EZ Connect™

2.4GHz 11 Mbps Wireless PCI Card

- 11 Mbps data rate – provides alternative to wired LANs that can dramatically cut costs
- Working range up to 160 m (528 ft) at 11 Mbps, 350 m (1155 ft) at 1 Mbps
- Seamless connectivity to wired Ethernet LANs augments existing networks quickly and easily
- DSSS technology provides robust, interference-resistant, and secure wireless connections
- Supports a wide range of operating systems (Windows 98/Me/2000/XP)
- Easy installation
- Removable external antenna

SMC® Networks

User Guide

SMC2602W

EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card

User Guide

The easy way to make all your network connections

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* SMC will provide warranty service for one year following discontinuance from the active SMC price list. Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

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COMPLIANCES

FCC - Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION STATEMENT: FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: In order to maintain compliance with the limits for a Class B digital device, SMC requires that you use a quality interface cable when connecting to this device. Changes or modifications not expressly approved by SMC could void the user's authority to operate this equipment.

Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matérial brouilleur: "Appareils Numériques," NMB-003 édictée par l'Industrie.

EC Conformance Declaration - Class B

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuós Gelabert 6-8, 2º, 4ª,
08970 - Sant Joan Despí,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:
- Limit class B according to EN 55022:1998, IEC 60601-1-2 (EMC, medical)
- Limit class B for harmonic current emission according to EN 61000-3-2/1995
- Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995

Immunity:
- Product family standard according to EN 55024:1998
- Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ±4 kV, Air Discharge: ±8 kV)
- Radio-frequency electromagnetic field according to EN 61000-4-3:1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ±1 kV, Data/Signal lines: ±0.5 kV)
- Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ±1 kV, AC/DC Line to Earth: ±2 kV)
- Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996 (0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)

- Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
- Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994 (>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)

LVD: • EN 60950 (A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

MDD: • IEC 60601-1

Safety Compliance

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlu ßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.

14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
    a. Netzkabel oder Netzstecker sind beschädigt.
    b. Flüssigkeit ist in das Gerät eingedrungen.
    c. Das Gerät war Feuchtigkeit ausgesetzt.
    d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht über oder unterschreiten sowie den minimalen Strom von 1A nicht unterschreiten.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

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EZ Connect™ 2.4 GHz 11 Mbps Wireless PCI Card

SMC's EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card, SMC2602W, is an 11 Mbps wireless network adapter that seamlessly integrates with existing Ethernet networks to support applications such as mobile users or temporary conferences. This solution offers a high data rate and reliable wireless connectivity with considerable cost savings over wired LANs (which include long-term maintenance overhead for cabling). Just install enough wireless access points to cover your network area, plug wireless cards into your desktop computers, and start networking.

Using this card in conjunction with SMC2655W wireless access points, you can create an instant network that integrates seamlessly with 10 Mbps Ethernet LANs. Moreover, moving or expanding your network is as easy as moving or installing additional access points – no wires!

Features

- 1, 2, 5.5 and 11 Mbps data rate
- Wireless connection without the hassles and cost of cabling
- Greater flexibility to locate or move networked computers
- Integrates with or replaces wired LANs at dramatically lower cost than wired alternatives
- Seamless connectivity to wired Ethernet LANs augments existing networks quickly and easily
- Easy installation
- Working range up to 160 m (528 ft) at 11 Mbps, up to 350 m (1155 ft) at 1 Mbps (indoor communication)
- Direct Sequence Spread-Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection
- Supports a wide range of systems (Windows 98/Me/2000/XP)
- Plug-and-Play
- Provides a user-friendly interface for configuration
- Enhances your network security with WEP data encryption
- Removable antenna with Reverse SMA Connector

Applications

EZ Connect wireless products offer fast and reliable network access for wireless clients in applications such as:

- **Remote access to corporate network information**
  E-mail, file transfer, and terminal emulation

- **Difficult-to-wire environments**
  Historic or old buildings, asbestos installations, and open areas where wiring is difficult to employ

- **Frequently changing environments**
  Retailers, manufacturers, and banks who frequently rearrange the workplace and change location

- **Temporary LANs for special projects or peak time**
  Trade shows, exhibitions, and construction sites that need to setup for a short time period. Retailers, airline, and shipping companies who need additional workstations for peak periods. Auditors who require workgroups at customer sites

- **Access to databases for mobile workers**
  Doctors, nurses, retailers, white-collar workers who need access to databases while being mobile in a hospital, retail store, office, campus etc.

- **SOHO users**
  SOHO (Small Office Home Office) users who need quick and easy installation of a small computer network

System Requirements

Before you install the EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card, check your system for the following requirements:

- A computer with a PCI slot, and PCI card and socket services compliant with revision 2.2 of the PCI specification
- Windows 98/Me/2000/XP (Prepare the Windows installation CD-ROM for use during installation.)
- A minimum of 1500 Kbytes of free disk space for installing the driver and utility program
- Another IEEE 802.11b compliant device installed in your network, such as the SMC2655W Wireless Access Point, or another computer with a wireless adapter

Package Checklist

The EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card package includes:

- 1 EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card (SMC2602W)
- 1 SMC2602W Driver, Utility, and Documentation CD
- This User Guide

Please register this product and upgrade the product warranty at www.smc.com.

Please inform your dealer if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use them again to repack the product if there is a need to return it for repair.

