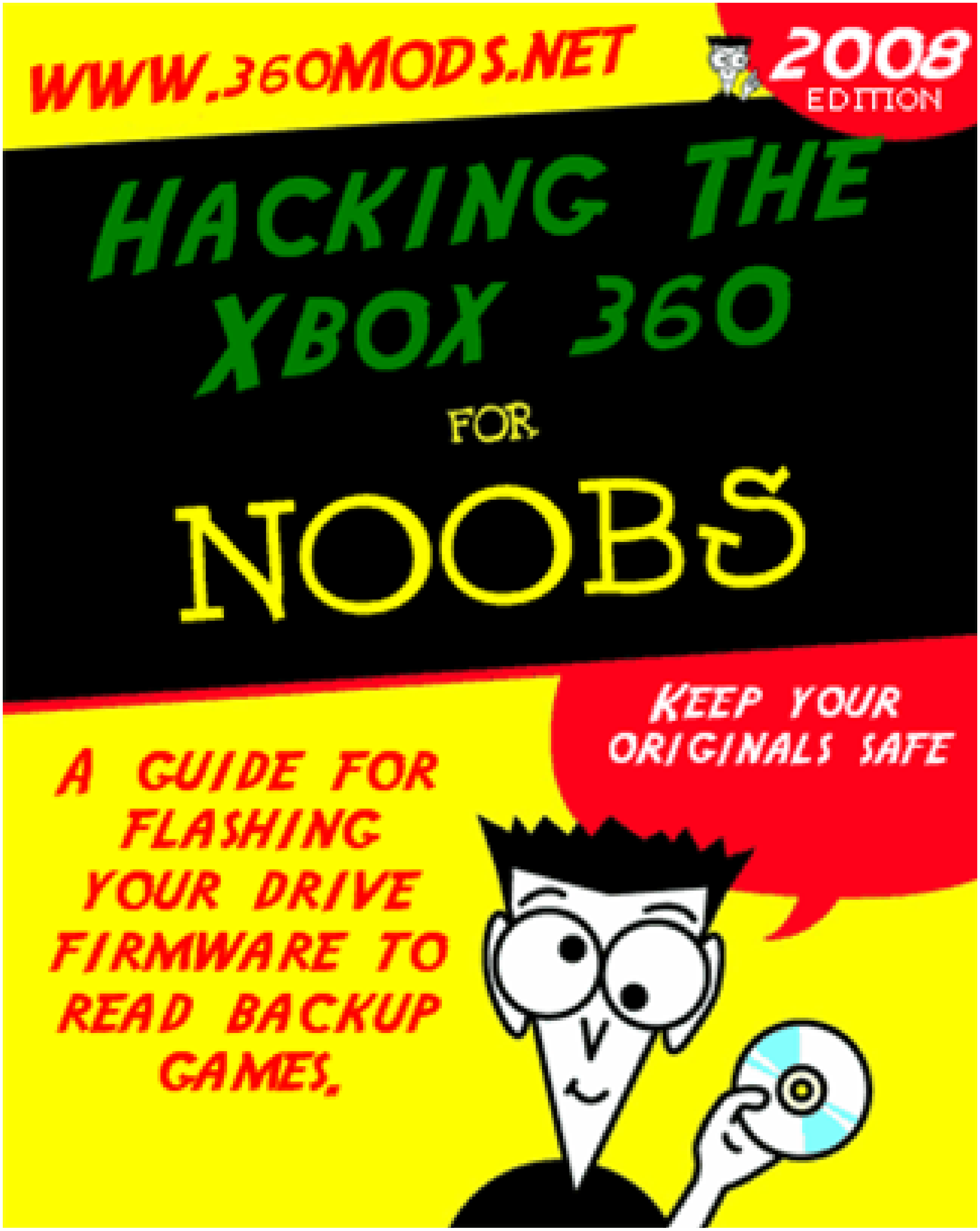
360MODS


WWW.360MODS.NET
2008 EDITION
HACKING THE XBOX 360
FOR
NOOBS
KEEP YOUR ORIGINALS SAFE
A GUIDE FOR FLASHING YOUR DRIVE FIRMWARE TO READ BACKUP GAMES.

Textbook's Xbox 360 Firmware Tutorial

www.360mods.net

Table of Contents

Introduction

The Xbox 360 DVD-ROM drive firmware hack is currently the only modification or hack available for the Xbox 360 that allows you to play properly created backup copies of Xbox 360 games. The firmware hack does **NOT** allow homebrew programs to run and does **NOT** bypass region protection. If a video game is locked to a particular region, then it will only play on an Xbox 360 of that same region. Before jumping into this modification, it is a good idea to learn how this hack works.

In the most basic form, an Xbox 360's game protection comes from two security measures. First of which is encryption. Nearly all files on an Xbox 360 game disc as well as the Xbox 360 hard drive are signed with Microsoft's private key. If anything in these files, even just a single bit, is changed, the signature is broken and the Xbox 360 refuses to run the file. The second security measure is media locking. The default.xex (game executable) is restricted to run only from a certain type of media. For example, all Xbox 360 games are restricted to run only from "Xbox 360" media. Before the firmware hacks, if you were to copy an Xbox 360 game and try running it from "DVD+R DL" the Xbox 360 would obviously see that it wasn't "Xbox 360" media and refuse to run it because of the media restriction.

This media restriction is what the firmware hacks bypass. The firmware fakes out the Xbox 360 into thinking that any media is "Xbox 360" media. You copy your game to DVD+R DL, insert it into a firmware-hacked drive, and instead of returning "DVD+R DL" to the Xbox 360, the drive says it is an "Xbox 360" disc and it then plays the game. As you can see, the firmware hack does not bypass any signature protection whatsoever. That is why the Xbox 360 backups have to be 1:1 unedited backups of the Xbox 360 games.

Warnings

The Xbox 360 firmware hack may be illegal under the Digital Millennium Copyright Act (United States), the European Union Copyright Directive (Europe), or other copyright laws in your country. Downloading, installing, and using this firmware could potentially be illegal. You are doing so at your own risk.

Copying or downloading games that you have not legally purchased or own is illegal in all countries. This violates not only laws in your own country, but international copyright laws as well. The purpose of the firmware hack is for making backup copies of games that you legally own. Software piracy is illegal, carries a huge penalty if convicted, is ethically wrong, and hurts the game companies. Support the game developers by purchasing the games you play. You wouldn’t work for free, would you?

Using this firmware hack and running your backups on Xbox Live violates the Xbox Live Terms of Service agreement that you agreed to when you signed up for the online gaming service. Microsoft withholds the right to terminate the Xbox Live service from you for any reason, at any point, with no warning, and no refunds. If you do get banned from Xbox Live, it is the system that is banned permanently. Simply put, if you are worried about Xbox Live, do not install this firmware modification.

Finally, upgrading your Xbox 360 firmware requires you to open your Xbox 360, open your PC, and connect the Xbox 360 DVD-ROM drive to your computer via a SATA cable. This will void your Xbox 360 warranty. Also, this firmware upgrade is not recommended for novices. A technical level of computer knowledge is required, with an understanding of how to configure your PC BIOS, use MS-DOS, or the MS-DOS command prompt, and the use of CD/DVD software. If, after reading through this tutorial, you still do not understand it completely, either ask questions in forums until you do or get an experienced installer to do the job for you. Read through the entire tutorial before attempting to modify the system. This is not a guide to be read for the first time while you’re doing it, it should have already been read in full before attempting the modification.

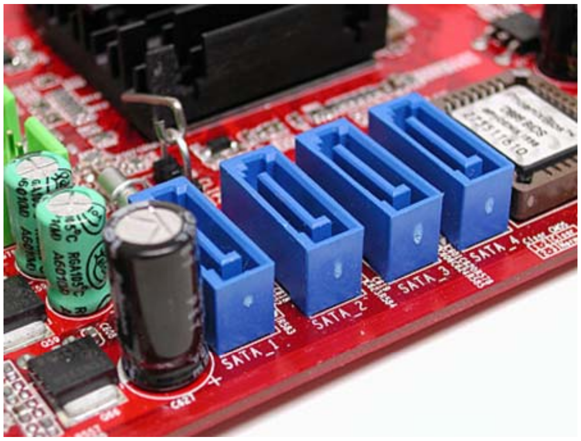
Costs

You will most likely have to spend a good amount of money in order to do this. Flashing the Xbox 360 firmware usually requires a specific SATA chipset, so if you don't have a SATA chipset that is compatible for flashing your drive, you have to purchase a compatible PCI Sata card. Many people purchase the VIA VT6421 PCI SATA cards that usually cost around $20 USD. That is just for flashing the drive. In order to make game backups you need something to rip them with and something to burn them. First, let's skip to burning. You're going to need a DVD burner that can burn Double Layer DVD+R DL discs. You may also want to look into seeing if your burner supports something called "bitsetting" to DVD-ROM. A cheap, quality drive that automatically bitsets for you is the Pioneer 112D. You can find these online for around $40 USD. A burner isn't going to do you any good without discs to burn them to. So get some DVD+R DL. My recommendation: use Verbatim brand discs, as they are the highest quality and you will not suffer from read errors if they are burned correctly. These discs, at the cheapest, will set you back around $2 USD a disc. Ripping games is somewhat complex. There are three different methods for ripping an Xbox 360 game. One is using an opened, external PC DVD-ROM drive and hotswapping a large DVD movie with the game, then dumping the game with WxRipper and merging a few patch files in later. So that won't cost you any, but it's a pain to have to keep a drive opened and outside of your PC all the time. There is another method, that is easier, but it requires purchasing a "Kreon" PC DVD-ROM drive. If you install this drive into your PC, ripping a game is as simple as inserting the game into the drive, loading Xbox Backup Creator, and one click on the "Backup" button. But the drive will cost you somewhere around $50 USD.

You may already have some of these, but if you have none of them, you're looking at quite a bit of money. $20 USD for a SATA card, $40 USD for a burner, $40 USD for some DVD+R DL (assuming you want to backup 20 games), and $50 USD for a Kreon drive comes out to be $150 USD. You have to ask yourself if it is worth it or not.

SATA Compatibility

Before you go taking apart your Xbox 360, you might as well make sure you have the right equipment to flash your drive. The Xbox 360 DVD-ROM drive uses a Serial ATA (SATA) interface, so you will need SATA ports on your desktop PC's motherboard. The picture below shows what a SATA port looks like. Having SATA is not enough though; you must have the right kind - the chipset that controls the SATA functions must be compatible with your version Xbox 360 drive.



Samsung MS25

Samsung MS25 drives can be flashed with many SATA chipsets. Silicon Image, Promise, and NForce2 chipsets are known to **NOT** be compatible for flashing Samsung drives. There are possibly more that cannot flash a Samsung MS25. Intel ICH5/6/7/8 chipsets, NForce 3/4, SiS, Uli, Jmicron, and VIA chipsets are all known to be compatible – others may also be. You cannot flash a Samsung drive using a SATA-to-USB adapter. If you are unsure whether your SATA is compatible or not, the best advice is to just try it out. If the SATA isn't compatible, the drive won't be recognized. You won't brick your drive if the SATA is incompatible, it just "won't work" – so you're not losing much by just trying out what you already have. If you do not have SATA or yours is incompatible, you should look into purchasing a VIA VT6421 PCI card. You can find links to retailers here.

Samsung MS28

Samsung MS28 drives can be flashed using two methods, the VIA bad-flash recovery method and the VCC method. You are best off purchasing a VIA brand card to do the bad-flash recovery method. You can find links to retailers here. Even with the VCC method, you would need a chipset compatible with MS25 drives, since the VCC method is the equivalent of temporarily “dropping down” to MS25. It is just easier and safer using a VIA brand SATA chipset. You cannot flash a Samsung drive using a SATA-to-USB adapter.

Hitachi 46 / 47 / 59

These “older version” Hitachi drives can be flashed with basically all SATA chipsets. It should work as long as the SATA supports ATAPI devices (optical drives). Another good thing about these drives is they are the only Xbox 360 drives that can be flashed with a SATA-to-USB adapter. The cheap generic one I bought on eBay worked fine.

Hitachi 0078FK

These drives can be flashed by most SATA chipsets. Silicon Image SATA chipsets will **NOT** work; they corrupt the data and will give you an error. Attempting to flash this drive with a SIL chipset could brick your drive. Also, in rare cases, there are reports that VIA chipsets have problems with some version 78 drives. Personally, my VIA 8237 is iffy. I have to play with it for a while until I get it to read the drive. Shorter SATA cables seem to help with my setup. Many other chipsets should work fine.

VIA SATA

Just some notes about users of VIA SATA chipsets. This is for both onboard chipsets (like the 8237) as well as the PCI cards (6421).

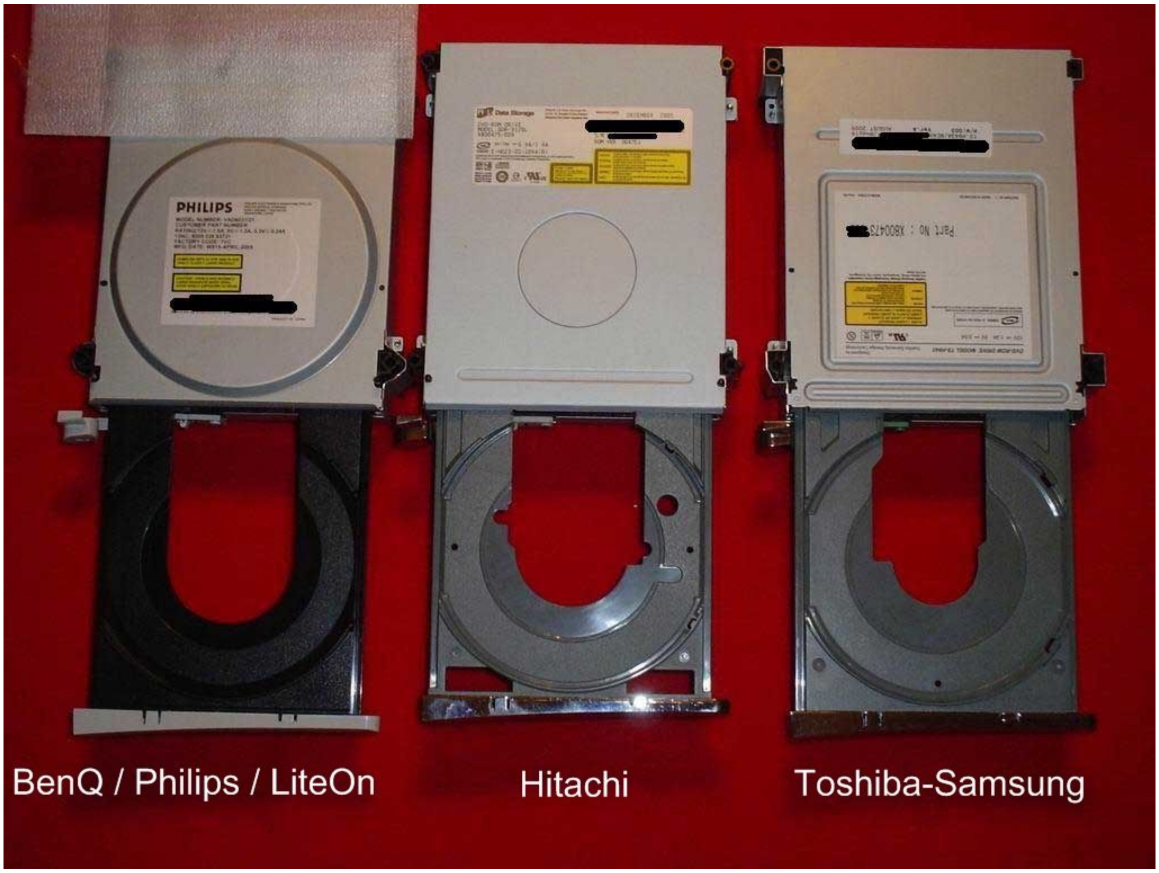
A common problem is detecting the drive with MTKFlash with VIA chipsets. For some reason, many people have this problem when using the external ports on the VIA SATA cards, or the “1” port if using internal. What seems to work best for most people is always using the primary “0” SATA port. On the PCI SATA cards, this is almost always an internal port. If there are multiple internal ports, use the port closest to the front of your PC.

If you still can’t get the drive detected, you can try –pk-‘s suggestions.

Also, the latest VIA SATA drivers are available here. When you run through the installation wizard, uncheck (don’t install) the VIA RAID Tool. Just install the drivers.

What Brand Drive?

Use the following image to see what brand DVD drive you have, then follow this tutorial accordingly. Note that there are different versions of these drives. You can only tell the brand of the drive by looking at the tray. You can estimate the version of the drive by comparing your Xbox 360 information to the online drive database at http://360drives.com. The only way to know for sure is to open the Xbox 360 and check the sticker on the drive.



BenQ VAD6038	HL GDR-3120L	TSST H-943A

After determining what version drive you have, please help the community by submitting your information to the online drive database at http://360drives.com. No registration or personal information is needed, just your drive version and some system information. Your contribution will help the database for a more complete overview comparing drives with systems.

Philips/BenQ/LiteOn VAD6038 Tutorial

You will need:

- VIA or NForce SATA chipset
- iPrep 101 v006

This method only works with VIA or NForce SATA chipsets. Any other chipset requires soldering a switch to the drive and is covered in a tutorial here.

Opening The Xbox 360

The outer Xbox 360 “shell” is entirely screwless. Plastic friction tabs hold the case together. There are many different tutorials for opening the Xbox 360, with different methods. Here are some links to “opening the Xbox 360” tutorials. I decided not to cover opening the Xbox 360 in this tutorial since it is already long enough and there are many other tutorials for opening the Xbox 360. Notes:

- The Anandtech guide says you need to use a Torx 12 screwdriver. There is no such thing. You need a Torx 10 screwdriver.
- Removing the grey side grill on the hard drive side is a little tricky. The first friction tab is actually inaccessible from the top holes in the case, so you need to stick your screwdriver in the hole by where the hard drive button is and unclip it. (See Pic)
- In order to push in the back clips, you can do one of two things. You can use a thin metal object such as a precision flathead screwdriver / bobby pin / paperclip OR you can make an opening “key” out of a CD spindle case. The key would not work for me, it was too flimsy, but it works for some people. You can also purchase an “unlock kit.”
- If all you want to do is just flash the firmware, you only need to remove the six long screws on the bottom. (See Pic)

Read all these guides and watch all the videos, figure out how you want to go about opening the Xbox 360. It is not rocket science.

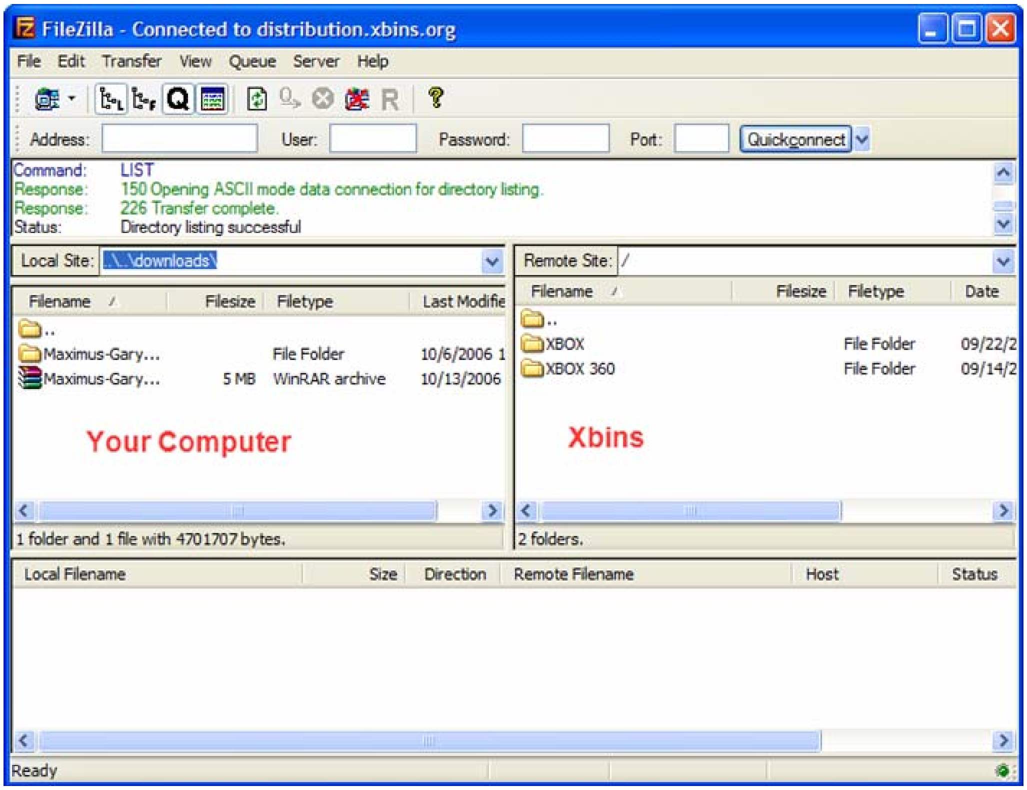
Anandtech Guide
InformIT Guide
Xbox-Accessories Disassembly
Hydra's Guide to Making a CD Unlock Key
Textbook’s Video
acDC's Video

Downloading The Firmware

The hacked firmware may be illegal under the DMCA, EUCD, or other local, national, and international copyright laws. It contains portions of Microsoft's copyrighted firmware and therefore cannot be linked to or downloaded publicly. Do not request the firmware on any forums because you will most likely be banned. Use Xbins. Xbins is an IRC channel and FTP server that hosts Xbox and Xbox 360 mod files.

If you have never used Xbins before, the easiest method is to use Ground Zero's automated Xbins downloader.

Download and run the xbins.exe file. It will ask you where you want to save the files, choose your desktop. Now, go into the "Xbins" folder on your desktop and run the .bat file. The program will connect to the IRC channel, message the bot, and connect to the FTP server. When FileZilla opens you should see the local Downloads folder on your left and the Xbins FTP server on your right.


FileZilla - Connected to distribution.xbins.org
File Edit Transfer View Queue Server Help
Address:
User:
Password:
Port:
Quickconnect
Your Computer
Xbins
Ready

```
Command:   LIST
Response:  150 Opening ASCII mode data connection for directory listing.
Response:  226 Transfer complete.
Status:    Directory listing successful
```

Local Site: ..\downloads\

Filename	Filesize	Filetype	Last Modifie
..			
Maximus-Gary...		File Folder	10/6/2006 1
Maximus-Gary...	5 MB	WinRAR archive	10/13/2006

1 folder and 1 file with 4701707 bytes.

Remote Site: /

Filename	Filesize	Filetype	Date
..			
XBOX		File Folder	09/22/2
XBOX 360		File Folder	09/14/2

2 folders.

Local Filename	Size	Direction	Remote Filename	Host	Status

The hacked firmware can be found in:

/XBOX 360/firmware/hacked firmware/Benq VAD6038/

Simply drag the "Benq.iXtreme.v1.4.rar" file over to the left side of FileZilla and wait for it to finish downloading.

iPrep (USB Flash Drive)

The following process will set up a bootable USB flash drive with everything necessary to read your original firmware and write the hacked firmware onto the drive. We will use iPrep to automatically detect your SATA port, format the USB drive, and copy the required DosFlash and hacked firmware files onto it.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer's web site to install the latest drivers. The latest drivers for VIA chipsets and Windows XP are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, the latest version is always available on his website at http://www.x-projects.org or on xbins in:

/XBOX 360/firmware/firmware tools/iPrep 101/

The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder and run the installer to install iPrep.

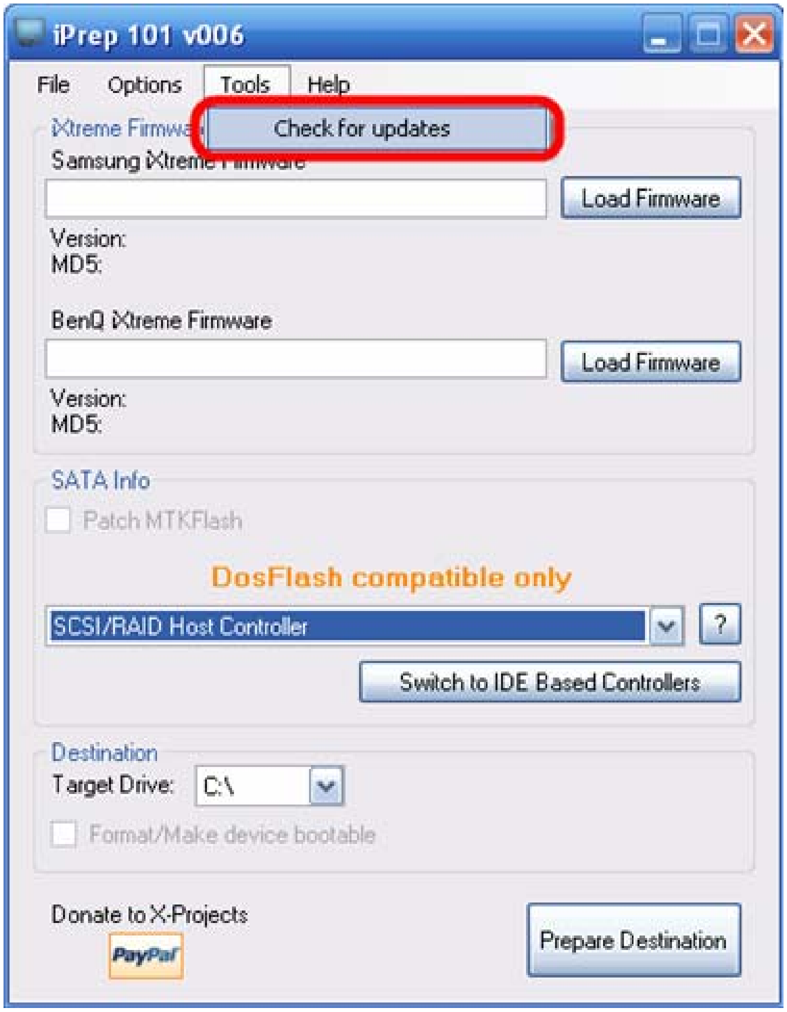
Next we will update Firmtool to the newest version which is 1.2. There are many improvements from 1.1 to 1.2 so it is recommended to update before formatting your drive with iPrep and flashing.

To do this, download Firmtool 1.2 from here and extract the "firmtoolv1.2.rar" file. Then replace the "firmtool.exe" file in the folder below with the new one from the rar file.

C:\Program Files\X-Projects\iPrep 101\Resources\Tools

Since the firmtool.exe already exists, Windows should ask you if you want to replace the existing file with the new one – click Yes.

Now run the program. The first thing you want to do is check for updates.

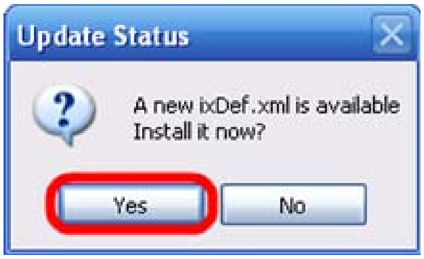


DosFlash compatible only

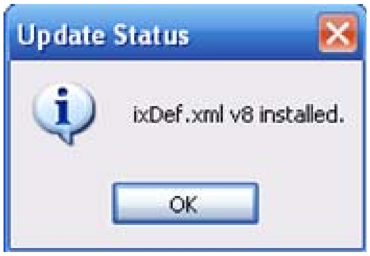
SCSI/RAID Host Controller

Target Drive: C:\

It should find an updated definitions file. Choose "Yes" to install it.

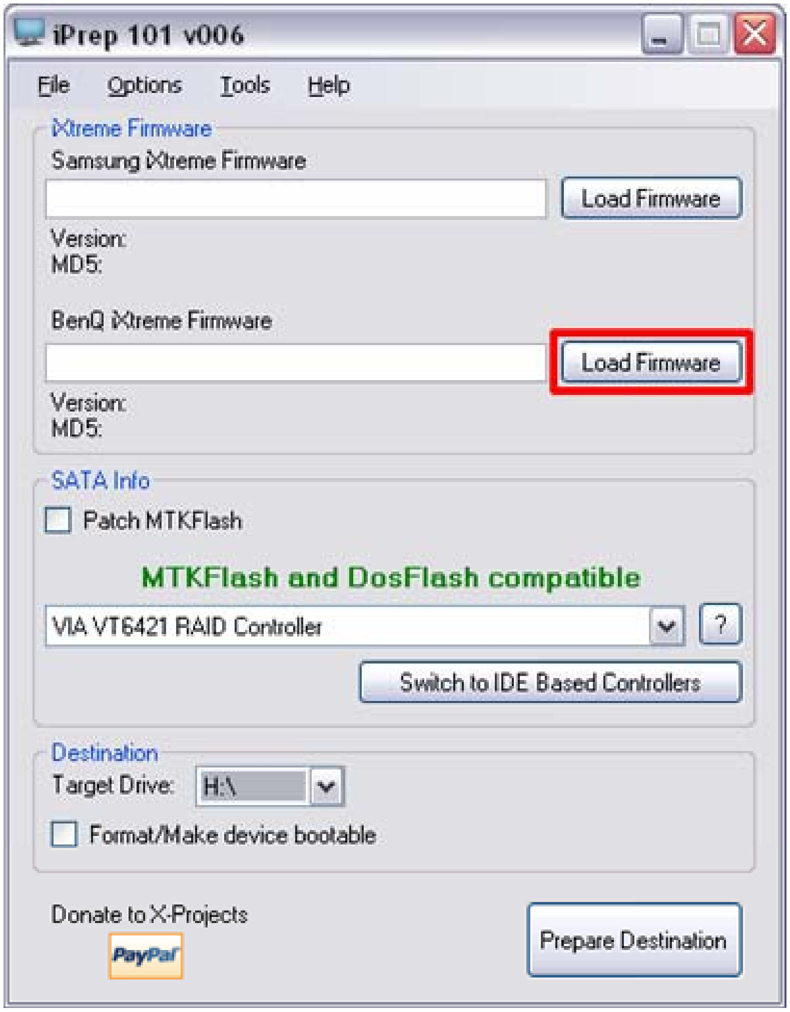


A new ixDef.xml is available
Install it now?



ixDef.xml v8 installed.

Hit the "Load Firmware" button on iPrep.



iXtreme Firmware

Samsung iXtreme Firmware

Version:
MD5:

BenQ iXtreme Firmware

Version:
MD5:

SATA Info

☐ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

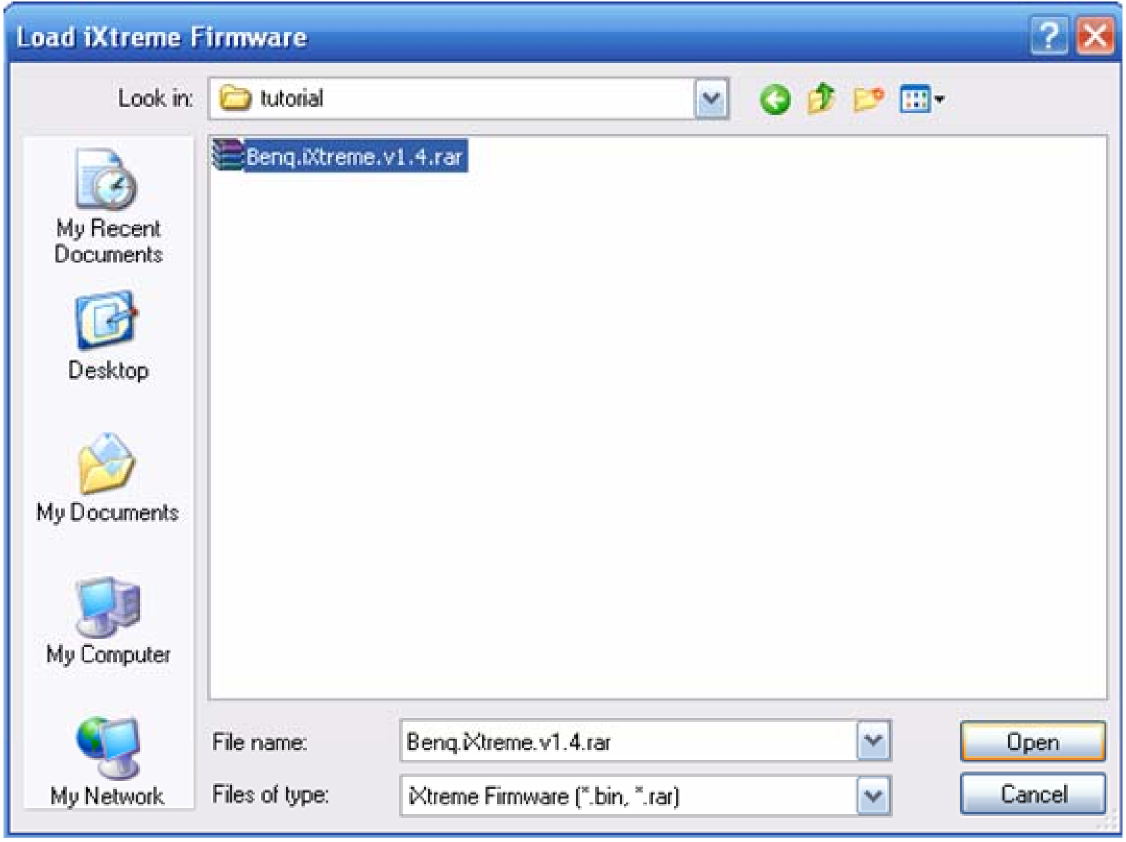
Destination

Target Drive: H:\

☐ Format/Make device bootable

When you hit this button, a “Load iXtreme” window should open for you to browse for the iXtreme firmware. Browse and open the:

“Benq.iXtreme.v1.4.rar” file



Load iXtreme Firmware

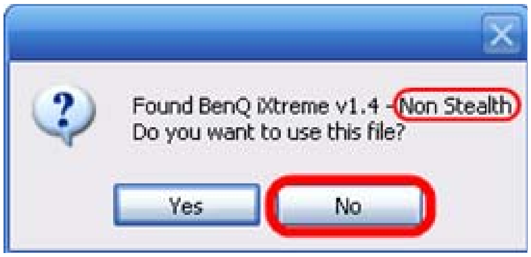
Look in: tutorial

Benq.iXtreme.v1.4.rar

File name: Benq.iXtreme.v1.4.rar

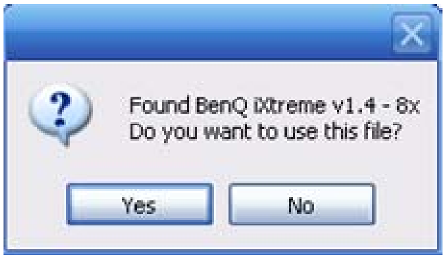
Files of type: iXtreme Firmware (*.bin, *.rar)

You should then get a series of messages confirming that iPrep has found the iXtreme firmware files inside the rar, the first one will be for the NON-STEALTH version, click No.



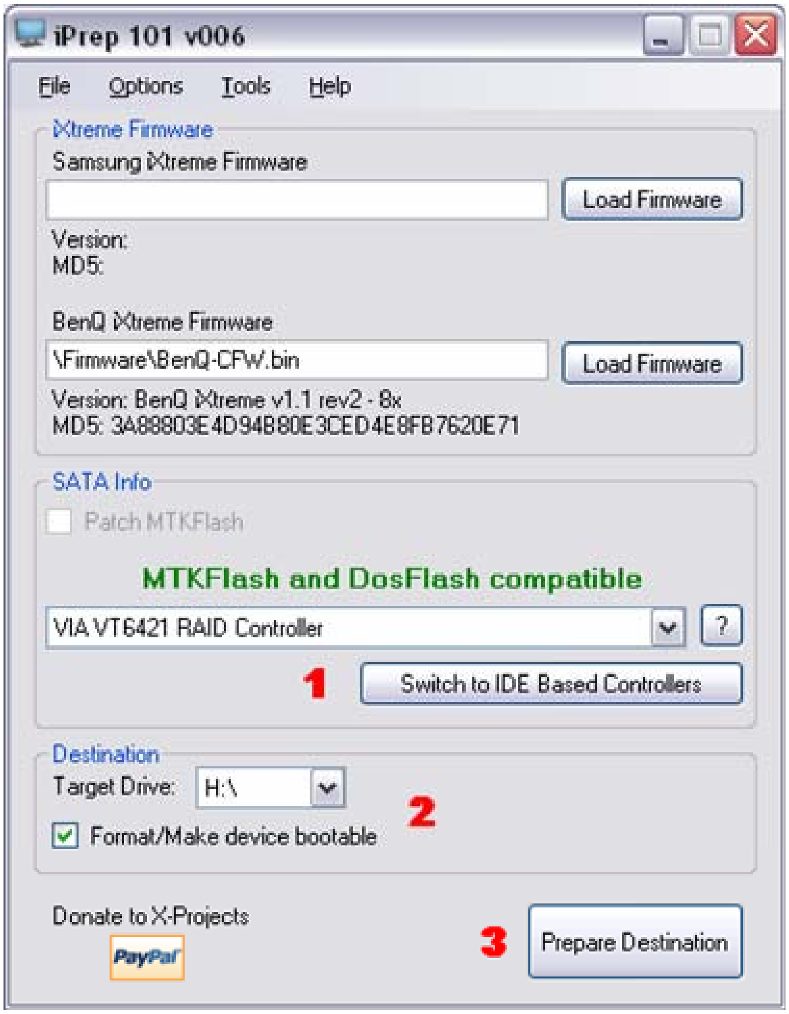
Found BenQ iXtreme v1.4 - Non Stealth
Do you want to use this file?

iPrep will continue loading the firmware, click Yes to choose the speed that you would like to use. (2x, 5x, 8x, or 12x)



Found BenQ iXtreme v1.4 - 8x
Do you want to use this file?

There is no “right” firmware to use here, it is matter of preference. Normal speed is 12x, the slower versions are quieter but the trade-off is longer load times. It is up to you to choose the one you want or you can simply go with 12x and there will be no change from normal.



iPrep 101 v006

Xtreme Firmware

Samsung Xtreme Firmware: (empty)

Version:
MD5:

BenQ Xtreme Firmware: \Firmware\BenQ-CFW.bin

Version: BenQ Xtreme v1.1 rev2 - 8x
MD5: 3A88803E4D94B80E3CED4E8FB7620E71

SATA Info

□ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

Destination

Target Drive: H:\

☑ Format/Make device bootable

Donate to X-Projects

1. Confirm that your SATA chipset is selected in the dropdown menu. You can click the “Switch to IDE/SCSI Based Controllers” button to detect your SATA chipset.

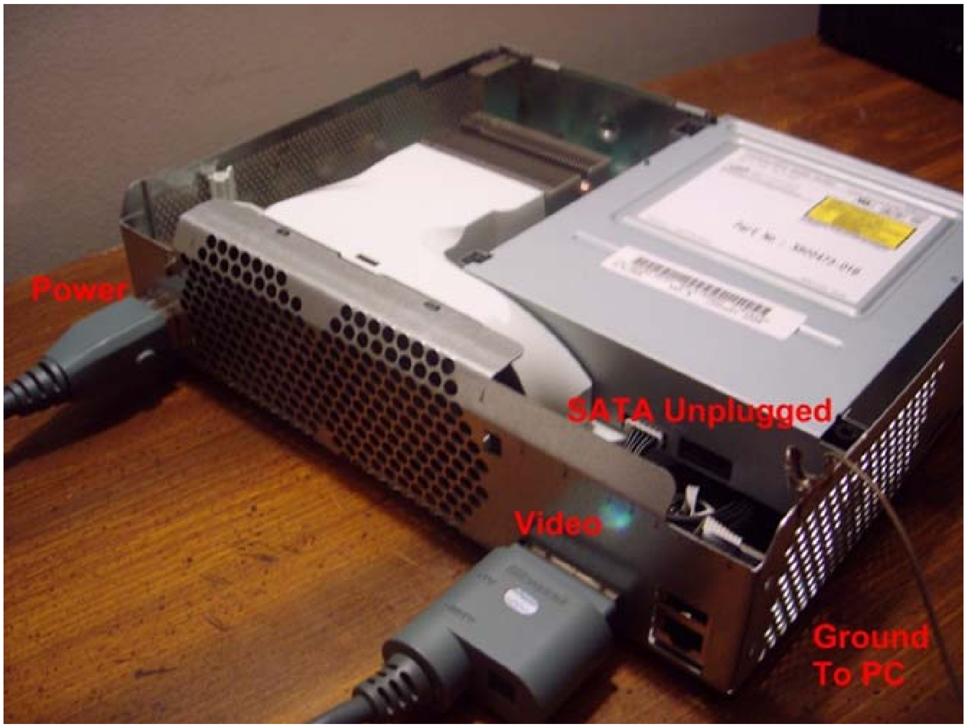
2. Select your USB flash drive from the drop-down list. Check the box to Format the flash drive and make it bootable. *Remember to get any important data off the flash drive first, it will be erased!*

3. Click “Prepare Destination”.

If everything goes smooth you should get a “Preparation Complete” message.

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

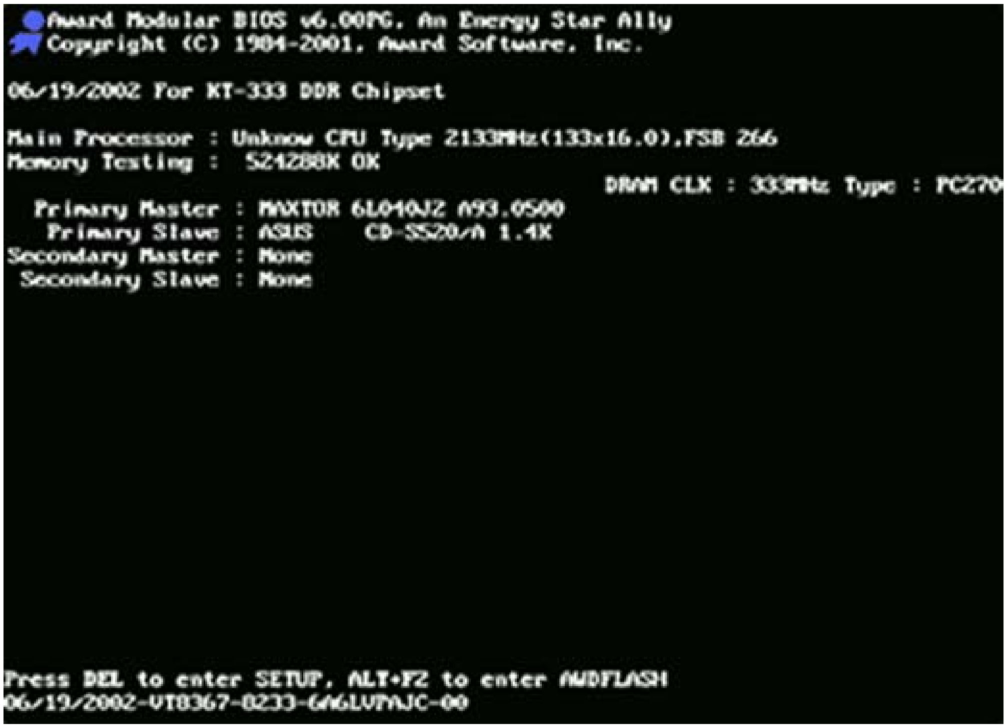
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

Booting From USB

You will need to configure your computer's BIOS to boot from USB. Not all computers or BIOSes support booting from USB. Since all BIOSes are different, I can't give you word-for-word instructions for doing this part. Your best chance of figuring out if your BIOS can boot from USB, and how to check the settings is to use a search engine and search your motherboard model number and terms like "USB boot". Generally, the steps you need to follow should be similar to something like this:

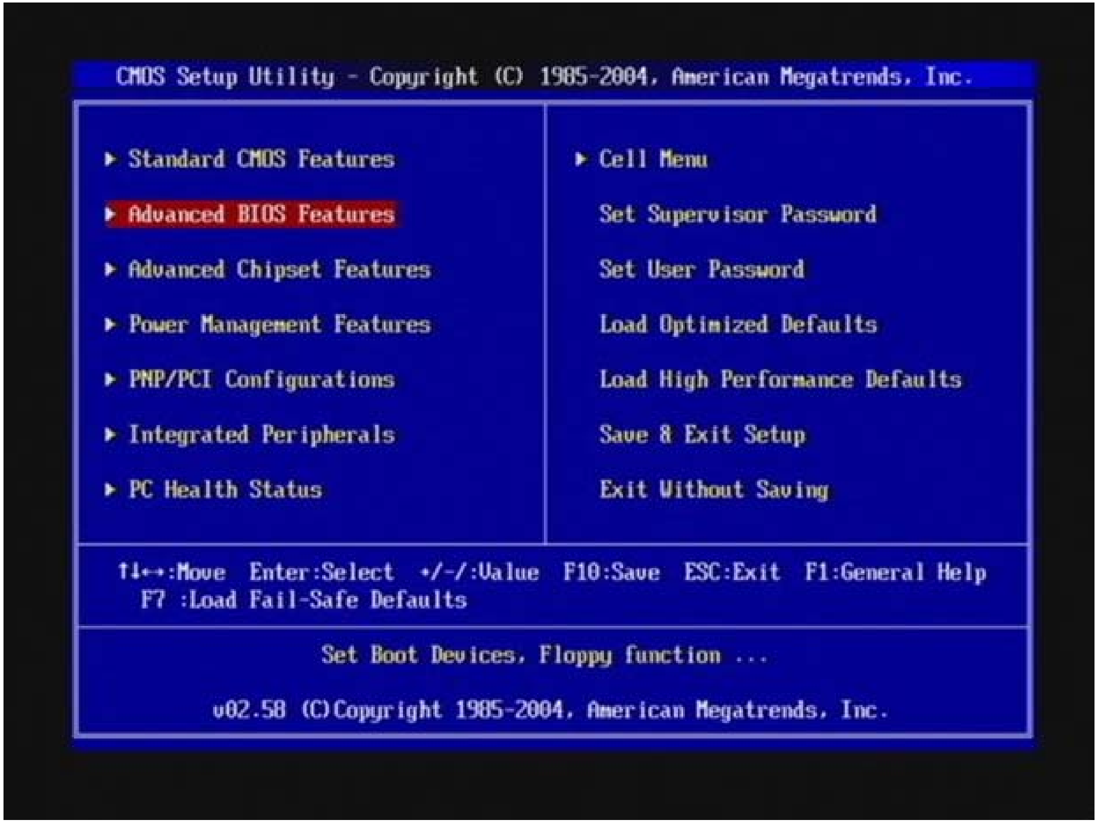
When you power up your computer, you should see somewhere telling you to "Press [key] to enter setup"



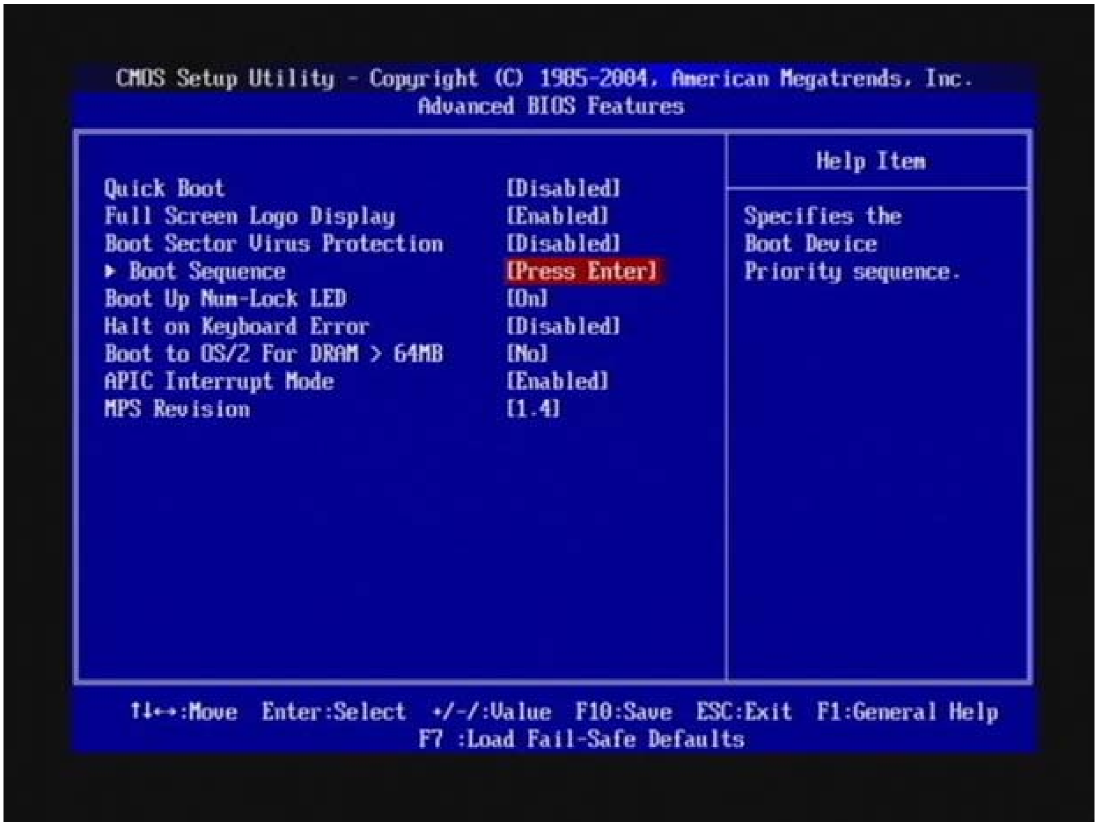
```
Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2001, Award Software, Inc.

06/19/2002 For KT-333 DDR Chipset

Main Processor : Unknow CPU Type 2133MHz(133x16.0),FSB 266
Memory Testing :  524288K OK
                                            DRAM CLK : 333MHz Type : PC270
  Primary Master : MAXTOR 6L040J2 A93.0500
   Primary Slave : ASUS    CD-S520/A 1.4X
Secondary Master : None
 Secondary Slave : None






Press DEL to enter SETUP, ALT+F2 to enter AWDFLASH
06/19/2002-VT8367-8233-6A6LVPAJC-00
```

In this example, the key to hit is DEL (delete). So hit whatever key it's telling you and you may see something like these following pictures.

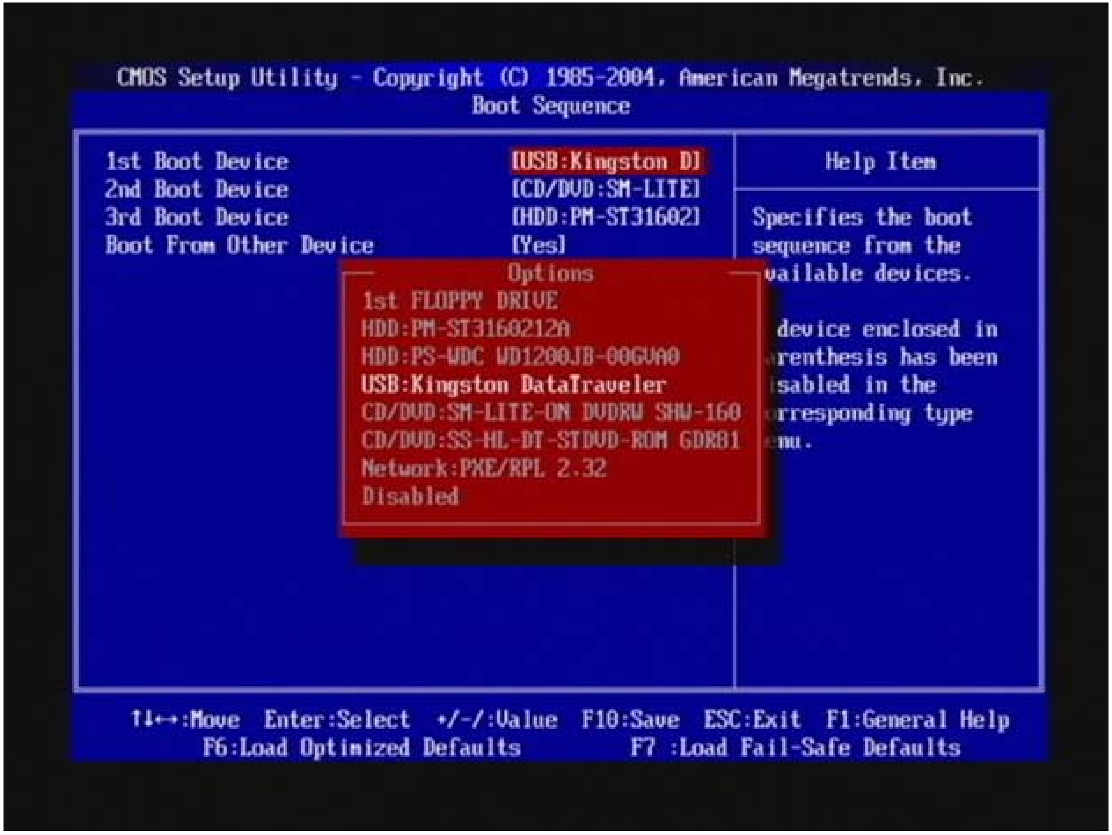
For my particular BIOS, I need to go Advanced BIOS Features > Boot Sequence, and then I can select the flash drive as the primary boot device. F10 to save and exit, which should work with all BIOSes.



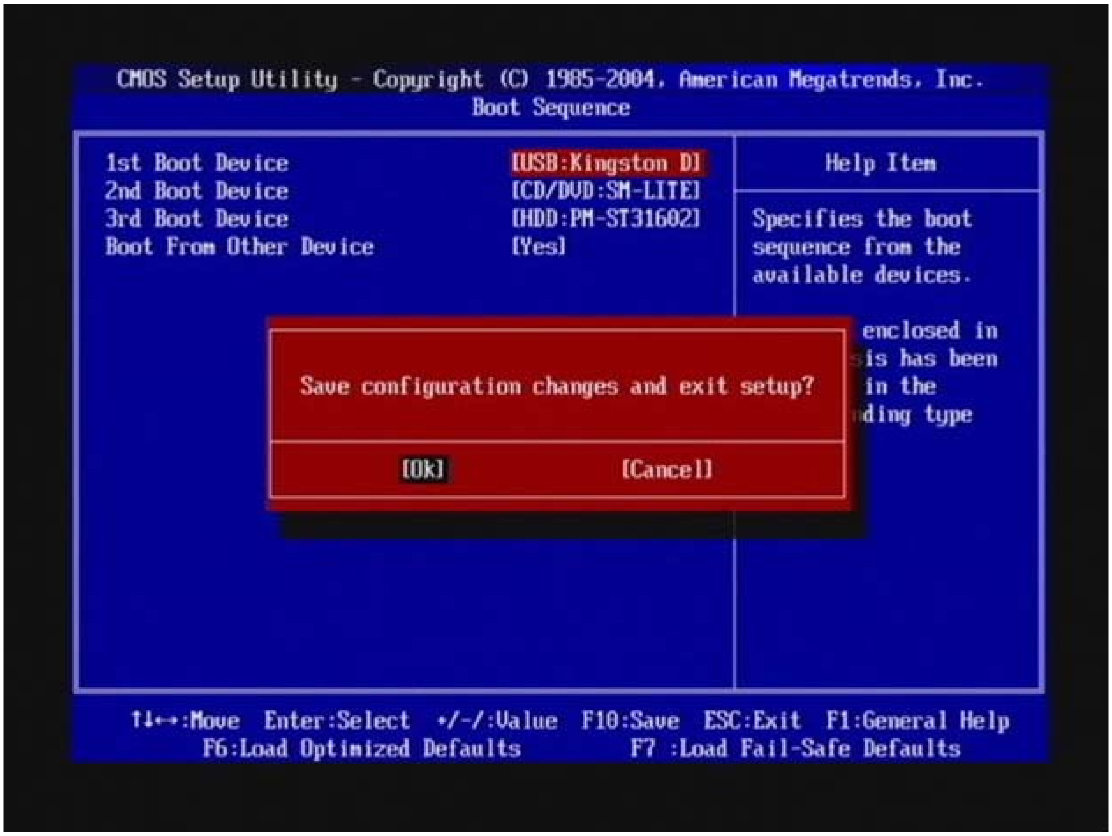
```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.

▶ Standard CMOS Features          ▶ Cell Menu

▶ Advanced BIOS Features            Set Supervisor Password

▶ Advanced Chipset Features         Set User Password

▶ Power Management Features         Load Optimized Defaults

▶ PNP/PCI Configurations            Load High Performance Defaults

▶ Integrated Peripherals            Save & Exit Setup

▶ PC Health Status                  Exit Without Saving

↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
  F7 :Load Fail-Safe Defaults

            Set Boot Devices, Floppy function ...

       v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.
```



```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                     Advanced BIOS Features

                                                      Help Item
Quick Boot                        [Disabled]
Full Screen Logo Display          [Enabled]       Specifies the
Boot Sector Virus Protection      [Disabled]      Boot Device
▶ Boot Sequence                   [Press Enter]   Priority sequence.
Boot Up Num-Lock LED              [On]
Halt on Keyboard Error            [Disabled]
Boot to OS/2 For DRAM > 64MB      [No]
APIC Interrupt Mode               [Enabled]
MPS Revision                      [1.4]

 ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
                   F7 :Load Fail-Safe Defaults
```



```
   CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                              Boot Sequence

  1st Boot Device                [USB:Kingston D]    Help Item
  2nd Boot Device                [CD/DVD:SM-LITE]
  3rd Boot Device                [HDD:PM-ST31602]    Specifies the boot
  Boot From Other Device         [Yes]               sequence from the
                   ──────────── Options ────────────  vailable devices.
                    1st FLOPPY DRIVE
                    HDD:PM-ST3160212A                  device enclosed in
                    HDD:PS-WDC WD1200JB-00GVA0        renthesis has been
                    USB:Kingston DataTraveler         isabled in the
                    CD/DVD:SM-LITE-ON DVDRW SHW-160   rresponding type
                    CD/DVD:SS-HL-DT-STDVD-ROM GDR81   enu.
                    Network:PXE/RPL 2.32
                    Disabled

   ↑↓↔:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
         F6:Load Optimized Defaults        F7 :Load Fail-Safe Defaults
```

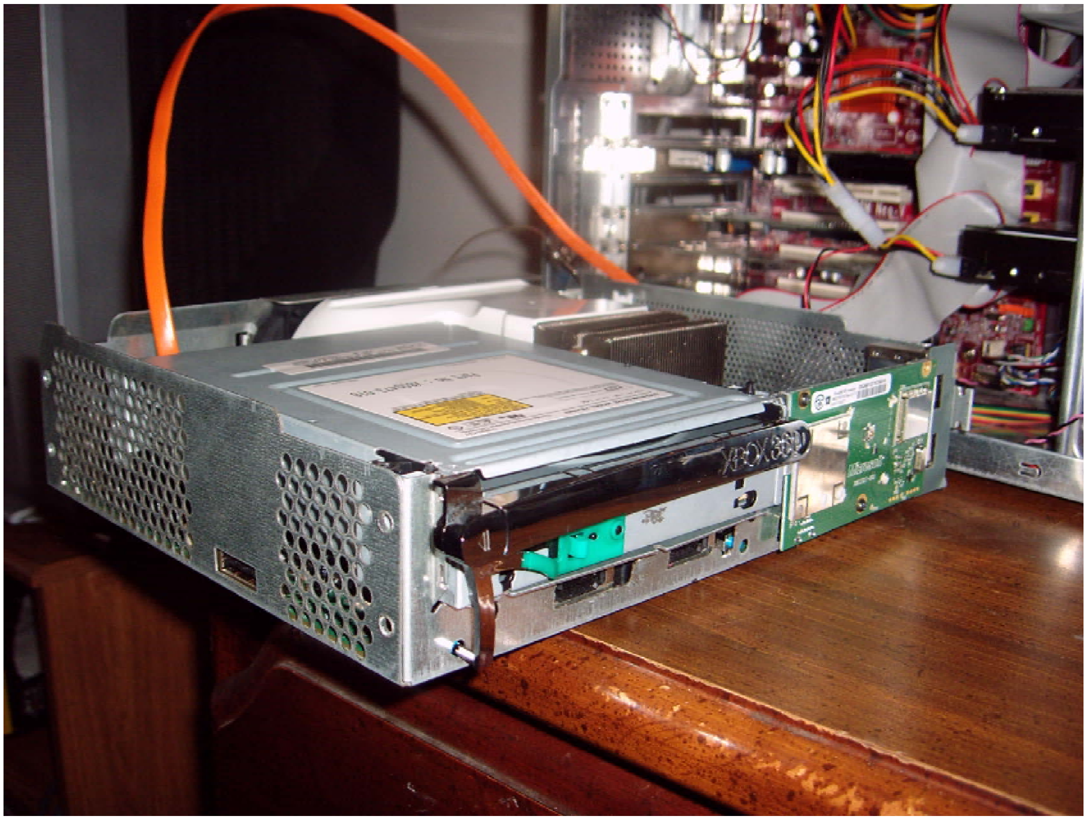


```
   CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                              Boot Sequence

  1st Boot Device                [USB:Kingston D]    Help Item
  2nd Boot Device                [CD/DVD:SM-LITE]
  3rd Boot Device                [HDD:PM-ST31602]    Specifies the boot
  Boot From Other Device         [Yes]               sequence from the
                                                     available devices.

                                                         enclosed in
                                                        is has been
    Save configuration changes and exit setup?          in the
                                                        ding type

              [Ok]                  [Cancel]

   ↑↓↔:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
         F6:Load Optimized Defaults        F7 :Load Fail-Safe Defaults
```

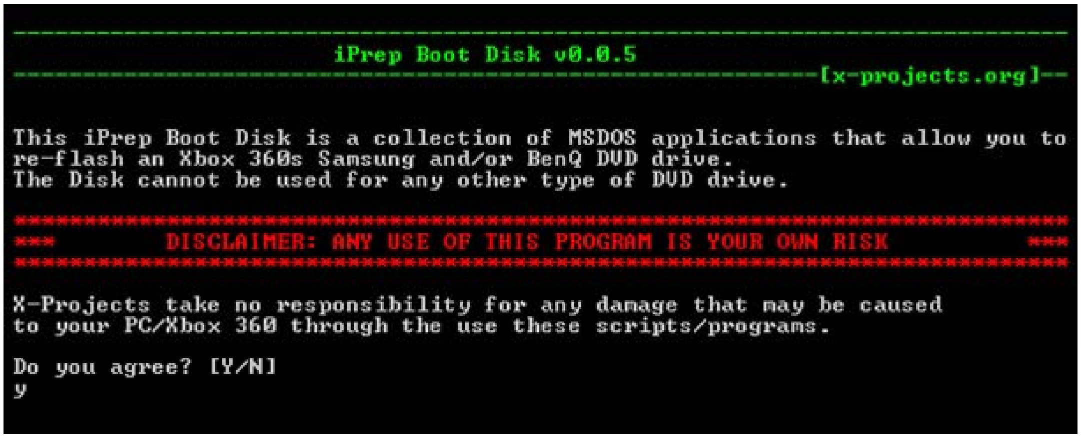
Flashing The Drive (USB)

Reading The Original Firmware

Connect the SATA cable from the 360 to your PC / SATA card, then turn on your PC and boot from the USB flash drive into DOS. The Xbox 360 should still be off at this point.



Enter y to accept the iPrep Terms of Use.

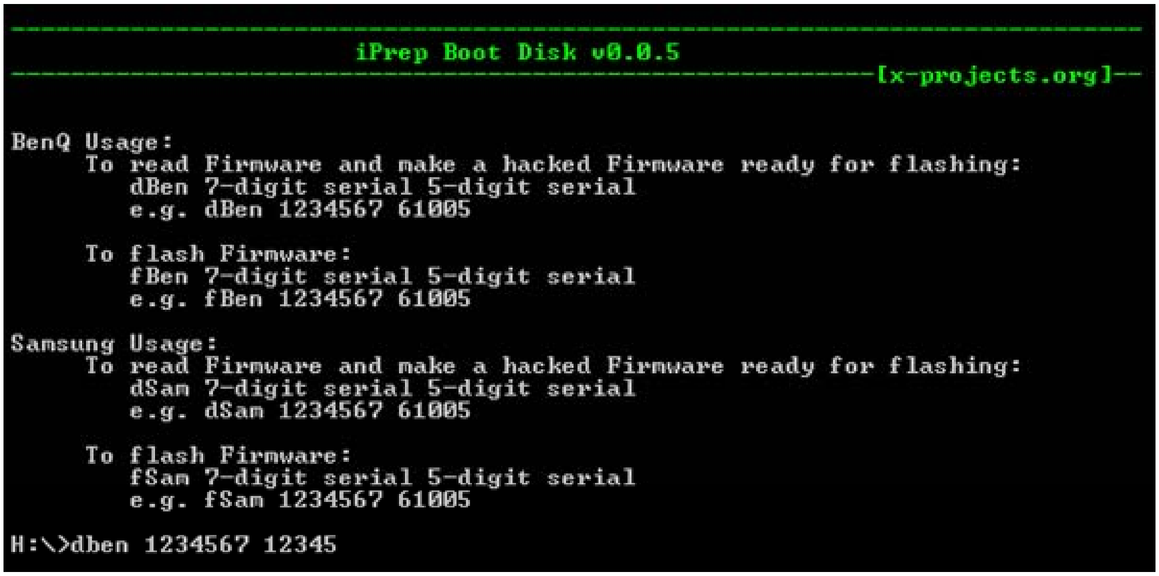


```
--------------------------------------------------------------------------------
                          iPrep Boot Disk v0.0.5
-------------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

********************************************************************************
***          DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK            ***
********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

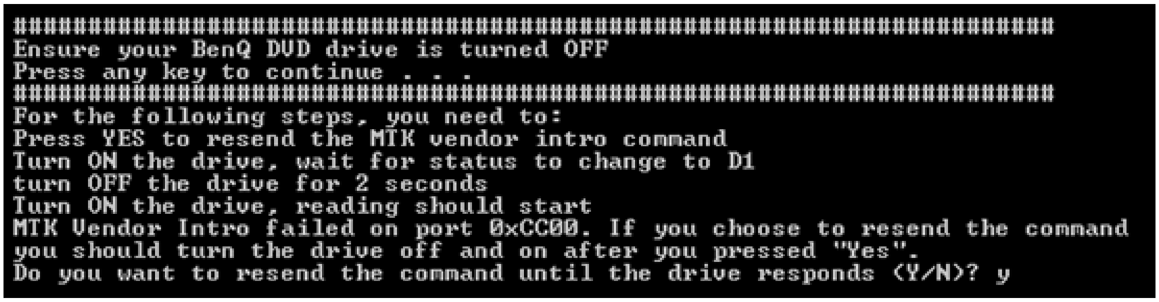
(we'll use the serial number 1234567 12345 as an example)

dBen 1234567 12345 [press enter]



```
------------------------------------------------------------------------------
                         iPrep Boot Disk v0.0.5
-----------------------------------------------------------[x-projects.org]--

BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005

H:\>dben 1234567 12345
```

Follow the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.



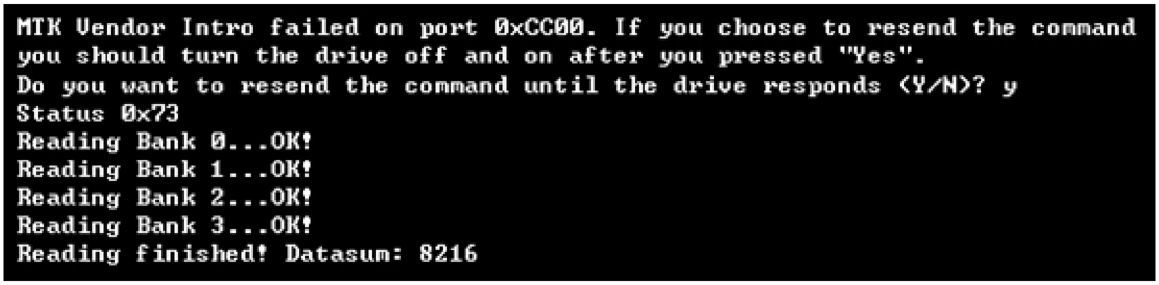
```
##########################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
##########################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, wait for status to change to D1
turn OFF the drive for 2 seconds
Turn ON the drive, reading should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

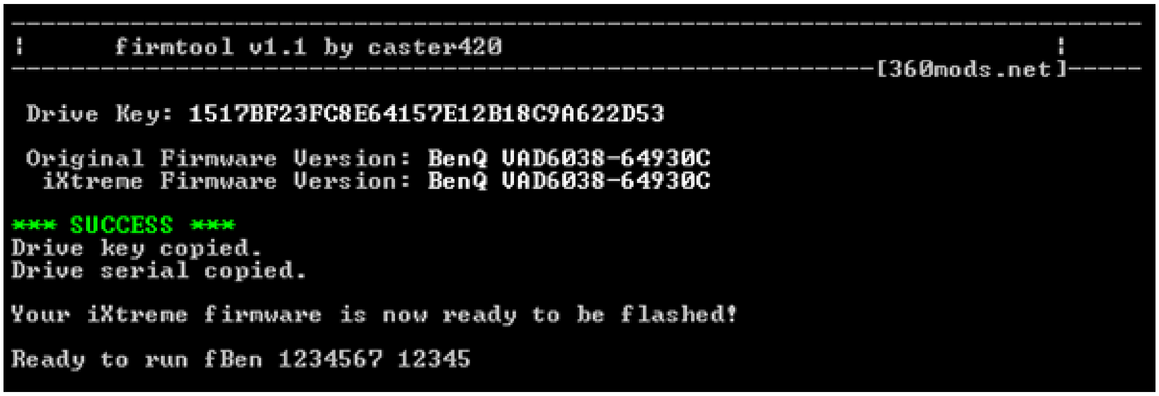
- Turn on the Xbox 360, you should get a good drive status 0x73 and reading should begin automatically.

All 4 banks should read OK and you should get a “Reading finished!” message with a Datasum.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Reading Bank 0...OK!
Reading Bank 1...OK!
Reading Bank 2...OK!
Reading Bank 3...OK!
Reading finished! Datasum: 8216
```

Firmtool will then run automatically to create the hacked firmware…



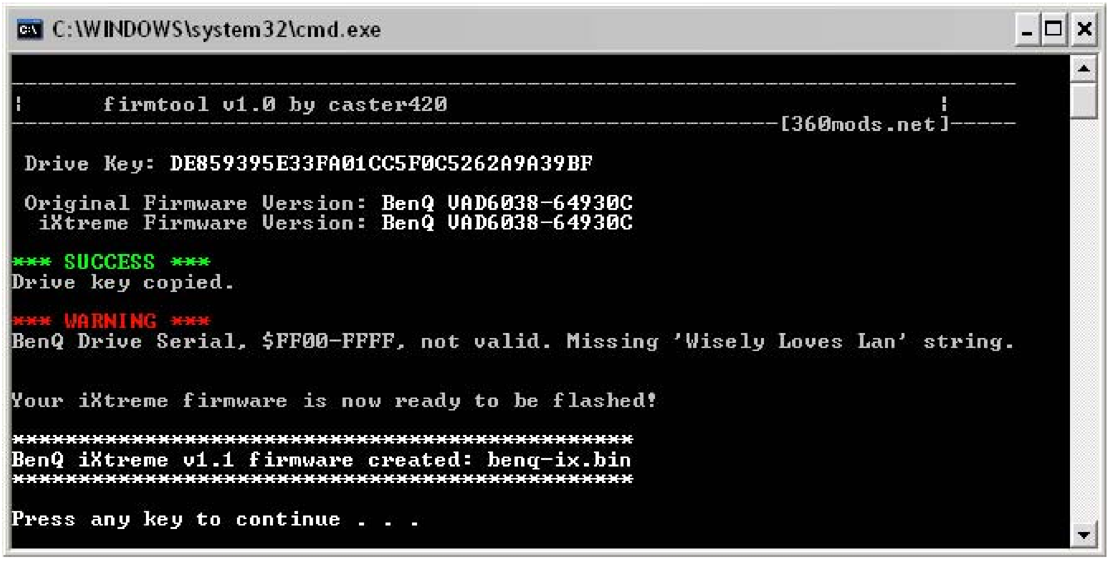
```
----------------------------------------------------------------------------
¦      firmtool v1.1 by caster420                                      ¦
----------------------------------------------------------[360mods.net]-----

 Drive Key: 1517BF23FC8E64157E12B18C9A622D53

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

Ready to run fBen 1234567 12345
```

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

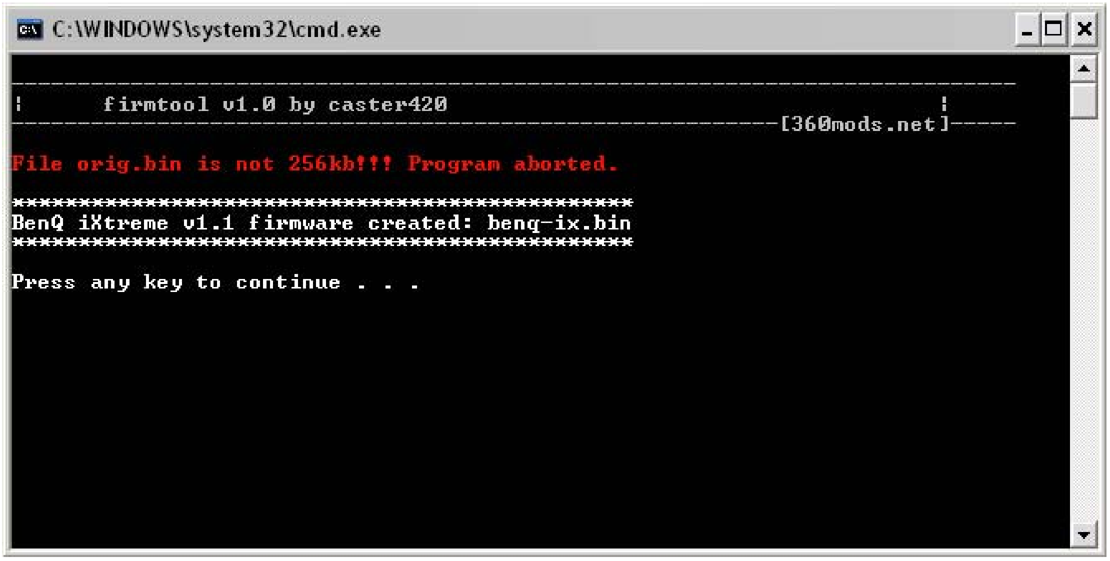
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

INVALID DRIVE SERIAL



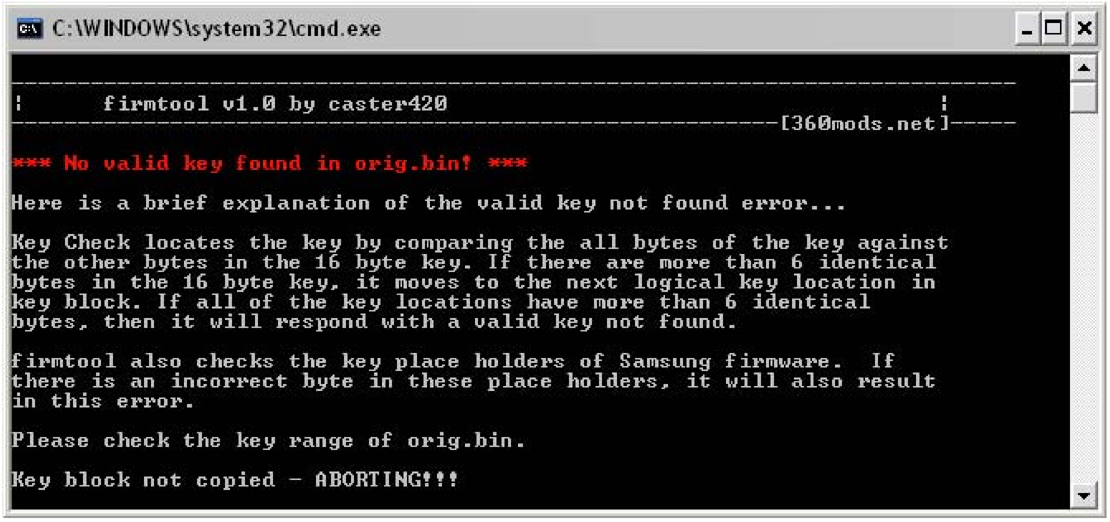
```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                          |
-----------------------------------------------------------[360mods.net]-----

 Drive Key: DE859395E33FA01CC5F0C5262A9A39BF

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.

*** WARNING ***
BenQ Drive Serial, $FF00-FFFF, not valid. Missing 'Wisely Loves Lan' string.

Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

ORIG.BIN IS WRONG SIZE



```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                          |
-----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

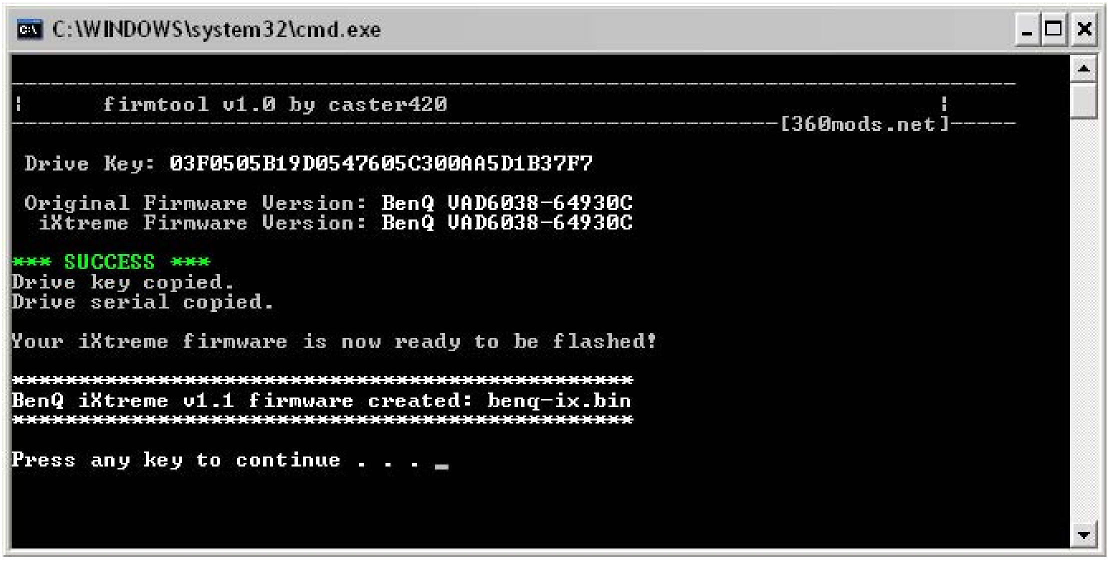
NO VALID KEY IN ORIG.BIN



```
------------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                          |
-------------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS



```
------------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                          |
-------------------------------------------------------------[360mods.net]-----

 Drive Key: 03F0505B19D0547605C300AA5D1B37F7

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . . _
```

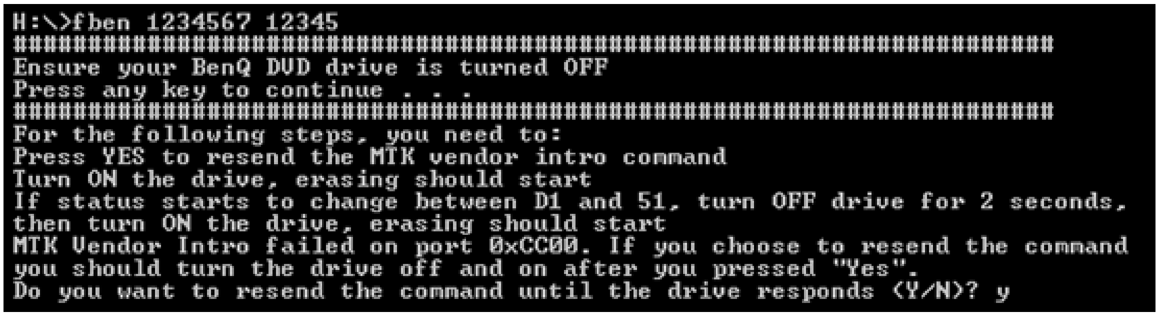
Flashing The Hacked Firmware

After reading the original firmware and firmtool has completed successfully, you can proceed to flashing the hacked firmware. You should not need to restart your PC in order to flash, but you will need to power off the Xbox 360.

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(we'll use the serial number 1234567 12345 as an example)

fBen 1234567 12345 [press enter]



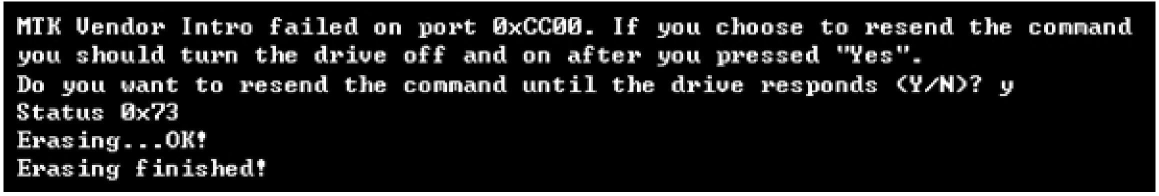
```
H:\>fben 1234567 12345
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, erasing should start
If status starts to change between D1 and 51, turn OFF drive for 2 seconds,
then turn ON the drive, erasing should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

Following the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

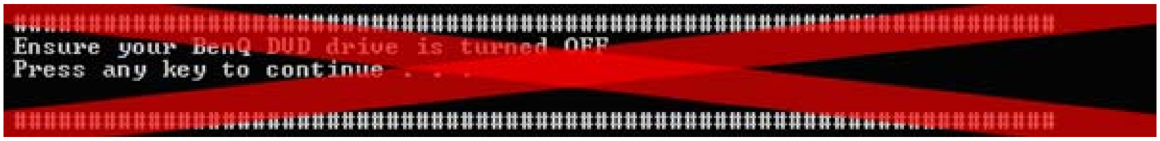
- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

- Turn on the Xbox 360, you should get a good drive status 0x73 and erasing should begin automatically.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Erasing...OK!
Erasing finished!
```

You will then see this screen which tells you to power OFF the 360:

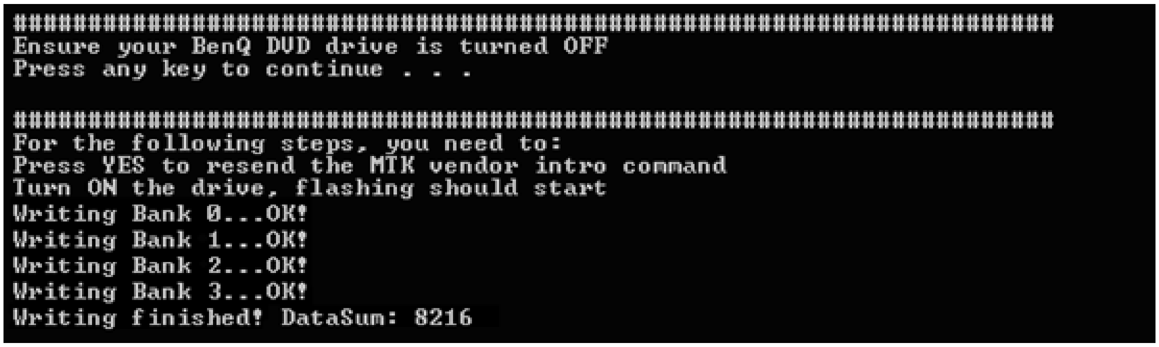


```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
```

IMPORTANT! You must power the 360 back ON before pressing any key to continue.

If you press any key to continue with the 360 powered OFF (as instructed to do on screen) it will immediately freeze attempting to write Bank 0. This is a bug in iPrep 006 and will hopefully be resolved in a future release.

So power the 360 OFF, wait a few seconds, power it ON, wait a few seconds, then press any key to continue.



```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, flashing should start
Writing Bank 0...OK!
Writing Bank 1...OK!
Writing Bank 2...OK!
Writing Bank 3...OK!
Writing finished! DataSum: 8216
```

Writing should begin as soon as you press any key to continue with the 360 already powered ON. All 4 banks should write OK and you should get a “Writing finished!” message with a Datasum.

iPrep (NTFS4DOS CD)

The following process will set up an NTFS partition (your Windows hard drive) with everything necessary to read your original firmware and write the hacked firmware onto the drive. One thing you should realize before starting is that NTFS4DOS has been known to have some problems with partitions larger than 32gb. You can try going ahead and using your large partition, but if you experience problems or just want to make sure it will work, you should make a small, logical, primary partition using something like Partition Magic or a Gparted live cd. We will use iPrep to automatically detect your SATA port and copy the required DosFlash and hacked firmware files onto it.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer’s web site to install the latest drivers. The latest drivers for VIA chipsets and Windows XP are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, the latest version is always available on his website at http://www.x-projects.org or on xbins in:

/XBOX 360/firmware/firmware tools/iPrep 101/

The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder and run the installer to install iPrep.

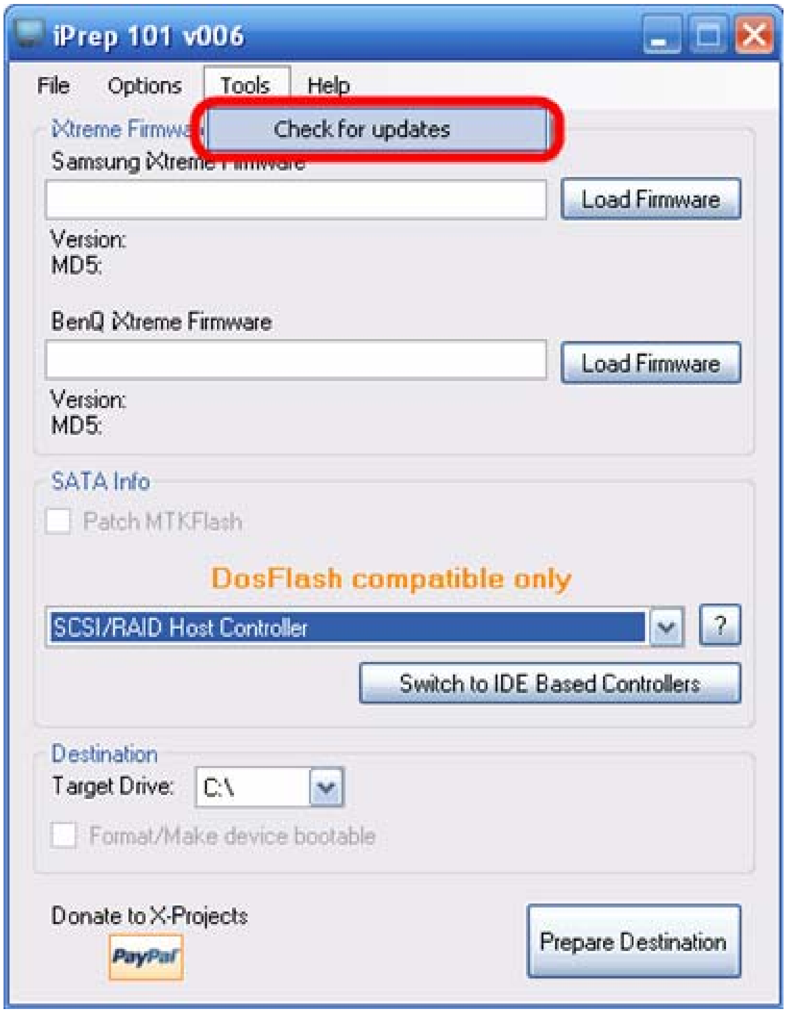
Next we will update Firmtool to the newest version which is 1.2. There are many improvements from 1.1 to 1.2 so it is recommended to update before formatting your drive with iPrep and flashing.

To do this, download Firmtool 1.2 from here and extract the “firmtoolv1.2.rar” file. Then replace the “firmtool.exe” file in the folder below with the new one from the rar file.

C:\Program Files\X-Projects\iPrep 101\Resources\Tools

Since the firmtool.exe already exists, Windows should ask you if you want to replace the existing file with the new one – click Yes.

Now run the program. The first thing you want to do is check for updates.



Version:
MD5:

Version:
MD5:

□ Patch MTKFlash

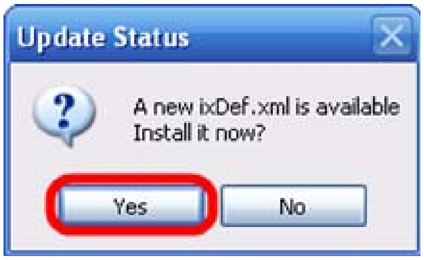
DosFlash compatible only

SCSI/RAID Host Controller

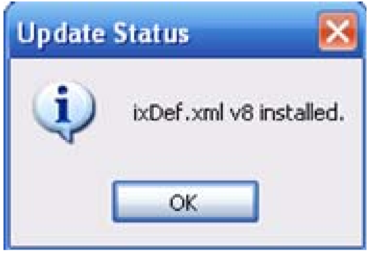
Target Drive: C:\

□ Format/Make device bootable

It should find an updated definitions file. Choose "Yes" to install it.

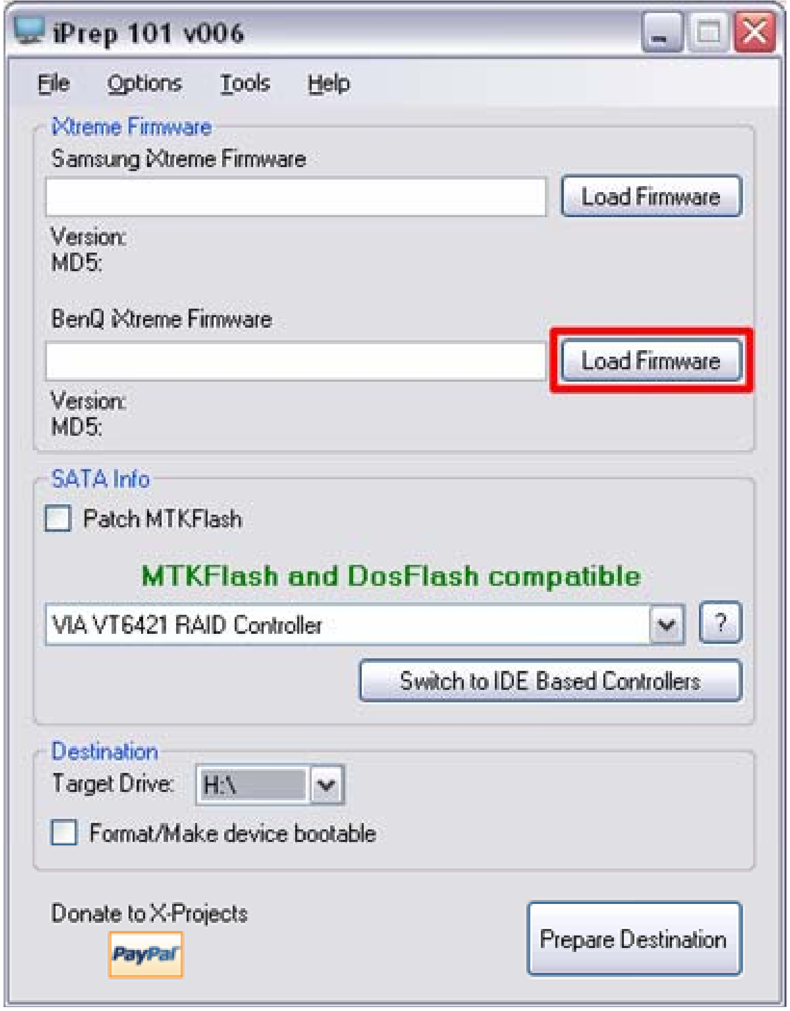


A new ixDef.xml is available
Install it now?



ixDef.xml v8 installed.

Hit the “Load Firmware” button on iPrep.



Samsung iXtreme Firmware

Version:
MD5:

BenQ iXtreme Firmware

Version:
MD5:

□ Patch MTKFlash

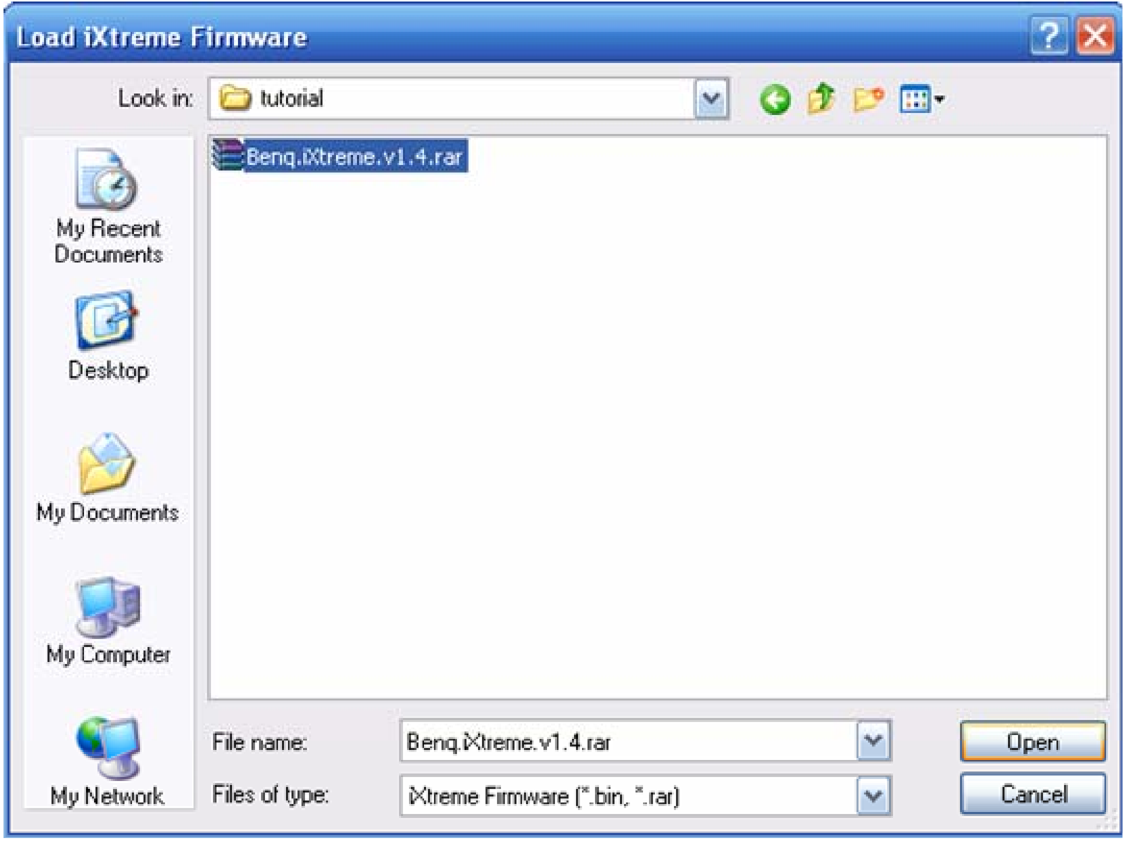
VIA VT6421 RAID Controller

Target Drive: H:\

□ Format/Make device bootable

When you hit this button, a “Load iXtreme” window should open for you to browse for the iXtreme firmware. Browse and open the:

“Benq.iXtreme.v1.4.rar” file



Load iXtreme Firmware

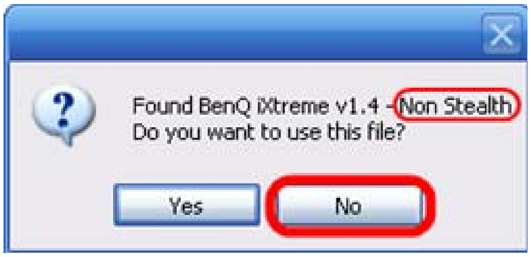
Look in: tutorial

Benq.iXtreme.v1.4.rar

File name: Benq.iXtreme.v1.4.rar

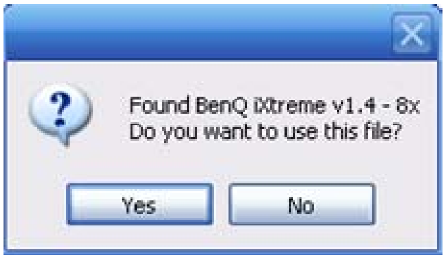
Files of type: iXtreme Firmware (*.bin, *.rar)

You should then get a series of messages confirming that iPrep has found the iXtreme firmware files inside the rar, the first one will be for the NON-STEALTH version, click No.



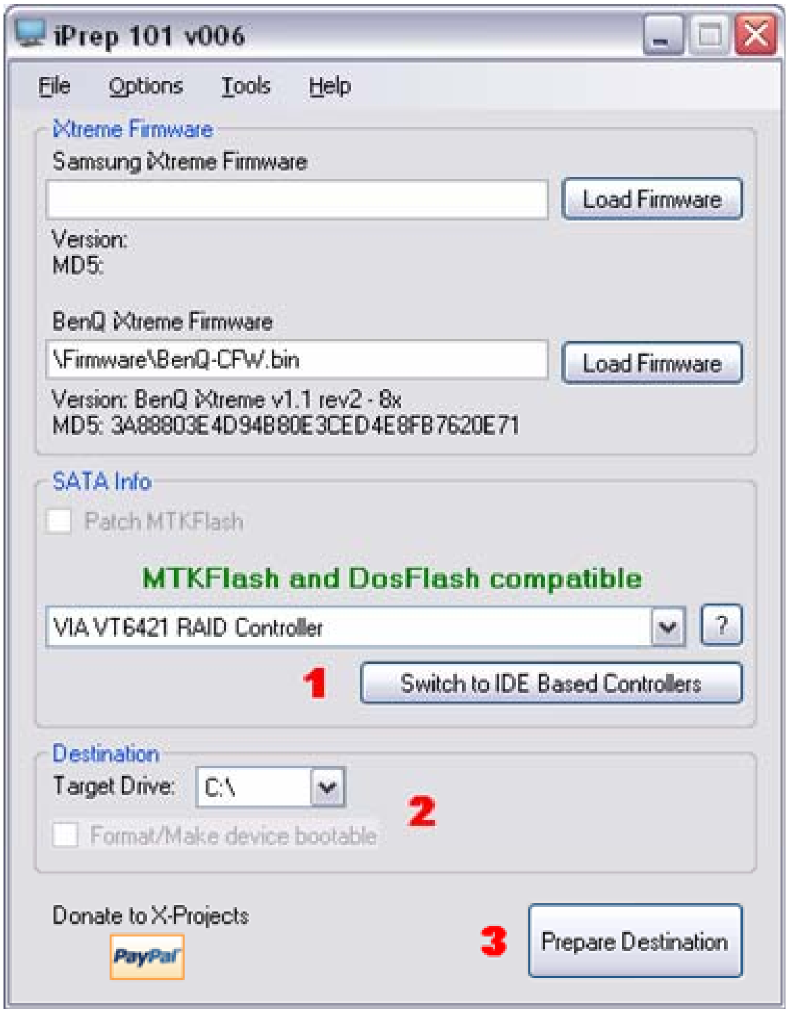
Found BenQ iXtreme v1.4 - Non Stealth
Do you want to use this file?

iPrep will continue loading the firmware, click Yes to choose the speed that you would like to use. (2x, 5x, 8x, or 12x)



Found BenQ iXtreme v1.4 - 8x
Do you want to use this file?

