M2TECH

YOUNG

384kHz/32BIT DIGITAL-TO-ANALOG CONVERTER

USER MANUAL

REV. 1.0 – 11/2010

Warning!

Changes or modifications not authorized by the manufacturer can invalidate the compliance to CE regulations and cause the unit to be no more suitable to use. The manufacturer refuses every responsibility regarding damages to people or things due to the use of a unit which has been subject to unauthorized modifications or to misuse or to malfunction of a unit which has been subject to unauthorized modifications.

This unit is compliant with the following CE regulations when an USB cable less than 3m is used: CEI EN 55022:2009 Class B (Radiated Emissions), CEI EN 55024:1999, CEI EN 55024:A2/2003, CEI EN 55024:IS1/2008 (Radio Frequency Electromagnetic Fields, 50Hz Magnetic Field Immunity Test and Electrostatic Discharges – ESD).

Recycling

The label above, printed on the product case, indicates that the product, when no more usable, can't be treated as generic garbage, but must be disposed of at a collection point for recycling of electrical and electronic equipment, in compliance with the WEEE regulation (Waste of Electrical and Electronic Equipment).
By making sure that this unit is correctly recycled, you will help preventing potential damages to environment and human health, which could be caused by a wrong treatment of this product as generic garbage. Materials recycling helps saving natural resources. For more in-depth information about recycling this product, please contact M2Tech Snc di Manunta & Marino.

WARNING: the information contained in this manual are considered to be reliable and accurate. M2Tech reserves the right to change or modify the information any time, without prior advice. It's up to the customer to ensure that the manual being consulted is the latest version.

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Dear customer,

thank you for purchasing YOUNG. What you have is a first-rate digital-to-analog converter with many unique features conceived to obtain the best audio performance out of a music file.

Even if getting music out of a PC or a Mac is nowadays quite simple, much harder is to obtain the best sonic performance from it, due to intrinsic limits in USB 1.1 audio standard and the implementation of digital audio interfaces in computers. Please visit M2TECH website (www.m2tech.biz) to find extensive literature about this topic.

YOUNG overcomes all the limits of usual USB digital-to-analog converters by implementing the latest generation HIFACE technology, which uses proprietary drivers and asynchronous data transfer, along with a sophisticated electronic design.

YOUNG features a comprehensive set of input connections which suit virtually all digital sources around.

We feel that your expectations will be fulfilled by YOUNG: you'll hear your CD's, DVD's and music files in a way like never before, prepare for a whole new experience!

Nadia Marino, CEO

Please annotate here your YOUNG serial number for future reference:

S/N: _____

Date of purchase: _____

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1. Unpacking and placing the unit

Place the carton box on a table and open it by removing or cutting the adhesive tape. Extract the foam upper cover. You should find the following items:

- one Young DAC;
- one wall adapter;
- one A-B USB cable;
- a sheet with indications about how to obtain this manual and the drivers.

Should one or more items be missing, please contact your dealer or local distributor.

Extract the Young from the foam container and place it on a stable base, far from heat sources. Avoid the direct sunlight on the unit. Allow for enough room around the unit for venting. The Young is a high efficiency design so little heat is produced during normal operation; anyway, it's better allow for adequate venting. Avoid smoke, humidity, moisture and water from reaching the unit.
Do not place the unit on thick carpets or inside a box or piece of furniture, or in close contact with curtains.

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2. Front Panel

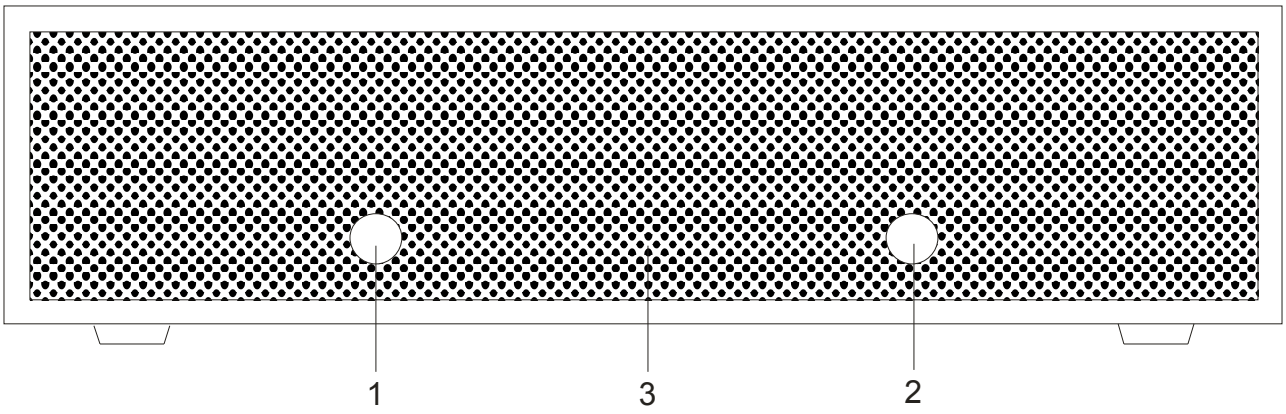

Figure 1

1) Standby button. Press this button to put the unit into standby. When in standby, the unit is silent and the display is off. Standby ends when this button or the input selection button is pressed.

2) Input selection button. Press this button to change the selected input. Inputs are selected sequentially by consecutively pressing this button.

3) Display. Multifunction three digits led matrix display. When selecting the input, it shows the selected input. During normal operation, it indicated the sampling frequency of the music program being decoded. A dash indicates the loss of lock.

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3. Back Panel

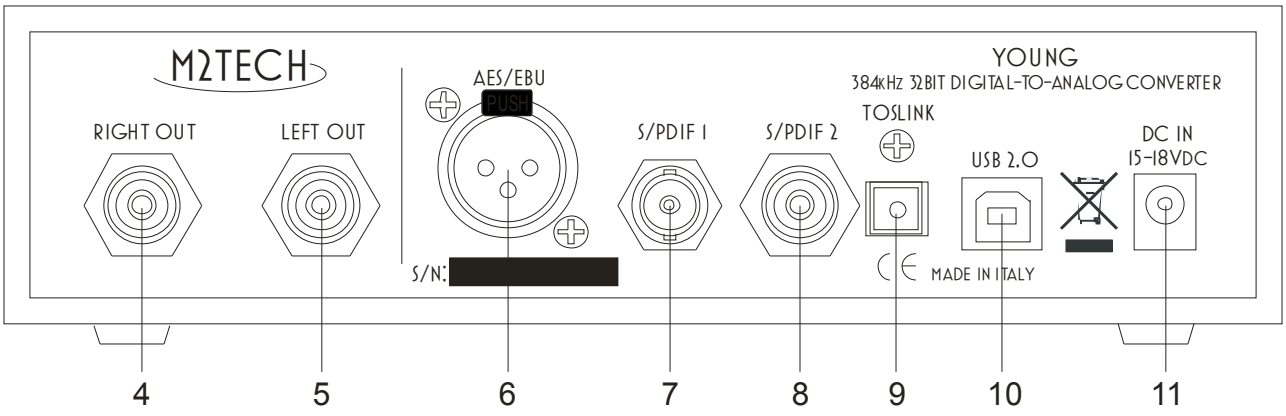

Figure 2

4) Right channel analog output. Connect to right channel of the amplifier or preamplifier input. RCA female connector.

