



Corinex Intelligent PowerNet



Corinex Intelligent PowerNet

**Ethernet Adapter
Owner's Manual**

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Introduction

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1.1 Overview

The Corinex *Intelligent PowerNet Ethernet Adapter* is a network interface adapter, using the 110/120 or 220/240 V electrical wires in premises as a medium for communications. After successful installation, the indoor Powernet network behaves like a traditional LAN for computers. The Corinex *Intelligent PowerNet Ethernet Adapter* supports up to 14 Mbps-network speed.

The product keeps network maintenance cost low and eliminates usage barriers while there is no need for additional wiring.

The Product is highly integrated and requires no other external electronic components.

1.2 About this Manual

This Owner's Manual is intended to provide sufficient information to help you understand how to successfully install Corinex *Intelligent PowerNet Ethernet Adapters* to meet your networking needs. With the information in this guide, you should be able to:

- Analyze your network efficiency
- Plan the configuration of Corinex *Intelligent PowerNet Ethernet Adapter* options

- Install and configure your *Corinex Intelligent PowerNet Ethernet Adapter* according to your plan
- Verify and optimize your *Corinex Intelligent PowerNet Ethernet Adapters' performance*

Installation Guide

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2.1 What this Package Contains

When you receive your *Corinex Intelligent PowerNet Ethernet Adapter*, check to be sure that your package contains:

- Corinex Intelligent PowerNet Ethernet Adapter
- AC cord
- Ethernet cable
- This manual
- Application CD

2.2 System Requirements

- A computer with a pre-installed Ethernet Network Interface Slot or an Ethernet Network Interface Card
- CD-ROM drive
- Windows 98/ME/2000/XP operating system

2.3 Installing the Ethernet Adapter

To connect the *Corinex Intelligent PowerNet Ethernet Adapter* to your computer, follow the steps listed below:

1. Plug the supplied AC cord into the *Corinex Intelligent PowerNet Ethernet Adapter* and after that, into an AC outlet.
2. Plug the Ethernet cable into the *Corinex Intelligent PowerNet Ethernet Adapter* and the Ethernet slot or card on your PC.

As soon as the *Corinex Intelligent PowerNet Ethernet Adapter* is connected to an Ethernet slot or card using a standard cable, the button on the front panel of the box should be in the „OUT“ (Normal) position. A cable modem or DSL modem often requires a “cross cable”. If this is the case, the button should be in the „IN“ (Uplink) position. When the button is in the correct position, the green link LED at the Ethernet connection will light up.

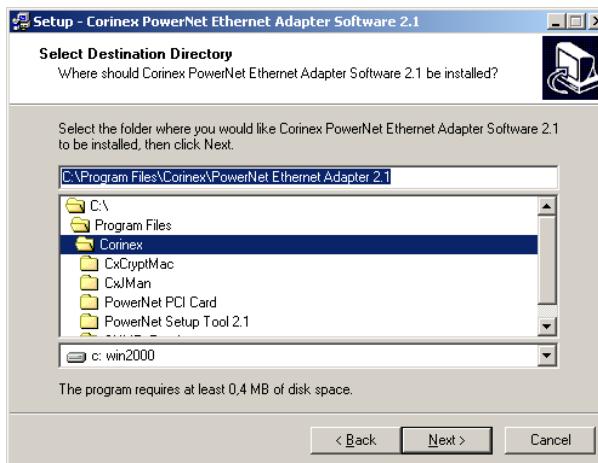
2.4 Installing the PowerNet Setup Tool

1. Insert the installation CD. The CD should automatically start the installation process. If the installation program does not start automatically, start the application by selecting „My Computer“, usually found on the desktop. Navigate to the CD drive, and double click on the drive. The following screen should be displayed:

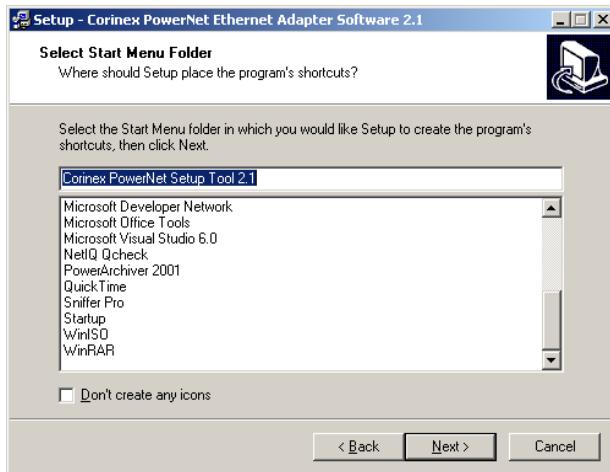


The following screen is the welcome screen. Click „Next“ to continue.

