

SDHC and SDXC Card Best Practices For The AU-EVA1

(excerpted from “A Guide To The Panasonic AU-EVA1 Camera”)

Recording video on an SD card will be new to many users, so I put together a “Best Practices” guide to help new users avoid common mistakes.

1. Always format the memory card in the camera.

This is a vital first step. Even though the memory card comes pre-formatted when you buy it, it's still advisable to format it in the camera. Reports of glitches in the footage seem to be greatly reduced when cards are formatted in the camera instead of by a computer. Never format the card in a computer using your operating system's “format” command. If you must format a card in a computer, only use the SD Card Formatter software program (a free download on Panasonic's website). It is especially important to format the cards properly depending on what kind of card they are; SD and SDHC cards should be formatted as FAT32, but SDXC cards need to be formatted as exFAT. The camera will always do this properly, so it's best to format the cards in the camera.

2. Never pull the card out when it's being accessed.

This is a big one; if a card is being written to, or read from, and you eject that card, it has the potential to not only ruin the current clip, but perhaps to glitch the entire card! Always make sure a card is not being accessed before you pull it out of any device. This is one reason for the presence of the card door – closing that door will remind you to double-check that recording has stopped. However, do be aware that the camera has hot-swap capability; you can leave the door open and eject a memory card that's not currently being accessed. This gives you the ability to perform an endless relay recording where you can continually swap in new cards and record perpetually. The danger in this scenario is, of course, ejecting the card that's being currently written to. Always double-check yourself and look for the access lights to make sure you only eject that dormant card, and never the card that's currently being written to.

And when removing a card from a computer, be sure to eject the card through your desktop (on Mac, “Eject” or drag its icon to the trash, on Windows, use the green-arrow “Safely Remove Hardware” utility.)

3. Carry the cards in some sort of protective case.

SDXC and SDHC cards should be carried in a protective plastic case, or in a dedicated card holder. You really don't want to have cards roaming around

loose in your pockets or at the bottom of your camera bag, where they can be crushed, be subjected to static electricity, be spilled on, or forgotten in your clothes and subsequently washed! Always put a card in a case when you're not using it.

4. Always write-protect the cards the instant they come out of the camera.

This has been a backbone of my tapeless workflow for years – the instant the card comes out of the camera, write-protect it. This does several things for you:

- A. It prevents your valuable footage from being overwritten.
- B. It alerts you that this particular card hasn't been offloaded to a computer yet.
- C. It prevents you from getting that card mixed up and formatting it(!)

My standard workflow is to write-protect the card, and leave it write-protected until I've successfully offloaded the footage onto a computer (at least once, and maybe to two separate drives). Once I know the footage is safe, the write-protection tab gets moved to the "unprotect" position. Things can get confusing quickly in a production environment, but with this procedure I always know that my footage is safe from being lost or overwritten. Get in the habit of immediately write-protecting your cards and you'll save yourself from some grief.

5. Use the very best cards you can afford.

This one almost goes without saying, but – I'm going to say it. There are cheap cards out there, and some of them are junk, and some of them are even counterfeit! Not all SDHC/SDXC cards are the same! Some employ technologies for protecting your footage from write errors, from power failures, from wearing out — and the cheaper ones don't. If you're buying no-name cards from third-world countries off internet auction sites, don't be surprised if they don't perform as well as a top-of-the-line card. In fact, don't be surprised if it's a fake/counterfeit/knockoff! There are plenty of examples on the internet of people who received fake cards; unscrupulous sellers have printed their own labels and stuck them over low-quality cards to deceive unwary buyers into thinking they've received a higher-quality, more-expensive card than they actually have.

It's not a matter of footage quality, it's a matter of data integrity. If a card works, it'll record the footage the same as any other card will. But a cheap card might not have as much reliability, it might have "bad sectors" or it might fail unexpectedly. While anything's possible, it's reasonable and

practical to expect that a better-quality card will perform more reliably, and in my experience that has held to be the case. They say “you get what you pay for,” and going with super-cheap cards may bring nasty surprises when it comes to reliability. Always get the best media you possibly can. And always buy your memory cards from the manufacturer’s authorized resellers. You might pay an extra \$10 per card, but if it helps you avoid a reshoot, it’s extremely cheap insurance!

As to what cards are supported: the minimum requirements are shown in the owner’s manual / Operating Instructions. Panasonic produces three cards that are compatible with the EVA1: a 64GB V90 SDXC, a 128GB V90 SDXC, and a 64GB MicroP2 card. You’re not limited to only using Panasonic cards, but you are guaranteed that these particular cards are going to work properly in the EVA1.

6. Always use SDXC cards whenever possible.

The camera is capable of recording low-bandwidth footage (like AVCHD footage) to SDHC cards, but in general you should stick with modern SDXC cards. SDXC cards are preferred for a number of reasons, but the two most obvious are that 1) the newer cards carry the speed ratings that the camera needs to record its higher bandwidth footage (V30 and V60); and 2) the SDXC cards have a much bigger file size limit on them. SDHC cards were limited to a maximum of 4 gigabytes per file, and had the potential of creating many spanned clips if you recorded long duration events on them. SDXC cards have no file size limit, although the camera may still limit the maximum file size. That means that even if you’re recording the longest events, you’ll have very few if any spanned clips, and that can make life much easier when working with the footage in post.