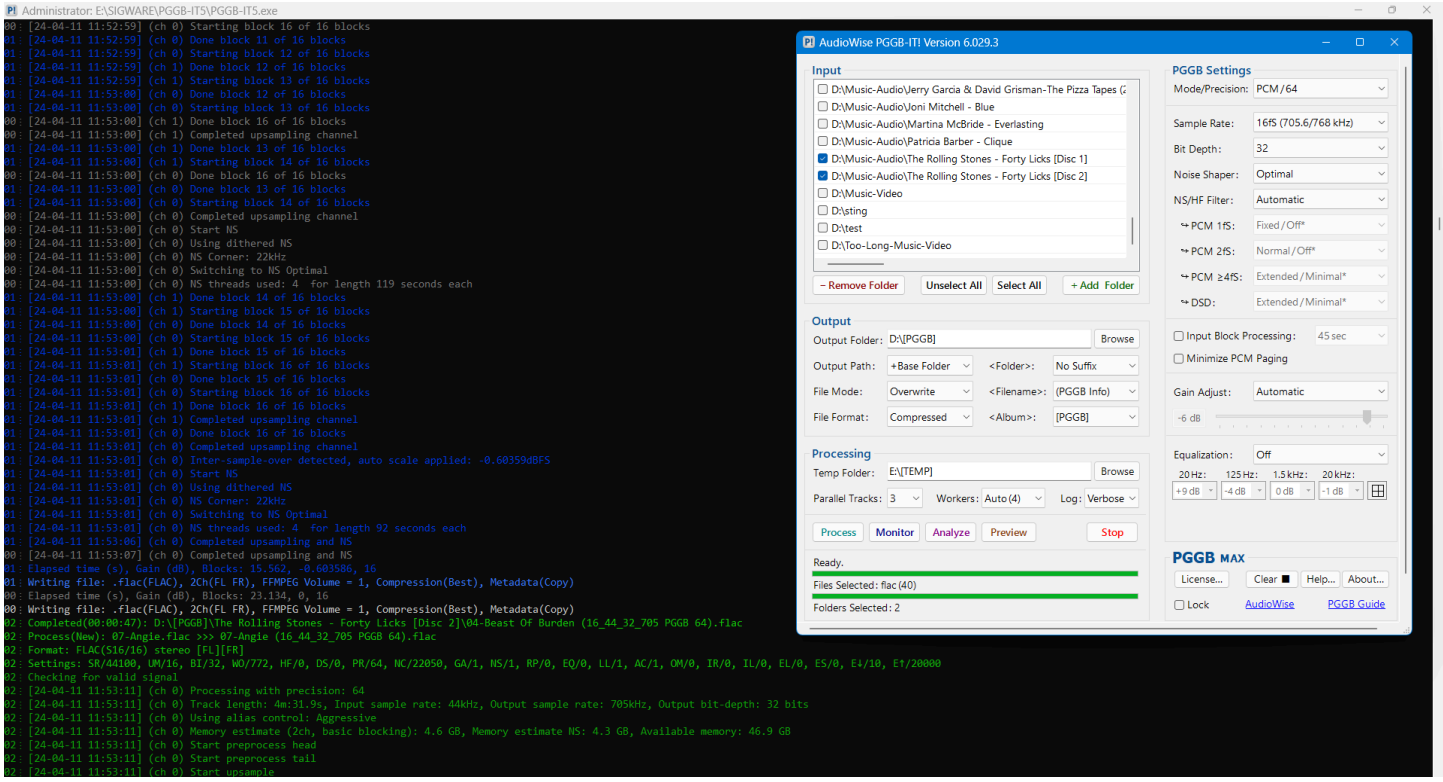
PGGB-IT! User Guide

Version 6.042.X
April 2024

PGGB•IT! is a professional Windows application for batch remastering of music album folders using revolutionary PGGB remastering. AudioWise is a Licensee Partner of core PGGB technology from remastero. PGGB•IT! is always updated with the latest PGGB core software to ensure quality and performance.



PGGB•IT! works with your local music files only (residing on a SSD or HDD attached to your PGGB processing and digital playback system). If you listen exclusively to streamed music (as from Tidal or Qobuz) you will need to obtain digital versions of your music. For best sound quality, select PGGB•IT! settings that are tailored to your DAC and signal path. Use your DAC specifications as well as published reviews and forum posts when determining which settings to use.

