EtherTalk: Ethernet Connectivity for the Macintosh II

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TOPIC ----------

This is an article about EtherNet for the Macintosh.

DISCUSSION ----------

Overview

EtherTalk demonstrates that AppleTalk is a network architecture independent of media type. EtherTalk increases AppleTalk's bandwidth significantly by using Ethernet, an industry standard medium. It also provides increased throughput for transmission-intensive applications while implementing the layered features and functionality of the AppleTalk architecture.

Installation

The EtherTalk card is easy to install and use. You don't need to worry about the Ethernet Link Access Protocol address assignments. Each EtherTalk card has a unique address, assigned at the factory and stored on the card. The driver automatically looks for and uses this address on an Ethernet network. (The network address is also printed on a label on the back of the board.)

Features

EtherTalk Macintosh OS software redirects AppleTalk packets from the printer port to the EtherTalk card. These packets are then encapsulated in Ethernet Link Access Protocol and then sent out onto the network. EtherTalk operates at speeds up to 10MBPS. The card can be configured for use on 'thick' or 'thin' Ethernet networks. (See the EtherTalk Interface

Card manual for configuration details.)

You can connect a LocalTalk node to the printer port with one or more EtherTalk cards installed, and switch between the printer port or any one of the EtherTalk cards. Only one AppleTalk path can be active at any one time, and the 'network' function in the control panel is used to select the active network. (See Chapter 2 of the EtherTalk User's Guide.) There is a limit of 254 active EtherTalk users (including bridges) on any one Ethernet.

Performance

EtherTalk improves AppleTalk throughput, depending on the level of 'foreign' Ethernet traffic and total available bandwidth. A practical expectation is an improvement of 1.3 to 3 times over LocalTalk connections, with a total capacity of 3 to 5 times that of LocalTalk networks.

Bridges

An EtherTalk Macintosh II can't act as a bridge between a LocalTalk network and Ethernet. It's possible to write bridging software, but none is included with the EtherTalk product.

AppleTalk Protocol Notes

EtherTalk under Macintosh OS implements AppleTalk according to Inside AppleTalk specification with some enhancements to allow operation on Ethernet networks. This means that Ethernet devices that don't implement these protocols and enhancements will be unable to 'see' the card on an Ethernet network. This is applicable only under Macintosh OS using AppleTalk protocol.

Under Macintosh OS, a special driver (.ENET) is utilized to 'push' packets onto the network. This driver is similar to the LocalTalk driver. Packets sent by this driver in AppleTalk mode are restricted to 768 bytes to allow encapsulation by an Ethernet LAP.

These packets will co-exist with TCP/IP, XNS or other Ethernet protocols on the same network without problem.

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