



Results on Bandwidth Measurement

K.K. Gan
The Ohio State University

April 16, 2008



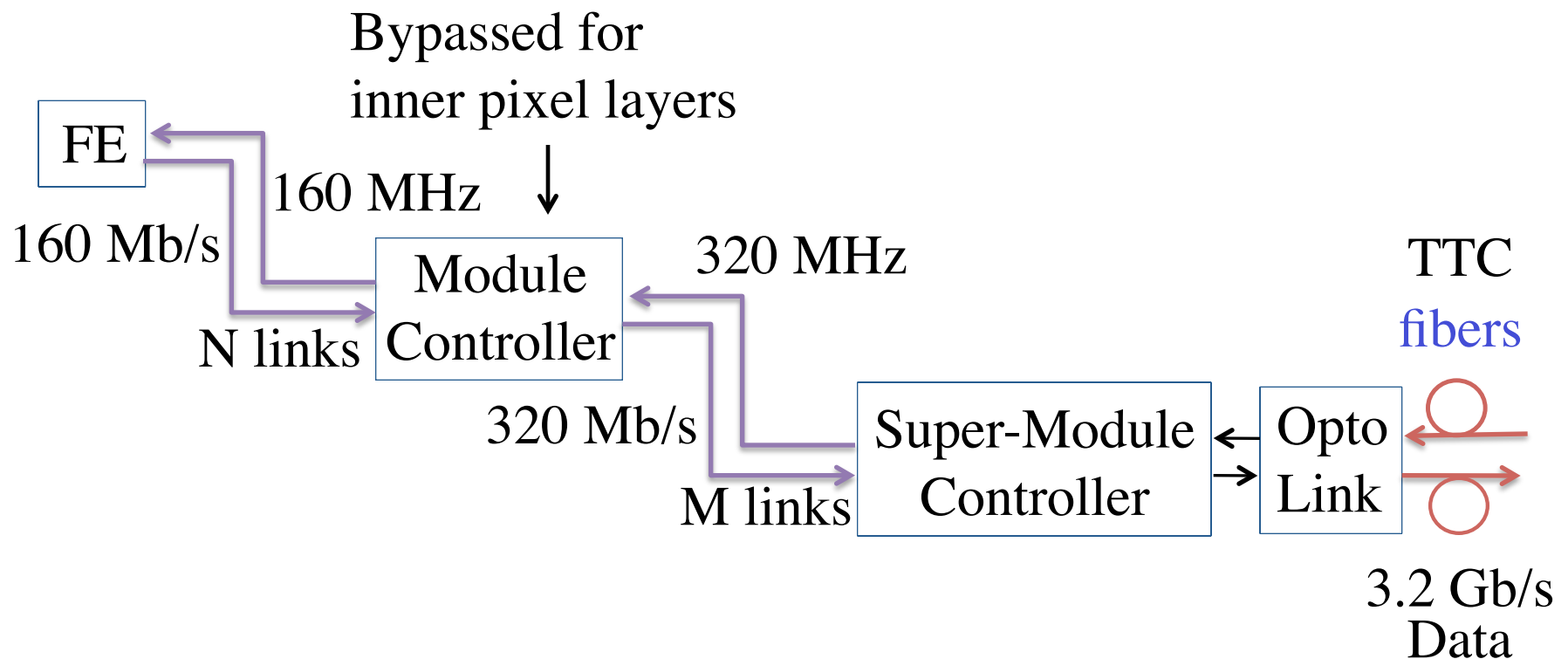
Outline

- Transmission on micro-cables
- Transmission on TRT micro-cables
- Transmission on TRT HV micro-coaxs
- Summary



