

# ProTrekkr version 2.8.5

# **Operating Manual**

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### 1. Introduction

ProTrekkr is a tracker program combining a software synthesizer together with a traditional samples tracker which can (mainly) be used to create electronic music (like psytrance, trance goa, hard acid, IDM, chip, techno, jungle, etc.) targeting small sized intros, demos or games.

It's a heavily modified version of the old NoiseTrekker 2 which was made by Juan Antonio Arguelles Rius aka Arguru.

Currently the tracker is available on Windows and more or less on Linux, FreeBSD, NetBSD, Amiga OS4, AROS, MorphOS, Mac OSX and Haiku OS.

### Main features:

- 16 multi-notes tracks (with 256 virtual channels).
- Up to 4 effects per track.
- Samples editor (can load up to 64 bits stereo samples).
   Patterns based tracker style sequencer.
- Synthesizer with custom waveforms support.
- Samples loop editor.
- 2 303s units.
- Linear/Cubic spline interpolation.
- Wav/Aiff samples import/export.
- 16 or 32 bits wav rendering.
- Effects engine with reverb, distortion, filters, delay, EQs, flanger, etc.
- Fully customizable 10 combs reverb.
- Midi in/out support with automation.
- Protracker .mod/Fasttracker I .ft/Digibooster v1.x .dbm files import.
- Samples compressor handling Gsm/Mp3/ADPCM/8 Bit/WavPack.
- Replay routine source code to be included & used inside your own programs (Also featuring a replay routine for the PlayStation Portable).
- Winamp/XMPlay plugin available.
- And probably more...

This is a FREEWARE tool, this means that you can use it for whatever you want and for free. There's NO GUARANTEE that this program will perform well or even run on your computer.

### 2. Minimum requirements

The tracker can be quite CPU intensive (especially when the CPU have to handle visuals as well but nowadays most of that is done on GPUs), a 1.5ghz processor may be the bare minimum when replaying heavy modules (16 tracks all effects/polyphony on).

The only computer running under Mac OS X i have is a dual 450Mhz G4 and it doesn't make it at all, there's a lot of hiccups (although the system monitor doesn't show more than 60% usage for both CPU so i may have made a mistake somewhere).

## 3. How to install (Windows only)

On Windows, go to the install directory, right click on the "LameACM.inf" file and selected "install". Do the same for the "atrac3.inf" file, this will install both codecs in the system. Without these 2 codecs installed, ptk wouldn't be able to pack samples in Mp3 or Atrac3 (only used on PSP) formats.

### 4. Compressed modules (.ptp)

These modules can be recognized as they're using the ".ptp" extension (regular modules use ".ptk"), they can't be reloaded inside the tracker, but the musician can simulate the compression of the samples (or per sample) within the tracker.

While these files may have a bigger size than their .ptk counterparts, they're internally organized to maximize packing ratio so using any generic data compressor on them will produce a much smaller file than what could be achieved by packing a .ptk file.

There are two commands related to compressed modules in the tracker:

### - "Save .ptp":

Create a module with extension ".ptp" in the current directory.

### - "Calc .ptp size":

Calculate (roughly) the size that the module would take once used in your (compressed) program.

Note that compressed modules generated on big endian platforms and little endian ones aren't compatible with each others.

Samples inside .ptp modules can be packed, the user have the ability to select the packing algorithm which will be used on a per sample basis, the available compression schemes are all "lossy".

### WavPac:

Wavpack based compression (lossy algorithm).

### GSM:

Suitable for drums/snares.

### MP3:

Suitable for longer samples like cymbals.

### ADPCM:

Can give better result than GSM (but samples are a bit bigger).

### At3 (For PSP):

This one is similar to MP3 compression, it will be handled in the PSP replay routine only (but it's not handled yet).

### 8 Bit:

The samples (every 2 samples in fact) are packed to 8 bits and interpolated to 16 bits when depacked this give a bit better results than adpcm but compress less.

### None:

Suitable for very short (chiptune like) samples (if you want to keep quality). Note that this is the only way to save packed samples if the tracker has been compiled without codecs supports.

The .ptp are the only modules format recognized by the replay routine.

### Note:

The MP3 compression might not work on a bare bone Windows 2000 (it works on any others).

### Note2:

When a packing is selected for a sample (other than none) samples are reconstructed by interpolation.

