

**SiliconMotion Update SN Tool User Guide**

**Release Note**

| **Revision** | **Effect Date** | **Description of the Change** |
| --- | --- | --- |
| V0.1 | 2013-08-26 | Initial Version |
| V1.0 | 2014-05-12 | Add tool description |

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1. Overview
2. File construction

-- <WORK FOLDER>

|-- *Config\*

| |-- *ConfigEMBZA.txt*

| |-- *…*

|-- *Firmware\*

| |-- *ISPxxx.bin*

| |-- *MPISP.bin*

| |-- …

|-- Setting\

| |-- CountCur.dat

| |-- CountLim.dat

| |-- DeviceName.dat

| |-- DeviceType.dat

| |-- SaveLOG1Path.dat

| |-- SaveLOG2Path.dat

| |-- TestMachineNo.dat

|-- *Vendor\*

| |-- …

|-- *external\_text\*

| |-- …

|-- model\_list.txt

|-- SMIDLL.dll

|-- UpdateSnTool.exe

(\*) *Italics* means the folder name or file name can be configurable in configuration files.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File or folder name** | | **Description** | **Flag** | |
| File | UpdateSnTool.exe | The executable file of this tool. | M | N |
| File | SMIDLL.dll | Library for access SMI | M | N |
| File | model\_list.txt | Main configuration file. | M | N |
| Folder | Setting | Contains setting files. See NECi’s design specification. | M | N |
| Folder | *Config* | Contains module configure files. | M | C |
| File | *Config\models.txt* | Model configuration files | M | C |
| Folder | *Firmware* | Contains ISP files and MPISP | M | C |
|  |  |  |  |  |
| Folder | *Vendor* | Contains vendor specific data. | O | C |
| Folder | *External\_test* | Contains external test tools and data. | O | C |

(\*) Flags: M, mandatory. The file or folder is mandatory.

O, optional. The file or folder is optional.

C, configurable. The file name or folder name can be configured in configuration files.

N, non-configurable. The file name or folder name is fixed and cannot be changed.

1. Configuration files
   1. Configuration files layer



* 1. Main configuration file (model\_list.txt)

This tool needs a main configuration file to descript how many models there are and other global properties. The file name of main configuration file is fixed as **model\_list.txt**. This file should be placed in same folder as the executable file.

All of the section and keys are capital sensitive.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Section / Key** | | **Description** | **Sample value** | **Flags** |
| **[MODELS]** | | This section contains some global properties |  | M |
|  | count | Number of models in the configuration. The number should be same as the quantities of [MODELxx] sections | 3 | M |
|  | PREFIX | The serial number’s prefix for all models. This setting is used for checking input serial number of verify. See NECi design specification page 8. | EMB | M |
|  | controller | Controller name for Ferri. SATA Bx: “LT2244”, PATA Bx: “SM2236” | SM2236 | M |
| **[MODELxx]** | | These sections contain descriptions of each model. xx is a 2 digital numeric from 01 to N. N is the count of models defined in MODELS section. |  | M |
|  | name | Model name displayed in model select dialog and main dialog. (NECi Spec. p.10) | EMBZA (NVDISK2-SX0160B) | M |
|  | config\_file | Path and file name of model’s configuration. The path is related to <WORK FOLDER> | Config\ConfigEMBZA.txt | M |
| **[EXTERNAL]** | | This section descripts an external test tool. |  | M |
|  | COMMAND | Command of the external tool. Should be in double quotation. | "svt" | O |
|  | PATH | The folder where external tool executes. The path is related to <WORK FOLDER>. Should be in double quotation. | "external\_test" | O |
|  | PARAMETER | Specify a command line parameter for external test tool. Some place holder can be used to pass model information to external tool. | See 4. For detail. | O |
|  | SHOW\_WINDOW | 1: Show tools window during external test.  0: Do not show window. | 0 | O |
|  | TIME\_OUT | Timeout value for external test. Unit: second. | Infinitive | O |

(\*) Flags: M, mandatory. The file or folder is mandatory.

O, optional. The file or folder is optional.

