No Wires Needed

Swallow 1100 PC Card/ Falcon 1100 ISA Card

User Manual

Version 2.1.0 – July 1999

User manual

Swallow 1100 PC Card/ Falcon 1100 ISA Card

No Wires Needed
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Version 2.1.0 – July 1999

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Warranty

NWN undertakes a Product Warranty of 12 months from the date of Invoice. Within the warranty period NWN repairs a faulty device free of charge or replaces it in case of irreparable damage.

Excluded from the warranty are malfunctions caused by operation outside the intended usage; by misuse or abuse; by service modifications or repairs performed by unauthorized persons or by other conditions not arising from defects in Product materials or workmanship.

The costs associated with physically replacing the defective part and re-installing are to be borne by the Buyer.

Statement of Year 2000 Compliance

Detailed information about our statement is published on our website.

http://www.nwn.com

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 the minimum distance between your body and the antenna as shown in the table below:

Integrated PCMCIA Antenna	1.8cm (0.7 inches)
Optional PC Card 2dBi antenna	1.8cm (0.7 inches)

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2 Introduction

Thank you for purchasing your No Wires Needed Swallow 1100 PC Card / Falcon 1100 ISA Card. This manual will assist you with the installation procedure.

The package you have received should contain the following items:

- Swallow 1100 PC Card
- ISA Card *(only by Falcon 1100 ISA Card)*
- External antenna *(only by Falcon 1100 ISA Card)*
- User manual
- Diskette containing Connect utility and drivers labeled Swallow 1100

Note: if anything is missing, please contact your vendor

The diskette contains the drivers and the program Connect™ that is used for managing the Swallow 1100 PC Card and establishing the wireless connection with your Local Area Network.

3 Wireless LAN basics

Wireless LAN (Local Area Networks) systems offer a great number of advantages over a traditional, wired system. Wireless LANs are more flexible, easier to setup and manage and often more cost effective than their wired equivalence.

Using radio frequency (RF) technology, WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

With wireless LANs, users can access shared information without looking for a place to plug in and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, convenience and cost advantages over traditional wired networks:

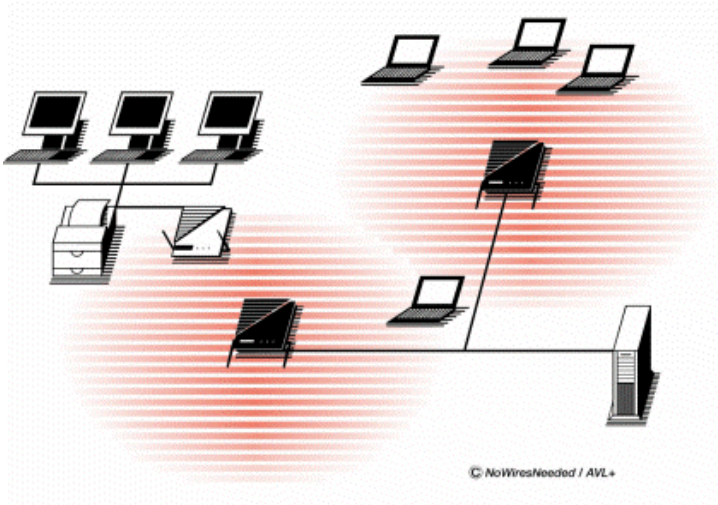
- Mobility - Wireless LAN systems can provide LAN users with access to real-time information anywhere in their organization. This mobility supports productivity and service opportunities not possible with wired networks.

- Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

- Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

- Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

- Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allows roaming over a broad area.



4 Series 1100 installation

This manual will assist you with the installation of the No Wires Needed Series 1100 products.

For a quick installation, insert the PC Card, click trough all the Windows screens and use the drivers from the installation disk to finish the installation.

Follow the paragraph of the operating system you are using for detailed installation guidelines.

If you are using the Falcon 1100 ISA Card please also pay attention to Paragraph 4.5 (Installation of external antenna).

