

**SIDStudio**

**COLLABORATORS**

	<i>TITLE :</i> SIDStudio		
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WRITTEN BY		August 7, 2022	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## SIDStudio

### 1.1 AmiDog's Movie Player - The Movie Player for your PPC Amiga!

AmiDog's Movie Player v0.50, 990131

Copyright 1998

Mathias "AmiDog" Roslund

Introduction

- What is this?

Requirements

- What does it require?

Features

- What can it do?

Installation

- How to install?

Usage

- How do I use it?

Settings

- What can I set?

Speed

- How fast is it?

Disclaimer

- Who's responsible?

Development

- How is it done?

Bugs

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- Are there any known bugs?

History

- What's new?

Future

- What will be added?

Contact

- How to contact me?

Thanks!

- Which have helped me?

Visit the homepage at <http://www.amidog.com/amp/>

## 1.2 AmiDog's Movie Player - Introduction

This is a Movie Player for Amigas equiped with a PPC board.

The MPEG1/2 decoder is based on mpeg2decode v1.2 from the MPEG Software ↔  
Simulation Group.

I'm planning to add AVI/QT support as well, I've not yet decided if I'm going to ↔  
use  
the Xanim source or not, that'll be decided as soon as the MPEG plugin is ↔  
finished.

Please consider this product as Freeware/Giftware, which means that you can ↔  
freely  
use it as much as you like, but frequent use should result in a small gift being ↔  
sent  
to the author (that's me!).

Now start the player and enjoy the speed of your PPC board!

## 1.3 AmiDog's Movie Player - Requirements

Hardware:

- \* Amiga 1200/3000/4000 with a PowerPC board.
- \* 4 MB of free RAM.
- \* OS 3.0.

## 1.4 AmiDog's Movie Player - Features

It currently supports the following multimedia types:

- \* MPEG1/2 (no sound)
-

\* ...

## 1.5 AmiDog's Movie Player - Installation

Just copy it to any place on your HD.

## 1.6 AmiDog's Movie Player - Usage

1. Start shell.
2. stack 65536 <ENTER>.
3. AMP GUI or AMP "filename" <ENTER>.

NOTE1: If AMP crashes, try to increase the stack!

NOTE2: From v0.50b you should be able to start AMP by simply doubleclicking the icon! ↔

## 1.7 AmiDog's Movie Player - Settings

General:

- \* Output type (AGA/CGFX/NONE) - How the image is to be displayed.
- \* Screenmode (Default/?/...) - Which screenmode to use.
- \* Limit FPS (From Stream/5/10/15/20/25/30/Maximum) - How fast the MPEG should be played. ↔

Output:

- \* ColorModes:
  - Gray (4/6/8 bit) - 16/64/256 colors, gray display.
  - Color (8 bit) - 256 colors, ordered dither.
  - HAM (6/8 bit) - HAM6 or HAM8.
  - True (15/16/24/32 bit) - NOT implented yet!
- \* Gray Depth (4/6/8) - 16/64/256 gray colors, lower depth is faster due to less CHIP accesses. ↔
- \* HAM Depth (6/8) - HAM6 (4096 colors) or HAM8 (262144 colors).
- \* HAM Width (1/2/4) - The amount of HAM pixels per RGB pixel (4 is the same as 12/18 bit). ↔
- \* HAM Quality (Normal/High) - Only affects 1/2-width, biggest difference on 1-width. ↔
- \* HAM S-Lores (On/Off) - If On, AMP will use SuperLores (PAL only) for MPEGs up to 160\*128. ↔

MPEG:

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- \* Interpolation (On/Off) - On gives a slightly better YUV->RGB quality but is way slower. ↔
- \* Color Quality (Normal/High) - High gives better quality on 4:2:0 interlaced MPEGs. ↔

Misc:

- \* Statistics (Normal/Detailed/Off) - Detailed is mainly for debugging.

