

AMPlifier

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Chapter 1

AMPlifier

1.1 AMPlifier Documentation

```

                                AMPlifier
                                Version 1.54
                                MPEG Audio Player
                                © 1999 Thorsten Hansen
                                Kato Development
                                http://www.katodev.de

                                Introduction
                                Why using it?

                                Requirements
                                Things needed to get it work

                                Usage
                                How it works

                                Tooltypes and Arguments
                                Configuration and Settings

                                ARexx
                                ARexx Port

                                Registration
                                How to get a full License of AMPlifier
```

1.2 Introduction

Introduction to AMPlifier

AMPlifier primary is a playback tool for MPEG-Audio (Musicam). Additionally it can be used to playback 16-bit Sound stored into various file formats. AMPlifier makes it possible to play MPEGs at nice and powerfull manner. It may be used on any Amiga and supports hardware-based decoding on one hand and software-based decodierung using the mpega.library.

supported hardware decoders actually are:

Melody Z2, Melody1200+/pro, Peggy+ (ScalaMPEG),
CD32-FMV

as said before software decoding is using mpega.library and AHI or X-Audio depending on user's needs.

Features:

- * Supports MPEG-Audio up to Layer III and even AIFF, MAUD, WAVE and RAW.
 - * Ease of use, basic functionality known from CD-Players (play, pause, stop, forward, backward, skip back, skipforward)
 - * Powerful plugin system - for external visualization plugins
 - * Resizeable and configureable user interface - easy to use
 - * Loads WinAMP skins (different gfx designs)
 - * Opens and moves to/from any public screen on your choice
 - * Nice and fast move to any position in a song by using a pos-slider
 - * Powerfull Playlist (sortable, loop support).
 - * Load, Save and Edit of playlists.
 - * Random play
 - * Simple drag&drop of files and drawers. (drop it over the playlist window to add it)
 - * Recursive scan through directorys with pattern matching (drag&drop). with possibility to abort! (drop a drawer or volume on the player or playlist window)
 - * ID3-Tag support to get closer and better infos from the songs played (artist, title, album, year,...)
 - * Time remaining/elapsed display
-

- * ARexx port
- * Done as a Commodity
- ...

1.3 Hardware Requirements

Hardware and Software requirements

- * AMPlifier works for any Amiga running AmigaOS 2.04 or better. While Developers machines are running OS 3.1 only the player is enhanced and checked with 3.1 only. Because of this the actual version 3 of the OS should be used.
- * Regarding MPEG AMPlifier supports DSP based decoding of Soundboards and even simple Soundboards or output of traditional Amiga. If Software decoding is used only mpega.library done by Stephan Tavenard is required. For hardware which supports MPEG a proper mpeg.device (CBM's definition for CD32) is required and must be selected in the settings of AMPlifier.

1.4 Usage

Usage

AMPlifier may be started from Workbench or Shell. The GUI is equivalent to the user interface of a generic CD-Player. At PullDown menu an additional playlist window may get opened. It contains the list of songs which will be played. By clicking one of the entries in the list it's possible to start that song immediately. This mechanism may even be used to skip one or more songs or play one or more a second time.

If songs are given to the player using Drag-and-Drop or the filerequester (multiselect capability) the old playlist will get removed and a new one containing the last choice will show up. To add songs to the playlist they have to be dropped over the playlist window or may get added with a filerequester by using the ADD button.

Unkown file formats won't be accepted in default setup. This may get changed via a
Tooltype

to enable playback of headerless RAW samples (Big-Endian, MSB first, Motorola).

The windows of player and playlist are variable in size. While the sizegadget is visible at playlist, it's invisible at the player itself. It's still there, though.

Menus

Player

Playlist

Configuration

1.5 Menues

Menues

Project

Settings

1.6 Project

Project

Open...

Opens an ASL-Filerequester for selecting songs to play

Add...

Opens an ASL-Filerequester to add one song or a list of songs to playlist

Playlist...

Opens the window of the playlist.

Load Playlist...

Loading of an previously saved playlist.
The name will be requested by a Filerequester.

Save Playlist...

Saves actual playlist into a file.