Read Out Architect

- G. Darbo, P. Farthouat, A. Grillo, ATL-P-EN-0001

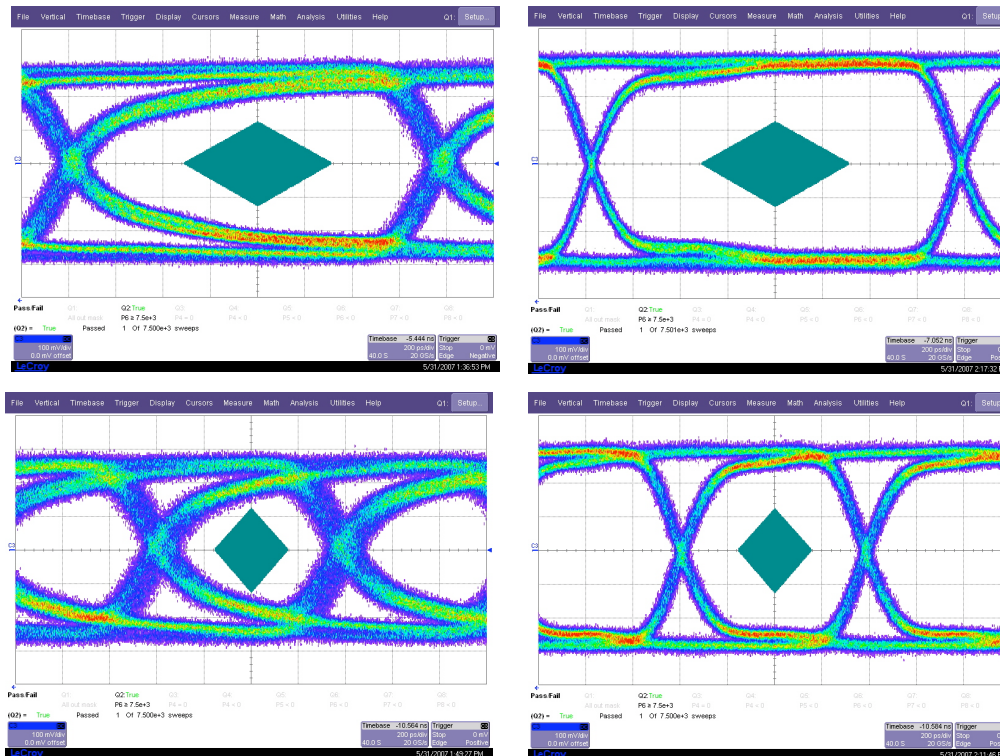




Eye Diagrams

100 μm current pixel cable
140 cm

640 Mb/s



1280 Mb/s

- transmission at 640 Mb/s is adequate for current PP0 location

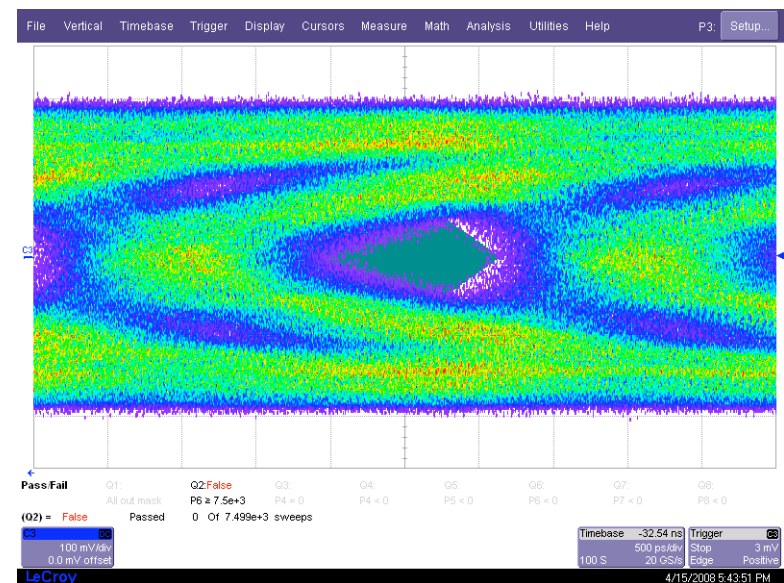
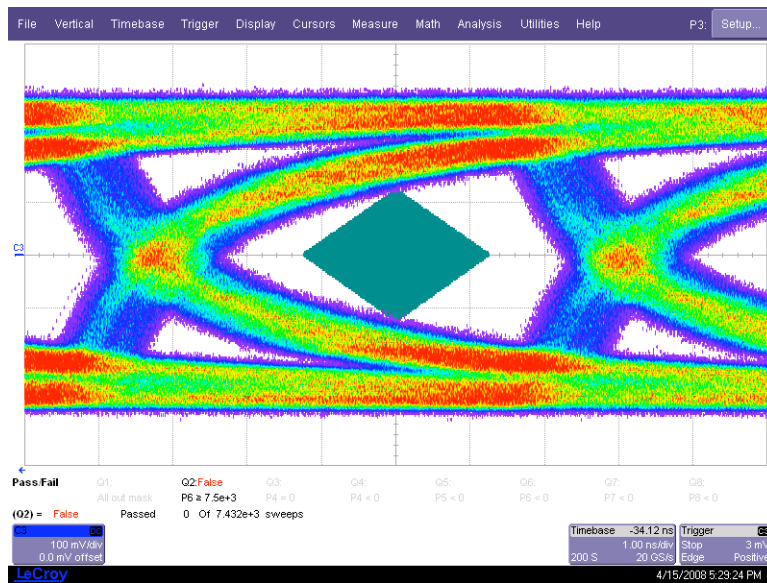


