Wasabi 360 Ultra User Guide

For firmware **v1.2**, document revision 0, 25/2/2012

Introduction

Wasabi 360 Ultra – the ultimate ODDE (Optical Disc Drive Emulator), allows you to emulate you Xbox 360's optical disc drive and run Xbox 360 or Xbox 1 ISO's from HDD. No more hunting for game discs, simply execute your favourite ISO's from any ESATA or USB (adaptor required) external HDD. Easy, fast, safe and convenient.
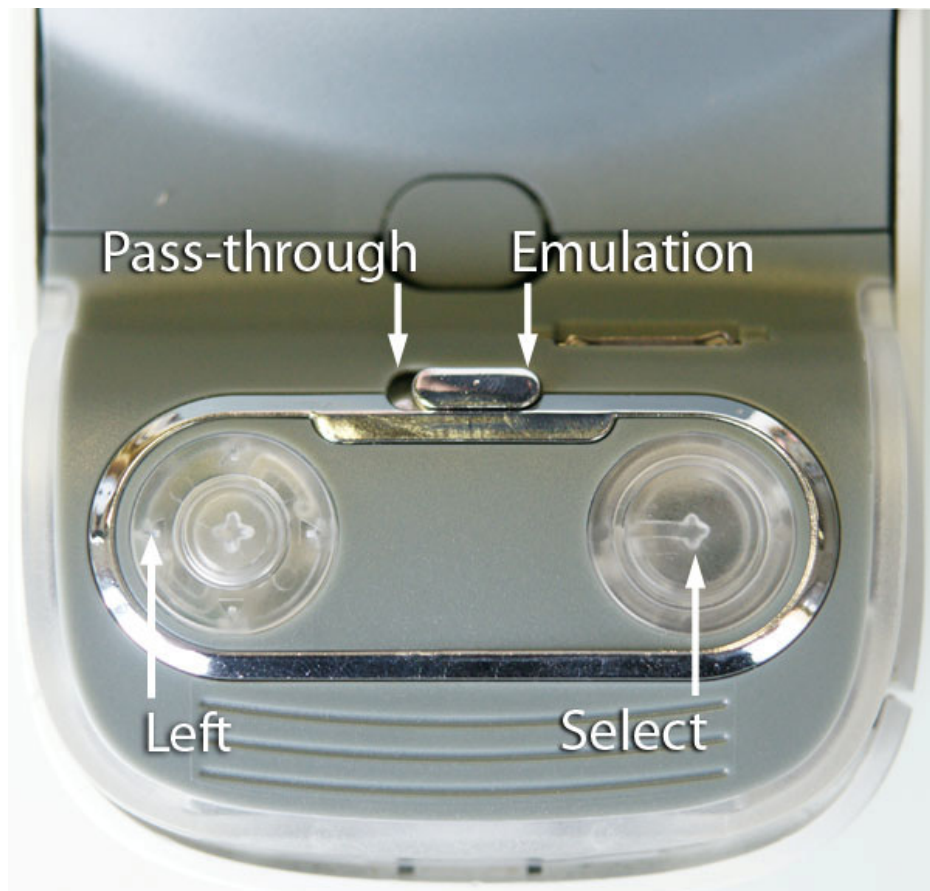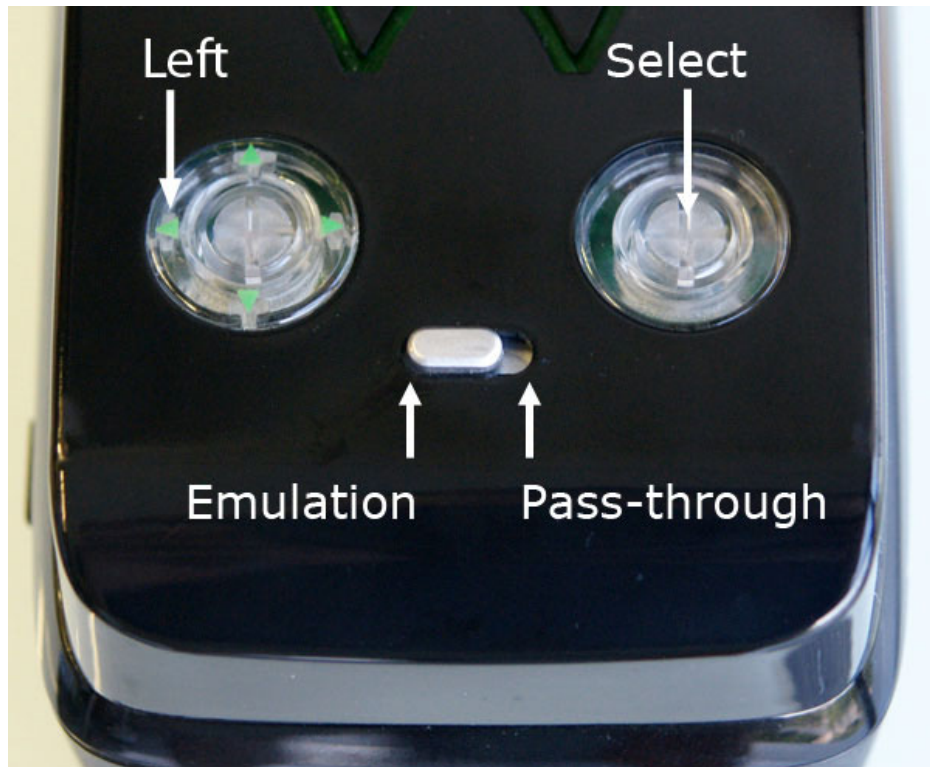
Features include:

- Unique, intuitive on-screen user interface - navigate the ISO list directly from the Xbox 360 dashboard using your controller. No need to interact with a small remote/LCD for feedback or navigation. No need to ever leave the sofa
- Automatic extraction of the drive key* which means no expensive 3rd party key extraction hardware is necessary, with the simple press of a button the drive key is automatically extracted and saved for future use, truly plug and play!
- Solder-less installation
- Support for XGD3 games
- Support for AP25 protected games and the console specific dae.bin via "disc profiling"
- ESATA interface is used in place of USB providing superior performance, since data is transferred directly between the ESATA HDD and Xbox 360 resulting in impressively high bandwidth, many times faster than reading from a real DVD disc
- Elegant and streamlined console inspired case design
- Versions available for both fat and slim consoles
- NTFS file system natively supported
- Multi-disc games fully supported
- Powerful embedded CPU running performance tuned Real Time Operating System
- Regular firmware updates available free for download
- Fully updatable hardware (MCU and FPGA's) from ESATA HDD including a failsafe recovery mode
- No need to flash or in any way modify your original ODD
- Hardware selectable pass through mode – allowing games to be played from the original disc drive in a 100% Xbox Live safe manner

NOTE: PLEASE READ AND ENSURE THAT YOU FULLY UNDERSTAND THIS ENTIRE DOCUMENT BEFORE YOU ATTEMPT TO OPERATE WASABI 360 ULTRA

