EEG CONNECTIVITY TRAINING

THATCHER’S Z-score Biofeedback
Uses the feedback power of BioGraph to train from norms on-the-fly, or for pre- and post-session assessment.

INDUSTRY-STANDARD COHERENCE, phase and amplitude asymmetry computations.

DUAL THRESHOLD INSTRUMENTS to allow clients to train within a predefined range.

HEART RATE VARIABILITY (HRV)

PROGRAMMABLE RESPIRATION PACER: “Follow the bouncing ball” display shows a dot moving along a template line of the respiration cycle. Choose respiration rate for inhalation, hold, exhalation, hold - with automatic pacing from the starting to target rate over a chosen time.

PULSE TRANSIT TIME: The Pulse Transit Time algorithm calculates the time between the EKG R-Spike and the blood volume pulse - useful in investigating relative changes in BP.

HEART RATE VARIABILITY pNN50 COMPUTATION (ratio of consecutive RR-interval differences greater than 50 ms - or any user defined time period) was added to expand on BioGraph’s heart rate variability (HRV) assessment tools.
IMPROVED USER INTERFACE

**Quick Toggle for Feedback Conditions**
To rapidly convert a screen that is designed to reward a physiological condition into a screen that will inhibit it, you can now right-click on any feedback instrument and toggle its threshold condition (Output ON) between Above/Below or Inside/Outside.

**DVD Feedback Session**
When the “Start DVD but Pause session” option is selected, you can launch a DVD, access the DVD menu and start a movie while the program waits in Pause. When ready, click Pause to start recording data.
- Useful when a DVD will not allow jumping directly to playing the movie.
- Allows you and the client to get ready before starting the session.

**Smoothing on Screen**
A dampening function was added to screen instrument’s right-click menu. This menu gives rapid access to the most often used instrument functions.

**OTHER FEATURES**

**Frequency Band - Peak Amplitude:** For magnitude of the tallest bin in the FFT array. Used with the breathing pacer can help detect the resonant frequency.

**Improved MIDI Option** provides more pleasant tones by offering a choice of major & minor scales over several octaves.

**Binaural beat Audio Feedback** provides audible feedback of a varying frequency (ex. Left = 400Hz; Right = 408Hz → Binaural beat = 8Hz).

**Volume Level Feedback** to select one MIDI, Wav or MP3 file for feedback and define threshold condition levels between 0 and 100%.

**Connection Instrument:** Allows network based communication between BioGraph and third-party multimedia applications, including games and educational software.

**Area under the curve Statistics:** For session, segment, and script reports

**Dual Screen Support** with control of client screen from clinician screen on-the-fly.

**Session Replay:** Replay at 2x, 4x or 8x speed or jump to specified time, activity or event marker.

**OVER 70 NEW FEATURES...**
The Physiology Suite contains a complete set of standard biofeedback tools to get a total physiological perspective on your client's sympathetic and parasympathetic processes, including: Temperature, Skin Conductance, Surface EMG, Respiration and Heart rate variability (HRV).

The Physiology suite contains more than 80 screens and over 14 scripts, and provides you with advanced tools for assessment and follow-up:

- Pre/post baseline assessment
- SC verbal Relaxation exercise
- Training scripts (10 x 1 min trials)
- A 7 activity stress assessment script that takes your client through a sequence of stress/relax cycles and generates a report to rapidly identify hyper- or hypo-reactivity in each modality.

The two Suites offer 17 new animations, 15 MP3 (music & ambiance), 20 MIDI songs and many other new multimedia feedback options:

- DVD (4 action control: shrink, zoom, pause & sound)
- Morphing animation sequences, 3 stage puzzles
- Nature sound audio tracks
- MIDI splitter
Thought Technology is proud to launch two new specialized Suites: EEG Suite and Physiology Suite. The Suites take full advantage of functions and features of the powerful BioGraph Infiniti software platform. They provide complete control over your entire clinical process, including: assessment, training, reporting and demonstrating outcome. For each protocol, the Suites provide signal quality verification screens, multimedia feedback screens and quick report screens showing in-session trends & learning curves.