PGGB•IT! incorporates many powerful features:

- PCM up to 64fS and DSD up to DSD1024 to/from any sample rate or bit depth
- Multi-threaded modeless user interface with separate console/logging window
- Robust and efficient .NET processing

- Simultaneous processing of tracks on performant many-core systems
- FFMPEG processing of audio files including video(audio tracks) and multi-channel(up to 7.1)
- Lossless equalization using imported convolution/parametric files and integrated 4-band EQ
- Folder monitoring for automatic processing of added files across a network
- Keyboard remote control for headless operation
- Preview mode and Analyze mode to assist with workflow and settings

Unlicensed PGGB•IT! operates in **DEMO** mode that's fully functional but only processes the first 3 minutes of each track. Upgrade to a full license for unrestricted operation: **64**-bit, **PLUS** or **MAX** license. **64**-bit supports PCM only at 64-bit precision. **PLUS** supports PCM and DSD at up to 128-bit/Adaptive-precision. **MAX** supports PCM and DSD at up to 256-bit/Adaptive precision.

A Windows 10/11 64-bit system with at least 16 Gbytes RAM and a fast SSD is required. Performance will scale with more CPU cores and more RAM. On an Apple macOS (Sonoma recommended) system, a Boot Camp or Parallels19 Desktop install is required.

Installation

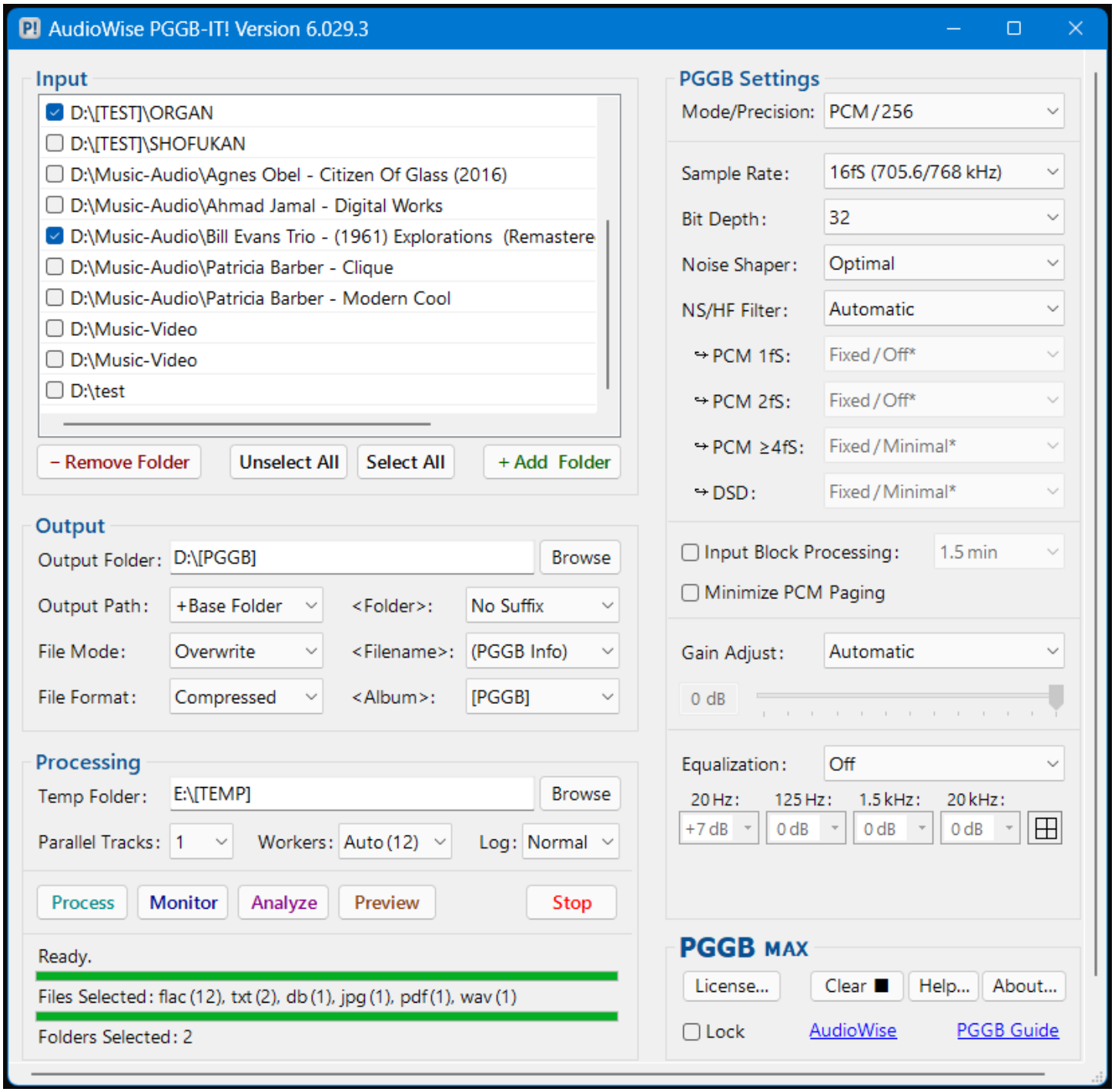
PGGB•IT! is downloaded as a .EXE installation (pggb_it_install_6.X.X.exe) from the AudioWise store (www.audiowise.ca). The default installation folder is:

```
C:\Users\<USER>\AppData\Local\Programs\PGGB-IT!
```

