

Flash Memory Guide

Portable Flash memory for computers, digital cameras, mobile phones and other devices



AUTO
Car Audio System



POLLEX
Lightweight Body



SDXC Card
microSDXC

Mobile Data Solution



Highlights

Flash Memory Products

Available Space is not equal to the physical device capacity, because of:

- Definition of usable vs unusable cells to avoid performance or reliability degradation
- Space is being allocated during device-formatting operation in an operating system
- Memory cells reserved for controller firmware, updates and other controller internal administrative data
- Special features such as copy protection and security features

Understanding Flash Memory Products.

Flash storage devices are commonly referred by the physical storage capacity that the basic storage media supports with regards to the physical storage bytes. For Flash Memory Products, storage is generally in the NAND flash memory components. The actual available space that is presented to a user by an operating system or camera device normally does not equate to the physical device capacity stated on the packaging. Partial storage memory cells in any Flash Memory Product are utilized for device formatting during manufacturing process and operating system formatting.

During formatting, it allocate portions of the storage device space for use by administrative computing operations - either computing within the card, or computing inside a host digital device or system. The space that is reserved is unavailable to the user for data storage, but acts to boost the performance and/or the reliability of the device when used with host devices such as digital cameras, mobile phones, computers, etc. Such space allocation is normally a required process of any flash storage device and free space to users will deviate based on the card technology, the host device, and manner in which the user may select to format it, therefore, due to these space allocation factors, the usable space for storage will generally be less than the device capacity listed on the packaging. Space is reserved for several formatting processes including some of the following reasons:

- During the manufacturing process of the storage device, usable and unusable cells are being determined and by setting aside unusable cells, it prevents the occurrence of a performance or reliability degradation in the user experience. Hence, those cells will remain unused and not usable for any reading or writing of user data.
- The device-formatting operation in an operating system assigns space used to trace user file location in the flash drive/card, dates/times/filenames and administration of used versus free file system space that operating system informs to users. For example, the formatting in a Windows operating system on a card or drive typically creates a File Allocation Table (FAT), root directory and sub-directory elements making some parts of the storage unavailable as actual user data.
- Part of the memory cells are being reserved for the controller firmware (the codes running inside the storage device) and for updates and other administrative data related to the controller.
- Where required, part of the memory cells might be reserved to administer special features such as the copy protection function and security feature requirements of Secure Digital (SD) cards.

Highlights

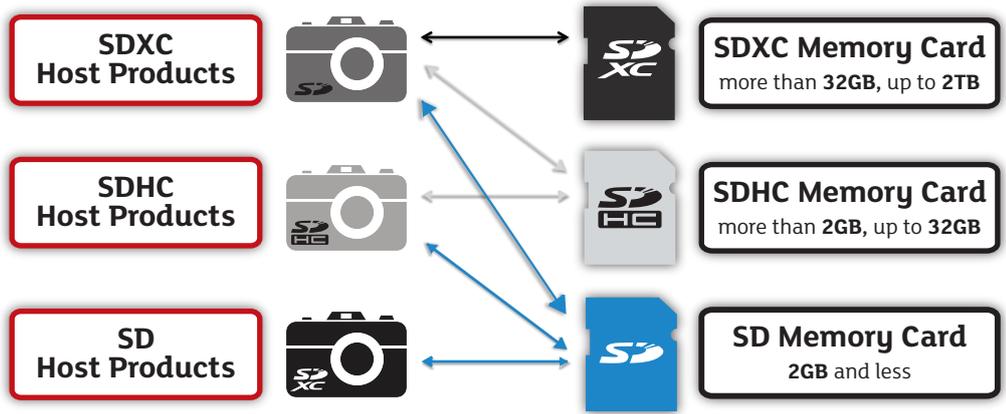
Key factors which will alter the functionality of the Flash Memory Products

1. Compatibility
2. Platform Varies
3. Speed Concern

1. Compatibility.

Confirm Compatibility

Before inserting your Secure Digital (SD) memory card into your device, confirm the device is compatible with the SD standard by locating the compatibility logo on the device or referring to the device's user manual or manufacturer information.



