Schlumberger

Reflex 72

Reader Installation Guide

Trademarks

Schlumberger, Cryptoflex, Cyberflex, Cyberflex Access, and e-gate are trademarks or registered trademarks of Schlumberger.

Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation. Other company, product, and service names may be trademarks or service marks of others.

Document	Date
C300480_rev2	November 2003

You will find the Reader Driver License Agreement (*License.txt*) in the following directory: *\Program Files\Schlumberger\Smart Cards and Terminals\Smart Card Readers\Reflex 72\Docs*.

The Reader Driver License Agreement is also available from the Reflex Reader Technical Support website: *http://www.reflexreaders.com/Support/support.html*.

Your feedback about this manual is welcome! Comments, questions, and suggestions about any part of the Cyberflex® Access™ documentation library can be posted to the Docs & Samples Conference of the User Discussion Forums: *www.flexforum.com/cgi-bin/dcforum/dcboard.cgi*.

Contents

Introduction

The SchlumbergerSema Reflex 72 is a general-purpose smart card reader that supports data speeds from 9600-115200 bps. The Reflex 72 smart card reader uses a serial port for transferring data and draws power from the host machine through a PS/2 connector, which it can share with the mouse or keyboard.

Operating Systems Supported

- Microsoft Windows 98 (Second Edition)
- Windows Me
- Windows NT 4.0 (Service Pack 6)
- Windows 2000 (Service Pack 2)
- Windows XP Professional

NOTE *The Reflex 72 smart card reader has been discontinued. Drivers for the Reflex 72 were last verified on the platforms listed above, and are currently available from the Reflex Reader Technical Support website (www.reflexreaders.com/Support/Downloads/downloads.html) on an "as is" basis. See the "End of Life Product Announcements" section in the Release Notes for details.*

Other System Requirements

- **Minimum processing capability** — 133 MHz processor with 32 MB RAM
- **Connectors** — Available COM port (RS-232) and a PS/2 connector (either dedicated or shared)

Card Supported

The SchlumbergerSema Reflex 72 smart card reader works with all leading ISO 7816-compatible microprocessor cards, including:

- Cryptographic cards
- Java cards
- Subscriber Identity Modules (SIMs)
- SchlumbergerSema e-gate™ cards

Electrical Specifications

- **PC Interface** — RS-232
- **Power supply** — 5V from PC PS/2 port
- **Power consumption** — Operating mode: 40mA; Idle mode: 5mA
- **Communication speed with PC** — 56700 bps
- **Communication speed with card** — 9600-115200 bps

Physical Specifications

- **Dimensions** — 75.8mm x 23mm x 68mm (2.98” x 0.91” x 2.67”)
- **Color** — Grey

Other features

- Live card insertion/removal support
- PPS support

Certifications and Standards Compliance

- Microsoft PC/SC
- Microsoft Hardware Compatibility List

Regulatory Approvals

- Microsoft PC/SC
- CE
- UL
- C-UL

Installation

This section contains instructions for installing the SchlumbergerSema Reflex 72 smart card reader. The computer must have an available COM port and a PS/2 connector — either an open connector or one the reader can share with the mouse or keyboard.

Installation Notes

The table presents the following information about installing the Reflex 72 smart card reader on each supported operating system:

- Overview of the installation sequence on each operating system. For detailed instructions, see the sections that follow.
- Summary of each operating system's Plug-and-Play or hot pluggable capability.
- Summary of the expected behavior of the Reflex 72 smart card reader's power light on each operating system.

Operating System	Installation Notes
Windows NT 4.0	• *Installation sequence:* Install the Reflex 72 smart card reader software (the installation program also automatically installs the Microsoft Smart Card Base Components if they are not already installed), power down the system (recommended for older desktop systems[1]), connect the Reflex 72 smart card reader, and then reboot the system. • *not Plug-and-Play compliant:* Operating system and Smart Card Resource Manager detect Reflex 72 smart card reader status only at boot-time (mid-session connect/disconnect detected only at reboot). • *Power light:* Power light on the Reflex 72 flickers during I/O activity only. When the operating system detects the device during installation, the power light flickers briefly.
Windows 98 / Windows Me	• *Installation sequence:* Install the Reflex 72 smart card reader software (the installation program also automatically installs the Microsoft Smart Card Base Components if they are not already installed), connect the reader, and reboot. • *Plug-and-Play compliant:* Operating system detects Reflex 72 smart card reader at connect/disconnect; Smart Card Resource Manager detects Reflex 72 smart card reader at boot-time (mid-session connect/disconnect detected only at reboot). • *Power light:* Power light on the Reflex 72 flickers during I/O activity only. When the operating system detects the device during installation, the power light flickers briefly.
Windows 2000 / Windows XP	• *Installation sequence:* Attach the Reflex 72 smart card reader, and then install the Reflex 72 smart card reader software. Initiate a scan for hardware changes. • *Hot pluggable*: Operating system and Smart Card Resource Manager detect Reflex 72 smart card reader status at connect/disconnect. • *Power light:* Power light on the Reflex 72 flickers during I/O activity only. When the operating system detects the device during installation, the power light flickers briefly.

