



INTELLISWITCH
engineered by **Madentec**

User Guide



INTELLISWITCH
engineered by *Madentec*

All rights reserved. No part of this publication and the hardware or software described in it may be reproduced in whole or in part. This User Guide may contain samples of names and other identification to describe the features and capabilities of IntelliSwitch and should not be construed as endorsing any product or individual but simply to illustrate the application.

IntelliSwitch is a trademark of IntelliTools, licensed by Madentec Limited. Windows 95, Windows 98, Windows NT, Windows 2000, Windows ME and Windows XP, are trademarks of Microsoft Corporation. Apple and Macintosh, OS 9 and OSX are registered trademarks of Apple Computer, Inc. All other product names are trademarks or registered trademarks of their respective companies. Discover and Tracker are registered trademarks of Madentec. DiscoverPro, Envoy, and the Madentec logo are trademarks of Madentec.

Madentec Limited

www.madentec.com

Phone: 780-450-8926

Fax: 780-988-6182

© 2006 Copyright Madentec Limited

United States Radio and TV Interference Regulations

The 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.

Your IntelliSwitch has been tested and found to comply with the limits for a 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.

IntelliSwitch generates, uses 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.

Warning: Changes or modifications to this unit not expressly approved by Madentec Limited could void the user's authority to operate the equipment.

Contents

Introducing IntelliSwitch 7

Wireless Switch Access	7
How does it work?	7
What's in the box?	9
Registering IntelliSwitch	9

Installing IntelliSwitch 11

Get Started	11
Installing the Control Panel	11
Windows	13
Mac OSX	13
Connecting IntelliSwitch	15
Wired Mode	15
Wireless Mode	17

Pairing 19

Pairing one Transmitter to one Receiver	19
Pairing multiple Transmitters to the same Receiver	21
Clearing a Channel Pairing	23

General Information 25

Built-in Switches	25
Care & Maintenance	25
USB Hubs	25
Mounting	27

Specifications 33

Appendix A: Using the IntelliSwitch

Control Panel Software	35
Introduction	35
The Control Panel Icon	35
The Control Panel Tool Tray Menu	37
The Control Panel Software	37

Appendix B: Using IntelliSwitch with IntelliTools Overlays 39

Appendix C: Using IntelliSwitch with DiscoverPro Setups 41

Appendix D: Using IntelliSwitch with 3rd-Party Switch Software43

Index 45

Introducing IntelliSwitch

Wireless Switch Access

IntelliSwitch is a USB switch interface for personal computers. When combined with assistive technology software, it can enable people with disabilities to control their computer using nothing more than a single (or multiple) switch. IntelliSwitch is compatible with both Macintosh & PC computers.

IntelliSwitch can be connected to the computer in one of two ways: by plugging it directly into the computer via the supplied USB cable, or wirelessly through the supplied wireless USB receiver.

How does it work?

IntelliSwitch ships with special control panel software that allows you to configure it for use with many different software programs. The Control Panel software provides 25 preset switch configurations that allow IntelliSwitch to control dozens of software titles that already have switch access built-in. Additionally, IntelliSwitch is fully compatible with all IntelliTools software as well as DiscoverPro and Discover Envoy software from Madentec. Both OverlayMaker software from IntelliTools, and the Discover software products from Madentec allow you to further customize the functions of IntelliSwitch.



1.



2.



3.



4.



5.



6.



7.

Illustration A. - Box Contents

What's in the box?

Illustration A. shows the contents of what is included in the IntelliSwitch box.

- | | |
|------------------------------------|---------------------------------------|
| 1. IntelliSwitch Transmitter | 5. 2 x "AA" Batteries |
| 2. IntelliSwitch Wireless Receiver | 6. Quickstart Guide/Registration Card |
| 3. USB Cable | 7. Control Panel CD |
| 4. Pairing Tool | |

Registering IntelliSwitch

It is important to register your new IntelliSwitch. Please complete the registration card included and mail it as soon as possible. Registration entitles you to one year free warranty support from the date of purchase. Filling out the questionnaire on the registration card also entitles you to a free IntelliSwitch Pairing Tool, compliments of Madentec.

Note In the event that you return your IntelliSwitch for warranty support it is imperative that you keep the original shipping box. This box has been designed to protect IntelliSwitch during shipping. Any damage to IntelliSwitch caused by returning it in a box other than the original is not covered by warranty.



