



## **DefleMask - a Multi-System Tracker**

DefleMask is one of the most ambitious chipmusic projects to date; it is a donationware aiming to have one unique tracker interface for making chiptunes for many old school sound chips.

**Supported Soundchips:**

- 1: YAMAHA YM2612 FM Soundchip
- 2: Texas Instruments SN76489 PSG Soundchip
- 3: Z80 Variant used by the Nintendo Game Boy
- 4: Hudson Soft HuC6280
- 5: Ricoh 2A03 APU
- 6: MOS Technology SID
- 7: YAMAHA YM2151 FM Soundchip
- 8: SEGA PCM

**Supported Systems:**

- SEGA Genesis (Soundchip 1 + Soundchip 2)
- SEGA Master System (Soundchip 2)
- Nintendo Game Boy (Soundchip 3)
- NEC PC-Engine/TurboGrafx-16 (Soundchip 4)
- Nintendo NES (Soundchip 5)
- Commodore 64 (Soundchip 6)
- Arcade Machine (SEGA X/Y Board, Soundchip 7 + Soundchip 8)

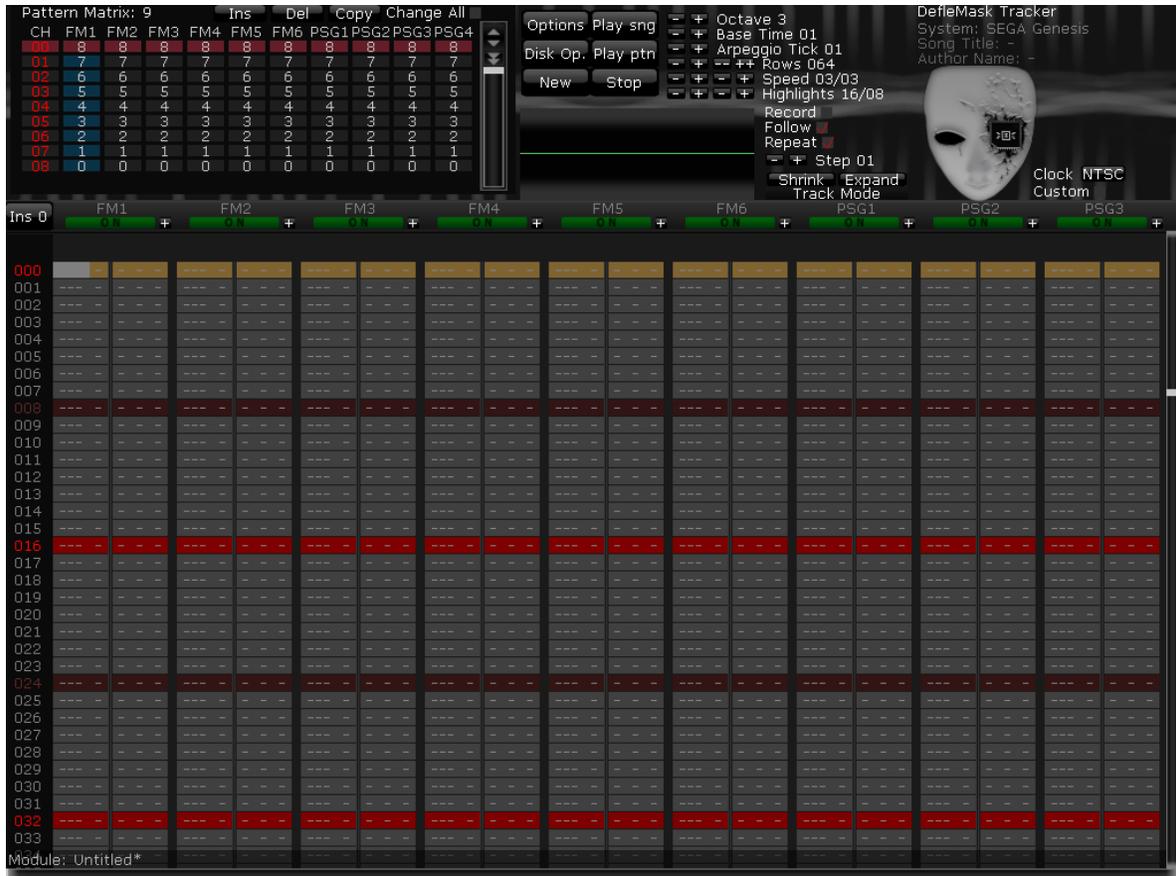
**Attention:**

- \* Please provide Administrator/Root privileges to DefleMask, it needs to have write permission in its directory.
- \* DefleMask character support: ASCII

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# Main Interface

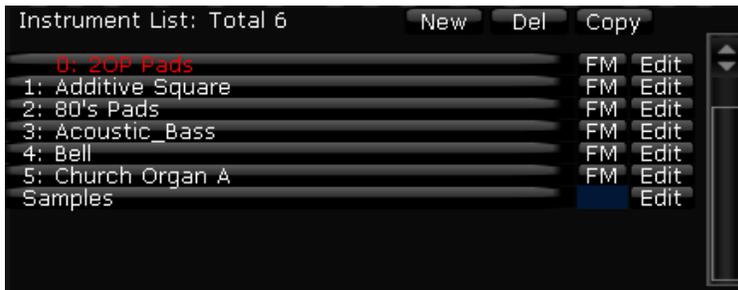


- **1: Pattern Matrix**



In the pattern matrix you can arrange the patterns' positions. It is possible to create different orders for every channel, in this way you can create different loops, repetitions and mixes using all the channels at the same time. The pattern matrix is a sequencer; it will help you to control how your song will evolve trough time.

## • 2: Instrument List



When you start a new song, there are no instruments at all; you have to click on "New" in order to create a new instrument (to switch from Pattern Matrix to the Instrument List press F1 or the INS button under the pattern matrix).

After you create an instrument, you can change the type by clicking on "FM" or "STD" if the current system supports both "FM" and "STD" instruments, STD instruments are controlled by macros, and FM instruments are controlled by its FM envelopes and operator registers.

You can enter on the properties of the instruments by clicking on edit button. Inside that window, you can name it, edit its behavior, load another instruments, save your changes, etc.

If you want a copy of the instrument, you should click "Copy" button, and a copy will be created at the bottom of the list with "COPY" added at the end.

