

MUSIC – BEAT

Audio Visualizer Asset

1.4.2 release

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“Music-Beat”

Audio Visualizer Asset Documentation

Abstract

The purpose of this asset is to provide the user with a tool that allows them to visualize audio using two main components: an Audio Controller (gets an audio input), and also whether a shaded or unshaded object with configurable properties. You will need Universal Render Pipeline in order for Shader Graph shaders to work. However, if you do not want to install it, the project can also work. Steps for setting up the project with Universal Render Pipeline are presented below.

Before Starting

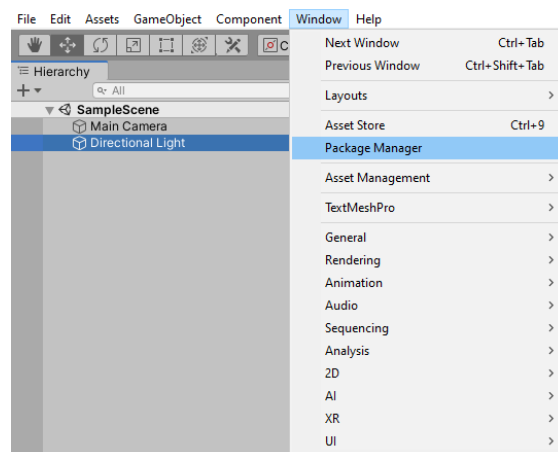
The asset has **two demo scenes** for you to test it, the first one is called ‘**DemoScene**’, play it to have a **preview** of what you can do with this asset **without installing Universal Render Pipeline (Universal RP)**.

The second scene is ‘**SGDemoScene**’ and **preview**s how the project works **using Universal Render Pipeline (Universal RP)**.

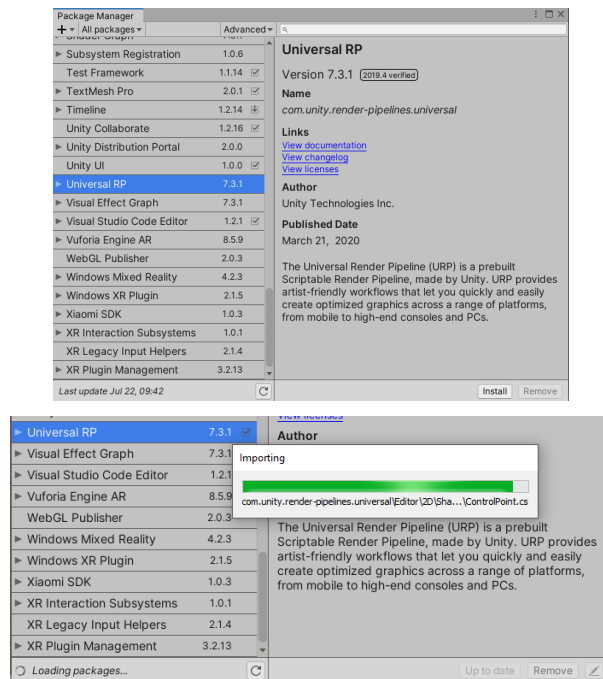
**If you don’t want to install Universal RP, just use the prefab called ‘UnshadedObject’ and skip the section ‘Setting up the project’.*

Setting up the project (for URP)

