19 Dec 2024
Rev.0.01

Transponders

Quick Guide

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Transponder

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1、Function Overview

Motion Sensor Connectivity and Data Transmission Specification

Overview

This document outlines the connectivity and operational details for interfacing with motion sensors, collecting motion data, and transmitting it to a PC via Wi-Fi. The setup includes MOXI x5 sensors and KinMAS II clothing and pants sets.

Connectivity

Supported Communication Protocols:

- **Wi-Fi**: Dual-band support for Wi-Fi 4, Wi-Fi 5, and Wi-Fi 6.
- **Bluetooth**: Supports Bluetooth Low Energy (BLE) and Bluetooth v4.1 or above.

Radio Frequency (RF) Power:

- **Wi-Fi 5GHz Band**: +5 to +19 dBm.
- **Bluetooth**: +3 dBm.
- **Antenna**: Built-in antenna for both Wi-Fi and Bluetooth.

Bluetooth Connection:

- MOXI sensors connect via Bluetooth for initial setup and real-time data transmission.

Device Controls

Buttons:

1. **Power Button**: Turns the device on or off.
2. **Mode Setting Button**: Switches operational modes.
3. **System Reset**: Press the Power and Mode Setting buttons simultaneously to reset the system.

LED Indicators:

1. **KinMAS II Connection Status**: Two LEDs to indicate the connection status.
2. **Wireless Setup/Connection Status**: Dedicated LED indicator for wireless setup mode or Wi-Fi connection status.

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Power and Battery

- **Battery Type**: Li-polymer, 2,000mAh (undergoing testing and certification).
- **Estimated Battery Life**: Greater than 4 hours of continuous operation.
- **Charging Connector**: Circular connectors for secure attachment and charging.

Physical Design

- **Dimensions**: 60.2 x 76.8 x 19.2 mm (To Be Determined).
- **Waterproof Rating**: IP-x5 certified, ensuring resistance to water jets from any direction.

Integration with KinMAS II Clothing Set

Setup and Attachment:

- **KinMAS II Clothing Set**: Connect securely using the designated circular connectors.
- **KinMAS II Pants Set**: Attach seamlessly for full-body motion tracking.

