Niagara 4.3 HDD Tool

Installation and User Manual

V1.0

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1 Overview

The Niagara HDD testing tool has released several versions, including 2.0, 3.25, 4.1, 4.2, and the latest 4.3. The 4.3 version is highly powerful, supporting SAS, SATA, and NVMe interfaces, especially for HGST series HDDs such as HUS726060CXX, HUH728080CXX, HUH721010CXX, HUH721212CXX, HUH721414CXX, HUS728T8TCXX, and HUS726T6TCXX. The Niagara 4.3 extended module (EXT) enables HDD module read/write, health value clearing, time clearing, G-list formatting, super firmware upgrades, SAS/SATA conversion, and more. It also supports custom module development for specific needs. Below are the installation instructions, main module usage, and FAQs for the Niagara 4.3 tool.

Note :Some functions are highly specialized and require familiarity with HDD operations. Improper handling may lead to drive failure. Proceed with caution.

2 Niagara Software Installation

2.1 Software Installation

For super firmware upgrades (including SAS-SATA conversion and SAS firmware branding changes), two steps are required. If the drive has a PSID, three steps are needed.

Niagara 4.3 can be installed on Windows 7 (32-bit or 64-bit) or Windows 10 (32-bit or 64-bit), with 64-bit recommended. An HBA RAID card (e.g., LSI

1068E) is typically required for SAS/SATA drive recognition. Installation steps:

1、 Select the default installation directory (usually `C:\Niagara-customer`).

2、 After installation, replace the `tcluil.dll` file in `C:\Niagara-customer\bin\Win64` with the cracked version from the package to ensure Niagara 4.3 starts properly.

3、 Launch Niagara.exe and select **Driver > SPTI** to start Niagara 4.3, as shown in Figure 1.

Figure 1: Launching Niagara

4、 After successful startup, two windows will appear: a Console window for command output and a Function Menu window for operations.

2.2 Requesting an Extended Module License

To use the EXT module, request a license file:

1. Click HDD TOOLS > HGST GEN LIC (Figure 2).

2. Send the `request.txt` file from `C:\Niagara-customer\` to the specified email address.

3. Place the received `license.txt` in `C:\Niagara-customer\` to activate the EXT module.

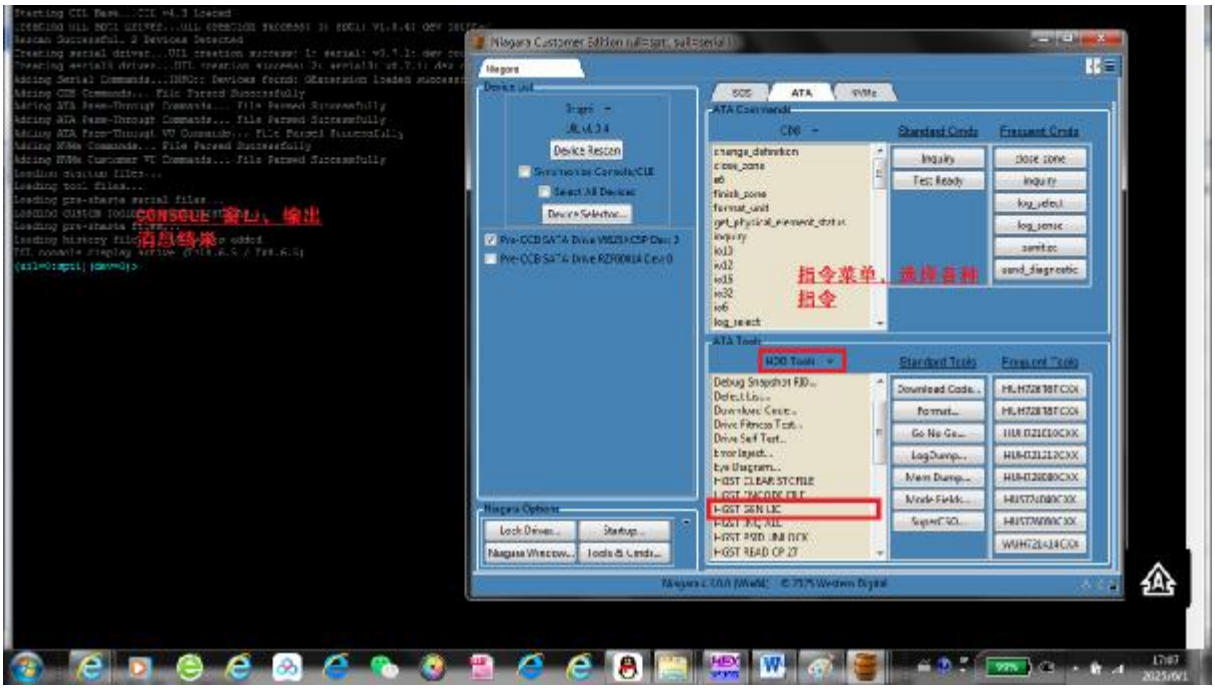

Figure 2: Generating a License File

3 Niagara Function Module Usage

3.1 Detecting HDD Drives

Click <Device Rescan> to identify drives. Select the target drive(s) by SN. Batch operations (e.g., read modules, INQ) are supported for multiple drives.

Avoid opening multiple Niagara windows to prevent errors (Figure 3).

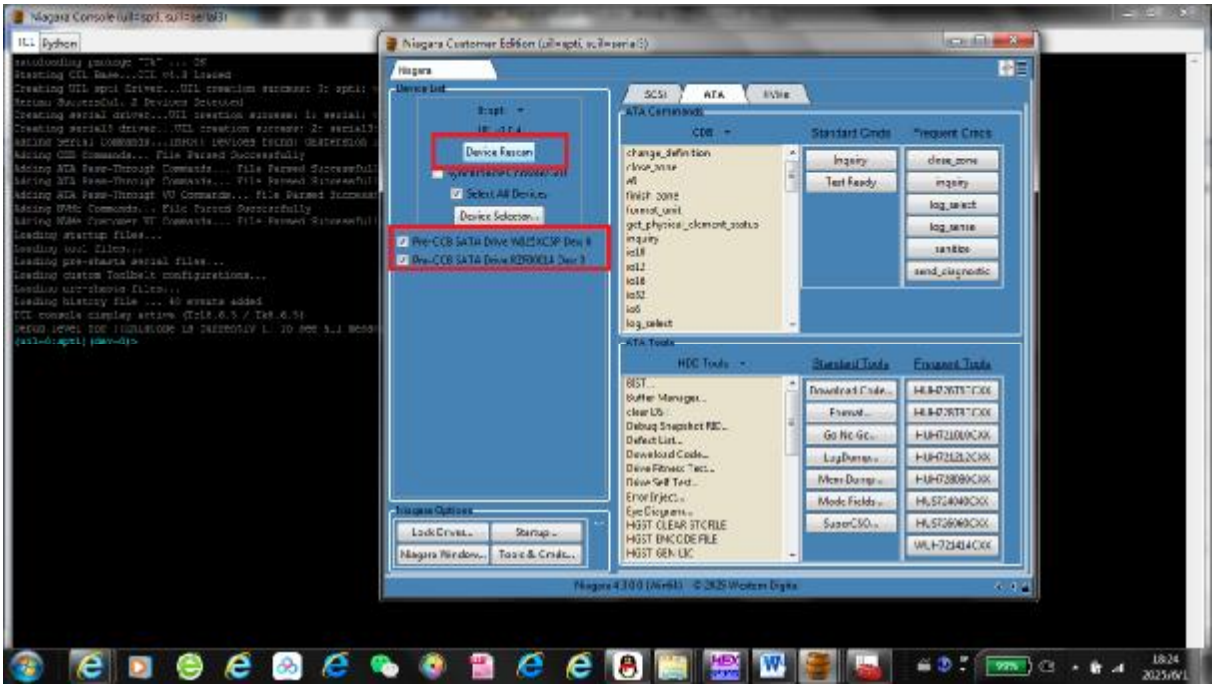

Figure 3: Drive Detection

3.1 Reading INQ Information (HGST INQ ALL)

Click HGST INQ ALL to query HDD information (Figure 4). Data is saved in the DISKDATA folder under the HDD's SN.

