

H2OFFT™ (Flash Firmware Tool)

User Guide for Microsoft* Windows* Version

Rev. 5.31 Approved
Prepared by SI-Driver Team
Apr 23 2014
Insyde Software Corp.



Copyright © 1998-2014, All Rights Reserved.
Insyde Software Corp.


No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form, or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of Insyde Software Corp.

Disclaimer

Insyde Software Corp. provides this document and associated programs “as is” without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose.

This document could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in future revisions of this document. Insyde Software Corp. is under no obligation to notify any person of the changes.

The following trademarks are used in this document:

 and InsydeH2O are registered trademarks and H2OFFT is a trademark of Insyde Software Corp.

All other trademarks or trade names are property of their respective holders.

Revision History

Rev.	Date	Summary
3.72	09/27/2009	Initial version
3.93	05/19/2010	Update platform.ini & command setting
3.98	09/08/2010	Update platform.ini
4.02	10/06/2010	Update platform.ini & command setting
4.04	10/30/2010	Update platform.ini & command setting & iFdPacker explain
5.00	12/24/2010	Update platform.ini & iFdPacker version
5.02	3/14/2011	Update platform.ini & iFdPacker version
5.03	4/14/2011	Update platform.ini & command setting
5.05	5/05/2011	Update platform.ini & iFdPacker version
5.06	5/25/2011	Update platform.ini & iFdPacker version
5.08	9/02/2011	Update platform.ini & command setting
5.13	02/24/2012	Update platform.ini & command setting
5.16	03/20/2012	Update platform.ini & command setting & iFdPacker version
5.19	05/24/2012	Update platform.ini & command setting
5.20	06/21/2012	Update platform.ini
5.22	08/07/2012	Update platform.ini & iFdPacker version
5.24	08/15/2012	Update platform.ini & iFdPacker version
5.26	09/19/2012	Update platform.ini & command setting & iFdPacker version
5.27	10/12/2012	Update iFdPacker version & support PFAT image update
5.29	01/14/2013	Update platform.ini & command setting
5.30	02/07/2013	Update iFdPacker version
5.31	05/09/2014	Update platform.ini & command setting

Table of Contents

1.	Introduction	5
1.1.	Overview	5
1.2.	Key Points	5
1.3.	Support Features	5
1.4.	System Requirements	5
2.	Customizing H2OFFT-W	6
3.	Using H2OFFT-W	36
3.1.	Starting H2OFFT-W	36
3.2.	Running H2OFFT-W in the Command Line	37
3.3.	Package H2OFFT-W	38
3.4.	Flash Tester	40
4.	Flash BIOS by H2OFFT-W	41
4.1.	Main Flash Feature	41
4.2.	Update Block Feature	42
4.3.	Flash EC that is not in the BIOS Region	42
4.4.	Flash ME that is combined with BIOS	43
5.	Run in Command Mode	44
5.1.	Show IHISI version	44
5.2.	Read BIOS by SMI	44
5.3.	Flash non-share EC (Flash EC only.)	44
5.4.	CMOS Clean	44
5.5.	Running Silent Mode by “-s”	45
5.6.	Silent mode and don’t check version	45
5.7.	Convert virtual address to physical address	45
5.8.	Disable confirm dialog	45
5.9.	Flash BIOS protect region	46
5.10.	Support "H2OFFT-W.exe biosfile.bin" command	46
5.11.	Support updates customize data by IHISI	46
5.12.	run in manufacturing mode	46
6.	Support PFAT image update	47
6.1.	How to sign a PFAT BIOS image?	47
6.2.	How to update signed PFAT BIOS image via flash utility?	47
7.	Other Setting Features in platform.ini	48
7.1.	Display H2OFFT-W version	48
7.2.	Backup ROM	48
7.3.	UI setting	49
7.4.	Other Features	52
7.5.	ReturnErrorCode and ReturnCodeDefinition	52
7.6.	OEM Project Function	53
8.	FAQs	54

1. Introduction

1.1. Overview

H2OFFT is a flash utility provided by Insyde Software. It serves as a powerful and intelligent tool for updating and maintaining the computer BIOS under various Windows environments. H2OFFT also features a friendly graphical user interface for saving, loading and updating the BIOS, as well as displaying the system BIOS information.

H2OFFT (for windows) works under the Windows 2000, Windows XP, Windows Vista, Windows 7 and Windows 8 operating systems. This chapter provides a quick introduction on H2OFFT, its key features, and what it can do for you.

1.2. Key Points

H2OFFT-W provides the following key features:

- **Pure WDM Solution:** H2OFFT-W is a pure Windows Driver Model (WDM) utility, requiring IHISI support service in the BIOS layer.
- **Easy To Customize:** H2OFFT-W is based on modularized code including UI, DLL, WDM and OEM layers. The OEM layer provides a convenient way to add hardware dependent codes such as a special ROM write bit controller, EC commands, and high voltage control.
- **Multiple OS Support:** H2OFFT-W has been fully tested with the most popular Microsoft Windows operating systems, such as Windows 2000, Windows XP, Windows Vista, and Windows 7 and Windows 8. This gives you great flexibility in using H2OFFT-W to support various Windows OS platforms.
- **2MB/4MB/8MB/16MB Flash Parts:** H2OFFT-W supports update for 2MB, 4MB, 8MB and 16MB Flash BIOS.
- **Boot Block Protection:** H2OFFT-W also includes Boot Block Protection. Many systems come with a feature where a “boot block” program is included as part of the BIOS. Boot Block is used to recover corrupted BIOS id in case the system does not boot properly.
- **64-bit OS Support:** H2OFFT-W supports Windows XP x64, Windows Vista x64, Windows 7 x64 and Windows 8 x64 versions. Windows PE Vista support.

1.3. Support Features

H2OFFT-W offers you the following functionality:

- Allows to save and create a backup file of the current system BIOS before updating with a new one.
- Allows to easily update the system BIOS under Windows without needing to reboot the system or boot from DOS.
- Allows you to verify the system BIOS to ensure system reliability.
- Provides you with a friendly Windows graphical user interface (GUI) for maintaining your system BIOS.
- Auto detects hardware settings to help determine H2OFFT-W system compatibility.

1.4. System Requirements

Installing H2OFFT-W is quick and easy. However, you need to be aware of its system requirements before installing the program:

- **H2OFFT-W requires** one of the following operating systems:
 - Windows 2000 /XP /Vista /7 /8
 - Windows PE 4.0
- InsydeH2O® BIOS-compatible motherboard (H2OFFT-W will auto detect the BIOS on the motherboard for compatibility).
- InsydeH2O BIOS that supports Insyde IHISI.

2. Customizing H2OFFT-W

Prior to shipping H2OFFT-W to your end users, you may need to customize it. H2OFFT-W allows customization of a variety of options.

To customize your H2OFFT-W utility, you can choose two of the following methods.

- ✓ Modifying the configuration file "Platform.ini".
- ✓ Specifying the H2OFFT-W Options screens.

Modifying the Configuration File

Supported Section List.

1. [AC_Adapter]
2. [AutoWakeup]
3. [Bios_Version_Check]
4. [BIOSVersionFormat]
5. [CapsuleAudit]
6. [CommonFlash]
7. [FDFile]
8. [FlashComplete]
9. [FlashSecureBIOSOverride]
10. [ForceFlash]
11. [Log_file]
12. [MessageStringTable]
13. [MULTI_FD]
14. [Option]
15. [Others]
16. [PasswordCheck]
17. [PermitFlashVersion]
18. [Platform_Check]
19. [PlatformVersion]
20. [Region]
21. [ReturnCodeDefinition]
22. [ReturnErrorCode]
23. [SecureUpdate]
24. [UI]
25. [UpdateEC]
26. [UpdateExtraData]
27. [UpdateOEMME]
28. [Version]

2.1. [AC_Adapter]

Performing AC/DC check before firmware update.

Flag	(default) 0 : 1 :	Don't check AC. Check AC.
BatteryCheck	(default) 0 : 1 :	Don't check battery. Check battery.
BatteryBound	1~100 (default) 20	Low battery boundary (percentage). When BatteryCheck=1 this value will be referenced. And only when the battery life percentage is bigger than inputted value, it can do flash.
LauncherAcWarning	(default) A02	String : A key name which list in [MessageStringTable].
SecurityAcWarning	(default) A02	String : A key name which list in [MessageStringTable].

2.2. [AutoWakeup]

Supporting auto wake up when flash update is completed and shutdown system

Flag	(default) 0 : 1 :	Disable. Enable auto power on via RTC.
Interval	(default) 120	Integer : Unit is second. Interval time after system turn off.

2.3. [Bios_Version_Check]

Perform firmware version check before update firmware.

Flag	0 : Don't check rom file version. 1 : Check BIOS version. When rom file version is older than BIOS, it will display a warning message and close application. (default) 2 : Depend on BIOS report to decide the BIOS version check function is enable or disabled.
CheckByBios	(default) 0 : Normal process. 1 : It will pass version by IHISI to BIOS and check by BIOS. When BIOS return not allow to flash, it will be terminated the process. When BIOS allow to flash, it will go ahead and do its normal process. When this flag is enable but BIOS not support, it will skip version check and assume allow to flash.
CheckByBiosErrorMessage	"This BIOS file is not allow to flash. The flash process will be terminated." (default) String : User defined error message when BIOS is not allow to flash this version image.

2.4. [BIOSVersionFormat]

The below configuration for firmware version format is used to define version format check.

BIOSVFEEnable	(default) 0 : 1 :	Disabled. Enabled.
VersionFormat	[X] [N] [T] [.] [D]	: The field is masked. It will NOT be compared. : The digit field can be ASCII, case-sensitive. : It's the same definition with N. But T is a case-insensitive. : Dot is also a mask. It will NOT be compared. : Don't care field. It will NOT be compared. This field can be empty. It only allow to put at start or end of the version format. For example: Onboard version 1.21B flash to 1.22, VersionFormat must be N.NND N.NND means the valid format is N.NN and N.NNX, the 5th character will be ignore in version compare.

2.5. [CapsuleAudit]

Support the detection of the right signing key for capsule image

Flag	(default) 0 : 1 :	Disabled. Enable Capsule Update Audit.
QAKey	(default) empty	String : Image file signing by Insyde QA test key.
OemKey	(default) empty	String : Image file signing by OEM/ODM key.

2.6. [CommonFlash]

This function is only available for specific ODMs.