There is no “right” firmware to use here, it is matter of preference. Normal speed is 12x, the slower versions are quieter but the trade-off is longer load times. It is up to you to choose the one you want or you can simply go with 12x and there will be no change from normal.



iPrep 101 v006

Xtreme Firmware

Samsung Xtreme Firmware

Version:
MD5:

BenQ Xtreme Firmware

\Firmware\BenQ-CFW.bin

Version: BenQ Xtreme v1.1 rev2 - 8x
MD5: 3A88803E4D94B80E3CED4E8FB7620E71

SATA Info

☐ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

Destination

Target Drive: C:\

☐ Format/Make device bootable

Donate to X-Projects

1. Confirm that your SATA chipset is selected in the dropdown menu. You can click the “Switch to IDE/SCSI Based Controllers” button to detect your SATA chipset.

2. Select your NTFS partition.

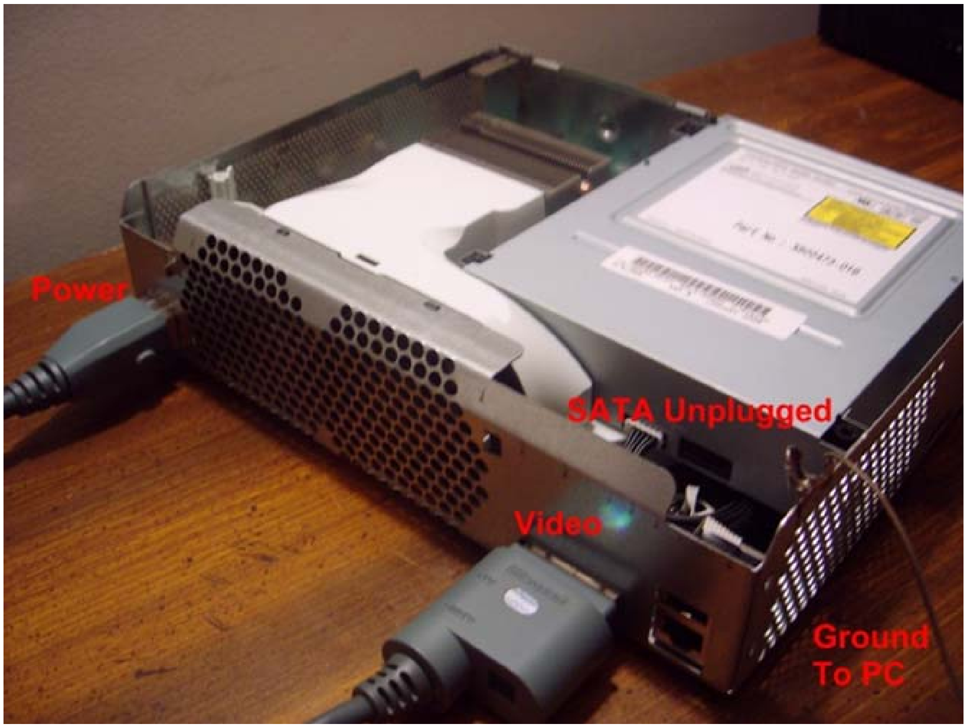
3. Click “Prepare Destination”.

If everything goes smooth you should get a “Preparation Complete” message.

Download the NTFS4DOS ISO and burn it to a blank CD-R using any recording software capable of burning ISO files. (IMGBurn)

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

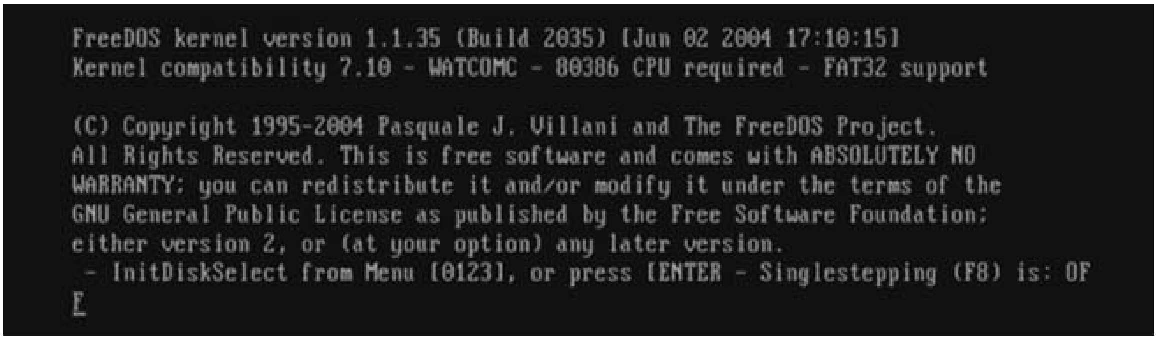
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Flashing The Drive (NTFS4DOS CD)

Reading The Original Firmware

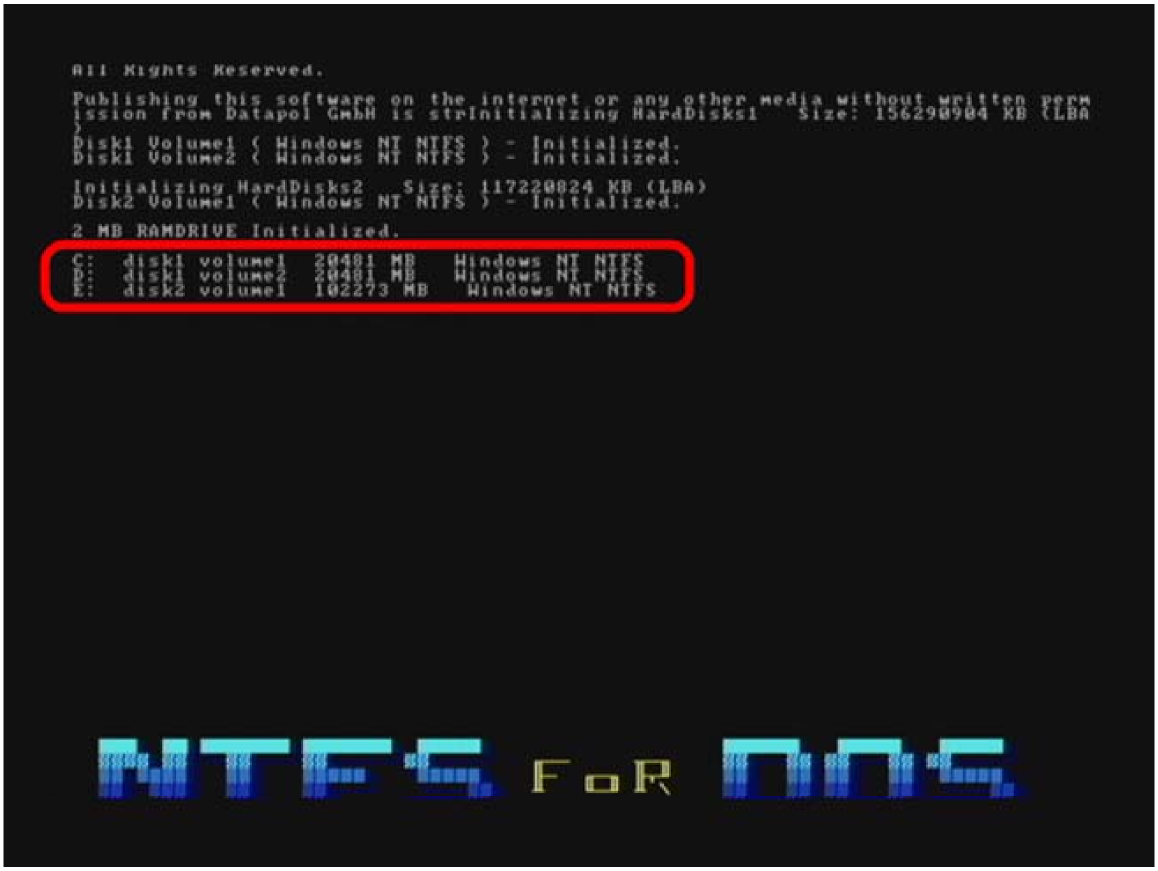
Turn on your PC and boot from the NTFS4DOS CD. After a while it should say:

"Select from Menu [0123], or press [ENTER – Singlestepping (F8) is: OFF"



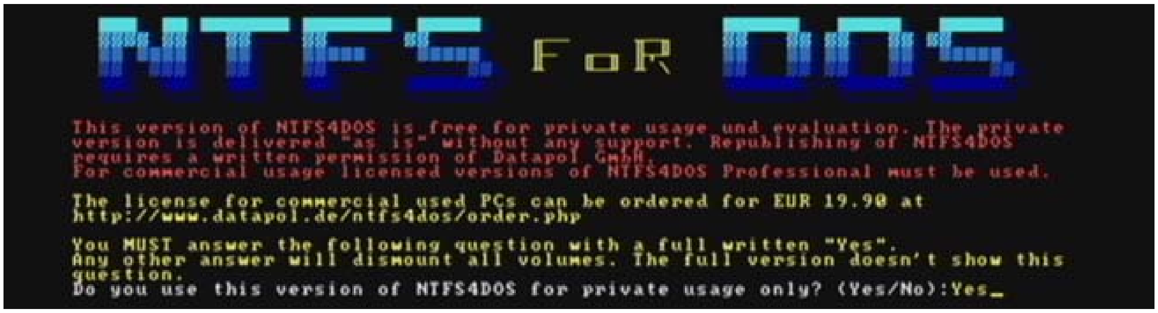
```
FreeDOS kernel version 1.1.35 (Build 2035) [Jun 02 2004 17:10:15]
Kernel compatibility 7.10 - WATCOMC - 80386 CPU required - FAT32 support

(C) Copyright 1995-2004 Pasquale J. Villani and The FreeDOS Project.
All Rights Reserved. This is free software and comes with ABSOLUTELY NO
WARRANTY: you can redistribute it and/or modify it under the terms of the
GNU General Public License as published by the Free Software Foundation;
either version 2, or (at your option) any later version.
 - InitDiskSelect from Menu [0123], or press [ENTER - Singlestepping (F8) is: OF
F
```

Hit the Enter key and you should see an NTFS for DOS logo screen with a disclaimer. On this screen, please notice your drive letter that has been mounted at the top. You will need to know this when typing in commands.



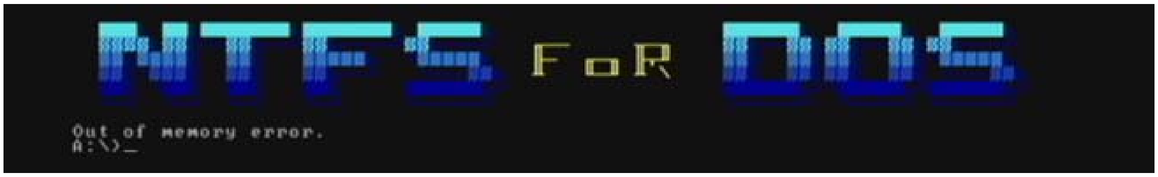
```
All Rights Reserved.

Publishing this software on the internet or any other media without written perm
ission from Datapol GmbH is strInitializing HardDisks1    Size: 156290904 KB (LBA
)
Disk1 Volume1 ( Windows NT NTFS ) - Initialized.
Disk1 Volume2 ( Windows NT NTFS ) - Initialized.

Initializing HardDisks2   Size: 117220824 KB (LBA)
Disk2 Volume1 ( Windows NT NTFS ) - Initialized.

2 MB RAMDRIVE Initialized.
C:  disk1 volume1  20481 MB   Windows NT NTFS
D:  disk1 volume2  20481 MB   Windows NT NTFS
E:  disk2 volume1  102273 MB   Windows NT NTFS
```

The disclaimer asks you if you are going to use this for private usage only, please type in “Yes” without the quotes, and hit the Enter key.



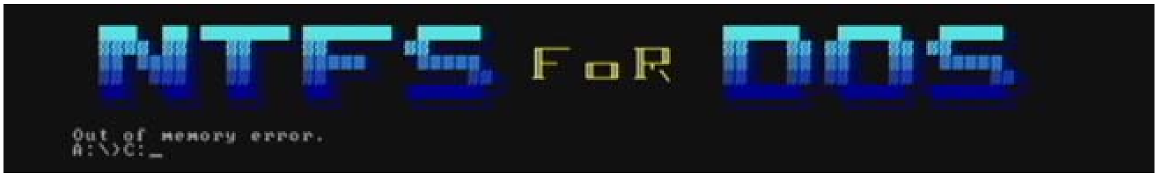
```
This version of NTFS4DOS is free for private usage und evaluation. The private
version is delivered "as is" without any support. Republishing of NTFS4DOS
requires a written permission of Datapol GmbH.
For commercial usage licensed versions of NTFS4DOS Professional must be used.

The license for commercial used PCs can be ordered for EUR 19.90 at
http://www.datapol.de/ntfs4dos/order.php

You MUST answer the following question with a full written "Yes".
Any other answer will dismount all volumes. The full version doesn't show this
question.
Do you use this version of NTFS4DOS for private usage only? (Yes/No):Yes_
```

Dos will start in your ram drive. You will need to mount your hard drive.



```
Out of memory error.
A:\>_
```

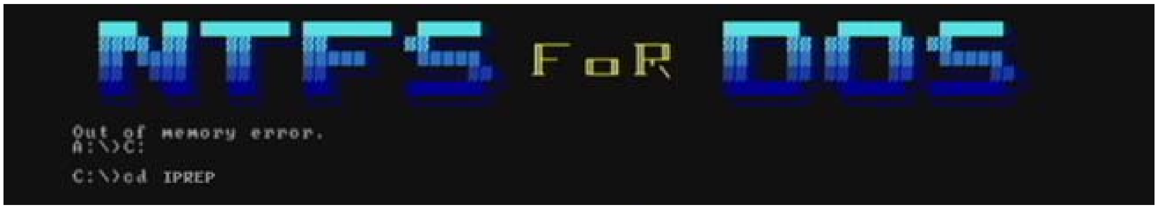
C: [press enter] ← use the drive letter your hard drive was given



```
Out of memory error.
A:\>C:_
```

cd iPrep_101 [press enter]

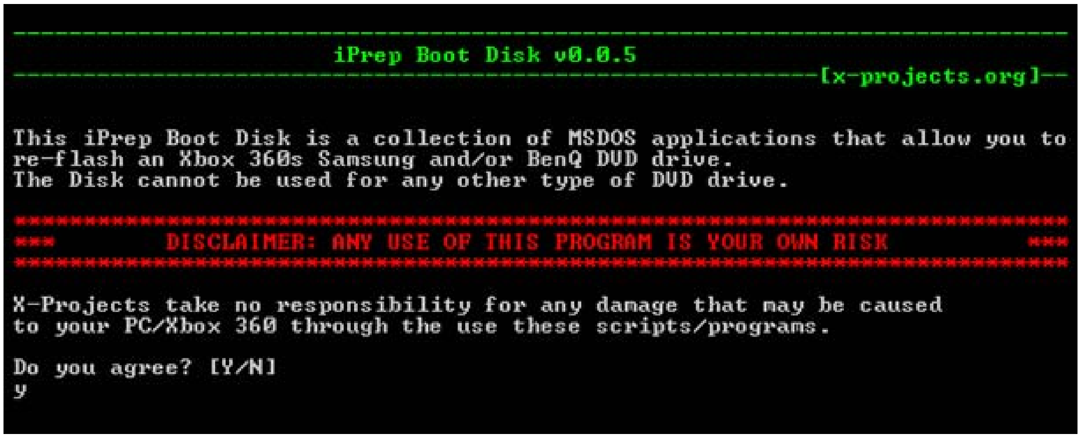
If you get a message saying “chdir failed” it is because of the long directory name. Type “dir” without the quotes and hit enter for a directory listing of the C: drive. The iPrep_101 folder may show up as something like IPREP_~2 or similar. So use that with the cd command.



```
Out of memory error.
A:\>C:

C:\>cd IPREP
```

Now that you are in the right directory, you can now connect the Xbox 360 to the PC using the SATA cable.

Enter y to accept the iPrep Terms of Use.

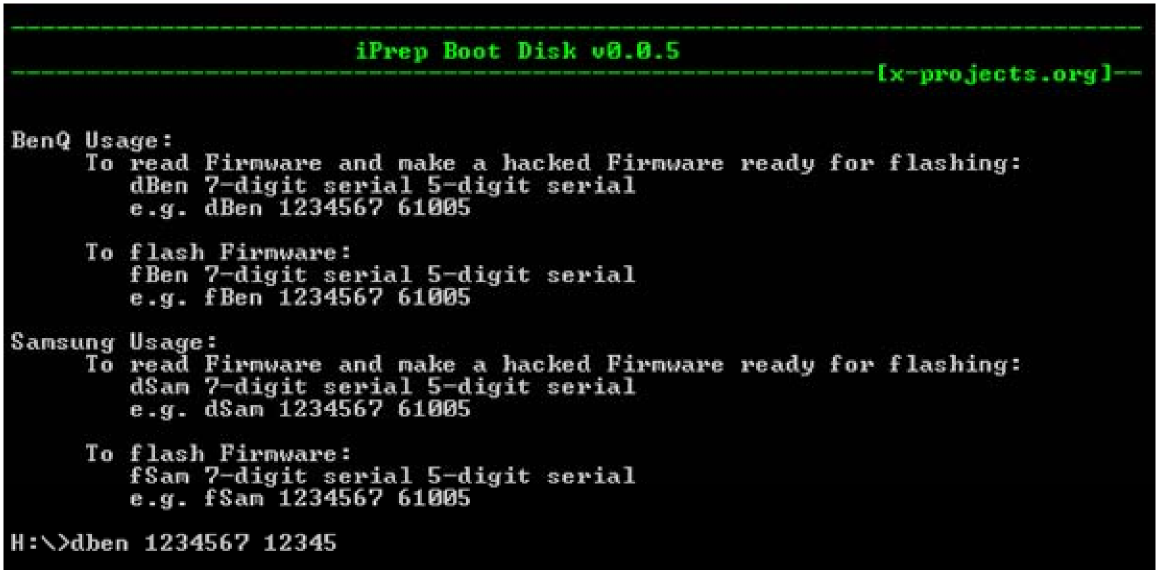


```
-----------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
----------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

*****************************************************************************
***         DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK         ***
*****************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

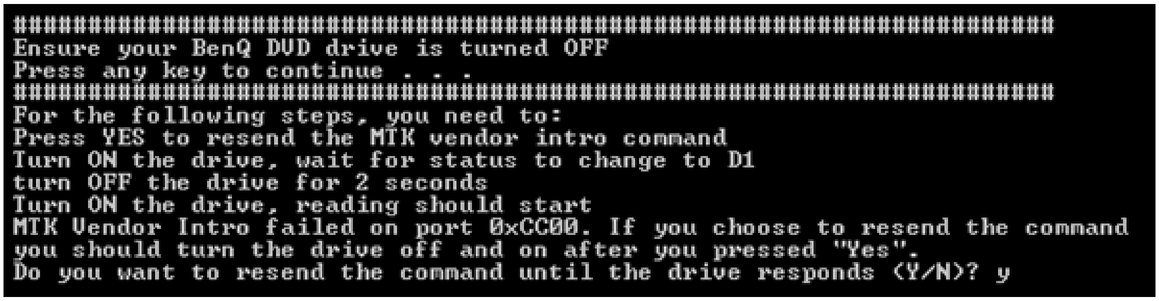
(we'll use the serial number 1234567 12345 as an example)

dBen 1234567 12345 [press enter]



```
----------------------------------------------------------------------------
                       iPrep Boot Disk v0.0.5
----------------------------------------------------------[x-projects.org]--

BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005

H:\>dben 1234567 12345
```

Follow the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.



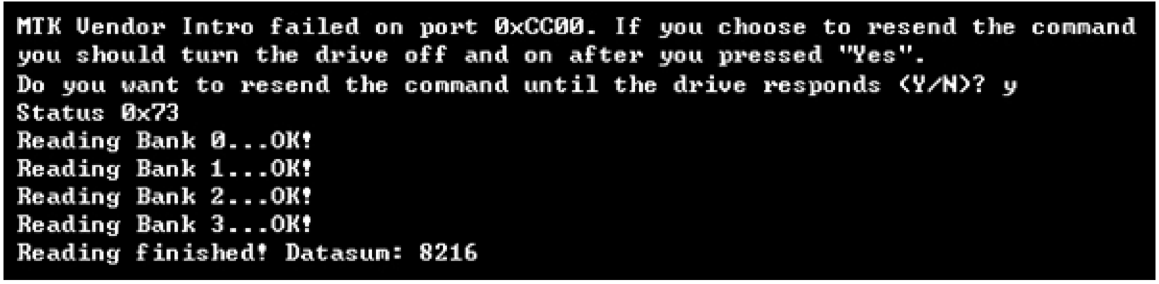
```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, wait for status to change to D1
turn OFF the drive for 2 seconds
Turn ON the drive, reading should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

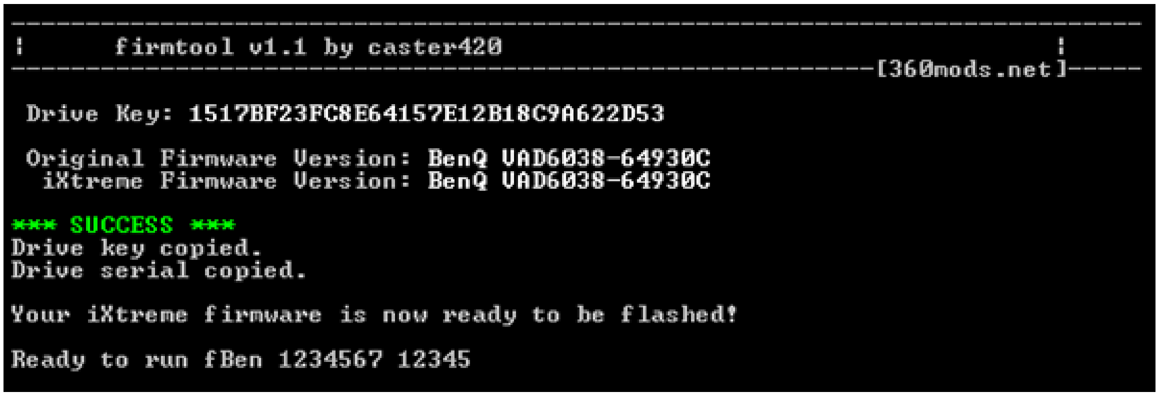
- Turn on the Xbox 360, you should get a good drive status 0x73 and reading should begin automatically.

All 4 banks should read OK and you should get a “Reading finished!” message with a Datasum.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Reading Bank 0...OK!
Reading Bank 1...OK!
Reading Bank 2...OK!
Reading Bank 3...OK!
Reading finished! Datasum: 8216
```

Firmtool will then run automatically to create the hacked firmware…



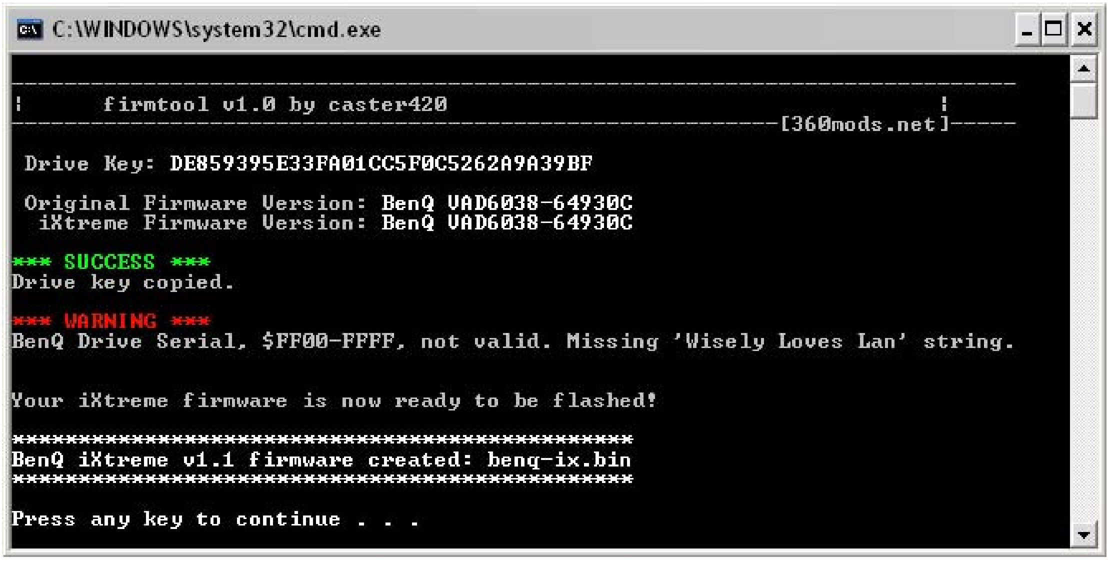
```
------------------------------------------------------------------------------
|      firmtool v1.1 by caster420                                             |
---------------------------------------------------------[360mods.net]-----

 Drive Key: 1517BF23FC8E64157E12B18C9A622D53

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

Ready to run fBen 1234567 12345
```

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

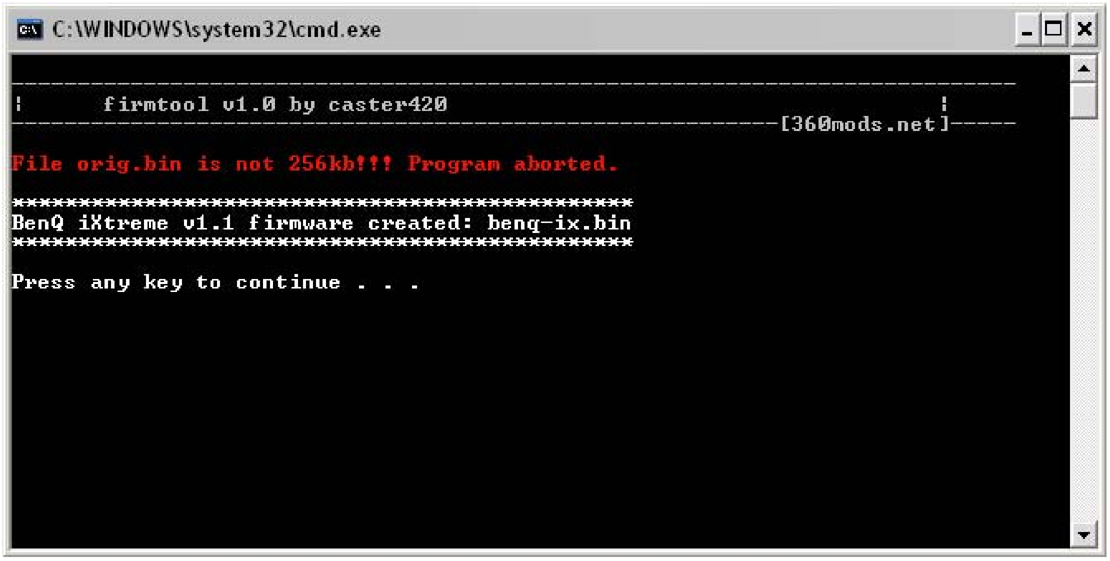
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

INVALID DRIVE SERIAL



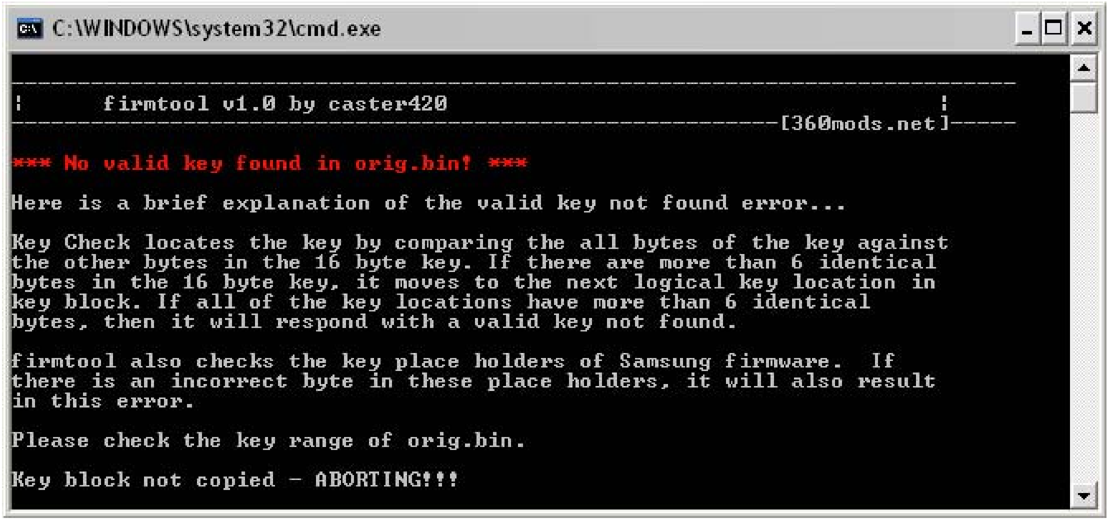
```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                         |
-----------------------------------------------------------[360mods.net]-----

 Drive Key: DE859395E33FA01CC5F0C5262A9A39BF

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.

*** WARNING ***
BenQ Drive Serial, $FF00-FFFF, not valid. Missing 'Wisely Loves Lan' string.


Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

ORIG.BIN IS WRONG SIZE



```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                         |
-----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

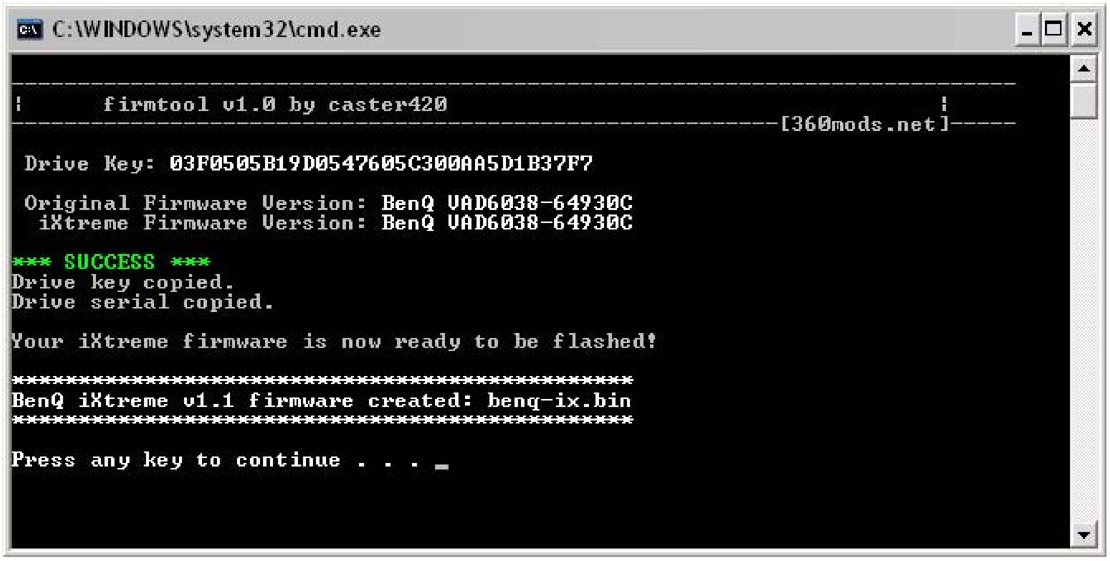
NO VALID KEY IN ORIG.BIN



```
----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                         |
---------------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS



```
----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                         |
---------------------------------------------------------------[360mods.net]-----

 Drive Key: 03F0505B19D0547605C300AA5D1B37F7

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . . _
```

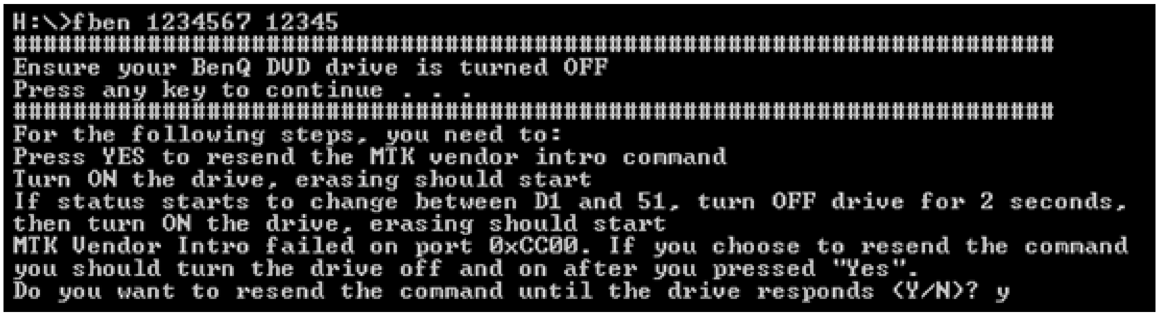
Flashing The Hacked Firmware

After reading the original firmware and firmtool has completed successfully, you can proceed to flashing the hacked firmware. You should not need to restart your PC in order to flash, but you will need to power off the Xbox 360.

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(we'll use the serial number 1234567 12345 as an example)

fBen 1234567 12345 [press enter]



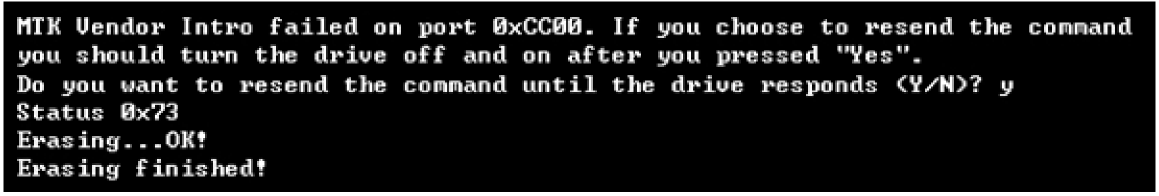
```
H:\>fben 1234567 12345
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, erasing should start
If status starts to change between D1 and 51, turn OFF drive for 2 seconds,
then turn ON the drive, erasing should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

Following the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

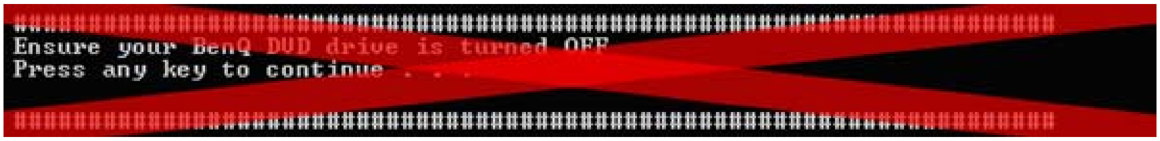
- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

- Turn on the Xbox 360, you should get a good drive status 0x73 and erasing should begin automatically.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Erasing...OK!
Erasing finished!
```

You will then see this screen which tells you to power OFF the 360:

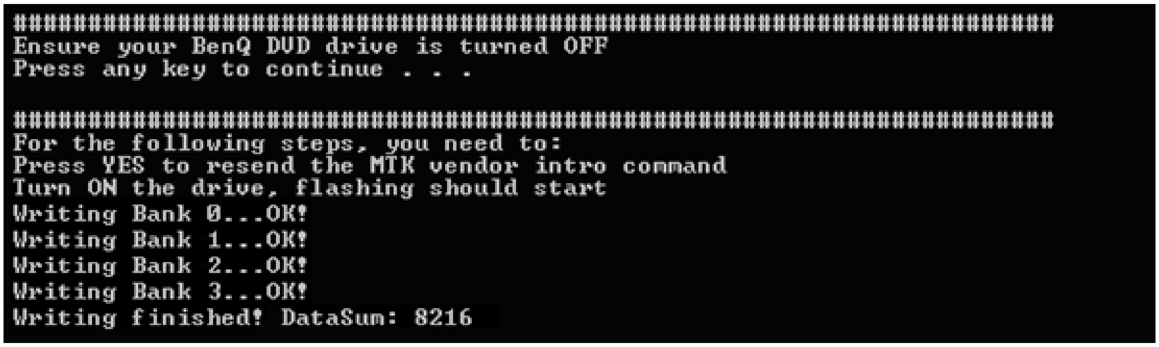


```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
```

IMPORTANT! You must power the 360 back ON before pressing any key to continue.

If you press any key to continue with the 360 powered OFF (as instructed to do on screen) it will immediately freeze attempting to write Bank 0. This is a bug in iPrep 006 and will hopefully be resolved in a future release.

So power the 360 OFF, wait a few seconds, power it ON, wait a few seconds, then press any key to continue.



```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, flashing should start
Writing Bank 0...OK!
Writing Bank 1...OK!
Writing Bank 2...OK!
Writing Bank 3...OK!
Writing finished! DataSum: 8216
```

Writing should begin as soon as you press any key to continue with the 360 already powered ON. All 4 banks should write OK and you should get a “Writing finished!” message with a Datasum.

iPrep (Floppy)

Quick warning about floppies. Lately, people have been bricking their drives by using floppies. They are unreliable and can die mid-flash. Sometimes the person is lucky and the bad flash recovery method can be used to reflash the drive. Others needed to hotswap and use the bad flash recovery. Floppies are old technology for a reason. They are very unreliable. Please try to refrain from using a floppy. If you can use a bootable USB stick or burn an NTFS4DOS CD, do that instead. If you absolutely must use a floppy, use a new one!

The following process will set up a bootable floppy disk with everything necessary to read your original firmware and write the hacked firmware onto the drive. We will use iPrep to automatically detect your SATA port, format the floppy, and copy the required DosFlash and hacked firmware files onto it.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer’s web site to install the latest drivers. The latest drivers for VIA chipsets and Windows XP are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, the latest version is always available on his website at http://www.x-projects.org or on xbins in:

/XBOX 360/firmware/firmware tools/iPrep 101/

The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder and run the installer to install iPrep.

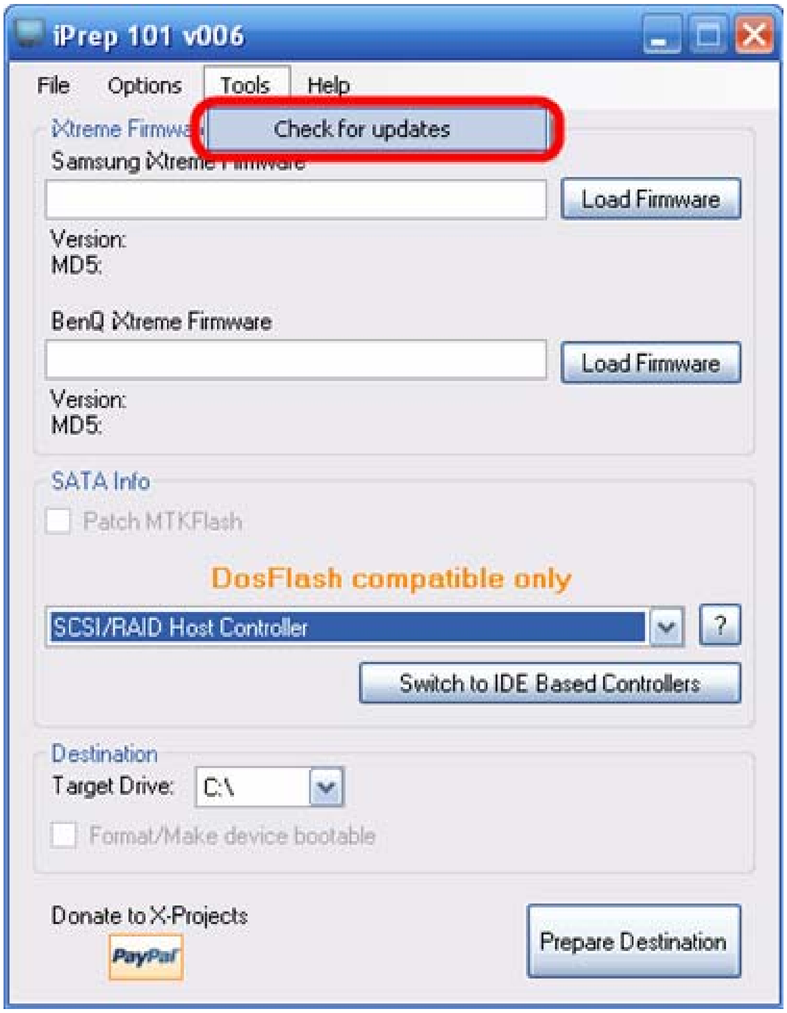
Next we will update Firmtool to the newest version which is 1.2. There are many improvements from 1.1 to 1.2 so it is recommended to update before formatting your drive with iPrep and flashing.

To do this, download Firmtool 1.2 from here and extract the “firmtoolv1.2.rar” file. Then replace the “firmtool.exe” file in the folder below with the new one from the rar file.

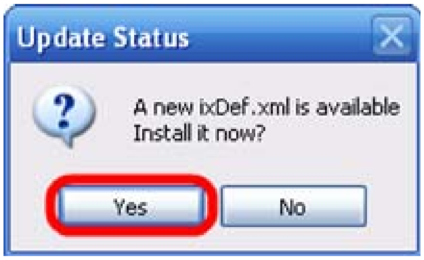
C:\Program Files\X-Projects\iPrep 101\Resources\Tools

Since the firmtool.exe already exists, Windows should ask you if you want to replace the existing file with the new one – click Yes.

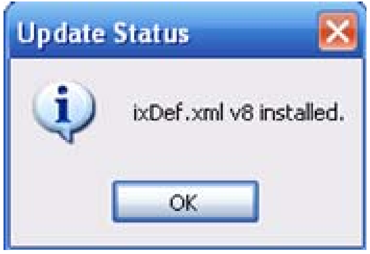
Now run the program. The first thing you want to do is check for updates.



It should find an updated definitions file. Choose "Yes" to install it.

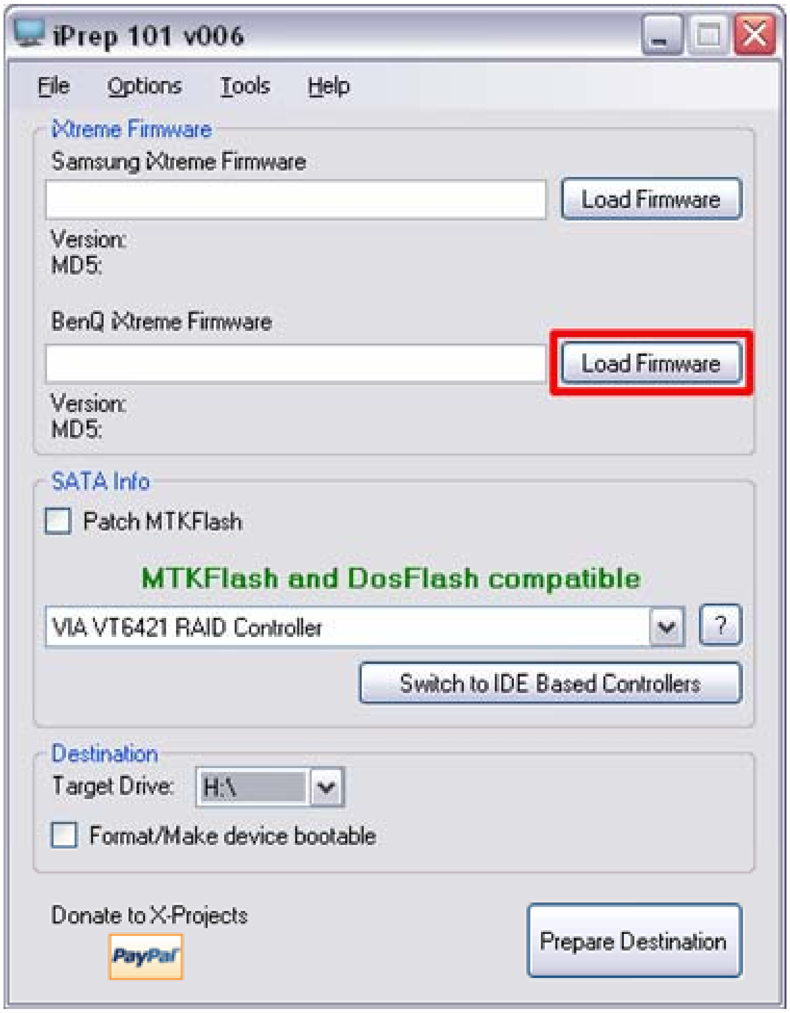


A new ixDef.xml is available
Install it now?


Update Status

ixDef.xml v8 installed.

Hit the “Load Firmware” button on iPrep.


iPrep 101 v006

iXtreme Firmware

Samsung iXtreme Firmware

Version:
MD5:

BenQ iXtreme Firmware

Version:
MD5:

SATA Info

□ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

Destination

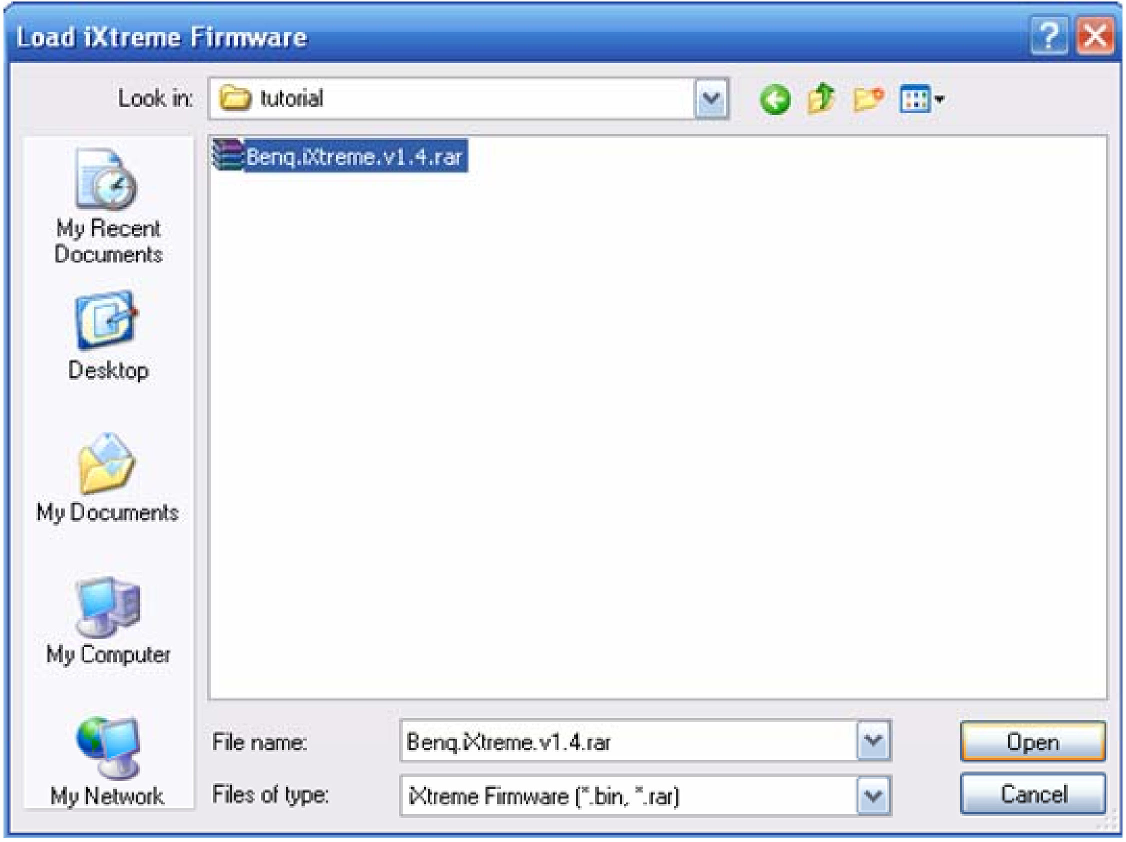
Target Drive: H:\

□ Format/Make device bootable

Donate to X-Projects

When you hit this button, a “Load iXtreme” window should open for you to browse for the iXtreme firmware. Browse and open the:

“Benq.iXtreme.v1.4.rar” file



Load iXtreme Firmware

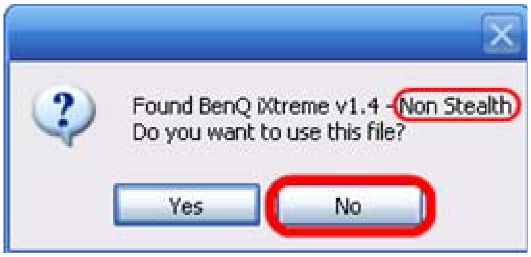
Look in: tutorial

Benq.iXtreme.v1.4.rar

File name: Benq.iXtreme.v1.4.rar

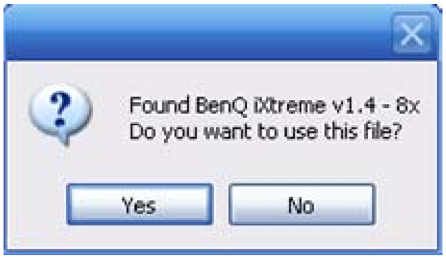
Files of type: iXtreme Firmware (*.bin, *.rar)

You should then get a series of messages confirming that iPrep has found the iXtreme firmware files inside the rar, the first one will be for the NON-STEALTH version, click No.



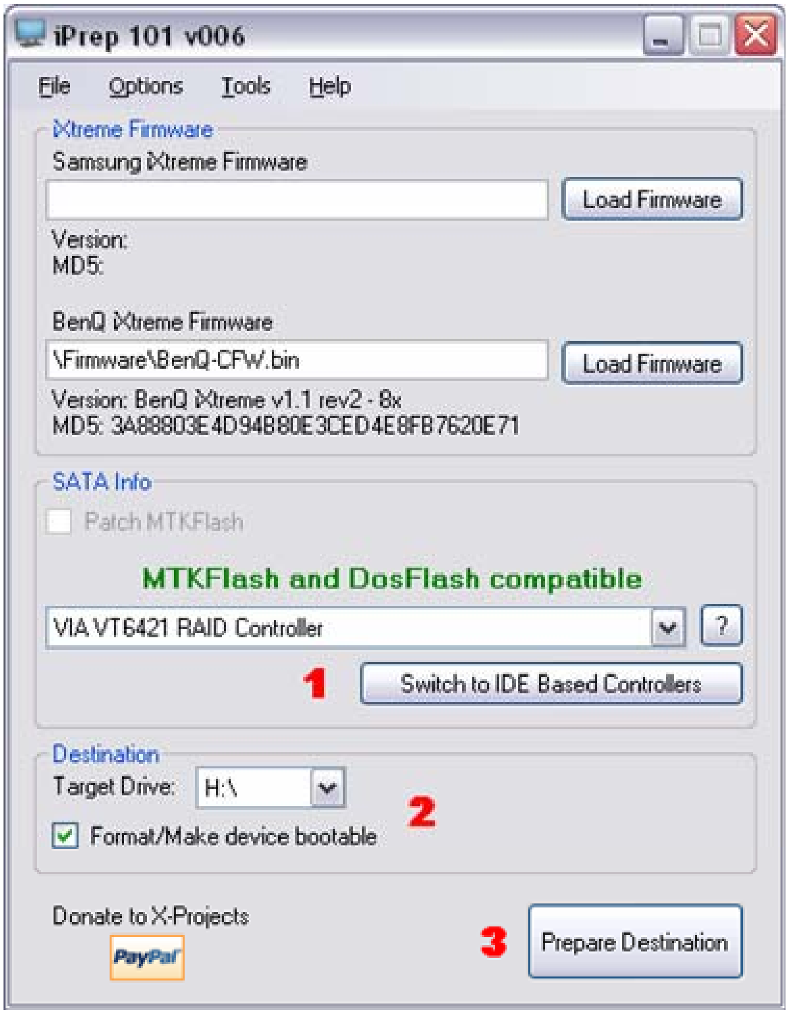
Found BenQ iXtreme v1.4 - Non Stealth
Do you want to use this file?

iPrep will continue loading the firmware, click Yes to choose the speed that you would like to use. (2x, 5x, 8x, or 12x)



Found BenQ iXtreme v1.4 - 8x
Do you want to use this file?

There is no “right” firmware to use here, it is matter of preference. Normal speed is 12x, the slower versions are quieter but the trade-off is longer load times. It is up to you to choose the one you want or you can simply go with 12x and there will be no change from normal.



iPrep 101 v006

iXtreme Firmware

Samsung iXtreme Firmware

Version:
MD5:

BenQ iXtreme Firmware

\Firmware\BenQ-CFW.bin

Version: BenQ iXtreme v1.1 rev2 - 8x
MD5: 3A88803E4D94B80E3CED4E8FB7620E71

SATA Info

□ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

Destination

Target Drive: H:\

☑ Format/Make device bootable

Donate to X-Projects

1. Confirm that your SATA chipset is selected in the dropdown menu. You can click the “Switch to IDE/SCSI Based Controllers” button to detect your SATA chipset.

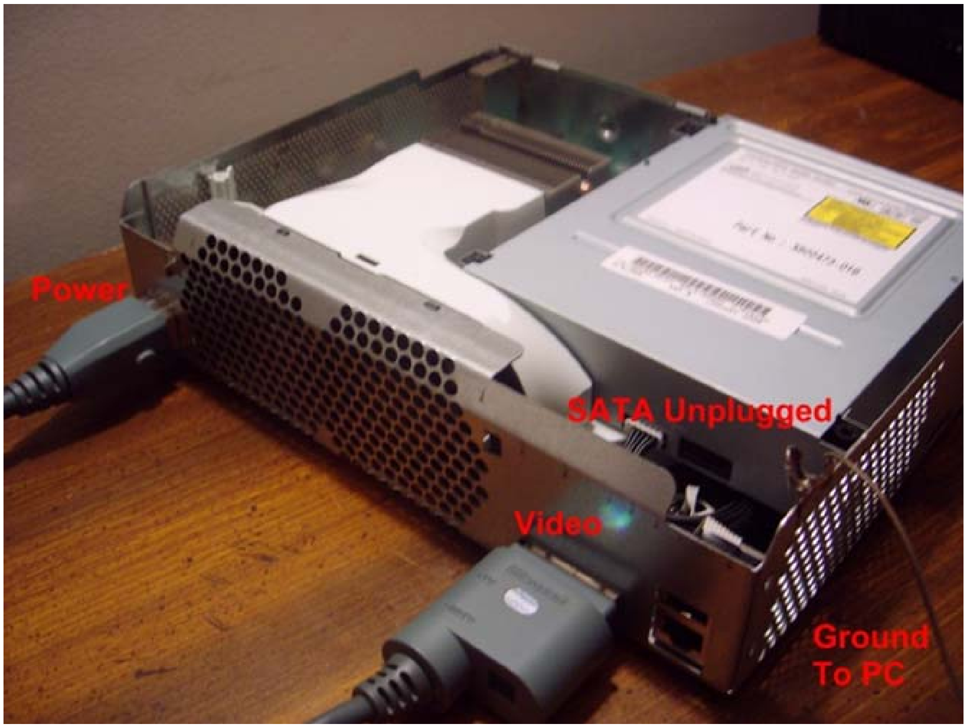
2. Select your floppy drive from the drop-down list. Check the box to Format the floppy and make it bootable. *Remember to get any important data off the floppy first, it will be erased!*

3. Click “Prepare Destination”.

If everything goes smooth you should get a “Preparation Complete” message.

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a "true earth" ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360's ground to the PC's ground. The easiest way to do this is by using a "croc clip wire" and connecting the Xbox 360 metal casing to your PC's metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

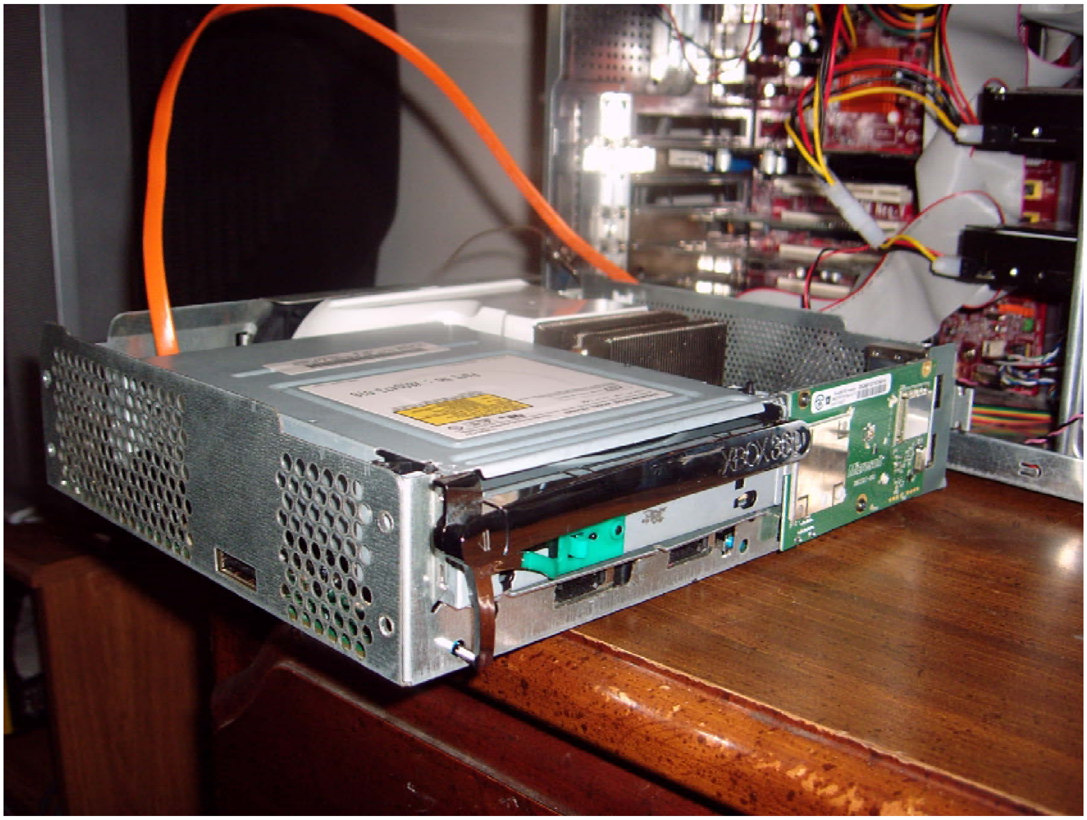
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn't absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

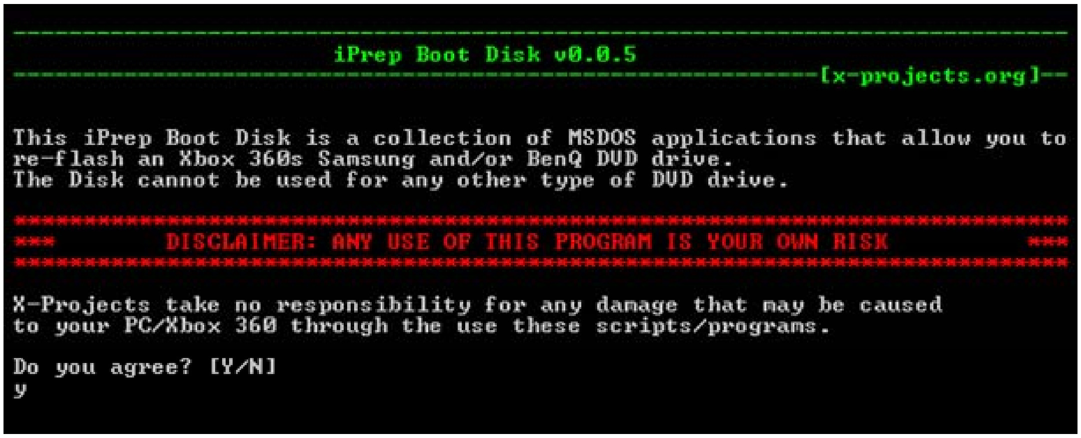
Flashing the Drive (Floppy)

Reading The Original Firmware

Connect the SATA cable from the 360 to your PC / SATA card, then turn on your PC and boot from the floppy into DOS. The Xbox 360 should still be off at this point.



Enter y to accept the iPrep Terms of Use.

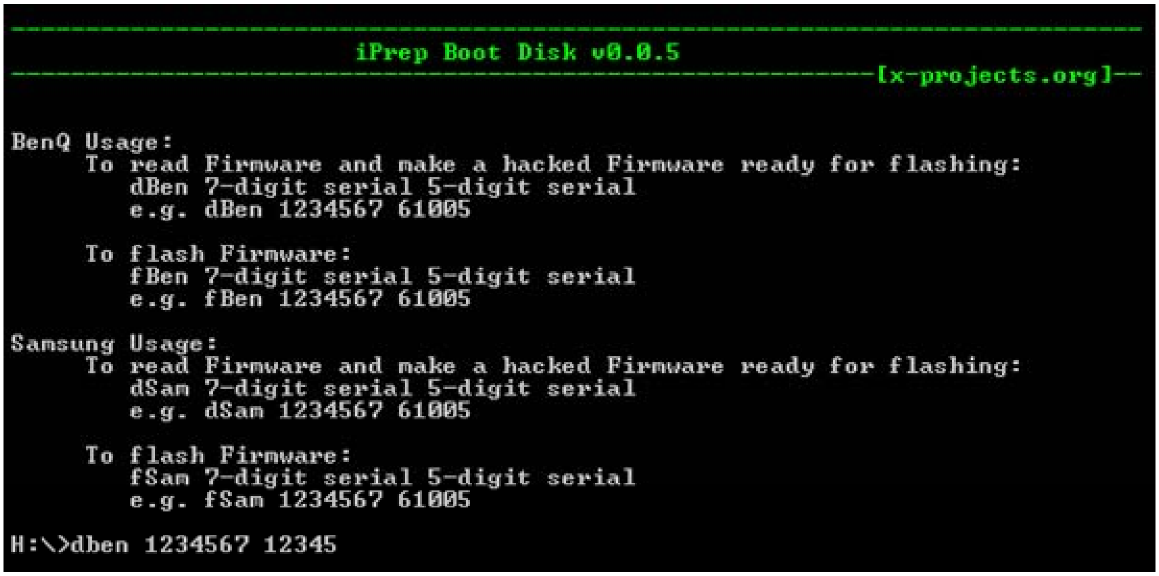


```
--------------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
-------------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

********************************************************************************
***         DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK             ***
********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

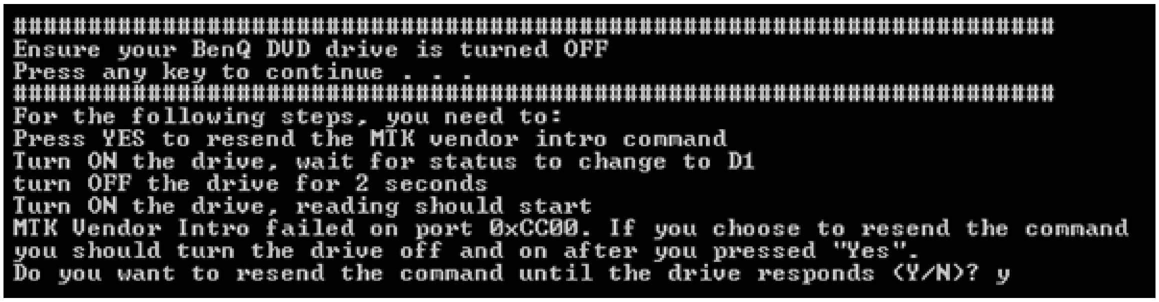
(we'll use the serial number 1234567 12345 as an example)

dBen 1234567 12345 [press enter]



```
--------------------------------------------------------------------------------
                          iPrep Boot Disk v0.0.5
----------------------------------------------------------------[x-projects.org]--

BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005

H:\>dben 1234567 12345
```

Follow the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.



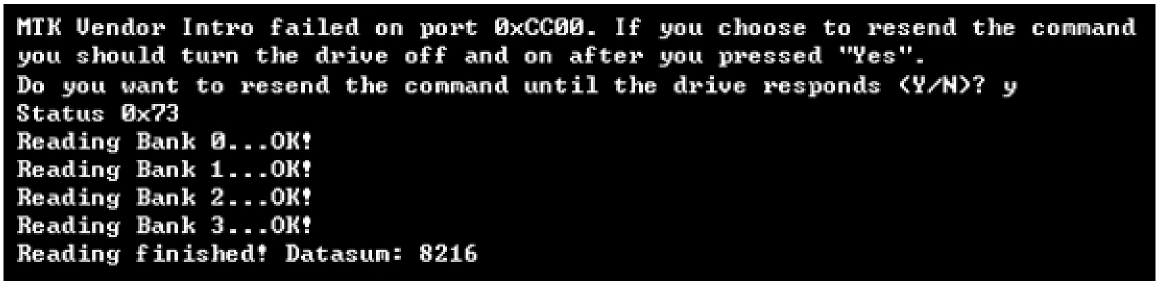
```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, wait for status to change to D1
turn OFF the drive for 2 seconds
Turn ON the drive, reading should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

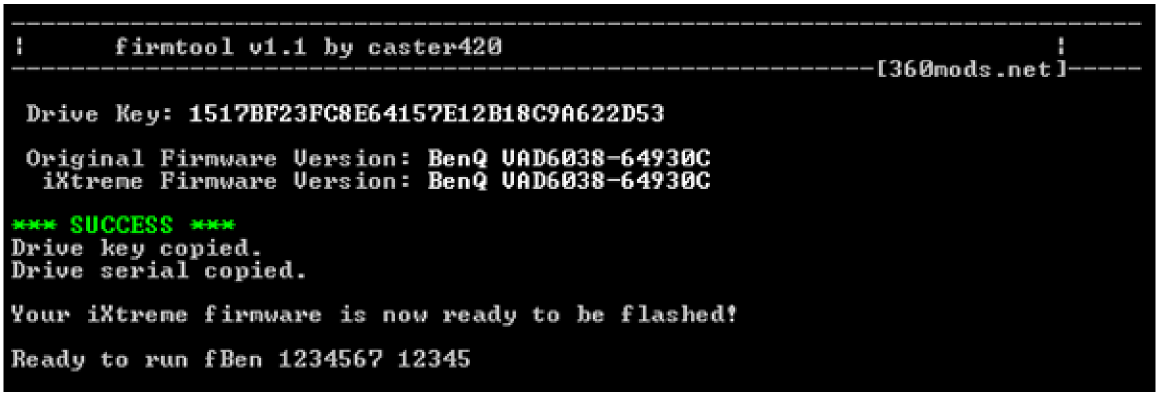
- Turn on the Xbox 360, you should get a good drive status 0x73 and reading should begin automatically.

All 4 banks should read OK and you should get a “Reading finished!” message with a Datasum.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Reading Bank 0...OK!
Reading Bank 1...OK!
Reading Bank 2...OK!
Reading Bank 3...OK!
Reading finished! Datasum: 8216
```

Firmtool will then run automatically to create the hacked firmware…



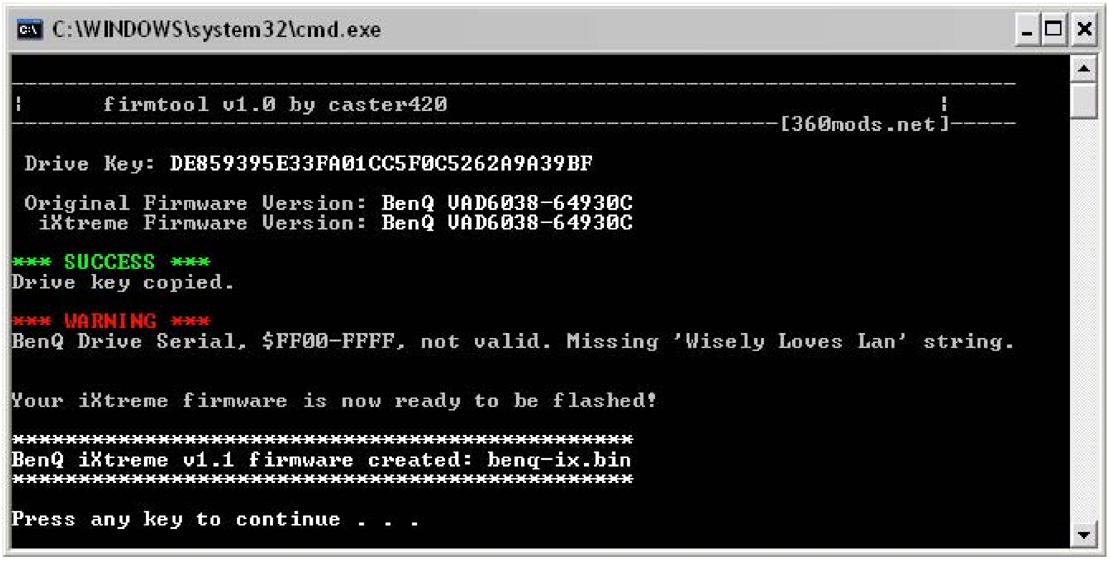
```
------------------------------------------------------------------------------
¦       firmtool v1.1 by caster420                                       ¦
------------------------------------------------------------[360mods.net]-----

 Drive Key: 1517BF23FC8E64157E12B18C9A622D53

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

Ready to run fBen 1234567 12345
```

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

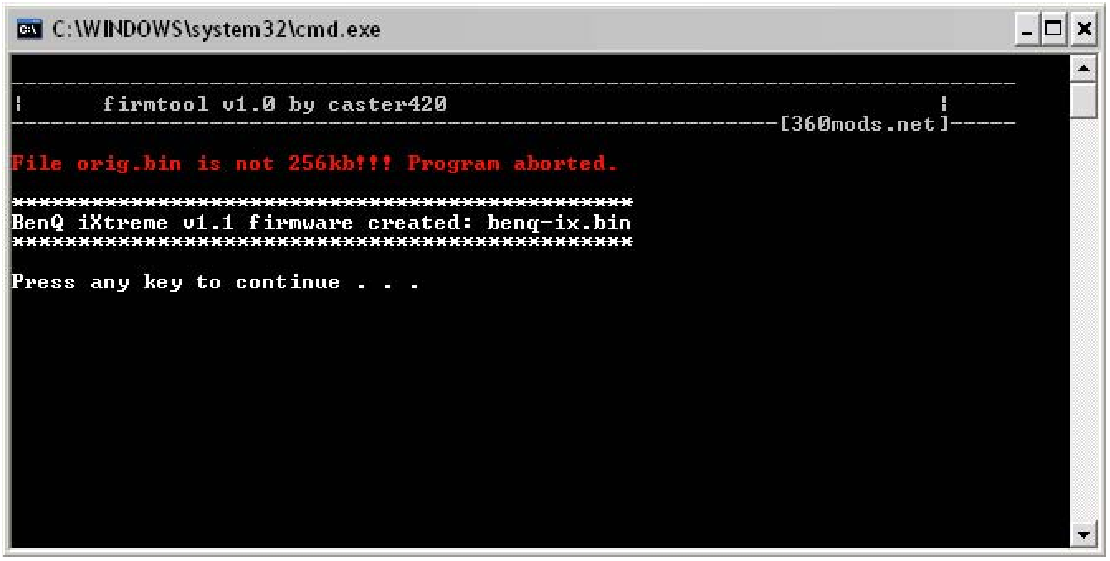
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

INVALID DRIVE SERIAL



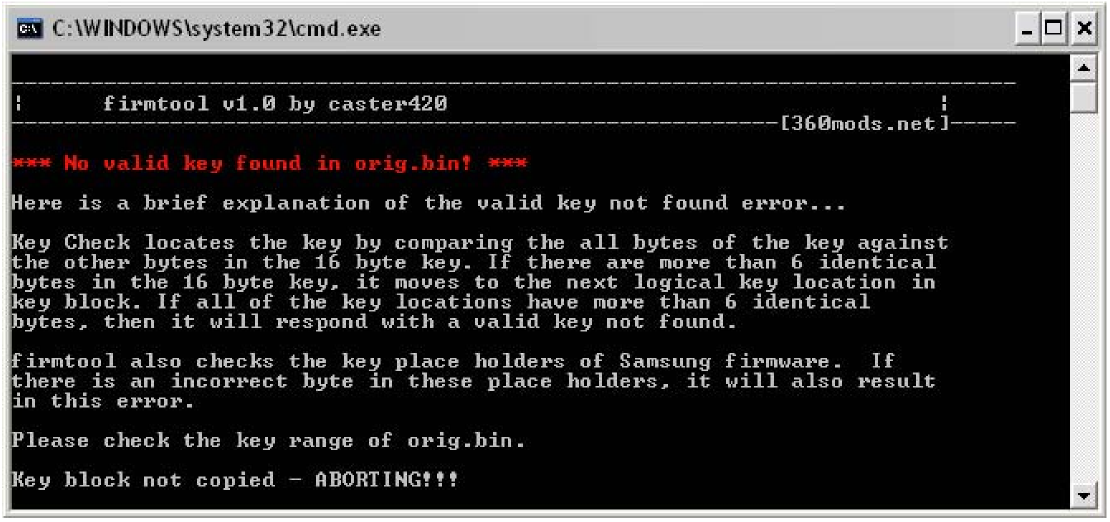
```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                          |
-----------------------------------------------------------[360mods.net]-----

 Drive Key: DE859395E33FA01CC5F0C5262A9A39BF

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.

*** WARNING ***
BenQ Drive Serial, $FF00-FFFF, not valid. Missing 'Wisely Loves Lan' string.


Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

ORIG.BIN IS WRONG SIZE



```
-----------------------------------------------------------------------------
|      firmtool v1.0 by caster420                                          |
-----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

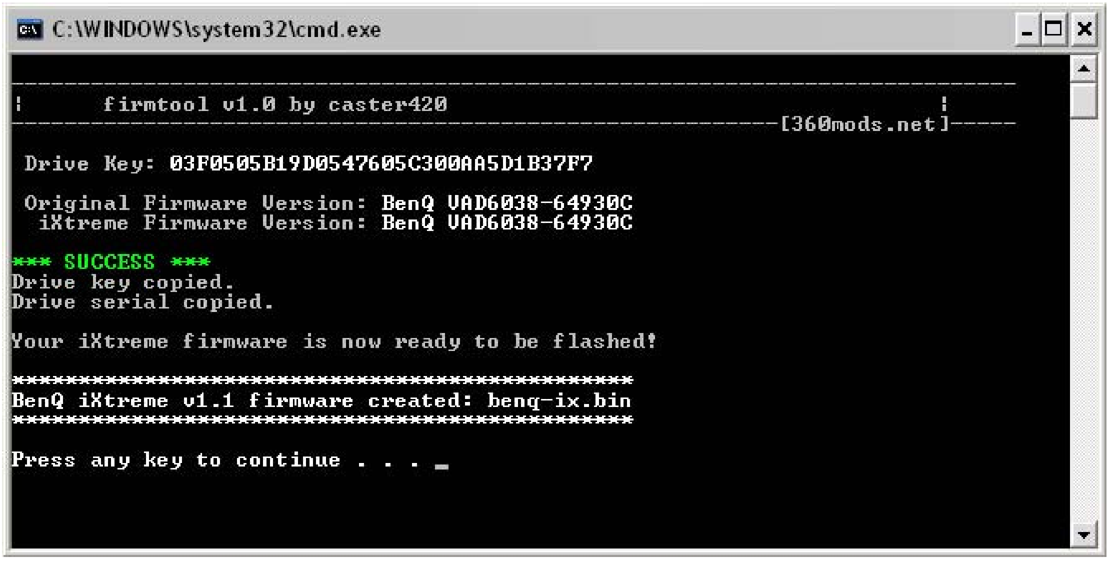
NO VALID KEY IN ORIG.BIN



```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                     ¦
----------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS



```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                     ¦
----------------------------------------------------------[360mods.net]-----

 Drive Key: 03F0505B19D0547605C300AA5D1B37F7

 Original Firmware Version: BenQ VAD6038-64930C
  iXtreme Firmware Version: BenQ VAD6038-64930C

*** SUCCESS ***
Drive key copied.
Drive serial copied.

Your iXtreme firmware is now ready to be flashed!

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . . _
```

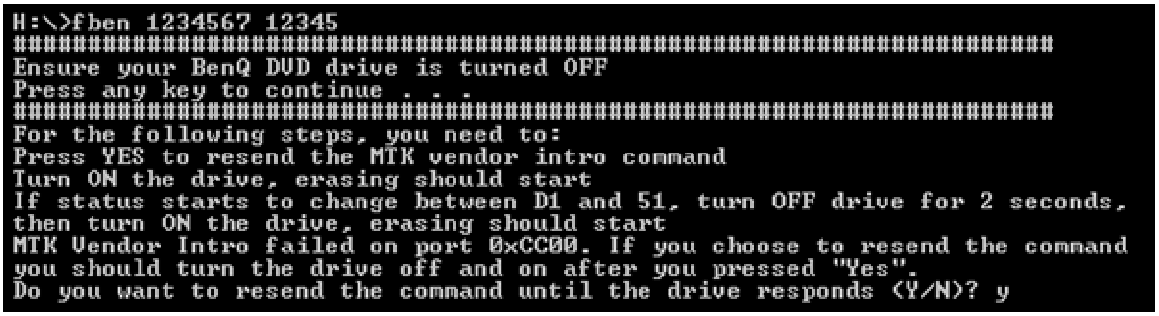
Flashing The Hacked Firmware

After reading the original firmware and firmtool has completed successfully, you can proceed to flashing the hacked firmware. You should not need to restart your PC in order to flash, but you will need to power off the Xbox 360.

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(we'll use the serial number 1234567 12345 as an example)

fBen 1234567 12345 [press enter]



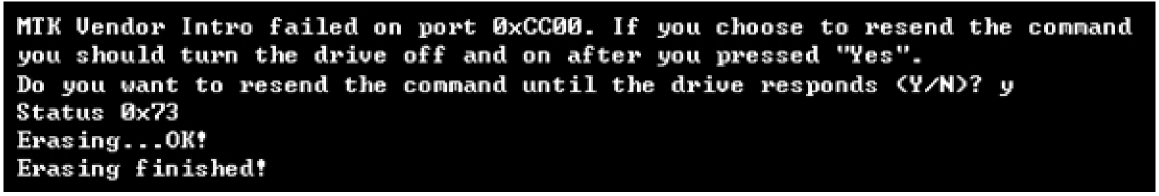
```
H:\>fben 1234567 12345
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .
######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, erasing should start
If status starts to change between D1 and 51, turn OFF drive for 2 seconds,
then turn ON the drive, erasing should start
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
```

Following the prompts on the screen, make sure your 360 is OFF and press any key to continue. Press Y to resend the MTK Vendor Intro.

- Turn on the Xbox 360 and wait 2 or more seconds, status toggles between 0x51 and 0xD1.

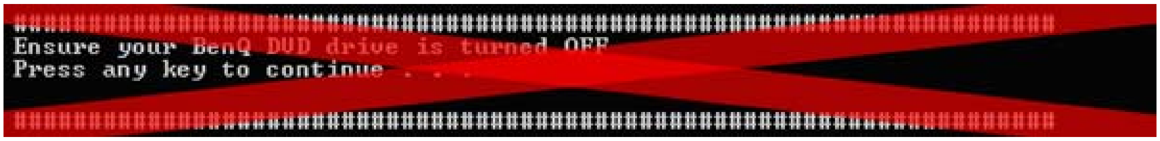
- Turn off the Xbox 360 and wait 2 or more seconds, status will stay at 0xD1.

- Turn on the Xbox 360, you should get a good drive status 0x73 and erasing should begin automatically.



```
MTK Vendor Intro failed on port 0xCC00. If you choose to resend the command
you should turn the drive off and on after you pressed "Yes".
Do you want to resend the command until the drive responds (Y/N)? y
Status 0x73
Erasing...OK!
Erasing finished!
```

You will then see this screen which tells you to power OFF the 360:

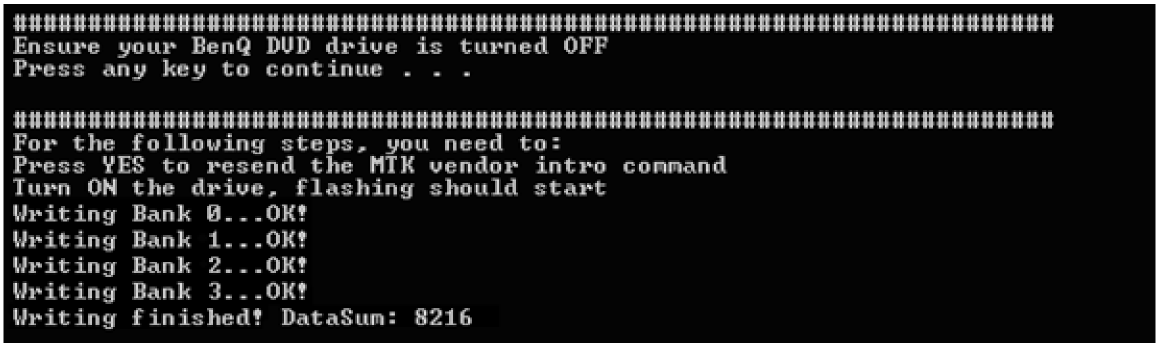


```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
```

IMPORTANT! You must power the 360 back ON before pressing any key to continue.

If you press any key to continue with the 360 powered OFF (as instructed to do on screen) it will immediately freeze attempting to write Bank 0. This is a bug in iPrep 006 and will hopefully be resolved in a future release.

So power the 360 OFF, wait a few seconds, power it ON, wait a few seconds, then press any key to continue.



```
######################################################################
Ensure your BenQ DVD drive is turned OFF
Press any key to continue . . .

######################################################################
For the following steps, you need to:
Press YES to resend the MTK vendor intro command
Turn ON the drive, flashing should start
Writing Bank 0...OK!
Writing Bank 1...OK!
Writing Bank 2...OK!
Writing Bank 3...OK!
Writing finished! DataSum: 8216
```

Writing should begin as soon as you press any key to continue with the 360 already powered ON. All 4 banks should write OK and you should get a “Writing finished!” message with a Datasum.

Toshiba-Samsung TS-H943A Tutorial

Video Tutorial Here

Opening The Xbox 360

The outer Xbox 360 “shell” is entirely screwless. Plastic friction tabs hold the case together. There are many different tutorials for opening the Xbox 360, with different methods. Here are some links to “opening the Xbox 360” tutorials. I decided not to cover opening the Xbox 360 in this tutorial since it is already long enough and there are many other tutorials for opening the Xbox 360. Notes:

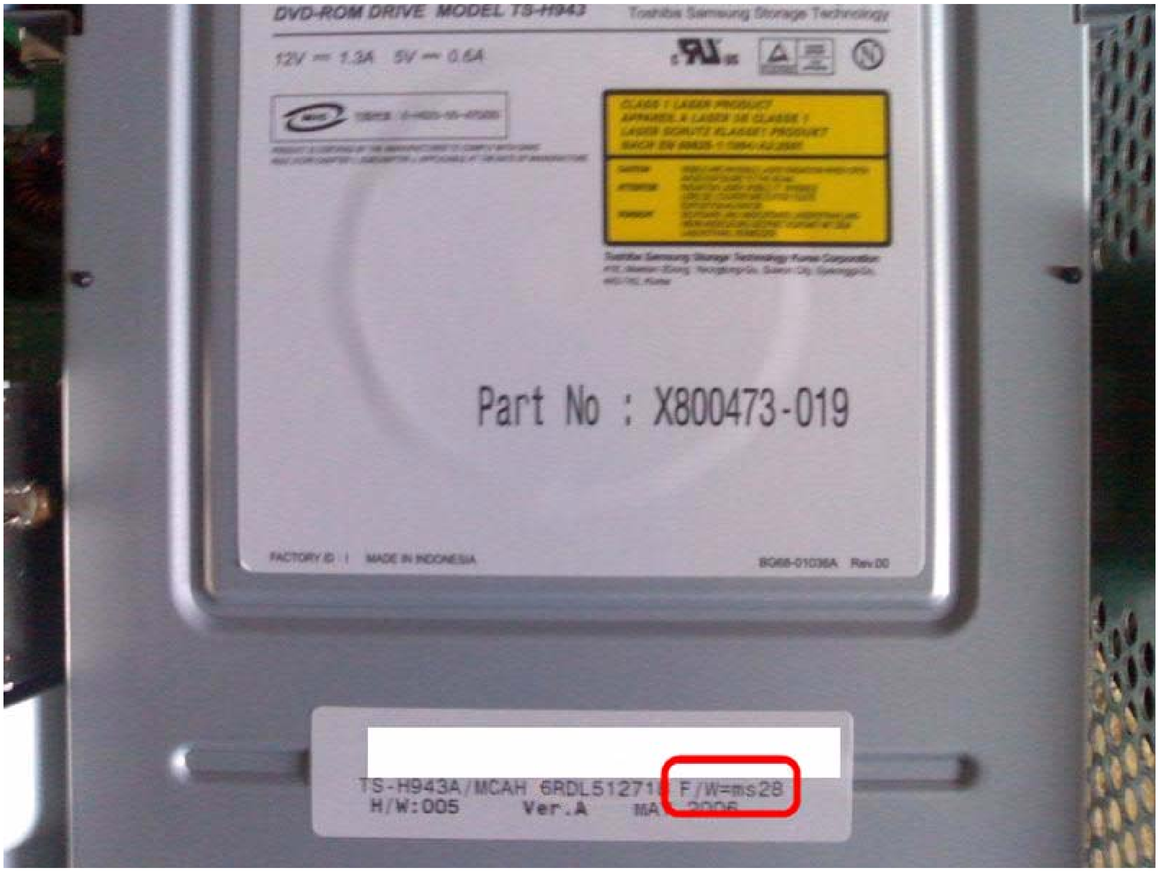
- The Anandtech guide says you need to use a Torx 12 screwdriver. There is no such thing. You need a Torx 10 screwdriver.
- Removing the grey side grill on the hard drive side is a little tricky. The first friction tab is actually inaccessible from the top holes in the case, so you need to stick your screwdriver in the hole by where the hard drive button is and unclip it. (See Pic)
- In order to push in the back clips, you can do one of two things. You can use a thin metal object such as a precision flathead screwdriver / bobby pin / paperclip OR you can make an opening “key” out of a CD spindle case. The key would not work for me, it was too flimsy, but it works for some people. You can also purchase an “unlock kit.”
- If all you want to do is just flash the firmware, you only need to remove the six long screws on the bottom. (See Pic)

Read all these guides and watch all the videos, figure out how you want to go about opening the Xbox 360.

Anandtech Guide
InformIT Guide
Xbox-Accessories Disassembly
Hydra's Guide to Making a CD Unlock Key
Textbook’s Video
acDC's Video

MS25 or MS28

There are currently two versions of the Samsung drive. The hardware is identical, but there are different firmware revisions. The MS25 is the easier drive to flash, but this firmware only appears on earlier systems. The MS28 can be flashed, but you will need a VIA SATA chipset or take a soldering iron to your drive and remove a resistor. Once you have your Xbox 360 opened, check the sticker to see if your drive’s firmware is MS25 or MS28, and follow the instructions below. If you have an MS25 drive, just continue reading. If you have an MS28 drive, the process is very similar to flashing an MS25. You will use the same firmware, same iPrep settings, etc... The only difference is when you actually read or write from the drive in DOS. You need to use a VIA brand SATA chipset and the bad-flash recovery method. So follow these instructions until you reach the “Flashing” section of this tutorial.

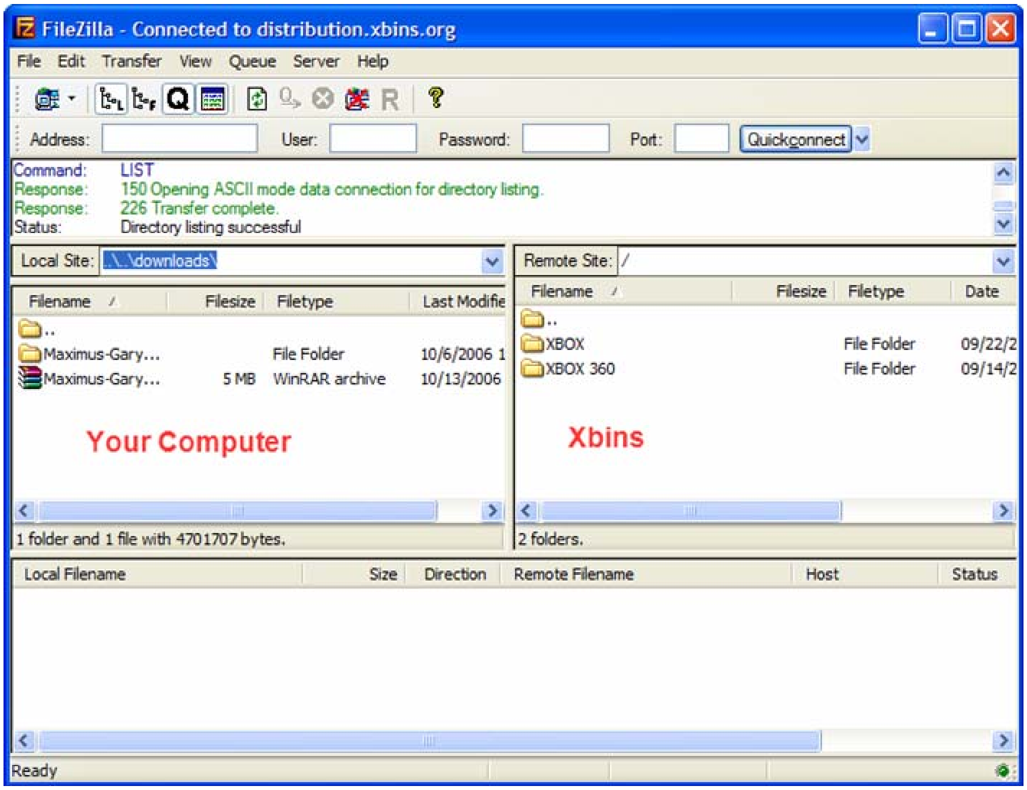

DVD-ROM DRIVE MODEL TS-H943
Toshiba Samsung Storage Technology
12V ⎓ 1.3A 5V ⎓ 0.6A
Part No : X800473-019
FACTORY ID : I MADE IN INDONESIA
BG68-01036A Rev.00
TS-H943A/MCAH 6RDL51271 F/W=ms28
H/W:005 Ver.A MA 2006

Downloading The Firmware

The hacked firmware may be illegal under the DMCA, EUCD, or other local, national, and international copyright laws. It contains portions of Microsoft's copyrighted firmware and therefore cannot be linked to or downloaded publicly. Do not request the firmware on any forums because you will most likely be banned. Use Xbins. Xbins is an IRC channel and FTP server that hosts Xbox and Xbox 360 mod files.

If you have never used Xbins before, the easiest method is to use Ground Zero's automated Xbins downloader.

Download and run the xbins.exe file. It will ask you where you want to save the files, choose your desktop. Now, go into the "Xbins" folder on your desktop and run the .bat file. The program will connect to the IRC channel, message the bot, and connect to the FTP server. When FileZilla opens you should see the local Downloads folder on your left and the Xbins FTP server on your right.


FileZilla - Connected to distribution.xbins.org
File Edit Transfer View Queue Server Help
Address: User: Password: Port: Quickconnect

Command: LIST
Response: 150 Opening ASCII mode data connection for directory listing.
Response: 226 Transfer complete.
Status: Directory listing successful

Local Site: \..\downloads\

Filename	Filesize	Filetype	Last Modifie
..			
Maximus-Gary...		File Folder	10/6/2006 1
Maximus-Gary...	5 MB	WinRAR archive	10/13/2006

1 folder and 1 file with 4701707 bytes.

Remote Site: /

Filename	Filesize	Filetype	Date
..			
XBOX		File Folder	09/22/2
XBOX 360		File Folder	09/14/2

2 folders.

Local Filename	Size	Direction	Remote Filename	Host	Status

Ready

The hacked firmware can be found in:

/XBOX 360/firmware/hacked firmware/Toshiba-Samsung TS-H943/

Simply drag the "Samsung.iXtreme.1.4.rar" file over to the left side of FileZilla and wait for it to finish downloading.

iPrep (USB Flash Drive)

The following process will set up a bootable USB flash drive with everything necessary to read your original firmware and write the hacked firmware onto the drive. We will use iPrep to hex-edit MTKFlash, format the USB drive, and copy the files onto it.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer's web site to install the latest drivers. The latest drivers for VIA chipsets are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, the latest version is always available on his website at http://www.x-projects.org or on xbins in:

/XBOX 360/firmware/firmware tools/iPrep 101/

The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder and run the installer to install iPrep.

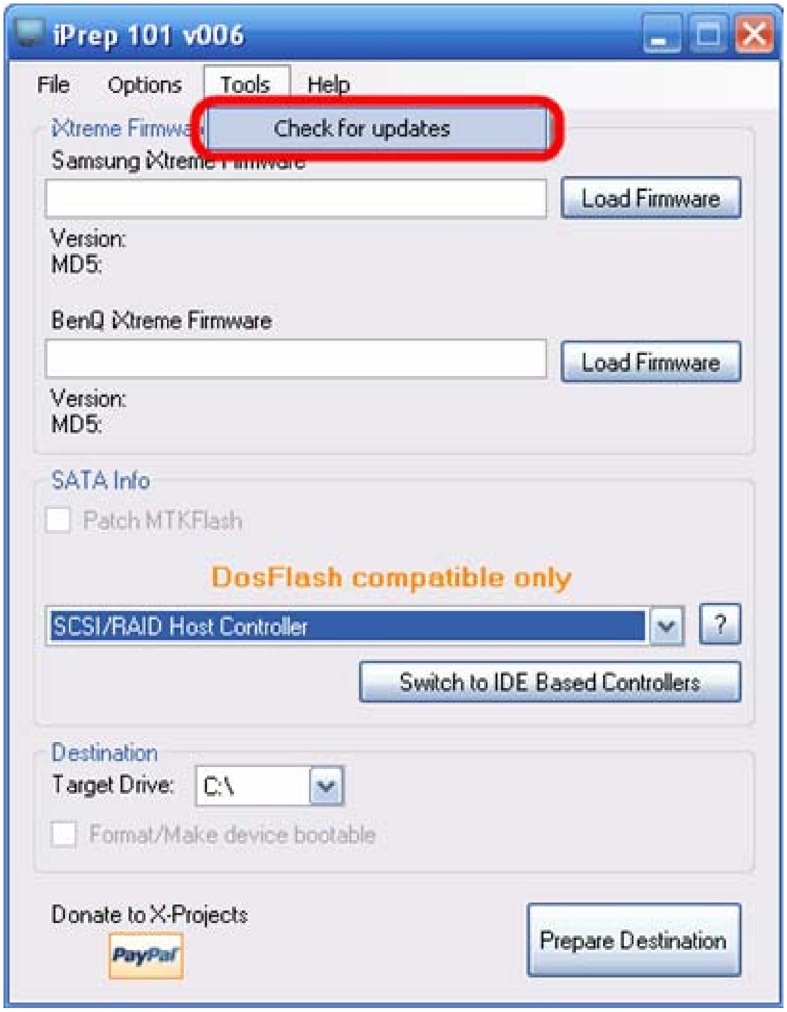
Next we will update Firmtool to the newest version which is 1.2. There are many improvements from 1.1 to 1.2 so it is recommended to update before formatting your drive with iPrep and flashing.

To do this, download Firmtool 1.2 from here and extract the "firmtoolv1.2.rar" file. Then replace the "firmtool.exe" file in the folder below with the new one from the rar file.

C:\Program Files\X-Projects\iPrep 101\Resources\Tools

Since the firmtool.exe already exists, Windows should ask you if you want to replace the existing file with the new one – click Yes.

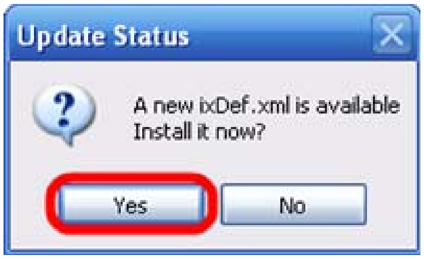
Now run the program. The first thing you want to do is check for updates.



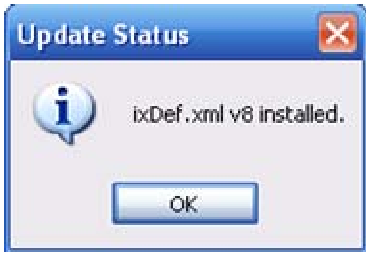
SCSI/RAID Host Controller

Target Drive: C:\

It should find an updated definitions file. Choose “Yes” to install it.

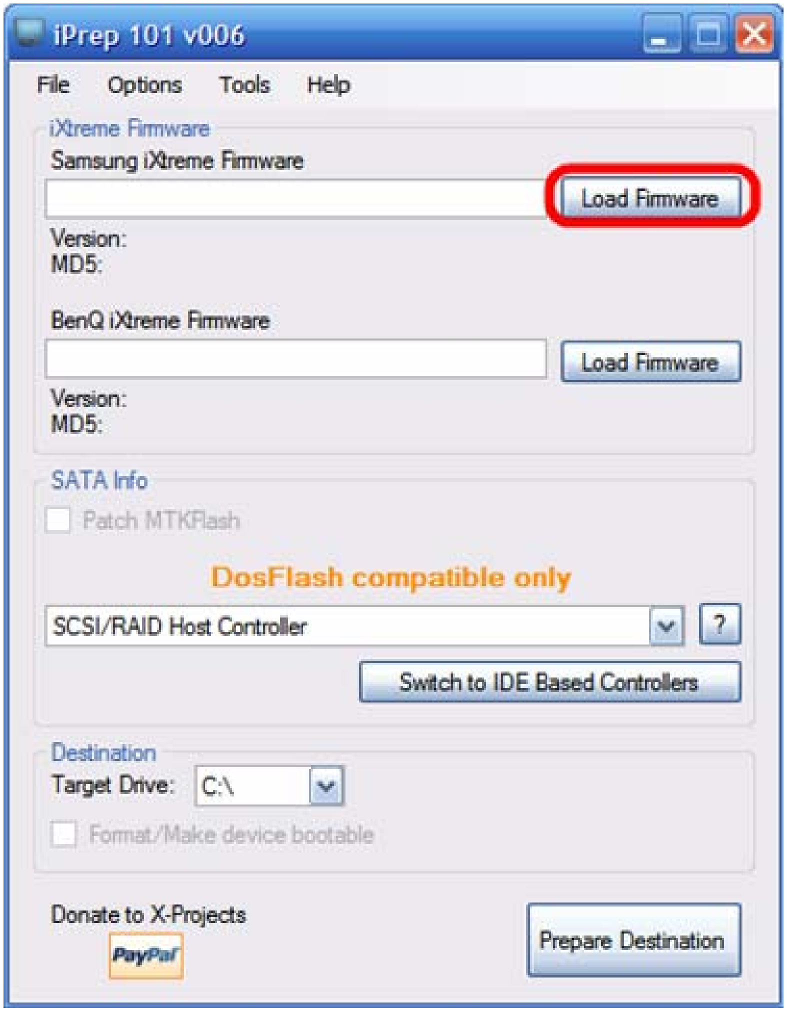


A new ixDef.xml is available
Install it now?



ixDef.xml v8 installed.

