

# VITESSE

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

Kevin Witt & Mahbubul Bari

SAS-2 PHY Working Group

January 9, 2006



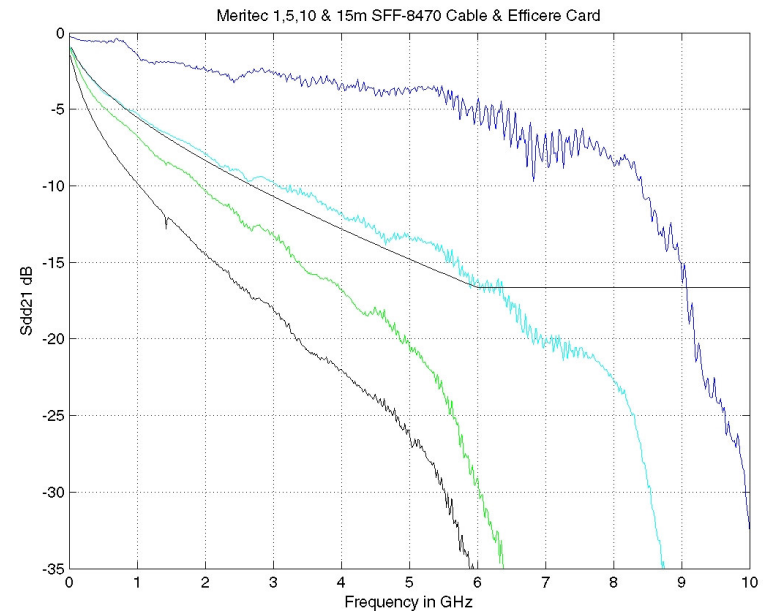
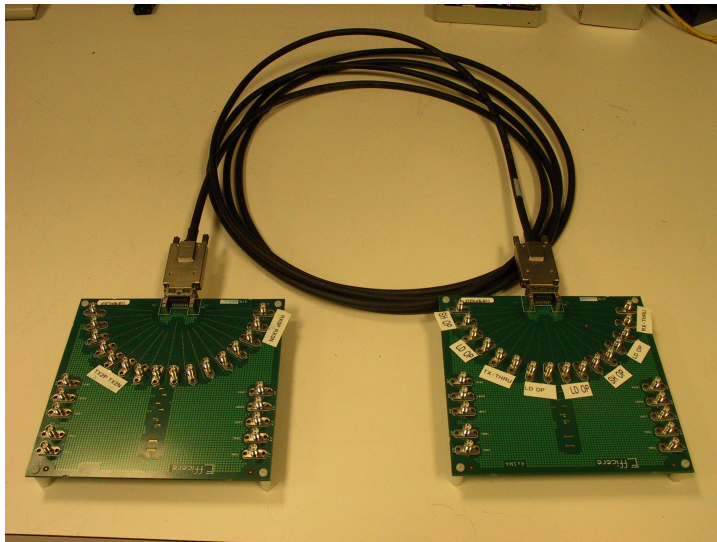
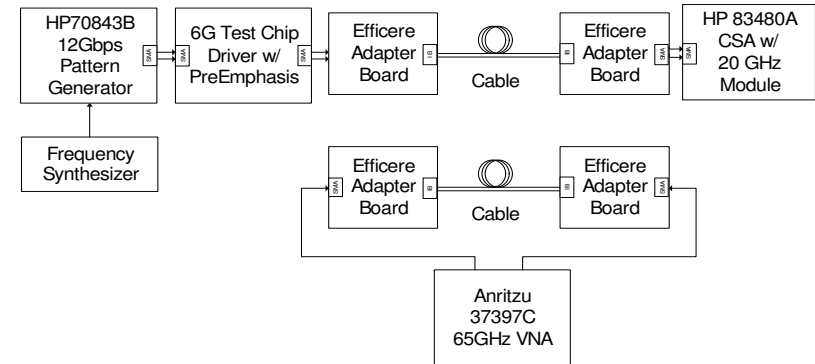
YOUR PARTNER FOR SUCCESS

