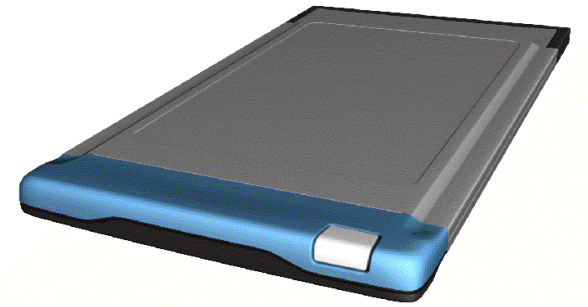
USER'S MANUAL
LSE041 BlueCard



Disclaimer:

This manual is published by **Wireless Solutions Sweden AB**, without any warranty. Improvements and changes to this manual necessitated by typographical errors, inaccuracies of current information or improvements to equipment may be made by **Wireless Solutions Sweden AB** at any time and without notice. Such changes will however be incorporated into new editions of this manual.

TABLE OF CONTENTS

1 ABBREVIATIONS

ISM	Industrial, Scientific and Medical
AC	Alternate Current
DC	Direct Current
LED	Light Emitting diode
PWM	Pulse Width Modulation
PCM	Pulse Code Modulation
FCC	Federal Communications Commission
ETS	European Telecommunications Standard
UL	Underwriters Laboratories
CTR	Common Technical Regulations
ETL	Edison Testing Laboratory
ETSI	European Telecommunications Standards Institute
EEC	European Economic Community
EMC	Electromagnetic Compatibility
LVD	Low Voltage Directive
SIG	Special Interest Group

2 DESCRIPTION

2.1 INTRODUCTION

This user's manual covers the LSE041 BlueCard adapter for Bluetooth applications certified by the Bluetooth SIG and compliant with the Bluetooth 1.0B specification. The LSE041 BlueCard supports file transfer and wireless printing (when used in conjunction with the LSE019 Printer module). The LSE041 BlueCard is designed to be installed and configured with a Microsoft Windows 98 operating system.
This manual assumes that you have a basic understanding of personal computers and computer networks and that you are familiar with the basic terminology and procedures for using the Windows 98 operating system.

2.2 PRODUCT DESCRIPTION

The LSE041 BlueCard provides wireless communication for Bluetooth applications in the 2.4 GHz ISM band. The LSE041 BlueCard is intended for insertion into a PCMCIA Card slot in a computer.

LSE041 BlueCard features:

- Bluetooth 1.0B compliant.
- Data rates up to 468 Kbps.
- Proprietary wireless printing supported. (Requires LSE019 Printer module)

LSE041 BlueCard applications:

- File transfer between PC's, PDA, mobile phones etc.
- Wireless printing.

2.3 KIT CONTENTS

The LSE041 BlueCard kit includes the following items (Fig. 1):

- The LSE041 BlueCard Bluetooth PC Card
- The Quick Installation Guide
- The LSE041 BlueCard software CD-ROM

The Printed Quick Installation Guide is an abstract of the electronic Installation Guide included on the BlueCard software CD-ROM. This printed copy will help you install your LSE041 BlueCard using the minimum set of parameters. For detailed information you may wish to consult the electronic version that is available on the software CD-ROM in both Adobe's Acrobat Portable Document (*.pdf) format and Hypertext Markup Language (HTML) format.
NOTE: If any of the above items is missing or appear to be damaged, please contact your supplier.

3 BLUETOOTH STANDARD INFORMATION

3.1 BLUETOOTH CAPABILITY STATEMENT

This product is manufactured to meet the Bluetooth specification 1.0 B.
The following profiles / interoperable products are supported:

- Service Discovery
- Wireless printing (unique profile, only in conjunction with LSE019 Printer module)
- File transfer profile
- Generic access profile

4 INSTALLATION AND CONNECTION PROCESS FOR THE BLUECARD

This chapter describes the installation of the LSE041 BlueCard, the LSE041 BlueCard adapter driver and the LSE041 BlueCard software for the Microsoft Windows 98 operating system, as well as the configuration of different printers for use with the LSE041 BlueCard adapter and a Bluetooth printer application.

NOTE: Before you proceed, please verify that all items are present as described in Kit contents. If any of the items described appear to be damaged or missing, please contact your supplier.

4.1 INSTRUCTIONS FOR INSTALLING THE BLUECARD BLUETOOTH SOFTWARE

The Microsoft Windows 98 operating system supports Plug & Play, which means that once your LSE041 BlueCard is installed, you will be able to insert, remove and re-insert it whenever you like. When you insert the card, Windows 98 will automatically recognize it, (re-)load the driver and activate card operation. When the card is removed, Windows 98 will disable the driver and disconnect power to the PC card slot.

NOTE: You are advised to always disable the card before removing it. This will allow Windows 98 to disable the driver properly. A shortcut is to click once on the PC card icon on the right side of the task bar, and select the option “Stop BlueCard Bluetooth PCCARD Driver”.

