# Deli14BitGenie-Manual

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# Chapter 1

# Deli14BitGenie-Manual

## 1.1   Deli 14Bit NotePlayer Genie Manual

                                        Welcome to the

                    Deli 14Bit NotePlayer Genie V3.00

                    Copyright 1998-99 by
                Chris Hodges
                .

 WARNING: Read
                this
                first before using this software!

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## 1.2 Legal Stuff...

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                             Copyright notice
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```

"Deli 14Bit NotePlayer Genie" software is  based  on  the  sources  of  the
"14Bit-NotePlayer V2.3"  originally  created by Delirium Softdesign (Peter
Kunath and Frank  Riffel)  and  is  therefore Copyright 1994-95 Delirium
Softdesign. All rights reserved.

All further routines  and  this  documentation  were  written  by  and  are
Copyright 1998-99 Chris Hodges. All rights reserved.

No parts of this program or documentation may be altered by any means (this
includes   editing,   modifying,   reprogramming,   extracting,   crunching,
resourcing etc.) except archiving.

This is software uses the 14 Bit Output Routine by  Christian  Buchner.  It
also  uses  a  modified  version  of  the  DeliMix sample-mixing technology
Copyright by Delirium Softdesign.

```
-------------------------------------------------------------------------------
                                 Disclaimer
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```

This software has been proven stable in everyday use. The author is  in  no
way  liable  for any loss of data, damages to software or hardware that may
result directly or indirectly from use of this program.

The author  reserves  the  right  to  make  changes  to  this  software  or
documentation without notice.

```
-------------------------------------------------------------------------------
                                Distribution
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```

This software  is freely distributable as  long  as  the  archive  contents
remain complete and unaltered and no fee is charged for this software.

None of the  files  in  this  package  may  be  modified  or  left  out  or
distributed with other products without written permission from the author.
No unrelated files may be added to any archive containing this program.

Special permission is hereby granted to include the Deli  14Bit  NotePlayer
Genie in FD collections such as Fred Fish's Amiga Library or Urban
Müller's AmiNet archive or on AmiNet CDs.