# SFF-8470 Options for SAS-2

VITESSE

## 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](http://www.Efficere.com)

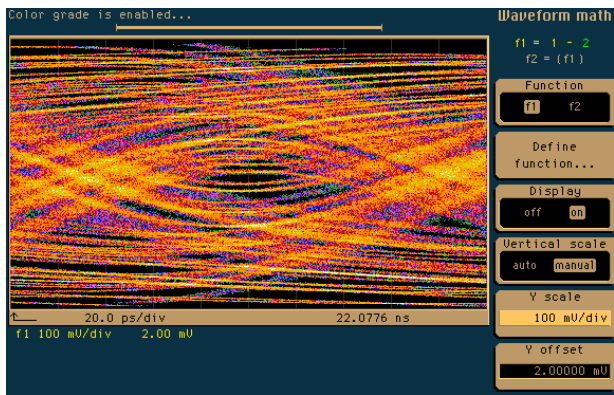


# SFF-8470 Options for SAS-2

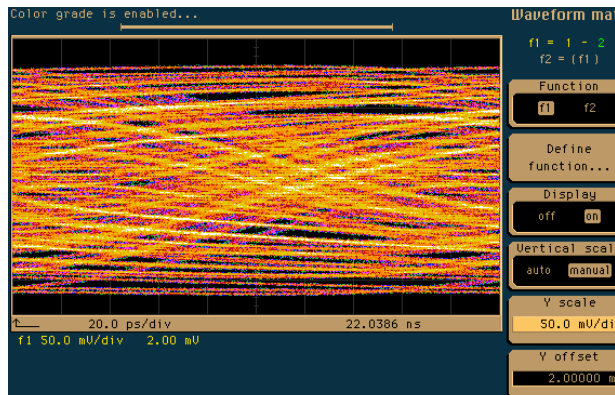
VITESSE

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

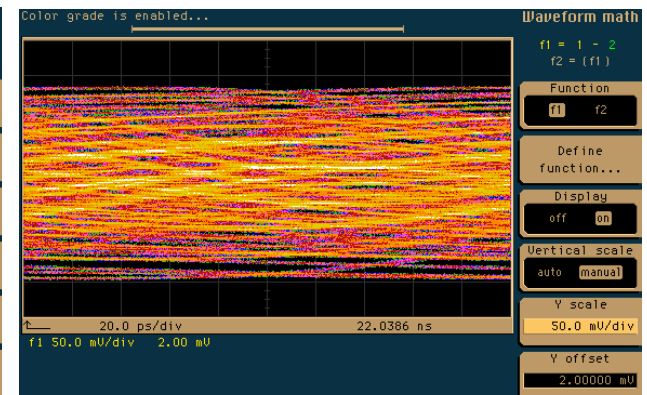