4.1.1 Installation of the LSE041 BlueCard device driver

1. Start your computer.
2. Insert the LSE041 BlueCard software CD-ROM.
3. Insert the LSE041 BlueCard into the PCMCIA slot (Fig. 1.) NOTE: The location of the PCMCIA slot varies between different computers.

Figure 1 Installation: Insert PCCard

4. “Add New Hardware Wizard” is launched automatically. Follow the instructions on each screen.
5. Choose the recommended option “Search for the best driver for your device”.

Figure 2 Installation: Add new hardware wizard

6. When prompted for a location to search for the driver, select “CD-ROM drive”.

Figure 3 Installation: Search for device drivers

7. If a dialog box appears saying Windows cannot find the device driver file “(*.sys), point out the CD-ROM drive once more.

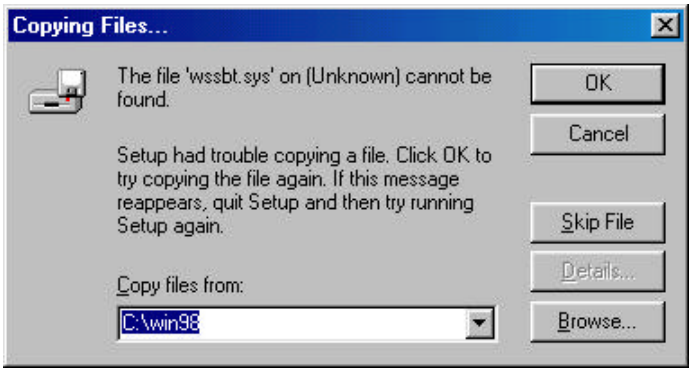


Figure 4 Installation: Locate driver

8. Finish the installation.

4.1.2 Installation of the LSE041 BlueCard software

1. Open the LSE041 BlueCard software CD-ROM.
2. Doubleclick the icon “Setup”. Follow the instructions on each screen.
3. When prompted for a serial number, enter any number (e.g. “12345”).
4. When prompted for a destination location click “Next” if the default location is acceptable, or specify an alternative location otherwise.

