

08-073r0 StatEye v5.080111 results

by Rob Elliott, HP All with 8b10b  
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Desired eye size:

Amplitude goal (V) 0.1  
Jitter goal (UJpp) 0.6

Note: 0.001 amplitude, 0.99 jitter means closed eye

Models used

Source  
HP01-08, 27-28 05-384r2  
HP09-11 05-389r0  
HP12-14 05-390r0  
HP24-26 06-017r0  
MiniSAS\_halfmeter 05-401r0  
MiniSAS\_onemeter 05-402r0  
MiniSAS\_threemeter 05-403r0  
MiniSAS\_sixmeter 05-404r0  
SAS Transmitter test lo:07-193r1

Other notes

coding 0=8b10b, 1=random

Repeated results tried Rj=0.01 (as in v5.081210)

vs. Rj=0.15/14 to isolate return loss effects

v5.080111 includes padcap and retloss which closes eye compared to v5.081210

v5.080111 amp is 1Vpp. Arguably should be set to 0.8V (or output scaled to 0.1/0.8=0.125) is no longer necessary.

Reference

See www.stateeye.org for the simulator by Anthony Sanders, Infineon

Testcases included in .zip file simplify varying parameters.

channel	temp	steps	amp	jitter	temp	steps	amp	jitter	temp	steps	amp	jitter	temp	steps	amp	jitter
HP01_BtoB_3Connector	0	0	0.136	0.65	0	2	0.304	0.47	0	3	0.348	0.41				
HP01_BtoB_3Connector	0	0	0.138	0.65	0	2	0.306	0.46	0	3	0.35	0.41	0	4	0.354	0.4
HP01_BtoB_3Connector	1	0	0.164	0.59	1	2	0.29	0.46	1	3	0.326	0.42	1	4	0.334	0.4
HP01_BtoB_3Connector	2	0	0.194	0.54	2	2	0.282	0.46	2	3	0.31	0.44	2	4	0.32	0.42
HP01_BtoB_3Connector	3	0	0.214	0.49	3	2	0.272	0.47	3	3	0.29	0.45	3	4	0.302	0.43
HP01_BtoB_3Connector	3	0	0.216	0.49	3	2	0.274	0.46	3	3	0.29	0.45				
HP02_BtoB_3Connector	0	0	0.194	0.6	0	2	0.342	0.45	0	3	0.384	0.39				
HP02_BtoB_3Connector	0	0	0.196	0.59	0	2	0.34	0.45	0	3	0.382	0.39	0	4	0.4	0.36
HP02_BtoB_3Connector	1	0	0.22	0.55	1	2	0.326	0.45	1	3	0.358	0.41	1	4	0.376	0.37
HP02_BtoB_3Connector	2	0	0.242	0.51	2	2	0.312	0.45	2	3	0.334	0.43	2	4	0.354	0.41
HP02_BtoB_3Connector	3	0	0.262	0.46	3	2	0.294	0.45	3	3	0.314	0.43	3	4	0.332	0.42
HP02_BtoB_3Connector	3	0	0.26	0.47	3	2	0.29	0.44	3	3	0.31	0.43				
HP03_BtoB_3Connector	0	0	0.232	0.5	0	2	0.392	0.41	0	3	0.432	0.35				
HP03_BtoB_3Connector	0	0	0.234	0.5	0	2	0.388	0.41	0	3	0.428	0.35	0	4	0.45	0.34
HP03_BtoB_3Connector	1	0	0.256	0.46	1	2	0.37	0.4	1	3	0.402	0.36	1	4	0.42	0.36
HP03_BtoB_3Connector	2	0	0.278	0.43	2	2	0.348	0.39	2	3	0.38	0.39	2	4	0.396	0.36
HP03_BtoB_3Connector	3	0	0.294	0.41	3	2	0.322	0.4	3	3	0.35	0.4	3	4	0.372	0.39
HP03_BtoB_3Connector	3	0	0.29	0.41	3	2	0.318	0.4	3	3	0.346	0.4				
