

DELKIN DEVICES®

Rugged Controlled Storage.

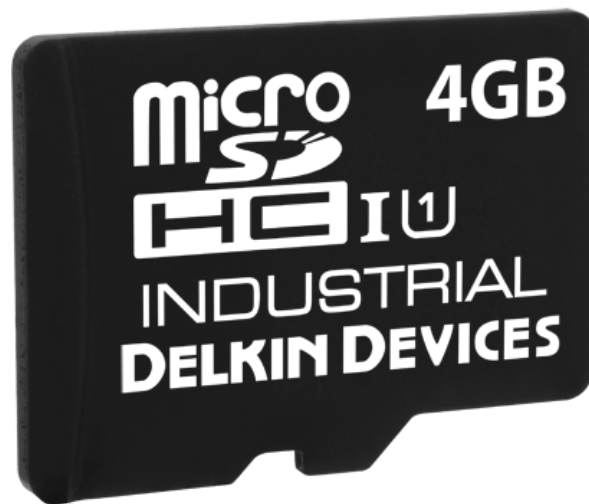
(<https://www.delkin.com/>)

HAVE A QUESTION?
(<https://www.delkin.com/contact/>)

MENU



[Home \(https://www.delkin.com/\)](https://www.delkin.com/) > [Products \(https://www.delkin.com/products/\)](https://www.delkin.com/products/) > [Industrial microSD \(https://www.delkin.com/products/industrial-microsd/\)](https://www.delkin.com/products/industrial-microsd/) > [Industrial SLC microSD](#)



Industrial SLC microSD

Product Highlights

- Compliant with SD 3.0, 1.1 & 2.0 Standards
- Supports SD and SPI Modes
- Capacities from 128MB to 16GB in SLC Flash
- SMART Functionality
- -40 to 85°C Operating Temp
- Read / Write Speeds up to 23 / 21 MB/s*

**Capacity Dependent*

Product Description

The perpetual drive to shrink electronics has made the tiny microSD form factor the fastest growing segment in the industrial and OEM space in recent years. Since industrial microSD cards are constructed as an encapsulated SIP (System In Package), they are also extremely rugged from a mechanical standpoint, and able to withstand environments subject to shock and vibration. Whether just 512MB is needed to boot an application or 16GB is needed for extensive data logging, Delkin has a high endurance industrial SLC microSD option available, rated for full industrial temperature operation. Configurations are also available with SMART capability, allowing users to monitor the status of the card, including program/erase cycles consumed, spare block status, power cycles and an estimated remaining life. Delkin provides a dashboard tool for off-line SMART monitoring or the card data can be accessed directly via a library or SD commands.

As contrasted with commercial grade microSD cards, which can have frequent configuration changes to reduce cost, or which often utilize TLC flash, Delkin U300, U331 & U331A Series Industrial microSD cards are controlled with a locked bill of materials. This means that no changes can be made to the flash, controller or firmware configuration without a part number change. Delkin also understands the importance of life cycle management, so that when a part must be discontinued, users are notified in advance, offered a last time buy opportunity and provided with qualification samples of the replacement part.

Delkin offers customization of industrial microSD's, including custom pad printing or content loading, and the cards are available with adapters converting them to full size SD.

In addition to industrial microSD, Delkin also offers full-size D200 SD (<https://www.delkin.com/technology/elc-extended-life-cycle/>) as well as Utility SD and microSD cards (<https://www.delkin.com/products/secure-digital/utility-sd-microsd/>), which are cost-effective MLC options for OEM applications.

Delkin Industrial microSD Part Numbers

Capacity	U300 Series	U331 Series	U331A Series
128MB	n/a	S312TLKEU-C1000-3	S312TLKCN-C1000-3
256MB	n/a	S325TLMEU-C1000-3	S325TLMCN-C1000-3
512MB	S351MMVAL-C1000-4	S351TLNEU-C1000-3	S351TLNCN-C1000-3
1GB	S30GMMUAL-C1000-4	S30GTLNEU-C1000-3	S30GTLNCN-C1000-3
2GB	S302MMZAL-C1000-D	S302TLNEU-C1000-3	S302TLNCN-C1000-3
4GB	S304MMZAL-U1000-D	S304TLNEU-U1000-3	S304TLNCN-U1000-3
8GB	S308MMZAL-U1000-D	n/a	n/a
16GB	n/a	n/a	n/a

[ORDER ENGINEERING SAMPLE](#)

[DOWNLOAD SPEC \(HTTPS://WWW.DELKIN.COM/DOWNLOAD/4923\)](https://www.delkin.com/download/4923)

[ASK A QUESTION \(HTTPS://WWW.DELKIN.COM/CONTACT/\)](https://www.delkin.com/contact/)

Technical Specifications

Environment

Operating Temp

-40 to +85°C

Storage Temp

-50 to +100°C, dependent on card configuration. Refer to full specifications.

