

XModule

COLLABORATORS

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REVISION HISTORY

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Contents

1	XModule	1
1.1	XModule.guide	1
1.2	XModule.guide/Overview	1
1.3	XModule.guide/Distribution	2
1.4	XModule.guide/Getting Started	3
1.5	XModule.guide/User Interface	4
1.6	XModule.guide/Panels	4
1.7	XModule.guide/ToolBox	5
1.8	XModule.guide/Format Conversion	5
1.9	XModule.guide/Optimization	7
1.10	XModule.guide/ARexx Interface	8
1.11	XModule.guide/Known Bugs	8
1.12	XModule.guide/Future Plans	8
1.13	XModule.guide/Programmers	9
1.14	XModule.guide/Credits	10
1.15	XModule.guide/Author Info	10
1.16	XModule.guide/Concept Index	11

Chapter 1

XModule

1.1 XModule.guide

This manual documents XModule version 2.8 released on 28 Jul 94.

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Overview	An overview of XModule.
Distribution	Licence & Disclaimer.
Getting Started	How to run XModule.
User Interface	General notes on the user interface.
Panels	Description of all windows.
Format Conversion	Brief description of module conversion with XModule.
Optimization	How to save memory and disk space with modules.
ARexx Interface	Every program should have one nowadays, isn't it?
Known Bugs	Notes on things that are still not working...
Future Plans	What XModule should feature in the next releases.
Programmers	Notes on the C source and TexInfo documentation.
Credits	Some people I wish to express my gratitude to.
Author Info	How to contact me.
Concept Index	

1.2 XModule.guide/Overview

Overview

The Amiga computer has standard file formats for almost everything. Graphics, text, animation, hypertext and many other data types are easily imported into any program that supports the given standards. But this isn't true for music. Too bad the music interchange file

format defined by Electronic Arts (the old IFF SMUS) was too poor to be usable in high-quality music sequencers. Therefore, every music editor created its own proprietary module format, so that, for instance, you cannot load into ProTracker music written with Oktalyzer.

XModule (pronounced Cross Module) born as music module conversion utility that tries to solve this problem. The project started in early 1993, as a friend of mine (Fabio), who wrote a lot of (good) music on Oktalyzer, needed ProTracker to obtain certain effects. He had an old PD conversion program called Tracker that worked only in particular conditions and was really bogus. So I decided to contact the author and he let me have the source for Lit30000 (about \$20).

The original program has been completely rewritten from scratch, as the source was really poorly coded. At the moment, Oktalyzer, ProTracker, NoiseTracker and SoundTracker are the only supported formats, but I'm still developing XModule, so contact me if you want to see your favorite music editor added to this (short) list (see Author Info).

Now XModule sports many other features, like module optimization, a nice user interface and complex module editing. This is why I like to call XModule a module processor. XModule is to the music processing what ADPro and ImageFX are to image processing (am I a bit immodest? :-).

1.3 XModule.guide/Distribution

Distribution

XModule is a Freeware program. This means that you (probably) have got it free and you should not ask any money if you decide to copy it for someone else. If, instead, someone sold you XModule for a price higher than the media used to store it on (i.e. \$1 for a DD disk), tell him he should try making money honestly.

I'm not asking you to pay for XModule because I never paid for a ShareWare program, so I felt that I somehow had to pay my debt and I decided to distribute XModule as free software, a little gift to all the Amiga community. Feel free to distribute XModule to your friends and enemies, but, if you do so, you must keep the documentation and the other distribution files together with the executable. The source code is not required, but I'm distributing it to let others take advantage of my work, so, if possible, try to include the source too.

Fred Fish, SAN, ADS and Aminet are especially granted permission to include XModule into their PD libraries. Other PD libraries are welcome as well.

If you intend to include XModule or parts of it in a commercial package, please at least send me a free copy of the product. I would be honored to see one of my programs being part of a commercial package.

You can modify or improve XModule (see Programmers), only be so kind to return the new source code to me, so I can put the new features in the next release. And, please, do not strip my name from the documentation, the program source, or the executable.

This product is provided as is, without warranties of any kind: the author of this program cannot be held liable for any defects in the executable nor in the documentation or in any other files contained in this package. Any damage directly or indirectly caused by the use/misuse of XModule is the sole responsibility of the user her/himself. In other words: XModule never formatted my hard disk nor killed my dog, so I suppose it won't cause any damage to your system either, but, just in case, do not blame me if something nasty happens.

1.4 XModule.guide/Getting Started

Getting Started

XModule requires KickStart version 2.0 or greater. The reason is that I hate programming on 1.3 and I won't do it any more. If you still haven't upgraded to 2.0, you'll miss the chance to run XModule and many other wonderful programs. So what are you waiting for?