5) Left channel analog output. Connect to left channel of the amplifier or preamplifier input. RCA female connector.

6) AES/EBU digital input. Accepts AES/EBU datastreams in either professional or consumer format. XLR female connector.

7, 8) S/PDIF digital inputs. Accept S/PDIF datastreams. RCA and true 75 Ohms BNC female connectors

9) Toslink™ optical digital input. Optical input for Toslink™ cables. Toslink™ connector.

10) USB 2.0 input. Connect to a PC or MacIntosh with an USB 2.0 compliant A-B cable. USB 2.0 B female connector.

11) Power supply input. Connect the wall adaptor provided with the unit or any other power supply capable of 15-18V/500mA. 5.5mm/2.1mm supply jack (female, tip is positive).

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4. Connecting and powering the unit

Please refer to section 3, “Back Panel Description”.

Connect the “B” plug of a 2.0 USB A-B cable to the USB connector (Figure 2, 10) of the Young.

Connect the “A” plug of the cable to a 2.0 USB port of your computer.

Connect two interconnects to the analog outputs of the Young (Figure 2, 4/5) and to the input of your amplifier/preamplifier.

Connect digital cables from your digital sources (CD player, DAT tape recorder, DAB/DVB/sat tuner) to the Young’s digital inputs (Figure 2, 6-9).

Connect the power supply or any other 15-18V/500mA power supply to the supply connector (Figure 2, 11) of the Young. The Young will activate.

If a driver hasn’t been installed on your computer, an automatic driver installation wizard may appear.

Note: If you want to avoid the automatic driver installation, please connect the Young to the computer after manually installing the driver (see section 5).

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5. Driver installation

5.1. Obtaining the driver

The drivers for the Young are available on the M2Tech website, in the download page (www.m2tech.biz/download.asp). Download the driver you need for your computer and operating system. Windows drivers are contained in zip files, Mac drivers are contained in dmg files encapsulated in zip files.

5.2. Installing the driver on a Windows-based PC

Create a temporary folder in the hard disk of your computer (you can even create it on the desktop). Then, double-click on the zip file to open it. Select and drag all files in the temporary folder: this automatically unzips all files.

5.2.1. Automatic (guided) installation

Apply power to the Young and connect it to the PC. Following the negotiation process, the driver installation wizard is automatically launched. Select the option “Not now”, as in Figure 3.

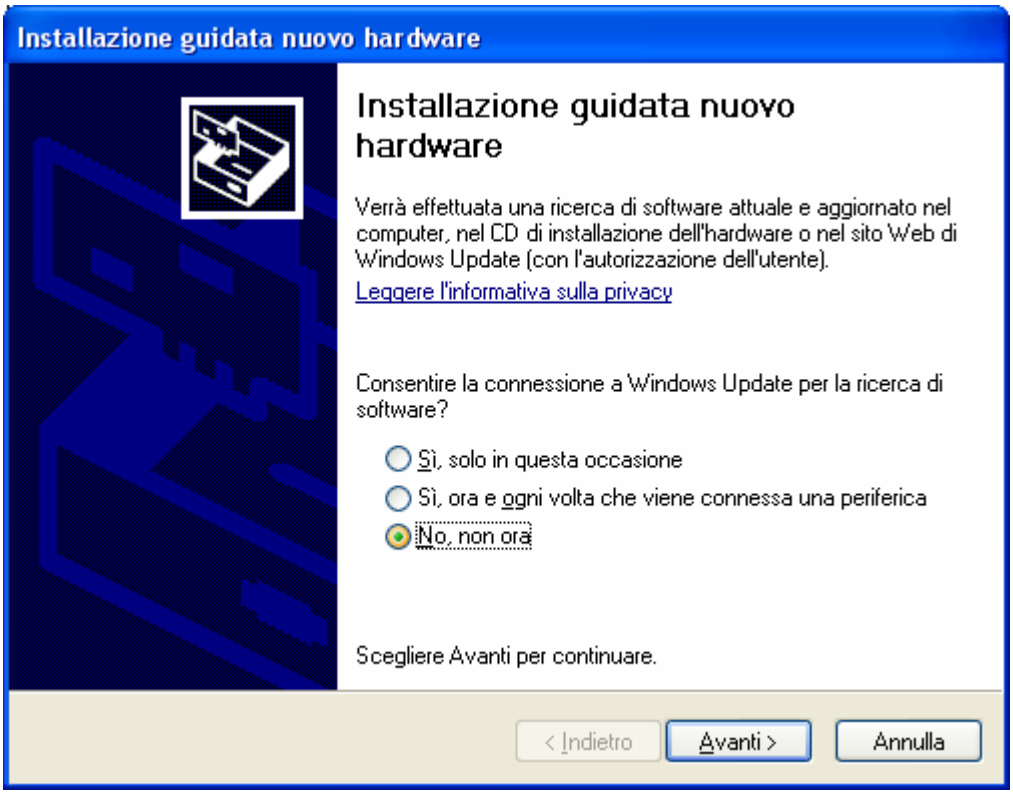

Figure 3

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Click on the button to proceed. A window appears as shown in figure 4:

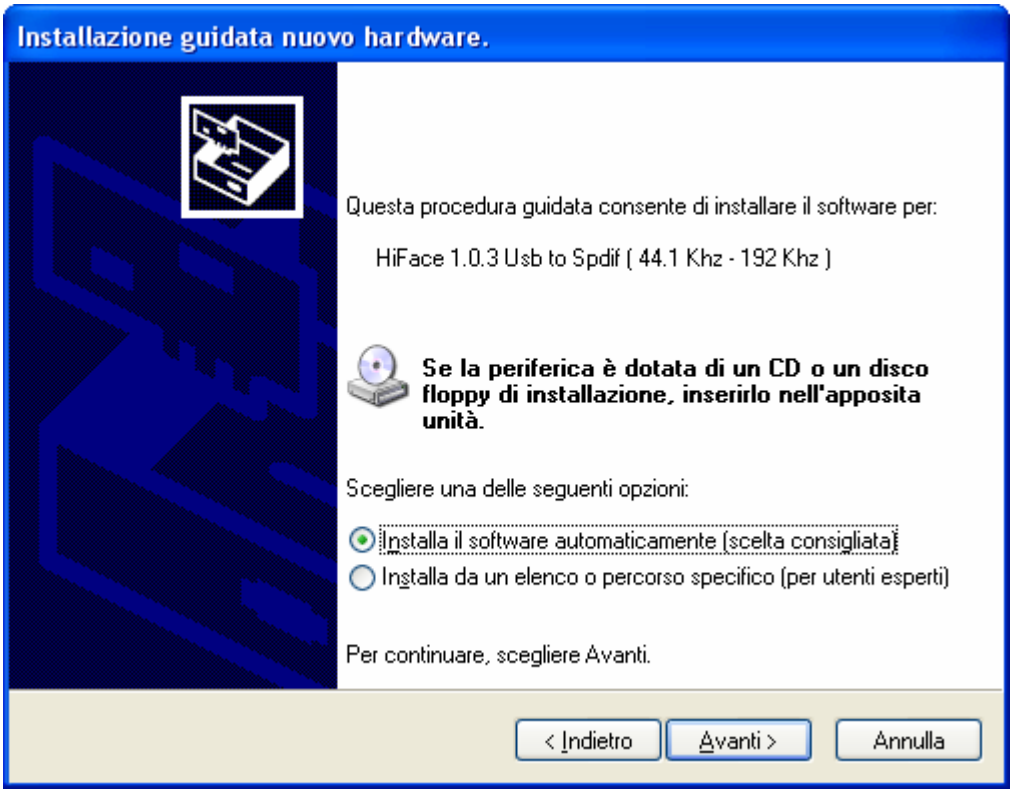

Figure 4

Choose automatic installation (as recommended) and proceed to next step. Indicate the folder where you have previously unzipped the driver and proceed to installation. The window shown in figure 5 will appear:

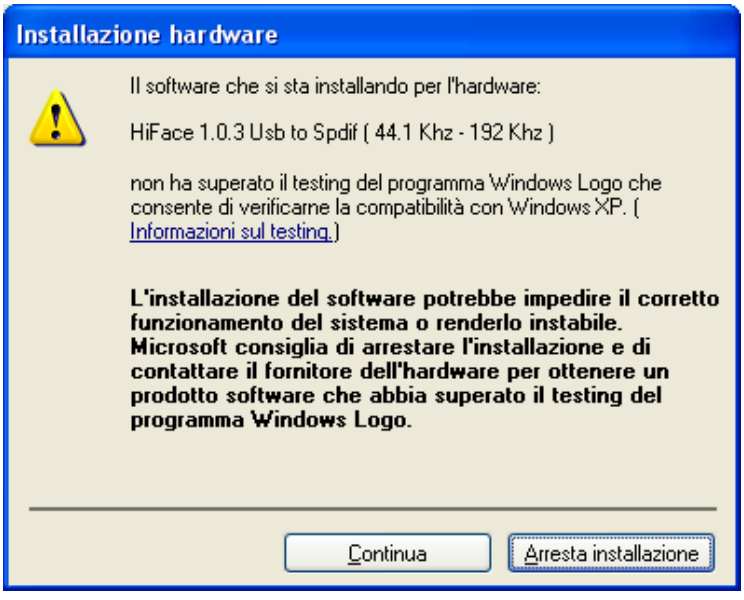

Figure 5

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Click on Continue. The installation will proceed to the end. The window shown in figure 6 will appear. Click on Finish to complete the driver installation.

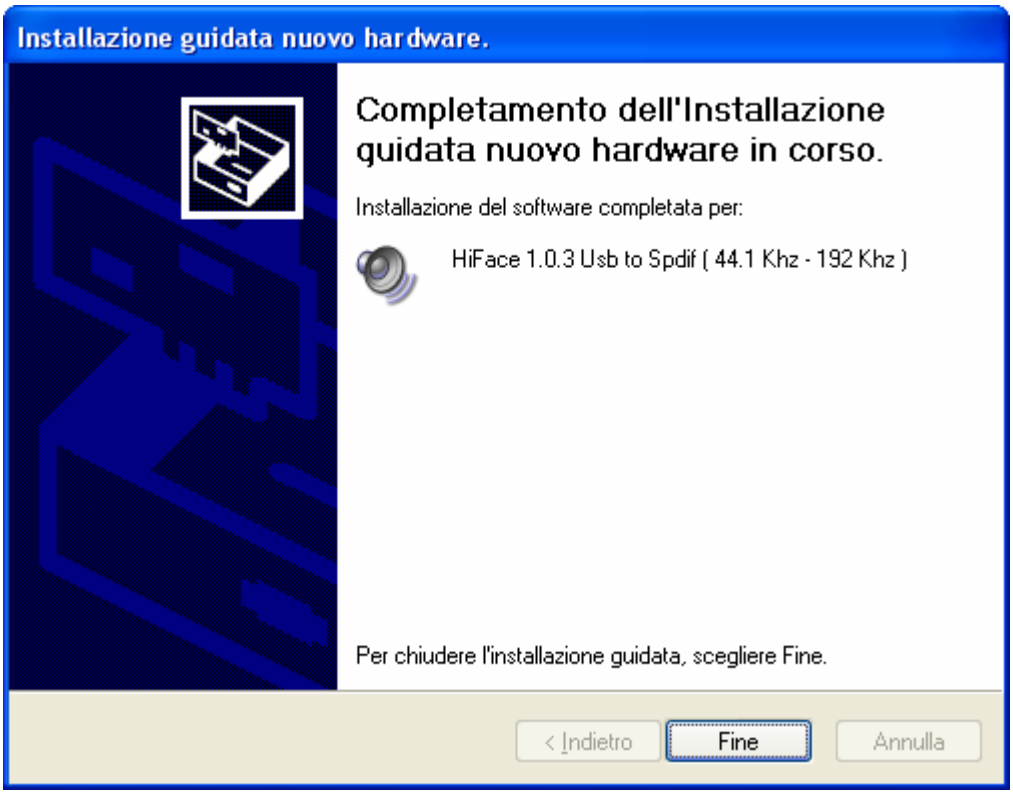

Figure 6

Note: the wizard appearance and the guided installation procedure may slightly vary from XP to Vista to Windows 7.

5.2.2. Manual installation

Sometimes it's necessary or advisable to install the driver manually. The installation package offers two installation utilities, "setup32.exe" and "setup64.exe". The former is for 32 bits operating systems, while the latter is for 64 bits operating systems. Without connecting the Young to the PC, double-click on either "setup64.exe" or "setup32.exe", depending on your operating system: the driver will be installed in your PC.

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5.3. Installing the driver on a Mac

Double-click on the zip file to open it. It contains a single dmg file. Extract it from the zip and double-click on it to open it. It only contains a pkg file. Double click on it to start driver installation. The window shown in figure 7 will appear.

Figure 7

Click on the Continue button. The installation process will go on and the window in figure 8 will appear.

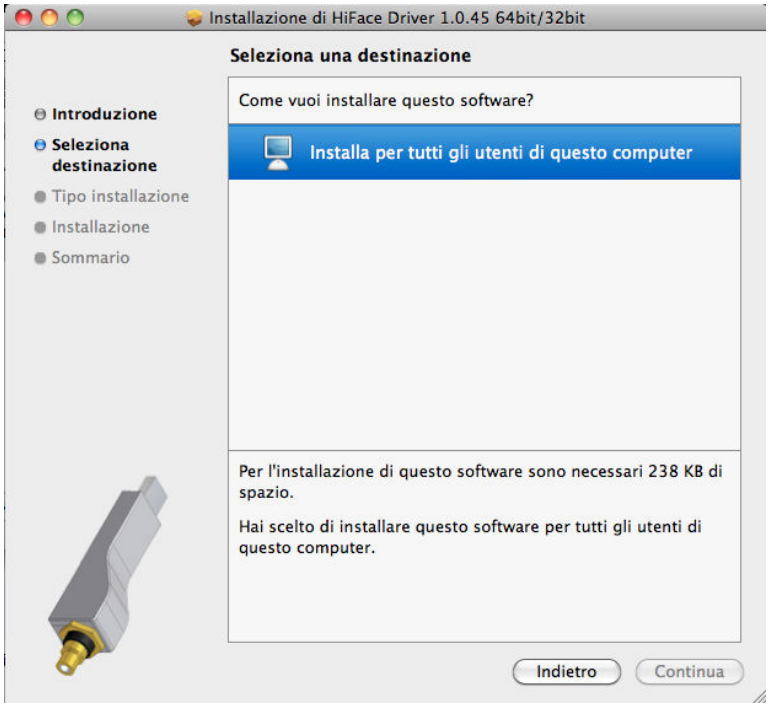

Figure 8

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Select “Install for all users”, then click on Continue button. Another window will appear as in figure 9 and you’ll be asked to type in the administrator password. After doing that, the installation process will continue and you’ll be asked for a confirmation to continue the process up to the computer restart. Click on Continue Installation button.
The installation will continue until the final window will appear, announcing the successful installation of the driver.

