

Intel SSDSC2KG019T801

Intel Solid State Drive SSDSC2KG019T801 User Manual

Model: SSDSC2KG019T801

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your Intel Solid State Drive (SSD) D3-S4610 Series, model SSDSC2KG019T801. Designed for server and data center environments, this 1.92TB 2.5-inch SATA 6Gb/s SSD offers reliable and high-performance storage solutions. Please read this manual thoroughly before proceeding with installation or use.

2. PRODUCT OVERVIEW

The Intel SSD D3-S4610 Series is a high-capacity, enterprise-grade solid-state drive built for read-intensive workloads. It utilizes 3D NAND TLC technology to deliver consistent performance and endurance. Its 2.5-inch form factor and SATA 6Gb/s interface ensure broad compatibility with server and storage systems.



Figure 1: Angled view of the Intel SSD D3-S4610 Series, showing the SATA connector and mounting screw holes.

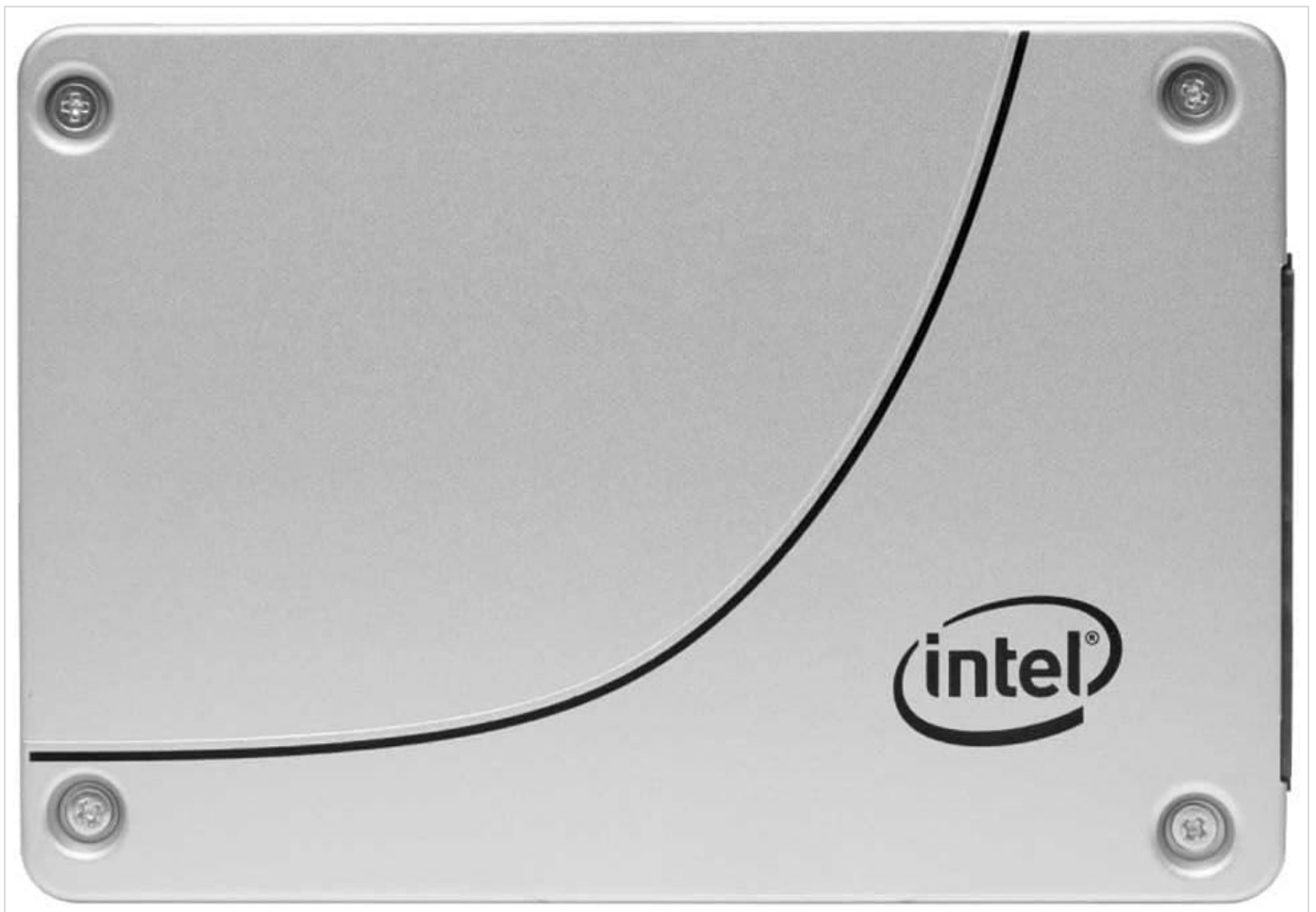


Figure 2: Top-down view of the Intel SSD D3-S4610 Series, highlighting the Intel logo and product design.