Illustration B. -

IntelliSwitch Transmitter & Receiver

Installing IntelliSwitch

Get Started

IntelliSwitch may be installed on any PC or Macintosh computer with an available USB port. First, you must install the IntelliSwitch control panel software, then connect IntelliSwitch to the computer in either the wired or wireless configuration.

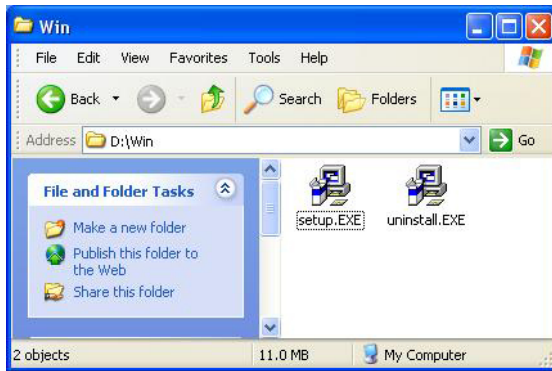
Installing the Control Panel

The IntelliTools control panel can be found on the IntelliSwitch Control Panel CD. The CD contains the installer for both Mac OSX and Windows computers. When the CD is placed in a Windows computer, you will only see the Windows installer. Likewise, when placed in a Macintosh computer, you will only see the Mac installer.

Illustration B. showing the IntelliSwitch Transmitter and Receiver

(continued on Page 13)

Windows Installers



Mac OSX Install Screens



Illustration C. - Windows & Mac Installers

Windows

1. Insert the CD-ROM into your CD drive. Browse to your CD drive (D: Drive), under My Computer. The disk is titled “IntelliSwitch CP3.1”. Double click on the disk to open it. Make sure that you do not have the IntelliSwitch or the Receiver plugged in during the installation.
2. There are two installer files. The one titled “setup.exe” is for installing, and the other, “uninstall.exe” is for removing the control panel software. Double click on setup.exe. Follow the on-screen prompts.

Mac OSX

1. Insert the CD-ROM into your CD drive. The disk is titled “IntelliSwitch CP3.1”. Double click on the disk to open it, once it mounts onto your desktop.
2. Double click on “IntelliSwitch Installer/Uninstaller”, and follow the directions on screen.
3. The installer may require that you enter an administrator password to complete the installation. (This may be your own name and password.)
4. For up to date information read the “Read Me” section in the installer.
5. Illustration C shows how you can choose to either install or uninstall from this window.

Illustration C.-Windows installers & Mac OSX install windows



Illustration D.- Wired Mode

Connecting IntelliSwitch

You may connect IntelliSwitch to any Windows or Mac computer that has an available USB port. Once the control panel software has been installed, you may connect IntelliSwitch in either wired or wireless mode. Madentec supports IntelliSwitch on computers with the following operating systems: Macintosh computers running Mac OSX, and Windows platform computers running Win98SE to Win XP. If you are using IntelliSwitch on an AAC product, please see the device manufacturer for questions regarding setup for switch access. (The equipment is to be supplied from an identified USB port complying with the requirement of Limited Power Source.)

Wired Mode

1. After installing the control panel, plug the USB cable into the IntelliSwitch, and the other end into an available USB port on your computer.
2. Plug your desired switches into the IntelliSwitch. If you are using one switch, plug it into switch jack #1. If you are using two switches, plug them into #1 & #2, and so on.
3. Turn on IntelliSwitch using the On/Off button found on its right hand side. Depending on your computer, you may see or hear feedback that new hardware has been found.
4. Open the Control Panel software and select your desired configuration (see the Control Panel software help file and appendix A on page 33 for more information on using IntelliSwitch with a variety of software).

Illustration D. showing IntelliSwitch “wired mode” with a switch plugged into jack #1.



Battery Installation



Note the symbol for "positive"



Illustration F. - Wireless Mode

Wireless Mode

1. Install the Control Panel (See page 11-13)
2. Install the provided 2 “AA” batteries. Remove the battery cover door located on the bottom of IntelliSwitch. You may use the provided tool to remove the small “Phillips” head screw that keeps the cover securely in place. Insert the batteries in the direction indicated inside the battery compartment. Replace the cover and screw. (Take care as the Pairing Tool is made from plastic).
3. Plug your desired switches into the IntelliSwitch. If you’re using one switch, plug it into switch jack #1. If you are using two switches, plug them into #1 & #2, and so on. Turn on the IntelliSwitch using the On/Off button located on its right hand side.
4. Plug the USB receiver into an available USB port on your computer. Depending on your computer, you may see or hear feedback that new hardware has been found.
5. Press any button on the transmitter – a green LED on the receiver should flash. (If it does not, go to the section titled “Pairing” on page 19).
6. Open the Control Panel software and select your desired configuration (see the Control Panel software help file and the appendix for more information on using IntelliSwitch with a variety of software).

