Technical Note #611

SIXNET Modem Interfaces to a network of Allen Bradley SLC 5/04

ABSTRACT: This technical note provides instructional tips for interfacing the SIXNET Industrial Telephone Modem with the Allen Bradley AI Configuration Software and Allen Bradley 500 Processors configured for DH-485 Communication Network.

Key Handling Systems Inc. has created the following tutorial for interfacing the SIXNET Industrial Telephone Modem with Allen-Bradley AI Software and AB 500 Processors. This modem interface provides long distance communication between the operator and seven PLCs through an Allen-Bradley 1770-KF3 DH-485 Communication Interface Module. Diagnostics and troubleshooting can now be done from hundreds of miles away. This provides a great advantage to operators because problems can now be solved and corrected without having to travel to the PLC itself.

Settings in the A-B AI Software

Run the Allen-Bradley AI Software Package. The Main Menu Should Appear. To complete configuration, perform the following steps in order.

PLC-500 Main Menu

Step 1: F9) Configure Program Parameters
Step 2: F1) Communication Hardware

Configure Online Communications Hardware

F1) Computer/Terminal Address: 1 (This device has to be at the same address with the 1770-KF3 DH-485 Communication Interface Module, and also be "Something Other than PLC Node")
F2) Interface Hardware Type: 5/03, 5/04 CH0, 1770-KF3, 1747-KE
F3) Online wait for reply timeout: 15 Seconds
F4) Communications Port: Com X (Com port of PC modem)
F5) Baud Rate: 19,200
F6) Parity: None
F7) Error Checking: BCC
F8) Protocol: Full Duplex
F9) Dial Modem: No
CTL-F1) Modem Dial String:
CTL-F2) Network Diagnostics (Dials Number & Connects to Remote PLC)
CTL-F3) Run Terminal Utility Program: Go to this screen and type
ATDT-(Phone#) after press **ENTER**

When modem connects, use the <Escape> key to back-out of these windows.

From the Main PLC-500 Menu:

F3 - Go Online **or** F5-Utility Options ✍ F7-Network Diagnostics ✍ F2-Who Active- Active Station Identification

PLC-500 Main Menu

Step 3: F2) Offline Programming/Doc

Step 4: F8) Display

Step 5: F7) ChancFg

Channel 0

Current Communication Mode:	System
System Mode Driver:	DH-485 Master
User Mode Driver:	Generic ASCII
Write Protect:	Disabled
Mode Changes:	Disabled
Mode Attention Character:	\0x1b
System Mode Character:	S
User Mode Character:	U
Edit Resource/File Timeout:	60
Passthru Link ID:	0

Channel 1

System Mode Driver:	DH+
Write Protect:	Disabled
Edit Resource/File Timeout:	60
Passthru Line ID:	0

Step 6: F3) *Ch0User*

Communication Driver:	Generic ASCII
Baud Rate: 1200	Parity: None
Stop Bits: 1	Data Bit: 8
Delete Mode: Ignore	RTS Off Delay (x20 ms): 0
Echo: Disabled	RTS Send Delay (x20 ms): 0
	XON/XOFF: Disabled

Control Line……: No Handshaking

Termination 1…..: \0x0d	Append 1……: \0x0d
Termination 2…..: \0xff	Append 2……: \0xff

Step 7: F4) Ch0Sys

Channel 0 Configuration

Communication Driver:	DH-485
Baud Rate:	19200
Node Address	2-31
Max Node Address	2-31
Token Hold Factor	1

Step 8: F5) Ch1Sys

Channel 1 Configuration

Communication Driver:	DH+
Baud Rate:	57.6K
Node Address	2-31

1770-KF3 Settings

DH-485 Port

0	-	1	Node Address
1	-	19	Baud Rate
2	-	1	Diagnostic Command Execution

RS-232 Port

3	-	19	Node Address
4	-	0	No Parity
5	-	0	Full Duplex
6	-	0	BCC Error Checking
7	-	0	Disable Hand Shaking
8	-	0	No Duplicate Message Detection

9 Sub Menu

0	-	2-31	Maximum Node Address
1	-	1	Token Hold Factor
2	-	10	Number of Retries
3	-	10	DF1 ACK Timeout
4	-	10	CTS to Transmit Delay
5	-	10	End of Message to RTS Off
6	-	10	Half Duplex Master Station Delay
7	-	0	Group Number

SIXNET Modem Settings

Use Windows HyperTerminal (or a similar program) to communicate to the modem.

