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## **PX5 Advanced Sound Editor - Users Guide Revision 1.0**

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[www.turtlebeach.com](http://www.turtlebeach.com)

## Introducing the PX5 Advanced Sound Editor

The PX5 Advanced Sound Editor lets you view and edit all of the parameters in a PX5 preset. Once installed on your Windows PC or laptop, you can connect the PX5 headset via the USB port on the left ear cup and manage the presets using the software.

### Downloading the PX5 Advanced Sound Editor Software

The PX5 Advanced Sound Editor software is available as a download from our website, [www.TurtleBeach.com](http://www.TurtleBeach.com).

1. Navigate to the PX5 section of our website at [www.turtlebeach.com/customize.aspx](http://www.turtlebeach.com/customize.aspx).
2. Click on “Download PX5 Advanced Sound Editor”.
3. Select a location to save the .exe file to and press OK.

The software is compatible with Windows 7 (32/64 bit), Vista and XP.

### Installing the Software

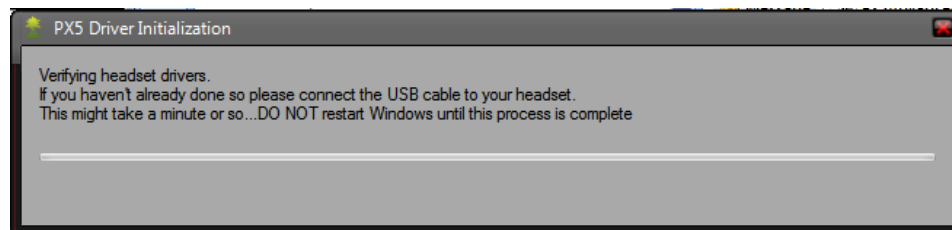
Once the file has finished downloading, navigate to its location and double click it. (Note: You must be administrator to install the tool) Before running the installation, close any programs (including anti-virus programs) that are running so they will not interfere with the installation process.

Follow the prompts to complete the installation. The install may require you download the latest .Net 4 package. If so, it will take care of this automatically.



### Setting up the Software

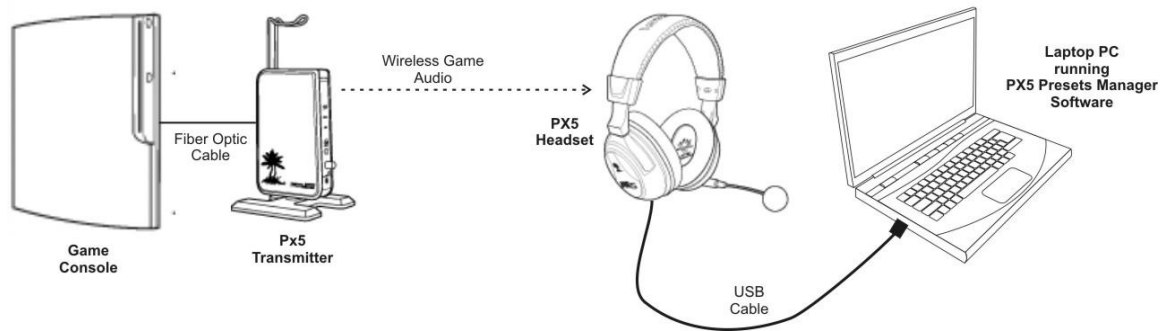
Connect one side of the USB cable (included with your PX5) to the USB port on the left ear cup of your PX5 and the other side to a free USB port on your PC or laptop. After you've installed the PX5 Advanced Sound Editor software, double click the **PX5 Advanced Sound Editor** icon on your desktop to launch the software. When first launching the software, the PX5 Driver screen will appear. If the PX5 is not connected, you'll be prompted to connect the headset. Once the headset is detected, the PX5 driver installation process will begin.



- ❖ **CAUTION: Do not disconnect the headset during this procedure!**
- ❖ **If Windows prompts you to restart your computer because it installed a new device, choose “restart later”.**

After the software installs the PX5 drivers and the presets are downloaded from the headset to your PC, the message “**PX5 Headset Attached**” will appear in the lower left corner of the software screen. At this point, you're ready to use the PX5 Advanced Sound Editor with the PX5.

## Using the Software with a PX5



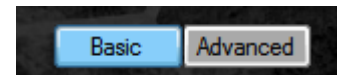
The best way to use the PX5 Advanced Sound Editor is with a laptop located near your game console. This way you can hear the effects of changing parameter settings in the presets as you're playing the game.

Connect the PX5 headset to your laptop with the included USB cable. Place the laptop and PX5 near your game console so you can hear the game with the headset. With the laptop next to you, start the game and try editing presets to hear the effects.

- ❖ **After you're done using the software, be sure to unplug the USB cable from the headset so the power will shut off. The headset power will remain on for as long as the USB cable is inserted into the headset. This will eventually drain the batteries even if the headset is not being used.**

## Basic and Advanced Modes of Operation

The PX5 Advanced Sound Editor operates in either Advanced or Basic mode. The modes are selected by clicking on the appropriate button at the bottom of the program screen. The primary difference between these two modes is the tabs that appear, which are explained later in this manual.

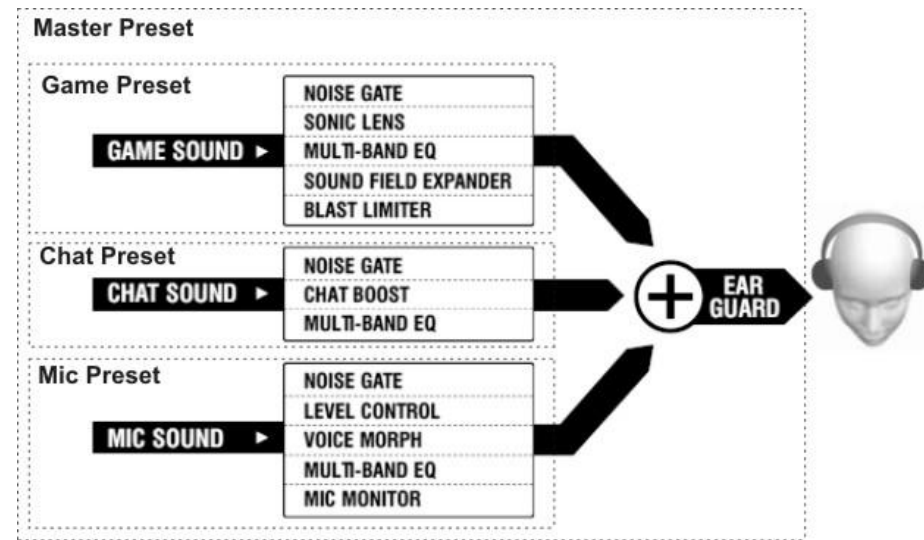


- **Basic Mode** presents a simplified version of the editing tool. The Chat, Mic and Game Preset tabs are disabled and additional controls appear on the Preset Tab.
- In **Advanced Mode**, the Preset Tab controls are simplified and the Chat, Mic and Game preset tabs allow the individual presets to be edited.

## About the PX5 Presets

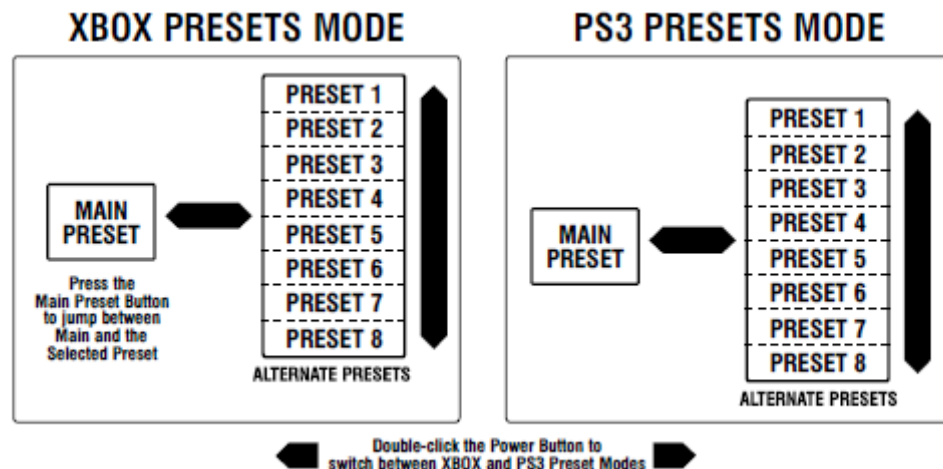
The PX5 headset uses a Digital Signal Processor (DSP) to independently modify the game, chat and microphone audio paths in the headset. The DSP settings are saved as presets, which can be saved to the hard drive on your PC or laptop using the PX5 Advanced Sound Editor software.