4.1 Falcon 1100 ISA Card installation

Important: before inserting the Swallow 1100 PC Card in the PC Card Adapter, you should install the PC Card adapter.

1. Shut Down the computer
2. Remove the metal casing of the computer
3. Place the PC Card adapter in a free ISA slot. (without the Swallow 1100 PC Card)
4. Replace the metal casing from the computer
5. Switch on the computer

For Windows 95/98 some extra steps are required to complete the installation.

6. A window will appear, the SCM Plug and play Swap Box will be automatically installed

The SCM Swap Box is disabled by default.
Enabling:

7. Go to *Control Panel -> PC Card (PCMCIA)* and answer <Next>, <Next> and <Finish> to complete the installation of the PC Card adapter

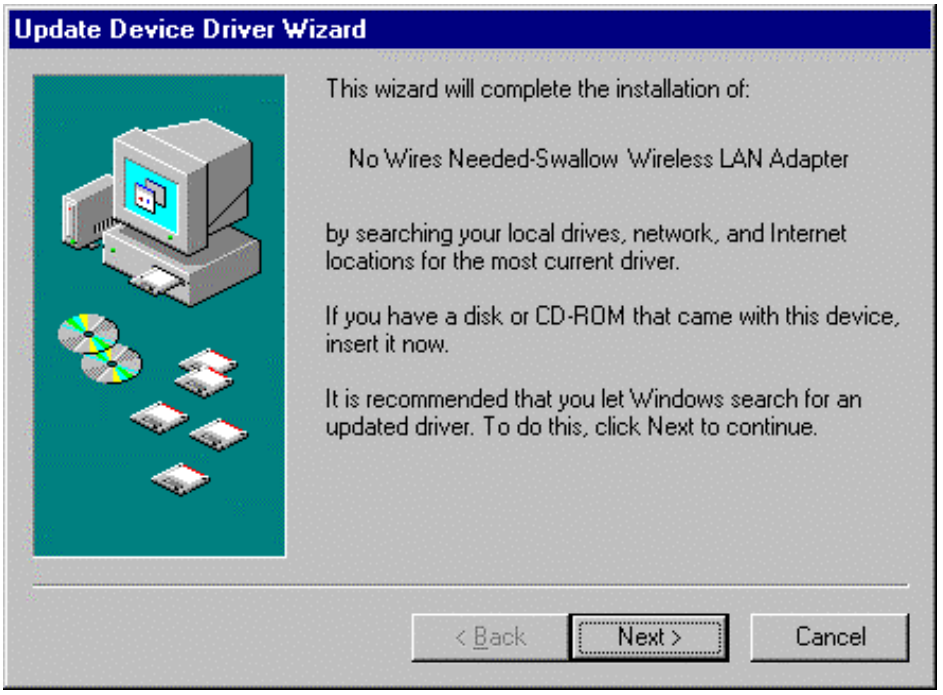
Installation of the PC Card adapter is completed.

Proceed to one of the next chapters for the Swallow 1100 PC Card installation.