You can use the arrows from the upper right corner to move them freely, also by pressing "Del" you will delete the bottom instrument.

If the current system supports PCM Samples, a PCM Samples line will appear. You can press "Edit" button in order to load and assign samples to notes.

### **Supported instruments formats:**

- .dmp (Official DefleMask Preset File)
- .bin (RAW SMPS dump)
- .tfi (TFM Music Maker format)
- .y12 (GENS KMod dump)
- .ins (MVS Tracker format)
- .vgi (VGM Music Maker format)
- .opm (YM2151 dumps, you have to select the last instrument in the list to load up to 8 opm instruments)

- **3: Save/Load Window**



A window like this will be shown when you press on a Save or Load button, you can navigate through subfolders, load files or create more and new folders. Remember that the "Name: " textbox is also used to create a new folder, so you have to type a name and press "Create Folder" to create it correctly.

- **4: Instrument Editor Windows:**

The instrument editor window in DefleMask is a floating sub window, you can use the side button ">" to switch the position of the window to the right part of the screen, after that you can use the "<" button to move it to the left.

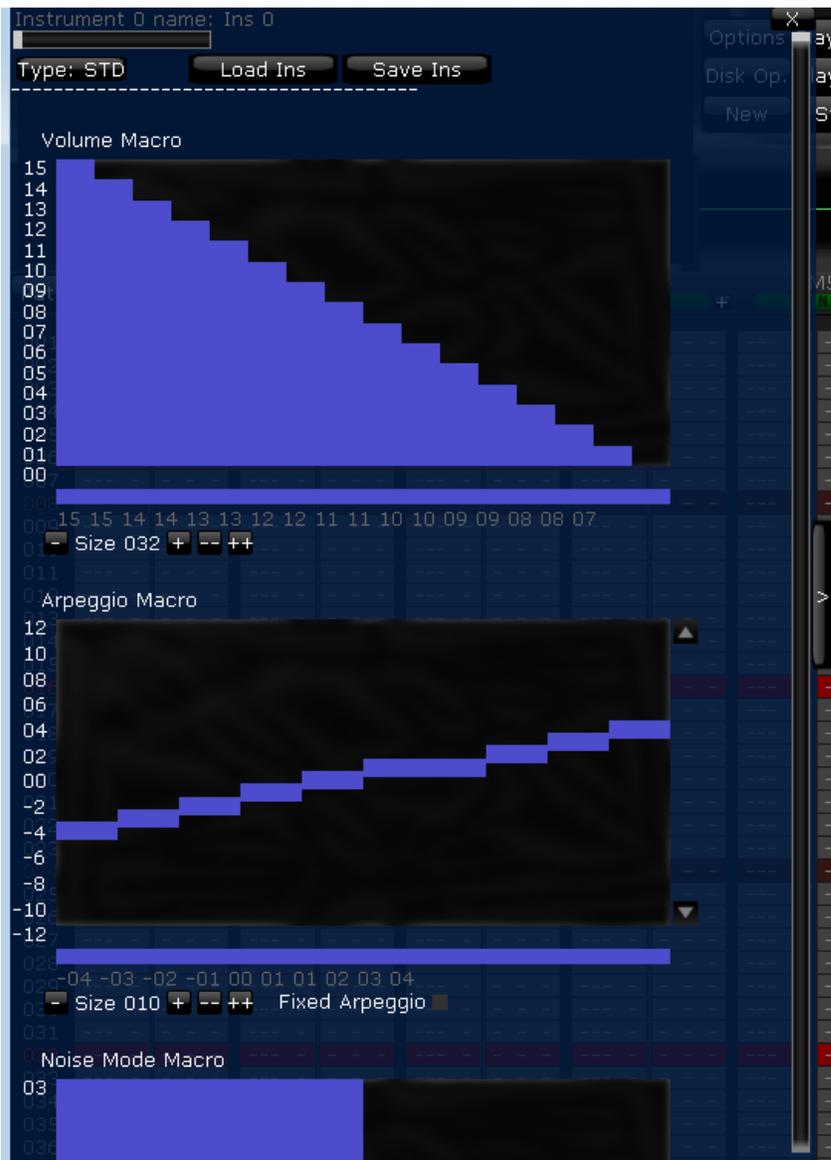
This is very useful while you are editing a song and you want to check the instrument at the same time.

In order to close the window, you have to press the "X" button at the top of the screen.

Because DefleMask is a Multi-System Tracker there are two types of instruments edition windows: STD, FM, WAVETABLES and Samples.

They are explained in the next pages.

## STD Instruments:



The STD Instruments are controlled by Macro Generators, you can draw any type of shape using the mouse, you can also copy notes or volume values and paste its inside the Macro, or set a Loop point by clicking in the bottom part of the envelope, and you can remove that loop point with a click with the right mouse button. If the current system supports WAVE Channels, you can change the wave selected by the "Selected WAVE" display or by the button in the bottom of the instrument list.