Illustration F. showing battery installation & receiver plugged into USB port.

Note IntelliSwitch is a USB (“Universal Serial Bus”) device, and may only be used on computers that support USB. Please check with your computer hardware specialist to ensure that is the case.

Pairing

Pairing is a simple process of setting an IntelliSwitch transmitter and a USB receiver to communicate with one another. First, follow the installation procedures described on page 17 for Wireless Mode. (The pairing procedure can be performed on any computer with a USB port, even if the control panel software has not been installed.)

Note IntelliSwitch transmitters and receivers with matching serial numbers are pre-paired at the factory and should not need re-pairing. It should only be necessary if you wish to change the pairing, or if the two do not seem to be communicating.

Pairing one Transmitter to one Receiver

1. *Using the provided “Pairing Tool”, or an unfolded paper clip, press the pairing button through the hole found on the top of the USB receiver. The LED will blink on channel A, two times per second. (See Illustration G. on page 20)*
2. *Within 10 seconds, press the pairing button through the hole found on the bottom*



Illustration G. - Pairing

of the Transmitter, using the same tools. The LED on the Receiver will turn on solid for 2 seconds, and then turn off. The Transmitter and Receiver are now uniquely paired. Even if another IntelliSwitch is within range and transmitting on the same channel, it will not interfere; both devices may be used independently.

Pairing multiple Transmitters to the same Receiver

It is possible to pair up to five separate IntelliSwitch Transmitters to the same Receiver. For example, you may wish to do this in a classroom where several students may need to access the same computer at different times, but who all have their own IntelliSwitch mounted to their wheelchair.

Follow the installation procedures described on Page 17 for Wireless Mode, then perform the following steps:

1. *Using the provided “Pairing Tool”, or an unfolded paper clip, press the pairing button found on the top of the Receiver once for channel A, twice for channel B, and so on up to channel E. A green LED will flash two times per second to indicate which channel is selected. (You may press the button six times to wrap back around to channel A).*
2. *Within 10 seconds, press the pairing button found on the bottom of the Transmitter, using the same tools. The LED on the Receiver will turn on solid for 2 seconds, and then turn off. The two devices are now “paired” on the selected channel. You can test this by pressing a switch connected to the IntelliSwitch, and look to see that the LED blinks on your chosen channel on the Receiver.*
3. *Repeat this process up to four additional times, using a different channel for each time, for a total of five transmitters.*



Illustration H.- Clearing

Note If two Transmitters are paired on the same channel of a Receiver, only the most recently paired Transmitter will operate. Also, if a Transmitter has been previously paired to a lower channel than what you are trying to pair it to, you will need to clear the lower channel first. Refer to next section.

