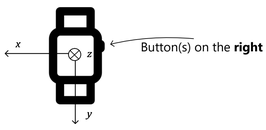
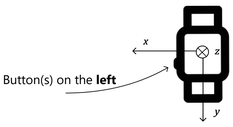
Smartwatch IMU orientation

Direction is ⊙ **towards** ⊗ **away** from the reader of this document

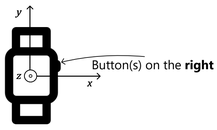
MS Band 2, Huawei Watch, Sony Watch



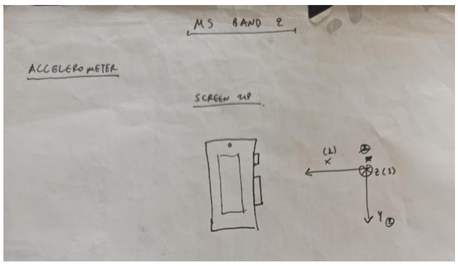
TicWatch

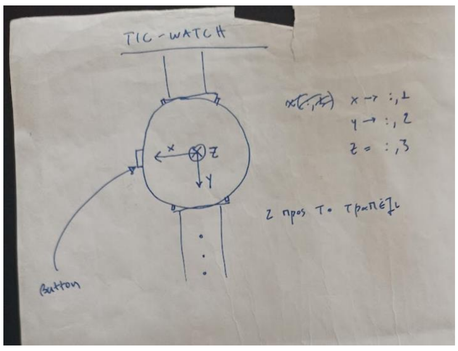


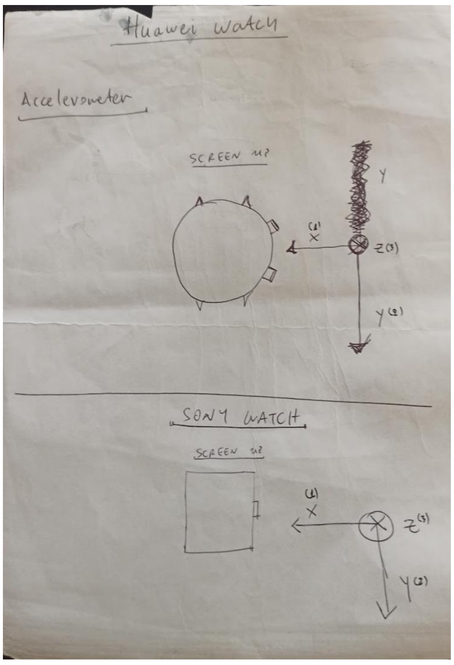
Garmin Venu SQ



Original drawings







Compatibility with the e2e_py_rev framework

All data are transformed to represent to the **RIGHT-BOTTOM** position using the **MS Band 2 watch**; where RIGHT corresponds to **right hand** and BOTTOM corresponds to the watch positioned **inside the wrist** (see image below).

Figure showcasing an MS Band 2 smartwatch in the RIGHT-BOTTOM position. This position/hardware combination represents the format of the IMU signals in the e2e_py_rev framework.

Example #1

Transform IMU data from a (a) **Sony Watch** worn (b) **above the wrist** on the (c) **right hand**.

	RIGHT-TOP (recorded data)	RIGHT-BOTTOM (transformed data)
Accelerometer	x	x
	y	-y
	z	-z
Gyroscope	x	x
	y	-y
	z	-z

Example #2

Transform IMU data from a (a) **Sony Watch** worn (b) **above the wrist** on the (c) **left hand**.

	LEFT-TOP (recorded data)	RIGHT-TOP (intermediate data)	RIGHT-BOTTOM (transformed data)
Accelerometer	x	-x	(-x)
	y	y	-(y)
	z	z	-(z)
Gyroscope	x	x	(x)
	y	-y	-(-y)
	z	-z	-(-z)