

**Interpretation Number:** 4-11/03  
**Topic:** Isolation requirements  
**Relevant Clause:** 14.3.1.1  
**Classification:** Substantially identical to existing interpretation

### **Interpretation Request**

A customer has raised a question regarding the 802.3 2002 specification and our modular jack connector which is shielded and has LEDs. Our customer is testing our connector per section '14.3.1.1 Isolation Requirement' and believe that the electrical isolation requirement applies to the following:

- 1 Signal leads to ground (our shield)
- 2.) LED leads to ground (our shield)
- 3.) LED leads to signal leads

When we designed the modular jack in question, our interpretation of the 802.3 specification was that electrical isolation was required only between signal leads and ground and in no manner does the 802.3 spec dictate electrical isolation between LED/ground nor LED/signal. We would like to know IEEE's interpretation of the electrical isolation requirement in this matter.

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### **Interpretation for IEEE std 802.3-2002**

This request is substantially identical to interpretation 3-11/03, and the resolution of that interpretation applies in this case.

**Interpretation Number:** 3-11/03  
**Topic:** Isolation requirements  
**Relevant Clause:** 14.3.1.1  
**Classification:** Beyond the scope of the Standard

### **Interpretation Request**

I would like to request an interpretation for IEEE802.3 2002 specs (clause 14.3.1.1 Isolation Requirement) which should be the same as IEEE802.3 1998 or 2000.

This clause says: "The MAU shall provide isolation between the DTE physical layer circuits including frame ground and all MDI leads including those not used by 10Base-T. This electrical separation shall withstand at least one of the following electrical strength tests ....."

Now, we use gang RJ45 connectors in our designs which have integrated LEDs for status indication. Those LEDs are driven by the DTE physical layer circuit.

Our interpretation to the above clause is that those LED leads on the the RJ45 connector need to be isolated from MDI leads by 2250Vdc or 1.5KVrm or the pulse test. So, we basically believe that LED leads are part of DTE physical layer circuit. However, when we talk to the vendor they think that they only need to isolate MDI leads from the frame ground and isolation of LED leads to MDI leads is not a requirement by the standard.

If we follow this clause further, we find that it directs to IEC60950 and therefore we think LED leads and MDI leads should have a minimum clearance of 60mil per Annex G of IEC60950.

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### **Interpretation for IEEE std 802.3-2002**

The implementation of the 'visible indicator' recommended in subclause 14.2.1.7 'Link Integrity Test function requirements' is beyond the scope of the Standard. This request is therefore being returned to you because it does not constitute a request for interpretation but rather a request for consultation advice.