96.5.4.6 Transmitter peak differential output

When measured with 100 Ω termination, transmit differential signal at MDI shall be less than 2.2 V peak to peak. This limit applies to all transmit modes including SEND_I and SEND_N modes.

96.8.3 MDI fault tolerance

The wire pair of the MDI shall, under all operating conditions, withstand without damage the application of short circuits of any wire to the other wire of the same pair or Ground potential or positive voltages of up 50 V for an indefinite period of time and shall resume normal operation after the short circuit(s) are removed. The magnitude of the current through such a short circuit shall not exceed 150 mA.

The wire pair of the MDI shall also withstand without damage high voltage transient noises and ESD per application requirements.

96.8.2.2 MDI mode conversion loss

Mode conversion LCL (Sdc11) of the PHY measured at MDI shall meet or exceed the limit defined in Equation (96–12) for all frequencies from 1 MHz to 200 MHz.

$$\text{MDI mode conversion loss}(f) \geq \begin{cases} 50 \text{ dB} & \text{for } 1\text{MHz} \leq f \leq 33\text{MHz} \\ 50 - 20 \times \log_{10}\left(\frac{f}{33}\right) \text{ dB} & \text{for } 33\text{MHz} \leq f \leq 200\text{MHz} \end{cases} \quad \text{(96-12)}$$

where
MDI mode conversion loss(f) is the MDI return loss at frequency f
f is the frequency in MHz

Alternatively, TCL (Scd11) may be measured to pass the limit line.