

# Bluetooth FAQ

This document is an FAQ (Frequently Asked Questions) about Bluetooth in general and Logitech products using Bluetooth technology:

- Logitech® MX900™ Bluetooth® optical mouse
- Logitech® Cordless Desktop® MX™ for Bluetooth®
- Logitech® diNovo Media Desktop™

**Logitech®  
diNovo  
Media  
Desktop™**



**Logitech®  
Cordless  
Desktop® MX™  
for Bluetooth®**



**Logitech® MX900™  
Bluetooth® optical  
mouse**

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## 1. What you should know about Bluetooth

### 1.1. What is Bluetooth?

Bluetooth is a standard wireless technology that lets users make effortless, fast connections between appropriate mobile devices and computers. Bluetooth ensures protection from interference, increases data security, and provides greater wireless range. It is a global standard and is backed by major industry leaders in the telecommunications, computer and consumer electronics (such as 3Com, Ericsson, IBM, Intel, Microsoft, Motorola, Nokia, Sony and Toshiba).

Bluetooth is based on a low-cost, low power, short-range radio link. Bluetooth cuts the cords that used to tie up digital devices. When two Bluetooth equipped devices come within 10 meters range of each other, they can establish a connection together. And because Bluetooth utilizes a radio-based link, it doesn't require a line-of-sight connection in order to communicate. Bluetooth uses the global available and unlicensed 2.4 GHz ISM band. As opposed to other 2.4 GHz technologies, Bluetooth is a universal standard.

In the future, Bluetooth is likely to be standard in tens of millions of mobile phones, PCs, laptops and a whole range of other electronic devices. As a result, the market is going to demand new innovative applications, value-added services, end-to-end solutions and much more. The possibilities opened up really are limitless, and because the radio frequency used is globally available, Bluetooth can offer fast and secure access to wireless connectivity all over the world. With potential like that, it's no wonder that Bluetooth is set to become the fastest adopted technology in history.

For more information on Bluetooth, please visit the official Bluetooth site: [www.bluetooth.com](http://www.bluetooth.com)

### 1.2. What is the "Bluetooth SIG"?

The Bluetooth Special Interest Group (SIG) is a trade association of leaders in the telecommunication, computing and networking industries that is driving the development of Bluetooth specifications. Logitech is an associate member of the Bluetooth SIG and full member of the HID working group.

### 1.3. What is the range of Bluetooth?

Bluetooth wireless technology in its base implementation supports a range of 10 meters (33 feet). This is the maximum distance a connection can be maintained. Some devices on the market have more powerful transceivers and as such, are likely to have greater range. Range is also impacted by building materials and interference.

### 1.4. Do I have to be in sight of the Bluetooth wireless hub?

No, this is not a requirement. You just need to be within range of the wireless hub. For example, it is possible for a PDA and a Bluetooth enabled computer to link to each other even if they are across the room from each other or the PDA is inside a briefcase or pocket.

### 1.5. What is risk of interference?

Just as your voice can go unheard by others due to other noises, so too can Bluetooth radios go unheard due to other radio interference. This issue is especially a concern as Bluetooth wireless technology uses an unlicensed band for transmissions. Fortunately the technology, as an industry standard, was designed explicitly to be both a good citizen in these frequencies by not producing unnecessary noise but also to be able to avoid other radio waves.

### 1.6. What are the differences between Wi-Fi (802.11b) and the Bluetooth wireless technology

Bluetooth wireless technology and Wi-Fi are complementary technologies which do different things. Bluetooth wireless technology is designed to replace USB cables between cell phones, laptops, and other computing and communication devices within a 10-meter range. Wi-Fi is wireless Ethernet; it provides an extension or replacement of wired networks for dozens of computing devices.