Magazines have my permission to distribute  this  program  on  their  cover
disks  and  CDs,  but I would appreciate if a copy of the magazine would be
sent to me in that case.


```
------------------------------------------------------------------------------
                            PostcardWare Notice
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```

This software is POSTCARDWARE. If you find this program  useful,  I  expect
you  to  send  me  a  postcard  of your location or at least smash a Wintel
machine you come across. You have to agree that this is not much asked  and
will  raise  my  motivation  on  Amiga  software development. Of course I'm
always open to other kinds of gifts aswell! You will receive some  sort  of
keyfile which will remove the about requester which appears on start.

By copying, distributing and/or  using  this  software  you  indicate  your
acceptance of the above rules.


## 1.3   What you require to use this software...

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                                Requirements
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```

Requirements:
– DeliTracker V2.0 or higher
– Kick 2.05 (V37) or higher
– MC68020 or higher (it will play back mods on MC68000 aswell, but you
  won't get DSP, Panning, Interpolation nor ModSave).
– About 3 KB of Chip memory (without GUI)
– About 256 KB of Fast memory (plus DSP buffer and/or ModSave buffer)
– OCS/ECS/Cgfx/P96 machine
– Speakers/Amplifier or Headphones

Recommended:
– Kick 3.0+ (V39) or higher (for busy pointer :) )
– MC68040/MC68060 or higher
– plenty of Fast memory
– ECS/AGA machine with MultiScan screenmode or a Cgfx/P96 machine

Developed on:
– A4000TE/60, 42MB, 3.6GB HD, CDR, ZIP, CV64, FliFix

Have a look at the  CPU Timing table  to see the CPU usage.


## 1.4   Introduction...

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                              Introduction
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```

This is a new and pretty enhanced version of the well known 14Bit
NotePlayer that came with the original DeliTracker distribution. After
Peter Kunath gave me the sourcecode, I was able to add various features
(listed below).

Please notice that you need at least an MC68020 to use them as the MC68000
routines have been left untouched! So there's NO reason for MC68000 owners
to use this new genie (personally, I think that MC68000 users suck for not
upgrading their machines).

Even if you don't use the new features, I recommend to use this version for
it has a faster chipmem transfer routine than the one in V2.3.

Plenty of cpu power is appreciated (although the Genie will not be slower
when not using the new features). You will need an MC68060 to be able to
mix at frequencies higher than 50KHz with Panning and Interpolation and 32
voices 8-D

Small list of new features/improvements:

- Now uses a faster longword pipelined chipmem transfer.
- Added Panning support (e.g. for FastTracker modules).
- Added stereo width slider (so this incorporates the HeadPhones Genie).
- Added Interpolation mode for high quality mixing.
- Added DSP Routines: Echo (Reverb), Hall (Reverb with feedback) and
  Reverser (each one is available in Mono, Cross or Center mode).
- Added ModSave function (16 Bit AIFF or RAW file).
- The ModSave routine has a Normalize option which will do a peak search.
- The ModSaver also will cut off NULL-samples at the beginning and at the
  end of a saved soundfile (optional).
- Peak search can also be done when not using ModSave. Average peak level
  and maximum peak and the optimal boost value are displayed in the window.
- Actual (DMA) mixing frequency is now displayed aswell.
- Now uses a 256 samples buffer instead of 200, which speeds things up a
  little and doesn't cost too much precision.
- Settings can be saved individually for each module (prefs file is stored
  either in a separate directory or along with the module.

## 1.5   How to install this great software...

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                              Installation
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```

Just place the main file into your DeliTracker/Genies folder (by replacing
the old 14bit NotePlayer). The ModPrefs drawer used for saving individual
settings will be created automatically on first use.

## 1.6  Changing the settings...

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                              Configuration
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```

Load up DeliTracker, select the 14Bit-NotePlayer from the  list  of  Genies
and  click on Show to open up the GUI window. If you want the window to pop
up at start already, checkmark the 'Settings/Popup' menu item.

Deli14Bit uses a two-way approach to for the prefs. There are global  prefs
and  ModPrefs.  The  global  prefs  store the menu settings, window position
etc. and a set of preset DSP settings ('1'-'4'  buttons)  whereas  ModPrefs
(Channel   Toggles,  Boost  Value,  Frequency,  Panning,  Interpolation+DSP
Settings) can be stored individually with each module.

Why do I think this  is  useful?  Each  module  has  different  properties:
volume,  number of channels, beats per minute, etc. Especially modules with
more than 4 voices normally need custom Boost  settings  as  the  AutoBoost
can't  guess the real usage of the channels. Moreover, the DSP settings are
very dependant on the speed and the type of the module. So it really  makes
sense to save individual ModPrefs.

At  any  time  you  may  reload  or  save  the  current  settings  with  the
'Settings/Load Global Prefs' and 'Settings/Save Global Prefs'.

You  can  store  the  current  Settings  for  a  module  either  using  the
'Settings/ModPrefs/Save  ModPrefs'  item  or  the  'M'  button in the Store
section of the DSP-Settings.

The prefs file is normally stored in a drawer  called  "ModPrefs"  in  your
DeliConfig  directory  (the  original filename of the module is used). Some
people have told me, that this not very handy if you want to distribute the
ModPrefs  along with the module (moreover, you could only have one ModPrefs
file for two modules with the same name in different drawers). So  I  added
an  alternative mode, that can be enabled using the 'Settings/ModPrefs/Alt.
Saving Path' menu item. In this mode, the prefs are saved  along  with  the
module  with  an  '.14b'  suffix appended. You are encouraged to filter the
'.14b' files  with  an  additonal  entry  ("#?.14b")  in  the  'DeliTracker
Options/Pattern'  field. Please note that the prefs file cannot be saved if
the filename already consists of  30  characters (so  ".14b"  wouldn't  be
appended).  This  case is checked for, don't worry to overwrite your module
with ModPrefs. On file systems that allow the  usage  of  longer  filenames
(AFS, SFS etc.), this is no problem at all.

If you want to copy settings etc., ModPrefs may be  stored  to  and  loaded
from  other  locations  aswell. Use  the  'Save  ModPrefs as...' and 'Load
ModPrefs...' items to achieve this.

ModPrefs can be deleted again by manually removing  the  settings  file  or
loading  the  module  and  using  the  'Settings/ModPrefs/Delete ModPrefs'.
Again, 'Delete ModPrefs' will not delete the module file if the  file  name
already contained 30 characters and the prefs file would accidentally point
to the module.

No matter what saving mode for the ModPrefs is used, the Genie will  always

try  both  ways  to  find  a  prefs file. If a valid file is found (further
called ModPrefs-Mode), the current prefs will be backed up and the ModPrefs
will  be  loaded. When ejecting the module, the last settings will be
restored again. In ModPrefs-Mode, the 'M' and 'B' buttons become available.
The  'B'  gadget allows to load the backuped DSP Prefs and 'M' restores the
ModPrefs.

Starting with V3.00, there's an option ('Frequency Override') that will fix
the frequency to the value *you* entered (e.g as global frequency), even if
the individual ModPrefs would like to use different  values.  This  can  be
handy  if  you  temporarily  have  to  work with a PAL-screenmode which only
supports 28KHz but all your individual ModPrefs use 44KHz.

In conjunction with this feature, you can checkmark  the  'Auto-adapt  DSP'
option,  which will ensure that the DSP Delay remains the same, even if you
change the frequency (either by hand or when using ModPrefs).

Please note that the configuration format of versions below V2.65 had to be
extended  and  is  not  compatible anymore (and will not be imported). I've
introduced  a  new  prefs  format  introduced  with  V3.00,  but  the  old
V2.65-V2.67  prefs files can be loaded without problems, but I recommend to
save the prefs back in the new format for future compatibility.


## 1.7   The new mixing routines...

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                           The Mixing Routines
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```

These are the main new features of my  Deli  14Bit  NotePlayer  Genie.  But
let's have a look at the internal data stream first:


```
 _____      _____      _____
|Channel 01|--->|    DeliMix:   |      | DSP Routines:  |
 ~~~~~~~~~~     |   ~~~~~~~~    |====>| ~~~~~~~~~~~~~  |===.
 _____     |Scaled 8 bit   |      |Stream is saved |  ||
|Channel 02|--->|samples are    |   .=>|and fed in after|  ||
 ~~~~~~~~~~      :mixed together :  || |certain delay   |  ||
 _____     :to a 16 bit    :  || |                |  ||
|Channel 31|--->|buffer. Panning|  ||  ~||~~~~~~~~~~~~~   ||
 ~~~~~~~~~~      |and Interpol.  |  ||  _VV_____   ||
 _____     |is applied here|  '==| DSP Buffer    |  ||
|Channel 32|--->|               |   |  |                |  ||======.
 ~~~~~~~~~~      ~~~~~~~~~~~~~~~      ~~~~~~~~~~~~~~~~   ||     ||
                                              _____||_   _||_____
                 _____  | 14 Bit Output: | | ModSave: |
 _____ |Paula Audio Channel 0|<-|  ~~~~~~~~~~~~~~   | | ~~~~~~~~ |
|Left Speaker  |<-|--------------------|  |Creates 14bit data| |Buffer is |
 ~~~~~~~~~~~~~    |Paula Audio Channel 3|<-|using the boost   | |copied to |
                 ==================== |table, optional   | |a file    |
 _____    |Paula Audio Channel 1|<-|peak search is    | |buffer    |
|Right Speaker|<-|--------------------|  |done, uses 32bit  |  ~::~~~~~~~
 ~~~~~~~~~~~~~    |Paula Audio Channel 2|<-|pipelined chipmem |  _::_____
                 ~~~~~~~~~~~~~~~~~~~~~   |writes            | |Save-Task:|
```