The presets are grouped into four categories: master, chat, game and mic. The Master preset is comprised of chat, game and mic presets as well as other global parameters, such as master volume and Ear Guard settings. The signal flow is illustrated in the diagram below, which shows the game, chat and mic sound channels being modified by the DSP processor, then mixed down to the sound that you hear in the headset.



## PS3 and XBOX Modes

The headset operates in either XBOX or PS3 mode. This is selected by quickly pressing on the headset power button twice and listening for the announcement of which mode is active. Each mode stores 9 presets, comprised of one Main preset and 8 Alternate presets. The preset button on the headset toggles through the 8 Alternate Presets. The main preset button on the headset toggles between the Main preset and the selected Alternate preset. This allows toggling between the Main and Alternate by pressing the Main button.



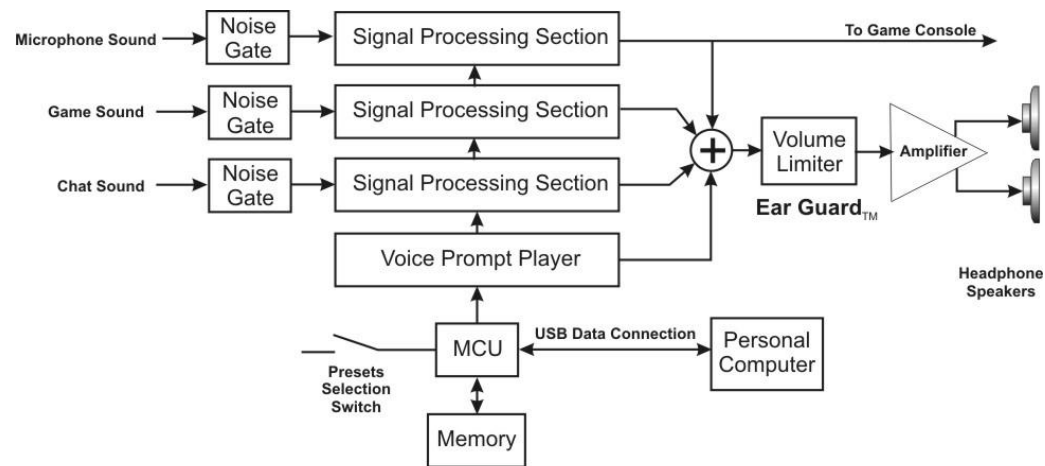
The difference between PS3 and XBOX modes is in the settings of chat and mic presets and chat signal routing.

In PS3 mode, the mic signal is connected to the Bluetooth signal while in XBOX mode it is connected to the Xbox live jack. Therefore, if the PX5 is in PS3 mode and connected to an Xbox, the chat signal will not work, and vice versa for XBOX mode connected to a PS3.

In addition to this hardware difference, the chat and mic presets have different filtering and noise gate thresholds for PS3 and XBOX modes. For this reason, the names of chat and game presets are preceded by [XBOX] or [PS3] to identify the platform they should be used with. The game presets will operate in either XBOX or PS3 mode, so they do not use [XBOX] and [PS3] in the game preset names as do the chat and mic presets.

## Presets Architecture

There are four categories of presets (main, game, chat and mic) each corresponding to the signal paths in the headset. The illustration below shows the DSP signal flow and other system processing.



### Noise Gates

A noise gate on each input of the three channels (mic, game and chat) allows background noise to be removed from that channel. For example, on the mic channel, the noise gate threshold may be set to just above the room noise, so the microphone channel will only pass sound that is above the room noise (such as the sound of your voice speaking into the mic). On the chat channel, the noise gate may be set to just above the noise level of the Xbox controller, keeping the chat channel quiet unless voices are detected from online players.

### Signal Processing Sections

The noise gates in each channel are followed by a signal processing section with audio modifiers that are specific to the channel. The parameters within these signal processing sections comprise a “preset”. These parameters can be edited using the PX5 Advanced Sound Editor software as described in this user guide. The game, chat and mic tabs sections of this manual describe these signal processing sections in more detail.

### Voice Prompt Player

A voice prompt is triggered when certain events occur, such as pressing buttons, low battery conditions, power on, power off, and so on. The voice prompt player output is mixed with the channel outputs to create the master signal heard on the headset. The voice prompts may be changed by downloading a new voice prompt file from the Turtle Beach web site. Thus,

for example, the factory-installed English voice prompts can be replaced with different foreign language versions.

#### **Ear Guard™ Volume Limiter**

A volume limiter precedes the headset amplifier to set the maximum level of sounds sent to the speakers. This feature is referred to as “Ear Guard” since it reduces excessive sound levels during loud sections of the game to help protect the ears.

#### **MCU and Personal Computer**

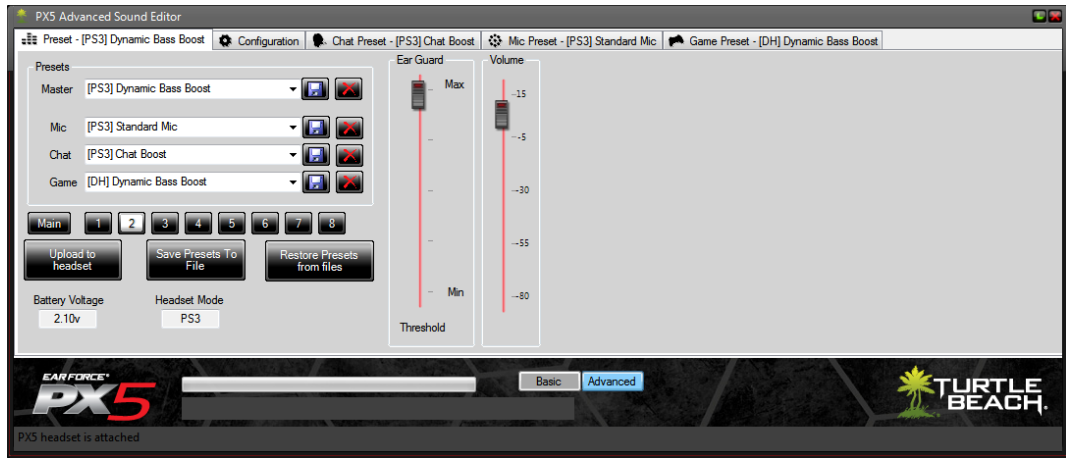
The MCU controls the programmable system functions and connects to a Windows PC via the USB port. This USB connection allows the MCU firmware to be updated with new versions downloaded from the Turtle Beach web site, and also allows editing of presets with the PX5 Advanced Sound Editor software.

# Software Controls – Presets Tab

The Presets Tab is the main section of the PX5 Advanced Sound Editor. This is where you'll transfer presets between your PX5 headset and PC. This tab will look different, depending on whether you've selected Basic or Advanced mode by clicking on the appropriate button at the bottom of the program screen.

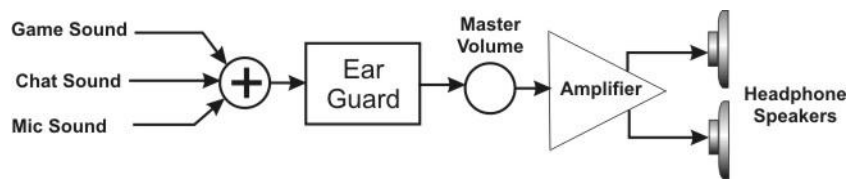
## Advanced Mode Presets Tab

Clicking the Advanced button places the software in Advanced mode, with the Presets Tab configuration illustrated below. The Presets section on the left is identical in Advanced and Basic modes, so it is described at the end of this section.



## Volume (Master Volume Section)

The chat, game and mic signals are mixed together and routed to the master output, whose signal flow is illustrated below:



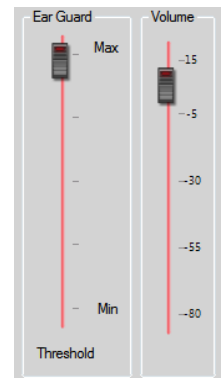
The game, chat and mic levels are located in the game, chat and mic tabs. These volume controls allow you to balance the levels of game, chat and mic signals heard in the headset.

### Ear Guard™

The mixer is followed by a volume limiter, referred to as “Ear Guard”. This slider lets you limit the level of the overall sound to help protect your ears from sudden boosts in volume. Pushing the slider all the way up will let all of the sound come through, no matter how loud it is. Moving it down sets a ceiling above which the sound won't increase. To limit the sound of gun shots and blasts, turn this down to about 75% or less.