1 NT computers in which the motherboard and Basic Input/Output System (BIOS) are not compliant with Advanced Configuration and Power Interface (ACPI) specifications.

Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Unsigned Driver Warning Messages

A driver is “unsigned” if certification of the driver by Microsoft was pending but not yet complete at the time of release. Depending on driver signing options established by local system security policy (Control Panel > System Properties > Hardware > Driver Signing…), driver installation on Windows 2000, Windows XP, and Windows Server 2003 might either silently allow, display a warning message, or block the installation of unsigned drivers. If a warning message is displayed, click **Yes** or **Continue Anyway** to complete the driver installation.

Installing on Windows NT 4.0

To install the SchlumbergerSema Reflex 72 smart card reader on a Windows NT 4.0 computer, complete these tasks, which are described in detail in the sections that follow.

Be sure to install the smart card reader software before you connect the reader. If the proper software is not present when the computer detects the reader, a partial configuration may result. A partial configuration can interfere with future attempts to configure the reader properly.

1. Install the Reflex 72 smart card reader software.
2. *For older Windows NT 4.0 desktop computers*[1], *power down the computer.* Connect the Reflex 72 smart card reader.
3. Reboot the computer.

Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Step 1: Install the Reflex 72 smart card reader software

Go to the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*) to download the latest Reflex 72 driver package for Win NT. If the Microsoft Base Components are not already installed on your computer, you will also need to download and install that software.

See the package's Install Notes for installation instructions.

Step 2: Connect the Reflex 72 smart card reader

1. *If you have an older NT 4.0 desktop computer*, we recommend that you power down the computer before you connect the Reflex 72 smart card reader. This step is necessary if the computer's motherboard and Basic Input/Output System (BIOS) are not compliant with Advanced Configuration and Power Interface (ACPI) specifications. If you disconnect a peripheral (such as the mouse or keyboard) to add the Reflex 72 smart card reader to a nonACPI-compliant system, the peripheral may not function when reconnected. In this case, the peripheral is unusable until you reboot.

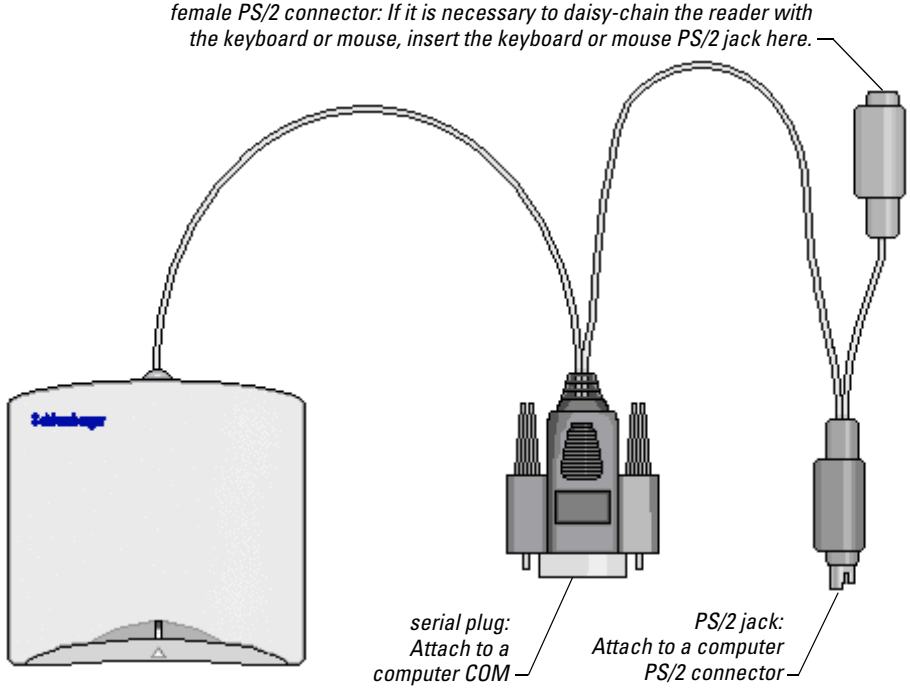
1. NT computers in which the motherboard and Basic Input/Output System (BIOS) are not compliant with Advanced Configuration and Power Interface (ACPI) specifications.

