

DIAL-UP DATA

User's Guide

Iridium Satellite LLC Rev. 2; June 15, 2001

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DIAL-UP DATA SERVICE------ OVERVIEW

1 Dial-Up Data Overview

Dial-Up Data Service provides dial-up connectivity through your Iridium phone to another computer, a remote LAN (e.g., a corporate network), or an Internet Service Provider (ISP). This service offers a typical data rate of 2.4 Kbps.

You will be able to use Dial-Up Data service just as you would use the modem on your computer to dial a call through the public switched telephone network (PSTN). The only differences are that the dialed telephone number must conform to the international dialing pattern used by Iridium, and that you will use your Iridium phone as the data modem. In essence, your Iridium phone appears as an external modem to your computer. Before using Dial-Up Data, you will need to install the Motorola Satellite Series Data Modem driver (provided on the Iridium World Data Services CD) on your computer. You will then be able to use standard software applications (e.g., Microsoft Dial-Up Networking) to initiate data calls with Dial-Up Data Service.

How it works

You are probably familiar with using your computer and its modem to perform dial-up data applications across the PSTN. Most computers have an internal modem, to which you connect your telephone line. Figure 1 illustrates how you dial your ISP to access the Internet. (The modem is shown external to the computer for illustration purposes.) On your computer, you configure a dial-up networking connection. As part of that connection, you identify which modem to use and the phone number to dial. Then, in dial-up networking you enter your user name and password to access your ISP, and you initiate the connection. Your modem dials into and connects to another modem at your ISP. Once connected and a session has been established, you can check your email and browse the Internet.

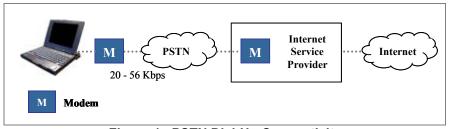


Figure 1. PSTN Dial-Up Connectivity

Dial-Up Data Service functions in much the same way. From the perspective of your computer, the Iridium handset is an external modem. On your computer, you will configure a dial-up networking connection. As part of that connection, you will identify the modem associated with the Iridium handset and the phone number to dial. Then, in dial-up networking you will enter your user name and password to access your ISP, and you will initiate the connection. Your handset will actually dial and initiate a connection with the Iridium gateway through the Iridium satellite constellation. This connection setup is similar to how a voice call is established, except a data connection is requested. Since your Iridium handset is requesting to establish a data connection, the switch at the gateway will route the call through a modem. The modem at the Iridium gateway will then dial into and connect to another modem at your ISP. Once connected and a session has been established, you can check your email and browse the Internet just like you would across the PSTN. Figure 2 illustrates how a Dial-Up data call is routed.

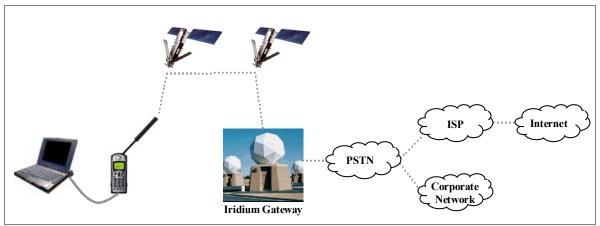


Figure 2. Iridium Dial-Up Data Connectivity

2 Hardware/Software Requirements

To use Iridium Dial-Up Data Service, you will need the following:

- ✓ A Windows®-based PC, with:
 - Windows® 95, 98, Me, NT4.0 (Service Pack 4 or later) or 2000
 - CD-ROM drive
 - Serial port
- ✓ A SIM Card that is provisioned for data (note that this SIM can also be used for voice calls).
- ✓ **An Iridium Phone** (A Motorola 9500 or 9505 Portable Phone, or a 9520 Mobile Phone) with a data-capable internal software version. Check the software version in the phone by pressing *#91# on the keypad.
 - Motorola 9500 Phone must have software version INC0620 or later
 - Motorola 9505 Phone must have software version LAC109G or later
 - Motorola 9520 Phone must have software version RAC0620 or later
- ✓ Hardware and Software, depending on the type of phone you are using, according to the table below:

	Type of Iridium Phone used for data calls		
	9500 or 9505	9500 or 9505 Phone, with	9520 Mobile
Hardware and Software	Phone	a 9570 Portable Dock*	Phone
Data Kit (shown below), which includes:			
 Data Adapter 			
 Serial Cable (9-Pin, M/F) 	✓		
Stand			
 Iridium World Data Services CD 			
Iridium World Data Services CD		,	
(Available in the Data Kit. Also sold		✓	✓
separately)			
Serial Cable (9-Pin, M/F)			
(Not sold as a standalone item by Iridium.		✓	
This item is widely available at retail stores)			

^{*} The 9570 Portable Dock requires an adapter (sold separately) for use with the 9505 Portable Phone.

Data Kit Components:



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3 Modem Driver Installation and Configuration

Prior to using your Iridium phone as a modem for Dial-Up Data, you must do the following:

- Install the Motorola Satellite Series[™] modem driver on your PC, and
- Set up and configure a dial-up networking connection.

This section contains instructions for installing the modem driver and configuring Dial-Up Networking in selected Microsoft Windows environments. These instructions are identical to those that you would use to install and configure any new modem in Microsoft Windows. If you cannot find your operating system below, please refer to the user manual provided with your computer and follow the instructions for installing a new modem.

Note: In order to proceed, Dial-Up Networking must be installed on your computer. Dial-Up Networking is a standard Windows feature that is typically installed by default when a computer is initially set up. If Dial-Up Networking is not installed on your computer, please refer to the user manual provided with your operating system and follow the instructions for installing Dial-Up Networking.

