

92.2 Physical Coding Sublayer for 10GE-PON

92.2.1 Overview

This subclause defines the physical coding sublayers 10GBASE-PR and 10/1GBASE-PRX, supporting burst mode operation of the point-to-multipoint physical medium. The 10GBASE-PR PCS is specified to support 10Gb/s symmetric mode, where both the receive and transmit paths operate at 10Gb/s rate. The 10/1GBASE-PRX PCS supports 10/1 Gb/s asymmetric mode, in which OLT transmit path and ONU receive path operate at 10Gb/s, while the ONU transmit path and the OLT receive path operate at 1Gb/s rate.

This subclause also specifies a forward error correction (FEC) mechanism to increase the optical link budget or the fiber distance. Figure 92–1 and Figure 92–2 show the relationship between the extended PCS sublayer and the ISO/IEC OSI reference model.

92.2.1.1 10/1GBASE-PRX PCS

Conceptually, 10/1GBASE-PRX PCS represents a combination of transmit and receive functions defined in 10GBASE-PR PCS (specified in this clause) and 1000BASE-PX PCS (specified in Clause 65). At the OLT, the 10/1GBASE-PRX consists of 10GBASE-PR transmit function and 1000BASE-PX receive function (see Figure 92-xx). Reciprocally, at the ONU, the 10/1GBASE-PRX PCS consists of 10GBASE-PR receive function and 1000BASE-PX transmit function (see Figure 92-YY).

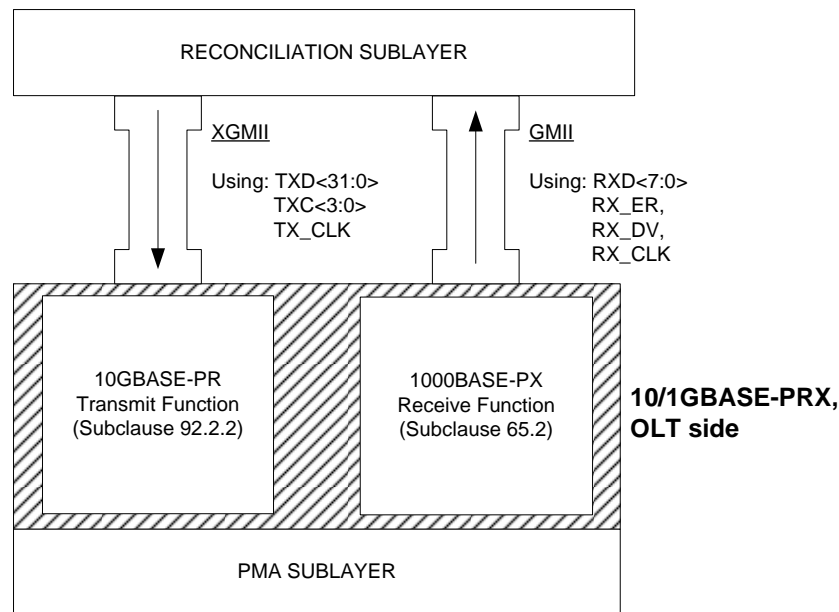


Figure 92-XX -- Conceptual Diagram of 10/1GBASE-PRX PCS, OLT Side

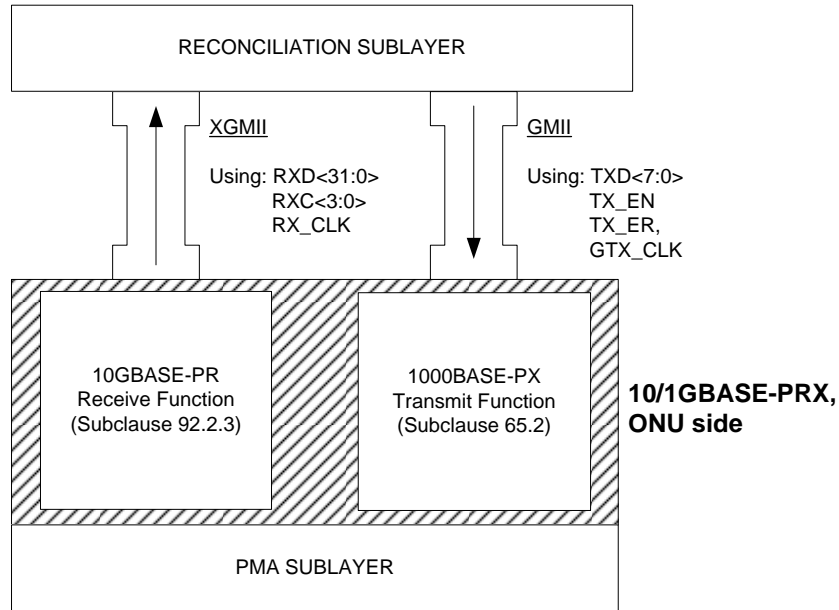


Figure 92-YY -- Conceptual Diagram of 10/1GBASE-PRX PCS, ONU Side

In this clause, no explicit specification is provided for 10/1GBASE-PRX PCS. It is expected that deriving such specification from 10GBASE-PR and 1000BASE-PX PCS specifications as described above will be a straightforward process.

92.2.1.1 10GBASE-PR PCS

The 10GBASE-PR PCS extends the physical coding sublayer described in Clause 49 to support burst mode operation of the point-to-multipoint physical medium. Figure 92-4 illustrates functional block diagram of the downstream path and Figure 92-5 represents functional block diagram of the upstream path.

92.2.2 10GBASE-PR Transmit Functions (← note changed title)

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92.2.3 10GBASE-PR Receive Functions (← note changed title)

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