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## Modem Standard Terms Defined (8/95)

Article Created: 30 July 1993

Article Reviewed/Updated: 10 August 1995

TOPIC -----

What do the terms MNP, V.xx and bis stand for? I know that there are several standards, but what do they mean? Which standards do the Apple Express Modem and 2400 internal modem have?

DISCUSSION -----

For a complete discussion of the topic, an Introduction to Data Communications book will give more information. A book by Andrew S. Tanenbaum is a good one.

Terms Defined

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V.xx is a standard created and maintained by CCITT which is an International standards body for networking communication. There are a number of V.xx standards and some correspond to older US standards. For example:

- V.21 same as Bell 103 (a 300 bps (bits per second) standard)
- V.22 same as Bell 212A (a 1200 bps standard)
- V.24 same as RS-232 (a 2400 bps standard)
- V.34 is the 28,800 bps standard

The term bis refers to the second release of a standard, or rev 2. For example:

- V.22 is a 1200 bps standard
- V.22bis is a 2400 bps standard
- V.32 is a 9600 bps standard
- V.32bis is a 14,400 bps standard

MNP stands for Microcom Networking Protocol and is used to define a number of levels of data compression and/or error correction standards for modems when they are communicating. The modems have to have compatible standards (MNP level) to work properly together.

Standards for Apple Products

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For the Express Modem the following are the features:

- Hayes standard AT command set support
- V.32 and V.32bis (that means transfer rates of: 7200, 9600, 12000, 14400)
- V.42 error control - Supports MNP 2-4 as well
- V.42bis data compression - Supports MNP 5 as well

For the Internal 2400 Modem:

- Supports the following standards:
  - Bell 103 -- 300 bps
  - V.21 -- 300 bps
  - Bell 212A -- 1200 bps
  - V.22 -- 1200 bps
  - v.22bis -- 2400 bps
- Error control -- MNP 3-4, same as V.42 for Bell 212A, V.22 and V.22bis only
- Data Compression -- MNP 5, same as V.42bis for Bell 212A, V.22 and V.22bis only

What about MNP 10?

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This is an error correction standard designed for really noisy lines such as cellular connections. To use MNP 10 both modems must support MNP 10 and at this time there are few modems that do. No Apple modems support MNP 10 at this time.

Do Apple modems support 28.8?

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At this time there are no Apple modems that support v.34 or 28.8 kbps connections. All Apple modems should be able to connect with v.34 modems at lower speeds.

What is V-Fast?

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V-Fast is what 28.8 class modems were called before the v.34 standard was set. Modems that say V-Fast may not work with true v.34 standard modems.

Article Change History:

10 Aug 1995 - Update article with current information.

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Keywords: <None>

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19960215 11:05:19.00

Tech Info Library Article Number: 12851