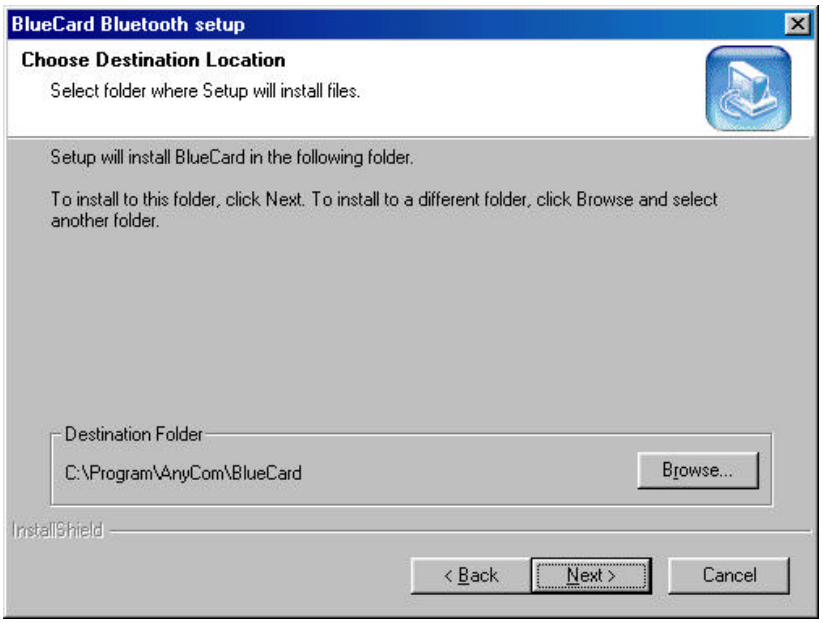


Figure 5 Installation: Choose destination location

5. When prompted for “Setup Type”, choose “Typical”.

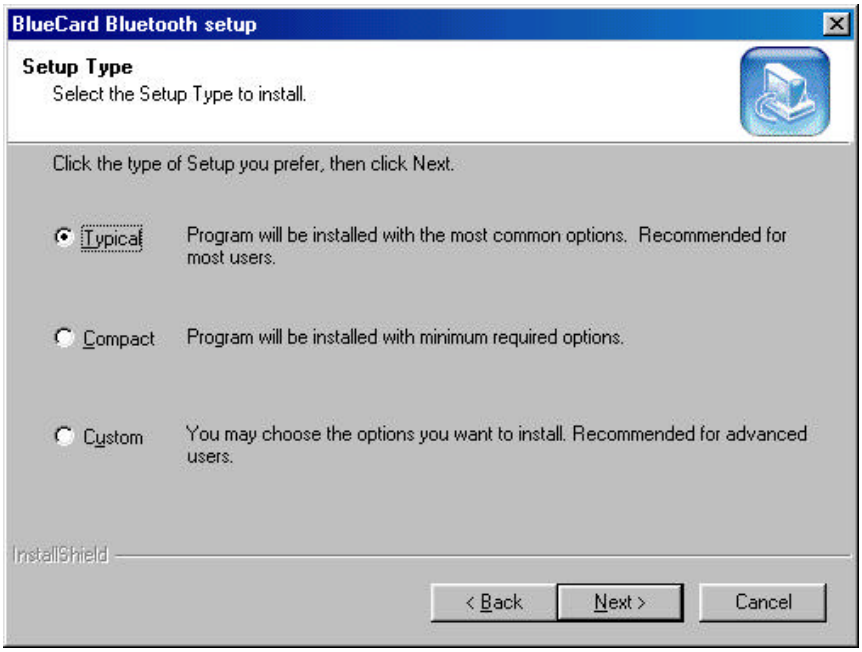


Figure 6 Installation: Type of installation

6. When asked if you want to install RedMon, answer “Yes”.
7. Installation is complete, but you must still configure a printer driver to use wireless printing before using it.

4.1.3 Configuration of the printer driver for Wireless printing

4.1.3.1 Installation instructions for how to associate an already installed Windows (LPT) driver with the Wireless printer (RPT) in Windows 98

1. Choose Start menu/Settings/Printers. Right-click the printer to use and select “Properties”.
2. Select the “Details” tab and select a port of type RPT. If you do not see a free RPT port, add one by clicking the “Add Port” button and select “Redirected Port”.
3. Click the “Configure Port” (alt. “Port Settings”) button. Click the “Browse” button and locate “WPPClient” (it should be in C:/Program files/AnyCom/BlueCard if you used the default settings in 4.1.2 above). Select and open WPPClient.
   - DO NOT add any arguments to “Arguments for this program are:” edit field.
   - Select “Program handles output” in the “Output” menu.
   - Close this dialog box by clicking the OK button.
4. Close the “Printer” dialog box by clicking the OK button. A Bluecard dialog box will appear, confirming that installation is successful. If you are not about to print anything immediately, click the “Abort” button.

4.1.3.2 Installation instructions for how to associate a new printer driver with the Wireless printer (Windows 98)

1. Choose Start menu/Settings/Printers. Double-click the “Add Printer” icon.
2. Select “My Computer” (alt. “Local printer”).
3. Select your printer from the list or click the “Have Disk” button and locate your drivers.
4. Select a port of type RPT. (If you do not see an RPT port, select e.g. LPT1.) Click Next (DO NOT click the “Configure port” button).
5. Finish the driver installation WITHOUT printing a test page.
6. Choose Start Menu/Settings/Printers and right-click the newly installed printer. Select “Properties” in the popup menu.
7. Select the “Details” tab and select a port of type RPT. If you do not see a free RPT port, add one by clicking the “Add port” button and select “Redirected Port”.
8. Click the “Configure Port” (alt. “Port Settings”) button. Click the “Browse” button and locate WPPClient (it should be in C:/Program files/AnyCom/BlueCard if you used the deault settings in 4.1.2 above). Select and open WPPClient.
   - DO NOT add any arguments to “Arguments for this program are:” edit field.
   - Select “Program handles output” in the “Output” menu.
   - Close this dialog box by clicking the OK button.
9. Close the “Printer” dialog box by clicking the OK button and you are done.

After you have finished the installation, you should now be able to print via the Bluetooth printer application by simply choosing “Print” from any application and selecting the printer for which you followed the instructions above.

4.1.3.3 Installation instructions how to associate the Windows 98 printer driver with the Wireless printer when changing printer

If you want to use the printer adapter on a different printer than the printer originally used, you will need to reconfigure the software to associate the correct driver with the correct printer according to the following:

1. Run Start Menu/Programs/BlueCard/Printing Configuration. The Configuration Dialog below will appear.
2. Right-click the desired printer and select “Remove Association”
3. Click OK to close the Configuration Dialog.
4. The next time you try to print, the software will search for the printer and configure itself to associate this printer driver with the detected printer.