Alongside with the .ptp are the optional .psm files which contain synchro information related to the effect "07" used within the patterns; The .psm file format is as follow:

### **Header:**

1.w: number of synchros data entries

### Synchro data:

1.b: position

1.b: row1.b: fx data (as specified within the tracker)

The fx data part is removed from the .ptp files and moved to the .psm files and only one fx per position/row is saved.

### 5. FAQ/Troubleshooting

Q> No Fasttracker support, no 53194 tracks ? No etc...?, "m... i don't like the gui, the key shortcuts, you should have to..."

A1> Get a compiler and code the best tracker ever. I'm sure you'll do fine. A2> Use fasttracker, impulse tracker, buzz or whatever stuff you want. A3> Use your browser and search for some stuff...

### Q> I Cannot run the program! Any idea ?

A> If u have got a SBLive, try disabling EMU driver on your soundcard. Be sure you have got lastest DirectX drivers for your stuff (gfx/sfx card) and DirectX6.1 or above installed. (Microsoft DirectX 6.1 or above is required to run ptk) Ptk won't run on Windows NT, it should run on any other Windows. Also, might not work with some goofy gfx/sfx cards.

### Q> Well, the program runs ok but ... how I can quit it?

A> Click 2 times on the exit button. Or just close the window if you're running ptk in windows mode. Alternatively, you can also use the key combo: LALT + F4.

### Q> Ehh Everything sounds clicks, distorted and weird !!?

Plan A> Try to use higher latency in Misc. Setup section. This means that the CPU is not having enough time to render/fill the audio buffer data, and this produces clicking...

Plan B> Buy a faster computer.

### Q> How I play 303 patterns in ptk ?

A> Use ptk command 31xy and 32xy. 31xy will trigger pattern 'y' (1-8) from bank 'x' (A-D) from the first 303 unit (ptk has got 2 303 units, just like Rebirth).

### Example:

The 303 unit 1 will be assigned to the track 0 stream.

This means, that panning, fx setup, filter settings of the track will be applied to the sound of the 303 unit 1.

To play the second 303 unit, use the same method but with 32xy command instead of 31. To stop 303 playing (patterns are played "looped" continuously) just put a note off (right shift key) on the track were it was triggered.

Also, using -3100- or -3200- will replay the patterns that are currently selected on the 303 editor. Can be handy while composing basslines.

Btw: 303 engine will not "eat" the track sampler/csynth engine, so you can have both playing ex. a bassdrum and a 303 line on the same track.

Also, both 303 units can be triggered in the same track. Well, just play with them :].

### Q> Oh!, the 303 sounds great, will you code a 'buzz' port ?

A> Nope.

### Q> How I can record 303 or the tracks tweaking on the fly?

A> Press the "Live Rec: OFF" (top/left of the screen) button and, voila, the 303 tweaking or current track are auto-filled on pattern while the tune is being played.

### Q> How I can alter 303s CutOff, Resonance, etc.. on the pattern while playing ?

A> Easy, just use the 303 special pattern commands. They're very useful to automatize 303 stuff.

### Q> How to use Midi In/Out ?

A> First of all, midi in & out capabilities of this program are rather "primitive" to say the least.

Follow these steps:

- 1 Go to Misc. Setup section and select a midi in or out device to use (ptk only supports one device at a time).
- 2 Go to instrument section, and select a MIDI PRG (the default is N/A, which means no midi program selected).
- 3 Go to track section and here you can assign a midi channel to each track of ptk.
- 4 Play notes :]. Note off works. F'x' note cut command also works too, and note-volume command (velocity) is supported.

Also, you can change midi controllers in the tracker, using '90' in the panning row:

```
C-3 02 .. .. 0000....
--- .. .. 90 xxyy.... set the controller n.'xx' to 'yy' (both in hex)
--- .. .. 0000....
--- .. .. 0000....
```

--- .. .. 90 2040.... will set the controller number 0x20(32) to value 0x40(64).

You will need the midi implementation table of your gear to know what you can change with midi controller messages. Probably, it's located at the end of the manual =].

### Q> Audio & Midi are not synchronized, what I can do ?

A1> Buy a commercial software package.

A2> Well, there is a nasty trick to synchronize both. It's a bit hardcore but work with me:

Simply put one line down to all midi notes on your pattern (use Insert key) and go to 'Misc. Setup', adjust the latency and just search a value that will make sound sync both audio/midi.