- ⇒ For Windows 95, Windows 98 or Windows Me, complete the steps in section 3.1
- ⇒ For Windows NT4.0, complete the steps in section 3.2
- ⇒ For Windows 2000, complete the steps in section 3.3

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3.1 Windows 95/98/Me Setup

In order to install the modem driver and configure dial-up networking, you will need the following:

- ✓ The Iridium World Data Services CD
- ✓ An available communications port on your computer (e.g., COM1)

Note: The following instructions are for Windows Me. Windows 95 and 98 are very similar in appearance, but the individual screens you see may differ slightly.

3.1.1 Install the Modem Driver – Windows 95/98/Me

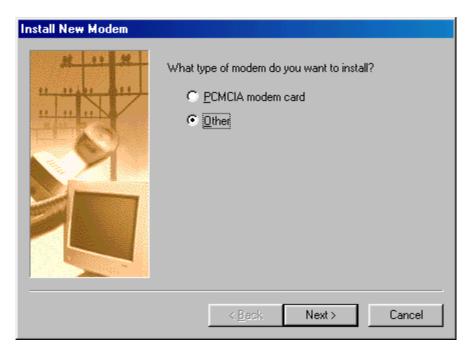
- 1. Close all applications.
- 2. Choose Start > Settings > Control Panel to open the Control Panel window.
- 3. Double-click on *Modems* to open the Modem Properties window.

Note: If no modems are currently installed on your computer, you will not see the Modem Properties window. In this case, skip to step 5.

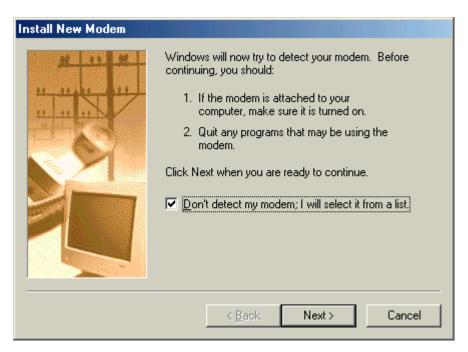
4. Click the *General* tab, and you will see all the modems installed on your computer. Click on <u>Add...</u> to open the Install New Modem window. This will begin the modem installation procedure. Henceforth, you can cancel at any time without affecting your system by clicking *Cancel*.



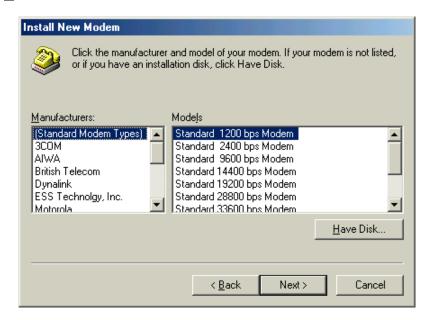
5. If you are using a laptop, you may be presented with the following screen. Select the *Other* radio button and click *Next* >.



6. Choose the checkbox marked "Don't detect my modem; I will select it from a list." Then, click Next >.



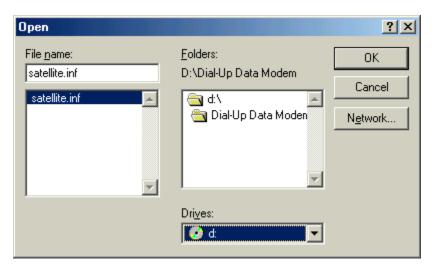
7. Click on Have Disk...



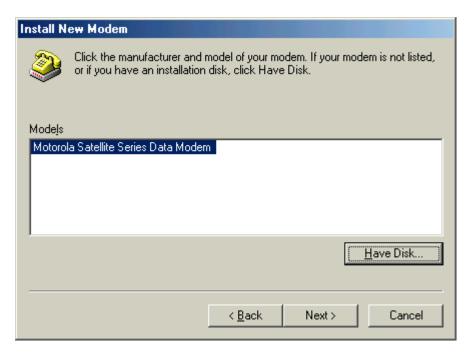
8. The default drive setting is A:\, which is the default floppy drive on most computers. Insert the Iridium World Data Services CD into your CD drive, and click Browse...



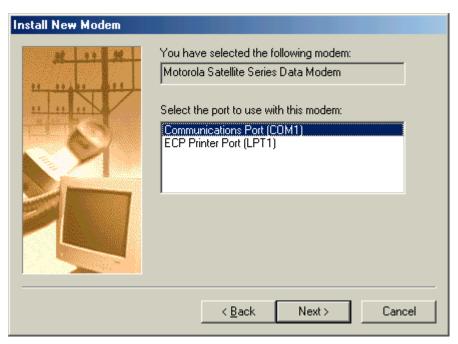
9. Browse to the *Dial-Up Data* directory on the CD, and then click *OK*.



 In the Install New Modem window, select the Motorola Satellite Series Data Modem and click Next >.



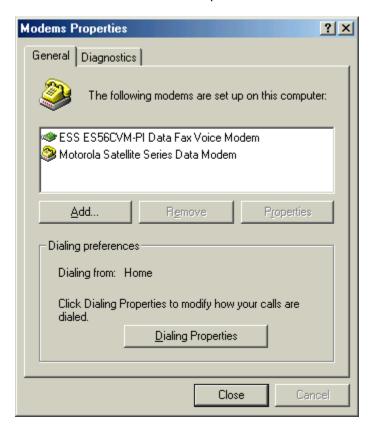
11. Select an available Communications Port (or COM Port) on which to install the modem (e.g., COM1), and click *Next* >. This is the port to which you will connect your Iridium phone.



12. Click Finish.



13. Click either *Close* or *OK* to close the Modem Properties window.



14. You have now completed the installation of the Motorola Satellite Series Data Modem. Continue with section **3.1.2**.

