

App Guide Hip extension

SageMotion
Wearable Biofeedback System



Table of Contents

Components	<i>(page 1)</i>
Wirelessly Connect to Computer or Cellphone	<i>(page 2)</i>
Hip extension App	<i>(page 3)</i>

Components



Hub



Nodes (8x)



Battery



Node Straps: *Medium (8x), Short (4x), Long (2x)*



Cable A (10x)

-Connect Hub to Battery
-Charge Nodes & Battery



Cable B (*optional use*)

-Connect Hub to Computer



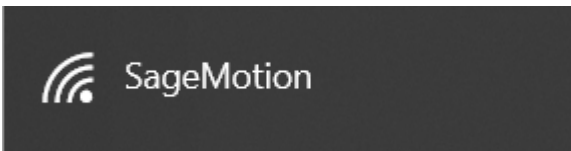
Node Charging Station

Wirelessly Connect to Computer or Cellphone

1) Connect Cable A to Battery and to Hub



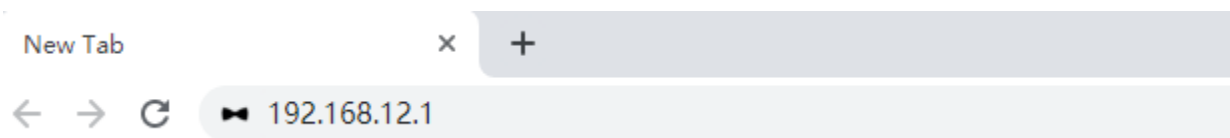
2) On Computer/Cellphone, Connect to Wi-Fi: "SageMotion"



Note 1: Need to wait for up to 1 minute for "SageMotion" to appear in Wi-Fi list. If it doesn't appear, try turning the Wi-Fi off and then on again on the computer/cellphone.

Note 2: Hub is connected after clicking "Connect" even if in Windows it shows "Connecting" or "No internet, open".

3) On Computer/Cellphone, in Chrome Address Bar, Go To <http://192.168.12.1>



[Note] If Computer Doesn't Have Wi-Fi: plug in Cable B to the Hub and to the ethernet port of your computer, then in chrome address bar, go to **<http://192.168.137.1>**

Hip extension App

The purpose of the Hip extension App is to record, analyze, and provide feedback for Hip Extension angle while subjects perform walking or other daily activities.

1) Turn on 6 Nodes

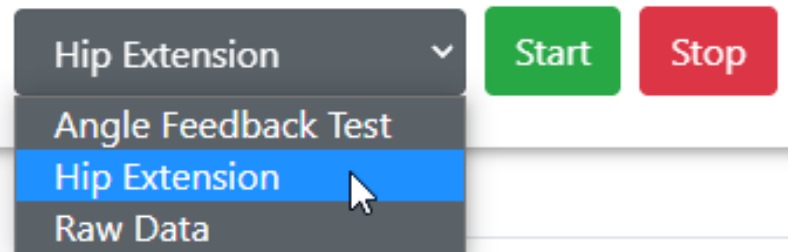


Slide switch toward middle to turn node on



Green light will blink after the node is on and running

2) Select “Hip extension” App



3) Click “Search”

Node List







Hip extension App (cont.)

4) Configure 2 Sensor Nodes and 2 Feedback Nodes as Shown Below:

Node List

Search

Connect

Type	Position	MAC	
feedback ▾	feedback_max ▾	88:6B:0F:E1:D8:96	
sensor ▾	pelvis ▾	88:6B:0F:E1:D8:9E	
sensor ▾	thigh ▾	88:6B:0F:E1:D8:A2	
feedback ▾	feedback_min ▾	88:6B:0F:E1:D8:9F	

5) Click “Connect”