Flag	(default) empty	<p>A switch flag setting string. Ex: "CPVER:[1] ACEN DCEN FHRST" Detail parameter please reference following table.</p> <table><tr><td>Parameter</td><td>Description</td></tr><tr><td colspan="2">-----+</td></tr><tr><td>PTEN</td><td>All protection enable.</td></tr><tr><td>PTDIS</td><td>All protection disable.</td></tr><tr><td>ACEN</td><td>AC protect checking enable.</td></tr><tr><td>ACDIS</td><td>AC protect checking disable.</td></tr><tr><td>DCEN</td><td>DC & Gangue protect checking enable.</td></tr><tr><td>DCDIS</td><td>DC & Gangue protect checking disable.</td></tr><tr><td>RESSEN</td><td>BIOS Regression enable.</td></tr><tr><td>RESSDIS</td><td>BIOS Regression disable.</td></tr><tr><td>PJMDEN</td><td>Project Model string protect checking enable.</td></tr><tr><td>PJMDDIS</td><td>Project Model string protect checking disable.</td></tr><tr><td>FHOS</td><td>System back to OS after flash BIOS completely.</td></tr><tr><td>FHST</td><td>System directly shutdown after flash BIOS</td></tr><tr><td>FHRST</td><td>completely.</td></tr><tr><td>CPVER:[Num]</td><td>System directly reboot after flash BIOS completely.</td></tr><tr><td></td><td>Common Flash Version information</td></tr><tr><td></td><td>Ex: [Num] is decimal and start from 1.</td></tr></table>	Parameter	Description	-----+		PTEN	All protection enable.	PTDIS	All protection disable.	ACEN	AC protect checking enable.	ACDIS	AC protect checking disable.	DCEN	DC & Gangue protect checking enable.	DCDIS	DC & Gangue protect checking disable.	RESSEN	BIOS Regression enable.	RESSDIS	BIOS Regression disable.	PJMDEN	Project Model string protect checking enable.	PJMDDIS	Project Model string protect checking disable.	FHOS	System back to OS after flash BIOS completely.	FHST	System directly shutdown after flash BIOS	FHRST	completely.	CPVER:[Num]	System directly reboot after flash BIOS completely.		Common Flash Version information		Ex: [Num] is decimal and start from 1.
Parameter	Description																																					
-----+																																						
PTEN	All protection enable.																																					
PTDIS	All protection disable.																																					
ACEN	AC protect checking enable.																																					
ACDIS	AC protect checking disable.																																					
DCEN	DC & Gangue protect checking enable.																																					
DCDIS	DC & Gangue protect checking disable.																																					
RESSEN	BIOS Regression enable.																																					
RESSDIS	BIOS Regression disable.																																					
PJMDEN	Project Model string protect checking enable.																																					
PJMDDIS	Project Model string protect checking disable.																																					
FHOS	System back to OS after flash BIOS completely.																																					
FHST	System directly shutdown after flash BIOS																																					
FHRST	completely.																																					
CPVER:[Num]	System directly reboot after flash BIOS completely.																																					
	Common Flash Version information																																					
	Ex: [Num] is decimal and start from 1.																																					
ErrorMsg00	(default) empty	No error message.																																				
ErrorMsg01	(default) empty	AC error message.																																				
ErrorMsg02	(default) empty	DC error message.																																				
ErrorMsg03	(default) empty	DC gas gauge under xx% message.																																				
ErrorMsg04	(default) empty	BIOS version error message.																																				
ErrorMsg05	(default) empty	Model name error message.																																				
ErrorMsg10	(default) empty	No support this version of Flash Common Interface message.																																				
ErrorMsg##	(default) empty	The number ## is in hex.																																				

2.7. [FDFile]

Indicate which new firmware image is selected to update.

FileName	(default) empty	Utility always load this file. If the FileName is empty, utility will search current directory and load the first found FD file.
-----------------	------------------------	---

2.8. [FlashComplete]

The below configuration is to override default action and to apply optional action in end of flash when launching in normal flash mode.

Action	0 : Do nothing. 1 : Shutdown. (default) 2 : Reboot.
Dialog	(default) 0 : Don't display dialog. 1 : Display dialog. 2 : Display dialog and wait several seconds.
Counter	(default) 15 Unit is second The number of seconds for countdown to reboot or shutdown.
ActionOverride	(default) 0 : This key is disabled. Flash utility bases action key setting to do original behavior. 1 : This key is enabled. Flash utility just does close itself in silent mode.
Pause	(default) 0 : Disable to pause after flash complete. 1 : Enable to pause after flash complete.
PauseWarning	default : messagestringA03 A key name which list in [MessageStringTable].

2.9. [FlashSecureBIOSOverride]

The below configuration is to override default action when launching in secure flash mode.

EnableFlashSecureBIOSOverride	(default) 0 : Disable action override. Use the action which returned from BIOS. 1 : Enable the action override when flashing secure BIOS in OS.
Action	0 : S3. (default) 1 : Reboot. 2 : Shutdown. 3 : Do nothing.

2.10. [ForceFlash]

Decide what flash region will be forced to update base on below configuration if the some region BIOS report had been protected.

ALL	(default) 0 : 1 :	Reserve all protected areas. Flash all ROM parts.
BB_PEI CPU_Microcode Variable DXE EC Password OEM_NVS Logo Type#09 Type#08	(default) 0 : 1 :	Protect these areas if BIOS report them are protected areas. Force flash these areas if BIOS report them are protected areas.

2.11. [Log_file]

For debugging purposes, we can generate a log file and output error code via CMOS.

Flag	(default) 0 : 1 :	Don't log to file. Utility will log to specify file.
FileName		H2OFFT-W.log (default) String : Log file name.
CMOS_Flag	(default) 0 : 1 :	Disable CMOS debug. Enable CMOS debug.
CMOS_INDEX_PORT	(default) 70 :	70 : Use 0x70 port as index port.
CMOS_DATA_PORT	(default) 71 :	71 : Use 0x71 port as index port.
CMOS_OFFSET	(default) 0,0 :	xx is high byte offset; (00 ~ FF) yy is low byte offset, (00 ~ FF)

2.12. [MessageStringTable]

Provide a message string table to define customized messages.

messagestring1 messagestringA00 messagestringA01 messagestringA02 messagestringA03 messagestringA04	(default) empty	The message string must as following format messagestring#="Your message here." The # is a number in Decimal or Hex. If a multi-line message is required, you can use "\n" in message string for new line.
--	------------------------	--

2.13. [MULTI_FD]

Some of the flash package can contain multiply firmware image for different SKU. The following setting can be configured for what condition to the detect firmware image.

Flag	(default) 0 : 1 :	disable enable
FD#XX	FD#01 ~ FD#99	XX is decimal number from 01 to 99. String : condition type, condition

<u>condition of IO :</u> IO ,[Offset], [Mask], [Value], [File Name], [ME File Name], [INI File Name]	: Offset in hex. : IO type supports BYTE, WORD and DWORD in hex. : IO type supports BYTE, WORD and DWORD in hex. : File name of FD. : ME File name of FD. If it exists, utility will run OEMME flash feature. : INI File name for overwrite.
---	---

<u>condition of PCI :</u> PCI ,[Bus], [Device], [Function], [Offset], [Mask], [Value], [File Name], [ME File Name], [INI File Name]	: Bus number : Device number : Function number : Offset in hex. : PCI type supports DWORD in hex only. : PCI type supports DWORD in hex only. : File name of FD. : ME File name of FD. If it exists, utility will run OEMME flash feature. : INI File name for overwrite.
---	---

<u>condition of ID :</u> ID ,[Model Name], [File Name], [ME File Name], [INI File Name]	: The platform ID, model name string. : File name of FD. : ME File name of FD. : INI File name for overwrite.
--	--

<u>condition of OS :</u> OS ,[OS Version], [File Name], [ME File Name], [INI File Name]	: 32bit or 64bit OS. 32 for 32bit OS, 64 for 64bit OS. : File name of FD. : ME File name of FD. : INI File name for overwrite.
--	---

<u>condition of MPCII :</u> MPCII ,[Condition Number], PCI-[Bus]-[Device]-[Function]-[Offset]-[Mask]-[Value], IO-[Offset]-[Mask]-[Value], [File Name], [ME File Name], [INI File Name]	: Condition type numbrer : Condition of PCI : Condition of IO : File name of FD. : ME File name of FD. : INI File name for overwrite.
---	--

2.14. [Option]

The below setting is to detect whether to automatically or manually start to enter flash process.

Flag	(default) 0 : 2 :	Auto flash mode. User flash mode, including start, exit buttons.
------	----------------------	---

2.15. [Others]

Support for miscellaneous functions.

ClearCMOS	(default) 0 : 1 : 2 :	Auto flash mode. User option mode, including option, start, exit buttons. (Option button will disable on secure flash mode.) User flash mode, including start, exit buttons.
DisableCompare	(default) 0 : 1 : 2 :	Read BIOS and compare difference before writing. If the readed data is the same as the data we want to write, it will not do the write action. Don't do compare before writing. Just do write action directly.
DisableVerify	(default) 0 : 1 :	Verify BIOS after writing. Don't verify BIOS after writing.
VerifyErrorRetry	(default) 3	Retry times. If the value is not zero means enable verify retry, and will retry setted times. 0 for disable verify retry.
SMIErrorRetryDelay	(default) 100	Unit is millisecond Delay time during SMI error retry (millisecond).
SMIErrorRetry	(default) 5	Retry times when SMI fail. (Note: This may let flash time become longer.)
AllowVersion	(default) 000	Version : Utility will do following process. If you want to run into UEFI flash update, the current version (on board BIOS) must be higher than this version (as "AllowVersion" key). Current BIOS version > allow version: Utility will run into UEFI flash update. Current BIOS version <= allow version: Utility will run into Window flash to update BIOS. If AllowVersion=000, utility always into UEFI flash update.
ForceIHISIVersion		(default) empty Version : This flag will force override the IHISI version which will passing to BIOS.
EnablePrivateRegionMovement	(default) 0 : 1 :	Disable private region movement. Enable private region movement. It will backup original private region and relocate to new address which defined in new image BVDT when update whole BIOS.
DisableSecureCapsuleFlash	(default) 0 : 1 :	Enable flash secure BIOS on normal platform. Disable flash secure BIOS on normal platform.

2.16. [PasswordCheck]

Support for password check before firmware update.

PasswordCheckEnable	(default) 0 : 1 :	Disable the password check function. Enable the password check function.
MsgCaption		"Password confirmation" (default) String : The dialog box caption.
MsgPreface		"Please enter password" (default) String : The preface of password entering.
MsgSuccess		"Password is correct." (default) String : The string displayed when the comparing result returned by BIOS is 0x00.
MsgFailure		"Password is incorrect. Please retry again." (default) String : The string displayed when the comparing result returned by BIOS is 0x01.

