

SAS 10m Cable Results (Stateye Analysis)

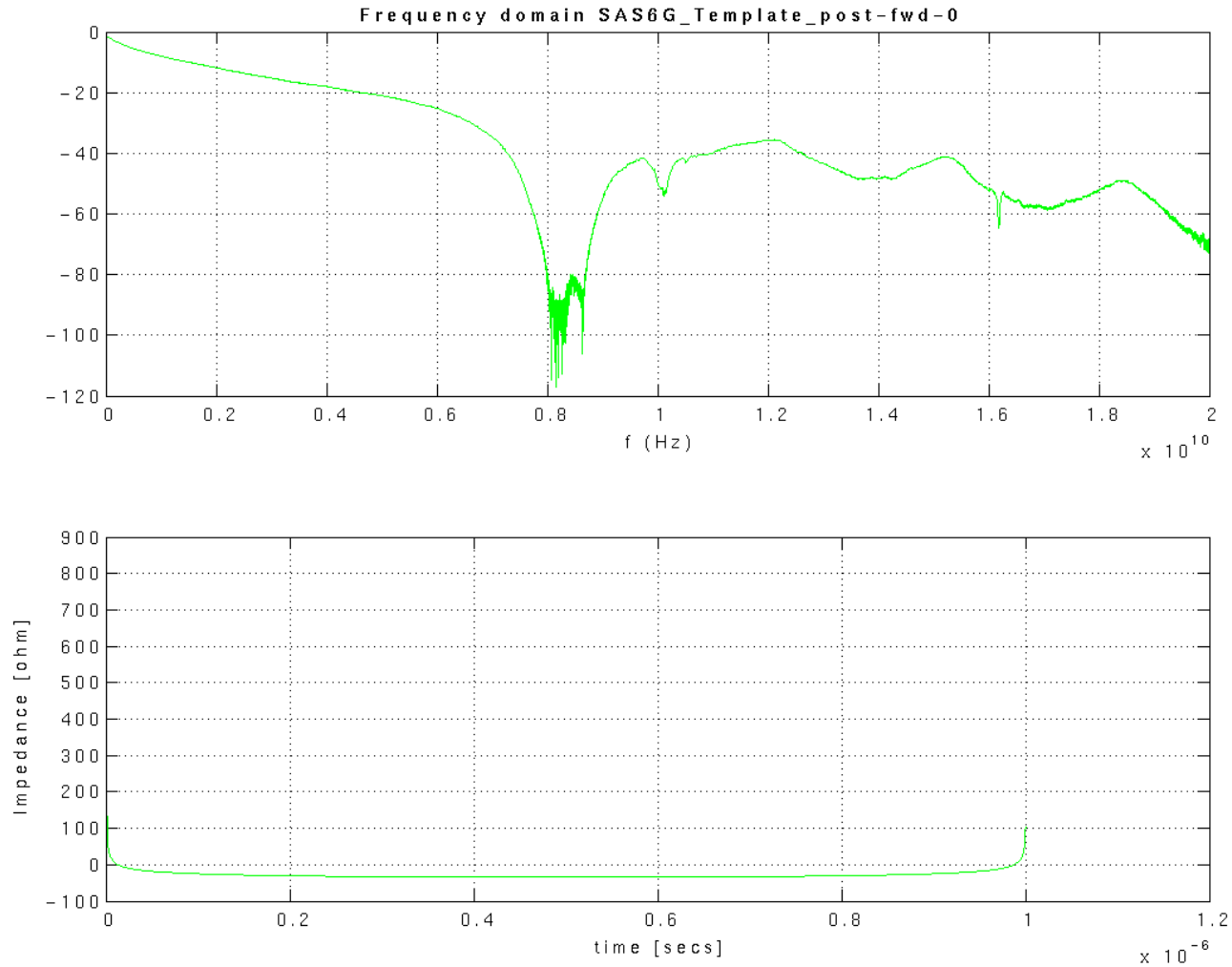
Anthony Sanders
Harvey Newman
Thu 28 Jun 07