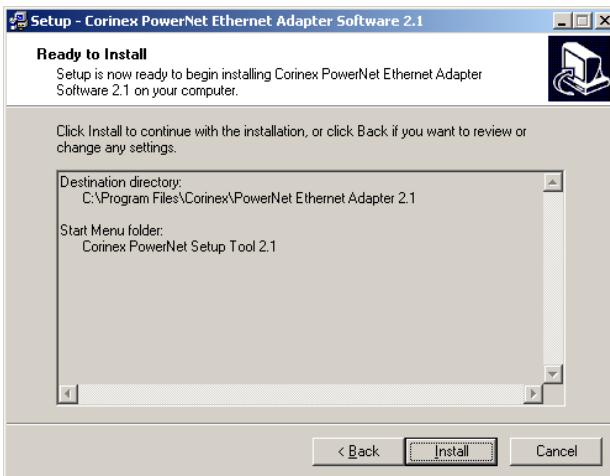
2. The next screen will ask where the PowerNet Setup Tool should be installed. Click „Next“ to continue.



3. This screen will ask where Setup should place the program's shortcuts. Select the Start Menu Folder or simply click „Next“.



4. The following screen will appear to inform you that Setup is ready to begin installing the PowerNet Setup Tool on your computer. Click „Install“.



2.5 Testing the Setup

To verify that the connection is working correctly, use the standard Ping utility. (in Windows, click to menu Start ->Run, then write command “ping IPADDRESS -t”, where IPADDRESS is ip address of computer the Ethernet adapter is connected to, e.g. ping 192.168.4.1 -t . This command will be stopped by pressing keys CTRL+C)

- Ping the IP address of the computer the Ethernet adapter is connected to. If this fails, there is a problem with the Ethernet network card.
- Repeat the same process with the other power line device on the network.
- If all nodes can ping themselves, try pinging another power line device on the network. If this fails, there is a problem with connections on the power line. Try a different AC outlet.
- If the setup does not work, refer to the troubleshooting guide, but first, try unplugging the powerline device and reboot the computer as this sometimes fixes the problem.

2.6 Running the PowerNet Setup Tool

The setup so far allows transmission of data encrypted with a universal key. To set your private and personal encryption keys for the network, run the PowerNet Setup Tool provided on the CD (refer to section 3.1 for details.) This prevents anyone from intercepting your transmitted data.

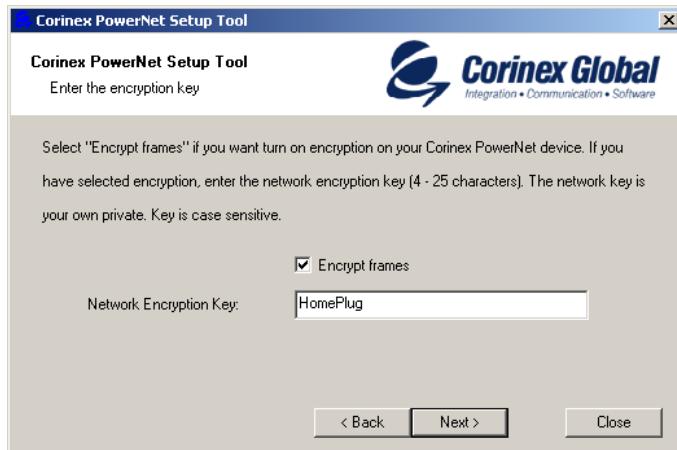
User's Guide

3

3.1 PowerNet Setup Tool User Guide

The PowerNet Setup Tool allows the user to setup a private and secure powerline network. Follow the steps on the screen of this guide and your secure network will be setup correctly.

