

BrainMaster 3.0 Software User Manual

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Minimum PC Computer Requirements

Atlantis I/II, 2EB, Discovery with BMrMMP** and up to 4 Channel LZT*

CPU:	Dual-Core 2.2GHz Processor
Operating System:	Windows XP, Windows Vista, Windows 7
Memory(RAM):	Windows XP - 1GB(Minimum) 2GB(Recommended)
	Windows Vista - 2GB(Minimum) 4GB(Recommended)
	Windows 7 - 2GB(Minimum) 4GB(Recommended)
	Windows 8/8.1 - 2GB(Minimum) 4GB(Recommended)
	Windows 10 – 4GB
Graphics Card:	512MB Dedicated OR 1GB Shared Graphics
Optical Drives:	DVD-ROM Drive: Required for BMrDVD**
Input:	1 USB Port
Additional SW:	Microsoft Office: Required for Certain reports and EEGAudio**
	Windows Media Player or 3 rd Party DVD Decoder: Required for BMrDVD**
	Adobe Acrobat Reader
	Adobe Flash Player: Required for BMrFlash Player
	Adobe Shockwave Player: Required for BMrFlash Player



*Live Z-Score Training is an optional purchase **BMrMMP is an optional purchase



Setup/Home Screen Menu

Welcome t	o BrainMaster 🛛 🖸 👳 📕	LOGIN OK: SN: 30342 1 EXP DATE: 12/31/2010
Current Tra	inee/Study Folder:	CLINICAL LICENSE
Trainee ID:	Mini-Q2 - 2Chan Assesment 9 Positions\	3 Login
Trainee Name:	Mini-Q2 - 2Chan Assesment 9 Positions	4 Folder Selections
Comment:	Mini-Q2 - 2Chan Assesment 9 Positions	5 But The Next Service
Next Sessio	on Number: Total Sessions Available:	Run The Next Session
	2 40	6
Training	screen is currently: Not Running	View or Change Settings
9 Exit	8 Product Manuals	7 Review Session Results

- 1. Log-In Display Shows the current Serial number of the BrainMaster unit that is logged in, the expiration of the software if any, and status of the units license.
- 2. **Current Trainee/Study Display** Shows the current trainee folder, the settings being used, how many sessions that have been used, and how many more that can be run.
- 3. Login Button Click to open the Login Menu.
- 4. Folders Selections Button Click to open the Select Trainee/Study Folder Menu.
- 5. Run The Next Session Button Click to open the Training/Control Screen.
- 6. View or Change Settings Button Click to open the Setup Options Menu.
- 7. Review Session Results Button Click to open the BReview Screen.
- 8. Product Manuals Button Click to open a menu displaying documentation on our software.
- Exit Button Click to close the BrainMaster software. ***Please Note: We do not at any point in time recommend that you use the red "X" located in the top portion of the various menus and screens of our software, unless otherwise stated.

Login	X
Current Login Sta	atus: Basic User 1
2 Please enter yo	our module Serial Number and PassKey:
Nou mou opto	"Pasia" with no Decokar for basic yes)
(Tou may enter	
Serial Num	ber: basic
DK	
PassKe	; y :
5	Remember PassKey
⁰ (Optional) Perso	onal Information:
Name: Brai	nMaster Support
Email	
supp	oortworainm.com
9 Cancel	8 Login Notes 7 OK

- 1. Current Login Status Displays what your Current Login status is.
- 2. Serial Number and Passkey Box Area where you will input the Serial Number and Passkey of your BrainMaster unit for logging into the BrainMaster Software.
- 3. Serial Number Box Box where you will type in the Serial Number of your BrainMaster unit.
- PassKey Box Box where you type in your Passkey supplied by BrainMaster Technologies.
 ***PLEASE NOTE: Always be sure to keep record of your passkey. If BrainMaster Technologies is needed to retrieve the passkey for you, an Administration fee will be charged.
- Remember PassKey Check Box If checked, the BrainMaster Software will remember your passkey. If unchecked, The BrainMaster Software will remember the passkey until the software is closed.
- 6. **(Optional) Personal Information** Name and E-Mail information utilized for sending BMZ Files via E-Mail. See 533-309 for more information.
- 7. OK Button Click when all information is entered to exit the Login Menu. ***PLEASE NOTE: If you are having any difficulties logging in, please double-check your passkey. When entering, it is highly recommended that CAPS Lock is on, and the "-"are left out. If you are still having difficulties, please contact BrainMaster Technologies Technical Support.
- 8. Login Notes Button Brings you to the Login Notes Note Pad. It is highly recommended to utilize this for your Passkey, and COM Port information.
- 9. **Cancel Button** Click if you do not wish to save any information entered and exit the Login Menu.

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Select Trainee/Study Folder Menu

Select Trainee/Study Folder	
Select Folder: (you may double-click to select)	
[] [0102t5t6E0] [Alpha1] [Alpha2] [alpha4] [AlphaThetaStandard] [AlphaX] [AMPplusCOH] [AtkinsonTest] [blah] [BReview] [BReviewTest] [ChipTest] [d] [Daniel S F3 F4 P3 P4 zscore]	2 Create New Folder 3 Folder Notes 4 Session Librarian 5 OK
File Name (Trainee ID):	Sessions Used
Mini-Q2 - 2Chan Assesment 9 Positions\	1
Trainee Name:	
Mini-Q2 - 2Chan Assesment 9 Positions	Max Sessions:
comment: Mini-Q2 - 2Chan Assesment 9 Positions	6 Edit Comment
Session Genie	
7 Administer Session Genie	8Push to Server and Delete Folder

- 1. **Folder Selection List** List where you can select from already created Studies folder. You may double-click to select a file. When highlighted information on the folder will be displayed below this box.
- 2. Create New Folder Button Click to create a new Study Folder to be used.
- 3. Folder Notes Button Click to create or look at a Note page for a specific client folder. ***PLEASE NOTE: In order for notes to stay, you must save the completed Note file.
- 4. Session Librarian Button Click this to utilize the Session Librarian to create a BMZ File.
- 5. **OK Button** Click to confirm the folder that you have highlighted and exit the Select Trainee/Study Folder Menu
- 6. Edit Comment Button Click to change the comment for the selected folder.
- Administer Session Genie Click to utilize the Session genie. ***PLEASE NOTE: Administer Session Genie will not be available on Remote User Systems.
- Push to Server and Delete Folder Click to remove a no longer wanted folder from your Folder Selection List. ***PLEASE NOTE: Using this feature will not remove your file permanently. Using this feature creates a BMZ version of your folder in case it is needed in the future.

Training/Control Screen



- 1. Data Tab Click to access COM, filter settings, playback options, and Atlantis Setup Menu.
- 2. Display Tab Click to choose from various display options.
- 3. Freq. Bands Tab Click to choose what filtered waveforms to display.
- 4. **Color Tab** Click to choose between filtered waveforms to be displayed either in color or in white.
- 5. **Sound Tab** Click to choose your sound settings.
- GO Button Click to run a session. ***PLEASE NOTE: Be sure that before clicking GO that your BrainMaster Unit is plugged in, installed, and the software is set to the proper COM Port.
- 7. STOP Button Click to stop a session.
- 8. Window Button Click to open the Window Menu.
- 9. Clock Used to keep time for the Training session.
- 10. Points Used to keep track of the amount of Reward points earned in a training session.
- 11. Close Button Click to close the Training/Control Screen when completed. *****PLEASE** NOTE: If a session is ended before it is completed, it will be counted as a completed session.

File Playback and Export Control		-
1 Path: c:\brainm.20\studies\ Filename: Text 2 e0200101.e02 e0200201.e02 e0200301.e02 e0200401.e02 e0200501.e02 e0200601.e02 e0200701.e02 e0200801.e02 e0200901.e02 e0201001.e02	 3 Playback File 4 Playback Speed • Real Time • Fast • Slow 6 Text File Format • Floating Point • Decimal • Hexadecimal 	
Input File: Output File:		
Status:	8 Done	

- 1. **Desciption Section –** Section that displays information for the Highlighted .e02 from the Files Selection Section.
- 2. File Selection Section Section where you can choose a recorded run for either playback or converting.
- 3. Playback File Button Click to playback the selected file from the File Selection Section.
- 4. Playback Speed Section Section where you can select the speed for playback.
- 5. Export ASCII Text File Button Click to convert the selected file from the File Selection Section to an ASCII file.
- 6. **Text File Format Section –** Section where you can select the File Format for the ASCII conversion.
- 7. **ASCII Display Conversion Section –** Section that displays the progress of a file being converted to ASCII format.
- 8. Done Button Click to exit the File Playback Menu.

opups		2-BMr Multimedia	3 BMr Macromedia
X-Wing	BoxFlow	MultiMedia Player	Flash Player
BrainMan	Mini BMirr	DVD Player	
2D Spectral	BrainScape	4-Audio/Video Interfaces - F	5-Additional Software
Numbers	TrendView	AVI Extensions	Browse
Thermos	LongTrend		
Waves	Circles	6-Contributed Games	ante Cases
LissaView	ReturnMap	Jim Zdunek's	zzie Space
			Bugrian
		8 Cancel	7 OK

- 1. **Popups Section** Click the included buttons to launch additional display/training feedback options used for feedback.
- BMr Multimedia Section* Click the included buttons to launch either BMrDVD* or BMrMMP* used for feedback.
- 3. **BMr Macromedia Section** Click the included buttons to launch the BMrFlashPlayer used for feedback.
- 4. Audio/Video Interfaces Section Click the included buttons to launch EEGAudio*.
- 5. Additional Software Section Click the included buttons to launch additional software.
- 6. **Contributed Games Section** Click the included buttons to launch contributed games used for feedback.
- 7. **OK Button** Click to close the Window Menu.
- 8. **Cancel Button** Click to close the Window Menu.

*BMrMMP, BMrDVD, and EEGAudio make up the MultiMediaPlayer Suite. MultiMediaPlayer is an Optional Purchase.

Setup Options	×
1 Read/Write Settings File	Current Trainee/Study: Mini-Q2 - 2Chan Assesment 9 Positions
1 Data Channels	NCHANS: 2 SRATE: 256 FILTER: 6 ARTIFACT: 240 uV COM: 3 - SUMCHANS:OFF - SAVEEEG:ON - P-P:ON USE MINI-Q HEADBOX
1 Frequency Bands	
1 Training Protocol	GO: (none) STOP: (none) AUTO:OFF:60/20/10
1 Display Options	Display: impedances, wave, filt mirror,
1 Feedback Control	Sound: Reward Sound -
1 Session Control	40 SESSIONS -NO BASELINES-9 RUNS OF LENGTH: 1.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Simulation
5 CLOSE	² PRINT SETTINGS ³ Event Wizard ⁴ USE THESE SETTINGS

- 1. Various Menu Buttons Click to open the associated menus.
- 2. **PRINT SETTINGS Button** Click to print a hard copy of all of your Settings.
- 3. Event Wizard Button Click to open the Event Wizard.
- 4. USE THESE SETTINGS Button Click to confirm all settings changes and exit the Setup Options Menu.
- 5. CLOSE Button Click to cancel all changes made and exit the Setup Options Menu.

Read/Write Settings File Menu

Settings File Name: (double-click to read in settings and proceed)	Use this screen to manage your Settings Fil
Settings [] [1-channel Alpha Monitor] [AAPB_HRV[2]] [AIPB_RON_PPA[1]] [AIert beta training (w. Flash Games)] [AIert beta training with Flash Games via. Event Wizard] [AIert] [AMPplusCOH] [Assess simple assessment] [Asym] [Bands named Beward & Inbibit with Flash Games]	Ibrary. You can change settings within any trainee/study folder, without using this screen. 2 Save Current Settings to a New File 3 Save Current Settings To Selected File
[David alpha theta 2] [David Pannell Alpha 8.5 etc] [DC_and_SCP_Cycle_Training_II] [DCSCP] [Deep alpha theta training] [Deep]	Settings Description: No name file Directory:
[Deep2 2-channel alpha theta training] [Deep2] [Deepcomp] [Demo Alpha amplitude with dynamic thresholding] [Demo alpha asymmetry with rising flute tone] [Demo alpha aymmetry with rising flute tone] [Demo alpha downtraining with multiple thresholds organ and piano] [Demo alpha french horn walkaround using percent energy] [Demo alpha Peak Frequency Training] [Demo alpha percent energy with chinese koto sounds]	4 Read In Settings From Selected File

- Settings File Name Section Section where a new setting may be selected. If you would like to have the selected setting file used in your Studies folder, you may double-click the Settings file to read the settings file into the folder.
- 2. Save Current Settings to a New File Button Click to save the current Studies folders settings into a new Settings file.
- 3. Save Current Settings To Selected File Button Click to save the current Studies folder settings into the selected Settings file from the Settings File Name Section.
- 4. **Read In Settings From Selected File Button** Click to read the Settings file from the Settings File Name Section into the current Studies folder.
- 5. **OK Button** Click to confirm changes and exit the Read/Write Settings File Menu.
- 6. **Cancel Button** Click to cancel changes and exit the Read/Write Settings File Menu.

Data Channels	X
Data channels	
1EEG Channels:	2 Software Digital Filter Order:
○ One ○ nIR HEG	01 02 03 04 05
⊙ Two ○ Four ○ PIR HEG or ○ Four ○ TEMP	C 6 C 7 C 8 C 9 C 10 lower order is faster higher order is more selective
3Sum-Channel Mode:	A
○ ON ⊙ OFF	⁴ Atlantis Hardware Control
54-channel Sum Method:—	6 Amplitude Scale:
🗢 Split 💿 Combine	Peak-to-Peak CRMS
7 Save EEG to Disk:	8 Artifact Threshold:
○ ON ⓒ OFF	120 microvolts
9Software Notch Filters:-	
🗌 60 Hz Notch Filter	50 Hz Notch Filter
10EEG Data Sampling Rat	e:
120 sps	O 256 sps
11COM Port Select:	
Enter COM Port Number	3 (1, 2, 3,, 32)
12 Search this PC	for Available COM Ports
¹⁵ Cancel ¹³ Electrod	es & Trainee Info

- 1. **EEG Channels Section** Section where you choose the EEG Channels for feedback.
- 2. **Software Digital Filter Order Sections** Section where you set the Digital Filter order. The higher the filter order, the more selective the system is.
- 3. Sum-Channel Mode Section Section where you set the Sum-Channel mode on or off.
- 4. Atlantis Hardware Control Button Click to enter the Atlantis Hardware Control Menu.
- 5. **4-Channel Sum Method Section** Section where you can set the 4-Channel Sum Method to either Split or Combine.
- 6. **Amplitude Scale Section** Section where you can set the Amplitude scale to either Peak-to-Peak or RMS.
- 7. Save EEG to Disk Section Section where you can turn on or off the EEG saving option.
- 8. Artifact Threshold Section Section where you can adjust the artifact rejection range.
- 9. Software Notch Filters Section Section where you can turn on or off the Software notch filters.
- 10. **EEG Data Sampling Rate Section** Section where you can adjust the Sample rate you are collecting from the data.
- 11. COM Port Select Section Section where you can set what COM Port your BrainMaster is on. ***PLEASE NOTE: COM 1 – 8 can also be chosen under the Data Tab of the Training/Control Screen.
- 12. Search this PC Button Click to let the BrainMaster Software search for the BrainMaster unit.
- 13. Electrode & Trainee Info Button Click to enter the Electrode & Trainee Info Menu.
- 14. **OK Buttton** Click to confirm changes and exit the Data Channels Menu.
- 15. Cancel Button Click to cancel changes and exit the Data Channels Menu.

Atlantis Hardware Control Menu

Hardware Environment / Notch Filterin © US Domestic (60 Hz) C Internatio	ng nal (50 Hz)
2Hardware Emulation Mode	3 Low Frequency Cutoff
4Photic Stimulator ☞ Autonomous/Immersive	ntrolled
5 Auditory Stimulator ☞ Autonomous/Immersive ← PC Co	ntrolled
6Vibrotactile Stimulator	ntrolled
8 1	7

- 1. Hardware Environment/Notch Filtering Section Section where you can adjust the Hardware Environment.
- Hardware Emulation Mode Section Section to adjust the Hardware Emulation. ***PLEASE NOTE: Only the BrainMaster Atlantis modules may utilize the Full Atlantis Emulation mode.
- Low Frequency Cutoff Section Section to adjust the low frequency cutoff. ***PLEASE NOTE: Only the BrainMaster Atlantis modules may utilize the Low frequency cutoff.
- Photic Stimulator* Section Section where you can adjust photic feedback. ***PLEASE NOTE: Only the BrainMaster Atlantis modules may utilize the PC Controlled Photic Stimulation.
- Auditory Stimulator Section Section where you can adjust auditory feedback. ***PLEASE NOTE: Only the BrainMaster Atlantis modules may utilize the PC Controlled Auditory Stimulation.
- 6. Vibrotactile Stimulator** Section Section where you can adjust vibrotactile feedback.
- 7. OK Button Click to confirm changes and exit Atlantis Hardware Control Menu.
- 8. Cancel Button Click to confirm changes and exit Atlantis Hardware Control Menu.

*PC Controlled Photic Stimulation requires StimFlash. StimFlash is an optional purchase.

**PC Controlled Vibrotactile Stimulation requires InterActor software. InterActor software is an optional purchase.

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Electrode & Trainee Info Menu

- Electrode Information Section Section where the sites for training are selected.
 ***PLEASE NOTE: The amount of sites that can be chosen is dependent upon the amount of channels selected in EEG Channels Section on the "Data Channels Menu".
- 2. Session Wizard to control session Check Box Used to control whether or not Session Wizard* is used for the training/assessment.
- 3. Session Wizard Button Click to enter the Session Wizard* controls.
- Condition Section Section to choose eyes open or eyes closed for Z-Score PZOK training**.
- 5. OK Button Click to confirm changes and exit Electrode and Trainee Info Menu.
- 6. Cancel Button Click to cancel changes and exit Electrode and Trainee Info Menu.
- 7. Age Section Section to enter the age of the client.

*Session Wizard is an optional purchase **Z-Score PZOK is an optional purchase

	Low:	High:		Low:	High:
Delta	1.000	3.000	Beta	15.000	20.000
Theta	4.000	7.000	Hibeta	20.000	30.000
Alpha	8.000	12.000	Gamma	38.000	42.000
Lobeta	12.000	15.000	User	30.000	35.000
Digital Filter An Global displays an smoo	nplitude Smooth Smoothing Win d training using th over. Use va	ing and Dam dow (used to digital filters alues 0-1000	ues 0.10 - 1.00 (ping Factors slow ampitude c s). Specify # of m (0=no smoothing	hanges for all hilliseconds to , default = 60)	0.050 60

- 1. **Frequency Band Section** Section where the frequency band range and name can be adjusted.
- On-the-fly Frequency Adjustment Increment Section Section where the increment of the On-the-fly frequency adjustment can be adjusted. On-the-fly Frequency Adjustment is performed during training. While training is occurring, simply click the Tab button, then click the button letter associated for the band to be adjusted (d=Delta, t=Theta, a=Alpha, l=Lobeta, b=Beta, h=High Beta, g-Gamma, u=User).
- 3. **Digital Filter Amplitude Smoothing and Damping Factors Section** Section where Global Smoothing Window and Text Damping Factor can be adjusted.
- 4. Standard Settings Button Click to re-adjust all changes back to original settings.
- 5. **OK Button** Click to confirm changes and exit the Frequency Bands Menu.
- 6. **Cancel Button** Click to cancel changes and exit the Frequency Bands Menu.

