Spectrum24 Plus Pack

Users Guide

70-20709-01
Revision A
November 1999

symbol®
www.symbol.com

Copyright

Copyright © 1999 by Symbol Technologies, Inc. All rights reserved.

No part of this publication may be modified or adapted in any way, for any purposes without permission in writing from Symbol. The material in this manual is subject to change without notice.

Symbol reserves the right to make changes to any product to improve reliability, function, or design.

No license is granted, either expressly or by implication, estoppel, or otherwise under any Symbol Technologies, Inc., intellectual property rights. An implied license only exists for equipment, circuits, and subsystems contained in Symbol products.

Symbol, the Symbol logo and Spectrum24 are registered trademarks of Symbol Technologies, Inc.

Other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.

IBM is a registered trademark of International Business Machine Corporation.

Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation.

Novell and LAN Workplace are registered trademarks of Novell Inc.

Toshiba is a trademark of Toshiba Corporation.

Patents

This product is covered by one or more of the following U.S. and foreign Patents:

U.S. Patent No.

4,360,798; 4,369,361; 4,387,297; 4,460,120; 4,496,831; 4,593,186; 4,603,262; 4,607,156; 4,652,750; 4,673,805;
4,736,095; 4,758,717; 4,816,660; 4,845,350; 4,896,026; 4,897,532; 4,923,281; 4,933,538; 4,992,717; 5,015,833;
5,017,765; 5,021,641; 5,029,183; 5,047,617; 5,103,461; 5,113,445; 5,130,520; 5,140,144; 5,142,550; 5,149,950;
5,157,687; 5,168,148; 5,168,149; 5,180,904; 5,216,232; 5,229,591; 5,230,088; 5,235,167; 5,243,655; 5,247,162;
5,250,791; 5,250,792; 5,260,553; 5,262,627; 5,262,628; 5,266,787; 5,278,398; 5,280,162; 5,280,163; 5,280,164;
5,280,498; 5,304,786; 5,304,788; 5,306,900; 5,321,246; 5,324,924; 5,337,361; 5,367,151; 5,373,148; 5,378,882;
5,396,053; 5,396,055; 5,399,846; 5,408,081; 5,410,139; 5,410,140; 5,412,198; 5,418,812; 5,420,411; 5,436,440;
5,444,231; 5,449,891; 5,449,893; 5,468,949; 5,471,042; 5,478,998; 5,479,000; 5,479,002; 5,479,441; 5,504,322;
5,519,577; 5,528,621; 5,532,469; 5,543,610; 5,545,889; 5,552,592; 5,557,093; 5,578,810; 5,581,070; 5,589,679;
5,589,680; 5,608,202; 5,612,531; 5,619,028; 5,627,359; 5,637,852; 5,664,229; 5,668,803; 5,675,139; 5,693,929;
5,698,835; 5,705,800; 5,714,746; 5,723,851; 5,734,152; 5,734,153; 5,742,043; 5,745,794; 5,754,587; 5,762,516;
5,763,863; 5,767,500; 5,789,728; 5,789,731; 5,808,287; 5,811,785; 5,811,787; 5,815,811; 5,821,519; 5,821,520;
5,823,812; 5,828,050; 5,850,078; 5,861,615; 5,874,720; 5,875,415; 5,900,617; 5,902,989; 5,907,146; 5,912,450;
5,914,478; 5,917,173; 5,920,059; 5,923,025; 5,929,420; 5,945,658; 5,945,659; 5,946,194; 5,959,285; D305,885;
D341,584; D344,501; D359,483; D362,453; D363,700; D363,918; D370,478; D383,124; D391,250; D405,077;
D406,581; D414,171; D414,172

Invention No. 55,358; 62,539; 69,060; 69,187 (Taiwan); No. 1,601,796; 1,907,875; 1,955,269 (Japan); European Patent 367,299; 414,281; 367,300; 367,298; UK 2,072,832; France 81/03938; Italy 1,138,713

Symbol Technologies, Inc.
One Symbol Plaza
Holtsville, N.Y. 11742-1300
Telephone:(800)SCAN234, (516)738-2400, TLX:6711519
www.symbol.com

About This Document

Reference Documents

This reference guide refers to the following documents:

Part Number	Document Title
70-20688-01	Spectrum24 AP-4111 DS Access Point Product Reference Guide
70-20706-01	Spectrum24 Wireless LAN Adapter Models LA-4111 PC Card and LA-4113 PCI Adapter Product Reference Guide

Conventions

Keystrokes are indicated as follows:

ENTER	identifies a key.
FUNC, CTRL, C	identifies a key sequence. Press and release each key in turn.
Press A+B	press the indicated keys simultaneously.
Hold A+B	press and hold the indicated keys while performing or waiting for another function. Used in combination with another keystroke.

Typeface conventions used include.

<angles>	indicates mandatory parameters in a given syntax.
[brackets]	for command line, indicates available parameters; in configuration files brackets act as separators for options.
GUI Screen text	indicates the name of a control in a GUI-based application.
Italics	indicates the first time a term is used, a book title, variables, and menu titles.
'single quotes'	indicates the exact setting for a parameter.
`Screen`	indicates monitor screen dialog. Also indicates user input. A screen is the hardware device on which data appears. A display is data arranged on a screen.
`Terminal`	indicates text shown on a radio terminal screen.
URL	indicates Uniform Resource Locator.

This document uses the following for certain conditions or types of information:

Indicates tips or special requirements.

Indicates conditions that can cause equipment damage or data loss.

Indicates a potentially dangerous condition or procedure that only Symbol-trained personnel should attempt to correct or perform.

Contents

Chapter 1 Installing the Spectrum24 Plus Pack 1

Chapter 2 Network Interface Card Task Tray Applet (NICTT) 3

2.1 NICTT Task Tray Icons 4

2.2 NICTT Property Pages 5

2.2.1 General Properties 5

2.2.2 Power Mode 7

2.2.3 Signal Quality 8

2.2.4 Transmission Quality 9

Chapter 3 Network Interface Card Info (NICInfo) Utility 11

3.1 NICInfo Icons 11

3.2 NICInfo Property Pages 11

3.2.1 Adapter Information 12

3.2.2 Mobile Unit Settings 13

3.2.3 Power Management Settings 14

3.2.4 Known Access Points 15

3.2.5 Association and Roaming 16

3.2.6 Transmit and Receive Statistics 17

3.2.7 Adapter Diagnostics 19

3.2.8 NICInfo Options 20

Chapter 4 Network Interface Card Update (NICUpdate) Utility 21

Appendix A Customer Support ..... A - 1

Appendix B Regulatory Compliance ..... B - 1

Chapter 1 Installing the Spectrum24 Plus Pack

The Symbol Technologies Spectrum24 Plus Pack utility suite now supports Spectrum24 LA-41XX Network Interface Cards (NICs) operating in a Spectrum24 network. Install the *Spectrum*24 Plus Pack utilities (NICTT, NICInfo and NICUpdate) from the installation CDROM as a bundled tool suite.

