

# **PalomAVI-english**

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**COLLABORATORS**

	<i>TITLE :</i> PalomAVI-english		
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**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## PalomAVI-english

### 1.1 PalomAVI Main Menu

PalomAVI - AVI capture with sound for  
PicassoIV with the Paloma AV module and Concierto audio module

Version 0.7

(29.08.99)

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**Features** Supported codecs & other stuff

**Requirements** Required hard & software

**Shell/WB parameters** The shell parameters and tooltypes

**GUI & Keyboard usage** Some info about the GUI/Keys

**Questions & Answers** FAQ

**About the codecs** About the video codecs

**Used things** Used hard & software

**Author** Who did it?

**To do & known bugs** Things to do and known bugs

**History** Revision history

**Thanks** The author wishes to thank..

**Copyright** Legal mush

### 1.2 Required hard & software...

Required hardware:

Kickstart 3.0+

PicassoIV Graphic board with Paloma A/V module

Concierto for audio recording

68020 or Faster

Required software:

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Picasso96 graphics system release 1.39 or newer (latest version recommended)

reqtools.library v38 or newer

PalomaTV.config (for channel freq)

Some free space on harddisk

Recommended configuration:

PicassoIV in ZorroIII mode

Concierto board

Fast Harddisk with AFS/PFS or ALOT of free RAM. (to save the anims to RAM:)

### 1.3 Features:

This program is able to capture AVI (Video for Windows) files with sound directly to harddisk from the TV tuner or from a device that is connected to the S-VHS/FBAS connector of the Paloma and the audio from any Concierto driven input.

Features:

This program is a WYSIWYG AVI capture, which features real-time video capture (up to 25 or more FPS).

It uses it's own codec (and standard YUV2, YUV9 formats aswell) called AccuPak, that is a hardware compressed YUV format.

Note: at the moment sound capture is possible only with Concierto, i plan to add support for Toccata and AHI later.

### 1.4 The shell parameters:

PalomAVI is startable both from the shell and Workbench.

The supported Workbench tooltypes are:

CAPTUREWIDTH

CAPTUREHEIGHT

MAXCAPTUREFRAMES

CAPTUREFPS

PALOMATVCONFIGPATH

CAPTUREFILENAME

CAPTUREFORMAT

NOAUDIOCAPTURE

CAPTURETIME

AUDIOSOURCE

CAPTUREFREQUENCY

BRIGHTNESS

CONTRAST

COLOR

For the tooltype description check the shell parameters below.

The Shell parameters are:

FILE/M,W=WIDTH/K/N,H=HEIGHT/K/N,FRAMES/K/N,FPS/K/N,CAPTUREFORMAT=CF/K

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NOAUDIOCAPTURE=NOAUD/S,CAPTURETIME=CT/K/N,AUDIOSOURCE=AUDS/K,AUDIOFREQ=RECHZ/K/N  
BRIGHTNESS/K/N,CONTRAST/K/N,COLOR/K/N

FILE or CAPTUREFILENAME

The avi file that you want to capture.

If you don't specify a filename, a filerequester will appear,  
and you will be able to name your savefile there.

W=WIDTH or CAPTUREWIDTH

The WIDTH of the video.

Default is 240.

I recommend to use values between 160 and 352.

H=HEIGHT or CAPTUREHEIGHT

The HEIGHT of the video.

Default is 180

I recommend to use values between 120 and 274.

FRAMES or MAXCAPTUREFRAMES

Select the number of frames you want to capture.

FPS or CAPTUREFPS

Frames per second: Select the framerate of the captured AVI file.

Defaults to the maximum possible framerate.

If you select higher value (more than 20-25) and your hardware can't cope, then the player will change the FPSrate by itself,  
ofcourse.

CAPTUREFORMAT

With this option you able to set the captured AVI file format.

Selectable codecs:

AccuPak - AccuPak (CLJR) - default format

YUV2 - Component Video (YUV2)

YUV9 - Intel Raw (YUV9)

For more information about the codecs, please click [here](#) .

PALOMATVCONFIGPATH

With this tooltype you can set the path of the PalomaTV.config file.

(Defaults to PROGDIR:PalomaTV.config)

NOAUDIOCAPTURE

This option disable the audio capture. (audio capture is default on when Concierto detected)

ATM the audio capture is 8bit mono.

