Subject: Re: NVidia Quadro4 980 XGL card + IDL
Posted by Rick Towler on Thu, 09 Feb 2006 18:52:53 GMT
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Chintan,

While I very much respect doing it the hard way (the journey is almost always more enjoyable than the destination), I'll second my offer, and sweeten the deal.

I have modified my camera object so it now offers stereo support. At this time it has only been tested with shutter glasses but would work equally well with dual-monitor or dual-projector setups.

Some caveats:

As I suggested in a previous email, the shutter glasses are controlled via the serial port, *not* the glasses port on your video card. This is good, in that it allows anyone with access to the glasses to use them, but bad in that you have to build a little circuit to interface the glasses to the serial port. It is *very* simple, and costs only a few dollars (a couple of LM301 or similar op-amps, a cap, and a couple of resistors). This approach also allows multiple glasses to be controlled by the pc.

The dlm I have written for controlling the glasses is for windows. If someone wants to do this on another platform they need to modify the dlm. It is very simple, and should be trivial.

If you are using shutter glasses, you need a good CRT monitor with a high refresh rate. I forgot this when testing the glasses and couldn't trace down the sync problem I was having... LCD monitors are too slow.

I have only done limited testing. Further testing needs to be done to confirm that the asymmetric frustum projection is correct. In IDL we don't have access to the perspective projection matrix, so I apply a "correction" to the modelview matrix. I think this works... If it doesn't there are other ways to fake this, just not as clean.

The code needs to be cleaned up and documented so I'm not posting it right now but you are welcomed to a copy, along with the circuit diagram.

-Rick

Karl Schultz wrote:
> On Wed, 08 Feb 2006 22:26:27 -0800, raval.chintan wrote:
>

>> Dear Karl,
>>
>> Thanks for your tip. I was able to create the dlm successfully and the
>> calls to glDrawBuffer(GL_BACK_RIGHT) were also happening but could not
>> see the stereo rendering then I found that the stereo mode was not
>> getting switched on and a call to
>>
>> sprintf(szMessage,
>> "Current OpenGL Driver:\n%s\n%s\n%s\n ",
>> glGetString(GL_VENDOR),
>> glGetString(GL_RENDERER),
>> glGetString(GL_VERSION),
>>)
>> glGetBooleanv(GL_STEREO, &bStereo)
>>
>> returned null values for vendor, renderer and version and returned
>> GL_FALSE for GL_STEREO flag.
>
> Getting null values here is bad. Are you making the glGetString calls
> while an IDLgrWindow Draw is in progress? In other words, are you calling
> this from a Draw method that you have overridden in a subclass?
>
> Null values indicate that a GL context is not current and you are making
> these calls "out of band". You can't just make these calls from any point
> in your IDL program. They must be made while a draw in is progress.
>
>> Now my question is (sorry for asking too many questions but I hear the
>> folks here are tolerant and are kind) how do I turn the stereo mode
>> programmatically ?
>
> This I do not know at the moment. How do you do it in a stand-alone GL
> application (outside of IDL)?? I'd have to research this, but maybe I'll
> leave it to you. :-) Of course, I'll figure it out when/if we add this to
> IDL. :-)
>
> In any case, you need to address the above context problem first.
>
>> if we use Pixelformatdescriptor than we need an handle to the window or
>> the context how can I get handle to IDL's window in dlm or is it that I
>> am completely going on wrong track here???
>
> Well, if this ends up needing to use a different PFD, then we are sunk.
> IDL does that deep inside and you cannot influence PFD selection.
> Further, you cannot change the PFD on a window once it is made current.
> I notice that there is a PFD_STEREO flag, but the Microsoft docs say this
> isn't supported. It may be that some ICD's support or pay attention to
> it. I know IDL does NOT set this flag when selecting a PFD, so if a PFD
> with PFD_STEREO set is required to activate stereo for your card, it isn't

> going to happen until RSI formally supports stereo.
>
>> Desperatly *seeking* answers
>
> Well, I never said that this would work out, and we gave it a try. IDL
> 6.2 and 6.3 simply does not support stereo and we're just trying to hack
> around it, and it doesn't look good now. But maybe you might still get
> someplace. If stereo support is really important to you, let RSI know
> about it.
>
> Karl
>