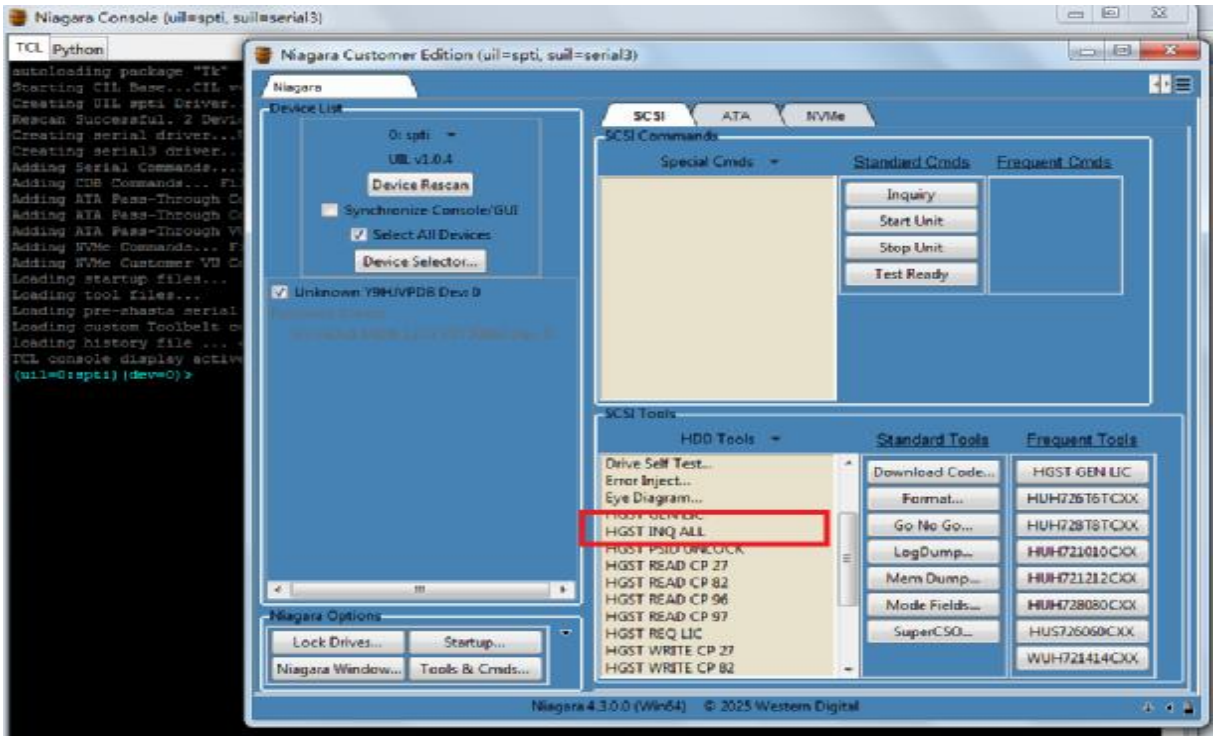

Figure 4 INQ DISK ALL

3.2 Reading Modules (HGST READ CP)

Click HGST READ CP to read module information (Figure 5). Data is saved in the SN folder.

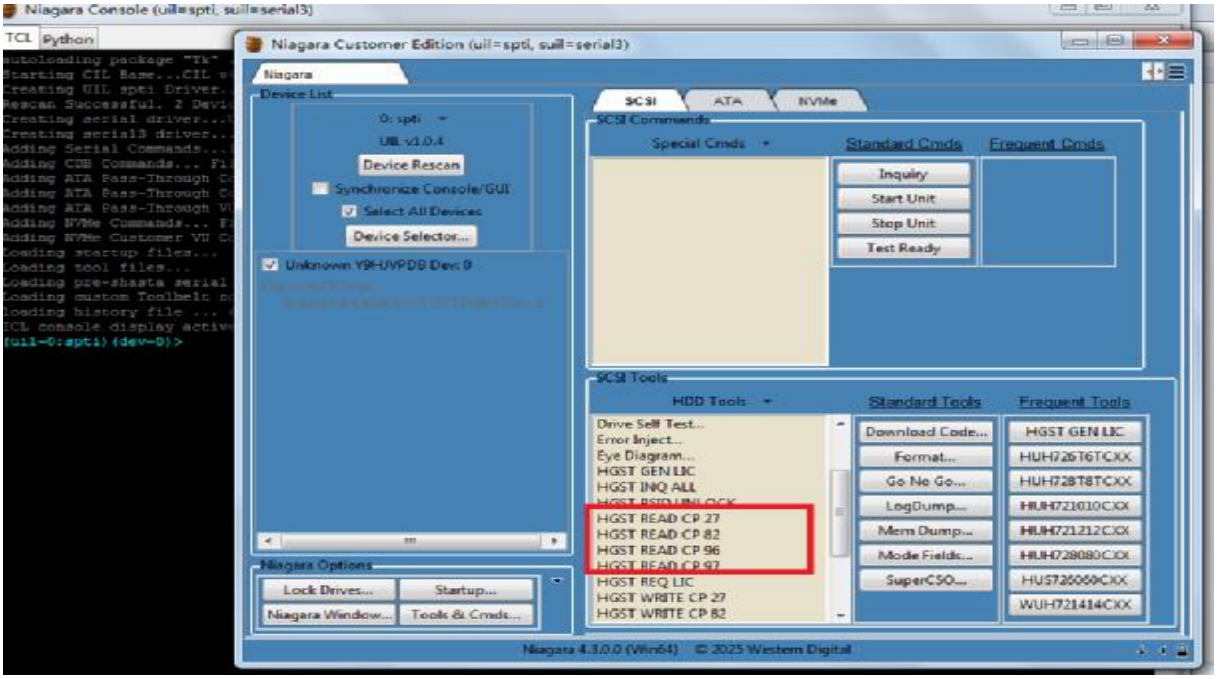

Figure 5 READ DISK MODULE

3.3 Reading ROM(HGST READ ROM)

Click HGST READ ROM to read ROM information.

3.4 Writing Module Information (HGST WRITE MODULE)

Click HGST WRITE MODULE to write module information from the SN folder to the HDD (Figure 6).

