OctaMED

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Chapter 1

OctaMED

1.1   Instruments / Instrument Management

```
                HOW TO...

          Select the current instrument

        Remove an instrument from memory

            Move or swap instruments

              Rename an instrument
                OVERVIEW
```
One of the most frequent things done in OctaMED is the selection of
an instrument for playing or editing. Instruments can also be
removed from memory, moved to a new position, swapped with another
instrument, or renamed. We call this the 'management' of
instruments.

1.2   Instrument Management / How To Select The Current Instrument

```
                  HOW TO SELECT THE CURRENT INSTRUMENT
```
INTRODUCTION
You may select an instrument in order to play it or enter a note
played by it. It is referred to as the 'current' instrument. There
are many different ways of selecting an instrument.

The current instrument's number is shown in the Main Control window
(top-middle), the Instrument Properties window (top-right) and the
Instrument Load window (bottom-middle).

STEPS

EITHER Use the handy keyboard shortcuts.

1) Select the previous or next instrument.
   > Press Shift-<left> or Shift-<right>

OR Use the Instrument List window.

1) Open the Instrument List window.
   > Instr menu -> Instrument List

2) Select an instrument.
   > Use the scroll bar to display the desired instrument THEN
   > Click on the instrument number or name in the list

OR Use the Instrument Properties window.

1) Open the Instrument Properties window.
   > Instr menu -> Set Properties OR
   > Main Control window -> Props button

2) Select an instrument.
   > Adjust the slider at the top of the screen OR
   > Use the arrows beside the slider (top-right) OR
   > Click 1st [selects instrument 01] OR
   > Click Last [selects instrument 1V] OR
   > Click L.U. [selects the Last instrument Used by the song]

OR Use the Instrument Load window.

1) Open the Instrument Load window.
   > Instr menu -> Load from List OR
   > Main Control window -> SList button

2) EITHER Select the previous or next instrument.
   > Click <<Prev Inst or >>Next Inst

   OR Select the previous or next empty instrument position.
   > Click <<Prev Free or >>Next Free

NOTES
* The current instrument's name is shown in the Main Control,
                 More
                   Instrument Properties and Instrument List windows.

* The current instrument's size, in bytes, is shown in the Main
  Control window, on the top right, and the Instrument List
  window, to the right of a / sign. The format of the size depends
  on the instrument's type:

  Sample: Size in bytes
  Hybrid: Size in bytes, with H   More
  ExtSample: Size in bytes, with E   More
  Synthetic: -Synth-   More
  16-bit: Size in bytes, with W
                 More
                   Empty: --------
  MIDI: M Cnn, where nn is the instrument's MIDI   More
      channel number. A * is shown for 'fake'
      MIDI instruments.
  In fast memory: Size in bytes, with '   More

1.3 Instrument Management / How To Remove An Instrument From Memory

```
                          HOW TO REMOVE AN INSTRUMENT FROM MEMORY
INTRODUCTION
There are six different ways of removing an instrument from
memory! All instruments unused in the song can also be removed.

STEPS
1) Select the instrument to be removed.
                 How?
              2) EITHER Remove the instrument through the Instr menu.
   > Instr menu -> Flush Current

   OR Use the keyboard shortcut.
   > Press Ctrl-G                  More

   OR Use the Instrument Properties window.
   a) Open the Instrument Properties window.
      > Instr menu -> Set Properties OR
      > Main Control window -> Props button
   b) Remove the instrument.
      > Click Flush (near the top)

   OR Use the Instrument Load window.
   a) Open the Instrument Load window.
      > Instr menu -> Load from List OR
      > Main Control window -> SList button
   b) Remove the instrument.
      > Click Flush (bottom-right)

   OR Use the Sample Editor.
   a) Open the Sample Editor.
      > Display menu -> Sample Editor OR
      > Main Control window -> Edit button (if the current
  instrument is not a synthsound)          More
   b) Remove the instrument.
      > Project menu -> Flush Sample

   OR (Most obscurely) Use the Transpose window.
   a) Open the Transpose window.
      > Edit menu -> Transpose
   b) Affect instrument slots rather than notes.
                 More
                     > Switch Instrument Slots on (bottom right)
   c) Pick the current instrument as the 'source'.
      > Click Source (bottom right, under Change Instrument)
   d) Remove the instrument.
      > Click Delete (bottom right)

NOTES
* I think the easiest and the hardest way of removing an instrument
  should be clear!

* To remove all instruments unused by the song (or all songs in a
  multi-module), select Instr menu -> Flush All Unused.        More
```