```
                                    ~~~~~~~~~~~~~~~~~~   |~~~~~~~~~~|
                                                        |Saves file|
                                                         ~~~~~~~~~~
```

--------------------------------------------------------------------------------
                                    Panning
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Panning is AFAIK currently only supported by FastTracker and OctaMed
Soundstudio Modules, but you can enable it at any time to reduce stereo
width (e.g when listening with headphones or recording a module to tape or
when burning it to CD). The panning routine is rather fast and will not use
much additional cpu power unless you use it together with interpolation
which nearly doubles the time used for mixing.

The stereo width slider can only be dragged with panning enabled. A setting
of 0% yields to perfect mono sound whereas 200% tries to increase the
separation. Settings between 100% and 200% do not make any difference on
Players without panning support.

There's a 3D mode about to be implemented which uses phased sound, but it's
not ready yet.

--------------------------------------------------------------------------------
                                  Interpolation
--------------------------------------------------------------------------------

Turning the interpolation on will generally yield smoother sound. How does
this work? Normally, the sample frequencies in most modules are much lower
than the output frequency. So the routine takes the instruments and
calculates the values inbetween two samples, therefore creating smaller
steps. Unfortunately, this normally makes some instruments sound a bit damp
on the other hand. I recommend this on modules with hifi samples, so better
keep it off on chip tunes.

Please note that this routine does ONLY interpolation and NO SMOOTHING. So
a sample with higher sample rate than the mixing frequency is not
interpolated in any way.

Also note that with interpolation enabled you can lower the mixing
frequency a lot and normally still get pretty good sound quality (for
Protracker Modules 28KHz is normally sufficient). There's also a little
'anti-knack' effect, but it isn't worth mentioning.

Interpolation takes lots of cpu power (each sample word needs one MULS
instruction!) to perform. This gets much worse when panning is enabled too,
for then both the left and right part of the sample need to be interpolated
separately.

## 1.8  DSP Routines...

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                                    DSP Routines
                    -------------------------------------------------------------------------
```

The DSP is something I always wished to have in the 14bit Genie. The
effects performed by these routines give most modules a whole new dimension
and depth of sound.

The DSP effects can be applied to the same channel (Echo,  Hall,  Reverser)
or alternating between the channels (Cross-Echo, Cross-Hall, X-Reverser) or
in the middle (Center-Echo, Center-Hall, Y-Reverser).

Echo-DSP: Adds a single echo to the audio stream after the given delay.

Hall-DSP: Adds a echo to the audio stream which will be reused for the next
          echo (feedback).

Reverser: The original source is written to  the  audio  stream  after  the
          specified delay. Several echos with increasing volume  are  added
          before the delay point (this creates an effect as if the sound is
          played reverse, but in fact it isn't).

There are two parameters to play with. The first one is the Delay. How much
time  passes until you will hear the feedback depends on the slider setting
aswell as  the  DSP  buffer  size  and  the  mixing  frequency.  The second
parameter is the volume: It controls the loudness of the DSP feedback. Just
play around with it a little bit.

Please notice that you should lower the main volume when using DSP  volumes
of  100%  or  50%  by the same amount. Otherwise you probably will get some
distortions (watch the maximum peak level and avoid getting a  100%  peak).
In  depth  explaination: If you look at the
                 Mixing Diagramme
                 , you can see
that DeliMix uses 8 bit samples, that have been scaled to produce no 16 bit
overflow when added (so the with full main volume, the maximum peak is 100%
when all channels are playing with full channel volume). Now the DSP stores
this  stream  and  feeds it back to the buffer, resulting in a maximum peak
above the 100% which gets cut  off.  With  multichannel  mods  this  not  a
problem  as  they  often  don't  play  all  channels  at the same time, but
4-channel modules tend to do so. The solution is to lower the main  volume,
so that the stream does not exceed the 16 bit range after the DSP.