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PROTOCOL SETTINGS F	OR CHANNEL	L 1: ACTIVE:	Fz REFERENCE	E: LE
Delta		Beta		
🔿 Go 🔿 Stop 💿 Igno	re 0.0	O Go 🕤	Stop 🖲 Ignore	e 0.0
Theta		Hibeta		
🔿 Go 🔿 Stop 💿 Igno	re 5.0	O Go O	Stop 🖲 Ignore	8.0
Alpha		Gamma		
🔿 Go 🔿 Stop 💿 Igno	re 0.0	C Go C	Stop 🖲 Ignore	e 0.0
Lobeta		User		
🔿 Go 🔿 Stop 🔹 Igno	re 1.0	O Go O	Stop 🖲 Ignore	e 0.0
		each cha	nnel and compo	onent band
3 Global Sustained Rewa Training Conditions to achieve a reward (use value = 0 - 100)	ard Criterion must be met point and so 00, default=5	(all channels) for: und 500 i00)	millis	econds
3 Global Sustained Rewa Training Conditions to achieve a reward (use value = 0 - 100) 4 Global Refractory Perio After a reward, syste before another rewa (use value = 0 - 100)	ard Criterion must be met point and so 00, default=5 od (all channe em will wait f rd is possibl 00, default=0	(all channels) for: 500 iund 500 i00) els) or: 0 e 0 i)	millise	econds econds
3 Global Sustained Rewa Training Conditions to achieve a reward (use value = 0 - 1000 4 Global Refractory Perio After a reward, syste before another rewa (use value = 0 - 1000 5"Original" Sweet Spot F	ard Criterion must be met point and so 00, default=5 od (all channe em will wait f rd is possibl 00, default=0 Feedback Set • OFF	(all channels) for: 500 iund 500 i00) els) or: 0 e 0 i) ttings	millise millise About	econds econds
3 Global Sustained Rewa Training Conditions to achieve a reward (use value = 0 - 1000 4 Global Refractory Perio After a reward, syste before another rewa (use value = 0 - 1000 5 "Original" Sweet Spot F ON 6 Points Counting Method	ard Criterion must be met point and so 00, default=5 od (all channe em will wait f rd is possibl 00, default=0 Feedback Set • OFF d	(all channels) for: und 500) els) or: e 0) tings	millise millise About	econds econds
3 Global Sustained Rewa Training Conditions to achieve a reward (use value = 0 - 100) 4 Global Refractory Perio After a reward, syste before another rewa (use value = 0 - 100) 5 "Original" Sweet Spot F ON 6 Points Counting Method • Normal (1 Counter)	ard Criterion must be met point and so 00, default=5 od (all channe em will wait f rd is possibl 00, default=0 Feedback Set • OFF d © Split for	(all channels) for: und 500) els) or: e 0 or: 0 tings 2 Players (2 (millise millise About	econds econds

Training Protocol Menu

- 1. **Frequency Training Section** Section where the adjustments for the frequency bands training settings can be adjusted.
- 2. Select Channel to Adjust Section Section where you can choose which channels frequency bands training settings to adjust.
- 3. **Global Sustained Rewards Criterion Section** Section to adjust the time where training conditions length must be met for a reward point and sound.
- 4. **Global Refractory Period Section** Section to adjust the time the system will wait before another reward point can be rewarded.
- "Original" Sweet Spot Feedback Settings Section Section to turn on and off the "Original" Sweet Spot Feedback Settings. For more information, on the "Original" Sweet Spot Feedback Settings, click the About... Button.
- 6. **Points Counting Method Section** Section to change between one or two counters for training. Visit <u>www.brainm.com/kb/entry/111</u> for more information.
- 7. Autothreshold Options Button Click to enter the Autothreshold Options Menu.
- 8. **OK Button** Click to Confirm changes and exit the Training Protocol Menu.

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Autothreshold Options Menu

Adioset do s loi.	60	percent time over threshold
Autoset "Stops" for:	20	percent time over threshold
Autoset HiBeta (stop) fo	or: 10	percent time over threshold
2 Autothresholding is: -		
u u	O ON	OFF
3Threshold Updating:		
C Manual (Press "y	" on keyb	pard to update)
1 DE 1020 DE		
O Autoupdate once,	after pre-	baseline
 Autoupdate once, Autoupdate repea 	after pre-l t: after pre	baseline e-baseline + after each run
 Autoupdate once, Autoupdate repea Autoupdate contin 	after pre-l t: after pre uous: eve	baseline e-baseline + after each run ery second
 Autoupdate once, Autoupdate repea Autoupdate contin Note: 'Y' key can be 	after pre-l t: after pre nuous: eve used to m	baseline e-baseline + after each run ery second nanually update at any time
 Autoupdate once, Autoupdate repeating Autoupdate conting Note: 'y' key can be 4 Autothreshold Epoch 	after pre- t: after pre uous: eve used to п	baseline e-baseline + after each run ery second nanually update at any time
 Autoupdate once, Autoupdate repea Autoupdate contin Note: 'Y' key can be Autothreshold Epoch Autothresholding use 	after pre-l t: after pre uous: eve used to m es epoch l	baseline e-baseline + after each run ery second nanually update at any time ength of 60 seconds
 Autoupdate once, Autoupdate repea Autoupdate contin Note: 'Y' key can be Autothreshold Epoch Autothresholding use to compute autothres fuse value = 1 to 60. 	after pre-l t: after pre- nuous: eve used to m se epoch l shold valu default =	baseline e-baseline + after each run ery second nanually update at any time ength of 60 seconds es 601
 Autoupdate once, Autoupdate repea Autoupdate contin Note: 'y' key can be Autothreshold Epoch Autothresholding use to compute autothres (use value = 1 to 60, 	after pre-l t: after pre- uous: eve used to m ses epoch l shold valu default =	baseline e-baseline + after each run ery second nanually update at any time ength of 60 seconds es 60)

- 1. **Autoset Percent Section** Section to set the percent time over threshold settings for the Go's, Stops and HiBeta(stop).
- 2. Autothresholding Is: Section Section to turn on or off Autothresholding.
- 3. Threshold Updating: Section Section where you can set the threshold updating options.
- 4. **Autothreshold Epoch Section** Section where you can adjust the epoch to compute the autothreshold value.
- 5. **OK Button** Click to confirm changes and exit the Autothreshold Options Menu.
- 6. **Cancel Button** Click to cancel changes and exit the Autothreshold Options Menu.

Display Options Menu

Display Options		X
1Viewed Panels:		2 Viewed Components:
Raw Waveform		🗖 Delta
Filtered Waveform	Text Stat Line with each Waveform	🗖 Theta
Phase-Space Trajectory	Text Stats Panel (Live)	🗖 Alpha
Thermometers	Component Trend Graphs	🗖 Lobeta
🗖 FFT Frequency Spectrum	Event Trend Graphs	🗖 Beta
🗖 Brain Mirror (FFT)	🗆 Wide Event Trend Graphs	🗂 Hibeta
🔽 Brain Mirror (Filters)	🗆 Z Score Text Display	🗖 Gamma
🗖 Coherence / Phase Display	Z Score Scatter Plot	🗖 User
3DII Memory Mapping Mode		
• Standard C Emul	ation ⁵ Cance	е 4 ОК
Use Emulation Mode to use ex games (Somatic Vision, CIS, et Event Wizard Events 9-16	ternal c) via.	

- Viewed Panels Section Section where you can choose what panels are to be viewed during training. ***PLEASE NOTE: All Panels can also either turned on or off by clicking the Display Tab of the Training/Control Screen.
- Viewed Components Section Section where you can choose what components are to be viewed during training. ***PLEASE NOTE: All components can also either turned on or off by clicking the Components Tab of the Training/Control Screen.
- 3. **DLL Memory Mapping Mode Section** Section where you can choose the DLL Memory Mapping Mode you are using.
- 4. **OK Button** Click to confirm changes and exit the Display Options Menu.
- 5. Cancel Button Click to cancel changes and exit the Display Options Menu.

, oound type		
 Reward Sound (.wav when all criteria met) Component Sound (.wav for each component) MIDI (note for each component) Coherence (MIDI note for each component) Phase (MIDI note for each component) Complex (Reward Sound + MIDI notes) 	MIDI Voice: 2 41 Viola 3 MIDI Style: • Sustained (held) Notes • Percussive (struck) Notes 4 MIDI Medulation	
Coherence or Phase Threshold (1-100): 10 6 Train Coherence or Phase:	Amplitude (loud/soft) Pitch (hi/lo) Simple (on/off)	
7Type of Coherence:		

- Sound Type Section Section where you can choose the sound type for training ***PLEASE NOTE: All Sounds can also either be turned on or off by clicking the Sound Tab of the Training/Control Screen.
- 2. **Midi Voice Section** Section where you can choose the type of MIDI sound for feedback that utilizes MIDI Playback.
- 3. **MIDI Style Section** Section where you can choose the MIDI Style for feedback that utilizes MIDI Playback.
- 4. **MIDI Modulation Section** Section where you can choose the MIDI Modulation for feedback that utilizes MIDI Playback.
- 5. **Coherence or Phase Threshold Section** Section where you can adjust the threshold for either Coherence or Phase training.
- 6. **Train Coherence or Phase Section** Section where you can adjust the method of training for either Coherence or Phase training.
- 7. Type of Coherence Section Section where you can choose the type of Coherence training.
- 8. OK Button Click to confirm changes and exit the Feedback Control Menu.
- 9. Cancel Button Click to cancel changes and exit the Feedback Control Menu.

bession control pictua

ession Control	
NOTE: Please enter all times as v 1 Baseline Length (pre and post) 0 Seconds (before and after Runs)	whole seconds (1, 2, 3, etc) 2 Run Length: 60 Seconds
3 Number of Sessions: 40 sessions (80 maximum) (0 allows repeated use of Test Session 1)	4 Number of Runs (Trials) 9 Runs (Must have at least one Run)
5 Session Type: C Assessment C Training Simulation C Playback	6 T Pause Between Runs? 7 Session Wizard
¹⁰ Cancel ⁸ Use Session Wizard to [use with MINI-Q]	control session

- 1. **Baseline Length Section** Section where you can adjust the length of the pre and post Baseline.
- 2. **Run Length Section** Section where you can adjust the length of the runs for the training session.
- 3. **Number of Sessions Section** Section where you can adjust the amount of Sessions a particular training can be used for.
- 4. **Number of Runs Section** Section where you can adjust the amount of runs for the training session.
- 5. **Session Type Section** Section where you can change the type of session that is being used.
- 6. **Pause Between Runs? Check Box** Click to choose whether or not you would like the training to pause at the end of a run.
- Session Wizard Button Click to enter the Session Wizard* Controls. ***PLEASE NOTE: The Session Wizard Controls can also be accessed in the Electrode & Trainee Info Menu.
- 8. Session Wizard to control session Check Box Used to control whether or not Session Wizard* is used for the training/assessment. ***PLEASE NOTE: The Session Wizard to control session Check Box can also be accessed in the Electrode & Trainee Info Menu.
- 9. **OK Button** Click to confirm changes and exit the Session Control Menu.
- 10. Cancel Button Click to cancel changes and exit the Session Control Menu.

*Session Wizard is an optional purchase





Review Session Results Control Menu Display

- 1. **Show All Button** Click button to display all sessions in a particular study file plotted by session.
- 2. Select Button Click to choose the session that you would like to view.
- 3. Settings Button Click to open the BReview Settings Menu.
- 4. Redraw Button Click to update the data.
- 5. **Print Button** Click to print the current displayed Review Screen.
- 6. Quick File Button Click to generate a Quick-File (Mini-Q) excel file.
- 7. Excel Table Button Click to generate a Excel Table Summary for the Session.
- 8. Review SW Button Click to view optional 3rd Party Review Software's.
- 9. Quit Button Click to quit the Review Session Results.
- 10. ← Button Click to step back 60 seconds in the Review Screen.
- 11. \rightarrow Button Click to step forward 60 seconds in the Review Screen.

BReview Settings Menu

Components	2 Channels	2 EulScale
Delta IZ Beta	Channel 1	C 5uV
I▼ Theta I Hibet I▼ Alpha I Gamr	a Channel 2	C 10 uV
I Lobeta □ User	Channel 3	C 30 uV
Aux	Channel 4	○ 50 uV
Format © Graphics © Text © Ber	Dort	3-4 C 100 uV
Show Anier Above Threshold Show Modal Frequency Show Standard Deviation Show Phase	Show By Type Data Source FFT Szoom 10 Filter Siz 9 Epoc Siz	Show By Session Jigital Filters e
View		
C All Session (C One Session	Coom
DEvents		
Event 1 Event 5	Event 9	Event 13
Event 2 Event 6	Event 10	Event 14
🗏 Event 3 🗌 Event 7	🔲 Event 11	🗂 Event 15
Event 4 Event 8	Event 12	☐ Event 16
11Cancel 1	2 0K 1	3 ZScore

- 1. **Components Section** Section where you can choose the components that you would like to be viewed.
- 2. **Channels Section** Section where you can choose the channel and channel combinations that you would like to be viewed.
- 3. Full Scale Section Section where you can choose the scale for the data being displayed.
- Format Section Section where you can choose what type of format you would like the information being reviewed be displayed PLEASE NOTE: not all formats are available for all views.
- 5. **Single Session Settings Section –** Section where you can set what you would like to be displayed for a single session.
- 6. **All Sessions Settings Section –** Section where you can set what you would like to be displayed for a single session.
- 7. Data Source Section Section where you can choose between the type of Data Source
- 8. **Zoom Section –** Section where you can the Zoom Filter size and Epoc Size
- 9. View Section Section where you set the type of view you would like.
- 10. Events Section Section where you can choose any or all of the Events that you would like to view in the Review Screen.
- 11. Cancel Button Click to cancel any changes and close the BReview Settings Menu.
- 12. OK Button Click to confirm any changes and close the BReview Settings Menu
- 13. **ZScore Button –** Click to open the ZScore Settings Menu.



ZScore Settings Menu

- 1. **Z-Score Selection Section –** Section where you can choose which Z-Score values you would like to display on the Review Screen.
- 2. **Select Section –** Section where you can choose to view all Z-Scores with-in a certain defined range to be displayed on the Review Screen.
- 3. **OK Button –** Click to confirm changes, and close the ZScore Settings Menu.
- 4. **Cancel Button –** Click to cancel changes, and close the ZScore Settings Menu.
- 5. Select All Button Click to select all Z-Score values to be displayed on the Review Screen.
- 6. **Deselect All Button –** Click to deselect any Z-Score values that were selected to be displayed on the Review Screen.
- 7. **Scale Section –** Section where you can set the Scale that you would like to set for viewing the Z-Scores on the Review Screen.

The following keyboard controls can be used at any time when the BrainMaster is operating. PLEASE NOTE: When autothreshold is used, threshold commands change percent target value. ALSO NOTE: Pressing <Tab> switches into "frequency adjust" mode. Pressing "a" for alpha, "t" for theta, etc, will make the frequency band changed per what you have selected for the on-the-fly Frequency adjustment.

Key	Function
a	Increase alpha (8-12 Hz) threshold by 0.1uV or target by 1 percent
А	Decrease alpha (8-12 Hz) threshold by 0.1uV or target by 1 percent
b	Increase beta (15-20 Hz) threshold by 0.1uV or target by 1 percent
В	Decrease beta (15-20 Hz) threshold by 0.1uV or target by 1 percent
с	Increase coherence/phase threshold
С	Decrease coherence/phase threshold
d	Increase delta (1-3 Hz) threshold by 0.1uV or target by 1 percent
D	Decrease delta (1-3 Hz) threshold by 0.1uV or target by 1 percent
g	Increase "gamma" (38-42 Hz) threshold 0.1 uV or target by 1 percent
G	Decrease "gamma" (38-42 Hz) threshold 0.1 uV or target by 1 percent
h	Increase "hibeta" (20-38 Hz) threshold 0.1 uV or target by 1 percent
Н	Decrease "hibeta" (20-38 Hz) threshold 0.1 uV or target by 1 percent
1	Increase "lobeta" (12-15 Hz) threshold 0.1 uV or target by 1 percent
L	Decrease "lobeta" (12-15 Hz) threshold 0.1 uV or target by 1 percent
М	Toggle "Brain Mirror" between FFT and Filtered Mode
r	Reduce artifact rejection threshold value by 10 microvolts
R	Increase artifact rejection threshold value by 10 microvolts
t	Increase theta (3-8 Hz) threshold by 0.1 uV or target by 1 percent
Т	Decrease theta (3-8 Hz) threshold by 0.1 uV or target by 1 percent
u	Increase user band threshold by 0.1 uV or target by 1 percent
U	Decrease user band threshold by 0.1 uV or target by 1 percent
У	Copy autothresholds into current thresholds ("Autoupdate")
+	Increase display gain by 20%
-	Decrease display gain by 20%
<space></space>	Pause or end pause
1	Set mode so keys (d, t, etc) adjust channel 1 only for thresholds, etc.
2	Set mode so keys (d, t, etc) adjust channel 2 only for thresholds, etc.
3	Set mode so keys (d, t, etc) adjust channel 3 only for thresholds, etc.
4	Set mode so keys (d, t, etc) adjust channel 4 only for thresholds, etc.
0	Set mode so keys (d, t, etc) adjust both channels 1 and 2 for thresholds, etc.

Trainee Folders

Creating a Trainee Folder

Select Trainee/Study Folder

[RobTest] [Ron Mini] [Rtes] [rtest] [RTest1] [RTest2] [SCR Pod Atlantis] [SCR_Pod_Atlantis]

|sikat]laks] |smrdtdown] |StephTest] [stupidtest] [Swingle_Assessment[1]] |TerryTest]

File Name (Trainee ID):

SendingStudies

[RobbyRob] [RobTest]

[slkdfjlaks]

Select Folder: (you may double-click to select)

PLEASE NOTE: This process can only be done if you have purchased a BrainMaster Clinical License

1. From the Setup/Home Screen, click the Folder Selection Button. This will bring you to the Select Trainee/Study Folder screen. On this screen, click the Create New Folder Button to begin creating a new folder.

- 2. Type in the name that you would like, and the file ID for the folder in the proper fields. When naming the folder, please take HIPAA compliance into consideration. When you have entered the name and file ID, click OK to continue.
- 3. Another screen will pop up to confirm the name of the folder. If the name and file ID are OK, click OK to continue.

Trainee Nan	ne:			
SendingStu	dies			Max Sessions:
Comment:				0
PZOK with F	PZMO and PZME		Edit Comment	U
Session	Genie			
	Administer Session Genie		Push to Server an	d Delete Folder
Create New Folde	er			
CREATE NEW	TRAINEE/STUDY FOLDER			
Name:				
CreatingTrain	neeFolder			Jse Name for File ID
File ID:				
CreatingTrain	neeFolder			
Current Setti	ngs will be saved to this Settings	File		
	0		OK	
	Cancel		UK	
Confirm New I	Folder			×
				and the second second
Name:	CreatingTraineeFolder			
ID:	CreatingTraineeFolder			

Create New Folder

Folder Notes

Session Librarian

ок

OK

Sessions Used

Current Settings will be saved to this Settings File Cancel

 The following screen will allow you to select a settings protocol. Highlight the Settings File that you would like to use, and click OK to continue. ***PLEASE NOTE: It is not recommended to choose [..] as a settings protocol.

You have now created a folder for training. You will be able to tell this, as you will see the Trainee ID and Trainee Name are now displayed on the Setup/Home Screen. You might need to click somewhere on this screen in order for the updates to take place.

New Folder - Select a Settings File Settings [] I-channel Alpha Monitor] [AAPB_RON PPA[1]] [Alert Beta training (w. Flash Games]] [Alert beta training with Flash Games via. Event Wizard] [Alert] [AMPPJusCOH] [Assess simple assessment] [Asym]	Ĩ	Select a file that will provide the initial settings for your new folder. You may double-click to select. (You may folder's settings on the next screen)
[David alpha theta 2] [David Pannell Alpha 8.5 etc]	-	ок

荧 Setup/Home Screen - BrainMaster 3.7i	
Welcome to BrainMaster 🖉 💽 💇 🔎 Current Trainee/Study Folder:	LOGIN OK: SN: 30796 UNLIMITED USE CLINICAL LICENSE
Trainee ID: CreatingTraineeFolder	Login
Trainee CreatingTraineeFolder Name:	Folder Selections
Comment: Next Session Number: Total Sessions Available:	Run The Next Session
1 repeatable Training screen is currently: Not Running	View or Change Settings
Exit Product Manuals	Review Session Results

PLEASE NOTE: This process can only be done if you have purchased a BrainMaster Clinical License

 From the Setup/Home Screen, click the View or Change Settings Button. On the Setup Options Menu, click Read/Write Settings File Button to continue.



 On the Read or Write Settings File Menu, highlight the settings file that that you would like to use, then click the Read In Settings From Selected File Button to continue.



X

 The following pop-up will ask to confirm your changes. After you click OK, another Pop-Up will appear to confirm the changes.



bsetup30

The settings for your Trainee folder have now been changed. You will be able to tell this, by seeing the information on the Setup Options screen will be different as it was before.

Setup Options				×
Read/Write Settings File	Current Trainee/Study: CreatingTraineeFolder			
Data Channels	NCHANS: 1 SRATE: 256 FILTER: 3 ARTIFACT: 240 uV COM: 6 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: Pz - A1 - A2			
Frequency Bands	Theta:5.0000-8.0000 Alpha:8.5000-11.5000			
Training Protocol	GO: 1:Theta(4.4) 1:Alpha(4.7) STOP: 1:Delta(6.7) 1:Hibeta(11.2) AUTO:ON:50/5/5 AUTOUPDATE BEFORE EACH RUN			
Display Options	Display: wave, filt. wave, w/ text line, therm, event trends,			
Feedback Control	Sound: Component Sound - Midi Sound - Voice: 102 Echo Drops (Sustained)			
Session Control	20 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 3.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Training			
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTING	is

PLEASE NOTE: This process can only be done if you have purchased a BrainMaster Clinical License

 From the Setup/Home Screen, click the View or Change Settings Button. On the Setup Options Menu, click Read/Write Settings File Button to continue.

