

Wireless LAN CF Card User's Guide

Introduction

This User Guide is to guide you to install a Wireless LAN designed for both large and small business and SOHO environments and let you share a local printer and files, access internet, and roam about different working places. The attached drivers and utilities support for Windows 95 (OSR2), Windows 98, and Windows 2000, NT4.0 and Windows Millennium.

Package Contents

- Wireless LAN CF Card
- Wireless LAN CD-ROM with drivers and utilities
- User's Guide
- Quick Start Guide
- Warranty Card

Planning your Wireless LAN

There are two usage modes for Wireless LAN, Ad-hoc mode and Infrastructure mode. Please review your need and build your Wireless LAN.

Ad-hoc Networking

Ad-hoc network also is called Peer-to-Peer network. Without Access Point, notebook users with Wireless LAN CF Card can build a Ad-hoc Peer-to-Peer wireless networks to share files with each other, share a public office printer and other peripheral resources, and even access the Internet via a modem.

Infrastructure Networking

802.11b-compatible Access Point is a bridge or router for connect to the wired Ethernet network and wireless network. Through the deployment of Access Point, wireless LAN can be extended to the reach of a wired network. Therefore, A notebook user with Wireless LAN CF Card can access to fixed local network resources.

Installation

Installation for Windows 95, Windows 98 and Windows 2000

Before installing the driver, you will need a copy of the operating system installation media, usually a CD supplied with your computer or operating system.

On Windows 98 systems, the installation files are sometimes archived on the hard disk in C:\WINDOWS\OPTIONS\CABS. On Windows 2000 systems, the system may prompt you to load operating system files from the Windows 2000 installation disk. Installation under Windows 95 is identical to the procedure given above for Windows 98 and Windows 2000. Only Windows 95 OSR2 or higher is supported.

The Setup program also installs Configuration Utility in the Wireless LAN CF Card in the Program directory. This configuration utility can help you to understand and maintain your Wireless LAN.

Install Driver

Step 1: Turn on your computer.

Step 2: Insert the Wireless LAN CF Card into the CF Card slot. Align the card properly before putting it in the slot. Insert the card firmly without forcing until it seats snugly.

CAUTION: *Forcing a misaligned card into the slot can damage the computer or the card.*

Step 3: Windows finds a new hardware shown *DLINK-DW650* and asks for the driver of Wireless CF Card. The driver installation wizard guides you through the steps standard for your operating system.

Step 4: You will be asked to supply CDs or directory path information for the driver. This driver shall be located in the following directory.

D:\DW650\ (if D:\ is your CD-ROM drive)

Step 5: Windows finds the driver described as *Wireless LAN CF Card*. Follow the directions of Windows dialog boxes to complete the driver installation. After completing the installation, Windows dialog will display *Systems Setting Change* and ask to restart the notebook. Please click Yes to reboot the computer.

Install Configuration Utility

1. Restart the computer and ensure *Wireless LAN Configuration Utility CD* in the CD-ROM drive.

You can run the program manually by selecting *Run* from the Start menu and running SETUP.EXE from the CD-ROM drive.

D:\DW650\SETUP.EXE (if D:\ is your CD-ROM drive)

2. On the *Wireless LAN CF Card – Installation* screen, click next to start software installation. Read the information in the Welcome dialog box and click Next. Then, click Yes if you accept the Software License Agreement.
3. Enter the name of the Wireless LAN Service Set of the wireless network (SSID) to which your computer will connect. The name you enter here must match exactly the name assigned to the access point. Characters, capitalization, and spacing must be exactly identical.

NOTE: If the access point you wish to associate with has encryption active, you must also enable encryption on the wireless client. Click Encryption in the Configuration Utilities after reboot to go to screens where you can enable and configure encryption. You must set the wireless client for the same Encryption algorithm and Key values as the access point it will associate with. Refer to the Advanced Configuration section for more details about configuring encryption

4. Select which network mode is suitable for your Wireless LAN. Infrastructure Mode is default selection. This setting can be changed at any time after installation completion.
5. Accept the default program folder or select where the SETUP.exe stores the Configuration Utility.
6. Select “Yes, I want to restart my computer now”. Reboot your computer by clicking Finish.

Operation

Orienting the Antenna

The *CF Card* antenna is attached to the end of the *CF Card*. For best use of the antenna:

- Keep the area around the antenna clear from materials that could block or obstruct

radio transmission, such as metal objects, electronic devices, cordless telephones, and microwave oven.

