' (25.0000), 'Minimum Drill Size Tolerance (Abs)' (5.0000), and 'Minimum Barrel Wall Thickness' (3.0000).
- Eight fill types now supported:** A callout points to a dropdown menu for 'Fill Type' with options: Resin, No Fill, Copper, Resin, Solder Mask, Non-Conductive, Conductive, Sintering Paste, and Copper Paste.
- Graphical preview of drill to be added, in this case a Laser Drill:** A callout points to a 3D model of a laser drill bit.

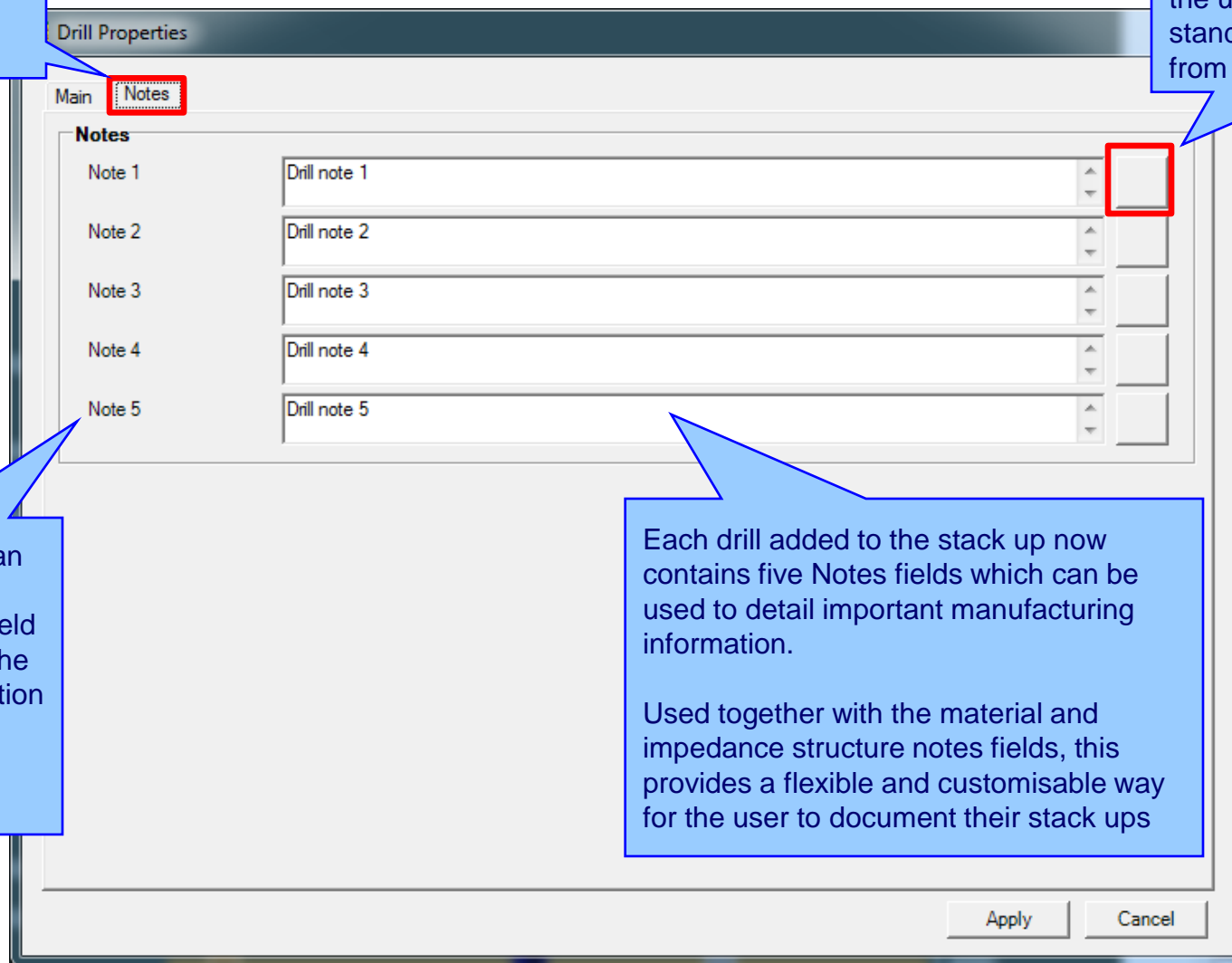
The dialog box contains the following sections and fields:

- Electrical Layers:** Stack Up Column (3), First Electrical Layer No (1), Second Electrical Layer No (2), Back Drill Must Cut Layer No (1), Back Drill Must Not Cut Layer No (1).
- Drill Information:** Mechanical (unselected), Laser (selected), Laser (Stacked) (unselected), Back Drill (unselected), Through Plated (checked).
- Hole Information:** Hole Count (1000), Different Hole Sizes (2), Minimum Hole Size (20.0000), Minimum Pad Size (25.0000).
- Information:** Minimum Distance From Cut Layer (0.0000), Maximum Distance From Cut Layer (0.0000), Primary Drill Size (0.0000).

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



Notes		
Note 1	Drill note 1	<input type="button" value="Import"/>
Note 2	Drill note 2	<input type="button" value="Import"/>
Note 3	Drill note 3	<input type="button" value="Import"/>
Note 4	Drill note 4	<input type="button" value="Import"/>
Note 5	Drill note 5	<input type="button" value="Import"/>

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

Copper Coverage Based Prepreg Corrections

Percentage Copper To Be Embedded in Prepreg

Set by Layer type

Signal Layer	%	<input type="text" value="75"/>
Mixed Layer	%	<input type="text" value="15"/>
Plane Layer	%	<input type="text" value="5"/>

Proportional to Coverage

Copper Finishing

Enter values of thickness according to preference. The selected value will be the one added to the base thickness of copper layers when plating.

Name	Value	Selection
<input type="text" value="Class 1"/>	<input type="text" value="0.7000"/>	<input checked="" type="radio"/>
<input type="text" value="Class 2"/>	<input type="text" value="1.0000"/>	<input type="radio"/>
<input type="text" value="Class 3"/>	<input type="text" value="1.4000"/>	<input type="radio"/>
<input type="text" value="Class 4"/>	<input type="text" value="2.8000"/>	<input type="radio"/>

Excess Resin Test

Minimum Excess Resin %

Apply Cancel

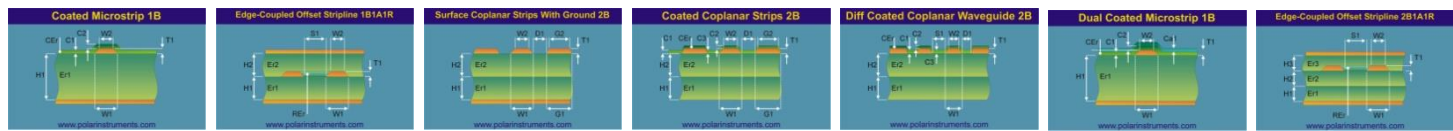
The Apply Finishing option now supports multiple user-nominated copper finishing values.

