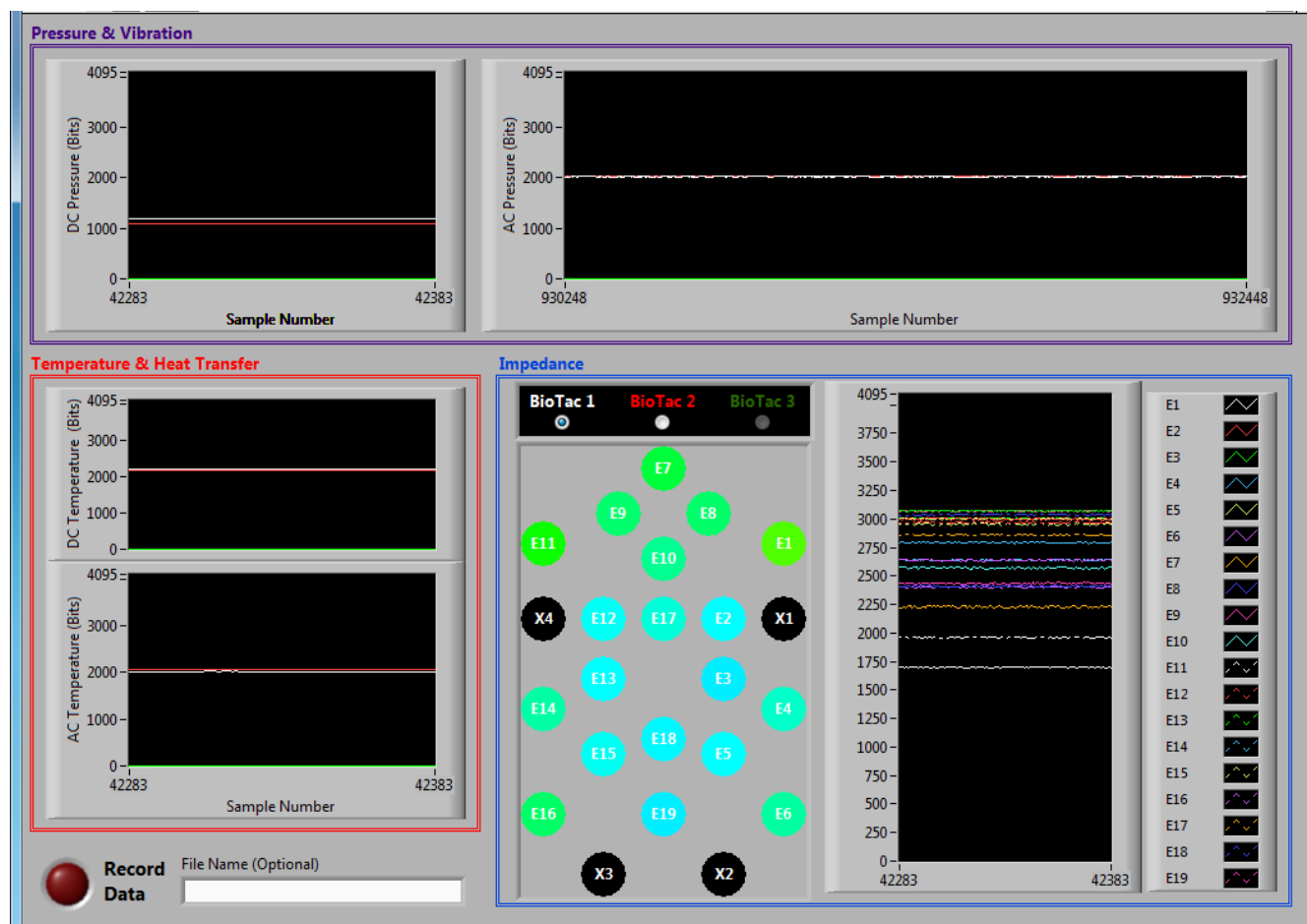


Users Guide for BioTac GUI Ver 3

For use with Windows PC only

Selects, displays and records data from one to three BioTacs connected via multiBioTac board and Cheetah USB interface



Available BioTacs are indicated by trace color keys in black box in the center, which are greyed out when the corresponding port on the MultiBioTac board has no BioTac connected. The electrode impedances will be displayed for the selected BioTac as a color-coded map (blue = low impedance = low force; red = high impedance = high force or no liquid) and individual traces at right. The pressure modalities (top) and thermal modalities (left) have multiple, color-coded traces for all available BioTacs.

The Record button at lower left will stream data to file from all three channels in ASCII, space-delimited format with header (see example below). If a File Name is specified, data will stream directly to that file until Record is turned off by hitting button again. Hitting Record again without changing File Name will over-write existing file. If no File Name has been specified, you will be asked to provide a name or discard when Record is turned off.

Other LabView GUIs provided with the BioTac include:

- BioTac Demo GUI with enhanced sampling, processing and display of vibration signals. The code provides a useful example of a different frame structure.
- BioTac Info GUI that provides serial number and other header info.

Interpretation of BioTac Data values (all 12-bit numbers ranging from 0-4095):

- **Impedance Modality:** An AC voltage is applied to the four reference electrodes (X1-4). Each sensing electrode (E1-19) is connected in turn to a load resistor whose voltage is sampled and digitized. Thus the data correspond to conductance, with higher values for the thickest liquid layer and lower values as the liquid is displaced by increasing force on the skin over each electrode. The map of electrode positions uses a reverse color-code (red corresponds to low conductance = high impedance).
- **Pressure Modalities:** DC Pressure represents the low-pass filtered output of the liquid pressure sensor (0-15psi vs. atmospheric). AC Pressure is the high-pass filtered and amplified output of the pressure sensor that corresponds to vibration (20-1000Hz band).
- **Thermal Modalities:** DC Temperature represents the resting temperature of the thermistor behind electrode E10. AC Temperature corresponds to thermal flux, essentially the first derivative of DC Temperature.

DataStructure: 2.0

Operator: Jeremy

Date: 4/5/2012

Time: 1:13 PM

Flex Version: B.D,B.D ,

Firmware Version: 0238,3.01,

Serial Number: BT-2P-02.2.0-B-11-E-00-04, BT-2P-02.1.2-A-11-D-29-01,

SampStructure:

Pac,E1,Pac,E2,Pac,E3,Pac,E4,Pac,E5,Pac,E6,Pac,E7,Pac,E8,Pac,E9,Pac,E10,Pac,E11,Pac,E12,Pac,E13,Pac,E14,Pac,E15,Pac,E16,Pac,E17,Pac,E18,Pac,E19,Pac,Pdc,Pac,Tac,Pac,Tdc

SampRate: 4400

FramesInBatch: 7

OtherData:

Begin File

0.000000 63 308 0 2021 0 2033 0 0 1

0.000227 63 308 17 1739 0 16 0 0 1

0.000455 63 308 0 2021 0 2032 0 0 1

0.000682 63 308 18 3039 0 645 0 0 1

0.000909 63 308 0 2021 0 2030 0 0 1

0.001136 63 308 19 3106 0 877 0 0 1

0.001364 63 308 0 2020 0 2035 0 0 1

...

Key to data structure (one line per sampled channel for all three BioTacs, two connected in example above):

Time stamp (s) batch index frame index channel ID BioTac1 value BioTac1 parity BioTac2 value
BioTac2 parity BioTac3 value BioTac3 parity