CAPTURETIME=CT

This option control the capture time (in seconds). It is needed, because Concierto can't capture audio in smaller hunks (at least i had some problems, and i use one buffer instead)

Default is 300 seconds (5 minutes).

It allocate some memory for audio buffer. (You can simply calculate it: Audiofrequency x seconds, for example for 11Khz and 300 seconds needs about 3.3MB memory, because  $11000 \times 300 = 3300000$ )

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## AUDIOSOURCE=AUDS

This parameter is for select audio source, selectable sources:

Microphone - Mono Microphone

AV - AV module

Mixer - Mixer output

Amiga - Amiga audio [switcher]

AV2 - AV module [switcher]

LineIn - Line In [switcher]

CDDA - CD-DA [switcher]

So you can record AVI files with CDDA audio for example. (Cool, eh? :)

When you plan to record AVI from external video source (VHS or S-VHS which video output connected to the CVBS/S-VHS connector of the Paloma) then connect the audio into 'LineIn' of Concierto and select LineIn as audio source.

## AUDIOFREQ=RECHZ/K/N or CAPTUREFREQUENCY

This option is to control the audio capture frequency. Default is 11Khz. (I recommend 11Khz or 22Khz, 44Khz is overkill in 8bit mode)

## BRIGHTNESS/K/N, CONTRAST/K/N, COLOR/K/N

Options to control the video window's BRIGHTNESS, CONTRAST, COLOR. (This one control the captured video file colors too, because PalomAVI use WYSIWYG window)

Same format like in 'PalomaTV' so valid values:

BRIGHTNESS: 0-200 (Default: 100)

CONTRAST: 0-200 (Default: 100)

COLOR: 0-100 (Default: 50)

## 1.5 About the GUI / control keys

The GUI is NOT ready yet. (sorry... but soon!)

The keyboard functions:

Num + / - select channel (up/down)

<space> - start capture

<esc> - finish capture

## 1.6 Frequently Asked Questions

Question:

How can i play the captured AVI file?

Answer:

Click [here](#) for the answer.

Question:

Is it possible to play/crunch the captured AVI file(s) on pC or MAC?

Answer:

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Click [here](#) for the answer.

Question:

Howcome capture to an FFS formatted harddisk is so much slower compared to AFS/PFS2?

Answer:

Because FFS updates the blockmap of the harddisk during capture. This will cause slowdowns. I recommend to capture AVI files to PFS/AFS partition or to RAM:

(but with some systems (like A3000/A4000 with A3640 card) Ram Disk can be even slower than a Harddisk...)

Question:

Is there any filesize limit during capture?

Answer:

Yes. The captured AVIs can't be longer than 4GB (!). But i heard there can be playback problems with AVIs longer than 2GB on pC. (AFAIR there is no similar limit on Amiga, but I never tried, because I only have a small harddisk)

## 1.7 All about the codecs & recompression...

PalomAVI (at the moment) support 3 different video codecs:

AccuPak - Cirrus Logic's HW video compression format (YUV411).

YUV9 (or YVU9) - Intel's Raw video format (Intel Indeo® 3.1/3.2 use this format)

YUV2 - Apple's Component Video format (YUV422)

Detailed info about the codecs:

AccuPak

FourCC code: CLJR

Depth: 24 bit

For 240x180 @ 15 FPS record need:

648000 bytes/s Zorro transfer

648000 bytes/s HardDisk transfer

During capturing the CPU load is low. (no compression)

Players for this format:

Platform: Program:

Amiga: PIV-MooVID

pC (DOS): QuickView (available at <http://www.multimediaware.com/>)

pC (Windows) None (maybe there is a .dll for, but i never seen)

MAC: None

Unix: None

Note: This is the default video format, and this is the most faster one, because of the relative low harddisk/Zorro bus usage.

The quality is a bit low, because of the limited chrominance. (just 5 bit chrominance/pixel)

A converter (called PalomAVIConverter) is included, to convert the captured AVIs to standard YUV9 format.

(after conversion all play/crunch stuff is similar like at YUV9 codec)

YUV9



FourCC code: YUV9 or YVU9

Depth: 24 bit

For 240x180 @ 15 FPS record need:

1296000 bytes/s Zorro transfer

729000 bytes/s HardDisk transfer

During capturing the CPU and Zorro bus load is HIGH. (realtime compression)

Players for this format:

Platform: Program:

Amiga: PIV-MooVId, CyberAVI

pC (DOS): QuickView (available at <http://www.multimediaware.com/>)

pC (Windows) Any AVIplayer (maybe need Intel Indeo® package too)

Mac: AVI->QT utility, Intel Indeo® package (Intel Raw extension), MovPlayer

Unix: XAnim (with linked YUV9 object)

Note: This codec have better quality than AccuPak, but need bigger CPU load/Zorro speed.

