

## SSD Firmware Update Utility Guide

### Crucial® M500 SSD Firmware Revision MU05 Firmware Update Guide for Bootable Media (Update from Rev MU02 or MU03 to Rev MU05)

#### Introduction

This document describes the process of updating the firmware on the Crucial M500 SSD using a bootable USB drive or a CD and a bootable ISO image. The ISO image contains the MU05 firmware update and DOS boot code.

This program is to be used for updating the **firmware from Revision MU02 or MU03 to Revision MU05**.

**PLEASE NOTE:** This firmware update is **not applicable** to any Micron SSD which was purchased separately or as original equipment in a computer system. Any firmware updates for such drives, if necessary, will be made available by the computer manufacturer or at [www.micron.com](http://www.micron.com). This firmware update is not applicable to any other Micron or Crucial SSD.

**WARNING:** As with all firmware updates, it is strongly recommended that you backup or make copies of all important files before performing this update. This firmware update process is done entirely at your own risk. If performed correctly, there will be no loss of system or user data on the drive. However, if the firmware process is interrupted for any reason, your solid state drive may not function properly. If this update is done on a notebook computer, it is strongly recommended that power be supplied by the AC power adapter.

#### General Instructions

**Complete the following steps before starting the firmware update process:**

##### 1. Backup the Solid State Drive

It is highly recommended that full system backup be completed before starting this firmware upgrade procedure. If the upgrade is interrupted (by a power loss or hardware failure of some sort), it is possible that the solid state drive may not function properly.

##### 2. Use AC Power

Ensure your mobile PC or desktop PC is plugged in to AC power during the update process. It is not recommended to use only battery power during the upgrade. Do not remove power at any time during the firmware update process as this could produce incomplete results and may render your solid state drive unusable.

##### 3. Edit BIOS Settings

Per the steps below, you may need to edit your computer's BIOS settings. Please see your computer's owner's manual for details on editing these settings.

##### a) Disable/Remove Drive Passwords

Enter the BIOS (typically by hitting the "Delete," "F2," or "F12" key during the start-up screen) and disable any passwords that you may have set on the SSD. Password protections could block firmware updates.

##### b) Check the Boot Order

If your system does not boot from CD or USB drive, you will need to edit your BIOS settings. While in the BIOS editor, check the drive boot order. As a default, most systems will boot from the CD drive before the system drive. Depending on the BIOS vendor, find an option called "Boot Device Priority," "Boot Load Order," or possibly "Advanced BIOS Features." Ensure that the system boots to the bootable CD or USB drive before the drive that contains the OS.

#### Download the Firmware Update

1. Before beginning the firmware download process close all other programs except for your Internet browser.
2. Find the M500 Rev. MU05 Firmware Update Utility associated with your Crucial SSD at <http://www.crucial.com/support/firmware.aspx>
3. Click the hypertext link for M500 Rev. MU05 Firmware, and the browser will prompt you to select Open, Save or Cancel. Select Save to download the ISO Image to your system.
4. Save this file to your desktop or another folder for easy access later and close the download window when download is complete.

#### Create Bootable Media with the ISO

##### Option 1: Burn a Bootable CD

**Note:** Optical drive burning software is built-in most operating systems.

1. Using the CD burning software of your choice, burn the firmware ISO image to CD media.

## Option 2: Create a Bootable USB Drive

**Note:** To use this option, your system must support boot from USB.

1. Start with a newly formatted USB drive (256MB or greater).
2. Open a USB installer program. If you do not have a USB installer program, you may download a free USB installer program such as, for example, the Universal USB Installer (available at [www.pendrivelinux.com/universal-usb-installer-easy-as-1-2-3/](http://www.pendrivelinux.com/universal-usb-installer-easy-as-1-2-3/)).
3. You may need to click through a security dialogue and/or license agreement.
4. If you are using the Universal USB Installer, then:
  - At the Step 1 drop down box, scroll to the bottom and select the last option: Try Unlisted Linux ISO.
  - Go to Step 2 and browse to the firmware ISO that you downloaded earlier.
  - Go to Step 3 and select the flash drive on which you want to install the ISO.
  - Click the Create button and click Format E:\Drive (Erases Content). Answer Yes to the warning about overwriting your USB drive.
  - A sequence of screens will appear and disappear; when that finishes, the USB drive is loaded.

## Run the Firmware Update

1. Insert the bootable CD or USB with the ISO Image into your system.
2. Boot the system from the bootable media. This will automatically start the Firmware Update.

