Default

COLLABORATORS

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Contents

Chapter 1

Default

1.1 AL16 Manual Main Page

```
                    AudioLab16 On-Line Help System
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   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:

   Tooltypes          Configuration
   Graphic Interface  Documentation for any gadget
   HowTo...           Common operations
   File Formats       Audio files
   Data Exchange      Cross-platform compatibility
   CDROMs             CDROM drives for digital tranfers
   Trouble Shooting   Problems and solutions
   Author             Contacting the author
```

1.2 Tooltypes

```
   Tooltypes.

   To  configure AudioLab16 for your system access the icon tooltypes
   clicking  once  on the AudioLab16 icon and selecting 'Information'
   from the 'Icon' Workbench menu.

   The following tooltypes are available:
```

```
Tooltype     A_MEM_MODEL
Values       MINI SMALL MEDIUM LARGE
Example      A_MEM_MODEL=LARGE
Note         affects the amount of RAM used by the application


Tooltype     B_MEM_MODEL
Values       MINI SMALL MEDIUM LARGE
Example      B_MEM_MODEL=LARGE
Note         affects the amount of RAM used by the Locator tool's
             caching system


Tooltype     C_MEM_MODEL
Values       MINI SMALL MEDIUM LARGE HUGE
Example      C_MEM_MODEL=MEDIUM
Note         affects  the   amount  of  RAM used by the MultiTrack
             Manager


Tooltype     CDDA_SCSI_DEVICE
Values       <your CD_ROM scsi device name>
Example      CDDA_SCSI_DEVICE=gvpscsi.device
Note         sets the default scsi device name for CDROM users


Tooltype     CDDA_SCSI_UNIT
Values       <your CD-ROM scsi ID number>
Example      CDDA_SCSI_UNIT=3
Note         sets the default scsi ID for CDROM users


Tooltype     MIDI_SERIAL_DEVICE
Values       <your MIDI serial device name>
Example      MIDI_SERIAL_DEVICE=serial.device
Note         sets the default serial device name for MIDI users


Tooltype     MIDI_SERIAL_UNIT
Values       <your MIDI serial unit number>
Example      MIDI_SERIAL_UNIT=1
Note         sets the default serial device unit for MIDI users


Tooltype     OUT_DRIVER
Values       <your board's output driver name>
Example      OUT_DRIVER=XYZOut
Note         sets the output driver for audioboards users
             (drivers aren't part of the AudioLab package)
```

1.3 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

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
'Amp Control   Window' DSP operator
'Clock Converter Window' DSP operator
'Comb Filter   Window' DSP operator
'Distortion   Window' DSP operator
'Delay-1-Tap   Window' DSP operator
'Delay-N-Tap   Window' DSP operator
'Delay-Recursive Window' DSP operator
'Fir Filter   Window' DSP operator
'Flanger   Window' DSP operator
'Hum Remover   Window' DSP operator
'MultiFlanger   Window' DSP operator
'Noise Gate   Window' DSP operator
'Phase Inverter Window' DSP operator
'Pitch Shift   Window' DSP operator
'Quantizer   Window' DSP operator
'Room   Window' DSP operator
'Skipper   Window' DSP operator
'Time Inverter Window' DSP operator
'Time Stretch   Window' DSP operator
'Tone Control   Window' DSP operator

Edit List Managers Enviroment
'ELM   Window' ELM main control
'MultiTrack Display   Window' MultiTrack editor
'MultiTrack Mixer   Window' MultiTrack mixer
'MultiTrack Control   Window' MultiTrack main control
'Object   Window' MultiTrack object selector

```
'Markers                      Window' MultiTrack markers
'Absolute Edit List Display Window' Multitrack AEL display
'Relative Edit List Manager Window' REL builder
'Rel List Item               Window' REL item selector


Triggers Enviroment
'Triggers  Window' Trigger selector
'Programs  Window' Program list builder
'Keyboard  Window' Keyboard trigger control
'MIDI      Window' MIDI trigger control

Filter Design Enviroment
'Design    Window' Filter design main control
'Windowing Window' Windowing method control

Signal Generators Enviroment
'SigGen           Window' Generators selector
'Cyclic Generator Window' General wave generator
'Tone Generator   Window' Accurate sine generator
'Sweep Generator  Window' Sweeping sine generator

Tools Enviroment
'Tools Window'           Tool selector
'(De)Interleaver Window' Mono<->Stereo converter
'MiniMixer       Window' MiniMixer

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

1.4 Control Window

```
Window:    Control
```

The Control Window is used to access the various enviroments 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:

```
'Enviroments'
'Main Help'
'Other Prefs'
'About'
'Quit' (window close gadget)
```

1.5 Enviroments

```
Gadget:    Enviroments
Window:    Control
```

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

1.6 Main Help

```
Gadget:     Main Help
Window:     Control
```

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

1.7 Other Prefs

```
Gadget:     Other Prefs
Window:     Control
```

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

1.8 About

```
Gadget:     About
Window:     Control
```

This gadget shows some information about the AL16 project.

1.9 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.

1.10 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 tooltypes.

This window contains the following gadgets:

```
'Reference Clock'
'Locator XScan'
'Task Priority'
'Internal Write'
```

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

1.11 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.

1.12 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.

1.13 Task Priority

```
Gadget:      Task Priority
Window:      Other Prefs
```

This gadget is used to set the AL16 priority.

1.14 InternalWrite

```
Gadget:      Internal Write
Window:      Other Prefs
```

This gadget is used to set the audio data format used by AL16 when writing to disk.

1.15 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'

1.16 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.

1.17 Frequency Response Window

```
Window:      Frequency Response
```

Actions:
Generate a FIR filter
Write a FIR filter

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.
```

1.18 Clock Window

```
Window:     Clock

Actions:
Generate a FIR filter
Write a FIR filter

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

This window contains the following gadgets:

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

1.19 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.
```

1.20 Use

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

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

1.21 Value

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

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

1.22 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.

1.23 Cancel

```
Gadget:     OK
Window:     Clock
```

This gadget is used to cancel the clock selection operation.

1.24 Locator Display Window

```
Window:     Locator Display
```

The Locator Display Window is used to show a graphic descrition 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).

1.25 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'
```

1.26 Show/All

```
Gadget:     Show/All
Window:     Locator Control
```

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

1.27 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).

1.28 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.

1.29 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.

1.30 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.

1.31 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.

1.32 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.

1.33 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.

1.34 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).

1.35 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).

1.36 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).

1.37 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).

1.38 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).

1.39 Play/All

```
Gadget:     Play/All
Window:     Locator Control
```

This gadget is used to play the complete recording.

1.40 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.

1.41 Play/Range

```
Gadget:     Play/Range
Window:     Locator Control
```

This gadget is used to play the ranged area.

1.42 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 usefull
when you are fine-tuning the start point of a range.

1.43 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 usefull
when you are fine-tuning the start point of a range.

1.44 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 usefull when
you are fine-tuning the end point of a range.

1.45 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 usefull when
you are fine-tuning the end point of a range.

1.46 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').

1.47 Range/All

```
Gadget:      Range/All
Window:      Locator Control
```

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

1.48 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.

1.49 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).

1.50 Range/S

```
Gadget:     Range/S
Window:     Locator Control
```

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

Holding the SHIFT key while clicking on the '+' or '-' gadgets
allows using a greater increment/decrement step value.

1.51 Range/E

```
Gadget:     Range/E
Window:     Locator Control
```

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

Holding the SHIFT key while clicking on the '+' or '-' gadgets
allows using a greater increment/decrement step value.

1.52 Range/D

```
Gadget:     Range/D
Window:     Locator Control
```

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

1.53 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 immediatly.
The first time you use the Locator tool the X Scan default value
set in the 'Other Prefs' window is used.

1.54 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.

1.55 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.

1.56 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.

1.57 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.

1.58 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.

1.59 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'
```

1.60 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.
```

1.61 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 too, producing exciting spatial
sounds.
```

1.62 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.
```

1.63 LP Filter

```
Gadget:     LP Filter
Window:     Analog (Out)
```

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

1.64 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'
```

1.65 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=gvpscsi.device
```

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

You can set a default unit number via tooltypes accessing AL16
icon from WorkBench.
Example:

```
CDDA_SCSI_UNIT=3
```

1.67 Open

```
Gadget:     Door/Open
Window:     CDAudio (In)
```

This gadget is used to open the CD-ROM's door. This operation
will invalid 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.

1.68 Close

```
Gadget:     Door/Close
Window:     CDAudio (In)
```

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

1.69 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.

1.70 Channel

```
Gadget:     Channel
Window:     CDAudio (In)
```

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

1.71 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 convertion 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.

1.72   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'
'Analize'
'Clock'
'Stream Limits/Start'
'Stream Limits/End'
'Stream Limits/Memo1'
'Stream Limits/Memo2'
'Stream Limits/Recall1'
'Stream Limits/Recall2'
'Rename'
'Delete'

1.73   Name/?

Gadget: Name/?
Window: File (In)

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

1.74   Format

Gadget: Format
Window: File (In)

This gadget is used to display the file format (AIFF,WAV,...).

If the 'Analize' 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'.

1.75 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 'Analize' gadget is selected
AND the file format is recognized.

You can change the data type at any time.

1.76 Analize

```
Gadget:      Analize
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.

1.77 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.

1.78 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.

1.79 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.

1.80 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.

1.81 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.

1.82 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.

1.83 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.

1.84 Rename

```
Gadget:     Rename
Window:     File (In)
```

```
This gadget is used to rename the audio data file.
```

1.85 Delete

```
Gadget:     Delete
Window:     File (In)
```

```
This gadget is used to delete the audio data file permanently from
your hard disk.
```

1.86 File (Out)

```
Window:     File (Out)
```

```
Actions:
Record digital tracks from a CDAudio
Convert a file format
Record from Parallel
```

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

```
This window contains the following gadgets:
```

```
'Name/?'
'Format'
'Sample Point Data'
'Clock'
```

1.87 Name/?

```
Gadget:     Name/?
Window:     File (Out)
```

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

1.88 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.
```

1.89 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 current format type AL16 reports the wrong
setting WHEN YOU CLICK ON EXECUTE GADGET.

1.90 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.

1.91 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
Record from Parallel

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'

1.92 Mappings

```
Gadget:      Mappings
Window:      I/O Mapping
```

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

1.93   Execute

```
Gadget:      Execute
Window:      I/O Mapping
```

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

1.94   Parallel (In)

```
Window:      Parallel (In)
```

```
Actions:
Record from Parallel
```

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'

1.95   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.

1.96   Parallel:File

```
Window:      Parallel:File
```

```
Actions:
Record from Parallel
```

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

This window contains the following gadgets:

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

1.97   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.

1.98   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.

1.99   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).

1.100   Parallel:VU

```
Window:     Parallel:VU
```

```
Actions:
Record from Parallel

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

This window contains the following gadgets:

'Clock'
```

1.101 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).
```

1.102 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'
```

1.103 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.

1.104   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.

1.105   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.

1.106   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.

1.107 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.

1.108 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.

1.109 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.

1.110 Play/Track

```
Gadget:      Play/Track
Window:      TOC
```

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

1.111 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.

1.112 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.

1.113 Play/Stop

```
Gadget:      Play/Stop
Window:      TOC
```

This gadget is used to stop the compact disk playback.

1.114 VU (Out)

```
Window:      VU (Out)
```

Actions:
Record from Parallel

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).

1.115 DSP

```
Window:     DSP

Actions:
Use the DSP

The DSP Window is used to apply DSP operators to recordings.

This window contains the following gadgets:

'Source/?'
'Source/Play'
'Source/Recording/Duration'
'Source/Recording/Length'
'Source/Recording/Clock'
'Source/Recording/Clock/?'
'Source/Range/Set'
'Source/Range/S'
'Source/Range/E'
'Operators'
'Operate On'
'Destination/?'
'Destination/Play'
'Destination/Recording/Duration'
'Destination/Recording/Length'
'Destination/Recording/Clock'
'Output'
'Execute'
```

1.116 Source/?

```
Gadget:     Source/?
Window:     DSP
```

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

1.117 Source/Play

```
Gadget:     Source/Play
Window:     DSP
```

This gadget is used to play the source recording.

1.118 Source/Recording/Duration

```
Gadget:     Source/Recording/Duration
Window:     DSP
```

This gadget is used to display the duration (hh:mm:ss:ff) of the
source recording.

1.119 Source/Recording/Length

```
Gadget:     Source/Recording/Length
Window:     DSP
```

This gadget is used to display the size of the file that contains
the source recording.

1.120 Source/Recording/Clock

```
Gadget:     Source/Recording/Clock
Window:     DSP
```

This gadget is used to display the signal clock of the source
recording.

1.121 Source/Recording/Clock/?

