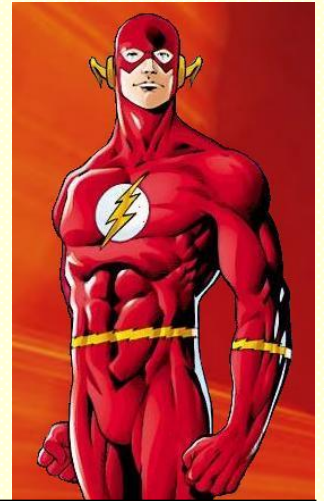


Using Barry Allen for Dreamboxes with PowerPC CPU on the DM 600PVR

Some time ago I wrote user guides for two boot managers for the 7025 (Multiboot and Barry Allen). During this I also learnt about the porting project of Barry Allen to the PowerPC-Boxes DM7020 and DM600. Because the DM600 doesn't have the possibility to attach an USB-Stick or insert a CF-card you had only the internal hard disk as a storage medium. This situation was not optimal and called for action.

My knowledge was not sufficient to run this project alone, but I got help from "gutemine" the [Barry Allen](#) developer. Even with gutemine not owning a DMM 600 I always got tips, hints and improved test versions of Barry Allen. Also the discussion during the later tests with ketschuss, the CoAdmin from the PB-PowerBoard was very helpful and finally brought me on the right track.

But first I started looking for a working CF-to-IDE Adapter/Module. As you might know - Google is your friend - so I started my research there.



Barry Allen
the second FLASH

Introduction

[Initial Setup - the Hardware](#)

[The Software](#)

[Installation](#)

[Telnet Commands](#)

[FAQ](#)

Attention: Everything you do based on this guide is at your own risk. I tried to document everything as good as possible but for any damage by following this guide I'm not responsible and would reject any responsibility

The following Files are only examples and over time their names and their version numbers could change. Try to use always the latest kits.

This guide was written for „**enigma2-plugin-extensions-barryallen_0.4.1-r9_powerpc.ipk**“

And now have fun with Barry Allen on your DM600

From my own suffering and problems a few useful **Hints**:

Don't forget the blanks in the [Telnet](#) commands (for example between **cd** and **/**). If you forget this blank Barry Allen will install itself into the [Flash](#) which will fail because of insufficient space there. And then there is only one solution left - NEW-FLASHING - so be careful with blanks !

A CF-carte **has to be empty** during Installation of Barry Allen. The CF-Card could have a [FAT](#) Partition from formatting on a PC. If Barry Allen is already installed you can change the CF-Card **before** Booting and even erase it with Barry Allen.

And off course the Hard disk should be also **initialized** (formatted). And without any storage medium (CF-card or HDD) it will not work either.

[...back](#)

FAQ:

(Some of the questions which get asked too often)

1. Can Barry Allen be simply upgraded?

Yes, simply [ipkg](#) install of the new Kits when booted from Flash, existing Images will be kept

Hint: *when you delete on the Barry Allen media in /media/ba the ba.sh the media will be erased (formatted) also during an installation*

2. How to get a newer/different image into Flash when Barry Allen is already installed? Do I have to remove the CF-Card for doing this?

No, you can leave the CF-Card in the Dreambox when Flashing with DreamUp or the WebInterface. But removing it should not do any harm either. And instead of a new „ipkg install“ of the BA Kit afterwards it is also sufficient to re-execute the shell script – for example if BA is installed on CF-Card:

```
cd /media/cf
ba.sh patch
ba.sh info
```

ONLY *when you remove the Plugin with „ipkg remove“ it gets dangerous for the images, because in this case the CF-Card will be cleaned properly including all your images on the CF-Card - which is also the idea behind an remove !*

3. Can is re-use my Multiboot CF-Card for Barry Allen?

Yes, but the CF-Card should be disabled with multiboot or re-formatted on a PC. Then simply boot with the CF-Card and re-install Barry Allen. Barry Allen will then prepare this CF-Card for his images.

PS: removing multiboot.sh on media/mb oder ba.sh on /media/ba will be sufficient too so that BA installation will erase and prepare CF-Card.

4. Can I continue to use my Multiboot Images with Barry Allen?

*Yes, but they would need to be exported in Multiboot to /MB_Images with copy N and can then be imported from there with Barry Allen (remark: copy X produces *.tar.bz2, copy N produces *.nfi images)*

5. How many images fit on a CF-cart or an USB-Stick?

Because with Barry Allen the Images all share the same File system, you have slightly more space available then with Multiboot, but per Image you still should calculate with 60-70MB to be able to do something sense making . And the total max number of images is 12 to fit the boot menu on the TV screen.