Select this folder or choose a root folder (like C:\PGGB-IT). Do not choose a folder inside 'Program Files'. If possible, choose a location on the fastest drive on your system - preferably a SSD.

Launching PGGB•IT! displays a console window and settings/control dialog. PGGB•IT! Displays all status and progress information in the console window. These windows are independent and allow for resizing and placement. Typically you can resize the console to fullscreen and place the settings dialog on top. Under Windows11, you can also use the sophisticated Dock/Undock capability to snap the PGGB•IT! Console and settings/control dialog as you wish. To close PGGB•IT!, click on the [X] close box on either window; although closing the console window may result in a slight delay.

Acquaint yourself with this settings panel. Help for each setting is provided with tool-tips (hover over the control with the mouse pointer).


AudioWise PGGB-IT! Version 6.029.3
Input
D:\[TEST]\ORGAN
D:\[TEST]\SHOFUKAN
D:\Music-Audio\Agnes Obel - Citizen Of Glass (2016)
D:\Music-Audio\Ahmad Jamal - Digital Works
D:\Music-Audio\Bill Evans Trio - (1961) Explorations (Remastere
D:\Music-Audio\Patricia Barber - Clique
D:\Music-Audio\Patricia Barber - Modern Cool
D:\Music-Video
D:\Music-Video
D:\test
– Remove Folder
Unselect All
Select All
+ Add Folder
Output
Output Folder: D:\[PGGB]
Browse
Output Path: +Base Folder
<Folder>: No Suffix
File Mode: Overwrite
<Filename>: (PGGB Info)
File Format: Compressed
<Album>: [PGGB]
Processing
Temp Folder: E:\[TEMP]
Browse
Parallel Tracks: 1
Workers: Auto (12)
Log: Normal
Process
Monitor
Analyze
Preview
Stop
Ready.
Files Selected: flac (12), txt (2), db (1), jpg (1), pdf (1), wav (1)
Folders Selected: 2
PGGB Settings
Mode/Precision: PCM / 256
Sample Rate: 16fS (705.6/768 kHz)
Bit Depth: 32
Noise Shaper: Optimal
NS/HF Filter: Automatic
↪ PCM 1fS: Fixed / Off*
↪ PCM 2fS: Fixed / Off*
↪ PCM ≥4fS: Fixed / Minimal*
↪ DSD: Fixed / Minimal*
Input Block Processing: 1.5 min
Minimize PCM Paging
Gain Adjust: Automatic
0 dB
Equalization: Off
20 Hz: 125 Hz: 1.5 kHz: 20 kHz:
+7 dB
0 dB
0 dB
0 dB
PGGB MAX
License...
Clear
Help...
About...
Lock
AudioWise
PGGB Guide