The Spectrum24 Plus Pack utilities support Windows 95, 98, NT 4.0. and Windows 2000.

Use the *Network Interface Card Task Tray* (NICTT) utility for NIC signal quality and power management status. NICTT automatically starts on the system task tray each time the system is booted.

Use the *Network Interface Card Information* (NICInfo) utility to obtain detailed NIC diagnostic and statistical information without rebooting.

Use the *Network Interface Card Update* (NICUpdate) utility for upgrading the firmware in the Spectrum24 WLAN adapter.

To install the Spectrum24 Plus Pack from a CDROM:

1. Insert the installation CDROM in the computer CD drive.
2. Click **Start** and select **Run**.
3. Enter **x:\Setup.exe**

   Where **x** represents the letter assigned to the CD drive.
4. Click **OK**.
5. Complete the installation by following the instructions displayed by the Windows operating system.
6. Restart the computer when prompted by the Windows operating system.

   NICTT appears in the system task tray when the system reboots.

Chapter 2 Network Interface Card Task Tray Applet (NICTT)

NICTT provides signal, transmission quality and power management status for a Spectrum24 WLAN NIC. NICTT contains two different NIC status-checking tools. The taskbar tray icons convey real-time signal strength and service quality information. The NICTT property pages display driver and firmware revision data, power management information and NIC transmission and signal quality statistics.

NICTT starts automatically and appears in the task tray when the system boots.

To start NICTT manually:

1. Click the Start button and select Programs.
2. Click Symbol Wireless and select Spectrum24 Plus Pack.
3. Click on NICTT to launch the utility.

   NICTT displays on the system task tray.

Right click the NICTT icon in the task tray to display the NICTT menu. Select one of the following menu items:

- Spectrum24 WLAN Adapter Status
- About Adapter Status
- Exit Spectrum24 Adapter Status.

Selecting Exit Spectrum24 Adapter Status removes NICTT from the task tray.

2.1 NICTT Task Tray Icons

NICTT task tray icons display NIC signal strength.

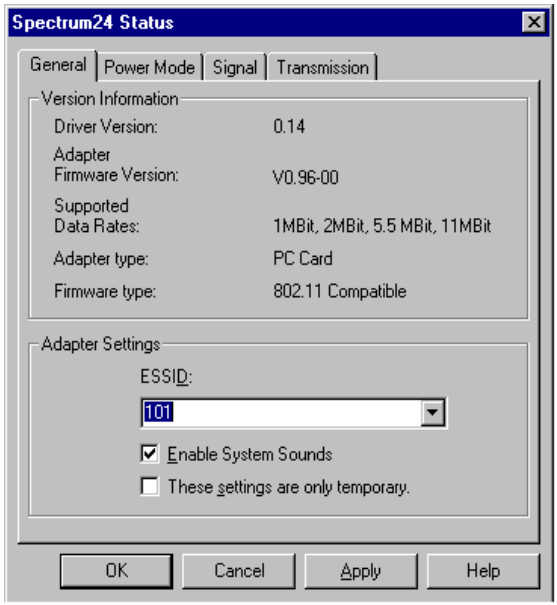
ICON	Status
	Excellent signal strength (Green Bar)
	Very good signal strength
	Good signal strength
	Fair signal strength
	Poor signal strength
	Out-of-network range
	Adapter not found

2.2 NICTT Property Pages

The NICTT property pages contain wireless network and service quality information.

2.2.1 General Properties

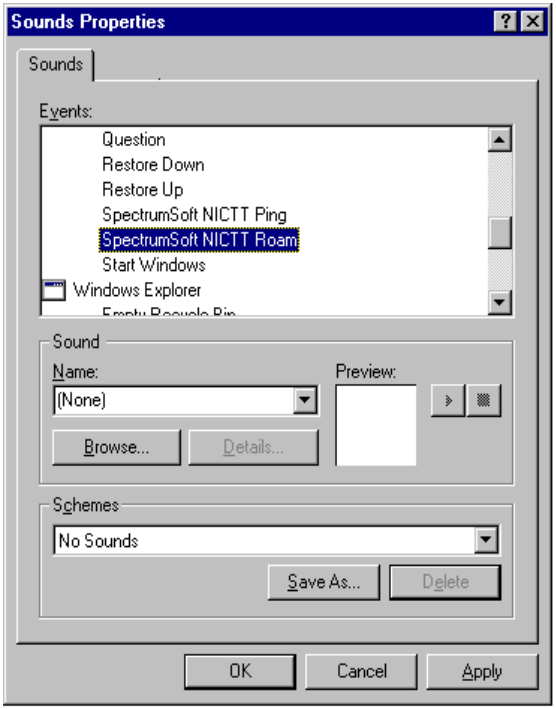
Use the General properties page to display the adapter type, firmware version, driver version and supported data rate (1 Mbps, 2 Mbps, 5.5 Mbps or 11 Mbps). The General dialog tab enables users to change the NIC ESSID.



Enable or disable NICTT system sounds within the General properties page. NICTT uses standard wave-table sounds supplied by the Windows operating system. NICTT initiates an audible signal each time it detects the host computer roaming between Spectrum24 APs. This tone is important if the user did not want the MU to roam to another AP. NICTT initiates an audible signal each time it completes a ping to a host computer.

Users can change NICTT wave file values using the Windows *Control Panel -> Sounds* applet. Two entries exist for NICTT:

- SpectrumSoft NICTT Ping
- SpectrumSoft NICTT Roam.



Select any available wave file in the Sounds window for the NICTT audible response tone. The standard wave files shipped with NICTT have the following format:

```
SSxxxxn.wav
```

Where xxxx represents either ping or roam and n represents the numeric identity of the file.

