

Implementation of Serman protocol:

This describes an implementation of the protocol described in Egner and Serman (2006) using the BrainMaster 3.0.8 software.

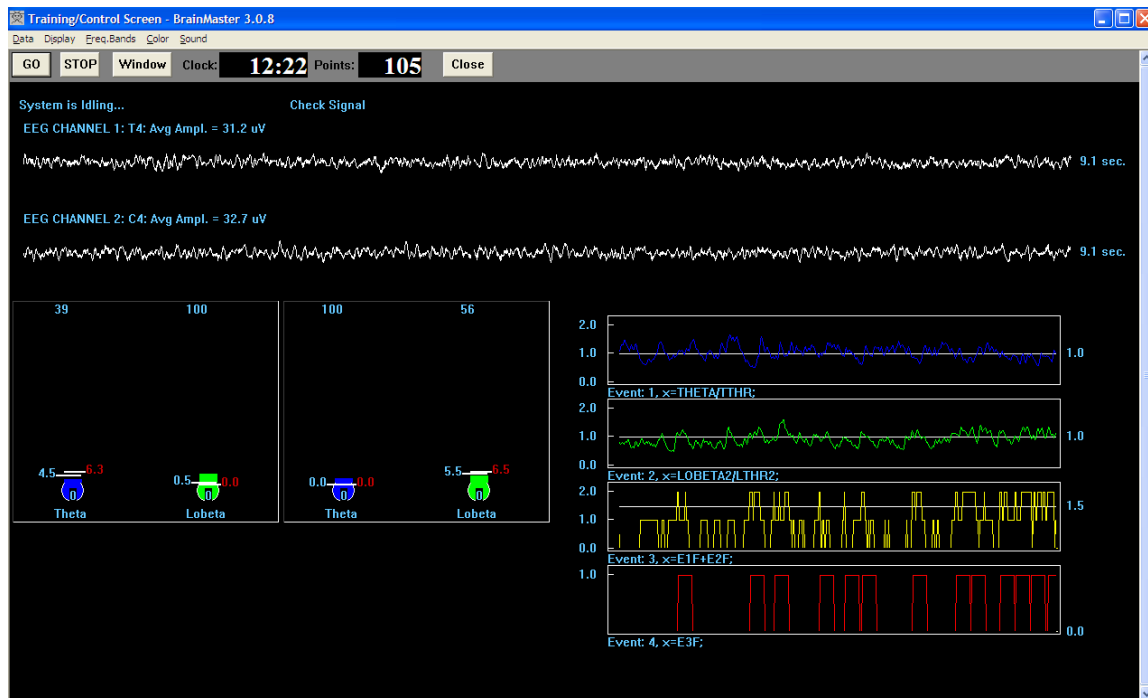
The intent of the protocol is as follows:

- Inhibit theta (4-8 Hz) on channel 1 (T4 or F8)
- Enhance low beta (SMR = 12-15 Hz) on channel 2 (C4)
- Provide single tone feedback immediately when conditions are met
- Provide a refractory period of 2 seconds after each reward
- Manual adjustment of thresholds.

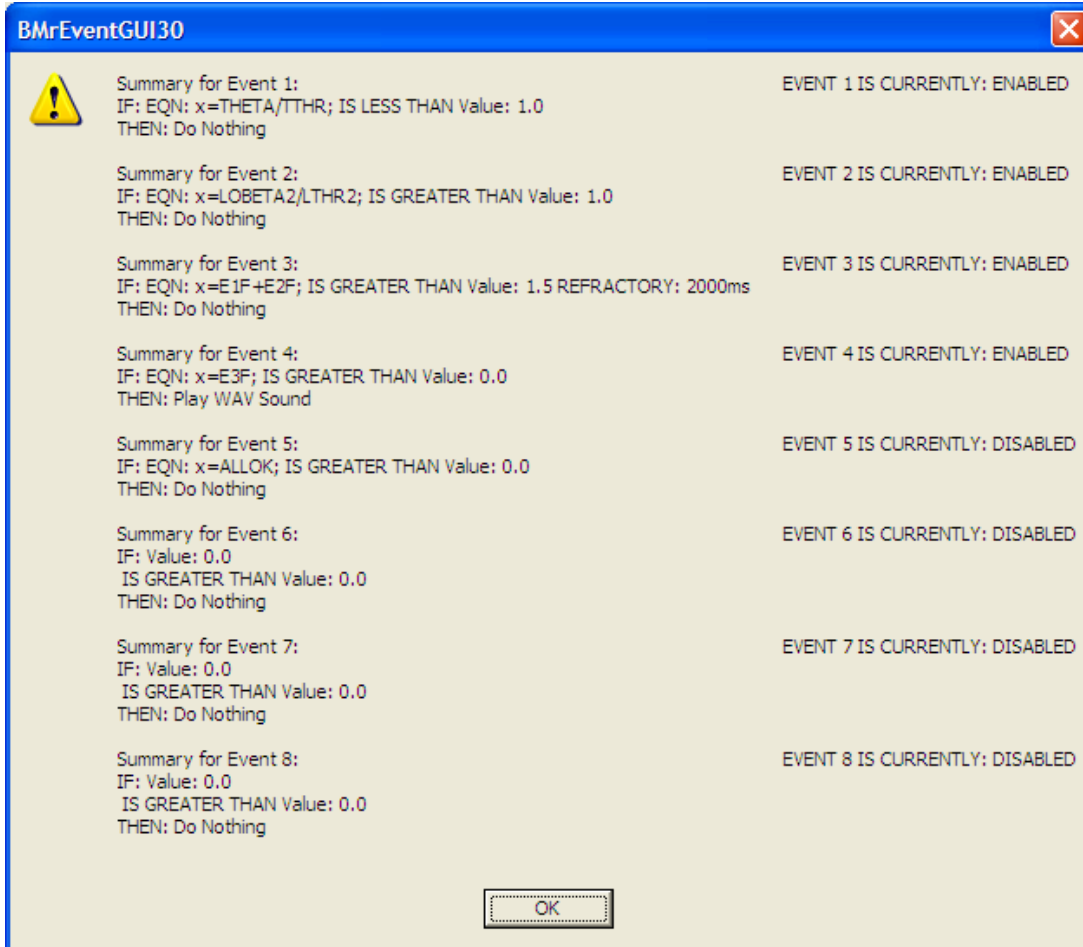
The protocol was implemented using the Event Wizard. The protocol is described below. The training screen is as shown.

- Event 1 shows theta / theta threshold.
- Event 2 shows low beta / low beta (SMR) threshold
- Event 3 shows the conditions being met. It reaches the value of 2 only when both are true. Event 3 has a refractory period of 2000 milliseconds.
- Event 4 shows the flag (“true” value) of Event 3. This shows the refractory period.

Thresholds can be adjusted via the keyboard. “t” and “T” raise and lower theta threshold, respectively. “l” and “L” raise and lower low beta threshold respectively.



The Event Wizard settings are summarized below:



Reference:

Egner, T. and Sterman, M.B. Neurofeedback treatment of epilepsy: from basic rationale to practical application. *Expert Rev. Neurotherapeutics* 6(2) 247-257 (2006).