```
Gadget:     Source/Recording/Clock/?
Window:     DSP
```

This gadget is used to edit the signal clock of the source
recording.

1.122 Source/Range/Set

```
Gadget:     Source/Range/Set
Window:     DSP
```

This gadget is used to recall the 'Locator' tool, in order to
define a portion of the whole source recording as a range. DSP
operators can be applied to ranges (see 'Operate On' gadget).

1.123 Source/Range/S

```
Gadget:     Source/Range/S
Window:     DSP
```

This gadget is used to display the timecode value for the starting
point of the range.

1.124 Source/Range/E

```
Gadget:      Source/Range/E
Window:      DSP
```

This gadget is used to display the timecode value for the ending
point of the range.

1.125 Operators

```
Gadget:      Operators
Window:      DSP
```

This gadget is used to select a DSP operator for the source
recording.

1.126 OperateOn

```
Gadget:      Operate On
Window:      DSP
```

This gadget is used to select which portion of the source
recording has to be processed:

- 'Recording'   : process the whole recording
- 'Range (save rng) : process range and save range to destination
- 'Range (save all) : process range but save also unprocessed
                      portions to destination.

1.127 Destination/?

```
Gadget:      Destination/?
Window:      DSP
```

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

1.128 Destination/Play

```
Gadget:      Destination/Play
Window:      DSP
```

This gadget is used to play the destination recording.

1.129 Destination/Recording/Duration

```
Gadget:     Destination/Recording/Duration
Window:     DSP
```

This gadget is used to display the duration (hh:mm:ss:ff) of the
destination recording.

1.130 Destination/Recording/Length

```
Gadget:     Destination/Recording/Length
Window:     DSP
```

This gadget is used to display the size of the file that contains
the destination recording.

1.131 Destination/Recording/Clock

```
Gadget:     Destination/Recording/Clock
Window:     DSP
```

This gadget is used to display the signal clock of the destination
recording.

1.132 Output

```
Gadget:     Output
Window:     DSP
```

This gadget is used to select the output mode.
'File' selects direct-to-disk mode.
'Analog' selects real-time mode.

1.133 Execute

```
Gadget:     Execute
Window:     DSP
```

This gadget is used to start the currently selected DSP operator.

1.134 Amp Control

```
Window:     Amp Control
```

Actions:
Use the DSP

The Amp Control Window is used to control parameters for the
'Amp Control' operator.
The 'Amp Control' operator allows modifying signal amplitude
(volume).

This window contains the following gadgets:

'Amp Optimization/Check'
'Amp Optimization/Margin'
'Amp Interpolation/Initial'
'Amp Interpolation/Final'
'Fade In/Fade Out'
'Apply'

1.135 Amp Optimization/Check

Gadget: Amp Optimization/Check
Window: Amp Control

This gadget is used to start the peak search function. See also
the 'Amp Optimization/Margin' gadget.

1.136 Amp Optimization/Margin

Gadget: Amp Optimization/Margin
Window: Amp Control

This gadget is used to display the distance (measured in bits)
between the maximum peak present in the recording and the maximum
level possible in a 16bit recording.

1.137 Amp Interpolation/Initial

Gadget: Amp Interpolation/Initial
Window: Amp Control

This gadget is used to set starting level for the interpolated
range.
'0' means 'silence'.
'100' means 'original level'.

1.138 Amp Interpolation/Final

Gadget: Amp Interpolation/Final
Window: Amp Control

```
This  gadget  is  used  to  set  ending level for the interpolated
range.
'0' means 'silence'.
'100' means 'original level'.
```

1.139   Fade In/Fade Out

```
Gadget:     Fade In/Fade Out
Window:     Amp Control
```

```
This  gadget  is used to set the duration of both the fade-in zone
and the fade-out zone.
```

1.140   Apply

```
Gadget:     Apply
Window:     Amp Control
```

```
This  gadget  is used to select one of the amp control methods.
The following methods are available:

- 'Optimization'    : a peack search is performed, then, if
                      necessary, the signal is amplified to force
                      the margin value to '0'
- 'Interpolation'   : a linear amplitude interpolation is
                      performed.
- 'Fade In/Fade Out': fading is applyed at start and end points of
                      the recording.
```

1.141   Clock Converter

```
Window:     Clock Converter
```

```
Actions:
Use the DSP
```

```
The  Clock Converter Window is used  to control parameters for the
'Clock Converter' operator.
The  'Clock Converter' operator allows modifying the signal clock.
The operator assumes the signal has already been band limited.
```

```
This window contains the following gadgets:
```

```
'Target'
```

1.142   Target

```
Gadget:     Target
Window:     Clock Converter
```

This gadget is used to set the desired output clock.
You can:
- type the number directly into the numeric gadget
- use the '?' gadget to open the clock requester

1.143   Comb Filter

```
Window:     Comb Filter
```

Actions:
Use the DSP

The Comb Filter Window is used to control parameters for the
'Comb Filter' operator.
The 'Comb Filter' operator allows removing a frequency (and its
odd harmonics) from the signal.

This window contains the following gadgets:

'Base Frequency'

1.144   Base Frequency

```
Gadget:     Base Frequency
Window:     Comb Filter
```

This gadget is used to set the frequency to be removed from the
signal. Note that its odd harmonics are remove too.

1.145   Distortion

```
Window:     Distortion
```

Actions:
Use the DSP

The Distortion Window is used to control parameters for the
'Distortion' operator.
The 'Distortion' operator applies deformation to the signal,
producing more aggressive sounds.

This window contains the following gadgets:

'Gain'
'Output Level'

1.146   Gain

```
Gadget:      Gain
Window:      Distortion
```

This gadget is used to set the level of the signal going into the
distortion box.   Higher levels cause more saturation, producing
more distortion.   To balance the increased gain use the 'Output
Level' gadget to attenuate the processed output.

1.147   Output Level

```
Gadget:      Output Level
Window:      Distortion
```

This gadget is used to set the level of the processed signal.

1.148   Single Tap Delay

```
Window:      Single Tap Delay
```

```
Actions:
Use the DSP
```

The Single Tap Delay Window is used to control parameters for the
'Delay-1-Tap' operator.
The 'Delay-1-Tap' operator is a digital delay that produces a
single echo.

This window contains the following gadgets:

'Delay Time'
'Attenuation'

1.149   Delay Time

```
Gadget:      Delay Time
Window:      Single Tap Delay
```

This gadget is used to set the amount of time between the original
signal and the delayed signal.

1.150   Attenuation

```
Gadget:      Attenuation
Window:      Single Tap Delay
```

This gadget is used to set the volume attenuation for the delayed
signal.
'0' means no attenuation.

1.151 Multi Tap Delay

```
Window:     Multi Tap Delay
```

```
Actions:
Use the DSP
```

The Multi Tap Delay Window is used to control parameters for the
'Delay-N-Tap' operator.
The 'Delay-N-Tap' operator is a digital delay that produces a
trail of multiple echos. You can control the envelope of the echo
trail.

This window contains the following gadgets:

'Delay Time'
'Attenuation'
'Envelope'

1.152 Delay Time

```
Gadget:     Delay Time
Window:     Multi Tap Delay
```

This gadget is used to set the amount of time between successive
echoes.

1.153 Attenuation

```
Gadget:      Attenuation
Window:      Multi Tap Delay
```

This gadget is used to set the volume attenuation for the delayed
trail.
'0' means no attenuation (without attenuation the trail sounds
louder than the input signal).

1.154 Envelope

```
Gadget:      Envelope
Window:      Multi Tap Delay
```

This   gadget   is   used   to   select   an envelope shape for the echo
trail.
The following envelopes are available:

```
- 'Ramp Up Echo Trail'  : the trail volume increases, then
                          cuts off abruptly.
- 'Flat Echo Trail'     : the trail volume keeps constant, then
                          cuts off abruptly.
- 'Ramp Down Echo Trail': the trail volume decays smoothly to
                          silence.
```

1.155   Recursive Delay

```
Window:      Recursive Delay
```

```
Actions:
Use the DSP
```

The   Recursive Delay Window is used to control parameters for the
'Delay-Recursive' operator.
The 'Delay-Recursive' operator is a digital delay that produces
multiples echos.

This window contains the following gadgets:

```
'Delay Time'
'Feedback'
```

1.156   Delay Time

```
Gadget:      Delay Time
Window:      Recursive Delay
```

This gadget is used to set the amount of time between the original
signal and the delayed signal.

1.157   Feedback

```
Gadget:      Feedback
Window:      Recursive Delay
```

This gadget is used to set the amount of processed signal that is
sent from output back to input.
Higher values mean more feedback (more echoes).

WARNING: if you set the feedback value too high, distortion may

occur.   Maximum feedback value depends on input signal amplitude
peaks: high level peaks require low feedback values, low level
peaks allow high feedback values.
If your need very high feedback values you should use the 'Amp
Control' operator to attenuate the signal, before applying this
effect.

1.158 FIR Filter

Window: FIR Filter

Actions:
Use the DSP
Generate a FIR filter
Write a FIR filter

The FIR Filter Window is used to control parameters for the 'FIR
Filter' operator.
The 'FIR Filter' operator allows performing digital filtering via
a user supplyed coefficients file. The coefficients file can be
created by AL16's filter designer or typing it with a text editor
(it's an ASCII file).

This window contains the following gadgets:

'Coefficients File/?'
'Show Response'
'Taps'
'Gain'

1.159 Coefficients File/?

Gadget: Coefficients File
Window: FIR Filter

This gadget is used to select the file containing the filter
coefficients.

1.160 Show Response

Gadget: Show Response
Window: FIR Filter

This gadget is used to open/close the windows displaying impulse
and frequency response.

1.161 Taps

```
Gadget:      Taps
Window:      FIR Filter
```

This gadget is used to display the total number of filter taps
(coefficients).

1.162 Gain

```
Gadget:      Gain
Window:      FIR Filter
```

This gadget is used to select the operating mode.

The following modes are available:

```
- 'Real'     : the processed signal is sent, as is, to output.
- 'Optimized': the processed signal  is  saved to a temporary file
               in 32bit precision, then the amplitude is optimized
               for 16bit storage.
```

1.163 Flanger

```
Window:      Flanger
```

```
Actions:
Use the DSP
```

The Flanger Window is used to control parameters for the 'Flanger'
operator.
The 'Flanger' operator applies a sweeping comb filter to the
signal.

This window contains the following gadgets:

```
'Freq.'
'Delay'
'Offset'
'Attenuation'
```

1.164 Freq.

```
Gadget:      Freq.
Window:      Flanger
```

This gadget is used to set the speed of the sweeping comb filter.
Lower values mean slower sweep, higher values mean faster sweep.

1.165 Delay

```
Gadget:     Delay
Window:     Flanger
```

This gadget is used to set the amount of filter notches.
Lower values mean less notches, higher values mean more notches.

1.166 Offset

```
Gadget:     Offset
Window:     Flanger
```

This gadget is used to set the amount of travel for the sweeping
filter.
Lower values mean shorter travel, higher values mean longer
travel.

1.167 Attenuation

```
Gadget:     Attenuation
Window:     Flanger
```

This gadget is used to set the depth of the notches created by the
flanger.
Lower values mean more depth, higher values mean less depth.

1.168 Hum Remover

```
Window:     Hum Remover
```

Actions:
Use the DSP

The Hum Remover Window is used to control parameters for the 'Hum
Remover' operator.
The 'Hum Remover' operator allows removing 50Hz/60Hz hum noise
from a recording.

This window contains the following gadgets:

'Hum'
'Remove'

1.169 Hum

```
Gadget:      Hum
Window:      Hum Remover
```

This gadget is used to set the hum noise type. The hum noise type
depends on the frequency used in the country were the material was
recorded.

1.170 Remove

```
Gadget:      Remove
Window:      Hum Remover
```

This gadget is used to set the amount of material removed by the
filter.

1.171 MultiFlanger

```
Window:      MultiFlanger
```

```
Actions:
Use the DSP
```

The MultiFlanger Window is used to control parameters for the
'MultiFlanger' operator.
The 'MultiFlanger' operator is a multi-tap digital delay with a
time-varing delay of each tap.

This window contains the following gadgets:

'Group Delay'
'Voice2 Spread'
'Voice3 Spread'
'Attenuation'
'Freq.'

1.172 Group Delay

```
Gadget:      Group Delay
Window:      MultiFlanger
```

This gadget is used to set base delay for the digital delay unit.

1.173 Voice2 Spread

```
Gadget:     Voice2 Spread
Window:     MultiFlanger
```

This gadget is used to set the amount of delay to be added to the
group delay for voice 2.

1.174   Voice3 Spread

```
Gadget:     Voice3 Spread
Window:     MultiFlanger
```

This gadget is used to set the amount of delay to be added to the
group delay for voice 3.

1.175   Attenuation

```
Gadget:     Attenuation
Window:     MultiFlanger
```

This gadget is used to set the the volume attenuation for the
processed portion of the signal.
'0' means no attenuation.

1.176   Freq.