About

Displays a window which contains infos to AMPlifier an its designer/programmer.

Hide

Hides the GUI of the player. As this is a so called Commodity feature the tool Exchange (comes with the OS) may be used to redisplay it again.

Quit

This entry hopefully won't be used at all as it simply quits the programm. The function is equivalent to the close gadget at the player's window.

1.7 Settings

Settings

Configuration...

The item opens the configuration window of AMPlifier.

Random

If Random is checked titles in the list are played at random order.

Loop

After all songs are played the player doesn't stop but plays the list again (if checked).

Time Elapsed / Time Remaining

Switches display to time remaining instead of time elapsed.

Display

Standard GUI

Info

Activates the part of the GUI which displays the line which contains infos regarding the currently played song

Slider

Activates position slider at the GUI.

Panel

Activates the CD-Player panel of player's GUI

Skin GUI

Select Skin...

It pops up a window which shows the list of different skins which are available in the skins directory (look for at WinAMP skins in Internet if you like). The skins directory can be selected in the configuration window of the player.

Public Screen

This item opens a list window which contains the public screens on which AMPlifier may be moved to.

Snapshot

This one snaps position and size of the player windows and stores the information for the next start of the program.

1.8 Player

Player

The userinterface was done equivalent to that one of a generic CD player. Same functionality is available at AMPlifier.

There are buttons for Play, Stop, Pause and for Skipping and Jump back to previously played songs.

The first way to do a list of songs for playback is a filerequester which even allows multiselection. It's even possible to choose the whole directory with the filerequester if no file is selected.

The other and maybe easier way is to drag and drop files, directories or even volumes over/into the player window. In case of a directory or volume AMPlifier will recursively scan it for files it's able to play back. These files will be listed in the playlist window.

1.9 Playlist

Playlist

Like the name tries to tell this is the window which includes and shows the list of titles to play. Each file is displayed with length (min:secs) and name.

MPEG-files may contain so called ID3 Tag informations appended to the sound data. If such Tag is available closer info will be or may be shown in the list.

In the top area of the playlist's window there are buttons which represent functions for editing the playlist. One or more files may be Added to the actual playlist. The filerequester supports selection of multible files (shift key!).

There are buttons to Remove entries or Clear the whole list. Additionally there is a button to Sort the list in alphabetical order.

As long as the player scans directories recursively (volumes or directories, their subdirectories and so on) there will be a temporary break button in the bottom of the window. It will disappear when the scan is finished. It was done to stop scans which take too long maybe because of and accidently selected Workbench partition or something equivalent. Entries in the playlist which are/were played will change from bold font to normal font.

A very special bonbon of the GUI is the XY-scrolling Listview which does softscrolling using any font! Up to programmers knowledge it's a unique GUI element at Amiga up to now.

1.10 Configuration

Configuration

General

Display

Output

MPEG

1.11 General

General

Load

Check filetype information on load

This checkbox forces AMPlifier to check filetypes while building the playlist. Files of types it doesn't know won't be shown at the playlist.

This configuration topic doesn't prevent AMPlifier to check any file before it plays it back, though.

ID3-Tag Info

ID3-Tag is an information block which may be appended to MPEG audio files. It usually contains title, interpret, style etc. A checked box tells AMPlifier to read this information out of the file.

As some computers are quite slow (usually wrong blocksize of harddisk...take OS 3.1 and 2048 byte/block) it's even possible to select the time when AMPlifier has a look at the data. The options are 1st: while it builds the playlist or 2nd: when song starts playing.

There is a coded string which defines the format of the display (have a look at the default settings to understand).

No question a title which doesn't contain such info data won't allow AMPlifier to display the data!
There are several tools which may be used to enter or modify ID3-Tags.

As there is a problem with ID3 regarding broadcasting (it's starting to be available when the song finished) there is a new standard at the horizon. AMPlifier will even support it when it's finished.

Start playback

As said before the scan of a big or slow dataset may take a longer time. AMPlifier is able to start playback before the whole list is ready.
The time (in seconds) it should wait until starting the first song may be entered here, too.

Attention: If a very short time is choosen random play will allways start with the same song(s) for sure.