Usage Overview

Wasabi 360 Ultra sits between your Xbox 360 motherboard and ODD (Optical Disc Drive). Two fundamental modes of operation are supported, **pass-through** and **emulation** mode. The current mode is selected by the mode switch. The mode of operation should only be changed while the Xbox 360 is powered off, do not toggle the switch while the Xbox 360 is powered on.
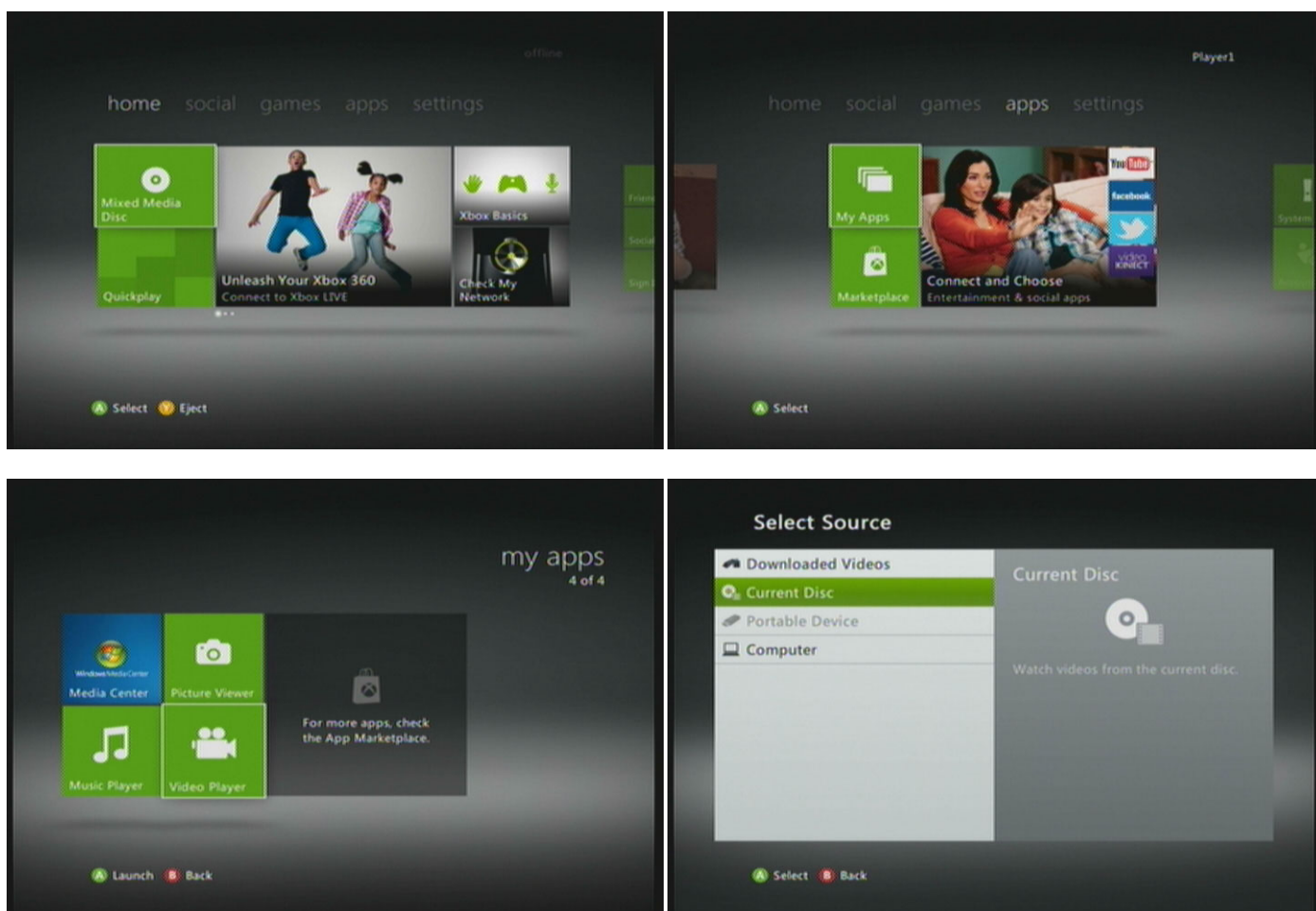

Please note the difference in the operation of the mode switch between Wasabi 360 Phat and Slim models.

Pass-through Mode

In pass-through mode, your original ODD is connected directly to the Xbox 360, with Wasabi 360 Ultra effectively disabled. In this mode you can play original game discs, DVD movies etc and safely sign in to Xbox Live to play games online.