1.4   Instrument Management / How To Move Or Swap Instruments

```
                   HOW TO MOVE OR SWAP INSTRUMENTS
INTRODUCTION
Using the Transpose window, an instrument can be moved to another
position ('slot'), or two instruments can swap positions.

STEPS
1) Open the Transpose window.
   > Edit menu -> Transpose

2) State the two instruments involved in the move or swap. For
   moves, the source instrument is moved to the destination
   instrument's position. For swaps, it doesn't matter which
   instrument is source or destination.
   a) Select and state the source instrument.
      > Select the source instrument
                 How?
                      > Click Source (bottom-right)
   b) Select and state the destination instrument.
      > Select the destination instrument
                 How?
                      > Click Destination (bottom-right)

3) Ensure that Instrument Slots is switched on.
   > If necessary, click Instrument Slots (bottom-right)

4) EITHER Move the source instrument to the destination position.
   > Click Change (bottom-left)

   OR Swap the source and destination instruments.
   > Click Swap (bottom-left)

NOTES
* The Delete button (bottom-right) removes the source instrument
                 More
                  from memory.

* The instrument numbers of relevant notes are *not* renumbered.
  To do this, switch Instrument Slots off, then click Change or
  Swap again.
```

1.5   Instrument Management / How To Rename An Instrument

```
                   HOW TO RENAME AN INSTRUMENT
INTRODUCTION
Instrument name text boxes exist in the Main Control and Instrument
Properties windows.

You occasionally come across songs whose instruments are nameless,
or whose instrument names are used for greetings and a contact
address and so on. This is quite unnecessary; please don't do it
yourself! If you need to leave a message in your song, there are     More
better ways of doing so.
```

```
STEPS

1) Select an instrument to rename.
                 How?
                 2) EITHER Use the Main Control window.
   > Type a new name into the text box at the top

   OR Use the Instrument Properties window.
   a) Open the Instrument Properties window.
      > Instr menu -> Set Properties OR
      > Main Control window -> Props button
   b) Rename the instrument.
      > Type a new name into the Name box (top)
```

1.6 Instruments / Digitizing

```
                     HOW TO...

                        Digitize an 8-bit sample

                Digitize with the Toccata 16-bit soundboard

                  Digitize with the Aura 16-bit soundboard
                OVERVIEW
```
Digitizing, also called sampling, recording or capturing, is the
act of feeding a sound from real-life into OctaMED, as a sample.
The source of the sound may be a tape recorder, microphone or
anything else that can plug into your 'sampler', which you must buy
separately.

8-bit samplers are small boxes that usually connect to your Amiga's
parallel port (the place where printer cables usually go). 8-bit
samplers are becoming outdated, though, and if you have the
opportunity to get hold of the Aura or Toccata 16-bit soundboard,
you won't regret it!

1.7 Digitizing / How To Digitize An 8-bit Sample

```
                     HOW TO DIGITIZE AN 8-BIT SAMPLE
INTRODUCTION
```
Almost all currently available samplers are 8-bit, and as a result,
the vast majority of samples are also 8-bit. Digitizing an 8-bit
sample involves connecting up your sampler and feeding a sound
through it into your computer.

The length of the produced sample must be set, as well as the
'sampling frequency'. Higher frequencies produce better quality
but shorter samples (sample lengths being equal). Each note is
attached to a frequency.