2.17. [PermitFlashVersion]

This section is for conditional version definition for BIOS update.

When this function enabled, flash utility will compare on board BIOS version with conditional version and then decide to continue flash progress or not.

For example:

In following condition

PFVFunctionEnable=1, SingleVersion=A03, "Please update to BIOS version A03 first!".

When on board BIOS version is older than A03, it will pop up the error dialog with the message "Please update to BIOS version A03 first!" and then terminated.

Otherwise it will continue original flash process.

The MultiVersion1~20 are similar as SingleVersion, but they only available when the [Platform_Check] is enable to compare the 20 platform IDs.

They must be pair of the PlatformName of [Platform_Check] section.

For example: When the platform ID matches with PlatformName2, the Version2 will be used.

The section is depended on other sections if using [PermitFlashVersion].

- a. If single version is enabled,
Please also configure section [Bios_Version_Check] for version check
- b. If multi-version is enabled,
Please also configure following sections [Bios_Version_Check] for version check,
section [Platform_Check] for platform name check and section [PlatformVersion] for multi-platform version check

PFVFunctionEnable	(default) 0 : 1 :	Disable conditional version check. Enable conditional version check.
SingleVersion MultiVersion1~20		String : XXXX, "Message String" XXXX is the conditional version, regarding version check rule please refer section "BIOSVersionFormat". "Message String" is the message to show when the on board BIOS version is older than the conditional version.

2.18. [Platform_Check]

To do platform name check before firmware update

Flag	<p>0 :</p> <p>1 :</p> <p>2 :</p> <p>(default) 3 :</p>	<p>Don't check project ID.</p> <p>Check project ID of new file. If ID is different with current BIOS, the utility will close.</p> <p>Utility will compare current platform ID with the 20 platform IDs. If anyone is match, it will go ahead, otherwise utility will close.</p> <p>Depends on BIOS report.</p>
PlatformName1~20		<p>(default) empty</p> <p>String : If ROM file do not contain correct ID, user can define ID here.</p>

2.19. [PlatformVersion]

This flag only available when the [Platform_Check] is enable to compare the 20 platform IDs.

The Version is pair with the PlatformName.

For example: When the platform ID matches with PlatformName2, the Version2 will be used.

Flag	(default) 0 : 1 :	Don't use multi version. Use the version in the list instead of the version in file.
Version1~20		(default) empty If ROM file do not contain correct version, user can define version here.

2.20. [Region]

This section is used to update region of Intel firmware.

Default is flash all regions when the values all set to 0.

If any one of the regions set to 1, it will only flash specific regions.

If the BIOS is built without additional Intel firmware as like ME, GbE and Descriptor or BIOS is an AMD firmware which does not support ME, please ignore this section.

BIOS	(default) 0 : 1 :	Don't flash. Flash BIOS region.
GbE	(default) 0 : 1 :	Don't flash. Flash GbE region.
ME	(default) 0 : 1 :	Don't flash. Flash ME region.
DESC	(default) 0 : 1 :	Don't flash. Flash Descriptor region.
Platform_Data	(default) 0 : 1 :	Don't flash. Flash Platform Data region.

2.21. [ReturnCodeDefinition]

The value behind comma is the return value in silent mode.

RETURN_SUCCESSFUL	(default) 0	Use input value as return code. 9999 : Use the default value above.
RETURN_MODEL_CHECK_FAIL	(default) 259	Use input value as return code. 9999 : Use the default value above.
RETURN_USER_CONFIRM_CANCEL	(default) 1602	Use input value as return code. 9999 : Use the default value above.
RETURN_AC_NOT_CONNECT	(default) 1602	Use input value as return code. 9999 : Use the default value above.
RETURN_LOAD_DRIVER_FAIL	(default) 259	Use input value as return code. 9999 : Use the default value above.
RETURN_NEED_REBOOT	(default) 3010	Use input value as return code. 9999 : Use the default value above.
RETURN_USER_EXIT	(default) 1602	Use input value as return code. 9999 : Use the default value above.
RETURN_SAME_VERSION_CHECK	(default) 1602	Use input value as return code. 9999 : Use the default value above.

2.22. [ReturnErrorCode]

The value behind comma is the return value in silent mode.

FileNotFound	(default) 3	If utility can't find the BIOS file, it will return this error code.
ErrorBeforeFlash	(default) 4	If error occur before flash process, it will return this error code.
BatteryNotConnect	(default) 4	If battery not connect, it will return this error code. (This error is separated from ErrorBeforeFlash.)
BatteryCapacityNotEnough	(default) 4	If battery capacity not enough, it will return this error code. (This error is separated from ErrorBeforeFlash.)
WriteROMFail	(default) 5	If error occur during write ROM process, it will return this error code.
WriteECFail	(default) 6	If error occur during write EC process, it will return this error code.
WriteExtraDataFail	(default) 7	If error occur during write Extra Data process, it will return this error code.

2.23. [SecureUpdate]

In secure flash mode, we need somewhere to temporarily save secure flash capsule. Below flag is to decide the capsule is put in ESP or default is put memory space.

Flag	(default) 0 : 1 :	Disable. Write the capsule to ESP (EFI system partition).
------	----------------------	--

2.24. [UI]

The below configurations are provided to allow users to decide what information is present and what action is applied in the user interface.

Confirm	0 : (default) 1 :	Don't display confirm dialog. Display confirm dialog.
Silent	(default) 0 : 1 :	Normal mode. Silent mode, hide main dialog.
SilentWithDialog	0 : 1 : (default) 2 :	Don't display any dialog. Display main dialog only. Display all dialogs except main dialog.
DisplayID	0 : (default) 1 :	Don't display BIOS ID. Display BIOS ID.
InsydeInfo	0 : (default) 1 :	Don't display Insyde copyright information and URL. Display Insyde copyright information and URL.
VersionInfo	0 : (default) 1 :	Don't display BIOS version. Display BIOS version.
GroupInfo	0 : (default) 1 :	0 : Don't display group box. 1 : Display group box.
ConfirmInfo	(default) 0 : 1 :	Don't display BIOS version and build date information in confirm dialog. Display BIOS version and build date information in confirm dialog.
ConfirmInfoRDate	(default) 0 : 1 :	Don't display BIOS version and release date information in confirm dialog. Display BIOS version and release date information in confirm dialog. When this flag set to 1, the ConfirmInfo flag won't be referenced.
OnFlashingBeep	(default) 0 : 1 :	Don't beep on flashing. Beep on flashing.

[UI] contd.

OnFlashingBeepDelayTime	(default) 800	Unit is millisecond Set beep delay time (Milliseconds).
DisableMouseAndKeyboardInput	(default) 0 : 1 :	Don't hook mouse and keyboard. Hook mouse and keyboard without "CTRL+ALT+DEL".
BeforeRunToolDelayTime	(default) 0	Unit is second Delay number of seconds before flash process.
ProgramStartToWrongMessageBox	(default) 0 : 1 :	Don't pop-up warning dialog before flash process. Pop-up a warning dialog before flash process.
GetFDFileButton	(default) 0 : 1 :	Hide FD file browse button. Show the button for browsing FD file.
DelayBeforeFlash	(default) 0	Unit is second Integer : Delay number of seconds before flashing.
ConfirmDialogCustomizeMessage		Empty. A key name which list in [MessageStringTable]. For inserting additional notification message in confirm dialog.
ShowUpdateROMAddress	(default) 0 : 1 :	Show progress bar when updating BIOS. Show ROM address when updating BIOS.
Elapse	(default) 0 : 1 :	Disable to show elapse time during progressing BIOS update. Enable to show elapse time during progressing BIOS update.

2.25. [UpdateEC]

The configuration is configured for EC update.

Flag	(default) 0 : 1 :	Don't flash EC by BIOS. Flash EC by BIOS.
EC_Dialog	(default) 0 : 1 :	Don't display confirm dialog when begin to update EC. Show confirm dialog.
BIOS_Only	(default) 0 : 1 :	Flash EC and BIOS file. Only flash BIOS part of the merge file.
EC_Only	(default) 0 : 1 :	Flash EC and BIOS file. Flash only EC binary file.
EC_Path		empty (default) EC file name.
EC_Compare	(default) 0 : 1 :	Don't do compare before writing. Just do write action directly. Read EC and compare difference before writing. If the read data is the same as the data we want to write, it will not do the write action.
EC_Verify	(default) 0 : 1 :	Don't verify EC. Verify EC after writing.
EC_VerifyErrorRetry	(default) 3	Retry times. If the value is not zero means enable verify retry, and will retry setted times. 0 for disable verify retry.
EC_DockWarning		messagestringA04 (default) A key name which list in [MessageStringTable].

2.26. [UpdateExtraData]

This feature will let you just input data to update by IHISI. Data type will define by BIOS OEM.
If new image is NOT processed by IFIT tool, please do not enable this function.

Flag	(default) 0 : 1 :	Do not update extra data. Update extra data by IHISI. If new image is NOT processed by IFIT tool, please do not enable this function.
DataType	(default) 1 4 C	Integer number. The meaning of data type number will define by BIOS OEM. Now will support 1, 4~C. Ex:1,4,6,5 -> Mean you want to update 1,4,6,5 Four type of data. Notice: 2, 3 cannot used.
type#errorcode??		This key is for customizing error message which occur in update extra data. For example: When an error occur when updating type 4, BIOS return the error code A2. AP will find the key "type4errorcodeA2" and get the string ID "messagestring4", and find the string in [MessageStringTable]. Then shows the message string instead of standard error message. # : The the type number define in DataType. (Hex) ?? : The error code returned by BIOS. Available value range A0~AF. X : Message string number.

2.27. [UpdateOEMME]

The Intel firmware update tool (FWUpdLcl.exe) is dependent on each chipset generation, the tool in release flash package is a sample and may be not suitable for your project.

Please remember to replace the FWUpdLcl.exe with right version before you will utilize function to update Intel firmware (ME or TXE).

MEFileName		empty (default) If this file name or Multi-FD ME file name exist tool will run this case to flash ME.
CheckVersion	(default) 0 : 1 : 2 : 3 :	Don't check ME file version. Check ME file version. When ME flash error is cause of same version and downgrade version do not show error and continue to flash. When ME flash error, show error but continue to flash.
Command		empty (default) When this field is empty and don't want to check ME version, utility will use "-f %filename -generic -allowsv" as default command. The %filename is a keyword which will be replaced with the value in MEFileName within this section or the filename in MULTI_FD section.