### 5m w/o De-Emphasis



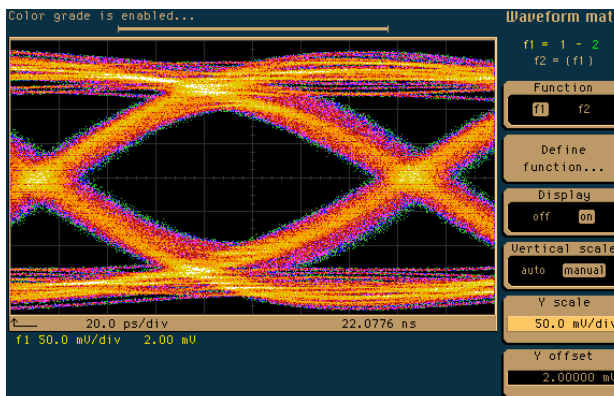
### 10m w/o De-Emphasis



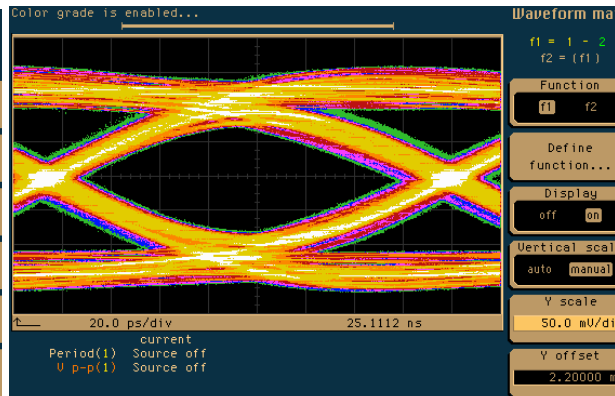
### 15m w/o De-Emphasis



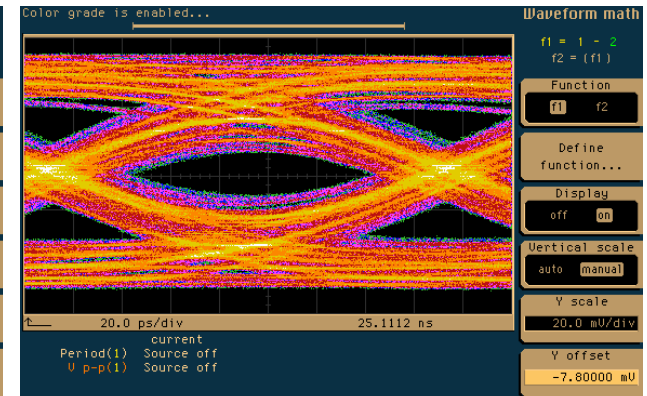
### 5m w/ De-Emphasis



### 10m w/ De-Emphasis



### 15m w/ De-Emphasis

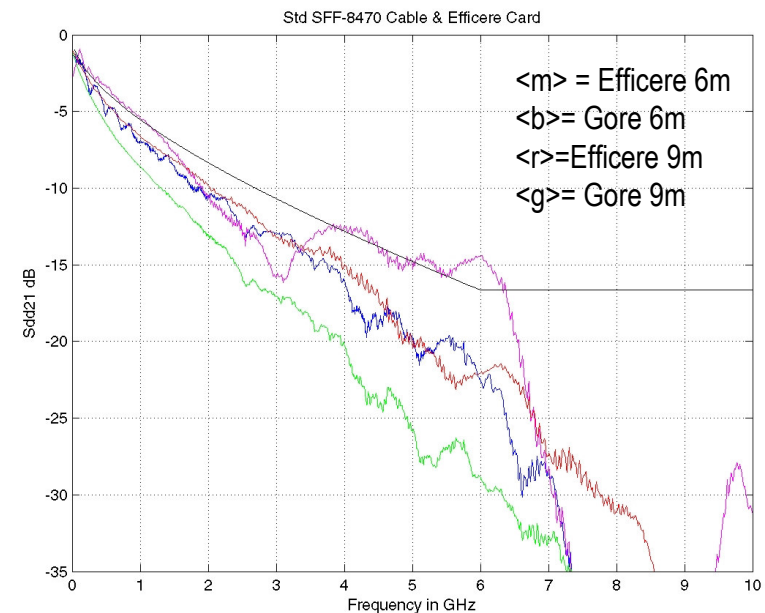
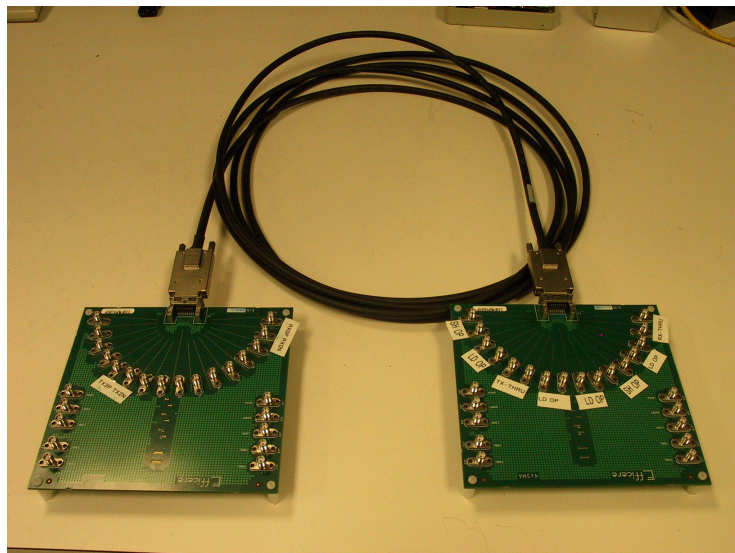
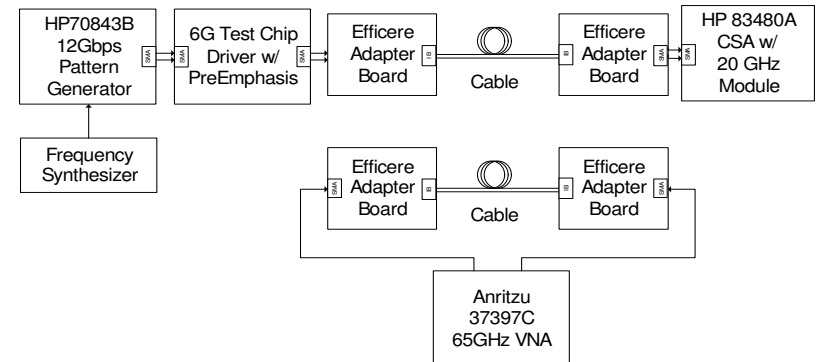