2 Attach the Reflex 72 smart card reader's serial plug to a COM port on the computer. The Reflex 72 smart card reader communicates with the computer through the COM port.

3 Insert the Reflex 72 smart card reader's PS/2 jack into a connector on the computer. If the computer does not have an open PS/2 connector, you can use one that the keyboard or mouse currently uses, and daisy-chain the keyboard or mouse onto the reader's PS/2 connector.

Use the plug's guidepost to help you position the connector correctly. If you break off the guidepost and insert the plug improperly, you will disable your computer.

4 If you disconnected the keyboard or mouse PS/2 jack, insert the disconnected PS/2 jack into the reader's female PS/2 connector, shown on the right in the following illustration.



Reader Cables and Connectors

Step 3: Reboot the computer

On a Windows NT 4.0 computer, both the operating system and the Smart Card Resource Manager detect the presence of the Reflex 72 smart card reader during reboot only. The Reflex 72 smart card reader is not usable until you reboot the computer.

These are other situations that require you to reboot your computer:

- If you connect the Reflex 72 smart card reader in mid-session, the Smart Card Resource Manager is unaware of the change until you reboot.
- If you reconnect the Reflex 72 smart card reader after removing it, the Reflex 72 smart card reader does not function until you reboot.

At this point you are ready to start using the Reflex 72 smart card reader. You can test the reader setup using the Smart Card Reader Tools. From the Start menu on the Windows taskbar, select **Programs → Schlumberger Smart Cards and Terminals → Smart Card Readers → Tools**.

Updating on Windows NT 4.0

If you are updating the Reflex 72 smart card reader software (not installing the hardware and software for the first time), complete these tasks, which are described in detail in the sections that follow:

1. Install the new Reflex 72 smart card reader software.
2. Reboot the computer.

Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Step 1: Install the new Reflex 72 smart card reader software

Go to the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*) to download the latest Reflex 72 driver package for Win NT.

See the package's Install Notes for installation instructions.

Step 2: Reboot the computer

After you finish installing the new Reflex 72 smart card reader software, reboot the computer.

If your computer previously used a Reflex 72 smart card reader driver with a different name from the new driver, the registry entry for the earlier driver is not overwritten when the new driver is installed. In this case, you might see the following warning message each time you restart your computer:

```
At least one service or driver failed during system startup.
Use Event Viewer to examine the event log for details.
```

This message is not significant and can be ignored, but if you want to prevent the message from displaying, use either of these methods:

- Disable the old device using the Devices Control Panel option. To access this option, select **Start** → **Settings** → **Control Panel**. Double-click **Devices**, select the device, click **Startup**, and set the startup type to either Manual or Disabled.

  or

- Use the Registry Editor to remove the registry entries associated with the old Reflex 72 smart card reader driver. (Open the old *.reg* file in a text editor to identify which entries must be removed.) If you need more information about editing the registry to complete this task, refer to the operating system's Help.

Using the Registry Editor incorrectly can cause serious problems that may require you to reinstall your operating system.

Installing on Windows 98 or Windows Me

To install the SchlumbergerSema Reflex 72 smart card reader on a Windows 98 or Windows Me computer, complete these tasks, which are described in detail in the sections that follow.

Be sure to install the smart card reader software before you connect the reader. If the proper software is not present when the computer detects the reader, a partial configuration may result. A partial configuration can interfere with future attempts to configure the reader properly.

1. Install the Reflex 72 smart card reader software.
2. Connect the Reflex 72 smart card reader.
3. Reboot the computer.

Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Step 1: Install the Reflex 72 smart card reader software

Go to the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*) to download the latest Reflex 72 driver package for Win98/Me. If the Microsoft Base Components are not already installed on your computer, you will also need to download and install that software.

