

The next generation of 3D Brain Imaging and Neurotherapy

BrainAvatar Software Manual



Minimum PC Computer Requirements		
BrainAvatar Software Display		2
Main Screen Menu		
Login Menu		
Select Trainee/Study Folder Menu		
Folder Notes Screen		
Edit Folder Info Screen		
Training/Control Screen		
Training/Control Screen (Continued)		
Window Menu		
Setup Options Menu		
Read/Write Settings File Menu		
Data Channels Menu		
Data Channels Menu (Continued)		
Acquisition Control Menu		
Montage Info Menu		
Frequency Bands Menu		
Training Protocol Menu		
Display Options Menu		
Feedback Control Menu		
Session Control Menu		
Z-Score Training Menu	21	
Atlantis Hardware Control Menu		
Review Session Results - Summary Graph		
Review Session Rusults - Detail Graph		
Review Session Results - Text Detail		
Review Session Results - Bar Graph		
Review Session Results - Report		
Review Session Results - Event Graph	28	
Review Session Results - Z-Score Graph		
ROI Select - ROI Amplitude Z-Score	30	
ROI Select - ROI Coherence Z-Score	31	
ROI Select - ROI Directional Coherence Training		
Global Settings Menu		
Z-Scores* Global Settings Menu		
BrainAvatar Trainee Folders		35
Classic (Setup Menu) Method	35	25
Creating a Trainée Folder		35 27
Changing to a new Settings Files		
Changing settings to a Settings Files		
Training Screen Method. Creating a Trainee Folder		11
Changing to a new Settings Files.		
Changing settings to a Settings Files Outside of BrainAvatar Software (File Explorer)		45
		46
Creating a Trainee Folder		40 50
Changing to a new Settings Files Walkthrough Guide: How to convert a Settings File from either the BrainMaster 3.0 Series Softw		
Series Software into the BrainAvatar 4.0 Series Software	vare or DISC	overy
Basic Settings Protocols Information		
Basic Settings Protocols Information Basic Settings Protocols Crib Notes		
Alert – Beta Up Theta and Hibeta Down		57

Deep – Theta Alpha Up	
Focus – Lobeta Up Theta and Hibeta Down	59
No Limit QEEG Assessment	60
Peak – Alpha Coherence Up	61
Relax – Alpha Up Theta Hibeta Down	
ROIA Enhance – Region of Interest Up Train	
ROIA Inhibit Training Dynamic	
Squash - Wideband Inhibit	
Z-Score PZOKUL Dynamic and Z-Score PZOKUL 'C' Key	
Z-Score sLORETA Absolute Power – Training a single Region of Interest and	a single band to a norma-
tive database	
Z-Score sLORETA PZOKUL Dynamic and Z-Score sLORETA PZOKUL 'C' Key	- Training multiple regions of
interest and multiple bands to a normative database	
BrainAvatar Trainee Screens.	
Keyboard Quick Keys	
Keyboard Quick Keys (Continued)	
Renaming Tabs	
Displays(Tabs)	
Display Types & Functionality	
Acquired Waveforms	
Training Waveforms	74
Frequency Spectrum	
Thermometer Display	
Mini BrainMirror(FFT)	
Mini BrainMirror(Filter)	
Text Stats	
Trend Graph (Components)	
Trend Graph (Events)	
Wide Trend (Events) (Same as Trends)	
Z-Scores	
Z-Bars Plot	
Z-Maps	
Flat Maps	
CSA (Filtered)	
CSA (FFT)	
Coherence	
Similarity	
ROI Amplitude	
ROI Z-Score Text	
EEG Text	
Impedance Maps	
Event Text	
FFT Graph	
ROI Coherence Text	
Directional Coherence Text	
Directional Coherence Graph Display	
ROI Description Display	
Advanced Displays	
Volume Head Map (Optional Purchase)	
Volume Head Map (Optional Purchase) Volume Head Map (Optional Purchase) (Continued)	101 102
ROI Table	

Volume Connectivitý Head Map (Óptional Purchase) (Continued) 106 Panel Wizard Control Menu Display 108 Panel Wizard Control Menu Display (Continued) 109 Using the Panel Wizard Control Menu Display (Continued) 109 Using the Panel Wizard Control Menu 110 Panel Wizard Control Menu Display (Continued) 111 EEG Data File Playback (Session Type Method) 113 Simple EEG Data File Playback (Playback File Method) 113 Opening an EEG Data File (Vindows/File Explorer) 117 Review Playback (a section of an EDF File 118 Playback Control Menu 118 Data Tiles a section of an EDF File 121 EDF Annotation 123 Annotation an EDF File 123 Annotation (Review Tab) 125 Deleting an Annotation (Review Tab) 126 ZBuilder Control Menu 128 ZBuilder Control Menu 133 Description Section 133 Scalars Section 133 Description Section 134 Similarities Section 133 Description Section 139 ROI Coherence Section	Volume Connectivity Head Map (Optional Purchase)		105
Panel Wizard Control Menu Display 108 Panel Wizard Control Menu Display (Continued) 109 Using the Panel Wizard Resolution Help 111 EG Data Files 113 Simple EEG Data File Playback (Session Type Method) 113 Simple EEG Data File Playback (Mayback File Method) 115 Opening an EEG Data File Vindows/File Explorer) 117 Review Playback 118 Playback Control Menu 120 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotation an EDF File 124 Deleting an Annotation (Review Tab) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Scalars Section 133 Description Section 133 Scalars Section 134 Training to a ZBuilder File 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 143	Volume Connectivity Head Map (Optional Purchase) (Continued)		106
Panel Wizard Control Menu Display (Continued) 109 Using the Panel Wizard 110 Panel Wizard Resolution Help 111 EEG Data Files 113 Simple EEG Data File Playback (Session Type Method) 113 Simple EEG Data File Playback (File Method) 115 Opening an EEG Data File Windows/ File Explorer) 117 Review Playback 118 Playback ontrol Menu 120 Playback in the Review Screen (Playback button) 120 Playback in the Review Screen (Playback button) 120 Playback in the Review Screen (Playback button) 120 Playback a section of an EDF File 121 EDF Annotation 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Deckring an Annotation (Review Menu) 128 ZBuilder File & Layout 133 Deckring an Annotation (Review Menu) 133 Deckring an Annotation (Review Menu) 134	Panel Wizard	108	
Using the Panel Wizard 110 Panel Wizard Resolution Help 111 EEG Data Files 113 Simple EEG Data File Playback (Session Type Method) 113 Simple EEG Data File Playback (Playback File Method) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback 118 Playback Control Menu 118 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotation Control Menu 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder File & Layout 133 Description Section 133 Description Section 133 Scalars Section 137 Band Ratios Section 133 Description Section 134 Export. 143 Exporting L	Panel Wizard Control Menu Display		
Panel Wizard Resolution Help 111 EEG Data Files 113 Simple EEG Data File Playback (Session Type Method) 115 Opening an EEG Data File Playback (Playback File Method) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback 118 Playback Control Menu 118 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotation Control Menu 124 Deleting an Annotation (Review Tab) 126 Deleting an Annotation (Review Tab) 126 ZBuilder 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Scalars Section 133 Scalars Section 137 Band Ratios Section 138 Voxels Section 139 ROI Cohrence Section 140 Training to a ZBuilder File 143 Export 143 Export In UDERTA Files 144 Chairs Section	Panel Wizard Control Menu Display (Continued)		
EEG Data Files 113 Simple EEG Data File Playback (Session Type Method) 113 Simple EEG Data File Playback (Playback File Method) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback Control Menu 118 Playback Control Menu 118 Data Playback Control Menu 120 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder File 121 Sample ZBuilder File & Layout 133 Scalars Section 133 Scalars Section 134 Paport Control Menu 143 Export. 143 Export Control Menu 143 Export Control Menu 143 Creating a Z-Builder File 144 Export Control Menu 143 Export Contr	Using the Panel Wizard		110
Simple EEG Data File Playback (Playback File Method) 113 Simple EEG Data File (Windows/File Explorer) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback 118 Playback Control Menu 118 Playback Control Menu 118 Playing back a section of an EDF File 120 Playing back a section of an EDF File 123 Annotation Control Menu 123 Annotation Control Menu 123 Annotation Control Menu 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 128 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder Control Menu 133 Description Section 133 Scalars Section 133 Voxels Section 134 Export Control Menu 143 Export Control Menu 143 Export Control Menu 134 Description Section 135 Similarities Section 136 Noxel Section 137 Band Ratios Section	Panel Wizard Resolution Help		111
Simple EEG Data File Playback (Playback File Method) 113 Simple EEG Data File (Windows/File Explorer) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback 118 Playback Control Menu 118 Playback Control Menu 118 Playing back a section of an EDF File 120 Playing back a section of an EDF File 123 Annotation Control Menu 123 Annotation Control Menu 123 Annotation Control Menu 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 128 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder Control Menu 133 Description Section 133 Scalars Section 133 Voxels Section 134 Export Control Menu 143 Export Control Menu 143 Export Control Menu 134 Description Section 135 Similarities Section 136 Noxel Section 137 Band Ratios Section	EEG Data Files	113	
Simple EEG Data File Playback (Playback File Method) 115 Opening an EEG Data File (Windows/File Explorer) 117 Review Playback			
Opening an EEG Data File (Windows/File Explorer) 117 Review Playback 118 Playback Control Menu 118 Playback Control Menu 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotating an ADF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder File & Layout 131 Scalars Section 133 Description Section 133 Scalars Section 139 Roi Coherence Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export Control Menu 143 Export Control Menu 150 </td <td></td> <td></td> <td></td>			
Review Playback 118 Playback Control Menu 118 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotation Control Menu 123 Annotation Control Menu 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder Scetion 133 Description Section 133 Scalars Section 133 Scalars Section 133 Rovies Section 139 ROI Coherence Section 140 Training to a ZBuilder File 143 Export 143 Export Control Menu 143 Export Menu 143 Export 144 Export 144 Description Section 150 Analyze (Optional Purchase) 150 Analyze (Optional Purchase) 150 A			
Playback Control Menu 118 Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotation Control Menu 123 Annotation an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 135 Similarities Section 133 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 143 Export 143 Export Control Menu 143 Exporting LORETA Files 144 Creating an EDF/CSV/Text File <t< td=""><td></td><td></td><td></td></t<>			
Data Playback in the Review Screen (Playback button) 120 Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 133 Scalars Section 137 Band Ratios Section 138 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 144 Export Control Menu 143 Export Control Menu 144 Export Control Menu 144 Description Section 150	•		119
Playing back a section of an EDF File 121 EDF Annotation 123 Annotation Control Menu 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File 133 Description Section 133 Scalars Section 135 Similarities Section 137 Band Ratios Section 139 ROI Coherence Section 140 Training to a ZBuilder File 143 Export 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 144 Description Section 150 Analyze (Optiona	•		
EDF Annotation 123 Annotation Control Menu 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 137 Band Ratios Section 138 Voxels Section 139 ROI Coherence Section 143 Export 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 143 Exporting LORETA Files 146 Creating an EDF/CSV/Text File 146 Analyze (Optional Purchase) 150 Analyze Control Menu 150 Sample Analyze File & Layout 154 Description Section 155 Similarities Section 155 Similarities Section 154			
Annotation Control Menu 123 Annotating an EDF 124 Deleting an Annotation (Review Tab) 125 Deleting an Annotation (Review Menu) 126 ZBuilder Control Menu 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 135 Similarities Section 137 Band Ratios Section 139 ROI Coherence Section 140 Training to a ZBuilder File 143 Export Control Menu 144 Creating an EDF/CSV/Text File 144 Analyze (Optional Purchase) 150 Analyze Control Menu 150 Sample Analyze File & Layout 154 Description Section 155 Similarities Section 155 <td>, .</td> <td></td> <td></td>	, .		
Annotating an EDF124Deleting an Annotation (Review Tab)125Deleting an Annotation (Review Menu)126ZBuilder128ZBuilder Control Menu128Creating a Z-Builder File131Sample ZBuilder File & Layout133Description Section133Scalars Section135Similarities Section137Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File143Export Control Menu143Export Control Menu143Export Control Menu143Export Control Menu143Export Control Menu144Description Section144Export Control Menu143Export Control Menu150Analyze (Optional Purchase)150Analyze File & Layout154Description Section154Scalars Section154Scalars Section155Similarities Section157			400
Deleting an Annotation (Review Tab)125Deleting an Annotation (Review Menu)126ZBuilder			
Deleting an Annotation (Review Menu) 126 ZBuilder 128 ZBuilder Control Menu 128 ZBuilder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 135 Similarities Section 137 Band Ratios Section 138 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export Control Menu 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 144 Maalyze (Optional Purchase) 150 Analyze Gontrol Menu 150 Analyze File & Layout 154 Scalars Section 154 Scalars Section 155 Similarities Section 155	5		
ZBuilder 128 ZBuilder Control Menu 128 Creating a Z-Builder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 135 Similarities Section 135 Similarities Section 137 Band Ratios Section 138 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export 143 Export Control Menu 143 Export Control Menu 143 Exporting LORETA Files 146 Creating an EDF/CSV/Text File 148 Analyze (Optional Purchase) 150 Analyze File & Layout 154 Description Section 154 Description Section 155 Similarities Section 155 Similarities Section 155	• • •		
ZBuilder Control Menu 128 Creating a Z-Builder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 135 Similarities Section 137 Band Ratios Section 138 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export 143 Export Control Menu 143 Export Control Menu 143 Export Control Menu 144 Malyze (Optional Purchase) 150 Analyze Control Menu 150 Sample Analyze File & Layout 154 Scalars Section 155 Similarities Section 154			126
Creating a Z-Builder File 131 Sample ZBuilder File & Layout 133 Description Section 133 Scalars Section 133 Scalars Section 135 Similarities Section 137 Band Ratios Section 138 Voxels Section 138 Voxels Section 139 ROI Coherence Section 140 Training to a ZBuilder File 141 Export 143 Export Control Menu 143 Export Control Menu 143 Export ID IORETA Files 146 Creating an EDF/CSV/Text File 148 Analyze (Optional Purchase) 150 Analyze Control Menu 150 Sample Analyze File & Layout 154 Description Section 154 Scalars Section 155 Similarities Section 155			
Sample ZBuilder File & Layout133Description Section133Scalars Section135Similarities Section137Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Sample Analyze File & Layout154Scalars Section155Similarities Section157			
Description Section133Scalars Section135Similarities Section137Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze File & Layout154Scalars Section155Similarities Section155Similarities Section157	•		
Scalars Section135Similarities Section137Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export143Export143Export Control Menu143Creating an EDF/CSV/Text File146Creating an EDF/CSV/Text File150Analyze (Optional Purchase)150Sample Analyze File & Layout154Description Section154Similarities Section155Similarities Section157	· · ·		
Similarities Section137Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export.143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Sample Analyze File & Layout154Description Section154Similarities Section155Similarities Section157			
Band Ratios Section138Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze File & Layout154Description Section154Similarities Section157			
Voxels Section139ROI Coherence Section140Training to a ZBuilder File141Export143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157			
ROI Coherence Section.140Training to a ZBuilder File141Export.143Export Control Menu143Exporting LORETA Files.146Creating an EDF/CSV/Text File148Analyze (Optional Purchase).150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157			
Training to a ZBuilder File141Export.143Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157			
Export.143Export Control Menu143Exporting LORETA Files.146Creating an EDF/CSV/Text File148Analyze (Optional Purchase).150Analyze Control Menu.150Sample Analyze File & Layout.154Description Section.154Scalars Section155Similarities Section157			
Export Control Menu143Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157	•		
Exporting LORETA Files146Creating an EDF/CSV/Text File148Analyze (Optional Purchase)150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157			
Creating an EDF/CSV/Text File 148 Analyze (Optional Purchase) 150 Analyze Control Menu 150 Sample Analyze File & Layout 154 Description Section 154 Scalars Section 155 Similarities Section 157	•		
Analyze (Optional Purchase)150Analyze Control Menu150Sample Analyze File & Layout154Description Section154Scalars Section155Similarities Section157	1 0		
Analyze Control Menu.150Sample Analyze File & Layout.154Description Section.154Scalars Section .155Similarities Section157			148
Sample Analyze File & Layout.154Description Section.154Scalars Section			
Description Section			
Scalars Section			
Similarities Section	•		
Band Ratios Section			
Voxels Section			
ROI Amplitude Section			
ROI Coherence Z-Score Section			
Suface Z-Score Absolute Power Section			
Suface Z-Score Connectivity Section			

Voxel Z-Score Section	
ROI Z-Score Section	
iCoh Section	
gPDC Section	
Creating an Analyze File	169
Software Themes	
Built-In Themes	 171
BMZ Files	172
Creating A BMZ from a Studies File	
Import Received/Downloaded BMZ Files	
BMr Extras	 180
BMr Contributed Games	
Puzzle	
Space Race	
Cricket	 182
Bug Run	
BMr Popups Displays	
BMr Flash Player	 196
BMr Flash Player Control Menu Display	
Using BMr Flash Player	
Flash Player Games	
Color Quest (Adventure Games)	 200
BrainCats 2 (Racing Games)	 201
BrainMan 2 (Arcade Games)	 203
BrainFish (Collecting Games)	
App Boxes (Amplitude Games)	
Meditation Master (Growth Games)	
NeuroFlight (Side-Scrolling Games)	
Fission Balls (Interactive Games)	 212
BMrMultiMediaPlayer Suite	216
BMrMultiMedia(BMrMMP) Player Control Menu Display	
Using BMrMMP	
BMrDVD Control Menu Display	
Using BMrDVD	
EEGAudio Control Menu Display	
Using EEGAudio	
Dimmer Control Menu	
Using Dimmer	
Z-Score Training	232
Activating ANI Z-Score Training DLL	
Single Tab Design - Z-Scores Using PZOK or PZOKUL	
Multi-Tab Design - Z-Scores Using PZOK or PZOKUL	
Changing Surface Sites	
Changing ROI Sites	
Changing ROI Coherence Training	

Event Wizard		244
Event Wizard Control Menu Display	244	
Event Wizard Control Menu Display (Continued)	245	
Data Dictionary for the Event Wizard	246	
Designing an Event		
Making a Threshold to be dragged by the Thermometer		
Basic BrainMaster Setting Protocol through the Event Wizard		
Standard Amplitude (Alert)		263
Standard Z-Score Based Protocol (4 Channel PZOKUL)		264
Standard ROI Training (ROIA Enhance Training)		
Advanced Event Wizard Controls		
Enabling Multiple Events to control Flash Player (2 Event Example)		
Enabling Amplitude Plus Events to control Flash Player		
Enabling Events to control Third-Party Games		270
Session Wizard		272
Session Wizard Control Screen		
Loading a Protocol that has a Pre-Loaded Session Wizard File		
Loading a Session Wizard File to a Pre-Existing Protocol		
Data Dictionary for the Session Wizard	276	
Designing a Session Wizard Template	279	





Minimum PC Computer Requirements

CPU:	Quad-core or above
Operating System:	Windows 8, Windows 10
Memory(RAM):	4GB
Graphics Card:	DirectX 10.1 or above compatible graphics card
	1GB Dedicated
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 3rd Party DVD Decoder: Required for BMrDVD* Adobe Acrobat Reader

Main Screen Menu

Welcome to B	Folder Settings Global Settings 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	LOGIN OK: SN: 60179 UNLIMITED USE	
	ee/Study Folder: EK 60 M5C(D)(PB) ASSESSMENT EC QEEG	3 Login	
Trainee D Name:	EK 60 M5C(D)(PB) ASSESSMENT EC QEEG	4 Folder Selections	
Comment: 1 Pi	1,013 PAP Personal Assessment rocedure (Assess EC QEEG) Pro BMANS	5 Run The Next Session	
Next Session M	Number: Total Sessions Available:	6View or Change Settings	
raining screer	n is Not Running	7 EDF Browser	
LO Exit	11Product Manuals	8 Review Session Results	
LO Exit	11Product Manuals	8 Review Session Results	
O Exit	11Product Manuals	8 Review Session Results	
.0 Exit	1 Product Manuals	8 Review Session Results	
LO Exit	1 1Product Manuals	8 Review Session Results	
10 Exit	1 1 Product Manuals	8 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 its 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. You can also click the Login Tab at the top.
- 4. **Folders Selections Button** Click to open the Select Trainee/Study Folder Menu. You can also click on the Folder Tab at the top.
- 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. You can also click the Settings Tab at the top.
- 7. **EDF Browser Button** Click to open the EDF Browser.
- 8. **Review Session Results Button** Click to open the BReview Screen. You can also click the Review Tab at the top.
- 9. Global Settings Tab Click to open the Global Settings Screen.
- 10. Exit Button Click to close the Avatar Setup Screen.
- 11. Product Manuals Button Click to open a menu displaying documentation on our software.
- 12. Use These Settings and Close Button Click to Use all settings that you have put into place and close the Avatar Setup Screen.
- 13. **Use These Settings Button** Click Use all settings that you have put into place, but keep the Avatar Setup Screen Open.

Login Menu

- 1. Current Login Status Displays what your Current Login status is.
- 2. **Current Passkey Status** Displays currently what the Passkey for your BrainMaster is enabled with.
- 3. Serial Number Box Box where you will type in the Serial Number of your BrainMaster unit. ***PLEASE NOTE: The BrainMaster Software has the capabilities to remember multiple passkeys. If you have entered multiple passkeys, you will be able to choose between the different passkeys by click the drop-down arrow to the right of the Serial Number Box.
- 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.
- 5. Delete This Key Button Click to remove your passkey from the BrainAvatar Software.
- 6. (**Optional**) **Personal Information** Name and E-Mail information utilized for sending BMZ Files via E-Mail.
- Login Button Click to log into the Current passkey that is entered into the BrainAvatar Software. ***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.

Select Trainee/Study Folder Menu

elect Folder: (you may double-cli	ck to select)								
Study Name	Birth Date	Sess	Max	Comment	Technician	Physician	Trainee Name	Created	Modified ^
								2017-11-27	2018-4-2(
	2007-4-7	9	40	4ch Z-Score PZ			4 channel FZ PZ C3 C4	2017-11-27	2017-11-:
	1982-10-7	1	40	4ch Z-Score PZ			4Chan BReview	2018-3-19	2018-3-19
Abby P. 1 Ch Swingle theta		10	40	Discovery Test			Abby P. 1 Ch Swingle theta		2017-12-(
	1997-10-18	8	10	comment	EEG tech		Aiden Thomason AFZ PZ 3	2017-12-21	2017-12-:
	1997-10-18	9	10	comment	EEG tech		Aiden Thomason PZ OZ 1	2017-12-21	2017-12-:
	1982-10-7	2	40	ROIA Enhance			AnotherRefreshTest	2017-11-27	2017-12-:
	1982-10-7	4	40	Discovery Test			Assessment Fix	2018-3-20	2018-3-2:
	2001-1-1	10	40	Alert - Beta Up			Better JIRA Testing	2018-3-7	2018-3-1:
	1982-10-7		40	Discovery Test			Birthdate Test	2018-4-26	2018-4-2(
BrainAvatar Demonstration		2	40	For Demonstra			BrainAvatar Demonstration		2018-4-2
BReview - FinalTest	2001-1-1	2	40	MicroTesla STI	EEG		BReview - FinalTest	2018-1-15	2018-4-3(
BReview-MoreTest	1982-10-7	1	40		EEG tech		BReview-MoreTest	2018-1-15	2018-1-1!
BReview50Testing	2001-1-1	1	40	Focus SMR Up	EEG tech		BReview50Testing	2017-11-27	2017-11-:
BReviewCompleteTesting	2001-1-1	1		Xin - Heart-Min	EEG tech		BReviewCompleteTesting	2017-11-27	2017-11-:
BReviewExport 1-15	1982-10-7	1	40	4ch Z-Score PZ	EEG tech		BReviewExport 1-15	2018-1-15	2018-1-1
BreviewTake2	1982-10-7	6	40	no comment su	EEG tech		BreviewTake2	2017-11-27	2017-11-:
BReviewTesting	2016-2-2	11	40	Z-Score sLORE	EEG tech		BReviewTesting	2017-11-27	2018-4-1:
udy Name (Trainee ID): K 30 M5C(D)(P) Quiet EC 2029 N	1ag G(35-45) [Dn		Trainee Name: SJK 30 M5C(D)(P) Quiet EC 202	9 Mag G(35-45)		2 Create Ne	ew Folder
omment:									
-Score PZOKUL 19CH Dynamic - o	EEG Pro			Sessions Used:	38			3 Folder	Notes
				Max Sessions:	40			-	
ession Librarian				Max Sessions:	40			4 Edit Fold	ler Info.
	1			1			1		
Administer Session Genie	7 ^{Push Cu}	rrent Stu and De	idy to Se lete	erver 8 Arch	nive Current St	tudy 9 Archi	ive Current Study and Delete	5 Select A	nd Run

- 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. You can also click the Create Folder Tab at the top.
- 3. **Folder Notes Button** Click to create or look at a Note page for a specific client folder. You can also click the Folder Notes Tab at the top.
- 4. **Edit Folder Button** Click to edit the folder information for the selected folder. You can also click the Edit Folder Info. Tab at the top.
- 5. **Select and Run Button** Click to confirm the folder that you have highlighted and exit the Setup Menu.
- 6. Administer Session Genie Click to utilize the Session genie. *****PLEASE NOTE:** Administer Session Genie will not be available on Remote User Systems.
- Push to Current Study to Server and Delete Button 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.
- 8. Archive Current Study Button Click this to back-up the current folder that is selected.
- 9. Archive Current Study and Delete Button Click to back-up the current folder that is selected, and remove it.