Eye Diagrams

100 μm current pixel cable (5 m/100 Ω)

160 Mb/s

320 Mb/s



- transmission at 160 Mb/s for 5 m is not acceptable

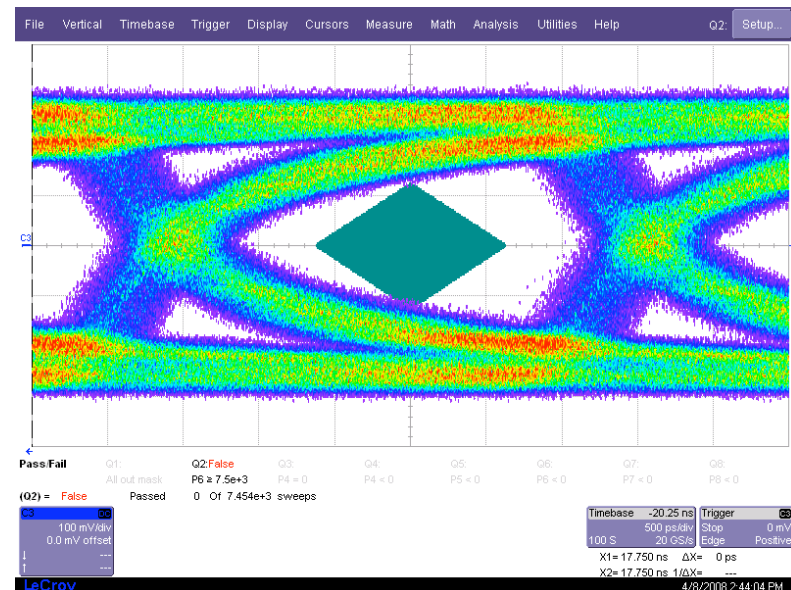
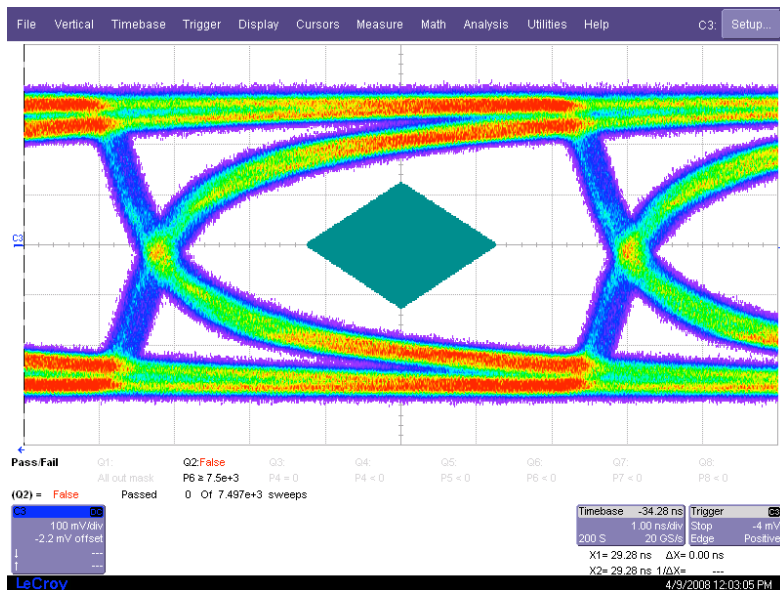