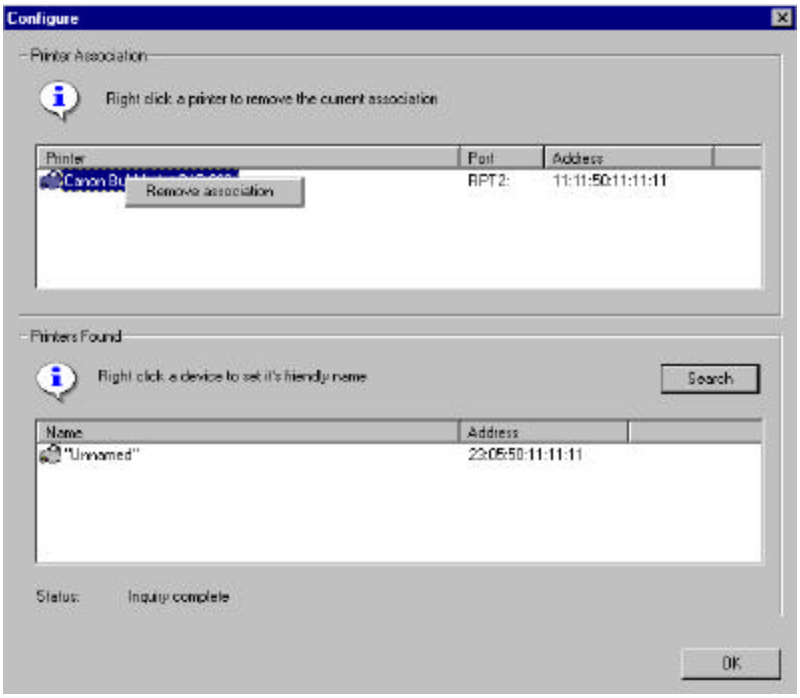


Figure 7 Printing Configuration Dialog

4.1.4 Instructions for setting a friendly name for the LSE019 Printer Module

You may set a friendly name for your Printer Adpater. This name will be displayed when searching for available printers. Do

- Run Start Menu/Programs/BlueCard/Printing Configuration. The Configuration Dialog above will appear.
- Click the “Search” button to search for available printers.
- When you see your Printer Module, right-click it and select “Set Friendly Name”.
- A Dialog box will appear prompting you for a friendly name.
- The printer application will connect to the Printer Module and set the friendly name.
- Click OK to close the Configuration Dialog.
- The next time you search for printers the Printer Module’s friendly name will be displayed.

4.1.5 Instructions for running the File Transfer Application

First make sure that you have finished steps 4.1.1 and 4.1.2 above for the computers on which you want to run the File Transfer Profile.

1. Choose “Start menu/Program/BlueCard/File transfer” on both computers. (The order is of no significance.) The Bluetooth File Transfer Window will appear on both screens.

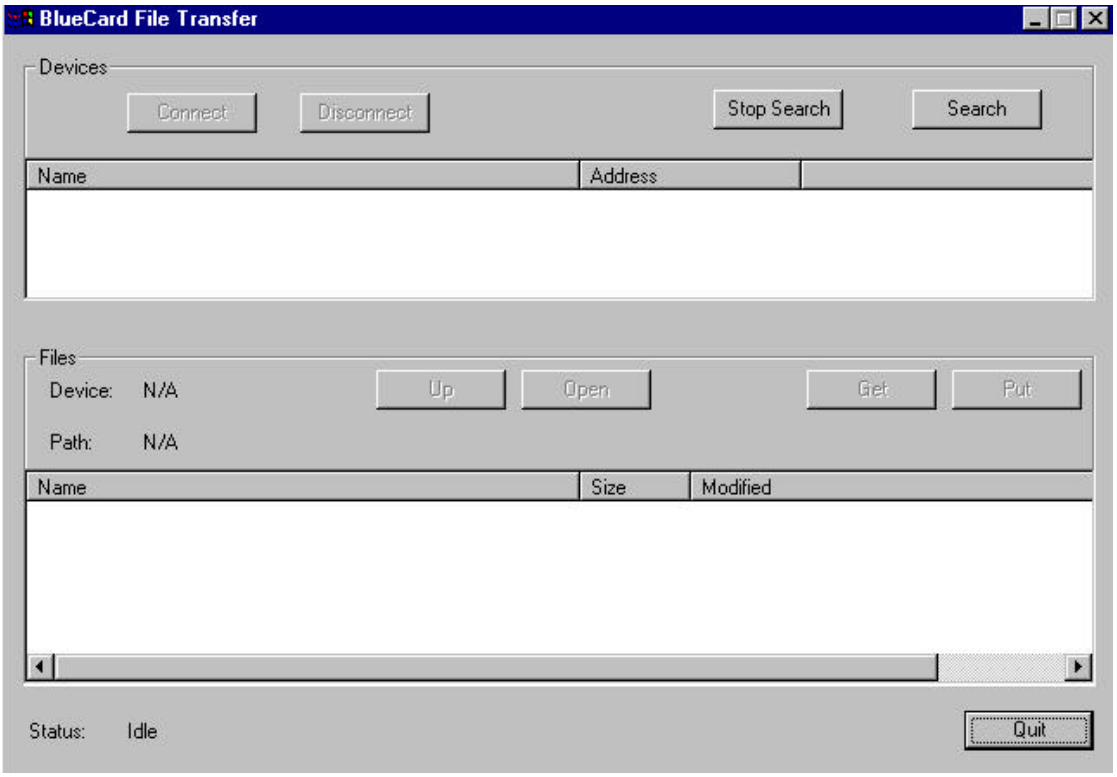


Figure 8 FileTransfer: Idle

2. Click the “Search”-button on your laptop’s FileTransfer window. The application will continue searching for other devices supporting File Transfer until it finds at least one other device. If this is not the correct device, click search again. Continue until the wanted device is found.

3. If the search is successful, the source PC’s BlueCard friendly name and hardware address will appear in the “Devices” pane. **N.B**: Your device may find other devices while searching. Make sure to choose the correct one when establishing connection (next step), or relocate/deactivate the undesired devices.

4. In order to establish connection with the remote PC, select the desired device and click “Connect” in the “Devices” section.