HARDWARE DESCRIPTION

The EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card supports 1, 2, 5.5 and 11 Mbps half-duplex connections to Ethernet networks. This card is fully compliant with 2.4 GHz DSSS CSMA/CA wireless networking as defined in IEEE 802.11b. It is designed to complement PCI Local Bus computers. It supports Windows 98/2000/Me/XP.

LED Indicator

The EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card includes two status LED indicators, as described in the following figure and table.

LED	Status	Description
Power/Link	On	Indicates a valid connection with an access point.
	Flashing	Indicates that the EZ Connect 2.4 GHz 11 Mbps Wireless PCI card is operating in the 802.11 Ad-Hoc mode.
Activity	Flashing	Indicates that the EZ Connect 2.4 GHz 11 Mbps Wireless PCI card is browsing active access points.

HARDWARE INSTALLATION

Warning:

- This network adapter requires a PC and BIOS that supports the PCI Local Bus Specification v2.2 or later. If you are installing in an older computer model, upgrade the BIOS to the latest version
- Network cards are sensitive to static electricity. To protect the card, avoid touching its electrical components and always touch the metal chassis of your computer before handling the card.

1. Switch off the computer, unplug the power cord, and remove the computer's cover.

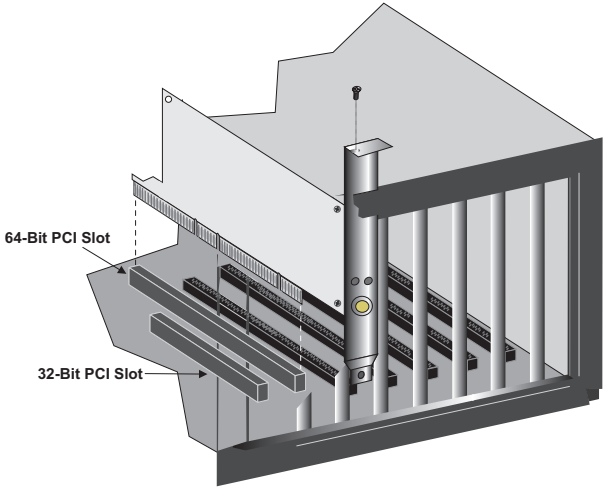
2. Select an available bus-mastering PCI slot and remove the cover bracket. The SMC2602W card can be installed in either 32- or 64-bit PCI slots.

Note the following points about installing the SMC2602W card:

- Use a 64-bit PCI slot if your computer supports this standard.
- When using a 32-bit PCI slot, the end of the card's edge connector will be exposed. Be careful that it does not touch any conducting parts on the computer motherboard.

Note: Some computer motherboard designs may not provide adequate space behind all 64-bit PCI slots to properly install the SMC2602W network card.

3. Install the network card into the slot so that it is firmly seated. Then, screw the card's bracket securely into the computer's chassis.



4. Replace the chassis cover on your computer and power it on.

5. The SMC2602W should be automatically configured by the host computer's BIOS. However, if you have an older computer, you may have to manually configure the computer's BIOS settings.

6. The CD driver contains all the network operating system drivers supported by this card. Please read the "RELEASE.TXT" file on the disk for a list of all drivers. A text file is included with each driver to detail the proper installation procedure.

7. Install the Utility program for your EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card. The "SETUP.EXE" file of the utility program can be found on the CD.

8. Any new or updated drivers can be downloaded from SMC's Web site (see the back cover of this guide).

Driver and Utility Installation

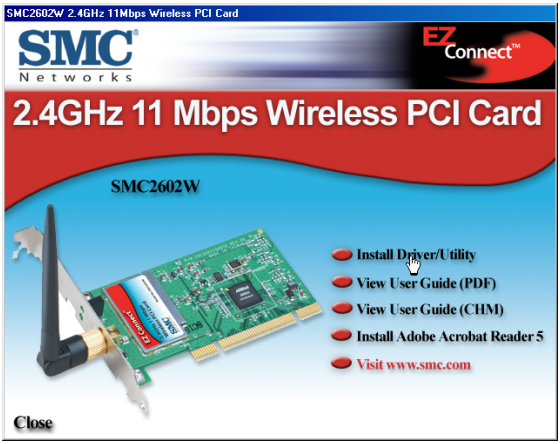
The SMC2602W Driver, Utility, and Documentation CD that comes with the package contains all the software drivers. Any new or updated drivers can be downloaded from SMC's Web site at:

http://www.smc.com/index.cfm?action=tech_support_support_tools

Using Installation Wizard

This installation method makes it as simple as possible to install the driver and utility program at the same time.

1. Insert the Driver, Utility and Documentation CD into your CD drive.
2. Click the "Install Driver/Utility" option on the wizard.



3. Follow the on-screen directions to install driver and utility.

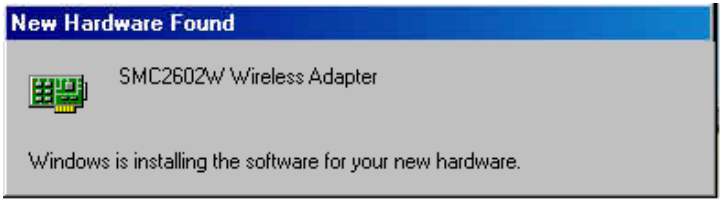
Manual Driver Installation

Installation processes will require the use of your original, licensed copy of Windows. Please have your Windows CD available BEFORE proceeding with the installation.