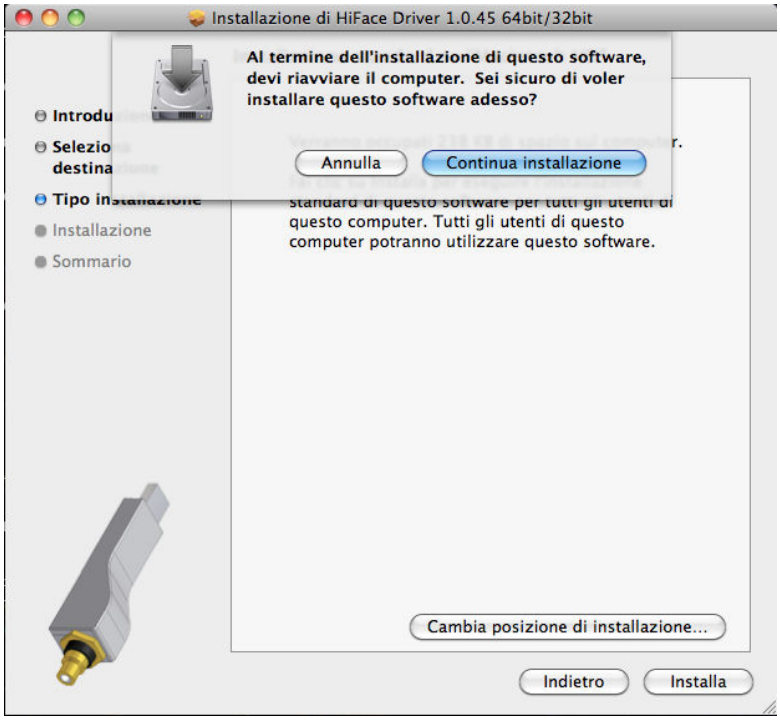

Figure 9

Click on Restart button to complete the installation process as indicated in figure 10.

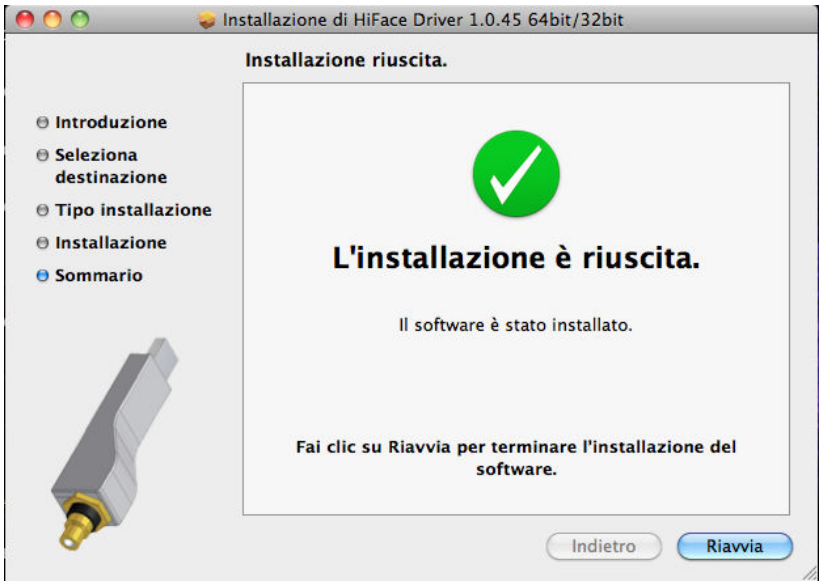

Figure 10

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5.4. Unistalling the driver

Sometimes it is necessary to uninstall the driver to roll back to a previous version. Uninstall is a quite simple procedure which depends on the operating system and the way the driver was installed.

5.4.1. Uninstalling the driver on a Windows-based PC after installation with setup32.exe or setup64.exe

Go to the control panel and launch the “Application Installation” utility.
Look for the Young driver item in the list.
Double-click on it to launch uninstalling.

5.4.2. Manually uninstalling the driver on a Windows-based PC

Connect the Young to the PC.
Go to the control panel and launch the “System” utility, then select Hardware tab. Open the Peripehral Management window (see figure 11).
You’ll find Young listed under Audio, Video and Game controllers.