The EEG Suite contains 6 scripts and more than 100 screens (over 21 from expert clinicians) for 1 or 2-channel EEG on 1 or 2 monitors. It comes with both standard protocols and a variety of template screens for user-defined protocols:
- Standard Bands: Alpha, Alpha peak frequency, Alpha-Theta, Low-high Beta, Beta-Theta, SMR-Theta, Wide-band inhibit, etc.
- 3 User Bands: 1 reward (up), 2 inhibits (down)
- 6 User Bands: 2 rewards (up), 4 inhibits (down)
- Multiple Bands: 1 reward, 9 inhibits

The EEG Suite also offers many advanced tools for assessment and follow-up:
- Pre/Post-training baseline assessment scripts
- A 4-activity EEG assessment script: eyes-open, eyes-closed, and 2 tasks
- Cross-session trend tools to show your client's progress
- A set of hybrid EEG and peripheral integrated biofeedback screens

EEG Suite features include:
- On-the-fly cut-off frequency adjustments
- Impedance detection
- Auto-threshold instruments with user-specified target percentage of time
- Single and dual-monitor display screens
- Real-time epoch statistics for instant trend graphing
- Out-of-this world alpha-theta relaxation script
The new EEG-Z3™ can be used in any of three modes:
- a regular mode for standard EEG
- a DC mode for slow cortical potentials
- a low frequency mode for evoked and event-related potentials

Easy selection of modes can be done on-the-fly with the simple push of a button. All three modes support our exclusive in-session impedance checking.

When combined with the new TT-AV Sync sensor and the hand-held push button, the EEG-Z3™ becomes a flexible, highly accurate, extremely powerful system for slow cortical potentials, evoked potentials, and reaction time testing.

**SCP – Slow Cortical Potentials:** Measure SCP in DC or slow AC mode. Perform pre- and post-session assessments by measuring SCP amplitudes using Go/No-Go evoked potential protocols. Employ strategies based on well-known academic research.

**EP/ERP – Evoked and Event-Related Potentials:** Record P300 responses, audio or visual evoked and event-related potentials, individual responses or multi-trial averages. Use for pre- and post-session analysis.

**Protocols:** User-programmable protocols can be any combination of mixed-mode (audio, visual or both), single or dual-stimuli, Go/No-Go, and motor response.

**Reaction Time:** Measure reaction time for use in peak performance and attention and focus training. Report errors of omission, errors of commission, success rate and failure rate, on-the-fly or post-session.

With these new sensors, Thought Technology’s Infiniti is the only available biofeedback system capable of measuring slow cortical potentials, evoked potentials, and reaction time - and with unmatched accuracy. All these new, cutting-edge features plug directly into the vast selection of feedback instruments already available in BioGraph Infiniti to give you unsurpassed flexibility over feedback training and assessment.
Why Buy an Infiniti® System?

Choice
Infiniti offers a choice of 5 encoders with 2, 5, 8, or 10 channels and the world's most sophisticated and complete, user programmable software, BioGraph Infiniti.

Reliability
Infiniti is by far the most reliable and crash-proof biofeedback system on the market. Our exclusive pause-on-disconnect feature allows you to recover from virtually any mishaps that may occur during your session:
- Batteries die, or
- Sensors are pulled out accidentally, or
- The fiber-optic cable (or blue-tooth) is disconnected, or
- The encoder is dropped from your workstation table...
BioGraph Infiniti will automatically pause and resume once the trouble is corrected. Your biofeedback session and data are always safe.

Accuracy
Built-in impedance checking pre-session or even in-session to guarantee clean EEG signals. No peer-reviewed research publication will accept EEG studies where the impedance was not verified, so why should you?
Built-In sensor and encoder calibration at the push of a button.
With Infiniti, measure what you expect and get clean, accurate data every time.