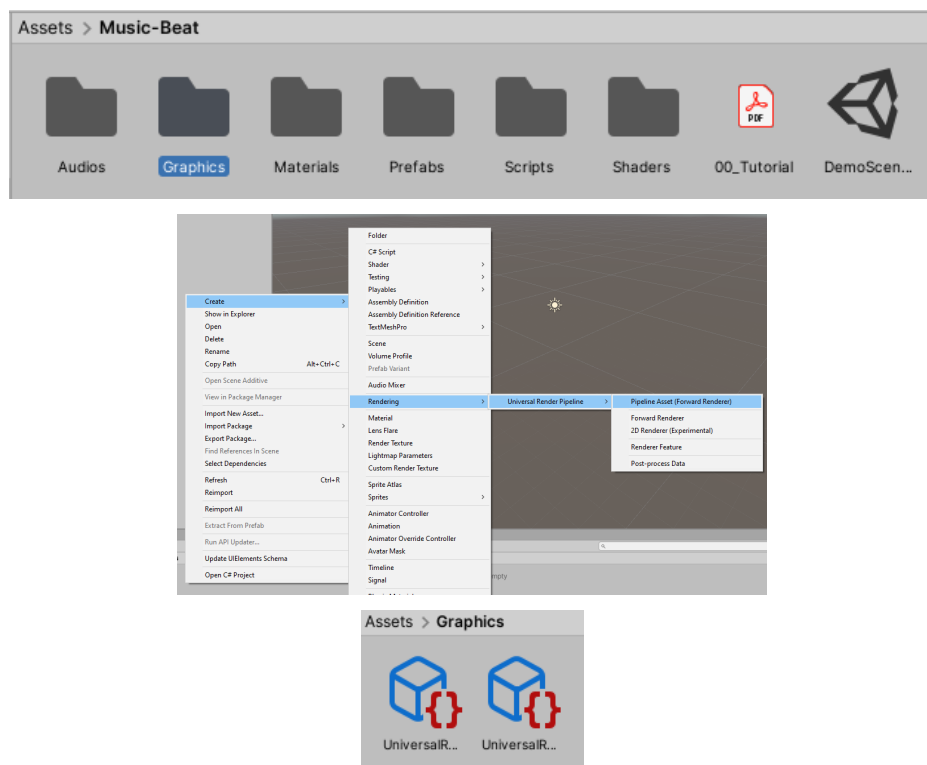
- **Setting up Shader Graph** → in order for the ShadedObject, you need to install Universal RP, this is not necessary to use the rest of the asset.
 1. Go to the ‘**Window**’ tab on top of the **Unity window** and select **Package Manager**.



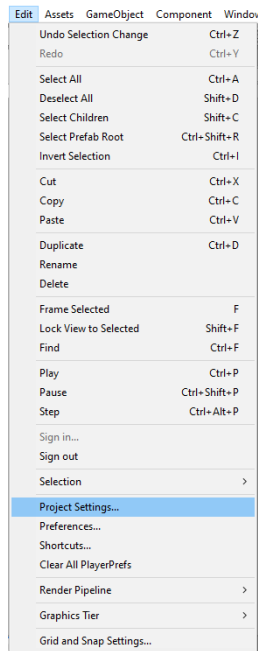
2. Search for ‘**Universal RP**’ and if not installed, **install it**.



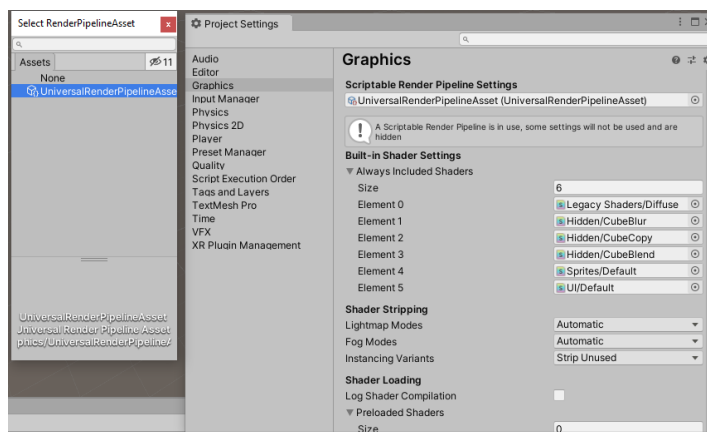
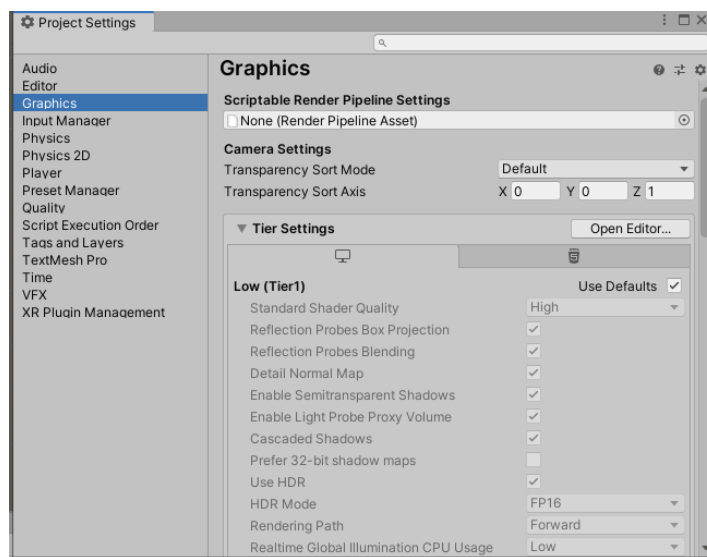
3. Inside the folder **Graphics** of the package, create an **Universal Render Pipeline**. Two files must appear after creation.