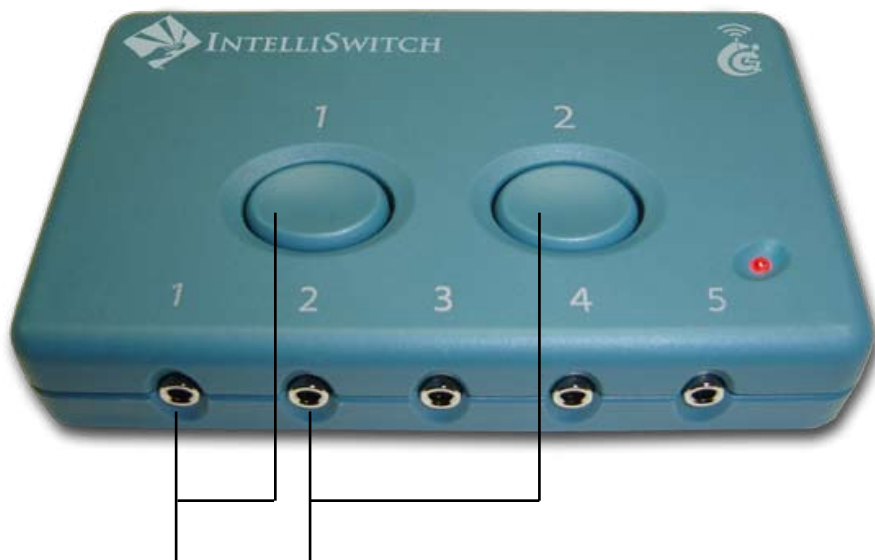
Clearing a Channel Pairing

It is important to note that the Transmitter will always transmit on the lowest channel that it has been paired to. What this means is, from the factory the two devices will be paired on Channel A. If you decide to pair the Transmitter to Channel E for instance, the original channel A should first be cleared, and then a new pairing be done on the new channel.

To clear a channel, do the following:

1. *Using the provided "Pairing Tool", or an unfolded paper clip, press the pairing button through the hole found on the top of the Receiver as many times as needed until you reach the channel you wish to clear. The green LED will blink 2 times per second as you reach each channel.*
2. *Once you are on the desired channel, press and hold the Receiver pairing button again for 5 seconds. The green LED will turn on steady for two seconds, and then turn off. The channel has now been cleared.*

Illustration H. shows using the Pairing Tool to set which channel you wish to clear on the receiver.



Functionally the same.

Illustration I.

General Information

Built-in Switches

There are two built-in switches on each Transmitter. These switches are functionally the same as the external switches 1 and 2 respectively. These built-in switches can be used by anyone, and are often convenient for the therapist or teacher to use. They have been recessed to reduce accidental switch closures.

Care & Maintenance

Clean the IntelliSwitch case using a damp cloth & warm water. If necessary, a cotton swab with isopropyl alcohol may also be used, but take care when cleaning with alcohol around the painted logos, as the alcohol may remove the paint.

If you intend to store IntelliSwitch for a long period of time unused, we recommend you remove the batteries from the transmitter. Even with the On/Off switch turned to the Off position, a small electrical current still exists and will eventually drain the batteries.



Mounting points

Illustration J.

USB Hubs

A USB hub may plug into an existing USB port which will expand the port from a single USB connection to as many as four connections.

Mounting

The IntelliSwitch includes two, 2.5"-spaced, 6-32 female brass inserts. (See illustration J.). These are used for mounting the device with 6-32 screws of appropriate length that you can pick up at your local hardware store. (6-32 thread)

Illustration J. showing Brass mounting points.

Alternatively, you could also use Velcro or "Dual Loc". Insure the mounting is secure so that the IntelliSwitch is not damaged from a fall.

Note Please note that any damage due to a fall from improper mounting, will not be covered by warranty.

FAQ

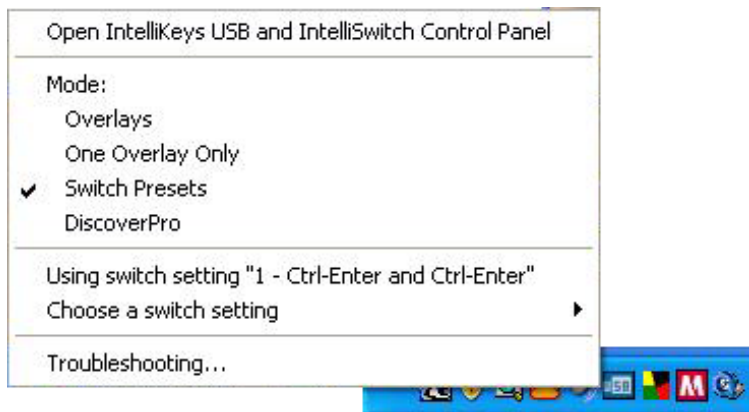
1. *Does IntelliSwitch work with Ablenet's wireless JellyBeamer switches?*
 - a. You can connect a JellyBeamer to the computer using IntelliSwitch, by plugging the JellyBeamer's receiver into one of IntelliSwitch's switch jacks (particularly useful when IntelliSwitch is being used in wired mode). However, IntelliSwitch and JellyBeamers cannot communicate wirelessly with each other.
2. *How far apart can the Transmitter and Receiver be in wireless mode?*
 - a. Over 100 feet in an open-air environment. Over 40 feet in a space with walls.
3. *How long does a set of AA batteries last?*
 - a. More than 3 months of typical use.
4. *What signal does an IntelliSwitch send to the computer?*
 - a. IntelliSwitch communicates directly with the IntelliTools Control Panel through the USB port, using a proprietary signal.
5. *What kind of switch can be plugged into IntelliSwitch?*
 - a. Any ability switch with a standard 3.5mm plug.
6. *What software can be used with IntelliSwitch?*
 - a. IntelliSwitch has built-in compatibility with all of Madentec's Discover software as well as IntelliTool's software. Through settings in the Control Panel, IntelliSwitch may also be used with most software that accepts switch input.