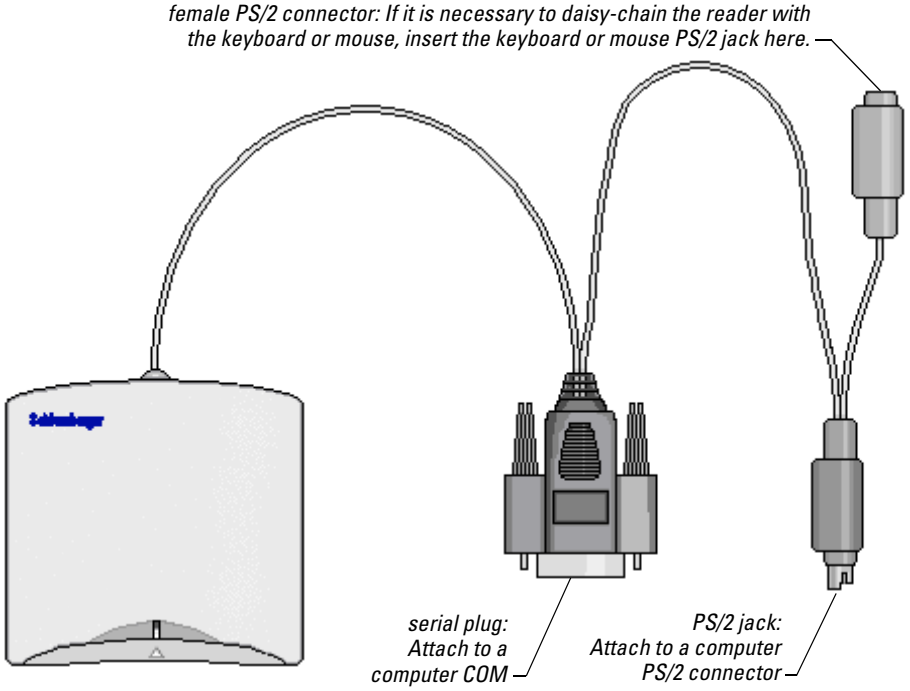
See the package's Install Notes for installation instructions.

Step 2: Connect the Reflex 72 smart card reader

1. Attach the Reflex 72 smart card reader's serial plug to a COM port on the computer. The Reflex 72 smart card reader communicates with the computer through the COM port.
2. Insert the Reflex 72 smart card reader's PS/2 jack into a connector on the computer. If the computer does not have an open PS/2 connector, you can use one that the keyboard or mouse currently uses, and daisy-chain the keyboard or mouse onto the reader's PS/2 connector.

Use the plug's guidepost to help you position the connector correctly. If you break off the guidepost and insert the plug improperly, you will disable your computer.

3 If you disconnected the keyboard or mouse PS/2 jack, insert the disconnected PS/2 jack into the reader's female PS/2 connector, shown on the right in the following illustration



The power light flickers.

If you click the **Refresh** button in the Device Manager now, the computer begins to scan for Plug-and-Play-compliant hardware. Displayed messages report that the system has found the new hardware, and has located and installed the software for it.

Step 3: Reboot the computer

The Smart Card Resource Manager detects the Reflex 72 smart card reader only during reboot. Therefore, although you might see the Reflex 72 smart card reader listed in the Device Manager as an installed device after you complete step 2, the Reflex 72 smart card reader is not usable until you reboot.

These are other situations that require you to reboot your computer:

- If you connect the Reflex 72 smart card reader in mid-session, the Smart Card Resource Manager is unaware of the change until you reboot.
- If you reconnect the Reflex 72 smart card reader after removing it, the Reflex 72 smart card reader does not function until you reboot.
- If you remove the Reflex 72 smart card reader without first stopping the device, these errors display:

  ```
  Reader removal monitor error retry threshold
  reached. The parameter is incorrect.
  ```

  ```
  Reader monitor ‘Schlumberger Reflex 72 0’ received
  uncaught error code: The parameter is incorrect.
  ```

  To make the Reflex 72 reader functional, reconnect it and reboot.

At this point you are ready to start using the Reflex 72 smart card reader. You can test the reader setup using the Smart Card Reader Tools. From the Start menu on the Windows taskbar, select **Programs → Schlumberger Smart Cards and Terminals → Smart Card Readers → Tools**.

Updating on Windows 98 or Windows Me

If you are updating the Reflex 72 smart card reader software (not installing the hardware and software for the first time), complete these tasks, which are described in detail in the sections that follow:

1. Install the new Reflex 72 smart card reader software.
2. Step through the Update Device Driver wizard.
3. Reboot the computer.

Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Step 1: Install the new Reflex 72 smart card reader software

Go to the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*) to download the latest Reflex 72 driver package for Win98/Me.

See the package's Install Notes for installation instructions.

Step 2: Step through the Update Device Driver wizard

Use the operating system's Update Device Driver wizard to point the operating system to the new driver:

1. To start the Device Manager, select **Start** → **Settings** → **Control Panel**. Double-click **System**, and then click the **Device Manager** tab.
2. In the Device Manager, expand the SmartCardReader device type, and then double-click the name of the device to open its Properties.
3. In the device's Properties, click the **Driver** tab, and then click the **Update Driver** button.

The Update Device Manager wizard is launched. Select the option to let the wizard search for suitable drivers for the device. If you need more information about using the wizard to complete this task, see the operating system's Help.

Step 3: Reboot the computer

After the wizard has finished updating the Reflex 72 driver, reboot the computer.

Installing or Updating on Windows 2000 or Windows XP

To install or update the SchlumbergerSema Reflex 72 smart card reader on a Windows 2000 or Windows XP computer, complete these tasks, which are described in more detail in the sections that follow.

