

http://groups.google.com/d/topic/comp.dcom.modems/iLgcQrmo_hI/discussion
comp.dcom.modems >

What is a PEP modem?

6 posts by 5 authors

D.J.Williams

10/31/96

What exactly is a PEP modem? Is it a proprietary standard or are they made by other folks?

Where can I get more info?

Sorry for the 20 questions :)

Dale

Charles Hyde

10/31/96

In article <55ak3i\$i...@fohnix.metronet.com>, da...@fohnix.metronet.com (D.J.Williams) wrote:

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PEP was Telebit's protocol for high speed transmission long before any other manufacturer. I believe it stands for Packet Encapsulated Protocol. It was designed for UNIX and its high volume traffic. In a nut shell, it transmitted data on different carrier signals allowing the modems to step up or down by 100 as line conditions varied. They were highly regarded, up to about two or three years ago. That is when they were surpassed in the marketplace by other less expensive and faster modems. Telebit's Trailblazer modems failed to keep up with market demand for more speed. If you want some, I can probably scrounge up a pair.

Charles Hyde

John Navas

10/31/96

[POSTED TO comp.dcom.modems]
da...@fohnix.metronet.com (D.J.Williams) wrote:

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<<http://www.telebit.com/>>

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Chris

11/8/96

On 31 Oct 1996 10:28:34 -0600, da...@fohnix.metronet.com (D.J.Williams) wrote:

>What exactly is a PEP modem? Is it a proprietary standard or are they

PEP stands for "Packetized Ensemble Protocol", a proprietary modem standard introduced by Telebit in 1986 in their "Trailblazer" modems.

I've heard that some other manufacturers use PEP under license, but I don't know who they are. PEP is patented by Telebit. Telebit was recently purchased by Cisco. I haven't seen (or heard the whale song of) a PEP modem in years.

Telebit modem were (are?) popular among unix system administrators because of their ability to "spoof" uucp, kermit, xmodem and other file transfer protocols.

PEP is a most excellent protocol for transmission over noisy lines. PEP uses many (up to 511) carrier frequencies as opposed to the single carrier frequency used by most of the V.x modems today.

When two PEP modems negotiate a connection, they exchange carrier usability information with each other. Noisy carriers can be locked out. Each separate carrier will be modulated using 2 to 7 bit QAM. Data is packetized over the carrier spectrum. Packet (aka baud or symbol) transmission rate is very slow. Maximum throughput is about 23K bits per second. PEP includes it's own error detection and correction protocol.

This multi carrier approach is efficient over noisy lines because of PEP's ability to dynamically allocate data over the most useable carriers. Since each carrier only represents a small amount of data, the loss of a few carriers is relatively insignificant. When the going gets rough, PEP stops using the carriers that are unreliable.

When the going gets rough for a conventional modem, the modem falls back to a lower baud rate. There used to be only a few baud rates, so each fall-back was a significant step backwards - 9600, then 7200, then 4800, then 1200, etc. So a narrow-frequency impairment could result in a 25% to 50% loss in throughput.

V.fast and V.34 introduced lots more baud rates, so this is not as significant as it used to be.

Since PEPs baud rate is very slow (around 10), PEP is much better at handling impulse noise since each baud will last such a long time.

So how come PEP never made it to the big time? It was considered in the 1993 CCITT V.fast study group, but the single carrier technology won out. I'm not really sure why, but many improvements were made to single-carrier technology that narrowed the differences.

I wonder what modems would be like if the multi-carrier technology was adapted as the V.fast standard.

Tobias Erichsen

11/9/96

Chris wrote:

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The multi-carrier approach has been taken out of the box again for use in modern ADSL-technology! Downlink range up to 8Mbits/sec and uplinks up to 768kbit/sec.

I think I read somewhere, that one ADSL-modulation scheme has even be approved as ANSI-standard.. (but I'm not really sure about that..)

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