

Default

COLLABORATORS

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Chapter 1

Default

1.1 AL16 Manual Main Page

AudioLab16 On-Line Help System
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NOTE: THIS IS THE (LIMITED) JUNIOR VERSION. THE COMPLETE VERSION IS PART OF THE AUDIOLAB16 STANDARD PACKAGE.

This is the main page of AudioLab16 On-Line Help System. To get on-line information while using AL16:

- select an AL16 window clicking on it, then press the HELP key on your keyboard...

or

- browse this document directly from here.

The following informations are available in this version:

Registering	Getting the Standard package
Information	General informations
Graphic Interface	Documentation for any gadget
HowTo...	Common opeations
Data Exchange	Cross-platform compatibility
Trouble Shooting	Problems and solutions
Author	Contacting the author

1.2 Registering

Registering.

To register and get the AudioLab16 Standard package see the OrderForm.txt and the ReadMe.txt files included in this archive, thank you.

1.3 Information

Information.

AudioLab16 is an HD based audio editing system. This means that any operation (such as editing, processing, recording, playing, mixing) is performed directly on disk, without loading the whole recording in ram memory. Disk access is at DOS level, no special partitioning is needed. Audio material is stored on disk using 16bit AIFF format files.

Any operation is performed in 16bit resolution (or higher).

For playback of 16bit data AudioLab16 supports drivers that hide the features of the installed D/A conversion hardware. The 'SoftMary' driver for the Paula chip allows near-16bit quality playback on standard Amigas (other drivers may be available in the future).

Most operations are available in realtime direct-from-disk. This means that AudioLab16 can read a signal direct-from-disk, process it and playback the processed signal simultaneously.

Functions that allow managing material in other than AIFF16 format are grouped in a single section ('I/O Mapper' enviroment). You use them for such tasks as:

- importing a file to AL16
- exporting a file from AL16
- recording digital tracks from an audio CD
- playing files in various formats without conversion and similar.

Currently AudioLab16 treats any recording as a single-channel stream. Multi-channel (stereo) streams require splitting.

1.4 Graphic Interface

GUI

AL16's Graphic Interface is composed by the following objects:

Main Window

'Control Window' Main control window

Misc Windows

'Clock	Window'	Clock requester
'Impulse Response	Window'	FIR i.r. graph
'Frequency Response	Window'	FIR f.r. graph
'Locator Display	Window'	Locator graphic display
'Locator Control	Window'	Locator control
'Other Prefs	Window'	Preferences control
'Performance	Window'	Speed tests control

I/O Mapper Enviroment

'Analog (Out)	Window'	Output to DAC
'CDAudio (In)	Window'	Input from audio CDs
'File (In)	Window'	Input from audio files
'File (Out)	Window'	Output to audio files
'I/O Mapping	Window'	I/O mapping main control

```
'Parallel (In) Window' Input from parallel port
'Parallel:File Window' Parallel:File mapping control
'Parallel:VU Window' Parallel:VU mapping control
'TOC Window' Audio CDs control
'VU (Out) Window' VU-meter display
```

Signal Processor Enviroment

```
'DSP Window' DSP main control (Please, register)
'Amp Control Window' DSP operator (Please, register)
'Comb Filter Window' DSP operator (Please, register)
'Compressor Window' DSP operator (Please, register)
'Distortion Window' DSP operator (Please, register)
'Delay-1-Tap Window' DSP operator (Please, register)
'Delay-N-Tap Window' DSP operator (Please, register)
'Delay-Recursive Window' DSP operator (Please, register)
'Fir Filter Window' DSP operator (Please, register)
'Flanger Window' DSP operator (Please, register)
'MultiFlanger Window' DSP operator (Please, register)
'Noise Gate Window' DSP operator (Please, register)
'Phase Inverter Window' DSP operator (Please, register)
'Pitch Shift Window' DSP operator (Please, register)
'Quantizer Window' DSP operator (Please, register)
'Room Window' DSP operator (Please, register)
'Skipper Window' DSP operator (Please, register)
'Time Inverter Window' DSP operator (Please, register)
'Time Stretch Window' DSP operator (Please, register)
'Tone Control Window' DSP operator (Please, register)
```

Edit List Manager Enviroment

```
'ELM Window' ELM main control (Please, register)
'Relative Edit List Manager Window' REL builder (Please, register)
'Rel List Item Window' REL item selector (Please, register)
'Absolute Edit List Manager Window' AEL builder (Please, register)
'Abs List Item Window' AEL item selector (Please, register)
'PreMixer Window' Premixer (Please, register)
```

Trigger Enviroment

```
'Triggers Window' Trigger selector (Please, register)
'Programs Window' Program list builder (Please, register)
'Keyboard Window' Keyboard trigger control (Please, register)
'MIDI Window' MIDI trigger control (Please, register)
```

Filter Design Enviroment

```
'Design Window' Filter design main control (Please, register)
'Windowing Window' Windowing method control (Please, register)
```

Signal Generator Enviroment

```
'Signal Generator Window' Generator main control (Please, register)
```

Great part of AL16's GUI was developed using
 GadToolsBox © Jan van den Baard.
 Thank you very much for that fine tool, Jan!

1.5 Control Window

Window: Control

The Control Window is used to access the various environments and to exit from AL16 (shut-down procedure). During shut-down it is possible to save to disk various informations such as windows positions, sizes and user preferences.

