



Test mode definition for BER test in GEPOF PHY

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Agenda



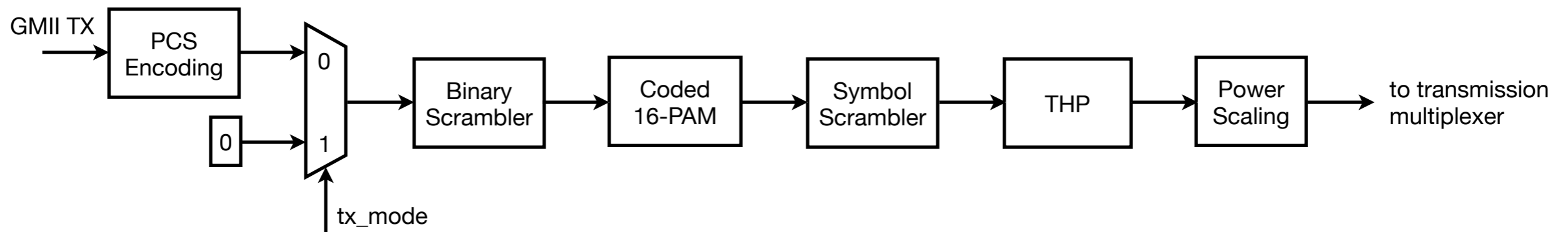
- Background and objectives
- Test mode definition for BER measurement

Background & Objectives



- In 802.3bv TF interim meeting of January 2015, the FEC and modulation schemes proposed in [1] were adopted for the baseline together with the transmission structure defined in [2]
- This presentation define a test mode by which the PHY is configured in an special mode of transmission that is suitable for Bit Error Rate measurement by link partner
- This test mode, as those that have to be defined for PMA and PMD testing, will be configurable from the management interface (e.g. clause 45 registers)
- The PHY shall can be instructed to enter the transmitter in this test mode independently of the transmission operation mode of the link partner, by using management interface

Test mode for BER test definition



- The PHY instructed to operate in this mode will configure the PCS TX function to take as input to binary scrambler an all zeroes bit stream, in such a way the link partner will be able to easily count the bit errors by simple addition of the bits with value 1 at the output the binary scrambler
- The PHY shall be configured in BER test mode with $tx_mode = 1$
- tx_mode control variable shall be announced in PHD.TX.NEXT.MODE field one frame before it take effect on PCS TX function (see [4])
- The PCS RX function of the link partner shall be able to be dynamically reconfigured per block basis, according to the information received in PHD.TX.NEXT.MODE in the previous PHD
- The tx_mode changes will be synchronized with the start of a transmission block, both for announcement and to take effect
- The management registers associated to BER test mode and attached to PCS RX function of the link partner shall be reset always the PHD.TX.NEXT.MODE to 1 from any other value
- LPI assertion from GMII shall be ignored in any test operation mode
- If PHY is instructed for entering in any test mode of operation while a LPI transition has been initiated, the PHY shall indicate wake-up to the link partner immediately before configuring the PCS for test mode, the later always synchronized with the beginning of a transmission block

References



- [1] *Rubén Pérez-Aranda, et al., “High spectrally efficient coded 16-PAM scheme for GEPOF based on MLCC and BCH”, IEEE 802.3bv TF, Interim Meeting, January 2015*
- [2] *Rubén Pérez-Aranda, “Transmission scheme for GEPOF”, IEEE 802.3bv TF, Interim Meeting, January 2015*
- [3] *Rubén Pérez-Aranda, et al., “64B/65B PCS encoding for GEPOF”, IEEE 802.3bv TF, Plenary Meeting, March 2015*
- [4] *Rubén Pérez-Aranda, et al., “Physical Header Data content for PCS encoding, PHY control and OAM channel in GEPOF”, IEEE 802.3bv TF, Plenary Meeting, March 2015*



Questions?