- Start the PowerNet Setup Tool from the Start menu by selecting the Powernet folder and select 'PowerNet Setup tool'.
- Click 'Next' to start the wizard.
- Make sure that your *Corinex Intelligent PowerNet Ethernet Adapter* is connected to the computer and click 'Next'. Detecting the device takes a few seconds.
- Now the following screen should be displayed. This is the screen where your network password is selected. Choose a password between 4 and 24 characters, the password is case sensitive so remember exactly how it was typed as it will be needed for the next device being set up. Type your password in the 'Network Password' box and click 'Next'. If you don't want to use encryption, uncheck box "Encrypt frames".



- Click 'Next' again to program the *Corinex Intelligent PowerNet Ethernet Adapter* with the new encryption key. This will take a few seconds. The next screen will look similar to the following screen. The white box will list the MAC addresses of all other installed powerline devices on the network that are programmed with your chosen network password. If no other devices have been programmed, the list will be empty.



- All devices in your network must be programmed with the same network encryption key. Run this utility on all computers with a powerline networking device attached. If you have a powerline device that is not normally connected to a computer, it must first be connected to a computer and set up with a network encryption key.

3.2 Corinex Intelligent PowerNet Ethernet Adapter

The *Corinex Intelligent PowerNet Ethernet Adapter* introduces a new and innovative solution for high speed communications, using the electric wires within premises. This unique technology offers users a wide range of networking options by using digital powerline technology enabling up to 14 Mbps of "traffic" between nodes within the network.

- Enables users to connect individual PC's or other devices with Ethernet communications links into a local area network through a 110/120 V or 220/240V electric wires (powerline) network
- Enables PC file and application sharing
- Enables peripheral and printer sharing through the powerline network
- Enables shared broadband Internet access
- Enables sharing the bandwidth for multimedia payloads including voice, data, audio and video
- Enables gaming competition within the reach of the electric wires network
- Eliminates the requirement for special data cable wiring
- A real cost-effective and reliable solution for high speed communications in any home or small office.

This User's Guide has been prepared for *Corinex Intelligent PowerNet Ethernet Adapters* use in combination with PC's or Laptop computers.

Example

The connection of two computers over the powerline by using two *Corinex Intelligent PowerNet Ethernet Adapters*:

1. Install *Corinex Intelligent PowerNet Ethernet Adapter* on each one of the two computers (see Installation Guide).
2. For connectivity enter the properties (see to user guide of operating system) for this connection and set up an IP address manually. For example: 192.168.4.1 mask: 255.255.255.0 and another PC set up 192.168.4.2 mask: 255.255.255.0
3. You can check the connection by a simple ping procedure addressing the IP address of the second PC.

3.3 FAQ

1. **Is the Corinex Intelligent PowerNet Ethernet Adapter still working if there is an electricity blackout? And will it resume the transmission automatically after the power comes back ?**
Corinex Intelligent PowerNet Adapters are operational, when the connected computers are rebooted and the power is back on.
2. **Once the electricity is on after blackout, is the Powernet put into operation "automatically".**
Yes, as soon as the computers are running again. If there is a problem, unplug the adapter and plug it back into the connection slot.
3. **As the recommended transmission range of Powernet is around 200 meters, what happens when the distance is over say 400 meters?**
We recommend to try the line for functionality and performance, before starting operations.
4. **Is there any cross talk or interference issue when using Corinex Intelligent PowerNet Adapters?**
Within a PC we don't see any interference with any other card and/or system. OFDM is a technology, which reduces any influence coming from another device, that is connected

to the electric power network. The Corinex adapters have also been FCC and EC approved.

5. **In case the PCs are at different floors of the same building, can they use the Powernet device for data transmission ? And how does it work?**
Powernet works on the same electric phase - the same physical line. If the electric wires between the two outlets used for communications in this case are connected with eachother and the maximum distance is about 200m, it works fine.
6. **Can we use a Corinex Intelligent PowerNet Adapter for both 110/220V Power Network or are there two versions of Corinex Intelligent PowerNet ?**
Yes, there are two versions, 110/120 V and 220/240 V to support the various market requirements. There are even more line cord versions available and delivered in different packages to reflect the outlet requirements of the consumer.

3.4 Ethernet Adapter Specifications

The following table lists the product specifications for the *Corinex Intelligent PowerNet Ethernet Adapter*.

