COMPUMEDICS™ Neuroscan

No Compromises Infinite Possibilities

See more and do more

CURRY SCAN NuAmps Express

Research Proven Solutions, Classroom Applications and Educational Pricing

CURRY SCAN NuAmps Express

A complete functional solution for research and teaching applications, the CURRY SCAN NuAmps Express (CNE) system includes NuAmps, CURRY and STIM.

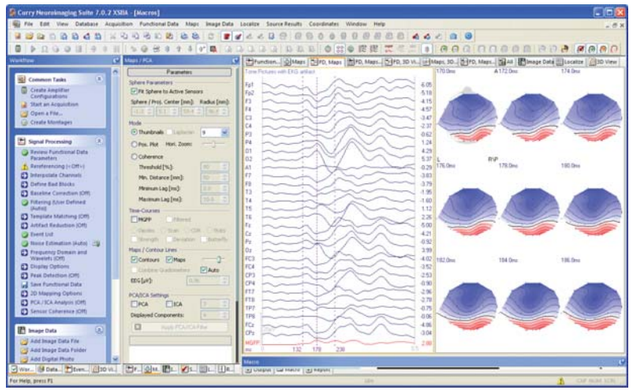
Used in research or for classroom instruction, the CNE package is an excellent choice. The CNE package delivers research quality software features and flexibility with ease of use and portability to meet all your requirements.

The **NuAmps** amplifier is a research grade amplifier, providing the capability to record a wide range of electrophysiology activity. Its ability to import voltage level triggers expands its utility to allow the recording of ERPs and EPs. Its superior technical design and specifications ensure the highest quality data, including DC potentials.

CURRY software has been a research standard for over two decades. Continually updated and revised, CURRY includes all of the tools and protocols needed to collect, process and analyze your data. CURRY is provided in a special configuration for CNE (40 channels, 1000Hz AD rate, Acquisition and Signal Processing modules), at a reduced price.

STIM² software provides a library of experimental protocols, as well as the ability to program your own custom tasks. From basic experimental psychology to advanced neuroscience, STIM² can be used to design protocols that suit your needs. By adding optional STIM² hardware you can further minimize the timing limitations imposed by the Windows®XP operating system to achieve microsecond accuracy.

Averaged VEP and 2D maps



As a system the CNE package can be used with many different types of data recordings, multiple analysis techniques and virtually unlimited stimulus generation. The following is a brief list of some types of data collection which can be done with the CNE system:

Electroencephalography
- Alpha gating and activation
- Alertness and cognitive state
- Affective state
- Laterality
- Coherence

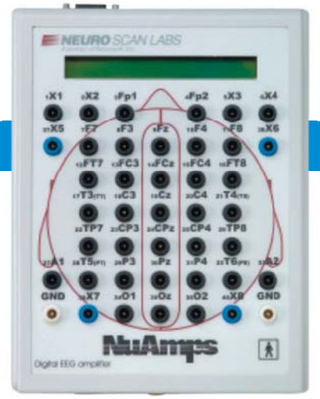
Evoked and Event Related Potentials
- N1, P2, N2
- P300, P3A, P3B
- N400, P600
- Mismatch negativity
- Contingent negative variation
- Stimulus preceding negativity

Other Electrophysiology
- EMG, EKG
- Startle
- Electro-retinogram

Analysis
- Spectral analysis
- Coherence analysis
- Principle and independent component analysis

Experimental Protocols
- Memory tasks
- Motor tasks
- Simple and choice reaction time
- Tracking
- Continuous performance tasks
- Custom task generation
- Active/passive target detection
- Attention paradigms
- Perceptual/cognitive interference
- Adaptive experiment control

Data Processing Methods
- Filters (IIR, FIR, digital, analog simulation)
- Eye blink suppression
- Voltage artifact rejection
- DC drift removal



COMPUMEDICS NeuroScan

Research Proven Solutions

NuAmps 40 Channel Digital EEG and ERP Amplifier

The NuAmps Amplifier offers a portable and easy to use solution without compromising quality. The NuAmps advanced digital circuitry and USB power source ensures quiet recordings in any environment. In fact, coupled with a laptop, you are truly free to record "in the field" as the NuAmps will utilize a laptop PC for power.

The NuAmps is a DC-coupled, 22 bit, monopolar amplifier, allowing you to record high quality EEG and ERP data. The bandwidth and sampling rate of the NuAmps also allow you to record other physiologic signals as well, such as EMG, EKG, EOG and ERG.

TTL level triggers can be used to record up to 255 discrete event markers allowing you to use the Neuroscan STIM² or other stimulus generation tools for eliciting ERPs. The NuAmps supports either individual electrodes through Touch-Proof connectors, or the QuikCap, via a high density connector.

