









Speedstack 2022 – 2021 Preview July edition introduces "Grid View"

Richard Attrill – July 2022 (Rev 8)



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Introducing the latest features of Speedstack

Welcome to a preview of Speedstack.

This highlights the most recent changes in a *"newest first"* format.

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

Please note: the Speedstack units have been set to Mils in the following screen grabs



Speedstack v22.07.20 (July 2022)



Grid View

Introducing Grid View

Grid View presents the current stack up in an editable data grid form to allow for easy editing of multiple materials from a single dialog

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Stack Up Collection Index	Material Class	Material Element	Electrical Layer	Material Layer Type ID	Layer Name	Description	Processed Thickness	Dielectric Constant	Loss Tangen
0	CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask	1.000	4.0000	0.019
1	CSTFoil	Copper	1	Foil	Тор	Copper Foil	1.4000)	
2	CSTPrePreg	Dielectric		PP		PrePreg 1080	1.9500	4.2000	0.01
3	CSTCore	UpperCopper	2		Inner 2		1.4000)	
3	CSTCore	Dielectric		Core		FR4 Core	3.0000	4.2000	0.01
3	CSTCore	LowerCopper	3		Inner 3		1.4000)	
4	CSTPrePreg	Dielectric		PP		PrePreg 3080	2.7760	4.2000	0.01
5	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.01
6	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.01
7	CSTCore	UpperCopper	4		Inner 4		1.4000)	
7	CSTCore	Dielectric		Core		FR4 Core	12.0000	4.2000	0.0
7	CSTCore	LowerCopper	5		Inner 5		1.4000)	
8	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.01
9	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.0
10	CSTPrePreg	Dielectric				PrePreg 3080	2.7760	4.2000	0.0
11	CSTCore	UpperCoppe			Inner 6		1.4000)	
	llowe for a	uiok oditi	ng of kov	ataok		FR4 Core	3.0000	4.2000	0.0
			ng or key	SLACK	Inner 7		1.4000)	
normati	on such as	s Materia	Descrip	tion,		PrePreg 1080	1.9500	4.2000	0.01
cessed	l hickness,	Dielectri	c Consta	nt and	Bottom	Copper Foil	1.4000)	
s Tange	nt.					Liquid PhotoImageable Mask	1.0000	4.0000	0.01
stack u	n data fror	n Grid Vi	ew can a	lso he			1		
	p data 1101 propoft Ev		the Crid	View	y then be edited with Excel	colum		Apply	/ C
		ser using	the Glid	view	IderMask.MaskThickness, Cove	erlay.			
and pa	aste functio	ons				Changes in Grid View can b	e		

design

saved back to the original stack up



Introducing Grid View

id View									- 🗆
Stack Up Collection Index	Material Class	Material Element	Electrical Layer	Mate Type	NOTE: In order to some fields are lo	preserve stack integrity – cked.	Processed Thickness	Dielectric Constant	Loss Tangent
0	CSTSolderMask	Mask		SM			1.0000	4.0000	0.019
1	CSTFoil	Copper	1	Foil			1.4000		
2	CSTPrePreg	Dielectric		PP			1.9500	4.2000	0.019
3	CSTCore	UpperCopper	2		miler Z		1.4000		
3	CSTCore	Dielectric		Core		FR4 Core	3.0000	4.2000	0.019
3	CSTCore	LowerCopper	3		Inner 3		1.4000		
4	CSTPrePreg	Dielectric		PP		PrePreg 3080	2.7760	4.2000	0.019
5	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.019
6	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.019
7	CSTCore	UpperCopper	4		Inner 4		1.4000		
7	CSTCore	Dielectric		Core		FR4 Core	12.0000	4.2000	0.019
7	CSTCore	LowerCopper	5		Inner 5		1.4000		
8	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.019
9	CSTPrePreg	Dielectric		PP		PrePreg 1651	5.5520	4.2000	0.019
10	CSTPrePreg	Dielectric		PP		PrePreg 3080	2.7760	4.2000	0.019
11	CSTCore	UpperCopper	6		Inner 6		1.4000		
11	CSTCore	Dielectric		Core		FR4 Core	3.0000	4.2000	0.019
11	CSTCore	LowerCopper	7		Inner 7		1.4000		
12	CSTPrePreg	Dielectric		PP		PrePreg 1080	1.9500	4.2000	0.019
13	CSTFoil	Copper		Foil	Bottom	Copper Foil	1.4000		
						Liquid PhotoImageable Mask	1.0000	4.0000	0.019



						1 Key information for the whole stack up can be edited from a			
id View					_	single dialog / screen		-	Ш
Stack Up Collection Index	Material Class	Material Element	Electrical Layer	Material Layer Type ID	Lay	 If changes to the original stack up design are made by the fabricator during the manufacturing stage, these can be 	ctric tant	Loss T	langeni
0	CSTSolderMask	Mask		SM		quickly evaluated by updating the Processed Thickness,	4.0000		0.019
1	CSTFoil	Copper	1	Foil	Тор	Dielectric Constant and Loss Tangent cells. The impact of			
2	CSTPrePreg	Dielectric		PP		these changes on stack up thickness, controlled impedance	4.2000		0.019
3	CSTCore	UpperCopper	2		Inne	and incortion loss calculations can then be quickly evaluated			
3	CSTCore	Dielectric		Core		and insertion loss calculations can then be quickly evaluated	4.2000		0.019
3	CSTCore	LowerCopper	3		Inne	3. Plated layer thicknesses can be adjusted quickly and easily			
4	CSTPrePreg	Dielectric		PP		4. Layer Names can be quickly assigned to electrical layers	4.2000		0.019
5	CSTPrePreg	Dielectric		PP			4.2000		0.01
6	CSTPrePreg	Dielectric		PP		5.5520	4.2000		0.01
7	CSTCore	UpperCopper	4		Inner	4 1.4000			
7	CSTCore	Dielectric		Core		FR4 Core 12.0000	4.2000		0.01
7	CSTCore	LowerCopper	5		Inner	5 1.4000			
8	CSTPrePreg	Dielectric		PP		PrePreg 1651 5.5520	4.2000		0.01
9	CSTPrePreg	Dielectric		PP		PrePreg 1651 5.5520	4.2000		0.01
10	CSTPrePreg	Dielectric		PP		PrePreg 3080 2.7760	4.2000		0.01
11	CSTCore	UpperCopper	6		Inner	6 1.4000			
11	CSTCore	Dielectric		Core		FR4 Core 3.0000	4.2000		0.01
11	CSTCore	LowerCopper	7		Inner	7 1.4000			
12	CSTPrePreg	Dielectric		PP		PrePreg 1080 1.9500	4.2000		0.01
13	CSTFoil	Copper	8	Foil	Botto	m Copper Foil 1.4000			
14	CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask 1.0000	4.0000		0.01