```
Gadget:     Freq.
Window:     MultiFlanger
```

This gadget is used to set the speed for the time-varing delays.

1.177   NoiseGate

```
Window:     NoiseGate
```

Actions:
Use the DSP

The NoiseGate Window is used to control parameters for the
'NoiseGate' operator.
The 'NoiseGate' operator is a very fast automatic volume control.
As long as the signal has a level higher then an user selectable
threshold, 'NoiseGate' keeps the volume to 100% (by-pass).
Whenever the signal level drops under the threshold 'NoiseGate'
turns the volume to 0%, until the signal levels raises above the
threshold again.
This is a simple method to remove background noise from signals
that   contain   silence   sections   such   as   human   talk   or

single-instrument tracks of a multitrack recording.

This window contains the following gadgets:

'Attack Time'
'Threshold Level'

1.178 Attack Time

```
Gadget:     Attack Time
Window:     NoiseGate
```

This gadget is used to set the amount of time (after the signal level drops below the threshold) the gate has to wait before muting the signal.

1.179 Threshold Level

```
Gadget:     Threshold Level
Window:     NoiseGate
```

This gadget is used to set threshold fro the gate. You should set it as little as possible over the average level of the background noise. Setting it too low produces limited gate activity (part of the noise is not removed), setting it too high produces excessive gate activity (parts of the signal are removed too).

1.180 Phase Inverter

```
Window:     No window
```

Actions:
Use the DSP

The 'Phase Inverter' operator has no window because it doesn't require parameters. It is usually used to invert the phase of one of the two channels of a stereo recording. Mixing together the channels of the phase-inverted stereo pair allows a strong attenuation of the sounds laying in the 'central' position (of the stereo space).

1.181 Pitch Shift

```
Window:     Pitch Shift
```

Actions:
Use the DSP

```
The  Pitch  Shift  Window  is  used  to control parameters for the
'Pitch Shift' operator.
The  'Pitch Shift' operator allows increasing or decreasing signal
pitch without affecting signal duration.

This window contains the following gadgets:

'Shift'
'Window'
'XFade'
```

1.182 Shift

```
Gadget:      Shift
Window:      Pitch Shift

These gadgets (actually three) are used to set the shift unit type
and amount:

- the radio-button gadget sets the unit type
- the sliders set the amount of shifting.
```

1.183 Window

```
Gadget:      Window
Window:      Pitch Shift

This gadget is used to select the optimization method:

- lower values preserve rithm timing  to  the prejudice  of  sound
  quality
- higher values preserve sound quality to  the prejudice  of rithm
  timing.

Please  understand  that,  being  the output a synthesized signal,
audible  quality  degradation  may  occur.   The  optimal value is
different  for  different  signals:  a  bit of experimentation is
usually required.
```

1.184 XFade

```
Gadget:      XFade
Window:      Pitch Shift

This gadget is used to select the amount of smoothing performed on
output signal.
```

1.185 Quantizer

```
Window:     Quantizer

Actions:
Use the DSP
```

The Quantizer Window is used to control parameters for the
'Quantizer' operator.
The 'Quantizer' operator allows reducing the PCM signal
resolution.   It   is   usefull   for experimenting with quantization
noise effects and related tecniques (oversampling, filtering,...).

This window contains the following gadgets:

'Reduce Resolution To'
'Align'

1.186 Reduce Resolution To

```
Gadget:     Reduce Resolution To
Window:     Quantizer
```

This gadget is used to select the amount of resolution reduction
(in bits).

1.187 Align

```
Gadget:     Align
Window:     Quantizer
```

This gadget is used to select the alignment mode.

The following modes are available:

- Left : samplepoints are truncated
- Right: samplepoints are right shifted (signal level is reduced).

1.188 Room

```
Window:     Room

Actions:
Use the DSP
```

The Room Window is used to control parameters for the 'Room'
operator.
The 'Room' operator simulates ambient reverberation.

This window contains the following gadgets:

'Room Size'
'Reflections'

1.189 Room Size

```
Gadget:      Room Size
Window:      Room
```

This gadget is used to select room corner size. The room is
cubic.

1.190 Reflections

```
Gadget:      Reflections
Window:      Room
```

This gadget is used to select amount of walls reflectivity.
Seeting the value too high may cause resonances that yield
distortion.

1.191 Skipper

```
Window:      Skipper
```

Actions:
Use the DSP

The Skipper Window is used to control parameters for the 'Skipper'
operator.
The 'Skipper' operator allows skipping or inserting samplepoints
into the signal stream. This operator is the base for performing
signal decimation and interpolation.

This window contains the following gadgets:

'Skip'
'Insert'
'Apply'

1.192 Skip

```
Gadget:      Skip
Window:      Skipper
```

This gadget is used to select the skipping mode (ratio).

The following modes are available:

- '2->1': every two samplepoints one is skipped
- '3->1': every three samplepoints two are skipped
- '4->1': every four samplepoints three are skipped

The output signal pitch changes depending on skipping ratio.
Output clock is not automatically adjusted to allow experimenting
outside the clock range managed by AL16.
You should band limit (low pass filter) the signal, depending on
skipping ratio, BEFORE performing skipping.

1.193 Insert

```
Gadget:     Insert
Window:     Skipper
```

This gadget is used to select the zero inserting mode (ratio).

The following modes are available:

- '1->2': one zero is inserted between each samplepoint
- '1->3': two zeros are inserted between each samplepoint
- '1->4': three zeros are inserted between each samplepoint

The output signal pitch changes depending on inserting ratio.
Output clock is not automatically adjusted to allow experimenting
outside the clock range managed by AL16.
You should band limit (low pass filter) the signal, depending on
inserting ratio, AFTER performing zero inserting.

1.194 Apply

```
Gadget:     Insert
Window:     Skipper
```

This gadget is used to select the operation mode.

The following modes are available:

- 'Skip'   : removes samplepoints from input signal
- 'Zero Insert': inserts zeros between the samplepoints of the
                  input signal.

1.195 Time Inverter

```
Window:     Time Inverter
```

Actions:

```
Use the DSP

The  Time  Inverter  Window  is used to control parameters for the
'Time Inverter' operator.
The  'Time Inverter' operator allows reversing the signal (playing
it backward). Mixed forward/backward playback is possible.

This window contains the following gadgets:

'Mode'
```

1.196 Mode

```
Gadget:       Mode
Window:       Time Inverter

This gadget is used to select the inverting mode.

The following modes are available:

- 'Complete' : the whole recording is reversed
- 'Paged Mix': the recording  is  divided  into  pages (fragments)
               and,  in  each  page,  the  original  and  reversed
               signals are mixed. This allows creating complex and
               strange  textures   when  using  sounds  with  long
               sustain  (such  as  human voices  or  guitars). You
               control the  mix  with  the  slider gadget ( higher
               values attenuate the reversed signal).
```

1.197 Time Stretch

```
Window:      Time Stretch

Actions:
Use the DSP

The  Time  Stretch  Window  is  used to control parameters for the
'Time Stretch' operator.
The 'Time Stretch' operator allows increasing or decreasing signal
duration without affecting signal pitch.

This window contains the following gadgets:

'Stretch'
'Window'
'XFade'
```

1.198 Stretch

```
Gadget:      Stretch
Window:      Time Stretch
```

This gadget is used to select the amount of duration stretching:

```
'1000': stands for the original duration
'500' : means that the new duration will halve
'2000': means that the new duration will double.
```

Intermediate values allow fine tuning. Increasing stretching values are associated with increasing signal degradation. Note that time stretching changes the effect of reverberation that may be present in the original signal.

1.199 Window

```
Gadget:      Window
Window:      Time Stretch
```

This gadget is used to select the optimization method:

- lower values preserve rithm timing to the prejudice of sound quality
- higher values preserve sound quality to the prejudice of rithm timing.

Please understand that, being the output a synthesized signal, audible quality degradation may occur. The optimal value is different for different signals: a bit of experimentation is usually required.

1.200 XFade

```
Gadget:      XFade
Window:      Time Stretch
```

This gadget is used to select the amount of smoothing performed on output signal. This gadget only affects smoothing performed on compressed signals (duration reduced).

1.201 Tone Control

```
Window:      Tone Control
```

Actions:
Use the DSP

The Tone Control Window is used to control parameters for the 'Tone Control' operator.

The 'Tone Control' operator allows applying an IIR filter to the
input signal.

This window contains the following gadgets:

'Zero'
'Pole'
'Output Level'

1.202 Zero

Gadget: Zero
Window: Tone Control

This gadget is used to control the IIR zero. Lower levels enhance
high frequencies, higher levels enhance low frequencies.

1.203 Pole

Gadget: Pole
Window: Tone Control

This gadget is used to control the IIR pole. Lower levels enhance
high frequencies, higher levels enhance low frequencies.

1.204 Output Level

Gadget: Output Level
Window: Tone Control

This gadget is used to select the amplitude level for the
processed signal. Note that if the level is too high, depending
on other filter settings, distortion may occur.

1.205 ELM

Window: ELM

The ELM Window is used to select an editing mode.

This window contains the following gadgets:

'Edit Mode'

1.206 Edit Mode

```
Gadget:     Edit Mode
Window:     ELM
```

This gadget is used to select an editing mode.

1.207 MultiTrack Display

```
Window:     MultiTrack Display
```

```
Actions:
Setup a multitrack project
```

The MultiTrack Display Window is used for interactive access to
the MultiTrack Manager.

```
Elements:
```

```
'Areas'
'Menus'
'Hotkeys'
```

1.208 Areas

The MultiTrack Display Window is composed by the following areas:

```
**************************************************
*           *                 2                 *
*           ***********************************
*           *                                  *
*           *                                  *
*           *                                  *
*           *                                  *
*           *                                  *
*           *                 3                *
*           *                                  *
*     1     *                                  *
*           *                                  *
*           *                                  *
*           *                                  *
*           ***********************************
*           *                 4                *
*           ***********************************
*           *                 5                *
*           ***********************************
*           *                 6                *
**************************************************
```

1:'Icons Area'

```
2:'GlobalView Area'
3:'TracksArea'
4:'Timeruler Area'
5:'Markers Area'
6:'Information Area'
```

1.209 Icons Area

The Icons Area is used to display and modify tracks' status.

WARNING: if the window size is too small to contain all the
icons, some of them are replaced with dots.

The zone beside each track (see also Tracks Area) contains the
following icons (relative to that track), from left to right:

- Headphones: SOLO mode
   - ghosted icon: normal mode
   - Headphones: solo mode

- Speaker: ON/MUTED
   - white speaker: track is muted
   - black speaker: track is on

- Lock: LOCKING
   - open lock: track is unlocked
   - closed lock: track is locked

- Number: TRACK NUMBER
   - the number surrounded by a rectangle indicates the selected
     track

The bottom zone contains (from left to right) the following icons:

- Selection Mode (objects/range)
- Output Channels (mono/stereo)

1.210 Global View Area

The Global View Area is used to display:

   - BLACK BARS:the portion of the timeline currently displayed
               in the Tracks Area

   - WHITE BARS:the portion of the timeline currently ranged.

Clicking with the left mouse button somewhere inside this area
causes the Track Area to display the timeline near that point
(results vary depending on current zoom factor).

1.211 Tracks Area

The Tracks Area is used to display the timeline.
This area is subdivided into tiled rectangles: each rectangle
represents a track. Flled boxes inside tracks represent objects.

1.212 Timeruler Area

The Timeruler Area is used to display the timecode values
corresponding to the positions into the Tracks Area, and to move
the cursor.

The notation depends on the current timecode selected:

- when in hh:mm:ff:ss notation ruler displays h:mm:ss
- when in bars:beats:clocks notation ruler displays bbbb:bb

WARNING: if you require more then 9999 bars the ruler switches to
bbbbb:b for values starting from (including) 10000:0

To move the cursor click into this area with the left mouse
button, then drag the cursor. Release the button when you're done.

1.213 Markers Area

The Markers Area is used to display the user defined markers.

1.214 Information Area

The Information Area is used to display timecode values in
realtime during dragging operations. Examples of such operations
are object dragging, track dragging, cursor dragging...

Both bars:beats:clock and hh:mm:ss:ff are displayed.

1.215 Hotkeys

The following hotkeys are available. Please remember that the
MultiTrack Display window must be selected to use them.

Key   Action

SPACEBAR   Execute

ESC   Abort dragging operation.