# SFF-8470 Option for SAS-2

VITESSE

## 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

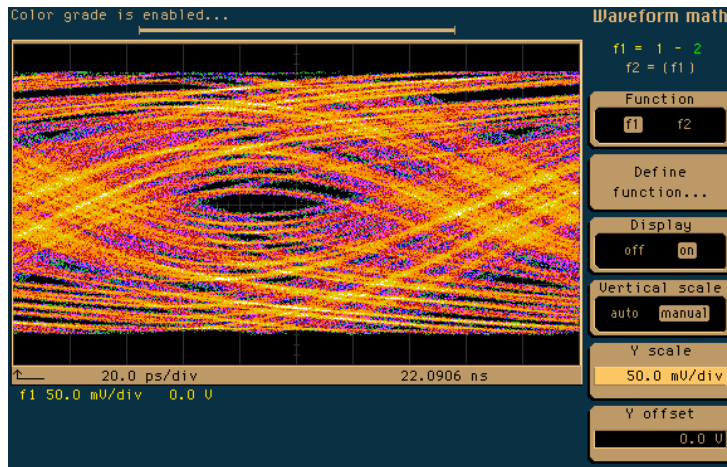


# SFF-8470 Option for SAS-2

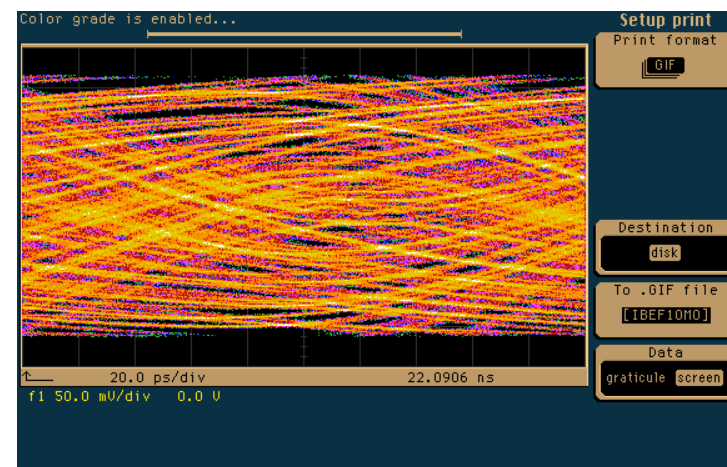
VITESSE

Standard SFF-8470 Cables & Efficere™ Interface Board

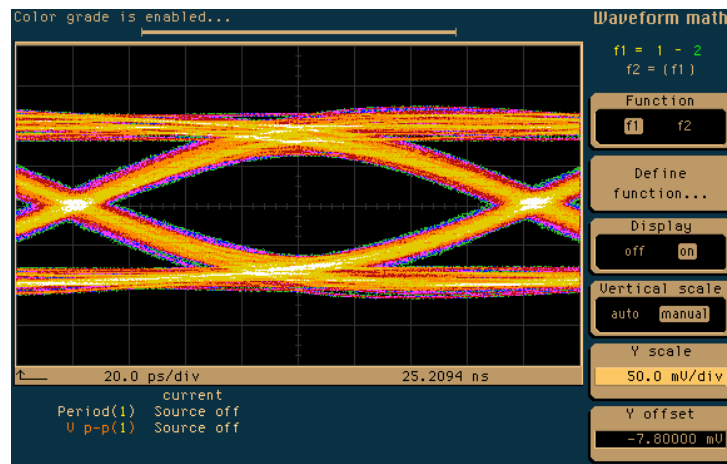
