

Firmware Update Application Guide

SONiX

May 23, 2024

Use Files Introduction

- **Fw_update :** BurnAP Tool
- **Device_Config.ini :** Tool settings
- **SerialNumber.txt :** Mask parameter
- **XXXXXX.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) (default)
 - 0 : Disable
- **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 Para1

- Para1 field

- -1 is 64KB FW update
- -2 is 128KB FW update
- -3 is 256KB FW update
- -4 is 512KB FW update

■ Example

- ./fw_update -3
 - Update 256KB Firmware and Keep the serial number information.
- ./fw_update --getbcd
 - Get Device BCD version.
- ./fw_update -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+F2)
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
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ ls
Device_Config.ini 'Firmware Update Application Guide_v1.0.6.11.pdf' fw_update
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 -ls
total 1732
  4 Device_Config.ini
536 'Firmware Update Application Guide_v1.0.6.11.pdf'
 932 fw_update
 256 SN9C2808S_OV5693_MIPI_All.bin
   4 SerialNumber.txt
```

Use Terminal Window

8. Execute the burning tool.

➤ `./fw_update -3`

- -1 is 64KB FW update
- -2 is 128KB FW update
- -3 is 256KB FW update
- -4 is 512KB FW update

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

```
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!
```


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 --getbcd`

```
chronos@localhost ~/Downloads/0BA503T3_v0710_28_20210916_Chrome_Update $ sudo ./fw_update --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=====
```

```
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
```

■ Help Description

➤ `./fw_update -h`