



**SP ToolBox**  
**Free-download Software**  
(Consumer products)

**User Manual**

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## 1. Intellectual Property & Copy Rights

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## 2. Product Introduction

SP Toolbox was developed for using with SP SSDs and Industrial Flash products, and provides multiple ways for users to obtain disk information, and to change settings easily. Additionally, it is an advanced and user-friendly software that makes it easier than ever to maintain a healthy and efficient device. The useful features include: View Drive Information, View S.M.A.R.T. Status, Wear Out Count, Block Information, Diagnostic Scan, Performance Test and Secure Erase.

With the SP SSD ToolBox, you will be able to perform all of the following tasks on SSDs and industrial Flash products:

- 「DEVICE INFO」: Displays device information including capacity, used space on device, device temperature, and Total Bytes Written.
- 「HEALTH」: Device Health shows the current status of the selected device as measured by supported S.A.M.R.T attributes.
- 「WEAR OUT COUNT」: Wear out count can identify device 's Total R/W, Erase count status.
- 「DIAGNOSTICS SCAN」: This function performs an overall health evaluation of your device.  
Two options: Quick Diagnostics, which will run basic tests on free space of the selected device, and Full Diagnostics, which runs a read test on all used space of the selected device.
- 「PERFORMANCE TEST」: Check both the sequential and random read/write speeds of your device.

## 3. System Requirements

- Operating system : Microsoft Window® 7 32bit/ 64bit, Microsoft Windows® 8 32bit/ 64bit, Microsoft Windows® 8.1 32bit / 64bit, Microsoft Windows® 10 32bit/ 64bit.

## 4. Matters needing attention

- SP SSD Toolbox is exclusive for SP SSD series and industrial flash modules.

## 5. Restrictions

- Only SSDs are supported currently.

## 6. Introduction

### 6.1 Activate SP SSD ToolBox

You can download the SP SSD Toolbox at <http://www.silicon-power.com/web/download-ToolBox>. After downloading, unzip the file and double-click "SP ToolBox" to open the SP Toolbox for the software installation. Please then unzip the software and open the SP ToolBox folder, and click the application file named "SP ToolBox", and start the software installation. As shown in Illustration 6.1.1.

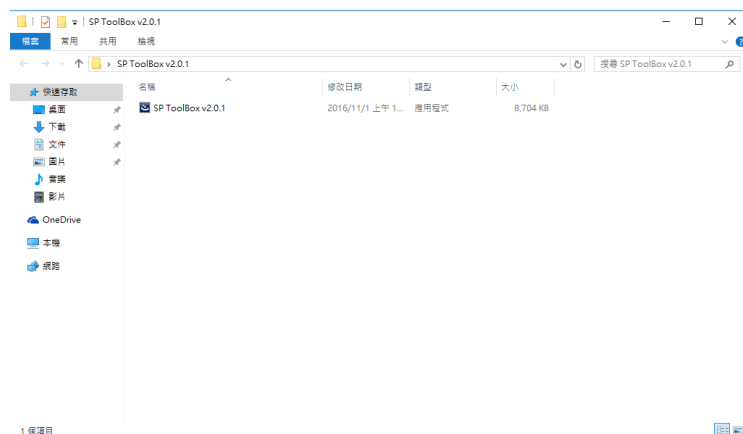


Illustration 6.1.1

To install the software, follow the steps to complete the process. As shown in Illustration 6.1.2 、 6.1.3 、 6.1.4 、 6.1.5 、 6.1.6.

