Korenix JetCard Series Multiport Serial Card

User's Manual

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www.korenix.com

Korenix JetCard Series Multiport Serial Card User's Manual

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Table of Contents

Chapter 1	Introduction	
Overview	7	1-2
Product F	eatures	
Package (Checklist	
Installatio	on Guide	1-3
Chapter 2	Hardware Installation	
Introducti	on	
Panel Lay	70ut	
DIP Swite	ch and Jumper Settings	
Installing	Your JetCard	
Removing	g Your JetCard	
Chanter 3	Software Installation	3-1
Windows	Contware instantion	3-2
Windows	Windows XP/2003	3-2
	Windows 2000	
	Windows 98/ME	
	Windows NT	
Linux		
Chapter 4	Korenix JetCard Utility	
Installing	Korenix JetCard Utility	
Using Ko	renix JetCard Utility	4-5
C	JetCard Diagnostic Test	
Uninstalli	ng Korenix JetCard Utility	4-7
Chapter 5	Cable Selection and Cable Wiring	
Cable Sel	ection and Pin Assignments	
	JetCard 1204/1208	
	JetCard 1402/1402i	
	JetCard 1404/1404i	
RS-232/4	22/485 Cable Wiring	
Appendix A	Specifications	A-1

1 Introduction

Welcome to Korenix JetCard Series Multiport Serial Card. Korenix JetCard Series Multiport Serial Card is a high performance Universal PCI card. JetCard Series can bring you high-speed and high-quality serial communication service.

The following topics are covered in this chapter:

- Overview
- Product Features
- Package Checklist
- Installation Guide

Overview

Korenix JetCard Series Multiport Serial Card is a high performance Universal PCI card. JetCard Series can bring you high-speed and high-quality serial communication service.

JetCard Series products use high-integrated Oxford chipset, which provides up to 921.6 kbps data transmission speed. JetCard Series products also come with 128-byte FIFO, which allows JetCard to occupy the least system resources even when operating with full speed and full loading.

In order to cope with harsh industrial environments, Korenix engineers select high quality components, ensuring that JetCard can still operate efficiently and stably under extremely high/low temperature. JetCard is also equipped with built-in surge protection and optical isolation, greatly prevent JetCard and your serial devices from noise or sudden electric surge often exist in industrial environments. For this reason, JetCard products can provide you with stable and reliable communications under any harsh environment.

No matter what your application is, JetCard is the ideal choice for your systems, bringing you the most reliable and cost-effective solution.

Madal Nama	JetCard	JetCard	JetCard	JetCard	JetCard	JetCard
Model Name	1204	1208	1402	1402i	1404	1404i
RS-232 Ports	4	8				
RS-422/485 Ports			2	2	4	4
128 Bytes FIFO						
921.6 Kbps Speed						
Surge Protection						
Optical Isolation						
Boord Connector	DB37	DB62	DB9	DB9	DB37	DB37
Buard Connector	Female	Female	Male * 2	Male * 2	Female	Female

JetCard Product Family

Product Features

Korenix JetCard Series products have the following features:

- High Performance UPCI Multiport Serial Card
- High Speed Up to 921.6 Kbps
- 2 KV optical isolation
- Built-in surge protection
- Built-In Termination Resistors
- Automatic Hardware Flow Control for 2-wire RS-485
- Plug and Play for Easy Installation
- Wide Operating Temperature: -10 to 70
- Korenix JetCard Utility

Package Checklist

Korenix JetCard Series products are shipped with the following items:

- 1 Korenix Multiport Serial Card
- Documentation and Software CD
- Quick Installation Guide

If any of the above items is missing or damaged, please contact your local sales representative.

Installation Guide

JetCard Series products are easy to install and use. Please follow the steps below to test your JetCard.



This chapter includes information about how to install your JetCard.

The following topics are covered in this chapter:

- Introduction
- Panel Layout
- DIP Switch and Jumper Settings
- Installing Your JetCard
- Removing Your JetCard

Introduction



Panel Layout



DIP Switch and Jumper Settings

Before you start using JetCard RS-422/485 products (JetCard 1402, JetCard 1402i, JetCard 1404, and JetCard 1404i), configure the DIP Switch and Jumper settings of each port. DIP Switch can configure RS-422, 4-wire RS-485, or 2-wire RS-485. Jumper can be used to configure JetCard' built-in Termination Resistors.



Installing Your JetCard

Follow the steps below to install your JetCard.

- 1. Power off the PC.
- 2. Remove the PC case.
- 3. Remove the slot cover.
- 4. Insert the JetCard into the PCI card.
- 5. Tighten the JetCard with screws.
- 6. Place the PC case back.



Removing Your JetCard

- 1. Power off the PC.
- 2. Remove the PC case.
- 3. Remove the screws from the JetCard.
- 4. Remove the JetCard.
- 5. Place the PC case back.