Setup Options			X
Read/Write Settings File	Current Trainee/Study: CreatingTraineeFolder		
Data Channels	NCHANS: 2 SRATE: 256 FILTER: 6 ARTIFACT: 240 uV COM: 6 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: C4 - A1 - A2		
Frequency Bands	User:20.0000-32.0000		
Training Protocol	GO: (none) STOP: (none) AUTO:OFF:20/20/5		
Display Options	Display: event trends,		
Feedback Control	Sound: Event Sounds -		
Session Control	0 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 2.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Simulation		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS

 On the Read or Write Settings File Menu, highlight the settings file that that you would like to change, then click the Save Current Settings To Selected File Button to continue.



X

3. The following pop-up will ask to confirm your changes. After you click OK, another Pop-Up will appear to confirm the changes.



The settings have now been changed to the selected Settings File.

Setup Options			×
Read/Write Settings File	Current Trainee/Study: CreatingTraineeFolder		
Data Channels	NCHANS: 1 SRATE: 256 FILTER: 3 ARTIFACT: 240 uV COM: 6 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: P2 - A1 - A2		
Frequency Bands	Theta:5.0000-8.0000 Alpha:8.5000-11.5000		
Training Protocol	GO: 1:Theta(4.4) 1:Alpha(4.7) STOP: 1:Delta(6.7) 1:Hibeta(11.2) AUTO:ON:50/5/5 AUTOUPDATE BEFORE EACH RUN		
Display Options	Display: wave, filt. wave, wł text line, therm, event trends,		
Feedback Control	Sound: Component Sound - Midi Sound - Voice: 102 Echo Drops (Sustained)		
Session Control	20 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 3.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Training		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS

Playing Back a Session

PLEASE NOTE: You can only play back a file that has the Save EEG to Disk option set to on.

 From the Setup/Home Screen, click the View or Change Settings Button. On the Setup Options Menu, click the Session Control Button

Setup Options			×
Read/Write Settings File	Current Trainee/Study: CreatingTraineeFolder		
Data Channels	NCHANS: 2 SPATE: 256 FILTER: 6 ARTIFACT: 240 uV COM: 6 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: C4 - A1 - A2		
Frequency Bands	User:20.0000-32.0000		
Training Protocol	GO: (none) STOP: (none) AUTO:OFF:20/20/5		
Display Options	Display: event trends,		
Feedback Control	Sound: Event Sounds -		
Session Control	0 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 2.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Simulation		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS

 From the Session Control Menu, set the Session Type to Playback, then click the OK button to continue.

Session Control			
NOTE: Please enter all times as whole seconds (1, 2, 3, etc)			
Baseline Length (pre and post)	Run Length:		
O Seconds (before and after Runs)	120 Seconds		
(Length of 0 means "no baselines")	(0 means run indefinitely)		
Number of Sessions:	Number of Runs (Trials)		
40 sessions (80 maximum)	10 Runs		
(O allows repeated use of Test Session 1)	(Must have at least one Run)		
Session Type:	☐ Pause Between Runs?		
O Assessment O Training			
Simulation • Playback	Session Wizard		
Cancel Use Session Wizard to control session OK			

BrainMaster 3.0 Software User Manual

3. From the Setup Options Menu, click USE THESE SETTINGS Button. When you return to the Setup/Home Screen, click the Run The Next Session Button. On the Trainee Screen, click the GO Button to Continue.



4. From the File Playback Menu, choose the file that you would like to playback, and how you would like this file to be played back. When all of the settings are as you would like, click the Playback File Button to continue.

File Playback and Export Control			
Path: c:\brainm.20\studi Filename: e0200201.e0 Len: 120 sec [2 chans], e0200101.e02 e0200301.e02 e0200401.e02 e0200501.e02 e0200601.e02 e0200601.e02 e0200601.e02 e0200601.e02 e0200601.e02 e0200601.e02	2 256 sps, 2EW C3-A1-Cz-A2- E Playback File Export ASCII Text File	C4 TRAINING Playback Speed • Real Time • Fast • Slow Text File Format • Floating Point • Decimal	
e0201001.e02	•	C Hexadecimal	
Output File:			
Status:			
		Done	

You will now be playing back the run that you selected. You can tell this, by seeing the information be played on the Training/Control Screen.



PLEASE NOTE: You can only play back a file that has the Save EEG to Disk option set to on.

 From the Setup/Home Screen, click the View or Change Settings Button. On the Setup Options Menu, click the Session Control Button

Setup Options			×
Read/Write Settings File	Current Trainee/Study: CreatingTraineeFolder		
Data Channels	NCHANS: 2 SRATE: 256 FILTER: 6 ARTIFACT: 240 uV COM: 6 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: C4 - A1 - A2		
Frequency Bands	User:20.0000-32.0000		
Training Protocol	GO: (none) STOP: (none) AUTO:OFF:20/20/5		
Display Options	Display: event trends,		
Feedback Control	Sound: Event Sounds -		
Session Control	0 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 2.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Simulation		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS

 From the Session Control Menu, set the Session Type to Playback, then click the OK button to continue.

Session Control			
NOTE: Please enter all times as whole seconds (1, 2, 3, etc)			
Baseline Length (pre and post)	Run Length:		
O Seconds (before and after Runs)	120 Seconds		
(Length of 0 means ''no baselines'')	(0 means run indefinitely)		
Number of Sessions:	Number of Runs (Trials)		
40 sessions (80 maximum)	10 Runs		
(O allows repeated use of Test Session 1)	(Must have at least one Run)		
Session Type:	☐ Pause Between Runs?		
🔿 Assessment 🔿 Training			
Simulation 💿 Playback	Session Wizard		
Cancel Use Session Wizard to control session OK			
3. From the Setup Options Menu, click USE THESE SETTINGS Button. When you return to the Setup/Home Screen, click the Run The Next Session Button. On the Trainee Screen, click the GO Button to Continue.



4. From the File Playback Menu, choose the file that you would like to convert, and what format you would like this file to be formatted to. When all of the settings are as you would like, click the Playback File Button to continue.

File Playback and Exp	port Control	x
Path: c:\brainm Filename: e020	1.20\studies\lsaac Niekamp1\ 00201.e02	
Len: 120 sec (2	2 chans), 256 sps, 2EW C3-A1-Cz-A2-C4 TRAINING	
e0200101.e02 e0200301.e02 e0200301.e02 e0200501.e02 e0200501.e02 e0200501.e02 e0200701.e02 e0200801.e02 e0200801.e02 e0201001.e02	Playback Speed Playback File Playback Speed • Real Time • Fast Text File Format • Floating Point • Decimal • Hexadecimal	© Slow
Input File:		
Output File:		
Status:		
		Done

5. The following box will appear. Click OK to continue.

master30	×	
	Will write out 30720 samples to file	
	OK	

ref 531-320 v2.2 3/16/2016

6. The system will begin the conversion. During this time, do not click anything to let the system properly convert.

File Playback and Path: c:\brain Filename: et	Export Control nm.20\studies\lsa 0200201.e02 cl2 chans), 256 sr	ac Niekamp1\ as. 2EW C3-41-C2-42-		
e0200101.ei e0200201.ei e0200301.ei e0200401.ei e0200501.ei e0200501.ei e0200701.ei e0200901.ei e0200901.ei	12 12 12 12 12 12 12 12 12 12 12 12 12 1	Playback File Export ASCII Text File	Playback Speed • Real Time • Fast Text File Format • Floating Point • Decimal • Hexadecimal	© Slow
Input File: Output File: Status:	c:\brainm.20\stu c:\brainm.20\stu File Written: 307	dies\lsaac Niekamp1\ dies\lsaac Niekamp1\ 20 Samples, 113664(e0200201.e02 a0200201.e02.txt) Characters	Done

The run will now be converted to ASCII format. You will tell that this has been completed through the confirmation screen stating this. At this time you can choose whether or not you would like to view this file.



BMZ Files

Creating A BMZ from a Studies File

 From the Setup/Home Screen, click the Folder Selection Button. This will bring you to the Select Trainee/Study Folder screen. On this screen, highlight the Folder you would like to create into a BMZ file, and click Session Librarian Button.

2. When the following screen pops up, click OK to continue.

RobbyRob	× .	
[Hob lest] [Rep Mini]		Create New Folder
[Rtes]		
[rtest]		
[RTest1]		Folder Notes
[KTest2] ISCB Pod Atlantic]	-	
ISCR Pod Atlantis		
[SendingStudies]		
[slkdfjlaks]		Session Librarian
[smrdtdown] [StephTeet]		
[stunidtest]		
[Swingle_Assessment[1]]		OK
[TerryTest]	•	
ile Name (Trainee ID):		
endingStudies\		Sessions Used:
rainee Name:		0
SendinaStudies		Max Sessions:
omment:		
20K with PZMO and PZME		0
	Edit	
	Comment	
Receive Coole		
Session deme		
Administer Session Genie	Push to Server	and Delete Folder



3. Another screen will pop up to show progress. Nothing is needed to be done. Simply wait for the extraction to complete to continue.

Creating BrainMaster Archive	
Adding	
to c:\brainm.20\archive\SendingStudies.bmz	
Cancel	

- 4. When the following screen appears, it will give you 3 options: Floppy, Email, NO.
 - A. Floppy This option will only work with a Floppy Disk. If you do not have a floppy drive, it will not function properly.
 - B. Email In order for this to work properly, two things are needed. First, proper Email information needs to be filled in from the Login page(See attached Picture). Second, the E-Mail account has to be tied through Microsoft Outlook.

- (Optional)	Personal Information:
Name:	BrainMaster Support
Email:	support@brainm.com

Copy To Floppy Disk?	arian a		
Archive c:\brainm.20\arc	hive\Sendir	ngStudies.bmz	
created. Do you want to copy to t or send it by email?	he floppy d	lisk	
Floppy	Email	NO	

- C. **NO** This is the option that most people will use. This will still create the BMZ, but it will not E-Mail it, or save it to a Floppy, it will simply create the BMZ File at C:\brainm.20\archive
- 5. Depending on which option that you choose above, you will receive a message stating that the action has been completed.

write archive	X
Archive file created but NOT emailed or sa Archive file can be found in c:\brainm.20\a	ved to floppy rchive
	ОК

You now have a BMZ file created.

PLEASE NOTE: This method can only be done if you have purchased a BrainMaster Clinical License

 From the Setup/Home Screen, click the Folder Selection Button. This will bring you to the Select Trainee/Study Folder screen. On this screen, highlight the Folder you would like to create into a BMZ file, and click Administer Session Genie Button.

2. When the FileUtilis Screen opens, click the Create Archive Button.

RobbyRob]	A	
RobTest]		Create New Folder
Ron Mini]		
Rtes]		
rtest]		
Riestij		Folder Notes
Riestzj PCD Dad Maanial		
SCR Pod Atlantis		
SendingStudies]		
senungstudies elkdfilakel		Session Librarian
smrdtdownl		
StenhTest	=	
stupidtest		
Swingle Assessment[1]]		OK
TerryTest]	-	
le Name (Trainee ID):		
endingStudies\		Sessions Used:
ainee Name:		0
endingStudies		Max Sessions:
omment:		-
ZOK with PZMO and PZME		0
	Edit Comment	
Session Genie		

👫 FileUtils	-	X
Create Archive		
Extract Archive		
Administration		

 Click The Select Study Button. This will bring up a menu in which you can choose not only folders located in the Studies folder, but

the Settings folder as well. After you have the file that you would like to Archive, click OK on the Browse For Folder Menu, and then the Create Archive Button on the FileUtilis Screen to continue.

Hello wor	ld	
c:\brainn	n. 20\studies	
	I i reviewsw	*
	b 🌗 settings	
	Dettingsd	
	b 🍌 studies	_
	Studiesd	
	SwingleAssessment	
	퉬 Test EMG	
	b 🎴 usbfiles	
	usbfiles_2-28-2011	-
٠ -		F.



 To continue, you will have to click the "Continue/Confirm" Button. After you do this, you will see a Blue Progress bar, and a list of tasks that are being completed.

Click on 'Continue/Confirm or 'Cancel'		Click on 'Continue/Confirm or	'Cancel'			
Study	C:\brainm.20\studies	<pre>\$\SendingStudies*.*</pre>	Study		C:\brainm.20\;	tudies\SendingStudies*.*
Select Study	Continue/Confirm	Cancel	Select Study	Continue	Confirm	Cancel
This procedure will write an a Study Name: SendingStudies You may then copy the archi or email it to a recipient	archive file for study "SendingStudies". ve to disk	Å	Creating BrainMaster Archive Adding C: [brainm.20 [studies] Adding C: [brainm.20 [studies]	SendingStudies SendingStudies SendingStudies SendingStudies SendingStudies SendingStudies SendingStudies	cur_sess to c:\p e0000101.e01t e0000101.e02t e0000201.e02t email.set to c:\p events.txt to c: k0000101.k01t k0000101.k02t	rainm. 20\archive\Sendin; o c:\brainm. 20\archive\S o c:\brainm. 20\archive\S o c:\brainm. 20\archive\S rainm. 20\archive\Sendi (prainm. 20\archive\Sendi o c:\brainm. 20\archive\Sendi o c:\brainm. 20\archive\Sendi

- 5. When the following screen appears, it will give you 3 options: Copy Archive to Disk, Email Archive, or Copy Archive to Server.
- A. Copy Archive to Disk This option will only work with a Floppy Disk. If you do not have a floppy drive, it will not function properly.
- B. Email Archive In order for this to work properly, two things are needed. First, proper E-mail information needs to be filled in from the "Login" page(See attached Picture). Second, the E-Mail account has to be tied through Microsoft Outlook.

- (Optional)	Personal Information:
Name:	BrainMaster Support
Email:	support@brainm.com

船 FileUtils	
Do you want to copy it to disk or send it by	email?
Study	C:\brainm.20\studies\SendingStudies*.*
Copy Archive to Disk Email	Archive Copy Archive to Server
Archive c: \prainm. 20 \archive \sendings tudie	s.bmz created.
	Ŧ

C. Copy Archive to Server – This is the option that most people will use. This will still create the BMZ, but it will not E-Mail it, or save it to a Floppy, it will simply create the BMZ File at C:\brainm.20\archive

6. Depending on which option that you choose above, you will receive a message stating that the action has been completed.

👬 FileUtils	
Click on Exit	
Study	C:\brainm.20\studies\SendingStudies*.*
	Exit
Study SendingStudies was saved to the ser	ver
,	

You now have a BMZ file created.

Import Received/Downloaded BMZ Files

Opening Mail Attachment

(HTML)

Cancel

- There are 3 ways BMZ Files can be received: E-Mail, Removable media, or downloading from the internet. Doubleclick on the BMZ file, and choose Open or Run, depending on your version of Windows.
- 2. The system will now take over. Press OK when prompted.



You should only open attachments from a trustworthy source.

Attachment: Test.bmz from .bmz Picture Example - Message

X

OK

 The folder is now expanded for use in your studies folder. You can access this folder by clicking Folder Selection Button on the BrainMaster Setup/Home Screen.

[rtest]	•	
[RTest1] [PTest2]		Create New Folder
[SCB Pod Atlantis]		
[SendingStudies]		
[slkdfjlaks]		Eolder Notes
[stupidtest]		I UIUCI NUICS
[TerryTest]		
Test		
[lest_HRV]		Seccion Librarian
[[immus]		Coston Elbranan
[Ttest]		
[uh]	= _	
Z Scores PercentZOK with Somatic Vision Enabled]		ок
[Z_Score_PZOKUL_MS[1]]	- L	
File Name (Trainee ID):		
Test		Sessions Used:
Trainee Name:		0
Standard Test Study		Max Sessions:
Comment:		0
(none)	Edu	U
	Comment	
Session Genie		
Session deme		1

PLEASE NOTE: This method can only be done if you have purchased a BrainMaster Clinical License

 On the BrainMaster Setup/Home Screen, click the Folder Selections Button and select the file that you would like to be converted to a Settings File.

 From the Setup/Home Screen, click the View or Change Settings Button. Once this is complete, then click the Read/Write Settings File Button.

茨 Setup/Home Screen - BrainMaster 3.7i	
Welcome to BrainMaster	LOGIN OK: SN: 30796 UNLIMITED USE
Current Trainee/Study Folder:	CLINICAL LICENSE
Trainee ID: SendingStudies\	Login
Trainee SendingStudies Name:	Folder Selections
Comment: Folder used for examples in Manuals	Run The Next Session
Next Session Number: Total Sessions Available: 1 repeatable	
Training screen is currently: Not Running	View or Change Settings
Exit Product Manuals	Review Session Results

etup Options	States and a state of the state				
Read/Write Settings File	Current Trainee/Study: SendingStudies				
Data Channels	NCHANS: 1 SRATE: 256 FILTER: 3 ARTIFACT: 255 uV COM: 3 - SUMCHANS:OFF - SAVEEEG:ON - P-P:ON SITES: F7 - LE - GND				
Frequency Bands	Alpha:8.0000-12.0000				
Training Protocol	GO: (none) STOP: (none) AUTO:OFI	F:50/20/10			
Display Options	Display: impedances, wave, w/ text line, training stats, wide event trends,				
Feedback Control	Sound:				
Session Control	0 SESSIONS -NO BASE PAUSE BETWEEN RUN	LINES-20 RUNS OF LE IS-SESSION TYPE: Simi	NGTH: 1.0 MIN–NO ulation		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS		

 In the Read or Write Settings File Menu, you will click the Save Current Settings to a New File Button. After doing this, click OK to all the prompts to follow. After you click OK on the Settings saved screen, you will now be able to use the folder as a settings protocol.





Archiving Old Studies Folders

 From the Setup/Home Screen, click the Folder Selection Button. This will bring you to the Select Trainee/Study Folder screen. On this screen, highlight the Folder you would like to remove, and click the Push To Server and Delete Folder Button.

Select Trainee/Study Folder		X
Select Folder: (you may double-click to select)		
[RobbyRob]	*	
[RobTest] [Rop Mini]		Create New Folder
[Rtes]	_	
[rtest]		1
[Riest] [BTest2]		Folder Notes
[SCR Pod Atlantis]	_	
[SCR_Pod_Atlantis]	_	
[slkdfilaks]	_	Session Librarian
[smrdtdown]		
[StephTest]		
[Swingle Assessment[1]]		ок
[TerryTest]	- L	
File Name (Trainee ID):		Constant Under
SendingStudies\		Sessions Oseu.
Trainee Name:		U
SendingStudies		Max Sessions:
Comment:		0
PZOK with PZMO and PZME	Edit Comment	
-Section Genie		
dession deme		
Administer Session Genie	Push to Server	and Delete Folder

X

c:\brainm.20\studies\SendingStudies*.*

Cancel

Continue

船 FileUtils

Study

Click on 'Continue' or 'Cancel

Do you want to delete the study

2. The system will take over. Once the archiving process is completed, it will ask if you are sure that you want to move the folder to the

Delete Folder

3

Are you sure you want to move this folder to the Recycle Bin?

SendingStudies Date created: 6/4/2010 12:08 PM

Yes <u>N</u>o

recycling bin. Click Yes to continue.

The folder has now been deleted from the Studies
Directory. A BMZ of this file has been created, and is
saved at C:\brainm.20\archive.



BMr Extras

BMr Contributed Games



- **1. Reset Button** Click to make the blue squares visible. This can also be performed by clicking Alt + R.
- 2. Choose Image Button Click to place a new image behind the blue squares. This can also be done by clicking Alt + C.
- **3.** Difficulty Check Box Check to change the difficulty. If the difficulty is checked on, then the customer must score two points to reveal a piece of the picture.
- **4.** Pause Button Click to pause the game in progress. This can also be performed by clicking Alt + P.
- 5. Start Button Click to start the game. This can also be performed by clicking Alt + S.
- 6. Display This is display, which is a square covered with 130 small blue squares. The puzzle will be revealed one square every time a point(depending on difficulty) is scored in the BrainMaster software.

Space Race



- 1. Interceptor The Interceptor Rocket will advance when points are not being scored.
- 2. Lunar Lander The Lunar Lander will advance whenever points are scored. The object is to get the lander to the top of the screen before the interceptor.
- 3. Score Board Section that keeps track of how many times each ship wins the race.
- 4. Start Button Click to start the game. This can also be performed by clicking Alt + S.
- 5. Pause Button Click to pause the game. This can also be performed by clicking Alt + P.
- Change Background Button Click to choose between several background images for the screen. This can also be performed by clicking Alt + B.
- 7. **Choose Sound Button –** Click to choose an explosion sound(if you desire) for when the lander wins the race. There are several that are included. This can also be performed by clicking Alt + C.
- 8. **Hide Controls Button –** Click to shrink the screen and obscure the control buttons. This can also be performed by clicking the Alt + H. To get the controls back, click Alt + "=".

Cricket



As training proceeds, the crickets "stack up" and pile on top of each other.

Later on, the bottom images change, bonus points are awarded, and the screen becomes more interesting.

Bug Run



This screen provides a "bug race". As the trainee meets the training criteria, the bugs will advance at random, running a race. If the trainee has excessive amounts of "stop" component, some of the bugs will slip down a bit, and fall behind. The goal of the game is to have the race progress.

