# SM2246EN-AA Flash F/W & ISP Release Information – N0530A

## Introduction

This purpose of this document is to provide release information on the SM22X family F/W and ISP release information

## Fix Coverage

■ stands for the **"new fix"** or **"new support"** in the category

☐ stands for the **"no-update"** in the category

| ■ **Tester FW** | ■ **Controller ISP** |
|---|---|
| ☐ **Yield Issue** | ■ **Yield Issue** |
| ■ **Flash Issue** | ■ **Flash Issue** |
| ☐ SLC Flash | ☐ SLC Flash |
| ☐ Samsung Flash | ☐ Samsung Flash |
| ☐ Toshiba/Sandisk Flash | ☐ Toshiba/Sandisk Flash |
| ☐ Intel/Micron Flash | ☐ Intel/Micron Flash |
| ☐ Hynix Flash | ☐ Hynix Flash |
| ☐ Others | ☐ Others |
| | |
| ■ MLC Flash | ■ MLC Flash |
| ■ Samsung Flash | ■ Samsung Flash |
| ■ Toshiba/Sandisk Flash | ■ Toshiba/Sandisk Flash |
| ■ Intel/Micron Flash | ■ Intel/Micron Flash |
| ■ Hynix Flash | ■ Hynix Flash |
| | |
| ☐ **Compatibility issue** | ☐ **Compatibility issue** |
| ☐ **Tester Bug Fix** | ■ **ISP Bug Fix** |
| ■ **AP Bug Fix & New Function** | ☐ **Feature Enhance** |
| ■ **Feature Enhance** | |

**ISP Revision History**

| Version | MP Tool version | ISP version | Note |
|---------|-----------------|-------------|------|
| **N0530A** | **N0529A** | **N0530A** | 1. **Support auto partial to slumber in HIPM**<br>2. **Fill up the active block's valid pages word line when receiving Standby Immediately and swapping active block after power on**<br>3. **Save SMART attribute every 20 minutes**<br>4. **Save SMART info when receiving Standby Immediately**<br>5. **Fine tune a read cache judgment** |
| N0402C | N0415A | N0402C | 1. Support 4CH8WAY interleave for 512page/block flash (L85A/L95B)<br>2. Support 1TB capacity<br>3. Fix DEVSLP bugs<br>4. Support the entrance of device sleep without slumber mode first. (CID 0x4D.bit7)<br>5. Fix the bug of occasional ISP hangs-up if power off while security erase<br>6. Fix the bug of building the wrong mapping table after resuming from device sleep<br>7. RDT update: Show the wrong fail message at MP result window<br>8. Update L95B ECC to 60b in database |
| N0307A | N0307A | N0307A | 1. Speed up boot up time by saving spare bitmap table, and shortening mapping table reset time.<br>2. Re-issue flash multi-plane ALE after disabling read-retry.<br>3. Issue one plane ALE instead of multi-plane in read-retry.<br>4. Extend the ALE, CLE and write pulse width when setting read-retry sequence in EDO mode.<br>5. Enable hardware write protect.(GPIO p1.bit1)<br>6. Enable quick erase.(GPIO P1.bit5)<br>7. Fix the SMART value (attribute ID 0x05) miss-match issue<br>8. Fix a markbad bug. (N0227A issue from VCT)<br>9. Fix SMART info miss match issue.<br>10. Fix read and write log DMA extend command bug.<br>11. Fix RDT firmware cannot recognize MP vendor command issue.<br>12. Support 16k 4plane flash. |
| N0103B | N0114A | N0103B | 1. Fix the bug of issuing Samsung 19nm read try command by EDO mode<br>2. Support DMA read log extend and DMA write log extend.<br>3. Support DMA read buffer and DMA write buffer.<br>4. Mark bad block by single block instead of super block and use rest good block to re-combine super block.<br>5. Support DMA download microcode<br>6. Add full dram size test in pretest |

| M1213C | M1226A | M1213C | 1. Support Micron/Intel L85A, L84C,<br>2. Support Micron/Intel L95B<br>3. Support Samsung 19nm MLC<br>4. Fix seek & read verify sector command bug<br>5. Support PIO Multiple mode to 2<br>6. Fix SCT write same bug<br>7. Enhance SPOR protection<br>8. Write performance enhancement<br>9. Fix a FW bug of WHCK Trim test<br>10. Reduce DEVSLP power consumption<br>11. Fix a read try bug for Micron/Intel NAND<br>12. Support Download Micro Code |
|---|---|---|---|
| M1024C | M1024A | M1024C | 1. Fix ATACT seek & read verify sector command bug.<br>2. Fix the error of scaling down the number of interleave<br>3. Add QC tool functions |
| M1011A | M1009B | M1011A | 1. Enhance ATA command support for Ulink test<br>2. Disable all flash CE if channel is idle.<br>3. Fix a power-cycling bug<br>4. Fix SN number issue when KeepSN is not 20 byte length. |
| M1003B | M1003A | M1003B | 1. Fix IM20nm read retry bug and add more options for read retry. Issue flash reset command before retry sequence.<br>2. Fix build-link bug in 4ch8way<br>3. Fix SPOR function bugs<br>4. Disable dram compensation<br>5. Lower schmitt trigger windows)<br>6. Fix seek, read verify sector, and RW multiple command bug<br>7. Fix a wear leveling bug<br>8. Support Few Samsung & Hynix dram.<br>9. Support LTS and fix bugs of RDT function. Add the loop option in RDT<br>10. Add Micron20nm SLC read-retry table.<br>11. Add Dram 380Mhz option.<br>12. Enable write cache as a default.<br>13. Modify dram VDT from 1.4 to 1.3v. |
| M0808A | M0808B | M0808A | 1. Fix Toshiba & Sandisk flash read-retry error.<br>2. Enhance SATA error handling<br>3. Switch to dummy write if the number of spare block decreases to zero, and do not mark bad block<br>4. Modify SMART command for WAF<br>5. Extend the number of write log page to 32<br>6. Fix strong page size bug on M0719<br>7. Fix pretest bug for manual toggle flash. |

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|---|---|---|---|
| | | | 8.   Add RDT function. |
| | | | 9.   Don't reset DRAM when resume |
| M0719A | M0716B | M0719A | 1.   Support Samsung 21nm K9GCG MLC |
| | | | 2.   Support Toshiba 19nm 16KB 2Plane MLC |
| | | | 3.   Support Hynix H27QCGDT2BLR, H27QEGDVEBLR |
| | | | 4.   Support Micron L84A Onfi MLC |
| | | | 5.   Support Micron L85A Onfi MLC |

**Note:**

1. F/W and ISP update is recommended.
2. History # is denoted by "Version-Date" .

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