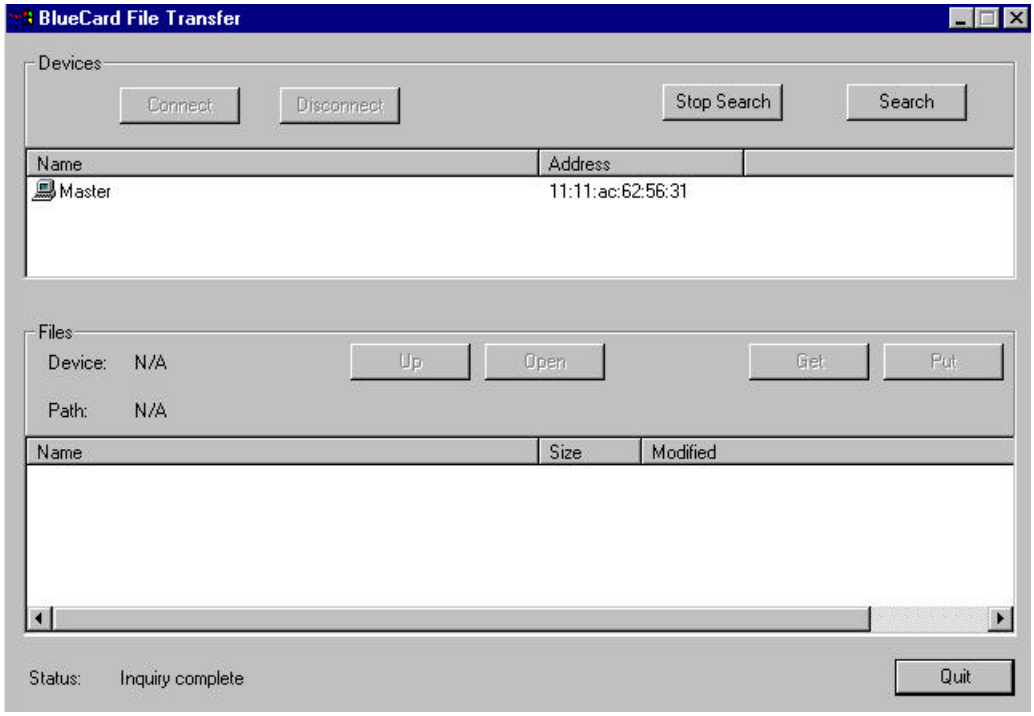


Figure 9 File Transfer: Device found

Once connected, you will see a folder listing of the remote PC's server root directory.

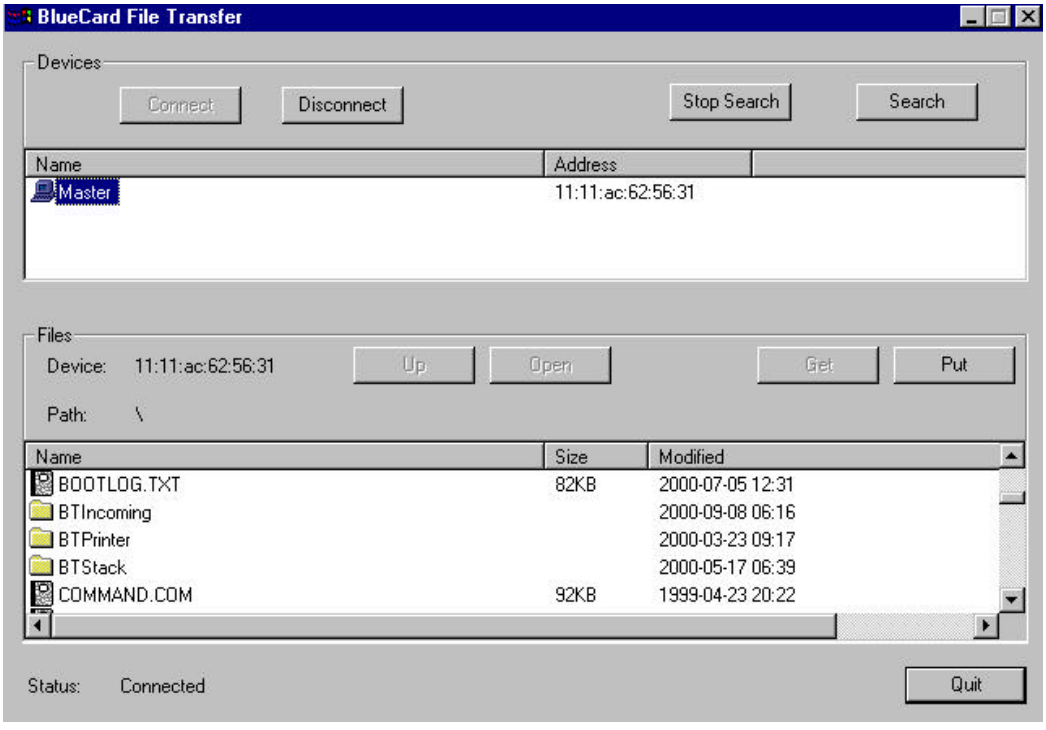


Figure 10 FileTransfer: Connected

5. In order to transfer a file **to** your PC **from** the remote PC (“Get”), first search for the desired file in the “Files” pane. To open a folder, mark it and click “Open”. To step up one level in the folder/directory hierarchy, click “Up”. When you have found the file, select it and click the “Get” button. You will be prompted for a place on your local disks where to save the file. If you select “Use this as your default download directory”, you will not be prompted again. Future downloaded files will be saved in the default directory. If you do not select “Use this as default download directory”, you will be prompted for a location every time. If you selected “Use this as your default download directory” once, you may change the default download directory by using the “**Get to…**” menu command after right-clicking a file.

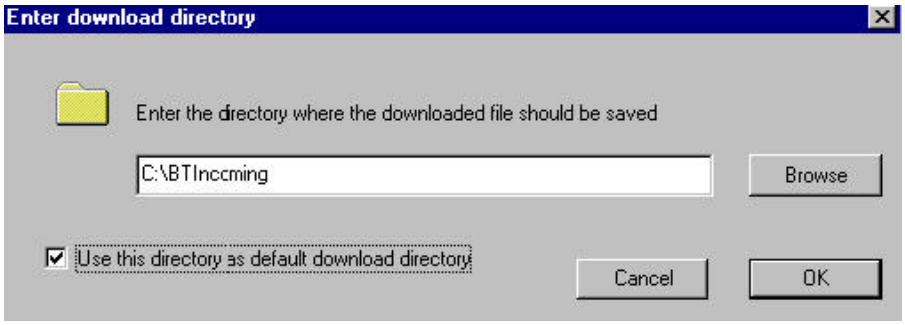


Figure 11 Enter download directory

In order to transfer a file **from** your PC **to** the remote PC (“Put”), first decide where on the remote PC you want to put the file. Under the “Files” section, use the “Up” and “Open” buttons to navigate to the desired destination, shown after “Path:” Then click the “Put” button under the “Files” section. A new window, “Open”, will appear. Search for the file you want to transfer, mark it and click the “Open” button.

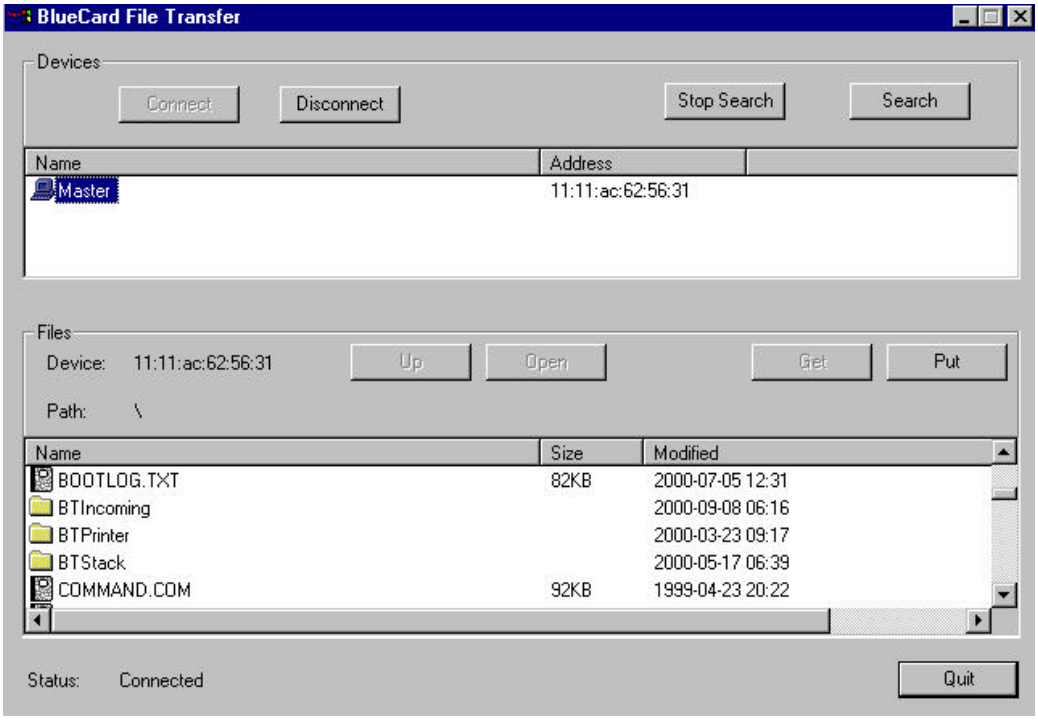


Figure 12 FileTransfer: Putting a file

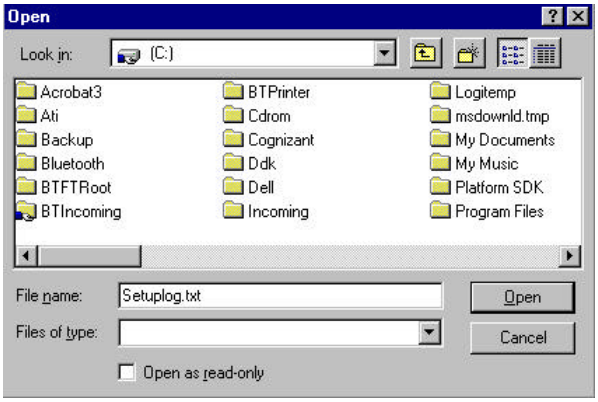


Figure 13 FileTransfer: Selecting a file to put

6. In order to disconnect from the other device, select the connected device and click the "Disconnect"-button in the "Devices" section. (If you choose an unconnected device the "Disconnect" button will simply remain disabled.)