After a while, one of the bugs will win, and be declared the winner.

BMr Popups Displays

Display: X-Wing **Display Type:** Game **Requirements:** Basic amplitude training **Brief Description:** The space ship will rise when the reinforced component (e.g. lobeta or beta) is high, and the ground will rise when the inhibited component (e.g. theta) is high. Both thresholds are shown as lines on the screen. When a point is scored, the spaceship will briefly turn red, and the point will be registered in the indicator area. When two channels are trained, this window shows two



space ships, with the left panel showing Channel 1, and the right panel showing channel 2.

Display: BrainMan

Display Type: Game

Requirements: Basic amplitude training **Brief Description:** BrainMan will advance 1 point for each target "hit". Since what constitutes a "hit" is determined by the setup of the Thermometer system, the exact criteria for causing BrainMan to move can be set up in any desired fashion. Whenever an inhibited component is over its threshold (e.g. theta), BrainMan will turn blue, signaling the trainee.

Display: 2D Spectral

Display Type: Display

Requirements: Basic amplitude training **Brief Description:** This provides a cascade of past FFT spectra, covering the previous 1 minute of activity. Each frequency band is colored according to the frequency ranges selected. This coloring is the same as used on the FFT and the BrainMirror displays. There are tic marks and the labels to identify the frequency coordinates of the display. When two channels are used, two spectra are shown.





Display: Numbers Display Type: Display Requirements: Basic amplitude training Brief Description: This screen shows numeric values for each component. "GO" components are shown in green. "STOP" components are shown in red. All other components are shown in blue. The values are "damped", so they do not change too quickly. Ratios to theta can be shown by selecting the bottom text with the mouse. In 2-channel mode, it shows both channels.

Numbers	5	
C N	HAN1	RATIO
v	ULIS	
USER:		1.0
GAMMA:		2.1
HIBETA:		0.6
BETA:	6.4	0.8
LOBETA:		1.0
ALPHA:		0.9
THETA:		1.0
DELTA:		1.3
Hide Ratios		

Display: Thermos **Display Type:** Display **Requirements:** Basic amplitude training **Brief Description:** This window shows each of the major EEG component intensities as a bar graph with real-time response. "GO" components show a "+" in the bottom of the thermometer. "STOP" components show a "-" in the bottom of the thermometer. Un-trained components will not be shown in this screen.

Display: Waves

Display Type: Display **Requirements:** Basic amplitude training **Brief Description:** This window shows the raw and filtered EEF waves in a resizable window. The display scal can be changed using the "+" and "-" keys, as usual. When two channels are used, both channels appear.





Display: Lissaview **Display Type:** Display **Requirements:** Basic amplitude training **Brief Description:** This is a 2-dimensional display, using "rate of change" in place of the time axis. The vertical axis is exactly the same as in the EEG waveform display, while the horizontal axis is the first derivative of the EEG signal.



Display: BoxFlow **Display Type:** Game **Requirements:** Basic amplitude training **Brief Description:** This is similar to that used in other common displays. The center box gets wider and narrower, so you can see the past history of the enhance band. You want it wide, to meet the threshold. The outer boxes are the "inhibits" and you want them small. If they get large, they encroach on the inner box, which inhibits feedback. When two channels are used, two "BoxFlows" appear.

Display: MiniBMirr **Display Type:** Display **Requirements:** Basic amplitude training **Brief Description:** This window shows the BrainMirror in a resizable window. It uses the FFT to show the current EEG component values. The BrainMirror window also works in 2-channel mode.





Display: BrainScape **Display Type:** Display **Requirements:** Basic amplitude training **Brief Description:** BrainScape is designed to provide a 3-dimensional time/frequency representation of EEG signals, using a combination of frequency analysis, spline interpolation, and color-coded representation of signal amplitude. When two channels are used, a BrainScape for both channels appears. In two channel mode, when Sum/Difference channel mode is used, the two



signals viewed are transformed into their sum and difference signals, and displayed in the usual manner.

Display: TrendView

Display Type: Display **Requirements:** Basic amplitude training **Brief Description:** This shows the current and past activity of a component, in a plot of value vs. time, over a period of 30 seconds. After the plot reaches 30 seconds, it clears and redraws. The plot window displays only those components that are currently selected. When two channels are used, both appear on the display.



Display: LongTrend

Display Type: Display

Requirements: Basic amplitude training **Brief Description:** This shows the current and past activity of a component, in a plot of value vs. time, over a period of 30 minutes. After the plot reaches 30 minutes, it clears and redraws. The plot window displays only those components that are currently selected. When two channels are used, both appear on the display.



Display: Circles **Display Type:** Game **Requirements:** Basic amplitude training **Brief Description:** The Circles Window is similar to the BoxFlow, in that the center feature shows the main "uptrained" component, while the outer features show the high and the low "inhibits". When two channels are used, this window adapts, to show the two "uptrained" components as an ellipse (width represents channel 1, and height represents channel 2). In addition, the total of 4 inhibits are



shown in the corners. Channel 1 inhibits are shown on the left, and channel 2 inhibits are shown on the right

BMr Flash Player



BMr Flash Player Control Menu Display

- 1. Game Drop-Down Box Drop-down box where you can choose the game that you would like the Flash Player to use.
- Protocol Type Drop-Down Box Drop-down box where you can choose the type of Protocol you are using, whether it's a Standard BrainMaster, LZT-Live Z-Score, or RTZ-Real Time Z-Score.
- **3. Game Type Drop-Down Box** Drop-down box where you can choose the Game Type that the Flash Player is using.
- 4. Display Window Display Window where the Flash Player Game is played.
- 5. Event Wizard Readings Displays the information that is coming in from the Event Wizard.

Using BMr Flash Player

 Setup the training that you would like to use, or choose an existing folder that you would like to us, and click the "Run The Next Session" Button.

2. After you start the Session, click the "Window" Button.

3. In the Window Launcher Menu, click the "Flash Player" Button, located in the BMr Macromedia Section.



🔅 Training/Control Screen - Brain	Master 3.7i	() () () () () () () () () () () () () (
GO STOP Window C	lock: 19.54	Points: 006	Close
	17.54		
SIMULATION MODE (NOT LI	VE) SII	MULATED EEG	
a character in our any state	An a solar taxons ()		10.000
հաչվերկան է ուներություն։ Theta:4.0000-7.0000		Thresh = 5.9 μ V	% Time = 3
		ss	
Beta:15.0000-20.0000	Avg Ampl. = 3.3 uV	Thresh = 3.0 uV	% Time = 9
Hibeta:20.0000-30.0000	Avg Ampl. = 3.5 uV	Thresh = 11.8 u¥	% Time = 1
alforente antimation and	htterrown and the second s	www.www.www.www.	and the first state of the stat
3 20 9 60	1 10		
	11.0 13.1		
5.9_7.2 3.0_5.5			
Theta B <u>eta</u>	Hibeta		.

Win	dow Launcher						×
Пг	Popups		1 6	BMr Multimedia –		BMr M	acromedia
	X-Wing	BoxFlow		MultiMedia Play	er	FI	ash Player
	BrainMan	Mini BMirr		DVD Player			
	2D Spectral	BrainScape		-Audio/Video Interfa	aces -	oitibhA-	nal Software —
	Numbers	TrendView		AVI Extensions	6		Browse
	Thermos	LongTrend					
	Waves	Circles		Contributed Game	S Dua	ala	Cases
	LissaView	ReturnMap		Jim Zdunek's	Cric	zie ket	BugRun
				Cancel			ОК

The Flash Player will now be running with the BrainMaster Software. You will be able to tell this has been successful, as the FlashPlayer Player for BrainMaster for BrainMaster Window will open, and the chosen Video file will play. Please make sure for proper use, the the Protocol Type, as well as the Game Type are properly set for optimal performance.



Flash Player Games

Color Quest



- Blimp Once a blimp has launched, the user will cause it to move every time its green progress bar fills up. When the blimp moves, it will move in the direction of the Colorful Ring(accuracy is dependent on user feedback). When the blimp hits the ring, it will change color. After 10 hits, the blimp will "spin out", causing it to disappear, restoring color to the game screen. There are 6 total blimps.
- 2. Launch Pad When there is no blimp on-screen, the user must fill the green progress bar in the top-left corner. Once this happens, a new blimp will launch from the Launch Pad. Also, the pink lights on the Launch Pad will illuminate when the user meets the requisite feedback conditions.
- **3.** Colorful Ring This ring is the target of the blimp. When the blimp hits it, the blimp will change color. Also, the ring will spin when the user meets the required feedback conditions.
- 4. Progress Bars These progress bars measure the overall feedback of the user. The "rainbow" feedback bar, on the left, displays the user's relative feedback for the last 3 seconds (i.e.: A full bar means the user met conditions 100% for the last 3 seconds, a half-bar means the user has met conditions 50% for the last 3 seconds, etc.). The green progress bar accumulates over time. If the user does not meet required conditions, the green progress bar will begin to descend. Filling the green progress bar once corresponds to 3 seconds of 100% feedback.
- 5. Trophy Blimps As your blimp continually hits the Colorful Ring, three miniature models of your blimp will become visible, floating about in the background. They are purely aesthetic, and represent a visual reward for the user's hard work.
- 6. Progress Panel The Progress Panel has six blimp-shaped outlines. As the user "completes" each of the six blimps, the blimp-shaped outline will be filled in with a gold blimp "token". This panel lets the user know how many blimps are left before the game is finished, as well as representing a visual reward for the user.

Similar Games – None



Opening Screen

- 1. Select Cat Section Section where you select the cat who will run according to the user feedback.
- 2. Race Length Section Section where you choose the length of the race. The non-user cats will take about this long to complete the race. Depending on the difficulty level and user feedback, the user could complete the race in a wide range of times. If the user meets the difficulty level consistently, they can be expected to take about as long as the non-user cats.
- **3.** Difficulty Setting Section where you set the difficulty. The difficulty corresponds to the percentage of client feedback that will put the player cat about "on par" with the race competition. The default value is 50%. For example: at a difficulty level of "25", the client will have to meet the required conditions about 25% of the time to keep up with their opponents in the race. As the client meets conditions more consistently, the chance of the client winning will also increase. So, in the case of "25", a client providing 35% feedback would have a good chance of winning the race.
- **4.** Sound On/Off Section Sections where you can control the sound settings for the game. The sounds act primarily as reward feedback, and appear in 5 different places during the game:
 - a. At the games start
 - b. At the result screen after a win
 - c. When the user earns the Monkey Trophy
 - d. When the user earns the Elephant Trophy
 - e. When the user reaches the nighttime scenario
 - f. When the user wins after completing the nighttime scenario
- 5. Start Race Button Click to begin the game after all settings are set to your desired settings.



- 1. Sun/Moon Graphics This graphic will move through the sky as you win more races. Eventually, when the sun passes the mountains on the west side of the screen, day turns into night, and the process begins again with the moon.
- 2. Trophies Graphics As you gain points, trophies begin to appear. When the client meets feedback requirements, the trophies animate. Each stage has nine trophies, with three models. For the daytime, these are the ladybugs, hummingbirds, and monkeys. For the nighttime, these are bees, doves, and elephants.
- 3. Race Track Borders When the client meets feedback requirements, the borders of the race track will light up around the players selected cat.
- 4. Statistics Section Here, you can see the user's performance for that game.

Similar Games – BrainCats, BrainCats 3D, Blimp Race, Blimp Race 3D

BrainMan 2



- 1. Automatic Gameplay Selection Click to choose the Automatic Gameplay mode. This is more akin to the original BrainMan for BrainMaster. BrainMan will move automatically across the board. His movements are a direct response to the user's feedback. In addition, the user's feedback over the last six seconds will govern the "intelligence" of BrainMan's AI, with a more consistent feedback resulting in a more effective BrainMan.
- 2. Manual Gameplay Selection Click to choose the Manual Gamelay mode. This mode boasts a more arcade-style of gameplay, with the user directly controlling the movement of BrainMan.



Training Screen

- 1. BrainMan This is BrainMan. He moves according to the feedback of the user. If the user does not meet specified feedback requirements, BrainMan will not move.
- 2. Pills When all the pills on a stage have been eaten, BrainMna will move on to the next stage.
- 3. Ghosts These familiar foes begin to freely move about the screen on Stage 3. Unlike the ghosts that you are used to, these pose no threat to BrainMan. They are extra points, and can be eaten. If the client is meeting the requirements, then the Ghosts will be a blue color and will be able to be consumed. They will turn in to a set of eyes and have to return to their "base" to regenerate.. If the client is not meeting the training requirements, then the Ghosts will be their normal colors. If during this time, they make contact with BrainMan, they will pass through him.
- 4. **Power Pill –** The Power Pill delivers a reward sound to the client, and has a small chance of increasing BrainMan's speed for the duration of the level.
- 5. Maze In this version, even the maze borders respond to the feedback. As the client meets requirements, the borders will become brighter and more saturated. Conversely, as the clinet fails to meet requirements, the maze will grow dark.
- 6. Al Level The Al is the controller of BrainMan's movement. It is based on a combination of three things: the client's relative feedback, the client's progress through the game, and the client's progress through the level. As these values increase, you will notice the Brain begin to "fill up". This means that BrainMan will actually become smarter, and hunt pills more effectively.
- 7. Speed Level This is self-explanatory. Much like the AI Level, it is governed by both the client's relative feedback and progress through the game. It does not however, measure progress through the level. Instead, it has a chance to temporarily increase when the user eats a power pill.
- 8. Score This number is raised by eating Pills, Fruit, and Ghosts.
- **9.** Lives These do not affect gameplay. Rather, they function as "trophies". The user receives one life for every 8,000 points sored.
- 10. Fruit Each level boasts a particular kind of Fruit. It will appear in the center of the game board for a brief interval of time during every level. They can be eaten for extra points.
 Similar Games BrainMan

BrainPlanets



- 1. BrianPlanets The BrainPlanets are created when the trainee meets the training criteria continuously for a certain period of time(approx.. ½ second). The Planets are moving quickly when the criteria are met, and slow down otherwise. The number of cells reflects the success in keeping in state over a period of time. If the trainee falls out of state(or has inhibits) for a period of time(approx. 1 second), one planet will disappear. 10 Planets create a Solar System, and all planets disappear and the client begins to build a Solar System again.
- 2. Solar System Counter This box counts the amount of Solar Systems that have been created.
- 3. Planet Counter This box counts the amount of Planets that have been created.

Similar Games - BrainPlanet1lite, BrainPlanets2, BrainPlanets2lite, BrainCell



- 1. Enhance Box Shows a box that represents the enhance band. This will increase and decrease in size horizontally, depending on your enhancement training.
- 2. Low Inhibit Box Shows a box that represents the low inhibit band. This will increase and decrease in size vertically, depending on your low inhibit, and will also have an effect on the Enhance Box. When the inhibit goes above the threshold, they cause the Enhance Box to become dimmer. When both Inhibit boxes are above threshold, the Enhance Box is maximally dark.
- **3. High Inhibit Box -** Shows a box that represents the High inhibit band. This will increase and decrease in size vertically, depending on your high inhibit, and will also have an effect on the Enhance Box. When the inhibit goes above the threshold, they cause the Enhance Box to become dimmer. When both Inhibit boxes are above threshold, the Enhance Box is maximally dark.
- Points Earned Box Box that displays the current amount of points that the client has earned during their training.
 Similar Games None.

BMrMultiMedia(BMrMMP) Player Control Menu Display

Multimedia Control for BrainMaster
1 Animation c:\VFviewer\Canyon.avi
 None Play continously while above threshold Show a frame for each point. Set Refractory Period to 1.0 seconds Modulate Contrast Modulate Zoom
2 Music None Modulate Sound
File C: WFplayer \CoolFunky.mid
CD Play track 1 through track 1
3 Resolution 4 Window Mode 5 CPU Usage Control ○ 640x480 ○ 800x600 ○ 1024x768 4 Window Mode 5 CPU Usage Control 30 ★ Max refresh per sec
6 Play 7 Close

- 1. Animation Section Section where you can choose what type of animation being viewed, and the type(if any) modulation is occurring. In order to choose a different animation, you can do so by clicking the "..." button.
- 2. Music Section Section where you can choose what type of music is being played, and whether or not audio modulation will occur. In order to choose a different audio file, you can do so by click the "..." button.
- **3.** Resolution Section Section where you can adjust the resolution the animation file is being displayed.
- 4. Window Mode Section Section where you can adjust whether the animation is being displayed as a Window, or in Full Screen Mode.
- 5. CPU Usage Control Section where you can control the Max refresh rate per second.
- 6. Play Button Click to confirm settings and launch BMr MultiMediaPlayer.
- 7. Close Button Click to close BMr MultiMediaPlayer Control Menu.

Acceptable Media Files: MPEG, AVI, WMV

Acceptable Audio Files: MIDI, MP3, WAV

Using BMrMMP

 Setup the training that you would like to use, or choose an existing folder that you would like to us, and click the "Run The Next Session" Button.

2. After you start the Session, click the "Window" Button.

3. In the Window Launcher Menu, click the "MultiMedia Player" Button, located in the BMr Multimedia Section.



交 Training/Control Screen - BrainMaster 3.7i							
GO STOP Window (Clock: 19:54	Points: 006	Close				
SIMULATION MODE (NOT LIVE) SIMULATED EEG EEG CHANNEL 1: C3: Avg Ampl. = 30.9 uV Base: 0							
mannound	www.www.www.www.www.www.www.www.www.ww						
Theta:4.0000-7.0000	A∨g Ampl. = 1.8 uV	Thresh = 5.9 uV	% Time = 3				
Beta:15.0000-20.0000	Avg Ampl. = 3.3 uV ለ//∧ለ//ለለለለ		% Time = 9 ₩/////				
Hibeta:20.0000-30.0000	Avg Ampl. = 3.5 uV	Thresh = 11.8 uV	% Time = 1 ለሌሌላ				
3 20 9 60							
5.97.2 3.05.5 Theta Beta	11.8—-13.1 () Hibeta						

Wir	dow Launcher						×
	Popups		1 [BMr Multimedia –		BMr M	acromedia
	X-Wing	BoxFlow		MultiMedia Play	er	FI	ash Player
	BrainMan	Mini BMirr		DVD Player			
	2D Spectral	BrainScape		Audio/Video Interfa	aces-	Additio	nal Software
	Numbers	TrendView		AVI Extensions	5		Browse
	Thermos	LongTrend				_	
	Waves	Circles		Contributed Game	s Puz	zle	Space
	LissaView	ReturnMap		Jim Zdunek's	Cric	ket	BugRun
			Ţ	Cancel			OK

 Setup the Controls for the BMrMMP as you would like them to react. When your settings are as you would like them, click the "Play" Button to continue.

Animation	r\Mousetran month	water sound mon			
None Play continously while above threshold Show a frame for each point. Set Refractory Period to Modulate Contrast Modulate Zoom					
Music None File C:\VFplayer CD Play track	'\Vivaldi Mandolin Co 1 ▲ throug	V Mi oncerto.mp3 h track 7 ↓	odulate Sound		
Resolution 640x480 800x600 9 1024x768	Window Mode Windowed Full Screen	CPU Usage Control	fresh per sec		
	Play	Close			

You have now set up the MultiMedia Player for use with the BrainMaster Software. You will be able to tell this has been successful, as the Multimedia Player for BrainMaster for BrainMaster Window will open, and the chosen Video file will play.



144 44 1			H H I	234	5 6	Min
Title: 0	Chap	ter: 0	8	Modulate Video	9 Volume	Brightness
Duration	n: 00:00	0:00		Modulate Audio		10
Time: 00	0:00:00	8		Pause/Unpause		
-					313	- H

- 1. **DVD Basic Controls –** Basic DVD Controls(Skip Back, Rewind, Pause, Play, Stop, Fast Forward, and Skip Forward).
- 2. **Root Menu/Resume Button –** Click to switch from to the Main Menu, or back to your original position.
- 3. Full Screen Button Click to Expand the DVD Window to Full Screen Mode.
- 4. Step Forward Button Click to step through the different Title Screens.
- 5. **Save Bookmark Button –** Click to create a Bookmark for the Trainee Folder that you are currently using.
- 6. **Restore Bookmark Button –** Click to restore a Bookmark for the Trainee Folder that you are currently using.
- 7. Disc Information Displays the Chapter Information, Duration and Time for the DVD.
- 8. Modulate Check Boxes Section where you can choose the type of Modulation(if any).
- 9. Volume Control Controls the Volume for the BMrDVD Program
- 10. **Min Brightness Control –** Controls how low the software modulates when the client is not meeting criteria.
- 11. Scroll Bar Use to Scroll through the DVD with-out skipping or fast forwarding.

Using BMrDVD

 Setup the training that you would like to use, or choose an existing folder that you would like to us, and click the "Run The Next Session" Button.

