



ConsensysPRO Software, Consensys Base6, and Consensys Base15

ConsensysPRO for Windows, the newest and most advanced version of Shimmer's Consensys software is designed for adaptive human data collection. ConsensysPRO offers rapid configuration, data capture in an easy-to-use graphical application. ConsensysPRO users can avail of new advanced features such as event annotation and online and offline data processing.

PRODUCT OVERVIEW

ConsensysPRO has been created to streamline the management of all your Shimmer3 sensors, the software integrates a range of different applications into a single graphical software application package.

Designed to be used in conjunction with the Consensys Base6, Consensys Base15 or Shimmer Dock, the system allows users to easily program, configure and capture data from numerous Shimmer sensors simultaneously, to simplify the setup of trials and storage of recorded data.

ConsensysPRO is easily configurable for repeatable trials; The software adapts configuration options to display only the appropriate settings for the connected hardware available and remembers the users configuration parameters even after reprogramming the firmware, thus enabling both technical and non-technical users to easily manage data collection.

Shimmer International Offices:

Europe – Dublin, Ireland.

USA – Boston, MA.

Asia – Kuala Lumpur, Malaysia.

KEY FEATURES

- Simultaneous configuration of up to 15 Shimmers per Consensys Base15
- Synchronised live data streaming over Bluetooth from up to 7 Shimmers at one time
- Seamless transfer of data from Shimmers to Windows PC
- Easy to use and intuitive user interface
- Data collated and stored in an SQL-based database
- Data can be exported to user's preferred output file type
- LogAndStream and SDLog firmware
- Simultaneous firmware updates
- 9DoF to Quaternion algorithm - online and offline
- 6DoF to Quaternion algorithm - online and offline
- PPG to HR algorithm - online and offline
- ECG to HR algorithm - online and offline
- Inter-beat interval for ECG and PPG
- Activity level reports for kinematic data
- Add context to data with event annotation
- Add text descriptors to your data sets
- Review IMU calibration parameters
- Recover SD recorded data
- EMG Band-pass filtering

CONSENSYS BASIC

MULTI SENSOR MANAGEMENT
CONSENSYSBASIC

ConsensysBASIC for Windows has been developed as part of the newest generation of Consensys software. Designed for users who require less advanced features and capabilities, the new software will incorporate the most essential functions of Consensys.

- Simple, intuitive application interface
- Program, configure and retrieve data from a single Shimmer sensor
- Review IMU calibration parameters
- Recover SD recorded data
- In-app FAQ and help features
- Data recorded and stored in a SQL database

Shimmer Sensor Specifications

UNIT SPECIFICATIONS	
Processing:	MSP 430 microcontroller (24MHz, 16Bit)
Communication:	Bluetooth – RN42
Storage:	Integrated 8GB microSD card Supports up to 32GB
Battery:	450mAh rechargeable Li-ion
Dimension: Motion Unit	51mm x 34mm x 14mm. Weight: 23.6 grams
Dimension: Biophysical	65mm x 32mm x 12mm. Weight: 31 grams
A/D Resolution	11 Channels of 12-bit A/D: 7 free for expansion
RAM	16KB
Flash	256KB
Frequency	24MHz



TECHNICAL SPECIFICATION KINEMATIC/MOTION	
Wide Range Accelerometer	STMicro LSM303DLHC
Range	±2g, ±4g, ±8g, ±16g
Sensitivity	1000 LSB/g at +/-2g
Numeric Resolution	16-bit
Typical Operating Current	110 µA (Running Mag @ 7.5 Hz & Accel @ 50 Hz)
RMS Noise*	27.5 x 10 ⁻³ m/s ²
Low Noise Accelerometer	Kionix KXR85-2042
Range	±2g
Sensitivity	600 ±18 mV/g
Typical Operating Current	500 µA
RMS Noise*	5.09 x 10 ⁻³ m/s ²
Digital Magnetometer	STMicro LSM303DLHC
Range	±1.3; ±1.9; ±2.5; ±4.0; ±4.7; ±5.6; ±8.1 Ga
Sensitivity	1100 LSB/Ga at ±1.3
Numeric Resolution	16-bit
RMS Noise*	0.0081 normalised local flux
Gyroscope	Invensense MPU9150
Range	±250; ±500; ±1000; ±2000 dps
Sensitivity	131 LSB/dps at ±250
Numeric Resolution	16-bit
Typical Operating Current	3.5 mA
RMS Noise*	0.0481 dps
Pressure Sensor	Bosch BMP180
Range	300 - 1100 hPa
Numeric Resolution	16-bit
Typical Operating Current	1 µA at 1 Hz
RMS Noise (Standard mode)	0.4 m (from Datasheet)

*@ 100Hz Bandwidth

TECHNICAL SPECIFICATION GALVANIC SKIN RESPONSE	
Current Consumption:	160µA
Measurement Range:	10kΩ - 4.7MΩ (.2µs - 100µs) +/- 10%, 22kΩ - 680kΩ (1.5-45µs) +/- 3%
Frequency Range:	DC-15.9Hz
Bias voltage across GSR Input:	0.5V

TECHNICAL SPECIFICATION ECG/EMG	
Gain:	Software configurable (1, 2, 3, 4, 6, 8, 12)
Data Rate:	Software configurable (125 - 8000 SPS)
Input Differential	
Dynamic Range:	Approx 800 mV (for gain = 6)
Bandwidth:	8.4 kHz
Connections:	EMG: Input Ch1N, Input Ch1P, Input Ch2N, Input Ch2P, Reference (Ref) ECG: Input RA, Input LA, Input LL, Input Vx, Reference (RL) All Hospital-Grade 1mm Touchproof IEC/EN 60601-1 DIN42-802 jacks
ECG Unit:	Five-wire, four-channel ECG solution, measuring bipolar limb leads and user's choice of V1 - V6.
EMG Unit:	2 channels of EMG data, with common reference

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