DELKIN DEVICES
Rugged Controlled Storage.

microSD/SDHC/SDXC Cards

microSD cards have been mainstream for years as storage for mobile phones, action cameras and other consumer devices. More recently, the small, lightweight and rugged form factor has become one of the most popular storage media for industrial and OEM applications as well. For handheld devices and other real estate-constrained designs, across a wide range of applications including inventory management, telecommunications, medical devices, power and energy, infotainment and transportation, Delkin Devices offers a full menu of microSD cards, allowing the best product selection to match any use model. Delkin microSD products have many additional benefits over standard retail consumer-grade cards, including BOM control, life cycle management and outstanding applications support.

Whether the application calls for a few Megabytes of storage to launch an application, or several Gigabytes to store video data, Delkin has the solution.

For the most demanding applications, in terms of environmental conditions, write-intensive workload or the mission-critical nature of the stored data, Delkin offers true industrial SD controllers, high endurance SLC NAND flash, full industrial temperature range and long life cycles.

HIGHLIGHTS

Three microSD Product Families
- SLC, MLC and 3D Flash
- Commercial & Industrial Temp
- SD 3.0
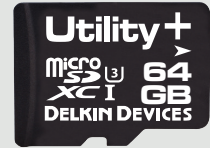
Wide Range of Capacities from 128MB to 128GB

Support for SD and SPI Modes

Controlled BOM

Life Cycle Management

For more cost sensitive designs, Delkin offers lines of MLC/3D Industrial - based cards – the Utility family in standard (-25°C to +85°C) and Utility+ family offering full industrial (-40°C to +85°C) temperature ranges.

Regardless of the microSD product family, Delkin ensures consistent performance and host compatibility through managed configurations. Delkin locks the card configuration down to the specific controller, firmware and flash chips, with a change to any of these components dictating a new part number. When an unavoidable EOL occurs to any of these items, Delkin communicates the discontinuation in advance, providing the opportunity to place a last time buy as well as to qualify the replacement solution.

Additionally, since the Delkin Devices facility in Poway, California is the headquarters for our design, manufacturing and support teams, we can also provide customized microSD solutions. Options include pad printing, content or image loading, conformal coating or other mechanical modifications to meet a specific need. Contact us to ask how a card can be customized for your application.

DELKIN DEVICES

microSD/SDHC/SDXC CARD PRODUCT MATRIX
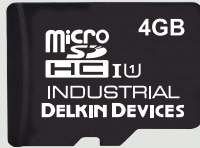
SD Product Family	U331C Series	Utility microSD	Utility+ microSD
Interface	SD 3.0, Class 10, UHS-I		
Connector	Standard microSD 8 pin		
Outline Dimensions	11 x 15 x 1 mm		
Flash Type	SLC	MLC / 3D Industrial	
Density Range	128 MB – 2 GB (SD) 4GB (SDHC)	4GB – 32GB (SDHC) 64GB – 128GB (SDXC)	4GB – 32GB (SDHC) 64GB – 128GB (SDXC)
Data Retention	10 years - up to 10% of P/E cycles	5 years - up to 10% of P/E cycles	
	1 year - at end of life / 100% of cycles	1 year - at end of life / 100% of cycles	
Endurance (Raw Flash Level)	60,000 P/E cycles	3,000 P/E Cycles	
Operating Temperature	-40°C to +85°C -	-25°C to +85°C	-40°C to +85°C
Storage Temperature	-40°C to +85°C	-40°C to +85°C	
Performance			
Sequential Read (MB/s)	up to 22	up to 95	
Sequential Write (MB/s)	up to 22	up to 90	
MTBF	≥ 2,000,000 hours (0 - 25°C)	≥ 3,000,000 hours (0 - 25°C)	
Shock*	1,500 G for 0.5msec		
Vibration*	20Hz ~80Hz/1.52mm displacement, 80Hz~2000Hz / 20G Acceleration		
Humidity	5 - 95% RH, non-condensing	95% RH under 40°C	
Voltage	2.7 – 3.6 V Normal		
Power Consumption	Read typically < 50 mA Write typically < 100 mA Idle typically < 500 uA	Read typically < 400 mA Write typically < 400 mA Idle typically < 1000 uA	
Features & Tools	Proven Power Fail Safety Sophisticated Wear Leveling & Bad Block management Highest Endurance Longest Life Cycle	Robust Power Fail & Firmware Protection Sophisticated Wear Leveling & Bad Block management SMART Data Reporting & Dashboard Limited Life Cycle Management Cost Effective	
SMART Capability	CMD56, Libraries Available Delkin Dashboard (Windows)	CMD56, Libraries Available Delkin Dashboard (Windows)	
Part Numbers	128MB S312TLKJM-C1000-3 256MB S325TLMJM-C1000-3 512MB S351TLNJM-C1000-3 1GB S30GTLNJM-C1000-3 2GB S302TLNJM-C1000-3 4GB S304TLNJM-U1000-3 Contact Delkin for other options	4GB S404GSEJ6-U3000-3 8GB S408GSEJL-U1000-3 16GB S416GSEJL-U3000-3 32GB S432FQYFA-U1000-3 64GB S464FQYFA-U1000-3 128GB S41HFQYFA-U1000-3 Contact Delkin for other options, including pSLC configurations	4GB S304GSEJ6-U3000-3 8GB S308APGJP-U1000-3 16GB S316APGJP-U3000-3 32GB S332FQYFA-U1000-3 64GB S364FQYFA-U1000-3 128GB S31HFQYFA-U1000-3 Contact Delkin for other options, including pSLC configurations

DELKIN DEVICES

www.delkin.com I 800.637.8087 I 858.391.1234