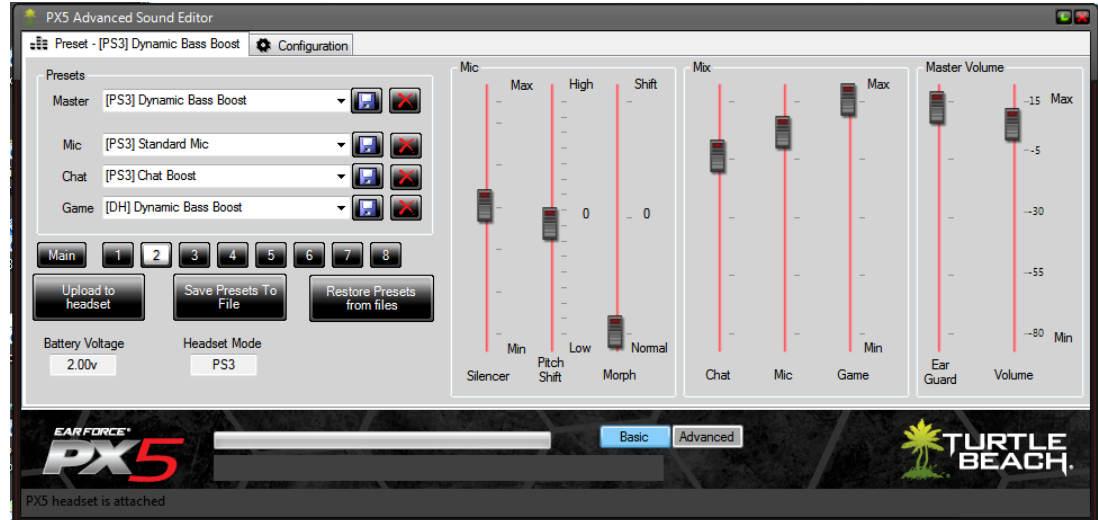
### Volume

This slider controls the master volume and determines the overall loudness of the headset. We suggest setting this to about 80% of maximum.



## Basic mode Presets Tab

Clicking the Basic button places the software in Basic mode, with the Presets Tab configuration illustrated below. The Presets section on the left is identical in Advanced and Basic modes, so it is described at the end of this section.



The right side of the Presets tab has three sections, Mic, Mix and Master Volume, used for editing certain key parameters on the presets. If you change any of the Mic controls, be sure to press the **Save** button next to the Mic presets field so it will be saved with the new values. If you change the Mix or Master volume settings, press the **Save** button next to the Master preset field. Otherwise, you'll lose the settings you've edited when you select a new preset.

### Mic Section

The mic section has three controls that affect the way your voice will sound when you speak into the mic.

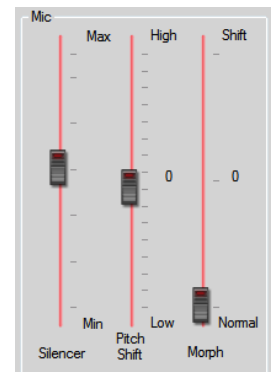
#### Silencer (Noise Gate)

The Silencer noise gate keeps background noise from being picked up by the mic. To set the noise gate threshold, listen to the mic while not speaking and bring up the threshold until you no longer hear the room noise. Then speak into the mic at a comfortable level and make sure the noise gate turns on, passing your voice. If it seems that you have to speak too loudly, turn down the threshold a bit so that you can eliminate room noise while still using a comfortable speaking tone.

For instance, if you're in a room with a blasting air conditioner, you can prevent the mic from picking up the air conditioner sound by setting the noise gate just above the air conditioner sound. That way, when you speak, the mic will pick up your voice, but when you're not speaking, it will shut out the air conditioner.

#### Pitch Shift

This slider lets you change the pitch of your voice either up and down. Moving the slider higher will make your voice sound higher-pitched, while moving it lower will make it sound deeper. Double click the slider to make it jump to the middle, where the pitch is not shifted. The pitch shift effect is selected with the Morph slider, described in the next section.



### Morph

This slider sets the balance between your normal voice and pitch shifted voice. Moving the slider down passes more of your normal voice and moving it up adds the pitch shift you've selected. If you place it in the middle, you'll get a 50/50 balance between normal and pitch shifted voice.

## Mix Section

This section controls what you hear in the headset. Use it to balance the game, chat and mic levels as described below.

### Chat

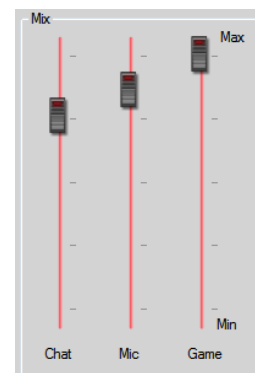
This slider adjusts the amount of chat level you'll hear.

### Mic

This slider adjusts the mic monitor level to determine how much of your voice will be heard in the headset. Turn it down if you don't want to hear your voice.

### Game

This slider adjusts the game volume level.



## Master Volume Section

The mixer output is routed to the master output, which is controlled by this section.

### Ear Guard™ Limiter

The mixer is followed by a volume limiter, referred to as "Ear Guard". This slider lets you limit the level of the overall sound to help protect your ears from sudden boosts in volume. Pushing the slider all the way up will pass all of the sound, no matter how loud it is. Moving it down sets a ceiling above which the sound won't increase. To limit the sound of gun shots and blasts, turn this down to about 75% or less.

### Master Volume

This slider controls the master volume and determines the overall loudness of the headset. We suggest setting this to about 80% of maximum.

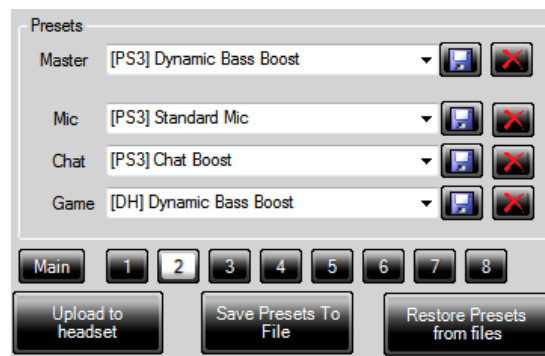


## Presets Section

This section is identical in Advanced and Basic modes. From here, you can transfer presets between your PC and the PX5 headset.

The PX5 headset has two presets buttons; one that selects the Main preset and another that toggles through the 8 Alternate presets. These two buttons are represented on the software screen by the row of 8 preset buttons and one Main preset button.

Above these buttons are fields for the four Preset types; Master, Mic, Chat and Game. The Master preset is the one that's uploaded to the headset and it's a combination of game, chat and mic presets listed right below it.



Clicking the down arrow in any of the four Presets fields will activate a drop-down box that lists all of the presets on your PC hard drive.

When the presets are uploaded to the headset, they can be stored in either the PS3 or XBOX section, as determined by the mode setting on the headset. So, for instance, if the headset is in XBOX mode, the presets will be uploaded into the XBOX section. If the headset is in PS3 mode, the presets will be uploaded into the PS3 section.

## Creating Master Presets

You can create a new master preset by combining different mic, chat and voice presets and saving the master preset. You can rename the master, chat, mic and game presets by clicking in the name field, typing in a new name and clicking the save button to the right.

To select different mic, chat and game presets that make up a master preset, click on the down arrow in one of the three fields and select a preset from the list. Once you've selected three that you like, you can save them as a master preset by clicking the save button to the right of the master presets field. If you don't rename the master preset before saving, you'll be prompted as to whether or not you want to overwrite the existing one.

- Presets that begin with [X360] are designed for the XBOX 360.
- Presets that begin with [PS3] are designed for the PS3.
- Game presets that begin with [DH] means they're using Dolby surround sound.
- Stereo game presets don't start with a [DH] in the name.

You can download more presets from the Turtle Beach web site, [www.TurtleBeach.com](http://www.TurtleBeach.com).

❖ **Presets files are located in the directory SavedPresets, under the PX5 Advanced Sound Editor directory. If you installed the software using the default settings, this would be: C:\Turtle Beach\Px5 Advanced Sound Editor\SavedPresets.**

## Presets Buttons

Pressing any of the 9 presets buttons (Main & 1 – 8) will select the preset on the headset. This can be used instead of toggling through the presets with the buttons on the headset.

