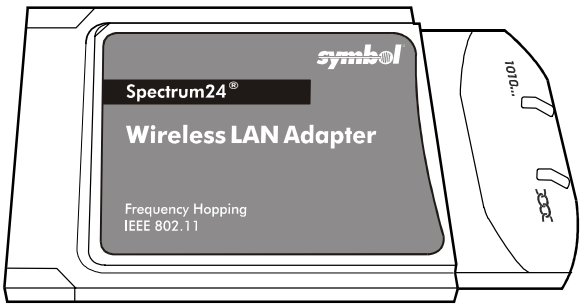
Spectrum24®

LA-4137 Compact Flash Wireless LAN Adapter

Quick Reference Guide



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Introduction

The LA-4137 CFWL adapter allows CF Card slot equipped handheld computer systems to configure, connect to and establish a Spectrum24 network.

Features Include:

- 50-pin Type I adapter card fully compliant with PCMCIA electrical and mechanical specifications
- Low-power operation for battery-powered devices with CF Card slots
- Pocket PC and Windows CE driver support
- Compact Flash form factor (CF+Type I extended)
- Automatic data rate and channel selection of 1, 2, 5.5 and 11 Mbps
- Wireless software upgrade
- Wired Equivalent Privacy (WEP) encryption and decryption
- An integrated antenna
- Card and Socket Services support
- Power management *[Continuously Aware Mode (CAM) and Power Save Polling (PSP)]*.

Scope

This Quick Reference Guide contains the CFWL adapter installation and configuration instructions for Windows CE/Pocket PC.

Preparation

Before beginning the installation, verify the hardware package contains:

- LA-4137 CFWL adapter with an integrated antenna
- Spectrum24 High Rate 11 Mbps Wireless LAN Software CDROM.

Note: Verify the model indicated on the card and packaging before use. Contact the Symbol Support Center if an item is missing or not functioning.

Supported Devices

The LA-4137 CFWL adapter has been qualified by Symbol Technologies to support the following devices:

- Palm/Handheld (PH) computers running Windows CE/Pocket PC
- Palm OS (i.e. Hand ERA/TRG Pro).

Installing the LA-4137 CFWL Adapter

The LA-4137 CFWL adapter installation requires:

- a handheld computer with a Type I CF Card slot
- a desktop computer with a CDROM drive or Web access
- a Spectrum24 High Rate 11 Mbps Wireless LAN Software CDROM.

To install the CFWL adapter:

1. Insert the CFWL adapter into the CF Card slot. Arrows on the front of the CFWL adapter indicate the insertion point to the slot.
2. Slide in the CFWL adapter until it firmly seats.

Caution! Align the CFWL adapter properly when inserting. Insert the CFWL adapter firmly without forcing. Forcing the CFWL adapter into the slot can damage the device or the adapter.

Note: If the CFWL adapter does not fit into the CF Card slot, a 68-pin, male reciever PCMCIA adapter is needed.

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/

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Patents

This product is covered by one or more of the following U.S. and foreign Patents:
U.S. Patent No.
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; 6,002,918; 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; D419,548
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

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Revision A

Installing and Configuring the Driver in Windows CE

Install the Spectrum24 Windows CE device driver from the Spectrum24 High Rate 11 Mbps Wireless LAN Software CDROM or download the driver from the Symbol Web site to a desktop computer. Symbol has bundled the NICTT and NCPA utilities with the Spectrum24 Windows CE driver. Use these utilities to monitor the status of the CFWL adapter as used within a handheld computer device.

Before installing the Windows CE device driver:

- obtain Spectrum24 High Rate 11 Mbps Wireless LAN Software CDROM
- verify that the Spectrum24 CFWL adapter is installed.

Installing the Spectrum24 Driver in Windows CE 3.x

To download the Spectrum24 Windows CE driver from the driver installation CD to a handheld computing device in a Windows CE 3.0 or 3.1 environment:

Note: Refer to the documentation shipped with the Microsoft ActiveSync program to ensure the desktop computer used in the driver installation meets the system requirements for the ActiveSync program.