### 6m w/o De-Emphasis



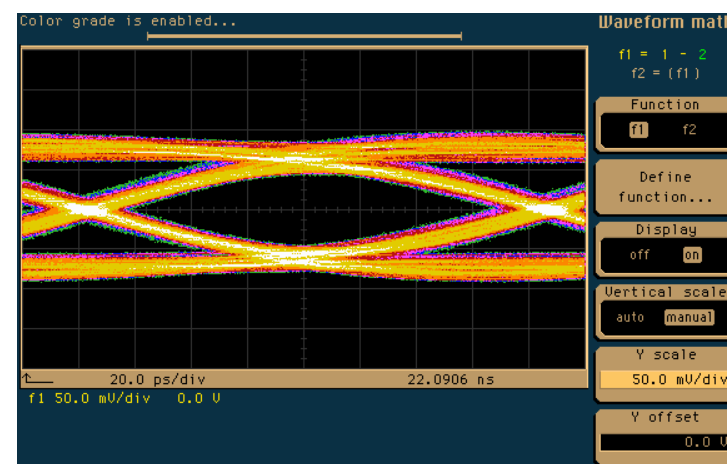
### 9m w/o De-Emphasis



### 6m w/ De-Emphasis



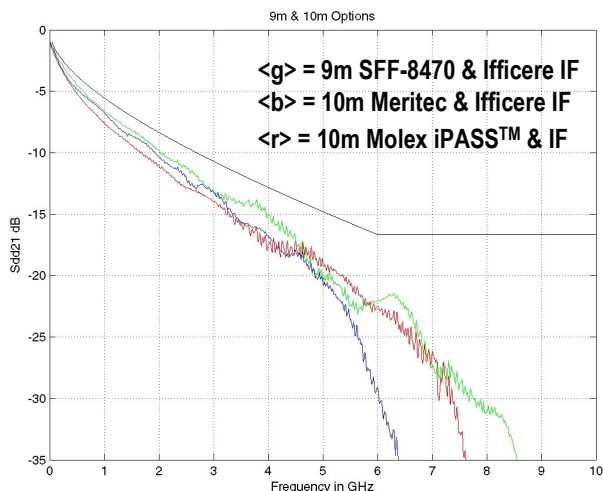
### 9m w/ De-Emphasis



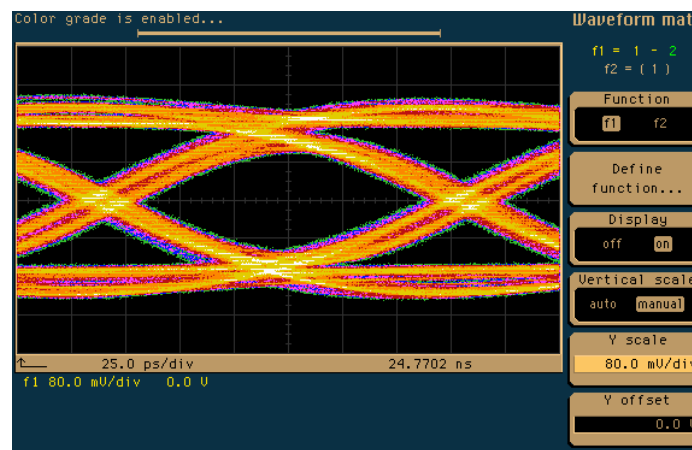
# 10m Options for SAS-2

VITESSE

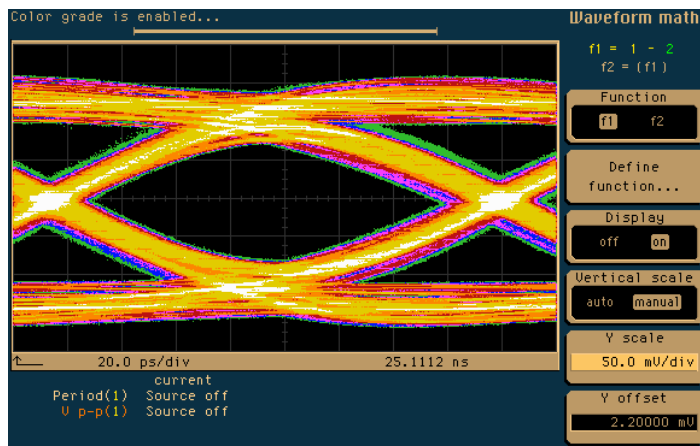
## 3 Options for ~10m w/ Tx De-Emphasis Only