This window contains the following gadgets:

- 'Environments'
- 'Main Help'
- 'Performance'
- 'Other Prefs'
- 'About'
- 'Quit' (window close gadget)

1.6 Environments

Gadget: Environments
Window: Control

This gadget is used to access AL16 environments. The current environment is hilited. Any environment is composed by one or more additional windows. Selecting an environment in this gadget causes closing of current environment's windows and opening of new environment's windows.

1.7 Main Help

Gadget: Main Help
Window: Control

This gadget is used to recall the main page of the on-line help.

1.8 Performance

Gadget: Performance
Window: Control

This gadget is used to start the speed tests on your machine.

1.9 Other Prefs

Gadget: Other Prefs
Window: Control

This gadget is used to set some user configurable variables. Other variables are available via icon's tooltips.

1.10 About

Gadget: About
Window: Control

This gadget shows some information about the AL16 project.

1.11 Quit

Gadget: Quit
Window: Control

This is actually the window close gadget. It's used to exit AL16 and return to AmigaOS. Clicking this gadget starts the shut-down procedure.

AL16 will ask you if you'll want to:

- 1) Save current status and quit
- 2) Quit immediatly
- 3) Cancel the operation.

Choosing the first option forces AL16 to save to disk:

- a) the position and size of any window
- b) the user preferences

The next time you'll start AL16 all these values will be restored.

1.12 Other Prefs Window

Window: Other Prefs

The Other Prefs Window is used to set some user configurable variables. Other variables are available via icon's tooltips.

This window contains the following gadgets:

'Reference Clock'
'Locator XScan'
'Task Priority'

To save the preferences to disk choose 'save current status' during shut-down procedure.

1.13 Reference Clock

Gadget: Reference Clock
Window: Other Prefs

This gadget is used to select the reference clock for your machine. Select the right value according to your hardware setting (PAL or NTSC). This value is available to Analog Output drivers for pitch and timecode calculations; it doesn't affect the hardware setting.

1.14 Locator XScan

Gadget: Locator XScan
Window: Other Prefs

This gadget is used to select the default value for the Locator X Scan. The default value is used until you change the value in the XScan gadget (Locator Control window). Lower values give high resolution, slow graphs, higher values give low resolution, fast graphs. You should set an high value as default and use the XScan gadget (Locator Control window) for fine tuning.

1.15 Task Priority

Gadget: Task Priority
Window: Other Prefs

This gadget is used to set the AL16 priority.

1.16 Performance Window

Window: Performance

The Performance Window is used to test AL16 speed on your current hardware/software setup. The speed tests are performed without disabling multitasking to analyze different system loadings. This fact also allows to check how concurrent applications (such as disk caching software) interact with AL16 performances.

This window contains the following gadgets:

```
'CPU/MAC'  
'CPU/Complex'  
'Disk/FileScan'  
'Disk/FileSwap'  
'StartTest'
```

1.17 CPU/MAC

Gadget: CPU/MAC
Window: Performance

This gadget is used to show how fast AL16 can perform a Multiply And Accumulate (MAC) operation. MACs are common DSP operation mostly used for time-domain FIR filtering. Higher values mean higher speed.

1.18 CPU/Complex

Gadget: CPU/Complex
Window: Performance

This gadget is used to show how fast AL16 can perform operations on arrays of complex numbers. Arrays of complex numbers are commonly used as a description of an audio signal in the frequency domain. Higher values mean higher speed.

1.19 Disk/FileScan

Gadget: Disk/FileScan
Window: Performance

This gadget is used to show how fast AL16 can seek into a file. File seeking is mostly required when building a graphic description of an audio file (Locator tool does it). Lower values mean higher speed.

1.20 Disk/FileSwap

Gadget: Disk/FileSwap
Window: Performance

This gadget is used to show how fast AL16 can read and write to disk. Reading and writing to disk are very important functions in AL16; they are used in almost any operation. Higher values mean higher speed.

1.21 StartTest

Gadget: StartTest
Window: Performance

This gadget is used to start the speed tests.

1.22 Clock Window

Window: Clock

The Clock Window is used to help you selecting a clock value.

This window contains the following gadgets:

```
'Presets'  
'Use'  
'Value'  
'OK'  
'Cancel'
```

1.23 Impulse Response Window

Window: Impulse Response

The Impulse Response Window is used to display FIR filter impulse response graph. The horizontal axis represents time, the vertical axis represents impulse response amplitude.

1.24 Frequency Response Window

Window: Frequency Response

The Frequency Response Window is used to display FIR filter frequency response graph. This window contains two boxes:

- the upper (bigger) box displays magnitude
- the lower (smaller) box displays phase.

The upper box.

Values on the horizontal axis represent normalized frequency (the frequency/clock ratio).

Values on the vertical axis represent filter gain (in dB).

The lower box.

Values on the horizontal axis represent normalized frequency (the frequency/clock ratio).

Values on the vertical axis represent phase measured in degrees, mapped in the $[-90,+90]$ interval.

1.25 Clock Window

Window: Clock

The Clock Window is used to help you selecting a clock value.

This window contains the following gadgets:

```
'Presets'  
'Use'  
'Value'  
'OK'  
'Cancel'
```

1.26 Presets

```
Gadget:    Presets  
Window:    Clock
```

This gadget is used to select one of the presets. The value corresponding to each preset is shown on the same row, in the 'Hard' or 'Soft' column depending on the current setting of the 'Use' gadget.