Remember that you can save the DSP  and  other  settings  individually  per
module and you should really do this.

Starting with V3.00 there is also a bank of presets which can be stored and
fetched at any time by clicking on the appropriate button. This allows very
fast switching between favourite effect settings. The two gadgets  'M'  and
'B'  are  ghosted  unless  you've  loaded a module with individual settings
(ModPrefs-Mode). In this case, 'M' (Module) will restore the  DSP  settings
from  the ModPrefs, whereas 'B' (Backup) returns the DSP values used before
you've loaded the module.

The 'M' button on the Store  side  of  the  panel  will  save  the  current
ModPrefs  for the module (just like the menu option 'Settings/ModPrefs/Save

ModPrefs').

Luckily, the DSP Routines are quite simple and normally don't need much cpu
time to perform (I'd say it's roughly the power of 3-4 additional channels.
The Reverser however, needs a bit more time than the Echo or  Hall  effects

(see  CPU Timing Table  for details).


## 1.9  The ModSave Option

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                              ModSave Option
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```

For the ModSave Genie which comes with the  DeliTracker  distribution  only
supports 8 bit output I've added this feature to the 14Bit NotePlayer.

You can either save the music as standard AIFF 16bit stereo  sample  or  as
raw  pulse  coded  binary  file  (the  left/right  channel  words are saved
interleaved). You can select either kind in the 'Settings/ModSave' menu. An
AIFF-ADCPM4  mode,  which  uses  the ADCMP routines by Stéphane Tavenard is
about to come, if I get my motivation back.

If you need other sample formats, I recommend to use  (Ami)Sox  to  convert
the file to the required sample format.

To save a module as a sample you need to enter  a  valid  filename  in  the
string  gadget  and then tag the save checkbox (before loading the module).
If you press return (or  tab)  in  the  empty  filename  string  gadget,  a
filerequester  will  pop  up  asking for the name of the file to save. This
will also happen if you tag the save checkbox  and  no  name  is  given  in
string  gadget.  Starting  with  V2.67,  there's also a simple button ('*')
which will pop up the file requester aswell.

The realtime saving needs a fast machine and a fast  harddrive  (preferably
SCSI  for  AT-IDE  needs  cpu  power  to  poll  the  data).  If  you  get
Overflow-Errors, try to lower the sample rate or use a faster drive.  There
is  also  a  new  Stop-Motion  Mode  for  very  slow  machines  (use
'Settings/ModSave/Stop-Motion Mode'). It will pause the module  during  the
harddisk  access. This is experimental (for there's no internal way to tell
DeliTracker to pause the module) and requires RexxMast running and  the  RX
command in your C: drawer. Please report if it works on your computer.

The ModSave subtask runs at priority +1 to avoid being locked out for a too
long period.

The routines are auto-sensing for the beginning and the end of  the  sample
(so  there  will  be  neither  NULL-bytes  in front or at the end). You can
toggle these features with the 'Settings/ModSave/Trigger  Saving'  and  the
'Settings/ModSave/Cut Trailing Zeros' options in the ModSave menu.

The saving will be automatically stopped when any error occurs (there might
not be any error message though (i.e. no memory for buffers)).

Please note that the Boost-Slider will have no effect on the overall volume
of the written sample (see
                  Diagramme
                  for details)! If you're using DSP
Effects PLEASE keep the master volume low enough so you will NOT get a 100%
maximum peak (or the resulting sample could be distorted), especially when
using this sample for burning it onto CD.