Important Note: When configuring the modem, make sure HyperTerminal is set to use the baud rate that you want the modem and PLC to communicate at. (19200 in this case).

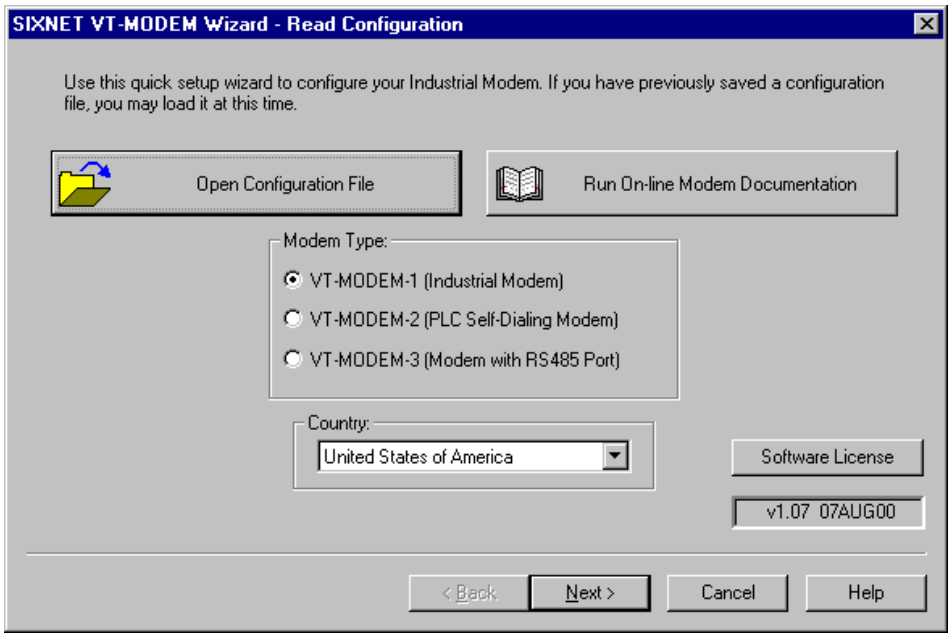
To check communication, type **AT <Enter>**. *OK* should appear.

To Set up Modem:

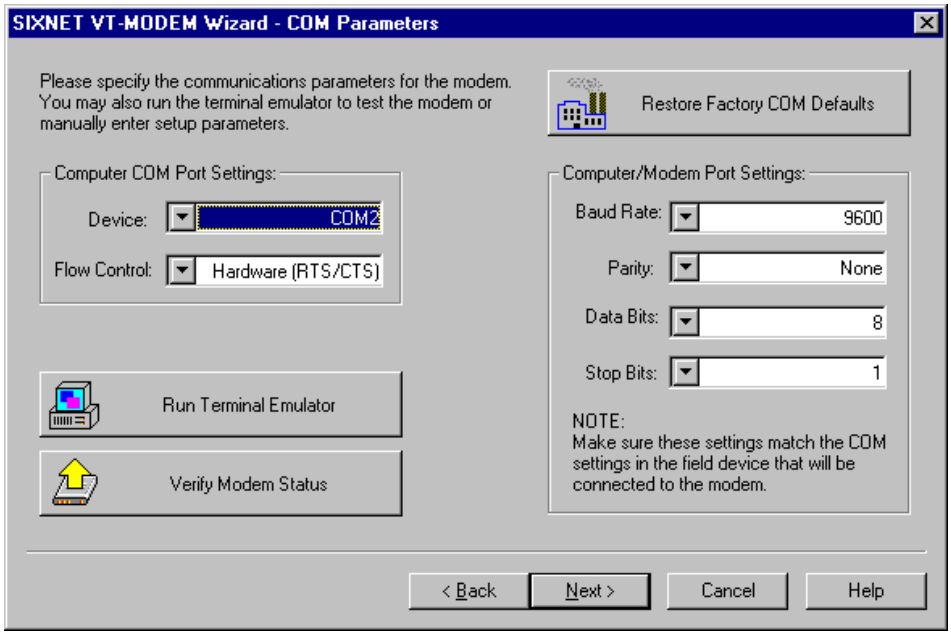
Type In: **AT&F**	- This sets the modem to factory defaults
ATS0=1	- This sets the modem to auto-answer
ATS46=136	- This turns off Data Compression
AT&K0	- This disables Flow Control
AT%E0	- This disables Line Quality Monitor
AT%C0	- This disables Data Compression
AT\N1	- This selects asynchronous operation
ATS23=60	- This sets baud rate at 19200
AT+H0	- This disables voice support
AT&Y0	- This tells the modem to load profile 0 on power-up
AT+MS=11,0,19200,19200	- This sets modem to modem speed at 19.2Kbps
AT&W0	- This saves changes to profile 0
AT&V	- Use this to verify your changes