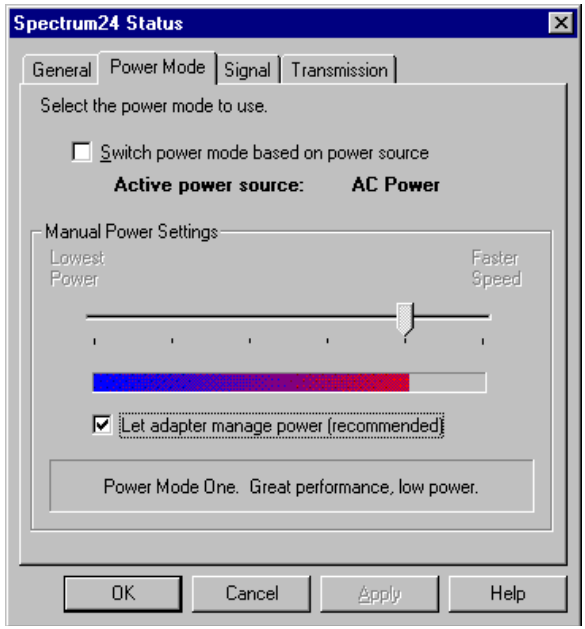
2.2.2 Power Mode

Use the Power Mode property page to control NIC power settings. A Spectrum24 WLAN adapter has two power consumption modes, Continuous Access Mode (CAM) and Power Save Poll (PSP) mode. Selecting CAM yields the best performance but uses the most power. CAM is the preferred mode for systems running on AC power.

Use the sliding scale in the Manual Power Settings field to select a PSP performance index (1 to 5) suited to the intended operation of the NIC. Selecting PSP saves significant amounts of power over CAM. PSP is the preferred mode for systems running on battery power.

Note

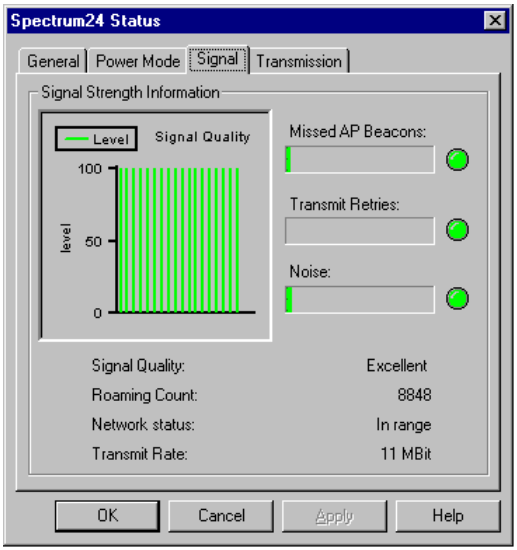
PCI adapters do not support PSP mode. Control over PSP options become disabled when using a PCI Adapter. The *Switch power mode* feature is unavailable in Windows NT 4.0.



2.2.3 Signal Quality

Use the Signal property page to display a real-time graph of the signal quality received by the NIC. It also displays a description of the signal quality. The Signal property page assists users in determining the quality of the signal from the MU to the AP, and if an association with a different AP is needed to increase signal strength. Any signal quality indication below good should be an indicator to associate with a different AP.

Use the Missed AP Beacons graph to view the amount of beacons (uniform system packets broadcast by the AP to keep the network synchronized) missed by the receiving MU. The fewer missed beacons the stronger the signal.

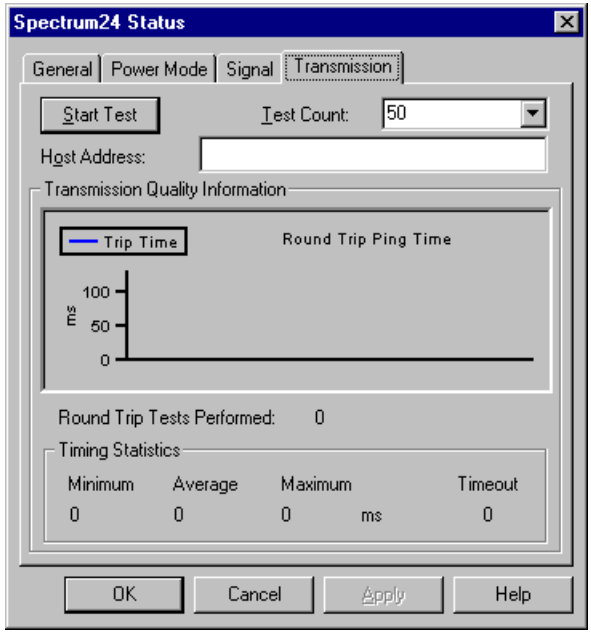


Use the Transmit Retries graph to view the number of data packets retransmitted by the MU. The fewer transmit retries the stronger the signal.

Use the Noise graph to view the level of noise (transmission interference) between the AP and the receiving MU. The less noise the stronger the signal.

2.2.4 Transmission Quality

Use the **Transmission** property page to perform data transmission tests and display a real-time graph of the tests. The transmission quality test also displays a text-based description of the transmission quality. Transmission quality tests use an ICMP ping to test data transmission between an MU and AP. The transmission quality indication is important in determining if the MU should associate with a different AP to optimize its transmission capabilities or if the MU is properly located to communicate with that AP.



Note

The Transmission Quality test requires the TCP/IP protocol.

Chapter 3 Network Interface Card Info (NICInfo) Utility

Use the Network Interface Card Information (NICInfo) utility to view and configure a Spectrum24 NIC. NICInfo provides adapter status, mobile unit (MU) configuration settings, power management configuration settings, NIC diagnostic information, NIC event logging options and MU transmit/receive statistics.

Users select property pages from the items listed in the tree on the left side of the NICInfo window. NIC signal quality appears on the bottom left-hand side of each property page. The signal quality function matches that displayed by NICTT.

Note

If the computer monitor is set to 640 x 480, NICInfo does not display properly. Set the computer monitor to 800 x 600 for optimal resolution.

To start NICInfo manually:

1. Click the Start button and select Programs.
2. Click Symbol Wireless and select Spectrum24 Plus Pack.
3. Select NICInfo to launch the utility.