```
RETURN              Add object at cursor position
SHIFT+RETURN        Add object at selected timecode

DEL                 Delete selected object
SHIFT+DEL           Delete any object in selected track

CTRL+LMB            Clone.
                    Pressing CTRL before dragging an object causes
                    object cloning.
                    Pressing CTRL before dragging a  track  causes
                    track cloning.

LEFT_AMIGA+LMB      Force track dragging.
                    Usually, to drag a track, you have to click on a
                    zone not covered by objects (otherwise you'd drag
                    the object, not the track).
                    This hotkey allows you to click on any zone of
                    the track.

LEFT_ALT            Horizontal lock.
                    If this hotkey is pressed during dragging
                    operations, only vertical movements are allowed.
                    Free movements are possible as soon as the key is
                    relesed.

CUR_UP              Zoom out
ALT+CUR_UP          Zoom out (maximum)

CUR_DOWN            Zoom in
ALT+CUR_DOWN        Zoom in (maximum)

CUR_LEFT            Zoom backward
SHIFT+CUR_LEFT      Zoom backward (faster)

CUR_RIGHT           Zoom forward
SHIFT+CUR_RIGHT Zoom forward (faster)

ALT+F1...F10        Store current view into memory slot (1...10)
F1...F10            Recall view from memory slot (1...10)
```

1.216 Menus

```
The following menus are available:

Project
    'Load'
    'Save'
    'Clear'
    'Control'
    'Edit List'
    'Markers'

Track
    'Load'
```

```
            'Save'
            'Clear'
            'Lock'
            'Lock All'
            'Unlock'
            'Unlock All'
            'Invert Locks'
            'Force Level'
            'Force Pan'

        Object
            'Add At Cursor'
            'Add At Timecode'
            'Delete'
            'Locate'
            'Change'
            'Snap'

        Range
            'Clear'
            'Cut'
            'Copy'
            'Paste'
            'Insert'
            'MultiInsert'
            'Load Clipboard'
            'Save Clipboard'
            'Clear Clipboard'

        Show
            'All'
            'Out'
            'In'
            'Max In'
            'Range'
            'NearRange'
            '<<'
            '<'
            '>'
            '>>'
            'Near Object'
            'Cursor'
            'Cursor Max In'
```

1.217 Load

```
    Item:       Load
    Menu:       Project
    Window:     MultiTrack Display

    This menu-item is used to load a multitrack project from disk.
```

1.218 Save

```
Item:       Save
Menu:       Project
Window:     MultiTrack Display
```

This menu-item is used to save a multitrack project on disk.
Saved data include all the tracks, mixer settings, views,...
The audio data is not saved: a project contains only control
data.

1.219 Clear

```
Item:       Clear
Menu:       Project
Window:     MultiTrack Display
```

This menu-item is used to clear the multitrack project.

1.220 Control

```
Item:       Control
Menu:       Project
Window:     MultiTrack Display
```

This menu-item is used to open the MultiTrack Control Window.

1.221 Edit List

```
Item:       Edit List
Menu:       Project
Window:     MultiTrack Display
```

This menu-item is used to open the Absolute Edit List Display
Window.

1.222 Markers

```
Item:       Markers
Menu:       Project
Window:     MultiTrack Display
```

This menu-item is used to open the Markers Window.

1.223 Load

```
Item:       Load
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to load a track from disk.

1.224 Save

```
Item:       Save
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to save the selected track to disk.

1.225 Clear

```
Item:       Clear
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to clear the selected track. Any object is
removed from that track.

1.226 Lock

```
Item:       Lock
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to lock the selected track.
A locked track is write-protected: no editing operation can
modify it in any way. You can unlock a track at any time.

1.227 Lock All

```
Item:       Lock All
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to lock all the tracks.
A locked track is write-protected: no editing operation can
modify it in any way. You can unlock a track at any time.

1.228 Unlock

```
Item:       Unlock
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to unlock the selected track.
An unlocked track is write-enabled: editing operations can modify
it freely.

1.229 Unlock All

```
Item:       Unlock All
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to unlock all the tracks.
An unlocked track is write-enabled: editing operations can modify
it freely.

1.230 Invert Locks

```
Item:       Invert Locks
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to invert the locking status
(write-protected / write-enabled) of each track.

1.231 Force Level

```
Item:       Force Level
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to set the level of each object (of the
selected track) to a common value.
The common value is the current Level setting displayed into the
Object Window.

1.232 Force Pan

```
Item:       Force Pan
Menu:       Track
Window:     MultiTrack Display
```

This menu-item is used to set the pan of each object (of the

```
selected track) to a common value.
The  common  value  is  the current Pan setting displayed into the
Object Window.
```

1.233   Add At Cursor

```
Item:        Add At Cursor
Menu:        Object
Window:      MultiTrack Display
```

```
This  menu-item  is  used  to add an object to the selected track.
An object must be defined into the Object Window before performing
this operation.
The object's timecode is set equal to the cursor timecode.
The object's timecode displayed into the Object Window is ignored.
```

1.234   Add At Timecode

```
Item:        Add At Timecode
Menu:        Object
Window:      MultiTrack Display
```

```
This  menu-item  is  used  to add an object to the selected track.
An object must be defined into the Object window before performing
this operation.
The  object's timecode is set equal to timecode displayed into the
Object Window.
```

1.235   Delete

```
Item:        Delete
Menu:        Object
Window:      MultiTrack Display
```

```
This  menu-item  is  used  to  remove the selected object from the
selected track.
```

1.236   Locate

```
Item:        Locate
Menu:        Object
Window:      MultiTrack Display
```

```
This  menu-item  is  used  to  update  the  Object Window with the
selected object's attributes.
```

1.237 Change

```
Item:      Change
Menu:      Object
Window:    MultiTrack Display
```

This menu-item is used to substitute the selected object with
a new object as defined into the Object Window.

1.238 Snap

```
Item:      Snap
Menu:      Object
Window:    MultiTrack Display
```

This menu-item is used to adjust the selected object's timecode
depending on the current snap mode.

1.239 Clear

```
Item:      Clear
Menu:      Range
Window:    MultiTrack Display
```

This menu-item is used to clear the ranged sections of unlocked
tracks.

1.240 Cut

```
Item:      Cut
Menu:      Range
Window:    MultiTrack Display
```

This menu-item is used to cut the ranged sections of unlocked
tracks.
Ranged data is copied to the clipboard, then the ranged sections
are removed from the timeline.
Objects placed at the right of the range end are shifted backward
in time to fit the empty area caused by the cutting operation.

1.241 Copy

```
Item:      Copy
Menu:      Range
Window:    MultiTrack Display
```

This menu-item is used to copy the ranged sections to the
clipboard.

1.242   Paste

```
Item:       Paste
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to paste data (contained into the
clipboard) onto unlocked tracks.
Data is pasted at the current cursor position. Underlaying data
gets overwritten.

1.243   Insert

```
Item:       Insert
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to insert data (contained into the
clipboard) into unlocked tracks.
Data is inserted at the current cursor position. Underlaying data
isn't overwritten. Object positioned at the right of the cursor
are shifted forward in time to make room for inserted data.

1.244   MultiInsert

```
Item:       MultiInsert
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to insert data (contained into the
clipboard) into unlocked tracks.
You can select how many times the operation should be
automatically repeated.
Data is inserted at the current cursor position. Underlaying data
isn't overwritten. Object positioned at the right of the cursor
are shifted forward in time to make room for inserted data.

1.245   Load Clipboard

```
Item:       Load Clipboard
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to load a file containing data for the
clipboard. The file must be created with "Save Clipboard".

1.246   Save Clipboard

```
Item:       Save Clipboard
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to save a file containing data for the
clipboard. The file can be loaded later with "Load Clipboard".

1.247   Clear Clipboard

```
Item:       Clear Clipboard
Menu:       Range
Window:     MultiTrack Display
```

This menu-item is used to clear the clipboard.

1.248   All

```
Item:       All
Menu:       Show
Window:     MultiTrack Display
```

This menu-item is used to show the complete timeline.

1.249   Out

```
Item:       Out
Menu:       Show
Window:     MultiTrack Display
```

This menu-item is used to show a greater portion of the timeline.

1.250   In

```
Item:       In
Menu:       Show
Window:     MultiTrack Display
```

This menu-item is used to show a smaller portion of the timeline.

1.251   Max In

```
Item:      MaxIn
Menu:      Show
Window:    MultiTrack Display
```

This menu-item is used to show the smallest portions of the timeline.

1.252 Range

```
Item:      Range
Menu:      Show
Window:    MultiTrack Display
```

This menu-item is used to show the ranged portion of the timeline.

1.253 NearRange

```
Item:      Near Range
Menu:      Show
Window:    MultiTrack Display
```

This menu-item is used to show a zone surrounding the ranged portion of the timeline.

1.254 <<

```
Item:      <<
Menu:      Show
Window:    MultiTrack Display
```

This menu-item is used to show a portion of the timeline at the left of the currently displayed one.

1.255 <

```
Item:      <
Menu:      Show
Window:    MultiTrack Display
```

This menu-item is used to show a portion of the timeline at the left of the currently displayed one.

1.256 >

```
Item:        >
Menu:        Show
Window:      MultiTrack Display
```

This menu-item is used to show a portion of the timeline at the right of the currently displayed one.

1.257 >>

```
Item:        >>
Menu:        Show
Window:      MultiTrack Display
```

This menu-item is used to show a portion of the timeline at the right of the currently displayed one.

1.258 Near Object

```
Item:        Near Object
Menu:        Show
Window:      MultiTrack Display
```

This menu-item is used to show a portion of the timeline surrounding the selected object.

1.259 Cursor

```
Item:        Cursor
Menu:        Show
Window:      MultiTrack Display
```

This menu-item is used to show a portion of the timeline centered at the cursor's timecode.

1.260 CursorMaxIn

```
Item:        Cursor Max In
Menu:        Show
Window:      MultiTrack Display
```

This menu-item is used to show the smallest portion of the timeline centered at the cursor's timecode.

1.261 **MultiTrack Mixer**

```
Window:     MultiTrack Mixer

Actions:
Setup a multitrack project

The MultiTrack Mixer Window is used to control the tracks levels.

This window contains the following gadgets:

'1'
'2'
'3'
'4'
'5'
'6'
'7'
'8'
```

1.262 **1/2/3/4/5/6/7/8**

```
Gadget:     1/2/3/4/5/6/7/8
Window:     MultiTrack Mixer

These   (actually   three)   gadgets   are   used   to   control   the
corresponding track level.

Starting from top:

O/M gadget:
    - O: track is ON
    - M: track is MUTED (no output)

    If a track is ON it will sound during multitrack playback.
    If a track is MUTED it won't sound during multitrack playback.
    This scheme can be altered by the solo mode (see below).

 /S gadget:
    -  : normal operation
    - S: SOLO mode

    When  a  track  is  in  SOLO  mode, only that track will sound
    during  multitrack  playback.   You  can  solo multiple tracks
    holding the SHIFT key when clicking on /S gadgets.

Level gadget:
    this gadget controls track level.

    '200': corresponds to +6dB variation (doubled level)
    '100': corresponds to  0dB variation (original level)
    '50' : corresponds to -6dB variation (halved level).

    Levels higher then '100' may cause distortion.
```

```
SOLO MODE EXAMPLES:


    *: track produces output
    O: track is ON
    M: track is MUTED
    S: SOLO mode


    A)            B)            C)            D)


    *  ***        *             **            **
    12345678      12345678      12345678      12345678
    OMMOOOMM      OMMOOOMM      OMMOOOMM      OMMOOOMM
                  S             SS            SS


    A)
    Tracks 1,4,5 and 6 are ON. They produce output.

    B)
    Track 4 is in solo mode. It produces output but tracks 1,5 and
    6 don't.

    C)
    Tracks  4  and  5  are  in  solo  mode (shift-clicking).  They
    produce output.

    D)
    Tracks  2  and  3  are  in  solo  mode (shift-clicking).  They
    produce  output  even  if  their  O/M gadgets are set to MUTED
    position.
```

1.263 MultiTrack Control

```
    Window:     MultiTrack Control

    Actions:
    Setup a multitrack project

    The  MultiTrack  Control  Window is used to control the MultiTrack
    Edit List Manager.

