Firmware Update Application Guide

SONiX

October 25, 2021

v1.0.6.14-1025

Use Files Introduction

- **Fw_update :   BurnAP Tool**
- **Device_Config.ini :   Tool settings**
- **SerialNumber.txt :   Mask parameter**
- **XXXXX.bin :   FW binary file**

Device_Config.ini

- **OpenSpecDev**
  - ✓ 1：Restricted burning by PID / VID (default)
  - ■ 0：Unrestricted
- **Rework**
  - ✓ 1： Depend on SerialNumberAndReworkAddress (default)
  - ■ 0： Disable
- **WriteSeiralNumber**
  - ■ 1：Enable Write SN which is from SerailNumber.txt
  - ✓ 0：Disable (default)

- **SerialNumberAndReworkAddress**
  - ✓ 1 : write to iSerialNumber (default)
  - ■ 0 : write to iManufacturer

Device_Config.ini

- **SensorInitialTime(ms): 3000**
  - fine tune sensor initial time (Adjusted by engineer)
- **EraseDelayTime(ms): 1500**
  - fine erase delay time (Adjusted by engineer)
- **DeviceFileName: XXXXXX.bin**
  - F/W Binary file name. (User fill in)

- **BypassSecureBIO: 0**
  - 1：bypass mechanism protect. (For new backend)
  - ✓ 0：Disable (default)
- **ReserveCalibrationData: 0**
  - 1：Enable Write Calibration from Calibration.ini for special sensor. (HM1091)
  - ✓ 0：Disable (default)
- **CalibrationSectorSize: 3000**
  - Read the specified calibration size.

FW Update Command

- **root@:/.../FolderPath..# ./fw_update_{x86|x64|arm} Para1**
  - Para1 field
    - -1 is 64kB FW update
    - -2 is 128kB FW update
    - -3 is 256kB FW update

- **Example**
  - ./fw_update_x86 -2
    - Update 256KB Firmware and Keep the serial number information.
  - ./fw_update_x64 --getbcd
    - Get Device BCD version.
  - ./fw_update_arm -h
    - Provide operational information

Use Terminal Window

1. **To enable developer mode.**

2. **Copy "SONiX_BurnerAP" folder to machine's 'Downloads' folder.**

3. **Open crosh shell terminal (Ctrl+Alt+T)**

4. **Change "user" execution permissions.**
   - sudo mount –o remount,rw –io exec /home/chronos/user

```
crosh> shell
chronos@localhost / $ sudo mount -o remount,rw -io exec /home/chronos/user
Password:
chronos@localhost / $ 
```

Use Terminal Window

5. Go to the "SONiX_BurnerAP" folder.

6. Change "fw_update" file permissions.

```
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ ls
Device_Config.ini  'Firmware Update Application Guide_v1.0.6.11.pdf'  fw_update_x86
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ chmod 777 fw_update_x86
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ ls
Device_Config.ini  'Firmware Update Application Guide_v1.0.6.11.pdf'  fw_update_x86
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $
```

7. Check Devicefile(xxxx.bin)'s size.

```
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ ls -s
total 1732
  4 Device_Config.ini                                      932 fw_update        256 SN9C2808S_OV5693_MIPI_All.bin
536 'Firmware Update Application Guide_v1.0.6.11.pdf'        4 SerialNumber.txt
```

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Use Terminal Window

8. Execute the burning tool.

➢ ./fw_update_x86 -3

- -1 is 64kB FW update
- -2 is 128kB FW update
- -3 is 256kB FW update

```
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ sudo ./fw_update_x86 -3

Program : SONiX F/W Update Tool on Linux
Version : v1.0.6.14
Date    : 2021-10-25 18:25:37
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Prepare : enumerate webcam ...
Prepare : select webcam #0 ...
[Progress] Cam_Select OK!
```

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FW Update Result

```
Program : SONiX F/W Update Tool on Linux
Version : v1.0.6.14
Date    : 2021-10-25 18:25:37
(c)2019 Copyright Sonix Technology Co., Ltd., All Rights Reserved.

Prepare : enumerate webcam ...
Prepare : select webcam #0 ...
[Progress] Cam_Select OK!

---------Device Info---------
VendorID:0x0c45
ProductID:0x672f
bcdDevice:0x710
---------End Of Device Info---------

[Progress] Setup FW file OK!

Source : 256K from FILE                    - SN9C2808S_OV5693_MIPI_All.bin
[Progress] Sensor Initial Time = 3000 (ms)
[Progress] Burn to FLASH
Start the burning process ...
Step 0 : INIT --------------> Pass!
[Progress] Run Set_Serial_Number_Rework
[Progress] ReserveCalibration OK !
[Progress] Erase Delay Time = 1500 (ms)
[Progress] BypassFirstFrame OK !
Step 1 : ERASE --------------> Pass!
Step 2 : CHECK --------------> Pass!
Step 3 : PROGRAM -------------> Pass!
Step 4 : VERIFY -------------> Pass!
Step 5 : END PROCESS --------> Pass!
[Progress] Burn to Flash Success!
Exit program!
```

Reference

■ Get Device BCD version

> ➢ ./fw_update_x86 --getbcd

```
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ sudo ./fw_update_x86 --getbcd

Program : SONiX F/W Update Tool on Linux
Version : v1.0.6.14
Date    : 2021-10-25 18:24:42
(c)2019 Copyright Sonix Technology Co., Ltd., All Rights Reserved.

Prepare : enumerate webcam ...
Prepare : select webcam #0 ...
[Progress] Cam_Select OK!
---------Get BCD---------
bcdDevice:0x710
Manufacturer:0x2, Sonix Technology Co., Ltd.
SerialNumber:0x0,
Flash Type:1
---------------------------------
Exit program!
```

■ Help Description

> ➢ ./fw_update_x86 -h

```
===============Help Description===============

COMMAND: ./fw_update [options1]
    or: ./fw_update [options2] [argv1] [argv2]

NAME:    SONiX F/W Update Tool on Linux.

DESCRIPTION:
    Setting device info in Device_Config.ini first and using the following command to process the device.

OPTIONS1:
    -1              Burn 64k single file.
    -2              Burn 128k single file.
    -3              Burn 256k single file.
    -h, --help      print help information
    -v              print application version
    --getbcd        Get device information.(bcdDevice, iManufacturer, iSerialNumber)
    --getver        Get device firmware version.
    --usb-info      print all devices information

OPTIONS2:
    --dbg=<str>     Test debug
    --getAddr=<str> Get device value from address.
    --setAddr=<str> Change device's address value.
    --dump=<str>    Save F/W data from device to file.

Arg1:   Device address(Hex value) or flash size of burn file
Arg2:   File name
```

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