4.2 LED INDICATORS

The LSE041 BlueCard has 2 LED indicators to report Data Transmission Rate and Bluetooth-Power-On. The LED's placing and indications are shown in Fig. 4 below.

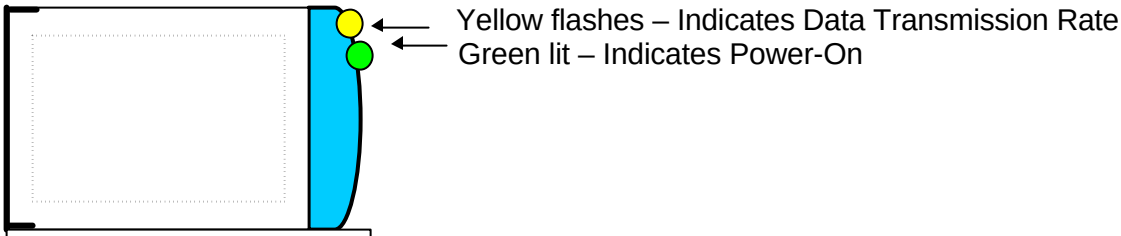


Figure 14 LED indicators

4.3 TROUBLE SHOOTING

No Bluetooth printing window appears when you print.
→ Something may be wrong with the printer settings.
Go to the "Printer" and "Port settings" (alt. "Configure Port") and verify that everything looks OK. Check that the path to the WppClient.exe agrees with the path in the RPT-port configurations. Check also that the correct RPT-port is selected for this printer.

The Bluetooth printing window appears but the Bluetooth status never leaves Idle.
→ The BTPrinter application can not find the LSE041 BlueCard or the local Bluetooth device fails to answer to the reset command.
Make sure that the LSE041 BlueCard is properly inserted into the slot. Try ejecting the card and inserting it again.

The Bluetooth printing window appears but you get the error: "Couldn't find any Bluetooth units within range".

→ The Bluetooth unit fails to discover other Bluetooth units or an unknown Bluetooth device answers before the Bluetooth printer adapter does.
Try resetting the Bluetooth printer adapter by disconnecting the power and removing it from the printer. Put it back on the printer and reconnect the power. Try moving the printer closer to the PC.

Inquiry succeeds but connect fails.
→ The Bluetooth printer adapter needs a reset.
Try reseting the Bluetooth Printer adapter by disconnecting the power and removing it from the printer. Put it back on the printer and reconnect the power. Also, try moving the printer closer to the PC.

The printer prints unreadable characters.
→ You may have swapped printer adapters with another printer using a different driver.
Remove the Bluetooth BdAdress setting from the RedMon settings and reassociate the printer with the driver: open Start Menu/Settings/Printers, right-click the printer and select "Properties", select "Details" tab and click the "Port settings" (alt. "Configure Port") button, delete the "–bdaddress" setting from the "Arguments for this program are:" edit field. Close all dialogs boxes and retry printing.

An error alert appears saying "Failed to open serial port/driver" or "Another process is already using the Bluetooth stack".
→ Either the driver isn't started or another application is currently using the LSE041 BlueCard.
Make sure that the LSE041 BlueCard is properly inserted into the slot and that the driver is installed and running. Quit other applications that may use the Bluetooth software/card. Try ejecting the card and reinserting it. N.B. Always make sure the printer application has finished before ejecting the card! If this does not help, you must restart the computer.

When trying to print, an error alert appears saying: "Sw mismatch".
→ There is a software version mismatch between the PC software and the printer adapter software.
Get a software upgrade or try printing anyway by clicking the OK button (it may work).

5 TECHNICAL SPECIFICATIONS

Radio specifications

Frequency range	2.402 – 2.495 GHz, programmable for specific national regulations.
Supported specification	Bluetooth 1.0 B.
Output power	0 dBm
Power management	Active and passive power saving mode.
Sensitivity	- 74 dBm
Modulation and bit-rate	Frequency hopping Spread Spectrum (FHSS) Gaussian Frequency Shift Keying (GFSK), 1 Mbps.
Antenna	Integrated

Electrical characteristics

Power supply	5 V from PC Card slot.

Power consumption	105 mA (peak) 0.55 mA (stand-by)
Physical interface	Type II PC Card slot.
Indicators	Data traffic, Connect status.