- If necessary, move your notebook computer a few inches to find a better signal. Environmental condition varies with users' location, a difference of one or two inches can mean the difference between a strong and a weak signal. Even a slight change in PC orientation can improve a wireless connection.
- If you have installed the Configuration Utility, you may use the Signal Strength display in the Link Info to determine the best location and orientation for a wireless network connection.

LED Indication

The yellow LED of Wireless LAN *CF Card* performs identical functions when indicating the operational status of the card.

Advanced Configuration

Configuration

Mode (Network Mode)

1. **Ad-Hoc:** The Ad-Hoc network is also known as a peer-to-peer network. An Ad-Hoc networking do not need Access Point. Instead, the Ad-Hoc network is a loose association of wireless computers that can communicate with each other using Wireless LAN CF Card in Ad-Hoc Mode
2. **Infrastructure:** In a wireless infrastructure network, wireless stations communicate with an Access Point to connect to a wired network. An infrastructure network also can consist of multiple Access Points. This can extend the coverage area of wireless network. In this configuration, the wireless network consists of cells. Each cell is a single Access Point that has different frequency channel to prevent from interference each other. A wireless station can move from one Access Point to another without losing the network connection.

SSID

The SSID is the name of wireless network for Ad-Hoc or Infrastructure mode. To add a Wireless LAN CF Card to an existing wireless network, configure this one with the name of the wireless network

Tx Rate

The Fixed 1, 2, 5.5, 11Mb/s or Fully Auto transmit rates can be selected for Wireless LAN

Card. Basically, the Fully Auto setting can allow the CF Card to automatically switch to a higher Tx rate for better throughput in most environment. A fixed rate setting does not allow CF Card to re-transmit at a lower rate even as a result of many retransmissions.

PS Mode (Power Saving Mode)

Enabling power saving mode can extend the battery life of the mobile notebook by allowing the CF Card to sleep to minimize the power consumption.

Channel

Wireless LAN CF Card can support up to 14 channels. But, the number of available channels must vary in different countries and regions. The Access Point must be set to a channel. To avoid radio interference, adjacent Access Point within the same infrastructure network (the same SSID) should be set to different channel. The channels of Access Points must be at least five channels apart. Instead, the Wireless LAN CF Card automatically uses the same channels as the Access Point and roams between APs in the same wireless network.

Encryption

The Wireless LAN CF Card uses WEP encryption to protect wireless data communications.

Encryption Selection

WEP uses a combination of 40-bit keys or 128-bit keys to provide security for every data transmission. In order to decode a data transmission, the identical WEP key must be used by each wireless client on the network. Choose Enable or Disable to decide whether the security of wireless network is needed or not.

Create with Passphrase

The WEP keys can be generated from a user-defined passphrase. The WEP text string is a maximum of 32 characters.

Regulatory Compliance Information

FCC Notice

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.

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.

IMPORTANT NOTE

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 minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This transmitter should be turned off when next to the body of the user.

European Notice

Equipment with CE marking complies with the R&TTE Directive (1999/5/EC), EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the European Community. Compliance with these directives implies conformity to the following European Norms or Regulations (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22) – Electromagnetic Interference
- EN 50082-1 (IEC 801-2, IEC 801-3, IEC 802-4) – Electromagnetic Immunity
- EN 60950 (IEC 60950) – Product Safety
- ETS 300 326 – Technical characteristics and test conditions for data transmission equipment operating in the 2.4GHz ISM band and using spread spectrum modulation techniques
- ETS 300 826 – Electromagnetic Compatibility (EMC) standard for 2.4GHz wide band transmission systems and High Performance Local Area Network (HIPERLAN) equipment

This product may be used in the following EU and EFTA countries: Austria, Belgium, Denmark, Finland, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and United Kingdom. Products not marked with “Not for use in France” may be used in France.

Specifications

Radio Technology	IEEE 802.11b Direct Sequence Spread Spectrum
Operating Frequency	2400-2497MHz ISM band
Modulation Schemes	DQPSK, DBPSK and CCK
Channel Available	11 channels for United States 13 channels for Europe 14 channels for Japan
Data Rate	11Mbps with fall back rates of 5.5, 2 and 1Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power	14dBm typically
Antenna Type	Two External Dipole Antennas
Operating Voltage	5VDC
Interface	PCMCIA Type II
Range Coverage	Indoor: 35 - 100 meters (depends on environment) Outdoor: 100 - 300 meters (depends on environment)
LED Indicator	Power & Link status