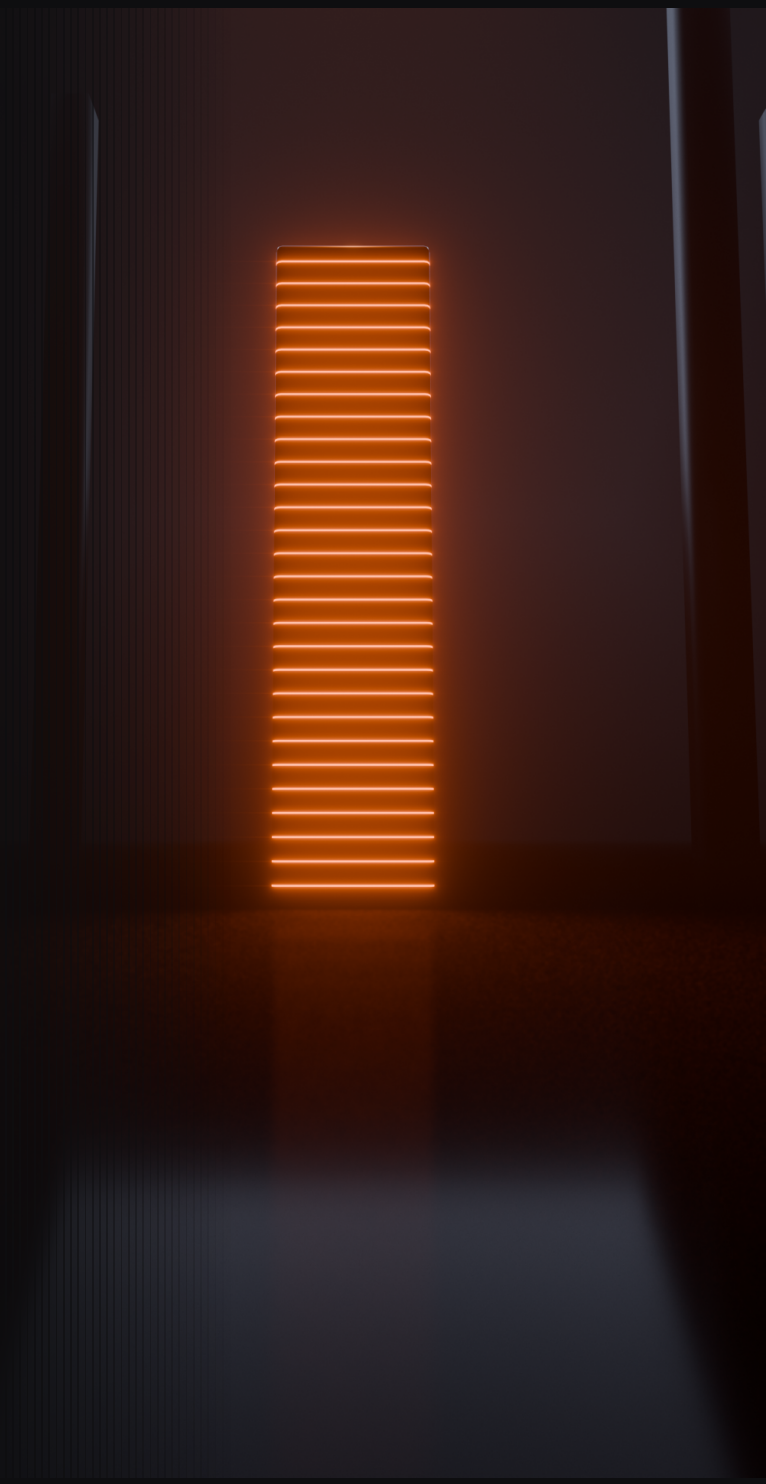
[BLENDER ADD-ON] USER GUIDE

AUDIO REACT

Your music drives your scene.
Automatically.



PART 1 - QUICK START
Install and bake your first animation in 5 minutes.

PART 2 - IN DEPTH
Every setting explained, recipes, troubleshooting.