1. Connect the Reflex 72 smart card reader.
2. Install the Reflex 72 smart card reader software.
3. Initiate a scan for hardware changes.

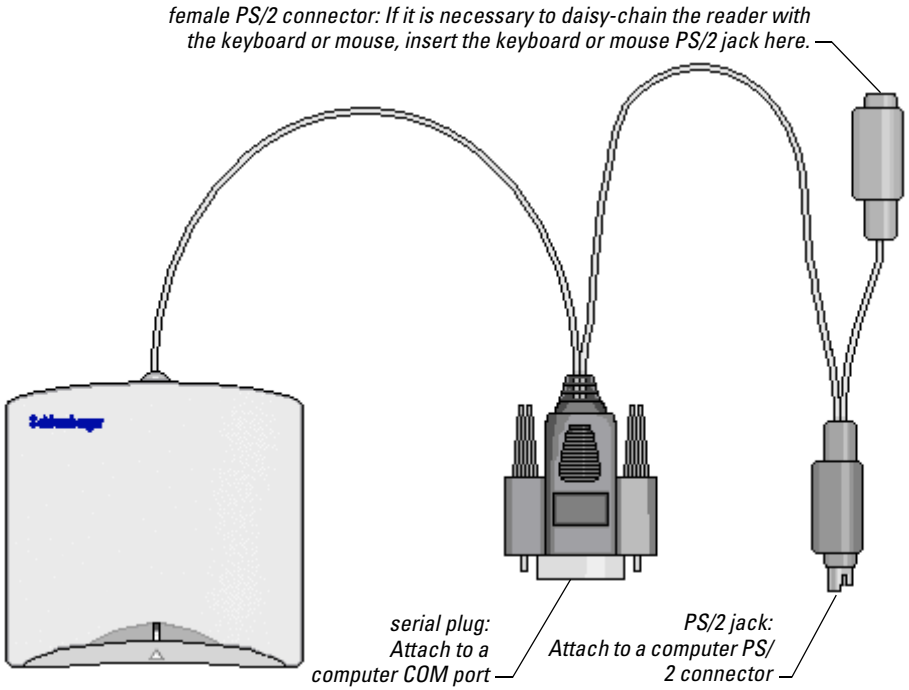
Refer to the release notes for driver version numbers and information about potential installation issues in a specific release.

Step 1: Connect the Reflex 72 smart card reader

1. Attach the Reflex 72 smart card reader's serial plug to a COM port on the computer. The Reflex 72 smart card reader communicates with the computer through this port.
2. Insert the Reflex 72 smart card reader's PS/2 jack into a PS/2 connector on the computer. If the computer does not have an open connector, you can use one that the keyboard or mouse currently uses, and daisy-chain the keyboard or mouse onto the reader's PS/2 connector.

Use the plug's guidepost to help you position the connector correctly. If you break off the guidepost and insert the plug improperly, you will disable your computer.

3 If you unplugged the keyboard or mouse PS/2 jack, plug that jack into the reader's open PS/2 connector, as indicated in the following illustration



Reader Cables and Connectors

Step 2: Install the Reflex 72 smart card reader software

Go to the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*) to download the Reflex 72 driver package for Win 2000 or Win XP.

See the package's Install Notes for installation instructions.

Note that the Microsoft Smart Card Base Components are pre-installed on Windows 2000 and Windows XP computers; do *not* reinstall the Microsoft Smart Card Base Components.

Step 3: Initiate a scan for hardware changes

Use the Device Manager to initiate a scan for hardware changes.

1. To start the Device Manager on Windows 2000, select **Start** → **Settings** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager** button.

   To start the Device Manager on Windows XP, select **Start** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager** button.

2. In the Device Manager, select **Action** → **Scan for hardware changes**.

After the scan for hardware changes is initiated, messages will report that the system has found the new hardware and has located and installed the software for it.

NOTE *On Windows 2000 and Windows XP systems, the operating system sometimes automatically configures the Reflex 72 to use a different driver from the one you have installed. See the Troubleshooting chapter for information about checking the driver version and manually updating the driver if necessary.*

The Reflex 72 smart card reader is ready to use without rebooting the computer. The Smart Card Resource Manager automatically detects the Reflex 72 smart card reader's change in status whenever you disconnect or reconnect it.

At this point you are ready to start using the Reflex 72 smart card reader. You can test the reader setup using the Smart Card Reader Tools. From the Start menu on the Windows taskbar, select **Programs** → **Schlumberger Smart Cards and Terminals** → **Smart Card Readers** → **Tools**.