YUV2

FourCC code: YUV2 or 2vuy

Depth: 24 bit

For 240x180 @ 15 FPS record need:

1296000 bytes/s Zorro transfer

1296000 bytes/s HardDisk transfer

During capturing the Zorro bus load is HIGH, and need fast Harddisk. (MUCH data)

Players for this format:

Platform: Program:

Amiga: PIV-MooVId, CyberAVI

pC (DOS): QuickView (available at <http://www.multimediaware.com/>)

pC (Windows) Any AVIplayer (untested)

Mac: AVI->QT utility, after any MovPlayer

Unix: XAnim (untested)

Note: This codec have the best quality (but no big difference, because all codec use 24bit), but need fast Harddisk. (due the much datarate)

Hints:

The needed Mac stuffs for playback/crunch available on my homepage.

(<http://www.dfmk.hu/~torokl> at the Download area, check for MacAVITools.hqx)

How to compress captured AVIs on Amiga:

First... Sadly there is not available any popular codec for Amiga. (for example the popular CinePak encoder licence fee is more than 20000 (!) USD...)

But there is an alternative: (luckily ;)

You need a Macintosh emulator (ShapeShifter, Fusion) with installed QuickTime extension(s), and AVI->QT utility.

About the recompression (on Amiga from Mac emulator):

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- Capture AVI file (with PalomAVI ofcourse ;)
- Convert AVI to when needed (only when it is AccuPak) with PalomAVIconverter
- Transfer AVI to Mac side (ShapeShifter: mount MAC: and copy file)
- Use AVI->QT converter (select "Save Normally" - in this case just 3kb need (MacOS Create an alias-like icon for the AVI file)
- Use 'Recompress Movie' from any MovPlayer (I prefer a shareware program called 'PlayItCool')
- Recommended video codecs: CinePak (needs much time during crunch, but the playback is faster) or Intel Indeo® 3.2 (need smaller time during crunch, but need more CPU power for playback (040/060) Indeo®'s quality is better CinePak, but on Amiga only the registered PIV-MooVid/MooVid able to play Indeo MOVs/AVIs.)

Note: you can make MPEG movie from the AVI, just use the program called 'Sparkle' on Macintosh after the AVI->QT conversion.

Note2: with compression you able to crunch AVIs up to 1:10-1:20 rate. (1:10 is typical with CinePak)

## 1.8 About the author

Some foreword:

Im really an Amiga fan... I have 5 Amigas (A500, A1200, CDTV, CD32, A4000 and I like all...) and I collect weird Amiga HW/SWs (Like beta/unfinished Zorro cards, etc...).

I'm looking for an original C= MPEG Module for my CD32, so if you have one then please contact me!

Ok... now the standard text:

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Cserfa 31.

Hungary

Phone: +36 92 310 396 (after 18:00 CET)

EMAIL: torokl@alpha.dfmk.hu

WWW: <http://www.dfmk.hu/~torokl>

(PalomAVI, MooVid, PIV-MooVid, Savage homepage)

iRC (mostly mornings) : pH03N1x@iRC (mostly #amigahu channel)

(sometimes on #amigager, but my german is very limited ;)

As you can see my english knowledge is very limited, too... so sorry for my english bugs...

## 1.9 Revision history

revision history:

0.1b Very early version (Hardcoded & AccuPak only)

0.2b CHANGED all requesters to reqtools requesters

ADDED FRAMES option (max frames limit)

ADDED tuner control stuff (PalomaTV config compatible - use num +/-)

Faster I/O (now 320x200 @ 15 FPS possible on A4000/A3640/IDE)

Now set the correct FPS to the AVI file

FIXED AVI size calculation (PalomAVI is WYSIWYG now)

FPS parameter is workin' now (default = max possible fps)

(25.10.98)

0.3b ADDED INDEX stuff for the captured AVI

(now fast seeking & frame skip is possible with PIV-MooVId)

ADDED tootype support (check icon info for details)

ADDED error some new error-requesters (file overwrite, etc)

CHANGED some tuner related code (PAL standard, interlace, etc)

(07.11.98)

0.4b ADDED CaptureFormat selector

(selectable formats: AccuPak, YUV9, YUV2)

FIXED a lame width modulo prob. (Width now 16 pixel aligned)

First Public Release

(22.11.98)

0.5b ADDED BPS for the AVI file (i forgot it... ;)

ADDED Soundcapture (Concierto) - default on, when Concierto found

(soundcapture reduce the framerate just about 2%(!))

