NAND Flash Test Case

Revision History

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| --- | --- | --- | --- |
| Version | Date | Author | Description |
| 0.1 | 07/03/2012 | Tiezhu Zhu | Initial Version |
| 0.2 | 07/27/2012 | Guoqing Zhu | Update after Dakar R2 |
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Glossary and Abbreviations

# Introduction

Micron NAND Flash devices include an asynchronous data interface for high-performance I/O operations. These devices use a highly multiplexed 8-bit bus (I/Ox) to transfer commands, address, and data.

# Test Objectives

It is first time to use Nand Flash on rialto platform in our device. We mainly focus on the basic function.

# Test Acceptance Criterion from Development

* Approved – MRD

The link to MRD

* Approved – Functional Specifications

The link to function spec：

* Approved – Unit Test Plans

The link to unit test report of dev

# Product Pass Criterion

Meet all objects in marketing requirement or function spec which may include key function objectives, capacity objectives, performance objectives and so on.

# Test Bed/Topo Design

<List topo and topo ID>

# Test Point

## Function Test

### Under Bootload mode, do “image\_flash” to check if nand flash can work

### Under Bootload mode, do “image\_netboot” to check if nand flash can upgrade from network

### Under Bootload mode, do “format\_flash\_fs” to check if nand flash can be formatted

### Under bootload mode, do “flash\_dump\_info” to check if flash contents be dumped

### Enter CLI mode, check if “ save image” can work normally

### Power off AP when AP erase Nand flash, check if AP can work normally

### Power off AP when AP write Nand flash, check if AP can work normally

### Power off AP when AP read and verify Nand flash, check if AP can work normally

### After apply new Nand flash, check boot up message about TPM and other error messages

### Power off AP when AP work normally with high throughput

### Download one other platform image, check if Nand flash corrupted.

### Download different linux kernel version image, check if Nand flash corrupted

### Continuously upgrade and downgrade, check if Nand flash corrupted

### Simulate crash issue, check if Nand flash affected.

### Keep continuously print log message with normal running, check if Nand flash abnormal

### Keep continuously print log message with high throughput, check if Nand flash abnormal

### Enter bootload mode, check if the debug commands work

## Stress Test

### Save image while running high throughput, check if nand flash works normally

### Continuous upgrade/downgrade for 10 hours by automation, check if nand flash corrupted

## Performance test

# Test Case

## Function Test Case

### Under Bootload mode, do “image\_flash” to check if nand flash can work

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC001 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Under Bootload mode, do “image\_flash” to check if nand flash can work | | |
| Pre-condition | 1. Enter bootload mode:  AH-0c6040#  AH-0c6040#reboot  Do you really want to reboot? (Y/N)y  Important: Do not unplug the power cord or PoE cable while rebooting!  AH-0c6040#1970-01-01 00:00:53 alert ah\_scd: System is rebooting ...  Restarting system.  U-boot DB120  DRAM:  sri  Wasp 1.2  wasp\_ddr\_initial\_config(259): (32bit) ddr2 init  128 MB  Top of RAM usable for U-Boot at: 88000000  Reserving 324k for U-Boot at: 87fac000  Reserving 136k for malloc() at: 87f8a000  Reserving 44 Bytes for Board Info at: 87f89fd4  Reserving 36 Bytes for Global Data at: 87f89fb0  Reserving 128k for boot params() at: 87f69fb0  Stack Pointer at: 87f69f98  relocating and jumping to code in DRAM  Now running in RAM - U-Boot at: 0x87fac000  Flash: 1 MB  pci\_init\_board: PCIe PLL not set for 40MHz refclk  BOARD IS NOT CALIBRATED!!!  ag934x\_enet\_initialize...  wasp reset mask:c03300  WASP ----> F1 PHY \*  : cfg1 0xf cfg2 0x7114  eth0: 00:19:77:ff:00:00  F1Phy reg init  ATHR\_AUTONEG\_ADVERT:1DE1  ATHR\_1000BASET\_CONTROL:200  ATHR\_PHY\_CONTROL:3100  ATHRSF1\_PHY: Port 0, Neg Success  ATHRSF1\_PHY: unit 0 phy addr 0 eth0 up  Atheros on-chip NAND FLash Controller Driver, Version 0.1 (c) 2010 Atheros Communications, Ltd.  Ath Nand ID[87ff4178]: 95:80:f1:2c:00  NAND 128MiB 3,3V 8-bit [128MB]  chip #0: First 0xa last 0xa sector size 0x10000  10  Hit the space bar to stop the autoboot process: 0  Password: //(pwd: administrator or aerohive)  chip #0: First 0xa last 0xa sector size 0x10000  10  ar7240>  2. set boot parameters:  ar7240> set\_bootparam  Change boot parameter, ENTER to skip the item  Device IP : [0.0.0.0]  TFTP Server IP : [0.0.0.0] 10.155.30.230  VLAN ID : [0]  NVLAN ID : [0]  Boot File : [] newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Netboot after flashboot failed [1 for yes, 0 for no] : [0]  Netdump after crash [1 for yes, 0 for no]: [0]  Are you sure to save? [Y/N] y  chip #0: First 0xa last 0xa sector size 0x10000  10  Parameter saved  ar7240> image\_flash | | |
| Test procedure | 1. Enter bootload and set parameter:   “set\_bootparam”   1. Set TFTP server IP and Boot File as precondition 2. Set other boot params as default 3. Check if bootload can work | | |
| Expect result | Bootload function is valid | | |
| Test Result | PASS | | |

