

Diamond Knowledge Base

Using the Phoenix MDK with a Modem

Overview

All Phoenix MDK counters come fully operable for use with a modem. You will need some type of telephone communication package to access the counter through the modem. Diamond Traffic Products offers our Centurion Gold for Windows® Telemetry software. The features include:

Display road map of your area with telemetry sites marked on the map. Individual site configurations. Photographs of each site can be incorporated into site info. Ability to configure multiple modems setups. Select polling times and dates by user assigned zones. Set polling commands by site or by polling groups. Setup auto-polling parameters such as frequency and period.

For field use the Centurion Field version provides a telemetry option for testing and on-site troubleshooting.

The Phoenix MDK will work with almost all modems (Hayes compatible). However we have found that many modems designed for office use DO NOT perform well when operating under field conditions. Diamond Traffic Products has designed our own Cascade Modem specifically to operate in the conditions found in the field. It will revert into a sleep mode to save power which is vital at solar power sites. It has some protection built into it to protect against power surges in the telephone lines and works in extreme temperature conditions (industrial temperature rated). While Diamond Traffic will operate with Hayes compatible modems, it is strongly suggested that an industrial or robust modem be used in the field to increase your communication reliability.

Note that some line powered modems are not “Smart Modems” (i.e. AT programmable modems), and we recommend you purchase a “Smart Modem”. The Phoenix MDK will work with a “Dumb Modem” (i.e. non-programmable modems), but you may not be able to take advantage of all the features of the Phoenix MDK or have reliable modem to modem connections. It is also recommended that line powered modems that draw power from either the serial or phone line not be used as they may not be reliable due to the serial line is not always powered from the counter side.

The Phoenix MDK is fully compatible with MNP protocol and can be easily configured to accept up to 19200 Baud (default setting is 9600). Our experience is that telephone lines in rural areas rarely allow speeds above 9600 Baud and more often at a 4800 Baud average for remote areas or poor line quality.

If your sites are in a lightning prone area, we strongly recommend you purchase a line surge suppressor between your modem and the telephone line.

Finally, be sure to provide a good earth ground & connect your lightning surge protector for the telephone modem and inductive loops to ground! This is vital to a reliable data collection site.

Standard Modem Hook Up (1200 Baud Smart Modem):

- 1) Turn off power to both the Phoenix MDK and the Modem.
- 2) Connect the Phoenix MDK to the modem using the Modem Interface Cable.
- 3) Turn on modem.
- 4) Turn on Phoenix MDK. The counter screen should display (after a self test):

Phoenix Vx.xx

Counter is now initializing the modem. The counter will perform this step every time you hang up after a connection & automatically at midnight and 2 p.m. or a.m. of each day. Note: "Vx.xx" is the current Phoenix MDK version number.

- 5) If everything is done correctly, the Phoenix MDK configures the modem and sets it properly. The counter will then display:

Phoenix Vx.xx

Counter is now ready to accept incoming calls. You can still use the counter keypad by pressing the ENTER key. Press the CLEAR key to return to this screen. Note: x.xx is the current Phoenix MDK version number.

- 6) If a nonprogrammable (i.e. Dumb Modem) modem has been connected or your smart modem is not functioning, or you have incorrectly connected the cables, the display screen will now read:

Phoenix Vx.xx

If the counter is connected to a dumb modem, it is now ready to accept incoming calls. You can still use the counter keypad by pressing the ENTER key. Press the CLEAR key to return to this screen.

NOTE: If the counter displays when it's connected to a smart modem, then something is not working properly.

Connecting to a Dumb Modem Other than a 1200 Baud Modem

NOTE: When using a newer Cascade Modem, it is required that the counter baud rate be set at 19200 to

operate in mode.

The Phoenix MDK defaults to work with a 1200 Baud modem, if you want it to accept other Baud rate calls, you must perform the following steps:

- 1) Disconnect any serial or modem cable from the Phoenix MDK.
- 2) Select the "Configure System" option when counter is not collecting data.
- 3) Press ENTER until the following option screen appears:

Select Baud For
Modem: 1200

- 4) Using the Arrow Keys, select the speed of transfer you want to be able to call the counter at. Make sure it's not faster than the modem can handle.
- 5) Keep pressing ENTER until you return to the main menu.
- 6) Follow the steps under Standard Modem Hook Up.

Notes about switch settings

If you are using a non-programmable dumb modem, all configuration of it is usually done through switch settings. Follow the below guidelines when setting these switches.

- 1) DTR Status (sometimes called Data Terminal Ready) should be in the hang up when Toggled setting.
- 2) DCD Status (sometimes called Data Carrier Detect) should be in the Reflect Actual State position (not always "on" or always "off").

If you are using a Smart Modem, switching settings are not normally important because the Phoenix MDK will re-initialize the modem to the correct settings with software.

<http://support.diamondtraffic.com/knowledgemanager/questions/38/>