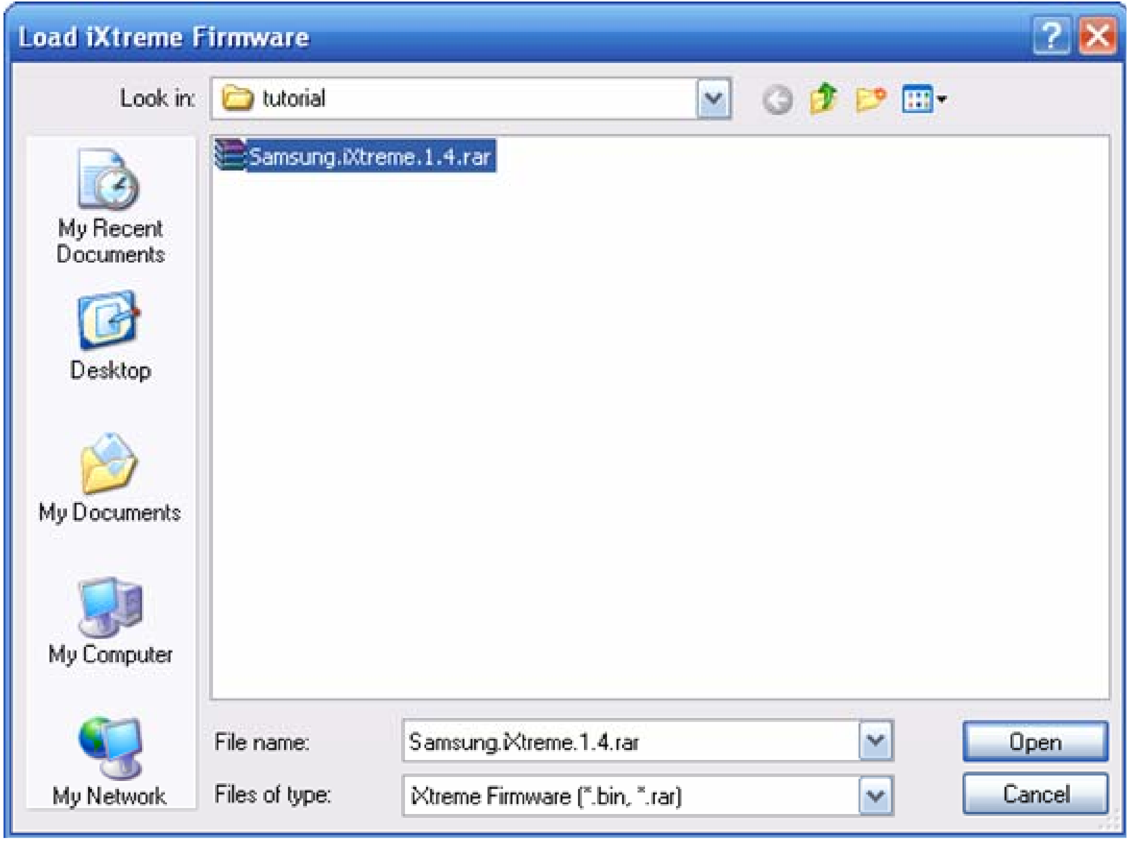
Hit the “Load Firmware” button on iPrep.



SCSI/RAID Host Controller

Target Drive: C:\

A "Load iXtreme" window should open for you to browse for the iXtreme firmware. Browse and open the "Samsung.iXtreme.1.4.rar" you downloaded from Xbins.



Load iXtreme Firmware

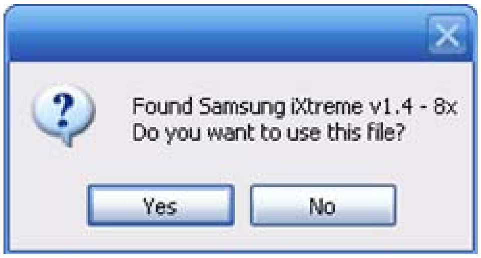
Look in: tutorial

Samsung.iXtreme.1.4.rar

File name: Samsung.iXtreme.1.4.rar

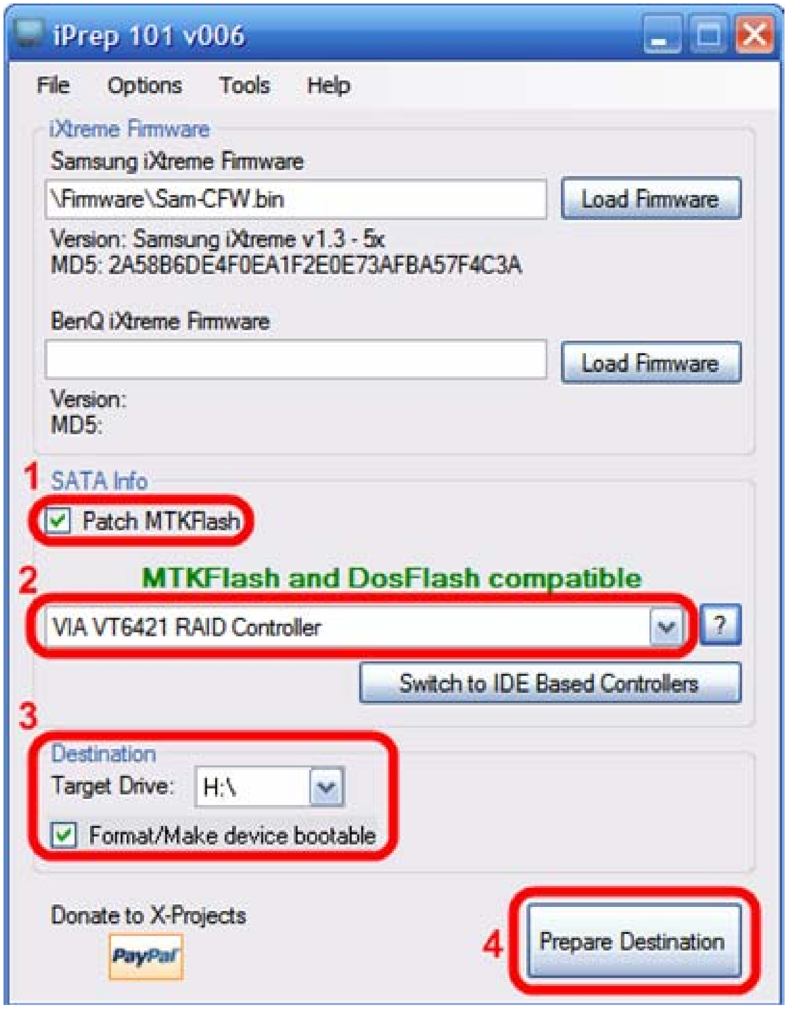
Files of type: iXtreme Firmware (*.bin, *.rar)

You now have a choice between different read speed firmwares. There are four available options. There is a firmware that reads backups at 2x speed, 5x speed, 8x speed, and 12x speed. There is no “right” choice, it is purely up to preference. 12x is the normal read speed of the drive. Higher speeds are louder, and may have trouble reading backups if you have a poor quality laser, burner, or media. Lower speeds are much quieter, and may read better, but you will have slower load times. When I loaded the firmware, it asked me in this order: 8x, 5x, 2x, 12x.



Found Samsung iXtreme v1.4 - 8x
Do you want to use this file?

After loading the firmware of your choice:



iXtreme Firmware

Samsung iXtreme Firmware: \Firmware\Sam-CFW.bin

Version: Samsung iXtreme v1.3 - 5x
MD5: 2A58B6DE4F0EA1F2E0E73AFBA57F4C3A

BenQ iXtreme Firmware:

Version:
MD5:

SATA Info

☑ Patch MTKFlash

MTKFlash and DosFlash compatible

VIA VT6421 RAID Controller

Destination

Target Drive: H:\

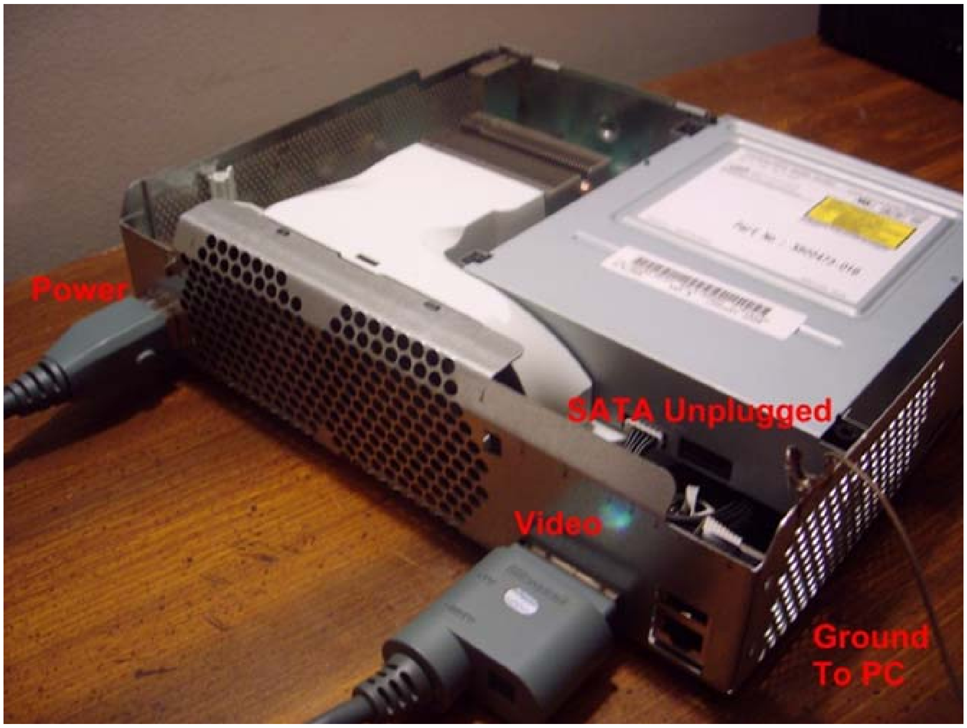
☑ Format/Make device bootable

1. Select Patch MTKFlash
2. Select your SATA controller from the list. If you can not locate the correct one in the drop-down list, hit the button below it to switch between IDE/SCSI based controllers.
3. Choose the flash drive as the target drive and check the box to format it and make it bootable.
   Remember to get any important data off the flash drive first, it will be erased!
4. Hit Prepare Destination

If everything goes smooth you should get a message saying “Preperation Complete.”

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

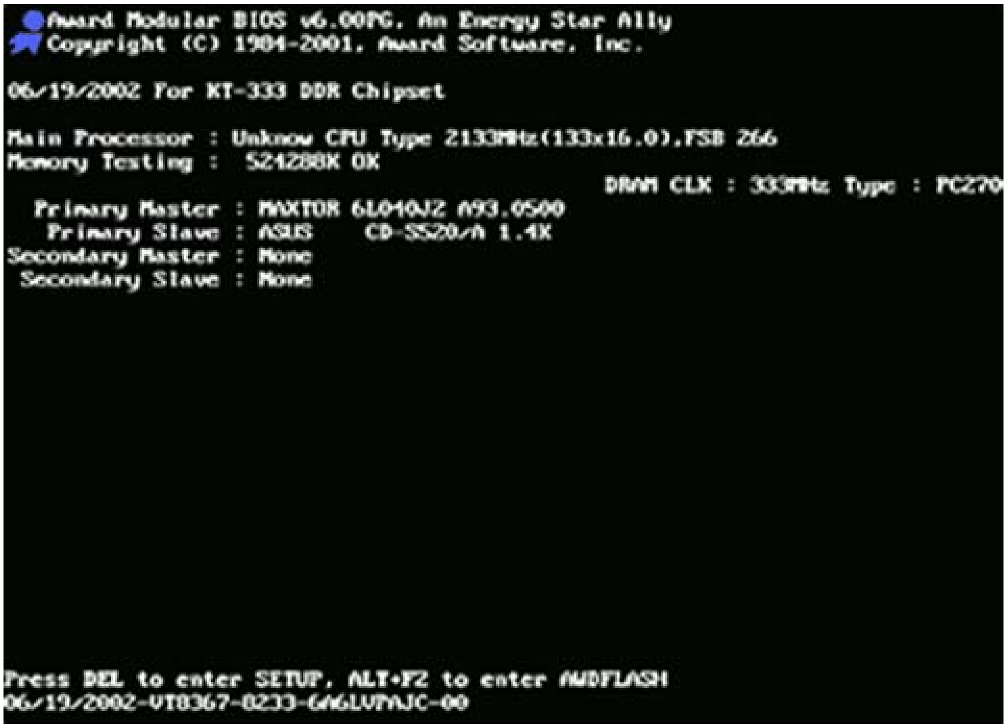
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

Booting From USB

You will need to configure your computer's BIOS to boot from USB. Not all computers or BIOSes support booting from USB. Since all BIOSes are different, I can't give you word-for-word instructions for doing this part. Your best chance of figuring out if your BIOS can boot from USB, and how to check the settings is to use a search engine and search your motherboard model number and terms like "USB boot". Generally, the steps you need to follow should be similar to something like this:

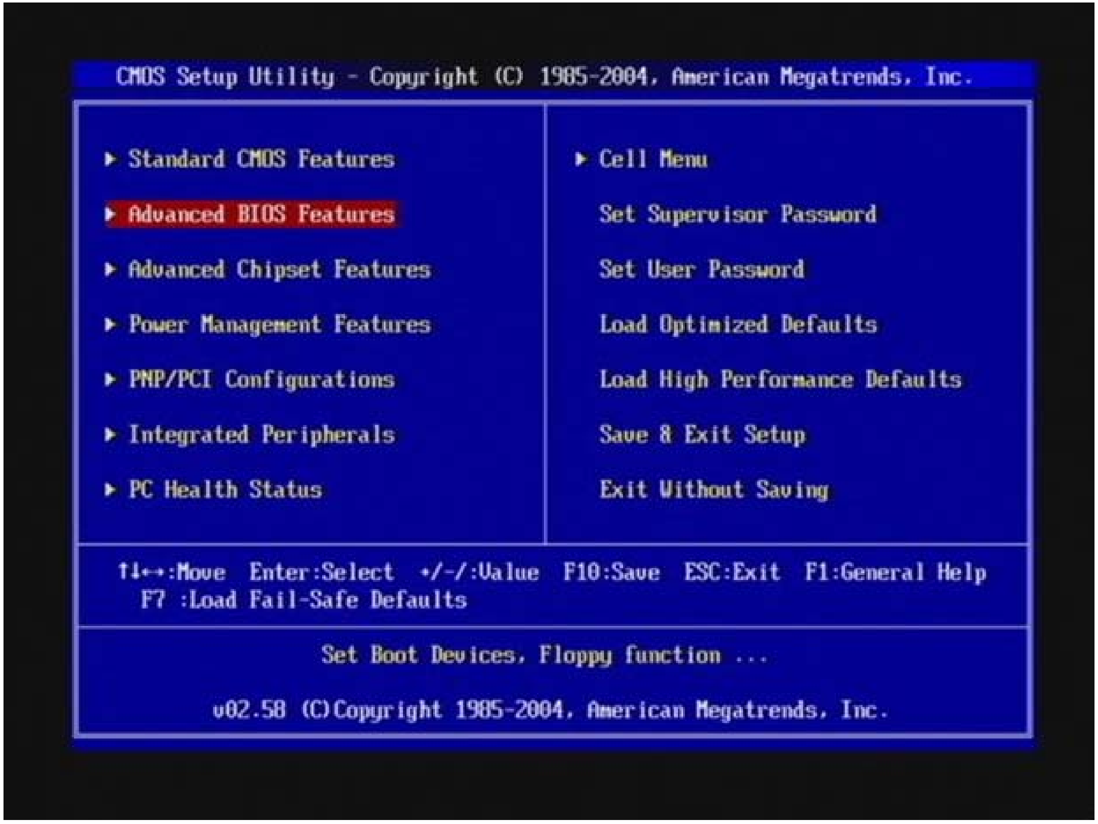
When you power up your computer, you should see somewhere telling you to "Press [key] to enter setup"



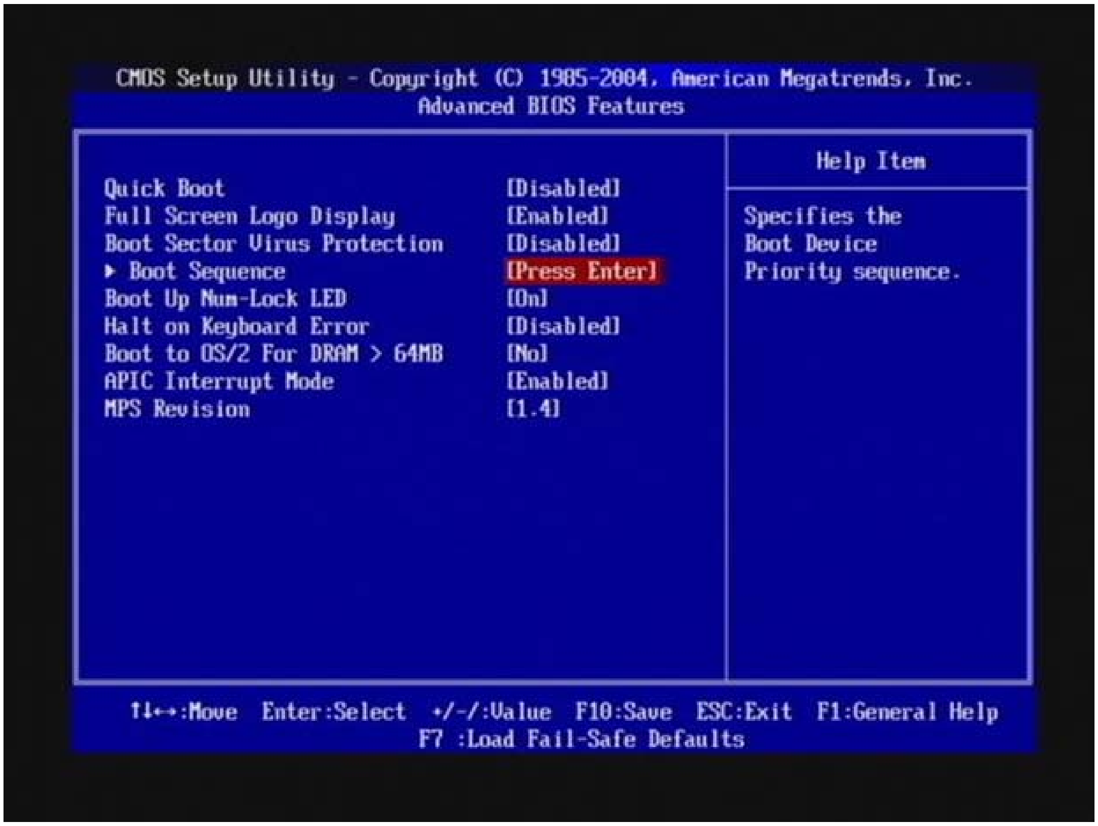
```
Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2001, Award Software, Inc.

06/19/2002 For KT-333 DDR Chipset

Main Processor : Unknow CPU Type 2133MHz(133x16.0),FSB 266
Memory Testing :  524288K OK
                                          DRAM CLK : 333MHz Type : PC270
  Primary Master : MAXTOR 6L040J2 A93.0500
   Primary Slave : ASUS    CD-S520/A 1.4X
Secondary Master : None
 Secondary Slave : None

Press DEL to enter SETUP, ALT+F2 to enter AWDFLASH
06/19/2002-VT8367-8233-6A6LVPAJC-00
```

In this example, the key to hit is DEL (delete). So hit whatever key it's telling you and you may see something like these following pictures.

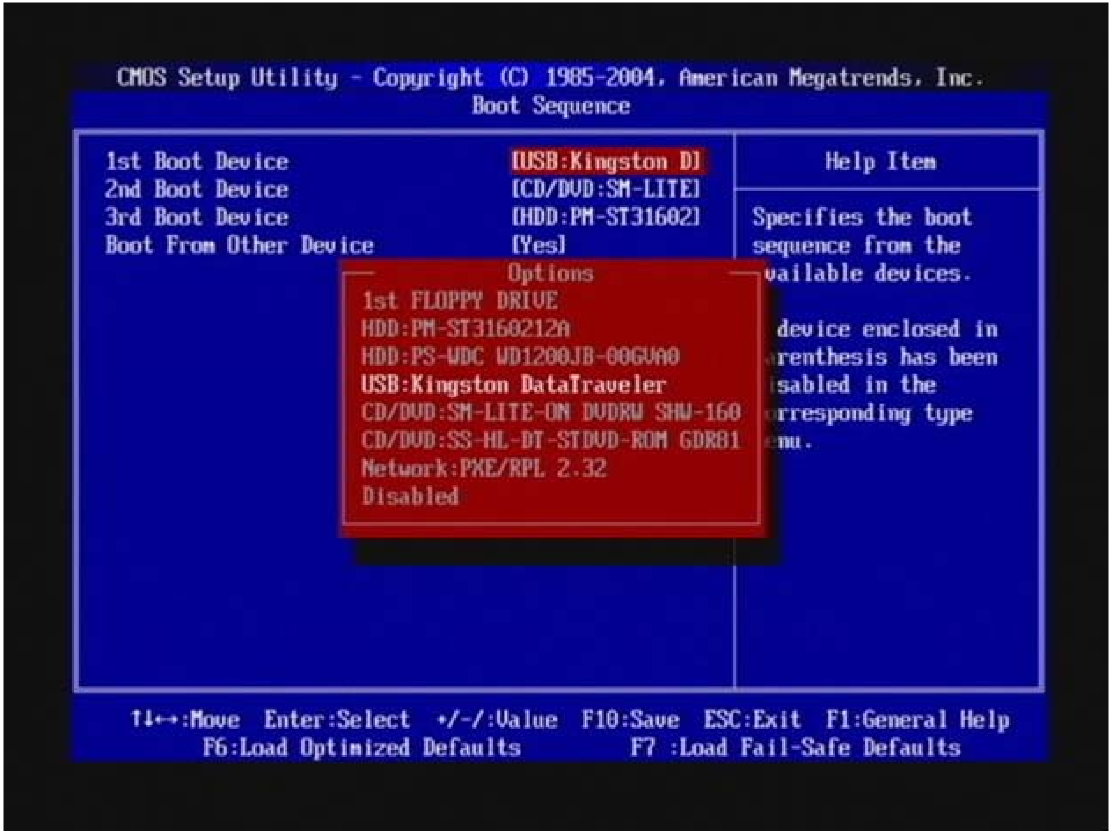
For my particular BIOS, I need to go Advanced BIOS Features > Boot Sequence, and then I can select the flash drive as the primary boot device. F10 to save and exit, which should work with all BIOSes.



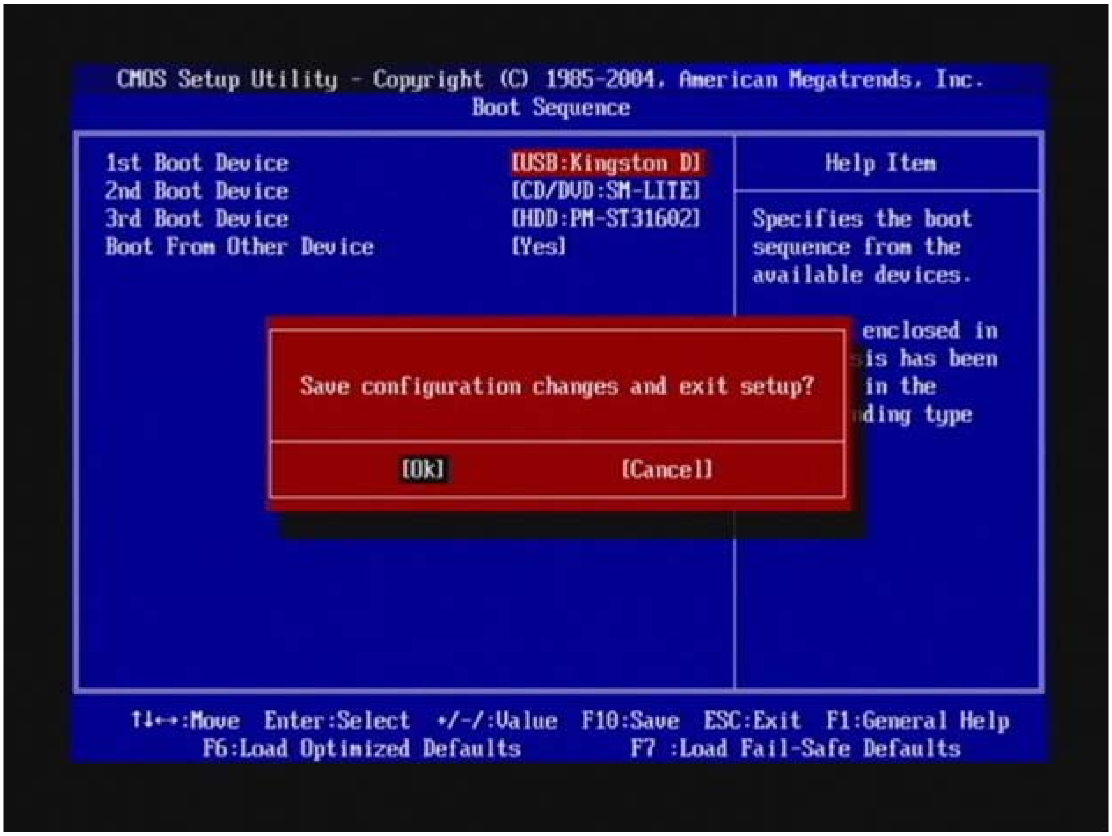
```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.

▸ Standard CMOS Features          ▸ Cell Menu
▸ Advanced BIOS Features            Set Supervisor Password
▸ Advanced Chipset Features         Set User Password
▸ Power Management Features         Load Optimized Defaults
▸ PNP/PCI Configurations            Load High Performance Defaults
▸ Integrated Peripherals            Save & Exit Setup
▸ PC Health Status                  Exit Without Saving

↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
  F7 :Load Fail-Safe Defaults

Set Boot Devices, Floppy function ...

v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.
```



```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                        Advanced BIOS Features

                                                       Help Item
Quick Boot                        [Disabled]
Full Screen Logo Display          [Enabled]      Specifies the
Boot Sector Virus Protection      [Disabled]     Boot Device
▸ Boot Sequence                   [Press Enter]  Priority sequence.
Boot Up Num-Lock LED              [On]
Halt on Keyboard Error            [Disabled]
Boot to OS/2 For DRAM > 64MB      [No]
APIC Interrupt Mode               [Enabled]
MPS Revision                      [1.4]

↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
                     F7 :Load Fail-Safe Defaults
```



```
   CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                                Boot Sequence

 1st Boot Device                     [USB:Kingston D]   Help Item
 2nd Boot Device                     [CD/DVD:SM-LITE]
 3rd Boot Device                     [HDD:PM-ST31602]   Specifies the boot
 Boot From Other Device              [Yes]              sequence from the
                    ┌──────────── Options ────────────┐ vailable devices.
                    │ 1st FLOPPY DRIVE                 │
                    │ HDD:PM-ST3160212A                │ device enclosed in
                    │ HDD:PS-WDC WD1200JB-00GVA0       │ renthesis has been
                    │ USB:Kingston DataTraveler        │ isabled in the
                    │ CD/DVD:SM-LITE-ON DVDRW SHW-160  │ rresponding type
                    │ CD/DVD:SS-HL-DT-STDVD-ROM GDR81  │ enu.
                    │ Network:PXE/RPL 2.32             │
                    │ Disabled                         │
                    └──────────────────────────────────┘

   ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
         F6:Load Optimized Defaults        F7 :Load Fail-Safe Defaults
```



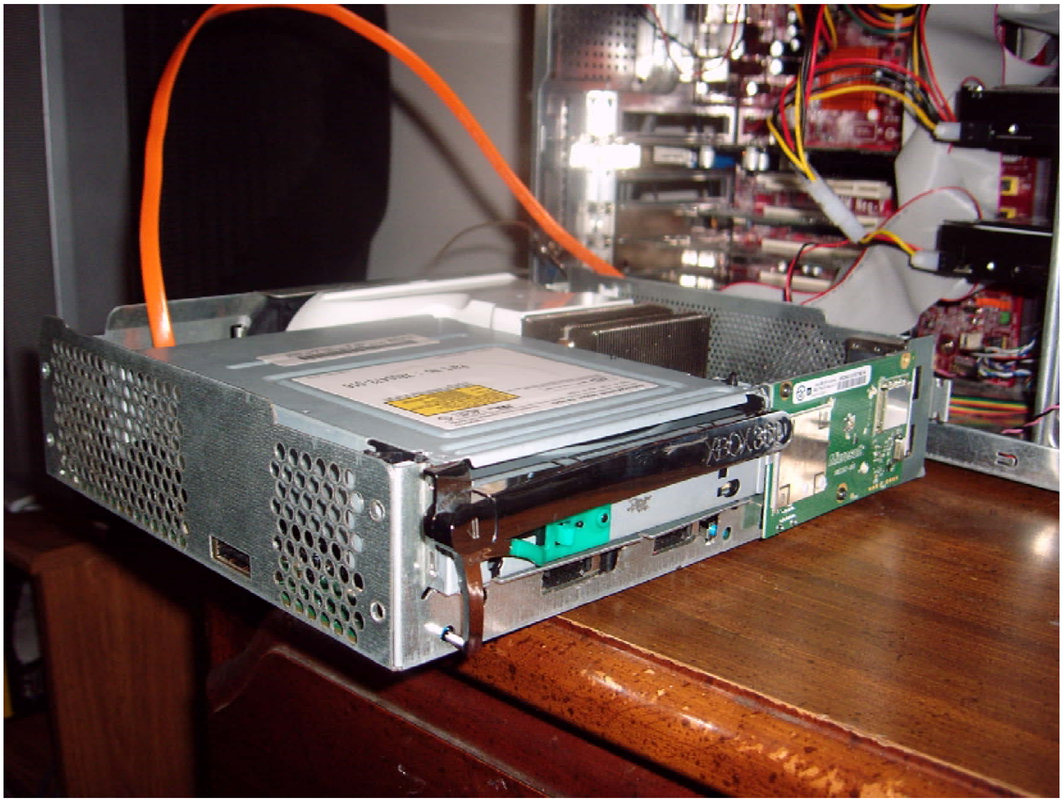
```
   CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                                Boot Sequence

 1st Boot Device                     [USB:Kingston D]   Help Item
 2nd Boot Device                     [CD/DVD:SM-LITE]
 3rd Boot Device                     [HDD:PM-ST31602]   Specifies the boot
 Boot From Other Device              [Yes]              sequence from the
                                                        available devices.

              ┌─────────────────────────────────────────┐ enclosed in
              │                                         │ is has been
              │ Save configuration changes and exit setup? │ in the
              │                                         │ nding type
              ├─────────────────────────────────────────┤
              │          [Ok]              [Cancel]     │
              └─────────────────────────────────────────┘

   ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
         F6:Load Optimized Defaults        F7 :Load Fail-Safe Defaults
```

Flashing The Drive (USB)

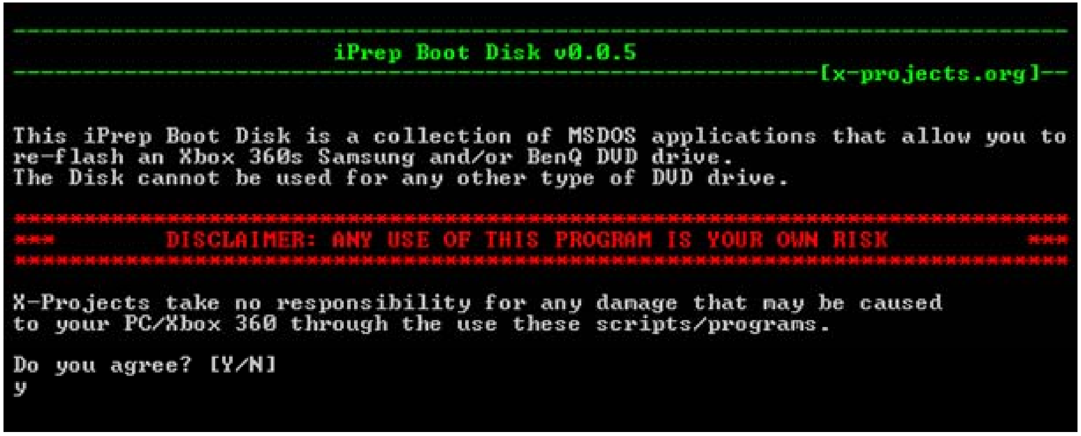
This tutorial is for MS25 drives only, if you have an MS28, please click here to follow the MS28 flashing procedure.

Reading The Original Firmware

Turn on your PC and Xbox 360 at the same time, and boot your PC from the USB flash drive into DOS. When you reach the DOS command prompt, plug the SATA cable into the Xbox 360 DVD drive, so that the drive is connected to your PC / SATA card.



Enter y to accept the iPrep Terms of Use.

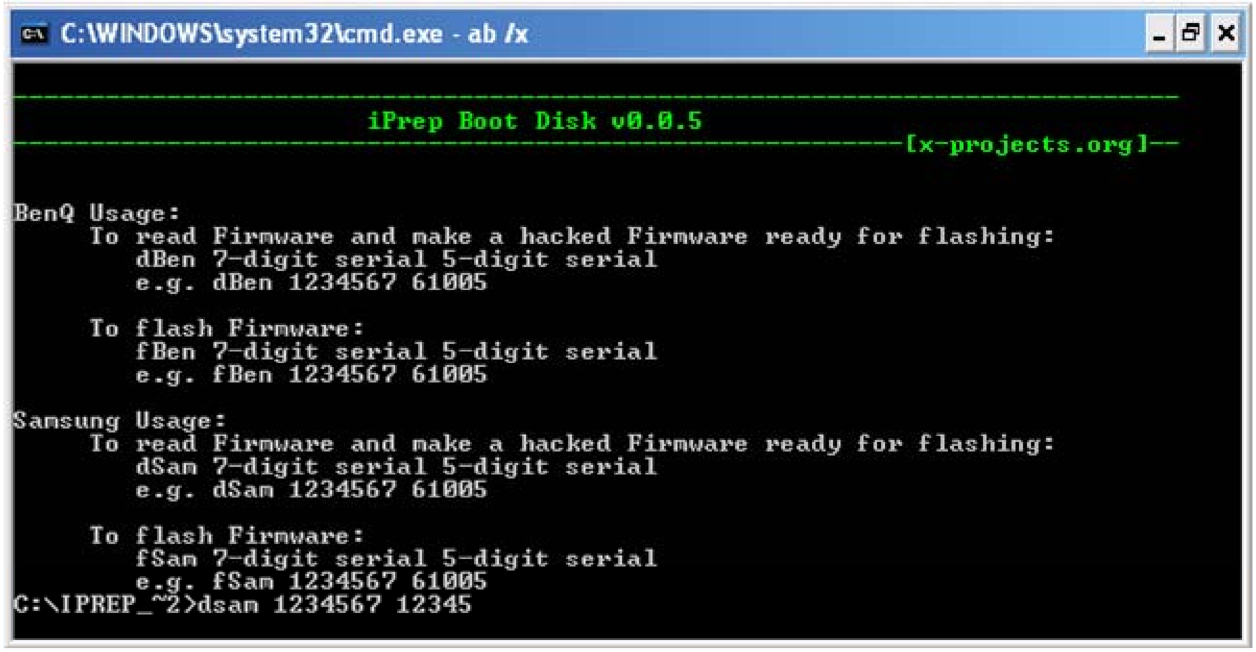


```
--------------------------------------------------------------------------------
                            iPrep Boot Disk v0.0.5
----------------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

**********************************************************************************
***         DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK             ***
**********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(We'll use the serial number 1234567 12345 as an example)

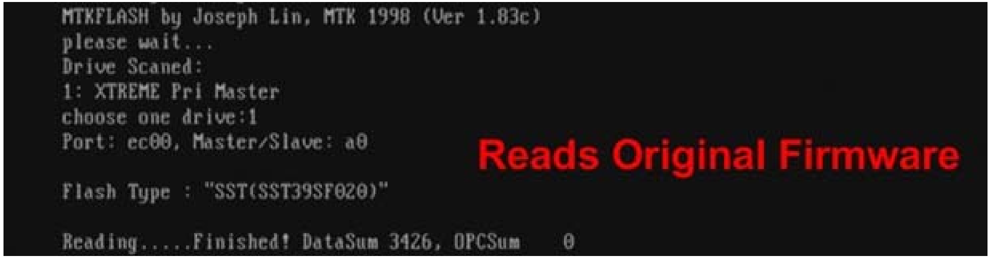
dSam 1234567 12345 [press enter]



```
--------------------------------------------------------------------------------
                            iPrep Boot Disk v0.0.5
----------------------------------------------------------------[x-projects.org]--


BenQ Usage:
      To read Firmware and make a hacked Firmware ready for flashing:
         dBen 7-digit serial 5-digit serial
         e.g. dBen 1234567 61005

      To flash Firmware:
         fBen 7-digit serial 5-digit serial
         e.g. fBen 1234567 61005

Samsung Usage:
      To read Firmware and make a hacked Firmware ready for flashing:
         dSam 7-digit serial 5-digit serial
         e.g. dSam 1234567 61005

      To flash Firmware:
         fSam 7-digit serial 5-digit serial
         e.g. fSam 1234567 61005
C:\IPREP_~2>dsam 1234567 12345
```

If you get errors like “Directory already exists” or “MKDIR failed…” don't worry. The batch file is trying to create a new folder but it's already there.

MTKFlash should run and your drive should be listed. If you see an item in the list named “XTREME”, select that and it should make a backup of your original firmware.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Reading.....Finished! DataSum 3426, OPCSum    0
```

Reads Original Firmware

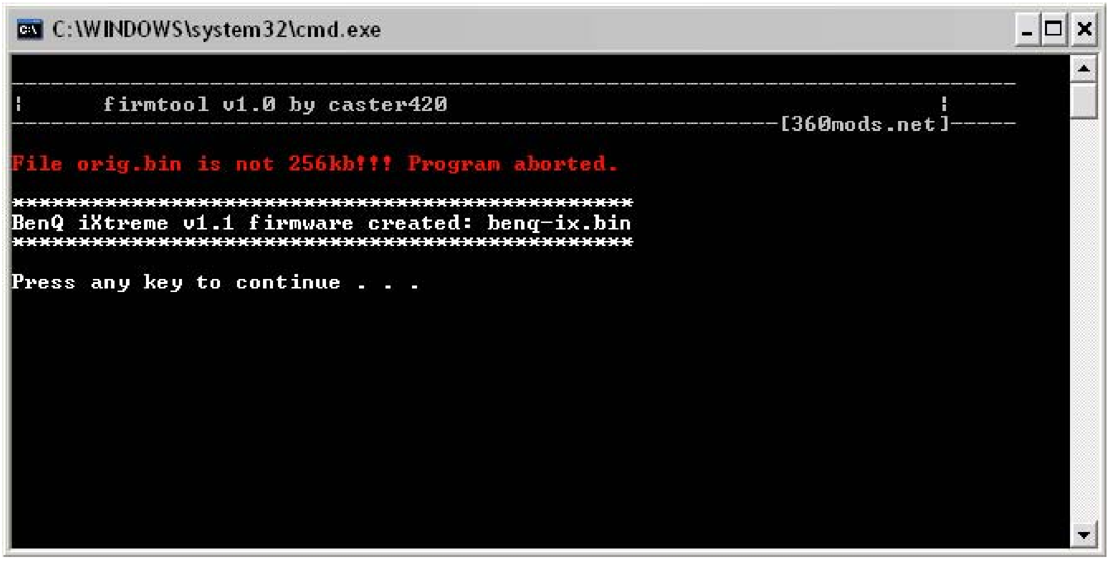
Firmtool will now check if a valid key exists in both your original and hacked firmware, and that they match.

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

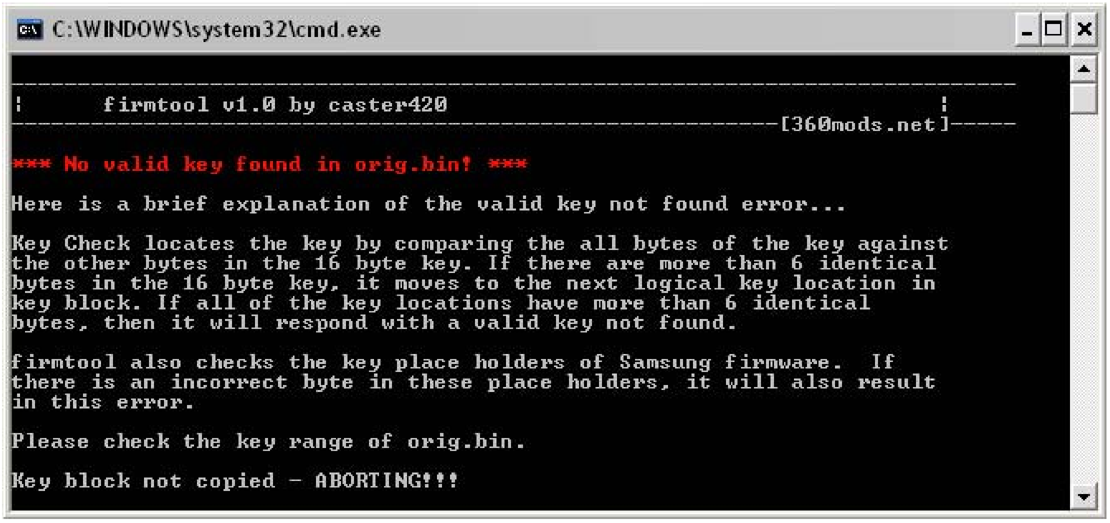
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

ORIG.BIN IS WRONG SIZE



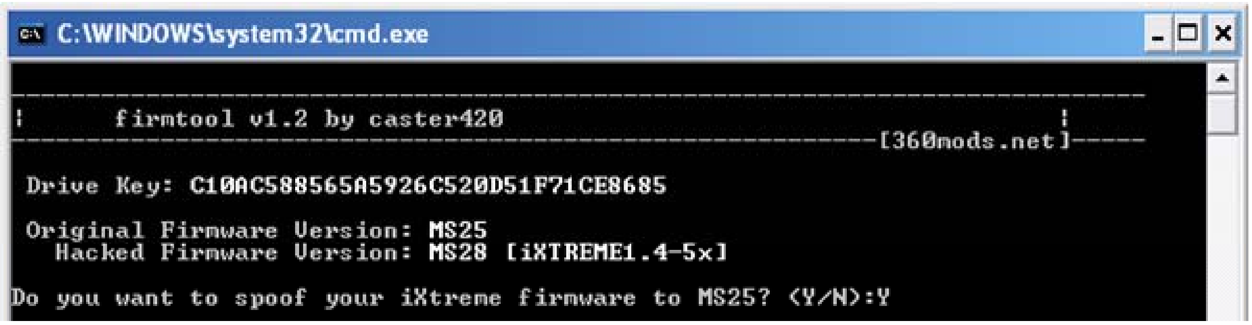
```
-----------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                    |
-----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

NO VALID KEY IN ORIG.BIN



```
-----------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                    |
-----------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

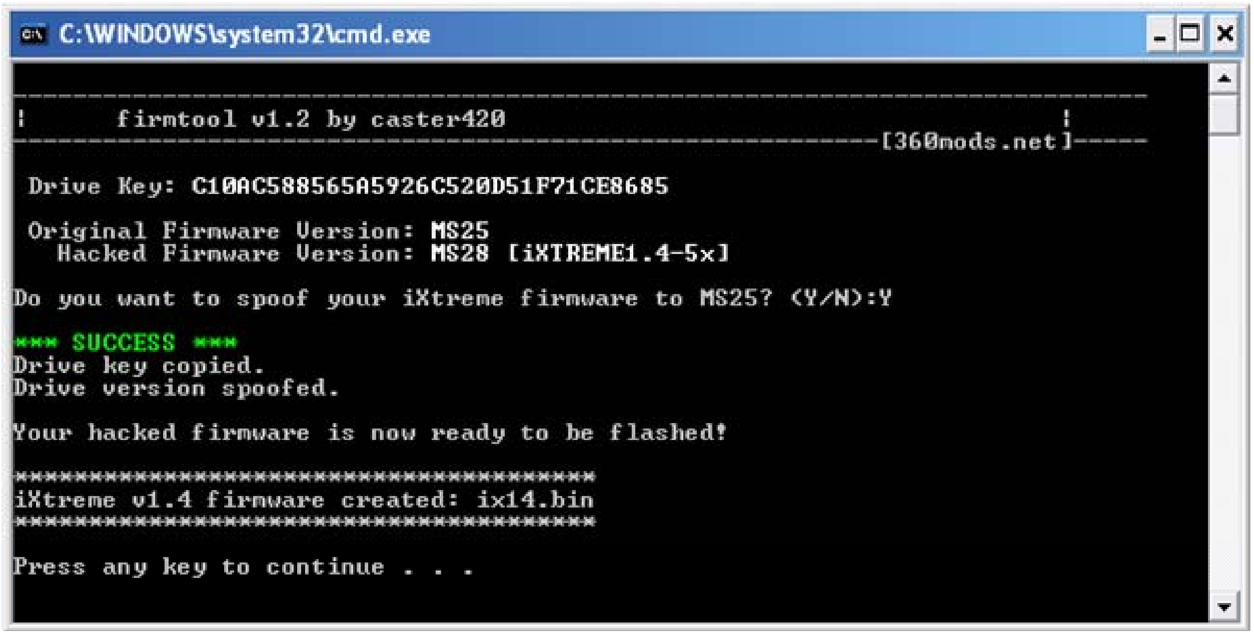
Firmtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Firmtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
----------------------------------------------------------------------------
¦       firmtool v1.2 by caster420                                         ¦
-----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS

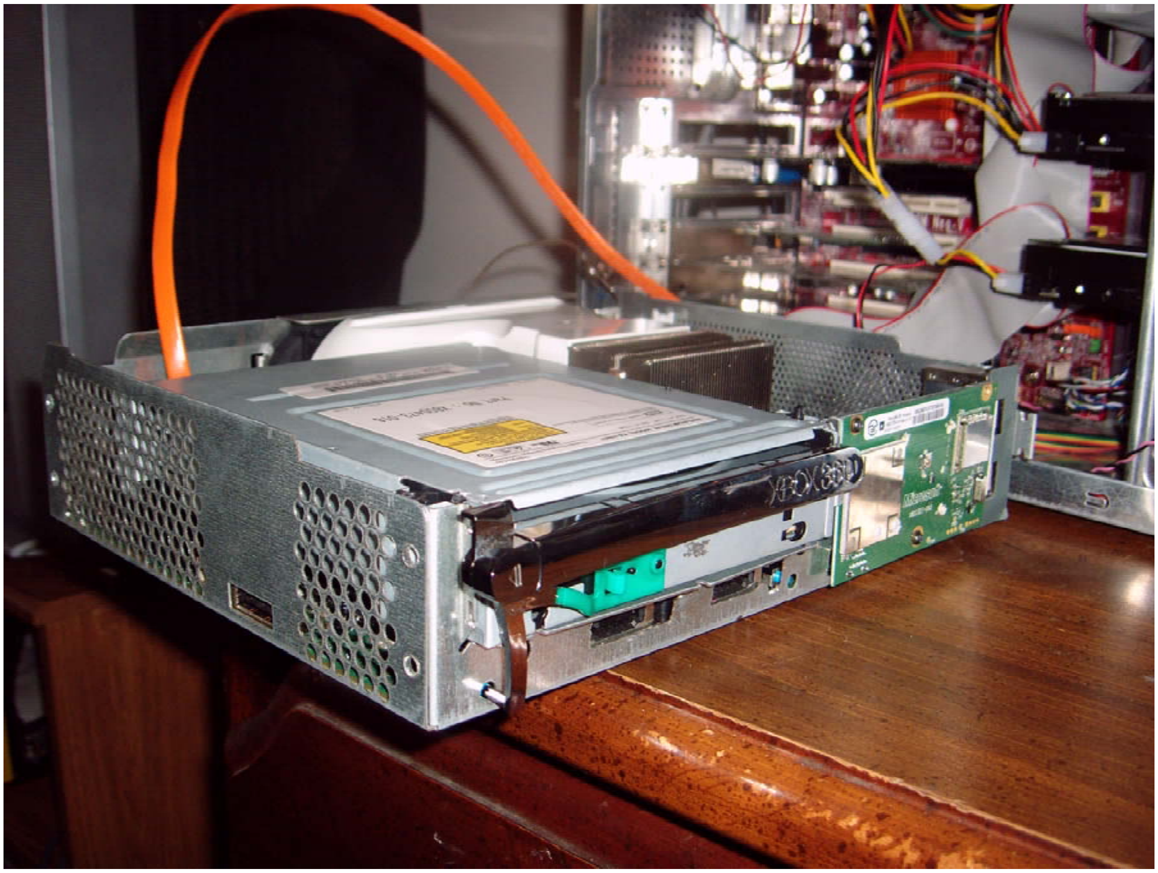


```
----------------------------------------------------------------------------
¦       firmtool v1.2 by caster420                                         ¦
-----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your hacked firmware is now ready to be flashed!

***************************************
iXtreme v1.4 firmware created: ix14.bin
***************************************

Press any key to continue . . .
```

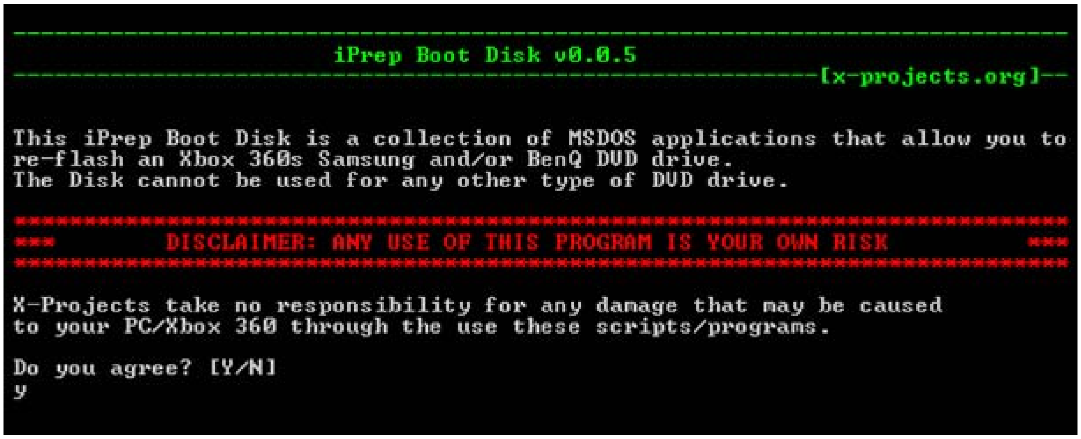
Unplug the SATA cable from the 360 DVD drive, power-cycle the Xbox 360, and reboot your PC.

Flashing The Hacked Firmware

When you're back into DOS, plug the SATA cable back into the Xbox 360 DVD drive.



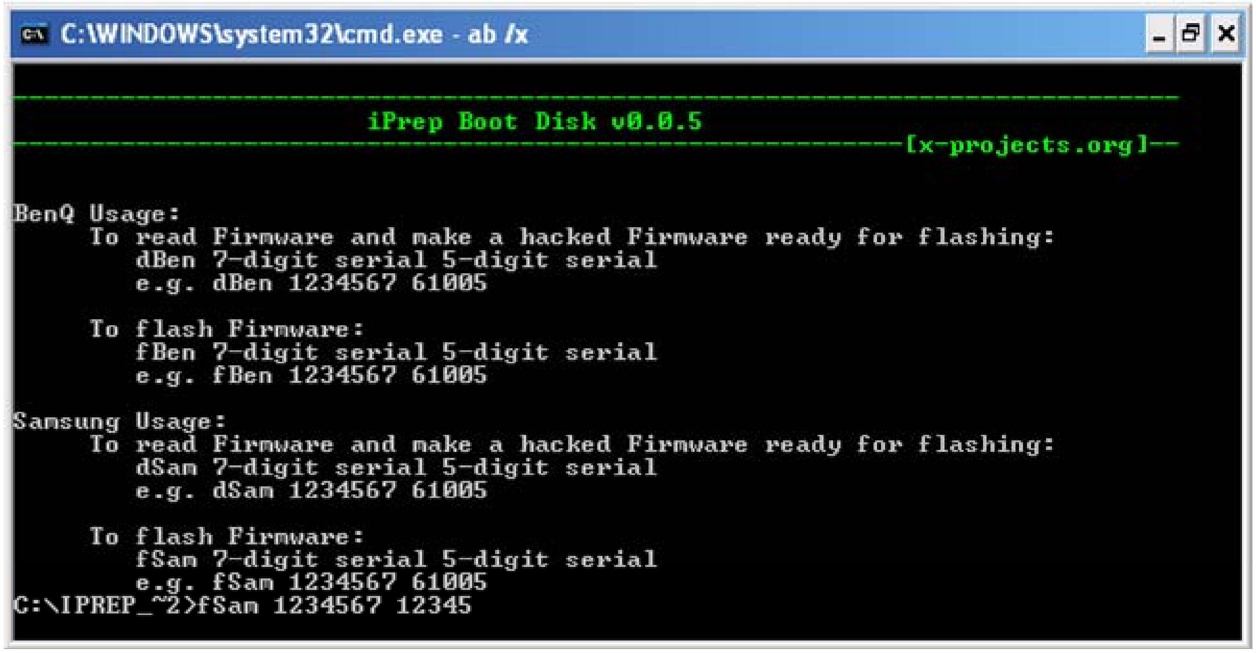
Enter y to accept the iPrep Terms of Use.



```
--------------------------------------------------------------------------------
                       iPrep Boot Disk v0.0.5
----------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

********************************************************************************
***        DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK            ***
********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

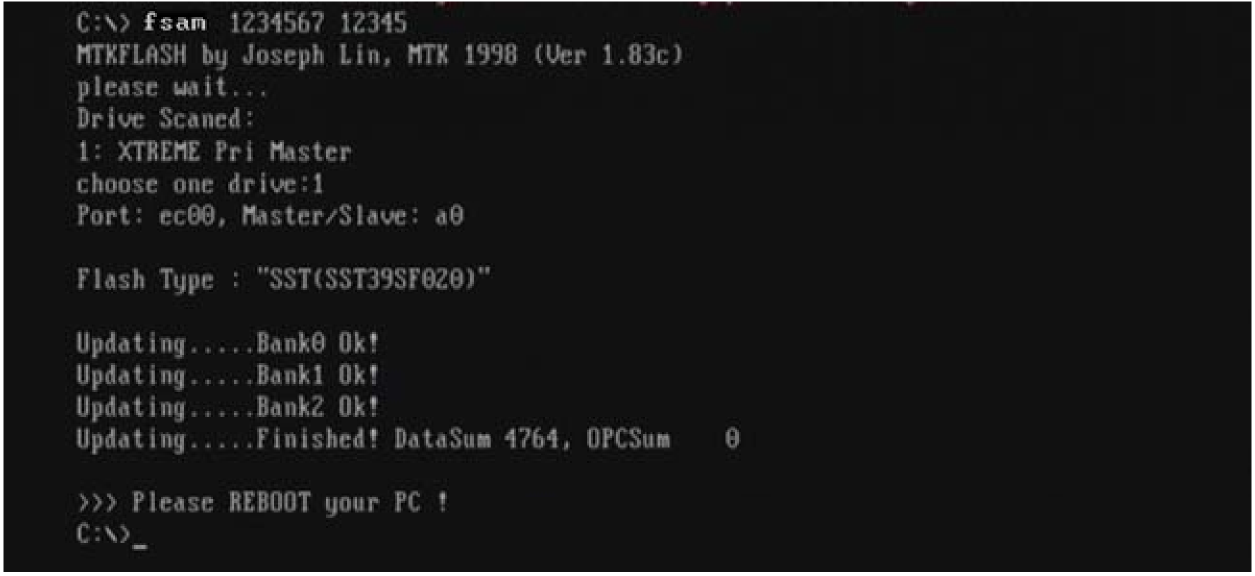
Type in the following command, using your Xbox 360 serial number that you used with the dSam command.

fSam 1234567 12345 [press enter]



```
-------------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
----------------------------------------------------------[x-projects.org]--

BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005
C:\IPREP_~2>fSam 1234567 12345
```

MTKFlash should run and your drive should be listed. If you see an item in the list named “XTREME”, choose that. iPrep renames your SATA controller to this when it creates the hexedited MTKFlash. Select the drive from the list and it should flash your drive with the hacked firmware. It should flash 4 banks. The 4th bank may say something like Datasum, it is normal. When it is done flashing, unplug the SATA cable from the 360 DVD drive, power off the Xbox 360, and power off your PC. Reconnect the 360 DVD drive to the 360 motherboard and test it.



```
C:\> fsam 1234567 12345
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Updating.....Bank0 Ok!
Updating.....Bank1 Ok!
Updating.....Bank2 Ok!
Updating.....Finished! DataSum 4764, OPCSum    0

>>> Please REBOOT your PC !
C:\>_
```

Backup Your Original Firmware!

Boot into Windows. Plug in your USB drive and find your Sam-OFW.bin and Sam-CFW.bin in the BACKUPS folder. This is your Xbox 360 drive firmware and needs to be kept safe! Make a copy of these files. Then make another one on another drive. Then make another somewhere else. Email it to yourself.

You should keep all the files on your flash drive to make future firmware updates easier.

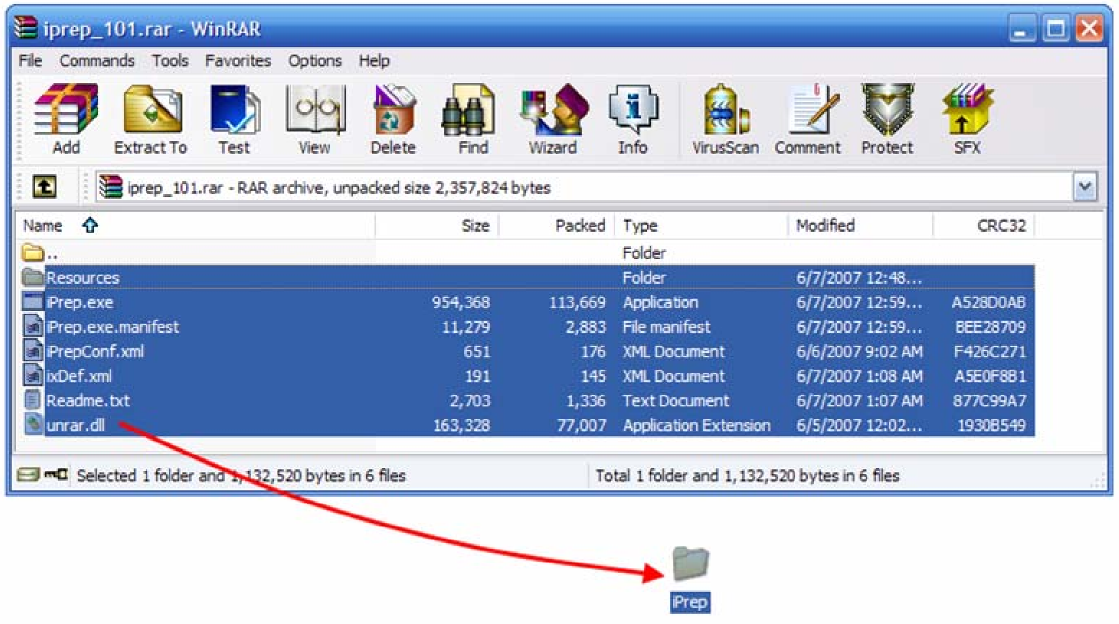
iPrep (NTFS4DOS CD)

The following process will set up an NTFS-mountable boot CD so that you can use your computer's hard drive to flash your Xbox 360 firmware. We will use iPrep to hex-edit MTKFlash and copy the files to your hard drive.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer's web site to install the latest drivers. The latest drivers for VIA chipsets are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, so please visit the website at http://www.x-projects.org to download the latest version. The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder.



iprep_101.rar - RAR archive, unpacked size 2,357,824 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
Resources			Folder	6/7/2007 12:48...	
iPrep.exe	954,368	113,669	Application	6/7/2007 12:59...	A528D0AB
iPrep.exe.manifest	11,279	2,883	File manifest	6/7/2007 12:59...	BEE28709
iPrepConf.xml	651	176	XML Document	6/6/2007 9:02 AM	F426C271
ixDef.xml	191	145	XML Document	6/7/2007 1:08 AM	A5E0F8B1
Readme.txt	2,703	1,336	Text Document	6/7/2007 1:07 AM	877C99A7
unrar.dll	163,328	77,007	Application Extension	6/5/2007 12:02...	1930B549

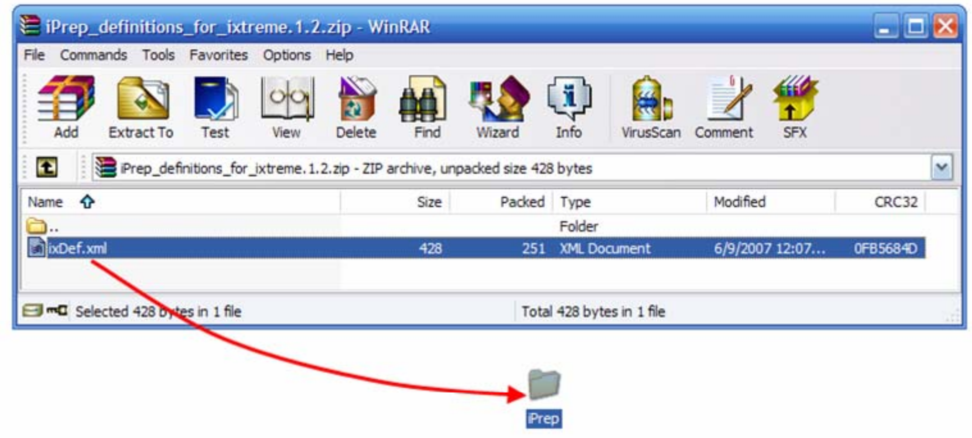
Selected 1 folder and 1,132,520 bytes in 6 files

Total 1 folder and 1,132,520 bytes in 6 files

After downloading and installing iPrep, download the latest definitions file here. (If you did not download it from Xbins already)

This is an updated definitions file for iPrep that will support loading the iXtreme firmware. The download is a zip archive containing a file named ixDef.xml.

Overwrite the old ixDef.xml with this new one.



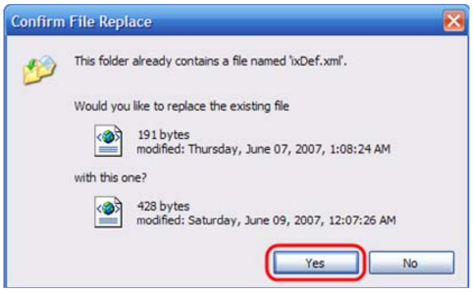
iPrep_definitions_for_ixtreme.1.2.zip - WinRAR

iPrep_definitions_for_ixtreme.1.2.zip - ZIP archive, unpacked size 428 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
ixDef.xml	428	251	XML Document	6/9/2007 12:07...	0FB5684D

Selected 428 bytes in 1 file | Total 428 bytes in 1 file

Since the default file already exists, Windows should ask you if you want to overwrite the file – answer Yes.



Confirm File Replace

This folder already contains a file named 'ixDef.xml'.

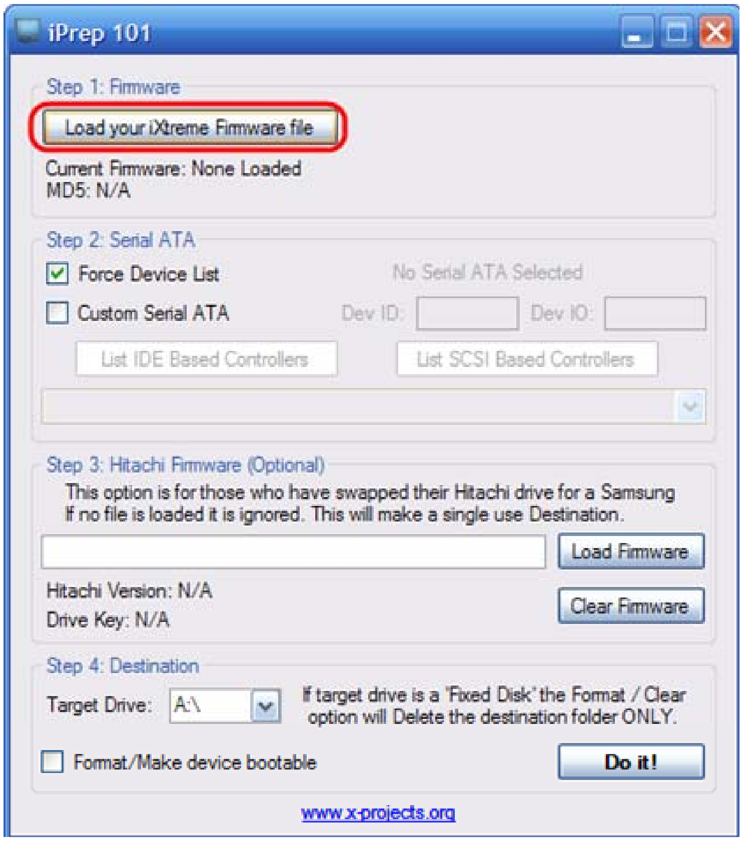
Would you like to replace the existing file

191 bytes
modified: Thursday, June 07, 2007, 1:08:24 AM

with this one?

428 bytes
modified: Saturday, June 09, 2007, 12:07:26 AM

Now run iPrep.exe and load your iXtreme firmware file.


Load your iXtreme Firmware file
List IDE Based Controllers
List SCSI Based Controllers
Load Firmware
Clear Firmware
Do it!

iPrep 101

Step 1: Firmware

Current Firmware: None Loaded
MD5: N/A

Step 2: Serial ATA

☑ Force Device List — No Serial ATA Selected

☐ Custom Serial ATA — Dev ID: — Dev IO:

Step 3: Hitachi Firmware (Optional)

This option is for those who have swapped their Hitachi drive for a Samsung
If no file is loaded it is ignored. This will make a single use Destination.

Hitachi Version: N/A
Drive Key: N/A

Step 4: Destination

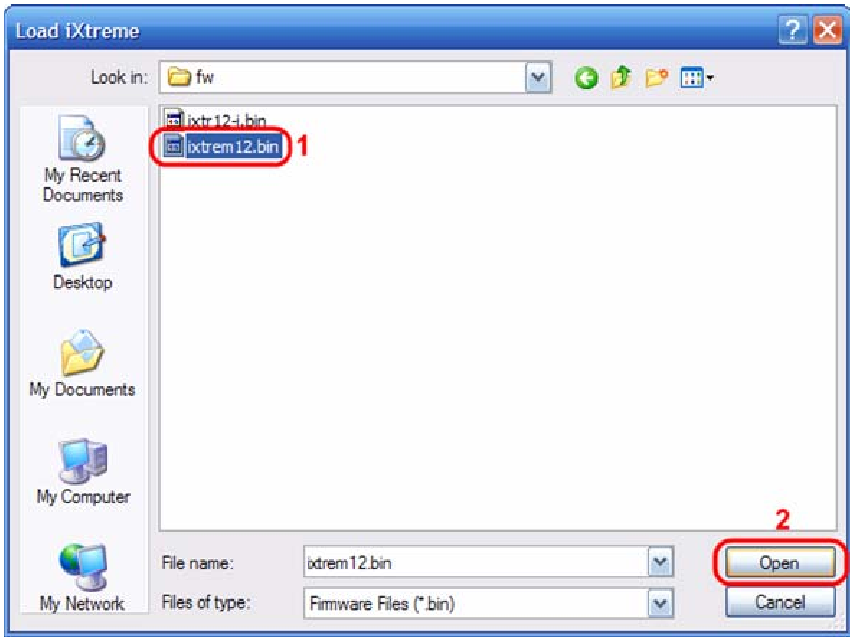
Target Drive: A:\

If target drive is a 'Fixed Disk' the Format / Clear option will Delete the destination folder ONLY.

☐ Format/Make device bootable

www.x-projects.org

When you hit this button, a “Load iXtreme” window should open for you to browse for the iXtreme firmware. This is where you extracted the downloaded firmware, and it is the ixtrem12.bin in the fw folder.



Load iXtreme

Look in: fw

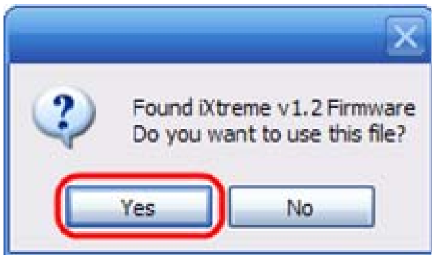
ixtr12-i.bin

ixtrem12.bin

File name: ixtrem12.bin

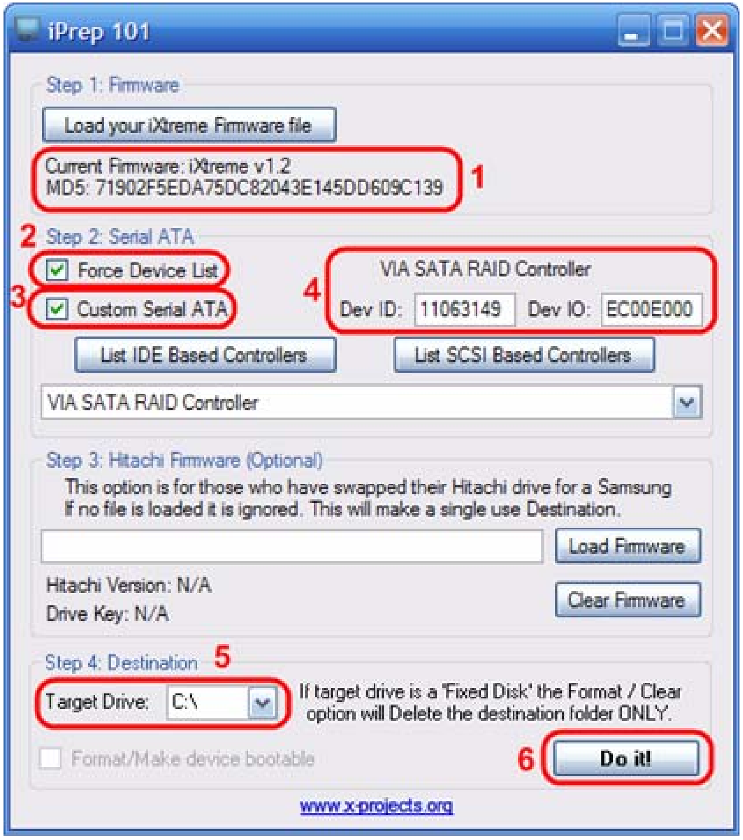
Files of type: Firmware Files (*.bin)

You should then have a message confirming that iPrep has found the iXtreme firmware file.



Found iXtreme v1.2 Firmware
Do you want to use this file?

Now for the rest of the iPrep process...


iPrep 101
Load your iXtreme Firmware file
1
2
3
4
List IDE Based Controllers
List SCSI Based Controllers
Load Firmware
Clear Firmware
5
6
Do it!
www.x-projects.org

Step 1: Firmware

Current Firmware: iXtreme v1.2
MD5: 71902F5EDA75DC82043E145DD609C139

Step 2: Serial ATA

☑ Force Device List

☑ Custom Serial ATA

VIA SATA RAID Controller

Dev ID: 11063149 Dev IO: EC00E000

VIA SATA RAID Controller

Step 3: Hitachi Firmware (Optional)

This option is for those who have swapped their Hitachi drive for a Samsung
If no file is loaded it is ignored. This will make a single use Destination.

Hitachi Version: N/A

Drive Key: N/A

Step 4: Destination

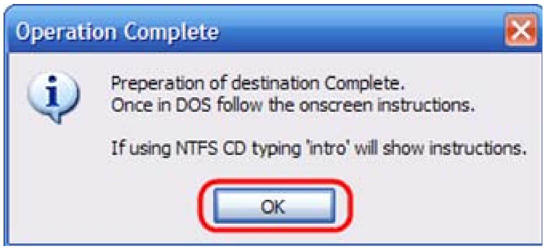
Target Drive: C:\

If target drive is a 'Fixed Disk' the Format / Clear option will Delete the destination folder ONLY.

□ Format/Make device bootable

1. Confirm that the firmware loaded is iXtreme v 1.2 and the MD5 matches the image above.
2. Force Device List should already be checked, just make sure it is.
3. Check the box for Custom Serial ATA.
4. Hit either of the list buttons and select your SATA controller from the drop-down list. It should input the ID and IO values in the textboxes above.
5. Select your hard drive from the drop-down list.
6. Do it!

If everything goes smooth you should get this message.



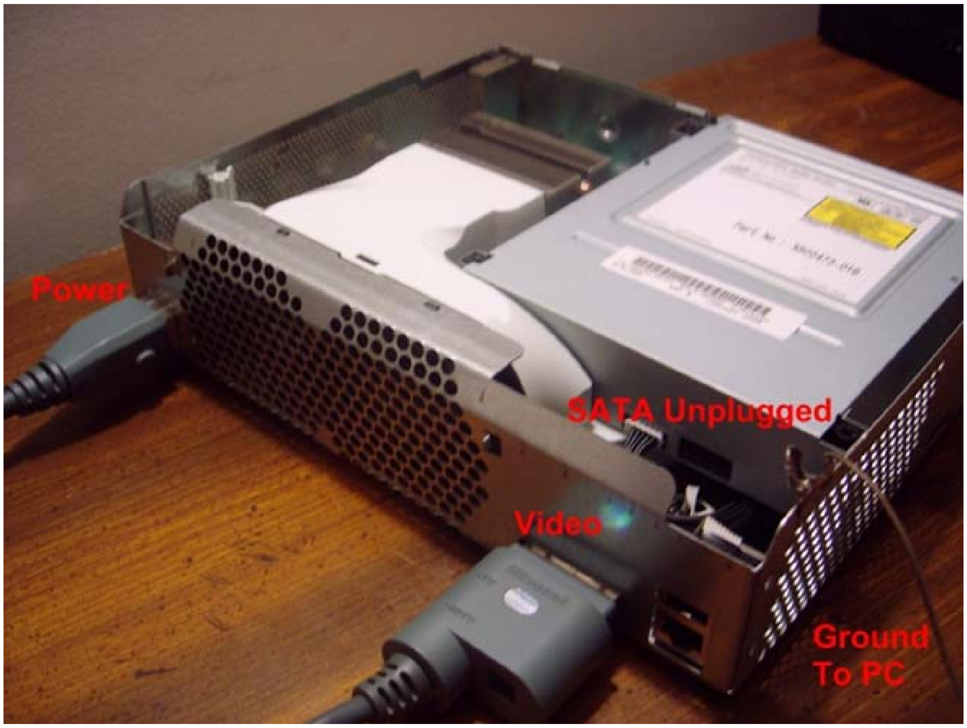
Preperation of destination Complete.
Once in DOS follow the onscreen instructions.

If using NTFS CD typing 'intro' will show instructions.

Download the NTFS4DOS ISO and burn it to a blank CD-R using any recording software capable of burning ISO files. (IMGBurn)

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

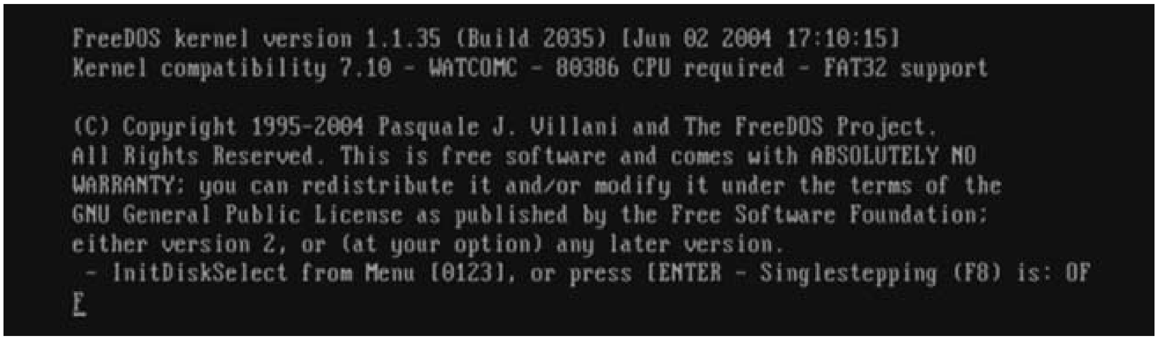
Flash The Drive (NTFS4DOS CD)

This tutorial is for MS25 drives only, if you have an MS28, please click here to follow the MS28 flashing procedure.

Reading The Original Firmware

Turn on your PC and boot from the NTFS4DOS CD. After a while it should say:

"Select from Menu [0123], or press [ENTER – Singlestepping (F8) is: OFF"



```
FreeDOS kernel version 1.1.35 (Build 2035) [Jun 02 2004 17:10:15]
Kernel compatibility 7.10 - WATCOMC - 80386 CPU required - FAT32 support

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All Rights Reserved. This is free software and comes with ABSOLUTELY NO
WARRANTY: you can redistribute it and/or modify it under the terms of the
GNU General Public License as published by the Free Software Foundation;
either version 2, or (at your option) any later version.
 - InitDiskSelect from Menu [0123], or press [ENTER - Singlestepping (F8) is: OF
F
```
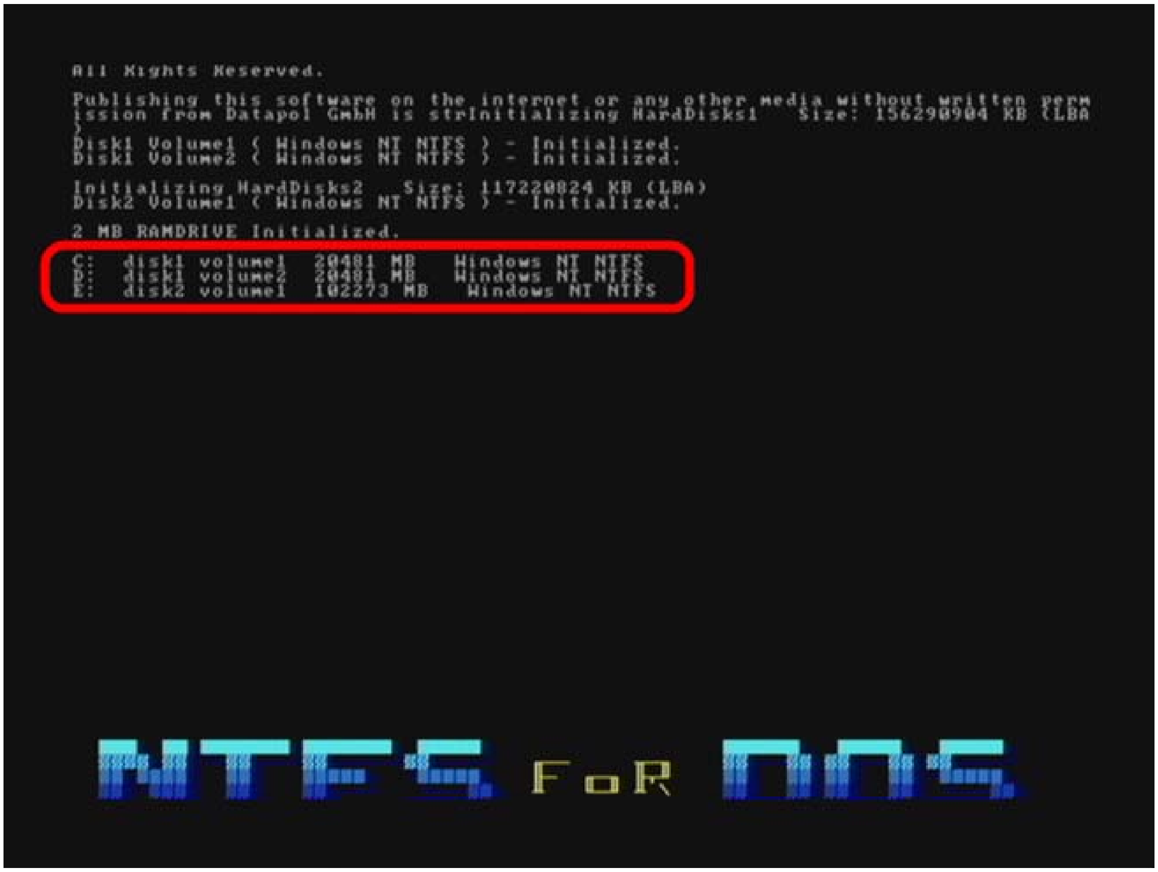
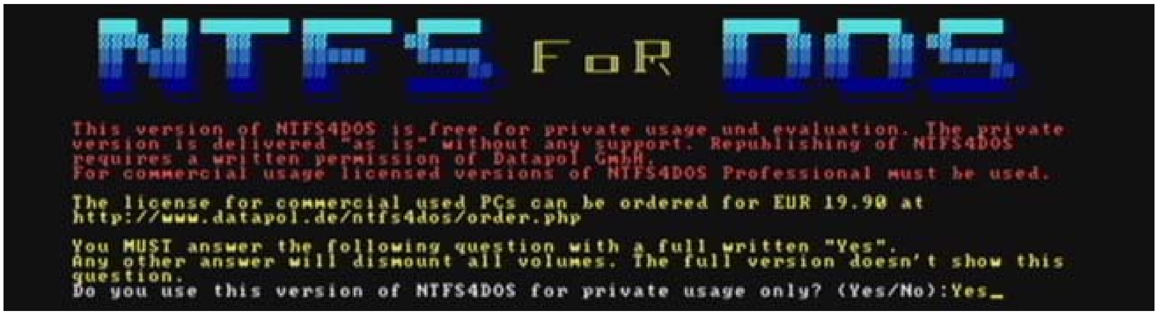

Hit the Enter key and you should see an NTFS for DOS logo screen with a disclaimer. On this screen, please notice your drive letter that has been mounted at the top. You will need to know this when typing in commands.



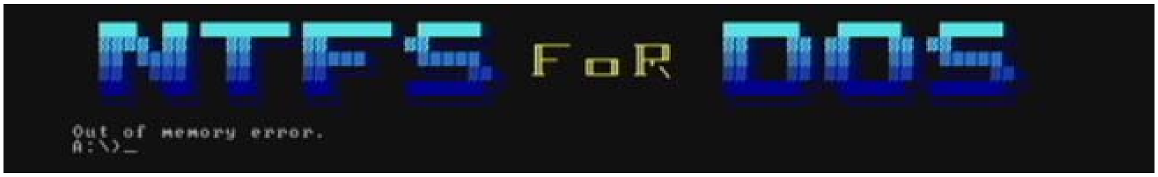
```
All Rights Reserved.

Publishing this software on the internet or any other media without written perm
ission from Datapol GmbH is strInitializing HardDisks1    Size: 156290904 KB (LBA
)
Disk1 Volume1 ( Windows NT NTFS ) - Initialized.
Disk1 Volume2 ( Windows NT NTFS ) - Initialized.

Initializing HardDisks2    Size: 117220824 KB (LBA)
Disk2 Volume1 ( Windows NT NTFS ) - Initialized.

2 MB RAMDRIVE Initialized.
C:  disk1 volume1  20481 MB   Windows NT NTFS
D:  disk1 volume2  20481 MB   Windows NT NTFS
E:  disk2 volume1  102273 MB   Windows NT NTFS
```

The disclaimer asks you if you are going to use this for private usage only, please type in “Yes” without the quotes, and hit the Enter key.



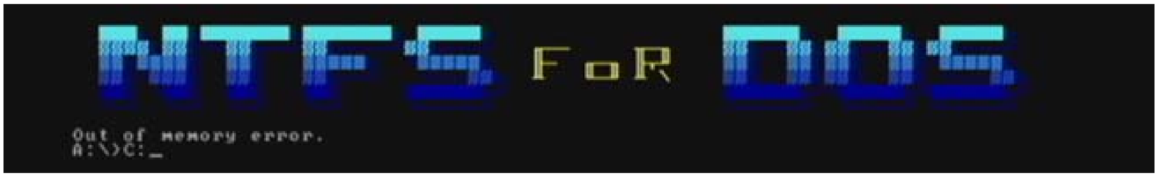
```
This version of NTFS4DOS is free for private usage und evaluation. The private
version is delivered "as is" without any support. Republishing of NTFS4DOS
requires a written permission of Datapol GmbH.
For commercial usage licensed versions of NTFS4DOS Professional must be used.

The license for commercial used PCs can be ordered for EUR 19.90 at
http://www.datapol.de/ntfs4dos/order.php

You MUST answer the following question with a full written "Yes".
Any other answer will dismount all volumes. The full version doesn't show this
question.
Do you use this version of NTFS4DOS for private usage only? (Yes/No):Yes_
```

Dos will start in your ram drive. You will need to mount your hard drive.



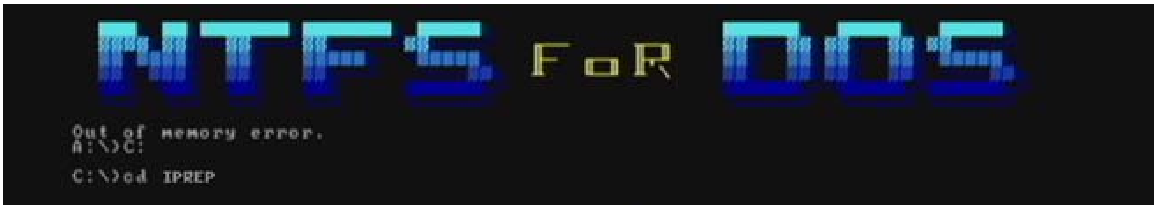
```
Out of memory error.
A:\>_
```

C: [press enter] ← use the drive letter your hard drive was given



```
Out of memory error.
A:\>C:_
```

cd IPREP [press enter]



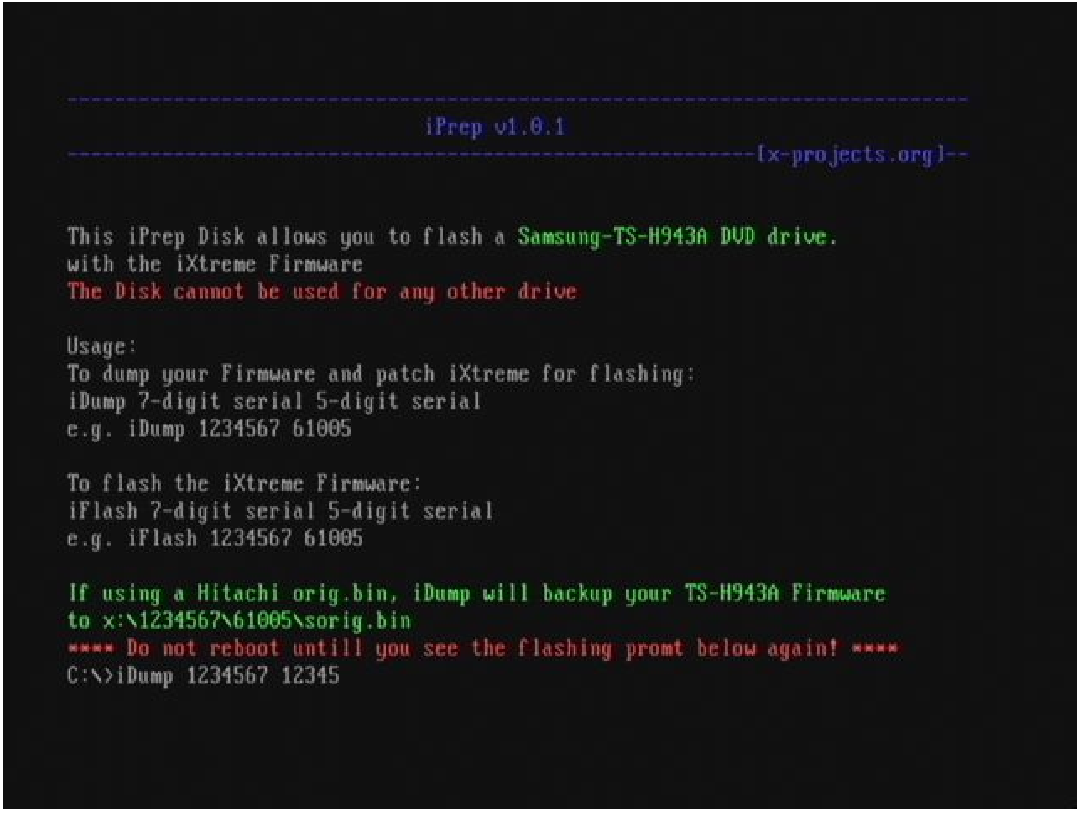
```
Out of memory error.
A:\>C:

C:\>cd IPREP
```

Now that you are in the right directory, you can now connect the Xbox 360 to the PC using the SATA cable.

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(We'll use the serial number 1234567 12345 as an example)

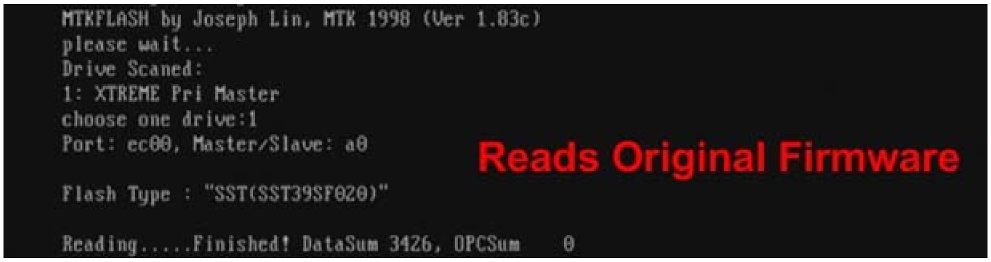
```
iDump 1234567 12345 [press enter]
```



```
--------------------------------------------------------------------------------
                              iPrep v1.0.1
-------------------------------------------------------------[x-projects.org]--

This iPrep Disk allows you to flash a Samsung-TS-H943A DVD drive.
with the iXtreme Firmware
The Disk cannot be used for any other drive

Usage:
To dump your Firmware and patch iXtreme for flashing:
iDump 7-digit serial 5-digit serial
e.g. iDump 1234567 61005

To flash the iXtreme Firmware:
iFlash 7-digit serial 5-digit serial
e.g. iFlash 1234567 61005

If using a Hitachi orig.bin, iDump will backup your TS-H943A Firmware
to x:\1234567\61005\sorig.bin
**** Do not reboot untill you see the flashing promt below again! ****
C:\>iDump 1234567 12345
```

If you get errors like “Directory already exists” or “MKDIR failed…” don’t worry. The batch file is trying to create a new folder but it’s already there.

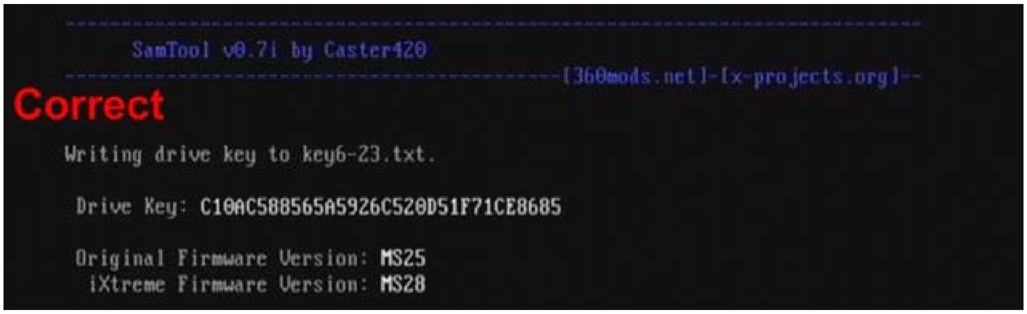
MTKFlash should run and your drive should be listed. If you see an item in the list named “XTREME”, select that and it should make a backup of your original firmware.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Reading.....Finished! DataSum 3426, OPCSum    0
```

Reads Original Firmware

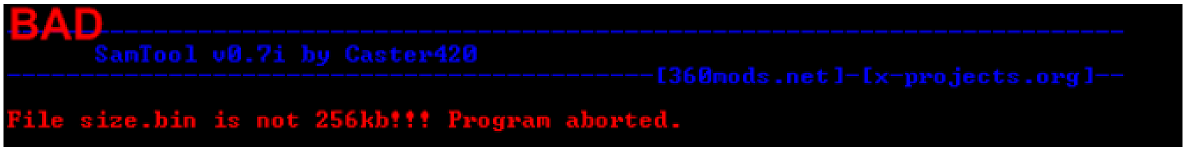
Samtool will now check if a valid key exists in both your original and hacked firmware, and that they match. This is what it should look like.



Correct

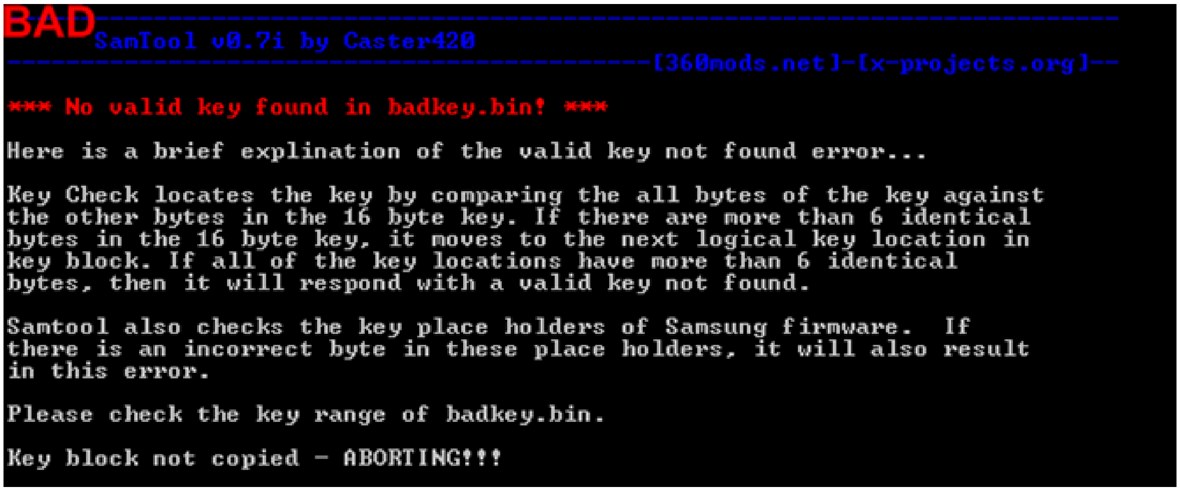
```
--------------------------------------------------------------------------
      SamTool v0.7i by Caster420
-----------------------------------------[360mods.net]-[x-projects.org]--

Writing drive key to key6-23.txt.

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
  iXtreme Firmware Version: MS28
```

If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, Samtool will abort.



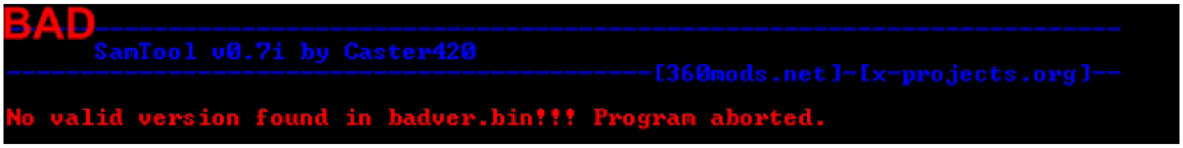
BAD

```
------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
---------------------------------------------[360mods.net]-[x-projects.org]--

File size.bin is not 256kb!!! Program aborted.
```



BAD

```
------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
---------------------------------------------[360mods.net]-[x-projects.org]--

*** No valid key found in badkey.bin! ***

Here is a brief explination of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

Samtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of badkey.bin.

Key block not copied - ABORTING!!!
```



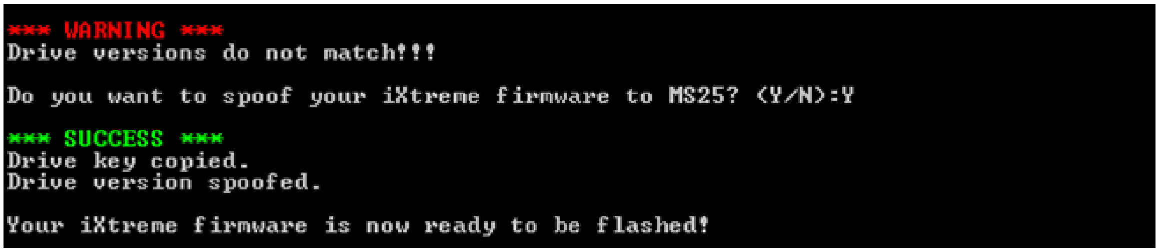
BAD

```
------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
---------------------------------------------[360mods.net]-[x-projects.org]--

No valid version found in badver.bin!!! Program aborted.
```

If you get something like these pictures, **DO NOT PROCEED PAST THIS POINT IN THE TUTORIAL!** Doing so will brick your Xbox 360, and leave you without a valid drive key. Something is wrong, make sure you have unplugged all other drives in your PC and restart the tutorial or get help.

If your screen is like the one above that says “Correct”, you can continue.

Samtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Samtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
*** WARNING ***
Drive versions do not match!!!

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your iXtreme firmware is now ready to be flashed!
```

Unplug the SATA cable from the 360 DVD drive, power-cycle the Xbox 360, and reboot your PC.

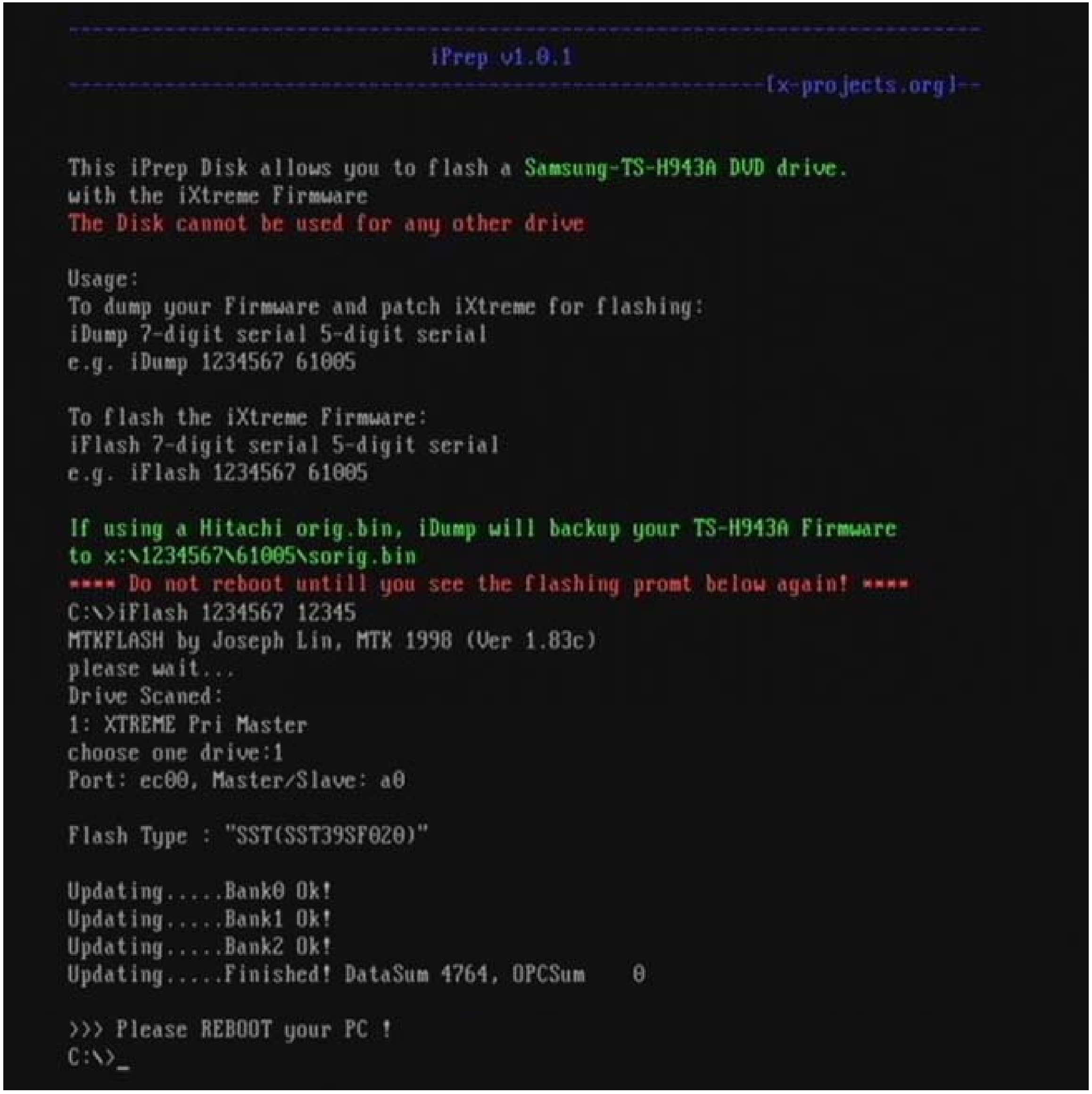
Flashing The Hacked Firmware

Do the same things as before, hit Enter at the singlestepping prompt, type Yes and hit enter at the private usage disclaimer, then mount your drive and use the command cd IPREP to change to the correct directory. When you're there, plug the SATA cable back into the drive.

Type in the following command, using your Xbox 360 serial number that you used with the iDump command.

iFlash 1234567 12345 [press enter]

MTKFlash should run and your drive should be listed. If you see an item in the list named "XTREME", choose that. iPrep renames your SATA controller to this when it creates the hexedited MTKFlash. Select the drive from the list and it should flash your drive with the hacked firmware. It should flash 4 banks. The 4th bank may say something like Datasum, it is normal. When it is done flashing, unplug the SATA cable from the 360 DVD drive, power off the Xbox 360, and power off your PC. Reconnect the 360 DVD drive to the 360 motherboard and test it.



