Resources for Electrocardiography

Data Acquisition and Analysis

Record ECG data from one-, three-, or multi-lead montages and implement a fully automated LEAD II analysis or automatically classify heartbeats.

Key Features
- Automated ECG Analysis
- RMSSD For HRV Analysis
- Respiration Sinus Arrhythmia (RSA)
- Classifying Heartbeats (ECG Classification)
- 12-Lead ECG Recordings

Knowledge Base
- Clinical Chart Grid Settings For ECG
- ECG Analysis
- ECG Artifact in EMG Signal
- ECG R-Wave Detector
- Extracting Heart Rate From a Noisy ECG Signal

Hardware Options for High-Quality ECG

Request more information online

<table>
<thead>
<tr>
<th>WIRED</th>
<th>WIRELESS</th>
<th>MRI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MP150</strong> Wired 16-channel A/D</td>
<td><strong>BN-ECG2</strong> 2CH Wireless ECG Amplifier</td>
<td><strong>ECG100C-MRI</strong> Wired MRI ECG</td>
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<tr>
<td><strong>ECG100C</strong> Advanced Amplifier for Research</td>
<td><strong>BN-ECG2-T</strong> 2 CH Wireless ECG Transmitter</td>
<td><strong>DTU200</strong> MRI Gating System for Two Signals (Small Animal)</td>
</tr>
<tr>
<td><strong>MP36R</strong> Wired Universal Amp</td>
<td><strong>BN-RSPEC</strong> Wireless RSP with ECG Amplifier</td>
<td><strong>DTU300</strong> MRI Gating System for Two Signals (Large Animal)</td>
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<tr>
<td><strong>EL502</strong> Disposable Long-Term Electrodes</td>
<td><strong>BN-BIOSHIRT</strong> Wireless, Wearable Smart Shirt</td>
<td><strong>GATE-CARD E(L)</strong> Complete Dual-Channel Gating System</td>
</tr>
<tr>
<td><strong>SS29L</strong> Multi-Lead ECG CBL, BSL</td>
<td><strong>EPOCH-ECG-SYS</strong> Wireless ECG Systems</td>
<td><strong>EL508</strong> Disposable Radiotranslucent Electrode</td>
</tr>
<tr>
<td><strong>TSD155C</strong> Multi-Lead ECG CBL, C-Series</td>
<td><strong>EPOCH-ECG-SEN</strong> Wireless ECG Transmitters</td>
<td><strong>LEAD108B/C</strong> Clip Lead Unshielded, 15 cm or 30 cm options</td>
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<tr>
<td><strong>WT100C</strong> Wilson Terminal for ECG100C TP, 20cm</td>
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<tr>
<td><strong>EL513</strong> Disposable Cloth Facial Electrodes</td>
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<tr>
<td><strong>LEAD110</strong> Lead Wire with Clip for EL500 Series</td>
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</table>

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(805) 685-0066 info@biopac.com www.biopac.com
Video Tutorials for Analysis
Automated ECG Analysis- Lead II
Classifying Heartbeats
Dual-Channel MRI Gating Systems|DTU200/300 Data
Locate Animal ECG Complex Bound. in AcqKnowledge
EL- CHECK Portable Impedance Checker from BIOPAC
BioHarness Data Logger in Action

Application Notes
109 – 3-, 6-, and 12- Lead ECG
129 – Heart Rate Variability
148 – Automated ECG Analysis
172 – Multilead ECG Calbe-SS29L
177 – ECG Analysis Using the Offline Averaging Mode
206 – Continuous 12- Lead ECG
233 – Heart Rate Variability- Preparing Data for Analysis
242 – Recording ECG Data in an FMRI
279 – ECG and EDA Recording in 7-Tesla FMRI
281 – ECG Timing Delay Associated with Amplifier Filter Selections

System Level Solutions
Hardware Bundles Available to Purchase Online

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<td>MP150 System uses Reusable Electrodes</td>
<td>BioNomadix System with Matched ECG Transmitter/Receiver set and MP150</td>
<td>MP150 System Uses Disposable and Reusable Electrodes for MRI</td>
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<tr>
<td>MP36R System uses Reusable Electrodes</td>
<td>BioHarness Lightweight, Portable Data Logger and Telemetry System</td>
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<tr>
<td>MP36R System uses Reusable Electrodes</td>
<td>Mobita Wearable 32-Channel Biopotential System</td>
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Automated Analysis with AcqKnowledge
Detect and Classify Heartbeats
ECG Interval Extraction
Locate ECG Complex Boundaries
Heart Rate Variability
Poincare Plot
Respiratory Sinus Arrhythmia (RSA)
Ensemble Average
Wavelet Denoising
Waterfall Plot
Epoch Analysis- Automated Data Reduction

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Selected citations below—search online for more than 2,700 BIOPAC Citations for EDA

A Wearable Context-Aware ECG Monitoring System Integrated with Built-in Kinematic Sensors of the Smartphone
   Fen Miao, Yayu Cheng, Yi He, Qingyun He and Ye Li

Body Dissatisfaction and Mirror Exposure: Evidence for a Dissociation Between Self-Report and Physiological Responses in Highly Body-Dissatisfied Women
   Fátima Servián-Franco, Silvia Moreno-Domínguez, Gustavo A. Reyes del Paso

Characterizing Psychological Dimensions in Non-Pathological Subjects Through Autonomic Nervous System Dynamics
   Nardelli, et al

Differences in Kinematics and Heart Rate Variability Between Winner and Loser of Various Skilled Levels During Competitive Golf Putting Tournament
   Choi, et al

Rapid Stress System Drives Chemical Transfer of Fear from Sender to Receiver
   Jasper H.B. de Groot, Monique A.M. Smeets, Gün R. Semin

Reduced Room for Cardiac Vagal Modulation to Increase and Cardiac Sympathetic Modulation to Decrease by Resting in Football Players
   Wan-An Lu, Yu-Chung Chen and Cheng-Deng Kuo

Simulating Murder: The Aversion to Harmful Action
   Fiery Cushman, Kurt Gray, Allison Gaffey & Wendy Berry Mendes

The Effects of Measuring Emotion: Physiological Reactions to Emotional Situations Depend on Whether Someone Is Asking
   Karim S. Kassam, Wendy Berry Mendes

The Psychology of Common Knowledge: Coordination, Indirect Speech, and Self-Conscious Emotions
   Thomas, Kyle

Transforming or Restraining Rumination: The Impact of Compassionate Reappraisal Versus Emotion Suppression on Empathy, Forgiveness, and Affective Psychophysiology
   Charlotte Van Oyen Wityliet

Unified Frame of Reference Improves Inter-Subject Variability of Seismocardiograms
   Mikko Paukkunen, Petteri Parkkila, Raimo Kettunen and Raimo Sepponen

Unstable Power Threatens the Powerful and Challenges the Powerless: Evidence from Cardiovascular Markers of Motivation
   Daan Scheepers, Charlotte Röell and Naomi Ellemers

Contact BIOPAC to learn more or request a quotation!