

1747-KE SETUP FOR USE WITH MARC 166-100 DIAL-UP MODEM

The MARC 166-100 Dial-up modem mounts in any empty slot of an Allen-Bradley SLC 500 chassis. It is powered from the backplane and communicates with the Allen-Bradley using a serial port. The serial port can be either the integral RS232 port on a SLC 503 or 504 processor or else the DF-1 port on an Allen-Bradley 1747-KE. This application note describes the setup and connections required when using the modem with a 1747-KE.

Currently there are 2 versions of the 1747-KE; Series A and Series B. The modem will work with either version. The Series A is configured using a standard terminal connected to the CONFIG port of the KE. The Series B module can be configured using a terminal just like the Series A or over the backplane. Detailed instructions for configuring the Series A and Series B modules are found in the Allen-Bradley User Manual for the 1747-KE.

CONNECTING A TERMINAL TO THE KE

Connect serial port of your PC to the CONFIG port of the KE. The KE port is pinned out as a DTE device so you will need to use a null modem connection. Start Windows and run Terminal. Select the Communications item from the Settings menu. Set up the terminal for 1200 baud, 8 data bits and no parity as shown in Figure 1.

The image shows a Windows 'Communications' dialog box with the following settings:

- Baud Rate:** 1200 (selected), 110, 300, 600, 2400, 4800, 9600, 19200.
- Data Bits:** 8 (selected), 5, 6, 7.
- Stop Bits:** 1 (selected), 1.5, 2.
- Parity:** None (selected), Odd, Even, Mark, Space.
- Flow Control:** None (selected), Xon/Xoff, Hardware.
- Connector:** COM1 (selected), None, COM2, COM3.
- Parity Check:**
- Carrier Detect:**

Buttons for 'OK' and 'Cancel' are located in the top right corner.

Figure 1 Terminal Communication Setup

Move JW4 on the KE module to the Configuration position and power up the module. You should see the top level setup menu as shown in Figure 2.

1. CONFIG PORT
2. DF1 PORT
3. DH-485 PORT
4. DF1 PROTOCOL
5. DISPLAY PARAMETERS

Figure 2 Top Level Setup Menu

DF1 PORT CONFIGURATION

Select 2 to go to the DF1 PORT configuration screen. Select each option and change the DF1 port communication options to 2400 baud, 8 Bits per character, NO Parity and One stop bit. Then select X to save and exit. You will go back to the Top Level menu.

1. Baudrate
2. Bits per character
3. Parity
4. Stop bits

Figure 3 DF1 Setup Menu

DF1 Protocol

Enter 4 to start the DF1 Protocol setup. Enter F (for Full Duplex) on the new line that appears at the bottom of the screen. The Full Duplex setup screen will appear as shown in Figure 4.

1. Duplicate Packet Detection
2. Checksum
3. Constant Carrier Detect
4. Modem Init String
5. Modem Init String Delay
6. Message Timeout
7. Hardware Handshaking
8. Embedded Response Detect
9. ACK Timeout
- A. ENQuiry Retries
- B. NAK Received Retries

Figure 4 DF1 Full Duplex Setup Menu

Select each option number one at a time and set up the KE as follows:

Duplicate Packet Detection	Disabled
Checksum	CRC
Constant Carrier Detect	Disabled
Modem Init String	(none)
Modem Init String Delay	0s
Message Timeout	1000ms
Hardware Handshaking	Enabled
Embedded Response Detect	ER
ACK Timeout	200 X 5ms
ENQuiry Retries	2
NAK Received Retries	2

Choose X to save and exit back to the Top Level menu.

DH-485 PORT

Select 3 to go to the DH-485 Setup menu as shown in Figure 5 below. The final configuration of the DH-485 port will depend on your system configuration.

1. Node Address
2. Maximum Node Address
3. Message Timeout
4. Pass Through
5. Baudrate

Figure 5 DH-485 Setup Menu

Select each option number one at a time and set up the KE as follows:

Node Address	System Dependent must be unique
Maximum Node Address	System Dependent must be less than 32
Message Timeout	Typically 1000ms
Pass Through	Disabled
Baudrate	System Dependent typically 19200

This completes the KE setup. Select X to save and exit back to the top level menu. If you select option 5 you will get a display of the current KE configuration selections. Our module, set up and ready to connect to the MARC dial up modem looks like Figure 6 on the following page.

The final step is to select X to save and exit from the Top Level menu. The settings will be saved in non volital memory and the configuration program will be stopped. Follow the on screen instructions to power down the module, move JW4 back to the RUN position and power back up.

Connect the DF1 port on the KE (the lower port) to P1 (the upper port) of the MARC 166-100 modem using cable #127-070-12. This completes the configuration at the PLC.

