

OptiMod

OPTIMIZE MODULE
A powerful moduleoptimizer
Version 5.20

16th of March 1994

by Joakim Ögren

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It may not be included in any commercial products without contacting the author before.

1 Requirements

OptiMod 5.20 runs only with version 2.04 (V37) or higher of the operating system. It utilizes many of OS2.04's features to get it as fast, short and powerfull as possible. If you don't have version 2.04 of the operating system I can only say: Upgrade :-)

1.1 PowerPacker

powerpacker.library is an excellent library for decrunching of files by Nico François. It's availble on most BBS's & from all PublicDomain distributors.

1.2 ReqTools

reqtools.library is an excellent library for displaying requesters by Nico François. It's availble on most BBS's & from all PublicDomain distributors.

2 Distribution

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It may not be included in any commercial products without contacting the author before.

All files are also classified as **SHAREWARE**. That means that you are not allowed to use for a longer time than two weeks if you haven't paid the shareware fee. But you are allowed to distribute it. More about the shareware fee later. See Chapter 11 [SHAREWARE], page 17, for more information about how to become a registered user.

Fred Fish have the right to include OptiMod in his Amiga Library. Other makers of PD-series also have the right to include it as long as all rules above are respected.

Please respect these rules, and I will continue to make new versions of OptiMod.

All files:

OptiMod	MainProgram
OptiMod.info	icon
OptiMod.doc	Documenation
OptiMod.doc.info	icon
OptiMod.guide	Documentation in AmigaGuide-format
OptiMod.guide.info	icon
OptiMod.dvi	Documentation in DVI-format
OptiMod.dvi.info	icon
OptiMod.RegForm	Registration form
OptiMod.RegForm.info	icon

3 Disclaimer

OptiMod is provided AS-IS.

The author cannot be held liable for the suitability or accuracy of this manual and/or the program(s) it describes. Any damage (software or hardware damage) directly or indirectly caused by the use or misuse of this manual and/or the program it describes is the sole responsibility of the user her/him self.

4 IMPORTANT!!!

DO NOT USE `OptiMod` ON MODULES THAT AREN'T COMPLETELY FINISHED. THIS MAY CAUSE SOME NOT YET INSERTED PATTERNS/SAMPLES TO BE DELETED!!!

DON'T BLAME ME IF SOMETHING GOES WRONG, I HAVE NOTE YET FOUND A MODULE THAT WERE CORRUPTED AFTER OPTIMIZING. AND I HAVE TESTED ON ABOUT 4000 (!) MODULES.

THE MODULE WILL SOUND EXACTLY THE SAME AFTER OPTIMIZATION AS BEFORE!!!

If `OptiMod` crashes or won't optimize a module correctly, please load it into ProTracker and save it again.

If newer versions of ProTracker changes the fileformat or adds new advanced commands, I can't guarantee `OptiMod` to work correctly!

5 What is OptiMod?

OptiMod is a utility to optimize NoiseTracker and ProTracker modules. All modules must be in the 31 instruments fileformat and be a ProTracker/NoiseTracker module. ie **OptiMod** won't accept any StarTrekker or 15 instruments SoundTracker modules. To use **OptiMod** on any of them please load them into ProTracker (or some other Tracker) and save it again.

I began to program **OptiMod** when I saw that most modules were longer than they would have to be. And the stupid fileformat of modules doesn't make it shorter. Unused samples & patterns exists in almost all modules. **OptiMod** will try to correct these faults. Some other authors have already tried to do this but in another way: Azatoth of Phenomena with his ProPacker, but it changed the whole format and deleted all instrument names etc. There exists some more programs that do the same thing, The Player is one example.

OptiMod will keep all instruments names & not change the format. It will just rearrange the patterns & delete unused samples & patterns.

OptiMod will keep the old format, but if you keep all your modules compressed/packed I would strongly recommend the NewPM option. By using **OptiMod** with the NewPM option the module will be saved into PowerMusic moduleformat. When you crunch/archive them you'll gain about 10% more than just crunching it.

YOU'LL SAVE ABOUT 40-50% WITH NEWPM OPTION + LhA (by Stefan Boberg)

But now with **OptiMod** you can optimize modules and they will sound EXACTLY the same.

OptiMod has also the ability to check who has done the module. If you use the Verbose (No option), Short or Name mode you'll see the authors name (if any). **OptiMod** will search thru all sample names for strings.