Folder Notes Screen

R BrainAvatar Setup	×
Vain Login Settings Global Settings	
Select Folder Create Folder Folder Notes Session Librarian Edit Folder Info.	
This is a place where you can write notes on your clients training and sessions.	
2 Save	
Logged in, device type Discovery Use Settings and Close Use These Settings	

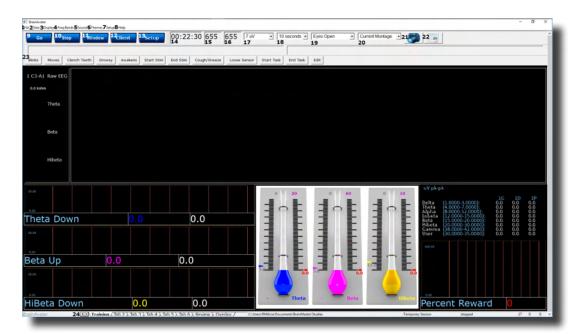
- 1. Text Area Area, where you can type notes for the particular client.
- 2. Save Button Click to save any changes to the Text Area.

Edit Folder Info Screen

BrainAvatar Setup	>
tain Login Folder Settings Global Settings	
Select Folder Create Folder Folder Notes Session Librarian Edit Folder Info.	
Editing Demographics for Trainee/Study:	
folder name	
Name:	_
BReviewTesting	
Comment:	
1 Z-Score sLORETA PZOKUL 'C' Key - Dx	
Birthdate2 26- Jun - 1997 + Age: 4 20.8 Gender: 5 F M or F	
Birthdate ² 26- Jun - <u>1997</u> Age: 4 20.8 Gender: 5 F M or F	
3 Compute Age	
6 Recording Conditions	
© Eves Open C Eves Closed C Task Task ID Number	
Sensor 7 electrode e.g. "gold disk electrode" or "tin electro-cap",	
,	
Investigator / 8 EEG tech	
	7
Edit contents then press "Save and 9 Save and Continue	
ogged in, device type Discovery	Use Settings and Close Use These Settings

- 1. **Comment Line** Line that a customer can add a comment for the selected Trainee folder.
- 2. **Birthday Section** Click to put in the client's Birthday. As you change the date, the age will set itself
- Compute Age Button Click to compute the age of the client based on their entered Birthday. You will use this button, if you import a Protocol, and the age does not match based off of the birthday
- Age Line Line where you enter the clients age.***PLEASE NOTE: You do not need to manually set this. The Age will set itself based off of the Birthday.
- 5. Gender Line Line where you enter the clients gender. M = Male and F = Female
- Recording Conditions Section Section where you can adjust the Recording condition.***PLEASE NOTE: If you set Recording Condition to Task, you will need to assign a 3-Digit number to it using the box next to the Task Recording Condition.
- 7. **Sensor Section** Section that you can input the type of sensor that you are using for the client.
- 8. Investigator Section Section that you can enter the person who is running the session.
- 9. Save and Continue Button Click to save the protocol and exit to the Folder Selection Tab

Training/Control Screen

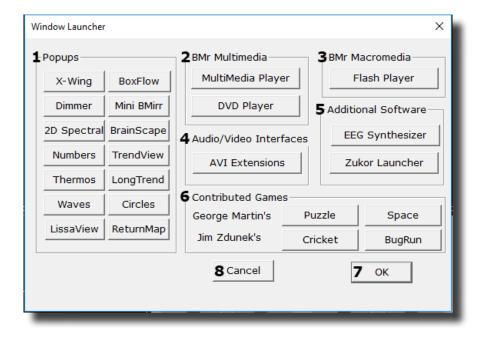


- 1. File Tab Click to create a new study, open existing study, export files and import a file.
- 2. **Data Tab** Click to access COM, filter settings, playback options, and Atlantis Setup Menu.
- 3. **Display Tab** Click to choose from various display options. This option will display the chosen option for whatever tab you are currently looking at.
- 4. Freq. Bands Tab Click to choose what filtered waveforms to display.
- 5. Sound Tab Click to choose your sound settings.
- 6. **Themes Tab** Click to adjust your Theme of the Training Screen.
- 7. **Setup Tab** Click to open up the Main Screen Menu.
- 8. Help Tab Click to view Help information.
- 9. **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.
- 10. **STOP Button** Click to stop a session.
- 11. Window Button Click to open the Window Menu.
- 12. Client Button Click to open the Client Training Window.
- 13. Setup Button Click to open the Main Screen Menu.
- 14. **Clock Window** Window that will display the time for your session as defined from the Session Control Menu.
- 15. **Points 1 Window** Box that will show the points gained from training.
- 16. **Points 2 Window** Box that will show the points gained from training. This will only be activated, if defined either from the Protocol Menu or the Event Wizard.
- 17. Gain Box Used to change the Gain of the Raw EEG.
- 18. Second Box Used to change how many seconds of data to be displayed on the screen.

Training/Control Screen (Continued)

BrainAvatar File 2Data 3Display4 Free	eq.Bands 5 Sound 6 Themes 7 Setup 8 Help					
9 _{Go} 10	Stop ¹¹ Window ¹² Client	¹³ Setup 00:22:30 655 14 15	655 7 uV 16 17	10 seconds Eyes Open 18 19	Current Montage	21 22
23 _{Blinks} Moves	Clench Teeth Drowsy Awakens	Start Stim End Stim Couph/Sneeze	Loose Sensor	Start Task End Task Edit		
_	mbee			0.0		0.0
	BrainAvatar	24	Training	<u> </u>	Tab 4 <u>λ</u> Tab 5	<u>λ Tab 6 λ Revie</u>

- 19. **Recording Condition Button** Click change the recording condition. When switching between conditions, a New EDF will be created.
- 20. Montage Button Click to change between saved, and pre-created Montages. *****PLEASE** NOTE: The Montage Button will only work in the Training Waveforms Display.
- 21. **Picture Button** Click to capture a screenshot of what is happening on the screen. The image will be saved to the Current Study folder.
- 22. **Report Button** Click to create a report that will take a screen capture and save the picture in this report.*****PLEASE NOTE:** Microsoft Word is required for this feature.
- 23. **Annotation Button** Click one of the 12 buttons, to annotation Buttons. When this is pressed, it will place a marker on the EDF, and the annotation Buttons name.
- 24. Tab Section Area where you can switch which display tab you wish to look at.



Window Menu

- Popups Section Click the included buttons to launch additional display/training feedback options used for feedback. ***PLEASE NOTE: More Information on the Popups Section in document 531-343.
- BMr Multimedia Section* Click the included buttons to launch either BMrDVD* or BMrM-MP* used for feedback. ***PLEASE NOTE: More Information on the Popups Section in document 531-308.
- BMr Macromedia Section Click the included buttons to launch the BMrFlashPlayer used for feedback. ***PLEASE NOTE: More Information on the Popups Section in document 531-313.
- 4. Audio/Video Interfaces Section Click the included buttons to launch EEGAudio*. *****PLEASE** NOTE: More Information on the Popups Section in document 531-308.
- 5. Additional Software Section Click the included buttons to launch additional software.
- Contributed Games Section Click the included buttons to launch contributed games used for feedback. ***PLEASE NOTE: More Information on the Popups Section in document 531-343.
- 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 Menu

🖬 BrainAvatar Setup 🛛 🕹
Main Login Folder Settings Global Settings
Main Read/Write Acquisition Channels Bands Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes 💶
Read/Write Settings File Current Trainee/Study: Name unknown
Data Channels NCHANS: 20 SRATE: 256 LOWFREQCUTOFF: ON FILTER: 3 ARTIFACT: 255 uv CON: 4 SUMCHANS: OFF SAVEEEG: E0F P-P:ONFJ-LE FP2-LE FP3-LE F4-LE G-3LE E4-LE D1-LE EP3-LE F4-LE G-3LE E4-LE D1-LE EP4-LE D1-LE
1 Frequency Bands Alpha:8.0000-1.0000 - 15.0000 The state of
1 Training Protocol GO: (none) AUTO:OFF:50/20/10
1 Display Options
1 Feedback Control
1 Session Control PAUSE BETWEEN RUNS-SESSION TYPE: Playback PAUSE ACTION PAUSE ACTI
1 Auto Threshold 2PRINT SETTINGS 1 Event Wizard USE THESE SETTINGS
Logged in, device type Discovery Use Settings and Close Use These Settings

- 1. **Various Menu Buttons** Click to open the associated menus. You can also click the tabs that are located at the top.
- 2. **PRINT SETTINGS Button** Click to print a hard copy of all of your Settings.

Read/Write Settings File Menu

BrainAvatar Setup	×
Main Login Folder Settings Main Read/Write Acquisition Channels Bands Montage Protocol Feedback	< Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes • •
Built-In Settings Files: (double-click to read in settings and proceed) Ø. Pic, Processing_Setting_Standard_Capt-O.bdb2 BasicOherener Fraining_11.0.bdb2 CA-ADwn;SMRU-bdb2 CA-ADwn;SMRU-bdb2 CA-ADwn;SMRU-bdb2 CA-ADwn;SMRU-bdb2 Commerce Fraining_11.0.bdb2 Commerce Fraining_11.0.bdb2 NeuroShifter - Aert-bdb2 Pic, Processing_Setting_12, Very X_Seconds.bdb2 Pic, Processing_Setting_10, Very X_Seconds.bdb2 Pic, Processing Setting_10, Very X_Seconds.bdb2 Pic, Pic, Pic, Pic, Pic, Pic, Pic, Pic,	Description: Description: Description: Description: Description: Dohn Berger Settings Browser Cancel Sure Settings Bload Protocol and Settings
Logged in, device type Discovery	Use Settings and Close Use These Settings

- 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. In the Directory Box, it will let you know which
 folder you are currently in. ***PLEASE NOTE: Find more Information on this selection in document 531-311.
- Save Current Settings to a New File Button Click to save the current Studies folders settings into a new Settings file. ***PLEASE NOTE: Find more Information on this selection in document 531-311.
- 3. Settings Description Section Lists out basic information about the highlighted Settings File.
- Advanced Settings Browser Button Opens Windows Explorer, to allow you to use Windows Explorer to find the Settings Protocol you would like to select. ***PLEASE NOTE: Find more Information on this selection in document 531-311.
- 5. Use Selected Settings Button Click to choose the highlighted protocol contained in the Settings File Name Section.
- 6. **Cancel Button** Click to cancel changes and exit the Read/Write Settings File Menu.
- 7. Load Protocol and Settings Button Click to utlize an XML generated from supported 3rd Party applications and select the proper settings file.
- 8. **Load Protocol Button** Click to utilize an XML generated from supported 3rd Party applications in the currently loaded settings.

Data Channels Menu

Training Channels:	2 Software Digital Filter Order:	Ch		. ≘qn. 17		Refer	ence	User Label	Equation 21	
C Two pIR HEG or	C 6 C 7 C 8 C 9 C 10	1	10	<u> </u>	18 F3		-	20	Z 1 F3-LE:	•
Four TEMP	lower order is faster, higher	2	~	Г	F4		-		F4-LE;	
C Other: 4	order is more selective	3	~	Г	C3		•		C3-LE;	
Sum-Channel Mode:	4 Acquisition Control	4		Г	C4		•		C4-LE;	
ON OFF 4-channel Sum Method:		5		Г			-			
⊂ Split	5 Atlantis Hardware Control	6	Г				-			
File Output	8Amplitude Scale:	7	Г		-					
EDF+ ASCII (CSV format)		8				<u> </u>	-			
ELexicor BSM	9Artifact Threshold:	9	Г							
BDF+ M BBSM	255 microvolts	10	Г				Ŧ			
Save raw EEG		11	Г	Г		;				
-		12	Г			<u> </u>				
Low Frequency Cutoff 0.5 Hz low cut	1 Software Notch Filters:	13		Г		ī i —				
	60Hz EEG Notch Fi	14	Г	Г		-				
2Visual Filters:	-	15	Г			=				
Off	-	16	Г	Г						
3EEG Data Sampling Rat		17	Г	Г						
	 256 sps 	18	Г						,	
		19	Е	Г					· · · · · · · · · · · · · · · · · · ·	
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4 Additional processing		21	Ē	Г				, 		
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1 Sciectiodes & I	lance into	2.4	Г	Г			- 		· · · · · · · · · · · · · · · · · · ·	

- 1. Training 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. **Acquisition Control Button** Click to enter the Acquisition Control Menu. You can also click the Acquisition tab at the top.
- 5. Atlantis Hardware Control Button Click to enter the Atlantis Hardware Control Menu. You can also click the Atlantis HW tab at the top.
- 6. **4-Channel Sum Method Section** Section where you can set the 4-Channel Sum Method to either Split or Combine.
- 7. **File Output Section** Section where you can choose what type of File Outputs that you would like to be created for review.
- 8. **Amplitude Scale Section** Section where you can set the Amplitude scale to either Peak-to-Peak or RMS.
- 9. Artifact Threshold Section Section where you can adjust the artifact rejection range.
- 10. Low Frequency Cutoff Section Section where you can enable or disable the Low Frequency Cutoff.
- 11. **Software Notch Filters Section** Section where you can turn on or off the Software notch filters.
- 12. **Visual Filters Section** Section where you can turn on a Visual Filter that displays the data with a filter of 1.5 34Hz.
- 13. **EEG Data Sampling Rate Section** Section where you can adjust the Sample rate you are collecting from the data.

Training Channels: 2Software Digital Filter Order: One OnIR HEG C1 C2 G3 C4 C5	Ch		. ≣qn. 17	Active 18		Referen 19	ce	User Label	Equation 21	
Two CPIR HEG OF C6 C7 C8 C9 C10 Four TEMP lower order is faster, higher	1	7	Π	F3	•	LE	•		F3-LE;	<u> </u>
Other: 4 • order is more selective	2	ঘ		F4 C3	_	LE LE	•		F4-LE; C3-LE;	
Sum-Channel Mode: C ON © OFF 4 Acquisition Control	4	4		C4	•	LE	•		C4-LE;	
4-channel Sum Method: 5 Atlantis Hardware Control	5				Y					
File Output 8Amplitude Scale: Image: Pile Output @ Peak-to-Peak	7	Γ			Ť		- -			
Ascill (CSV format) Lexicor	8				Ŧ		Ŧ			
BDF+ BBSM 255 microvolts	10									
▼ Save raw EEG	11				Ŧ		~			
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O.5 Hz low cut GOHz EEG Notch Fi	14	~	Г		~		~	i		
Off	15				Ψ Ψ		¥ *			
3EEG Data Sampling Rate: • 256 sps	17	Γ	Γ	<u> </u>	· •		Ť	 		
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Additional processing ☐ ROI Coherence	21				Ŧ		~			
1 5Electrodes & Trainee Info	22				- 		* *			
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Data Channels Menu (Continued)

- 14. Additional Processing Checkbox Click to choose additional settings for additional data processing
- 15. Electrode & Trainee Info Button Click to enter the Montage Menu. You can also click the Montage tab at the top.
- 16. Channel Check Boxes Check boxes to control what channels will be trained. *****PLEASE** NOTE: These settings can also be adjusted in the Montage Info Menu.
- 17. Equation Check Boxes Allows you to toggle between Channel combinations defined by the Active and reference site boxes or the Equation Box for the Channel. *****PLEASE NOTE:** These settings can also be adjusted in the Montage Info Menu.
- 18. Active Site Boxes Boxes where you can choose the active site location. *****PLEASE NOTE:** These settings can also be adjusted in the Montage Info Menu.
- 19. **Reference Site Boxes** Boxes where you can choose the reference site location. *****PLEASE NOTE:** These settings can also be adjusted in the Montage Info Menu.
- 20. User Label Box Allows you to give a name to the Channel, as opposed to being displayed as the Channel Combination or Equation. *****PLEASE NOTE:** These settings can also be adjusted in the Montage Info Menu.
- 21. Equation Box Allows you to define the channel, through an equation, rather than just an Active and Reference Electrode. *****PLEASE NOTE:** These settings can also be adjusted in the

Montage Info Menu.

Acquisition Control Menu

BrainAvatar Setup Main Login Folder Settings Global Settings Main Read/Write Acquisition Channels Bands Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW
Main Read/Write Acquisition Channels Bands Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes
1 Select Channels to Acquire 3 Reterence 4 Acquired PD1 PD2 PD2
Logged in, device type Discovery Use Settings and Close Use These Settings

- 1. **Select Channels to Acquire Section** Section where you can choose individual channels to either acquire, or not acquire from, or which Hardware you are utilizing.
- 2. **Special Data Section** This section is for the Atlantis Data. It will allow you to choose special data for the Atlantis to use.
- 3. **Reference Section** This section is used to define the type of reference you would like to use for the Acquisition. You can choose either LE (Linked Ears) or A1.
- 4. Acquired Channels Section Section that displays the current channels that are being acquired from.
- 5. Select All Button Click to select to acquire from all 24 Channels.
- 6. **Deselect All Button** Click to De-select all channels being acquired.
- 7. **Atlantis Switch Section** This section is for the Atlantis Data. It will allow you to choose to acquire the Switch* Outputs of the Atlantis Hardware
- 8. ANI Settings Button Click to change the acquired channels into the ANI Channel order
- 9. **Standard Settings Button** Click to change the acquired channels into the standard Discovery channel order.

🔳 B	rainAv	atar Set	up															×
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Mair	n F	Read/N	Vrite Acq	uisitio	n Ch	annels	Bands	Montag	e Protocol	Feedback	Session	Event Wiza	rd Z Score	es ROI Select	Session Wizard	d Atlantis	HW Electrode	s 🔸 🕨
Ch	Act.	Eqn.	Active		Refere	nce	User L		_	Equati	ion							
1	1	2	3	1.5	4		5		6									
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2					LE	•			F4-LE;					8Save Montage	1			
3	•				LE		 		P3-LE;					9Set From Acqu	irod l			
4	▼		P4	<u> </u>	LE	•			P4-LE;					- Sec Hom Acqu	ired			
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Montage Info Menu

- 1. Channel Check Boxes Check boxes to control what channels will be trained. *****PLEASE** NOTE: These settings can also be adjusted in the Data Channels Menu.
- 2. Equation Check Boxes Allows you to toggle between Channel combinations defined by the Active and reference site boxes or the Equation Box for the Channel. *****PLEASE NOTE:** These settings can also be adjusted in the Data Channels Menu.
- 3. Active Site Boxes Boxes where you can choose the active site location. *****PLEASE NOTE:** These settings can also be adjusted in the Data Channels Menu.
- 4. Reference Site Boxes Boxes where you can choose the reference site location. *****PLEASE** NOTE: These settings can also be adjusted in the Montage Info Menu.
- 5. User Label Box Allows you to give a name to the Channel, as opposed to being displayed as the Channel Combination or Equation. *****PLEASE NOTE:** These settings can also be adjusted in the Data Channels Menu.
- 6. Equation Box Allows you to define the channel, through an equation, rather than just a Active and Reference Electrode. *****PLEASE NOTE:** These settings can also be adjusted in the Data Channels Menu.
- 7. Load Montage Button Click to load a pre-existing montage(.bmm).
- 8. Save Montage Button Click to save your created montage for future use as a .bmm.
- 9. Set From Acquired Button Click to load the electrode placements from the Acquisition screen.
- **10. Electrode Selection Display** Section that displays the electrodes that have been selected in either the Active or Reference section of the Montage Screen.
- **11. Description Box** This box displays the Description given to a saved Montage when loaded into the system. This will be blank if a Montage has not been loaded.

Frequency Bands Menu

📧 Brain	Avatar Setup			×
Main	Login Folder	r Settings Globa	al Settings	
Main	Read/Write	Acquisition Chan	nels Bands	Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes 💶 🕨
Activ	2 Name:	3Low:	High:	Use Hz with 0.0001
1 ⊽ o	Raw EEG	0.0000	0.0000	5 On-the-fly Frequency Adjust Increment
V 1	Delta1	0.5000	1.5000	 Increment (Hz) used for on-the-fly frequency band changes.
₽ 2	Delta	1.7000	3.7000	Use values 0.0001 - 1.0000 0.0050
🗹 З	Theta	3.7000	7.7000	(default = 0.5000)
☑ 4	Alpha	7.7000	12.7000	6 Digital Filter Amplitude Smoothing and Damping Factors
⊮ 5	Beta	12.7000	25.2000	Global Smoothing Window (used to
⊮ 6	Sum	1.7000	25.2000	slow ampitude changes for all
₹ 7	Beta2	25.2000	35.2000	displays and training using digital 60 filters). Specify # of milliseconds
₹ 8	Gamma	35.2000	50.2000	to smooth over. Use values 0-1000
№ 9	Alpha1	7.7000	10.2000	(0=no smoothing, default = 60)
№ 10	Alpha2	10.2000	12.7000	Text Damping Factor (used to
□ 11				 further slow value changes for text displays). Use values 0-1000
□ 12				(0=no damping, default=100)
□ 13	·	<u>`</u>	-	
□ 14		/	-	
□ 15		/	-	
7 Star	ndard Settings	8 ANI Settin	ngs 9 E	BrainDx Settings 10 qEEGPro Settings 11 Loreta Settings
Logged	in, device typ	e Discovery		Use Settings and Close Use These Settings

- 1. Frequency Band Check Boxes Check Boxes to control what frequency bands are active.
- 2. Name Boxes Boxes where you can name/rename any frequency bands.
- 3. Low Boxes Boxes that you set the Low Hz of the Frequency Band.
- 4. High Boxes Boxes that you set the High Hz of the Frequency Band.
- 5. **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, I=Lobeta, b=Beta, h=High Beta, g-Gamma, u=User).
- 6. **Digital Filter Amplitude Smoothing and Damping Factors Section** Section where Global Smoothing Window and Text Damping Factor can be adjusted.
- 7. Standard Settings Button Click to adjust all frequency bands to the default settings.
- 8. ANI Settings Button Click to adjust all frequency bands to the standard LORETA settings.
- 9. BrainDX Settings Button Click to adjust all frequency bands to the BrainDX Settings.
- 10. **qEEGPro Settings Button** Click to adjust all frequency bands to the Default qEEGPro Settings.
- 11. Loreta Settings Button Click to adjust all frequency bands to the ANI Settings.