XModule also takes advantage of some 3.0 features, like DataTypes, AmiGaGuide, Locale and some enhancements for the user interface.

You can invoke XModule either from the Shell or Workbench. XModule accepts both command line and ToolTypes arguments. Workbench and Shell parameters are the same. The full AmigaDOS template is:

```
XModule FROM/M,PUBSCREEN/K,PORTNAME/K
```

The FROM keyword specifies optional modules to load at startup time. From Workbench, you multi-select module icons instead of specifying a ToolType.

Specifying the PUBSCREEN keyword, followed by a public screen name, allows you to open XModule on an existing public screen. The given name should match exactly (case matters), or the system won't be able to find the requested screen. If the screen does not exist, a new public screen will open, cloning Workbench resolution and palette. Note that this behavior is not standard: Commodore commodities will abort if the required public screen does not exist. The default for this option is "Workbench", that will open XModule on the Workbench screen.

PORTNAME will change the name of XModule's ARexx port. If a port with this name already exists, a number (eg: ".1") will be appended to the name, until a unique name is found. The port name defaults to "XMODULE". For more about the ARexx port, consult the ARexx Interface chapter.

1.5 XModule.guide/User Interface

User Interface

XModule's GUI follows Commodore's 2.0 style guidelines. Under Kickstart 3.0 and above, XModule takes advantage of some new OS capabilities to enhance some aspects of the GUI.

Gadget layout is font sensitive, but using some fancy fonts could give you a strange user interface look. If you are using a very big font and a window becomes too big to fit in the screen, topaz/8 will be used as a fallback for rendering that window. When you close a window, it will remember its position and size when you open it again. The same applies to window zooming.

In all windows, the following shortcut keys are active:

ESC

Close the active window. Does not work with ToolBox window, as it would make it too easy to accidentally exit the program.

HELP

Bring up AmigaGuide on-line help. This feature requires amigaguide.library, which is part of Workbench 2.1 and up, and XModule.guide located in the current directory or in the same directory of XModule's executable or in HELP:language/ directory, where language is one of your Locale preferred languages.

TAB

Cycle forward through string and numeric gadgets within the active window. SHIFT-TAB will cycle backwards. TAB also activates the first string or numeric gadget if none is selected.

Cursor up/down

Move up and down in a viewlist whenever the active window contains one. SHIFT-Cursor moves 5 items up/down. ALT-Cursor moves to the top or to the bottom of the list.

In addition, gadgets with underscored characters in labels, can be selected hitting the highlighted key. SHIFT-key acts the opposite of the unshifted key (sliders are decremented by one, cycle gadgets will cycle backwards, etc).

1.6 XModule.guide/Panels

Panels

Sorry, XModule's documentation is still incomplete. The next release will hopefully be more accurate.

But wait! Do not commit suicide for such a reason: XModule is very

easy to use, and you will be able to operate it even without this chapter.

ToolBox

1.7 XModule.guide/ToolBox

ToolBox Window
=====

Gadgets:

Patterns	This option has not been implemented yet.
Instruments	Opens or activates the Instrument information window.
Sequence	Opens or activates the Sequence editor.
Songs	Opens or activates the Song information window.
Optimization	Opens or activates the Optimization panel.
Play	This option has not been implemented yet.

Project Menu:

New	Creates an empty song.
Open	Opens a module over the current one.
Save	Saves the current song to the same path it was loaded from.
Save As	Opens a file requester and saves the current song to the ↔ selected path.
Clear Module	Opens or activates the Clear Module panel.
Join Modules	This option has not been implemented yet.
About	Brings up a requester showing various information on XModule.
Iconify	Closes all open windows and screens and puts an AppIcon on the ↔ Workbench.
Quit	Quits XModule.

1.8 XModule.guide/Format Conversion

Format Conversion

XModule can load and save modules created by other music editors. The following is a list of supported module formats:

- * NoiseTracker
Noise/ProTracker 31 instruments module. This is the default.
- * ProTracker 2.3

ProTracker 2.3 new 100 patterns module. XModule will automatically switch to ProTracker 100 whenever the converted module exceeds the 64 patterns limit.

Warning: You must load such a module with ProTracker 2.3 or better in order to play/edit it. Older players will either refuse to load or turn the module into scratch dance.

* SoundTracker 15 instrument module

This is pretty useless as SoundTracker is becoming quite rare. Do not save SoundTracker modules unless you really need to, because most players/editors will stop supporting this format very soon. SoundTracker format has no way of identifying a module, therefore XModule will ask you to confirm a SoundTracker module when the file being loaded matches no other module format.