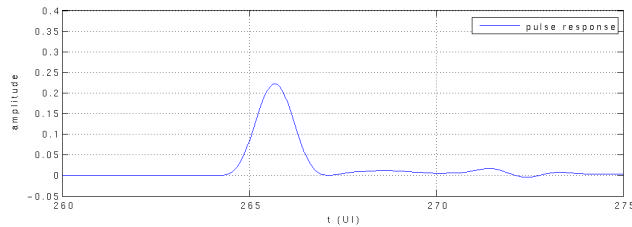
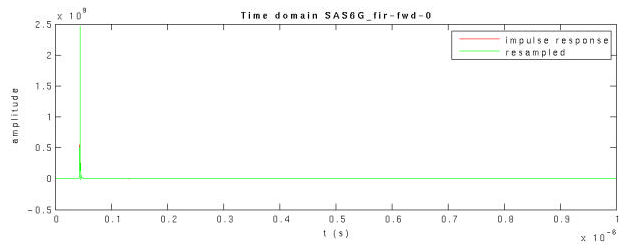
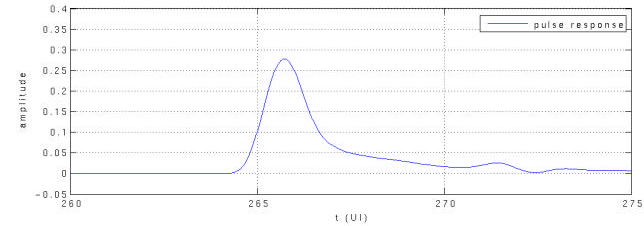
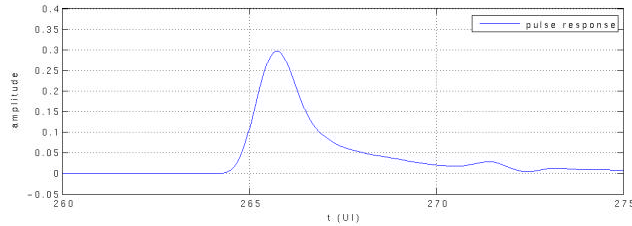
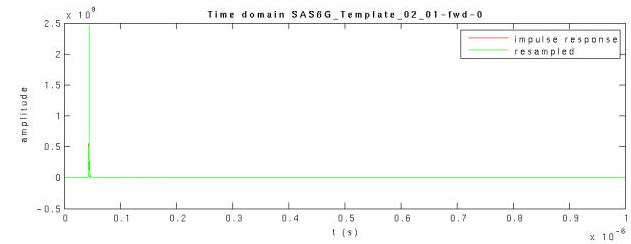
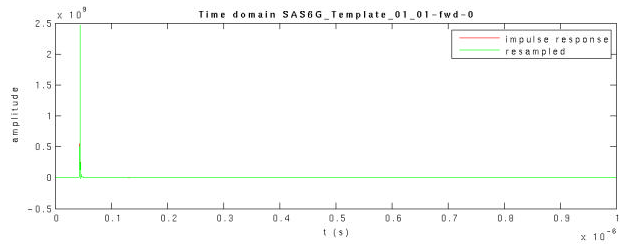
XML Input File

- Based on original exampleSAS2.xml
 - cascading of termination model is currently with model filter. Preferred would be a real s-parameter file including mode conversion, with frequency content upto same fmax as channel file
 - compares 2dB/3dB de-emphasis with 2/3 tap DFE
 - It is highly recommended that due to the size of the s-file, optimisation of the de-emphasis not be enabled.
 - v5 of stateye will have a different algorithm for dealing with this with first results for 8b10b by July 10th
 - DCD in xml file must be set to zero to avoid any crashing
 - zero padding version for stateye is currently being released to speed up simulation time for large channels