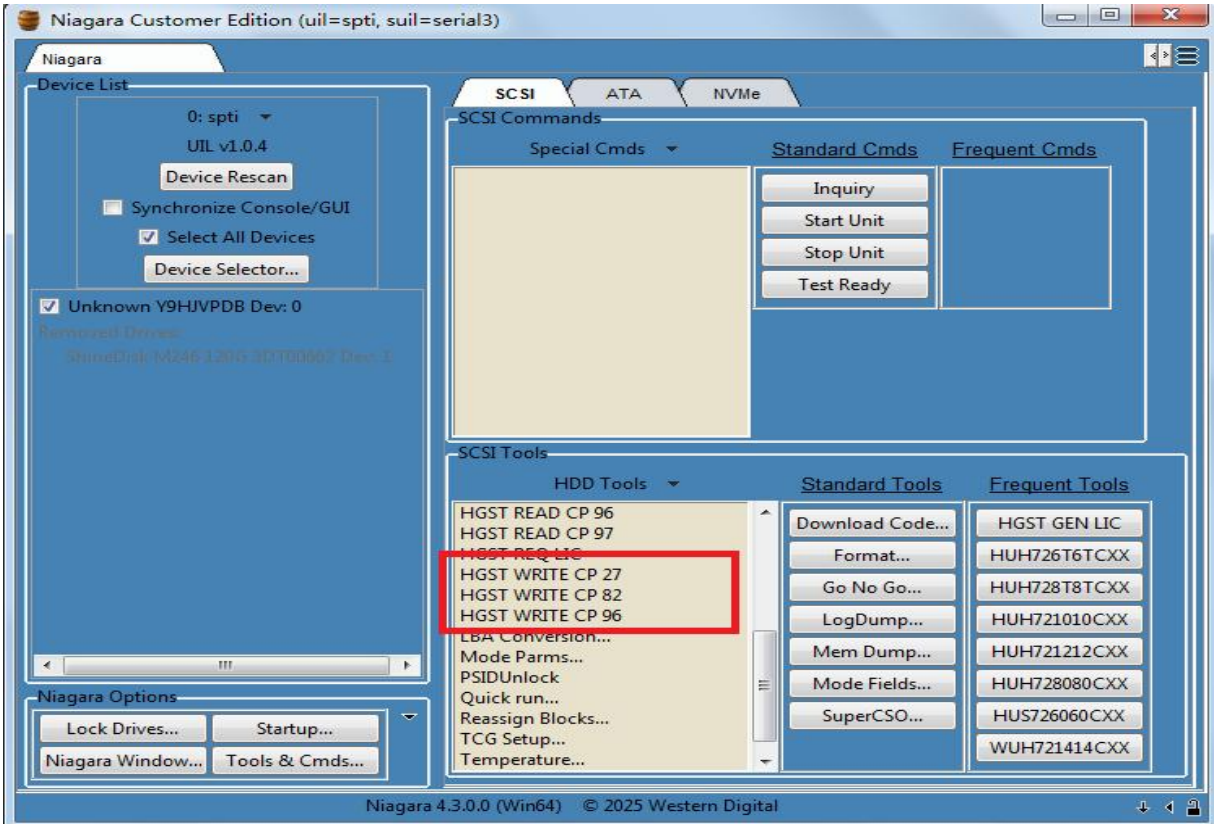

Figure 6 WRITE DISK MODULE

3.5 Clearing Health Values (CLEAR DST)

Click clear DST to clear the HDD's health values (Figure 7).

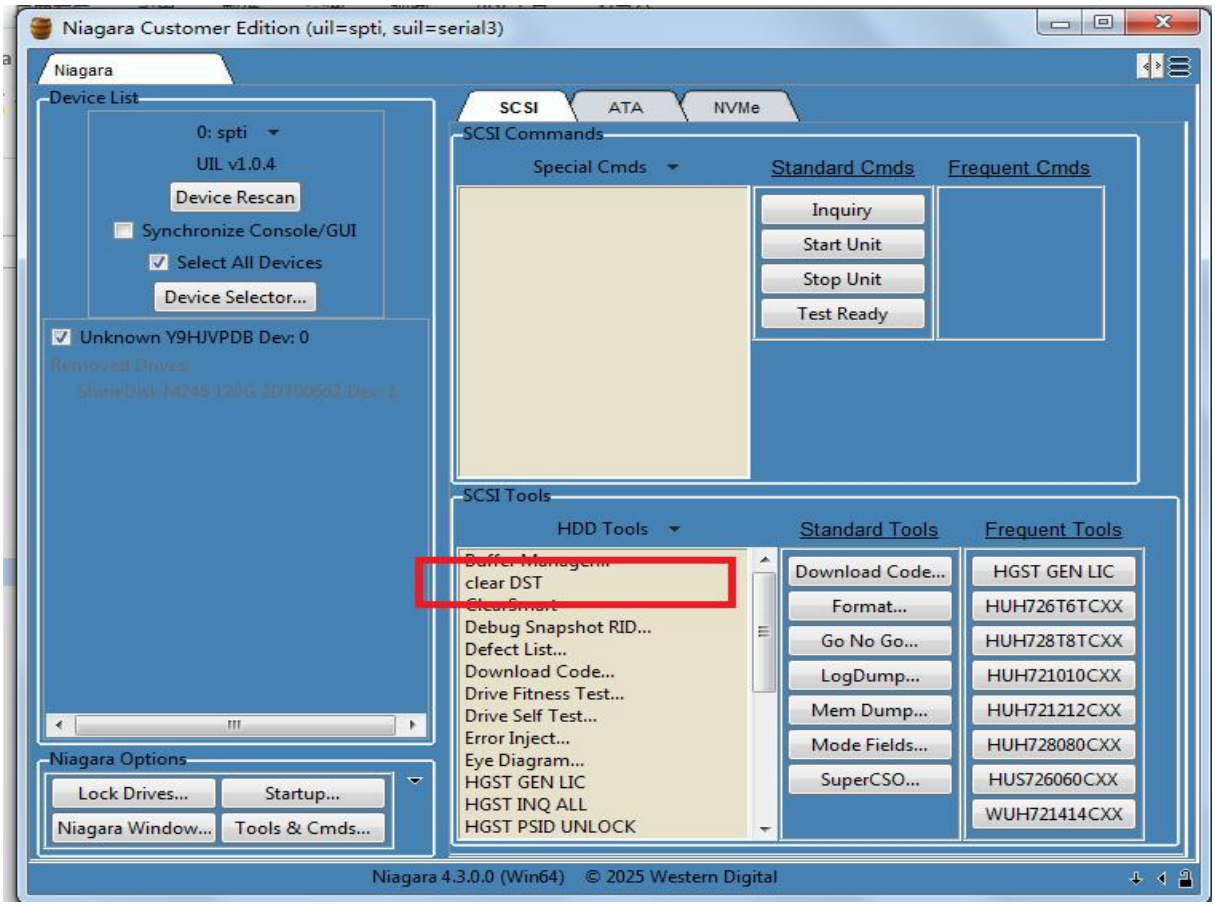

Figure 7 CLEAR health values

3.6 Firmware Upgrade Module (DOWNLOAD CODE)

Click HDD TOOLS -> Download Code (Figure 8). Select the firmware file and upgrade mode (typically Mode 4, 5, or 7). Ensure filenames and paths are in English (Figure 9).:

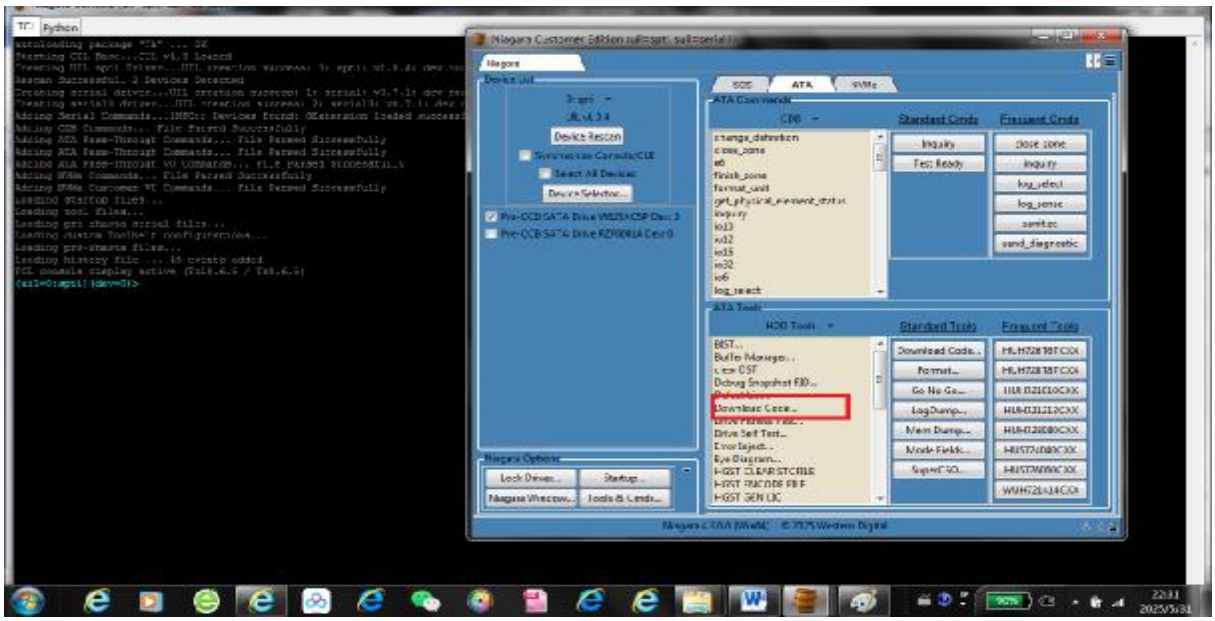

Figure 8 FW Download Code

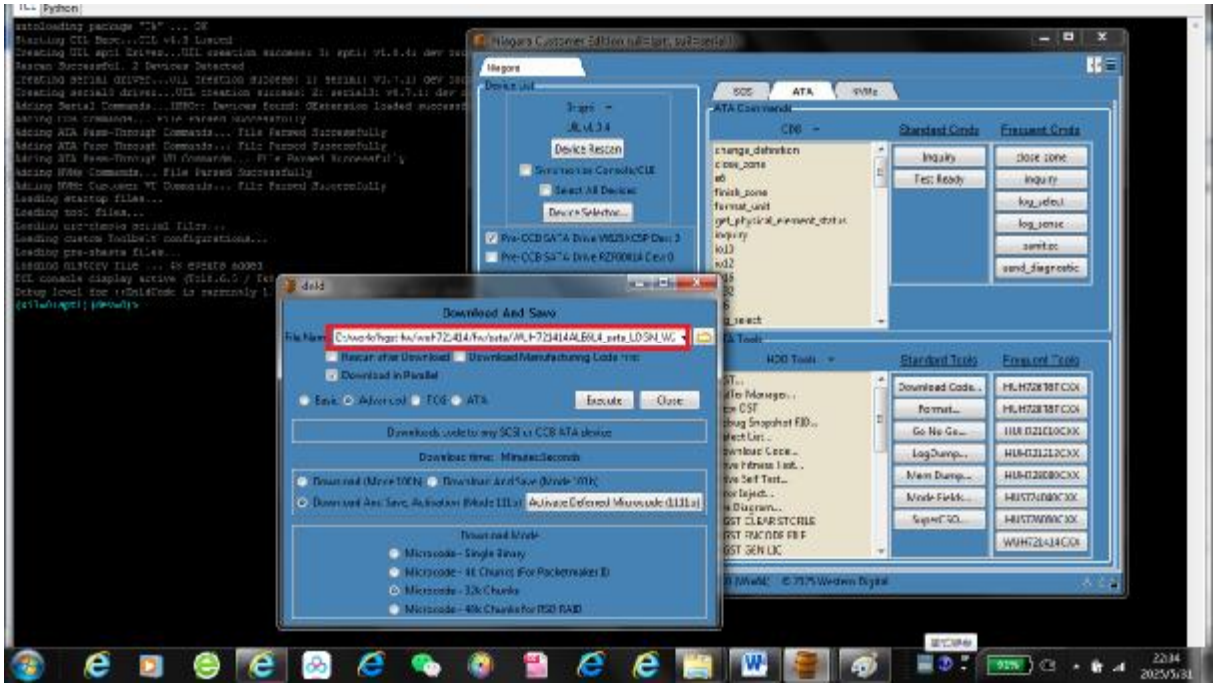

Figure 9 FW Download Code feature

3.7 Clearing Power-On Hours (ClearSmart)

For HDDs below 12TB, use CLEARSMART (Figure 10). For 14TB+ models, use WUH721414CXX -> CLEARTIME (Figure 11).