## 1.8 AmiDog's Movie Player - Speed

Speed differences: (Measurement using v0.30b and a Wallace and Gromit MPEG, 240\*176 pixels) ↔

- Color Mode - From HD - From RAM -

- \* NONE : 39.1 fps. 54.9 fps.
- \* Color (8 bit) : 22.5 fps. 27.1 fps.
- \* Gray (8 bit) : 23.8 fps. 29.0 fps.
- \* Gray (4 bit) : 30.2 fps. 39.0 fps.
- \* 18bit (HAM8) : 7.4 fps. 8.2 fps. (9.5 fps/10.2 fps)
- \* 12bit (HAM6) : 9.6 fps. 10.3 fps. (14.4 fps/16.1 fps)

NOTE1: IsisPPC gives 12.3/13.0 (HD/RAM) fps playing the same MPEG using FAST mode ↔

NOTE2: This means that AMP is 2.08 times faster than IsisPPC on AGA using 8bit color and playing the MPEG from RAM, while playing from HD, AMP is "only" 1.83 times as fast. ↔

NOTE3: The read-speed of my HD is about 1.4MB/s.

NOTE4: The values within the () signs are the results when using the new YUV->RGB conversion which don't use interpolation.

All tests are performed using an A1200 603e'200, 040'25, 32MB and OS3.0 in PAL mode. ↔

## 1.9 AmiDog's Movie Player - Disclaimer

Remember! You use this piece of software at your own risk!  
I can never be held responsible for any sort of damage caused to your software or hardware by the use of this product!

Bugreports and suggestions might be sent to one of my addresses.

## 1.10 AmiDog's Movie Player - Development

This product has been developed totally by me using EGCS/GCC.

Since I'm a student, I just don't have the time to spend several hours a day developing this product, especially when approaching Christmas and summer since I then will have a lot of schoolwork to finish. Therefor please don't write to me and complain about the slow development! Thanks!

AmiDog's Movie Player is developed using:

```
v0.00-0.31   Amiga1200HD -> 040/FPU/MMU'25, 603e'200, 2+32MB.  
v0.40-      A1300Ti   -> 040/FPU/MMU'25, 603e'200, 2+128MB.
```

## 1.11 AmiDog's Movie Player - Bugs

- \* If AMP quits due to faulty MPEG, the window might not get closed.
- \* Saving the prefs several times don't always work, of some reason (PPC "feature ←  
"?)  
the file wont get closed properly. A rebbot will be needed to save the prefs ←  
once  
again, your HD will however NOT be affected!

There might be more bugs, so you use it at your own risk!

## 1.12 AmiDog's Movie Player - Contact

Bugreports, suggestions, comments or anything else you may want to contact me about can preferably be sent by e-mail to:

amidog@amidog.com

You may however also contact me by "snail-mail":

Mathias Roslund  
Sveav. 2b, nb  
S-702 14 Örebro  
SWEDEN

## 1.13 AmiDog's Movie Player - Thanks!

I would like to thank the following persons:

- \* Stefan Burström - For answering all my (stupid?) GCC PPC questions.
  - \* Jesper Svennevid - For giving me the C-only C2P and helping me getting it to ←  
work!
  - \* Mikael Kalms - For helping me getting the 4bit C2P to do only 4bit C2P.
-



## 1.14 AmiDog's Movie Player - Future

This is what I currently plan to add, it is NOT in priority order, and it might change without further notice!

- \* Window playback.
- \* More speed!
- \* Sound!
- \* 15/16/24/32bit GFX-board support.
- \* Preloading of small MPEGs.
- \* AVI/QT/ANIM/FLI/FLC... support.

## 1.15 AmiDog's Movie Player - History

v0.00 -981104  
-First working version! It's still 68k only, and uses WPA8 for displaying ←  
the graphics  
and as all of you know, that's SLOW! I'll compile a PPC version and ditch ←  
WPA8 ASAP.

-981112  
-Well, what's happening, not much actually. I've not gotten GCC PPC to ←  
work yet, sadly.  
I've however spent a while examining the MPEG2 decoder source, and I ←  
think I know how  
to make it output 24bit data, or gray or whatever I like.

-981124  
-I got GCC PPC working yesterday! Sadly it don't want to compile my MPEG-2 ←  
player, but  
I hope to get it fixed soon. I have however added GRAY output, so the 68k ←  
version  
has become a little bit faster.