7. How can I “mount” the IntelliSwitch transmitter?

The IntelliSwitch includes two, 2.5”-spaced, 6-32 female brass inserts. (See illustration J. on page 26). These are used for mounting the device with screws that you can pick up at your local hardware store. (See page 27 for more information on mounting.)

Specifications

Feature	IntelliSwitch
Wireless Frequency & Type	2.4Ghz, Zigbee
No. of Switch Inputs	5
Switch Input Type	3.5mm mono
Battery Operated	2 AA Batteries
Transmission Distance	100 ft+
Transmitter Size (lxwxh)	4.9" x 2.9" x 1"
Transmitter Weight	140 Grams
Receiver size (lxwxh)	2.25" x 0.625" x 0.25"
Receiver Weight	9 grams
No. of transmitters per receiver	5
Transmitter Enclosure	Molded High Impact ABS
Computer Interface	USB
Built-in Switch Actuation Force	1.6 Newtons
Built-in Switch Lifetime	3 Million actuations
Mounting	<2.5"-spaced 6-32 female brass inserts>
Transmitter Operating Voltage	3.5V
Transmitter Operating Current	60mA (nominal)
Receiver Operating Voltage	5 V (USB-powered)
Receiver Operating Current	80mA



Windows Tray location of Control Panel icon



Icons turns RED when no
IntelliSwitch is connected

Illustration K. - Control Panel icon

Appendix A: Using the IntelliSwitch Control Panel Software

Introduction

This section provides an overview of how to use the Control Panel software to configure and use IntelliSwitch. An electronic help file provided with the Control Panel provides additional information and an explanation of all the software's features.

Note The Control Panel software serves both IntelliSwitch and IntelliKeys hardware products.

The Control Panel Icon

When installed, the Control Panel software displays a small icon in the System Tool tray on Windows computers, and the top right menu bar on Mac computers. A red icon indicates no hardware is presently connected or being used. Once IntelliSwitch is plugged in and recognized by the computer, the icon will turn blue. (You may need to press a switch, or toggle the side On/Off switch once before the Control Panel recognizes IntelliSwitch as present.)

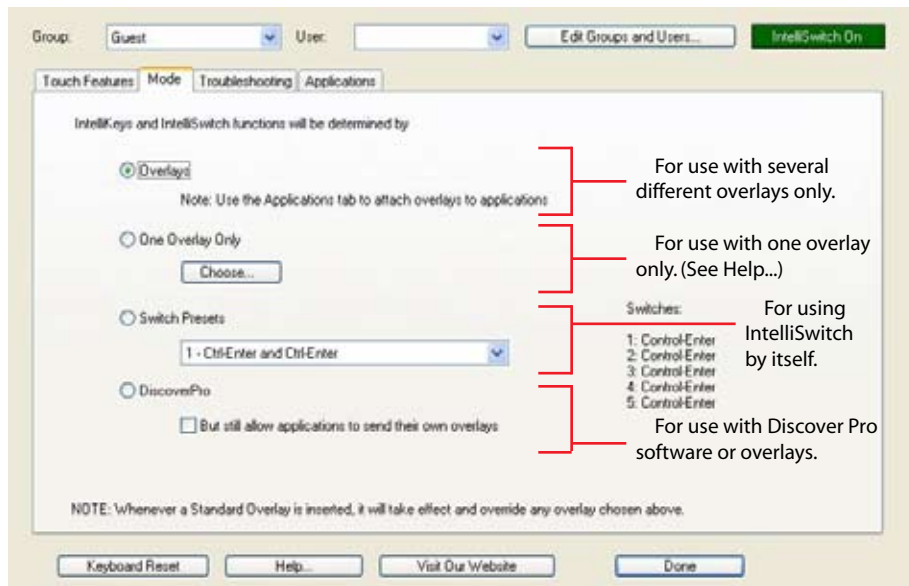


Illustration L. - The IntelliSwitch
Control Panel V 3.1

The Control Panel Tool Tray Menu

Click on the Control Panel icon to display the Control Panel menu. From here, you may open the actual Control Panel, attach a specific overlay to the currently active application, or select from a number of “shortcut” commands defining what the Control Panel will do.

