App Guide
Drop Land 1

SageMotion
Wearable Biofeedback System

sagemotion

Table of Contents

Components

Hub

Nodes *(8x)*

Battery

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

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

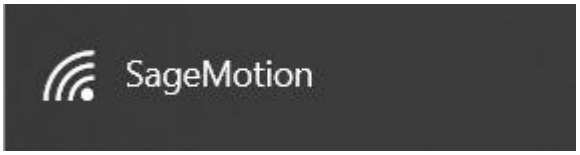
Cable B *(optional use)*
-Connect Hub to Computer

Node Charging Station

Wirelessly Connect to Computer or Cellphone

1) Connect Cable A to Battery and to Hub

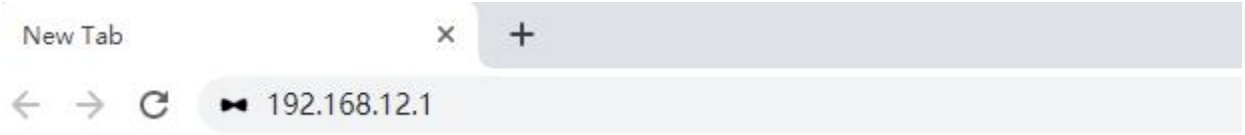
2) On Computer/Cellphone, Connect to Wi-Fi: "SageMotion"



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***

Drop Land 1 App

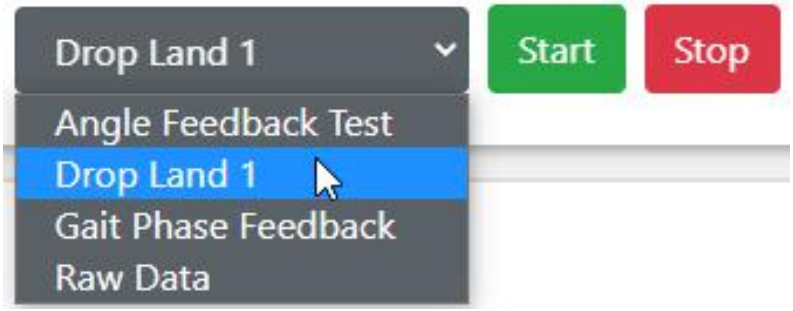
The purpose of the Drop Land 1 App is to record, analyze, and provide feedback for knee and trunk angles while subjects perform single and double leg drop lands and jump cutting tasks.

1) Turn on 5 Nodes

Slide switch toward middle to turn node on

Green light will blink after the node is on and running

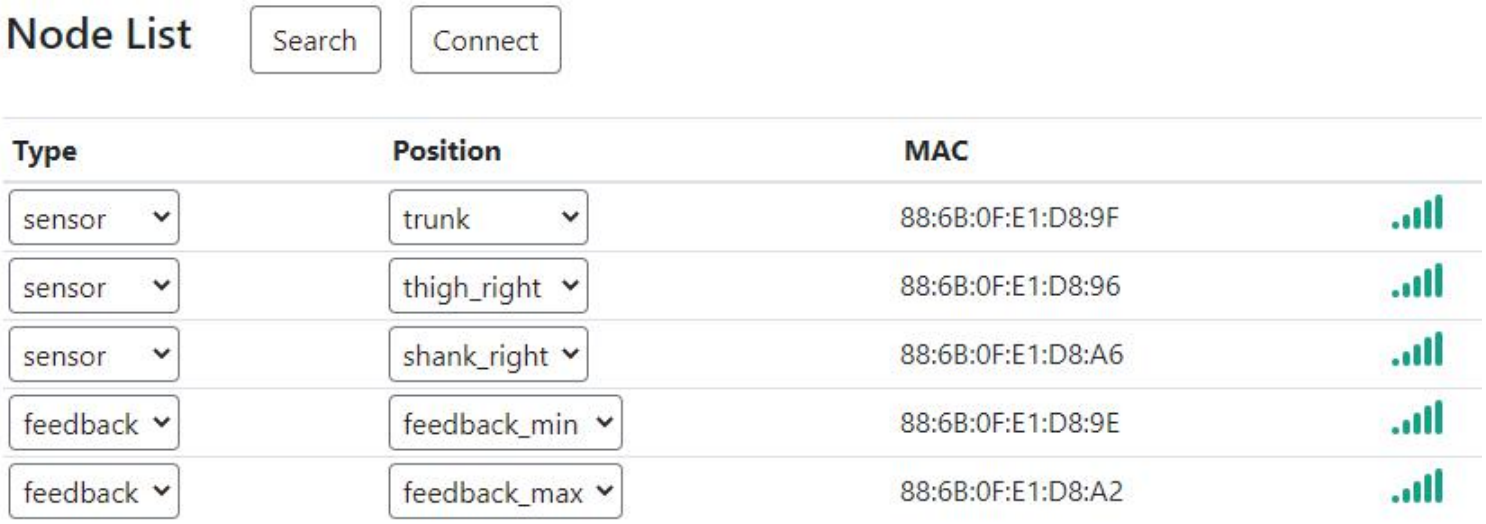
2) Select “Drop Land 1” App



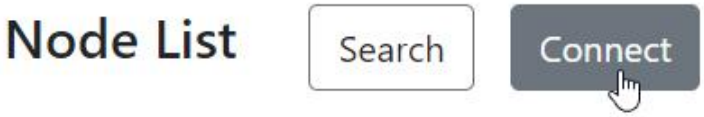
3) Click “Search”