3.1 NICInfo Icons

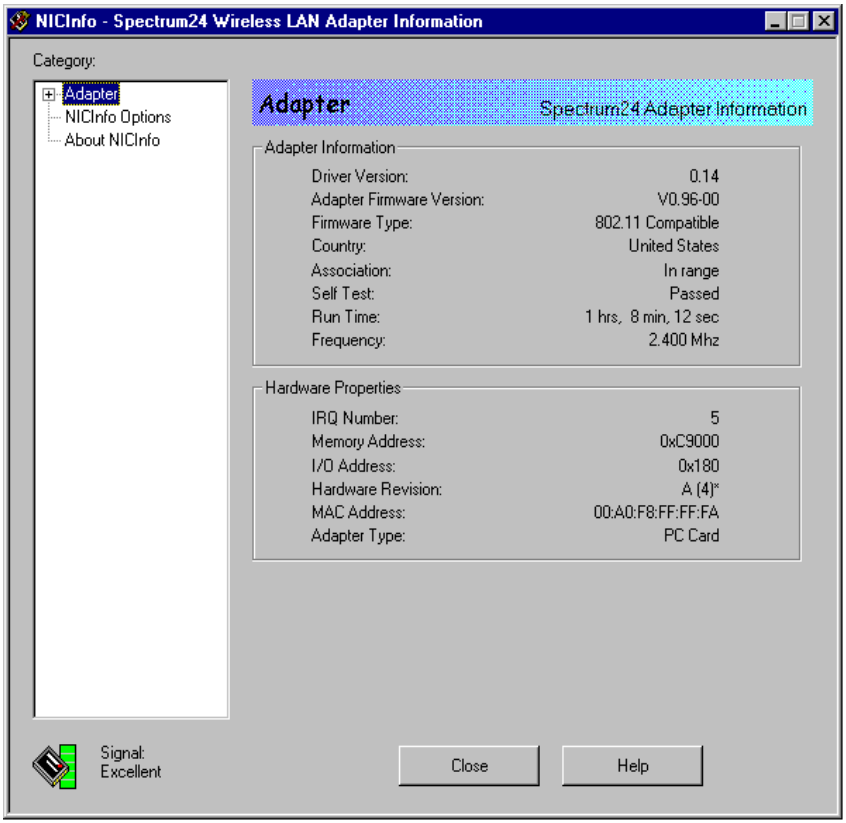
The NICInfo icons match the NICTT Task Tray icons described in the previous section and provide the same functionality.

3.2 NICInfo Property Pages

NICInfo contains property pages dedicated to displaying and configuring NIC settings and information.

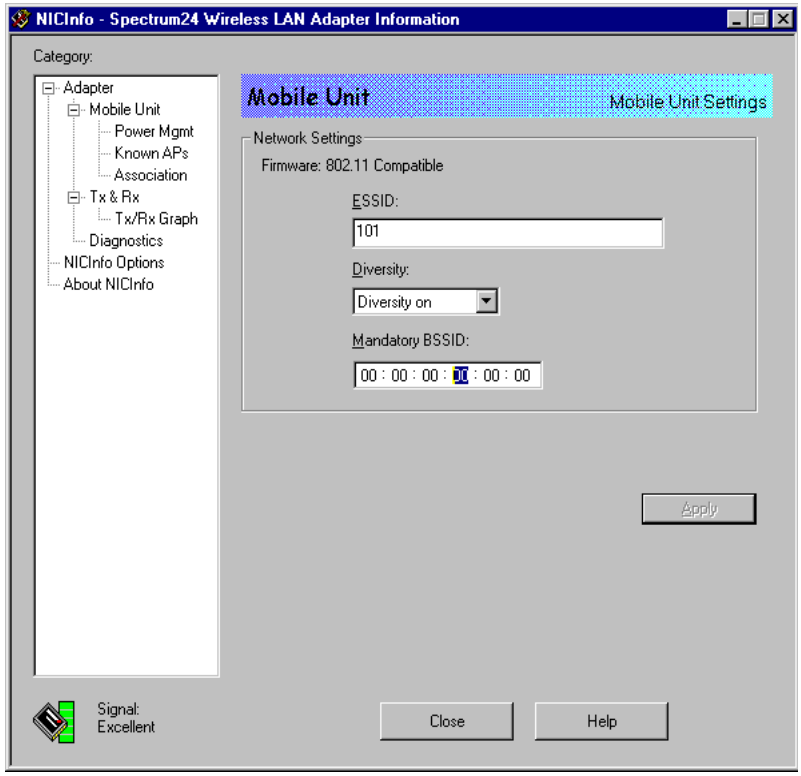
3.2.1 Adapter Information

Use the **Adapter** property page to display driver software and hardware information. The **Adapter Information** section displays the adapter firmware version and the driver version. The **Hardware Properties** section displays the I/O Address, IRQ, MAC Address and other hardware-related items.



3.2.2 Mobile Unit Settings

Select the Mobile Unit property page to set the ESSID, antenna diversity and Mandatory BSSID for the NIC. Click Apply to put the settings into effect. Selecting Diversity on often increases the range of an MU when site obstructions cause transmission and reception interference.



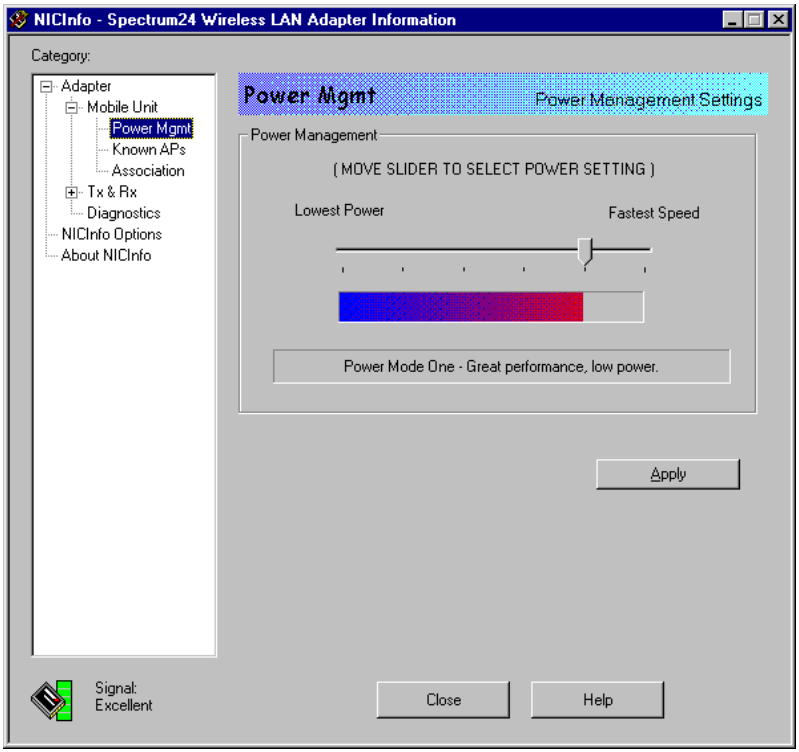
3.2.3 Power Management Settings

Use the Power Mgmt property page to display and adjust NIC power consumption settings. Users control the PSP performance index (1 to 5) in NICInfo by adjusting a sliding scale. A display below the slider describes the selected performance power level and its rating. Users requiring fast performance can adjust the slider accordingly.