3. SPECIFICATIONS

Feature	Detail
Model Number	SSDSC2KG019T801
Capacity	1.92 TB
Form Factor	2.5 inch
Interface	SATA 6Gb/s (SATA3)
NAND Flash Type	3D2 TLC
Sequential Read Bandwidth	Up to 560 MB/s
Sequential Write Bandwidth	Up to 510 MB/s
Random Read IOPS (100% Span)	97,000 IOPS
Random Write IOPS (100% Span)	46,500 IOPS
Read Latency	36 μ s
Write Latency	37 μ s
MTBF (Mean Time Between Failures)	2 million hours
Active Power Consumption	3.0 W
Idle Power Consumption	1.0 W
Thickness	7.0 mm
Operating Vibration	2.17G
Non-Operating Vibration	3.13G
Operating Shock	1000G 0.5ms
Non-Operating Shock	1000G 0.5ms
Dimensions (LxWxH)	5.75 x 4.5 x 0.7 inches
Weight	4.6 ounces

4. SETUP AND INSTALLATION

Before installing the SSD, ensure your system is powered off and disconnected from the power source. It is recommended to wear an anti-static wrist strap to prevent electrostatic discharge (ESD) damage.

4.1 Physical Installation

- 1. Prepare your system:** Open your computer case or server chassis. Locate an available 2.5-inch drive bay. If your system only has 3.5-inch bays, you may need a 2.5-inch to 3.5-inch adapter bracket (not included).
- 2. Mount the SSD:** Slide the SSD into the drive bay. Secure it with screws on both sides of the drive bay, if applicable.
- 3. Connect cables:**
 - Connect one end of a SATA data cable to the SATA port on the SSD and the other end to an available SATA port on your motherboard or RAID controller.

- Connect a SATA power cable from your power supply unit (PSU) to the power connector on the SSD.

4. **Close the system:** Once the SSD is securely installed and connected, close your computer case or server chassis.

4.2 Initializing the SSD (Operating System Setup)

After physical installation, the SSD needs to be initialized and formatted by your operating system before it can be used for storage.

1. **Power on your system:** Boot your computer or server.

2. **Access Disk Management (Windows):**

- Right-click on the Start button and select "Disk Management".
- The new SSD should appear as "Disk [number]" and be marked as "Unallocated".
- If prompted to initialize the disk, choose **GPT (GUID Partition Table)** for drives larger than 2TB or for modern systems, or **MBR (Master Boot Record)** for older systems or smaller drives. Click OK.
- Right-click on the "Unallocated" space and select "New Simple Volume". Follow the wizard to assign a drive letter and format the drive (NTFS is common for Windows).

3. **Access Disk Utility (macOS):**

- Open "Disk Utility" from Applications > Utilities.
- Select the new SSD from the sidebar.
- Click "Erase" and choose a format (e.g., APFS or Mac OS Extended (Journaled)) and a scheme (GUID Partition Map). Click Erase.

4. **Linux:**

- Use tools like **fdisk** or **gparted** to partition and format the drive. Common file systems include ext4, XFS, or Btrfs.

5. OPERATING THE SSD

Once initialized and formatted, your Intel SSD will function like any other storage drive. For optimal performance and longevity, consider the following:

- **TRIM Support:** Ensure your operating system has TRIM enabled. TRIM helps maintain the performance of the SSD over time by allowing the OS to inform the SSD which data blocks are no longer in use and can be wiped internally. Most modern operating systems (Windows 7+, macOS 10.6.8+, Linux kernel 2.6.33+) support TRIM automatically.
- **Avoid Defragmentation:** Unlike traditional hard drives, SSDs do not benefit from defragmentation. In fact, defragmenting an SSD can reduce its lifespan by increasing unnecessary write cycles. Disable any automatic defragmentation schedules for your SSD.
- **Over-provisioning (Advanced Users):** For enterprise environments, setting aside a small percentage of the drive's capacity as over-provisioning can improve performance and endurance, especially under heavy write workloads. This is typically managed through enterprise storage software or specific SSD utilities.
- **Data Transfer:** For large data transfers, ensure your SATA controller is operating in AHCI mode in your system's BIOS/UEFI settings for best performance.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your SSD.

- **Firmware Updates:** Periodically check the Intel support website for firmware updates for your SSD model. Firmware updates can improve performance, stability, and address known issues. Follow Intel's instructions carefully when performing firmware updates.

