06-052r0 Enhanced SFF-8470, SFF-8086 and SATA Cable at 6Gbps

Kevin Witt & Mahbubul Bari
SAS-2 PHY Working Group
January 9, 2006
Meritec™ Cable and Efficere™ Interface Board

- Enhanced SFF-8470 Cable
  - 1, 5, 10 & 15m Cables Investigated
- High Performance Evaluation Card (4x-SMA-12R)
  - www.Efficere.com
SFF-8470 Options for SAS-2

Meritec™ & Efficere™ Cable and Board Technology @ 6Gbps

5m w/o De-Emphasis

5m w/ De-Emphasis

10m w/o De-Emphasis

10m w/ De-Emphasis

15m w/o De-Emphasis

15m w/ De-Emphasis
Standard SFF-8470 Cables & Efficere™ Interface Board

- Standard SFF-8470 Cable (6 & 9m)
- High Performance Eval Card (4x-SMA-12R)
  - [www.Efficere.com](http://www.Efficere.com)
- Interface Card De-embedded
- Anritzu 37397 65GHz 2-port VNA
Standard SFF-8470 Cables & Efficere™ Interface Board

- 6m w/o De-Emphasis
- 9m w/o De-Emphasis
- 6m w/ De-Emphasis
- 9m w/ De-Emphasis
3 Options for ~10m w/ Tx De-Emphasis Only

- g = 9m SFF-8470 & Efficere IF
- b = 10m Meritec & Efficere IF
- r = 10m Molex iPASS™ & IF

10m iPASS SFF-8086 w/ Molex IF Card

10m Meritec Enhanced SFF-8470 & Efficere IF Card

9m Standard SFF-8470 & Efficere IF Card

Note: Different Parts and Variable Launch Swing Used
Quick Look at SATA Cables for SAS-2

- 0.5m, 1m and 2m lengths @ 6Gbps
SATA Cables at 6Gbps

1m w/o De-Emphasis

2m w/o De-Emphasis

2m w/ De-Emphasis

1m SATA Cable is Open @ 6Gbps No Need for DE
Multiple Options Exist to meet the 10m SAS-2 Reach Objectives

- Enhanced SFF-8086 iPASS™ (05-426r0)
- Meritec™ Enhanced SFF-8470 Cables and Efficere™ PCB technology
- Standard SFF-8470 and Efficere™ PCB technology

SATA Cable Will Most Likely Not Need Much or Any Equalization at 6G

- 6G SATA Drives Will be Optimized for the SATA Channel
- SAS-2 Phys Will Need to Provide the Tx and Rx Equalization to Support SATA 6G Drives in SAS-2 Channels besides the SATA cable