Technical Note #612

VT-MODEM Interfaces with the Allen-Bradley SLC-5/04 PLC using Rockwell's RSLogix 500 & RSLINX Lite Software

Abstract: This document explains the procedure for interfacing a SIXNET Industrial Telephone Modem with an AB SLC-5/04 controller and a computer running the Rockwell RSLogix 500 programming software and the RSLINX communication software. This set up will allow a remote computer to go on-line with a SLC-5/04 via a telephone modem connection.

Stork Gamco, Inc. has created the following guide for interfacing a SIXNET Industrial Modem (VT-MODEM-1) with an Allen Bradley SLC-5/04 PLC and Rockwell's RSLogix 500 programming software and RSLINX communication software. This telephone modem interface provides long distance communications between the operator and the PLC. Diagnostics and troubleshooting can now be done from hundreds of miles away. This saves time and money because problems can be corrected or configuration changes made without traveling to the PLC.

Hardware and Software Used:

- SIXNET Industrial Modem (Part Number: VT-MODEM-1)
- Serial cable (Part Number: VT-CABLE-MDM) (Incl. with VT-MODEM-1)
- SLC-5/04 CPU with Channel 0 serial communications port (i.e. 1747-L541)
- Rockwell RSLogix Software v2.10.12
- Rockwell RS LINX Communication Driver v2.00.97
- PCM/CIA modem card (Megahertz Telephony Modem; CC-XJ1560 Fax-Modem)
- **Analog** phone line connections at both ends (digital lines may not work). The phone line at the SLC-500 end must also be a direct-dial number from the outside (Stork Gamco, Inc. recommends that if possible the analog line should not be routed through a PBX system).

Receiving Modem (SIXNET VT-MODEM-1) Setup Procedure :

Use Window's HyperTerminal to communicate to the modem.

> **Note:** *For information on how to use HyperTerminal, please consult the SIXNET VT-MODEM online help guide located on the SIXNET CD in the Product Catalog.*

Settings can be changed by connecting the straight through cable, which comes as part of the Industrial Modem package (VT-CABLE-MDM) to the serial port on the modem and the serial port of the computer (i.e. serial port COM1).

> **Important:** *Choose the baud rate that matches the PLC or other device that will be connected to the modem. Anytime a setting is saved using &W0 or &W1, the RS232 baud rate is memorized*

by the VT-Modem. The saved baud rate will be used for future communications with any attached device that does not initiate communications with the modem (such as most PLC's).

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

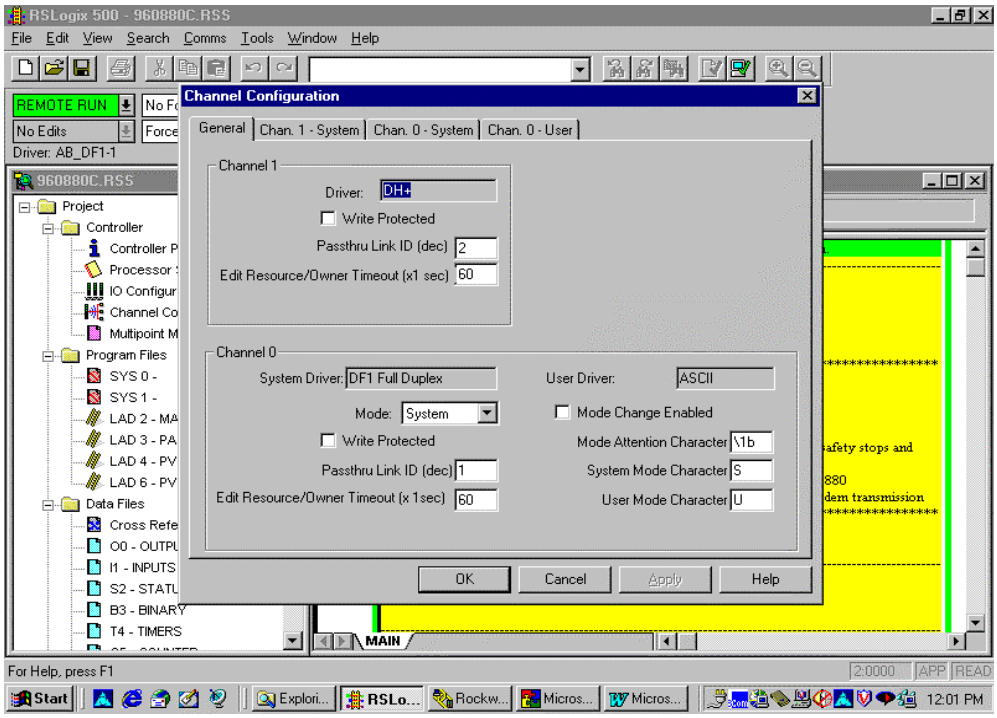
To Set Up Modem:

Type In: **AT&F<*Enter*>**	- This sets the modem to factory defaults
Type In: **ATS0=1<*Enter*>**	- This set the modem to auto-answer
Type In: **ATS46=136 <*Enter*>**	- This turns off data compression
Type In: **AT+MS=11,0,9600,9600<*Enter*>**	- This forces a 9600bps modem to modem speed.
Type In: **AT&W0&W1<*Enter*>**	- This save changes to both profiles
Type In: **AT&V<*Enter*>**	- Use this to verify changes

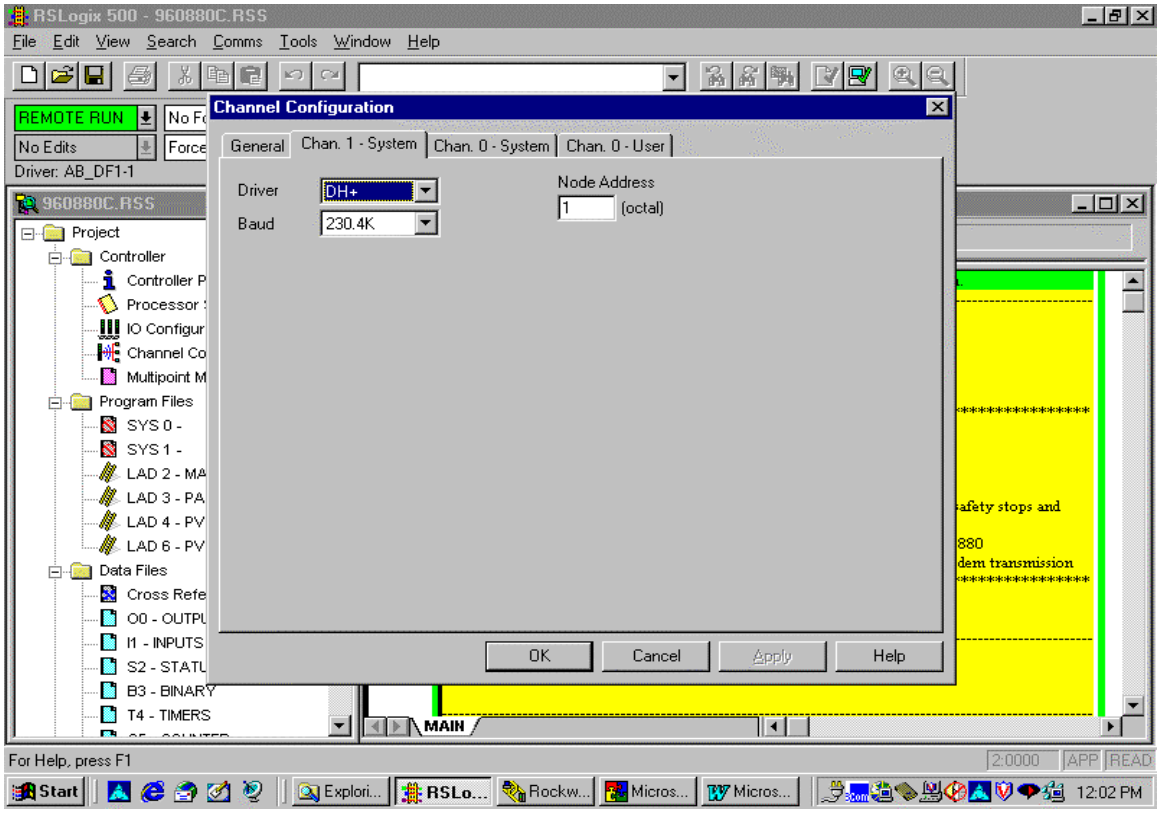
SLC 5/04 Controller Channel Configuration:

