

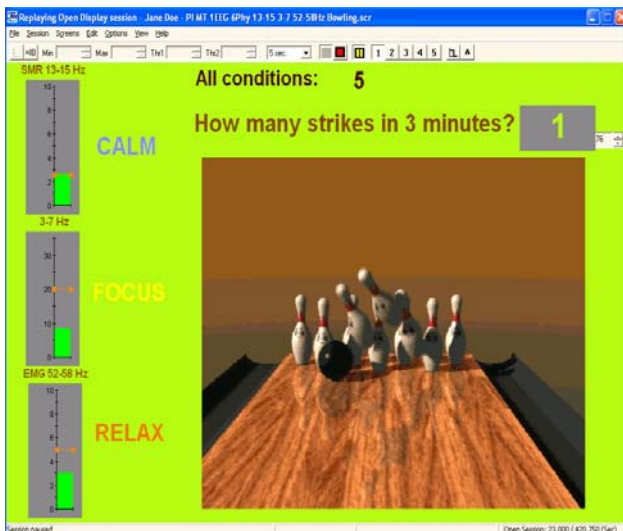
# Multi-Modality Suite Version 2.0

The BioGraph Infiniti Multi-Modality Suite Version 2.0 includes 96 screens plus 48 new screens created by leading clinicians with international reputations. Designed for assessment, feedback, training, reviewing and reporting; these specialized screens offer a world of choice for clinical and research use. There are many screens which combine different modalities; EMG, EEG, EKG, Skin Conductance, HR/BVP, Heart Rate Variability, Respiration, Temperature as well as screens for multiple channels of a single modality. The suite PDF manuals are organized by main modality (EEG, EMG and Physiology) to help you easily find the screen or script that best suits your client's needs. Included with the new screens are 5 dual-monitor screens to give you a view of the data while your client is engaged in a training session.

A number of new display instruments have been included in some of the screens, to provide you with greater control for training and feedback. For example, you can easily adjust the threshold of the instrument "percentage of time above threshold" during a session and change the cutoff frequencies while recording. For dual monitoring screens, you can change the parent bar graph's threshold controls on your monitor and know that these will be mirrored on the client's child bar graphs on their monitor. Other new features include epoch statistics, histograms and a variety of new animations. For further details, please view the New Features document.

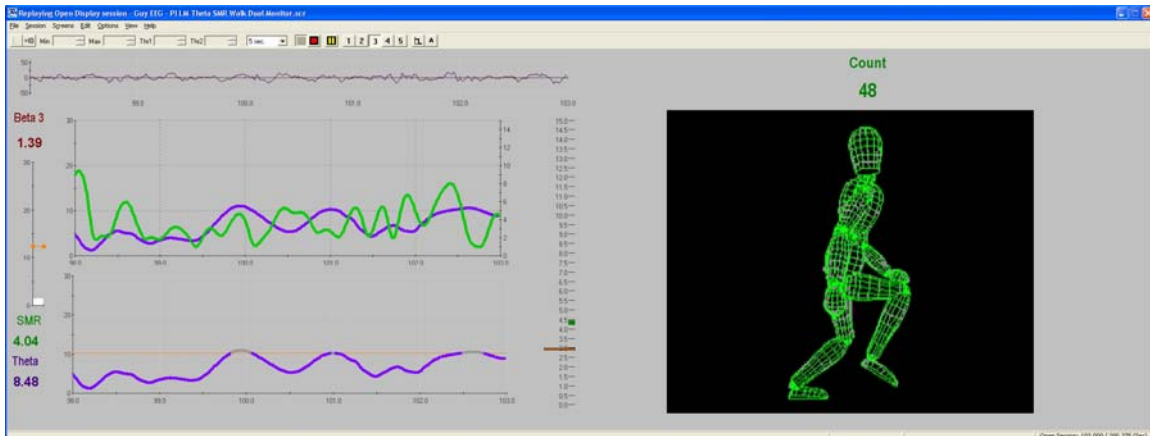
Thirteen new scripts have also been added to the 4 scripts in the last version for you to record client sessions. This way you can easily track client progress within a session and across sessions in easy-to-read trend reports.

The Multi-Modality Suite can be used with the 8-channel ProComp Infiniti encoder, or the 10-channel FlexComp Infiniti encoder. For the FlexComp you simply change the dip switch settings to allow for slower sampling rates on six channels, using up less hard disk space.



