Deftaudio PCM Custom Card for Korg DDD-1/DDD-5

Technical Description

The Deftaudio PCM Custom Card is a programmable PCM expansion module compatible with the Korg DDD-1, DDD-5, and Korg DRM series drum machines. The card provides eight independent PCM banks stored in non-volatile memory, selectable via an onboard DIP switch interface. It is based on the open-source PicoROM architecture and supports user modification at both hardware and software levels.

Specifications:

1. Compatibility (Korg PCM card interface–compatible models)

- Korg DDD-1
- Korg DDD-5
- Korg DRM

2. PCM Banks and Memory Structure

- 8 selectable PCM banks, stored in flash-based non-volatile memory.
- Bank selection performed via a front-mounted 8-position DIP switch.
- Each bank contains up to 8 PCM sound slots.
- Maximum available sample time per bank: ~1.5 seconds, shared across all sound slots.
- Output format: 8-bit PCM samples compatible with Korg DDD/DRM playback requirements.

3. Host Integration

- PCM sound names programmed on the card are correctly recognized and displayed on Korg DDD-1 and DDD-5 front-panel screens.
- Fully compatible with factory PCM card timing, addressing, and data lines.

4. Programming Interface

- USB-C port for loading PCM sample data and metadata.
- Programming tools and scripts included for Windows.
- macOS and Linux users may run the utilities via Parallels, VirtualBox, Wine, or equivalent environments.
- Supports standard WAV files with no special requirements. Sounds are automatically trimmed, resampled, mono converted to maximize utilization of internal memory.

5. Status Indication

- Perimeter LED activity indicators provide visual feedback during memory access and during USB programming operations.

6. Architecture and Modifiability

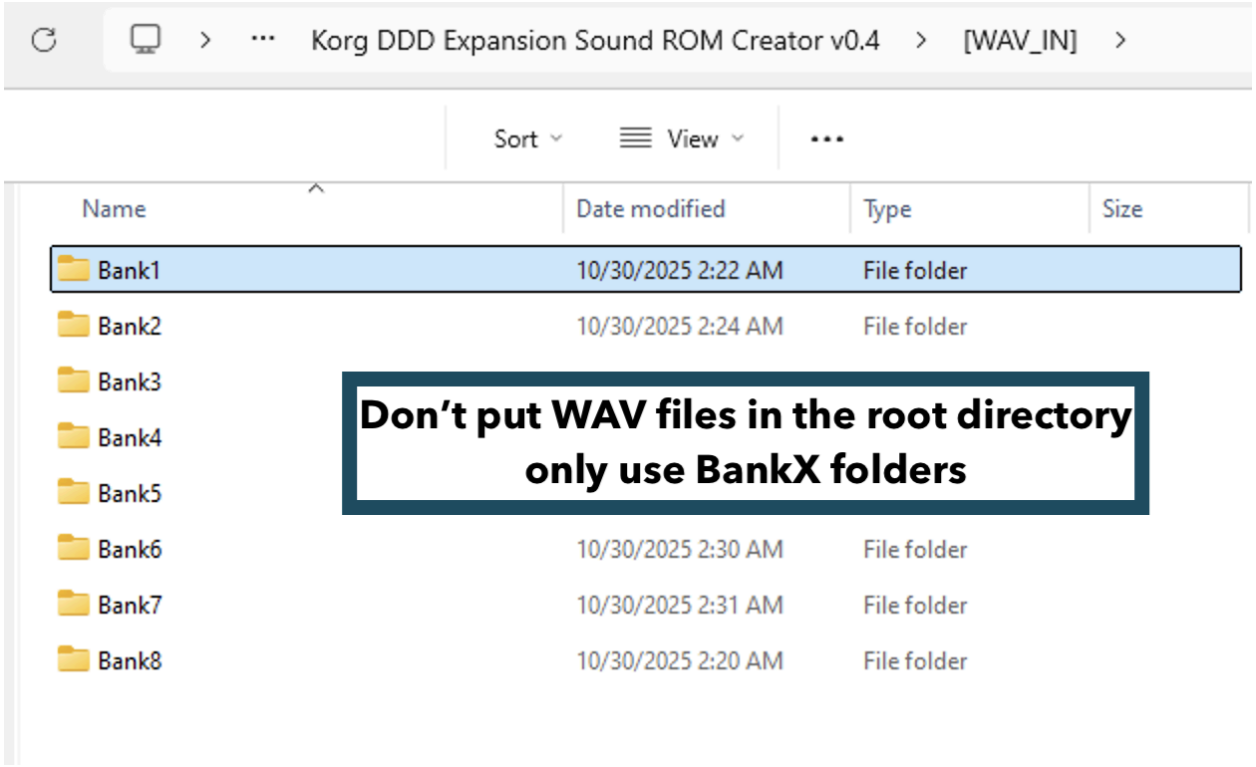
- Hardware is based on the PicoROM open-source project.
- PCM conversion scripts are higly modifiable and tweakable. Based on previous work of R-Massive and shared back with a community.
- Fully Github documented, DIY community is welcomed.