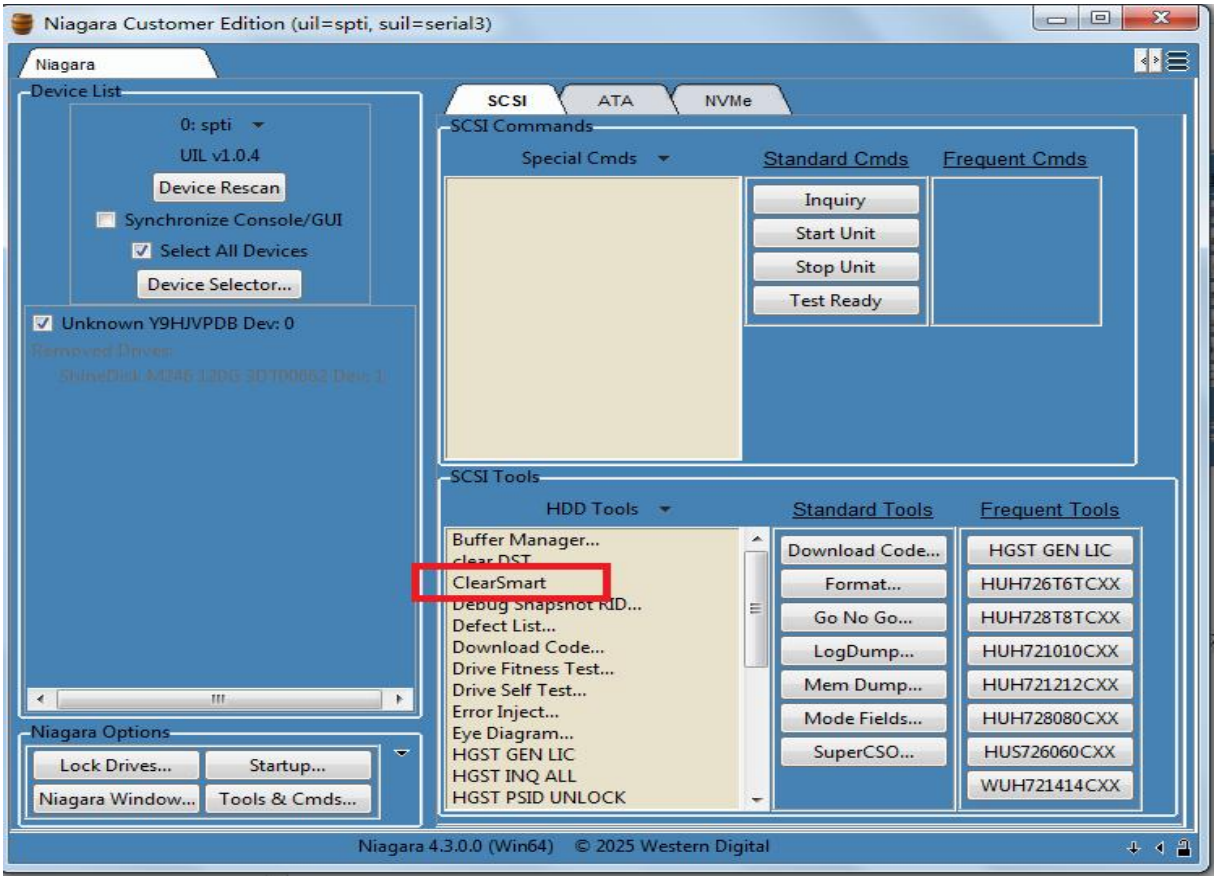

Figure 10 under 12T

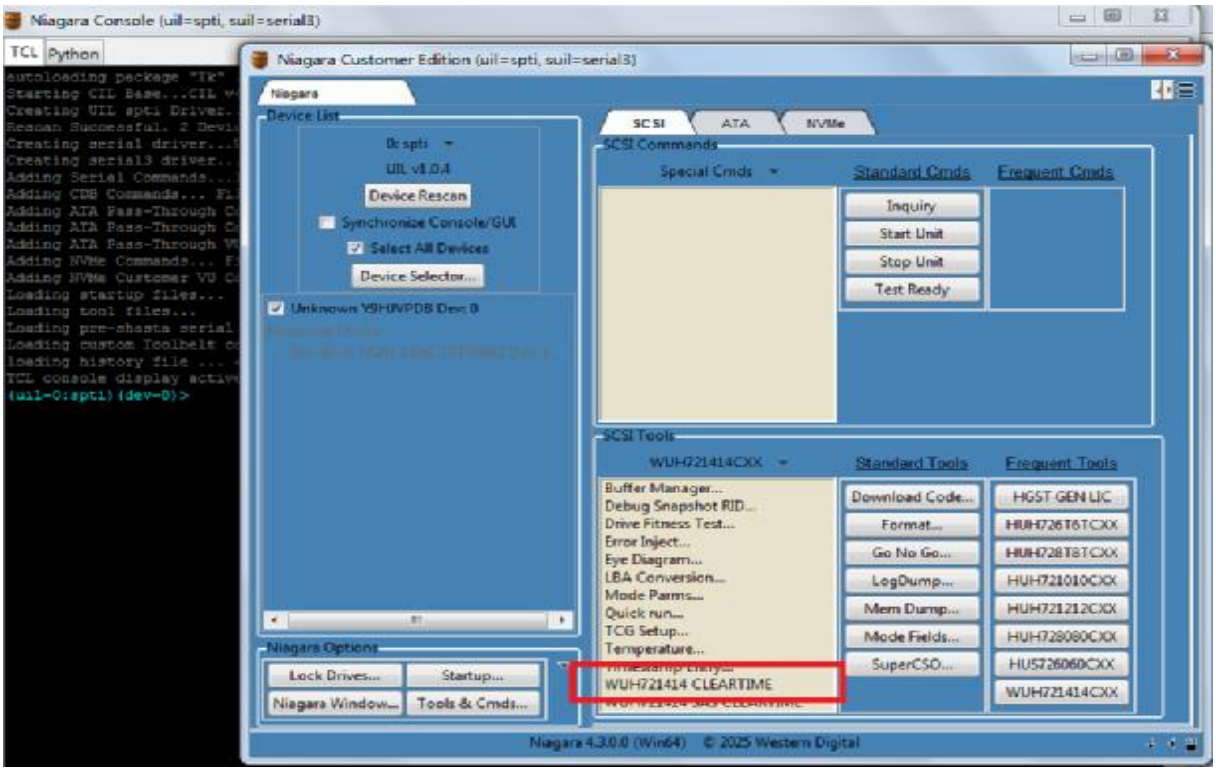

Figure 11 14T

3.8 Firmware Unlock Module

Standard firmware upgrades are limited to the same model and branding. For logo changes or SAS-SATA conversion, use the super firmware unlock feature (two steps).

3.8.1 Step 1: Firmware Unlock (XXX-UNLOCKFW)

1.PSID Unlock (if applicable).

2 . Firmware Unlock: Click XXX-UNLOCKFW (e.g., HUH728080 UNLOCKFW). Success is indicated by "write module num1/num2 successful" in the console (Figure 13).

3.Segmented Firmware Loading: Use Download Code in advanced mode (Mode 111b, 32 chunks) (Figures 14-15).

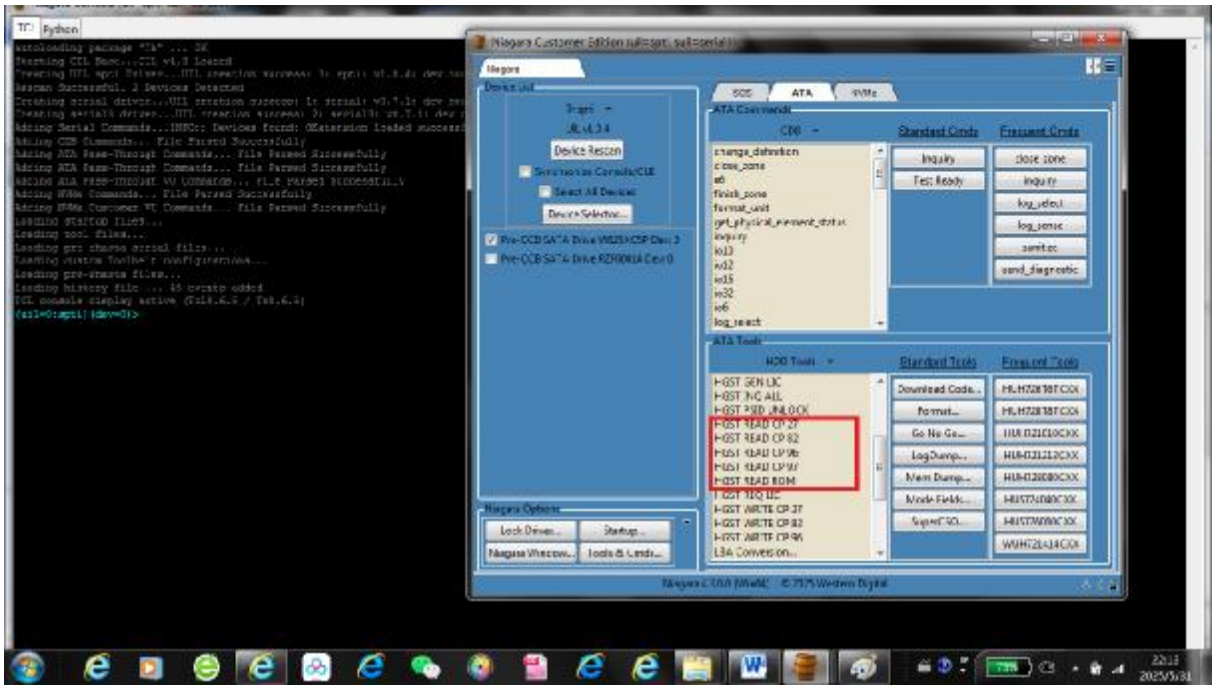

Figure 12: Backing Up Drive Information

If the firmware unlock is successful, the console window on the right will display the following messages:

1. "Write module num1 successful."
2. "Write module num2 successful."

