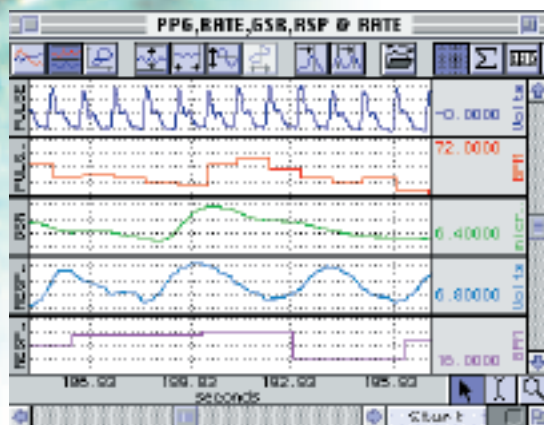




Record a wide variety of autonomic nervous system functions, including heart rate, skin conductance (also resistance), skin temperature, muscle tension (EMG), neuronal activity (EEG), and eye movement (EOG). Display measurements (e.g., mean value and standard deviation) during or after data collection. Perform detailed Event-related Potential (ERP) studies using a variety of different stimulus options, including image presentations, video clips, sound, and somatosensory stimulation. Combine physiological and psychological (self-assessment) responses for a detailed study. Use the Equation Generator to enter equations for combining multiple physiological variables for automatic assessment, or choose from an array of preset calculations. Mark events and write comments as they occur or after the fact.

FEATURES

- AUTONOMIC NERVOUS SYSTEM STUDIES
- EVOKED RESPONSE
- EVENT-RELATED POTENTIAL (P300 TESTS)
- STARTLE EYE BLINK EXPERIMENTS
- SOFTWARE-CONTROLLED STIMULATOR
- SEXUAL AROUSAL STUDIES
- AUTOMATED DATA ANALYSIS
- HEART RATE VARIABILITY
- AUTOMATICALLY CONTROL OTHER EQUIPMENT
- AUDITORY & VISUAL EVOKED RESPONSE TESTING



AUTONOMIC NERVOUS SYSTEM STUDIES **Q10**

Evaluate sympathetic and parasympathetic nervous system effects on humans and animals. Record ECG, electrogas-trogram (EGG), skin temperature and electrodermal activity for evidence of sympathetic/parasympathetic nervous system effects. When sympathetic activity increases, heart rate rises, EGG frequency slows, skin temperature drops and electrodermal activity increases.

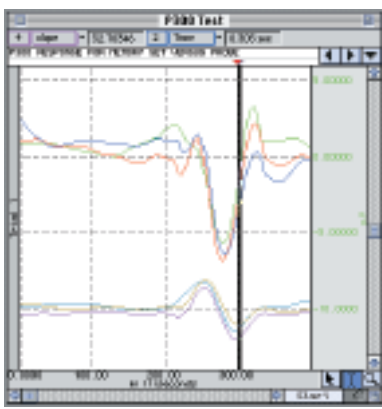
EVOKED RESPONSE

Powerful on- and off-line averaging features make it possible to perform a wide variety of evoked response studies. Record and measure evoked potentials, late

potentials, startle, nerve conduction and field potentials. Use the 100C-series biopotential amplifiers to record visual, somatosensory and auditory evoked responses. Use the stimulator to output pre-defined waveforms or tones, tone pips, clicks (pulses) or other, more complex, waveforms.

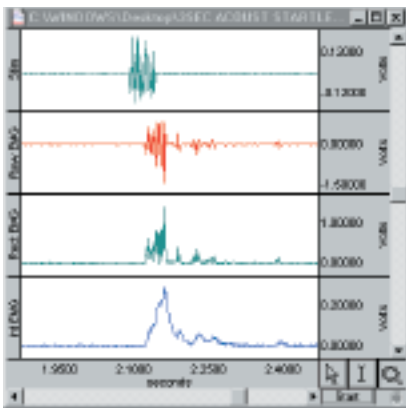
EVENT-RELATED POTENTIALS (P300)

The STP100W package will present a variety of visual and auditory stimuli on one computer while the *AcqKnowledge* software records the responses on another computer. As the stimuli are presented, the STP100W simultaneously (with 1ms resolution) sends trigger signals to the MP System for data synchronization and collection. The STP100W software (*SuperLab™*) can be used to change the placement of visual stimuli on the screen, change the screen's background color, choose from a variety of input and timing options, and provide feedback based on either response or reaction time. Different trigger channels can be paired to different visual or auditory stimuli to perform sophisticated evoked response averaging tests (e.g., P300). The off-line averaging function in *AcqKnowledge* displays the averaged response to each different stimulus triggered from the STP100W system. Useful in other presentation modalities, the TSD200 Pulse Transducer can be attached to a computer monitor to provide event mark timing from a presentation program such as PowerPoint®.