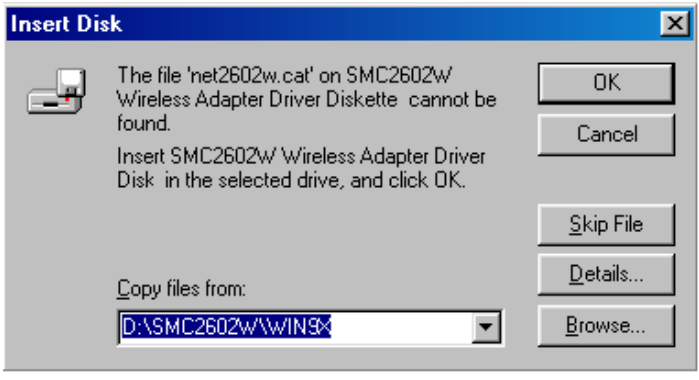
Windows 98/ME/2000

Note: You may find that the instructions here do not exactly match your version of Windows. This is because these steps and screenshots were created from Windows 98. Windows Millennium Edition and Windows 2000 are very similar, but not identical, to Windows 98

1. Insert the EZ Connect SMC2602W 2.4 GHz 11 Mbps Wireless PCI Card into your computer, the Operating System will automatically recognize the adapter and prompt you for the appropriate driver.



2. Insert the SMC2602W Driver, Utility, and Documentation CD into the CD-ROM drive, specify the location as:
a) "D:\SMC2602W\WIN9X" or b) "D:\SMC2602W\WIN2K" or c) "D:\SMC2602W\WINME" (assuming D: is the location of your CD-ROM drive), and click "OK" to copy files from the CD-ROM.



3. The system should find the drivers. Click "Next" button to continue the installation. The wizard will show "SMC2602W 11Mbps Wireless PCI Card" on screen.

Note: If the system could not find the drivers, click "Back" button, and select "Display a list of all the drivers..." option. Select "Network Adapters" from the list of devices, then press "Have Disk" and once again browse to the location of the drivers.

4. Once the system has copied the SMC drivers from the CD, the driver install process will be complete. Click "Finish" to exit the wizard.

5. You will then be prompted to reboot the machine. Press "Yes" button. Upon reboot, the EZ Connect SMC2602W 2.4 GHz 11 Mbps Wireless PCI Card will be initialized and ready for use.

Windows XP

1. Insert the EZ Connect SMC2602W 2.4 GHz 11 Mbps Wireless PCI Card into your computer, the Operating System will automatically recognize the adapter and prompt your for the appropriate drivers. Click "Next" button to begin the installation.

2. Insert the Driver CD and check only "Include this location in the search" option and click "Browse" button to look for the drivers on your CD-ROM. Browse to "D:\SMC2602W\WINXP" (assuming "D:" is your CD-ROM drive)

3. Once the system has copied the SMC driver from the CD, the driver install process will be complete. Click "Finish" to exit the wizard.

4. After driver installation, click "Yes" to restart your computer.

5. If you want to add more protocols after installation, go to the Control Panel and double-click "Network" button.

6. Select the "Configuration" tab and click "Add" to install the network protocols you want to use, such as IPX/SPX, NetBEUI or TCP/IP.

7. If you install TCP/IP, be sure to set the appropriate Gateway, DNS Server, and Domain for your network.

8. Click "File and Print Sharing..." to share files or printers.

9. If you install an IPX/SPX-compatible protocol, then you also need to install the Client for NetWare Networks.

10. Click on the "Identification" tab in the Network dialog box, and specify your computer name and network workgroup.

11. Restart your computer.

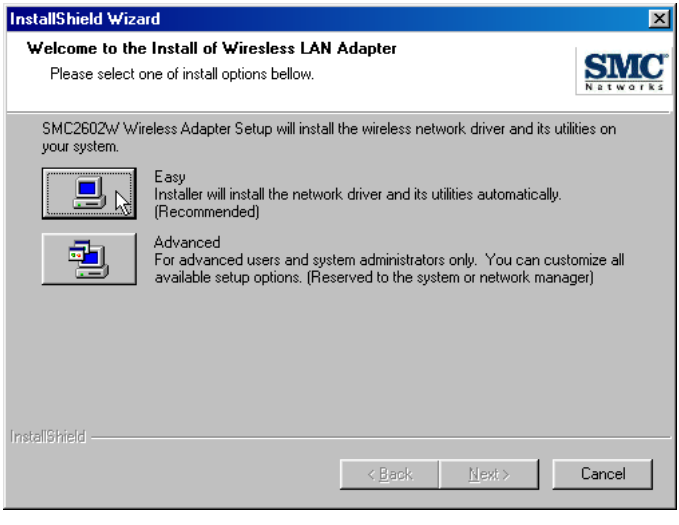
Manual Utility Installation

Follow the instructions below to install utility program for Windows 98/Me/2000/XP.

1. Insert the SMC2602W Driver, Utility, and Documentation CD into your CD-ROM drive.

2. Click "Start/Run..." and type "D:\Setup.exe" (assuming D: is the location of your CD-ROM drive).

3. After InstallShield Wizard screen shown as below, choose "Easy...(Recommended)" button to install utility progarm automatically.