[...back](#)

6. Will a CF-Carte or an USB-Stick be formatted during installation of Barry Allen?

Yes, for assuring that the media works properly it will be formatted, except Barry Allen (with Images) is already installed, then it will only upgrade. Barry Allen checks this by verifying the existence of `ba.sh`

7. Do I always have to boot from Flash for installing new images?

No, only in the BA Tools there are things like autofs which work only in Flash (but you then would get an information message) And of course things like removing or re-extracting the booted Image will (hopefully) not work

8. Does the Image in Flash have to be setup (Bouquets, Skins, EMU's etc.)?

No, not really and this is intentionally. In Barry Allen the Flash image is only for booting the [Kernel](#) from there. So the image in Flash doesn't need to be setup at all. But it doesn't do any harm if you setup Flash too.

9. I want to do a Filesystemcheck but get an Error message (unmount)?

This can happen for example if you have a [Swap](#) File there or you are standing in telnet on the device so that the unmount fails

10. What happens if I define a PIN?

When you define a PIN during the Image Selection while booting you will first have to enter this PIN, otherwise without correct PIN you can only boot the Flash. And without PIN in the wizards you will not allow you to do things like „boot, copy, rename“ which would do things with images on the CF card – so you are limited to „info“ and selecting the „flash“ for booting

So don't forget your PIN ! If you really have forgotten your PIN in telnet doing `rm /media/ba/.blocked` Will remove the PIN File (or with `cat /media/ba/.blocked` you can read the PIN there in clear text) – hence don't let the kids read this hint ☺)

11. Does Barry Allen also work with OE 1.5 images?

*Yes, but then you have to have such an image also in Flash due to the Kernel dependency. And backups of such images into an *.nfi File could take very long (30-45 min), but there is a progress bar to entertain you.*

For such a Backup you will also need a Swap file of at least 128MB (see the BA Tools Menu for doing this)

But this is only the case if the keepsquashfs Option was disabled, because in case of keepsquashfs (which is default since version 4.1) the squashfs File system will be kept and hence it doesn't need to be re-created in case of backup

The Setup – the Hardware

The first Adapter was bought from eBay, and cost only a few EUR, but...

It was an Adapter for 3.5" [IDE](#) Connections. You see this because the IDE-Cable socket has only 40 Pins on the back and a 4 pin Power connector. 2.5" Disk's have a 44 pin IDE- and no additional Power connector.

Because the DM600 doesn't have a Power supply connector on the internal printed circuit like the 7025. Hence for a non-expert like me (you ?) it would be difficult to find a way for connecting the adapter to get powered.

So decision to look for another adapter was easy – again eBay got a job and this time it looked better...

To prevent false hopes – as soon as this adapter was connected the hard disk disappeared. Only when I twisted the PIN 28, the IDE-Cable Connector worked with cable select and both devices worked on the same IDE bus.

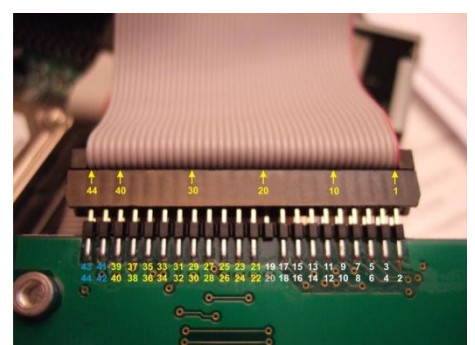
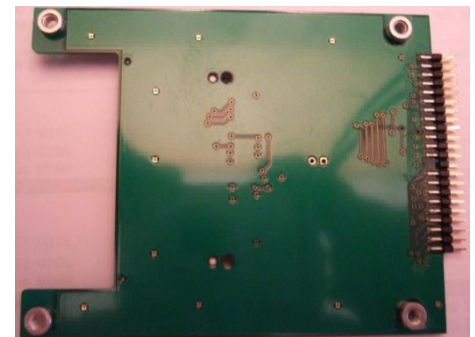
But there were other problems to get this adapter working stable, and the biggest one was that over time I always got the problem that recordings had lots of pixels. This made me sure that both the Adapter and the CF-Card have to support the [DMA](#)-Modus. And this never really worked with this adapter.