There is an option to automatically Normalize the resulting sample (i.e. to
make it as loud as possible without distorting it). For this step, the
maximum peak of the sample is scanned for during the mixing process (so
this needs very little additional cpu power if you enable it) and will then
adjust the volume of the sample AFTER the saving has been stopped (so don't
worry if your drive gets busy after the module has finished). You'll get a
busy pointer until the wave processing has been completed (Kick 3.1
required for the busy pointer to appear).

After any successful (!) saving process the Save checkbox gets untagged
automatically to avoid overwriting the previously saved samples by a new
one.

A short note: The AIFF file will use the frequency value you've entered in
the Mixing Freq. box. If this value differs from the actual DMA output
rate, the pitch of sample might be a bit offset on other computers. On the
other hand, this allows you to create e.g. '44100 Hz' samples (which are in
fact mixed at 44336 Hz) to burn them onto CD (as some programs don't accept
other rates).

Note that enabling the ModSave feature will increase the amount of (Fast)
memory used by 256KB.

## 1.10  AutoBoost Options

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                            AutoBoost Options
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```

With the 'Auto'-Button enabled, the Genie calculates the volume boosting
factor automatically by counting the amount of channels used with a module.
Now some guy had told me, that he noticed the AutoBoost calculation being
to low for most modules. So he asked me, if I couldn't add an option to
customize this factor.

I don't want to explain more on this topic. Just try it.

## 1.11  Known Bugs

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                              Known Bugs
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```

The only 'bug' I'm aware of, is that the Peak  and  DMA  displays  are  not
updated when the window is not active. But there are some other 'DO NOT's:

– Don't change the mixing frequency while the DSP is turned on.  This  will
  not do any harm, but may cause odd sounds for the buffer is not cleared.

– Changing the buffer size while playing will clear the old buffer. Just be
  aware of it (there's no way to avoid this).

– Don't fiddle with the mixing frequency while using the ModSave  function.
  This  just  causes  the  sample  to sound wrong (you can't have different
  frequencies in one sample file).

– Please don't toggle the Panning setting while using the ModSave function.
  This could cause some 'leaks' in the resulting file (this  has  not  been
  tested though).

– Please don't change the type of file to write while saving. This probably
  just  will cut off the beginning of the sample or will give you a useless
  AIFF header.

– Turning on the Normalize Wave function after saving has started  (and  no
  Calculate Peak option being enabled) may lead to distorted samples if the
  maximum peak already has been passed.

The Genie has been tested with Enforcer and MungWall, but if you  encounter
any  bugs  or  flaws, please report them. I also appreciate any comments on
the new features or suggestions for futher versions.


## 1.12  Acknoledgements

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                          Acknoledgements
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## 1.13   The Future

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                                 The Future
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Since the first release in June 1998 nobody seems to use this Genie,  as  I
didn't  receive  a single postcard. So I consider futher development just a
waste of time. If you don't agree, LET ME KNOW THIS. I've invested a lot of
time  and  work  already, maybe it's time for you act now? I didn't request
money, no, all I asked for was a tacky postcard. Even this seems to be  too
much  for  all  of  you people. Amiga users don't seem to give a shit about
software authors unless you cripple down the software to unusable crap (and
I  really  thought  about crippling the Genie). You're thinking I'm feeling
bitter? Yeah, to tell the truth, I'm really pissed off!

Some people gave their feedback and motivated me to keep on working on  the
Genie (thx again ppl!). There have been quite a lot interesting suggestions
as adding a Binaural feature (creating alpha  brain  waves),  real  3D  and
surround  modes,  ADCMP4  saving mode etc. but at the time writing, I'm not
willing to add these features. Make my day.