Blender 4.4 - 5.1 // by ITUR @itur.motion

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PART 1

QUICK START

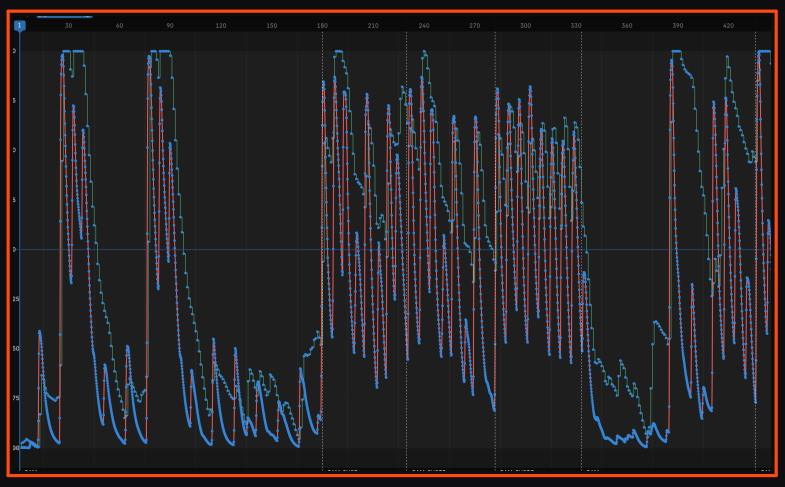
Everything you need to get a result. If you only read one part, read this one.

WHAT AUDIOREACT DOES

AudioReact listens to an audio file and turns it into **keyframes**. Those keyframes drive things in your scene: a light's power, a value in a shader, a Geometry Nodes input, an object's scale or rotation.

It works by **baking**: the animation is written once, as normal F-curves. Your render always matches the music exactly, and you can edit the result in the Graph Editor like any other animation.

The basic idea: a **track** listens to one part of the sound (kick, snare, sub bass...). A track drives one or more **targets**. You can have as many tracks as you want.



Real AudioReact output in the Graph Editor: kick and sub bass baked as F-curves.

INSTALL

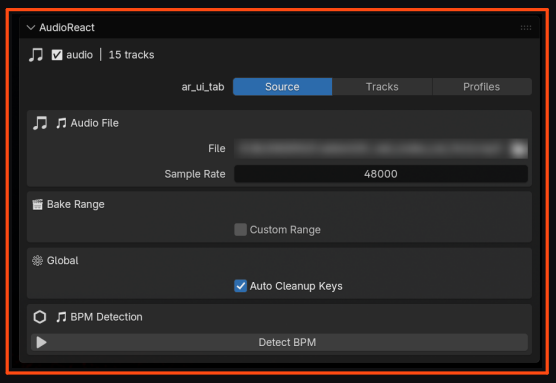
STEP	ACTION
1	In Blender: **Edit > Preferences > Add-ons**.
2	Click the small arrow at the top right, then **Install from Disk...** and select the AudioReact **.zip** (don't unzip it). You can also drag and drop the .zip into Blender.
3	Make sure **AudioReact** is enabled in the list.
4	In the 3D Viewport press **N** and open the **AudioReact** tab. That's it: nothing else to install.

NOTE AudioReact reads your audio with Blender's own built-in audio engine. No FFmpeg or other external tool is needed, and the add-on never downloads or runs anything outside Blender.

YOUR FIRST BAKE IN 5 STEPS

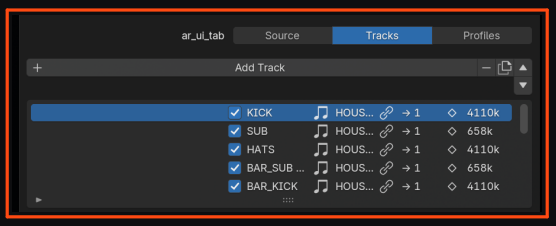
01 LOAD YOUR AUDIO

Source tab > **File**: pick your audio file. The status line at the top shows a check mark when the audio is ready. Optional: **Detect BPM** shows the tempo and the number of frames per beat.



02 ADD A TRACK

Tracks tab > **Add Track**. Give it a name (KICK, SNARE...). Each track listens to one part of the sound.