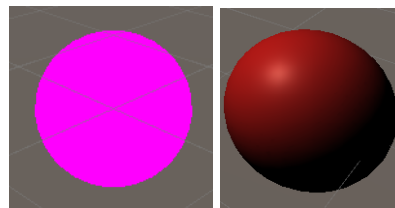
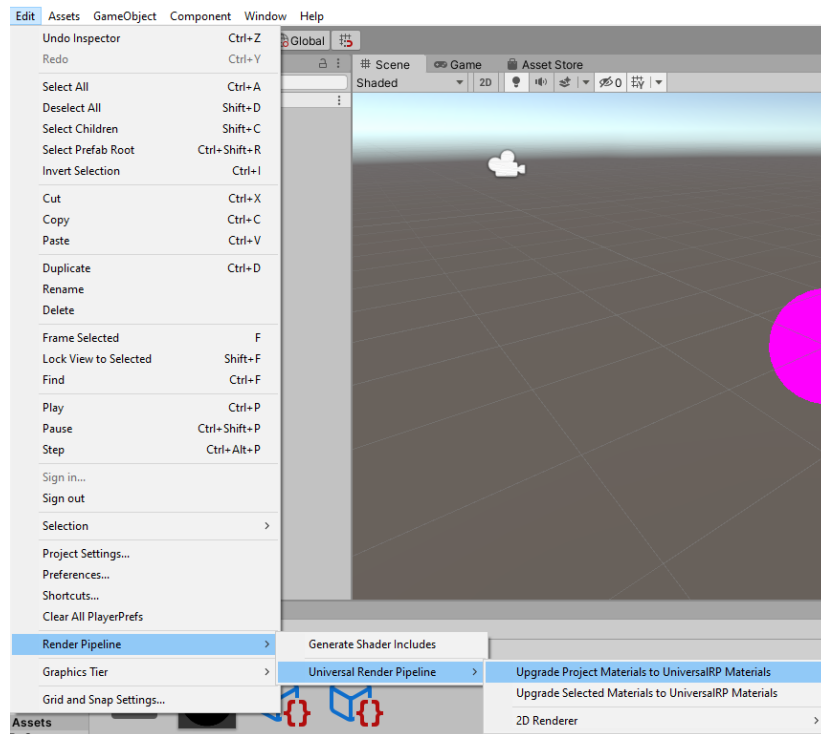
4. Go to **Project Settings**, found on the **Edit** tab.



5. Go to **Graphics** and link the **Pipeline** created on **step 4** to the 'Scriptable Render Pipeline Settings' parameter.



NOTE: if you are importing the package into an already started project and after installing the Universal Render Pipeline the scene turns pink, you only need to upgrade the project materials into Universal RP Materials.



Before || After

Prefabs

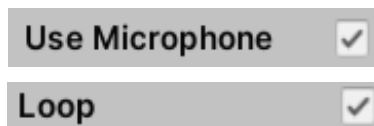
- **AUDIO CONTROLLER**

Audio Controller is an empty object that **reads an audio input**. This audio input can either be a microphone or an audio clip.

In case you use an audio clip, make sure that you attach an audio file to the Audio Clip parameter before launching the game. In order for the music to play correctly, you need to check the **Play On Awake** checkbox. Check the image for more information.



In case you are using a microphone set **Use Microphone** to true and the. Make sure the **Loop** setting, under the Audio Source component, is also set to true.



- **UNSHADED OBJECT**

Unshaded Object is the **main component of this asset**. It lets you build your own audio visualizer and customize it to please your likings.

Its behaviour controller can be divided into five main Tabs:

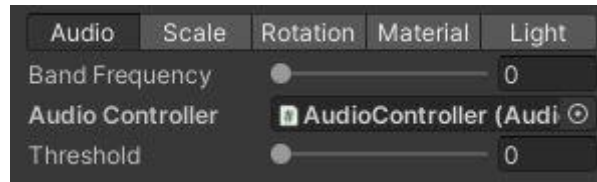
1. **Audio Tab**

In this tab you can modify the audio input the object will receive.

