App Guide
Gait Phase Feedback 2

SageMotion
Wearable Biofeedback System

sagemotion

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Components

Hub

Nodes *(8x)*

Battery

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

Cable A *(10x)*
-Connect Hub to Battery
-Charge Nodes & Battery

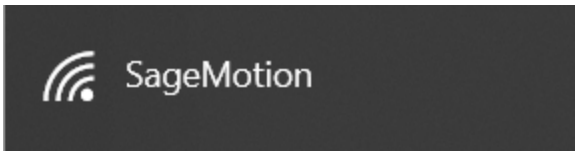
Cable B *(optional use)*
-Connect Hub to Computer

Node Charging Station

Wirelessly Connect to Computer or Cellphone

1) Connect Cable A to Battery and to Hub

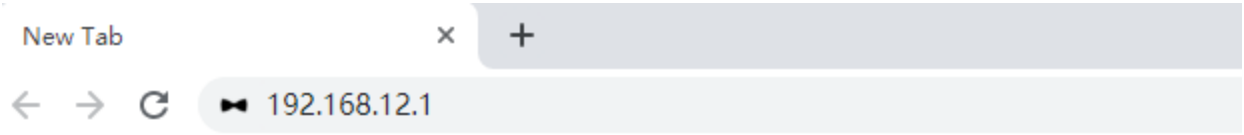
2) On Computer/Cellphone, Connect to Wi-Fi: "SageMotion"



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***

Gait Phase Feedback 2 App

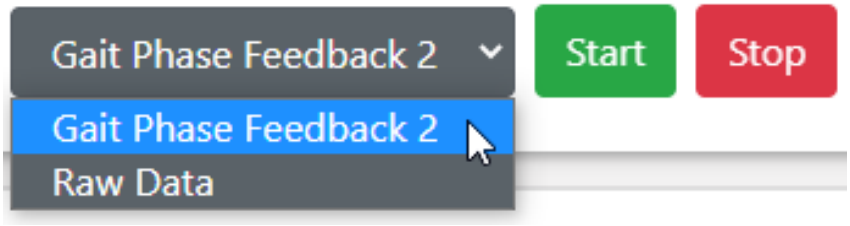
The purpose of the Gait Phase Feedback 2 App is to compute foot sagittal angles and angular velocities for both feet and deliver timed feedback during stance.

1) Turn on 4 Nodes

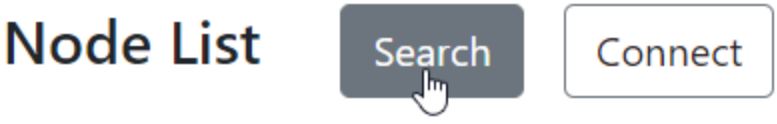
Slide switch toward middle to turn node on

