

# Reactive Hologram Shield - Asset Pack

This asset pack provides an advanced holographic shield effect that combines a custom shader and a custom script to create a dynamic, reactive visual experience ideal for interactive media and games. It includes three preconfigured materials, three demo prefabs showcasing the effect in action, and two base prefabs for spherical and planar shields that can be easily customized. It also includes some additional demo prefabs that are separated out and allow you to view auto turrets firing at the shield to see a potential use case.

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# 1. Introduction

The Reactive Hologram Shield Asset Pack delivers a striking holographic shield effect designed to enhance the visual quality of your projects by simulating a futuristic, energy-based shield that reacts to impacts and environmental stimuli. This asset pack has been developed to provide both visual appeal and practical functionality through customizable materials and scripts that integrate seamlessly with your Unity project.

## 2. Asset Contents

The pack includes three preconfigured materials that demonstrate various visual styles of the holographic shield, three demo prefabs that showcase the shield effect in real time, and two base prefabs—one for a spherical shield and one for a planar shield—designed to serve as starting points for further customization. These assets are organized to help you quickly implement the effect or use them as templates for creating your own shield variations.

## 3. Setup Guide

The setup for the Reactive Holographic Shield Asset Pack is straightforward:

- **Step 1:** Attach a material that uses the **ReinhardtHolographicShield** (this is the name because that is well...the style) shader to any mesh in your scene.
- **Step 2:** Add the **ShieldCollisionResponse** script to the same GameObject where the material is applied.
- **Step 3:** Add a collider to your GameObject.
- That's it! The material will render the dynamic holographic shield effect, and the script will handle collision events to update the shader in realtime.

## 4. Shader Overview

The custom shader, "**Custom/ReinhardtHolographicShield**", is the cornerstone of the asset pack. It uses noise textures and normal maps to generate dynamic distortions and light interactions, creating a realistic fresnel glow that adjusts based on the viewer's perspective. A procedurally generated hexagon grid pattern forms the basis of the shield's visual effect; this pattern is enhanced with adjustable parameters controlling hexagon scale, edge smoothness, and line thickness. In addition to these features, the shader supports collision-based effects by sampling multiple collision events—up to four simultaneously—using arrays to store collision

points, radii, intensities, and start times. The scan effect further adds a horizontal moving band across the shield, reinforcing its aesthetics.

## 5. Script Overview

The accompanying **ShieldCollisionResponse** script manages collision detection and updates the shader in real time to reflect impact events. It listens for collision events, captures contact points, and calculates a fade factor for each collision, ensuring that older impacts gradually fade as new collisions occur. The script efficiently manages up to four collision events, updating the shader's parameters to blend collision effects into the holographic shield appearance dynamically. There are several modifiable parameters in the inspector that will allow you to change the properties and appearance of the impact.

## 6. Usage and Integration

For practical implementation, you can drag and drop the demo prefabs into your scene to see the shield effect in action. The base prefabs for spherical and planar shields serve as customizable templates that can be modified by adjusting material properties or extending the provided script. The preconfigured materials offer a range of visual styles, each with tunable parameters such as noise intensity, distortion amount, fresnel power, and hexagon attributes, giving you the flexibility to tailor the effect to match your project's aesthetic.

## 7. License and Attribution

Please review the License and Attribution section included with the asset pack to understand the terms of use, redistribution rights, and necessary attributions for using the Reactive Hologram Shield Asset Pack in your projects.