🎯 Features Overview

- ✅ 10 Ready-to-use animated shaders for UI
- 🔁 Supports **Horizontal (H)** and **Vertical (V)** motion styles
- 🖼️ Layer-based animation control (1 / 3 / 5 / 6 / 8 layers)
- 🌟 Fully HDR-compatible with edge fading and UV compression
- 📦 Built-in support for texture scrolling and angular movement

---

🧩 Shader Naming Convention

Shader Name Prefix	Animation Direction
`H_`	Horizontal
`V_`	Vertical

Each shader is suffixed with a number indicating how many animated texture **layers** it supports.

✅ Available Shaders

Shader Name	Layers	Direction
`H_OneLayerHDR`	1	Horizontal
`H_ThreeLayerHDR`	3	Horizontal
`H_FiveLayerHDR`	5	Horizontal
`H_SixLayerHDR`	6	Horizontal
`H_EightLayerHDR`	8	Horizontal
`V_OneLayerHDR`	1	Vertical
`V_ThreeLayerHDR`	3	Vertical
`V_FiveLayerHDR`	5	Vertical
`V_SixLayerHDR`	6	Vertical
`V_EightLayerHDR`	8	Vertical

⚙️ How to Use

1. **Apply the Shader**
    - Select a UI Image (`Image`, `RawImage`, or custom `Graphic`).
    - In the **Inspector**, switch the Material to use any UIAnimFX shader (e.g., `V_ThreeLayerHDR`).
2. **Assign Textures & Parameters**
    - Assign textures to `_Layer1Tex`, `_Layer2Tex`, etc.

- Adjust colors using HDR fields like `_Layer1Color`.
- Use `_LayerXSpeed` and `_LayerXAngle` to define scrolling speed and direction.

3. **Optional Controls**

- `_ImageEdgeFade` and `_TextureEdgeFade`: Controls transparency fading near borders.
- `_ApplyFinalUVCompression`: Toggle dynamic UV remapping for screen-fit effects.

Pro Tips

- Use **different speeds and angles** per layer for rich parallax effects.
- Combine HDR colors with alpha texture channels for smooth blend effects.
- Use **Unity UI Mask** or **Clipping Rects** to constrain effects inside UI boundaries.

Customization Options

You can easily duplicate any of the provided shaders and:

- Add/remove texture layers.
- Change movement logic (e.g., from scrolling to rotation).
- Modify fade algorithms (e.g., radial fade or mask-based fade).

Requirements

- Unity 2019.4 or higher
- UI system based on `uGUI`
- Compatible with both **Built-in Render Pipeline** and **URP**

Parameters Guide Example(UIAnimFX/V_OneLayerHDR Shader)

Layer Settings

`_Layer1Tex` (Layer Texture)

- **Type**: `2D`
- **Description**: The texture used for the animated layer.
- **Default**: White texture.
- **Usage**: Assign your desired effect texture (e.g., glowing lines, energy swirls).

`_Layer1Color` (Layer Color)

- **Type**: `Color (HDR-enabled)`
- **Description**: Tint and intensity for the layer. HDR allows bright glow effects.
- **Tip**: Use high-intensity colors (e.g., `(10, 5, 2, 1)`) for bloom effects.

`_Layer1Speed` (Layer Move Speed)

- **Type**: `Float`
- **Description**: Controls how fast the layer texture scrolls.
- **Unit**: UV units per second.
- **Tip**: Try values between 0.1 and 1 for subtle motion.

`_Layer1Angle` (Layer Move Angle)

- **Type**: `Range(0, 360)`
- **Description**: The movement direction of the scrolling texture, in degrees.
- **Example**: `0 = right`, `90 = up`, `180 = left`, `270 = down`.

◈ Fade Controls

`_ImageEdgeFade` (Image Edge Fade)

- **Type**: `Range(0.0, 1.0)`
- **Description**: Fades the final result towards the edges of the UI image (based on UV distance from center).
- **Tip**: Use for soft visual boundaries; higher values result in stronger edge fading.

`_TextureEdgeFade` (Texture Edge Fade)

- **Type**: `Range(0.0, 1.0)`
- **Description**: Similar to Image Edge Fade but applies to the **layer texture** directly.
- **Use Case**: Prevent harsh tiling or looping seams in the animated texture.

◈ UV Remapping (Dynamic Texture Compression)

These parameters remap horizontal UV coordinates (`x`) based on vertical position (`y`). This enables effects like top-down compression or expansion of the texture.

`_UVUpMin` and `_UVUpMax`

- **Type**: `Range(0.0, 1.0)`
- **Description**: Horizontal UV range at the **top** (`y = 1`) of the image.
- **Example**: `_UVUpMin = 0.2`, `_UVUpMax = 0.8` restricts the top part of the image to sample only the central region of the texture.

`_UVBottomMin` and `_UVBottomMax`

- **Type**: `Range(0.0, 1.0)`
- **Description**: Horizontal UV range at the **bottom** (`y = 0`) of the image.

These four UV settings together create dynamic compression/stretching based on the vertical axis.

◈ Toggle

`_ApplyFinalUVCompression` (Apply Final UV Compression)

- **Type**: `Toggle (0 or 1)`
- **Description**: Enables or disables the custom UV remapping logic defined by the above UV min/max settings.
- **Tip**: Turn off (`0`) for normal UV behavior.

🧪 Rendering Notes

- **Blend Mode**: `SrcAlpha OneMinusSrcAlpha` – standard alpha blending.
- **ZWrite**: Off – disables depth writing, making it suitable for UI overlays.
- **Culling**: Off – renders both front and back, useful for 2D elements.
- **Lighting**: Disabled – this shader is unlit.
- **ClipRect**: Unity UI's built-in clipping support is respected.

🌀 Behavior Summary

- Texture scrolls at an angle with customizable speed.
- Layer color can be HDR-tinted for glow effects.
- Fade edges of the texture or image independently.
- Optional dynamic UV compression based on vertical positioning.
