

... in Apple environments

ORiNOCO Technical Bulletin 014 / A

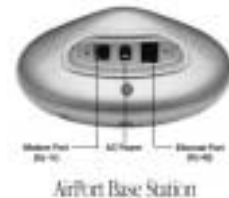
July 2000

Introduction

This bulletin addresses aspects of using the ORiNOCO PC card capability in an Apple PowerBook. The bulletin is meant for tech support staff with limited experience in using Apple equipment, but that are exposed to networking issues related to the ORiNOCO installations.

ORiNOCO PC Card and Apple AirPort

Apple Computer delivers as part of its iBook offering a product called AirPort, which includes an integrated ORiNOCO PC-Card inside the iBook attached to an integrated antenna system, and a device called the AirPort Base, which acts as an access point for home usage. AirPort is a scheme based on Lucent Technologies ORiNOCO hardware, but completely under support responsibility of Apple Computer.



Reason for including references to the AirPort system in this bulletin is to address the "grey" area of responsibility where Apple PowerBook users purchase a standard Lucent Technologies ORiNOCO PC Card and like to attach that to the Airport Base that they may own as well.

The remainder of this bulletin addresses the operational aspects of the standard ORiNOCO PC-Card within the Apple PowerBook

Software considerations.

Appearance of the device

The ORiNOCO PC Card in a PowerBook appears as a Network PC Card on the Desktop with the label "WaveLAN/IEEE."



Driver Software Summary

Using one of the following three available:

Lucent ORiNOCO/WaveLAN 6.0.4 Drivers

Available online at the following URL:

ftp://ftp.wavelan.com/pub/SOFTWARE/IEEE/PC_CARD/APPLE/v600/

Read the "Read Me First" document and Setup_Screen.PDF and then run the installation program to install these drivers on the System and reboot.

Apple AirPort 1.1 Drivers

Using these drivers will give full AirPort functionality and support for Encryption using a Lucent Silver Card with a PowerBook when connecting to an AirPort or AP-1000/AP-500/RG-1000 network

Note: See the section below for obtaining the Network Equivalent Password.

Apple AirPort 1.0 or 1.0.1 Drivers

Not possible to use Encryption with this release of the software when using a Lucent Silver Card

Determining the AirPort Network Password with AirPort 1.1

Refer to the following URL for details to this procedure on Apple's site:

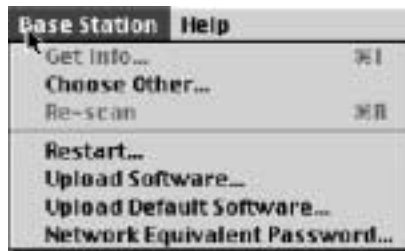
<http://til.info.apple.com/techinfo.nsf/artnum/n58574>

Note: This is only necessary when configuring non-AirPort enabled machines to connect to an AirPort Base Station, for example a PowerBook using the Lucent drivers or a Windows PC Notebook.

1. Launch the **AirPort Admin Utility** and open the Base Station configuration by selecting the Base Station and clicking on **Configure**.



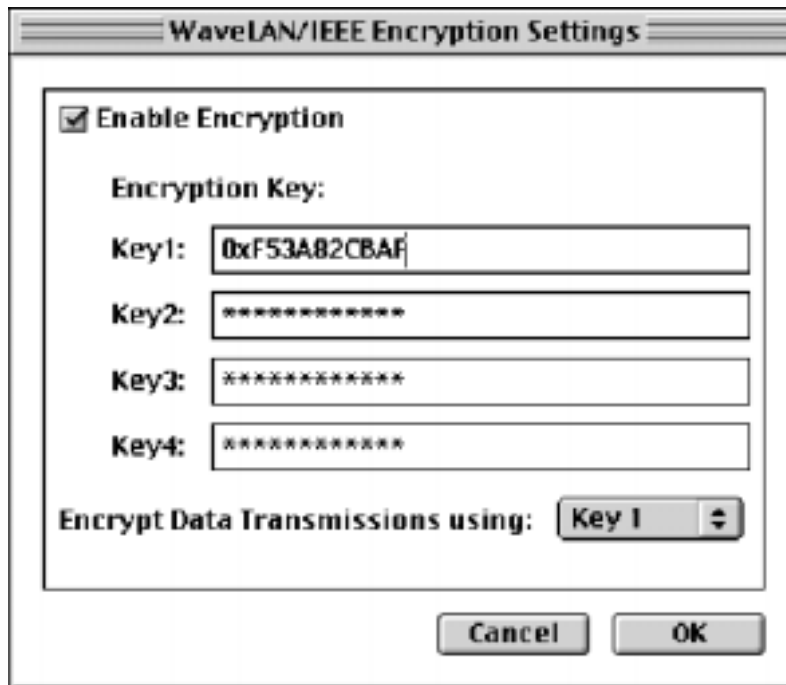
2. Select "Network Equivalent Password" from the "Base Station" menu.