This chapter includes information about installation and configuration.

The following topics are covered in this chapter:

- Windows
 - ➢ Windows XP/2003
 - ➢ Windows 2000
 - ➢ Windows 98/ME
 - Windows NT
- Linux

Windows

Korenix JetCard Series products support Windows 2003/XP/2000/98/ME/NT OS. Follow the steps below to install the driver and configure COM ports.

Windows XP/2003

Installing the Driver

1. Follow the hardware installation instructions in the previous chapter to install the JetCard first. Windows XP/2003 will automatically detect the new JetCard after you power on your PC.



- 2. Insert the JetCard software CD into the CD-ROM.
- In the Found New Hardware Wizard window, select No, not this time, and click on Next to continue. Sometimes, this window might not appear. It depends on your Windows XP/2003 version.

Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your consuler, on the hardware installation CD, or on the Windows Update Web site (with your persission)
Can Windows connect to Windows Update to search for softwae? O Yes, this time only O Yes, now and every time I connect a device O No, not this time
Click Next to continue

4. In the window to open next, select **Install from a list or specific location (Advanced)**, and click on **Next** to continue.

Found New Hardware Wizard			
	This woard helps you install software for: PCI Serial Port If yous hardware came with an installation CD or floppy disk, insert it now.		
	What do you want the wizard to do? () Install the software automatically [Recommended] () Install from a list or specific location [Advanced] Elicit. Next to continue.		
	< Back Next > Cancel		

5. In the window that opens next, select **Search for the best driver in these locations**, and check **Include this location in the search**. Click on **Next** to start installing the driver.

Found New Hardware Wizard				
Please choose your search and installation options.				
Search for the best driver in these locations.				
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.				
Search removable media (floppy, CD-ROM)				
Include this location in the search:				
G:\jetcard_driver\window_98_me_2k_xp_2003 💙 Browse				
O Don't search. I will choose the driver to install.				
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.				
<back next=""> Cancel</back>				

6. The window to open next will show you that wizard starts installing the driver. In the window that prompts next, click on **Continue Anyway** to proceed the driver installation.



 Korenix JetCard 1204 Internal UARTs
has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why this testing is important.</u>)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

7. A **Completing the Found New Hardware Wizard** window will open when the driver installation is complete. Click on **Finish** to leave the installation window.

Found New Hardware Wi	card
	Completing the Found New Hardware Wizard The weard has finished installing the software for With Korenix PCI Sesial Post
	Click Finish to close the woard.

8. Next, you need to install JetCard Auxiliary Function and COM ports. The steps for installing COM ports are almost the same. Follow the windows instructions and repeat several times until each COM port is installed.

How to Check the Installation

After the driver installation is complete, follow the steps below to check if the installation is successful.

1. Click on Start→Control Panel→System.





2. Select Hardware tab, and click on the Device Manager button.

em Pro	perties			?
System	Restore	Automa	atic Updates	Remote
General	Compu	uter Name	Hardware	Advanced
X	on your compu properties of a	anager lists all liter. Use the D ny device.	evice Manager to c	anager
Drivers	Driver Signing compatible wit how Windows	lets you make h Windows, W connects to V	sure that installed d indows Update lets /indows Update for	lrivers are you set up drivers.

3. Select Multi-port serial adapters to check if your JetCard is installed.



 Select Port (COM & LPT) to check if each port of the JetCard is installed successfully. The port number depends on which JetCard model you installed. In this case, 4 COM ports of JetCard 1204 were installed.

File Action View Help Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer Image: Computer </th
← → III Image: Computer → Image: Computer
Multi-port serial adapters Korenix JetCard 1204 (Auxiliary Func) Korenix JetCard 1204 (Port1 - Port4) Wetwork adapters Other devices Ports (COM & LPT) Communications Port (COM1) Communications Port (COM2) ECP Printer Port (LPT1) Korenix PCI Serial Port: Slot 09 Port 01 (COM3) Korenix PCI Serial Port: Slot 09 Port 03 (COM5) Korenix PCI Serial Port: Slot 09 Port 04 (COM6)

COM Port Configuration

This section includes information of how to configure COM ports.

1. Click on Start→Settings→Control Panel →System→Hardware→Device Manager. And then double click on the COM port you wish to configure.



2. Select **Settings** tab. This window is for you to configure the basic settings of the COM port. If you wish to reconfigure COM port mapping, click on **Advanced...**button.

Korenix PCI Serial Port: Slot 09 Port 01 (COM3) Prop ? 💈
General Settings FIFOs Driver Details
korenix 16C950 (K)
Hardware config
 ● RS232 ● RS422/485
Default Communications parameters
Bits per second: 9600
Data bits: 8
Parity None
Stop bits: 1
Flow control: None
Advanced Restore Defaults
OK Cancel

3. In this Advanced Settings for COM window, you can remap this COM port.

Advanced Settings	for COM3	
COM Port Number:	СОМЗ 💌	OK
	Restore Defaults	Cancel

4. Select **FIFOs** tab to configure FIFO settings. In this window, you can adjust FIFO Interrupt levels and XON/XOFF Flow Control threshold.

