# MSP

## BEGINNER'S GUIDE

### FROM ZERO TO HERO

A friendly, step-by-step walkthrough of the VanguardFX MSP module —
no experience with audio-reactive tools required.

Companion to the full MSP Complete User Guide (technical reference).

VANGUARDFX.PRO

WELCOME

# Let's Get You Started

This guide is written for the very first time you open MSP — no assumptions, no jargon left unexplained. By the end of it, you will have made your very first audio-reactive animation, and you will understand every panel in the main window well enough to start experimenting on your own.

Think of this guide as a friendly tour, not a manual you need to memorize. Read it once, follow along inside MSP as you go, and keep it nearby for the first few projects. Once the basic loop feels natural, the full *MSP Complete User Guide* is there for every advanced detail, parameter, and tool window this guide only introduces briefly.

### HOW THIS GUIDE IS ORGANIZED

This guide follows one simple path, start to finish:

- **Part 1 — The Big Picture:** what MSP is, what you need before you start, and a tour of the window.
- **Part 2 — Your First Animation:** a numbered, step-by-step walkthrough you can follow along with, live.
- **Part 3 — Understanding the Panels:** plain-language explanations of Sort Modes, FX Controls, Global Parameters, and Color Engine.
- **Part 4 — Beyond the Basics:** a quick tour of the advanced tool windows, so you know they exist and what they're for.
- **Part 5 — Cheat Sheet & Help:** a one-page summary, common beginner mistakes, and a plain-language glossary.

PART 1 · THE BIG PICTURE

# What Is MSP, Really?

In plain language: MSP takes a piece of music, listens to it in advance, and uses what it "hears" to move, scale, light up, or color objects inside 3ds Max — automatically, in time with the beat.

Imagine a graphic equalizer on an old stereo — the bars that jump up and down with the music. Now imagine that instead of little bars, those "bars" were actual 3D objects, lights, or materials in your scene. That is exactly what MSP does: it treats your 3ds Max objects like equalizer bars, and drives them from real frequency data extracted from a song.

You never have to place a single keyframe by hand to get this effect. MSP reads the music's frequency data frame by frame, and translates it into motion, color, and light for you — live, in the viewport, before you ever commit to anything permanent.

PART 1 · THE BIG PICTURE

# Before You Start

You will need three things before opening MSP for the first time:

**01** **3ds Max, open and running**
MSP runs inside 3ds Max — it is not a separate application. Make sure 3ds Max is already open with the scene you want to animate.

**02** **A frequency-data CSV file**
This is a small data file that describes the music's frequency content, frame by frame. It is created by the companion **DSP** module from an audio file — run your track through DSP once, save the CSV, and you are ready to bring it into MSP.

**03** **A few objects to animate**
Anything in 3ds Max works: lights, simple boxes, a logo, particles — even a whole grid of objects built with MSP's own tools. For your very first attempt, a handful of simple objects is the easiest way to see what is happening.

Good to know — nothing you do in MSP is permanent until you deliberately click Bake. Every step below can be undone or changed freely, so there is no way to "break" anything while you are learning.

PART 1 · THE BIG PICTURE

# A Quick Tour of the Window

When you open MSP, you will see one window split into two columns, with six labeled panels. You do not need to understand every control right away — here is what each panel is *for*, in one sentence:

| | |
|---|---|
| ■ **Color Engine** | Decides what colors your objects use when they react to the music. |
| ■ **FX Controls** | The on/off switches for every type of reaction — movement, scaling, color, and more. |
| ■ **Global Parameters** | Master dials that make the whole scene more or less reactive, all at once. |
| ■ **Motion Controls** | Shortcuts to extra motion tools, like spinning or swinging. |
| ■■ **Render Engine** | Where you tell MSP which objects to use, and how they're matched to the music. |
| ■ **Action Center** | The buttons you will click most: Preview, Bake, and shortcuts to every other tool. |

That's genuinely all you need to know before your first attempt. Every one of these panels is covered in plain language later in this guide — for now, let's make something react to music.



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PART 2

# YOUR FIRST ANIMATION, STEP BY STEP

Follow these eight steps in order, inside MSP, with your own scene open. Each step is short on purpose — do them one at a time, and look at your viewport after each one.

