Driver Precomp Proposal, Review Matches George's proposed 00-378r0 SPI-4 numbers													
00-227r10	12-Oct-00			500 mV strong driver									
Paul Aloisi - Tl	370	475	495	500	560	620	700	740	800	Millivolt drive			
Nominal Voltage													
No driver imbalance, matched													
Driver Fall back 33%	244.2	313.5	326.7	330	369.6	409.2	462	488.4	528	560.6061 mV			
Driver Fall Back 40%	222	285	297	300	<b>336</b>	372	420	444	480	616.6667 mV			
Driver Fall Back 50%	185	237.5	247.5	250	280	310	350	370	400	740 Min high drive, for 370 mV			
Assuming perfect driver assy	s below are	are at the connector of the receiving device, use the numbers with DC						loss					
No Fall back	14	35	39	40	52	64	80	88	100				
Precomp off	10.3	30.25	34.05	35	46.4	57.8	73	80.6	92	5% DC loss from cable, connectors and terminators			
Worst case, no driver tolerance				35 mV						-5 mV receiver required - Adaptive Active Filter - no eye pattern			
Cable roll off to 60% signal -6													
Trans FB 33% roll off to 60%	64.32	99.6	106.32	108	128.16	148.32	175.2	188.64	208.8	mV signal at the receiver minus cable loss			
Trans FB 40% roll off to 60%	59.88	93.9	100.38	102	121.44	140.88	166.8	179.76	199.2	10% DC loss from cable, connectors and terminators			
Trans FB 40% roll off to 60%	73.2	111	118.2	120	141.6	163.2	192	206.4	228	10% DC loss from cable, connectors and terminators			
75 mV ((((V+VFB)*.6)-Vfb)*0.9)-60) 100 mV receiver required, 60 mV Crosstalk and System Nois													
Color code													
20 mV @ receiver	Grey is ilegal												
80 mV @ receiver													
100 mV @ receiver													
100 mV @ receiver													
100 mV @ receiver Driver Assymetry caclulation	s (	-73	-4.6	-2.6	46	12	24.2	20.9	20.2	Adaptivo Activo filtor required, evo pattorn			
100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10%	s ( -22	-7.3	-4.5	-3.8	4.6	13	24.2	29.8	38.2	Adaptive Active filter required, eye pattern			
100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10% Precomp off	s <u>-22</u>	-7.3 -13.95	-4.5 -11.43	-3.8 -10.8	4.6 -3.24	13 4.32	<u>24.2</u> 14.4	29.8 19.44	<u>38.2</u> 27	Adaptive Active filter required, eye pattern 10% DC lo 99-295 wide pulse			
100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10% Precomp off Improved Tolerance driver as Cable of Uoff to 50% simple.	s <u>-22</u> -27.18 symmetry S0 mV crosstal	-7.3 -13.95 10%	-4.5 -11.43	-3.8 -10.8 -1	4.6 -3.24 10 mV	13 4.32	24.2 14.4	29.8 19.44	<u>38.2</u> 27	Adaptive Active filter required, eye pattern 10% DC lo 99-295 wide pulse -35 mV rec Bold Black does not work without Adaptive Active Filter			
100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10% Precomp off Improved Tolerance driver as Cable roll off to 60% signal -6 Transe fb 23% roll of to 60%	s <u>-27.18</u> symmetry 60 mV crosstal 19 109	-7.3 -13.95 10% Ik & Noise	-4.5 -11.43	-3.8 -10.8 -1	4.6 -3.24 10 mV	13 4.32	24.2 14.4	29.8 19.44	38.2	Adaptive Active filter required, eye pattern 10% DC lo 99-295 wide pulse -35 mV rec Bold Black does not work without Adaptive Active Filter Recomme Purple 20 mV receiver - active Filter			
100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10% Precomp off Improved Tolerance driver as Cable roll off to 60% signal -6 Trans fb 33% roll off to 60%	s <u>-27.18</u> symmetry 0 mV crosstal 18.108 20.4	-7.3 -13.95 10% Ik & Noise 44.19	-4.5 -11.43 49.158	-3.8 -10.8 -1 50.4	4.6 -3.24 0 mV 65.304	13 4.32 80.208	24.2 14.4 100.08	29.8 19.44 110.016	38.2 27 124.92	Adaptive Active filter required, eye pattern 10% DC lo 99-295 wide pulse -35 mV rec Bold Black does not work without Adaptive Active Filter Recomme Purple 20 mV receiver - active Filter 10% DC lo Red 80 mV receiver			
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100 mV @ receiver Driver Assymetry caclulation No Fall back - toleranced 10% Precomp off Improved Tolerance driver as Cable roll off to 60% signal -6 Trans fb 33% roll off to 60% Trans fb 40% roll off to 60%	s -27.18 -27.18 symmetry 0 mV crosstal 18.108 26.1 39.42	-7.3 -13.95 10% Ik & Noise 44.19 54.45 71.55	-4.5 -11.43 49.158 59.85 77.67	-3.8 -10.8 -1 50.4 61.2 79.2	4.6 -3.24 10 mV 65.304 77.4 97.56	13 4.32 80.208 93.6 115.92	24.2 14.4 100.08 115.2 140.4	29.8 19.44 110.016 126 152.64	38.2 27 124.92 142.2 171	Adaptive Active filter required, eye pattern 10% DC lo 99-295 wide pulse -35 mV rec Bold Black does not work without Adaptive Active Filter Recomme Purple 20 mV receiver - active Filter 10% DC lo Red 80 mV receiver 10% DC loss from cable, connectors and terminators			
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## SPI-4 proposal to limit the strong driver to 500 mV minimum

SPI-3				107		=				
Nominal Voltage	320	340	400	427	485	500	600	700	800 Mil	livolt drive
SPI-2/3 driver	320	340	400	427	485	500	600	700	800	320
Isolated Transition	164	178	220	238.9	279.5	290	360	430	500_m\	signal at the receiver minus cable loss
SPI-3 Receiver signal	130.4	142.3	178	194.065	228.575	237.5	297	356.5	416 15 <sup>9</sup>	% cable loss
100 mV @ receiver	100	100	100	100	100	100	100	100	100 m\ Mit	/ nimum signal at the receiver
Tolorance driver										
SPI-2/3 driver	320	340	400	427	485	500	600	700	800	320
Cable roll off to 85% signal										
Trans FB min to assert (85%)	122.18	130.91	157.1	168.8855	194.2025	200.75	244.4	288.05	331.7 m\	signal at the receiver minus cable loss
SPI-2/3 calculations	94.853	102.2735	124.535	134.5527	156.0721	161.6375	198.74	235.8425	272.945 15°	% cable loss
Should be SPI-2/3	76.635	83.1825	102.825	111.6641	130.6519	135.5625	168.3	201.0375	233.775 25°	% cable & system loss

Additional Data on backplane losses shows that SPI-2 and SPI-3 should have been 25% loss. Minimum drive level did not work in the worst case.

mV

First step min 320 mV