


*** Valued Customer: If this stackup is accepted, please add this PDF to the production data package. ***

Job number: XILINX 22 Lyr 081214	Material: MEGTRON-5670, ME	External Stackup Report Report v1.71	 STREAMLINE CIRCUITS TIME AND TECHNOLOGY EXPERTS
Part number: 22 Lyr, Rev: -	Impedance: Yes		
Customer: XILINX	Date: 12-Aug-2014		
Panel size: 18X24	Created by: Dennis McLaurin		


Layer	Type	CU Weight	CU %	Material Description	Via Structure	Segment	Glass Style	Material Family	Dielectric constant @ 1GHz	Thickness After lamination [mil]
Soldermask										
1	Signal	H	20	Press thk = 3.74 mil		Foil	1027(75)	MEGTRON-5670	3.28	0.80
						Prepreg	1027(75)	MEGTRON-5670	3.28	1.60
2	Plane	H	80	2.9 mil H/H		Core	1-1078	MEGTRON-5775	3.49	0.60
3	Signal	H	20	Press thk = 3.89 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	2.90
							1035(73)	MEGTRON-5670	3.29	0.60
4	Plane	H	80	2.9 mil H/H		Core	1-1078	MEGTRON-5775	3.49	3.89
5	Signal	H	20	Press thk = 3.89 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	0.60
							1035(73)	MEGTRON-5670	3.29	2.90
6	Plane	H	80	2.9 mil H/H		Core	1-1078	MEGTRON-5775	3.49	0.60
7	Signal	H	20	Press thk = 3.77 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	2.90
							1035(73)	MEGTRON-5670	3.29	0.60
8	Plane	1	80	2.9 mil 1/1		Core	1-1078	MEGTRON-5775	3.49	3.77
9	Plane	1	80	Press thk = 4.01 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	1.20
							1035(73)	MEGTRON-5670	3.29	2.90
10	Plane	1	80	2.9 mil 1/1		Core	1-1078	MEGTRON-5775	3.49	1.20
11	Plane	1	80	Press thk = 3.62 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	2.90
							1027(75)	MEGTRON-5670	3.28	1.20
12	Plane	H	80	Press thk = 4.48 mil		Foil	1035(73)	MEGTRON-5670	3.29	3.62
						Prepreg	1035(73)	MEGTRON-5670	3.29	1.60
13	Plane	H	80	Press thk = 4.01 mil		Foil	1035(73)	MEGTRON-5670	3.29	4.48
						Prepreg	1027(75)	MEGTRON-5670	3.28	1.60
14	Signal	H	20	5.8 mil H/H		Core	2-1078	MEGTRON-5775	3.49	4.01
15	Plane	H	80	Press thk = 7.28 mil		Prepreg	3313(54)	MEGTRON-5670	3.71	0.60
							3313(54)	MEGTRON-5670	3.71	5.80
16	Signal	H	20	5.8 mil H/H		Core	2-1078	MEGTRON-5775	3.49	0.60
17	Plane	H	80	Press thk = 7.28 mil		Prepreg	3313(54)	MEGTRON-5670	3.71	5.80
							3313(54)	MEGTRON-5670	3.71	0.60
18	Signal	H	20	5.8 mil H/H		Core	2-1078	MEGTRON-5775	3.49	7.28
19	Plane	H	80	Press thk = 7.28 mil		Prepreg	3313(54)	MEGTRON-5670	3.71	0.60
							3313(54)	MEGTRON-5670	3.71	5.80
20	Signal	H	20	5.8 mil H/H		Core	2-1078	MEGTRON-5775	3.49	0.60
21	Plane	H	80	Press thk = 3.74 mil		Prepreg	1027(75)	MEGTRON-5670	3.28	5.80
							1027(75)	MEGTRON-5670	3.28	0.60
22	Signal	H	20			Foil				3.74
Soldermask										

Specification (Over mask on plated copper):	mil
Overall Board Thickness:	116.0
Tolerance:	+11.6/-11.6
Min-Max Board Thickness:	104.4-127.6

Anticipated Board Thickness:	mil
After lamination:	112.29
Over mask on plated copper:	115.89

Grain in 18" Dimension

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Part number: 22 Lyr, Rev: -	Impedance: Yes		
Customer: XILINX	Date: 12-Aug-2014		
Panel size: 18X24	Created by: Dennis McLaurin		