4.2 Swallow 1100 Windows 95 installation

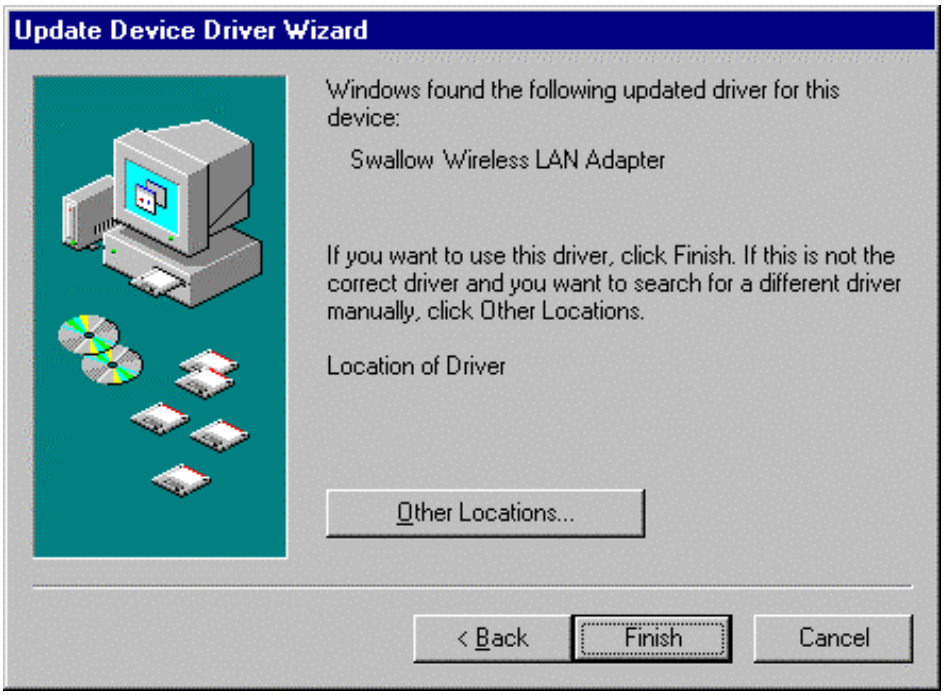
This chapter will give you assistance with the installation of the Swallow 1100 PC Card on a computer with the Windows 95 operating system.

Insert the Swallow 1100 PC Card in a free PC Card slot. After a few seconds, a window will appear, indicating you that new hardware has been found, for which software must be installed.

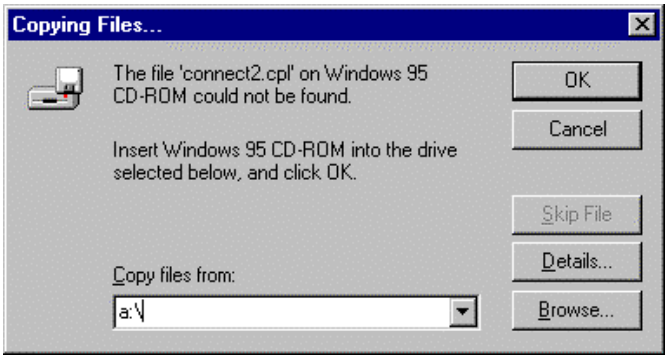


Windows starts looking for the drivers for the Swallow 1100 PC Card. Insert the diskette in the drive and click <Next>.

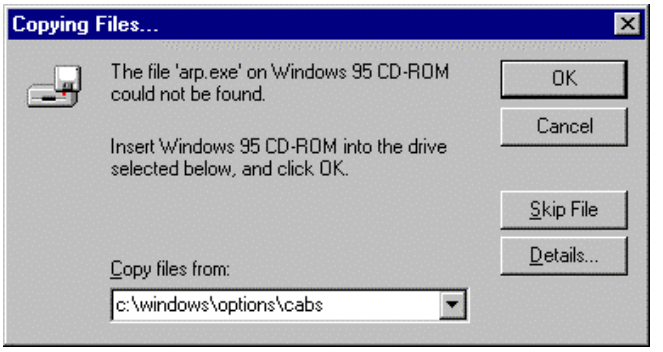
A window will appear with the drivers that are found on the disk. Click <Finish> to continue.



Windows will prompt for the Windows95 Disk 1, looking for the file “connect2.cpl”. Enter the location of the driver files. Typically this is “A:\”.



Windows starts copying the necessary files. You will be asked for the Windows 95 CD-ROM. On pre-installed laptops, the CD-ROM files can often be found in C:\WINDOWS\OPTIONS\CABS.



In most cases, you will have to reboot your computer now.

Installation of the Swallow 1100 PC Card is completed.

Proceed to chapter 5 for the explanation of the program Connect™.

4.3 Swallow 1100 Windows 98 installation

This chapter will give you assistance with the installation of the Swallow 1100 PC Card on a computer with the Windows 98 operating system.