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

Import / Export enhancements

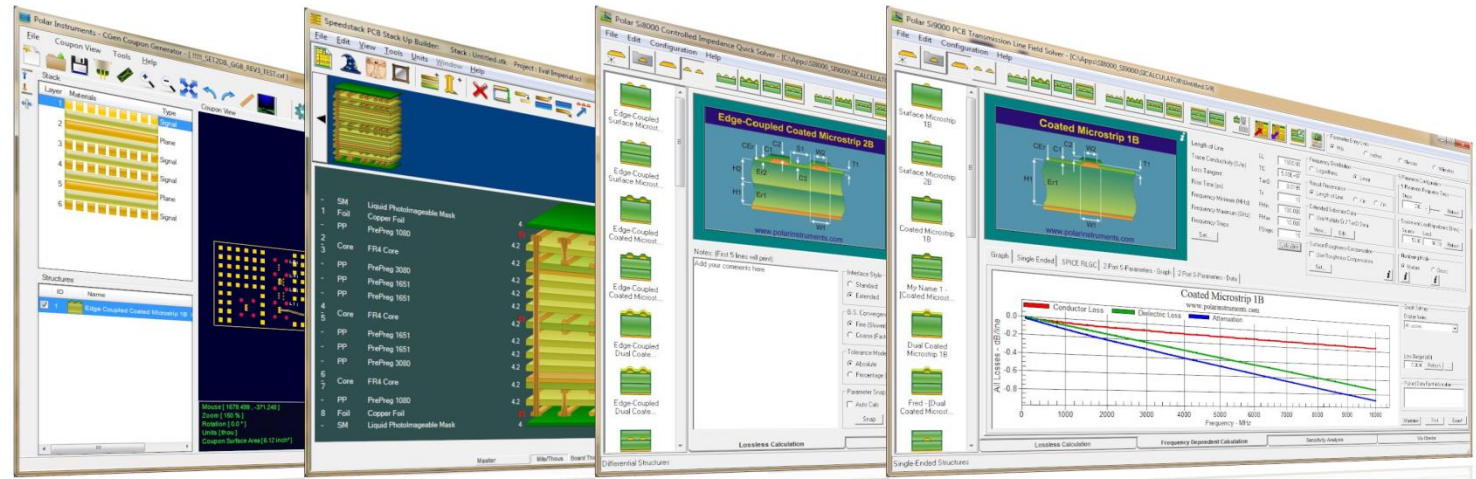
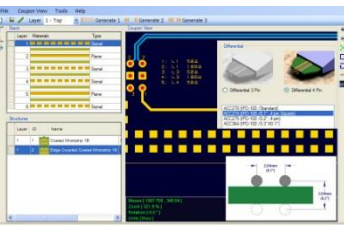
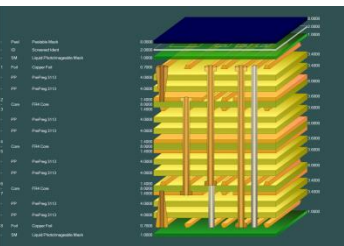
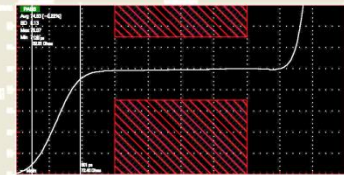
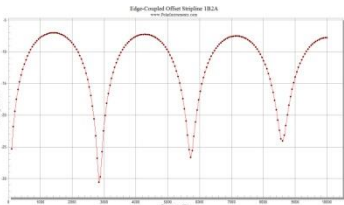
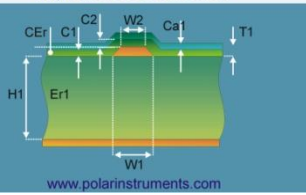
The following Import / Export options have been updated to support new fields introduced with Speedstack 2020:

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

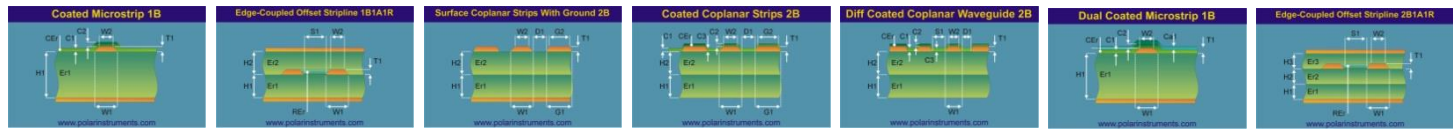


Thank you for viewing this Speedstack 2020 preview. If you have questions we would be delighted to help you. Your local contact information is contained on the following slide

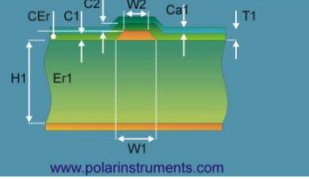
Impedance calculation



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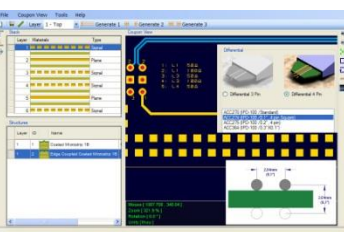
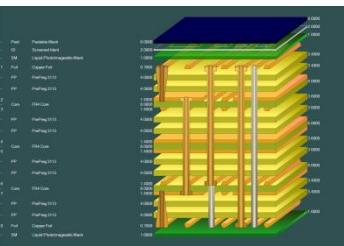
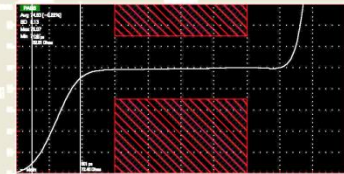
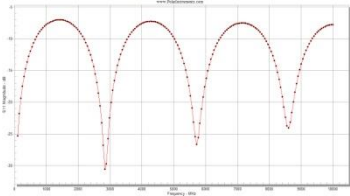


Impedance calculation



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Edge-Coupled Offset Stripline 1B2A



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