The volume of the input sound can be adjusted, by examining the

sound's 'waveform' in a black area at the bottom of the screen.
This process is called 'monitoring'. Finally, click Digitize in the
Sample Editor to digitize the sample.

STEPS
1) Connect your 8-bit sampler to the parallel port - the socket at
   the back of your computer where a printer is usually connected.

2) Open the Sample Editor.
   > Display menu -> Sample Editor OR
   > Main Control window -> Edit button (if the current instrument   More
     is not a synthsound)

3) Select any instrument.
                      How?
                     4) Set the desired length of the sample.
   > Type a new number into Buffer (top row) THEN
   > Answer Clear in the requester

5) Set the sampling frequency.
   > Set the pitch box (bottom-right) to the note on which the
     sample will most often be played OR
   > Type a number into the box beside Pitch (bottom-right)

6) Start 'monitoring' the sound coming through your sampler.
   > Click Digitize

7) Adjust the sound's volume as necessary, using e.g. the volume
   control on your tape recorder, until there is no distortion.

8) EITHER Start digitizing when you're happy. The screen blanks.
   > Press the left mouse button

   OR Cancel digitizing.
   > Press the right mouse button

9) If necessary, interrupt the digitizing.
   > Press the right mouse button

NOTES
* If the selected instrument is empty, step 4 isn't necessary. Just
  click Digitize: The sample length will be set to 131072 bytes
  (formerly the longest possible sample), or less if you don't have
  enough memory.

* The ideal volume of the sound is as loud as possible without
  distortion. You'll see distortion at the top and bottom of the
  waveform - horizontal lines - if the sound is too loud.

  'Crackling' is unfortunately normal during monitoring.

* You can't usually hear the sound during digitizing; this
  slightly enhances sound quality on slower computers. To hear the
  sound, select Settings menu -> Sampler Voice Monitor while in the
  sample editor.

* If your sample already has a default pitch, use Tools menu ->

```
  Copy Pitch -> Inst. default -> Sample Editor to copy the pitch to
  the sampling frequency pitch box. After sampling, the sampling
  frequency pitch can be copied to the instrument default pitch,
  using Tools menu -> Copy Pitch -> Sample Editor -> Inst. default.
```

```
ALSO SEE
  How To Save Part Of A Song As A Sample
```

1.8 Digitizing / How To Digitize With The Toccata 16-bit Soundboard

```
                      HOW TO DIGITIZE WITH THE TOCCATA 16-BIT SOUNDBOARD
INTRODUCTION
Macrosystems' 16-bit soundboard, Toccata, offers far superior
sound quality than the Amiga. A whole window - Toccata Capture - is
dedicated to digitizing with Toccata, owing to the many different
facilities of the Toccata board.
```

```
Before digitizing, you must create a blank sample for OctaMED to
digitize into; this is a bit fiddly for 16-bit samples. Next, set
up the Toccata Capture window to your liking, and 'monitor' the
sound coming through your Toccata board, adjusting the volume until
no distortion is present. Finally, digitize the sample.
```

```
STEPS
1) Connect your Toccata board to your Amiga, and connect your sound
   source (e.g. microphone) to your Toccata board. If you've
   sampled with Toccata before, this shouldn't be a problem.
```

```
2) Open the Sample Editor.
   > Display menu -> Sample Editor OR
   > Main Control window -> Edit button (if the current instrument   More
     is not a synthsound)
```

```
3) Select any instrument.
                   How?
                   4) Set the desired length of the sample.
   > Type a new number into Buffer (top row) THEN
   > Answer Clear in the requester
```

```
5) Set the sample's type to 16-bit Toccata.
   a) Open the Instrument Type window.
     > Click anywhere outside of the sample editor, e.g. in the
   Main Control window, to get at the main set of menus THEN
     > Select Instr menu -> Type
   b) Set the type to 16-bit.
     > Click 16-bit (bottom-left)
   c) Set the output device to Toccata.
     > Click Toccata (bottom-right)
   d) Close the window.
     > Click Exit
```

```
6) Back in the sample editor, open the Toccata Capture window.
   > Click Digitize (or Monitor)
```

```
7) Set up the Toccata Capture window's options.
```