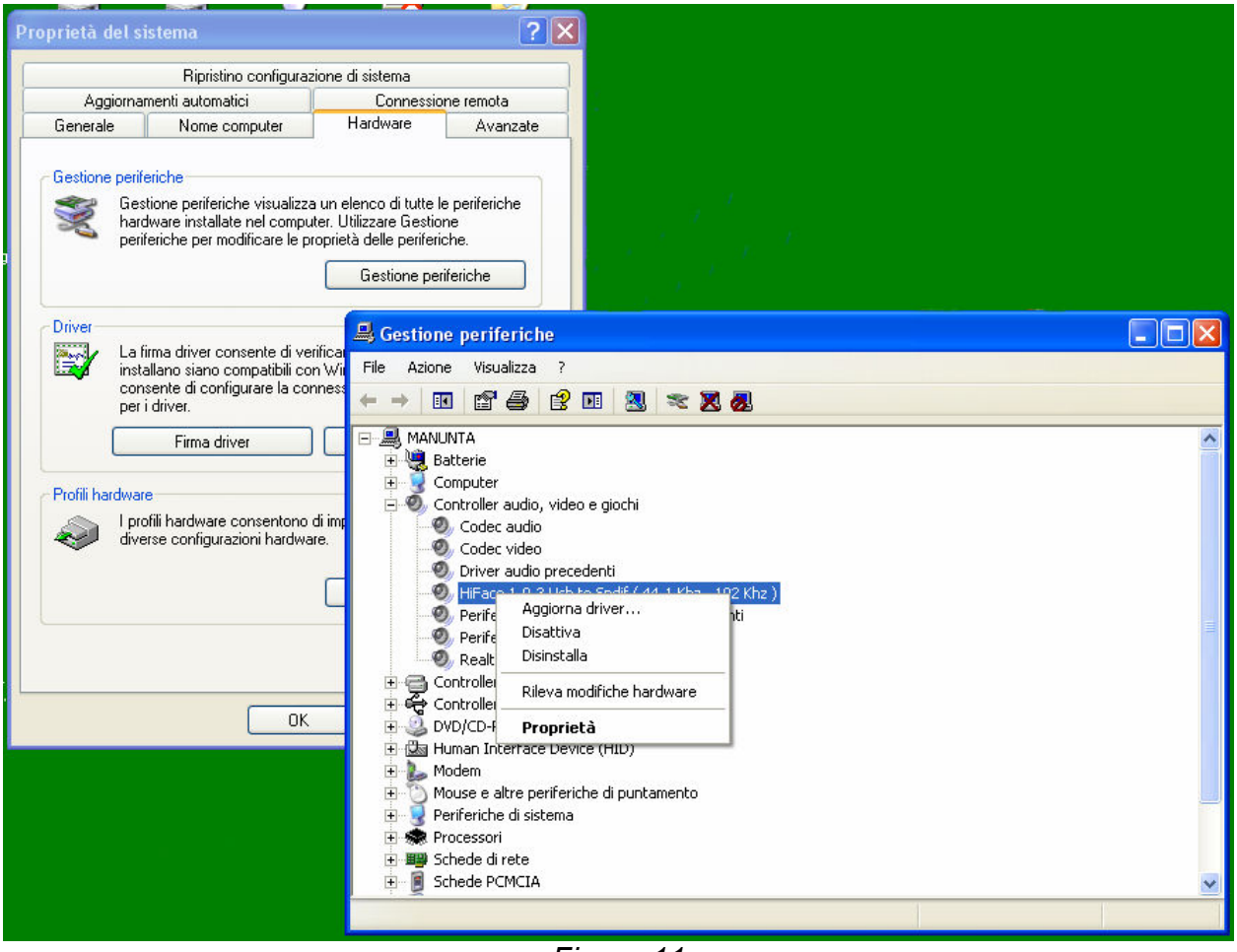

Figure 11

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Right-click to access the available actions.
Select “Uninstall”.

5.4.3. Uninstalling the driver on a Mac

Open a console, then type the following commands:

```
sudo mv /System/Library/Extensions/Young.kext /tmp
sudo touch /System/Library/Extensions
sudo pkgutil --forget com.m2tech.driver
```

Then, restart the Mac.

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6. Configuring the computer to use the Young

6.1. Configuring a PC with Windows XP

A PC with Windows XP can use the Young in two different ways: Direct Sound (DS) and Kernel Streaming (KS). The former is suitable for players which can't operate in Kernel Streaming mode (such as Windows Media Player and iTunes) or for Internet streaming, while the latter can be chosen (for better performance) with players which can operate in Kernel Streaming mode (such as FooBar, Winamp, Monkey Media, JRiver).

6.1.1. Configuring for Direct Sound with Windows XP

Connect the Young to your PC. Then, go to the Control Panel and launch the Sound and Audio Peripherals utility.
Select the Audio tab. In the Predefined Peripheral drop-down menu of the Playback area, select "KS M2Tech 384/32 DAC" (see figure 12).

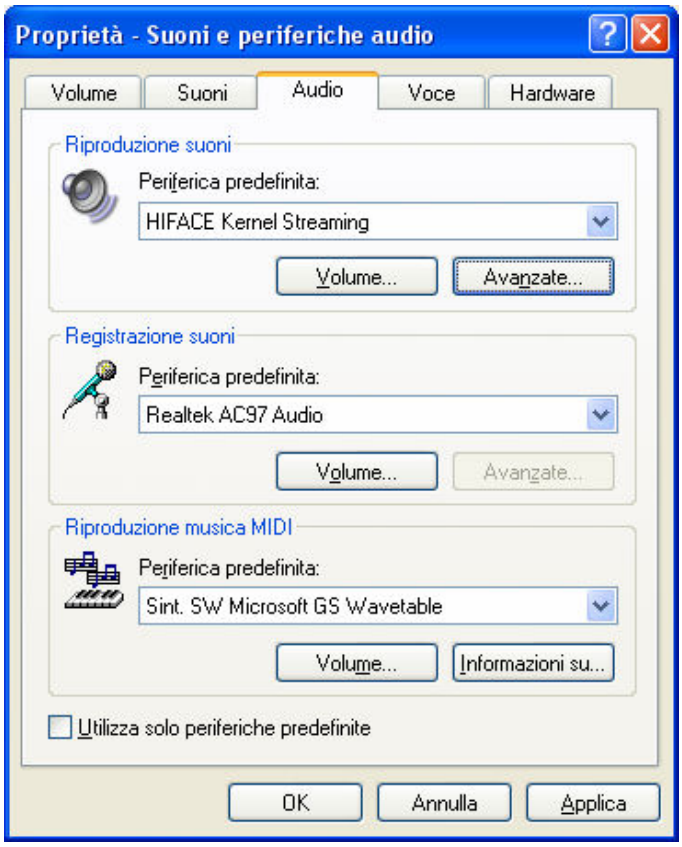

Figure 12

Then, select the "Voice" Tab. Again, select "Young Kernel Streaming" in the drop-down menu of the Playback area. Click on OK button. Please be adviced that even if the

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peripheral is listed as “kernel streaming”, it will operate in Direct Sound mode when listed here.
From now on, unless the Young is disconnected or settings are changed again, Young is the audio peripheral all audio programs will use when operating in direct sound mode.

6.1.2. Configuring for Kernel Streaming with Windows XP

Kernel Streaming has no standard setting in Windows XP. KS must be selected in the specific player you choose to use.
For example, when using FooBar, with Young connected to the PC, go to the File/Preferences/Playback /Output tab and select “KS: M2Tech 384/32 DAC” as output device. Other players will require different settings (see section 7).

6.1.3. Using Young in both Kernel Streaming and Direct Sound mode.

When Young is selected as predefined audio peripheral, it’s possible to use it in Kernel Streaming mode, too, with a caveat. When using it in KS mode, it is necessary that no other application accesses the Young in DS mode. If this happens, Windows XP’s Kernel Mixer takes control of Young’s driver and from then on, no KS application can access the Young unless the PC is restarted or the Young connection to the PC is cycled.

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5.2. Configuring a PC with Windows Vista or Windows 7

A PC with Windows Vista or Windows 7 can use the Young in three different ways: Direct Sound (DS), Kernel Streaming (KS) and WASAPI. DS is suitable for players which can't operate in Kernel Streaming mode nor with WASAPI or for Internet streaming; KS can be chosen (for better performance) with players which can operate in Kernel Streaming mode (such as FooBar, Winamp, Monkey Media, JRiver). WASAPI (Windows Audio Standard API) is a standard interface for audio players which allows to get the same performance of KS with applications which can't operate in KS mode, at the cost of higher CPU load.

6.2.1. Configuring for Direct Sound with Windows Vista or Windows 7

Open control Panel and select Hardware and Sounds. Under Audio, click on Manage Audio Devices. The following windows will appear, in which Young is listed. Set Young as predefined device. Then, click on OK.

