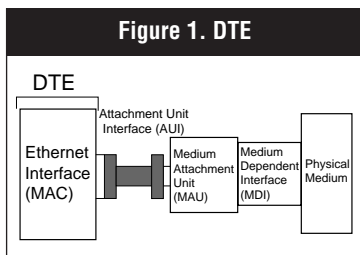
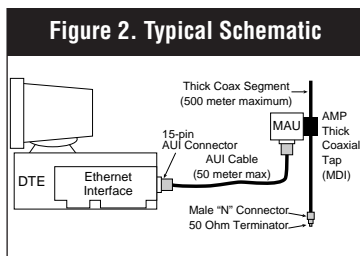


IEEE 802.3 Ethernet LAN (incl. Powered Ethernet) Application Overview

Ethernet is a local area network (LAN) technology that transmits information between computers at speeds of 10, 100, and 1000 (draft as of February 2000) million bits per second (Mbps).



Data Terminal Equipment includes a terminal and computer ports that use the RS-232 interface standard to communicate with data communications equipment, such as a computer or a remote access server.



The AUI consists of signal circuits, power, and ground. The interface provides for power transfer from the DTE to the MAU. Per the IEEE 802.3 standard, the Voltage Plus (VP) circuit shall be capable of operating at 12-15V_{DC} for all currents from 0 to 500mA. In addition, per section 7.5.2.5, the source

shall provide protection for this circuit against an overload condition.

In addition to this traditional use of a LAN, a new use of the standard 8 conductor cable is for powering devices in addition to transferring signal. The concept is to use existing ethernet network also to carry power. Power is supplied from a backplane or stand-alone power supply to power peripherals such as IP phones, POS systems, and security cameras/alarms. Power travels on unused copper pair(s) (typically 4 of 8 conductors in the RJ45 are used for the ethernet data transmission). Normal operating current is 150mA max. Protection is typically required against short-circuit and/or FET failure. Typical power requirements for devices targeted at this application are: EtherPhones (5W), Wireless Access Points (8W), EtherCams

(10W). Current and voltage levels have not been standardized but are typically 60V and 1.75A.

Typical Protection Requirements
Per IEEE 802.3 - Local and Metro. area networks, "The DTE (Data Terminal Equipment) shall be capable of: Operating voltage: 12-15V and Operating current: <500mA. The source shall provide protection for this circuit against an overload condition."

Typical Agency Requirements
IEC60950 and UL1950 requirements apply.

Device Selection
Devices from the miniSMD series are typically used for AUI protection. The most commonly used devices are miniSMDC110F/16 and miniSMDC075.