```
--------------------------------------------------------------------------------
                                 iPrep v1.0.1
--------------------------------------------------------------[x-projects.org]--


This iPrep Disk allows you to flash a Samsung-TS-H943A DVD drive.
with the iXtreme Firmware
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Usage:
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To flash the iXtreme Firmware:
iFlash 7-digit serial 5-digit serial
e.g. iFlash 1234567 61005

If using a Hitachi orig.bin, iDump will backup your TS-H943A Firmware
to x:\1234567\61005\sorig.bin
**** Do not reboot untill you see the flashing promt below again! ****
C:\>iFlash 1234567 12345
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Updating.....Bank0 Ok!
Updating.....Bank1 Ok!
Updating.....Bank2 Ok!
Updating.....Finished! DataSum 4764, OPCSum    0

>>> Please REBOOT your PC !
C:\>_
```

Backup Your Original Firmware!

Boot into Windows. Go to the C: drive, the IPREP folder, and find your Sam-OFW.bin and Sam-CFW.bin in the BACKUPS folder. This is your Xbox 360 drive firmware and needs to be kept safe! Make a copy of these files. Then make another one on another drive. Then make another somewhere else. Email it to yourself. You get the drift.

You should keep all the files in your IPREP folder to make future firmware updates easier.

iPrep (Floppy)

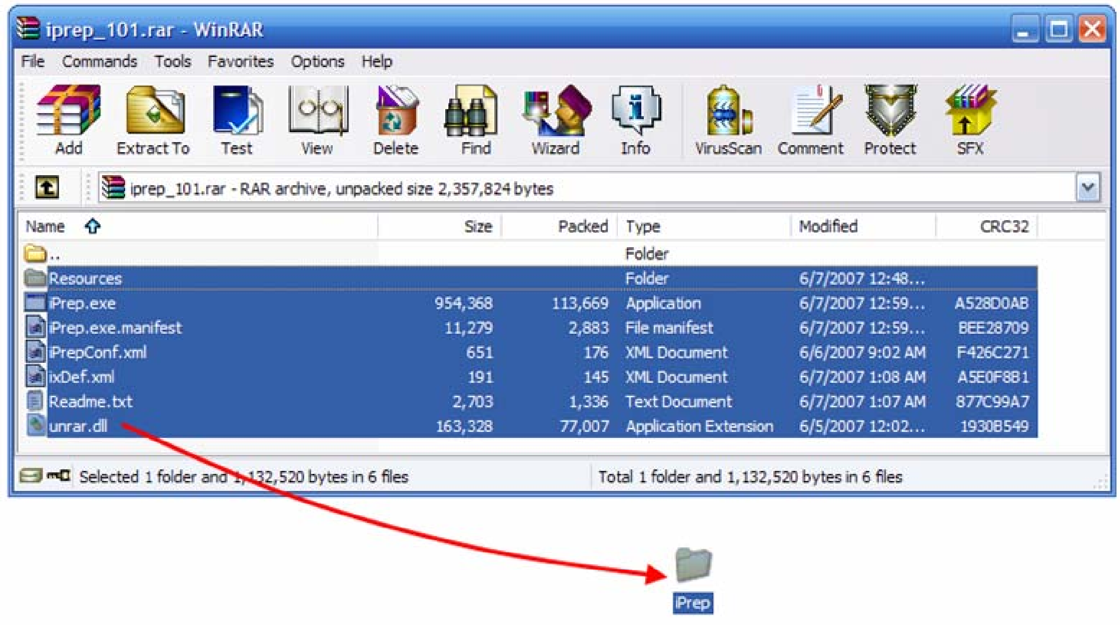
Quick warning about floppies. Lately, people have been bricking their drives by using floppies. They are unreliable and can die mid-flash. Sometimes the person is lucky and the bad flash recovery method can be used to reflash the drive. Others needed to hotswap and use the bad flash recovery. Floppies are old technology for a reason. They are very unreliable. Please try to refrain from using a floppy. If you can use a bootable USB stick or burn an NTFS4DOS CD, do that instead. If you absolutely must use a floppy, use a new one!

The following process will set up a floppy disk with everything necessary to read your original firmware and write the hacked firmware onto the drive. We will use iPrep to hex-edit MTKFlash, format the floppy disk, and copy the files onto it.

First, you need to make sure Microsoft .NET Framework v2 is installed. It is needed for iPrep to run. If you do not have this installed, you will be prompted to download and install it.

Second, you need to make sure the drivers for your SATA chipset are installed. Use either the CD that came with your computer/SATA card, or use the manufacturer's web site to install the latest drivers. The latest drivers for VIA chipsets are here.

Once you have that taken care of, you can download and install iPrep. Klutsh updates iPrep frequently, so please visit the website at http://www.x-projects.org to download the latest version. The download is in the form of a RAR archive. Use WinRAR to extract all the files to a new folder.



iprep_101.rar - RAR archive, unpacked size 2,357,824 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
Resources			Folder	6/7/2007 12:48...	
iPrep.exe	954,368	113,669	Application	6/7/2007 12:59...	A528D0AB
iPrep.exe.manifest	11,279	2,883	File manifest	6/7/2007 12:59...	BEE28709
iPrepConf.xml	651	176	XML Document	6/6/2007 9:02 AM	F426C271
ixDef.xml	191	145	XML Document	6/7/2007 1:08 AM	A5E0F8B1
Readme.txt	2,703	1,336	Text Document	6/7/2007 1:07 AM	877C99A7
unrar.dll	163,328	77,007	Application Extension	6/5/2007 12:02...	1930B549

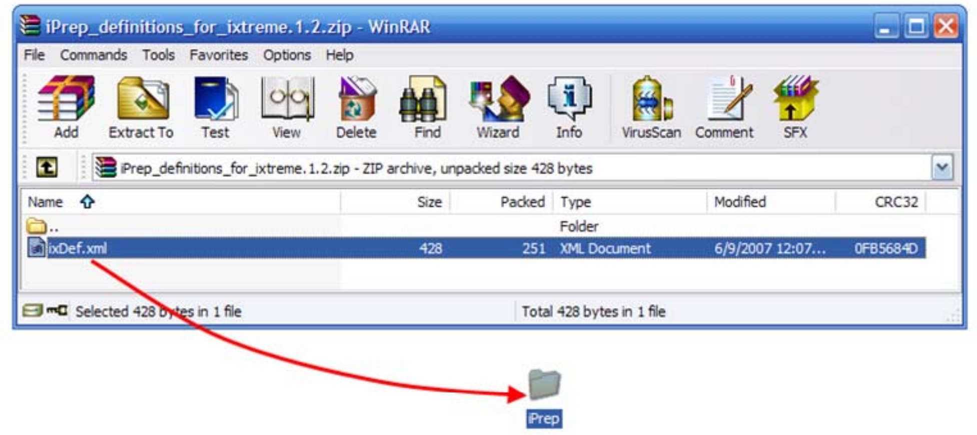
Selected 1 folder and 1,132,520 bytes in 6 files

Total 1 folder and 1,132,520 bytes in 6 files

After downloading and installing iPrep, download the latest definitions file here. (If you did not download it from Xbins already)

This is an updated definitions file for iPrep that will support loading the iXtreme firmware. The download is a zip archive containing a file named ixDef.xml.

Overwrite the old ixDef.xml with this new one.


iPrep_definitions_for_ixtreme.1.2.zip - WinRAR
File Commands Tools Favorites Options Help
Add
Extract To
Test
View
Delete
Find
Wizard
Info
VirusScan
Comment
SFX
iPrep

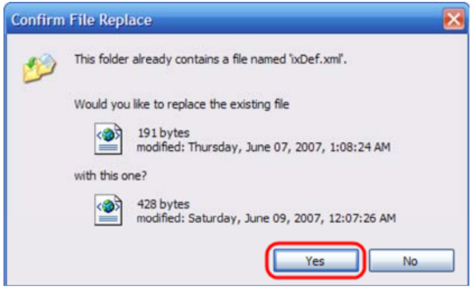
iPrep_definitions_for_ixtreme.1.2.zip - ZIP archive, unpacked size 428 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
ixDef.xml	428	251	XML Document	6/9/2007 12:07...	0FB5684D

Selected 428 bytes in 1 file

Total 428 bytes in 1 file

Since the default file already exists, Windows should ask you if you want to overwrite the file – answer Yes.



Confirm File Replace

This folder already contains a file named 'ixDef.xml'.

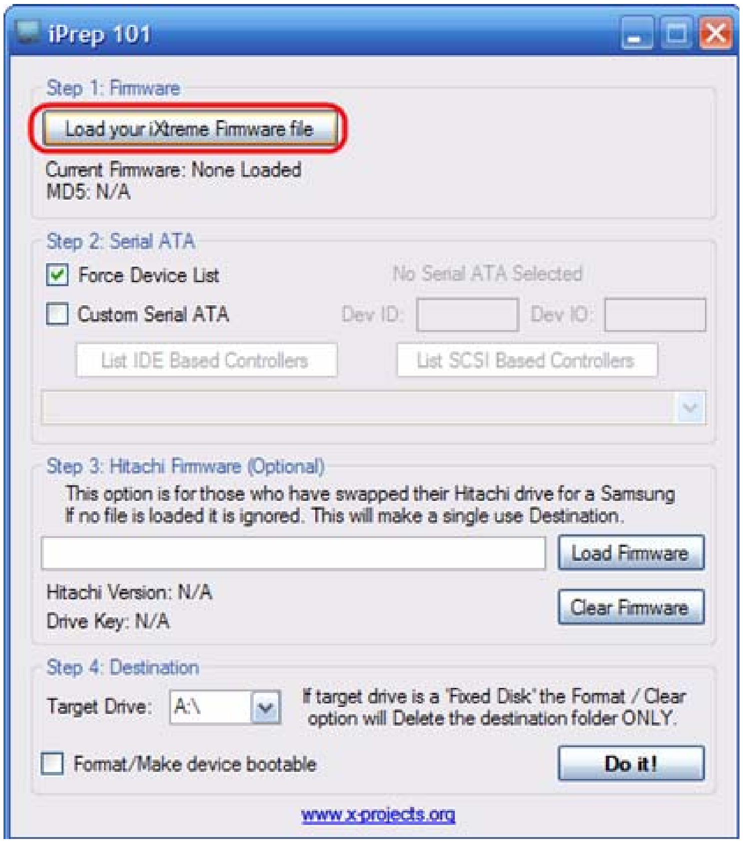
Would you like to replace the existing file

191 bytes
modified: Thursday, June 07, 2007, 1:08:24 AM

with this one?

428 bytes
modified: Saturday, June 09, 2007, 12:07:26 AM

Now run iPrep.exe and load your iXtreme firmware file.



iPrep 101

Step 1: Firmware

Current Firmware: None Loaded
MD5: N/A

Step 2: Serial ATA

☑ Force Device List

No Serial ATA Selected

□ Custom Serial ATA

Dev ID:
Dev IO:

Step 3: Hitachi Firmware (Optional)

This option is for those who have swapped their Hitachi drive for a Samsung
If no file is loaded it is ignored. This will make a single use Destination.

Hitachi Version: N/A
Drive Key: N/A

Step 4: Destination

Target Drive: A:\

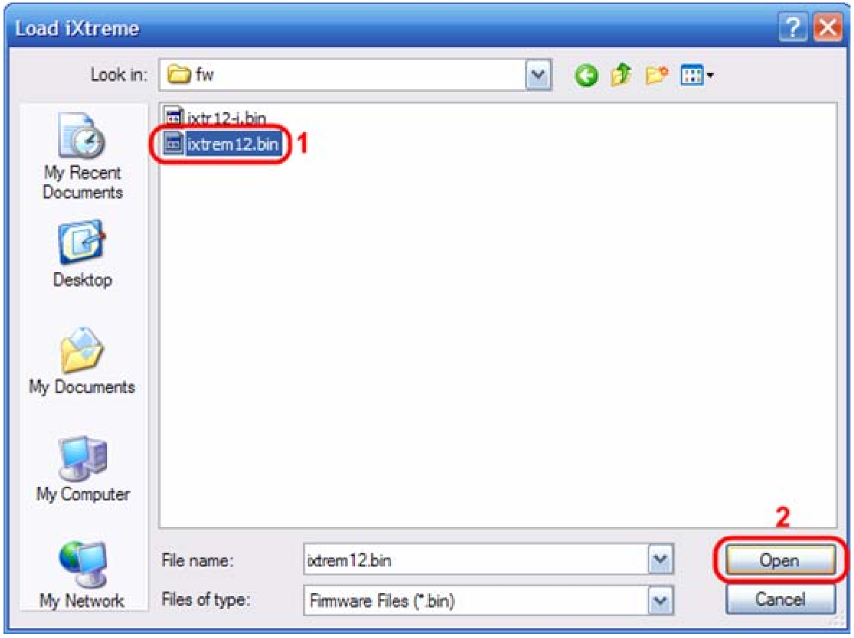
If target drive is a 'Fixed Disk' the Format / Clear option will Delete the destination folder ONLY.

□ Format/Make device bootable

www.x-projects.org

Load your iXtreme Firmware file
List IDE Based Controllers
List SCSI Based Controllers
Load Firmware
Clear Firmware
Do it!

When you hit this button, a “Load iXtreme” window should open for you to browse for the iXtreme firmware. This is where you extracted the downloaded firmware, and it is the ixtrem12.bin in the fw folder.



Load iXtreme

Look in: fw

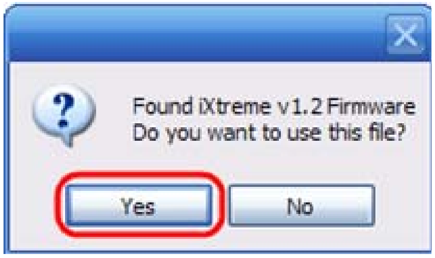
ixtr12-i.bin

ixtrem12.bin

File name: ixtrem12.bin

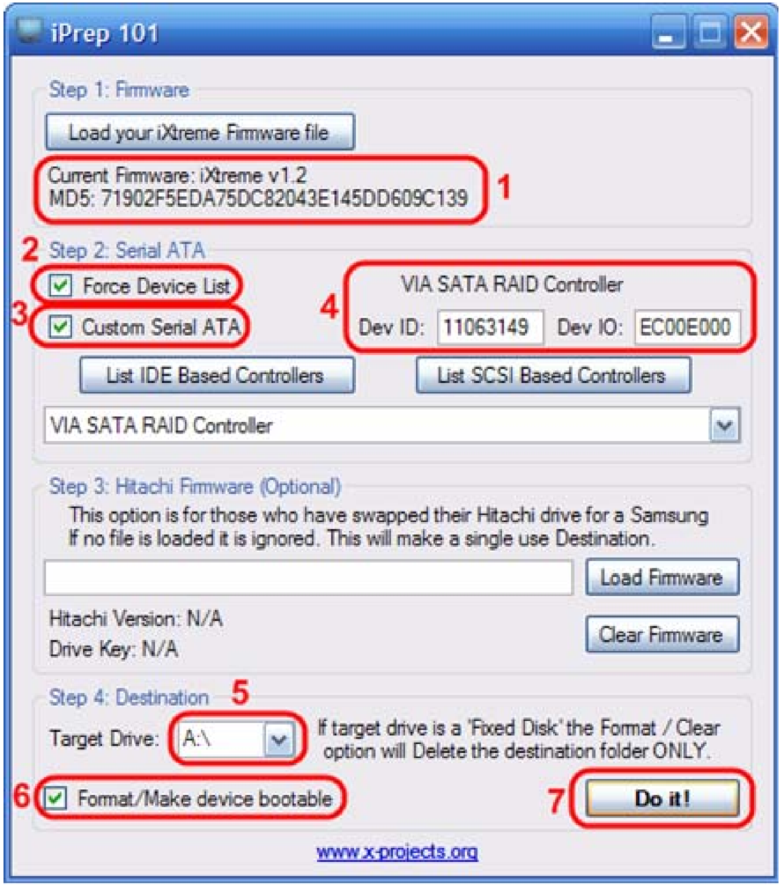
Files of type: Firmware Files (*.bin)

You should then have a message confirming that iPrep has found the iXtreme firmware file.



Found iXtreme v1.2 Firmware
Do you want to use this file?

Now for the rest of the iPrep process...


iPrep 101
Load your iXtreme Firmware file
1
2
3
4
List IDE Based Controllers
List SCSI Based Controllers
Load Firmware
Clear Firmware
5
6
7
Do it!

Step 1: Firmware

Current Firmware: iXtreme v1.2
MD5: 71902F5EDA75DC82043E145DD609C139

Step 2: Serial ATA

☑ Force Device List

☑ Custom Serial ATA

VIA SATA RAID Controller

Dev ID: 11063149 Dev IO: EC00E000

VIA SATA RAID Controller

Step 3: Hitachi Firmware (Optional)

This option is for those who have swapped their Hitachi drive for a Samsung
If no file is loaded it is ignored. This will make a single use Destination.

Hitachi Version: N/A

Drive Key: N/A

Step 4: Destination

Target Drive: A:\

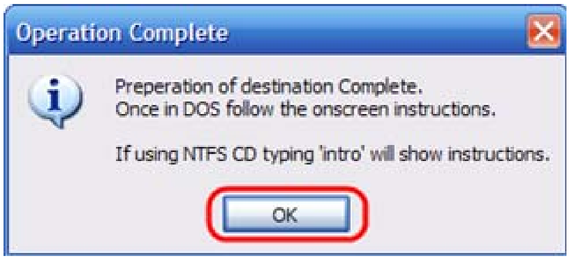
If target drive is a 'Fixed Disk' the Format / Clear option will Delete the destination folder ONLY.

☑ Format/Make device bootable

www.x-projects.org

1. Confirm that the firmware loaded is iXtreme v 1.2 and the MD5 matches the image above.
2. Force Device List should already be checked, just make sure it is.
3. Check the box for Custom Serial ATA.
4. Hit either of the list buttons and select your SATA controller from the drop-down list. It should input the ID and IO values in the textboxes above.
5. Select your floppy drive from the drop-down list.
6. Check the box to Format the floppy and make it bootable. *Remember to get any important data off the floppy first, it will be erased!*
7. Do it!

If everything goes smooth you should get this message.

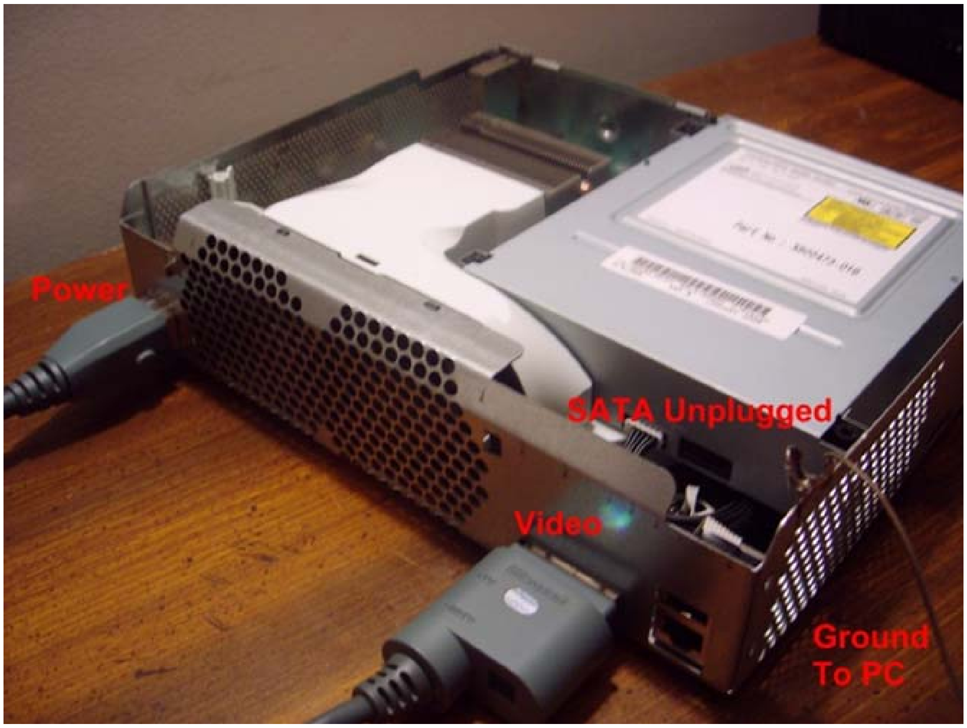


Preperation of destination Complete.
Once in DOS follow the onscreen instructions.

If using NTFS CD typing 'intro' will show instructions.

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a "true earth" ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360's ground to the PC's ground. The easiest way to do this is by using a "croc clip wire" and connecting the Xbox 360 metal casing to your PC's metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn't absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

Flash The Drive (Floppy)

This tutorial is for MS25 drives only, if you have an MS28, please click here to follow the MS28 flashing procedure.

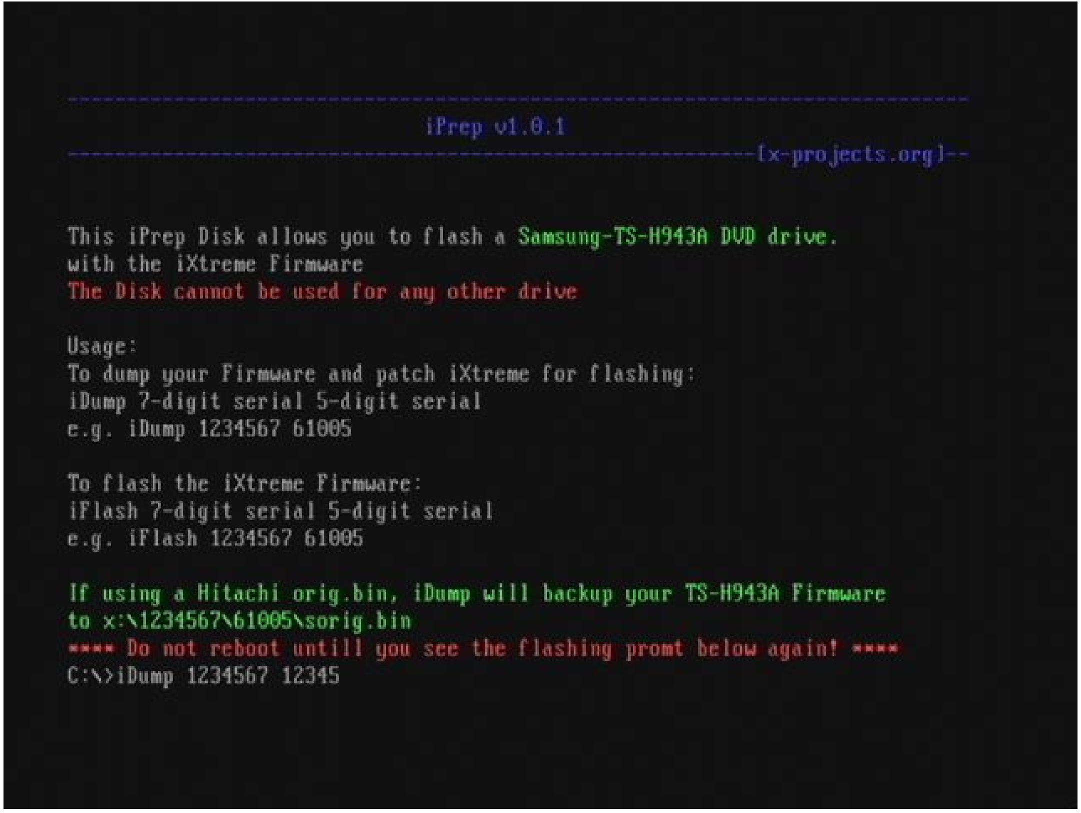
Reading The Original Firmware

Turn on your PC and Xbox 360 at the same time, and boot your PC from the USB flash drive into DOS. When you reach the DOS command prompt, plug the SATA cable into the Xbox 360 DVD drive, so that the drive is connected to your PC / SATA card.

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(We'll use the serial number 1234567 12345 as an example)

```
iDump 1234567 12345 [press enter]
```



```
-----------------------------------------------------------------------------
                              iPrep v1.0.1
---------------------------------------------------------[x-projects.org]--

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The Disk cannot be used for any other drive

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e.g. iDump 1234567 61005

To flash the iXtreme Firmware:
iFlash 7-digit serial 5-digit serial
e.g. iFlash 1234567 61005

If using a Hitachi orig.bin, iDump will backup your TS-H943A Firmware
to x:\1234567\61005\sorig.bin
**** Do not reboot untill you see the flashing promt below again! ****
C:\>iDump 1234567 12345
```
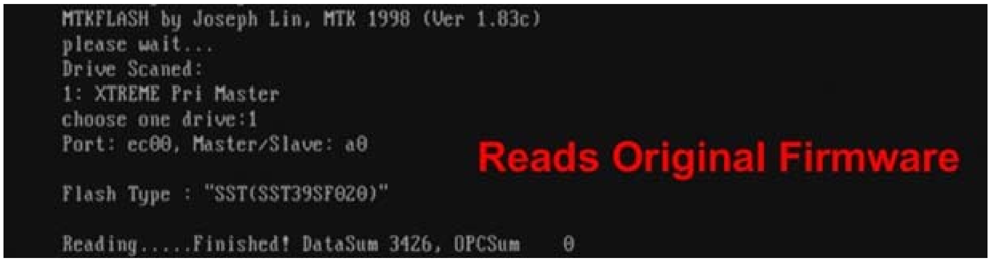

If you get errors like “Directory already exists” or “MKDIR failed…” don’t worry. The batch file is trying to create a new folder but it’s already there.

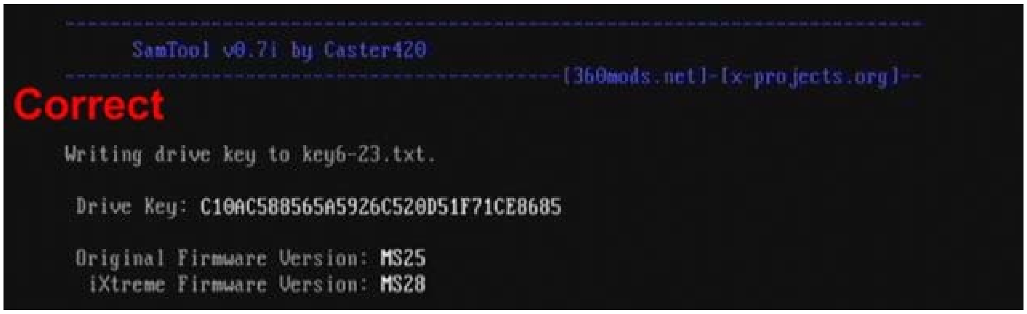
MTKFlash should run and your drive should be listed. If you see an item in the list named “XTREME”, select that and it should make a backup of your original firmware.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Reading.....Finished! DataSum 3426, OPCSum    0
```

Reads Original Firmware

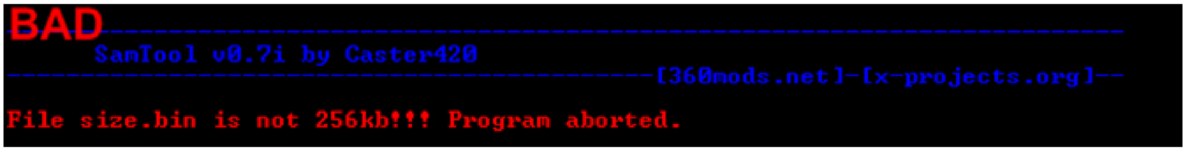
Samtool will now check if a valid key exists in both your original and hacked firmware, and that they match. This is what it should look like.



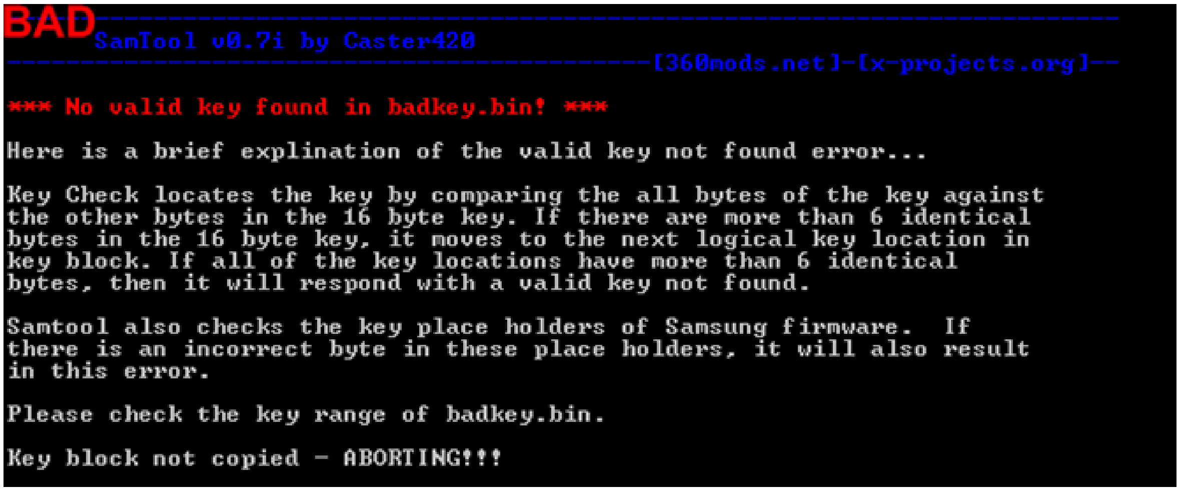
```
-----------------------------------------------------------------------------
      SamTool v0.7i by Caster420
------------------------------------------[360mods.net]-[x-projects.org]--

Writing drive key to key6-23.txt.

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
  iXtreme Firmware Version: MS28
```

Correct

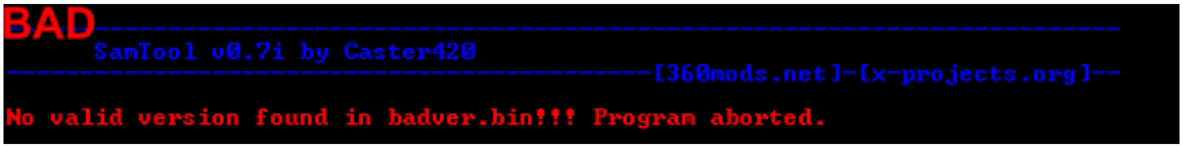
If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, Samtool will abort.



```
--------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
--------------------------------------------[360mods.net]-[x-projects.org]--

File size.bin is not 256kb!!! Program aborted.
```



```
--------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
--------------------------------------------[360mods.net]-[x-projects.org]--

*** No valid key found in badkey.bin! ***

Here is a brief explination of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

Samtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of badkey.bin.

Key block not copied - ABORTING!!!
```

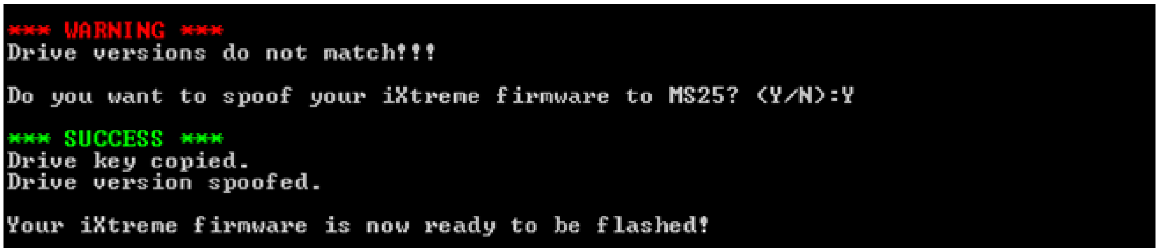


```
--------------------------------------------------------------------------------
      SamTool v0.7i by Caster420
--------------------------------------------[360mods.net]-[x-projects.org]--

No valid version found in badver.bin!!! Program aborted.
```

If you get something like these pictures, **DO NOT PROCEED PAST THIS POINT IN THE TUTORIAL!** Doing so will brick your Xbox 360, and leave you without a valid drive key. Something is wrong, make sure you have unplugged all other drives in your PC and restart the tutorial or get help.

If your screen is like the one above that says “Correct”, you can continue.

Samtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Samtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
*** WARNING ***
Drive versions do not match!!!

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your iXtreme firmware is now ready to be flashed!
```

Unplug the SATA cable from the 360 DVD drive, power-cycle the Xbox 360, and reboot your PC.

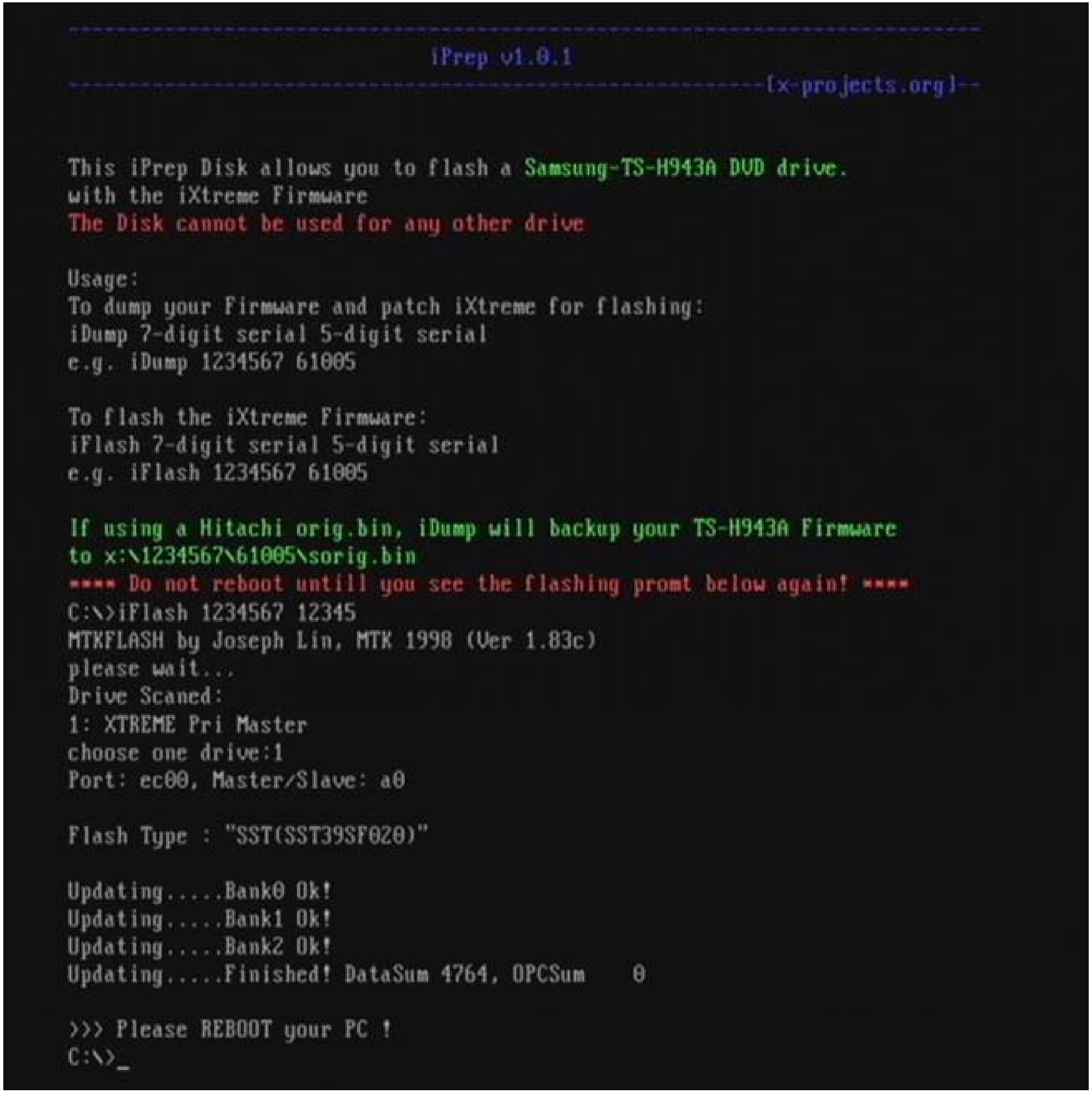
Flashing The Hacked Firmware

When you're back into DOS, plug the SATA cable back into the Xbox 360 DVD drive.

Type in the following command, using your Xbox 360 serial number that you used with the iDump command.

iFlash 1234567 12345 [press enter]

MTKFlash should run and your drive should be listed. If you see an item in the list named "XTREME", choose that. iPrep renames your SATA controller to this when it creates the hexedited MTKFlash. Select the drive from the list and it should flash your drive with the hacked firmware. It should flash 4 banks. The 4th bank may say something like Datasum, it is normal. When it is done flashing, unplug the SATA cable from the 360 DVD drive, power off the Xbox 360, and power off your PC. Reconnect the 360 DVD drive to the 360 motherboard and test it.



```
--------------------------------------------------------------------------------
                              iPrep v1.0.1
--------------------------------------------------------------[x-projects.org]--


This iPrep Disk allows you to flash a Samsung-TS-H943A DVD drive.
with the iXtreme Firmware
The Disk cannot be used for any other drive

Usage:
To dump your Firmware and patch iXtreme for flashing:
iDump 7-digit serial 5-digit serial
e.g. iDump 1234567 61005

To flash the iXtreme Firmware:
iFlash 7-digit serial 5-digit serial
e.g. iFlash 1234567 61005

If using a Hitachi orig.bin, iDump will backup your TS-H943A Firmware
to x:\1234567\61005\sorig.bin
**** Do not reboot untill you see the flashing promt below again! ****
C:\>iFlash 1234567 12345
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Updating.....Bank0 Ok!
Updating.....Bank1 Ok!
Updating.....Bank2 Ok!
Updating.....Finished! DataSum 4764, OPCSum    0

>>> Please REBOOT your PC !
C:\>_
```

Backup Your Original Firmware!

Boot into Windows. Insert your floppy disk and find your orig.bin in the BACKUPS folder. This is your Xbox 360 drive firmware and needs to be kept safe! Make a copy of the file. Then make another one on another drive. Then make another somewhere else. Email it to yourself. You get the drift.

You should keep all the files on your floppy to make future firmware updates easier.

MS28 Instructions

The MS28 firmware has certain lockout routines and can not be normally flashed via MTKFlash like an MS25 can. There are a couple workarounds to get the drive flashed. The VCC switch method requires you to open up the drive, desolder a resistor, and use a switch or wires to read/write to the drive. The VIA / Bad Flash Recovery method does not require desoldering/soldering, but will only work with VIA brand SATA chipsets. The preparation for flashing an MS28 drive is the same as if you were flashing an MS25. The only difference is the actual flashing.

Preliminary Setup (same as MS25)

1. Check the SATA/MTKFlash Compatibility List
2. Download The Hacked Firmware
3. Use iPrep to prepare a floppy/USB/NTFSCD

(Instructions for these are in the MS25 section of the tutorial)

Flashing an MS28 Using the Bad Flash Recovery Method (This method is easier and safer than the VCC method)

Video Tutorial Here

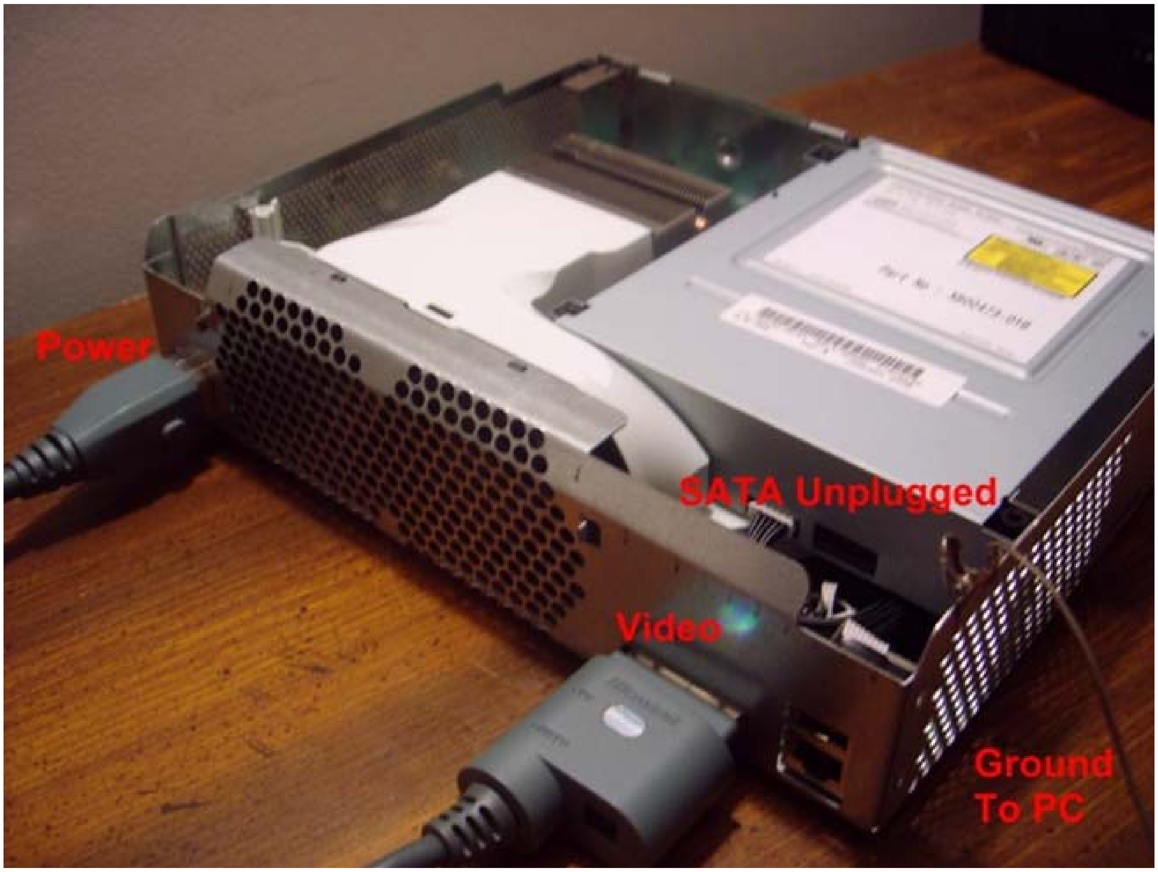
Requirements:

- VIA chipset, simply will not work for other chipsets
- Need to be able to power off the drive and power it back on. Recommend using the console to power the drive or the Xecuter Connectivity Kit v2 (which has a power switch).
- Need to use the /sata switch in the MTKFlash command or the drive will not show up (iPrep does this for you)

Setup (iPrep) is the same as MS25.

Xbox 360 and PC Connections

Power off both your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but the cable does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. You can solve this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case is connected to the PC case. You don’t have to use croc clips, you could just tape some bare/stripped wire to each, or even set the Xbox 360 next to the PC so that they are touching.

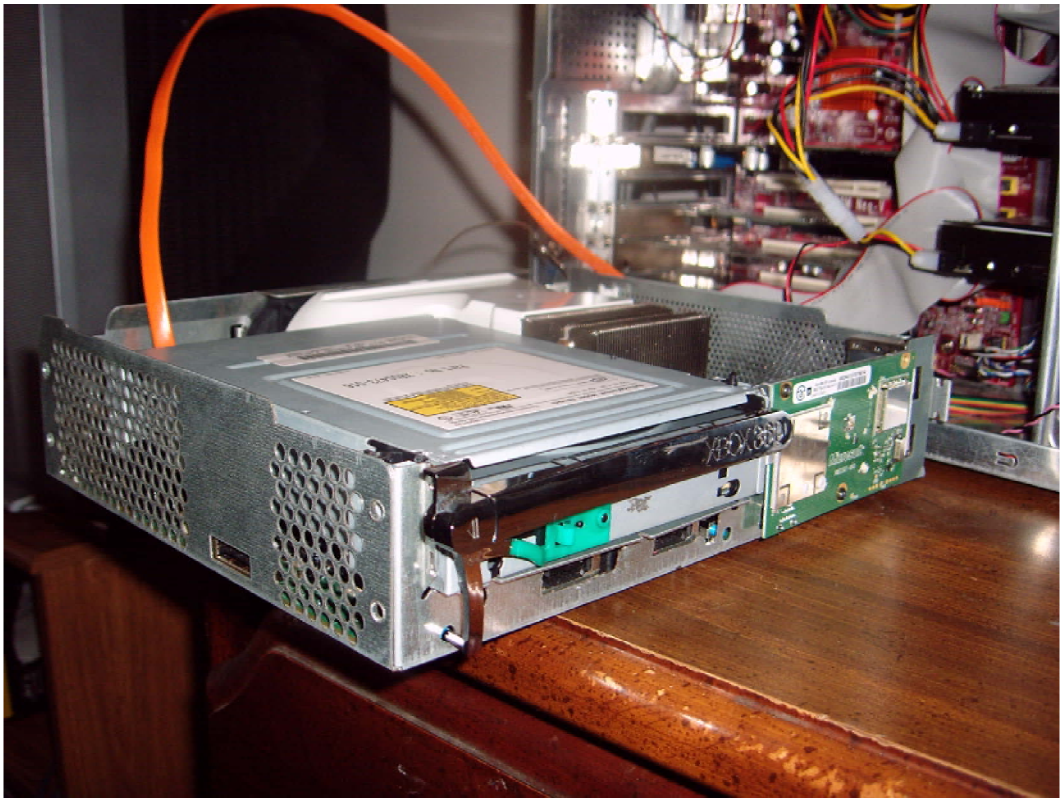
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

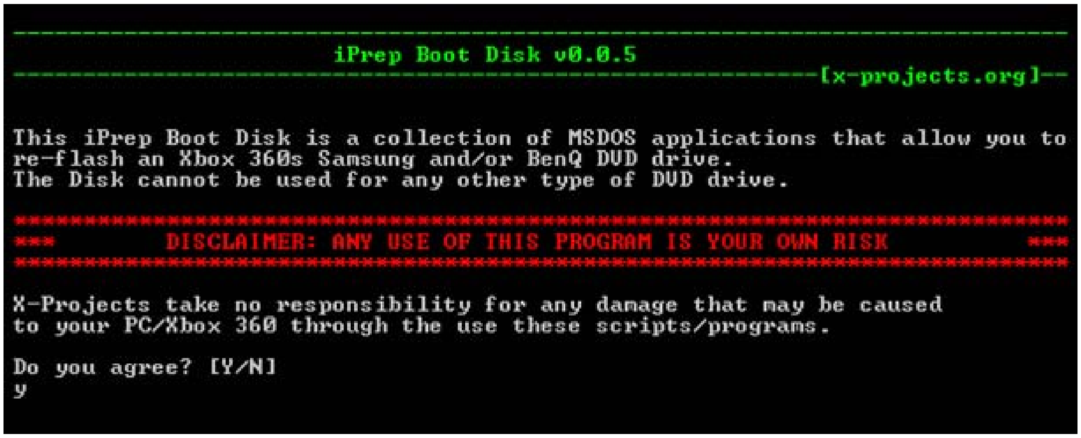
(Unless of course if you are using the NTFS4DOS CD. The drives would need to remain connected in this case)

Reading The Original Firmware

Turn on your PC and Xbox 360 at the same time, and boot your PC from the bootable media into DOS. When you reach the DOS command prompt, plug the SATA cable into the Xbox 360 DVD drive, so that the drive is connected to your PC / SATA card.



Enter y to accept the iPrep Terms of Use.

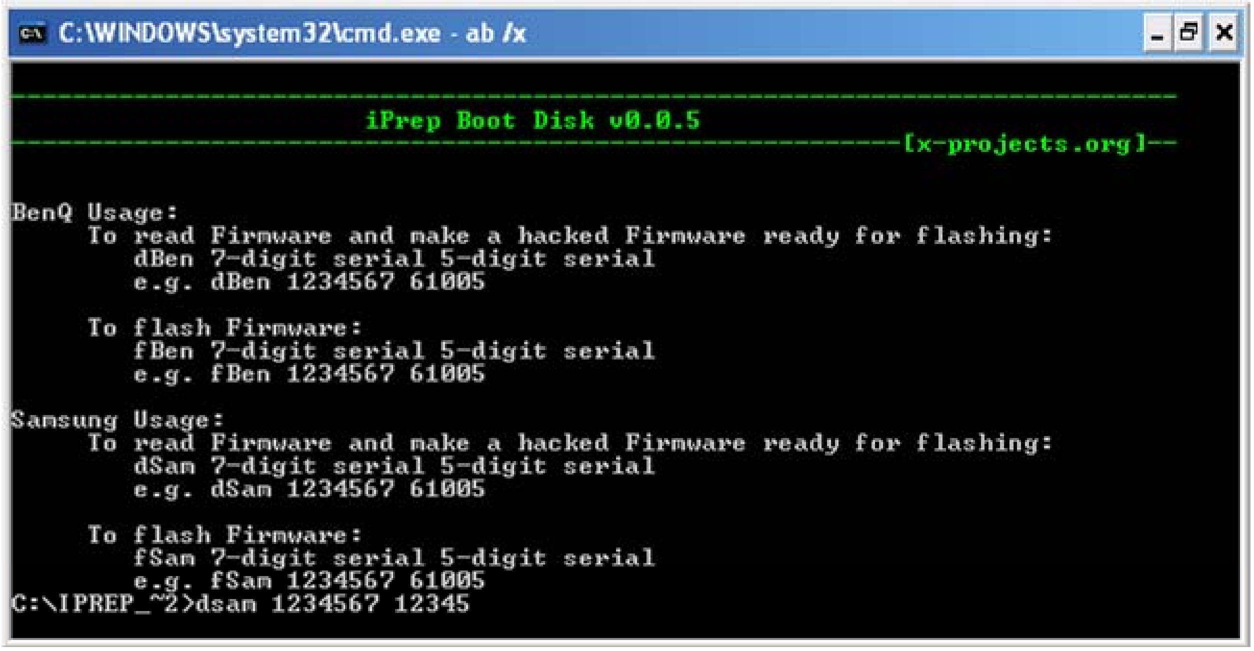


```
--------------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
------------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

********************************************************************************
***         DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK            ***
********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(We'll use the serial number 1234567 12345 as an example)

dSam 1234567 12345 [press enter]

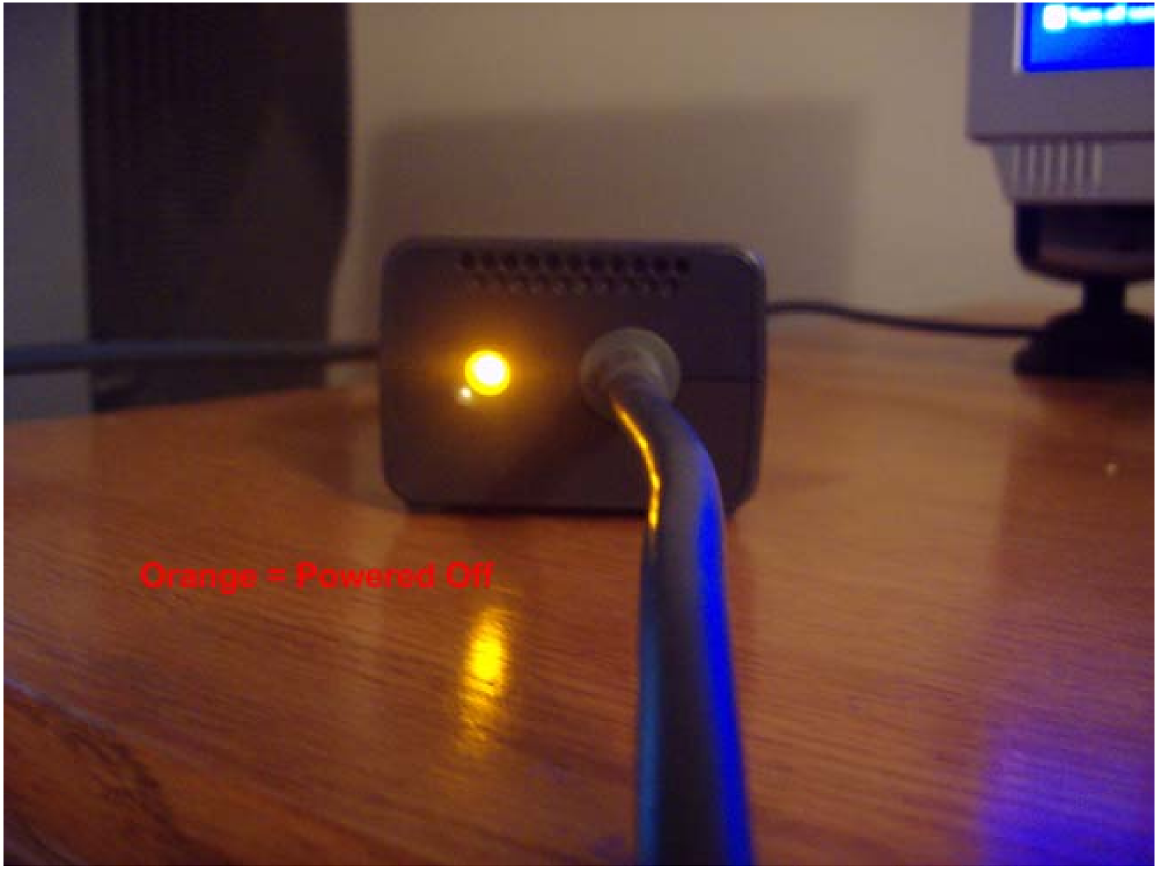


```
-------------------------------------------------------------------------------
                         iPrep Boot Disk v0.0.5
-------------------------------------------------------------[x-projects.org]--


BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005
C:\IPREP_~2>dsam 1234567 12345
```

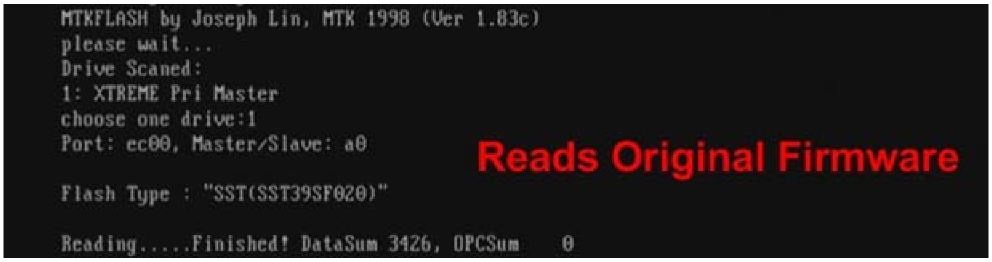
If you get errors like "Directory already exists" or "MKDIR failed…" don't worry. The batch file is trying to create a new folder but it's already there.

MTKFlash should run and your drive should be listed. If you see an item in the list named "XTREME", that's good – but don't select it yet.

While at the menu, power off your Xbox 360. To make sure your Xbox 360 is completely powered off, check the light on the power brick to make sure it is orange.



Select the drive from the list and it should go to a port error. Count to ten, then power the Xbox 360 back on, and it should dump the firmware. Your timing will vary based on the drive. Some work with waiting three seconds, some 5, some ten, some more. Just keep at it, you'll get it eventually.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Reading.....Finished! DataSum 3426, OPCSum    0
```

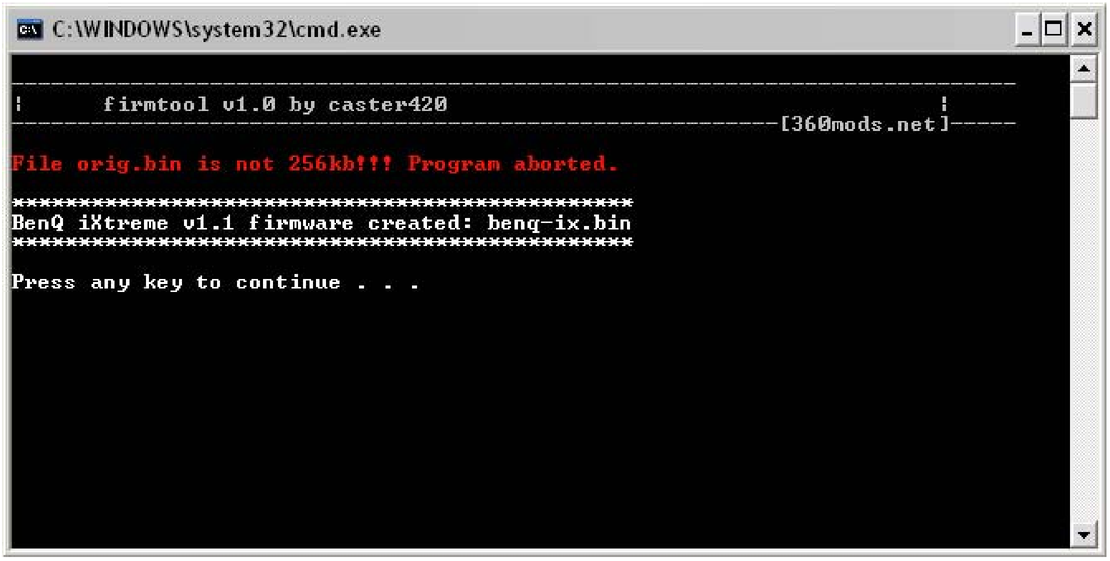
Firmtool will now check if a valid key exists in both your original and hacked firmware, and that they match.

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

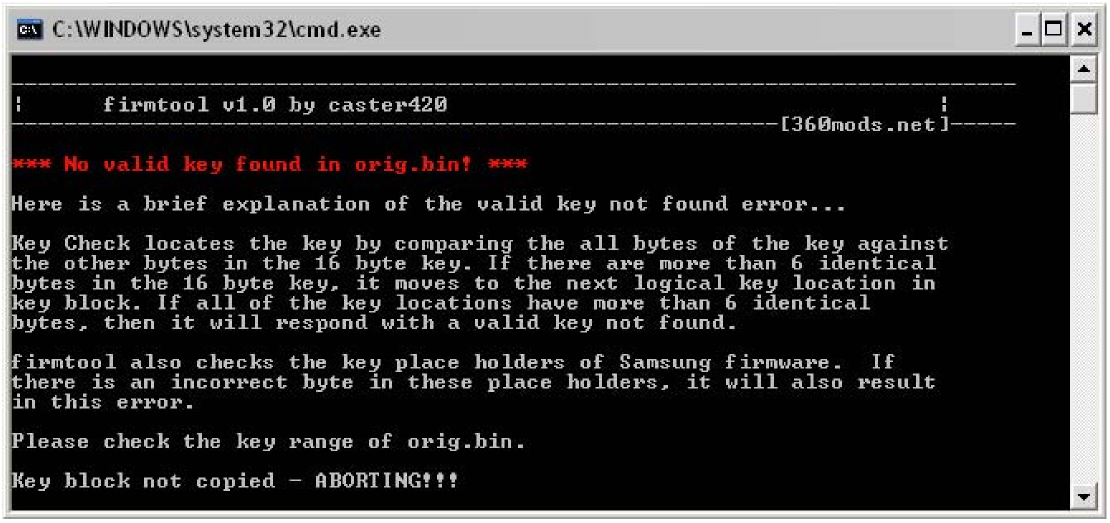
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

ORIG.BIN IS WRONG SIZE



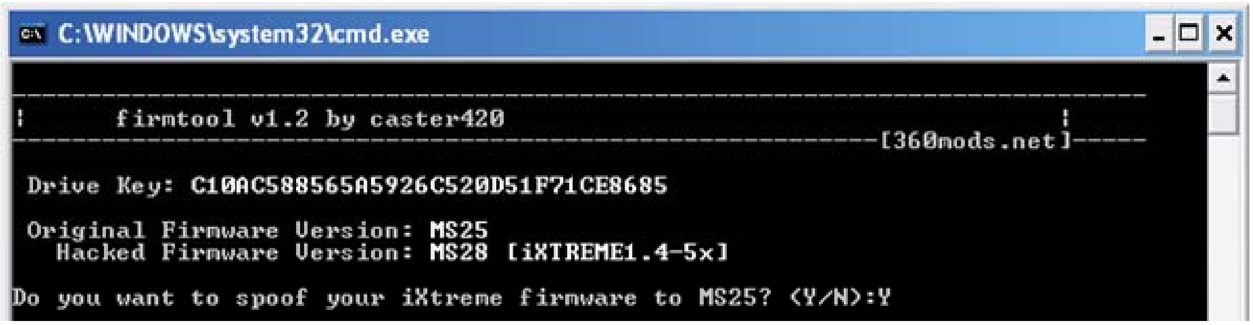
```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                     ¦
----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

NO VALID KEY IN ORIG.BIN



```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                     ¦
----------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

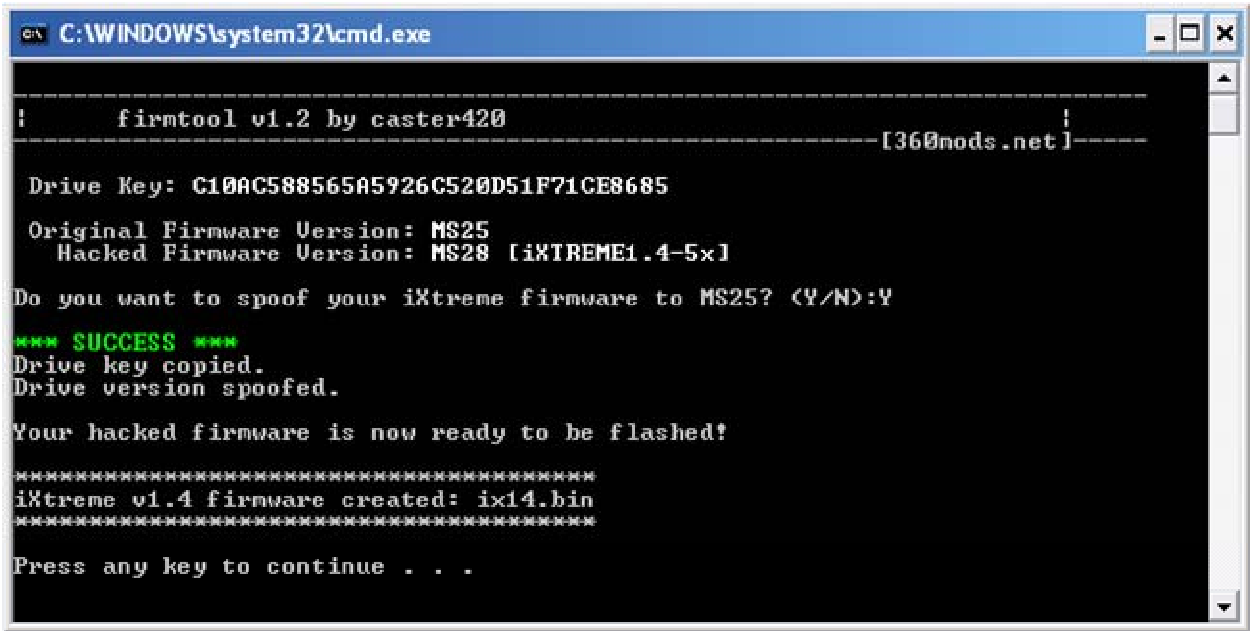
Firmtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Firmtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
-----------------------------------------------------------------------------
¦      firmtool v1.2 by caster420                                       ¦
-----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS



```
-----------------------------------------------------------------------------
¦      firmtool v1.2 by caster420                                       ¦
-----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your hacked firmware is now ready to be flashed!

***************************************
iXtreme v1.4 firmware created: ix14.bin
***************************************

Press any key to continue . . .
```

Unplug the SATA cable from the 360 DVD drive, power-cycle the Xbox 360, and reboot your PC.

Flashing The Hacked Firmware

When you're back into DOS, plug the SATA cable back into the Xbox 360 DVD drive.

Type in the following command, using your Xbox 360 serial number that you used with the dSam command.

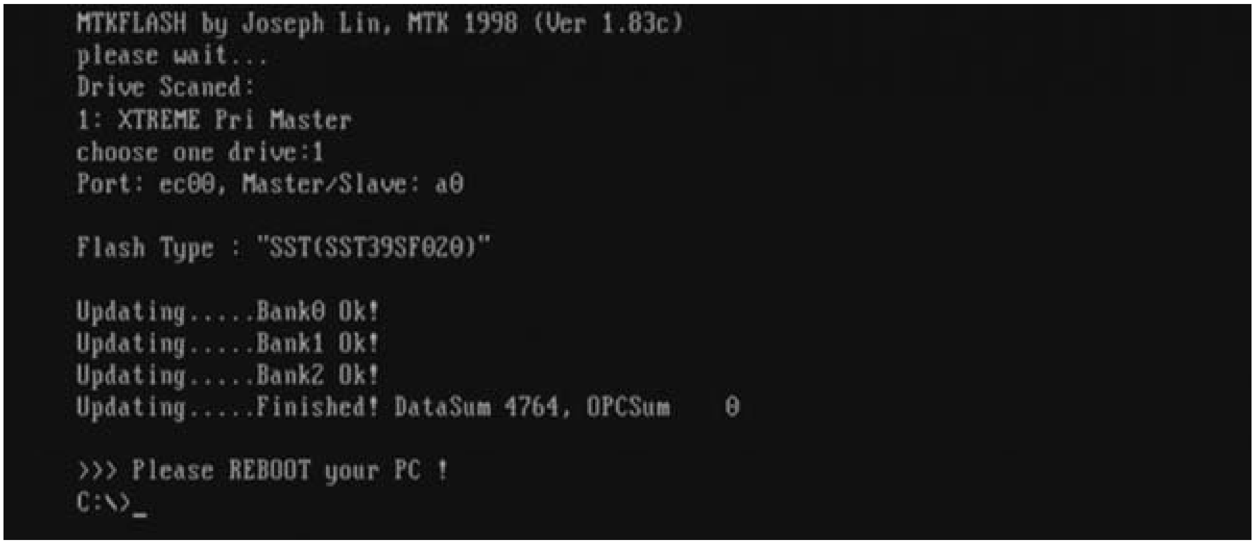
fSam 1234567 12345 [press enter]

MTKFlash should run and your drive should be listed. If you see an item in the list named "XTREME", that is what you want, but don't choose it yet.

While at the menu, power off your Xbox 360. To make sure your Xbox 360 is powered off, check the light on the power brick to make sure it is orange.

Select the drive from the list and it should go to a port error. Count to ten, then power the Xbox 360 back on, and it should dump the firmware. Your timing will vary based on the drive. Some work with waiting three seconds, some 5, some ten, some more. Just keep at it, you'll get it eventually.

It should flash 4 banks. The 4th bank may say something like Datasum, it is normal. When it is done flashing, unplug the SATA cable from the 360 DVD drive, power off the Xbox 360, and power off your PC. Reconnect the 360 DVD drive to the 360 motherboard and test it.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Updating.....Bank0 Ok!
Updating.....Bank1 Ok!
Updating.....Bank2 Ok!
Updating.....Finished! DataSum 4764, OPCSum    0

>>> Please REBOOT your PC !
C:\>_
```

Backup Your Original Firmware!

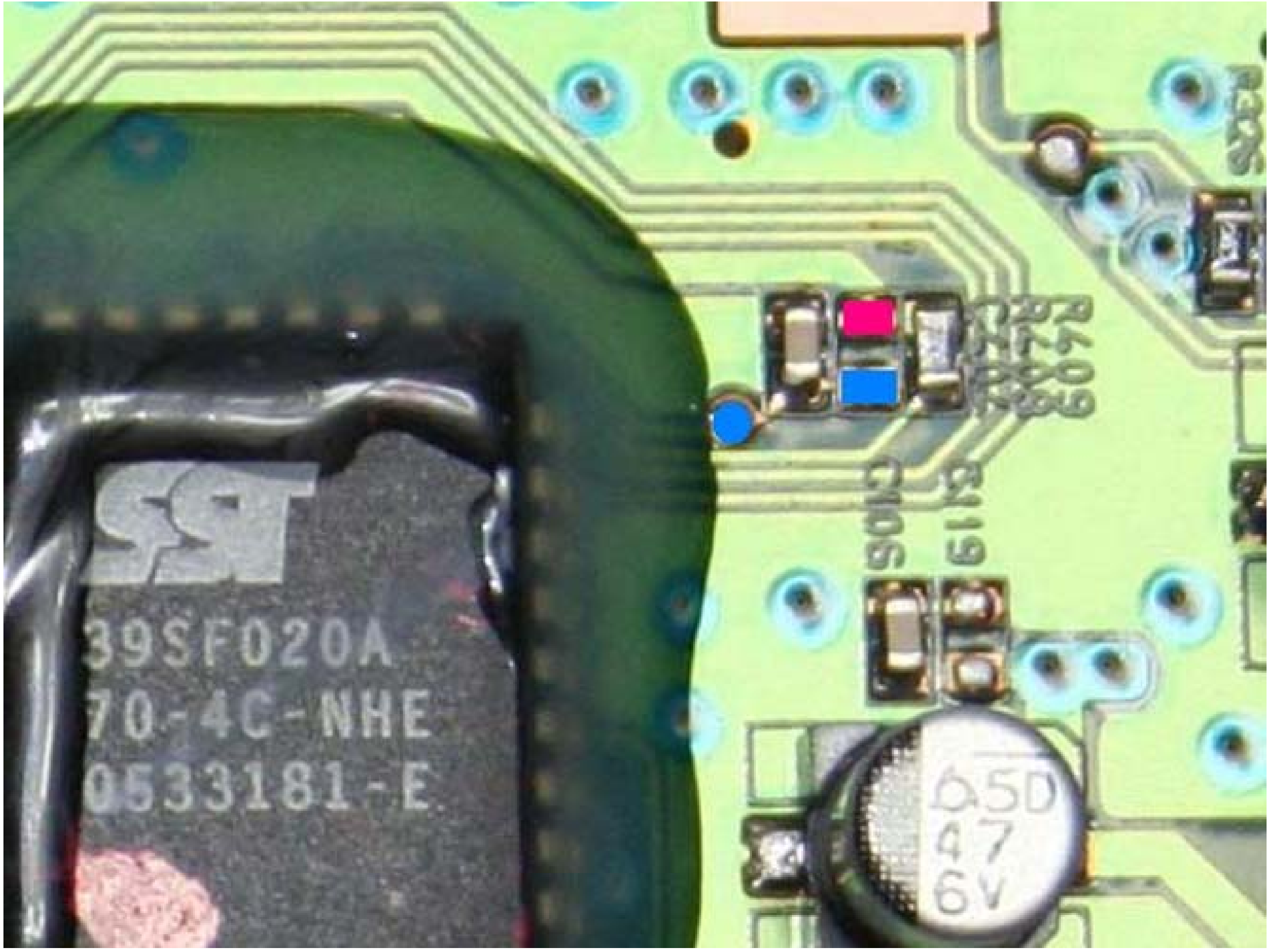
Boot into Windows. Plug in your USB drive and find your Sam-OFW.bin and Sam-CFW.bin in the BACKUPS folder. This is your Xbox 360 drive firmware and needs to be kept safe! Make a copy of these files. Then make another one on another drive. Then make another somewhere else. Email it to yourself.

You should keep all the files on your bootable media to make future firmware updates easier.

Flashing an MS28 Using The VCC Switch Method
(Not for noobs, requires desoldering of a very small smt resistor)

The VCC method is like temporarily making your drive an MS25. So for that reason, you still need a SATA chipset that is capable of flashing MS25 drives.

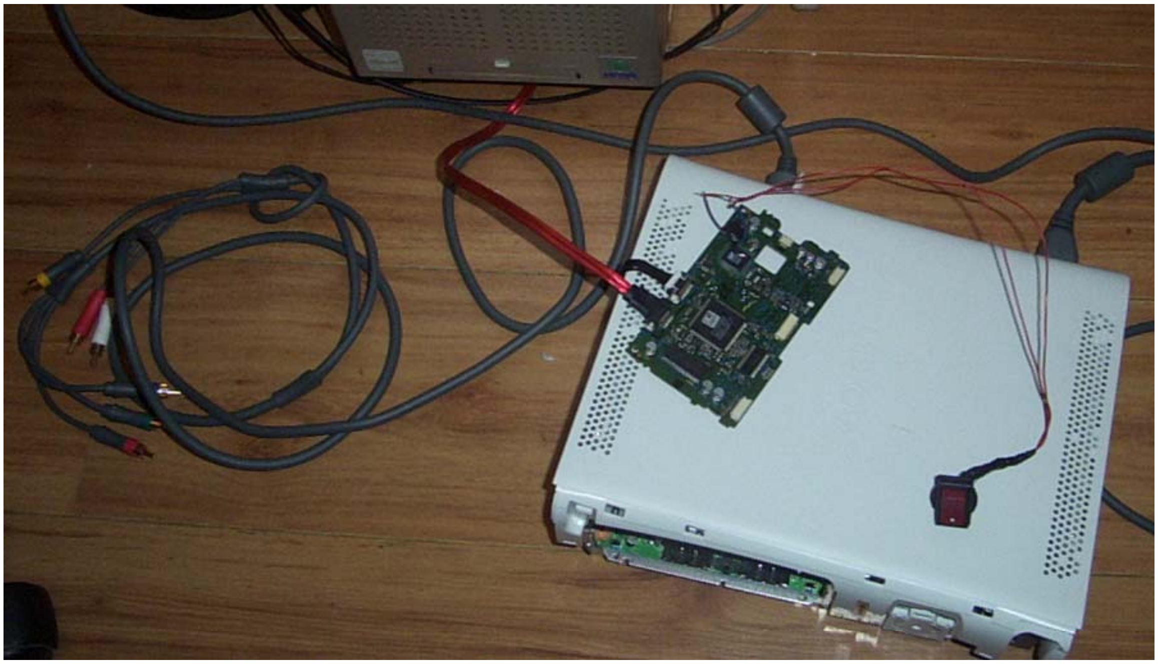
Open up your drive and desolder the middle VCC resistor (resistor R408) like in the following picture:



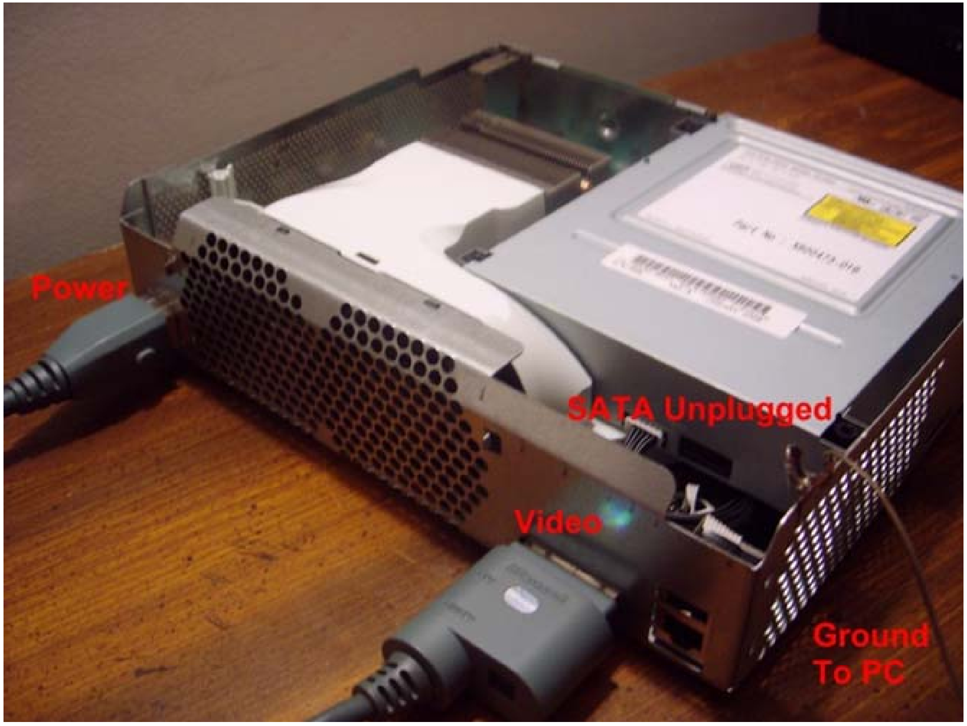
Wire up a simple SPST toggle/slide switch (or use wires) to the blue and red locations. The second blue circle is just an alternate point if needed. Set the switch to “On.”

Xbox 360 and PC Connections

Since you already have the drive apart and now have a switch installed on it, leave the PCB out of the DVD drive like xboxto did in the following image. Just make sure you supply power to the board through the Xbox 360 and you still have the video cables connected to the Xbox 360.



Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

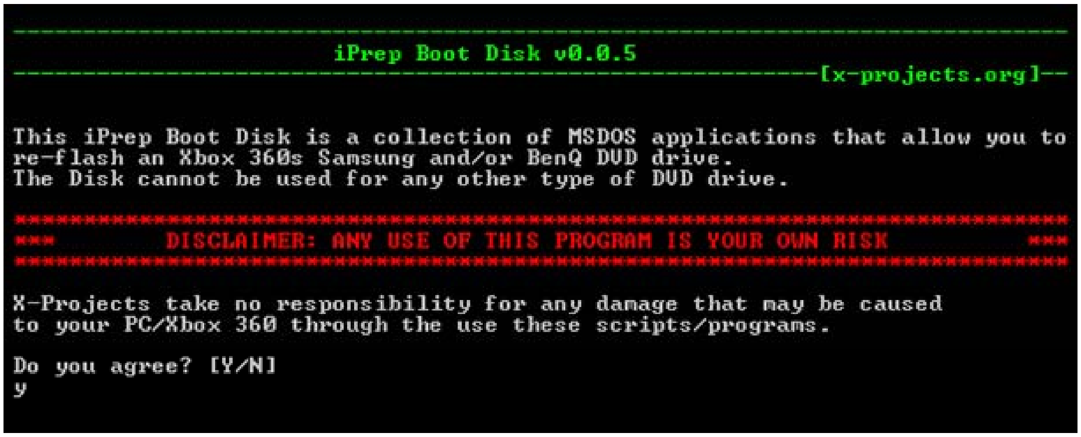
Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

Reading The Original Firmware

Power on your Xbox 360 and PC. Insert your bootable media, to a DOS prompt. Connect the Samsung drive to the PC using a SATA cable.

Enter y to accept the iPrep Terms of Use.

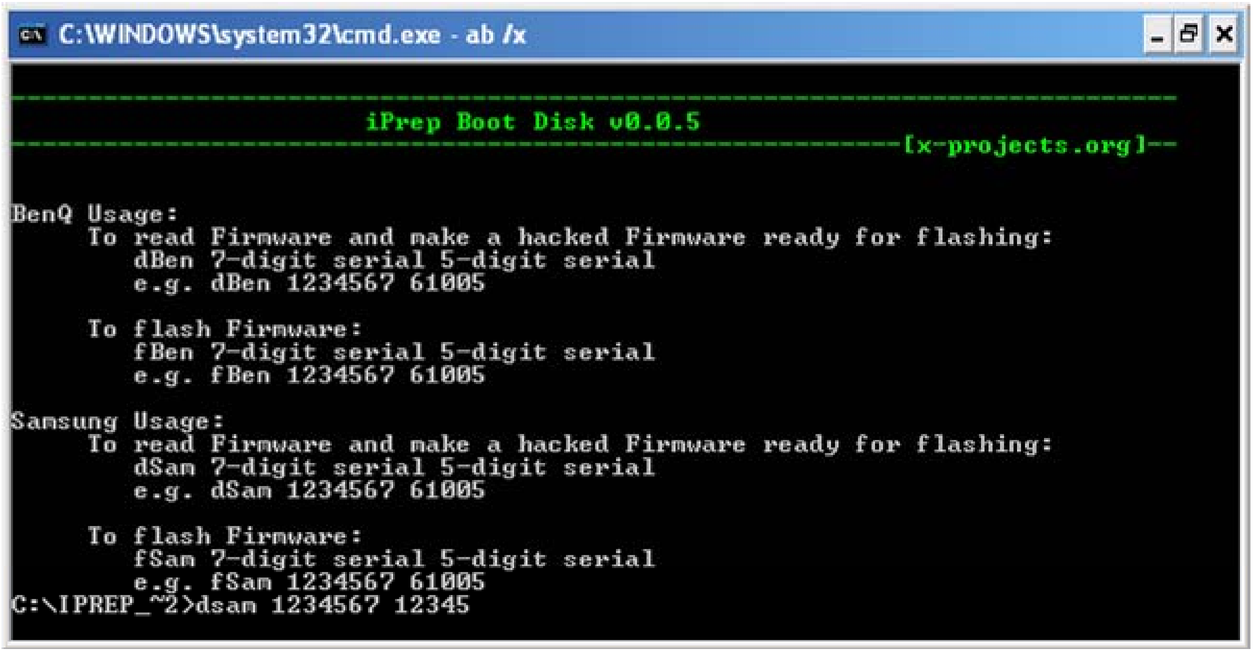


```
-----------------------------------------------------------------------------
                       iPrep Boot Disk v0.0.5
-----------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

*****************************************************************************
***          DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK          ***
*****************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

Type in the following command, using your Xbox 360 serial number found on the back of the Xbox 360 case.

(We'll use the serial number 1234567 12345 as an example)

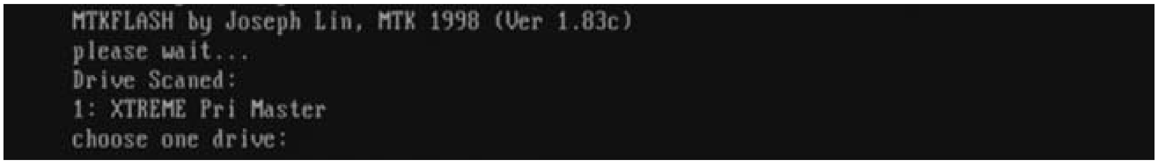
dSam 1234567 12345 [press enter]



```
-----------------------------------------------------------------------------
                       iPrep Boot Disk v0.0.5
-----------------------------------------------------------[x-projects.org]--


BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005
C:\IPREP_~2>dsam 1234567 12345
```

If you get errors like "Directory already exists" or "MKDIR failed…" don't worry. The batch file is trying to create a new folder but it's already there.

MTKFlash should run and your drive should be listed. If you see an item in the list named "XTREME", that is it, but don't select it just yet. Just leave it at the menu of drive choices.



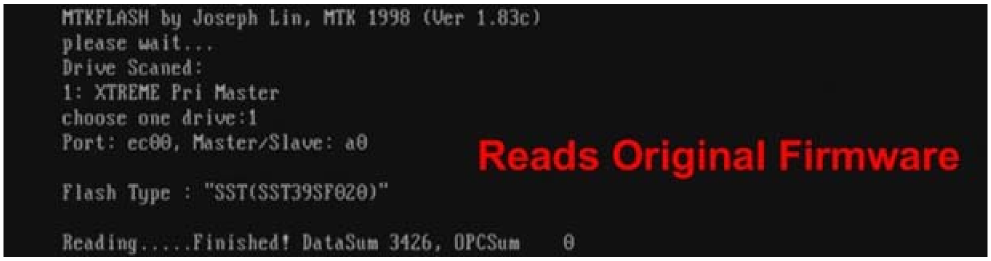
```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:
```

At this point, power off the Xbox 360.

To make sure your Xbox 360 is completely powered off, check the light on the power brick to make sure it is orange.

When you are sure the Xbox 360 is off, flip your VCC switch to the "Off" position, and power up your Xbox 360 again.

You will want to have one hand on your VCC switch, and the other hand on the key to select your drive. Quickly flip the VCC switch to "On", and then a split-second later, hit the key for your drive. It should dump your original firmware.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Reading.....Finished! DataSum 3426, OPCSum    0
```

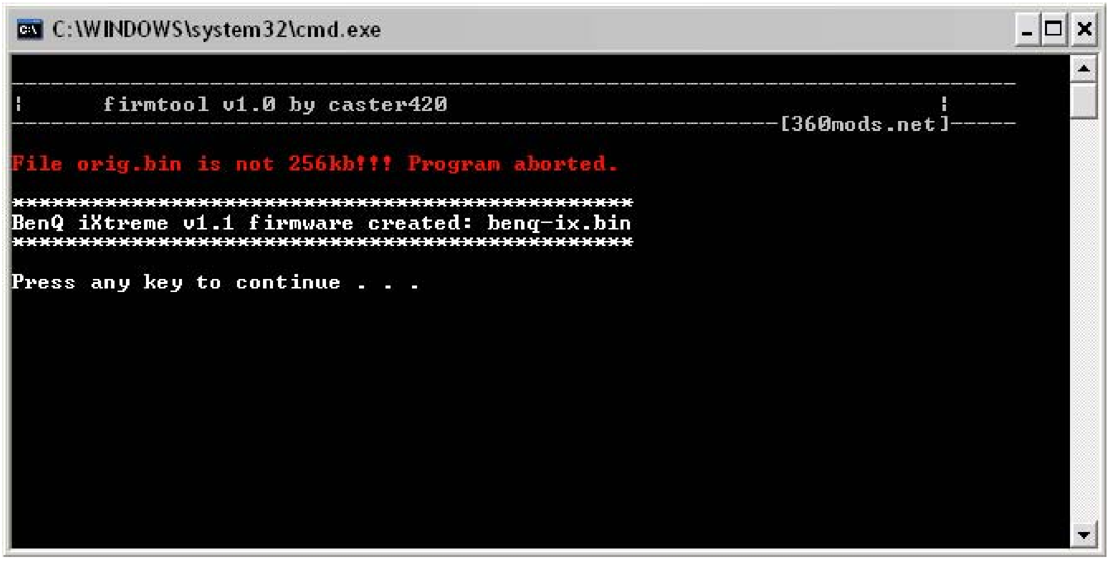
Firmtool will now check if a valid key exists in both your original and hacked firmware, and that they match.

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

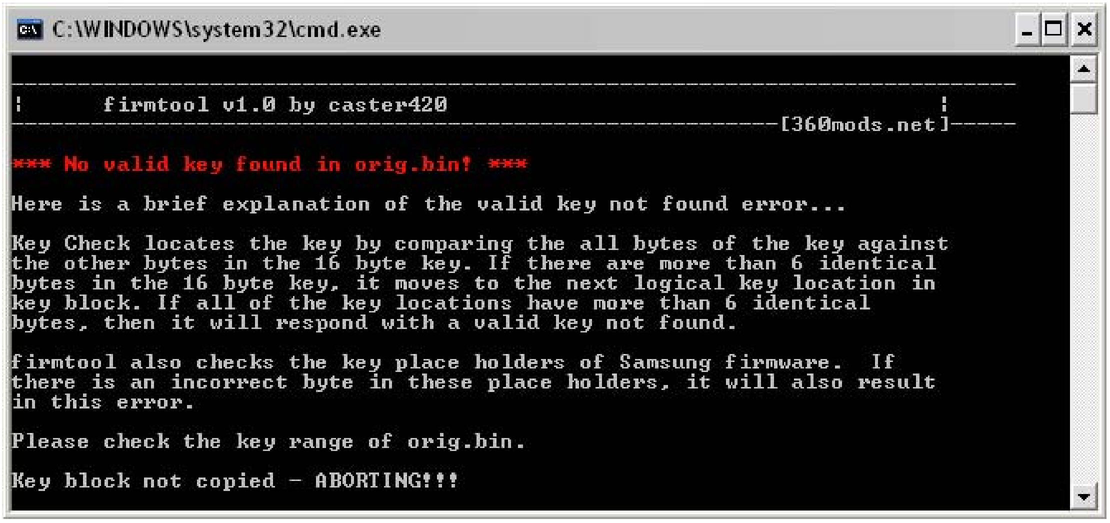
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

ORIG.BIN IS WRONG SIZE



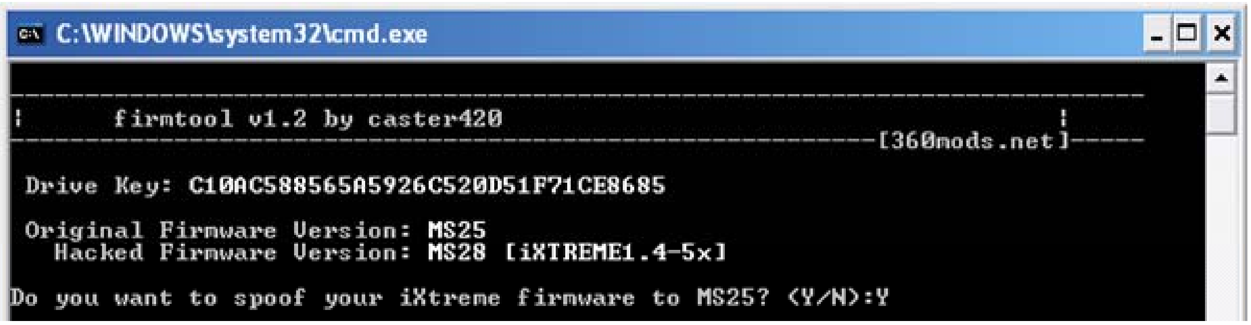
```
-----------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                     |
-----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

************************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
************************************************

Press any key to continue . . .
```

NO VALID KEY IN ORIG.BIN



```
-----------------------------------------------------------------------------
|       firmtool v1.0 by caster420                                     |
-----------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

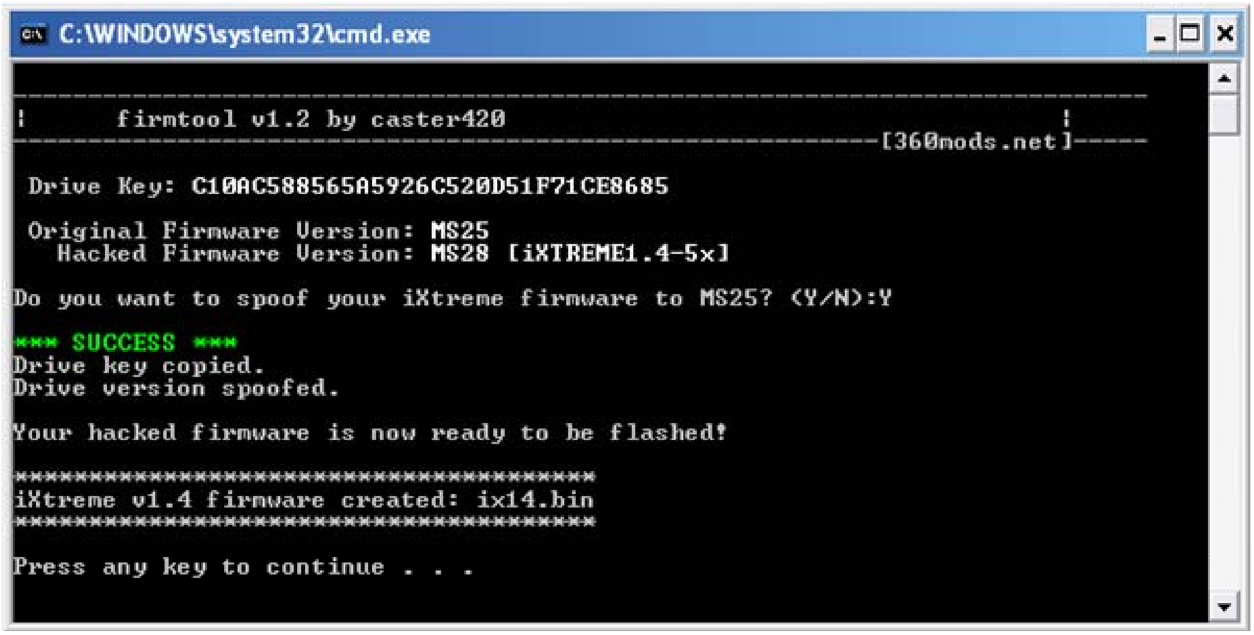
Firmtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Firmtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
-----------------------------------------------------------------------------
¦      firmtool v1.2 by caster420                                       ¦
----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y
```

Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS

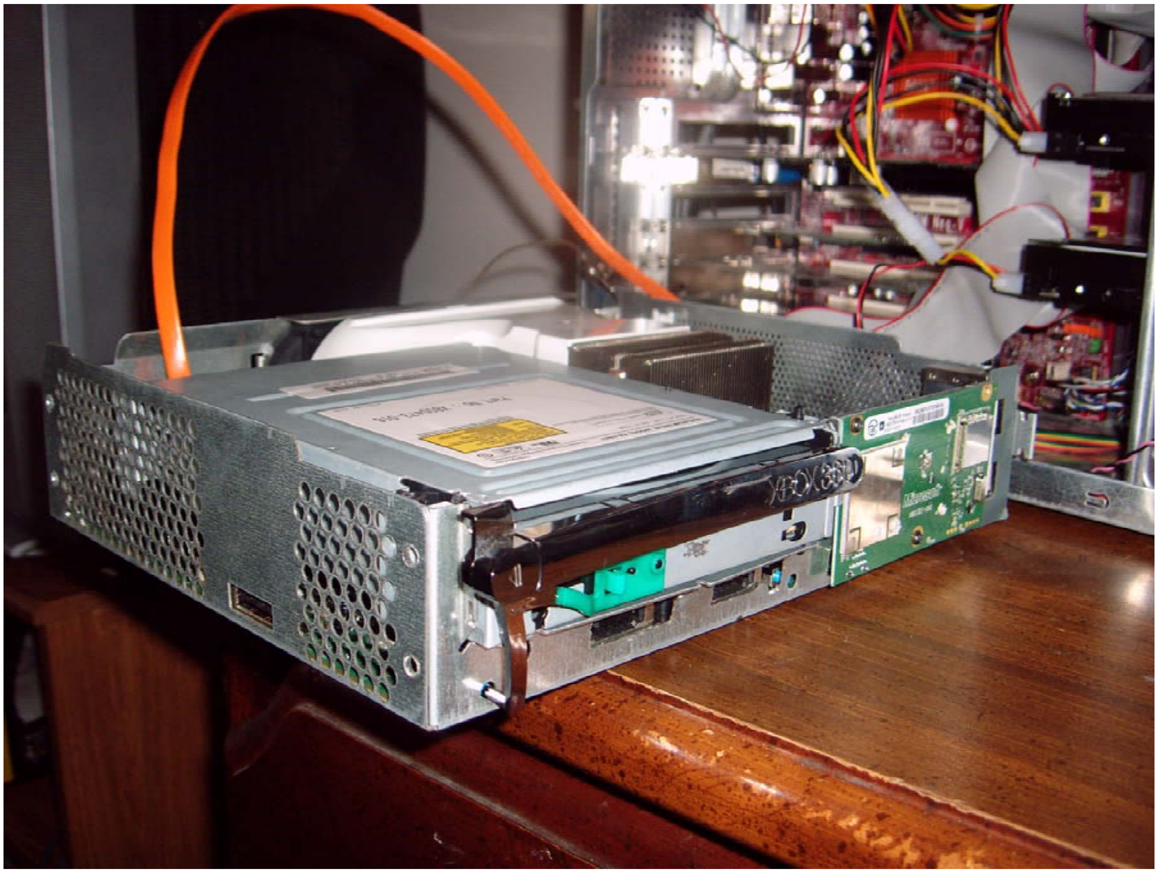


```
-----------------------------------------------------------------------------
¦      firmtool v1.2 by caster420                                       ¦
----------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your hacked firmware is now ready to be flashed!

***************************************
iXtreme v1.4 firmware created: ix14.bin
***************************************

Press any key to continue . . .
```

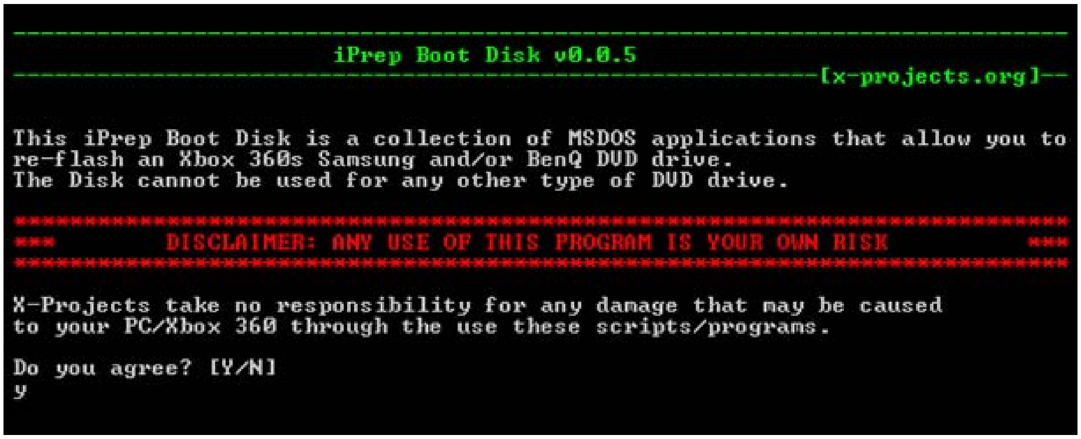
Unplug the SATA cable from the 360 DVD drive, power-cycle the Xbox 360, and reboot your PC.

Flashing The Hacked Firmware

When you’re back into DOS, plug the SATA cable back into the Xbox 360 DVD drive.



