

Interpretation Number: 6-11/02 – (10BASE-T isolation requirements)
Topic: 10BASE-T isolation requirements
Relevant Clause: 14.3.1
Classification: Unambiguous

Interpretation Request

I'm writing to you with regards to IEEE 802.3-2002 Clause 14.3.1.1 which deals with 10Base-T isolation requirements. The isolation requirement is specified at 1500V RMS at 50 to 60Hz for 60s, and makes a reference to IEC 60950: 1991, section 5.3.2. Looking at IEC 60950: 1991, section 5.3.2, the table indicates a working voltage of 130 V to 250V corresponding to a 1500V RMS test voltage for dielectric strength test. Now, there is a newer version of the IEC 60950: 2001 (3rd edition). In this 3rd edition, the working voltage table is different, with the following ranges:

=> 0V to 184V with an isolation test of 1000V RMS

=> 185V to 354V with an isolation test of 1500V RMS.

The issue/question that I have is the following. Given the information in the newer edition of the IEC 60950 standard, would the necessary isolation voltage for a 10Base-T Ethernet connection, per IEEE 802.3-2002 Clause 14.3.1.1 be adjusted?

Interpretation for IEEE std 802.3-2002

The standard clearly states in item a) of subclause 14.3.1.1 '1500 V rms at 50 Hz to 60 Hz for 60 s, applied as specified in Section 5.3.2 of IEC 60950:1991.'. Since this subclause specifies a voltage and duration followed by the text 'applied as specified in Section 5.3.2 of IEC 60950' it is only the methodology specified in Section 5.3.2 of IEC 60950 that is being referenced, not the values. Hence a change in the isolation voltage specified in IEC 60950 has no effect on this particular voltage specification within IEEE Std 802.3.