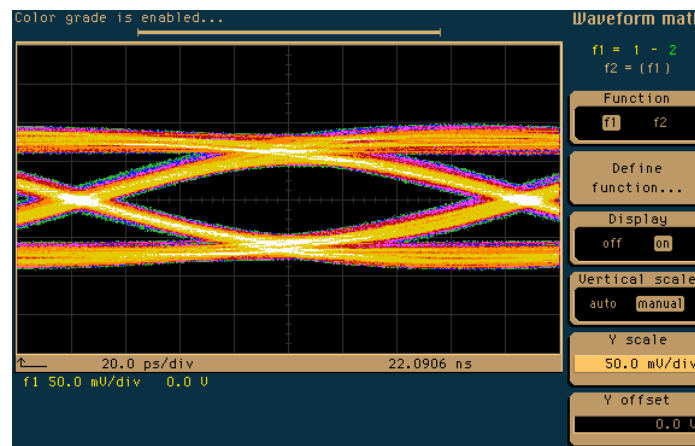
## 10m iPASS SFF-8086 w/ Molex IF Card



## 10m Meritec Enhanced SFF-8470 & Efficere IF Card



## 9m Standard SFF-8470 & Efficere IF Card



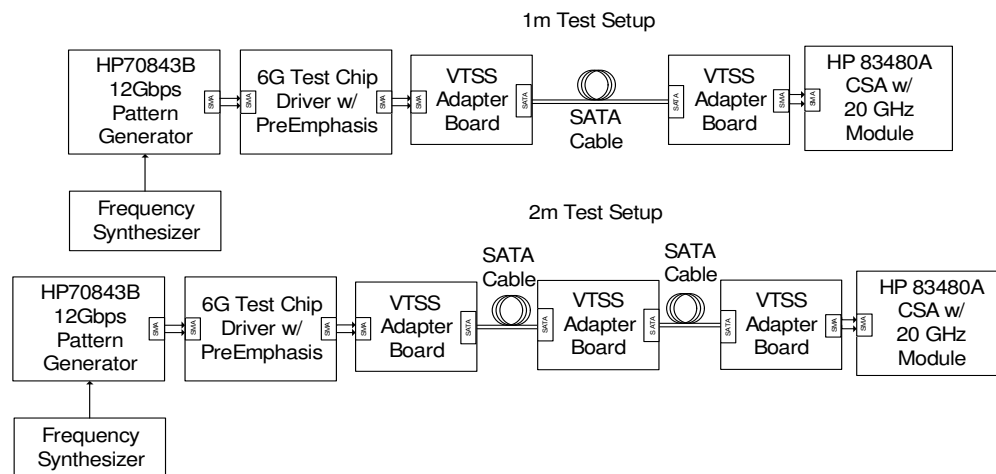
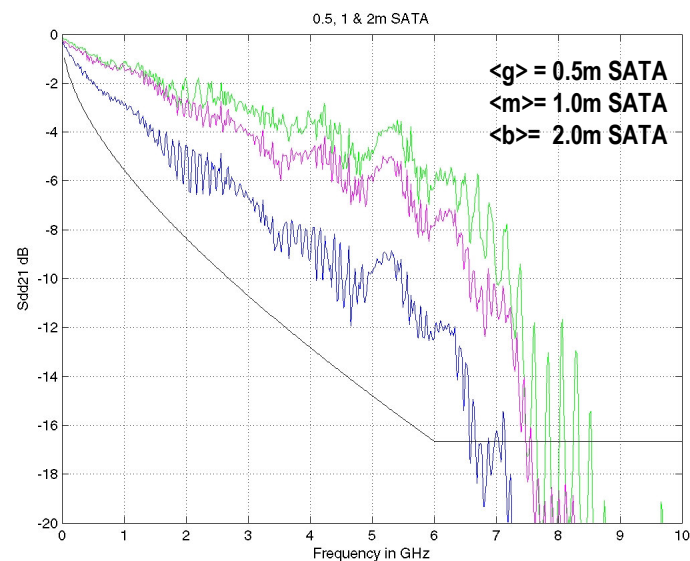
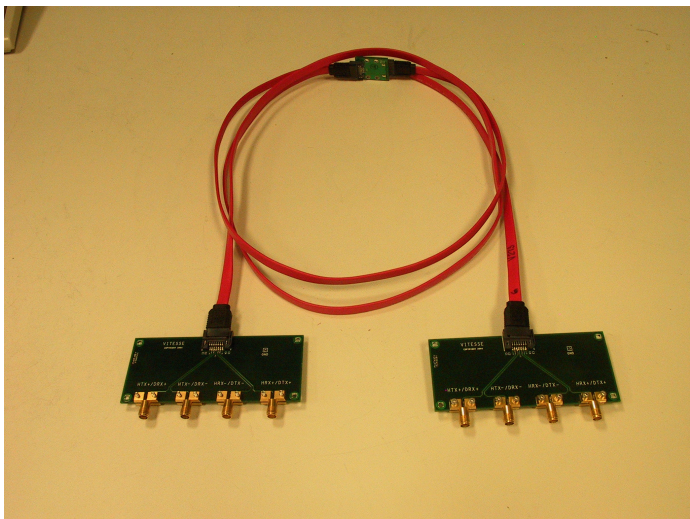
Note: Different Parts and Variable Launch Swing Used