# Q> The stock Sin/Saw/Pulse and Rnd waveforms are too simple/common, is there a way to use something more complex/rich ?

A> You have to ability to redirect the waveform of the instruments through the synth pipe by selecting the "wav" option for the oscillator you're using for this synth instrument, samples can be used as wavetables to replace the stock signals.

### Q> Why some buttons of the interface have different colors than others?

A> The buttons with highlighted colors have alternate/more global functions when clicked with the right mouse button.

### Q> Will you support VST instruments in a future?

A> No, the main goal of the tracker is to be an all-in-one program with a compact, stand-alone & re-usable replay routine.

### 6. The sequencer

The sequencer used in ptk is a little bit different from those usually found in other trackers, the user have the ability to re-use patterns with different tracks playing state configurations:

Tracks can be turned on/off by left clicking on their digits. (Inactive tracks will be displayed with a darker font color). (Right clicking will solo/unmute all tracks alternatively).

```
000
                     000
000
                     000
000
                     000
000 01234567
                     001
001 01234567
                     002
002 0123-567
                     003
003 012-4-67
                     003 Song position 3 with it's 3th and 5th tracks disabled.
                     Click Left or right mouse button on the right digits to
                     increase the pattern associated with the current position
Click on the position to move the sequencer on it.
```

(The mouse wheel can also be used to scroll through positions sequence).

### 7. The patterns sliders edition mode

When activated (with the "S" button on the top left of the track window), the volume, panning and effect data columns of the patterns will be displayed as small horizontal sliders (with or without their respective numerical values). In this mode, pressing and maintaining the **Right Shift** key will allow the user to modify their value either by clicking on them with the **left mouse button** (eventually maintaining it to modify several values "on the fly") or moving the caret onto such slider and using the **arrow keys**:

### In the volume and effect data columns:

- Up arrow will increase the value by 10.
- Left arrow will increase the value by 1.
- Down arrow will decrease the value by 10.
- Right arrow will decrease the value by 1.

### In the panning columns:

- Up arrow will decrease the value by 10 (moving it to the left speaker).
- Left arrow will decrease the value by 1 (moving it to the left speaker).
- Down arrow will increase the value by 10 (moving it to the right speaker).
- Right arrow will increase the value by 1 (moving it to the right speaker).

**Note:** when a block is selected, all volume, panning and effect data columns included in the selection will be modified when using these keyboard arrows.

### 8. The effects

```
Command '0000': No Effect
Command '01xx': Pitch Up (Disabled when using Arpeggio or Vibrato)
xx = Speed
Command '02xx': Pitch Down (Disabled when using Arpeggio or Vibrato)
xx = Speed
Command '03xx': Set Volume
xx = Volume level
Command '04xx': Trance Slicer
xx = Delay ticks before muting the volume (from 0 to 6)
Note: The volume stays muted at the next rows.
Command '05xx': Glider (Disabled when using Arpeggio or Vibrato)
xx = Speed
Command '06xx': Pattern Loop
00 = Sets the loop point
xx = Loops xx times
Command '07xx': FX Synchro
xx = Any data
Command '08xx': Set Filter Cut Off
xx = Cut Off level
Command '09xx': Set Sample Play Offset (256 bytes steps)
xx = Offset
Command 'OAxx': Randomize Filter Cut Off
xx = Amplitude
Command 'OBxx': Filter Cut Off Slide Up
xx = Speed
Command 'OCxx': Filter Cut Off Slide Down
xx = Speed
Command 'ODxx': Jump To Next Sequencer Position (aka Pattern Break)
xx = Pattern row
Command 'OExx': Note Retrigger
xx = Tick
```

```
Command 'OFxx': Set Number Of Ticks Per Beat
xx = Ticks
Command '10xx': Set Delay/Echo Send
xx = Send Level
Command '11xx': Set Reverb Send
xx = Send Level
Command '12xx': Set Distortion Threshold
xx = Threshold Level
Command '13xx': Set Distortion Clamp
xx = Clamp Level
Command '14xx': Set Filter Resonance
xx = Resonance Level
Command '15xx': Set Filter Type
xx = Filter to use
00 = LoPass -12db filter
01 = HiPass filter
02 = BandPass filter
03 = BandReject filter
04 = No Filter
05 = LoPass -24db filter
06 = LoPass -48db filter
06 = LoPass -48db filter
07 = LP-24 [Stereo] filter
08 = A. Mod. [Mono] filter
09 = A. Mod. [Stereo] filter
0A = Single [Mono] filter
0B = Single [Stereo] filter
0C = ParaEq -15db filter
0D = ParaEq -6db filter
0E = ParaEq +6db filter
0F = ParaEq +15db filter
10 = Custom Delta filter
11 = Comp Distort | filter
11 = Comp. Distort L filter

12 = Comp. Distort M filter

13 = Comp. Distort H filter

14 = Comp. Distort filter

15 = W-HP12 [Mono] filter

16 = W-HP12 [Stereo] filter

17 = W-HP24 [Mono] filter
Command '16xx': Set Filter LFO Carrier position
```