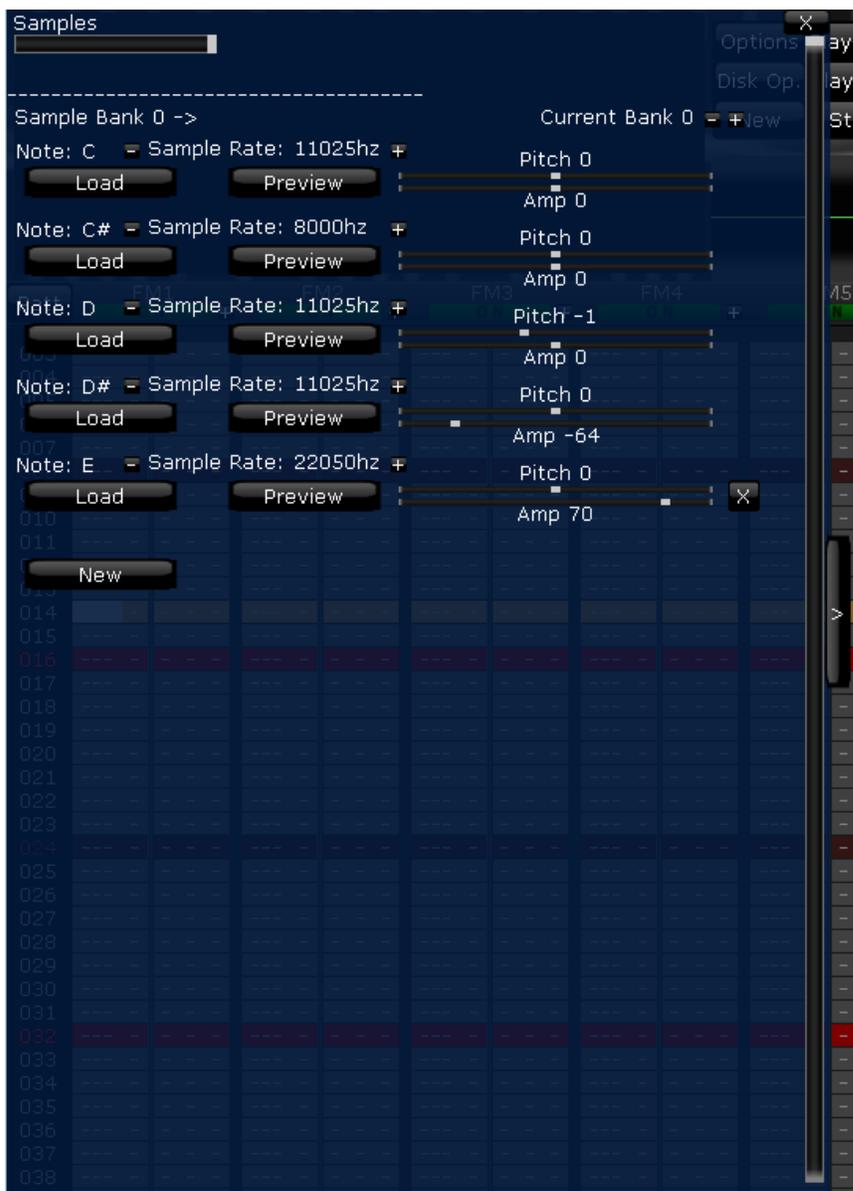
### FM Instruments:



The FM Instruments are controlled by FM Registers, you can change its values by using sliders, for more information about the System FM values, check the System's section inside this manual.



## Sample Instruments:



You can load Wav files into DefleMask in order to use the PCM capabilities of the current system selected; the wav files must have 16bits depth.

You can use a max of 12 PCM samples per bank (all notes from the keyboard). If you keep adding samples, a new bank will be created and you have to switch banks in your song by using Set Sample Bank effect (explained in Effects chapter of this manual)

To replace a loaded sample, simply reload a new sample over the desired one. To delete a sample, click on the "X". Only the latest loaded sample can be deleted! The samples are stored in a stack.

## 2: Options

**Repeat:** If it is checked, the song will start again when it reaches the end.

**Follow:** If it is checked, the camera will follow the playing row.

**Record:** If it is checked, you can modify the patterns, you can check/uncheck it using the keyboard too (check out Controls chapter for more information).

**Step:** The count of rows that the tracker will skip after a new data.

**Shrink/Expand:** These are global Shrink and Expand commands, they will double the size of the patterns and shrink/expand the information in the current project. You can do this locally by using Controls chapter.

**NTSC/PAL/Custom:** You can choose the global speed of the song, NTSC is 60 Hz and PAL is 50 Hz. You can also check "Custom" in order to set a custom clock speed value.

**Track Mode/Live Mode:** By pressing this button or using the Keyboard Shortcut Ctrl+E, you will enter to the Live Mode. Please read Live Mode chapter category inside this manual for more details. By pressing it again you will get back to the normal Track Mode.

## 3: Main Menu

**Options:** Under Options menu you can:

**System:** Change the current system.

**About:** Check some information about me and the tracker itself.

**E. Wav:** Export the current song, in real time, to a WAV file.

**Keys:** To customize your keyboard layout.

**MIDI:** A list to select from available MIDI IN devices.

**Buffer:** Change the Audio Buffer Size to improve the tracker performance.

**Play on Load:** To enable or disable auto play of a loaded song.

**Waveform Viewer:** To enable or disable Waveform output.

**Horizontal Effects Entry:** Move to right or down while entering effects.

**Play sng:** Plays the song from current pattern selected.

**Disk Op.:** Under Disk Op. menu you can:

**L. DMF:** Loads a DMF (DefleMask Module Format) into the tracker.

**S. DMF:** Saves a DMF (DefleMask Module Format).

**S. VGM:** Saves the song in .vgm format.

**S. ROM:** Builds a rom for the system.

**L. Skin:** Loads a new Skin into DefleMask.

**Play ptn:** Plays only current pattern selected.

**New:** Make a song from scratch.

**Stop:** Stop playback.

## 4: More Options

**Arpeggio Tick:** The speed of the arpeggio command.

**Rows:** Rows per pattern, "++" and "--" buttons will increase/decrease by 8.

**Octave:** Input octave selector, can be changed also by keyboard shortcuts.

**Base Time:** The base time value multiplies the tick time value.

**Speed:** The total time of an even row and for an odd row.

**Highlights:** Rows lines highlighting.

## 5: Patterns

This is the main part of any tracker, in it you can enter notes, effects, volumes and instrument changes.

The number of patterns will depend of the system selected.

## A row



**Row:** The number of the current row, the number of total rows can be changed using Total Rows changer on **4**.

**Note:** In this place you can put the actual notes that the tracker will play, check Controls chapter for a note-key relation.

**Vol:** Here you will be able to define a new volume; the max value is FF (HEX)

**Ins:** This value will relate the Instrument List with the Patterns.

**Effect:** In order to know the possible effects check the Standard Effects chapter and, remember that the current system that you are using maybe is capable to make other effects or the behavior of one standard effect is processed in a different way.

