

201.5.2.2 PMA Transmit function

The PMA Transmit function comprises a transmitter to generate a four-level modulated signal for PAM4, a two-level modulated signal for PAM2, both for HS_TX, and a DME modulated signal for LS_TX on the single balanced pair of conductors for -T1 or the single coax for -V1. When the PHY Control state diagram (Figure 201–22) is not in the DISABLE_TRANSMITTER state, PMA Transmit shall continuously transmit pulses modulated by the symbols given by tx_symb onto the MDI. During Link Synchronization, when sync_link_control = DISABLE and Auto-Negotiation is either not enabled or is not implemented, the sync_tx_symb output by the PHY Link Synchronization function shall be used in place of tx_symb as the data source for PMA Transmit. The signals generated by PMA Transmit shall comply with the electrical specifications given in 201.6.2 for HS_TX and in 201.7.2 for LS_TX.

When the PMA_CONFIG.indication parameter config is LEADER, the PMA Transmit function shall source TX_TCLK from a local clock source while meeting the transmit jitter requirements of 201.6.2.3 for HS_TX and 201.7.2.3 for LS_TX. The LEADER-FOLLOWER relationship shall include loop timing. If the PMA_CONFIG.indication parameter config is FOLLOWER, the PMA Transmit function shall source TX_TCLK from the recovered clock of 201.5.2.11 while meeting the jitter requirements of 201.6.2.3 for HS_TX and 201.7.2.3 for LS_TX.

A PHY_D shall support operation as LEADER, and may support operation as FOLLOWER. A PHY_S shall support operation as FOLLOWER, and may support operation as LEADER.

The PMA Transmit fault function is optional. The faults detected by this function are implementation specific. If the MDIO interface is implemented, then this function shall be mapped to the transmit fault bit as specified in 45.2.1.7.4.

When the PMA_transmit_disable variable is set to TRUE, the transmitter shall be turned off so that the average launch power of the transmitter is less than –53 dBm.