Current presets:

- DATx2: twice the (48KHz) clock of a DAT tape.
- CDAX2: twice the clock of a CDAudio disk.
- AGAx2: twice the (AudioDMA) clock of an OCS/ECS/AGA Amiga.
- DATx1: the (48KHz) clock of a DAT tape.
- CDAX1: the clock of a CDAudio disk.
- AGAx1: the (AudioDMA) clock of an OCS/ECS/AGA Amiga.
- DAT/2: half the (48KHz) clock of a DAT tape.
- CDA/2: half the clock of a CDAudio disk.
- AGA/2: half the (AudioDMA) clock of an OCS/ECS/AGA Amiga.

1.27 Use

```
Gadget:    Use  
Window:    Clock
```

This gadget is used to select which one of the values, associated with each preset, is used.

1.28 Value

```
Gadget:    Value  
Window:    Clock
```

This gadget is used to enter a clock value from the Amiga keyboard.

1.29 OK

Gadget: OK
Window: Clock

This gadget is used to accept the clock value shown in the 'Value' gadget and quit the clock selection operation.

1.30 Cancel

Gadget: OK
Window: Clock

This gadget is used to cancel the clock selection operation.

1.31 Locator Display Window

Window: Locator Display

The Locator Display Window is used to show a graphic description of an audio file.

The window contains two boxes:

- the upper (smaller) box describes the complete recording
- the lower (bigger) box describes a user selectable portion of the recording.

Upper box.

The position and size of the area currently displayed on the lower box (relative to the complete recording) is shown by two dark bars near the upper and lower borders of the upper box. The position and size of the currently selected range (if any) is shown by a white bar. Clicking with the left mouse button somewhere inside the upper box causes the lower box to display the recording area near that point (results vary depending on current X zoom factor).

Lower Box.

This box shows the signal graph. You can manipulate variables such as zoom factors, resolution and similar via the Locator Control Window. To select a portion of the complete recording (a range) click once on the graph with the left mouse button, then drag the mouse without releasing the left button (release it when you are done). The range is displayed in reversed colors (see also the description of the upper box).

1.32 Locator Control Window

Window: Locator Control

The Locator Control Window is used to control the Locator tool. The Locator tool is used to graphically navigate a recording and interactively select and play portions of it (ranges).

This window contains the following gadgets:

```
' Show/All'  
' Show/Display'  
' Show/Range'  
' Show/Near Range'  
' Show/Range Start'  
' Show/Range End'  
' Show/In'  
' Show/Out'  
' Show/<<'  
' Show/<'  
' Show/>'  
' Show/>>'  
' Play/All'  
' Play/Display'  
' Play/Range'  
' Play/Before Range'  
' Play/Range Start'  
' Play/Range End'  
' Play/After Range'  
' Play/Loop'  
' Range/All'  
' Range/Display'  
' Range/Edit Step'  
' Range/S'  
' Range/E'  
' Range/D'  
' Display/X Scan'  
' Display/X Zoom'  
' Display/Y Zoom'  
' Display/S'  
' Display/E'  
' Display/D'
```

1.33 Show/All

Gadget: Show/All
Window: Locator Control

This gadget is used to force the Locator Display window to show the complete recording.

1.34 Show/Display

Gadget: Show/Display
Window: Locator Control

This gadget is used to force the Locator Display window to show the same portion of the recording currently on display. This is usefull to cause a file rescan after changing the horizontal resolution setting ('Display/X Scan' gadget).

1.35 Show/Range

Gadget: Show/Range
Window: Locator Control

This gadget is used to force the Locator Display window to show only the ranged area of the recording. This action may change the current X zoom factor.

1.36 Show/Near Range

Gadget: Show/Near Range
Window: Locator Control

This gadget is used to force the Locator Display window to show the a portion of the recording surrounding the ranged area. This is usefull when you are fine-tuning the start/end points of a range.

1.37 Show/Range Start

Gadget: Show/Range Start
Window: Locator Control

This gadget is used to force the Locator Display window to show the a portion of the recording surrounding the start of the ranged area. This is usefull when you are fine-tuning the start point of a range.

1.38 Show/Range End

Gadget: Show/Range End
Window: Locator Control

This gadget is used to force the Locator Display window to show the a portion of the recording surrounding the end of the ranged area. This is usefull when you are fine-tuning the end point of a range.

1.39 Show/In

Gadget: Show/In
Window: Locator Control

This gadget is used to force the Locator Display window to double the x zoom factor for the recording currently on display.

1.40 Show/Out

Gadget: Show/Out
Window: Locator Control

This gadget is used to force the Locator Display window to halve the x zoom factor for the recording currently on display.

1.41 Show/⟨⟨

Gadget: Show/⟨⟨
Window: Locator Control

This gadget is used to force the Locator Display window to show a portion of the recording preceding the portion currently on display. The x zoom factor is not changed. The amount of the time shift (backward) is equal to the current display duration ('Display/D' gadget).

1.42 Show/⟨⟨

Gadget: Show/⟨⟨
Window: Locator Control

This gadget is used to force the Locator Display window to show a portion of the recording preceding the portion currently on display. The x zoom factor is not changed. The amount of the time shift (backward) is equal to the current display duration ('Display/D' gadget).

1.43 Show/⟨

Gadget: Show/⟨
Window: Locator Control

This gadget is used to force the Locator Display window to show a portion of the recording preceding the portion currently on display. The x zoom factor is not changed. The amount of the time shift (backward) is equal to half of current display duration ('Display/D' gadget).

