
# 802.3cb Proposed Draft Commentary

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# Preliminaries

- Proposed Draft text in
  - Lo_3cb_02_0316.pdf – 2.5GBASE-X PCS/PMA
  - Lo_3cb_03_0316.pdf – 5GBASE-R PCS/PMA
  - Lo_3cb_04_0316.pdf – Clause 69, 73, 78, 125 changes
- Started numbering new clauses at Clause 200. Actual clause # not assigned yet. These will change once we get clause number assignments.
  - 200 - 2.5GBASE-X PCS/PMA
  - 201 - 5GBASE-R PCS/PMA
  - 202 - 2.5GBASE-KX PMD
  - 203 - 5GBASE-KR PMD
- References within 802.3cb highlighted in yellow (Table 200–1)
- References not in 802.3cb but somewhere else in green font (Clause 46)
- Frame Maker Editor's notes in red (Copy figure…) - do not include this in text
- IEEE editors note in black bold italics (***Editor's Note: TBD should …***) – these are part of the text

# 2.5GBASE-X PCS/PMA

- Followed Clause 36 flow with some clause 48 text thrown in where it made sense.
- Followed the operating principles in Lo_3cb_01a_0116.pdf
- Introduced the Word Encode, Word Serializer, Word Alignment, Word Decode process and formalized their definition
  - XGMII to GMII conversion
- Introduced 2.5GPII and formalized the definition
  - All references to GMII is now to 2.5GPII
- Modified PCS Transmit and Receive process
  - Eliminated all half duplex operation
  - Eliminated all mechanics to support Clause 37 Auto-Negotiation
  - Introduced Sequence ordered_set
- PMA
  - Largely unchanged from Clause 36 except to speed up
  - No physical instantiations of the PMA defined for 2.5GBASE-X
- Added informative annex 200B
  - Lists restrictions when connecting 1000BASE-X PCS to 2.5GBASE-X PCS.

# 5GBASE-R PCS/PMA

- References Clause 49.  Followed general flow of 802.3by
- Followed the operating principles in Lo_3cb_02a_0116.pdf
- hi_ber count changed to scale with speed
- Abstract PMA function in Clause 51.3 referenced as is
- No physical instantiation of PMA defined for 5GBASE-R

# Existing Clause Changes

- **Clause 69 – Introduction to Ethernet operation over electrical backplanes**
  - Added 2.5GBASE-KX and 5GBASE-KR references
- **Clause 73 - Followed the operating principles in Lo_3cb_03a_0116.pdf**
  - Picked bits A11 (2.5GBASE-KX) and A12 (5GBASE-KR) for advertisement
  - Set priority resolution
  - Modified State diagram variables
  - Parallel detect for 2.5GBASE-KX
- **Not baselined in Lo_3cb_03a_0116.pdf is the link_fail_inhibit_timer value. Picked 40ms to 50ms since there is no transmitter training**

| | | | | |
|---|---|---|---|---|
| link_fail_inhibit_timer (when the link is neither 1000BASE-KX, 2.5GBASE-KX, 5GBASE-KR, nor 10GBASE-KX4) | 500 | | 510 | ms |
| link_fail_inhibit_timer (when the link is 1000BASE-KX, 2.5GBASE-KX, 5GBASE-KR, or 10GBASE-KX4) | 40 | | 50 | ms |

# Existing Clause Changes

- **Clause 78 – Energy Efficient Ethernet**
  - Added 2.5GBASE-KX and 5GBASE-KR references
  - Followed timing per Lo_3cb_01a_0116.pdf, Lo_3cb_02a_0116.pdf
- **Clause 125 – Introduction to 2.5Gb/s and 5 Gb/s networks**
  - Added 2.5GBASE-KX and 5GBASE-KR references
- **Delay constraints not baselined in Lo_3cb_01a_0116.pdf or Lo_3cb_02a_0116.pdf**

**Table 125–5—Sublayer delay constraints**

| Sublayer | Maximum (bit time)[a] | Maximum (pause_quanta)[b] | Maximum (ns) | Notes[c] |
|---|---|---|---|---|
| 2.5GBASE-T PHY | 12 800 | 25 | 5 120 | Does not include delay of cable medium. See 126.11 |
| 5GBASE-T PHY | 14 336 | 28 | 2 867.2 | Does not include delay of cable medium. See 126.11 |

| | | | | |
|---|---|---|---|---|
| 2.5GBASE-X PCS/PMA | TBD1 | TBD1 / 512 | TBD1 * 0.4 | See 200.5 |
| 5GBASE-X PCS/PMA | 3584 | 7 | 716.8 | See 201.5 |
| 2.5GBASE-KX PMD | 512 | 1 | 204.8 | See 202.TBD |
| 5GBASE-KR PMD | 512 | 1 | 102.4 | See 203.TBD |

# Open TBD

- 78.5 Communication link access latency
  - Need further analysis for EEE numbers
- 125.3 and 200.5 Delay Constraints
  - Need some analysis to specify a good number
- 200.3.4 Test Functions
  - Do we want to add any additional testing beyond Annex 200A?
- 200.6 Environmental specifications
  - Is what is currently specified for 10GBASE-KX4 sufficient?
- 200.7, 201.7 PICS
  - Need a PICS editor
- Misc TBDs
  - Need to point to references once PMD section written

# THANK YOU