Proposed text for P802.3bm D1p0: TDP test

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Proposed text for clause 95

95.8.5 Transmitter and dispersion penalty (TDP)

Transmitter and dispersion penalty (TDP) shall be as defined for 10GBASE-S in **52.9.10** with the following exceptions:

    a) Each optical lane is tested individually with all other lanes in operation.

    b) The test pattern is as defined in Table 95–10.

    c) The transmitter is tested using an optical channel with an optical return loss of 12 dB.

    d) The reference transmitter rise/fall times should be less than 12 ps at 20% to 80%.

    e) The reference receiver (including the effect of the decision circuit) has a fourth-order Bessel-Thomson filter response with a bandwidth of **11.7** GHz. The transversal filter of 52.9.10.3 is not used.

    f) The clock recovery unit (CRU) used in the TDP measurement has a corner frequency of 10 MHz and a slope of 20 dB/decade.

    g) The reference sensitivity S and the measurement P_DUT are both measured with the sampling instant displaced from the eye center by ± **0.11** UI. For each of the two cases (early and late), if P_DUT(i) is larger than S(i), the TDP(i) for the transmitter under test is the difference between P_DUT(i) and S(i), TDP(i) = P_DUT(i) – S(i). Otherwise, TDP(i) = 0. The TDP is the larger of the two TDP(i).

    h) The test setup illustrated in Figure 52-12 shows the reference method. Other measurement implementations may be used with suitable calibration.

    i) TDP is defined for each lane, at the BER specified in Table 95.1.1 and is for the lane under test on its own. See 95.8.1.1 for multi-lane pattern considerations.

NOTE—Sampling instant offsets have to be calibrated because practical receivers and decision circuits have noise and timing impairments. One method of doing this is via a jitter bathtub method using a known low-jitter signal.

Notes:

- TDP test receiver bandwidth needs to be agreed
  - *(value expected to be updated in petrilla_01_0713_optx)*
- Sampling instant offset needs to be agreed
- Values in magenta are placeholders, and are expected to be updated. New text or changes to the text in Draft 1p0 are also in magenta.