**01** **Select your objects, then click PICK OBJECT**

In 3ds Max, select every object you want to animate — lights, geometry, anything. Then, in MSP's Render Engine panel, click **PICK OBJECT**. MSP now knows which objects to work with.

**02** **Load your CSV**

Find the Load CSV control and point it at the frequency-data file you exported from DSP. MSP will read it and report how many frames and frequency bands it contains.

**03** **Click SMART EQ**

This is the single most useful button for a first attempt. **Smart EQ** automatically spreads your objects across the music's frequency range, gives them a pleasant color gradient, tunes the reaction speed for typical music, and turns on a basic reaction — all in one click.

**04** **Turn on CSV PREVIEW**

In Action Center, click **CSV PREVIEW**. Now press play on the 3ds Max timeline, or simply drag the time slider back and forth — your objects should already be reacting to the music, live, in the viewport. Nothing has been saved yet; this is just a preview.

**05** **Try turning one FX Control on or off**

Open the FX Controls panel and enable **Move Z** if it isn't already on — watch how your objects start moving up and down with the beat. Try turning it off, then try **Scale Uni** instead, to feel the difference between a moving reaction and a pulsing one.

**06** **Nudge one Global Parameter**

Find **Sensitivity** in Global Parameters and move it up or down while CSV Preview is still running. This is the fastest way to make the whole scene feel more or less energetic without touching individual effects.

**07** **Keep previewing until it feels right**

There is no rush here — scrub the timeline, toggle a few more FX Controls, and adjust Global Parameters as much as you like. Everything you are seeing is still just a live preview, so feel free to experiment freely.

## 08 Click BAKE CSV

Once you're happy with the look, click **BAKE CSV** in Action Center. This is the one and only step that permanently writes real keyframes to your timeline. Congratulations — you've made your first audio-reactive animation.

**YOU DID IT**

That's the entire core workflow of MSP. Every project you'll ever build with it — from a single reactive spotlight to a five-hundred-object stage rig — uses exactly this same loop: Pick Object, Load CSV, Sort (or Smart EQ), configure FX, Preview, Bake. Everything else in this guide, and in the full reference guide, is about giving you more control over each of those steps.



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PART 3

# UNDERSTANDING THE PANELS

Now that you've completed one full pass, here is what's really happening behind each panel — in plain language, without needing every technical detail from the reference guide.

## Sort Modes — "Who Reacts to What"

A Sort Mode decides which specific object responds to which part of the music. For example, a "bottom to top" sort mode means objects near the floor react to bass, and objects near the ceiling react to treble — like a real spectrum analyzer standing upright. There are more than 45 sort modes available (all documented in the full reference guide), but as a beginner you really only need to know three:

- **Smart EQ** — picks a sensible sort mode for you automatically. Use this by default.
- **Z Axis (bottom-up)** — bass at the bottom, treble at the top. Great for towers, walls, or rigs.
- **Random** — a fun, unpredictable mapping when you don't want an obvious pattern.

## FX Controls — "How Things React"

Every checkbox in FX Controls is one type of reaction. You can turn on as many as you like at once — they combine. As a beginner, these five will get you most of the way to a great-looking result:

| | |
|---|---|
| **Move Z** | Objects bob up and down with the beat — the classic first effect to try. |
| **Scale Uni** | Objects grow and shrink — a pulsing, breathing look. |
| **Light Intensity** | Lights get brighter and dimmer with the music — essential for any lighting rig. |
| **Dynamic Color** | Objects shift color between two colors you choose, timed to the music. |
| **Strobe Flash** | A sharp on/off flash on loud hits — great for drops and percussive moments. |

Tip — Start with just one or two of these. Adding all thirty-plus effects at once is the single most common way beginners end up with a scene that feels chaotic instead of musical — build up gradually instead.

## Global Parameters — "How Strongly Things React"

These are master dials that affect every active FX Control at once, instead of tuning each one separately. As a beginner, these four matter the most:

- **Sensitivity** — the master volume knob for the whole reaction. Turn it up if everything feels too subtle, down if it feels too extreme.
- **Smoothing** — reduces jittery, nervous-looking motion, especially on lower-quality audio.
- **Attack / Decay** — how quickly a reaction snaps on, and how slowly it fades back to rest. Fast attack and slow decay gives a punchy hit with a lingering glow.
- **FX Spread %** — how far objects are allowed to move. Turn this down for a tight, controlled look; turn it up for big, dramatic swings.