2. After you start the Session, click the "Window" Button.

3. In the Window Launcher Menu, click the "DVD Player" Button, located in the BMr Multimedia Section.



交 Training/Control Screen - Brain	Master 3.7i	2						
Data Display Freq.Bands Colo	r <u>S</u> ound	A Pointe	006	Close ^				
			000					
SIMULATION MODE (NOT LI	SIMULATION MODE (NOT LIVE) SIMULATED EEG							
EEG CHANNEL 1: C3: Avg A	mpl. = 30.9 uV B	ase: O						
www.www.www.www.www.	waren warden warden war	mann	anta May Markar /	WWW 4.0 sec.				
Theta:4.0000-7.0000	Avg Ampl. = 1.8	uV Thre	sh = 5.9 uV	% Time = 3				
				, <u> </u>				
Beta:15.0000-20.0000	Avg Ampl. = 3.3		sh = 3.0 uV	% Time = 9				
Hibeta:20.0000-30.0000	Ava Ampl. = 3.5	uV Thre	viv sh = 11.8 uV	% Time = 1				
alforante-amiliaande-amiliaande-amiliaande-amiliaande-amiliaande-amiliaande-amiliaande-amiliaande-amiliaande-am	hterrowed water	MMMM	www.www.www.	v Mala				
3 20 9 60								
	11.8-13.1							
5.9_7.2 3.0_5.5								
Thoto Roto	Hibata							

Win	dow Launcher		
Г	Popups		BMr Multimedia BMr Macromedia
	X-Wing	BoxFlow	MultiMedia Player Flash Player
	BrainMan	Mini BMirr	DVD Player
	2D Spectral	BrainScape	
	Numbers	TrendView	AVI Extensions Browse
	Thermos	LongTrend	ليستعمل المستعمل
	Waves	Circles	Contributed Games
	LissaView	ReturnMap	Jim Zdunek's Cricket BugRun
			Cancel OK

4. Click the "Play" Button or the "Restore Playback" Button to continue.

😵 BmrDVD	X
Itt + II + II + II + III + III + IIII + IIII + IIIII + IIIIII	Volume Brightness

You have now set up the DVD Player for use with the BrainMaster Software. You will be able to tell this has been successful, as the BmrDVD Video Window will open, and the DVD will play.





- Band Drop-Down Boxes Drop-Boxes, where you can choose which bands you would like use for the training. PLEASE NOTE: EEGAudio is typically used for Alpha/Theta Training, but is versatile enough to be used with any type of protocol that includes two enhance("Go") components, in which it is desirable to inform the trainee of their relative size, as well as when either of the goes above threshold.
- 2. Threshold Boxes Display boxes that show the current Threshold values for the bands chosen from the Band Drop-Down Boxes.
- **3.** Value Boxes Display boxes that show the current value for the bands chosen from the Band Drop-Down Boxes.
- 4. Damped Value Boxes Display boxes that show the damped(averaged) value for the bands chosen from the Band Drop-Down Boxes.
- 5. Above Thresh. Boxes Display boxes that show the value that shows the amount that the component is currently above threshold(negative if below) for the bands chosen from the Band Drop-Down Boxes.
- 6. Inhibited Box Displays whether or not any inhibits are active.
- **7.** Start/Stop Session Button Click when all settings are proper to run the EEGAudio Program.
- 8. Change Sounds Button Click to change the sounds that are coming in for each band, as well as the background for each band.
Using EEGAudio

 Setup the training that you would like to use, or choose an existing folder that you would like to us, and click the "Run The Next Session" Button.

2. After you start the Session, click the "Window" Button.



	ainMaster 3.7i			
Data Display Freq.Bands O	olor <u>S</u> ound			
GO STOP Window	Clock: 19:5	4 Points:	006	Close 📤
SIMULATION MODE [NOT	LIVEJ	SIMULATED	EEG	
EEG CHANNEL 1: C3: Av	g Ampl. = 30.9 u∀ ⊟	ase: O		
mannahanan	Monorman	manna	~.M. y.,-Whenharly~	W/ 1.0 sec.
Theta:4.0000-7.0000	Avg Ampl. = 1.8	uV Thresh	= 5.9 uV	% Time = 3
			<u> </u>	, A., A.
Beta:15.0000-20.0000	Avg Ampl. = 3.3	uV Thresh	= 3.0 uV	% Time = 9
AA- AA	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	www.www.ww	film fractions	₩₩₩₩
Hibeta:20.0000-30.0000	Avg Ampl. = 3.5	uV Thresh	= 11.8 uV	% Time = 1
	and the first of the second of	<u>no hhanna daanadh</u>	AdadAAAAAAAAA	<u> </u>
3 20 9 60	1 10			
5.9_7.2 2.0 _5.	11.8-13.1			
	— ()			
Theta Beta	Hibeta			~

3. In the Window Launcher Menu, click the "AVI Extensions" Button, located in the Audio/Video Interfaces Section.



4. The following menu will open. Double-Click "EEGAudio.exe" to open the EEGAudio program.

rganize * Include in libr	ary Share with Burn New folder				- H •	0	- 6
Fevorites	Name	Date modified	Туре	Size			
Recently Changed	8 531-312_EEGAudie_v1.0_5-1-2011 - Shortcut	5/13/2011 3:20 PM	Shortcut	2.68			
🇼 Public	🚼 BMr MMP Multimedia Player for BrainMas	6/27/2005 9:45 PM	Shortcut	1.02			
E Desktop	BMr MMP Multimedia Player for BrainMas	6/10/2005 11:25 AM	Shortcut	1 KB			
😹 Downloads	dvd ripper software installer	7/1/2005 5:56 PM	Application	1,495 KB			
J Drapbox	dowebsetup	6/28/2005 11:58 PM	Application	309 KB			
St. Recent Places	EEG Audio Documentation	7/26/2004 8:19 PM	Shortcut	1.108			
	A EEG Audio	7/24/2004 9:07 PM	Shortcut	1 KB			
Libraries	G-Force_300_Platinum Installer	6/27/2005 10:43 PM	Application	2,883 KB			
C Documents	Microsoft DirectX 9.0c Web Site	6/28/2005 11:51 PM	Internet Shortcut	1 KB			
Music	NFviewer Dolphin Demo	6/27/2005 9:09 PM	Shortcut	1 108			
Pictures	NFViewer	6/27/2005 9:05 PM	Shortcut	1 KB			
Videos	SoundSpectrum.com (provider of license f	6/28/2005 13:25 PM	Internet Shortcut	1.48			
Computer							
AL MINARTA (C)							
DATA (D)							
- Removable Dick (M)							
At-Web Ster on MCM							
Network							

5. Setup the sounds and bands as you would like them. When the set-up is complete, click the Start Session Button.



You have now set up the EEGAudio for use with the BrainMaster Software. You will be able to tell this has been successful, as EEGAudio will be having numbers, and you have chosen will be playing as the requirements are met.



Activating for the BrainMaster 3.0 or Discovery Software

PLEASE NOTE: ANI Z-Score DLL can only be activated on 2 Computer Systems. Please be sure before activating, that you are doing this on the system that you want this to be on

1. From the Setup/Home Screen, click the Folder Selections Button

Welcome to	BrainMaster 🛛 🙆 过 츛	LOGIN OK: SN: 30342 EXP DATE: 12/31/2010
Current Trai	nee/Study Folder:	CLINICAL LICENSE
Trainee ID:	Mini-Q2 - 2Chan Assesment 9 Position	Login
Trainee Name:	Mini-Q2 - 2Chan Assesment 9 Position	s Folder Selections
Comment:	Mini-Q2 - 2Chan Assesment 9 Position	IS
lext Sessio	n Number: Total Sessions Availabl	Run The Next Session
	2 40	
Training	screen is currently: Not Running	View or Change Settings
E.da	Product Manuale	Deview Secolar Devulte

2. From the Select Trainee/Study Folder Menu, click the Create New Folder Button

[+]	*	
[0102t5t6E0]		Create New Folder
[Alpha1]		create New Folder
[Alpha2]		
[alpha4] [AlphaThetaStandard]		1
[AlnhaX]		Folder Notes
[AMPplusCOH]		
[AtkinsonTest]		
[blah]		On a star Librarian
[Bmirror]		Session Librarian
[BReview]		
IChinTest	200	
[d]		ОК
[Daniel S F3 F4 P3 P4 zscore]	- L	
ile Name (Trainee ID):		
Mini-Q2 - 2Chan Assesment 9 Positions\		Sessions Used:
rainaa Nomo'		1
dini 02 2Chan tasaamant 0 Desitions		May Seccione
Ampoz - zonan Assesment 3 Positions		Max ocasiona.
		40
MINFUZ - ZUNAN Assesment 9 Positions	Edit Comment	
Session Genie		

3. Create a folder named ZscoreInstall, that contains a Z-Score protocol. After the folder is created, click View or Change Settings Button. On the Setup Options Menu, click the Session Control Button. On the Session Control Menu, make sure that the Session Type is set to Simulation. Once this is complete, click OK on the Session Control Menu, USE THESE SETTINGS on the Setup Options Menu, and click the Run The Next Session Button



4. Click GO on the Training/Control Screen, and confirm the following screens



5. When the following screen appears, click I accept the license agreement option, and click OK to continue





6. When the following screen appears, click the Create Key A File Button. This will create a text document

🕼 4 Channel ANI Biofeedback Security Key
Security Key A
5UH4 BYLU ZAW9 7FGW M2TS RHPW
5UH48YLUZAW97FGWM2TSRHPW
Security Key B
<u>C</u> reate Key A File
QK <u>Cancel</u>

 Save the document to the folder that was created named BrainMasterInstalls. E-Mail the document to

<u>qeeg@appliedneuroscience.com</u>. Once the Key-B is created, it will be E-Mailed to you. In order to put the Key-B into the system, you will need to run another session with the folder created to receive our Key-A

BrainMaster 3.0 Software User Manual Upgrading from 4 to 19channel Z-Score training for Discovery

PLEASE NOTE: In order for the upgrading process to be successful, you will need to assure that you are running the latest Discovery software. You will also need to assure that you have received your key from BrainMaster Technologies that is enabled for 19Channel Z-Score training.

1. Choose ZscoreInstall from the Folder Selection Menu

Setup/Home Screen - BrainMaster Discovery 1.x.x										
Welcome to BrainMaster Discovery LOGIN OK: SN: 60178 UNLIMITED USE Current Trainee/Study Folder: CLINICAL LICENSE										
Trainee ID: ZscoreInstall										
Login										
Trainee ZscoreInstall Folder Selections										
Comment: Folder created to gather Security Key-A	Run The Next Session									
Next Session Number: Total Sessions Available:	View or Change Settings									
Training screen is currently: Not Running EDF Browser										
Exit Product Manuals click here to refresh this screen	Review Session Results									

- Press View or Change Settings. In the Setup Options Menu, choose Data Channels. In the Data Channels Menu, click Discovery Acquisition Control. In the Discovery Acquisition Menu, set Training Method from 4 to 19 channels. After you have done this, choose more than 4 channels to be LZT Trained. Click OK/USE THESE SETTINGS until you have returned to the Setup/Home Screen
- Click Run the Next Session, then click GO. Confirm through the following screens, and you will receive a pop-up stating "Invalid passkey for number of channels selected. Click OK, and The ANI License agreement will pop-up. Click I Accept, and click OK to continue





4. When the following screen appears, click the Create Key A File Button. This will create a text document

🕼 4 Channel ANI Biofeedback Security Key
Security Key A
5UH4 8YLU ZAW9 7FGW M2TS RHPW
5UH48YLUZAW97FGWM2TSRHPW
Security Key B
<u>C</u> reate Key A File
QK <u>C</u> ancel

 Save the document to the folder that was created named BrainMasterInstalls. E-Mail the document to <u>qeeg@appliedneuroscience.com</u>. Once the Key-B is created, it will be E-Mailed to you. In order to put the Key-B into the system, you will need to run another session with the folder created to receive our Key-A

								_ `				<u> </u>	<u>a</u>				<u> </u>	<u> </u>			
😤 Training/Control Screen - Br	ainMaste	er 3.7i																			
Data Display Ereq.Bands ⊊	olor Se	ound								-											24
GO STOP Window	Clock:		30.	31	Points:		000			Clo	se										*
			57.		- sector and	<u>ii</u>	000		-	-											
	16	10	1P	26	2n 2	P 36	30	30	4G	4D	AD.		Dur: 60	.0 secs							
Delta (1.0000-3.0000	4.3	3.7	7.3	3.8	3.1	5.6 3.	6 3.5	9.9	3.7	3.1	9.2										
Theta (4.0000-7.0000] 5.4	4.7	15.3	4.7	4.9 1	3.2 5.	8 4.5	8.9	5.6	4.6	16.5	100	· —						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	i	
Alpha (8.0000-12.000	16.6	5.3	15.3	6.6	5.3 1	8.4 5. 0.8 E	0 5.0 a c a	11.2	5.9	5.0	12.7										
Beta (15.0000-20.00	1 7.5	6.1	13.2	7.0	6.0 1	4.3 7.	7 6.0	17.9	6.6	5.9	11.7										250
Hibeta (20.0000-30.00	1 9.5	8.1	20.0	9.2	8.1 2	21.4 9.	1 7.9	20.8	9.5	7.6	21.0										
Gamma (38.0000-42.00	1 2.3	1.9	0.0	2.5	2.0	0.0 2.	3 1.7	0.0	2.4	1.9	0.0								and the same process	1	
User (50.0000-55.00	10 417	4.7	9.0	9.9	4.4	4.0 4.	, 9.0	0.0	9.0	4.0	4.7								Mandappener	84.00	
VALUE A		RU	ILE VA	LUE B	3 TH	EN:	VA	LA	VAL B	% T	IME						1		1 d. a. 1.	2	
x=PercentZOK[UTHR];		GI	X÷	CT:	ton	ie Ibiog	9	0.00	84.80	18	3.8						B	A. H. A.A.	1	~	
x=UTHR:		GT	×=	UTHR	not	thing	2	.00	2.00	0	.0						ľ	NA MARY MAN	A		
x=E1F;		GT	0.5		not	thing	0	.00	0.50	18	3.5							different a			
CTANKS WA																					5
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1												0		4 10-						2.00	
6													Events	1-3:						4	
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Delta [1.0-4.0]	0.6 ภ ก	-0.7	-0.5) -U	1.2	-1.0	-1.Z		Della	11.0-4	1.UJ 8.D)		-0.8	-0.7	-0.6	-0.2	-1.1	-1.5			
Alpha (8.0-12.0)	0.2	-0.3		•		-0.8	-0.9		Alpha	(8.0-	12.0)		-0.4	-0.3		0.4	-0.9	-1.2			
Beta (12.0-25.0)	0.8	0.9					-0.2		Beta	12.0	25.0)		0.7	0.9				-0.4			
Beta 1 [12.0-15.0] Beta 2 (15.0-18.0)	0.5	0.6							Beta	1 [12, 2 115]	0-15.0J 0-18 m		0.3	0.5							
Beta 3 [18.0-25.0]	0.7	0.7							Beta	3 (18.	0-25.0		0.8	0.9							
Hi Beta (25.0-30.0)	1.0	1.0							Hi Be	ta (25	.0-30.0)	1.3	1.3							
Alpha 1 (8.0-10.0)	0.3	-0.3							Alpha	1 8.	U-10.0) L 0-1.2 0	1	-0.4	-0.3							
Delta (1.0-4.0)	1.1	-1.0	-0.7	-1	15	-1.2	1.5		Delta	11.0-4	1.01		-1.0	-0.8	-0.7	-0.3	-1.0	-1.5			-
Dena 1 10:4.0	1.1	-1.0	- 0.7		1.0	1.6	1.5		Dena	11.0~	1.01		-1.0	-0.0	-0.7	-0.5	1.0	- 140 C			

Z-Score Using PercentZOK

- 1. Z-ScorePZOK(White Line) This line is the Percent of Z-Scores with-in the defined range
- 2. Z-Score Threshold(Green Line) This line is the threshold for the Z-Scores. When the Z-Scores are below the threshold, the system will reward the client with the chosen reward. This is controlled by the "C" key.
- 3. Percent of Reward(Red Line) This line shows the percent time that the Z-Scores are greater than the Z-Score threshold.
- 4. Z-Score Range Definer(Orange Line) This line defines the range of Z-Scores that you are looking at. This is controlled by the "U" key.
- 5. Text Stats This gives you a text representation of what is occurring in the graph.
- 6. **Z-Scores** This shows a text representation of the Z-Scores. This is a "damped" change, which is not instantaneous. This is a more stable view of the Z-Scores.

💇 Training/Cont	rol Screen - Br	ainMast	ter 3.7i										Ŭ									- 6 💌
GO STOP	Window	Clock	ound	18.0	4 Poir	nts:	33	0	_	Clos	se								-	-	_	
	EL 4: P4: Nan ⁴⁴⁴ /Wa ¹ /m	linner	Ŵ	wyw	ne (ner	www.	Auto M	~~~~	w/17,14-1		when	wh	l'arailya	menne	ww	www	Mahyz-	wman	were way	martilling	and and a construction of the second s	9.8 sec.
Delta (1.1 Theta (4.1 Alpha (8.1) Lobeta (12 Beta (15 Hibeta (20 Gamma (28 User (30) VALUE A 6 x=E1re; x=C1Fr; x = ALLOK;)000-3.000)000-7.000)000-12.00 ,0000-20.0(.0000-20.0(.0000-20.0(.0000-35.0(.0000-35.0(1G)] 3.7)] 4.6)(5.9)(1D 3.0 4.9 5.5 4.8 2.5 4.8 8.4 2.5 4.8 GT GT GT LT	1P 20 4.1 4 17.1 5 14.9 5 9.7 5 13.0 6 22.3 9 0.0 2 4.4 5 x=C1 x=C1 x=C 0.5 0.5	G 2D 1.0 3.6 5.0 4.8 5.7 6.0 5.5 6.7 1.2 8.6 1.3 2.2 5.2 5.2 UE B T: THR: THR:	2P 5 8.0 3 10.3 3 15.8 9 9.0 7 16.4 8 21.2 2 0.0 2 4.5 THEN: tone nothing nothing nothing nothing	3G 31 3.8 3 4.9 4 5.4 4 5.4 5 5.4 5 6.9 6 8.6 8 2.2 2 4.9 5	3P .1 5.0 .8 12.3 .9 14.3 .9 14.4 .5 14.4 .4 10.0 .1 5.4 VAL A 62,29 2.00 -2.00 1.00 0.00 0.00	4G 3.6 5.2 2.5.9 5.7.2 5.9.2 2.3 4.9 VAL E 87.0 5.2 2.00 -2.00 0.50 0.50	4D 3.8 5.0 5.7 5.7 6.8 4.8 % TI 0 62 93	4P 7.8 17.5 10.0 12.1 15.0 22.2 0.0 2.5 IME 2.1 .0 .0 .0 .0 .0 .3 .1	100	Dur: 60	A H	jaylymyd	Villenry	en alla alla alla alla alla alla alla al	LAVAT Y	hindradh	hand and the second s	1 87.00 2 61.46 3	
7 SITES: 03 04 0	ECI 0	the	Bel	Bat/T	Bath	4 Batl	B Bat	G	SITE	S. D31	PAIECI	0	Events	1-4: Bel	Bat/T	Batlà	Bat/B	BattG			4 -2.00 5	
Delta (1.0-4.0) Theta (4.0-8.0) Alpha (8.0-12.0 Beta (12.0-25.0 Beta 1 (12.0-15 Beta 2 (15.0-18 Beta 3 (18.0-25)))).0)).0) j.0)	1.7 0.9 0.8 0.4 0.1 0.3 0.7	-1.3 -0.3 -0.2 1.2 0.8 1.0 1.4	-0.6	-0.6	-1.6 -1.0 -1.0	-1.5 -1.4 -0.5		Delt Thet Alph Beta Beta Beta	a (1.0-4 a (4.0-1 a (8.0-1 [12.0-1 1 (12.1 2 (15.1 3 (18.1	4.0] 8.0) 12.0] 25.0] 0-15.0] 0-18.0] 0-25.0]		-1.7 -1.1 -1.2 0.2 -0.1 0.1 0.6	-1.0 -0.3 -0.5 1.2 0.8 1.0 1.5	-0.4	-0.3 0.1	-1.5 -1.1 -1.2	-1.6 -1.7 -0.6				

Z-Score Using PercentZOKUL

- 1. **Z-ScoresPZOKUL(White Line) -** This line is the Percent of Z-Scores with-in the defined range.
- Z-Score Threshold(Green Line) This line is the threshold for the Z-Scores. When the Z-Scores are below the threshold, the system will reward the client with the chosen reward. This is controlled by the "C" key.
- 3. Percent of Reward(Red Line) This line shows the percent time that the Z-Scores are greater than the Z-Score threshold.
- 4. Z-Score Range Upper Range(Orange Line) This line defines the upper range of Z-Scores that you are trying to train down. This is controlled by the "U" key.
- 5. Z-Score Range Lower Range(Yellow Line) This line defines the lower range of Z-Scores that you are trying to train up. This is controlled by the "G" key.
- 6. Text Stats This gives you a text representation of what is occurring in the graph.
- **7. Z-Scores** This shows a text representation of the Z-Scores. This is a "damped" change, which is not instantaneous. This is a more stable view of the Z-Scores.

