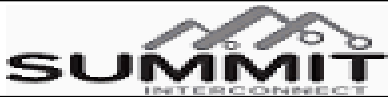


*** Valued Customer: If this stackup is accepted, please add this PDF to the production data package. ***
 *** Preliminary stack up subject to change based on review of final data and technology. ***

Job number:	ANALOG DEV 10 LYR 09-064617 03	Material:	FR408HR	External Stackup Report Report v1.78	
Part number:	09-064617, Rev: A	Impedance:	Yes		
Customer:	ANALOG DEVICES	Date:	18-May-2020		
Panel size:	18X24	Created by:	Mike Garrett		

Layer	Type	CU Weight	CU %	Material Description	Via Structure	Segment	Glass Style	Material Family	Dielectric constant @ 1GHz	Thickness After lamination [mil]
Soldermask										0.80
1	Mixed	H	30	8.0 mil H/1		Core	2-3313	FR408HR	3.68	1.60
2	Plane	1	87	Press thk = 3.79 mil		Prepreg	2113(57)	FR408HR	3.62	1.20
3	Plane	1	79	2.5 mil 1/1		Core	1-1080	FR408HR	3.62	1.20
4	Plane	1	87	Press thk = 5.04 mil		Prepreg	2116(55)	FR408HR	3.68	1.40
5	Plane	H	77	Press thk = 8.86 mil		Foil	1080(65)	FR408HR	3.46	1.40
6	Mixed	H	70	Press thk = 5.04 mil		Foil	1080(65)	FR408HR	3.46	1.40
7	Plane	1	87	2.5 mil 1/1		Core	1-1080	FR408HR	3.62	1.20
8	Plane	1	79	Press thk = 3.79 mil		Prepreg	2113(57)	FR408HR	3.62	1.20
9	Plane	1	87	8.0 mil 1/H		Core	2-3313	FR408HR	3.68	1.60
10	Mixed	H	25							0.80
Soldermask										0.80

Specification (Over mask on plated copper):	mil
Overall Board Thickness:	61.0
Tolerance:	+6.1/-6.1
Min-Max Board Thickness:	54.9-67.1

Anticipated Board Thickness:	mil
After lamination:	58.73
Over mask on plated copper:	62.33

Grain in 18" Dimension

Impedance Table

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	100	10	10	Differential		2	5	6.00	6.375	4.63	99.508
1	100	10	10	Differential		2	5.6	5.40	6.3	4.70	100.377
1	100	10	10	Differential		2	9	11.00	10.5	9.50	100.732
1	50	5	5	Single Ended		2	14.5		15		50.266
1	25	2.5	2.5	Single Ended		2	38		44		25.150
1	50	5	5	Differential		2	38	62.00	44	56.00	49.598
6	100	10	10	Differential	5	7	5.6	5.40	4.25	6.75	99.265
10	100	10	10	Differential		9	5.6	5.40	6.3	4.70	100.377
10	100	10	10	Differential		9	9	11.00	10.5	9.50	100.732

Remarks

PRELIMINARY STACK UP

- * 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.