apulSoft apUnmask v1.0.4 Manual
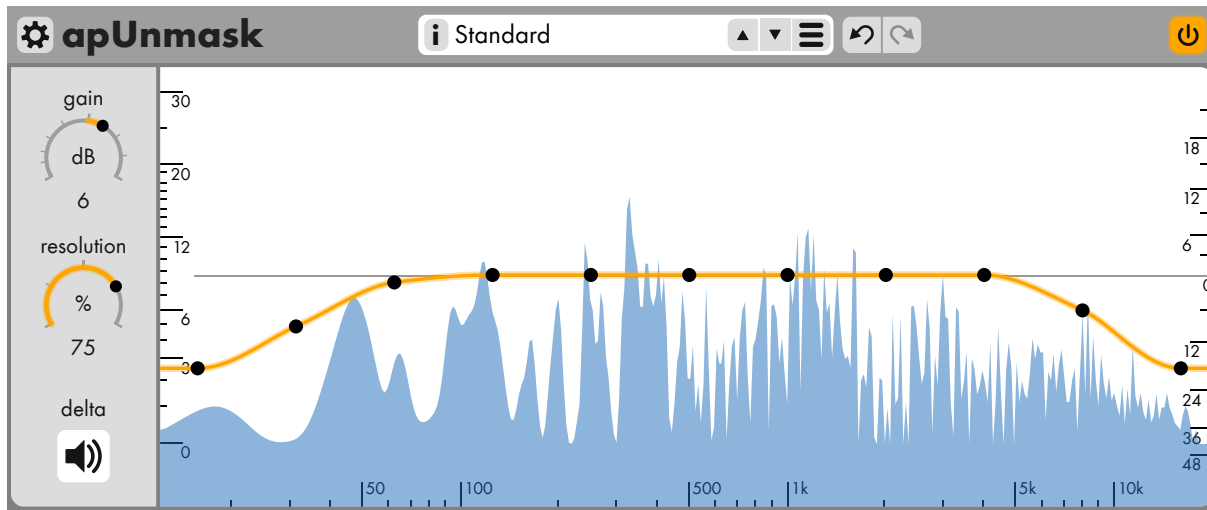
uncover hidden audio
(VST/VST3/AU/AAX)
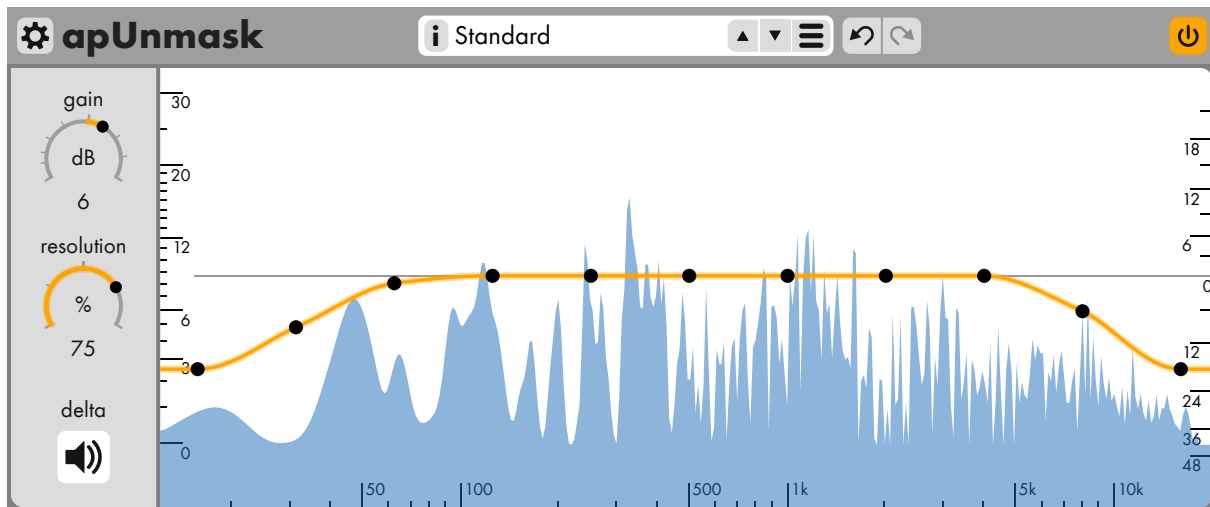
Introduction

apulSoft apUnmask is an audio plugin to amplify components of the audio that are psychoacoustically masked by other components.

To achieve this, apUnmask uses parts of the detector algorithm of the opus high-quality audio compression codec. Signal components that would get removed by compression are extracted. These can normally not be heard as they are masked by louder components in time and frequency. apUnmask enables amplifying and sculpting the masked content and adding it to the music.