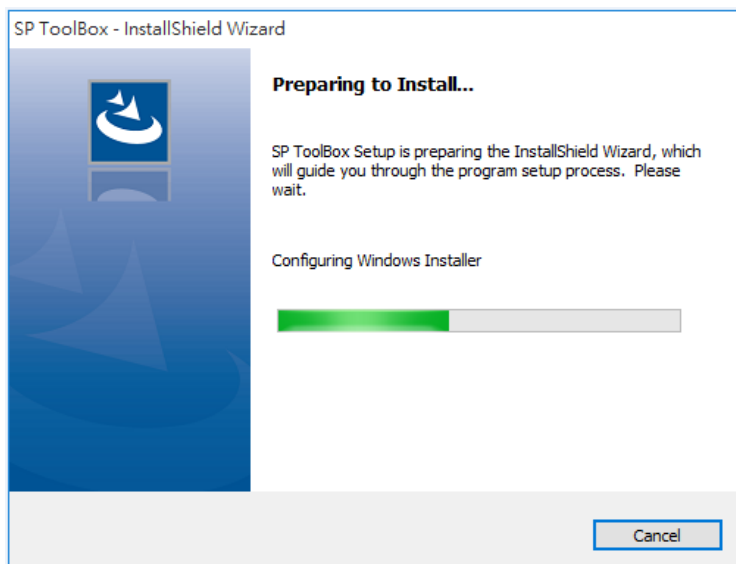


Illustration 6.1.2

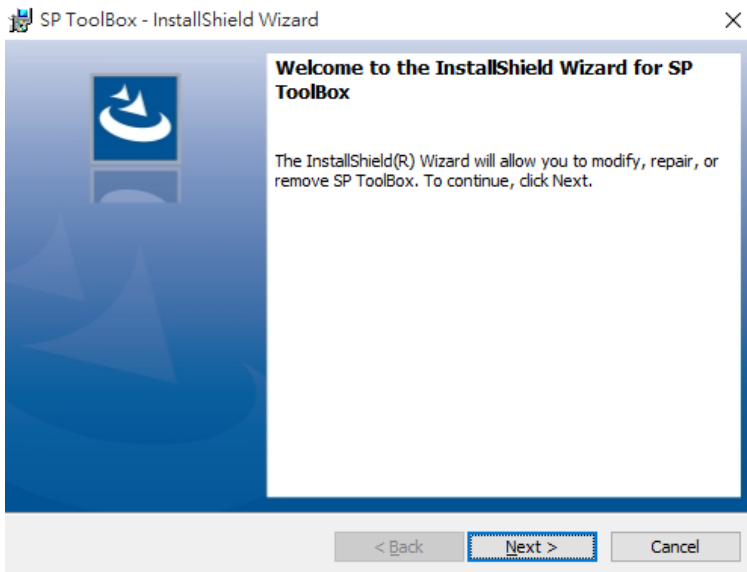


Illustration 6.1.3

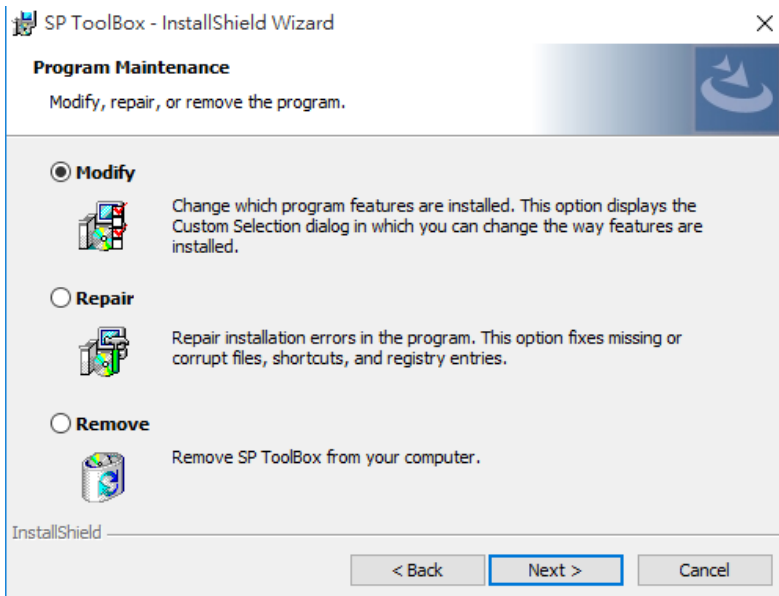


Illustration 6.1.4

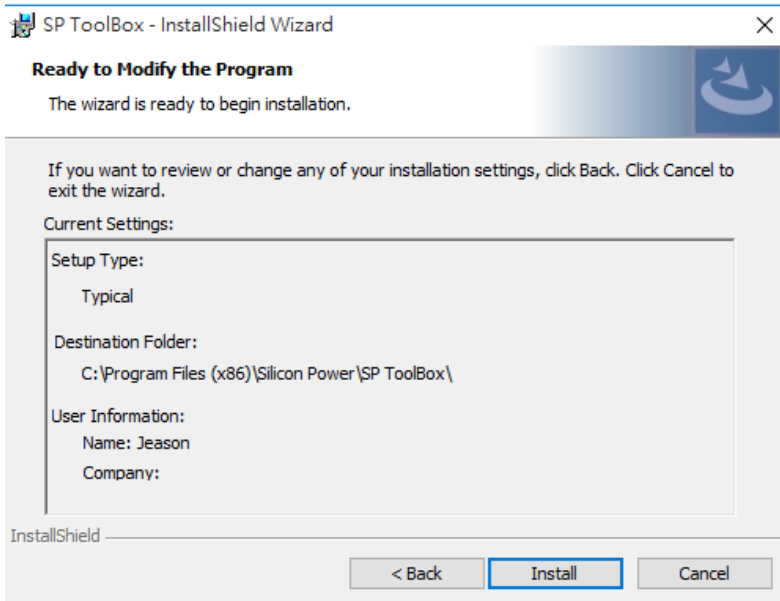


Illustration 6.1.5

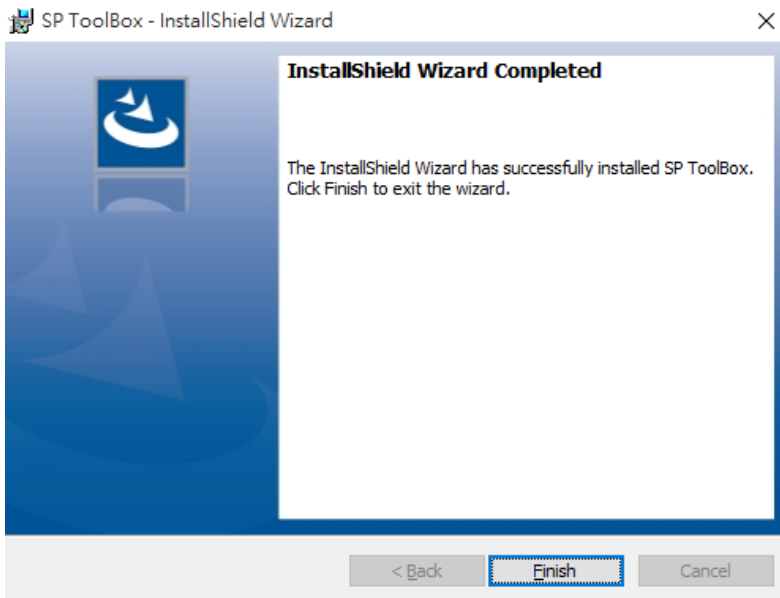


Illustration 6.1.6



### 6.2 Browser Interface

Each time you start "SP SSD Toolbox", the main screen will appear immediately. The function options are on the left, and the contents of the disk information on the right. As shown in Illustration 6.2.1.



Illustration 6.2.1

### 6.3 SP SSD ToolBox Function Overview

The initial screen when start up the "SP SSD Toolbox". As shown in Illustration 6.3.1.



Illustration 6.3.1

Click "Select SSD" to select the drive. As shown in Illustration 6.3.2.



Illustration 6.3.2

## 7. SP SSD ToolBox Function

### 7.1 DEVICE INFO



Click "DEVICE INFO" to display the basic information of the currently connected SSD. Including: device information, capacity usage, and current temperature. As shown in Illustration 7.1.1.



Illustration 7.1.1

#### ( 1 ) DEVICE INFO

Display the model name, serial number, and firmware version of the SSD.

