

# Enterprise USB Memory Key

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SMART Modular Technologies' Enterprise USB Memory Key is offered with both multi-level cell (MLC) NAND flash in capacities of 8 and 16 GBs and single-level cell (SLC) NAND flash in capacities of 2, 4, 8, and 16 GBs. The USB Memory keys address the need for enhanced reliability by incorporating on-board error detection and correction, and global wear leveling algorithms that provide reliable operation over the product life cycle.

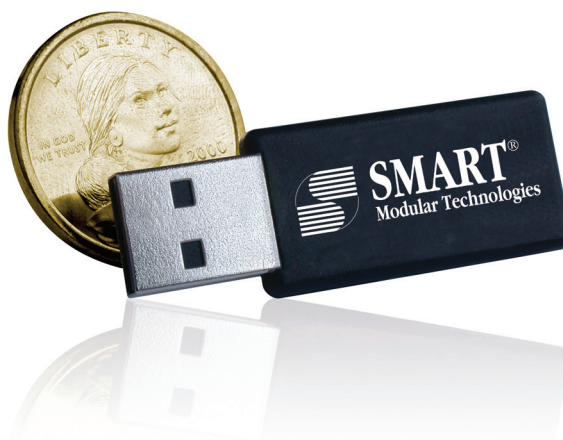
SLC NAND provides 2 million program/erase cycles for most applications and exceeds comparable multi-level cell (MLC) NAND technology by a factor of 100X in durability and 2X in speed. The MLC NAND flash USB Memory Key is specifically designed for cost conscious applications where large capacities are required in a small form factor. The limited program/erase endurance of MLC NAND means that these products should only be utilized in applications with a low frequency write profile.

### Product Family At-A-Glance

|                                  | Capacity (GB) | Performance Sequential                               |
|----------------------------------|---------------|--|
| <b>Enterprise USB Memory Key</b> |               |  |
| USB 2.0 SLC                      | 2, 4, 8, 16   | 22 MB/s Read (maximum)<br>16 MB/s Write (maximum)    |
| USB 2.0 MLC                      | 8, 16         | 21.1 MB/s Read (maximum)<br>8.2 MB/s Write (maximum) |

### Features

- Whole-drive global wear leveling
- Advanced Error Detection/Correction circuitry for superior data reliability (24 bit ECC Engine)
- Improved shock and vibration performance over rotating media
- Zero seek time
- Noiseless operation
- Low power dissipation
- USB-class definition for bootability support
- Field-upgradeable firmware via USB bus
- Small Form Factor



## Specifications

| Enterprise USB Memory Key                |   |           |    |
|--|---|-----------|----|
| <b>Performance</b>                       |   |           |    |
|  | SLC   | MLC       |    |
| Read (maximum)                           | 22 MB/s   | 21.1 MB/s |    |
| Write (maximum)                          | 16 MB/s   | 8.2 MB/s  |    |
| Host Interface Rate (maximum)            | 480 MB/s  | 480 MB/s  |    |
| <b>Reliability</b>                       |   |           |    |
| Data Retention                           | 10 years @ 25 °C and 10% of Drive Life  |           |    |
| Endurance                                | 200 K P/E Cycles  |           |    |
| Error Correction / Error Detection (BCH) | Up to 24 bits/KByte block (8K flash)  |           |    |
| <b>Power</b>                             |   |           |    |
|  | Typical   | Maximum   |    |
| Vcc                                      | 5.0 ± 10%   | 5.5%      | V  |
| Read                                     | 107   | 170       | mA |
| Write                                    | 114   | 239       | mA |
| Idle                                     | 71  | 78        | mA |
| <b>Environmental</b>                     |   |           |    |
| Shock/Acceleration                       | Operating Half-Sine 70 in/sec, 3 shocks along each axis, X, Y, Z, in each direction |           |    |
| Vibration Operating                      | 0.9 g rms 10-500 Hz, 30 minutes per side (total of 6 sides)                         |           |    |
| Vibration Non-Operating                  | Random 13.6 g rms 10-500 Hz, 30 minutes per side (total of 6 sides)                 |           |    |
| Operating Temperature - Commercial       | 0°C to 70°C   |           |    |
| Storage Temperature                      | -55 C to 95 C   |           |    |
| Humidity                                 | 5% to 95%, non-condensing, relative humidity  |           |    |
| Altitude                                 | -200 m [656 ft] to 10,600 m [34,777 ft]   |           |    |
| <b>Physical</b>                          |   |           |    |
|  | Standard  |           |    |
| Length                                   | 46.15 mm [1.82 in]  |           |    |
| Width                                    | 15.75 mm [0.62 in]  |           |    |
| Thickness                                | 5.33 mm [0.21 in]   |           |    |

## Ordering Information

| Part Number          | Capacity (GB) |
|----------------------|---------------|
| <b>USB 2.0 - SLC</b> |               |
| SG9MK2GPA            | 2             |
| SG9MK4GPB            | 4             |
| SG9MK8GPC            | 8             |
| SG9MK16GPD           | 16            |
| <b>USB 2.0 - MLC</b> |               |
| SG9MK8GPCM           | 8             |
| SG9MK16GPDm          | 16            |



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