Usage:

For basic information, please, refer to the Video Tutorial:
https://youtu.be/BM5A2fx6TgM

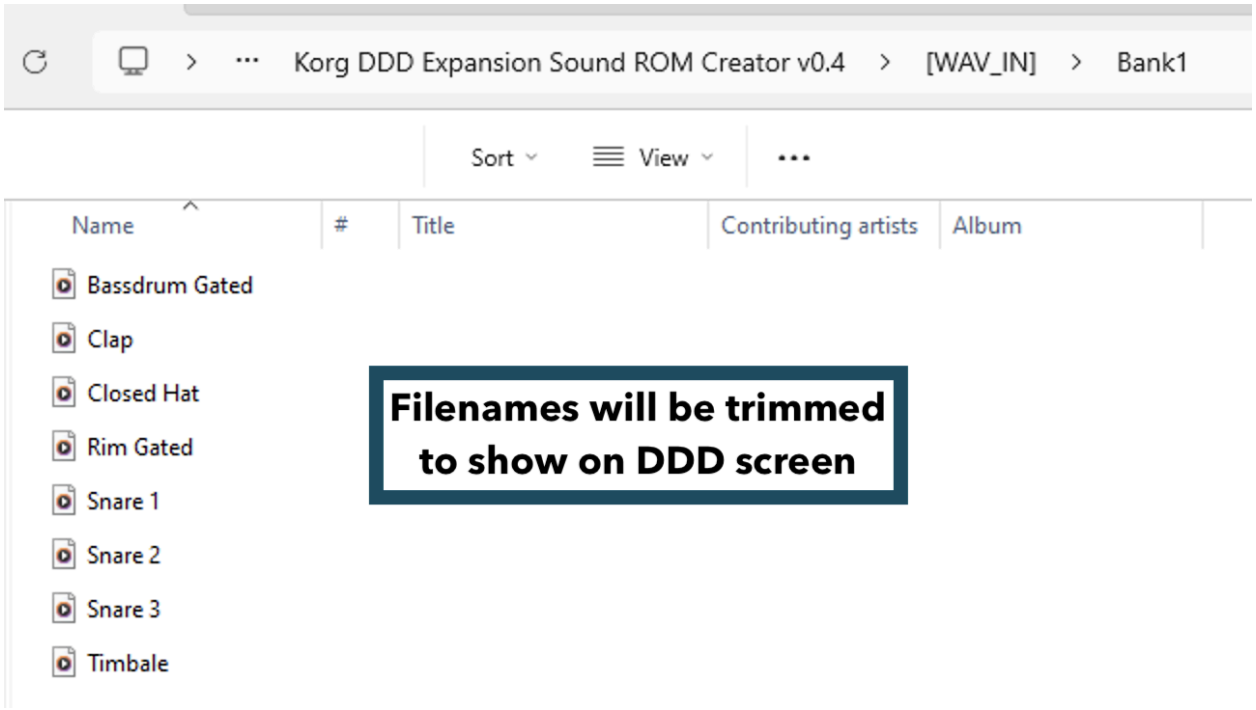
Download programming tools, unpack files:
https://github.com/Deftaudio/

Put your samples under [WAV-IN] in BankX subdirectories for corresponding Banks 1-8.