Green light will blink after the node is on and running

2) Select "Gait Phase Feedback 2" App

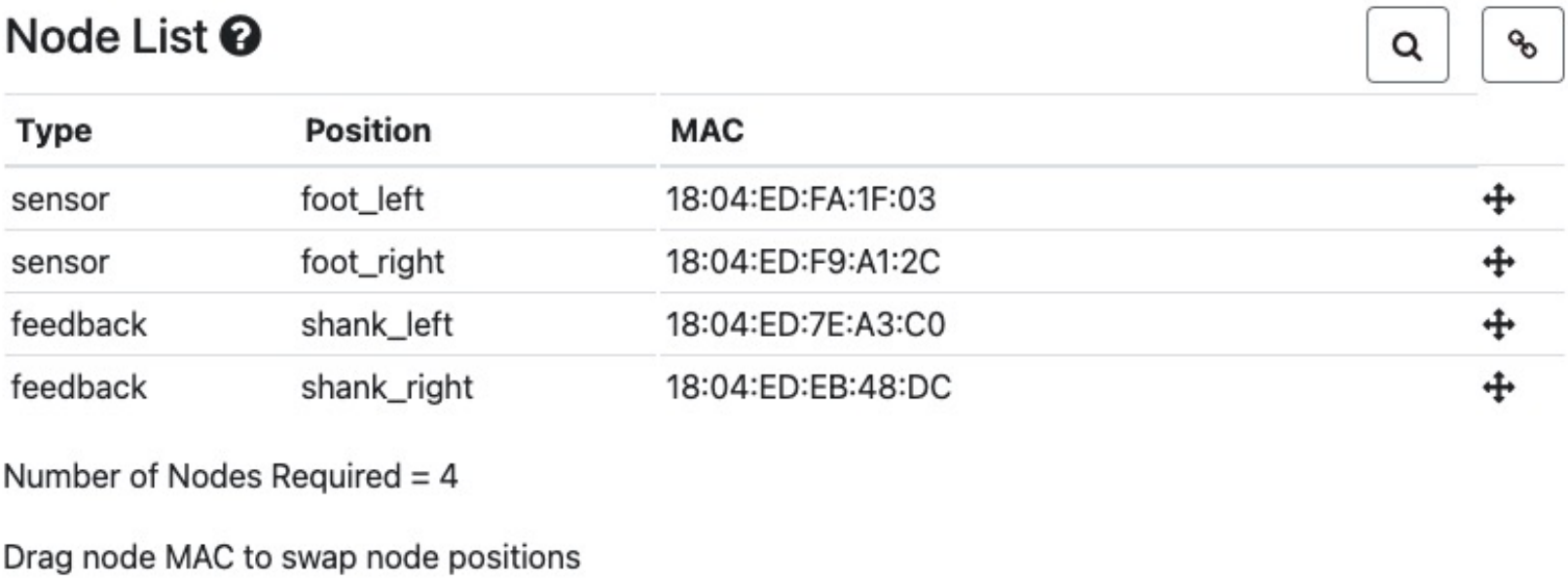


3) Click "Search"

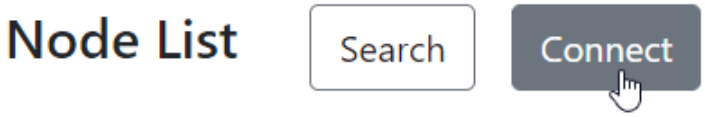


Gait Phase Feedback 2 App *(cont.)*

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



5) Click “Connect”



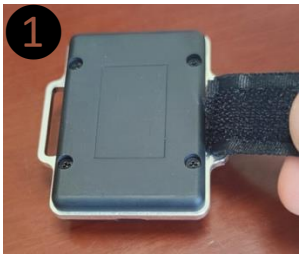
6) “Ready to collect data” Will Appear after Node Connection is Complete

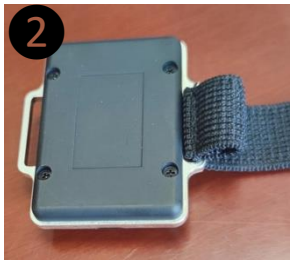
Gait Phase Feedback 2 App *(cont.)*

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

For both foot sensor nodes, the on/off switch points away from the body

How to Thread Straps





[Note] It is recommended to place the feedback nodes at the ankles as shown in the figure above, but they can be placed at any desired location

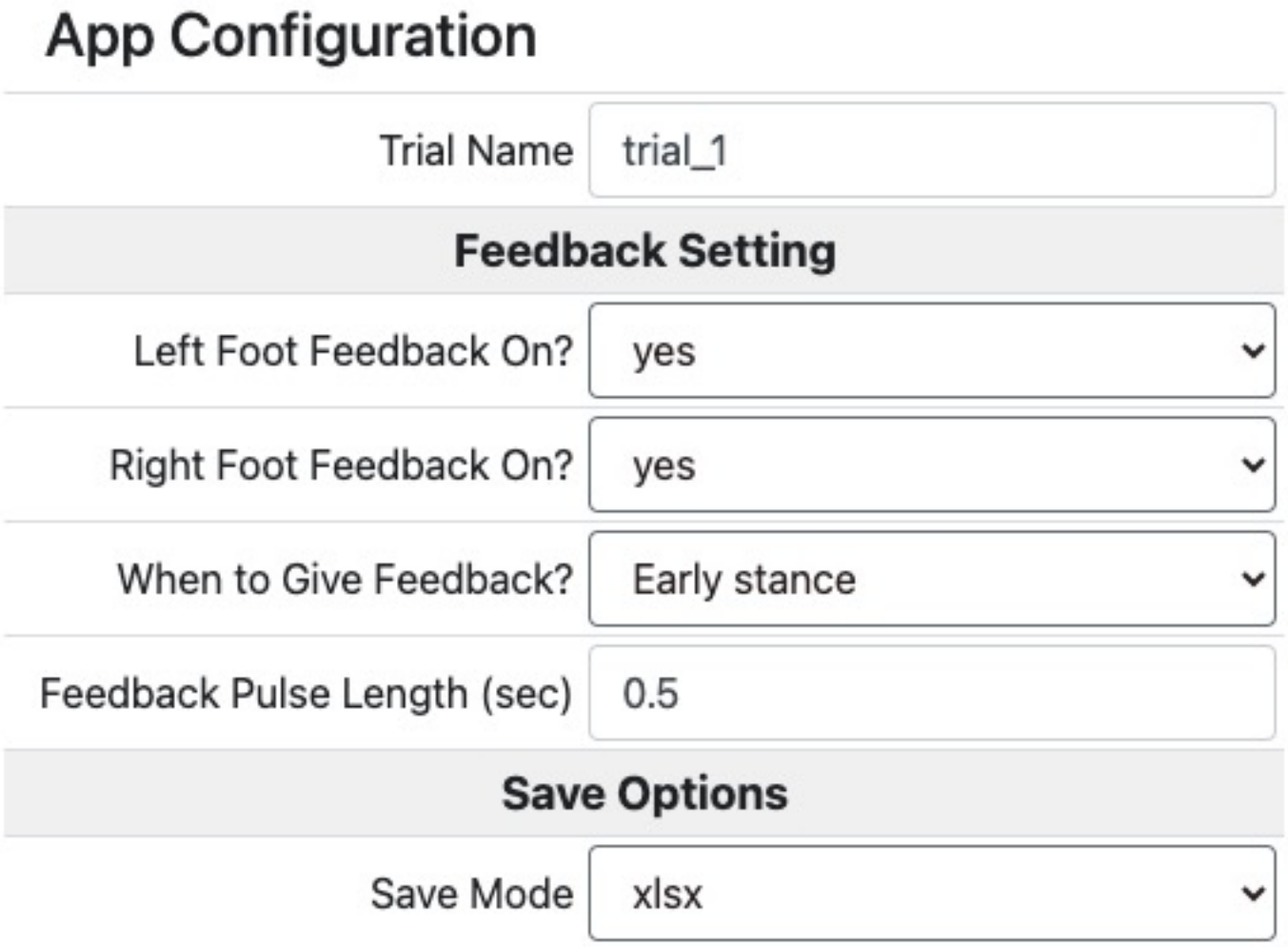
8) Click “Blink” for each Node to Confirm Correct Locations (red LED for given node blinks 3 times on click)