Frequency Response

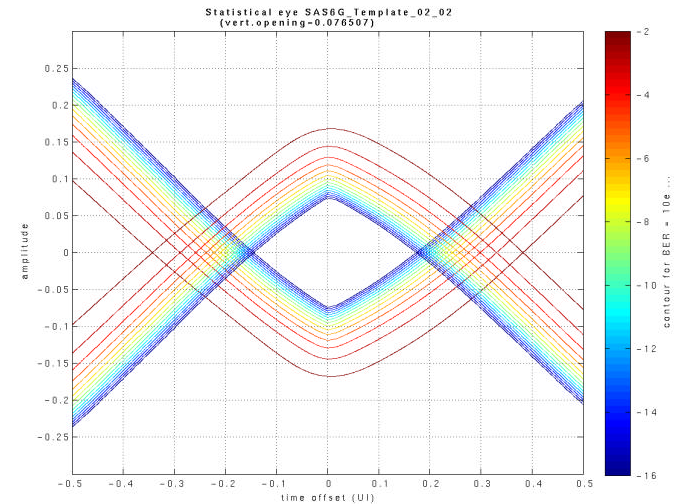
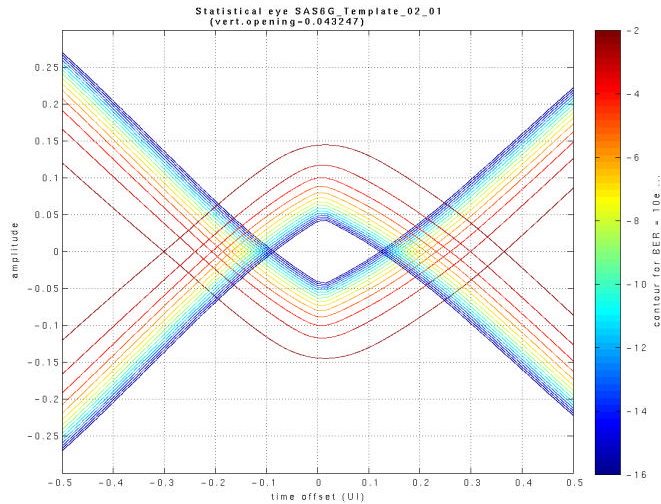
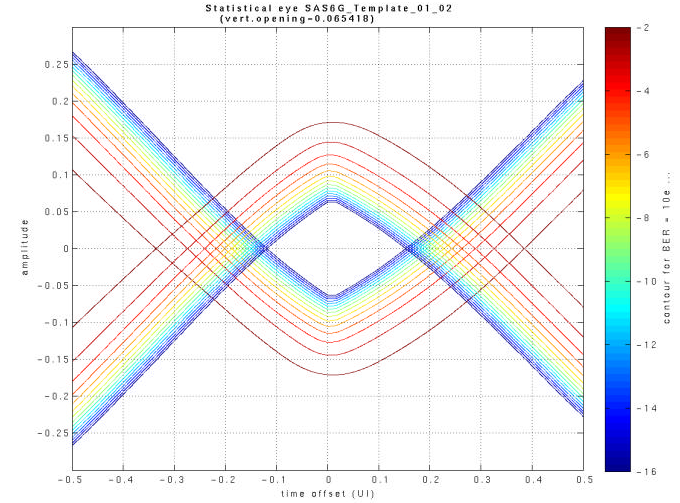
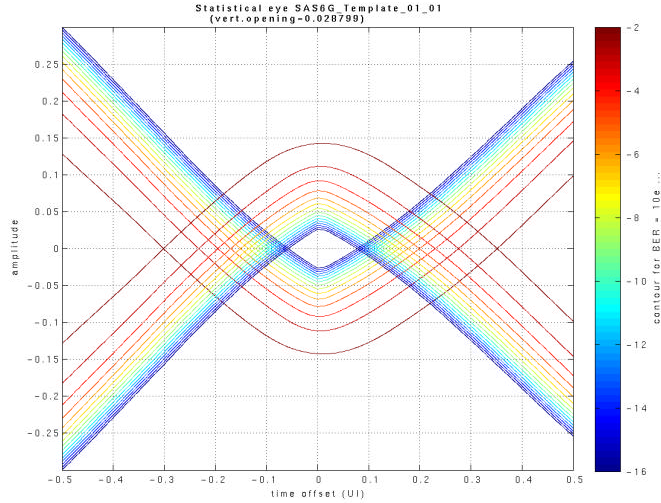