Korenix PCI Serial Port: Slot 09 Port 01 (C	ОМЗ) Ргор ? 🔀
General Settings FIFOs Driver Details	
korenix	16C950 (K)
☑ Use FIFO buffers	
FIFO Interrupt Trigger levels (Bytes)	
Transmitter: -]	4
Receiver:	j 100
Receiver FIFO Flow Control Thresholds (Bytes)	
Flow On:	16
Flow Off:	-] 112
	Restore Defaults
	OK Cancel

Removing the Driver

Click on Start \rightarrow Settings \rightarrow Control Panel \rightarrow System \rightarrow Hardware \rightarrow Device Manager. Select the JetCard and Auxiliary Function, and click on the Uninstall icon located in the tool bar.



Windows 2000

Installing the driver

- 1. Follow the hardware installation instructions in the previous chapter to install the JetCard first. Windows 2000 will automatically detect the new JetCard after you power on your PC.
- 2. Insert the JetCard software CD into the CD-ROM.
- 3. The window to open next indicates that the Hardware Wizard found the new hardware. Click on **Next** to install.

Found New Hardware Wizard		
	Welcome to the Found New Hardware Wizard This wizard helps you install a device driver for a hardware device.	
	< Back Next > Cancel	

4. Select **Search for a suitable driver for my device (recommended)**, and click on **Next** to continue.

Found New Hardware Wizard
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
PCI Serial Port
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
 Display a list of the known drivers for this device so that I can choose a specific driver
< Back Next > Cancel

5. Select **Specify a location**, and click on **Next** to continue.



6. Use Browse... to locate the driver file on the CD.



7. The window that opens next shows the driver files search results. Click on Next to continue.

Found New Hardware Wizard
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
PCI Serial Port
Windows found a driver for this device. To install the driver Windows found, click Next.
d:\jetcard driver\window 98_me_2k_xp_2003\kxpci.inf
<back next=""> Cancel</back>

8. The Digital Signature Not Found window will prompt next. Click on Yes to continue.



9. After the driver installation is complete, click on **Finish** to leave the installation window.

Found New Hardware Wizard	
	Completing the Found New Hardware Wizard Korenix JetCard 1204 (Port1 - Port4) Windows has finished installing the software for this device.
	To close this wizard, click Finish.
	< Back Finish Cancel

 Next, you need to install JetCard Auxiliary Function and COM ports. The steps for installing COM ports are almost the same. Follow the windows instructions and repeat several times until each COM port is installed.

How to Check the Installation

Follow the instructions in How to Check the Installation section in Windows XP/2003.

COM Port Configuration

Follow the instructions in COM Port Configuration section in Windows XP/2003.

Removing the Driver

Follow the instructions in Removing the Driver section in Windows XP/2003.

Windows 98/ME

Installing the Driver

- 1. Follow the hardware installation instructions in the previous chapter to install the JetCard first. Windows 98/ME will automatically detect the new JetCard after you power on your PC.
- 2. Insert the JetCard software CD into the CD-ROM.

Windows 98	Windows ME
3. The window to open next indicates that the Hardware Wizard found the new hardware. Click on Next to install.	 Select Specify the location of the driver (Advanced). Click on Next to install.
Add New Hardware Wizard Image: Second Seco	Add New Hardware Wizard Windows has found the following new hardware: PCI Serial Controller Windows can automatically search for and install software that supports your hardware. If your hardware came with installation media, inset it now and click Next. What would you like to do? Automatic search for a better driver (Recommended) Specify the location of the driver (Advanced)

Windows 98	Windows ME
4. Select Display a list of all the drivers in a specific location , so you can select the driver you want , and click on Next to continue.	4. Select Display a list of all the drivers in a specific location , so you can select the driver you want , and click on Next to continue.
Add New Hardware Wizard What do you want Windows to do? Search for the best driver for your device. (Personnended) (Personended) (Add New Hardware Wizard Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver for your device. Image: Search for the best driver for your device. (Flecommended). Image: Search for the best driver you want. Image: Search for the best driver you want.