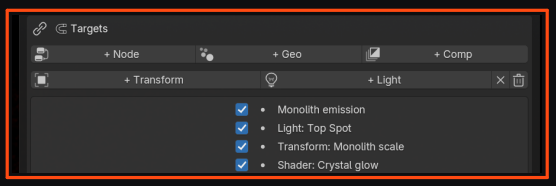
03 PICK A GENRE + PRESET

Choose the **Genre** closest to your music, then the **Preset** (Kick, Snare, Sub Bass...). Keep **Auto Reco** on: AudioReact sets good attack, release, contrast and curve values for you.



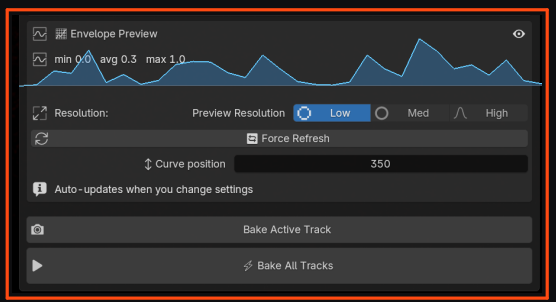
04 ADD A TARGET

In **Targets**, click what you want to animate: **+ Node / + Geo / + Comp** create a Value node in your shader, Geometry Nodes or compositor tree. Plug it into the input you want to animate.
+ Light drives a light's power. **+ Transform** drives scale, location or rotation.



05 CHECK THE PREVIEW, THEN BAKE

The **Envelope Preview** shows the curve that will be written. When it looks good, click **Bake All Tracks** and press play.



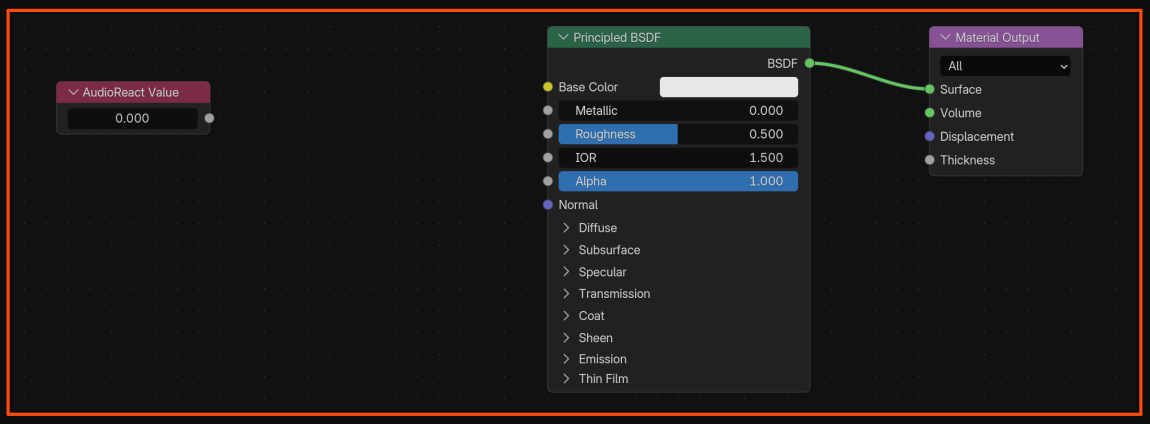
TIP Nothing moves after baking? The Value node is probably not connected to anything. Plug its output into the socket you want to animate, for example Emission Strength, through a Math or Map Range node to set the range.

THE VALUE NODE

When you click **+ Node**, **+ Geo** or **+ Comp**, AudioReact creates a new **Value node** inside the node tree you are working on, named **AR_Value** and labelled **AudioReact Value**. This node is the bridge: the bake writes the audio animation onto its value, and you decide what it drives by connecting it.

