

# 1394.b Copperheads Working Group

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## S400 (1394.a) to S800 (1394.b) Performance Evaluation - Phase 1

### Background:

- Cable identification mechanisms may be required at B operation speeds (S800 and S1600) to verify cable fitness.
- Are we assured that S400 compliant cables will operate at S800 or even S1600?

### Objective:

Determine if cable compliance to S400/1394.a will insure the ability to operate at S800/1394.b



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## S400/1394.a

Impedance -  
Signal Pairs

\* (Cable)

110 +/- 6 ohms  
differential

*at 200 ps risetime  
question 4.2.1.4.1*

\*\* (Connector)

110 +/- 25 ohms  
differential at  
500 ps risetime

\* (Cable)

*33 +/- 6 ohms  
common mode at  
200 ps risetime  
question 4.2.1.4.1*

## S800/1394.b

110 +/- 6 ohms  
differential at  
< 100 ps risetime

*110 +/- 20 ohms  
differential  
at 250 ps risetime  
ref. Table 5-1 and 5-3  
question 5.6.4*

33 +/- 6 ohms  
common mode at  
< 100 ps risetime



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## S400/1394.a

## S800/1394.b

### \*\* Attenuation -

#### Signal Pairs

100 MHz < 2.3 dB

< 2.3 dB

200 MHz < 3.2 dB

< 2.3 dB

400 MHz < 5.8 dB

< 2.3 dB

800 MHz

TBD

1600 MHz

TBD

3200 MHz

TBD

### Velocity of

### Propagation

$V_{\text{TPA/TPB}}$  < 5.05 ns/m

< 5.05 ns/m

### Relative Propagation Skew

#### - Signal Pairs

S < 400 ps

S < 400 ps



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## S400/1394.a

**\*\* Differential  
Propagation  
Skew  
- Signal Pairs**

None

**\*\* Crosstalk**

X < - 26 dB  
common mode  
1 - 75 MHz

## S800/1394.b

S < 5% of UI  
(TBD)  
where at 1 Gbd  
UI = 1ns  
S < 50 ps

TPA/TPB Differential  
TBD  
X < -26 dB  
1 - 2000 MHz

### Legend:

No star indicates spec overlap

\* Single star indicates minor discrepancy

\*\* Double star indicates major discrepancy