The **Band Frequency** slider allows you to **control which range of frequencies your object will respond to**. The closer to zero, the lower the pitches will be.

The **Audio Controller** component indicates which audio controller in the scene will your object respond to.

The **Threshold** slider Indicates the minimum value that the band buffer has to exceed to make the object react. It ranges from 0 to 1.



2. Scale Tab

These parameters allow you to control how the scale responds to the sound's pitch. The **'X', 'Y' and 'Z' checkboxes** are for setting on which axis the object's scale will be modified. If none of these are checked, the object will keep its original size.

Scale Multiplier establishes the sensitivity to which the scale is going to respond. Note that the higher the value of this parameter, the greater the change of the object's scale.



3. Rotation Tab

The parameter's objective is to control the rotation of the object. If the **Rotate checkbox** is selected, the object will be rotating according to the sound clip in whichever axis you decide. **Speed Multiplier** establishes the sensitivity to which the rotation speed is going to respond. Note that the higher the value of this parameter, the faster the object will rotate.



4. Material Tab

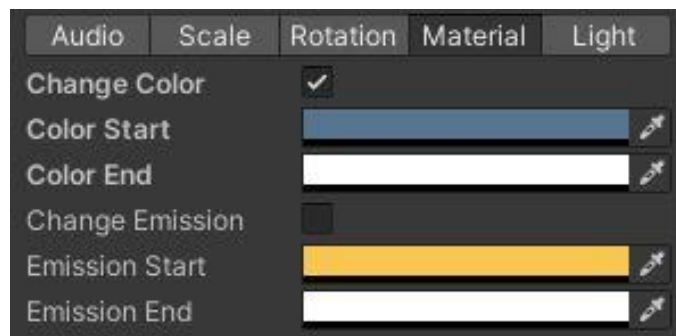
The material behaviour of the object is controlled by these parameters.

To be able to change the color of the object according to the pitch volume, the checkbox **Change Color** must be selected. Else, **Color Start** will be the object's default color.

Color Start will be the rendered color when the project starts. As the volume increases the rendered color will be changing, getting every time closer to **Color End**.

To be able to change the emission of the object according to the pitch volume, the checkbox **Change Emission** must be selected. Else, **Color Start** will be the object's default color.

Emission Start will be the rendered color when the project starts. As the volume increases the rendered color will be changing, getting every time closer to **Emission End**.



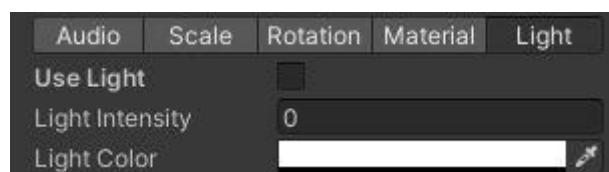
5. Light Tab

Allows light to be emitted from the object.

In order for the light to respond to the sound clip, set the **Use light** checkbox to true.

To change the light color, the **Light Color** field needs to be altered.

To adjust the intensity of the light emitted, the field **Light Intensity** needs to be changed.



• SHADED OBJECT

Unshaded Object is the **URP version of the Shaded Object**. It lets you build your own audio visualizer and customize it to please your likings. It is worth knowing that in order to make this prefab work, you should follow the [setting up the project tutorial](#).

Its behaviour controller can be divided into this main tabs:

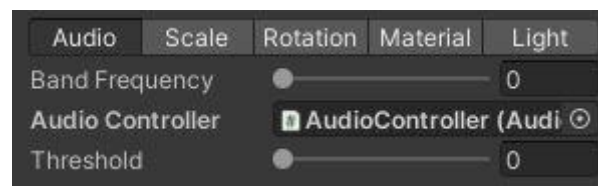
1. Audio Tab

In this tab you can modify the audio input the object will receive.

The **Band Frequency** slider allows you to control which range of frequencies your object will respond to. The closer to zero, the lower the pitches will be.

The **Audio Controller** component indicates which audio controller in the scene will your object respond to.

The **Threshold** slider Indicates the minimum value that the band buffer has to exceed to make the object react. It ranges from 0 to 1.



2. Scale Tab

These parameters allow you to control how the scale responds to the sound's pitch. The **'X', 'Y' and 'Z' checkboxes** are for setting on which axis the object's scale will be modified. If none of these are checked, the object will keep its original size.