Shock¹

1500G, 0.5msec duration

Vibration²

20 – 80Hz / 1.52mm displacement

80Hz – 2000Hz, 20G acceleration

Reliability / Endurance

TBW³

SLC: 234 TBW

MLC: N/A

MTBF

> 2 million hours (0 to +25°C)

> 200,000 hours (60°C)

Capacity Range

SLC

128MB – 4GB

or

512MB – 16GB

Refer to full engineering specifications.

MLC

N/A

Performance⁴**SLC**

Sequential Read up to 23MB/s

Sequential Write up to 21MB/s

Refer to full engineering specifications.

MLC

N/A

[DOWNLOAD SPEC \(HTTPS://WWW.DELKIN.COM/DOWNLOAD/4923/\)](https://www.delkin.com/download/4923/)

¹Per MIL-STD-810G, Method 516.6 Procedure I. Testing to other shock profiles available upon request.

²Per MIL-STD-810G, Method 514.6; Category 24. Testing to other vibration curves available upon request.

³TBW figures are representative for 4GB capacity based on optimal usage model. Contact Delkin for life estimates on other capacities or using your specific usage parameters.

⁴Performance figures shown are for highest capacity configuration, and will vary by capacity, host, usage model and other factors.

Features

Secure Digital



(<https://www.delkin.com/products/secure-digital/sd-sdhc-sdxc/>)
Industrial SD

Industrial Secure Digital (SD & SDHC) memory cards in capacities from 128MB to 16GB in SLC flash, and compliant with SD 2.0 & 1.1 standards.

learn more
(<https://www.delkin.com/products/secure-digital/sd-sdhc-sdxc/>)



(<https://www.delkin.com/products/secure-digital/microsd-microsdhc/>)
Industrial microSD

Industrial microSD (SD & SDHC) memory cards in capacities from 128MB to 16GB in SLC flash, and compliant with SD 2.0 & 1.1 Standards

learn more
(<https://www.delkin.com/products/secure-digital/microsd-microsdhc/>)



(<https://www.delkin.com/products/secure-digital/utility-sd/>)
Utility SD

Cost-effective & BOM friendly industrial storage solution for high performance and long life

learn more
(<https://www.delkin.com/products/secure-digital/utility-sd/>)

Order Industrial Engineering Sample

Note: Requests for samples are considered on a case-by-case basis and are available for B2B Industrial customers only. Looking for our consumer retail website? Visit www.delkindevices.com (<http://www.delkindevices.com>)

First Name *

Last Name *

Email *

Phone *

Company *

State/Province *

Product or Part Number *

Subject

Message

SUBMIT

PRODUCT CATEGORIES

- [INDUSTRIAL SD CARD \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-SD/\)](https://www.delkin.com/products/industrial-sd/)
- [INDUSTRIAL MICROSD \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-MICROSD/\)](https://www.delkin.com/products/industrial-microsd/)
- [INDUSTRIAL MSATA SSD \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-MSATA-SSD/\)](https://www.delkin.com/products/industrial-msata-ssd/)
- [INDUSTRIAL 2.5" SSD \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-2-5-SSD/\)](https://www.delkin.com/products/industrial-2-5-ssd/)
- [INDUSTRIAL M.2 SSD \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-M-2-SSD/\)](https://www.delkin.com/products/industrial-m-2-ssd/)
- [INDUSTRIAL COMPACTFLASH \(CF\) \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-CF/\)](https://www.delkin.com/products/industrial-cf/)
- [INDUSTRIAL CFAST \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-CFAST/\)](https://www.delkin.com/products/industrial-cfast/)
- [INDUSTRIAL EMBEDDED USB \(EUSB\) \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-EMBEDDED-USB/\)](https://www.delkin.com/products/industrial-embedded-usb/)
- [INDUSTRIAL USB FLASH DRIVE \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-USB-FLASH-DRIVE/\)](https://www.delkin.com/products/industrial-usb-flash-drive/)
- [INDUSTRIAL PCMCIA \(HTTPS://WWW.DELKIN.COM/PRODUCTS/INDUSTRIAL-PCMCIA/\)](https://www.delkin.com/products/industrial-pcmcia/)

PRODUCT APPLICATIONS

- [HEALTHCARE \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/HEALTHCARE/\)](https://www.delkin.com/applications/healthcare/)
- [AEROSPACE \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/AEROSPACE/\)](https://www.delkin.com/applications/aerospace/)
- [TRANSPORTATION \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/TRANSPORTATION/\)](https://www.delkin.com/applications/transportation/)
- [EMBEDDED COMPUTING \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/EMBEDDED-COMPUTING/\)](https://www.delkin.com/applications/embedded-computing/)
- [GAMING \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/GAMING/\)](https://www.delkin.com/applications/gaming/)
- [INFOTAINMENT \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/INFOTAINMENT/\)](https://www.delkin.com/applications/infotainment/)
- [COMMUNICATIONS / NETWORKING \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/COMMUNICATIONS-NETWORKING/\)](https://www.delkin.com/applications/communications-networking/)
- [DIGITAL SIGNAGE \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/DIGITAL-SIGNAGE/\)](https://www.delkin.com/applications/digital-signage/)
- [POWER / ENERGY \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/POWER-ENERGY/\)](https://www.delkin.com/applications/power-energy/)
- [CONTROLS / AUTOMATION \(HTTPS://WWW.DELKIN.COM/APPLICATIONS/CONTROLS-AUTOMATION/\)](https://www.delkin.com/applications/controls-automation/)

