

Technical Response Center

Technical Tip

Number: TT-Pre10BaseT-9508006

Subject: LattisNet (Pre-10BaseT) versus 10BaseT

Product: 1000, 2000, 3000

Description:

This Technical Tip is designed to clarify the differences and similarities between LattisNet (Pre-10BaseT) and the 10BaseT Standard currently in use.

LattisNet (Pre-10BaseT) UTP products, provide similar performance but are not compatible with the 10BaseT standard. These products will be referred to as LattisNet UTP. They include the following products:

Model 505 UTP Transceiver
Model 3305 UTP Host Module
Model 25xx Series Concentrator
Model 405 UTP Host Module for the 1xxx Series Concentrator

10BaseT products and LattisNet UTP products can be used to construct an Ethernet network over unshielded twisted pair wiring. 10BaseT products are based on the 10BaseT standard and give you interoperability with other equipment based on that standard. LattisNet UTP products give you compatibility with existing LattisNet UTP equipment. 10BaseT and LattisNet UTP equipment can be combined in a single network, as long as 10BaseT transceivers are connected to 10BaseT host ports, and LattisNet UTP transceivers are connected to LattisNet UTP host ports.

The 10BaseT specification is the IEEE 802.3i standard for Ethernet over unshielded twisted pair wiring. The "10" in 10BaseT refers to the data rate, 10 Mb/s, "BASE" refers to baseband transmission, and the "T" refers to telephone or twisted pair wiring.

LattisNet is compatible with IEEE Standard 802.3 at the transceiver cable interface (AUI), and operates with most Ethernet Version 1.0 and 2.0 equipment. It conforms to the CSMA/CD (carrier sense multiple access with collision detection) network access protocol.

The chart below shows the similarities between LattisNet and 10BaseT:

	Definition	10BaseT	LattisNet
Topology	Physical structure of the network	Active hierarchical star	Active hierarchical star
Configuration	Description of network configuration and hardware	Multiport repeaters, AUI-compatible	Multiport repeaters, AUI-compatible
Data Rate	Data Transfer Rate	10 Mb/s	10 Mb/s
Access Protocol	Method of gaining access to the physical medium	CSMA/CD	CSMA/CD
Maximum Distance Between Repeaters	Maximum distance allowed before signal must be regenerated	100 m (including patch cables)	100 m (excluding patch cables)
Connector	Device that connects nodes to the network medium	ISO 8877 (rj-45) with 10BaseT pin assignments	ISO 8877 (rj-45) with 10BaseT pin assignments
Network Wiring	Physical medium that network signals travel over	Telephone twisted pair wire	Telephone twisted pair wire

The chart below shows the differences between LattisNet and 10BaseT:

	Definition	10BaseT	LattisNet
Voltage Level	Maximum peak to peak signal voltage on the physical medium	5 Volts	2 volts
Link Status Detection	Method of determining integrity of physical link	"Link Beat" message sent after period of silence indicates link integrity	Low DC voltage indicates link integrity
Jabber Protection	Detection and isolation source of excessively long packets	Performed at transceiver and concentrator	Performed at concentrator
Jitter Equalization	Compensation for fluctuations in signal timing	Performed before transmitting packet	Performed after receiving packet

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