    a) Set the relevant gadgets in the Input area. Again, if you've
       sampled with Toccata before, this shouldn't be a problem. See
       the notes below for a brief explanation.
    b) Set the sampling frequency. You have Toccata's 14 different
       frequencies to choose from.
       > Adjust the Sampling Rate slider
    c) 'Monitor' the sound coming through Toccata, and adjust the
       sound's volume until no distortion occurs.
       > Switch on Level Display Active
       > Use the two black input level bars as a guide to the
  sound's volume. If they consistently move to the far
  right, the sound is distorted; reduce the volume

8) When you're satisfied, start digitizing.
   > Click Capture

9) If necessary, interrupt the digitizing.
   > Click Stop in the requester that appears

NOTES
* The ideal volume of the sound is as loud as possible without
  distortion.

* In the Input area, the radio button on the left selects which of
  Toccata's inputs to digitize through. Mic Gain switches on the
  microphone preamplifier. Level is another way to adjust the
  digitizing volume (other than adjusting the volume at the
  source). Loopback, when moved to the right, feeds the input back
  through Toccata's output sockets, allowing you to hear the sample
  through Toccata.

* Steps 4 and 5 are ideal candidates for an ARexx script... Try: More
  sa_changesize 100000 clear
  in_settype sample16
  in_setoutput toccata
  sa_monitor

ALSO SEE

            How To Enter Notes With The Toccata Soundboard

1.9   Digitizing / How To Digitize With The Aura 16-bit Soundboard

           HOW TO DIGITIZE WITH THE AURA 16-BIT SOUNDBOARD
INTRODUCTION
Try HiSoft's 16-bit soundboard, Aura, to enhance the sound quality
of your music. Procedure for digitizing using the board is much the
same as for 8-bit samples, so we suggest you learn how to digitize
       How?
        an 8-bit sample before consulting this how-to.

STEPS
1) Connect your Aura board to your Amiga, and connect your sound
   source (e.g. microphone) to your Toccata board. If you've
   sampled with Toccata before, this shouldn't be a problem.

2) Adjust the Aura settings if necessary.
                   How?
                  3) Open the Sample Editor.
   > Display menu -> Sample Editor OR
   > Main Control window -> Edit button (if the current instrument   More
     is not a synthsound)

4) Select any instrument.
                   How?
                  5) Set the desired length of the sample.
   > Type a new number into Buffer (top row) THEN
   > Answer Clear in the requester

6) Set the sample's type to 16-bit Aura.
   a) Open the Instrument Type window.
      > Click anywhere outside of the sample editor, e.g. in the
  Main Control window, to get at the main set of menus THEN
      > Select Instr menu -> Type
   b) Set the type to 16-bit.
      > Click 16-bit (bottom-left)
   c) Set the output device to Aura.
      > Click Toccata (bottom-right)
   d) Close the window.
      > Click Exit

7) Set the sampling frequency.
   > Set the pitch box (bottom-right) to the note on which the
     sample will most often be played OR
   > Type a number into the box beside Pitch (bottom-right)

8) Start 'monitoring' the sound coming through your sampler.
   > Click Digitize

9) Adjust the sound's volume as necessary, using e.g. the volume
   control on your tape recorder, until there is no distortion.

A) EITHER Start digitizing when you're happy. The screen blanks.
   > Press the left mouse button

   OR Cancel digitizing.
   > Press the right mouse button

B) If necessary, interrupt the digitizing.
   > Press the right mouse button

NOTES
* Excuse the brief transferral to hexadecimal at the end there. :-)

* If you have serious problems with Aura, please blame HiSoft for
  not providing an Aura support library for OctaMED to use! The
  programmer has tried his very best...

