Cemu - Bug #253

Artifacts at screen edges when upscaling with Vulkan (incorrect texture addressing mode?)

01/07/2020 02:24 PM - mark_k

Status:	New	**Start date:**	01/07/2020
Priority:	Normal		
Assignee:			
Category:	Graphic		
API:	Vulkan	**GPU Vendor/Model:**	AMD FirePro W5100
Cemu Version:	1.16.1		

Description

This minor issue probably relates to an incorrect texture addressing mode when upscaling.

The Breath of the Wild loading screen, where the upper part of the screen is bright and the lower part black shows the problem.

In Direct3D terminology (I'm not familiar with OpenGL or Vulkan), there are several texture addressing modes, see
https://docs.microsoft.com/en-us/windows/uwp/graphics-concepts/texture-addressing-modes
If Cemu is using the "wrap" mode that would explain this issue. Using either mirror or clamp modes instead should resolve it.

To reproduce:

- Set Cemu to Vulkan, full-screen mode, with emulated resolution less than Windows desktop native resolution. For example 1280x720 with 3840x2160 desktop/monitor. In full-screen mode, Cemu scales up the image to the Windows desktop size instead of changing video display mode to match the emulated resolution.
- Launch Breath of the Wild.
- On loading a saved game the loading screen appears. There is a light horizontal line at the bottom of the screen. That's because due to filtering, the top of the texture has wrapped around. Similarly, when the loading screen first appears and the upper bright band moves in from the right, you can see a light vertical line at the upper left edge of the screen.

I didn't see this issue with OpenGL.

History

#1 - 01/13/2020 08:37 PM - Bakugo

For me this happens in both Vulkan and OpenGL. The game I tested was Splatoon, upscaling from native to 1920x1080, it's most noticeable using the bicubic filter.