3.1.2 Configure Dial-Up Networking – Windows 95/98/Me

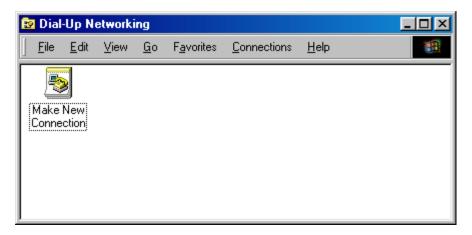
In order to use your Iridium handset for dial-up networking, you need to create a new dial-up networking connection.

In Windows 95: Choose Start > Programs > Accessories > Dial-Up Networking
In Windows 98/Me: Choose Start > Programs > Accessories > Communications > Dial-Up Networking

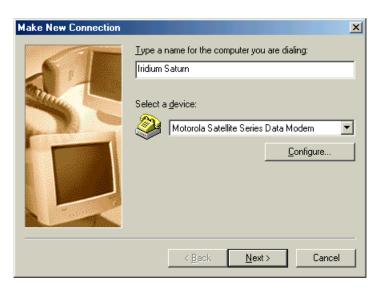
In the Dial-Up Networking window, you can modify an existing connection type or create a new connection type. Unless you are comfortable using the dial-up networking options, we recommend that you create a new connection type for Dial-Up Data.

To Create a New Connection Type:

1. In the Dial-Up Networking window, double-click *Make New Connection*. Henceforth, you can cancel at any time without affecting your system by clicking *Cancel*.



 In the Make New Connection window, enter a connection name and select Motorola Satellite Series Data Modem from the device list. For example, if you are creating a connection to your ISP and your ISP is called Saturn Internet, you might name your connection "Iridium Saturn." Click Next >.



- 3. In the Make a New Connection window, you must do the following:
 - In the *Telephone number* box, enter the telephone number you wish to use for your connection. **Enter the number in international dialing format**:

00 + Country Code + Area Code/Phone Number.

For example, if you are dialing an ISP in Tempe, Arizona, USA, you would enter 00 1 480 555 5555, where 1 is the country code and 480.555.5555 is the ISP's telephone number. *Please note that this is not a valid telephone number!*

Note: This is the same dialing pattern used for voice calls. In fact, you can verify that you are dialing the correct number for your ISP by dialing the number as a voice call on your satellite phone. You should hear your ISP's modem tones if dialed properly.

Leave the Area Code box blank

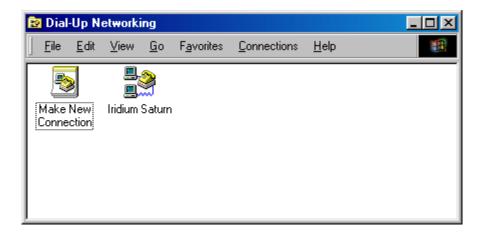
Click Next >.



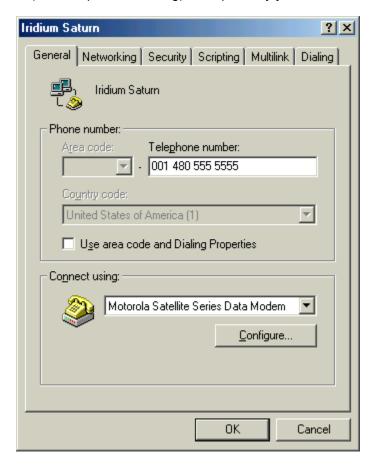
4. Click Finish to save your new Dial-Up Networking connection.



5. In the Dial-Up *Networking* window, right click on your new dial-up connection and select *Properties*.



6. Upon selecting *Properties*, you will see a window similar to the one shown below. Select the *General* tab, and then de-select the check box for "*Use area code and Dialing Properties*." Also, verify that you have entered the correct phone number. Set up the parameters for the rest of the menus (for example, Networking) as required by your ISP.



- 7. Click OK to return to the Dial-up Networking window. Close the Dial-up Networking window.
- 8. You have now completed the configuration of Dial-Up Networking. To connect your hardware and initiate a dial-up data call, continue with section 4.

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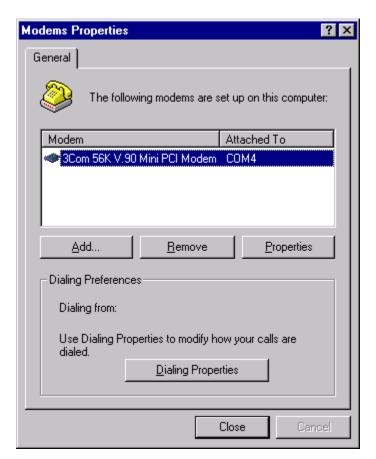
3.2 Windows NT4.0 Setup

In order to install the modem driver and configure dial-up networking, you will need the following:

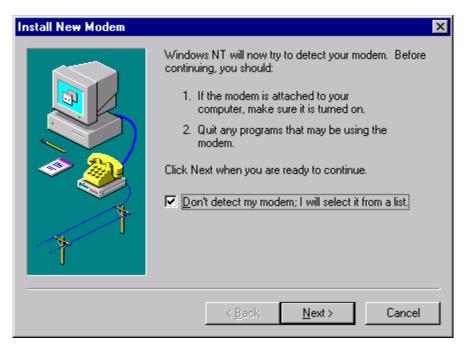
- ✓ The Iridium World Data Services CD
- ✓ An available communications port on your computer (e.g., COM1)
- ✓ Administrator privileges for Windows NT4.0

3.2.1 Install the Modem Driver – Windows NT4.0

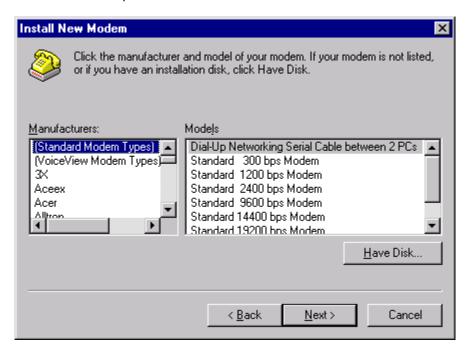
- 1. Close all applications.
- 2. Choose Start > Settings > Control Panel to open the Control Panel window.
- 3. Double click on *Modems* to open the Modems Properties window.
- 4. Click the *General* tab, and you will see all the modems installed on your computer. Click on *Add...* to open the Install New Modem window. This will begin the modem installation procedure. Henceforth, you can cancel at any time without affecting your system by clicking *Cancel*.