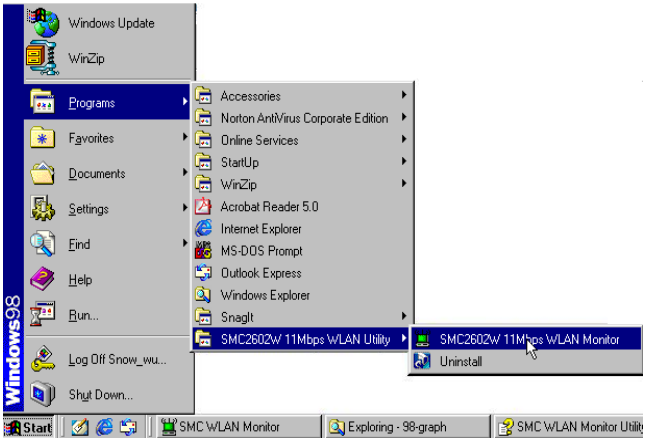


4. Follow the on-screen instructions to finish installation.

Utility Configuration

Using the SMC2602W Utility in Windows 98, Me, 2000 and XP

Once the installation is complete, the configuration utility can be accessed from the "Start" menu, as shown below.



Quick-Launch Icon

When the utility program is running, there will be a quick launch icon in the lower right-hand corner of the task bar. If the icon is GREEN, you have a good connection. If it shows RED, try to place it in a higher position, or move closer to the access point that you wish to connect to.

Double-click the quick launch icon will open the EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card Utility program, providing quick access to the adapter settings.

The configuration utility includes the following tools:

Configuration – Allows you to monitor network status and configure wireless adapter parameters, and provide WEP security control.

Link Information– Shows wireless adapter statistics.

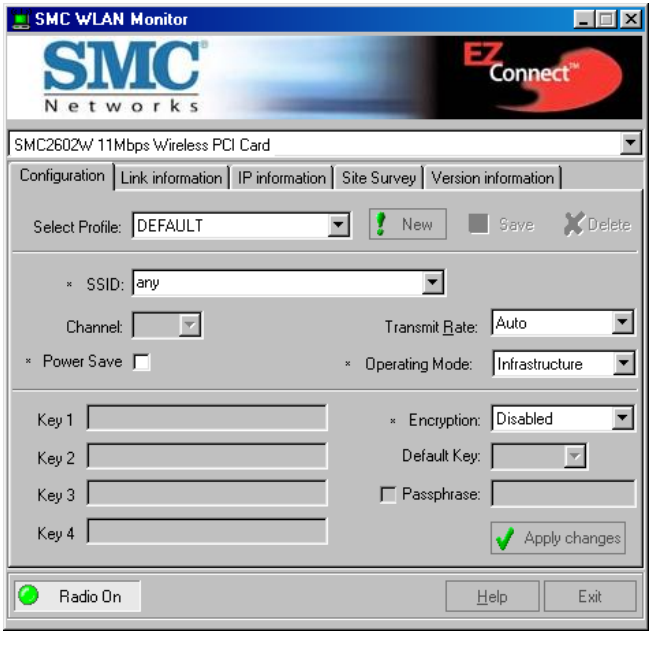
IP Information– Shows MAC IP information.

Site Survey– Scans/Shows all the access points in range.

Version Information– Shows the version information.

Configuration

When you start the SMC2602W 11 Mbps Wireless PCI Card utility, the information window for the SMC2602W is shown as in the figure below.



Encryption – Wired Equivalent Privacy (WEP) is implemented in the adapter to prevent unauthorized access. For more secure data transmissions, set encryption to "128-bit" or "64-bit". The 128-bit setting gives a higher level of security. The setting must be the same for all clients in your wireless network. (Default: Disabled.)

The WEP (Wired Equivalent Privacy) implemented in SMC's EZ Connect 2.4 GHz 11 Mbps Wireless PCI Card is based on the RC4 encryption algorithm. The security keys are four 10 digit keys for the 64-bit WEP setting and one 26-digit key for the 128-bit WEP setting. WEP security protects your wireless LAN against eavesdropping and unauthorized access by hackers or intruders.

Default Key ID – Choose the Key ID that has the encryption string you prefer. If you are using a key generated from the passphrase, you must use the same passphrase and key on each station.

To use the WEP function, take the following steps:

1. Select "128-bit" or "64-bit" in the "Encryption" field.
2. Choose "Create with Passphrase," type a string in the Passphrase field, and click "Generate."
3. Select the key, and click "Apply."

   Note: A passphrase string can consist of up to 32 alphanumeric characters.

Click "New" to configure the "Operating Mode," "Channel," "SSID" and "Tx Rate." After making a configuration change, the Submit button will become enabled. Click "Submit" to save the changes.

Operating Mode – Set the station operation mode to "802.11 Ad-Hoc" for network configurations that do not have an access point, or to "Infrastructure" for configurations with an access point ("Infrastructure" is the default setting.)