1. RIGHT AFTER CLICKING + NODE

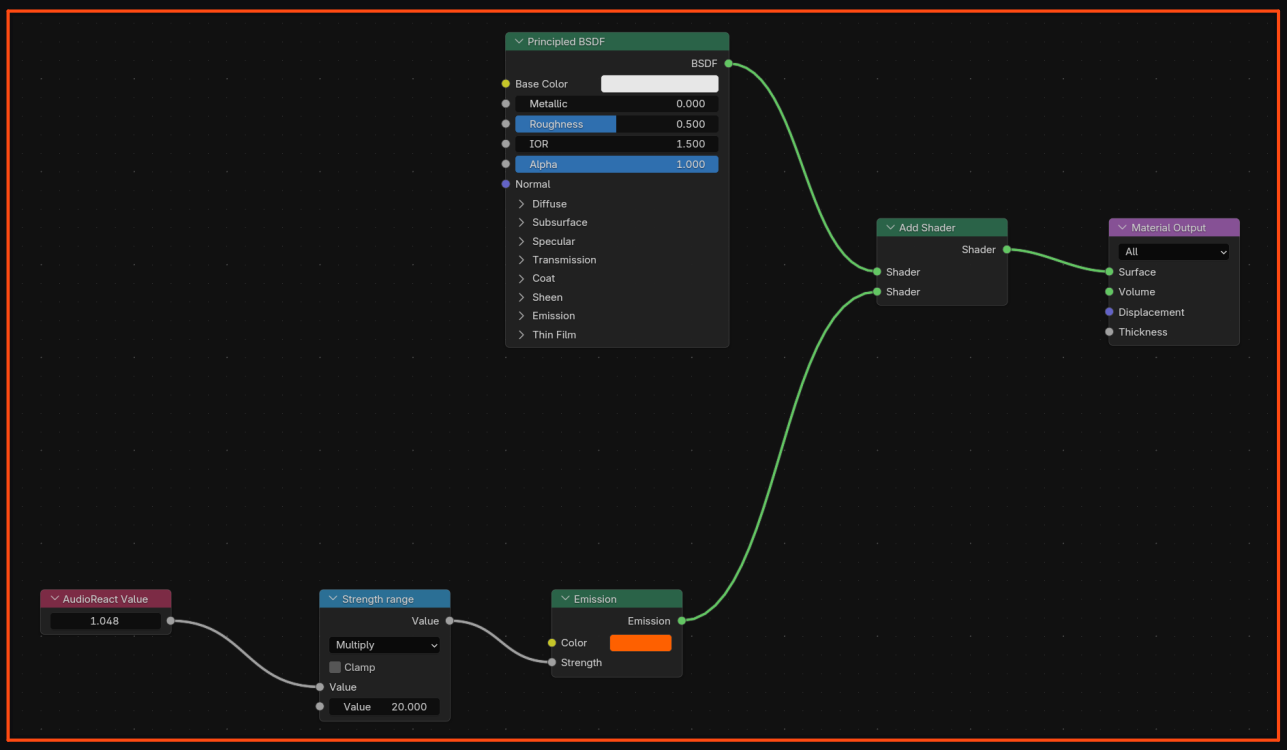
The node appears in the active material (or Geometry Nodes tree, or compositor). It is not connected yet, so nothing moves.



Material of the selected object: the new AudioReact Value node sits next to your existing nodes.

2. CONNECT IT, THEN BAKE

Plug the node into any input. Here: **AudioReact Value** > **Math (Multiply x20)** > **Emission Strength**. After baking, the value is keyframed and follows the kick: about 0 on silence, about 1 on the loudest hits.

