



STAR Comm[®] Modem Setup Instructions

The STAR Comm Modem is an external modem that can be used in dial-up and short-haul/leased-line configurations.

NOTE



If you possess a previous version of these instructions, you may notice changes since the last publication, marked by a change bar which is a vertical line in the margin that visually identifies significant new or revised material.

Before You Begin

Before you proceed, make sure that your peripheral system hardware (such as micros, readers, and network lines) is installed and running.

NOTE



Use a standard, straight-through PC-to-modem cable that includes RTS, CTS, DSR, DTR, RLSD, TX, RX, and Ground.

The setup of the STAR Comm Modem depends on the product you are using with this modem. This document includes the following sections:

- **Picture Perfect™**
Refer to "Picture Perfect" on page 2.
- **Entry Perfect™**
Refer to "Entry Perfect" on page 8.
- **Secure Perfect®**
Refer to "Secure Perfect 2.02 to 2.1" on page 11.
- **SP3.0**
Refer to "SP3.0" on page 20.
- **RS-232 Communication Cable Overview**
Refer to "RS-232 Communication Cable Overview" on page 25.
- **Using the STAR Comm Modem in 2-Wire Short-Haul or Leased-Line Configurations**
Refer to "Using the STAR Comm Modem in 2-Wire Short-Haul or Leased-Line Configurations" on page 28.
- **Battery Backup for the STAR Comm Modem**
Refer to "Battery Backup for the STAR Comm Modem" on page 30.

Picture Perfect

The following modems are compatible with the STAR Comm Modems for Picture Perfect:

- IBM® 7851-002 (Please follow the instructions found on the CASI-RUSCO Web site for this modem setup.)
- Hayes™ Accura 33.6
- Cardinal® 28.8
- Packard Bell® 9600 (If this modem is to be used at the micro, it operates best when preset following the instructions for the STAR Comm Modem.)
- * US Robotics® 33.6 and PIICEON Modem cards (for the network micros only)
- * 3 Com® 56K MHz modem cards (for network micros only)

* PCMCIA modem cards used in Micro/5-PXN and Micro/PXN-2000 with dial-up fall-back configurations.

NOTE



On the back of the modem, next to the 25-pin connector, make sure the two-pin jumper is removed.

Host, Modem Configuration, and Programming

Scenario 1: Adding a Modem to the Host

- To add a STAR Comm Modem to the host:

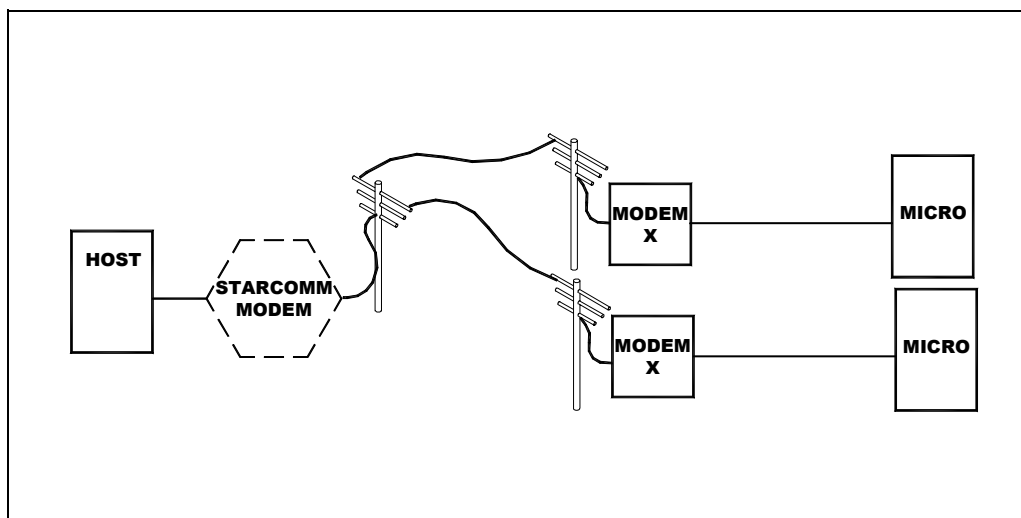


Figure 1: Typical Configuration - Adding a Modem to the Host

NOTE Dial-up fall-back modems used in Micro/5-PX Network units will follow Scenario 2.



1. If this is the first time you are adding a STAR Comm Modem to the host, you will need to create a STAR Comm Modem record; otherwise, go to step 5.
2. Within **Picture Perfect**, select **Devices**, then **Modems**. Find the Hayes 9600 record. Click **New**, then **Copy**. Change the description to STAR Comm.
3. Change the Initialization and Deinitialization fields to read:
`AT&FE0X3V1&C1&D2S0=1S7=60\N6&Q6&W`
4. Click **Save**.
5. Select **Devices**, then **Ports**. Create the port to which this modem will be attached.
6. Set the **Baud** to 9600, **Data bits** to 8, **Parity** to **None** and **Stop bits** to 2. Assign **Modem Type** (STAR Comm) to this port.
7. Select **Devices**, then **Micros**. Find the micros that will communicate with this new modem.
8. Select **Dial-Up**, then **Modem Type** and choose the STAR Comm Modem record that matches the STAR Comm (see diagram above).
9. Click **Save**, then **Quit**.

Table 1: Host Modem Configuration

	Baud Rate	Initialization/Deinitialization Strings
Minimum Micro Firmware Version	1.5.9	
Required (STAR Comm)	(Baud Rate 2400, 4800 and 9600) Initialization Deinitialization	AT&FE0X3V1&C1&D2S0=1S7=60\N6&Q6&W AT&FE0X3V1&C1&D2S0=1S7=60\N6&Q6&W
Default (Hayes)	(Baud Rate 2400, 4800 and 9600) Initialization Deinitialization	ATE0X3V1&C1&D2S0=1S7=18&W ATE0X3V1&C1&D2S0=1S7=18&W

Scenario 2: Adding a Dial-Up Micro

- To add a dial-up micro:

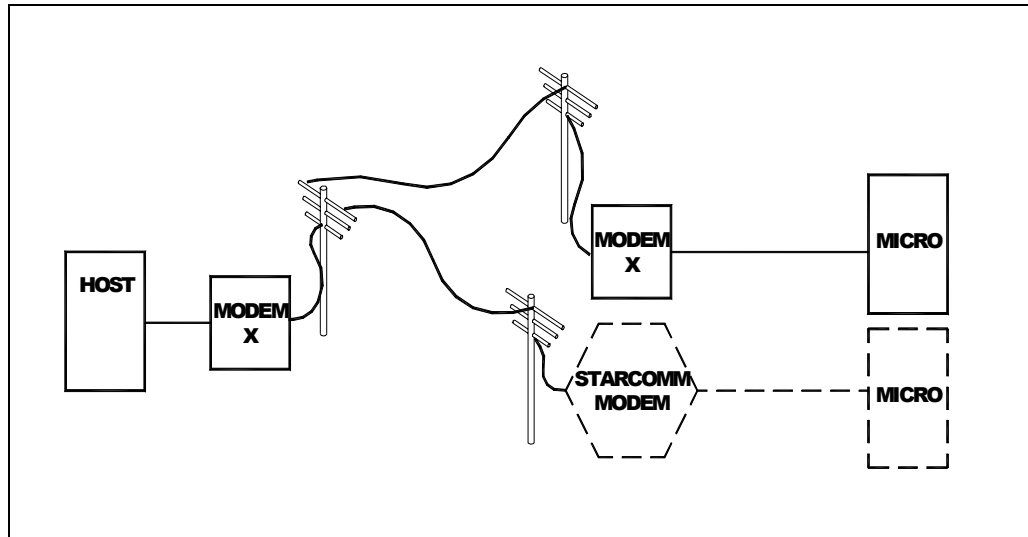


Figure 2: Typical Configuration - Adding a Dial-Up Micro

1. Within Picture Perfect, select **Devices**, then **Micros**.
2. Create a record for the new micro by specifying **None** for port assignment (primary and secondary), selecting **Dial Up**, and assigning the identical **Modem Type** that you are currently using on the host to the new micro. (In the diagram above, it is called Modem X.)
3. Click **Save**, then **Quit**.

Scenario 3: Adding a Dial-Up Micro and Host-End Modem

- To add a dial-up micro and host-end modem:

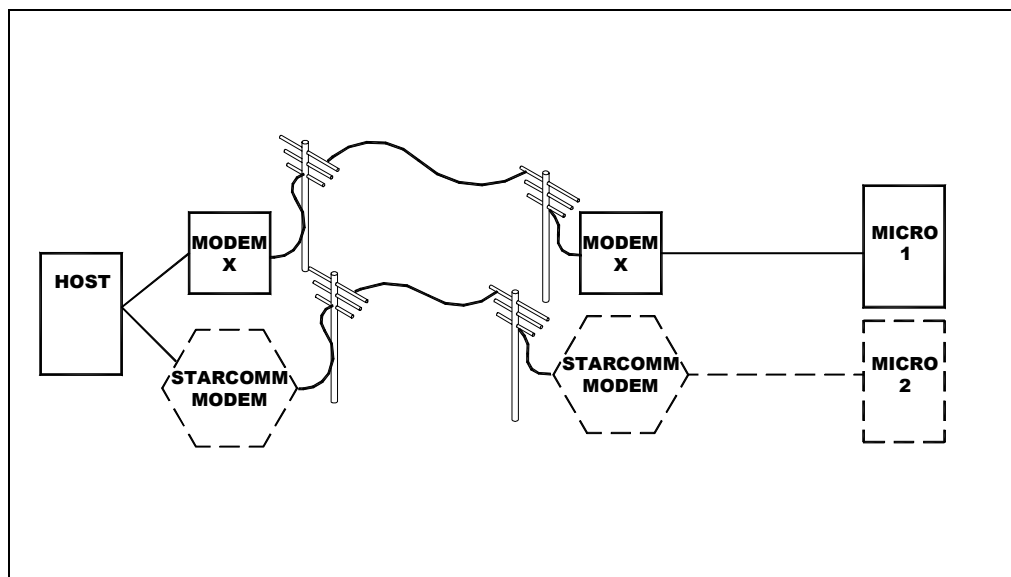


Figure 3: Typical Configuration - Adding a Dial-Up Micro and Host-End Modem

NOTE



If adding a STAR Comm Modem to both host ports and micros, follow steps in Scenarios 1 and 2.

In **Picture Perfect**, micros are allowed only one modem type. Micros call those host modems that are of the same modem type. In the diagram above, Micro 1 Modem Type is Modem X and Micro 2 Modem Type is STAR Comm.

Micro Parameter Block, Modem Configuration, and Programming

- To configure the STAR Comm modem at the micro:

The host phone number(s), the micro address, and modem initialization/deinitialization strings may be programmed into the parameter block of the micro using the Micro Installation Tool (MicTool) program on a PC connected directly to the micro. Attach the micro to the modem, and then reset the micro.

NOTE



Use the MicTool flash utility (Version 1.13 or higher) available from the CASI-RUSCO Web site company store.

► **If you are using MicTool to flash your micro (only one micro can be connected):**

1. Select the communications port to which the micro is attached, then select desired baud rate.
2. Close the progress window (select **x** in top right corner of screen).
3. From the MicTool menu, select **Flash/Param Setup**.

Result: The flash window opens and begins to search for the micro. MicTool must detect a micro to continue and the status must equal **Micro ready**.

4. Click **Parameters** under **Options** to edit the micro parameter information.
5. Select **Dial-up**.
6. Enter the desired **Micro address**.
7. Type the micro-to-host phone number in BOTH fields; both fields should have entries.
8. Type the initialization and deinitialization strings. Refer to Tables 2, 3, and 4, depending on your micro type.

Table 2: Micro/5-PX Modem Configuration for Picture Perfect

	Baud Rate	Initialization/Deinitialization Strings
Minimum Micro Firmware Version	1.5.9	
Required (STAR Comm)	(Baud Rate 4800 and 9600) Initialization Deinitialization	AT&FE0Q0V1M1X4S0=1Y1&D0&Y0\N6&Q6&W AT&FE0Q0V1M1X4S0=1Y1&D0&Y0\N6&Q6&W
Required (STAR Comm)	(Baud Rate 2400) Initialization Deinitialization	ATE0Q0V1M1X4S0=1Y1+MS=2,0,2400,2400&D0&W0 ATE0Q0V1M1X4S0=1Y1+MS=2,0,2400,2400&D0&W0
Default ¹ (Hayes)	(Baud Rate 2400, 4800, and 9600) Initialization Deinitialization	ATE0Q0V1M1X4S0=1Y1&D0&W ATE0Q0V1M1X4S0=1S7=60Y1

1. If no initialization/deinitialization strings are specified, the default strings are used.

Table 3: Micro/5-PXN Modem Configuration for Picture Perfect

	Baud Rate	Initialization/Deinitialization Strings
Minimum Micro Firmware Version	1.5.9	
Required (3COM Megahertz 56K (PCMCIA))	(Baud Rate 9600) Initialization Deinitialization	Leave Blank Leave Blank
Default ¹ (Hayes)	(Baud Rate 9600) Initialization Deinitialization	ATE0Q0V1M1X4S0=1Y1&D0&W ATE0Q0V1M1X4S0=1S7=60Y1

1. If no initialization/deinitialization strings are specified, the default strings are used.

Table 4: Micro/PX-2000 Modem Configuration for Picture Perfect

	Baud Rate	Initialization/Deinitialization Strings
Minimum Micro Firmware Version	1.5.9	
Required (STAR Comm)	(Baud Rate 4800 and 9600) Initialization Deinitialization	Leave Blank ¹ Leave Blank ¹
Required (STAR Comm)	(Baud Rate 2400) Initialization Deinitialization	ATE0Q0V1M1X4S0=1Y1+MS=2,0,2400,2400&D0&W0 ATE0Q0V1M1X4S0=1Y1+MS=2,0,2400,2400&D0&W0
Default ² (STAR Comm)	(Baud Rate 4800 and 9600) Initialization Deinitialization	AT&FE0Q0V1M1X4S0=1Y1&D0&Y0N6&Q6&W AT&FE0Q0V1M1X4S0=1Y1&D0&Y0N6&Q6&W

1. May leave blank for firmware Version 1.5.9 and later; otherwise, use Micro/5-PX STAR Comm initialization /deinitialization strings for Baud 4800 and 9600 from Table 2.