The Control Panel Software

The Control Panel allows you to define the behavior of IntelliSwitch. It can be used with IntelliTools software such as Classroom Suite and OverlayMaker, Madentec’s Discover software, or many other 3rd-party switch accessible software products. You may choose to have the same configuration all the time or use different configurations depending on what application is running on the computer at any given time. You can even mix configurations and use IntelliTools Overlays for one software application and Discover Setups for another, for example.

There are 3 ways to map a function to a switch plugged into IntelliSwitch: with an Overlay, with one of 26 Presets provided in the Control Panel software, or with a DiscoverPro Setup. These choices may be made from the Control Panel menu, or customized using the “Mode” tab of the Control panel software. Each of these methods are described in detail in subsequent appendix.

Other functional aspects of IntelliSwitch may be defined using the Control Panel software. Click on the appropriate tabs and follow the on-line help to make your desired changes to how IntelliSwitch behaves.

(Help... button at lower section of the window.)

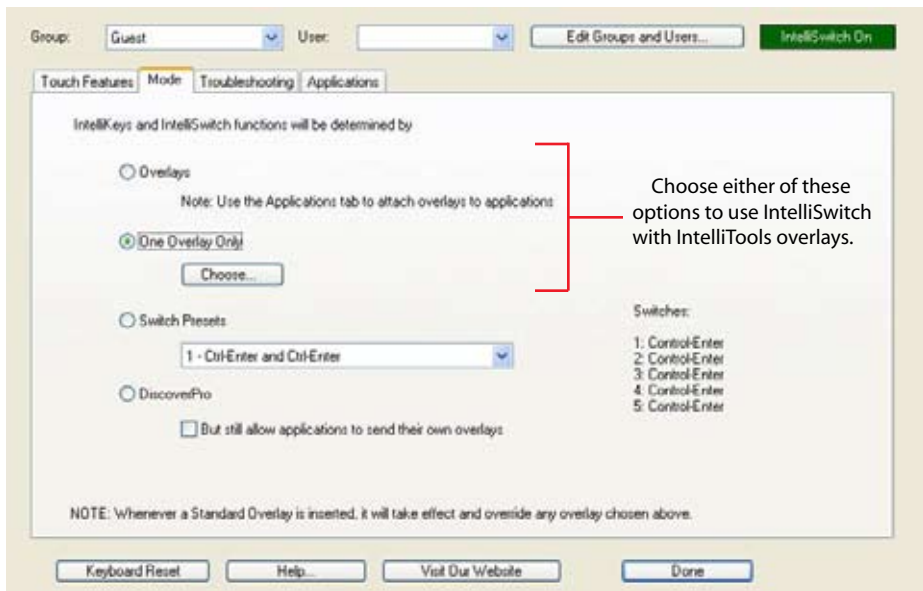


Illustration M.

Appendix B: Using IntelliSwitch with IntelliTools Overlays

If you are already familiar with how to define and use Overlays with IntelliKeys, the process is identical for IntelliSwitch. In fact, switch inputs #1 and #2 on IntelliSwitch behave exactly the same as the two switch inputs on IntelliKeys USB.

If you are not already familiar with the concept of Overlays, please refer to the Control Panel software on-line help and additional documentation on overlays available from IntelliTools.

Overlays already defined and attached to an application can be selected directly from the Control Panel tool tray menu. Alternatively, you can open the Control Panel and configure IntelliSwitch to use an Overlay by selecting the Advanced tab and choosing either the first or second radio button. If you wish to make the overlay choice application-specific, choose the top radio button on the Advanced tab page, and then click on the Applications tab. From there, you may attach specific Overlays to specific applications.

(See the on-line help for the Control Panel software, for more details. This is the Help... button at the lower section of the window).

