BYU Laser Harp Hardware Documentation

The laser harp runs on a Teensy 3.1 with the addition of the Teensy Audio Adapter Board Rev B. Both are somewhat outdated, so it may be difficult to find documentation for them specifically, but they are almost equivalent to the Teensy 3.2 and the Audio Adapter Board Rev C. Documentation can be found:
https://www.pjrc.com/teensy/teensy31.html
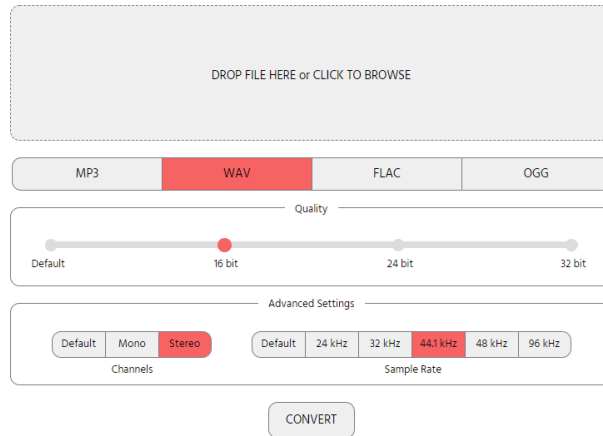https://www.pjrc.com/store/teensy3_audio.html
For reference, the following are the pinouts:
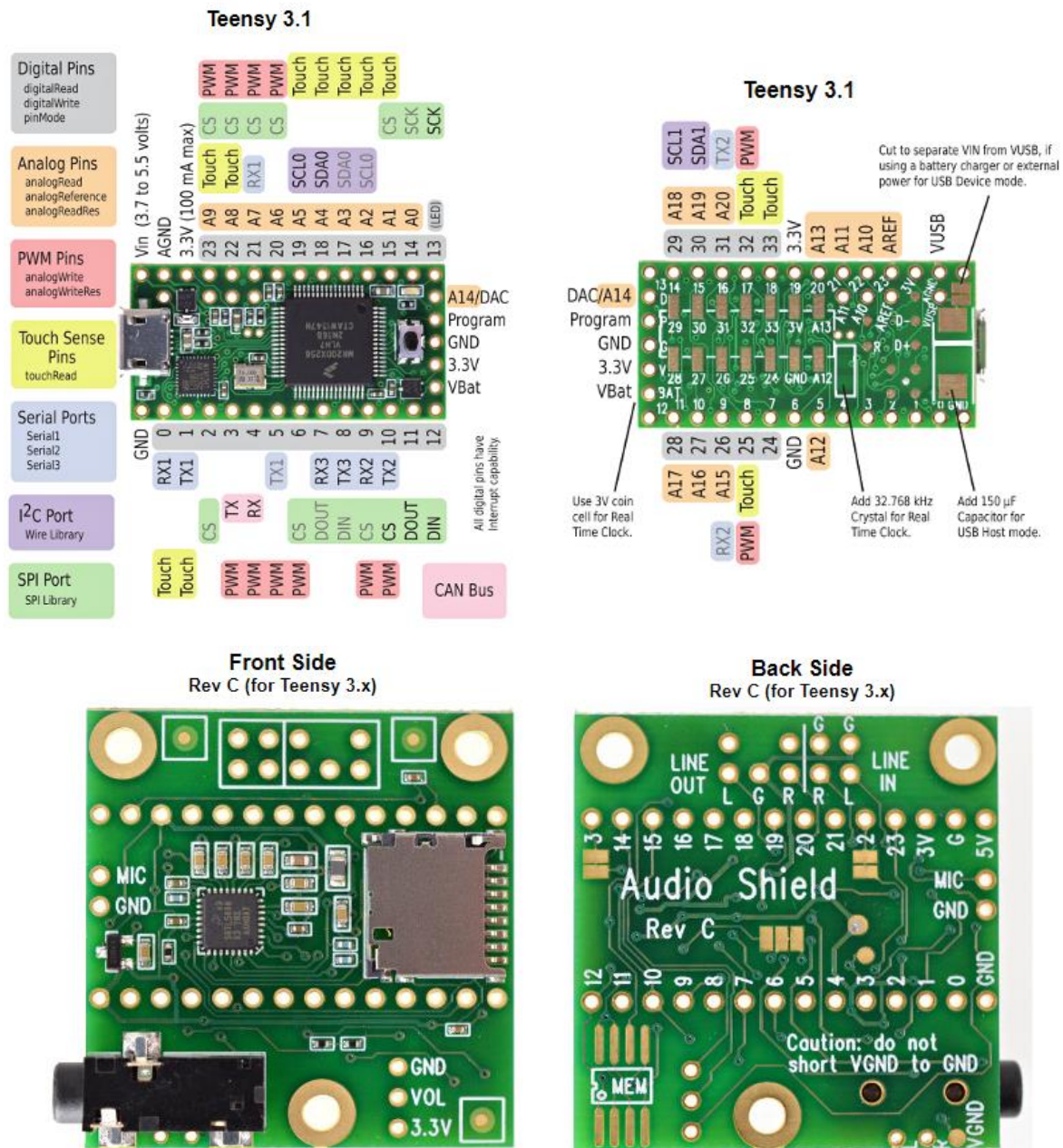
Note that the Audio Shield Rev B has the same pinout as the Audio Shield Rev C.

The Teensy 3.1 plays wav files stored on a micro SD card that is accessed via the Audio Shield. Note that for the audio files to be playable by the Teensy, they must not only be wav files, but they must also be sampled at 44.1 kHz. Other sample rates won't work. Wav files with other sample rates can be easily converted online at:

https://onlineaudioconverter.com/

Though it is tedious because you have to do one file at a time. After converting, simply save the files to the micro SD card by plugging it in to your computer and moving the files. Once your files are moved over, then you can insert it into the port on the Audio Shield and so long as the Teensy is connected, it will be able to read the files.

Lasers
There are 8 lasers on the harp, plus we ordered 2 extra as well. They are green dot laser modules that we added longer wires, extra hot glue, heat shrink, and Molex headers to. Replacements can be ordered at:
https://www.amazon.com/Lights88-Green-Modules-GM532-50-Solder/dp/B07PT4X966/ref=sr_1_4?dchild=1&keywords=lights88+green+laser+module&qid=162093160 3&sr=8-4
Operating voltage: 3.2 V
Operating current: ~100-200 mA
Output power (light): probably about 5-10 mW

Circuit Board (Further Documentation to follow)
Voltage Regulators
Output voltage: 3.3 V
Output current: 800 mA (each)
Pinout: left pin ground, center pin output, right pin input

Sensors
Photodiode and BJT, both connect to 5 V. The photodiode controls the base of the BJT. The BJT emitter connects to an input pin on the teensy.