55.5.3.3 Transmitter timing jitter

When in test mode 2, the PHY transmits {two +16 symbols followed by two -16 symbols} continually with the THP turned off and with no power backoff. In this mode, the transmitter output should be a 200 MHz signal and the RMS period jitter measured at the PHY MDI output shall be less than 5.5 ps. The RMS period jitter is measured as per the test configuration shown in Figure 55–30 over an integration time interval of 1 ms ± 10%.

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For a PHY that can operate in loop timed mode, the SLAVE mode jitter test shall be run using the test configuration shown in Figure 55–30. For this test, the MASTER PHY is in test mode 1 and the SLAVE PHY is in test mode 3. The MASTER is transmitting the PMA training pattern (PRBS 33) to the SLAVE PHY on pairs A, B and C. The SLAVE PHY is in loop-timed mode, synchronizing its transmit clock to the signals received from the MASTER PHY on pairs A, B and C. In this configuration, the transmitter output on pair D should be a 200 MHz signal and the RMS period jitter measured at the SLAVE PHY MDI output shall be less than 5.5 ps. The RMS period jitter is measured over an integration time interval of 1 ms ± 10%.

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RMS period jitter over an integration time interval of 1 ms ± 10% is defined as the root mean square period difference from the average period ($T - T_{avg}$), accumulated over a sample size of 200,000 ± 20,000:

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Equation remains the same (55–8) except the variable on the left side changes to RMS period jitter