

Updates for comment #75 (Joe Abler)

69A.2.1 Pattern generator

The amplitude delivered by the pattern generator to the test channel shall be no greater than the specified minimum transmitter output amplitude for the port type being tested as modified by the parameter *bTC* defined in 69A.2.2.

The clock source frequency shall be offset at least 200 ppm with respect to the reference clock of the DUT.

The clock source shall be modulated by a sine wave (sinusoidal jitter) at frequency of 0.40% of signaling speed of the port type under test $\pm 5\%$. The RMS amplitude of the jitter, as measured at the output of the data generator, shall be as prescribed for the port type being tested. If the pattern generator has random jitter above 0.35% of the signaling speed, this jitter may be substituted for part of the sinusoidal jitter so long as the total RMS value is maintained.

The pattern generator may include equalization depending on the port type being tested. For 1000BASE-KX, the pattern generator shall not include equalization. For 10GBASE-KX4, the pattern generator shall include equalization such that the differential output template defined in 71.7.1.6 is met. For 10GBASE-KR, equalization equivalent to a ~~two~~-or three-tap transversal filter [meeting the requirements defined in 72.7.1.10](#) shall ~~may~~ be included. ~~If such equalization is included, it shall meet the requirements defined in 72.7.1.10.~~

69A.2.4 Transmitter control

For 10GBASE-KR testing, ~~if the pattern generator is implemented with a multi-tap equalizer,~~ the pattern generator may be controlled by transmitter control. Transmitter control responds to inputs from the receiver to adjust the equalization of the pattern generator. The receiver may communicate through its associated transmitter, using the protocol described in 72.6.10, or by other means.

69A.3 Test methodology

Interference tolerance is measured at a standard BER, *BERS*, and then extrapolated to the target BER, *BERE*. The standard BER should be as low as practical to allow accurate extrapolation. It is recommended that the error rates be lower than 1 per second (*BERS* < 10^{-9} for 1000BASE-KX, *BERS* < 3.2×10^{-10} for 10GBASE-KX4, or *BERS* < 10^{-10} for 10GBASE-KR).

For 10GBASE-KR, the pattern generator ~~shall~~[may](#) first be configured to transmit the training pattern defined in 72.6.10.2. During this initialization period, the DUT ~~shall~~[may](#) configure the pattern generator equalizer, ~~if implemented,~~ via transmitter control [to the coefficient settings it would normally select using the protocol described in 72.6.10](#). During training, the interference generator should be off (peak-to-peak differential amplitude at the DUT less than 5 mV).

Configure the pattern generator to output the test pattern prescribed for the port type under test.