



SD Cards vs. Integrated Flash Memory: Setting the Record Straight

Digital Signage Players clearly need on-board storage to host a buffer of content – even the best streaming service isn't reliable or fast enough to keep a player continuously supplied. Some players have built-in flash memory, others have replaceable SD cards. What are the merits of the two approaches?

One issue is the frequency of reads and writes. When a player is left to loop through the same schedule for weeks on end, the content is being constantly read from the storage media. On top of that, as new content updates are published, or the presentation is using real-time feeds or social media, you create a huge number of writes to the media. It is worth remembering that over time and extensive use, flash memory devices suffer performance issues after many successive read/writes. Put simply, flash memory wears out over time. In fairness, SD cards suffer similarly after extended reading/writing, but SD cards are inexpensive and easy to swap out for new. A similar swap-out for flash memory built in to the player would require removing and replacing the flash memory chip – something that's costly and impractical.

Secondly, removable SD cards make it easy to load content. While many large networks typically distribute signage content via the network, many smaller (or single-screen) installations rely on content loaded locally. Sometimes the reason is that stable Wi-Fi connectivity isn't available at every signage location. SD cards are perfect for this application.

Finally, replaceable SD cards give more flexibility in terms of size. With SD cards, you can choose (and pay for) only the appropriate amount of memory that you need. Need additional memory in the future? No problem. You can choose a larger SD card and you're set. In a growing number of applications, even the largest SD cards can be insufficient. BrightSign now offers an integrated M2 interface in some players, allowing a solid-state drive to be added. This feature has already seen use in a recent application by Notice, one of our Dutch integration partners designing an interactive training station for gyms.

Harry Wiertz, Innovation Director at Notice, said, "The FunXtion Experience Station hosts a truly extensive library of content, with over 1,000 individual video clips. Each exercise is supported by a video explaining how to perform it, and there are further clips celebrating success and providing count downs, giving an exceptional level of content. On the original players, we used 64GB SD cards, and made use of H.265 compression to reduce the file size by about 50%. The new player, however, features an M2 peripheral port, allowing us to install a SATA SSD hard disk drive."

Lastly, remember that not all SD cards are created equally. Consumer SD cards may be less expensive, however there are trade-offs to consider. Commercial SD cards typically use a higher grade of flash memory, are designed to perform at higher temperatures and last exponentially longer than consumer SD cards.

For the reasons outlined above, BrightSign has always opted for removable SD cards, which give a much greater degree of flexibility for the user.