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	105	10.5	10.5	Differential		2	4	6.00	4.125	5.88	105.628
1	100	10	10	Differential		2	4.1	4.90	4.25	4.75	99.356
1	90	9	9	Differential		2	5.2	4.80	5.375	4.63	90.593
1	90	9	9	Differential		2	5.3	5.00	5.5	4.80	90.592
1	85	8.5	8.5	Differential		2	5.8	4.50	6	4.30	85.235
1	50	5	5	Single Ended		2	6		6.75		50.603
1	76	7.6	7.6	Differential		2	7.4	4.60	7.75	4.25	76.262
1	39	3.9	3.9	Single Ended		2	9.5		10.5		39.912
1	36	3.6	3.6	Single Ended		2	11		12		36.846
3	0	0	0	Differential	4	2	3	6.00	3	6.00	101.173
3	100	10	10	Differential	4	2	3.4	5.60	3.125	5.88	99.094
3	50	5	5	Single Ended	4	2	3.5		3.5		48.436
3	100	10	10	Differential	4	2	3.5	7.50	3.25	7.75	99.070
3	0	0	0	Differential	4	2	3.5	4.40	3.5	4.40	91.075
3	0	0	0	Differential	4	2	3.8	4.20	3.75	4.25	87.691
3	0	0	0	Differential	4	2	3.9	4.10	3.875	4.13	85.953
3	90	9	9	Differential	4	2	3.9	4.00	3.625	4.28	89.222
3	90	9	9	Differential	4	2	4	5.00	3.75	5.25	89.761
3	86	8.6	8.6	Differential	4	2	4.1	3.90	3.875	4.13	85.953
3	86	8.6	8.6	Differential	4	2	4.2	3.80	3.875	4.13	85.953
3	0	0	0	Differential	4	2	4.5	5.50	4.5	5.50	81.893
3	85	8.5	8.5	Differential	4	2	4.5	5.50	4.25	5.75	84.777
3	0	0	0	Differential	4	2	4.8	3.80	4.75	3.85	76.655
3	76	7.6	7.6	Differential	4	2	5	3.40	4.75	3.65	76.137
3	76	7.6	7.6	Differential	4	2	5.5	6.50	5.25	6.75	76.046
3	39	3.9	3.9	Single Ended	4	2	5.9		5.375		38.152
3	36	3.6	3.6	Single Ended	4	2	6.2		5.875		36.121
5	0	0	0	Differential	6	4	3	6.00	3	6.00	101.173
5	100	10	10	Differential	6	4	3.4	5.60	3.125	5.88	99.094
5	50	5	5	Single Ended	6	4	3.5		3.375		49.330
5	100	10	10	Differential	6	4	3.5	7.50	3.25	7.75	99.070
5	0	0	0	Differential	6	4	3.5	4.40	3.5	4.40	91.075
5	0	0	0	Differential	6	4	3.8	4.20	3.75	4.25	87.691
5	0	0	0	Differential	6	4	3.9	4.10	3.875	4.13	85.953
5	90	9	9	Differential	6	4	3.9	4.00	3.625	4.28	89.222
5	90	9	9	Differential	6	4	4	5.00	3.75	5.25	89.761
5	86	8.6	8.6	Differential	6	4	4.1	3.90	3.875	4.13	85.953
5	86	8.6	8.6	Differential	6	4	4.2	3.80	3.875	4.13	85.953
5	0	0	0	Differential	6	4	4.5	5.50	4.5	5.50	81.893
5	85	8.5	8.5	Differential	6	4	4.5	5.50	4.25	5.75	84.777
5	0	0	0	Differential	6	4	4.8	3.80	4.75	3.85	76.655
5	76	7.6	7.6	Differential	6	4	5	3.40	4.75	3.65	76.137
5	76	7.6	7.6	Differential	6	4	5.5	6.50	5.25	6.75	76.046
5	39	3.9	3.9	Single Ended	6	4	5.9		5.375		38.152
5	36	3.6	3.6	Single Ended	6	4	6.2		5.875		36.121
7	0	0	0	Differential	8	6	3	6.00	3	6.00	101.173
7	100	10	10	Differential	8	6	3.4	5.60	3.125	5.88	99.094
7	50	5	5	Single Ended	8	6	3.5		3.375		49.330
7	100	10	10	Differential	8	6	3.5	7.50	3.25	7.75	99.070
7	0	0	0	Differential	8	6	3.5	4.40	3.5	4.40	91.075
7	0	0	0	Differential	8	6	3.8	4.20	3.75	4.25	87.691
7	0	0	0	Differential	8	6	3.9	4.10	3.875	4.13	85.953
7	90	9	9	Differential	8	6	3.9	4.00	3.625	4.28	89.222
7	90	9	9	Differential	8	6	4	5.00	3.75	5.25	89.761
7	86	8.6	8.6	Differential	8	6	4.1	3.90	3.875	4.13	85.953
7	86	8.6	8.6	Differential	8	6	4.2	3.80	3.875	4.13	85.953
7	85	8.5	8.5	Differential	8	6	4.5	5.50	4.25	5.75	84.777
7	0	0	0	Differential	8	6	4.5	5.50	4.5	5.50	81.893