Event Wizard

Event Wizard Control Menu Display

_Event Number:	5 This Event Is: • Enabled C Disabled • Visibility:
Event Condition: IF: Use Equation: Delta Amplitude Constant: Damping Factor: 5	
Check Equation x=THETA/TTHR;	Sustained Reward Criterion Condition must be met for: 0 milliseconds 0 milliseconds
Index. In an Extern Mark Use Entered Value: Delta Image: Constant: Damping Factor: Image: Constant: Delta Image: Constant: Image: Constrol MMP Player Image: Constrol	 9 MIDI Sound Properties: Starting Note: 1A (55.0) ▼ 1 to 88 Instrument: 0 Piano 1 ▼ 128 choices Playing Style: Sustained ▼ Percus. or Sust Modulation: Amplitude ▼ Ampl. or Pitch Starting Loudness: Levet: 0 ▼ 0 to 128 Loudness Change Rate: 0 ▼ 0 to 20 Note Change Rate: 0 ▼ 0 to 20 Musical Scale (Mode): Chromatic ▼ 15 choices Musical Key: A ▼ C to B Flat
Scale Factor: 2 Offset: U Event Summary: Summary for Event 1: EVENT 1 IS CURRENTLY: ENABLED IF: EQN: x=THETA/TTHR; IS GREATER THAN Value: 1.0 THEN: Do Nothing	1.0Enable All Events 1Disable All Events 2 Data Dictionary 1.3 Clear All Events 14Show All Events Print All Events Help 15 Copy Event 16 Paste Event

- 1. Event Number Section Section where you choose which Event you are viewing.
- 2. Event Condition Section Section where you set the chosen Event Condition for operation.
- 3. Event Result Section Section where you set what the chosen Event does when the Event Condition has been met.
- 4. Event Trend Graph Section Section where you set the size for the Graph.
- 5. This Event Is: Section Section where you set whether the chosen Event is enabled or not.
- 6. Visibility Section Section where you set whether the chosen Event Graph will be visible or not, when the Trend Graphs are chosen for display.
- 7. Sustained Reward Criterion Section Section where you set how long the chosen Event Condition must be met to produce the selected Event Result.
- 8. Refractory Period Section Section where you set how long for a time before another reward is possible for the chosen event.
- **9. MIDI Sound Properties Section** Section where you can set the properties for MIDI reward feedback for the chosen Event.
- **10. Enable All Events Button** Click to enable all 16 Events.
- **11. Disable All Events Button** Click to disable all 16 Events.
- **12. Data Dictionary Button** Click to bring up the Data Dictionary.

BrainMaster 3.0 Software User Manual *Event Wizard Control Menu Display(Continued)*

1 Event Number: ・1 こ 2 こ 3 こ 4 こ 5 こ 6 こ 7 こ 8 こ 9 こ 10 こ 11 こ 12 こ 13 こ 14	C 15 C 16 C Disabled C Disabled G Visibility:
2 Event Condition: Constant: Dampi IF: Use Equation: Delta Amplitude Check Equation x=THETA/TTHR; RULE: IS GREATER THAN: Constant: Dampi Use Entered Value: Delta Image: Delta Check Equation x=1; Note: You must press "Check Equation" to check and save any changes made to equations Event Result: THEN: Do Nothing Image: Delta Control MMP Player Event Trend Graph Scale Factor: Image: Delta Imag	ing Factor: ▼ T Sustained Reward Criterion Condition must be met for: □ milliseconds Time between rewards is: □ milliseconds ■ ■ ■ ■ ■ ■ ■ ■ ■
Event Summary for Event 1: Summary for Event 1: IF: EQN: x=THETA/TTHR; IS GREATER THAN Value: 1.0 THEN: Do Nothing	IOEnable All Events 1Disable All Events 12 Data Dictionary I3 Clear All Events 14 Show All Events Print All Events Help 15 Copy Event 16 Paste Event 17 Cancel 18 Use Now 19

- **13. Clear All Events Button** Click to clear the data from all 16 Events.
- 14. Show All Events Button Click to show the Event Summary information for all 16 Events.
- **15.Copy Event Button** Click to copy the chosen Event.
- **16. Paste Event Button** Click to paste an Event that has been selected from the Copy Event Button.
- 17. Cancel Button Click to cancel any changes made, and exit the Event Wizard.
- 18. Use Now Button Click to accept all changes.
- **19.OK Button** Click to Exit the Event Wizard.

BrainMaster 3.0 Software User Manual Data Dictionary for the Event Wizard

Γ

User-defined bands	
Any component names may be used to access data, including user-defined variables.	band name: channel 1 amplitude (from digital filters) for 8 components e.g. "User1" or "EMG"
Any component name followed directly by the letter "T" will automatically access the current threshold from the protocol processor for that band.	channel 1 thresholds (from digital filters) for 8 components, e.g. "User1T" or "EMGT"
Note: User-defined bandnames will automatically override any built-in names. For example, if you define your own band called "D", then "D" will be used for your band, not the default D (Delta) band. This allows you to completely redesign the component band names and use all of your redefined band names in the Math Wizard.	
Standard 1-channel variables computed in real time usi system	ng BrainMaster built-in filter and protocol processing
D, T, A, L, B, H, G, U	channel 1 amplitude (from digital filters) for 8 components
DELTA, THETA, ALPHA, LOBETA, BETA, HIBETA, GAMMA, USER	channel 1 amplitude (from digital filters) for 8 components
DTHR, TTHR, ATHR, LTHR, BTHR, HTHR, GTHR, UTHR	channel 1 thresholds (from digital filters built-in autothresholder)
D1, T1, A1, L1, B1, H1, G1, U1	channel 1 amplitude (from digital filters) for 8 components
DELTA1, THETA1, ALPHA1, LOBETA1, BETA1, HIBETA1, GAMMA1, USER1	channel 1 amplitude (from digital filters) for 8 components
C1DA, C1TA, C1AA, C1LA, C1BA, C1HA, C1GA, C1UA	channel 1 amplitude (from digital filters) for 8 components
C1DF, C1TF, C1AF, C1LF, C1BF, C1HF, C1GF, C1UF	channel 1 modal frequency (from FFT) for 8 components
C1DE, C1TE, C1AE, C1LE, C1BE, C1HE, C1GE, C1UE	channel 1 percent energy (from FFT) for 8 components
C1DP, C1TP, C1AP, C1LP, C1BP, C1HP, C1GP, C1UP	channel 1 percent time over threshold (using digital filters)
C1DT, C1TT, C1AT, C1LT, C1BT, C1HT, C1GT, C1UT	channel 1 thresholds (from digital filters built-in autothresholder)
C1DV, C1TV, C1AV, C1LV, C1BV, C1HV, C1GV, C1UV	channel 1 variability (from digital filters)
Standard variables for channel 2	
D2, T2,DELTA2, THETA2,C2DA, C2TA,C2GV, C2UV	channel 2 repeats all channel 1 variables shown above that use a "1" e.g. D1, C1AF, etc., with the "1" replaced by "2"

Standard variables for channel 3		
D3, T3,DELTA3, THETA3,C3DA, C3TA,C3GV, C3UV	channel 3 repeats all channel 1 variables shown above that use a "1" e.g. D1, C1AF, etc., with the "1" replaced by "2"	
Standard variables for channel 4		
D4, T4,DELTA4, THETA4,C4DA, C4TA,C4GV, C4UV	channel 4 repeats all channel 1 variables shown above that use a "1" e.g. D1, C1AF, etc., with the "1" replaced by "2"	
Standard 1/2 channel cross-channel variables		
СТ	Coherence Threshold currently in use in built-in coherence processor. This will automatically track any changes in the coherence threshold.	
C1DC, C1TC, C1AC, C1LC, C1BC, C1HC, C1GC, C1UC	Coherence (currently selected type) between channels 1 and 2	
DCOH, TCOH, ACOH, LCOH, BCOH, HCOH, GCOH, UCOH	Coherence (currently selected type) between channels 1 and 2	
DPCOH, TPCOH, APCOH, LPCOH, BPCOH, HPCOH, GPCOH, UPCOH	"Pure" coherence between channels 1 and 2	
DTCOH, TTCOH, ATCOH, LTCOH, BTCOH, HTCOH, GTCOH, UTCOH	Similarity ("Training Coherence") between channels 1 and 2	
DSIM, TSIM, ASIM, LSIM, BSIM, HSIM, GSIM, USIM	Similarity ("Training Coherence") between channels 1 and 2	
DCOR, TCOR, ACOR, LCOR, BCOR, HCOR, GCOR, UCOR	"Spectral Correlation Coefficient" (SCC) between channels 1 and 2	
DCOM, TCOM, ACOM, LCOM, BCOM, HCOM, GCOM,	Comodulation (Sterman/Kaiser "SKIL" type) between channels 1 and 2	
C1DH, C1TH, C1AH, C1LH, C1BH, C1HH, C1GH, C1UH	Phase between channels 1 and 2	
DPHASE, TPHASE, APHASE, LPHASE, BPHASE, HPHASE, GPHASE, UPHASE	Phase between channels 1 and 2	
Values from other events:		
Events can read real-time data from other events. The events are processed in numerical order, so that the events are evaluated and act in order, e.g. Event 1 before Event 2, etc. Note that all events are checked for to see if any inhibits are generated, before events take action. All data passed between events are treated as double precision, floating-point numbers.		
E1A, E2A, E3A, E4A, E5A, E6A, E7A, E8A, E9A, E10A, E11A, E12A, E13A, E14A, E15A, E16A	values of "antecedent" variables in Events 1-16. These are the selected component values, or the values of the "x=" equation in the "IF" portion of the event design. Note: These are also the values of "In1", "In2", "In3", through "In16", in the Macromedia Flash Player for BrainMaster	

E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16	values of "antecedent" variables in Events 1-16. These are the selected component values, or the values of the "x=" equation in the "IF" portion of the event design. Note: These are also the values of "In1", "In2", "In3", through "In16", in the Macromedia Flash Player for BrainMaster
E1B, E2B, E3B, E4B, E5B, E6B, E7B, E8B, E9B, E10B, E11B, E12B, E13B, E14B, E15B, E16B	values of "condition" variables in Events 1-16. These are the selected component values, or the values of the "x=" equation after the "RULE" portion of the event design. Note: These are also the values of "In16", "In17", "In18", through "In32", in the Macromedia Flash Player for BrainMaster
E1F, E2F, E3F, E4F, E5F, E6F, E7F, E8F, E9F, E10F, E11F, E12F, E13F, E14F, E15F, E16F	values of flags for Events 1-16. These are 0 if the event's condition is not met, and 1.0 if the event's condition is met. These are also the values of "Flg1", "Flg2", through "Flg16" in the Macromedia Flash Player for BrainMaster
E1P, E2P, E3P, E4P, E5P, E6P, E7P, E8P, E9P, E10P, E11P, E12P, E13P, E14P, E15P, E16P	percent time meeting the condition for Events 1-16. These allow any events to "see" how often other events are "true" and use these values in rules. Values are returned as percent, e.g. between 0 and 100
Built-in Training Control Variables:	
INHF1, ENHF1, NUME1	channel 1 training flags: number of "stops" meeting criterion, number of "gos" meeting criterion, number of possible "go's"
INHF2, ENHF2, NUME2	channel 2 training flags: number of "stops" meeting criterion, number of "gos" meeting criterion, number of possible "go's"
ALLOK	indicates that all "gos" are met, and no "stops" exceed threshold. Use e.g. "x=ALLOK" for Event 5, to allow games like BrainMan and BrainCell to work automatically with any amplitude-based protocol that is set up using the standard "Training Protocol" setup.
Special Built-in Functions (note that "arg" can be any nu flags, etc. etc.	umber or variable name, including other Event Values,
Zor1(arg)	returns 0 if argument is <1, 1 otherwise. Note: when used with a fraction e.x. X/Y, returns 1.0 if $X \ge Y$, 0.0 otherwise
GT(arg)	returns 0 if argument is <1, 1 otherwise. Note: when used with a fraction e.x. X/Y, returns 1.0 if $X \ge Y$, 0.0 otherwise
Rng(arg1, arg2, arg3)	returns 0 if arg1 is within arg2 of arg3. E.g. Rng (C1AF, 0.5, 10) returns 1 if Channel 1 Alpha Frequency is within 0.5 Hz of 10 Hz. E.g. between 9.5 and 10.5 Hz, and returns 0 otherwise

Bnd(channel, low, high) or Band(channel, low,	returns total FFT energy in a band for a channel. E.g.		
high)	Bnd(2, 4, 6)		
	returns the energy in channel 2 between 4 Hz and 6 Hz		
Modf(channel, low, high)	returns modal frequency ("first moment") from FFI in a		
	band for a channel. E.g. Modf(2, 4, 6) returns the modal		
	frequency in channel 2 in band from 4 Hz to 6 Hz		
Peakf(channel, low, high)	returns peak frequency (highest amplitude) from FFT in a		
	band for a channel. E.g. Modf(2, 4, 6) returns the peak		
	frequency in channel 2 in band from 4 Hz to 6 Hz		
Special Built-in Constants:			
Schumann, SCH	Schumann Frequency = 7.81		
PHI, GOLDEN, GM	Golden Mean = 1.618		
PI	PI = 3.14159		
Standard Operators: Note: all arguments and parameter	ers are treated as double precision floating point values		
+ - * /	add, subtract, multiply, divide		
%	modulus returns the remainder after an integer division		
٨	power: $y = x^2$		
()	parenthetical gropuing, unlimited, e.g. (2 + BETA) /		
	THETA		
, ,	semicolon, needed at end of each equation in formula		
//	comment, single line		
/**/	comment, multiple lines		
Priority of Operators:			
()	highest		
Λ	next		
-x (unary minus)	next (e.g. y=-x^2, the ^ occurs before -)		
*/^	next		
+-	lowest		
Standard Built-in Functions:			
abs(x)	return absolute value		
acos(x)	calculate arccosine		
asin(x)	calculate arcsine		
atan(x)	calculate arctangent		
atan2(x,y)	calculate arctangent with two parameters to preserve		
	quadrant angle		
bessj(n,v)	Bessel function of the first kind. n is order and v is input		
	value		
bessy(n,v)	Bessell function of the second kind. n is order and v is		
	input value.		
Ceil(x)	Find integer ceiling		
Cos(x)	Calculate cosine		
Cosh(x)	Calculate hyperbolic cosine		

exp(x)	calculate exponential function "e to the x"		
floor(x)	Find integer floor		
hypot(a b)	calculate hypotenuse of right triangle		
min(x,y)			
min(x,y)	return smaller of two values		
	get pseudorandom number between 0 and 1		
sin(x)			
sinn(x)			
sqrt(x)	find square root		
srand(x)	initialize pseudorandom series		
tan(x)	calculate tangent		
tanh(x)	calculate hyperbolic tangent		
Z-Scores (using optional NeuroGuide Real-Time Extens	sions for BrainMaster)		
With this option, the equation processor can	Note: With 2 channels, N Z scores = $26 * 2 + 24 = 76$		
access real-time z-score computations based	targets (24 are connectivity-related). With 4 channels,		
upon the NeuroGuide normative database.	N Z scores = 26 * 4 + 6 * 24		
(www.appiledneuroscience.com)	= 248 targets (144 are connectivity-related).		
Augilable autout usbuggy (70 total terrate)			
	delte thete eleks hete heted heted heted warme		
ZAP1D, ZAP11, ZAP1A, ZAP1B, ZAP11, ZAP12, ZAP12, ZAP10, ZAP2D, ZAP2T	deita, theta, alpha, beta, beta1, beta2, beta3, gamma		
ZAP12, ZAP13, ZAP1G, ZAP2D, ZAP21, 7AD2A, ZAD2B, ZAD21, ZAD22, ZAD22, ZAD2C	Absolute Power 2 channels / 8 bands		
ZAFZA, ZAFZD, ZAFZI, ZAFZZ, ZAFZG			
ZRP1D, ZRP11, ZRP1A, ZRP1B, ZRP11,	delta, theta, alpha, beta, beta1, beta2, beta3, gamma		
ZRP12, ZRP13, ZRP1G, ZRP2D, ZRP21, ZRP3A, ZRP3P, ZRP31, ZRP32, ZRP32,	Relative Power 2 channels / 8 bands		
ZRFZA, ZRFZD, ZRFZT, ZRFZZ, ZRFZS, 7000			
	d/t d/a d/b d/a t/a t/b t/a a/b a/a b/a		
ZERTUT, ZERTUA, ZERTUB,	Power Ratios 2 channels / 10 ratios		
ZPR1BG ZPR2DT ZPR2DA			
ZAAD, ZAAT, ZAAA, ZAAB, ZAA1, ZAA2, ZAA3,	delta, theta, alpha, beta, beta1, beta2, beta3, gamma		
ZAAG	Amplitude Asymmetry 8 bands		
ZCOD, ZCOT, ZCOA, ZCOB, ZCO1, ZCO2,	delta theta alpha beta beta1 beta2 beta3 gamma		
ZCO3, ZCOG	Coherence 8 bands		
ZPHD, ZPHT, ZPHA, ZPHB, ZPH1, ZPH2,	delta theta alpha beta beta1 beta2 beta3 gamma		
ZPH3. ZPHG	Phase Difference 8 bands		
Additional Z Scores for 4-channel systems: (248 total ta	argets)		
ZAP3D, ZAP3T,, ZAP4D, ZAP4T	delta, etc. absolute power, channels 3 and 4		
ZRP3D, ZRP3T,, ZRP4D, ZRP4T	delta, etc. relative power, channels 3 and 4		
ZPR3DT ZPR3DA ZPR4DT ZPR4DA	d/t d/a etc. power ratios channels 3 and 4		
7AA12D 7AA12T	asymmetry between chans 1 and 2 (same as $7\Delta\Delta D$		
	ZAAT. etc)		
ZAA13D_ZAA13T	asymmetry between chans 1 and 3		
ZARTSD, ZARTST, asymmetry between thans 1 and 5			

ZAA14D, ZAA14T,	asymmetry between chans 1 and 4
ZAA23D, ZAA23T,	asymmetry between chans 2 and 3
ZAA24D, ZAA24T,	asymmetry between chans 2 and 4
ZAA34D, ZAA34T,	asymmetry between chans 3 and 4
ZCO12D, ZCO12T,	coherence between chans 1 and 2 (same as ZCOD, ZCOT, etc)
ZCO13D, ZCO13T,	coherence between chans 1 and 3
ZCO14D, ZCO14T,	coherence between chans 1 and 4
ZCO23D, ZCO23T,	coherence between chans 2 and 3
ZCO24D, ZCO24T,	coherence between chans 2 and 4
ZCO34D, ZCO34T,	coherence between chans 3 and 4
ZPH12D, ZPH12T,	phase between chans 1 and 2 (same as ZPHD, ZPHT, etc)
ZPH13D, ZPH13T,	phase between chans 1 and 3
ZPH14D, ZPH14T,	phase between chans 1 and 4
ZPH23D, ZPH23T,	phase between chans 2 and 3
ZPH24D, ZPH24T,	phase between chans 2 and 4
ZPH34D, ZPH34T,	phase between chans 3 and 4
PercentZOK(range) or PZOK(range)	Percentage of Z scores that are within "range" of normal.
	Returns value between 0 and 100
PercentZOKUL(upper, lower) or PZOKUL(upper, lower)	Percentage of Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100
PercentZAOK(range) or PZAOK(range)	Percentage of ABSOLUTE POWER Z scores that are within "range" of normal. Returns value between 0 and 100
PercentZAOKUL(upper, lower) or PZAOKUL(upper, lower)	Percentage of ABSOLUTE POWER Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100
PercentZROK(range) or PZROK(range)	Percentage of RELATIVE POWER Z scores that are within "range" of normal. Returns value between 0 and 100
PercentZROKUL(upper, lower) or PZROKUL(upper, lower)	Percentage of RELATIVE POWER Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100
PercentZPROK(range) or PZPROK(range)	Percentage of POWER RATIO Z scores that are within "range" of normal. Returns value between 0 and 100
PercentZPROKUL(upper, lower) or PZPROKUL(upper, lower)	Percentage of POWER RATIO Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100
PercentZASOK(range) or PZASOK(range)	Percentage of ASYMMETRY Z scores that are within "range" of normal. Returns value between 0 and 100
PercentZASOKUL(upper, lower) or PZASOKUL(upper, lower)	Percentage of ASYMMETRY Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100
PercentZCOK(range) or PZCOK(range)	Percentage of COHERENCE Z scores that are within "range" of normal. Returns value between 0 and 100

PercentZCOKUL(upper, lower) or	Percentage of COHERENCE Z scores that are below		
PZCOKUL(upper, lower)	upper limit, and above lower limit. Returns value between		
	0 and 100		
PercentZPOK(range) or PZPOK(range)	Percentage of PHASE Z scores that are within "range" of		
	normal. Returns value between 0 and 100		
PercentZPOKUL(upper, lower) or	Percentage of PHASE Z scores that are below upper		
PZPOKUL(upper, lower)	limit, and above lower limit. Returns value between 0 and		
	100		
PercentZCCOK(range) or PZCCOK(range)	Percentage of ALL CONNECTIVITY Z scores that are		
	within "range" of normal. Returns value between 0 and		
	100		
PercentZCCOKUL(upper, lower) or	Percentage of ALL CONNECTIVITY Z scores that are		
PZCCOKUL(upper, lower)	below upper limit, and above lower limit. Returns value		
	between 0 and 100		
	NOTE: ALL CONNECTIVITY Z Scores includes scores		
	for		
	ASYMMETRY, COHERENCE, and PHASE		
Controls for Atlantis Photic Output Controls			
x=SetPhoticRate(rate) or x=SPR(rate)	sets rate of photic stimulation to value given by "rate"		
Controls for DC and Slow Cortical Potentials Atlantis or	Discovery Training Channels		
x=DC1, DC2, DC offset for channel 1, 2, 1 unit = 4 microvolts			
x=DCE1, DCE2,	Enhanced DC for channel 1, 2, 1 unit = 1 millivolt		
Controls for Discovery Acquired Channels DC and Slow	Cortical Potentials		
x=DCA1, DCA2,	DC Acquired channel 1, 2, 24		
x=CA1DCP, CA2DCP,	DC Acquired channel 1, 2,, 24		
x=DCALL	DC average of all 19 10-20 channels		
x=DCFR	Frontal DC: Fp1 F3 F7 Fz Fp2 F4 F8		
x=DCBK	Back DC: P3 P4 Pz T5 T6 O1 O2		
x=DCLT			
	Left DC: Fp1 F3 F7 C3 T3 P3 T5 O1		
x=DCRT	Right DC: Fp2 F4 F8 C4 T4 P4 T6 O2		

Designing an Event

1. On The Even Wizard Screen, choose the Event Number that you would like to work with (For this Example,

we will work with Event 1).