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d View							following Names ha	cells are a ave been c	mended. hanged	. Laye and
tack Up ollection ndex	Material Class	Material Element	Electrical Layer	Material Layer Type ID	Layer Name	Description	Processe	d Thicknes	ss adjust	ed
0	CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask		1.0000	4.0000	0.019
1	CSTFoil	Copper	1	Foil	Тор	Copper Foil		1.4000		
2	CSTPrePreg	Dielectric		PP		PrePreg 1080		1.9500	4.2000	0.019
3	CSTCore	UpperCopper	2		Inner 2			1.4000		
3	CSTCore	Dielectric		Core		FR4 Core		3.0000	4.2000	0.019
3	CSTCore	LowerCopper	3		Power			1.4000		
4	CSTPrePreg	Dielectric		PP		PrePreg 3080		2.5000	4.2000	0.01
5	CSTPrePreg	Dielectric		PP		PrePreg 1651		2.5000	4.2000	0.01
6	CSTPrePreg	Dielectric		PP		PrePreg 1651		6.0000	4.2000	0.01
7	CSTCore	UpperCopper	4		Inner 4			1.4000		
7	CSTCore	Dielectric		Core		FR4 Core		12.0000	4.2000	0.01
7	CSTCore	LowerCopper	5		Inner 5			1.4000		
8	CSTPrePreg	Dielectric		PP		PrePreg 1651		6.0000	4.2000	0.01
9	CSTPrePreg	Dielectric		PP		PrePreg 1651		6.0000	4.2000	0.01
10	CSTPrePreg	Dielectric		PP		PrePreg 3080		2.5000	4.2000	0.01
11	CSTCore	UpperCopper	6		Ground			1.4000		
11	CSTCore	Dielectric		Core		FR4 Core		3.0000	4.2000	0.01
11	CSTCore	LowerCopper	7		Inner 7			1.4000		
12	CSTPrePreg	Dielectric		PP		PrePreg 1080		1.9500	4.2000	0.01
	CSTFoil	Copper	8	Foil	Bottom	Copper Foil		1.4000		
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	Collection	Material Class	Material Element	Electrical Layer	Material Layer Type ID	Layer Name	Description		Processed Thickness	Dielectric Constant	Loss Tangent		
	0	CSTSolderMask	k Mask		SM		Liquid PhotoImageable	Mask	1.0000	4.0000	0.0195		
	1	CSTFoil	Copper	1	Foil	Тор	Copper Foil		1.4000				
	2	CSTPrePreg	Dielectric		PP		PrePreg 1080		1.9500	4.2000	0.0195		
	3	CSTCore	UpperCopper	r 2		Inner 2			1.4000				
	3	CSTCore	Dielectric		Core		FR4 Core		3.0000	4.2000	0.0195	-	
	3	CSTCore	LowerCopper	r 3		Inner 3	D. D. 0000		1.4000	4 2000	0.0105		
- SM	4	CSTPrePreg	Dielectric		PP DD		PrePreg 3080		2.7760	4.2000	0.0195		
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- PP	7	CSTCore	UpperCopper	r 4		Inner 4	Thering root	Paste from Clipboard (from Excel)	1.4000	4.2000	0.0100		
2	7	CSTCore	Dielectric		Core		FR4 Core		12.0000	4.2000	0.0195		
- Core	7	CSTCore	LowerCopper	r 5		Inner 5			1.4000				
3	8	CSTPrePreg	Dielectric		PP	1	PrePreg 1651		5.5520	4.2000	0.0195		
- PP	9	CSTPrePreg	Dielectric		PP		PrePreg 1651		5.5520	4.2000	0.0195		
- PP	10	CSTPrePreg	Dielectric		PP		PrePreg 3080		2.7760	4.2000	0.0195		
- PP	11	CSTCore	UpperCopper	r 6		Inner 6			1.4000				
	11	CSTCore	Dielectric				FR4 Core		3.0000	4.2000	0.0195		
4 - Core	10	CSTCore	Lowen			Inner /	ProProg 1090		1.4000	4 2000	0.0195		
						Bottom	Copper Foil		1 4000	4.2000	0.0133		
The Con		to onti	ممم ما	low fo	r tha	Dottom	Liquid PhotoImageable	Mask	1.0000	4.0000	0.0195		
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1 Sta	ck Up Collection Index	Material Class	Material Element	Electrical Layer	Material Layer Type	e ID Layer Nam	Description	Processed Thickness Die	lectric Constant Los	s Tangent						
2	(CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask	1	4	0.0195						
3	:	1 CSTFoil	Copper	1	1 Foil	Тор	Copper Foil	1.4								
4	:	2 CSTPrePreg	Dielectric		PP		PrePreg 1080	1.95	4.2	0.0195						
5	:	3 CSTCore	UpperCopper	1	2	Inner 2		1.4								
6	:	3 CSTCore	Dielectric		Core		FR4 Core	3	4.2	0.0195						
7	:	3 CSTCore	LowerCopper	:	3	Inner 3		1.4								
8	4	4 CSTPrePreg	Dielectric		PP		PrePreg 3080	2.776	4.2	0.0195						
9	:	5 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
10	(5 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
11		7 CSTCore	UpperCopper	4	4	Inner 4		1.4								
12		7 CSTCore	Dielectric		Core		FR4 Core	12	4.2	0.0195						
13	1	7 CSTCore	LowerCopper	5	5	Inner 5		1.4								
14	1	8 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
15	9	9 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
16	10	CSTPrePreg	Dielectric		PP		PrePreg 3080	2.776	4.2	0.0195						
17	1:	1 CSTCore	UpperCopper		5	Inner 6		1.4								
18	1:	1 CSTCore	Dielectric		Core		FR4 Core	3	4.2	0.0195						
19	1:	1 CSTCore	LowerCopper		7	Inner 7		1.4								
20	12	2 CSTPrePreg	Dielectric		PP		PrePreg 1080	1.95	4.2	0.0195						
21	1:	3 CSTFoil	Copper	8	B Foil	Bottom	Copper Foil	1.4								
22	14	4 CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask	1	4	0.0195						
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1 Sta	ck Up Collection Index Material Class	Material Element	Electrical Layer	r Material Layer Type	ID Layer Nam	e Description	Processed Thickness Diel	ectric Constant Los	ss Tangent						
2	0 CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask	1	4	0.0195						
3	1 CSTFoil	Copper	1	1 Foil	Тор	Copper Foil	1.5								
4	2 CSTPrePreg	Dielectric		PP		PrePreg 1080	2.1	4.2	0.0195						
5	3 CSTCore	UpperCopper	1	2	Inner 2		1.4								
6	3 CSTCore	Dielectric		Core		FR4 Core	3	4.2	0.0195						
7	3 CSTCore	LowerCopper	:	3	Inner 3		1.4								
8	4 CSTPrePreg	Dielectric		PP		PrePreg 3080	2.776	4.2	0.0195						
9	5 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
10	6 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
11	7 CSTCore	UpperCopper	4	4	Inner 4		1.4								
12	7 CSTCore	Dielectric		Core		FR4 Core	10	4.2	0.0195						
13	7 CSTCore	LowerCopper	5	5	Inner 5		1.4								
14	8 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
15	9 CSTPrePreg	Dielectric		PP		PrePreg 1651	5.552	4.2	0.0195						
16	10 CSTPrePreg	Dielectric		PP		PrePreg 3080	2.776	4.2	0.0195						
17	11 CSTCore	UpperCopper	(6	Inner 6	Ŭ	1.4								
18	11 CSTCore	Dielectric		Core		FR4 Core	3	4.2	0.0195						
19	11 CSTCore	LowerCopper	-	7	Inner 7		1.4								
20	12 CSTPrePreg	Dielectric		PP		PrePreg 1080	2.1	4.2	0.0195						
21	13 CSTFoil	Copper	5	8 Foil	Bottom	Copper Foil	1.5								
22	14 CSTSolderMask	Mask		SM		Liquid PhotoImageable Mask	1	4	0.0195						
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1 Stack Up Collection Index	Material Class	Material Element	t Electrical Layer	Material Layer Type I	D Layer Name	Description		Processed Thickness Diel	lectric Constant Lo	ss Tangent						
2	0 CSTSolderMask	Mask		SM		Liquid PhotoImageal	ole Mask	1	4	0.0195						
3	1 CSTFoil	Copper	1	1 Foil	Тор	Copper Foil		1.5								
4	2 CSTPrePreg	Dielectric		PP		PrePreg 1080		2.1	4.2	0.0195						
5	3 CSTCore	UpperCopper	2	2	Inner 2			1.4								
6	3 CSTCore	Dielectric		Core		FR4 Core		3	4.2	0.0195						
7	3 CSTCore	LowerCopper	3	3	Inner 3			1.4								
8	4 CSTPrePreg	Dielectric		PP		PrePreg 3080		2.776	4.2	0.0195						
9	5 CSTPrePreg	Dielectric		PP		PrePreg 1651		5.552	4.2	0.0195						
10	6 CSTPrePreg	Dielectric		PP		PrePreg 1651		5.552	4.2	0.0195						
11	/ CSTCore	UpperCopper	4	4	Inner 4	504.0		1.4	10	0.0105						
12	7 CSTCore	Dielectric		- Core	lan an F	FR4 Core		10	4.2	0.0195						
13	/ CSTCore	Dielectric		DD	inner 5	DroDrog 1651		1.4	4.2	0.0105						
14	9 CSTProProg	Dielectric		PP DD		Prepreg 1051		5.552	4.2	0.0195						
16 1	0 CSTPrePreg	Dielectric		DD		ProProg 2090		2 776	4.2	0.0195						
17 17	1 CSTCore	UpperCopper	6	5	Inner 6	FIEFIEg 5000		1.4	4.2	0.0155						
18 1	1 CSTCore	Dielectric		Core		FR4 Core		3	4.2	0.0195						
19 1	1 CSTCore	LowerCopper		7	Inner 7			1.4								
20 1	2 CSTPrePreg	Dielectric		PP		PrePreg 1080		2.1	4.2	0.0195						
21 1	3 STFoil	C		n e-u	0-44	0		1.5								
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<u>Using Grid View with Microsoft Excel – Step #4</u>