## Saving a Preset

To save a preset to the PC hard drive, press the **Save** button (the one with the disk symbol) just to the right of the preset name. Pressing **Save** on the Master preset will save the Master preset along with the settings from the mic, chat and game presets associated with that Master preset. However, it will not save the individual Mic, Chat and Game presets. Pressing the **Save** button on the Mic, Chat or Game presets saves each one independently.

Saving a preset on the hard drive in this manner will add the Preset to the drop down list. It will not save it to the headset.

## Deleting a Preset

To delete a preset from the hard drive (not the headset), press the delete button just to the right of the preset name (the one with the X.) The preset file will be permanently deleted from the hard drive, so before doing this, make sure you really no longer want it!

## “Upload to Headset” Button

Pressing this button followed by pressing one of the nine preset buttons (Main or 1 – 8) will transfer the Master preset from the hard drive to the selected preset location on the headset. For example, if you wanted to upload the Master preset to the headset preset location 4, press **Upload to Headset**, then press the preset button labeled 4. The headset mode



determines what section the preset will be saved in. If the headset is in PS3 mode, it will be saved in the PS3 section, and if it's in XBOX mode it will save it in the XBOX section.

### **“Save Presets to File” Button**

Clicking this button saves all of the presets from the headset to a file on your PC and creates a manifest that allows you to restore the presets back to the headset later on.

### **“Restore Presets from Files” Button**

Pressing this button uploads the group of presets listed in the manifest from the hard drive to the headset.

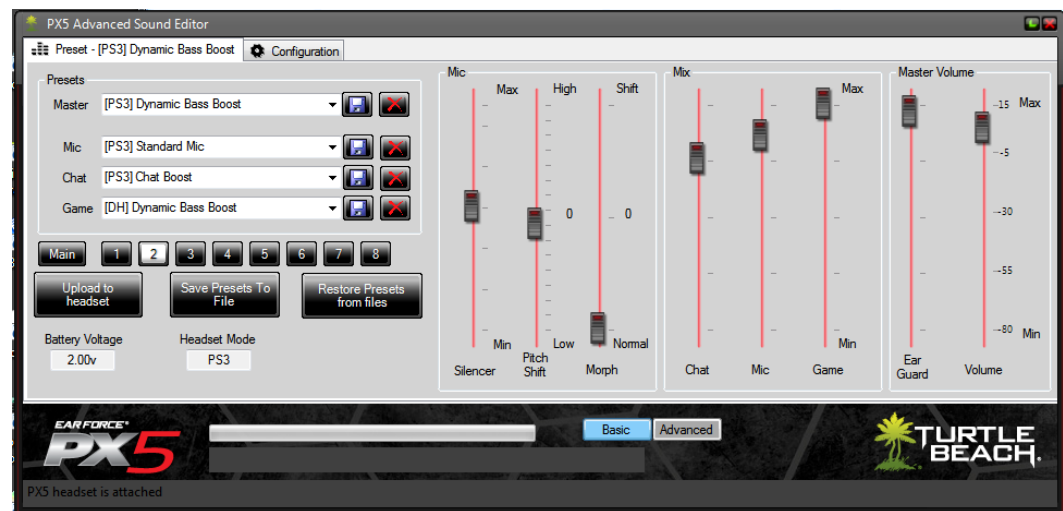
### **Battery Voltage**

The PX5 battery voltage is monitored in the bottom left section of the screen, so you can check if the battery is low. Note that the software will not allow the headset to be programmed if the battery is too low, to ensure it won't shut off while headset data is being edited.

### **Headset Mode**

The PX5 headset operates in either XBOX or PS3 mode and this section indicated which mode is active.

## Software Tutorial



This section provides an overview of how to use the Presets tab on the PX5 Advanced Sound Editor software.

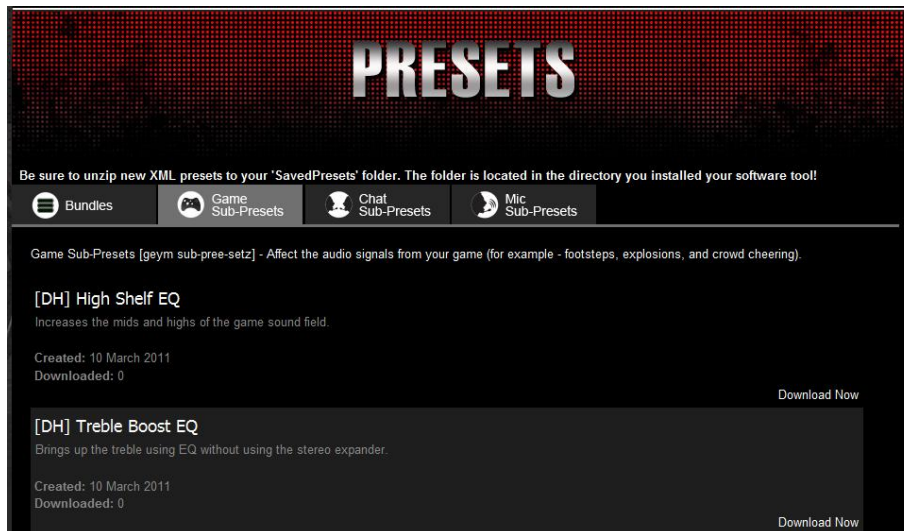
Note that if the battery voltage (shown in the bottom left) drops down too low, the software won't transfer files to and from the headset. This is to prevent a file error caused by the battery failing during a file transfer.

The Headset Mode indicator, next to the battery voltage, indicates whether the headset is in XBOX or PS3 mode.

## Listening to the Factory Presets

1. Connect the PX5 transmitter to your XBOX or PS3 so you can hear sound on the headset. Or, connect it to your PC if it has a digital optical output.
2. Run the PX5 Advanced Sound Editor and connect the PX5 to your PC using the USB cable included in the PX5 package.
3. After the bottom left of the screen indicates "PX5 Headset is attached", the PX5 Advanced Sound Editor will download the presets from the headset to the PC hard drive.
4. After the presets have been transferred from the headset to the PC, play some music or a game so you can hear it in the headset. While you're listening, press the Main and Presets 1 – 8 buttons so you can hear their effect on the sound. The preset names will be displayed in the Presets section of the software as you click the presets buttons. This is the same as selecting presets using the buttons on the headset.
5. Try changing the Master preset by clicking on the small arrow to the right of the name and selecting one of the names from the drop down box. The Master Preset is made up of the three sub-presets below (Mic, Chat and Game). Each time you change the Master preset, the sub-presets also change.

## Downloading New Presets



1. Go to [www.turtlebeach.com/customize.aspx](http://www.turtlebeach.com/customize.aspx) and download some presets. Scroll down and Click on the **Game Sub-presets** tab and click on “**Download Now**” for the first game sub-preset. Save the zip file to a temporary directory on your hard drive.
2. Open the zip file and copy the xml preset file to the **SavedPresets** folder in the directory where you installed the PX5 Advanced Sound Editor. If you used the default settings when installing the program, this would be **C:\Turtle Beach\Px5 Advanced Sound Editor\SavedPresets**.
3. On the PX5 Advanced Sound Editor, click on the pull-down box for the Game sub-preset and you should see the file name you just downloaded. Select it to change the game sound based on that preset.
4. Go back to the web site and download more game, chat and mic presets. Save them all to the SavedPresets directory and you should see them appear in the drop down boxes on the PX5 Advanced Sound Editor software. Then listen to how each one changes the sound of the headset.

## Managing Presets

### Creating Master Presets

To create new Master presets from the sub-presets downloaded from our web site:

1. Select the game, chat and mic sub-presets you'd like to use.
2. Click the mouse in the Master Preset name box and type in a new name.
3. Press the “**Save**” button (the one with the disc symbol) located just to the right of the Master preset name. This will add the new Master preset to the drop down list. You now have a new Master preset that contains the chat, game and mic sub-presets selected.

### Deleting Presets

To delete a preset from the drop down list, select the preset from the drop-down list, then click on the button labeled “X” just to the right of the preset name. This will remove it from the list and delete it from the hard drive.

### Uploading Single Presets to the Headset

To load the current Master preset into the headset:

1. Click on **“Upload to Headset”** and the Presets buttons will start flashing.
2. Click on one of the preset buttons to load the Master preset into that location on the headset.
3. After you’ve unplugged the USB cable from the headset, the preset will remain in the headset so you can select it with the headset presets button without the need for the software.

## Uploading all Presets to the Headset

If you’ve changed all of the presets using the PX5 Advanced Sound Editor software, you can upload all of them into the headset by clicking the **“Restore Presets from Files”** button. This uploads all 18 presets listed in the manifest file of the SavedPresets directory into the headset and is faster than transferring them one at a time using the **“Upload to Headset”** button.