## 1.14   Version History

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                               Version History
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V3.00 (17-Jan-99):
  - Nearly all of the gui routines and other internals have been rewritten.
    (GadToolsBox code really sucks and so does direct/absolute addressing).
    Doesn't  make  much difference when looking at it, but object code size
    apparently became smaller than the first V2.65 release  (before  adding
    all of the new features).
  - Fixed some enforcer hits introduced with V2.67.
  - Introduced new (IFF) prefs format to store all  the  new  options.  Old
    V2.65/V2.66 prefs files will still be read correctly.
  - Added quick Get/Store DSP preset buttons as requested.
  - Fixed a possible crash on Kick 2.0 machines for  the  BusyPointer  that
    should  have  been showed while normalizing the waveform after ModSave,
    as it is a Kick 3.0+ only feature.
  - Found and fixed a bug in the peak level routine. Added  an  option  to
    calculate  the maximum peak even when not actually using ModSave. More-
    over, the optimal boost level is also displayed. This new  peak  search
    routine is somewhat faster than the old one.
  - Maximum Boost has been increased from 8.00 to 9.99.
  - ModSave  file  requester didn't  split  path  and  filename  into  its
    components when popping up with the old file path.
  - Implemented Stop-Motion Mode for ModSave for very slow  machines.  This
    allows  you  to  do  ModSaving if your machine is not fast enough to do
    both mixing and saving at the same time.
  - Increased ModSave buffer size to  256KB (so  the  saving  doesn't  get
    aborted when using opaque window movement etc.).
  - Added two options in the ModSave menu to control the triggering and the

removal of trailing zero samples.
  – Increased speed of chipmem transfer once more (at least for fast
    machines).
  – Implemented alternative ModPrefs saving path option. This allows  prefs
    being saved along with the module.
  – Added menu options to load, save (with  file  requester)  ModPrefs  and
    delete existing ModPrefs.
  – Added option to modify AutoBoost factor (as requested).
  – Implemented Frequency Override. When this tag is enabled, ModPrefs  and
    DSP  presets do not change the global frequency but stick to the global
    one.
  – Added Auto-adapt DSP (as requested). This option ensures that  the  DSP
    delay stays the same if you change the frequency.
  – Converted doc file into AmigaGuide.
  – DSP buffer was not cleared on stop. Fixed.

V2.67 (07-Oct-98) (not released on AmiNet):
  – ModSave Filename was not stored  anywhere. This  could  cause  problems
    (enforcer hits?) when  the  save flag was enabled, but the genie window
    had been closed. Also the file name was lost when the genie window  had
    been reopened. This problem has been fixed.
  – ModSave CheckBox setting is not used with local ModPrefs anymore.  This
    caused  a  lot  of confusion when trying to record a module with custom
    module settings.
  – Some gadgets were not updated (Stereo Width slider), when  loading  new
    prefs.
  – Effect Delay slider was not updated when frequency went down due to too
    high cpu load. Fixed.
  – Effect Delay slider now displays the amount of milliseconds up to  9999
    (requested  by Dion Wooning), beyond this value it switches back to the
    old seconds display.
  – Changed the layout of some gadgets a bit and added a simple button  for
    the ModSave file requester.

V2.66 (16-Jun-98):
  – Doubled the ModSave Buffers (now 128KB) for slower  machines  to  avoid
    overflows. This flaw has been reported by Ralph Bernecker.
  – Detected a bug which would not flush the last ModSave Buffer if  a  PCM
    RAW file should have been written. Fixed.
  – Added feature to cut off trailing NULL-samples when doing a ModSave.
  – Added busy pointer during truncating or normalizing process.
  – Now you'll get a file request when pressing return in an empty Filename
    string gadget.
  – All settings can now be saved individually for each module.
  – Interpolation routine now uses  15bit  accuracy  instead  of  8bit  for
    subsample factor calculation (just a little bit slower).

V2.65 (06-Jun-98):
  – First public (AmiNet) release of the new version.

## 1.15  Contacting the Author...

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                          Contacting the Author...
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Feel free to contact me. And send me a Postcard or something. Or ask me for
the keyfile.

Any mail, comments or donations welcome:

```
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```