Note: The unlock is only considered successful if both steps complete successfully. If either step fails, the process will revert to the original state.

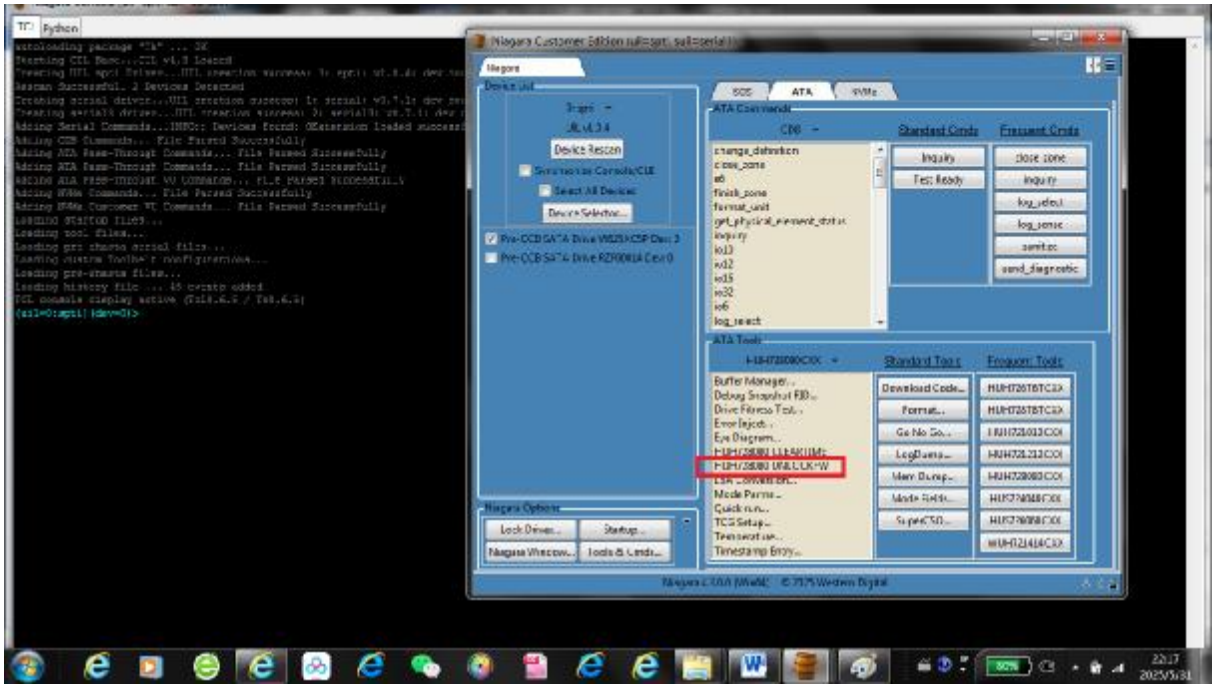

Figure 13: Firmware Unlock

If one step shows unsuccessful, it may be due to selecting the wrong model, causing the unlock module to fail for that specific drive. If both steps show unsuccessful, it indicates the unlock module write operation has failed. Possible reasons include:

- The drive was disconnected and not re-detected
- The drive has PSID protection and requires PSID unlocking first

- The selected model is incorrect
- The drive is encrypted

Important: If the unlock process is not fully successful, do not repeatedly attempt unlocking. Instead, try power-cycling the drive and restoring the original firmware.

Once both firmware unlock steps show successful, proceed to the next phase: segmented loading of the target firmware (Step 2: Segmented Firmware Loading).

(Note: I've slightly restructured the sentences for better flow in English while maintaining all technical details. The term "power-cycling" is used for " power off" as it's the standard technical term for cutting and restoring power to a device.)

