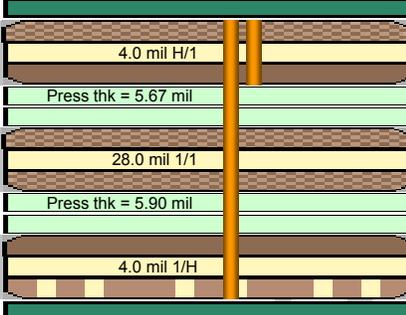


\*\*\* Valued Customer: If this stackup is accepted, please add this PDF to the production data package. \*\*\*  
 \*\*\* Preliminary stack up subject to change based on review of final data and technology. \*\*\*

Job number: b4119	Material: RO4835 LOPRO, 370	<b>External Stackup Report</b> Report v1.76	 <b>STREAMLINE CIRCUITS</b> TIME AND TECHNOLOGY EXPERTS
Part number: 1243/1443-EVM, Rev: A	Impedance: Yes		
Customer: SVTRONICS, INC	Date: 22-Mar-2018		
Panel size: 18X24	Created by: Carol Rulla		

Layer	Type	CU Weight	CU %	Material Description	Via Structure	Segment	Glass Style	Material Family	Dielectric constant @ 1GHz	Thickness After lamination [mil]
Soldermask										
1	Mixed	H	35	4.0 mil H/1		Core		RO4835 LOPRO	3.66	1.60
2	Plane	1	89	Press thk = 5.67 mil		Prepreg	1080(66)	370HR	3.90	4.00
							1080(66)	370HR	3.90	1.40
3	Mixed	1	69	28.0 mil 1/1		Core	4-7628	370HR	4.36	1.20
4	Mixed	1	85	Press thk = 5.90 mil		Prepreg	1080(66)	370HR	3.90	28.00
							1080(66)	370HR	3.90	1.20
5	Plane	1	90	4.0 mil 1/H	Core	1-2116	370HR	4.26	5.90	
6	Signal	H	47						1.20	4.00
Soldermask										

Specification (Over mask on plated copper):	mil
Overall Board Thickness:	56.2
Tolerance:	+5.6/-5.6
Min-Max Board Thickness:	50.6-61.8

Anticipated Board Thickness:	mil
After lamination:	53.37
Over mask on plated copper:	57.37

**Grain in 18" Dimension**

**Impedance Table**

InSolver

Layer	Impedance Requirement [ohms]	Tolerance [ohms]		Type	Upper Reference	Lower Ref	Designed Line Width [Mil]	Designed Spacing [Mil]	Finished Line Width [Mil]	Finished Spacing [Mil]	Impedance Simulation [ohms]
		+	-								
1	102	10.2	10.2	Differential		2	5.2	5.00	4.375	5.83	101.900
1	51.68	5.168	5.168	Single Ended CP		2	7.08		7.08		51.283

**Remarks**

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- \* Any targeted thickness .0046" and greater shall have a minimum tolerance of +/- .001 after lamination.
- \* Any targeted thickness .0045" and below shall not be held to the minimum dielectric .0035429" as specified in IPC-6012 section 3.6.2.15. Unless agreed upon in writing from Streamline Circuits Inc. The minimum thickness per this exception shall not be less than .0009839" per IPC-6012 section 3.6.2.17.