Misc

Song Dir

Default directory for songs.

Playlist Dir

Default directory for playlists.

Start File

This feature allows the user to pre-define a title or a directory of songs AMPlifier will start to play when just started.

File Pattern

File pattern limits the search for playable files by their extention (f.e. #?.mp3). As AMPlifier doesn't have to spend a look into each file it usually speeds up scanning by factors.

Activate on Doubleclick

If user is currently edditng the playlist in background it may be a bad idea to start playback of a song as soon as it's selected by a single mouse click.

Activate on doubleclick transforms the behavior to

1st: mark on single click and
2nd: play this song now

It's up to users choice what's current optimum.

1.12 Display

Display

Skins

Beside the traditional GUI which shows up by default, so called skins known from PC's WinAMP may be used. This drawn GUIs are often difficult to look at (not economical) and don't offer the feature of resizing. Regarding useability they're bad but fresh and colorfull on the other hand.

If skins are used the GUI includes a display area for Volume Meter, Oscilloscope or Spectrum Analyzer. Click left below the time display for toggling

(If Melodyl200 with MPEG hardware support is build into the machine special hardware is used to display the analysis graphics!).

At this area the directory which contains the skins may and should be entered.

The Skins from PC world are done in Truecolor. If they're used at an Amigascreen which offers a lower number of colors (usually true for A1200) the may loog quite ugly.

Even less colors look nice if color reduction is done. If the skin does't look very nice take color reduced ones or do the reduction yourself if you can. Sometimes there are stronger problems regarding display of skins. Usually the picture.datatype is defective/old and slow. Take a new one!

As soon as Skins are enabled a new menue bar will be shown in Settings Menue. That's the place where skins may be changed and selected.

1.13 Output

Output

Output Device

It's possible to select output drivers (device) and unit numbers for MPEG hardware and even simple audio output. If there is more than one board using the same driver

you'll have to specify it by using unit numbers.

For example it's even possible to use two Melody1200PRO in a A1200 (one on top of the other).
Closer information available on request.

MPEG

For Melody 1200 pro and plus take 'mell200mpeg.device'.
Users of Peggy should enter 'peggympeg.device'.

Audio

That's the name of the Audio Device
(mell200audio.device for all Melody1200 boards).

Use AHI

If there are people who unfortunately don't have got a Melody1200 available in their A1200 or Zorro Amiga, AHI may be choosen.
If AHI is used it's even possible to start more instances of AMPlifer and play back on the same hardware (AHI does the mixing).

File Buffer

That's the size of the overall file buffer. AMPlifer makes use of multibuffering for smooth playback.

Blocksize specifies the size of one particular buffer. The overall buffersize is splitted into a calculated number of small buffers with the size of Blocksize.

Attention: If Peggy+, ScalaFMV is used, the maximum value is 5 kB only (bug in its device).

Audio

The size of the audio {b}Buffer in seconds is selected here.
If hardware baded decoding is used the value is ignored. It's used for playback of raw files and software based MPEG decoding, only.

Primary when using software decoding there may be short interrupts when an MPEG file just started playback or the positioning slider is moved.
To avoid these kind of short interrupts Pre-Buffering may be used.
Via this setting it's possible to define how much of the audio buffer has to be filled (in percent) until audible playback starts.

Additionally the user may modify the Priority of the audio Task. A priority of 20 or more is recomended in case of problems.
Finally it strongly depends on the machine and its CPU which is used for playback.

1.14 MPEG

MPEG

At the MPEG configuration user has got the choice of doing software or hardware based decoding. This can be configured separately for MPEG Audio Layer I/II and for Layer III.

Attention: If DSP based decoding is wanted the options have to be disabled. Otherwise the DSP won't be used and main CPU takes tons of work instead!

1.15 Configuration

Settings and Parameters

There are several options which may be selected via tooltypes or as a parameter in the shell.

Following Tooltypes are available in program's Icon:

CONFIG=Prefsfile

Prefsfile is a file into which AMPlifier stores its configuration. It's probably only useful to change the name if there is more than one instance of AMPlifier running with different configuration.
(Default: ENVARC:AMPlifier.prefs)

CX_POPUP=Yes/No

This Tooltype is a standard one of AmigaOS. If 'No' is entered, AMPlifier starts up as an AppIcon only. The GUI is not visible for first. This is equivalent to iconify in pull-down-menu of AMPlifier.