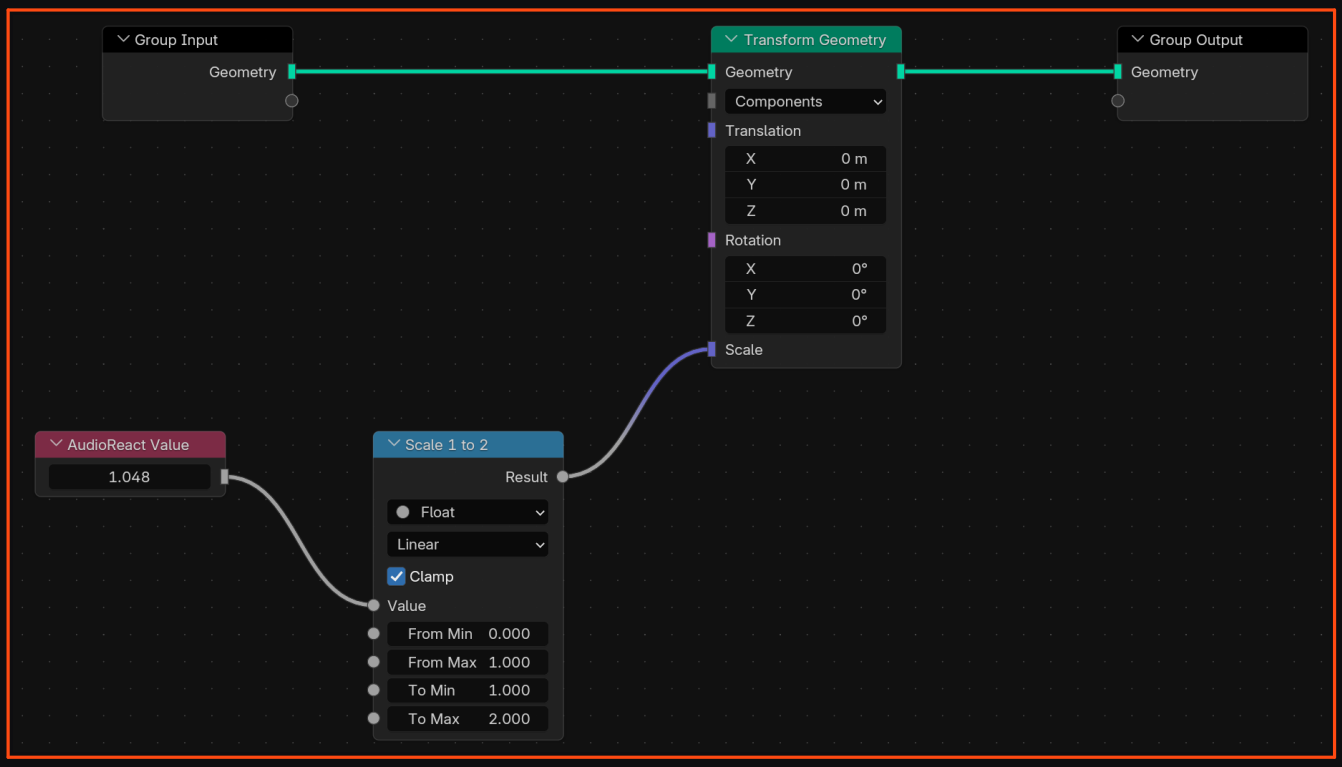


The baked value (1.048 on a kick) multiplied by 20 drives the emission strength.

> **TIP** The value goes from about **0 to 1**. Use a **Math** node (Multiply, Add) or a **Map Range** node to turn it into the range you need: 0 to 20 for emission, 0.5 to 2 for a scale, a color ramp factor, and so on.

3. SAME THING IN GEOMETRY NODES

Select the object with your Geometry Nodes modifier, open its node tree and click **+ Geo**. The **AudioReact Value** node is created inside that tree. Here it goes through a **Map Range** (0-1 to 1-2) into the **Scale** of a **Transform Geometry** node: the cube grows on every kick.



Geometry Nodes tree after the bake: AudioReact Value (1.048 on a kick) > Map Range > Transform Geometry Scale.

TIP Anything in Geometry Nodes can be driven this way: instance count, noise strength, extrude offset, rotation... For the compositor, **+ Comp** works the same: the node appears in the scene compositor, plug it into a Glare, Blur or Mix factor.

QUICK RECIPES

PULSING LIGHT ON THE KICK

Track preset: **Kick**. Target: **+ Light**. Set **Min W** for silence (e.g. 100) and **Max W** for the loudest hit (e.g. 3000). Bake.

GLOWING SHADER ON THE SNARE

Track preset: **Snare**. Select your material, click **+ Node**. Connect the new **AR_Value** node to a **Math (Multiply)** node, then into **Emission Strength**. The Multiply value sets how bright the peaks get.

SPIN THAT SPEEDS UP WITH THE MUSIC

Track preset: **Full** (Wideband) or **Sub Bass**. Target: **+ Transform**, Mode **Rotation**, Axis **Z**, enable **Accumulate Rotation**. Set Min / Max degrees per frame. The object keeps turning, faster on loud parts.