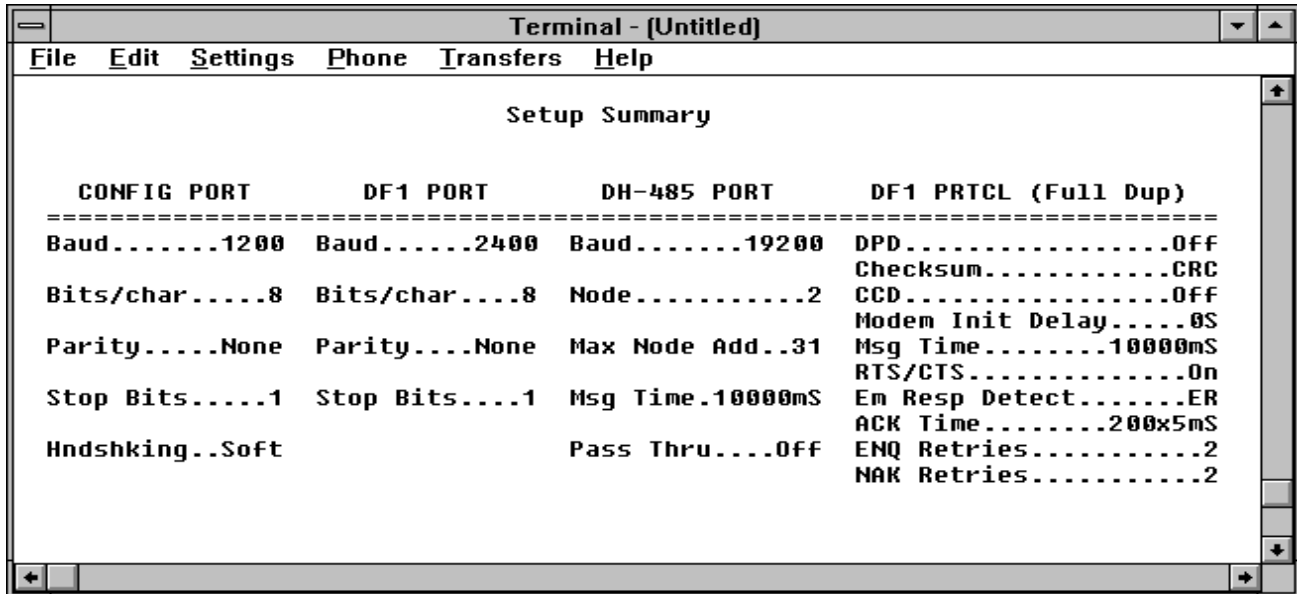


Figure 6 Setup Summary for use with MARC Modem

PROGRAMMING SOFTWARE SETUP

The following screens detail the setup of the programming software (the examples are from Allen-Bradley Advanced Programming Software (APS) Version 5.01.