* UnicTracker

Actually I've never seen UnicTracker, but I sometimes ripp Unic modules with ExoticRipper, so I decided to give support for this weird Tracker clone too. The format is very similat to ProTracker, except for the EMW3 ID.

* Oktalyzer V1.1

Oktalyzer is an old editor which can play up to 8 channels by mixing instruments in real time.

As a matter of fact, there are things that simply cannot be done because of the big differences between module formats. Below is a list of the internal limitations of each module formats. When you save to a particular format, if the module exceeds one of this values, or makes use of features not implemented, some data will be stripped away to produce at least a partial conversion.

Program	Instr	MaxPatt	PattLen	SongLen	InstrLen
Oktalyzer	36	128	128	128	128K
Sound Tracker	15	64	64	128	64K
Noise Tracker	31	64	64	128	64K
Pro Tracker	31	100	64	128	64K
MED/OctaMED	63	256	256	256	No Limit

Where:

#Instr is the maximum number of instruments,
 MaxPatt is the maximum number of patterns,
 PattLen is the maximum number of lines per pattern,
 SongLen is the maximum number of positions in a song,
 InstrLen is the maximum size of an instrument given in bytes.

Effects are the hardest thing to convert. While Speed and Volume are almost the same between different music editors, some effects (such as Oktalyzer's H and L) cannot be converted because there are no equivalents in other music editors. Therefore, you will have to modify the score manually if you intend to convert a module while keeping such effects. In addition, some effects behave in different ways even if they claim to do the same thing.

Last but not least, some music editors support synthetic or hybrid instruments. Fortunately, none of the module formats known by XModule implement such instruments, because I can hardly think of a way to implement a sample to synth conversion (any ideas?). I used to like synthetic music, but it seems that all those great composers on the good old C64 have vanished... Why have you musicians become so lazy? 8-(

1.9 XModule.guide/Optimization

Optimization

Module optimization is achieved by removing all unused data in such a way that the module will sound the same as before. XModule can process a module to reduce its size as much as possible. It is generally a good idea to optimize a module before distributing it, but never while you are still composing it, because you could easily lose some data that you didn't want to discard. Do not expect to gain a lot of bytes optimizing modules: saving 20% of the total size is usually a very good result.

* Unused patterns

Some formats (e.g.: Sound/Noise/ProTracker) store empty patterns in a module if a pattern with a greater number is used. For instance, a song using patterns 1, 2 and 5 will contain patterns 3 and 4 as well.

Warning: If a song contains a part that has not been finished yet and has not already been inserted in the position table, you will lose it.

Warning: When a song is saved to Noise/ProTracker, patterns beyond the last used patterns are discarded regardless of this switch. This is due to a limitation of Noise/ProTracker module format.

* Unused instruments

A composer may decide to use an instrument and then change his mind, but forget to clear the instrument. In this case the module will contain an instrument that is never played. These instruments are simply stripped away.

* Sample data after a loop

The part of an instrument following a loop is never played and is therefore discarded.

* Instruments zero tails

Long zero tails eat up memory and produce no sound. This optimization is performed only on loopless instruments, as a zero sequence inside a loop does make difference. XModule leaves at least two zero bytes to avoid the nasty click produced by the speaker dropping its volume to zero too quickly.

1.10 XModule.guide/ARexx Interface

ARexx Interface

Sorry, XModule's documentation is still incomplete. The next release will hopefully be more accurate (it's already three releases I'm promising it :-).

Anyway, XModule's ARexx port is a little brain dead at the moment, so you're not missing a great deal.

1.11 XModule.guide/Known Bugs

Known Bugs

Murphy's laws state that nothing can be perfect, not even computer programs. XModule is far from being perfect and I need your help to fix as many bugs as possible. If you discover a bug which isn't reported in the list below (note: there is no list at the moment; this is a beta release, remember?), please notify me.

When you report a bug, state exactly what happens and indicate how to reproduce the conditions that generated the problem. Reports like 'XModule sometimes crashes converting my favorite module' does not help at all. Include your name if you want to be credited in future XModule releases.

If the program refuses to convert a module, mail it to me on a disk or upload it to a BBS that I can reach and I'll try to fix the problem as soon as possible. Glass Globe BBS, whose address can be found in the Author Info chapter, will do. If you want the disk back with the fixed version of XModule, send me a self-addressed envelope with enough italian stamps or enough money for a reply.

XModule has been tested on several machines running Kickstart 2.0, 3.0 and 3.1. It should work on any 68K family processor (tested on 68000, 68020 and 68040) and is Enforcer and Mungwall proof. I also tested XModule with virtual memory programs (such as VMM40) and found that everything seems to work correctly.