3.8.2 Step 2: Segmented Firmware Loading

1. Click **HDD TOOLS > Download Code** (Figure 5).

2. Select **Advanced**, **Mode 111b**, and **32 Chunks** (Figure 6).

3. Execute the upgrade. Success is indicated by a pause, console confirmation, and audible drive activity.

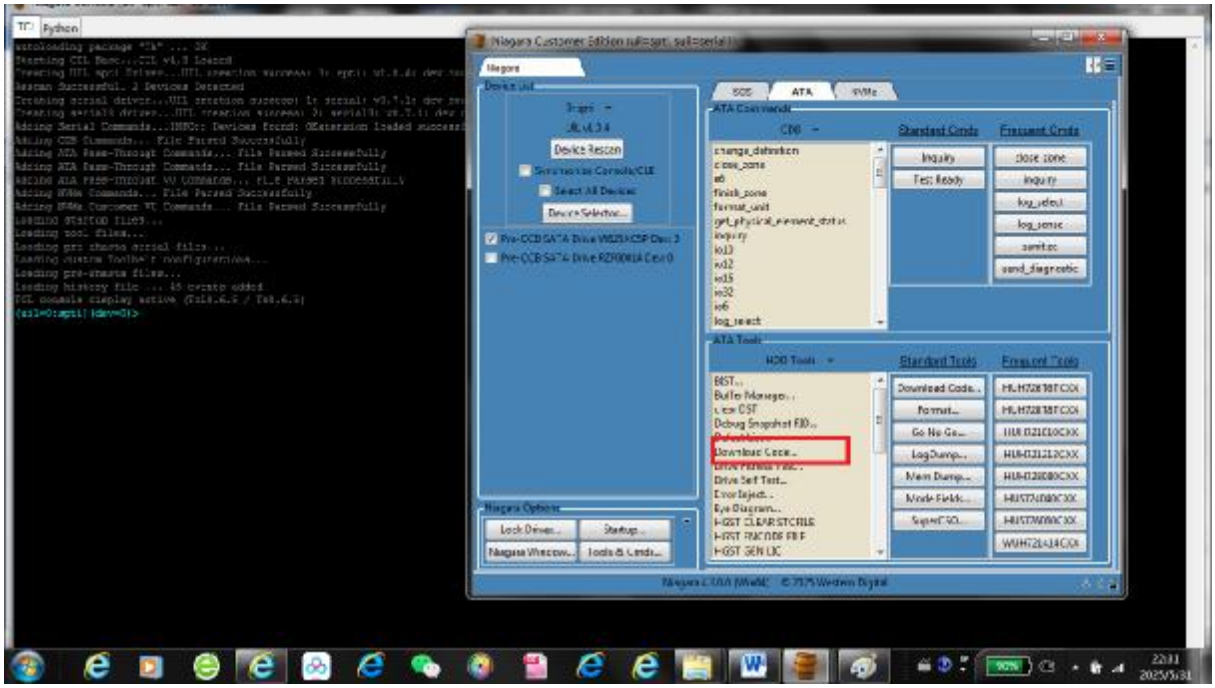

Figure 14: Firmware Upgrade Menu

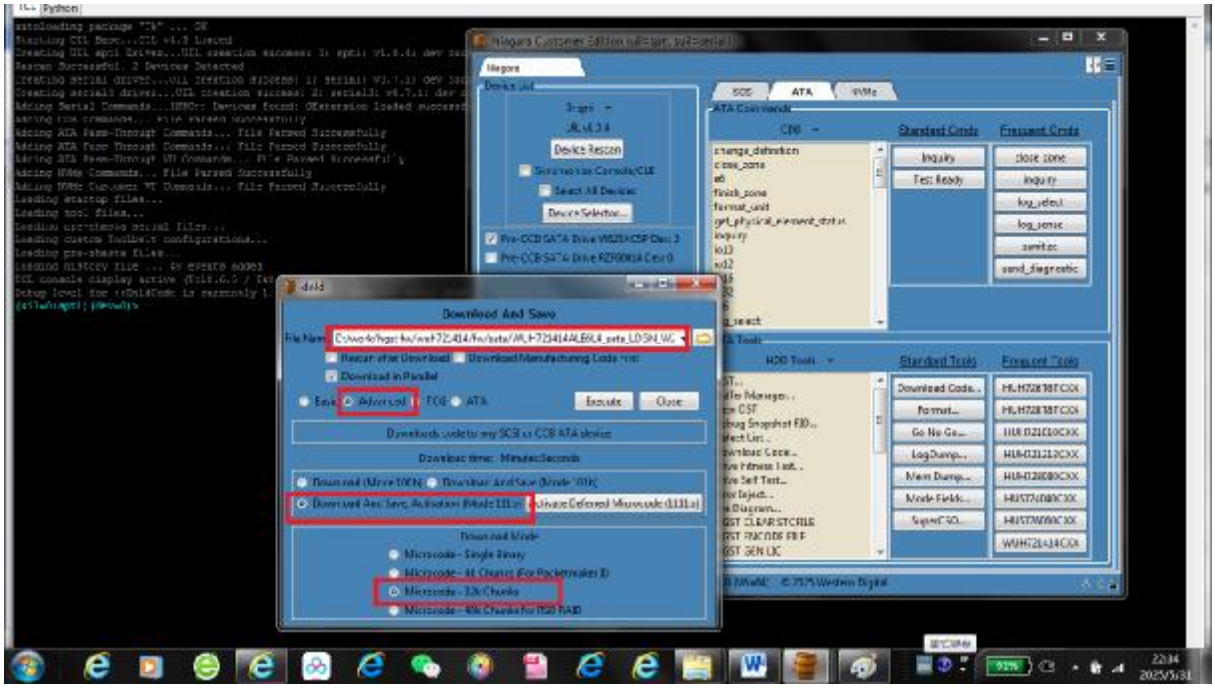

Figure 15: Segmented Firmware Loading

After selecting the correct file and options, click "Execute" to begin segmented loading and activate the firmware upgrade.

Successful Upgrade Indicators:

- The process will pause noticeably
- The console window will display "Download Code Successful"
- Audible disk activity will be heard as files load onto the drive

If Upgrade Fails:

- If the process completes too quickly without these indicators
- Likely cause: Incorrect target firmware selected
- Troubleshooting: Switch to Basic mode and retry (ensure console shows Mode 7 for upgrade)

Post-Upgrade Verification:

After successful upgrade, you may use third-party disk utilities to confirm the firmware version has been properly updated.

(Note: I've maintained all technical details while improving readability:

1. Structured with clear success/failure sections
2. Used "segmented loading" consistently
3. Kept "Mode 7" as technical users would expect
4. Added "third-party disk utilities" as more natural than "other testing software"
5. Used active voice for clearer instructions

3.8.3 Precautions

Precautions

1. Back up modules and ROM before unlocking.

1.Select the correct firmware and model.

1.If unlocking fails, revert to the original firmware immediately.

3.9 PSID Unlock Module (HGST PSID UNLOCK)

For drives with PSID, follow these steps:

1. Scan the PSID from the drive label (Figure 16).

2. Save the PSID as `psid.txt` in the drive's data directory (e.g., `C:\Niagara-customer\diskdata\9RKDXXXX`) (Figure 17).