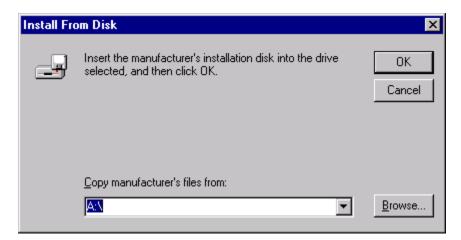
5. Choose the checkbox marked "Don't detect my modem; I will select it from a list." Then, click *Next* > to open the Install New Modem window.



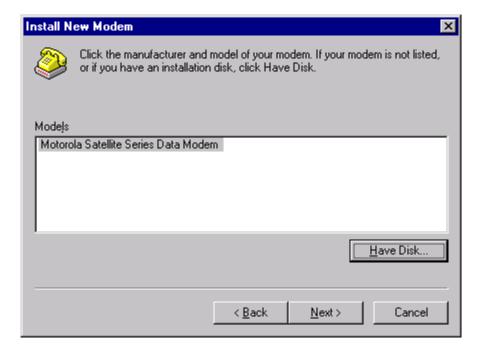
6. Click on Have Disk... to open the Install From Disk window.



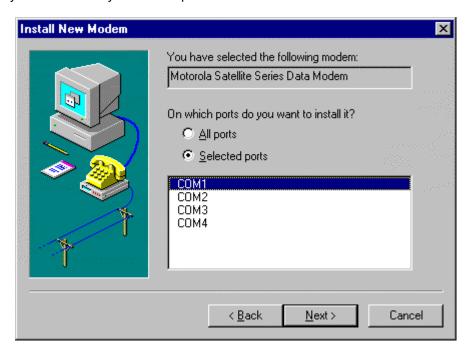
7. The default drive setting is A:\, which is the default floppy drive on most computers. Insert the Iridium World Data Services CD into your CD drive, and browse to the *Dial-Up Data* directory on the CD. Click *OK*.



8. In the Install New Modem window, select the Motorola Satellite Series Data Modem and click Next >.



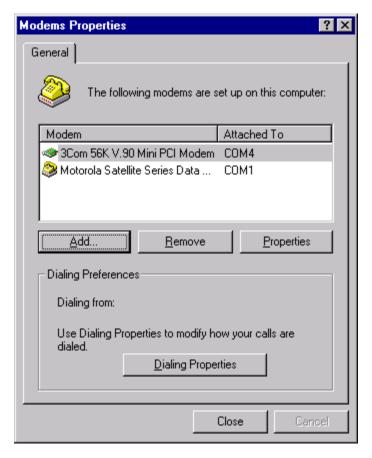
9. Click the "Selected ports" radio button, and select an available Communications Port (or COM Port) on which to install the modem (e.g., COM1) and click *Next* >. This is the port to which you will connect your Iridium phone.



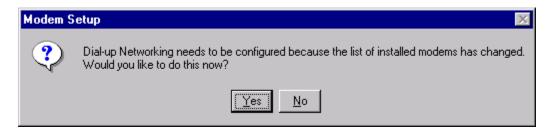
10. Click Finish to close the Install New Modern window.



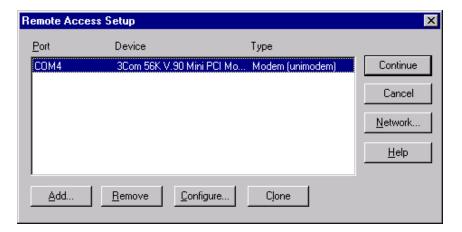
11. Click Close to close the Modems Properties window.



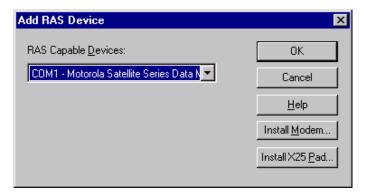
12. The Modem Setup window appears and asks if you would like to configure Dial-Up Networking. Click Yes.



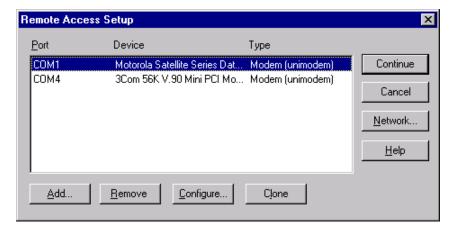
13. The Remote Access Setup window appears. Click Add to continue. Note: If a modem is already installed on the COM port that you would like to use for the Motorola Satellite Series Data Modem, select the modem in the list and click Remove.



14. Select the Motorola Satellite Series Data Modem from the list of RAS capable devices. Click *OK* to add the entry to the Remote Access Setup list.



15. The new entry is added to the list of modems. Click Continue.



- 16. When the computer asks if you would like to restart the computer, click Yes.
- 17. You have now completed the installation of the Motorola Satellite Series Data Modem. Continue with section **3.2.2**.