Input

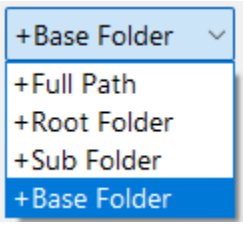
Input Folder List Include your music folders for processing by PGGB•IT! by selecting the '+ Add Folder' button then tick the checkbox ☑ to select folders for processing. Note that PGGB•IT! only processes folders so if you wish to process individual files (tracks) from a folder (album), copy them to a temporary folder first. PGGB•IT! will process files of the formats in the table below:

PCM Audio (up to 64 bits/sample)	MP3, OPUS, WMA, MKA, M4A, AIF, FLAC, AIFF, WAV, WV, W64
DSD Audio (64, 128, 256)	DSF
Video+Audio (any format/codec)	MPG, WEBM, WMV, MKV, MP4, MOV
Non Audio-Video (copied as-is)	JPG (album art), PDF (liner notes), etc.

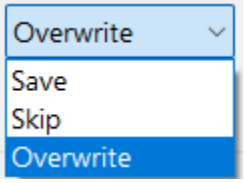
Output

Output Folder: Select the Output Folder. Folders selected for processing will have their fully qualified paths recreated within the output folder selected by the Output Folder.

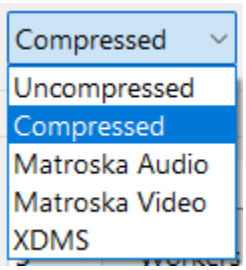
Output Path: Select the Output Folder naming mode that maps the input folder structure to the output folder structure. Use the 'Preview' processing mode to view the output folder path (no actual processing is done).



File Mode: Select 'Save' when you want to save any existing PGGB files - these will be moved to a subfolder named with a date/time timestamp. Select 'Skip' to avoid re-processing files that match the name of files already existing. Select 'Overwrite' to always overwrite any existing files.

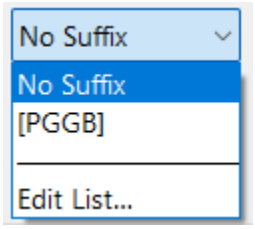


File Format (PCM): 'Uncompressed' outputs to standard WAV (with RF64 headers for > 4GByte files). 'Compressed' outputs FLAC up to 16fS; WavPack otherwise. 'Matroska' MKA outputs audio-only or MKV outputs video+audio (audio as WavPack compressed); source video content or created title still video with timecode. XDMS outputs proprietary Taiko WAV format.



File Format (DSD): The output is standard uncompressed DSF regardless of the file format selection. XDMS outputs proprietary Taiko DSF format.

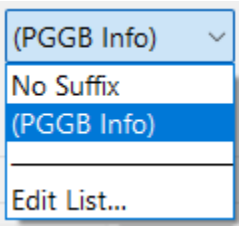
<Folder> Suffix: Selects the Folder naming.



For example, if the music folder 'C:\Music\Santana\Shaman' is included in the PGGB-IT! Library and the Output Folder is set to 'D:\PGGB', the output folder will be processed according to the table:

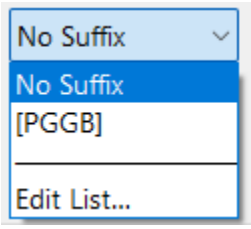
No Suffix	D:\PGGB\Music\Santana\Shaman. The output folder maintains the same folder basename as the original.
[PGGB]	D:\PGGB\Music\Santana\Shaman [PGGB]. The folder has a '[PGGB]" suffix.
Edit List…	Create a list of custom suffixes.

<Filename> Suffix: Selects the File naming:



No Suffix	Each track (file basename) maintains the same file basename as the original.
(PGGB Info)	Each track (filename) has a suffix of bit depth, sample rate & mode-precision information, ie: 'filename (16_44_24_705 PGGB 256)'.
Edit List…	Create a list of custom suffixes.

<Album> Suffix: Copies metadata tags from the source track to the PGGB resampled track and selects a suffix to be appended to the metadata 'Album' tag.



For example, if you are processing the album 'Shaman' by the artist 'Santana':

No Suffix	Shaman. (no change)
[PGGB]	Shaman [PGGB]. This is the default.
Edit List…	Create a list of custom suffixes.

Processing

Temp Folder: During processing, a named folder is required to store temporary files. Select a dedicated drive or folder on a very fast SSD drive. Preferably this drive is not the same as your music store drive.