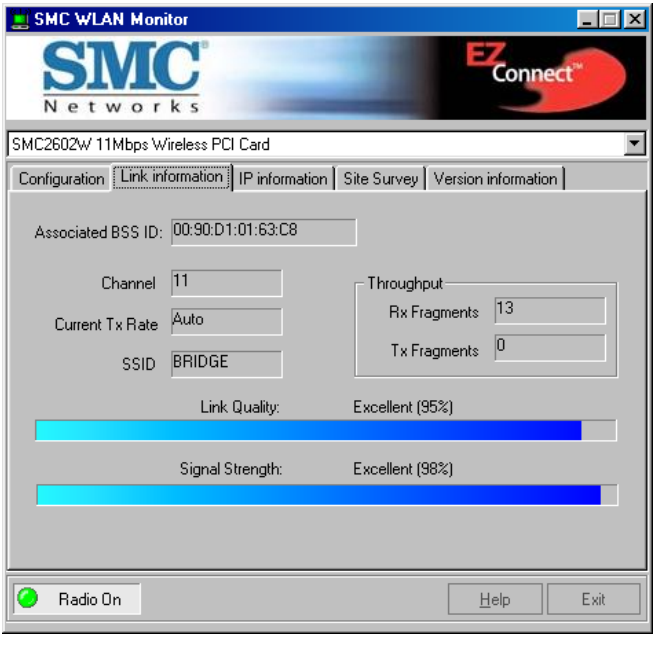
Channel – If you are setting up an ad-hoc wireless LAN (See "Network Topologies" on page 20.), set the channel number to the same radio channel as that used by the other wireless clients in your group. However, if you are connecting to a network via an access point, then the channel is automatically set to the channel of the access point to which the adapter connects.

Note: The Channel can only be set when the Operating Mode is "802.11 Ad-Hoc."

SSID – Input an SSID string for the wireless network to which you want to connect. (This setting is blank by default.) If you will be roaming among multiple access points with different BSSIDs, leave the SSID blank to connect to any access point.

Link Information

The Link Information window for the SMC2602W is shown as below.



Tx Rate – Indicates the data transmission rate. Select an appropriate transmission speed. Lower speeds will give better range. (Default: Auto.)

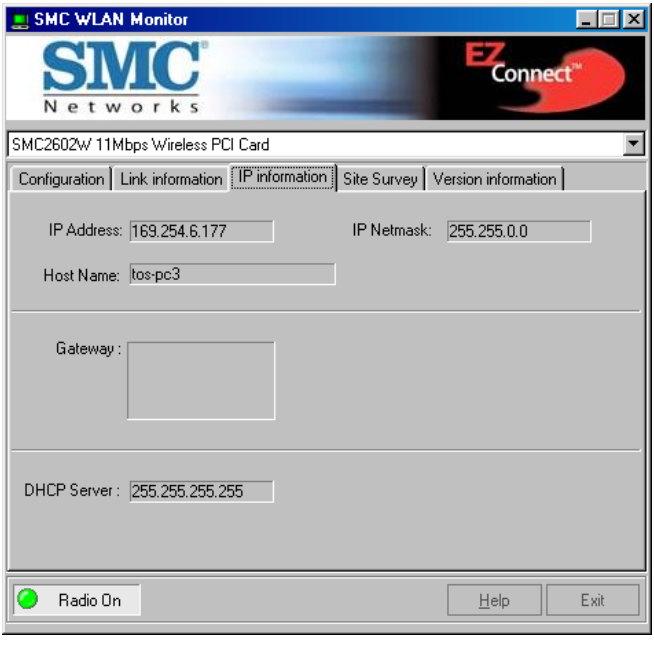
Associated BSSID- Shows the MAC address of the associated access point (BSS ID).

Signal Strength – Shows the relative strength of the wireless connection to the access point.

Link Quality – Shows the relative link quality (e.g., lack of frame errors) of the wireless connection to the access point.

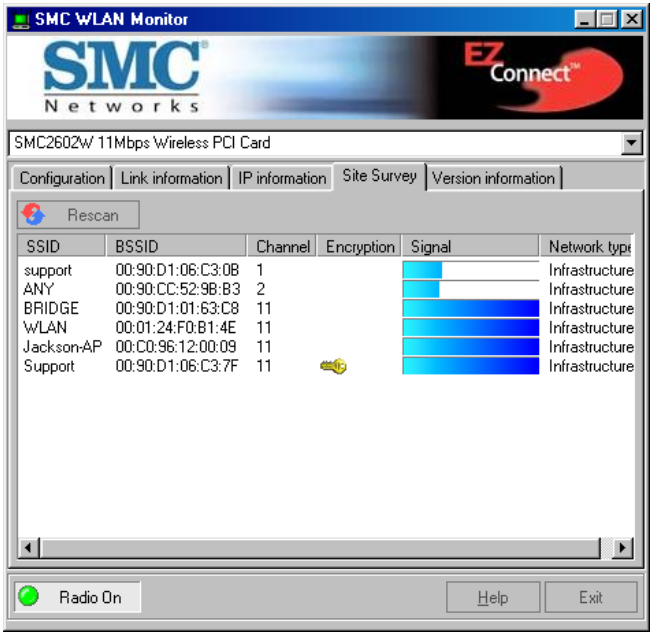
IP Information

The IP Information screen displays network connection information as below.



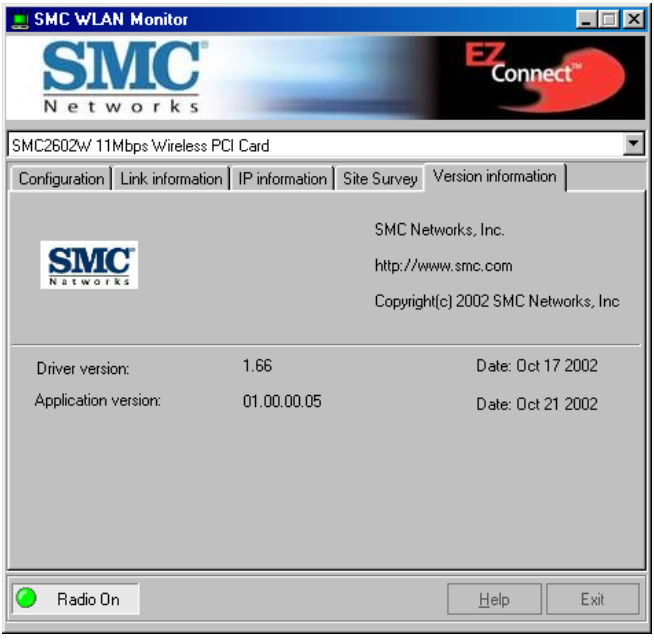
Site Survey

Site Survey scans and displays all access points in the wireless LAN. You can choose one of them to connect to by double-clicking on an entry.