5.1 Rearrange patterns to take less space.

For instance by using pattern 0,1,2 & 6. All patterns in the middle will be saved (3,4 & 5) but unused and empty. This will gain 1024 bytes per deleted pattern. **OptiMod** won't delete any used pattern. As long as it's in the 'SongPositions' it will be left. Duplicate patterns will be removed.

5.2 Delete unused samples.

Every unused but existing sample will be deleted. Why should you keep them?

5.3 Cut away zeros in the end of Samples.

If a instrument/sample ends with many zeros they will be cut away. This will not affect how it sounds, if the zeros is in a loop they will not be deleted. At least 2 zeros is always left to make the sound not 'click' at the end.

Sample data after a loop is deleted. Watch out if you're using the command to start playing a sample at a certain offset.

5.4 Delete Garbage

If the module contains garbage at the end of the module it will be cut away. Some rippers save some bytes extra just in case. But `OptiMod` will cut them. Please note that Garbage gain can be negative. If it is negative the module wasn't correct at the start. `OptiMod` will add some zero bytes were it should be. (Load it into ProTracker, and you'll see the same result)

5.5 NoiseTracker REPLEN

Old NoiseTracker replen to be converted to ProTracker replen. This will automaticly be done. This will make the module SOUND a lot BETTER. Fixes a lot of problems.

5.6 Clear unused samples

All empty or unused samples data it will reset and clear:
FineTune/Size/RepLen/RepPos/Volume but not SampleName.

If the module has used an nonexistant sample it will not sound BAD in some badly written players.

6 Template

OptiMod can be started from Workbench as well as from CLI.

The CLI template is:

```
OptiMod  SOURCE/M,DEST=DESTINATION/K,SHORT/S,XG=SHORT2/S,QUIET/S,REQ/S
          NS=NOSAVE/S,NPAT=NOPATTERN/S,NSMP=NOSAMPLE/S,VERBOSE/S
          NSMPLEN=NOSAMPLELEN/S,NA=NOAUTHOR/S,MEDIUM/S,NAME/S,NOPP/S,NEWPM/S
          FX=EFFECT/S,BUG=UNWANTED/S,NOBUFF/S,SAMPLE=INSTR/S,NRS=NORESAVE/S
```

/S is a switch, by using the option you will turn it on.

= means that you can use either one of the options. (NS is the same as NOSAVE)

Please refer to any AmigaDos 2.0 Reference for more information about Templates and modifiers.

6.1 SOURCE

The module(s) to optimize. One or many modules can be specified. Currently are wildcards¹ **NOT** allowed.

OptiMod can handle powerpacked files also. But all files will be saved as non-packed files whether or not they were packed before.

Example: OptiMod mod.BombJack "mod.It's tuesday"

Remember to put the argument within "" if it contains a space.

6.2 DESTINATION

This is an optional destination directory. If omitted the sourcefile will be overwritten, else it will be written to the destination directory.

¹ Wildcards are used to specify files that match a pattern. #? is the famous wildcard combination, it will match all files.

This is a keyword, that means that you must write:
DEST destination_path

You may not omit the keyword DEST.

Example:
OptiMod ram:tmp/mod.BlueGrass DEST dh0:mod

The module mod.BlueGrass will be loaded from ram:mod/tmp and saved to the directory dh0:mod.

6.3 SHORT

This will list:

FileSize before	(in bytes)
FileSize after	(in bytes)
Gain	(in bytes)
SongLength	(number of positions)
Real Module name	
Author	

6.4 SHORT2

This will list

FileSize after	(in bytes)
Gain	(in bytes)
SongLength.	(number of positions)
How much percent with effects	
Play time of Module. (approx.)	
Bugs in Module:	- = Legal PosJump
	P = Illegal PosJump
	I = Used nonexistent sample
	Use the BUG option for more info about
	which patterns that contains 'unwanted'
	commands.
	See Section 6.19 [UNWANTED], page 11, for more info.
Real Module name	
Author	

6.5 MEDIUM

```
This will list
  FileSize before      (in bytes)
  FileSize after       (in bytes)
  All four Gains       (Pat/Smp/SamEnd/Garbage)
  Total Gain           (in bytes)
  SongLength.          (number of positions)
  Real Module name
```

6.6 NAME

```
This will list
  Filename              (without path)
  Gain                  (in bytes)
  Real Module name
  Author
```

6.7 QUIET

No output at all, will make it go slightly faster :-)

6.8 REQ

If this option is specified `OptiMod` will bring up some requesters to choose everything with. This will require the `reqtools.library` by Nico François

This is the default if `OptiMod` is called from Workbench.