Standard compliance	Homeplug v 1.0.1 Certified Windows 98/Me/2000/XP Compatible for the PowerNet Setup Tool IEEE 802.3 UL and /or international standards FCC and / or CE approved
Protocol	TCP/IP
Port	RJ 45 (Ethernet 8 pin port)
Speed	Up to 14 Mbps

Cabling type	- Standard AC cable - Ethernet cable
LED status Lights	Collision, Link, Activity
Unit Dimensions	102mm L x143mm W x 59mm H
Power cable	6`/1.8m
Weight	0.69 lbs/0.313 kg
Interface	Standard Ethernet port RJ 45
Power input	110/120 or 220/240 V AC, 0.5A
Safety & EMI	UL, FCC part 15
Operating	32°F to 131°F (0° to 55°C)
Storage Temperature	-4°F to 158°F (-20° to 70°C)
Operating Humidity	10% to 85% Non-condensing
Storage Humidity	5% to 90% Non-condensing

Troubleshooting Guide

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Computer networking can sometimes be "tricky" when many components must work together for the ultimate network system to function properly. With the right tools the problems are usually easy to fix. The following tools, available on your computer or the Corinex CD, will get you started.

- PowerNet Setup Tool (from the Corinex Intelligent PowerNet Installation CD)
- Ping (from the command prompt, see section 2.5)
- ipconfig (WinNT/2000/XP), winipcfg (Win9x/Me) (from the command prompt)

If it just doesn't work...

1. Check that the power LED on all devices are on, if not:
 - Check the AC cables.
 - Make sure the AC outlet is working by plugging something else into it. If this works, try another outlet. If this fails as well, try 2. – 4.
2. Check the Ethernet cables.

The *Corinex Intelligent PowerNet Ethernet Adapter* has a LED located on the Ethernet socket labeled 'link'. If it is not on:

- Check if the device at the other end of the Ethernet cable is switched on.

- Press the normal/uplink button on the *Corinex Intelligent PowerNet Ethernet Adapter*.
- Try a different Ethernet cable with the normal/uplink button in both positions.

3. Check that the devices exist on the network.

Start the PowerNet Setup Tool Program, click 'Next' and see if all devices on your network are found. If all devices are listed, skip this section. If a device is missing:

- Make sure all computers have only one active network slot
- Make sure the *Corinex Intelligent PowerNet Ethernet Adapters* are plugged straight into the wall and not through a power strip or extension cord.
- Unplug all *Corinex Intelligent PowerNet Ethernet Adapters* and plug them back in again, one by one. Run the PowerNet Setup Tool Program again.
- The devices may be programmed with different passwords. Setup all devices with a new password as described in the PowerNet Setup Tool Manual.
- The chosen outlet pair may have poor electrical connection, try a different pair of outlets.

4. Check that the *Corinex Intelligent PowerNet Ethernet Adapters* devices are detected by TCP/IP.

From the command prompt, run ping and type the computer name or IP address of the computer you are working on. [ping yourcomputername] This should return 4 good packets. Now try to ping

another computer on the network. If a timeout occurs:

- Go into the TCP/IP properties and check that the buttons for automatically obtaining IP addresses and gateway are checked. If not, make sure that both computers are on the same subnet.
- Run ipconfig/all from the command prompt on all computers to verify that all computers have valid IP addresses on the same subnet
- The IP tables may be corrupted, reboot all computers and try again.

If these tests work, you have basic connectivity and can use all network services.

If this does not work, you may have a faulty device. Please return it for replacement.

I cannot share my internet access

To share broadband internet access, you need a router connected to your Cable/DSL modem. This will provide a firewall with a single IP address that all computers will use as a gateway. Connect a *Corinex Intelligent PowerNet Ethernet Adapter* to your cable/DSL router.

I have got all that, it still doesn't work.

- Make sure that your TCP/IP settings are set to automatically obtaining IP address and gateway address.
- Switch off all computers and unplug the powerline devices, now plug your Ethernet Adapter back into the router before switching on your computer. This will ensure that the computer's IP address will be obtained from the router.
- Now try opening Internet Explorer, if the 'Not Found' page appears, try clicking the link to 'obtain proxy settings automatically'

It works but it is slow

A slow connection is almost always due to poor electrical connection.

- Make sure the device is connected straight into the socket and not a power splitter or extension cord.
- Try another outlet.