Wireless:		Wired:
Bluetooth	<=>	USB
WiFi	<=>	Ethernet

### **1.7. Will using Wi-Fi (802.11b) and Bluetooth technologies together cause interference?**

Studies by a number of companies indicate that if the separation is more than 2 meters, in most cases there is no perceptible degradation transmitting data in either device. From two meters to about a half-meter, there is a graceful degradation. As the devices are brought in very close proximity and collocated, the degradation can be quite noticeable. Fortunately, this scenario only happens when the two systems are in the same device, and in those cases, Bluetooth hardware and Wi-Fi hardware can collaborate to dramatically improve performance.

### **1.8. What does "Pairing" mean?**

Normally, for security reasons, two Bluetooth devices need to be initially paired before they can exchange data. The term pairing (or bonding as it is sometimes referred to) means that two devices are exchanging protected passkeys which enables a higher level of security. Once devices have been paired, the information is kept and you don't have to re-pair these devices a second time. Even though devices are paired, this does not mean that they can necessarily transfer data. To do that, they must also be connected. Once devices are paired and connected, data can be transferred and two-way communication is enabled.

At certain instances, it makes sense to override the pairing procedure. E.g. When exchanging business cards between two mobile phones, it may be too cumbersome for pairing with password. Usually there is a setting in the device where you can set a lower level of security for such instances.

Please see online "How to's" to get step by step instructions for specific Bluetooth devices ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

### **1.9. When should I pair my Bluetooth device?**

Frequently, when two Bluetooth devices will regularly be used together it is best to pair the devices. This process saves the connection information (device name, passkey and other information) so automatic actions can occur between two devices.

For some devices, initial pairing is required prior to use (example: Bluetooth keyboard)

### **1.10. What is a Passkey (also called Bluetooth PIN code or Passcode)?**

A Passkey (sometimes referred to as a Passcode or PIN number) is a unique password, shared between two devices when initially paired. The Passkey is case-sensitive and can be alphanumeric, numbers, or letters. The Passkey must consist of from 1 up to 16 characters. HID devices (such as a Bluetooth keyboard) only accept numbers to build a passkey. Bluetooth devices without entry mode (such as a Bluetooth headset or mouse) generally use default passkey ("0000"). Please consult the documentation that came with your Bluetooth device to find the default code.

### **1.11. What is "discoverable mode" (also called "visible mode")?**

For one device to initially "find" another Bluetooth device, one product must be in discoverable mode ("being visible"), while the other performs a device discovery (or "device search"). The methodology for putting your product in a discoverable state varies by device and by manufacturer. Most devices allow a user to configure the default state. Please consult the documentation that came with your Bluetooth device to find specific instructions on device discovery.

For security reasons it is recommended you do not leave your devices in a discoverable state; however there are usage cases where this does make sense - a Bluetooth printer in a shared area would be a good example of a device that should always be in discoverable state.

Logitech keyboards and mice are in discoverable mode when pressing the "connect" button located on the bottom.

**1.12. What is a Bluetooth profile (also called "service")?**

A profile or service is a list of options, features or functionality available for a specific Bluetooth device. Since Bluetooth wireless technology is used for many different types of applications, it is necessary to describe how the different devices and their applications should operate together. For example, profiles or services available for a Bluetooth enabled cell phone may include Dial-up Networking, PIM Item Transfer, PIM Synchronization, Network Access, etc.

For devices to work together, it is important that each device that communicates share the same profile. Some examples:

- If you want to connect a headset to a mobile phone you will need the "headset" profile or service in both devices
- If you want to establish a dial-up session to reach the Internet from a PDA connected to a mobile phone, you would need the "dial-up networking" profile or service in both devices

An example that is not likely to work together:

- A mouse, which typically supports the HID (Human Interface Device) profile, and a mobile phone are unlikely to work due to the fact that presently, there are no phones which support the HID profile or service.

These are just some examples. When purchasing your Bluetooth device, please keep this concept in mind to ensure that the devices you purchase will work together as expected. Usually the supported profiles or services are listed in the user manual for the device.