Step #4 Once the Excel changes are complete select the range of cells representing the whole stack up data and select

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	, and the second s	0 CSTSolderMask	Mask	SM	io cayer nam	Liquid PhotoImageable Mask	1	4	0.0195				
		1 CSTFoil	Copper	1 Foil	Тор	Copper Foil	1.5						
		2 CSTPrePreg	Dielectric	PP		PrePreg 1080	2.1	4.2	0.0195				
		3 CSTCore	UpperCopper	2	Inner 2		1.4						
		3 CSTCore	Dielectric	Core		FR4 Core	3	4.2	0.0195				
		3 CSTCore	LowerCopper	3	Inner 3		1.4						
		4 CSTPrePreg	Dielectric	PP		PrePreg 3080	2.776	4.2	0.0195				
		5 CSTPrePreg	Dielectric	PP		PrePreg 1651	5.552	4.2	0.0195				
		6 CSTPrePreg	Dielectric	PP		PrePreg 1651	5.552	4.2	0.0195				
		7 CSTCore	UpperCopper	4	Inner 4		1.4						
		7 CSTCore	Dielectric	Core		FR4 Core	10	4.2	0.0195				
		7 CSTCore	LowerCopper	5	Inner 5		1.4						
		8 CSTPrePreg	Dielectric	PP		PrePreg 1651	5.552	4.2	0.0195				
		9 CSTPrePreg	Dielectric	PP		PrePreg 1651	5.552	4.2	0.0195				
	1	0 CSTPrePreg	Dielectric	PP		PrePreg 3080	2.776	4.2	0.0195				_
	1	1 CSTCore	UpperCopper	6	Inner 6		1.4						
	1	1 CSTCore	Dielectric	Core		FR4 Core	3	4.2	0.0195				
	1	1 CSTCore	LowerCopper	7	Inner 7		1.4						
	1	2 CSTPrePreg	Dielectric	PP		PrePreg 1080	2.1	4.2	0.0195				
	1	3 CSTFOIL	Copper	8 Foil	Bottom	Copper Foil	1.5		0.0105				
	1	4 CSTSOIDERMASK	IVIASK	SIVI		Liquid Photoimageable Mase	1	4	0.0195				



