ACTIVE OPTICAL SYSTEMS

AN006

Camera Frame Rate Variations

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We are finding that the frame rate that we are able to obtain from some cameras depends on the computer to which it is attached. The USB webcams do not appear to be as susceptible to this variation, but the 1394 (FireWire) cameras are. Below are the results of an experiment done with an AVT Marlin F131b camera on two different computers. In each case we were measuring a laser beam profile with the smallest exposure time possible (11µs). The 5000 images were read into a Matlab script through a COM interface to the device. The average frame rate was determined by dividing the number of frames by the amount of time the test took to run.

Frame Size	HP Pavilion D4100Y (fps)	Dell Vostro 200 (fps)
64x64	396	1138 ± 6
128x128	315	721 ± 2
100x100	-	882 ± 3

In the two computers we used for this testing we clearly saw a very large variation in the frame rate performance. This is probably due to a variety of hardware differences between the computers including processer speed, memory speed, quality of the FireWire interface, and maybe operating system (32-bit Vista on the Dell vs 32-bit XP Pro on the HP). We do not have enough data to determine which of these factors is the most important, but will update this note as we get more information. If speed matters to you on an experiment, we recommend that you get the highest quality computer interface you can afford.