



HDD LAND

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SEDIV HDD REPAIR SOFTWARE · SEAGATE SECTION

SeDiv Seagate (F3) — FLASH Edit (HexEdit)

Viewing, editing, checksumming and writing the PCB Flash (ROM) image

Software	SeDiv-Disk Image 2026 (v. 2026.0.2.58)
Section	Seagate (F3) — FLASH Edit, HexEdit tab
Example family	CheopsLiteM-RA5 · ST750LM035 / ST1000LM035 · FW SBM3
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HDD LAND CONTACT

Websites	www.hddland.com · www.hddgod.com
Email	info@hdd-land.com
Sales	sales@hdd-land.com
Technical support	support@hdd-land.com
Phone / WhatsApp	+989123486391
Head office	Tehran, Iran

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About this guide

This HDD Land guide explains the **FLASH Edit** window (tab **HexEdit**) of the Seagate (F3) section of SeDiv-Disk Image. The window shows the PCB's **serial Flash (ROM) image** – 1 MB on the example drive (Size 0x100000) – in a hex editor, lists the adaptive files found in it, offers helpers for the **capacity** values stored in the ROM, **SYS checksum** and **CRC** functions, and lets you save the image to a file or write it back to the board.

The guide is based on a real screenshot of SeDiv 2026 (v. 2026.0.2.58) with family **CheopsLiteM-RA5** (ST750LM035-1RK17C / ST1000LM035 class, firmware SBM3) **On screen** . The **Adaptives Import** button of this window opens the Import Adaptives window, described in *SeDiv Seagate (F3) — FLASH Edit: Import Adaptives* (separate HDD LAND guide).

Sources and honesty. **On screen** marks what the screenshot shows; **General HDD knowledge** marks general Seagate F3 repair knowledge. Behaviour that is not visible on screen and not documented by SeDiv is described as **typical** and written **in purple**. Only controls that are on the screen are described.

Removed from the screenshot: the drive serial number inside the FLASH.bin path and the Serial line of the main window were blurred. Model, firmware and family names are left visible. The hex rows shown are generic ROM header data.