iew								right-c	lick menu Pa and Grid Viev	ste from	Clipb
k Up ection x	Material Class	Material Element	Electrical Layer	Material Layer Type ID	Layer Name		Description	the dat data no	a from Excel ow matches E	Notice Excel	how
0	CSTSolderMask	Mask		SM			Liquid PhotoImageable Mask		1.0000	4.0000	0.01
1	CSTFoil	Copper	1	Foil	Тор		Copper Foil		1.5000		
2	CSTPrePreg	Dielectric		PP			PrePreg 1080		2.1000	4.2000	0.01
3	CSTCore	UpperCopper	2		Inner 2				1.4000		
3	CSTCore	Dielectric		Core			FR4 Core		3.0000	4.2000	0.01
3	CSTCore	LowerCopper	3		Inner 3				1.4000		
4	CSTPrePreg	Dielectric		PP			PrePreg 3080		2.7760	4.2000	0.01
5	CSTPrePreg	Dielectric		PP		Comuto Cl	in part (for Even)		5.5520	4.2000	0.01
6	CSTPrePreg	Dielectric		PP		Copy to Ci	Click and (for excel)		5.5520	4.2000	0.01
7	CSTCore	UpperCopper	4		Inner 4	Paste from	Clipboard (from Excel)		1.4000		
7	CSTCore	Dielectric		Core			FR4 Core		10.0000	4.2000	0.01
7	CSTCore	LowerCopper	5		Inner 5				1.4000		
8	CSTPrePreg	Dielectric		PP			PrePreg 1651		5.5520	4.2000	0.01
9	CSTPrePreg	Dielectric		PP			PrePreg 1651		5.5520	4.2000	0.01
10	CSTPrePreg	Dielectric		PP			PrePreg 3080		2.7760	4.2000	0.01
11	CSTCore	UpperCopper	6		Inner 6				1.4000		
11	CSTCore	Dielectric		Core			FR4 Core		3.0000	4.2000	0.01
11	CSTCore	LowerCopper	7		Inner 7				1.4000		
12	CSTPrePreg	Dielectric		PP			PrePreg 1080		2.1000	4.2000	0.01
13	CSTFoil	Copper	8	Foil	Bottom		Copper Foil		1.5000		
14	CSTSolderMask	Mask		SM			Liquid PhotoImageable Mask		1.0000	4.0000	0.01

Processed Thickness = Copper.FinishedThickness, Dielectric.IsolationDistance, SolderMask.MaskThickness, Coverlay.FinishedThickness

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Should I update now (July 2022)?

- If you have been waiting for this view, YES, though...
- Polar plans another major release in August / September offering enhanced visibility of all impedance structures from the main edit view.
- So you may prefer to await the August / September edition to minimise the number of updates you need to install.



Other enhancements

- Stack Up Notes user interface improvements
- The Tools | Options | Structure Defaults | Separation Region Dielectric (REr) now supports double data types. Previously, it only supported integers



Speedstack v22.05.06 (May 2022)



Online Library enhancements



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Embedded Microstrip structure enhancements





New Confidential Stamp options added to the technical report





Speedstack v22.01.01 (January 2022)



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Snap Parameters and Calculate Structure

Configuration Options								×
External Utilities Rebuild and Calculate General Structure Defaults Licensing	Structures	Goal Seeking	User	CITS	Test Colours Misc	ellaneous Hat	tch Defaults	
Structures Lower Trace Width (W1) Upper Trace Width (W2)	Default 10.0000 9.0000	Snap To 0.2500 0.2500		-Board Boa	Thickness	Plus %	60.0000 10	
Lower Ground Strip Width (G1) Upper Ground Strip Width (G2) Trace Separation (S1) Ground Strip Separation (D1) Trace Offset (O1)	100.0000 99.0000 10.0000 10.0000 0.0000	0.2500 0.2500 0.2500 0.2500 0.2500		—Drillin <u>c</u> Min	imum Hole Size	, milds 7,	20.0000	
Separation Region Dielectric (REr)	4				The Snap To v in the configur the Tools Op Although all S	value for ea ration settir tions Stru nap To val	ach paramet ngs, accessil icture Defaul ues shown h	er is held ble from Its tab. ere are
					a different valu	ue		Support



Material Library Enhancements

C:\Program Files	s (x86)\Polar\Speedstack\Samples'	\Speedstack Imperial.mlbx						- 0	×
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Foils Prepregs F	RCCs Cores Solder Masks Iden	t Inks Peelable Masks Coverlays Bond Ply	Adhesive Flexible Cores Shields	1	1				1
Supplier	Supplier Description	Description	Stock Number	Dielectric Base Thickness	Dielectric Finished Thicknes	Tolerance	Dielectric Constant	Loss Tangent	
Polar Samples	5 PP/001	PrePreg 1080	300-001	3	3	0	4.2	0.0195	
Polar Samples	- PP/002	PrePreg 3080	300-002	4	3	10	4.2	0.0195	
Polar Samples	PP/003	PrePrez 1651	300-003	5	6	10	4.2	0.0195	
Polar Samples	PP/005	PrePreg 7628	300-005	7.9	7.9	10	4.2	0.0195	
Polar Samples	5 PP/005	PrePreg 106	300-005	2	2	10	4.2	0.0195	
*									
						The Ma	torial Librar		norte
								y now sup	ports
						materia	Is with a die	electric thic	knes
						matoria			
						tolerand	ce of 0%.		
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						value di	reater than	0%	
						10.1019		• • • •	
4									F
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lick on a material row to	o edit it								



Speedstack v21.11.01 (November 2021)



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Material Note Field Enhancements – improvements to stack up documentation