## Editing Presets

Complete editing of presets requires that you run the PX5 Advanced Sound Editor software in Advanced Mode by clicking on the Advanced button at the bottom of the program screen.

- ❖ **Any changes made with the chat, game and Mic tabs in Advanced Mode, or with the Mic, Mix and Master Volume controls in Basic Mode, will be lost unless you save them as part of the Master Preset.**

So if you change any of the settings, be sure to click on the **Save** button next to the Master preset name. Note that this will not save the changes into the individual sub-presets. For example, if you changed the Pitch Shift setting on the mic and you want to save it as part of the Mic sub-preset so you can use it with a different Master preset, you’ll have to click on the save button next to the Mic sub-preset name.

### Changing Mic Preset Settings

1. While talking into the mic, move the **Mic** slider in the Mix section up and down so you can hear how it changes the loudness of your voice in the headset. This feature is called “mic monitoring” and you can set the level to your preference. For now, turn it up all the way so you can hear your voice as you speak into the mic.
2. Move the **Morph** slider from Normal to Shift. Then change the **Pitch Shift** slider up and down and listen to how it changes the pitch of your voice. These two sliders let you control the voice morph feature. Moving the Morph slider towards the middle will mix your normal voice with the pitch-shifted voice, so you can balance between the two.
3. Lightly blow into the microphone as you move the **Silencer (Noise Gate)** slider up and down. Notice that the mic will shut off at a certain point, so the blowing sound is blocked. If you blow harder the mic will turn on, softer and it turns off. The higher you move the slider, the louder you’ll have to speak in order to turn on the mic. By adjusting this slider, you can eliminate room noise so the mic will only pick up your voice when you speak and not the sounds around you.

### Changing the Chat Setting

Adjust the Chat slider in the Mix section to change the level of the chat voices from other players. The more you turn this up, the louder the other players will be.

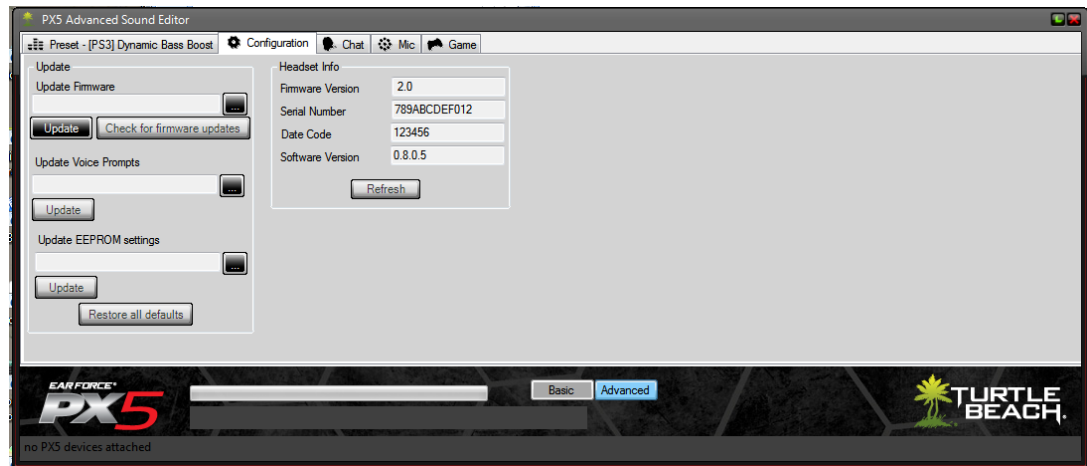
### Changing the Master Volume Settings

The **Volume** slider sets the maximum volume level you’ll hear in the headset. Don’t turn this up all the way to Max, or the headset might distort. A comfortable setting is between 5 and 15.



The **Ear Guard** slider helps to keep loud sounds under control. If you push it up to the top, it won't do anything to the headset sound. As you start turning it down, you'll start to block out loud blasts without affecting the lower level sounds. Try adjusting this so you can protect your ears from very loud sounds while still maintaining the excitement of the game experience. A good position for this slider is about 75% of maximum

## Software Controls - Configuration Tab



The Configuration Tab displays information about the PX5 headset and lets you update the headset firmware, voice prompts and EEPROM settings.

## Update Section

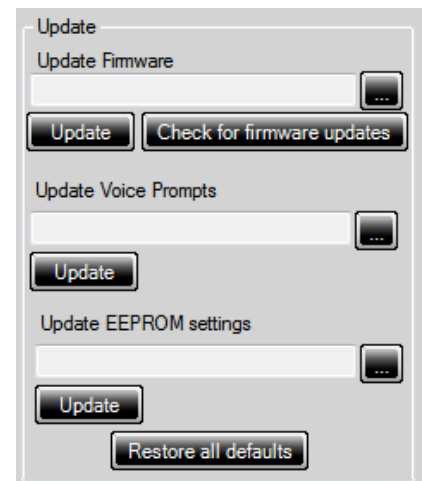
### Update Firmware

The headset operates with internal “firmware”, which is the software that makes the processor run. At times, we’ll release updates to the firmware to fix bugs or add features, so this section makes it easy to update it when it’s available on our web site.

To check if a firmware update is available, click the “**Check for Firmware Updates**” button. The PX5 Advanced Sound Editor software will check the Turtle Beach web site for the latest firmware release and compare it to what’s in your headset. If it’s newer, it will prompt you to download it.

After you download the firmware, you can load it into the **Update Firmware** field by pressing the “...” button next to the field. This will open Windows Explorer where you can navigate to the location where you saved the firmware download. Load the firmware into the display area and then click on the “**Update**” button to upload the firmware to the headset.

- ❖ **It is important that you do not turn off the headset or remove the USB cable while the firmware is being uploaded to the headset. Disrupting the data transfer can cause your headset to become inoperable.**



### Update Voice Prompts

The voice prompts in the headset can be replaced with different ones that you can download from our web site. For instance, you can change the English version to French, German, Italian or Spanish. To do this, go to [www.Turtlebeach.com](http://www.Turtlebeach.com) and click on “Customize” at the top of the screen. Then navigate to the voice prompts section and download the language of your choice.

After you've downloaded the new voice prompts, load them into the display area by clicking on the "...” button, navigating to the location of the download, and clicking on the name. Once the voice prompt file is in the display area, click on the **“Update”** button to upload them into the headset.

## Update EEPROM Settings

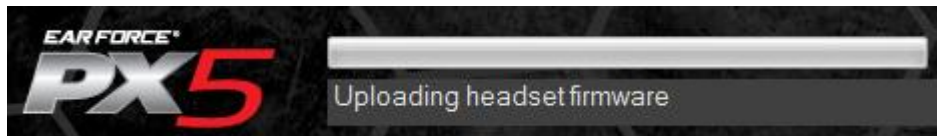
The EEPROM is memory in the PX5 that holds special values in addition to Presets. This includes settings such as the volume level of the microphone, the volume of the voice prompts, etc.. Sometimes, we may change these values and if we do, you can update them with this section of the tool.

Check our web site to see if the EEPROM settings have been updated. If they have, you can download them to your PC, then click the "...” button to find the file, click on the name and it will appear in the display area. Then click the **“Update”** button to upload the new values into the headset.

## “Restore All Defaults” Button

The **“Restore All Defaults”** button returns the PX5 back to its factory settings. Clicking this button connects to our online servers, downloads the latest files and uploads them to the headset. This includes factory presets, voice prompts, firmware and EEPROM settings so you can undo any changes you've made to the headset.

During the update process, the system status will be displayed at the bottom of the screen, as illustrated below. If the battery level is too low, the process might not complete, so it is suggested you replace the batteries with a fresh pair before attempting this procedure.



- ❖ In some cases, while the software is downloading files from the server, it may seem that it is no longer responding. If this happens, please do not shut down the software and instead allow the procedure to complete. The process may take a few minutes.
- ❖ It is important that you do not turn off the headset or remove the USB cable while the files are being uploaded to the headset. Disrupting the data transfer can cause your headset to become inoperable.

## Headset Info Section

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### Firmware Version

This field shows the version number of the firmware loaded into the headset. You can check our website to see if it's the latest one, or simply click the **“Check for Firmware Update”** button in the Update section.

### Serial Number

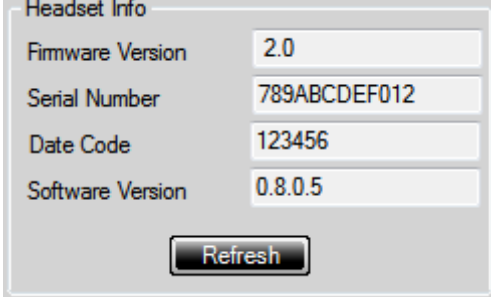
This field shows the serial number of the headset, used for tracking purposes.

