

Interpretation Number: 2-11/03 – Item 1
Topic: DTE Power via MDI Isolation
Relevant Clause: 33.2.6.1
Classification: Unambiguous

Interpretation Request

Clause 33.2.6.1 Detection Criteria

The following is a note in this clause:

NOTE – Caution, in a multiport system, the implementer should maintain DC isolation through the termination circuitry to eliminate cross-port leakage currents.

This may be interpreted to mean that the implementer has the choice to prevent leakage or not prevent leakage port-to-port in a multiport PSE. The word 'shall' is not used.

How is this to be interpreted considering the clauses below?

Clause 33.4.1 Isolation

Interpretation for IEEE std 802.3-2002

The text referenced is contained in a note, it is therefore not a mandatory requirement.

Since the note is attached to Subclause 33.2.6.1 'Detection criteria', which specifies the behavioral requirements of the PD detection function in a PSE, it is this function the note is addressing. As the note states, it relates to DC isolation for termination circuitry in a multi-port system. The note is advising the implementer to eliminate cross port leakage current as this may interfere with the detection function specified in this subclause.

The scope of a note is limited to the clause or subclause to which it is attached.

Interpretation Number: 2-11/03 – Item 2
Topic: DTE Power via MDI Isolation
Relevant Clause: 33.4.1
Classification: Unambiguous

Clause 33.4.1 Isolation

Text in this clause is as follows:

Conductive link segments that have different isolation and grounding requirements shall have those requirements provided by port-to-port isolation of network interface devices (NIDS).

There are two implications here:

One, there exists port-to-port isolation in multiport NIDS as the isolation provides for different grounding and isolation requirements. Is there a requirement for port-to-port isolation in multi-port NIDS?

Two, link segments that have the same isolation and grounding requirements are not covered by this port-to-port isolation...or are they?

There seems to be a requirement for port-to-port isolation, i.e., the presence of ports with different or the same isolation requirements, does not remove the requirement for port-to-port isolation.

How is this to be interpreted considering Clause 33.2.6.1 and Clause 33.4.1? 1?

Interpretation for IEEE std 802.3-2002

The standard states in the first paragraph of 33.4.1 that 'The PSE shall provide electrical isolation between the PI device circuits, including frame ground (if any), and all PI leads.'. This does not place any requirement for isolation between PI leads on differing ports on a multiport device. The 8th paragraph quoted in the request relates to the case of different isolation and grounding requirements on the link segments attached to the ports, such as where there are differing mains supplies. In the case where this does not exist this requirement does not need to be met.

It should be noted that there is a requirement that all equipment that meets this standard meets the safety requirements specified in subclause 33.5.1 'General safety'.

Interpretation Number: 2-11/03 – Item 3
Topic: DTE Power via MDI Isolation
Relevant Clause: 33.4.1.1.1
Classification: Ambiguous

Clause 33.4.1.1 Electrical Isolation Environments

The Environment A definition text is as follows:

Environment A – When a LAN or LAN segment, with all its associated interconnected equipment, is entirely contained within a single low-voltage power distribution system and within a single building.

What is the definition of ‘single low-voltage power distribution’?

Interpretation for IEEE std 802.3-2002

This represents an ambiguity within the standard. This issue is being referred to the maintenance process for possible action.

Interpretation Number: 2-11/03 – Item 4
Topic: DTE Power via MDI Isolation
Relevant Clause: 33.4.1.1.1
Classification: Unambiguous

Clause 33.4.1.1.1 – Environment A requirements

The first statement of the clause requires the following:

Attachment of network segments via network interface devices (NIDS) that have multiple instances of a twisted pair MDI requires electrical isolation between each segment and the protective ground of the NID.

There is an implication that each segment need not be isolated from the other segments (port-to-port isolation) in a multiport NID, but all isolated from protective ground.

How is this statement to be interpreted considering Clause 33.2.6.1 and Clause 33.4.1?

Also, the following text is located in this clause:

A multi-port NID complying with Environment A requirements does not require electrical power isolation between link segments.

This appears to be a circular reference since the above requirement is referencing the requirement clause in which the text itself is located. How is this to be interpreted?

Also, how is this statement to be interpreted considering Clause 33.2.6.1 and Clause 33.4.1?

Interpretation for IEEE std 802.3-2002

The standard states in the first paragraph of subclause of 33.4.1.1.1 that isolation is required between MDI and protective ground of the NID, there is no requirement stated here for isolation between MDIs.