Material Note Field Enhancements – improvements to stack up documentation

Were Cover Note Delector Notes Delector Notes Notes allow the user to specify important information about the copper surfaces for a Core and Flex Core material. Notes Important information about the copper surfaces for a Core and Flex Core material. For instance, copper roughness and plating fabrication information can be specified	Core Properties	
Notes Podymess: Very low public (V.P) Image: Notes allow the user to specify important information about the copper surfaces for a Core and Flex Core material. Notes 4 Image: Notes allow the user to specify important information can be specified Notes 5 Image: Notes allow the user to specify important information can be specified	Main Upper Copper Notes Dielectric Notes Lower Copper Notes Attributes	The new Upper and Lower Copper
Note 2 Copper surfaces for a Core and Flex Note 3 Core material. Note 4 Core material. Note 5 Core material.	Notes Apply Note 1 Roughness: Very-low profile (VLP) Close	important information about the
Note 3 Image: State of the state of t	Note 2	copper surfaces for a Core and Flex
Note 4 Image: Comparison of Comparison o	Note 3	Core material.
New 5	Note 4	For instance, copper roughness and
	Note 5	plating fabrication information can be specified

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<u>Material Note Field Enhancements – improvements to stack up documentation</u>

Core Properties Main Upper Copper Not Notes Note 1 Note 2	IPC-4101 /21 /24 /26	Dielectric Notes are useful for specifying IPC-4101 slash sheet categories, glass weave information (spread glass) and other important
Note 3 Note 4 Note 5		The existing five Notes fields from
		be allocated as Dielectric Notes.

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Material Note Field Enhancements – improvements to stack up documentation

	1.4000
	1.9500
	1.4000 3.0000
	2 7760
	2.7700
	5.5520
	5.5520
	1.4000 12.0000 1.4000
	5.5520
	5.5520
	2.7760
	1.4000 3.0000
	1.4000
	1.9500
	1.4000
	1.0000
ess with Soldermask = 62.8600	/21.11.01

Field	Value	1		
Upper Copper Notes				
Note 1	Roughness: Very-low profile			
Note 2			W	h
Note 3				or
Note 4				op
Note 5			C	р
Dielectric Notes			CC	n
Note 1	IPC-4101 /21 /24 /26			
Note 2				
Note 3				
Note 4				
Note 5				
Lower Copper Notes		11		
Note 1	Roughness: Very-low profile			
Note 2				
Note 3				
Note 4				
Note 5				
Cost	5			
Lead Time	0			
Attributes				

When selecting a core / flex core material the Upper Copper, Dielectric and Lower Copper Notes can be confirmed here.

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//.

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<u>Material Note Field Enhancements – library enhancements</u>

eview/Edit Cores							
Supplier	Polar Samples	Upper Copper Not	es	Dielectric Notes		Lower Copper Notes	s
Supplier Description	CO/005	Note 1	Roughness: Very-low profile (VLP)	Note 1	IPC-4101 /21 /24 /26	Note 1	Roughness: Very-low profile (VLP)
Description	FR4 Core						
Stock Number	400-005						
Туре	FR4	Note 2		Note 2		Note 2	
ase Thickness	3 0000	 					
inished Thickness	3 0000						
ielectric Constant	4.2	Note 3		Note 3		Note 3	
oss Tangent	0.0195	-					
esin Content	60						
9	180	Note 4		Note 4		Note 4	
	0						
AF Resistance	0						
Axis Expansion	0	Note 5		Note E		Note 5	
olerance +/-%	10	INOLE 5		NOLE 5		Note 5	
C. TILL	1 4000						
pper Cu Thickness	1.4000		1				ļ
ower Cu Thickness	1.4000						
ost	5						
ad Time	0						
ze	·					The Speedsta	ack material library h
se in Auto Stack	\checkmark					been enhance	ed to support the ext
anes Both Sides						notes fields.	
aser Drillable	\checkmark						
<u>A</u> dd <u>D</u> elete			<< <	5 of 27 >>>		Notos addad (to the motorials in th
						library will aut	omatically be
						transferred to	the stack up.



Material Note Field Enhancements – library enhancements





Material Note Field Enhancements – technical report enhancements





Import / Export enhancements

The following Import / Export options have been updated to support the additional material notes properties introduced with Speedstack v21.11.01:

- XML STKX v23.00 and SSX v13.00 import / export options
- CSV export option



Speedstack v21.07.08 (July 2021)


New Drill Cap feature





Drill Cap option – mechanical through plated drills

Drill Properties		×	(
Main Notes Electrical Layers First Electrical Layer Second Electrical Layer Stack Up Column First Electrical Layer Layer No (Electrical Layer) 2 Image: Alexandrow of the second electrical Layer Image: Alexandrow of the second electrical Layer 2 Image: Alexandrow of the second electrical Layer Image: Alexandrow of the second electrical Layer 1 Image: Alexandrow of the second electrical Layer Image: Alexandrow of the second electrical Layer 2 Image: Alexandrow of the second electrical Layer Image: Alexandrow of the second electrical Layer	trical Back Drill Must nd Layer) Layer No	-Cut Back Drill Must-Not-Cut Layer No		Mechanical For mechanical drills it is possible to have four states: 1.Neither first or second layer capped (default when adding a drill)
Drill Information • Mechanical • Mechanical • Laser • Laser • Back Drill • Through Plated • First Layer Capped • Second Layer Capped	Hole Information Hole Count 0 Different Hole Sizes 0 Minimum Hole Size 0.0000 Minimum Pad Size 0.0000	Minimum Drill Size 0.0000 Minimum Drill Size Tolerance (Abs) 0.0000 Minimum Barrel Wall Thickness 0.0000		2.First layer capped3.Second layer capped4.Both layers capped
Back Drill Information Minimum Distance From Must-Cut Layer 0.0000 Maximum Distance From Must-Cut Layer 0.0000 Maximum Distance From Must-Cut Layer 0.0000 Primary Drill Size 0.0000		Apply Cancel		



Drill Cap option – laser drills

Drill Properties		×	
Main Notes Electrical Layers First Electrical Layer Stack Up Column First Electrical Layer 3 Image: Stack Up Column 3 Image: Stack Up Column 3 Image: Stack Up Column 4	trical Back Drill Must- ind Layer) Layer No	Cut Back Drill Must-Not-Cut Layer No	Laser For laser drills it is possible to have two states as the Second Layer Capped checkbox is disabled: 1.Not capped (default when adding a
Drill Information ○ Mechanical Fill Type ● Laser Copper Paste ○ Back Drill Image: Through Plated Image: First Layer Capped Data Filenames Second Layer Capped Back Drill Information	Hole Information Hole Count 0 Different Hole Sizes 0 Minimum Hole Size 0.0000 Minimum Pad Size 0.0000	Minimum Drill Size 0.0000 Minimum Drill Size Tolerance (Abs) 0.0000 Minimum Barrel Wall Thickness 0.0000	drill) 2.First layer capped
Minimum Distance From Must-Cut Layer Minimum Distance From Must-Not-Cut Layer 0.0000 0.0000 Maximum Distance From Must-Cut Layer Maximum Distance From Must-Not-Cut Layer 0.0000 0.0000 Primary Drill Size 0.0000		Apply Cancel	