1.10 Instruments / Loops

```
                HOW TO...

                  Set a loop

                Find a good loop

              Store and retrieve a loop position

                Temporarily remove a loop
                OVERVIEW
```
A 'sample loop' means that the notes you play with the sample will
be sustained until stopped. This is due to a particular part of the
sample being continually repeated, or 'looped'.

The usual way of setting the looped part of the sample is through
the sample editor. Here, the loop boundaries appear as dotted lines
connected to little triangles; these 'loop pointers' can be dragged
to a new position. Alternatively, the loop can be set to the marked
range, current display or entire sample. Real hackers can even
enter the loop's starting position and length in bytes!

Finding a good loop is quite an elusive process, involving plenty
of trial-and-error. A few tips are presented, though. While playing
with loops, it's a good idea to store any good loops you find, for
retrieving later if you mess things up. The loop can also be
temporarily removed.

The sample editor's Loop menu provides useful loop facilities; do
experiment with all items, not just those presented here.

1.11   Loops / How To Set A Loop

```
        HOW TO SET A LOOP
INTRODUCTION
```
The usual way of setting the looped part of the sample is through
the sample editor. Here, the loop boundaries appear as dotted lines
connected to little triangles; these 'loop pointers' can be dragged
to a new position, or be moved left or right in tiny amounts.

Alternatively, the loop can be set to the marked range, current
display or entire sample. Real hackers can even enter the loop's
starting position and length in bytes!

STEPS

EITHER Type values directly, in the Instrument Properties window.

1) Open the Instrument Properties window.
   > Instr menu -> Set Properties OR
   > Main Control window -> Props button

2) Enter the loop's starting position and length, in bytes.
   > Type new values into Loop: Start and Length

```
OR Use the sample editor.

1) Open the Sample Editor.
   > Display menu -> Sample Editor OR
   > Main Control window -> Edit button

2) If necessary, reveal the loop pointers.
   > Switch on Loop (bottom-left)

3) EITHER Adjust the loop pointers by brute force.
   > Drag one of the pointers to a new position

   OR Adjust the loop pointers with finesse.
   > Set the cycle gadget beside Loop Point (bottom row) to Start
     or End, to adjust the start (left) or end (right) loop pointer
   > Beside that cycle gadget, click < or > to move the pointer
     left or right by two bytes

   OR Set the loop over a marked range.
   a) Mark a range.                 How?
   b) Move the start loop pointer to the range's start, the end
      pointer to the range's end.
      > Loop menu -> Mark -> Range

   OR Set the loop to cover the currently displayed part of the
      waveform.
   a) Zoom into a different waveform part.          How?
   b) Cover the display with the loop.
      > Loop menu -> Mark -> Display

   OR Set the loop to cover the entire sample.
   > Loop menu -> Mark -> Waveform
```

1.12 Loops / How To Find A Good Loop

```
          HOW TO FIND A GOOD LOOP
INTRODUCTION
Finding a good loop is pretty elusive. There's really no substitute
to trial-and-error. Some systems claim to find loops automatically,
but most are rather erratic.

Still, a few things can be borne in mind while searching for the
perfect loop:

* Good loops start and end at the same vertical point. In normal
  language, a loop is smoothly connected all the way round its
  surface. So it is with sample loops: There must be a smooth
  connection between the loop's end and the loop's start.

  Often, the starting and ending point can be zero; that is, in the
  exact center. OctaMED can find the nearest zero bytes to the loop
  pointers for you. The how-to describes this.

* Zoom in. If you have a hunch that a particular point might be a
  good place for a loop pointer, zoom right into that point for
```

  maximum accuracy. In practice, try moving the loop pointer to
  roughly the required point, then mark a small range covering the
  loop pointer and click Show (bottom-left).

* Look for repeating waveform shapes. Many instruments from real-
  life have a basic 'envelope', a definite waveform pattern that
  is repeated throughout the sample. Marking a loop over one or
  more envelopes is often successful.