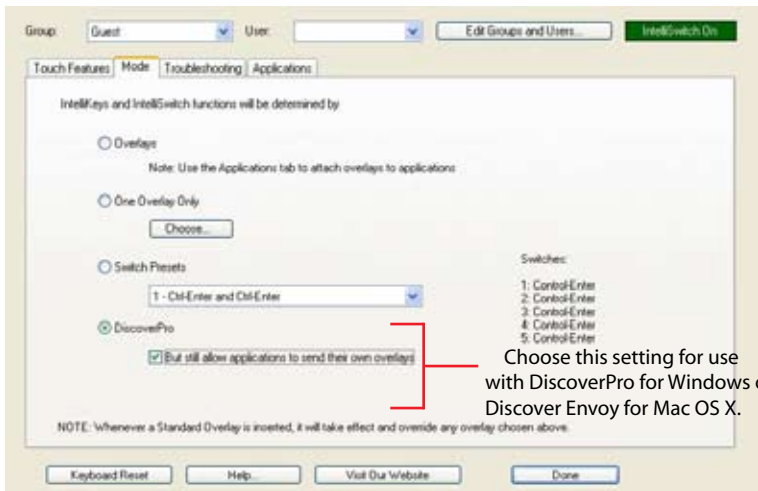


Illustration N.

Appendix C: Using IntelliSwitch with DiscoverPro Setups

Perform the following steps:

- 1. Install the DiscoverPro software. (The IntelliSwitch Control Panel will automatically make the DiscoverPro options active, once DiscoverPro is installed).*
- 2. Open the IntelliSwitch Control Panel and select the tab named "Mode".*
- 3. Choose the third radio button indicating "DiscoverPro"/"Envoy". This will allow Discover to have control of the IntelliSwitch or IntelliKeys, and allow it to be used as the switch interface or as a keyboard.*
- 4. If you wish to allow IntelliTools overlays to still be sent to the IntelliSwitch, even when using Discover, select the check box below labeled **"But still allow applications to send their own overlays"**. By clicking on the applications tab, you can assign an Overlay to be sent to each application.*
- 5. Turn on the DiscoverPro software and begin using it.*
- 6. You may quick-select between DiscoverPro Setups and attached IntelliTools Overlays in the Control Panel pop-up menu.*

Note	Use the IntelliSwitch Control Panel only to define whether or not DiscoverPro will be used with a given application. Use the DiscoverPro software itself (as usual) to define which specific DiscoverPro Setup will be used with a specific software application.
-------------	---

Use this setting for built in presets.

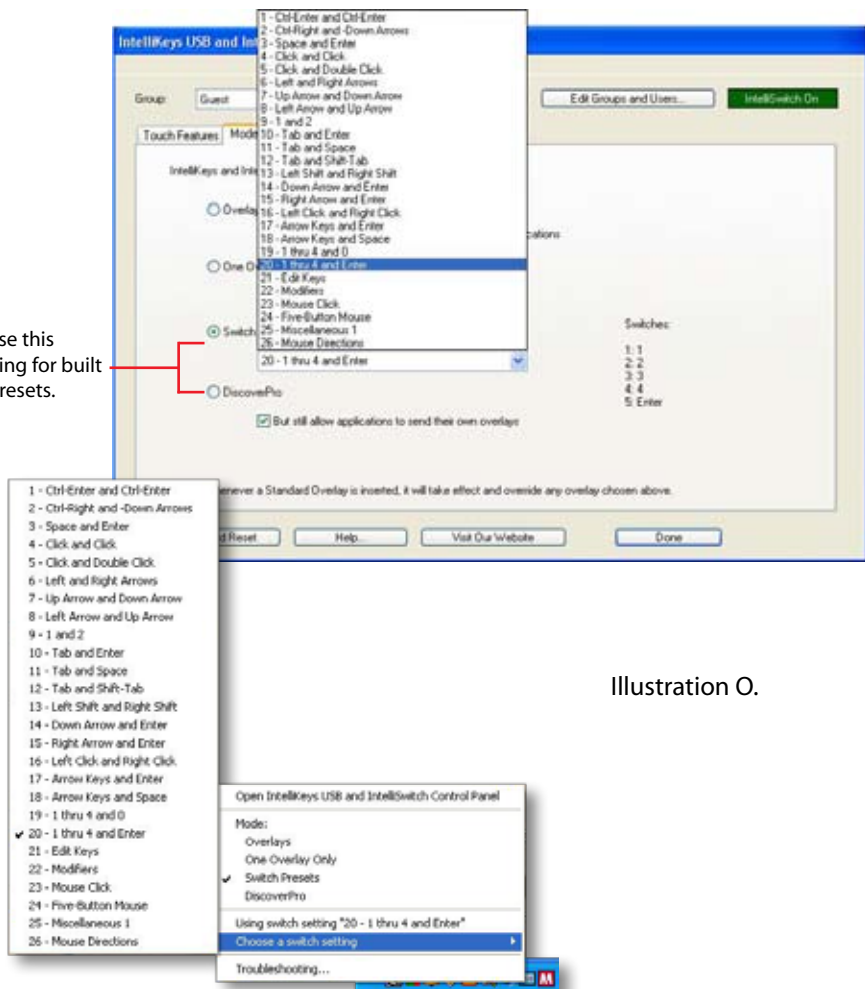


Illustration O.