### Under Bootload mode, do “image\_netboot” to check if nand flash can upgrade from network

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC002 | | |
| Priority | Low | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Under Bootload mode, do “image\_netboot” to check if nand flash can upgrade from network | | |
| Pre-condition | boot parameters:  ar7240> set\_bootparam  Change boot parameter, ENTER to skip the item  Device IP : [0.0.0.0]  TFTP Server IP : [0.0.0.0] 10.155.30.230  VLAN ID : [0]  NVLAN ID : [0]  Boot File : [] newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Netboot after flashboot failed [1 for yes, 0 for no] : [0]  Netdump after crash [1 for yes, 0 for no]: [0]  Are you sure to save? [Y/N] y  chip #0: First 0xa last 0xa sector size 0x10000  10  Parameter saved  ar7240> image\_netboot | | |
| Test procedure | 1. Enter bootload and set parameter:   “set\_bootparam”   1. Set TFTP server IP and Boot File as precondition 2. Set other boot params as default 3. Check if image\_netboot can work 4. Reboot, check if AP return to the previous image | | |
| Expect result | 1) step #4, Image\_netboot function is valid, AP works normally with new image  2) AP return to previous image | | |
| Test Result | PASS | | |

### Under Bootload mode, do “format\_flash\_fs” to check if nand flash can be formatted

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC003 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP------SW-----server | | |
| Description | Under Bootload mode, do “format\_flash\_fs” to check if nand flash can be formatted | | |
| Pre-condition |  | | |
| Test procedure | 1. Enter bootload 2. Enter “format\_flash\_fs”, check if work | | |
| Expect result | Format\_flash\_fs function is valid | | |
| Test Result | Not support this command yet, error info isn’t correct  ar7240> format\_flash\_fs  Error: end address (0x07bfffff) not in flash!  Bad address format | | |

### Under bootload mode, do “flash\_dump\_info” to check if flash contents be dumped

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC004 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Under Bootload mode, do “flash\_dump\_info” to check if flash contents be dumped | | |
| Pre-condition |  | | |
| Test procedure | 1. Enter bootload 2. Enter “flash\_dump\_info”, check if work | | |
| Expect result | Flash\_dump\_info function is valid | | |
| Test Result | PASS  ar7240>  ar7240> flash\_dump\_info  Bank # 1: Size: 1024 KB in 16 Sectors  Sector Start Addresses:  9F000000 9F010000 9F020000 9F030000 9F040000  9F050000 9F060000 9F070000 9F080000 9F090000  9F0A0000RO 9F0B0000 9F0C0000 9F0D0000 9F0E0000  9F0F0000  ar7240> | | |

### Enter CLI mode, check if “save image” can work normally

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC005 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Enter CLI mode, check if “ save image” can work normally | | |
| Pre-condition | boot parameters:  AH-0c6d00#  AH-0c6d00#save image tftp://10.155.30.230:newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Do you really want to update image?(Y/N)y | | |
| Test procedure | 1. Under CLI mode, check if “save image” can work normally   CLI: “save image tftp://10.155.30.230:…” | | |
| Expect result | 1. Save image function is valid  2. After “save image” finished, reboot AP and check the version.  CLI: “show version” | | |
| Test Result | PASS | | |