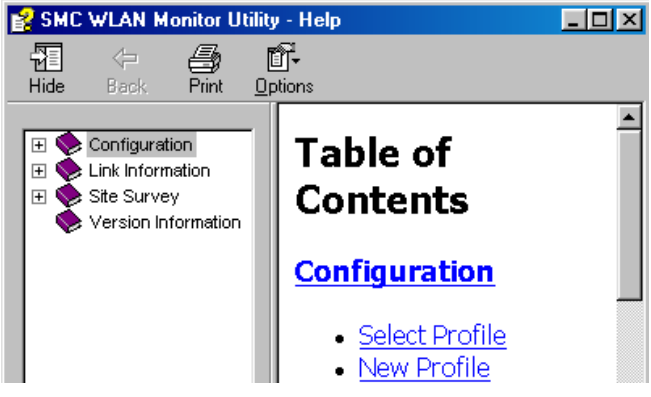


Version Information

The following screen shows the version information.



Click "Help" button to get more advanced setting information.



Network Configuration and Planning

SMC's EZ Connect Wireless Solution supports a stand-alone wireless network configuration, as well as an integrated configuration with 10/100 Mbps Ethernet LANs.

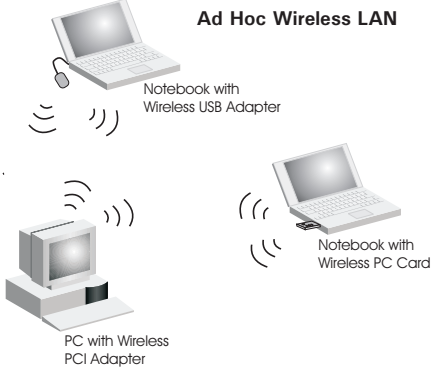
The SMC2602W can be configured as:

- Ad-hoc - for small groups that only communicate with each other
- Infrastructure - for wireless LANs

Network Topologies

Ad-Hoc Wireless LAN

An ad-hoc wireless LAN consists of a group of computers, each equipped with one wireless adapter, connected via radio signals as an independent wireless LAN. Computers in a specific ad-hoc wireless LAN must therefore be configured to the same radio channel. Anad-hoc wireless LAN can be used in a SOHO or temporary environment.

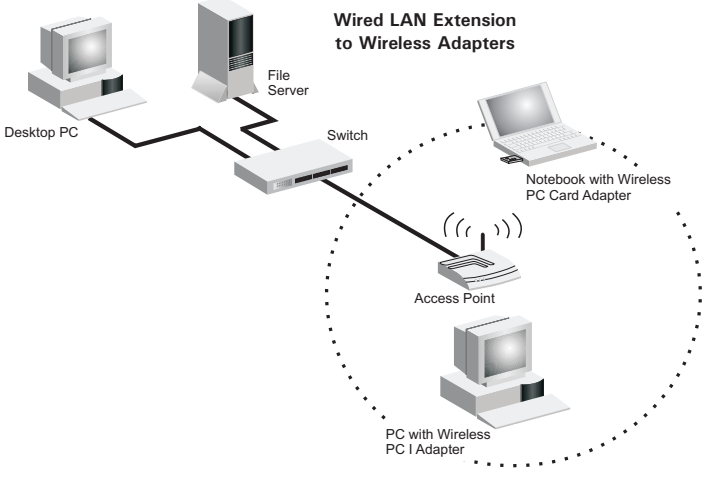


Infrastructure Wireless LAN

The SMC2602W can also provide wireless workstations with access to a wired LAN. An integrated wired and wireless LAN is called an infrastructure configuration. A Basic Service Set (BSS) consists of a group of wireless PC users, and an access point that is directly connected to the wired LAN. Each wireless PC in this BSS can talk to any computer in its wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure via the access point.

The infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also extends the effective wireless transmission range for wireless PCs by passing their signal through one or more access points.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure.



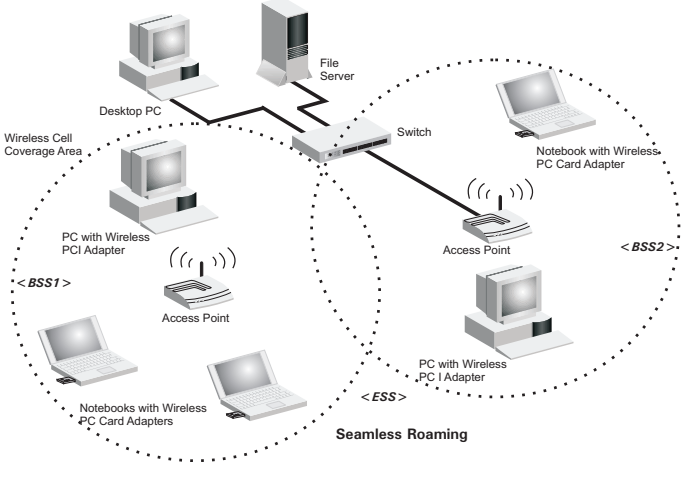
Setting the Communication Domain

Stationary Wireless PCs

The Basic Service Set (BSS) is the communication domain for each access point. For wireless PCs that do not need to support roaming, set the domain identifier (SSID) for the wireless card to the SSID of the access point you want to connect to. Check with your administrator for the SSID of the access point you should connect to.

