

# **ABeeb Documentation**

James Fidell and ported to Belson

<b>COLLABORATORS</b>
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## Chapter 1

# ABeeb Documentation

### 1.1 ABeeb

ABeeb version 0.9.1

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Introduction

-

Features

-

Sod this, where's the quick start

-

Requirements

-

Installation

-

Usage

-

Known problems

-

BBC related WWW sites

-

History

-

Contact info

-

Thanks

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CPU emulation adapted from Frodo, © Copyright 1994-1997 Christian Bauer

## 1.2 Introduction

Background

Having spent a while unsuccessfully looking for an Amiga BBC Micro emulator, I realised I would have to port one myself...

So, here is ABeeb, the Amiga BBC Micro emulator (ported from James Fidell's xbeeb).

Since the original program was written to run under Linux on a Pentium PC, the speed is a bit less than impressive on your average Amiga setup. I am currently working on ways to speed up the emulation, but for the foreseeable future you'll need quite a fast machine to get a decent frame rate.

## 1.3 Features

Features

- o Emulation of a BBC Micro model B
- o Runs in either full size window, quarter size window or on a PAL screen
- o Emulation of all bitmap and teletext modes
- o Support for virtual disks
- o Assembler 6502 emulation, about 3 x faster than previous release.
- o Frame per second counter

## 1.4 Quickstart guide

The minimum to get up and running...

Get the three required ROM images and put them in a subdirectory

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of ABeeb's called 'Roms'. If necessary, rename the ROMs to 'BASIC2.rom', 'DNFS' and 'OS1.2pl.rom'.

Copy the contents of the Fonts subdirectory to your system FONTS: directory (these contain all the teletext characters).

Open a shell window, set the stack to something largish (about 20k should do) and then type 'ABeeb'. A small prefs window should pop up, and from here it's easy. Note that the full-size window is much slower than either of the other display methods since there are no optimised rendering routines.

To quit the program, either click the window close gadget or type ctrl-C into the output window

## 1.5 Requirements

What you will need to run the program

- o A fast Amiga.

For teletext stuff (adventure games etc) a fast '030 will probably be sufficient (with a bit of patience), but for bitmap games a good '040 is essential.

- o OS 3.0 upwards.

- o A graphics card or AGA.

A graphics card will speed up the emulation quite a bit.

- o PatchWPA8 for machines without a graphics card.

This fixes a bug in the WritePixelFormat8() routine, and speeds it up display of bitmap modes (ie. modes that aren't mode 7).

- o A workbench screen with at least 16 free colours

If you want to run the emulation in a window, that is.

- o Two ROM snapshots.

'BASIC2.rom' and 'OS1.2pl.rom'.

- o Lots of games snapshots 8^)

## 1.6 Installation

How to install the program

1. Put the three ROM images in a subdirectory called 'Roms'.
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2. Copy the contents of the 'Fonts' directory into your system FONTS: directory.
3. If you want to run the program in a window, make sure you have got 16 or more colours free.
4. Set a decent sized stack in a shell window, then type 'ABeeb'. A prefs window should appear...

If you want to use the emulated file system xfs (essential for using virtual disks), you'll have to patch the file 'OS1.2.rom'. This is done as follows:

1. Rename the 'OS1.2.rom' file to 'OS1.2pl.rom' if necessary.
2. Move the file 'pch' to the directory where 'OS1.2pl.rom' is located.
3. Run 'pch'. This should patch the ROM to enable xfs.

## 1.7 Known problems

Known problems...

- o Sometimes a bit of 'stutter' when playing games - will have to investigate this.
- o Rocket Raid is broken now (doh!). I think I know the problem, will fix later.
- o Games that have a mode 7 intro screen (eg. Arcadians, Killer Gorilla) can require several attempts to start. Be patient 8^)
- o It is possible for the emulator to get confused if a pop-up requester robs input focus from the emulator during a keypress or release. This can result in lots of 'phantom' characters appearing on the screen.

Solution: Register all your shareware 8^).

Better solution: If say the emulator misses your release of the 'a' key, you can sometimes sort things out by de-selecting the emulator window, pressing 'a', reselecting the window, then releasing 'a'.

- o Teletext mode is a bit slow since the emulator updates the whole screen when it changes (including flashing text).
  - o When changing modes, you can sometimes be left with odd pixels on the screen.
  - o The CAPS LOCK key acts strangely: Due to the way the BBC keyboard works, you have to press the caps key \*twice\* to switch case. Pressing it once is equivalent to pressing it and holding it on a real BBC Micro. You will probably notice this most in games.
-

- o Pressing BREAK with the CAP LOCK 'in limbo' causes the 'XBeeb 1770 DFS' message to disappear. I don't know if this will cause any problems, though.
- o The CAPS LOCK and CTRL keys are reversed compared to the Amiga keyboard. This is kinda annoying in games, so I might add an option to reverse them.
- o Teletext characters look weird when using PAL screen display. This happens because the fonts have to be scaled for the lores screen. The only ways around this are to do another set of fonts (making 12 in total) or use hires-interlaced for this mode.
- o Modes 0 and 3 look weird when using PAL display. In these mode the width is 640 pixels which would require hires to display properly. To avoid having to change amiga modes when you change BBC modes, I skipped alternate pixels.
- o Pressing BREAK clears the memory, ie. emulates \*fx 200 3.

## 1.8 History

### Program History

16.1.1997 First release, version 0.9.0

2.4.1997 Second release, version 0.9.1

Replaced 6502 emulation with assembler code adapted from Frodo (cheers ←  
Christian 8^)  
Frames per second counter  
Various bug fixes

## 1.9 Contact

### Contact information:

If you have any problems with this program, or suggestions on how to improve it (apart from 'make it faster', I'm working on that) then please feel free to get in touch.

I'm currently porting MAME (multi arcade emulator) so updates to ABeeb may be slower in coming.

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## 1.10 WWW sites

BBC-related WWW sites

The best BBC Micro web site is Robert Schmidt's 'BBC Lives' page, which contains lots of game snapshots, Beeb info and a couple of hints on how to get hold of ROM images.

<http://www.nvg.unit.no/bbc/>

## 1.11 Usage

Using the emulator

Keyboard

The keyboard is pretty much the same as the BBC Micro's, with the following exceptions:

F0 is mapped onto F10

BREAK is mapped onto HELP

COPY is 0 on the numeric keypad.

Disk handling

A virtual disk is emulated by means of a directory containing a file called '\_\_CATALOG\_\_' in it. This file should contain something like the following:

```
--start-- (don't type this)
0 0
--end--
```

The first number gives the number of times the disk has been written to, and the second the bootup option.

To select a disk, press the ENTER key on the numeric keypad to call up a screen requester and navigate your way to the directory you require. Select 'OK' to select this disk.

The easiest way to create a new virtual disk is something like:

```
makedir my_disk
echo "0 0" > my_disk/__CATALOG__
```

Snapshots

ABeeb supports file snapshots to allow you to run games. Snapshots can be obtained from the Internet ( BBC related sites ).

You will probably have to convert them to ABeeb's format using the program 'BBCIm'. This program and docs are available from the 'BBC Lives' web page.

## 1.12 Thanks

Thanks go out to the following people:

James Fidell, for writing xbeeb in the first place

Ruud Dingemans, Ben Hutchings and Simon Goodwin for testing and helpful suggestions

Robert Schmidt for his cool BBC Micro home page.

Craig Howard for testing and helpful suggestions.

Christian Bauer for letting me use the 6502 code from Frodo