



CAPTOGLOVE VER. 1.0.2

March 2019

CaptoGlove is the world's first wireless, wearable controller
for gaming and smart devices.





A B O U T C A P T O G L O V E

Unveiled publicly for the first time at CES 2017, Captoglove was first created as a health rehabilitation tool for patients recovering from strokes, but has since evolved into an immediately usable, wireless wearable controller for gaming, VR, smart devices and virtually anything with a Bluetooth connection.



Being able to transform hand movements into digital outputs, it is suitable for:

- video gaming;
- virtual reality applications;
- augmented reality applications;
- robotic and unmanned system applications;
- mobile systems interactions;
- 3D CAD modeling;
- DJ's digital applications;
- Education applications;
- Health rehabilitation applications;
- Professional training applications;
- Simulation applications.



DESCRIPTION

CaptoGlove is a smart glove with advanced technology to precisely detect a wide variety of hand/finger movements. The gestures are translated into digital inputs which are sent directly to the connected devices (such as PCs, VR Headsets, Smart Home, Internet of Things, iOS/Android Phones and Tablets, Drones etc.) to interact and control them faster, more naturally and effectively.

CaptoGlove is designed with multiple use scenarios in mind, and can control virtually any device with its Bluetooth Low Energy (BTLE) connectivity. One glove can be used as a single controller or coupled with another CaptoGlove to be used as a pair.

The most popular uses for CaptoGlove are controller for video games, PCs, mobile phones, tablets, smart home devices and healthcare rehabilitation - professional training tool (for instance, to enable

simulators to read and analyze the user's hand movements).

Thanks to its flexibility, CaptoGlove becomes the perfect tool in different fields, such as Gaming, Medical, Educational, Training, Robotics, Unmanned Systems Control.

CaptoGlove works with any existing PC content and with any Smartphone game/application that has gamepad support, converting hand/finger's gestures into digital inputs.

Users can extract the CaptoSensor from each CaptoGlove to track any object or body movement. Hardware and Software modularity makes CaptoGlove able to be integrated with new sensors and applications.

FEATURES



Touch Screen Compatible

Capacitive fingers will allow using your smart devices without the need to take off CaptoGlove.



Drone Compatible

Compatible with smartphone controlled drones.



Intuitive Control

CaptoGlove uses natural hand movements as control gestures for a quick and easy learning curve.



Plug & Play

Simple and easy setup for PC, iOS and Android devices. Capability to work with many more Bluetooth-enabled devices and upcoming gaming consoles.



No Add-On Necessary

Designed for versatility and immediate use, CaptoGlove does not require a special prepared area, or any additional hardware/software such as external cameras, specific games or costly gaming PCs.



Game Ready

As a videogame controller, CaptoGlove delivers a unique and immersive experience on a wide variety of platforms and game genres, including virtual reality, augmented reality, first-person shooters, flight sims & more.



Quality

CaptoGlove's textile developed by world's premier manufacturers of equipment for soccer and winter sports.



Cross platform compatibility

Compatibility with iOS and Android devices in development.



Washable

Completely washable after removal of the sensors. Pockets and loops inside CaptoGlove will help you replace them.



Mobile

Compatibility with Smartphones is in development.



Energy Saving and Wireless

Connects to devices via Bluetooth Low Energy (BTLE) allowing for 24 hours of continuous gaming or use.



Windows Compatible

Fully compatible with any Windows PC. Requirements for wireless connection: Bluetooth 4.0 for Windows 10-8.1; Wi-Fi for Windows 7-8 (no internet required).



SOFTWARE

CaptoGlove comes with a suite for customisation software for PC, iOS & Android are in development

SDKs available for Unity3d, Unreal4, Cpp.

In particular: Windows PC compatible, iOS and Android Apps in development, SDKs for independent development on Unity3D (Version 5+), Unreal Engine (Version 4), Windows C++ and Windows C#, iOS & Android frameworks in development.



HARDWARE

- Bluetooth Low Energy (BTLE 4.0);
- 10 Degrees of Freedom (10DoF);
- Triple-axis gyro;
- Triple-axis accelerometer;
- Triple-axis magnetometer;
- 1 barometer;
- 5 finger sensors able to perceive finger movement on the bending axis (resolution less than 1° of bend);
- 1 pressure sensor for thumb's fingertip able to perceive pressure from 100 g to 10 kg. Upon request, It is possible to have 5 pressure sensors (one for each finger).
- Index and Thumb compatible with capacitive screens;
- 24 hours rechargeable (3.7V USB-Mini USB cable) Li-ion Polymer Battery;
- Washable and breathable textile;
- Very low latency;
- Pre-installed suite of advanced algorithms for a variety of operation conditions;
- Advanced CaptoGlove Suite for multiple gestures assignment on each of the 10 DoF and finger movements;
- Additional CaptoHaptic Kit to be released later on during the year (OPTIONAL).

