

Differences in Flash Drive Quality

Like all types of technology, flash drives vary greatly in quality. To indicate the quality of the memory used in those drives, the memory industry uses tiers, or grades. Tier 1 is top of the line flash memory, while the lower tiers are more likely to cause errors and other problems with the USB drives.

All flash memory starts out on one giant, but non-uniform silicon wafer. Once the wafer is created and etched with circuits, a machine then cuts out each chip. Individual chips that do not pass quality control inspections are automatically tossed to the side.

Grades (tiers) of Flash Memory

Tier 1 (Grade A)

These top of the line chips are always laser etched with a serial number and the manufacturer's name. Currently, Samsung and Hynix are the primary producers of tier 1 memory chips. Tier 1 chips have the lowest error rates, longest life spans, and are faster than all the other tiers. These chips almost always come with a *lifetime warranty*. Leed's and LogoIncluded use only Tier 1 chips, and are our favorites because of this and their long-standing reputations. Yes, they cost a bit more. Yes, they are worth it. Your client is going to use this drive for *years*, and quite reliably.

Tier 2

Tier 2 chips are a slight downgrade of tier 1 chips. These chips are still very reliable, have the second lowest error rates, and *generally* live about as long as tier 1. These chips may or may not be etched with a serial number and name of the manufacturer.

Tier 3 and Below

Tier 3 chips and below are made from the discarded pieces of the silicon wafer. These chips have roughly a 30-40% failure rate and have much lower life expectancies. They can even cause problems for the device or computer they're used in. Tier 3 chips may be acceptable for use in throw-away toys, but not flash drives.

Other Issues

A common scam is the use of special software to make a small capacity (e.g., 256 MB) flash drive appear to your computer as, for example, a 2 GB drive. Then, when your customer tries to save data to the drive, it either balks or erroneously reports the file has been saved when it has not. Imagine the warm fuzzies your client *won't* be feeling for you when the flash drive she received from you loses the presentation she was going to give to the Board of Directors.

Buying Guidelines

So what can you do to make sure you only receive tier 1 chips? The first thing is to order through Leed's or LogoIncluded, as mentioned previously. Our PeerNet buying group has been able to negotiate very

competitive pricing with them. Be aware that some companies advertise tier 1 drives at prices below market. The reason they're so cheap is because they are tier 2 or 3 (or worse) chips that have been falsely labeled. There are literally hundreds of vendors doing this. Or, that 1 GB flash drive is really a 128 MB drive with a software hack. If you're buying product from a vendor in China, you may be on your own when your customers start complaining. A cheap flash drive could end up costing you a lot of money and goodwill.

Sources:

blog.premiumusb.com/2010/03/differences-in-flash-chip-quality

leedsworld.com

usbtalk.net/2009/09/nand-flash-chip-grades-explained/

tomshardware.com/

blog.logoincluded.com/

