

SetTexturePixel for V 5.0

Sets the RGBA values of a single texture pixel. To be used to generate small to medium maps in real-time, e.g. to feed HLSL shaders. The custom channel is optimized for speed in continuous mode. Corresponds loosely to the VectorOperator channel “Get Pixel from Texture”. This version of SetTexturePixel allows in addition to save the texture, and to fill the complete texture with one color.

Children

- | | |
|------------------|---------|
| 1. OUT texture | texture |
| 2. IN x position | value |
| 3. IN y position | value |
| 4. IN R | value |
| 5. IN G | value |
| 6. IN B | value |
| 7. IN Alpha | value |

A valid texture is required. The parameters of the child texture are used in the channel. Default values of R, G, B are 0, Alpha is 1.

Usage:

Possible channel state are

- | | |
|----|---------------|
| -2 | trial expired |
| -1 | error |
| 0 | inactive |
| 1 | ready |

The channel is called in three ways:

1. The actual channel state is read with a Value parent.
2. Commands are set with SetValue call.
 - 1: initiate or reset channel to grey
 - 10: update texture: make all changes available in child channel
 - 11: fill the complete texture at once with the children RGBA values
 - 12: save texture as a jpg to /c:/temp with auto-numbering.
3. A call from a ChannelCaller parent reads the value child channels and sets the corresponding pixel.

A ChannelCall is typically done multiple times in a single Quest3D frame (e.g. with a for-loop).

A standard scenario: Start initiating with the (SetValue-) command 1. Set many different pixels. Write all changes to the child texture with the command 10.

Tips:

- Texture is not updated in the thumbnail view. The original pixel content of the texture is not kept. Instead, it is filled with a gray color. The main reason to request a valid texture in the beginning is to have placeholder for future use.
- A Quest3D Version 4.3.2 channel is available too, but uses a different approach.
- Can be used to modify alpha maps as well.
- Full Screen mode may require an explicit reset command after startup completion.
- Don't forget to call the update command.
- Tested on Win7 and Win8

Known Problems:

1. Access to very small textures is not guaranteed by the Quest3D engine. If you run into trouble, try JPEG files. The most reliable are power of 2 square textures.

Version History:

2012 11 29 initial release for Version 5.0

Example:

SetTexturePixel-Demo-500.cgr



Observations: Application runs with more than 200 fps. The dark square is placed in the lower corner to demonstrate transparency. Fill all depends on random values.

Use Key R to initiate operation in FullScreen mode, if necessary.

Outlook:

Audio Spectrum Analysis: Application scenario (from 4.3.2) see <http://quest3d.com/forum/index.php?topic=69494.0>