Eye Diagrams

1 mm TRT shield twisted pair (5 m/100 Ω)

160 Mb/s

320 Mb/s



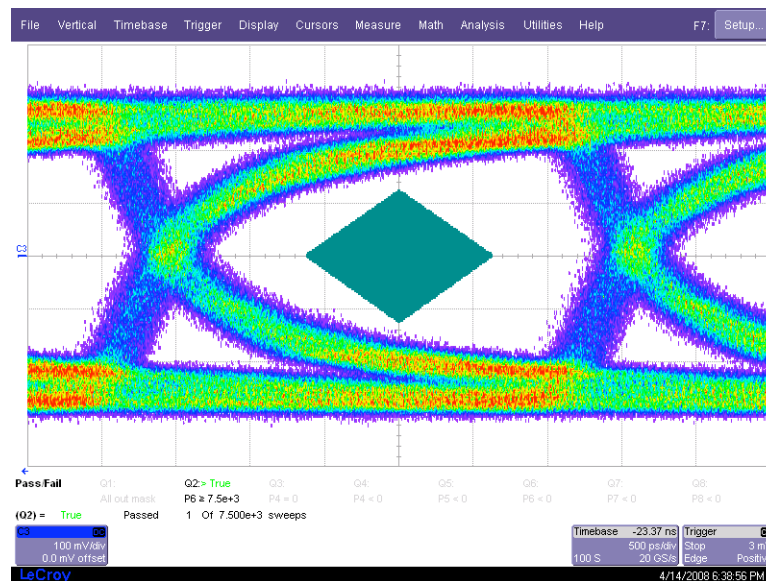
- transmission at 160 Mb/s for 5 m is adequate



Eye Diagrams

1 mm TRT shield twisted pair (4 m/100 Ω)

320 Mb/s



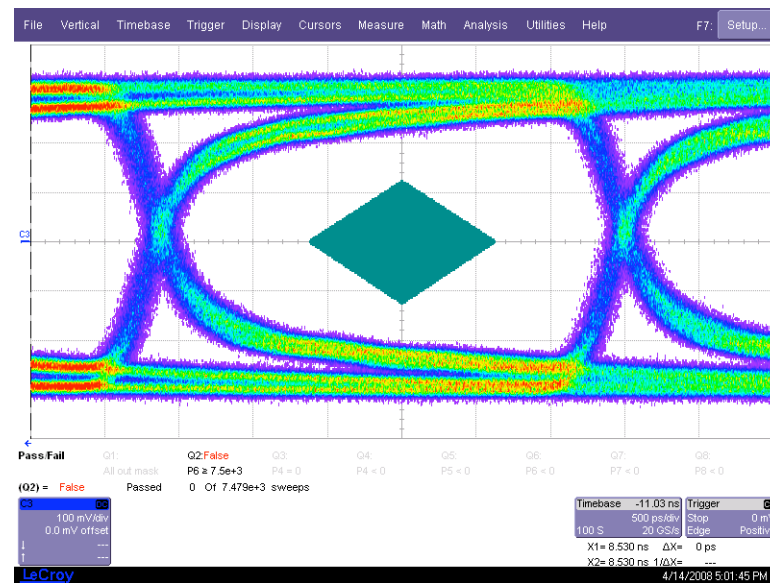
- transmission at 320 Mb/s for 4 m is probably adequate



Eye Diagrams

1 mm TRT HV micro coax (2.5 m/50 Ω)

320 Mb/s



- transmission at 320 Mb/s for 4 m is probably adequate but not at much higher rate