    This window contains the following gadgets:

    'Timecode'
    'Timeline Size'
    'Snap'
    'Tempo'
    'Trks'
    'Range/S'
```

```
'Range/E'
'Range/D'
'Lev'
'Output'
'Execute'
```

1.264   Timecode

```
Gadget:      Timecode
Window:      MultiTrack Control
```

This gadget is used to set the desired timecode notation for the
MultiTrack Display timeruler.

1.265   Timeline Size

```
Gadget:      Timelne Size
Window:      MultiTrack Control
```

This gadget is used to set the desired duration for the multitrack
timeline.

1.266   Snap

```
Gadget:      Snap
Window:      MultiTrack Control
```

This gadget is used to set the snapmode.

1.267   Tempo

```
Gadget:      Tempo
Window:      MultiTrack Control
```

This gadget (actually two gadgets) is used to set the tempo for
the MultiTrack Display timeruler.

BPS: sets the Beats Per Minute value.
QPB: sets the Quarters Per Bar value.

1.268   Trks

```
Gadget:      Trks
Window:      MultiTrack Control
```

This gadget is used to set the number of tracks showed into the
MultiTrack Display Window.

1.269 Range/S

```
Gadget:      Range/S
Window:      MultiTrack Control
```

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

Holding the SHIFT key while clicking on the '+' or '-' gadgets
allows using a greater increment/decrement step value.

1.270 Range/E

```
Gadget:      Range/E
Window:      MultiTrack Control
```

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

Holding the SHIFT key while clicking on the '+' or '-' gadgets
allows using a greater increment/decrement step value.

1.271 Range/D

```
Gadget:      Range/D
Window:      MultiTrack Control
```

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

1.272 Lev

```
Gadget:      Lev
Window:      MultiTrack Control
```

This gadget is used to control the multitrack master level.

1.273 Output

```
Gadget:      Output
Window:      MultiTrack Control
```

```
This  gadget is used to select the output mode.
'File' selects direct-to-disk mode.
'Analog' selects real-time mode.
```

1.274 Execute

```
Gadget:      Execute
Window:      MultiTrack Control
```

```
This gadget is used to start the mixing operation.
```

```
When  the  MultiTrack  Display  Window  is  selected,  hitting the
SPACEBAR key is equivalent to clicking on this gadget.
```

1.275 Markers

```
Window:      Markers
```

```
Actions:
Setup a multitrack project
```

```
The Markers Window is used to control the user defined markers for
the MultiTrack Display Window.
```

```
This window contains the following gadgets:
```

```
'00'
'01'
'02'
'03'
'04'
'05'
'06'
'07'
'08'
'09'
'Bank'
'Store'
'Recall'
'Clear'
'Clear Bank'
'Clear All'
```

1.276   00/01/02/03/04/05/06/07/08/09

```
Gadget:      00/01/02/03/04/05/06/07/08/09
Window:      Markers
```

These (actually two) gadgets are used to set the marker text
label.

The string gadget contains the text itself. Examples of valid
texts are:

"Check this","Guitar solo","Insert here",...

WARNING: CONFIRM ENTERED TEXT HITTING THE RETURN KEY (THIS ACTION
WILL ALSO AUTOSELECT THE CORRESPONDING MARKER)

The radio button gadget is used to select the current marker.
Other gadgets are available to perform operations on the current
marker.

1.277 Bank

```
Gadget:      Bank
Window:      Markers
```

This gadget is used to select the current marker bank.
Additional banks allow to use more than ten markers.

1.278 Store

```
Gadget:      Store
Window:      Markers
```

This gadget is used to set the current marker timecode.
When you click on this gadget the current cursor position (on the
MultiTrack Display Window) becames the current marker timecode.
The MultiTrack Display Window is updated to display the current
marker.
If the marker already had a timecode, that timecode is replaced by
the new one.

1.279 Recall

```
Gadget:      Recall
Window:      Markers
```

This gadget is used to recall the current marker.
When you click on this gadget the MultiTrack Display Window is
updated to be centered at the current marker timecode.

1.280 Clear

```
Gadget:     Clear
Window:     Markers
```

This gadget is used to clear the current marker.

1.281 Clear Bank

```
Gadget:     Clear Bank
Window:     Markers
```

This gadget is used to clear all the markers contained into the
current bank.

1.282 Clear All

```
Gadget:     Clear All
Window:     Markers
```

This gadget is used to clear all the markers.

1.283 Absolute Edit List Display

```
Window:     Absolute Edit List Display
```

Actions:
Setup a multitrack project

The Absolute Edit List Display Window is used to show a track edit
list in text format.

This window contains the following gadgets:

'Absolute Edit List'

1.284 Absolute Edit List

```
Gadget:     Absolute Edit List
Window:     Absolute Edit List Display
```

This gadget is used to display the edit list. Each item is an
object.
The following informations are shown, for each item in the edit
list:

- File   : the file containing the audio data

```
- Lev        : object level
- Pan        : object pan
- Time In    : object start point
- Time Out   : object end point (no overlapping considered)
- Duration   : object duration (no overlapping considered)
```

1.285 Object

```
Window:     Object

Actions:
Setup a multitrack project

The Object Window is used to select items for edit lists.

This window contains the following gadgets:

'File/?'
'Place At'
'Step'
'Set Range'
'Level'
'Pan'
```

1.286 File/?

```
Gadget:     File/?
Window:     Object

This gadget is used to select a file containing a recording.
```

1.287 Place At

```
Gadget:     Place At
Window:     Object

This  gadget  is  used  to set the position (timecode) in the edit
list for the current item.

Holding  the  SHIFT  key  while clicking on the '+' or '-' gadgets
allows using a greater increment/decrement step value.
```

1.288 Step

```
Gadget:     Step
Window:     Object
```

This gadget is used to set the amount of numeric increment and
decrement for the 'Place At' gadget.

1.289 Set Range

```
Gadget:     Set Range
Window:     Object
```

This gadget is used to recall the 'Locator' tool, in order to
define a portion of the whole source recording as a range.

1.290 Level

```
Gadget:     Level
Window:     Object
```

This gadget is used to set object level:

'200': corresponds to +6dB variation (doubled level)
'100': corresponds to 0dB variation (original level)
'50' : corresponds to -6dB variation (halved level).

Levels higher then '100' may cause distortion.

1.291 Pan

```
Gadget:     Pan
Window:     Object
```

This gadget is used to set the object stereo pan:

'0' : corresponds to full left panning
'50' : corresponds to centered panning
'100': corresponds to full right panning.

Please note that the values:

'0' : Full Left
'12' : 3/4 Left
'25' : 1/2 Left
'50' : Center
'75' : 1/2 Right
'88' : 3/4 Right
'100': Full Right

are optimized for faster operations.

1.292   Relative Edit List Manager

```
Window:      Relative Edit List Manager

Actions:
Build a Relative Edit List

The  Relative Edit List Manager Window is used to control relative
time edit lists.

This window contains the following gadgets:

'Relative Edit List'
'Item/Append'
'Item/Insert'
'Item/Delete'
'Item/Change'
'Item/Up'
'Item/Down'
'Item/Locate'
'Item/Play'
'List/Clear'
'List/Load'
'List/Make'
'List/Save'
'List/Play'
'List/Duration'
'List/Size'
```

1.293   Relative Edit List

```
Gadget:      Relative Edit List
Window:      Relative Edit List Manager

This  gadget  is  used  to display the edit list.  Each item is an
audio fragment (ranged data) present somewhere on disk.
The  following  informations  are shown, for each item in the edit
list:

- File        : the file containing the ranged data
- Start       : the position (timecode) of the start point of the
                range (measured from the start of the recording)
- End         : the position (timecode) of the end point of the
                range (measured from the start of the recording)
- Duration    : the duration of the range
- GlobalStart : the position (timecode) of the start point of the
                range (measured from the start of the edit list)
- Rp          : the number of repetitions for this item.
```

1.294   Item/Append

```
Gadget:     Item/Append
Window:     Relative Edit List Manager
```

This gadget is used to add, at the end of the edit list, the
currently selected recording range.

1.295 Item/Insert

```
Gadget:     Item/Insert
Window:     Relative Edit List Manager
```

This gadget is used to add, at the current position of the edit
list, the currently selected recording range.

1.296 Item/Delete

```
Gadget:     Item/Delete
Window:     Relative Edit List Manager
```

This gadget is used to remove the item at the current position of
the edit list.

1.297 Item/Change

```
Gadget:     Item/Change
Window:     Relative Edit List Manager
```

This gadget is used to remove the item at the current position of
the edit list and substitute it with the currently selected
recording range.

1.298 Item/Up

```
Gadget:     Item/Up
Window:     Relative Edit List Manager
```

This gadget is used to move the currently selected item one
position up (in the edit list).

1.299 Item/Down

```
Gadget:     Item/Down
Window:     Relative Edit List Manager
```

This gadget is used to move the currently selected item one
position down (in the edit list).

1.300   Item/Locate

```
Gadget:      Item/Locate
Window:      Relative Edit List Manager
```

This gadget is used to force the Locator tool to display the
recording range corresponding to the currently selected item.

1.301   Item/Play

```
Gadget:      Item/Play
Window:      Relative Edit List Manager
```

This gadget is used to play the currently selected item.

1.302   List/Clear

```
Gadget:      List/Clear
Window:      Relative Edit List Manager
```

This gadget is used to remove all the items from the edit list.

1.303   List/Make

```
Gadget:      List/Make
Window:      Relative Edit List Manager
```

This gadget is used to build a recording from an edit list.

1.304   List/Load

```
Gadget:      List/Load
Window:      Relative Edit List Manager
```

This gadget is used to load an edit list from a file.

1.305   List/Save

```
Gadget:      List/Save
Window:      Relative Edit List Manager
```

This gadget is used to save an edit list to a file.

1.306   List/Play

```
Gadget:     List/Play
Window:     Relative Edit List Manager
```

This gadget is used to play an edit list.

1.307   List/Duration

```
Gadget:     List/Duration
Window:     Relative Edit List Manager
```

This gadget is used to display the total duration of the edit
list.

1.308   List/Size

```
Gadget:     List/Size
Window:     Relative Edit List Manager
```

This gadget is used to display the size of the file containing
the recording generated from the edit list.

1.309   Rel List Item

```
Window:     Rel List Item
```

```
Actions:
Build a Relative Edit List
```

The Rel List Item Window is used to select items for edit lists.

This window contains the following gadgets:

'File'
'Repeat'

1.310   File/?

```
Gadget:     File/?
Window:     Rel List Item
```

This gadget is used to select a file for the edit list. Selecting
a file recalls the Locator tool: you have to choose a range of
the recording to insert it in the edit list.

1.311 Repeat

```
Gadget:      Repeat
Window:      Rel List Item
```

This gadget is used to the number of repetitions for the currently
selected range. Set it to 1 if you don't want repetitions.

1.312 Triggers

```
Window:      Triggers
```

```
Actions:
Trigger playback
```

The Triggers Window is used to select a method to trigger playback
operations.

This window contains the following gadgets:

'Triggers'
'Execute'

1.313 Triggers

```
Gadget:      Triggers
Window:      Triggers
```

This gadget is used to select a method to trigger playback
operations.

Available methods:

```
- Arexx     : trigger via Arexx messages
- Keyboard  : trigger via Amiga keyboard
- MIDI      : trigger via MIDI messages.
```


1.314 Execute

```
Gadget:      Execute
Window:      Triggers
```

This gadget is used to put AudioLab16 in triggering mode
(listening to trigger messages).

1.315 Programs

```
Window:     Programs
```

The Programs Window is used to control the programs table.

This window contains the following gadgets:

```
'Programs'
'Current Program'
'Current Program/?'
'Current Program/Clear'
'List/Clear'
'List/Load'
'List/Save'
```

1.316 Programs

```
Gadget:     Programs
Window:     Programs
```

This gadget is used to display the programs table. Each program
(slot) in the table can be associated with a different recording.
You refer to a recording via its program number (this is similar
to perform a program change on a MIDI instrument).

1.317 Current Program

```
Gadget:     Current Program
Window:     Programs
```

This gadget is used to select a program in the programs table.

1.318 Current Program/?

