



## What to do... Not Getting a 56K Connection

### **Introduction:**

This document provides information about what to do if your modem cannot achieve a 56K connection.

Because of current phone company technology, several factors contribute to why your modem may not be able to achieve a 56K connection (53Kbps max. The modem is 56Kbps capable. However, current FCC regulations limit download speeds to 53Kbps). Keep in mind that a 56K connection is defined as any connection speed over 33.6Kbps.

The most common reasons are:

- Loop Length - General line noise, or the distance you are located from your phone company's Central Office (CO) and from your ISP. Even though your ISP may be close by, there may be a long loop length because the CO may have to route a call differently due to high call volume.
- Digital Stuffing or Bit Robbing - These are ways that the CO tracks calls so that if there is a high call volume, the calls can be redirected to alleviate congestion. Technically, the CO adds or removes one digital bit to the original (normal) 8 bits.
- Line Concentrators - These are used to provide more service in an area that has a limited number of physical lines and requires more lines than are available. A good example of this is a new housing development that has tenants using extra lines for Internet connections, fax machines, or the like.
- Multiple Digital Switches - A 56K connection is only possible when there is one Digital to Analog conversion. A digital PBX phone system in an office location or a line concentrator are examples of an additional D/A conversion.

In order to ensure the best possible conditions for a 56K connection, verify that:

- You're dialing into an actual 56K line. Many ISP's have separate phone numbers available for 56K connections apart from 33.6 connections.
- Your ISP supports the protocol of your 56K modem. X2 modems cannot achieve a 56K connection to K56Flex equipment, and vice versa.
- If you're going to update your modem to V.90 (or a later version of V.90) that your ISP is as closely matched as possible. Inquire with your ISP about server software versions, equipment types, etc.
- If you have updated your modem to a version of V.90 firmware and have connection problems that you have the latest information on your product type for possible workarounds. These documents can be referenced below and requested from the self-help documentation systems:

2331 What to do... OT/PPP Reports "Communicating at an Unknown Rate"

2332 What to do... Problems Connecting After Updating TelePort K56Flex or V.90 to ROM 2.200

2333 What to do... Problems Connecting After Updating TelePort X2 to V.90

2334 What to do... Problems Connecting After Updating GV 56K or V.90 PC Card to ROM 2.200

If your modem cannot achieve a 56K connection, it will try and negotiate down to the next fastest protocol, v.34 (33.6Kbps), based on line conditions, until it can negotiate a speed with the remote server equipment.