Note

CAM is not recommended for devices operating on battery power.

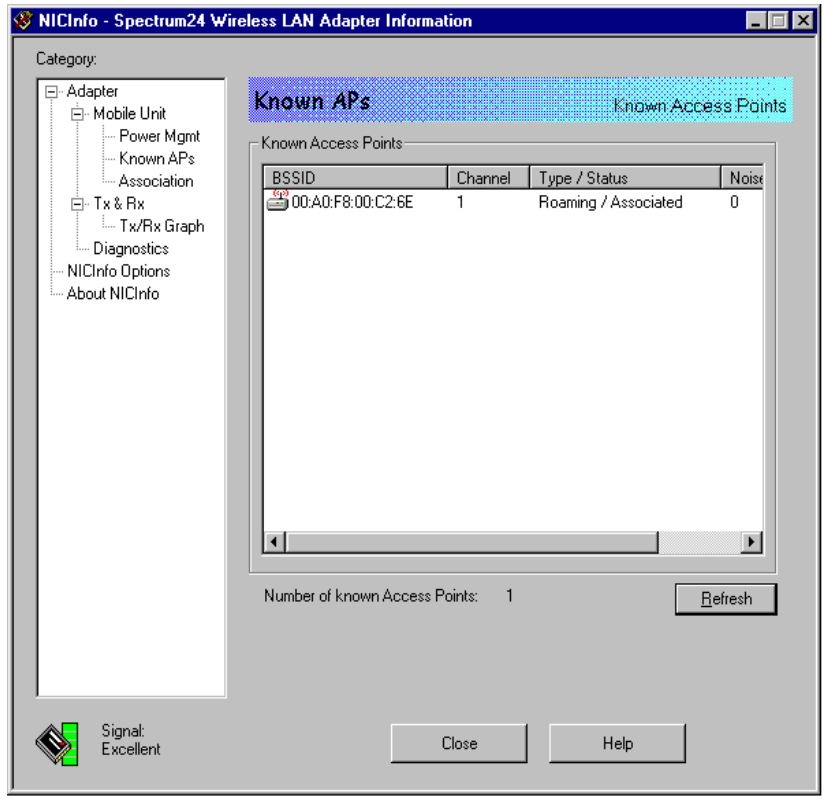
PSP mode does not have the performance of CAM, but reduces battery consumption. Click Apply to put the selected power setting into effect.



3.2.4 Known Access Points

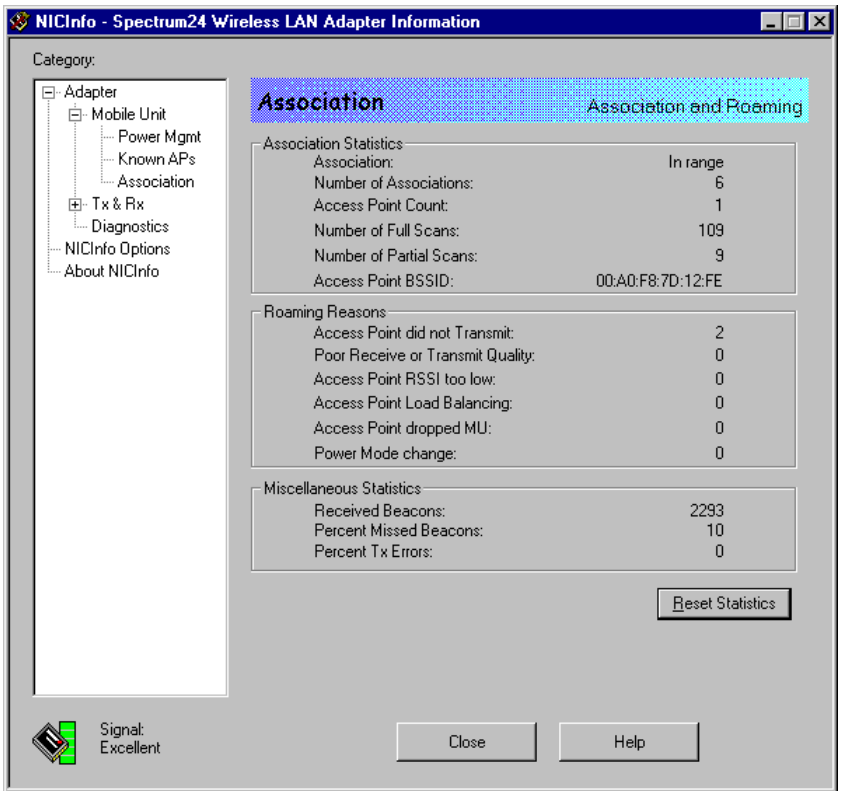
Use the Known APs property page to view the APs with the same ESSID as the NIC within the Spectrum24 network. View the BSSID, direct sequence channel and Type/Status of each available AP.

Click Refresh to display the list of the Known Access Points. The Known Access Points property page is read only with no user configurable data fields.