Training Protocol Menu

1 All F3-LE F4-LE P3-LE P4-LE Band Go Stop Janore Band Go Stop Janore Datta C C 0.0 Alphe C C 0.0 Alphe C C 0.0 Beta C C 0.0 Beta C C 0.0 Beta C C C Gamma C C 0.0 Libeta C C 0.0 Samma C C C 0.0 Training Conditions must be met for: [500 milliseconds to aclive a reward point and asound (use value = 0 - 10000, default=500) 3Global Refractory Period (all channels) After a reward, system will wait for: 0 milliseconds before another reward point and set (use value = 0 - 10000, default=0) Nillesconds	x ocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes I Note: All thresholds are in microvolts 7 4.10 thresholds are in microvolts 7 50 percent time over threshold Autoset 'Sopa" for: 10 percent time over threshold Autoset HiBeta (stop) for: 10 percent time over threshold Autoset HiBeta (stop) for: 0 percent time over threshold Sutosthresholding is: • • • ON • off 9 Threshold Updating: • • Autopdate conce, after pre-baseline • Autopdate concellate pre-baseline • Autopdate conce, after pre-baseline • Autopdate concellate pre-baseline • Autopdate conce, after pre-baseline • Autopdate concellate continuous: every second Note: ''Y' key can be used to manually update at any time 10 Autothreshold Epoch Autothreshold Epoch • • • • • • • • • • • • • • • • • • • •
Logged in, device type Discovery	Use Settings and Close Use These Settings

- Frequency Training Section Section where you can set the training thresholds and type of training for all defined bands from the Frequency Bands Menu, for each of the defined Training Bands defined on either the Data Channels or Montage Info Menu. ***PLEASE NOTE: If you use the "All Tab, this will define the training for that band on all defined Training Channels.
- 2. **Global Sustained Rewards Criterion Section** Section to adjust the time where training conditions length must be met for a reward point and sound.
- 3. **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.
- 5. **Markers Check Box** Check Box that allows you to choose whether or not you would like to Mark the EEG whenever a reward is given.
- 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. **Autoset Percent Section** Section to set the percent time over threshold settings for the Go's, Stops and HiBeta(stop).
- 8. Autothresholding Is: Section Section to turn on or off Autothresholding.
- 9. Threshold Updating: Section Section where you can set the threshold updating options.
- 10. **Autothreshold Epoch Section** Section where you can adjust the epoch to compute the autothreshold value.

Display Options Menu

Acquired W Training We Phase-Spar Thermome Coherence FFT Freque Brain Mirro Brain Mirro Text Stats I Componen Event Trenu Wide Event	Vaveform aveform ce Trajectory ters / Phase Displ ncy Spectrum r (FIFT) r (Filters) Panel (Live) t Trend Graphs	Channel		Monta	age f								s ROI Selec	t Session Wiz	ard Atl	antis HW	Electrodes	Display	• •
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Z-Score Ma	aps (Instantan	neous)						ПГ		Г	ПГ								
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Vizard Event	ts 9 - 16																		
	evice type [gs and Close			e Settinas	1	

- 1. **Trainer Check Boxes** Checkboxes to control what displays are active on each individual tab for the Training/Control Screen.
- 2. **Client Check Boxes** Checkboxes to control what displays are active on each individual tab for the Client Screen.
- 3. **DLL Memory Mapping Mode Section** Section where you can choose the DLL Memory Mapping Mode you are using.

Feedback Control Menu

BrainAvatar Setup	×
Main Login Folder Settings Global Settings	
Main Read/Write Acquisition Channels Bands Montage Protocol Feedback Session Event Wiza \$ Sound Type Reward Sound (.wav when all criteria met MIDI Voice: 2 16 Organ 1 Image: Sound 1 and 1 an	ard Z Scores ROI Select Session Wizard Atlantis HW Electrodes
Logged in, device type Discovery	Use Settings and Close Use These Settings

- 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.
- 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.

Session Control Menu

BrainAvatar Setup				×
	1			^
Main Login Folder Settings Global Settin		. 1	1 1	
Main Read/Write Acquisition Channels Ba		ssion Event Wizard Z Sco	ores ROI Select Session \	Wizard Atlantis HW Electrodes 1)
NOTE: Please enter all times as who	e seconds (1, 2, 3, etc)			
Baseline Length (pre and post)	2Run Length:			
0 Seconds (before and after	1200 Seconds			
(Length of 0 means "no baselines")	(0 means run indefinitely)			
3Number of Sessions:	4 Number of Runs (Trials)	1		
40 sessions (80 maximum)	1 Runs			
(0 allows repeated use of Test Session 1)	(Must have at least one Run)			
5 Session Type:	6 Pause Between Runs?			
C Assessment @ Playback	O , i daba betirdari tanbi			
C Training C Synthesize	-			
C Simulation C Calibration	7 Session Wizard			
8 Use S	ession Wizard to control			
8 sessio	ession Wizard to control n (use with MINI-Q)			
Logged in, device type Discovery		Use	Settings and Close	Use These Settings

- 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.
- 7. Session Wizard Button Click to enter the Session Wizard* Controls.
- 8. Session Wizard to control session Check Box Used to control whether or not Session Wizard* is used for the training/assessment.

Z-Score Training Menu

2Score type Not using ZScores Ant is ing ZScores Ant is ing ZScores Ant if C ZBuilderOB ZBuilder C ZBuilder C getGPro BrainDx C sustom 2Zscore Options Zscore Options Zscore Options Zscore Options Zscore Options Surface EEG ROI connectivity Drymain ZScores C 4-ch Use selections on the right to c 19-ch Min Max ZScore Damping Factor: Jscore Damping Factor: C Control folder C Study folder Study folder Surface IEG	Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes 4 Acquired Fp1 Fp2 Fp2
Logged in, device type Discovery	Use Settings and Close Use These Settings

- 1. **Z-Score* Type Section** Section where you can choose the type of Z-Score* Training.
- 2. **Z-Score* Options Section** Section where you can choose what type of Z-Score processing you would like to do, the damping factor on the Z-Score displays.
- 3. **Z Builder Options Section** Section where you set up your information if you are using Brain-Master Z-Scores. This is where you would choose which Z-Builder file you use, as well as the settings for it.
- 4. Acquired Section Section that displays what is being acquired from the Acquisition screen.
- 5. **LZT* Section** Section where you set the sites to be LZT* Trained.
- 6. Add ⇒ Button Click to add the highlighted position from the Acquired Section.
- 7. Add All Button Click to add all positions from the Acquired Section.
- 8. **CREMOVE Button** Click to remove the highlighted position from the LZT* Section.
- 9. Remove All Button Click to remove all positions from the LZT* Section.
- 10. **Trained Values Section** Section that you can choose the trained values for the positions selected in the LZT section.
- 11. **Trained Bands Section** Section that you can choose the trained bands for the positions selected in the LZT section.
- 12. **Summary Section** Section where you can see the Total Number of Z-Scores being trained, as well as a detailed summary of all trained channels, bands cross frequencies, and ROI's

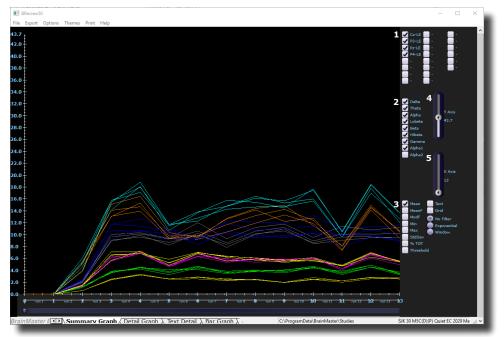
Atlantis Hardware Control Menu

📑 BrainAvatar Setup			×
Main Login Folder Settings Global Settings Main Read/Write Acquisition Channels Bands Montage	Protocol Feedback Session Event Wizard Z	Scores ROI Select Session Wizard At	lantis HW Electrodes
Autonomous/Immersive C PC Controlled Pulse width Amplitude Initial Freq. Left: Right: Left: Right: 6	HW Filtering 3 Low Frequency Cutoff C 2E (0.5 Hz) C Low (<0.5Hz) brotactile Stimulator Autonomous/Immersive PC Controlled uditory Stimulator Autonomous/Immersive PC Controlled		
Logged in, device type Discovery		Use Settings and Close	nese Settings

- 1. Hardware Environment/Notch Filtering Section Section where you can adjust the Hardware Environment.
- 2. Hardware Emulation Mode Section Section to adjust the Hardware Emulation.
- 3. Low Frequency Cutoff Section Section to adjust the low frequency cutoff.
- 4. Photic Stimulator* Section Section where you can adjust Photic/MicroTesla feedback.
- 5. Auditory Stimulator Section Section where you can adjust auditory feedback.
- 6. Vibrotactile Stimulator** Section Section where you can adjust vibrotactile feedback.

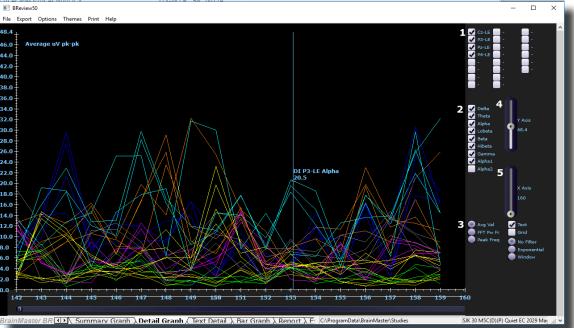
*PC Controlled Photic requires StimFlash. StimFlash is an optional purchase.

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



Review Session Results - Summary Graph

- 1. Channels Section Section where you can select the channels for reviewing.
- 2. Bands Section Section where you can select the bands for reviewing.
- 3. **Metrics Section** Section where you can select different metrics for viewing, as well as additional viewing options on the graph itself.
- 4. **Y-Axis Control** Control that allows you to adjust how much data is viewed on the Y-Axis of the graph.
- 5. **X-Axis Control** Control that allows you to adjust how much data is viewed on the X-Axis of the graph.



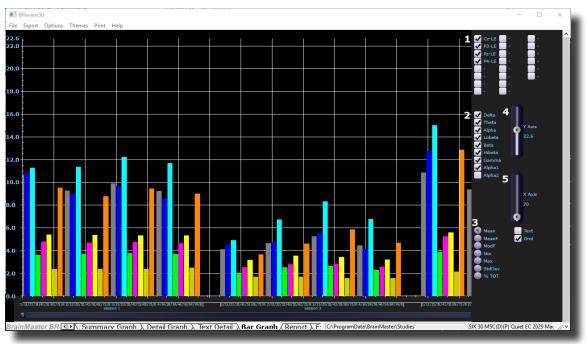
Review Session Results - Detail Graph

- 1. Channels Section Section where you can select the channels for reviewing.
- 2. Bands Section Section where you can select the bands for reviewing.
- 3. **Metrics Section** Section where you can select different metrics for viewing, as well as additional viewing options on the graph itself.
- 4. **Y-Axis Control** Control that allows you to adjust how much data is viewed on the Y-Axis of the graph.
- 5. **X-Axis Control** Control that allows you to adjust how much data is viewed on the X-Axis of the graph.

Review Session Results - Text Detail

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1/1/2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/10		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/12		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/13		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/14		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/15		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
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		$0.00\\0.00$	0.00	0.00 0.00	$0.00 \\ 0.00$	$0.00 \\ 0.00$	0.00	0.00		
1/1/18 1/1/19		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/20		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/21		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/1/22		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1/2/1	2.08	2.39	3.99	1.25	1.31	1.54	0.59	3.83		
1/2/2	2.05	2.16	5.08	1.24	1.54	1.58	0.60	4.58		
1/2/3	2.24	2.41	6.05	1.27	1.56	1.53	0.61	5.29		
1/2/4	1.96	2.04	5.48	1.09	1.47	1.41	0.60	5.28		
1/2/5	1.87	1.93	2.02	0.97	0.88	1.04	0.44	2.26		
1/2/6	1.41	1.72	2.12	0.91	0.71	1.02	0.53	2.14		
1/2/7	1.96	2.25	2.45	1.04	1.19	1.38	0.52	2.65		
1/2/8	1.56	2.23	2.75	1.11	1.10	1.25	0.46	2.89		
1/2/9	2.04	1.99	2.63	1.04	1.07	1.12	0.57	2.67		
1/2/10	2.22	2.03	1.68	0.88	1.02	1.25	0.55	1.82		
trainMae	ter E	Summan	(Graph)	Detail G		avt Deta	I / Bar G	ranh VI	. C:\ProgramData\BrainMaster\Studies SJK 30 M5C(D)(P) Quiet EC 20/	20 Mag G

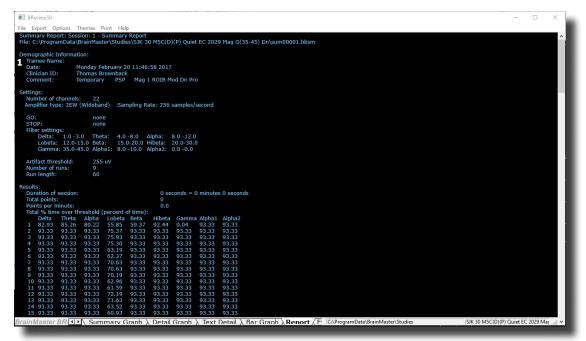
1. **Data Section** – Section that lists out the Average Amplitude separated by sessions, runs, and channels



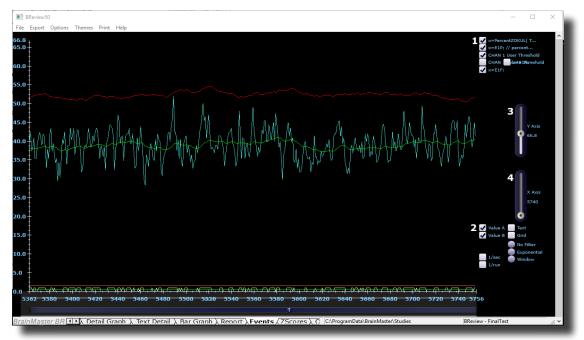
Review Session Results - Bar Graph

- 1. Channels Section Section where you can select the channels for reviewing.
- 2. Bands Section Section where you can select the bands for reviewing.
- 3. **Metrics Section** Section where you can select different metrics for viewing, as well as addtional viewing options on the graph itself.
- 4. **Y-Axis Control** Control that allows you to adjust how much data is viewed on the Y-Axis of the graph.
- 5. **X-Axis Control** Control that allows you to adjust how much data is viewed on the X-Axis of the graph.

Review Session Results - Report

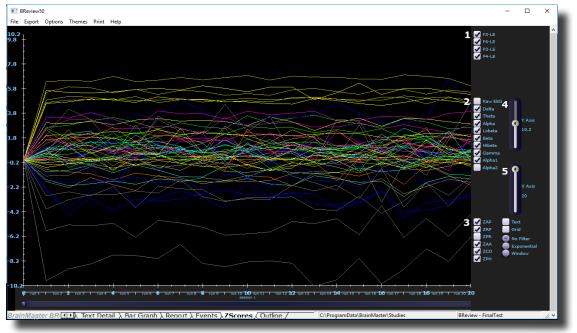


1. **Overview Section** – Section that gives an overview of the patient folder including date used, band information, basic training information, and average microvoltage of the bands



Review Session Results - Event Graph

- 1. **Events Section** Section where you can select the Events for reviewing.
- 2. **Metrics Section** Section where you can select different metrics for viewing, as well as addtional viewing options on the graph itself.
- 3. **Y-Axis Control** Control that allows you to adjust how much data is viewed on the Y-Axis of the graph.
- 4. **X-Axis Control** Control that allows you to adjust how much data is viewed on the X-Axis of the graph.



Review Session Results - Z-Score Graph

- 1. Channels Section Section where you can select the channels for reviewing.
- 2. Bands Section Section where you can select the bands for reviewing.
- 3. **Metrics Section** Section where you can select different metrics for viewing, as well as addtional viewing options on the graph itself.
- 4. **Y-Axis Control** Control that allows you to adjust how much data is viewed on the Y-Axis of the graph.
- 5. X-Axis Control Control that allows you to adjust how much data is viewed on the X-Axis of

the graph.

ROI Select - ROI Amplitude Z-Scores

🔳 Brain	Avatar S	etup				x
Main	Login	Folde	er Settin	gs G	Global Sett	ngs
Main	Read	/Write	Acquisitio	n Cł	hannels	ands Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes 🔳
						ROI ZScore Training ROI ZScore Coherence Training ROI dCoh Training ROI dCoh ZScore Training
1 User						This panel can be sed to specify the BOI / band 6 7 combinations to be used for ROI emplitude ZScore 3 Combined on the set of the se
User F		Terrent	Export	View	Build	🖶 🖂 Hubs
User F User F		Import		View	Build	😟 🦳 User Defined
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User F		Import		View	Build	
User F		Import		View	Build	
User F		Import		View	Build	2 ZScore Damping Factor:
User F	ROIS	Import	Export	View	Build	Min Max
User F	2019	Import	Export	View	Build	
 Liser F	-	Import		View	Build	
		Import		View	Build	4 Total Selected: Surface 4256
User F	01 12	Import	Export	View	Build	ROI
User F	01 13	Import	Export	View	Build	Summary ROI coh
User F	01 14	Import	Export	View	Build	Total 4256
User F	Roi 15	Import	Export	View	Build	
User F	ROI 16	Import	Export	View	Build	
						, <
Loggo	Lin do	vice tv	no Discov	0.02	_	Use Settings and Close Use These Settings

- User ROI Section Section where you Build, view, import or export up to 16 User-defined ROI's.***PLEASE NOTE: This menu is available for use on all Sub-Menus of the ROI Select Tab.
- 2. **Z-Score Damping Factor Section** Section where you can control the Damping Factor for the ROI Amplitude Z-Scores.
- 3. **ROI Selection Section** Section where choose the ROI's and their components for training.
- 4. **Summary Section** Section where you can see the Total Number of Z-Scores being trained, as well as a detailed summary of all trained channels, bands cross frequencies, and ROI's *****PLEASE NOTE:** This menu is available for use on the ROI Z-Score Coherence Tab as well.
- 5. **ROI Z-Score Coherence Tab** Tab that opens up the ROI Z-Score Coherence Tab. *****PLEASE NOTE:** This menu is available for use on all Sub-Menus of the ROI Select Tab.
- 6. **ROI dCoh Training Tab** Tab that opens up the ROI Directional Coherence Training Tab. *****PLEASE NOTE:** This menu is available for use on all Sub-Menus of the ROI Select Tab.
- 7. **ROI dCoh Z-Score Training Tab** Tab that opens up the ROI Directional Coherence Z-Score Training Tab. *****PLEASE NOTE:** This menu is available for use on all Sub-Menus of the ROI

Select Tab.

ain	Login	Folde	r Settir	ngs	Global Se	tings													
ain	Read	/Write	Acquisiti	on (Channels	Bands	Mon	age Pro	tocol	Feedba	ack Se	ssion	Event W	zard Z	Sc	cores ROI Select Session V	Vizard Atlantis HW	Electr	rodes 🔳
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								ROI / bar d for ROI				1 N	t Selected		-	2	3 Not Selected	•	
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ROI Select - ROI Coherence Z-Score

- 1. **ROI 1 Choice** Drop-Down-List that allows you to choose the first ROI that you would like to use for Coherence
- 2. Bands Check Check boxes to choose which bands to do training to
- 3. ROI 2 Choice Drop-Down-List that allows you to choose the second ROI that you would like

to use for Coherence

n Logir	Folde	er Setti	ings	Global Se	ttings										
n Rea	d/Write	Acquisit	tion	Channels	Bands	Montage	Protocol	Feedback	Sessio	n Event Wiza	rd Z S	cores ROI Select Session \	Vizard Atlantis HW	Electr	odes
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er ROI 16	Import	Export	View	Build		Dam	ping Factor	0	-	Inor selected	-		Inor selected	-	
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ROI Select - Dirctional Coherence Training

- 1. **ROI 1 Choice** Drop-Down-List that allows you to choose the first ROI that you would like to use for Coherence.
- 2. Bands Check Check boxes to choose which bands to do training to
- 3. **ROI 2 Choice** Drop-Down-List that allows you to choose the second ROI that you would like to use for Coherence.
- 4. All Discretes Button Button that automatically chooses all Discrete (Surface Sites) to be used for Directional Coherence Training.
- 5. All User ROIs Button Button that automatically chooses all User-Defined ROI's that have been imported/Built to be used for Directional Coherence Training.
- 6. **Directional Coherence Metric Section** Section to choose computation values for the Directional Coherence output.

Global Settings Menu

BrainAvatar Setup				>
ain Login Folder Settings Global Set lobal ZScores Perfomance	tings			
- COM Port Select: Enter COM Port Number (1, 2, 3,, 32) Enter Secondary COM Port Number		•		
Options 4	File review polarity © Neuroguide convention C EDFBrowser convention			
Protocol Analyzer Executable: Use the full absolute path and filename				
gged in, device type Discovery			Use Settings and Close	Use These Settings

- 1. **Primary COM Port Select Dropdown** Section in which you use the Drop-Down box to select the COM Port that your Main Device is on from a list of available open ports.
- 2. Secondary COM Port Select Dropdown Section in which you use the Drop-Down box to select the COM Port that your Secondary Device is on from a list of available open ports. This is only used, if your Primary Device is a Discovery.
- 3. **Refresh Button** Click refresh the available open ports. Use this, if you have changed the ports that are connected.
- 4. File Review Polarity Options Choose to change the Polarity of displaying information on the Review Screen. The Default and recommended option is Neuroguide Convention

Z-Scores* Global Settings Menu

Global ZScores Perfomance	BrainAvatar Setup		×
Static 2.2-Scores Vuse ANI ZScore DLL Vuse BrainDsk (NYU) DLL Vuse Custom DLL (filename below)	Main Login Folder Settings Global Settings		
I 2-Scores	Global ZScores Perfomance		
Image: Second DLL Image: Use BrainDax (NYU) DLL Image: Use Custom DLL (filename below)			
V Use BrainDx (NYU) DLL Use Custom DLL (filename below)	Z-Scores		
Use Custom DLL (filename below)	🔽 Use Brainmaster DLL		
	🔽 Use BrainDx (NYU) DLL		
Logged in, device type Discovery Use Settings and Close Use These Settings	Use Custom DLL (filename below)		
Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings			
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Logged in, device type Discovery Use Settings and Close Use These Settings			
Logged in, device type Discovery Use Settings and Close Use These Settings		1	
	Logged in, device type Discovery	Use Settings and Close	Use These Settings

1. **Z-Score* Section** – Section where you can choose which Z-Score DLL will be used.

Classic (Setup Menu) Method

Creating a Trainee Folder

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

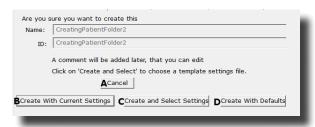
1. From the Main Tab, click the Folder Selection Button or the Folder Tab. This will bring you to the Select Folder screen. On this screen, click the Create New Folder Button or the Create Folder Tab to begin creating a new folder.