2. If no initialization/deinitialization strings are specified, the default strings are used.

9. Select **Save to Micro**.

10. Flash the micro with firmware.

Setting Dip Switches and Powering On

- To set the dip switches and power on:
 1. Power down the micro, then set the dip switches for dial-up communications, the baud rate, and application mode.
 2. Make modem connection to the micro, power on the modem, then power on the micro.
 3. The micro makes a dial-up connection to the host.

Entry Perfect

The following modems are compatible with the STAR Comm Modems for Entry Perfect:

- Hayes Accura 33.6
- Cardinal 28.8
- Packard Bell 9600
- IBM 7851-002

Host Modem Configuration

- To configure your STAR Comm Modem at the host for use with dial-up micros — minimum Entry Perfect Version 2.14c — minimum micro firmware Version 2.14a:
 1. From the Entry Perfect **Main** menu, select **Configuration, Hardware**, then **Modem Control Data**.
 2. Move the cursor to the port to which the modem is connected and enter the following string:

```
ATEVX4S0=1&Q0&C0&D0&K0&W
```
 3. Select the micro and follow the setup for your micro type.

Micro Modem Configuration

Micro/5-E

➤ **To configure a Micro/5-E:**


1. Attach the modem to the serial port of a PC.
2. Run any DOS-based or Windows-based communications program that allows direct communication with a modem (for example, Procomm (DOS), Windows Terminal (3.11), or HyperTerminal (95)). Ensure that the program is set to communicate with the modem at Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2.
3. To have the Micro/5-E dial back the host immediately, the host phone number(s) must be programmed into the modem at this time. Otherwise, when the host dials for this micro later, the micro programs the host number(s) into the modem at that time.

NOTE



When a micro powers up, it has no host numbers and must use the numbers stored in the modem to reach its host and get its database loaded.

4. To view the profiles and numbers stored, if any, type the following (if profiles are viewed, start a new session: **File, New Connection**):

AT&V 

To store the host phone numbers in the modem, type the following:

AT&Zn=####

where:

n is the register (0, 1, 2, or 3) where the telephone number is stored,
and

is the telephone number.

NOTE



The host telephone number(s) MUST be entered in all four registers. For example, if you only have one host telephone number, enter the same number in all four registers.

5. Reset the modem to its factory settings. This turns echo on so that you can see the initialization strings you are about to type. This does not reset stored telephone numbers. Type in the following:

AT&F&W 

6. Enter the modem initialization strings listed in Table 5.

Table 5: Micro/5-E Entry Perfect Modem Configuration

Modem Type:	Initialization/Deinitialization Strings
STAR Comm	ATEVX4S0=1&C0&D0&K0&Q0@W
Hayes Accura 33.6	AT&F&C1&D0E0V0S0=1X4&Q0S37=9&W
Cardinal 28.8	AT&FE0V0X4S0=1&Q0&C0&D0\N0&W
Packard Bell	None required.
IBM 7851-002	Please follow the instructions found on the CASI-RUSCO Web site for this modem setup.

7. Power off the modem; then, exit the communications program without sending any other string to the modem. Do not attempt to view the profile or re-enter any information.
8. When the modem setup is complete, attach the modem to the micro.

MicroProx

➤ **To configure a MicroProx:**

The host phone number(s), the micro address, and modem initialization/deinitialization strings must be programmed into the parameter block of the micro using the Micro Installation Tool (`mcutil32`) program on a PC connected directly to the micro.

Attach the micro to the modem, and then reset the micro. Refer to Table 6.

➤ **When flashing a dial-up micro at the host, using the `mcutil32` program:**

1. From the `mcutil32` main menu, select **Function**, then **Start Flash/SMA**.
Result: The **Communication Settings** window displays.
2. In the **Modem Init. Cmd** box, select the appropriate initialization/deinitialization string from Table 6:

Table 6: MicroProx Modem Configuration for Entry Perfect

Modem Type:	Initialization/Deinitialization Strings
STAR Comm	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1
Hayes Accura 33.6	None required. (Reset modem to factory defaults.)
Cardinal 28.8	Initialization: AT&FE0Q0V1M1X4S0=1Y1&D0\N0&W Deinitialization: ATE0Q0V1M1X4S0=1S7=60Y1
Packard Bell	None required. (Reset modem to factory defaults.)
IBM 7851-002	Please follow the instructions found on the CASI-RUSCO BBS for this modem setup.

- Flash the micro with firmware.

Secure Perfect 2.02 to 2.1

The following modems are compatible with the STAR Comm Modems for Secure Perfect:

- Hayes Accura 33.6
- Cardinal 28.8
- Packard Bell 9600
- IBM 7851-002

Host Modem Configuration

- To configure the STAR Comm Modem at the host for use with dial-up micros:

NOTE



FOR WIN98 SYSTEMS: The first time the computer is restarted and you attach a STAR Comm Modem to the computer, you receive a message that new hardware has been detected. As a result, a KORTEX modem is added to the Modems Properties list. Allow the modem to be installed and leave it installed.

Beginning Installation

➤ To begin the installation:

1. Insert the Secure Perfect (Version 2.14 or later) CD-ROM into the drive, or download the file from the CASI-RUSCO Web site and save to the computer or to a diskette. If you save to a diskette, insert the diskette into the drive. The `mdmstar.inf` (drivers) file may also be found in the `Casi-Rusco\Secure Perfect\Firmware` folder if the Secure Perfect software has already been loaded.
2. Click **Start**, **Settings**, then **Control Panel**.
3. Double-click the **Modems** icon.
4. If no modems exist, the **Install New Modem** dialog displays. Skip to step 8.
If a modem already exists, the **Modems Properties** dialog displays. Continue with the next step.
5. Click **Add**.
Result: The **Install New Modem** dialog displays.
6. **For Win95 and WinNT systems:** Skip to step 8.
For Win98 systems: Select **Don't run the Hardware Installation Wizard**. Continue with the next step.
7. Click **Next**.
8. Select **Don't detect my modem; I will select it from a list**.
9. Click **Next**.
10. Click **Have Disk**.
Result: The **Install From Disk** dialog displays.
11. If installing from diskette and the diskette drive is A:, click **OK**.
Otherwise:
 - Click **Browse**.
 - Navigate to the location of the `mdmstar.inf` file. On the **Secure Perfect 2.14** CD, the file can be found in the **StarComm Modem Driver** folder.
 - Select the file.
 - **For WinNT systems:** Click **Open**.
For Win95 and Win98 systems: Click **OK**.
 - Click **OK**.