**Note:** Once this is done, the firmware update process will initiate and will complete automatically on all eligible drives on the system.

3. After the update tool has fully loaded, you will see the following:

```
(c) 2009,2010 Micron Technology, Inc. All Rights Reserved.
This copyright notice may not be removed, altered or obscured in any way.
=====
** READ ONLY SUPPORTING DOCUMENTS ACCOMPANYING THIS PROGRAM **
=====
Finding drives...
Searching for eligible SSDs...
The following TCG drive is eligible for Firmware and/or TCG Tables Update:
Crucial_C12M500SSD1
Block Size 512
Firmware Revision MU03
Micron TCG drive, Index: 0, CustomerId 50
Update Firmware on this drive to revision MU05?
Enter 'yes' or 'no', case is sensitive...
->
```

It is acceptable to update from any previous version. If your M500 drive is not listed in the screen display as above, please see the “Troubleshooting Tips” section below.

4. The utility will automatically enter “yes”. The following screen will appear:

```
Update Firmware on this drive to revision MU05?
Enter 'yes' or 'no', case is sensitive...
-> yes
Downloading .....
```

5. On most systems, this process will take between 30 to 60 seconds. Some systems may require a longer time to complete.
6. Upon completion, the following message will display:

```
Update Firmware on this drive to revision MU05?
Enter 'yes' or 'no', case is sensitive...
-> yes
Downloading ..... Download complete.
Current Firmware Revision is: MU05
Resetting Drive
Drive Reset completed successfully.
Finished.
A:\>
```

7. If you are not sure which revision firmware you have or if you want to confirm, you can enter:

**dismcli --verbose -d**

at the A:\> prompt. The last line shown is the Firmware Revision. If MU05 is not shown, repeat the process from Step 1 of the “Run the Firmware Update” section above. PLEASE NOTE: This command will list all ATA drives on your system, not just the Crucial SSD.

8. Remove the bootable media and shut down your system by pressing and holding the power button.
9. Turn power back ON. You may change any BIOS settings you made at the start of this process back to original settings.
10. Process is complete.

## Troubleshooting Tips

- Although efforts have been made to test the compatibility of this software with various system and chipset configurations, it is not possible to test every available system. Therefore, certain systems (e.g., older systems) may experience compatibility problems.
- If your M500 drive is not recognized in Step 3 of the “Run the Firmware Update” section above, it may be necessary to run this update in IDE mode instead of AHCI mode, on some older systems. To do so, perform the following steps:
- In a desktop system, ensure that your drive is plugged into one of first 4 ports on the SATA bus. These are normally labeled 0–3. Some motherboards do not support hot-plugging of SATA devices, so it is recommended that power be shut off to the system before changing ports.
- From BIOS Setup, change the SATA mode to IDE or Legacy mode or Compatibility mode. Look for a parameter called “SATA Configuration,” or possibly “Integrated Peripherals.”
- Save your settings and exit from the BIOS.
- Proceed with the instructions from Step 1 of the “Run the Firmware Update” section above.
- Most systems prevent firmware updates when in RAID mode. In this case, changing to AHCI or IDE mode may help to complete the update process. Any RAID configurations should be preserved after the update, when the system is put back into RAID mode, but check with your system’s user manual before proceeding.

Peripheral RAID cards will not pass the necessary commands to perform firmware updates. You may need to move the target drive onto a SATA host bus adapter or SATA connector on the motherboard that facilitates these commands.

- This firmware update tool may not properly operate in PCs, notebooks or tablets with UEFI-based BIOS.

## Firmware Release Notes

Firmware for the M500 (all form factors) is being updated from version MU03 to MU05. The M500 is updateable to this new firmware starting from previous versions using tools provided by Micron.

This update will be mandatory cut-in for new product built in Micron factories, and is an OPTIONAL update for any drive in the field. For end users, it is recommended if the user is experiencing or wishes to prevent an issue related to the following items.

### Version MU05 includes the following changes:

- Improved drive latency performance in applications with SMART polling
- Improved compatibility with 3rd party encryption management software
- Corrected reporting of SMART attribute 196 and 183
- Increased thermal throttling response on 960GB Capacity for greater reliability
- Corrected upgrade issues experienced on MU03 by some customers
- Numerous bug fixes and stability improvements

## Revision History

Rev. A..... 25 March 2014

- Initial release