

Modular TactileHead

Comfort & Fit
Pressure Mapping System

INTRODUCTION AND PRODUCT OVERVIEW

The PPS Modular TactileHead is a unique pressure measurement and mapping system for quantifying pressures exerted on the head and face from wearable head products.

For head wearables manufacturers who need to balance the product design with the most comfortable fit, the Modular TactileHead can accurately capture and visualize the interaction between the headset and the complex shapes of the head, crown, and face by imaging the applied pressures.

The system features up to 18 individual high-resolution sensor modules, across the face and head regions. The number and location of the modules used can be customized depending on your application. We also offer two options of configurations for the crown of the head - centre seam or off-set seam depending on your requirements.

Chameleon real time visualization and acquisition software is then used to display pressures from both sensors simultaneously and to perform real time analysis for evaluating the fit and comfort.





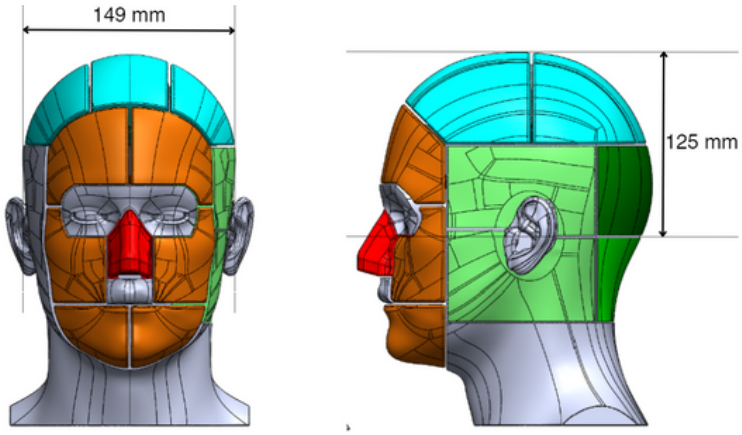
KEY BENEFITS

+ Accurately capture pressure applied around ears, nose and other facial features
+ Visualize, map and quantify contact pressures from your wearable products
+ Objectively quantify and understand your comfort tester's feedback
+ Compare competitor product design
+ Create more comfortable products

Features and Applications

KEY FEATURES

+ Based around a nominal 50th Percentile male head
+ Head size is fixed at: width 149 mm & vertex to tragion height 125 mm
+ Customize the system to match your specific project needs
+ Nominal Element Pitches:
  Crown, sides & rear modules: 5.0 x 5.0 mm
  Forehead & cheek modules: 4.5 x 4.5 mm
  High-resolution nose: 3.0 x 3.0 mm.





APPLICATIONS

Initially designed for safety headphones and headset testing applications, the TactileHead Comfort and Pressure Measurement System has since been widely used in both consumer sport and wearable comfort and fit assessment.

Actual and potential applications include:

+ Quantitatively measure comfort and fit of helmets, goggles, headphones, glasses, facemasks or headbands.

+ Accurately map, measure, and refine head pressures produced by a product.

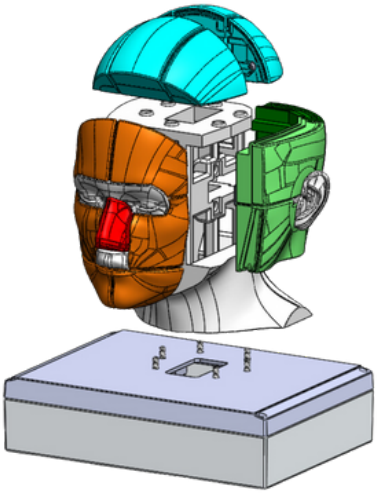
+ Identify areas of high or abnormal pressure, highlighting points of discomfort.

