Mini-Project Presentation

Mini-Project
Soundgates – Interactive Music Synthesis on FPGAs

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Outline

- Objectives

- Ideas

- Overview

- Live demo

- Prospect

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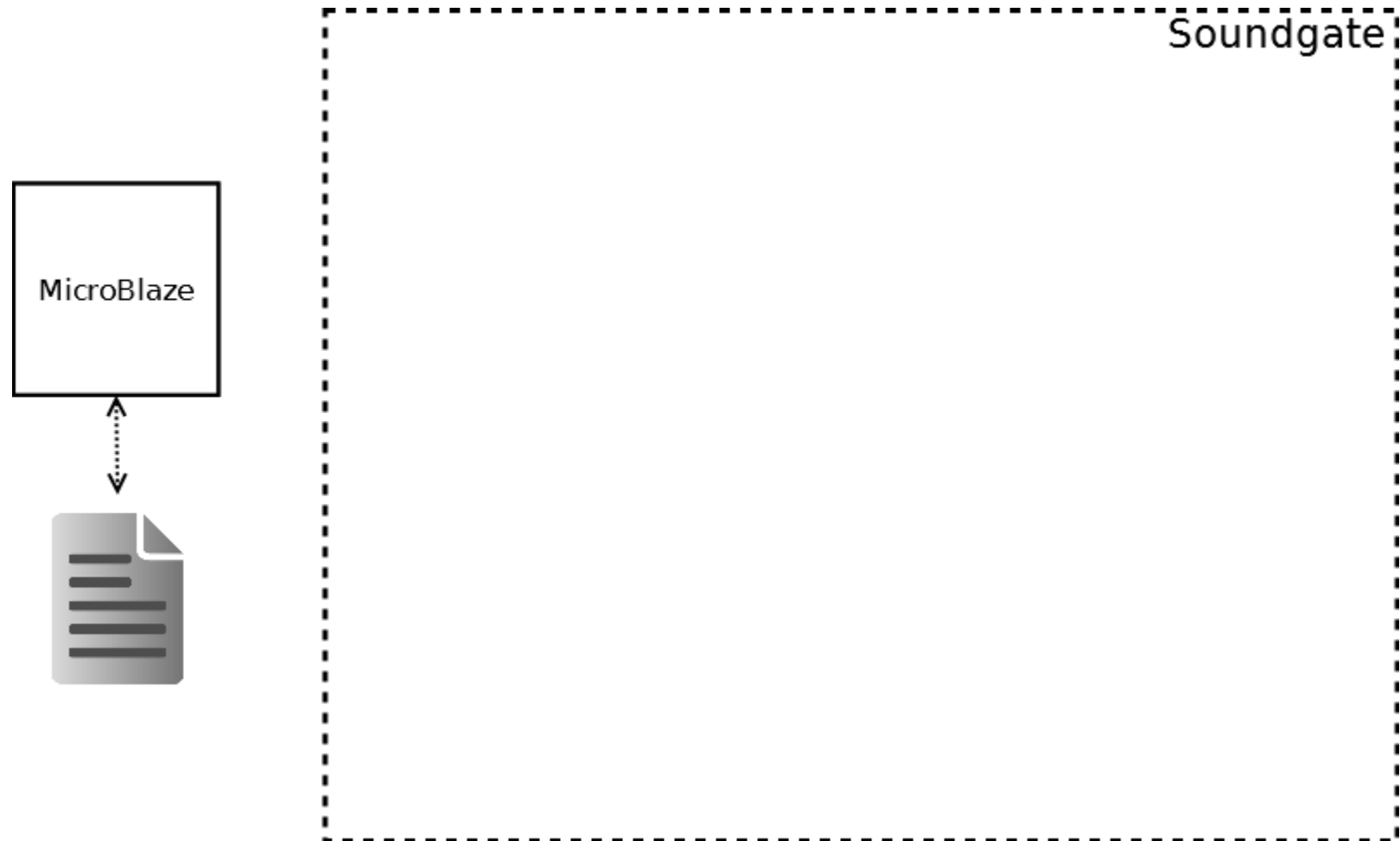*Die Universität der Informationsgesellschaft*