Mechanical specifications

Dimensions	PC Card 85.6 x 54 x 5 mm with extension.

Environment

Operating temperature	0º C to +55º C.
Storage temperature	-20º C to +70º C.
Humidity	5-95% non condensing.

Configuration and security

Drivers, setup and configuration	Drivers for Windows 98.
Upgrade of software in PC Card	From host PC.

Compliance

Radio	FCC part 15.247 (US), ETS 300 328 (Europe)
EMC	FCC part 15 C (US), ETS 300 826 (Europe)
Safety	UL 1950 (US), EN 60950 (Europe)
Approval marks	CE, ETL

6 REGULATIONS

6.1 EUROPEAN COMPLIANCE

EMC, Electrical Safety and Radio EC Directive Compliance

The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

- Council Directive 1999/5/EC of the European Parliament and the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

- Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of Member States relating to electromagnetic compatibility (EMC).

- Council Directive 73/23/EEC of 19 february 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

Each of the above mentioned directives amended by

- Council Directive 93/68/EEC of 22 July 1993 on the harmonization of the CE marking requirements.

A “Declaration of Conformity” in accordance with the relevant standards to confirm compliance with the above mentioned directives has been made and is on file at Wireless Solutions Sweden AB, Sundbyberg, Sweden.

6.2 FCC (US) COMPLIANCE

FCC R.F. Interference Statement

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.

This equipment has been tested and found to comply with the limits for class B Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this 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.

- Reorient 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 to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Any changes or modifications not expressly approved by Wireless Solutions Sweden AB could void the user's authority to operate the equipment.

6.3 EXPOSURE TO RADIO FREQUENCY RADIATION

The radiated output power of the equipment is far below the FCC radio frequency exposure limits. Neverthless, it is advised to use the equipment in such a manner that the potential for human contact during normal operation is minimized.

6.4 IMPORTANT SAFETY INFORMATION

6.4.1 SAFETY WARNINGS !

Interference
All wireless devices may get interference, which could affect performance.

Switch off in aircraft
Wireless devices can cause interference. Using them on aircraft is illegal.

Switch off when refueling
Do not use the wireless PC Card at a refueling point. Do not use near fuel or chemicals.

Switch off near blasting
Do not use the PC Card where blasting is in progress. Observe restrictions, and follow any regulations or rules.

Switch off near medical equipment.
Follow all regulations and rules in hospitals. Do not use the PC Card near medical equipment.

Use qualified service
Only qualified service personnel must repair equipment.

Accessories
Use only approved accessories. Do not connect incompatible products.

Connecting to other devices
When connecting to any other device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

Chemicals
Do not store or use the PC Card in places where it may be exposed to chemicals or chemical vapors. Doing so will lead to fires or electric shocks.

Prohibited areas
Do not use the PC Card when the use of a Bluetooth application is prohibited or when it may cause interference or danger.

Humid or dusty places
Do not store or use the PC Card in humid or dusty places. Doing so could lead to fires or electric shocks.

Do not disassemble or modify the PC Card in any way
Do not disassemble or modify the PC Card in any way. Doing so without the express approval by the manufacturer will void user authority to operate the equipment and may lead to fires or electric shocks.

Switch off near a microwave oven in use
Do not use the Bluetooth application close to a microwave oven in use. There may be a risk that the system will be disturbed.

Heat, direct sunlight
Avoid installing the PC Card near sources of heat or in direct sunlight.

Use only appropriate Region settings
Use only the region setting appropriate for the area where the Bluetooth application is used at the present time. Using the LSE041 Bluetooth PC Card in any other region or with an incorrect region setting may be illegal.

Connect only to SELV circuits
The PC Card is classified as an SELV (safety extra low voltage) circuit according to the electrical safety standards EN 60950/IEC 950/UL 1950 (Safety of information technology equipment). For this classification to be maintained, equipment to which the unit is connected must also be classified as an SELV circuit.

6.4.2 Operating Environment

Follow always any special regulations in force in any area and always power off your Bluetooth device whenever it is forbidden to use it, or when it may cause interference or danger.

When connecting the Bluetooth PC Card to another device, read it's users guide for detailed safety instructions. Do not connect incompatible products.

Electronic Devices
Most modern electronic equipment is shielded from radio frequency (RF) signals. However, certain electronic equipment may not be shielded against the RF signals from your Bluetooth device.

Hearing Aids
Some digital wireless devices may interfere with some hearing aids.

Medical Devices
Power off your Bluetooth device in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Potentially explosive atmospheres
Do not use your Bluetooth device when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause explosions.
Users are reminded of the need to observe restrictions on the use of radio equipment in fuel depots, chemical plants or where blasting operations are in progress.
Areas with a potentially explosive atmosphere are often but not always clearly marked. They include below deck on boats; chemical transfer or storage facilities; vehicles using liquefied petroleum gas (such as propane or butane); areas where the air contains chemicals or particles, such as grain, dust or metal powders; and any other area where you would normally be advised to turn off your vehicle engine.
Failure to observe these instructions may lead to legal action.