1. Connect the sync cable to a serial or USB port between the desktop computer and the handheld computer.
   Once a connection partnership exists between the desktop computer and the Windows CE device, file transfers and data synchronization can take place.
2. From My Computer, right-click on the drive assigned to the CDROM. Click Open.
   Note: Double-clicking the CDROM drive launches the autorun. Close autorun.
3. Open the WinCE file folder and double-click on the Spectrum24forWindowsCE.exe file.
   The Unpacking File progress bar displays.
4. Click Yes to use the default application install directory when the Installing Application dialog box displays.
5. Click OK when the Application Downloading Complete dialog box displays.
   The NCPA Spectrum24 Easy Setup dialog box displays on the handheld device when the file download is done.
6. Enter the network ESSID in the Spectrum24 Easy Setup dialog box.
7. Click Advanced and scroll through the NCPA property pages to view the default adapter configuration.
   Use the Mobile Unit, Power, Transmission Power, Encryption and WLAN Adapter tabs to view or adjust the adapter configuration settings.
   Note: For information on using the NCPA utility to configure CFWL adapter properties, refer to Appendix A.
8. Click OK to save the changes to the adapter configuration and exit the NCPA utility.
   The Installing Spectrum24 WLAN Adapter Driver dialog box displays after adjustments are made.
9. Restart and reset the handheld computer and remove and reinsert the CFWL adapter for the configuration changes to take effect.

If additional information of NCPA or adapter configuration is required, refer to *Configuring the CFWL Adapter in Windows CE*.

Downloading the Spectrum24 Windows CE Driver from the Symbol Web Site

Before copying the Spectrum24 device driver to a handheld computer, download the driver from the Symbol Web site.

To download the Spectrum24 device driver from the Symbol Web site:

1. From the desktop computer, go to the Symbol Web site (http://www.symbol.com/services/downloads/download_spec24.html).
2. Select Firmware, Software, Drivers, Tools, Documentation and... for Spectrum24 - 11 Mbps DS.
3. Select the latest version of the firmware and software.
4. Select Spectrum24® driver installation for Windows CE v.3.0 & Microsoft Windows for Handheld PC 2000.
   A File Download window appears prompting the user to run the utility from its current location or save it to disk.
5. Check the Save this program to disk option and click OK.
   A Save As dialog box displays prompting the user to use the default destination folder. If the default destination folder is not Desktop, select Desktop from the Save As dialog box.
6. Click Save.
   The S24_WINCE_DS11.exe icon displays on the desktop computer.
7. Double-click on the S24_DS11 icon on the desktop computer.

The Welcome to Spectrum24 for Windows CE Setup dialog box displays.

8. Click Next.
   The Choose Destination Location dialog box displays.
9. Click Next to use the default destination folder or click Browse to specify a different location for the Win CE driver files.
10. Click Next. The Setup Complete dialog box displays.
11. Click Finish.
12. Click Yes to use the default application install directory when the Installing Application dialog box displays.
13. Click OK when the Application Downloading Complete dialog box displays.
    The NCPA Spectrum24 Easy Setup dialog box appears on the handheld device when the file download is done.
14. Enter the network ESSID in the Spectrum24 Easy Setup dialog box.
    Note: When users insert the CFWL adapter in a handheld computer for the first time, an Unidentified PC Card Adapter window could display. Assign a name to the card and click OK.
15. Click Advanced and scroll through the NCPA property pages to view the default adapter configuration.
    Use the Mobile Unit, Power, Transmission Power, Encryption and WLAN Adapter tabs to view or adjust the adapter configuration settings.
    Note: For additional information on using the NCPA utility to configure CFWL adapter properties, refer to Appendix A.
16. Click OK to save the changes to the adapter configuration and exit the NCPA utility.
    The Installing Spectrum24 WLAN Adapter Driver dialog box displays.
    Restart and reset the handheld computer and remove and reinsert the CFWL adapter for the configuration changes to take effect.

If information with NCPA or additional adapter configuration is required, refer to *Configuring the CFWL Adapter in Windows CE.*

Configuring the CFWL Adapter in Windows CE

Note: The way to access the NCPA utility on Windows CE and Pocket PC devices differs depending on manufacturer. If the Spectrum24 Settings icon does not reside within the Windows CE Control Panel refer to the documentation shipped with the device.