**Value:** The effect's parameter.

**NOTE:** You can add up to 4 effects columns pressing the "+" button in the upper part of each channel.

## Controls

### General

COMMAND	KEY
Exit	Esc
Play Song	Enter
Play Pattern	Shift+Enter
Global Play	Ctrl+Enter (this will play all current opened DefleMask Instances in the OS)
Switch modes (Track Mode/Live Mode)	Ctrl+E
Mutes Channel N	Ctrl+1/2/3/4/5/6/7/8/9/N
Full Screen/Windowed	Alt+Enter
Recording mode	Space
Pattern Matrix/Instrument Editor Swich	F1
More/Less Step Size	Ctrl+Add/Ctrl+Subtract
Quick Save	Ctrl+S

### Top of Patterns

COMMAND	KEY
Mute/Unmute Channel	Single Click on Mute Button
Solo Channel	Double Click on Mute Button

### Pattern Matrix

COMMAND	KEY
Increase Pattern Number	Left Mouse Click on Pattern's ID
Pattern Number Equal To The Lastest One	Middle Mouse Click on Pattern's ID
Decrease Pattern Number	Right Mouse Click on Pattern's ID
Insert a Unused Frame	"Ins" Button
Delete Current Frame	"Del" Button
Copy Frame to Next Position	"Copy" Button
Add Frames With ID Zero on Bottom	"+" Button
Remove Bottom Frame	"-" Button
Move Frame Up	"^" Button
Move Frame Down	"v" Button
Move Frame To Bottom as New	Double "v" Button

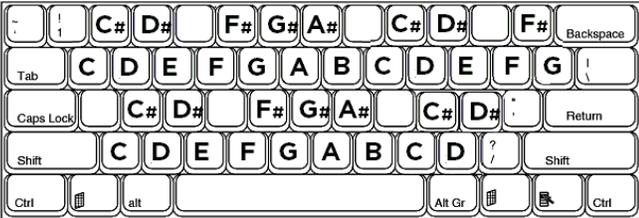
### Instrument List

COMMAND	KEY
New Instrument	"New" Button
Delete Last Instrument	"Del" Button
Copy Selected Instrument	"Copy" Button
Edit Instrument	"Edit" Button

### Instrument Editor Window

COMMAND	KEY
Copy Instrument	Shift+Ctrl+C
Paste Instrument	Shift+Ctrl+V
Next Instrument	Alt+Right Arrow Key
Previous Instrument	Alt+Left Arrow Key

## Patterns

COMMAND	KEY
Movement	Arrow Keys
Movement Up/Down with 4 as step	Page Up/Page Down
Movement trough Channels	Ctrl+Left/Right
Movement trough Patterns	Ctrl+Up/Down
Translate Under Values Down	Insert/Alt+Down
Move Under Values Up	Backspace/Alt+Up
Go to the first row	Home
Go to the last row	End
Remove Selected Values	Delete/OS Key+Backspace
Multiple Selection	Ctrl+A
Custom Selection	Shift+Arrow Keys / Click+Drag
Custom Selection Expand	Ctrl+E
Custom Selection Shrink	Ctrl+W
Copy (while on Track Mode)	Ctrl+C
Clear Loop Points (while on Live Mode)	Ctrl+C
Cut	Ctrl+X
Paste	Ctrl+V
Paste and Mix	Ctrl+B
Numerical Values	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F (HEX)
Notes	
Note-Off	Tab
Decrease Note/s	Ctrl+F1
Increase Note/s	Ctrl+F2
Decrease Octave/s	Divide Key (Numpad)
Increase Octave/s	Multiply Key (Numpad)
Interpolate Volume Values	Ctrl+I

# Live Mode

**3 points, Loop start, Loop end and next in queue.**

CH	FM1	FM2	FM3	FM4	FM5	FM6	PSG1	PSG2	PSG3	PSG4
00	0	0	0	0	0	0	B	9	5	0
01	1	1	1	1	1	1	C	A	6	0
02	0	0	0	0	0	0	D	B	0	0
03	2	2	2	2	2	2	B	C	5	0
04	3	3	3	3	3	3	E	D	6	0
05	4	4	4	4	4	4	0	0	0	0
06	5	5	5	5	5	5	0	0	0	1
07	6	6	6	6	6	6	0	0	0	1

When you press the "Track Mode" button or Ctrl+E, you will change the current DefleMask's mode.

In Live Mode you can set Loop points in the pattern matrix. With Left Mouse Button you could set the start loop point (the Green Line) and with Right Mouse Button you will set the end loop point (the Red Line).

If you press the Middle Mouse Button the current pattern will be declared as Start Loop Point and as the End Loop Point, making that specific pattern to loop.

After that, the song will start to loop over and over again, until you change the loop form, stop the song or clear the loop points.

Ctrl+C (copy) is replaced by Clear Loop Points while in Live Mode.

You can queue a new pattern by pressing Shift+Left Mouse Button (the Green Arrow on the left side). That arrow will define that after the end of the current sounding pattern, the playing cursor will be moved to that specific position.

You can queue repeatedly one after the other to control the song structure.

To remove the latest node in the queue, you have to press Shift+Right Mouse Button, in order to clear completely the queue you have to press Ctrl+Shift+C.

A very useful technic is to make generic and independent pattern frames and queue them manually during a Live Session.

Another interesting feature to use in the Live Mode is the Mute Channel Keyboard Shortcut, you can press Ctrl+1/2/3/4/etc to dynamically mute the channels.

## Effects

DefleMask uses Protracker's standard MOD effect enumeration. Like other trackers, however, the speed and behavior of the commands can be processed differently.

Remember that the current system can change how effects are processed. In order to learn more about the changes and new effects available on a desired system, you will need to check that system's category in this manual.

### Effects list

[0xy - Arpeggio](#)

[1xx - Portamento up](#)

[2xx - Portamento down](#)

[3xx - Portamento to note](#)

[4xy - Vibrato](#)

[5xy - Portamento to note and volume slide](#)

[6xy - Vibrato and volume slide](#)

[7xy - Tremolo](#)

[8xx - Panning](#)

[9xx - Set Speed Value 1](#)

[Axy - Volume Slide](#)

[Bxx - Position Jump](#)

[Cxx - Retrig](#)

[Dxx - Pattern Break](#)

[Exx - Extended Commands](#)

[Fxx - Set Speed Value 2](#)

**0xy - Arpeggio**

This effect changes the pitch of the note rapidly, with the speed of this note pitch change being set by the Arpeggio Speed selector. You can create 3 different pitches, the first one is the base note, the second one is note + x semitones, and the third one is note + y semitones. The effect will work until the effect is turned off by setting xy to 00.

**1xx - Portamento Up**

This effect will change the frequency by adding the xx value on each tick. In other words, value xx defines speed of the portamento. The effect will continue until it is turned off by setting xx to 00.