STARTLE EYE BLINK TESTS **Q11**

Use the stimulator with the OUT100 headphones to present auditory stimuli for classic startle response measurements. Use the EMG100C amplifier to record eye blinks (facial EMG). Use AcqKnowledge to integrate the recorded EMG in real time. Use the measurement tools to determine the startle response and amplitude directly, or automate analysis with the peak detection tools. (See the EMG Application on page 42.)

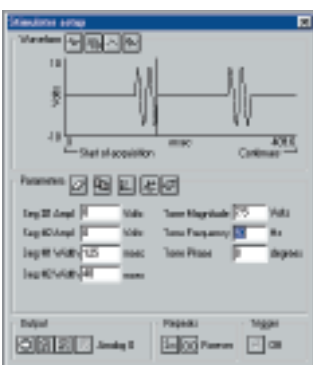


SOFTWARE-CONTROLLED STIMULATOR

The stimulator provides a variety of pre-formatted output options including square, sine and triangle, or users can design an appropriate stimulus with the graphical setup features; stimulus waveforms can be of any polarity and shape. The output options are adjusted either graphically or numerically for easy control of amplitude, duration and start time. Users can also output a previously recorded waveform or create customized stimuli using the waveform math functions.

SEXUAL AROUSAL STUDIES **Q12**

Monitor a variety of different psychophysiological parameters including vaginal plethysmography (TCIPPG1), penile plethysmography (TCI111/TCI112), temperature, GSR, respiration, and pulse. Monitor pulse rate, respiration rate, pulse amplitude, and area under the pulse curve on-line with calculation channels. Use the STP100W



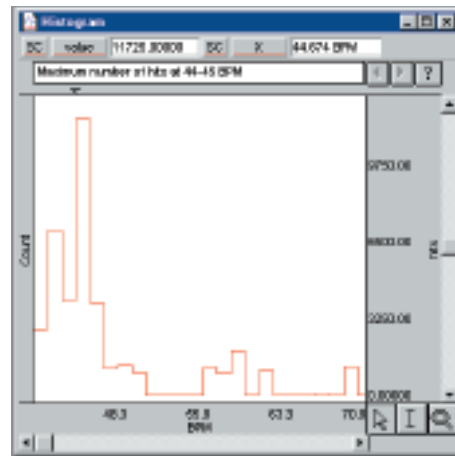
package to present a wide range of images while sending marker/trigger information to the MP System. Use the automatic analysis features, triggering off of the image markers, to determine the amplitude, duration, and onset timing of the subject's response.

AUTOMATED DATA ANALYSIS

There are a variety of tools for measuring response times and response amplitudes. Perform measurements manually by selecting an area of data, or automatically over specified time periods or around the time of a trigger (pre- and post-trigger values). Measurement results can be automatically entered into a journal file for further analysis or displayed as a new graph channel.

HEART RATE VARIABILITY

For Heart Rate Variability studies, record a wide bandwidth ECG signal, calculate the R-R interval, and then apply the FFT or Histogram transformation to the R-R interval data. The FFT allows frequency representation using linear or logarithmic scaling. Users can select from a variety of windowing and display options to easily reproduce published results.



AUTOMATICALLY CONTROL OTHER EQUIPMENT

The MP System will interface with a wide variety of devices such as pumps, valves, stimulators and switches. The MP System has 16 digital I/O lines that can be manually or automatically controlled with the AcqKnowledge software. By using the on-line Calculation and Control channel functions it's possible to automatically trigger devices to turn on and off. Use the stimulator and control channels to perform multiple stimulus paradigms. Stimulate the subject based on the result of a physiological response.

AUDITORY & VISUAL EVOKED RESPONSE TESTING

Combine the auditory output options of the Stimulator with the signal averaging functions of the MP System to perform on-line AER studies. Display the results and measure the amplitude and time of Fast (2-12 msec), Middle (12-50 msec), Slow (50-300 msec), and Late responses (250-600 msec). Use the stroboscope and the averaging features to perform VER studies. Trigger the averaging cycle with the stroboscope, or vice-versa.

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