Troubleshooting

This chapter describes some problems you might encounter when you set up and use the SchlumbergerSema Reflex 72 smart card reader, along with possible causes and solutions. If you need additional help, use the User Discussion Forums or contact the SchlumbergerSema reader support team through the Reflex Reader Technical Support website (*www.reflexreaders.com/Support/support.html*).

Refer to the release notes for information about other known product issues.

The reader power light is not on

Cause Description: The Reflex 72 smart card reader power light is illuminated only during I/O activity between the reader and the card.

The reader is not getting power to operate

No PS/2 connection

Cause Description: The Reflex 72 smart card reader's PS/2 jack is not connected to a PS/2 connector.

Solution: Make sure the Reflex 72 smart card reader's PS/2 jack is securely inserted in a PS/2 connector on the computer.

Insufficient power (laptop)

Cause Description: The Reflex 72 smart card reader is connected to an older laptop computer that is not compliant with industry standards and does not supply sufficient power through the PS/2 connector to run the reader.

Solution: You can build an external power supply for the Reflex 72 smart card reader. (For information about the pinout for an external power supply cable, see *www.linuxnet.com/docs.html*, and follow the link to **PS2 Power Vampire AC Cable PINOUT**.)

Legacy application (Windows NT 4.0)

Cause Description: An application that allocated COM ports statically was once installed on the host Windows NT 4.0 system, and was connected to the reader's COM port.

Solution: Remove the legacy driver that is causing the conflict. The driver could be from an application that was incompletely uninstalled. Alternatively, connect the reader to a different COM port. (SchlumbergerSema recommends that you connect the Reflex 72 smart card reader to COM1 if possible.)

Polling error (Windows NT 4.0)

Cause Description: A nonstandard device is using one of the COM ports and interfering with detection of the reader. By default, the system attempts to poll all four standard COM ports at boot-time in order to detect the Reflex 72 smart card reader. If a nonstandard device uses one of the polled COM ports, the device can cause the system's initialization command to fail to reach the reader's port. (It is also possible for polling to cause the nonstandard device to work erratically or stop working completely.)

Solution: Disable polling of the COM port used by the nonstandard device, by editing the system registry.

Do not modify the system registry yourself unless you are a system administrator or have considerable system administration expertise. You can disable your system by modifying the registry improperly.

To resolve the problem, follow these steps:

1. Determine which device is causing the interference (or is being disabled), and which COM port the device uses.

2 Display the system's Registry Editor window.

3 Locate the Reflex 72 smart card reader's registry parameters. The reader parameters are located in this path:

My Computer → HKEY_LOCAL_MACHINE → SYSTEM → Current Control Set → Control → Services → Slbl4 → Parameters

4 Double-click the **COMMask** parameter icon.

The Edit DWORD Value dialog box appears

5 In the Edit DWORD Value dialog box, modify the specification in the **Value data** box to specify the COM ports to be polled.

The default COMMask value is Fh (15 decimal). Converted to a binary value, the default setting is 1111, with one bit assigned to each COM port. (COM1 occupies the Least Significant Bit, or LSB.)

To specify a bit mask that disables polling for one of the COM ports, assign a setting of 0 (off) to its bit position, convert the resulting binary value to a hexadecimal or decimal value, and enter that value in the **Value data** box. The following table shows some examples of COMMask settings.

Hex Value	Decimal Value	Binary Values: Bit 4	Bit 3	Bit 2	Bit 1	COM Port Polling Status
F	15	1	1	1	1	1111 = All COM ports polled.
E	14	1	1	1	0	1110 = COM1 not polled.
D	13	1	1	0	1	1101 = COM2 not polled.
B	11	1	0	1	1	1011 = COM3 not polled.
7	7	0	1	1	1	0111 = COM4 not polled.

NOTE *SchlumbergerSema recommends that you disable polling only for COM ports that are causing problems. Allow the system to poll all other COM ports.*

6 Click **OK** to save the change.

The reader is getting power, but I can't connect to it

No COM connection

Cause Description: The Reflex 72 smart card reader's serial plug is not connected.

Solution: Make sure the Reflex 72 smart card reader's serial plug is connected to a COM port.

BIOS Setup

Cause Description: The COM port is disabled in the system Basic Input/Output System (BIOS).

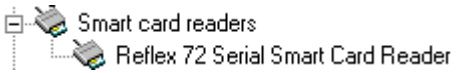
Solution: To see if the COM port is likely to be disabled, check to see if the port appears as a system device, as described in the following text. If the COM port does not appear as expected, check the system BIOS setting to make sure the COM port is enabled. (For information about your BIOS control system, refer to the documentation for your system.)

