Modem Problems at Multiple Sites - Troubleshooting Flowchart

from **sandman.com**

Can't connect to or stay connected to multiple modems at multiple premises

It's possible but unlikely that you have the same problem at every location. It's overwhelming when you think about trying to fix a lot of problems at a lot of sites. The only sane thing to do is get one location fixed and then move on to the next case of trouble. What you learned for the last fix will help or might even be the same fix, or you start troubleshooting from the beginning.

Start at the main computer location

YES ← The problem is the same calling all locations? → **NO**

Start at the location with the most easily reproducible problem, and is nearest to you

YES ← Make a voice call on the POTS line with a known good phone or butt-set at each end. Is it at a normal volume and noise free? → **NO**

Fix the phone line(s). You have no chance of a modem working right if there is noise or the volume is too loud, or way too low (modems usually like lower rather than higher since high volume often distorts the tones).

Use standard troubleshooting for a phone line to determine if the problem is inside, or outside towards the phone company.

You may need our Telephone Line Diagnostic Table to determine the problem with the line.

If you hear noise on a line with the inside wiring disconnected the phone company HAS TO fix it. Don't mention anything about a modem if you report it to repair. Just tell them about the noise.

If you mention "modem" the phone company will tell you they don't guarantee a modem will work on your line, and they'll never even try to fix the problem.

Did replacing the modem at one or both ends fix the problem? Trying to fix stuff without good spares can be very frustrating!

Having spares that are bad because the previous tech didn't mark them as bad is even more frustrating.

YES

Congratulations! You fixed it.

NO

Is your power and ground good, and is the environment free of RF/EMI Interference?

NO → Fix the power, ground or interference and re-test

YES

Move on to making test measurements to figure out what's wrong. The Telephone Line Diagnostic Table suggests all the meter readings you need to take - with guidance to what's normal. Hopefully something will pop off the page as being odd and give you a direction to go in (you can call Mike Sandman with the readings and he can give you his opinion). Note that AC voltage over 1/2 volt often causes problems with modems and all kinds of phone equipment (except 2500 sets).

Re-test after the phone company says it's fixed

In order to use the Telephone Line Diagnostic Table you need to know what the readings are supposed to look like at a site that's working,

Go to a number of sites where the modems are working OK to see what the readings are like, AND that you're taking the measurements properly and you have confidence in your tools.

Taking readings for the first time in the heat of battle is a losing proposition. If you see strange readings, you don't know if it's your techniques, the meter of there's really something wrong.

If you have problems at multiple sites after you get the first one fixed, move on to fixing the next site. It may be the same fix, or it may be different? Don't just assume that what you just did will fix all your problems. It may, but it would be your lucky day if it did!

In general if you're looking for something as close to magic as possible our Modem Protector with Filter is being automatically installed at every site by many companies around the world when they put in a modem. It can't fix every problem with a modem, but it reduces loop current (high loop current sometimes gets the modem's components too hot to function normally) and puts a common mode noise filter in series with the modem which both eliminates noise (that you can't hear because it's common mode - the same on the tip and ring), AND it absorbs surges or spikes on the line (it's NOT a lightning protector).

Many of the same large companies automatically putting our Modem Protector with Filter in with every modem they deploy also install our Modular MLP-270M Lightning Protector at every site (the Lighting Protector needs a good ground or it won't do anything).