# SATA Cables at 6Gbps

VITESSE

## Quick Look at SATA Cables for SAS-2

- 0.5m, 1m and 2m lengths @ 6Gbps

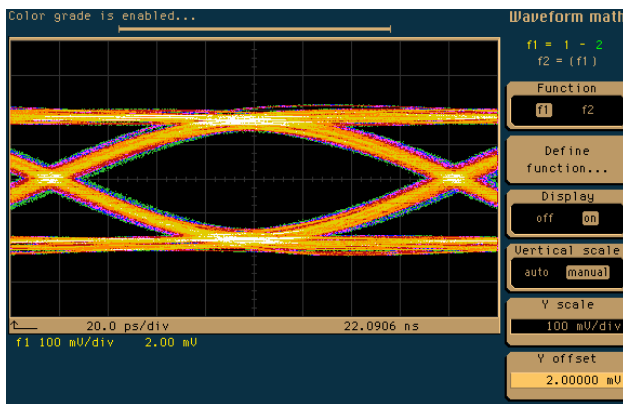


# SATA Cables at 6Gbps

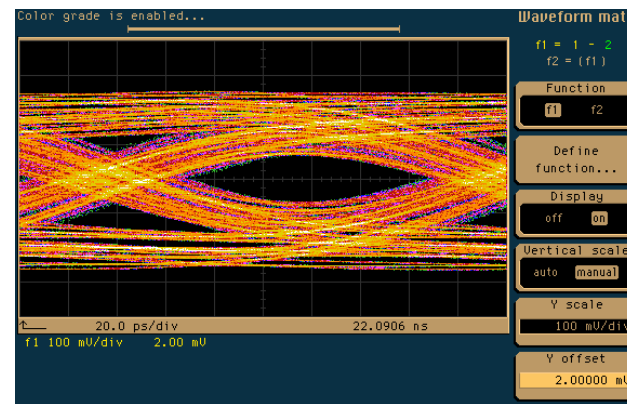
VITESSE

## SATA Cable @ 6Gbps

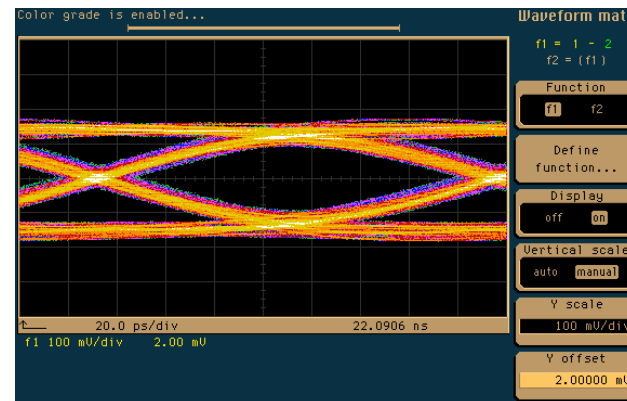
### 1m w/o De-Emphasis



### 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