6.9 VERBOSE

If none of these output modes are selected, the optimization will be output in Verbose mode, and when I say verbose I mean **VERBOSE!**

6.10 NOSAVE

Only examine, don't save the file. This could be used to look for errors in a module that is under development.

6.11 NOPATTERN

Don't optimize patterns, default is to optimize patterns. See Section 5.1 [Rearrange patterns], page 5, for more info.

6.12 NOSAMPLE

Don't optimize samples usage, default is to optimize samples usage. See Section 5.2 [Delete unused samples], page 6, for more info.

6.13 NOSAMPLELEN

Don't optimize samples len, default is to optimize samples len. See Section 5.3 [Cut away zeros], page 6, for more info.

6.14 NOAUTHOR

Don't show authors name, default is to examine the instrument names to find the authors name.

6.15 NOPP

Don't use powerpacker.library. This will disable the loading of powerpacked files but will increase loading speed a little. It will also make `OptiMod` use a little less memory.

6.16 NOERROR

No returncode=20 whenever an error occurs. `OptiMod` will return 20 if an error occurs, this will for example directly break any script file.

`OptiMod` will currently break the execution as an error occurs, even if more files was specified.

6.17 NEWPM

This will convert the module into the new PowerMusic module format. The module will have the same size as a normal module, but when you pack with a packer/archiver it will be crunched better. `OptiMod` will always output normal ProTracker module (except when the optimization failed and no file was generated) even if the source file was a PM-module. Keep that in mind.

Don't forget to specify `NEWPM` to use the better format.

Read PowerMusic² documentation for more information.

The PowerMusic moduleformat can currently only be played from either PowerMusic (by Joakim Ögren) or SmartPlay (by Peter Hjelt)!

6.18 EFFECT

This will show some information about how much all effect-commands are used. Both graphically and with numbers.

6.19 UNWANTED

This will spot 'bugs' in a module! You can find any used but nonexisting sample. And nested pos-jumps which causes some positions not to be played. NoSave is automatically enabled. Module won't be saved. **USE IT BEFORE RELEASING ANY MODULE!!! Please...**

² PowerMusic is a moduleplayer developed by Joakim Ögren

6.19.1 Illegal PosJumps

Illegal PositionJumps are those positionjumps which makes some parts of the module not be played. If the positiontable are like this:

```
Position:  0  1  2  3  4  5  6
Pattern:   4  5  1  0  3 2  4
```

If pattern 3 contains a posjump to position 6 will Pattern 2 never be played.

The posjump command was invented to be used in the end of a module to jump to the middle for better repeating of the song, not to be a substitute for the patternbreak command!

6.19.2 Used nonexistent samples

If a pattern contains data that will play a sample that don't exists I'll classify that as a bug. This could have been caused by either that the sample has disappeared or that author haven't thought of it.

6.20 NOBUFF

In normal cases OptiMod will allocate a little extra bit of memory after the module, in case that the module are trashed and some instruments are missing. Then it will save zero's at the end instead of trash. By using this option you'll save some bytes of memory. Only use this if you're short of memory.

6.21 INSTR

This will list all instruments. NoSave is automatically enabled.

6.22 NORESAVE

OptiMod won't save the module if you haven't gained anything unless you want to change the format. From ProTracker to PowerMusic format or the other way. (Good for floppy-only users.)

7 Examples

<code>OptiMod req</code>	Use a requester to choose modules.
<code>OptiMod mod.LetsRock ns</code>	To just analyze the module. Great for musicians.
<code>OptiMod mod.LetsTwist name newpm</code>	Optimize module, save as the same name as the Source. Show it in Name output mode. Output format=PowerMusic
<code>OptiMod mod.LetsBoogie dest T: nsmp</code>	Optimize everything except sample usage, and save as T:mod.LetsBoogie

8 Tips about Usage

It's smart to use OptiMod in conjunction with DirectoryOpus, here is two gadgets to use in DirOpus (v3.51 or higher).

