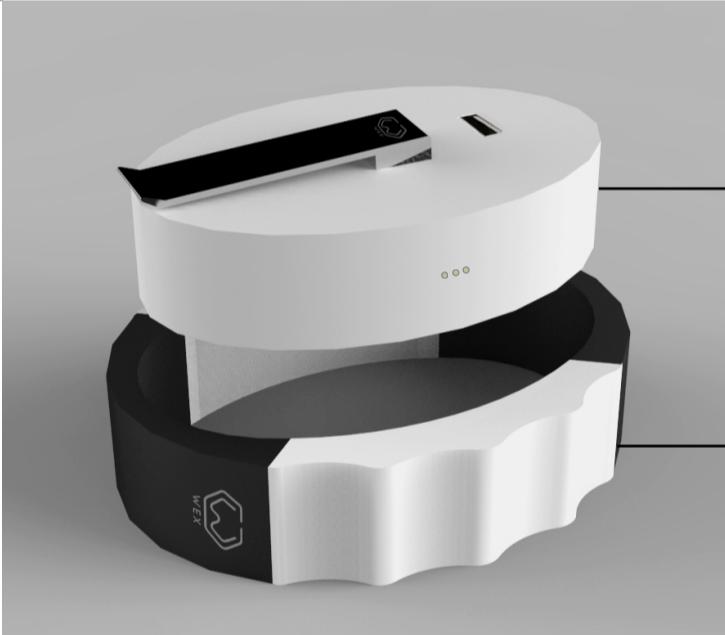


Can a Health Sensing Wearable also boost muscle strength?



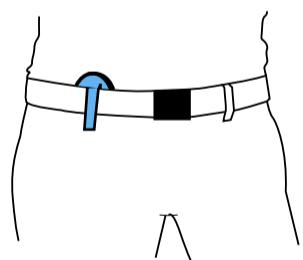
A modular wearable and exerciser!



A tuck-in device measures abdominal sounds, signals, and movements, breathing, posture / stretching.

An elastic device measures sun exposure, heart rate, blood pressure + Palm exerciser.

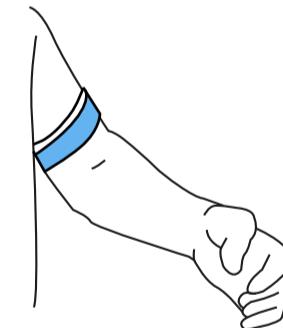
How to use WEX:



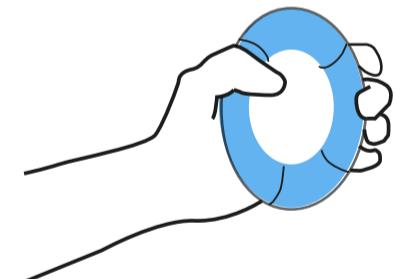
Tuck-in device to be tucked in near abdomen.



Elastic band device to be worn on wrist.



Elastic band device to be worn on upper arm for BP measurement



Elastic band device as hand grip exercise to enhance muscle strength.

What WEX can do?

WEX senses and measures :

- Sunlight exposure
- Abdominal sounds, signals, and movements
- Posture/stretching
- Heart Rate
- Breathing
- Blood Pressure

After collecting these signals, WEX alerts user about safety and precautions on the connected smartphone app.

The WEX wrist device can be used as hand grip exerciser.

Daily 15-minute hand grip exercise has following health benefits :

- Lowers blood pressure.
- Enhances endurance strength of hand.
- Improves fore-arm muscularity.
- Acts as stress buster.

Inside WEX:

The wrist device contains a Oscillometer, an Accelerometer, an Arduino module and following 3 sensors :

- Si114x - UV Index sensor
- SEN - 11574 Pulse Sensor
- Piezoelectric Pressure Sensor

The Tuck-In device contains 2 sensors :

- MEAS CM-01 Piezo Film Sound Sensor.
- SPA 401 Series Pressure Sensors.

Mobile app functions:

- Switch on/off any particular sensor
- Analyze Weekly reports
- Share the information in the form of infographics with Doctor and care-taker/Family.
- Set reminders for medicines.
- Get alerts about well-being on the basis of collected data.

Approx. Estimate of WEX prototype :

Rs.12,000 to 14,000.