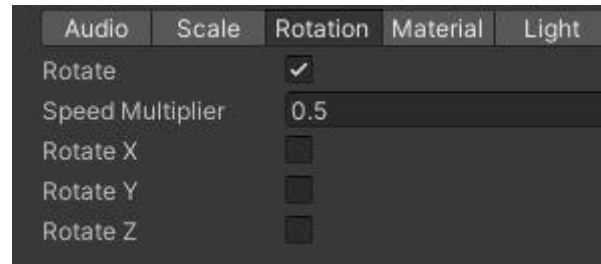
Scale Multiplier establishes the sensitivity to which the scale is going to respond. Note that the higher the value of this parameter, the greater the change of the object's scale.



3. Rotation Tab

The parameter's objective is to control the rotation of the object. If the **Rotate checkbox** is selected, the object will be rotating according to the sound clip in whichever axis you decide. **Speed Multiplier** establishes the sensitivity to

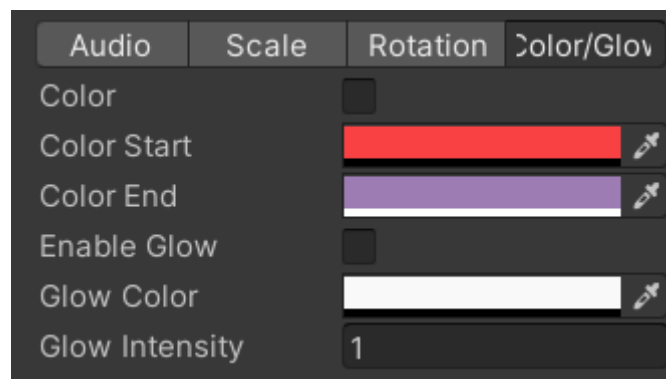
which the rotation speed is going to respond. Note that the higher the value of this parameter, the faster the object will rotate.



4. Color/Glow Tab

The **color behaviour** of the object is controlled by these parameters. To be able to change the color of the object according to the pitch volume, the **checkbox Color** must be selected. Else, **Color Start** will be the object's default color. Color Start will be the rendered color when the project starts. As the volume increases the rendered color will be changing, getting every time closer to **Color End**.

This tab also allows light to be emitted from the object. In order for the light to respond to the sound clip, set the **Glow control** checkbox to true (tick it). To change the emission color, the **Glow Color** field needs to be altered. To adjust the intensity of the light emitted, the field **Glow Intensity** needs to be changed.



• DANCING BOT

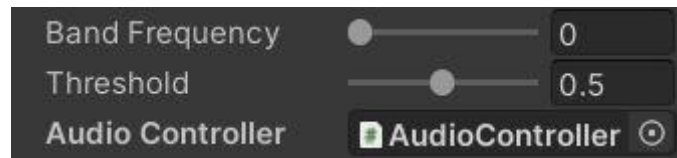
The previous 2D Dancing Character prefab has been replaced for this new much simpler prefab.

This prefab consists of a **3D character intended to display audio responsive animations**. The character has two possible states: Idle and Dance01. It will change from Idle to Dance01 according to the audio Input it receives.

The **Band Frequency** slider allows you to **control which range of frequencies your object will respond to**. The closer to zero, the lower the pitches will be.

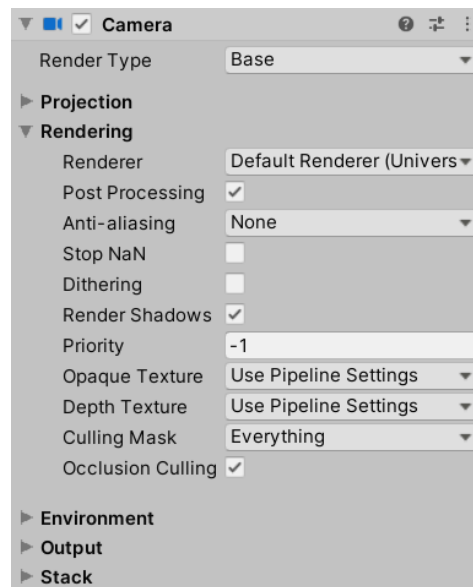
The **Audio Controller** component indicates which audio controller in the scene your object will respond to.