Insert the Swallow 1100 PC Card in a free PC Card slot. After a few seconds, a window will appear, indicating that new hardware has been found, for which software must be installed.

Let Windows look for the best suitable driver for this hardware and click <Next>.

Windows starts looking for the drivers for the Swallow 1100 PC Card. Insert the floppy disk in the drive check the box “Floppy disk drives” and click <Next>.

A window will appear with the drivers that are found on the disk. Click <Next> to continue.

In most cases, you will have to reboot your computer now.

Installation of the Swallow 1100 PC Card is completed.

Proceed to chapter 5 for the explanation of the program Connect™.

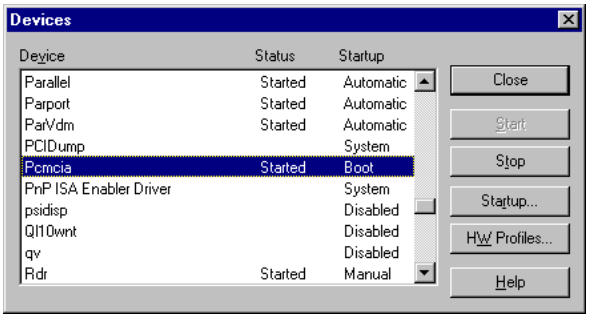
4.4 Swallow 1100 Windows NT4 installation

You need administrator privileges to be able to install the Swallow 1100 PC Card.

1. Make sure that the PC contains a PC Card drive.

2. Go to *Control Panel -> Devices* and look for *Pcmcia*

3. If the Status column indicates ‘Started’ and the Startup column indicates either ‘Boot’ or ‘Automatic’, proceed with step 5.