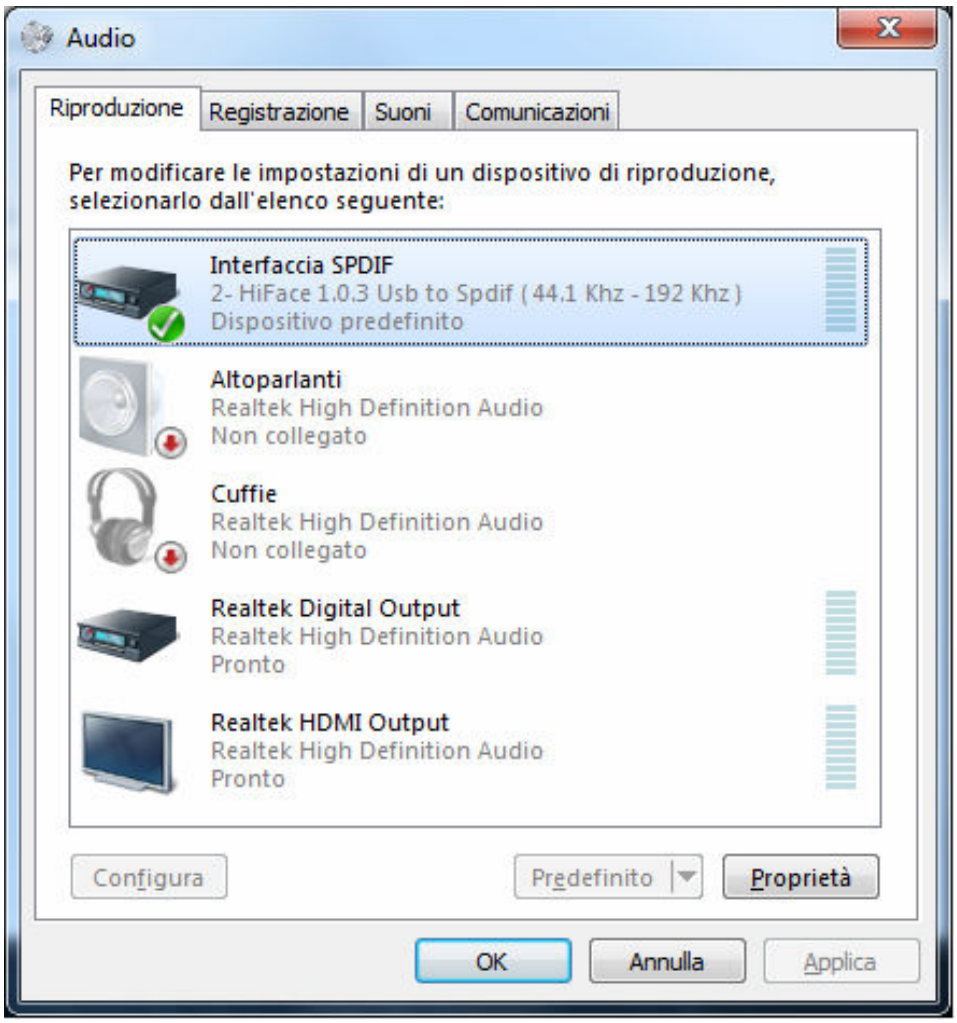

Figure 13

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6.2.2. Configuring for Kernel Streaming with Windows Vista or Windows 7

As for Windows XP, Kernel Streaming has no standard setting in Windows Vista and Windows 7. KS must be selected in the specific player you choose to use.
For example, when using FooBar, with the Young connected to the PC, go to the File/Preferences/Playback /Output tab and select “KS: M2Tech 384/32 DAC” as output device. Other players will require different settings (see section 7).

6.2.3. Configuring for WASAPI with Windows Vista or Windows 7

As happens with Kernel Streaming, WASAPI cannot be directly accessed. WASAPI must be selected in the specific player you choose to use.
For example, when using FooBar, with the Young connected to the PC, go to the File/Preferences/Playback /Output tab and select “WASAPI: M2Tech 384/32 DAC” as output device. Other players will require different settings (see section 7).

6.3. Configuring a Mac

Go to System Preferences and select Sounds. The following windows will appear. Select M2Tech 384/32 DAC for output as indicated in Figure 14.

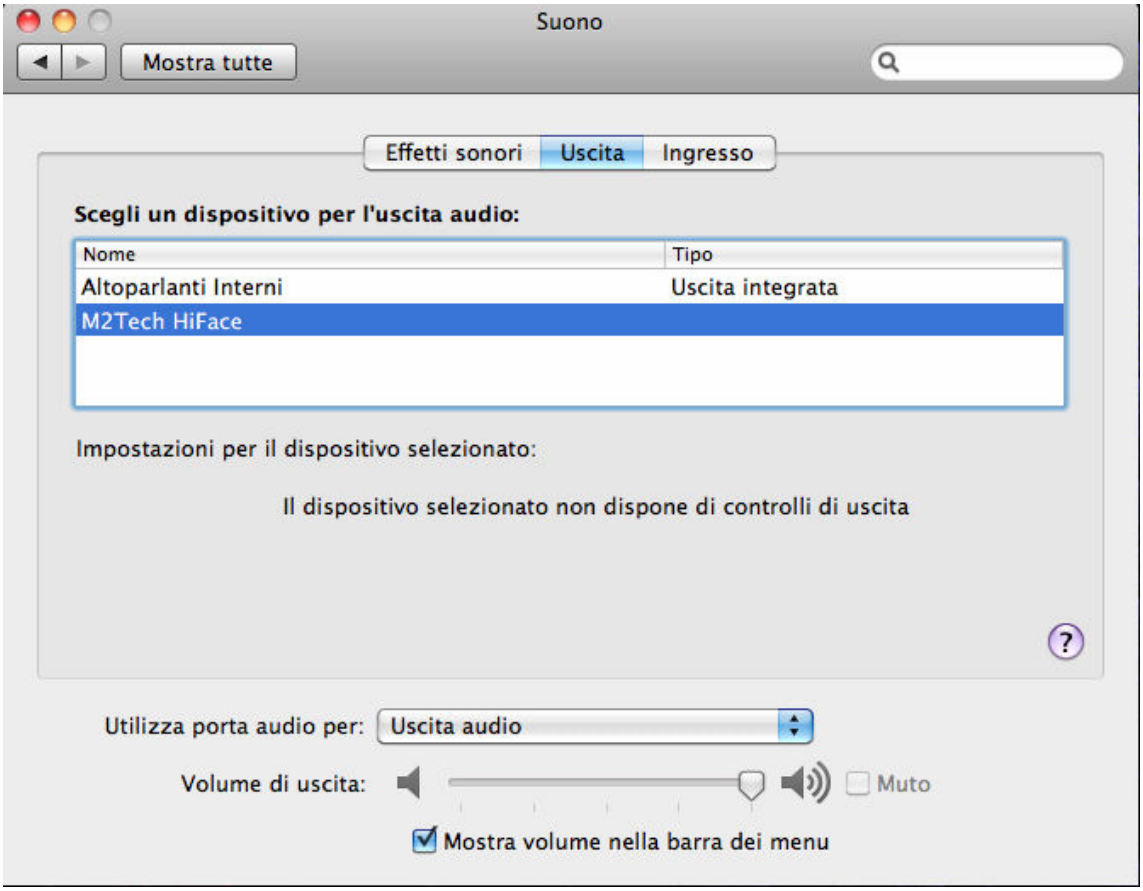

Figure 14

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7. Configuring the player for Kernel Streaming: some examples

7.1. FooBar

To use FooBar in KS mode it is necessary to download the DLL for Kernel Streaming from the FooBar2000 website and install it in the Components sub-folder inside FooBar2000 main folder in your hard disk. The DLL can be found at http://www.foobar2000.org/components/view/foo_out_ks (click on Download). It is a zip folder which contains the DLL. Extract it from the zip and copy to the Components folder. Then, restart FooBar, go to the File/Preferences/Playback/Output window and set parameters as in figure 15.