Loading Pre-Configured Settings into the VT-MODEM-1:

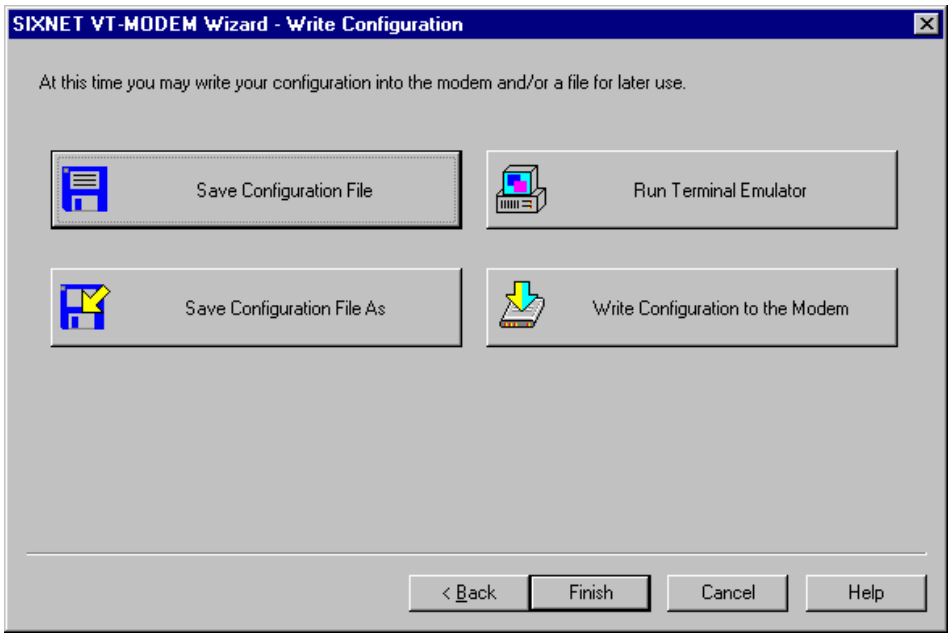
The Modem settings above can also be loaded using the VT-Modem Setup Wizard included with the VT-MODEM-#. Use the configuration file (ABSLC504.6ms) located on the latest SIXNET CD, your local SIXNET representative and the modem section in www.Get2Support.com. Open the VT-MODEM Setup Wizard. In the *Load Configuration* window click on the "Open Configuration File" button, and open the ABSLC504.6ms file (See Screen Shot 1). Select the communications port the SIXNET VT-MODEM-1 is connected to (COM 2 in this case) in the *COM Parameters* window (See Screen Shot 2). Load the configuration into the modem using the "Write Configuration to the Modem" button in the *Write Configuration* Window (See Screen Shot 3).



Screen Shot 1



Screen Shot 2



Screen Shot 3

Cable Wiring

Connect the RS-232 serial port of the A-B 1770-KF3 DH-485 Communication Interface with the modem using the cable shown below