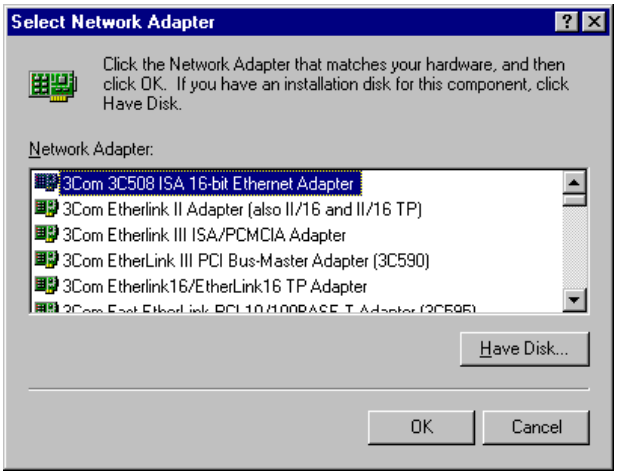


4. Click the *Startup* button and select the *Boot* radio button.

5. Go to *Control Panel -> Network* and go to the *Adapters* tab.

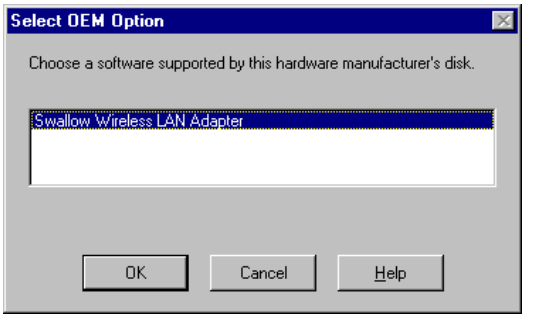
6. Click <Add>

7. A list of network adapters appears. Click the <Have Disk> button.

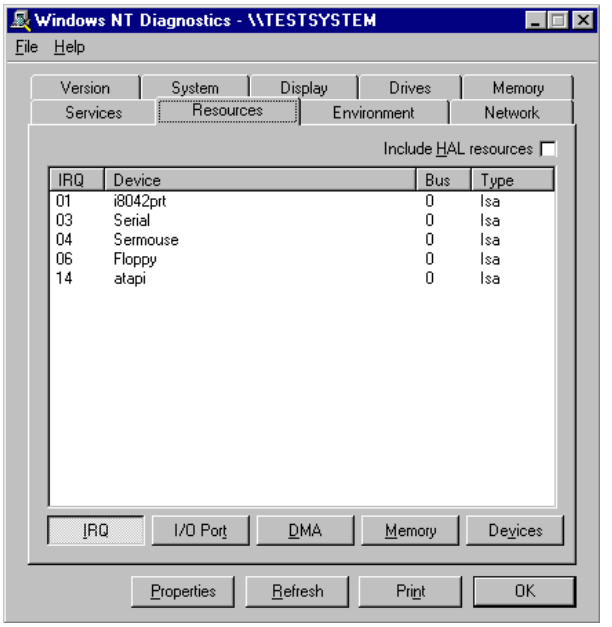


8. Indicate the path of the Swallow 1100 Installation Disk (typically A:\)

9. Click <OK>, in the dialog box containing “Swallow 1100 Wireless LAN Adapter”.

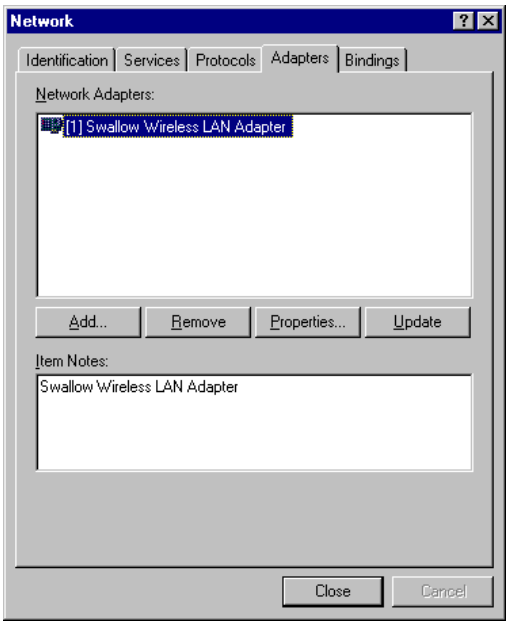


10. Now you must select an IRQ Number and an I/O Base. Windows NT can not see if the default values are conflicting with other hardware. To make sure, look in *Start -> Programs -> Administrative Tools -> Windows NT Diagnostics* and select the *Resources* tab. Here you see which IRQs are already used.



When clicking the <I/O Port> button below, you also see which I/O ports are already used. Select an unused IRQ and unused I/O base for the Swallow 1100. Note that the Swallow 1100 requires 8 I/O ports, so it will occupy the I/O Base + 7 ports. When you selected both, click <OK>.

11. You see the Swallow 1100 listed as a network adapter. Click <Close>.



12. If you have other protocols installed, they will review their bindings and ask some questions. TCP/IP for example will ask you whether you want to use DHCP or give a static IP address.

13. You are asked to reboot. Insert the Swallow 1100 and reboot.

14. After rebooting, the lower-right corner of your screen should contain an icon for *Connect*™. Double-click on this icon to configure the Swallow 1100, when necessary.

Installation of the Swallow 1100 PC Card is completed.

Proceed to chapter 5 for the explanation of the program Connect™.

4.5 Installation of the external antenna (optional)

1. Plug the external antenna onto the Swallow 1100 PC Card
2. Attach the antenna to the casing of your computer or place it on your desk
3. Insert de driver disk, startup a dos-prompt
   - *Start -> programs -> MS-Dos prompt*
   - type “a: antenna external”
4. Pull out the Swallow PC Card and re-insert for activating these settings

Installation of the external antenna is completed.

5 Connect™

Now that you have successfully installed your Swallow 1100 PC Card you can establish a connection with a network.

Connect™ is an application that shows the user the current situation of the network connection. Using Connect™ you can diagnose your connection and choose a wireless network to establish a connection with.

