Micromed source module version 0.03

Erik J. Aarnoutse

Rudolf Magnus Institute, UMC Dept. Psychiatry, Utrecht, The Netherlands
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This module can be used to read data sent over TCP/IP from a Micromed acquisition unit running SystemPLUS Rev. 1.02.1056.
To active this function is necessary to add 3 registry keys on the acquisition unit under "HKEY_CURRENT_USER\Software\VB and VBA Program Settings\Brain Quick - System 98\EEG_Settings":
1.   "tcpSendAcq" that is a string type. Set "1" to active the eeg sending data via tcp function otherwise "0".
2.   "tcpServerName" that is a string type that represent the server name of the computer that receive the eeg trace data.
3.   "tcpPortNumber" that is a string type that represent the port number. (e.g. 5000)

The BCI source module that receives the data from the acquisition is the server so it must be in listening mode before the acquisition unit starts to save data (data is sent only during recording). Micromed sends 64 data packets per second. The connection is reset if the computer running BCI2000 is too slow to read all packets.
A packet of data is structured in 2 sections the first is the header and the second is information data. The first packet sent from the client is the header of an EEG Micromed trace and is read for condition checking. If a note is added in SystemPLUS it is sent as a note packet to the source module and the state MicromedEvent is set to 1. The next sample block the state returns to 0. The header packet and the data packets are in the same format as in a Micromed trace file. The note packet sends the complete note buffer, but this information is ignored in the source module.

Parameters:

Source int NotchFilter= 0 0 0 2 : Power line notch filter: 0 disabled, 1: at 50 Hz, 2: at 60 Hz

Source int SampleBlockSize= 32 5 1 128 : the number of samples transmitted at a time in the BCI2000 system. If SampleBlockSize is a multiple of SamplingRate/64, data packets are merged. This way the BCI system can run on less than 64 sampleblocks per second, which saves CPU power.

Source int SamplingRate= 512 128 1 4000 : the sample rate set by the acquisition unit.

*Source string ServerAddress= *:5000 1 1 %* : address and port of the Micromed BCI Server. The port number can be set in the acquisition unit by changing the registry setting "tcpPortNumber"

Source int SignalType= 0 0 0 % : numeric type of output signal: 0: int16, 3: int32. Other values are not allowed. Use 0 for Micromeds 16 bit mode, 3 for 22 bit mode: only the first 22 bits are used, but data packets are filled with 32 bit integers.

Source int SoftwareCh= 128 16 1 128 : the number of digitized and stored channels, must match the number of channels in the acquisition unit.

Source int TransmitCh= 4 4 1 128 : the number of transmitted channels

Source intlist TransmitChList= 4 1 2 3 4 1 1 128 : list of transmitted channels

Update due June 2006