- **SSD Health Monitoring:** Use S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) tools to monitor the health and lifespan of your SSD. Many operating systems and third-party utilities provide access to S.M.A.R.T. data. Key metrics to watch include "Wear Leveling Count" and "Media Wearout Indicator".
- **Data Backup:** Regularly back up critical data from your SSD to another storage device. While SSDs are highly reliable, no storage device is immune to failure.
- **Secure Erase (Advanced):** If you need to securely wipe all data from the SSD, use a secure erase utility. This process permanently deletes all data and restores the drive to its factory performance state. Be extremely cautious as data cannot be recovered after a secure erase.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your Intel SSD.

7.1 SSD Not Detected

- **Check physical connections:** Ensure both the SATA data cable and SATA power cable are securely connected to the SSD and the motherboard/PSU.
- **Verify BIOS/UEFI settings:** Enter your system's BIOS/UEFI setup. Check if the SATA port the SSD is connected to is enabled. Ensure the SATA controller mode is set to AHCI (recommended) or IDE/RAID, depending on your setup.
- **Try a different port/cable:** Test the SSD with a different SATA data cable, power cable, or SATA port on your motherboard/controller.
- **Check power supply:** Ensure your power supply unit (PSU) has sufficient wattage and available SATA power connectors.
- **Disk Management/Disk Utility:** After booting, check Disk Management (Windows) or Disk Utility (macOS/Linux) to see if the drive is detected but uninitialized. Refer to Section 4.2.

7.2 Slow Performance

- **TRIM status:** Verify that TRIM is enabled for your operating system.
- **SATA Mode:** Ensure your SATA controller is set to AHCI mode in BIOS/UEFI.
- **Driver updates:** Ensure your motherboard's SATA controller drivers are up to date.
- **SSD Firmware:** Check for and apply any available firmware updates for the SSD.
- **Over-provisioning:** If the drive is heavily used, consider implementing over-provisioning if not already done.
- **System resources:** Ensure your system has adequate RAM and CPU resources, as these can impact overall storage performance.

7.3 Drive Errors or Corruption

- **Run Disk Check:** Use your operating system's built-in disk checking tools (e.g., `chkdsk` on Windows, First Aid in Disk Utility on macOS).
- **S.M.A.R.T. Data:** Check the S.M.A.R.T. data for any warning signs of impending failure.
- **Reformat:** As a last resort, if data is backed up, reformatting the drive can resolve persistent corruption issues.

8. WARRANTY AND SUPPORT



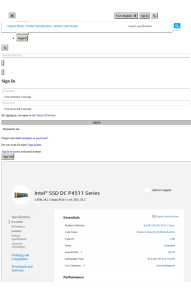

Intel provides support for its products. For detailed warranty information, technical support, and driver/firmware downloads, please visit the official Intel support website. Keep your proof of purchase for warranty claims.





While this product does not explicitly come with a data recovery plan from Intel, third-party data recovery plans may be available for purchase separately, such as 2-Year or 3-Year Data Recovery Plans, which can provide additional peace of mind for your valuable data.

For further assistance, please contact Intel Customer Support through their official channels.



Related Documents - SSDSC2KG019T801

	<p>Intel® Memory and Storage Tool (MAS) CLI Release Notes - December 2022</p> <p>Release notes for the Intel® Memory and Storage Tool (MAS) Command Line Interface (CLI), version 017US, detailing firmware updates and bug fixes for Intel Optane and SSD products released in December 2022.</p>
	<p>Intel RAID Controller RS3DC080 and RS3DC040 Tested Hardware and Operating System List</p> <p>A comprehensive guide detailing tested hardware and operating system compatibility for Intel RAID Controllers RS3DC080 and RS3DC040, including server boards, storage devices, and testing methodologies.</p>
	<p>Intel® SSD DC P4511 Series 2.0TB M.2 NVMe SSD Product Specifications</p> <p>Detailed specifications for the Intel® SSD DC P4511 Series 2.0TB M.2 NVMe SSD, covering performance, reliability, package details, and advanced technologies for enterprise storage solutions.</p>
	<p>Intel® VROC 6.3 PV Windows Customer Release Notes</p> <p>This document provides release notes for Intel® Virtual RAID on CPU (VROC) version 6.3 PV for Windows. It details new features, supported platforms, limitations, and lists known and resolved issues for various VROC and RSTe versions.</p>

 	<p>Intel Desktop Board D945GCNL Product Guide</p> <p>This product guide provides comprehensive information on the Intel Desktop Board D945GCNL, covering board layout, component installation, BIOS updates, and regulatory compliance. It is intended for technically qualified personnel and details features, installation procedures, and troubleshooting.</p>
 	<p>Intel® Memory Drive Technology Set Up and Configuration Guide</p> <p>A comprehensive guide to setting up and configuring Intel® Memory Drive Technology, detailing installation, boot options, troubleshooting, and performance optimization for Intel® Optane™ SSDs.</p>