CX_POPKEY=Hotkey

Hotkey defines the combination of keys which (re-)activates the GUI.
(Default: shift-F1)

CX_PRIORITY=pri

Defines the startup priority of Commodore
(standard feature)

MPEGDevice=MPEGDeviceName

This is where the Device Name of the MPEG Hardware is entered.
For Melody 1200 pro and plus take 'mel1200mpeg.device'.
Peggy User should take 'peggympeg.device' instead.

(mpeg.device not xaudio.device !!!)

MPEGUnit=Nummer

Identification of more than one Soundboards using the same device (default: 0)

(unit mpeg.device not xaudio.device !!!)

AudioDevice=AudioDeviceName

This is the name of the Audio Hardware.
Regarding Melodyl200 'mell200audio.device' is the right choice.

(xaudio.device not mpeg.device !!!)

AudioUnit=Nummer

Identification of more than one Soundboards using the same device (default: 0)

(unit of xaudio.device not mpeg.device !!!)

BlockSize=Blocksize in KBytes

Blocksize specifies the size of one particular buffer. The overall buffersize is splitted into a calculated number of small buffers with the size of Blocksize.

BuffSize=Overall size of memory used for buffering

That's the size of the overall file buffer. AMPlifer makes use of multibuffering for smooth playback.

noAppIcon

The player doesn't show an AppIcon on Workbench.

PubScreen=ScreenName

Screenname is one of the allready opened Public Screens on which AMPlifier will open its GUI on.

AudioPri=Priorität

This is the priority of the Audio task (default 21)

RemainingTime

The player doesn't display time elapsed but the time remaining.

Pattern=#?.(MP2|AIFF|WAV|MAUD)

At filerequesters only files matching the pattern are displayed.

Random

The Player plays all entries at random order instead of alphabetical order.

Loop

AMPlifier doesn't stop playback after the whole list is finished but restarts playback again.

CDDA

If CDDA is not activated, it's not possible to playback

unknown filetypes which don't contain a header.
By default it's deactivated to protect AMPlifier from
playing back f.e. non-audio files.

CDDAIntel

For CDDA files (raw) there are two different orderings
which have got their root at CPU level. The flag enables
playback of foreign data.
As CDDA is headerless it's usually required to check it
out or know about the data before.

StopBeforeScan

Before AMPlifier plays back a new song it checks if
knows the filetype.
At some configurations it's a problem if one song is
currently played and a second one is scanned to identify
it. Using this flag AMPlifier will stop the previous
song until having a look at the next one.

Visual=1,2,3

This is used to select the display which is used at the
the skin GUI.
1=Volume Meter, 2=Oscilloscope, 3=Spectrum Analyzer

SAScale=spectrum scale

This is the scaling of the frequency range at the
Spectrum Analyzer Effect.

VisualPri=pri

This is the priority of the Visualization task

Many options are even available as shell arguments
The meaning is equivalent to the WB Tooltypes.

```
FILENAME=StartFile
CONF=CONFIGFILE
CX_POPUP=<YES/NO>
DEV=DEVICENAME
U=UNIT
BUFF=BUFFERSIZE
BLOCK=BLOCKSIZE
PS=PUBLICSCREEN
```

1.16 ARexx

AMPlifier ARexx-Port

The ARexx port of AMPlifier is accessible AMPLIFIER.1.
Additional instance of AMPlifier gets the port AMPLIFIER.2
and so on.

