

Re: 30-bit Color on 24-bit Hardware

Source: <http://sci.tech-archive.net/Archive/sci.image.processing/2004-09/0153.html>

usenet_at_imagenoir.com

Date: 09/29/04

Date: Wed, 29 Sep 2004 12:53:48 +1000

[Followups set to rec.photo.digital only]

Kibo informs me that contact@silvasdigital.com (Ron W. Silvas) stated that:

>"Bob Myers" <nospamplease@address.invalid> wrote in message
news:<Kw15d.11687\$MS.7082@news.cpqcorp.net>...
>> "Ron W. Silvas" <contact@silvasdigital.com> wrote in message
>> news:c516aeb9.0409241202.6a4f5b6c@posting.google.com...
>> > I've found that 24-bit artifacts are quite demonstratable on both CRTs
>> > and LCDs, alike, (as can be experienced with the previously mentioned
>> > tech demo) but I believe that, if anything, they would be more
>> > noticeable on CRTs because the higher dynamic range of a CRT means that
>> > an 8-bit color channel's 256 intensity/brightness levels have that much
>> > more perceptual space to cover, right?
>>
>> I've been following this thread with interest, but a couple of
>> comments seem appropriate at this point.
>>
>> First – what "higher dynamic range" of the CRT? Neither the
>> color gamut or the contrast of the typical CRT display is
>> much different that what can be obtained with the LCD.
>> What I think the problem here really is, is a difference in the
>> response curves of the two technologies. CRTs have a very
>> nice (perceptually) "gamma" sort of response, whereas LCDs
>> have a perceptually–nastier "S-shaped" response that cannot
>> adequately be compensated for with only 8 bits per channel,
>> not if you still intend to have 8 bit/channel of perceptually linear
>> intensity control. The solution here is greater dynamic range
>> (bit depth) at the panel (i.e., at the driver level), to permit
>> compensation for the panel's response and thus present a
>> "CRT-like" 8-bit input. Fortunately, we ARE starting to see
>> 10-bit LCD drivers entering the market.
>>
>> Bob M.
>
>Hi, Mr. Myers.

sci.image.processing: Re: 30-bit Color on 24-bit Hardware

>
>*It might be time for me to exit from this branch of the*
>*discussion, as I am admittedly not very knowledgeable about the*
>*areas being discussed (dynamic ranges, contrast ratios,*
>*hardware behavioral differences between LCD and CRT*
>*technologies, etc.). =)*
>
>*My earlier comment . . .*
>
>> > *"I believe that, if anything, they would be more noticeable*
>> > *on CRTs because the higher dynamic range of a CRT . . . "*
>
>. . . *was a jump to a conclusion on my part-*

But a correct one, in most cases. ;)

>*I should have asked*
>*Mr. Westin if he could explain to me his comment about the*
>*different dynamic ranges before I commented on that. Totally*
>*my mistake.*

Mr Westin is mistaken in his comments anyway.

> *o 30-bit color's >1000 intensity levels per channel *is**
> *finally enough.*
> *o 30-bit color display is desirable.*
> *o 30-bit color display on common 24-bit hardware would be a*
> *nice bonus, and . . .*
>
>*It works. On CRTs and LCDs, alike. No special hardware*
>*requirements. No special OS support needed.*

Indeed. Did you know that the Matrox Parhelia cards already have true 30 bit resolution in hardware?

<http://www.matrox.com/mga/workstation/digital_design/products/parhelia/256mb.cfm>

--
W
. | , . w , "Some people are alive only because
\\|/ \\|/ it is illegal to kill them." Perna condita delenda est