Flexibility
External active sensors provide signal amplification at the measurement site, significantly minimize electrical and movement artifacts and allow unlimited signal combinations.
Connect any sensor to any channel - not limited to a fixed number of input types. Measure 10 EMG, 8 EEG, 4 EEG with 4 peripherals or even 10 skin conductance inputs simultaneously. No other system offers such flexibility.

BioGraph Infiniti® Software
New versions and updates are frequently released, which include features suggested by users, as well as new cutting-edge applications, such as:
- JTFA, Z-Score and industry standard coherence, and phase.
- Resonant frequency detection.
- Game interface for 3rd party developers (several games already available).
- The design of a DC slow cortical potential (SCP) sensor, which includes:
  - Visual/Auditory evoked potentials (VEP/AEP) and reaction time testing.
  - Screens and hardware to provide industry-standard tests of SCP and VEP/AEP activity compared to systems with basic SCP sensing and display.

Clinically-Relevant EEG, Physiology & Rehab Suites developed by TTL
Get started right away with suites of screens and protocols pre-designed by clinicians for the specific clinical applications you desire. Hundreds of screens and protocols are ready for you to use from day 1.
Context-Specific Help
If you get stuck, just hit F1 and the BioGraph software will provide the help you need depending on where you are in the software. There are also over 100 free video training clips available at www.thoughttechnology.com/tutorial.htm

Sturdy Miniature Connectors
Our patented, small, protected pln connectors cost over $100,000 to design to meet regulatory requirements for safety. Unlike other off-the-shelf connectors, which are almost as large as the instrument and can produce unwanted torque when pulled, our glass-filled plastic connectors are much more compact and contain 4 gold-plated pins to ensure low noise. They are as durable as steel. We have also developed both gold and sintered silver-silver chloride individual electrodes and very comfortable earclip electrodes.

Wireless Options
While we strongly recommend using our secure fiber-optic connections directly to the PC USB port, in order to avoid false readings or data corruption from signal interference, we offer two Bluetooth solutions:
• a small add-on module for ProComp 2 & MyoTrac3.
• a high-speed long range (up to 300'/100m) CF module.

Our design philosophy is that wireless communication should only be considered when you absolutely need long-range immediate monitoring, such as during sport or ambulatory muscle re-education - and only when neither our flexible fiber-optic cable nor our compact flash memory module will do.

Ongoing Product Improvement
For the past 10 years, Thought Technology has spent over one million dollars annually in new product and software development. Our development team includes 8 software programmers and testers, 10 hardware engineers and technicians, and 6 quality assurance professionals to assure our products meet strict medical standards worldwide.

Online Training
In addition to workshops, Thought Technology has recently launched a worldwide online training program. Sit in the comfort of your home or office while a qualified clinical specialist shows you how to use the system for clinical biofeedback on your own computer.
A growing number of your colleagues (over 40 to date) are offering online training courses on their favorite applications using BioGraph Infiniti.

Best Service in the Industry
Three of our staff of 53 are full-time product support specialists available to guide you through the use of your product, optionally taking direct control of your PC. They are backed up by our always available engineering and marketing staff.

Commitment to Quality
Thought Technology maintains strict ISO 13485 and CE standards. Our systems have passed relevant medical regulatory requirements. Our products are designed specially for the purpose of clinical applications - unlike other programs that are labeled for personal, educational or industrial use.

The Infiniti System is Clearly “The Best in its Class”

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REAL Telemetry: Tele-Infiniti CF™ Bluetooth® wireless provides up to 300 feet (100 meters) of hi-speed data transmission — useful in sports, like golf and for ambulatory monitoring. The module slips into the CF slot with only the antenna visible. The fiber optic USB is also always available.

REAL Data: Thought Technology Infiniti encoders offer 2 – 40 sensor inputs at up to 2048 samples/second of the highest accuracy and use external active sensors to monitor virtually any combination of physiological signals. These include EEG, sEMG, EKG, SC, Temperature, BVP, and Respiration. Other devices can also be used with our voltage isolators. BioGraph Infiniti software provides precise high resolution multimedia biofeedback/neurofeedback, and is available with a large variety of clinically relevant application suites.