Objectives

- Objective of supervisors:

  Get sound of out the PmodAMP3 Sound Module

- Group objectives:

  - Possibility to play different sounds (controlled with hardware buttons)

  - Possibility to play well known sounds

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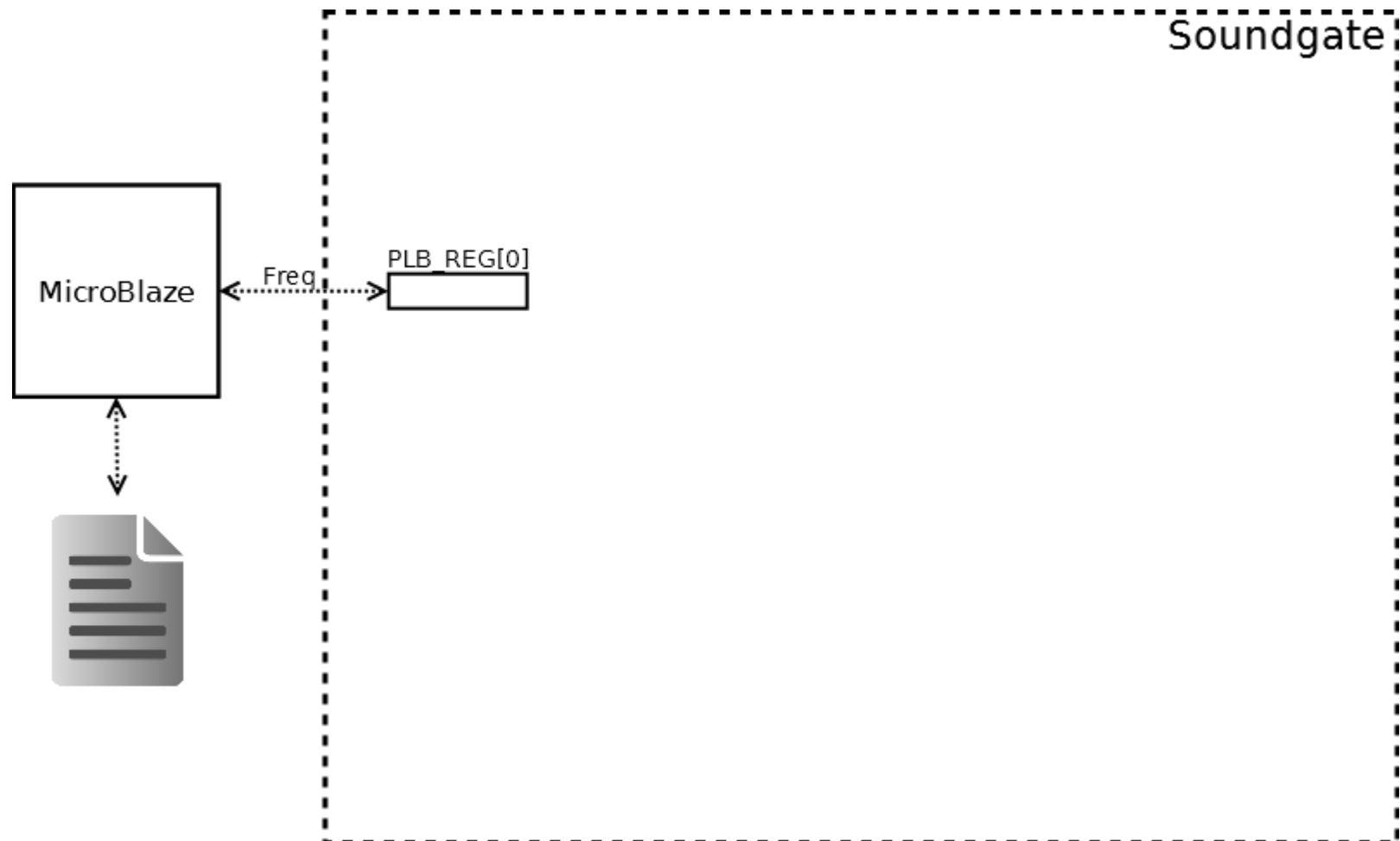*Die Universität der Informationsgesellschaft*