1.12 XModule.guide/Future Plans

Future plans

* OctaMED

This will probably be the next format I'll work on. I think this is the best music editor available on the Amiga, but I haven't yet

got enough infos on its file format to code a conversion routine.
If you have such information, please contact me (see Author Info).

* TeX

Another format I would like to add is AmigaTeX. If you know TeX, you will surely be wondering what a typesetting program can be used for in music. Well, AmigaTeX is at the moment is the best implementation available on any computer of the TeX typesetting program, and its distribution includes MusicTeX, a powerful music language which can output notes in a great standard staff notation. I know no other program on the Amiga that can print notes of such fine quality (if you do, let me know!), so I think that many musicians would appreciate such an option.

* Other module formats

If you have documentation regarding a format you would like to see in a next release, please send it to me together with a couple of modules and, if possible and legal, the program that created them. I'll try to implement the new format only if it is somewhat easy: it is very hard to convert, say, Future Composer to SoundTracker. Do not send a module without a text file describing its structure, as I'm not willing to spend my nights hex-dumping modules :).

1.13 XModule.guide/Programmers

Programmer notes

XModule has been written in C and compiled with SAS C version 6.51, Other compilers may require some changes to the source.

The program is written in respect of the Amiga multitasking operative system and complies with Commodore programming guidelines. All allocated resources will be (hopefully) freed before program termination. I wrote XModule with the goal in mind of keeping the executable fast and small.

This manual has been typeset using MakeInfo, a GNU PD utility ported to the Amiga by Reinhard Spisser and Sebastiano Vigna. I found that the time I saved writing one file for three was nearly compensated by the time I spent learning how to operate MakeInfo. As I'm not that skilled in using TeX and MakeInfo, you will probably find this document a bit silly in its typesetting style.

Besides, English is not my first language (as you might have guessed) and I bet this document is full of grammar mistakes.

If you intend to translate, improve or somewhat edit this document, please work on the supplied TexInfo file and then process it with the utilities supplied in the MakeGuide distribution. You can find MakeGuide in several PD libraries such as BBSs.

Do not hesitate to send criticisms to my work, and, even better, advices on how to improve the program and the documentation. See

Author Info.

1.14 XModule.guide/Credits

Credits

- * Fabio Barzagli, for beta testing version 1.x, for the money he paid me for it and, last but not least, for letting me have (or steal?) his awesome modules!

Keep on making good music, Fabio!

- * Alessandro Lombardi, for 2.x beta testing.

Stop deleting files!

- * Massimo Brogioni, for being my fido boss and for spreading bogus XModule releases all around the world.

Hey boss, have you got a spare 5Gig streamer?

- * Erno Tuomainen for his wonderful Finnish BBS, for his kindness and for all the support he gave me.

Are there any more top-rating modules to leech?

- * Gerardo Iula, for letting me have the source of Tracker (by paying :-().

I assumed the money I paid covered the rights of modifying the original source and distributing modified versions of your program. Hope you won't worry about it, Gerardo.

- * Sebastiano Vigna & his buddy Reinhard Spisser, for porting GNU MakeInfo to the Amiga and for Reinhard's E-Mail technical support.

Please, continue developing this useful (and hard to learn) tool. By the way, MakeInfo crashed my Amiga really bad a couple of times! Are my docs that boring?

- * The Amiga, for being the best computer in the world. :^)

Commodore: Why don't you sell the Amiga project to someone serious such as GVP or NewTek?

1.15 XModule.guide/Author Info

How to contact the author

If you want to make me aware of your suggestions, bug reports, ideas or you want to send me a gift, a good module or, why not, some money :-), reach me in any of the following ways:

* Mail

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* FAX

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Subj: Amiga/XModule

* E-Mail

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FidoNet: Bernardo Innocenti 2:332/118.4
UseNet: bernie@nikita.nervous.com
(Glass Globe BBS ++39-577-959054)

I will try to reply to all my E-Mail, but I'm too lazy to reply old-style mail. Your suggestions will be taken into account unless they are 'I want XModule to do ice tea'-style.

1.16 XModule.guide/Concept Index

Concept Index

Acknowledgements	Credits
Arguments, command line	Getting Started
Author's address	Author Info
Bug reports	Known Bugs
Bugs, known ones	Known Bugs
Compiling	Programmers
Contact the author, how to	Author Info
Credits	Credits
Distribution	Distribution
For programmers	Programmers
GUI	User Interface
How to contact the author	Author Info
Known Bugs	Known Bugs
Modifying XModule	Programmers
Optimization	Optimization
Overview of XModule	Overview
Panels	Panels
Starting XModule	Getting Started
Thanks	Credits
ToolTypes	Getting Started
Usage	Getting Started
User Interface	User Interface
Windows	Panels

XModule overview

Overview