Study Name	lick to select)	Sacs	Max	Comment	Technician	Physici	ian Trainee Name	Created	Notified o
	Birth Date	5455	Max	Comment	Technician	Physics	an Trainee Name	2017-6-9	2017-9-1
 Abby P. 1 Ch Swingle theta			40						
		10	40	no comment su			Abby P. 1 Ch Swingle theta	2017-6-19	2017-9-1:
BReviewCompleteTesting	2001-1-1	1		Xin - Heart-Min			BReviewCompleteTesting	2017-6-9	2017-6-9
BreviewTake2	1982-10-7	6	40	no comment su			BreviewTake2	2017-6-9	2017-6-9
BReviewTesting	2016-1-1	3	40	ZScore qEEG-P			BReviewTesting	2017-6-9	2017-8-8
Calibration Testing	1982-10-7	2	80	no comment su			Calibration Testing	2017-7-3	2017-7-3
Carole A 0728 Analysis	2001-1-1		40	1-4ch Amplitud			Carole A 0728 Analysis	2017-9-19	2017-9-11
Carole A Raw Analysis	1982-10-7		40	Z-Score PZOKU			Carole A Raw Analysis	2017-9-19	2017-9-11
Clashe F3 F4 01 02 May 2		2	40	4ch Z-Score PZ			Clashe F3 F4 01 02 May 2		2017-6-9
CreatingPatientFolder	1982-10-7		40	Discovery Test			CreatingPatientFolder	2017-7-6	2017-7-6
DirectionalCoherenceDemo	1982-1-1		80	no comment su			DirectionalCoherenceDemo	2017-8-24	2017-8-25
ExportTest	1982-10-7	1	40	4ch Z-Score PZ			ExportTest	2017-6-21	2017-6-2
MoarExportTesting	1982-10-7	1	40	no comment su			MoarExportTesting	2017-6-21	2017-6-2
Neuro Sebastian	1995-1-31	9	40	Alert - Beta Up			Sebastian M	2017-6-20	2017-6-21
NewReviewSessionResultsT		1	40	no comment su			NewReviewSessionResultsT		2017-6-9
Riley B. 2 Ch. Alpha inhibit a	1998-1-1	1	40	Alert - Beta Up	EEG tech		Riley B. 2 Ch. Alpha inhibit a		2017-6-11
Self Training - 3H0517								2017-8-11	2017-8-1:
S3K 30 MSC(D)(P) Quiet EC	1987-2-1	22	80	Temporary	EEG tech		SJK 30 MSC(D)(P) Quiet EC		2017-9-1
udy Name (Trainee ID):				Trainee Name:					
emporary Session								Create N	ew Folder
omment									
Score sLORETA PZOKUL Dynam	ic - Dx							Folder	Autor
				Sessions Used:	33				TROCKIA .
				Max Sessions:	40			Edit Fol	to the last
lession Librarian								Eat Fol	Der Into.
	1 Durk C	urrent St					1		
Administer Session Genie	Puen C	and De		Ard	nive Current Stu	idy	Archive Current Study and Delete	Select	And Run

2. Type in the name that you would like, and the file ID for the folder in the proper fields. When naming the folder, use a numerical code that you will need to record in a confidential file.

sindvatar Setup		×
Login Folder Settings EDF Browser Review Global S	Settings	
ct Folder Create Folder Folder Notes Session Librarian Ed	dit Folder Info.	
NE:		
altingPatientFolder	Use Name for File 3D	
80:		
atingPatientFolder		
mment will be added later, that you can edit		
Cancel	OK	
ed in, device type Discovery	Use Settings and Close	Use These Settings

3. Another screen will pop up to confirm the name of the folder. You have four options:



- A. **Cancel creating the folder** This will cancel creating this folder, and return you to the Select Folder Tab.
- B. Create the folder with the currently chosen settings This will load the last chosen settings file for this folder.
- C. Create the folder with default settings This option will use the default settings.
- D. Create the folder and select the settings This option allows you to choose either new settings(.bdb2) or old settings(.txt) If using this option, merely navigate to the setting file that you would like to use. ***PLEASE NOTE: You will have to specify between the different file formats.

Choose which option you would like to continue.

4. The Edit Folder Info Screen will open. Fill out all information, and then click the Save and Continue Button.

Login Folder Settings EDF Browser Review Global Settings	
ect Folder Create Folder Folder Notes Session Librarian Edit Folder Info.	
Editing Demographics for Trainee/Study:	
folder name	
Name:	
CreatingPatientFolder2	
Comment:	
Birthdate 07-Oct-1982 Age: 29 Gender: M M or F	
Compute Age	
Recording Conditions	
C Eyes Open IF Eyes Closed C Task Task ID Number	
Sensor electrode e.g. 'gold dak electrode' or 'tin electro-cap',	
Investigator / EEG tech	
Edit contents then press "Save and Save and Continue	

You have now created a folder for training.

Changing to a new Settings Files

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

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

Brainslugter Setup		×
in Login Folder	Settings EDF Browser Review Global Settings	
in Read/Write C	anneb Bands Protocol Diplay Feedback Session Event Wizard Acquisition Montage Z Scores Session Wizard Atlantis HW Electrodes	
aad/Write Settings P	Gurrent Traineu/Study: Re Name unknown	
Data Channels	NCHANS: 4 SPATE: 256 LOWFREQCUTOFF: OFF FEITH: 3 ARTIMACT: 9999 W/ COM: 4 - SUMCHANS: OFF - SAVEEEG:EDF - P+0:0073-UF + 4E = -	
Frequency Bands	Raw EEG 0.0000-3.0000 Delta 1.0000-3.0000 Theta:4.0000-7.0000 Adpta: 1.0000-12.0000 Lobera:12.0000-15.0000 Befa:15.0000-20.0000 Helearia.0.0000 J	
Training Protocol	GDI (wome) STOP: (nome) AUTO-ON-D/0/0 AUTO-ROME BETORE GACH RUN	
Display Options	Deplay:	
Feedback Control	Sound:	
Session Cantrol	80 SESSIONS -NO BASELNES 1 RUN OF LENGTH: 25.0 MINPAUSE RETWEEN RUNS-SESSION TYPE: Mayback	
Auto Threshold	PRINT SETTINGS Event Wand USE THESE SETTINGS	
		_
ged in, device type	Discovery Use Settings and Close Use These Settings	

2. On the Read or Write Settings Menu, you can either utilize the menu, on the left. Or, you can click the Advanced Browser Button. If you use the menu, navigate through the folders (Identified with between []) to find the file that you would like to use, and click the Use Selected Button, the click Use Settings and Close Button. Or, if you click the Advanced Settings Browser Button, proceed to Step 3.

Built-In Settings Files: (double-click to read in settings and proceed)	Use this screen to manage your Settings File Ideary. You can change setting within any
6, Pic, Processing, Settings, Standard, Cest O Job? Conference. Job Pic, Processing, Settings, Ruhr Left, Differentiation. Job? Simple HVL Job? Li	trained study folder, without using the errore. Serve Current Bettings to a New File
(Atlantia Hi Rasolution) (Atlantis Low Resolution) (Souscovery Hi Resolution)	Settings Description:
[Satasive) (an Reachdon] (Meetinn 2016 Reachdon) (Satasive) (an Reachdon) (Satasive) (an Reachdon) (Meetinn 76 Leve Reachdon) (Meetinn 76 Leve Reachdon)	Sidin begar
	Advanced Sellings Browser
Directory: CriphogramDataldrainHaster/Bettings	Cancel Use Selected Settings
gaed in, device type Discovery	Use Settings and Close Use These Settings

3. The following will open, so that you can find the BrainMaster Setting file(new or old) you would like. Highlight the Setting file that you would like to use, and click open to continue. After you have returned to the menu, click the Use Settings and Close Button. *****PLEASE NOTE:** You will have to specify between the different file formats(bdb2 or txt).

Organice · New folder					11 · III	0
					100 · L	•
Trainee Folders	Name	Date modified	Type	Size		
Contractor Avata	Atlantis Hi Resolution	5/23/2017 4:14 PM	File folder			
	Atlantis Low Resolution	5/23/2017 4:14 PM	File folder			
Dropbox	Discovery Hi Resolution	8/10/2017 11:43 AM	File folder			
🚉 exald.schober©	Discovery Low Resolution	5/23/2017 4:14 PM	File folder			
ConeDrive	Freedom 7D Hi Resolution	5/23/2017 4:14 PM	File folder			
	Freedom 7d Low Resolution	5/23/2017 4:14 PM	File folder			
This PC	Freedom 24D Hi Resolution	5/23/2017 4:14 PM	File folder			
Desktop	Freedom 24D Low Resolution	5/23/2017 4:14 PM	File folder			
Cocuments	6_Pic_Processing_Settings_Standard_Capi	7/17/2017 4:15 PM	BDB2 File	160 KB		
Downloads	 iCOHTemp 	8/25/2017 11:03 AM	BDB2 File	111 KB		
h Music	Pic_Processing_Settings_Every_X_Seconds	10/11/2017 2:26 PM	EDE2 File	160 KB		
E Pictures	Pic_Processing_Settings_Right-Left_Differ	10/11/2017 2:10 PM	BDB2 File	157 KB		
	PzAlphaDown	9/8/2017 2:40 PM	EDB2 File	106 KB		
Videos	Simple HRV	3/14/2016 1:47 PM	8D82 File	127 KB		
Local Disk (C)						
× ×						
File nan	ne:			 Setup Filer 		v
	c			Open	Cancel	_

The settings for your Trainee folder have now been changed.

Creating a new Setting or updating a Settings File from a Patient's Settings Files

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

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

pag (Dada Setting) in Alanta And (Exterbal) (Davenh Bach Montage Petroci Daylar) Feedbach Session Event Wated 2 Scores McL Select Session <u> </u> Jarent Thankorthady Dannel Shafer: Side UnderRegistration of the PETRO Data Setting Second Second (Second Second Sec
ument Taward Tabuyi ana Unitron Connel Ju (Cont 4 : Sector 201 : Loopergocitory on Fister 3 The Content of the Cont 4 : Sector Cont 1 : Sector Cont 1
ame urånown Owneris 20 SAUTE: 256 LOWFREQCUTOFF: ON FILTER: 3 TRYACT: 358 W. COM: 4 - SAMONARS/OFF - SAVEEDG-50F -
ATTFACT: 255 uV COM: 4 - SUMCHANS: OFF - SAVEEDG:EDF -
-P/ONF01-LE F02-LE F3-LE F4-LE C3-LE C4-LE F3-LE P4-LE C1-LE
aw EEG 8.0000-0.0000 Delta: 1.0000-3.0000 Theta: 4.0000-8.0000 phask.0000-12.0000 Lobera: 22.0000-35.0000 test: 15.000-23.000 Heeker: 20.0000-30.0000
0: (none) ROP: (none) AUTO:OFF-56/20/38
iqday:
ound: Event Sounde -
0 SESSIONS -NO BASELINES1 FUN OF LENGTH: 20.0 MINNO NUSE BETWEEN RUNG-SESSION TYPE: Training
PRINT SETTINGS Event Wizard USE THESE SETTINGS
Use Settings and Close Use Settings

2. On the Read or Write Settings File Menu, click the click Save Current Settings to a New File Button to continue.

uit-on Settings Files: (double-click to read in settings and proceed) Pic. Processing. Settings. Standard, Capit-0.3db2	Use this acreen to manage your Settings Ne Ibrery, Yeu can change settings within any
ssicCoherenceTraining_v1.0.bdb2 + ACxws, (SMEU)a.bdb2 ammaProtocol_v1.0.bdb2 ammaProtocol_v1.0.bdb2	traines/teuty foliar, without using the some
Conterny, Job2 c., Processing, Settings, Every, X., Seconds, Job2 e., Processing, Settings, Every, X., Secondsv5.1.3-BD3 c., Processing, Settings, Kight-caft, Differentation.3db2 exbitadiosen.bdb3	Serie Current Detrings to a new new
regis Witzebic2 Section in Resolution2 Section in Resolution2 Section in Resolution2 Section in Resolution2 Vestion 240 rs Resolution3 Vestion 240 rs Resolution3 Vestion 79 rs Resolution3 Vestion 79 (SectionAccord)	John Kerger
	Advanced Bellings Browser
redory: C//ProgramCetal&rainRader/Settings	Carcal Use Selected Sellings
	Load Protocol Load Protocol and Settings

3. The following will open, so that you can find the BrainMaster Setting file you would like. Highlight the Setting file that you would like to change, or simply type in the File Name that you would like the Settings file to contain. Click the Save Button to continue.

ganize 👻 New fold	er			6	. v 👩
BrainMaster Avata	Name	Date modified	Туре	Size	^
	Atlantis Hi Resolution	5/23/2017 4:14 PM	File folder		
Dropbox	Atlantis Low Resolution	5/23/2017 4:14 PM	File folder		
OneDrive	Discovery Hi Resolution	8/10/2017 11:43 AM	File folder		
	Discovery Low Resolution	5/23/2017 4:14 PM	File folder		
This PC	Freedom 7D Hi Resolution	5/23/2017 4:14 PM	File folder		
3D Objects	Freedom 7d Low Resolution	5/23/2017 4:14 PM	File folder		
Desktop	Freedom 24D Hi Resolution	5/23/2017 4:14 PM	File folder		
Documents	Freedom 24D Low Resolution	5/23/2017 4:14 PM	File folder		
Downloads	6_Pic_Processing_Settings_Standard_Capit-O	7/17/2017 4:15 PM	BDB2 File	160 KB	
h Music	BasicCoherenceTraining_v1.0	11/1/2017 9:09 AM	BDB2 File	107 KB	
Pictures	C4-ADwn;SMRUp	11/27/2017 1:05 PM	BDB2 File	114 KB	
Videos	GammaProtocol_v1.0	11/1/2017 10:54 AM	BDB2 File	118 KB	
	GammaProtocol_v2.0	11/1/2017 10:59 AM	BDB2 File	130 KB	
Local Disk (C:) 🗸	COHTemn	8/25/2017 11:03 AM	BDB2 File	111 KB	~
File name:					~
Save as type: Setup	Files				~

4. If you are saving over an existing settings file, you will have to confirm the replacement of the file. Click the Yes Button to continue.

Confirm Save As		
C4-ADwn;SMRUp.bdb2 Do you want to replace		
	Yes	No

The settings have now been changed with the adjustments you have added, or a new settings file has been created with your settings.

C Braindontar Setup	×
fain Login Folder Settings Global Settings	
Main Read/Write Acquisition Atlantis HW Electrodes Channels 8	lands Montage Protocol Display Feedback Session Event Wizard Z Scores ROE Select Session 4 P
In 2-5 Energy Files (Subalt for Star 1 and File and process) (Sub-physics), Subard (Subar	and interlapping interlocal paper (interlapping interlocal paper) interlocal paper (interlapping interlocal paper) interlocation (interlapping interlocation (interlapping interlapping interlocation) interlapping i
Treasland 20 Lan Tabildung Treasland Tr Lan Kasantan) Directory: Directory:	Advanced Salarge Browner
	Land Protocol Lond Protocol and Settings
	Call Protocol Color Protocol and Desinge
Logged in, device type Discovery	Use Settings and Close Use These Settings

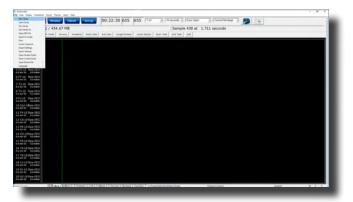
Training Screen Method

Creating a Trainee Folder

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

cense.

1. From the Training Screen, Click the File Tab, then New Study.



2. This will bring you to the Select Folder screen. On this screen, click the Create New Folder Button or the Create Folder Tab to begin creating a new folder.

Study Name	Birth Date	Sess	Max	Comment	Technician	Physician	Trainee Name	Created	Nodfied ^
								2017-11-27	2017-12-1
4 channel FZ PZ C3 C4	2007-4-7	9	40	4ch Z-Score PZ	EEG tech		4 channel FZ PZ C3 C4	2017-11-27	2017-11-1
Abby P. 1 Ch Swingle theta	2003-12-3	10	40	Discovery Test	EEG tech		Abby P. 1 Ch Swingle theta	2017-11-27	2017-12-0
Aiden Thomason AFZ PZ 3	1997-10-18	8	10	comment	EEG tech		Aiden Thomason AFZ PZ 3	2017-12-21	2017-12-1
Aiden Thomason PZ OZ 1	1997-10-18	9	10	comment	EEG tech		Aiden Thomason PZ OZ 1	2017-12-21	2017-12-1
AnotherRefreshTest	1982-10-7	2	40	ROIA Enhance	EEG tech		AnotherRefreshTest	2017-11-27	2017-12-
BReview50Testing	2001-1-1	1	40	Focus SMR Up	EEG tech		BReview50Testing	2017-11-27	2017-11-3
BReviewCompleteTesting	2001-1-1	1		Xin - Heart-Min	EEG tech		BReviewCompleteTesting	2017-11-27	2017-11-:
BreviewTake2	1982-10-7	6	40	no comment su	EEG tech		BreviewTake2	2017-11-27	2017-11-
BReviewTesting	2016-2-2	6	40	Z-Scores For s			BReviewTesting	2017-11-27	2017-11-0
Brief T3T4 A	2001-1-1	1	80	no comment su			Brief T3T4b	2017-11-27	2017-11-0
Brief, Rose Fp1Fp2 A	1974-5-2	1	12	ISFAtlantis 2Ch	EEG_tech		Brief, Rose Fp1Fp2 A	2017-11-27	2017-11-1
Calibration Testing	1982-10-7	2	80	no comment su	EEG tech		Calibration Testing	2017-11-27	2017-11-:
Carole A 0728 Analysis	2001-1-1		40	1-4ch Amplitud	EEG tech		Carole A 0728 Analysis	2017-11-27	2017-11-5
Carole A Raw Analysis	1982-10-7		40	Z-Score PZOKU	EEG tech		Carole A Raw Analysis	2017-11-27	2017-11-0
ClaShe F3 F4 01 02 May 2	1960-8-25	2	40	4ch Z-Score PZ			Clashe F3 F4 01 02 May 2	2017-11-27	2017-11-0
CreateFolder1	1956-2-21		80	Test 4	EEG tech		CreateFolder1	2017-12-11	2017-12-:
CreateFolder2	2001-1-1			Xin - Heart-Min	EEG tech		CreateFolder2	2017-12-11	2017-12-1
udy Name (Trainee ID):				Traipee Name:					
emporary Session								Create Ne	w Folder
mment									
Score sLORETA PZOKUL Dynam	in - Dy							Folder	
				Sessions Used:	38			Forder	Notes
				Max Sessions:	40				
Session Librarian								Edit Fold	er Info.
	Push Cu						1		
Administer Session Genie	Push Cu	and De		erver Arch	nive Current St	udy An	thive Current Study and Delete	Select A	nd Run

3. Type in the name that you would like, and the file ID for the folder in the proper fields. When naming the folder, use a numerical code that you will need to record in a confidential file.

E Brain-Avatar Setup		×
Aan Login Folder Settings EDF Browser Review Global Setting	ga	
Select Folder Create Folder Folder Notes Session Librarian Edit Fo	Ader Info.	_
Test		
Name		
CreatingPatientFolder	Use Name for File ID	
File ID:		
CreatingPatientFolder		
A comment will be added later, that you can edit		
a comment an or asses and, that you can east		
Cancel	OK .	
		_
ogged in, device type Discovery	Use Settings and Close Use Th	ese Settings

4. Another screen will pop up to confirm the name of the folder. You have four options:

	reatingPatientFolder2
ID: C	reatingPatientFolder2
	comment will be added later, that you can edit :k on 'Create and Select' to choose a template settings file. ACancel
BCreate With (Current Settings CCreate and Select Settings CCreate With Defaults

- A. **Cancel creating the folder** This will cancel creating this folder, and return you to the Select Folder Tab.
- B. Create the folder with the currently chosen settings This will load the last chosen settings file for this folder.
- C. Create the folder with default settings This option will use the default settings.
- D. Create the folder and select the settings This option allows you to choose either new settings(.bdb2) or old settings(.txt) If using this option, merely navigate to the setting file that you would like to use. ***PLEASE NOTE: You will have to specify between the different file formats.

Choose which option you would like to continue.

5. The Edit Folder Info Screen will open. Fill out all information, and then click the Save and Continue Button.

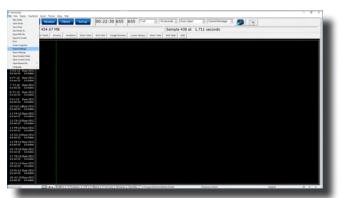
Lugar Frake [state] [Staf Parks [state] Staff Constrainting (Staf Parks Task State) Staff Constrainting (Staf Parks Task State) Staff Constrainting Sta	Х
Kólng Densgapéries for Traines-Struky: Kábr Jane Dense: Consent: Consent: Compute Age Assumption of the Structure Compute Age Recording Conditions * dense Danse: Secure of exercision Secure of exercision * dense Danse: * dense: * dense: <td>ttings EDF Browser Review Global Settings</td>	ttings EDF Browser Review Global Settings
Nater same Texne Constant dear Sales Sentence: Sent	er Folder Notes Session Librarian Edit Folder Info.
Stratut Constratut Constratut	for Trainee/Study:
Constant of Marcoland Status Semand:	
Comment: Berthadate [27-Cert-1982] Age; 29 Gander; M or # Compute Age Ascarding Conditions r # Syss Dans # Eyes Dansd r Tank Tank ID Number Server (electrode e.g., bjeld disk electrode' or 'Tank electro-cept', browstiggeter / WEG Stoch	
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Betriddata (2 ¹⁰ -Oct - 1042) (4) (2 ¹⁰ (4) (4)	
Compute Age Recarding Conditions If dress Open # Even Consed If Tank Tank 3D Number Server Interface events of the Second Sec	
Compute Age Recarding Conditions If dress Open # Even Consed If Tank Tank 3D Number Server Interface events of the Second Sec	
According Conditions C Eyes Open E Eyes Op	M82 A Apr: 29 Gender: M M or F
According Conditions C Eyes Open E Eyes Op	Ann
F lives Open ≪ lives Closed ← Task Task ID Number Sensor decitode e.g. "pold dok electrode" or "on electro-cap", breestgater / Elitis Isch	
Sensor electronie e.g. "gale dals electroni" or "In electro-cay", Investigator / Elici Sach	
Investigator / EEG tech	If Eyes Closed ○ Task Task ID Number
Investigator / EEG tech	
Investigator / EEG tech	
	ode e.g. 'gold disk electrode' or 'bn electro-cap',
	REF Sector
Edit contents then press "Save and Save and Continue	TOTA MALA
	then press "Save and Save and Continue
ged in, device type Discovery Use Settings and Close Use These Settings	and the second sec
No of standards and case. Con users standards	Ote second and cose on these seconds

You have now created a folder for training.

Changing to a new Settings Files

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

1. From the Training Screen, click the File Tab and then click Import Settings.



The following will open, so that you can find the BrainMaster Setting file(new or old) you would like. Highlight the Setting file that you would like to use, and click open to continue.
 ***PLEASE NOTE: You will have to specify between the different file formats(bdb2 or txt).

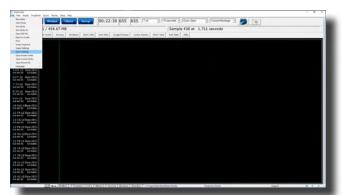
Inganize · New folder					10 . 0	
Avatar Settings F A	Name	Date modified	Type	Size		^
Atlantis Settings	Atlantis Hi Resolution	\$/23/2017 #14 PM	File folder			
Discovery Settiny	Atlantis Low Resolution	5/23/2017 4:14 PM	File folder			
	Discovery Hi Resolution	8/10/2017 11-43 AM	File folder			
Dropbox	Discovery Low Resolution	\$/73/2017 4:14 PM	File folder			
CneDrive	Freedom 7D Hi Resolution	5/23/2017 4:14 PM	File folder			
	Freedom 7d Low Resolution	5/23/2017 4/14 PM	File folder			
This PC	Freedom 24D Hi Resolution	5/23/2017 4:14 PM	File folder			
30 Objects	Freedom 24D Low Resolution	5/23/2017 4:14 PM	File folder			
Desktop	6 Pic Processing Settings Standard Capit-0	7/17/2017 4/15 PM	8D82 File	160 KB		
Documents	BasicCoherenceTraining v1.0	11/1/2017 9:09 AM	BDB2 File	107 KB		
Downloads	C4-ADwn:SMRUp	11/27/2017 1-05 PM	8082 File	114 KB		
Music	GammaProtocol_v1.0	11/1/2017 10:54 AM	BDB2 File	118 KB		
Pictures	GammaProtocol_v2.0	11/1/2017 10:59 AM	BDB2 File	130 KB		
	COHTemp	8/25/2017 11:03 AM	8082 File	111 KB		
Videos	Pic_Processing_Settings_Every_X_Seconds	10/11/2017 2:26 PM	BDB2 File	160 KB		
Local Disk (C) 🗸	E Fir Banrassina Sattinas Fuary Y Sarondari 1	10/10/2017 2-17 044	RDR2 File	162 KR		v
File nam	e [Setup Files		¥
				Open	-	ncel

The settings for your Trainee folder have now been changed.

