

iWorx Electrocardiogram Solutions (ECG/EKG)

The cardiac cycle involves a sequential contraction of the atria and ventricles which is triggered by the coordinated electrical activity of the myocardial cells in the heart. These electrical currents can be recorded non-invasively through electrodes producing what is known as an electrocardiogram or ECG. The ECG can be measured in 3 dimensions by looking at the electrical signals from different views or leads. iWorx offers complete systems for humans and animals to study ECG in some of the most common lead configurations - 3 lead ECG, 6 lead ECG, 12 lead ECG.

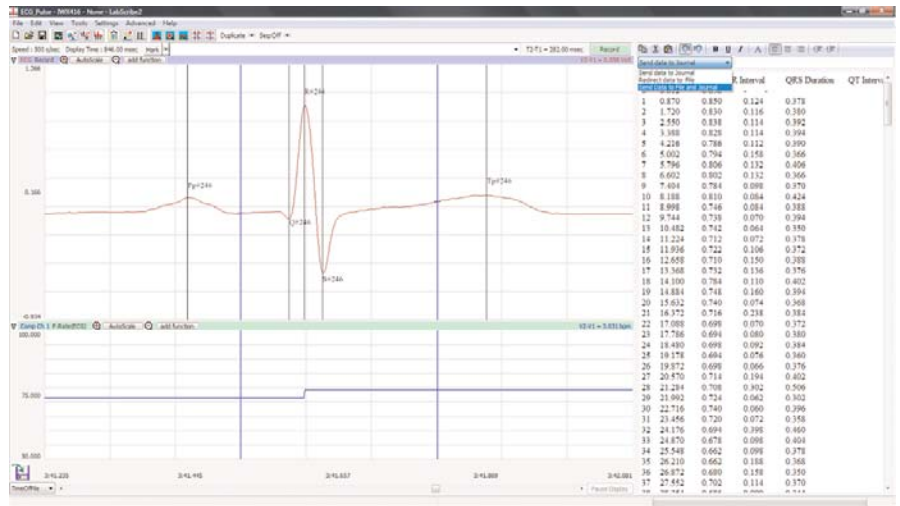
ECG calculations:

- Heart rate
- Time at R
- R-R Interval
- Delta R-R
- PR Interval
- P Duration
- QRS Duration
- QT Interval
- QTc Interval
- ST Segment
- T Duration
- T-P Duration

Heart Rate Variability (HRV*) calculations:

- Delta R-R
- Low Power
- High Power
- Mean Power at low band
- Mean Power at high band

**Note: HRV can be derived from either an ECG trace or a blood pressure trace.*



Record and AutoMark the ECG, sending the calculations to the journal from where they can be exported easily to Excel or other analytical program for further analysis.



Electrodes

- C-ISO-255 3-Lead Isolated wide band width cable for ETH-256C Amplifier
- C-ISO-104 3-Lead Isolated ECG Amplifier Cable
- A-NE-300 Set of 3 Needle Electrodes with Safety Pin Connectors
- A-NE-500 Set of 5 Needle Electrodes with Safety Pin Connectors
- C-WT-100 The Wilson Terminal Cable allows simultaneous recording of periodical leads and one chest lead when used with iWorx 214 Recording Interface and a C-ISO-104 3-Lead Isolated ECG Amplifier Cable.

Amplifier/Signal Conditioner Options:

- ETH-256C Two Channel Combination Bridge/ECG/EMG/EEG Amplifier
- SAE-100 Small Animal ECG Amplifier
- SAE-200 Small Animal ECG Amplifier

Data Recording Options:

- IX-300 series
- IX-400 series

Intracardiac Electrical Potentials

iWorx offers minimally invasive 8-electrode catheters for studying intracardiac electrical potentials in the rodent. Intracardiac electrophysiology catheters allow for in depth analysis of biopotential propagation through the heart. Up to 4 regional intracardiac electrograms can be recorded simultaneously. The same catheter can be used to pace the heart while recording electrical activity.

Applications

- His Bundle characterization
- SA node characterization
- General signal propagation
- Endocardial ECG assessment
- Regional atrial assessment
- Conduction studies
- Qualification of cardiac insult



Intracardiac electrical potentials look similar to a surface ECG. Multiple signals from different locations can be recorded simultaneously and analyzed from a single catheter.

Amplifier/Signal Conditioner Options:

- ETH-256C Two Channel Combination Bridge/ECG/EMG/EEG Amplifier
- SAE-100 Small Animal ECG Amplifier
- SAE-200 Small Animal ECG Amplifier

Data Recording Options:

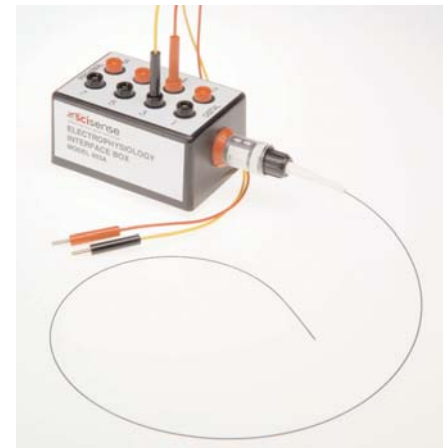
- IX-300 series
- IX-400 series

Sensors/Electrodes:

- A-NE-100 Subdermal Ground Electrode

System Components:

- FTS-1113A-0518 1.2F Cardiac Electrogram Catheter
- FTS-1913A-1018 1.9F Cardiac Electrogram Catheter
- FI893B Catheter Interface Box (includes extension cable)



FI893B Catheter Interface Box with FTS-113A-0518 Catheter.

iWorx Cardiovascular Research Solutions

iWorx offers complete systems to study physiological function for a variety of scientific research applications. Our cardiovascular products are used to assess cardiac performance and hemodynamics both *in vivo* and *in vitro*. We offer transducers, accessories, amplifiers, data recorders and software for *in situ* experiments, isolated heart preparations and isolated tissue protocols.



Data Acquisition for
the Life Sciences

www.iworx.com