Selecting the Software

► To select the software:

1. At the **Install New Modem** dialog, select **Casi Rusco 1442 - 9.6Kbps (Secure Perfect)**.
2. Click **Next**.
3. **For WinNT systems:** In the field **On which ports do you want to install it?**, select **Selected ports**. Select the desired port from the list.
For Win95 and Win98 systems: In the field **Select the port to use with this modem**, select the desired port.
4. Click **Next**.
5. **For WinNT systems only:** You may be prompted to restart your computer. Click **OK** to restart the computer.
6. Once the modem drivers have been installed, click **Finish**.
7. **For WinNT systems only:** You may be prompted to restart your computer. Click **OK** to restart the computer.

Setting Properties

► To set the properties:

1. In the **Modems Properties** window, select the modem you just added. If this is the first STAR Comm Modem, it is named **Casi Rusco 1442 - 9.6Kbps (Secure Perfect)**. With each additional modem added, the name is appended with a pound sign followed by the number of STAR Comm Modems added. For example, if this is the second modem, it is named **Casi Rusco 1442 - 9.6Kbps (Secure Perfect) #2**.
2. Select **Properties**.
3. Select the **General** tab and set the maximum speed to 9600. Select **Only connect at this speed**.
To configure at 4800: Maximum speed = 4800 only. Connect at this speed.
To configure at 2400: Maximum speed = 2400 only. Connect at this speed.
4. Select the **Connection** tab and set the **Data bits** to 8, **Parity** to **None** and **Stop bits** to 2.
5. Click **Advanced**.

6. In the **Advanced Connection Settings** window, clear **Use error control**.
To configure at 4800, enter Extra setting: **+ms = 9, 0, 4800, 4800**
To configure at 2400, enter Extra setting: **+ms = 2, 0, 2400, 2400**
7. Click **OK** twice, then **Close**.

Micro Modem Configuration

To configure your STAR Comm Modem at the micro — minimum micro firmware must be Version 2.03. Follow the instructions for the appropriate micro type.

Micro/5-E

► **To configure a Micro/5-E:**

1. Attach the modem to the serial port of a PC.
2. Run any DOS-based or Windows-based communications program that allows direct communication with a modem (for example, Procomm (DOS), Windows Terminal (3.11), or HyperTerminal (95)). Ensure that the program is set to communicate with the modem at Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2.
3. To have the Micro/5-E dial back the host immediately, the host phone number(s) must be programmed into the modem at this time. Otherwise, when the host dials for this micro later, the micro programs the host number(s) into the modem at that time.

NOTE



When a micro powers up, it has no host numbers and must use the numbers stored in the modem to reach its host and get its database loaded.

4. Stop Secure Perfect Services to free the Comm Ports. To view the profiles and numbers stored, if any, type the following (If profiles are viewed, start a new session: **File, New Connection**):

AT&V 

To store the host phone numbers in the modem, type the following:

AT&Zn=####

where:

n is the register (0, 1, 2, or 3) where the telephone number is stored,
and

is the telephone number.

NOTE

The host telephone number(s) **MUST** be entered in all four registers. For example, if you only have one host telephone number, enter the same number in all four registers.

5. Reset the modem to its factory settings. This turns echo on so that you can see the initialization strings you are about to type. This does not reset stored telephone numbers. Type in the following:

AT&F&W 

6. Enter the modem initialization strings listed in Table 7.

Table 7: Micro/5-E Secure Perfect Modem Configuration

Modem Type:	Initialization/Deinitialization Strings
STAR Comm	Initialization: ATEVX4S0=1&C0&D0&Q0+MS=9,0,9600\N0&W0 Deinitialization: ATEVX4S0=1&C0&D0&Q0+MS=9,0,9600\N0&W1 Speeds other than 9600: Baud Rate 2400: Initialization: AT&FEVS0=1&C0&D0+MS=2,0,2400,2400\N0&W0 Deinitialization: AT&FEVS0=1&C0&D0+MS=2,0,2400,2400\N0&W1 Baud Rate 4800: Initialization: AT&FEVS0=1&C0&D0+MS=9,0,4800,4800\N0&W0 Deinitialization: AT&FEVS0=1&C0&D0+MS=9,0,4800,4800\N0&W1
Hayes Accura 33.6	AT&F&C1&D0E0V0S0=1X4&Q0S37=9&W
Cardinal 28.8	AT&FE0V0X4S0=1&Q0&C0&D0\N0&W
Packard Bell	None required.
IBM 7851-002	Please follow the instructions found on the CASI-RUSCO Web site for this modem setup.

7. Power off the modem; then, exit the communications program without sending any other string to the modem. Do not attempt to view the profile or re-enter any information.
8. When the modem setup is complete, attach the modem to the micro.

Micro/5-PX and MicroProx for Secure Perfect

➤ To configure a Micro/5-PX or MicroProx:

The host phone number(s), the micro address, and modem initialization/deinitialization strings must be programmed into the parameter block of the micro using the Micro Installation Tool (MicTool) program on a PC connected directly to the micro.

Attach the micro to the modem, and then reset the micro.

NOTE Use the MicTool flash utility (Version 1.103 or higher) available from the CASI-RUSCO Web site company store or alternatively, the mcutil32 program available by contacting CASI-RUSCO Customer Support.



Table 8: Micro/5-PX and MicroProx Modem Configuration for Secure Perfect

Modem Type:	Initialization/Deinitialization Strings
STAR Comm ¹	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1
Hayes Accura 33.6	None required. (Reset modem to factory defaults.)
Cardinal 28.8	Initialization: AT&FE0Q0V1M1X4S0=1Y1&D0\N0&W Deinitialization: ATE0Q0V1M1X4S0=1S7=60Y1
Packard Bell	None required. (Reset modem to factory defaults.)
IBM 7851-002	Please follow the instructions found on the CASI-RUSCO BBS for this modem setup.

1. For Micro/5-PX only, if you use a baud rate other than 9600, refer to Table 13.

Micro/PX-2000

➤ **To configure a Micro/PX-2000:**

If **NO** initialization/deinitialization string is specified in the micro parameter block, then the following default strings are used by the micro.