xx = Position

```
xx = Ticks
C-7 00 .. .. 1710....
--- .. .. .. 0000....
--- .. .. .. 0000....
G-6 00 .. .. 0000.... and will be faded in too
--- .. .. .. 0000....
--- .. .. .. 0000....
--- .. .. .. 0000....
--- .. .. 1700....
Command '18xx': Auto Fade Out Track
xx = Ticks
Same behavior as above.
Command '19xx': Volume Slide Up
xx = Speed
Command '1Axx': Volume Slide Down
xx = Speed
Command '1Bxy': Arpeggio
x = Second relative semitone
y = Third relative semitone
C-7 00 .. .. 1B37....
--- .. .. 1B00.<u>...</u>
Note: Arpeggio effect won't stop until it's set to 00.
Command '1Cxx': Set Global Volume
xx = Volume level
Command '1Dxy': Vibrato
x = Speed
y = Depth
C-7 00 .. .. 1D46....
--- .. . . . . <u>0000. . . . .</u>
--- .. .. .. 0000....
--- .. .. .. 0000....
--- .. .. 1D7F....
--- . . . . <u>000</u>0.. . . .
--- .. .. .. 0000....
--- .. .. 1D00....
```

Note: Vibrato effect won't stop until it's set to 00.

Command '17xx': Auto Fade In Track

```
Command '1E0x': Select Instrument Playing Way
0 = Play forward
1 = Play backward
Command '1Fxx': Position Jump
xx = New position
Command '20xx': Fine Volume Slide Up
xx = Amount
Command '21xx': Fine Volume Slide Down
xx = Amount
Command '22xx': Fine Pitch Up
xx = Amount
Command '23xx': Fine Pitch Down
xx = Amount
Command '240x': Turn Flanger On/Off
0 = Turn it off
1 = Turn it on
Command '25xx': Set Shuffle Value
xx = Amount
Command '26xx': Set Reverb Filter Cutoff
xx = Amount
Command '27xx': Set Reverb Filter Resonance
xx = Amount
Command '280x': Turn Track Filter On/Off
0 = Turn it off
1 = Turn it on
Command '290x': Turn Track Compression On/Off
0 = Turn it off
1 = Turn it on
Command '2Axx': Set Track Compression Threshold
xx = Amount
Command '2Bxx': Set Track Compression Ratio
xx = Amount
Command '2Cxx': Set Reverb Damp Ratio
xx = Amount
```

```
Command '2D0x': Set Stereo Delay Filter Type
xx = Filter to use
00 = LoPass -12db filter
01 = HiPass filter
02 = BandPass filter
03 = BandReject filter
04 = No Filter
Command '2Exx': Set Stereo Delay Filter Cutoff
Command '2Fxx': Set Stereo Delay Filter Resonance
Command '300x': Control Channel Denoising Strength
0 = Off
1 = Low rate (4 samples)
2 = High rate (8 samples)
3 = Higher rate (16 samples)
4 = Highest rate (32 samples)
Command '43xx': Set Channel LFO Frequency
xx = Frequency
Command '44xx': Set Channel LFO Frequency Scale Ratio
xx = Frequency
Command '45xx': Set Channel LFO Amount To Send To The Filter Cutoff
xx = Frequency
Command '46xx': Set Channel LFO Amount To Send To The Volume
xx = Frequency
Command '47xx': Set Channel LFO Amount To Send To The Panning
xx = Frequency
Command 'F0xx': Set BPM Speed
xx = BPM
```

```
Command '31xy': Trigger 303 Bass Line (Unit 1)
x = Bank (A-D)
y = Pattern (1-8)
'00' will trigger current selected pattern
'ff' will stop the bass line
Command '32xy': Trigger 303 Bass Line (Unit 2)
x = Bank (A-D)
y = Pattern (1-8)
'00' will trigger current selected pattern
'ff' will stop the bass line
Where 'xx' is a number between 0x00 and 0xFF (hex):
Command '33xx': Set 303 (Unit 1) Filter Cutoff
Command '34xx': Set 303 (Unit 2) Filter Cutoff
Command '35xx': Set 303 (Unit 1) Filter Resonance
Command '36xx': Set 303 (Unit 2) Filter Resonance
Command '37xx': Set 303 (Unit 1) Filter Env. Mod
Command '38xx': Set 303 (Unit 2) Filter Env. Mod
Command '39xx': Set 303 (Unit 1) Filter Decay
Command '3Axx': Set 303 (Unit 2) Filter Decay
Command '3Bxx': Set 303 (Unit 1) Accent
Command '3Cxx': Set 303 (Unit 2) Accent
Command '3Dxx': Set 303 (Unit 1) Tune
Command '3Exx': Set 303 (Unit 2) Tune
Command '3Fxx': Set 303 (Unit 1) Scale (From 0x01 to 0x10)
Command '40xx': Set 303 (Unit 2) Scale (From 0x01 to 0x10)
Command '41xx': Set 303 (Unit 1) Volume
Command '42xx': Set 303 (Unit 2) Volume
```