1.44 Show/>

Gadget: Show/>
Window: Locator Control

This gadget is used to force the Locator Display window to show a portion of the recording following the portion currently on display. The x zoom factor is not changed. The amount of the time shift (forward) is equal to half of current display duration ('Display/D' gadget).

1.45 Show/>>

Gadget: Show/>>
Window: Locator Control

This gadget is used to force the Locator Display window to show a portion of the recording following the portion currently on display. The x zoom factor is not changed. The amount of the time shift (forward) is equal to the current display duration ('Display/D' gadget).

1.46 Play/All

Gadget: Play/All
Window: Locator Control

This gadget is used to play the complete recording.

1.47 Play/Display

Gadget: Play/Display
Window: Locator Control

This gadget is used to play the portion of the recording currently displayed in the Locator Display window.

1.48 Play/Range

Gadget: Play/Range
Window: Locator Control

This gadget is used to play the ranged area.

1.49 Play/Before Range

Gadget: Play/Before Range
Window: Locator Control

This gadget is used to play a short portion of the recording preceding the start point of the ranged area. This is useful when you are fine-tuning the start point of a range.

1.50 Play/Range Start

Gadget: Play/Range Start
Window: Locator Control

This gadget is used to play a short portion of the recording following the start point of the ranged area. This is useful when you are fine-tuning the start point of a range.

1.51 Play/Range End

Gadget: Play/Range End
Window: Locator Control

This gadget is used to play a short portion of the recording preceding the end point of the ranged area. This is useful when you are fine-tuning the end point of a range.

1.52 Play/After Range

Gadget: Play/After Range
Window: Locator Control

This gadget is used to play a short portion of the recording following the end point of the ranged area. This is useful when you are fine-tuning the end point of a range.

1.53 Play/Loop

Gadget: Play/Loop
Window: Locator Control

This gadget is used to choose if the Locator playback function has to repeat forever ('Loop') or play only once ('No Loop').

1.54 Range/All

Gadget: Range/All
Window: Locator Control

This gadget is used to set the complete recording as the ranged area.

1.55 Range/Display

Gadget: Range/Display
Window: Locator Control

This gadget is used to set the portion of the recording currently displayed in the Locator Display window as the ranged area.

1.56 Range/Edit Step

Gadget: Range/Edit Step
Window: Locator Control

This gadget is used to set the step value for the timecode editing gadgets ('+' and '-' gadgets).

1.57 Range/S

Gadget: Range/S
Window: Locator Control

This gadget is used to show the timecode value for the range start point.

1.58 Range/E

Gadget: Range/E
Window: Locator Control

This gadget is used to show the timecode value for the range end point.

1.59 Range/D

Gadget: Range/D
Window: Locator Control

This gadget is used to show the duration of the ranged area.

1.60 Display/X Scan

Gadget: Display/X Scan
Window: Locator Control

This gadget is used to select a value for the X Scan variable. Lower values give high resolution, slow graphs, higher values give low resolution, fast graphs. After changing the X Scan value you should click on the 'Show/Display' gadget if you want to update the Locator Display window graph immediately. The first time you use the Locator tool the X Scan default value set in the 'Other Prefs' window is used.

1.61 Display/X Zoom

Gadget: Display/X Zoom
Window: Locator Control

This gadget is used to show the current horizontal zoom factor for the Locator Display window.

1.62 Display/Y Zoom

Gadget: Display/Y Zoom
Window: Locator Control

This gadget is used to change the vertical zoom factor for the Locator Display window.

1.63 Display/S

Gadget: Display/S
Window: Locator Control

This gadget is used to show the timecode value for the start point of the portion of the recording displayed in the Locator Display window.

1.64 Display/E

Gadget: Display/E
Window: Locator Control

This gadget is used to show the timecode value for the end point of the portion of the recording displayed in the Locator Display window.

1.65 Display/D

Gadget: Display/D
Window: Locator Control

This gadget is used to show the duration of the portion of the recording displayed in the Locator Display window.

1.66 Analog (Out)

Window: Analog (Out)

Actions:
Play a formatted file (AIFF,WAV,...)
Play a raw or unknown file

The Analog (Out) Window is used to control the hardware used to playback the audio signals. The window layout depends on the output driver installed.

SoftMary is an output driver for the Amiga built-in audio chip (Paula). It's window contains the following gadgets:

'Clock'
'Spatial Image'
'Loop Sample'
'LP Filter'

1.67 Clock

Gadget: Clock
Window: Analog (Out)

This gadget is used to set the playback clock. You can use the slide-bar to set the preferred value immediatly or click on the "?" button to open the clock requester.

1.68 Spatial Image

Gadget: Spatial Image
Window: Analog (Out)

This gadget is used to set the amount of spatial expansion that SoftMary performs on audio signals. This is a stereo enhancer that works well with mono signals, producing exciting spatial sounds.

1.69 Loop Sample

Gadget: Loop Sample
Window: Analog (Out)

This gadget is used to enable/disable playback looping. If this gadget is not checked the playback stops at the end of the recording, if it is checked the playback keeps repeating until you abort the operation.

1.70 LP Filter

Gadget: LP Filter
Window: Analog (Out)

This gadget is used to enable/disable the built-in hardware low-pass filter.

1.71 CDAudio (In)

Window: CDAudio (In)

Actions:
Record digital tracks from a CDAudio

The CDAudio (In) Window is used to access audio data on audio compact disks. You need an Apple CD300(+) compatible SCSI CD-ROM drive.