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3.2.2 Configure Dial-Up Networking – Windows NT4.0

In order to use your Iridium handset for dial-up networking, you need to create a new dial-up networking connection.

In the Dial-Up Networking window, you can modify an existing connection type or create a new connection type. Unless you are comfortable using the dial-up networking options, we recommend that you create a new connection type for Dial-Up Data.

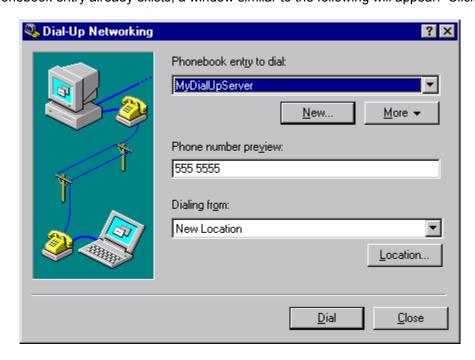
To Create a New Connection Type:

There are two possible sequences of windows that could arise depending on whether or not the New Phonebook Entry Wizard has previously been disabled. The following instructions assume that the wizard is *not* used. If you are using the Wizard, use the information from the following instructions to populate the Wizard screens.

1. Choose *Start > Programs > Accessories > Dial-Up Networking* to open the Dial-Up Networking window. If Dial-Up Networking has no "phonebook entries", the following window will appear. Click *OK* if this window appears.



2. If a phonebook entry already exists, a window similar to the following will appear. Click New.



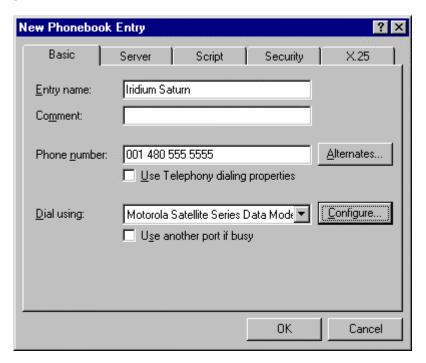
- 3. The New Phonebook Entry window appears. You must do the following:
 - In the *Entry name* box, enter a connection name. For example, if you are creating a connection to your Internet Service Provider, and your ISP is called "Saturn Internet", you might name your connection "Iridium Saturn."
 - In the *Phone number* box, enter the telephone number you wish to use for your connection. **Enter the number in international dialing format:**
 - 00 + Country Code + Area Code/Phone Number.

For example, if you are dialing an ISP in Tempe, Arizona, USA, you would enter 00 1 480 555 5555, where 1 is the country code and 480.555.5555 is the ISP's telephone number. *Please note that this is not a valid telephone number!*

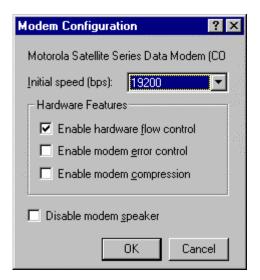
Note: This is the same dialing pattern used for voice calls. In fact, you can verify that you are dialing the correct number for your ISP by dialing the number as a voice call on your satellite phone. You should hear your ISP's modem tones if dialed properly.

- De-select the "Use Telephony dialing properties" check-box.
- In the *Dial using* list, select "Motorola Satellite Series Data Modem".

Click Configure...



4. Verify the proper settings according to the window below. Click *OK* to save any changes. Upon returning to the New Phonebook Entry window, click *OK*.



- 5. Close the Dial-Up Networking window.
- 6. You have now completed the configuration of Dial-Up Networking. To connect your hardware and initiate a dial-up data call, continue with section 4.

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3.3 Windows 2000 Setup

In order to install the modem driver and configure dial-up networking, you will need the following:

- ✓ The Iridium World Data Services CD
- ✓ An available communications port on your computer (e.g., COM1)
- ✓ Administrator privileges for Windows 2000

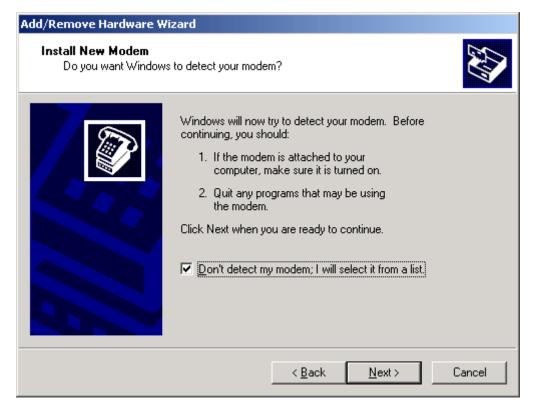
3.3.1 Install the Modem Driver – Windows 2000

- 1. Close all applications
- 2. Choose Start > Settings > Control Panel to open the Control Panel window.
- 3. Double click on *Phone and Modem Options* to open the Phone and Modem Options window.
- 4. Click the Modems tab, and you will see all the modems installed on your computer. Click on *Add...* to open the Add/Remove Hardware Wizard for installing a new modem. This will begin the modem installation procedure. Henceforth, you can cancel at any time without affecting your system by clicking *Cancel*.

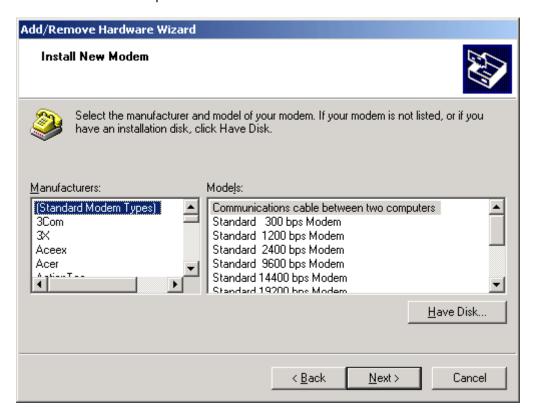


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5. Choose the checkbox marked "Don't detect my modem; I will select it from a list." Then, click *Next* > to open the Install New Modem window of the Add/Remove Hardware Wizard.