Fiber

SLHC SCT fibers

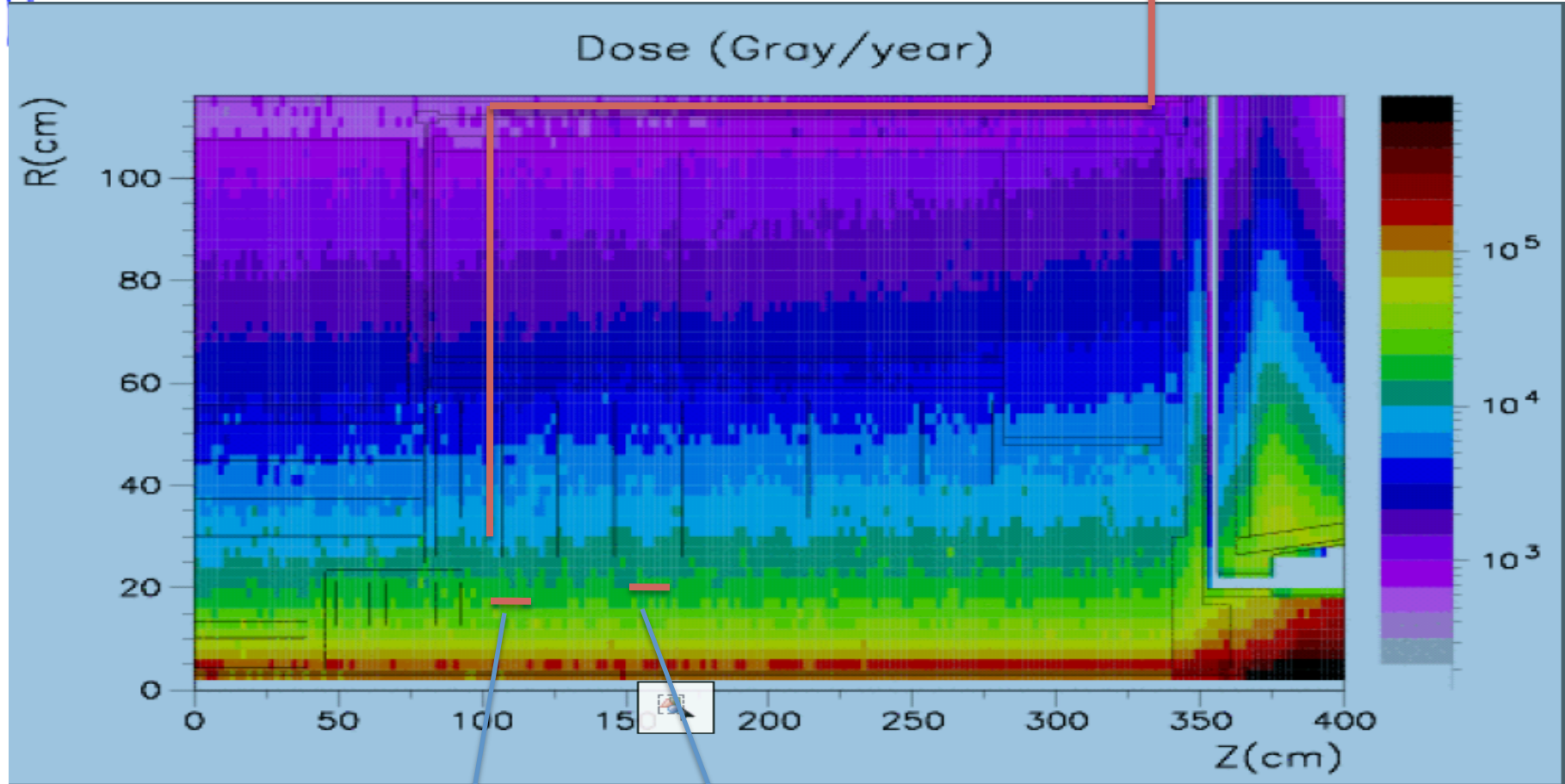


Figure 5.6 Annual doses (Gy/Year) assuming 10^7 s at high luminosity.

OSP bottom/ISP top

OSP top

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Transmission Bandwidth

- SCT plans to use GRIN fiber @ SLHC



Summary

- Current pixel micro cable can transmit at 640 Mb/s up to 1.4 m
 - ◆ can't transmit at 160 Mb/s for 5 m
- TRT micro cable can transmit at 160 Mb/s up to 5 m
 - ◆ transmission at 320 Mb/s for 4 m is probably adequate