### Date Code

This field shows an internal code used by the factory for tracking purposes.

### Version

This field shows the version number of the PX5 Advanced Sound Editor software.



Headset Info	
Firmware Version	2.0
Serial Number	789ABCDEF012
Date Code	123456
Software Version	0.8.0.5

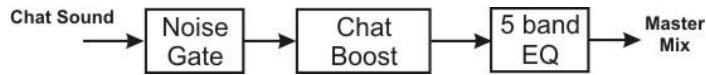
Refresh

### “Refresh” Button

Click this button to refresh all of the above data.

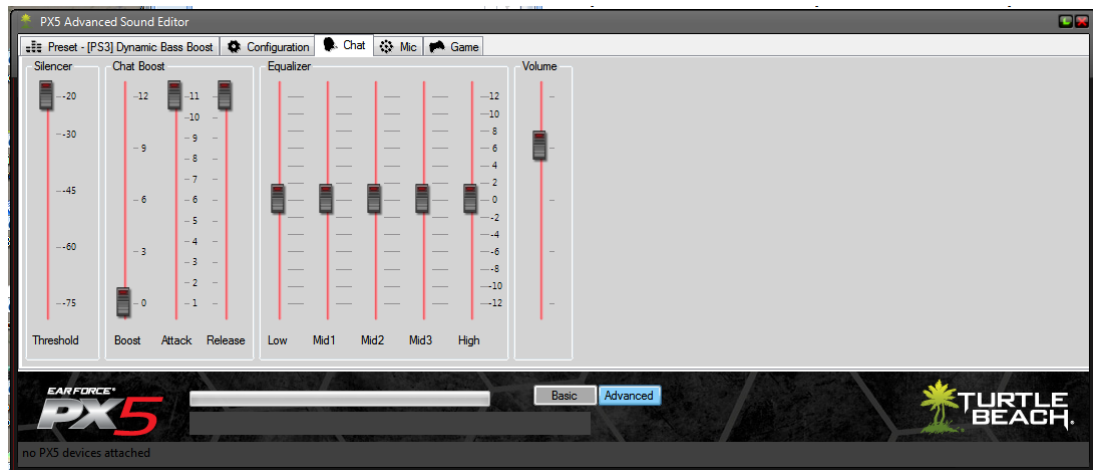
## Software Controls – Chat Preset Tab (Advanced Mode Only)

The following diagram illustrates the audio processing sections in the chat channel:



The parameters in each processing section are represented in the Chat Preset tab.

❖ **NOTE: Any edits made in this tab are not saved unless you press the Chat Preset “Save” button in the Presets Tab.**



❖ **TIP: Rather than click on the slider knob with the mouse and dragging it to the desired position, click on the point you want it to go and the slider knob will automatically jump there. Also, you can double click on the Equalizer sliders to center them midway between the top and bottom position.**

### Silencer

The Silencer is a noise gate that eliminates background noise on the chat channel. To set the noise gate threshold, listen to the chat channel while no one is speaking on the online chat and bring up the threshold until you no longer hear background noise. Then, when someone speaks on the chat channel, check if their voice comes through. If it seems that you're losing some chat voices, turn down the threshold a bit so that they come through while still eliminating the background noise.

The Noise Gate is very useful when using the Xbox Live because the Xbox controller is notorious for having excessive background noise. You can prevent the chat channel from passing the background noise from the Xbox controller by setting the noise gate just above the background noise level. That way, the chat channel will remain quiet while letting the chat voices pass when someone speaks on Xbox live.

### Chat Boost™

#### Gain Boost

The Chat Boost stage is a dynamics processor that maintains the chat signal at a specified level in relation to the game level. As the game sound gets louder, the chat gain is increased to keep the chat voices above the game sound. The Gain Boost sets the amount of chat boost and ranges from 0dB (no boost) to 12dB (about a 4 times boost).

### Attack

The attack time adds a lag to the gain boost so the gain does not jump erratically in response to fast transient envelope changes. With a fast attack, the gain will jump to the higher level every time a loud game sound occurs. Adding some attack will keep the chat boost off unless the game sound is consistently loud. A setting of 3 – 4 seconds is typical. Note that the 1 – 11 intervals on the Attack and Release sliders refers to seconds.

### Release

The release time determines how long the gain boost will remain after the game sound returns to a normal level. A typical setting is 9 seconds, meaning that if the game returns to normal sound for longer than 9 seconds, the chat gain will return to 0dB.

## Equalizer

The equalizer modifies the tone of the chat signal. The sliders will boost or cut the designated frequencies by +/-12dB. The frequencies for each slider are:

Low: 100Hz shelving filter

Mid 1: 250Hz band-pass filter

Mid 2: 1kHz band-pass filter

Mid 3: 4kHz band-pass filter

High: 8kHz shelving filter

The Low and High shelving filters provide a bass and treble boost respectively. The Mid 1, 2 and 3 band pass filters provide a resonant boost or cut at the specified frequency.

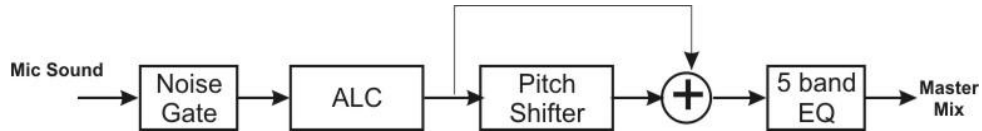
❖ **TIP: Double clicking a slider sets it to the center position (zero boost and cut)**

## Chat Volume

This slider adjusts the amount of chat level heard in the headset.

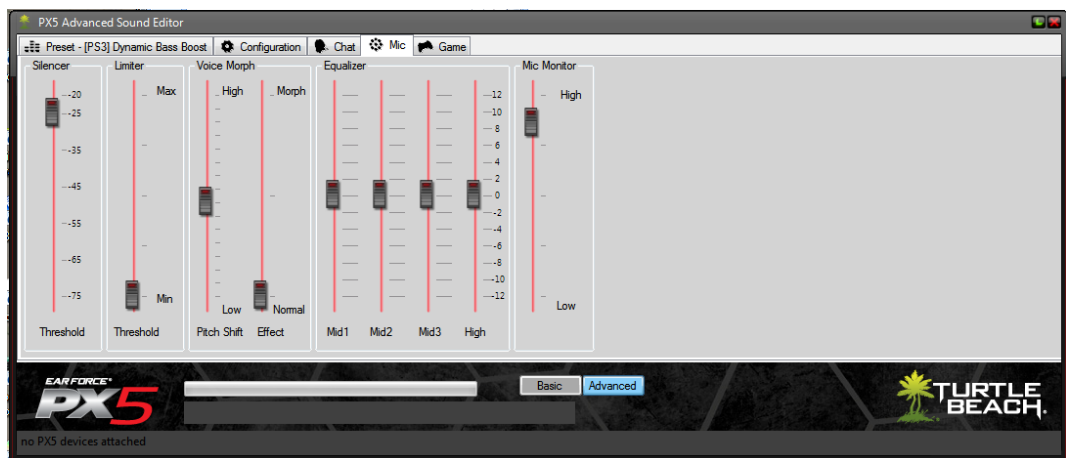
## Software Controls – Mic Preset Tab (Advanced Mode Only)

The following diagram illustrates the audio processing sections in the mic channel:



The parameters in each processing section are represented in the Mic Preset tab.

❖ **NOTE:** Any edits made in this tab are not saved unless you press the Mic Preset “Save” button in the Presets Tab.



❖ **TIP:** Rather than click on the slider knob with the mouse and dragging it to the desired position, click on the point you want it to go and the slider knob will automatically jump there. Also, on some sliders, such as the Equalizer, you can double click to center them midway between the top and bottom position.

### Silencer

The Silencer noise gate eliminates background noise from being picked up by the mic. To set the noise gate threshold, listen to the mic and turn up the threshold until you no longer hear the room noise. Then speak into the mic at a comfortable level and make sure the noise gate turns on, passing your voice. If it seems that you have to speak too loudly, turn down the threshold a bit so that you can eliminate room noise while still using a comfortable speaking tone.

For instance, if you’re in a room with a blasting air conditioner, you can prevent the mic from picking up the sound of the air conditioner by setting the noise gate just above the air conditioner sound. That way, when you speak, the mic will pick up your voice, but when you’re not speaking it will shut out the sound of the air conditioner.