Parallel Tracks: Normally all tracks in a folder are processed sequentially - one at a time. Select multiple parallel tracks to process multiple tracks simultaneously. Note that boosting this setting may not improve performance linearly as each processing instance takes memory and multiplies the workers. Edit List creates a list of parallel tracks #'s to suit your system and workflow.

Workers: Use 'Auto(#)' which uses all logical cores. You can select more cores (workers) to get better performance but this risks engaging thermal protection (speed throttling and fans) and CPU at 100% reduces overall system responsiveness. Edit List creates a list of worker #'s to suit your system and workflow.

Log: Select Normal, Verbose, Minimal or Debug to affect the level of detail logged to the console.

Process Process folders marked with a checkbox ☑. Keyboard shortcut is *CTRL+SHIFT+P*.

Monitor Monitor folders marked with a checkbox ☑. Any changes to the folders (adding or changing files) will result in those folders being automatically processed. Note that a delay between detected change and initiation of processing is normal. Keyboard shortcut is *CTRL+SHIFT+M*.

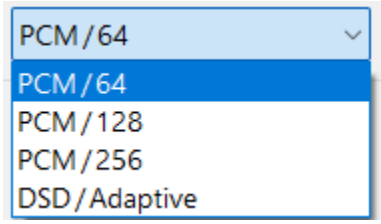
Analyze Analyze and display file header and pertinent audio information.

Preview Use this feature as a 'what if?' to display the input file list and output folder structure without actually doing any processing.

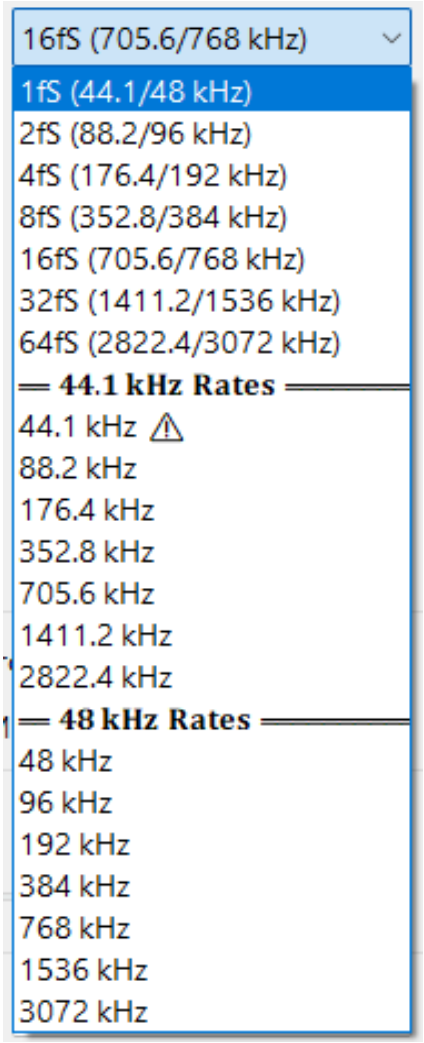
Stop Stop all processing/monitoring/analyzing/preview. The console may report 'Stopping…' and require several seconds to stop all parallel processes. Keyboard shortcut is *CTRL+SHIFT+S*.

PGGB Settings

Mode/Precision: Select the processing mode and level of precision. A selection displays **'DEMO'** for non licensed operation. In this case, processing is limited to the first 3 minutes of each track.



Sample Rate (PCM): Select the highest possible sampling rate allowed by your DAC. Three categories may be selected as below:

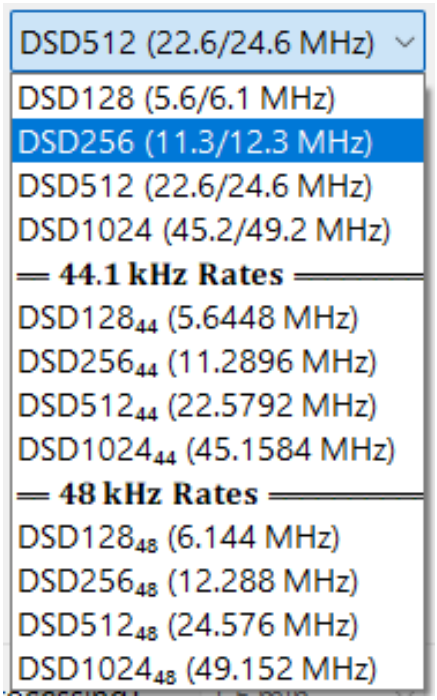


'fS' (fundamental sample rate) remasters to the integer multiple of the source track sample rate. DACs normally support both 44.1 & 48kHz rates with an upper limit to sampling rate. For example, Chord Electronics and many USB DACs support up to 16fS; Holo Audio May supports up to 32fS; MSB supports up to 64fS.