Table 9: Micro/PX-2000 Defaults for Secure Perfect

Application	Baud Rate	Initialization/Deinitialization Strings
Flash Code M5S2110 or Later	Initialization Deinitialization (Baud Rate 9600)	AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1

Flashing a Dial-Up Micro that has Secure Perfect Application Firmware

Flashing with mcutil32

NOTE



The mcutil32 program is loaded on the Secure Perfect host when Secure Perfect is installed.

➤ **When flashing a dial-up micro from the host, using the mcutil32 program:**

1. From the **mcutil32** main menu, select **Function**, then **Start Flash/SMA**.

Result: The **Communication Settings** window displays.

2. In the **Modem Init. Cmd** box, select the following initialization string from the list:

Modem Initialization String	AT&FEV1S7=60\N0%C0&K0+MS=9,0,9600,9600
-----------------------------	--

3. Flash the micro with firmware.

Flashing a Dial-Up Micro Without Secure Perfect Application Firmware

Connect, Flash and Transfer Data

The following steps assist you to connect, flash, and transfer data to a micro without the Secure Perfect application code:

➤ **To connect and set dip switches:**

1. Connect directly to the micro.
2. Power down the micro and set the dip switches as follows:

Micro/PX-2000		Micro/5-PX	
SW5-1	ON	SW1-1	ON
SW5-2	ON	SW1-2	ON
SW5-6	ON		
SW5-7	ON		

3. Match the baud rate to the selected baud rate in the flash utility you are using, then power on.
4. You must run **mcutil32** or **MicTool** when flashing your micro for the first time. Refer to the sections that follow for the appropriate instructions for your choice of a micro installation tool.

NOTE

Use the `micrtool` flash utility (Version 1.13 or higher) available from the CASI-RUSCO Web site company store or alternatively, the `mcutil32` program available by contacting CASI-RUSCO Customer Support.

➤ **If using `mcutil32` to flash your micro:**

1. Select communications port to which the micro is attached, then select desired baud rate.
2. Select **Secure Perfect**, click **Next**, select **SMA**, click **Next**, select **Dial-up**, click **Next**, and then **Change direct to dial-up**.
3. Select **Finish** to poll for all micros (leave micro address fields blank). Select **Finish** to poll for micros in maintenance mode or one of the detected micros (enter the address of a detected micro in the **Old configuration** field).

Result: The old configuration is shown.

4. Delete the old micro address and type in the desired new micro address in **both** old and new micro address fields.
5. Type the micro-to-host phone number in **both** fields; both fields should have entries.
6. Type the initialization and deinitialization strings as follows (**both** must be entered):

**Table 10: Secure Perfect 2.1 Modem Configuration
for First-Time Flash Using `mcutil32`**

Baud Rate	Secure Perfect First-Time Flash Initialization/Deinitialization Strings
9600	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1
4800	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W1
2400	Initialization: AT&FEV1S0=1&C0&D0+MS=2,0,2400,2400\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=2,0,2400,2400\N0&W1

7. Select **Finish** to update the old configuration.
8. Select **Finish** to exit SMA.
9. Flash the micro with firmware.

➤ **If you are using MicTool to flash your micro (only one micro can be connected):**

1. Select the communications port to which the micro is attached, then select desired baud rate.
2. Close the progress window (select **x** in top right corner of screen).
3. From the MicTool menu, select **Flash/Param Setup**.

Result: The flash window opens and begins to search for the micro. MicTool must detect a micro to continue and the status must equal **Micro ready**.

4. Click **Parameters** under **Options** to edit the micro parameter information.
5. Select **Dial-up**.
6. Enter the desired **Micro address**.
7. Type the micro-to-host phone number in BOTH fields; both fields should have entries.
8. Type the initialization and deinitialization strings as in Table 11 (**both** must be entered):

**Table 11: Secure Perfect 2.1 Modem Configuration
First-Time Flash using MicTool**

Baud Rate	Secure Perfect First-Time Flash Initialization/Deinitialization Strings	
9600	Initialization:	AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0
	Deinitialization:	AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1
4800	Initialization:	AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W0
	Deinitialization:	AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W1
2400	Initialization:	AT&FEV1S0=1&C0&D0+MS=2,0,2400,2400\N0&W0
	Deinitialization:	AT&FEV1S0=1&C0&D0+MS=2,0,2400,2400\N0&W1

9. Select **Save to Micro**.
10. Flash the micro with firmware.

Setting Dip Switches and Powering On

➤ **To set dip switches and power on:**

1. Power down the micro, then set the dip switches for dial-up communications, the baud rate, and application mode (Micro/PX-2000).

2. Make modem connection to the micro, power on the modem, then power on the micro.
3. The micro makes a dial-up connection to the host.

SP3.0

Host Modem Configuration

This section details the steps to configure the STAR Comm Modem at the host on Windows 2000.

Beginning the Installation

- To begin the installation of the STAR Comm Modem at the host on Windows 2000:

1. Click **Start, Settings, Control Panel**, then **Phone and Modem Options**.

Result: The **Location** information window displays.

NOTE



This information is only required the first time you install any modem. This window will not display for subsequent modem installations.

2. Enter **Location**, **Area Code**, and **Number dialed to access an outside line**. The **Area Code** is a required field.

3. Click **Next**.

Result: The **Phone and Modem Options** window displays.

4. Select the **Modems** tab and locate the STAR Comm Modem on the list. If the STAR Comm Modem is not listed, click **Add** to add a modem.

Result: The **Add/Remove Hardware Wizard** window displays.

5. Select **Don't detect my modem; I will select it from a list** and click **Next**.

6. From the **Install New Modem** window, click **Have Disk**.

Result: The **Install From Disk** window displays.

7. If installing from a diskette, and the drive is A:, click **OK**.

Otherwise:

- Click **Browse** and navigate to the `mdmstar.inf` file in the firmware folder of SP3.0 on the Server computer. On the SP 3.0 CD, browse to the drive where the **Firmware** folder resides.
- Select the file.
- Click **Open**.

- Click **OK**.

Result: The **Install New Modem** window displays.

Selecting the Software

➤ To select the software:

1. Select **Casi Rusco 1442 - 9.6Kbps (Secure Perfect)**.
2. Click **Next**.
3. When asked **On which ports do you want to install it?**, select **Selected ports** and select the desired port from the list.
4. Click **Next**.

NOTE



You may see a *Digital Signature Not Found* window. When asked *Do you want to continue the installation?*, click **Yes**.

Result: Modem drivers are installed.

5. Click **Finish**.
6. Select the modem you just added. If this is the first STAR Comm Modem, it is named **Casi Rusco 1442 - 9.6Kbps (Secure Perfect)**. With each additional modem added, the name is appended with a pound sign followed by the number of the STAR Comm Modems added. For example, the second STAR Comm Modem is named **Casi Rusco 1442 - 9.6Kbps (Secure Perfect) #2**.