**1.13. What is a Bluetooth stack (software)?**

A stack is a piece of software that is installed on your computer, which allows Bluetooth devices to be recognized and used. Today, a Bluetooth stack is required due to the fact that Bluetooth is not natively supported by Windows XP or Windows 2000.

## **2. What you should know about Bluetooth within Logitech Bluetooth products**

### **2.1. Which Bluetooth specification are Logitech products compatible with?**

Our products are compatible with the Bluetooth 1.1 specification, the latest released specification

### **2.2. What are the main differences between Bluetooth 1.1 and Bluetooth 1.2 specifications?**

Bluetooth 1.2 has not been released yet. The expected improvements will be mainly on quality of service for audio/video support.

### **2.3. What is the Bluetooth class of Logitech products?**

There are three Bluetooth classes: Class I, Class II and Class III. Logitech products are Class II.

### **2.4. What is the range of Logitech product?**

Our products support Bluetooth class II. This means they will work up to at least 10 meters (33 feet).

### **2.5. Which Bluetooth stack (or software) is used in Logitech products?**

The Bluetooth stack we are using is provided by Widcomm (also known as "BTW"). A stack is a piece of software that is installed on your computer, which allows Bluetooth devices to be recognized and used.

### **2.6. Why not use the Microsoft stack?**

Currently, Microsoft does not provide a Bluetooth stack as part of their OS or as a service pack (e.g. Windows XP SP1). Microsoft has licensed a few OEM notebook manufacturers for pre-installation. Microsoft is also shipping a retail Bluetooth desktop (mouse and keyboard) using this stack. This stack only works with Windows XP SP1. However, the current Microsoft implementation only allows you to print to a Bluetooth printer and to complete an internet dial-up using the notebook and a cellular phone. You are unable to synchronize, file transfer or use a Bluetooth headset with it.

### **2.7. Can I access the BIOS settings of my system with my Bluetooth keyboard?**

Yes. During boot, your Bluetooth keyboard will be seen as a standard PS/2 keyboard as long as you connect to PS2. This means you can use it to manage your BIOS setting or enter a boot password without the need for a second keyboard.

### **2.8. Can I use my Logitech product even if I have not installed the Bluetooth stack (software) yet?**

Yes. Logitech Bluetooth products are fully "Plug & Play". It means you can already use your keyboard even if you have not installed the software. Obviously, you will need to install the software to get all the features of the product. It also means you don't need to have an existing keyboard and mouse to install Logitech desktops for Bluetooth.

### **3. Connecting with Bluetooth - *Interoperability of Logitech products***

#### **3.1. What Bluetooth devices can I connect to the Bluetooth wireless hub from Logitech?**

Any device compatible with the Bluetooth 1.1 specification and featuring one or more of our supported profiles will work with our Bluetooth wireless hub. Please refer to our currently supported devices ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

#### **3.2. Can I use my Logitech Cordless Presenter with this Bluetooth wireless hub?**

Yes, the Logitech Cordless Presenter, which has the HID profile, is fully compatible with the Bluetooth wireless hub.

#### **3.3. I have a system with Bluetooth built-in (ex: notebook). Can I use the Logitech Bluetooth keyboard or mouse without using the Logitech Bluetooth wireless hub?**

We have provided our keyboard and mouse with the Bluetooth wireless hub because there are almost no desktop PCs that are Bluetooth enable and we want to provide the best Bluetooth experience to our customers. However, If you already have a system with built-in Bluetooth and the HID profile, you can directly connect the Bluetooth keyboard and mouse. The Bluetooth wireless hub will be used only to recharge your mouse - no need to plug it to your system.

However:

- you need to make sure your system's Bluetooth stack includes the HID (Human Interface Device) profile.
- you need to first pair the keyboard and mouse with the notebook bluetooth stack
- because you will be using a different stack, you will not be able to enjoy the features of the Logitech Bluetooth wireless hub, including the Mobile Phone Suite for Bluetooth application, bundled with all our Bluetooth products.

