Hapticlabs Devkit

v.23.02

Overview

- Instantaneous playback of haptic signals
- Internal Firmware (Haptics engine)
- Support for electromagnetic haptic actuators
    - LRA (Linear Resonant Actuator)
    - ERM (Eccentric Rotating Mass)
    - Voice coil
- 2 independent output channels
    - Simultaneous playback and A/B testing
- Internal storage for up to ~2500 haptic signals
- 2 Multi-purpose I/O pins and 1 Capacitive touch sensor
    - Trigger internally stored haptic signal playback
- UART Serial communication via USB
- Bluetooth Low Energy (BLE) & WIFI-capable hardware (Upcoming release)

Applications

- Concept prototyping
    - Quick, iterative exploration of ideas and functional prototypes
    - Small footprint for easy integration
    - Standalone - no other electronics required
- Actuator evaluation
    - Compare different actuator technologies, characteristics, placement and footprints
- Development
    - Rich set of parameters and tuning...
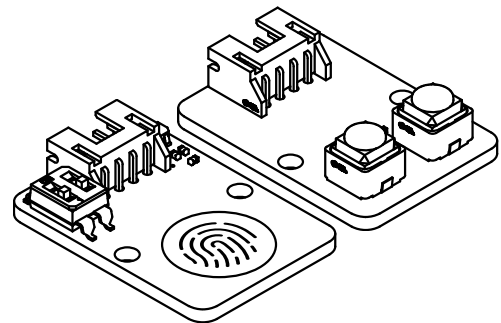
Satellite Module

The Hapticlabs Satellite is a hardware module incorporating an Espressif ESP32 MCU and two Texas Instruments DRV2605 haptic drivers.
It allows instantly playback of haptic signals designed in Hapticlabs Studio The communication is established through a UART Serial communication via the USB port. The module's internal haptic engine is optimized to play back haptic signals on electromagnetic haptic actuators, including LRAs (Linear Resonant Actuators), ERMs (Eccentric Rotating Masses), and voice coils, accounting for their respective properties.
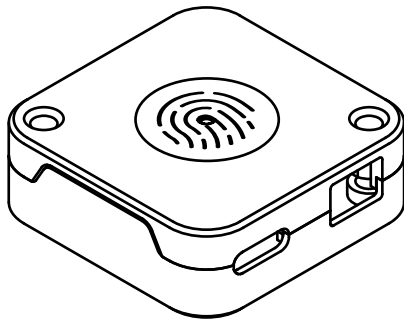
Satellite unit

The Hapticlabs Satellite is a hardware module incorporating an Espressif ESP32 MCU and two Texas Instruments DRV2605 haptic drivers.
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Sensor modules

The sensor modules allow triggering Hapticlabs tracks with a simple touch or by pressing a button. They connect to the Satellite unit with their JST PH-4 4-pole connectors and can be easily integrated into prototypes using their two 2.5 mm mounting holes.
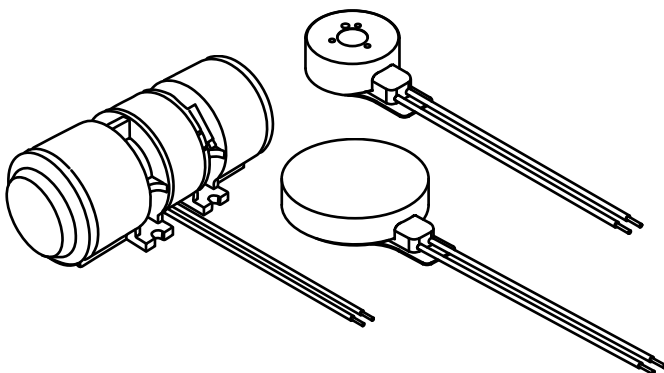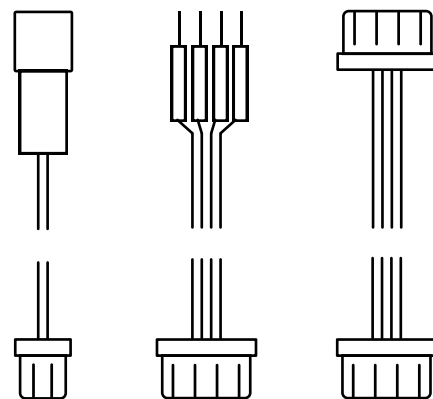

Actuators

In the box, you will an example for each of the three major classes of haptic actuators.
The included **E**ccentric **R**otating **M**ass (**ERM**) is provided by Vybronics (Model: VC1234B016F).
The included **L**inear **R**esonant **A**ctuator (**LRA**) is provided by Vybronics (Model: VG1040003D)
The included **Voice coil** is provided by TitanHaptics (Model: Drake low frequency)
Play around with all of them and find out their distinct characteristics!

Cables

All necessary cables are included to get started:
- 2x Actuator extension cables (the electric signal might deteriorate).
1x Male-to-male JST PH-4 connector allows connecting the sensor boards to the Satellite module.
In addition a male-to-male JST PH-4 to 2.54 mm jumper pin connector allows you to connect the Satellite unit to a breadboard, facilitating the integration in your existing setup.