

Proposal for 6G SAS
TX Specification
via Reference Receiver

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The Question...

Whether to specify TX de-emphasis and, if so, how?

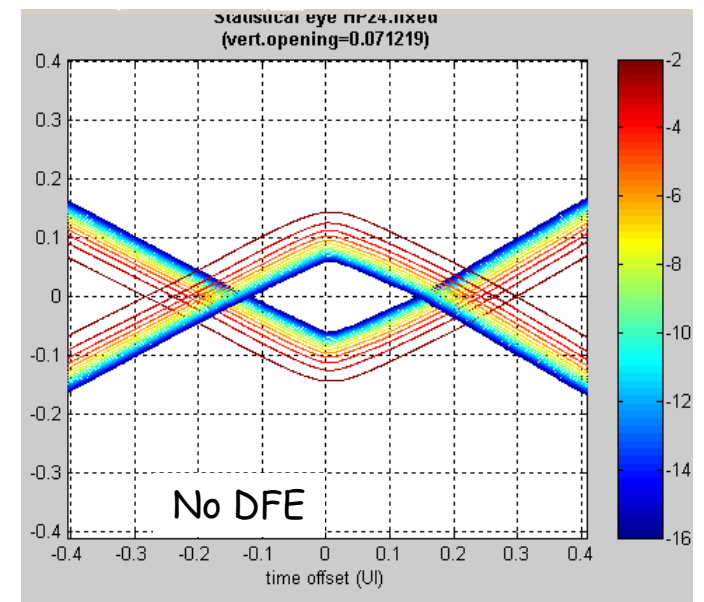
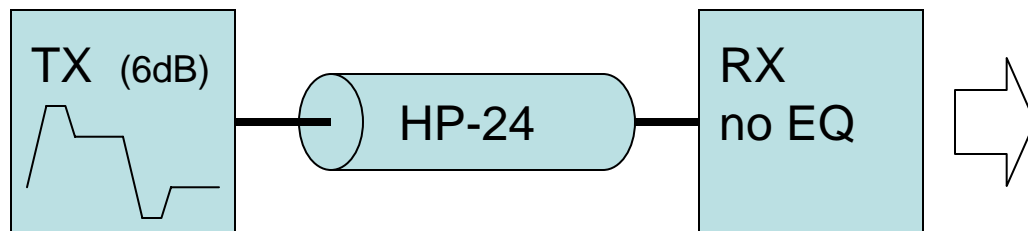
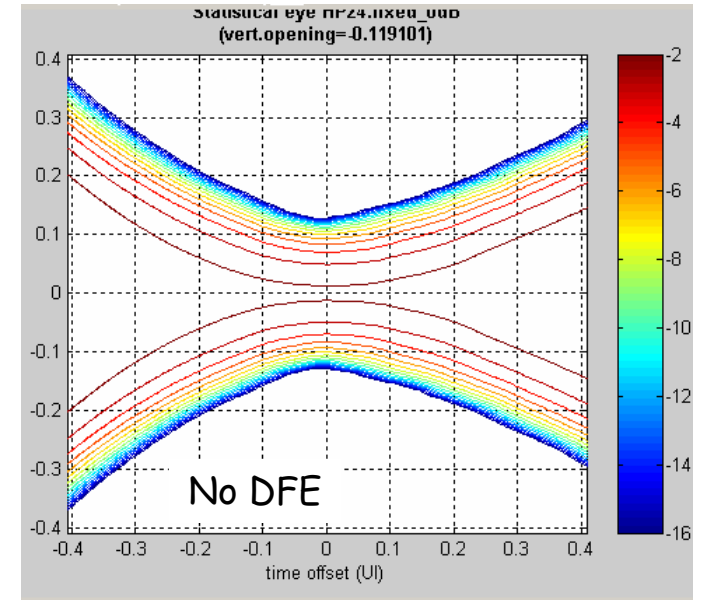
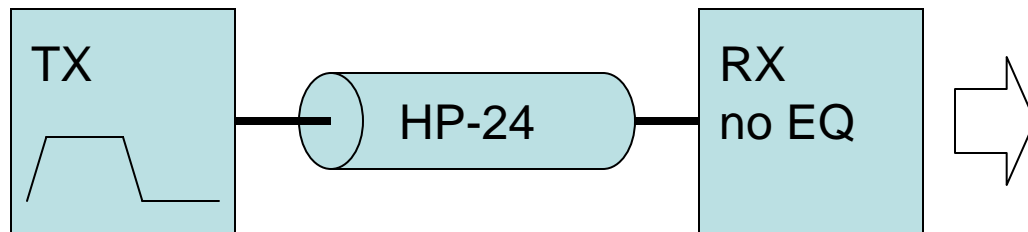
- 6dB TX de-emphasis clearly produces open eye after worst case channels
- TX de-emphasis causes more crosstalk & EMI for a given eye height
- Equalization via DFE in RX theoretically reduces noise

The Answer...

