

MRT Seagate Updating Firmware 1:

Update Firmware of Seagate 7200.11 HDDs

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We all know that when something goes wrong with Windows, the easiest way is to reinstall the operating system. Whether there is file missing, registry corruption, or virus damage, as long as the system is reinstalled, everything will come back to normal.

This is also true for Seagate F3 series HDDs. There are so many problems of HDDs of this series. Let us list the common error messages:

RAP subfile error 201c
Init SMART failed
SIM Error xxx
No HOST FIS-ReadyStatusFlags 2002A1A5
LED: 000000EE FAddr: 0000004C

These errors may be a great headache for users. Although there are various ways to fix these failures, we still hope to find a simple, process-oriented, once and for all solution. MRT firmware updating is such a solution. It means updating firmware system with factory firmware. It is similar to reinstalling operating system. Then HDD will return to factory firmware state with no fault. Let us start with the simplest. Updating firmware of Seagate 7200.11 HDDs is the easiest.

Let us look at the one-step firmware updating of 7200.11.

First, download firmware resources package. Download link:
<http://vip.mrtlab.com/showdown.asp?id=13>

After unzipping, put it in user data folder of Seagate.

Connect the HDD. SATA port and terminal COM port must be connected properly.

7200.11 HDDs can easily be ready. Whatever the fault may be, try to make it ready first.

If it cannot be ready, try short circuit method. Take the following operations after it is ready.

Reference document for short circuit: <http://vip.mrtlab.com/showdown.asp?id=18>

After entering the Seagate repair module, power off and then power on the HDD if it is Busy. In short, we should ensure that the HDD is ready when updating firmware.

Open the firmware updating tool, load the downloaded LDR file. At this time, various firmware versions will be listed.

How to choose the firmware version?

For 7200.11 HDDs, you can use SD1A version. The 2D in SD1A_2D refers to two discs. Then SD1A_3D or SD1A_4D stands for HDDs with three or four discs accordingly. If the name is PHCC494H, then the firmware version is CC49. 4H refers to four heads (H is short for head). So it is easy to select corresponding version according to the name. And the sequent description generally indicates the applicable HDD, too.

Do you think there are too few firmware versions in the firmware pack, which do not cover all models of Seagate?

Actually, this is not the truth. The firmware pack already covers almost all models because the high version of firmware can replace low version and firmware of compatible HDDs can be mutually updated.

For example, 7200.11 HDD, with four heads (two discs), the original firmware version is SD15. This HDD can have its firmware updated with SD1A provided by firmware pack because SD1A is an upgraded version of SD15. Select firmware SD1A_2D. After that, the HDD will become SD1A version and can be used normally. There is no influence in the data recovery or user data because only SA firmware will be updated. Additionally, for many 7200.11 HDDs of other firmware versions, especially OEM version, the firmware can be updated with SD1A version. After that, HDD turn into SD1A version without impact on its function or user data. This principle also applies to other models. For example, 7200.12 HDDs, whatever the factory version is, it can generally be updated into CC49 version. The firmware should be chosen according to the number of heads. For example, .12 HDD with one head can be updated with firmware PHCC491H.

Now we need to guarantee the HDD is ready (If not, try to make it ready), which manifests as the second and 4th indicators on while other indicators off. Then start updating firmware.

The demonstrated HDD is 7200.11, with two discs. So update firmware with SD1A_2D.

After selecting, press the button to start updating.

Note that at this time the BSY indicator of HDD is on, which is normal. If the ERR indicator is on, it indicates the firmware updating failed.

After a while, you will hear the sound of the HDD stopping spinning which indicates the firmware updating is completed. Then the HDD will automatically restart. You can hear the sound of it spinning up.

After the restart is completed, the new firmware comes into effect.

Note: This process is generally no longer than three minutes. If the HDD is still BSY after three minutes, then you do not need to wait. The HDD has been crashed by firmware updating.

In case the HDD may be crashed by firmware updating, do backup ROM in advance!

This is the easiest "one-step firmware updating", of which the risk is the lowest. As long as ROM is backed up, this method can solve part of the problems. Then you need to use advanced "MRT four-step firmware updating".

"One-step firmware updating" is like clean installation of Windows operating system. Sometimes the damage of system is severe, which cannot be repaired by clean installation, so it needs a fresh installation. That is formatting the HDD, clearing all the data and then reinstalling. By clearing all the data, the error data was cleared. So it will no longer affect the newly installed system.

Above is the working principle of "MRT four-step firmware updating".

The four steps of this method:

1. Backup P-List
2. Reset firmware zone
3. Update firmware
4. Write back P-List

Let us demonstrate the detailed steps:

It is a HDD with data demonstrated. It has a DWF failure. Let us have a look. As the scanning goes on, the status indicator DWF goes on.

Now let us fix it by updating firmware.

1. Backup P-List first, which is 03 module. Why do we backup P-List? It is because each P-List of HDD is unique. It is the unique parameter of HDD. If P-List of Seagate HDD is damaged or lost, there will be no possibility of recovering the data.

2. Reset firmware zone. This step will erase all the firmware of SA. That is to say, all the firmware of HDD will be cleared. Of course, firmware with errors will be cleared. So does the P-List. This is why we should backup P-List in last step. Enter serial binary BOOT mode, and then start to reset firmware zone.

Resetting firmware zone will take 20 minutes at most. If it cannot be completed within 20 minutes, then there is no need to wait. Just power off HDD and then power it on. Start the following steps. As there will always be damage to firmware once resetting firmware zone starts, we can just continue to take the following steps and see if it works.

3. After firmware zone is emptied, exit serial binary BOOT mode. 7200.11 HDDs can even be ready with empty PCB. Then update firmware.

4. After firmware is updated, you will get a HDD with firmware intact. Note that there is no P-List at this time. We can observe that all the modules are empty.

5. Write back P-List which was backed up in advance.

6. Recalculate translator.

Then it is done.

1. Backup P-List
2. Reset firmware zone
3. Update firmware
4. Write back P-List

This is essence of "Four-step firmware updating".

Please stay tuned for *MRT Seagate Firmware Updating 2: Updating firmware of 7200.12 Seagate HDDs* that will be issued later.

Disclaimer: There are risks of firmware updating. It is only for technical discussion. MRT Lab does not provide any guarantee of it and take no responsibility of resulted joint liability.

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