Ideas for the implementation

- Convert WAVE files to a ROM

- Usage of the CORDIC algorithm to play sine and cosine waveforms
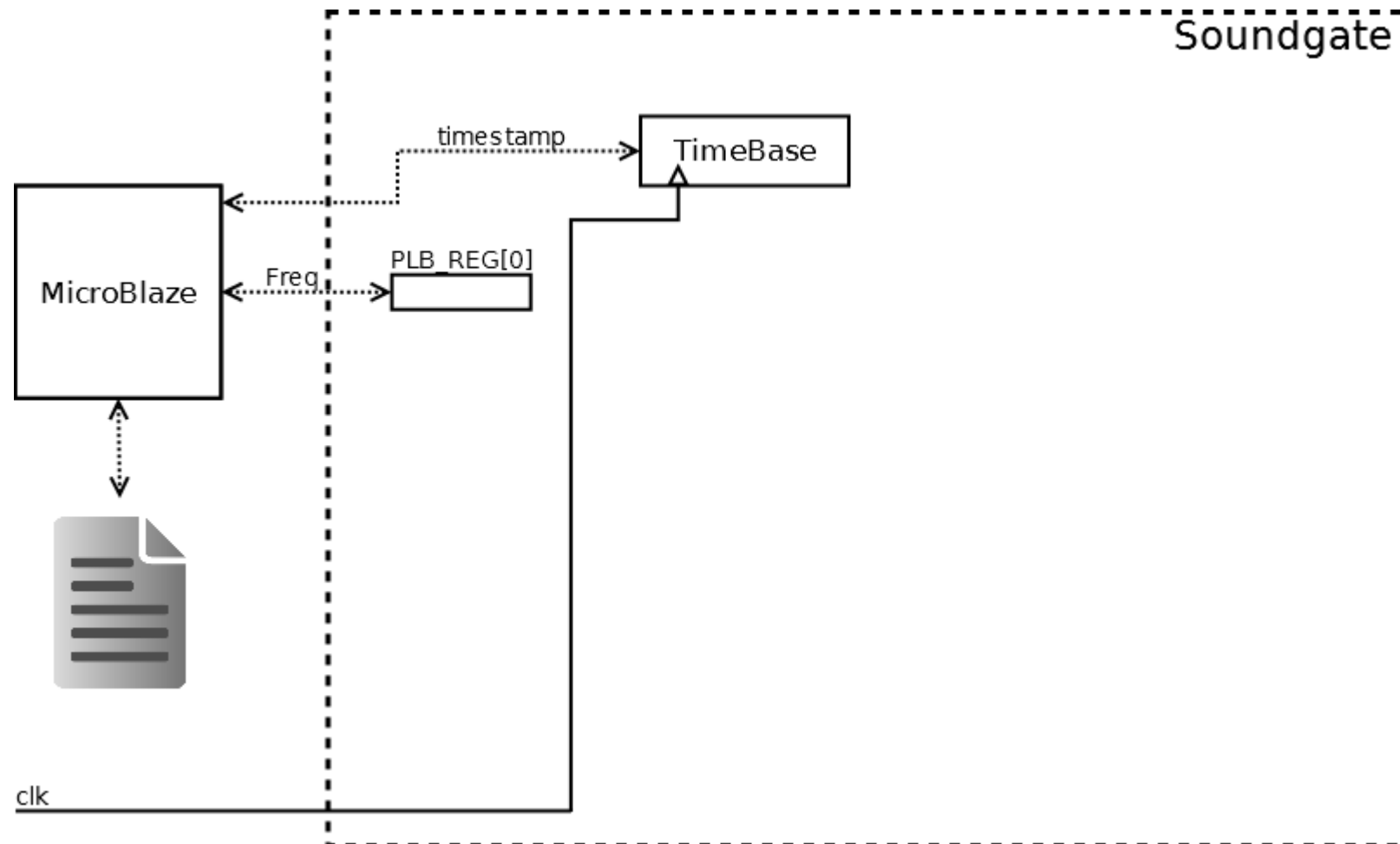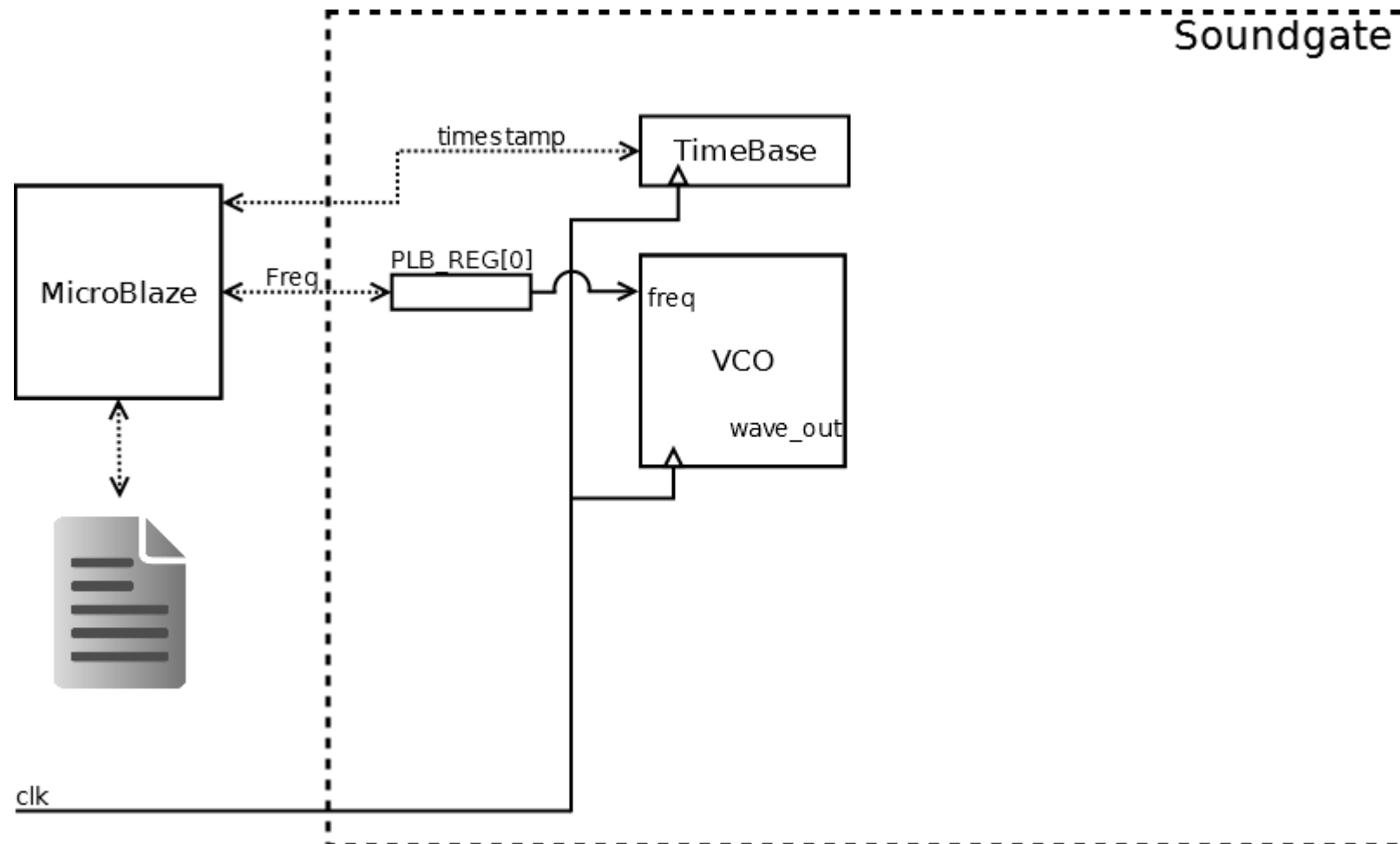
- MIDI controlling of the CORDIC