2.28. [Version]

Version		<p>Empty (default)</p> <p>Version number string for display It will be show on UI, and append on current version number When current version is 5.01 and this version string set to "12", then it will show "H2OFFT-W V5.01.12" on main dialog caption.</p>
---------	--	---

3. Using H2OFFT-W

3.1. Starting H2OFFT-W

After setting the configure file, you can begin running H2OFFT-W. Before you begin to update the BIOS, you must put the ROM file together with H2OFFT-W. There are options within platform.ini file for you to run H2OFFT-W.

[Option]

Flag=0 -> Auto-flash mode.

2 -> User flash mode, including start, exit buttons.

Refer to the explanation below:

1. Flag set to 0: H2OFFT-W will show this main dialog (Figure 3-1). It will run automatically.

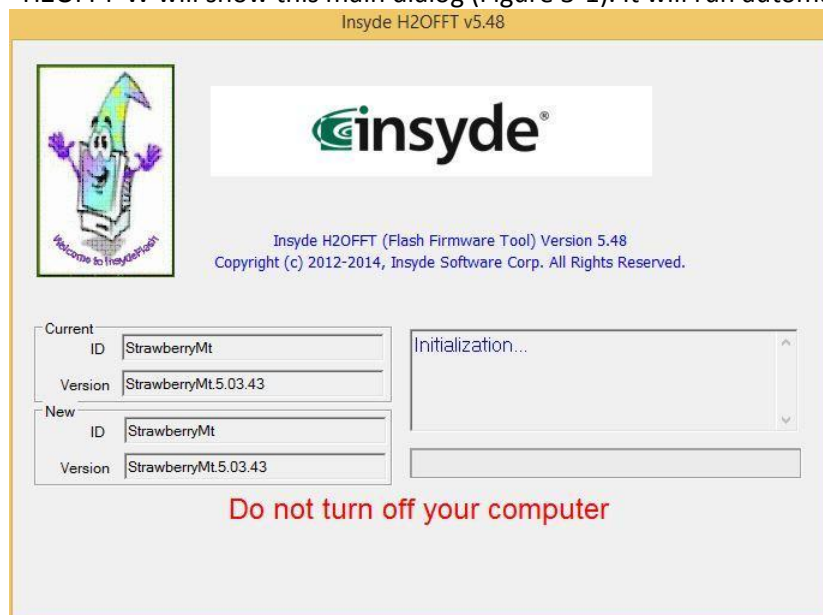


Figure 3-1. Auto-flash mode

2. Flag set to 2: H2OFFT-W will show this main dialog (Figure 3-2), click start to run H2OFFT-W



Figure 3-2. User flash mode

3.2. Running H2OFFT-W in the Command Line

There are some features that will run in the command line. These features include silent mode. These features will be described in detail in chapter 5. This chapter focuses on command line usage.

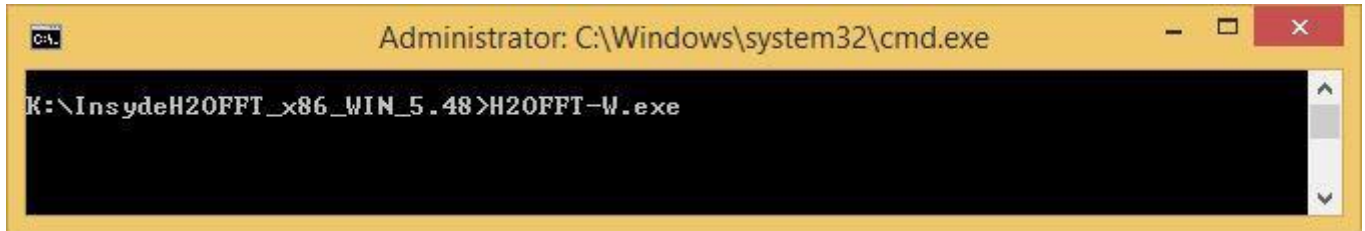


Figure 3-4. Run H2OFFT-W in cmd.exe

1. Running cmd.exe.
2. Key in the folder which H2OFFT-W.exe in (Figure 3-4).
3. Running H2OFFT-W.exe with type the command.

3.3. Package H2OFFT-W

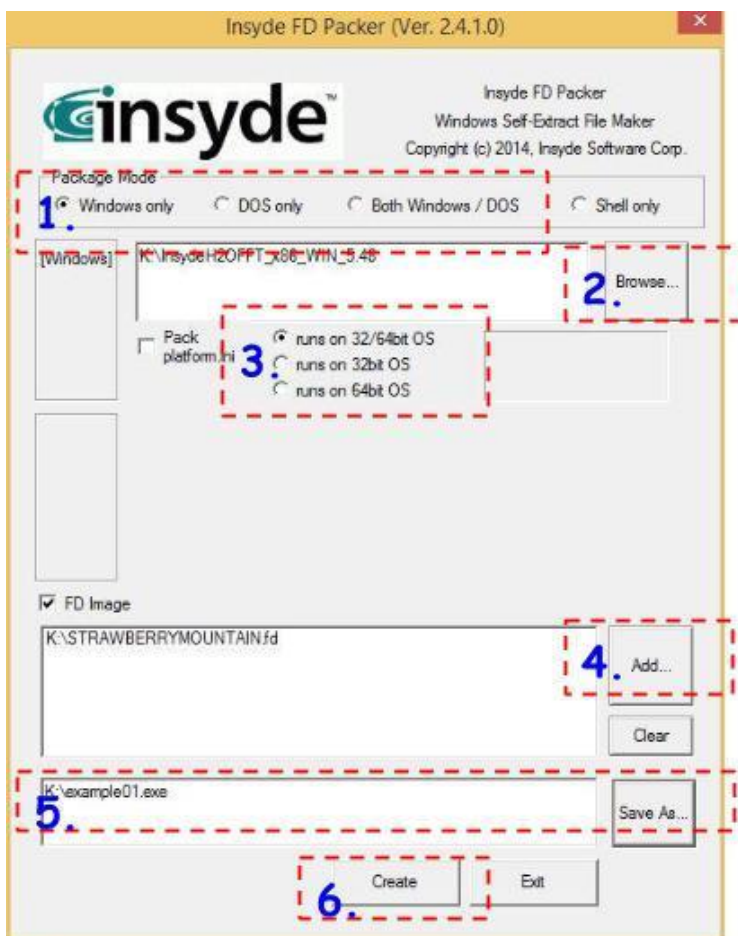
Locate “iFdPacker.exe” in the H2OFFT-W folder. You can use this tool to package H2OFFT-W and binary files with the setting in Platform.ini.

In addition to the H2OFFT-W utility, BIOS ROM files, etc., the “iFdPacker.exe” is the InsydeFdPacker utility for you to generate an executable file.

Additionally, you can use InsydeFdPacker to pack the entire H2OFFT-W folder into an executable file. To use InsydeFdPacker, follow these procedures:

A. Run package H2OFFT-W step (For Windows setting):

1. Run iFdPacker.exe (by double click) in tool folder.



1. Select Package mode item

2. Click “Browse” to select directory of H2OFFT-W-W package.

3. Select windows mode support OS.

- runs on 32/64bits supports
 - Windows 32/64bit OS
 - Windows PE 32bit
- runs on 32bits supports
 - Windows 32bit OS
 - Windows PE 32bit
- runs on 64bits supports
 - Windows 64bit OS
 - Windows PE 64bit

4. Click [Add] to select BIOS image.

5. Click [Save As] to select output file folder and specify a filename.

6. Click [Create] to pack.

B. Support run command line

1. Command Description:

	Command	Description
1	-winsrc PATH	The path of WinFlash
2	-dossrc PATH	The path of DosFlash
3	-shlsrc PATH	The path of ShellFlash
4	-b [3264 32 64]	The WinFlash Build Type 3264 - 32bit Ap runs on 32/64bit OS 32 - 32bit Ap runs on 32bit OS 64 - 64bit Ap runs on 64bit OS
5	-winini	Windows pack platform.ini
6	-dosini	Dos pack platform.ini
7	-shlini	Shell pack platform.ini
8	-arg "flag"	Dos/Shell argument with quotation marks
9	-argfilter "flag"	Dos/Shell argument filter with quotation marks
10	-fv FILE	The path of firmware file
11	-output FILE	The single package file
12	-h	The usage message

2. Example:

a. Pack Windows Only:

```
iFdPacker.exe -winsrc d:\Insyde\WinFlash
               -winini
               -b 3264
               -fv d:\file1.fv
               -fv d:\file2.fd
               -output d:\OutputFile\myFlashUtility.exe
```

b. Pack both Windows and Dos:

```
iFdPacker.exe -winsrc d:\Insyde\WinFlash
               -winini
               -b 3264
               -dossrc d:\Insyde\flashit
               -dosini
               -fv d:\file1.fv
               -arg "-bios"
               -output d:\OutputFile\myFlashUtility.exe
```

3.4. Flash Tester

There is the Flash Tester in the flash folder, which provides a long run test feature:

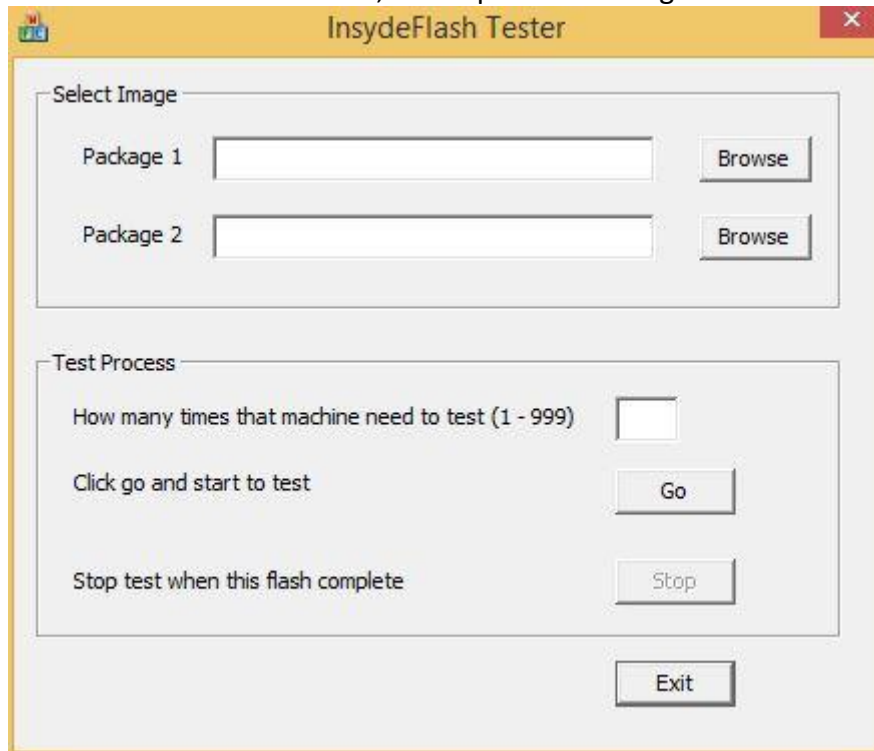


Figure 3-10. The Flash Tester

1. This tool will run the binary file packaged from InsydeFdPackage.exe.
2. Package 1 sets the package file that you want to test.
3. Package 2 sets an additional package file to test.
4. Enter the number of tests you would like to run.
5. Click "GO" to start this tool.