Roaming Wireless PCs

A wireless infrastructure can also support roaming for mobile workers. More than one access point can be configured to create an Extended Service Set (ESS). By placing the access points so that a continuous coverage area is created, wireless users within this ESS can roam freely. All wireless adapters and access points within a specific ESS must be configured with the same SSID and to the same radio channel.



Before setting up an ESS for roaming, you need to choose a clear radio channel and ideal location for the access points to maximize performance. (Refer to “Troubleshooting” on next page for detailed information.)

TROUBLESHOOTING

Check the following troubleshooting items before contacting SMC Technical Support.

Adapter Installation Problems

If your computer cannot find the SMC2602W 11 Mbps Wireless PCI Card or the network driver does not install correctly, check the following:

- Make sure the adapter is securely seated in the PCI slot. When you insert the wireless adapter into the device's slot, a beep should be heard if the adapter is properly inserted. Check for any hardware problems, such as physical damage to the card's connector.
- Try the card in another PCI slot. If this also fails, test your computer with another SMC2602W 11 Mbps Wireless PCI Card that is known to operate correctly.
- Make sure your computer is using the latest BIOS.
- If there are other network adapters in the computer, they may be causing conflicts. Remove all other adapters from the computer and test the wireless adapter separately.
- Check for a defective computer or PC connection by trying the adapter in another computer that is known to operate correctly.
- If it still does not work, take out the wireless adapter. Delete CW10.sys from C:\windows\system. Then go to "Control Panel" and delete the adapter from your network configuration menu. Restart your computer and reinstall the card.

Network Connection Problems

If the Link LED on the SMC2602W 11 Mbps Wireless PCI Card does not light, or if you cannot access any network resources from the computer, check the following:

- Make sure the correct software driver is installed for your operating system. If necessary, try reinstalling the driver.
- Make sure the computer and other network devices are receiving power.
- The access point you want to attach to may be defective. Try using another access point.
- If you cannot access a Windows service on the network, check that you have enabled and configured the service correctly. If you cannot connect to a particular server, be sure that you have access rights and a valid ID and password.
- If you cannot access the Internet, be sure you have configured your system for TCP/IP.

If your wireless station cannot communicate with a computer in the Ethernet LAN when configured for Infrastructure mode, check the following:

- Make sure the access point that the station is associated with is powered on.
- If you still can't connect, change the access point and all the stations within the BSS to another radio channel.
- For a station with roaming disabled, make sure the SSID is the same as that used by the access point, or the same as that used by the access points in the extended service set (ESS).

SMC Networks
802.11b Wireless Product Maximum Distance Table

Important Notice

Maximum distances posted below are actual tested distance thresholds. However, there are many variables such as barrier composition and construction, as well as local environmental interference that may impact your actual distances and cause you to experience distance thresholds far lower than those posted below. If you have any questions or comments regarding the features or performance of this product, or if you would like information regarding our full line of wireless products, you can visit us at www.smc.com, or you can call us toll-free at 800.SMC.4YOU. SMC Networks stands behind every product sold with a 30-day satisfaction guarantee and a limited-lifetime warranty.

SMC2602W 802.11b Wireless PCI Card Maximum Distance Table				
	Speed and Distance Ranges			
Environmental Condition	11 Mbps	5.5 Mbps	2 Mbps	1 Mbps
Outdoors: A line-of-sight environment with no interference or obstruction between the Access Point and users.	160 m (528 ft)	195 m (640 ft)	255 m (837 ft)	350 m (1155 ft)
Indoors: A typical office or home environment with floor to ceiling obstructions between the Access Point and users.	72 m (236 ft)	73 m (240 ft)	73 m (240 ft)	75 m (246 ft)

SPECIFICATIONS

SMC2602W

Functional Criteria

Data Rate	1, 2, 5.5, 11 Mbps
Transmission Mode	Half duplex
Network Connection	IEEE 802.11b - Wireless LAN,
Operating Range	Up to 350 m (1155 ft) at 1 Mbps, Up to 160 m (528 ft) at 11 Mbps

Radio Signal

Signal Type	Direct Sequence Spread-Spectrum (DSSS)
Operating Frequency	USA, Canada and Europe (ETSI): 2.400~2.4835 GHz, Japan: 2.400~2.497 GHz
Sensitivity	-80 dBm (typical)
Modulation	CCK for 5.5/11 Mbps, BPSK for 2 Mbps, QPSK for 1 Mbps
Output Power	+15 dBm

Physical Characteristics

Current Consumption	TX 460 mA Max. RX 230 mA Max. 350 mA (Typical)
Dimensions	12.8 x 5.3 cm (5.04 x 2.09 in.)
LED Indicator	Power/Link, Activity
Host Interface	PCI Spec Rev. 2.2

Standards Conformance

Wireless Standard	IEEE 802.11b
Media Access Protocol	CSMA/CA with ACK

Environmental

Temperature	Operating: 0 to 50 °C (32 to 122 °F)
	Storage: 0 to 70 °C (32 to 158 °F)
Humidity	Max. 95% (non-condensing)
Vibration/Shock/Drop	IEC 68-2-34, IEC 68-2-27, IEC68-2-32