Estimated Power consumption :

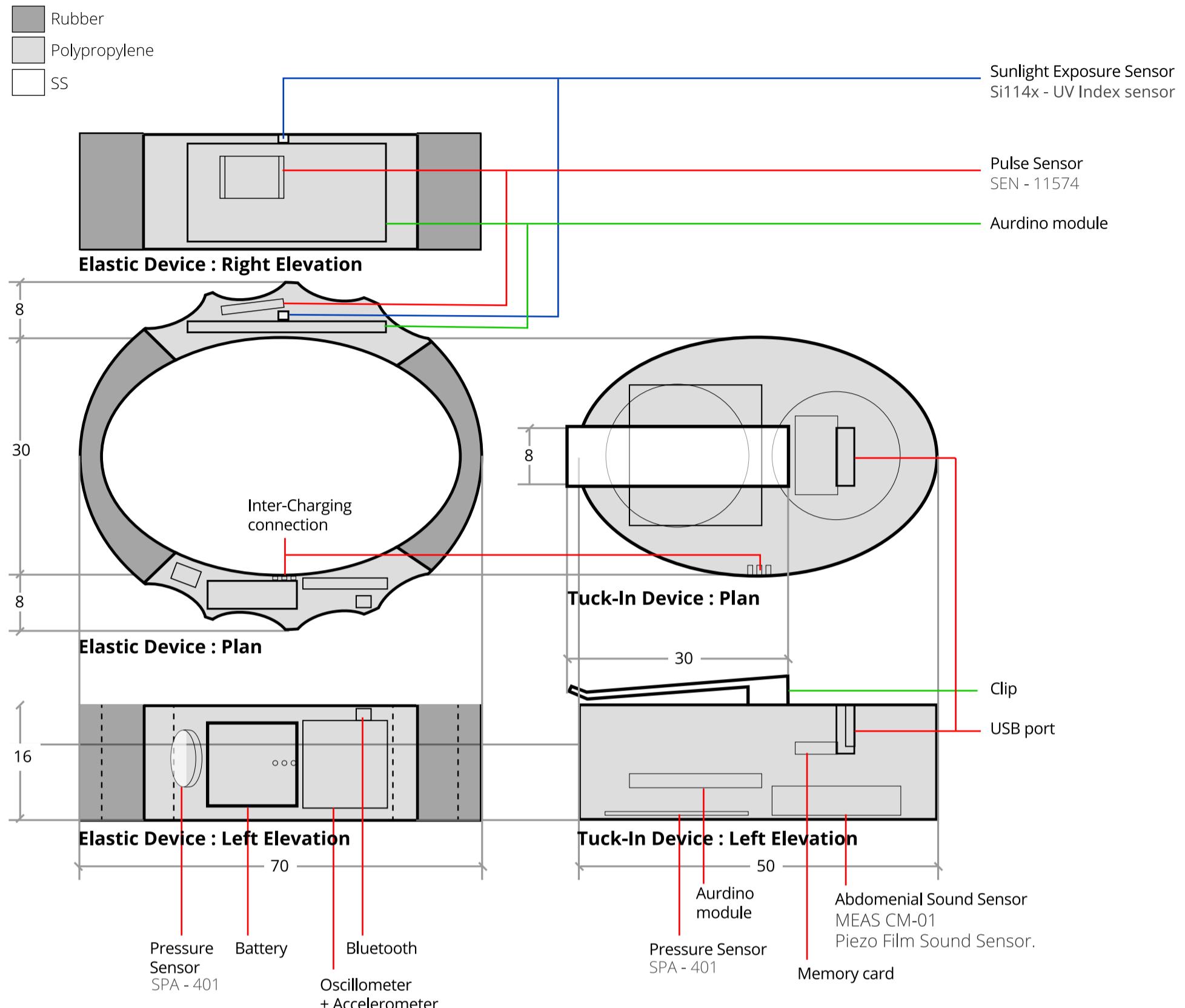
Included features supports 3.0 to 5.0 V supply voltage, and very low current consumption < 5mA.

References:

- UV Index Sensor : <https://goo.gl/2Zv72I>
- TE Medical Sensors Application and Solutions : <https://goo.gl/on32oK>
- SPA 401 Series Pressure Sensors : <https://goo.gl/oeBUQI>
- Pulse Sensor Chip SEN-11574 : <https://goo.gl/TKCXJO>
- Effect of different sitting posture on pulmonary function in students : <https://goo.gl/vuvzuk>
- Blood Pressure Sensor Theory of Operation : <https://goo.gl/PgBO8Y>
- Hand Grip Exercise: <https://healthambition.com>

Orthographic Projections:

(ALL UNITS ARE IN MM)



3D Rendering:

