

Software and MCU-Based Haptic Actuator Evaluation Kit

Software-Driven Platform for Haptic Signal Control and Feedback





1. Overview

This kit is designed to support the development and demonstration of a haptic feedback system using NECS haptic actuators.

2. Features

- Based on Infineon PSoC[™] 4100S Plus + TI DRV2511
- .wav to PWM signal conversion using Scilab
- Selection detection feature enabled / PWM-based output



System Diagram

3. Setup Instructions

- 1. Connect the HapDRV board to the KitProg3 board using the SWD interface
- 2. Connect the KitProg3 board to a PC via USB
- 3. Connect the 12V DC power adapter to the HapDRV board
- 4. Launch the PSoC Creator software
- 5. Select the .cywrk project file from "File \rightarrow Open"
- 6. Click the "Program" button to flash the firmware

*Detailed user instructions are provided separately.



4. Selection Detection and Signal Tuning

What is SetDet? SetDet refers to a technology that detects press and release actions on the haptic feedback surface by measuring voltage changes generated from the Selection Detection coil.

Adjustable Parameters

- Press Threshold Release Threshold
- - Release Ratio
 - Minimum Delay
 - ADC LSB Size

5. System Configuration and Hardware Specifications

Board Components

- PSoC 4100S Plus MCU
- DRV2511: Up to 8A output, 20 dB gain
- INA351 Amplifier: 26 dB gain, with filtering
- Optimize SelDet performance

- SelDet performance
- Detection voltage range: 165 mV
- Filtering frequency: 9 Hz



SelDet Path





6. Contact information

- Email: jaem@necsco.kr
- Address: NECS Inc. A-1204, 184, Jungbu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, 17095, Rep. of KOREA
- website: www.necsco.kr