Certification

CE Mark	EN50081-1, EN55022 Class B
	EN50082-1, IEC 61000-4-2/3/4/6/11,
	IEC 60601-1-2, ARIB STD33 & T66
Emissions	FCC Part 15(B), ETSI 300.328, C-Tick
	ICES-003
Safety	EN60950

Software Drivers

NDIS Drivers	Windows 98
	Windows Me
	Windows 2000
	Windows XP

Antenna

Frequency Band	2.497 GHz
Impedance	50 Ohms Nominal
Gain	2.0 dBi Peak
Radiation	Omni
Polarization	Vertical
VSWR	<= 2.0
Connector	Reverse SMA
Temperature	Operating: -20 to 65 °C (-4 to 131 °F)
	Storage: -30 to 75 °C (-22 to 167 °F)

TERMINOLOGY

The following is a list of terminology that is used in this document.

Access Point – An networking device that seamlessly connects wired and wireless networks.

Ad-Hoc – An ad-hoc wireless LAN is a group of computers, each with LAN adapters, connected as an independent wireless LAN.

Backbone – The core infrastructure of a network. The portion of the network that transports information from one central location to another central location where it is unloaded onto a local system.

Base Station – In mobile telecommunications, a base station is the central radio transmitter/receiver that maintains communications with the mobile radiotelephone sets within its range. In cellular and personal communications applications, each cell or micro-cell has its own base station; each base station in turn is interconnected with other cells' bases.

BSS – BSS stands for "Basic Service Set." It is an Access Point and all the LAN computers that are associated with it.

CSMA/CA – Carrier Sense Multiple Access with Collision Avoidance.

ESS – ESS (ESS-ID, SSID) stands for "Extended Service Set." More than one BSS is configured to become an Extended Service Set. LAN mobile users can roam between different BSSs in an ESS (ESS-ID, SSID).

Ethernet – A popular local area data communications network, which accepts transmission from computers and terminals. Ethernet operates on a 10 Mbps baseband transmission rate, using shielded coaxial cable or shielded twisted-pair telephone cable.

Fragmentation Threshold – In the 802.11 Standard, the MAC Layer may fragment and reassemble directed MSDUs or MMPDUs. The fragmentation and defragmentation mechanisms allow for fragment re-transmission.

Infrastructure – An integrated wireless and wired LAN is called an Infrastructure network.

Preamble Type – Some Access Points and Client card drivers have a radio setting for "Short" RF Preamble. If all the Clients and Access points in your wireless network have this feature, then enabling it can boost your throughput. However, if a radio does not support this feature, then it will not be able to communicate with any other radios that have this set to "Short."

Roaming – A wireless LAN mobile user moves around an ESS and maintains a continuous connection to the Infrastructure network.

RTS Threshold – Transmitters contending for the medium may not be aware of each other. The RTS/CTS mechanism can solve this "Hidden Node Problem." If the packet size is smaller than the preset RTS Threshold size, the RTS/CTS mechanism will NOT be enabled.

WEP – "Wired Equivalent Privacy" is based on the use of 64-bit or 128-bit keys and the popular RC4 encryption algorithm. Wireless devices without a valid WEP key are excluded from network traffic.

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (24 hours a day, 7 days a week)
(800) SMC-4-YOU; (949) 679-8000; Fax: (949) 679-1481
From Europe (8:00 AM - 5:30 PM UK Time)
44 (0) 118 974 8700; Fax: 44 (0) 118 974 8701

INTERNET

E-mail addresses:
techsupport@smc.com
european.techsupport@smc-europe.com
Driver updates:
http://www.smc.com/index.cfm?action=tech_support_drivers_downloads
World Wide Web:
http://www.smc.com/
http://www.smc-europe.com/

FOR LITERATURE OR ADVERTISING RESPONSE, CALL:

U.S.A. and Canada:	(800) SMC-4-YOU;	Fax (949) 679-1481
Spain:	34-93-477-4935;	Fax 34-93-477-3774
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France:	33 (0) 41 38 32 32;	Fax 33 (0) 41 38 01 58
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Benelux:	31 33 455 72 88;	Fax 31 33 455 73 30
Central Europe:	49 (0) 89 92861-0;	Fax 49 (0) 89 92861-230
Switzerland:	41 (0) 1 9409971;	Fax 41 (0) 1 9409972
Nordic:	46 (0) 868 70700;	Fax 46 (0) 887 62 62
Northern Europe:	44 (0) 118 974 8700;	Fax 44 (0) 118 974 8701
Eastern Europe:	34 -93-477-4920;	Fax 34 93 477 3774
Sub Saharian Africa:	27-11 314 1133;	Fax 27-11 314 9133
North Africa:	34 93 477 4920;	Fax 34 93 477 3774
Russia:	7 (095) 290 29 96;	Fax 7 (095) 290 29 96
PRC:	86-10-6235-4958;	Fax 86-10-6235-4962
Taiwan:	886-2-2659-9669;	Fax 886-2-2659-9666
Asia Pacific:	(65) 238 6556;	Fax (65) 238 6466
Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-3-5645-5715;	Fax 81-3-5645-5617
Australia:	61-2-9416-0437;	Fax 61-2-9416-0474
India:	91-22-8204437;	Fax 91-22-8204443

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