Intel SSDPEKKW128G7X1

Intel 128GB M.2 80mm SSD (SSDPEKKW128G7X1) User Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Intel 128GB M.2 80mm SSD (Solid State Drive), model SSDPEKKW128G7X1. This high-performance internal storage device utilizes the PCIe NVMe 3.0 x4 interface, offering significantly faster data transfer speeds compared to traditional SATA SSDs and hard disk drives. Please read this manual thoroughly before proceeding with installation or use.

2. Safety Information

Observe the following safety precautions to prevent damage to the SSD and your computer system, and to ensure personal safety:

- **Electrostatic Discharge (ESD) Prevention:** Always handle the SSD by its edges. Wear an anti-static wrist strap or frequently touch a grounded metal object (e.g., the computer chassis) before and during installation to discharge static electricity.
- **Power Off:** Ensure your computer system is completely powered off and unplugged from the electrical outlet before opening the chassis or installing the SSD.
- **Component Compatibility:** Verify that your motherboard has a compatible M.2 slot (M-key, PCIe NVMe support) before installation. Refer to your motherboard's manual for specific details.
- **Physical Handling:** Avoid bending or applying excessive force to the SSD. Do not touch the gold connector pins or the integrated circuits on the drive.

3. Package Contents

The retail package for the Intel 128GB M.2 80mm SSD (SSDPEKKW128G7X1) typically includes the following items:

- Intel 128GB M.2 80mm SSD (SSDPEKKW128G7X1)
- Documentation (Quick Start Guide or Warranty Information)

Note: A mounting screw for the M.2 slot is typically provided with the motherboard or laptop, not with the SSD. Ensure you have the appropriate screw before installation.

Figure 3.1: Example of Intel 128GB M.2 SSD retail packaging. The label displays the product code SSDPEKKW128G7X1, UPC, EAN, and other manufacturing details.

4. Product Overview

The Intel 128GB M.2 80mm SSD is a compact, high-performance storage solution designed for modern desktop and laptop systems. Its M.2 2280 form factor (22mm wide, 80mm long) allows for integration into slim devices and motherboards with dedicated M.2 slots. The drive utilizes the NVMe protocol over a PCIe Gen3 x4 interface, enabling sequential read speeds up to 770 MB/s and sequential write speeds up to 450 MB/s.

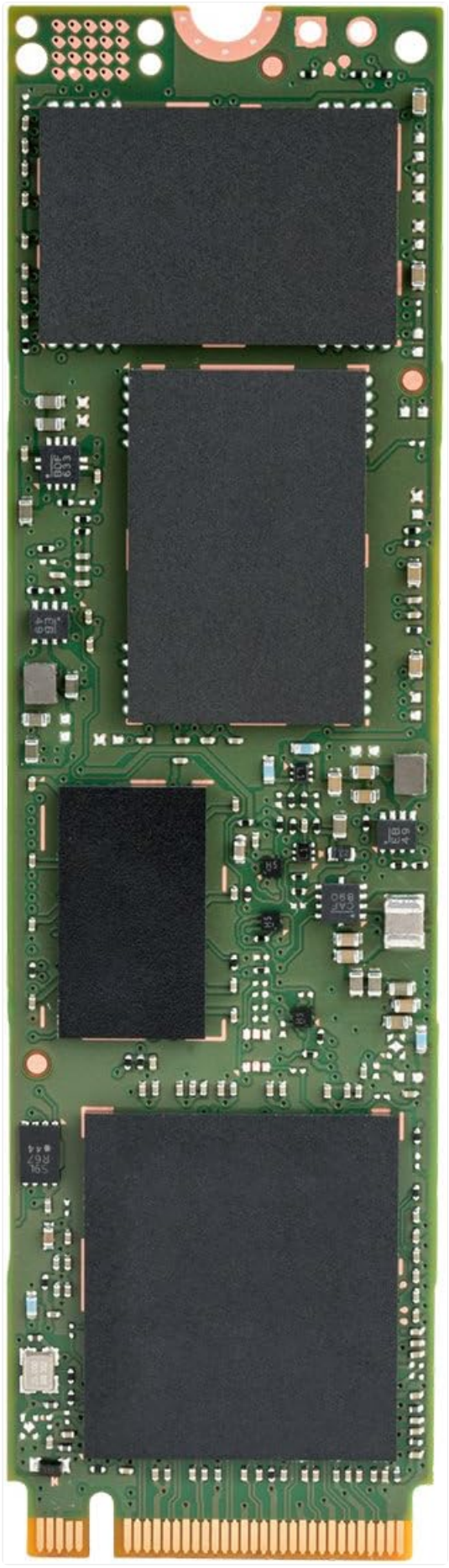

Figure 4.1: Top-down view of the Intel 128GB M.2 80mm SSD. This image shows the green PCB, NAND flash modules, and controller chip.