-A little later. I've now gotten the first version of my GUI to work, it ←  
wont send any  
settings to the MPEG2 player yet, but atleast I can now play MPEGs ←  
without using shell!

-981127  
-Still no PPC version. The GUI is however fully functional now. I've been ←  
able to make  
a PPC compile which outputs the GFX to files, but it wont work with Amiga ←  
display yet.

-981129  
-No PPC version yet... I've gotten a bit unsystemfriendly with the latest ←  
version. I've  
removed the "invisible window" which was used to catch mouseevents and ←  
added a simple  
register read instead, this solved some of my problems actually, however ←  
since it is  
only executed between the frames, you might have to hold down the left ←  
mouse button  
for a few 1/10 seconds before it'll exit. Oh, and I've added a 4 bit (16 ←  
color) gray  
mode as well.

-A little later. Guess what!? Yes! The PPC version is up and running!!! ←  
And it's damn

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fast too!

- v0.10 -981129  
-First version with working PPC MPEG2 plugin!  
-981201  
-I had planned to release v0.10 but I'll probably wait until I've got a ←  
faster C2P  
than WPA8 as I'm currently using.
- v0.11 -981203  
-I've gotten the C2P up and running! It's a C-only one (no asm!) and it ←  
runs on the PPC.  
The speed is quite good, not to say quite excellent! It's TWICE as fast ←  
as IsisPPC on  
my AGA Amiga! IMPORTANT: This release is to be considered as a beta, it ←  
might contain  
a lot of bugs!
- v0.12 -981204  
-A couple of bugfixes and improvements, please check the homepage!
- v0.20 -981216  
-Removed a bunch of bugs, MPEGs which have a size not devidable by 8 now ←  
works,  
spaces in filenames is allowed, strange crashes more or less removed etc.  
-A lot of features added, partial width C2Ps reducing CHIP access, 18bit ←  
HAM8 mode  
(which uses YUV->24bit RGB conversion, so 24bit output can easily(?) be ←  
added),  
4bit C2P now only makes a 4bit C2P, displays FPS. It's also been prepared ←  
for a  
FPS limiter (I've not had the time to add it yet) + more.
- v0.21 -981219  
-Added two new 6 bit C2Ps (partial and fullwidth) which made it possible ←  
to add  
12bit (HAM6) support. It uses the same algoritms as the HAM8 one, except ←  
that is  
reduced the CHIP-memory accesses by 25% (6 instead of 8 bitplanes) which ←  
improves  
the speed slightly.  
-I've also changed the GUI a little, so the strange v0.20b crashes are ←  
hopefully  
gone (atleast that's what I've been told by some of my friends).
- v0.30 -990101  
-A lot of changes, and I'm still not finished. Added YUV->RGB conversion ←  
which don't  
use interpolation (it's a lot faster!), two new HAM8 modes, single and ←  
double width,  
GadTools GUI (not finished) since MUI currently don't work with PowerUP/ ←  
WarpUP. And  
a lot of internal changes which you all wont notice.  
-990103  
-The basic GUI functions are implented. Some small bugfixes etc.
- v0.40 -990104
-