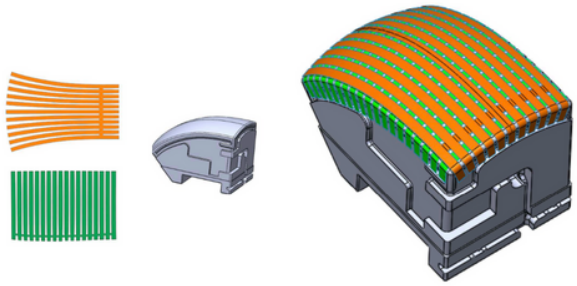
+ Determine the optimal tightness of a head-mounted product to ensure non-slippage.

System Components

MODULAR SYSTEM

1. TactileHead with selected modules
2. Integrated sensor electronics
3. TactileHead stand
4. Synchronized USB Webcam for real-time tactile data and video recording





UNIQUE DESIGN

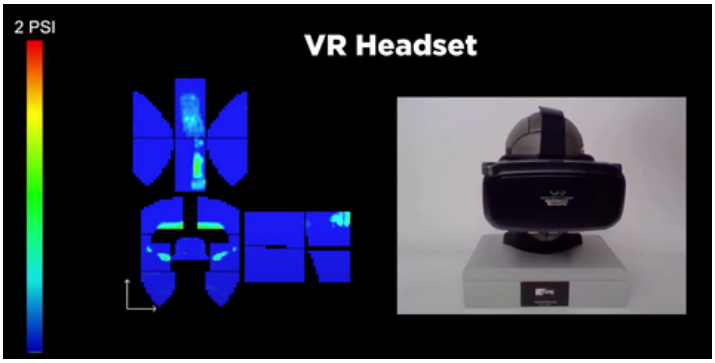
Unique sensor arrays designed specifically for the complex compound curvature across the head form seamlessly integrate with the modular system structure along with true full 3D Calibration process to enable accurate high-sensitivity high spatial resolution measurement

CHAMELEON™ VISUALIZATION & RECORDING (TVR) SOFTWARE

PPS's Chameleon™ Tactile Visualization and Recording (TVR) software is a pressure imaging solution providing intuitive, easy to use, high quality pressure mapping visualization.

Chameleon™ TVR software allows users to export, replay, save and analyze data. Data can even be analyzed live during recording or after the file has been saved. Live visual recordings can be captured using an accessory webcam, which can be replayed with the data to provide context.

Optional 3D Display available



Technical Specications

SENSOR MODELS AND METRICS

Sensor Characteristics and Performance [1]

Sensing Element Pitch	2.8 - 5.2 mm across full head form
Pressure Range	Selectable at Build: 2, 3, 5 or 7 psi
Minimum Sensitivity	0.2%
Signal-to-Noise (SNR)	400:1
Gain Non-Repeatability	0.4%
Linearity	99.8%
Sensor Thickness	0.04” (1 mm)
Accuracy Error	≤ 2%

Electronic Specifications

Scan Rate	5 - 10 Hz
Interconnection ADC	USB 2.0
Resolution	12 bit
Input Voltage	5V USB
Cable Length	5.9” (1.5 m)
Operating	23 °C to 27 °C (static)

(Can be calibrated to higher)

[1]Performance numbers are for typical system response.

FAQS

1. What is the minimum pressure sensitivity that the TactileHead can detect?

The minimum pressure that each individual TactileHead sensor element (14.4 mm²) can detect is 28 Pa, or 0.004 psi.

2. Does the TactileHead measure pressure or force?

The TactileHead system is calibrated in units of pressure (i.e., psi or N/cm²). Force values are calculated using the known area of the sensor element.

3. How is the TactileHead calibrated?

The TactileHead is calibrated in a true 3D calibration chamber referenced to NIST traceable reference sensors.

4. How often does the TactileHead require calibration?

The capacitive-based sensing modality of PPS sensors results in reliable stability and superior repeatability. With proper use and care, the TactileHead should retain its calibration for years.

CONTACT US

中国服务热线：400-877-3220
support@pressureprofile.com.cn
www.pressureprofile.com.cn