### Power off AP when AP erase Nand flash, check if AP can work normally

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC006 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Power off AP when AP erase Nand flash, check if AP can work normally | | |
| Pre-condition | boot parameters:  AH-0c6d00#  AH-0c6d00#save image tftp://10.155.30.230:newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Do you really want to update image?(Y/N)y | | |
| Test procedure | 1. Under CLI mode, do “save image”   CLI: “save image tftp://10.155.30.230:…”   1. Power off AP when erase Nand flash, check if AP can work normally | | |
| Expect result | AP will crash. But it can be cured by bootload image\_flash. | | |
| Test Result | PASS | | |

### Power off AP when AP write Nand flash, check if AP can work normally

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC007 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Power off AP when AP write Nand flash, check if AP can work normally | | |
| Pre-condition | boot parameters:  AH-0c6d00#  AH-0c6d00#save image tftp://10.155.30.230:newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Do you really want to update image?(Y/N)y | | |
| Test procedure | 1. Under CLI mode, do “save image”   CLI: “save image tftp://10.155.30.230:…”   1. Power off AP when write Nand flash, check if AP can work normally | | |
| Expect result | AP will crash. But it can be cured by bootload image\_flash. | | |
| Test Result | PASS | | |

### Power off AP when AP read and verify Nand flash, check if AP can work normally

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC008 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Power off AP when AP read and verify Nand flash, check if AP can work normally | | |
| Pre-condition | boot parameters:  AH-0c6d00#  AH-0c6d00#save image tftp://10.155.30.230:newimg/-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Do you really want to update image?(Y/N)y | | |
| Test procedure | 1. Under CLI mode, do “save image”   CLI: “save image tftp://10.155.30.230:…”   1. Power off AP when AP read and verify Nand flash, check if AP can work normally | | |
| Expect result | AP can work normally | | |
| Test Result | PASS | | |

### After apply new Nand flash, check boot up message about TPM and other error messages

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC009 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | After apply new Nand flash, check boot up message about TPM and other error messages | | |
| Pre-condition | boot parameters:  ar7240> set\_bootparam  Change boot parameter, ENTER to skip the item  Device IP : [0.0.0.0]  TFTP Server IP : [0.0.0.0] 10.155.30.230  VLAN ID : [0]  NVLAN ID : [0]  Boot File : [] newimg/rialto-HiveOS-5-1r1-Dakar-TVforND-Jul-10-2012-071812190353-2012.img  Netboot after flashboot failed [1 for yes, 0 for no] : [0]  Netdump after crash [1 for yes, 0 for no]: [0]  Are you sure to save? [Y/N] y  chip #0: First 0xa last 0xa sector size 0x10000  10  Parameter saved  ar7240> image\_flash | | |
| Test procedure | 1. Enter bootload and set parameter:   “set\_bootparam”   1. Set TFTP server IP and Boot File as precondition 2. Set other boot params as default 3. Check boot up message about TPM and other error messages | | |
| Expect result | No TPM or other error messages | | |
| Test Result | PASS  //////no TPM, no abnormal errors  ar7240>  ar7240> reset  Resetting...U-boot DB120  DRAM:  sri  Wasp 1.2  wasp\_ddr\_initial\_config(259): (32bit) ddr2 init  128 MB  Top of RAM usable for U-Boot at: 88000000  Reserving 324k for U-Boot at: 87fac000  Reserving 136k for malloc() at: 87f8a000  Reserving 44 Bytes for Board Info at: 87f89fd4  Reserving 36 Bytes for Global Data at: 87f89fb0  Reserving 128k for boot params() at: 87f69fb0  Stack Pointer at: 87f69f98  relocating and jumping to code in DRAM  Now running in RAM - U-Boot at: 0x87fac000  Flash: 1 MB  \*\*\* Warning - bad CRC, using default environment  ag934x\_enet\_initialize...  wasp reset mask:c03300  WASP ----> F1 PHY \*  : cfg1 0xf cfg2 0x7114  eth0: 00:19:77:ff:00:00  F1Phy reg init  ATHR\_AUTONEG\_ADVERT:1DE1  ATHR\_1000BASET\_CONTROL:200  ATHR\_PHY\_CONTROL:3100  ATHRSF1\_PHY: Port 0, Neg Success  ATHRSF1\_PHY: unit 0 phy addr 0 eth0 up  Atheros on-chip NAND FLash Controller Driver, Version 0.1 (c) 2010 Atheros Communications, Ltd.  Ath Nand ID[87ff4178]: 1d:00:f1:ad:1d  Hynix NAND 128MiB 3,3V 8-bit [128MB]  chip #0: First 0xa last 0xa sector size 0x10000  10  Hit the space bar to stop the autoboot process: 0  Loading kernel from device 0: ath-nand (offset 0x800000) ... done  Loading rootfs from device 0: ath-nand (offset 0x1200000) ... done  Uncompressing Kernel Image ... No initrd  ## Transferring control to Linux (at address 80237e10) ...  commandline console=ttyS0,9600 root=01:00 init=/sbin/init console=ttyS0,9600 rd\_start=0x80500000 rd\_size=0x01900000  ## Giving linux memsize in bytes, 134217728  Booting Atheros AR934x  Mounting local file systems...  [board]: initialize soft i2c by gpio.  [board]: configure gpio 20, 19 for wifi 2.4G RX.  [board]: pull high gpio 15 for USB\_EN.  Aerohive Wireless Extension 1.0.0 ... INIT!  Aerohive Forwarding Engine module ... INIT!  athr\_gmac\_ring\_alloc Allocated 2048 at 0x85d13800  athr\_gmac\_ring\_alloc Allocated 3072 at 0x85f10000  WASP ----> F1e PHY  Setting Drop CRC Errors, Pause Frames and Length Error frames  ATHR\_AUTONEG\_ADVERT:DE1  ATHR\_1000BASET\_CONTROL:200  ATHR\_PHY\_CONTROL:1000  ATHRSF1\_PHY: Port 0, Neg Success  ATHRSF1\_PHY: unit 0 phy addr 0  ATH\_MAC\_TIMER: enet unit:0 is up...  RGMii 100Mbps full duplex  ATH\_MAC\_TIMER: done cfg2 0x7115 ifctl 0x10000 miictrl  Welcome to Aerohive Product  AH-0c6d00 login: | | |