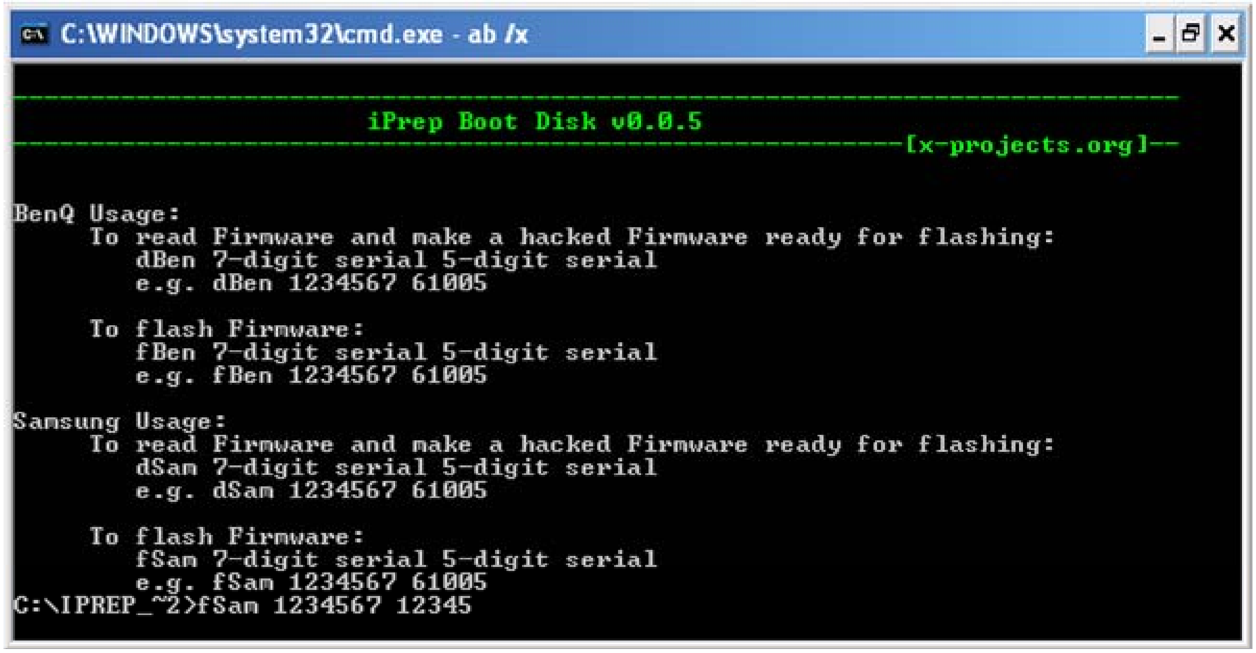
Enter y to accept the iPrep Terms of Use.



```
--------------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
-------------------------------------------------------------[x-projects.org]--

This iPrep Boot Disk is a collection of MSDOS applications that allow you to
re-flash an Xbox 360s Samsung and/or BenQ DVD drive.
The Disk cannot be used for any other type of DVD drive.

********************************************************************************
***         DISCLAIMER: ANY USE OF THIS PROGRAM IS YOUR OWN RISK             ***
********************************************************************************

X-Projects take no responsibility for any damage that may be caused
to your PC/Xbox 360 through the use these scripts/programs.

Do you agree? [Y/N]
y
```

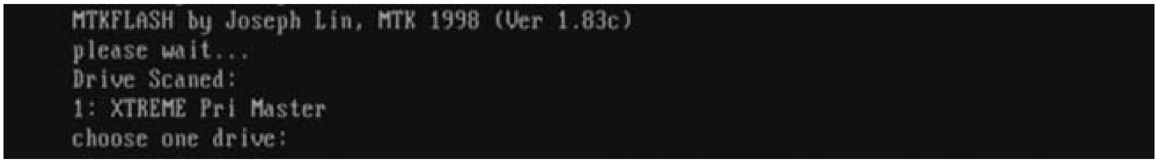
Type in the following command, using your Xbox 360 serial number that you used with the dSam command.

fSam 1234567 12345 [press enter]



```
------------------------------------------------------------------------------
                        iPrep Boot Disk v0.0.5
--------------------------------------------------------------[x-projects.org]--

BenQ Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dBen 7-digit serial 5-digit serial
        e.g. dBen 1234567 61005

     To flash Firmware:
        fBen 7-digit serial 5-digit serial
        e.g. fBen 1234567 61005

Samsung Usage:
     To read Firmware and make a hacked Firmware ready for flashing:
        dSam 7-digit serial 5-digit serial
        e.g. dSam 1234567 61005

     To flash Firmware:
        fSam 7-digit serial 5-digit serial
        e.g. fSam 1234567 61005
C:\IPREP_~2>fSam 1234567 12345
```

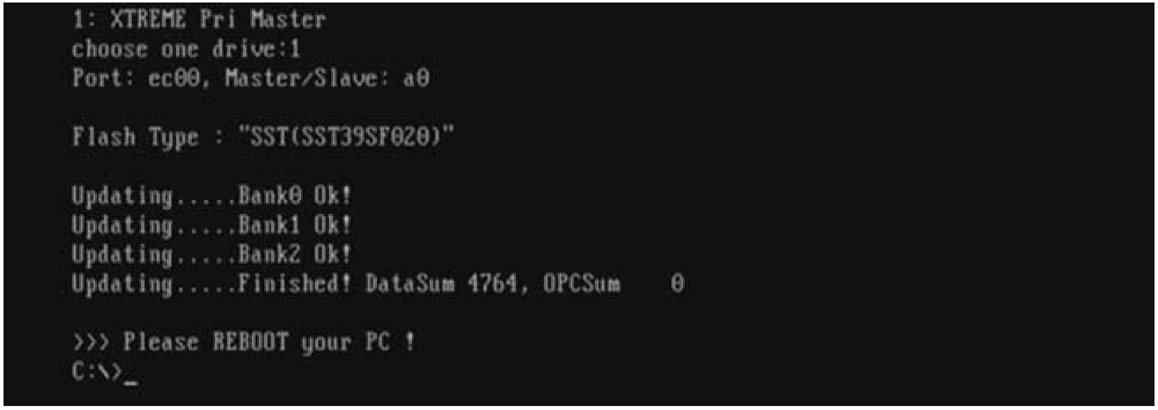
It should display your SATA chipset. Do not select it yet, just leave it at the menu.



```
MTKFLASH by Joseph Lin, MTK 1998 (Ver 1.83c)
please wait...
Drive Scaned:
1: XTREME Pri Master
choose one drive:
```

At this point, power off the Xbox 360. When you are sure the Xbox 360 is off, flip your VCC switch to the “Off” position, and power up your Xbox 360 again.

You will want to have one hand on your VCC switch, and the other hand on the key to select your drive. Quickly flip the VCC switch to “On”, and then a split-second later, hit the key for your drive.



```
1: XTREME Pri Master
choose one drive:1
Port: ec00, Master/Slave: a0

Flash Type : "SST(SST39SF020)"

Updating.....Bank0 Ok!
Updating.....Bank1 Ok!
Updating.....Bank2 Ok!
Updating.....Finished! DataSum 4764, OPCSum    0

>>> Please REBOOT your PC !
C:\>_
```

It should flash 4 banks. The 4th bank may say something like Datasum, it is normal. When it is done flashing, unplug the SATA cable from the 360 DVD drive, power off the Xbox 360, and power off your PC. You must now desolder your VCC switch and resolder the resistor, or you can just bridge the two solder pads together with some solder. Reconnect the 360 DVD drive to the 360 motherboard and test it.

Backup Your Original Firmware!

Boot into Windows and insert your floppy/USB or go to the C: drive. Find your Sam-OFW.bin and Sam-CFW.bin in the BACKUPS folder. This is your Xbox 360 drive firmware and needs to be kept safe! Make a copy of these files. Then make another one on another drive. Then make another somewhere else. Email it to yourself. You get the drift.

You should keep all the files on your bootable media to make future firmware updates easier.

Updating Your Firmware

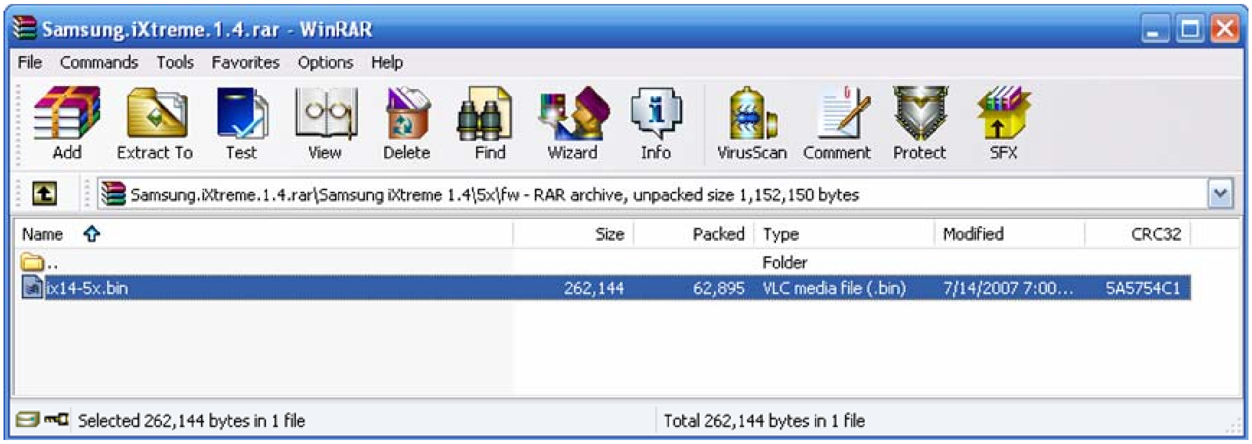
New firmware is inevitable. There will always be firmware updates. Whether it is extra / added security or a new feature, you can count on there being a new firmware released. I do not always have the time to update this tutorial, or sometimes I'm just too lazy to do so. This section of the tutorial is for when a new firmware is released, you shouldn't have to wait for a whole new revision of this tutorial in order to flash. There are a few different ways to update the firmware. If your drive is currently working fine, (boots retail games, no e64 or e66), then you should not need to flash back to your original firmware. Your current firmware contains the drive key and version, and that is all that is needed to create the new, updated firmware.

Updating Your Firmware – Method 1 – Firmware Overwrite

This method only works if you still have the bootable media (flash drive/floppy/iPrep folder) that you previously used to flash the firmware with. This is one reason why it is a good idea to not delete the files off your media after flashing the drive – leave them there if you can. This method involves overwriting the hacked firmware (.bin file) on the media with the new firmware.

In this example, I will be "updating" from iXtrem14 and using a bootable media that has been formatted with the latest iPrep.

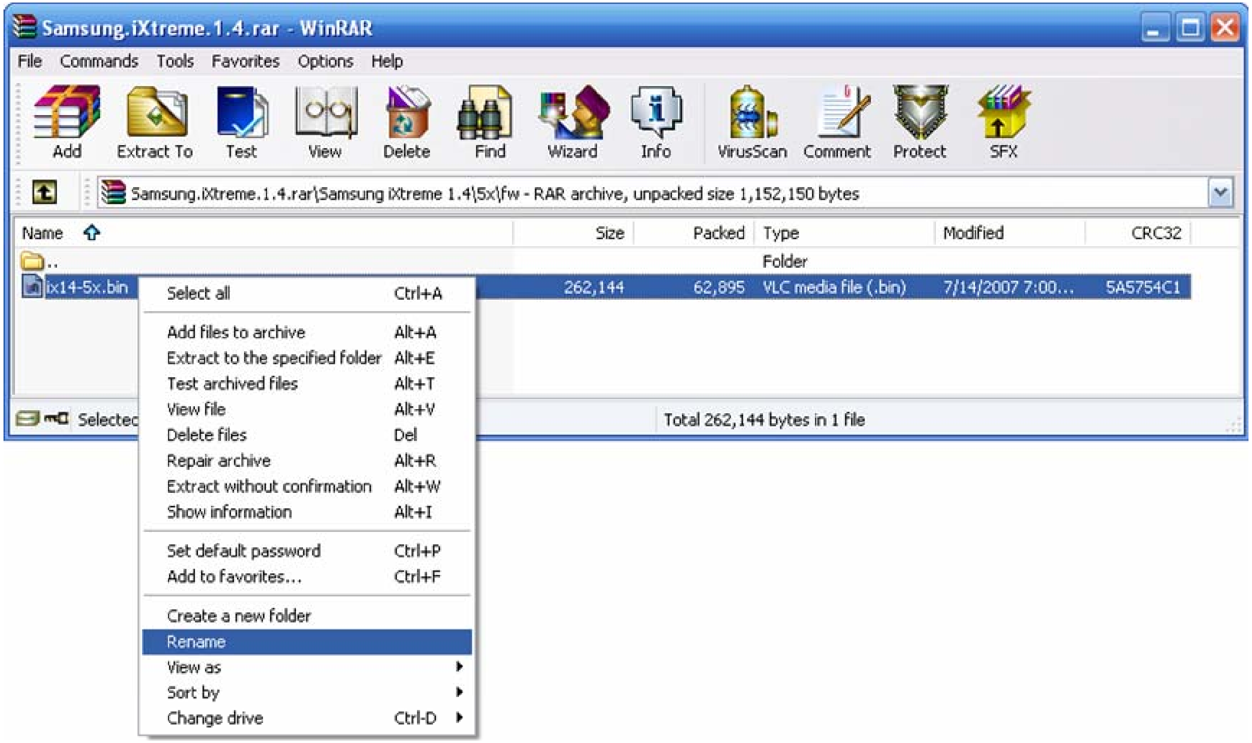
Open the updated firmware with WinRAR and enter the fw folder. Whatever the new firmware is named, you must rename it to Sam-CFW.bin. You can rename files right in WinRAR.



Samsung.iXtreme.1.4.rar\Samsung iXtreme 1.4\5x\fw - RAR archive, unpacked size 1,152,150 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
ix14-5x.bin	262,144	62,895	VLC media file (.bin)	7/14/2007 7:00...	5A5754C1

Selected 262,144 bytes in 1 file | Total 262,144 bytes in 1 file

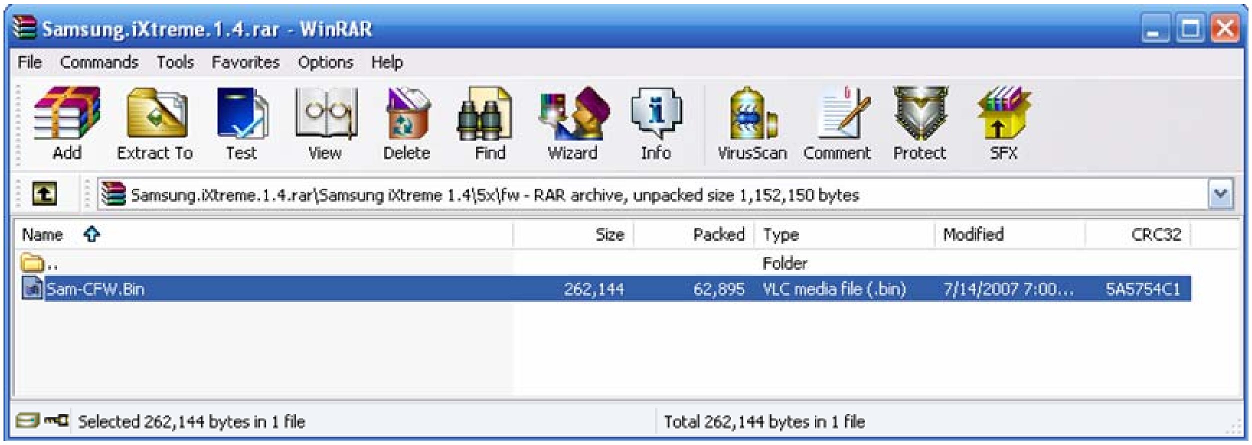


Samsung.iXtreme.1.4.rar\Samsung iXtreme 1.4\5x\fw - RAR archive, unpacked size 1,152,150 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
ix14-5x.bin	262,144	62,895	VLC media file (.bin)	7/14/2007 7:00...	5A5754C1

Selectec

Total 262,144 bytes in 1 file



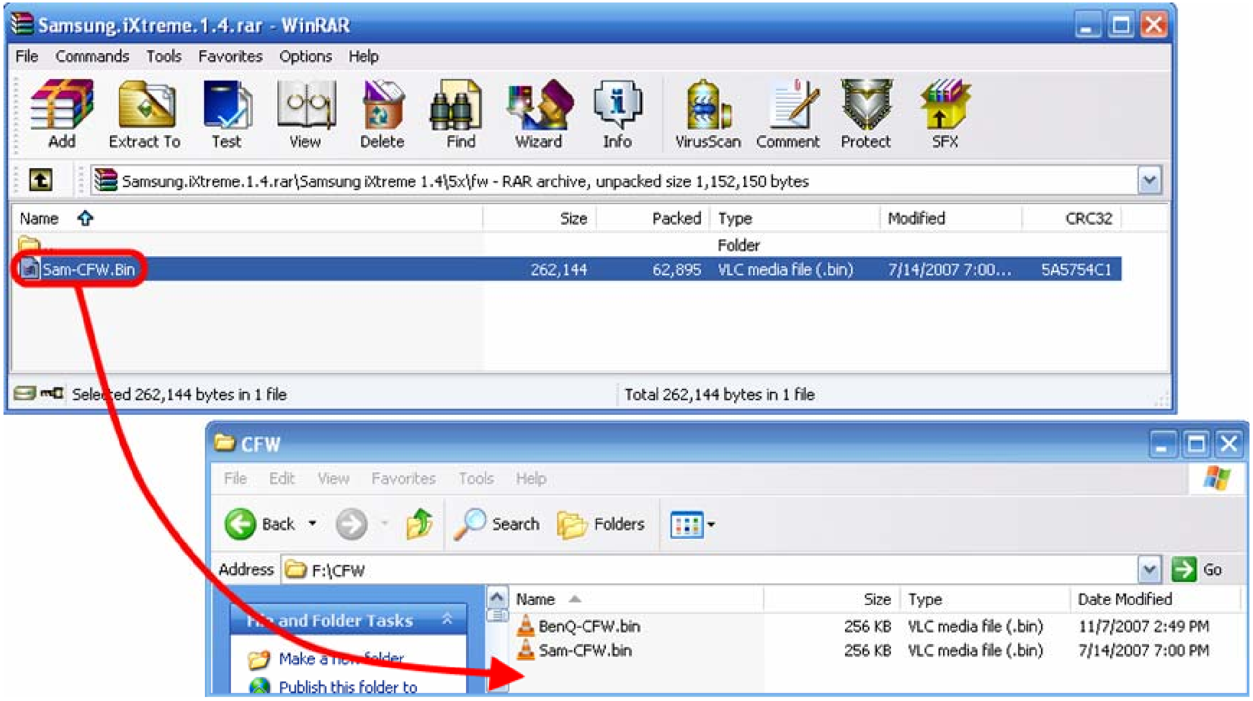
Samsung.iXtreme.1.4.rar\Samsung iXtreme 1.4\5x\fw - RAR archive, unpacked size 1,152,150 bytes

Name	Size	Packed	Type	Modified	CRC32
..			Folder		
Sam-CFW.Bin	262,144	62,895	VLC media file (.bin)	7/14/2007 7:00...	5A5754C1

Selected 262,144 bytes in 1 file

Total 262,144 bytes in 1 file

Once the new firmware has been renamed, you can just drag it to your bootable media and overwrite the Sam-CFW.bin in the CFW folder.



Samsung.iXtreme.1.4.rar - WinRAR

Samsung.iXtreme.1.4.rar\Samsung iXtreme 1.4\5x\fw - RAR archive, unpacked size 1,152,150 bytes

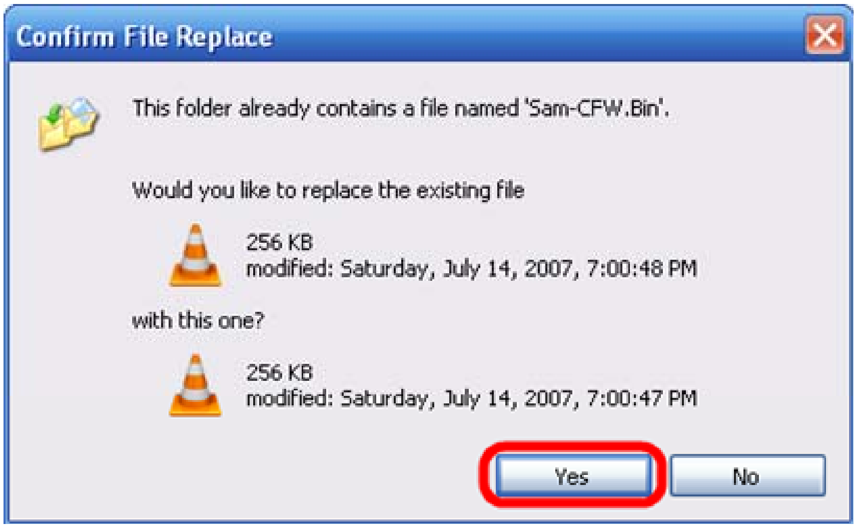
Name	Size	Packed	Type	Modified	CRC32
..			Folder		
Sam-CFW.Bin	262,144	62,895	VLC media file (.bin)	7/14/2007 7:00...	5A5754C1

Selected 262,144 bytes in 1 file | Total 262,144 bytes in 1 file

CFW

Address F:\CFW

Name	Size	Type	Date Modified
BenQ-CFW.bin	256 KB	VLC media file (.bin)	11/7/2007 2:49 PM
Sam-CFW.bin	256 KB	VLC media file (.bin)	7/14/2007 7:00 PM



Confirm File Replace

This folder already contains a file named 'Sam-CFW.Bin'.

Would you like to replace the existing file

256 KB
modified: Saturday, July 14, 2007, 7:00:48 PM

with this one?

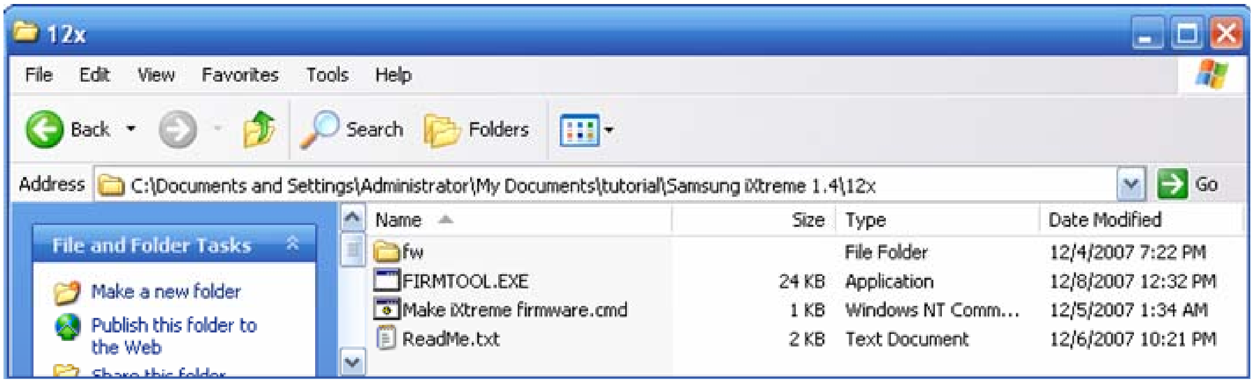
256 KB
modified: Saturday, July 14, 2007, 7:00:47 PM

Then you need to do follow the same flashing procedure you used to flash your drive the first time. Boot to DOS, run dSam, reboot, and run fSam. Remember to read the second necessary section on updating firmware – Disabling FirmGuard.

Updating Your Firmware – Method 2 – The "make" command

Another way you can upgrade your firmware is using the "Make firmware" command file included in the firmware package. This method also assumes you have kept your bootable media. All the files that were on it when you flashed your drive should still be on there.

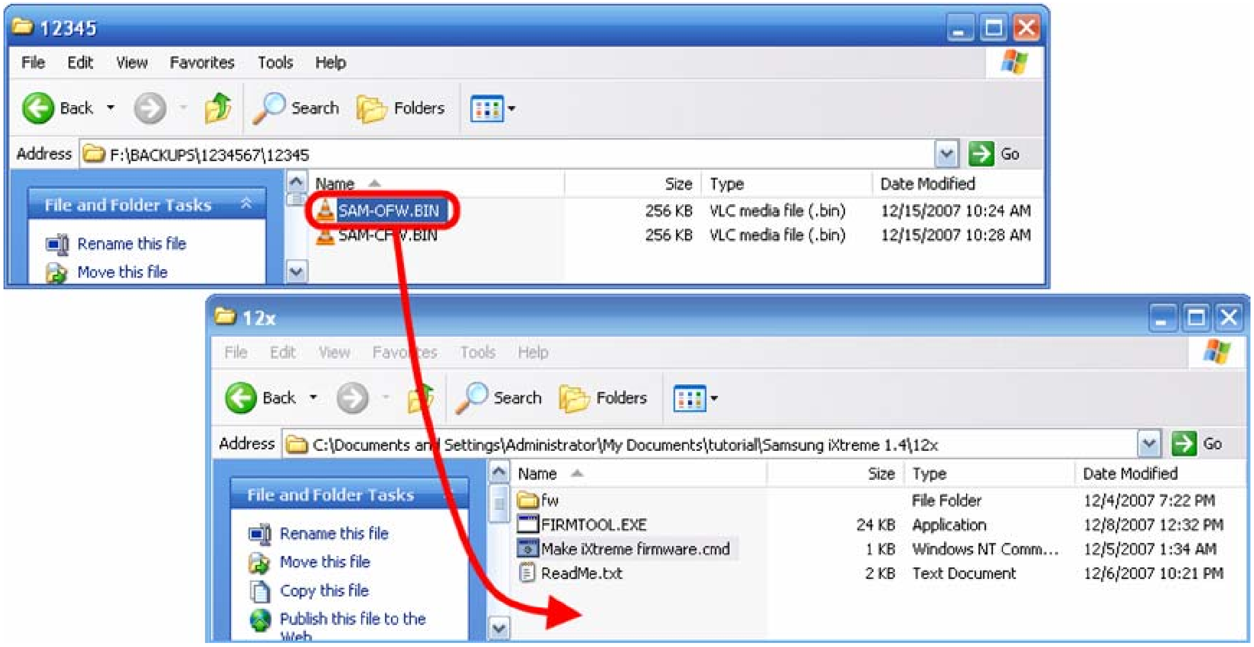
Extract the new, updated firmware to a folder on your computer, it should at least have a fw folder, a "make" command file, a readme, and firmtool.



Address C:\Documents and Settings\Administrator\My Documents\tutorial\Samsung iXtreme 1.4\12x

Name	Size	Type	Date Modified
fw		File Folder	12/4/2007 7:22 PM
FIRMTOOL.EXE	24 KB	Application	12/8/2007 12:32 PM
Make iXtreme firmware.cmd	1 KB	Windows NT Comm...	12/5/2007 1:34 AM
ReadMe.txt	2 KB	Text Document	12/6/2007 10:21 PM

You will need to copy your original firmware to this location. This is located in the /BACKUPS/1234567/12345/ folder on the bootable media. (1234567 12345 being the serial numbers you used when you flashed your drive)



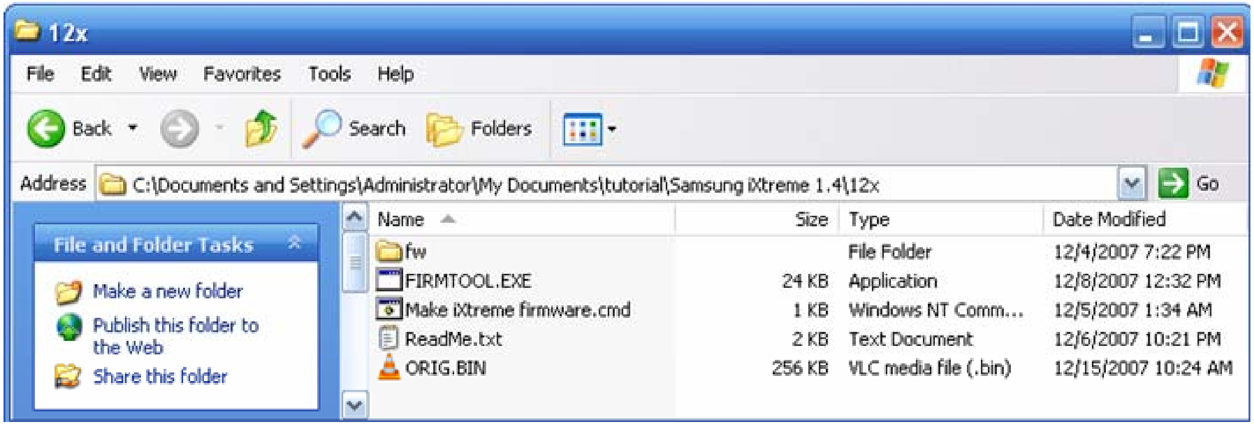
Address F:\BACKUPS\1234567\12345

Name	Size	Type	Date Modified
SAM-OFW.BIN	256 KB	VLC media file (.bin)	12/15/2007 10:24 AM
SAM-CFW.BIN	256 KB	VLC media file (.bin)	12/15/2007 10:28 AM

Address C:\Documents and Settings\Administrator\My Documents\tutorial\Samsung iXtreme 1.4\12x

Name	Size	Type	Date Modified
fw		File Folder	12/4/2007 7:22 PM
FIRMTOOL.EXE	24 KB	Application	12/8/2007 12:32 PM
Make iXtreme firmware.cmd	1 KB	Windows NT Comm...	12/5/2007 1:34 AM
ReadMe.txt	2 KB	Text Document	12/6/2007 10:21 PM

After copying the file over, rename it to orig.bin. The "Make" command is set up so to look for orig.bin, so it needs to be named that.



Address: C:\Documents and Settings\Administrator\My Documents\tutorial\Samsung iXtreme 1.4\12x

Name	Size	Type	Date Modified
fw		File Folder	12/4/2007 7:22 PM
FIRMTOOL.EXE	24 KB	Application	12/8/2007 12:32 PM
Make iXtreme firmware.cmd	1 KB	Windows NT Comm...	12/5/2007 1:34 AM
ReadMe.txt	2 KB	Text Document	12/6/2007 10:21 PM
ORIG.BIN	256 KB	VLC media file (.bin)	12/15/2007 10:24 AM

Double-click the “make firmware” command to run firmtool.

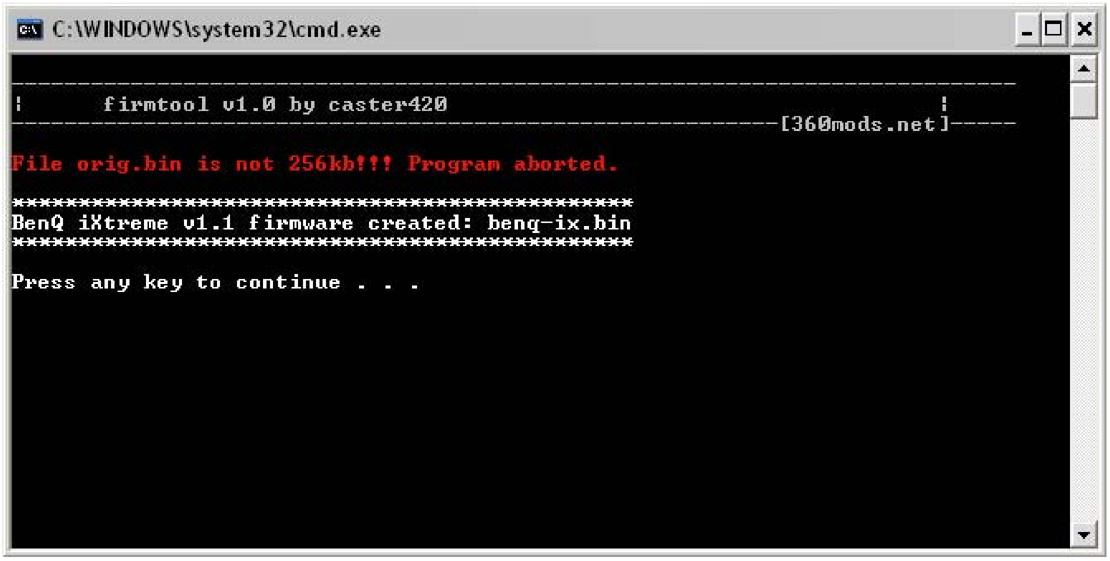
Firmtool will now check if a valid key exists in both your original and hacked firmware, and that they match.

If you get a green success message from Firmtool power off the 360 and proceed to the flashing page. If you get any red error messages **DO NOT** proceed with flashing.

Firmtool Errors

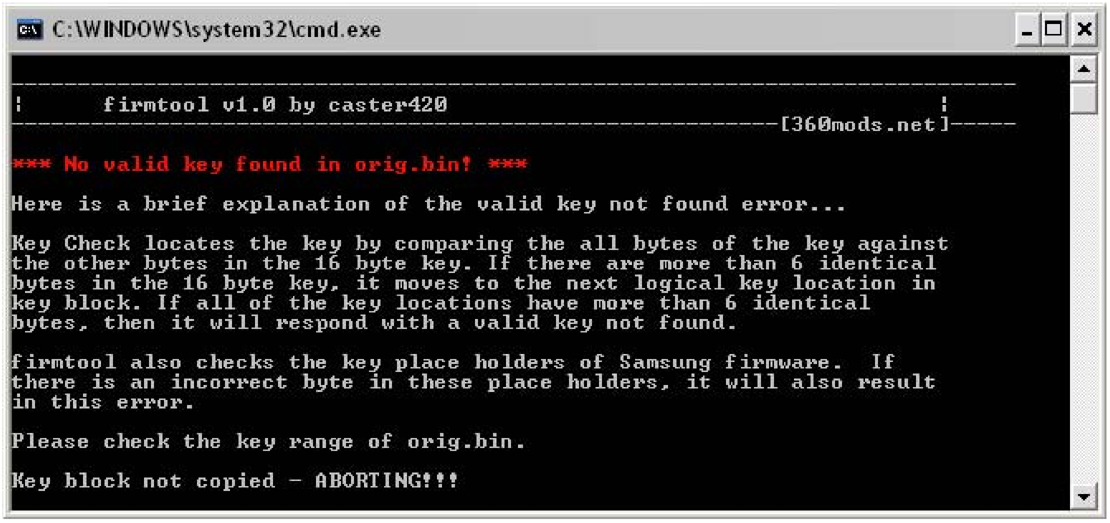
Sometimes there are problems. If your firmware dump is not the correct size, does not contain a valid key, or does not contain a valid drive version, FirmTool will abort. If you get something like any of these pictures, **DO NOT PROCEED WITH FLASHING!** Doing so may brick your Xbox 360 and leave you without a valid drive key. Something is wrong. Make sure you have unplugged all other drives in your PC and try starting this tutorial over again.

ORIG.BIN IS WRONG SIZE



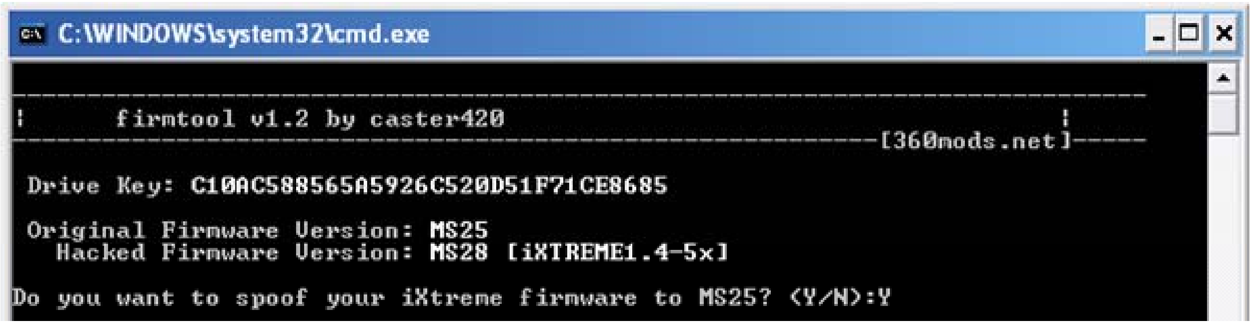
```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                      ¦
----------------------------------------------------------[360mods.net]-----

File orig.bin is not 256kb!!! Program aborted.

***********************************************
BenQ iXtreme v1.1 firmware created: benq-ix.bin
***********************************************

Press any key to continue . . .
```

NO VALID KEY IN ORIG.BIN



```
----------------------------------------------------------------------------
¦      firmtool v1.0 by caster420                                      ¦
----------------------------------------------------------[360mods.net]-----

*** No valid key found in orig.bin! ***

Here is a brief explanation of the valid key not found error...

Key Check locates the key by comparing the all bytes of the key against
the other bytes in the 16 byte key. If there are more than 6 identical
bytes in the 16 byte key, it moves to the next logical key location in
key block. If all of the key locations have more than 6 identical
bytes, then it will respond with a valid key not found.

firmtool also checks the key place holders of Samsung firmware.  If
there is an incorrect byte in these place holders, it will also result
in this error.

Please check the key range of orig.bin.

Key block not copied - ABORTING!!!
```

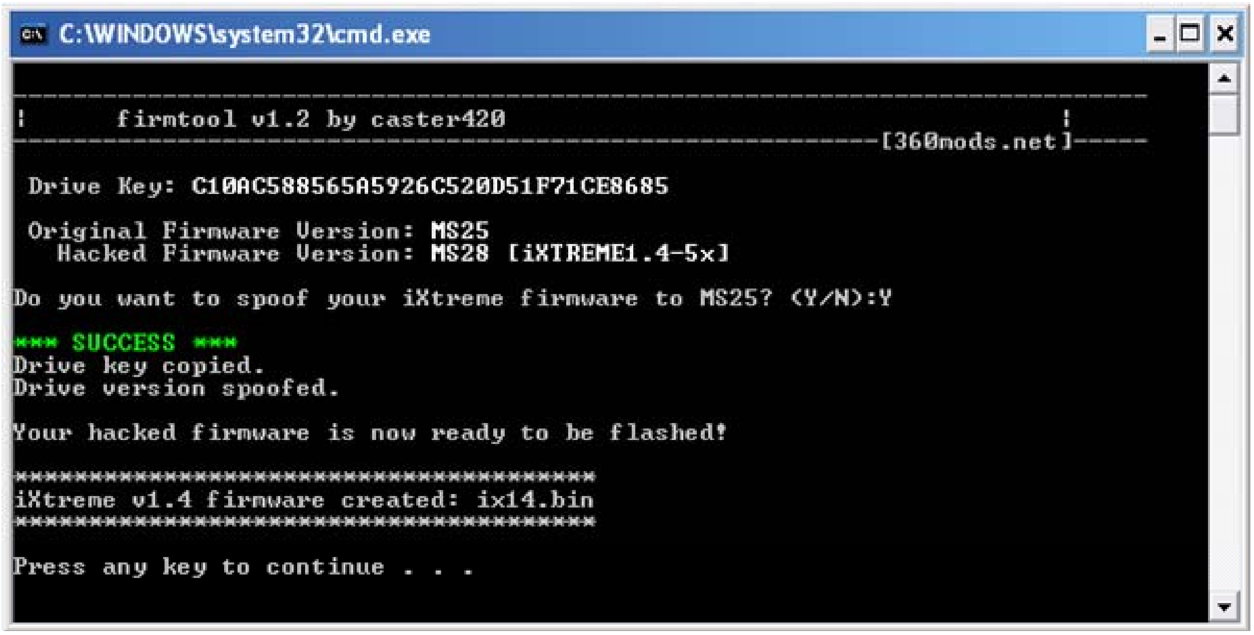
Firmtool will also check your firmware version strings to make sure they match. These must match or you could get error code 66 after flashing your drive. If Firmtool asks if you want to copy the version string, type Y to use the ms25 version strings from your original firmware.



```
---------------------------------------------------------------------------
|      firmtool v1.2 by caster420                                        |
---------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y
```

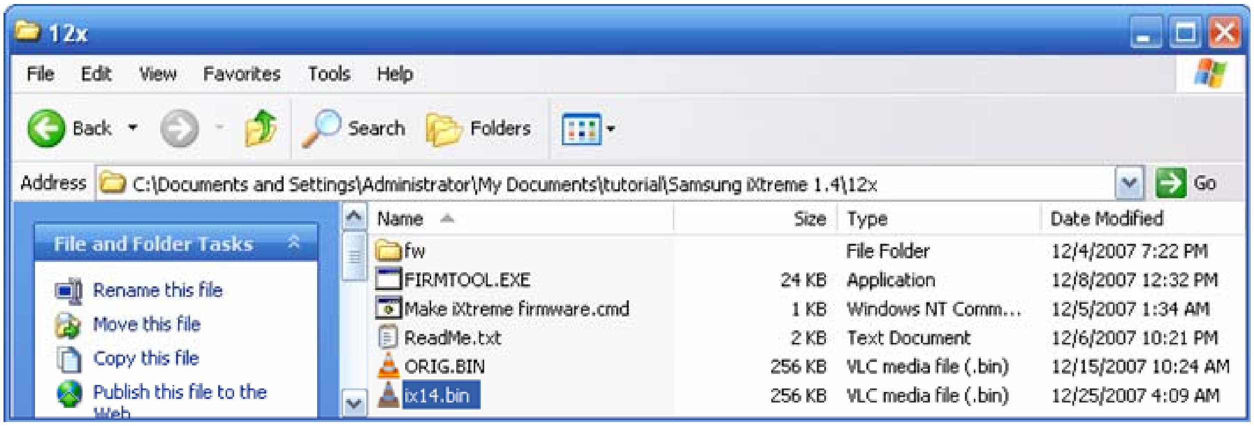
Again, your screen should match the screenshot below before proceeding:

FIRMTOOL SUCCESS



```
---------------------------------------------------------------------------
|      firmtool v1.2 by caster420                                        |
---------------------------------------------------------[360mods.net]-----

 Drive Key: C10AC588565A5926C520D51F71CE8685

 Original Firmware Version: MS25
   Hacked Firmware Version: MS28 [iXTREME1.4-5x]

Do you want to spoof your iXtreme firmware to MS25? (Y/N):Y

*** SUCCESS ***
Drive key copied.
Drive version spoofed.

Your hacked firmware is now ready to be flashed!

***************************************
iXtreme v1.4 firmware created: ix14.bin
***************************************

Press any key to continue . . .
```

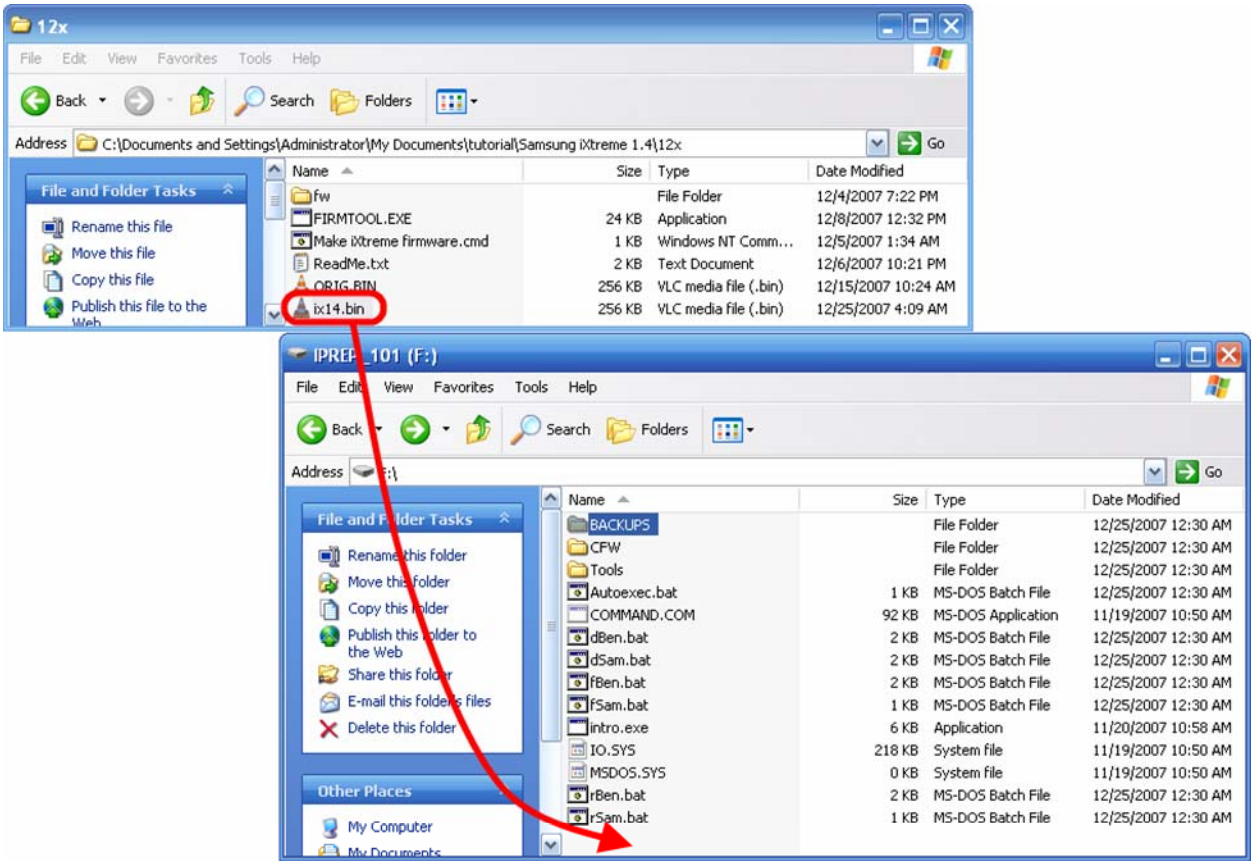
Once firmtool has completed successfully, you should have a new file. It is the hacked firmware injected with your drive key and version. In this example, the “make” generates a file named ix14.bin. If the firmware version was iXtreme 1.5, it would probably be named ix15.bin.



Address: C:\Documents and Settings\Administrator\My Documents\tutorial\Samsung iXtreme 1.4\12x

Name	Size	Type	Date Modified
fw		File Folder	12/4/2007 7:22 PM
FIRMTOOL.EXE	24 KB	Application	12/8/2007 12:32 PM
Make iXtreme firmware.cmd	1 KB	Windows NT Comm...	12/5/2007 1:34 AM
ReadMe.txt	2 KB	Text Document	12/6/2007 10:21 PM
ORIG.BIN	256 KB	VLC media file (.bin)	12/15/2007 10:24 AM
ix14.bin	256 KB	VLC media file (.bin)	12/25/2007 4:09 AM

Copy the generated file over to your bootable media.



Address: C:\Documents and Settings\Administrator\My Documents\tutorial\Samsung iXtreme 1.4\12x

Name	Size	Type	Date Modified
fw		File Folder	12/4/2007 7:22 PM
FIRMTOOL.EXE	24 KB	Application	12/8/2007 12:32 PM
Make iXtreme firmware.cmd	1 KB	Windows NT Comm...	12/5/2007 1:34 AM
ReadMe.txt	2 KB	Text Document	12/6/2007 10:21 PM
ORIG.BIN	256 KB	VLC media file (.bin)	12/15/2007 10:24 AM
ix14.bin	256 KB	VLC media file (.bin)	12/25/2007 4:09 AM

Address: F:\

Name	Size	Type	Date Modified
BACKUPS		File Folder	12/25/2007 12:30 AM
CFW		File Folder	12/25/2007 12:30 AM
Tools		File Folder	12/25/2007 12:30 AM
Autoexec.bat	1 KB	MS-DOS Batch File	12/25/2007 12:30 AM
COMMAND.COM	92 KB	MS-DOS Application	11/19/2007 10:50 AM
dBen.bat	2 KB	MS-DOS Batch File	12/25/2007 12:30 AM
dSam.bat	2 KB	MS-DOS Batch File	12/25/2007 12:30 AM
fBen.bat	2 KB	MS-DOS Batch File	12/25/2007 12:30 AM
fSam.bat	1 KB	MS-DOS Batch File	12/25/2007 12:30 AM
intro.exe	6 KB	Application	11/20/2007 10:58 AM
IO.SYS	218 KB	System file	11/19/2007 10:50 AM
MSDOS.SYS	0 KB	System file	11/19/2007 10:50 AM
rBen.bat	2 KB	MS-DOS Batch File	12/25/2007 12:30 AM
rSam.bat	1 KB	MS-DOS Batch File	12/25/2007 12:30 AM

Now your bootable media is all set. To flash the drive, boot to DOS and type this command:

```
mtkflash w /m /sata ix14.bin
```

You will still need to disable or bypass FirmGuard.

Edit the command for whatever file you are flashing. For example, if the "make firmware" generated an ix15.bin, you would use the command

```
mtkflash w /m /sata ix15.bin
```

Updating Your Firmware – Method 3 – “Repeat Entire Process”

This method would be your choice if you do not still have the bootable media you used when you last flashed your drive.

With the release of a new firmware, iPrep will require a “definitions update” to load that new firmware. You should be able to use Tools > Check for Updates right within iPrep to download the latest definitions file.

Then you would run iPrep, load the new firmware, go through the process of setting up bootable media again, and flash the drive like you did the first time. You would have to boot to DOS, run dSam, reboot, and run fSam. Essentially, just repeating the entire process, with the new firmware and updated definitions file for iPrep. You would still have to disable or bypass FirmGuard.

Disabling FirmGuard

(Reflashing when your drive if already flashed with a hacked firmware)

Firmware versions Xtreme v4.x-5.x and all iXtreme versions include FirmGuard, which makes reading and writing to the drive much more difficult. This FirmGuard uses the MS28 core firmware lockout routines. Essentially, once you flash the drive with a hacked firmware you then have an MS28 drive, no matter what your drive was originally. In order to be able to read or write from a drive that has FirmGuard, follow either of these methods.

Now, when following the above instructions, remember to do this instead:

FirmGuard disable method 1 – 0800 Disc

1. You need to disable FirmGuard. Burn the activate.iso to a DVD+R DL using IMGBurn or CloneCD.
2. Boot your PC to DOS; leave the 360 powered off, but with both power and video cables connected. The drive should be hooked up to your SATA port.
3. When you reach the DOS command prompt, power on your Xbox 360, hit the eject button, and insert your 0800 disc. Let it spin up and read the disc. It usually takes a good 10 to 20 seconds. If you listen carefully, you can hear the drive laser shift and when you hear no more sounds except for the constant spinning disc, the disc has done the job.
4. Eject the drive back open and take out the 0800 disc.
5. FirmGuard should now be disabled and you should be able to read and write to the drive just like it was a normal MS25 drive.

FirmGuard bypass method 2 – VIA & bad-flash

1. Users with a VIA chipset can avoid using the 0800 disc if they can correctly follow the instructions for "Bad-Flashing an MS28 Drive" in this tutorial. The FirmGuard is basically just the MS28 firmware, and this method for flashing the MS28 drives also works with bypassing FirmGuard.

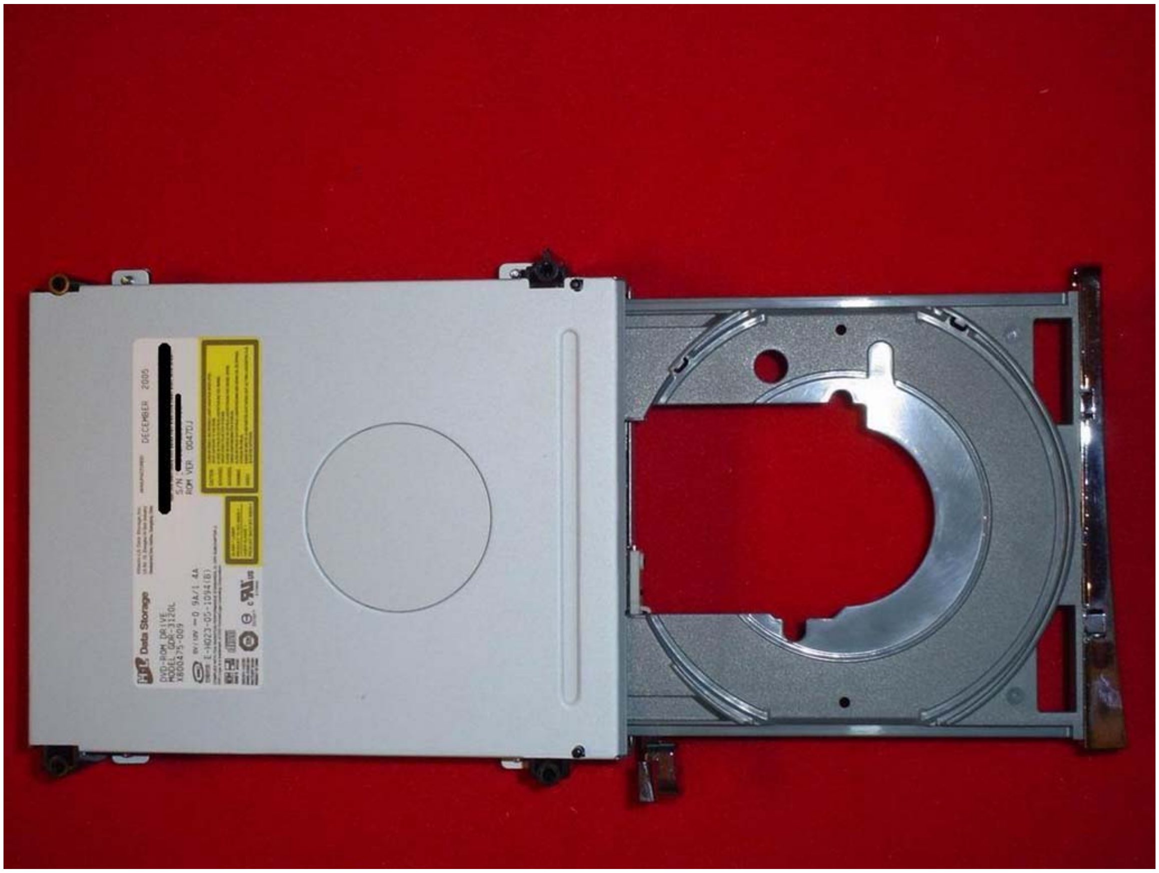
Restoring Original Firmware

Restoring the drive to the original firmware should not be necessary if your drive is currently working and you are only interested in updating to a newer hacked firmware. Nevertheless, you may have some reason to flash back to the original firmware, so I have included the instructions.

Restoring the Samsung drive’s original firmware is very easy if you still have the bootable media you created with the latest iPrep. All you need to do is boot to dos like you would for flashing the drive, and instead of typing dSam or fSam, type rSam. You would use the serial number you used when you flashed the drive, so something like rSam 1234567 12345.

You will still need to disable or bypass FirmGuard.

Hitachi-LG GDR3120L Tutorial



Video Tutorial Here (v46/47/59 drives)

Opening The Xbox 360

The outer Xbox 360 “shell” is entirely screwless. Plastic friction tabs hold the case together. There are many different tutorials for opening the Xbox 360, with different methods. Here are some links to “opening the Xbox 360” tutorials. I decided not to cover opening the Xbox 360 in this tutorial since it is already long enough and there are many other tutorials for opening the Xbox 360. Notes:

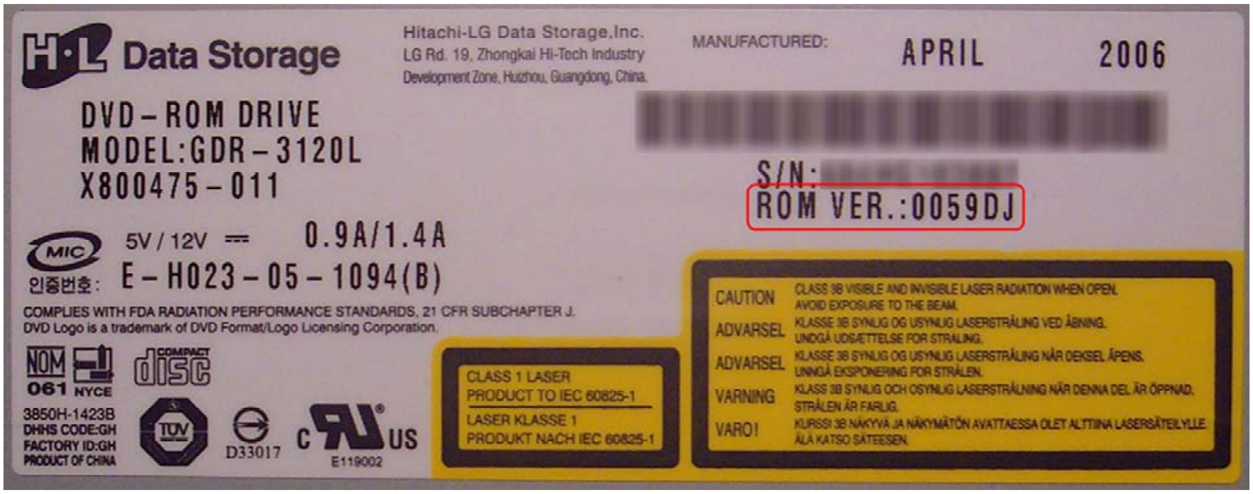
- The Anandtech guide says you need to use a Torx 12 screwdriver. There is no such thing. You need a Torx 10 screwdriver.
- Removing the grey side grill on the hard drive side is a little tricky. The first friction tab is actually inaccessible from the top holes in the case, so you need to stick your screwdriver in the hole by where the hard drive button is and unclip it. (See Pic)
- In order to push in the back clips, you can do one of two things. You can use a thin metal object such as a precision flathead screwdriver / bobby pin / paperclip OR you can make an opening “key” out of a CD spindle case. The key would not work for me, it was too flimsy, but it works for some people. You can purchase an “unlock kit.”
- If all you want to do is just flash the firmware, you only need to remove the six long screws on the bottom. (See Pic)

Read all these guides and watch all the videos, figure out how you want to go about opening the Xbox 360. It is not rocket science.

Anandtech Guide
InformIT Guide
Xbox-Accessories Disassembly
Hydra's Guide to Making a CD Unlock Key
Textbook’s Video
acDC's Video

Which Version

You can determine what version Hitachi drive you have simply by looking at the sticker. Your ROM version **will** matter in this tutorial. ROM version 46/47/59 drives will all have the same instructions. ROM 0078FK drives can only use the Slax method to get into ModeB, and must use a different method when flashing the drive. The most recent version, the ROM 0079FK and 0079FL, are more difficult. Currently, there are two methods to flash these drives, and will be explained in the ROM v79 section of the tutorial. Be warned that modifying a Hitachi v79 using either method is very difficult and risky, and thus should not be attempted by those with poor soldering experience. Since ModeB does not apply to modifying a Hitachi 79 drive, you should ignore that section and instead skip ahead directly to the v79 section of the tutorial.



H·L Data Storage

Hitachi-LG Data Storage,Inc.
LG Rd. 19, Zhongkai Hi-Tech Industry
Development Zone, Huizhou, Guangdong, China.

MANUFACTURED: APRIL 2006

DVD-ROM DRIVE
MODEL:GDR-3120L
X800475-011

[redacted]

S/N: [redacted]
ROM VER.:0059DJ

MIC 5V / 12V ⎓ 0.9A/1.4A
인증번호: E-H023-05-1094(B)

COMPLIES WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J.
DVD Logo is a trademark of DVD Format/Logo Licensing Corporation.

NOM 061 NYCE COMPACT disc

3850H-1423B
DHHS CODE:GH
FACTORY ID:GH
PRODUCT OF CHINA

TÜV D33017 c UL US E119002

CLASS 1 LASER
PRODUCT TO IEC 60825-1
LASER KLASSE 1
PRODUKT NACH IEC 60825-1

CAUTION CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.
ADVARSEL KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
ADVARSEL KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPENS. UNNGÅ EKSPONERING FOR STRÅLEN.
VARNING KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.
VARO! KURSSI 3B NÄKYVÄ JA NÄKYMÄTÖN AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEN.

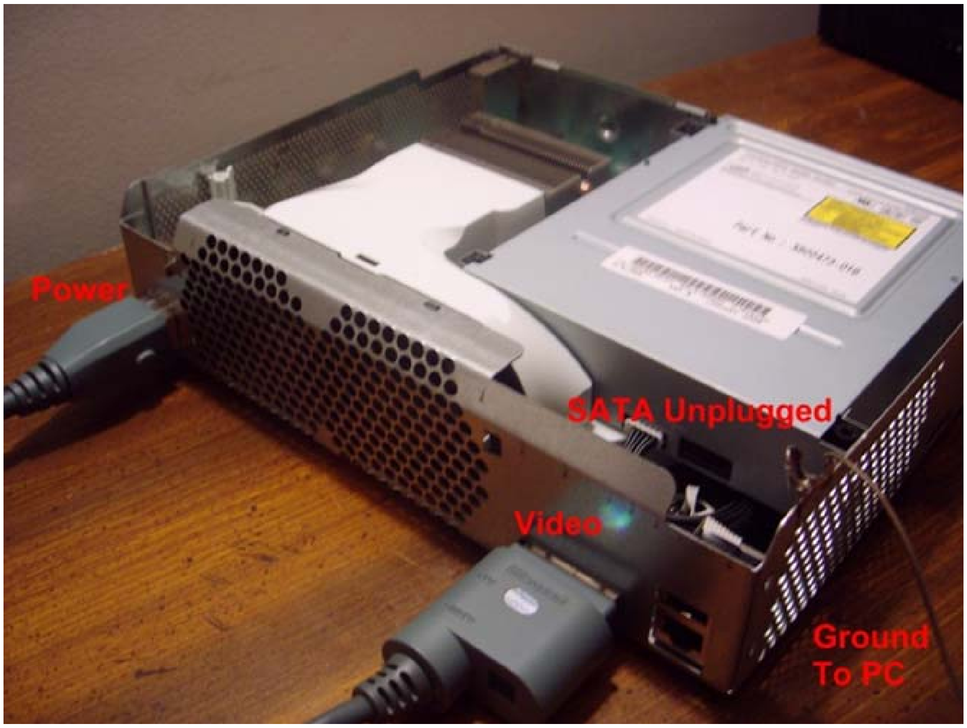
ROM v0078FK

If you have a drive with ROM v0078FK, you will need to follow different instructions for flashing. The drive must still be put into ModeB, but can only be done using Method 1, the Slax CD.

Currently, SATA-to-USB adapters like the X360USB and generic adapters will not work. SIL SATA chipsets are also not supported at this time due to read corruption. Your best bet would be to use onboard Intel ICH* chipsets or NForce chipsets. VIA chipsets will work with a majority of v78 drives, but not all of them.

Xbox 360 and PC Connections

Power off your PC and Xbox 360. Make sure the Xbox 360 power cable and video cable are both plugged in. You do not need to hook up the video to a TV, but it does have to be plugged into the back of the Xbox 360.



The Xbox 360 uses a floating point ground. Your PC uses a “true earth” ground. This difference can cause excess voltage to travel through your SATA cable and potentially damage your Xbox 360 DVD drive or PC Motherboard / SATA card. Remedy this problem by connecting the Xbox 360’s ground to the PC’s ground. The easiest way to do this is by using a “croc clip wire” and connecting the Xbox 360 metal casing to your PC’s metal case. You can use anything conductive to connect the Xbox 360 case to the PC case - you could just tape some bare/stripped wire to each, or even just set the Xbox 360 next to the PC so that they are touching.

Many people have flashed their drives completely ignoring this recommendation. The possibility of damaging something by ignoring this step is rare, but still possible. So, you could say grounding the PC and 360 together isn’t absolutely necessary, but it is recommended. If you have the ability to do so, it is safest to take the time to do it.

Disconnect all other drives in your PC. You should disconnect all hard drives and DVD drives so they do not get accidentally flashed with the hacked firmware. Disabling these devices in your BIOS may not work, so physically unplugging them is the best solution.

ModeB

ModeB is the Hitachi drive's built-in debug mode that we need to get into before anything else can be done. When in ModeB, the drive can be recognized in Windows and flashed with the hacked firmware. There are a few different ways to get into ModeB. You only need to use whatever method works and you feel comfortable with.

ModeB Method 1 – SLAX

The first method you can use to get your Hitachi drive into ModeB is by using a bootable SLAX Live CD. It is a specially edited Linux LiveCD that will send custom commands to the Hitachi drive on bootup.

1. Download the latest SLAX image from Xbox-Scene
2. Burn the .iso image to a blank CD-R using IMGBurn, CloneCD, Nero, or any other recording software capable of burning .iso image files.
3. Make sure your computer's BIOS is set to boot from CD first. Most are set to this by default.
4. Power off both the Xbox 360 and PC.
5. Make sure both power and video cables are plugged into the Xbox 360. Also provide a true path to ground between the Xbox 360 case and PC case by using croc clips, small wire, or setting them against each other so they are touching.
6. Unplug the small, black SATA cable from the back of the Hitachi DVD drive and connect your Hitachi drive to your PC via a SATA cable.
7. Power on the Xbox 360 and PC at the same time. Boot the PC from the Slax CD and wait until you reach the login prompt. If you get a message that says "Spinning up disc…." , hit eject on your Hitachi drive, and the Slax disc should continue to load. If you get that message, that's a good thing, it means your drive is probably already in ModeB.
8. Check for ModeB! (see below)

Troubleshooting: Some people are having problems with the Slax disc, and the only suggestion I can give you is to try turning on the Xbox 360 at a different time. I know with my VIA chipset, it usually works best if I don't turn on the 360 until just after the Slax disc started to load. You can also check out this video of how to use Slax to get a Hitachi drive into ModeB.

(The video is for a Hitachi 78FK drive, but the information on using Slax would be useful for all drive versions.)

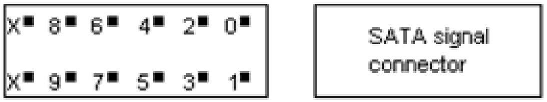
ModeB Method 2 – Two-Wire/Resistor Trick

Note: This ModeB method will not work on Hitachi v0078FK drives. You must use Slax if you have a v0078FK drive.

Experimentation and research by SeventhSon and others early on found a way to put the drive into ModeB by grounding one of the pins on the DVD power plug. This method works every time when done correctly, but take caution. This method is much more dangerous than other ModeB methods. You must read this entirely and understand what you are doing. If you screw up on this, you may brick your drive and what is worse, is without an original firmware backed up, you won’t be able to purchase a new drive for your Xbox 360. Screw up on this and it’s a good chance you’ll make a permanent drive-less Xbox 360.

For safety reasons (less chance of bricking) please use a 1K-ohm resistor when doing the “two-wire trick.” You can purchase resistors at a local Radioshack or other hobby electronics shop. This resistor has brown-brown-red-gold bands on it. Radioshack model number 271-1118.

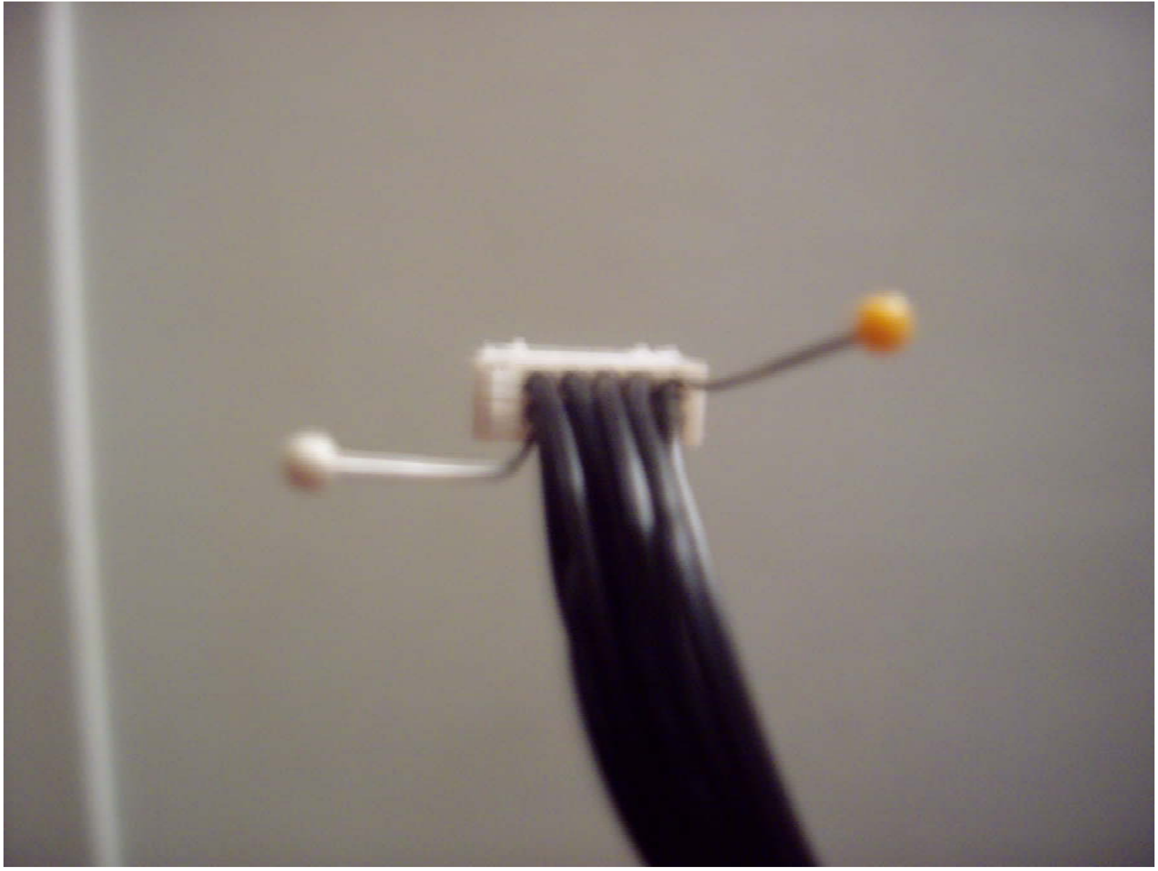
Now, take a look at the back of your DVD drive and you should see a black SATA cable to the right and the power cable to the left. The power cable consists of ten smaller black wires and has a white connector.



Xbox 360 DVD drive power connector pinout

What you will want to observe is pins 0 and 9. Since the left side pin holes of the connector are empty, the wires you want are the top right and bottom left wires.

Stick a sewing pin in next to these wires as shown in the image below.



What you need to do is use the resistor to touch these two pins together when booting the Xbox 360, then release the resistor immediately afterwards. So, with the Xbox 360 off, hold the resistor so that each end touches the sewing pin. With your other hand, hit the power button on your Xbox 360 and as soon as you see the power light come on, remove the resistor and break the connection. This is the tricky part and where people were bricking their drives. You can screw this up in two ways. First, some people were accidentally using the wrong points on the power cable. Second, people were holding the two wires together for too long. The pins should be connected at most for only a half second on bootup.

Again, just for clarity:

1. Make the cable as shown above by sticking sewing pins in the 0 and 9 locations on the power plug.
2. Plug this newly made power plug back into the back of the DVD drive with the Xbox 360 off.
3. With the Xbox 360 powered off, use a 1Kohm resistor and hold it to connect the two pins together.
4. Power on the Xbox 360 and immediately remove the resistor as soon as you see the green power led on the Xbox 360 light up.
5. Check for ModeB! (see below)

ModeB Method 3 – Connectivity Kit

Note: This ModeB method will not work on Hitachi v0078FK drives. You must use Slax if you have a v0078FK drive.

If the Slax disc did not work for you and you are too afraid to use the two-wire/resistor trick method, you can purchase a Xeno or Xecuter Connectivity Kit to put the drive into ModeB.

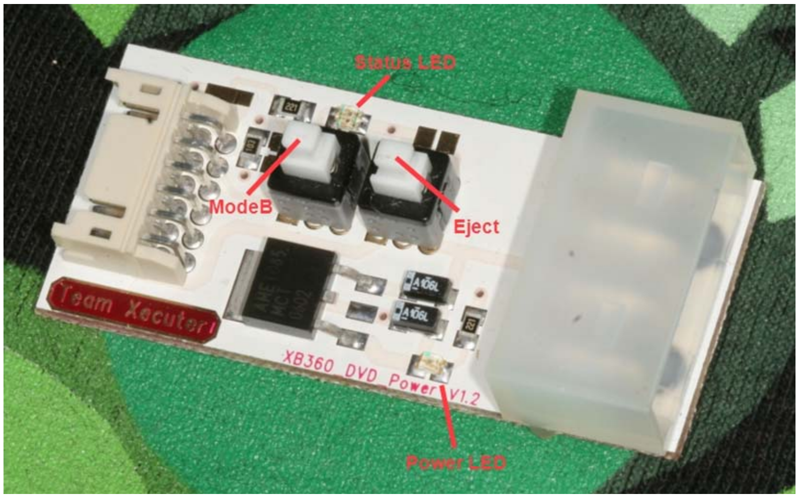
Some important warnings about the kits –

You can blow up the kit and/or drive if you plug in the DVD power cables upside down. Look on the connector. There are small tabs to make sure you are connecting the cables correctly.

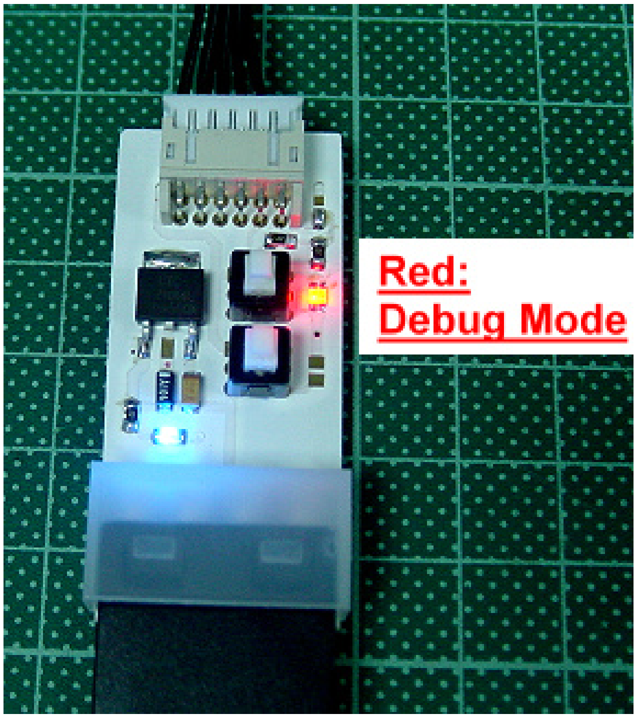
You can also blow up the kit and/or drive if you short it out on something. The back of the kit is not protected, and you can see bare solder points on the circuit. If you aren't careful, you can short the kit onto your PC case, Xbox drive, or another metal object.

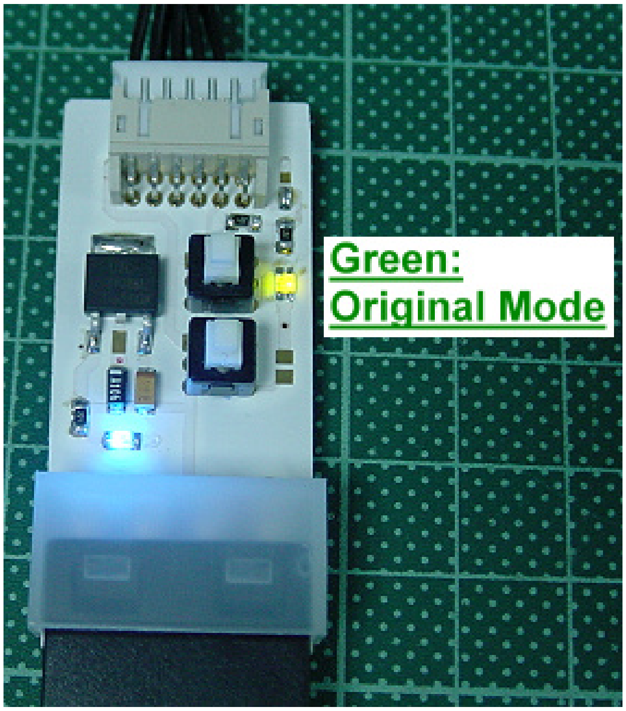
For a clear explanation of these dangers, take a look at this PDF.

Disconnect all cables from the DVD drive and take it out of the Xbox 360. Power off your PC and hook up the connectivity kit. Hook up the SATA cable to the DVD drive as well. Push the ModeB button down and power on your PC and boot into Windows.

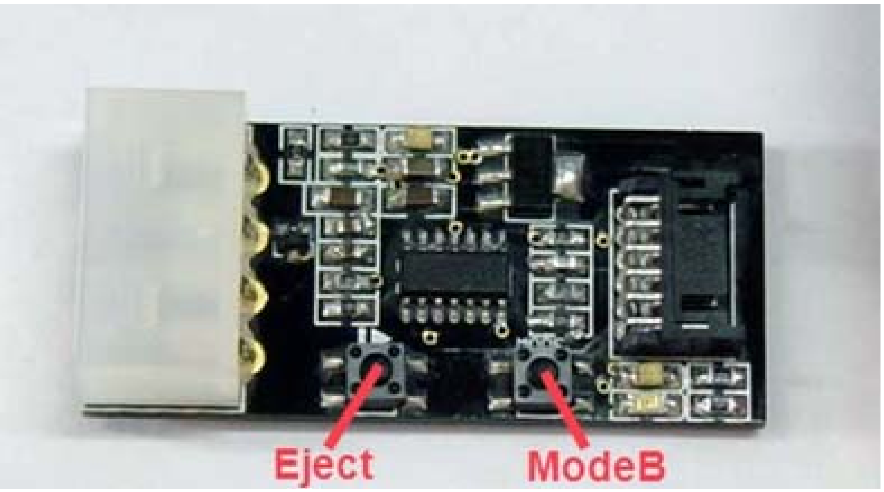


For the Xecuter kit, make sure the Eject button is up and the ModeB button is down before powering up the system.





The same status LED configuration is used for the Xeno kit. If you power up the drive and the LED is green, hit the ModeB button so that the LED turns red for ModeB.



ModeB Method 4 – Hotswap

Note: This ModeB method will not work on Hitachi v0078FK drives. You must use Slax if you have a v0078FK drive.

The fourth method of ModeB in fact is not a method to get into ModeB at all. The drive never goes into ModeB, but using this method, you will be able to flash your drive and since that's what we are trying to do here, it is still included as a “ModeB method.” This method is not very applicable to many people so I won't spend too much time going over it.

You need a SATA DVD-ROM drive hooked up to your PC and detected in Windows. This can be a normal PC SATA DVD-ROM drive like the SH-D163A or it can also be an Xbox 360 Samsung drive in 0800 mode. Whatever it is, it has to be a SATA DVD-ROM drive detected and working in Windows. Note your drive letter, then unplug the SATA cable from your “normal” drive and plug it into the Hitachi drive. You can then flash your Hitachi with that drive letter.

I personally couldn't get this working, but others have, so it's in here.

ModeB Method 5 – Boot Previously Flashed Drive With an Open Tray

All previous hacked Hitachi firmwares have a seldom-known feature that allows them to be easily put back into ModeB. Remember, this only works with hacked firwmares (drives that have already been flashed). This ModeB method is not one to be used on drives that still have the original firmware.

Power on the Xbox 360, eject the Hitachi tray, and make sure there is no disc in the tray. Leave the tray open, and then unplug the Xbox 360 power supply from the wall electrical outlet. Just hitting the 360's power button would make the tray retract, we want it to stay open – and unplugging from the wall does this. Then, plug the power supply back in, and power the 360 back up. The drive should go into ModeB.

ModeB Indicators

It is obvious that we must first get the Hitachi drive into ModeB before doing anything else. Before worrying about your PC, before worrying about flashing, or anything else, focus on ModeB. ModeB is a property of the DVD drive alone. It does not rely on SATA and has nothing to do with your computer. In fact, you can do the following checks with no SATA cable hooked up to the Hitachi drive at all. The following are signs of ModeB. Your Hitachi drive must be doing one of the following. Your drive does not have to display all these signs to be in ModeB. If your drive is showing just one of these, it is in ModeB.

Signs of ModeB:

1. If using the Xbox 360 to power the drive and using the wire/resistor trick, your Xbox 360's power LED should flash rapidly
2. With all methods, it should take two presses of the eject button to either open or close the DVD tray.
3. With all methods, when you eject the drive back in using the eject button, it should auto-eject back open a second later. This only occurs if you are using the Xbox 360 to power the drive.
4. Obviously, if the drive shows up in Windows, then it is in ModeB.

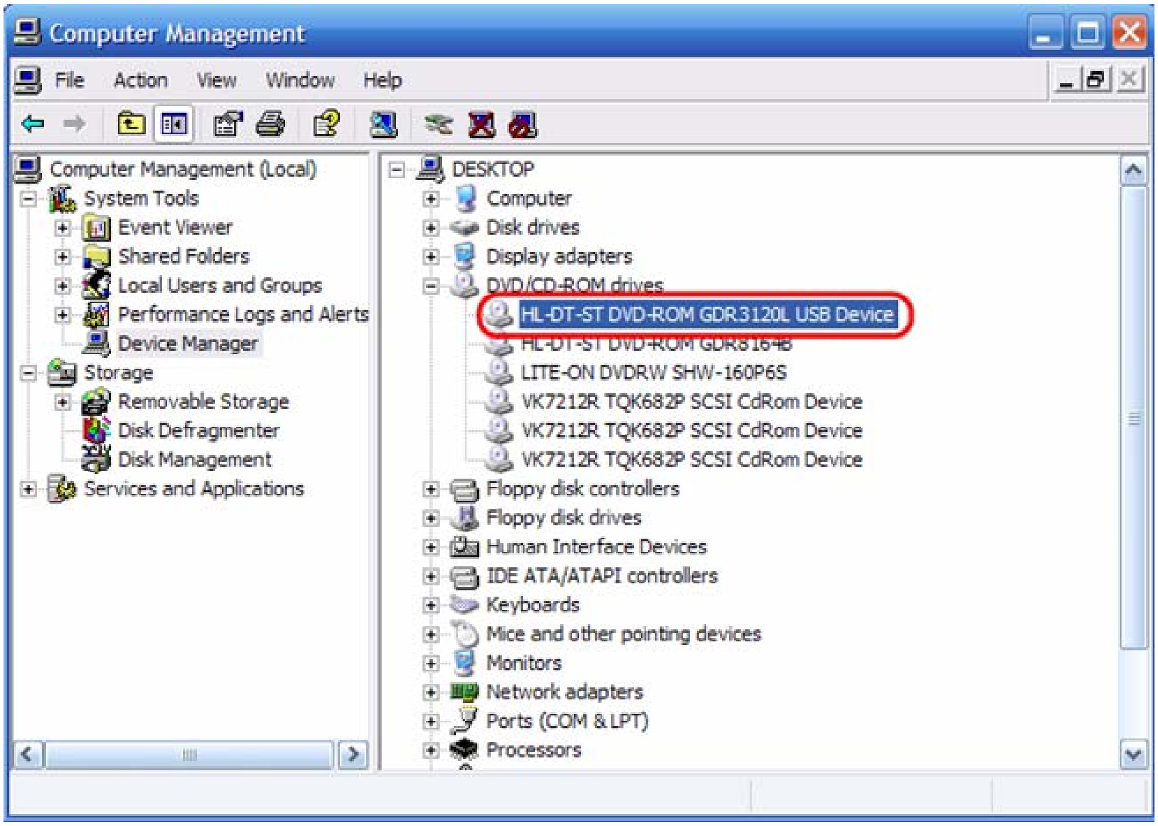
When you do get into ModeB, do not power off the drive. Powering off the drive will make you lose ModeB and you would have to repeat your steps all over again.

Drive Detection in Windows

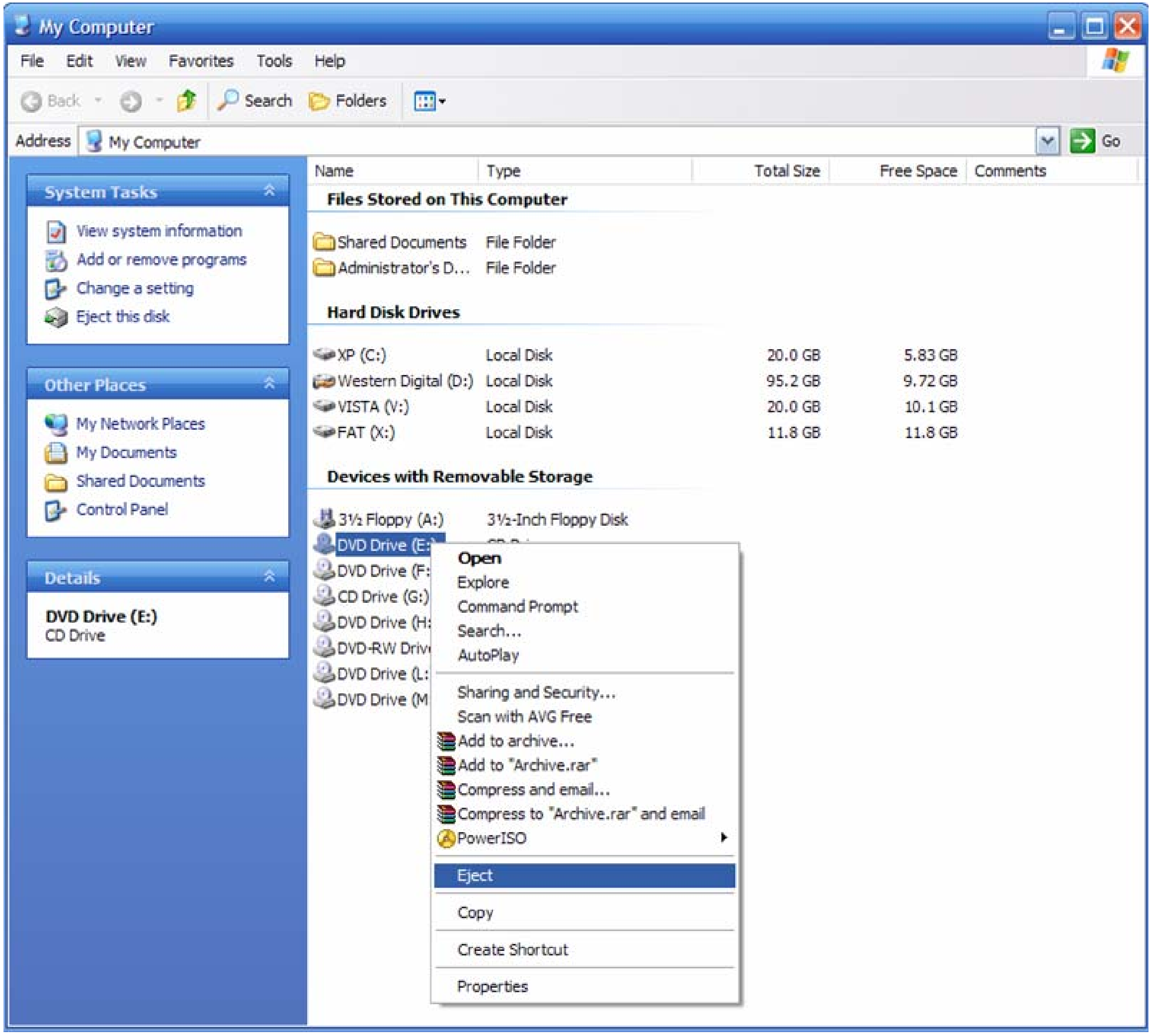
When you have made sure your drive is in ModeB, connect it to your PC and power up your PC. If you used Slax, remember to take out the Slax disc because you need to boot from the hard drive into Windows. At the Windows loading bar, you should eject the Hitachi drive in and out a few times. Some people believe that they only need to eject the drive if the loading gets stuck, but this is NOT true! Testing has shown that device I/O errors while flashing were a result from the failure to eject the Hitachi drive at the Windows loading bar.

When Windows boots up, check to see if the drive is detected. First, open device manager. Right-click "My Computer" and select "Manage." A Computer Management window should open up with a list to the left. In that list to the left, under System Tools, is Device Manager.

Check your CD/DVD drives to see if the Hitachi GDR-3120L is listed.



Open up "My Computer" and see if you have a new CD-ROM drive. Right-click on your drive and eject it. You just want to make sure you know which drive is the Hitachi drive. Remember the drive letter.



DVD Drive (E:)
CD Drive

Name	Type	Total Size	Free Space	Comments
Files Stored on This Computer				
Shared Documents	File Folder			
Administrator's D...	File Folder			
Hard Disk Drives				
XP (C:)	Local Disk	20.0 GB	5.83 GB	
Western Digital (D:)	Local Disk	95.2 GB	9.72 GB	
VISTA (V:)	Local Disk	20.0 GB	10.1 GB	
FAT (X:)	Local Disk	11.8 GB	11.8 GB	
Devices with Removable Storage				
3½ Floppy (A:)	3½-Inch Floppy Disk			
DVD Drive (E:)				
DVD Drive (F:				
CD Drive (G:)				
DVD Drive (H:				
DVD-RW Drive				
DVD Drive (L:				
DVD Drive (M				

Flashing v46/47/59 Drives

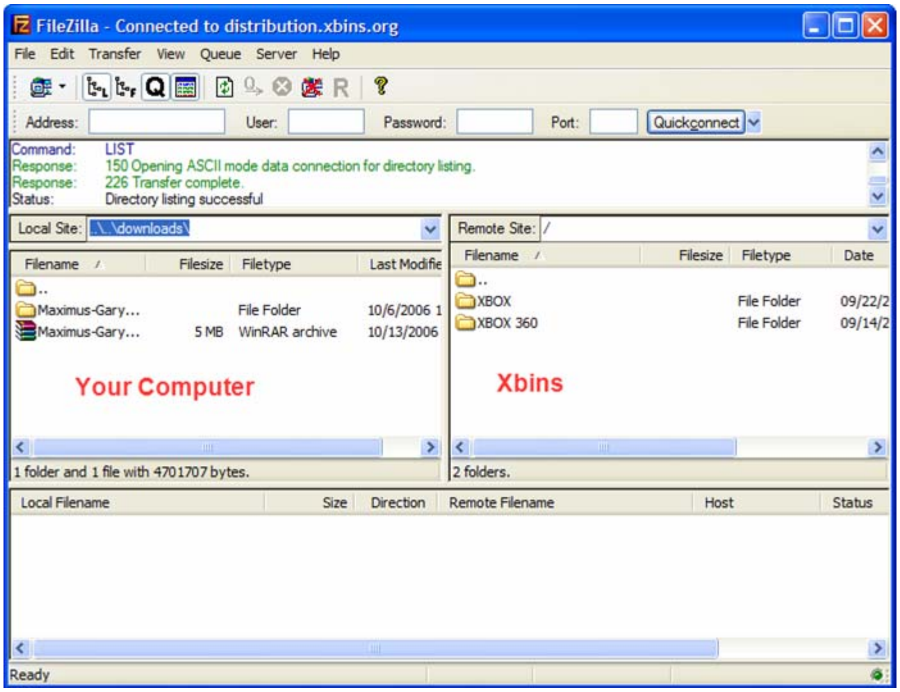
The rest of this tutorial is for the “old” version Hitachi drives. If you have a v0078FK drive, please click here for those instructions. If you have a v0079 drive, you shouldn’t even be reading this in the first place since you were instructed to skip the ModeB section, but here is the link to the v0079 instructions.

Downloading The Firmware

The hacked firmware may be illegal under the DMCA, EUCD, or other local, national, and international copyright laws. It contains portions of Microsoft's copyrighted firmware and therefore cannot be linked to or downloaded publicly. Do not request the firmware on any forums because you will most likely be banned. Use Xbins. Xbins is an IRC channel and FTP server that hosts Xbox and Xbox 360 mod files.

If you have never used Xbins before, the easiest method is to use Ground Zero's automated Xbins downloader.

Download and run the xbins.exe file. It will ask you where you want to save the files, choose your desktop. Now, go into the "Xbins" folder on your desktop and run the .bat file. The program will connect to the IRC channel, message the bot, and connect to the FTP server. When FileZilla opens you should see the local Downloads folder on your left and the Xbins FTP server on your right.



```
Command:   LIST
Response:  150 Opening ASCII mode data connection for directory listing.
Response:  226 Transfer complete.
Status:    Directory listing successful
```

Local Site: .\..\downloads\

Filename	Filesize	Filetype	Last Modifie
..			
Maximus-Gary...		File Folder	10/6/2006 1
Maximus-Gary...	5 MB	WinRAR archive	10/13/2006

Your Computer

1 folder and 1 file with 4701707 bytes.

Remote Site: /

Filename	Filesize	Filetype	Date
..			
XBOX		File Folder	09/22/2
XBOX 360		File Folder	09/14/2

Xbins

2 folders.

Local Filename	Size	Direction	Remote Filename	Host	Status

Ready

The hacked firmware can be found in:

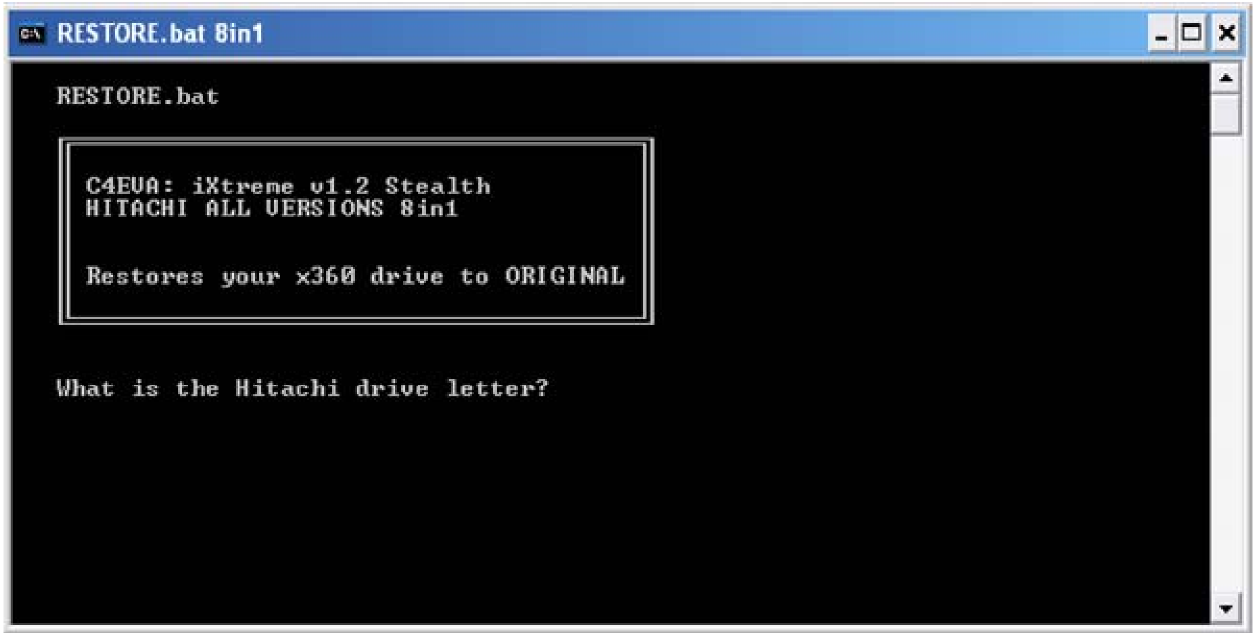
/XBOX 360/firmware/hacked firmware/ Hitachi-LG GDR-3120L/

Simply drag the "iXtreme1.4_Hitachi.rar" file over to the left side of FileZilla and wait for it to finish downloading. You can use WinRAR or 7-zip to extract the RAR archive. You will want to copy the iXtreme1.4_Hitachi_C4EVA_rev1 folder to the C: drive.

Upgrading From Older Firmware?

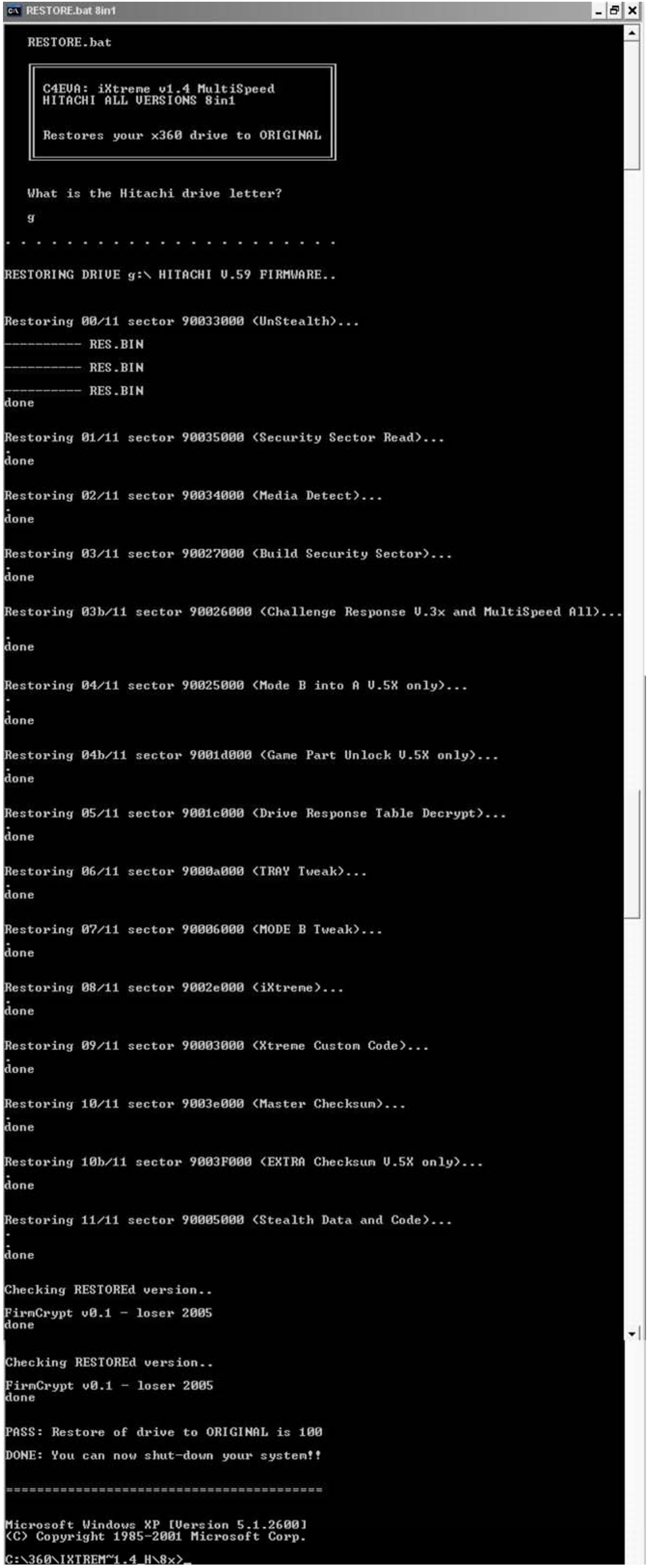
If you are upgrading from an older hacked firmware, like a previous GaryOPA firmware, a Birdy firmware, or Commodore4Eva firmware, you must restore your drive to the original firmware before continuing. If you are flashing the firmware to a stock drive, ignore this section and skip to “Flashing The Drive.”

