

# AudioNet™ Modem Manual

## Introduction

All Ivie AudioNet™ products are capable of communication via modem, although not all modems will work with Ivie AudioNet™ products. The purpose of this manual is to both identify some (although not all) modems that will work with Ivie equipment, to establish guidelines for selecting a modem, and to provide instructions for successful modem interface with Ivie's products.

In addition to a modem, successful interface of a remote computer to Ivie AudioNet™ products requires an RS232 to RS485 converter. The standard Ivie 78-232A, RS232 to RS485 converter is available for interface between a local computer and Ivie products, but the 78-232M has been created specifically for use with modems. The 78-232M has the correct cables to connect to a modem and to Ivie AudioNet™ products.

## Compatible Modems

The following modems have been tested and successfully used as AudioNet™ modems:

U.S. Robotics Sportster X2 56K Modem  
U.S. Robotics WorldPort 14,400 Data/Fax Modem  
Practical Peripherals PM14400FXMT Modem  
Hayes Accura 14,400 Data/Fax Modem

This is not intended to be a complete list. Other modems may work as well if they meet all of the following considerations.

## General Considerations

- 1: The modem must be configured for stand alone answer. This requires both software configuration and a properly configured modem cable.
2. The modem must be configured to never echo any commands or data sent to it. This requirement must be met in all modem modes - on-line and off-line.
3. The modem should not generate any progress messages during connect. There should be no ring message, nor any connect message, just a silent answer with a smooth transition to the on-line data mode.

4. The modem should always answer at a DTE speed of 9600 baud.
5. The modem should hang up upon loss of carrier.

## General Modem Setup

(See below for setup of US Robotics Sportster X2 56K)

Before taking the modem to the job site, it must be properly configured. The following setup instructions should be followed carefully to properly configure the modem before it is taken out to be installed:

1. Connect the site modem to a computer using a standard modem cable (not supplied by Ivie). *Do not use the special cable supplied with the 78-232M. It will not work for programming the modem.*
2. If the modem is connected to the serial communications port #1 (COM1), run the Ivie 485MON program by typing: c:> 485MON <cr> (<cr> = carriage return: either the “enter” or “return” key). If the modem is connected to COM2, run the Ivie 485MON program by typing: c:> 485MON COM2 <cr>. Running the 485MON program will allow visual confirmation of proper communication with the modem.
3. Type this command into the modem: AT? <cr>. This command will confirm a communications link with the modem. It should answer back with an “OK.” If it does not, either there is no communication taking place, or the modem answer back feature has been defeated. Proceed with the next command.
4. Type this command into the modem: AT&F <cr>. This will reset the modem to factory defaults, a known condition. After this command, the modem should answer back with an “OK.” If it does not, the communications link between the computer and the modem is not working. Check cables, COM port assignments, etc. to correct the problem and repeat steps one and two. After successful communication and the receipt of an “OK” answer back, proceed with the next command.
5. Type this command into the modem: ATS0=1 <cr>. This command tells the modem to answer on the first ring. The modem should reply with an “OK.” Proceed to the next command.
6. Type this command into the modem: ATE0Q1 <cr>. This disables the echo and answer back feature of the modem. It should not reply or answer to this command. No “OK” will be given in response because this feature (echo) should now be disabled. Proceed to the next command.
7. Type this command into the modem: AT&W0 <cr>. This will save the instructions already given to the modem’s power-up memory, memory 0. Proceed to the next command.
8. Type this command into the modem: AT&W1. As a backup, this saves the instructions already given to memory 1 as well. Proceed to instruction #9.
9. The modem should now be properly programmed. Disconnect it from the computer and take it to the job site for installation. It should be connected to Ivie AudioNet™ products through a 78-232M adaptor, using the cable supplied with the 78-232M.

# Modem Setup for the US Robotics Sportster X2 56K

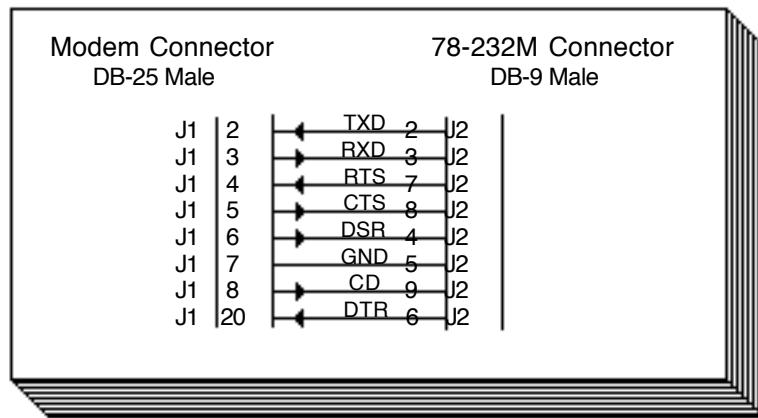
Before taking the modem to the job site, it must be properly configured. The following setup instructions should be followed carefully to properly configure the modem before it is taken out to be installed:

1. Connect the site modem to a computer using a standard modem cable (not supplied by Ivie). *Do not use the special cable supplied with the 78-232M. It will not work for programming the modem.*
2. Set the Dip Switches as follows: 

|    |    |     |    |     |    |    |     |
|----|----|-----|----|-----|----|----|-----|
| 1  | 2  | 3   | 4  | 5   | 6  | 7  | 8   |
| up | up | dwn | up | dwn | up | up | dwn |
3. If the modem is connected to the serial communications port #1 (COM1), run the Ivie 485MON program by typing: c:> 485MON <cr> (<cr> = carriage return: either the “enter” or “return” key). If the modem is connected to COM2, run the Ivie 485MON program by typing: c:> 485MON COM2 <cr>. Running the 485MON program will allow visual confirmation of proper communication with the modem.
4. Type this command into the modem: AT? <cr>. This command will confirm a communications link with the modem. It should answer back with an “OK.” If it does not, either there is no communication taking place, or the modem answer back feature has been defeated. Proceed with the next command.
5. Type this command into the modem: AT&F1 <cr>. This will reset the modem to factory defaults, a known condition. After this command, the modem should answer back with an “OK.” If it does not, the communications link between the computer and the modem is not working. Check cables, COM port assignments, etc. to correct the problem and repeat steps three and four. After successful communication and the receipt of an “OK” answer back, proceed with the next command.
6. Type this command into the modem: ATS0=1 <cr>. This command tells the modem to answer on the first ring. The modem should reply with an “OK.” Proceed to the next command.
7. Type this command into the modem: AT&W0 <cr>. This will save the instructions already given to the modem’s power-up memory, memory 0. Proceed to the next command.
8. Type this command into the modem: AT&W1. As a backup, this saves the instructions already given to memory 1 as well. Proceed to instruction #9.
9. Set the Dip Switches as follows: 

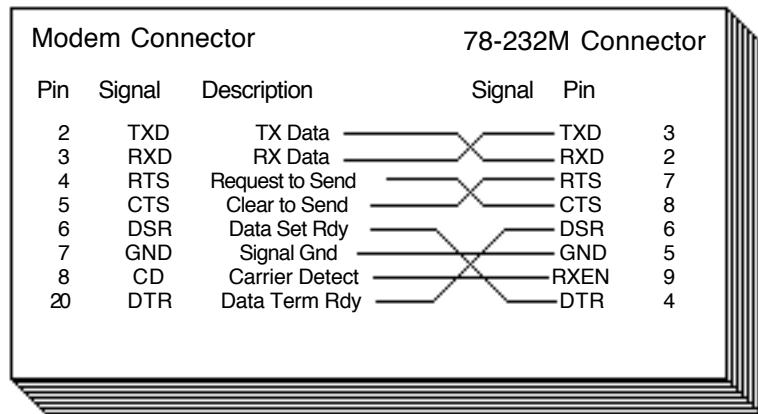
|    |    |    |     |    |    |    |    |
|----|----|----|-----|----|----|----|----|
| 1  | 2  | 3  | 4   | 5  | 6  | 7  | 8  |
| up | up | up | dwn | up | up | up | up |
10. The modem should now be properly programmed. Disconnect it from the computer and take it to the job site for installation. It should be connected to Ivie AudioNet™ products through a 78-232M adaptor, using the cable supplied with the 78-232M.

# Building Your Own Cable



## Note:

This cable connects a DTE device (modem) to a second DTE device (78-232M). This requires a "null modem" wiring technique as shown below.



## Quick Kit

Need to build this cable in a hurry? The following parts from Radio Shack will allow you to build it immediately.

- RS\* 26-116 6' Male DB9 RS-232 Cable
- RS\* 276-1429 D-Sub Crimp Connector (25 Pin)
- RS\* 276-1549C D-Sub Connector Hood (25 Pin)