Verifying the COM Port Status on Windows NT 4.0 systems

To see if a particular COM port is possibly disabled on a Windows NT 4.0 system, select **Start** → **Settings** → **Control Panel**, and then double-click **Ports** to display the Ports list. Verify that the COM port appears in the Ports list.

Verifying the COM Port Status on Windows 98, Me, 2000, and XP systems

Open the Device Manager (for information about how to open the Device Manager, refer to the documentation for your system) and verify that the COM port appears in the device tree, as shown in the following example:



If the COM port appears, the BIOS setting is likely to be enabled. If it does not appear, check to make sure the COM port is enabled in the BIOS setup.

Faulty COM port

Cause Description: The COM port is not functional.

Solution: To verify that the COM port is working properly, use one of these methods:

- Perform a loopback test.
- Test the COM port by connecting another serial device to it.
- On a Windows 98, Me, 2000, or XP system, open the Device Manager (for information about how to open the Device Manager, refer to the documentation for your system), select the COM port, and then click the **Properties** button. Check the port status in the dialog box that appears.

COM port allocation or settings (Windows NT 4.0 systems)

Cause Description: The COM port you selected on the host Windows NT 4.0 system for the reader may be allocated to another device. (This is less likely to be the problem than an incorrect setting in the system BIOS.)

Solution: Check to make sure your system does not have any IRQ conflicts and check the serial port settings, such as:

- *Address value* — If your serial port hardware uses address values other than the values that Windows NT detects, change the base I/O address.
- *Unique IRQ numbers for multiple COM ports* — To use multiple COM ports simultaneously, assign a unique IRQ number to each COM port.

The method for setting advanced port options is varies somewhat by operating system. Brief instructions follow for setting port options on a Windows NT 4.0 system. For information about other operating systems, refer to your system's Windows help or documentation.

To display the Advanced Settings dialog box on a Windows NT 4.0 system, follow these steps:

1 Select **Start** → **Settings** → **Control Panel**, and then double-click **Ports** to display the Ports list.

2 Highlight the name of the port you chose for the reader, and then click the **Settings** button.

The Settings for COM *X* dialog box appears.

3 Click the **Advanced** button.

The Advanced Settings for COM *X* dialog box appears.

4 Make any needed changes, and then click **OK**.

A message appears and informs you that changes do not take effect until you restart Windows NT.

5 To implement your changes immediately, click the **Restart Now** button.

The system implements the new port settings. Check to see if you can connect to the reader.

Infrared port conflict

Cause Description: The laptop computer's infrared port conflicts with the COM port.

Solution: First verify that the COM port is functional (as described on page 23) and enabled in the BIOS setup (as described on page 22). If neither of these is the problem, change the infrared port's resource settings or disable the infrared port. Make sure the infrared port is set to use a different COM port than the reader. For more information about changing infrared port settings, see the documentation for your system.

Premature reader connection (Windows 2000 and Windows XP systems)

Cause Description: The Reflex 72 smart card reader software was not present on the computer when you connected the reader and the system detected its presence. In this situation, the system may configure the Reflex 72 smart card reader incorrectly. This flawed configuration can interfere with future attempts to configure the reader properly.

Solution: Uninstall the Reflex 72 smart card reader hardware on your Windows 2000 or Windows XP system, and then install it again correctly. For information about uninstalling hardware, see the documentation for your system.

An error message says the removal monitor error retry threshold has been reached

Reader disconnection (Windows 98 and Windows Me systems)

Cause Description: The Reflex 72 smart card reader was disconnected in the middle of a session on a Windows 98 or Windows Me system. The Smart Card Resource Manager service responds with the following error:

```
Reader removal monitor error retry threshold reached. The
specified network resource or device is no longer available.
```

If you click **OK** to close the message box, the following message might display:

```
Reader monitor 'Schlumberger Reflex 72 0' received uncaught
error code: The device does not recognize the command.
```

If one or both of these messages appear, the reader will not function again in the current Windows session, even if you reconnect it.

Solution: To make the Reflex 72 smart card reader functional, reconnect it and reboot the system. The Smart Card Resource Manager detects the Reflex 72 smart card reader only at boot-time on Windows 98 and Windows Me computers.

If you do not need to use the Reflex 72 smart card reader again in the current Windows session, close the message boxes and continue the session.

Device driver reinitialization (Windows 98 and Windows Me systems)

Cause Description: The system reinitialized the Reflex 72 smart card reader's device driver when you clicked the **Refresh** button in the Device Manager tab of the System Properties window on a Windows 98 or Windows Me computer. The reinitialization interrupted the Smart Card Resource Manager service, and the Reflex 72 smart card reader stopped working.

The Smart Card Resource Manager service responds with the Microsoft Smart Card System errors shown earlier in this topic. If you click **OK** to close the first message box, the second message box appears.