6. Click on Have Disk... to open the Install From Disk window.

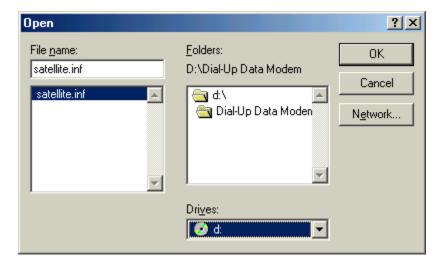


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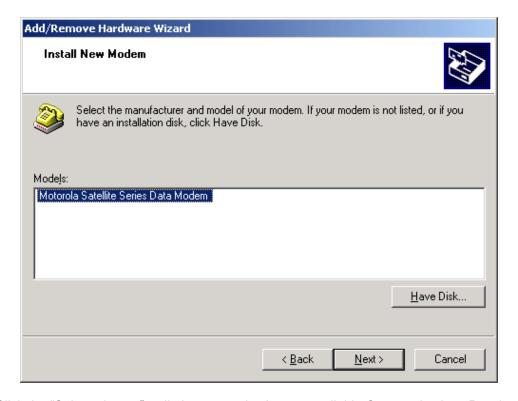
7. The default drive setting is A:\, which is the default floppy drive on most computers. Insert the Iridium World Data Services CD into your CD drive, and click *Browse...*



8. Browse to the Dial-Up Data directory on the CD, and then click OK.



In the Install New Modem window, select the Motorola Satellite Series Data Modem and click Next >.

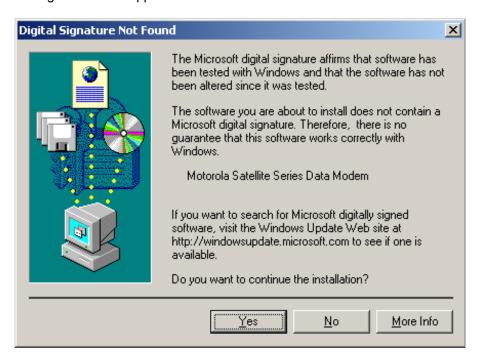


10. Click the "Selected ports" radio button, and select an available Communications Port (or COM Port) on which to install the modem (e.g., COM1). This is the port to which you will connect your Iridium phone. Click Next >.



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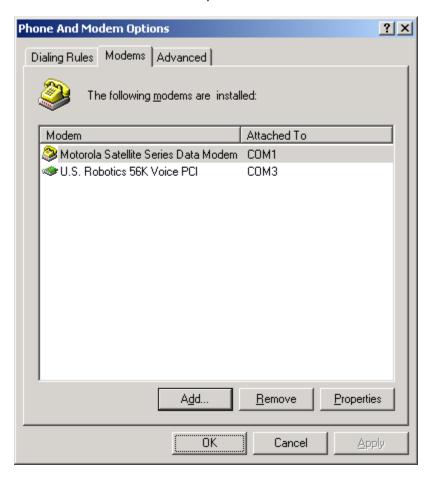
11. The following window will appear. Click Yes.



12. Click Finish to close the Install New Modem window.



13. Click *OK* to close the Phone and Modem Options window.



14. You have now completed the installation of the Motorola Satellite Series Data Modem. Continue with section **3.3.2**.

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3.3.2 Configure Dial-Up Networking – Windows 2000

In order to use your Iridium handset for dial-up networking, you need to create a new dial-up networking connection.

In the Network and Dial-Up Connections window, you can modify an existing connection type or create a new connection type. Unless you are comfortable using the dial-up networking options, we recommend that you create a new connection type for Dial-Up Data.

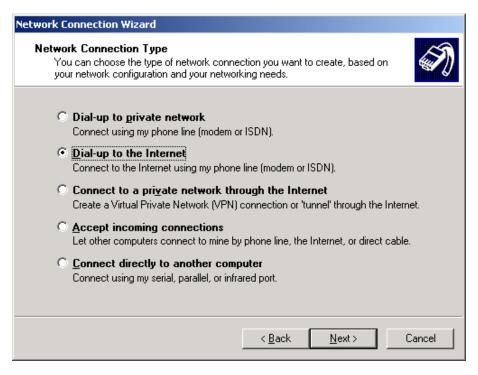
To Create a New Connection Type:

- 1. Choose *Start > Programs > Accessories > Communications > Network and Dial-up Connections* to open the Network and Dial-Up Connections window.
- 2. In the Network and Dial-Up Connections window, double-click *Make New Connection* to open the Network Connection Wizard. Henceforth, you can cancel at any time without affecting your system by clicking *Cancel*. To continue, click *Next* >.



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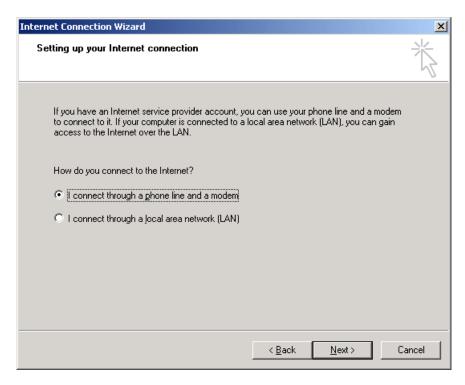
3. In the Network Connection Type window of the Network Connection Wizard, select the appropriate Dial-up connection type (either "Dial-up to private network" or "Dial-up to the Internet"). This example assumes you are creating a connection to your Internet Service Provider. Click *Next* >.