The **Threshold** slider Indicates the minimum value that the band buffer has to exceed to make the object react. It ranges from 0 to 1.



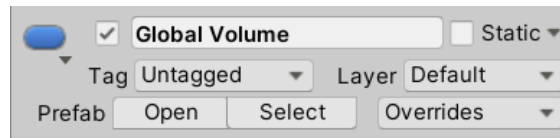
- **GLOWING CAMERA**

To **enable the emission of light in the cubes**, the **normal camera needs to be replaced with this prefab**. It has been pre-configured for its use, No further changes needed.



- **GLOBAL VOLUME**

This prefab **enables the glow emission in the scene**. It needs to exist in the scene in order to work properly.



• AUDIO REACTOR

This prefab is a script you can add to any other 3D prefab you have in your scene in order to make its scale or rotation react to audio

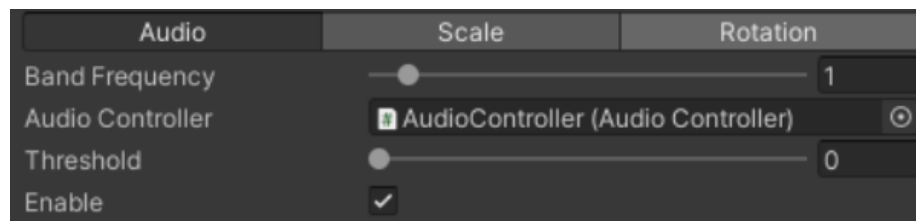
1. Audio Tab

The **Band Frequency** slider allows you to control which range of frequencies your object will respond to. The closer to zero, the lower the pitches will be.

The **Audio Controller** component indicates which audio controller in the scene your object will respond to.

The **Threshold** slider Indicates the minimum value that the band buffer has to exceed to make the object react. It ranges from 0 to 1.

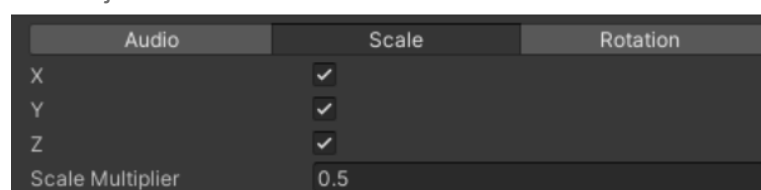
The **Enable** checkbox allows all the behaviour to react to audio or to stop it.



2. Scale Tab

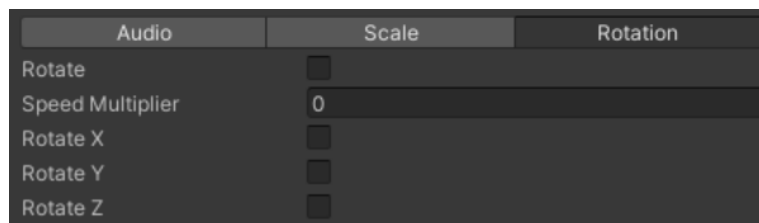
These parameters allow you to control how the scale responds to the sound's pitch. The **'X', 'Y' and 'Z' checkboxes** are for setting on which axis the object's scale will be modified. If none of these are checked, the object will keep its original size.

Scale Multiplier establishes the sensitivity to which the scale is going to respond. Note that the higher the value of this parameter, the greater the change of the object's scale.



3. Rotation Tab

The parameter's objective is to **control the rotation of the object**. If the **Rotate checkbox** is selected, the object will be rotating according to the sound clip in whichever axis you decide. **Speed Multiplier** establishes the sensitivity to which the rotation speed is going to respond. Note that the higher the value of this parameter, the faster the object will rotate.



• Particle behaviour

This prefab is a script you can add to any particle system you have in your scene and **make it reactive to sound**.

The **Band Frequency** slider allows you to control which range of frequencies your object will respond to. The closer to zero, the lower the pitches will be.

The **Threshold** slider Indicates the minimum value that the band buffer has to exceed to make the object react. It ranges from 0 to 1.

The **Audio Controller** component indicates which audio controller in the scene your object will respond to.

The **Enable checkbox** allows all the behaviour to react to audio or to stop it.

The **Particles to emit** is the amount particles that will be emitted once the threshold is surpassed.

HOPE YOU LIKE IT,
HAVE FUN!
:)



- JPPC & MGC