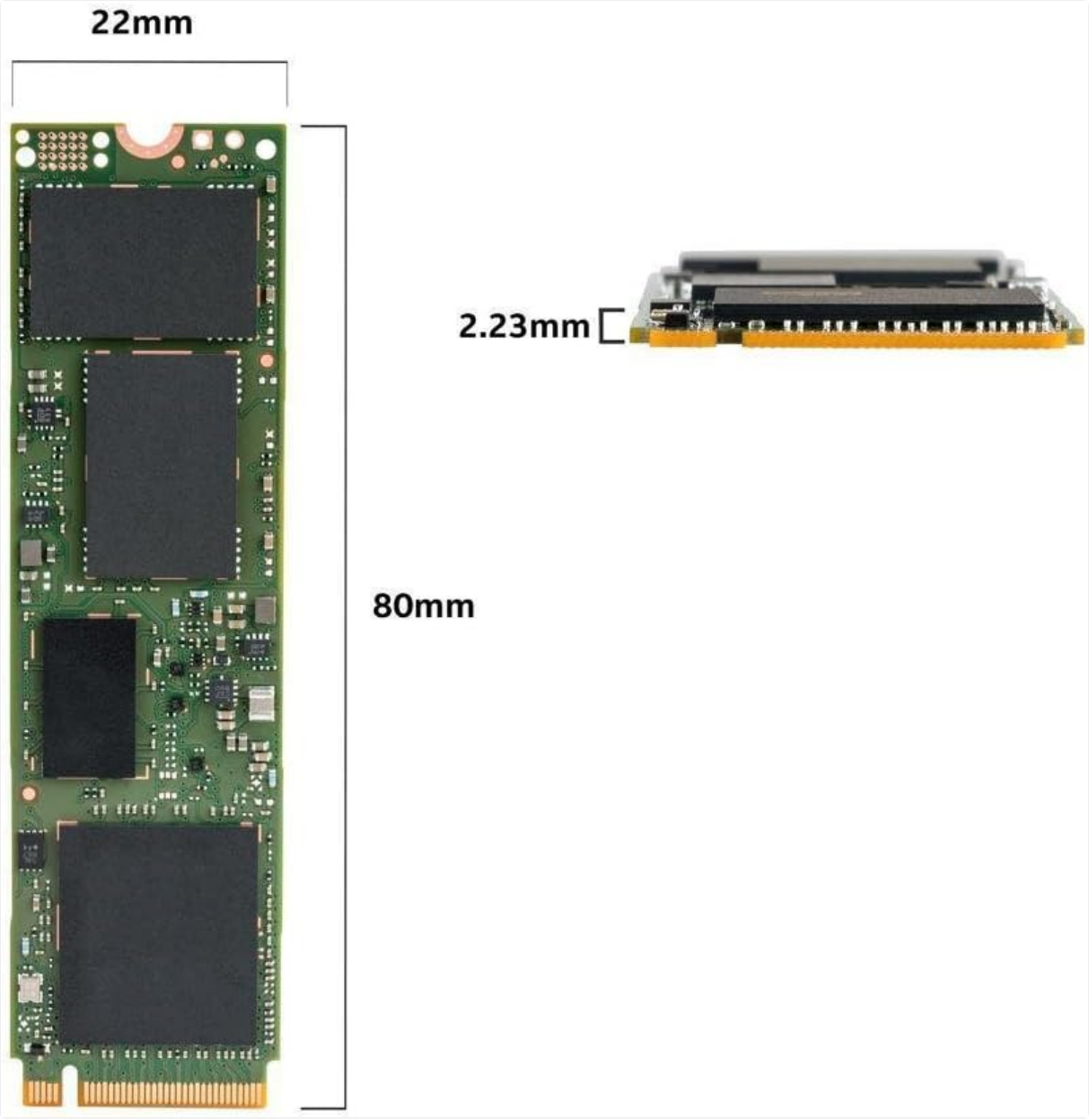

Figure 4.2: The Intel 128GB M.2 80mm SSD with its physical dimensions highlighted, showing a width of 22mm and a length of 80mm.

5. Setup and Installation

Follow these steps to install the Intel M.2 SSD into your compatible system.

5.1. Pre-Installation Checklist

- Compatible motherboard or laptop with an M.2 slot (M-key, PCIe NVMe support).
- Small Phillips head screwdriver.
- M.2 mounting screw (usually supplied with the motherboard/laptop).
- Anti-static wrist strap (recommended).

5.2. Physical Installation

1. **Power Down:** Shut down your computer completely and unplug the power cord from the wall outlet.
2. **Open Chassis:** Open your computer case or laptop cover to access the motherboard. Refer to your system's manual for instructions on how to safely open it.
3. **Locate M.2 Slot:** Identify the M.2 slot on your motherboard. It is typically labeled and may have a

pre-installed standoff and screw.

4. **Insert SSD:** Gently align the notch on the Intel M.2 SSD with the key in the M.2 slot. Insert the SSD at a slight angle (approximately 30 degrees) into the slot until it is fully seated. Do not force it.
5. **Secure SSD:** Push the SSD down towards the motherboard until it is parallel with the board. Secure it with the M.2 mounting screw into the standoff.
6. **Close Chassis:** Replace the computer case or laptop cover and reconnect all cables.

