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Knowledge Solutions

*i*bioSAQ
Biomedical Signal Acquisition & Analysis System

*I*bioSAQ - LabVIEW & NI ELVIS based real time ECG, EMG, EEG, EOG signal acquisition & analysis product from *itie* **Knowledge Solutions, Bangalore** based Biomedical Product Development Company.

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Applications

> Real Time acquisition of different biopotentials namely ECG, EMG, EOG, & ECG
> Baseline Drift Correction
> Realising and filtering out power noise interference
> Study of FIR & IIR filtering on bio signals
> Finding physiological parameters like heart rate, R-R interval, S-T Segment..etc from ECG signals.
> QRS detection algorithm
> Study of polarity
> Statistical parameter estimation of bio signals
> Frequency Analysis - FFT implementation
> The bio-amplifiers work seamlessly with the data acquisition systems, which provide powerful digital recording, display, and analysis function, as well additional digitally selectable gain up to 10000.

Your Partner in
Bio Medical Engineering

> Real Time Bio Signal Acquisition
> Bio Signal / Medical Image Processing
> Training in Biomedical Stream
> Signal Processing
> Bio-Medical Training
> Technical Document Building
> Product Development
> Product Engineering
> Virtual Testing
> Fatigue Life Assessment
> Product Optimization to save time, money, material and process

Center of Excellence
Biomedical Engineering

Advantages

> Interactive & Innovative
> Makes use of Graphical Design Interface based LabVIEW
> Works on National Instruments hardware platforms
> Self contained and easy to operate provides on board variable amplification
> Specially designed for educational experimentation, research & application development purpose

Our Partners / Customers

CBME, Indian Institute of Technology, Delhi
PSG College of Technology, Coimbatore
VIT Vellore
NITTTR, Chennai
Alwar Institute of Engineering & Technology
SSN College of Engineering, Chennai
TCE, Madurai
Nehru Group of Institutions, Coimbatore
RV College of Engineering, Bangalore
PSNA College of Engineering, Dindigul
many more...

Training / Workshop

> 5 Days training on **ibioSAQ**, @ MSRIT, Blore
> Training on Biomedical & Control Engg @ BMSCE, Blore
> Real Time BioSignal acquisition and analysis using ibioSAQ
> Graphical System Design Using LabVIEW @ NITTTR
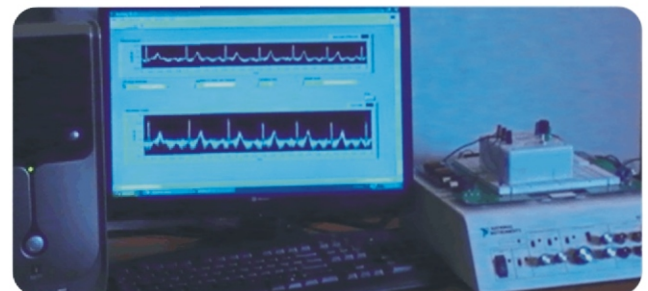> Tutorials on Bio-Signal Processing @ 2nd International Conference Biomedical Informatics & Signal Processing
many more...

Want to
Attend /Organise
Training Programmes, then contact us

"ibioSAQ is plug and play, highly reliable biosignal acquisition system"

– Mr. Vivek Srivastava
Sr Bio Medical Consultant

Right arm

Left arm

Bio-Amplifier

End - to - End Solutions for
Biomedical Signal & Image Processing

Electrocardiogram (ECG) Acquisition & Analysis

Acquire ECG data from multi-lead montages. Record using 12 lead ECG placements to study the properties of the ECG signal. LabVIEW signal processing in built graphical algorithms can be used to calculate heart rate variability (HRV). Combine ECG data with other parameters to perform a complete physiological examination. Calculate different statistical parameters like max, min, mean, and many more. Compare waveforms, find peaks, compute averages and perform complex analyses in real time or after data collection. Using our programs R-R interval, QRS peaks and other time segments can be obtained.