3. Click **HDD TOOLS > HGST PSID UNLOCK** to unlock (Figure 18).

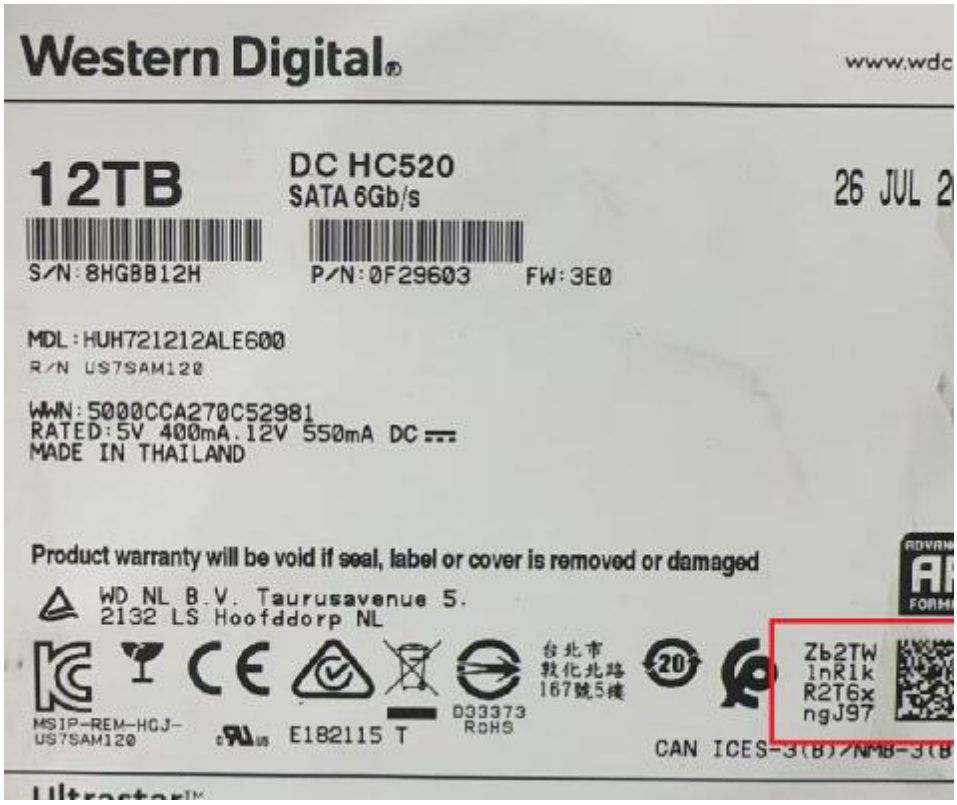

Figure 16: PSID Label

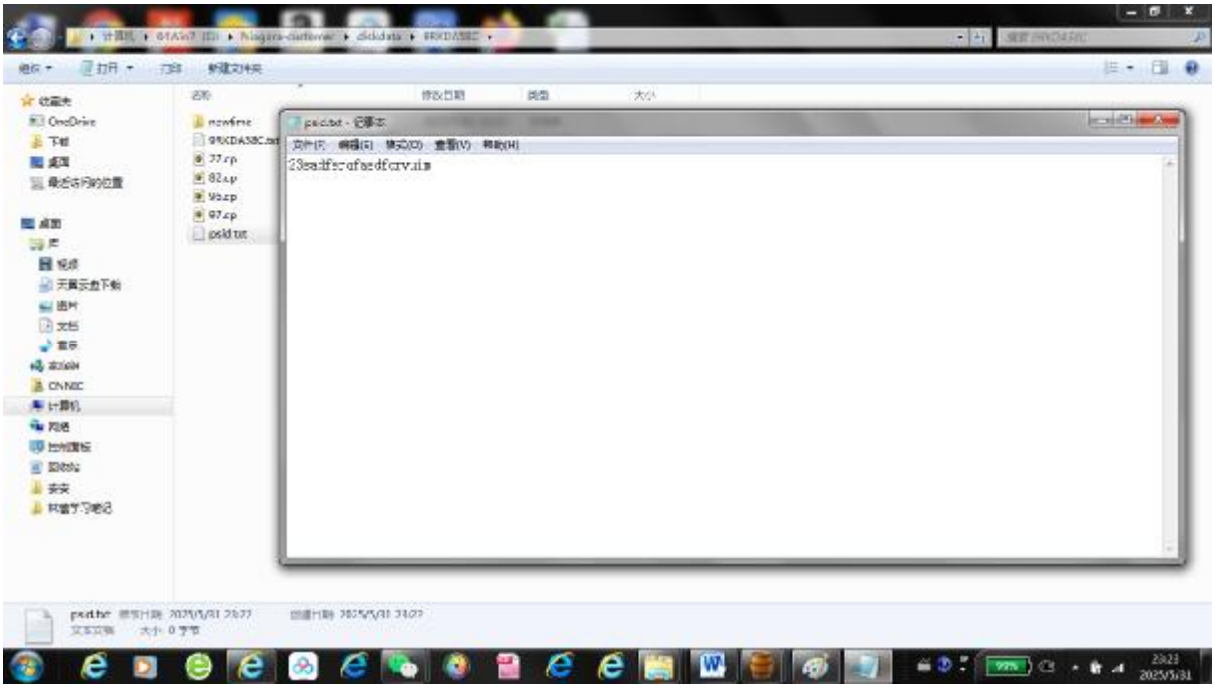

Figure 17: PSID File

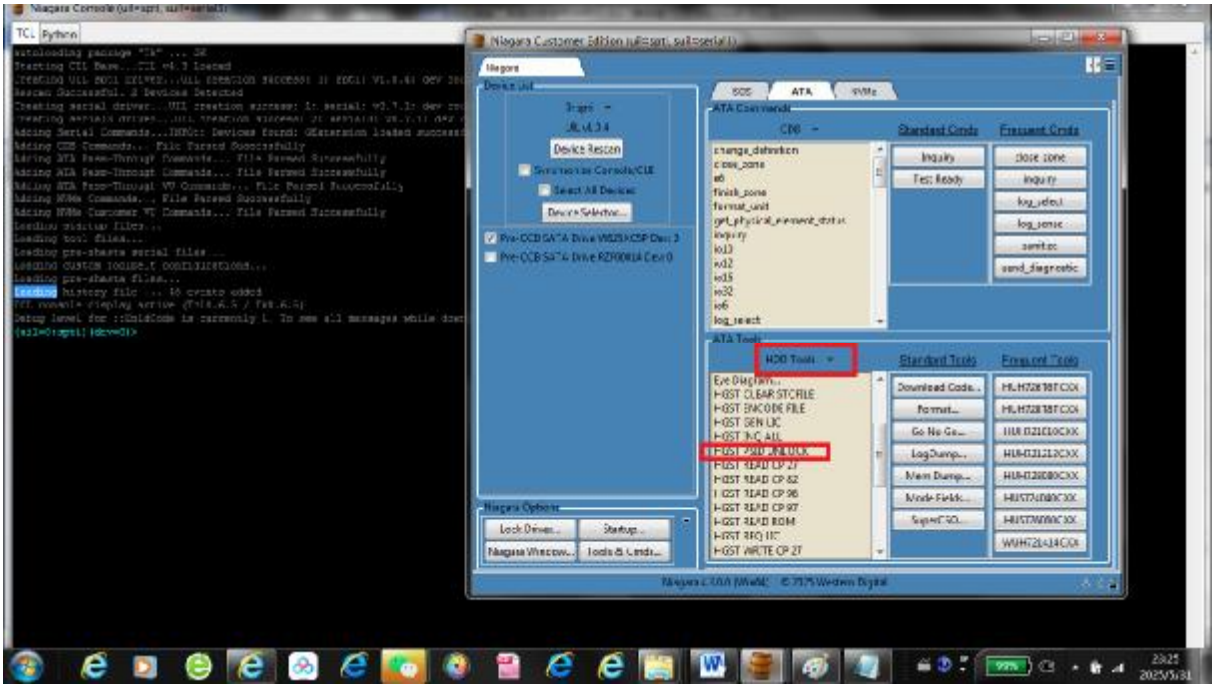

Figure 18: PSID Unlock

Note: PSID is case-sensitive and must be 20 characters long. Errors may prevent unlocking.

4 FAQ

4.1 Drive Not Detected

Ensure the HBA RAID card is properly connected. SATA drives must be connected via SAS cables. Check Windows Device Manager for drive recognition.

4.2 Information Read Failure

If the drive is recognized but data cannot be read, rescan using **Device Rescan** and select the correct SN.

4.3 Firmware Upgrade Failure

1. Verify the drive model (e.g., 512n vs. 512e).

2. Ensure paths and filenames are in English.

3. Select the correct upgrade mode (4, 5, or 7).

4.4 Firmware Unlock Failure

1.Back up modules and ROM.

2. Select the correct firmware and model.

-2.Restore the original firmware if unlocking fails.

4.5 PSID Unlock Failure

Ensure the PSID is scanned correctly (20 characters, case-sensitive). OEM drives may have incorrect PSIDs.

5 Niagara Extended Module Versions

INDEX	EXT VERSION	Features and Supported Models	Notes
1	Basic	u Standard Niagara 4.3 functions (batch info read, module backup, ROM read/write, health clear). u Supports HUS724040CXX, HUS726060CXX, HUH728080CXX 、HUH721010CXX、HUH721212CXX etc.	1-year license for 1 host. Ideal for beginners.
2	Professional	u Adds time clear, super firmware upgrades. u Supports mainstream HGST models. HUS724040CXX、HUS726060CXX、HUH728080CXX、HUH721010CXX、HUH721212CXX、HUS728T8TXX、HUH726T6TXX 、 Includes Hitachi SAS/SATA firmware. u WUH721414 clear time	2-host license, 1-year support, regular updates.
3	Premium	u Adds batch operations of PSID unlock、firmware unlock (SAS-SATA) and SMART clear. - Supports HUC156CXX, HUC101818CXX, and other SAS models. etc. u - Includes firmware lib for Hitachi, HP, IBM, etc.	1 hardware host license, 1-year support, regular updates.
4	Custom	Tailored modules for specific needs.	