```
Gadget:     Current Program/?
Window:     Programs
```

This gadget is used to associate a recording to the current
program. A file requester allows to choose the file containing
the recording.

1.319 Current Program/Clear

```
Gadget:      Current Program/Clear
Window:      Programs
```

This gadget is used to free the slot corresponding to the current
program in the programs table.

1.320 List/Clear

```
Gadget:      List/Clear
Window:      Programs
```

This gadget is used to free any slot in the programs table.

1.321 List/Load

```
Gadget:      List/Load
Window:      Programs
```

This gadget is used to load the programs table from a file.

1.322 List/Save

```
Gadget:      List/Save
Window:      Programs
```

This gadget is used to save the programs table to a file.

1.323 Keyboard

```
Window:      Keyboard
```

Actions:
Trigger playback

The Keyboard Window is used to configure triggering via Amiga
keyboard.

This window contains the following gadgets:

'Function Keys'
'Get Programs'

1.324 Function Keys

```
Gadget:     Function Keys
Window:     Keyboard
```

These gadgets are used to associate a program number to each function key.

1.325 Get Programs

```
Gadget:     Get Programs
Window:     Keyboard
```

This gadget is used to automatically associate the programs in the program list to the Amiga function keys.

1.326 MIDI

```
Window:     MIDI
```

Actions:
Trigger playback

The MIDI Window is used to configure triggering via MIDI messages.

This window contains the following gadgets:

'Serial Device'
'In Channel'
'Unit'
'In Mode'

1.327 Serial Device

```
Gadget:     Serial Device
Window:     MIDI
```

This gadget is used to select the serial device for MIDI interface access.
Example: serial.device

You can set a default serial device via tooltypes accessing AL16 icon from WorkBench.
Example:
            MIDI_SERIAL_DEVICE=serial.device

1.328 In Channel

```
Gadget:     In Channel
Window:     MIDI
```

This gadget is used to select the MIDI channel that AudioLab16
uses to receive MIDI messages. This value is used only in 'Poly'
mode ('In Mode' gadget).

1.329 Unit

```
Gadget:     Unit
Window:     MIDI
```

This gadget is used to select the serial unit for MIDI interface
access.

You can set a default serial unit via tooltypes accessing AL16
icon from WorkBench.
Example:
```
          MIDI_SERIAL_UNIT=2
```

1.330 In Mode

```
Gadget:     In Mode
Window:     MIDI
```

This gadget is used to select the MIDI receive mode.
Available modes are:

- Poly: receive on a single channel
- Omni: receive on any channel.

1.331 Design

```
Window:     Design
```

The Design Window is used to select a filter design method.

This window contains the following gadgets:

'Method'

1.332 Method

```
Gadget:     Method
Window:     Design
```

This gadget is used to select a filter design method.

Available methods:

- Windowing: FIR generation via sinc windowing.

1.333 Windowing

```
Window:     Windowing
```

```
Actions:
Generate a FIR filter
Write a FIR filter
```

The Windowing Window is used to control parameters for FIR
coefficients generation via sinc windowing.

This window contains the following gadgets:

```
'Taps'
'CutOff Rel. Freq.'
'Freq. Shift'
'Remark'
'Windows'
'Save'
'Execute'
```


1.334 Taps

```
Gadget:     Taps
Window:     Windowing
```

This gadget is used to set the number of taps (coefficients) of
the FIR filter. Usually is preferable to set an odd number
instead of an even one.

1.335 CutOff Rel Freq.

```
Gadget:     CutOff Rel Freq.
Window:     Windowing
```

This gadget is used to set the cutoff point for the FIR filter.
Units are 1/1000 of the signal clock. Note that the maximum
frequency, for a digital recording, isn't higher than half of the
signal clock (500 units). For example, a cutoff point in the
middle of signal theorical band corresponds to 1/4 of the signal
clock (250 units).

1.336 Freq. Shift

```
Gadget:     Freq. Shift
Window:     Windowing
```

This gadget is used to shift the FIR filter response in the
frequency domain.
A '0' value gives you an unshifted low-pass FIR filter.
A '500' value gives you an hi-pass FIR filter.
Intermediated values are here for experimentation. Usually they
don't allow linear phase response.

1.337 Remark

```
Gadget:     Remark
Window:     Windowing
```

This gadget is used to insert a textual remark to the FIR filter
file.   FIR filter files are saved in ASCII form: you are allowed
to read and edit then later, with a normal text-editor.

1.338 Windows

```
Gadget:     Windows
Window:     Windowing
```

This gadget is used to select one of the available windowing
methods.
Generating a FIR filter via sinc function gives an infinite length
filter response, without practical use. Truncating it (multiplying
the response by a rectangular window) causes very limited stopband
attenuation.
Better performances can be obtained using windows with smoother
edges then the rectangular window ones.

1.339 Save

```
Gadget:     Save
Window:     Windowing
```

This gadget is used to save the generated FIR coefficients to a
file.

1.340 Execute

```
Gadget:     Execute
Window:     Windowing
```

This gadget is used to start FIR coefficients generation. FIR
filter frequency and impulse responses are shown.

1.341 SigGen

```
Window:     SigGen
```

The SigGen Window is used to select one of the available signal
generators.

This window contains the following gadgets:

'Generators'

1.342 Generators

```
Gadget:     Generators
Window:     SigGen
```

This gadget is used to select one of the available signal
generators.

1.343 Cyclic Generator

```
Window:     Cyclic Generator
```

The Cyclic Generator Window is used to control parameters for
synthesizing 16bit signals. This generator synthesizes a single
signal cycle and replicates it to fit the user's desired signal
duration. Compared to the "Tone Generator", this technique allows
faster operations but suffers of higher granularity when selecting
the frequency of the synthesized signal.

This window contains the following gadgets:

'Type'
'Clock'
'Clock/?'
'Dur.'
'Points'
'Frequency'
'Size'
'Execute'

1.344 Type

```
Gadget:      Type
Window:      Cyclic Generator
```

This gadget is used to select the waveform.

1.345 Clock

```
Gadget:      Clock
Window:      Cyclic Generator
```

This gadget is used to display the signal clock of the destination
recording.

1.346 Clock/?

```
Gadget:      Clock
Window:      Cyclic Generator
```

This gadget is used to edit the signal clock of the destination
recording.

1.347 Dur.

```
Gadget:      Dur.
Window:      Cyclic Generator
```

This gadget is used to edit the duration of the destination
recording.

1.348 Points

```
Gadget:      Points
Window:      Cyclic Generator
```

This gadget is used to edit the number of samplepoints reserved
for a single cycle of the waveform. This value AND the value in
the Clock gadget determine the frequency of the synthesized
signal.
Note: when synthesizing noise use the highest value possible (for
'Points') to reduce signal periodicity.

1.349 Frequency

```
Gadget:      Frequency
Window:      Cyclic Generator
```

This gadget is used to display the frequency of the synthesized
signal (where applicable).

1.350 Size

```
Gadget:      Size
Window:      Cyclic Generator
```

This gadget is used to display the size of the file containing the
synthesized signal.

1.351 Execute

```
Gadget:      Execute
Window:      Cyclic Generator
```

This gadget is used to start signal generation.

1.352 Tone Generator

```
Window:      Tone Generator
```

The Tone Generator Window is used to control parameters for
synthesizing 16bit signals.   This generator synthesizes a sine
tone.   Compared to the "Cyclic Generator", this technique causes
slower operations but allows more accurate selection of the
frequency of the synthesized signal.

This window contains the following gadgets:

'Clock'
'Clock/?'
'Dur.'
'Freq.'
'Size'
'Execute'

1.353 Clock

```
Gadget:     Clock
Window:     Tone Generator
```

This gadget is used to display the signal clock of the destination recording.

1.354 Clock/?

```
Gadget:     Clock
Window:     Tone Generator
```

This gadget is used to edit the signal clock of the destination recording.

1.355 Dur.

```
Gadget:     Dur.
Window:     Tone Generator
```

This gadget is used to edit the duration of the destination recording.

1.356 Freq.

```
Gadget:     Freq.
Window:     Tone Generator
```

This gadget is used to set the frequency of the synthesized signal.

1.357 Size

```
Gadget:     Size
Window:     Tone Generator
```

This gadget is used to display the size of the file containing the synthesized signal.

1.358 Execute

```
Gadget:     Execute
Window:     Tone Generator
```

This gadget is used to start signal generation.

1.359 Sweep Generator

```
Window:      Sweep Generator
```

The Sweep Generator Window is used to control parameters for
synthesizing 16bit sweeping signals. This generator synthesizes a
sine tone sweeping between two user selected frequencies.

This window contains the following gadgets:

```
'Clock'
'Clock/?'
'Dur.'
'Freq. A'
'Freq. B'
'Size'
'Execute'
```

1.360 Clock

```
Gadget:      Clock
Window:      Sweep Generator
```

This gadget is used to display the signal clock of the destination
recording.

1.361 Clock/?

```
Gadget:      Clock
Window:      Sweep Generator
```

This gadget is used to edit the signal clock of the destination
recording.

1.362 Dur.

```
Gadget:     Dur.
Window:      Sweep Generator
```

This gadget is used to edit the duration of the destination
recording.

1.363 Freq. A

```
Gadget:     Freq.
Window:     Sweep Generator
```

This gadget is used to set the starting frequency. Signal will smoothly sweep from "Freq. A" to "Freq. B".

1.364 Freq. B

```
Gadget:     Freq.
Window:     Sweep Generator
```

This gadget is used to set the ending frequency. Signal will smoothly sweep from "Freq. A" to "Freq. B".

1.365 Size

```
Gadget:     Size
Window:     Sweep Generator
```

This gadget is used to display the size of the file containing the synthesized signal.

1.366 Execute

```
Gadget:     Execute
Window:     Sweep Generator
```

This gadget is used to start signal generation.

1.367 Tools

```
Window:     Tools
```

The Tools Window is used to select one of the available auxiliary tools.

This window contains the following gadgets:

'Tools'

1.368 Tools

```
Gadget:      Tools
Window:      Tools
```

This gadget is used to select one of the available auxiliary
tools.

1.369   (De)Interleaver

```
Window:      (De)Interleaver
```

The (De)Interleaver Window is used to control the mono->stereo
(interleaving) and stereo->mono (deinterleaving) convertions.

This window contains the following gadgets:

'Operation'

1.370   Operation

```
Gadget:      Operation
Window:      (De)Interleaver
```

This gadget is used to select between 'interleaving' and
'deinterleaving' operations.

- 'L+R->LRLR...': requires two single-channel files and produces
                  one stereo (interleaved) file. The stereo file
                  inherits the signal clock from the LEFT input
                  file. The length of the shortest input file is
                  used for both LEFT and RIGHT channel.

- 'L+R<-LRLR...': requires one stereo (interleaved) file and
                  produces two single-channel files.

Intentionally, the operator doesn't check the actual number of
channels for the input file(s). This allows performing tricky
operations on unknown/unsupported formats, once you have converted
them to a supported 16bit file using the I/O Mapper.

1.371   Execute

```
Gadget:      Execute
Window:      (De)Interleaver
```

This gadget is used to start the '(de)interleaving' operation.
After clicking this gadget a sequence of file-requesters allow you
to select the input/output files.

1.372 MiniMixer

```
Window:     MiniMixer
```

The MiniMixer Window is used to control the MiniMixer. Unlike the
MultiTrack Manager, the MiniMixer requires a very minimal amount
of RAM.   On the other hand, each MiniMixer's track can contain
only one recording. Pan or timecode parameters aren't available.

This window contains the following gadgets:

```
'Tracks/?'
'Tracks/File'
'Tracks/Clear'
'Tracks/Play'
'Tracks/Level'
'Tracks/End'
'Tracks/Mix'
'Destination/?'
'Destination/Play'
'Output'
'Execute'
```

1.373 Tracks/?

```
Gadget:     Tracks/?
Window:     MiniMixer
```

This gadget is used to associate a file, containing a recording,
with this track.

1.374 Tracks/File

```
Gadget:     Tracks/File
Window:     MiniMixer
```

This gadget is used to display the name of the file, containing a
recording, associated with this track.

1.375 Tracks/Clear

```
Gadget:     Tracks/Clear
Window:     MiniMixer
```

This gadget is used to remove the file, containing a recording,
associated with this track.

1.376 Tracks/Play

```
Gadget:     Tracks/Play
Window:     MiniMixer
```

This gadget is used to play the file, containing a recording, associated with this track.

1.377 Tracks/Level

```
Gadget:     Tracks/Level
Window:     MiniMixer
```

This gadget is used to set the output level of this track.
A '0' level mutes this track.
Levels are relative to other track's levels, not absolute.

Example:
setting track-1 level to '5' and track-2 level to '10' is the same
as setting track-1 level to '25' and track-2 level to '50'.

1.378 Tracks/End

```
Gadget:     Tracks/End
Window:     MiniMixer
```

This gadget is used to set a track end point as the global mixing
end point (mixed recording stops at the end of the selected
track).

1.379 Tracks/Mix

```
Gadget:     Tracks/Mix
Window:     MiniMixer
```

This gadget is used to include this track in the global mixing.
If the gadget is checked this track is sent to the mixer.
If the gadget is not checked this track is muted.

1.380 Destination?