* 1. Model configuration file

| **Section / Key** | | **Description** | **Sample value** | **Flags** |
| --- | --- | --- | --- | --- |
| **[CONFIGURE]** | |  |  |  |
|  | ModelName | Model name which will be written to ID table. | NVDISK2-SX0160B | M |
|  | Capacity(dec) | Total quantity of sectors. | 31194576 | M |
|  | CapacitySetting\_C  (decimal) | Cylinder of the device |  | O |
|  | CapacitySetting\_H  (decimal) | Heads per cylinder |  | O |
|  | CapacitySetting\_S  (decimal) | Sectors per head |  | O |
|  | DisableISPCheckversion | 0: Check if the ISP version in Ferri is same as which in ISP bin file.  1: Do not check ISP version. Used for update F/W | Default: 0 | O |
|  | UDMAModeSetting | UDMA MODE | 2 | O |
|  | I/F Setting | 1: SATA GEN I.  2: SATA GEN II. |  | O |
|  | TRIM | 0: Do not support TRIM command.  1: Support TRIM command. |  | O |
|  | DEVSLP | 0: Do not support device sleep feature.  1: Support device sleep feature. |  | O |
|  | FW\_VER | Check firmware version in ID table. | M1107N | M |
|  | SNPREFIX | This model’s prefix of serial number. (See NECi Spec. p.8) | EMBZA | M |
| **[SOURCE]** | |  |  |  |
|  | ISP | Path and file name of ISP bin file. The path is related to <WORK FOLDER> | Firmware\ISP\_SM651GA\_BB\_M1107N.bin | M |
|  | ISPchecksum | Checksum of ISP bin file in decimal. | 17982317 | M |
|  | MPISP | Path and file name of MPISP bin file. The path is related to <WORK FOLDER>. This file is necessary for download ISP to Ferri. | Firmware\MPISP\_SM651X\_BB.bin | M |
|  | MPISP\_CHECKSUM | Checksum of MPISP bin file in decimal. If this value is not set or equal to 0, do not compare checksum. |  | O |
|  | FLASHID | Path and file name of FLASHID bin file. The path is related to <WORK FOLDER>. Using this file to check if correct Ferri model is connected. (NECi Spec. p.8) |  | O |
|  | FLASHID\_CHECKSUM | Checksum of FLASH bin file in decimal. If this value is not set or equal to 0, do not compare checksum. |  | O |
|  | VENDOR | Path and file name of vendor specific bin file. The path is related to <WORK FOLDER>. |  | M |

(\*) Flags: M, mandatory. The file or folder is mandatory.

O, optional. The file or folder is optional.

* 1. Setting files

See details in NECi spec, page 15.

1. External test
   1. Overview

Update sn tool will invoke an external test after all update and verify process succeeds. The external test tool can be specified in section [EXTERNAL] in configuration file model\_list.txt. All models use same setting for external test. Update sn tool passes model’s information to external tool by command line parameter. Some kinds of place holder can be used to specify model information. External tool can return a result to update sn tool by process exit code.

* 1. Parameter

The parameter is passed from update sn tool to external tool. Some kinds of place holder can be used to pass the model information to external tool. A place holder is stated by % and followed by a letter. The place holder letter is capital sensitive. No space is necessary to insert before or after place holder.

* + 1. Place holder list

|  |  |  |
| --- | --- | --- |
| **Place holder** | **Description** | **Example Value** |
| %D | Replaced by module’s logical drive name. | \\.\D: |
| %F | Replaced by firmware version in ID table. | M1107N |
| %L | Replaced by module’s logical drive letter. | D |
| %M | Replaced by model name in ID table. | NVDISK2-SX0160B |
| %N | Replaced by input serial number. | EMBZA22222222222 |
| %T | Replaced by test mode. | UPDATE or VERIFY |

* 1. Test result

External tool returns the test result by process exit code. 0 means testing passed. 1~100 (0x01~0x64) means an error. If an error happens the error code returns from external tool will be recorded in to log file.

The error code is defined by external tool itself.

1. Error code

| **Code** | **Error Message** | **Description** |
| --- | --- | --- |
| **0x01~0x64** | External test returned an error. | Defined by external tool. |
| **0xA1** | Scan Drive Fail! | Scan drive fail |
| **0xA2** | Download S/N Fail! | Download serial number fail |
| **0xA3** | Open Drive Fail! | Open drive fail, it may be not SMI SSD drive |
| **0xA4** | Scan Drive exceed 30 Seconds! | Scan drive time out 30 seconds |
| **0xA5** | Reset Device Fail! | Power off and power on fail. |
| **0xA6** | Verify S/N Fail! | Verify S/N Fail between card and setting |
| **0xA8** | Compare vendor specific no match! | Verify vendor specific fail |
| **0xA9** | Compare Capacity No Match! | Verify capacity fail |
| **0xAA** | Compare Model Name No Match! | Verify model name fail |
| **0xAB** | Compare Checksum Not Match! | Compare ISP.bin with the checksum in configuration file is not match |
| **0XAC** | Compare ISP version Not Match! | Compare FW version of device is not match with ISP.bin |
| **0XAD** | Open File Fail! | Open relative file fail |
| **0XAE** | Write File Fail! | Write relative file fail |
| **0xAF** | Unknown Fail | Unknown Fail |
| **0XA00** | I/F Setting Not Match! | Verify I/F Setting fail |
| **0xA01** | TRIM Not Match! | Verify TRIM Setting fail |
| **0XA02** | DEVSLP Not Match! | Verify DEVSLP Setting fail |
| **0XA03** | Compare ISP content Not Match | Update ISP and read ISP back to compare if not match |
| **0XA04** | Read ISP Fail! | Read ISP fail |
| **0XA05** | Compare f/w version not match! | Firmware version in ID table does not match. |
| **0XA06** | External test timeout. | Timeout when run external test tool. |
| **0xA07** | Compare CHS setting not match! | Verify CHS setting in identify failed |
| **0xA08** | Compare UDMA mode not match! | Verify UDMA mode in identify failed |