I-Hand

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Project Overview

I-Hand is a robotic hand that can finish some tasks based on operator's mind under different situations

Challenges

• Thumb movement is not as accurate as other fingers because the thumb is not long enough to be identified as a useful signal

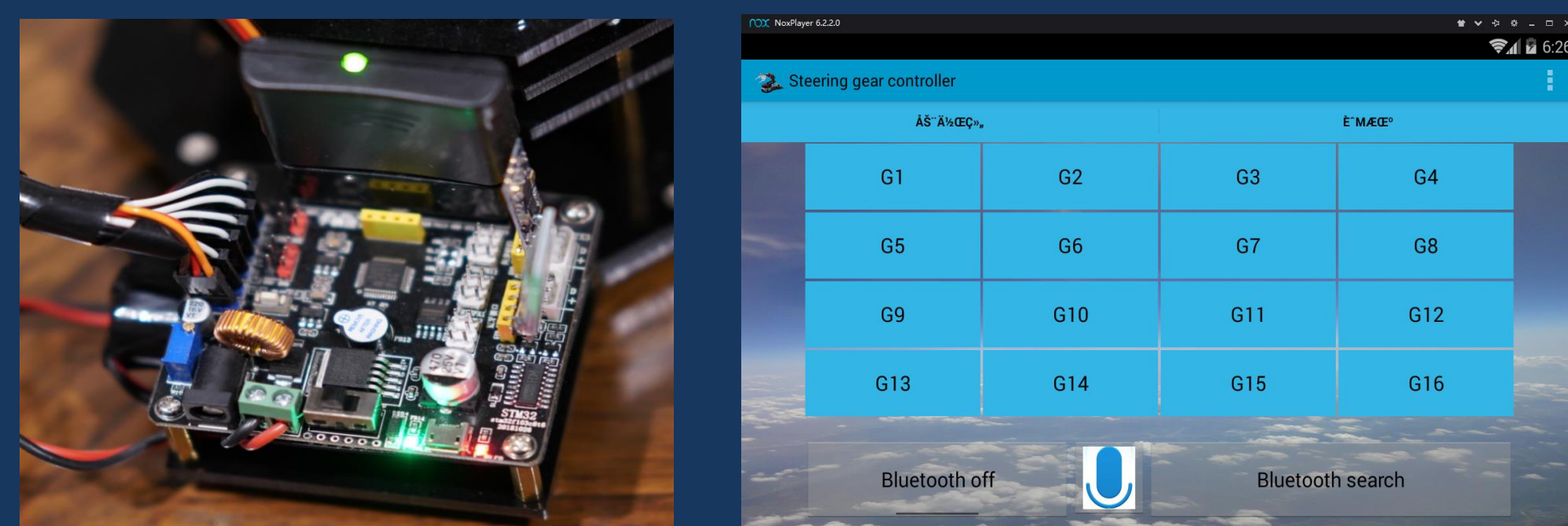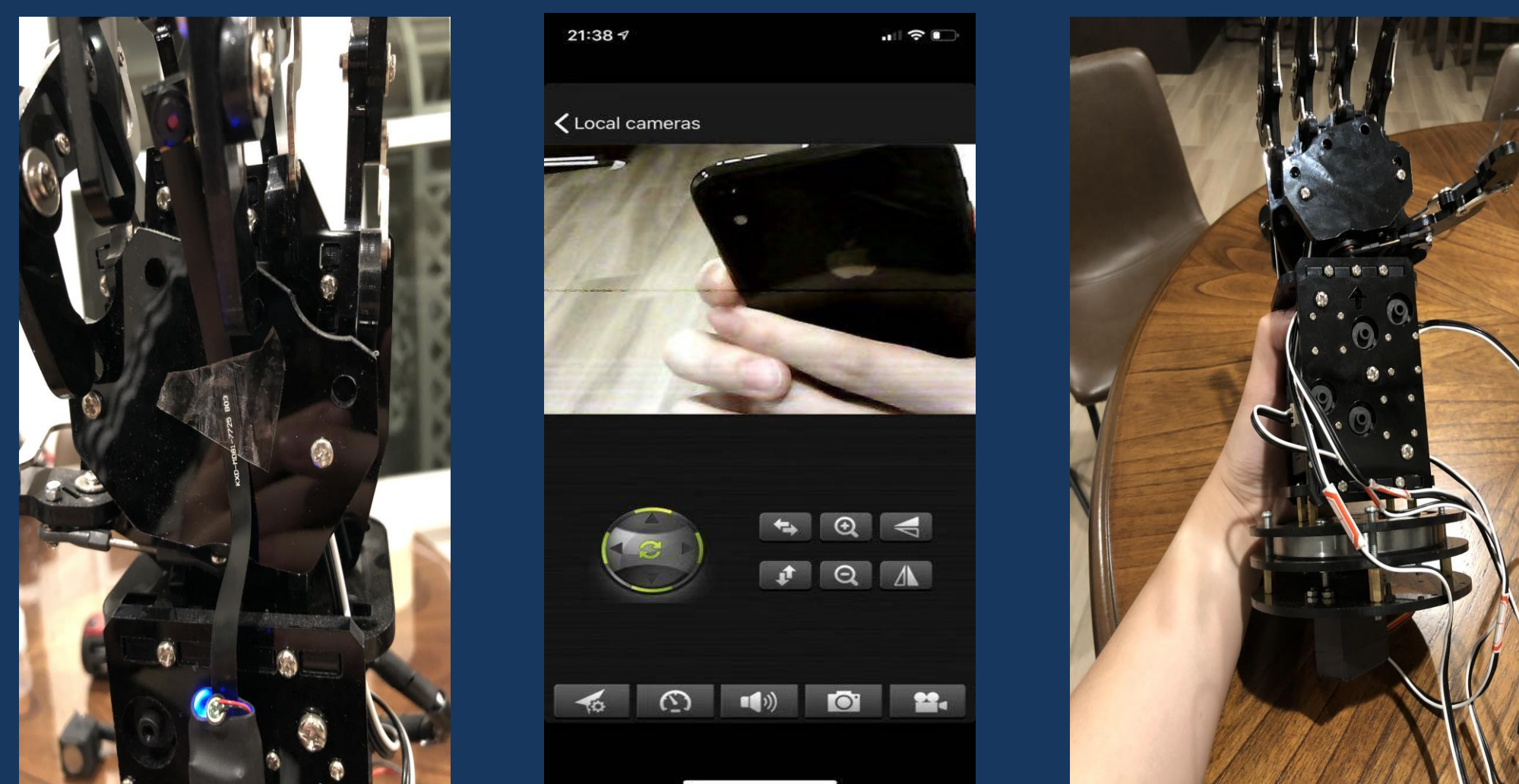• Bluetooth module cannot work as the distance exceeds 5 meters.