HP04_BtoB_3Connector	0	0	0.276	0.5	0	2	0.416	0.42	0	3	0.458	0.38				
HP04_BtoB_3Connector	0	0	0.27	0.5	0	2	0.416	0.42	0	3	0.458	0.38	0	4	0.466	0.36
HP04_BtoB_3Connector	1	0	0.3	0.48	1	2	0.398	0.42	1	3	0.434	0.38	1	4	0.444	0.37
HP04_BtoB_3Connector	2	0	0.318	0.45	2	2	0.378	0.42	2	3	0.408	0.4	2	4	0.418	0.39
HP04_BtoB_3Connector	3	0	0.338	0.43	3	2	0.36	0.42	3	3	0.388	0.41	3	4	0.4	0.4
HP04_BtoB_3Connector	3	0	0.332	0.43	3	2	0.354	0.42	3	3	0.386	0.41				
HP05_BtoB_3Connector	0	0	0.212	0.59	0	2	0.372	0.44	0	3	0.408	0.41				
HP05_BtoB_3Connector	0	0	0.212	0.59	0	2	0.372	0.44	0	3	0.408	0.42	0	4	0.412	0.39
HP05_BtoB_3Connector	1	0	0.24	0.54	1	2	0.36	0.44	1	3	0.392	0.42	1	4	0.394	0.41
HP05_BtoB_3Connector	2	0	0.264	0.5	2	2	0.346	0.45	2	3	0.376	0.43	2	4	0.376	0.43
HP05_BtoB_3Connector	3	0	0.29	0.47	3	2	0.33	0.44	3	3	0.356	0.44	3	4	0.358	0.44
HP05_BtoB_3Connector	3	0	0.288	0.47	3	2	0.328	0.44	3	3	0.354	0.44				
HP06_BtoB_3Connector	0	0	0.07	0.76	0	2	0.268	0.48	0	3	0.296	0.43				
HP06_BtoB_3Connector	0	0	0.072	0.76	0	2	0.266	0.49	0	3	0.294	0.43	0	4	0.318	0.4
HP06_BtoB_3Connector	1	0	0.106	0.66	1	2	0.258	0.48	1	3	0.28	0.44	1	4	0.298	0.41
HP06_BtoB_3Connector	2	0	0.14	0.59	2	2	0.252	0.48	2	3	0.27	0.44	2	4	0.286	0.41
HP06_BtoB_3Connector	3	0	0.166	0.54	3	2	0.246	0.48	3	3	0.26	0.44	3	4	0.27	0.43
HP06_BtoB_3Connector	3	0	0.168	0.52	3	2	0.248	0.48	3	3	0.262	0.45				
HP07_BtoB_3Connector	0	0	0.176	0.58	0	2	0.35	0.42	0	3	0.372	0.39				
HP07_BtoB_3Connector	0	0	0.176	0.58	0	2	0.352	0.42	0	3	0.374	0.4	0	4	0.386	0.38
HP07_BtoB_3Connector	1	0	0.204	0.53	1	2	0.34	0.42	1	3	0.356	0.39	1	4	0.368	0.39
HP07_BtoB_3Connector	2	0	0.232	0.49	2	2	0.322	0.43	2	3	0.334	0.41	2	4	0.346	0.4
HP07_BtoB_3Connector	3	0	0.254	0.44	3	2	0.31	0.43	3	3	0.318	0.42	3	4	0.328	0.4
HP07_BtoB_3Connector	3	0	0.256	0.44	3	2	0.312	0.43	3	3	0.32	0.42				
HP08_BtoB_3Connector	0	0	0.13	0.65	0	2	0.308	0.45	0	3	0.332	0.41				
HP08_BtoB_3Connector	0	0	0.128	0.65	0	2	0.314	0.45	0	3	0.338	0.42	0	4	0.346	0.4
HP08_BtoB_3Connector	1	0	0.16	0.58	1	2	0.3	0.44	1	3	0.32	0.42	1	4	0.334	0.39
HP08_BtoB_3Connector	2	0	0.186	0.53	2	2	0.288	0.45	2	3	0.304	0.43	2	4	0.316	0.4
HP08_BtoB_3Connector	3	0	0.216	0.48	3	2	0.278	0.45	3	3	0.29	0.44	3	4	0.3	0.43
HP08_BtoB_3Connector	3	0	0.212	0.48	3	2	0.278	0.45	3	3	0.29	0.44				
HP09_BtoB_4Connector	0	0	0.001	0.99	0	2	0.222	0.55	0	3	0.258	0.49				
HP09_BtoB_4Connector	0	0	0.001	0.99	0	2	0.224	0.55	0	3	0.26	0.5	0	4	0.276	0.47