The "Stop" button allows you to stop the extended test.

The "Exit" button is to close this dialog.

Notes:

PS: Flash tester needs to be run as Administrator account in Windows 8.

PS: Run "Net user administrator /active:yes" in cmd then use netplwiz utility to set Administrator account automatic logon for Windows 8.

PS: The file name in Package1 and Package2 can be the same. Both of them are necessary. You cannot enter one file and run the test.

4. Flash BIOS by H2OFFT-W

H2OFFT-W supports updating the BIOS in many different conditions. This includes flashing a specific region in the BIOS and flashing the BIOS without protected areas.

4.1. Main Flash Feature

H2OFFT-W provides you with the ability to update the entire BIOS ROM with many conditions. H2OFFT-W will detect the regions status and BIOS protect areas in this feature.

Check before flash. Before flashing, H2OFFT-W will do the below things:

1. AC_Adapter.

Flag	Check the power status.
BatteryCheck	Check the battery power status.
BatteryBound	Set the boundary of the battery.

2. Platform_Check

Flag	Flag = 1, checks the new platform name and current BIOS platform name. Flag = 2, checks the below platform name and current BIOS platform name. If one of them matches, H2OFFT-W will start to flash.
PlatformName#	Input the name what you want to change the new platform name.

3. BIOS_Version_Check

Flag	Check the BIOS version. When a new BIOS version is not newer than the current BIOS, H2OFFT-W will show an error message and stop.
------	---

- **Intel regions.** This is exclusive to the Intel platform. You can set them in section named "Region".
- **BIOS protect areas.** BIOS may define many protected areas. You can set them in the section "ForceFlash".

1. ForceFlash.

ALL	H2OFFT-W will flash all blocks in here.
-----	---

- **Compare feature.** Before writing data to the BIOS, H2OFFT-W will read data from the BIOS and then compare both write and read data. If they are the same, H2OFFT-W will skip this block and continue to flash the next block. You still can flash BIOS in the event that the data matches by disabling this feature. It is defined from the flag "DisableCompare" in the section named "Others". After writing data to BIOS, H2OFFT-W will do the compare feature. If they are not the same, H2OFFT-W will pop a dialog and stop. This feature can be disabled from the flag "DisableVerify" in the section "Others".

- **Flash complete action.** After flashing, the tool will let the BIOS know that the flash is complete. You can decide to restart, shut down or do nothing in this instance. Please modify this feature by “Action” in the section named “FlashComplete”.

1. FlashComplete.

Action	When 0, H2OFFT-W will do nothing after flash is complete. When 1, H2OFFT-W will shut down after flash is complete. When 2, H2OFFT-W will reboot after flash is complete.
Dialog	When 0, it will not show this dialog. When 1, it will show this dialog. When 2, it will show this dialog and wait several second to close the dialog automatically.
Counter	If users need to reboot or shut down automatically within several seconds, they can set the counter to an integer.

4.2. Update Block Feature

In this feature, H2OFFT-W allows you to update a part of BIOS ROM. Please set “PatchFV” in “UpdateBlock” section.

FileName	The file you want to update.
FileOffset.	This is the offset of your file in hexadecimal. H2OFFT-W will start to flash from this offset.
FlashSize	Set the size which you want to flash here in hexadecimal.
PhysicalAddress	The start address of the BIOS in memory is here.
FvID	When the “flag” in section “Platform_Check” is 1, H2OFFT-W will check the name in “FvID” and new file platform name.
IDErrorAction	When platform name check does not match, H2OFFT-W will perform according to this setting.. When it is 1, H2OFFT-W will prompt the error message box. When it is 2, H2OFFT-W will close the tool and reboot/shutdown. It is dependent on the “Action” which is setting in section “FlashComplete”.

4.3. Flash EC that is not in the BIOS Region

This section describes the situation when the EC is not in the BIOS block. The EC ROM is separated, which means a non-share ROM solution. Refer to the explanation below to update both BIOS with EC in one file.

The tool will merge both the BIOS and EC binary files into one file. Please set EC in front of BIOS in the merged file.

Ex:copy /b EC.bin+BIOS.bin Merge.bin

Please set these flags in platform.ini:

[FlashComplete]

Action=1 or Action=2

[UpdateEC]

Flag=1

In this feature, shutdown and reboot is decided on Action.

When you start to flash EC, you can choose to confirm.

If EC_Dialog = 0, it will show a small dialog to tell you start to update EC, and close after 3 seconds.

If EC_Dialog = 1, it will show a dialog to ask for the next step

If you only want to flash the BIOS part, please set the flag “BIOS_Only = 1”. The tool will not flash EC even if the file is the merged file.

3. For other settings for flash, please refer to **Table 2-1**.

Below are some examples for your reference:

- ✓ When you want to flash the EC file “ec.bin” and the ROM file “rom.fd”, the merged file “merge.bin” is the file that is merged by EC and BIOS.
- ✓ When you want to flash whole BIOS binary with EC, you need to set these two flags. Additionally, you need to set the flag “ALL=1” and flash the file “merge.bin” to flash both EC and whole BIOS binary.
- ✓ When you want to flash only BIOS region with EC, you need to set these two flags. Additionally, you need to set the flag “BIOS=1” and flash the file “merge.bin” to flash both EC and BIOS block.

Notes:

This feature requires BIOS support for special SMI. Please contact with Insyde BIOS engineers for details.

4.4. Flash ME that is combined with BIOS

This section describes flashing the ME region in non-descriptor mode.

The tool will merge these two files into one file. Please set ME in front of BIOS in the merged file.

Ex:copy /b ME.bin+BIOS.bin Merge.bin

1. Please set these flags in platform.ini:

[FlashComplete]

Action=0 or Action=1 or Action=2

[UpdateME]

Flag=1

In this feature, shutdown and reboot is decided on Action.

2. The other settings for flash please refer **Table 2-1**.

Below are some examples for reference:

- ✓ When you want to flash the ME file “me.bin” and the ROM file “rom.fd”, the merged file “merge.bin” is the file that is merged by ME and BIOS.
- ✓ You want to flash whole BIOS binary with ME. You need to set these two flags. Additionally, you need to set the flag “ALL=1” and flash the file “merge.bin” to flash ME and whole BIOS binary.
- ✓ You want to flash only BIOS with ME. You need to set these two flags. Additionally, you need to set the flag “BIOS=1” and flash the file “merge.bin” to flash both ME and BIOS block.

Notes:


This feature requires BIOS support for special SMI. Please contact with Insyde BIOS engineers for details.

5. Run in Command Mode

In addition to flashing the BIOS, H2OFFT-W includes other features. This chapter will show these features, which are used in the command line.

5.1. Show IHISI version

You can show IHISI version. Please use this command “-iv”



```

Administrator: Command Prompt
K:\InsydeH2OFFT_x86_WIN_5.48>H2OFFT-W.exe /iv
Tool IHISI version: 2.0.4
BIOS IHISI version: 2.0.1
  
```

Figure 5-1. Show IHISI version

5.2. Read BIOS by SMI

You can read the BIOS by SMI and save the current BIOS to a binary file. Please use this command “-g [-base:] [-size:]”



```

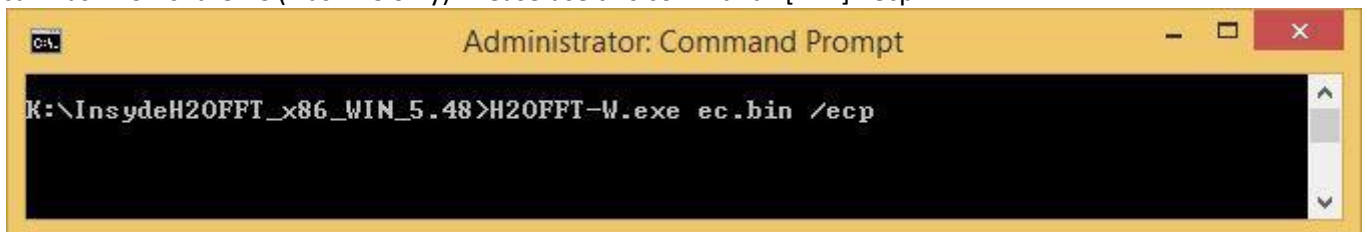
Administrator: Command Prompt
K:\InsydeH2OFFT_x86_WIN_5.48>H2OFFT-W.exe current.bin /g

reading rom ...
progress: 37%
  
```

Figure 5-2. Read BIOS to current.bin

5.3. Flash non-share EC (Flash EC only.)

You can flash non-share EC (Flash EC only). Please use this command “[FILE] -ecp”.



```

Administrator: Command Prompt
K:\InsydeH2OFFT_x86_WIN_5.48>H2OFFT-W.exe ec.bin /ecp
  
```

Figure 5-3. Flash non-share EC

5.4. Running Silent Mode by “-s”

Use “-s” to run the tool in silent mode. When you use this feature, H2OFFT-W will not show any dialogs. All messages will instead send return code.



Figure 5-5. Running Silent mode by “-s”

The flag “silentWithDialog” in platform.ini provides you three types of behavior in this feature.

Set to 0, H2OFFT-W won’t display any dialog.

Set to 1, H2OFFT-W will display main dialog.

Set to 2, H2OFFT-W will display all dialogs without main dialog.

5.5. Disable confirm dialog

You can disable the confirm dialog with command “-noconfirm”. (must be added as latest parameter).

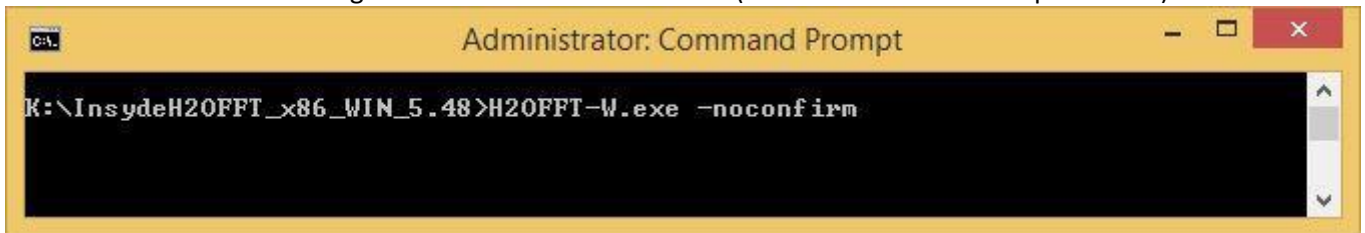


Figure 5-8. Disable confirm dialog

5.6. Flash BIOS protect region

You can update partial region base on protecting map. Type the protected region type(Hex). Please use the command “H2OFFT-W.exe profile.fv -pbi:Type”.