### Limiter

The limiter makes sure your voice level won’t go above the threshold setting, so it won’t get too loud if you speak too close to the mic. Speak into the mic and set the threshold to a comfortable level that doesn’t make the voice sound unnatural, but keeps it from getting too loud.

## Voice Morph

### Pitch Shift

This slider lets you change the pitch of your voice either up and down. Moving the slider higher will make your voice sound higher-pitched, while moving it lower will make it sound deeper. Double click the slider to make it jump to the middle, where the pitch is not shifted.

### Morph

This slider sets the balance between your normal voice and pitch shifted voice. Moving the slider down passes more of your normal voice and moving it up adds the pitch shift you've selected. If you place it in the middle, you'll get a 50/50 balance between normal and pitch shifted voice.

### Multi-Band Equalizer

The band equalizer lets you change the tone settings of the voice signal. The sliders will boost or cut the designated frequencies by +/-12dB at the following frequencies.

Mid 1: 250Hz band-pass filter

Mid 2: 1kHz band-pass filter

Mid 3: 4kHz band-pass filter

High: 8kHz shelving filter

The High shelving filter provides a treble boost. The Mid 1, 2 and 3 band pass filters provide a resonant boost or cut at the specified frequency..

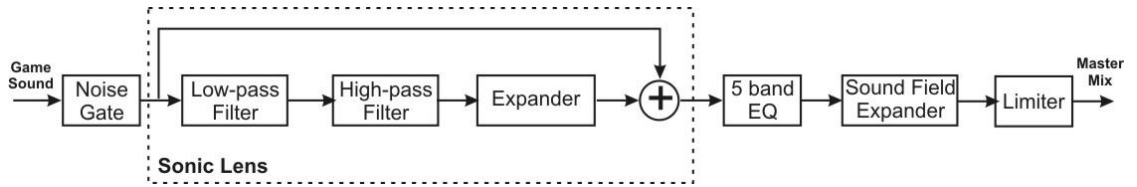
**TIP: Double clicking a slider sets it to the center.**

## Mic Monitor

The mic monitor signal is routed to the headset speakers so you can hear your voice as you speak into the mic. This slider adjusts the level of the mic so you can determine just how much you want to hear.

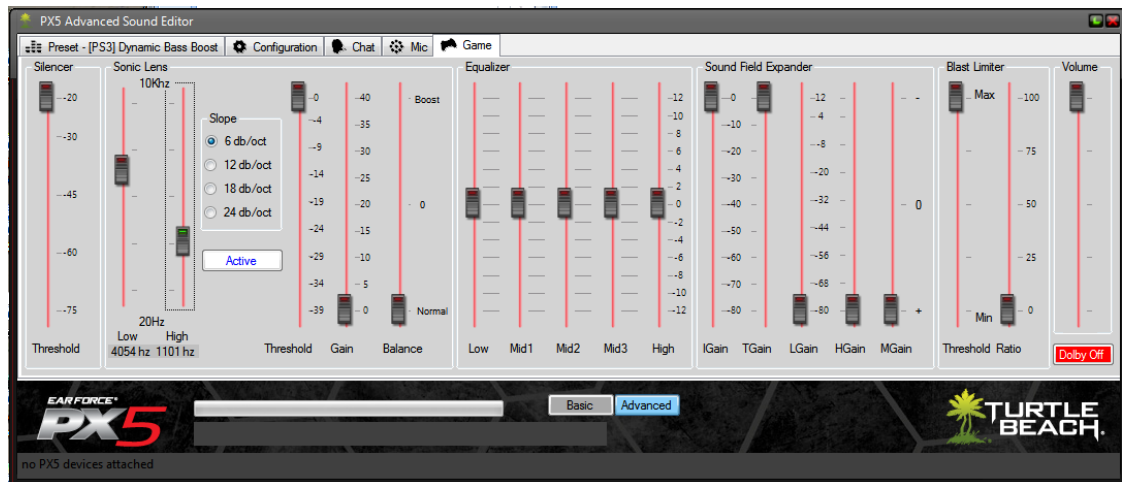
## Software Controls – Game Preset Tab (Advanced Mode Only)

The following diagram illustrates the audio processing sections in the game channel:



The parameters in each processing section are represented in the Game Presets tab.

❖ **NOTE:** Any edits made in this tab are not saved unless you press the Game Preset “Save” button in the Presets Tab.



❖ **TIP:** Rather than click on the slider knob with the mouse and dragging it to the desired position, click on the point you want it to go and the slider knob will automatically jump there. Also, on some sliders, such as the Equalizer, you can double click to center them midway between the top and bottom position.

### Silencer

The Silencer noise gate eliminates background noise from the game sound input. When the game level is below the threshold setting, the noise gate blocks the game sound from passing, thereby creating silence. This helps eliminate the background noise from the game input signal, thereby improving the signal-to-noise ratio of the game audio path.

The threshold level should be set as low as possible to assure none of the soft game sounds will be cut off by the silencer. To set the optimum threshold, listen to quiet parts of the game and turn up the threshold until the sound shuts off.

### Sonic Lens™

The Sonic Lens is a combination of a high-pass and low pass filter followed by an expander. By setting the cutoff frequencies of these filters, the expansion can be limited to affect sounds that are in a specific frequency range defined by the low and high pass filters. This

allows softer sounds in the frequency range to be boosted in volume while not affecting louder sounds.

For example, to boost the sound of a grenade pin being pulled, it is better to boost higher frequency sounds by adjusting the low and high pass filters. The Sonic Lens is also useful for boosting quiet sounds like footsteps without also boosting the level of louder sounds like explosions.

A mixer stage at the output of the Expander output allows the adjustment of the pre and post expander signal so that the unprocessed game sound can be balanced with the processed game sound.

### Low

This slider sets the cutoff frequency for the low pass filter. Frequencies above the cutoff will not pass through.

### High

This slider sets the cutoff frequency for the high pass filter. Frequencies below the cutoff will not pass through.

### Slope

These buttons set the filter roll-off from -6dB/Octave to -24 dB/Octave. The -6dB slope will pass more of the frequencies than will the -24 dB slope.

### Active/ Pass Thru Button

When **Active** is enabled, the high and low pass filters are activated. When **Pass Thru** is enabled, the filters are disabled.

### Threshold

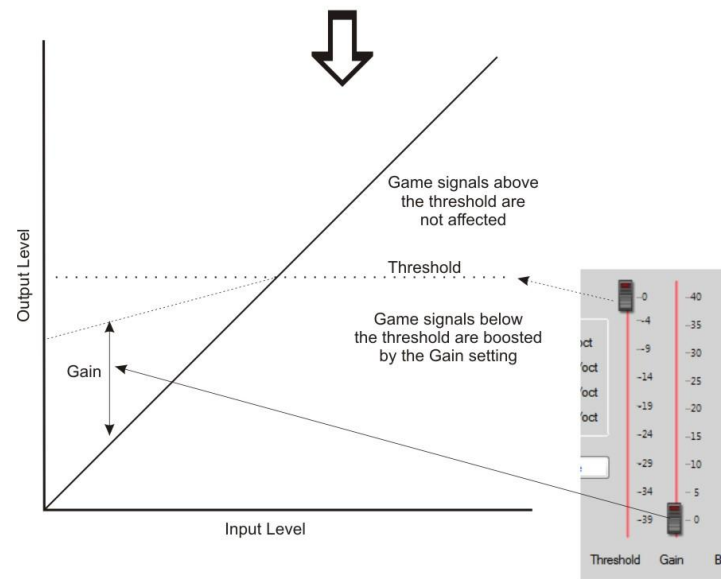
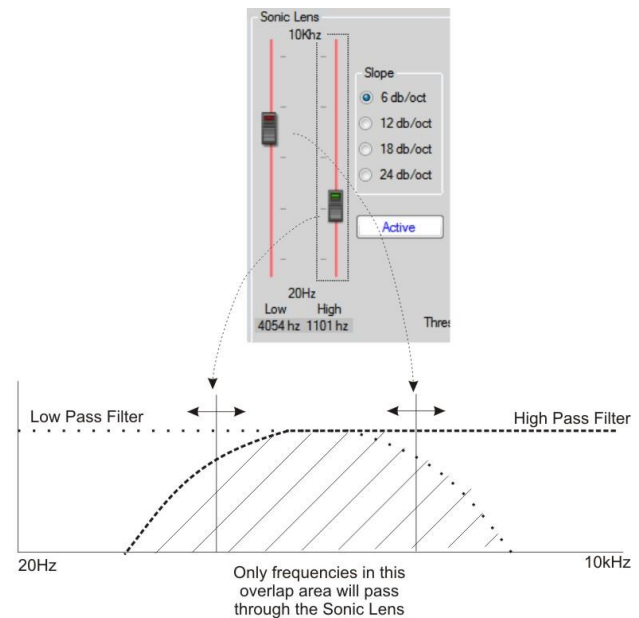
Sounds below the threshold setting will be boosted by the amount of gain set by the gain slider. Sounds above the threshold will not be affected.