#### **3.4. I have a system with Bluetooth built-in. Can I use the Logitech products without limitation?**

We assume that you are enjoying your Bluetooth experience on your notebook computer and you wish to continue. For this reason we will NOT install our Bluetooth stack when another Bluetooth stack is detected. However, the keyboard and mouse will be fully functional, working in "embedded mode" (e.g. the bluetooth software required for your keyboard and mouse is "embedded" in the Bluetooth wireless hub). You will not be able to enjoy the extra features included in the Bluetooth hub, such as the Mobile Phone Suite for Bluetooth application, bundled with all our Bluetooth products.

#### **3.5. Will my Logitech devices work with the Microsoft BT stack?**

Yes, however with a limited feature set. Our Bluetooth products have been optimized with the Bluetooth stack we provide. We do not recommend to replace our existing stack by the Microsoft one.

#### **3.6. I have a Bluetooth PDA (or Smartphone). Can I use my Logitech keyboard or mouse with it?**

In theory, it should be possible. However, to our knowledge, there are no PDA or cell phone which have implemented the HID (Human Interface Device) profile yet. Therefore, it is not possible yet, but should be in the future.

## 4. Learn what you can do with the Bluetooth wireless hub

### 4.1. What can I do with the wireless hub?

You are supplied with a Bluetooth Wireless Hub which makes your PC a Bluetooth control center. Once you've installed it, you can truly work differently, taking advantage of Bluetooth-enabled devices:

- Freedom from cable:
  - Use your mouse or keyboard up to 30 feet away
  - Print to a Bluetooth printer
- Get Organized:
  - Synchronize your Bluetooth PDA with your PC
  - Synchronize your mobile phone with your PC
- Share:
  - Easily transfer pictures and files between your PC and your Bluetooth mobile devices
  - Exchange files between your laptop and your desktop PC
- Communicate:
  - Use Bluetooth headset to do voice over instant messaging
  - SMS on your desktop, using the Mobile Phone Suite, bundled with all our Bluetooth products

### 4.2. What should I do to synchronize my Bluetooth PDA?

The main difference between a cradle and Bluetooth synchronization is the link that is used (e.g. wireless instead of cable). You will still need ActiveSync (PocketPC platform) or HotSync (Palm platform). You have to first pair your PDA with the Logitech Bluetooth wireless hub and then setup your PDA to use Bluetooth instead of cable. Current PDAs use the serial port profile to synchronize over BT.

Please see our online "How To's" to get step by step instructions for your specific device. ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

### 4.3. What should I do to synchronize my cell phone?

There are two ways to synchronize your cell phone with your PC's Personal Information Manager. Logitech recommends to use the Synchronization ("SYNC" or "IrMc") profile to exchange information whenever possible (i.e. most of Sony Ericsson Bluetooth phones). Supported desktop application are : MS Outlook, Outlook Express and Lotus Notes. When the Synchronization profile is not available on the device (for example Nokia cell phones), the exchange can be done over Bluetooth Serial Port. In this case, additional software provided by the phone manufacturer is required (i.e. Nokia PC Suite).

Please see our online "How To's" to get step by step instructions for your specific device. ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

### 4.4. What should I do to easily transfer pictures and files between my PC and my cell phone?

To transfer a picture over Bluetooth to the PC you should simply use your phone option "send picture over Bluetooth", then select your PC as a destination and agree on the PC side that you want to receive the pictures. They will then be located into your personal folder. In addition, you can also retrieve pictures from your cell phone.

Please see our online "How To's" to get step by step instructions for your specific device. ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

### 4.5. What should I do to do voice over Instant Messaging with my Bluetooth headset?

Voice over instant messaging using Bluetooth headset is possible today with MSN Messenger 4.7 and 5, as well as AOL Instant Messenger (AIM). You have to first pair your Bluetooth headset with the Logitech Bluetooth wireless hub and connect your headset. You can then enjoy voice over instant messaging. Some Instant Messaging applications need to be restarted after the connection of the Bluetooth headset in order to use the correct audio output channel.