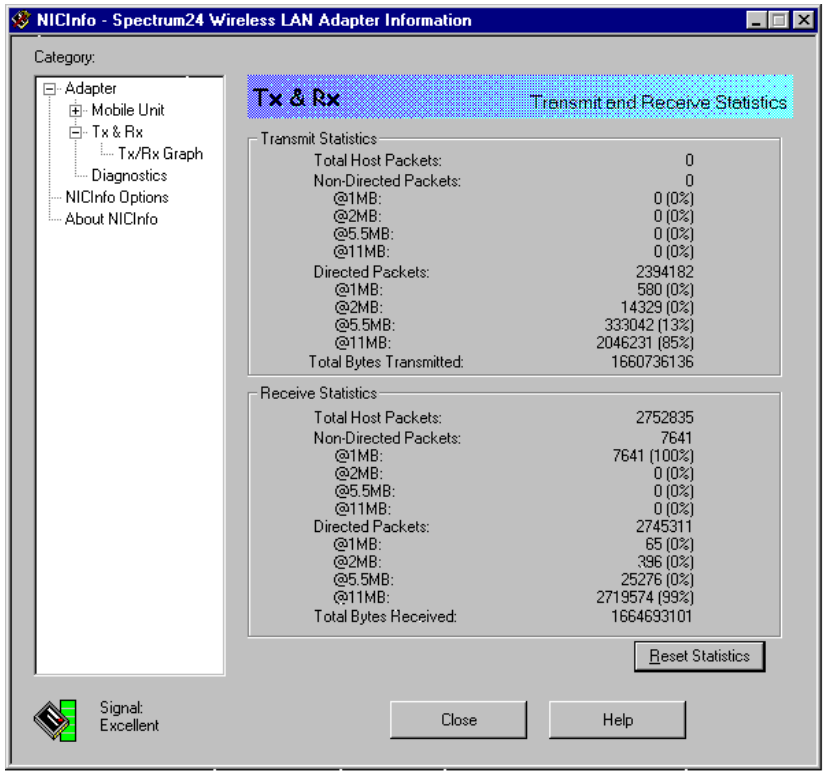
3.2.5 Association and Roaming

Use the Association property page to display the NIC association state, AP association statistics and AP scan information. AP roaming counts and statistics also display. The values on this page update as they occur. Click Reset Statistics to clear the statistic counters and begin collecting new data. The information in the Association property page is read only with no user configurable data fields.



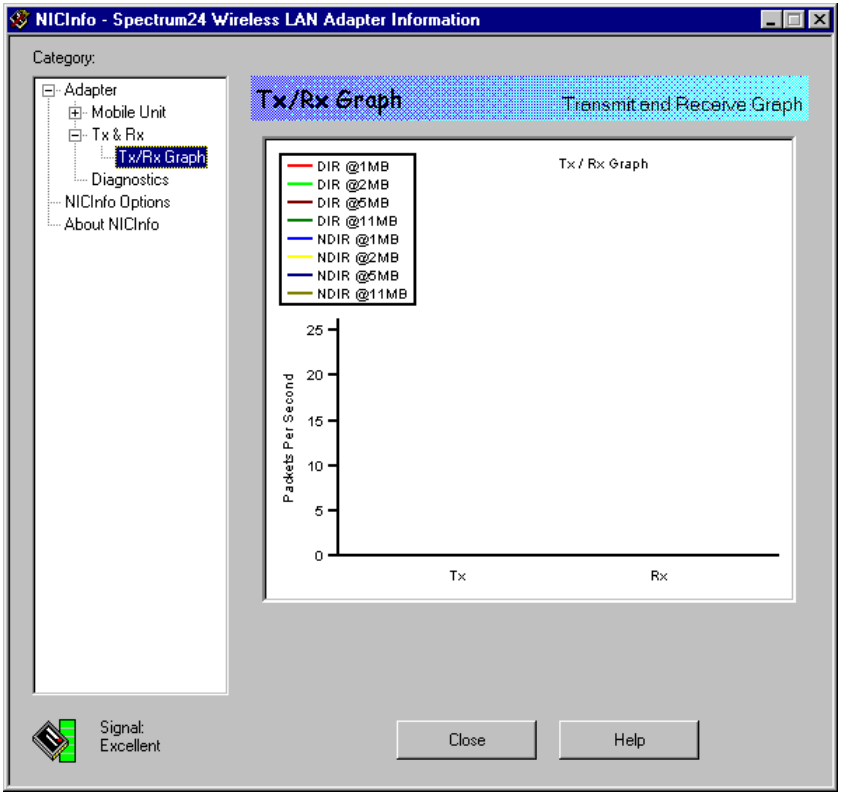
3.2.6 Transmit and Receive Statistics

Select the Transmit and Receive Statistics property page to display statistics for directed and nondirected packets and byte counts for both transmission and reception. Directed and nondirected packet statistics display for each data rate supported (1 Mbps, 2 Mbps, 5.5 Mbps and 11 Mbps). Use these statistics to determine if selecting a different data rates would result in improved NIC performance. The values on this page update in real-time. Click Reset Statistics to clear the statistic counters and begin collecting new data.



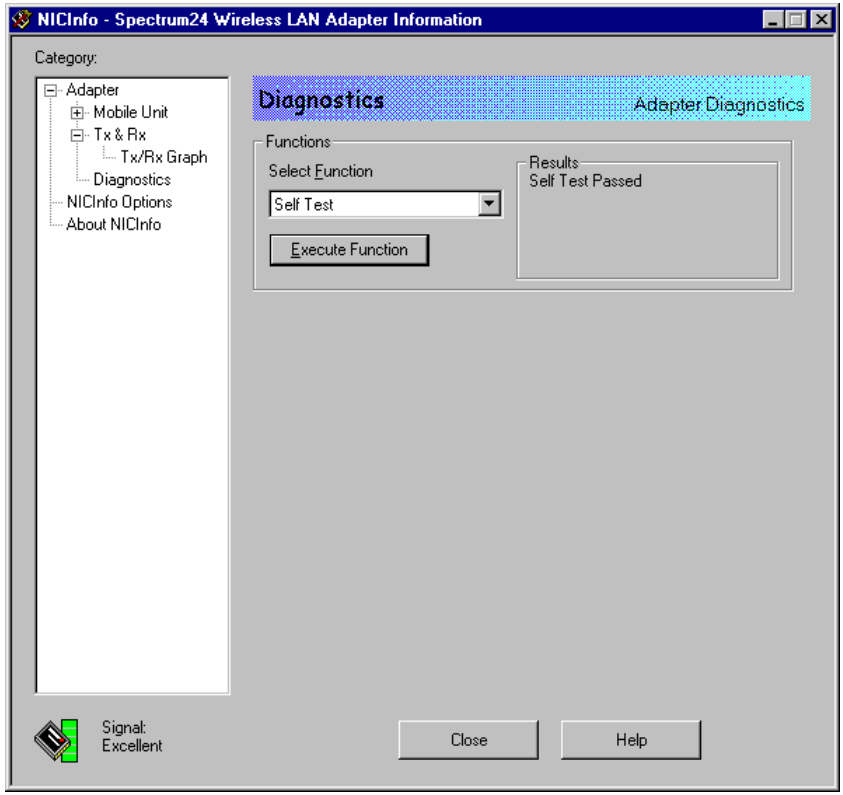
Transmit and Receive Graph

The Tx/Rx (transmit and receive) graph displays the packet per second throughput of the NIC. Colored bars display directed and nondirected packet throughput for each data rate supported (1 Mbps, 2 Mbps, 5.5 Mbps and 11 Mbps). Use these statistics to determine if selecting a different data rate would result in improved NIC performance. The graph is updated every second.