'44.1kHz Rates' remasters to the specified rate that is a multiple of the standard rate for CD. Some DACs have limited internal processing or clocks. For example, PSAudio Directstream has a maximum of 705.6kHz. Select this rate and PGGB•IT! will resample 48kHz family input files to this 44.1kHz family rate.

'48khz Rates' remasters to the specified rate that is a multiple of the standard rate for professional audio and video(DVD or BluRay). Consider this rate to maximize PCM sound quality and maintain a common sample rate (some DACs have audible artifacts when changing sample rates).

Sample Rate (DSD): Select the highest possible sampling rate allowed by your DAC. Three categories may be selected as below:

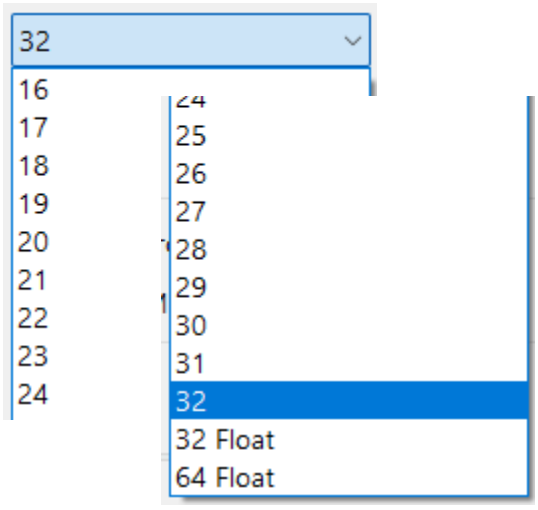


Normal DSD remasters to the integer multiple of the source track sample rate. Use this if your DSD DAC supports both 44.1kHz and 48kHz DSD clocks.

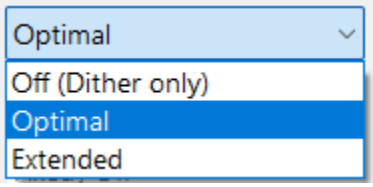
'44.1kHz Rates' remasters to the specified rate, a multiple of SACD and identified by a subscript tag. Use this if your DSD DAC has limited clocks. For example, PSAudio Directstream only inputs DSD files at 44.1khz rates up to DSD256 (11.2897MHz)

'48khz Rates' resamples to the specified rate, identified by a subscript tag. This is a DSD sampling variant supported by a few DACs. Consider using this rate to maximize DSD sound quality.

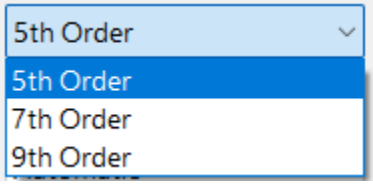
Bit Depth (PCM): Output files will normally have fixed word sizes of 16, 24 or 32 bits - however the actual audio signal is noise shaped to this specified bit depth. Select the DACs internal bit depth(ASIC Chip), signal format (USB, SPDIF) or, in the case of R2R (ladder) DACs, select the most linear bit depth (according to manufacturer specification or industry publication measurements). Use 32 Float or 64 Float for the special case of exporting to digital audio workstations.



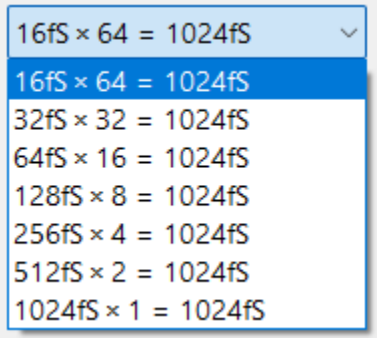
Noise Shaper (PCM): Adaptive noise shaping removes quantization noise resulting in a high degree of small signal accuracy and a very life-like sound. Select the modes 'Off (Dither Only), 'Optimal', 'Alternate' or 'Extended' as applicable. Select 'Off (Dither Only)' for certain 32-bit DACs set to NOS mode or when the output is to a hardware upsampler (eg. MScaler in bypass mode).



