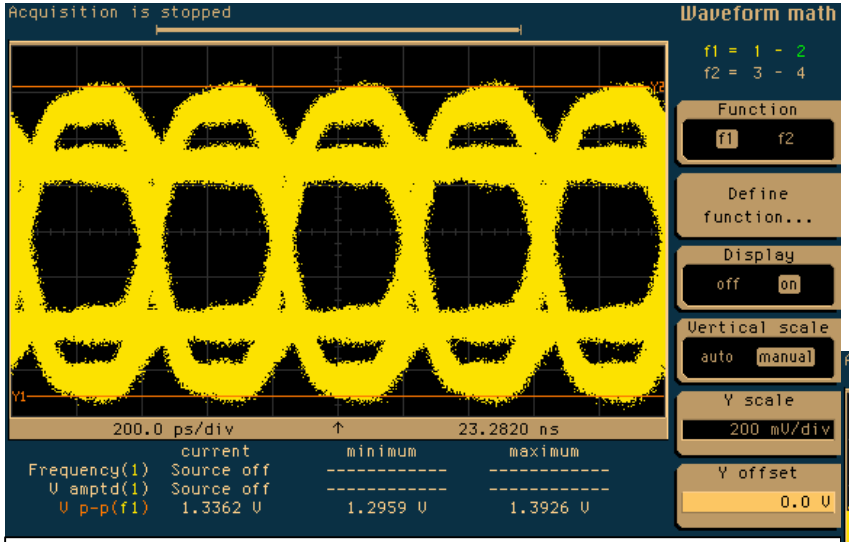
Equipment Room Copper Cabling Proposal

Proposed Topology: 4 SerDes x 3.125 GBd (each SerDes) employing standard fiber-channel cable or other suitable coax cable.

Features:

- Low-cost SerDes Devices exist
- Cabling Exists (two different options)
- Distance capability has been proven (up to 15 m with twin-ax cabling.)

Measurements on 2.5 GBd SerDes (with on-chip equalization) with fiber-channel cable