New Drill Cap feature





<u>New Drill Cap feature – technical report enhancements</u>

С:\Арр	s\Sam	oles\E	val Imperial (Capped Dr	IIIS.SCI	Uni	s: Mils										÷
Layer			:	Stack up			Copper Layer Name	Supplier	Descr	iption	Турө	Processed Thickness	13	Loss Tangent	Impedance ID		
								Polar Samples	Liquid Photolma	ageable Mask	SolderMask	1.000	4.000	0.0195			
1	-						Тор	Polar Samples	Copper Foil		Copper	1.400			1, 2		
								Polar Samples	PrePreg 1080		Dielectric	1.950	4.200	0.0195			
2					4 4		Inner 2	Polar Samples	Copper Foil		Copper	1.400					
								Polar Samples	PrePreg 1080		Dielectric	1.950	4.200	0.0195			
3					4 4		Inner 3	Polar Samples	Copper Foil		Copper	1.400					
					_			Polar Samples	PrePreg 1080		Dielectric	1.425	4.200	0.0195			
4					4 - 4		Inner 4	Polar Samples	EB4 Core		FR4	2.100	4 200	0.0195			
5							Inner 5	l olar oumpios	1114 0010		1114	1.400	4.200	0.0100			
								Polar Samples	PrePreg 1080		Dielectric	2.178	4.200	0.0195			
								Polar Samples	PrePreg 1080		Dielectric	2.178	4.200	0.0195			
6	96	9					Inner 6	D. I. O. I.	504.0		50.4	2.100	4.000	0.0105	3, 4		
7	56.	54.	╵╹╹╵╴┑╏┢				Inner 7	Polar Samples	FR4 Core		FR4	2.100	4.200	0.0195	5, 6		
								Polar Samples	PrePreg 1080		Dielectric	2.178	4.200	0.0195			
								Polar Samples	PrePreg 1080		Dielectric	2.178	4.200	0.0195			
8							Inner 8					1.400					
9							Inner 9	Polar Samples	FR4 Core		FR4	3.000	4.200	0.0195			
-								Polar Samples	PrePrea 1080		Dielectric	1.425	4.200	0.0195			
10							Inner 10	Polar Samples	Copper Foil		Copper	1.400					
								Polar Samples	PrePreg 1080		Dielectric	1.950	4.200	0.0195			
11							Inner 11	Polar Samples	Copper Foil		Copper	1.400					
		•						Polar Samples	PrePreg 1080		Dielectric	1.950	4.200	0.0195			
12	•						Bottom	Polar Samples	Copper Foil		Copper	1.400			7, 8		
										igeable Mask	SolderMask	1.000	4.000	0.0195			



Import / Export enhancements

The following Import / Export options have been updated to support the drill cap properties introduced with Speedstack v21.07.08:

- XML STKX v22.00 and SSX v12.00 import / export options
- CSV export option



Speedstack v21.05.06 (May 2021)







Foil P	roperties					
Mai	n Notes Attributes					Apply
	Supplier	Polar Samples				
	Supplier Description Description	FO/001 Copper Foil		Cost	1.00	- The new Layer Name property exists
	Stock Number Type	100-001 Copper		Lead Time	0.00	on all materials with an electrical /
	-Copper	Jookka			10.00	alphanumeric name
	Base Thickness	0.7000	Copper Coverage %		0.00	
	Finished Thickness Layer Name	1.4000 Top	Graphical Colour			
	Data Filename					
	Trace Inverted Finishing Applied		Remove Copper (disabled if structur	es or sub-stacl	ks exist)	



ore Properties					
Main Notes Attributes					
General Information				Apply	
Supplier	Polar Samples		Exchange Copper 🔲	Close	
Supplier Description	CO/005				
Description	FR4 Core		Cost 5.00		
Stock Number	400-005		Tolerance 0.00		Core Properties
Туре	FR4		Lead Time 0.00		
Upper Copper					For core materials, a new Layer Name
Base Thickness	1.4000	Copper Coverage %	0.00		property has been added for both
Finished Thickness	1.4000	Graphical Colour			upper and lower electrical / copper
Layer Name	Inner 2				layers
Data Filename					
Trace Inverted	Г	Remove Copper			
Finishing Applied		(disabled if structure	es or sub-stacks exist)		
Dielectric					
Base Thickness	3.0000	Td	0.0		
Finished Thickness	3.0000	CAF Resistance	0.0		
Dielectric Constant	4.2000	Z Axis Expansion	0.0		
Loss Tangent	0.0195	Excess Resin	0.0000		
Resin Content %	60.00	Isolation Distance	3.0000		
Tg	180.0	Graphical Colour			
Lower Copper					
Base Thickness	1.4000	Copper Coverage %	0.00		
Finished Thickness	1.4000	Graphical Colour			
Layer Name	Inner 3				
Data Filename					
Trace Inverted	\checkmark	Remove Copper (disabled if structure	es or sub-stacks exist)		
Finishing Applied		(uisabicu il su ucturi	Color on Standard Cylor		

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New Layer Name property for electrical / copper layers



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New Layer Name property for electrical / copper layers





New Layer Name property for electrical / copper layers





Copper Finishing classes increased

	d Prepreg Corrections		×
Percentage Copper To Be	Embedded in Prepreg		
Set by Layer type			
Signal Layer	% [75	
Mixed Layer	%	15	
Plane Layer	%	5	
C Proportional to Covera	ge		
Copper Finishing			
Enter values of thickness the one added to the base	according to preference thickness of copper lay	e. The selected va vers when plating.	lue will be
Enter values of thickness the one added to the base Class Name	according to preference thickness of copper lay Value	e. The selected va rers when plating. Selection	n
Enter values of thickness the one added to the base Class Name Class 1	Value	e. The selected va ers when plating. Selection	n
Enter values of thickness the one added to the base Class Name Class 1 Class 2	Value 0.7000 0.7000	e. The selected va rers when plating. Selection	n
Enter values of thickness the one added to the base Class Name Class 1 Class 2 Class 3	Value 0.7000 0.7000 0.7000	e. The selected va rers when plating. Selection C	n
Enter values of thickness the one added to the base Class Name Class 1 Class 2 Class 3 Class 4	Value 0.7000 0.7000 0.7000 0.7000	Selected va Selection	n
Enter values of thickness the one added to the base Class Name Class 1 Class 2 Class 3 Class 3 Class 4 Excess Resin Test Minimum Excess Resin	according to preference thickness of copper lay Value 0.7000 0.7000 0.7000 0.7000 0.7000 0.7000 15	e. The selected va rers when plating. Selection C C	n