**2xx - Portamento Down**

This effect will change the frequency by subtracting the xx value on each tick. In other words, value xx defines speed of the portamento. The effect will continue it is turned off by setting xx to 00.

**3xx - Porta to note**

This effect will change the frequency of the previous note to the new note with a speed of xx.

The effect will continue until a new note is triggered, it reaches the pitch of the second note, or the effect is turned off by setting xy to 00.

**4xy - Vibrato**

Sine vibrato, changes frequency up and down with specified depth and speed. Value x defines speed of the vibrato. 1 is minimum speed, F is maximum speed. Value y defines depth of the vibrato. Maximum depth is a full note. The effect will continue until the effect is turned off by setting xy to 00.

**5xy - Portamento to note and volume slide**

Continues previous 3xx effect and combine the result with a volume slide that works like Axy effect.

**6xy - Vibrato and volume slide**

Continues previous 4xx effect and combine the result with a volume slide that works like Axy effect.

**7xy - Tremolo**

Similar to the vibrato, but changes the volume amplitude instead of the pitch. x for speed, and y for depth.

**8xx - Panning**

Panning will change the sound output of the channel to the right or the left speakers, normally it is 0x01 right, 0x10 left, and 0x11 both. However, some systems have different stereo behavior. You will need to check these individually.

**9xx - Set Speed Value 1**

This command will set the playback speed 1 dynamically.

**Axy - Volume Slide**

Volume slide up or down. Positive x value and zero y value defines speed of the volume slide going up, positive y value and zero x value defines speed of the volume slide going down.

**Bxx - Position Jump**

This command will cause the tracker to jump to pattern position xx (hex). If used together with a pattern break, you can also specify the starting row (by default, it will play from the start of the pattern).

**Cxx - Retrig**

Retrig the current note xx times on a tick. If the parameter xx is equal or higher than tick time, the effect is ignored. This effect will work until the row ends.

**Dxx - Pattern Break**

This command will stop playing the current pattern and will jump to the next one in the pattern matrix. You can also select which row to start on in the next pattern. Note that the specified row xx is in Hex. This effect will not work on the last pattern of the song, because there is no "next pattern". If you want to make a loop, use Bxx instead.

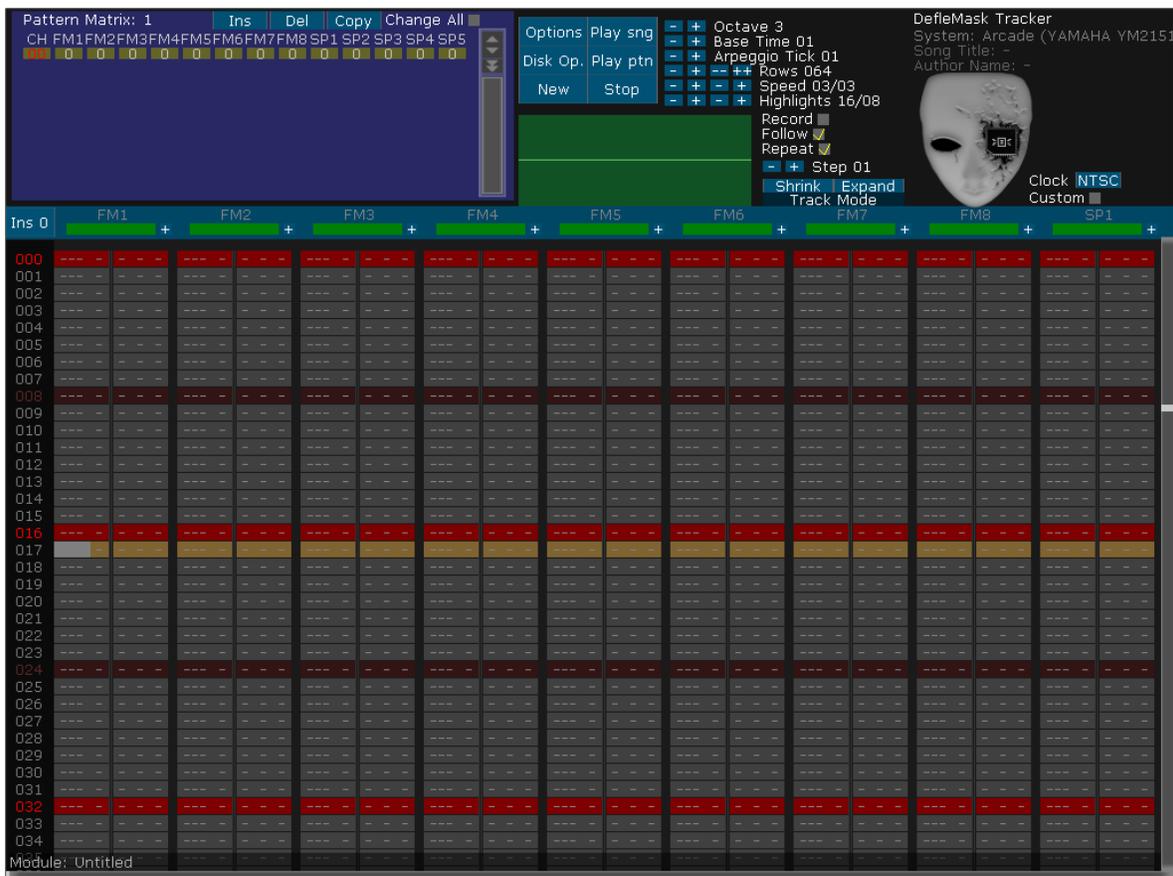
**Exx - Extended Commands**

- **E1xy** - Note Slide Up: Use x to define the speed, and y to define the number of semitones to increment. This effect is similar to 3xx - Portamento to Note.
- **E2xy** - Note Slide Down Use x to define the speed, and y to define the number of semitones to decrement. This effect is similar to 3xx - Portamento to Note.
- **E3xx** - Set Vibrato Mode: This command will define vibrato mode, 1 UP ONLY (like guitars), 2 DOWN ONLY, 0 both/normal mode.
- **E4xx** - Set Fine Vibrato Depth: This command will define the fine vibrato depth, default value is F.
- **E5xx** - Set Fine Tune: This command will set the frequency of the current or future sounding notes in a very precise way, it is a fine pitch offset setting, 80 is default.
- **EBxx** - Set Samples Bank: This command will change the current sample bank to xx. A max of 12 sample banks can be used, from 0 to 11.
- **ECxx** - Note Cut: This command will rapidly cut a triggered note, a value greater than the speed of the current row will be ignored.
- **EDxx** - Note Delay: This command will delay a note a short period of time, a value greater than the speed of the current row will be ignored.
- **EFxx** - Set Global Fine Tune: This command will add or subtract to the global pitch of the entire song, a value greater than 80 will add, and a value lower than 80 will subtract (this effect is cumulative).