REAL Support: From a company with 50+ employees who have put customer support and product quality first for over 34 years. Thought Technology conforms to ISO, CE and all relevant requirements for medical equipment in over 50 countries.

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  - April 19-23
  - April 10-14
  - May 21-25
  - June 19-23
  - August 16-20
  - September 20-24
  - October 25-29
  - November 8-12
  - December 6-10
  - **Includes 1-day Easy Tools for Stress Reduction Program (may be taken separately)**

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**4-Day EEG Neurofeedback Certificate Program**

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  - April 19-23
  - April 10-14
  - May 21-25
  - June 19-23
  - August 16-20
  - September 20-24
  - October 25-29
  - November 8-12
  - December 6-10
  - **Includes 1-day Introduction to EEG Neurofeedback Program (may be taken separately)**

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- **SF/Oakland, CA**
  - December 3-4

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CEs for APA, CNA, BBS. Stens Corp is approved by the APA to offer CE for psychologists and maintains responsibility for the program.

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The Biofeedback Society of California is the largest and oldest State society in the US. It was founded in 1974 as an open forum for the exchange of ideas, methods, clinical experience, and outcomes of biofeedback, applied psychophysiology and related disciplines.

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Visual, Auditory, Tactile Feedback System

Quality EEG Feedback at an Affordable Price

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STRESS THERAPY SOLUTIONS is developing university-style education that begins with an introductory, comprehensive certificate program. Our faculty members are clinicians with active practices; they are writers of core textbooks and cutting-edge articles; they are researchers and software developers with decades of clinical practice behind them. What you learn at STS is based on solid neurofeedback and biofeedback research, in addition to clinical experience.

Our comprehensive workshop series provides three levels of neurofeedback training: introductory (36 CE hours for BCIA certification requirements with online mentoring available after completion), intermediate, and advanced.

Training programs include deep states, peak performance, meditation, introduction to brain mapping and QEEG, Z-score training, and other advanced skills.

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Biofeedback is an international, interdisciplinary magazine devoted to the study of physiological systems, cognition, social and environmental parameters, and health. Published quarterly by the Association for Applied Psychophysiology and Biofeedback (AAPB), Biofeedback contains original research, conceptual and theoretical articles, evaluative reviews, case studies, and clinical notes and observations.

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**Foundations Trainings**


**Advanced Trainings**

*Sept 19-21, 2008* by Len Ochs, Ph.D. Rockville, MD (Washington DC area). Registration through www.ochslabs.com or (707) 823-6225.

*Nov 7-9, 2008* by Len Ochs, Ph.D. Sebastopol, CA. Registration through www.ochslabs.com or (707) 823-6225.

*Dec 5-7, 2008* by Len Ochs, Ph.D. New Paltz, NY. Registration through Stone Mountain Center (845)658-8083.

*Feb, 2009* by Len Ochs, Ph.D. East Coast (TBA). Registration through www.ochslabs.com or (707) 823-6225.

*Mar 30-Apr 1, 2009* by Len Ochs, Ph.D. AAPB pre-conference training, Albuquerque, NM. Registration through www.ochslabs.com or (707) 823-6225.

**Third Annual LENS Conference**

*April 24-26, 2009* Los Gatos, CA (San Francisco Bay area). Registration through www.ochslabs.com or (707) 823-6225.

The LENS system can dramatically decrease the number of treatments for many of your clients. You may learn more about the Low Energy Neurofeedback (LENS) approach in The Healing Power of Neurofeedback, by Stephen Larsen, and issue 10/3-4 of the Journal of Neurofeedback devoted entirely to the LENS. Training DVDs are also available for purchase on our website: www.ochslabs.com. OchsLabs, Inc. offers a number of trainings throughout the year for both the beginner and the experienced practitioner. The Foundations training is designed to teach assessment, introductory treatment planning, and software operation. The Advanced training is designed to teach advanced assessment, reassessment, and treatment planning.

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