5.1 Appearances

When you have successfully installed the drivers and the Connect™ software on your computer the taskbar will show a new icon.

This icon can give you information about the status of your computer in relation to the wireless networks in your environment.

The wireless network icon can have three different appearances; each appearance gives you the status of the connection of your computer with the wireless network. There are three possibilities

There is no Swallow 1100 PC Card inserted in the PC Card slot of your computer.

Everything is installed but you don't have a connection with a wireless network.

Your hard- and software is ok and you have a connection with a wireless network.

By clicking the icon once with your right mousebutton a pop-up menu appears with the next options:

General info and Session info will open the dialog box of Connect™ with the respective tabsheet.

The About Connect™ option will open a box with information about the version and the copyrights.

The <Exit> option will end the program that keeps the icon in the taskbar. The icon will therefore disappear from the taskbar if you select this option. This option does not disconnect from a network (if you are connected).

Remark: when there is no icon in the taskbar, Use *Start -> Settings -> Control panel -> Wireless network* than check <Show icon in taskbar>, to display the icon.

5.2 Establishing a connection

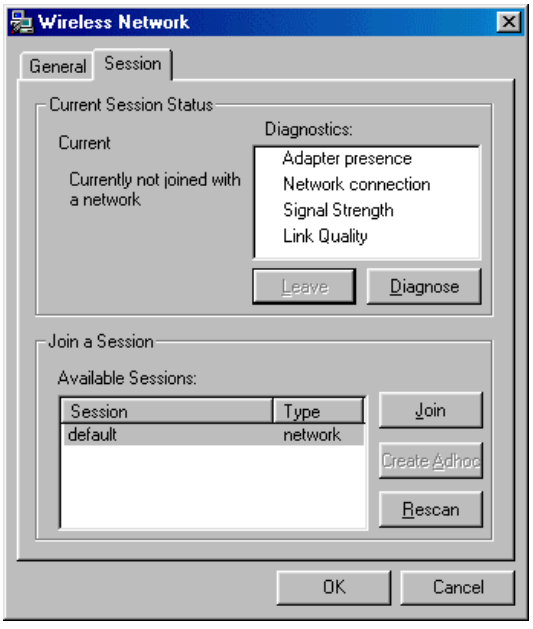
By double clicking on the icon in the taskbar with the left mousebutton the following dialog window will appear:

This window gives you information about the adapter you are using. It also displays the driver- and software versions.

By clicking the <Show icon in taskbar> checkbox you can show or hide the icon in the taskbar.

Regulatory domain gives information about were this product can be used.

By clicking the <Session> tab the next window will appear:

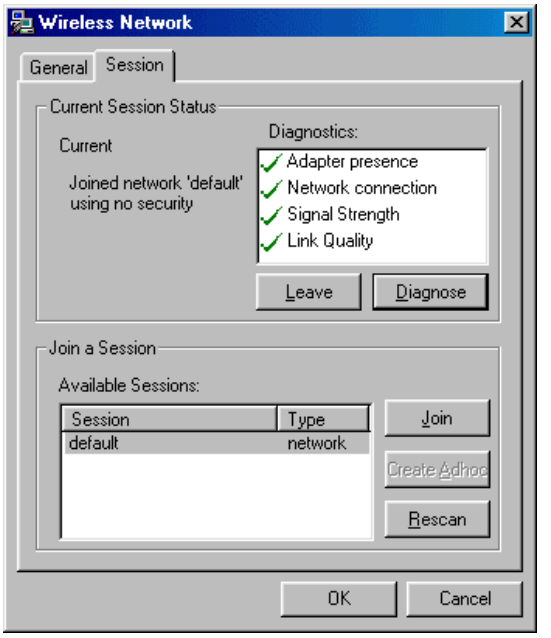


This window is divided into two parts: one that gives information about the current session, another that is displaying the available sessions.

If you have not established a network connection yet then the text “Currently not joined with a network” is shown.