Shows no cable attached

Figure 1: 2.5 GBd SerDes direct (differential) output

At the end of 10m of non -equalized fiber-channel cable

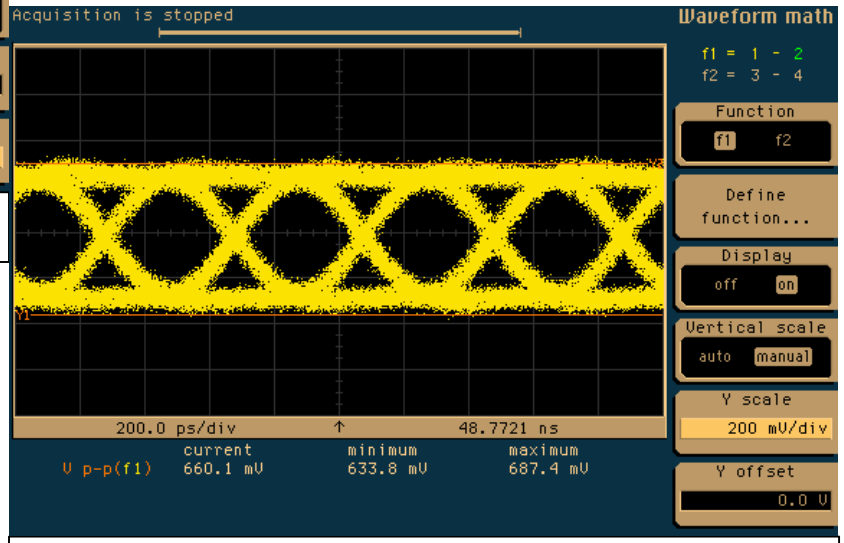


Figure 2: 10m of unequalized Metagig Cable with 2.5GBd SerDes

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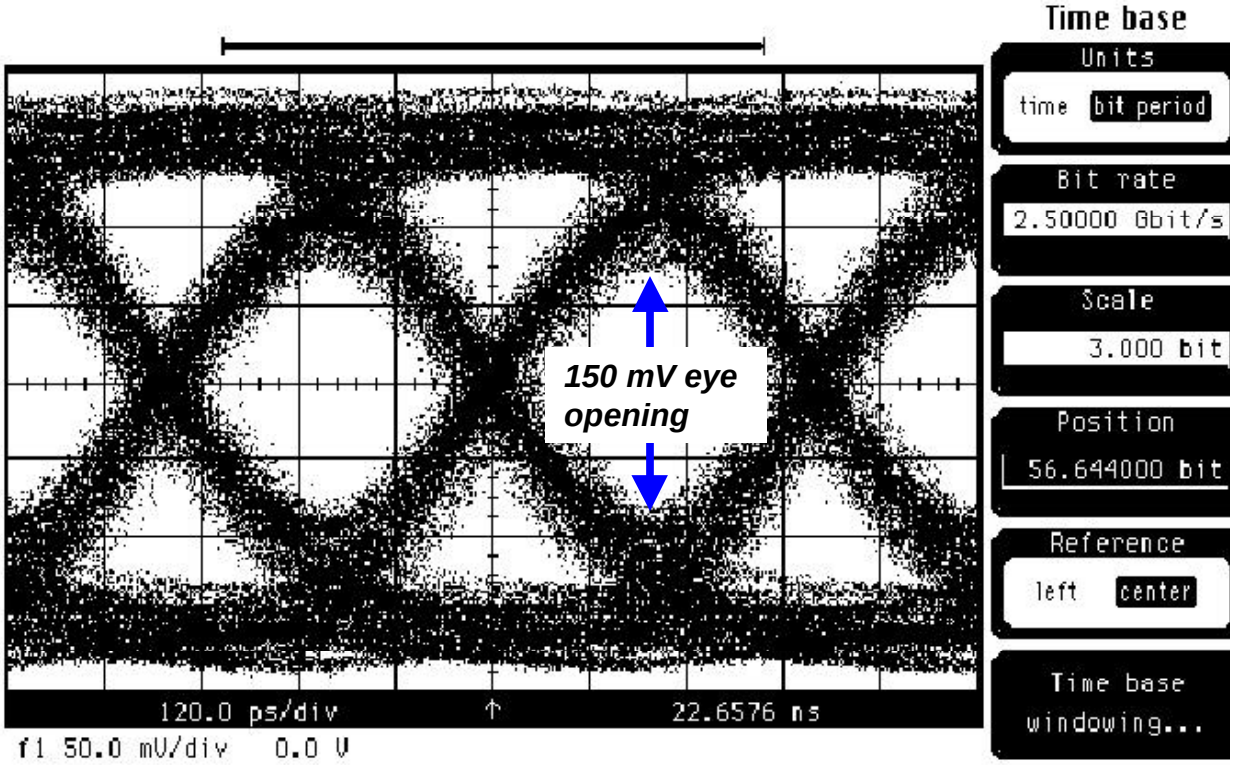
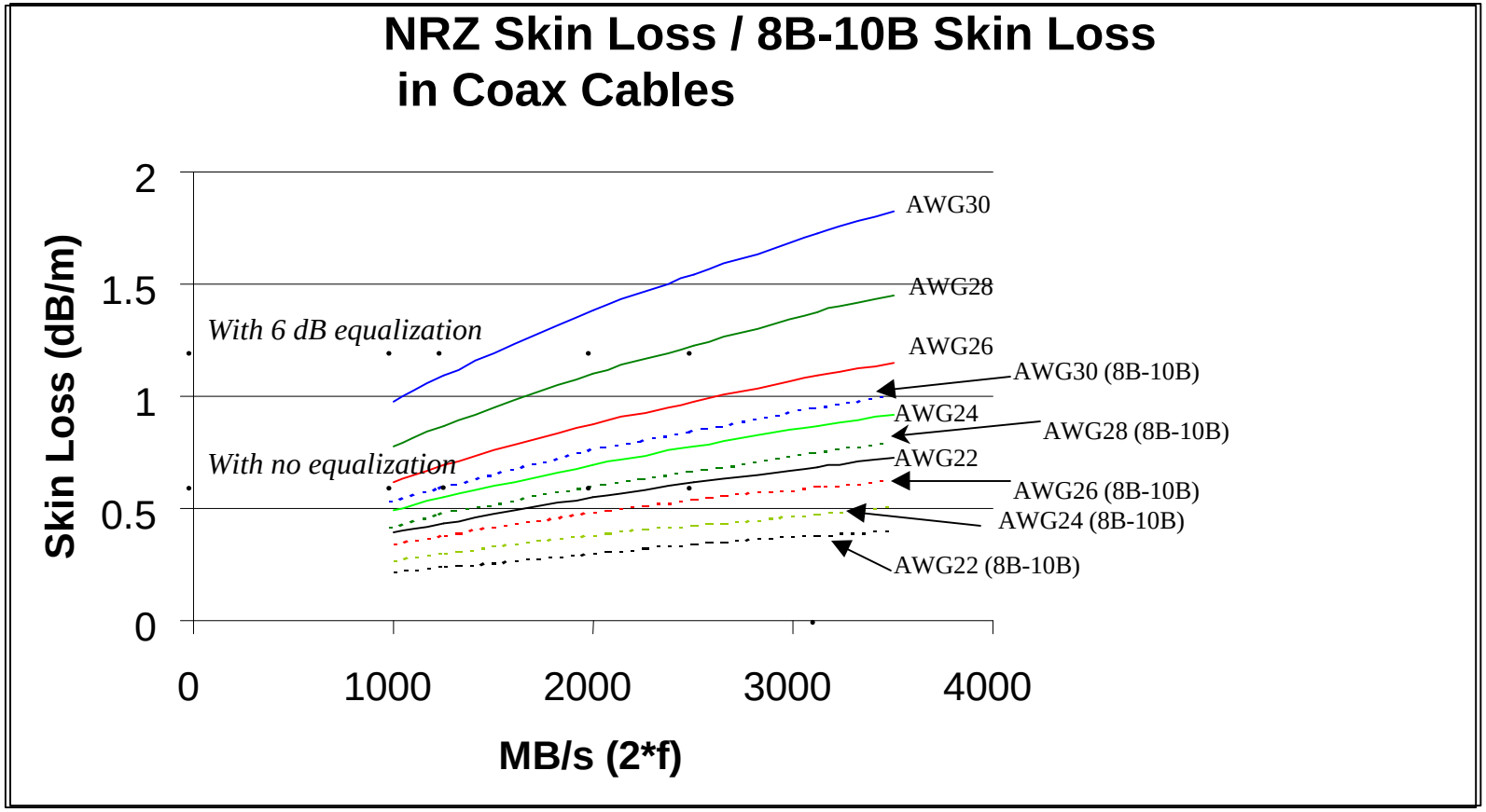
PROOF OF CONCEPT: Measurements on 2.5 GBd SerDes (with on-chip equalization) with 15m twin-ax cable