- Removed crash when no filename had been selected. Rewrote some MPEG stuff which means that from now on ALL screensizes should be supported! ←
  - 990105/06
  - Yep, it's later, or early or whatever. Anyway, I've speeded up the 4-width (12/18bit) routines by about 10-20% and also tried a new 2-width HAM routine which is faster and actually gives a nicer output than the current one, I might speed that one up as well. ←
  - 990106
  - Nope, it's not night anymore. I've added defaults in case the .prefs file is missing as well as saving of currently selected prefs (no screenmode prefs editing yet, that still has to be done by using a text editor). ←
  - Improved the speed of the 2-width HAM routine I wrote about above, also added option to select HAM quality. That is I've improved the 2-width one (and soon the 1-width one) so that there are one fast and one a little slower but with better Quality. This has NO effect on the 4-width one, since it can't be better/worse than it is! ←
  - Finally added the FPS limiter, and it works great, choosing 20 FPS often gets you at about 19.95 FPS, and that's quite close. It's however the worst FPS limiter you can create, it uses a busy loop which wastes a lot of CPU resources. ←
  - 990107
  - Optimized 4-width and 2-width (Normal) HAM speed, it's now even faster. I also improved the 1-width HAM quality by using the same theory as for the 2-width ones. ←
  - 990112
  - After a HD crash and installation of a A1300Ti I've now been able to work on AMP again. ←
  - I've improved the 2-width (High) and 1-width (Normal) HAM speed, as well as improving the quality of the 1-width (High) HAM a lot. It uses a predefined palette to reduce the HAM "bugs" that are visible when sharp contrasts should be displayed. ←
  - v0.50 -990117
  - Linked using Libnix, no more ixemulppc requirement, and guess what, AMP can now be started from an icon! I guess it was ixemulppc that screwed it up! ←
  - Rewrote most of the AmigaOS specific parts to make CGFX support easily addable, as well as simplifying making a WarpUP version. ←
  - Some minor code changes in other parts as well.
  - 990118
  - Made a recompile with newest EGCS just to find it making AMP slower! So, I'm still using the same old version as before. ←
  - Tried to make changes so that it would be possible to compile a WarpUP version. It didn't work very well though. ←
  - 990119
-

- Still can't get the WarpUP version up and running.
  - I just remembered a few days ago, there are SuperLores screenmodes ←  
available, so why  
not use them? Anyway, you can now play MPEGs up to 160\*128 in PAL ←  
SuperLores fullscreen  
using the 2-width HAM option. It's also a little faster than PAL Lores ←  
(320\*256).
  - 990122
  - Improved error checking in the AmigaOS implementation, still need to ←  
finish it for the  
MPEG decoder though.
  - Cleaned up most parts of the code, removed a lot of unused variables.
  - Found out that SuperLores works in any resolution, now 4-width HAM can be ←  
used!
  - Just tried 4-width HAM8 output using SuperLores, speed was 25.6fps ←  
compared to  
19.5fps using normal resolution! And don't forget that you also get ←  
fullscreen!
  - Added 4/2-width HAM support for HighGFX as well.
  - 990124
  - Added a listview to the main GUI window, and started redirecting all ←  
output to that  
listview instead of the CON: window. This will remove some PowerUP ←  
specific code as well  
as probably some CON: related problems. The listview is currently limited ←  
to 100 lines of  
text, this might change if required.
  - Added A LOT of #ifdef WARPUP, but I still can't get the WarpUP version to ←  
work. I also  
removed the CON: window after redirecting all CON: output to the list ←  
instead, there are  
still a couple of outputs being made to stdout, so you wont see them if ←  
you haven't  
started AMP from Shell. I'll remove them as soon as possible.
  - 990126
  - Improved error handling when HAM modes are selected. Changed the GUI a ←  
little.
  - The first version of the Edit Prefs window has been created and it can ←  
now be opened  
and closed. It's however not functionally yet.
  - Added another option to the prefs, but it wont change anything currently.
  - The GUI is more or less fully functional now, except for the Edit Prefs ←  
part.
  - 990127
  - Improved CLI support.
  - All prefs settings now does what they are supposed to, incl. the new ←  
Statistics one.
  - The Edit Prefs window now shows the current settings. Screenmodes can NOT ←  
be added yet.
  - 990128
  - Improved the listviewhandling for the Edit Prefs window, screenmodes can ←  
now be deleted.
  - Now screenmodes can be added to the list, they can however not be saved ←  
and they aren't  
being sorted yet.
  - It's now evening.
-

- The Edit Prefs window is now fully functional and hopefully bugfree as well! The screenmodes are nicely sorted, and you are stopped from doing stupid things.
  - The ASL screenmode requester has been added, but it might not display CGFX modes, it's really hard for me to tell since I don't have a GFX board yet.
  - Fixed some HighGFX related bugs.
  - 990131
  - Added a use button to the Edit Prefs window.
  - It's now possible to override the default screenmodes by selecting the one you want. Currently this list is only updated when AMP is started, NOT when the prefs has been changed (a maximum of 20 custom/default screenmodes are allowed).
  - Rewrote the main GUI listview handling a little, it's more systemfriendly now.
-