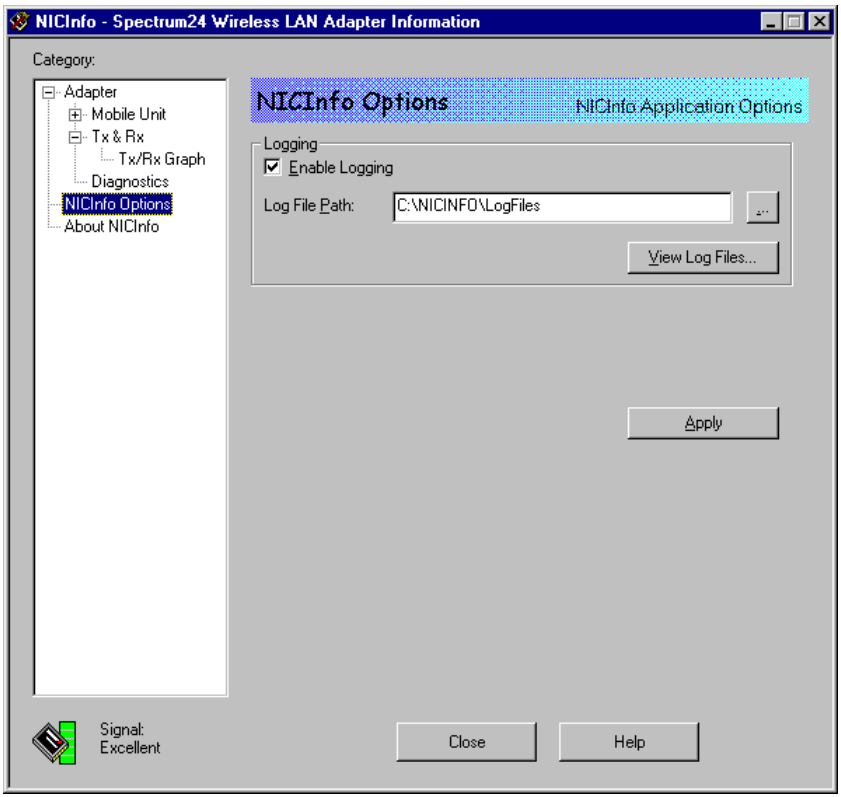
3.2.7 Adapter Diagnostics

Use the Adapter Diagnostics property page to execute tests assessing NIC functionality. The user can perform a self-test or reset the NIC by selecting a diagnostic from the Select Function pull-down menu. Click the Execute Function button to initiate the test.



3.2.8 NICInfo Options

Select the NICInfo Options property page to enable or disable NICInfo logging capabilities. When NICInfo gathers WLAN adapter statistics, NICInfo can save the information to a log file. Log files are saved in HTML format. If users run NICInfo after midnight, the log file closes and a new log file is automatically created for the next day. Click View Log Files to view the log file contents using a default browser.



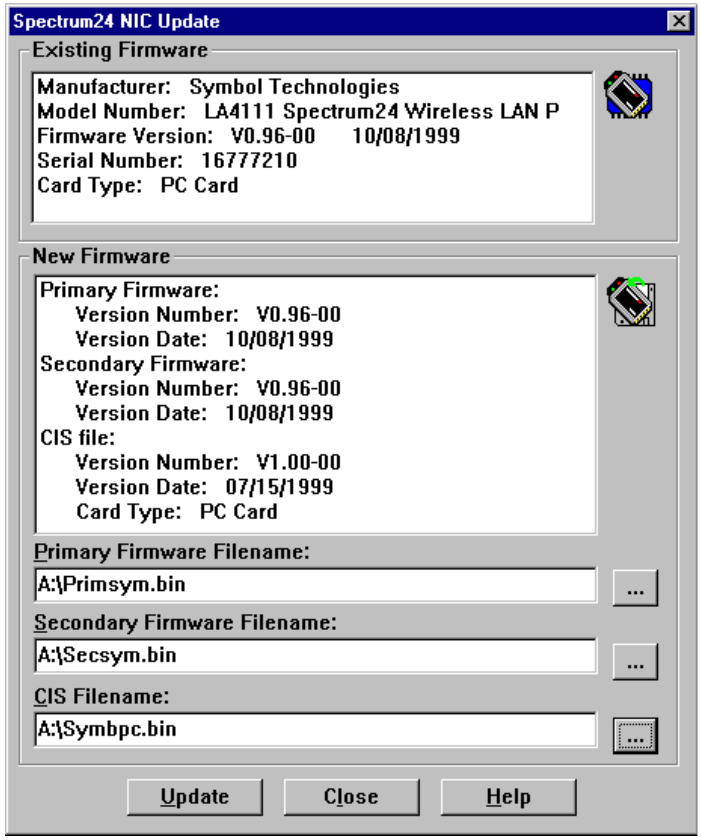
Chapter 4 Network Interface Card Update (NICUpdate) Utility

Symbol Technologies periodically releases NIC firmware to provide improved performance over existing firmware. Use the Network Interface Card Update (NICUpdate) utility to upgrade the firmware in a Spectrum24 Network wireless LAN adapter.

To start NICUpdate manually:

1. Click the Start button and select Programs.
2. Click Symbol Wireless and select Spectrum24 Plus Pack.
3. Select NICUpdate to launch the utility.

NICUpdate upgrades the firmware in a Spectrum24 NIC by specifying a primary and secondary firmware filename and optionally, a Card Information Structure (CIS) filename. Use the CIS to identify adapter manufacturer information and the system resources required by the adapter.



NICUpdate provides the user with current firmware level information and displays the proposed new firmware level information from the firmware file selected. Select a primary and secondary firmware file and a CIS file then click Update. The secondary firmware version is equal to or greater than the primary firmware. The results display in the Adapter Firmware Update Tool dialog page.