**Fxx - Set Speed Value 2**

This command will set the playback speed 2 dynamically.

# Skins



DefleMask knows that every user has different visual preferences, so it is available an easy system to customize the visual aspect of the software.

You can do a new skin following 5 easy steps:

1. Enter to skins folder.
2. Copy "default" folder.
3. Rename your copy.
4. Edit the textures.
5. Edit colors.ini changing the RGB values.

Enjoy!

## Config File

DefleMask Tracker uses a config file to store the configuration, instead of the registry or other platform-dependent solutions.

The file config.ini can be modified by hand; but almost all the parameters are modified through DefleMask.

NAME	POSSIBLE VALUES	COMMENTS
full_screen	0,1	Sets the full screen, it is saved automatically if you press Alt+Enter
window_width	>0	Sets the startup Window width.
window_height	>0	Sets the startup Window height.
max_fps	>0	Sets the speed of the rendering system, with lower values you can gain performance. This value is only changeable editing this config file.
current_skin	Any skin name	Store the latest skin used, if an inexistent or invalid skin is detected, the default skin will be loaded.
sound_system	SYSTEMS	Store the latest System used.
sound_system_mode	SYSTEM MODE	Store the latest System Mode used.
highlight_a	>0	First Highlight value.
highlight_b	>0	Second Highlight value.
buffer_size	0,1,2,3	Store the latest buffer size used.
play_on_load	0,1	Setting it to 1 will tell to DefleMask not to play a track after load it.
skip_intro	0,1	Setting it to 1 will tell to DefleMask not to show any intro screen.
waveform_viewer	0,1	Setting it to 1 will enable the waveform viewer.
horizontal_effects	0,1	Setting it to 1 will make the cursor move to the right rather than down while entering effects.
keyslayout	LAYOUT	This field remembers the latest used key layout.
midi_in	>0	Stores the midi device used.

# **Systems information**

# SEGA Genesis



Soundchip 1: YAMAHA YM2612

Soundchip 2: Texas Instruments SN76489

Note Range: C#-0 -> C-8

Max Volume: 7F (Soundchip 1), F (Soundchip 2)

## Effects:

### YM2612:

#### **10xy - LFO Control:**

This effect controls the Low Frequency oscillator of the YAMAHA YM2612. The x value set if the LFO is on or off, a zero x turns the LFO off, a non-zero value turns the LFO on. The y value controls the speed of the LFO, you can set a value from 0 to 7.

#### **11xx - Feedback Control:**

The FB is a global parameter of a YM2612's channel. You can designate xx with a value from 0 to 7.

#### **12xx - TL Operator 1 Control:**

With this effect you can modify the TL of the operator 1. You can designate xx with a value from 0 to 7F.

#### **13xx - TL Operator 2 Control:**

With this effect you can modify the TL of the operator 2. You can designate xx with a value from 0 to 7F.

#### **14xx - TL Operator 3 Control:**

With this effect you can modify the TL of the operator 3. You can designate xx with a value from 0 to 7F.

#### **15xx - TL Operator 4 Control:**

With this effect you can modify the TL of the operator 4. You can designate xx with a value from 0 to 7F.

#### **16xy - MULT Control:**

The Multiplier factor is a frequency multiplier, all of the 4 operators are capable of have its own values of MULT. The x value is the operator to modify, you can designate a value from 1 to 4. The y value controls the MULT value; you can designate a value from 0 to F.

#### **17xx - DAC Enable:**

This effect will enable the sample features of the last FM Channel. A non-zero value will enable the sample output, and a zero value will disable it.

**19xx - Global AR Control:**

This effect will control all the AR values of all operators of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Axx - AR Operator 1 Control:**

This effect will control the AR value of the operator number 1 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Bxx - AR Operator 2 Control:**

This effect will control the AR value of the operator number 2 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Cxx - AR Operator 3 Control:**

This effect will control the AR value of the operator number 3 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Dxx - AR Operator 4 Control:**

This effect will control the AR value of the operator number 4 of the current instrument, a value higher than 0x1F (31) would be ignored.

**SN76489:****20xy - Change Noise Mode:**

This effect only works on SN76489 (PSG) channels.

This effect will change the way in which the SN76489 makes the noise.

Value x sets the special noise mode, if it is set to 0 only 3 frequencies are available: C, C# and D.

If it is set to 1, the noise can reach any frequency at the cost of losing the third Square channel.

Value y sets the type of noise, setting it to 0 will enable the periodic noise mode, if it is set to 1, white noise generation will be enabled.

Keep in mind that, after changing this value, you have to play the current track in order to update the emulator noise mode.

# SEGA Master System



Soundchip: Texas Instruments SN76489

Note Range: A-0 -> A#-7

Max Volume: F

A maximum of 4 notes can be sounded on the SN76489 if the noise mode is not in the special mode, if it is, a maximum of 3 notes can be sounded.

**Effects:****20xy - Change Noise Mode:**

This effect only works on SN76489 (PSG) channels.

This effect will change the way in which the SN76489 makes the noise.

Value x sets the special noise mode, if it is set to 0 only 3 frequencies are available: C, C# and D.

If it is set to 1, the noise can reach any frequency at the cost of losing the third Square channel.

Value y sets the type of noise, setting it to 0 will enable the periodic noise mode, if it is set to 1, white noise generation will be enabled.

Keep in mind that, after changing this value, you have to play the current track in order to update the emulator noise mode.

# Nintendo Game Boy



Soundchip: Z80 Variant

Note Range: C-1 -> C-8

Max Volume: F on SQ1/SQ2/Noise Channel, 3 on WAVE Channel.

**Attention!** Due to how volume is handled inside the soundchip, you should always use Volume Envelopes to shape your volume fades. Using the volume column directly is only available at the start of the notes, while the note is sounding the volume envelope controls it all.