The main point is frustratingly simple: Experiment!

STEPS
1) Ensure that the loop is smoothly connected.
   > Loop menu -> Find Zero Loop In OR
   > Loop menu -> Find Zero Loop Out OR
   > Set the cycle gadget beside Loop Point (bottom row) to Start
     or End, to adjust the start (left) or end (right) loop pointer
   > Beside that cycle gadget, click <0 or 0> to move the pointer
     left or right until a zero byte is found

NOTES
* It can occasionally be useful to turn part of the sample upside-
  down, or shift it vertically, in order to make the loop connect
  smoothly (see tip 1 above).

  To invert an area, mark a range and choose Edit menu -> Invert.
  To shift an area up or down, mark a range and choose Edit menu ->
  Adjust Y. In the window, enter the amount of adjustment from -127
  to 128: Positive numbers shift up, negative numbers shift down.
  Or click Calculate Average Deviation to centralise the range.
  Finally, click Adjust (shift-click it to close the window too).

1.13 Loops / Storage And Retrieval, Temporary Removal

                        HOW TO STORE AND RETRIEVE A LOOP POSITION
INTRODUCTION
Imagine you've found an OK loop, but have a gut feeling that better
may be around. Before experimenting with others, store the loop
position in memory. If you simply can't find a better loop, the
stored loop can easily be retrieved.

STEPS
1) Store a loop in memory.
   > Loop menu -> Snapshot Loop

2) Set other loops.
                 How?
                 3) Later, retrieve the loop.
   > Loop menu -> Recall Loop

     HOW TO TEMPORARILY REMOVE A LOOP
INTRODUCTION
It's a very simple matter to remove, or 'switch off', a sample's
loop if so desired. The loop can be reinstated later, again with a

simple click.

STEPS

EITHER Use the Instrument Properties window.

1) Open the Instrument Properties window.
   > Instr menu -> Set Properties OR
   > Main Control window -> Props

2) Remove the loop.
   > Switch off the On check box (on the right, beside Loop:
     Start and Length)

OR Use the Sample Editor.

1) Open the Sample Editor.
   > Display menu -> Sample Editor OR
   > Main Control window -> Edit button

2) Remove the loop.
   > Switch off the Loop check box (bottom-right)

NOTES
* To reinstate the loop, turn either check box back on.

1.14 Instruments / Stereo

                    HOW TO...

              Make the current sample stereo

               Make a stereo sample mono

              Display a stereo sample's waveform
                      OVERVIEW
Although most samples are in mono, samples can also be in stereo.
Stereo samples have two halves: a left half, and a right half. The
left half is played through the left speaker, the right half
through the right speaker.

Which half of a stereo sample is played depends on the current
track. If the current track is 0 or 3, the left half is played. If
1 or 2, the right half is played. So in order to play both halves
together in a song, two identical notes must be placed on each pair
of tracks.

For example, note C-2 can be placed on line 004 of track 0 *and*
track 1. Then, assuming the sample is stereo, the left half of note
C-2 will be played on track 0, the right half on track 1. Both
halves can be played together in the sample editor by clicking Show
All then Play Display.   More

It's very easy to turn a sample into mono or stereo. A stereo
sample's waveform can be displayed in the sample editor in three

different ways: its left half only, its right half only or both
halves together. Each way has its advantages.