Backwards Compatibility

- SDXC memory cards must only with SDXC devices.
- SDXC devices can use SD, SDHC and SDXC memory cards.
- SDHC memory cards can be used with SDHC and SDXC devices.
- SDHC devices can use both SD and SDHC memory cards.
- SD devices can only use SD memory cards.

2. Platform Varies.

Possible Device Messages for when switching from devices to PC devices

If user switch the flash media among various platform, the following messages may appear:



Possible Messages:

- You need to format the disk in drive 'X': before you can use it. Do you want to format it?
- The disk in drive 'X' is not formatted. Do you want to format it now?

Choose No/Cancel
 Do not format, otherwise card is no longer SDXC format!



Possible Messages:

- Card error
- This card cannot be used
- Please check your card
- Format this card

Choose No/Cancel
 Do not format, otherwise card is no longer SDXC format!



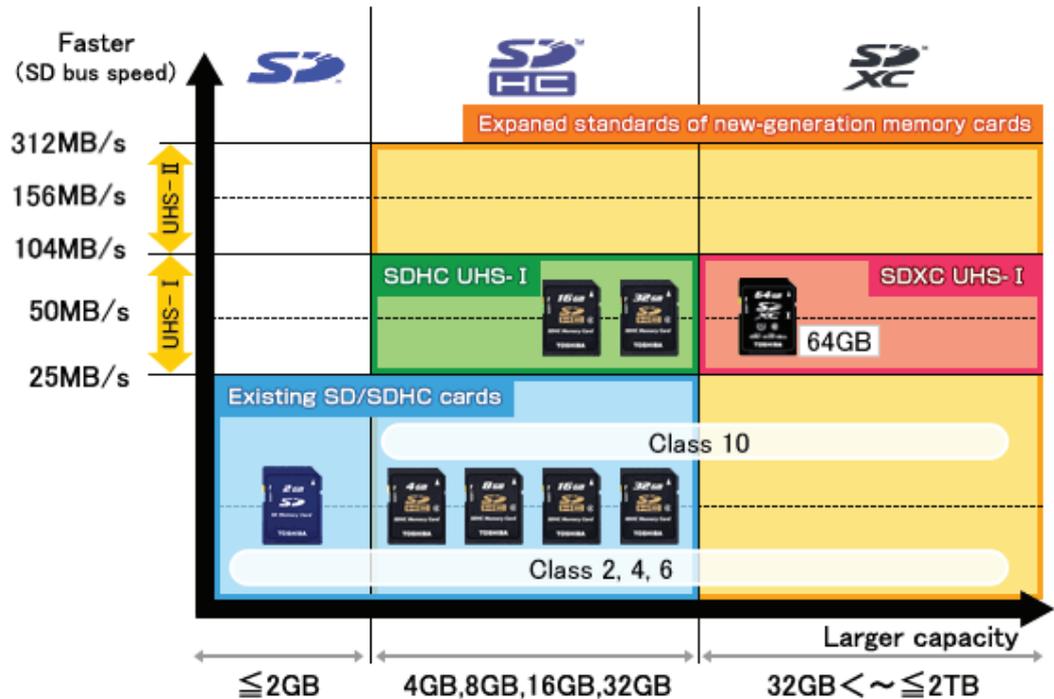
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General Guideline for User Reference to Prepare Your STRONTIUM's Flash Media Prior Usage.

Perform a full initialization and synesthetic check upon acquiring your new Flash Product

- Once a flash product is acquired, perform a full initialization (format) with the host device. This would align the media with the host format.
- If device support hot-plug, do a synesthetic check for the media on other device, for example PC, MP3 player etc. Use the best recording setting to do the trial run. This would expose all possible error which might surface.

Do regular backup of your data

- Backing up your data regularly on a CD or network decreases the stress and other negative effects that result from losing vital work or resources. Determining how often you should back up your data is a personal decision. If you are frequently changing or adding data, a weekly backups might be the best solution.

Download SD Formatter when formatting is required and check back for regular updates on the latest firmware

- On PC, if a format is really require, do it with the SD Formatter which can be download from SDA website:
https://www.sdcard.org/downloads/formatter_3/ or
https://www.sdcard.org/downloads/formatter_4/
- Alternatively for USB products, it is advisable for user to regularly check back our website (link below) for any updates available:
<http://www.strontium.biz/support/downloads>