This window contains the following gadgets:

'Scsi Device'
'Unit'
'Door/Open'
'Door/Close'
'TOC/Read'
'Channel'
'Clock'

1.72 SCSIDevice

Gadget: SCSIDevice
Window: CDAudio (In)

This gadget is used to select the scsidevice for CD-ROM access.
Examples: scsi.device, gvpscsi.device, ...

You can set a default scsidevice via tooltypes accessing AL16 icon

from WorkBench.

Examples:

```
CDDA SCSI_DEVICE=scsi.device
CDDA SCSI_DEVICE=gvp SCSI_DEVICE=device
```

1.73 Unit

Gadget: Unit
Window: CDAudio (In)

These (actually three) gadgets are used to select which SCSI device is being referred to. You'll usually need only to set the CD-ROM SCSI ID (ID gadget).

NOTE 1: the ID gadget accepts values upto 9 for compatibility with some old controllers.

NOTE 2: the LUN gadget is present for compatibility with some old controllers.

1.74 Open

Gadget: Door/Open
Window: CDAudio (In)

This gadget is used to open the CD-ROM's door. This operation will invalidate the current TOC. During some operations AL16 doesn't allow an Open command. In these cases AL16 also asks the CD-ROM to disable the 'open' button present on the front panel. The Open gadget and button are enabled again as soon as the operation is completed/aborted.

1.75 Close

Gadget: Door/Close
Window: CDAudio (In)

This gadget is used to close the CD-ROM's door.

1.76 Read

Gadget: TOC/Read
Window: CDAudio (In)

This gadget is used to read a CDAudio Table Of Contents. An audio disk must be present into the CD-ROM drive.

1.77 Channel

Gadget: Channel
Window: CDAudio (In)

This gadget is used to select which audio channel is accessed.

1.78 Clock

Gadget: Clock
Window: CDAudio (In)

This gadget is used to select the clock of the audio data. The standard CDAudio clock is 44.1KHz, you can use it in AL16. Lower clocks are provided: they require less disk space but reduce audio quality.

If you want to lower the clock consider these possibilities:

- for fast preview work reduce the clock using this gadget (the rate conversion is performed without digital filtering).
- to keep the best quality copy the material with 44.1KHz clock, then use AL16 DSP tools to rate convert the signal.

1.79 File (In)

Window: File (In)

Actions:
Play a formatted file (AIFF,WAV,...)
Play a raw or unknown file
Convert a file format

The File (In) Window is used to access audio data contained into files.

This window contains the following gadgets:

'Name/?'
'Format'
'Sample Point Data'
'Analyze'
'Clock'
'Stream Limits/Start'
'Stream Limits/End'
'Stream Limits/Memo1'
'Stream Limits/Memo2'
'Stream Limits/Recall1'
'Stream Limits/Recall2'

1.80 Name/?

Gadget: Name/?
Window: File (In)

This gadget is used to select the file via the file requester.

1.81 Format

Gadget: Format
Window: File (In)

This gadget is used to display the file format (AIFF,WAV,...).
If the 'Analyze' gadget is:

- selected:
AL16 will display the proper format name or (if the format is not recognized or the file is damaged) the string 'RAW'.
- deselected:
AL16 will display the string 'RAW'.

1.82 Sample Point Data

Gadget: Sample Point Data
Window: File (In)

This gadget is used to select the audio data type. The data type is automatically set by AL16 if the 'Analyze' gadget is selected AND the file format is recognized.

You can change the data type at any time.

1.83 Analyze

Gadget: Analyze
Window: File (In)

This gadget is used to enable/disable the automatic file format detection function. If the gadget is enabled every time you select a new file AL16 will try to recognize the file format.

1.84 Clock

Gadget: Clock
Window: File (In)

This gadget is used to display the file audio data clock. This information is only valid if AL16 has recognized the file format.

1.85 Start

Gadget: Stream Limits/Start
Window: File (In)

This gadget is used to select the position of the start point of the audio data. The position is relative to the beginning of the file and is measured in bytes. This gadget is automatically updated when AL16 recognizes the input file format.

1.86 End

Gadget: Stream Limits/End
Window: File (In)

This gadget is used to select the position of the end point of the audio data. The position is relative to the beginning of the file and is measured in bytes. This gadget is automatically updated when AL16 recognizes the input file format.

1.87 Memo1

Gadget: Stream Limits/Memo1
Window: File (In)

This gadget is used to store the current values of the Start and End gadgets. The values are recalled using the Recall1 gadget.

1.88 Memo2

Gadget: Stream Limits/Memo2
Window: File (In)

This gadget is used to store the current values of the Start and End gadgets. The values are recalled using the Recall2 gadget.

1.89 Recall1

Gadget: Stream Limits/Recall1
Window: File (In)

This gadget is used to recall values of the Start and End gadgets previously stored using the Memo1 gadget.

1.90 Recall2

Gadget: Stream Limits/Recall2
Window: File (In)

This gadget is used to recall values of the Start and End gadgets previously stored using the Memo2 gadget.

1.91 File (Out)

Window: File (Out)

Actions:

Record digital tracks from a CDAudio

Convert a file format

The File (Out) Window is used to store audio data into files.

This window contains the following gadgets:

'Name/?'

'Format'

'Sample Point Data'

'Clock'

1.92 Name/?

Gadget: Name/?
Window: File (Out)

This gadget is used to select the file via the file requester.