1.15   Stereo / How To Make The Current Sample Stereo or Mono

```
                            HOW TO MAKE THE CURRENT SAMPLE STEREO
INTRODUCTION
Making the current sample stereo is a simple matter of switching on
Stereo in the Instrument Type window. This also can turn an
existing mono sample into a stereo one, but don't get excited! It
just copies the mono sample to both left and right halves, so the
new 'stereo' sample is in fact still in mono.

Because the sample doubles in size, you need a fair amount of free
memory to make a mono sample stereo; in fact, a free area twice the
size of the current sample.

STEPS
1) Select a sample.
                  How?
               2) Open the Instrument Type window.
   > Instr menu -> Type OR
   > Main Control window -> Type

3) Make the sample stereo.
   > Switch on the Stereo check box


      HOW TO MAKE A STEREO SAMPLE MONO
INTRODUCTION
Making a stereo sample mono is a simple matter of switching off
Stereo in the Instrument Type window. The two halves of the stereo
sample are mixed together, so that the resulting mono sample is a
combination of what was played on the left and right speakers.

Although the sample halves in size, you still need an area of free
memory half the size of the current sample.

STEPS
1) Select a sample.
                   How?
               2) Open the Instrument Type window.
   > Instr menu -> Type OR
   > Main Control window -> Type

3) Make the sample mono.
   > Switch off the Stereo check box
```


1.16   Stereo / How To Display A Stereo Sample's Waveform

```
        HOW TO DISPLAY A STEREO SAMPLE'S WAVEFORM
INTRODUCTION
```

A stereo sample's waveform can be displayed in the sample editor in
three different views: its left half only, its right half only or
both halves together.

Displaying both halves together gives an overview of the whole
sample, and allows you to edit both halves together. Displaying one
particular half allows you to examine that half more closely, and
to edit it separately from the other half. Some operations,
particularly Freehand, are only available in this view.   More

In the sample editor's bottom-right corner, the left of the two
display boxes provides the following information about the current
sample, including the current view:

```
  Mono  mono sample
  L><R  stereo sample, both halves displayed
  L>  stereo sample, left half displayed
  <R  stereo sample, right half displayed
  8 8-bit
  16  16-bit
```

The display box to its right displays the same information for the
contents of the copy buffer.   More

STEPS
1) Change the current view.
   > Repeatedly click S (bottom-right), until the desired view is
     selected

1.17   Instruments / 16-bit

                    HOW TO...

                 Change a sample to 16-bit

              Convert a 16-bit sample to 8-bit

                Use the Aura soundboard

              Enter notes with the Toccata soundboard
                    OVERVIEW
The Amiga's 8-bit sound quality is beginning to show its age. As a
result, several 16-bit soundboards have entered the market.

OctaMED supports four 16-bit soundboards: Aura, Toccata, MaestroPro
and Delfina. All except Aura are used in Mix mode, although Toccata
also has limited use in 4-channel mode. Mix mode is described in
detail in chapter 10 of the printed manual, and you're referred
especially to part 10.4. Because Aura is not supported by Mix mode,
however, it is covered here.

Because 16-bit quality on the Amiga is relatively new, OctaMED
samples are 8-bit by default. Before creating a 16-bit sample, you
must change the sample to 16-bit. 16-bit samples can also be
converted to 8-bit, with an inevitable loss of sound quality.

Settings for HiSoft's Aura soundboard can be found in the Aura
Sampler Options window. A couple of things should be born in mind
while entering notes played through Macrosystems' Toccata
soundboard.

ALSO SEE
  Anything relevant, please

1.18   16-bit / Changing A Sample To And From 16-Bit

                         HOW TO CHANGE A SAMPLE TO 16-BIT
INTRODUCTION
Because 16-bit quality on the Amiga is relatively new, OctaMED
samples are 8-bit by default. Before creating a 16-bit sample, you
must change the sample to 16-bit, through the Instrument Type
window.

If the sample is to be used in 4-channel mode (rather than Mix
mode), you should also set an 'output device' for it - through
which device the sample should be played. You have a choice of two
16-bit boards: Aura and Toccata. Toccata is only available if the
Toccata board is connected to your Amiga.

An empty instrument cannot be changed to 16-bit. You must have a
sample already loaded, or alternatively type a sample length into
the Buffer box in the Sample Editor.   Where?