Although 3.125 GBd part is not shown here, the above eye after 15m of cable would approximate same eye opening as 10m of cable operating at 5.6 GBd

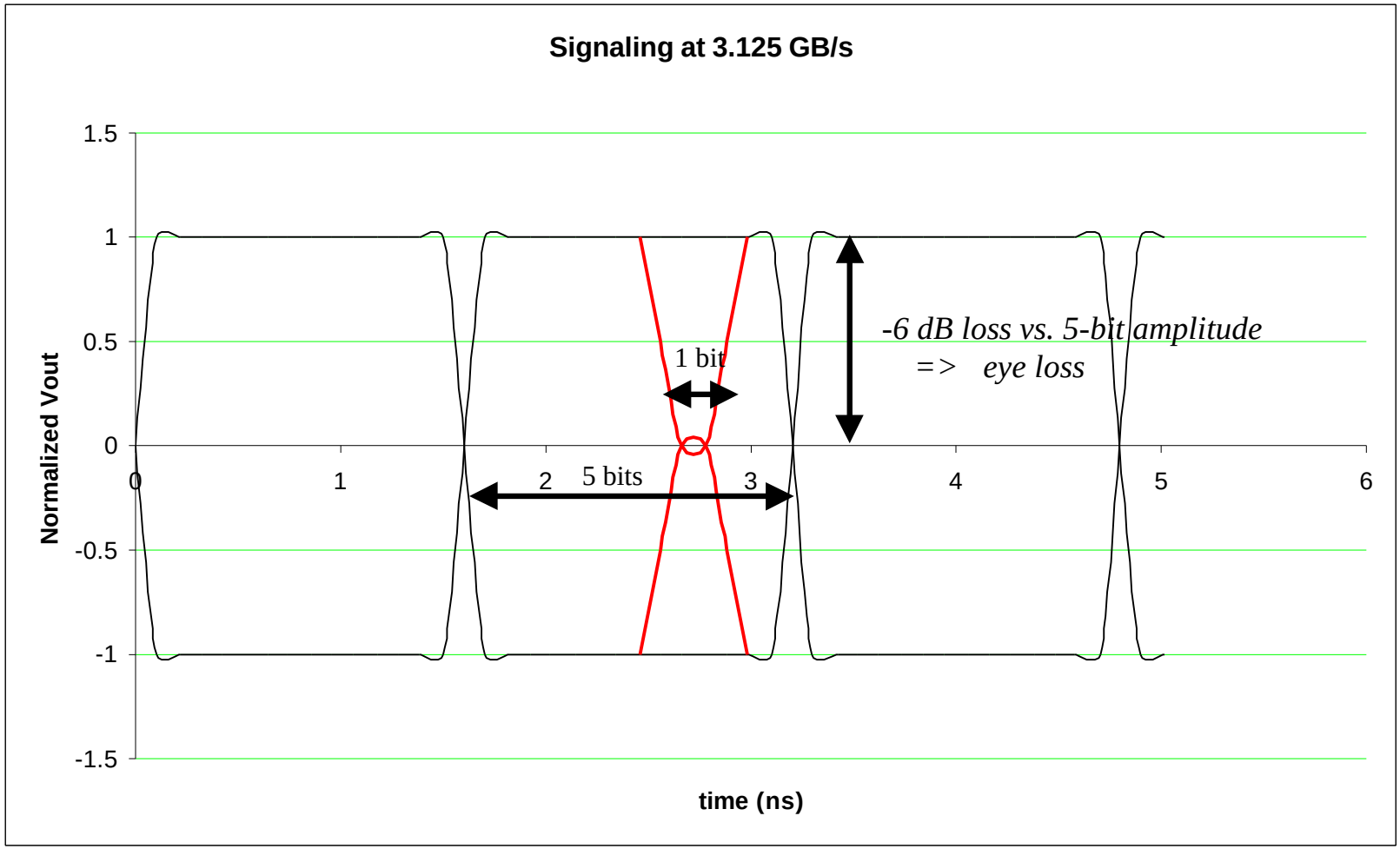
Above cable (AWG26) was not optimized for length. Lower guage would have lower att'n.



A loss of more than 6 dB constitutes loss of eye (with no equalization).

NRZ loss (solid curves) show loss of 1bit compared with static levels.

8B-10B loss (dashed curves) show loss of 1bit compared with 5bit max amplitudes.



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