Features:
> Easy configuration of the hardware from LabVIEW
> Einthoven's Triangle & 6-lead ECG
> 12-lead ECG
> Real time ECG Analysis
> Off-line ECG analysis
> Heart Rate Variability
> Off-line ECG Averaging
> Observe the power line interference
> FFT for Frequency Analysis
> Apply different Filters (low pass, high pass, notch etc)
> Statistical parameter extraction
> Base line correction
> Easy Artifact removal

Output from ibioSAQ

> Heart rate	*> R-R*
> Time of P	*> Time of S*
> P wave amplitude	*> S amplitude*
> Time of Q	*> S-T segment*
> Q amplitude	*> Time of end of T*
> R-height	*> Pulse rate*
> Time of R	

## Electroencephalogram (EEG) Acquisition & Analysis:

Acquire EEG data from multi-lead connections. Record using bipolar placements to study the properties of the EEG signal. LabVIEW signal processing in built graphical algorithms can be used to filter out alpha beta, gamma & other components of EEG. Calculate different statistical parameters like max, min, mean, standard deviation, average and many more.

Features:
> Easy configuration of the hardware from LabVIEW
> 10-20 electrode system
> Real time EEG Analysis
> Off-line EEG analysis
> Observe the power line interference
> FFT for Frequency Analysis
> Apply different Filters (low pass, high pass, notch etc)
> Statistical parameter extraction
> Base line correction
> Easy Artifact removal

Output from ibioSAQ

> Acquisition of EEG (Bipolar)
> Frequency analysis
> Filtering of EEG
> Time analysis and interpretation of the EEG
> Plotting alpha, gamma, beta separately
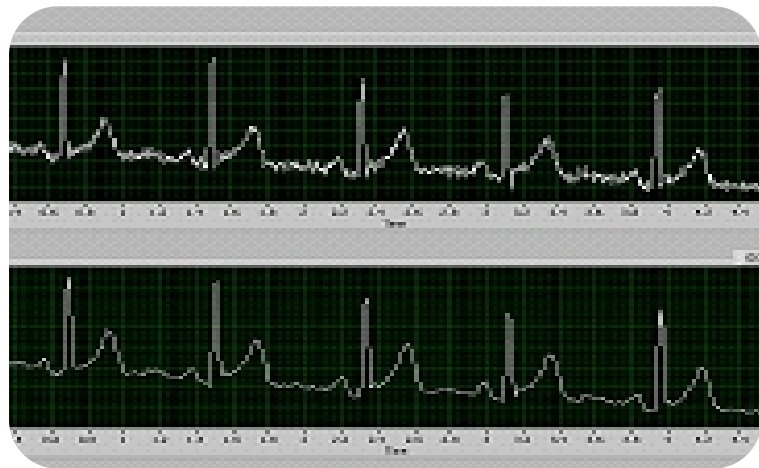
> Apply different Filters (low pass, high pass, notch etc)
> Statistical parameter extraction
> Base line correction
> Easy Artifact removal

Output from ibioSAQ

> Acquisition of EOG (Bipolar)
> Frequency analysis
> Filtering of EOG
> Time analysis and interpretation of the EOG

Electrooculogram (EOG) Acquisition & Analysis:

Acquire EOG from multi-lead connections. Record using bipolar placements to study the properties of the EOG signal. LabVIEW signal processing in built graphical algorithms can be used to perform artifact removal, filtering operations.

Features:
> Easy configuration of the hardware from LabVIEW
> Single bipolar connections
>Real time EOG Analysis
> Off-line EOG analysis
> Observe the power line interference
> FFT for Frequency Analysis

Electromyogram (EMG) Acquisition & Analysis:

Electromyography provides in-depth study and observation of electric potential generated by the muscles and nerves. Enables EMG signals observation by affixing biomedical electrodes to the surface of human body. **LabVIEW signal processing in built graphical algorithms can be used to perform artifact removal, filtering operations.**

Features:

> Easy configuration of the hardware from LabVIEW

> Single bipolar connections

> Real time EMG Analysis

> Off-line EMG analysis

> Observe the power line interference

> FFT for Frequency Analysis

> Apply different Filters (low pass, high pass, notch etc)

> Statistical parameter extraction

> Base line correction

> Easy Artifact removal

Output from ibioSAQ

> Acquisition of EMG (Bipolar)

> Frequency analysis

> Filtering of EMG

> Time analysis and interpretation of the EMG

Powered By

LabVIEW

Supported By

NATIONAL INSTRUMENTS

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