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RESEARCH RING NOVEL, MOBILE, WEARABLE DEVICE FOR EDA, PULSE, ECG, TEMP

RESRING-PACK

The Research Ring allows researchers to acquire high-quality biometric data from a study participant's finger via a compact and mobile wearable device. Data for a wide range of biometric signals can be collected and displayed with the Senstream iOS app and is automatically saved to the cloud for easy review. The Research Ring's compact, unintrusive design eliminates the need for straps, bands, and adhesive electrode attachments while allowing research participants to perform activities naturally, even forgetting they are taking part in a data gathering activity.

The Reseach Ring records a wide range of biometric signals

Biometric data includes the following signals and derived biometrics:

- Electrodermal activity (EDA)
- Photoplethysmograpy (PPG)
- Electrocardiogram (ECG) available when second point of contact is made
- Temperature
- Derived signals (EDRindex, EDRamp, EDL, ΔEDL, HR, HRV, RSA)

Potential Applications

The Research Ring can provide valuable, high-quality data for a wide range of research applications, including the following:

- Psychophysiology
- General health tracking
- Exercise and wellness
- Lifestyle — stress, sleep, etc.
- Longevity and aging
- Media and communications
- Consumer insights
- User experience and ergonomics

Each Pack Includes

- Research ring(s)
- Eight (8) sizing shims per ring
- Magnetic charger cable (one per ring)
- QR code for Research Ring iOS app and one year of Senstream Cloud
- Acq*Knowledge* integration*

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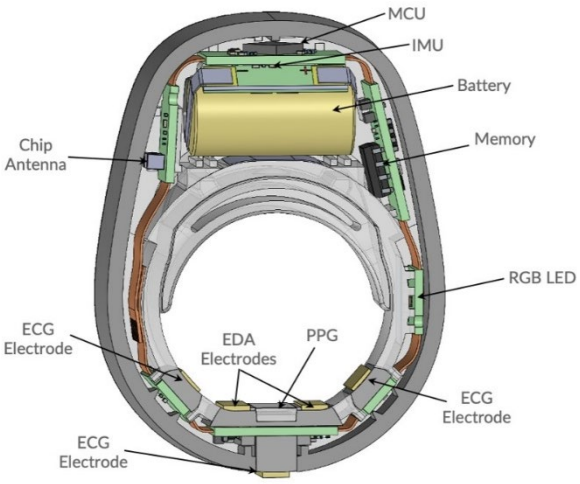
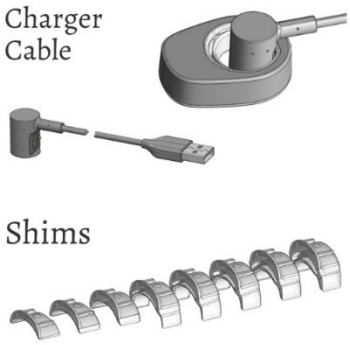
SYSTEM SPECIFICATIONS:

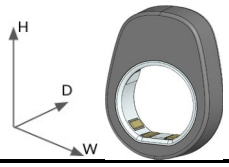


Ring component cross section



Ring charger and sizing shims

Product Name	Research Ring
Model	-AT01

Dimensions	in / oz	mm / grams	Diagram
Height	1.68	42.7	
Width	1.26	32.2	
Depth	0.44	11.4	
Weight	0.32	9	

Sizing	
Finger Size Range	Ring size 6-13 US (52-70 EU) with interchangeable shims

Temperature Range	
Operating Range	0 - 45 deg C

Materials	Description
Housing material and shims	Teijin Panlite polycarbonate is certified ISO10993 for biocompatibility and rated UL94-V0
Electrodes	Stainless Steel 430 with Nickel and Gold plating

Sensors	Description	Metric	Max Sampling Rate*
PPG	Photoplethysmography (green LED)	Heart rate - optical	400 Hz
EDA	Electrodermal Activity (two electrodes, single finger)	Skin conductance (µSiemens)	400 Hz
ECG	Electrocardiogram (3 electrode)	Heart rate - electrical	800 Hz

Temp	Body Temperature (epidermal thermistor)	Celsius or Fahrenheit	20 Hz
Motion	Actigraphy	(TBD)***	100 Hz

Connectivity	Description
BLE	Bluetooth Low-Energy (Class B digital device, pursuant to part 15 of the FCC Rules)
Firmware	Automatic firmware updates available w/ Senstream iOS App (15.2 or later)
Cloud [charts.senstream.com]	Senstream's application can automatically upload your data to a cloud application for storage analysis, downloading, or connection to other cloud solution through an API.

Battery and Power	Description
Run time	Can exceed eight (8) hours depending on channels and sampling rates
Charge time	2 hours from completely depleted device
Charge Cable	USB-A Charge cable with custom magnetic coupling (Note: USB power adaptor not included).

*__BIOPAC INTEGRATION:__ In addition to being a stand-alone research tool, the Research Ring can also be used with Acq*Knowledge* Ring Software (ACK100W-RNG) for in-lab applications or to import data acquired from the phone app to the cloud into Acq*Knowledge*. Acq*Knowledge* Ring Software can interface up to nine rings per computer and installation also provides a single license for Basic Scripting and Workflow drag-and-drop automation.
** Not all sampling rates may be run concurrently. Refer to the Senstream App for defined settings.
*** Actigraphy using the Research Ring's IMU is under development. Contact Senstream for any requirements you may have.