Please see our online "How To's" to get step by step instructions for your specific device. ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

#### **4.6. What should I do to enable wireless printing?**

To enjoy wireless printing over Bluetooth, you have to first pair your printer with the Logitech Bluetooth wireless hub and then install the driver of the printer. Please make sure the Bluetooth printer or Bluetooth dongle for the printer is using the HCRP profile. We do not recommend using the Serial Port profile. Please see our online "How To's" to get step by step instructions for your specific device. ([www.logitech.com/bluetooth/howto](http://www.logitech.com/bluetooth/howto))

#### **4.7. All my USB ports are used. Can I use the PS/2 cable only for connecting my Logitech keyboard?**

No, a USB port is required for Bluetooth functionality. If you are unable to free-up an existing port you should add a USB hub. With just the PS/2 cable connected, only the very basic functionalities of the keyboard and numpad are available: no multimedia keys, no hot keys, no F-keys, no LCD, no mouse, no wireless hub.

#### **4.8. I have a desktop PC. Is it possible to plug the USB cable only?**

We recommend to plug both USB and PS/2 port so you can also use your keyboard during boot / or in safe mode.

#### **4.9. I have a laptop without PS/2 port. Can I just plug the USB cable?**

Yes, on a laptop, you just need to plug the USB cable

#### **4.10. Will the Bluetooth wireless hub work if the power brick is not connected?**

Yes the mouse functions and the wireless hub works without power brick. The only difference is that the mouse will not switch off and will not charge when placed on the cradle. Therefore, it is better for power consumption not to put the mouse on its cradle while it is not powered by the power-brick.

#### **4.11. What are the Bluetooth profiles supported by the Logitech products?**

The supported Bluetooth profiles are: Generic Access, Serial Port, Dial-up Networking, LAN Access, Generic Object Exchange, Object Push, File Transfer, Synchronization (SYNC), Headset, Hardcopy Cable Replacement and Human Interface Devices.

#### **4.12. Which profile should I use to synchronize my PDA?**

The Serial Port profile enables data synchronization with PDAs.

#### **4.13. Which profile should I use to synchronize my cell phone?**

Depending of the cell phone model, the Serial Port profile or SYNC profile is used. For instance, SonyEricsson T68 / T68i / T610 support the Synchronization profile. Nokia 6310 / 6310i / 8910 / 8910i supporting the Serial port profile only. Logitech recommends to use the Synchronization profile whenever possible

#### **4.14. Which profile should I use to wireless print?**

Depending on the printer model, the Serial Port profile or the HCRP (Hard Copy Replacement Profile) profile is used for wireless printing. Logitech recommends to use the HCRP profile.

#### **4.15. Which profile should I use with my Bluetooth headset?**

You should use the Headset profile.

#### **4.16. I am using the Serial Port Profile and I have been asked to setup a virtual COM port. What is it?**

A virtual COM port emulates the behavior of a physical serial port. Every computer has two COM ports (also called Serial ports) and has the capability of adding virtual COM ports. Devices can communicate to each other via a virtual serial link as long as they both are using the same COM port (example COM Port 6). For a

PC application, a virtual COM port behaves the same as a physical COM port, and therefore allows an application designed to deal with a physical serial communication (such as hotsync) to work wirelessly.

**4.17. What is the BIP profile?**

The BIP (Basic Imaging Profile) profile enables picture exchange with digital cameras in particular. It allows automatic picture size optimization depending on where the picture will be sent. For instance, if you send a picture from a digital camera to a mobile phone, it will optimize the size for fast transmission over the mobile phone network.

**4.18. Why not support the BIP profile in current Logitech products?**

Since the BIP profile has not been officially released by the Bluetooth SIG, it is not part of Logitech products yet.