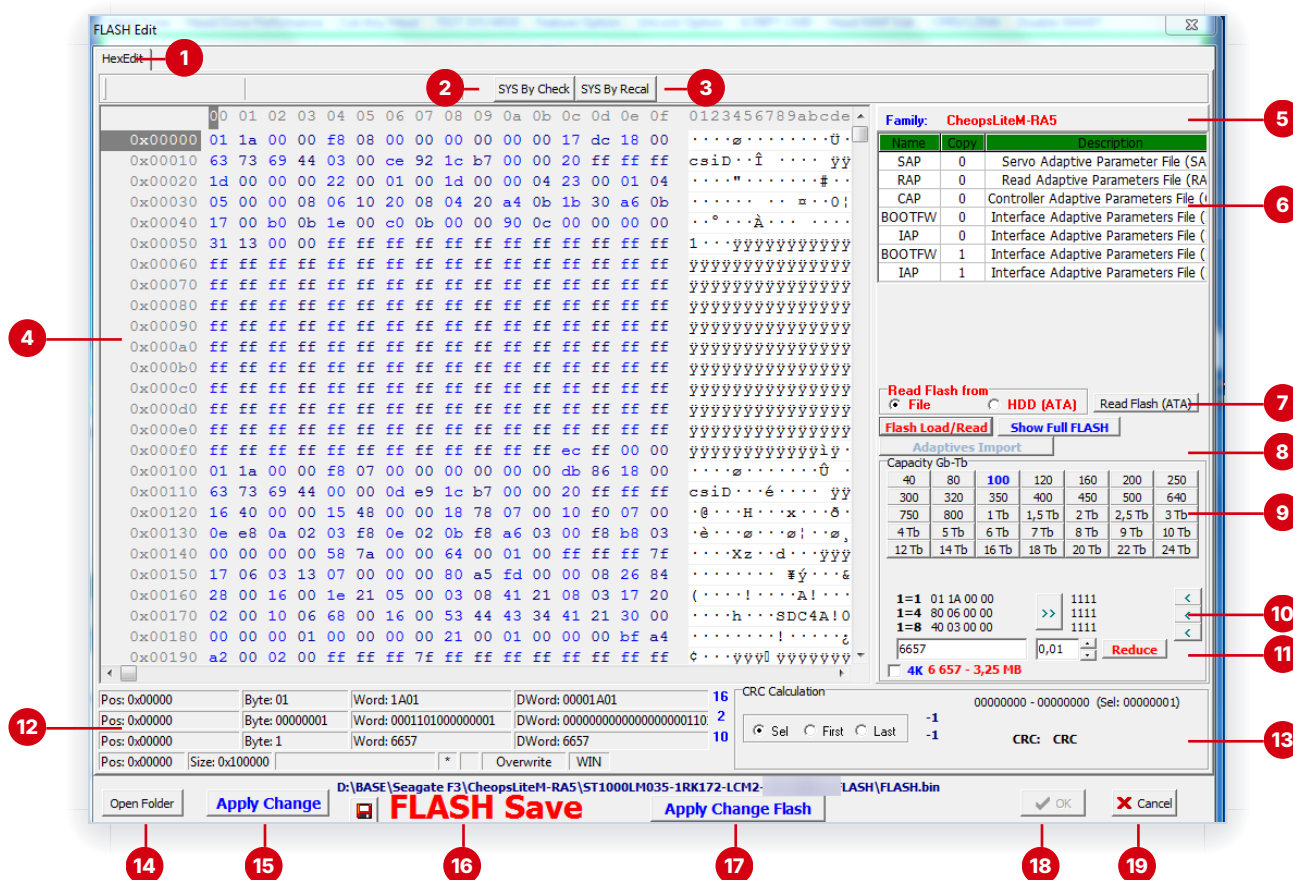
Risk legend

Item (exact caption)	What it does	When to use	Risk
Low risk	Only reads, loads or displays data.	Any time.	Low risk
Caution	Changes the image in memory or a file on the PC; recoverable if you kept backups.	When you know what the option does.	Caution
⚠ Dangerous	Result is written to the drive's ROM. A wrong image can leave the PCB dead or the drive clicking, BSY or not detected.	Only with a verified backup of the original ROM.	⚠ Dangerous – back up first

⚠ Read this first

- A **wrong edit in the ROM can brick the PCB or the drive**: no spin-up, clicking, BSY / not ready, wrong ID or capacity.
- **Always keep the original ROM backup** (two copies, outside the SeDiv folder) before editing and before writing anything.
- Use only images of the **matching family** (shown at the top right of the window). Never write an image of another family or another drive's adaptives.
- After writing, **read the ROM back and compare** with the file you wrote before powering the drive normally.

1. The window at a glance



FLASH Edit, HexEdit tab (serial in the path blurred). 1 HexEdit tab 2 SYS By Check 3 SYS By Recal 4 hex editor and ASCII pane 5 Family 6 Name/Copy/Description table 7 Read Flash from, Read Flash (ATA), Flash Load/Read, Show Full FLASH 8 Adaptives Import 9 Capacity Gb-Tb grid 10 1=1 / 1=4 / 1=8 fields 11 6657 / 0,01 / Reduce / 4K 12 status bars 13 CRC Calculation 14 Open Folder 15 Apply Change 16 FLASH Save 17 Apply Change Flash 18 OK 19 Cancel.

2. Controls in detail

2.1 Toolbar and hex editor

Item (exact caption)	What it does	When to use	Risk
1 HexEdit	The only tab of the window On screen : the hex view of the loaded Flash image.	—	Low risk
2 SYS By Check	On screen Typically verifies the SYS (system / header) checksum of the image and reports whether it is correct.	Before writing; after any edit.	Low risk
3 SYS By Recal	On screen Typically recalculates the SYS checksum and stores the corrected value in the image.	After an edit, before saving / writing.	Caution

Item (exact caption)	What it does	When to use	Risk
4 Hex editor	16 bytes per row, offsets from 0x00000; ASCII pane on the right On screen . Example: the header at 0x0 starts 01 1a 00 00 f8 08 ..., the signature csiD appears at 0x10 and again at 0x110; 0x100 starts a second copy of the header.	Inspect and edit bytes.	Caution