Setting the Properties

➤ To set the properties:

1. Click **Properties**.
2. Select the **General** tab and set the **Maximum Port Speed** to 9600.
3. Select the **Advanced** tab and click **Change Default Preferences**.
4. Set the **Data Connection Preferences**:
 - **Data Protocol** to **Disabled**.
 - **Compression** to **Disabled**.
5. Select the **Advanced** tab and set the **Hardware Settings** at **Data bits** to 8, **Parity** to **None**, and **Stop bits** to 2.
6. Click **OK** three times to exit the modem setup windows and exit the Control Panel.

Micro Modem Configuration

This section details the instructions for configuring your STAR Comm Modem at the micro.

Micro/5-PX

► To configure a Micro/5-PX:

The host computer or communication client computer phone number and the micro address must be programmed into the parameter block of the micro using the Micro Installation Tool (MicTool) program on a PC connected directly to the micro. If the modem is a STAR Comm Modem set at 9600 baud, its initialization/deinitialization strings are already in the firmware; it is not necessary to re-enter. Refer to Table 12.

Attach the micro to the modem, and then reset the micro.

NOTE



If you are flashing your micro with application code for the first time, you must use the `mictool` flash utility (Version 1.13 or higher) available from the CASI-RUSCO Web site company store.

If **NO** initialization string is specified in the micro parameter block, then the following default initialization strings are used by the micro.

Table 12: Micro/5-PX Modem Configuration for SP3.0

Modem Type:	Initialization/Deinitialization Strings
STAR Comm ¹	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1
Hayes Accura 33.6	None required. (Reset modem to factory defaults.)
Cardinal 28.8	Initialization: AT&FE0Q0V1M1X4S0=1Y1&D0\N0&W Deinitialization: ATE0Q0V1M1X4S0=1S7=60Y1
Packard Bell	None required. (Reset modem to factory defaults.)
IBM 7851-002	Please follow the instructions found on the CASI-RUSCO BBS for this modem setup.

1. If you use a baud rate other than 9600, refer to Table 13.

Micro/PX-2000

► To configure a Micro/PX-2000:

If NO initialization string is specified in the micro parameter block, then the following STAR Comm default initialization strings are used by the micro.

Table 13: Micro/PX-2000 Default Modem Configuration for SP3.0

Application	Baud Rate	Initialization/Deinitialization Strings
Flash Code 3.xxx or Later	Initialization Deinitialization (Baud Rate 9600)	AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W0 AT&FEV1S0=1&C0&D0+MS=9,0,9600,9600\N0&W1

Serially Flashing a Dial-Up Micro Without SP3.0 Firmware

Connect, Flash, and Transfer Data

The following steps assist you to connect, flash, and transfer data to a micro without the SP3.0 firmware:

► To connect and set dip switches:

1. Connect Host-to-Micro cable directly to the micro.
2. Power down the micro and set the dip switches as follows:

Micro/PX-2000		Micro/5-PX	
SW5-1	ON	SW1-1	ON
SW5-2	ON	SW1-2	ON
SW5-6	ON		
SW5-7	ON		

3. Match the baud rate to the selected baud rate in the flash utility you are using, then power on.
4. The first time you flash your micro, you must use FlashTool.

NOTE



To run, open FlashTool. (By default, FlashTool installs in Program Files\Casi-Rusco\Secure Perfect\FlashTool.)

Double-click Flash.exe.

5. Enter the micro address in the parameter block. The initialization/deinitialization strings are already programmed for 9600 baud; you do not need to re-enter. Refer to Table 14 if you want to communicate at 4800 baud.

Table 14: SP3.0 Modem Configuration for First-Time Flash Using FlashTool

Baud Rate	Secure Perfect First-Time Flash Initialization/Deinitialization Strings
4800	Initialization: AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W0 Deinitialization: AT&FEV1S0=1&C0&D0+MS=9,0,4800,4800\N0&W1

6. Select **Save to Micro**.

Set Dip Switches and Power On

➤ **To set dip switches and power on:**

1. Power down the micro, then set the dip switches for dial-up communications, the baud rate, and application mode (Micro/PX-2000).
2. Make modem connection to the micro, power on the modem, then power on the micro.
3. The micro makes a dial-up connection to the host.

Reflashing a Dial-Up Micro by Dial-Up Communication

Using FlashTool

➤ **To flash firmware to the micro in SP3.0 on Win2000 systems, use FlashTool:**

1. At the host computer of the STAR Comm Modem, open FlashTool. (By default, FlashTool installs in `Program Files\Casi-Rusco\Secure Perfect\FlashTool1`.) Double-click `Flash.exe`.
2. Select **File**, then **Configuration**.

3. A series of windows may display. Click **OK** to accept each window. Verify the micro settings as follows:
 - **Baud Rate** must match the switch settings on the Power/Communication board.
 - From the drop-down list, select the **Com Port** to which the modem is connected and click **OK**.
 - Click **Dial a Micro** and enter the telephone number to reach the micro.
4. Click **Connect**.

Result: When FlashTool finds the micro, the status appears in the Micro Status block.
5. Click **Parameters**.
6. In the **Dialup Parameters** block, enter phone numbers to reach the host.
7. Click **Save to Micro** to save the data into the parameter block of the micro.
8. Exit FlashTool.

RS-232 Communication Cable Overview

Figure 4 to Figure 7 show the connections for the various types of host connectors.