**Effects:****10xx - Set WAVE:**

This effect will change the current wave defined in the WAVE Channel Instrument Editor Window.

**11xx - Set Noise Polynomial Counter Mode:**

This effect will set the current Polynomial counter for the Noise Channel, 0 will set it to 15 steps, and 1 will set it to 7.

**12xx - Set Duty Cycle:**

This effect will set the duty cycle value of the current Square Channel, you can set a value from 0 to 3. 0=12.5%, 1=25%, 2=50% and 3=75%.

**13xy - Set Sweep Time and Shift:**

Value x will set the Sweep time, and value y will set the Sweep Shift. Both have a valid range from 0 to 7. A zero value will disable the sweep.

**14xx - Set Sweep Direction:**

A zero value will make the sweep to go upwards, a non-zero value downwards.

## NEC PC-Engine



Soundchip: Hudson Soft HuC6280

Note Range: C#-0 -> B-6

Max Volume: 1F

The stereo 08xy effect in PC Engine is X for LEFT and Y for Right. 0-F values are allowed.

**Effects:****10xx - Set WAVE:**

This effect will change the current wave defined in the WAVE Channel Instrument Editor Window.

**11xx - Enable Noise Channel:**

This effect will enable the features of the Channels 5 and 6 to produce Noise, a value different from zero will enable the noise channel in the current channel. This command will only take Effect in channels 5 and 6.

**12xx - Set LFO Mode:**

Enabling the LFO will mute the Channel 2. This effect will set the current LFO mode, a value of 00 will turn off the LFO, a value of 01 will add the LFO data directly to channel 0's frequency, a value of 02 will shift the LFO data left by four places and then it will be added to the frequency, a value of 03 will shift left the LFO data by eight places and then it will be added to the frequency.

**13xx - Set LFO Speed:**

This effect will set the LFO speed if it is enabled by 12xx effect.

**17xx - Enable Sample Output:**

Setting xx to 1 will enable the sample output in the selected channel, setting it to 0 will enable again the wavetable output.

# Nintendo NES



Soundchip: Ricoh 2A03 (APU)

Note Range: A-0 -> C-7

Max Volume: F

You have 5 channels, 2 square channels with variable duty cycle, a Triangle Channel, a Noise Channel and a 7Bits PCM channel (RAW PCM NES Samples)

**Effects:****12xx - Change Duty Cycle/Noise Mode:**

This effect will change the duty cycle or the noise output mode.

If you are in a square channel (SQ1 or SQ2), you will change the Duty Cycle (possible values are 00, 01, 02 and 03), if you are in the Noise Channel (NOI) you could change the noise mode, possible values are 00 and 01. Keep in mind that you can change them too by using the Duty Cycle Macro of the instrument.

# Commodore 64



Soundchip: MOS Technology SID

Note Range: A-0 -> C-7

Max Volume: F (global parameter of the soundchip, you have to use the ADSR to modify the volume per channel)

You have 3 channels, with selectable Waveforms (Triangle, Saw, Noise, Pulse), ADSR generators, 3 different filters that can be mixed and various other parameters.

There are two version of the SID chip, the 6581 and the 8580. DefleMask supports both of them, and the differences are: better mixing of waveforms for the 8580, and more aggressive filters for 6581.

**Effects:****10xx - Set WAVE:**

This effect will set directly the waveform for the current channel, the parameter is a 4bits bitmask, a detailed list could be found in the Instrument Editor category of Commodore 64 in this manual.

**11xy - Filter Cutoff Set:**

This effect will set the filter cutoff to a specific value, you can set values from 0 to 64 (hex).

**12xx - Pulse Width Set:**

This effect will set directly the pulse width; xx could be from 0 to 64.

**13xx - Filter Resonance Set:**

This effect will change the current Filter Resonance value, xx goes from 0 to F.

**14xx - Filter Mode Set:**

xx is a bitmask to enable or disable the filter modes:

0 = Low Pass Disabled, Band Pass Disabled, High Pass Disabled.

1 = Low Pass Enabled, Band Pass Disabled, High Pass Disabled.

2 = Low Pass Disabled, Band Pass Enabled, High Pass Disabled.

3 = Low Pass Enabled, Band Pass Enabled, High Pass Disabled.

4 = Low Pass Disabled, Band Pass Disabled, High Pass Enabled.

5 = Low Pass Enabled, Band Pass Disabled, High Pass Enabled.

6 = Low Pass Disabled, Band Pass Enabled, High Pass Enabled.

7 = Low Pass Enabled, Band Pass Enabled, High Pass Enabled.

**15xx - ADSR Hard Reset Time Set:**

This effect will set the amount of frames that the ADSR Reset effect (1Axx) will take to perform the reset of the envelope, a value of 3 should be enough to avoid all types of ADSR Bugs presents in the SID (default value: 1).

**1Axx - ADSR No Reset:**

This effect will prevent the reset of the ADSR on note on, if xx is a non-zero value, then all the next notes of the channel will continue the envelope, a value of zero will reset the ADSR on every note on (keep in mind that the SID chip has a bug regarding to the ADSR, to reset it effectively the software should wait some frames, you can set the count of frames to wait using 15xx effect).

**1Bxy - Filter Cutoff Reset:**

This effect will reset the filter cutoff to the current instrument filter cutoff, very useful to finish a Dynamic Macro Filter Cutoff change. An y value different from zero will change it instantly, and the x value, if it is not set to zero, will reset it on every new note. Keep in mind that the filter cutoff is a global value on the Commodore 64, so this command will change the behavior of all the channels that are using the filter.

**1Cxy - Pulse Width Reset:**

This effect will reset the pulse width to the current instrument pulse width, very useful to finish a Dynamic Macro Pulse Width change. An y value different from zero will change it instantly, and the x value, if it is not set to zero, will reset it on every new note.

**1E0X - Extended 0 - Attack Set:**

This effect will change dynamically the attack of the selected channel. x can go from 0 to F.

**1E1X - Extended 1 - Decay Set:**

This effect will change dynamically the decay of the selected channel. x can go from 0 to F.

**1E2X - Extended 2 - Sustain Set:**

This effect will change dynamically the sustain of the selected channel. x can go from 0 to F.

**1E3X - Extended 3 - Release Set:**

This effect will change dynamically the release of the selected channel. x can go from 0 to F.