But other users are reporting that this adapter works nicely if there is no hard disk in the DM600, but I didn't want to work without hard disk to get boot manager support working.

Here you see a picture showing the 44pin IDE-Cable. BTW later I found out that it is better to have the hard disk on the middle plug of the IDE-Cable and not as I did on the picture on the end of the IDE-cable.

On this picture you see that it has to be a 44-pin cable. And just for info in case you don't know the pins are numbered from the red wire starting with 1. And on the printed circuits there are normally marks showing where to attach the red wire side of the cable. Here in the example you see this mark on the right side of the printed circuit.

[...back](#)

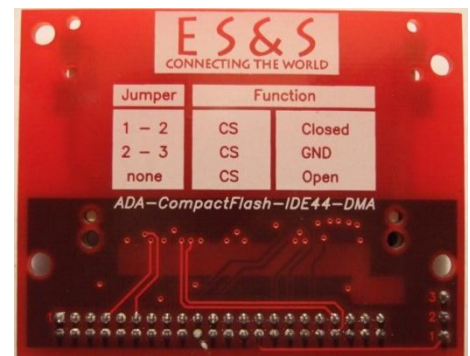
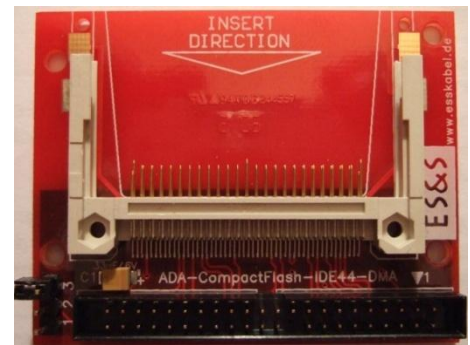


In this phase ketschuss (CoAdmin of the PB-Boards) made me aware on a [Thread](#) (Link points to a board where you have to be registered) which pointed to a final solution of my problems. Soon I realized that I would have to buy a third [Adapter](#) to be successful. And to make it clear – the 3rd adapter worked. The picture on the right shows this Adapter.

This is the backside of the adapter showing also the different jumper settings that it supports. In my case I have chosen none – no jumper was set.

One further result of the Thread from ketschuss was that it will not work with a simple cheap CF-Card, because such a card would slow down the speed of the hard disk to its own slow I/O speed. Hence it is a must that the CF-Card works in the fast DMA mode. I decided for the shown 2GB card.

Two more pictures showing the final working HW setup. Without sawing or bending the steel sheets you can put the CF card adapter within the box, but at the moment to prevent temperature problems I don't screw down the box enclosure but just put it on top loosely.



The Software

After the hardware setup was done some words to the used software. I tried different images in Flash and found out that OE 1.4 images turn on the DMA mode automatically, while the OE 1.5 images have DMA mode turned off per default. This information is only based on the current OE 1.5 images and this could change soon because of the ongoing image and driver development within the OE. It looks like the newer device driver work that way that if they find 2 devices on the IDE bus they turn off DMA. With the hard disk alone on IDE the DMA mode will stay on in all types of images...

There is the possibility to enable/disable DMA manually after booting, but this is not the optimal solution.

Because it is at the moment (different from the 7025) not really important which OE is in Flash, it is recommended to install an OE 1.4 in Flash at the moment. Best results I had with the OE 1.4 Image from PowerBoard, but probably other OE 1.4 images will work as well.

[...back](#)

Installation

And here are the installation guidelines as gutemine includes then in the readme.txt of every Barry Allen version. I just removed all points which are for the 702X. In the real readme.txt are all lines unchanged

Now that Barry Allen is as a Multiboot solution also available for the OE based PowerPC CPU Dreamboxes (DM600) – at least with its basic functionality, it is time to leave the Workbench and test on a broader basis for getting your feedback and inputs.

The usual BA Menus as an Enigma1 plugin are not yet available – so don't waste time searching for them!

Because Enimga2 images on the 600 are still very experimental you only have the shell script interface and the boot manager. But with these you can already extract images on CF-Card and harddisk and choose them for booting, which was until now not possible due to lack of Support by Flashwizard for the 600.