In the lower half of the screen you can establish a connection to a wireless network.

First, you have to select the network you want to join. The selected network will be highlighted. If you don’t see the network you are looking for you can use the “Rescan” button. The Connect™ program will then again scan for the available networks. To join with the selected network just click the <Join> button.



After joining the network the “Current Session Status” will change into, for example “Current joined network ‘default’ using IEEE 802.11 security”. Dependent on the options set by the Network Manager.

At this moment a connection with the wireless network has been established. If you click the <Diagnose> button Connect™ will diagnose various aspects of the connection. If everything is OK, checkmarks will appear in front of each item.

When you are connected to a network you can use the <Leave> button to disconnect.

By clicking the <OK> button the dialog window will disappear and you continue working on the network.

Configuration information about the network you join will be saved in the registry. There is no configuration information stored in the Swallow 1100.

6 Network protocols

Check with your System Administrator for additional network settings.

7 Troubleshooting

The following paragraphs describe the troubleshooting tips for the various operating systems and the Connect™ utility.

- Windows 95/98
- Windows NT4
- Connect™

If these tips are not sufficiently supporting you please contact your vender.

7.1 Windows 95/98

Q: I inserted the Swallow 1100 but windows did not recognize the PC Card.
A: Proceed along the following steps

1. Check if PC Card support is installed: *Start -> Settings -> Control Panel -> PC Card*. If there is a PC Card icon in the Control Panel, double click this icon. When PC Card support is not activated, you will get the opportunity to activate this now.

2. If PC Card support is available, a window will appear with the status of the PC Card slots. If you cannot find a PC Card icon in the Control Panel, try “New Hardware” to detect your PC Card controller.

Q: I Installed the Swallow 1100 but it does not work.
A: Proceed along the following steps:

1. First, Check the lower right corner of the screen and look for the *Connect* icon in the taskbar. If it is there, and it does not show a red exclamation mark, proceed with step 3.

2. Something went wrong during the installation of the adapter.
   - Go to *Control Panel -> System* and select the 'Device Manager' tab. Check the status of the Swallow 1100 adapter under Network Adapters. Double click this item to see the status of the adapter. Check the resource tab to see if there is a resource conflict.
   - Also in *Control Panel -> System*, check if there is a reference to the Swallow 1100 under 'Other Devices'. If so, remove this reference.
   - Make sure the Swallow 1100 is detected by the PCMCIA socket. Go to *Control Panel -> PCMCIA* and see if the Swallow 1100 is listed there. If it is not, check your PCMCIA socket connections and eject and insert the Swallow 1100 again.

3. Double click the Connect icon and see if Connect provides information about the adapter in the General tab. If so, the Swallow 1100 was successfully installed on Windows 95

4. Now go to the Session tab and select Diagnose to determine your problem. If no problems were found, the connection with the Access point is also functioning correctly. If you can not use your network now, you should check your client and protocol settings in *Control Panel -> Network* such as the NT domain, your workgroup and IP address.

5. If Diagnose revealed that you do not have a connection with an Access Point, you must first join a network. Click one of the networks listed on the Sessions tab and press the Join button. If no networks are listed, check if there is an Access Point in your neighborhood and if it has been switched on. Also there should be no red lights blinking on the Access Point.

Q: The label of the second tab of Connect contains nonsense.

A: Use a newer version of the Microsoft Common Controls DLL. Contact your vendor for a software patch.

7.2 Windows NT4

Q: I inserted the Swallow 1100 before it was installed and I rebooted the system. I also have another network card. Now my other network card does not work correctly.
A: You should insert the Swallow only after you have installed it via the Network Control Panel.

Q: I installed the Swallow 1100 but it does not work. What can I do?
A: Proceed along the following steps:

1. First, check the lower-right corner of the screen and look for the *Connect* icon in the taskbar. If it is there, proceed with step 3.

