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## PowerBook Fax/Data Modem: How Escape Sequence Differs from Hayes

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TOPIC -----

I'm reluctant to believe that the PowerBook internal modem is fully compatible with Hayes' patented guard time escape sequence. Is this a serious issue?

DISCUSSION -----

The issue relates to the different ways the escape sequence is implemented by Hayes and Apple. The primary difference is that Hayes implements a guard time and Apple doesn't. And no, it isn't a serious issue.

### Background

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You can use an escape sequence when the modem is on-line and you need to enter commands to the modem, but you don't want to disconnect from a call. The escape sequence ensures that you won't lose the modem connection or data while the modem is off line in the command state. Because of the escape sequence, modems can provide reliable transmission of data, distinguishing the predetermined escape sequence characters from the random occurrence of like characters in user data.

### Hayes' Implementation

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To enter the escape sequence, follow these steps:

- 1) Pause 1 second (Hayes calls this the guard time) or longer.
- 2) Enter +++ (3 plus characters), and pause 1 second or longer.
- 3) The "OK" from the modem acknowledges that it has escaped from the on-line data state, and you may begin entering AT commands.

When you're ready to resume your call to a remote system, enter ATO, and press RETURN. This is the command to return on-line.

### Apple's Implementation

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There are two ways to enter into the command state while on line:

- Send a BREAK to the modem (refer to the ATYn command on page 100 of the Macintosh PowerBook Fax/Data Modem User's Guide for more details), and it will immediately drop into command state, or
- Enter the appropriate escape sequence.

The following strings are recognized as valid escape sequences:

```
+++ATxxx...xxx<CR>  
+++<CR>ATxxx...xxx<CR>
```

<CR> is RETURN.

xxx...xxx is a character string consisting of 0 to 13 ASCII characters.

After the escape command is recognized and executed, the modem sends an OK result code.

NOTE: This escape sequence is only based on character recognition, regardless of any guard time before, during, or after the DTE sends the string to the modem. This command isn't recognized in command mode.

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