Installation is done either via „manual install“ in Blue Panel of the Gemini-Image (warning: this doesn't work with GP 4.0 because ipkg is missing) or after copying it via FTP to /tmp you logon to the box with Telnet and enter the following:

```
cd / [ENTER]
ipkg install /tmp/enigma2-plugin-extensions-barryallen*.ipk [ENTER]
```

When it finishes Barry Allen for the DM600 is already installed and after a reboot you are ready for using it.

Barry Allen expects the *.nfi Image files in the directory /MB_Images on the hdd in your Dreambox 600. For this you copy with a PC FTP program the Image files to the Dreambox.

It could make sense to rename the large image files. Because on the TV you will see only about 40 characters of the image name. I recommend to use about 15 char. maximum.

How to copy Images via FTP is not explained here, if you have troubles doing this read the BA user guide for the 7025. There also basic things (DCC etc.) are explained. Barry Allen was developed for the DM7025 and only ported on request to the PowerPC boxes. But who cares – if it works :-)

[...back](#)

The most important Telnet commands

Always enter the correct path in advance:

cd /media/ba

[ENTER]

ba.sh extract nameofimagewithoutnfi (nameinbootmenu) - installs Image for booting, if you don't enter nameinbootmenu it will use the image filename

ba.sh boot nameinbootmenu - choosing an image for booting, be carefully with small/capital letters (for example **F**lash is the correct name if you want to boot from there)

ba.sh info - shows what you have booted, gives infos to the installed images - cat /tmp/.baimages also shows the current image name of the booted image if no such file exists you are booted from Flash

ba.sh list - lists the Images in /MB_Images

ba.sh delete nameofimage - deletes an installed image

ba.sh disablebootmanager - disables the bootmanager
ba.sh enablebootmanager - enables the bootmanager

ba.sh backup nameinbootmenu (nameofimagewithoutnfi) - creates a nfi backup, if you don't pass a *.nfi name the name from the boot menu will be used

ba.sh backup booted mybackupname - as before, but using booted for the booted image

ba.sh bootlogo barryallen_dark - dark bootlogo
ba.sh bootlogo barryallen_standard - standard bootlogo

grep ")" ba.sh - shows you all available options from ba.sh

init 4 - stops enigma
init 3 - starts enigma2
init 2 - starts enigma1
ps for checking if the enigma processes are running

The baint commands only make sense when you are booted from Flash, because otherwise the device could be busy as your bootdevice:

bainit 91		- Filesystemcheck - CFcard
bainit 92	(not available on a DM600)	- Filesystemcheck - USB stick
bainit 93		- Filesystemcheck - Harddisk
bainit 81	(!!Attention!!)	- erase CF-Card
bainit 82	(!!Attention!!)	- erase USB-Card

ba.sh list	- lists tar.bz2 kits and nfi images images on /MB_Images
ba.sh list tar.bz2	- lists kits at /tmp and /MB_Images
ba.sh list tar.gz	- lists kits at /tmp and /MB_Images
ba.sh list rar	- lists kits at /tmp and /MB_Images
ba.sh install ipkg kitnamewithoutfileextesnions	- installs ipkg kit
ba.sh install tar.bz2 kitnamewithoutfileextension	- installs tar.bz2 kit
ba.sh install tar.gz kitnamewithoutfileextension	- installs tar.gz kit
ba.sh install rar kitnamewithoutfileextension	- installs rar kit
ba.sh free	- show memory usage
ba.sh swapon /media/cf 32000	- creates on /media/cf a 32MB big Swapfile. /media/ba and 64MB are default when you pass only swapon
ba.sh swapoff	- disables swapfile
ba.sh link /media/cf	- moves /MB_Images Link to /media/cf/MB_Images

and <http://ipofthedreambox/barryallen> - this should also work on a 600/7020 for invoking the Barry Allen web interface but only within booted **enigma2** images !

And for getting rid of Barry Allen... De-installation works with:

cd /	[ENTER]
ipkg remove enigma2-plugin-extensions-barryallen	[ENTER]

Shopping List:

<u>Modul:</u>	29,69€ + 7,90€ Shippment	
<u>Kabel:</u>	12,50€ + 3,00€ Shipment & prepaid	(Harddiskcable 2.5"--->2.5"--->2.5" 15cm+10cm)
<u>CF-Karte:</u>	38,00€ + 9,90€ Shipment	

109,30€		

And once more: Everything you do based on this guide is at your won risk. I wrote this guide as good as I could but you can't blame me for any damages caused by the usage of this guide