



Video Thrills the Radar Tsars

It happens to the best of us: the dreaded day our trusty computer leaves the surly bonds of electromagnetism to touch the face of neutrality—leaving the unprepared in several days of pure hell. Sure, it teases with a spark or sputter only to return to the blue screen of death, the black screen of doom, or the nauseous bios merry-go-round.

Such was my fate at the onset of 2010. It began with an unsolicited Windows upgrade that automatically downloaded and deemed itself so urgent the operating system incessantly begged for a restart and eventually took matters into its own hands. Luckily, I had the common sense to back-up my data to my new Christmas present—a 500GB Hitachi mobile hard drive that resembles an armadillo tank. Thanks, Santa!

My first step in Hades started with a “Gold Support” call. It sounded good when purchased, but what I didn’t realize was that Gold Support starts with a call center operator on a mission to get you to fix your computer via telephone. Sure, I don’t mind a few qualifying questions to eliminate bone-heads (“yes, it’s plugged in...”), but after that I want help; not computer repair on-the-job training. Note to computer manufacturers: How about “Platinum Support” that gets me back up and running without delay, no questions asked?

After Harold and Kumar failed to find my laptop’s heart-beat, I took it to a local repair shop only to find out the remedy would outpace the cost of a replacement. The computer was limping through its fourth year of service and I was eager to jettison Vista (and its barnacles picked up over those years). It was time for a new computer. I had threatened to purchase a new computer over the past nine months; those threats rang hollow as I realized that necessity is not only the mother of invention but also the ugly stepsister of action.

I needed a computer quick—and a custom computer was going to take time. I don’t know about you, but if I’m taking a computer into the trenches, I prefer it be tailored to my needs. So I was in need of quick makeshift computing while I found a long term solution. Enter my son’s college computer (he’s on hiatus in Oregon). With minimum processing power and disk space, I coupled it with my new tank drive to survive. It was enlightening to see what you can do with mobile storage and provisional computing.

Now I could take some time to find a suitable replacement. Along with Windows 7, I was interested in the new Intel Core i3, i5, and i7 processors—as well as their 32-nanometer sub-micron processing technology. While perusing the specs, something caught my eye. The i7 has floating-point processing capability.

Did you hear me? A readily available, commercially supported floating-point processor. To the ears of an embedded system designer that is like Charlie finding the golden ticket. Finally!

After years of neglect, has Intel decided to focus on military embedded systems? Hardly. It turns out Intel customers are attracted to floating-point to power a new generation of personal computers that handle high resolution graphics and high volume video.

Nowadays, it’s not good enough to share pictures. Those pictures have to move in multiple windows, at the same time, and in high definition. We want “Avatar” in 3D THX surround sound streaming on our laptop with pop-up director notes

devoid of jitter, loading stutter, or delay. That’s where floating-point comes in.

While The Buggles decried, “Video Killed the Radio Star,” it turns out in this millennium, video has an unlikely partner: the military. Not a partner in murder, rather a partner in readily available commercial off-the-shelf floating-point processors.

Video is an unintentional accessory to the art of war. Yes, your desire to stream your baby’s first steps to grandma and grandpa has military embedded computer designers dreaming of a commercial processor crunching complex fast moving radar, sonar, and electronic warfare data by day and handling routine data parsing, links, stores management, and fault tolerant checks by night.

Sure, standalone digital signal processing (DSP) chips have been in operation for years; however, as standalone chips, they command their own real-estate on densely populated circuit boards. That gives rise to high rent, heavy footprints, and congestion. Now designers can use a processor that performs DSP as well as general-purpose processing on a single chip, shrinking substantial processing capability into a smaller space.

Couple size benefits with the cost savings from commercial processor mass manufacturing, and you have embedded system designers squirming with joy like Iggy Pop sucking an extra sour Warhead.

So I had a choice: i3, i5, or i7. Did I really need the i7? No. Did I want the i7? Yes. Did I get the i7? Of course—as well as a couple of 500GB hard drives in RAID configuration with a boatload of RAM.

Now I need a good lead on a miniature radar antenna—about five to six inches in diameter with a SCSI output. I’ll plug that into my new laptop and start painting targets in the office by day and research why Cher is morphing into Joey Ramone by night. All because Dave Cook wants to watch movies on his laptop¹.

Thanks Dave.

—Gary A. Petersen
Arrowpoint Solutions, Inc.
gpetersen@arrowpoint.us

Note

1. Although Dave’s always talking about his laptop in his BACKTALK, see <www.stsc.hill.af.mil/crosstalk/2008/12/0812BackTalk.html>.

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