3. Note the Password which will be put into Encryption Key field in the WaveLAN/IEEE Control Panel



4. Type the Hex String into the Encryption Key field with "0x" preceding the string from above.



5. Close the Control Panel and reboot the System.

ORiNOCO/WaveLAN IEEE PC Cards and AirPort interoperability Notes

Lucent Technologies Apple Drivers v 6.0.4 Installed

Capabilities:

- Connecting to an AirPort Base Station with encryption requires the procedure described above.
- Connecting to a Lucent WP-II functions as expected. Encryption and closed networks are not an issue here since it is standard operating procedures for the ORiNOCO PC Card. The only case where there might be a problem is with a firmware mismatch for the WEP encryption, much the same as in Windows under the 6.0 drivers and the older firmware.
- AirPort Admin Utility operates with a warning but this is OK.
- This is a minimum to configure the AirPort Base Station with a non-AirPort enabled PowerBook.
- There is currently no other way to configure an AirPort base station under the Macintosh that is supported.

Note: Customers will use non-standard configurators and run those under Virtual PC or from another PC if they find it on his web page. This can cause problems for the AirPort Base Station but one can recover by doing a force reload of the Base Station if they corrupt the configuration.

Caveats:

- WEP Encryption problems. When using a PC Card with firmware earlier than v6.0.4 under the 6.0.4 drivers there is a problem when connecting to a WP-II or an RG-1000.
- Unable to use the AirPort application, which is used to manually dial the modem and switch your AirPort network.
- CSM support. The Control Strip Module is only supported under AirPort v 1.1 software.
 - Monitor link quality
 - Switch networks dynamically
- NOT possible to change between WLAN networks "on the fly" or dynamically. Anytime one wants to change to a different WLAN network it requires a reboot of the machine. Much the same way one had to under Windows prior to version 6.0 drivers.
- The limitations of using Lucent Technologies' drivers and Apple's WEP encryption method in the Base Station lie in the way which Apple implemented the WEP scheme. There is a hashing done on the plain text before it leaves the client and enters the Base Station. This is overcome with the methods described here.

Apple AirPort 1.1 with Lucent PC Cards

NOTE: The PC Card must be version 4.52 firmware or later otherwise the customer will end up with a TRASHED card and it will have to be returned to the factory for repair.

Installs the "AirPort PC Card" Driver version 1.1 (System Extension)

- This driver recognizes any of the "WaveLAN/IEEE" cards.
- It does not recognize a non-IEEE card.

Capabilities:

- All AirPort functionality enabled.

Requirements for using AirPort 1.1:

- Mac OS 9.0 or later. It will not install on a Macintosh with an earlier OS. This is required due to the support of SNMP for the AirPort application for monitoring and controlling the AirPort Base Station.
- Open Transport 2.6 or later with SNMP.
- This is installed as part of AirPort 1.1 unless OS 9.0.2 or later is loaded before the update to AirPort 1.1 is done.
- Closed Networks – this option (check box) must be enabled in order to allow for a pop up to appear where one can enter the name of the closed WLAN network.
- WEP Encryption support. There seem to be no issues when accessing an encrypted WLAN network when using AirPort 1.1. Accessing either a WavePoint-II or an RG-1000 for that matter with an AirPort 1.1 enabled machine, either with a WaveLAN/IEEE card or with an OEM AirPort card poses no problem on an encrypted network.

Caveats:

- There is no reason a customer should use the Lucent Technologies Apple drivers instead of the AirPort 1.1 drivers if possible. If the customer is using an older operating system, earlier than OS 9.0 then they must either upgrade to OS 9 or later or install the Lucent Apple drivers in order to communicate with an AirPort Base Station.

Apple AirPort 1.0 with Lucent PC Cards

- There is no support for the Lucent WaveLAN/IEEE cards directly under AirPort 1.0.
- It is necessary to use the Lucent Technologies Apple drivers.
- It is however possible to use the AirPort Admin Utility from version 1.0 when using the Lucent Apple drivers. This is necessary to configure an AirPort Base Station at a minimum, but there are some issues when initially setting up the Base Station that should be addressed. Most of these issues are with regard to the way that the Base Station uploads the current/active dialup configuration from the remote machine in order to connect to the ISP via the Modem. Using a cable modem/DSL via DHCP is not an issue.
- Apple has issued a general TIL bulletin suggesting that whenever possible upgrade to AirPort 1.1.
- Apple has also issued a warning on the TIL about using mixed versions of AirPort 1.0 and 1.1 and suggests that all AirPort 1.0 files and applications be removed from the customers system when upgrading to AirPort 1.1.