The NICUpdate dialog box provides the following options:

Existing Firmware	The **Existing Firmware** field displays the firmware manufacturer, model number, firmware version and serial number of the NIC firmware. The **Existing Firmware** field is read only with no user configurable parameters.
New Firmware	Use the **New Firmware** window to view the version number and date of the Primary and Secondary Firmware and CIS file.
Primary Firmware Filename	Click the **Primary Firmware Filename** ellipsis (...) button to browse for a valid primary firmware file.
Secondary Firmware Filename	Click the **Secondary Firmware Filename** ellipsis (...) button to browse for a valid secondary firmware file.
CIS Filename	A Windows file dialog displays files with the extension, bin. When users select a file, the file name and full path display in the **CIS Filename** box.
Update	Starts the Update process. A warning to close open applications appears. Users can cancel the Update process at this point. A message displays advising users that the Update process has started. A subsequent message displays whether the Update was successful. A message advising the user to reboot follows a successful Update.
Close	Click **Close** to exit the NICUpdate program.
Help	Click the **Help** button. A page of NICUpdate help information displays.

Appendix A

Customer Support

Symbol Technologies provides its customers with prompt and accurate customer support. Use the Symbol Support Center as the primary contact for any technical problem, question or support issue involving Symbol products.

If the Symbol Customer Support specialists cannot solve a problem, access to all technical disciplines within Symbol becomes available for further assistance and support. Symbol Customer Support responds to calls by email, telephone or fax within the time limits set forth in individual contractual agreements.

When contacting Symbol Customer Support, please provide the following information:

- serial number of unit
- model number or product name
- software type and version number.

North American Contacts

Inside North America, contact Symbol by:

- Symbol Technologies, Inc.
  One Symbol Plaza
  Holtsville, New York 11742-1300
  Telephone: 1-516-738-2400/1-800-SCAN 234
  Fax: 1-516-738-5990
- Symbol Support Center:
  - telephone: 1-800-653-5350
  - fax: (516) 563-5410
  - Email: support@symbol.com

International Contacts

Outside North America, contact Symbol by:

- Symbol Technologies Technical Support
  12 Oaklands Park
  Berkshire, RG41 2FD, United Kingdom
  Tel: 011-44-118-945-7000 or 1-516-738-2400
  ext. 6213

Symbol Developer Program Web Site

- http://sdp.symbol.com

Additional Information

Obtain additional information by contacting Symbol at:

- 1-800-722-6234, inside North America
- +1-516-738-5200, in/outside North America
- http://www.symbol.com

Appendix B

Regulatory Compliance

To comply with U.S. and international regulatory requirements, the following information has been included. The document applies to the complete line of Symbol products. Some of the labels shown, and statements applicable to other devices might not apply to all products.

Radio Frequency Interference Requirements

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the Federal Communications Commissions Rules and Regulation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

However, there is no guarantee that interference will not occur in a particular installation. If the 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:

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

Radio Frequency Interference Requirements - Canada

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

CE Marking & European Union Compliance

Products intended for sale within the European Union are marked with the CEMark which indicates compliance to applicable Directives and European Normes (EN), as follows. Amendments to these Directives or ENs are included: Normes (EN), as follows.

Applicable Directives:

- Electromagnetic Compatibility Directive 89/336/EEC
- Low Voltage Directive 73/23/EEC

Applicable Standards:

- EN 55 022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information technology Equipment
- EN 50 082-1 - Electromagnetic Compatibility - Generic Immunity Standard, Part 1: Residential, commercial, Light Industry
- IEC 801.2 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 2: Electrostatic Discharge Requirements
- IEC 801.3 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 3: Radiated Electromagnetic Field Requirements
- IEC 801.4 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 4: Electrical Fast Transients Requirements
- EN 60 950 + Amd 1 + Amd 2 - Safety of Information Technology Equipment Including Electrical Business Equipment
- EN 60 825-1 (EN 60 825) - Safety of Devices Containing Lasers

RF Devices

Symbol's RF products are designed to be compliant with the rules and regulations in the locations into which they are sold and will be labeled as required. The majority of Symbol's RF devices are type approved and do not require the user to obtain license or authorization before using the equipment. Any changes or modifications to Symbol Technologies equipment not expressly approved by Symbol Technologies could void the user's authority to operate the equipment.

Telephone Devices (Modems)

United States

If this product contains an internal modem it is compliant with Part 68 of the Federal Communications Commission Rules and Regulations and there will be a label on the product showing the FCC ID Number and the REN, Ringer Equivalence Number. The REN is used to determine the quantity of devices which maybe connected to the telephone line. Excessive RENs on the telephone line may result in the device not ringing in response to an incoming call. In most but not all areas, the sum of the RENs should not exceed 5.0. To be certain of the number of devices that may be connected to the line, as determined by the total number of RENs, contact the telephone company to determine the maximum REN for the calling area.

If the modem causes harm to the telephone network, the telephone company will notify you in advance; however, if advance notice is not practical, you will be notified as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the modem. If this happens the telephone company will provide advance notice so you may make any necessary modifications to maintain uninterrupted service.

Canada

If this product contains an internal modem it is compliant with CS-03 of Industry Canada and there will be a Canadian certification number (CANADA: _____) on a label on the outside of the product. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line, individual service maybe extended by means of a certified convector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

User should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution

User should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to the telephone loop which is used by the device, to prevent overloading. The termination of a loop may consist of any combination of devices, subject only to the requirement that the total of the Load Numbers of all devices not exceed 100.

The Load Number is located on a label on the product.

Contact your local Symbol Technologies, Inc., representative for service and support;

Symbol Technologies, Inc.,
Canadian Sales and Service
2540 Matheson Boulevard East
Mississauga, Ontario
Canada L4W 4Z2
Phone - 905 629 7226

Laser Devices

Symbol products using lasers comply with US 21CFR1040.10, Subchapter J and IEC825/EN 60 825 (or IEC825-1/EN 60 825-1, depending on the date of manufacture). The laser classification is marked one of the labels on the product.

Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations:

Caution

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous visible or invisible laser light exposure.

Class 2 laser scanners use a low power, visible light diode. As with any very bright light source, such as the sun, the user should avoid staring directly into the light beam. Momentary exposure to a Class 2 laser is not known to be harmful.

Laser information labels are found in the product Quick Reference Guide.