### The volume column:

Command 'xx': Set Volume (00 to 40)

Command 'Fx': Note Cut

x = tick number where the note should be cut

### The panning column:

Command 'xx': Panning (00 to 80)

Command '90': Send Midi message

Send the command and data specified in the fx/data columns to Midi OUT selected device.

ex: 90 4050

Send command 0x40 with data 0x50.

### Midi command:

Command '80xx': Set Patch Bank

(might not work on all midi equipment)
(won't work in the replay routine)

Read in the [faq] how you can send midiout controller messages and read the manual of your gear to learn how send RRPN ones using midiout, also, you might find here the midi implementation table for your hardware (or it could also be displayed on the device's LCD screen).

### 9. The keyboard shortcuts

### **Playing**

RCTRL: Play song from row 0.

LSHIFT + RCTRL: Play song from current row.

RALT: Play pattern from row 0.

**LSHIFT + RALT:** Play pattern from current row.

**Left mouse on '>':** Play song from row 0.

Right mouse on '>': Play song from current row.

**Left mouse on '>|':** Play pattern from row 0.

Right mouse on '>|': Play pattern from current row.

**ENTER or RETURN:** Single step play (pattern mode).

**LSHIFT + ENTER or RETURN:** Single step play (song mode).

**Left mouse on 'Edit/Record':** Edit mode on/off.

Right mouse on 'Edit/Record': Record mode on/off.

**Editing** 

LSHIFT + ESCAPE: Switch large patterns view on/off

TAB: Go to next track

**LSHIFT + TAB:** Go to previous track

LCTRL + TAB: Go to next note in track

**LCTRL + LSHIFT + TAB:** Go to previous note in track

SPACE: Toggle Edit mode On & Off

(Also stop if the song is being played)

SHIFT SPACE: Toggle Record mode On & Off

(Wait for a key note to be pressed or a midi in message to be received)

**DOWN ARROW:** 1 Line down

UP ARROW: 1 Line up

LEFT ARROW: 1 Row left

RIGHT ARROW: 1 Row right

PREV. PAGE: 16 Arrows Up

NEXT PAGE: 16 Arrows Down

HOME / END: Top / Bottom of pattern

LCTRL + HOME / END: First / last track

LCTRL + LALT + HOME / END: Top of pattern & First track / Bottom of

pattern & last track

F5, F6, F7, F8, F9: Jump to 0, 1/4, 2/4, 3/4, 4/4 lines of the

patterns

+ - (Numeric keypad): Next / Previous pattern LCTRL + LEFT / RIGHT: Next / Previous pattern

LCTRL + LALT + LEFT / RIGHT: Next / Previous position

LALT + LEFT / RIGHT: Next / Previous instrument

LSHIFT + M: Toggle mute state of the current channel

LCTRL + LSHIFT + M: Solo the current track / Unmute all

LSHIFT + F1 to F12: Select a tab/panel

LCTRL + 1 to 4: Select a copy buffer

Tracking

1st and 2nd keys rows: Upper octave row

3rd and 4th keys rows: Lower octave row

RSHIFT: Insert a note off

Toggle patterns sliders edition On/Off

/ and \* (Numeric keypad) or F1 / F2:

-1 or +1 octave

LCTRL + F2 / F4: Decrease / Increase editing step.