Following ARexx commands available at AMPlifier's port:

QUIT
HIDEGUI
SHOWGUI
OPEN
PLAY
STOP
PLAYPAUSE
PAUSE
PLAYNEXT
PLAYPREV
SELECT
QUERYSELECTED
SEEK
VOLUME
WAIT
WAITABORT
ADD
REM
CLEAR
SORTLIST
PLAYSTATE
GETTIME
GETLENGTH
GETTAGINFO

1.17 QUIT

QUIT

Template

-

Description
Quits AMPlifier

1.18 HIDEGUI

HIDEGUI

Template
-

Description
Hides graphical user interface

1.19 SHOWGUI

SHOWGUI

Template
-

Description
Shows graphical user interface

1.20 OPEN

OPEN

Template
TITLE/A

Description
Tries to open a file with name given

1.21 PLAY

PLAY

Template
TITLE, INDEX/N/K

Description
If no argument is passed the current song is played;
With argument given the specified file will be loaded
if possible.
If index argument is used the number of the entry in
playlist is played (topmost argument is 0).

1.22 STOP

STOP

Template
-

Description
Stops playback of current song

1.23 PLAYPAUSE

PLAYPAUSE

Template
-

Description
Each call toggles play und pause

1.24 PAUSE

PAUSE

Template
-

Description
Pauses playback of current song

1.25 PLAYNEXT

PLAYNEXT

Template
-

Description
Plays next title in playlist
If random mode is activated, the next random title is played.

1.26 PLAYPREV

PLAYPREV

Template

-

Description

Plays previous title

1.27 SELECT

SELECT

Template

INDEX/N/K, NEXT/S, PREV=PREVIOUS/S, TOP/S, BOTTOM/S

Description

Selects titel in playlist

1.28 QUERYSELECTED

QUERYSELECTED

Template

PLAYED/S, INDEX/S, NAME/S, LABEL/S

Description

Returns informations to selected title in playlist

1.29 SEEK

SEEK

Template

SEC/N/A

Description

Jumps to a specified position in actual title
(seconds from start).

1.30 VOLUME

VOLUME

Template

LEVEL/N

Description

Set volume to (0-64).
If no argument is passed actual volume is returned

1.31 WAIT

WAIT

Template
-

Description
Wait until song is finished (synchronous)

1.32 WAITABORT

WAITABORT

Template
-

Description
Breaks
WAIT
command

1.33 ADD

ADD

Template
TITLES/M

Description
Adds one or more files or directories from playlist

1.34 REM

REM

Template
-

Description
Removes an entry from playlist

1.35 CLEAR

CLEAR

Template

-

Description

Clears playlist

1.36 SORTLIST

SORTLIST

Template

-

Description

Sorts playlist in alphabetical order

1.37 PLAYSTATE

PLAYSTATE

Template

-

Description

Ask for state of the players

Result

1=Stop

2=Pause

3=Playback

1.38 GETTIME

GETTIME

Template

-

Description

Ask for time elapsed (per song).

Result

Time in seconds

1.39 GETLENGTH

GETLENGTH

Template

-

Description

Ask for length of current title

Result

Length in seconds

1.40 GETTAGINFO

GETTAGINFO

Template

STEM/K

Description

Returns ID3-TAG informations into a pre-defined variable

Result

READY 0 - no ID3-TAG infos available
 1 - following infos are available

TITLE
ARTIST
ALBUM
YEAR
COMMENT
GENRE

Example

OPTIONS RESULTS

ADDRESS AMPLIFIER.1

GETTAGINFO STEM tag

```
IF tag.ready = "1" THEN DO
  SAY "Title:" tag.title
  SAY "Artist:" tag.artist
  SAY "Album:" tag.album
  SAY "Year:" tag.year
  SAY "Comment:" tag.comment
  SAY "Genre:" tag.genre
END
```


1.41 Registration

Registration

Melody Users

If you're proud owner of a Melody Z2/Melody 1200 Soundboard, AMPlifier is unlimited for you. There is no need for registration.

All others:

AMPlifier is Shareware. If you're using it for a longer time then about two weeks you have to register.

The shareware price is 15,- Euro,
30,- DM.

Registered users will receive a personal keyfile. Inside the Keyfile your coded data is stored.

One license includes one computer only and for you it's not allowed to give it to someone else.

Unless noted differently the common rules for shareware are even true for AMPlifier.

The Keyfile will be send out uuencoded via EMail.

Following data is required: Name
Address
EMail Address

The payage may be done directly via mail (money) or via the account of my Bank. If you like to transfer to bank, ask for my SWIFT etc.

At near future there will be additional ways (Eurocard) for payage.

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