Reference

RM0008
Reference manual
STM32F101xx, STM32F102xx, STM32F103xx, STM32F105xx and STM32F107xx advanced Arm®-based 32-bit MCUs

Features

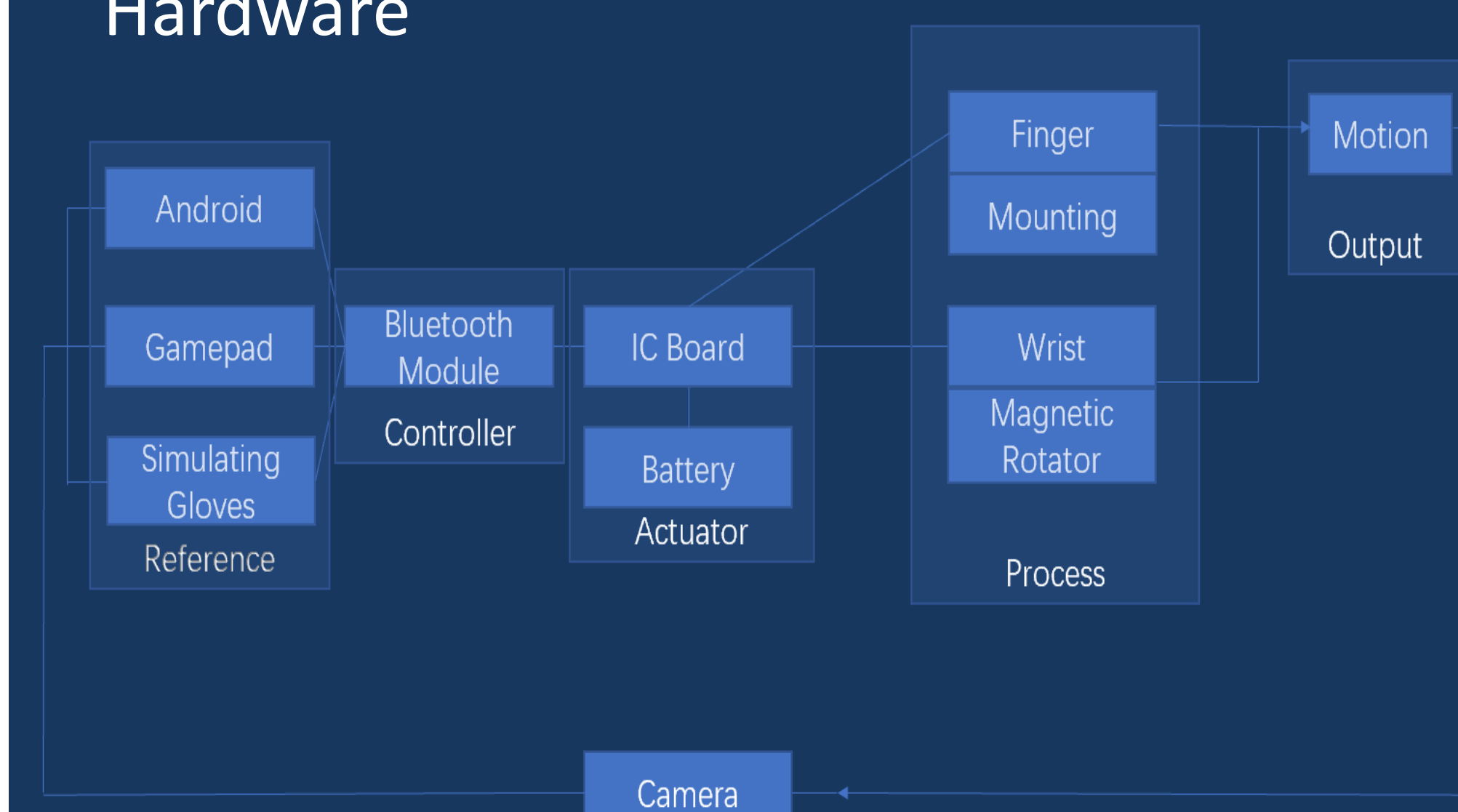| G1 | G2 | G3 | G4 |
G5	G6	G7	G8
G9	G10	G11	G12
G13	G14	G15	G16

Bluetooth off   Bluetooth search

• Imitate human hand movement
• Multi Wireless Control
• Real time image of operation

Approach

Hardware

Android
Gamepad
Simulating Gloves
Reference

Bluetooth Module
Controller

IC Board
Battery
Actuator

Finger Mounting
Wrist
Magnetic Rotator
Process

Motion
Output

Camera

Software

Java(Android Studio) User interface → Command → Python code(Rasberry Pi) ISTM32
Python code(Rasberry Pi) ISTM32 → Feedback → Java(Android Studio) User interface

C code (glove) → Check motion → Assembly language

Assembly language → Robotic Hand
Memory Card (code) → Robotic Hand

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