To configure the CFWL adapter in a Windows CE environment:

1. From the NCPA Easy Setup window, click Advanced.
2. Select Advanced and scroll through the NCPA property pages to view or adjust the default adapter configuration.
   Note: For additional information on using the NCPA utility to configure CFWL adapter properties, refer to Appendix A of the *Spectrum24 Compact Flash Wireless LAN Adapter Users Guide*.
3. Click OK to save the changes to the adapter configuration and exit the NCPA utility.
4. Restart and reset the handheld computer and remove and reinsert the CFWL adapter for the configuration changes to take effect.

Troubleshooting

The following problem scenarios could be encountered when using the LA-4137 CFWL adapter in a Windows CE environment:

The Handheld Computer Does Not Recognize the LA-4137 CFWL Adapter

The handheld computer could display an Unidentified PC Card Adapter window when the LA-4137 CFWL adapter is inserted into the handheld computer.

This probably means the Spectrum24 32-bit Windows CE driver was not loaded or was loaded incorrectly. If this is the case the driver files require reinstallation. Refer to the Spectrum24 32-bit Windows CE driver installation section for detailed installation instructions.

To verify that the handheld computer recognizes the LA-4137 CFWL adapter:

1. Tap Start and select Settings and Control Panel.
2. Double tap the System icon.
   The Expansion Slot: in the System: section of the System Properties window should list Low_Power_Ethernet.
   This window displays the type of processor the handheld computer uses.
3. If the handheld computer does not recognize the Spectrum24 CFWL adapter and does not display an Unidentified PC Card Adapter window, remove and reinsert the CFWL adapter.

An IP Address is Not Recognized by the Handheld Computer

Remove and reinsert the CFWL adapter for changes to the IP address to take effect once the Network program has been run from the Windows CE Control Panel.

Declaration of Conformity

We, Symbol Technologies Inc. of One Symbol Plaza, Holtsville, NY 11742-1300, USA declare under our sole responsibility that the product

Spectrum24HR, LA-4137, 11 Mbps Type II Radio Card

To which this product relates, is in conformity with the following standards and/or other normative documents.

EN 300 328 v1.1.1(2000-07) Radio; 2.4GHz Spread Spectrum
EN 301 489-1 v1.2.1 (7-2000) Part 1: EMC, Common technical requirement
EN 301 489-17 v1.1.1 (9-2000) Part 17: Specific conditions for wide-band data.
EN 60750: 1992 Uncl. 1-4, 11: Safety of information Technology Equipment.

We hereby declare that all essential radio test suites have been carried out and that the above named product is in conformity to all essential requirements of Directive 1999/5/EC.
The conformity assessment procedure referred to in Article 10(5) and detailed in Annex IV of Directive 1999/5/EC has been followed with the involvement of the following Notified Body(ies):
BABT, Claremont House, 34 Molesey Road, Walton-on-Thames, KT12 4RQ

Identification Mark:
0168 The equipment also carries the Class 2 equipment identifier

The technical documentation relevant to the above equipment can be made available for inspection on application to:
Symbol Technologies EMEA, Symbol Place, Winnersh Triangle, Berkshire, RG 41 5TP, UK

Dornu Narnor	Senior Director, Regulatory		7 September 2000
(name)	*(title)*	*(signature of authorised person)*	*(date)*

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 at:
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 at:
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

Regulatory Compliance

Symbol 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 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 authority to operate the equipment.

Radio Frequency Interference Requirements

This device has been tested and found to comply with the limits for a Class B 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.

Radio Frequency Interference Requirements - Canada

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la Classe B respecte toutes les exigences du Reglement sur le Matériel Brouilleur du Canada.

Warning: To comply with FCC and Industry Canada RF exposure requirements, this hand-held device is approved for operation in a user's hand when there is 20cm or more between the antenna and the user's body.

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.

European Economic Area

The European variant is intended for use throughout the European Economic Area, however authorization for use restricted as follows:

- European standards dictate maximum radiated transmit power of 100m W
- EIRP and frequency range 2.400 - 2.4835 GHz
- France, the equipment is to be restricted to the 2.4465 - 2.4835 GHz frequency range
- Belgium outside, the equipment is to be restricted to the 2.460 - 2.4835 GHz freuency range
- Operation in Italy requires a user license.