TECHNICAL COMPONENTS DETAILS

MCU (microcontroller)

-STM32L433RCT Ultra-low-power ARM® Cortex®-M4 32-bit MCU+FPU, 100DMIPS, up to 256KB Flash, 64KB SRAM, USB FS, LCD, analog audio.

BLE module

nRF8001 Single-chip Bluetooth® low energy solution (BLE 4.0).

BLE antenna

ALA321C3 2.4GHz Chip RF Antenna 2.4~2.485 GHz.

Compass

QMC5883L 3-Axis Digital Compass IC (three-axis magnetic sensor), it offers the advantages of low noise, high accuracy, low power consumption, offset cancellation and temperature compensation. QMC5883L enables 1° to 2° compass heading accuracy. The I²C serial bus allows for easy interface.

Acc/Gyro

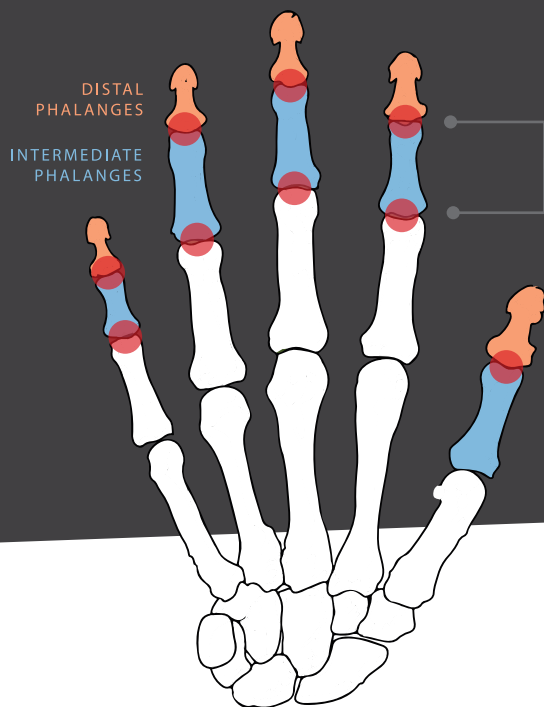
ICM-20689 Accelerometer, Gyroscope, Temperature, 6 Axis Sensor I²C, SPI Output it has FSR range of ±4000 dps for gyroscope and ±32g for accelerometer.

Barometer

MS561101BA03-50 Barometric Pressure Sensor 0.15 PSI ~ 17.4 PSI (1 kPa ~ 120 kPa) Absolute 24 b 8-SMD.

High resolution module, 10 cm / 3.9 inches

- Fast conversion down to 1 ms
- Low power, 1 µA (standby < 0.15 µA)
- QFN package 5.0 x 3.0 x 1.0 mm³
- Integrated digital pressure sensor (24 bit ΔΣ ADC)
- Operating range: 10 to 1200 mbar, -40 to +85 °C
- I²C and SPI interface up to 20 MHz



EXTREME PRECISION

CaptoGlove's sensors can measure these joints for maximum control and precision.



SIZE INFORMATION

CaptoGlove's comes in two sizes M, L. The M (6.5" – 8") size fits small hands such as those of kids and women. If you have a common sized hand or a big hand we suggest you buy the L (7.5" – 10") size.

We found in our exhibitions that the elastic material of CaptoGlove fits very well even bigger hands.



Wrap a tape measure around your knuckles and keep your hand flat. The length in inches indicates your CaptoGlove size.

Size	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10
Large			X	X	X	X	X	X
Medium	X	X	X	X				

WHAT IS INCLUDED?

- 1 Pair of CaptoGlove or Single CaptoGlove;
- 1 or 2 USB connection cables;
- 1 CaptoGlove travel bag;
- 1 manual booklet with instructions to download CaptoGlove software;
- 1 or 2 auxiliary CaptoSensor (OPTIONAL);
- 1 or 2 CaptoHaptic Kit (OPTIONAL).