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Part number: 22 LYR, Rev: -				Impedance: Yes								
Customer: XILINX				Date: 12-Aug-2014								
Panel size: 18X24				Created by: Dennis McLaurin								
7	0	0	0	Differential	8	6	4.8	3.80	4.75	3.85	76.655	
7	76	7.6	7.6	Differential	8	6	5	3.40	4.75	3.65	76.137	
7	76	7.6	7.6	Differential	8	6	5.5	6.50	5.25	6.75	76.046	
7	39	3.9	3.9	Single Ended	8	6	5.9		5.375		38.152	
7	36	3.6	3.6	Single Ended	8	6	6.2		5.875		36.121	
13	85	8.5	8.5	Model not defined		14	5.8	5.20	5.5	5.50	84.935	
13	75	7.5	7.5	Model not defined		14	7	4.00	6.625	4.38	74.911	
14	0	0	0	Differential	13	15	3.5	4.50	3.5	4.50	104.153	
14	100	10	10	Differential	13	15	3.9	4.10	3.75	4.25	100.198	
14	100	10	10	Differential	13	15	4.3	6.20	4.375	6.13	99.255	
14	0	0	0	Differential	13	15	4.8	4.00	4.875	3.93	88.125	
14	0	0	0	Differential	13	15	4.9	5.00	5	4.90	90.349	
14	50	5	5	Single Ended	13	15	4.9		4.875		50.143	
14	86	8.6	8.6	Differential	13	15	5.1	3.80	5.125	3.78	85.523	
14	85	8.5	8.5	Differential	13	15	5.2	3.30	5	3.50	85.291	
14	0	0	0	Differential	13	15	5.4	3.30	5.5	3.20	80.265	
14	0	0	0	Differential	13	15	5.45	4.50	5.5	4.45	85.018	
14	90	9	9	Differential	13	15	5.6	8.40	5.625	8.38	90.414	
14	86	8.6	8.6	Differential	13	15	5.6	5.40	5.625	5.38	86.390	
14	78	7.8	7.8	Differential	13	15	5.7	3.00	5.75	2.95	77.397	
14	85	8.5	8.5	Differential	13	15	5.7	5.25	5.75	5.20	85.055	
14	76	7.6	7.6	Differential	13	15	6.7	4.30	6.75	4.25	76.054	
14	39	3.9	3.9	Single Ended	13	15	7.5		7.625		39.011	
14	36	3.6	3.6	Single Ended	13	15	8.5		8.625		36.121	
16	0	0	0	Single Ended	15	17	3		3		70.038	
16	72	7.2	7.2	Single Ended	15	17	3		3		70.038	
16	0	0	0	Differential	15	17	4	4.00	4	4.00	101.651	
16	100	10	10	Differential	15	17	4.3	3.70	4.125	3.88	99.777	
16	100	10	10	Differential	15	17	5.3	5.70	5.125	5.88	99.908	
16	0	0	0	Differential	15	17	5.4	3.50	5.5	3.40	86.787	
16	100	10	10	Differential	15	17	5.6	6.40	5.5	6.50	98.568	
16	86	8.6	8.6	Differential	15	17	5.6	3.00	5.375	3.23	86.514	
16	0	0	0	Differential	15	17	5.6	3.00	5.625	2.98	83.407	
16	86	8.6	8.6	Differential	15	17	5.7	3.20	5.625	3.28	85.285	
16	86	8.6	8.6	Differential	15	17	5.8	3.10	5.625	3.28	85.285	
16	50	5	5	Single Ended	15	17	6.8		6.75		48.992	
16	86	8.6	8.6	Differential	15	17	7	5.00	6.875	5.13	85.590	
16	85	8.5	8.5	Differential	15	17	7.2	4.80	7	5.00	84.505	
16	0	0	0	Differential	15	17	7.2	4.80	7.25	4.75	82.371	
16	76	7.6	7.6	Differential	15	17	8.2	3.80	8	4.00	76.197	
16	39	3.9	3.9	Single Ended	15	17	10.3		10.375		38.335	
18	0	0	0	Single Ended	17	19	3		3		70.038	
18	72	7.2	7.2	Single Ended	17	19	3		3		70.038	
18	0	0	0	Differential	17	19	4	4.00	4	4.00	101.651	
18	100	10	10	Differential	17	19	4.3	3.70	4.125	3.88	99.777	
18	100	10	10	Differential	17	19	5.3	5.70	5.125	5.88	99.908	
18	0	0	0	Differential	17	19	5.4	3.50	5.5	3.40	86.787	
18	100	10	10	Differential	17	19	5.6	6.40	5.5	6.50	98.568	
18	86	8.6	8.6	Differential	17	19	5.6	3.00	5.375	3.23	86.514	
18	0	0	0	Differential	17	19	5.6	3.00	5.625	2.98	83.407	
18	86	8.6	8.6	Differential	17	19	5.7	3.20	5.625	3.28	85.285	
18	86	8.6	8.6	Differential	17	19	5.8	3.10	5.625	3.28	85.285	
18	50	5	5	Single Ended	17	19	6.8		6.75		48.992	
18	86	8.6	8.6	Differential	17	19	7	5.00	6.875	5.13	85.590	
18	85	8.5	8.5	Differential	17	19	7.2	4.80	7	5.00	84.505	
18	0	0	0	Differential	17	19	7.2	4.80	7.25	4.75	82.371	
18	76	7.6	7.6	Differential	17	19	8.2	3.80	8	4.00	76.197	
18	39	3.9	3.9	Single Ended	17	19	10.3		10.375		38.335	
20	0	0	0	Single Ended	19	21	3		3		70.038	
20	72	7.2	7.2	Single Ended	19	21	3		3		70.038	
20	0	0	0	Differential	19	21	4	4.00	4	4.00	101.651	
20	100	10	10	Differential	19	21	4.3	3.70	4.125	3.88	99.777	
20	100	10	10	Differential	19	21	5.3	5.70	5.125	5.88	99.908	
20	0	0	0	Differential	19	21	5.4	3.50	5.5	3.40	86.787	
20	100	10	10	Differential	19	21	5.6	6.40	5.5	6.50	98.568	