Creating a new Setting or updating a Settings File from a Patient's Settings Files

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

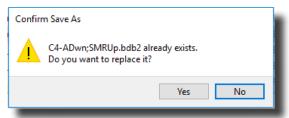
1. From the Training Screen, click the File Tab and then click Export Settings.



2. The following will open, so that you can find the BrainMaster Setting file you would like. Highlight the Setting file that you would like to change, or simply type in the File Name that you would like the Settings file to contain. Click the Save Button to continue.

ganize 🔻 New fold	ler				811 -	0
BrainMaster Avata	Name	Date modified	Туре	Size		^
	Atlantis Hi Resolution	5/23/2017 4:14 PM	File folder			
Dropbox	Atlantis Low Resolution	5/23/2017 4:14 PM	File folder			
OneDrive	Discovery Hi Resolution	8/10/2017 11:43 AM	File folder			
This BC	Discovery Low Resolution	5/23/2017 4:14 PM	File folder			
This PC	Freedom 7D Hi Resolution	5/23/2017 4:14 PM	File folder			
3D Objects	Freedom 7d Low Resolution	5/23/2017 4:14 PM	File folder			
Desktop	Freedom 24D Hi Resolution	5/23/2017 4:14 PM	File folder			
Documents	Freedom 24D Low Resolution	5/23/2017 4:14 PM	File folder			
Downloads	6_Pic_Processing_Settings_Standard_Capit-O	7/17/2017 4:15 PM	BDB2 File	160 KB		
h Music	BasicCoherenceTraining_v1.0	11/1/2017 9:09 AM	BDB2 File	107 KB		
Pictures	C4-ADwn;SMRUp	11/27/2017 1:05 PM	BDB2 File	114 KB		
Videos	GammaProtocol_v1.0	11/1/2017 10:54 AM	BDB2 File	118 KB		
-	GammaProtocol_v2.0	11/1/2017 10:59 AM	BDB2 File	130 KB		
Local Disk (C:) 🗸	COHTemp	8/25/2017 11:03 AM	BDB2 File	111 KB		~
File name:						~
Save as type: Setu	n Files					~

3. If you are saving over an existing settings file, you will have to confirm the replacement of the file. Click the Yes Button to continue.



The settings have now been changed with the adjustments you have added.

Outside of BrainAvatar Software (File Explorer)

Creating a Trainee Folder

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

1. Locate the .bdb2 file that you would like to use for your training. When you find this, file double-click.

		📭 🔤 👗 🧮 📮 🕐 Etayanas 🗡 🖓 ta					
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		Name	Data modified	Tare	Gas		
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E Dealling	1	Jan	5/3-30% T1-21 AM	6060 Ale	1748		
Courisals		e faar	ACCOUNT YOUR AM	0002-534	10.43		
R Doumann		P Ferrer	\$13:20% 11:22 AM	0002104	10.00		
Patan	21	No Lond CEEL Assessment - DC Offices	STOTA UNIT	0002104	10.02		
6 Google Drive	21	No Limit CEEC Assessment - Impelances	6/5/2016 12/52 (PM	0002134	140.42		
	1	D Paul	\$/3-30% TL25-AM	0002134	1248		
501-522 alvatar Manual		Reise	\$12x214 1123 AM	000254	11748		
Decevery H Resolution		ROIB Exhance Training Exnemic	5/5/2016 12-49-PM	0002554	107.02		
Passings		ROIA Inhibit Training Tyramic	5/5/30% 12-45 (Mul	8080 534	107.42		
Trainee Fulders		· Spanh	APRIL TO DE LAN	8782 814	110.00		
Creative Cloud Files		2-500% AM 4/0-720403 1C Way	8/3/07/6 11/25 AM	0002734	100.40		
Comment Contraction		2 Suge AM 4/A #2050, Duramic	\$13,076 T125 AM	0002104	10.48		
Drighter		2 Score AN 19/A A20KIA, 'C Key	8/5/00/6 12/4 ⁷ /Mil	0002734	100.48		
India		2 Score AN 19ch ASONIA Dynamic with ROA Shlance Training	\$5.076 Q.46.0M	0002134	102.48		
		2-Score AM 19ch #2080A Dynamic with RDA Inhibit Training	5/5/2016 12.46 PM	0002134	102.48		
This PC		2-Score AM 19uh #30KIX Dynamic	5/5/2P6 1227/PM	0002154	100-43		
2 10 Olijevita		2-Score Dr - Analysis	6/5/2016 12.24 PM	0082784	10.43		
E Dailing		2 Score Do Aph #2DKJA, VC Kay	\$15,076 T128,AM	808284	100.48		
Counters		2 Score Dr. Ach #2040A. Dynamic	\$15,00% Th27 AM	000254	120.48		
4 Dourisate		2 Score Dr 19th R20KIA, 1C Kay	8/5/3014 13/23 PM	000254	100.48		
A Music		2 Score Dr 19th R2DKU, Dynamic with RDU. Exhance Training	\$/5/2016 12/21 PM	8082 554	102.48		
R. Publish		2 Score Dv 19ch #3DKUL Dynamic with RDA inhibit Training	8/9/3018 13/20 PM	8082 514	102.43		
		2-Scow Dv 19th R3DHIA Bynamic	8/5/2016 1/27/PM	0002734	10.43		
Tides.		2 Score Dr sUORESA Albushum: Power	6/5/2016 1206 PM	0002.534	104.43		
Level Delt (C)	-	2-Some DescORETA REDRUE, C Key	6/5/2016 12/06/MM	8080 File	102.43		
USE Drive (D)		2 Sears Dr sUORETA F20KUL Opnamie	6/5/2016 1205/968	828244	102.43		
🕿 rand 1 (Loweleycord) (J		2 Score Dr Surf & sUGRESA Synamic	6110-2017-11-41 AM		105.43		
# IMAGe (18MCTOR) (1)		2 Score gitti-Pre - Analysis	\$25.0014 S200 PM	8082 AM	102.43		
· Indexindepent (1846)	040	2 Score gills Pro 8/0.72082, 'C Kay	8/4/3018 T1/1 AM		10148		
· Software (1846/1040) (N)		2 Score gEEL Pro Ach 722XLA Dynamic	ENGINE THESAM	BOBU File	10.43		
· Documentation (184670)		 2 Some of Eli-Pea Hot P20KA 'C Key 2 Some of Eli-Pea Hot P20KA Dynamic with EDA-Internet Training 		8082 No.	10.48		
# IT DANSTORD (2)	-		8/5/208 1158-AM	BOBC FM	10.48		
-		 2-Score gEEL-Pro 15ch F2DELE Dynamic with RDA white Training 2-Score gEEL-Pro 15ch F2DELE Dynamic 	6/5/3018 13/6/PM	BOBC File	10.48		
Will Drive Driv		 2 soor geo ne non non non non non non non non no	8/10/2017 19-45 AM		10.45		
item. Themselected 1984	. *	 C. Mittel Martin of Mittel of Wittel of Shipping 	6-10-2011 TLA1 AND		-10.44		

2. The following screen will appear, asking what you would like to do. There are 4 options:

Do to want to:
Create a new study with these settings
Use these settings in the current study
Use these settings and pick a study
Run a temporary session
ОК

- **a.** Create a new study with these settings This will bring you to the Create Folder Tab, so that you can create a new folder.
- b. Use these settings in the current study This will automatically load these settings into the Study Folder that you last ran a session with, and will open the software to this Study Folder
- **c.** Use these settings and pick a study This option will allow you to pick a Study folder that you would like to load this into. After you have picked, it will open the software to this Study Folder.
- **d.** Run a temporary session This will load the settings into a Study Folder named Temporary Session, and will open the software to this Study Folder.

To create a new folder, click Create a new study with these settings.

3. Type in the name that you would like, and the file ID for the folder in the proper fields. When naming the folder, use a numerical code that you will need to record in a confidential file.

BrainAustar Setup		×
Main Login Folder Settings EDF Browser Review Global Settin	nai	
Select Folder Create Folder Folder Notes Session Librarian Edit Fo		
Text		
Name: CreatingPatientPolde	Use Name for File 30	
File ID:	One reason for the so	
CreatingPatientFolder		
A convert will be added later, that you can will	α.	
Logged in, device type Discovery	Use Settings and Close Use These Settings.	

4. The following screen will appear. This will be slightly different than if you created a folder inside of the software. As opposed to 4 options as normal, you will only have 2 options:

Select Folde	er Create Folder Folder Notes Session Librarian Edit Folder Info.
Are you su	ure you want to create this
Name:	CreatingAnotherStudy
ID:	CreatingAnotherStudy
	A comment will be added later, that you can edit Click on 'Create and Select' to choose a template settings file. Cancel
Create With	h Current Settings Create and Select Settings Create With Defaults

- **a.** Cancel creating the folder This will cancel creating this folder, and return you to the Select Folder Tab.
- **b.** Create With Current Settings This will load the last chosen settings file for this folder. This is the only option available, as you have already chosen the Settings protocol that you would like to have loaded.

To continue, click option b.

5. The Edit Folder Info Screen will open. Fill out all information, and then click the Save and Continue Button.

Login Folder Settings EDF Browser Review Global Settings	
ect Folder Create Folder Folder Notes Session Librarian Edit Folder Info.	
Editing Demographics for Trainee/Study:	
folder name	
Name:	
CreatingPatientFolder2	
Comment:	
Bethdate 07-Oct-1992	
Birthdate 07-Oct-1982 Ape: 29 Gender: M M or F	
Compute Age	
Recording Conditions	
C Eyes Open # Eyes Closed C Task Task 10 Number	
eyes open - eyes cover - rain	
Sensor e.g. 'gold dak electrode' or "tin electro-cap",	
Investigator / EEG tech	
Edit contents then press "Save and Save and Continue	
ged in, device type Discovery Use Settings and Close Us	it These Settings

You have now created a folder for training.

Changing to a new Settings Files

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

1. Locate the .bdb2 file that you would like to use for your training. When you find this, file double-click.

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hant Case Party of Antonio		Construction			
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	al Duk (C) + ProgramBata + BrainMatian + Sattings + Discoursy Hill Resolution				with Search Descent Without days of
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Durk scores	Name	Data modified	Terr	See	
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	Aiet	\$/3/306 TH21 AM	8082.Fie	11748	
Deunicals #	Even	\$75-30% YL22 AM	0002734	109.43	
Doumens #	Feiture	\$10:00% F122 AM	0002 File	16.43	
Polan P	No Love QUE Assessment - DC Offices	\$15/2018 12 Sel Per	0082784	149.43	
Google Drive #	No Linit QEC Assessment - Impedances	\$5008 QS2PM	008213a	140.43	
501-502 dualitie Manual	Post	\$/3-2018 1125 AM	0002534	1248	
Decayary Hi Resolution	faise	\$/3-2016 T123-AM	0082744	117.63	
Paulan	ROIB Enhance Training Epinamic	\$15,0016 12.49 PM	008273a	107.43	
Trainee Fulders	ROIA Inhibit Training Tynamic	\$15,0276 1248 PM	8082 File	10.43	
Transe Fulders	Speeh	\$15-DITE TO AM	8082734	110.48	
Creative Cloud Files	2-Scow AM Adv A2DRIA 1C Way	8/3/37/6 1125 AM	0002 File	125.48	
	2-Score AM AD-#2DKUL Dynamic	\$13,376 T125 AM	0002754	120.48	
higher .	2 Score AM 19uh #20KUA 'C' Key	\$15,00 6 1247 MM	0002 File	100.43	
indus	2-Score AM 19ch #20KIA Dynamic with RDA-Enhance Training	\$15-3016 12-46 PM	0002734	102.48	
	2-Score AM 19ch #20KIA Dynamic with RDA Inhibit Training	\$5076 1246 PM	0002734	102.48	
No PC	2-Score AM 19UH #2DRIX Dynamic	8/5/2016 12:07 PM	0002754	100.43	
30 Olijevla	2:Score Dx - Analysis	\$15:376 1324/Mil	0082 file	10.43	
Deitrop	2 Score Du Ach #2000A \C Kay	\$10-3016 T128-AM	8082744	120.48	
Documents	2 Score Dr. Ach. #20404, Dynamic	\$15 2016 Th 27 AM	0002434	120.48	
Description	2 Soore Dx 19uh R3DRUA, 1C Kay	8/5/3016 1323 PM	0002444	10.43	
Music	2 Score Dr. 19th F3DKUL Dynamic with RDU. Scharos Training	\$15/3018 13/21 PM	8082 File	102.43	
Patron	2 Score Dr 19th /S20KUA Dynamic with 8DUA inhibit Training	\$15.00 a 13.00 mil	8082744	102.43	
	2-Score Dx 19ch #3DKIA Bynamic	8/5/2016 1/2* PM	0002754	10.43	
tides	2 Score Dr sLORESA Absolute Power	8-5-30-6 1206 PM	0002.534	104.43	
Level Deh (C)	2-Some De aCORETA PEDROL C Key	8/5/2018 12/06 PM	8092 File	102.43	
USE Drive (D)	 2 Sears Dr sUORETA F2DKUS, Opnamic 	8/5/2018 1205 PM	8082194	102.48	
(peg-1 (Tucnumberpoint) (2)	 2 Score Dr. Surf & sUORESA Synamic 	\$10207 TALAM		105.43	
BALLIN / (BARTORD (V)	2 Scow gitti-Ins - Analysis	\$15,0014 12.00 PM	8082444	102.43	
Technical agent (18467048)	2 Score gRSL-Pro 60A-722603, C Key	\$1632161125.4M	8082.54	125.48	
Self-read (BAR/1080 (K)	2 Score gifti Pro Ach/IDIAL Dynamic	818/3018 T1/5 AM	BOBU Net	120.48	
	2 Score gRU-Pea Hot AZONIA, C Key	8/5/3018 12/30 794	8082.534	102-63	
Bocumentation (18M57040) (2 Score gEEL-Pre 15ch P20KUL Dynamic with RDA-Binhance Training	8/5/30% 1158-AM	8082.54	102.48	
# (14MST040-2)	2 Score g855-Pro 15ch A20838 Dynamic web 82x8 Intering	8/5/2018 1/36/PM	8082.444	112.48	
58 Drive (D1)	 2 Score gR0-Pro 19th P20KUL Dynamic 	8/5/30/8 13/6/PM	8082494	102-68	
	2 Score of EEPro Surf & of DRUIA Dynamic	Arris 2017 111 43 484	8082 Alar	10.43	

2. The following screen will appear, asking what you would like to do. There are 4 options:

Do to want to: X
Create a new study with these settings
Use these settings in the current study
Use these settings and pick a study
Run a temporary session
ОК

- **a.** Create a new study with these settings This will bring you to the Create Folder Tab, so that you can create a new folder.
- b. Use these settings in the current study This will automatically load these settings into the Study Folder that you last ran a session with, and will open the software to this Study Folder
- **c.** Use these settings and pick a study This option will allow you to pick a Study folder that you would like to load this into. After you have picked, it will open the software to this Study Folder.
- **d.** Run a temporary session This will load the settings into a Study Folder named Temporary Session, and will open the software to this Study Folder.

If you want to change the settings in the Patient Folder that the software is currently using, click Use thes settings in teh current Study. If you want to change the settings of a specific folder, click Use these settings adn pick a study, and move to step 3.

3. Use the following screen to select the Patient Folder that you would like to load your settings into. Highlight the Patient file, and click the Use This Study Button, or Double-click the folder to continue.

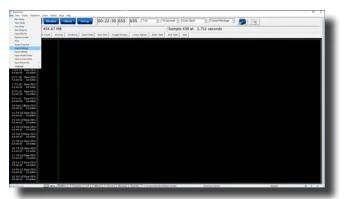
Irganize 🔻 New folde	r				8== -	0
Discovery Hi Res ^	Name	Date modified	Туре	Size		
Passkeys	BReviewTesting	11/27/2017 11:55	File folder			
Trainee Folders	Brief T3T4 A	11/27/2017 11:55	File folder			
-	Brief, Rose Fp1Fp2 A	11/27/2017 11:55	File folder			
🐉 Dropbox	Calibration Testing	11/27/2017 11:55	File folder			
OneDrive	Carole A 0728 Analysis	11/27/2017 11:56	File folder			
	Carole A Raw Analysis	11/27/2017 11:56	File folder			
This PC	GlaShe F3 F4 O1 O2 May 2017	11/27/2017 11:56	File folder			
3D Objects	CreateFolder1	12/11/2017 2:06 PM	File folder			
Desktop	CreateFolder2	12/11/2017 2:07 PM	File folder			
Documents	CreateFolder3	12/12/2017 2:23 PM	File folder			
Downloads	CreateFolder4	12/13/2017 10:59	File folder			
Music	CreateFolder5	12/13/2017 11:27	File folder			
-	CreatingAnotherStudy	1/3/2018 11:08 AM	File folder			
Pictures	CreatingPatientFolder	11/27/2017 11:56	File folder			
Videos	CreatingPatientFolder2	11/27/2017 11:56	File folder			
🏪 Local Disk (C:) 🖕	DirectionalCoherenceDemo	11/27/2017 11:56	File folder			
Patient Nam	CreatingPatientFolder Stud	y info BrainAvatar Study				
Folder	CreatingPatientFolder					_

The settings file will now be loaded into the Study Folder that you have selected.

*****PLEASE NOTE:** You cannot change settings to a settings file outside of the BrainAvatar Software.

Walkthrough Guide: How to convert a Settings File from either the BrainMaster 3.0 Series Software or Discovery Series Software into the BrainAvatar 4.0 Series Software

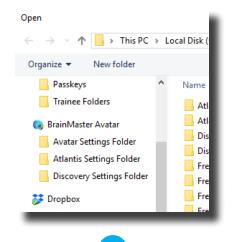
1. From the Training Screen, Click the File Tab, then Import Settings.



- 2. You will have to do two things from here:
 - A. First, you will have to switch the type of files that you are looking for from "Setup Files", to "Old settings file (e.g. settings)".

Setup Files	up Files \lor Old setting files (e.g. settings)		
Open	Cancel	Open	Cancel

B. Next, you will have to direct yourself to the original BrainMaster Settings Directory that you would like to move the settings from. This can be done by using the scroll bar on the left to move to the top of the extras bar, and choose the BrainMaster Settings Directory that best suits your needs.



C. After directing yourself to the directory that you would like to choose for your settings file, from the directory on your right, find the protocol folder that best suits your needs, and choose this by double-clicking on it. Then, double-click on the "settings" file that appears next.

Open										×
← → · ↑ → This PC	> Lo	cal Disk (Ci) > brainm	20 > settings > Deep		~ (Б	Search Deep			,ρ
Organize · New folder										0
Avatar Settings Folder	^	Name	^	Date modified	Туре		Size			
Atlantis Settings Folder		Settings		4/7/2008 12:55 PM	File	2 10		В		
Dropbox										
CineDrive	i.									
This PC										
3D Objects										
Desktop										
Documents										
Downloads										
Music										
Pictures										
Videos										
Local Disk (C:)	~									
File name:	Settin	çs				\sim	Old setting fi	les (e.g. si	ettings)	~
							Open		Cancel	

*****PLEASE NOTE:** You have now imported the Settings file to be used for **THIS STUDY FOLDER ONLY! IF YOU WANT TO CONVERT THE PROTOCOL TO BE USED EASILY FOR FUTURE STUDIES:**

3. From the Training Screen, Click the File Tab, then Export Settings.

Danhater	ant loud Trans late tob	- 0 ×
New Yorky Trangets		
Open Shally	Visiter Clevel Sector 00:22:30 655 655 7/V - Toteconds - Ever Open - Curret Markap -	
Save Study Save Study-Av	1 / 454.67 MB Sample 438 at 1.711 seconds	
Control Film	h Yandh Droway Analiana Start Stin End Stin Cough/Smean Luces Senary Start Yank End Yank Edd	
Equal to Lovela		
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Open Recent File		
Language		
5 OD 4.E Raw EEG		
6.F7-LE Raw EEG 6.F.W/IX LEMM		
7 T3-LE Raw EEG 67 W/RC Liketen		
8 TS-LE Raw EEG 64 eV3C Littates		
9 F2-LE Raw EEG 63 w/3C L3 laten 10 Fp2-LBaw EEG		
11 F4 LE Rise EEG		
CONVECTORING		
12 C4-LERew EEG 61-mr/IC Likelen		
13 P4-LE Raw FEG 64-evril: Li late		
14 02-LERow EEG 62-ev/2C 63 killer		
13 PB-LE Raw EEG 62 WY DC 1.0 Make		
16 T4-L2 Kaw EEG 12 HV2C 1.1 MAIN		
17 TE-LE Raw EEG 6.0 mV RC 1.0 kolm		
18 C2-LE Raw EEG 6-2-m2-34; L2 luke		
19 P2-LE Raw EEG 62-eV2C 6.8 Julie		
20 A2-LERaw EEG 62-8Y2C 11 MAN		
main.Augtar	CD, Arta (Eellins), 7 Station 3, 113 3, 7 Station 3, 113 3, 7 Station 3, 113 1, 7 Station 3, 113 1, 12 Station 3,	

4. When you save the file you can either save this over an existing file. Or, you can name it as a new file. Once this is completed, click the Save Button in the bottom-right hand corner of this screen.

Organize 🔻 New fold	er				888 💌
😪 BrainMaster Avata ^	Name	Date modified	Туре	Size	
SF Dropbox	Atlantis Hi Resolution	5/23/2017 4:14 PM	File folder		
Se propoox	Atlantis Low Resolution	5/23/2017 4:14 PM	File folder		
a OneDrive	Discovery Hi Resolution	8/10/2017 11:43 AM	File folder		
This PC	Discovery Low Resolution	5/23/2017 4:14 PM	File folder		
	Freedom 7D Hi Resolution	5/23/2017 4:14 PM	File folder		
3D Objects	Freedom 7d Low Resolution	5/23/2017 4:14 PM	File folder		
Desktop	Freedom 24D Hi Resolution	5/23/2017 4:14 PM	File folder		
Documents	Freedom 24D Low Resolution	5/23/2017 4:14 PM	File folder		
Downloads	6_Pic_Processing_Settings_Standard_Capit-O	7/17/2017 4:15 PM	BDB2 File	160 KB	
h Music	BasicCoherenceTraining_v1.0	11/1/2017 9:09 AM	BDB2 File	107 KB	
Pictures	C4-ADwn;SMRUp	11/27/2017 1:05 PM	BDB2 File	114 KB	
Videos	GammaProtocol_v1.0	11/1/2017 10:54 AM	BDB2 File	118 KB	
-	GammaProtocol_v2.0	11/1/2017 10:59 AM	BDB2 File	130 KB	
Local Disk (C:) ↓	COHTemp	8/25/2017 11:03 AM	BDB2 File	111 KB	
File name:					
Save as type: Setup	Filer				

You have now converted a BrainMaster 2.5, 3.0, or Discovery Settings file to be used as a Setting File for the BrainAvatar Software. You will be able to tell this, as this will now be listed in your BrainAvatar Settings files.

