



Proposal On 80 Mega Transfers

- **Basic Idea Is To Use Dual Edge Clocking**
 - Keeps frequency same as 40
 - Frequency related loss issues highest concern



Proposal On 80 Mega Transfers

- **Changes:**
 - 28 gauge mandatory
 - Reduce bias voltage
 - Was based on assumptions no longer valid
 - Decide on way to solve ISI problem which is also problem with NRZ data string
 - Use expanders for backplane impedance control



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- **Reduce Distance**
 - Verify loss in MP and PP configurations
 - Keep loss to less than 6 db over all MP and PP configurations
 - Require 28 gauge as minimum
 - Suggest 6 m MP since this is original SCSI distance



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- **Reduced Bias Voltage**

- Bias voltage based on 20 microamps leakage of 16 devices
- More realistic number 10 microamps
- Could reduce to 30 mv (extreme lower limit)
- Provides 70 mv more margin



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- **Inter-Symbol Interference Problem**
 - Shown before that is issue with clock line
 - Using dual edge clock may be issue with data lines
 - Long 1 or 0 string may cause data to have first pulse problem
 - Propose variable strength driver to resolve this on clock
 - To be determined if needed on data lines

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- **Use Expanders For Backplane Impedance Matching**
 - Due to impedance discontinuity expander is solution at these frequencies (with retiming)
 - Cost usually not an issue with backplanes and complex systems



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- **Concerns:**

- DC bias due to NRZ code
 - NRZ code with long 1 or 0 string may not be detected on first transition
- Possible solutions
 - Try to eliminate with multi-strength drivers on each data line
 - Could be eliminated with encoding, but would reduce transfer rate and increase gate count



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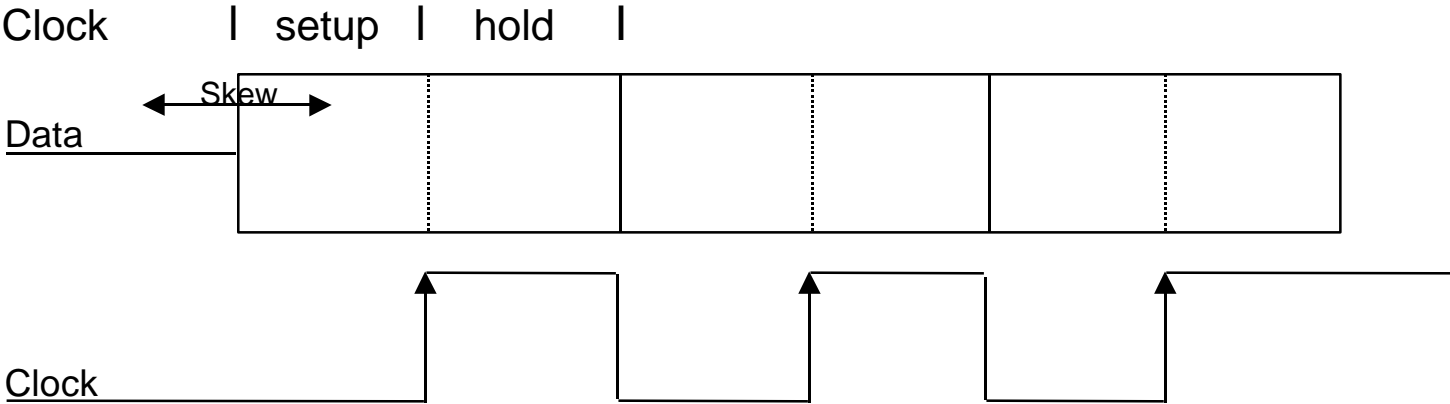
- **Concerns:**

- Setup and hold timing
 - Reduced by half, since data frequency 2X
- Possible solutions
 - Reason to reduce distance is to cut data line to clock line skew
 - High quality cables
 - Or could consider compensation scheme as done in HIPPI but would require changes to way data phase done

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SKEW

Single Edge Clock
40 MT



Dual Edge Clock
80 MT