5. Select **Other Devices**, and click on **Next** to continue.

Add New Hardware Wizard		
	Select the type of device from the list below, then click Next.	
	Moritors Mouse Multi-function adapters	
🍅 🍣 💧	Other devices	
<u></u>	PCMCIA socket Ports (COM & LPT)	
	Printer SBP2 SCSI controllers	
	< <u>B</u> ack Next> Cancel	

6. Click on Have Disk... to locate the driver file.

Add Nev	/ Hardware Wizard
P.	Select the manufacturer and model of your hardware device. If you have a disk that contains the updated driver, click Have Disk. To install the updated driver, click Finish.
Mo <u>d</u> els:	
Unsupp	oorted Device
,	Have Disk
	< Back Next > Cancel

7. Locate the driver file on the CD, and click on **OK** to continue.



8. Click on Next to continue.

Add Nev	v Hardware Wizard
P.	Select the manufacturer and model of your hardware device. If you have a disk that contains the updated driver, click Have Disk. To install the updated driver, click Finish.
Models:	
Korenix	: JetCard 1402/1402i (Port1 - Port2) [2: 5-2005]
	Have Disk
	< Back Next> Cancel

9. Click on **Next** to start installing the driver.

Add New Hardware Wi	zard
	Windows driver file search for the device: Korenix JetCard 1402/1402i (Port1 - Port2) Windows is now ready to install the selected driver for this
	device. Click Back to select a different driver, or click Next to continue. Location of driver:
	< <u>B</u> ack Next> Cancel

10. After the driver installation is complete, click on **Finish** to leave the installation window.

Add New Hardware Wizard		
	Korenix JetCard 1402/1402i (Port1 - Port2)	
	Windows has finished installing the software you selected that your new hardware device requires.	
	< Back Finish Cancel	

11. Next, Windows 98/ME will start to install COM ports automatically. Sit back and wait for the COM port installation to finish.

How to Check the Installation

Follow the instructions in How to Check the Installation section in Windows XP/2003.

3-14 Korenix JetCard Series Multiport Serial Card User's Manual

COM Port Configuration

Follow the instructions in COM Port Configuration section in Windows XP/2003.

Removing the Driver

Follow the instructions in Removing the Driver section in Windows XP/2003.

Windows NT

Installing the Driver

- 1. Insert the JetCard software CD into the CD-ROM.
- 2. Open the **\jetcard_driver\windows_nt** folder located on the CD-ROM, and click on **KXInstaller** icon to start the driver installation.



3. Click on Next to continue.

🛃 Korenix 🗸	letCard Installer for Windows NT 4.0	×
-Welcome-		
æ	JetCard Installer	
	This application allows you to install or uninstall JetCard devices and drivers for the Windows NT4 environment. It will now look for an installation file INF which specifies the install / uninstall procedure to carry out.	
Click Ne	xt to continue Cancel	

4. In the window to open next, select **INSTALL**, and in the **License Agreement** window, click on **Yes** to agree to the terms.

🛃 Korenix 🛛	JetCard Installer for Windows NT 4.0	X
E Install / Ur	ninstall	
2	Installation File: oxser.INF Please select the operation to perform	
	 INSTALL Copies files and adds information to the Windows registry 	
	C UNINSTALL Removes installed files and Windows registry information	



5. After the driver installation is complete, click on **Exit** to leave the installation window.

🛃 Korenix J	etCard Installer for Windows NT 4.0
_ Install / Uni	nstall
2	Installation File: oxser.INF The operation was completed successfully and the driver has been started.
	C INSTALL Copies files and adds information to the Windows registry
	O UNINSTALL Fremoves installed files and Windows registry information
	Exit

How to Check the Installation

1. Click on Start→Settings→Control Panel.



2. Double clicks on the Devices icon.



3. Windows NT Devices List will open next. Check if **Korenix PCI Serial Driver** is in the list. Click on **Close** to close the window.



4. The next step is to check COM ports installation. Double click on **Ports** icon in **Control Panel**.



5. The COM Ports list will open next. Check if the COM Ports are all successfully installed. Click on **Cancel** to close the window.

Ports	
Ports:	Cancel
COM1: COM2: COM5:	<u>S</u> ettings
COM6: COM7:	<u>A</u> dd
COM8:	Delete
	Help

Removing the Driver

- 1. Repeat step 1 to 3 of Installing the Driver in Windows NT.
- 2. Click on Uninstall to uninstall the driver.

_	Installation File: oxser.INF
E	Please select the operation to perform
	C INSTALL Copies files and adds information to the Windows registry

3. Click on **Exit** to leave the uninstallation window.

Linux

Installing the Linux Driver

Note: use root as the username to log in.

Note: mount your CD device and insert Korenix JetCard CD first.

- 1. Copy the driver file to the hard disk and decompress.
 - # mkdir korenix
 # cp /mnt/cdrom/jetcard_driver/linux/jetcarddrv.tgz korenix
 # cd korenix
 # tar xfz jetcarddrv.tgz
- 2. Compile the driver file.

cd jetcarddrv # make

3. Create the device files.

./mknod.jetcard

4. Now the JetCard driver is installed correctly. JetCard driver will be loaded into your system automatically during the next boot up. Or you could start to load the driver manually right now with the command below:

#/etc/init.d/jetcard start

Testing JetCard Under Linux

Korenix provides a test program "**rstest**" for testing your JetCard under Linux. Before you start to test, finish the JetCard hardware and driver installation.

