XAUI and 10GBASE-X

Track 5: Clauses 47 and 48

Track Chair: Dawson Kesling

Goals

- Brad:
  - March goals:
    - Compete the technical skeleton of the draft
    - Prepare draft for Working Group (802.3) ballot
  - "Fill the technical holes"
  - Refinements should wait for D3.0
  - There are many more ballot cycles to come
  - Editors need explicit solutions from now on

Agenda
XAUI / 10GBASE-X

Mon.	*8-11*	*Jitter Ad Hoc*
Tues.	*1:30 - 7*	*Cls. 47 Editor's update*
		Signal detect
		Cls. 47 comment res.
		XAUI Jitter
Wed.	*8-9:30*	*XAUI technical issues*
	9:30-12:30	*Cls. 48 comment res.*
	1-3	*Task Force ratification*
Thurs.		*Working Group ratification*

Cls. 47 Editor's Update

- ✓ 1 D2.0 comment to be reconsidered
- ✓ 60 D2.1 comments to be resolved
- Big Issues – Presentations to be made
  - ✓ Signal detect (Joel, Pat, Rich)
  - ✓ Jitter methodology and specifications (Anthony)
  - ✓ Compliance channel phase response (Dawson)
- Smaller Issues – to be discussed
  - ✓ RL, Vmax, X-talk, loopback, jitter budget, loss budget, lane skew, dif'l skew, load spec, CC LF limit

Signal Detect

- D2.0 Comment 930 background
  - Proposal: "…add SD line to the XGXS IF…"
  - TF accepted proposal; editors to write text
  - Editors implemented 1000B-X, LW-4 LOS
    - Monitor incoming XAUI signals and report to XGXS S_D state variables
  - Commenter meant to add SD wire on XAUI
  - Interpretation and intention of TF is unclear
  - We need to clarify the TF intention and reconsider the comment.

Signal Detect

- D2.0 Comment 930 reconsideration plan
  - Pat Thaler presentation
    - Accept the proposed solution (for D3.0)
  - Joel Dedrick presentation
    - Reject the comment (D3.0 = D2.0)
  - Rich Taborek presentation
    - Accept in principle,but use 1000B-X type LOS detection (D3.0 = D2.1)
  - Discussion and vote

    Outcome: Comment withdrawn

XAUI Jitter

- Anthony Sanders to lead session:
  - XAUI Jitter Ad Hoc status update
  - Presentation of Infineon channel simulation
  - Presentation of CRD simulation
    - Effects of CJPAT with phase high pass filter
  - Presentation of SONET vs. Ethernet SJ

Compliance Channel Phase Response

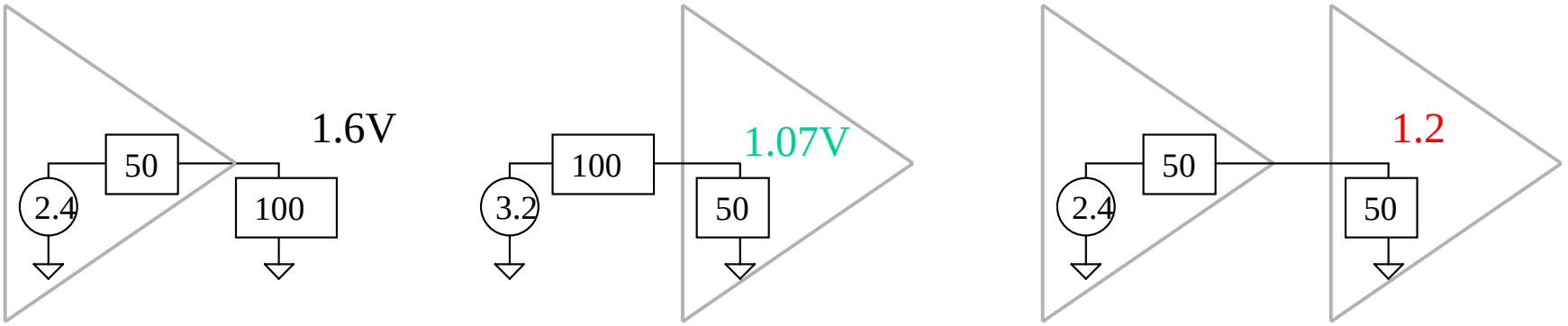
- None of contributed compliance channels meet the group delay spec.
- Dawson to present work in progress on an alternate specification method

Return Loss

- Background
  - Some participants think 10 dB will be difficult for transmitters to meet, adding unnecessary cost.
- We need to define:
  - What is acceptable for system performance
    - One analysis suggests that 8 dB is acceptable from a system perspective.
  - What is doable in IC implementations.
    - No data yet.

Vmax Margin

- Transmit output voltage maximum (D2.1)
  - Limited to 1600mV into a 100 ohm load. Source impedance can be 100 ohm +/- 50% (10 dB today).
- Receiver input voltage tolerance (D2.1)
  - Limited to 1600mV when source is 100 ohm +/- 5% and receiver is replaced by 100 ohm load.



Crosstalk

- How important is the 4% estimate? What does it affect?
- What are the real contributors to X-talk? What is the real value?
- Is our standard sound?

Jitter Budget

	Total	DJ	RJ
Driver	.35/.35	.17/.17	.18/.18
Channel	.15/.15	.15/.15	.00/.00
Other*	.20/.24	.04/.10	.16/.14
Total	.60/.65	.36/.42	.24/.23

Crosstalk, noise, reflections

Key: D2.1 / proposal

- What is the right total?