d) *Simplicity*—The powering system described here is no more burdensome on the end users than the requirements of 10BASE-T, 100BASE-TX, or 1000BASE-T.

33.1.2 Compatibility considerations

All implementations of PD and PSE systems shall be compatible at their respective Power Interfaces (PIs) when used in accordance with the restrictions of Clause 33 where appropriate. Designers are free to implement circuitry within the PD and PSE in an application-dependent manner provided that the respective PI specifications are satisfied.

33.1.3 Relationship of Power via MDI to the IEEE 802.3 Architecture

Power via MDI comprises an optional non-data entity. As a non-data entity it does not appear in a depiction of the OSI Reference Model. Figure 33–1 depicts the positioning of Power via MDI in the case of the PD.

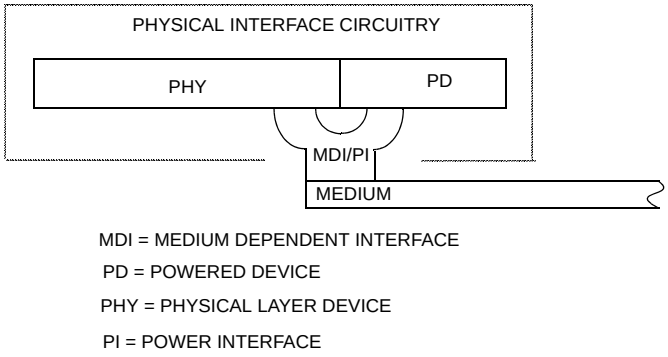

Figure 33–1—DTE Power via MDI powered device relationship to the physical interface circuitry and the IEEE 802.3 CSMA/CD LAN model

Figure 33–2 and Figure 33–3 depict the positioning of Power via MDI in the cases of the Endpoint PSE and the Midspan PSE, respectively.

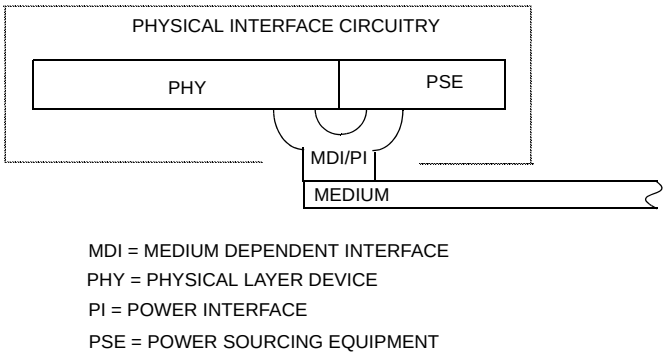

Figure 33–2—DTE Power via MDI endpoint power sourcing equipment relationship to the physical interface circuitry and the IEEE 802.3 CSMA/CD LAN model

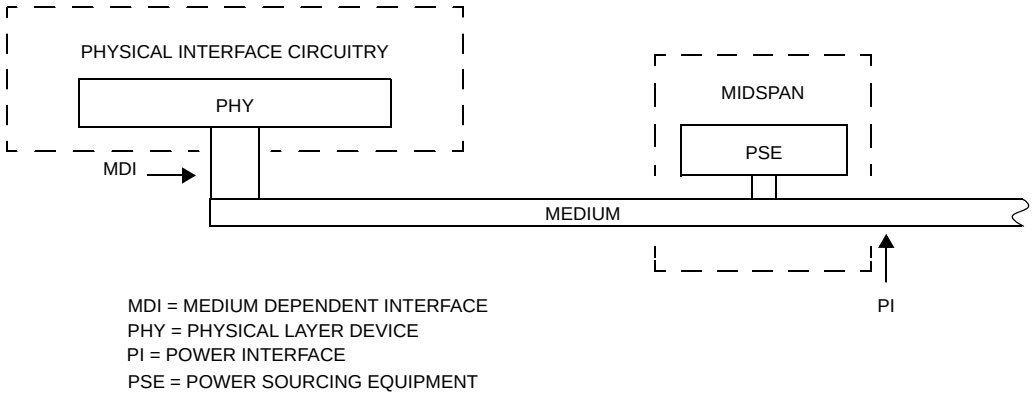

Figure 33–3—DTE Power via MDI midspan power sourcing equipment relationship to the physical interface circuitry and the IEEE 802.3 CSMA/CD LAN model

Any device that contains an MDI compliant with Clause 14, Clause 25, and/or Clause 40, and sinks and/or sources power in accordance with the specifications of this clause is permitted.

The Power Interface (PI) is the generic term that refers to the mechanical and electrical interface between the PSE or PD and the transmission medium.

In an Endpoint PSE and in a PD the PI is encompassed within the MDI.

PSE power interface specifications that are defined at the MDI apply to an Endpoint PSE. They may or may not apply to a Midspan PI.

33.1.4 Type 1 and Type 2 system parameters

A system defined as either Type 1 or Type 2 will have certain basic parameters defined according to Table 33–1. These parameters define not only certain performance characteristics of the system, but are also used in calculating the various electrical characteristics of PSEs and PDs as described in 33.2 and 33.3.

Table 33–1—Type 1 and Type 2 system parameters

Parameter	Symbol	Units	Type 1 value	Type 2 value
Maximum DC cable current	I_{Cable}	A	0.35	0.6
Channel DC loop resistance	R_{Ch}	Ω	40	25
Cable type			CAT-3	Class D

33.1.4.1 Type 2 cabling requirement

Type 2 operation requires Class D or better cabling as specified in ISO/IEC 11801:1995. When Class D cabling is used, the cabling system components (cables, cords, and connectors) used to provide the link segment shall consist of Category 5e components as specified in ANSI/TIA/EIA-568-B.2 and ISO/IEC 11801:2002.