K Event Number: 1).
• 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0 13 0 14 0 15 0 16

> Event Result: THEN: Play WAV Sound

2. Next, set the Event Condition (For this example, we are going to reward the Channel 1 Theta band, when it is greater than its threshold). There are many ways that the Event Wizard can define what is being trained (See Attached pictures). If an equation is used, the Check Equation Button must be clicked, or it will not save this.

	Eve	ent Con	dition with	l		
Event Condit	tion: quation:	▼ Delta	Amplitude	Ţ	Constant:	Damping Factor:
Check Eq	uation x=	THETA; HAN:	•			-
Use E	quation:	▼ Delta	✓ SKIL Comodula	tion 💌	Constant: 1.0	Damping Factor: 0
Check Eq Note: You r	uation x="	TTHR; Check Equation''	to check and save any o	changes m	ade to equat	ions

Event Condition with

•

🔲 Obey Inhibits ("stops")

IF: Channel 1:	▼ Theta	✓ Amplitude	•	Constant:	Damping Factor:
Check Equation X	THETA;				
RULE: IS GREATER	THAN:	•		Constant	Damning Factor
Channel 1:	▼ Theta	 Threshold 	-	1.0	0
Channel 1: Check Equation	Theta	▼ Threshold	-	1.0	

- 3. Next, set the Event Result (For This example, if the Event Condition is met, a .wav will play. This will also Control BMrMMP).
- 4. Next, set the size of the Event Trend Graph. If you are not going to make your graph visible, you do not need to do anything with this (For this example, the graph will range from 0 to 20).
- Next, you will need to make sure, that the Event is enabled. You will also need to choose whether you would like it visible or not. If the Event is not enabled, it will not work. But, if the Event is Hidden, it will still operate.

- Event Trend Graph	
Event Henu diapri	
Scale Factor: 20	Offset: 0

Control MMP Player

-

-

-

This Event Is:	Visibility:	
Enabled C Disabled	 Visible 	C Hidden

6. Next, set the Sustained Reward Criterion, Refractory Period and the properties of the MIDI Sound. If you are not utilizing a MIDI sound for a reward sound, you do not have to set this. The Sustained Reward Criterion and Refractory Period effect how often a reward can be give (For this example, the Sustained Reward Criterion and Refractory Period are both set for 500 milliseconds. This means, that a reward will not be given unless the client stays above the threshold for 500 milliseconds. Then, another reward is not possible for another 500 milliseconds).

Sustained Reward Criterion Condition must be met for: 500 milliseconds	Refractory Period Time between rewards is: 500 milliseconds
- MIDI Sound Properties:	
Starting Note: 1 A	(55.0) 🔹 1 to 88
Instrument: 0 Pia	ano 1 🗾 💌 128 choices
Playing Style: Susta	ained 📃 💌 Percus. or Sust.
Modulation: Ampli	litude 📃 💌 Ampl. or Pitch
Starting Loudness: Level	el: 0 🗾 🗸 0 to 128
Loudness Change Rate: 0	💌 0 to 20
Note Change Rate: 0	💌 0 to 20
Musical Scale (Mode): Chror	matic 🗾 15 choices
Musical Key: 🔼	👻 C to B Flat
Play Note or Chord: 1 Not	ote 🚽 1 to 8 Notes

7. Click the Use Now Button, and then click OK.

Event Number @ 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0 13 0 14 0 15 0 16	This Event Is: Visibility: © Enabled C Disabled © Visible C Hidden
Ever Condition:	- Sutiand Reward Diteion Condition must be nel to: 500 million must be nel to: 500 million must be nel to: 100 Sourd Properties: - MDI Sourd Properties: - MDI Sourd Properties: - Muno Stating Likeling OPenol 1 - 210 choisen Putying State [Durand _ Pincut 6 - 20 Modulary Anathudio _ Pincut 6 - 20 Stating Likeling [Immil 0 _ 1 - 10 to 128 Loudence Druge Rel 0 _ 1 0 to 20
Event Trend Graph Scale Factor. 20 Offset. 0	Munical Scale (Hoder) Children C in a Children Munical Key: A C to B Flat Play Note or Chard: 1 Note 1 to 8 Notes
Event Summary: Event 1: Summary: Event 1: EVENT 115 CURPENTLY: ENABLED BIS EVENTLY: IS GREATER THAN EQN: w-TTHR SUSTAIN SOOM REPARCTORY: SOOM THER Flay with Sound	Enable AI Events Disable AI Events Data Dictionary Disar AI Events Show AI Events Pint AI Events Help Copy Event Pante Events Concel Use Now OK

The Event Wizard has been set for the Client Folder. You will be able to tell this during the running of a session. If the Event was set to Visible, then you will see a graph if you choose the Display Event Trend Graph, or Wide Event Trend Graph. If you do not have the Event set to Visible, then you can still see that this is occurring through the Display Text Stat Panel.



BrainMaster 3.0 Software User Manual Basic BrainMaster Setting Protocol through the Event Wizard

Alert



Event 1 – THETA/TTHR is Greater than 1. This shows the ratio of the low "stop" inhibit to its threshold.

Event 2 – BETA/BTHR is Greater than 1. This shows the ratio of the "go" component to its threshold.

Event 3 – HIBETA/HTHR is Greater than 1. This shows the ratio of the hi "stop" inhibit to its threshold.

Event 4 – x=POINTS/100. This shows the points divided by 100. This is merely for the Flash Game indicator.

Event 5 – x=ALLOK. This indicates that all components meet criteria, and the Flash Game can "move" or proceed.

Z-Score PZOKUL



Event 1 – x=PercentZOKUL(UTHR, -GTHR) is Greater than CT. This rewards the Percentage of Z-Scores that are with-in the ranges of the U Threshold and G Threshold that are above the threshold that is defined by the C Key.

Event 2 - x = E1P. This shows the percentage of reward for Event 1.

Event 3 – x=-GTHR is greater than x=-GTHR. This gives a graphical representation for the Lower threshold for the Z-Score equation.

Event 4 – x=UTHR is greater than x=UTHR. This gives a graphical representation for the Upper threshold for the Z-Score equation.

Event 5 – x=E1F is greater than 0.5. This flags Event 1. When the Event 1 meets its Event Condition, Event 5 produces a 1, which indicates that this component has met criteria, and the Flash Game can "move" or proceed.

Enabling Multiple Events to control Flash Player (2 Event Example)

🔀 Event Wizard Designer		Stevent Wizard Designer	
Event Wicard Designer Event Number: © B) 2 ∩ 3 ∩ 4 ∩ 5 ∩ 6 ∩ 7 ∩ 8 ∩ 9 ∩ 10 ∩ 11 ∩ 12 ∩ 13 ∩ 14 ∩ 15 ∩ 16 Event Condian: If: Use Equation: Other Equation: © Delta II: Use Equation: Use Equation: © Delta II: Use Equation: II: Use Equation: II: Event Equation: II: II: II: Event Equation: II: II: II: Event Equation: II: Event Equation:	This Event Is: Valuation Charled Plated Sturand Reward Datation Platectory Penid Condition multible not for: 0 0 Sundard Reward Datation Platectory Penid Sturand Reward Datation 0 MDI Sound Proveints: 0 Sutaring Made [6] A 11720.01 • 1 to 88 Instrument; [115.484 Drums • 103 choices	Event Wizard Designer Event Number: I & 2 & 3 & 4 & 5 & 6 & 7 & 6 & 5 & 10 & 11 & 12 & 13 & 14 & 15 & 16 Event Condition: Event Condition: Event Equation: Detect Eq	Thi Ever It. Extained Researd Citesion Cutating Researd Citesion Cutating Researd Citesion Cutating Researd Citesion Cutating Researd Citesion References Reference
Check Equation [PreCT; Note: You must prest: "Deteck: Equation" to check and save any changes made to equations Event Result. THEN: [Pay MDI Sound	Instrument: [115.9880/brm2 = 123 docides Paging Style: Startand = Pacous or Start. Modulator: Rand: and Park and Park Starting Loadees: [Level 70 = 0 to 128 Loaders: Change Rate:] = 0 to 20 Munical Scale Mode) [Maid Union] = 15 docides Munical Kay [A = 0 to 8 Park Page Nate or Conce] [Nate = 1 to 8 Nate	Oreck Equation PorTHR; Net "You must press "Direck Equation" to check and save any charges made to equations Ever Result THEN (To Naining	Instrument 11 Vid. v 128 choice; Peijvig Syle Sonained v Percur. or Sunt. Modular Annihud v Percur. or Sunt. Surring Loudens: Level 10 v 0 v 20 20 Surring Rate 3 v 0 v 20 20 20 20 20
Event Summary Summary for Event 1 EDIN - Montered/2014[LII]THIP, GTMPH IS OBGATER THAN EDIN, MCT: F20N - Montered/2014[LII]THIP, GTMPH IS OBGATER THAN EDIN, MCT: TYTE Summary MODULATION And and PARA LOUDINESS Level 70 LUUDINESS CANCE RATE 3 THOT HANKE RATE 1 KEY: A MODE Map Jonary CHORD. 1 Note	Enable Al Eventz Disable Al Events Data Dickinooy Claar Al Eventz Show Al Events Part Al Events Help Copy Event Parta Event Carcel Lite Now OK	Event Summary for Event 2 Summary for Event 2 EVENT 2 IS CURRENTLY: ENABLED PF CDN + wf179 THEN: Do Noting	Endole Al Eventa Diadle Al Eventa Data Dotonary Dear Al Eventa Show Al Events Part Al Events Help Copy Event Parte Event Carcel Une New OK

1. Create an Event (Event 3) that Flags these Events, and requires them to be greater than the possible combination with-out all being met (For this example, since there are two Events, we want the Event Condition to be greater than 1.5. This way, we are only successful when both Event 1 and Event 2 have been met).

Event Wizard Designer	100 B	(F. 770)	
Event Number:	This Event Is:	Visibility.	
C1 C2 @ 3 C 4 C 5 C 6 C 7 C 8 C 9 C 10 C 11 C 12 C 13 C 14 C 15 C 16		ibled (* Vis	ble C Hidden
Event Condition:			
Econstant: Damping Factor:			
	- Sustained Reward Criter	ion Refracto	ory Period
Check Equation x=E1F + E2F;	Condition must be met fo	r: Time be	tween rewards is:
BULE: IS GREATER THAN:	0 milisecond	ds 0	miliseconds
Constant: Damping Factor:	- MIDI Sound Properties:		
Use Entered Value: V Delta V Amplitude V 1.5	Starting Note:	37 A (440.0)	▼ 1 to 88
Check Equation x+-GTHR;	Instrument:	41 Viola	▼ 128 choices
Note: You must press "Check Equation" to check and save any changes made to equations	Playing Style:	Sustained	 Percus. or Sust.
Fund Paret	Modulation:	Amplitude	 Ampl or Pitch
THEN: Do Nothing	Starting Loudness:	Level 80	• 0 to 128
	Loudness Change Rate:	3	▼ 0 to 20
<u> </u>	Note Change Bate:	3	▼ 0 to 20
Obey Inhibits ("stops") Control MMP Player	Musical Scale (Mode):	Chromatic	▼ 15 choices
Event Trend Graph	Musical Key:	A	C to B Flat
Scale Factor: 100 Offset -5	Play Note or Chord.	1 Note	
Event Summary	Enable All Events	Disable All Events	Data Dictionary
Summay for Event as EVENT 31S CURRENTLY: ENABLED IF: EQN: x=CF + 22F:1S GREATER THAN Value: 0.0 THEN: Do Nothing	Clear All Events	Show All Events	Print All Events
	Heb	Copy Event	Paste Event
	Cancel	Use Now	ОК

2. Next, we will need to flag the results of this last created Event into Event 5, so that the Flash Player can be controlled.

Event Number: C 1 C 2 C 3 C 4 F 5 C 6 C 7 C 8 C 9 C 1	0 C 11 C 12 C 13	○ 14 ○ 15 ○ 16	This Event Is: © Enabled © Dise	ibled Visibility.	ble 🕫 Hidden
Evert Condition: IF: Use Equation: Delta Amplitude [Check Equation] ==E3F: RULE: [IS GREATER THAN:	Constant:	Damping Factor:	Sustained Reward Criter Condition must be met fo 0 milisecom	ion Refracto r: Time bet ds 0	ny Period ween rewards is: milliseconds
Use Entered Value: Deita Amplitude	Constant:	Damping Factor:	MIDI Sound Properties:	37 A (440.0)	▼ 1 to 88
Check Equation x=0:			Instrument	41 Viola	▼ 128 choices
Note Measurement and the second			Playing Style:	Sustained	Percus. or Sus
Note: Tou must press. Check Equation: to check, and save any c	nanges made to equas	ons	Modulation:	Amplitude	· Ampl or Pitch
Event Result			Starting Loudness:	Level 90	▼ 0 to 128
THEN: Do Noning	<u> </u>	<u>_</u>	Loudness Change Rate:	3	▼ 0 to 20
	¥	Ψ	Note Change Bate:	3	▼ 0 to 20
Obey Inhibits ("stops") Control MMP Player			Musical Scale (Mode):	Chromatic	 15 choices
F			Musical Key:	A	▼ C to B Flat
Scale Factor: 100 Offset: 5			Play Note or Chord:	1 Note	↓ 1 to 8 Notes
Event Summary	EVENT 515 CURREN	TLY: ENABLED	Enable All Events	Disable All Events	Data Dictionary
IF: EQN: x=E1F; IS GREATER THAN Value: 0.5 THEN: Do Nothing	C. C. C. C. C. COMMEN	in a south	Clear AI Events	Show All Events	Print All Events
			Heb	Copy Event	Paste Event
			Cancel	Use Now	OK I

Your protocol will now be able to drive the Flash Player when all Event criteria has been met for the different Event Conditions. You will be able to tell, as you can see that the Flash Player will operate to Event 5



BrainMaster 3.0 Software User Manual Enabling Amplitude and Events to control Flash Player

🔀 Event Wizard Designer		Control Protocol and Threshold Values
Event Number:	This Event Is: © Enabled C Disabled © Visibility:	PROTOCOL SETTINGS FOR CHANNEL 1: ACTIVE: C3 REFERENCE: LE Delta Delta Beta C Go C Ston G January 0.0
Event Condition Press Venet Conduct Press Venet Vene	Sutained Reward Citation Cardiom mut be nel for 10 million millioned in MDI Sound Propertie: HIDI Sound Propertie: Hindmark (111 Steal During - 1 to 88 Instimute View - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Instimute - 1 111 Steal During - 1 to 88 Institute - 1 111 Steal During - 1 101 Steal Steal Starting Lower - 1 During - 0 During - 1 During - 1 1111 Steal During - 1 1111 Steal During - 1 11111 Steal During - 1 11111 Steal During - 1 11111 Steal During - 1 111111 Steal During - 1 111111111111111111111111111111111	du stup stup stup stup Theta Go Stop Ignore 0.0 Alpha Go Stop Ignore 0.0 Alpha Go Stop Ignore 0.0 Co Stop Ignore 0.0 Gamas Science Stop Ignore 0.0 Go Science Stop Ignore 0.0 Go Science Stop Ignore 2.0 User Science Science Science Science Science Science Science Science Science Science
Tever Trend Diggh Totage Tever Trend Diggh Totage Tever Trend Diggh Totage	Louchess Change Rate: 3 • 0 to 20 Note Change Rate: 1 • 0 to 20 Musical Scale (Mode) Major (lonism) • 15 choices Musical Scale (Mode) Major (lonism) • 15 choices Musical Scale (Mode) • • • 0 to 20 Play Note or Choot: 1 Note • 1 to 8 Notes	to achieve a reward point and sound ⁹⁰⁰ milliseconds (use value 0 - 10000, default=500) Global Refractory Period (all channels) After a reward, system will walt for: before another reward is possible (use value 0 - 10000, default=0) milliseconds
Event Summay: Summay for Event 1: EDIN = Monore/2004/UDINE, GITHIN, IS GREATED THAN EDINCT: F20IN = Monore/2004/UDINE 2017E 51 INSTR 115 SAME AVENT STILE Summer MODULATION And and Park LOUNNESS Level 70 LOUNNESS CANCE PARTS 31 THE FUNCTION FOR A THE T REY. A MODE Major Ilonary DHORD: 1 Note	Enable AI Events Disable AI Events Data Dictionary Diara AI Events Show AI Events Pint AI Events Hab Copy Event Panta Events Cancel Use Now OK	"Original" Sweet Spot Feedback Settings ON OFF About Points Counting Method Normal (1 Counter) Split for 2 Players (2 Counters) About Autothreshold Options Use the button at left to view and change Autothresholding Options

1. Create an Event to indicate that all amplitude components have met their criteria.

Event Wizard Designer			-
Event Number: C 1 @ 2 C 3 C 4 C 5 C 6 C 7 C 8 C 9 C	10 C 11 C 12 C 13 C 14 C 1	This Event Is: © Enabled © Disabled	Visbility. ☞ Visible C Hidden
Event Condition: IF: Use Equation: Deck Equation RevALLOK:	Constant: Damping Fo	Sustained Reward Criterion Condition must be met for: 1 milliscondt	Refractory Period Time between rewards is:
RULE: (S GREATER THAN:	Constant: Damping F	MIDI Sound Properties: MIDI Sound Properties: Starting Note: 37 A Instrument: 41 Vic Playing Style: Susta Minchelion: Amplik	(440.0) 1 to 88 4a 128 choices ned Ampl. or Pitc Ampl. or Pitc
THEN: Do Nothing	к Г. Г.	Starting Loudness: Level Loudness Change Rate: 3 Note Change Rate: 3 Musical Scale (Mode): Onror	80 ▼ 0 to 128 ▼ 0 to 20 ▼ 0 to 20 ■ 0 to 20 ■ 15 choices
Event Trend Graph Scale Factor: 100 Offset: 0		Musical Key: A Play Note or Chord: 1 Note	C to B Flat T to 8 Notes
Event Summagy. Summagy for Event 2. In FEDRIX = ALLOCK IS GREATER THAN Value: 0.0 THEN: Do Nothing	EVENT 215 CURRENTLY: ENABLE	D Enable All Events Disable Dear All Events Show Help Cop	All Events Data Dictionary All Events Print All Events y Event Paste Event
		Cancel Us	e Now OK

2. Create an Event (Event 3) that Flags these Events, and requires them to be greater than the possible combination with-out all being met (For this example, since there are two Events, we want the Event Condition to be greater than 1.5. This way, we are only successful when both Event 1 and Event 2 have been met).

