MUSIGLOVE

USER MANUAL

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Introduction

Welcome to the MusiGlove experience!

MusiGlove is, as the name implies, Music in a Glove. This a simple musical device which uses sensors on the fingertips of the glove to trigger sounds. The sounds can be reproduced through speakers or headphones using the 3.5mm jack connection. The product comes in pairs, each of which contains different set of samples. The user can wear both gloves and play music as soloist or share a glove with another user to interact with each and make music.

Please take a moment to read through this manual; and enjoy your MusiGlove experience!

About This Manual

This user manual is designed to give the user an overview of the MusiGlove as well as a detailed guide on how to use it.

The device is a ready to operate and does not require any additional software. This is ideal for non-technical users who wish to plug and play. However; the device has a text based form of feedback which does require additional software.

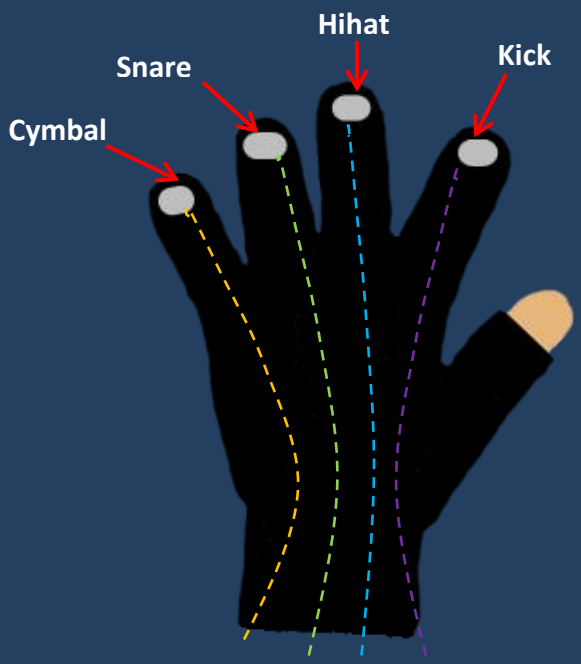
The software can be acquired from the Arduino website using the following link: http://arduino.cc/en/Main/Software

Getting Started

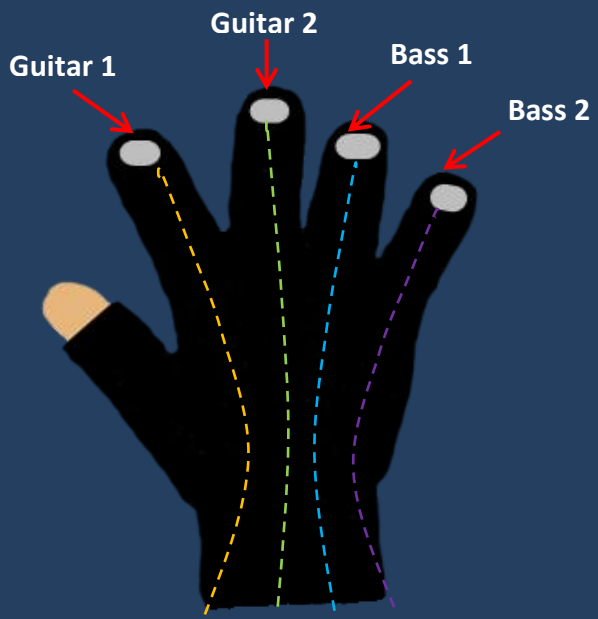
Here we will help you to familiarise yourself with the components of the Arduino WaveShield as well as some of the features on the glove.

Note: Please refer to the diagrams below when troubleshooting the device.

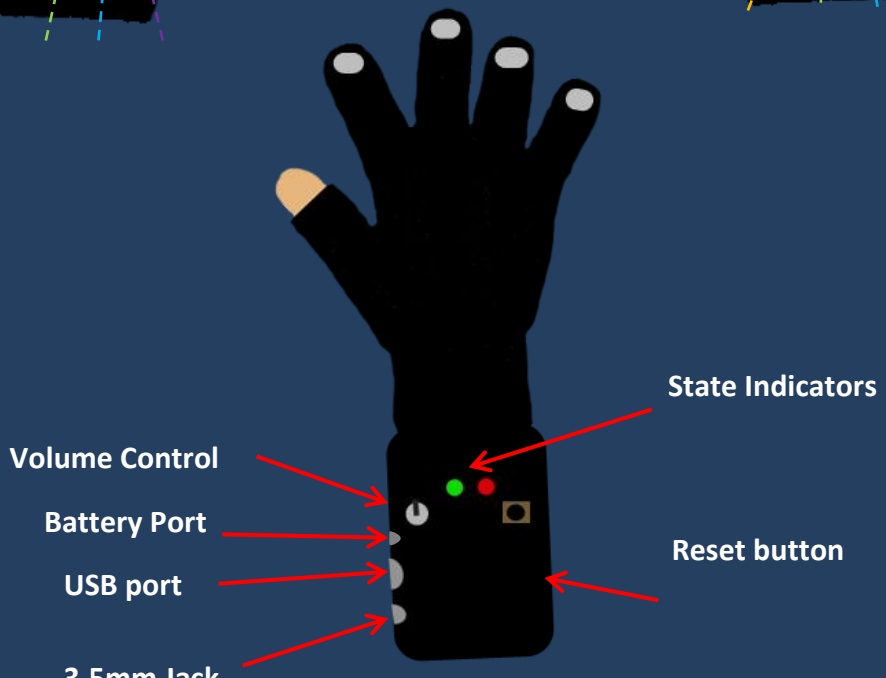
RIGHT GLOVE



LEFT GLOVE



TOP VIEW



Quick Setup

Here we will show how to set up your MuisGlove to start making music right away without having to read the entire manual. However, if you are from a technical background you may want to refer to the ***Advance setup*** guide.