5.3. Post-Installation Configuration

1. **BIOS/UEFI Settings:** Power on your computer and enter the BIOS/UEFI setup. Verify that the M.2 SSD is detected. You may need to enable the M.2 slot or set the boot order if you intend to install an operating system on the new SSD.
2. **Initialize and Format:** For a new SSD, you will need to initialize and format it before it can be used for storage.
    - **Windows:** Open Disk Management (right-click Start button > Disk Management). Locate the new SSD, right-click on it, and select 'Initialize Disk'. Choose GPT (GUID Partition Table) for modern systems. Then, right-click on the unallocated space, select 'New Simple Volume', and follow the wizard to format it (NTFS recommended).
    - **Linux:** Use tools like fdisk or gparted to partition and format the drive.
3. **Operating System Installation (Optional):** If you plan to install an operating system on the SSD, follow the standard OS installation procedures, selecting the Intel M.2 SSD as the target drive.

6. Operating the SSD

Once installed and configured, the Intel M.2 SSD operates like any other storage drive in your system. It will provide significantly faster boot times, application loading, and file transfers due to its NVMe PCIe interface.

- **Boot Drive:** If an operating system is installed on the SSD, it will serve as your primary boot drive, enhancing overall system responsiveness.
- **Secondary Storage:** If used as a secondary drive, it can store frequently accessed applications, games, or large files for quick access.
- **Driver Installation:** Modern operating systems typically include native NVMe drivers. However, for optimal performance, it is recommended to check the Intel support website for the latest NVMe drivers specific to your SSD model.

7. Maintenance

Proper maintenance ensures the longevity and optimal performance of your Intel M.2 SSD.

- **TRIM Command:** Ensure that the TRIM command is enabled in your operating system. TRIM helps the SSD manage its storage space efficiently, preventing performance degradation over time. Windows typically enables TRIM by default for SSDs.
- **Firmware Updates:** Periodically check the Intel support website for firmware updates for your SSD. Firmware updates can improve performance, stability, and address potential issues.
- **Avoid Defragmentation:** Do not defragment an SSD. Defragmentation is designed for traditional hard disk drives and can reduce the lifespan of an SSD without providing any performance benefit.
- **Maintain Free Space:** While not strictly necessary, maintaining some free space (e.g., 10-15%) on

your SSD can help sustain performance, especially for drives with smaller capacities.

- **Temperature Management:** Ensure adequate airflow within your computer case. High temperatures can affect SSD performance and lifespan. If your system experiences high temperatures, consider additional cooling solutions.

8. Troubleshooting

If you encounter issues with your Intel M.2 SSD, refer to the following common troubleshooting steps:

- **SSD Not Detected:**
  - Verify the SSD is correctly seated in the M.2 slot.
  - Check BIOS/UEFI settings to ensure the M.2 slot is enabled and the drive is recognized.
  - Ensure your motherboard supports PCIe NVMe M.2 SSDs. Some M.2 slots only support SATA M.2 drives.
  - Update your motherboard's BIOS/UEFI to the latest version.
- **Slow Performance:**
  - Ensure NVMe drivers are installed and up to date.
  - Verify TRIM is enabled.
  - Check for background processes consuming disk I/O.
  - Monitor SSD temperature. Excessive heat can cause thermal throttling, reducing performance.
  - Ensure the SSD is connected to a PCIe Gen3 x4 M.2 slot for optimal speed.
- **Operating System Installation Issues:**
  - Ensure the SSD is initialized and partitioned correctly (GPT recommended for UEFI systems).
  - Confirm the boot mode (UEFI vs. Legacy BIOS) in your BIOS/UEFI settings matches your OS installation media.
  - Load NVMe drivers during OS installation if the installer does not detect the drive.
- **Drive Disappears/Unstable:**
  - Check for loose connections.
  - Monitor system temperatures, especially for the M.2 slot area.
  - Update SSD firmware.
  - Test the SSD in another compatible system if possible to rule out motherboard issues.

If problems persist, contact Intel customer support or your system manufacturer.

9. Specifications

The following table details the technical specifications for the Intel 128GB M.2 80mm SSD (SSDPEKKW128G7X1):

Feature	Specification
Model Number	SSDPEKKW128G7X1
Storage Capacity	128 GB

Feature	Specification
Form Factor	M.2 2280 (22mm x 80mm)
Interface	PCIe NVMe 3.0 x4
Sequential Read Speed (up to)	770 MB/s
Sequential Write Speed (up to)	450 MB/s
Item Weight	1.6 ounces (approx. 45 grams)
Product Dimensions	8 x 4 x 2 inches (packaging)
Hard Disk Description	Solid State Drive
Installation Type	Internal Hard Drive
Date First Available	August 9, 2016

10. Warranty and Support

Intel provides a limited warranty for its SSD products. For specific warranty terms and conditions, please refer to the documentation included with your product or visit the official Intel website.
For technical support, driver downloads, firmware updates, and additional resources, please visit the official Intel support website:

Intel SSD Support

When contacting support, have your SSD model number (SSDPEKKW128G7X1) and purchase information readily available.