Solution: To make the Reflex 72 smart card reader functional again, reconnect it and reboot the system. The Smart Card Resource Manager detects the reader only at boot-time on Windows 98 and Windows Me computers.

If you do not need to use the reader again in the current Windows session, close the message boxes and continue the session.

Since I added the reader to my system, I have a problem with another peripheral

Polling error (Windows NT 4.0 systems)

Cause Description: The COM port polling the system conducts at boot-time is confusing the other (nonstandard) device and causing it to stop working. Polling a nonstandard device's COM port can also potentially prevent the reader from working. (By default, the system attempts to poll all the COM ports at boot-time, in order to detect the reader.)

Solution: Disable polling of the COM port used by the malfunctioning or interfering device. Edit the system registry or ask your system administrator to edit it.

Since I installed the reader, the system boots slowly

COM port selection (Windows 98 and Windows Me systems)

Cause Description: The Reflex 72 smart card reader is connected to a COM port that follows the one used by an internal or external modem.

Solution: Reconnect the devices so that the Reflex 72 smart card reader uses a COM port that precedes the modem. If possible, connect the Reflex 72 smart card reader to COM1.

The Reflex 72 is not using the driver I installed

The operating system chose the wrong reader driver

Cause Description: On Windows 2000 and Windows XP systems, the operating system sometimes automatically configures the smart card reader to use a different driver from the one that you installed. A detailed discussion follows.

Solution: Reconfigure the smart card reader to use the correct driver. Detailed instructions follow.

When the operating system detects that a smart card reader has been added (during installation) or changed (during update), the operating system tries to find the best driver for the device.

On *Windows 2000* systems, depending on characteristics of both the new driver and drivers already installed on a system, the operating system sometimes automatically configures the smart card reader to use a driver that is not the one that you installed.

On *Windows XP* systems, at the time of release, if the smart card reader is plugged in before the driver software is installed, the correct driver is automatically selected by the operating system. If the reader is not plugged in before the driver software is installed, the operating system sometimes automatically configures the smart card reader to use a driver that is not the one that you installed.

You can confirm whether your smart card reader is using the correct driver by checking the driver version number, as outlined in “Checking a Driver Version” in this section.

If you discover that your smart card reader is configured to use an older driver and you want to use the driver that you installed, you can manually update the driver using the instructions outlined in “Manually Updating a Driver” in this section.

Checking a Driver Version

To confirm whether your smart card reader is configured to use the driver that you installed, you can check the version number using the Device Manager.

1. To start the Device Manager on Windows 2000, select **Start** → **Settings** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager…** button.

   To start the Device Manager on Windows XP, select **Start** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager…** button.

2. In the Device Manager, expand the Smart card readers device type, and then double-click the name of the device to open its Properties. In the device's Properties, click the **Driver** tab. Click **Driver Details….** to display driver information, including driver file name and version number.

3. Compare the version number displayed in the Driver File Details screen to the version number for the driver listed on the Reflex Readers Download website (*www.reflexreaders.com/Support/Downloads/downloads.html*).

If the smart card reader is currently configured to use an older driver, you can manually update the driver using the instructions that follow.

Manually Updating a Driver

Use the Upgrade Device Driver wizard (on Windows 2000) or Hardware Update wizard (on Windows XP) to update the smart card reader driver:

1. To start the Device Manager on Windows 2000, select **Start** → **Settings** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager…** button.

   To start the Device Manager on Windows XP, select **Start** → **Control Panel**. Double-click **System**, click the **Hardware** tab, and then click the **Device Manager…** button.

2. In the Device Manager, expand the Smart card readers device type, and then double-click the reader device to open its Properties.

3. In the device's Properties, click the **Driver** tab, and then click the **Update Driver…** button. The Upgrade Device Driver wizard (on Windows 2000) or Hardware Update (on Windows XP) wizard is launched.

4. In the Upgrade Device Driver wizard (on Windows 2000) or Hardware Update (on Windows XP) wizard, select to display a list of known drivers for the device so that you can select a specific driver.

5. In the Select a device driver screen, click **Have Disk …**

6. In the Install from Disk screen, type in or browse to the *\Program Files\Schlumberger\Smart Card Readers\reader_name* directory, and click **OK**.
7. In the Select a Device Driver window, select the new device driver from the list, and click **Next**.

   You might see warnings that you are about to install an unsigned driver or that you are about to install an unsigned driver over a signed driver. Click **Yes** or **Continue Anyway**.
8. Follow screen instructions to complete updating the driver. If you need more information about using the wizard to complete this task, refer to the operating system's Help.

The smart card reader is ready to use without rebooting the system.

Index

T

U

W