ADDED args/tooltypes for soundcapture (FREQ, SOURCE, etc)

(27.12.98)

0.6b ADDED support for Contrast/Brightness/Saturation (like PalomaTV)

MINOR audio related fixes

(01.05.99)

0.7b MINOR audio changes (reset switcher state, etc)

Second Public Release

(29.08.99)

## 1.10 To do list/bug list

Known bug:

None.

Todo:

Add audio support for other hardwares (Toccata and AHI)

Add GUI (almost ready)

MORE SPEED! (yepp, it is still possible)

PalomaPEG public release ;) (=realtime MPEG1 video encoder for Paloma)

## 1.11 Used hard & software

Hardware:

Till 0.4b:

A4000 (REV D) - with 030/882 on the Motherboard (!)

& A3640 3.2 (040/25) & 2meg Chip + 16 meg Fast

PicassoIV + Paloma (proto) A/V module + PabloII

Samsung SyncMaster 15GL (before that i had an 12 year old 12' Eizo..)

2x80watt audio.... (its VERY important... :)

CDTV as Audio CD Player :)

Buddha&CatWeasel Z2 controller

Nexus SCSI board (Z2)

Now:

A4000 (REV D) 030/882 (MotherBoard), CyberStorm MKII (060/50) + SCSI controller

PicassoIV + Paloma + Concierto + Pablo

Samsung SyncMaster 15GL

Buddha&CatWeasel z2 controller (6x IDE, 2x Drive)

A2091 SCSI controller

A2386SX BridgeBoard

2+16+128+2MB of ram :) (Chip/MB fast/MKII fast/A2091 fast)

6.4GB Quantum HDD (IDE)

8x Sony CD-ROM drive (ATAPI)

Panasonic SCSI-II CW7502B CD-R (4x/8x)

2x100 Watt of audio (Jamo Classic 6 Speakers), and CDTV as Audio CD player

Software:

Asm-one 1.29 .. I think i found all bugs in it ;)

Asm-Pro 1.12 .. It have same bugs :))

## 1.12 The author wishes to thanks:

The author wishes to thanks:

First:

The authors of the Picasso96 system (Tobias Abt and Alexander Kneer) - a really great system

Village Tronic (espec. to Klaus Burkert for the great PicassoIV)

K-P Koljonen (for Hippoplayer)

Thanx to my beta testers:

(No names here.. but when need i inculde them :)

Other greetinx:

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Amiga: Shamen/CDi, Flex/Frame18, Anorganic/Promise, Hanzi, Chexum, Gizmo/Frame18, ZAK/The Forcers TEAM, Louise, Goa/CDi/Faculty, EFT/Impulse, Soldier/Impulse, Chris/Power Team, Magic/Amiga Only, Unreal/Faculty, RatMan/Crimson^Jihad, McPhoton, Enc0re.

All members of Amiga Only <- The best Hungarian Amiga-user mag

pC: Grass/CDi, Psycho and Basq/Tsi Alive, Trajic/???, Hamster/???, Dada, DAB/Promise PC

Last, but not at least: the Developers of the Amiga and AmigaOS (yes this is a real OS -okay, have some bugs- , but it's really fun to develop under it!!)

Fuck to all pC-owners who's think the Amiga is a game-machine... (ooppss that was a bit strange... but true :)

## 1.13 Copyright

PalomAVI and the sources of this program are copyright © 1998-99 by László Török.

The program is freely distributable as long as all of its files are included in their original form without additions, deletions or modifications of any kind, and only nominal fee is charged for their distribution.

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Unauthorized copying, reproduction, hiring, lending, prohibited. By using the 'PalomAVI' software of the program, you accept the entire risk as to the quality and performance of the program.

This program is FREEWARE.

If you are doing an article or a review of PalomAVI then please send me a copy of the magazine! (It's not a must, but I would be very happy :)