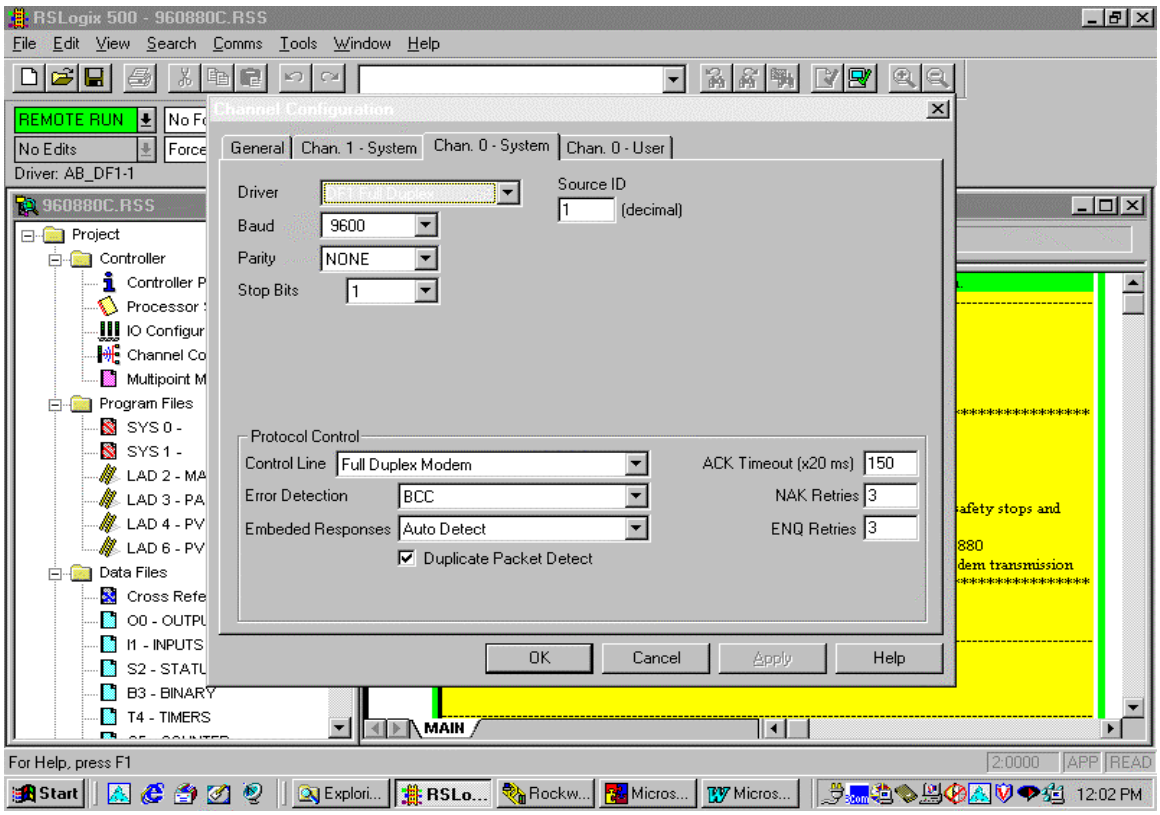
Whatever PLC program is running in the processor is not important; however the Channel 0 (system and user) port must be configured properly and the changes saved with the program.

a) Start up RSLogix and go on-line (this requires a Channel 1 connection such as a DH+ connection through the PCMK card). Double click on the channel configuration. Select Channel 0 - System.
b) The Channel Configuration must be set up so that the modem will properly communicate with the SLC-500. Make sure that the following parameters match those of the SLC 5/04 Channel Configuration.