#### ( 2 ) CAPACITY USAGE

Display the total disk capacity, used capacity, total bytes written, and current temperature.

7.2 HEALTH



Click "HEALTH" to display the current health status and estimated life remaining; and click "SMART Info" to monitor the health status of the SSD. As shown in Illustration 7.2.1.




Illustration 7.2.1

( 1 ) HEALTH

Show the health status of the SSD, which is derived from S.M.A.R.T.

Healthy ( Blue )  - All functions are healthy.

Warning ( Yellow )  - Some functions are not healthy.

Dangerous ( Orange )  - Main functions are not healthy. ◦ **\* Please back up your data immediately.**

( 2 ) ESTIMATED LIFE REMAINING

The estimated life remaining of the SSD is displayed in the "HEALTH" window. This estimate number is from the S.M.A.R.T. attribute.

**\* If the estimated life remaining is less than 10%, please backup your data immediately.**

( 3 ) S.M.A.R.T. Info



S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) can monitor the health status of the SSD and predict potential failures. Figure 7.2.2 provides the picture for reference. The reference figure may differ from products.

v2.0.1

ID	Item	Hex	Dec
01	Raw Read Error Rate	00000000000000	0
05	Retired Block Count	00000000000000	0
09	Power On Hours	35F0B600000004	15182...
0C	Device Power Cycle Count	0000000000001E	30
AB	Program Fail Count	00000000000000	0
AC	Erase Fail Count	00000000000000	0
AE	Unexpected Power Loss	0000000000001E	30
B1	Wear Range Delta	00000000000000	0
BB	Reported Uncorrectable Errors	00000000000000	0
C2	Temperature	1E	30
C3	ECC On-the-fly Count	00000000000000	0
C4	Reallocation Event Count	00000000000000	0
C9	Uncorrectable Soft Read Error Rate	00000000000000	0

Illustration 7.2.2

### 7.3 WAER OUT COUNT



Click "WEAR OUT COUNT" to monitor the current consumption of the SSD. As shown in Illustration 7.3.1.

v2.0.1

**SP Toolbox**

**SPCC Solid State Disk**

- DEVICE INFO
- HEALTH
- WEAR OUT COUNT**
- DIAGNOSTICS SCAN
- PERFORMANCE TEST

**WEAR OUT COUNT**

Total LBA Read Count: 45312  
 Total LBA Write Count: 1460224  
 Total Erase Count: N/A  
 Minimum Erase Count: N/A  
 Average Erase Count: 0  
 Maximum Erase Count: N/A

**BLOCK INFO**

Valid Spare Blocks  100.00%

Number of Valid Spare Blocks: 1024  
 Number of New Bad Blocks: 0  
 Hardware ECC Recoveries: 0

Illustration 7.3.1

#### ( 1 ) WEAR OUT COUNT

Show total LBA count, total LBA write count, total erase count, minimum erase count, average erase count and maximum erase count. (Some products do not support this feature).

## ( 2 ) BLOCK INFO

Show valid spare blocks, number of valid spare blocks, number of new bad blocks and hardware ECC recoveries.

**7.4 DAIGNOSTICS SCAN**

Click "DIAGNOSTICS SCAN". There are two diagnostic scans: "Quick Scan" and "Full Scan" for users to choose from. As shown in Illustration 7.4.1.

**Illustration 7.4.1**

## ( 1 ) Quick Scan



Conduct 5% data write, read and compare transmission to detect the SSD' s condition. (It usually takes a few minutes to complete the test)

## ( 2 ) Full Scan



Conduct 100% data write, read and compare transmission to detect the SSD' s condition. (It usually takes longer time to complete the test)

### 7.5 PERFORMANCE TEST




Click "PERFORMANCE TEST", to execute **START**  will get the numbers of sequential read, sequential write, random read and random write speeds. (Performance may vary depending on the platform and environment). As shown in Illustration 7.5.1.



Illustration 7.5.1

### 8. Version Information

Time	Version	Description
10/19/2016		Supported SSD models added