Speedstack v21.04 and earlier supported 4 classes

					-		
erc	entage Copper To Be Embe	edded in Prepreg					
• •	Set by Layer type						
	Signal Layer	% 75		Lleor e	olocta	hle plating	
	Mixed Layer	% 15		thickne	electa	under Finis	hina
	Plane Layer	% 5	_	Option	s (Co	pper Cover	age 8
				Simple	% m	ethods)	
Ē	Proportional to Coverage		L				
_							
	and Finishing					1	
.op	per Finishing						
.op	per Finishing r values of thickness accor	ding to preference. The	eselected	value will be			
Ente he c	per Finishing er values of thickness accorr one added to the base thickn	ding to preference. The ness of copper layers w	e selected vhen platir	value will be ng.			
Ente he c	r values of thickness accor one added to the base thickness	ding to preference. The ness of copper layers w Class Value	e selected when platin	I value will be ng.	idit		
Lop Ente he c ID	r values of thickness accor one added to the base thickn Class Name Class 1	ding to preference. The ness of copper layers w Class Value 0.7000	e selected when platin Active YES	I value will be	idit Set		
Lop Ente he c ID 1	r values of thickness accor one added to the base thickr Class Name Class 1 Rich	ding to preference. The ness of copper layers w Class Value 0.7000 0.8000	e selected when platin Active YES	I value will be	idit Set		
ID 2 3	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3	ding to preference. The ness of copper layers w Class Value 0.7000 0.8000 0.7000	e selected when platin Active YES	I value will be ng.	idit Set		
-op Ente he c ID 1 2 3 4	r values of thickness accor one added to the base thickness Class Name Class 1 Rich Class 3 Class 4	ding to preference. The ness of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000	e selected when platin Active YES	I value will be	dit Set		
-op Ente he c ID 1 2 3 4 5	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3 Class 4 Class 5	ding to preference. The hess of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000 0.7000 0.0000	e selected /hen platir Active YES	I value will be ng.	dit Set		
ID 1 2 3 4 5	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3 Class 4 Class 5	ding to preference. The ness of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000 0.0000	e selected when platin Active YES	I value will be ng.	dit Set		
ID 1 2 3 4 5	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3 Class 4 Class 5	ding to preference. The ness of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000 0.0000	e selected when platin Active YES	value will be	idit Set		
ID 1 2 3 4 5 Exce	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3 Class 4 Class 5 ess Resin Test	ding to preference. The hess of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000 0.0000	e selected vhen platir Active YES	I value will be ng.	dit Set		
ID 1 2 3 4 5 Exce Min	r values of thickness accor one added to the base thickr Class Name Class 1 Rich Class 3 Class 4 Class 5 ess Resin Test imum Excess Resin	ding to preference. The hess of copper layers w Class Value 0.7000 0.8000 0.7000 0.7000 0.0000	e selected when platin Active YES	I value will be ng.	Set		

Speedstack v21.05 now supports 20 classes

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Import / Export enhancements

The following Import / Export options have been updated to support the layer name property introduced with Speedstack v21.05.06:

- XML STKX v21.00 and SSX v11.00 import / export options
- CSV export option
- Gerber / DXF export option



Speedstack v21.04.00 (April 2021)



All Losses plot - clearer labelling





Other enhancements

- The controlled impedance and insertion loss Calculation Engine updated to the latest edition
- Frequency Dependent Calculations graphing library enhancements



Speedstack v21.03.09 (March 2021)





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New Apply Plating Colours toolbar option



Plated Copper Layers

During PCB fabrication drill holes commonly have copper applied to the barrel wall by an electroplating process. This provides an interconnect between copper layers in the stack up.

This electroplating process often results in additional copper also being applied to the exposed copper layers where the mechanical drill starts / ends.

It is important to account for this additional plated copper thickness when calculating the overall stack up thickness and controlled impedance / insertion loss structures.

Speedstack has always allowed this additional plating thickness to be applied to the relevant copper layers. With v21.03 this has been enhanced further with automatic colour assignments to the plated and un-plated layers



New Apply Plating Colours toolbar option



Standard Colours





Apply Plating Colours



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New Apply Plating Colours toolbar option





New Apply Plating Colours toolbar option





Online Library enhancements



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Speedstack v21.02.01 (February 2021)