## 5. Learn about Logitech diNovo Media Desktop

### 5.1. Why "diNovo"?

From the Latin "novo", new, fresh, original. De novo = from the beginning. "de" becomes "di" to suggest digital—a new way to orchestrate digital media. The whole idea is fresh new beginning, from the ground up. "diNovo" also communicates the style, elegance and premium aspect of this product

### 5.2. What is the MediaPad?

We have re-invented what a numberpad can do! The MediaPad is a Bluetooth remote commander for today's full-screen and intuitive digital media interface. The MediaPad enables to work, play and communicate with one touch.

- Work - use the MediaPad as a calculator or numpad which allows to effortlessly paste numbers into an application such as Excel
- Play - use the MediaPad to enjoy digital music with pictures or video to run a slide show from a distance; launch the Logitech Media Desktop software to view, select, and launch favorite jukebox tunes, or video clips.
- Communicate - use the MediaPad to view the current song and artist you are listening to; be notified of email and instant messages

### 5.3. What is the mouse of this product?

It is MX900 optical mouse. Please, refer to the MX900 section for more information about this device.

### 5.4. What can I do with the Bluetooth wireless hub?

Please refer to the section related to the Bluetooth wireless hub

### 5.5. What is the battery life?

The battery life for the keyboard is 6 months; for the MediaPad is 3 months and the mouse is rechargeable and gives 5 days of autonomy.

### 5.6. Is it possible to use rechargeable batteries in the keyboard or MediaPad?

Yes, however, we do not recommend using rechargeable batteries in these products.

### 5.7. What is the "123" button on the MediaPad?

The MediaPad has 3 different modes: numeric pad mode, PC remote commander mode and calculator mode. The "123" button turns the MediaPad into numeric pad mode. You can then use your MediaPad as a classic number pad.

### 5.8. What is the "NAV" button on the MediaPad?

The MediaPad has 3 different modes: numeric pad mode, PC remote commander mode and calculator mode. The "NAV" button turns the MediaPad into "PC remote commander" mode and will activate all keypad blue functions. You can then use the MediaPad to remotely command your PC.

### 5.9. What is the "+ / =" button on the MediaPad?

The MediaPad has 3 different modes: numeric pad mode, PC remote commander mode and calculator mode. The "+ / =" button turns the MediaPad into calculator mode. You can then use the MediaPad as a smart calculator. You can then past calc results to any PC application.

### 5.10. What is the "Clear Screen" button on the MediaPad?

The "clear screen" button erases the content of the MediaPad display. For instance, once you have received an email notification, you can erase it by pressing "Clear screen". You will be erasing the notification, not the email in your mailbox.

### 5.11. What is the "Media" button?

The "Media" launches the Logitech Media Desktop application. The Logitech Media Desktop is an unique application bundled with the Logitech diNovo. It is a full-screen and intuitive digital media interface that provides an easy and elegant access to all your media content: digital pictures, music and videos.

**5.12. I understand that I can receive email notifications on the display of the MediaPad. Which email clients are supported?**

The first release of our product supports the following global email applications: MS Outlook EXPRESS. We will support additional email clients via software upgrades.

**5.13. I understand that I can receive Instant Messaging notifications on the display of the MediaPad. What Instant Messaging clients are supported?**

The first release of our product supports the MSN Messenger 6 and Windows Messenger 4.7

**5.14. I am an AOL user. Can I get email and IM notifications on the MediaPad?**

Since AOL is using proprietary technologies, AOL IM notifications cannot be displayed on the MediaPad.

**5.15. I understand that I can receive Media information on the display of the MediaPad. What media players are supported?**

The first release of our product supports the following global media player applications: Windows Media Player 9, which is bundled with the product. We will support additional Media Player via software upgrades.

## 6. Learn about Logitech Cordless Desktop MX for Bluetooth

### 6.1. What are the key features of this product:

- It's all you need to put your Bluetooth devices to work for you right now, right at your desktop.
- Premium Bluetooth keyboard featuring Zero Degree Tilt design and one-touch access to favorite applications and web navigation.
- Rechargeable cordless optical mouse that maximizes precision and freedom.
- Bluetooth wireless hub makes your PC a Bluetooth control center.