```
Gadget:     Destination
Window:     MiniMixer
```

This gadget is used to select a file for the mixed output.

1.381 Destination/Play

```
Gadget:     Destination/Play
Window:     MiniMixer
```

This gadget is used to play the file containing the output of the
last mixing.

1.382 Output

```
Gadget:     Output
Window:     MiniMixer
```

This gadget is used to select the output mode.
'File' selects direct-to-disk mode.
'Analog' selects real-time mode.

1.383 Execute

```
Gadget:     Execute
Window:     MiniMixer
```

This gadget is used to start the mixing operation.

1.384 File Formats

File Formats.

Normally, AudioLab16 requires one of the following 16bit file
formats: AIFF, MAUD, MAESTRO. You can use the I/O Mapper
enviroment to import/export from/to other formats. Using the
programmable raw mode you can also import from unknown formats.

Stereo 16bit formats are supported.
Interleaved stereo files (left and right channels into the same
file) can be used for storage and playback. Deinterleaved stereo
files (left and right channels into two different files) must be
used for editing/processing.

The following formats can be used into the I/O Mapper enviroment:

```
  Format        Sample point structure        Channels
------------------------------------------------------------

  AIFF          PCM16 Lin Signed    MSBLSB     1/2 interleaved
  MAUD          PCM16 Lin Signed    MSBLSB     1/2 interleaved
  MAESTRO       PCM16 Lin Signed    MSBLSB     1/2 interleaved
  WAVE          PCM16 Lin Signed    LSBMSB     1/2 interleaved
```

```
    SUN          PCM16 Lin Signed    MSBLSB       1/2 interleaved
1) STUDIO16_3   PCM16 Lin Signed    MSBLSB       1 (2 n/a)
    MAUD         PCM8  U-Law         BYTE         1
    SUN          PCM8  U-Law         BYTE         1
    AIFF         PCM8  Lin Signed    BYTE         1
    MAUD         PCM8  Lin Unsigned  BYTE         1
    MAESTRO      PCM8  Lin Unsigned  BYTE         1
    WAVE         PCM8  Lin Unsigned  BYTE         1
    VOC          PCM8  Lin Unsigned  BYTE         1
    8SVX         PCM8  Lin Signed    BYTE         1
    8SVX         DPCM  Fibonacci     NIBBLE       1
    RAW          PCM16 Lin Signed    MSBLSB       -
    RAW          PCM16 Lin Unsigned  MSBLSB       -
    RAW          PCM16 Lin Signed    LSBMSB       -
    RAW          PCM16 Lin Unsigned  LSBMSB       -
    RAW          PCM8  U-Law         BYTE         -
    RAW          PCM8  Lin Signed    BYTE         -
    RAW          PCM8  Lin Unsigned  BYTE         -


    NOTES:
    1) read-only, in this enviroment (see below)
```

The following formats can be used into the Triggers enviroment:

```
    Format        Sample point structure        Channels
    ----------------------------------------------------------

    AIFF          PCM16 Lin Signed    MSBLSB       1/2 interleaved
    MAUD          PCM16 Lin Signed    MSBLSB       1/2 interleaved
    MAESTRO       PCM16 Lin Signed    MSBLSB       1/2 interleaved
```

The following formats can be used into the Signal Processor enviroment:

```
    Format        Sample point structure        Channels
    ----------------------------------------------------------

    AIFF          PCM16 Lin Signed    MSBLSB       1
    MAUD          PCM16 Lin Signed    MSBLSB       1
    MAESTRO       PCM16 Lin Signed    MSBLSB       1
1) STUDIO16_3   PCM16 Lin Signed    MSBLSB       1
```

```
    NOTES:
    1)  When  a  Studio16_3 file is detected on input, output is forced to
    Studio16_3  format.  This way the attributes carried by this file type
    (timecode, gain, pan,...) can be preserved on output.
```

The following formats can be used into the Edit List Managers
enviroment (MultiTrack Manager):

```
  Format          Sample point structure          Channels
-----------------------------------------------------------

  AIFF          PCM16 Lin Signed     MSBLSB       1/2 deinterleaved
  MAUD          PCM16 Lin Signed     MSBLSB       1/2 deinterleaved
  MAESTRO       PCM16 Lin Signed     MSBLSB       1/2 deinterleaved
```

The following formats can be used into the Edit List Managers
enviroment (Relative Manager):

```
  Format          Sample point structure          Channels
-----------------------------------------------------------

  AIFF          PCM16 Lin Signed     MSBLSB       1
  MAUD          PCM16 Lin Signed     MSBLSB       1
  MAESTRO       PCM16 Lin Signed     MSBLSB       1
```

1.385 How To...

How to...

Setup a multitrack project
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
Build a Relative Edit List
Generate a FIR filter
Write a FIR filter
Trigger playback
Record from Parallel

1.386 Setup a multitrack project

How to setup a multitrack project.

In the 'Control' window, 'Enviroment' gadget, select the Edit List
Managers enviroment.
In the 'ELM' window, 'Edit Mode' gadget, select 'MultiTrack'.

```
How to:
Toggle objects/range editing
Drag the cursor
Add an object
Select an object
Edit an object
Drag an object
Snap an object
Time-slip an object
Move an object to another track
Clone an object
Delete an object
Select a track
Drag a track
Time-slip a track
Swap two tracks
Store markers
Recall markers
Set the multitrack clock
Add stereo recordings
```

1.387   Toggle objects/range editing

```
How to toggle objects/range editing.

Select the 'MultiTrack Display' window.
Toggle  objects/range  editing  clicking on the icon at the bottom
left of Icon Area.

When objects editing is active:
- objects in the Tracks Area can be dragged with the mouse
- playback is performed on the complete timeline.

When range editing is active:
- ranges can be selected in the Tracks Area with the mouse
- playback is performed on the ranged portion of the timeline.
```

1.388   How to drag the cursor

```
How to drag the cursor.

Select the 'MultiTrack Display' window.
Click on the Timeruler Area and hold the left mouse button pressed
while moving the mouse.
The  cursor is shown into the Tracks Area; look at the Information
Area to read the current timecode values.
```

1.389   How to add an object

How to add an object.

In the 'Object' window, click on 'File/?' gadget, to select a recording. Click on the 'Set Range' gadget if you want to use only a fragment instead of the whole recording.
Use the 'Level' gadget to set the object's volume, use the 'Pan' gadget to set the object's stereo position.

Now you have to choose the object's start time.

– Method1:
    Use the 'Place At' gadget to set the start time.
    Select the 'MultiTrack Display' window.
    Hit SHIFT+RETURN to add the object.

– Method2:
    Select the 'MultiTrack Display' window.
    Click on the Timeruler Area and drag the cursor to the desired start time.
    Hit RETURN to add the object.

1.390 How to select an object

How to select an object.

Select the 'MultiTrack Display' window.
Click onto an object in the Tracks Area.
The selected object turns to a different color.

1.391 How to edit an object

How to edit an object.

Select the 'MultiTrack Display' window.
Select an object clicking on it.
Now you have to move the object's attributes to the 'Object' window to edit them. Do it by double-clicking onto the object or by selecting 'Locate' from the 'Object' menu (the 'Object' window is updated to display the selected object's attributes).
Perfom any desired change then select the 'MultiTrack Display' window. Select 'Change' from the 'Object' menu to apply the changes to the original object.

1.392 How to drag an object

How to drag an object.

Select the 'MultiTrack Display' window.
Click onto an object and, while holding the left mouse button pressed, move the mouse.

1.393   How to snap an object

```
How to snap an object.

Select the 'MultiTrack Display' window.
Select the 'Control' item into the 'Project' menu (the 'MultiTrack
Control' window opens).
Use the  Tempo  gadgets  to  set  the desired BPM Beats Per Minute
value.
Use  the  Tempo  gadgets  to  set the desired QPB Quarters Per Bar
value.
Use the 'Snap' gadget to select:
    - None   : no snapping
    - To Beat: autosnap objects to the nearest beat
    - To Bar : autosnap objects to the nearest bar start.
Setting  the 'Timecode' gadget to Bars:Beats:Clocks is recommended
but not mandatory.

When active, snapping is performed on:
    - any new object added at cursor position (RETURN hotkey)
    - any dragged object.

Snapping doesn't affect:
    - any new object added at  a  timecoded position (SHIFT+RETURN
      hotkey)
    - any object already present onto the timeline.
```

1.394   How to time-slip an object

```
How to time-slip an object.

Select the 'MultiTrack Display' window.
Drag  an  object  on the horizontal axis.  While dragging, look at
the Information Area displaying the current timecodes.
```

1.395   How to move an object to another track

```
How to move an object to another track.

Select the 'MultiTrack Display' window.
Hold  the  LEFT_ALT  key (this  avoids  any  unwanted  horizontal
slipping).
Drag  the object on the vertical axis until it reaches the desired
track.
```

1.396   How to clone an object

```
How to clone an object.
```

```
Select the 'MultiTrack Display' window.
While  holding  the  'Ctrl' key pressed, select an object and drag
it.
```

1.397   How to delete an object

```
How to delete an object.

Select the 'MultiTrack Display' window.
Select an object.
Press the DEL key.
```

1.398   How to select a track

```
How to select a track.

Select the 'MultiTrack Display' window.
Click onto a track in the Tracks Area or click onto a track number
into the Icons Area.
```

1.399   How to drag a track

```
How to drag a track.

Select the 'MultiTrack Display' window.
Click  onto  a  track's  zone  not  covered  by objects and, while
holding the left mouse button pressed, move the mouse.
Please  note  that  if you click onto a track's zone covered by an
object, you'll drag the object, not the track.
To  avoid  this  you  can  'force'  track  dragging by holding the
LEFT_AMIGA key before clicking onto a track.
```

1.400   How to time-slip a track

```
How to time-slip a track.

Select the 'MultiTrack Display' window.
Drag  a track on the horizontal axis.  While dragging, look at the
Information  Area  displaying  the  current  timecodes  variations
(positive/negative).
```

1.401   How to swap tracks

```
How to swap tracks.

Let's suppose you want to swap track A and track B.
Select the 'MultiTrack Display' window.
Drag track A on the vertical axis until it overlaps track B.
Release the left mouse button.
```

1.402   How to clone a track

```
How to clone a track.

Select the 'MultiTrack Display' window.
While  holding  the 'Ctrl' key pressed, select a track and drag it
on the vertical axis.
Release the cloned track onto an empty or unwanted track.
```

1.403   How to delete a track

```
How to delete an object.

Select the 'MultiTrack Display' window.
Select a track.
WHile holding the SHIFT key, press the DEL key.
```

1.404   How to add markers

```
How to use markers.

Select the 'MultiTrack Display' window.
Drag  the  cursor  to  the  position  (timecode) where you want to
attach a marker,
Select  the  'Markers' item into the 'Project' menu (the 'Markers'
window opens).
Select the 'Markers' window.
Select one of the markers using the radio button gadget.
Type some text into the marker string gadget.
Click  on  the 'Store' button (the marker appears into the Markers
Area of the 'MultiTrack Display' window).
```

1.405   How to recall markers

```
How to recall markers.