### Gain

The gain setting determines how much the sounds below the threshold will be boosted.

### Balance

This slider sets the balance between the expander output and the normal output. When set to Normal (bottom), the game sound will be unaffected by the Sonic Lens. When set to Expand (top), the game sound is fully processed by the Sonic Lens. When set to the middle, a mix of 50/50 normal and Sonic Lens game sound will be heard.



## Multi-Band Equalizer

The multi-band equalizer lets you change the tone of the game sound. The sliders will boost or cut the designated frequencies by +/-12dB. The frequencies for each slider are:

Low: 100Hz shelving filter

Mid 1: 250Hz band-pass filter

Mid 2: 1kHz band-pass filter

Mid 3: 4kHz band-pass filter

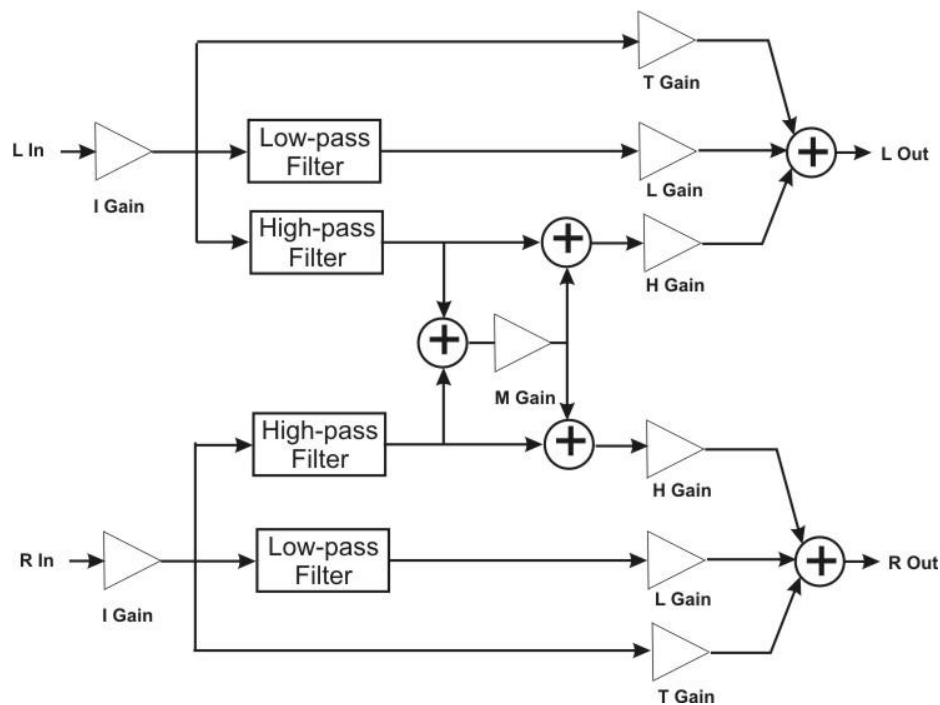
High: 8kHz shelving filter

The Low and High shelving filters provide a bass and treble boost. The Mid 1, 2 and 3 band pass filters provide a resonant boost or cut at the specified frequency.

❖ **TIP: Double clicking a slider sets it to the center position (zero boost and cut)**

## Sound Field Expander

The sound field expander can be used for widening a stereo sound field, boosting center sounds and accentuating sounds from the left and right sides. The signal flow of the expander is shown below. The left and right channels are processed independently and split into four paths.



- The “Through” path (I) is the direct unmodified sound. The level of this path is controlled by the TGain slider.
- The Low Pass Filter path (L) filters out frequencies above 200Hz. The level of this path is controlled by the LGain slider.
- The High Pass Filter path (H) filters out frequencies below 200Hz. The level of this path is controlled by the HGain slider.
- The left and right High Pass Filter paths are added or subtracted from each other to form a mono signal that is added to the original high-pass filter signals. The add/subtract amount is set by the MGain slider.

These paths are mixed together to form the left and right outputs and the levels of each path determines the final effect achieved.

### **Initial Gain (I Gain)**

This sets the overall gain into the Sound Field Expander and should be set to a level that does not produce distortion, yet achieves adequate signal gain.

### **Through Gain (T Gain)**

This gain setting determines the amount of unprocessed signal that is mixed into the final output. When combined with the H Gain and M Gain signals, various expander effects are achieved.

### **Low Frequency Gain (L Gain)**

This gain setting determines the amount of bass signal that is passed through the processing stage. The cutoff is about 200 Hz. When the LGain is set low, the bass is cut and when it is set high the bass is boosted. The result is similar to a “sub-woofer” effect.

### **High Frequency Gain (H Gain)**

This gain setting determines the amount of high frequency signal that is passed through the processing stage. The cutoff frequency is the same as bass cutoff frequency (200 Hz), but it filters out frequencies below the cutoff rather than above. The expander is most effective on high frequency signals, so this gain setting is critical to get the most effective expander effect.

### **Mono Gain (M Gain)**

The H Gain signal is affected by the position of the M Gain control. The high frequency signals from the H Gain left and right channels are mixed together into a mono signal which is controlled by the M Gain slider.

- When positioned in the center, the M Gain slider does nothing, so the H Gain is a stereo signal.
- When positioned at the bottom, the M Gain slider adds the left and right channels together and routes them to the H Gain slider. So the H Gain controls a mono signal that is the sum of left and right signals.
- When positioned at the top, the M Gain slider subtracts the left and right channels and routes them to the H Gain slider. So any signals that are panned to the center (i.e. same level on left and right sides) are canceled.

The H Gain, M Gain and T Gain sliders work together to provide the Sound Field effects. For example, with the H Gain and T Gain both turned up, if the M Gain is also turned up, it will remove the center channel signals and the stereo field will widen.

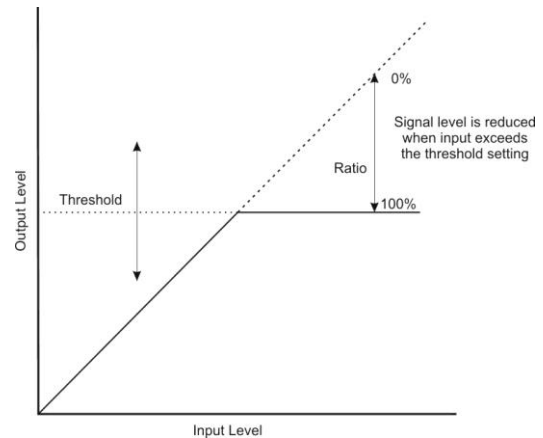
As another example, if the H Gain and T Gain sliders are both turned up and the M Gain slider is turned all the way down, the center channel will be boosted as the left and right channels are added together and summed to the stereo signal.

Adjusting the ratios of the H and M Gain settings will result in different effect depths. The L Gain setting will control the level of bass in the final sound and will not affect the directional effects.

- ❖ **When using the Sound Field Expander, the Dolby effect should be turned off so that it doesn't affect the stereo separation of the game sound.**

## Blast Limiter

The Blast Limiter lets you turn up the volume to hear soft sounds while limiting the volume of louder sounds, like gun shots and explosions. The Blast Limiter is a variable gain stage with a threshold used for limiting the signal levels above the threshold setting. The amount of gain reduction is set by the Ratio slider. The higher the Ratio slider is turned up, the more the sounds above the threshold are attenuated. This effect is placed at the end of the game sound chain so that the sound level caused by processing in all preceding stages can be limited in amplitude.



### Threshold

The volume of any game sounds below the threshold setting is not changed. The volume of game sounds above the threshold setting are reduced an amount set by the ratio slider.

### Ratio

The gain above the threshold is reduced by this ratio setting. For example, a setting of 25 reduces the gain by 25%.

## Game Volume

This slider adjusts the volume level of the game channel heard in the headset.

## Dolby on/off Button

When using the Sound Field Expander, some settings might compromise the Dolby processing. In these cases, you can instruct the game preset to turn off Dolby processing by clicking on the Dolby button and shutting it off. If Dolby is turned off in a preset, the Bypass LED on the transmitter will turn on to indicate that Dolby processing is inactive.