2. If the *Connect* icon is not there, there is something wrong with the NT installation. Go to *Start -> Programs -> Administrative Tools -> Windows NT Diagnostics -> Event Viewer*. Make sure you are looking at the System Log. Otherwise, go to the *Log* menu item and select *System*. Look at the recent entries by double clicking.

– If the description indicates there is a resource conflict, you must adjust the IRQ or I/O Base settings. To do this, go to *Control Panel -> Network*, select the *Adapters* tab and select *Properties* of the Swallow 1100 Wireless LAN Adapter.

- If NT did not detect a resource conflict but you used I/O Base **0x278** for the Swallow 1100, there may be an undetected conflict with the Plug-and-Play features of the ISA bus. Try another I/O base.
- Make sure the Swallow 1100 is detected by the PCMCIA drive. Go to *Control Panel -> Pcmcia* and see if the Swallow 1100 is listed there. If it is not, check your PCMCIA socket connections, eject and insert the Swallow 1100 again and reboot.

3. Double click on the *Connect* icon and see if *Connect* provides information about the adapter in the *General* tab. If so, the Swallow 1100 was successfully installed on NT.

4. Now go to the *Session* tab and select *Diagnose* to determine your problem. If no problems were found, the connection with the Access Point is also functioning correctly. If you can not use your network now, you should check your client and protocol settings in *Control Panel -> Network*.

5. If *Diagnose* revealed that you do not have a connection with an Access Point, you must first join a network. Click one of the networks listed on the *Session* tab and press the *Join* button. If no networks are listed, check if there is an Access Point in your neighborhood and if it has been switched on. Also, there should be no *red* lights blinking on the Access Point.

Q: At first it seemed to work, but I ejected the Swallow 1100 and inserted it again and now it does not work any more.
A: PCMCIA hot swapping capabilities as available in Windows 95 and Windows 98 are not available in NT 4.0. Reboot your system with the Swallow inserted.

7.3 Connect™

Q: No icon in the taskbar although the checkmark is “om”.
A: Select “Run” from the start menu and type “connect2”. Press the <OK> button and in a few seconds the icon will appear on the taskbar.

8 Technical specifications Swallow 1100

Hardware compatibility

- IBM-compatible computer with a PC Card Type II

Driver support

NDIS 3.1

- Windows 95
- Windows 98
- Windows NT 4 and higher
- Linux

Standards supported

- Compliant with ETS 300 328 and ETS 300 826 (CE marked)
- IEEE 802.11 standard for Wireless LAN
- All major networking standards (including IP, IPX)

Environmental

Operating temperature (ambient):

- 0°C to 40°C (32°F to 104°F)

Humidity:

- 95%

Power specifications

Operating voltage:

- +5 V DC ±5%

Active transmitting:

- 400 mA

Active receiving:

- 250 mA

Idle status:

- 50 mA

Radio specifications

Range:

- per cell indoors approx. 50 meters (150 ft) or more
- per cell outdoors up to 300 meters (1000 ft)

Transmit power:

- +18 dBm

Frequency range:

- 2.4-2.4835 GHz, direct sequence spread spectrum

Number of Channels:

- Europe: 13 (3 non-overlapping)
- US: 11 (3 non-overlapping)
- France: 4 (1 non-overlapping)

Antenna system:

- One integrated antenna.
- One miniature coaxial connector for external antenna (optional).

Mobility:

- Seamless roaming across cell boundaries with handover

Specific features

Supported bit rates:

- 11 Mbps
- 5.5 Mbps
- 1 Mbps (IEEE 802.11 DSSS compliant devices, using ASBF™)
- 2 Mbps (IEEE 802.11 DSSS compliant devices, using ASBF™)

Data encryption:

- AirLock™ security, 128-bit key length

Utility Software:

- Connect™ User setup & diagnostics tool

Key Management:

- Automatic Dynamic Key Allocation (ADKA) through public key

Physical Dimensions

- Extended type-II PC Card 117.8 x 54.0 x 8.4 mm