F3: Chords helper (triggered when the caret

is located on a note).

**INSERT / BACKSPACE:** Insert or Delete a line in current track

or current selected block.

LSHIFT + INSERT / BACKSPACE: Insert or Delete a line in current pattern

DELETE (NOT BACKSPACE): Empty a column or a selected block.

**Block manipulations** 

Blocks can also be selected with the mouse by dragging the pointer over a pattern and holding the left mouse button (if nothing is selected the following operations occur on the complete current track).

LCTRL + A: Select entire current track

LCTRL + LSHIFT + A: Select entire current pattern

LALT + A: Select entire column note in a track

LALT + LSHIFT + A: Select all notes of a track

LCTRL + X: Cut the selected block and copy it into the current

block buffer

LCTRL + C: Copy the selected block into the current block buffer

**LCTRL + V:** Paste the data from the current block buffer

into the pattern

LSHIFT + ARROWS

PREV. PAGE

**NEXT PAGE:** Select a block

LCTRL + I: Interpolate selected data from the first

to the last row of a selection

example: (assuming only the 2 effects data columns are selected)

C-3 04 09 00 ---> C-3 04 09 00 09 00 ---> C-3 04 C-3 04 02 09 C-3 04 05 09 00 ---> C-3 04 09 C-3 04 09 00 ---> C-3 04 09 08 C-3 04 09 00 ---> C-3 04 09 0A C-3 04 .. .. 09 00 ---> C-3 04 09 0D C-3 04 .. .. 09 10 ---> C-3 04 09 10

Cool to make cutoff transitions, etc...

(You can also switch on the Slider Rec to On, and perform parameter-live-recording, such as cutoff, resonance or panning tweaking, etc..)

**Note:** this command (as well as the randomize one below) only works for volume/panning and FX data columns.

LCTRL + R: Randomize the select columns of a selection, works similar

to CTRL + I, but it randomizes values instead of

interpolating them.

LCTRL + LSHIFT + R: Same as above but done according to the current Step Add

**LCTRL + F:** Fill an entire block with the first select line.

LCTRL + LSHIFT + F: Same as above but done according to the current Step Add

LCTRL + U: Transpose the note of a selection to 1 semitone higher

LCTRL + D: Transpose the note of a selection to 1 semitone lower

LCTRL + K: Transpose the note of a selection to 1 octave higher

LCTRL + L: Transpose the note of a selection to 1 octave lower

LCTRL + W: Save the current selection or current pattern into a file

### **Miscellaneous**

LALT + ENTER: Switch between full screen / windowed mode

LALT + F4: Exit program (Windows only)

**LCTRL + S:** Save current module

**LSHIFT + S:** Switch top right panel to synths list

**LSHIFT + I:** Switch top right panel to instruments list

### 10. Keyboard definition files

In order to keep a constant layout for the keyboard, the tracker uses locale keyboards text definitions which are located within the skins directory.

These files contains the full name of the region on the first line and the 37 ASCII codes used for that particular type of keyboard (the keys layout) following on 4 rows.

To add a new keyboard definition:

first copy an already existing file and rename it after the keyboard's country it is supposed to describe, modify the 4 rows then edit the keyboards.txt file and insert it's file's name along with the others.

Load (or reload) the tracker and select the new keyboard in the "UI Setup" panel.

Hexadecimal notation is allowed in the form 0xXXXX or just plain ASCII. (it \*may\* work with Unicode characters but i haven't tested it).

You can eventually submit a new keyboard layout at: franck@hitchhikr.net

### 11. Compiling the source

Compiling the tracker on an already supported operating system will require the 3 src/extralibs (that is SDL\_draw, tinyxml & zlib-1.2.3) to be generated first, only the tracker itself can be generated with either one of the makefiles of the top directory or via the visual studio project.

