25% Precomp Cutback Level Proposal

SCSI Parallel Working Group
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Nashua, NH

Bruce Manildi
Seagate Technology
Data Collected

- Test Setup
- Proposed Changes
- Conclusions
Test Setup
Test Setup
Other Issues to Consider

- Power is an issue – Power (heat) relates to reliability

- With 50% cutback, the primary driver is at an extremely high level – even for minimum drive strength.

- The strong driver strength would be reduced by about 20%. Therefore the average voltage would be reduced by 10%. The power reduction is 20% ($V^2 - .9 \times .9 = .81$). In a typical driver this is a 300-350 mw reduction.
How much ISI is compensated for?

- Table 37 - SCSI Fast-160 timing budget template states:
  “ISI Compensation | 2.0 ns | Assumes 50% of ISI is compensated”

- 50% cutback compensates for 100+% of the ISI
25% Cutback Proposal

- Change Paragraph A.2.1 Driver requirements overview in Annex A to read:

“If precompensation is enabled, the weak driver amplitude shall be a minimum of 50 60% to a maximum of 66 75% of the strong driver amplitude after the first bit of a series of adjacent ones or adjacent zeros.”
Proposal (cont.)

- Change NOTE 49 to read:
- “If a weak driver is driving with the minimum amplitude specified in table A.2, then the 370 mV weak driver translates to a strong driver of 580 493 mV for the 66 75 % case ranging up to 740 616 mV for the 50 60 % case.”
Conclusion

- 25% cutback gives superior performance to 50% cutback
- 50% cutback increases power (by 300-359 mw)
- One would be better off (if more power is acceptable) to use 25% cutback and increase average voltage.