

99.4.5 Receive processing

The Receive Processing function receives mFrames from the underlying PHY and then delivers to either pMAC or eMAC, depending on whether the received mFrame is a preemptable frame or an express frame, respectively. The receiving MAC is selected based on the SMD value in the received mFrame (see 99.3.3 for details).

The process of receiving a preemptable frame starts with the Receive Processing function asserting PLS_DATA_VALID.indication(DATA_VALID) to pMAC. The Receive Processing function increases the expected FRAG_COUNT for the following mFrame, relying on the fragment counter to detect missing mFrames. The fragment counter is set to 0 in the initial frame fragment. The Receive Processing function replaces the SMD in the received mFrame with an SFD and then starts transmission of data to pMAC via a series of PLS_DATA.indication primitives. Once all data is transmitted to pMAC, no further PLS_DATA.indication primitives are transmitted until the next mFrame is received.

The Receive Processing function calculates the CRC for each received mFrame and separately for the reassembled MAC frame. If the value of the CRC calculated for the received mFrame matches the CRC in the received mFrame, CRC is not transmitted to pMAC. If the value of CRC calculated for the received mFrame does not match the CRC in the received mFrame, but the CRC calculated for the whole reassembled MAC frame matches the CRC in the received mFrame, CRC is transmitted to pMAC in the FCS field. Otherwise, the received mFrame is discarded.

If the Receive Processing function detects an incomplete preempted frame or otherwise invalid mFrame, the Receive Processing function causes pMAC to detect a FrameCheckError prior to asserting PLS_DATA_VALID.indication(DATA_NOT_VALID) primitive.

The Receive Processing function shall implement the process defined in Figure 99–5.

The PLS_SIGNAL.indication primitive is not generated by the Receive Processing function.