PRODUCT TECHNOLOGY

- INTERFACES / FORM FACTORS ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/INTERFACES-FORM-FACTORS/](https://www.delkin.com/technology/interfaces-form-factors/))
- POWER FAIL ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/POWER-FAIL/](https://www.delkin.com/technology/power-fail/))
- CUSTOMIZATION ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/CUSTOMIZATION/](https://www.delkin.com/technology/customization/))
- TESTING ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/TESTING/](https://www.delkin.com/technology/testing/))
- UTILITY ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/UTILITY/](https://www.delkin.com/technology/utility/))

PRODUCT SEARCH



CONTACT DELKIN

We'd Love to Hear From You

Have questions on product configuration samples for compatibility and qualification testing?

[CONTACT \(HTTPS://WWW.DELKIN.COM/CONTACT/\)](https://www.delkin.com/contact/)

CONNECT WITH DELKIN



(<https://www.linkedin.com/company/delkin-devices/>)



(<https://twitter.com/DelkinInd>)

Quick Links

- PRODUCTS ([HTTPS://WWW.DELKIN.COM/PRODUCTS/](https://www.delkin.com/products/))
- PART SELECTOR TOOL ([HTTPS://WWW.DELKIN.COM/SHOP/](https://www.delkin.com/shop/))
- SPEC DOWNLOAD ([HTTPS://WWW.DELKIN.COM/SPEC-DOWNLOAD/](https://www.delkin.com/spec-download/))
- TECHNOLOGY ([HTTPS://WWW.DELKIN.COM/TECHNOLOGY/](https://www.delkin.com/technology/))

- APPLICATIONS ([HTTPS://WWW.DELKIN.COM/APPLICATIONS/](https://www.delkin.com/applications/))
- ABOUT DELKIN ([HTTPS://WWW.DELKIN.COM/ABOUT-DELKIN/](https://www.delkin.com/about-delkin/))

Resources

- CONSUMER RETAIL SITE ([HTTP://DELKINDEVICES.COM/](http://delkindevices.com/))
- PARTNERS ([HTTPS://WWW.DELKIN.COM/ABOUT-DELKIN/PARTNERS/](https://www.delkin.com/about-delkin/partners/))
- CAREERS ([HTTPS://WWW.DELKIN.COM/ABOUT-DELKIN/CAREERS/](https://www.delkin.com/about-delkin/careers/))
- PRIVACY POLICY ([HTTPS://WWW.DELKIN.COM/PRIVACY-POLICY/](https://www.delkin.com/privacy-policy/))
- TERMS AND CONDITIONS ([HTTPS://WWW.DELKIN.COM/TERMS-AND-CONDITIONS/](https://www.delkin.com/terms-and-conditions/))
- CAPACITY NOTICE ([HTTPS://WWW.DELKIN.COM/FLASH-STORAGE-DRIVE-CAPACITY-NOTICE/](https://www.delkin.com/flash-storage-drive-capacity-notice/))
- INDUSTRIAL CATALOG PDF ([HTTPS://WWW.DELKIN.COM/DOWNLOAD/7621/](https://www.delkin.com/download/7621/))
- SITEMAP ([HTTPS://WWW.DELKIN.COM/SITEMAP/](https://www.delkin.com/sitemap/))

Our Facility

Location

13350 Kirkham Way
 Poway, CA 92064
[view on map >>](#)

(<https://www.google.com/maps/place/13350+Kirkham+Way,+Poway,+CA+92064/data=!4m2!3m1!1s0x80dbfba37cabcea1:0xbf39a71ca304569e?sa=X&ei=Z5MZVcfjC8e0ggSSvoGIAg&ved=0CB0Q8gEwAA>)

Phone Numbers

800.637.8087
858.391.1234

ISO 9001:2015 Certification (https://www.delkin.com/wp-content/uploads/2017/08/1621640-01_QMS_ENG_RR.pdf)

Delkin Blog



only- (<https://www.delkin.com/blog/get-the-facts-about-msata-256gb/>)
**Get the Facts about mSATA
 256GB**



(<https://www.delkin.com/blog/understanding-the-price-of-data-failure/>)
**Understanding the Price of Data
 Failure**

(<https://www.delkin.com/blog/get-the-facts-about-most-256gb-a-the-risks-of-data-failure/>) (<https://www.delkin.com/blog/understanding->

800.637.8087 | 2020 © Delkin Devices. All Rights Reserved.