Example: Stroop Interference Test

CURRY SCAN Data Acquisition and Processing Software

The CURRY software provides a comprehensive library of on-line and post-acquisition features. On-line data processing allows you to filter, correct for artifacts and re-montage your data. Real-time analysis of data can be conducted to compute averages and spectral maps. These features allow you to verify data quality and assess the recording methods and procedures in real-time, allowing a great opportunity to evaluate factors influencing EEG.

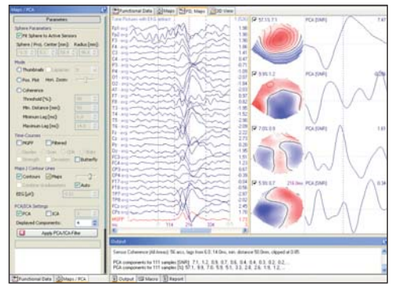
The analysis portion of the CURRY software allows you to clean and filter data before subsequent analyses. Data processing is a critical step in ensuring accurate results from your recordings. Numerous methods for artifact removal are provided allowing multiple options to process your data and to provide comparisons between the methods.

CURRY includes data analysis tools to identify the spectral characteristics of the data. It will map topography in both the time and frequency domains on a 2D or realistic head image. Other CURRY analysis features allow you to sort and average data to derive Evoked or Event Related responses. More advanced analysis like coherence, component analysis, and wavelets are included.

STIM² Software for Stimulus Generation and Delivery

STIM² provides a library of built-in tasks, to ensure your lab is up and running quickly. STIM² also provides a complete software environment for custom stimulus generation and protocol design. Virtually any image or sound can be used to develop your protocols. Sound stimuli can be either generated with the built-in sound editor or imported from your favorite program. A simple spread sheet interface allows complete control of stimulus presentation with no programming necessary.

STIM² has incorporated true stimuli integration allowing embedded audio and visual stimuli to make simultaneous, overlapping and interleaved multimedia stimuli simple to present. The event markers, which are vital in tying your complex protocols to electrophysiological and behavioral data, can be placed in conjunction with any programmed event, either at its onset or at a user defined offset.



CURRY SCAN NuAmps Express

Technical Highlights:

NuAmps

- 40 monopolar/referential EEG/EP channels, all channels can be derived as bipolar in real time
- Integrated 22-bit analog to digital conversion
- Sampling rate of 1000 Hz on all channels
- Individual delta sigma analog to digital conversion to eliminate phase error
- DC coupled acquisition on all channels
- Input range + 130 mV with sensitivity of 61 nV (19x gain)
- Common mode rejection greater then 100dB
- Noise less than 4 microvolts peak-to-peak
- Automated DC correction via software interface
- Linear optical signal isolation
- Acceptance of 255 stimulus-type codes, 16 response-type codes
- Built-in electrode impedance testing circuitry
- Standard USB interface
- Software control of all acquisition functions

STIM2

- Runs under Windows®XP (32 bit) operating system
- Audio, visual and multi-media stimuli supported
- Task library provided (i.e. target detection, STROOP, CPT, RT tracking, WCS, etc.)
- Drag-and-drop non-programming based custom task generation
- Audio editor for sound development and presentation
- Feedback tools for automated feedback presentation
- Behavioral data analysis tools

CURRY Software

- Records both continuous EEG and trigger-based evoked potential
- Allows simultaneous display of continuous EEG and EP
- On-line spectral analysis, with smoothing and averaging supported
- Generation of on-line independent averages based on event/response coding
- On-line topographic mapping of amplitude and spectral data with user selected parameters
- On-line amplitude and spectral histograms of data at all channels
- On-line display filtering, without altering raw data
- On-line re-montage and re-referencing
- On-line artifact rejection on specified channels
- On-line FSP averaging for identification of signal-to-noise ratio
- On-line PCA and ICA calculations
- Acceptance of TTL level triggers for integration with EEG/EP data
- Import and export of ASCII data with macro and template files
- Viewing and processing of continuous, epoched, coherence and averaged data
- 2D and 3D topographical mapping of data for continuous, epoched and averaged data
- Mapping for user selectable topographical spectrum and cartoon maps with all data types
- Principal and independent component analysis
- Direct interface to MATLAB® for advanced analysis

Computer Requirements

The CURRY NuAmps Express system requires two computers to be fully operational, one for CURRY and the NuAmps and another for the STIM2 system. These computers are not included in the CURRY NuAmps Express Package price; they may be purchased separately. The STIM2 computer must be Windows®XP (32 bits), and the CURRY computer may be either Windows®XP (32 bits), Windows®7 (32 bits), or Vista® (32 bits), as there are no 64 bit drivers for NuAmps. Minimum specifications for the computers are Pentium 4 processors, 256 MB RAM, and 64 MB video RAM.

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