Select the 'MultiTrack Display' window.
Select  the  'Markers' item into the 'Project' menu (the 'Markers'
window opens).
Select the 'Markers' window.
```

Select one of the markers using the radio button gadget.
Click on the 'Recall' button (the Tracks Area of the 'MultiTrack
Display' window gets updated to show a zone of the timeline around
the selected marker position: results vary depending on the
current zoom factor).

1.406   How to set the multitrack clock

How to set the multitrack clock.

The multitrack signal clock is set automatically equal to the
clock of the first object, track or project loaded into the
timeline. This signal clock is valid until you clear the current
project.

Objects of a multitrack project must share the same signal clock.
To correctly use an object with a different signal clock firstly
clear the current project, then add the new object.

1.407   How to add stereo recordings.

How to add stereo recordings.

To add a stereo recording to the timeline you have to create two
objects: one for the left channel and one for the right channel.

If the recording is interleaved (left and right channels into the
same file) you have to deinterleave it (create one file for each
channel) using the (De)Interleaver tool ('Tools' enviroment).

Create an object with the left channel file and set the pan all
the way left.
Select a track and a timecode, then add the object.

Create an object with the right channel file and set the pan all
the way right.
Select another track but keep the same timecode, then add the
object.

1.408   Play a formatted file

How to play a formatted file.

In the 'Control' window, 'Enviroment' gadget, select the I/O
Mapper enviroment.
Now, in the 'I/O Mappings' window, 'Mappings' gadget, select
'File:Analog'. Be sure the 'Analize 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.

1.409 Play a raw file

How to play a raw file.

In the 'Control' window, 'Envirement' gadget, select the I/O
Mapper enviroment.
Now, in the 'I/O Mappings' window, 'Mappings' gadget, select
'File:Analog'. Be sure the 'Analize 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.

1.410 Record digital tracks from a CDAudio

How to record digital tracks from a CDAudio.

In the 'Control' window, 'Envirement' gadget, select the I/O
Mapper enviroment.
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 immediatly 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.

1.411 Convert a file format

How to convert a file format.

In the 'Control' window, 'Enviroment' gadget, select the I/O
Mapper enviroment.
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 'Analize 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.

1.412   Use the DSP

How to use the DSP.

In the 'Control' window, 'Envirement' gadget, select the Signal
Processor envirement.
In the 'DSP' window click on the 'Source/?' gadget to open the
file requester. Now choose the file you want to process. If you
want to process only a section of the recording click on the
'Source/Range/Set' gadget to open the Locator tool and select a
range.   In the 'Operate On' gadget specify if you want to process
the whole recording or only a range.
Now in the 'Operators' gadget select a DSP operator. If the
operator opens a window use it to set its user configurable
parameters.
To operate the effect in real-time (most allow it) find the
'Output' gadget and select 'Analog'. Press the 'Execute' gadget
to start processing.
To send the processed signal to a file set the 'Output' gadget to
'File' then click the 'Destination/?' gadget to select a file
name. Press the 'Execute' gadget to start processing.

1.413   Build a Relative Edit List.

How to build a Relative Edit List.

The Relative Edit List is used to join different audio fragments
positioning them in sequence.

In the 'Control' window, 'Envirement' gadget, select the Edit List
Managers envirement.
In the 'ELM' window, 'Edit Mode' gadget, select 'Relative'.
In the 'Rel List Item' window click on the 'File/?' gadget to open
the file requester.   Now choose a recording. The Locator tool
should open: select an interesting range.
Now, in the 'Rel List Item' use the 'Repeat' gadget to set the
number of repetitions for your range.
Add it to the edit list clicking on the 'Append' gadget, in the
'Relative Edit List Manager' window.
Repeat the procedure with another range from the same or another
recording.   Note that if you use different recordings they must
share the same signal clock.
See the 'Relative Edit List Manager' window documentation for
other editing options.
At any time you can click on the 'Play' gadget to listen the list.
Then click on the 'Make' gadget to generate a real file.

1.414   Generate a FIR filter

How to generate a FIR filter.

FIR filter coefficients tables for AL16 DSP are contained in ASCII

files. AL16 has the capabitily to generate these files under the
user control. We'll try to build a simple low-pass filter with
that tool.

In the 'Control' window, 'Enviroment' gadget, select the Filter
Design enviroment.
In the 'Windowing' window, set the 'Freq. Shift' gadget to '0' to
choose the low-pass filter option. Set the 'CutOff Rel. Freq.'
gadget to 125 to position the cutoff frequency at 1/8 of signal
clock. We want the filter removing (attenuating) frequencies above
1/8 of the signal clock, in this example.

(Note that we work with relative frequencies. If you want the
cutoff point positioned at an absolute frequency you have to build
a different filter for any different signal clock you use. For
example, if you need a low-pass filter with cutoff at 8KHz you'll
have to build one for 48KHz clock, another for 44.1 clock, another
for 28.6KHz,...)

Now set the 'Taps' gadget (filter length) to '127'. Press the
'Execute' gadget. The impulse and frequency response windows open
and display their graphs. In the 'Frequency Response' window you
should see (from left to right):
- a zone where the filter allows the signal to pass with little
  attenuation (passband).
- a zone where the filter starts attenuating the signal
  (transition band), around the cutoff point
- a zone where the filter strongly attenuates the signal
  (stopband).

Try moving the cutoff point with the 'CutOff Rel. Freq.' gadget
(press the 'Execute' gadget to update the graphs).

Select the various types of windows in the 'Windows' gadget and
press 'Execute' each time to check how they affect filter
response.
Try reducing the number of taps. A shorter filter allows faster
DSP processing at the cost of frequency response regularity. Also
note how odd numbers and even numbers affect filter responses
differently (usually odd ones give better results).

Set the 'Taps' gadget to '11', 'Windows' gadget to 'Rectangle'.
Put a text comment such as "Low-Pass 11-Taps Rectangle" then click
on 'Save' gadget.

Now you can use the saved file with the FIR Filter DSP operator.
You can also load the saved file in your favorite text-editor and
modify it.

1.415 Write a FIR filter

How to write a FIR filter.

FIR filter coefficients tables for AL16 DSP are contained in ASCII
files.   AL16 has the capabitily to generate these files under the

user control. We'll try to build a simple filter with a
text-editor instead of using the AL16 tool.

In the 'Control' window, 'Enviroment' gadget, select the Signal
Processor enviroment.
In the 'DSP' window, 'Operators' gadget select 'FIR Filter'.

Now load your favorite text editor and type the following lines:

; This is my new filter
0.1
0.2
0.3
0.2
0.1

The first line is a comment (';' must be present in the first
column). Then we have a filter coefficient for each line. Each
coefficient is a floating-point number in the [-1.0,1.0] interval.
This example filter has five coefficients.

Save the filter to a file (RAM:MyFilter) but don't quit the
editor.

Back to AudioLab16.
In the 'FIR Filter' window click on 'Coefficients File/?' gadget
and select RAM:MyFilter. The 'Taps' gadget should display '5'.
Set 'Show Response/Impulse' and 'Show Response/Frequency' gadgets
on checked position (response graphs for RAM:MyFilter should be
displayed).

Now, in the text-editor, you can experiment modifying the
coefficients values (keep them in the [-1.0,1.0] range).
AudioLab16 monitors the coefficients file and, every time you hit
the save key in your text-editor, response graphs are updated.
Note that the name of the file you save must match the name
present in the 'Coefficients File' gadget, 'FIR Filter' window.

Instead of writing a coefficient file from scratch you may load a
filter generated by AudioLab16 and modify it.

1.416 How to trigger playback

How to trigger playback.

AudioLab16 allows to select and play recordings (16bit files)
from a user compiled list. Selection and play/stop commands can
be sent via Arexx,MIDI or keyboard.
When playing material direct-from-disk a certain amount of delay,
between the playback request and the effective playback start, is
introduced. This delay is caused by the disk swapper prefetching
the first data page from disk to ram buffers.
To allow triggering with zero delay AudioLab16 require the user to
follow this scheme:

– send a program selection command (the disk swapper prefetches
                                    data)
– send a play command   (playback starts with zero
                                    delay)
– send a stop command   (optional).

AudioLab16 will not execute a play command if it isn't preceded by
a selection command. Sending a selection command while previous
program is still playing is not possible: you must send a stop
command first, then the selection command.

In the 'Control' window, 'Envirement' gadget, select the Triggers
envirement.
In the 'Programs' window, set the 'Current Program' gadget to '0'
the click on 'Current Program/?' gadget to select a recording.
Now set the 'Current Program' gadget to '1' and select another
recording. Continue this procedure if you need to.

AREXX Triggering.

In the 'Triggers' window, 'Triggers' gadget select 'AREXX'. In
the 'Triggers' window press 'Execute' to enter triggering mode.

Arexx port name is "AL16TRIGGER.1".

To select a program send a PRG_CHNG N command where N is the
program number.

Example:

```
/* Select program number 1 */
ADDRESS AL16TRIGGER.1  PRG_CHNG 1
```

To start playback send a NOTE_ON command.

Example:

```
/* Start selected program */
ADDRESS AL16TRIGGER.1  NOTE_ON
```

To stop playback send a NOTE_OFF command.

Example:

```
/* Stop selected program */
ADDRESS AL16TRIGGER.1  NOTE_OFF
```


MIDI Triggering.

In the 'Triggers' window, 'Triggers' gadget select 'MIDI'. In the
'MIDI' window, 'In Mode' select a receive mode. If you choose
'Poly' you should also assign a MIDI channel to AudioLab16 via the
'In Channel' gadget. In the 'Triggers' window press 'Execute' to
enter triggering mode.

To select a program send a MIDI PROGRAM CHANGE message, specifying
the program number.
To start playback send a MIDI NOTE ON message.
To stop playback send a MIDI NOTE OFF message.

Keyboard Triggering

In the 'Triggers' window, 'Triggers' gadget select 'Keyboard'. In
the 'Keyboard' window click on 'Get Programs' to automatically
assign program numbers to function keys (you can do it manually
using the 'Function Keys' slider gadgets). In the 'Triggers'
window press 'Execute' to enter triggering mode.

NOTE: the 'Keyboard' window must be selected (AL16 automatically
        selects it when you press 'Execute') to send keyboard
        triggering commands.

To select a program hit the associated function key.
To play a program hit the space bar
To stop a program hit the 'Esc' key.

1.417   How to record from Parallel

How to record from Parallel.

The most important step is setting the correct external source
level due to the very limited dynamic range of 8bit devices. AL16
provides a color-coded tool to help you obtaining the best
results.

Setting the external source level.

In the 'Control' window, 'Enviroment' gadget, select the I/O
Mapper enviroment.
Now, in the 'I/O Mappings' window, 'Mappings' gadget, select
'Parallel:VU'.
In the 'Parallel (In)' window, 'Clock' gadget, select the desired
sampling clock.
In the 'Parallel:VU' window, 'Clock' gadget, set the clock ratio
depending on you CPU speed.
Press the 'Execute' gadget.
Now look the 'VU (Out)' window. Increase the external source level
until the scrolling graph turns black (black means that the level
is too high and causes distortion). Decrease the source level
until the scrolling graph turns white (white means that the level
is below the distortion threshold but, using only 8 bits, it will
suffer audible quantization noise). Finding a good setting is a
matter of raising the graph white as much as possible, avoiding to
turn it black. Intermediate color peaks are acceptable: they
mean the level just touched the distortion zone, exiting
immediatly.
Click the left mouse button to quit the operation.

Recording.

In the 'I/O Mappings' window, 'Mappings' gadget, select
'Parallel:File'.
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.
In the 'Parallel:File' window select the recording mode. You
should use 'Direct To Disk' if your system is fast enought for
current Parallel clock, otherwise use 'Buffer In Ram'.
Click on the 'Execute' button to start the operation. When using
the 'Direct To Disk' mode a window shows 'elapsed time' and
'remaining time' for current output medium.
Click the left mouse button to quit the operation.

1.418 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.
```

1.419   CDROMs

CDROMs.

These fine drives should allow 16bit recording with AudioLab16:

- Plextor Quad-Speed PX-45CS
- Pioneer DR-U124X
- Sony CDU-561
- Sony CDU-8002
- Sony CDU-8003A
- Sony CDU55S
- Sony CDU76S
- Matshushita CR-8004

Please note that some drives are available under different labels
(i.e. Apple uses Sony and Matshushita drives and they work fine).

This list is:
- not complete
- unofficial.

1.420   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 containg 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 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 incorrectly
    assumes that it's a single-channel file.
    Possible causes are:
    - an incorrect or corrupted file header
    - a file type supported only in mono-mode (currently true for
      8bit files and raw files).
    Convert the file to a 16bit format (AIFF/MAESTRO/MAUD) and use
    the (De)Interleaver tool to extract one channel at a time.

P7: AL16 slows down concurrent applications.
S7: Check the 'Task Priority' gadget in the 'Other Prefs' window.

P8: Playback is irregular (backward   and   forward jumps are
    audible).
S8: 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).
      You should install AmigaOS 3.1 or higher. That version allows
      you to set the size of the FFS blocks. Larger blocks mean
      faster seeking operations (such as Locator drawing, non-linear
    playback,...).
    Disk   caching   utilities   usually   enhance AudioLab16
    performances on machines with slow HDs.

P9: Triggering via   keyboard doesn't produce reactions, other
    triggering methods work fine.
S9: Someone deselected the 'Keyboard' window. Select the window
    clicking on it.

P10:Triggering   via   keyboard   causes playback of an undesidered
    recording.
S10:Check the 'Keyboard' window for keys->programs mapping. Use
    the 'Get Programs' gadget to automatically rebuild the mapping
    list.

P11:The operation 'X' doesn't work.
S11:If an operation involving a signal doesn't work, try using it
    with the lowest signal clock possible. If it works then
    your system is probably too slow for the original signal

```
clock.
Starting from the lowest clock try increasing it in successive
steps  until  the  operation  stops working.  This way you can
find the clock limit for your current setup.
```

1.421 Author

```
Author.

Feel free to contact the author:

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          a fidonet/internet gateway:  please allow a few days for
          replies, thank you).
```