Directory Opus is Copyrighted by Jonathan Potter 1990-92
Published by INOVAtronics

8.1 DirOpus-OptiMod

```
Button:      OptiMod

Executable   OptiMod {f} newpm short2

Flags:      * Output window
            * Recursive directories
            * Do all files
            * Reload each time.

CloseDelay: -1
```

8.2 DirOpus-OptiModCheck

```
Button:      OptiMod Chk

Executable   OptiMod {f} nosave

Flags:      * Output window
            * Recursive directories
            * Do all files
            * Reload each time.

CloseDelay: -1
```


9 Message to all Musicians

All modules will sooner or later be ripped or spreaded. But when this happens it's better that you, the author of the module gets the credits instead of no one. Please try to write your name in the first instrumentname in every new module you make!

INSTRUMENT 1: #JOAKIM OGREN_____

And it would be good if you included your adress some place in the module as well. Many musicians already do this but some musicians don't. Please do it in the future!

10 Thanks to

Niklas Edmundsson

For helping me with a lot of testing!!!

Marcus Ottosson

For some optimizing with the PowerMusic routines! Thanks alot!

Peter 'Crayon' H

For his ProTracker. Get in touch if you want to include this in the ProTracker.

Freelancers

Previous ProTrackers..

Mahoney & Kaktus etc...

For all other Trackers.

Nico François

For his two Great libraries (powerpacker & reqtools) which I have used in some of my other programs.

Robert Wahlström

For beta testing some of my programs. He has also hatched my programs into San sometimes.

Pierre Andersen

For some modules.

Martin Larsson

For some modules.

Kalle Kiviaho

For some suggestions and some modules.

Per Salmi

For hatching into file-distribution nets.

Myself

For making this wonderful program.

11 SHAREWARE

This program is **SHAREWARE**! If you use it you are urged to pay the shareware fee! All users who pay the shareware fee will be inserted to the list of registred users!

You're allowed to use this program for trial period no longer than two weeks, if you find this program usable after that trial period you must register yourself. Register yourself by sending 50 SEK or US\$10¹(by international money order/postal money order in SEK, look at Registration Form for more info). As registred user you'll get the latest version of **OptiMod** If a new version is under development I will wait until it's ready before sending the programs. Please remember that a lot of time and money have been spent on **OptiMod** and other QTech Tools. You **SHOULD GET** yourself **REGISTRED** now!

Continuing to use **OptiMod** without being registred is both illegal and immoral!

Or send the money to Svenska Postgirot PG 9203446-1.

¹ Please compare the fee with shareware fee's for other programs, and you'll find that this is the cheapest & best software you'll ever find.

12 Author Info

Happy OptiMod-ing! Please send any bug report or enhancement request to:

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 Snipgränd 69
 S-90624 UMEÅ
 Sweden

NetMail: 2:205/420 (Joakim Ogren) (No dots above the 0)

13 >> REGISTRED USERS <<

List of (nice) registred Users:

Niklas Edmundsson (Sweden)

Mathias Andersson (Sweden)

David Elfström (Sweden)

Marcus Ottosson (Sweden)

Mario Gonzalez (Norway)

Josef Fuchs (Austria)

Johan Hillnäs (Sweden)

Staffan Hämälä (Sweden)

Mats-Olov Rustad (Sweden)

Patrik Lundberg (Sweden)

Billy Lundgren (Sweden)

Lars-Åke Vallin-Silverek (Sweden)

Mikael Nordlund (Sweden)

Micke Persson (Sweden)

Martin Larsson (Sweden)

Ulf Andersson (Sweden)

Håkan Engelström (Sweden)

Kalle Kiviaho (Sweden)

Christophe Wegmuller (Sweden)

Marcus Ottosson (Sweden)

Hopefully is no one forgotten.. Consider to registrer yourself.

14 History

Changes for OptiMod

14.1 Version 0.1

Started: 9206??

- The project started! Wasn't that a good change :-)

14.2 Version 1.0

Released: 920704

- It could have been the first public release but I wanted to Betatest it a while longer.

14.3 Version 2.01

Released: 921107

- First public release. No known BUGS!!! OptiMod has been Betatested for a long period of time now.

14.4 Version 2.10

Released: 921116

- OptiMod will now optimize about 200-300 bytes more, this was accomplished by cutting away 1 & -1 in samples also. This makes no noticeable difference but some samplers seems to be a bit untuned (eg no sound = -1 or 1 instead of 0).
- OptiMod is now even more foolproof.

14.5 Version 3.00

Released: 921213

- Added support for the new fileformat: PM-module. This is a moduleformat which is to be used with PowerMusic when it comes. Read Main doc.