4. In the Internet Connection Wizard, select "I want to set up my Internet connection manually...". Click *Next* >.



 In the Internet Connection Wizard, select "I connect through a phone line and a modem." Click Next >.



6. The following Internet Connection Wizard window appears only if you have more than one modem installed. If this window appears, choose the Motorola Satellite Series Data Modem from the drop down list. Then, click *Next* >.



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- 7. In the Internet Connection Wizard window, you must do the following:
 - In the *Telephone number* box, enter the telephone number you wish to use for your connection. **Enter the number in international dialing format:**

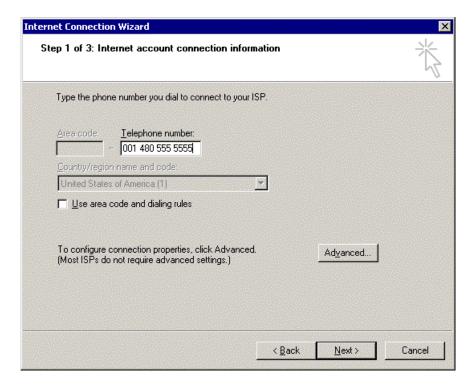
00 + Country Code + Area Code/Phone Number.

For example, if you are dialing an ISP in Tempe, Arizona, USA, you would enter 00 1 480 555 5555, where 1 is the country code and 480.555.5555 is the ISP's telephone number. *Please note that this is not a valid telephone number!*

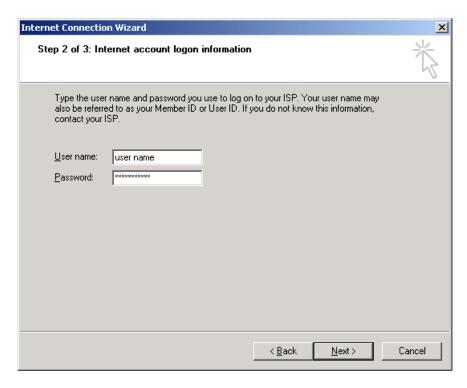
Note: This is the same dialing pattern used for voice calls. In fact, you can verify that you are dialing the correct number for your ISP by dialing the number as a voice call on your satellite phone. You should hear your ISP's modem tones if dialed properly.

De-select the checkbox for "Use area codes and dialing rules." (Note: This will "gray-out" the Area code and Country/Region name and code boxes. Because they are grayed-out, it does not matter what these boxes contain)

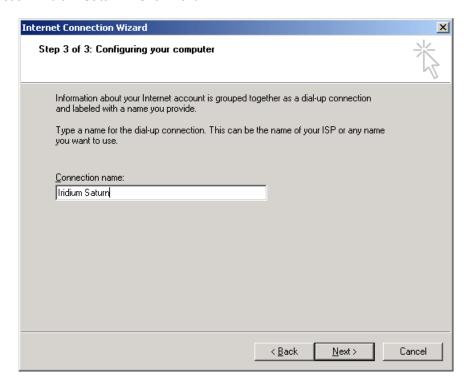
Click Next >.



8. In the Internet Connection Wizard, enter your user name and password to access your ISP. Click *Next* >.



9. In the Internet Connection Wizard, enter a connection name. For example, if you are creating a connection to your ISP and your ISP is called Saturn Internet, you might name your connection "Iridium Saturn." Click *Next* >.



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10. In the Internet Connection Wizard, if you have already configured your email (or you are not using Microsoft Outlook), select "No." Click *Next* >.

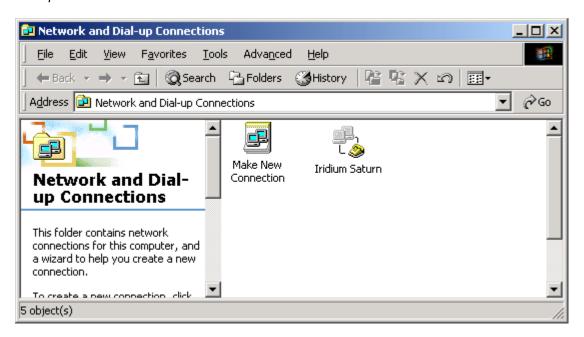


11. In the Internet Connection Wizard, de-select "To connect to the Internet immediately...". Click *Finish* to save your new connection.

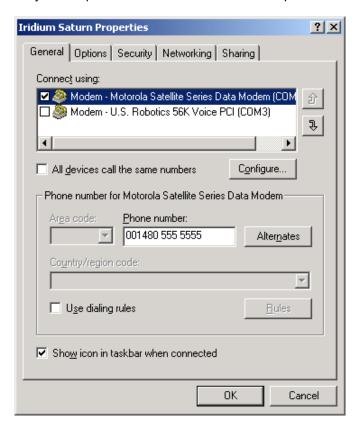


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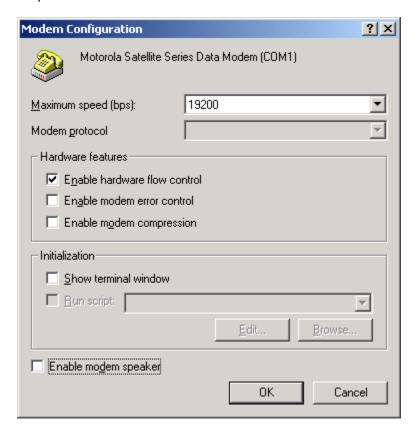
12. In the Dial-Up Networking window, right click on your new dial-up connection and select *Properties*.



13. Upon selecting *Properties*, you will see the window below. Select the *General* tab, and verify the settings with the figure below. Also, verify that you have entered the correct telephone number. (Note that your telephone number should be seen in place of 001 480 555 5555).