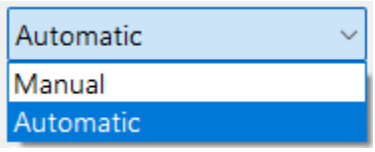
Modulator (DSD): Converting PGGB's internal high precision format to DSD's 1-bit output requires Modulation (a form of noise shaping). Higher order modulation requires more processing time but moves quantization noise further into the ultrasonic range. Modulator options presented will depend on DSD rate. Use the highest modulator for best sound quality.



1st Stage × M (DSD): Use the highest 1st Stage sampling rate to improve sound quality. Use a single stage (x 1) for the best sound quality.



NS/HF Filter: This is an advanced setting. Normally leave at ‘Automatic’ for the majority of tracks as determined by PGGB technical measurements and subjective listening tests. ‘Manual’ is for advanced users.



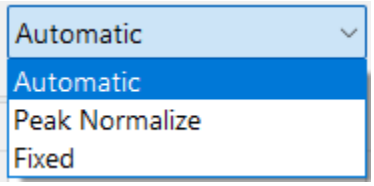
PCM 1fS, PCM 2fS, PCM ≥4fS, DSD: These are the NS/HF settings for input/output format & sample rates. This is an advanced setting.

For PCM Rates		
NS	Dither	Noise shaper is disabled. Instead, Dither reduces quantization noise.
	Normal	Noise shaper (auto corner frequency) minimizes audible quantization noise in the audible range. Subjectively 'clean'.
	Extended	Noise shaper (auto corner frequency) minimizes quantization noise beyond the audible range. Subjectively 'airy'.
	Fixed	Noise shaper (fixed corner frequency) filters ADC noise in the audible range to improve listenability of harsh recordings.
HF	Off	No HF filtering is performed. May be subjectively 'harsh' or 'fatiguing' at ≥4fS rates if excess ADC noise is present.
	Aggressive	Aggressive HF filtering removes ADC noise. Some music information may also be filtered. Subjectively 'smooth'.
	Minimal	Minimal HF filtering for a balance of ADC noise (removed) and music information (retained). Subjectively 'natural'.
For DSD Rates		
NS	Fixed, Normal or Extended	DSD adaptive noise shaping based on input format or output modulator.
HF	Off, Aggressive or Minimal	DSD adaptive filtering to filter DSD’s significant HF noise that can damage downstream components.

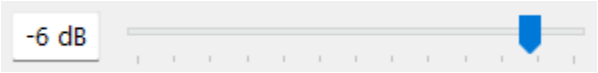
☐ **Input Block Processing:** This is an advanced setting to allow processing of long duration PCM or DSD tracks with limited RAM. Normally leave disabled.

☐ **Minimize PCM Paging:** This is an advanced setting to allow processing of PCM tracks with limited RAM. Normally leave unchecked.

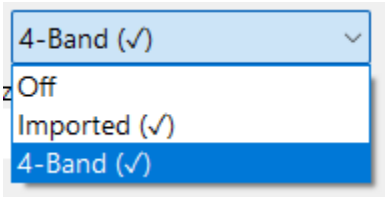
Volume/Gain: PGGB performs all volume adjustment prior to noise shaping to ensure maximum sound quality.



'Automatic' is the default - meaning unity gain without any adjustment to the volume level (apart from that required to avoid inter-sample-overs or to support special processing). Select 'Peak Normalize' to set the peak value of the output track to the selected value. Select 0dB to output files at the loudest possible volume - a peak of ~1.0000 PCM or ~0 dB. Select 'Fixed' to apply the selected gain value.