Lights, shader values, transforms and counter mode, all driven by the same song.

> **TIP** Start with the preset defaults. Only open **Show Settings** if the motion is too subtle, too jittery, or not on time. Part 2 explains each setting.

PART 2

IN DEPTH

Every setting, what it does, and when to touch it.

THE INTERFACE

The panel lives in the 3D Viewport sidebar (**N** > AudioReact). The top line shows the audio status and the number of active tracks. Below, three tabs:

TAB	CONTAINS
Source	Audio file, global bake range, key cleanup, BPM detection.
Tracks	Your tracks, their presets and settings, their targets, the envelope preview and the bake buttons.
Profiles	Save the current settings as a reusable profile and apply it later.

SOURCE TAB

SETTING	WHAT IT DOES
File	The audio file to analyse: WAV, MP3, FLAC, OGG, AIFF...
Sample Rate	Decoding sample rate. Default 48000. Leave it unless you have a reason.
Bake Range	**Custom Range** limits the bake to a start / end frame for all tracks. Off = whole scene range.
Auto Cleanup Keys	Removes the previous AudioReact keys before writing new ones, so re-baking never stacks keys.
Detect BPM	Estimates the tempo and shows frames per beat at your scene frame rate. Useful to plan cuts and loops.

TRACKS & PRESETS

Use **Add Track**, **-** (remove), **Duplicate** and the arrows to manage the list. The checkbox on each track enables it: disabled tracks are skipped by **Bake All**. The list also shows each track's genre, number of targets and number of keys written.

GENRES AND THEIR PRESETS

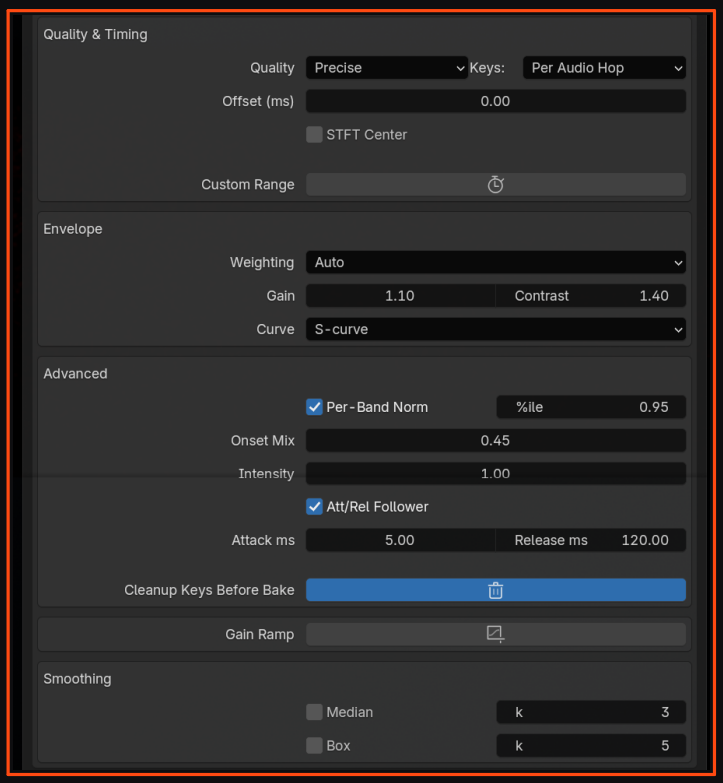
GENRE	PRESETS
Drum & Bass	Sub Bass, Kick, Snare, Hi-Hat, Atmos, Air
Dubstep	Sub Bass, Kick, Snare, Hi-Hat, Atmos, Air
Techno	Sub Bass, Kick, Snare, Hi-Hat, Atmos, Air
House	Sub Bass, Kick, Snare, Hi-Hat, Air
Trance	Sub Bass, Kick, Snare, Hi-Hat, Pad, Air
Wideband	Full, Low End, Mid, Highs (not genre specific, good for any music)

TIP If a preset doesn't exist in the selected genre, the panel shows **Preset not in category** with the valid list. Pick one from that list, or switch to Wideband for Low End / Mid / Highs / Full.

SETTING	WHAT IT DOES
Auto Reco	When on, changing the preset also sets the recommended Attack, Release, Contrast and Curve. Turn it off to keep your own values.
Apply	Applies the recommended settings now, once.

TRACK SETTINGS

Click **Show Settings** on a track to open them. Everything here only affects the selected track.



QUALITY & TIMING

SETTING	WHAT IT DOES
Quality	STFT window size. **Fast** for quick previews, **Balanced**, **Precise** recommended for the final bake.
Keys	**Per Frame**: 1 key per frame, light and matches the timeline. **Per Audio Hop**: more keys, smoother curve, heavier file. **Counter**: see Counter mode.
Offset (ms)	Shifts the animation in time. Positive = animation comes earlier, negative = later.
STFT Center	Pads the analysis so the very start and end of the file are more accurate. Small extra cost.
Custom Range	Bake this track only between a start and end frame. Shows the duration in seconds.

ENVELOPE

SETTING	WHAT IT DOES
Weighting	How frequencies inside the band are weighted. **Auto** (from the preset, recommended), Flat, Triangular, Gaussian.
Gain	Multiplier after normalisation. Raise it if the motion is too subtle, lower it if it's too aggressive.
Contrast	Gamma curve. Above 1 = sharper peaks and deeper valleys. 2.0 to 3.0 for punchy results.
Curve	**Linear** as is. **S-curve** natural motion. **Log** boosts quiet parts. **Exp** crushes quiet parts, emphasises peaks.

ADVANCED

SETTING	WHAT IT DOES
Per-Band Norm / %ile	Normalises bass, mids and highs separately so one band can't take over. %ile 0.95 = the top 5% of peaks are clipped before normalising.
Onset Mix	Blend between energy (0) and transient detection (1). 0.2 to 0.4 makes kicks and snares punchier.
Intensity	Above 1, the preset focuses more tightly on its frequencies and ignores the rest.
Att/Rel Follower	**Attack**: how fast the value rises (5-15 ms snappy, 80-200 ms smooth swell). **Release**: how fast it falls (50-100 ms tight, 300-800 ms long fade).
Cleanup Keys Before Bake	Clears this track's previous AudioReact keys before baking.

GAIN RAMP

Changes the gain over time: from a start time (s) to an end time (s), going from **Gain start** to **Gain end**. Example: 0.3 during the intro, 1.5 on the drop. Values above 2 can clip, watch the preview.

SMOOTHING

SETTING	WHAT IT DOES
Median (k)	Removes isolated spikes without softening the shape. k=3 subtle, k=7 stronger, 11+ heavy.
Box (k)	Moving average. Smoother but blurs transients, good for slow parameters (pads, ambience). Large k adds delay: compensate with a negative Offset.

COUNTER MODE

Set **Keys** to **Counter**. Instead of a value going 0-1-0-1, the value goes up by a step on every detected peak: 1, 2, 3, 4... Use it to switch cameras or images, cycle colors, step through a sequence, or rotate something one notch per beat.

SETTING	WHAT IT DOES
Threshold	Minimum level to count a peak. Lower = more sensitive. Start at 0.1 - 0.2.
Min Gap (ms)	Minimum time between two counted peaks, so one hit is never counted twice. About half the beat interval (200 ms at 120 BPM).
Step (+)	How much is added per peak (1 = +1 per beat).
Start	Value before the first peak.

> **TIP** Feed the counter into a **Math > Floored Modulo** node to loop through N states (0, 1, 2 ... N-1, 0, 1...).

TARGETS

A track can drive any number of targets. Select a target in the list to edit it, **X** removes it, the trash icon clears the list.

TARGET	HOW IT WORKS
+ Node	Creates an **AR_Value** node in the active shader tree and links it. Or select any Value node and click **Capture selected node**. Works in materials, world, node groups and the compositor.
+ Geo	Same, inside the active Geometry Nodes tree.
+ Comp	Same, inside the scene compositor.
+ Light	Drives a light's power. **Min W** = silence, **Max W** = loudest peak.
+ Transform	Drives Scale, Location or Rotation, on all axes or one (X / Y / Z).
GeoNodes input / Modifier	Advanced types: drive a Geometry Nodes modifier input (by its name in the modifier interface) or any animatable modifier property.