Appendix D: Using IntelliSwitch with 3rd-Party Switch Software

There are dozens of software titles that have some form of switch access built-in. Unfortunately, there is no common standard defined for how a switch should communicate with the software. As a result, most manufacturers have defined their own switch input convention and they are all different.

To accommodate this, the IntelliSwitch Control Panel has 26 preset configurations that will accommodate all the 3rd-party switch-accessible software that we are aware of. Consult the user guide of the 3rd-party software to determine what switch input signal it supports. Then find the corresponding preset in the Control Panel.

The Presets may be selected by performing the following:

- 1. Open the IntelliSwitch Control Panel.*
- 2. Select the tab labelled "Mode"*
- 3. Select the third radio button titled "Switch Presets"*
- 4. Select the appropriate preset from the pop-up menu located below the third radio button, or from the USB control panel menu pop up. (See Illustration O).*

Note The selected preset definitions will appear to the immediate right of the radio button to serve as a visual reminder.

Index

Symbols

3rd-Party Switch Software 43

A

AAC product 15

“AA” Batteries 9

ability switch 29

Ablenet 29

administrator password 13

assistive technology software 7

B

batteries 17, 25, 29

Battery Installation 16

Box Contents 8

Built-in Switches 25

C

Care & Maintenance 25

CD drive 13

Clearing 22, 23

Clearing a Channel Pairing 23

Connecting IntelliSwitch 15

Control Panel 7, 9, 11, 15, 17, 29, 34,
35, 36, 37, 39, 41, 43

Control Panel CD 9, 11

Control Panel software 7, 15, 17, 35,
37, 39

control panel software 7, 11, 13, 15, 19
customize 7

D

DiscoverPro 7, 40, 41

Discover Envoy 7, 40

Dual Loc 27

F

FAQ 29

G

green LED 17, 21, 23

H

help file 15, 17, 35

I

Install 17

Mac installer 11

Windows installer 11

Installing IntelliSwitch 11

Installing the Control Panel 11

IntelliSwitch Control Panel CD 11

IntelliSwitch control panel software 11

IntelliSwitch CP3.1 13

IntelliSwitch Installer/Uninstaller 13

IntelliSwitch Transmitter 9, 10, 11
IntelliSwitch Wireless Receiver 9
IntelliTools 7, 11, 29, 37, 38, 39, 41
IntelliTools software 7, 37

J

JellyBeamer 29

L

LED 17, 19, 21, 23

M

Macintosh 7, 11, 15
Mac installer 11
Mac OSX 11, 12, 13, 15, 40
Mac OSX Install Screens 12
Madentec 7, 9
Mounting 26, 27, 33
Mounting points 26
My Computer 13

O

On/Off button 15, 17
one switch 15, 17
OSX 11, 12, 13, 15, 40
OverlayMaker 7, 37

P

Pairing Tool 9, 17, 19, 21, 23

PC 7, 11
personal computers 7
preset switch configurations 7

Q

Quickstart Guide 9

R

Read Me 13
receiver 7, 17, 19, 23, 29, 33
register 9
Registering IntelliSwitch 9
Registration Card 9

S

setup.exe 13
shipping box 9
Specifications 33
Switch Software 43

T

Tool Tray Menu 37
Transmitters 21
two switches 15, 17

U

uninstall 13
uninstall.exe 13
USB Cable 9

USB cable 7, 15
USB Hubs 25
USB port 11, 15, 17, 19, 25, 29
USB receiver 7, 17, 19
USB switch interface 7

V

Velcro 27

W

warranty 9, 27
warranty support 9
Win98SE 15
Windows 11, 12, 13, 15, 34, 35, 40
Windows computers 11, 35
Win XP 15
Wired Mode 14, 15
wireless 7, 11, 15, 29
wireless configuration 11
Wireless Mode 15, 16, 17, 19, 21, 29
Wireless Switch Access 7