Figure 5-9. Flash BIOS protect region

5.7. Support "H2OFFT-W.exe biosfile.bin" command

You can use a command to flash BIOS. Please use the command “H2OFFT-W.exe biosfile.bin”.

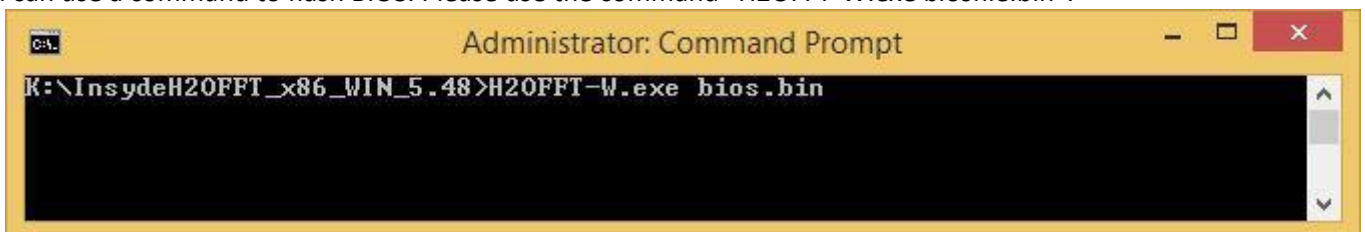


Figure 5-10. Support "H2OFFT-W.exe biosfile.bin" command

5.8. Support updates customize data by IHISI

H2OFFT-D.exe (filename) -edt:#@:"value"

You can use -edt#@:"Value" for updating customized data (such as logo with signature) by IHISI.

- # — from 4 ~ C.
- @ — F, S, W, DW
 - F — means file
 - S — means string
 - W — means word value
 - DW — means double word value

Example:

Update type 4 data, the source is file.

And update type 5 data, the source is string.

- -edt4f:logo.jpg -edt5s:"Input string"

Update a type 9 data, the source is WORD.

- -edt9w:"0x1234"

Update a type C data, the source is DWORD

- -edtc dw:"0x12345678"

```
Administrator: Command Prompt
K:\InsydeH2OFFT_x86_WIN_5.48>H2OFFT-W.exe -edt4S:"test"
```

Figure 5-11. Support updates customize data by IHISI

5.9. Run in manufacturing mode

Application notify BIOS current system is in manufacturing mode. BIOS can do some special process for this run in manufacturing mode.

```
Administrator: Command Prompt
K:\InsydeH2OFFT_x86_WIN_5.48>H2OFFT-W.exe /mfg
```

6. Support PFAT image update

6.1. How to sign a PFAT BIOS image?

Support for PFAT image update requires BIOS version: SharkBay 03.72.37.0018.

1. System Requirements:
 - a. Microsoft Windows 7 or later.
 - b. Microsoft "SignTool.exe". (Included in the Microsoft Windows SDK package. v6.1.7600.16385 or later).
 - c. Make sure the SignTool.exe is in the System Environment Variable "path".
2. Please install QA Certificate in your system. (Reference QA Certificate Installation Guide) You need QA.pfx file and double-click to install it into your system.
3. Use iEFIFlashSigner.exe to sign PFAT BIOS image in command mode. (Output file name: isflash.bin)

Example:

Sign PFAT bios image only command:

```
iEFIFlashSigner.exe -n "QA Certificate." -bios BIOS_PFAT.fd
```

(PS: BIOS_PFAT.fd is PFAT BIOS image file name)

6.2. How to update signed PFAT BIOS image via flash utility?

Please put isflash.bin file into H2OFFT-W folder and run H2OFFT-W.exe to update.

7. Other Setting Features in platform.ini

This chapter will describe the other flags and features in platform.ini.

7.1. Display H2OFFT-W version

This feature allows you to modify the version. It will show on the top of Flash main dialog.

This picture shows the status when “Version” is 00 in platform.ini.

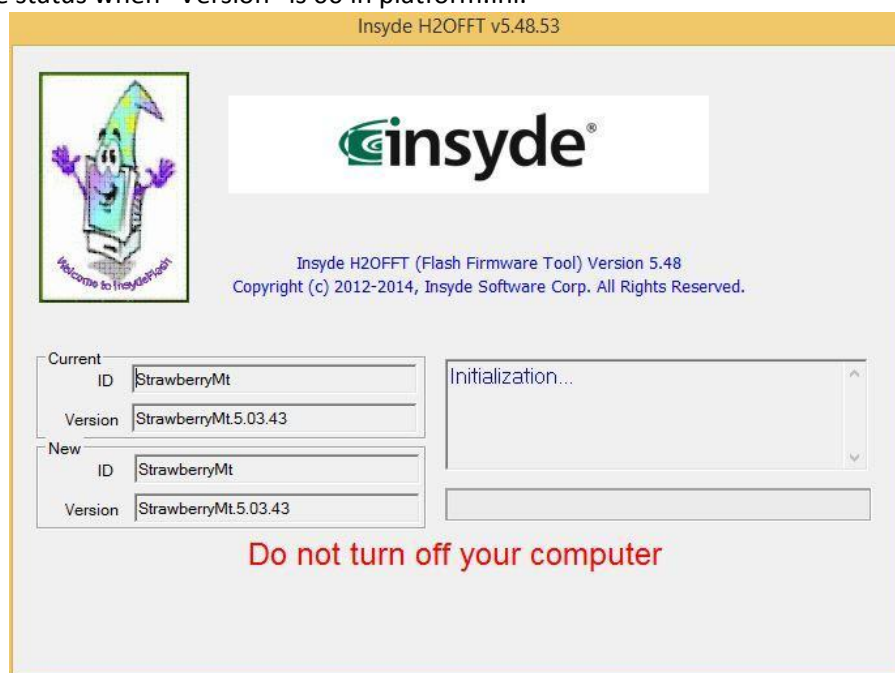


Figure 6-2. When version is 53

This picture shows the status when the “Version” is 53 in platform.ini.

7.2. Backup ROM

This feature allows you to backup the current BIOS and new BIOS binary.

Flag	Set the backup feature. When “Flag=1”, backup current BIOS “filename.bin” and the new BIOS to “filename_new.bin”.
FilePath	Set the path of the binary file in here.
FileName	The name you want to save. If you do not name it, it will be saved as the default name. The default name is the name of the platform.

7.3. UI setting

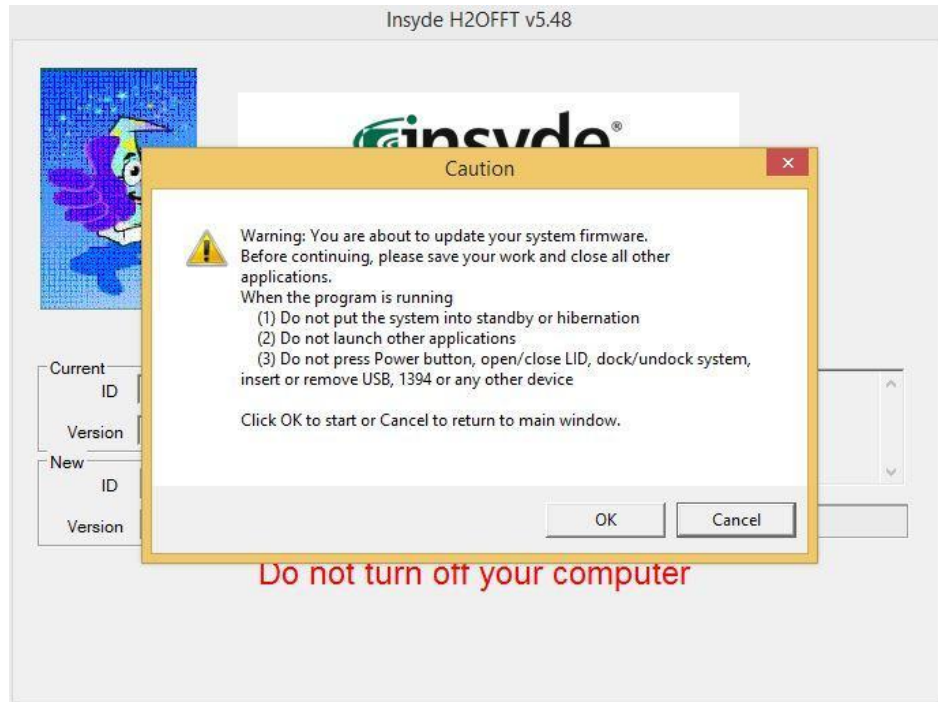


Figure 6-3. Confirm dialog

When you set 1 as the flag “Confirm”, H2OFFT-W will ask you with this dialog.

If you want to flash, please click the “OK” button.

If you do not want to flash, please click the “Cancel” button.

The flag “Silent” will set H2OFFT-W to run in silent mode without the main dialog.

The flag “SilentWithDialog” must be used with the command line feature “-s”. This does not support the “Silent” flag.

Set to 0, H2OFFT-W won’t display any dialog.

Set to 1, H2OFFT-W will display main dialog.

Set to 2, H2OFFT-W will display all dialogs without main dialog.