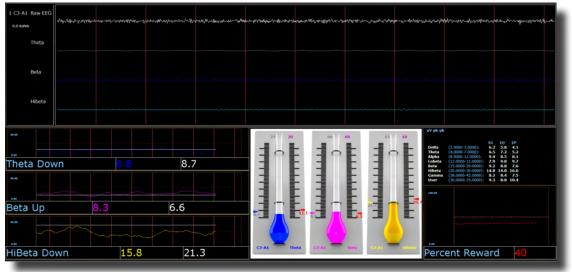
*****PLEASE NOTE:** This protocol will have very little displays on the screen. To learn more about customizing displays, please see in the Panel Wizard Section.

Basic Settings Protocols Information

Protocol	Training	Default Location(s)
Alert	Theta & Hibeta Inhibited, Beta Rewarded with a reward tone when all criteria is met	C3
Deep	Alpha & Theta with Reward each band with its own reward tone	Pz
Focus	Theta & Hibeta Inhibited, Lobeta Rewarded with a reward tone when all criteria is met	C4
Peak	Alpha Coherence Training to reward with a MIDI tone when the coherence is above the threshold	01, 02
Relax	Theta & Hibeta Inhibited, Alpha Rewarded with a MIDI reward tone when all criteria is met	C4
Squash	Wideband Single inibit that rewards with a MIDI tone when the criteria is met	Cz
ROI Training Only Head	Single Band Reward based on the band and location selected using the	All 10/20
Select Enhance	3D Head Map with a reward tone when the criteria is met	Sites
ROI Training Only Head	Single Band Inhibit based on the band and location selected using the 3D	All 10/20
Select Inhibit	Head Map with a reward tone when the criteria is met	Sites
Z-Score PZOK 4ch	Trains the percentage of Z-Scores that are falling between +/- your de-	C3, C4, P3,
	fined range, rewards with a MIDI tone when above your defined Threshold	P4
Z-Score PZOKUL 4ch	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above your defined Threshold	C3, C4, P3, P4
Z-Score PZOKUL 4ch Dynamic	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above the Dynamic Threshold	C3, C4, P3, P4
Z-Score PZOK 19ch	Trains the percentage of Z-Scores that are falling between +/- your de- fined range, rewards with a MIDI tone when above your defined Threshold	All 10/20 Sites
Z-Score PZOKUL 19ch	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above your defined Threshold	All 10/20 Sites
Z-Score PZOKUL 19ch Dynamic	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above the Dynamic Threshold	All 10/20 Sites
Z-Score Using sLORETA Z Absolute Power	Single Band sLORETA Z-Score Absolute Power based on the band and location selected using the 3D Head Map with a MIDI tone when the value falls between the upper and lower range	All 10/20 Sites
Z-Score Using sLORETA PZOKUL	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above your defined Threshold	All ROI's All Bands
Z-Score Using sLORETA PZOKUL Dynamic	Trains the percentage of Z-Scores that are falling between your upper and lower range, rewards with a MIDI tone when above the Dynamic Threshold	All ROI's All Bands

Basic Settings Protocols Crib Notes

Alert - Beta Up Theta and Hibeta Down



Basic Overview

Alert is known more generally as beta training. It consists of a reward on increasing beta, with inhibits placed on theta and hibeta. This protocol is generally applied at C3. When all criteria are met for 500 milli-seconds the trainee will get a reward tone (.wav)

Default Settings

Threshold Updating is set to autoupdate repeat: after pre-baseline and after each run. This protocol is set to update 10 times, every 120 seconds (20 minute session).

Percent Time over Threshold Hot Keys

't' increase Theta - 'Shift T' to decrease Theta

'b' increase Beta - 'Shift B' to decrease Beta

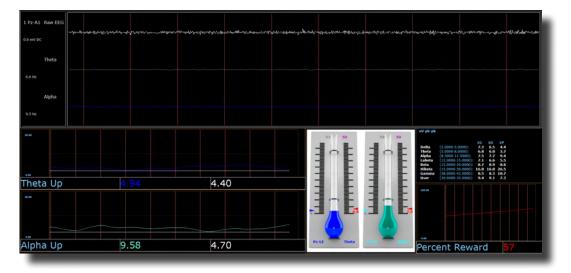
'h' increase Hibeta - 'Shift H' to decrease Hibeta

Note: 'y' key can be used to manually update at any time

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

*****PLEASE NOTE:** All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Deep - Theta Alpha Up



Basic Overview

Deep is known as alpha/theta trainng. It consists of a reward on increasing alpha and theta. This protocol is generally applied at Pz. When each band criteria is met for 500 milliseconds the trainee will get a reward tone for each band.

Default Settings

Threshold Updating is set to autoupdate repeat: after pre-baseline and after each run. This protocol is set to update 10 times every 180 seconds (30 minute session).

Percent Time over Threshold Hot Keys

't' increase Theta - 'Shift T' to decrease Theta

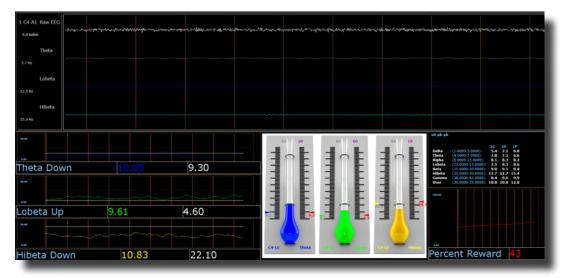
'a' increase Alpha - 'Shift A' to decrease Alpha

Note: 'y' key can be used to manually update at any time

This protocol is set up to work with EEG Audio, BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

*****PLEASE NOTE:** All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Focus – Lobeta Up Theta and Hibeta Down



Basic Overview

Focus is known more generally as beta training. It consists of a reward on increasing lobeta, with inhibits placed on theta and hibeta. This protocol is generally applied at C4. When all criteria are met for 500 milli-seconds the trainee will get a reward tone (.wav)

Default Settings

Threshold Updating is set to autoupdate repeat: after pre-baseline and after each run. This protocol is set to update 10 times every 120 seconds (20 minute session).

Percent Time over Threshold Hot Keys

't' increase Theta - 'Shift T' to decrease Theta

'l' increase Lobeta - 'Shift L' to decrease Lobeta

'h' increase Hibeta - 'Shift H' to decrease Hibeta

Note: 'y' key can be used to manually update at any time

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

PLEASE NOTE: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

No Limit QEEG Assessment

1 Fp1-LE Raw EEG 2.0 m DC Cookana Willington & California Control Cont
2 Fp2-LE Raw EEG 0.0 mil cc 0.0 kohn 4/10 mil 1/10 mil 1/
3 F3-LE Raw EEG as have a selection of the selection of t
4 F4-LE Raw EEG and the second and t
SC3-LE Raw EEG as more as balan why her man many fair from the formation of the second
6 C4-LE Raw EEG and a construction of the contraction of the contracti
793-LE Raw EEG and water and the second and the sec
8 P4-LE Raw EEG any anti-anti-anti-anti-anti-anti-anti-anti-
201-LE Raw EEG as have a start and the second of the secon
10 02-LERaw EEG 0.0 mi oc 0.0 kultur warden shullower yn cryffreger strawinger ffellen gwerger franken gwerder an gwer
11 F7-LE RAW EEG 0.0 m oc 0.0 balan war regen when were were were were were were were we
13 T3-LERaw EEG 0.0 mil oc 0.0 kohn Anthony Market Anthony Market Anthony Market Anthony Market Anthony
14 T4-LE Raw EEG 0.0 mi oc 0.0 kohn by naynafrafra hwendrywyth warach yw wy wedin yn wedin
15 T5-LERaw EEG 0.0 mil oc 0.0 kolm antideur generaliser ferste hand antideur generaliser of the standard of the standard and the description of t
17 F2-LE RAW EEG 0.0 mil CC 0.0 kohn wellen well
18 Cz-LE Raw EEG a mi cc ⁻ a baha w w w w w w w w w w w w w w w w w w
19 02-1 F Raw FFG

Basic Overview

The No Limit QEEG Assessment file is acquiring the standard sensor positions defined by the 10-20 system. The recording condition can be changed on the fly from the condition drop down menu at the top of the BrainAvatar window. Each time the condition is changed from the drop down menu a new EDF is created.

The observed offset values on the acquisition screen in BrainAvatar software is generally useful for assessing sensor connection quality

Recommended DC Offsets Values

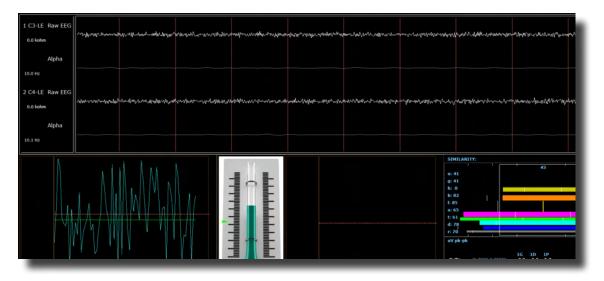
Gold - 50 Millivolts Tin - 30 Millivolts Silver/ Silver Chloride - 10 Millivolts

Recommended Impedance Values (Optional add-on)

0-5 kohm – White 5-10 kohms – Green 10-15 kohm – Yellow 15> kohm – Red

PLEASE NOTE: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Peak – Alpha Coherence Up



Basic Overview

Peak is a more specific type of alpha training. Peak's goal is achieving a coherent state between the left and right hemispheres in the alpha band (8-12 Hz). Eyes are generally closed when using the 'peak' protocol. This protocol is generally applied at C3 and C4. When the alpha coherence is above the training threshold the trainee will get an event sound (MIDI Tone).

Default Settings

Protocol is **not** set to autothreshold, and session is set to run for 20 minutes.

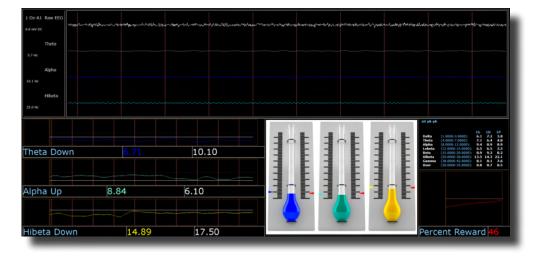
Threshold Hot Keys

'c' increase Coherence Threshold - 'Shift C' to decrease Coherence Threshold

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Relax – Alpha Up Theta Hibeta Down



Basic Overview

Relax is a classic alpha protocol. It consists of a reward on increasing alpha, with inhibits placed on the ta and hibeta. This protocol is generally applied at Oz. When all criteria are met for 500 millisecond's the trainee will get a reward tone (.wav)

Default Settings

Threshold Updating is set to autoupdate repeat: after pre-baseline and after each run. This protocol is set to update 10 times every 120 seconds (20 minute session).

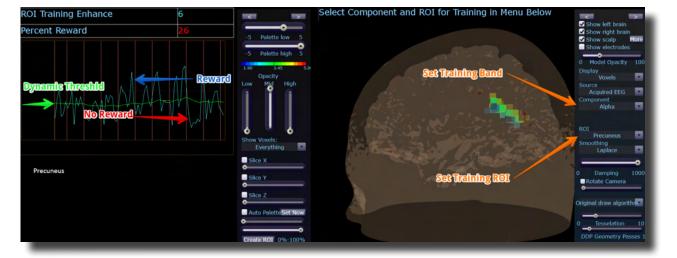
Percent Time over Threshold Hot Keys

- 'a' increase Alpha 'Shift A' to decrease Alpha
- 't' increase Theta 'Shift T' to decrease Theta
- 'h' increase Hibeta 'Shift H' to decrease Hibeta

Note: 'y' key can be used to manually update at any time

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

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ROIA Enhance - Region of Interest Up Train

Basic Overview

ROIA Enhance is a protocol that requires the standard 10/20 sites acquired. This settings file is set to up train the band and region of interest defined in the component and ROI drop down menu in the 3D head display. When criteria is met for the trainee will get an event sound (MIDI Tone).

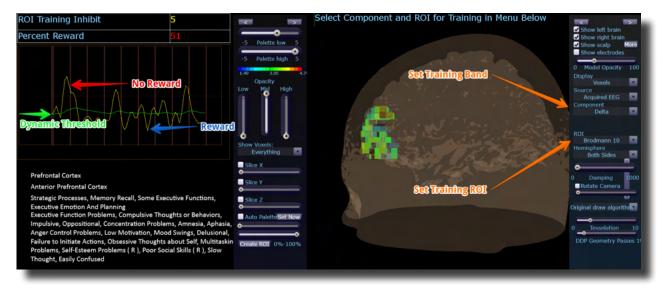
Default Settings

Threshold is set to dynamically adjust which will reward trainee about 50-60% throughout the training session. This settings file is set to run for 20 minutes

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: The following on the fly adjustments DO NOT apply to all settings file designs training region of interest amplitude. The settings file explained above is designed to make on the fly adjustments from the drop down menu. The following equation in the Event Wizard is required in order to make these adjustments on the fly: x=LoretaROIA(SELECTROI,SELECTBAND);

Please Note: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.



ROIA Inhibit Training Dynamic

Basic Overview

ROIA Inhibit is a settings file that requires the standard 10/20 sites acquired. This settings file is set to up train the band and region of interest defined in the component and ROI drop down menu in the 3D head display. When criteria is met for the trainee will get an event sound (MIDI Tone).

Default Settings

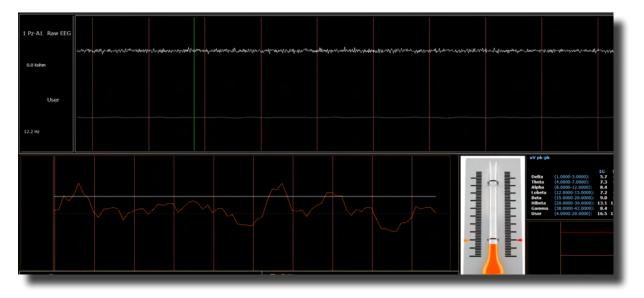
Threshold is set to dynamically adjust which will reward trainee about 50-60% throughout the training session. This settings file is set to run for 20 minutes

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: The following on the fly adjustments DO NOT apply to all settings file designs training region of interest amplitude. The settings file explained above is designed to make on the fly adjustments from the drop down menu. The following equation in the Event Wizard is required in order to make these adjustments on the fly: x=LoretaROIA(SELECTROI,SELECTBAND);

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Squash - Wideband Inhibit



Basic Overview

Squash is a protocol that consists of inhibits placed on four bands, spanning the range from 4-20 Hz. This protocol is generally applied at Cz. When criteria is met the trainee will get an event sound (MIDI Tone).

Default Settings

Threshold Updating is set to autoupdate repeat: after pre-baseline and after each run. This protocol is set to update 10 times, every 120 seconds (20 minute session).

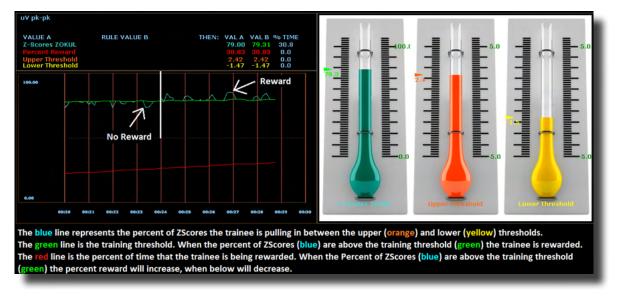
Percent Time over Threshold Hot Keys

'u' increase User – 'Shift U' to decrease User

Note: 'y' key can be used to manually update at any time

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

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Z-Score PZOKUL Dynamic and Z-Score PZOKUL 'C' Key

Basic Overview

Z-Score training is a scientifically designed software approach which will analyze selected training; compare those sites with a normative database, and reward the Z-Scores that fit within the desired upper and lower limits (database e.g. ANI, BrainDx, qEEG Pro). Z-Score PZOKUL Dynamic protocol has a training threshold that will auto adjust based on the percent of Z-Scores the trainee is pulling in between the upper and lower limits. Z-Scores PZOKUL 'C' Key - is used when one wants to manually adjust the training threshold. When the trainee's percent of Z-Scores are above the training threshold the trainee will get a reward tone.

Threshold Hot Keys

'u' increase Upper Threshold - 'Shift U' to decrease Upper Threshold

'l' increase Lower Threshold – 'Shift L' to decrease Lower Threshold

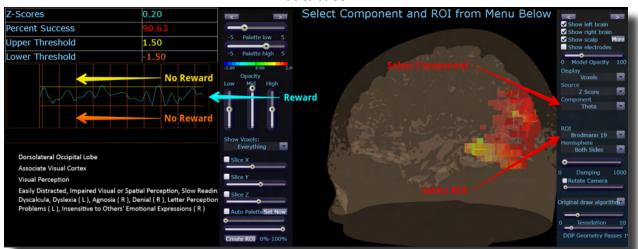
Z-Scores PZOKUL 'C' Key - Threshold Hot Keys

'c' increase Controlled Threshold – 'Shift C' to decrease Controlled Threshold

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Z-Score sLORETA Absolute Power – Training a single Region of Interest and a single band to a normative database



Basic Overview

Z-Score sLORETA Absolute Power training is a scientifically designed software approach which will analyze selected training compare those regions of interest with a normative database, and reward the Z-Scores that fit within the desired upper and lower limits (database e.g. BrainDx, qEEG Pro). This is a settings file that requires the standard 10/20 sites. Z-Score sLORETA Absolute Power settings file will reward the trainee when the selected training perimeter is in-between the upper and lower threshold. The region of interest and component are adjusted from the Live LORETA Projector drop down menu.

Default Settings

Threshold is manually adjusted throughout the training session. This settings file is set to run for 20 minutes

Threshold Hot Keys

'u' increase Upper Threshold - 'Shift U' to decrease Upper Threshold

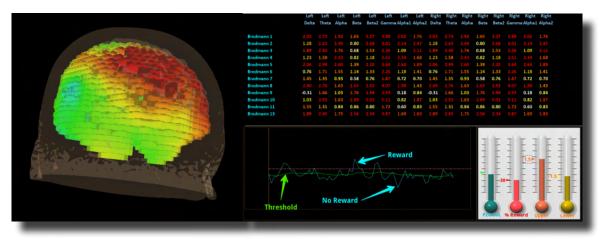
'l' increase Lower Threshold – 'Shift L' to decrease Lower Threshold

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: The following on the fly adjustments DO NOT apply to all settings file designs training region of interest sLORETA Absolute Power. The settings file explained above is designed to make on the fly adjustments from the drop down menu. The following equation in the Event Wizard is required in order to make these adjustments on the fly: x=LoretaROIZAP(SELECTROI,SELECTBAND);

Please Note: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Z-Score sLORETA PZOKUL Dynamic and Z-Score sLORETA PZOKUL 'C' Key – Training multiple regions of interest and multiple bands to a normative database



Basic Overview

sLORETA Z-Score training is a scientifically designed software approach which will analyze selected training compare those regions of interest with a normative database, and reward the Z-Scores that fit within the desired upper and lower limits (database e.g. BrainDx, qEEG Pro). This is a settings file that requires the standard 10/20 sites. Z-Score PZOKUL Dynamic protocol has a training threshold that will auto adjust based on the percent of Z-Scores the trainee is pulling in between the upper and lower limits. Z-Scores PZOKUL 'C' Key - is used when one wants to manually adjust the training threshold. When the trainee's percent of Z-Scores are above the training threshold the trainee will get a reward tone. Training location are setup within the BrainAvatar Z-Score Setup. Left click on the regions to train, then right click over the regions to customize training bands.

Threshold Hot Keys

'u' increase Upper Threshold - 'Shift U' to decrease Upper Threshold

'l' increase Lower Threshold – 'Shift L' to decrease Lower Threshold

Z-Scores PZOKUL 'C' Key - Threshold Hot Keys

'c' increase Controlled Threshold - 'Shift C' to decrease Controlled Threshold

This protocol is set up to work with the BrainMaster DVD player, Flash Player, Dimmer, Multi Media Player, and third party games (e.g. InnerTube, Particle Editor, Zukor)

Please Note: All designs provided by BrainMaster, are for demonstration and illustration purposes only. It is the clinician's responsibility to ensure that any designs used provide the intended feedback.

Keyboard Quick Keys

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.

Please Note: Pressing <Tab> switches into "frequency adjust" mode. Pressing "a" for alpha, "t" for theta, etc, will make the frequency band change per what you have selected for the "on-the-fly" Frequency adjustment.

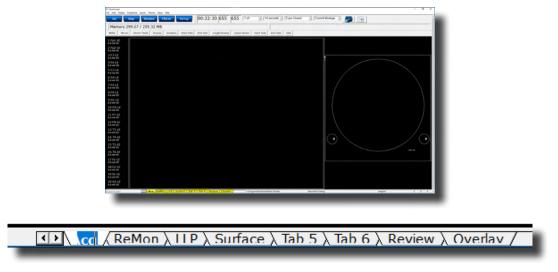
Кеу	Function
а	Increase the alpha or 3rd bands threshold by 0.1uV or target by 1 percent
А	Decrease the alpha or 3rd bands threshold by 0.1uV or target by 1 percent
b	Increase the beta or 5th bands threshold by 0.1uV or target by 1 percent
В	Decrease the beta or 5th bands threshold by 0.1uV or target by 1 percent
С	Increase coherence/phase threshold
С	Decrease coherence/phase threshold
d	Increase the delta or 1st bands threshold by 0.1uV or target by 1 percent
D	Decrease the delta or 1st bands threshold by 0.1uV or target by 1 percent
g	Increase the gamma or 7th bands threshold 0.1 uV or target by 1 percent
G	Decrease the gamma or 7th bands threshold 0.1 uV or target by 1 percent
h	Increase the hibeta or 6th bands threshold 0.1 uV or target by 1 percent
Н	Decrease the hibeta or 6th bands threshold 0.1 uV or target by 1 percent
1	Increase the lobeta or 4th bands threshold 0.1 uV or target by 1 percent
L	Decrease the lobeta or 4th bands 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 the theta or 2nd bands threshold by 0.1 uV or target by 1 percent
Т	Decrease the theta or 2nd bands threshold by 0.1 uV or target by 1 percent
u	Increase the user or 8th bands threshold by 0.1 uV or target by 1 percent
U	Decrease the user or 8th band threshold by 0.1 uV or target by 1 percent
у	Copy autothresholds into current thresholds ("Autoupdate")
<shift> + "="</shift>	Increase the display gain by 20%
-	Decrease the display gain by 20%
<space></space>	Pause or End Pause
1	Set mode so threshold keys (d, t, etc.) adjust channel 1 thresholds only
2	Set mode so threshold keys (d, t, etc.) adjust channel 2 thresholds only

Keyboard Quick Keys (Continued)

Кеу	Function
3	Set mode so threshold keys (d, t, etc.) adjust channel 3 thresholds only
4	Set mode so threshold keys (d, t, etc.) adjust channel 4 thresholds only
0	Set mode so threshold keys (d, t, etc.) adjust all thresholds
<up> <pg up=""></pg></up>	Moves the display up (CSA Display only)
<down> <pg dn=""></pg></down>	Moves the display down (CSA Display only)
<left></left>	Moves the display left (CSA Display only)
<right></right>	Moves the display right (CSA Display only)
<insert></insert>	Switches between controlling look point and camera (CSA Display Only)
<shift> + 9</shift>	Decreases the Photic Output Amplitude by 1%
<shift> + 0</shift>	Increases the Photic Output Amplitude by 1%
<shift> + "."</shift>	Enables Impedance (Discovery only)
<shift> + ","</shift>	Disables Impedance (Discovery only)
<ctrl> + e</ctrl>	Opens the BrainAvatar Setup Menu on the Event Wizard Tab
<ctrl> + z</ctrl>	Opens the BrainAvatar Setup Menu on the Z-Score Tab

Renaming Tabs

1. From the Training Screen, find the Tab Section located at the bottom of the screen. Find the tab that you would like to edit, and double-click. Doing this will allow you to edit the Tab name to what you would like.