Pulse Responses

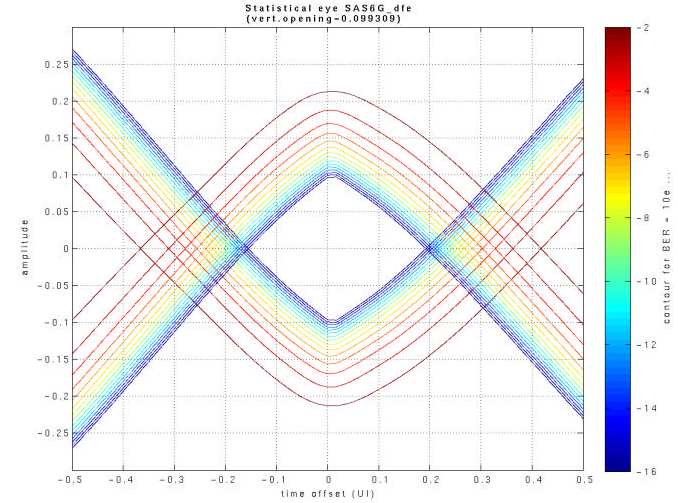
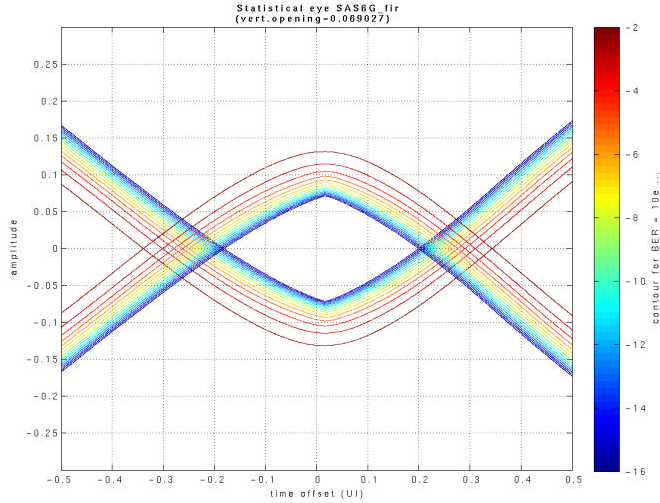


- 2dB and 3dB pre-emphasis are clearly not completely equalising the channel
- 8dB is necessary for complete compensation

Top Left=2dB+2tap, Top Right=2dB+3tap
Bot Left=3dB+2tap, Bot Right=3dB+3tap



Top Left=8dB+0tap, Top Right=0dB+5tap



- 8dB appears to give a good solution but no crosstalk is included, therefore it is inadvisable

- Once 5 tap DFE is enable, de-emphasis is not necessary

Results Overview (no conclusion)

Launch Voltage	800		mVppdif										
transmitterId	emphasis		receiverId	ber	dfe taps Number	dfetaps Found	Tx Jitter		Stateye			Tx max amplitude mV	eye opening mV
							jitterDj	jitterRj	dj	rj	eye Opening		
								rms		rms		mV	mV
SAS6G_Tx_2dB	0.9	-0.1	SAS6G_Rx_dfe2	1.00E-15	2	0.127666 0.0597772	0.180	0.011	0.472	0.024	0.029	800.000	23.039
SAS6G_Tx_2dB	0.9	-0.1	SAS6G_Rx_dfe3	1.00E-15	3	0.130187 0.0602403 0.0405122	0.180	0.011	0.357	0.023	0.065	800.000	52.335
SAS6G_Tx_3dB	0.85	-0.15	SAS6G_Rx_dfe2	1.00E-15	2	0.10481 0.0468414	0.180	0.011	0.424	0.023	0.043	800.000	34.598
SAS6G_Tx_3dB	0.85	-0.15	SAS6G_Rx_dfe3	1.00E-15	3	0.10481 0.0468414 0.0334261	0.180	0.011	0.338	0.021	0.077	800.000	61.206
SAS6G_Tx_8dB	0.7	-0.3	SAS6G_Rx_dfe0	1.00E-15	0	n/a	0.180	0.011	0.330	0.018	0.069	800.000	55.222
SAS6G_Tx_0dB	1		SAS6G_Rx_dfe5	1.00E-15	5	0.180941 0.0870382 0.0546845 0.0337655 0.0238217	0.180	0.011	0.286	0.022	0.099	800.000	79.447