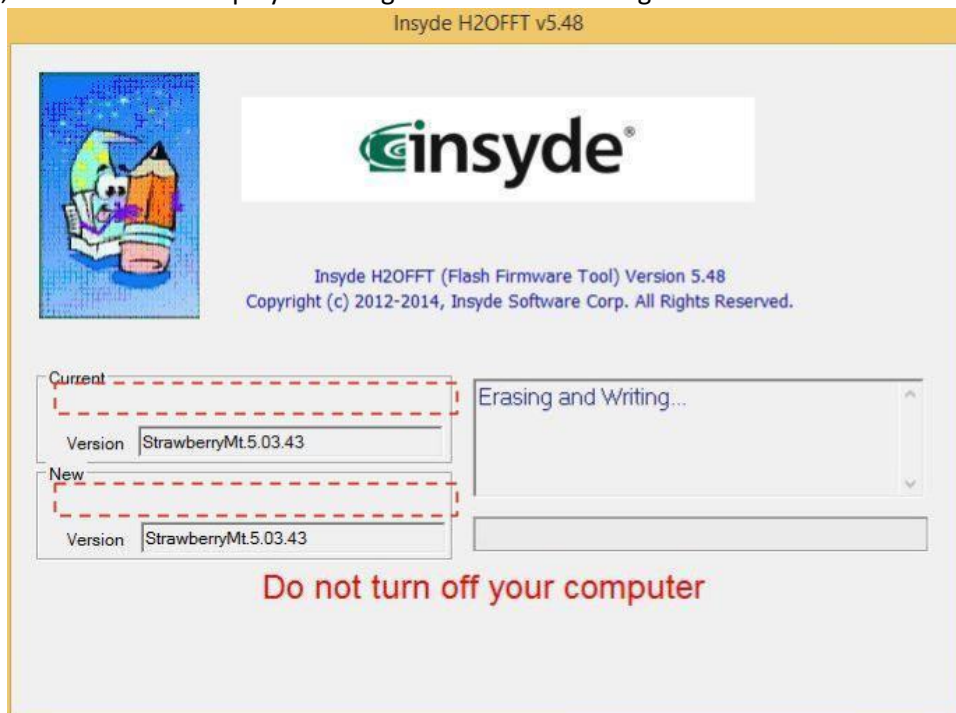


Figure 6-4 Display ID

When you set 0 to the flag “DiplayID”, the main dialog will not show the platform ID.

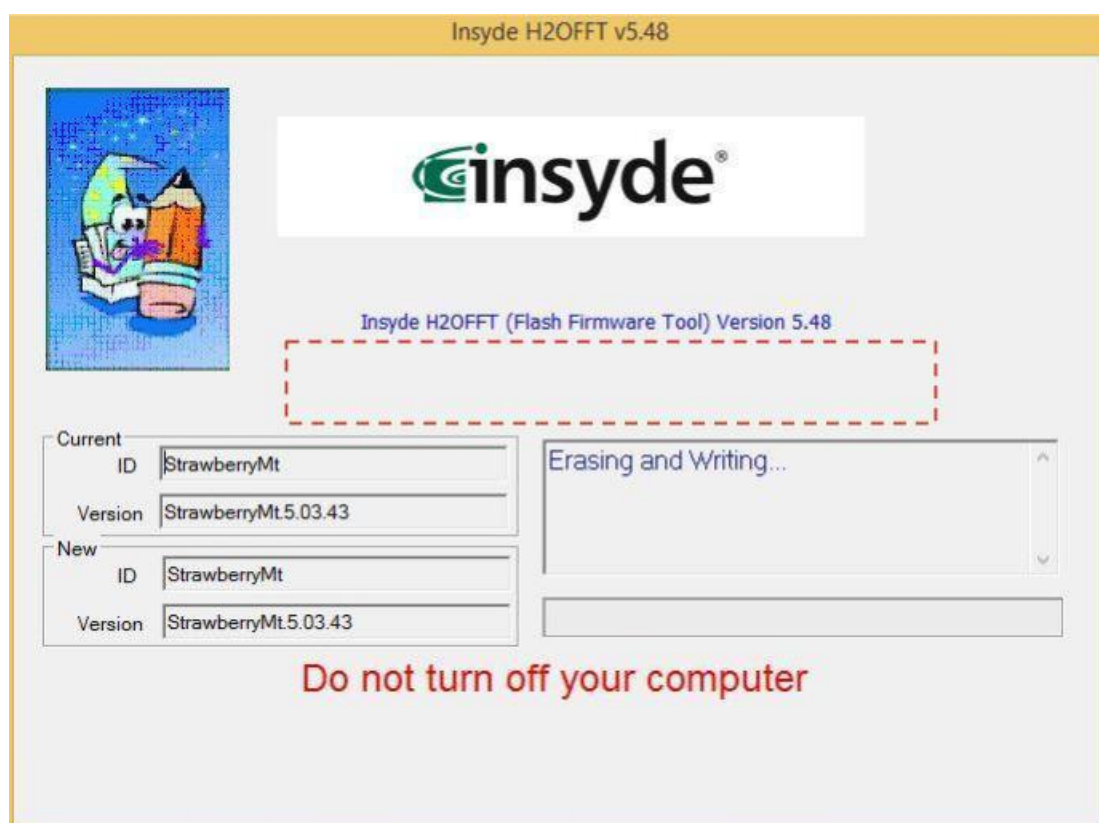


Figure 6-5 Display Insyde Information

When you set 0 to the flag “InsydeInfo”, the main dialog will not show Insyde Information.

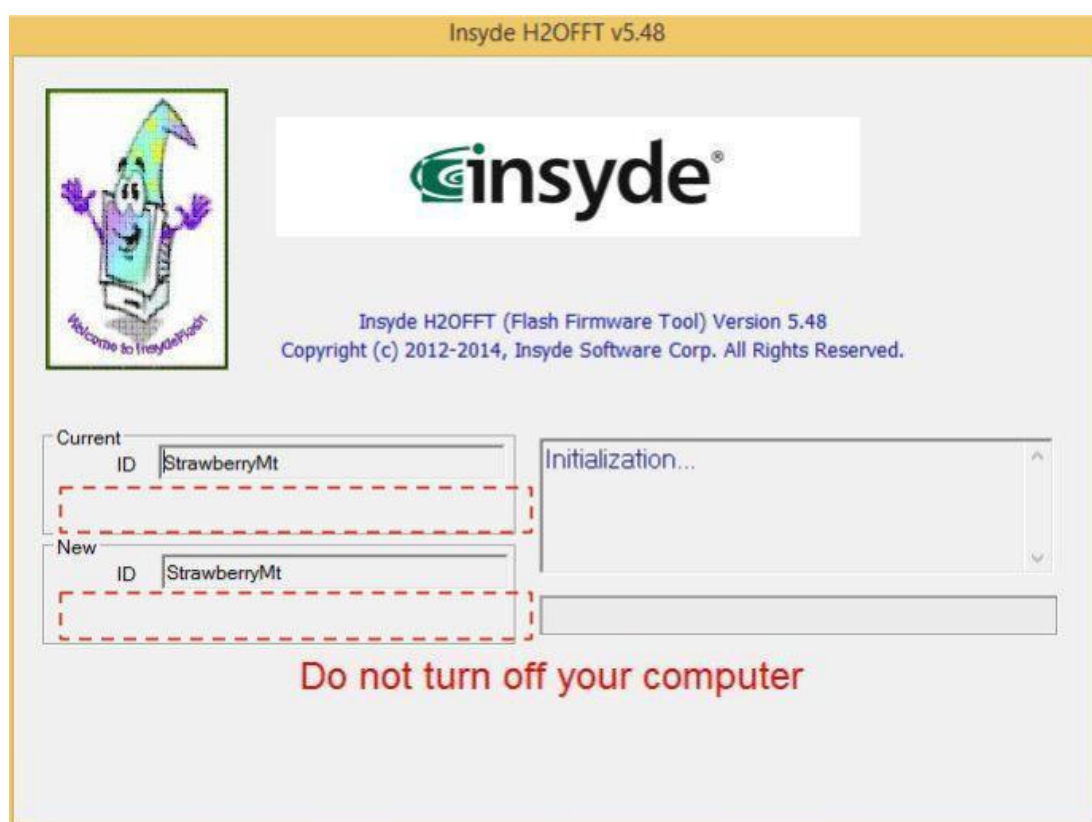


Figure 6-6. Display version Information

When you set 0 to the flag “VersionInfo”, the main dialog will not show BIOS version Information.

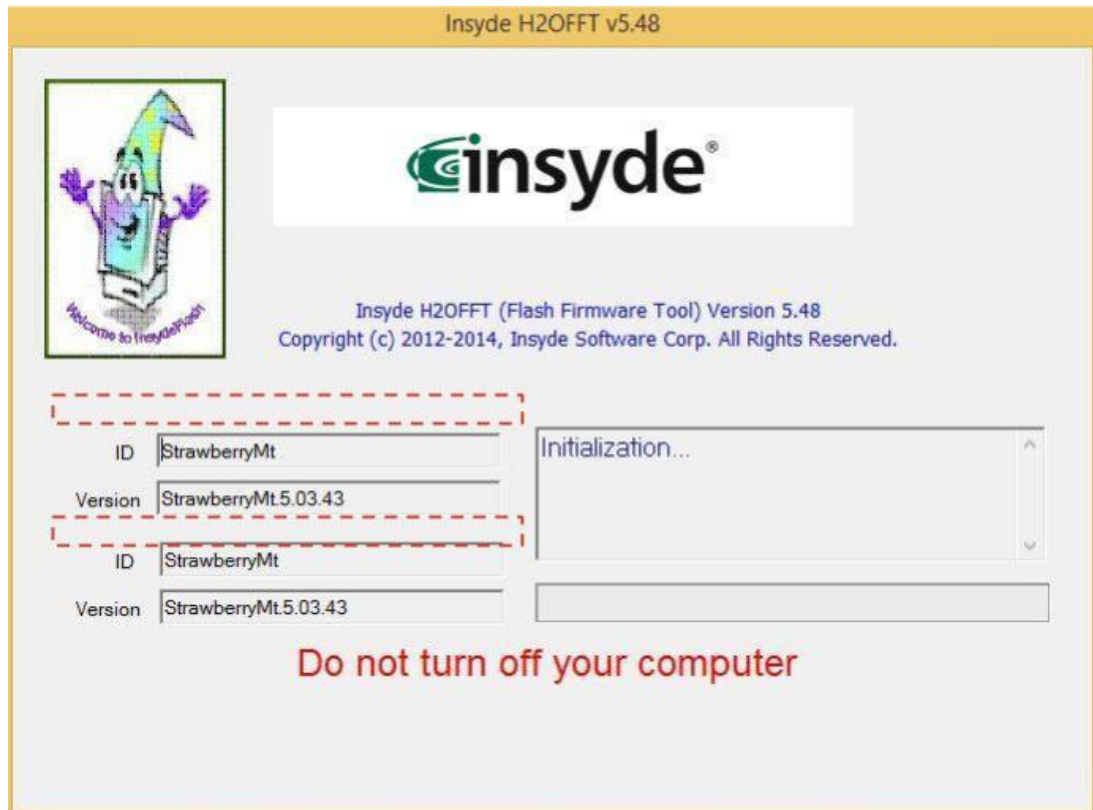


Figure 6-7. Display group line

When you set 0 to the flag “GroupInfo”, the main dialog will not show the group line.

The flag “OnFlashingBeep” will turn on a beep during flash.

“OnFlashingBeepDelayTime” allows you to adjust the beep by frequency.