Emulation Mode

In emulation mode, Wasabi 360 Ultra is connected to your Xbox 360 and replaces your ODD. From this mode you can enjoy playing ISO's directly from the attached HDD. When the Xbox 360 is initially powered on, Wasabi 360 Ultra will scan the attached HDD and generate a listing of available ISO files. This will subsequently be used to display the on-screen menu system. To access the Wasabi 360 Ultra menu system and select an ISO file to play, navigate to **apps \ my apps \ Video Player** in the Xbox 360 dashboard and then select **Current Disc**. You will be presented with the list of ISO files on your HDD, represented as a series of folders. Using your controller, navigate this list and when you have decided which item you would like to play, press the **A** button to enter that "folder". You will then be presented with a message saying "ISO selected. Please eject disc". At this stage you must "eject" Wasabi either by pressing the eject button on the front of the console, an Xbox 360 remote control, or using the controller to navigate back to the main dash screen where you can select **Mixed Media Disc** and then press **Y** to eject. At this point Wasabi 360 Ultra will mount the selected ISO and after a few seconds the Xbox 360 will show that game as inserted in the same way it would with any regular game disc. You may then start playing at your leisure (if the game has not already automatically started due to the dashboard auto-start feature).
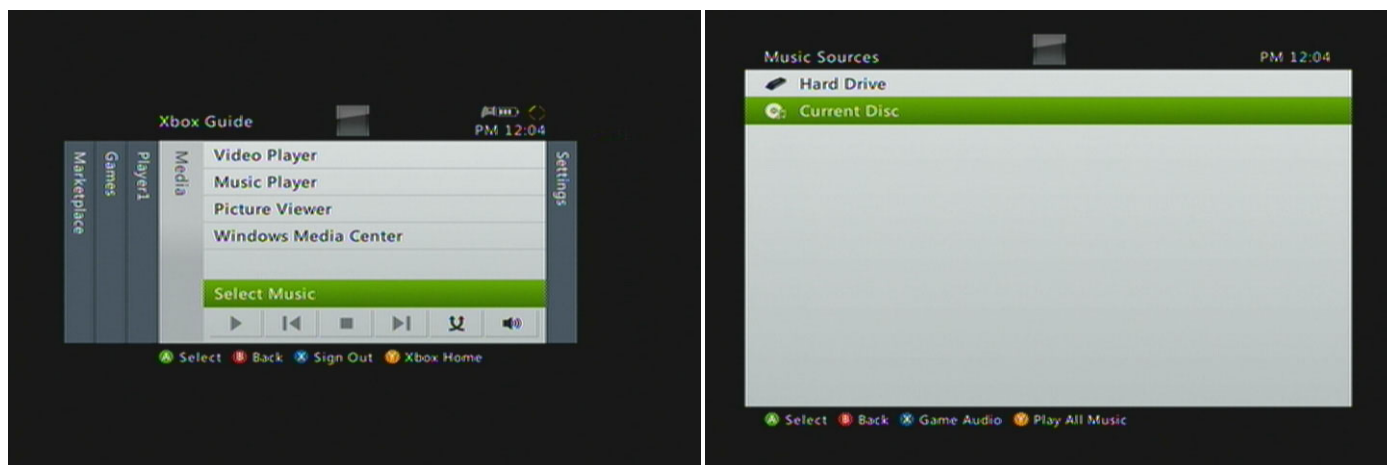

How to find the ISO list

When you wish to switch to a different game, the procedure is just as simple. Return to the Xbox 360 dashboard and then eject the disc again using any of the methods described above. Wasabi 360 Ultra will then re-mount the "mixed media disc" which makes up the menu system, and you may browse the menu system and select a new ISO just as previously.

If you are playing a multi-disc game, you may change ISO's without leaving the game. When the game instructs you to insert another disc, first eject the emulated ISO by pressing the eject button on your console. Then press the "guide" button on your controller (the one with the X logo on it) to bring up the Xbox Guide menu. Scroll right to the

"Media" tab, then "Select Music" and finally "Current Disc". You will be presented with your list of ISO's represented by folders, in the same manner as the standard menu system. Select the ISO you wish to change to, and press the eject button on your console one final time. Wasabi 360 Ultra will then mount the selected ISO. Press the guide button again to return to the game, which will now continue loading with the correct ISO mounted.

How to change discs in-game

You may mount any type of ISO file, including DVD movie and mixed media ISO files. This allows you to watch DVD movies and enjoy video, audio and image media from data ISO files stored on your HDD.

Initial Preparation

Drive Key
Before you can use Wasabi 360 Ultra, you must first obtain the drive key that corresponds to your Xbox 360. Every single Xbox 360 has a unique drive key and you must obtain the one that specifically matches your Xbox.

