



Viewpoint Mike Smith

Mike Smith ponders the deceptively simple subject of memory cards. It may not be as straightforward as you think...

Transferring photos from a memory card to your computer is one of those mundane tasks that chugs away in the background (most of the time) while you go and make a cup of tea. If I've shot a wedding, then my usual workflow is simply to plug the CompactFlash (CF) card into my Lexar USB3 card reader and then watch the images appear in Lightroom.

However, the whole topic of data transfer speeds came back to haunt me recently after a day of shooting 1,000 images for a computational photography project. The main camera was my trusty Nikon D700, which I used to shoot uncompressed 14-bit raw files (and nothing else). These weigh in at a fairly svelte (given the 12MP resolution) 14MB each, so my go-to CF card is a SanDisk 16GB Ultra that has read speeds of 30MB/s. At the end of the day, I needed to put a copy of the data from the card onto the project laptop. I had brought my cheap and cheerful Integral CF to USB card reader with me, which I've used on numerous occasions with no problems. Or so I thought. Thirty minutes later, the card had copied across at the painfully slow speed of less than 5MB/s. This wasn't a 'one cup of coffee' cafe stop, but two to three!

When I got back to the office, I dug back into data transfer speeds so that next time I was in this position – well, it would cost me less in coffee! I reminded myself that the hardware (and so firmware) in a digital camera would be able to use memory cards up to a certain specification. The

D700 can use cards of at least 64GB, at speeds of up to 90MB/s (although it might not be able to utilise the full speed of the card). In contrast, my Fujifilm X-M1 can take 32GB cards at speeds of up to 50MB/s. Now, to achieve these speeds during data transfer to a PC, all parts of the workflow need to be quick – card, card reader, USB port (sorry to the Mac users out there!), motherboard and hard disk.

The right port

So if we have a fast card, what sort of card reader/USB port do we need? Well, USB3 has a throughput of (depending upon what you read) somewhere above 400MB/s (which doubles for USB3.1), while USB2 is somewhere around 35MB/s. To make the best use of your new speedy memory card, you therefore have to make sure you have a USB3 card reader plugged into a USB3 port.

In my instance, the card reader was the limiting factor (it was plugged into a USB3 port on a new laptop). So, one low-cost USB3 card reader later (KiWiBIRD branded) and a new 50MB/s CF card, all plugged directly into the USB3 port, the images fly off the card on to the PC. Getting this kind of throughput is cheap and easy, but a timely reminder to me that it's all too easy to put a weak link in that chain accidentally and see those data rates plummet.

Mike Smith is a London-based wedding and portrait photographer. Visit www.focali.co.uk



For fast transfer speeds, all links in the chain need to be strong

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