STEPS
1) Select an instrument to be made 16-bit.
                 How?
                2) Open the Instrument Type window.
   > Main Control window -> Type button OR
   > Instr menu -> Type

3) Change the type to 16-bit.
   > Click 16-bit

4) If necessary, set its output device.
   > Click Aura OR
   > Click Toccata [available if the Toccata board is connected]

        HOW TO CONVERT A 16-BIT SAMPLE TO 8-BIT
INTRODUCTION
16-bit samples can be converted to 8-bit, with an inevitable loss
of sound quality.

STEPS
1) Select the instrument to be converted.
                 How?
                2) Open the Instrument Type window.
   > Main Control window -> Type button OR
   > Instr menu -> Type

```
3) Change the type to 8-bit.
   > Click Sample
```


1.19   16-Bit / How To Use The Aura Soundboard

```
                    HOW TO USE THE AURA SOUNDBOARD
```

Hi-Soft's 16-bit soundboard, Aura, is set up for use in the Aura
Sampler Options window. Open it through the Settings menu.

To prepare OctaMED to use Aura, switch on Active in this window.
OctaMED doesn't actually activate its Aura facilities until a
16-bit sample is next loaded or created.
                    More
                    Other gadgets in this window are:

* Minimum Period: Sets the minimum period limit, i.e. the highest
  pitch OctaMED can play using the card. The smaller the period,
  the higher the pitch and the better the quality BUT the more
  processor time used.

  The ideal value depends on the speed of your computer, so you
  have to adjust it by hand until you reach the highest possible
  pitch playable on your Amiga. If you set it too high, OctaMED
  will freeze while playing Aura samples. It will return to normal
  when play has stopped.

  To set the minimum period, play a 16-bit sample at a high pitch
  (e.g. A#3), slide the minimum period down, play the sample again,
  and so on. You'll find that your Amiga will freeze during play if
  the minimum period is too low. Set it to such a value that no
  freezing occurs.

  The minimum period is saved with settings.   More

* Single Channel Output: Only outputs sound using the right
  stereo channel. This saves processor time.

* Fixed Output Rate: Forces OctaMED always to output sound at the
  Minimum Period rate. All notes are scaled to this rate 'on the
  fly'.

  Using this option you can play higher notes than the Minimum
  Period correctly, but unfortunately with degraded quality.

Any sound intended to be played through the Aura card must be of
type 16-bit. It's easy to convert an 8-bit sample to 16-bit.
                  More
                  Only one 16-bit sample can be played through Aura at a time.
Although they can be placed on any track, Aura samples always
occupy track 3 while they're playing (this track is used for
timing). So it's a good idea to enter notes played by Aura samples
on track 3.
```

## 1.20   16-Bit / How To Enter Notes With The Toccata Soundboard

        HOW TO ENTER NOTES WITH THE TOCCATA SOUNDBOARD

A couple of things to bear in mind when entering notes to be played
through Macrosystems' Toccata soundboard:

* The C-1 to C#2 keys (normally keys Z to L) each play a Toccata
  sample at one of the fixed frequencies. That is, C-1 plays at
  5513 Hz, C#2 at 48 kHz. You can play back a sample at any of
  these frequencies, no matter which frequency it was originally
  recorded on.

* There's a slight problem with using Toccata samples in songs. If
  you play two different samples one after the other, and they have
  certain different settings, there will be a short (but audible)
  delay between the two samples.

  000 C-1 10000 (Here, there'll be a delay before playing
  001 --- 00000  the note on line 004, because the two
  002 --- 00000  different samples are played at different
  003 --- 00000  pitches. Different sampling rates and
  004 E-1 20000  stereo/mono status also cause a delay)

  This is unfortunately beyond OctaMED's control, but there is a
  rather laborious work-around. Select an empty sample, and give it
  the same sampling rate and stereo/mono status as the second of
  the two samples. Now enter it just before the second sample (on
  line 003 here), at the same pitch as the second sample. So the
  track becomes:

  000 C-1 10000
  001 --- 00000
  002 --- 00000
  003 E-1 30000 <= Inst. 03 (empty sample with the same rate
  004 E-1 20000  and stereo/mono as inst. 02) played at E-1