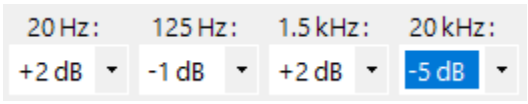


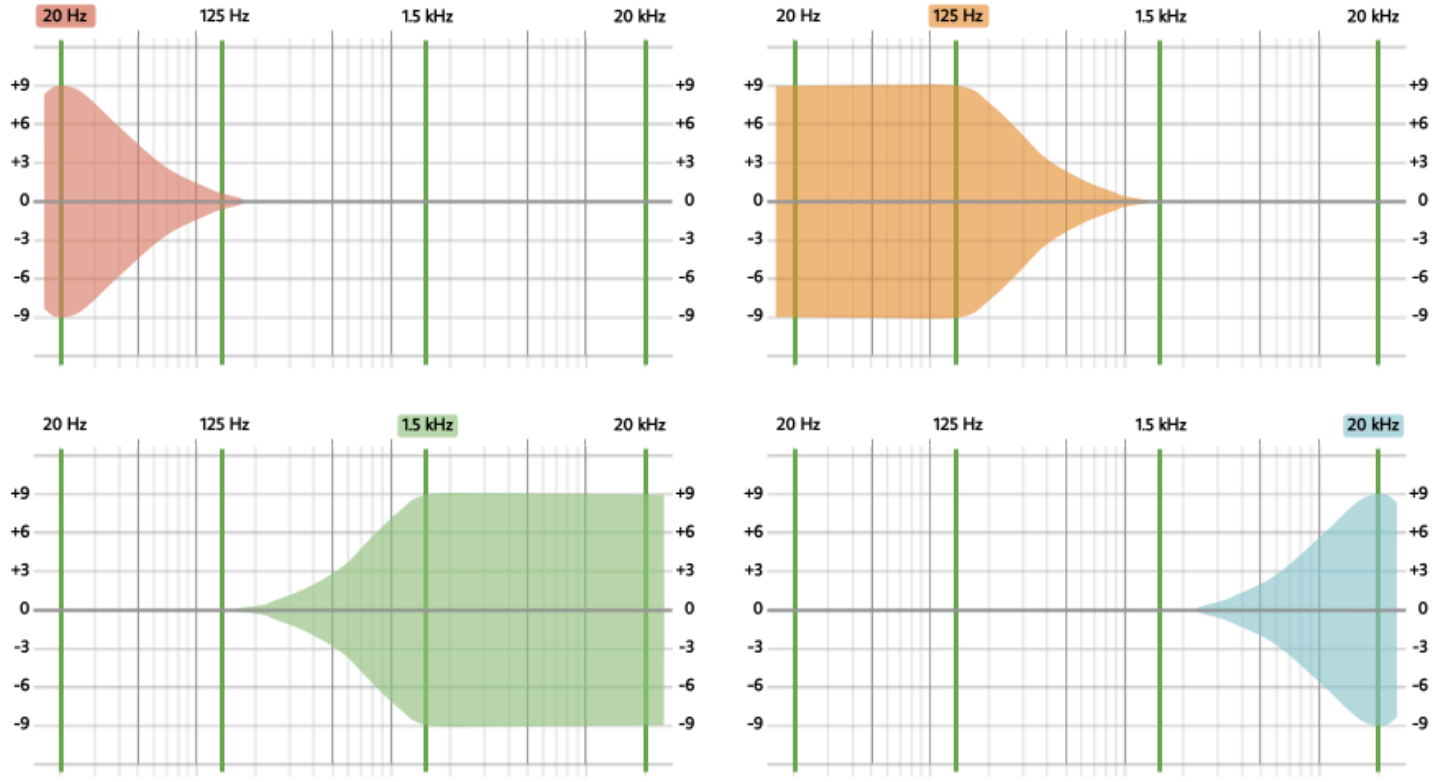
Equalization: PGGB-IT! supports lossless EQ.



Refer to the information on the remastero site for how to measure and obtain impulse files for your listening room or headphones. Alternatively, use the integrated 4-band EQ across the common bands:

- 20Hz: Sub-Bass ~ Bass guitars, synths and kick drums
- 125Hz: Bass ~ Rhythm section instruments
- 1.5kHz: High-Mids ~ Vocals and percussive instruments
- 20kHz: Highs ~ Harmonic brilliance and sparkles





License... PGGB uses a hardware system fingerprint as a hardware ID for licensing. Copy this hardware ID when ordering and simply paste the license key provided.

Clear ⬛ Clear the console window. Use this to reduce clutter during review when you have processed many folders.

Help... Display a summary of this user document on the console window.

About... Display version and legal information.

☐ Lock Settings Use this to disable settings adjustment apart from that required to select folders and process. This may be used to ensure settings are not altered.