"**rstest**" program can test to see if two serial ports communicate with each other. You need to connect two serial ports' TX, RX, RTS, and CTS for testing ("**rstest**" uses hardware handshaking mode). The test procedures are described below:

1. You need to compile the test program if you are using "rstest" for the first time.

#cd /...../korenix/jetcarddrv/rstest #make

2. The commands of the test program are as follows:

#./rstest [-d] [-m] [-s n] </dev/ttyJn1> </dev/ttyJn2>

[-d] disable RX/TX transfer test [-m] enable modem control line test [-s n] The highest test baud rate

n = 9, baud rate = 230K

- n = 10, baud rate = 460K
- n = 11, baud rate = 921K

For Example:

Ex1. Test to see if ttyJ0 and ttyJ1 communicate with each other with baud rate up to 921 Kbps.

./rstest -s 11 /dev/ttyJ0 /dev/ttyJ1

Ex2. Test to see the modem line status of ttyJ0 and ttyJ1.

./rstest -d -m /dev/ttyJ0 /dev/ttyJ1

4 Korenix JetCard Utility

This chapter includes information about how to use Korenix JetCard Utility to test and diagnose your JetCard.

The following topics are covered in this chapter:

- Installing Korenix JetCard Utility
- Using Korenix JetCard Utility
 - JetCard Diagnostic Test
- Uninstalling Korenix JetCard Utility

After you finish JetCard's hardware and software installation, you can use the provided Korenix JetCard Utility to test functions of your communication system.

Installing Korenix JetCard Utility

Note: Korenix JetCard Utility can be operated under Windows 2003/XP/2000/ME/98.

1. Insert the JetCard software CD into the CD-ROM. Locate the **setup** file in **jetcard_utility** folder.



2. Click on Yes to continue.



3. Click on Next to continue.



4. In the License Agreement window, select I accept the agreement, and click on Next to continue.

🕵 Setup - Korenix JetCard Diagnostic Utility			
License Agreement Please read the following important information before continuing.			
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.			
Warning: this software is protected by Copyright 2005 Korenix Technology Co., Ltd.			
All rights reserved. Use or distribution of all or part of the functions without permission will be prosecuted by civil and criminal law.			
 I accept the agreement I do not accept the agreement 			
< Back Next >	Cancel		

5. In the **Information** window, the setup program will inform you of the recommended system requirements. Click on **Next** to continue.



6. The setup program will ask you to select the destination where you wish to install the Korenix JetCard Utility. Click on **Next** to continue.

🗐 Setup - Korenix JetCard Diagnostic Utility 📃 📃	
Select Destination Directory Where should Korenix JetCard Diagnostic Utility be installed?	
Select the folder where you would like Korenix JetCard Diagnostic Utility to be installed, then click Next.	
C:\Program Files\korenix\Diagnostic	
CA Program Files Calkorenix Diagnostic	
🖃 C:	
The program requires at least 1.7 MB of disk space.	
< <u>B</u> ack <u>N</u> ext > Cance	

7. The window to open next will ask you where you wish to place the JetCard Utility in the Start Menu. Click on **Next** to continue.

覺 Setup - Korenix JetCard Diagnostic Utility	
Select Start Menu Folder Where should Setup place the program's shortcuts?	
Select the Start Menu folder in which you would like Setup to create the program's shortcuts, then click Next.	
þetCard Utility	
AcroLink Tool Administrative Tools Adobe Eset Java 2 Runtime Environment JetCard NPort Administration Suite PComm Pro 2.0 PrintMe Internet Printing SENA Serial-IP	•
< <u>B</u> ack <u>N</u> ext >	Cancel

8. The window to open next will ask if you wish to create a desktop icon. Check the **Create a desktop icon** box if you wish to have a JetCard Utility icon on your desktop. Click on **Next** to continue.

🗐 Setup - Korenix JetCard Diagnostic Utility	
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like Setup to perform while installing Korenix JetCard Diagnostic Utility, then click Next.	
Additional icons:	
Create a desktop icori	
< <u>B</u> ack <u>N</u> ext>	Cancel

9. The window to open next will allow you to confirm whether all of the settings are correct. If you wish to make changes, click on **Back** to do so. If the settings are correct, click on **Install** to start the installation process.

📮 Setup - Korenix JetCard Diagnostic Utility	
Ready to Install Setup is now ready to begin installing Korenix JetCard Diagnostic Utility on your computer.	
Click Install to continue with the installation, or click Back if you want to review or change any settings.	or
Destination directory: C:\Program Files\korenix\Diagnostic	4
Start Menu folder: JetCard Utility	
Additional tasks: Create a desktop icon	
प	₹ ₹
< Back	Cancel

10. The JetCard Utility installation is complete. If you wish to start up the utility right away, check the Launch Korenix JetCard Diagnostic box and click on Finish. Otherwise uncheck the Launch Korenix JetCard Utility box, and click on Finish to leave the installation window.