Drop Land 1 App *(cont.)*

4) Configure 3 Sensor Nodes and 2 Feedback Nodes as Shown Below:



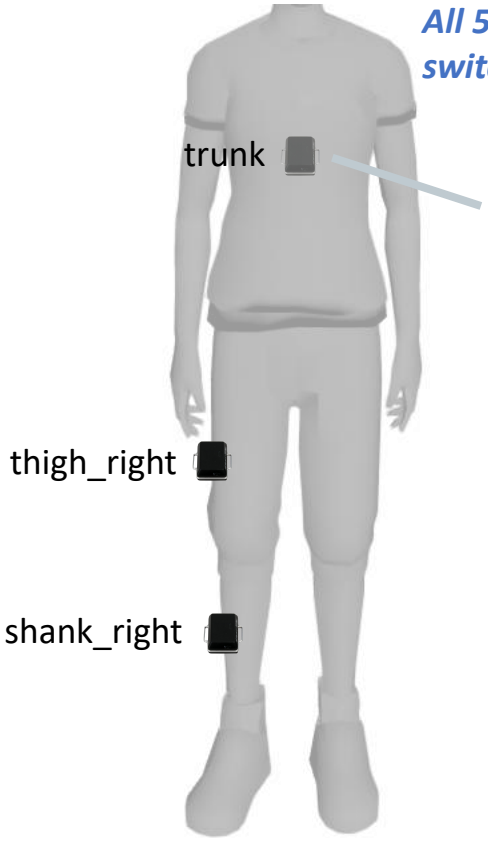
5) Click “Connect”



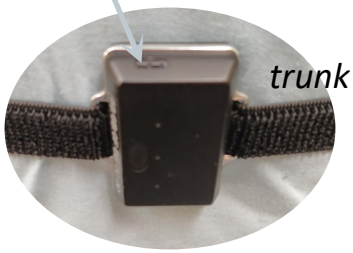
6) “Ready to collect data” Will Appear after Node Connection is Complete

Drop Land 1 App *(cont.)*

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

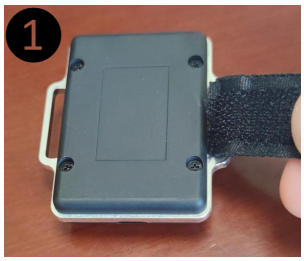


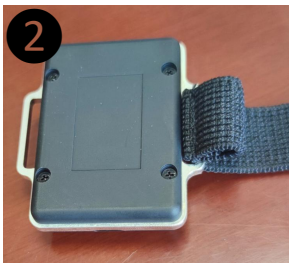
All 5 node sensor orientations on/off switch must point upwards