14. From the General menu, click *Configure...* to verify the proper settings. The settings should match the figure below. Click *OK* to return to the Properties window, and then click *OK* again to close the Properties window.



15. You have now completed the configuration of Dial-Up Networking. To connect your hardware and initiate a dial-up data call, continue with section 4.

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4 Hardware Connections

4.1 Setting up the 9500 or 9505 Portable Phone

- 1. Insert your data-provisioned SIM card into the phone. See the user guide for your phone if you need further instructions on how to insert the SIM card.
- 2. Connect the Data Adapter to the bottom of the phone.



3. (Optionally) connect a charging device to the Data Adapter.



4. Plug the Serial Cable into the Data Adapter.



- 5. Plug the Serial Cable into the serial port on your computer.
- 6. Rotate and extend the phone's antenna. Place the phone into the stand, or otherwise position the phone so that the antenna is vertical and has a clear view of the sky.



7. Continue with section 5.

4.2 Setting up the 9570 Portable Dock



- Insert your data-provisioned SIM card into the phone or the dock. See the user guide for your Portable Phone or Portable Dock if you need further instructions on how to insert the SIM card.
- 2. Insert the 9500 Portable Phone into the Portable Dock (or insert a 9505 Portable Phone, with optional dock adapter).
- 3. Plug the Serial Cable into the back of the Portable Dock.
- 4. Plug the Serial Cable into the serial port on your computer.
- 5. Connect an external antenna to the Portable Dock, and orient the antenna so that it has a clear view of the sky.
- 6. Continue with section 5.

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4.3 Setting up the 9520 Mobile Phone



- 1. Insert your data-provisioned SIM card into the Mobile Phone. See the user guide for your phone if you need further instructions on how to insert the SIM card.
- 2. The wiring harness for the 9520 Mobile Phone contains a built-in Serial Cable. Plug the Serial Cable into the serial port on your computer.
- 3. Verify that an external antenna is connected to the Mobile Phone, and orient the antenna so that it has a clear view of the sky.
- 4. Continue with section 5.

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DIAL-UP DATA------ DIALING A CALL

5 Dialing a Call

To place a Dial-Up Data call, you must open the Dial-Up Networking window and select the dial-up connection you created for your Motorola phone.

- 1. Connect the computer and phone as described in Section 4.
- 2. Orient the phone's antenna with a clear view of the sky.
- 3. If your computer is turned off, turn it on and wait for it to boot up.
- 4. Turn on your Iridium phone and wait for it to register with the satellite network.
- 5. Depending on your Windows operating system, choose one of the following to open the Dial-Up Networking window:
 - Start > Programs > Accessories > Dial-Up Networking
 - Start > Programs > Accessories > Communications > Dial-Up Networking
 - Start > Programs > Accessories > Communications > Network and Dial-up Connections
- 6. A window similar to the following will appear. Double-click the dial-up connection you created for your Motorola Satellite Series phone. In this example, you would double click "Iridium Saturn".



7. Find your operating system below and follow the appropriate instructions.

DIAL-UP DATA------ DIALING A CALL

Windows 95/98/Me:

In the Connect To window, enter the user name and password that you use to access your ISP or corporate network, and if desired, click the "Save password" checkbox so that you do not have to re-enter the password every time a connection is made. Click Connect and your Iridium handset will begin to dial. Go to Step 8.



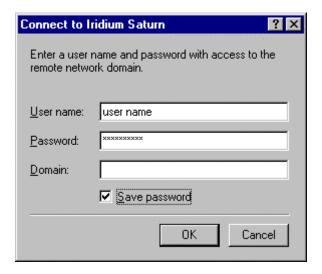
Windows NT:

The Dial-Up Networking window appears. Select your connection from the drop down list (for example, Iridium Saturn). Verify that the phone number is correct. Click *Dial* to continue.



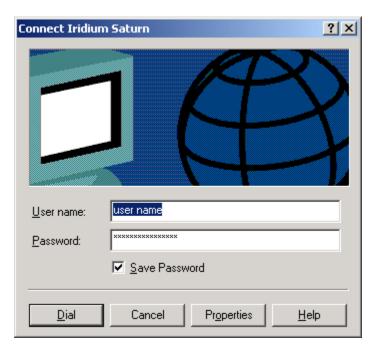
DIAL-UP DATA------DIALING A CALL

A window similar to the following will appear. Enter the user name and password that you use to access your ISP or corporate network. If desired, click the "Save password" checkbox so that you do not have to re-enter the password every time a connection is made. Press *OK* and your Iridium handset will begin to dial. Go to Step 8.



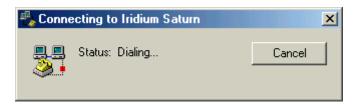
Windows 2000:

The Connect window appears. Click *Dial* and your Iridium handset will begin to dial. Go to Step 8.



DIAL-UP DATA----- DIALING A CALL

8. As the Iridium phone is dialing, it will blink "Data Call In Progress" and a Dial-Up Networking window will appear on your computer showing the current status of the connection (just as it does when connecting through the landline network to your ISP or corporate network).



9. Once connected, the handset will continue to display "Data Call In Progress," but it will no longer blink, and the following window will appear on your computer indicating that your user name and password are being verified.



- 10. Once authenticated, a dial-up networking session is established, and the dial-up networking icon will appear in your task bar.
- 11. You can now launch your Web browser, email program or other program you normally use when connected to your corporate network or Internet Service Provider.

Note: See the "Application Notes" document for instructions on how to optimize some common software applications for use with Iridium World Data Services.

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DIALUP DATA-----TRADEMARK NOTICE

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