14.6 Version 4.00

Released: 930129

- Harddisk crash destroyed my source, I had to restart all my work from v2.99. *#&%
- Added option: SHORT2/S - New listmode.
- Added option: EFFECT/S - Show all effect commands.
- Added option: UNWANTED/S - Spot 'bugs' in a module.
- Added option: NOBUFF/S - No extra buffer. Read Doc!
- Added option: INSTR/S - Show all instruments.
- Great enhancement of the author find routine!
- Now deletes duplicate patterns.
- Deletes data after a sample loop.
- These options will allow you to gain a few more bytes.
- If a sample is empty or unused it will reset and clear: FineTune/Size/RepLen/RepPos/Volume

14.7 Version 4.30

Released: 930616

- OptiMod seems to be 100.00 % safe now!
- Added option: NORESAVE/S - Don't save if no gain! (For floppy users mostly, suggested by Kalle Kiviaho)
- Added Time estimation in Short2 mode. Estimates the time it will take to play the module. (Not 100% perfect yet.)
- Added conversion for old NoiseTracker replen to be converted to ProTracker replen. This will automaticly be done. This will make the module SOUND a lot BETTER. Fixes a lot of problems.

- Enhanced the optimization routines, could save more bytes.

14.8 Version 4.40

Released: 930625

- New routines in v4.30 caused the modules to crash sometimes, I'm **very** sorry for this! *
NEVER USE V4.30 AGAIN!!!! *

14.9 Version 4.41

Released: 930627

- Optimized code, shorter executable.
- I'm not using MCAsm (assembler) anymore cause of all bugs! It generates wrong code!
- Some 020+ commands (oops) removed to become 100% compatible with 000 processors.

14.10 Version 5.00

Released: 931215

- Been a while since last update! Sorry for the long delay!!!
- Just to be noticed: Over one & a half year since v1.0 :-)
- New faster PowerMusic decoding routines used, Thanks to Marcus Ottosson for sending them to me!!!
- Instruments that are used without any note, ie in Chip-mods where instruments often are used just to change the sound, they're not 'retrigged'. OptiMod will not optimize away those samples anymore.
- Routine that optimizes unused samples rewritten a bit (ie rewritten alot :-). A nasty bug removed. Haven't occured for me yet anyway, sample 16 could sometimes be optimized away.
- Nasty bug removed that caused OptiMod to crash if the module was corrupted (instrument number>31) OptiMod will now repair those modules.
- If the instrument names are corrupted they will not trash the display when they are displayed with option INSTR.

- Removed some strange text ('x123x') from the verbose output, it was printed at top of sample optimization. I must have used it for some debugging?!
- Added option: REQ - For a small GUI. See Section 6.8 [REQ], page 9, for more info.
- OptiMod didn't seem to handle the situation if there was no output window available before, it just crashed. Not anymore.
- OptiMod can now be started from Workbench, it also includes a beautiful icon. See Chapter 6 [Template], page 7, for more info.
- OptiMod can now handle multiple files to optimize. This will speed up a lot of things, since OptiMod don't have to be loaded each time.
- The DESTINATION option has change a little bit. In previous version did it require a filename as argument. It will now instead require a directory (due to the Multiple file handling). DESTINATION is now a keyword. See Section 6.2 [DESTINATION], page 7, for more info.
- The documentation is almost completely rewritten. I hope this one is better.
- Documenation is included as AmigaGuide-, Text- and DVI-file. Be sure to use a textviewer that supports bold & italic. The DVI-file is not 100% finished yet.. I'm sorry for that.
- It's now possible to pay the registration fee to the 'Svenska Postgirot'. See Chapter 11 [SHARE-WARE], page 17, for more info.

14.11 Version 5.10

Released: 940103

- MAJOR BUG: Most of the options that could be specified from Shell didn't work!! Major mistake by me! THIS VERSION WILL WORK..
- Niklas Edmundsson found some strange spellingerrors in the documents, as usual! Fixed!
- Happy New Year... Let this be a year with lots of new & great software for the AMIGA!

14.12 Version 5.20

Released: 940316

- OptiMod no longer contains the annoying shareware requesters!! This is why:
 - The future of OptiMod is in YOUR hands! You should send me the ShareWare-money if use it. I will NOT continue to develop OptiMod for the public if I don't get any response!! Think about this!!

- Registred users won't get the special keyfile, but the will be inserted into the list of registred users! Using OptiMod without paying the ShareWare fee is both immoral & stupid!!
- Wanted: A nice MagicWB icon for OptiMod, does anyone feel like drawing one?

Concept Index

(Index is nonexistent)

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