Ultimate Ray Designer: Documentation

Document Version 1.0
Ultimate Ray Designer 1.0

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Description

Thank you for purchasing ULTIMATE RAY DESIGNER!
This tool will be updated sporadically at no additional cost to deliver a good looking and easy to work with tool. If you have trouble with it, or have an idea to improve it, please don't hesitate and contact me under: **support@maxproude.com**

ULTIMATE RAY DESIGNER is a tool that helps you create lines, rays and curves with only a couple of clicks. It is completely dynamic, but can also be used as a static object. Now you can save time and create lightning forks, laser beams, magic effects, force fields and much more directly in Unity.

Features

Toolbar

1. New Ray (Ray Desiger> New Ray)
This creates a new Ray named ‘New Ray’ at position (0,0,0) in your Scene.

Ray Designer Editor

This component manages this Ray only and gives you a lot of options to choose from.

Global settings

Simulate: This turns on/off the simulation. It is handy if you want to change some settings or bring two materials into synch.

Activate on start: If this is not checked, the ray will be invisible after the game starts/ instantiation.

Dynamic Update: This feature allows you to turn on/off the realtime recalculation of the the Bezier curve and triangle strip. If this is turned off, the Ray will be static. That means, that shader effects will still animate (like texture offset and vertex offset), but it will not follow its marker points.

Marker Points: These points define the shape of the Ray. The Ray will be drawn between ‘Start Point’ and ‘End Point’. ‘Control Point 1’ and ‘Control Point 2’ define the direction in 3D space.

Activation Speed: This is the speed at which the ray will animate if Show() or Hide() is called.

Start Effect: This is a Particle Effect used at the Start Point of the Ray.

End Effect: This is a Particle Effect used at the End Point of the Ray.

Start Light: This is a Light that can be placed at the Start of the Ray (Point Light).

End Light: This is a Light that can be placed at the End of the Ray (Point Light).

Start Light Intensity: This is a curve that defines the intensity of the Start Light source over time. To make it loop, open the Curve editor and select the end keyframe. Set it to either PingPong or Loop. The X-Axis defines the time, the y-axis defines the light intensity.
End Light Intensity: see above.

Ray Settings

To access the settings to a Ray tab, simply click on the name of the Ray you want to edit. You can also duplicate that Ray, hide it temporarily or remove it from the Ray designer permanently.

Face Mode: You can make the Ray face the Camera as a single Triangle-strip or as a Cross Shape, make it Horizontal or Vertical.

Material: Every Ray is generated with a custom Material that you can access by double clicking on it in the editor. If you want to Share Materials, Simply create on manually and drag and drop it in the Material Slot. Please note, that the Shader should be 'UltimateRayDesigner/Ray_Add' or 'UltimateRayDesigner/Ray_Alpha'. If you want to create custom

Shaders, the Shader must have a "_TintColor" and a "_MainTex" property in order to function.
Material Save: The Standard Material used when creating a new Ray is not serialized within prefabs and only exists as long it is saved in a scene. You can click the Save button to save the Material to Disc to make it available in Prefabs.

Smoothness: The amount of segments created on Update if Dynamic Update is ticked. The amount of Triangles created is equal to:
Smoothness * 4 – 4 for Cross facing mode and
Smoothness * 2 – 2 for every other facing mode.

Shape: This curve defines the width over length.

Amplitude Mask: This curve defines the strength of the Vertex offset applied by the Shader. Handy if you don't want the ends to move.

Size: This is a multiplier for the Size (or width) of the Ray.

Texture Speed: Animation Speed of the Texture.

Distortion Speed: Speed of the Noise Texture -> Speed of the vertex offset.

Material Options:

Main Tex: The Texture displayed on the Ray. Best use a greyscale tillable texture and add Color using the TintColor property for best results.

Mask: This texture adds additional transparency to the Ray, to make it less repetitive and add details.

Distortion: This is a 3D noise texture used to offset vertices.

TintColor: Color of the Ray.
Amplify: Strength of the Distortion.

X Frequency: Texture tiling of the noise Texture along the ray.

Y Frequency: Texture tiling of the noise Texture across the ray.

Ultimate Ray Designer - API

To Activate Ultimate Ray Designer from code, simply call **RayDesigner.Show()** on the instance you want to activate. Call **RayDesigner.Hide()** to deactivate the ray. After activation/ deactivation, the Ray will animate and fade at a speed defined by **'Activation Speed'**.
If you want to change the Shape of the Ray dynamically, you can either move the Marker Points manually or you use **RayDesigner.UpdateStartPosition(StartPoint, ControlPoint1) or RayDesigner.UpdateTargetPosition(EndPoint, ControlPoint2).**

Performance and Limitations

This tool can create triangle strips at runtime which has the biggest impact on performance. You can increase the performance by optimizing the smoothness property to a value that is as big as necessary but as small as possible.
If you use point lights, make sure you set your project to 'Deferred Lighting' to save performance.