This is a sample screen designed by Dr. Thompson. The goal of this screen is to encourage the child to simultaneously meet three basic criteria: externally focus (decrease 3-7 Hz theta activity), decrease impulsivity and fidgeting (increase 13-15 Hz SMR activity) while holding muscle (EMG) noise at a low level so that there is no false idea of raised SMR or beta activity. There are three counters; two regular and one target: one is for strikes (every time the ball knocks over the pins). The other counter gives one point every two seconds that all three criteria are sustained. This second counter is similar to other instruments. (You can change it to a different time frame in the screen editor if you wish.)

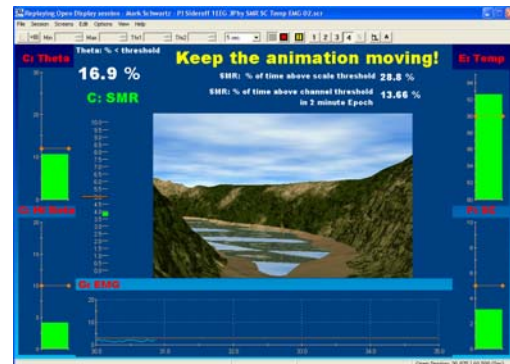
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This is a sample screen from Louise Marks. The purpose of the above dual-monitor screen is to train clients to increase SMR and decrease Theta and Beta 3 activity. There is a counter to compare trial to trial, with the goal of making more points (meeting all criterion) within the same amount of time. The walking man animation and the counter on the client's monitor advance and music plays when three criterions are met: theta and beta 3 are below threshold, and SMR is above threshold. The threshold controls are on the trainer's monitor along with digital readings for theta, SMR, and Beta 3 amplitude.

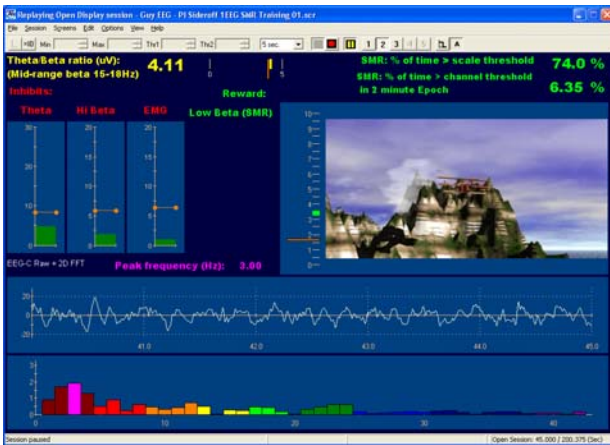


Another sample of a Dr. Thompson screen, allows the clinician to observe the raw EEG, remove artifacts in order to have accurate statistics and to teach the client (&/or parents) which band-widths correspond to which mental states.

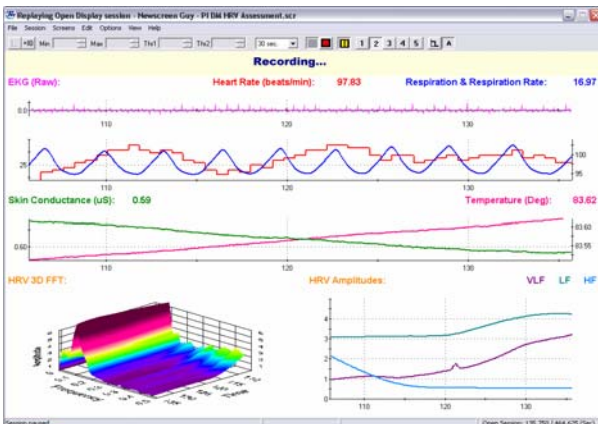


A sample screen from Dr Stephen Sideroff. The screen to the right combines SMR/EMG combined training (SMR reinforcement with Theta and Hi Beta inhibits and peripheral EMG inhibit) along with training of skin temperature (color change when Temperature is above threshold) and Skin Conductance (color change when Skin Conductance is below threshold). This is useful in integrating EEG and peripheral training. This screen can be specifically used for pain and muscle tension clients where specific muscles can be monitored while enhancing SMR and lowering Theta.