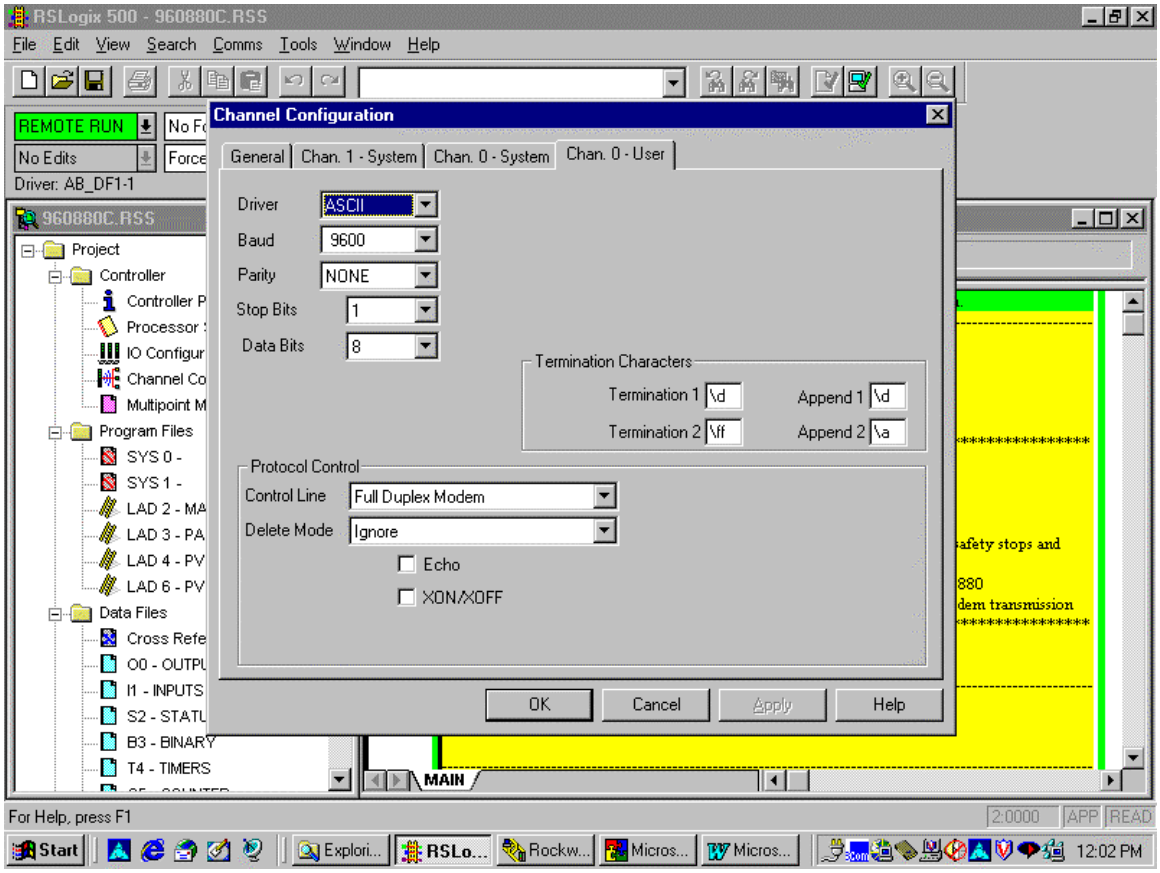


SLC 5/04 Controller Channel Configuration - continued:



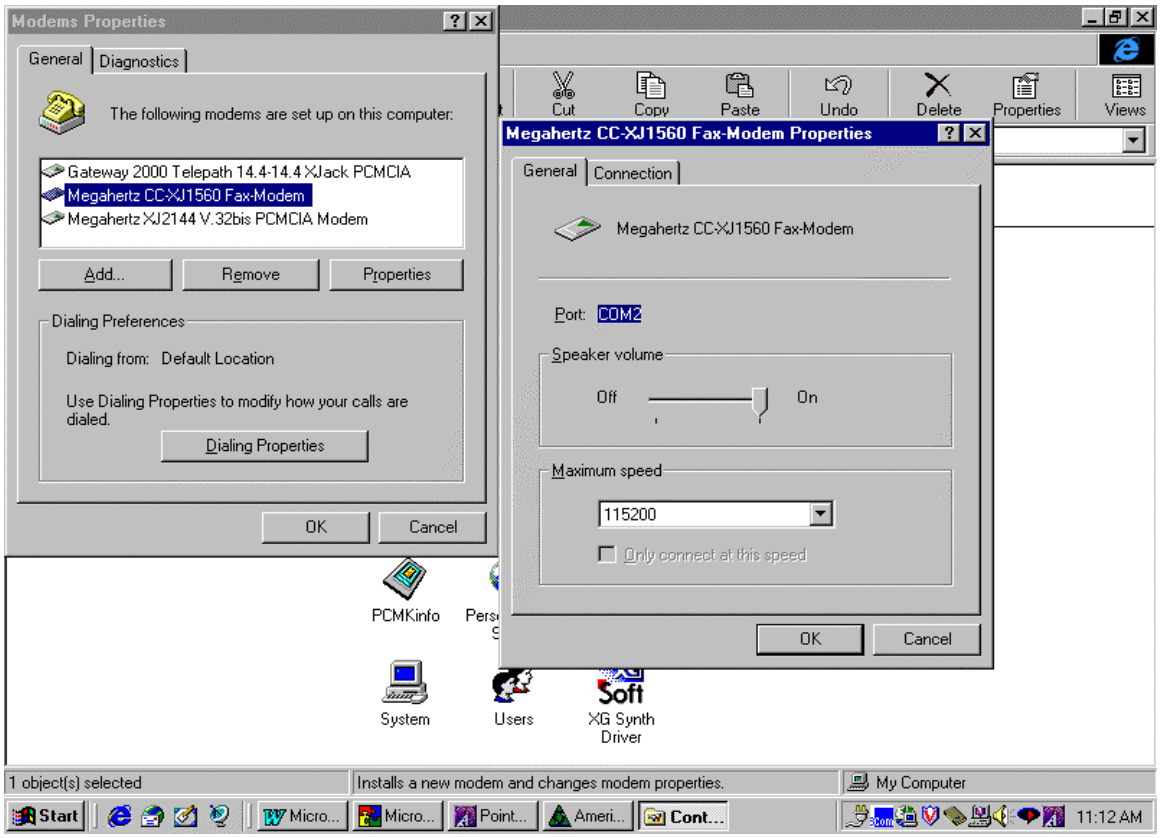


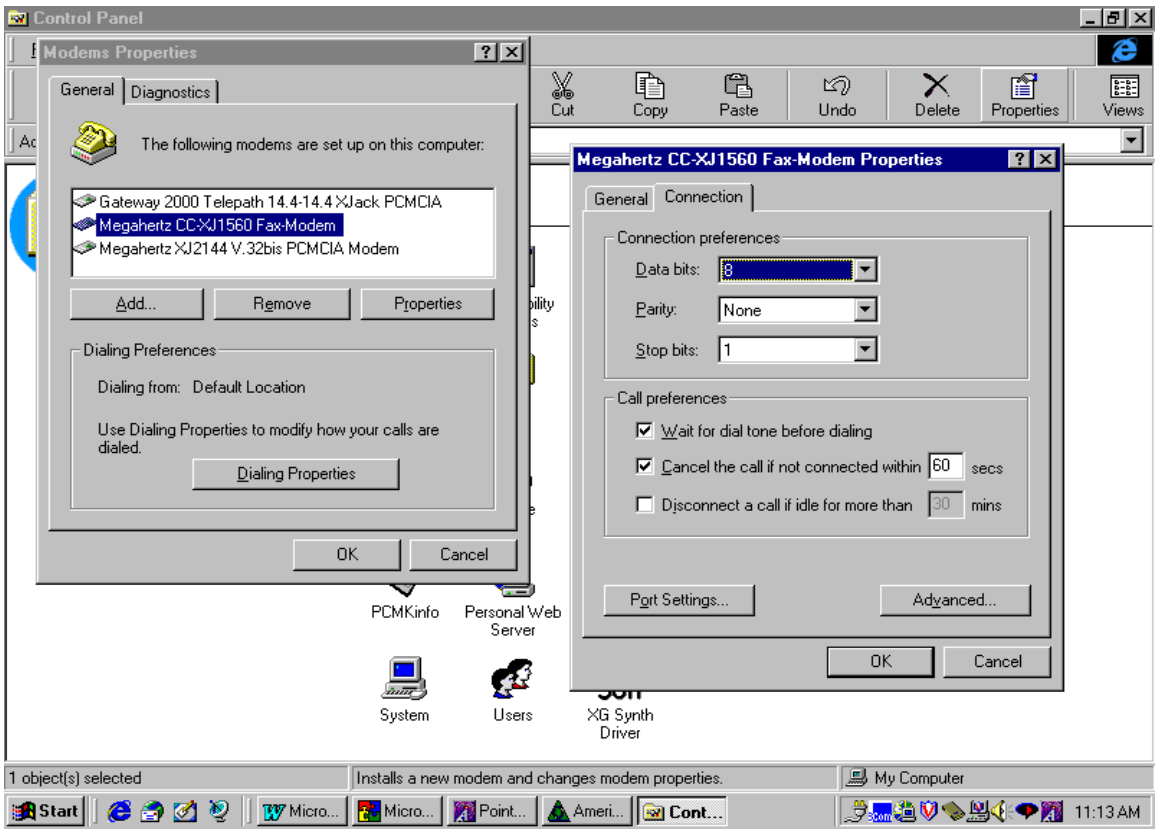
SLC 5/04 Controller Channel Configuration - continued:

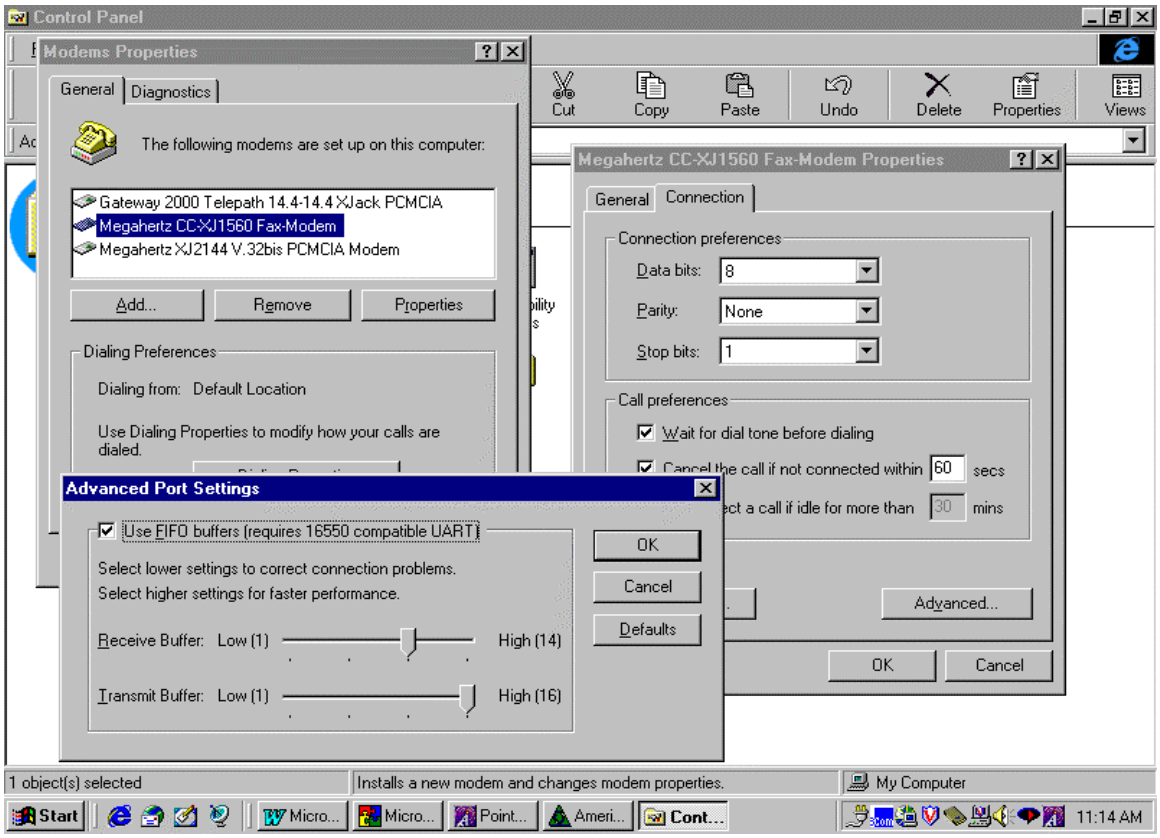


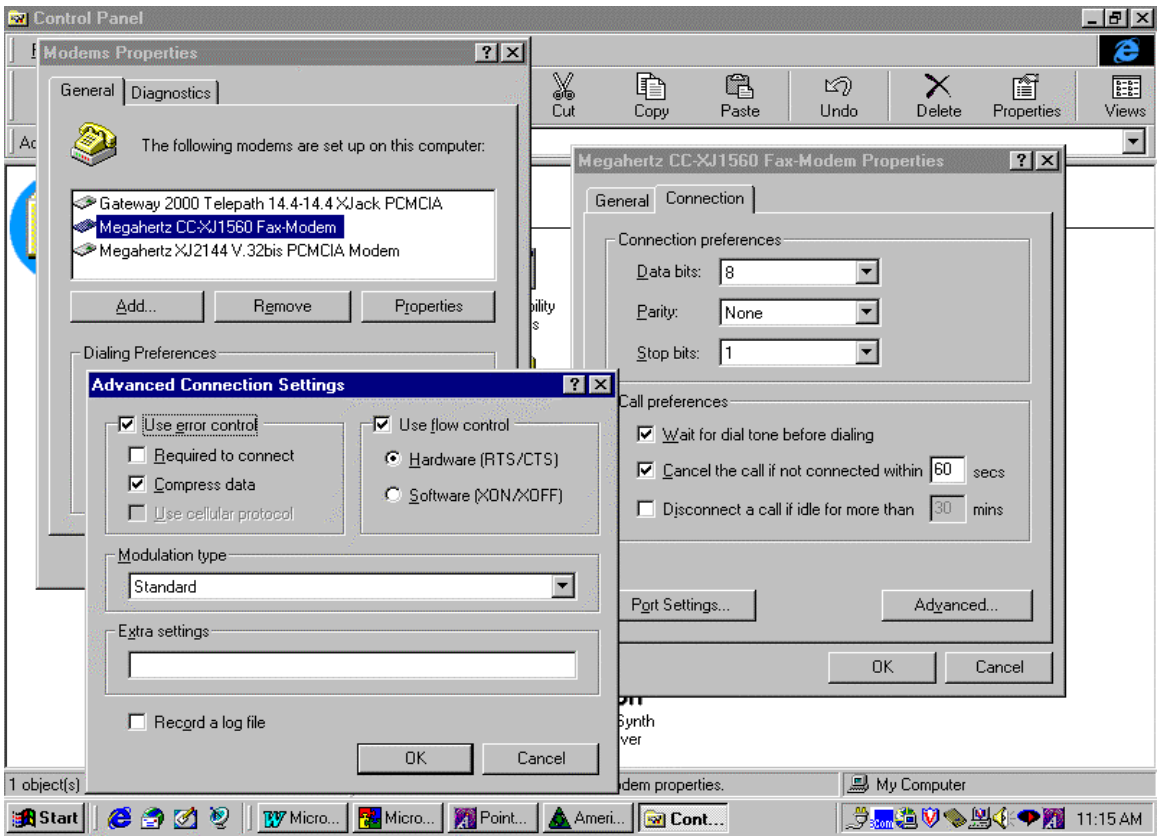
Sending Modem Setup Procedure:

Open the control panel in Windows 95 and double-click on the modem icon. This will bring up a dialog box showing the modem properties. Make a note about which COM port the modem is set up on. If it is COM1 or COM2, then record this. If it is COM3 or COM4, then the exact IRQ and memory address must be obtained for the number shown and the address shown. Click on the OK button and then on the General tab, press the "*Properties*" button. Make sure modem properties match those listed on the following pages:

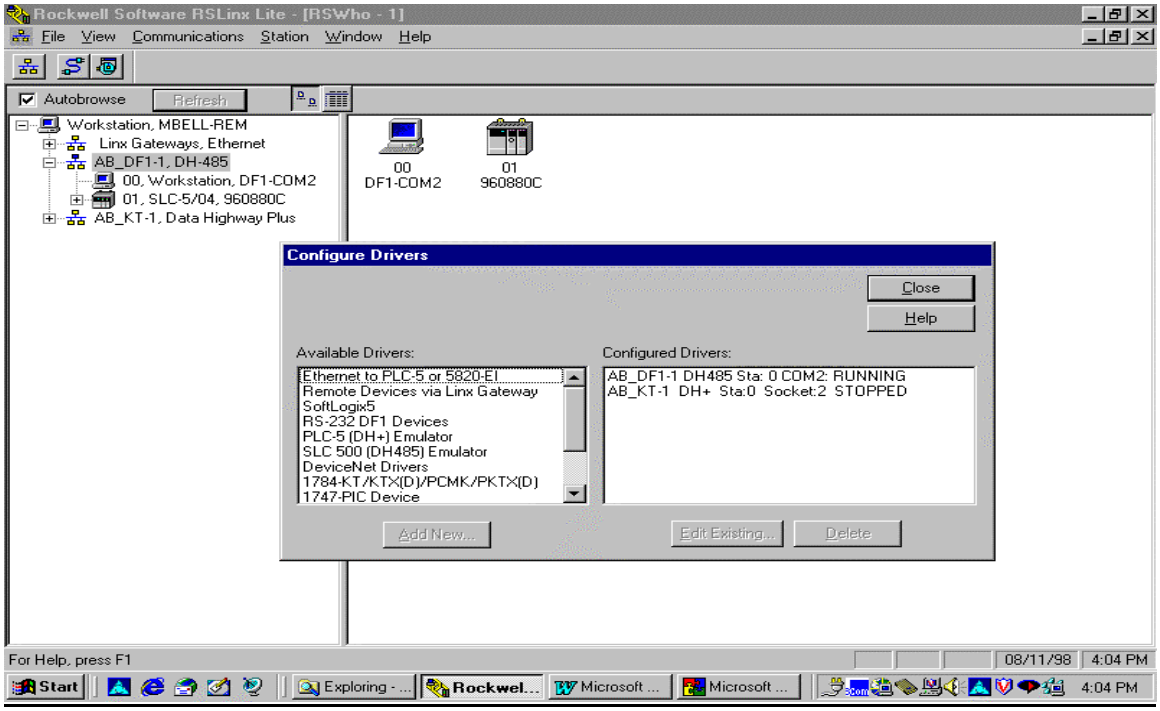

Modems Properties
General
Diagnostics
The following modems are set up on this computer:
Gateway 2000 Telepath 14.4-14.4 XJack PCMCIA
Megahertz CC-XJ1560 Fax-Modem
Megahertz XJ2144 V.32bis PCMCIA Modem
Add...
Remove
Properties
Dialing Preferences
Dialing from: Default Location
Use Dialing Properties to modify how your calls are dialed.
Dialing Properties
OK
Cancel
Megahertz CC-XJ1560 Fax-Modem Properties
General
Connection
Megahertz CC-XJ1560 Fax-Modem
Port: COM2
Speaker volume
Off
On
Maximum speed
115200
Only connect at this speed
OK
Cancel
Cut
Copy
Paste
Undo
Delete
Properties
Views
PCMKinfo
System
Users
XG Synth Driver
1 object(s) selected
Installs a new modem and changes modem properties.
My Computer
Start
11:12 AM