### Power off AP when AP work normally with high throughput

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC010 | | |
| Priority | High | Automation Flag | No |
| Topology to use | AP------SW-----server | | |
| Description | Power off AP when AP work normally with high throughput | | |
| Pre-condition |  | | |
| Test procedure | 1. AP work normally with high throughput 2. Power off AP, Restart AP,check if exist abnormal debug log   CLI: sh \_core  sh \_kernel  sh log flash | | |
| Expect result | AP works normally. No abnormal debug log | | |
| Test Result | PASS | | |

### Download one other platform image, check if Nand flash corrupted

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC011 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Download one other platform image, check if Nand flash corrupted | | |
| Pre-condition |  | | |
| Test procedure | //Take AP121 as an example   1. AP121 works normally with rialto platform 2. Try to download other platform image (AP350 as Ex.)   CLI: “sav image tftp://10.155.30.230:newimg/ap350-HiveOS-041512054119-0632.img” | | |
| Expect result | Can not download other platform image | | |
| Test Result | PASS  AH-0c6d00#  AH-0c6d00#sh ver  Aerohive Networks Inc.  Copyright (C) 2006-2012  Version: HiveOS 5.1r2 release build0861  Build time: Wed Aug 8 18:42:28 UTC 2012  Build cookie: 080812054110  Platform: HiveAP121  Bootloader ver: v1.0.0.24  TPM ver: v1.2.35.8  Uptime: 0 weeks, 0 days, 0 hours, 3 minutes, 44 seconds  AH-0c6d00#  AH-0c6d00#  AH-0c6d00#save image tftp://10.155.30.230:newimg/ap120-HiveOS-5-1rX-Dakar-Jun->  Do you really want to update image?(Y/N)y  mode set to octet  Connected to 10.155.30.230 (10.155.30.230), port 69  getting from 10.155.30.230:newimg/ap120-HiveOS-5-1rX-Dakar-Jun-22-2012-080812054110-0809.img [octet]  Received bytes: 17207 KB  Received 17620428 bytes in 15.2 seconds [9291414 bit/s]  Image platform type error!  The format of image is incorrect!  ERROR: Save image failed!  AH-0c6d00# | | |