Wasabi 360 Ultra can currently automatically extract the drive key from the following ODD drives (support for additional drive types is currently under development):
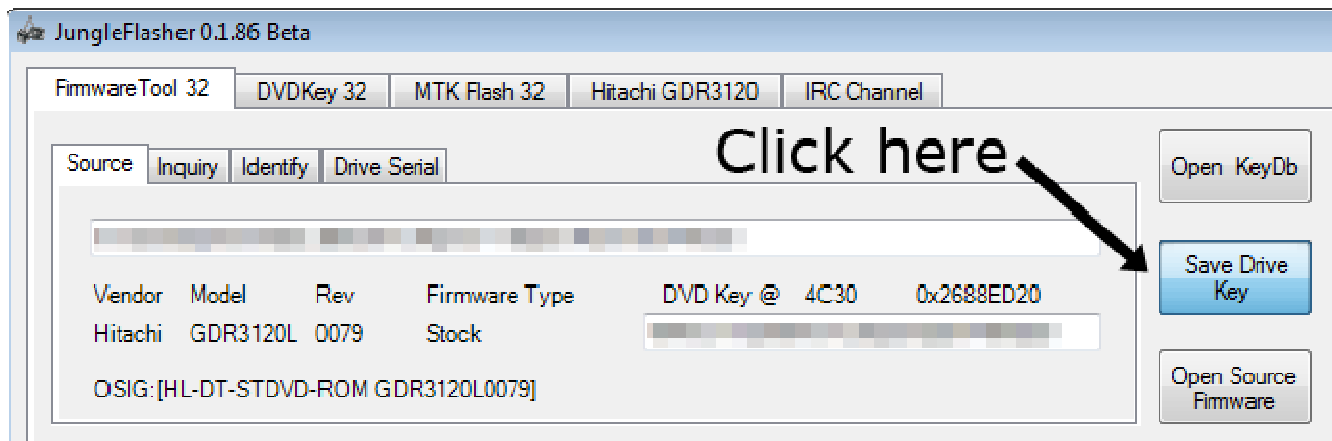
- Xbox Slim LiteOn 16D4S with firmware 9504, 0225, 0401, 0272, 1071

If your Xbox 360 does not use one of the above drives, then you will need to manually obtain your drive key through other means. We recommend the use of a piece of software called **Jungle Flasher** which can extract drive keys from almost any Xbox 360 drive. You will need a way to connect the drive to your PC in order to use Jungle Flasher; often this will involve additional hardware. Please see the documentation accompanying Jungle Flasher for further information.

The steps to configure your drive key with Wasabi 360 Ultra depends on if you can take advantage of the automatic key extraction or if you must manually obtain the drive key through other means – please refer to the corresponding section below:

Manual Drive Key Configuration
Once you have obtained the drive key for your Xbox 360, you should have a file called **Key.bin** which contains the 16-byte key in binary format. If you have used Jungle Flasher to obtain your drive key, you can generate a Key.bin file by selecting the **FirmwareTool 32** tab and then pressing the **Save Drive Key** button. The **Key.bin** file must be placed at a specific location on the HDD you will connect to Wasabi 360 Ultra. In the root directory of your HDD there should be a folder called **wasabi**; if this does not exist then create it. Place the **Key.bin** file inside the **wasabi** folder, so you end up with the file path **X:\wasabi\Key.bin** where X: is the drive letter for your external HDD.
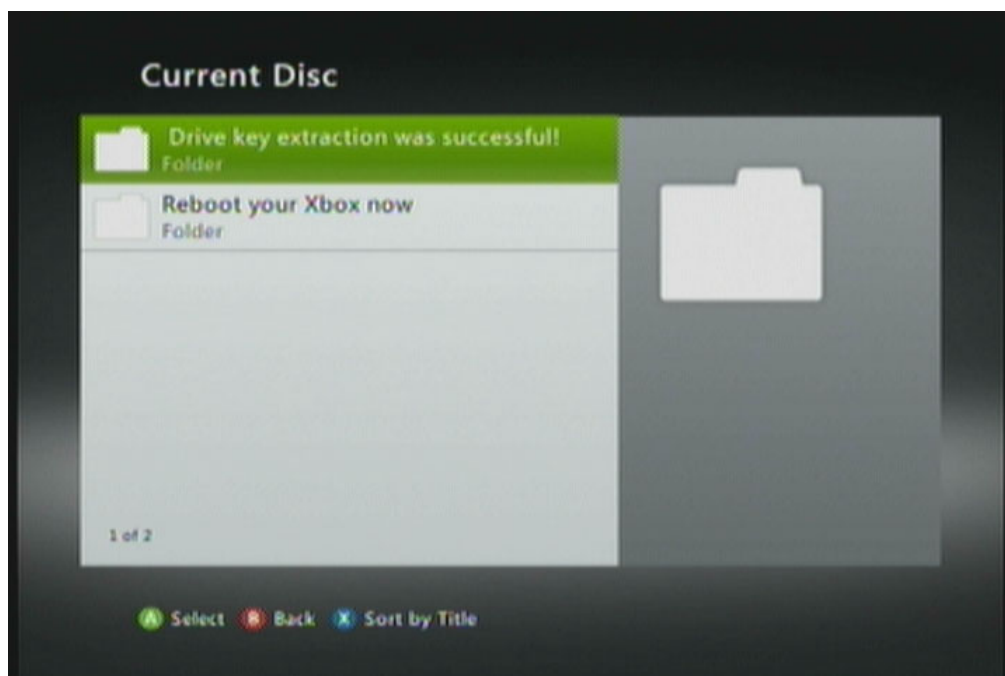
Extract key.bin with Jungle Flasher