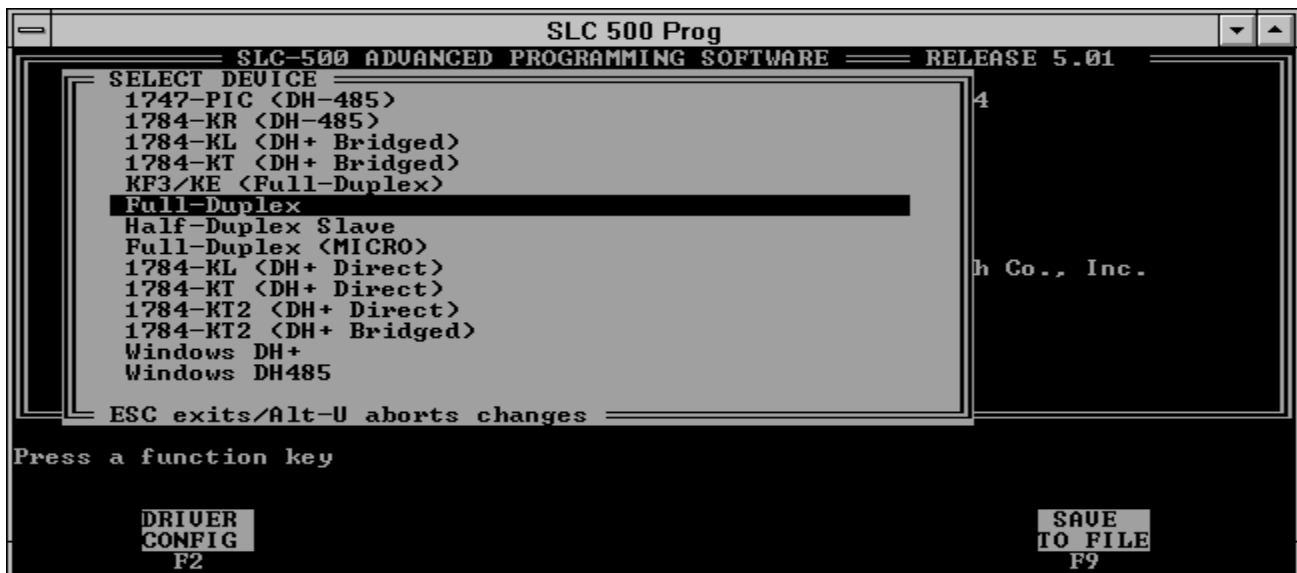


Figure 7 F2 ONLINE CONFIG DEVICE SELECTION

F2 Online Config

Select F2 to go to the Online Device selection screen. Highlight FULL DUPLEX as shown in Figure 7.

F2 Driver Config

Select F2 again to go to the Full Duplex driver configuration screen as shown in Figure 8.

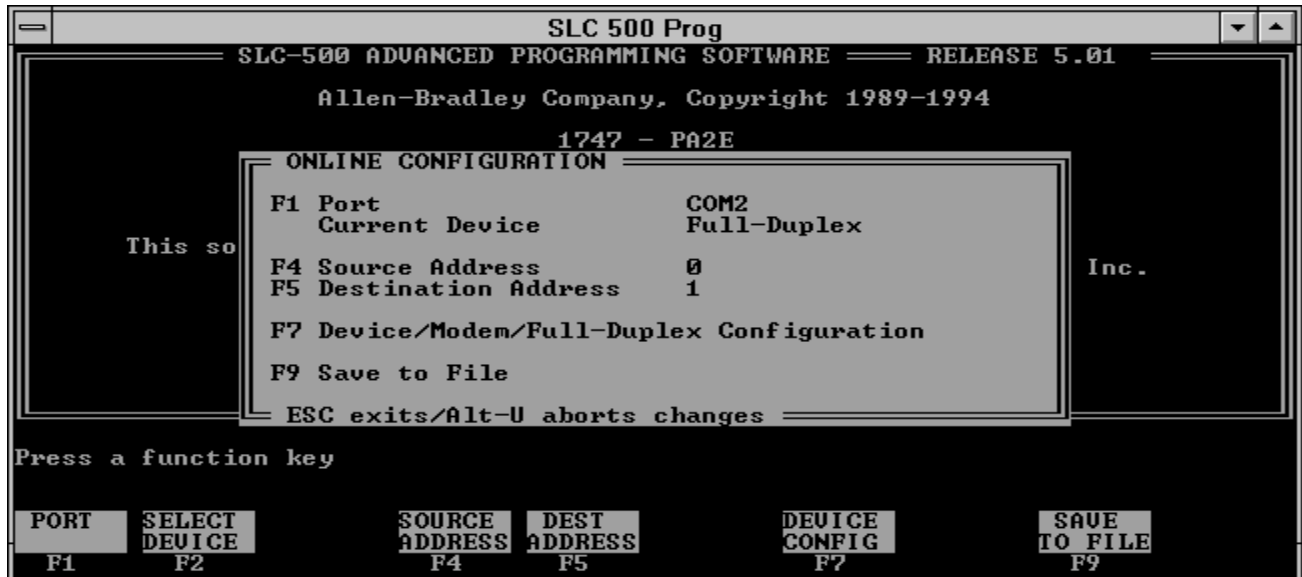


Figure 8 Full Duplex Device Configuration

Use the function key F1 to select the port that your modem is connected to. Use F4 enter the source address (any number that is not assigned to another node will work). Use F5 to select the Destination address. This is the DH485 node address of the processor you want to connect to. **This is very important.** It must be correct or you will be unable to go online with the processor.

Select F7 to bring up the Device/Modem/Full Duplex Configuration screen as shown in Figure 9 below.