📲 Setup - Korenix JetCard Diagnostic Utility			
	Setup has finished installing Korenix JetCard Diagnostic Utility on your computer. The application may be launched by selecting the installed icons. Click Finish to exit Setup. I Launch Korenix JetCard Diagnostic		
	<u> </u>		

Using Korenix JetCard Utility

Korenix JetCard Utility comprises of JetCard Diagnostic Internal Test and External Test. The Internal Test of the JetCard Diagnostic Test can allow you to check JetCard's status, while the External Test can allow you to check if the pins and cables needed for communications are functioning normally (please use loop back circuit for your test environment).

JetCard Diagnostic Test

1. Double click on JetCard Utility Icon to launch the program.



2. The JetCard Utility will automatically detect how many JetCards are installed in your PC.

Regulation of the second secon	
File Diagnose Help	
To be tested	Test Report
Korenix JetCard 1208	Found Korenix JetCard 1288 COM 7 (P1)
Korenix JetCard 1204	COM 8 (P2) COM 9 (P3) COM10 (P4) COM11 (P5) COM12 (P6)
	COM13 (P7) COM14 (P8)
	Found Korenix JetCard 1204
	COM 3 (P1)
	COM 4 (P2)
	COM 5 (P3)
	CUM 6 (P4) Found 2 cards

3. Click on **Diagnose→Config** to open the Diagnostic window. Click on **Communication Parameters** tag to set up serial communication basic parameters.

Diagnostic Config			×
Test Item Commun	ication Parameters		
Baud rate:	9600		
Data bits:	8	•	
Parity:	None	•	
Stop bits:	1	•	
		ОК	Cancel

4. Click on **Test Item** tag to select the test you wish to perform. The Internal Test can allow you to check JetCard's status, while the External Test can allow you to check if the pins and cables needed for communications are functioning normally (please use loop back circuit for your test environment).

Diagnostic Config	×
Test Item Communication Parameters	
✓ Internal test	
✓ External test	
✓ Tx <→ Rx	
₩ RTS> CTS	
OK	Cancel

4-6 Korenix JetCard Series Multiport Serial Card User's Manual

 After finishing setting all of the parameters, click on Diagnose→Go or the Go icon to start the test. If the JetCards and pins are functioning normally, you will see OK message on the Test Report. If connections are not correct, you will see ERR message on the Test Report. You can save or print the report by clicking on the icons of the menu bar.



Uninstalling Korenix JetCard Utility

1. Click on Start→Program→JetCard Utility→Uninstall.



2. In the window to open next, click on Yes to start the uninstallation.

Korenix JetCard Diagnostic Utility Uninstall				
?	Are you sure you want to completely remove Korenix JetCard Diagnostic Utility and all of its components?			
	Yes No			

The uninstallation is now complete. Click on **OK** to leave the uninstallation window.
 Korenix JetCard Series Multiport Serial Card User's Manual 4-7



This chapter includes information of how to select cables for your systems and cable pin assignments.

The following topics are covered in this chapter:

- Cable Selection and Pin Assignments
 - JetCard 1204/1208
 - JetCard 1402/1402i
 - JetCard 1404/1404i
- RS-232/422/485 Cable Wiring

Cable Selection and Pin Assignments

JetCard 1204/1208

Korenix provides 2 types of cables for JetCard 1204, which are CM37M9x4 and CM37M25x4. These 2 cables can convert JetCard 1204's DB37 connectors into 4 sets of DB9 or DB25 male connectors.

Korenix provides 2 types of cables for JetCard 1208, which are CM62M9x4 and CM62M25x4. These 2 cables can convert JetCard 1208's DB62 connectors into 4 sets of DB9 or DB25 male connectors.

The pin assignments of DB9 and DB25 connector are shown in the figure below.

DB9 Male Connector

DB25 Male Connector



JetCard 1402/1402i

JetCard 1402/1402i is equipped with 2 standard DB9 male connectors. The pin assignments of RS-422, 4-wire RS-485, and 2-wire RS-485 are different. See the figure below.

	DB9 Male	-	RS-422	RS-4	485 4Wires	RS-4	85 2Wires
		Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
		1	TxD-(A)	1	TxD-(A)	1	Data-(A)
		2	TxD+(B)	2	TxD+(B)	2	Data+(B)
6 —	$\mathbf{f} \cdot \mathbf{H}_{2}^{1}$	3	RxD+(B)	3	RxD+(B)	3	1.2
7 —		4	RxD-(A)	4	RxD-(A)	4	
g —	H. :∰⁵	5	GND	5	GND	5	GND
		6	RTS-(A)	6		6	
		7	RTS+(B)	7		7	
		8	CTS+(B)	8		8	
		9	CTS-(A)	9		9	

JetCard 1404/1404i

Korenix provides 2 types of cables for JetCard 1404/1404i, which are CM37M9x4 and CM37M25x4. These 2 types of cables can convert JetCard 1404/1404i's DB37 connector into 2 sets of DB9 or DB25 male connectors. The pin assignments of RS-422, 4-wire RS-485, and 2-wire RS-485 are different. See the figure below.