1.93 Format

Gadget: Format
Window: File (Out)

This gadget is used to select the file format (AIFF,WAV,...).
This gadget setting affects the Data gadget setting.

1.94 Sample Point Data

Gadget: Sample Point Data
Window: File (Out)

This gadget is used to select the audio data type. The data type is automatically set by AL16 if you use the Format gadget. You can change the data type at any time. If you choose a data type not compatible with the format type AL16 will report the wrong setting WHEN YOU CLICK ON EXECUTE GADGET.

1.95 Clock

Gadget: Clock
Window: File (Out)

This gadget is used to set the file audio data clock.
You can:

- type the number directly into the numeric gadget
- use the '?' gadget to open the clock requester
- use the 'Get Clock From Input' gadget to copy the current input clock value.

1.96 IOM_IOMapping

Window: I/O Mapping

Actions:

Play a formatted file (AIFF,WAV,...)
Play a raw or unknown file
Record digital tracks from a CDAudio
Convert a file format

The I/O Mapping Window is used to select one of the available audio stream mappings and start the mapping operation.

This window contains the following gadgets:

'Mappings'
'Execute'

1.97 Mappings

Gadget: Mappings
Window: I/O Mapping

This gadget is used to choose one of the available I/O mappings.

1.98 Execute

Gadget: Execute
Window: I/O Mapping

This gadget is used to start the currently selected I/O mapping.

1.99 Parallel (In)

Window: Parallel (In)

The Parallel (In) Window is used to select one of the available audio stream mappings and start the mapping operation.

This window contains the following gadgets:

'Clock'

1.100 Clock

Gadget: Clock
Window: Parallel (In)

This gadget is used to set the input audio data clock.

You can:

- use the '?' gadget to open the clock requester
- use the slider to set the value directly.

Note that Parallel (In) clock range may have a different granularity than Analog (Out) clock range.

1.101 Parallel:File

Window: Parallel:File

The Parallel:File Window is used to control the Parallel:File mapping operation.

This window contains the following gadgets:

'Rec Mode'
'Memory/Info'
'StartMode'

1.102 Rec Mode

Gadget: Rec Mode
Window: Parallel:File

This gadget is used to choose the recording mode.

'Buffer In Ram' stores the digital data in ram and writes it to disk only at the end of the process. During recording the video DMA is turned off, producing a blank display. You can stop the recording process with a mouse click. The recording process automatically stops when there isn't further free ram or free space on disk.

'Direct To Disk' stores the digital data directly on disk. During the recording process the elapsed time and the time available before the disk is full are shown. You can stop the recording process with a mouse click. The recording process automatically stops when there isn't further free space on disk.

'Buffer In Ram' allows higher clocks but recording time is limited by available ram.

'Direct To Disk' allows longer recordings but clock is limited by CPU and disk speed.

1.103 Memory/Info

Gadget: Memory/Info
Window: Parallel:File

This gadget is used to show the available free space in ram and disk. The free space is shown as recording time (depending on current parallel clock) and as total number of samplepoints.

1.104 Start Mode

Gadget: Start Mode
Window: Parallel:File

This gadget is used to choose how to start recording.

'Mouse Click' starts recording at mouse click.

'Threshold' starts recording when the input level is higher than a user selectable threshold (use the slider to select a threshold).

1.105 Parallel:VU

Window: Parallel:VU

The Parallel:VU Window is used to control the Parallel:VU mapping operation.

This window contains the following gadgets:

'Clock'

1.106 Clock

Gadget: Clock
Window: Parallel:VU

This gadget is used to set the (VU Clock)/(Parallel Clock) ratio. Higher ratios cause higher audio quality and slower graphic refresh in the VU window.

Note that this setting will not affect the audio quality when recording from parallel (it only affects monitoring quality when in Paralle:VU mode).

1.107 TOC

Window: TOC

Actions:

Record digital tracks from a CDAudio

The TOC Window is used to access the Table Of Contents (TOC) of audio compact disks.

This window contains the following gadgets:

'CDDA Table Of Contents'
'Range Start'
'Range Start/Get'
'Range Start/Sector'
'Range End'
'Range End/Get'
'Range End/Sector'
'Play/Track'
'Play/All'
'Play/Range'
'Play/Stop'

1.108 CDDA Table Of Contents

Gadget: CDDA Table Of Contents
Window: TOC

This gadget is used to select an audio track from those available on the currently mounted audio compact disk. For each audio track, the following information is displayed:

- the track number
- the track duration
- the number of the first sector (of the track)
- the number of the last sector (of the track)
- the track start time
- the track end time.

Selecting a track automatically updates the 'Range Start' and 'Range End' gadgets.

1.109 Range Start

Gadget: Range Start
Window: TOC

This gadget is used to set the start point (mm:ss) of the range used for recording to HD.

Selecting a track automatically updates this gadget to track start.

1.110 Range Start/Get

Gadget: Range Start/Get
Window: TOC

This gadget is used to set the start point of the range used for recording to HD. First, start CD playback, then click on this gadget when playback reaches the preferred starting point.

Selecting a track automatically updates this gadget to track start.

1.111 Range Start/Sector

Gadget: Range Start/Sector
Window: TOC

This gadget is used to set the start point (sector number) of the range used for recording to HD.

Selecting a track automatically updates this gadget to track start.

1.112 Range End

Gadget: Range End
Window: TOC

This gadget is used to set the end point (mm:ss) of the range used for recording to HD.

Selecting a track automatically updates this gadget to track end.

