To: T10 Committee
From: Rob Elliott, HP (elliott@hp.com)
Date: 12/14/2007
Subject: 08-031r0 StatEye v5.071210 results

The .zip file contains two python programs to run with StatEye v5.071210, current available from http://www.stateye.org/developmentForum/doku.php?id=v5.0.0. (StatEye is by Anthony Sanders, Infineon)

The python script files replace testcase.py:
1. metatest-071210-re.py - runs StatEye on multiple files with combinations of parameters (by invoking python on testcase-071210-resub.py). This cleans up Python memory leaks between runs.
2. testcase-071210-resub.py – modified version of Anthony's testcase.py that sets major parameters based on command line arguments, names output files based on the .s4p input filename, and outputs a .log file with the Amplitude and Jitter results.

Each 8b10b simulation takes about 5 minutes on a 2 GHz Intel Core2 Duo T7300 (so 192 simulations take about 16 hours). Random simulations take negligible time.

The Excel spreadsheet compiles the .log file results.

With 3-tap DFE and 8b10b, all channel models meet the proposed criteria in 07-339 (SAS-2 6 Gbps specification, by Alvin Cox, Seagate).

With 3-tap DFE and random data, the SAS Transmitter test load (10 m cable) fails.

With 0-tap DFE and either coding scheme, HP06, HP09, HP10, HP11, HP24, HP25, HP26, 6 m cable, and 10 m cable all fail at one or more deemphasis levels. Random data provides smaller eyes than 8b10b.

Desired eye size:

Amplitude goal (V)	0.1
Jitter goal (Uipp)	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 load (10m)	07-193r1