Automatic Drive Key Extraction

If your Xbox 360 uses a LiteOn 16D4S drive then you can take advantage of the automatic drive key extraction feature - meaning there is no need prepare key.bin on your HDD. All you need to do is have Wasabi 360 Ultra extract the key from your drive once, and then the key is saved to the Wasabi's onboard storage for future use. Each subsequent time you turn on your Xbox 360, the previously saved drive key will be automatically retrieved and used to load game ISO's. The procedure for automatic key extraction is simple:

1. With your Xbox 360 powered off, hold down the **LEFT** button on the Wasabi 360 Ultra control panel and power on your Xbox 360. Keep the button held down until you see output on your TV
2. Once the Xbox 360 has booted to the dashboard, you can navigate to the "virtual ISO" menu system as you would normally do to select games, and view the result of the key extraction operation
3. If the operation was successful (which should always be the case) then you should power off your Xbox 360. Your drive key is now saved to Wasabi 360 Ultra's onboard storage. Power the Xbox 360 back on to enjoy your game ISOs

Successful drive key extraction

AP25 Setup

AP25 is a new Xbox 360 copy protection scheme affecting some of the more recent games, where the Xbox 360 tries to verify the presence of an original disc by querying data that is derived from the physical structure of the game disc. In order to use AP25 protected titles with Wasabi 360 Ultra, you must have a scan of the physical structure of the corresponding original game disc, hereafter known as the **topology data**. There are currently two sources for topology data: the **ap25db.bin** file included with the Wasabi 360 Ultra firmware, and topology data embedded in **iXtreme LT v3** ISO images. Inside the Wasabi 360 Ultra firmware download archive is a file named **ap25db.bin** –

place this file on your HDD in the **wasabi** folder. This included database contains verified topology data for most current AP25 games. If you try to play a game for which the corresponding topology data is not found in the database, then Wasabi 360 Ultra will attempt to use topology embedded in the ISO itself. If the correct topology data is not found in the ISO either, then AP25 authentication will fail and you will be unable to play that game. If this happens then you will be returned to the Xbox dashboard with a disc read error message. Wasabi 360 Ultra has special protection in place so that if you experience such an AP25 authentication failure, your console will not be flagged for an Xbox Live ban.

Wasabi 360 Ultra Firmware

Wasabi 360 Ultra ships from the factory without any firmware installed. Before you may use the device for the first time, you must perform the initial firmware installation. Download the latest firmware build from the official Wasabi 360 Ultra website. Inside the archive will be a folder labelled **wasabi**, and within this folder there will be files labelled **wasabi-update.bin** which contains the firmware update data, and **ap25db.bin** which contains the AP25 topology database. Copy the **wasabi** folder from the archive to the root directory of your Wasabi 360 Ultra's HDD, so that you have the following file structure (where X is the drive letter of your HDD):