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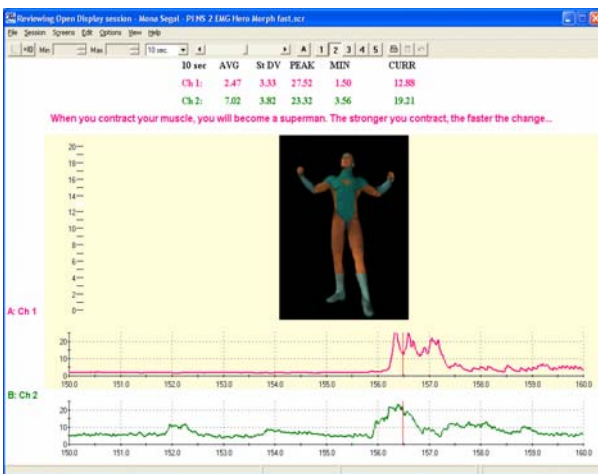


Another sample screen from Dr Stephen Sideroff. This screen has been designed to provide feedback for successfully going above threshold for SMR, while staying below threshold on the three other frequency bands: Theta, Hi Beta and EMG. In addition, the screen has been designed to keep track of progress in staying above SMR threshold. This screen also displays another instrument, a scale, at the top, that displays the Theta/Beta ratio as well as percent of time the SMR has been above threshold in 2-minute epochs.



A sample screen from Dr Don Moss. This screen provides line graphs showing the EKG, Heart Rate, Respiration, Skin Conductance and Temperature, as well as digital displays showing the moment to moment values of each of these parameters. The screen includes a three dimensional spectral display of Heart Rate Variability across frequency ranges. It also includes a line graph showing the amplitude of Heart Rate Variability in the three standard frequency ranges utilized in biofeedback: Very Low Frequency, Low Frequency, and High Frequency. This screen can be used to

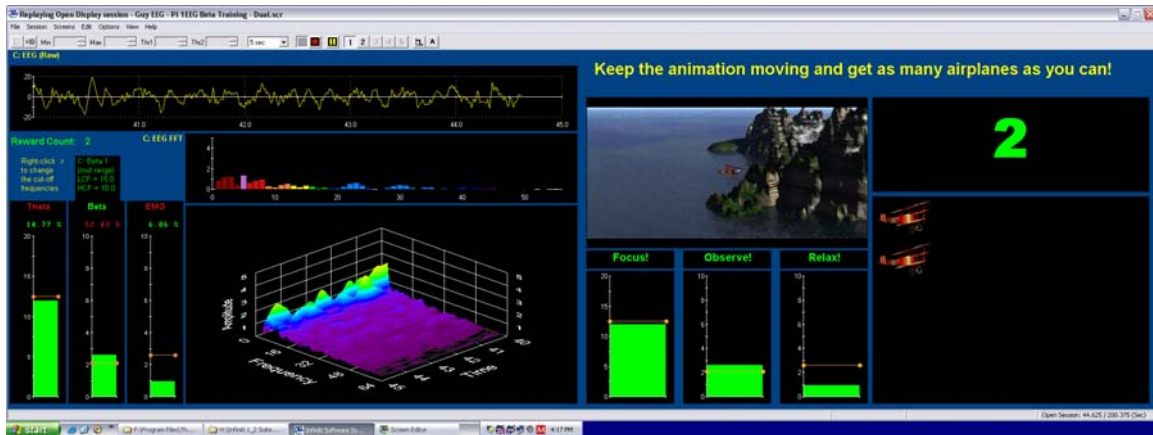
record and display multiple modalities during an initial assessment session, and to replay session data at a later time.



A sample screen from Nancy Schully BA, BCIAC. The purpose of this display screen is to measure and provide feedback on a smaller muscle group. For this purpose, the default scale ranges for the linegraphs and for the animation are set at 0-20 microvolts. Channels 1 and 2 are connected to 2 virtual channels giving the RMS values calculated from the raw EMG signals. The animation is of a boy who changes to a superhero as the EMG signal on channel 1 increases. The screen includes statistics for both channels 1 and 2, which include average, standard deviation, peak, minimum and current. The "10 sec" shown on the display refers to the default value for the time period over which

each statistic is calculated (epoch).

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This screen is designed for a dual monitor set-up. The clinician controls the feedback conditions by manipulating the thresholds on the bar graphs which are controlled from the three bar graphs, on the left. The ongoing percentage of time over threshold calculation helps find appropriate threshold values. The settings instrument shows the actual frequency cut-off values for the reward band. If you need to adjust them, right-click over the settings instrument to open the dialog box. You have to click *Apply* for a change to be made. The AVI animation that shows a number of small biplanes has a maximum of 20 images but the number counter can count higher. You can reset the counter, when the animation has reached its maximum, by clicking on the Reset button.



The training goal for this screen is to learn to maintain two muscles in balanced contraction. As the amplitudes of the EMG signals alternate in intensity, the animation tilts to the low side, giving a visual indication of the imbalance in both muscles contraction levels.