

SUPERTALENT ULTRADRIVE GX/GX2 FIRMWARE RELEASE NOTES

2.5" SATA-II SOLID STATE DRIVE



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1.0 FIRMWARE VERSION 1916 (AFTER 1819)

Release Date: 1/4/10

Serial Numbers: xxxxxxxx-xlBx/xlCx/xlDx-xxxxxxx

Change Log:

- Feature Add: Garbage Collection enabled
- Feature Add : Firmware download through SCSI interface

- Bug Fix: Early performance drop issue in quite clean state. This problem is fixed with changing weak dynamic wear leveling parameter
- Bug Fix: Occasional firmware download failure bug fixed (Due to FPDMA problem of SCSI/AHCI)
- Bug Fix: IRQ stack overflow bug fixed. Runtime bad block structure was too big. It caused 256GB block 0 to be corrupted.
- Bug Fix: With 1819 firmware, Wiper performance was slower than 1571 firmware revision.
- Bug Fix: Power cycle count was always 0 in 1819 firmware.
- Bug fix: Specific SATA Gen I host (ex. SB400) caused SATA hardware buffer ID error.
- Bug Fix: L63B (256 pages/block) wear leveling bug fixed.
- Bug Fix: Bug fix found during simulation. Free block count may become 0 after a lot of power cycling. It was not witnessed in the real life.
- Bug Fix: SMART information – Remaining life was not 100% even right after firmware download.
- Bug Fix: Flush should not check IDNF.

- Other: Toshiba NAND has additional blocks over 4095th block. These blocks can be used.

UltraDrive GX/GX2 Firmware Release Notes

- Other: For Intel/Micron 34nm NAND, NAND BIST is performed always. NAND BIST is flash cell test. It uses AA5555AA pattern and uses 2 plane mode.
- Other: To support Intel/Micron 34nm NAND, copy back delay was adjusted.
- Other: Erase count distribution is made better.

2.0 FIRMWARE VERSION 1819 (AFTER 1571)

Release Date: 10/19/09

Serial Numbers: xxxxxxx-xFBX-xxxxxxx

Change Log:

1. Updater runs out of DOS instead of Windows
 - 1.1 Added ATA8 ACS2 TRIM Support
 - 1.2 SATA Rx SSC is turn off by default, Now Rx and Tx SSC both off
 - 1.3 IDENTIFY word 69 bit 14 is cleared (Non deterministic trim)
 - 1.4 IDENTIFY word 60-61 are changed (User addressable logical sectors for LBA28)
 - 1.5 FPDMA error return code was not adequate
 - 1.6 SMART related changes were made (BBM error log was removed)
 - 1.7 SATA error handling code was enhanced
 - 1.8 Added paired page calculation for Micron 34nm MLC NAND
2. Bug Fix: Fixed a bug in error handling in Set Multiple mode command
3. Bug Fix: Fixed a bug that caused 1.5Gbps diagnostic failure
4. Bug Fix: SMART related bugs were fixed
5. Bug Fix: Toshiba 43nm NAND has address hole and previous firmware couldn't handle it.
6. Bug Fix: SMART related bugs were fixed. (MLC Max PE count was displayed as 100K)

7. Bug Fix: Current ATA security state was not reflected in IDENTIFY information.
8. Bug Fix: Performance boost routine reused the recently used block and it did harm to wear leveling.
9. Bug Fix: During SATA protocol, abrupt OOB made Barefoot hang.
10. Bug Fix: End user update failed between 1571 and 1711.
11. Bug Fix: In bad block management, wrong number of free blocks is used and it led to timeout and hang.
12. Bug Fix: After STANDBY_IMMEDIATE, most host controllers wait for OOB reply only for 100ms. Sometimes Barefoot firmware couldn't answer to COMRESET because FTL initialization took longer time. This bug caused Windows Sleep/Hibernate test failure.
13. Bug Fix: Various read fail scenario were found with FTL simulation.
14. Barefoot ECO chip support code was added.
15. More NAND ICs supported

3.0 FIRMWARE VERSION 1571

Release Date: 5/28/09

Serial Numbers: xxxxxxxx-xDIX-xxxxxxx

Change Log:

1. Updater runs out of DOS instead of Windows
 - 1.1 Enables fixing of failed firmware installation characterized by "Yatapdong Barefoot ROM ATA"
 - 1.2 Enables firmware updates on Apple Mac
 - 1.3 Updater no longer requires AHCI mode
 - 1.4 Updater compatibility instability with nVidia chipsets fixed

2. Bug Fix: ATA Security command now working in AHCI mode
3. Bug Fix: When receiving invalid SMART subcommands, abort is now sent to host to minimize long delays
4. Bug Fix: Corrected values of some SMART attribute data initialization
5. Bug Fix: ATA Security Command now returning correct values
6. Enables life expectancy calculation
7. Other internal bug corrections

4.0 FIRMWARE VERSION 1370

Release Date: 5/14/09

Serial Numbers: xxxxxxxx-xCIX-xxxxxxx

Change Log:

1. Adds support for TRIM command
2. Firmware Update now preserves serial number
3. Bug Fix: Apple Mac Pro sleep/wake test now passes
4. Other internal bug corrections