



Design/InStack® Design
The Right Way
to Design Boards
that Work

InStack® Design - The Right Way to Design Boards that Work

Fast stackup design optimization

InStack® is an industry-proven software solution that enables you to design the most challenging stackups in minutes, taking all mechanical and signal integrity (SI) constraints into account. Your fab house probably uses InStack to select your stackup. Now you can use your own custom version of InStack: InStack Design. Using standard industry materials or material libraries provided by PCB suppliers, you can model and verify thickness, impedance and losses quickly and accurately, even for the most complex multi-zone structures. Designing stackups with the right tradeoffs to meet your board requirements helps reduce PCB costs, improve product quality and shorten manufacturing lead-time by eliminating lengthy exchanges with fabricators.

Cut design time

InStack Design stackup and impedance designers can achieve in minutes what previously took experts hours of work. Whether using

automatic or manual stackup design, InStack Design ensures that all zone thickness and impedance calculations are up to date. InStack Design delivers the most cost-effective stackup solutions while meeting all design rules.

Reduce revision spins

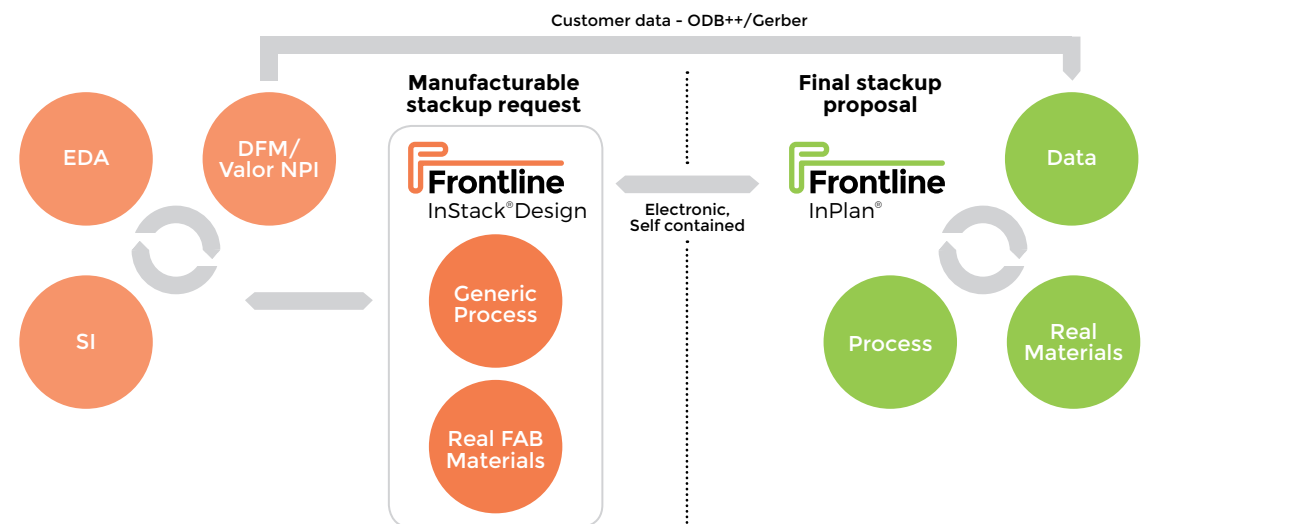
Reduce preproduction revision spins, shorten lead-time and improve quality by generating precise stackup designs that consider design rules, resin starvation checks and supplier process rules. Use your fabricator's materials library to ensure that designs can be manufactured within allowed tolerances. Automatically apply pressing rules and copper etching factors to match your PCB supplier's process rules.

317 out of 1758 materials displayed. 1 Selected.

Name	Type	Thickness (MM)	Dielectric Thickness (MM)	Top Copper Weight (Oz)	Bottom Copper Weight (Oz)	Top Coat (µ)	Beam Percentage	Material Cost
High Tg PCL-FR-370 0.056 1/2 36x24 8 ply		58.500	56.000	1.000	1.000	347.000	N/A	2.000
High Tg PCL-FR-370 0.056 1/2 36x24 8 ply		59.000	56.000	2.000	2.000	347.000	N/A	2.350
High Tg PCL-FR-370 0.056 1/2 36x24 8 ply		61.300	56.000	2.000	2.000	347.000	N/A	2.502
High Tg PCL-FR-370 0.056 3/3 36x24 8 ply		62.600	56.000	3.000	2.000	347.000	N/A	3.252
High Tg PCL-FR-370 0.056 3/3 36x24 8 ply		63.900	56.000	3.000	3.000	347.000	N/A	3.252
High Tg PCL-FR-370 0.056 4/4 36x24 8 ply		66.600	56.000	4.000	4.000	347.000	N/A	4.367
High Tg PCL-FR-370 0.056 4/4 36x24 8 ply		69.300	56.000	5.000	5.000	347.000	N/A	4.230
High Tg PCL-FRP-370 105 36x24 60%		2.300	N/A	N/A	N/A	356.000	69	0.420
High Tg PCL-FRP-370 1057 36x24 60%		2.030	N/A	N/A	N/A	356.000	65	0.450
High Tg PCL-FRP-370 1880 36x24 60%		3.000	N/A	N/A	N/A	356.000	64	0.230
High Tg PCL-FRP-370 1890LR 36x24 60%		2.550	N/A	N/A	N/A	356.000	60	0.230
High Tg PCL-FRP-370 1896 36x24 50%		2.830	N/A	N/A	N/A	356.000	58	0.280
High Tg PCL-FRP-370 2116 36x24 53%		4.270	N/A	N/A	N/A	356.000	53	0.270
High Tg PCL-FRP-370 2313 36x24 57%		4.100	N/A	N/A	N/A	356.000	57	0.330
High Tg PCL-FRP-370 2628 36x24 43%		6.900	N/A	N/A	N/A	356.000	43	0.230
High Tg PCL-FRP-370 2629 36x24 48%		8.460	N/A	N/A	N/A	356.000	48	0.240