2.2 Family, adaptive files and Flash source

Item (exact caption)	What it does	When to use	Risk
5 Family	Detected family of the image, here CheopsLiteM-RA5 On screen .	Check before any edit.	Low risk
6 Name / Copy / Description	Areas found in the image: SAP 0, RAP 0, CAP 0, BOOTFW 0, IAP 0, BOOTFW 1, IAP 1 On screen . Typically selecting a row jumps the hex view to that area. Meaning of each area: see <i>SeDiv Seagate (F3)</i> — <i>FLASH Edit: Import Adaptives</i> (separate HDD LAND guide).	Locate adaptive files.	Low risk
7 Read Flash from: File / HDD (ATA)	Selects the source of the image; File is selected On screen .	Choose where to read from.	Low risk
7 Read Flash (ATA)	On screen Typically reads the ROM from the connected drive over ATA (drive must be ready / in the correct mode).	Get the ROM from the board.	Low risk
7 Flash Load/Read (red)	On screen Typically loads the file or reads the drive according to the File / HDD (ATA) choice.	Step 1 of every job.	Low risk
7 Show Full FLASH	On screen Typically shows the whole image instead of the current area.	Navigate.	Low risk
8 Adaptives Import	Greyed in the screenshot On screen . Opens the Import Adaptives window (transplant SAP / RAP / CAP between images), see <i>SeDiv Seagate (F3)</i> — <i>FLASH Edit: Import Adaptives</i> (separate HDD LAND guide).	Patched or donor ROM.	Caution

2.3 Capacity helpers

Item (exact caption)	What it does	When to use	Risk
9 Capacity Gb-Tb	Grid of capacities: 40, 80, 100 (highlighted), 120 ... 750, 800, 1 Tb, 1,5 Tb, 2 Tb, 2,5 Tb, 3 Tb, 4 Tb ... 24 Tb On screen . Typically picks a target capacity for the capacity field of the ROM; the highlighted value is the current selection.	Capacity change.	⚠ Dangerous – backup first

Item (exact caption)	What it does	When to use	Risk
10 1=1 / 1=4 / 1=8	Values 01 1A 00 00, 80 06 00 00, 40 03 00 00, with a >> button, the values 1111 and three < buttons On screen . Typically the capacity value read from the image in three scalings (1, 4 and 8); >> converts / transfers, < writes a value back into the hex image.	Capacity change.	⚠ Dangerous – back up first
11 6657 / 0,01 / Reduce / 4K	Input 6657, step 0,01 with spinner, Reduce button; checkbox 4K with the result "6 657 – 3,25 MB" On screen . Typically: the value to reduce by, its step, and Reduce applies it; 4K switches to 4K-sector units.	Capacity reduction.	⚠ Dangerous – back up first

2.4 Status bars and CRC

Item (exact caption)	What it does	When to use	Risk
12 Pos / Byte / Word / DWord	Cursor position and the value under the cursor in hexadecimal (16), binary (2) and decimal (10) rows On screen . Size 0x100000 = 1 MB image; Overwrite = typing overwrites bytes; WIN (typically the character set of the ASCII pane).	Read values exactly.	Low risk
13 CRC Calculation	Radios Sel / First / Last, values -1 -1, range 00000000 – 00000000 (Sel: 00000001), result "CRC: CRC" On screen . Typically calculates a CRC over the selected range or the first / last area.	Check data after edits.	Low risk

2.5 Bottom row

Item (exact caption)	What it does	When to use	Risk
Path line	Full path of the loaded file, e.g. D: \BASE\Seagate F3\CheopsLiteM-RA5\<model-PCB-serial>\FLASH\FLASH.bin On screen .	Know which file is open.	Low risk
14 Open Folder	Opens the folder of the loaded file.	Find / back up the file.	Low risk
15 Apply Change	On screen . Typically applies the edits / capacity change to the image in memory.	After an edit.	Caution
16 FLASH Save	Big red button with disk icon On screen . Typically saves the edited image to a file. Save under a new name.	Keep the result.	Caution