MORE ABOUT THE AR_VALUE NODE

TOPIC	DETAILS
Where it's created	**+ Node**: the active shader tree (material of the selected object). **+ Geo**: the active Geometry Nodes tree. **+ Comp**: the scene compositor.
Name	AR_Value (AR_Value.001, .002... for the next ones), label "AudioReact Value".
Renaming / moving	Safe. AudioReact tags the node with a hidden ID, so the target still finds it after a rename or move.
Using your own node	Select any existing Value node, then click **Capture selected node** on the target. No need to use the auto-created one.
Deleting it	The target loses its link (warning in the target list). Create a new one or capture another Value node, then bake again.
One node, many uses	A Value node output can feed several inputs at once: plug it into as many sockets as you like.

ACCUMULATE (CONTINUOUS MOTION)

On Node targets (**Accumulate**) and on Rotation transforms (**Accumulate Rotation**), the audio controls the **speed** instead of the value: silence = Min speed, loud peak = Max speed. The value keeps growing, so objects keep spinning or patterns keep evolving, faster on loud parts.

CAMERA FOLLOW

With an accumulating Node target in Geometry Nodes, the panel offers one-click drivers: **Rot X / Y / Z** and **Scale XYZ / X / Y / Z** on the active object. Parent your camera to that object (Ctrl+P) and it follows the baked motion.

ADVANCED FIELDS

Each target has an **Advanced fields** section showing its type, tree, node name and socket index. Useful to fix a target by hand if you renamed a node.

ENVELOPE PREVIEW & BAKING

The preview shows the curve of the selected track and updates when you change a setting. **Resolution** Low / Med / High sets how many points are drawn. **Force Refresh** recomputes it. **Curve position** moves the curve up or down if it doesn't line up with the panel.

BUTTON	WHAT IT DOES
Bake Active Track	Bakes only the selected track. Fast way to test a setting.
Bake All Tracks	Bakes every enabled track.

> **TIP** Keys are standard F-curves: open the Graph Editor to inspect, offset or tweak them. Re-baking replaces them when cleanup is on.

PROFILES

Profiles tab: type a **Name** and click **Save** to store your current settings. Select a profile and use the import icon to apply it, or the trash icon to delete it. Handy to reuse your favourite kick or snare setup across projects.

TROUBLESHOOTING

PROBLEM	FIX
Nothing moves after bake	Node target: the Value node isn't connected to anything. Light / Transform: check the right object is selected in the target. Check the track is enabled.
'Could not decode this audio file'	The file is damaged or not an audio file. Export it again as WAV or MP3.
'Preset not in category'	That preset doesn't exist in this genre. Pick one from the list shown, or use Wideband.
Motion too subtle	Raise Gain, raise Contrast, try the Exp curve, or check the target range (Max W, Map Range...).
Motion too jittery	Longer Release, Median filter k=5-7, or Box smoothing for slow parameters.
Animation early / late	Use Offset (ms). Box smoothing adds delay: compensate with a negative offset.
Kick and bass mixed together	Use the Kick preset instead of Sub Bass, raise Intensity, add Onset Mix 0.2-0.4.
Heavy .blend file	Keys = Per Frame instead of Per Audio Hop. Bake only the range you need.
Same beat counted twice (Counter)	Raise Min Gap and/or the Threshold.

SPECS

Blender	4.4 - 5.1
Render engines	Cycles and Eevee (output is standard keyframes)
Analysis	STFT with NumPy (bundled with Blender), Fast / Balanced / Precise
Audio formats	WAV, MP3, FLAC, OGG, AIFF... Read by Blender itself, nothing else to install.
Targets	Shader / World / node group / compositor Value nodes, Geometry Nodes inputs, modifier properties, light power, object transforms
Keys	Linear F-curves: per frame, per audio hop, or counter
License	GPL

Questions or bugs: **contact.itvisuals@gmail.com** // Instagram & YouTube **@itur.motion**