

**SM2246EN-AA Flash F/W & ISP Release Information – N0711A****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
<div><input type="checkbox"/> Yield Issue</div> <div>■ Flash Issue</div> <div><input type="checkbox"/> SLC Flash</div> <div><input type="checkbox"/> Samsung Flash</div> <div><input type="checkbox"/> Toshiba/Sandisk Flash</div> <div><input type="checkbox"/> Intel/Micron Flash</div> <div><input type="checkbox"/> Hynix Flash</div> <div><input type="checkbox"/> Others</div> <div><div>■ MLC Flash</div><div>■ Samsung Flash</div><div>■ Toshiba/Sandisk Flash</div><div>■ Intel/Micron Flash</div><div>■ Hynix Flash</div></div> <div><input type="checkbox"/> Compatibility issue</div> <div><input type="checkbox"/> Tester Bug Fix</div> <div>■ AP Bug Fix & New Function</div> <div>■ Feature Enhance</div>	<div><input type="checkbox"/> Yield Issue</div> <div>■ Flash Issue</div> <div><input type="checkbox"/> SLC Flash</div> <div><input type="checkbox"/> Samsung Flash</div> <div><input type="checkbox"/> Toshiba/Sandisk Flash</div> <div><input type="checkbox"/> Intel/Micron Flash</div> <div><input type="checkbox"/> Hynix Flash</div> <div><input type="checkbox"/> Others</div> <div><div>■ MLC Flash</div><div>■ Samsung Flash</div><div>■ Toshiba/Sandisk Flash</div><div>■ Intel/Micron Flash</div><div>■ Hynix Flash</div></div> <div><input type="checkbox"/> Compatibility issue</div> <div>■ ISP Bug Fix</div> <div><input type="checkbox"/> Feature Enhance</div>



ISP Revision History

Version	MP Tool version	ISP version	Note
N0711A	N0704B	N0711A	<ol style="list-style-type: none"> 1. Fix cache program bug since N0704A. 2. Fix program fail handle bug for internal interleave mode since N0704A 3. Fix an IPM issue since FW N0516D which automatically change Partial to Slumber in HIPM if DIPM was enabled. 4. Extend bad block combination number from 512 to 1024. 5. Decide Hynix read-retry count by using OPT command instead of predefine value from MP package. 6. Support Internal Interleave. 7. Support program fail handling 8. Modify trim flow for the performance with Marvell RAID chip 9. Support Hynix 16nm 64Gb MLC: H27QCG8T2E5R, H27QEG8VEE5R 10. Support Hynix 16nm 128Gb MLC: H27QEG8UDB8R, H27QFG8VEB8R-BCF, H27Q1T8YEB9R (CS sample and after)
N0530C	N0529A	N0530C	<ol style="list-style-type: none"> 11. ISP Bug fix: Erase count miss-match after doing security erase 12. Pretest Bug fix: Load L85A reclaim flash original bad bug found in N0530A 13. Fix an IPM issue since FWN0516D, which cannot enter IPM mode normally.
N0530A	N0529A	N0530A	<ol style="list-style-type: none"> 1. Support auto partial to slumber in HIPM 2. Fill up the active block's valid pages word line when receiving Standby Immediately and swapping active block after power on 3. Save SMART attribute every 20 minutes 4. Save SMART info when receiving Standby Immediately 5. Fine tune a read cache judgment
N0402C	N0415A	N0402C	<ol style="list-style-type: none"> 1. Support 4CH8WAY interleave for 512page/block flash (L85A/L95B) 2. Support 1TB capacity 3. Fix DEVSLP bugs 4. Support the entrance of device sleep without slumber mode first. (CID 0x4D.bit7) 5. Fix the bug of occasional ISP hangs-up if power off while security erase 6. Fix the bug of building the wrong mapping table after resuming from device sleep 7. RDT update: Show the wrong fail message at MP result window 8. Update L95B ECC to 60b in database



N0307A	N0307A	N0307A	<ol style="list-style-type: none"> 1. Speed up boot up time by saving spare bitmap table, and shortening mapping table reset time. 2. Re-issue flash multi-plane ALE after disabling read-retry. 3. Issue one plane ALE instead of multi-plane in read-retry. 4. Extend the ALE, CLE and write pulse width when setting read-retry sequence in EDO mode. 5. Enable hardware write protect.(GPIO p1.bit1) 6. Enable quick erase.(GPIO P1.bit5) 7. Fix the SMART value (attribute ID 0x05) miss-match issue 8. Fix a markbad bug. (N0227A issue from VCT) 9. Fix SMART info miss match issue. 10. Fix read and write log DMA extend command bug. 11. Fix RDT firmware cannot recognize MP vendor command issue. 12. Support 16k 4plane flash.
N0103B	N0114A	N0103B	<ol style="list-style-type: none"> 1. Fix the bug of issuing Samsung 19nm read try command by EDO mode 2. Support DMA read log extend and DMA write log extend. 3. Support DMA read buffer and DMA write buffer. 4. Mark bad block by single block instead of super block and use rest good block to re-combine super block. 5. Support DMA download microcode 6. Add full dram size test in pretest
M1213C	M1226A	M1213C	<ol style="list-style-type: none"> 1. Support Micron/Intel L85A, L84C, 2. Support Micron/Intel L95B 3. Support Samsung 19nm MLC 4. Fix seek & read verify sector command bug 5. Support PIO Multiple mode to 2 6. Fix SCT write same bug 7. Enhance SPOR protection 8. Write performance enhancement 9. Fix a FW bug of WHCK Trim test 10. Reduce DEVSLP power consumption 11. Fix a read try bug for Micron/Intel NAND 12. Support Download Micro Code
M1024C	M1024A	M1024C	<ol style="list-style-type: none"> 1. Fix ATACT seek & read verify sector command bug. 2. Fix the error of scaling down the number of interleave 3. Add QC tool functions
M1011A	M1009B	M1011A	<ol style="list-style-type: none"> 1. Enhance ATA command support for Ulink test 2. Disable all flash CE if channel is idle. 3. Fix a power-cycling bug 4. Fix SN number issue when KeepSN is not 20 byte length.
M1003B	M1003A	M1003B	<ol style="list-style-type: none"> 1. Fix IM20nm read retry bug and add more options for read



			<ul style="list-style-type: none">retry. Issue flash reset command before retry sequence.2. Fix build-link bug in 4ch8way3. Fix SPOR function bugs4. Disable dram compensation5. Lower schmitt trigger windows)6. Fix seek, read verify sector, and RW multiple command bug7. Fix a wear leveling bug8. Support Few Samsung & Hynix dram.9. Support LTS and fix bugs of RDT function. Add the loop option in RDT10. Add Micron20nm SLC read-retry table.11. Add Dram 380Mhz option.12. Enable write cache as a default.13. Modify dram VDT from 1.4 to 1.3v.
M0808A	M0808B	M0808A	<ul style="list-style-type: none">1. Fix Toshiba & Sandisk flash read-retry error.2. Enhance SATA error handling3. Switch to dummy write if the number of spare block decreases to zero, and do not mark bad block4. Modify SMART command for WAF5. Extend the number of write log page to 326. Fix strong page size bug on M07197. Fix pretest bug for manual toggle flash.8. Add RDT function.9. Don't reset DRAM when resume
M0719A	M0716B	M0719A	<ul style="list-style-type: none">1. Support Samsung 21nm K9GCG MLC2. Support Toshiba 19nm 16KB 2Plane MLC3. Support Hynix H27QCGDT2BLR, H27QEGDVEBLR4. Support Micron L84A Onfi MLC5. 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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