To shape the frequencies of the extracted signal, it is fed through a linear phase graphical equalizer. It features a bezier curve smoothed frequency response without overshoot.

The result is a form of hyperrealistic audio, the process helps the listener to hear more aspects of the music at the same time.

Contents

1 End User License Agreement

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2 System Requirements

- macOS

  - macOS 10.11 or newer on an Intel or Apple Silicon CPU (64-bit only).
  - A host application compatible with VST, VST3, AU or AAX plugins running in 32-bit or 64-bit mode.
  - Pro Tools (AAX): Version 11 or newer. Pro Tools on Apple Silicon is natively supported.

- Windows

  - Windows 7 or newer. Both 32-bit and 64-bit versions of Windows are supported.
  - A CPU with SSE2 instruction support (Pentium 4 or newer).
  - A host application compatible with VST, VST3 or AAX plugins running in 32-bit or 64-bit mode.
  - Pro Tools (AAX): Version 10.3.5 or newer.
  - An application to view pdf files to read this manual.

3 Installation

- macOS

  - Quit all plugin host applications.
  - Double-click **apunmask-mac-(..).pkg**.
  - Follow the OSX installation procedure.
  - Open a host and create an instance of apUnmask in a plugin slot.
  - The apUnmask GUI shows a welcome screen with the options to run the plugin in demo mode after 5 seconds of delay, to buy a license online or to enter a serial number to unlock the full feature-set.

- Windows

  - Quit all plugin host applications.
  - Double-click the **apunmask-installer-win-(..).exe** to start the installation. On newer versions of Windows, it may be necessary to confirm the launch because of user access management.
  - Follow the installation procedure. During the install, you have the option to set the path to the apUnmask data folder, where settings, presets and the manual are installed into.
  - If VST2 versions are installed, the installer will provide the option to select destination folders for VST2 plugins for both 32-bit and 64-bit.
  - Open a host and create an instance of apUnmask in a plugin slot.
  - The apUnmask GUI shows a welcome screen with the options to run the plugin in demo mode after 5 seconds of delay, to buy a license online or to enter a serial number to unlock the full feature-set.

4 User Interface

The apUnmask user interface consists of a top bar and a large bottom section.

Most of the user interface controls have **tooltips** that get displayed if the mouse hovers over them for some time (with the tooltips preferences setting enabled). If the function of a control is unclear, use tooltips.

Many controls on the user interface can be dragged with the mouse to change values.

- If the ⎢Shift⎥ key is held down, values snap to predefined markers at round values.

- Holding ⎢Ctrl⎥ switches dragging to be scaled by 1/20 for fine adjustments.

- Double-clicking most of the value-based controls opens a popup editor to enter a new value with the keyboard.

4.1 Title Bar

Click the **gear button** on the left or the plugin title to open the preferences/information dialog.

On the top right corner, the **enable processing** button allows to bypass audio processing. Modern hosts supporting AU/AAX or VST3 plugin formats hook this up to their plugin bypassing system.

Before the full features of apUnmask are enabled by entering a serial, the ⎢→full version⎥ is displayed to the left of the enable button. Clicking it It opens a dialog with options to buy an apUnmask license online, to enter the purchased license information or to keep running in demo mode.

4.2 Preset Section/Undo/Redo

The white box shows the label of the current preset and can be clicked to edit the label. The "**i**" button on the left opens the preset description popup that can also be used to edit the description.

On the right side are up/down arrow buttons to cycle through presets inside the same folder as the currently loaded one. The rightmost button opens the preset menu. It lists all available presets with folders as they are organized on disk. Below the presets the following entries are available:

save current preset.. The current state of the plugin is added to the preset menu. In the prompt that pops up, the preset name can be edited and folder paths can be added which automatically

creates folders on disk if necessary. Presets in the menu can be overwritten by using the same name/path.

import preset.. Load a preset from a .umskpreset file anywhere on the local filesystem.

export current preset.. Store the current state of the plugin as a .umskpreset to any location on your local filesystem.

manage preset folder in finder/explorer.. This opens the filesystem folder that contains the presets shown in the menu. Normal file operations can be used to restructure this folder which will be reflected by the presets menu.

To the right of the white preset box are the **Undo** and the **Redo** buttons. apUnmask supports unlimited undo.

Note: Saving and importing of presets is only available in the full version of apUnmask.

5   Main Controls
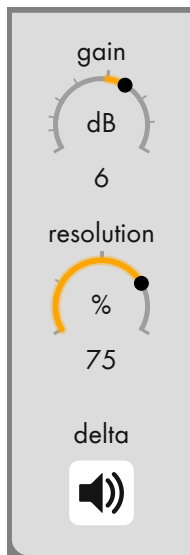
Located on the left side, these control the most important aspects of the processing.