Node List

Search

Connect



6) “Ready to collect data” Will Appear after Node Connection is Complete

Hip Extension ▾

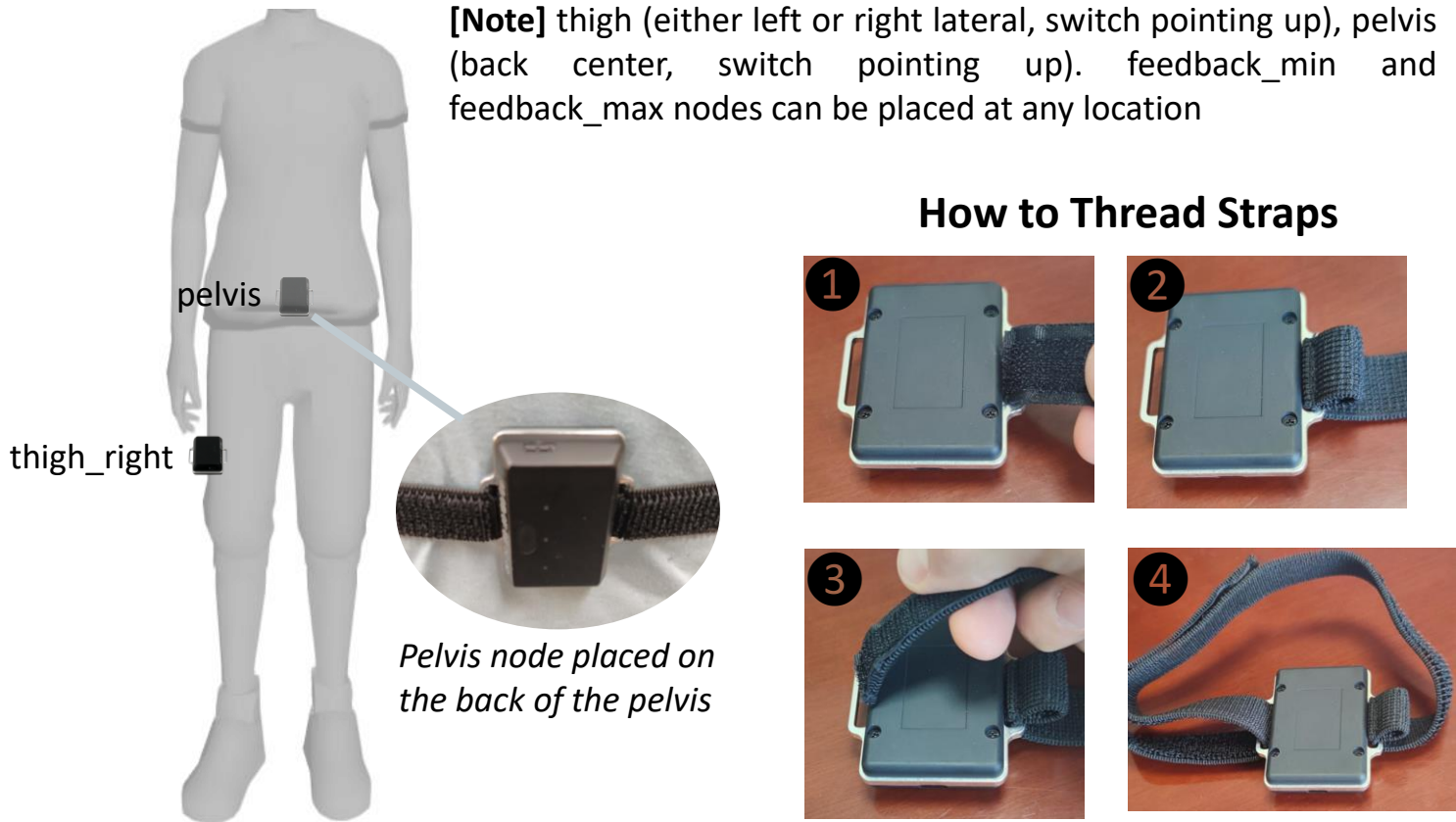
Start

Stop

✓ Ready to collect data

Hip extension App (cont.)

7) Thread Straps through Nodes and Attach at Locations Shown Below:



8) Click “Blink” for each Node to Confirm Correct Locations (red LED for given node blinks 3 times on click)

Type	Position	MAC		
sensor	thigh	88:6B:0F:E1:D8:A2		<input type="button" value="Blink"/>
sensor	pelvis	88:6B:0F:E1:D8:9E		<input type="button" value="Blink"/>
feedback	feedback_min	88:6B:0F:E1:D8:9F		<input type="button" value="Blink"/>
feedback	feedback_max	88:6B:0F:E1:D8:96		<input type="button" value="Blink"/>

Hip extension App (cont.)

9) In App Configuration, Enter Settings (Example Below)

App Configuration

Trial Name	<input type="text" value="Hip_angle_2"/>
Sensor Placement	
Which Leg?	<input type="text" value="Right Leg"/>
Feedback Setting	
Feedback On?	<input type="text" value="Yes"/>
Min Threshold Angle	<input type="text" value="-20"/>
Max Threshold Angle	<input type="text" value="20"/>
Delay Time before Feedback (sec)	<input type="text" value="0.03"/>
Save Options	
Save Mode	<input type="text" value="xlsx"/>

[Note] “Delay Time before Feedback” is the amount of delay between the time when the land task is complete and when vibration starts. This can be configured as needed.

Hip extension App (cont.)

10) Click “Start” to Start Running the App





11) After the Trial is Finished, Click “Stop”





12) After Clicking “Stop”, a File from that Trial will Appear under Download Data. Click the File (e.g. Hip_angle_2) to Download it to the Computer or Phone.

Data Management

 Download Selected

 Delete Selected

<input type="checkbox"/>	Name	Date▲	Duration	App	Type	Size	Rename	Delete
<input checked="" type="checkbox"/>	<u>Hip_angle_2</u>	2021-10-14-19-43-18	0:00:16	Hip Extension	.xlsx	1.8 MB		

Hip extension App (*cont.*)

Description of Data in Downloaded File

time (sec): time since trial start

Hip_ext (deg): Hip Flexion/Extension angle for the leg

Feedback_min: feedback status for Feedback_min node. 0 is “feedback off”; 1 is “feedback on”

Feedback_max: feedback status for Feedback_max node. 0 is “feedback off”; 1 is “feedback on”

SensorIndex_1/2: index of raw sensor data

AccelX/Y/Z_1/2 (m/s²): raw acceleration data

GyroX/Y/Z_1/2 (deg/s): raw gyroscope data

MagX/Y/Z_1/2 (μT): raw magnetometer data

Quat1/2/3/4_1/2: quaternion data

Sampletime_1/2: timestamp of each sensor

Package_1/2: package number of each sensor