In order to use the replay routine either use the provided makefiles or vc studio projects located in the release/distrib/replay directory, a .ptp module file and a ptk\_properties.h source file (both generated by the tracker). Replace the PTK\_MODULE variable content of the assembly files located in release/distrib/replay/test with the filename of the .ptp module and compile.

# 12. Porting the tracker

In order to port the tracker to another operating system, several issues should be considered (beside crafting the relevant makefiles, that is):

### 1. The keyboard handling:

It is important for the keyboard to behave identically on every port. The input is usually handled differently depending on the computer or even the operating system, for example the Windows version doesn't require keyboard definition files but the Linux one does and on Mac OS X the translation to Unicode is handled differently.

### 2. The executable path:

The variable "ExePath" must be filled with the current path of the executable file during main(), all the data loading are relative to this variable.

The way to obtain it can be different depending on the operating system.

### 3. The midi drivers:

These can be disabled at compilation by using the \_\_NOMIDI\_\_ constant, the midi in/out drivers are located in src/midi/RtMidi.cpp file.

The functions of the drivers mainly concern enumerating the devices, opening them, receiving/sending messages and calling the callback function for incoming messages.

### 4. The codecs:

To reduce the size of the modules, the tracker is using (lossy) codecs present in the operating system to pack (and depack) the samples in .ptp module files. This can be disabled at compilation too by using the \_\_NOCODEC\_\_ constant. On operating systems which don't possess codecs only Internal (wavpack), ADPCM and 8 bit compression schemes are available.

Note that packing samples in .ptp files is not mandatory (the packing scheme for each sample can be set to none in the tracker).

# 13. Thanks

Karsten Obarski:
The father of the original tracker.
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The original NoiseTrekker.
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Original Amiga OS 4 port.
Fernando Mastandrea:
Original AROS port.
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MorphOS port.
Gary P. Scavone:
Rtmidi class.
Dayy Taia Kanaal Na7 Dusashay Nice Kuyland Manya Maghaayniy Misiaalay
Daxx, Teis, Kaneel, Ne7, Preacher, Mice, Kmuland, Manwe, Manbearpig, Misioslaw, Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil Mike West, Theorize, phecda, sk.syncsound:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil Mike West, Theorize, phecda, sk.syncsound:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk  Archangel:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk  Archangel:  Wonderland.ptk
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk  Archangel:  Wonderland.ptk  Bassie:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk  Archangel:  Wonderland.ptk  Bassie:  Gone tipsy.ptk
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99: Lunch with the gods.ptk  Archangel: Wonderland.ptk  Bassie: Gone tipsy.ptk  Bionic:
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99:  Lunch with the gods.ptk  Archangel:  Wonderland.ptk  Bassie:  Gone tipsy.ptk  Bionic:  Factory of hybrid.ptk
Raina, Grusbanan, Syphus, Nula, Little bitchard, Lemmon, cp, matchugovsky, Evil, Mike West, Theorize, phecda, sk.syncsound:  Beta testing, ideas & bugs reports.  99: Lunch with the gods.ptk  Archangel: Wonderland.ptk  Bassie: Gone tipsy.ptk  Bionic: Factory of hybrid.ptk  DJ Amfibia:

### Dune:

Alterraid.ptk Aulral.ptk Dne\_wro3.ptk

### Drawer:

AcidTrance.ptk

### Falcon:

Vacation climate.ptk
Without performer.ptk

### Ganja:

Plastic elements.ptk

### Jiffypop23:

Arrhenius.ptk

### Nula:

Ordinary-Zero.ptk

### Maktone:

Comic Bakery Remix.ptk

### Mice:

Bitchbiker.ptk Primitive.ptk

### Okeanos:

Sudoku padawan.ptk

### Revisq:

Goa.ptk Trip to exp.ptk

### Rhino:

Brass tacks.ptk C-Masters.ptk Chemistry.ptk Dragon.ptk Dream weaver.ptk Jameson.ptk Money.ptk Round A Bout.ptk

### Scorpik:

Love me daddy.ptk

### Tomchi:

Devenirunpoulet.ptk

# Wal: Elevator zax.ptk Loop influenza.ptk Wally: Space game.ptk Xtd: Flight.ptk Warlock.ptk Yzi: Amarillo.ptk Spinning.ptk

### Michael Wolniak, AAS Tao, Arguru:

Presets and instruments.

### Leonid:

303 skin.

### Alien^PDX & Kenët:

The startup logo.