## Color Engine — “What Colors Are Used”

Pick two colors — Color A and Color B — and MSP blends between them as the music plays, wherever Dynamic Color or Hue Shift is turned on in FX Controls. Turn on **Rainbow Flow** instead if you want a continuously cycling rainbow rather than a two-color blend.

A good starting point is to pick a darker, calmer color for Color A and a brighter, more energetic color for Color B — that way quiet passages read as calm and loud passages read as intense, without needing to touch anything else. You can always come back and swap the two colors, or try Rainbow Flow instead, once you have a feel for how the reaction behaves.

Tip — If colors are changing but feel washed out or hard to notice, check that Global Opacity in Global Parameters isn't set too low, and that the object's material actually supports the color channel MSP is driving.



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PART 4

# BEYOND THE BASICS

Once the basic loop feels comfortable, MSP has an entire second layer of specialized tool windows for more ambitious projects. You don't need any of these for a first project — but it helps to know they exist, and roughly what each one is for, so you know where to look later.

| | |
|---|---|
| **Magic Layouts / Object Modify Studio** | Arrange objects into grids, circles, spirals, and dozens of other shapes before you even start the audio reaction. |
| **Motion FX / Kinetic Engine** | Add extra motion — spinning, swinging, wobbling — layered on top of the music reaction. |
| **Camera FX Controller** | Give a camera its own cinematic moves: orbits, cranes, shakes, and beat-timed cuts. |
| **Band EQ** | Fine-tune which parts of the music's frequency range are emphasized or toned down. |
| **Rhythm FX Studio** | One-click, ready-made looks — Disco, Cyber Rave, and dozens more — as a fast starting point. |
| **Emoji / Light Matrix Generator** | Build a grid display you can draw patterns onto by hand, like a giant pixel screen. |
| **Quantum Core** | Keeps everything running smoothly on large, demanding scenes. |
| **TyFlow Deep Integration** | Connects MSP's music data to TyFlow particle simulations, for advanced particle work. |

Every one of these has its own full chapter in the *MSP Complete User Guide* — come back to that guide whenever you're ready to go deeper into any of them.

PART 5

# CHEAT SHEET & HELP

## One-Page Quick Reference

| | |
|---|---|
| **Register objects** | Select in 3ds Max → PICK OBJECT |
| **Load your music data** | Load CSV (from the DSP module) |
| **Fastest good result** | Click SMART EQ |
| **See it live, risk-free** | Toggle CSV PREVIEW |
| **Make it stronger / weaker** | Global Parameters → Sensitivity |
| **Make it tighter / wider** | Global Parameters → FX Spread % |
| **Choose reaction types** | FX Controls checkboxes |
| **Choose colors** | Color Engine → Color A / Color B |
| **Save it permanently** | Action Center → BAKE CSV |

## Common Beginner Mistakes

■ **Turning on every FX Control at once.** Start with one or two effects, confirm the timing feels right, then add more gradually.

■ **Forgetting to re-click PICK OBJECT after moving objects.** MSP remembers where objects were when you registered them — if you move them afterward, click PICK OBJECT again.

■ **Clicking BAKE too early.** Baking is permanent. Always confirm the look in CSV Preview first — there's no cost to previewing as many times as you like.

■ **Assuming the reaction is broken when it's just quiet audio.** If a track has a quiet passage, try raising Sensitivity or Compression in Global Parameters rather than assuming something is wrong.

## Plain-Language Glossary

| | |
|---|---|
| **Band** | One slice of the music's frequency range — like one bar on an equalizer. |
| **CSV** | The data file that describes the music, made by the DSP module. |
| **Sort Mode** | The rule for which object reacts to which part of the music. |
| **Preview** | Looking at the reaction live, without saving anything. |
| **Bake** | Saving the reaction permanently as real keyframes. |
| **Smart EQ** | The one-click button that sets up a good starting reaction automatically. |

You now know everything you need to start creating with MSP. Have fun — and when you're ready for more depth on any topic here, the full *MSP Complete User Guide* is waiting.



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