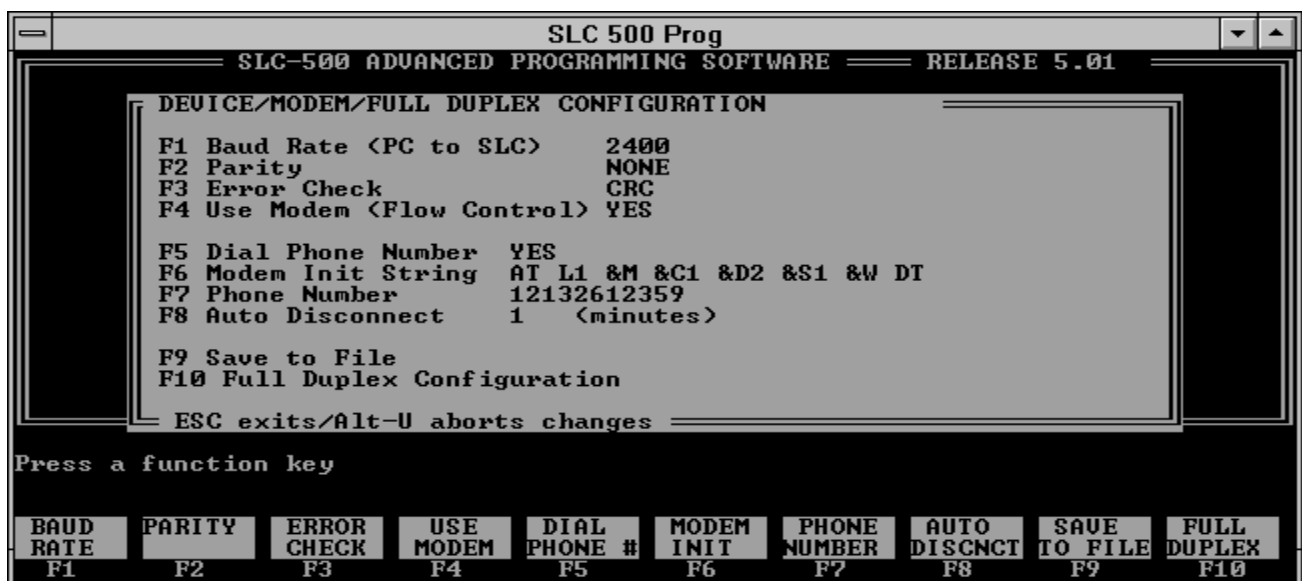


Figure 9 DEVICE/MODEM/FULL DUPLEX CONFIGURATION SCREEN

Use the Function keys to select and change each parameter to the values shown in Figure 9. Note that the Modem Init String may be different depending on the modem you are using. Use F7 to enter the phone number of the modem you want to call and be sure to select the appropriate number prior to exiting from the phone number setup screen.

Finally, use F10 to go to the Full Duplex screen as shown in Figure 10 below.

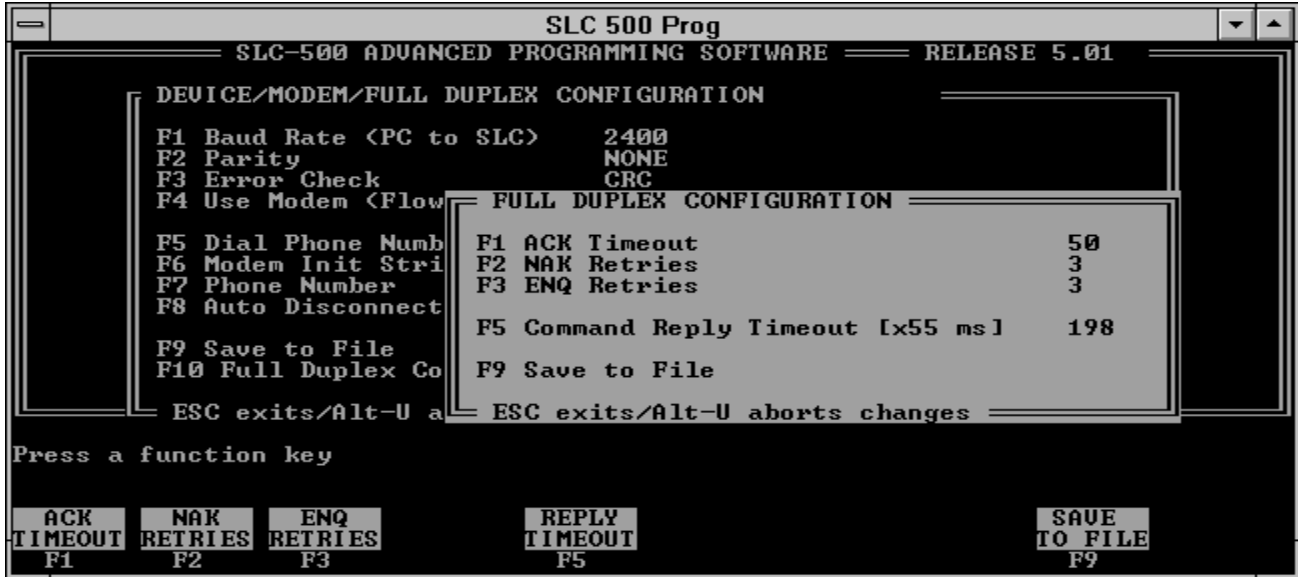


Figure 10 FULL DUPLEX CONFIGURATION

Use the Function keys to set up the parameters as shown in Figure 10.

Now back out of the configuration screens, saving as you go (use F9) until you are back at the main signon screen. You should now be able to automatically dial the remote phone number and go on line just by hitting the F1 key!