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Part number: 22 LYR, Rev: -				Impedance: Yes								
Customer: XILINX				Date: 12-Aug-2014								
Panel size: 18X24				Created by: Dennis McLaurin								
20	86	8.6	8.6	Differential	19	21	5.6	3.00	5.375	3.23	86.514	
20	0	0	0	Differential	19	21	5.6	3.00	5.625	2.98	83.407	
20	86	8.6	8.6	Differential	19	21	5.7	3.20	5.625	3.28	85.285	
20	86	8.6	8.6	Differential	19	21	5.8	3.10	5.625	3.28	85.285	
20	50	5	5	Single Ended	19	21	6.8		6.75		48.992	
20	86	8.6	8.6	Differential	19	21	7	5.00	6.875	5.13	85.590	
20	85	8.5	8.5	Differential	19	21	7.2	4.80	7	5.00	84.505	
20	0	0	0	Differential	19	21	7.2	4.80	7.25	4.75	82.371	
20	76	7.6	7.6	Differential	19	21	8.2	3.80	8	4.00	76.197	
20	39	3.9	3.9	Single Ended	19	21	10.3		10.375		38.335	
22	105	10.5	10.5	Differential		21	4	6.00	4.125	5.88	105.628	
22	100	10	10	Differential		21	4.1	4.90	4.25	4.75	99.356	
22	90	9	9	Differential		21	5.2	4.80	5.375	4.63	90.593	
22	90	9	9	Differential		21	5.3	5.00	5.5	4.80	90.592	
22	85	8.5	8.5	Differential		21	5.8	4.50	6	4.30	85.235	
22	50	5	5	Single Ended		21	6		6.75		50.603	
22	76	7.6	7.6	Differential		21	7.4	4.60	7.75	4.25	76.262	
22	39	3.9	3.9	Single Ended		21	9.5		10.5		39.912	
22	36	3.6	3.6	Single Ended		21	11		12		36.846	

Remarks

PRELIMINARY STACK UP. MUST USE HVLP COPPER.

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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 3.6.2.15.