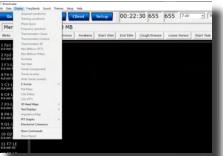
All of the Tabs can be renamed. If the names of the tabs get too long, you can use the arrow buttons located next to the Tab Section to search through them.

Displays(Tabs)

- 1. There are three ways to choose what to display on each tabs:
 - A. **Classic Method:** From the Setup Screen, click the Settings Tab, and then click the Display Tab, and choose by putting a check mark by the items that you would like displayed for each Tab. There are 6 Tabs for the Training Screen and Client Screen, plus an Overlay Screen, that can be displayed on all Tabs. Once you have chosen the Displays that you would like, please click the Use Settings and Close Button. **PLEASE NOTE:** This will not properly reflect, if you have done any changes using the Panel Wizard.

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B. Training Screen: Click the Display Tab, and choose which Display you would like for the Tab that you have currently selected. You will have to do this to each Tab individually. PLEASE NOTE: This will not properly reflect, if you have done any changes using the Panel Wizard



C. Panel Wizard: In the Tab Section located at the bottom of your screeen. Find the tab you would like to work with, and right-click the Tab. PLEASE NOTE: For more information on this, please go to the Panel Wizard Section of this Manual

	Layout T Show Ou	tlines	Tab		Acq		Tab 1	
No	Туре	х	Y	w	н	Del	Menu	
1	Acquired waveforms	0	0	1270	885	Delete	Men	
2	Impedance Map	1270	100	625	625	Delete	Men	
							•	
Add a	panel:		•	App	bly	ОК	Cance	

Display Types & Functionality

	Acquired Waveforms
1 Fp1-LE	
2 Fp2-LE	
3-F3-LE	
4.F4-LE	
5-C3-LE	
6-C4-LE	
7 P3-LE	
8 P4-LE	
9-01-LE	
10 02-LE	
11 F7-LE 12 F8-LE	
13 T3-LE	
14 T4-LE	
15 TS-LE	
16 T6-LE	
17 Fz-LE	
18 Cz-LE	
19 Pz-LE	
20 A2-LE	
and the second second	

Use: Displays the acquired Waveforms.

Requirements: Displays only sites seleted in the Acquired Section of Settings.

Left-Click Mouse Function: Yes. Highlights an area of EEG for making annotations (Coming Soon). **Right-Click Mouse Function (Panel Option):** Yes. Allows you to add filtered waveforms, choose to not view particular waveforms, show uV levels, DC Offsets & Impedances, as well as turning on & off a Zero Line.

📧 Dialog			×
Select Channel		Select Bands	Options
☑ Fp1	🗹 Fz	🗖 Raw EEG	Show Band
₩ Fp2	🗹 Cz	🗖 Delta	🗆 Zero Line
17 F3	₩ Pz	🗖 Theta	🗆 Wiper
₩ F4	M A2	🗖 Alpha	Show Pk-Pk
₩ C3		🗖 Lobeta	Show Freq
₩ C4		🗖 Beta	Show RMS
₩ P3		🗖 Hibeta	Show DC
₩ P4		🗖 Gamma	Show Impedance
01		🗖 Alpha1	
₩ 02		🗖 Alpha2	
10 F7			
17 F8			
🗹 ТЗ			
☑ T4			
M 15			
₩ Тб			
ОК	🛛 🔽 Use tab defau	ults Cancel	

Training Waveforms



Use: Displays the Trained Waveforms.

Requirements: Displays only sites selected in the Montage Section of Settings.

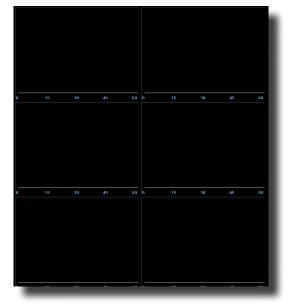
Left-Click Mouse Function: No use at this moment.

Right-Click Mouse Function (Panel Option): Yes. Allows you to add Raw EEG waveforms, show uV lev-

els, frequencies (Filtered Band

Panel Options		×	
_			t
✓ Use tab d			
	Fz-LE	🗖 Raw EEC	
☑ Fp2-LE	Cz-LE	🗹 Delta	
F3-LE		🗹 Theta	
F4-LE	🕅 A2-LE	🗹 Alpha	
C3-LE		🗹 Lobeta	
C4-LE		🗹 Beta	
☑ P3-LE ☑ P4-LE		🔽 Hibeta	
M P4-LE ▼ O1-LE		🗖 Gamma	
M OI-LE ▼ O2-LE		🗖 Alpha1	
I F7-LE		🗖 Alpha2	
F8-LE			
M F8-LE ▼ T3-LE			
₩ T3-LE			
T5-LE			
T6-LE			
🗌 Set Loret	a folder		
🗌 Create ele	ectrode sxyz fil	е	
🗆 Scroll			
Show Pk-	Pk	Show RMS	
Show Fre		Show DC	
, Show Fie	ч	SHOW DC	
01/		Connect	
ОК		Cancel	

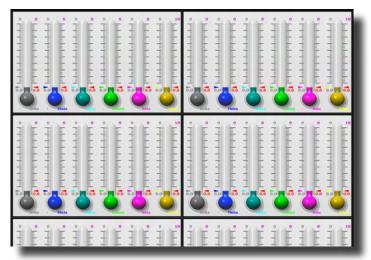
Frequency Spectrum



Use: Displays the frequency spectrum for each trained site. **Requirements:** Displays only sites selected in the Montage Section of Settings **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): No.

Thermometer Display



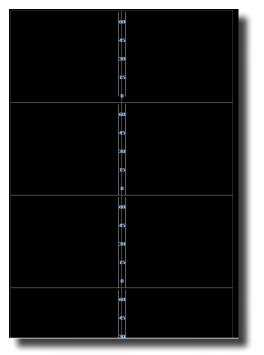
Use: Displays live bar-graphs that show the selected frequency components, along with associated threshold information for each trained site. You can choose from three different types of Thermometers: Classic, Contour (pictured), or Large.

Requirements: Displays only sites selected in the Montage Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands or Events you would like displayed, as well as choosing the Large Style Thermometer.

📧 Thermometer Men	u		×
Select Channel		Select Bands	Options
☑ Fp1-LE	Fz-LE	🗖 Raw EEG	🗖 Large Thermo
▼ Fp2-LE	🔽 Cz-LE	🔽 Delta	
🗹 F3-LE	Pz-LE	🗹 Theta	
🔽 F4-LE	🗹 A2-LE	🗹 Alpha	
🗹 C3-LE		🔽 Lobeta	
C4-LE		🔽 Beta	
🗹 P3-LE		🗹 Hibeta	
₽4-LE		🗖 Gamma	
🗹 O1-LE		🗖 Alpha1	
🗹 02-LE		🗖 Alpha2	
F7-LE			
🕅 F8-LE			
₩ T3-LE			
₩ T4-LE			
☑ T5-LE			
₩ T6-LE			Filters -
ОК	☑ Use tab defaults	Cancel	
-			



Mini BrainMirror(FFT)

Use: Displays the FFT spectrum for each trained site.

Requirements: Displays only sites selected in the Montage Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which channels will be displayed.

📧 Mini BMirror Me	nu	×
Select Channel		Select Bands
Fp1-LE	Fz-LE	🗖 Raw EEG
▼ Fp2-LE	🔽 Cz-LE	🔽 Delta
🗹 F3-LE	🔽 Pz-LE	🔽 Theta
🔽 F4-LE	🔽 A2-LE	🔽 Alpha
🗹 C3-LE		🔽 Lobeta
🗹 C4-LE		🗹 Beta
🗹 P3-LE		🗹 Hibeta
₽4-LE		🗖 Gamma
🔽 O1-LE		🗖 Alpha1
🗹 02-LE		🗖 Alpha2
F7-LE		
F8-LE		
☑ T3-LE		
☑ T4-LE		
🔽 TS-LE		
🔽 TG-LE		
ОК	✓ Use tab defaults	Cancel
_		

Mini BrainMirror(Filter)

Use: Displays the Filtered spectrum for each trained site.

Requirements: Displays only sites selected in the Montage Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which channels will be displayed

📧 Mini BMirror Menu		×
Select Channel —		Select Bands
☑ Fp1-LE	Fz-LE	🗖 Raw EEG
Fp2-LE	🗹 Cz-LE	🔽 Delta
🗹 F3-LE	🗹 Pz-LE	🗹 Theta
F4-LE	🗹 A2-LE	🗹 Alpha
🗹 C3-LE		🔽 Lobeta
☑ C4-LE		🗹 Beta
₩ P3-LE		🗹 Hibeta
₩ P4-LE		🗖 Gamma
☑ 01-LE		🗖 Alpha1
☑ 02-LE		🗖 Alpha2
F7-LE		
M F8-LE		
₩ T3-LE		
₩ T4-LE		
M TS-LE		
₩ T6-LE		
ОК	☑ Use tab defaults	Cancel

Text Stats

, (4.0600-8.0600); 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		1G		1P			2P	36		ЗP			4P			5P			6P	7G	7D		8G	8D	8P	9G		9P	10G	
. (8.000-12.0000); 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	a (1.0000-3.0000):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
a (12.0000-15.0000); 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	(4.0000-8.0000):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(15.0000-20.0000): 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	(8.0000-12.0000):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
a (20.0000-30.0000); 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	a (12.0000-15.0000):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(15.0000-20.0000):				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E A RULE VALUE & THEN: VAL A VAL & % TIME			0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	eta (20.0000-30.0000):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0			
						0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	5.5	0.0	5.5	0.0	0.0	0.0			

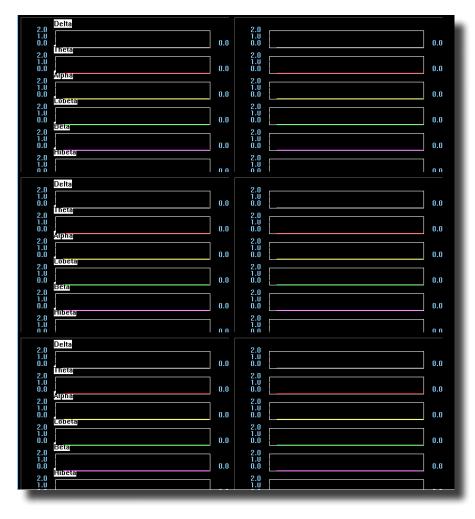
Use: Displays the Grand Average, Damped Average, and percent of time over threshold for each frequency band on each trained site, as well as any Event Information.

Requirements: Displays only sites selected in the Montage Section of Settings, and/or if an Event is enabled.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands or Events you would like displayed, as well as other settings like Impedance readings, Impedances, as well as adjust the data precision.

🔳 Text Stats Menu	×
Select Bands	Options
🗖 Raw EEG	🗖 Acquired
🔽 Delta	🗖 Show Grid
🔽 Theta	🗖 No Labels
🗹 Alpha	🔽 Peak-Peak
🗹 Lobeta	Demographics
💌 Beta	🗖 Impedance
🗹 Hibeta	🗹 Training Channels
🗖 Gamma	🗖 Opaque BG
🗖 Alpha1	
🗖 Alpha2	Show Eventis
	Filter precision 4 (0.0000) Data precision 1 (0.0) Verdana 16 Normal
OK	se tab defaults Cancel

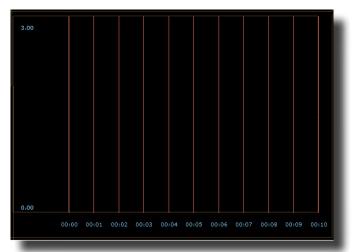


Trend Graph (Components)

Use: Displays a graph for each component for each trained site.

Requirements: Displays only sites selected in the Montage Section of Settings. **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): No.



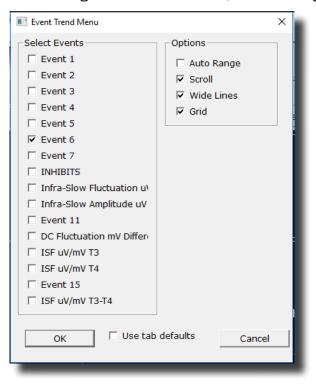
Trend Graph (Events)

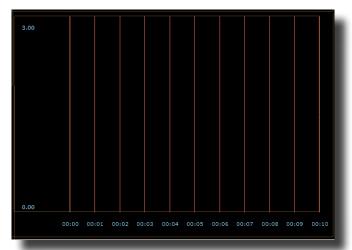
Use: Displays a graph for each event utilized through the Event Wizard.

Requirements: Displays only if an Event is Enabled and Visible.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which Events that you would like to display, as well as different settings for size of the lines, and the range of the graph.





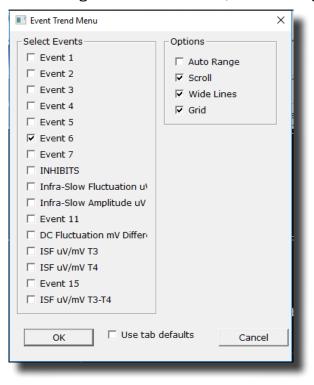
Wide Trend (Events) (Same as Trends)

Use: Displays a graph for each event utilized through the Event Wizard.

Requirements: Displays only if an Event is Enabled and Visible.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which Events that you would like to display, as well as different settings for size of the lines, and the range of the graph.



SITES: F3 01 (E0)	Abs	Rel	Rat/T	Rat/A	Rat/B	Rat/G	SITES: F	4 02 (E	0) Abs	Rel	Rat/	T Rat/A	Rat/B	Rat/0	3		
Delta1 (0.5-1.5)	0.0	0.0	0.0	0.0	0.0	0.0		0.5-1.5				0.0	0.0	0.0			
Delta (1.7-3.7)	0.0	0.0		0.0	0.0	0.0	Delta (1	i.7-3.7)	0.0			0.0	0.0	0.0			
Theta (3.7-7.7)	0.0	0.0			0.0	0.0	Theta (3		0.0				0.0	0.0			
Alpha (7.7-12.7)	0.0	0.0				0.0		7.7-12.7						0.0			
Beta (12.7-25.2)	0.0	0.0						2.7-25.2									
Sum (1.7-25.2)	0.0	0.0					Sum (1,		0.0								
Beta2 (25.2-35.2)	0.0	0.0						25.2-35.									
Gamma (35.2-50.2)		0.0							0.2) 0.0								
Alpha1 (7.7-10.2)	0.0	0.0						(7.7-10.									
Alpha2 (10.2-12.7)	0.0	0.0					Alpha2	(10.2-12	2.7) 0.0	0.0							
Delta1 (0.5-1.5)	0.0	0.0	0.0	0.0	0.0	0.0		[0.5 - 1.5]				0.0	0.0	0.0			
Delta (1.7-3.7)	0.0	0.0		0.0	0.0	0.0	Delta (1		0.0			0.0	0.0	0.0			
Theta (3.7-7.7)	0.0	0.0			0.0	0.0	Theta (0.0				0.0	0.0			
Alpha (7.7-12.7)	0.0	0.0				0.0		7.7-12.7						0.0			
Beta (12.7-25.2)	0.0	0.0						2.7-25.2									
Sum (1.7-25.2)	0.0 0.0	0.0					Sum (1.		0.0								
Beta2 (25.2-35.2) Gamma (35.2-50.2)		0.0 0.0						25.2-35.	2) 0.0 0.2) 0.0								
Alpha1 (7.7-10.2)	0.0	0.0						(33.2-3									
		0.0							2,7) 0.0								
Alphaz (10.2-12.7)	F3-0			F3-	4.		F3-0		2.7) 0.0	01-F4:		0	1-02:			F4-02	
ASY	сон	PHA	ASY	сон	PHA	ASY	сон	PHA	ASY	сон				HA A	SY	сон	РНА
D1 (0.5-1.5) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
D(1.7-3.7) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
т (3.7-7.7) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0	0.0 0	.0	0.0	0.0	0.0
A (7.7-12.7) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0	0.0 0	.0	0.0	0.0	0.0
B (12.7-25.2) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
S (1.7-25.2) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
B2 (25.2-35.2) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
G (35.2-50.2) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
A1 (7.7-10.2) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
A2 (10.2-12.7) 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0	0.0 0	.0	0.0	0.0	0.0

Use: Displays the Absolute Power, Relative Power, and Power Ratios for all components chosen at each trained site.

Requirements: Displays only for sites, components, and values chosen in the Z-Score Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to select the bands for viewing, the speed that you would like for the data, what data you would like to view, adjust the palette for the data coming in, as well as choose to display only the Z-Scores being LZT Trained.

ZScore Menu	×
Select Bands	Options
EEG	🗖 Undamped
🗹 Delta1	🗖 Show Training On
🗹 Delta	🗖 Show Grid
💌 Theta	🔽 Show Channels
💌 Alpha	Show Combos
💌 Beta	🗖 Opaque BG
🗖 Sum	Palette
IV Beta2	Range
🗹 Gamma	C +2 to -2 C +3 to -3
🗖 Alpha1	
🗖 Alpha2	Colors
•	C blue-white-red
	C blue-green-red
	Verdana 👻
	16 👻 Normal 👻
ОК 🔽 Us	se tab defaults Cancel

Z-Scores

4 Channel Z-S 5.0	core (EO), Age:	56.0			
4.0 -					
3.0 -					
2.0 -					
1.0 -					
0.0					
-1.0- -2.0-					
-2.0-					
-4.0-					
-5.0- ZAP Z	RP ZF	PR ZA	AA ZO	co zr	рн

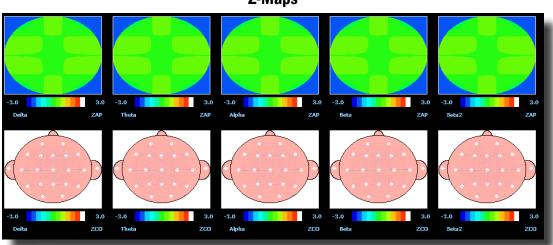
Z-Bars Plot

Use: Displays the bar-graph representation of the Absolute Power, Relative Power, Power Ratios, Phase, Coherence, and Asymmetry for all components chosen at each trained site. **Requirements:** Displays only for sites, components, and values chosen in the Z-Score Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to select the bands for viewing as well as which metrics you would like to view

ZScore Scatter Menu	×
Select Bands	Options
EEG	🗖 Wide Plot
🔽 Delta1	Show Train Only
🔽 Delta	Absolute Power
🗹 Theta	🔽 Relative Power
🗹 Alpha	Power Ratios
💌 Beta	🔽 Amplitude Asymm
🗹 Sum	Coherence
🗖 Beta2	☑ Phase
🗖 Gamma	
🗖 Alpha1	
🗖 Alpha2	
OK 🔽 U	Ise tab defaults Cancel
-	· · · · · · · · · · · · · · · · · · ·



Z-Maps

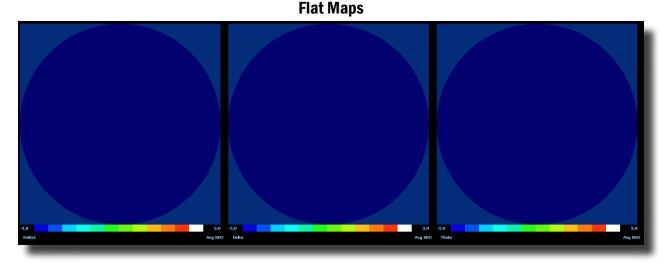
Use: Displays a topographic version of the Z-Scores for each filtered waveform.

Requirements: Displays only if you have 19-Channel Z-scores chosen in the Z-Score Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose what Bands are displayed, the palette range of the maps as well as choose between averaged maps, instantaneous maps, damped maps, and/or all of the different connectivity maps.

FlatMap Menu			×
Select Bands EEG Delta1 Ø Delta Ø Theta Ø Alpha	Options Amplitude ZScore Asymmetry ZScore Coherence ZScore Phase ZScore Laplace	Palette Palette Low: -3.0 Palette High: 3.0	×
 ✓ Beta ✓ Sum ✓ Beta2 ✓ Gamma ✓ Alpha1 ✓ Hole 2 	🗖 Big Maps		
OK Us	Blue-Green-Red-Whit	ncel	



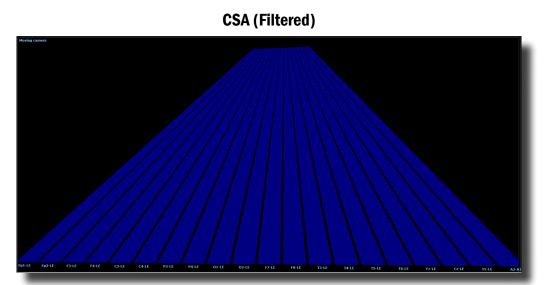
Use: Displays a topographic version of the powers for each filtered waveform.

Requirements: Displays for only the bands chosen to be viewed.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose what Bands are displayed, the palette range, as well as choose between averaged maps, instantaneous maps, big maps, damped maps, and Laplacian View.

FlatMap Menu			×
Select Bands	Options	-Palette	
Delta1	 Average EEG Damping 	Palette Low: -3.0	
🔽 Delta		Palette High: 3.0	
🔽 Theta	🔽 Big Maps		
Alpha			1
I Beta I Sum			
F Beta2			
🗆 Gamma			
🗌 Alpha1			
🗌 Alpha2	Blue-Green-Red-Whit		
ОК	Use tab defaultsCa	ancel	
-			

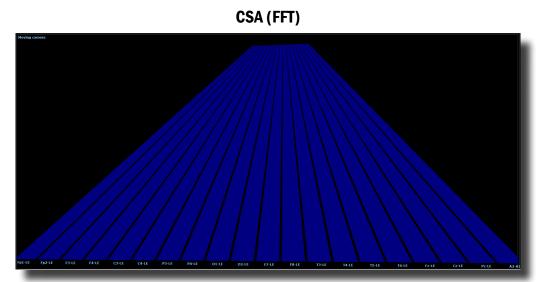


Use: Displays a filtered version of the Compressed Spectral Array for each trained site. **Requirements:** Displays only sites selected in the Montage Section of Settings.

Left-Click Mouse Function: Yes. By left-clicking and holding down on the mouse, you can change the displays orientation. Using the Scroll control, will zoom the field in and out. See the Keyboard Quick Keys for more options.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose what Bands are displayed, as well as if you would like this to be displayed as a full image, or a line image.

📧 Dialog			×
Select Channel		Select Bands	Options
Image: Fp1-LE Image: Fp2-LE Image: Fp2-LE Image: Fp3-LE Image: Fp3-LE	 ✓ Fz-LE ✓ Cz-LE ✓ Pz-LE ✓ A2-A1 	 □ Raw EEG □ Delta □ Theta □ Alpha □ Lobeta □ Beta □ Hibeta □ Gamma □ Alpha1 □ Alpha2 	Lines Use splines
IF T3-LE IF T4-LE IF T5-LE IF T6-LE OK OK	□ Use tab defaults	Cancel	

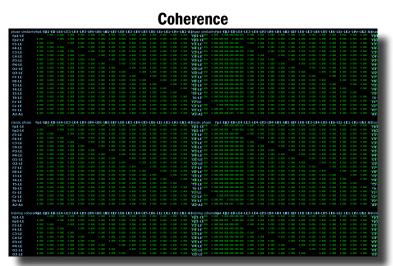


Use: Displays a FFT version of the Compressed Spectral Array for each trained site. **Requirements:** Displays only sites selected in the Montage Section of Settings.

Left-Click Mouse Function: Yes. By left-clicking and holding down on the mouse, you can change the displays orientation. Using the Scroll control, will zoom the field in and out. See the Keyboard Quick Keys for more options.

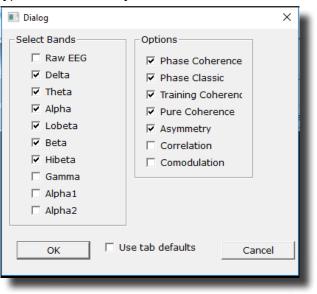
Right-Click Mouse Function (Panel Option): Yes. Allows you to choose what Bands are displayed, as well as if you would like this to be displayed as a full image, or a line image.

