

Text to adopt XGMII

G. Zimmerman (CME Consulting/various), M. Tazebay (Broadcom)

1/24/2025

- XGMII has TX clock towards the PHY and RX clock from the PHY.
- The rates of these are specified by the MACs bit rate.

46.1.6 XGMII structure

The XGMII is composed of independent transmit and receive paths. Each direction uses 32 data signals (TXD<31:0> and RXD<31:0>), four control signals (TXC<3:0> and RXC<3:0>), and a clock (TX_CLK and RX_CLK). Figure 46–2 depicts a schematic view of the RS inputs and outputs.

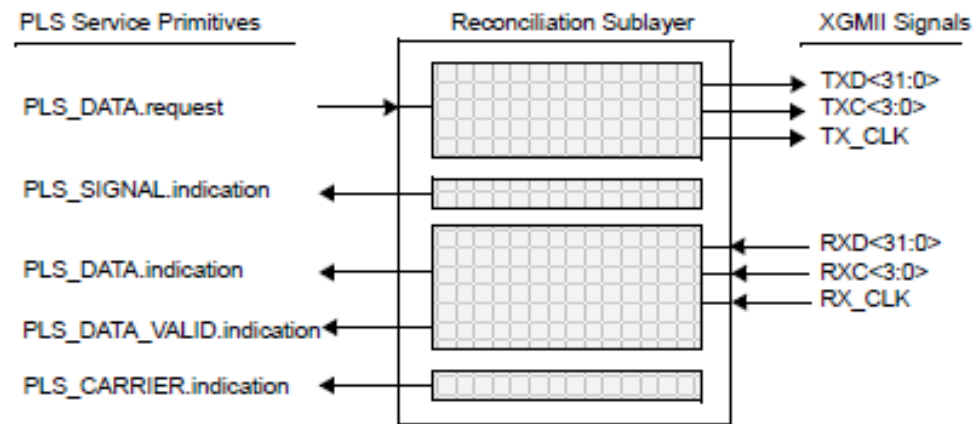


Figure 46–2—Reconciliation Sublayer (RS) inputs and outputs

Edits to Clause 46

Change the 3rd & 4th paragraphs of 46.1 as shown (to include asymmetric PHYs, with editorial license):

The RS adapts the bit serial protocols of the MAC to the parallel encodings of 2.5 Gb/s, 5 Gb/s, and 10 Gb/s (including asymmetric) PHYs. Though the XGMII is an optional interface, it is used extensively in this standard as a basis for specification. The 2.5 Gb/s, 5 Gb/s, and 10 Gb/s (including asymmetric PHYs with these rates in one direction and 100 Mbps in the reverse direction) Physical Coding Sublayers (PCS) are specified to the XGMII, so if not implemented, a conforming implementation shall behave functionally as if the RS and XGMII were implemented.

The XGMII has the following characteristics:

a) It is capable of supporting at least one of the following rates of operation: 2.5 Gb/s, 5 Gb/s, or 10 Gb/s (including asymmetric PHYs with these rates and 100 Mbps in the reverse direction)

(and amend PICS G1, G2, G3 in 46.6.3.1 to align)

Change 2nd paragraph of 46.3.1.1 TX_CLK (transmit clock) as shown:

The TX_CLK frequency shall be $1/64 \times f_{MAC} \pm 100$ ppm, where f_{MAC} is the frequency (in Hz) corresponding to the nominal transmit bit rate.

Change the 2nd sentence of the 2nd paragraph of 46.3.2.1 RX_CLK (receive clock) as shown:

When the received data rate at the PHY is within tolerance, the RX_CLK frequency shall be $1/64 \times f_{MAC} \pm 100$ ppm, where f_{MAC} is the frequency (in Hz) corresponding to the MAC's nominal receive bit rate.

Motion

- Adopt the text shown on slide 3 of [zimmerman_text_to_adopt_xgmii_0125.pdf](#)
- M: M. Tazebay
- S: G. Zimmerman