1.113 Range End/Get

Gadget: Range End/Get
Window: TOC

This gadget is used to set the end point of the range used for recording to HD. First, start CD playback, then click on this gadget when playback reaches the preferred ending point.

Selecting a track automatically updates this gadget to track end.

1.114 Range End/Sector

Gadget: Range End/Sector
Window: TOC

This gadget is used to set the end point (sector number) of the range used for recording to HD.

Selecting a track automatically updates this gadget to track end.

1.115 Play/Track

Gadget: Play/Track
Window: TOC

This gadget is used to play, via the CD-ROM drive output, the currently selected track.

1.116 Play/All

Gadget: Play/All
Window: TOC

This gadget is used to play, via the CD-ROM drive output, the complete compact disk, starting from first track.

1.117 Play/Range

Gadget: Play/Range
Window: TOC

This gadget is used to play, via the CD-ROM drive output, the range defined by the 'Range Start', 'Range End' gadgets.

1.118 Play/Stop

Gadget: Play/Stop
Window: TOC

This gadget is used to stop the compact disk playback.

1.119 VU (Out)

Window: VU (Out)

The VU (Out) Window is used to monitor the input signal level before recording from parallel.

Two boxes are shown:

- the upper box displays an analog VU meter
- the lower box displays a scrolling history of the signal levels.

The lower box graph is color coded. When signal level is under the hardware saturation threshold the color is white. If the signal exceeds the threshold for a very short period of time the color turns darker. If the signal exceeds the threshold for a longer period of time the color turns black. (Colors may differ when AL16 is used on a public screen such as the Workbench screen).

1.120 How To...

How to...

Play a formatted file (AIFF,WAV,...)
Play a raw or unknown file
Record digital tracks from a CDAudio
Convert a file format
Use the DSP

A great number of other functions are available with AudioLab16.
Please register to get the complete documentation.

1.121 Play a formatted file

How to play a formatted file.

In the 'Control' window, 'Environment' gadget, select the I/O Mapper environment.

Now, in the 'I/O Mappings' window, 'Mappings' gadget, select 'File:Analog'. Be sure the 'Analyze File Type' gadget is checked. In the 'File (In)' window, click on the 'Name/?' gadget to open the file requester. Now choose the file you want to play. If the file is recognized the 'Format', 'Data' and 'Clock' gadgets ('File (In)' window) show the file parameters.

In the 'Analog (Out)' window the 'Clock' gadget is updated to match the input file clock (when a perfect match is not possible, the analog driver finds the best value according to hardware limitations).

In the 'Analog (Out)' window check the 'Loop' gadget if you want endless repeat during playback.

In the 'I/O Mappings' window click on the 'Execute' gadget to start playback.

1.122 Play a raw file

How to play a raw file.

In the 'Control' window, 'Environment' gadget, select the I/O Mapper environment.

Now, in the 'I/O Mappings' window, 'Mappings' gadget, select 'File:Analog'. Be sure the 'Analyze File Type' gadget is not checked.

In the 'File (In)' window, click on the 'Name/?' gadget to open the file requester. Now choose the file you want to play.

In the 'File (In)' window, choose a value for the 'Data' gadget.

In the 'Analog (Out)' window check the 'Loop' gadget if you want endless repeat during playback.

In the 'I/O Mappings' window click on the 'Execute' gadget to start playback. If the file is not correctly played (noise) choose a new value for the 'Data' gadget and try again.

1.123 Record digital tracks from a CDAudio

How to record digital tracks from a CDAudio.

In the 'Control' window, 'Environment' gadget, select the I/O Mapper environment.

Now, in the 'I/O Mappings' window, 'Mappings' gadget, select 'CDAudio:File'.

In the 'CDAudio (In)' window, check if the 'SCSI Device' gadget and the 'Unit/ID' gadget settings reflect your CD-ROM drive setup. You can set default values for these gadgets using the CDDA SCSI_DEVICE and CDDA SCSI_UNIT tooltypes from Workbench.

Now click on 'Door/Open' gadget (or use the button on drive front

panel), insert an audio CD, click on 'Door/Close' gadget (or use the button on drive front panel). Read the audio CD contents using the 'TOC/Read' gadget. If the CD is a valid audio CD the 'CDDA TOC' window opens.

In the 'CDDA TOC' window the 'CDDA Table Of Contents' gadget shows, for each audio track, the following information:

- the track number
- the track duration
- the number of the first sector (of the track)
- the number of the last sector (of the track)
- the track start time
- the track end time.

Select the track you want to record clicking on it (the 'Range Start' gadget and 'Range End' gadget are immediately updated). Play the range using the 'Play/Range' gadget (you are using the CD-ROM drive output, not the Amiga output. Be sure the drive audio output is connected correctly). Stop playback using the 'Play/Stop' gadget. You can change the range start/end points using the 'Range Start', 'Range End' gadgets. While the CD is playing you can set the start/end points in realtime, clicking on the 'Range Start/Get', 'Range End/Get' gadgets. Use the 'Channel' gadget to choose which audio channel is recorded. Use the 'Clock' gadget to choose the clock rate for recording.

Now in the 'File (Out)' window click on the 'Name/?' gadget to open the file requester and enter a file name. In the 'Format' gadget select a file format. The 'Sample Point Data' gadget is updated automatically (note that most file formats support more than one data format... you can change the data format as long as the new value is legal for that file format). Use the 'Clock' gadget to set the clock value that is written in the file header (this doesn't affect the recording clock... use the 'Clock' gadget in the 'CDAudio (In)' window to affect the recording clock).