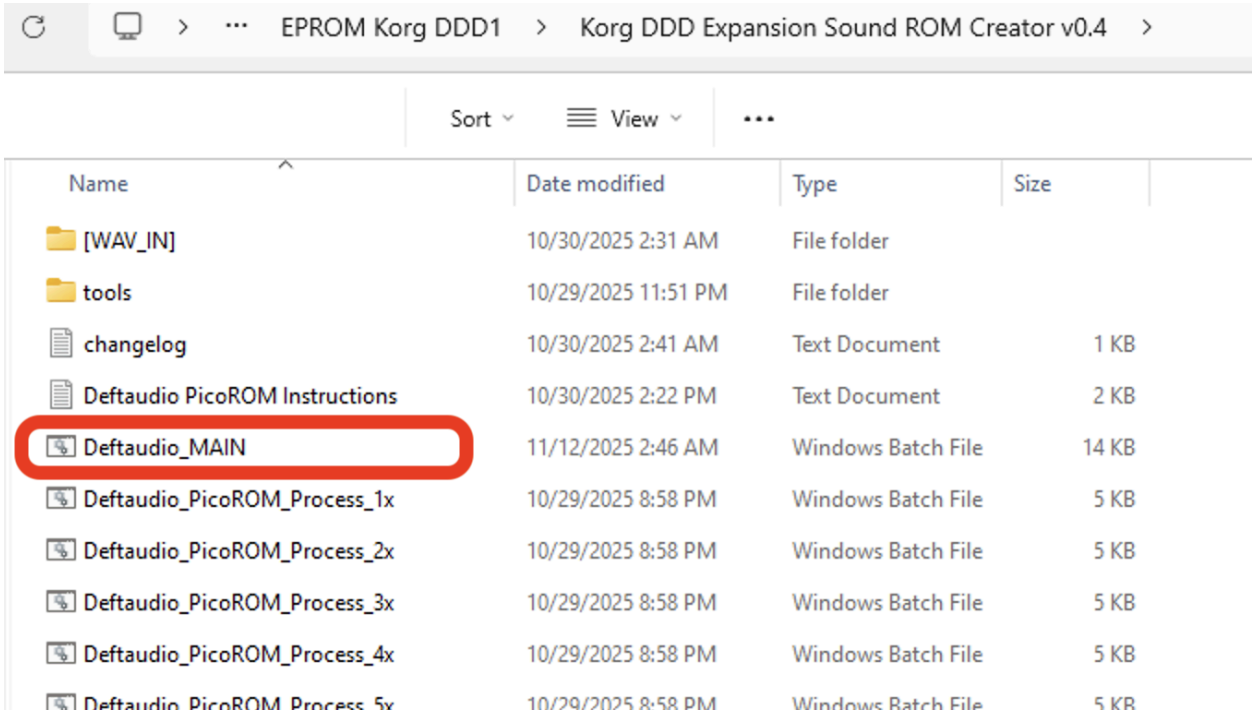


Supports any WAV file format. Scripts will take care of processing.

- Each bank can have between 1 to 8 sounds. The layout will be automatically adjusted and input sounds trimmed to maximize usage of bank memory.
- Sound names are preserved. Eight characters of the original file name will be shown on Korg DDD screen. Avoid using custom characters.
- Sounds will be combined in banks while sorted in alphabetic order.



Double click on *Deftaudio_main.bat* script.
First it scans all subdirectories for files. It prints the total number of files in each directory before it proceeds.



Press any key to start conversion. It takes 10-20 seconds to create the bank
At the end of the script the bank image is created: PicoROM.BIN

The script can program it automatically onto a connected card. If you have multiple cards, only one card at a time needs to be connected. Each PCM card should have a “PicoROM” name programmed for the script to recognize it (all assembled units have it already).

Manual Card programming using PicoROM tools:

Refer to the PicoROM manual:

PicoROM programming tools available for Windows, MacOS, Linux. The syntax is the same across all versions.

Identify PicoROM first:
Picorom-x86_64-pc-windows-msvc list

Program PicoROM.BIN image from the same directory where tools are:
picorom-x86_64-pc-windows-msvc.exe upload -s PicoROM PicoROM.BIN 2mbit

(Optional) PicoROM name change:
Find it first: *Picorom-x86_64-pc-windows-msvc list*
Picorom-x86_64-pc-windows-msvc rename <CURRENT_NAME_OR_ID> <NEW_NAME>