### Download different linux kernel version image, check if Nand flash corrupted

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC012 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP------SW-----server | | |
| Description | Download different linux kernel version image, check if Nand flash corrupted | | |
| Pre-condition |  | | |
| Test procedure | 1. AP works normally 2. Download different linux kernel version image, check if Nand flash corrupted | | |
| Expect result | AP works normally | | |
| Test Result | For rialto platform, only one linux version image. So skip this case this time. (20120725) | | |

### Continuously upgrade and downgrade, check if Nand flash corrupted

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC013 | | |
| Priority | Middle | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Continuously upgrade and downgrade, check if Nand flash corrupted | | |
| Pre-condition |  | | |
| Test procedure | 1. AP works normally 2. Try to upgrade 10 times continuously, check if Nand flash corrupted 3. Try to downgrade 10 times continuously, check if Nand flash corrupted | | |
| Expect result | No corruption | | |
| Test Result | PASS | | |

### Simulate crash issue, check if Nand flash affected

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC014 | | |
| Priority | Middle | Automation Flag | Yes |
| Topology to use | AP------SW-----server | | |
| Description | Simulate crash issue, check if Nand flash affected | | |
| Pre-condition |  | | |
| Test procedure | 1. AP works normally 2. Simulate crash issue, check if Nand flash affected   CLI: “\_crash \_kernel”  “show \_core”  “show \_kernel”  “show log flash” | | |
| Expect result | AP works normally. No abnormal debug log | | |
| Test Result | PASS  AH-0c6040#  AH-0c6040#sh \_core  AH-0c6040#sh \_ker  ktrace-2012-07-25\_06-59-50.txt  AH-0c6040#  AH-0c6040#  AH-0c6040#  AH-0c6040#sh log flash  2012-07-25 07:02:59 notice -ah\_cli\_ui: Admin "<admin>" successfully logged in  2012-07-25 07:01:03 info ntpclient: [ntpclient]Set time - Wed Jul 25 07:01:03 2012  1970-01-01 00:00:34 notice ah\_top: System is initialized  1970-01-01 00:00:19 alert ah\_dcd: last time rebooted at 1970-01-01\_00-00-18, reboot reason: hardware watchdog (probably NMI)  1970-01-01 00:00:19 crit ah\_dcd: kdump: kernel trace found on 2012-07-25\_06-59-50.  1970-01-01 00:00:18 info ah\_scd: Initial AP hostname:default(AH-0c6040), cli(AH-0c6040), value(AH-0c6040)  2012-07-25 06:55:12 notice -ah\_cli\_ui: Admin "<admin>" successfully logged in  2012-07-25 06:55:01 info ntpclient: [ntpclient]Set time - Wed Jul 25 06:55:01 2012  1970-01-01 00:00:34 notice ah\_top: System is initialized  1970-01-01 00:00:18 info ah\_scd: Initial AP hostname:default(AH-0c6040), cli(AH-0c6040), value(AH-0c6040) | | |

### Keep continuously print log message with normal running, check if Nand flash abnormal

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC015 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP------SW-----server | | |
| Description | Keep continuously print log message with normal running, check if Nand flash abnormal | | |
| Pre-condition |  | | |
| Test procedure | 1. AP works normally 2. Open debug   CLI: “\_kdebug fe basic”  “\_kdebug wifi basic”  “\_kdebug wifi-driver wifi0.1 action/assoc/auth”  “\_kdebug wifi-driver wifi1.1 action/assoc/auth”   1. Keep continuously print log message for 48 hours, check if Nand flash abnormal   CLI: “sh \_core”  “sh \_kernel”  “sh log flash” | | |
| Expect result | AP works normally. No abnormal debug log | | |
| Test Result | PASS | | |

### Keep continuously print log message with high throughput, check if Nand flash abnormal

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC016 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP------SW-----server | | |
| Description | Keep continuously print log message with high throughput, check if Nand flash abnormal | | |
| Pre-condition |  | | |
| Test procedure | 1. AP run high throughput continuously 2. Open debug   CLI: “\_kdebug fe basic”  “\_kdebug wifi basic”  “\_kdebug wifi-driver wifi0.1 action/assoc/auth”  “\_kdebug wifi-driver wifi1.1 action/assoc/auth”   1. Keep continuously print log message for 48 hours, check if Nand flash abnormal   CLI: “sh \_core”  “sh \_kernel”  “sh log flash” | | |
| Expect result | AP works normally. No abnormal debug log | | |
| Test Result | PASS | | |