Inside the iXtreme1.4_Hitachi_C4EVA_rev1 folder is a file named “RESTORE.BAT”. You can run this simply by double-clicking on it.



```
RESTORE.bat

 C4EVA: iXtreme v1.2 Stealth
 HITACHI ALL VERSIONS 8in1

 Restores your x360 drive to ORIGINAL

What is the Hitachi drive letter?
```

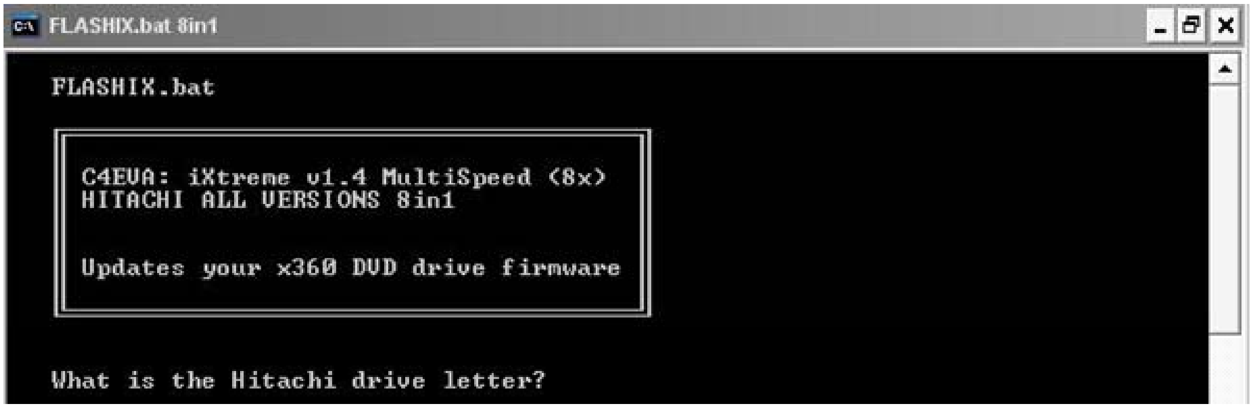
That should open a command prompt asking you for the Hitachi drive letter. So type in the drive letter of your Hitachi, and press enter, and it should restore the drive back to the original firmware automatically. This is necessary before flashing to the latest firmware. After restoring the firmware, you can continue on to flashing the new firmware.



```
   RESTORE.bat

   ╔══════════════════════════════════════╗
   ║                                      ║
   ║ C4EVA: iXtreme v1.4 MultiSpeed       ║
   ║ HITACHI ALL VERSIONS 8in1            ║
   ║                                      ║
   ║ Restores your x360 drive to ORIGINAL ║
   ║                                      ║
   ╚══════════════════════════════════════╝

   What is the Hitachi drive letter?

   g

. . . . . . . . . . . . . . . . . . . . . .

RESTORING DRIVE g:\ HITACHI V.59 FIRMWARE..


Restoring 00/11 sector 90033000 (UnStealth)...

---------- RES.BIN

---------- RES.BIN

---------- RES.BIN
done

Restoring 01/11 sector 90035000 (Security Sector Read)...
.
done

Restoring 02/11 sector 90034000 (Media Detect)...
.
done

Restoring 03/11 sector 90027000 (Build Security Sector)...
.
done

Restoring 03b/11 sector 90026000 (Challenge Response V.3x and MultiSpeed All)...

.
done

Restoring 04/11 sector 90025000 (Mode B into A V.5X only)...
.
.
done

Restoring 04b/11 sector 9001d000 (Game Part Unlock V.5X only)...
.
done

Restoring 05/11 sector 9001c000 (Drive Response Table Decrypt)...
.
done

Restoring 06/11 sector 9000a000 (TRAY Tweak)...
.
done

Restoring 07/11 sector 90006000 (MODE B Tweak)...
.
done

Restoring 08/11 sector 9002e000 (iXtreme)...
.
done

Restoring 09/11 sector 90003000 (Xtreme Custom Code)...
.
done

Restoring 10/11 sector 9003e000 (Master Checksum)...
.
done

Restoring 10b/11 sector 9003F000 (EXTRA Checksum V.5X only)...
.
done

Restoring 11/11 sector 90005000 (Stealth Data and Code)...
.
.
done

Checking RESTOREd version..

FirmCrypt v0.1 - loser 2005
done


Checking RESTOREd version..

FirmCrypt v0.1 - loser 2005
done

PASS: Restore of drive to ORIGINAL is 100

DONE: You can now shut-down your system!!

=========================================


Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\360\IXTREM~1.4_H\8x>_
```

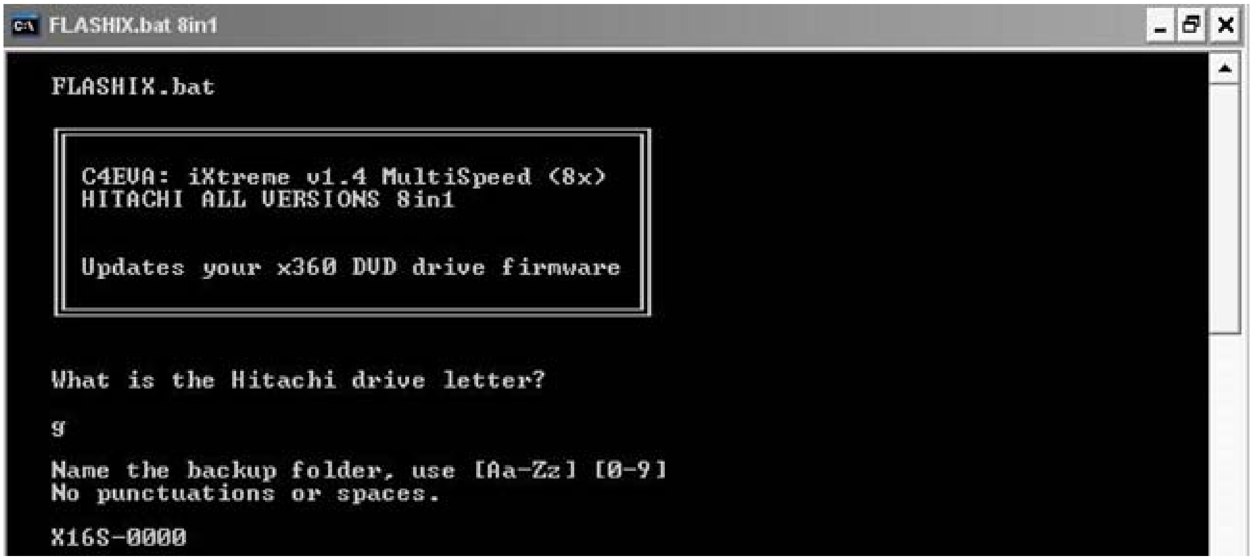
Flashing The Drive

Inside the iXtreme1.4_Hitachi_C4EVA_rev1 folder is a file named "FLASHIX.BAT". You can run this simply by double-clicking on it.



```
FLASHIX.bat

 C4EVA: iXtreme v1.4 MultiSpeed (8x)
 HITACHI ALL VERSIONS 8in1

 Updates your x360 DVD drive firmware


What is the Hitachi drive letter?
```

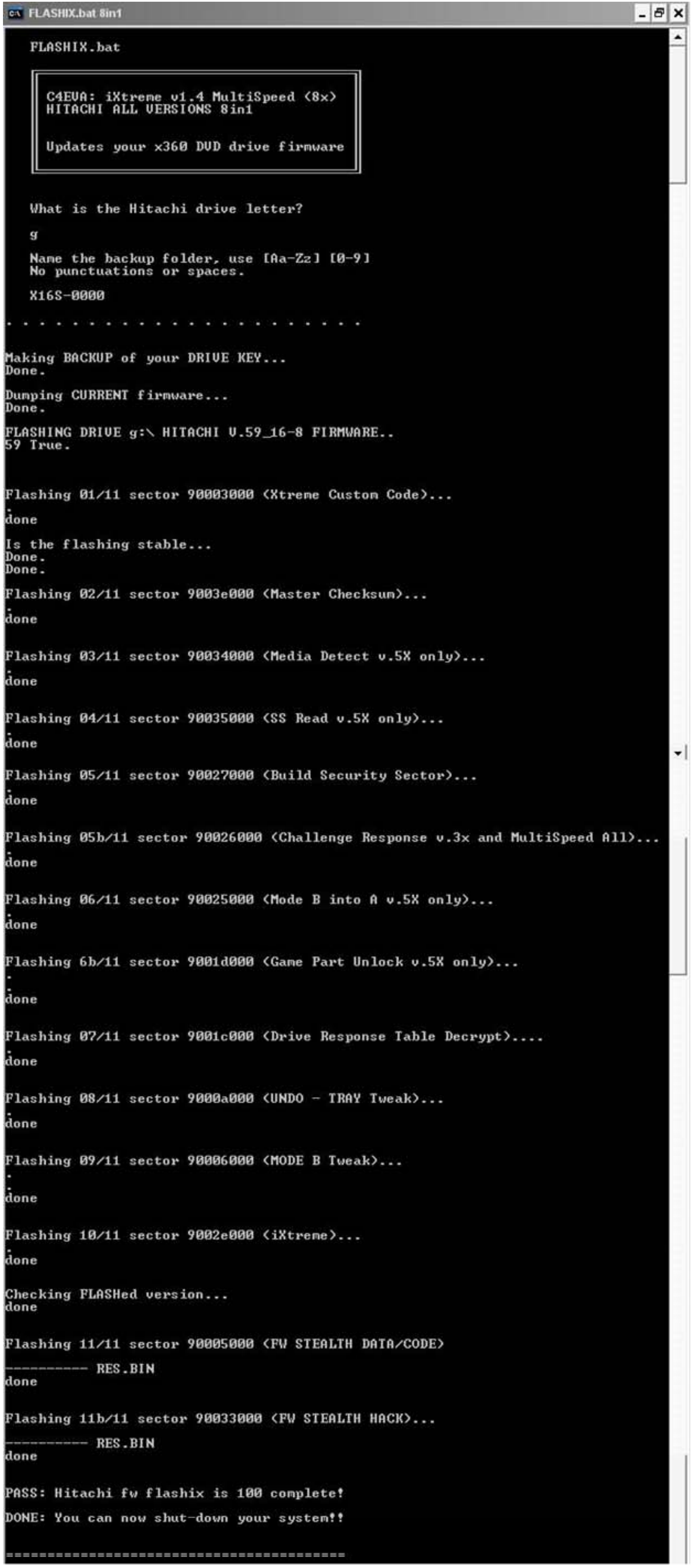
That should open a command prompt asking you for the Hitachi drive letter. So type in the drive letter of your Hitachi, and press enter.



```
FLASHIX.bat

 C4EVA: iXtreme v1.4 MultiSpeed (8x)
 HITACHI ALL VERSIONS 8in1

 Updates your x360 DVD drive firmware


What is the Hitachi drive letter?

g

Name the backup folder, use [Aa-Zz] [0-9]
No punctuations or spaces.

X16S-0000
```

Now it asks for the name you want for the folder to store the files in. This will be used to store your original firmware and hacked firmware. You should keep it short, just choose something easy to match to your drive, like your first name.

Wait until the process to finish. You will find a backup of your original firmware in the iXtreme1.4_Hitachi_C4EVA_rev1 folder. There will be a folder in there starting with X16S- and whatever you chose to name the folder. Zip or Rar this folder up and email it to yourself for backup purposes.



FLASHIX.bat 8in1

```
   FLASHIX.bat

     C4EVA: iXtreme v1.4 MultiSpeed (8x)
     HITACHI ALL VERSIONS 8in1

     Updates your x360 DVD drive firmware


   What is the Hitachi drive letter?

   g

   Name the backup folder, use [Aa-Zz] [0-9]
   No punctuations or spaces.

   X16S-0000

. . . . . . . . . . . . . . . . . . . . . .


Making BACKUP of your DRIVE KEY...
Done.

Dumping CURRENT firmware...
Done.

FLASHING DRIVE g:\ HITACHI V.59_16-8 FIRMWARE..
59 True.


Flashing 01/11 sector 90003000 (Xtreme Custom Code)...
.
done

Is the flashing stable...
Done.
Done.

Flashing 02/11 sector 9003e000 (Master Checksum)...
.
done


Flashing 03/11 sector 90034000 (Media Detect v.5X only)...
.
done


Flashing 04/11 sector 90035000 (SS Read v.5X only)...
.
done


Flashing 05/11 sector 90027000 (Build Security Sector)...
.
done


Flashing 05b/11 sector 90026000 (Challenge Response v.3x and MultiSpeed All)...
.
done


Flashing 06/11 sector 90025000 (Mode B into A v.5X only)...
.
done


Flashing 6b/11 sector 9001d000 (Game Part Unlock v.5X only)...
.
.
done


Flashing 07/11 sector 9001c000 (Drive Response Table Decrypt)....
.
done


Flashing 08/11 sector 9000a000 (UNDO - TRAY Tweak)...
.
done


Flashing 09/11 sector 90006000 (MODE B Tweak)...
.
.
done


Flashing 10/11 sector 9002e000 (iXtreme)...
.
done


Checking FLASHed version...
done

Flashing 11/11 sector 90005000 (FW STEALTH DATA/CODE)

---------- RES.BIN
done


Flashing 11b/11 sector 90033000 (FW STEALTH HACK)...

---------- RES.BIN
done


PASS: Hitachi fw flashix is 100 complete!

DONE: You can now shut-down your system!!


========================================
```

v0078FK Instructions

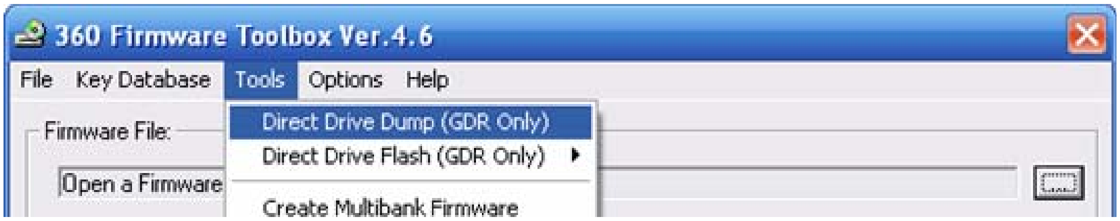
Video Tutorial Here

Once you have the v78 drive in ModeB using the Slax disc and detected in Windows, follow these instructions for flashing the v0078FK drive.

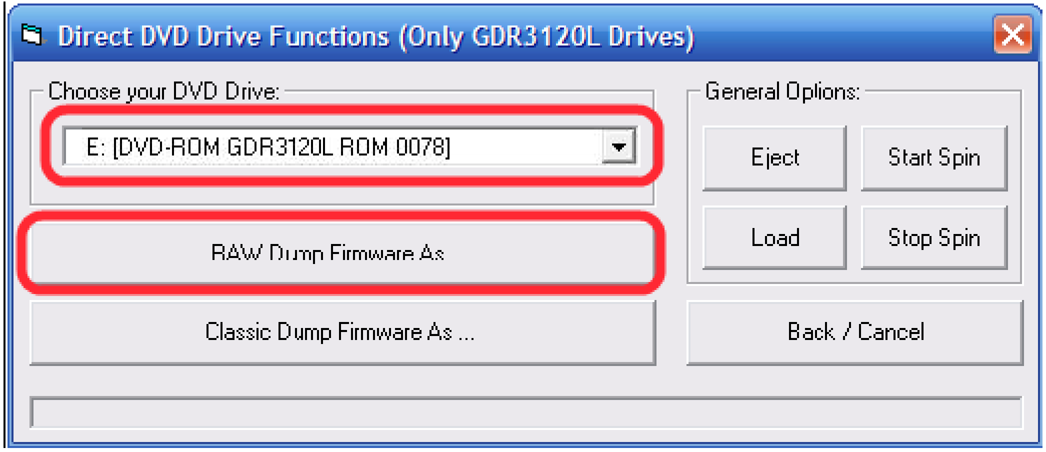
1. Download the latest version of Maximus 360 Firmware Toolbox from Xbins. It is a .NET application that requires Microsoft .NET framework v2 to run properly. It is available on Xbins in /XBOX 360/firmware/firmware tools/Firmware Toolbox/
2. Insert an original retail game or movie DVD into the Hitachi drive. Remember that the Hitachi drive in ModeB likes to automatically eject after a few seconds. Follow one of these methods to keep the drive closed.

- With the Hitachi drive tray open, press the eject button once, and then push the tray in manually or...
- Press eject a third time, while the tray is closing

3. Wait for Windows to recognize the disc inserted, then close out of any autoruns caused by the disc.
4. Open 360 Firmware Toolbox.
5. Select Tools > Direct Drive Dump (GDR Only)


360 Firmware Toolbox Ver.4.6
File
Key Database
Tools
Options
Help
Firmware File:
Open a Firmware
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware

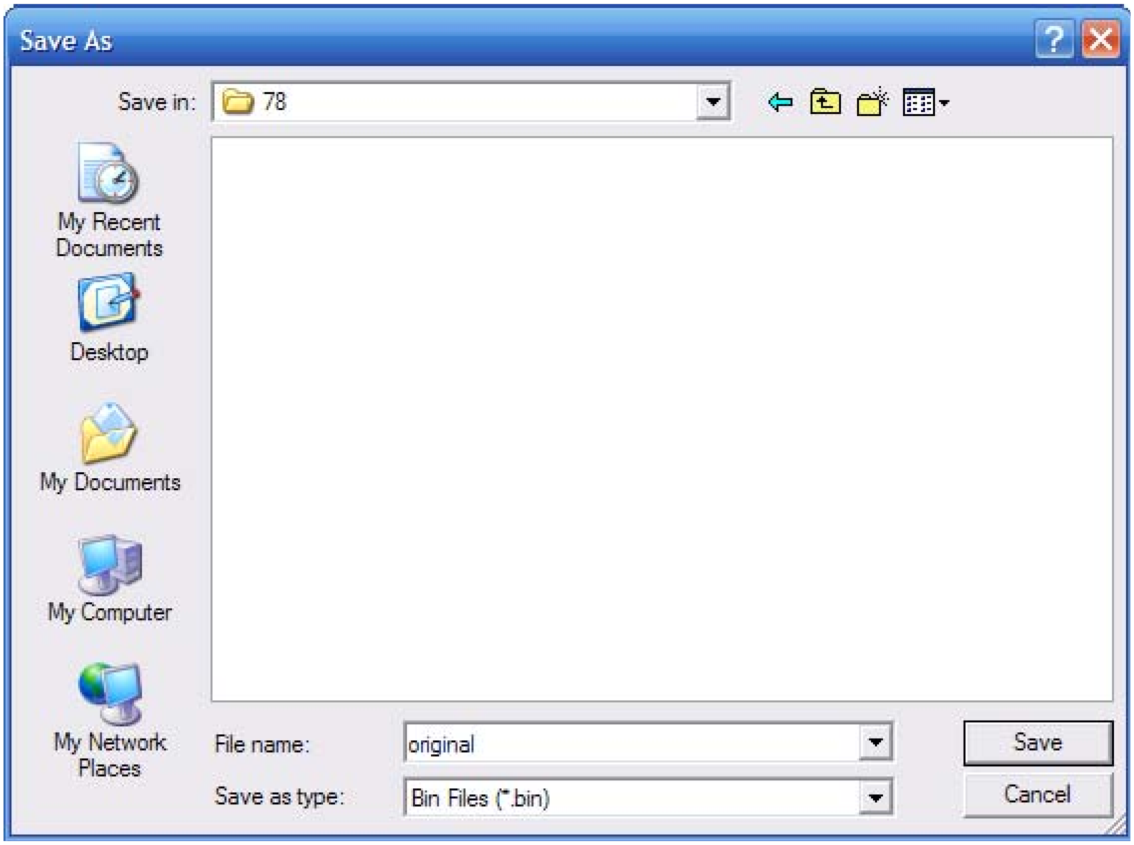
6. Make sure your Hitachi drive is selected in the drop-down list
7. Select “Raw Dump Firmware As…”



Direct DVD Drive Functions (Only GDR3120L Drives)

Choose your DVD Drive: E: [DVD-ROM GDR3120L ROM 0078]

8. Save the original firmware as original.bin somewhere safe



Save As

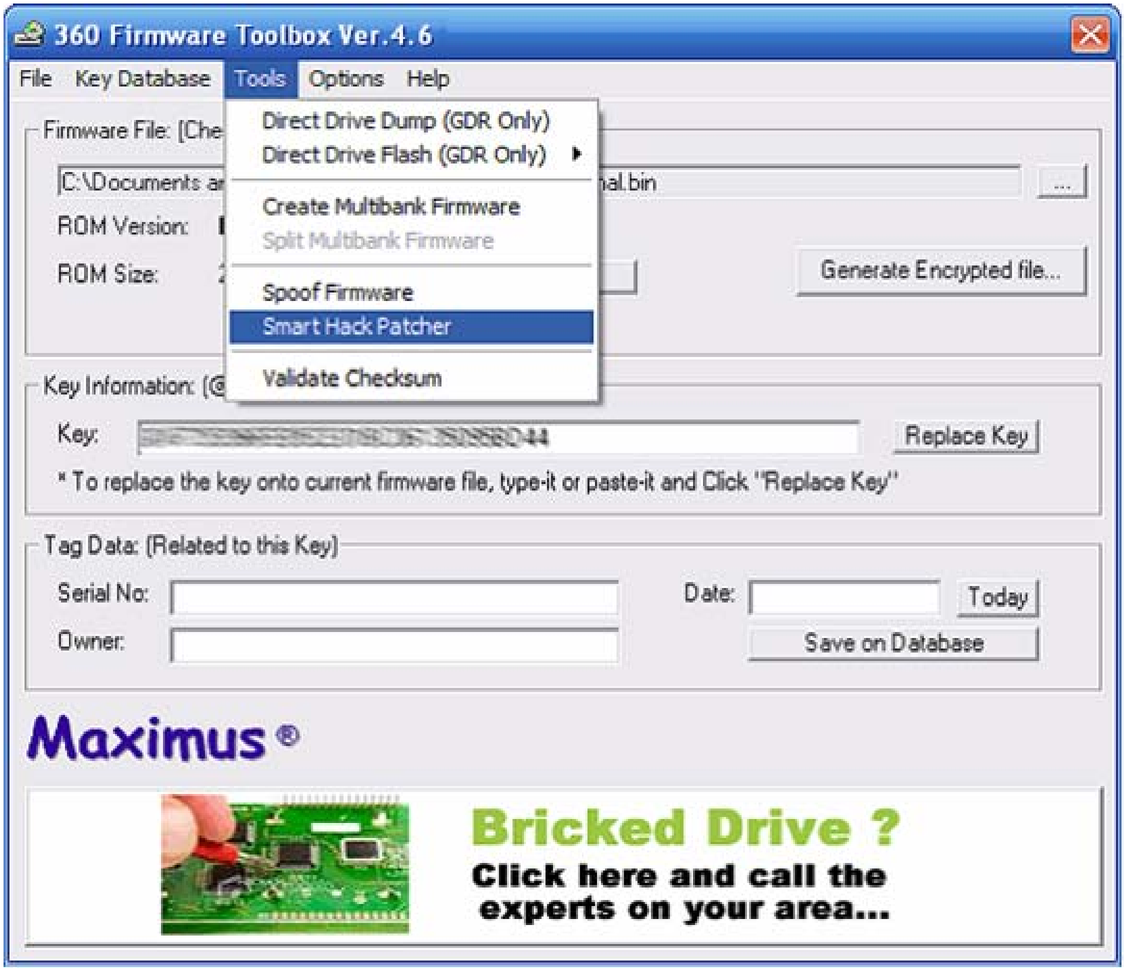
Save in: 78

File name: original

Save as type: Bin Files (*.bin)

9. The program will tell you that your firmware has been dumped and asks if you want to open it, select "Yes"
10. Make sure the key displayed looks fairly unique, with no multiple FF or 00 bytes. You may also want to dump the firmware a couple times and make sure the key is the same for each dump.
11. Select Tools > Smart Hack Patcher

360MODS

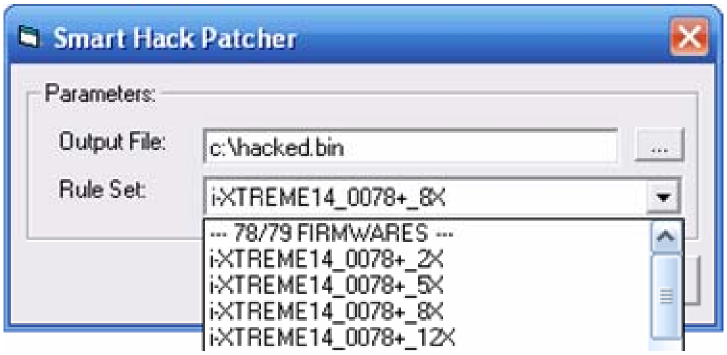


C:\Documents ar … nal.bin

Key: [redacted]

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

12. Read the warning and accept it
13. On the line labeled output file, click the box to the right with the ellipsis (three dots) and save the file as hacked.bin where you saved the original firmware



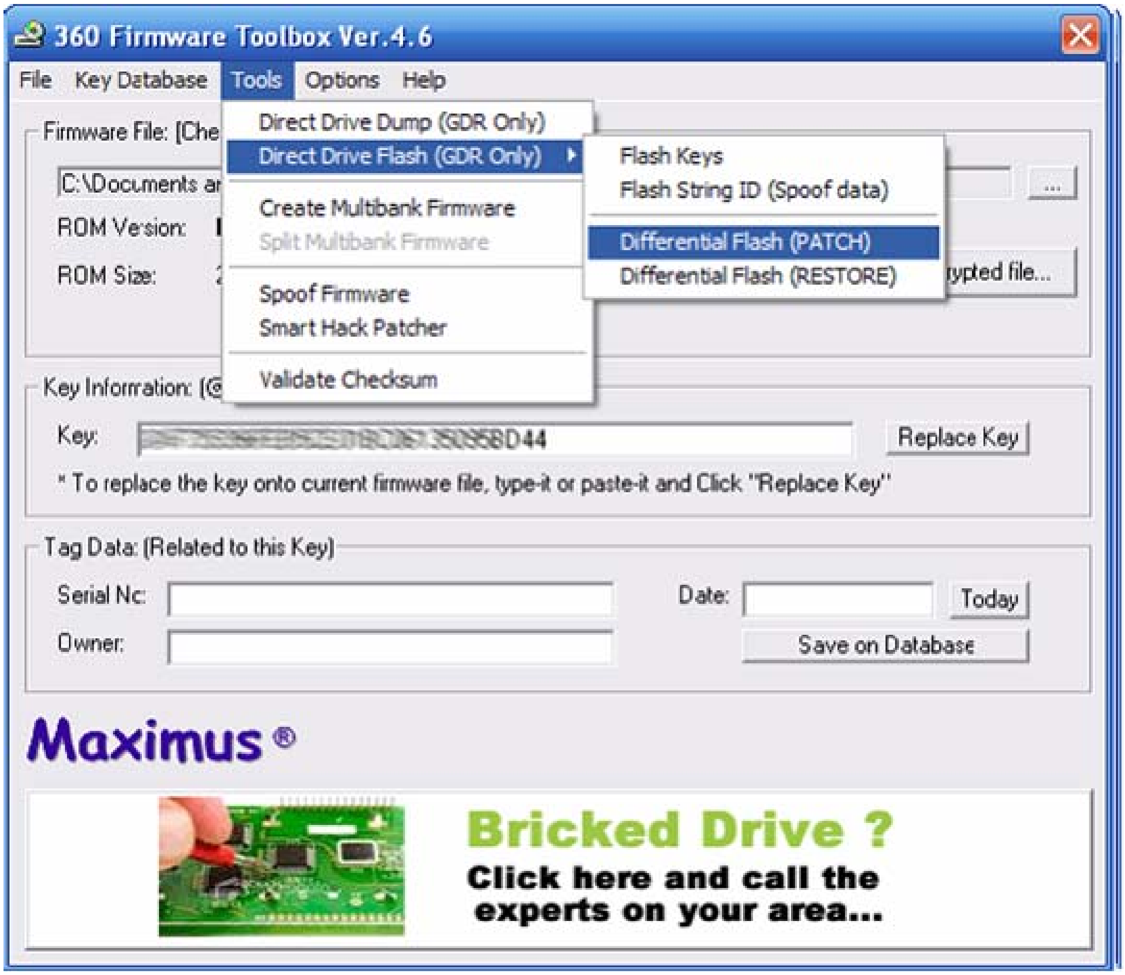
Output File: c:\hacked.bin

Rule Set: iXTREME14_0078+_8X

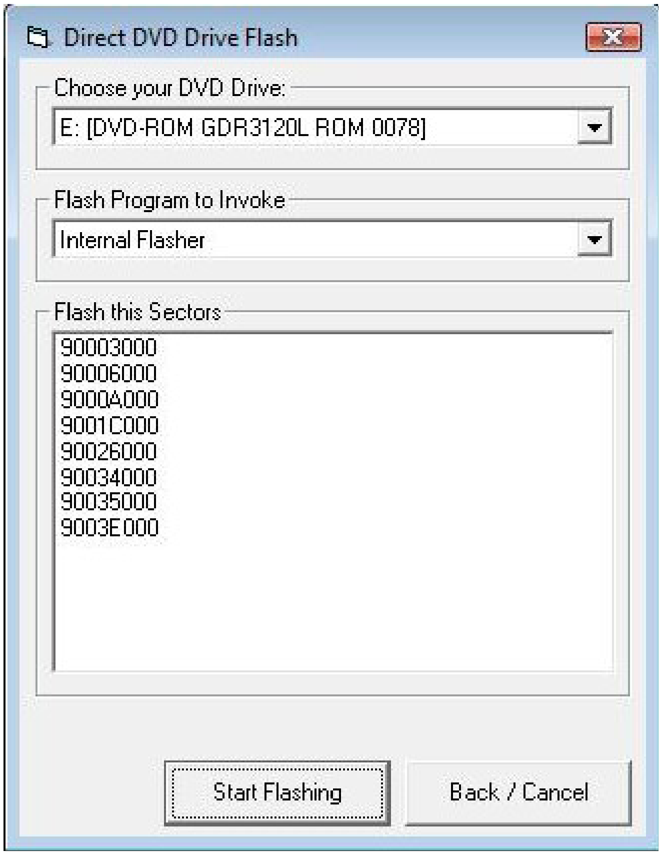
14. Select one of the v78 firmwares, 2x, 5x, 8x, and 12x are the different read speeds for the firmware.

You now have a choice between different read speed firmwares. There are four available options. There is a firmware that reads backups at 2x speed, 5x speed, 8x speed, and 12x speed. There is no “right” choice, it is purely up to preference. 12x is the normal read speed of the drive. Higher speeds are louder, and may have trouble reading backups if you have a poor quality laser, burner, or media. Lower speeds are much quieter, and may read better, but you will have slower load times.

15. Select “Generate File”
16. It should say the hacked firmware was created, and asks if you want to open it, again select “Yes”
17. Verify that the key is still the same as before
18. Select Tools > Direct Drive Flash (GDR Only)
19. Select Differential Flash (Patch)


360 Firmware Toolbox Ver.4.6
File
Key Database
Tools
Options
Help
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware
Split Multibank Firmware
Spoof Firmware
Smart Hack Patcher
Validate Checksum
Flash Keys
Flash String ID (Spoof data)
Differential Flash (PATCH)
Differential Flash (RESTORE)
Firmware File: [Che
C:\Documents ar
ROM Version:
ROM Size:
...
ypted file...
Key Information: (©
Key: [redacted]
Replace Key
* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"
Tag Data: (Related to this Key)
Serial No:
Owner:
Date:
Today
Save on Database
Maximus ®
Bricked Drive ?
Click here and call the experts on your area...

20. Check that your Hitachi drive is selected in the drop-down list
21. Hit “Read and Detect Differences”
22. Select “Start Flashing” and let it finish



Direct DVD Drive Flash

Choose your DVD Drive: E: [DVD-ROM GDR3120L ROM 0078]

Flash Program to Invoke: Internal Flasher

Flash this Sectors

```
90003000
90006000
9000A000
9001C000
90026000
90034000
90035000
9003E000
```

23. Close out of the program, hook the drive back up to the 360, and test it out.

Email yourself the original.bin and hacked.bin for backup purposes.

v0079 Instructions

The Hitachi v0079FK and v0079FL drives have extra security in place that makes flashing the drives using software alone currently not possible. There are two ways to flash a v79 drive, but both require soldering and both are difficult.

Method 1 – Modchip

There are modchips for the v79 drives that, when fitted, allow you to use Maximus 360 Firmware Toolbox to flash the drive. There are two different modchips for v79 drives. The first is a Maximus 79 Pass Key. The second is the Infectus FLASH079. The features of both chips are very similar, the main point being that it allows you to flash the v79 drive. Both chips will also boot the drive into ModeB if the chip detects the drive is still flashed with the original firmware. So after fitting the chip, you shouldn't need to worry about ModeB, just powering the drive should put it in ModeB. With both chips, the modchip needs to remain installed if you plan on upgrading the drive firmware in the future.

The official 79 Pass Key site is:
http://www.maximusgames.net/79passkeyinfo.php

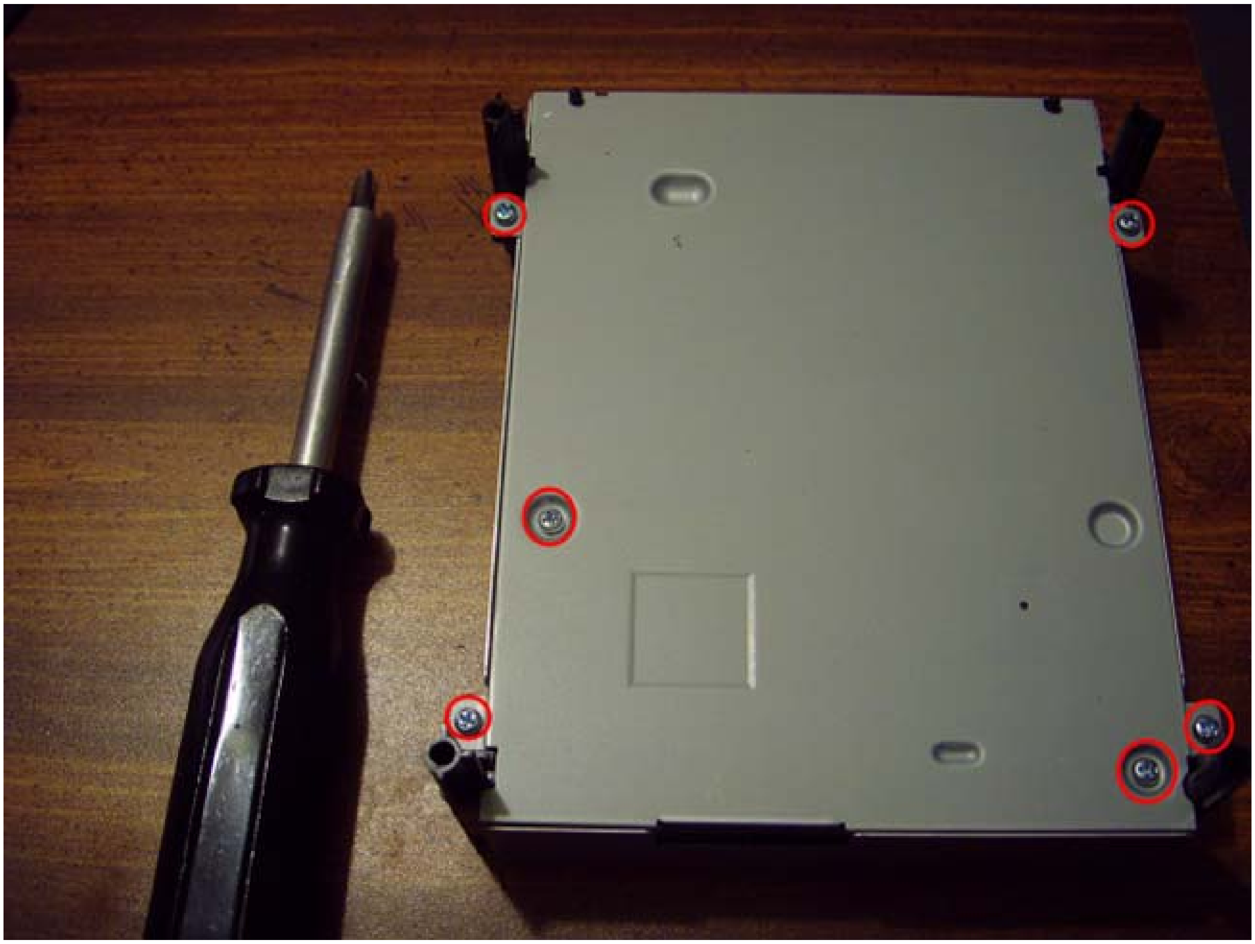
Here you will find links to resellers, installation diagrams, and tutorials.

The official FLASH079 site is:
http://www.infectus.biz/news.php?news=2007-09-28%2012.09.13

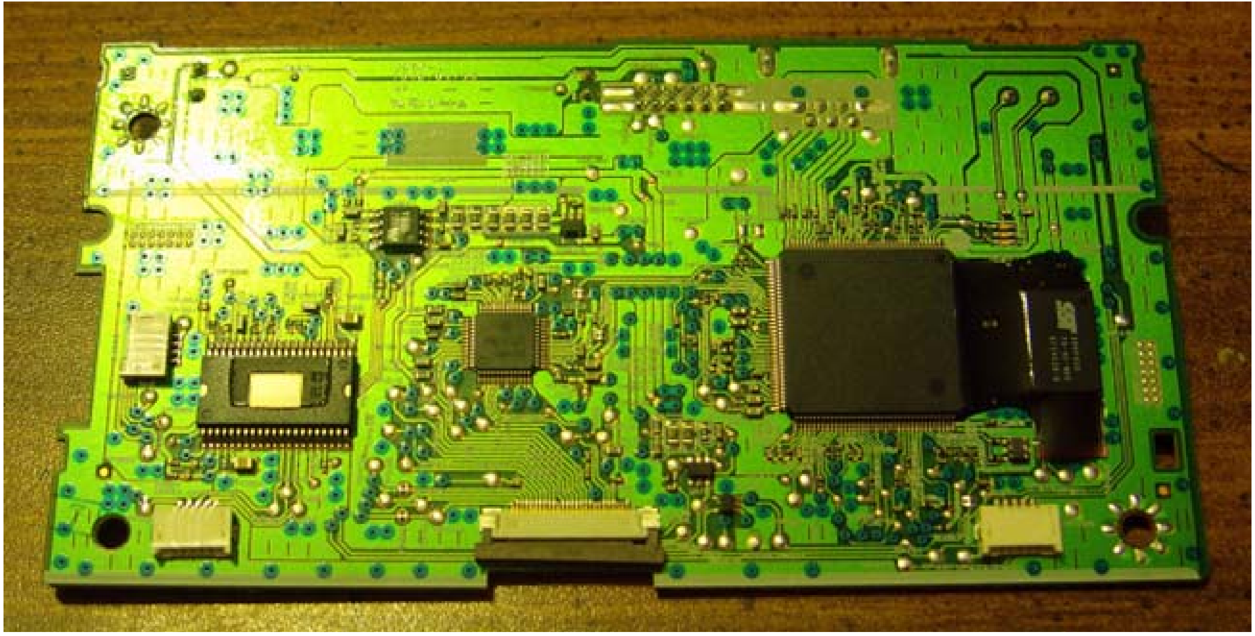
You can purchase the FLASH079 chip from:
http://www.hardstore.com/default.asp?cmd=getProd&cmdID=9204&idC=623&pType=-1

Purchase whichever chip you prefer. I know that with the 79 Pass Key, there is an option of adding a fcc ribbon connector socket and flat cable for usually around $6 extra. That choice is up to you.

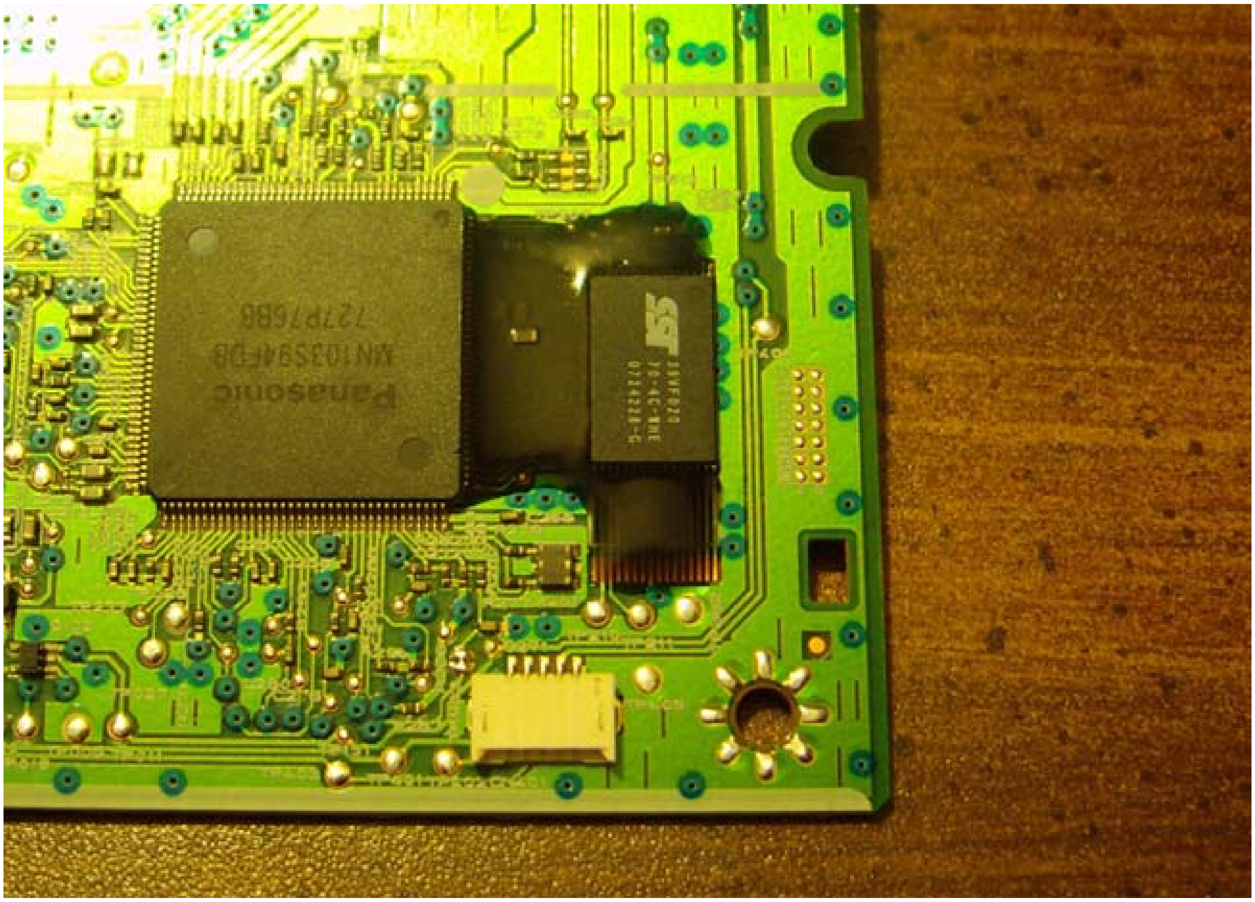
You will need to open up the DVD drive using a Philips head screwdriver and remove the printed circuit board.



The drive PCB should look like this.



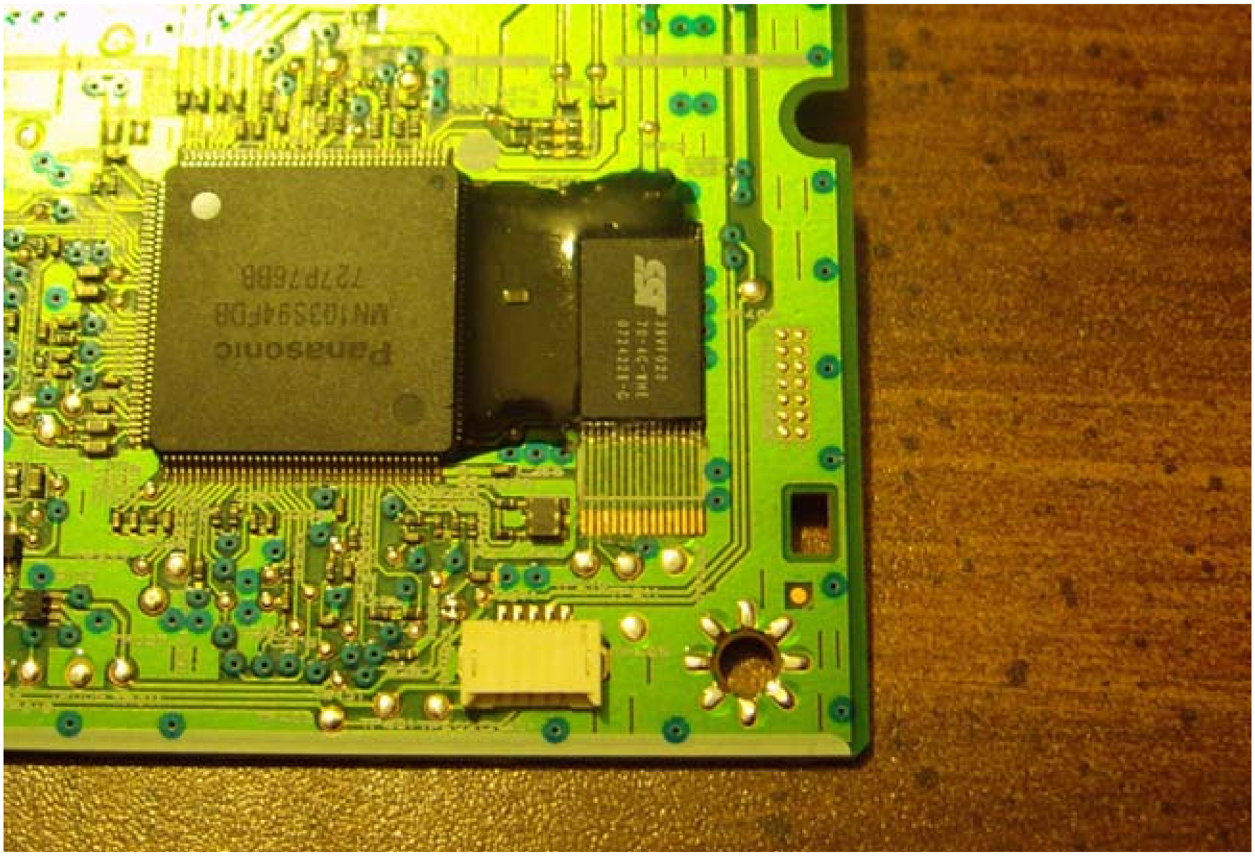
On the right, you can see the SST39VF020 firmware chip. The black material surrounding the chip is some form of epoxy or potting solution.



This epoxy will need to be removed on the bottom side of this firmware chip. We do not need to remove all of it, just enough to expose the copper pads underneath, since this is where the modchip will be soldered to. The best method for removing the epoxy is by using a heatgun. A heatgun is not the same thing as a hair dryer, it is much hotter. Generally they are used for removing paint, so you should be able to buy one from a home improvement store or online. You will also need a scalpel or hobby knife (like an Xacto razor) to remove the epoxy.

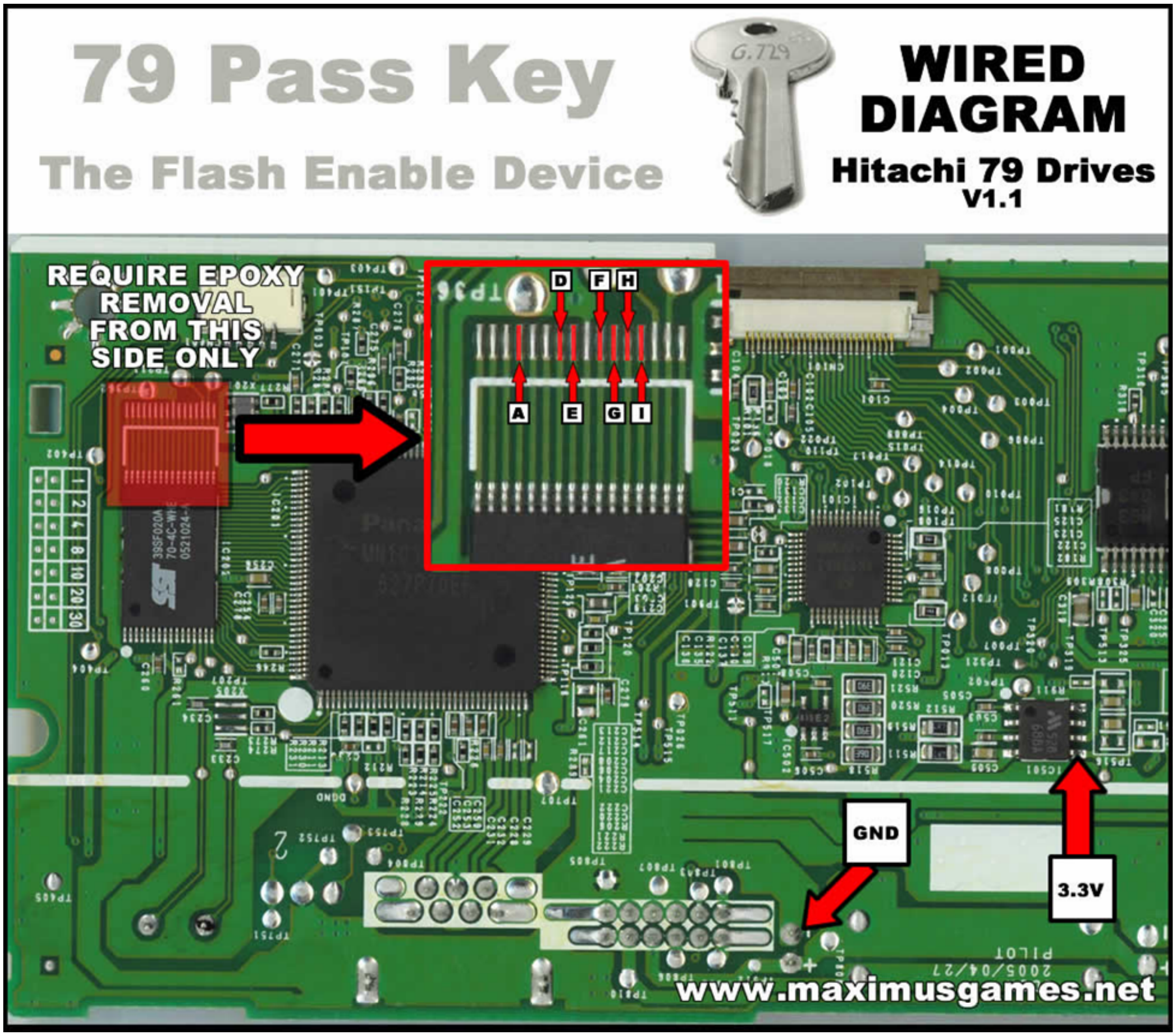
Use the heatgun to heat up the epoxy to around 120 degrees Celsius. Then, use the razor blade to get underneath the epoxy and it should flake off. A video of the black epoxy removal procedure can be found at http://teammodfreakz.hostwq.net/_menue/Extras.php

Hopefully you end up with something like this.



Once the epoxy has been removed, you can install the modchip.

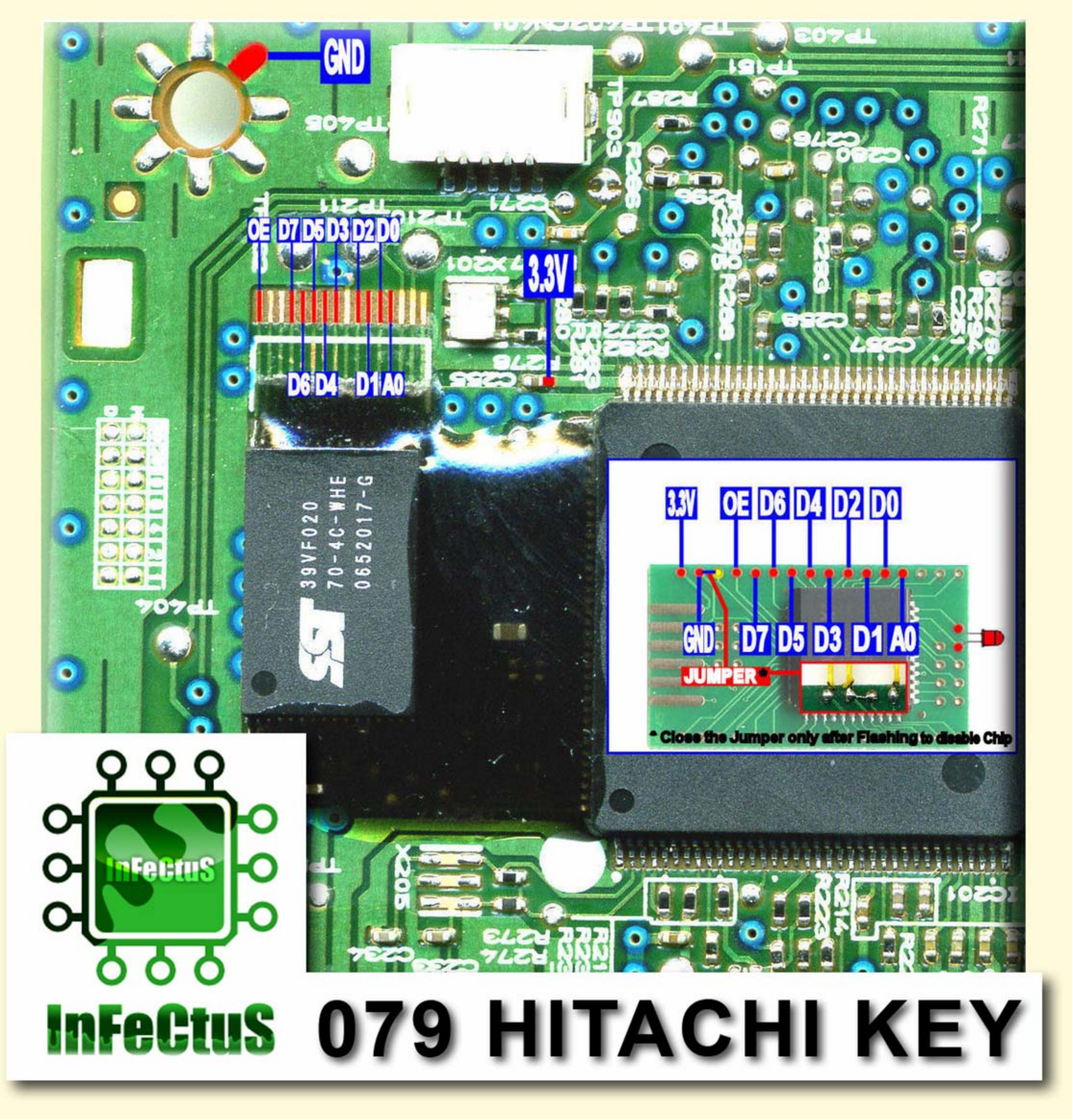
If you are installing a 79 Pass Key, using wires, please use this diagram.



If you are installing the 79 Pass Key with the flat cable, please download the official tutorial here or here.

If you are installing the FLASH079, please use this diagram.

360 MODS


GND
OE D7 D5 D3 D2 D0
3.3V
D6 D4 D1 A0
SST
39VF020
70-4C-WHE
0652017-G
3.3V OE D6 D4 D2 D0
GND D7 D5 D3 D1 A0
JUMPER
* Close the Jumper only after Flashing to disable Chip
InFeCtuS
InFeCtuS
079 HITACHI KEY

v0079 Instructions

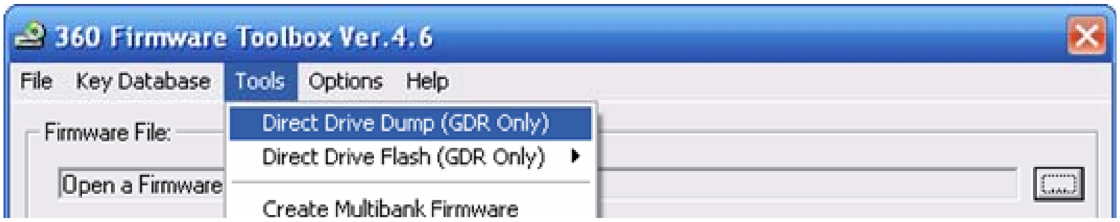
Video Tutorial Here (video is for flashing v78 – it is the same procedure)

A v0079 drive fitted with a 79 Pass Key or FLASH079 is flashed with Maximus 360 Firmware Toolbox. The instructions are the same as flashing a v0078FK drive.

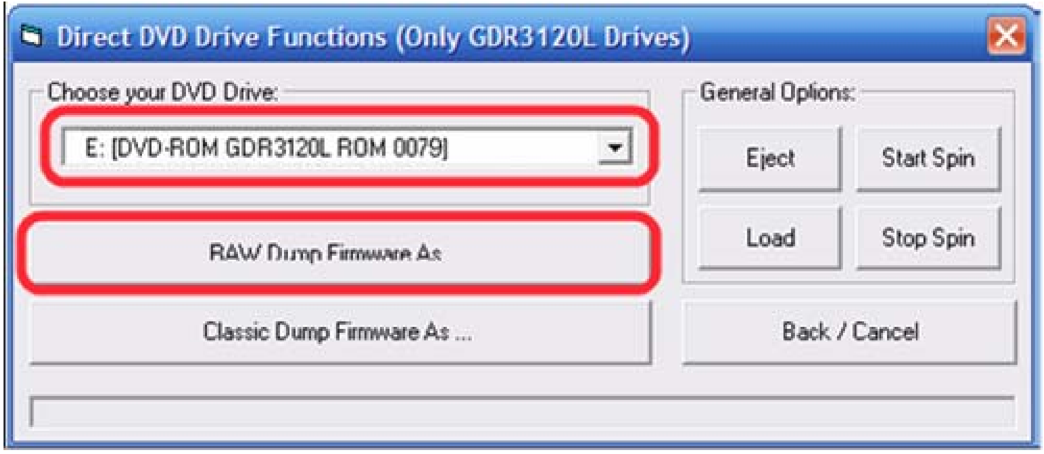
1. Download the latest version of Maximus 360 Firmware Toolbox from Xbins. It is a .NET application that requires Microsoft .NET framework v2 to run properly. It is available on Xbins in /XBOX 360/firmware/firmware tools/Firmware Toolbox/
2. Insert an original retail game or movie DVD into the Hitachi drive. Remember that the Hitachi drive in ModeB likes to automatically eject after a few seconds. Follow one of these methods to keep the drive closed.

- With the Hitachi drive tray open, press the eject button once, and then push the tray in manually or...
- Press eject a third time, while the tray is closing

3. Wait for Windows to recognize the disc inserted, then close out of any autoruns caused by the disc.
4. Open 360 Firmware Toolbox.
5. Select Tools > Direct Drive Dump (GDR Only)


360 Firmware Toolbox Ver.4.6
File
Key Database
Tools
Options
Help
Firmware File:
Open a Firmware
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware

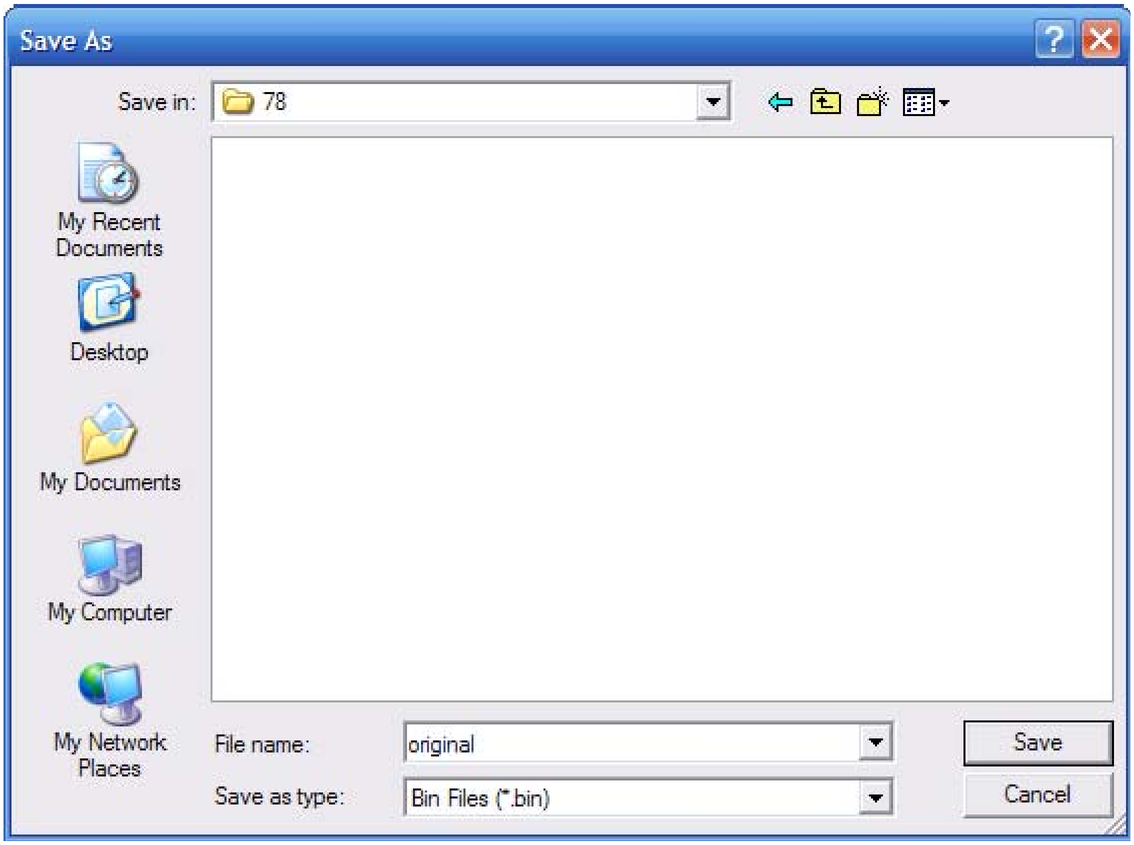
6. Make sure your Hitachi drive is selected in the drop-down list
7. Select "Raw Dump Firmware As…"



Direct DVD Drive Functions (Only GDR3120L Drives)

Choose your DVD Drive: E: [DVD-ROM GDR3120L ROM 0079]

8. Save the original firmware as original.bin somewhere safe



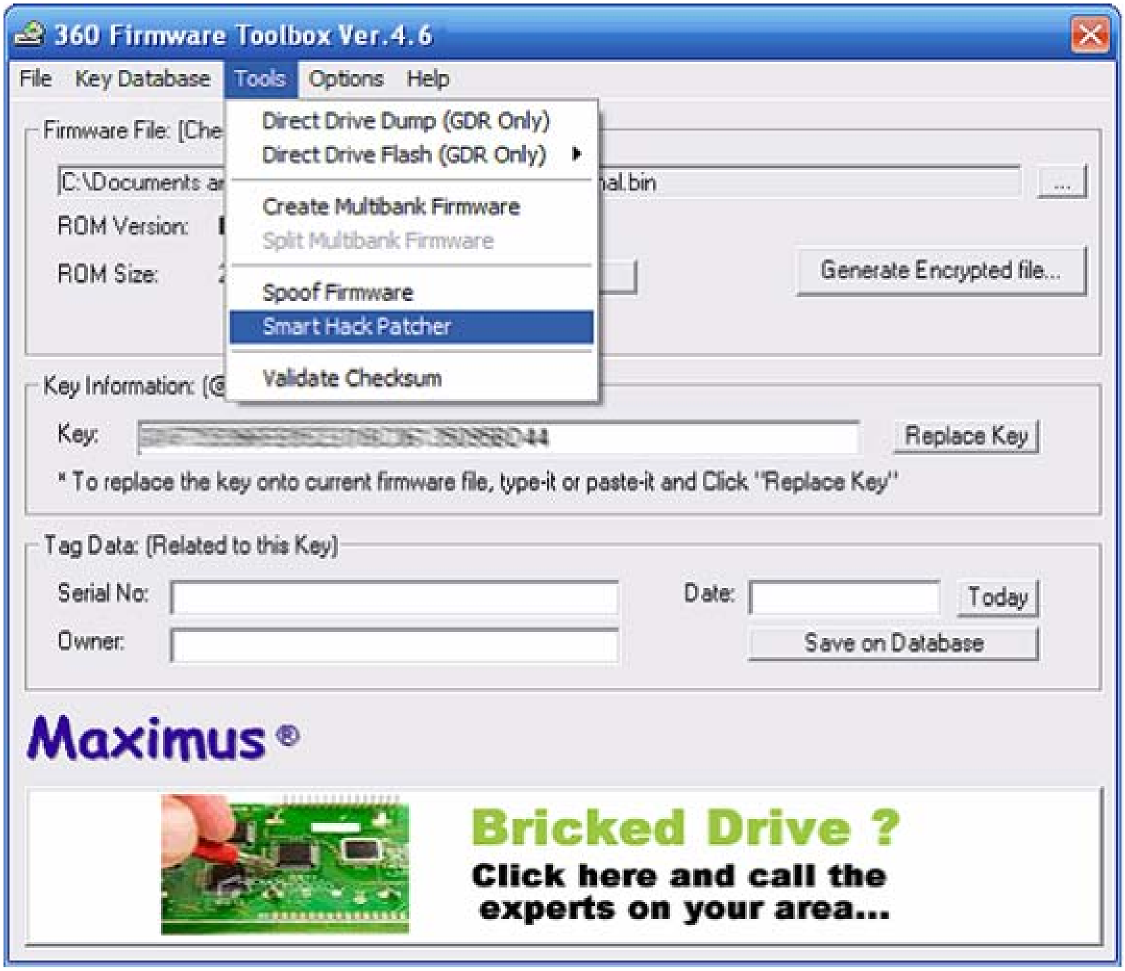
Save As

Save in: 78

File name: original

Save as type: Bin Files (*.bin)

9. The program will tell you that your firmware has been dumped and asks if you want to open it, select “Yes”
10. Make sure the key displayed looks fairly unique, with no multiple FF or 00 bytes. You may also want to dump the firmware a couple times and make sure the key is the same for each dump.
11. Select Tools > Smart Hack Patcher


360 Firmware Toolbox Ver.4.6
File
Key Database
Tools
Options
Help
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware
Split Multibank Firmware
Spoof Firmware
Smart Hack Patcher
Validate Checksum
Generate Encrypted file...
Replace Key
Today
Save on Database
Maximus®
Bricked Drive ?
Click here and call the experts on your area...

Firmware File: [Che

C:\Documents ar …nal.bin

ROM Version:

ROM Size:

Key Information: (@

Key:

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

Tag Data: (Related to this Key)

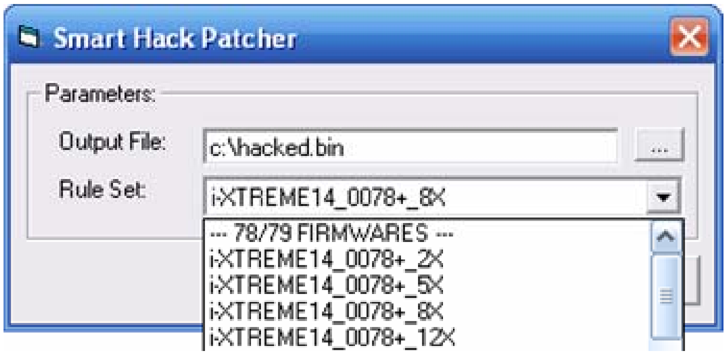
Serial No:

Owner:

Date:

12.Read the warning and accept it

13.On the line labeled output file, click the box to the right with the ellipsis (three dots) and save the file as hacked.bin where you saved the original firmware



Parameters:

Output File: c:\hacked.bin

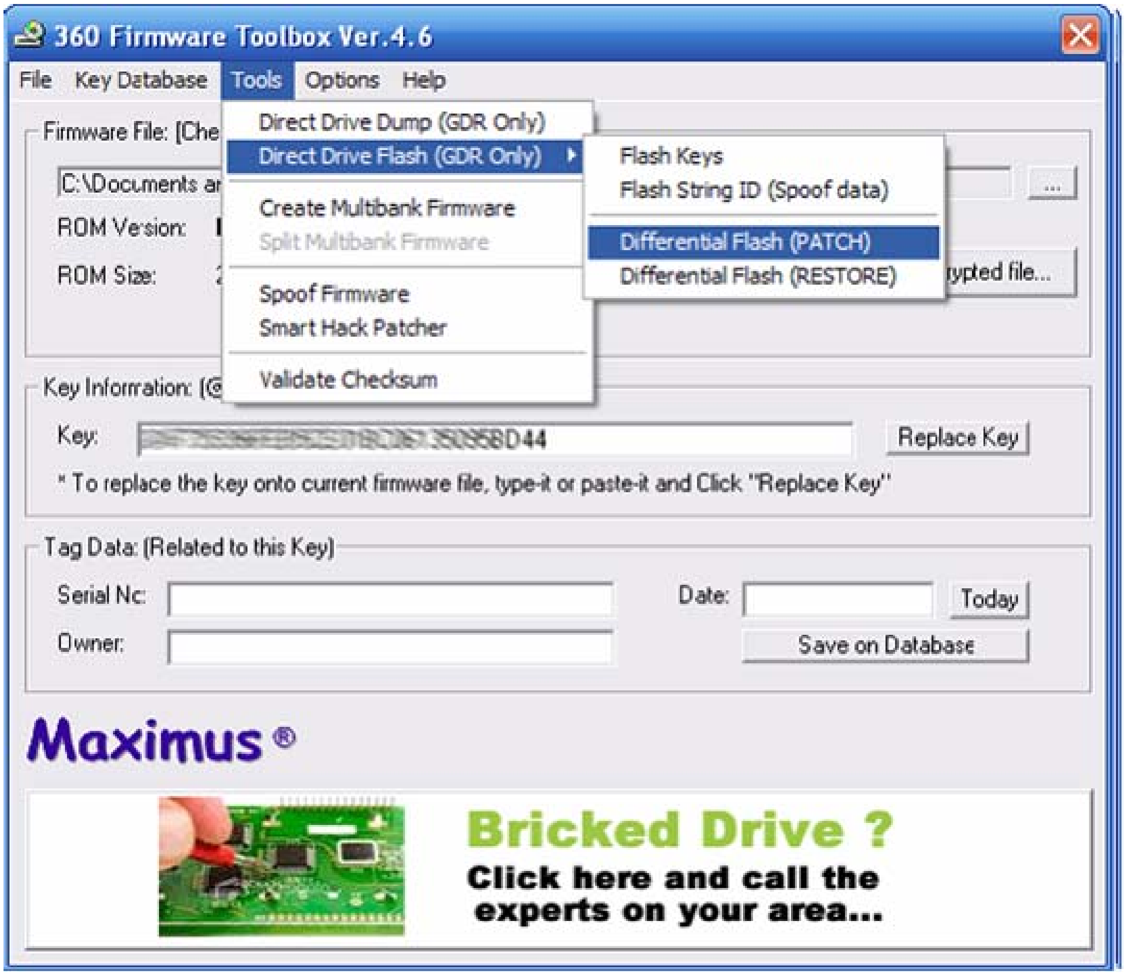
Rule Set: iXTREME14_0078+_8X

--- 78/79 FIRMWARES ---
iXTREME14_0078+_2X
iXTREME14_0078+_5X
iXTREME14_0078+_8X
iXTREME14_0078+_12X

14.Select one of the v78+ firmwares, 2x, 5x, 8x, and 12x are the different read speeds for the firmware.

You now have a choice between different read speed firmwares. There are four available options. There is a firmware that reads backups at 2x speed, 5x speed, 8x speed, and 12x speed. There is no “right” choice, it is purely up to preference. 12x is the normal read speed of the drive. Higher speeds are louder, and may have trouble reading backups if you have a poor quality laser, burner, or media. Lower speeds are much quieter, and may read better, but you will have slower load times.

15. Select “Generate File”
16. It should say the hacked firmware was created, and asks if you want to open it, again select “Yes”
17. Verify that the key is still the same as before
18. Select Tools > Direct Drive Flash (GDR Only)
19. Select Differential Flash (Patch)

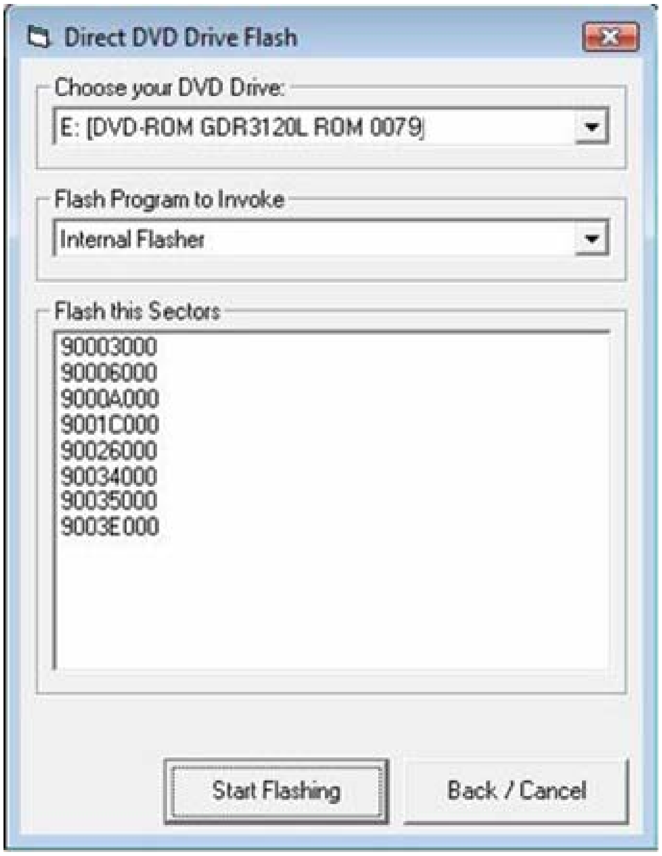


C:\Documents ar

Key: [redacted]350958D44

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

20. Check that your Hitachi drive is selected in the drop-down list
21. Hit “Read and Detect Differences”
22. Select “Start Flashing” and let it finish



Direct DVD Drive Flash

Choose your DVD Drive: E: [DVD-ROM GDR3120L ROM 0079]

Flash Program to Invoke: Internal Flasher

Flash this Sectors

```
90003000
90006000
9000A000
9001C000
90026000
90034000
90035000
9003E000
```

23. Close out of the program, hook the drive back up to the 360, and test it out.

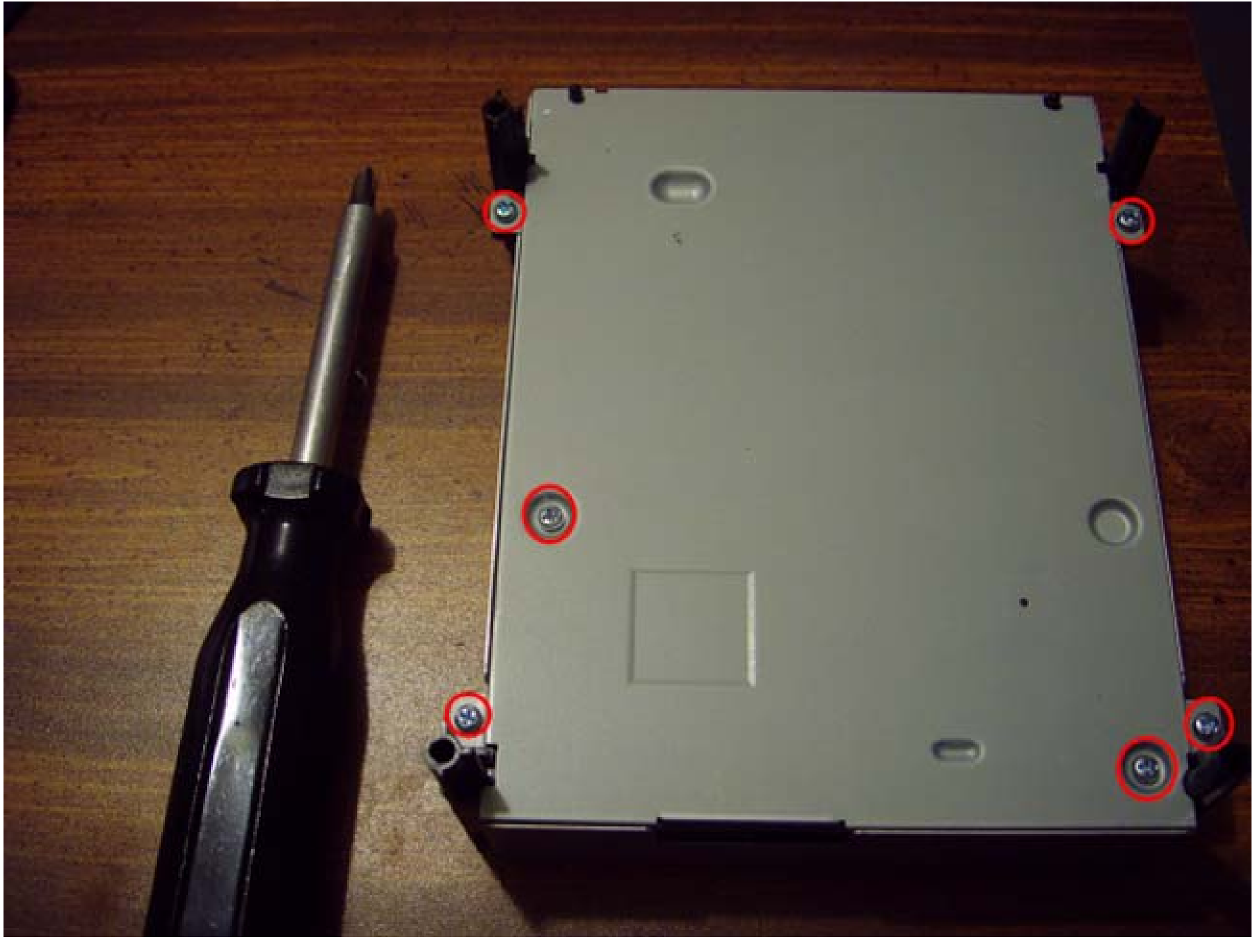
Email yourself the original.bin and hacked.bin for backup purposes.

Method 2 – Using an External Programmer

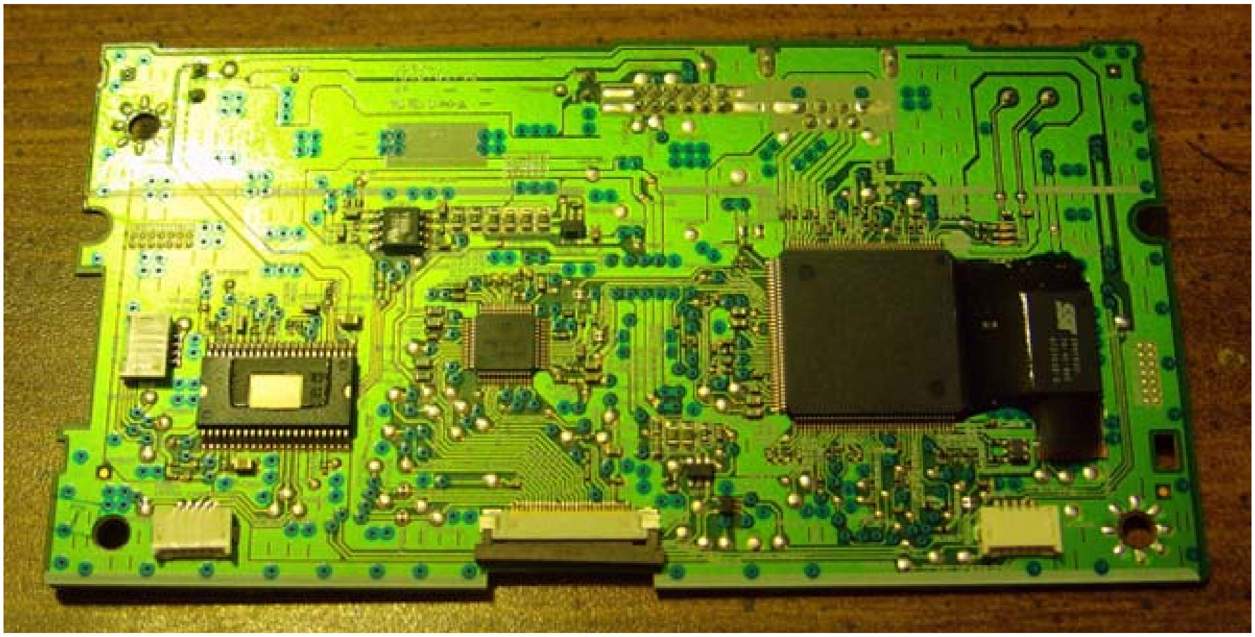
Another way to flash the drive firmware is by desoldering the TSOP firmware chip and using an external Willem programmer. The chip is then resoldered back to the drive. This process should not be taken lightly. Many would say that this is more difficult, and at a higher risk because the PCB or chip can easily be damaged. You will need a Willem programmer and 14mm TSOP32 socket adapter for this method. Those alone are more expensive than either of the v79 modchips. The advantage this has to the modchips would be for people who will be flashing many v79 drives. With a programmer, you can use the v78 firmware, and then firmware upgrades in the future can be flashed like the v0078FK, using software alone.

Many people sell Willem programmers and TSOP sockets on ebay. Do a search for "14mm TSOP32" and you will probably find the socket and a programmer together in a combo. If you do some research you can find sites that sell the programmer and socket, Sivava is the only one I know of.

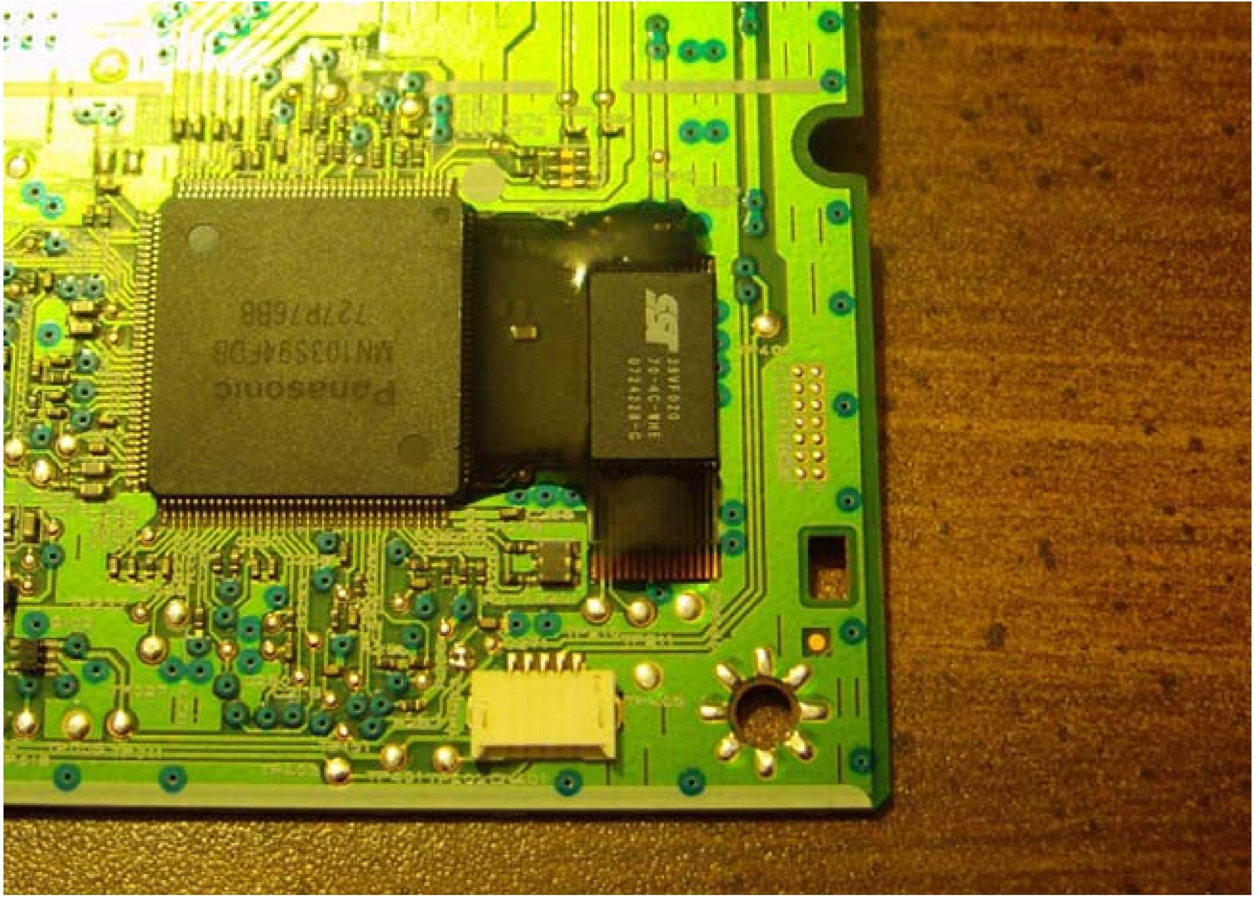
You will need to open up the DVD drive using a Philips head screwdriver and remove the printed circuit board.



The drive PCB should look like this.



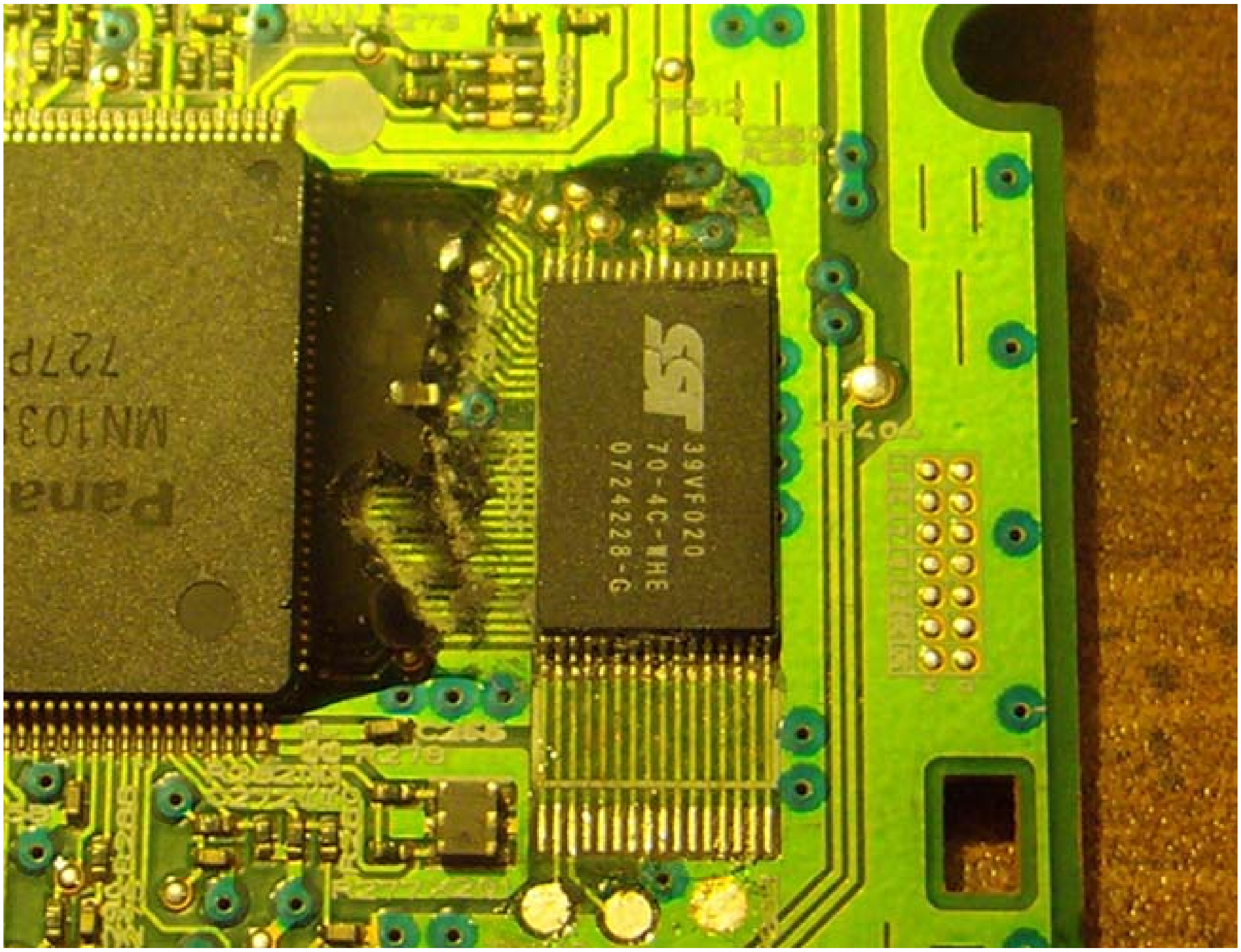
On the right, you can see the SST39VF020 firmware chip. The black material surrounding the chip is some form of epoxy or potting solution.



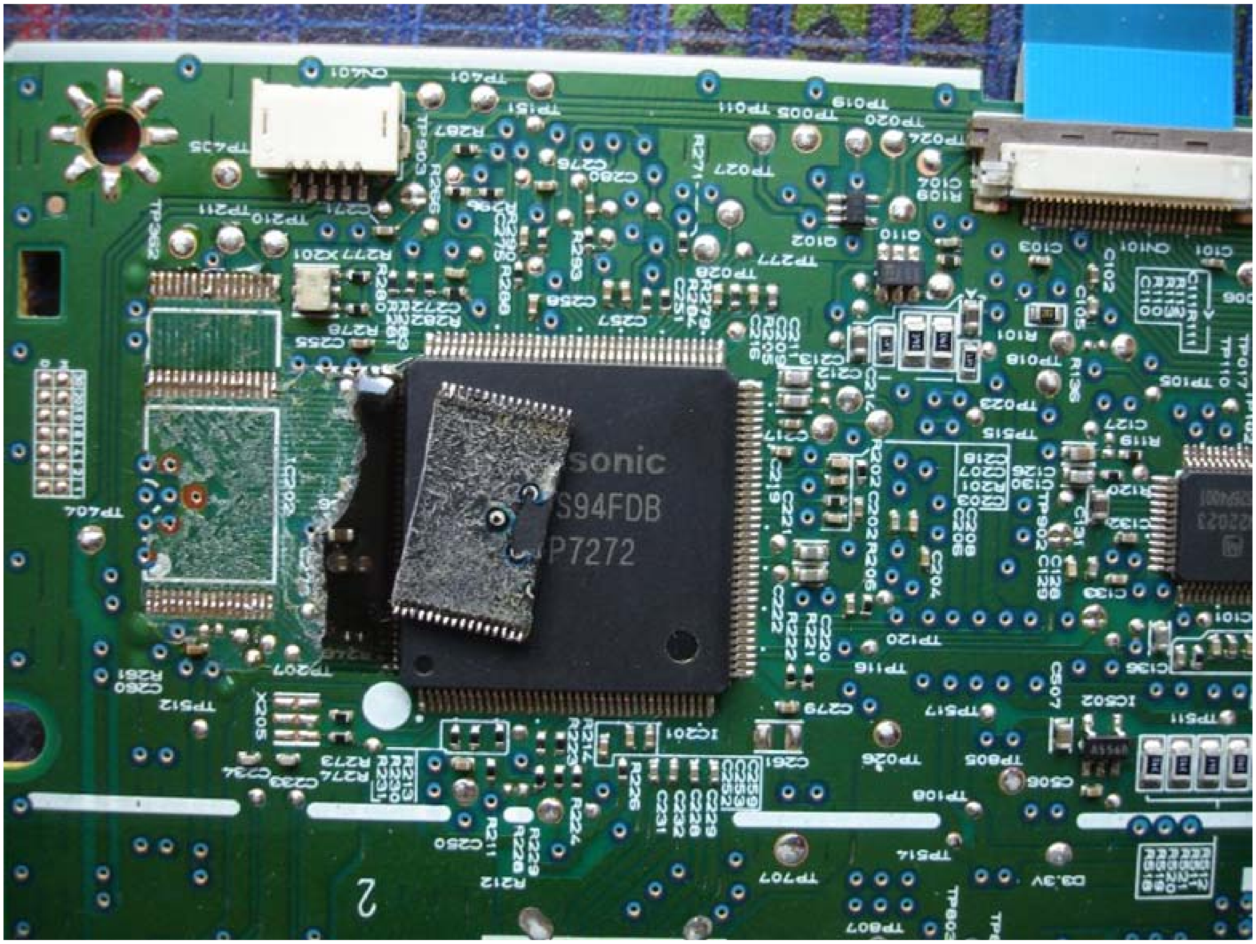
This epoxy will need to be removed everywhere around the chip. The best method for removing the epoxy is by using a heatgun. A heatgun is not the same thing as a hair dryer, it is much hotter. Generally they are used for removing paint, so you should be able to buy one from a home improvement store or online. You will also need a scalpel or hobby knife (like an Xacto razor) to remove the epoxy.

Use the heatgun to heat up the epoxy to around 120 degrees Celsius. Then, use the razor blade to get underneath the epoxy and it should flake off. A video of the black epoxy removal procedure can be found at http://teammodfreakz.hostwq.net/_menue/Extras.php

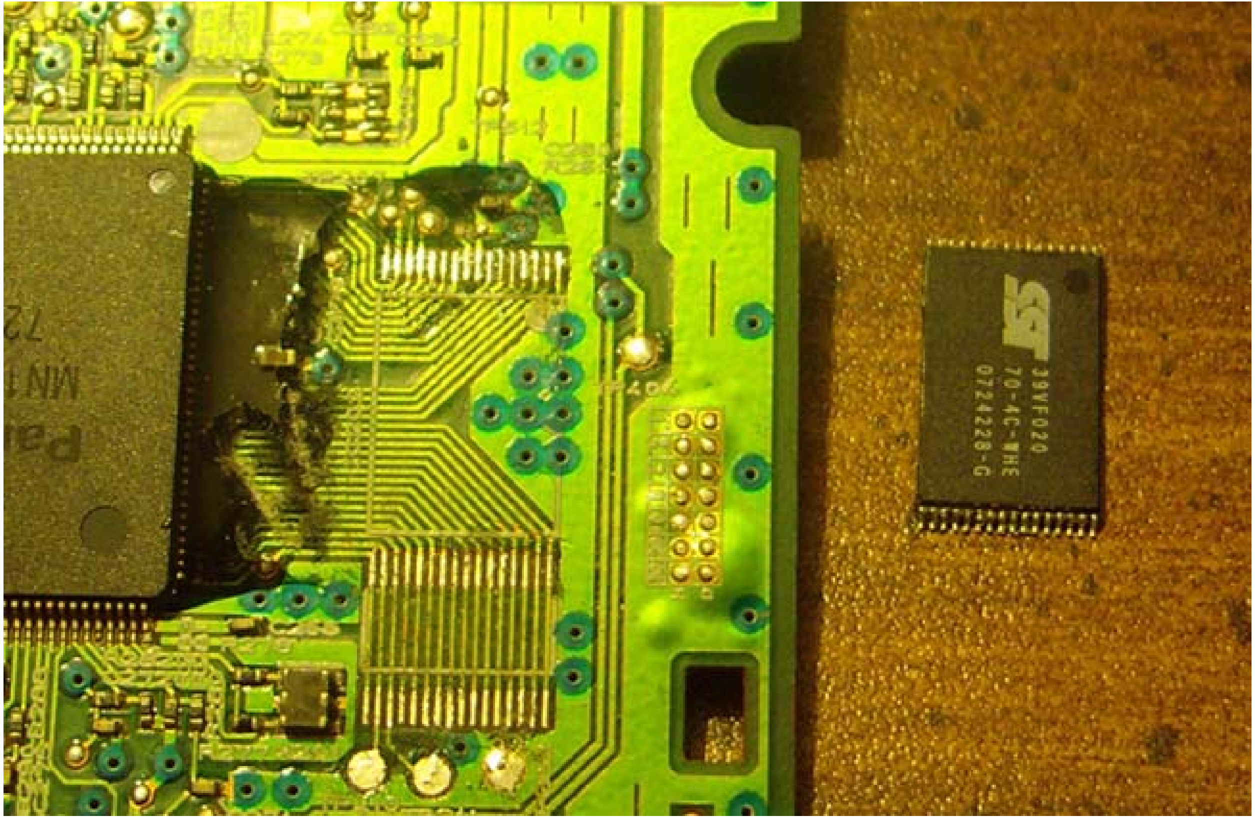
Hopefully you end up with something like this.



The chip must then be desoldered carefully. This is probably the riskiest and most difficult part of the entire procedure. The Modfreakz video shows you two methods for removing the chip, with a pyropen or some other heat source, or by flooding with a soldering iron. One important note I would like to make is that for every v79 drive I have done, there has been epoxy underneath the firmware chip. Just look at the following image:

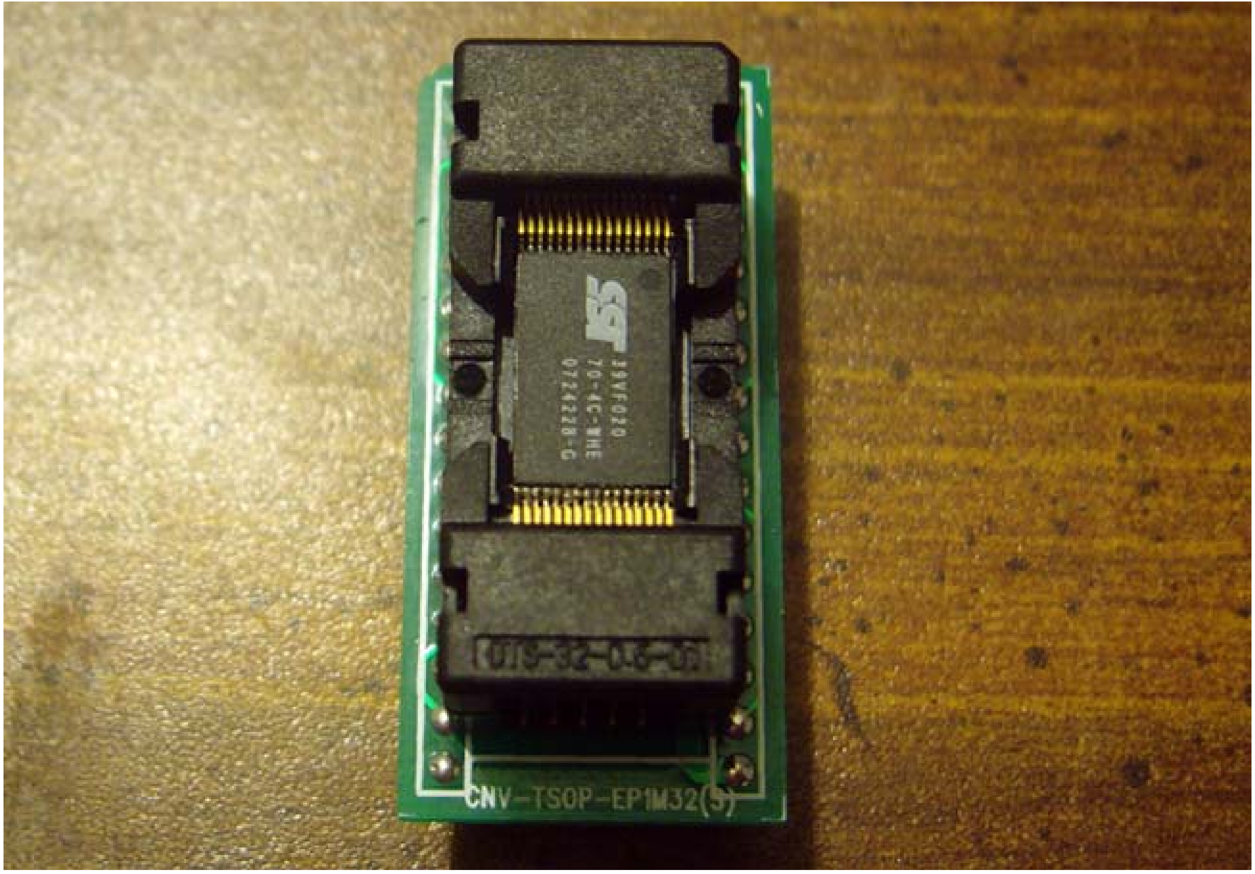


This means that the solder flood removal technique isn’t going to work. You have to use a pyropen or heat gun to desolder the firmware chip. I personally use a heat gun. Below is an image of a board I removed the chip on. I also cleaned up the epoxy on the PCB after removing the chip. If you notice on both FuzzyLogic’s photo above and my photo below, you can see in some places where the thin foil of the PCB has started to “bubble” because of the heat. Personally, I would rather have some relatively safe bubbles and make sure everything was hot enough than I would risk pulled traces or broken chip legs.