Item (exact caption)	What it does	When to use	Risk
17 Apply Change Flash	On screen Typically writes the edited image to the board's Flash.	Final step only.	⚠ Dangerous – back up first
18 OK / 19 Cancel	OK is greyed in the screenshot On screen ; Cancel closes the window.	—	Low risk

3. Hex editor navigation and checksums

- Click a byte to place the cursor; Pos and the Byte/Word/DWord values update **12** **On screen** .
- Typically arrow keys, Page Up/Down and the scrollbar move through the 1 MB image; typing hex digits overwrites bytes (Overwrite mode).
- Use the table **6** to find SAP / RAP / CAP / BOOTFW / IAP; BOOTFW and IAP exist in two copies (0 and 1) **On screen** .
- The header repeats (0x0 and 0x100, "csiD" at 0x10 and 0x110) **On screen** – **General HDD knowledge** : redundant copies; edit both consistently or not at all.

Checksums. ROM areas are protected by checksums **General HDD knowledge** . A byte changed without fixing the checksum typically makes the drive reject the area. After any edit: **SYS By Recal** **3**, then **SYS By Check** **2** (typical order), and use **CRC Calculation** **13** to compare ranges before and after.

4. Step-by-step procedures

4.1 General edit workflow

Warning: Step 7 is irreversible. Do not start it without a verified backup of the original ROM.

- Choose **Read Flash from** **7**: **File** for a saved FLASH.bin, or **HDD (ATA) / Read Flash (ATA)** to read the board.
- Click **Flash Load/Read** and check the **Family** **5** and the table **6**.
- Back up: FLASH Save** **16** the untouched image, and copy it with **Open Folder** **14** to a second place.
- Make the edit in the hex editor **4** (or the capacity helpers, 4.2).
- Apply Change** **15**, then **SYS By Recal** **3** and **SYS By Check** **2**; check CRC **13** if needed.
- FLASH Save** **16** under a new file name.
- Apply Change Flash** **17** to write it to the board (typical meaning).
- Verify:** read the ROM again (HDD (ATA)) and compare with the saved file; then power on, Identify, check model, capacity, readiness.

4.2 Reducing capacity in the ROM (typical)

Warning: The exact semantics of these fields are not documented by SeDiv. Test on a spare board first.

1. Load the image and back it up (4.1 steps 1–3).
2. Select the target capacity in the Capacity Gb-Tb grid **9**, or enter a reduction value in the 6657 field with the 0,01 step **11** (tick 4K for 4K-sector drives).
3. Click Reduce; check the new values in the 1=1 / 1=4 / 1=8 fields **10** and transfer them with < / >> into the image.
4. Apply Change **15**, SYS By Recal **3**, SYS By Check **2**, FLASH Save **16**, write **17**, verify.
5. Identify the drive and confirm the new capacity; restore the original ROM if anything is wrong.

4.3 Transplanting adaptives

1. Load the image, back it up, click **Adaptives Import** **8** and follow *SeDiv Seagate (F3) — FLASH Edit: Import Adaptives* (separate HDD LAND guide).
2. Back in FLASH Edit: SYS By Check / Recal, save, write, verify.

5. FAQ and troubleshooting

Question / symptom	Meaning
Adaptives Import is grey	Typically no image is loaded yet, or the family does not support it. Load a Flash first.
SYS By Check reports an error	Do not write the image. Recalculate (SYS By Recal), check again; if it still fails, return to the backup.
Drive dead / clicking after writing	Write back the original ROM backup (with a programmer if the board no longer answers).
Wrong capacity after reduce	Restore the original ROM and repeat with the correct value.
Can I use a ROM from another drive?	Only with the original adaptives transplanted, and only within the same family.

6. Glossary

Term	Meaning
ROM / Flash	Serial Flash chip on the PCB with boot code and drive-specific adaptives.
Adaptives	Factory calibration values unique to one drive (SAP, RAP, CAP).
BOOTFW / IAP	Boot firmware and interface parameter areas, two copies.
SYS checksum	Checksum that protects the image / header areas.
CRC	Cyclic redundancy check over a byte range.
ATA	Interface used to read / write the ROM through the drive.
Hex / DWord	Base-16 notation; DWord = 4 bytes.