Gain The amount of gain applied to the extracted signal before it is added to the input. This does the same as moving all eq handles up or down at the same time.

Resolution This controls the compression strength of the opus codec detector stage. Higher resolution means compression at a higher bitrate, which means less parts of the signal are considered masked by other parts. The effect of this control gets gain compensated, so levels stay mostly constant when tweaking the resolution. Too low a resolution can lead to graininess and the amplification of things that weren't hidden at all, too high can lead to mostly random high frequency noise being amplified. The recommended way to deal with this is to enable **delta** signal listening below and to tweak the resolution until interesting content becomes audible.

Delta A toggle switch to listen to the extracted signal after equalization as it would normally be added to the input. Turn this on the hear the difference apUnmask makes to your music.

6 Delta Spectrum & Equalizer
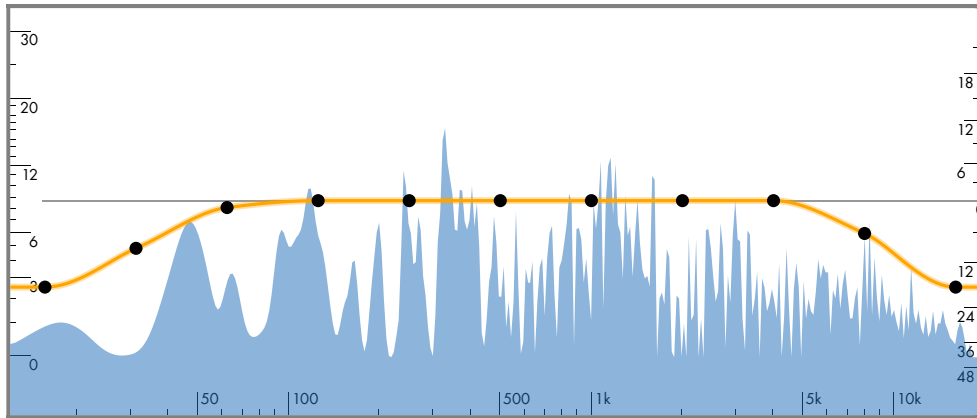
The main apUnmask graphical display shows the gain difference applied to the audio signal per frequency. If a straight 0 dB line is displayed, nothing is added. The nonlinear scale on the left (0-30 dB) is decibels gain per frequency.

On top of the spectrum, a line with handles displays and controls the linear-phase equalizer frequency response that is applied to the extracted audio. Its scale is on the right side (-∞ dB - +24 dB) and is not linear. Moving the handles all the way down will completely mute their part of the frequency range.

The frequency response can be "drawn" by dragging the mouse horizontally over the handles. Use Shift to make the handles snap to some predefined values including 0 dB. Double-clicking handles allows entering new dB values using the keyboard.

7 Suggested Workflow

For good results the input material needs to be as high quality as possible. The worst case would be compressed audio, because apUnmask then uncovers the nasty compression artefacts that might have been inaudible. If the source material is very noisy, apUnmask might amplify the noise as some of it gets masked by tones and music.

Ideally apUnmask uncovers hard-to-hear overtones and brings out instruments and notes at the hearing threshold. Gain needs to be adjusted carefully as the content added is by definition hard to hear. There is a threshold where it suddenly becomes very audible and the best results can be found just below that.

A step-by-step workflow can be:

- Insert apUnmask on the master track or an individual track to be enhanced.

- Tweak gain until a reasonable amount of delta signal is visible.

- Toggle the delta listen button to hear the "ghostly" sound what would be removed by the opus codec. This is what normally lives in the shadows of your music.

- Adjust resolution until the most interesting components are audible.

- Tweak the eq curve to extract and boost the good stuff.

- Toggle off delta listen and enjoy the result.

8   Plugin Settings & Information Dialog

This dialog is accessed by clicking the gears icon or the plugin name in the top left corner of the main apUnmask Interface.
The left side of the dialog shows some basic information and has four buttons at the bottom.

view manual.. The apUnmask manual is opened in a pdf viewer application.

apulSoft website.. Open the default webbrowser and visit https://www.apulsoft.ch.

update check.. This opens a special page on the apulSoft homepage and sends version information. The version gets checked against the latest release.