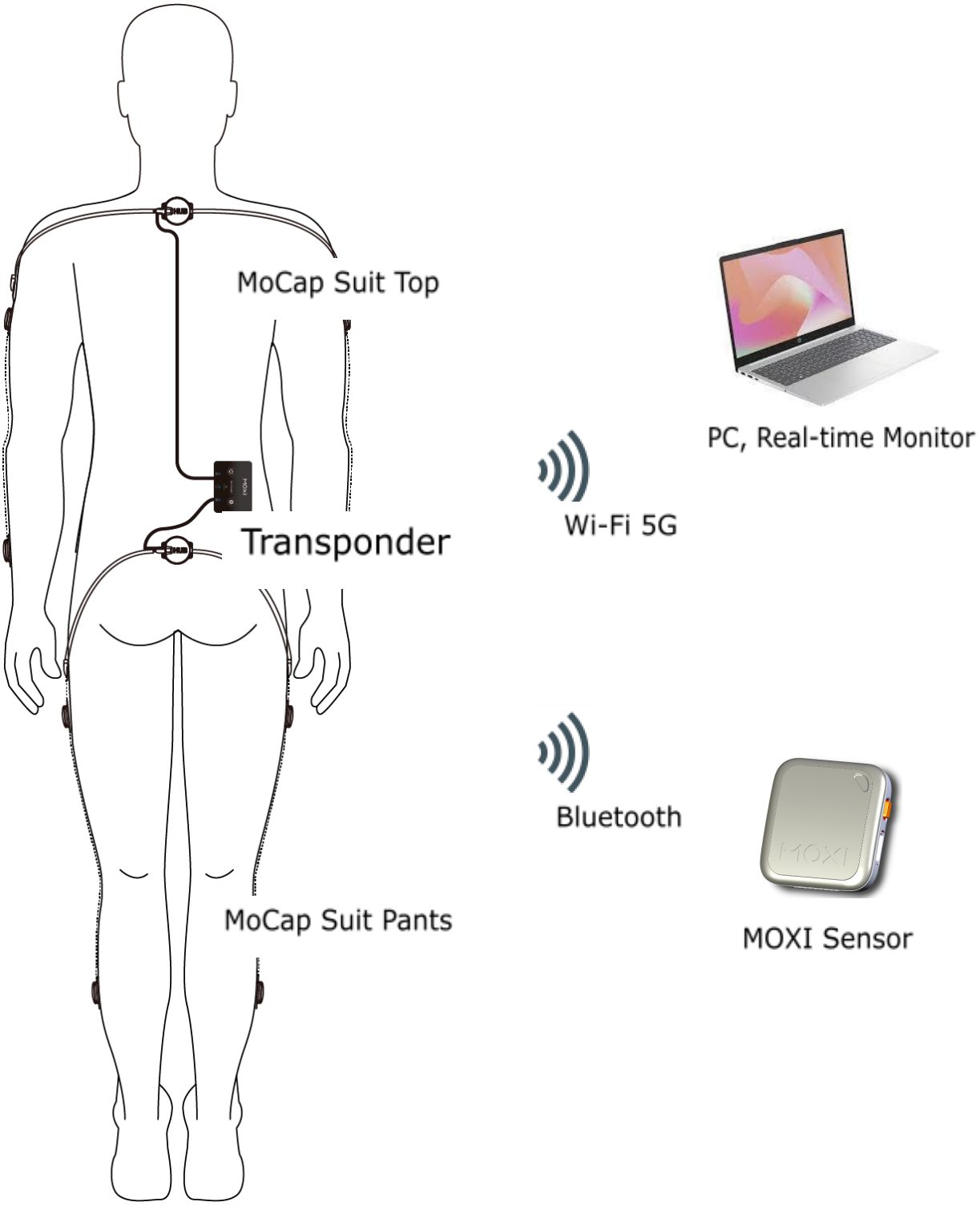
Key Features

1. **Multi-Sensor Connectivity**: Supports integration with up to five MOXI sensors and two KinMAS II clothing sets.
2. **Wireless Data Transmission**: Reliable real-time data transfer via Wi-Fi and Bluetooth.
3. **Reset Functionality**: Simplified system recovery using button combination.
4. **LED Indicators**: Intuitive status feedback for connectivity and power.

Notes:

- Ensure compatibility of the Wi-Fi and Bluetooth configurations with the PC.
- Conduct routine battery and waterproof certification tests for optimal performance.
- Optimize the connection process for simultaneous KinMAS II clothing and pants set usage.

2、System Architecture



3、Introduction to Transponder

1. MoCap Suit Cloth Dedicated Socket
2. Charging Power Socket
3. MoCap Suit Pants Dedicated Socket
4. MoCap Suit Cloth Connection Status Indicator
5. Charging/Wireless Connection Status Indicator
6. MoCap Suit Pants Connection Status Indicator
7. Battery Level Indicator
8. Power Button
9. Setting Mode Button

4、Electrical specifications

Parameter	Conditions	Min.	Tpy.	Max.	Unit
Temperature					
Operation temperature		0		45	°C
Storage temperature		-10		45	°C
Power management					
Operation voltage (USB)		4.75		5.25	V_{DC}
Low battery indicator			3.4		V_{DC}
Power cut-off			3.1		V_{DC}
Charging current			1		A
RF Protocol					
Wi-Fi	IEEE 802.11 a/b/g/n/ac/ax				
Bluetooth	Low Energy, Bluetooth v4.1 or above				
RF					
Wi-Fi Output power				7	dBm
Bluetooth output power				3	dBm

5、Product

1. Product model MoCap Suit
2. Product name MOXI Transponder

6、Manufacturer

J-Mex Inc., Ltd.
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FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.