When “DisableMouseAndKeyboardInput” is set, H2OFFT-W will lock the keyboard and mouse. If the BIOS does not lock the keyboard and mouse, you can use this flag to lock it by Windows API.

“BeforeFlashDelayTime” sets the delay time before flash.

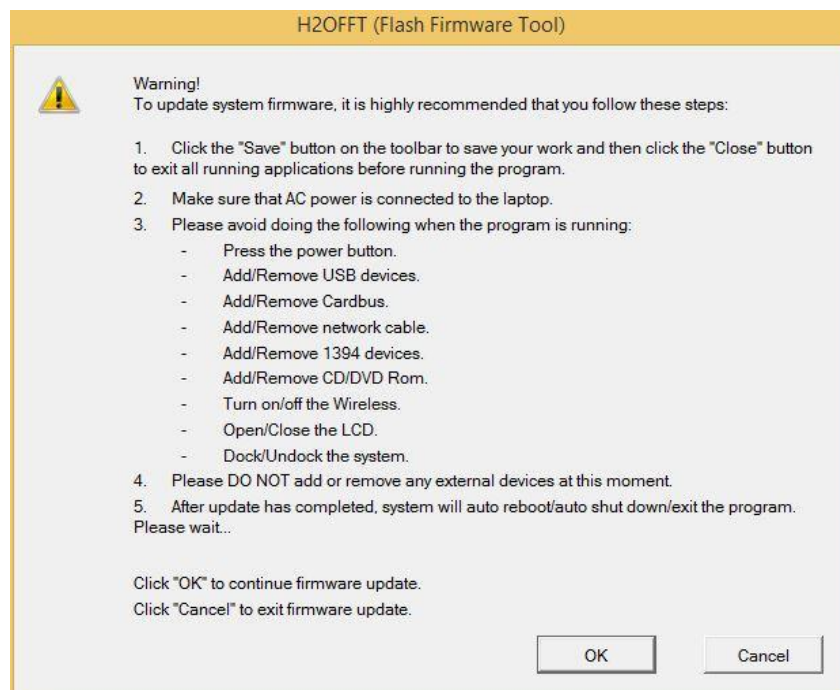


Figure 6-8. Warning message before flash

When you set 1 to the flag “ProgramStartToWrongMessageBox”, H2OFFT-W will pop a warning message before flash.

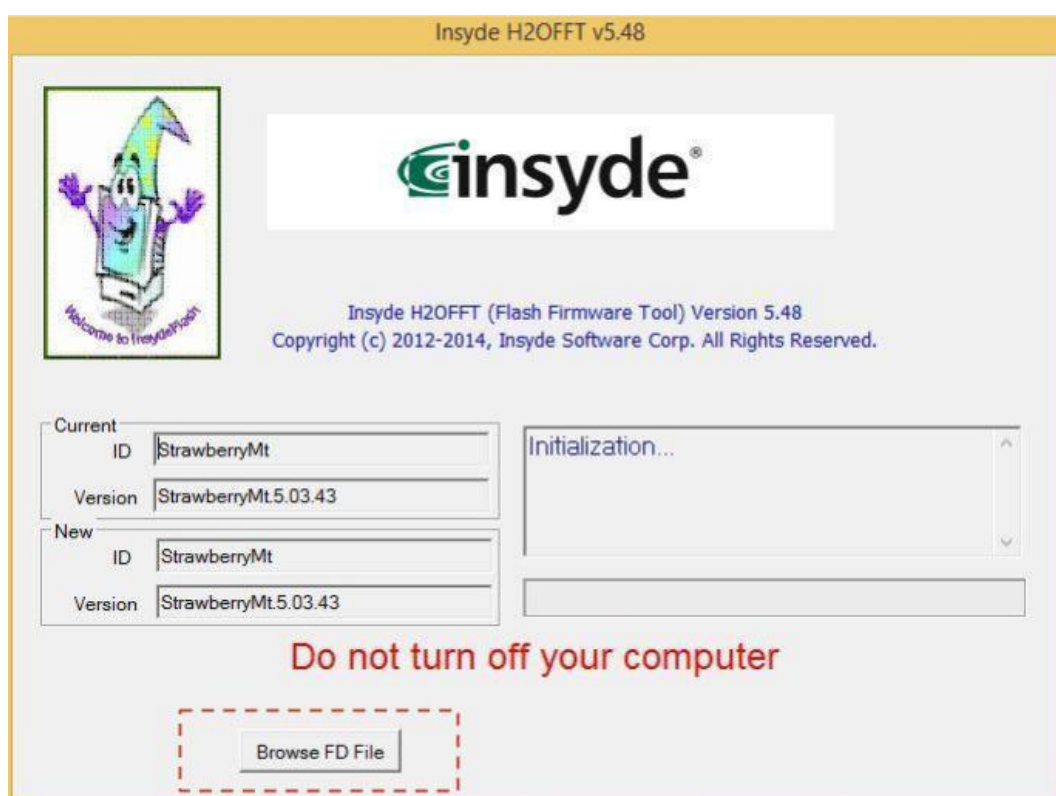


Figure 6-9. Get FD file button

When you set 1 to the flag “GetFDFileButton”, you can get file name by pressing the button.

7.4. Other Features

H2OFFT-W will flash 4k byte and draw a progress bar. H2OFFT-W will read ROM data before write data, and then compare the ROM data and file data. If it does not match, H2OFFT-W will write this part. If it does match, H2OFFT-W will skip this block. After writing data, H2OFFT-W will read the ROM data and run a comparison again. If it does not match, H2OFFT-W will prompt a message box with the message “Verify error”. The flag “DisableCompare” can skip the compare feature before writing. The flag “DisableVerify” can skip the compare feature after writing. When the flag “ErrorRetry” is 1, H2OFFT-W will write and compare three times when “after compare” fails.

7.5. ReturnErrorCode and ReturnCodeDefinition

You can set the return code value in this section. If you input “99999”, H2OFFT-W will return the default code. Below are some flags for “ReturnErrorCode”.

FileNotFound	When a file is not found, H2OFFT-W will return this value.
ErrorBeforeFlash	H2OFFT-W will return this value when errors occur before flash.

There are some flags in “ReturnCodeDefinition”

RETURN_SUCCESSFUL	When flash is successful, H2OFFT-W will return this value.
RETURN_MODEL_CHECK_FAIL	When checking the platform name or BIOS version error, H2OFFT-W will return this value.

RETURN_USER_CONFIRM_CANCEL	When user cancels confirm dialog, H2OFFT-W will return this value.
RETURN_AC_NOT_CONNECT	When AC is not plugged in, H2OFFT-W will return this value.
RETURN_LOAD_DRIVER_FAIL	When loading the H2OFFT-W driver fails, H2OFFT-W will return this value.
RETURN_NEED_REBOOT	When flash is successful and requires a reboot, H2OFFT-W will return this value.
RETURN_USER_EXIT	When exiting flash, H2OFFT-W will return this value.
RETURN_SAME_VERSION_CHECK	When the BIOS version is the same, H2OFFT-W will return this value.

7.6. OEM Project Function

1. For platform.ini setting

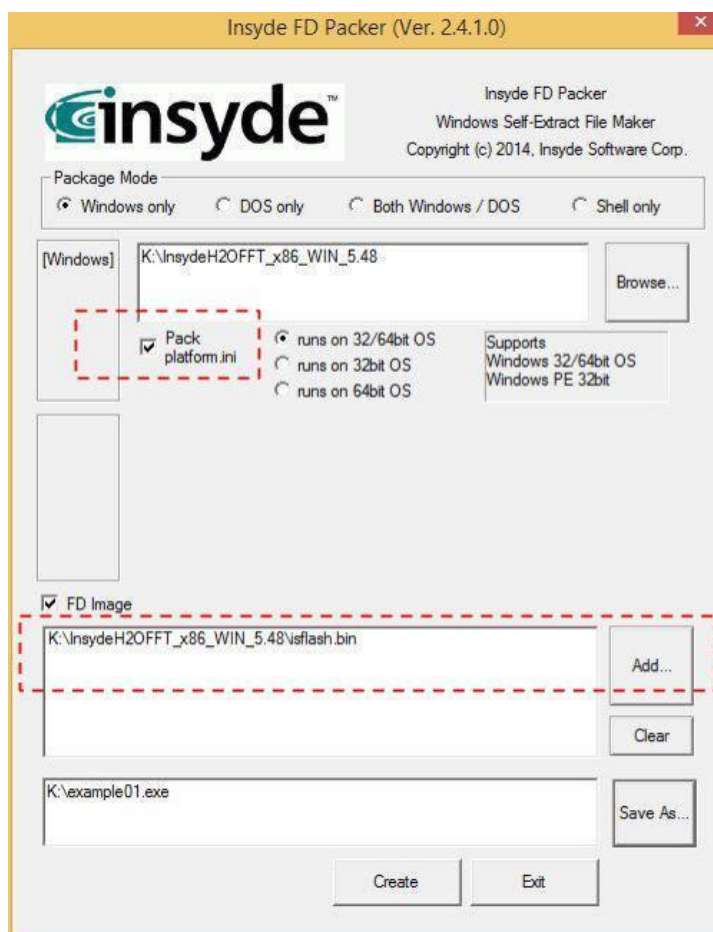
[FlashComplete]	
ActionOverride	<p>Default set is 0.</p> <p>This key is disabled. Flash utility bases action key setting to perform original behavior.</p> <p>If set to 1, this key is enabled. Flash utility will close itself in silent mode</p>

8. FAQ

8.1. Which configure file (platform.ini) will be referenced if the configure file built in capsule image and also exist external folder?

External configure file is higher priority.

- **In secure update,**
H2OFFT will reference the platmform.ini in the same folder instead of configuration of secure FD (isflash.bin).
- **In package mode,**
H2OFFT will reference the external configure file, if click “pack platform.ini”.
If there is platform.ini in the same folder with package file (example01.exe), configure file will not be



referenced.

8.2. When AC/DC status is correctly reported via IHISI 10h, why H2OFFT still indicate AC/DC status is in correct?

In the Windows version, H2OFFT gets AC/DC power status via Windows API and not via IHISI 10h.

8.3. When complete to configure for update ME via [UpdateOEMME] section, why Intel ME firmware tool still show ME update is fail?

The Intel firmware update tool (FWUpdLcl.exe) is dependent on each chipset generation, the tool in release flash package is a sample and may be not suitable for your project. So please remember to replace the FWUpdLcl.exe with right version before you will utilize function to update Intel firmware (ME or TXE).

Other, please also make sure ME=1 in [Region] section if you would update ME firmware region.