8.1   Global section

The **global** settings apply to all instances of apUnmask. All instances using the same plugin format in the same host update immediately, other instances once the plugin is reloaded.

tooltips If activated, orange rectangles with text hints pop up if the mouse hovers over a control for a second.

gui scale Choose how large the plugin interface should be drawn in %. The right-side popup features a few presets. It is also possible to enter a value between 25 and 500. **Note:** Some hosts require plugin window reopening or even restarts to adapt to a new size.

redraw rate The number of interface redraws per second. A slow computer might not be able to reach high rates. High refresh rates only work well with small host audio buffer sizes because new information is only available once per buffer size.

color scheme Switch between multiple interface color schemes. The menu contains all installed schemes. New ones can be added by renaming and editing the existing scheme files. They are are located in a folder called ColorSchemes next to the apUnmask presets folder. Use the **manage in finder/explorer..** entry of the presets menu to navigate to the presets folder and go one level up. The color schemes use an xml based format and can be edited in a text editor. More information can be found inside the **bright.xml** file.
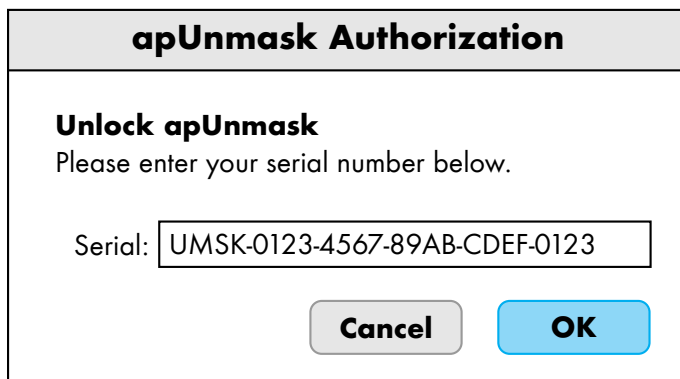
9 Init and Factory Presets

apUnmask installs a number of example presets by default. All factory presets include descriptions that are accessible by clicking the **i** button on the left side of the current preset name.

9.1 Init Preset

A special preset is the **Init** preset. The first time the plugin is opened it is auto-generated from the plugin's default values. Every time a new instance of apUnmask is created, the **Init** preset is loaded. This allows you to set up your personal default values by overwriting this preset once the plugin is in the desired default state.

10 Unlocking the Full Version of apUnmask

```
┌─────────────────────────────────────────┐
│        apUnmask Authorization            │
├─────────────────────────────────────────┤
│                                          │
│   Unlock apUnmask                        │
│   Please enter your serial number below. │
│                                          │
│   Serial: │ UMSK-0123-4567-89AB-CDEF-0123 │  │
│                                          │
│            Cancel        OK              │
│                                          │
└─────────────────────────────────────────┘
```

Once you bought an apUnmask license via 2Checkout from the apulSoft homepage (which can be opened from the demo welcome screen or the global settings dialog) there are three ways to enter your information and unlock the plugin.

- When you open first apUnmask plugin interface, a demo welcome screen appears with a **enter id/serial..** button. Click this button open the pictured dialog.

- If the plugin is running in demo mode, the ⟶full version button is displayed on the top right which brings up a license dialog where the **enter id/serial..** button can be used to open the pictured dialog.

- Clicking the preferences gear button on the top left corner of the plugin opens the preferences dialog which contains an **edit id/serial..** button that brings up the pictured dialog.

Just enter the ID/serial exactly as received and click **OK**. to unlock the full version.

In case the ID/serial is not accepted, check the following things:

- The serial needs to be an apulSoft apUnmask serial consisting of **UMSK** followed by 5 sections of 4 hexadecimal digits (0-9, A-F).

- If copy/paste was used, try typing manually as copy/paste sometimes copies more than was intended (white spaces, tab stops, etc).

- Check whether you used the right fields for the right entries.

11 Frequently Asked Questions (FAQ)

- **I lost my serial/ID thingy. How can I retrieve it?**
  Just head to http://www.apulsoft.ch and use the **contact apulSoft** link. Please add enough information to locate your order in the database and you will receive your serial/ID info as soon as possible.

- **What to do if the window size does not match the interface size after adjusting the GUI scale?**
  Depending on how the host application handles resizing of plugins triggered by the plugin, changing the GUI scale might not immediately work correctly. Any change to the GUI scale is stored in a global preferences file that is read whenever a new instance of apUnmask is created. If this problem occurs, first try to just close and reopen the plugin window/editor. If that does not help, set the desired scale on the settings pane and then restart your host application. As long as GUI scale is not changed again, window and content should match.

12 Changelog

- Version 1.0.1

    - Compatibility with Apple Silicon Macs.

- Version 1.0.2

    - Improved timing accuracy of host-automated parameters.
    - BUGFIX: installer signing issues on older macOS versions.

- Version 1.0.3

    - BUGFIX: low frequency problems when using very high sampling rates.
    - BUGFIX: tooltip scaling on windows when using high-dpi displays.

- Version 1.0.4

    - AAX: Compatibility with Apple Silicon native.
    - Better display of numerical values.
    - User-ID no longer required/displayed on the GUI.
    - Improved spectrum drawing.
    - Accept both ',' and '.' as decimal separators for keyboard entry.