

## Rainstick Application Note

### 1 Hardware Requirement

	<p>1x TL003-SEN-A</p> <p>Tactile Handle - Sensing and Actuating Unit</p>
	<p>1x TL003-AMP-A</p> <p>Tactile Amplifier Shield  + Olimexino-STM32 Development Board  + 12V power supply</p>
	<p>1x TL003-CABLE-DIN8</p> <p>8-in mini-din cable (shield with 1 differential pair)</p>
	<p>Mini- USB Cable for reprogramming the software  (not included)</p>

### 2 Connecting the Hardware

1. Connect the Tactile Shield with the Tactile Handle with the cable;

2. Connect the DC power jack to the Tactile Shield;
3. Connect the DC power supply to a power outlet.

**CAUTION:**

**The handle must be connected before the power on the amplifier shield is turned on, or it may not work or even damage the sensors.**

### 3 Firmware Download

The Rainstick program should start running a few seconds after the power is connected. To change the code, you need Maple IDE to be up and running:

1. **Install and start Maple IDE.** The Installation guide can be found here: <http://leaflabs.com/docs/maple-ide-install.html>. The quick start guid can be found here: <http://leaflabs.com/docs/ide.html>
2. **Get the source code from github.** The firmware can be found here: <https://github.com/hsinyun/Rainstick>.
  - The rainstick code can be found in the “main” directory.
  - The sensor testing code can be found in the “spi\_test” directory.
  - The amplifier testing code can be found in the “amp\_test” directory.
3. **Connect the processor board to the computer using a USB cable.**
4. **Upload the code to the device.** You may need to press the reset button during the download process when the software is searching for the device.
5. When you see the message “Done! Resetting USB to switch back to runtime mode”, the code should be already up and running.