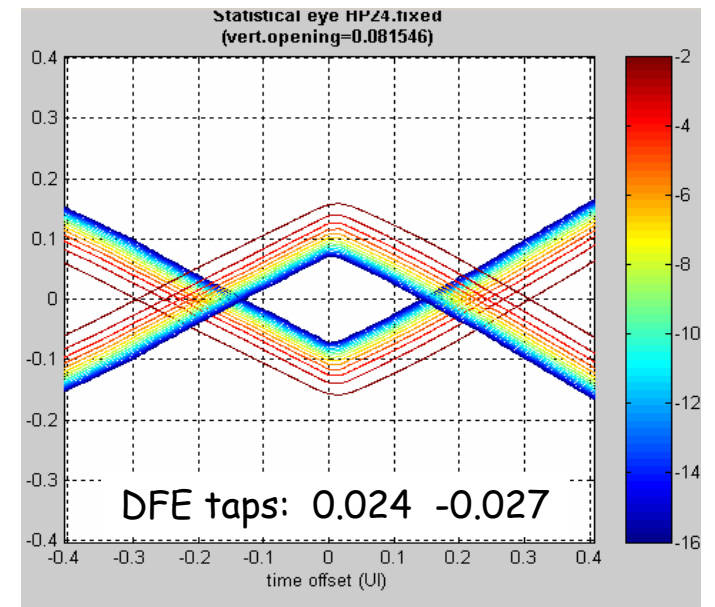
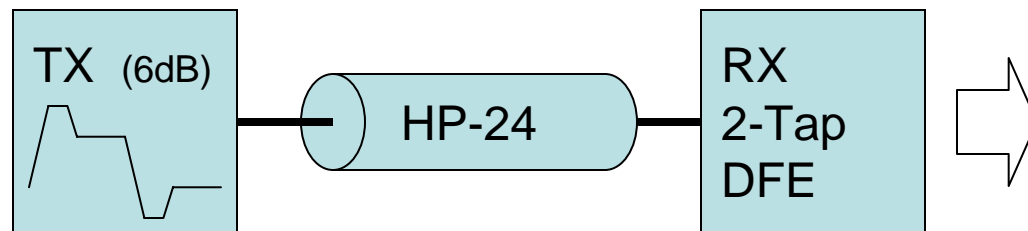
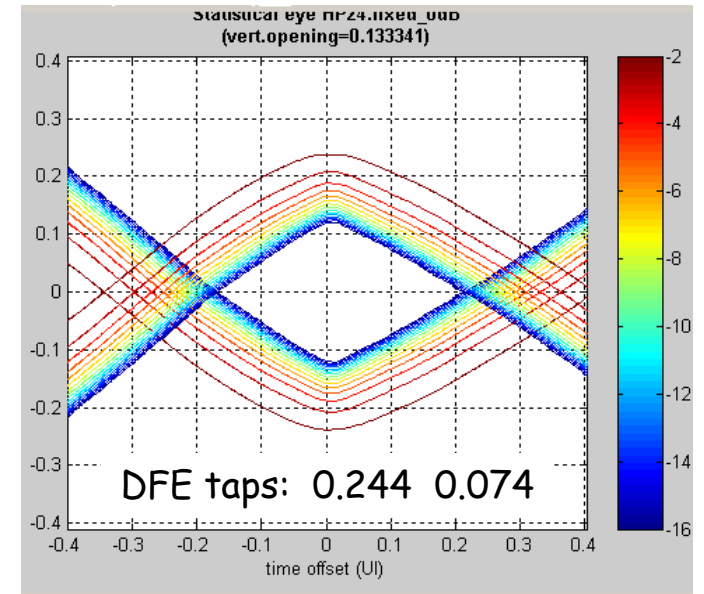
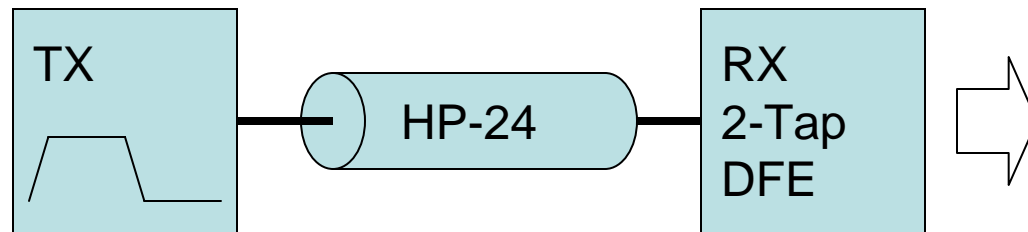
Avoid the question!

- Specify TX performance via reference channel(s) & reference RX
 - OIF CEI 6G "Medium Reach"
- Reference RX is 2-tap DFE

Effect of TX De-emphasis: No RX Equalization



Effect of TX De-emphasis: RX with DFE



Conclusion

- Best to defer decision on level of TX de-emphasis
- OIF CEI provides a framework to accomplish this:
 - "2.4 Method D This sub-clause defines the interoperability methodology specifically for interfaces where transmit emphasis may be used and the receiver eye requires DFE equalization (from channel interoperability point of view) to be open to within the BER of interest."
 - Proposed: 2-tap reference receiver & single post-cursor tap TX FFE with max de-emphasis of 6 dB