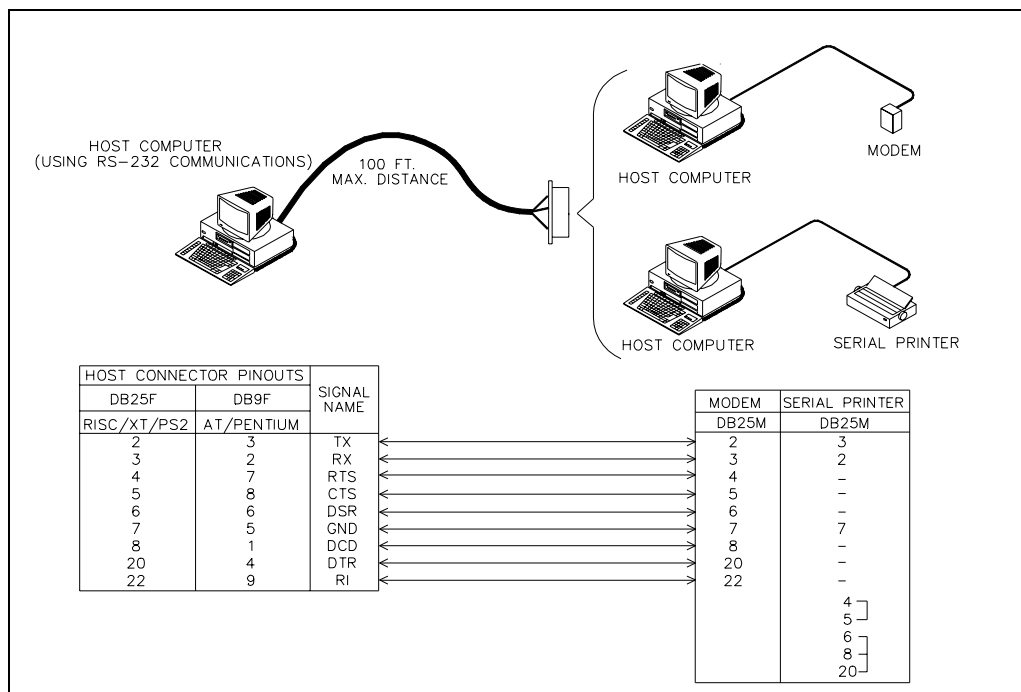


Figure 4: Host-to-Modem Connection Overview

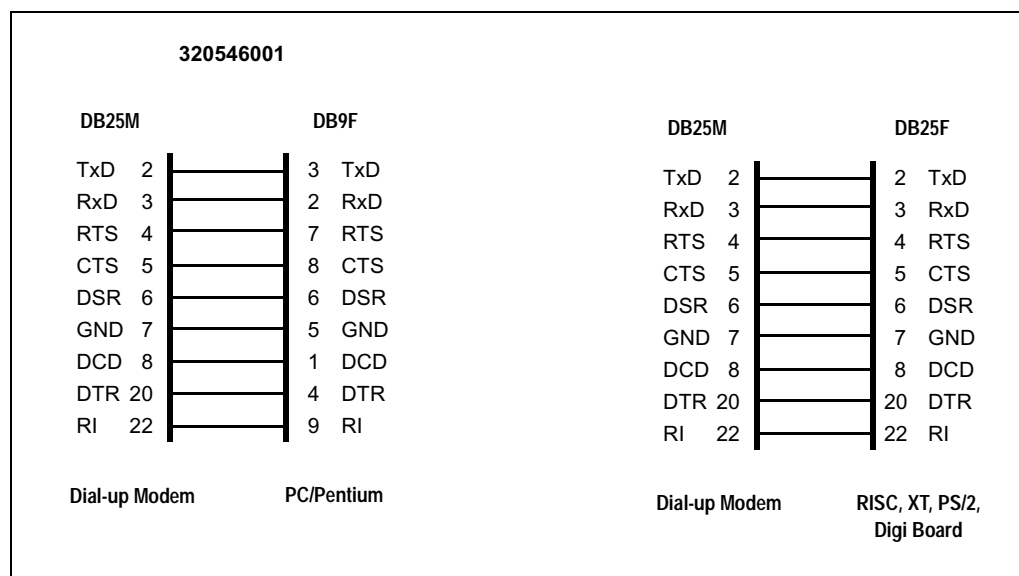


Figure 5: Host-to-Modem Cable Pinouts

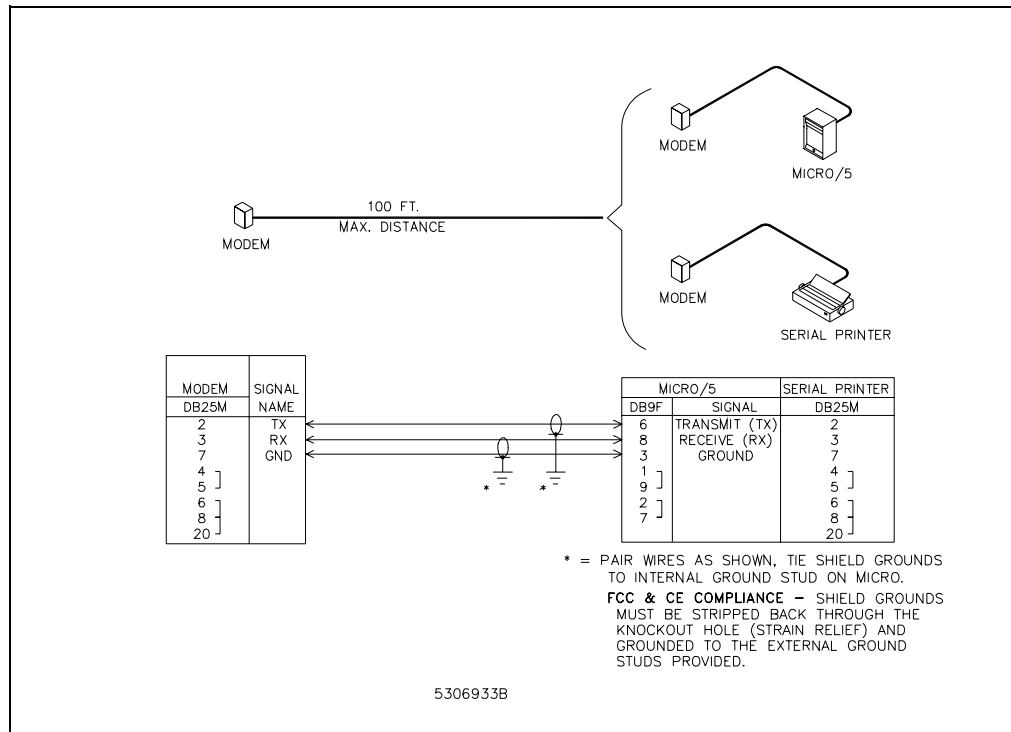


Figure 6: Modem-to-Micro/5 Connection Overview

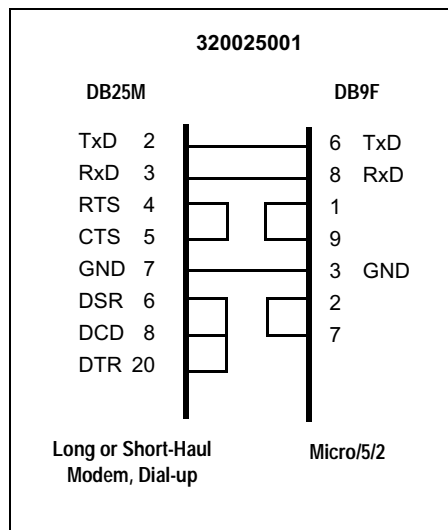


Figure 7: Modem-to-Micro/5 Cable Pinouts

Using the STAR Comm Modem in 2-Wire Short-Haul or Leased-Line Configurations

A pair of STAR Comm Modems can be used over a short-haul line to a maximum distance of five miles or over leased lines.

NOTE



Leased lines should be a 2-wire line with a minimum 3002 conditioning and a line loss of from -12 to -18 db.