trunk node placed on the back of the torso

How to Thread Straps





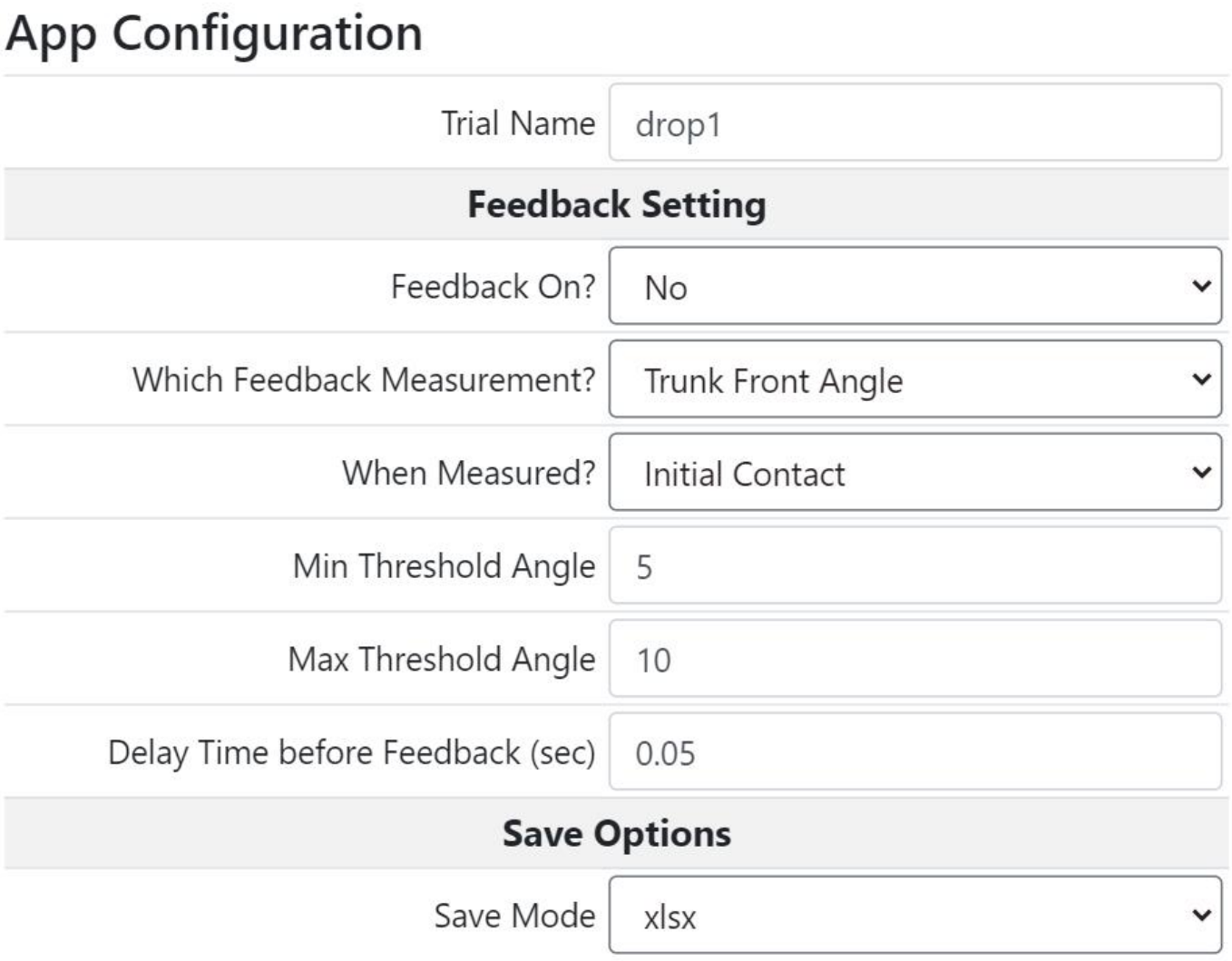
[Note] feedback_min and feedback_max nodes can be placed at any location

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

Type	Position	MAC			
sensor	shank_right	88:6B:0F:E1:D8:A6			Blink
sensor	thigh_right	88:6B:0F:E1:D8:96			Blink
sensor	trunk	88:6B:0F:E1:D8:9F			Blink
feedback	feedback_min	88:6B:0F:E1:D8:9E			Blink
feedback	feedback_max	88:6B:0F:E1:D8:A2			Blink

Drop Land 1 App *(cont.)*

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



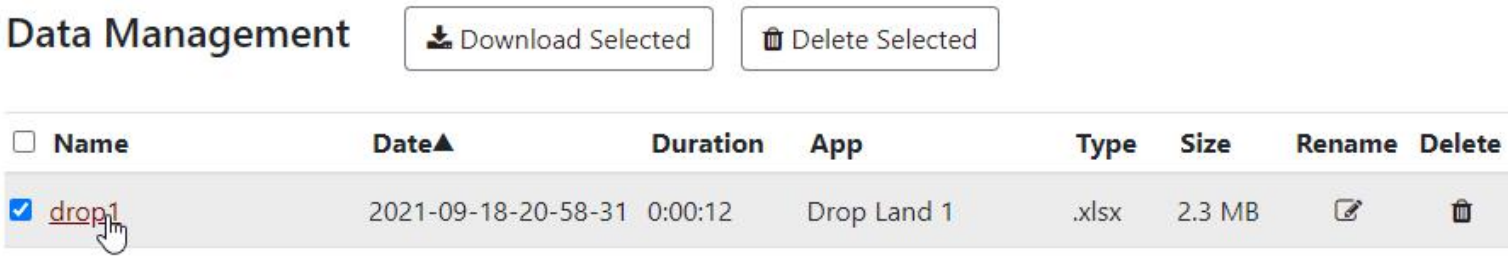
[Note] "Delay Time before Feedback" is the amount of delay between the time when the land task is complete and when vibration starts. This can be configured as needed.

Drop Land 1 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. drop1) to Download it to the Computer or Phone.



Drop Land 1 App *(cont.)*

Description of Data in Downloaded File

time (sec): time since trial start

landphase: pre_land (before initial contact), land (after initial contact during land task), post_land (after land task is complete)

TSA (deg): trunk side angle (medial-lateral), positive is to the right

TFA (deg): trunk forward angle (anterior-posterior), positive is forward

KFA_right (deg): knee flexion angle for the right leg

KAA_right (deg): knee adduction angle for the right 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_1/2/3: index of raw sensor data

AccelX/Y/Z_1/2/3 (m/s^2): raw acceleration data

GyroX/Y/Z_1/2/3 (deg/s): raw gyroscope data

MagX/Y/Z_1/2/3 (µT): raw magnetometer data

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

Sampletime_1/2/3: timestamp of each sensor

Package_1/2/3: package number of each sensor