New Shield material











Speedstack 2021 – 2022 Introduction





Speedstack 2021 – 2022 Introduction





Material library enhancements

Preprega RCC: Cores Solder Maska Identifying Band Pur Reschip Core Sinds Suppler Suppler/Description Description Description Stock Number Delectric Base Thickness Delectric Finished Thickne Shield CU Thickness D Polar Samples SH002 EUI Shield Film 1200-002 5 5 1.4 4. Polar Samples SH004 EUI Shield Film 1200-002 5 5 2.8 4. Polar Samples SH004 EUI Shield Film 1200-003 5 5 2.8 4. Polar Samples SH004 EUI Shield Film 1200-006 10 10 0.7 4. Polar Samples SH004 EUI Shield Film 1200-006 10 10 2.8 4. Polar Samples SH005 EUI Shield Film 1200-006 10 10 2.8 4. Polar Samples SH006 EUI Shield Film 1200-006 10 10 2.8 4.	C:\Apps\S	Samples\Spee	edstack Imperial.n	nlbx			¥ 🖌			Shield ma	ateria	l information		
Suppler/Exciption Description Description	ls Prepr	regs RCCs	Cores Solder M	asks Ident Inks	Peelable Masks	Coverlays Bon	d Ply Adhesive	Flexible Cores Shield	s					
Polar Samples SH001 EM Sheid Fim 1200-001 5 5 0.7 4. Polar Samples SH002 EM Sheid Fim 1200-003 5 5 1.4 4. Polar Samples SH003 EM Sheid Fim 1200-003 5 5 2.8 4. Polar Samples SH004 EM Sheid Fim 1200-003 5 5 2.8 4. Polar Samples SH004 EM Sheid Fim 1200-004 10 10 0.7 4. Polar Samples SH005 EM Sheid Fim 1200-005 10 10 1.4 4. Polar Samples SH005 EM Sheid Fim 1200-006 10 10 2.8 4.	Supplie	ier	Supplier Description	n i	Description			Stock Nu	imber Di	electric Base Thickness	Dielectric	Finished Thickne Shield Cu	Thickness	Die
Polar Samples SH4002 EMI Sheid Film 1200-002 5 5 1.4 4.4 Polar Samples SH4003 EMI Sheid Film 1200-004 10 10 0.7 4. Polar Samples SH4005 EMI Sheid Film 1200-004 10 10 0.7 4. Polar Samples SH4005 EMI Sheid Film 1200-004 10 10 1.4 4. Polar Samples SH4005 EMI Sheid Film 1200-005 10 10 2.8 4. Polar Samples SH4005 EMI Sheid Film 1200-005 10 10 2.8 4.	PolarS	Samples	SH/001		EMI Shield Fil	m		1200-00	1 5		5	0.7		4.2
Polar Samples SH4003 EMI Sheid Film 1200-003 5 5 2.8 4. Polar Samples SH4004 EMI Sheid Film 1200-005 10 10 0.7 4. Polar Samples SH4005 EMI Sheid Film 1200-005 10 10 1.4 4. Polar Samples SH4006 EMI Sheid Film 1200-005 10 10 2.8 4.	PolarS	Samples	SH/002		EMI Shield Fil	m		1200-00	2 5		5	1.4		4.2
Polar Samples SH004 Entil Shield Film 1200-005 10 10 0.7 4 Polar Samples SH005 ENI Shield Film 1200-005 10 10 1.4 4. Polar Samples SH006 ENI Shield Film 1200-005 10 10 2.8 4	PolarS	Samples	SH/003		EMI Shield Fil	m		1200-00	5		5	2.8		4.2
Polar Samples 51/000 0 1.4 4 Polar Samples 51/000 0 10 2.8 4	PolarS	Samples Samples	SH/004		EMI Shield Fil	m		1200-00	+ 10 5 10		10	1.4		4.2
	PolerS	Semples	SH/005		EMI Shield Fil	m		1200-00	5 10		10	2.8		4.2
	1 Olar S	Jampies	518000		Envir Smeld fill			1200-00	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		10	2.0		7.2



eview/Edit Shield				dialog
Supplier	Polar Samples	Size	•	
Supplier Description	SH/001	Note 1		
Description	EMI Shield Film			
StockNumber	1200-001			
Туре	Shield			
		Note 2		
Base Thickness	5.0000	_		
Finished Thickness	5.0000			
Dielectric Constant	4.2	Note 3		
Loss Tangent	0.0195			
Resin Content	0			
Tg	0			
Td	0	Note 4		
CAF Resistance	0			
Z Axis Expansion	0			
Excess Resin	0.0000	Note 5		
Tolerance +/-%	10			
Shield Copper Thickness	0.7000			
Cost	0			
Lead Time	0			
Laser Drillable				



Online Library enhanced to support Shield materials





Export / Import Shield library to Excel





Stack up editor enhancements



Stack Up editor enhancements:

Shield material options to add, delete, swap, move up, move down, symmetry and set properties


Shield properties

Folar Speedstack Stack Up Builder: Stack : ShieldExample#4_4Layer.stk Project : ShieldExample#4_4Layer.sci — — × File Edit View Tools Units External Utility Help — …									View and customise the Shield properties. Useful
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Shield Properties									
				Main Notes Attributes					
				General Information				Apply	
				Supplier	Polar Samples			Cancel	
				Supplier Description	SH/002			Close	
				Description	EMI Shield Film				
				Stock Number	1200-002				
				Туре	Shield				
Shield Copper									
				Base Thickness	1.4000	Copper Coverage %	0.00		
				Finished Thickness	1.4000	Graphical Colour			
				Data Filename					
				Trace Inverted	Г	Remove Copper	F		
				Finishing Applied		(disabled if structures or sub-	-stacks exist)		
				Shield Dielectric]		
				Base Thickness	5.0000	Td	0.0		
				Finished Thickness	5.0000	CAF Resistance	0.0		
				Dielectric Constant	4.2000	Z Axis Expansion	0.0		
i				Loss Tangent	0.0195	Excess Resin	0.0000		
				Resin Content %	0.00	Isolation Distance	5.0000		
				Tg	0.0	Graphical Colour			
						Data Filenames			1
1		4 000/0 0105			1.4000				
- Shield EN	VII Shield Film	4.200/0.0195			5.0000	Dielectric Base Thickness	5.0000		
- PP Pre	rePreg 1080	4.200/0.0195			3.0000	Dielectric Constant	4.2		
2	24 Care	4 200/0 0105			1.4000	Loss Tangent	0.0195		
3		4.200/0.0195			1.4000	Ta Kesin Content	0		
- PP Pre	rePreg 1080	4.200/0.0195			3.0000	Td	0		
- Shield EN	MI Shield Film	4 200/0 0195			5 0000	CAF Resistance	0		
4 Chield Liv		1.200/0.0100			1:4000	Excess Resin	0.0000	-	
Mils/Thous Target Stack Up Thickness = 30.0000 Stack Up Thickness = 29.6000 Stack Up Thickness with Soldermask = 29.6000 Beta V21.02.01									6



Controlled impedance and insertion loss calculations





Controlled impedance and insertion loss calculations





Controlled impedance and insertion loss calculations

Please note: Speedstack is capable of supporting many shield types for stack up design and documentation. However, it is important to use the correct type of shield material for controlled impedance and insertion loss applications. They are often designated by the shield vendor as 'for high speed signal transmission applications'.













Import / Export enhancements

The following Import / Export options have been updated to support the new shield material introduced with Speedstack 2021:

- XML STKX v20.00 and SSX v10.00 import / export options
- CSV export option
- Gerber / DXF export option





Thank you for viewing this Speedstack 2021 – 2022 preview. If you have questions we would be delighted to help you. Your local contact information is contained on the following slide



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