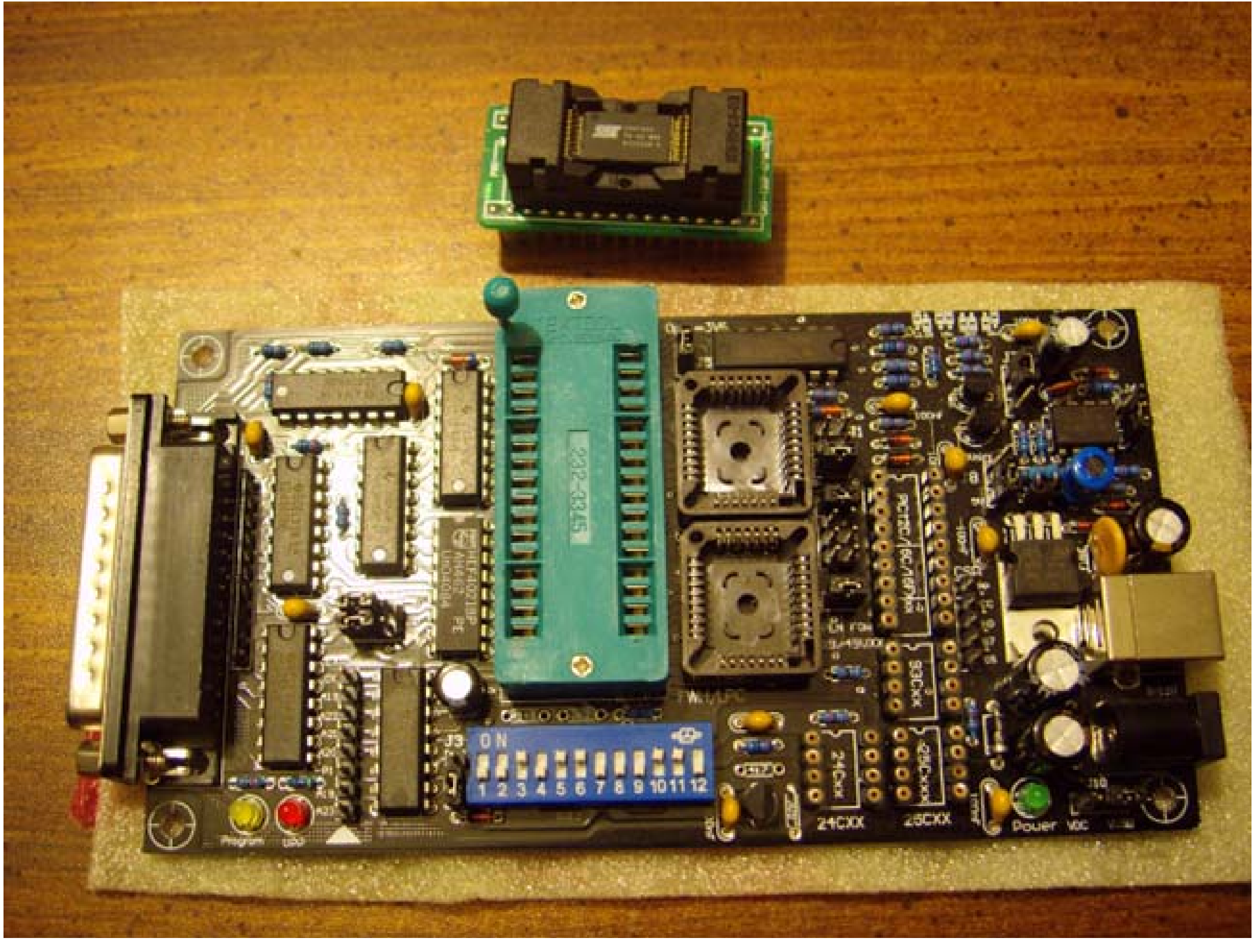


When (if?) you have successfully desoldered the firmware chip, you will want to inspect the PCB and chip. Clean up both using solder, desoldering braid, maybe a fiberglass pen if you have one, and some rubbing alcohol. Make sure that no pads or legs are bridged. If any of the chip legs are bridged, you will not be able to read it using the programmer.

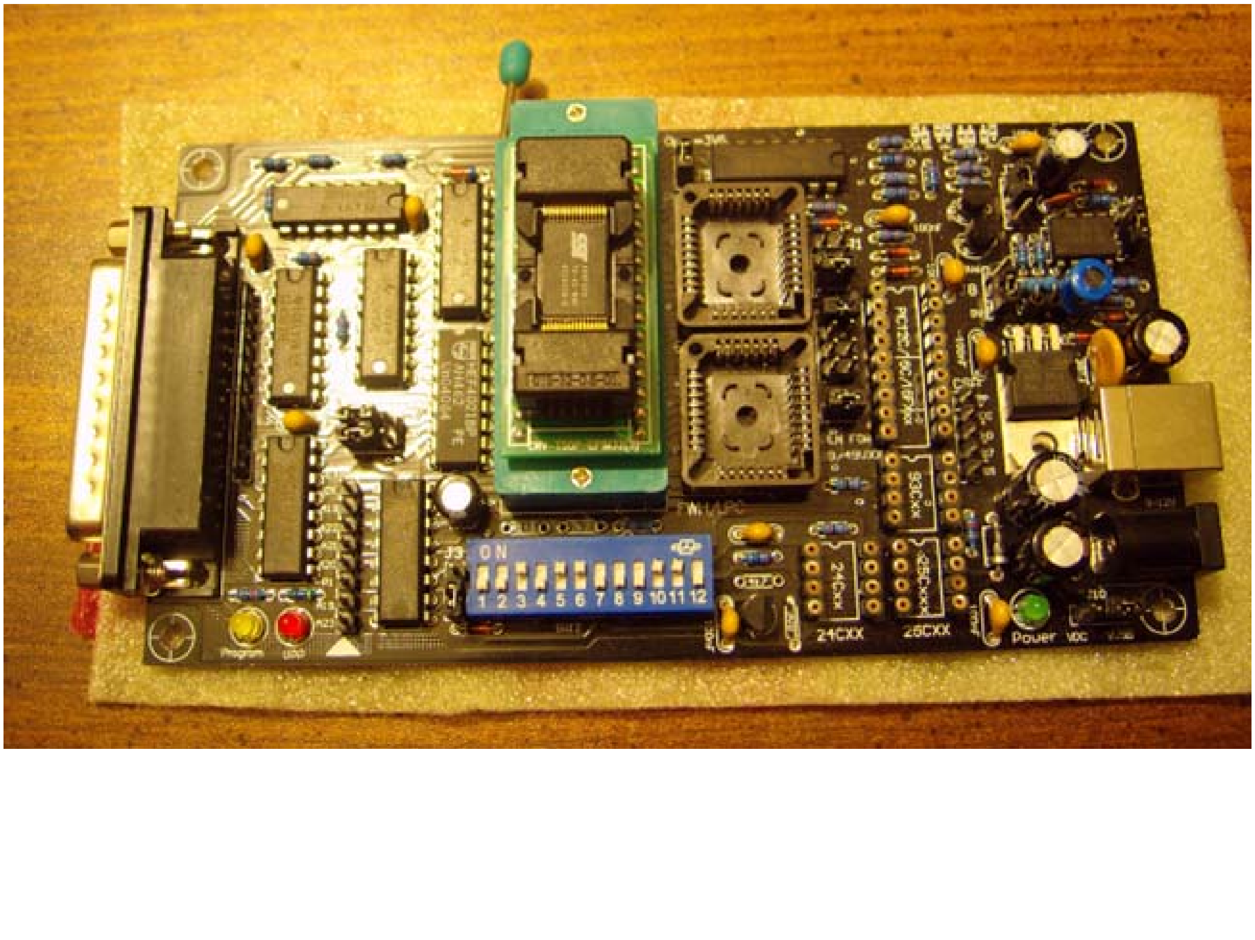
To insert the chip into the socket, push down on the top of the socket, and you will notice that the teeth move “out”. Still holding down the top, you can then place the chip in the socket in the correct orientation. When you let go, the teeth will move back into position, each tooth making contact with a leg of the chip.



Then just insert the socket into your Willem programmer, and hook it up to your PC. If you will notice, the DIP switches on the programmer are set to 3, 5, 6, 10, and 11. I already know what these switches are because I have programmed SST39VF020 chips before, but if you didn’t know, the programming software would tell you anyways.



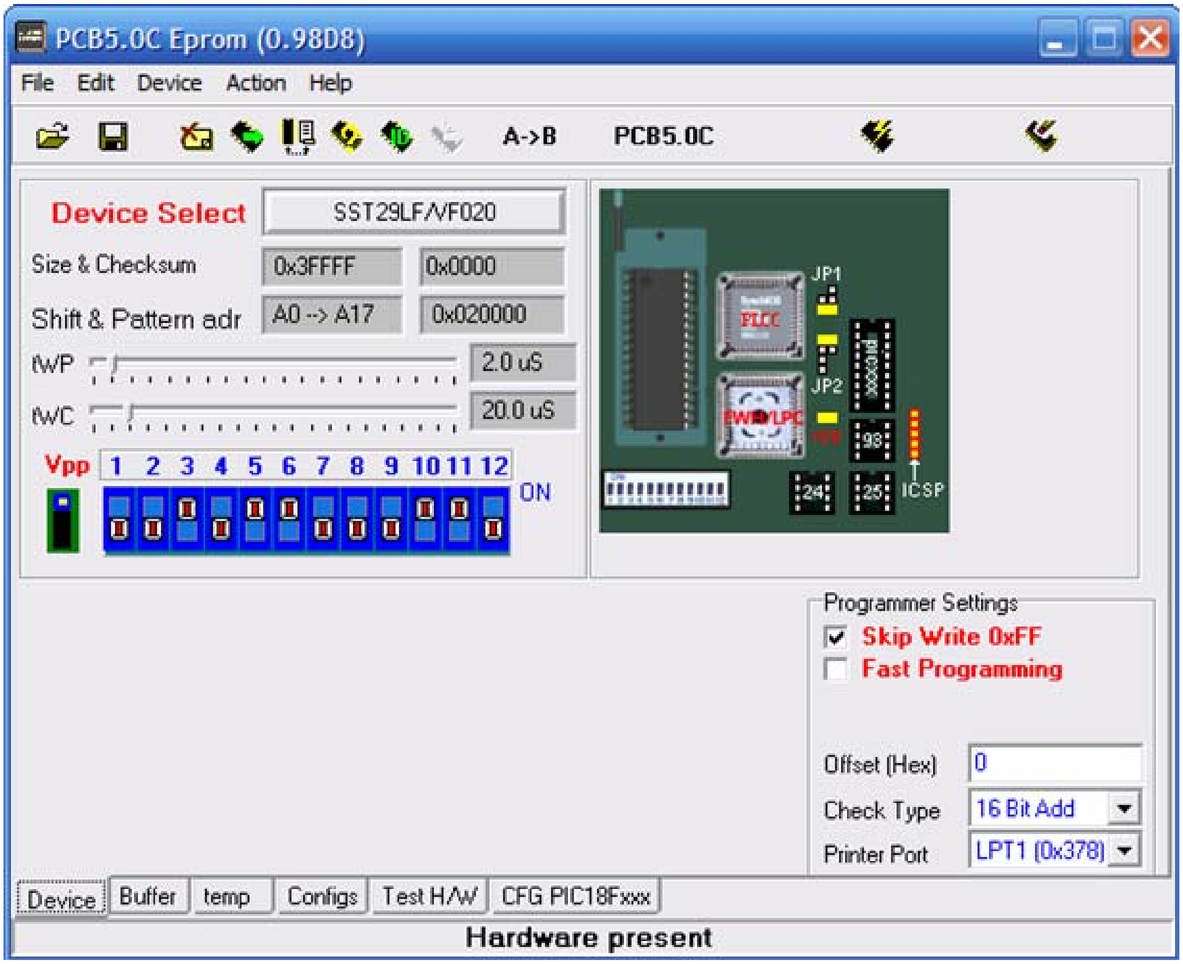
ON
1 2 3 4 5 6 7 8 9 10 11 12
24CXX
25CXX
Power



ON
1 2 3 4 5 6 7 8 9 10 11 12
24CXX
25CXX
Power

Using the Willem Software

If you run the software that comes with your programmer, it should look something like this.



PCB5.0C Eprom (0.98D8)

Device Select: SST29LF/VF020

Size & Checksum: 0x3FFFF 0x0000

Shift & Pattern adr: A0 --> A17 0x020000

tWP: 2.0 uS

tWC: 20.0 uS

Vpp 1 2 3 4 5 6 7 8 9 10 11 12 ON

Programmer Settings

☑ Skip Write 0xFF

☐ Fast Programming

Offset (Hex): 0

Check Type: 16 Bit Add

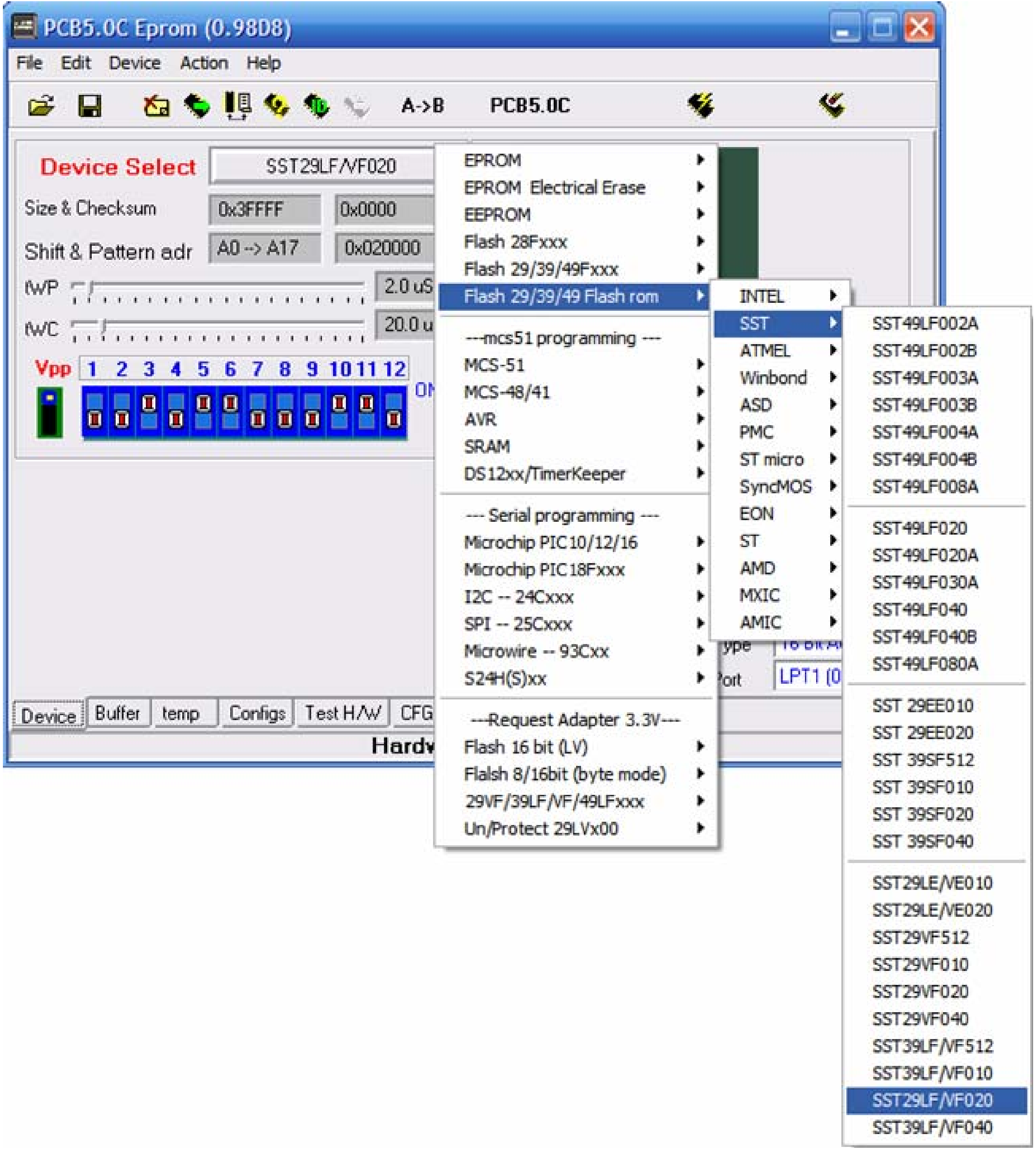
Printer Port: LPT1 (0x378)

Hardware present

To make sure the programmer is working correctly, the first thing you want to do is go to Help > Test Hardware. If it all checks out good, it should show “Hardware present” at the bottom of the program.

Hardware present

Set the device by clicking on the box marked Device Select. The firmware chip is an SST39VF020. So you will want to select that. The way the chips are listed in your software may be different than mine, but it should have it somewhere. Note that the chip I have selected is actually listed as SST29LF/VF020 (29 instead of 39). If you look above and below that, the chips in the list are 39, so I believe this is just a typographical error by the software developers, and that it really should say 39.



PCB5.0C Eprom (0.98D8)

Device Select: SST29LF/VF020

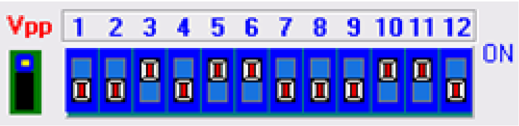
Size & Checksum: 0x3FFFF 0x0000

Shift & Pattern adr: A0 --> A17 0x020000

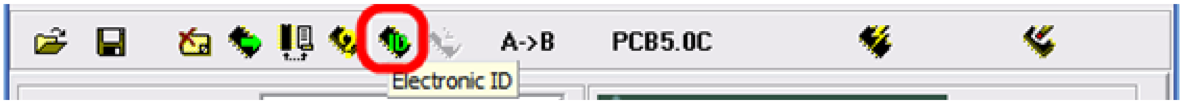
tWP: 2.0 uS

tWC: 20.0 u

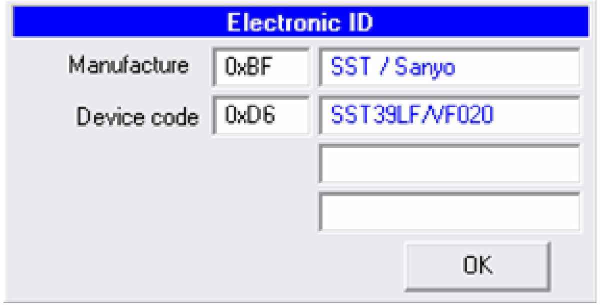
When you have selected the device, you'll notice the software shows you what the DIP switches need to be set to on the programmer.



Now, the fun part. You need to make sure the programmer is correctly identifying the SST chip. Hit the Electronic ID button.



You should see a small popup like this. If you do not, that means the programmer is not reading the chip correctly. Make sure no legs on the chip are bridged.

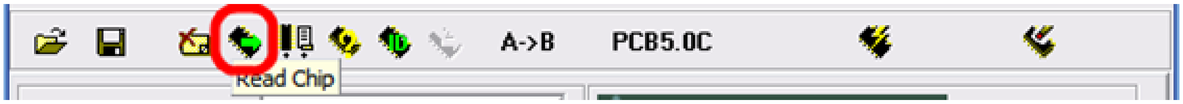


Electronic ID

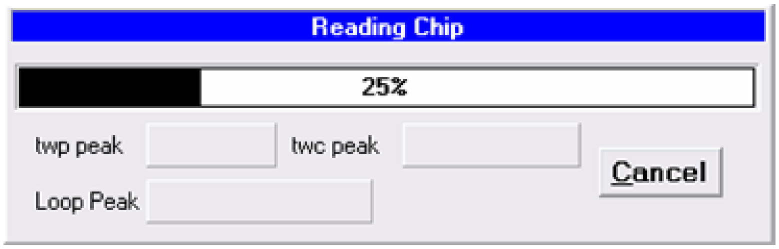
Manufacture 0xBF SST / Sanyo

Device code 0xD6 SST39LF/VF020

Then hit Read Chip to read the contents of the SST chip.



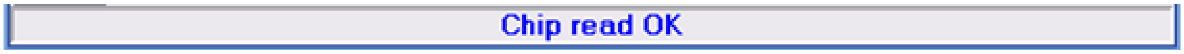
During reading:



Reading Chip

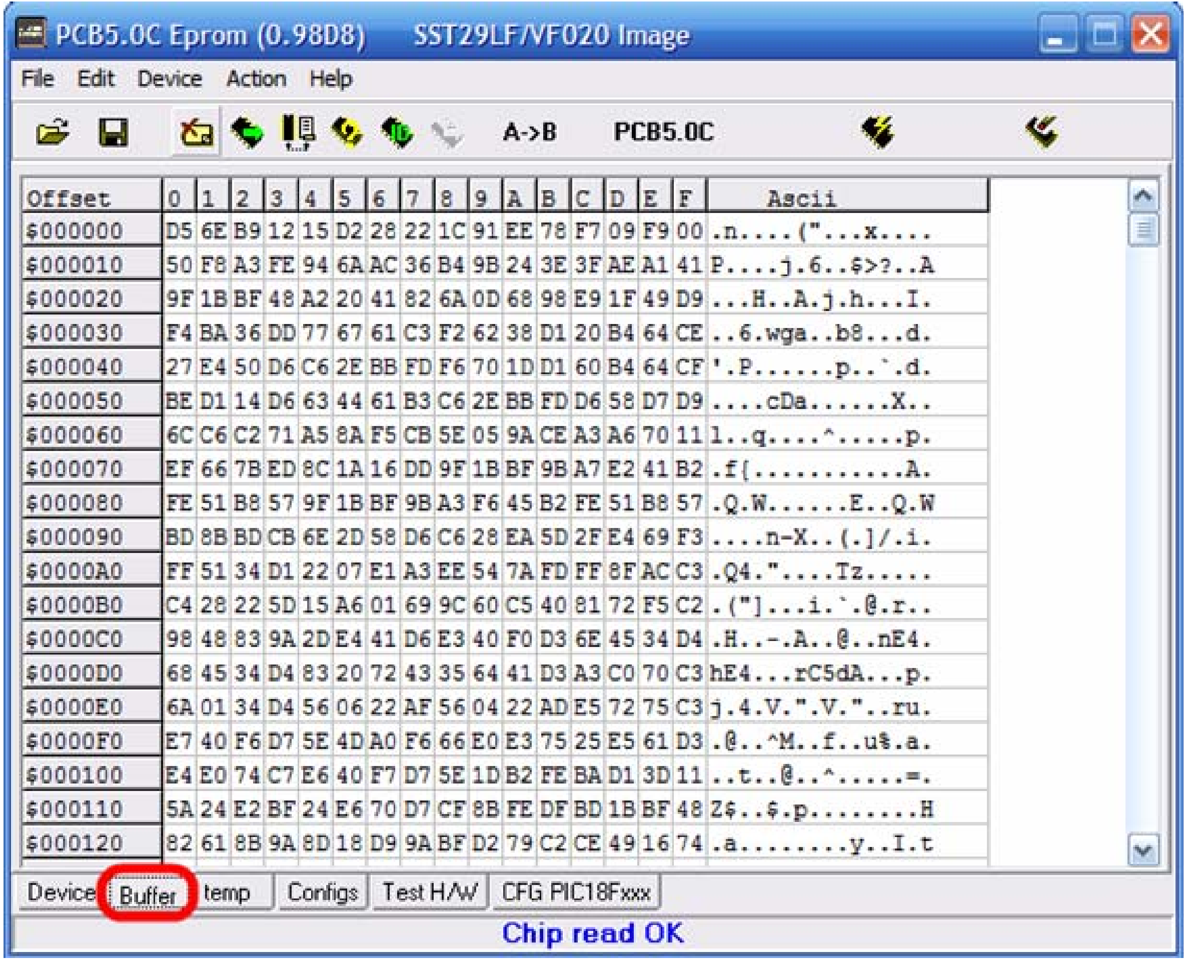
25%

And hopefully, you see this at the bottom of the program:



Chip read OK

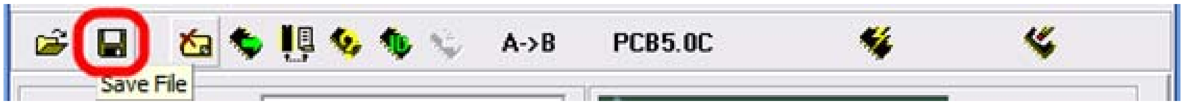
You can even check the program’s buffer to see the hex contents of the chip you just read. Hitachi firmware is encrypted, so you won’t see anything useful.

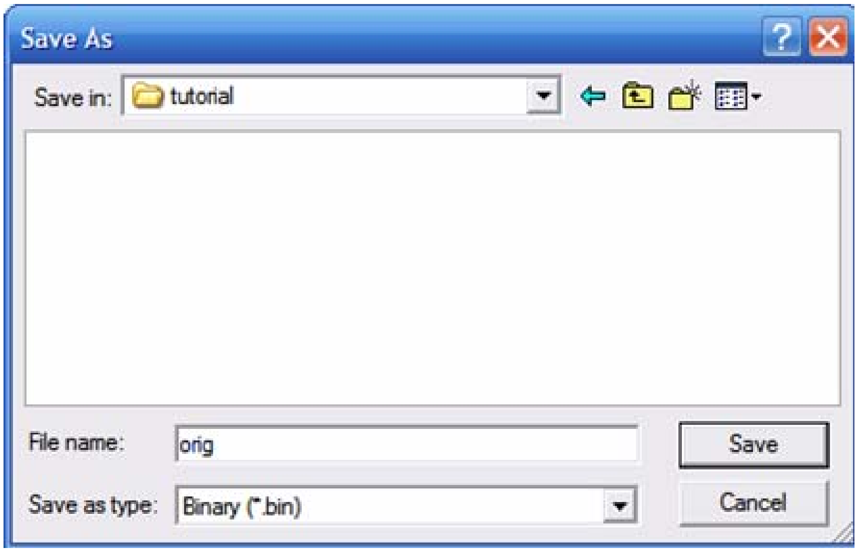


```
Offset   0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F      Ascii
$000000 D5 6E B9 12 15 D2 28 22 1C 91 EE 78 F7 09 F9 00 .n....("...x....
$000010 50 F8 A3 FE 94 6A AC 36 B4 9B 24 3E 3F AE A1 41 P....j.6..$>?..A
$000020 9F 1B BF 48 A2 20 41 82 6A 0D 68 98 E9 1F 49 D9 ...H..A.j.h...I.
$000030 F4 BA 36 DD 77 67 61 C3 F2 62 38 D1 20 B4 64 CE ..6.wga..b8...d.
$000040 27 E4 50 D6 C6 2E BB FD F6 70 1D D1 60 B4 64 CF '.P......p..`.d.
$000050 BE D1 14 D6 63 44 61 B3 C6 2E BB FD D6 58 D7 D9 ....cDa......X..
$000060 6C C6 C2 71 A5 8A F5 CB 5E 05 9A CE A3 A6 70 11 l..q....^.....p.
$000070 EF 66 7B ED 8C 1A 16 DD 9F 1B BF 9B A7 E2 41 B2 .f{...........A.
$000080 FE 51 B8 57 9F 1B BF 9B A3 F6 45 B2 FE 51 B8 57 .Q.W......E..Q.W
$000090 BD 8B BD CB 6E 2D 58 D6 C6 28 EA 5D 2F E4 69 F3 ....n-X..(.]/.i.
$0000A0 FF 51 34 D1 22 07 E1 A3 EE 54 7A FD FF 8F AC C3 .Q4."....Tz.....
$0000B0 C4 28 22 5D 15 A6 01 69 9C 60 C5 40 81 72 F5 C2 .("]...i.`.@.r..
$0000C0 98 48 83 9A 2D E4 41 D6 E3 40 F0 D3 6E 45 34 D4 .H..-.A..@..nE4.
$0000D0 68 45 34 D4 83 20 72 43 35 64 41 D3 A3 C0 70 C3 hE4...rC5dA...p.
$0000E0 6A 01 34 D4 56 06 22 AF 56 04 22 AD E5 72 75 C3 j.4.V.".V."..ru.
$0000F0 E7 40 F6 D7 5E 4D A0 F6 66 E0 E3 75 25 E5 61 D3 .@..^M..f..u%.a.
$000100 E4 E0 74 C7 E6 40 F7 D7 5E 1D B2 FE BA D1 3D 11 ..t..@..^.....=.
$000110 5A 24 E2 BF 24 E6 70 D7 CF 8B FE DF BD 1B BF 48 Z$..$.p........H
$000120 82 61 8B 9A 8D 18 D9 9A BF D2 79 C2 CE 49 16 74 .a........y..I.t
```

Chip read OK

After a read, you will want to save the data from the buffer into a .bin file.



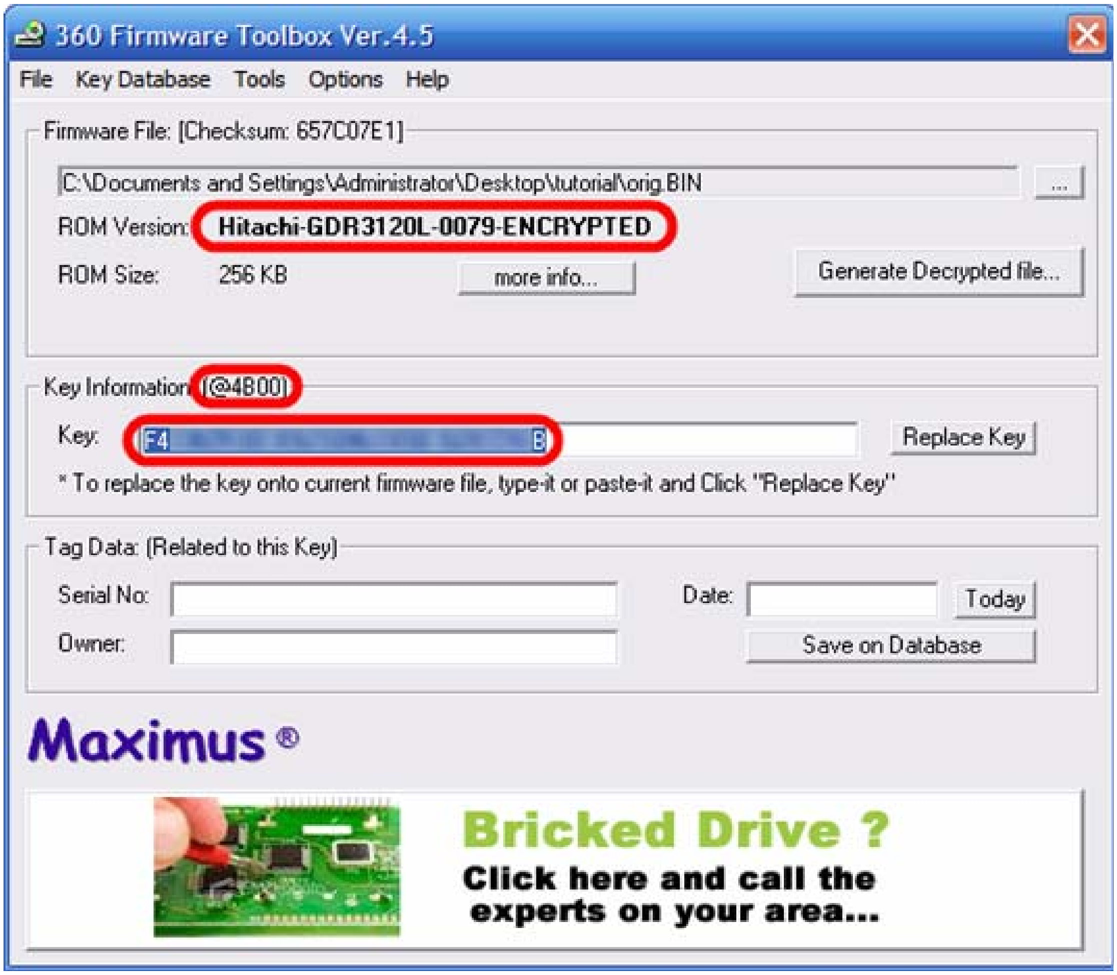


Save in: tutorial

File name: orig

Save as type: Binary (*.bin)

If you open this file with Maximus 360 Firmware Toolbox, it should show up as an original v79 encrypted firmware.



Firmware File: [Checksum: 657C07E1]

C:\Documents and Settings\Administrator\Desktop\tutorial\orig.BIN

ROM Version: Hitachi-GDR3120L-0079-ENCRYPTED

ROM Size: 256 KB

Key Information [@4B00]

Key: F4 [redacted] B

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

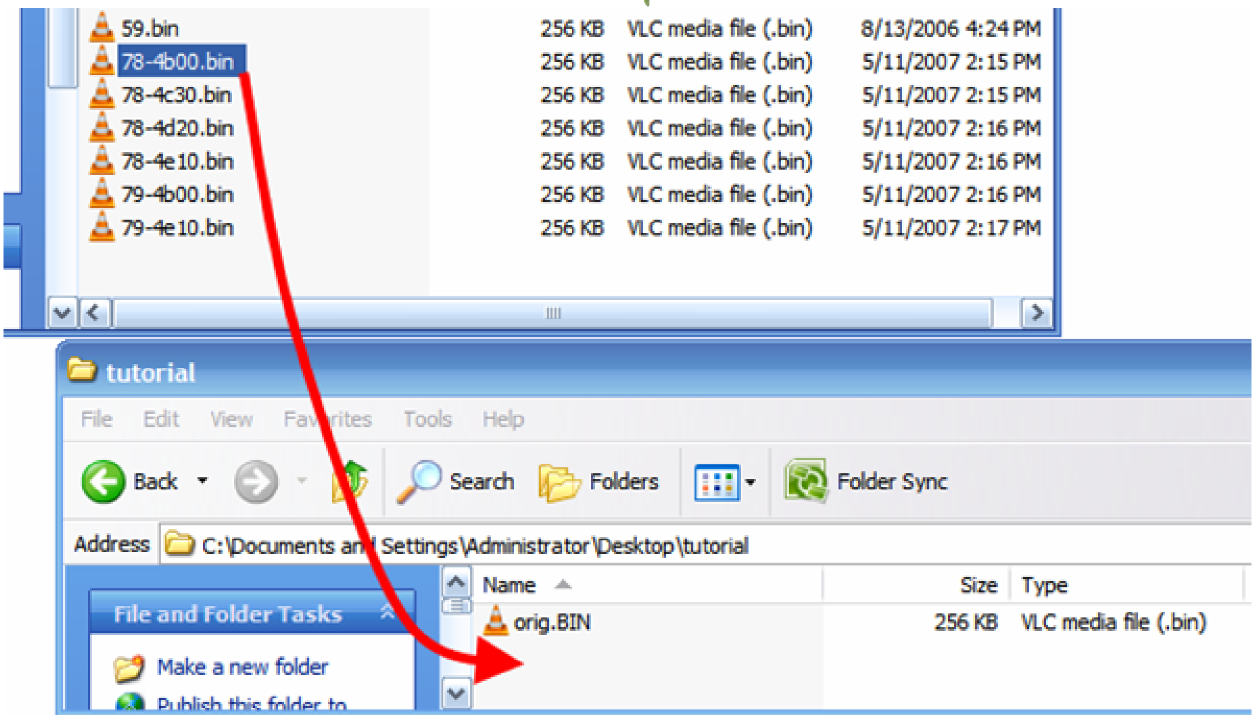
Tag Data: [Related to this Key]

Serial No:

Date:

Owner:

Probably the first thing you want to do is copy the key down into a .txt file in Notepad, or email it to yourself. After that, take note of the key location in the firmware. Hitachi v78 and v79 firmwares can have the key located in one of 4 addresses: 4B00, 4C30, 4D20, 4E10. What I do is flash the drive with a v78 firmware, which is then spoofed to v79. I do this so that in the future, upgrading the firmware will be as easy as upgrading the firmware on a v78. But to do this you need to know where the key is located at. In this example, it is 4B00. Included in the download for Maximus 360 Firmware Toolbox is a folder named “orig_fw”, containing the original firmware for many drives. What you will want to do is copy the 78-xxxx.bin firmware to the same place you saved your orig.bin you dumped with the programmer. (xxxx meaning the key location)

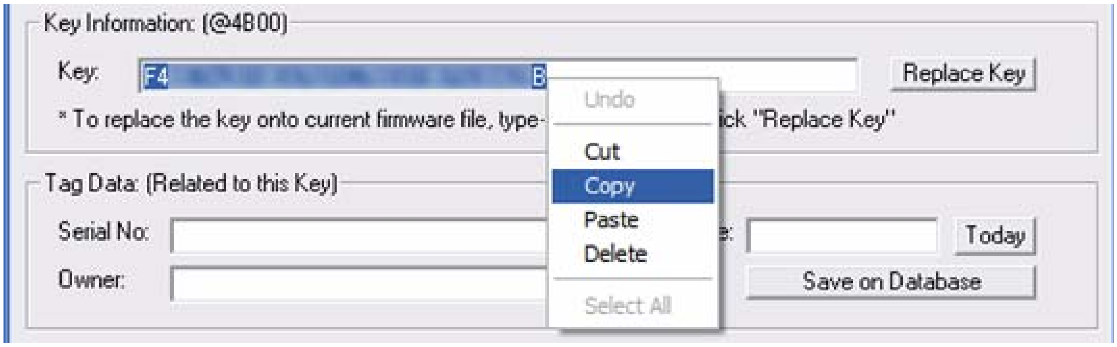


Name	Size	Type	Date Modified
59.bin	256 KB	VLC media file (.bin)	8/13/2006 4:24 PM
78-4b00.bin	256 KB	VLC media file (.bin)	5/11/2007 2:15 PM
78-4c30.bin	256 KB	VLC media file (.bin)	5/11/2007 2:15 PM
78-4d20.bin	256 KB	VLC media file (.bin)	5/11/2007 2:16 PM
78-4e10.bin	256 KB	VLC media file (.bin)	5/11/2007 2:16 PM
79-4b00.bin	256 KB	VLC media file (.bin)	5/11/2007 2:16 PM
79-4e10.bin	256 KB	VLC media file (.bin)	5/11/2007 2:17 PM

Address: C:\Documents and Settings\Administrator\Desktop\tutorial

Name	Size	Type
orig.BIN	256 KB	VLC media file (.bin)

You should still have firmware toolbox open with your orig.bin loaded. Copy the key to the clipboard.



Key Information: (@4B00)

Key: F4[redacted]B

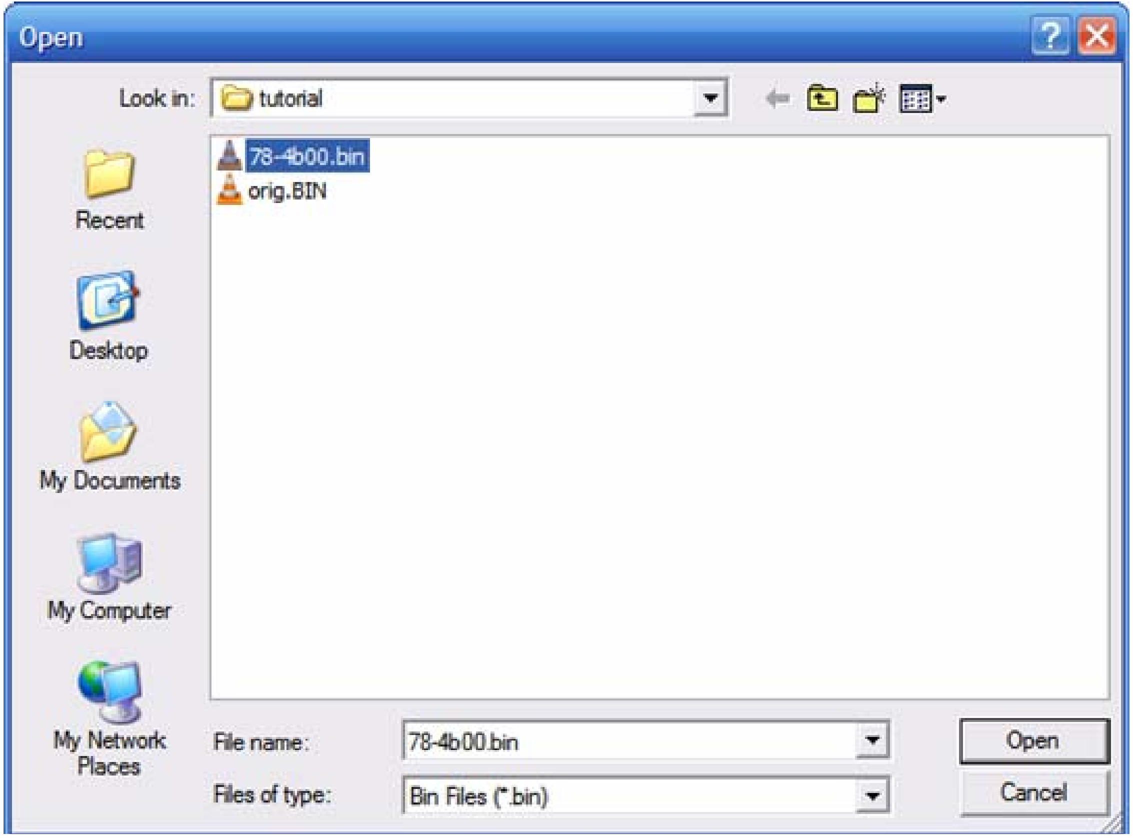
* To replace the key onto current firmware file, type-...ick "Replace Key"

Tag Data: (Related to this Key)

Serial No:

Owner:

Open the 78-xxxx.bin file with firmware toolbox.



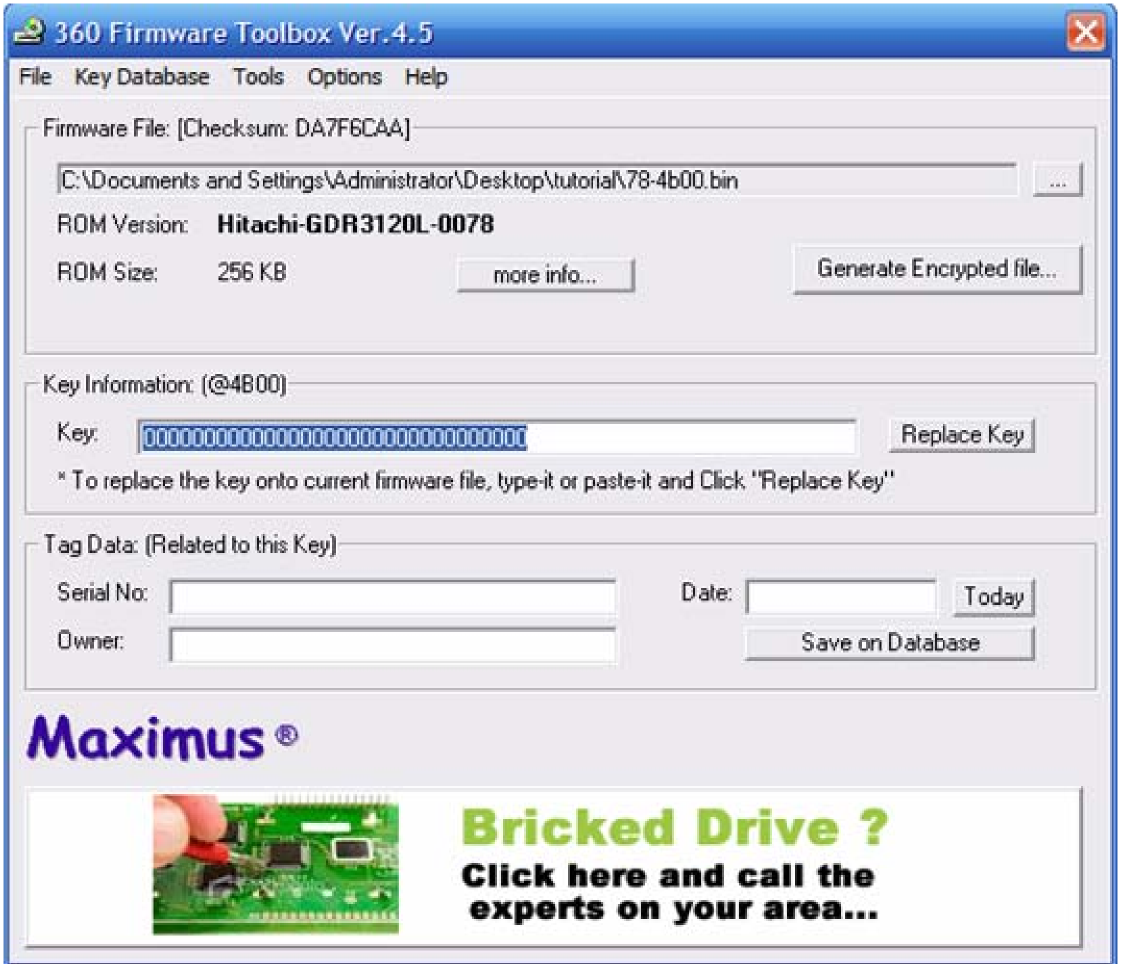
Look in: tutorial

78-4b00.bin
orig.BIN

File name: 78-4b00.bin

Files of type: Bin Files (*.bin)

It should look like this:



360 Firmware Toolbox Ver.4.5

File Key Database Tools Options Help

Firmware File: [Checksum: DA7F6CAA]

C:\Documents and Settings\Administrator\Desktop\tutorial\78-4b00.bin

ROM Version: **Hitachi-GDR3120L-0078**

ROM Size: 256 KB

Key Information: (@4B00)

Key: 00000000000000000000000000000000

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

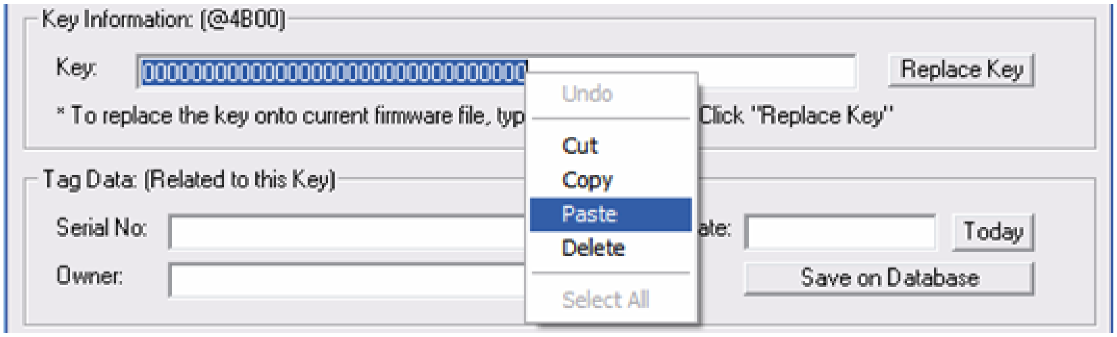
Tag Data: (Related to this Key)

Serial No:

Owner:

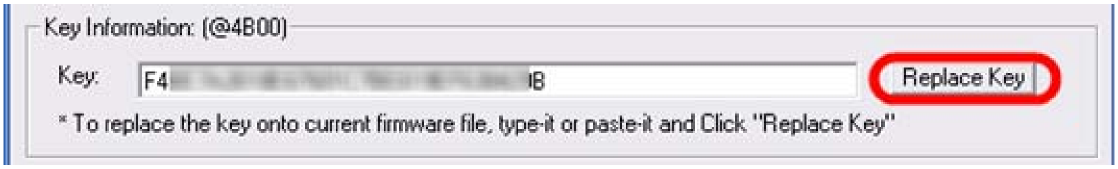
Date:

Paste your key into the textbox and hit replace key.



Key Information: (@4B00)

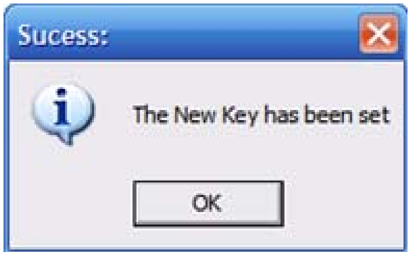
Key: 00000000000000000000000000000000



Key Information: (@4B00)

Key: F4[redacted]B

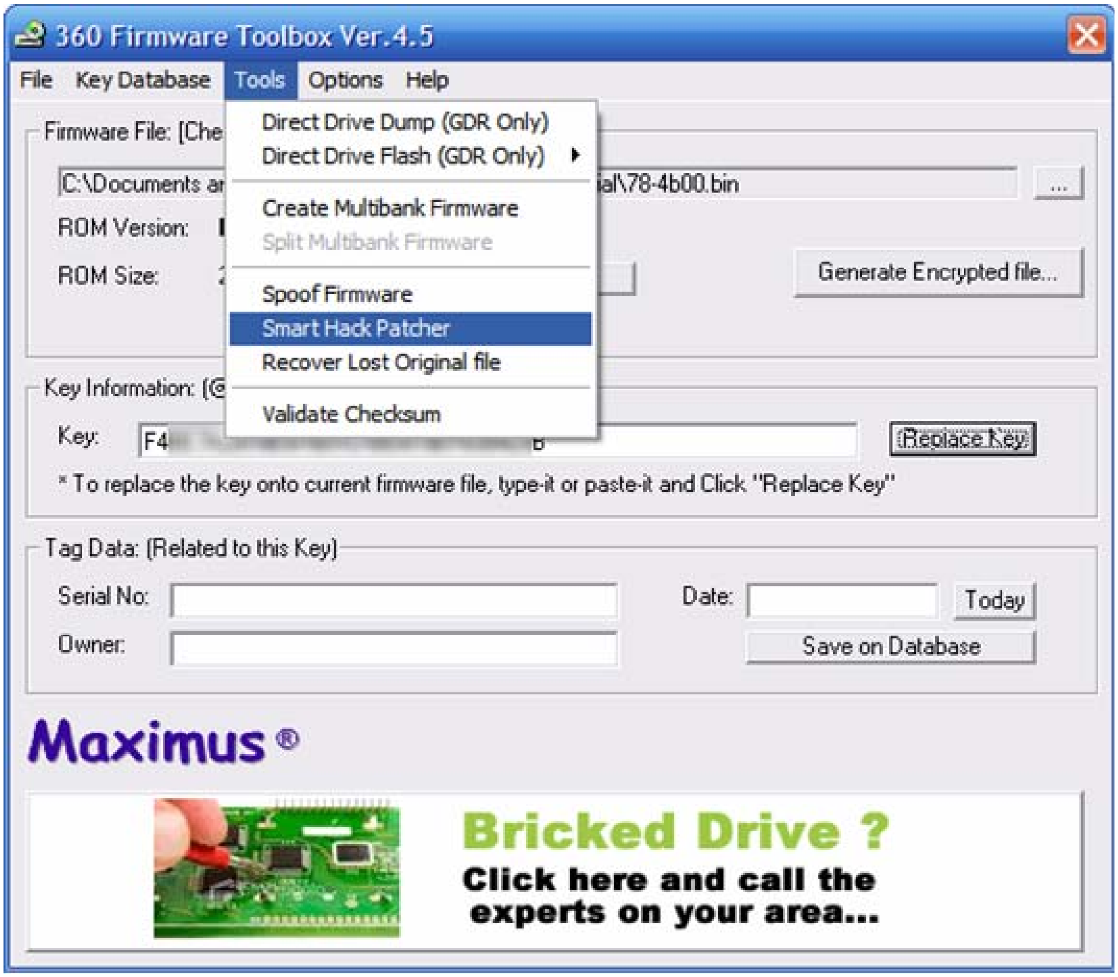
* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"



Sucess:

The New Key has been set

Now run the smart hack patcher from Tools > Smart Hack Patcher.



360 Firmware Toolbox Ver.4.5

Firmware File: [Che

C:\Documents ar ial\78-4b00.bin

ROM Version:

ROM Size:

Key Information: [@

Key: F4 [redacted] B

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

Tag Data: [Related to this Key]

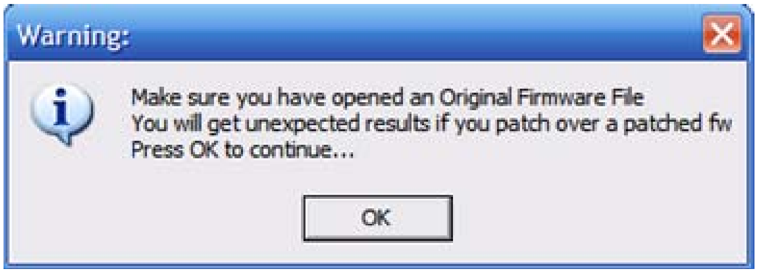
Serial No:

Owner:

Date:

File
Key Database
Tools
Options
Help
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware
Split Multibank Firmware
Spoof Firmware
Smart Hack Patcher
Recover Lost Original file
Validate Checksum
...
Generate Encrypted file...
Replace Key
Today
Save on Database
Maximus ®
Bricked Drive ?
Click here and call the experts on your area...

You will probably get a warning to make sure you have opened an original firmware, just hit Ok.

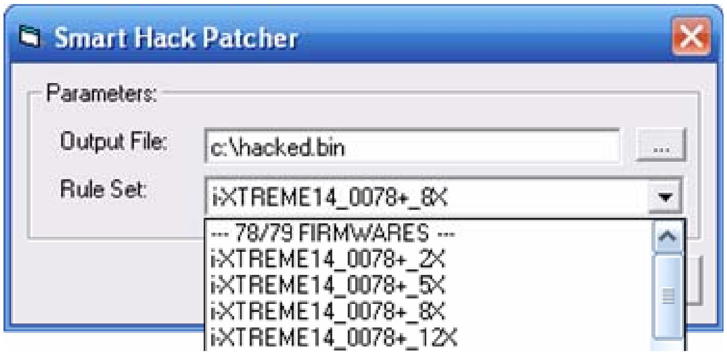


Warning:

Make sure you have opened an Original Firmware File
You will get unexpected results if you patch over a patched fw
Press OK to continue...

You now have a choice between different read speed firmwares. There are four available options. There is a firmware that reads backups at 2x speed, 5x speed, 8x speed, and 12x speed. There is no “right” choice, it is purely up to preference. 12x is the normal read speed of the drive. Higher speeds are louder, and may have trouble reading backups if you have a poor quality laser, burner, or media. Lower speeds are much quieter, and may read better, but you will have slower load times.

Make sure the Rule Set is the iXtreme firmware and it is for v78+. Select one of the v78+ firmwares, 2x, 5x, 8x, and 12x are the different read speeds for the firmware. Then hit the ellipsis button to choose the save file. Save as hacked.bin



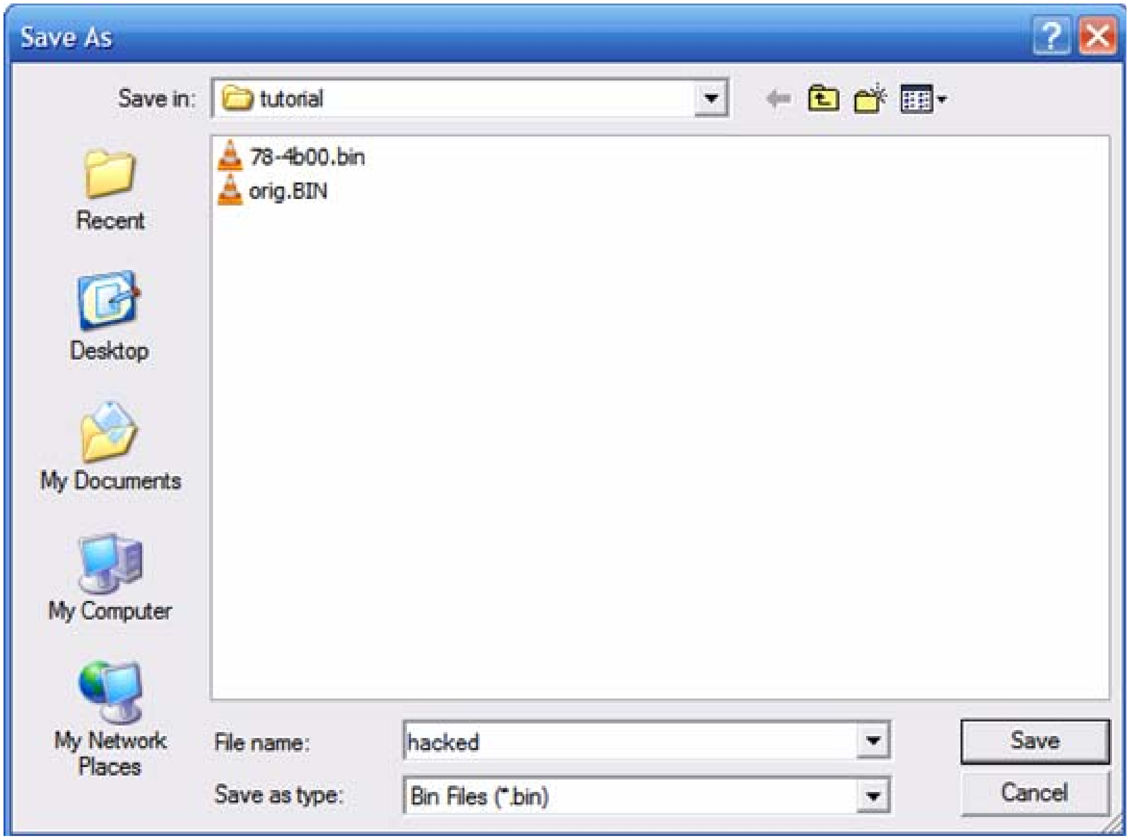
Smart Hack Patcher

Parameters:

Output File: c:\hacked.bin

Rule Set: iXTREME14_0078+_8X

--- 78/79 FIRMWARES ---
iXTREME14_0078+_2X
iXTREME14_0078+_5X
iXTREME14_0078+_8X
iXTREME14_0078+_12X



Save in: tutorial

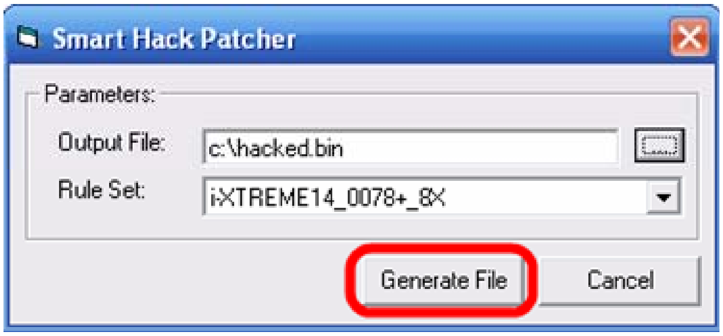
78-4b00.bin

orig.BIN

File name: hacked

Save as type: Bin Files (*.bin)

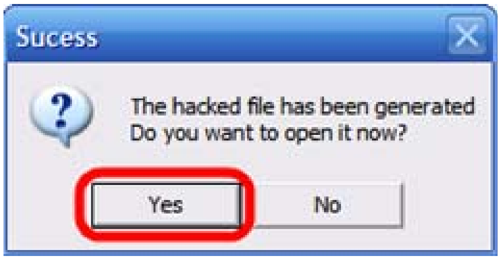
Hit the generate file button, and open the firmware.



Parameters:

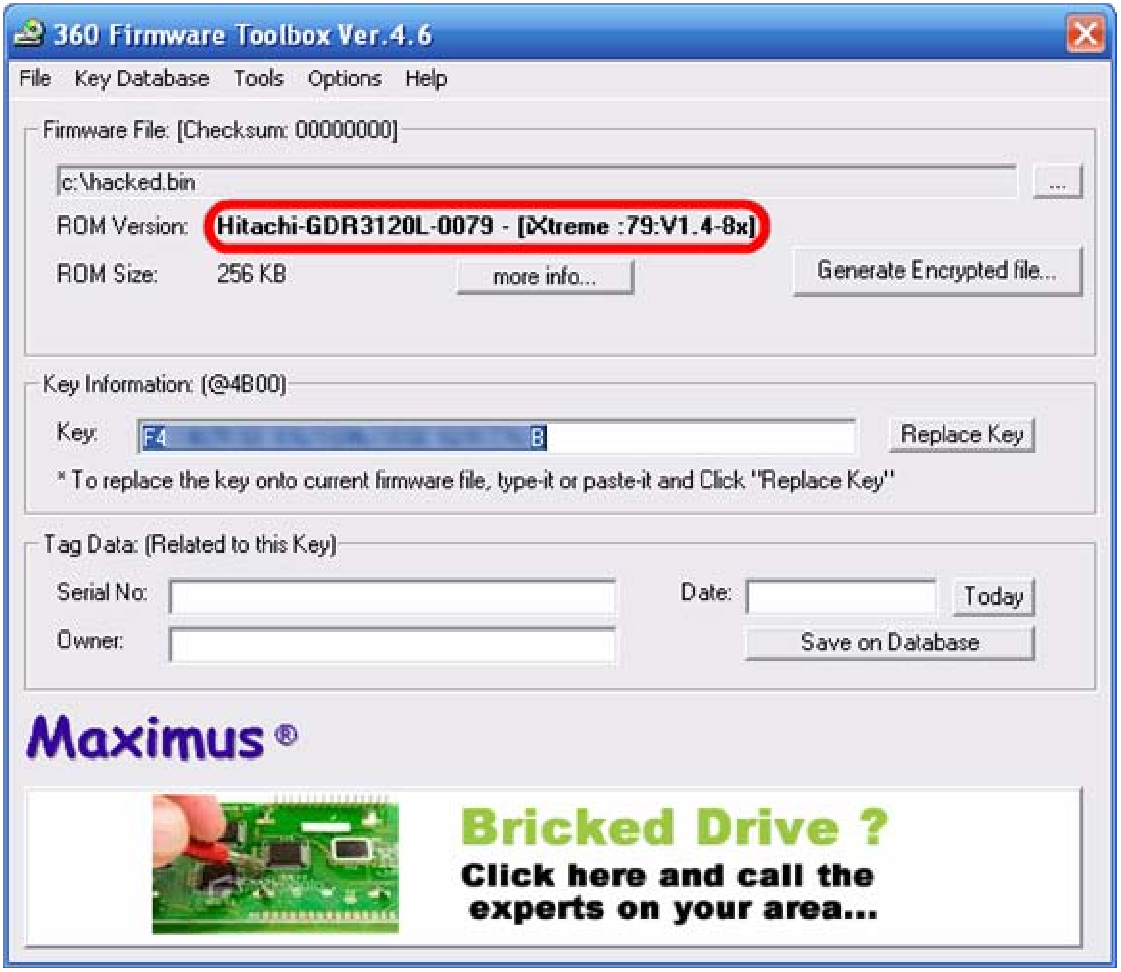
Output File: c:\hacked.bin

Rule Set: iXTREME14_0078+_8X



The hacked file has been generated
Do you want to open it now?

Notice how the firmware is now v78, hacked with iXtreme v1.2, but it has your drive key from the v79.



Firmware File: [Checksum: 00000000]

c:\hacked.bin

ROM Version: Hitachi-GDR3120L-0079 - [iXtreme :79:V1.4-8x]

ROM Size: 256 KB

Key Information: (@4B00)

Key: [redacted]

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

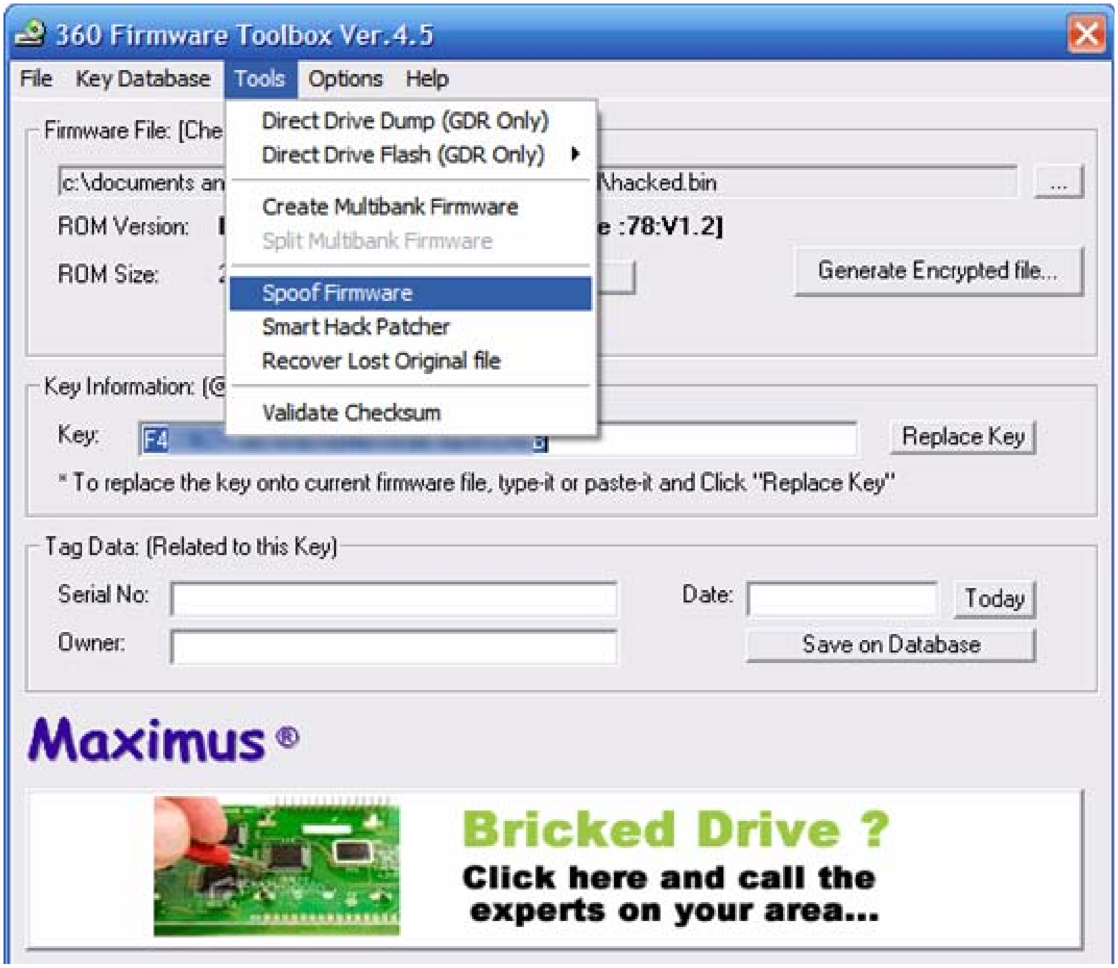
Tag Data: (Related to this Key)

Serial No:

Owner:

Date:

Now we spoof the firmware to v79. Go to Tools > Spoof Firmware.



360 Firmware Toolbox Ver.4.5

File
Key Database
Tools
Options
Help
Direct Drive Dump (GDR Only)
Direct Drive Flash (GDR Only)
Create Multibank Firmware
Split Multibank Firmware
Spoof Firmware
Smart Hack Patcher
Recover Lost Original file
Validate Checksum
...
Generate Encrypted file...
Replace Key
Today
Save on Database
Maximus®
Bricked Drive ?
Click here and call the experts on your area...

Firmware File: [Che

c:\documents an \hacked.bin

ROM Version: I e :78:V1.2]

ROM Size: 2

Key Information: (@

Key: F4[redacted]3

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

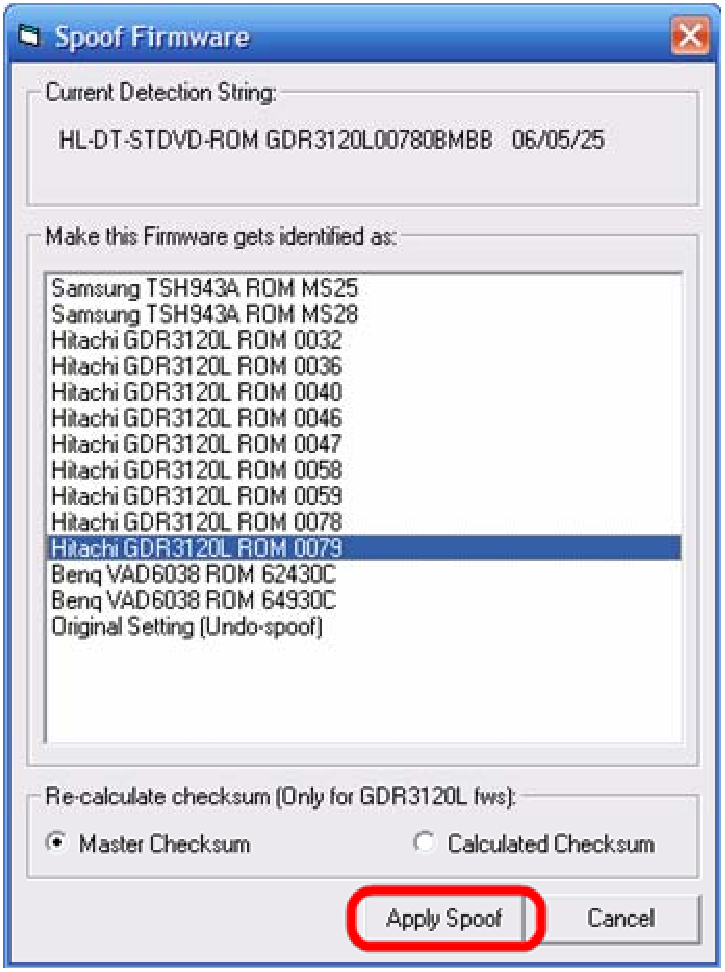
Tag Data: (Related to this Key)

Serial No:

Date:

Owner:

Select v79 from the list and master checksum, then hit Apply Spoof.



Spoof Firmware

Current Detection String:

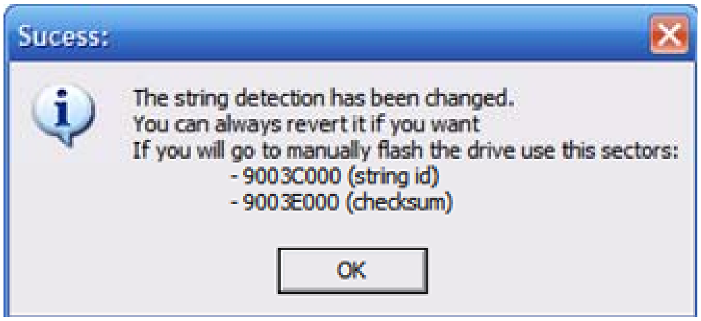
HL-DT-STDVD-ROM GDR3120L00780BMBB 06/05/25

Make this Firmware gets identified as:

Samsung TSH943A ROM MS25
Samsung TSH943A ROM MS28
Hitachi GDR3120L ROM 0032
Hitachi GDR3120L ROM 0036
Hitachi GDR3120L ROM 0040
Hitachi GDR3120L ROM 0046
Hitachi GDR3120L ROM 0047
Hitachi GDR3120L ROM 0058
Hitachi GDR3120L ROM 0059
Hitachi GDR3120L ROM 0078
Hitachi GDR3120L ROM 0079
Benq VAD6038 ROM 62430C
Benq VAD6038 ROM 64930C
Original Setting (Undo-spoof)

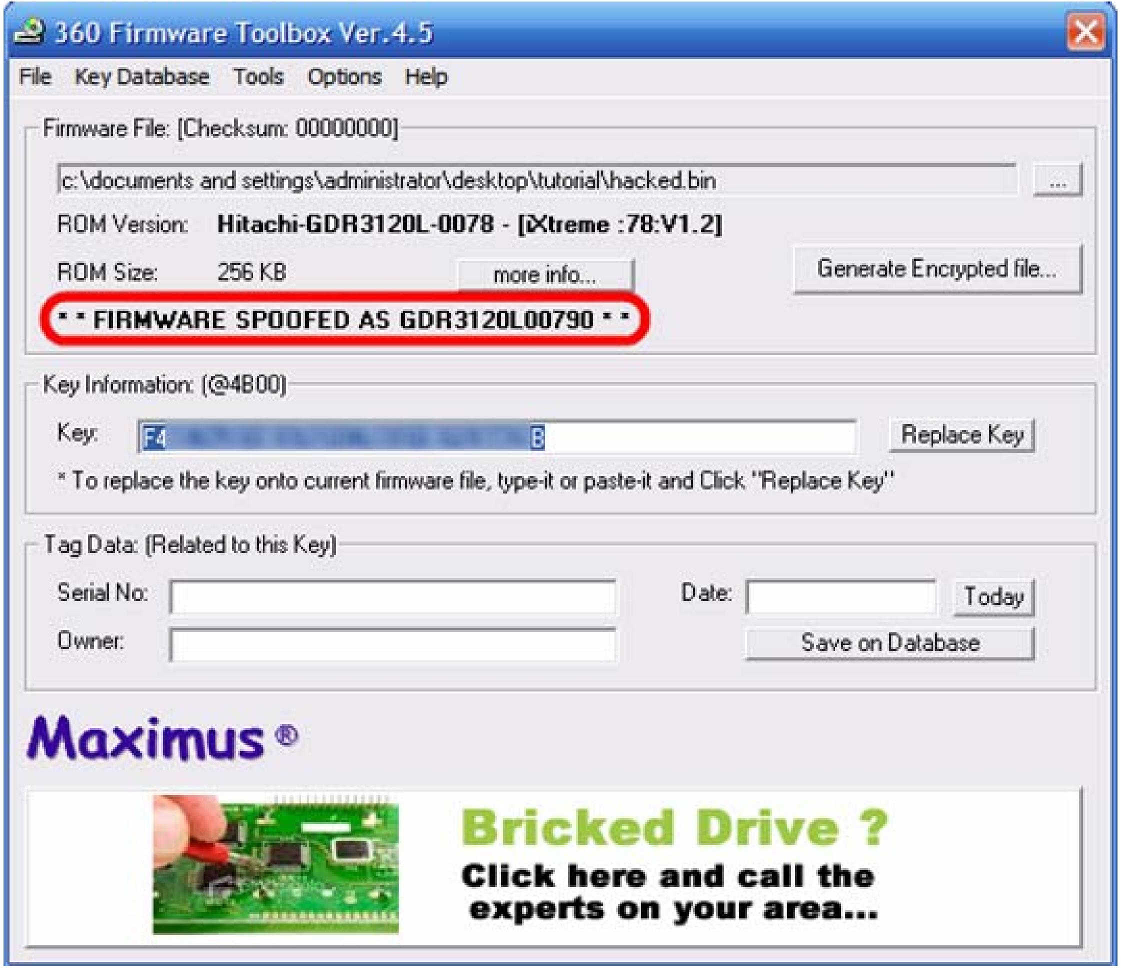
Re-calculate checksum (Only for GDR3120L fws):

● Master Checksum ○ Calculated Checksum



Sucess:

The string detection has been changed.
You can always revert it if you want
If you will go to manually flash the drive use this sectors:
- 9003C000 (string id)
- 9003E000 (checksum)



Firmware File: [Checksum: 00000000]

c:\documents and settings\administrator\desktop\tutorial\hacked.bin

ROM Version: Hitachi-GDR3120L-0078 - [iXtreme :78:V1.2]

ROM Size: 256 KB

* * FIRMWARE SPOOFED AS GDR3120L00790 * *

Key Information: (@4B00)

Key: [redacted]

* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

Tag Data: (Related to this Key)

Serial No:

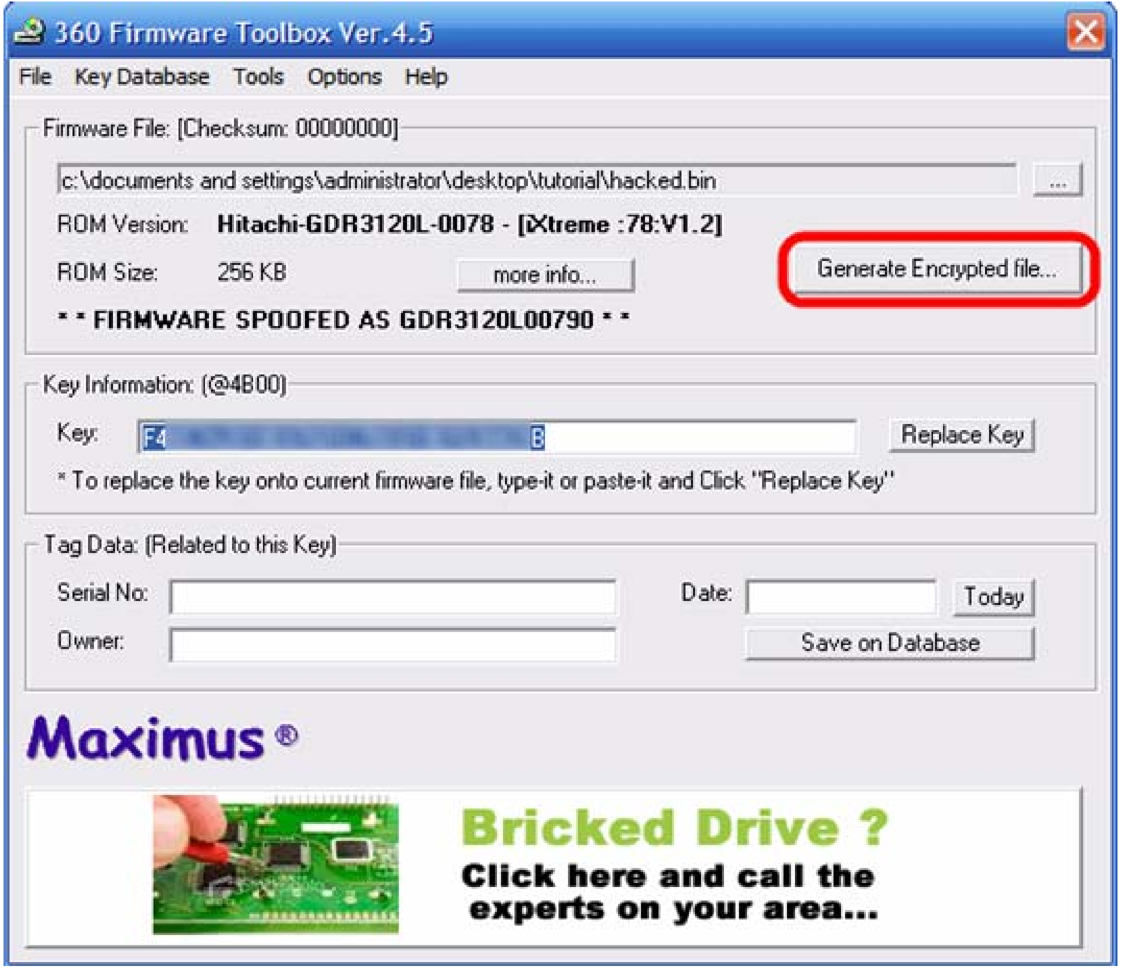
Owner:

Date:

Bricked Drive ?

Click here and call the experts on your area...

Now the last part is to generate an encrypted firmware.



Firmware File: [Checksum: 00000000]

c:\documents and settings\administrator\desktop\tutorial\hacked.bin

ROM Version: **Hitachi-GDR3120L-0078 - [iXtreme :78:V1.2]**

ROM Size: 256 KB

*** * FIRMWARE SPOOFED AS GDR3120L00790 * ***

Key Information: (@4B00)

Key: [redacted]

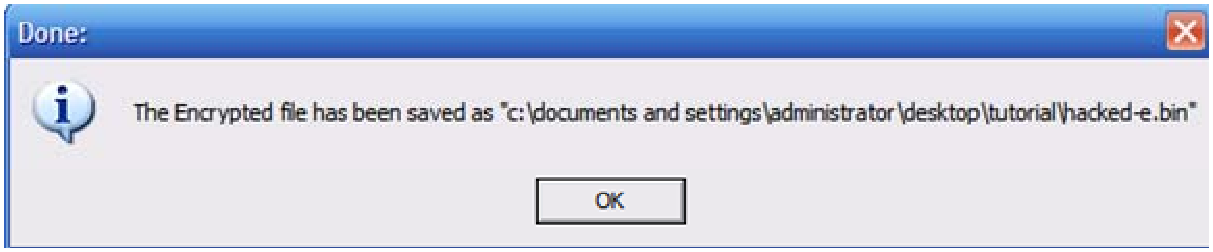
* To replace the key onto current firmware file, type-it or paste-it and Click "Replace Key"

Tag Data: (Related to this Key)

Serial No:

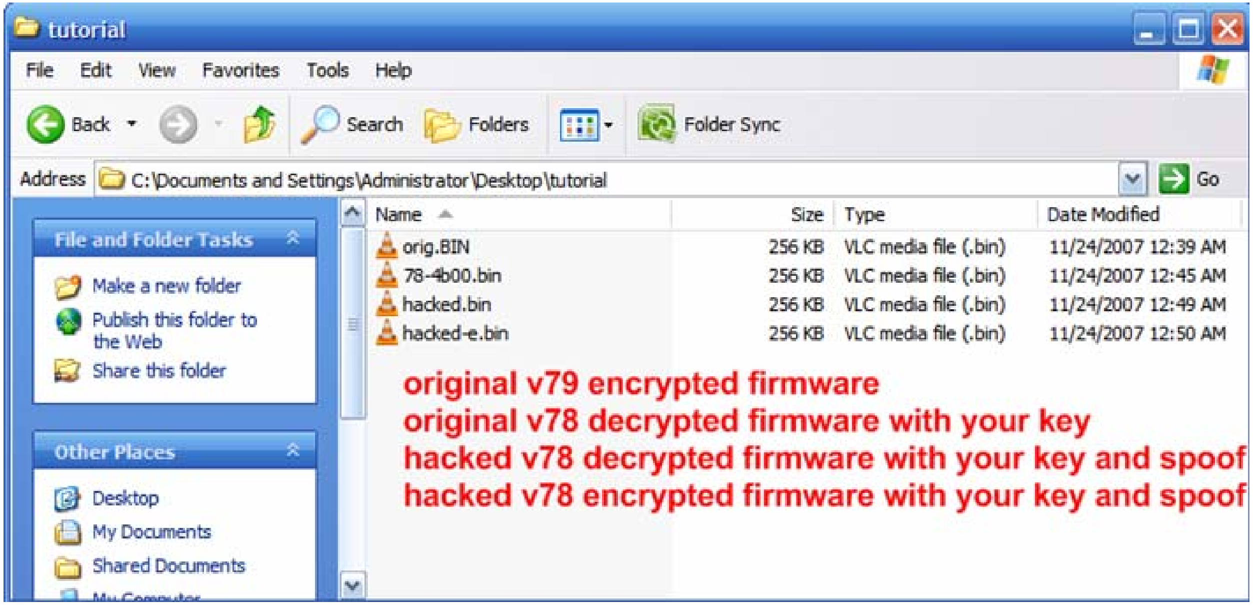
Date:

Owner:



The Encrypted file has been saved as "c:\documents and settings\administrator\desktop\tutorial\hacked-e.bin"

You're done with firmware toolbox. You can close out of it. Now we need to flash this firmware back to the SST chip. Before you do that, take a look at the folder you saved your files in.



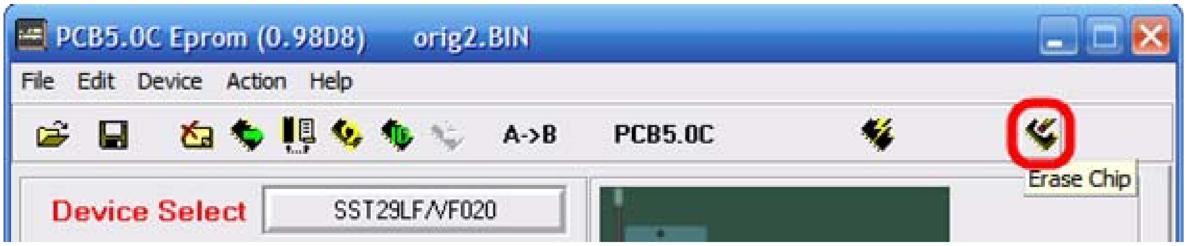
Address: C:\Documents and Settings\Administrator\Desktop\tutorial

Name	Size	Type	Date Modified
orig.BIN	256 KB	VLC media file (.bin)	11/24/2007 12:39 AM
78-4b00.bin	256 KB	VLC media file (.bin)	11/24/2007 12:45 AM
hacked.bin	256 KB	VLC media file (.bin)	11/24/2007 12:49 AM
hacked-e.bin	256 KB	VLC media file (.bin)	11/24/2007 12:50 AM

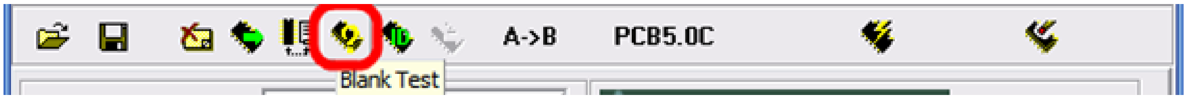
original v79 encrypted firmware
original v78 decrypted firmware with your key
hacked v78 decrypted firmware with your key and spoof
hacked v78 encrypted firmware with your key and spoof

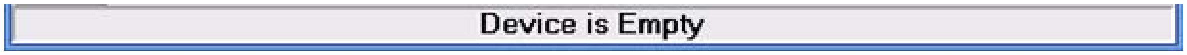
Only an encrypted firmware can be flashed back to a drive. Flashing a decrypted firmware would result in a non-working drive (brick).

Go back to the Willem sotware. Before programming the chip, we need to erase it first. A chip erase should take less than a second.


PCB5.0C Eprom (0.98D8)   orig2.BIN
File Edit Device Action Help
A->B
PCB5.0C
Erase Chip
Device Select
SST29LF/VF020

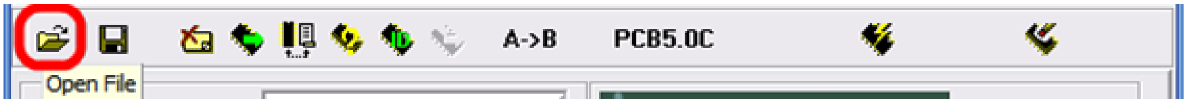
Then you should check to make sure the chip is empty.

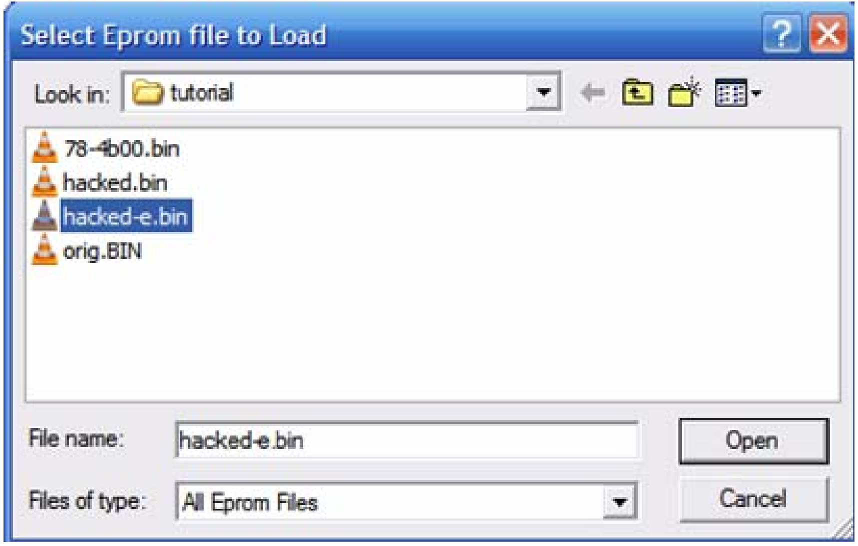




Device is Empty

Open the hacked-e.bin





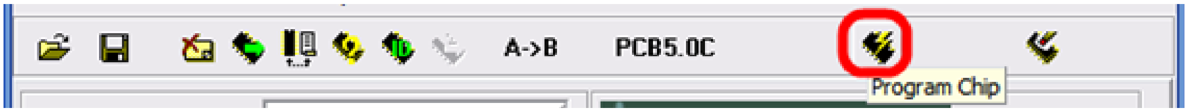
Look in: tutorial

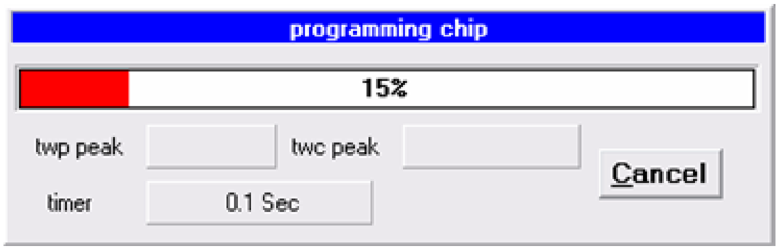
78-4b00.bin
hacked.bin
hacked-e.bin
orig.BIN

File name: hacked-e.bin

Files of type: All Eprom Files

Then program the chip.





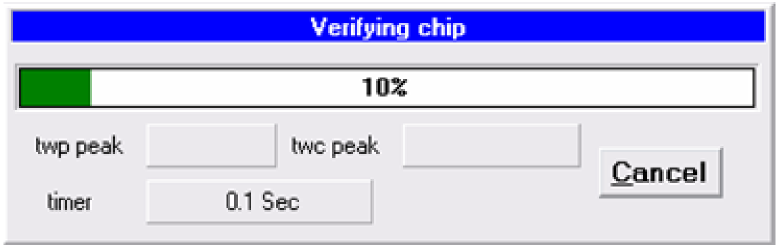
programming chip

15%

twp peak

twc peak

timer 0.1 Sec



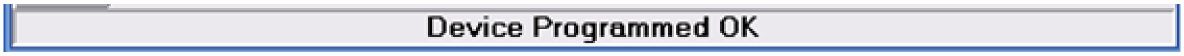
Verifying chip

10%

twp peak

twc peak

timer 0.1 Sec

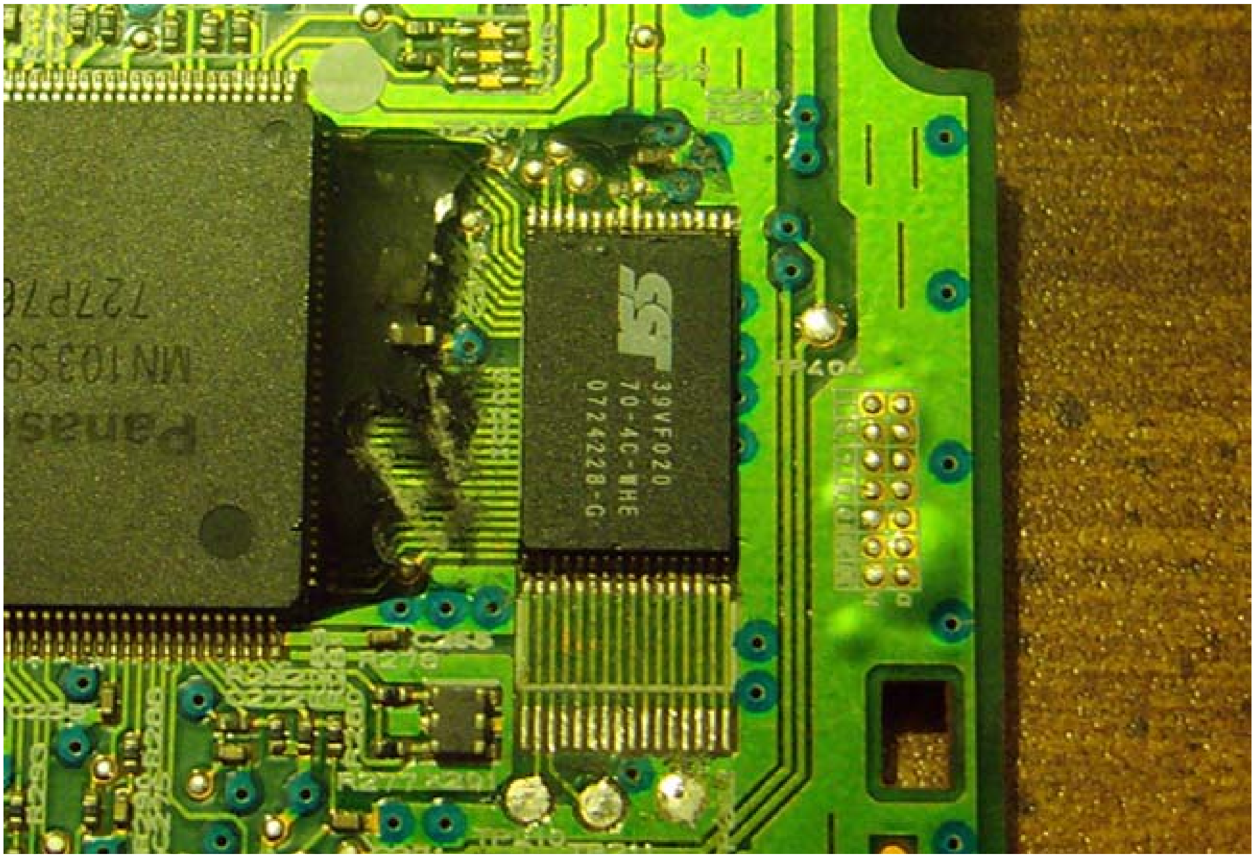


Device Programmed OK

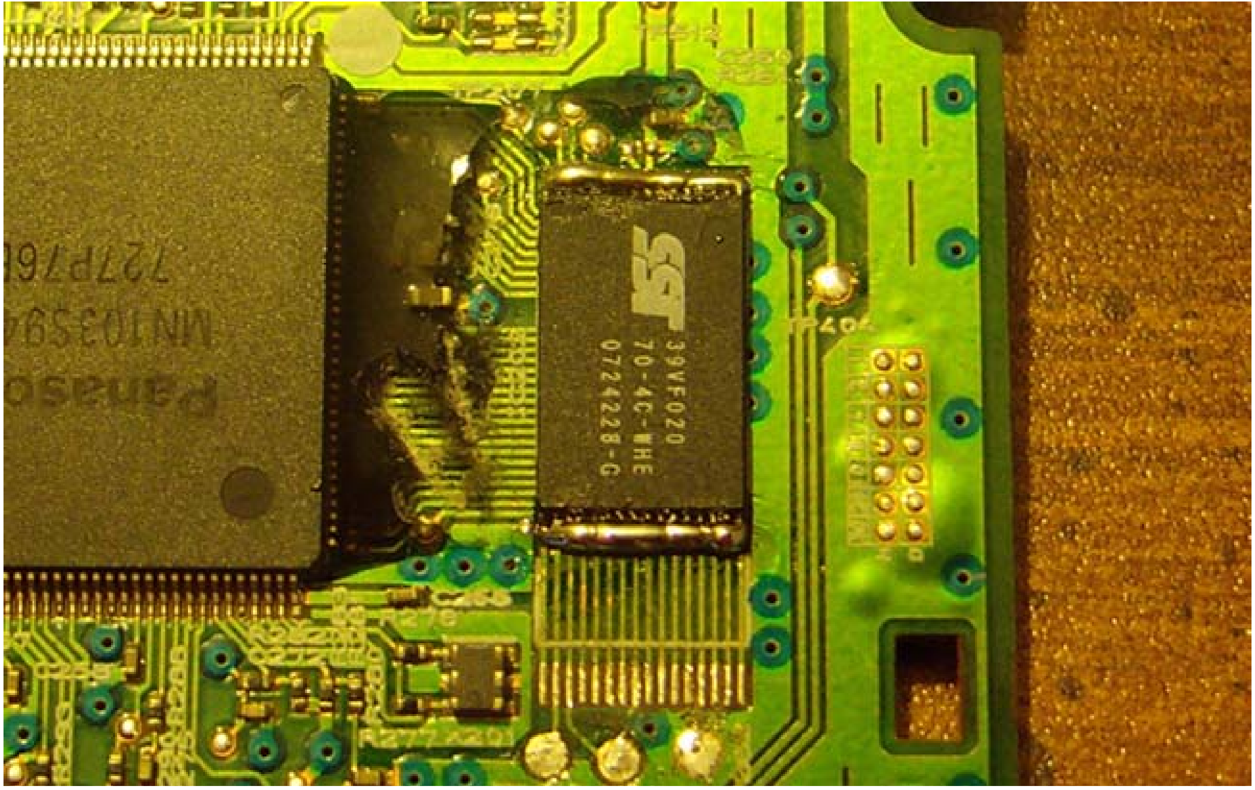
Once the chip has been programmed, you need to resolder it back to the drive. First clean up the PCB as best you can, making sure there are no bridges between pads and you have removed all of the epoxy. There are a couple different ways you could go about resoldering the chip. As you saw in the Modfreakz video, he used a pyropen/heatgun to resolder the chip. This would definitely work, and there’s not much to it, just make sure the chip is lined up, heat the area, and put pressure on the chip while it cools so that it is flush with the board.

Personally, I like to use another method that I found using Google one day. http://warmcat.com/milksop/soldering.html uses a “flood and braid” procedure. You can view the tutorial there, and it works great for me.

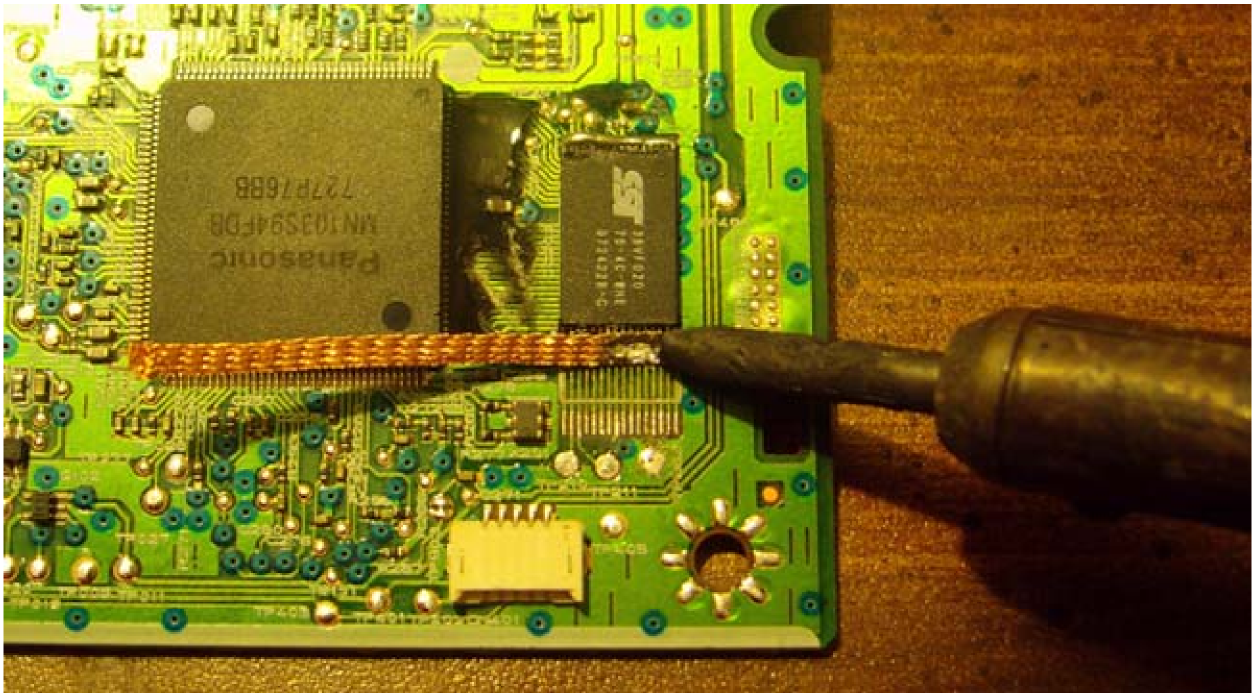
First I tack the corners down so the chip is aligned and won’t move.



