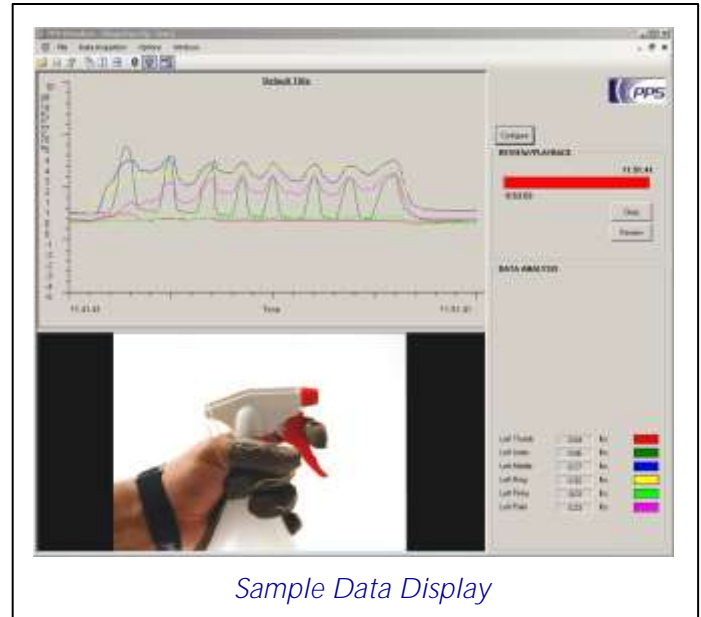




FingerTPS System



Sample Data Display

## PRODUCT OVERVIEW

The Finger Tactile Pressure Sensing System (FingerTPS) is designed to measure pressures exerted on objects by human hands while gripping.

For product designers and researchers who optimize the ergonomics of an object by quantifying user interactions, FingerTPS is a measurement instrument that comfortably, and with minimum intrusion, collects high-quality data at user-specified locations on the fingers and hand. Minimal interference in movement, coupled with high quality sensors, makes this the most accurate and easy-to-incorporate finger sensing system.

Medical practitioners and researchers also use the FingerTPS system to quantify the pressure applied by fingers in certain medical procedures for both training and evaluation.

The system comprises of a series of sensors of various sizes. These sensors connect to a Signal Conditioning Wrist Assembly (which connects up to 6 sensors) and the Rechargeable electronics interface module with Bluetooth connectivity. This module connects to a computer running PPS's Chameleon image capture and analysis software.

## KEY SYSTEM FEATURES AND BENEFITS

- Wearable, comfortable & conformable sensor system for natural hand manipulation research.
- Minimally-intrusive comfortable tactile sensors closely match human interactions.
- Sensitive and repeatable even for complex finger geometry so users can design their products or procedures based on accurate and repeatable data even for curved surfaces.
- Can connect two wrist assemblies at a same time allowing a two handed operation.
- No need to configure the system. Just put on the hand, calibrate the sensors and Chameleon auto-detects your configuration.
- Compact wireless Bluetooth electronics provides simple and easy to use set up with minimal wires to encumber use.
- Simple Calibration procedure that is easy to use while providing accurate results.
- Chameleon Visualization Software provides intuitive, easy to use, high-quality visualization and easy access to data for analysis and export to other applications.

SENSOR CHARACTERISTICS AND PERFORMANCE <sup>1</sup>	
Pressure Range	0-10 psi
Maximum Force	2 kgf (4.4 lbs) per sensor
Pressure Resolution	0.01 psi
Signal to Noise Ratio (SNR)	1000:1
Minimal Repeatability Error	1% with strict mechanical controls. Repeatability error is application specific and depends on level of control used by the operator
Human Factors Repeatability Error	Human factors in typical applications may introduce up to 10-20% repeatability error
Linearity	99% after calibration
Contact Surface Material	Conductive Cloth
Sensor Thickness	0.08 in (2 mm)
Cable Length	59 in (1.5m)
Operating Temperature	0 - 50°C
Baseline Shift	±0.05 lbs, removable by zeroing the system between measurements
Continuous Compression Effect	10% of FSR error over 3 minutes

ELECTRONICS SPECIFICATIONS	
Sample Rate	50 Hz
Computer Interface	Bluetooth
ADC Resolution	16 bit
Input Voltage	5 VDC
Input Power	2.5 W
Enclosure Size	3 x 1.5 x 0.5 in. (75 x 40 x 12.8 cm)
Weight	0.12 lbs. (55 g)

## BASE FINGERTPS SYSTEM COMPONENTS

- Two FingerTPS Sensors (any types and sizes)
- Signal Conditioning Wrist Assembly (connects up to 6 sensors)
- Rechargeable D710 electronics interface module with Bluetooth connectivity
- Chameleon Visualization Software
- Synchronized video capture function and hardware
- Calibration Load Cell
- Remote Installation and Training

Additional Sensors & a second Wrist Assembly are available upon request.

## SENSORS SHAPES AND SIZES

- Finger (x-small, small, medium, or large)
- Thumb (small, medium or large )
- Band-aid (small or large)
- Palm

To choose the right sizes for your sensors refer to the following sizing chart web link:

<http://www.pressureprofile.com/s/FingerTPS-Sizing-Chart.pdf>

<sup>1</sup> Performance numbers are for typical system response. Actual performance may vary.