

Re: Image Processing with Geode GX2: Win CE or XPe?

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<http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.embedded/2005-02/1511.html>

From: Slobodan Brcin \((eMVP\) (*sbrcin_at_ptt.yu*)

Date: 02/26/05

Date: Sat, 26 Feb 2005 06:52:08 +0100

Alexis,

Few facts if you use color picture: If you use 2 bytes per pixel (which is minimum) then you will have following memory bandwidth requirements: (that is if you capture hardware and its drivers are pure perfection)

1280x960x2x60 > 140.65 MB/s for bringing RAW video over PCI-?

PCI-33 could yield <125MB/s but this is theory. You should be extremely happy with ~100 MB/s and that is if you card is the only one on PCI bus.

So first thing that you need is PCI-66+.

Memory BW:

Just for picture capture to memory you lost 140+ MB of bandwidth.

For processing you need to read this picture and apply some algorithm. Provided that all happen inside the processor cache you lost minimum of 140+MB of bandwidth as well.

>*Common image processing tasks in machine vision:*

- Pattern, Geometric, Shape matching.
- Edge Analysis.
- Color Analysis.
- Barcode recognition, OCR.
- Measurement, and so on.

Please let me know of algorithm that can do all this in one read pass, I am really interested.

To make at least some of the things possible with high resolutions you will probably have to cut your initial requirements if you

plan to stick with Geode platform.

BTW if you need every bit of performance then you should integrate all image handling and processing in to the driver/preferably in symbiosis with capture custom driver.

I had to write similar thing for our hardware although I had HTT 2.4 GHz processors, with three separate PCI

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buses. And a lot of memory for storing captured pictures in case that processor(s) can't keep up at certain moments. I'm talking here about capture of (3x2x4) cameras in 702x288x2x25 resolution.

Regards,
Slobodan

"Dave August" <august@NOSPAMacmesi.com> wrote in message
news:eSG6cj7GFHA.3216@tk2msftngp13.phx.gbl...

> Alexis,

>

> *No my app is strictly Windows GUI, but with lots of TCP/IP and serial*

> *stuff..*

>

> *If you need more than simple video functions like streaming but require*

> *serious video processing Slobodan is correct you need a dedicated DSP,*

> *certinaly a 400 mhz Geode will not have enough power*

>

> *Dave*

>

> "Alexis" <Alexis@discussions.microsoft.com> wrote in message

> news:31468015-0CE7-4B04-960D-261DE029DD67@microsoft.com...

> > *Hello Dave and Slobodan.*

> >

> > *Thank you for your quick reply.*

> >

> > *Dave ,*

> > *Regarding the RAM, have you any estimation of how many RAM is needed by a*

> > *such install (approximatively)? Does your system make some image*

> > *processing?*

> >

> > *Slobodan,*

> > *Reagrding the video capture, it is not a primary goal to capture video to*

> > *a*

> > *file. The smart camera is developed to be use in industry for autmation*

> > *purpose.*

> > *I was not very clear in my previous post: it process video capture in SXGA*

> > *a*

> > *15fps and fps go up to 60 when in partial scan mode.*

> > *The hardware has already been developped so I have to stick with the Geode*

> > *architecture.*

> >

> > *"Slobodan Brcin (eMVP)" wrote:*

> >

> >> *Alexis,*

> >>

> >> *Although I like XPe, for video applications inside camera I would choose*

> >> *TI DSP solutions that can do real time WMV9 compression.*

> >> *Geode processors are probably too slow for video handling in resolutions*

> >> *that you mention. DSP's on the other hand are designed for*

> >> *applications like these.*

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http://dspvillage.ti.com/docs/dspvillagehome.jhtml?DCMP=TIHeaderTracking&HQS=Other+OT+hdr_p_dsp

> >> http://focus.ti.com/docs/general/splashdsp.jhtml?&path=templatedata/cm/splashdsp/data/dm64x_home

> >> <http://focus.ti.com/pdfs/vf/vidimg/esc250paper2004.pdf>

> >>

> >>

> >> *Regards,*

> >> *Slobodan*

>

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