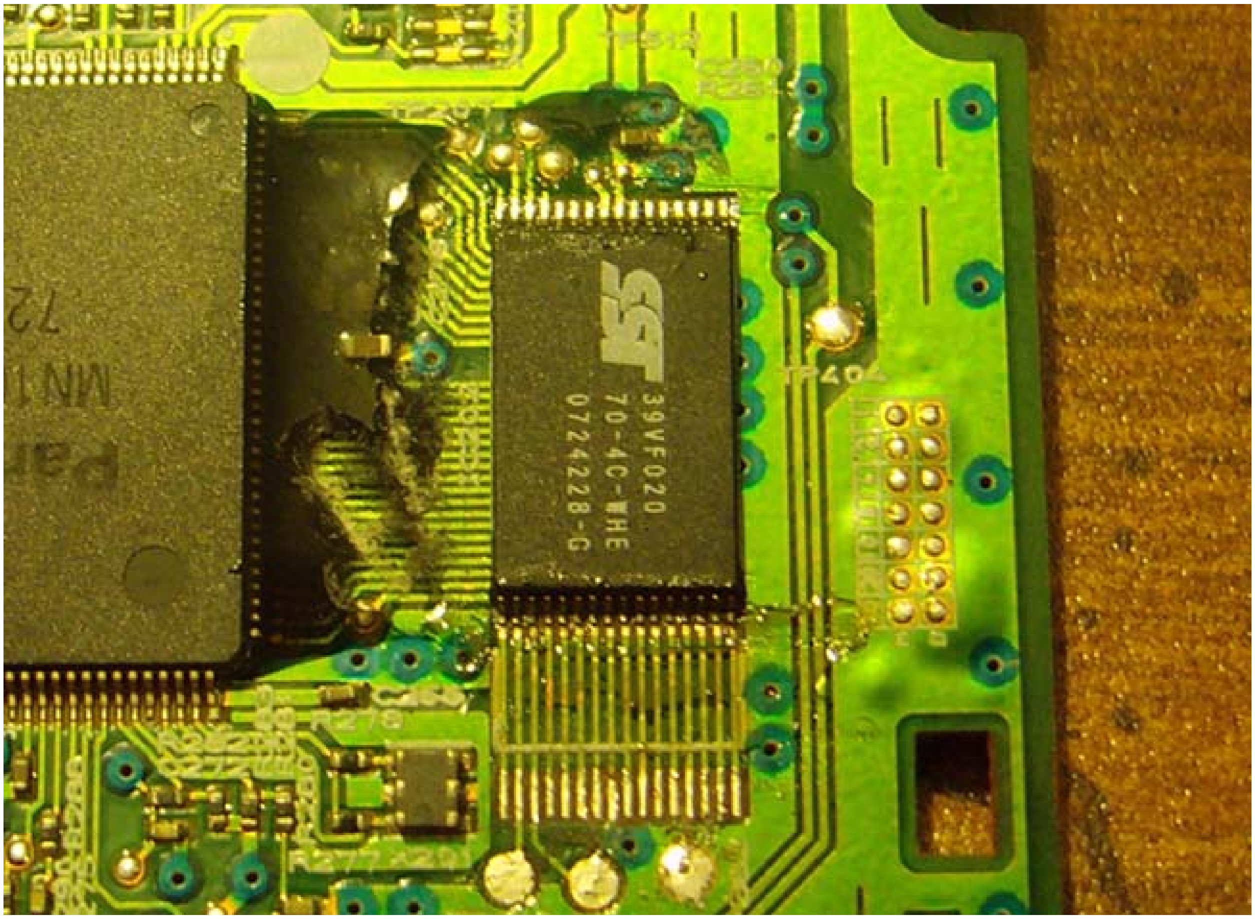
Then I cover both sides of the chip in solder.



Usually at this point, I do the opposite of what Modfreakz did in their video. When they did this method for removing the chip, they heated up all of the solder and lifted the chip. I heat up all of the solder on one side and use a screwdriver or something else to push on top of the chip. This just makes sure that side is flush to the PCB. I then do it for the other side. Then I use desoldering braid to remove the solder.



Hopefully you get a clean resolder job and everything works, so go test it out.



If anybody cares, the drive used in these photos worked perfectly :P

Backing Up Xbox 360 Games

There are a few different ways to back up your Xbox 360 games. There are two free/cheap methods, but are pretty complex. There is a much easier method as well, but it requires that you purchase a specific DVD-ROM drive and install it in your PC.

Method 1 – Purchasing a "Kreon" Drive (best option)

The following drives can be purchased, installed in your PC, and then flashed with one of Kreon's alternate firmwares for reading Xbox 360 games.

SH-D162C	(IDE)
*TS-H352C	(IDE)
SH-D163A	(SATA)
*TS-H353A	(SATA)
SH-D162D	(IDE)
*TS-H352D	(IDE)
SH-D163B	(SATA)
*TS-H353B	(SATA)

*If you notice in this list, after each SH drive there is a matching TS drive right underneath it. This TS drive has the same hardware and firmware, and it can be flashed with the above drive's firmware. For example, a TS-H352C can be flashed with the SH-D162C firmware and the TS-H353A can be flashed with the SH-D163A firmware. The only difference when flashing these TS drives is you need to run the –nocheck option.

After purchasing the drive, install it in your PC and then get on Xbins and download the firmware. Alternatively, many people sell these drives pre-flashed with the Kreon firmware on eBay.

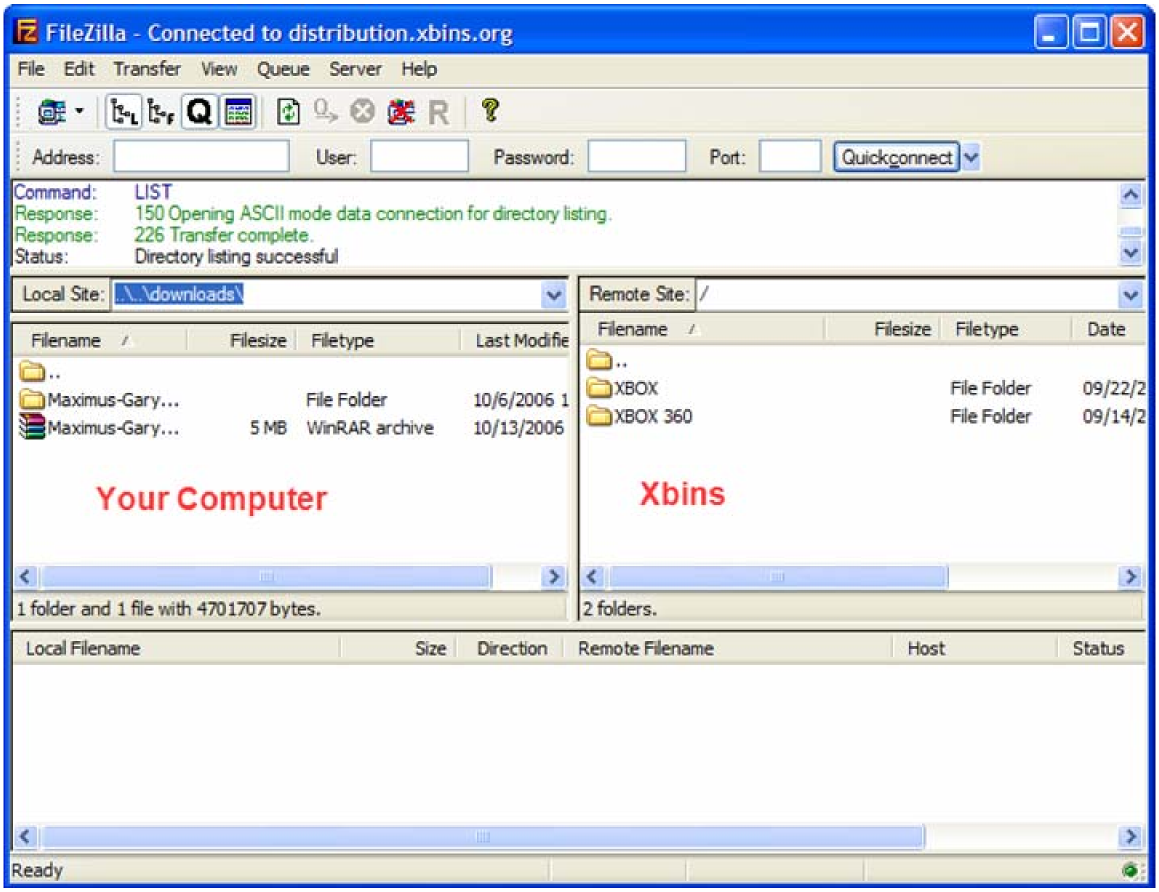
Downloading the Kreon Firmware

The best method to obtain the firmware is by using Xbins. Xbins is an IRC channel and FTP server that hosts Xbox and Xbox 360 mod files, homebrew programs, and development software.

If you have never used Xbins before, the easiest method is to use Ground Zero's automated Xbins downloader.

Download

Download the self-extracting archive and run the xbins.exe file. It will ask you where you want to save the files, choose your desktop. Now, go into the “Xbins” folder on your desktop and run the .bat file. The program will automatically connect to the IRC channel, message the bot, and connect to the FTP server. When filezilla opens up you should see the local Xbins folder on your left side, and a few folders on your right side (this is the FTP server).



```
Command:   LIST
Response:  150 Opening ASCII mode data connection for directory listing.
Response:  226 Transfer complete.
Status:    Directory listing successful
```

Local Site: ..\..\downloads\

Filename	Filesize	Filetype	Last Modifie
..			
Maximus-Gary...		File Folder	10/6/2006 1
Maximus-Gary...	5 MB	WinRAR archive	10/13/2006

1 folder and 1 file with 4701707 bytes.

Remote Site: /

Filename	Filesize	Filetype	Date
..			
XBOX		File Folder	09/22/2
XBOX 360		File Folder	09/14/2

2 folders.

Local Filename	Size	Direction	Remote Filename	Host	Status

Ready

The hacked firmware can be found in:

/XBOX 360/firmware/hacked firmware/Samsung SH-D162C/

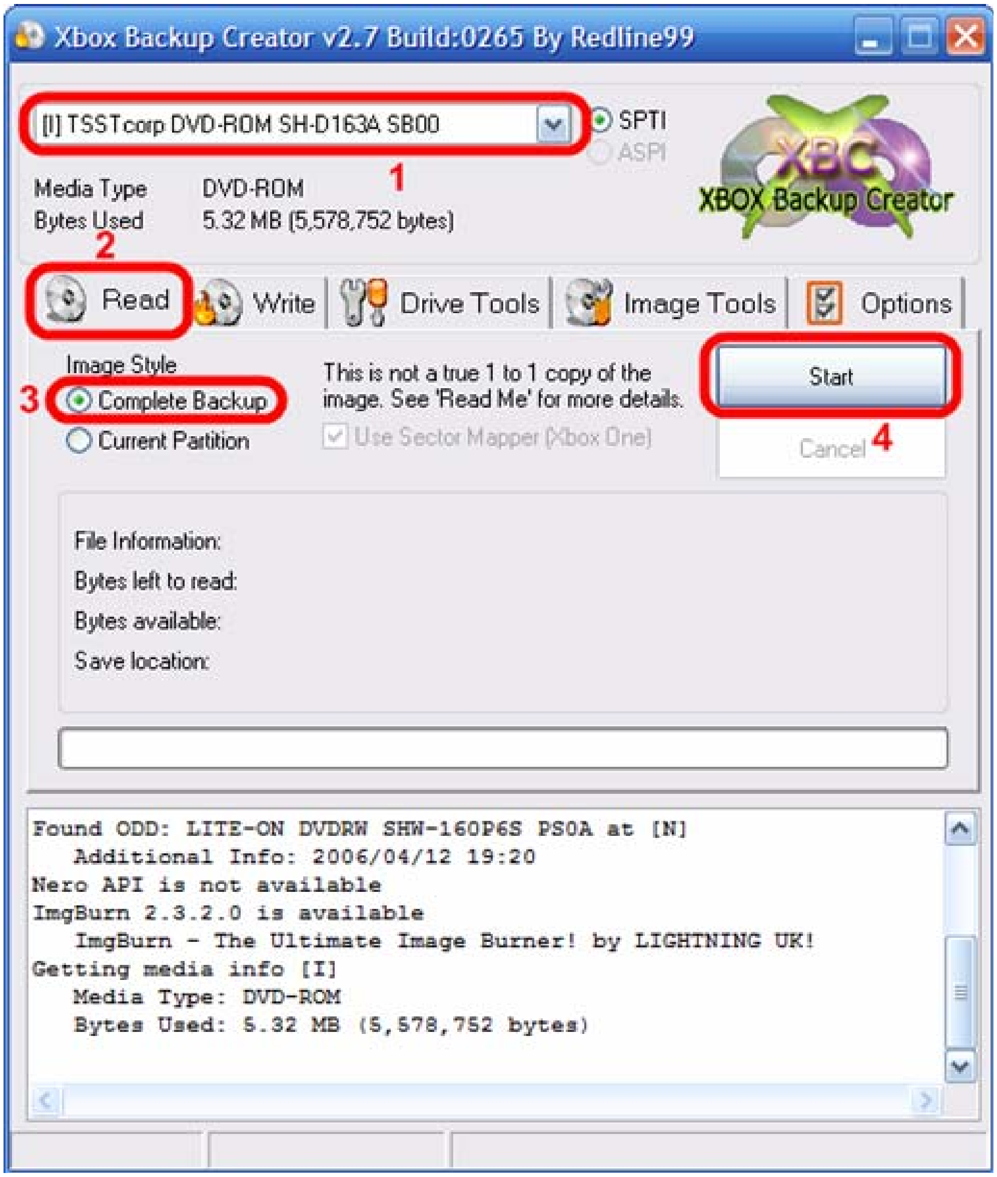
Or whatever drive yours is.

Simply drag the .RAR file over to the left side of FileZilla, into the Xbins folder and wait for it to finish downloading. You can use WinRAR or 7-zip to extract the RAR archive.

Read the “How to upgrade firmware.txt” included in the RAR archive for instructions on flashing your drive with the Kreon firmware.

When the drive is flashed with the Kreon firmware, you can start making backups of your Xbox 360 games.

The easiest-to-use software to backup your games is Xbox Backup Creator. All you need to do is insert your game and run Xbox Backup Creator.


Xbox Backup Creator v2.7 Build:0265 By Redline99
[I] TSSTcorp DVD-ROM SH-D163A SB00
1
2
3
4
XBC
XBOX Backup Creator
Read
Write
Drive Tools
Image Tools
Options
Start
Cancel

● SPTI
○ ASPI

Media Type DVD-ROM
Bytes Used 5.32 MB (5,578,752 bytes)

Image Style
● Complete Backup
○ Current Partition

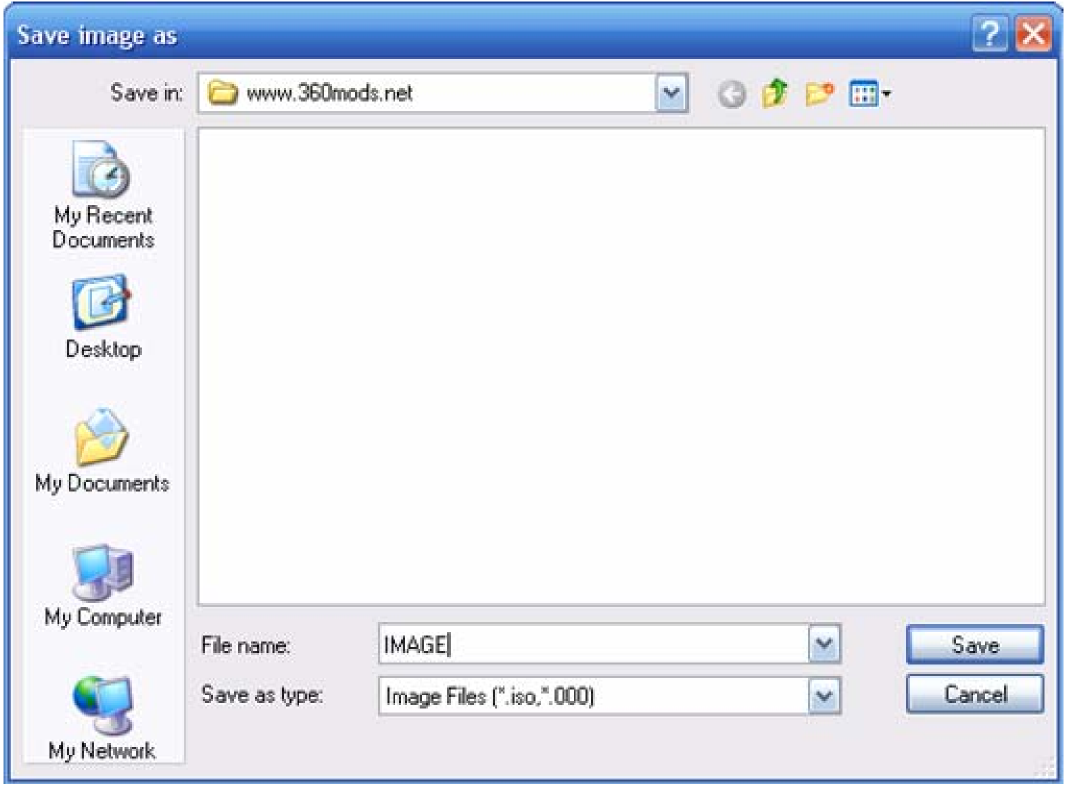
This is not a true 1 to 1 copy of the image. See 'Read Me' for more details.

☑ Use Sector Mapper (Xbox One)

File Information:
Bytes left to read:
Bytes available:
Save location:

```
Found ODD: LITE-ON DVDRW SHW-160P6S PS0A at [N]
   Additional Info: 2006/04/12 19:20
Nero API is not available
ImgBurn 2.3.2.0 is available
   ImgBurn - The Ultimate Image Burner! by LIGHTNING UK!
Getting media info [I]
   Media Type: DVD-ROM
   Bytes Used: 5.32 MB (5,578,752 bytes)
```

1. Make sure your Kreon drive is selected.
2. Select the Read tab.
3. Select Complete Backup
4. Hit Start



Save in: www.360mods.net

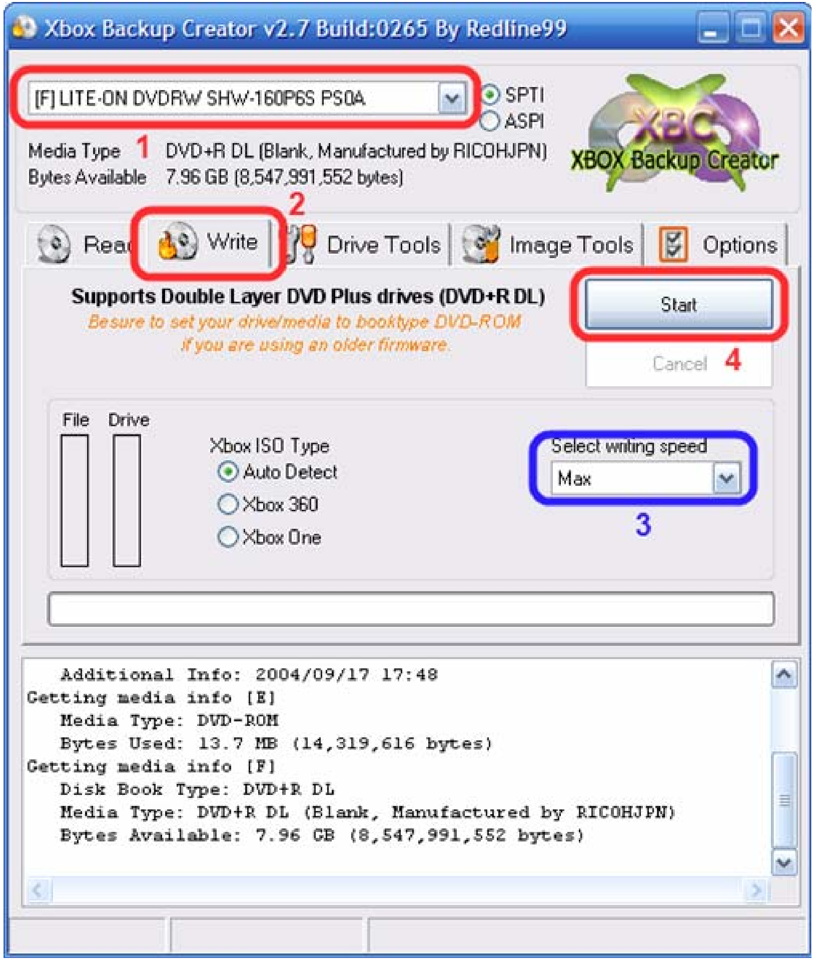
File name: IMAGE

Save as type: Image Files (*.iso,*.000)

Name the file anything you want and hit Save.

Wait for the game to backup to your computer.

To burn the game, you can also use Xbox Backup Creator.



Xbox Backup Creator v2.7 Build:0265 By Redline99

[F] LITE-ON DVDRW SHW-160P6S PS0A

● SPTI
○ ASPI

Media Type DVD+R DL (Blank, Manufactured by RICOHJPN)
Bytes Available 7.96 GB (8,547,991,552 bytes)

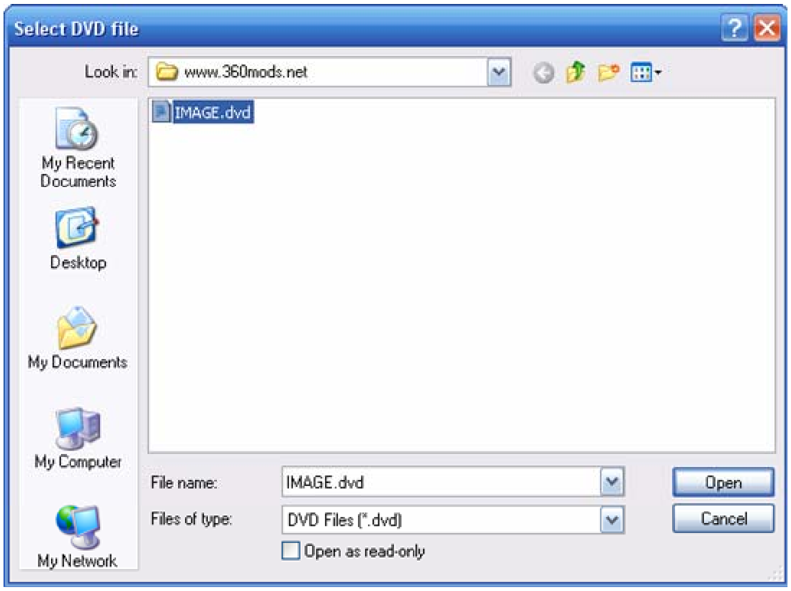
Supports Double Layer DVD Plus drives (DVD+R DL)
Besure to set your drive/media to booktype DVD-ROM if you are using an older firmware.

Xbox ISO Type
● Auto Detect
○ Xbox 360
○ Xbox One

Select writing speed: Max

```
   Additional Info: 2004/09/17 17:48
Getting media info [E]
   Media Type: DVD-ROM
   Bytes Used: 13.7 MB (14,319,616 bytes)
Getting media info [F]
   Disk Book Type: DVD+R DL
   Media Type: DVD+R DL (Blank, Manufactured by RICOHJPN)
   Bytes Available: 7.96 GB (8,547,991,552 bytes)
```

1. Make sure your DVD recorder is selected.
2. Select the Write tab
3. Select your writing speed , 2.4x recommended
4. Hit Start and select your .dvd file



Select DVD file

Look in: www.360mods.net

IMAGE.dvd

File name: IMAGE.dvd
Files of type: DVD Files (*.dvd)
□ Open as read-only

Method 2 – Using Your Xbox 360 Drive (Samsung only)

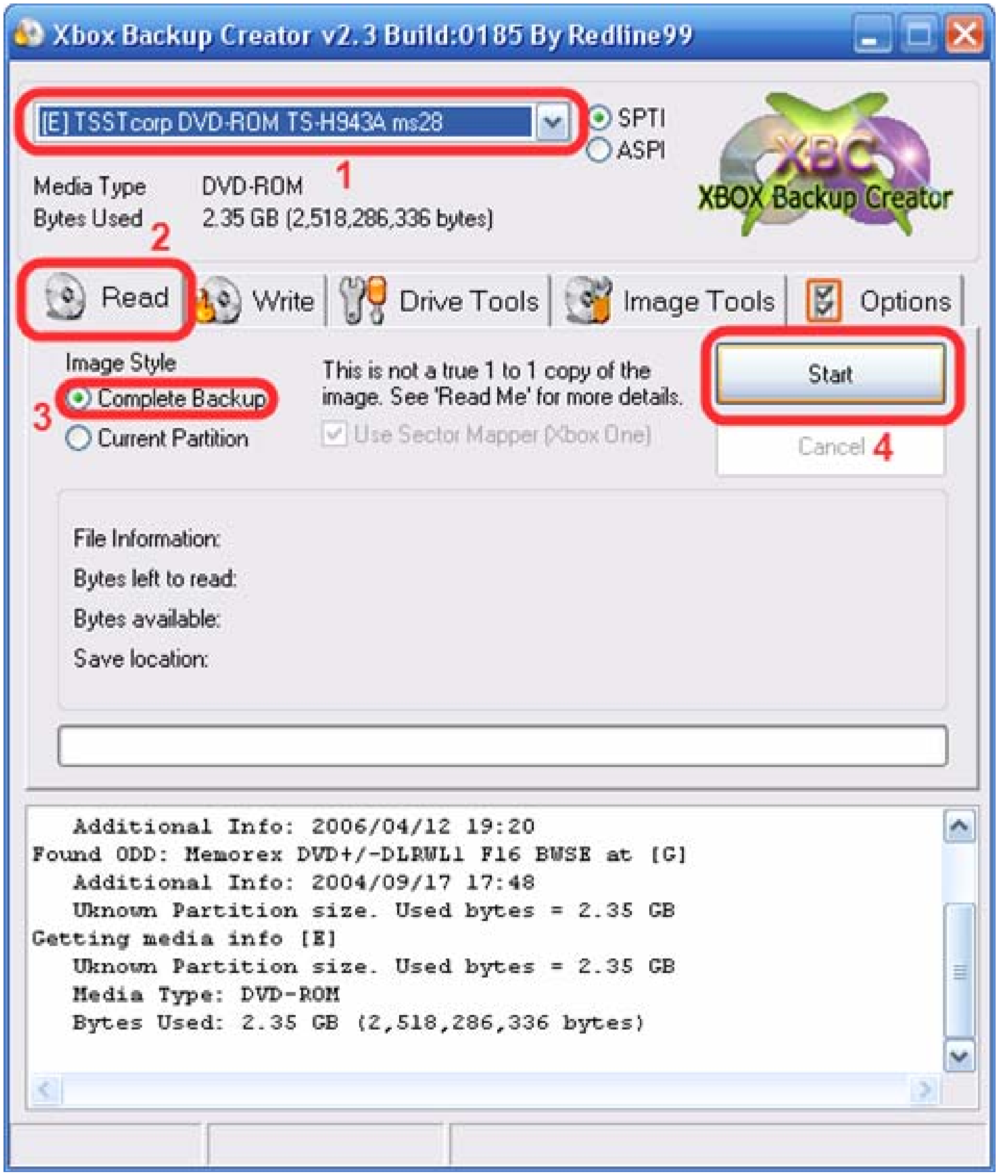
NOTE! – The iXtreme firmware does not have the ability to be recognized in Windows with the 0800 disc and therefore cannot be used to backup games. The only way to backup games with a Samsung drive is if it is flashed with the xtrm0800 firmware (from the very first firmware release) or with an Xtreme firmware and using the 0800 disc.

This method involves connecting the Samsung drive to your PC. This method currently does not work with the Hitachi drive because the game partition fails to unlock correctly. In order to get the Samsung drive recognized in Windows, the drive needs to already have the flashed firmware on it. You will then need to enable the built-in 0800 mode of the firmware. First, you need to burn the enable0800.iso to a DVD+R DL using IMGBurn or CloneCD.

Unplug the SATA cable from the DVD drive. Make sure both power and video cables are hooked up to the Xbox 360. Power on the 360 and insert the 0800 disc you burned. Listen to the drive, let it spin up and read the disc. After 10-20 seconds, you can take eject the drive and take out the 0800 disc. Your drive is now in 0800 mode. Now, you can either connect the drive to the PC (plug in SATA cable) with the PC off, then boot into Windows. You may also try “hot plugging” the SATA cable with Windows already running.

The easiest-to-use software to backup your games is Xbox Backup Creator. All you need to do is insert your game and run Xbox Backup Creator.

360MODS



Xbox Backup Creator v2.3 Build:0185 By Redline99

[E] TSSTcorp DVD-ROM TS-H943A ms28

● SPTI
○ ASPI

Media Type DVD-ROM
Bytes Used 2.35 GB (2,518,286,336 bytes)

Image Style
● Complete Backup
○ Current Partition

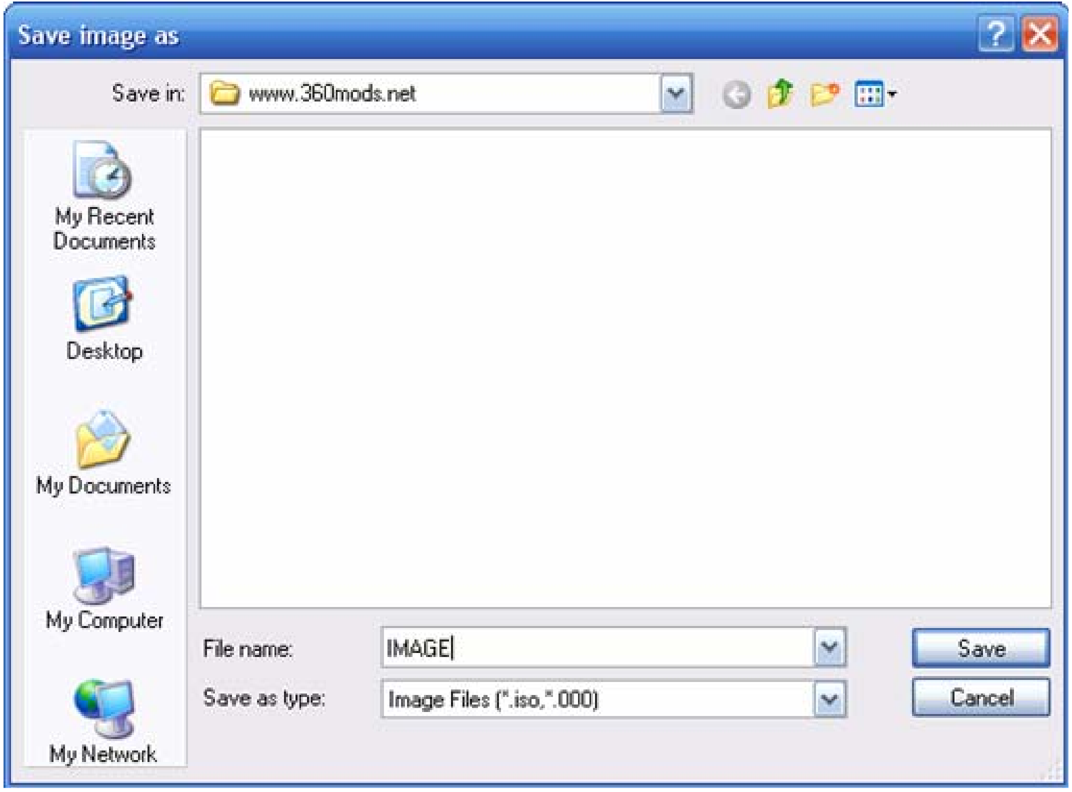
This is not a true 1 to 1 copy of the image. See 'Read Me' for more details.

☑ Use Sector Mapper (Xbox One)

File Information:
Bytes left to read:
Bytes available:
Save location:

```
   Additional Info: 2006/04/12 19:20
Found ODD: Memorex DVD+/-DLRWL1 F16 BWSE at [G]
   Additional Info: 2004/09/17 17:48
   Uknown Partition size. Used bytes = 2.35 GB
Getting media info [E]
   Uknown Partition size. Used bytes = 2.35 GB
   Media Type: DVD-ROM
   Bytes Used: 2.35 GB (2,518,286,336 bytes)
```

1. Make sure your Xbox 360 drive is selected.
2. Select the Read tab.
3. Select Complete Backup
4. Hit Start



www.360mods.net

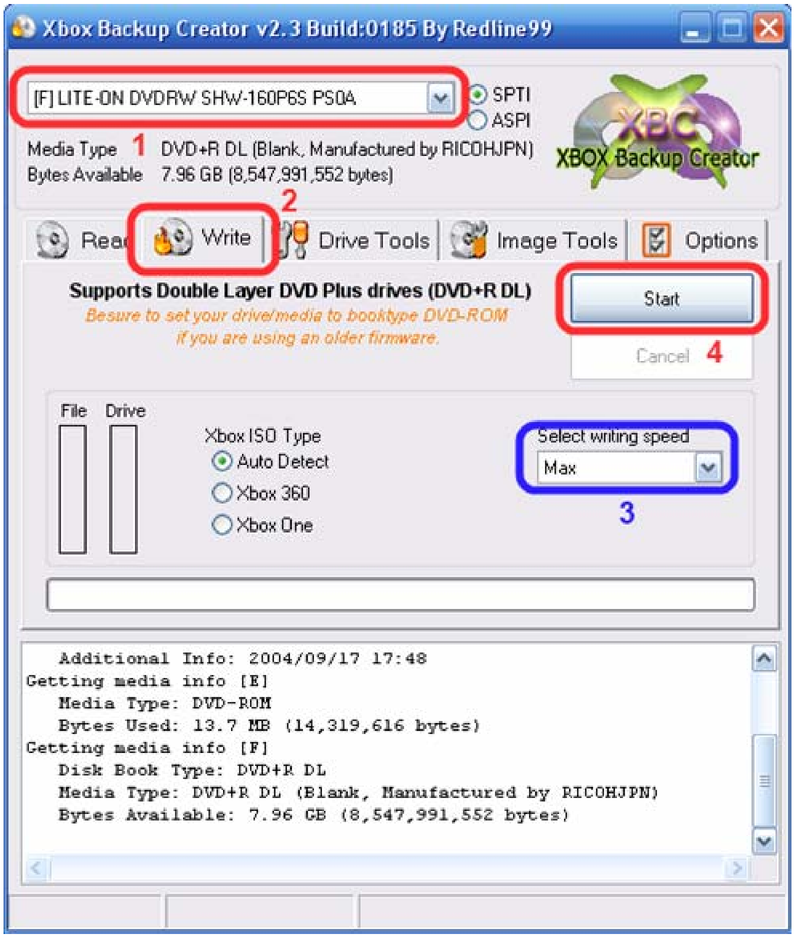
File name: IMAGE

Save as type: Image Files (*.iso,*.000)

Name the file anything you want and hit Save.

Wait for the game to backup to your computer.

To burn the game, you can also use Xbox Backup Creator.



[F] LITE-ON DVDRW SHW-160P6S PS0A

● SPTI
○ ASPI

Media Type DVD+R DL (Blank, Manufactured by RICOHJPN)
Bytes Available 7.96 GB (8,547,991,552 bytes)

Supports Double Layer DVD Plus drives (DVD+R DL)

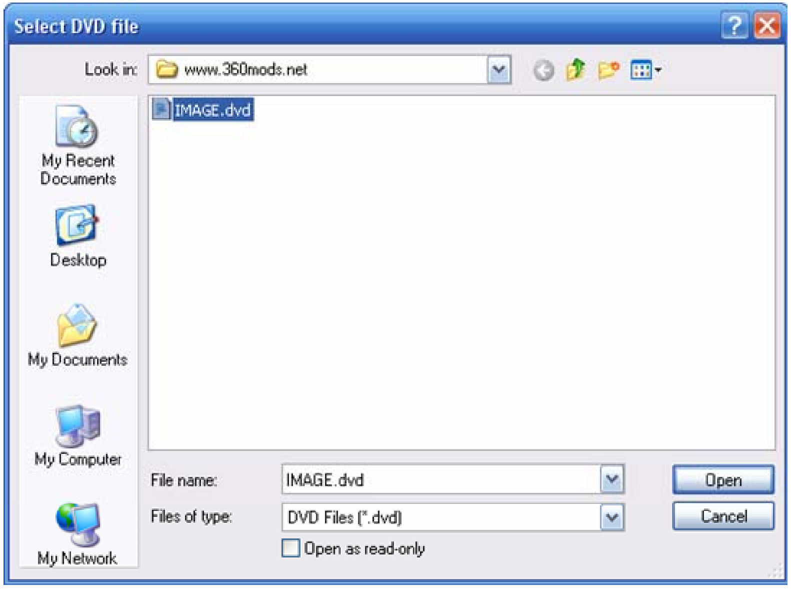
Besure to set your drive/media to booktype DVD-ROM if you are using an older firmware.

Xbox ISO Type
● Auto Detect
○ Xbox 360
○ Xbox One

Select writing speed: Max

```
   Additional Info: 2004/09/17 17:48
Getting media info [E]
   Media Type: DVD-ROM
   Bytes Used: 13.7 MB (14,319,616 bytes)
Getting media info [F]
   Disk Book Type: DVD+R DL
   Media Type: DVD+R DL (Blank, Manufactured by RICOHJPN)
   Bytes Available: 7.96 GB (8,547,991,552 bytes)
```

1. Make sure your DVD recorder is selected.
2. Select the Write tab
3. Select your writing speed , 2.4x recommended
4. Hit Start and select your .dvd file



Select DVD file

Look in: www.360mods.net

File name: IMAGE.dvd

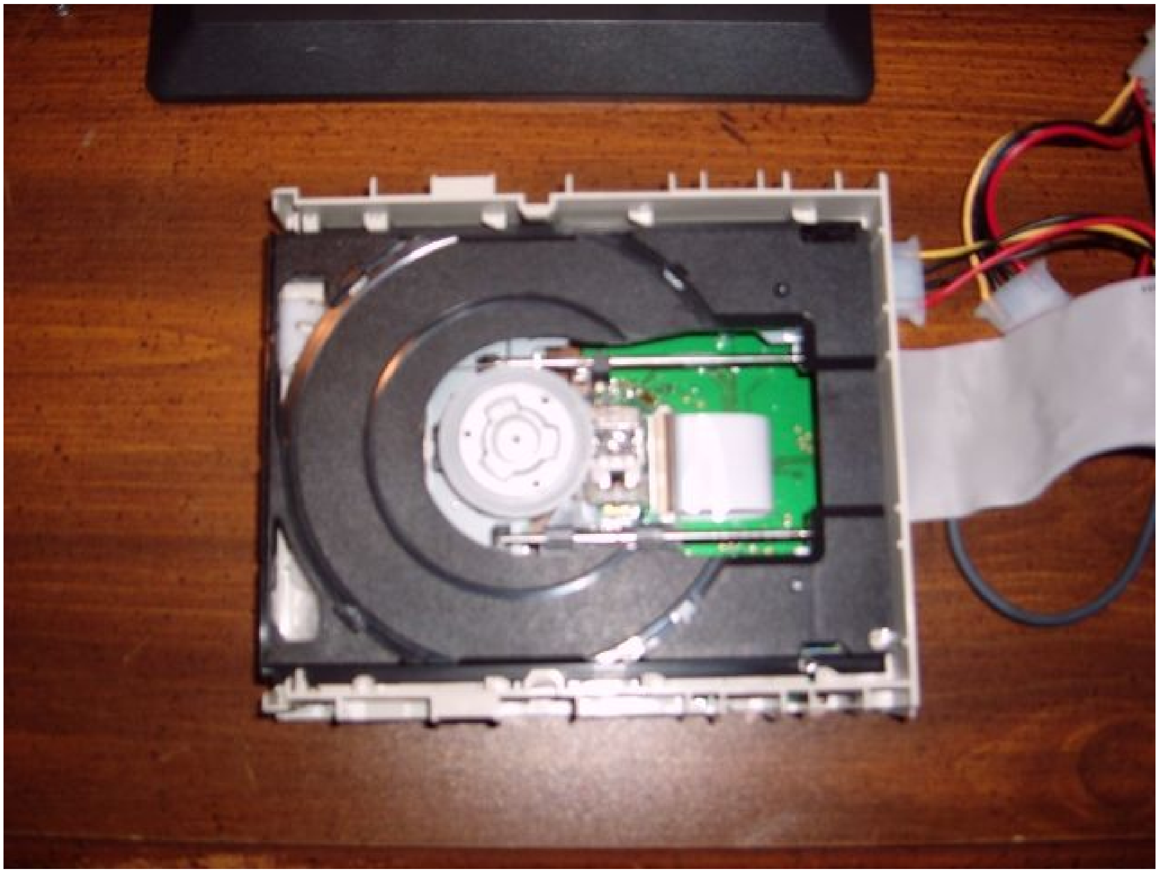
Files of type: DVD Files (*.dvd)

□ Open as read-only

Method 3 – WxRipper

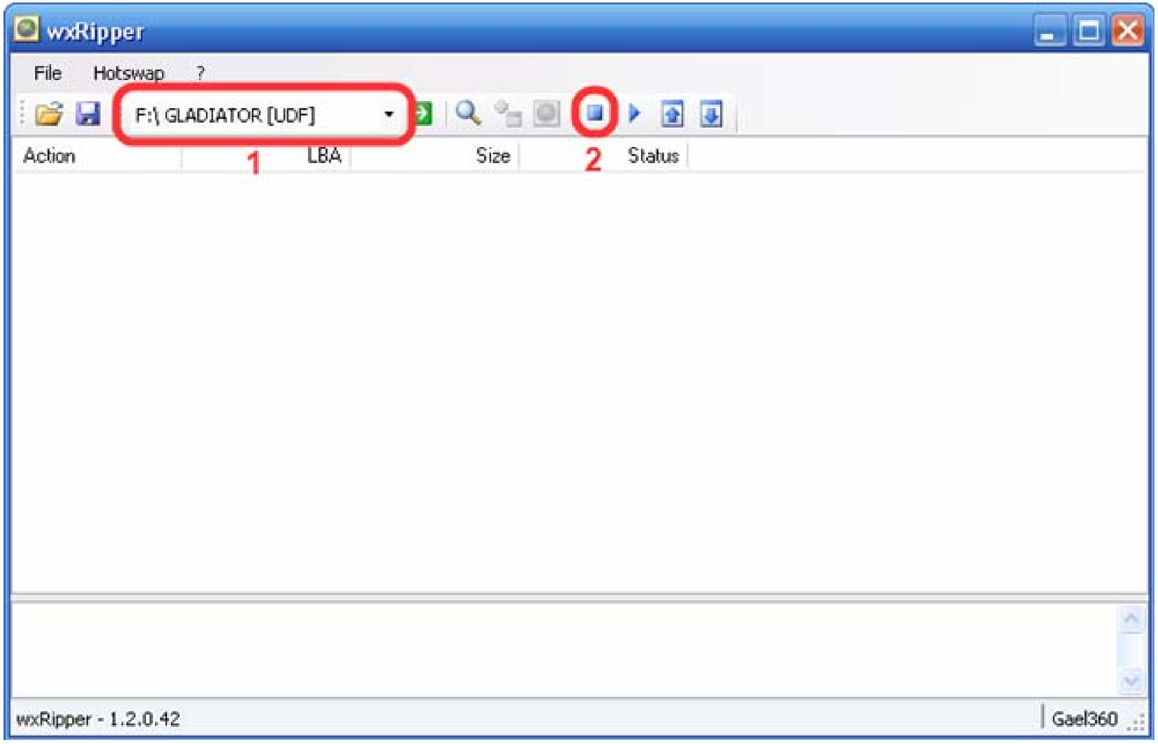
There is another method used to backup Xbox 360 games by hotswapping discs with a normal PC DVD-ROM drive. This method involves hotswapping a large (8 gb+) movie DVD with your Xbox 360 game. The reason this is done is because the Xbox 360 discs have a fake table of contents. So, hotswapping and finding the “magic number” offset is the only way to read the real contents of discs. Hotswapping the discs means switching them without actually hitting the eject button on your drive. So, you will have to either use the emergency eject hole on your drive or open the drive up and make it external with the screws off so you can take off the lid.

Here is an example of my setup using a magnet from a drive lid to keep the discs in place.



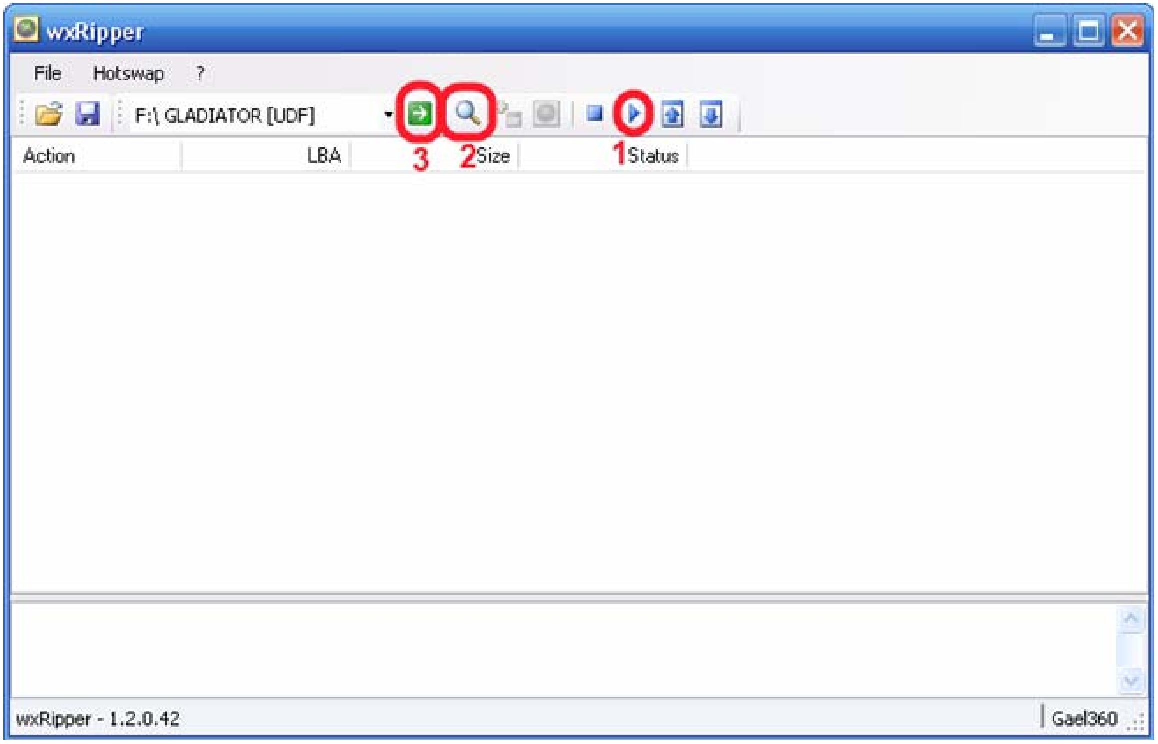
Download WxRipper 1.2

Insert your large DVD, let it get recognized by Windows, and then close out of any autoruns or installers. Then, open up WxRipper.



1. Make sure your DVD drive is selected
2. Hit the Stop button to stop the disc from spinning

This is when you swap the DVD with your Xbox 360 game. Either use the emergency eject hole or take off the lid and stick in your Xbox 360 game. Make sure you replace the lid completely so the disc will spin correctly. Please note that the emergency eject hole method works with very few drives. If you get an error using this, you will most likely have to take the drive apart to hotswap.



1. Select the Play button to spin the Xbox 360 disc.
2. Select the magnifying glass to find the magic number.
3. Select the green arrow to start dumping the game.

If you get errors in WxRipper, your DVD drive doesn't like the bad sectors between LBA19408 & LBA20479. LBA20480 isn't a bad sector, but your drive has a problem aligning the lens on LBA20480...
To fix:

1 - Click on 'Find magic number', the action list is generated
2 - Save the action list to a layout file (File->Save layout file...)
3 - Edit the layout file with notepad, you should have these 3 first lines:

```
C19408
D1072
C109344
```

if you want to make an ISO with the XDVDFS session starting at LBA129824, like a raw dump, replace these 3 lines with these ones:

```
D19408
D1072
D109344
```

Then File-> Load Layout File and dump as normal.

OR METHOD 2:

Regarding the layout file:

- Usually the first 3 lines are like this:

- C19408
- D1072
- C109344

- People say to change them to this (bold represents the changes):

- **D**19408 <- D = Dummy instead of C (Copy)
- D1072 <- Same as original
- **D**109344 <- D= Dummy instead of C (Copy)

In this case, all you're doing is 'faking' the first three lines. I figured out that 9 out of 10 problems occur at the 3rd line, so that's really the only one you need to Dummy. Therefore:

- Most of the time this will work (bold represents the only change):

- C19408 <- Same as original
- D1072 <- Same as original
- **D**109344 <- D = Dummy instead of C (Copy)

This way you get more of the original information. I'm not sure if this matters, but I say more is better when it comes to duplicating a game.

If you want to go even further:

- Since I noticed most people (myself included) occasionally get a CRC error at 91136, especially on games like Tomb Raider and Hitman, I use this layout (replace first 3 lines with these 4):

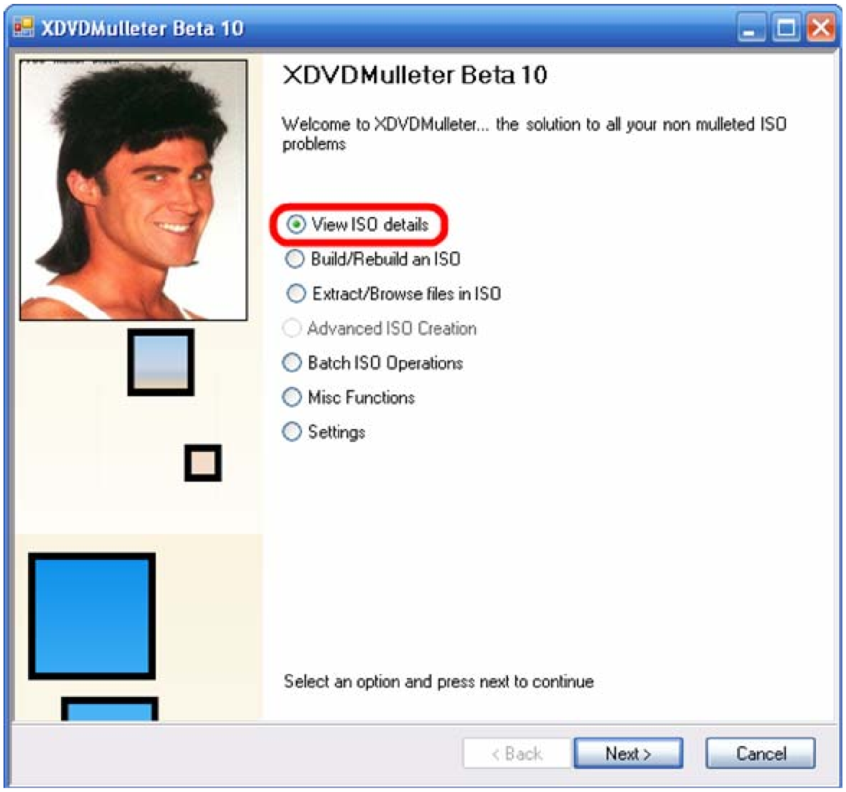
- C19408 <- Same as original
- D1072 <- Same as original
- C91135 <- Original used to be C109344, which I split into 2 parts, stopping at 1 byte before my CRC error @ 91136

- D18209 <- Dummy the remainder of the part that gives the error. 18209 (this line) + 91135 (previous line) = 109344 (original number)

Patching Your Image

After making the dump with WxRipper, you must inject the security sector, pfi, and dmi files into the image before burning it. To do this, we will be using XDVDMulleter. You can get this off Xbins in /XBOX 360/xdvdfs/XDVDMulleter/

Run the program and select “View ISO Details.”



XDVDMulleter Beta 10

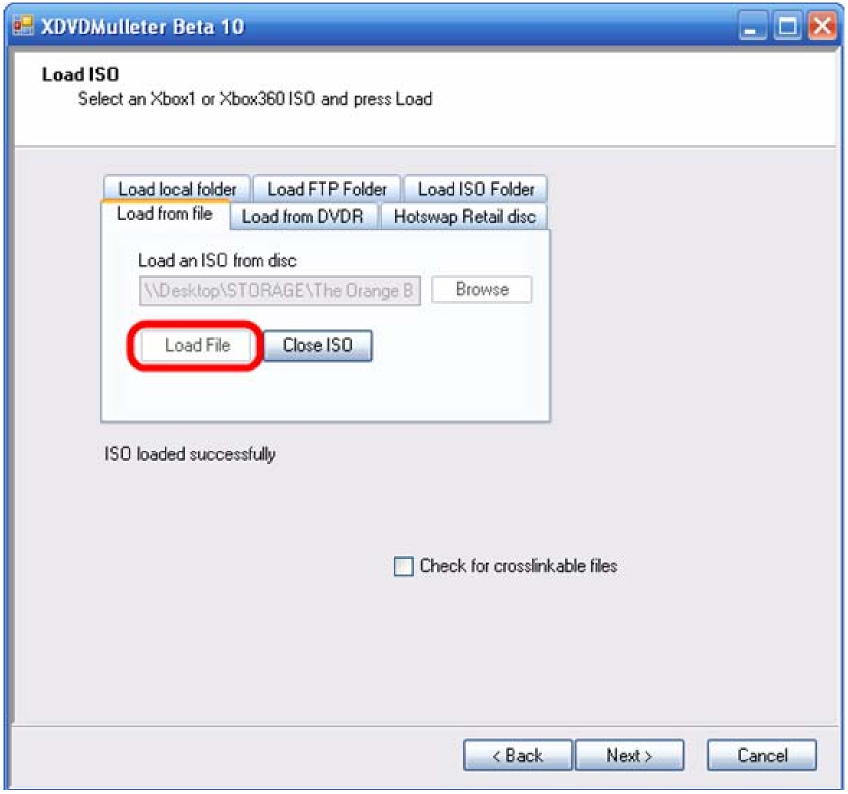
XDVDMulleter Beta 10

Welcome to XDVDMulleter... the solution to all your non mulleted ISO problems

● View ISO details
○ Build/Rebuild an ISO
○ Extract/Browse files in ISO
○ Advanced ISO Creation
○ Batch ISO Operations
○ Misc Functions
○ Settings

Select an option and press next to continue

Then load the .iso you dumped with WxRipper.


XDVDMulleter Beta 10

Load ISO

Select an Xbox1 or Xbox360 ISO and press Load

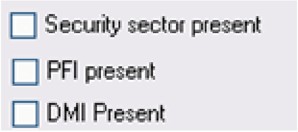
Load an ISO from disc

\\Desktop\STORAGE\The Orange B

ISO loaded successfully

□ Check for crosslinkable files

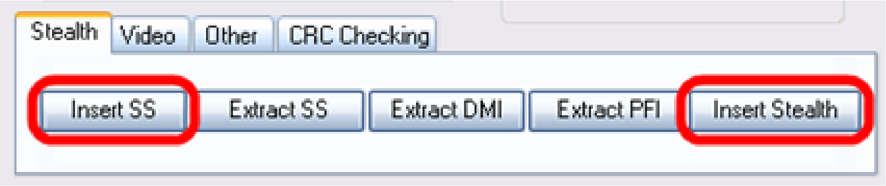
Now under the compatibility list, you should see that the image does not have a security sector, pfi, or dmi sector. This image would not work with the iXtreme firmware, so that's why we need to inject these files.


□ Security sector present

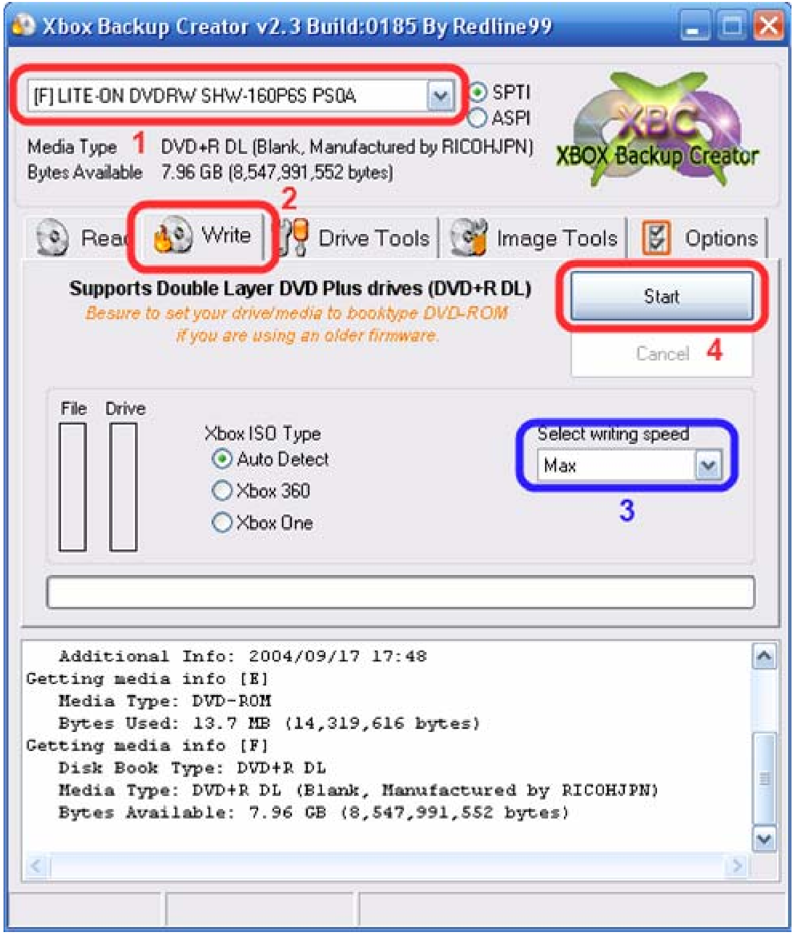
□ PFI present

□ DMI Present

At the bottom, hit the insert ss button, then browse and select this game's ss.bin. Do the same for inserting the stealth files, select the pfi.bin and dmi.bin.



To burn the game, you can use Xbox Backup Creator, IMGBurn, or CloneCD.



Xbox Backup Creator v2.3 Build:0185 By Redline99

[F] LITE-ON DVDRW SHW-160P6S PS0A

● SPTI ○ ASPI

Media Type: DVD+R DL (Blank, Manufactured by RICOHJPN)

Bytes Available: 7.96 GB (8,547,991,552 bytes)

Supports Double Layer DVD Plus drives (DVD+R DL)

Besure to set your drive/media to booktype DVD-ROM if you are using an older firmware.

Xbox ISO Type

● Auto Detect

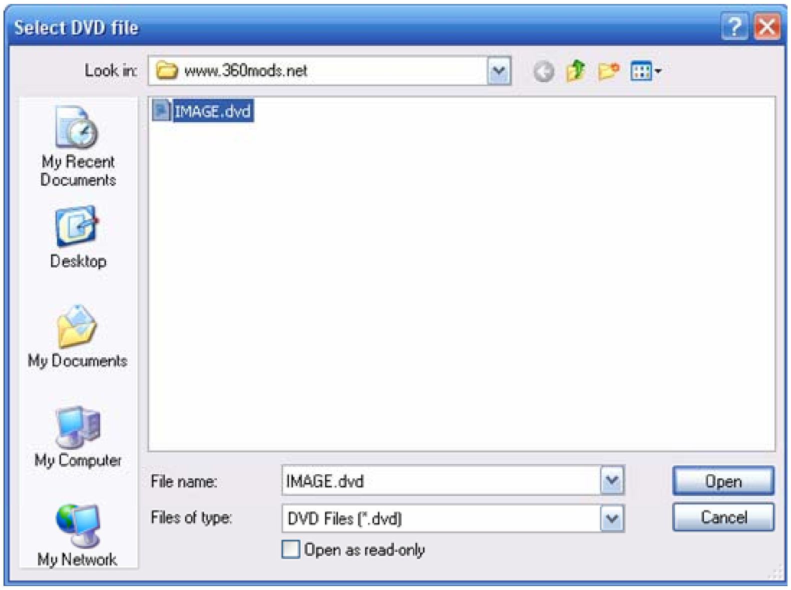
○ Xbox 360

○ Xbox One

Select writing speed: Max

```
   Additional Info: 2004/09/17 17:48
Getting media info [E]
   Media Type: DVD-ROM
   Bytes Used: 13.7 MB (14,319,616 bytes)
Getting media info [F]
   Disk Book Type: DVD+R DL
   Media Type: DVD+R DL (Blank, Manufactured by RICOHJPN)
   Bytes Available: 7.96 GB (8,547,991,552 bytes)
```

1. Make sure your DVD recorder is selected.
2. Select the Write tab
3. Select your writing speed , 2.4x recommended
4. Hit Start and select your .dvd file



Select DVD file

Look in: www.360mods.net

IMAGE.dvd

File name: IMAGE.dvd

Files of type: DVD Files (*.dvd)

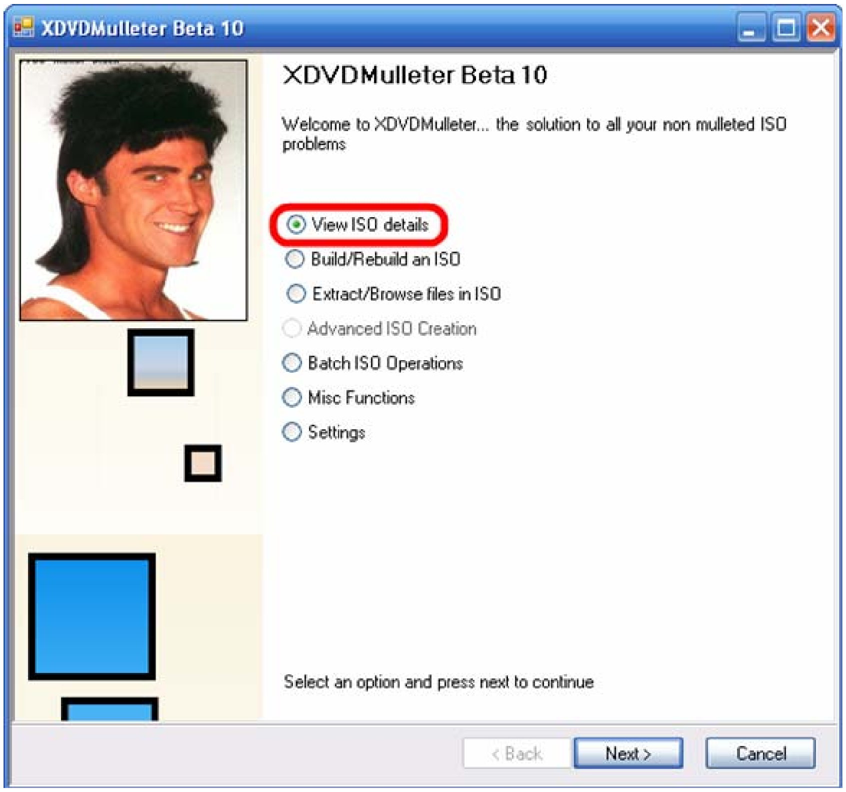
□ Open as read-only

Verifying Game Images

The iXtreme firmwares were created with security in mind. Features from previous “Xtreme” firmwares were scrapped, because they could potentially be detected by Xbox Live. The most important difference was that the iXtreme firmware will only play completely stealth backups. It will refuse to play backups that do not have a valid pfi or dmi sector. For this reason, it is a good idea to check all of your backup images after you have ripped them to the hard drive. Doing this takes only a few seconds, and it may stop you from burning off a game that won’t work with the iXtreme firmware.

To do this, we will be using XDVDMulleter. You can get this off Xbins in /XBOX 360/xdvdfs/XDVDMulleter/

Run the program and select “View ISO Details.”



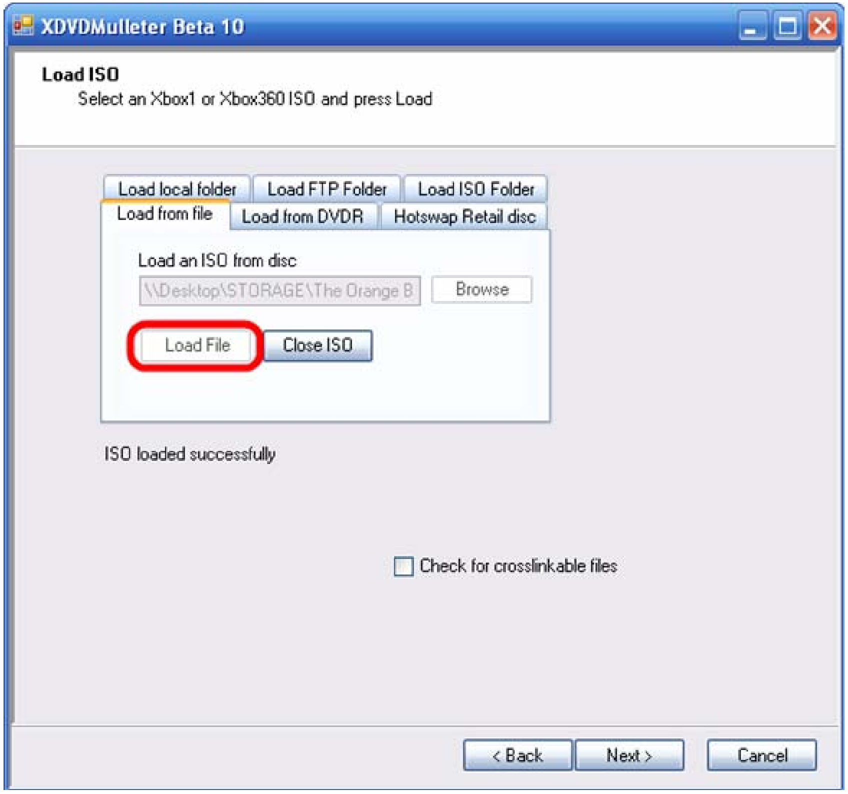
XDVDMulleter Beta 10

Welcome to XDVDMulleter... the solution to all your non mulleted ISO problems

● View ISO details
○ Build/Rebuild an ISO
○ Extract/Browse files in ISO
○ Advanced ISO Creation
○ Batch ISO Operations
○ Misc Functions
○ Settings

Select an option and press next to continue

Then load the .iso



XDVDMulleter Beta 10

Load ISO

Select an Xbox1 or Xbox360 ISO and press Load

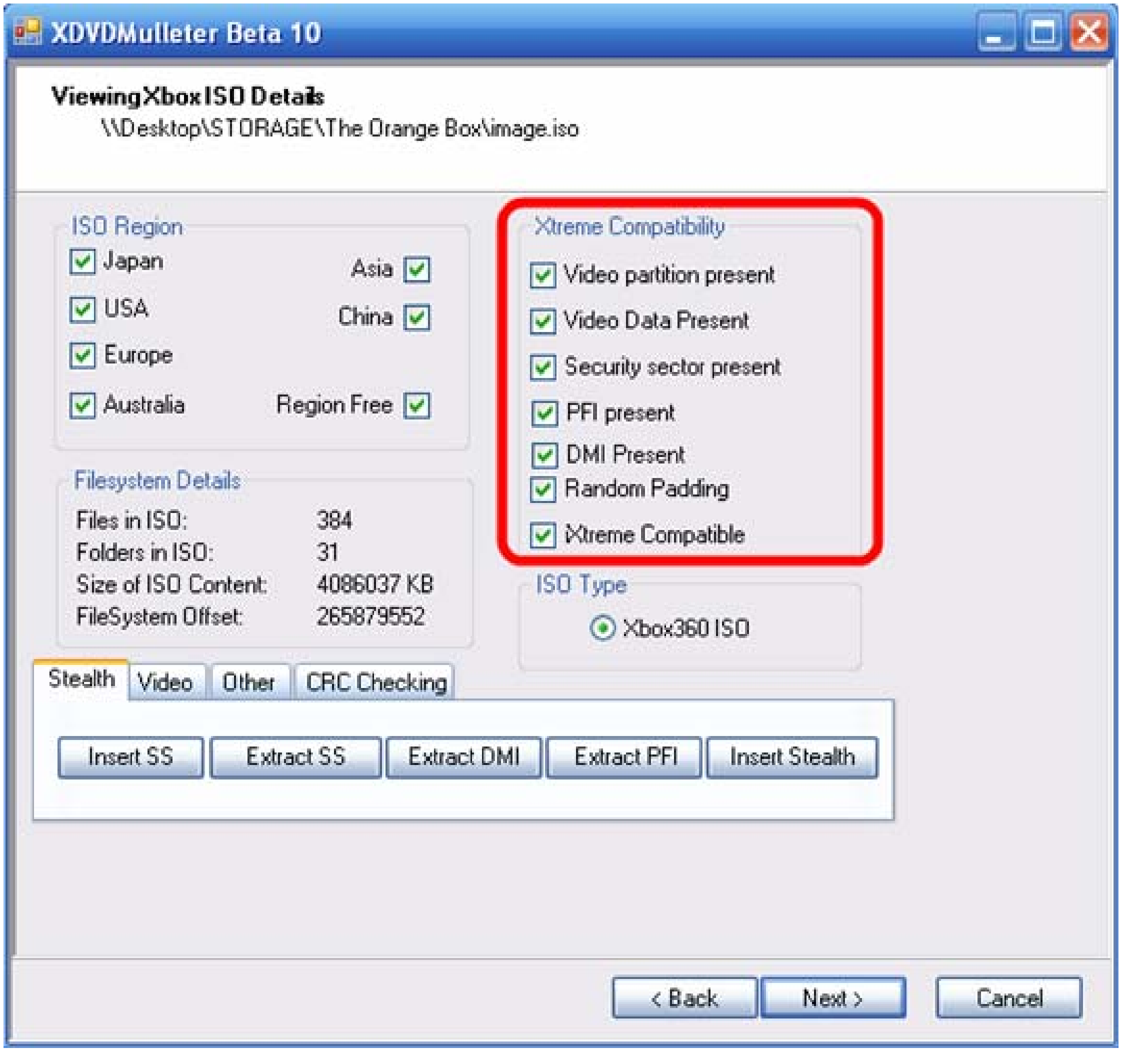
Load an ISO from disc

\\Desktop\STORAGE\The Orange B

ISO loaded successfully

□ Check for crosslinkable files

The next screen will analyze the .iso and show whether the ss, pfi, dmi files and other critical parts are present. Everything should be checked, and if they are, then “iXtreme Compatibility” should also be checked. Then you know you can burn the image and it should work.



Viewing Xbox ISO Details
\\Desktop\STORAGE\The Orange Box\image.iso

ISO Region

☑ Japan
☑ USA
☑ Europe
☑ Australia
Asia ☑
China ☑
Region Free ☑

Filesystem Details

Files in ISO:	384
Folders in ISO:	31
Size of ISO Content:	4086037 KB
FileSystem Offset:	265879552

Xtreme Compatibility

☑ Video partition present
☑ Video Data Present
☑ Security sector present
☑ PFI present
☑ DMI Present
☑ Random Padding
☑ Xtreme Compatible

ISO Type

● Xbox360 ISO

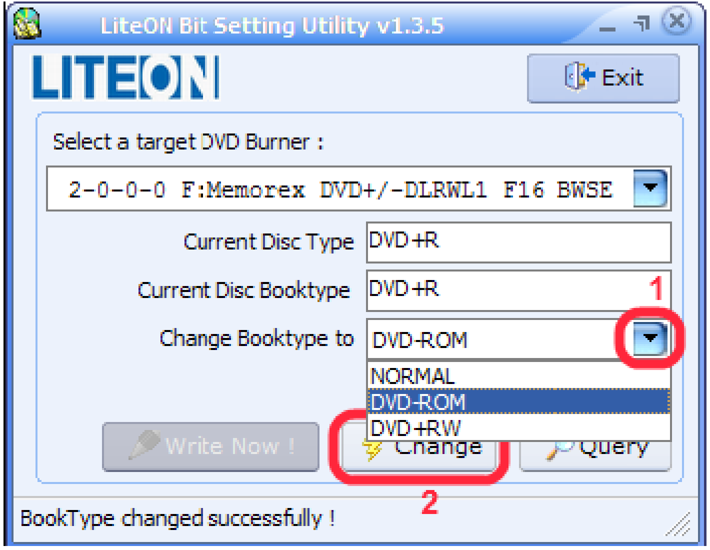
Bitsetting

The latest firmware for both the Xbox 360 Hitachi and Samsung drives does not require bitsetting. For the most part, this is true. But in some cases, bitsetting is still required and it is still recommend, even when using the latest firmware. It only takes a second and if it doesn't cause any problems and may actually help, why not do it?

Bitsetting is a standard of the +R DVD format. It allows you to set the booktype of your +R and +R DL discs to DVD-ROM for greater compatibility. Since bitsetting/booktyping is dependent on what burner you are using, I can't give you universal instructions that everybody will be able to follow, but I can help.

I would recommend using your favorite search engine such as Google and search for your DVD burner model number with the terms bitsetting and/or booktype. Just do a little research on your drive. Some drives auto-bitset, some may need a firmware update, some may need to use a specific program, and some may work with IMGBurn alone.

1. Pioneer burners, including the 111D and 112D drives, are already set to auto-bitset all +R and +R DL media to DVD-ROM. No firmware update is needed, no program, no settings at all. Just burn the discs without messing with anything. They will already be set for you.
2. LiteOn burners enable bitsetting differently from other drives. You can use the LiteOn Bitsetting Utility or IMGBurn to bitset to DVD-ROM. In order to bitset, you must have a blank +R disc already inserted into the drive. Also, if the booktype does not look like it changed, don't worry. Mine doesn't appear to change, but every burn does end up being DVD-ROM booktype.



Select a target DVD Burner : 2-0-0-0 F:Memorex DVD+/-DLRWL1 F16 BWSE

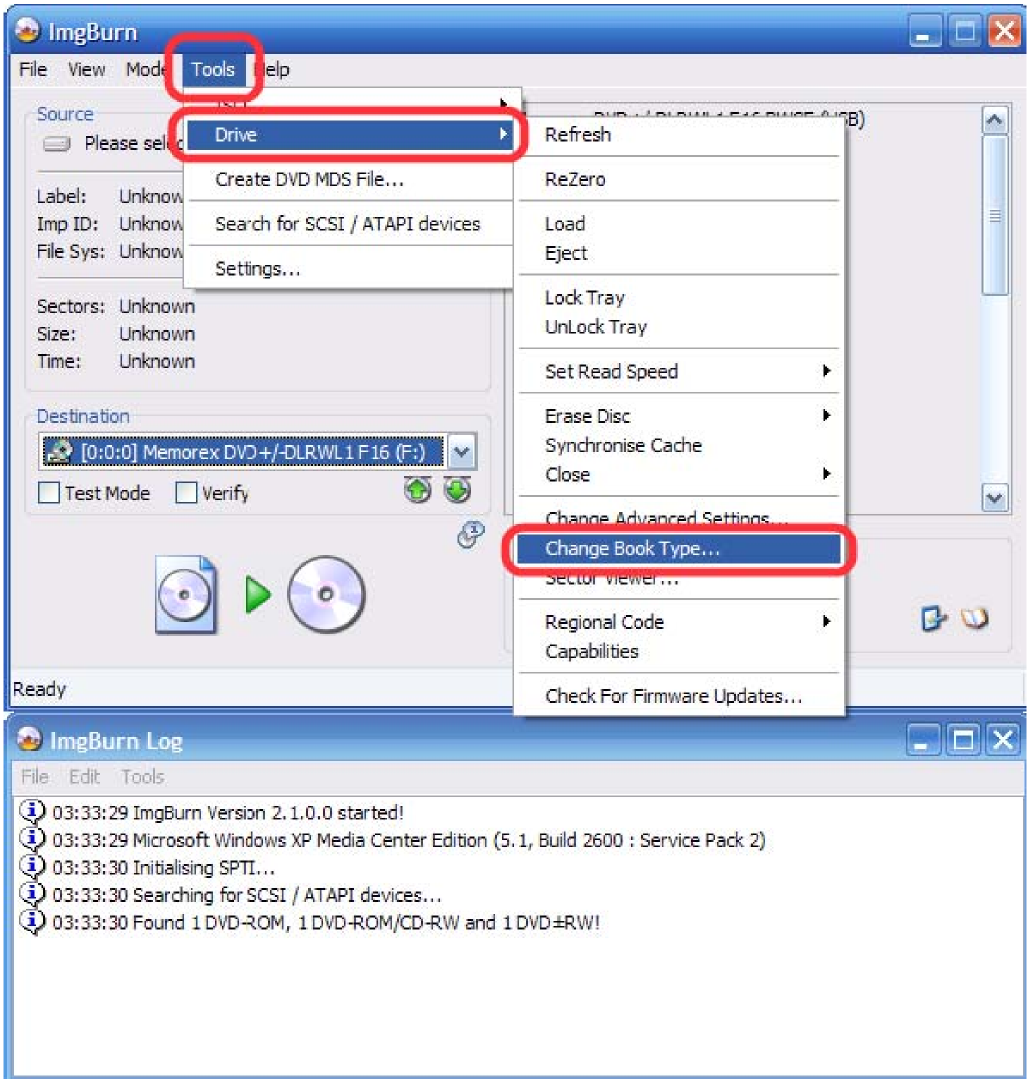
Current Disc Type DVD+R

Current Disc Booktype DVD+R

Change Booktype to DVD-ROM

BookType changed successfully !

3. For other drives, you can try using IMGBurn. With a +R disc in the drive, open IMGBurn and go to Tools > Drive > Change Booktype.



Label: Unknown
Imp ID: Unknown
File Sys: Unknown

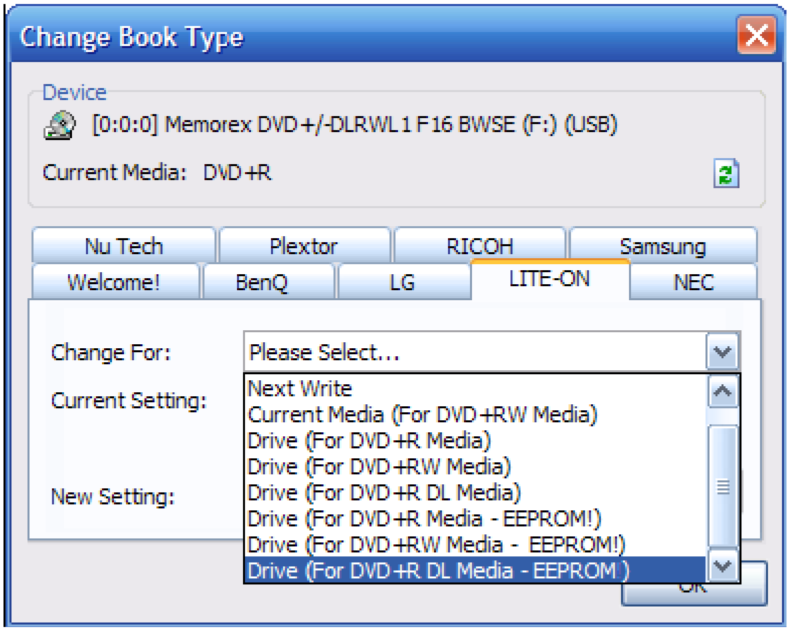
Sectors: Unknown
Size: Unknown
Time: Unknown

[0:0:0] Memorex DVD+/-DLRWL1 F16 (F:)

Ready

```
03:33:29 ImgBurn Version 2.1.0.0 started!
03:33:29 Microsoft Windows XP Media Center Edition (5.1, Build 2600 : Service Pack 2)
03:33:30 Initialising SPTI...
03:33:30 Searching for SCSI / ATAPI devices...
03:33:30 Found 1 DVD-ROM, 1 DVD-ROM/CD-RW and 1 DVD±RW!
```

There will be tabs for different types of drives. If you select your drive and it says “Unknown” then you do not have that drive type or your drive does not support bitsetting. As I said earlier, some drives have an updated firmware for bitsetting support. You may notice some settings for “EEPROM.” This will permanently change the bitsetting of the drive, so that it will always set to DVD-ROM, similar to how the Pioneer drives bitset automatically. You will only have to bitset one time if you choose the eeprom option.



Change Book Type

Device

[0:0:0] Memorex DVD+/-DLRWL1 F16 BWSE (F:) (USB)

Current Media: DVD+R

Change For: Please Select...

Current Setting:

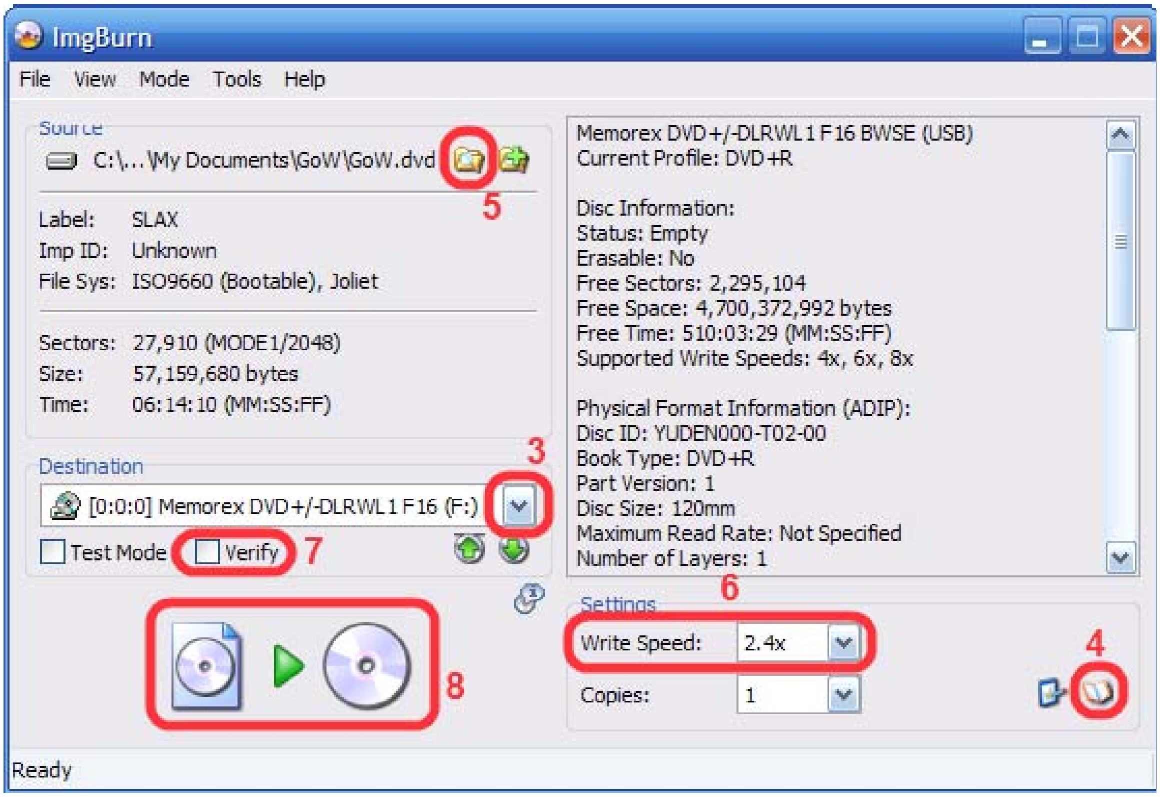
New Setting:

Nu Tech
Plextor
RICOH
Samsung
Welcome!
BenQ
LG
LITE-ON
NEC
Next Write
Current Media (For DVD+RW Media)
Drive (For DVD+R Media)
Drive (For DVD+RW Media)
Drive (For DVD+R DL Media)
Drive (For DVD+R Media - EEPROM!)
Drive (For DVD+RW Media - EEPROM!)
Drive (For DVD+R DL Media - EEPROM)
OK

Burning Using IMGBurn

You can also burn any backups using IMGBurn. The latest version of IMGBurn supports setting the layerbreak via .dvd files.

1. Insert your blank DVD+R DL into your burner
2. Open IMGBurn
3. Make sure the destination drive is your burner
4. Change the booktype if necessary
5. Load your .dvd file
6. Set your write speed (2.4x recommended, approximately 45 minutes to burn)
7. Uncheck verify as it is unnecessary and will just add time to the process
8. Burn the image to the disc



Source
C:\...\My Documents\GoW\GoW.dvd

Label: SLAX
Imp ID: Unknown
File Sys: ISO9660 (Bootable), Joliet

Sectors: 27,910 (MODE1/2048)
Size: 57,159,680 bytes
Time: 06:14:10 (MM:SS:FF)

Destination
[0:0:0] Memorex DVD+/-DLRWL1 F16 (F:)
□ Test Mode □ Verify

Memorex DVD+/-DLRWL1 F16 BWSE (USB)
Current Profile: DVD+R

Disc Information:
Status: Empty
Erasable: No
Free Sectors: 2,295,104
Free Space: 4,700,372,992 bytes
Free Time: 510:03:29 (MM:SS:FF)
Supported Write Speeds: 4x, 6x, 8x

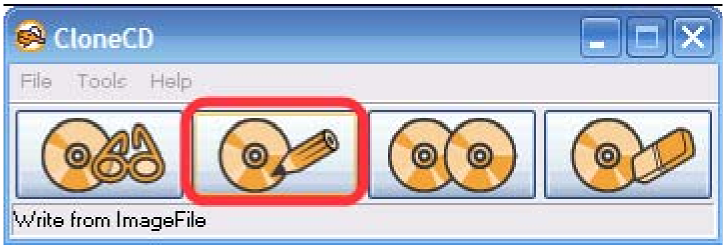
Physical Format Information (ADIP):
Disc ID: YUDEN000-T02-00
Book Type: DVD+R
Part Version: 1
Disc Size: 120mm
Maximum Read Rate: Not Specified
Number of Layers: 1

Settings
Write Speed: 2.4x
Copies: 1

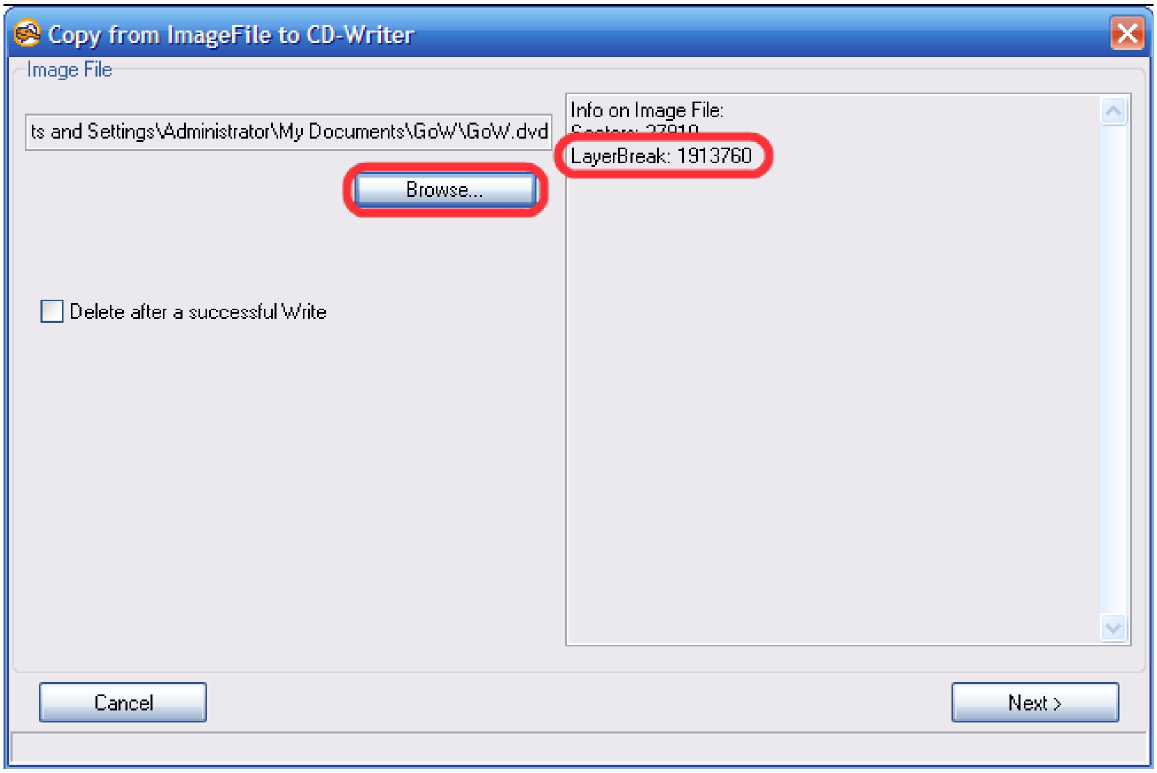
Burning Using CloneCD

CloneCD also supports the custom layerbreak via the .dvd file. To burn using CloneCD:

1. Insert your blank DVD+R DL into your burner
2. Open CloneCD
3. Select "Write from image file



4. Hit the browse button and open your .dvd file. Check to make sure the layerbreak is set to 1913760.

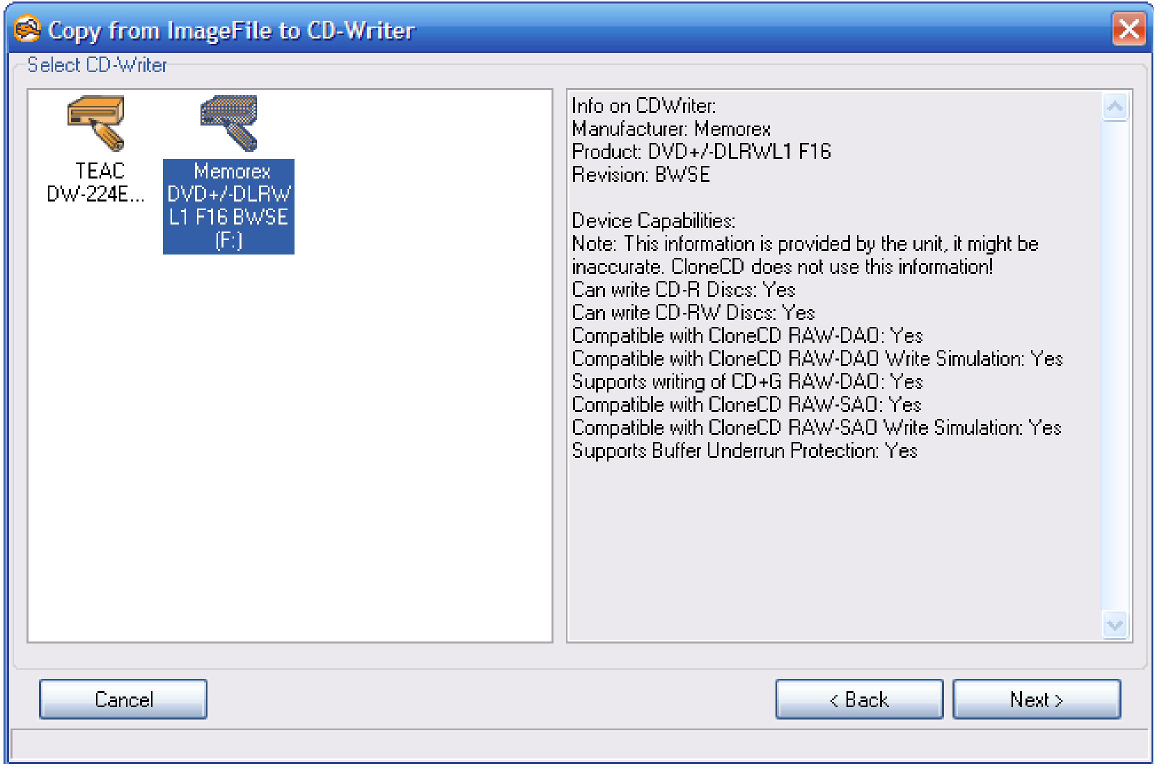


ts and Settings\Administrator\My Documents\GoW\GoW.dvd

□ Delete after a successful Write

Info on Image File:
Sectors: 27910
LayerBreak: 1913760

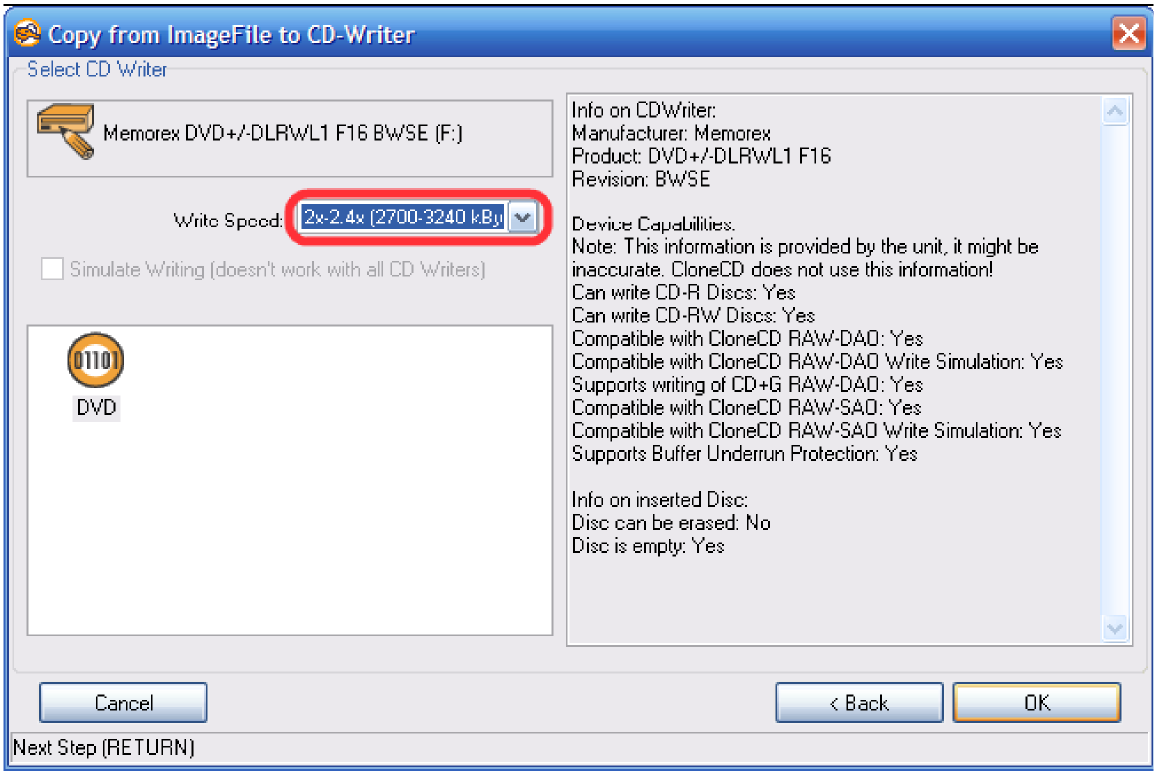
5. Hit next, and select your burner from the list of drives to the left.


Copy from ImageFile to CD-Writer
Select CD-Writer
TEAC DW-224E...
Memorex DVD+/-DLRW L1 F16 BWSE (F:)
Cancel
< Back
Next >

Info on CDWriter:
Manufacturer: Memorex
Product: DVD+/-DLRWL1 F16
Revision: BWSE

Device Capabilities:
Note: This information is provided by the unit, it might be inaccurate. CloneCD does not use this information!
Can write CD-R Discs: Yes
Can write CD-RW Discs: Yes
Compatible with CloneCD RAW-DAO: Yes
Compatible with CloneCD RAW-DAO Write Simulation: Yes
Supports writing of CD+G RAW-DAO: Yes
Compatible with CloneCD RAW-SAO: Yes
Compatible with CloneCD RAW-SAO Write Simulation: Yes
Supports Buffer Underrun Protection: Yes

6. Hit next again, select your write speed (2.4x recommended), and then hit Ok to start burning.


Copy from ImageFile to CD-Writer
Select CD Writer
Memorex DVD+/-DLRWL1 F16 BWSE (F:)
DVD
Cancel
< Back
OK

Write Speed: 2x-2.4x (2700-3240 kBy

□ Simulate Writing (doesn't work with all CD Writers)

Info on CDWriter:
Manufacturer: Memorex
Product: DVD+/-DLRWL1 F16
Revision: BWSE

Device Capabilities:
Note: This information is provided by the unit, it might be inaccurate. CloneCD does not use this information!
Can write CD-R Discs: Yes
Can write CD-RW Discs: Yes
Compatible with CloneCD RAW-DAO: Yes
Compatible with CloneCD RAW-DAO Write Simulation: Yes
Supports writing of CD+G RAW-DAO: Yes
Compatible with CloneCD RAW-SAO: Yes
Compatible with CloneCD RAW-SAO Write Simulation: Yes
Supports Buffer Underrun Protection: Yes

Info on inserted Disc:
Disc can be erased: No
Disc is empty: Yes

Next Step (RETURN)

Downloads

This Tutorial

WinRAR

Microsoft .NET Framework v2

Easy Xbins

Latest VIA SATA Drivers

iPrep

Xbox Backup Creator

WxRipper

activate.iso / enable0800.iso

IMGBurn

CloneCD

”Open CMD Here” Powertoy

Slax v2.1

Connectivity Kit Precautions

Thanks

www.360mods.net – site I started
www.xboxhacker.net – the hardcore Xbox hackers
www.xbox-scene.com – huge resource for Xbox mods
www.free60.org – getting Linux on the Xbox 360
commodore4eva – for hacking the drives and being so consistent
Iriez – for Xbins and his amazing dedication to the scene
Maximus / carranzafp – for the time put into the Hitachi drives and firmware toolbox
GaryOPA – for his Hitachi work early on
TheSpecialist – group that first hacked the system
Seventhson / Kev.nu – so much information on the drives
MacDennis – group that first hacked the system
Robinsod – group that first hacked the system, as well as hv info
probutus – for making “Slax”
Dr. Matrix – wow, hv knowledge is crazy
Team Modfreakz – always around, doing something cool
arnezami – for the timing attack and hopefully a hacked kernel in the future
crawler360 – for recreating the tmbinc’s exploit
Felix Domke(tmbinc) – for the hypervisor exploit and Linux development
stonersmurf – for Linux testing and development
cpasjuste – for Linux tutorials and testing
Birdy – for help with the Hitachi development
Joseph Lin – for making MTKFlash
Caster420 – for firmtool and helping me run the site
Lahey – for rewriting the Hitachi batch files
Klutsh – for Xtreme Boot Maker and now iPrep
Exobex – for X360SAM
Redline99 – for Xbox Backup Creator
Schtrom – for Dosflash
Badsheepy – for XDVD Mulleter
Gael360 – for WxRipper
Ground Zero – for “Easy Xbins”
l33 – for AutoSAM
Grim187 – for finding the MTKFlash hexedits
Boke – for his MTKFlash force list patch
Redline – for helping me with MS28 testing
XTNS06 – MS28 testing
rodpad – MS28 testing
IIsTixII – MS28 testing
PrimitiveX5 – helping moderate forums
vinomarky – helping moderate forums
bigd23 – helping moderate forums
sosotit – for his game backup tutorial
AccidentProne – for his many tutorials
Geebee – the original tutorial creator
mksoftware – helped GB on the tutorial
#fw on EFNET
#360mods.net on EFNET

And anybody else I forgot