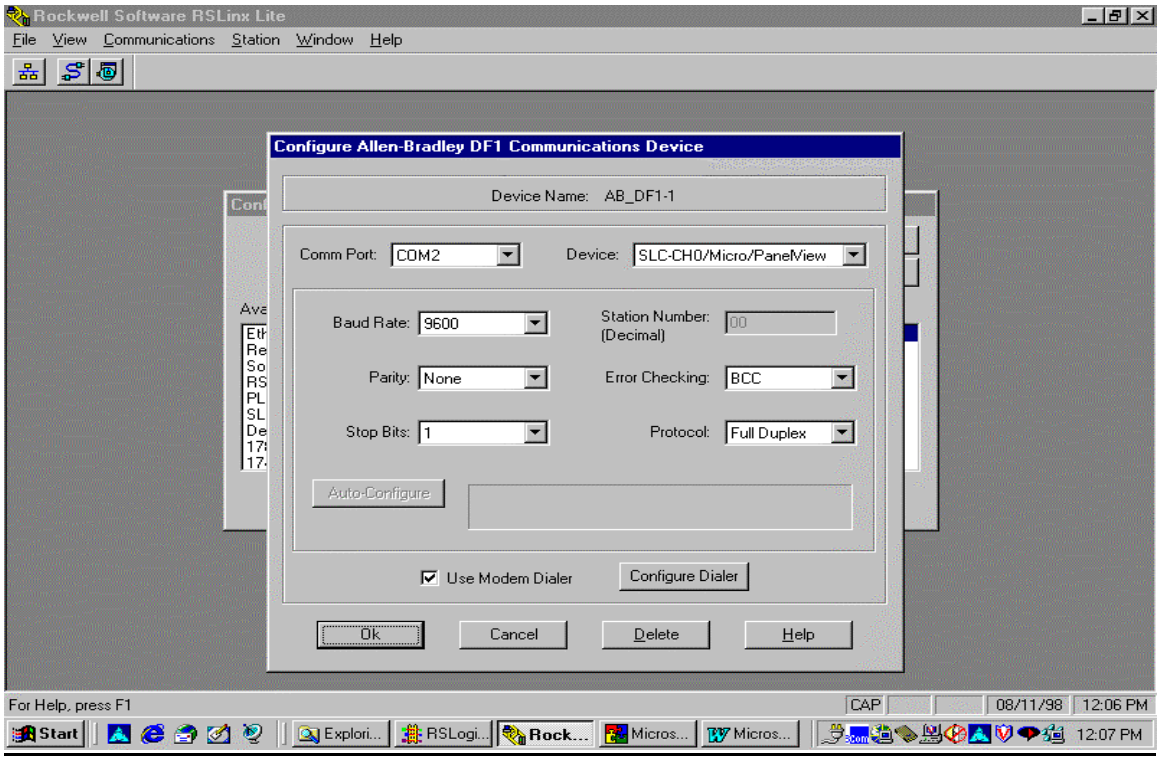

Control Panel
Modems Properties
General
Diagnostics
The following modems are set up on this computer:
Gateway 2000 Telepath 14.4-14.4 XJack PCMCIA
Megahertz CC-XJ1560 Fax-Modem
Megahertz XJ2144 V.32bis PCMCIA Modem
Add...
Remove
Properties
Dialing Preferences
Dialing from: Default Location
Use Dialing Properties to modify how your calls are dialed.
Dialing Properties
OK
Cancel
Megahertz CC-XJ1560 Fax-Modem Properties
General
Connection
Connection preferences
Data bits: 8
Parity: None
Stop bits: 1
Call preferences
Wait for dial tone before dialing
Cancel the call if not connected within 60 secs
Disconnect a call if idle for more than 30 mins
Port Settings...
Advanced...
OK
Cancel
Cut
Copy
Paste
Undo
Delete
Properties
Views
PCMKinfo
Personal Web Server
System
Users
XG Synth Driver
1 object(s) selected
Installs a new modem and changes modem properties.
My Computer
Start
11:13 AM


Control Panel
Modems Properties
General
Diagnostics
The following modems are set up on this computer:
Gateway 2000 Telepath 14.4-14.4 XJack PCMCIA
Megahertz CC-XJ1560 Fax-Modem
Megahertz XJ2144 V.32bis PCMCIA Modem
Add...
Remove
Properties
Dialing Preferences
Dialing from: Default Location
Use Dialing Properties to modify how your calls are dialed.
Megahertz CC-XJ1560 Fax-Modem Properties
General
Connection
Connection preferences
Data bits: 8
Parity: None
Stop bits: 1
Call preferences
Wait for dial tone before dialing
Cancel the call if not connected within 60 secs
Disconnect a call if idle for more than 30 mins
Advanced...
OK
Cancel
Advanced Port Settings
Use FIFO buffers (requires 16550 compatible UART)
Select lower settings to correct connection problems.
Select higher settings for faster performance.
Receive Buffer: Low (1) High (14)
Transmit Buffer: Low (1) High (16)
OK
Cancel
Defaults
Cut
Copy
Paste
Undo
Delete
Properties
Views
1 object(s) selected
Installs a new modem and changes modem properties.
My Computer
Start
11:14 AM


Control Panel
Modems Properties
General
Diagnostics
The following modems are set up on this computer:
Gateway 2000 Telepath 14.4-14.4 XJack PCMCIA
Megahertz CC-XJ1560 Fax-Modem
Megahertz XJ2144 V.32bis PCMCIA Modem
Add...
Remove
Properties
Dialing Preferences
Megahertz CC-XJ1560 Fax-Modem Properties
General
Connection
Connection preferences
Data bits: 8
Parity: None
Stop bits: 1
Call preferences
Wait for dial tone before dialing
Cancel the call if not connected within 60 secs
Disconnect a call if idle for more than 30 mins
Port Settings...
Advanced...
OK
Cancel
Advanced Connection Settings
Use error control
Required to connect
Compress data
Use cellular protocol
Use flow control
Hardware (RTS/CTS)
Software (XON/XOFF)
Modulation type
Standard
Extra settings
Record a log file
OK
Cancel
Cut
Copy
Paste
Undo
Delete
Properties
Views
1 object(s)
My Computer
Start
11:15 AM

RSLogix Driver Setup:





Under Configure Dialer just enter the phone number and when you communicate the Rockwell software will automatically dial and make the phone connection.