**1E4X - Extended 4 - Ring Modulation Set:**

This effect will set or clear the ring modulation of the selected channel. x can be 0 or 1.

**1E5X - Extended 5 - Sync Set:**

This effect will set or clear the sync of the selected channel. x can be 0 or 1.

**1E6X - Extended 6 - Channel 2 OFF Set:**

This effect will set the CH2OFF command of the SID's chip dynamically. x can be 0 or 1.

# Arcade



Soundchips: YAMAHA YM2151 + SEGA PCM

Note Range: C#-0 -> B-7

Max Volume: 7F

Effect 08 works 08xy where x is left speaker and y is right speaker.

Max sample rate of PCM data: 31250hz

## Effects:

### YM2151:

#### **10xx – Noise Mode Set:**

This effect will enable the noise output of the 4<sup>th</sup> operator of the last FM channel. 00 means disabled, standard behavior as a FM operator. From 0x01 to 0x20 (HEX) you will set the white noise frequency. This provides independence from the main frequency of the other operators (to make noise and kick at the same time at different pitches, for example)

#### **11xx - Feedback Control:**

The FB is a global parameter of a YM2612's channel. You can designate xx with a value from 0 to 7.

#### **12xx - TL Operator 1 Control:**

With this effect you can modify the TL of the operator 1. You can designate xx with a value from 0 to 7F.

#### **13xx - TL Operator 2 Control:**

With this effect you can modify the TL of the operator 2. You can designate xx with a value from 0 to 7F.

#### **14xx - TL Operator 3 Control:**

With this effect you can modify the TL of the operator 3. You can designate xx with a value from 0 to 7F.

#### **15xx - TL Operator 4 Control:**

With this effect you can modify the TL of the operator 4. You can designate xx with a value from 0 to 7F.

#### **16xy - MULT Control:**

The Multiplier factor is a frequency multiplier, all of the 4 operators are capable of have its own values of MULT.

The x value is the operator to modify, you can designate a value from 1 to 4.

The y value controls the MULT value; you can designate a value from 0 to F.

#### **17xx – Set LFO Speed:**

This effect will set the LFO's speed. It starts disabled (00), the max value is FF.

**18xx – Set LFO Waveform:**

This effect will change the LFO waveform, 0 SAW, 1 SQUARE, 2 TRIANGLE, 3 NOISE.

**19xx - Global AR Control:**

This effect will control all the AR values of all operators of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Axx - AR Operator 1 Control:**

This effect will control the AR value of the operator number 1 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Bxx - AR Operator 2 Control:**

This effect will control the AR value of the operator number 2 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Cxx - AR Operator 3 Control:**

This effect will control the AR value of the operator number 3 of the current instrument, a value higher than 0x1F (31) would be ignored.

**1Dxx - AR Operator 4 Control:**

This effect will control the AR value of the operator number 4 of the current instrument, a value higher than 0x1F (31) would be ignored.

**SEGA PCM:****20xx – Set Sample Delta:**

This effect will set the speed of sample playback, very useful to make tonal samples. The formula is:  $\text{delta} * (31250/255) \text{hz} = \text{sample hz}$

## FAQ

**Q:** MIDI Input is already supported by DefleMask?

**A:** Yes! under Options you will find the MIDI button. It will list all available MIDI devices.

**Q:** How can I associate the files extension with DefleMask?

**A:** DefleMask automatically associate files extension under Windows, in Windows 7 you should start it as Administrator to let DefleMask to write into the registry. In Linux you should done the association manually.

**Q:** I saved a track in VGM format, but there are some problems with the playback of the file, why?

**A:** Remember that DefleMask can export in various versions of the VGM format; some players maybe do not support the desired format. The latest in\_vgm Winamp Plugin is included in extras folder, with it every track should sound fine.

**Q:** I made a Skin for DefleMask and some Textures are not loaded, what I'm doing wrong?

**A:** Remember that you need to copy all textures from the default skin, if some texture is missing, DefleMask will simply load the default skin. If the problem persist, make a thread on the forum and explain your problem.

**Q:** How can I speed up the performance of DefleMask?

**A:** You could try to increase the Buffer's size, under options menu. Also you can try to decrease the max\_fps value inside the config.ini file.

**Q:** My computer crashed, my work is lost?

**A:** DefleMask saves automatically a backup module in the folder where the executable is located. You should search for "backup.dmf", it is the latest module played.

**Q:** I done a skin, but it don't load, how can I solve this?

**A:** Maybe you miss a texture file. Check that your skin have all the textures that the default skin have. Maybe there is a new texture added in a update and your skin needs it.

**Q:** The volumes of the channels are quieter after a Macro, why?

**A:** The latest value of volume is used as a reference for the next volume macro, so if you want to reset the volume to the standard you have to put in the volume column the max volume of the current system (F, for example).

**Q:** I cannot run DefleMask, I got a "Impossible to create the Window. CODE: 0xF4E7372F" in the ERROR.log file.

**A:** This should be a problem in the OpenGL drivers or video drivers, try to search for an OpenGL installation package and to update the video drivers and the problem should be fixed.

**Q:** On my Linux DefleMask won't start, why?

**A:** This is usually due to a missing library, remember to get OpenGL (sudo apt-get install freeglut3), if you are on a 64Bits distro you have to Download 32Bits libraries (sudo apt-get install ia32-libs) and maybe you will need also SDL libraries and lib32asound2-plugins.

**Q:** On my Mac OS X I get "Library not loaded: /usr/local/lib/libSDL-1.2.0.dylib" and DefleMask won't start, why?

**A:** You have to move libSDL-1.2.0.dylib file included with DefleMask to usr/local/lib to correctly load the Library.

**Q:** I have more questions!

**A:** You should register on the forum and ask anything you need to know!

## Links

Delek's Website:

<http://www.delek.com.ar>

Delek's Forum:

<http://www.delek.com.ar/forum>

Delek's YouTube Channel:

<http://www.youtube.com/Dele1000>

Delek's SoundCloud:

[http://www.soundcloud.com/Delek\\_Music](http://www.soundcloud.com/Delek_Music)

DefleMask Wiki:

<http://deflemask.wikia.com>

# Thanks!

Thank you for using DefleMask! consider a donation @ delek.com.ar using PayPal or Bitcoin!

My Bitcoin address:

1DELEKif32CbB4FJRWW6gGoYzxiy7bxepU