Event Wizard Designer				17.77	_
Event Number: C 1 C 2 @ 3 C 4 C 5 C 6 C 7 C 8 C 9 C 1	10 C 11 C 12 C	13 C 14 C 15 C 16	This Event Is:	ibled Visibility	ble C Hidden
Event Condition: IF: Use Equation: ICheck Equation: Rec 1F + E2F;	Constant	Damping Factor:	Sustained Reward Criter	ion Refracts	ny Period
RULE: (IS GREATER THAN:	Constant	Damping Factor:	MIDI Sound Properties: Starting Note: Instrument: Playing Style:	37 A (440.0) 41 Viola Sustained	1 to 88 128 choices Percus. or Se
Event Result: THEN: Do Nothing Control MMP Places Control MMP Places	¥	× v	Modulation: Starting Loudness: Loudness Change Rate: Note Change Rate: Musical Scale (Mode)	Ampitude Level: 80 3 Chromatic	Ampl or Pite O to 128 O to 20 O to 20 O to 20 I5 choices
Event Trend Graph Scale Factor: 100 Offset -5			Musical Key: Play Note or Chord:	A 1 Note	C to B Flat T to 8 Notes
Event Summay. Summary for Event 3: IF:EDM: w∈EF + E2F:IS GREATER THAN Value: 0.0 THEN: Do Nothing	EVENT 3 IS CURR	ENTLY: ENABLED	Enable All Events Clear All Events	Disable All Events Show All Events	Data Dictionary Print All Events
			Help Cancel	Copy Event Use Now	Paste Event OK

3. Next, we will need to flag the results of this last created Event into Event 5, so that the Flash Player can be controlled.

Event Number:			This Event Is:	- Visibility.	
C 1 C 2 C 3 C 4 @ 5 C 6 C 7 C 8 C 9 C	10 C 11 C 12 C	° 13 ⊂ 14 ⊂ 15 ⊂ 16		led C Visit	ele 🕫 Hidden
Event Condition:					
IF: Use Equation: Delta Accolhude	Consta	nt: Damping Factor:			
			Sustained Reward Criterio	n Refracto	y Period
Check Equation x=E3F;		· ·	Condition must be met for:	Time beh	ween rewards is:
RULE: IS GREATER THAN:			10 milliseconds		maseconds
	Consta	nt: Damping Factor:	MIDI Sound Properties:		
Use Entered Value: Delta Amplitude	- U.5	lo.	Starting Note:	37 A (440.0)	▼ 1 to 88
Check Equation x=0;		•	Instrument:	41 Viola	 128 choices
Note: You must press "Check Equation" to check and save any	changes made to e	quations	Playing Style:	Sustained	Percus. or Su
Event Result:			Modulation:	Amplitude	 Ampl or Pitcl
THEN: Do Nothing	Y	Ψ	Starting Loudness:	Level au	• 0 to 128
	-		Loudness Change Rate:	3	■ 0 to 20
		_	Musical Scale (Mode)	Chromatic	▼ 15 choices
Control MMP Player			Munical Key	A	▼ C to B Flat
Event Trend Graph Scale Factor: 100 Diffset: -5			Play Note or Chord	1 Note	▼ 1 to 8 Notes
E venit Summary			Enable All Events D	isable All Events	Data Dictionary
Summary for Event 5: IE: FON: wETE: IS GREATER THAN Value: 0.5	EVENT 5 IS CUR	RENTLY: ENABLED			
THEN: Do Nothing			Clear All Events	Show All Events	Print All Events
			Help	Copy Event	Paste Event
			Cancel	Lize Now	OK

Your protocol will now be able to drive the Flash Player when all Event criteria has been met for the different Event Conditions. You will be able to tell, as you can see that the Flash Player will operate to Event 5



BrainMaster 3.0 Software User Manual Enabling Events to control Third-Party Games

1. First, the BrainMaster Software has to be set into Emulation Mode. This is accomplished in the Display Options Menu under the DLL Memory Mapping Mode.

Display Options			k
Viewed Panels:		Viewed Components:	
🔽 Raw Waveform		🗆 Delta	
Filtered Waveform	Text Stat Line with each Waveform	🗹 Theta	
Phase-Space Trajectory	Text Stats Panel (Live)	🗹 Alpha	
Thermometers	Component Trend Graphs	🗹 Lobeta	
FFT Frequency Spectrum	🗆 Event Trend Graphs	🗆 Beta	
🗖 Brain Mirror (FFT)	Vide Event Trend Graphs	✓ Hibeta	
E Brain Mirror (Filters)	🗆 Z Score Text Display	🗆 Gamma	
🗖 Coherence / Phase Display	Z Score Scatter Plot	User	
DII Memory Mapping Mode			
Standard • Emulat	tion	Incel OK	
Use Emulation Mode to use exte games (Somatic Vision, CIS, etc) Event Wizard Events 9-16	rnal ∨ia.		

2. Next we have to set the Events so that they will properly operate. This is accomplished, by utilizing Events 9-16 to emulate the Filtered Waveforms. A list of the Events to what band they are referring to, see below (For this example, we are going to want the game to react to training done on the Lobeta band. Because of this, we will use Event 12). For proper reaction, the Event Condition must be Event must be greater than its condition (For this example, we want the training reaction from Event 1. So, because of this

Event Wizard Designer			
Event Number:	This Event Is:	Visibility:	
○1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ● 22 ○ 13 ○ 14 ○ 15 ○	16	abled (* Visi	ble C Hidden
Event Condition: Construct: Dispersion Eastern			
IF: Use Equation: Delta Amplitude Use Equation: Delta Amplitude Use Equation: Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta Delta De	-		
Deck Equation IntE1A:	Sustained Reward Crite	nion Refracto	ry Period
	0 milisecon	ds 0	miliseconds
RULE: IS GREATER THAN:			
Constant: Damping Factor:	MIDI Sound Properties:		_
Use Equation:	Starting Note	37 A (440.0)	 1 to 88
Check Equation x=E18;	 Instrument 	41 Viola	▼ 128 choices
Note: You must press "Check Equation" to check and save any changes made to equations	Playing Style	Sustained	Percus. or Su
veri Result	Modulation	Amplitude	Ampl. or Pitch
HEN: Do Nothing 👻 🔍	Starting Loudness	Level: 80	• 0 to 128
	Loudness Change Rate	3	• 0 to 20
	Note Change Rate	3	• 0 to 20
Obey Inhibits ("stops") Control MMP Player	Musical Scale (Mode)	Chromatic	15 choices
Event Trend Graph	Musical Key:	PA	- L to B Fist
Scale Factor: 100 Officet: 0	Play Note or Chord	11 Note	- I to o Notes
Event Summary.	Enable All Events	Disable All Events	Data Dictionary
Summary for Event 12: EVENT 12 IS CURRENTLY: ENABLED F: EQN: x=E1A: IS GREATER THAN EQN: x=E1B:			
THEN: Do Nothing	Clear All Events	Show All Events	Print All Events
	Heb	Copy Event	Paste Event
	Carcel	Lise Now	ΟΚ

the Event Condition is "IF Equation: x=E1A, is GREATER THAN Equation x=E1B"). You can do this for up to all 8 Events.

	Third-Party "Filtered
Event Number	band
9	Delta
10	Theta
11	Alpha
12	Lobeta
13	Beta
14	Hibeta
15	Gamma
16	User

You have now enabled the BrainMaster protocol to have its Events be seen as a Filtered waveband in the third-party game. You will be able to see this, by starting the third-party game, and seeing the band that you chose to affect the games reward. If this is not working, please make sure that you have set the reward for the game to the bands that you have chosen.



a: 0.00 Theta: 0.00 Alpha: 0.00 LoBeta: 1.00 Beta: 0.00 HiBeta: 0.00 Gamma: 0.00

Session Wizard Control Screen

1 Available Template Files: miniq 2x8 60-sec runs (simple design).mqt miniq2x6 5sec runs (using cycles).mqt miniq2x6 60sec runs (using cycles).mqt miniq2x8 5sec runs (using cycles).mqt miniq4x4 5sec runs.mqt miniq4x4 60sec runs.mqt miniq4x5 5sec runs.mqt []	View Template 2 File
3 Standard 4-channel MINI-Q 5 positions	
Template Comment:	
4 Use with Atlantis MINI-Q in 4-channel mode	
5 Cancel	6 ОК

- 1. **Available Template Section –** Section where you can choose the Session Wizard Template you would like to use.
- 2. View Template File Button Click to View the Template of the Session Wizard Template that has been selected.
- 3. **Template Description Section –** Section that displays the Template's description of the selected Session Wizard Template.
- 4. **Template Comment Section** Section that displays the Template's comment of the selected Session Wizard Template.
- 5. Canel Button Click to cancel any selections and exit the Session Wizard Control Screen.
- 6. **OK Button –** Click to confirm the selections and exit the Session Wizard Control Screen.

Loading a Protocol that has a Pre-Loaded Session Wizard File

- 1. Choose a file that you would like to use. From the Setup/Home Screen, click the View or Change Settings Button.
- 🕅 Setup/Home Screen BrainMaster 3.7i 🖲 🖸 🤯 🞑 🥘 LOGIN OK: SN: 40036 UNLIMITED USE CLINICAL LICENSE Welcome to BrainMaster Current Trainee/Study Folder: Trainee ID: SessionWizard\ Login Trainee SessionWizard Name: Folder Selections Comment: Alert Beta Up Theta Hibeta Down Run The Next Session Next Session Number: Total Sessions Available: View or Change Settings Training screen is currently: Not Running Exit Product Manuals **Review Session Results**
- 2. From the Setup Options Menu, click the Read/Write Settings File Button.

Setup Options		A DECISION OF			
Read/Write Settings File	Current Trainee/Study: SessionWizard				
Data Channels	NCHANS: 1 SRATE: 256 FILTER: 6 ARTIFACT: 240 uV COM: 16 - SUMCHANS:OFF - SAVEEEG:OFF - P-P:ON SITES: C3 - A1 - A2				
Frequency Bands	Theta:4.0000-7.0000 Beta:15.0000-20.0000 Hibeta:20.0000-30.0000				
Training Protocol	GO: 1:Beta[3.0] STOP: 1:Theta[5.9] 1:Hibeta[11.8] AUTO:ON:60/20/10 AUTOUPDATE BEFORE EACH RUN				
Display Options	Display: wave, filt. wave, w/ text line, therm, event trends,				
Feedback Control	Sound: Reward Sound -				
Session Control	40 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 2.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Training				
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS		

3. From the Read or Write Settings File Menu, double-click the settings protocol that you would like to use, and load this protocol, by double-clicking. Confirm all changes and run your session

Settings File Name: (double-click to read in settings and proceed)		Use this screen to ma	nage your Settings File
settings settings.txt [] 2 CH NauroField	^	library. You can char trainee/study folder, v screen.	nge settings within any vithout using this
[Addrt] [Asym] [Basic2chEMG]		Save Current Se	ttings to a New File
[PEEp] [PEG nIR pIR or THERM for 3.0 with Trend Graph and MMP and Flash] [PEG nIR or TEMP with manual threshold keyboard controlled] [PEG nIR or nIR or Temp with Somatic Vision Enabled]		Save Current Sett	ings To Selected File
[HEG Proportional Feedback] [HEG training (w. Flash Games)] [HEG with Trend Graph and MMP and Flash and Games working] [HEG Teet for Left]		Settings Description: MINI-Q 2 4-channel 61) second runs
[John Demos MINI-Q Standard Settings]		Directory:	
MINEO 22 4-channel 50 second runs) [MINEO basic assessment] [MINEO John Demos Standard Settings] [MINEO New Mind Format [Richard Soutar]] [MINEO Adverts Standard E.0.8.E.C]		/brainm.20/settings/N second runs	liNI-Q 2 4-channel 60
[Miniq] [Peak] [Peak] [PercentZOK with Somatic Vision Enabled]		Read In Settings	From Selected File
[Photic Output Exed Rate] [Photic Output Fixed Rate]		Cancel	ОК

The System will now run the Session Wizard File. You will be able to tell this, as there will be a message stating the Number of periods, pauses, and total time in the session.



BrainMaster 3.0 Software User Manual Loading a Session Wizard File to a Pre-Existing Protocol

1. Choose a file that you would like to use. From the Setup/Home Screen, click the View or Change Settings Button.



2. From the Setup Options Menu, click the Session Control Button.

Setup Options		All and and and	X
Read/Write Settings File	Current Trainee/Study: SessionWizard		
Data Channels	NCHANS: 1 SPATE: 25 COM: 16 - SUMCHANS: SITES: C3 - A1 - A2	6 FILTER: 6 ARTIFAC OFF - SAVEEEG:OFF - P	T: 240 u¥ +P:ON
Frequency Bands	Theta:4.0000-7.0000 Bo	eta:15.0000-20.0000 Hil	beta:20.0000-30.0000
Training Protocol	GO: 1:Beta(3.0) STOP: 1:Theta(5.9) 1:Hibeta(11.8) AUTO:ON:60/20/10 AUTOUPDATE BEFORE EACH RUN		
Display Options	Display: wave, filt. wav	e, w/ text line, therm, e	vent trends,
Feedback Control	Sound: Reward Sound		
Session Control	40 SESSIONS -NO BASELINES-10 RUNS OF LENGTH: 2.0 MIN-NO PAUSE BETWEEN RUNS-SESSION TYPE: Training		
CLOSE	PRINT SETTINGS	Event Wizard	USE THESE SETTINGS

3. From the Session Control Menu, first click the Check Mark Box to use the Session Wizard to control the session. When this is complete, click the Session Wizard Button.

Session Control		
NOTE: Please enter all times as whole seconds (1, 2, 3, etc)		
Baseline Length (pre and post)	Run Length:	
O Seconds (before and after Runs)	120 Seconds	
(Length of 0 means ''no baselines'')	(0 means run indefinitely)	
Number of Sessions:	Number of Runs (Trials)	
40 sessions (80 maximum)	10 Runs	
(0 allows repeated use of Test Session 1)	(Must have at least one Run)	
Session Type:	Pause Between Runs?	
O Assessment O Training		
• Simulation • Playback	Session Wizard	
Cancel Vse Session Wizard to control session OK		

4. From the Session Wizard Control Menu, choose the Session Wizard Template you would like to use. When you have the file you would like, click the OK Button to confirm the choice. Confirm all changes and run your session.

ession Wizard Control Files Available Template Files: [miniq 2x8 60-sec runs (simple design).mqt miniq2x6 60-sec runs (simple design).mqt miniq2x6 60-sec runs (simg cycles).mqt miniq2x6 sec runs.mqt miniq2x6 56-sec runs.mqt miniq2x6 56-sec runs.mqt miniq2x6 56-sec runs.mqt miniq2x6 56-sec runs.mqt miniq2x6 56-sec runs.mqt [-]	View Template File
Template Description:	
miniq4x5 5sec runs.mqt	
Template Comment:	
Use with Atlantis MINI-Q in 4-channel mode	
Cancel	ОК

The System will now run the Session Wizard File. You will be able to tell this, as there will be a message stating the Number of periods, pauses, and total time in the session.



Session Wizard Basic Variables	
NAME	Defines the name of the Session Wizard Template. The name placed here, will be in view on the Sesssion Wizard Control Screen.
VERSION	Defines what version of the Session Wizard Template. This is not displayed anywhere only in the actual Session Wizard Template
СОМ	Defines the comment of the Session Wizard Template. The comment placed here, will be in view on the Session Wizard Control Screen
NCHANS	Defines the number of channels that will be used by the Session Wizard Template.
DO	Starts the Session Wizard Template.
DONE	Ends the Session Wizard Template.
//	Classifies a comment for the user. Use to place comments in your Session Wizard Template, with-out the Session Wizard seeing these comments.
BEGCYCLE	Begins an area to create a pre-defined cycle to be used in the DO section of the Session Wizard Template. The CYCLE is created outside of the DO Section.
ENDCYCLE	Ends an area to create a pre-defined cycle to be used in the DO section of the Session Wizard Template. The CYCLE is created outside of the DO section.
DOCYCLE	Used in the DO section of the Session Wizard Template. Calls to a pre-defined CYCLE with-in the Sessio Wizard Template.
Session Wizard Session Variables	
MESG1	Displays a message before the run begins.
MESG2	Displays a message after the run ends.
SITES	Programs the run for the specific locations that will be acquired/trained.
PERIOD	States how long the run will be
FEEDBACK	Variable that can be used for the Session Wizard Template. This value will only be kept for the period declared.
DUTY	Percentage Variable that controls the FEEDBACK variable. This allows FEEDBACK to be worth its stated value for the percentage of time of DUTY (If PERIOD is 30, FEEDBACK is 10, and DUTY is 50, then FEEDBACK=10 for the first 15 seconds and 0 for the last 15 seconds). This value will only be kept of the period declared.
INTENSITY	Variable that can be used for the Session Wizard Template. This value will only be kept for the period declared.

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Session Wizard Session Variables for Discovery	
EYES OPEN	Creates an EDF File with the EO mark when the PERIOD is complete.
EYES CLOSED	Creates an EDF File with the EC mark when the PERIOD is complete.
TASK	Creates an EDF File with the TASK mark when the PERIOD is complete. You will have to declare the Task for this.
Session Wizard Session Variables for Peripherals	
PHOTICRATE	Variable that sets the rate for Photic glasses to be used for the Session Wizard Template. This value will only be kept for the period declared.
PHOTICENABLE	Enable or Disable Photic Output. 1 Enables Photic Output. 0 Disables Photic Output.
BrainMaster 3.0 Software User Manual Designing a Session Wizard Template

PLEASE NOTE: A Session Wizard Template can be designed in any Notepad-based program. It is recommended to use Notepad++. For more information on Notepad++, please visit <u>http://notepad-plus-plus.org/</u>.

1. Open your Notepad-based program.



- Create your Header information. The Header information will contain the Line "BrainMaster Session Wizard Control File". It will also contain the Version, Name, Comment, and Number of channels.
- Yorew 2. Holoppd++
 Image: Setting: Macro Run Plugin: Window 1
 X

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- Next, create any cycles that will be used. If you are not using the CYCLE feature, this is not needed.



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 Now, create the DO section of the template section of the Session Wizard Template. All that is created in the DO section will control the session. When the DO section is completed, end with DONE.



5. When completed with you Session Wizard Template, it is now time to save it. The location that you will need to save this in for use is c:\brainm.20\Control\SW for use in the BrainMaster 3.0 Series Software, and c:\brainm.20\Control\SWD for use in the BrainMaster Discovery Series Software. You will save the file as

"YourSessionWizardTemplateName".mqt. If you are using a Notepad program that allows this action, no further action will be required. If you are using a Notepad program that will

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Save in:	🔋 SW 👻	G 🌶 🖻 🛄 -	
(Fig	Name	Date modified	Туре
	📋 cyclesd	2/9/2012 2:23 PM	Text Docu
Recent Places	miniq 2x8 60-sec runs (simple design).mqt	8/7/2007 8:16 PM	MQT File
	miniq2x6 5sec runs (using cycles).mqt	8/7/2007 8:15 PM	MQT File
	miniq2x6 60sec runs (simple design).mqt	8/7/2007 8:17 PM	MQT File
Desktop	miniq2x6 60sec runs (using cycles).mqt	9/1/2007 5:56 PM	MQT File
A	miniq2x8 5sec runs (using cycles).mqt	8/7/2007 8:13 PM	MQT File
1990 - C	miniq4x4 5sec runs.mqt	1/8/2008 5:02 PM	MQT File
Libraries	miniq4x4 60sec runs.mqt	1/8/2008 5:01 PM	MQT File
	miniq4x5 5sec runs.mqt	1/8/2008 4:58 PM	MQT File
	miniq4x5 60sec runs.mqt	1/8/2008 4:59 PM	MQT File
Computer	📄 miniqd	2/9/2012 2:23 PM	Text Docu
	📄 runsd	2/9/2012 2:23 PM	Text Docu
Network			,
	File name: Session Wizard Template Test.mqt	-	Save
	Save as type: Normal text file (*.bd)	•	Cancel

not support this naming, you will have to force the .mqt ending in Windows manually.

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You have now created a Session Wizard Template, that can now be used for future sessions. You will be able to tell that this has been completed, by opening the Session Wizard Control Screen, and seeing your newly created Session Wizard Template ready for use.

Session Wizard Control Files				
Available Template Files: miniq 2x8 60-sec runs (simple design).mqt miniq2x6 5sec runs (using cycles).mqt miniq2x6 60sec runs (using cycles).mqt miniq2x6 60sec runs (using cycles).mqt miniq2x8 5sec runs (using cycles).mqt miniq4x4 5sec runs.mqt miniq4x4 60sec runs.mqt miniq4x5 5sec runs.mqt Miniq4x5 60sec runs.	View Template File			
Template Description:				
Session Wizard Template Test				
Template Comment:				
How To Design Session Wizard Template				
Cancel	ОК			

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BrainMaster Products are manufactured by:

BrainMaster Technologies Inc. 195 Willis St. Bedford, OH 44146 United States 1-440-232-6000



European Representative: mdi Europa GmbH Langenhagener Straße 71 D-30855 Langenhagen

Phone: +49-511-39 08 95 30 Fax: +49-511-39 08 95 39 Email: <u>info@mdi-europa.com</u> Internet: www.mdi-europa.com

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