Since these modems are used in pairs, **do not use the STAR Comm Modem in conjunction with any other modem.**

Before you configure the modem, verify that the micro setup (see the bullets below) and the connections (see Figure 8) are correct:

- In Picture Perfect, the micro must be set up as a direct micro with Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2. This is done in the **Ports** screen for the primary port for this micro.
- In Secure Perfect, the micro is set up as a direct micro and its COM port in Windows is defined as Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2.

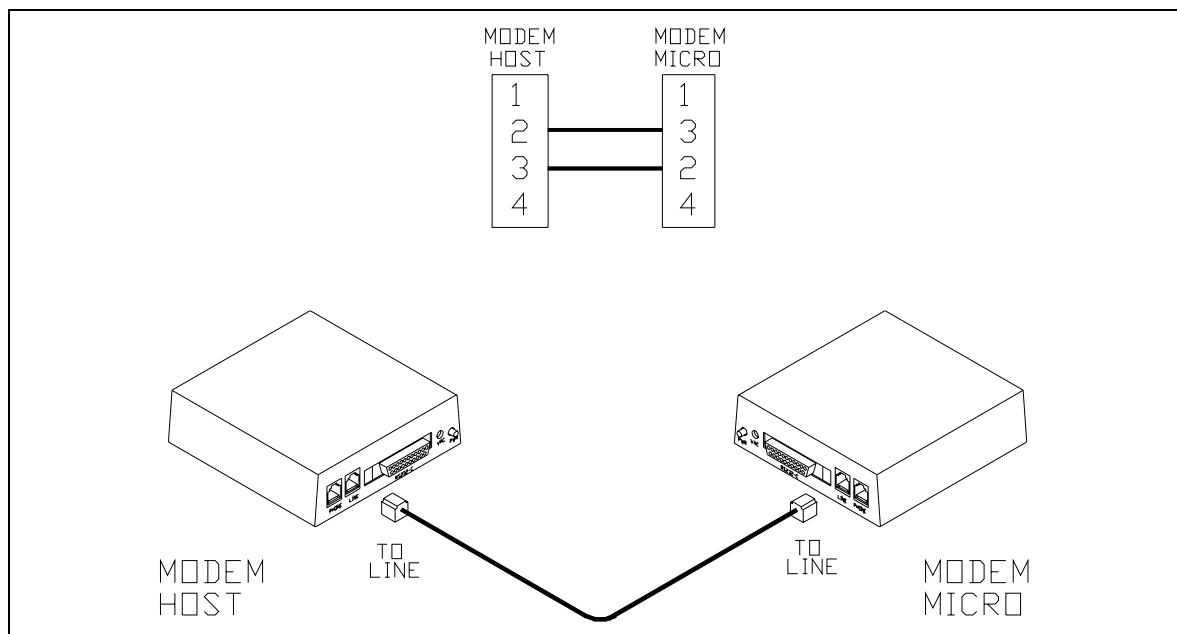


Figure 8: Short-Haul Connection Overview

Configuring Modems

- To configure the modems for your application to operate at 9600 bit per second:
 1. Attach the modem that is located at the host computer to the serial port of a PC.
 2. On the back of the modem next to the 25-pin connector, there is a two-pin jumper. Set the jumper to disconnect the two pins. Power off the modem and power it back on.
 3. Run any DOS-based or Windows-based communications program, such as HyperTerminal, that allows direct communications with a modem. Ensure you are running at Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2. For example, using the DOS prompt, type:

```
mode comx 9600 n 8 2
```

where **x** is the communication port.

Then, type:

```
echo init string >comx
```

where **init string** is as follows:

```
AT&F&L1&K0&D0\H1\F1\N0E0Q1+MS=9,0,9600,9600S7=200&W
```

This modem is designated the **Originate** (host end) modem.

Power off the modem; then, exit the communications program without sending any other string to the modem. Do not attempt to view the profile or re-enter any information.

4. On the back of the modem next to the 25-pin connector, there is a two-pin jumper. Set the jumper to connect the two pins together.
5. Attach the modem that is located at the CASI-RUSCO micro to the serial port of a PC.
6. On the back of the modem next to the 25-pin connector, there is a two-pin jumper. Set the jumper to disconnect the two pins. Power off the modem and then power it back on.
7. Run any DOS-based or Windows-based communications program that allows direct communications with a modem. Ensure you are running at Baud rate 9600, Data bits 8, Parity **None**, and Stop bits 2. For example, using the DOS prompt, type:

```
mode comx 9600 n 8 2
```

where **x** is the communication port.

Then, type:

```
echo init string >comx
```

where `init string` is as follows:

```
AT&F&L1&K0&D0\H1\F0\N0E0Q1+MS=9,0,9600,9600S7=30&W
```

This modem is designated the **Answer** (micro end) modem.

Power off the modem; then, exit the communications program without sending any other string to the modem. Do not attempt to view the profile or re-enter anything.

8. On the back of the modem next to the 25-pin connector, there is a two-pin jumper. Set the jumper to connect the two pins together.
9. Connect the **Originate** modem from step 3 to the host computer. This line must be set up as a local (direct) line in the host software. Attach the host end of the short-haul line or the leased line to this modem.
10. Connect the **Answer** modem from step 7 to the CASI-RUSCO micro. The micro must be set up as a direct-connect micro either from DIP switches (Micro/2 or Micro/5) or in the firmware (MicroProx). Attach the micro end of the short-haul line or the leased line to this modem.
11. When both modems are powered on and the telephone line has been connected, the modems automatically establish the connection.
 - At the host, the **MR TR OH CD HS** LEDs are ON and the **SD RD** LEDs flicker as data is exchanged between the host and the micro.
 - At the micro, the **MR TR OH CD HS** LEDs are ON and the **SD RD** LEDs flicker as data is exchanged between the micro and the host.

Battery Backup for the STAR Comm Modem

The STAR Comm Modem comes with a 9VAC wall-mounted transformer. If the modem is to be used at a CASI-RUSCO micro that uses a battery backup, it is recommended that the modem also be attached to a battery backup to allow normal system operation when the AC power fails.

➤ **To attach the STAR Comm Modem to the micro battery backup:**

1. Cut the cable between the modem and the 9VAC transformer (with the transformer unplugged) and allow enough wire between the power connector on the rear of the modem and the input power connector in the micro.
2. Pull the two wires apart for a distance of about 2 inches at the cut on the section of wire going to the modem and strip about 3/8 of an inch of insulation from each wire.

3. Disconnect DC power from the micro.
4. Connect one of the wires from step 2 to the + side of the 12VDC power to the micro (it does not matter which wire is connected). Connect the other wire to the - side of the 12VDC power.
5. Reconnect DC power to the micro. One or more LEDs on the modem should light.
6. Test to ensure that the modem can call out to the host computer and that it can answer incoming calls.

NOTES

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