Set-up:

1. Using the appropriate ports, power up the device using a USB cable or a 9V battery.
2. The State Indicators will light up. Wait until the green light comes on.
3. Connect a set of headphones or speakers into the 3.5mm Jack port.
4. Adjust the volume using the volume control knob.
5. Once the green light is on the device is ready to operate. Use your finger sensors to tap against your thumb. This will trigger each sound accordingly.

Advance setup

As mentioned earlier this setup requires that the user has a general understanding on how the Arduino and software works.

This guide will help you setup your MusiGlove in order to view the text-based feedback through the Serial monitor. This will also help you to make slight modifications in the code should you wish to change the sounds of your device.

Before you get started

Make sure that you have the following software and libraries installed in your computer:

Arduino Software: http://arduino.cc/en/Main/Software

WaveShield Library: https://code.google.com/p/wavehc/downloads/list

Capacitive sensor Library:
http://playground.arduino.cc//Main/CapacitiveSensor?from=Main.CapSense

Advance setup

Note: There are two Arduino sketches provided for both gloves. (WSRight and WSleft). Although the code has minimal differences make sure that you use the correct sketch for each glove to avoid any problems.

Text-based Feedback

1. Launch the Arduino software and open the sketch you would like to use for text-based feedback (Serial output).
2. Connect the device to your computer using a USB cable.
3. To view the text-based output click on the Serial Monitor icon or use shortcut **CTRL+SHIFT+M/CMD+SHIFT+M.**
4. The Serial Monitor will display an introduction as well as some quick instructions on how to operate the device. Should there be any errors the Serial Monitor will generate a message accordingly. There is also feedback on the sensor values which is useful for troubleshooting.

Changing Sounds

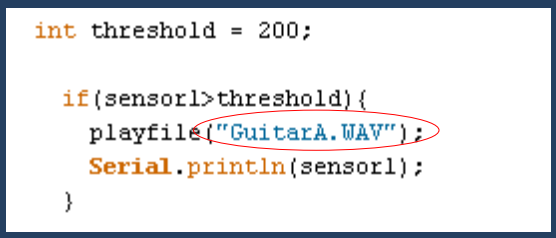
Note: In order to change sounds you must add files to the SD card separately. It is also important that all sound files are in the following format:

- ***Sample rate : 22050Khz***
- ***Bit resolution: 16bit***
- ***Audio Channels: Mono***

You can use any audio editor that allows to convert sound files to the above format. Alternatively use an online audio converter such as http://audio.online-convert.com/convert-to-wav ***to convert you audio files.***

1. Launch the Arduino software and open the sketch you would like to modify.
2. Connect the device to your computer using a USB cable.
3. Navigate through the code and find the “void loop” function.
4. The void loop function contains a set of statements which are linked to each sensor on the glove.

See image below:



5. Change the name of the sound (*circled red on the image above*) to the new sound you have added to the SD card. *(Make sure you type the name exactly as the file name, otherwise an error would be triggered when trying to play that particular file).*

6. Once you have made your changes you can precede by uploading the code to the Arduino board. You can do this by clicking the right arrow icon at the top of the application. Once it is done uploading the device will restart and you would be able to play your new sounds!

7. Save your changes.

Troubleshooting

“There are no sounds playing, what is happening?”

Make sure that the volume is adjusted correctly. Try triggering sounds as you alter the volume control knob to identify is this is the problem. Otherwise, check the State Indicators (LEDs), GREEN will determine that there device is running properly and RED will determine if there is an error. If the RED light is on, make sure that the SD card is inserted in correctly. Alternatively, make sure that the headphones or speakers are connected properly and that they are functioning.

“The State Indicators are not responding”

The LEDs might not be connected properly. Remove the Arduino from the pouch and make sure that the LEDs are pushed in properly into the breadboard. Make sure that the long pin of the LED is connected next to the cable and the shorter pin next to resistor on the breadboard. If these seem to be connected properly, check that the ground (Black wire) is connected to the negative line on the breadboard.

“One of the sensors is triggering the RED light, what should I do?”

This means that the sound has you are trying to play is not declared properly in the code. Please refer to the advance setup guide in order to make changes to the code.

“The sensors work but they are not very responsive, how can I fix this?”

There may be a problem with the sensitivity or threshold in the code. You can fix this issue by loading the Arduino sketch provided and changing the value of the threshold. Please refer to the advance setup guide in order to make changes to the code.

Note: Lowering the threshold below the default value (200) may cause unexpected sound triggering. Try not to go lower than this value to avoid this issue.