Node List

Type	Position	MAC				
sensor	foot_left	18:04:ED:FA:1F:03		Blink	Vibrate	
sensor	foot_right	18:04:ED:F9:A1:2C		Blink	Vibrate	
feedback	shank_left	18:04:ED:7E:A3:C0		Blink	Vibrate	
feedback	shank_right	18:04:ED:EB:48:DC		Blink	Vibrate	

Gait Phase Feedback 2 App *(cont.)*

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

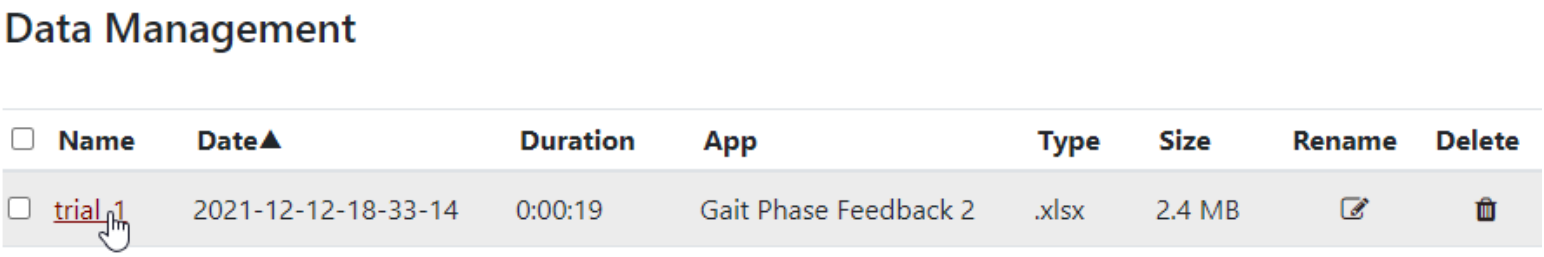


Gait Phase Feedback 2 App *(cont.)*

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. trial1) to Download it to the Computer or Phone.



Gait Phase Feedback 2 App *(cont.)*

Description of Data in Downloaded File

time (sec): time since trial start

Left_Foot_Sag_Ang_Vel: Left foot sagittal-plane angular velocity from GyroX (deg/s)

Left_Foot_Sag_Angle: Left foot sagittal-plane angle relative to initial reference (deg)

Gait_Phase_Left: Gait phase for left leg (0: swing, 1: early stance, 2: mid stance, 3: late stance)

Right_Foot_Sag_Ang_Vel: Right foot sagittal-plane angular velocity from GyroX (deg/s)

Right_Foot_Sag_Angle: Right foot sagittal-plane angle relative to initial reference (deg)

Gait_Phase_Right: Gait phase for right leg (0: swing, 1: early stance, 2: mid stance, 3: late stance)

Feedback_Left: feedback status for left foot. 0 is “feedback off”; 1 is “feedback on”

Feedback_Right : feedback status for right foot. 0 is “feedback off”; 1 is “feedback on”

SensorIndex_1/2: index of raw sensor data

AccelX/Y/Z_1/2 (m/s^2): 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