X:\wasabi\wasabi-update.bin
X:\wasabi\ap25db.bin

Make sure you overwrite any old **wasabi-update.bin** and **ap25db.bin** files! Once you have copied the files into place, then you may install the update according to the following procedure:
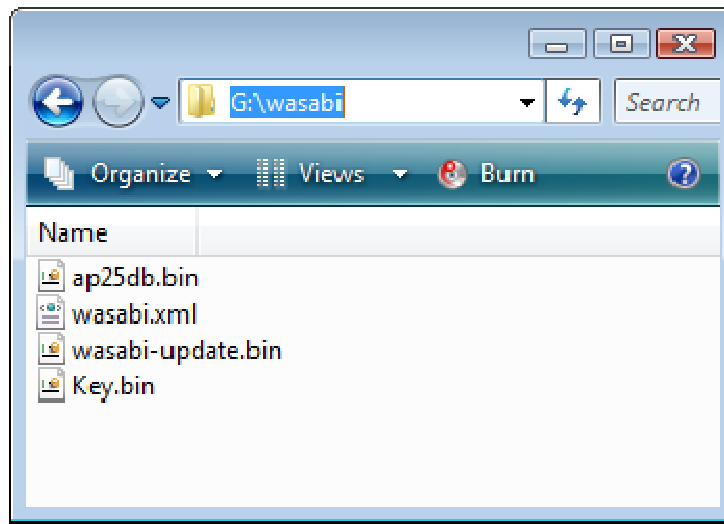
1. Power **off** your Xbox 360, and power **on** your HDD
2. Ensure that pass-through mode is selected, by placing the mode switch in the correct position – **THIS IS IMPORTANT**
3. Hold down the **SELECT** button on the Wasabi 360 Ultra control panel (the button by itself, away from the remaining buttons)
4. While holding down the SELECT button, turn on your Xbox 360. A **blue** LED should start blinking on your Wasabi 360 Ultra. This indicates that the update process is underway.
   DO NOT TURN OFF YOUR XBOX 360 OR OTHERWISE DISCONNECT POWER FROM WASABI 360 ULTRA UNTIL THE UPDATE IS COMPLETE!
5. After a few moments, a **green** LED should turn on to indicate that the update was successful. If for any reason the update failed, a red LED will turn on instead. Please see the troubleshooting section for more information.
6. Once the update has completed, as indicated by either a solid green or red LED, switch off your Xbox 360.
7. You may now delete the **wasabi-update.bin** file from your HDD as it is no longer required
8. Select emulation mode by placing the mode switch in the correct position. Providing you have correctly setup your drive key according to the directions above, your Wasabi 360 Ultra is now ready to use. Enjoy!

These same steps should be followed whenever you need to install a new firmware release in future.

PLEASE NOTE: Currently, Wasabi 360 Ultra firmware supports HDD's larger than 2TB HOWEVER when it comes to installing firmware updates, the wasabi-update.bin file must be stored on a HDD smaller than 2TB. This limitation will be removed in the near future.

Hard Disk Drive

Wasabi 360 Ultra connects to external HDD's via an ESATA port. Any ESATA enclosure is supported, along with USB HDD's if you are making use of the Wasabi ESATA -> USB adaptor. The HDD must be formatted with the **NTFS** file system. Wasabi 360 Ultra will only scan the root directory for ISO files, so place all your game ISO's in the root directory of your HDD. The files must be named with a **.ISO** extension. As explained above, there must be a folder labelled "**wasabi**" in the root of your HDD. This folder is where the firmware update, AP25 database, drive Key.bin (if applicable) and XML configuration file reside:

IMPORTANT NOTE: When you connect your HDD to your PC in order to copy files or otherwise modify its contents, ALWAYS remember to use the "safely remove hardware" feature of Windows (or for Linux/etc, properly un-mount the mass-storage device). Failure to do so may result in corruption on your HDD!

Configuration XML File

Various advanced Wasabi 360 Ultra settings are configurable via the **wasabi.xml** file. A copy of this file containing the default settings is included with each Wasabi 360 Ultra firmware release. If you wish to customise any of the settings included in this configuration file, then you must edit the XML accordingly and then copy **wasabi.xml** to the **wasabi** folder on your HDD (alongside **ap25db.bin** etc). Configurable items are as follows:

- **automountLastIso** - Auto mount the last used ISO when booting the Xbox 360 (default: YES)
- **displayLastIsoFirst** - Display the last used ISO at the top of the ISO selection list (default: YES)
- **blockDashUpdates** - Block dash updates from running off a mounted ISO (if you wish to update your Xbox, this should be done from Live or a USB stick with Wasabi in pass-through mode) (default: YES)
- **isoFolder** - The path to the folder on your HDD which holds ISO files (default: /)
- **alwaysUseKeyBin** - Ignore any drive key stored in Wasabi 360's onboard flash and force the use of key.bin on the HDD (default: NO)