HP09_BtoB_4Connector	1	0	0.03	0.86	1	2	0.214	0.55	1	3	0.244	0.5	1	4	0.26	0.48
HP09_BtoB_4Connector	2	0	0.07	0.74	2	2	0.216	0.55	2	3	0.24	0.5	2	4	0.254	0.48
HP09_BtoB_4Connector	3	0	0.102	0.66	3	2	0.206	0.54	3	3	0.226	0.5	3	4	0.238	0.49
HP09_BtoB_4Connector	3	0	0.094	0.66	3	2	0.202	0.54	3	3	0.222	0.51				
HP10_BtoB_4Connector	0	0	0.001	0.99	0	2	0.154	0.6	0	3	0.18	0.56				
HP10_BtoB_4Connector	0	0	0.001	0.99	0	2	0.156	0.6	0	3	0.182	0.56	0	4	0.232	0.46
HP10_BtoB_4Connector	1	0	0.001	0.99	1	2	0.15	0.61	1	3	0.17	0.57	1	4	0.218	0.47
HP10_BtoB_4Connector	2	0	0.001	0.99	2	2	0.144	0.62	2	3	0.16	0.59	2	4	0.2	0.5
HP10_BtoB_4Connector	3	0	0.024	0.89	3	2	0.134	0.64	3	3	0.146	0.61	3	4	0.18	0.54
HP10_BtoB_4Connector	3	0	0.024	0.86	3	2	0.134	0.63	3	3	0.146	0.61				
HP11_BtoB_4Connector	0	0	0.001	0.99	0	2	0.228	0.54	0	3	0.246	0.5				
HP11_BtoB_4Connector	0	0	0.001	0.99	0	2	0.226	0.53	0	3	0.244	0.51	0	4	0.278	0.45
HP11_BtoB_4Connector	1	0	0.02	0.92	1	2	0.218	0.53	1	3	0.23	0.52	1	4	0.258	0.48
HP11_BtoB_4Connector	2	0	0.056	0.8	2	2	0.21	0.56	2	3	0.218	0.53	2	4	0.244	0.5
HP11_BtoB_4Connector	3	0	0.076	0.73	3	2	0.188	0.56	3	3	0.192	0.55	3	4	0.216	0.51
HP11_BtoB_4Connector	3	0	0.08	0.73	3	2	0.192	0.55	3	3	0.196	0.55				
HP12_Brd_1mCable_Bp_Drive	0	0	0.218	0.56	0	2	0.376	0.44	0	3	0.38	0.43	0	4	0.406	0.4
HP12_Brd_1mCable_Bp_Drive	3	0	0.286	0.44	3	2	0.338	0.43	3	3	0.342	0.42	3	4	0.352	0.42
HP13_Brd_6inCable_Bp_Drive	0	0	0.28	0.5	0	2	0.446	0.4	0	3	0.456	0.4	0	4	0.484	0.38
HP13_Brd_6inCable_Bp_Drive	3	0	0.33	0.44	3	2	0.348	0.43	3	3	0.36	0.43	3	4	0.384	0.41
HP14_6inCable_Bp_Drive	0	0	0.224	0.5	0	2	0.348	0.41	0	3	0.39	0.38	0	4	0.438	0.36
HP14_6inCable_Bp_Drive	3	0	0.208	0.53	3	2	0.252	0.48	3	3	0.292	0.43	3	4	0.34	0.41
HP24_BtoB_4Connector	0	0	0.001	0.99	0	2	0.118	0.67	0	3	0.156	0.58	0	4	0.168	0.56
HP24_BtoB_4Connector	3	0	0.001	0.99	3	2	0.106	0.68	3	3	0.132	0.61	3	4	0.136	0.6
HP25_BtoB_4Connector	0	0	0.001	0.99	0	2	0.102	0.69	0	3	0.16	0.56	0	4	0.168	0.55
HP25_BtoB_4Connector	3	0	0.001	0.99	3	2	0.094	0.68	3	3	0.136	0.58	3	4	0.15	0.55
HP26_BtoB_4Connector	0	0	0.001	0.99	0	2	0.134	0.66	0	3	0.186	0.57	0	4	0.202	0.53
HP26_BtoB_4Connector	3	0	0.026	0.88	3	2	0.128	0.66	3	3	0.162	0.6	3	4	0.17	0.58
HP27_BtoB_3Connector	0	0	0.014	0.94	0	2	0.228	0.52	0	3	0.266	0.47	0	4	0.27	0.47
HP27_BtoB_3Connector	3	0	0.102	0.61	3	2	0.202	0.51	3	3	0.228	0.48	3	4	0.232	0.48
HP28_BtoB_3Connector	0	0	0.08	0.73	0	2	0.266	0.5	0	3	0.306	0.44	0	4	0.316	0.42
HP28_BtoB_3Connector	3	0	0.144	0.57	3											