### Enter bootload mode, check if the debug commands work

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_FunctionTest\_TC017 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP------SW-----server | | |
| Description | Enter bootload mode, check if the debug commands work | | |
| Pre-condition |  | | |
| Test procedure | 1. Enter bootload mode 2. Check if debug commands work   ar7240> ?  autoscr - run script from memory  base - print or set address offset  bdinfo - print Board Info structure  bootm - boot application image from memory  bootp - boot image via network using BootP/TFTP protocol  chpart - change active partition  cmp - memory compare  coninfo - print console devices and information  cp - memory copy  crc32 - checksum calculation  dhcp - invoke DHCP client to obtain IP/boot params  dump\_hw\_info - dump hardware info  echo - echo args to console  erase - erase FLASH memory  ethreg - S26 PHY Reg rd/wr utility  exit - exit script  flinfo - print FLASH memory information  format\_flash\_fs - format flash file system  format\_uboot\_env - format uboot environment.  fsinfo - print information about filesystems  fsload - load binary file from a filesystem image  go - start application at address 'addr'  help - print online help  icrc32 - checksum calculation  iloop - infinite loop on address range  image\_flash - upgrade image via network using TFTP protocol  image\_netboot - boot image via network using TFTP protocol  imd - i2c memory display  iminfo - print header information for application image  imls - list all images found in flash  imm - i2c memory modify (auto-incrementing)  imw - memory write (fill)  inm - memory modify (constant address)  iprobe - probe to discover valid I2C chip addresses  itest - return true/false on integer compare  ls - list files in a directory (default /)  md - memory display  mm - memory modify (auto-incrementing)  mtdparts- define flash/nand partitions  mtest - ALT RAM test  mw - memory write (fill)  nand - NAND sub-system  nboot - boot from NAND device  nfs - boot image via network using NFS protocol  nm - memory modify (constant address)  ping - send ICMP ECHO\_REQUEST to network host  pll cpu-pll dither ddr-pll dither - Set to change CPU & DDR speed  pll erase  pll get  print\_bootinfo - print boot info of device  print\_bootparam - print boot parameters of device  printenv- print environment variables  protect - enable or disable FLASH write protection  rarpboot- boot image via network using RARP/TFTP protocol  reset - Perform RESET of the CPU  reset\_dummy - Perform RESET of the CPU  run - run commands in an environment variable  saveenv - save environment variables to persistent storage  set\_bootparam - set boot parameters of device  setenv - set environment variables  sleep - delay execution for some time  srifpll cpu-pll ddr-pll - To change CPU & DDR speed through srif  srifpll erase  srifpll get  test - minimal test like /bin/sh  tftpboot- boot image via network using TFTP protocol  version - print monitor version | | |
| Expect result | Valid. Or give out correct info while the command is not supported. | | |
| Test Result | Bug18595 | | |

## Stress Test Case

### Save image while running high throughput, check if nand flash works normally

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_StressTest\_TC001 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | Client-----AP------SW-----Chariot server | | |
| Description | Save image while running high throughput, check if nand flash works normally | | |
| Pre-condition |  | | |
| Test procedure | 1. AP run high throughput continuously 2. Save image while running high throughput, check if nand flash works normally   CLI: “sh \_core”  “sh \_kernel”  “sh log flash” | | |
| Expect result | AP works normally. No abnormal debug log | | |
| Test Result | PASS | | |

### Continuous upgrade/downgrade for 10 hours by automation, check if nand flash corrupted

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | NandFlash\_StressTest\_TC002 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use | Client-----AP------SW-----Chariot server | | |
| Description | Continuous upgrade/downgrade for 10 hours by automation, check if nand flash corrupted | | |
| Pre-condition |  | | |
| Test procedure | 1. Continuous upgrade/downgrade for 10 hours by automation   CLI: “save image …”   1. Check if Nand flash corrupted   CLI: “sh \_kernel” | | |
| Expect result | No crash | | |
| Test Result | PASS  AH-0c6040#  AH-0c6040#sh \_kernel  AH-0c6040#  AH-0c6040# | | |

## Performance Test Case

## CLI Management (Automation Status: Yes/No)

<firstly, list all cli that this feature has one by one>

<CLI test case>

## GUI Management-HiveManager

<List HM test case or test log>

## GUI Management-HiveUI

<List HiveUI test case or test log>