	DB9 Male	1	RS-422	RS-4	185 4Wires	RS-4	85 2Wires
		Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
		1	TxD-(A)	1	TxD-(A)	1	Data-(A)
		2	TxD+(B)	2	TxD+(B)	2	Data+(B)
6 —	$\left(\begin{array}{c} \cdot \\ \cdot \\ \cdot \\ \end{array} \right)^{1}$	3	RxD+(B)	3	RxD+(B)	3	
7		4	RxD-(A)	4	RxD-(A)	4	10
g —	t:;∓⁵	5	GND	5	GND	5	GND
		6	RTS-(A)	6		6	
3		7	RTS+(B)	7	-	7	
		8	CTS+(B)	8		8	
		9	CTS-(A)	9	5	9	8

	DB25 Male	F	RS-422	RS-4	85 4Wires	RS-4	85 2Wires
		Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
		2	RxD+(B)	2	RxD+(B)	2	
14 _ 15 _		3	TxD+(B)	3	TxD+(B)	3	Data+(B)
16 _ 17 _		4	RTS+(B)	4		4	
19 - 20 -		5	CTS+(B)	5		5	
21 - 22 -		6	RTS-(A)	6	2 2	6	
23 - 24 - 25 -		7	GND	7	GND	7	GND
20		8	TxD-(A)	8	TxD-(A)	8	Data-(A)
		20	RxD-(A)	20	RxD-(A)	20	
		22	CTS-(A)	22	,	22	

RS-232/422/485 Cable Wiring

In this section, we will talk about RS-232/422/485 cable wiring in detail by presenting several wiring examples.

Example 1

Topology Type	Point-to-Point RS-232
Model Name	JetCard 1204, JetCard 1208
PC with JetCard RxD TxD TxD CTS RTS DTR DSR GND DCD	RxD TxD CTS RTS DTR DSR GND DCD

In this example, you can use standard DB9 or DB25 cross-over cables to connect 2 PCs with JetCard Series RS-232 Multiport Serial Cards installed. Since the handshaking signals (CTS, RTS, DTR, DSR) are connected too, you can select Hardware Handshaking options in your application software for communications. Please note that RS-232 transmission distance is up to 15m (50ft).

Example 2

Topology Type	Point-to-Point RS-422		
Model Name	JetCard 1402, JetCard 1402i		
	JetCard 1404, JetCard 1404i		
PC with JetCard RxD+ RxD-(TxD+(TxD-(CTS+(CTS-(RTS+(RTS+(RTS-(GND	(B) (A) (B) (B) (A) (B) (B) (B) (B) (B) (B) (B) (B		

In this example, you can use 4 twisted pairs of cables and a ground cable to connect 2 PCs with JetCard Series RS-422/485 Multiport Serial Cards installed. These JetCards are configured to RS-422 mode. Since 2 of the twisted pairs of cables (CTS+(B), CTS-(A), RTS+(B), RTS-(A)) are connected too, you can select Hardware Handshaking options in your application software for communications. Please note that RS-422 transmission distance is up to 1200m (5000ft).

Example 3

Topology Type	Point-to-Point 2-wire RS-485
Model Name	JetCard 1402, JetCard 1402i
	JetCard 1404, JetCard 1404i
PC with JetCard Data+(B) Data-(A) GND	Data+(B) Data-(A) GND
In this example, you can us with JetCard Series RS-422	e 1 twisted pair of cables and a ground cable to connect 2 PCs /485 Multiport Serial Cards installed. These 2 JetCards are

with JetCard Series RS-422/485 Multiport Serial Cards installed. These 2 JetCards are configured to 2-wire RS-485 mode. Please note that RS-485 transmission distance is up to 1200m (5000ft).

Example 4

Topology Type	Point-to-Point 4-wire RS-485
Model Name	JetCard 1402, JetCard 1402i
	JetCard 1404, JetCard 1404i
PC with JetCard RxD+(I RxD-(A TxD+(I TxD-(A GND	$ \begin{array}{c} B) \\ A) \\ B) \\ B) \\ B) \\ A) \\ B) \\ C) \\ C) \\ C) \\ C) \\ C) \\ C) \\ C$
In this example, you can us with JetCard Series RS-422 configured to 4-wire RS-485	e 2 twisted pairs of cables and 1 ground cable to connect 2 PCs 2/485 Multiport Serial Cards installed. These 2 JetCards are 5 mode. Please note that RS-485 transmission distance is up to

Example 5

1200m (5000ft).