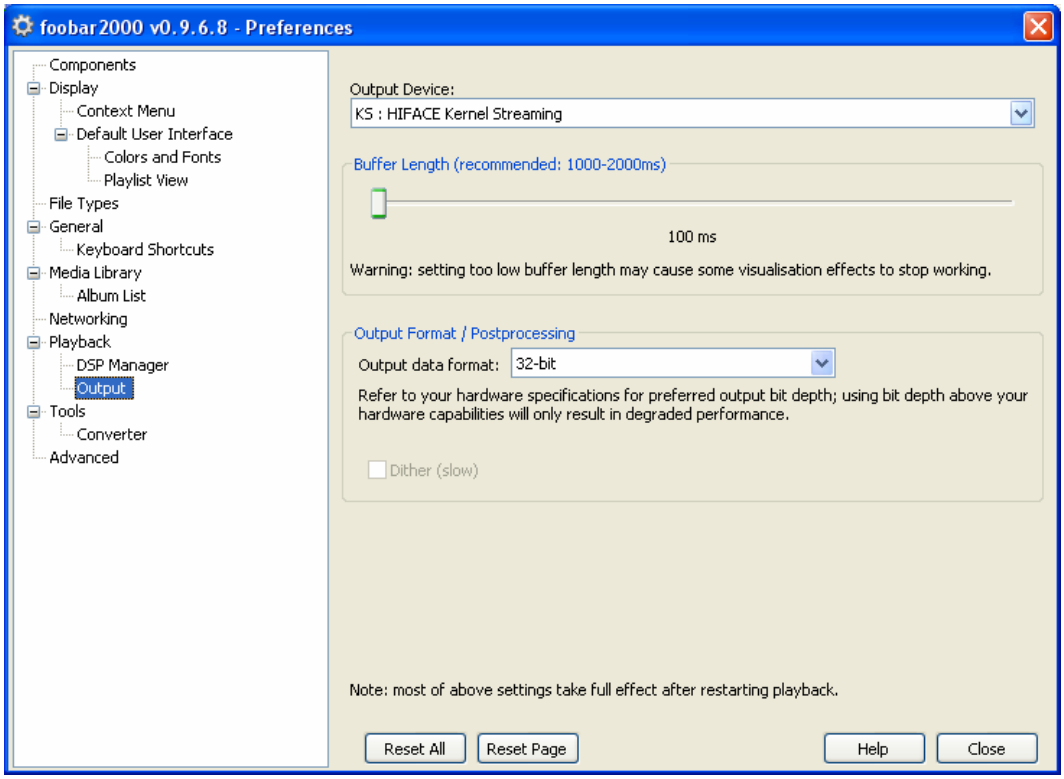

Figure 15

7.2. Winamp and MediaMonkey

These two players are actually the same player with different skins, so they can share the same plug-ins. A freeware plug-in for Kernel Streaming by Steve Monks is available on the Internet (http://www.stevemonks.com/ksplugin/) that can be used to enable Kernel Streaming operation with these players.
Download the zip file, extract the dll file and copy it into the Plugins folder inside Winamp main folder.
With the Young connected, right-click on Winamp and select Display/Select Plug-ins. The Preferences window of Winamp will open (see figure 16).

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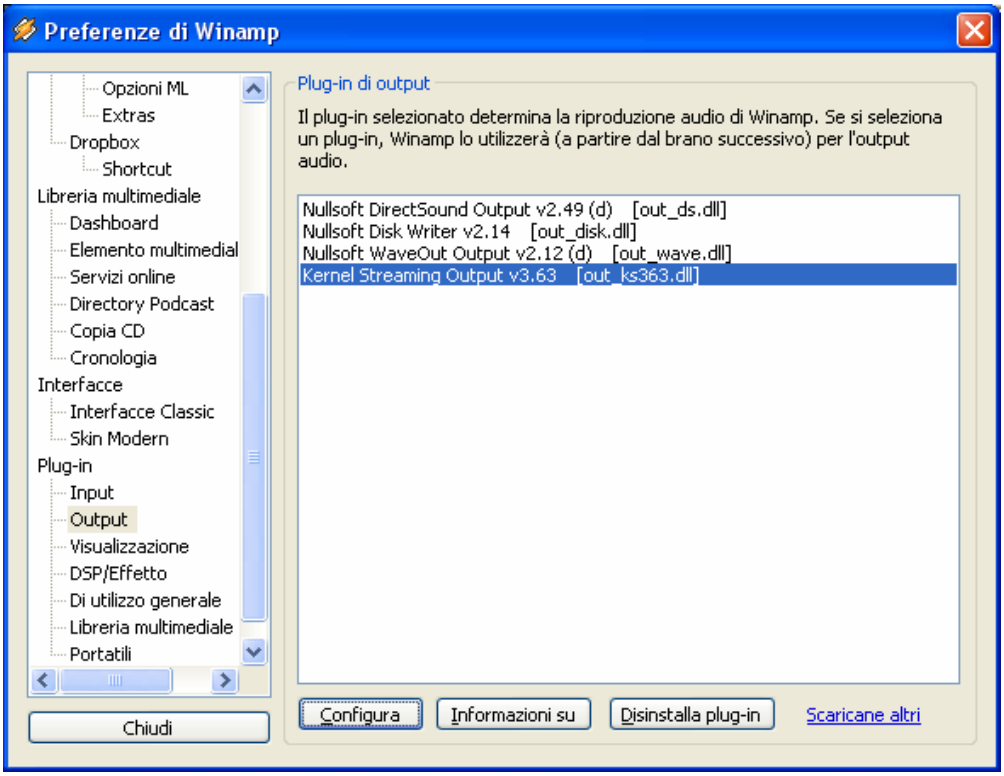

Figure 16

Go to Plug-in/Output and select “Kernel Streaming Output”. Then click on Configure button. Choose YOUNG Kernel Streaming in the output device list (Figure 17).

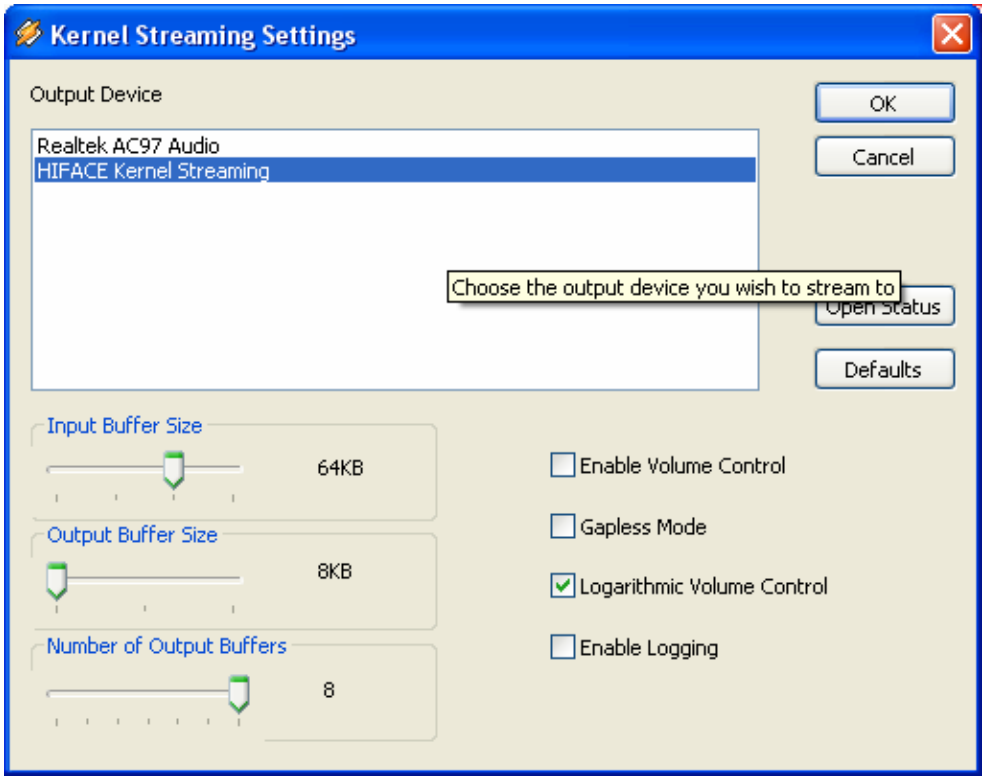

Figure 17

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8. Configuring the player for WASAPI: an example

