# Simulating the Internal Sacred Sound

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## BRAIN AS MIDI CONTROLLER

This project is an audio-visual experience that introduces the audience to a meditative sound installation. The project assigns electroencephalogram (EEG) data to MIDI parameters in real-time; software interprets MIDI data from a structured meditation period to trigger pre-recorded musical elements, “translating” the internal experience into the physical world.

Brain wave data is filtered into four categories (delta, theta, alpha, and beta waves) which are mapped to symbolic musical effects based on specific characteristics such as attention, relaxation, and mental interiorization. The purpose of this project is to use electrophysiology as a medium to paint a picture of the internal sacred sounds – the subtle sounds of the astral body and cosmic vibration - utilizing the brain as paint, the EEG and network programming as the paintbrush, and surround-sound speakers as the canvas. In this project, electrical signals of the brain, trained and directed by scientific meditation, influence projected visualizations and sound. With deepest reverence to Yoga, the ancient metaphysical system of which this simulation is guided, this project will work to bridge the divide between planes of consciousness and demonstrate the synergism between science and spirituality.

## KEY COLLABORATORS

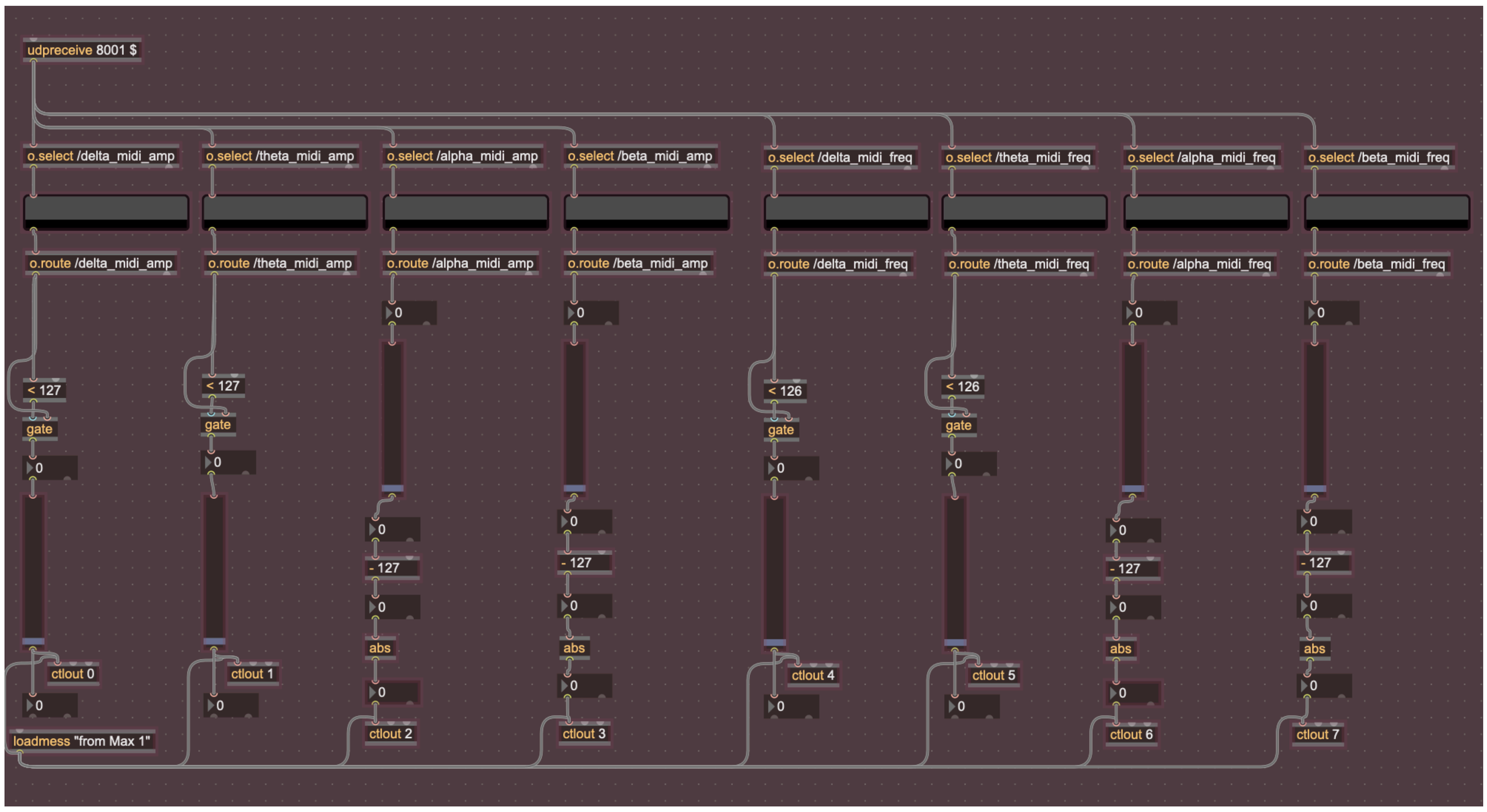
I owe exemplary acknowledgements to my wonderful friend and programming wizard Zachary Rosario for his indispensable expertise in designing the python code required to make this project a reality. See the code, licensing, and installation process for EEG to MIDI on https://github.com/zachjesus/EEG-To-Midi

## TECHNOLOGY STEPS

The sequence of steps for this project involve:

1. g.Tec Nautilus EEG
2. Brain Controlled Interface
3. g.Tec driver software
4. Matlab for signal acquisition and filtering
5. Python for more filtering and socket transmission
6. Max for MIDI mapping (amplitude and frequency event triggering)
7. Ableton for sound playback and real-time automation

Below, the Max patch (step 6) is shown.

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