User Manual: The Conductor Glove

1. Introduction

Welcome to The Conductor Glove user manual! This guide will assist you in understanding the functionalities and operations of this innovative glove, designed to control music through gestures and sensors.

2. Components

Glove Components:

Accelerometers: Three in the fingers, one in the main PCB on the back of the hand.
Microcontroller and I2C Multiplexer: Integrated into the main PCB.
Time-of-Flight Sensor: Located in the palm.

Software Components:

Python Code: Gathers sensor data, passes it through a neural network to interpret gestures.
GUI: Allows for creating, training, and uploading gesture models, as well as configuring Wi-Fi connections.

3. Getting Started

Charging:

Ensure the glove is fully charged before use using the provided charging cable.

Power On/Off:

Press and hold the designated power button for 3 seconds to turn the glove on/off.

Connecting to Wi-Fi:

Access the GUI interface to configure and connect to the glove's Wi-Fi network.

4. Using the Glove

Gestures and Sensors:

The accelerometers and time-of-flight sensor capture hand movements and gestures. These values are interpreted by the neural network to produce gesture data.

Creating and Training Models:

Utilize the GUI to create, train, and refine gesture models for precise control.

Uploading and Configuring Models:

Upload existing gesture models via the GUI and configure settings for optimal performance.

5. Software Interface (Jose)

GUI Overview:

Navigate the user-friendly interface to create models, configure Wi-Fi, and manage glove settings.

Creating and Configuring Models:

Use the GUI to build new gesture models, adjust parameters, and fine-tune performance.

Connecting to the Glove:

Easily connect to the glove's Wi-Fi network through the interface.

6. Controlling Music (Jose)

MIDI Controllers:

Translate gesture values into MIDI controller inputs for music control.

Variable Values and Events:

Configure and transmit variable values and events to digital audio workstations for music manipulation.

7. Troubleshooting

Refer to the troubleshooting section in case of connectivity issues, sensor malfunctions, or software errors.

8. Technical Specifications

Accelerometers: Three finger accelerometers, one main PCB accelerometer
Sensors: Time-of-flight sensor in the palm
Software: Python-based code for data gathering, neural network interpretation, and MIDI translation
GUI: Interface for model creation, Wi-Fi configuration, and gesture control

9. Support and Contact Information

For further assistance, contact our support team at support@theconductor.tech or visit our website www.theconductor.tech/support.

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* Verification of active components. (rotation)
* Electrical continuity.
* Verification of connectors and wiring.
* Validations of wireless communication.
* Validation of midi commands.
* Verification of delays.
* Validation of gestures.
* Validation of GUI commands.
* Validations of sounds.

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