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Circuit overview
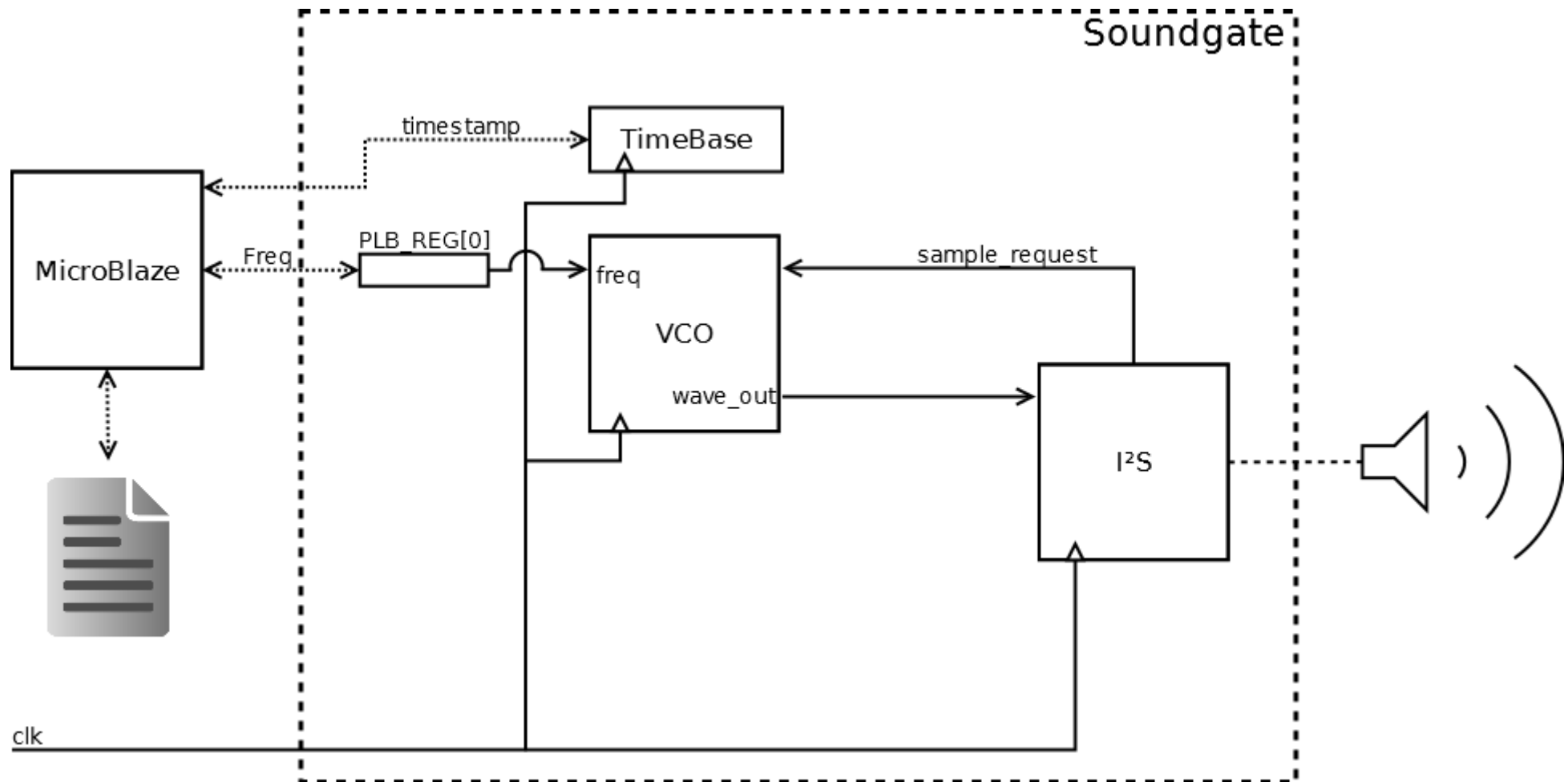
Circuit overview

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Live demo

Prospect

- Use different DAC (replace PmodAMP3 with FMC-CE)

- Capability to stream MIDI files

- Add Filter

- Add more Waveforms (Square, Triangle, Sawtooth,...)

- Use one or more ROMs as background sound

  - e.g.: Drum loop

- MIDI support

  - Integration in existing creative audio environments

  - Control by standardized hardware (keyboards, ...)

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