KTX2 Viewer

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Contents

Overview - KTX2 Viewer

KTX2 offers a form of compression that been generalized to work across multiple platforms making it the most modern format for GPU Textures.

Goals:

- HDR Support
- Expanding Compression Types
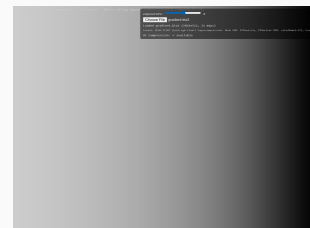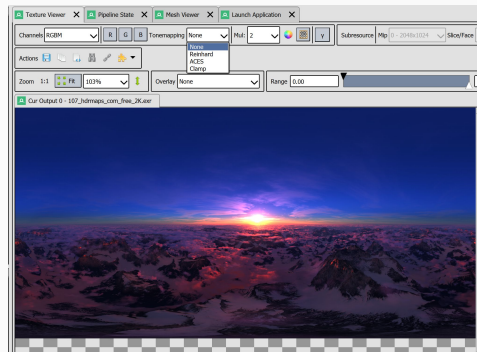 - Supercompression: secondary compression (Zstandard)

High Dynamic Range (HDR)

○ HDR expands color range in monitors from 0-1 to 0-100 (or in some cases, more)

○ Utilized VK_FORMAT 143 and 144 for signed and unsigned BC6H

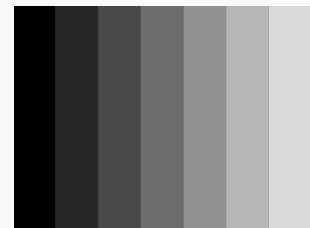○ Rendering tested and verified, produces no color banding or downsampling
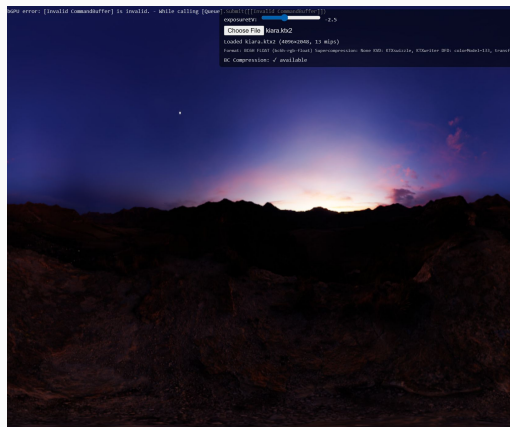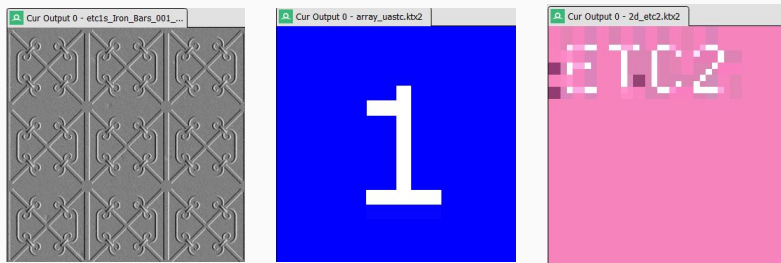

Viewer

OpenHDR.org
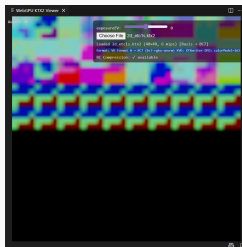

Correct HDR

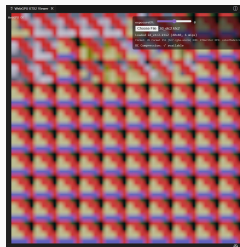Color Banding

Format Transcoding

RenderDoc

ETC1s/UASTC (supercompressed mobile) ETC2 WIP

VSCode

ETC1S WIP ETC2 WIP

img	vkFormat	model
BASIS ETC1S	–	KHR_DF_MODEL_ETC1S
BASIS UASTC	–	KHR_DF_MODEL_UASTC

img	vkFormat	colorspaces
ASTC 4x4	ASTC_4x4_SRGB_BLOCK	"srgb"
ETC1	ETC2_R8G8B8_SRGB_BLOCK	"srgb"
ETC2	ETC2_R8G8B8A8_SRGB_BLOCK	"srgb"
BC1	BC1_RGB_SRGB_BLOCK	"srgb"
BC3	BC3_SRGB_BLOCK	"srgb"
BC5	BC5_UNORM_BLOCK	"srgb"
BC7	BC7_SRGB_BLOCK	"srgb"

From Don Mccurdy's KTX2 Samples repo

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Next Steps & Live Demo

Milestone 3:

- ○ User Interaction
  - ■ channel and alpha previews (VSCode)
  - ■ Bilinear filtering
  - ■ Mip map previews (VSCode)
  - ■ Tonemapping (Renderdoc)
  - ■ Transfer function toggle + dithering
- ○ Steph/Rich update
- ○ Deploy vscode plugin for mobile testing