8.1. FooBar

To use FooBar with WASAPI under Windows 7 it is necessary to download the DLL for WASAPI from the FooBar2000 website and install it in the Components sub-folder inside FooBar2000 main folder in your hard disk. The DLL can be found at http://www.foobar2000.org/components/view/foo_out_wasapi (click on Download). It is a zip folder which contains the DLL. Extract it from the zip and copy to the Components folder.
Then, restart FooBar, go to the File/Preferences/Playback/Output window and set parameters as in figure 18.

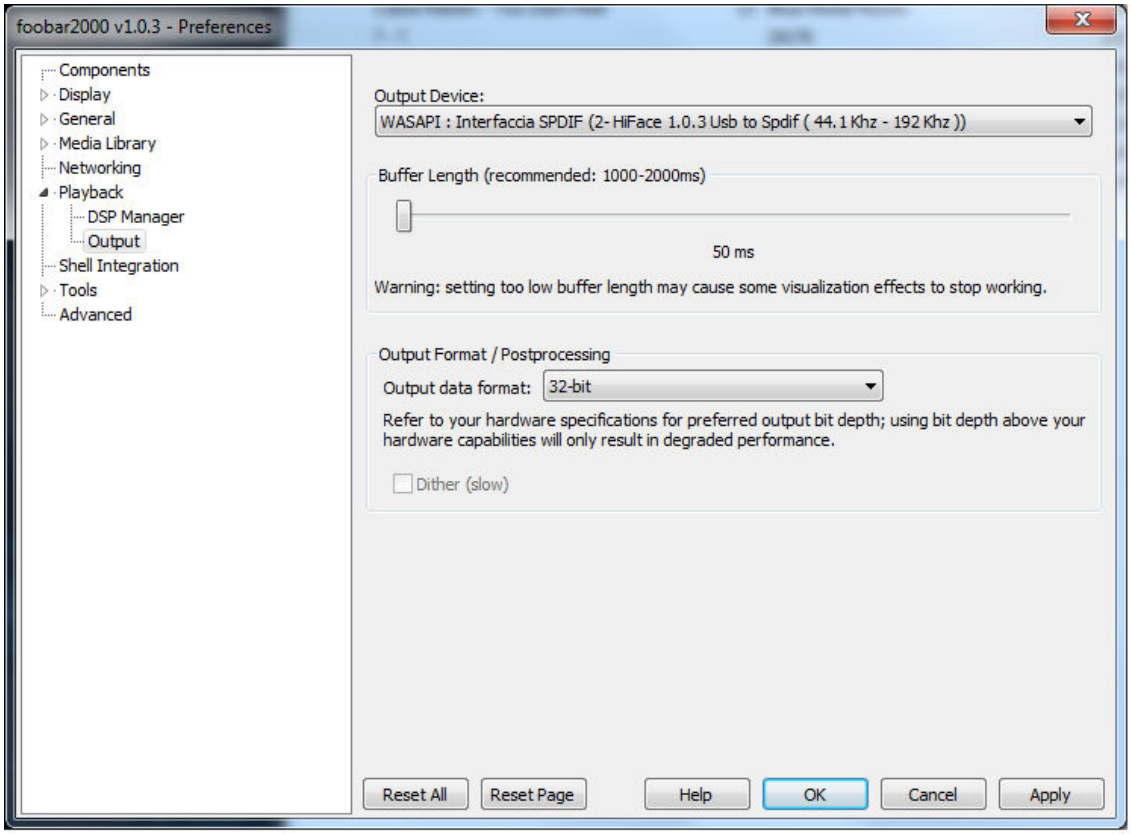

Figure 18

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9. Using a power supply different from the standard one

The Young comes with a 15V/1A wall adapter. This unit has been tested to comply with the Young's power and supply quality requirements and allows for very high performance. Nevertheless, a better (and more expensive) unit could squeeze the last degree of performance from the Young.
We advice users that using a different power supply than the one included in the package will void the warranty: no warranty claim will be acknowledged for damages due to the use of power supply different from the one included in the package or other units specifically designed by M2Tech for the Young.
Should the user decide to use another power supply, the specifications listed in section 11 must be observed.

10. Cleaning the unit

The Young should be cleaned with a soft, damp cloth. Do not use alcohol or other cleaning liquids to avoid damaging the unit.

11. Tips on using the USB input

Depending on the PC or Mac being used, it is necessary to first connect and then power up the Young or first power up and then connect the Young. Please try both ways to see which one fits best to your computer.
Some care must also be used when switching from USB to other inputs and back. It's always a good practice to stop the player on the computer before switching to another input.

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12. Technical Specifications

Sampling frequencies: 44.1, 48, 88.2, 96, 176.4*, 192*, 352.8**, 384kHz**
Resolution:..... 16 to 32 bits***
USB: ..... 2.0 high speed

Clock precision: ..... +/-10ppm 0 to 60°C, 2ppm typical @ 25°C

S/PDIF input sensitivity:..... 0.5Vpp +/-0.1V
S/PDIF input impedance:..... 75 Ohms
AES/EBU input sensitivity:..... 2Vpp +/- 0.5V
AES/EBU input impedance:..... 110 Ohms

S/PDIF and AES/EBU inputs bit-rate up to 24.576Mbps (up to 192kHz sampling frequency)
Toslink™ input bit-rate:..... up to 15Mbps (up to 96kHz sampling frequency)

Analog output voltage:..... 2.65V_{rms} @ 0dBFS
THD+N:..... 0.0003% (1kHz @ 0dBFS, 0-22kHz)
S/N ratio:..... 122dB (A-weighted)

Minimal requirements:..... 1.3GHz CPU clock, 1GB RAM, 2.0 USB port

Supply voltage: ..... 15 to 18V_{DC} (20V_{DC} max)
Power consumption: ..... 240mA @ 15V (no output loaded)

Size: ..... 200x50x200mm (w x h x d, cabinet)
200x55x210mm (w x h x d, with connectors and feet)
360x120x260mm (w x h x d, box)
Weight:..... 1.7kg (DAC only)
3kg (box)

* all inputs except Toslink™. Depending on the fiber used and the transmitter's power, 176kHz and 192kHz may be achieved with Toslink™, too, but this feature is not guaranteed.
** USB input only.
*** 32 bits are accepted on USB input only.

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