Precautions

There are some precautions to keep in mind both before using your Wasabi 360 Ultra for the first time, and continuing its use into the future:

- Do not update your Xbox 360 system software (dashboard) past the most recent version explicitly supported by Wasabi 360 Ultra. The latest system software version currently supported by Wasabi 360 Ultra is listed on the official website at http://www.wasabi360.com
- Do not connect to Xbox Live while you are using Wasabi 360 Ultra in emulation mode. Xbox Live is **currently** not supported unless you have booted your Xbox 360 with Wasabi 360 Ultra in pass-through mode (whereby you would play games from your ODD rather than Wasabi)
- If you wish to update your Xbox 360 console firmware, this should be done in pass-through mode from USB, from Xbox Live or from an original game disc containing the update. Do not attempt to update your Xbox 360 firmware while Wasabi 360 Ultra is running in emulation mode.

Be warned, failure to adhere to the above precautions could result in your console getting banned from Xbox Live or other issues.

FAQ

Is there a way to check the software/hardware version of my Wasabi 360 Ultra?

Turn on the Xbox 360 while holding the **UP** button on the Wasabi 360 Ultra control interface, and then navigate to the menu system. Instead of displaying the list of ISO's, the version information for your Wasabi 360 Ultra will be displayed. To leave this mode and revert back to normal operation, simply cycle power on your Xbox 360 and do not hold down any buttons upon the next power up.

Do I need a working original ODD in order to use Wasabi 360 Ultra?

At the current time, a functioning original ODD is required in order to use Wasabi 360 Ultra. Furthermore, to avoid issues the ODD should not be modified with a custom firmware such as iXtreme. We plan to release a firmware update capable of functioning without any ODD attached in the future.

Troubleshooting

There are several situations which will result in Wasabi 360 Ultra displaying an error message instead of the ISO list when you navigate to Video Library in order to display the menu system. These error messages are explained below:

- **ERROR: NTFS cluster size is not 4kb** – non-standard cluster sizes are not supported, your HDD must be formatted with NTFS using the standard 4kb cluster size
- **ERROR: HDD not NTFS formatted** – the HDD connected to your Wasabi 360 Ultra MUST be formatted with NTFS. Other file system formats such as FAT32 are not supported (due to the fact that FAT32 cannot accommodate files larger than 4GB)
- **ERROR: HDD not connected** – a HDD could not be detected. Check that the HDD is properly connected to Wasabi 360 Ultra and reset the Xbox 360
- **ERROR: ODD not connected** – the ODD connection could not be detected. The original disc drive for your Xbox 360 must be connected as per the instructions in the installation manual. Check the connection and try again
- **ERROR: \wasabi\key.bin not found** – the Key.bin file was not found on your HDD. Ensure that your Key.bin file is placed on the HDD according to the preceding instructions

Other potential error conditions which do not involve such an error message include:

- If more recent games (using AP25 and/or XGD3) do not work, this is probably due to a conflict caused by custom firmware such as iXtreme installed on your ODD. Reverting your ODD back to its original firmware should resolve such issues.
- If Wasabi 360 Ultra is partially functional in emulation mode (it shows a list of ISO's on your HDD) but when you press eject nothing happens and/or in pass-through mode you cannot eject the ODD, then you have installed the power cable incorrectly. The end of the power cable with the red and green wires must connect to the ODD and not the Xbox motherboard.
- If you get black screen, Exx error messages or generally intermittent failures then there is likely a problem with the cables (either SATA or power). Carefully disconnect all cables and re-set them. Test your Wasabi 360 Ultra again before re-assembling the Xbox 360.

There are several error conditions that may occur while attempting to update the firmware and are indicated by the state of the LED's under the buttons on the Wasabi 360 Ultra control panel, as follows:

- **Red + white flashing** – a HDD could not be detected
- **Red + blue flashing** – wasabi-update.bin could not be found on the HDD
- **Red flashing** – wasabi-update.bin is corrupt. Please try copying again and make sure you "safely remove hardware"

Further Information and Contact

Wasabi 360 Ultra official website: http://www.wasabi360.com
Technical Support e-mail: support@wasabi360.com
Wholesale enquiry e-mail: sales@wasabi360.com

Please see our official website for news, downloads, tutorials, videos and our official Facebook and Twitter pages.