In the 'I/O Mapping' window click on the 'Execute' gadget to start recording.

1.124 Convert a file format

How to convert a file format.

In the 'Control' window, 'Environment' gadget, select the I/O Mapper environment.

Now, in the 'I/O Mappings' window, 'Mappings' gadget, select 'File:File'.

In the 'File (In)' window, click on the 'Name/?' gadget to open the file requester. Now choose the file you want to convert. If the file is recognized the 'Format', 'Data' and 'Clock' gadgets ('File (In)' window) show the file parameters (this happens only if the 'Analyze File Type' gadget is checked).

Now in the 'File (Out)' window click on the 'Name/?' gadget to open the file requester and enter a file name. In the 'Format' gadget select a file format. The 'Sample Point Data' gadget is updated automatically (note that most file formats support more

than one data format... you can change the data format as long as the new value is legal for that file format). Use the 'Clock' gadget to set the clock value that is written in the file header (this doesn't affect the recording clock).

In the 'I/O Mapping' window click on the 'Execute' gadget to start mapping.

1.125 Use the DSP

In this Junior version two DSP operators are available, and only in realtime direct-from-disk. If you are enough interested in this program you should have no problem discovering how to use them... (study the DSP window).

1.126 Data Exchange

Data Exchange.

Using AudioLab16 you should be able to exchange 16bit formatted audio files with the following hard disk recording software:

Program		Platform	Format
- Audioshop	(Opcode Systems)	MAC	AIFF
- Cubase Audio	(Steinberg)	MAC	AIFF
- Deck II	(OSC)	MAC	AIFF
- Digital Performer	(Mark Of The Unicorn)	MAC	AIFF
- Digitrax	(Alaska Software)	MAC	AIFF
- Logic Audio	(Emagic)	MAC	AIFF
- Pro Tools	(Digidesign)	MAC	AIFF
- Session 8 Mac	(Digidesign)	MAC	AIFF
- SoftSplice	(Digital Expressions)	MAC	AIFF
- Sonic System	(Sonic Solutions)	MAC	AIFF
- Sound Designer II	(Digidesign)	MAC	AIFF/WAV
- SoundEdit16	(Macromedia)	MAC	AIFF/WAV
- Studio Vision	(Opcode Systems)	MAC	AIFF
- Cubase Audio PC	(Steinberg)	PC	AIFF
- FastEddie	(Digital Audio Labs)	PC	WAV
- MicroSound	(Micro Technology)	PC	WAV
- SADiE Disk Editor	(Studio Audio and Video)	PC	WAV
- SAW	(I.Q.S.)	PC	WAV
- Session 8 PC	(Digidesign)	PC	WAV
- SSHDR1 HDRecorder	(Soundscape Digital T.)	PC	WAV
- Techno Lab	(Digital Manager)	PC	WAV/raw16
- The EdDitor Plus	(Digital Audio Labs)	PC	WAV
- Quad	(Turtle Beach)	PC	WAV
- Wave for Windows	(Turtle Beach)	PC	WAV

This list is:

- not complete
- unofficial.

1.127 Trouble Shooting

Trouble Shooting.

P1: The program doesn't start.

S1: If you don't see any message on screen (such as 'Low Memory.') be sure to have a complete installation of the required OS version.

Try also removing from s:user-startup and WBStartup any utility that is not part of the official OS distribution (a utility for adding sounds to system events was reported to prevent AL16 from booting).

P2: Can't get on-line help.

S2: You need:

- the amigaguide.library in your LIBS: directory
- the AL16.guide file in the directory containing the AL16 executable.

P3: The windows are not well positioned on screen.

S3: If you are running the program for the first time AL16 doesn't know your preferred settings. Please, rearrange any window as you like, then quit the program. During shut-down you are offered the option of saving program's status: do it. The next time you'll launch the program, any window will position according to your preferred settings.

P4: My CD-ROM drive allows digital transfer of audio tracks but it isn't CD300(+) compatible (doesn't work with AL16).

S4: Currently you should use a program that supports your drive (PD software for most CD-ROM models has been developed) to transfer the audio material to a mono 16bit file on your disk. Then you can access that file with AL16. The sample point data format for CDAudio tracks is 'PCM16 Lin Signed LSBMSB'.

NOTE: the program that you use for transfer may change the sample point data format before writing to disk.

P5: The file requesters don't work properly.

S5: This problem showed only when using an old (beta) version of the asl.library. Upgrade your asl.library.

P6: AL16 recognizes an formatted audio file but plays it low pitched (one octave lower than normal) and slowly (duration is doubled).

S6: The file is probably a two-channel (stereo) interleaved recording. AL16 recognizes the data section but doesn't currently split the channels (splitting is planned for future versions). Use the Skipper DSP operator to extract one channel at a time.

P7: AL16 slows down concurrent applications.

P7: Check the 'Task Priority' gadget in the 'Other Prefs' window.

P8: Playback is irregular (backward and forward jumps are audible).

P8: Probably your HD is too slow. Try playing at lower clocks:

if it works you need a faster HD. If you are performing a realtime processing (such as a DSP operation or mixing) check if the Ksmp/s value is lower the signal clock. If it happens then your CPU is too slow (the HD may be OK). Also be sure that your current screenmode doesn't slowdown access to chip-ram (800x600 on ECS machines, for example).

1.128 Author

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