To: T10 Technical Committee
From: Rob Elliott, Compaq Computer Corporation (Robert.Elliott@compaq.com)
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Subject: SPI-3 Setup and Hold Timings text changes

SPI-3 Revision 8 Section 9.4 "Setup and Hold Timings" used to be broken into several sections, one per speed (SPI-3 had sections for Fast-10, Fast-20, and Fast-40). With the text merged into one ST section and one DT section, some of the original intent was losI. The fast-20 sentence in the ST section, for example, used to be in the fast-20 section, after a paragraph explaining that the rules in that section applied to devices which supported up to fast-20 speeds. Now that all the ST sections have been merged, all the speeds need to be mentioned and the proper qualifications need to be made.

9.4.1 ST data transfer calculations
Figure 49 shows how the setup and hold times are calculated for various physical configurations on SCSI devices that support ~~SE~~ ST data transfers. The minimum ~~set up~~setup and hold timings specified in figure 49 shall be used. Note that these values are different for the driver and the receiver but that the receiver sensitivity provides the threshold points for both. This is required because both extreme cases of attenuation need to be covered:
> a) receivers connected to drivers with very short interconnect, and
> b) receivers connected to drivers through worst case interconnect.

~~Fast-20 setup and hold times shall apply even if a slower transfer rate is negotiated.~~

~~Fast-40 ST data transfer setup and hold times shall apply when a transfer rate of greater than 20 megatransfers/second and up to 40 megatransfers/second is negotiated.~~
Fast-5 ST data transfer setup and hold times shall apply when a device supports a maximum transfer rate less than or equal to 5 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-10 ST data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 5 and less than or equal to 10 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-20 ST data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 10 and less than or equal to 20 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-40 ST data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 20 and less than or equal to 40 megatransfers/second, even if a slower transfer rate is negotiated.

9.4.2 DT data transfer calculations
Figure 50 shows how the setup and hold times are calculated for various physical configurations on SCSI devices that support DT data transfers. The minimum ~~set up~~setup and hold timings specified in figure 50 shall be used. Note that these values are different for the driver and the receiver but that the receiver sensitivity provides the threshold points for both. This is required because both extreme cases of attenuation need to be covered:
> a) receivers connected to drivers with very short interconnect, and
> b) receivers connected to drivers through worst case interconnect.

~~Fast-80 DT data transfer setup and hold times shall apply when a transfer rate of greater than 40 magetransfer/second and up to 80 megatransfer/second is negotiated.~~
Fast-10 DT data transfer setup and hold times shall apply when a device supports a maximum transfer rate of up to 10 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-20 DT data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 10 and less than or equal to 20 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-40 DT data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 20 and less than or equal to 40 megatransfers/second, even if a slower transfer rate is negotiated.

Fast-80 DT data transfer setup and hold times shall apply when a device supports a maximum transfer rate greater than 40 and less than or equal to 80 megatransfers/second, even if a slower transfer rate is negotiated.