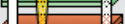


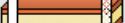


PCB Designer

PCB Supplier



Make the most of your process

Take control of your stackup, the foundation of your board

Lyr	Image	Foil	Thk (Mil)
CM			0.7
L1		0.25oz	1.75
L2		0.25oz	2.784
L3			1.35
L4		0.5oz	2.79
L5		0.5oz	4
L6		0.5oz	3.842
L7		0.5oz	4
L8		0.25oz	2.832
SM		0.25oz	1.35
		0.25oz	2.7705
			1.75
			0.7

Only you can make the right tradeoffs between signal integrity, reliability, cost and complexity. Simulate your real stackup as you create it and make sure all your SI and layout

needs are met. Then send the stackup to your fabricator for immediate manufacturing. Modify a stackup provided by your fab house to meet your needs or adapt it for use as a prototype for other fabricators, while maintaining the crucial properties of the board.

Design your stackup early on, your layout depends on it

Create manufacturable stackups early in the design process, even at the pre-layout phase. Use accurate spacing and pitch selection tools to precisely plan your routing resources and select the correct number of layers before you begin routing.

Ensure manufacturability

InStack is the leading tool your fabricators use to manufacture your boards. When you design with InStack Design you can be sure your stackup is manufacturable. InStack Design brings fabrication know-how to you.

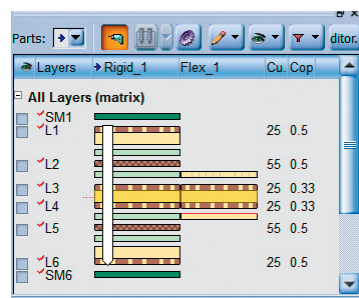
Tell your fabricator what you need, electronically

Exchange your stackup designs electronically with fabs. All details of the job including impedances, materials, and stackup properties are included as well as calculation sources and results. Receive electronic stackup proposals that include the same level of detail and have full visibility and understanding of the fab stackup proposal.

Export your stackups to Hyperlynx® and other simulation tools for end-to-end simulation

Use your real stackup in your IBIS- or HSPICE-based simulation and rest assured that your simulation is as accurate as possible.

Conquer flex and rigid-flex with multiple zones



Create complex designs with automatic multi-zone buildup creation and advanced buildup editing tools, including air gap

formation between flex clads, adding stiffeners and other accessories, and placing rigid and flex materials side by side. Use the Flex Buildup Editor to define zones for copper layers, masks, drills and materials, and to add and define coverlays, stiffeners and other accessory materials. InStack Design also supports crosshatch layers and EMI shielding.

Accurate impedance and SI simulation



Attenuation Graph

Use InSolver[®], InStack Design's built-in impedance solver, to automatically calculate impedance. InStack Design's easy-to-use interface lets you create multiple impedance constraints on each layer and select any layer or conductive material as reference layers

per constraint. As stackup materials are selected, InStack Design automatically calculates copper and dielectric thicknesses and optimizes the trace widths to meet impedance requirements. In addition, InStack Design can accurately model dielectric, resistive and total attenuation for a range of frequencies, enabling you to select the most cost-effective material that meets your performance requirements.

Get a full visualization of how your board will be built



InStack Design shows you a detailed visualization of how your board will be built that includes all sub-assemblies and processes.

Revision-controlled stackup database

All stackups are stored in InStack Design's revision-controlled database enabling operators to track changes between revisions and compare revisions and/or jobs. Derivative stackup design becomes a simple task as you can quickly search for similar stackups, duplicate the existing stackup, and modify the stackup and impedance in just minutes.

InSolver[®] is powered by Mentor Graphics HyperLynx[®] technology

Frontline PCB Solutions is the world leader in PCB CAM and Engineering software solutions, offering the only end-to-end preproduction solution in the industry, from design to manufacturing.

A joint venture of two industry leaders. Orbotech and Mentor Graphics, Frontline has the unique expertise to offer customers smart, innovative solutions for transforming complex designs into outstanding end products.

The Company has a strong track record of success, with more than 20 years' experience, thousands of projects and over 10,000 installations worldwide. Frontline's comprehensive range of products and services seamlessly integrate enabling our customers to implement efficient, straightforward workflows and achieve their fullest potential. We build long-term partnerships and are deeply committed to our customers' success.

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