Example 6

Topology Type	Multidrop 4-wire RS-485
Model Name	lotCard 1402 lotCard 1402i
Model Name	Jeloaiu 1402, Jeloaiu 1402i
	JetCard 1404, JetCard 1404i
PC with JetCard TxD+(B) TxD-(A) RxD+(B) RxD-(A) GND	RxD+(B) RxD-(A) TxD+(B) TxD-(A) GND PC with JetCard PC with JetCard PC with JetCard PC with JetCard PC with JetCard With JetCard With JetCard With JetCard With JetCard With JetCard With JetCard With JetCard With JetCard
In this example, you can use PCs with JetCard Series RS configured to 4-wire RS-485 1200m (5000ft). In this topo	e 2 twisted pairs of cables and 1 ground cable to connect multiple 3-422/485 Multiport Serial Card installed. All JetCards are 5 mode. Please note that RS-485 transmission distance is up to logy, the number of connected devices (PCs) can be up to 32.

Example 7



A Specifications

	JetCard 1204	JetCard 1208		
Bus Interface	32-bit Universal PCI	32-bit Universal PCI		
Number of Ports	4	8		
Max. Number of Boards	4	4		
IRQ	Assigned by PCI plug and play	Assigned by PCI plug and play		
Data Bits	5, 6, 7, 8	5, 6, 7, 8		
Stop Bits	1, 1.5, 2	1, 1.5, 2		
Parity Bits	None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark		
Controller	16C950C compatible (Oxford)	16C950C compatible (Oxford)		
FIFO Size	128 bytes	128 bytes		
Speed	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps		
Data Signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND		
Surge Protection	Embedded 15KV ESD Surge Protection	Embedded 15KV ESD Surge Protection		
Power Consumption	120 mA (+5V)	130 mA (+5V)		
Dimensions	120 x 80 mm	120 x 80 mm		
Operating Temperature	-10 to 70 (14 to 158)	-10 to 70 (14 to 158)		
Operating Humidity	5 to 95% Relative Humidity, non-condensing	5 to 95% Relative Humidity, non-condensing		
Storage Temperature	-20 to 85 (-4 to 185)	-20 to 85 (-4 to 185)		
OS Supported	Windows 98/ME/NT/2000/XP/2003, Linux	Windows 98/ME/NT/2000/XP/2003, Linux		
Regulatory Approvals	FCC, CE	FCC, CE		
Board Connector	DB37 Female	DB62 Female		
Cable Connection	DB9 Male or DB25 Male, 100 cm	DB9 Male or DB25 Male, 100 cm		
Cable Model	CM37M9x4-100 or CM37M25x4-100 (optional)	CM62M9x4-100 or CM62M25x4-100 (optional)		

	JetCard 1402/1402i	JetCard 1404/1404i		
Bus Interface	32-bit Universal PCI	32-bit Universal PCI		
Number of Ports	2	4		
Max. Number of Boards	4	4		
IRQ	Assigned by PCI plug and play	Assigned by PCI plug and play		
Data Bits	5, 6, 7, 8	5, 6, 7, 8		
Stop Bits	1, 1.5, 2	1, 1.5, 2		
Parity Bits	None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark		
Controller	16C950C compatible (Oxford)	16C950C compatible (Oxford)		
FIFO Size	128 bytes	128 bytes		
Speed	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps		
RS-422 Signals	Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND	Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND		
4-wire RS-485 Signals	Tx+, Tx-, Rx+, Rx-, GND	Tx+, Tx-, Rx+, Rx-, GND		
2-wire RS-485 Signals	Data+, Data-, GND	Data+, Data-, GND		
RS-485 Data Control	Hardware data flow/direction control (2-wire)	Hardware data flow/direction control (2-wire)		
Surge Protection	Embedded 15KV ESD Surge Protection	Embedded 15KV ESD Surge Protection		
Isolation	2KV Optical Isolation	2KV Optical Isolation		
Protection	(only JetCard 1402i)	(only JetCard 1404i)		
Terminator	Built-in termination resistors	Built-in termination resistors		
Power Consumption	590 mA (+5V)	1.6A (+5V)(1404)/1.02A (+5V)(1404i)		
Dimensions	120 x 80 mm	138 x 108 mm		
Operating Temperature	-10 to 70 (14 to 158)	-10 to 70 (14 to 158)		
Operating Humidity	5 to 95% Relative Humidity, non-condensing	5 to 95% Relative Humidity, non-condensing		
Storage Temperature	-20 to 85 (-4 to 185)	-20 to 85 (-4 to 185)		
OS Supported	Windows 98/ME/NT/2000/XP/2003, Linux	Windows 98/ME/NT/2000/XP/2003, Linux		
Regulatory Approvals	FCC, CE	FCC, CE		
Board Connector	DB9 Male x 2	DB37 Female		
Cable Connection		DB9 Male or DB25 Male, 100 cm (optional)		
Cable Model		CM37M9x4-100 or CM37M25x4-100 (optional)		