

IEEE Standards Interpretations for IEEE Std 802.3™-2008 IEEE Standard for information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and Physical Layer specifications

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Interpretation Request #1

Topic: PBO schedule implementation accuracy **Subclause:** 55.4.3.1

Implementing the PBO table correctly is key to operating 10GBase-T in deployments with multiple 10GBase-T PHYs in the same bundle (Alien Xtalk). To implement the PBO table correctly each receiver must accurately measure the received signal from remote partner. Currently the estimate accuracy of the power is specified in 45.2.1 and registers 1.141-4 as 0.5dB, but implementation of this register is optional. From the contents one can assume that maintaining this 0.5dB accuracy is a mandatory even if the register is not implemented. Otherwise, if the receiver does not have any accuracy requirements max power could be transmitted at any length and 10GBase-T will not co-exist due to Alien Xtalk.

Please clarify whether the above understanding is correct: that the accuracy of the received signal power at the MDI still to follow 45.2.1.171 through 45.2.1.174 whether the received signal power is stored in the registers 1.141-1.144 or not.

Interpretation Response #1

The standard is unambiguous. PBO is normatively defined in 55.4.3.1: "The minimum power backoff level requested shall comply with the power backoff schedule in Table 55-7".

Interpretation Request #2

Topic: Standardization of 0.3/50 impulse

Relevant Clause: Clause 32.6.1.4.4

IEEE Std 802.3-2008, 32.6.1.4.4 states:

Transmitters shall withstand without damage a 1000 V common-mode impulse applied at Ecm of either polarity (as indicated in Figure 32-24). The shape of the impulse shall be 0.3/50 μ s (300 ns virtual front time, 50 μ s virtual time of half value), as defined in IEC 60060.

Normative references shown are IEC 60060-1 ed2.0 (1989-11), IEC 60060-2 ed2.0 (1994-11) and IEC 60060-3 ed1.0 (2006-02). Part 1 defines 8.3.1 Standard lightning impulse voltage: The standard lightning impulse voltage is a full lightning impulse having a front time of 1.2 μ s and a time to half-value of 50 μ s. It is described as a 1.2/50 impulse.

What Part of IEC 60060 defines the 0.3/50 impulse? I cannot find such a waveshape in the IEC 60060 documents.

Interpretation Response #2

Your interpretation request referenced text in IEEE Std 802.3-2008, 32. Clause 32 is not recommended for new installations. However, the standard is unambiguous. Further, the standard references the IEC 60060 documents for the waveform shape (e.g. the meaning of virtual front which is not defined in IEEE Std 802.3-2008) and not intended for the values.

Interpretation Request #3

Following Interpretation Request #2, is the 0.3/50 a mistake and the test impulse should be a 1.2/50 as defined in IEC 60060-1?

Interpretation Response #3

See response to Interpretation Request #2 above.