### 6.2. What can I do with the Bluetooth wireless hub?

Please refer to the section related to the Bluetooth wireless hub

### 6.3. What is the battery life of this product?

The battery life for the keyboard is 6 months and the mouse is rechargeable.

### 6.4. What is the mouse of this product?

The mouse is the MX900 optical mouse. Please, refer to the MX900 section for more information about this device.

## 7. Learn about Logitech MX900 for Bluetooth

### 7.1. What can I do with the Bluetooth wireless hub?

Please refer to the section related to the Bluetooth wireless hub

### 7.2. Does the computer need to be ON for the charge to work?

No, the charge is independent from the computer hardware or the OS. It just requires the power-brick to be powered.

### 7.3. Does it harm the mouse to leave it on the cradle?

No, the charge algorithm will detect the end of charge and will conserve battery full without over-charging them. Just make sure the power-brick stays powered as long as the mouse remains on the cradle, otherwise the batteries will discharge again.

### 7.4. Do I have to remove the batteries when I plan to not use the mouse for a long period?

No, provided the brick is powering the cradle, the mouse can stay on it with its batteries in forever, as the algorithm is designed in order to take care of self-discharge. However, we strongly recommend that you do not leave the batteries in the mouse for months when it is not on its cradle or when the power-brick is not connected and powered, as the batteries could become so discharged that their life expectancy may be affected, or they could possibly leak and damage the mouse.

### 7.5. Can I interrupt a charging session before the end of charge?

Yes, you can interrupt a charging session, the mouse will just run for a shorter period of time before it needs a new recharge.

### 7.6. Is it true that if I never complete a full charge of the batteries, I might damage them or shorten their total life?

No, you won't damage the batteries nor the mouse with partial recharge. Nevertheless, we recommend to let the charge complete fully until the end as often as possible.

**7.7. Should I put the mouse on the cradle immediately each time I stop using it ? Is there an optimal period for recharge?**

No, feel free to choose which rate is the most convenient for you. We suggest that you put your mouse on its cradle each time you leave your computer for a while, e.g. at noon and at the end of the day, or each evening, etc.

**7.8. Where can I buy additional or replacement batteries?**

In many retail shops or in photo shops. Please make sure to buy the correct type and size: NiMH batteries, AA size, with a rated capacity of 1500 mAh or higher. Other types or capacities are not compatible. Both cells must be identical and should ideally come from the same set (e.g. from the same 2- or 4-cell package). They do not need to be at a particular state of charge (e.g. no need to charge them in an external charger), but should be more or less both at the same state of charge when put in the mouse. Please note that Logitech does not sell separate batteries or power bricks.

**7.9. Can I use alkaline batteries ? What will the battery life be if I use alkaline?**

Yes you can use alkaline batteries, but the battery state indication as well as the battery end of life might be wrong. Don't try to recharge alkaline batteries, you will damage your device. We recommend that you disconnect the power-brick to prevent recharge attempt if the mouse is put on the cradle by mistake.

**7.10. Can I use NiCd batteries?**

No, the mouse has not been designed for NiCd. You might damage your device if you try to use other rechargeable batteries other than NiMH. However, provided you charge them in their dedicated charger, out of the mouse, you may power the mouse with any other rechargeable AA batteries, provided you observe the same precaution as with alkaline batteries: never attempt to recharge on the cradle and do not expect an accurate battery state indication.

**7.11. Will the Bluetooth wireless hub work if the power brick is not connected?**

Yes the mouse functions without the power brick. The only difference is that the mouse will not switch off and will not charge when placed on the cradle. Therefore, it is better for power consumption not to put the mouse on its cradle while it is not being powered by the power-brick.

**7.12. Can I use another power brick or do I need to use the Logitech power brick?**

You must use the Logitech power brick. Only the specific Logitech power brick can be used to charge the mouse. The power brick is not a standard power brick but has a specific characteristic to be used only with the mouse.