📧 Dialog				×
Select Channel ✓ Fp1-LE ✓ Fp2-LE ✓ F3-LE	▼ Fz-LE ▼ Cz-LE ▼ Pz-LE	Select Bands Raw EEG Ø Delta Ø Theta	Options Lines Use splines Show vectors	
\bar{V} F4-LE \bar{V} C3-LE \bar{V} C4-LE \bar{V} P3-LE \bar{V} P4-LE \bar{V} 01-LE \bar{V} 02-LE V	₩ A2-A1	 ✓ Alpha ✓ Lobeta ✓ Beta ✓ Hibeta ✓ Gamma ✓ Alpha1 ✓ Alpha2 		
\[\[\] F7-LE \[\[\] F8-LE \[\] T3-LE \[\] T4-LE \[\] T5-LE \[\[\] T6-LE \[\]				I
ОК	☐ Use tab defaults	Cancel		



Use: Displays a text representation of Coherence for the Acquired channels. **Requirements:** Displays only sites selected in the Acquired Section of Settings. **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands you would like to look at, as well as what type of Coherence you would like to view.

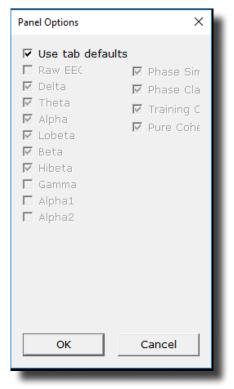


		Similarity		
a: 0		78		a: 50
a: 0				a: 50
g: 0			·	g: 50
h: 0				h: 50
b: 0				b: 50
l: 0				⁺ l: 50
a: 0				a: 50
t: 0				t: 50
d: 0				d: 50
r: 0				r: 50
r: 0	i 	+	i	r: 50

Use: Displays a Bar Graph representation for the trained channels.

Requirements: Displays only sites selected in the Montage section of Settings. **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands you would like to look at, as well as what type of Coherence you would like to view.



			-	-								
	Left	Left	Left	Left	Left	Left	Right	Rìght	Right	Right	Rìght	Right
	Delta	Theta	Alpha	Lobeta	Beta	Hibeta	Delta	Theta	Alpha	Lobeta	Beta	Hibeta
Frontal Lobe	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Limbic Lobe	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Occipital Lobe	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Parietal Lobe	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub Lobar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Temporal Lobe	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
IIA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Angular Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Anterior Cingulate	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cingulate Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cuneus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Extra Nuclear	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fusiform Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inferior Frontal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inferior Occipital Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inferior Parietal Lobule	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inferior Temporal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Insula	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LingualGyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Medial Frontal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Middle Frontal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Middle Occipital Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Middle Temporal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Orbital Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Paracentral Lobule	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Parahippocampal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Postcentral Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Posterior Cingulate	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Precentral Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Precuneus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rectal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub Gyral	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subcallosal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Superior Frontal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Superior Occipital Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Superior Parietal Lobule	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Superior Temporal Gyrus	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

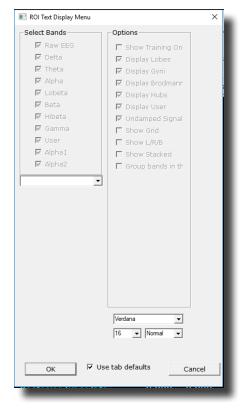
ROI Amplitudes Text

Use: Displays a text representation of ROI Amplitudes for All ROI's.

Requirements: BrainAvatar Live sLORETA Projector.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands you would like to look at, as well as what ROI's to view.



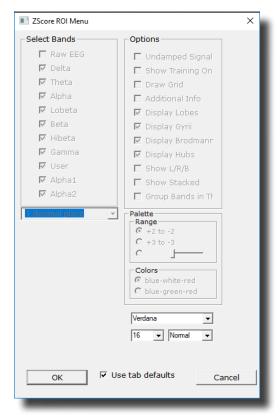
	Left	Left	Left	Left	Left	Left	Right	Rìght	Right	Right	Rìght	Rìght
	Delta	Theta	Alpha	Lobeta	Beta	Hibeta	Delta	Theta	Alpha	Lobeta	Beta	Hibeta
Frontal Lobe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Limbic Lobe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Occipital Lobe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parietal Lobe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Lobar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Temporal Lobe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Angular Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anterior Cingulate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cingulate Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cuneus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extra Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fusiform Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inferior Frontal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inferior Occipital Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inferior Parietal Lobule	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inferior Temporal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Insula	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LingualGyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medial Frontal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Middle Frontal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Middle Occipital Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Middle Temporal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Orbital Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paracentral Lobule	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parahippocampal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Postcentral Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Posterior Cingulate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Precentral Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Precuneus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rectal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Gyral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcallosal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Superior Frontal Gyrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ROI Z-ScoreText

Use: Displays a text representation of ROI Amplitudes for All ROI's. **Requirements:** BrainAvatar Live sLORETA Projector.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which bands you would like to look at, as well as what ROI's, and the palette range.



Average	T3-LE	T4-LE
Delta	0.0	0.0
Theta	0.0	0.0
Alpha	0.0	0.0
Lobeta	0.0	0.0
Beta	0.0	0.0
Hibeta	0.0	0.0
RMS	T3-LE	T4-LE
Delta	0.0	0.0
Theta	0.0	0.0
Alpha	0.0	0.0
Lobeta	0.0	0.0
Beta	0.0	0.0
Hibeta	0.0	0.0
Covar	T3-LE	T4-LE
Delta	0.0	0.0
Theta	0.0	0.0
Alpha	0.0	0.0
Lobeta	0.0	0.0
Beta	0.0	0.0
Hibeta	0.0	0.0
Other:	T3-LE	T4-LE
DC mV		0.000
DCE mV	0.000	0.000
Impedance	0.0	0.0

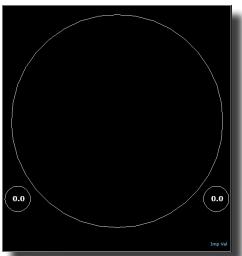
Use: Displays text values for all acquired EEG channels, including, Average, RMS, Covariance, DC, DCE and Impedance* values.

Requirements: Displays only sites selected in the Acquired Section of Settings.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): No.

EEG Text



Impedance Maps

Use: Displays text and graphical displays for the impedance measurments. **Requirements:** Displays only sites selected in the Acquired Section of Settings. **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose the size of the map displays, as well as what types of maps you would like to be displayed.

Name	Val A	Val B
ROI Amplitude Z-Scores	0.0	0.0
PZOK Success	0.0	0.0
ZOK Upper	0.0	0.0
ZOK Lower	0.0	0.0
Select Training Regions in Z-Score Setup 'Ctrl Z'	0.0	0.0
All Z-Scores	0.0	0.0
PZBRA Success	0.0	0.0
ZBRA Upper	0.0	0.0
ZBRA Lower	0.0	0.0
ROI Coherence Z-Scores	0.0	0.0
Surface Z-Scores	0.0	0.0
	0.0	0.0
Delta	0.0	0.0
Theta	0.0	0.0
Alpha	0.0	0.0
Lobeta	0.0	0.0
Beta	0.0	0.0
Hibeta	0.0	0.0
Gamma	0.0	0.0

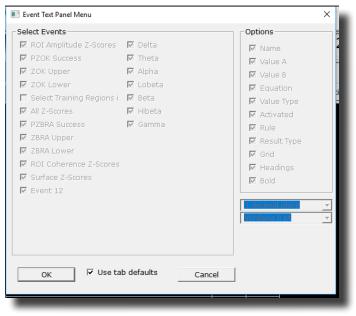
Event Text

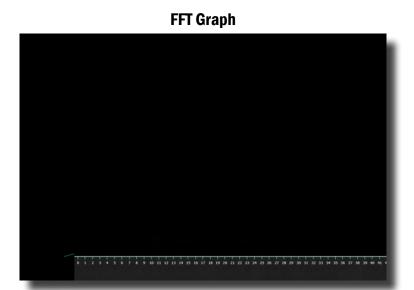
Use: Displays Text for the Enabled Events.

Requirements: Actively used Events.

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose the size and which events are displayed, as well as which portions of an Event is displayed.





Use: Displays a Line Graph for all channels from the Acquired or Training Channels **Requirements:** Acquired or Montaged Channels. **Left-Click Mouse Function:** No.

Right-Click Mouse Function (Panel Option): No.

ROI Coherence Text Display

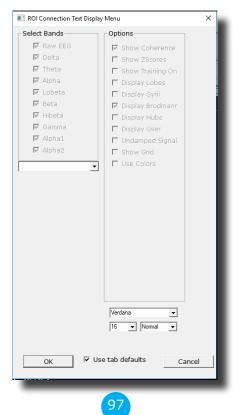
E 3001.L																								
E 3001.R	0.0																							
E 3002.L	0.0	0.0																						
E 3002.R	0.0	0.0	0.0																					
E 3003.L		0.0		0.0																				
E 3003.R	0.0	0.0	0.0	0.0	0.0																			
E 3004.L		0.0				0.0																		
E 3004.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0																	
E 3005.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																
E 3005.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0															
E 3006.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0														
E 3006.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
E 3007.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0												
E 3007.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0											
E 3008.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
E 3008.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
E 3009.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
E 3009.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
E 3010.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
E 3010.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
E 3011.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
E 3011.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
E 3013.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
E 3013.R																						0.0		
E 3017.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E 3017.R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E 3018.L																						0.0		
E 3018.R																						0.0		
E 3019.L																						0.0		
E 3019.R																						0.0		
E 3020.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Use: Displays text information for the Coherences of ROI's

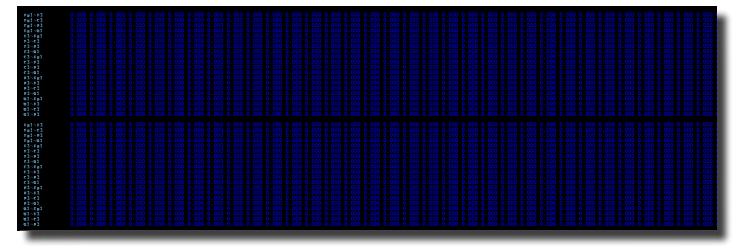
Requirements: Connectivity Suite

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose the size of font, as well as which ROI Coherences you would like to view, or whether it's standard or Z-Score Coherences.



Directional Coherence Text



Use: Displays Text for all included Directional Coherence Values

Requirements: Connectivity Suite

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose the size of the Font, as well as which types of Directional Coherence you would like to view.

📧 Dialog	×						
Select Bands	Options						
🗖 Raw EEG	🔽 Show iCoh						
🗆 Delta	Show iCoh XYZ						
🔽 Theta	Show gPDC						
🔽 Alpha	Show gPDC XYZ						
🗌 Lobeta	Display FFT						
🗌 Beta							
🗌 Hibeta							
🗌 Gamma							
🗌 Alpha1							
🗌 Alpha2							
OK Use tab defaults Cancel							

03 fp3 f = 35.0 01 fp3 f = 6.000		

Directional Coherence Graph Display

Use: Displays graphs for all included Directional Coherence Values **Requirements:** Connectivity Suite

Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose which types of Directional Coherence you would like to view.

📧 Dialog		×					
Select Channel	Select Bands Raw EEG Delta Theta Alpha Eobeta Beta Hibeta Gamma Alpha1 Alpha2	Options Show iCoh Show gPDC Show XYZ Trained only					
OK 🗌 Use tab defaults Cancel							

ROI Description Display

Brodmann 37 Posterior Temporal Lobe Fusiform Gyrus Memory Impaired Memory, Slow Reading, Letter Perception Problems (L), Receptive Language Problems (L)

Use: Displays simple information on the ROI that is being viewed in the Live LORETA Projector **Requirements:** BrainAvatar LLP

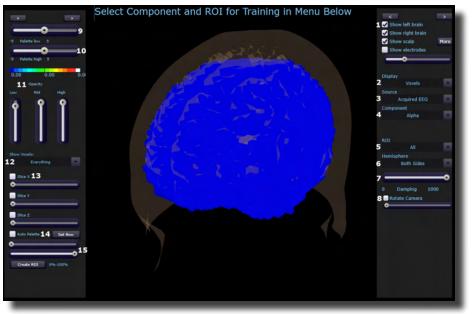
Left-Click Mouse Function: No.

Right-Click Mouse Function (Panel Option): Yes. Allows you to choose whether you are viewing the name or not, as well as the percentage of size on the display.

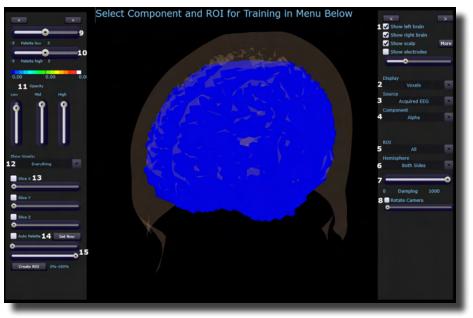
📧 Info Panel Menu	×
Options	
Show ROI name	
Full	
OK 🗌 Use tab defaults	Cancel

Advanced Displays

Volume Head Map (Optional Purchase)



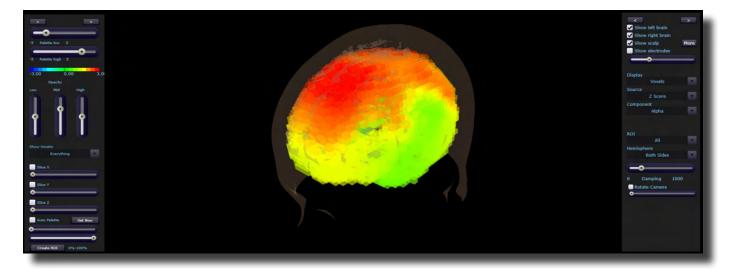
- 1. Model Display Section Section where you can choose various items to be displayed for the model.
- 2. **Display Drop-Down Menu –** Drop-Down Menu, where you can choose the type of display for the data. You can choose between Voxels or Dipoles.
- Source Drop-Down Menu Drop-Down Menu, where you can choose the source of the display information. You can choose between various acquired and Z-Scores sources, based on your Display choice.
- 4. **Component Drop-Down Menu –** Drop-Down Menu, where you can choose the component to be displayed. You can either choose the Raw EEG, or any of the filtered bands.
- 5. **ROI Drop-Down Menu –** Drop-Down Menu, where you can choose the Region of Interest to be displayed. For a detailed list of the ROI's, please see the next page.
- 6. **Hemisphere Drop-Down Menu –** Drop-Down Menu, where you can choose to look at the Left Hemisphere, Right Hemisphere, or both.
- 7. **Damping Slider –** Slide bar that sets the rate of change for the display.
- 8. Rotation Section Section that you can set the rotation and speed of rotation for the Head Map.



Volume Head Map (Optional Purchase) (Continued)

- 9. Palette Low Slider Slide bar that sets the low range of the palette for displaying.
- 10. Palette High Slider Slide bar that sets the high range of the palette for displaying.
- 11. **Opacity Section –** Slider bars that sets the opacity for the different ranges of data.
- 12. Show Voxel Drop-Down Drop-Down that will set what will be displayed based off of either the Palette or Percentage Slider
- 13. Slice Section Section, that you can chose an area for viewing base on X, Y or Z coordinates on the head.
- 14. Auto Palette Section Section where you can allow the data to set the range that you are investigating, and click the Set Now to set the range to a permanent range.
- 15. **Percentage Sliders** Section where you can set the Percentage range that you would like to be displayed for the Show Voxel Drop-Down.

10



Requirements: Displays only sites selected in the Acquisition Screen, and the LLP Add-on.

Left-Click Mouse Function: Yes. By left-clicking and holding down on the mouse, you can change the displays orientation. Using the Scroll control, will zoom the field in and out.

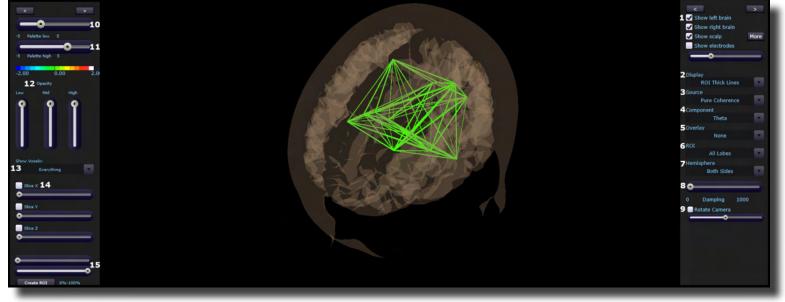
Right-Click Mouse Function(Panel Option): Yes. Allows you to either hide or display the Palette or Signal menu.

💽 Dialog	×
Options Palette Menu Signal Menu	
Opaque Backgrou	Cancel

	RUI lable	
	Lobes	
Frontal Lobe	Libic Lobe	Occipital Lobe
Parietal Lobe	Sub-Lobar	Temporal Lobe
	Everything	
	Gyrus	
Angular Gyrus	Anterior Cingulate	Cingulate Gyrus
Cuneus	Extra-Nuclear	Fusiform Gyrus
Inferior Frontal Gyrus	Inferior Occipital Gyrus	Inferior Parietal Gyrus
Inferior Temporal Gyrus	Insula	Lingual Gyrus
Medial Frontal Gyrus	Middle Frontal Gyrus	Middle Occipital Gyrus
Middle Temporal Gyrus	Orbital Gyrus	Paracentral Lobule
Parahippocampal Gyrus	Postcentral Gyrus	Posterior Cingulate
Precentral Gyrus	Precuneus	Rectal Gyrus
Sub-Gyral	Subcallosal Gyrus	Superior Frontal Gyrus
Superior Occipital Gyrus	Superior Parietal Lobule	Superior Temporal Gyrus
Supramarginal Gyrus	Transverse Temporal Gyrus	Uncus
	Brodmann Areas	
Brodmann Area 1	Brodmann Area 2	Brodmann Area 3
Brodmann Area 4	Brodmann Area 5	Brodmann Area 6
Brodmann Area 7	Brodmann Area 8	Brodmann Area 9
Brodmann Area 10	Brodmann Area 11	Brodmann Area 13
Brodmann Area 17	Brodmann Area 18	Brodmann Area 19
Brodmann Area 20	Brodmann Area 21	Brodmann Area 22
Brodmann Area 23	Brodmann Area 24	Brodmann Area 25
Brodmann Area 27	Brodmann Area 28	Brodmann Area 29
Brodmann Area 30	Brodmann Area 31	Brodmann Area 32
Brodmann Area 33	Brodmann Area 34	Brodmann Area 35
Brodmann Area 36	Brodmann Area 37	Brodmann Area 38
Brodmann Area 39	Brodmann Area 40	Brodmann Area 41
Brodmann Area 42	Brodmann Area 43	Brodmann Area 44
Brodmann Area 45	Brodmann Area 46	Brodmann Area 47
	Network Hubs	
Hagmann 1	Hagmann 2	Hagmann 3
Hagmann 4	Hagmann 5	Hagmann 6
Default Mode Network	Central Executive Network	Salient Network

104

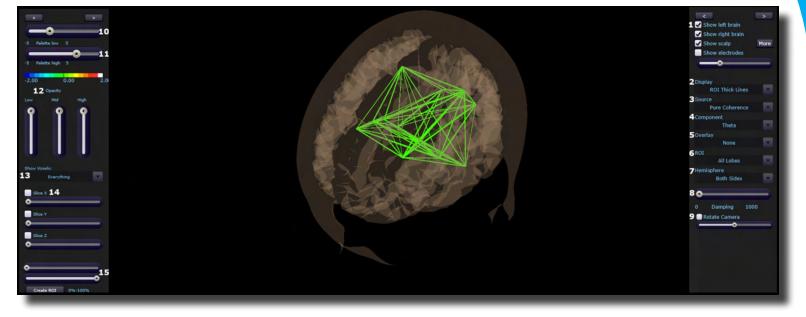
ROI Table



Volume Connectivity Head Map (Optional Purchase)

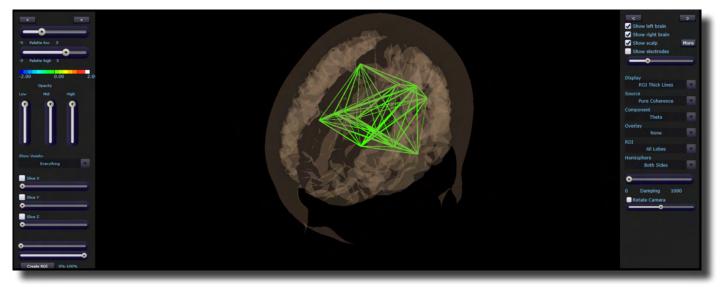
- 1. Model Display Section Section where you can choose various items to be displayed for the model.
- 2. **Display Drop-Down Menu –** Drop-Down Menu, where you can choose the type of display for the data. You can choose between Voxels or Dipoles.
- 3. **Source Drop-Down Menu –** Drop-Down Menu, where you can choose the source of the display information. You can choose between various acquired and Z-Scores sources, based on your Display choice.
- 4. **Component Drop-Down Menu –** Drop-Down Menu, where you can choose the component to be displayed. You can either choose the Raw EEG, or any of the filtered bands.
- 5. **Overlay Drop-Down Menu** Drop-Down Menu, where you can choose what type of Display will be on the Model.
- 6. **ROI Drop-Down Menu –** Drop-Down Menu, where you can choose the Region of Interest to be displayed. For a detailed list of the ROI's, please see the next page.
- 7. **Hemisphere Drop-Down Menu –** Drop-Down Menu, where you can choose to look at the Left Hemisphere, Right Hemisphere, or both.
- 8. Damping Slider Slide bar that sets the rate of change for the display.

10



Volume Connectivity Head Map (Optional Purchase) (Continued)

- 9. Rotation Section Section that you can set the rotation and speed of rotation for the Head Map.
- 10. Palette Low Slider Slide bar that sets the low range of the palette for displaying.
- 11. Palette High Slider Slide bar that sets the high range of the palette for displaying.
- 12. Opacity Section Slider bars that sets the opacity for the different ranges of data.
- 13. **Show Voxel Drop-Down -** Drop-Down that will set what will be displayed based off of either the Palette or Percentage Slider
- 14. Slice Section Section, that you can chose an area for viewing base on X, Y or Z coordinates on the head.
- 15. **Percentage Sliders** Section where you can set the Percentage range that you would like to be displayed for the Show Voxel Drop-Down.



Requirements: Displays only sites selected in the Acquisition Screen, and the LLP Add-on, and Connectivity Suite Add-on.

Left-Click Mouse Function: Yes. By left-clicking and holding down on the mouse, you can change the displays orientation. Using the Scroll control, will zoom the field in and out.

Right-Click Mouse Function(Panel Option): Yes. Allows you to either hide or display the Palette or Signal menu.

III Dialog	×
Options	
✓ Palette Menu	
🔽 Signal Menu	
🗌 Opaque Backgrou	
OK 🗌 Use tab defaults	Cancel



Panel Wizard

Manual No	l Layout Options Type	x	Y	w	н	Del	Menu	
1	Trends (events)	0	70	825	372	Delete	Men 🔺	
2	Trends (events)	942	70	825	372	Delete	Men	l
3	Trends (events)	0	512	824	369	Delete	Men	
4	Trends (events)	942	512	824	369	Delete	Men	
5	Text Displays/Event T	0	0	834	70	Delete	Men	1

Panel Wizard Control Menu Display

- 1. Auto Layout Check Box Check Box to choose whether or not you want the tab to use the Auto Layout function.
- 2. **Show Outlines Check Box –** Check Box to choose whether you would like to see the display, or if you would like to view the outlines, so that you can manually move the display box.
- 3. Tab Name Box Box in which you can view/rename the current tab you are viewing (Coming soon).
- 4. **Display Type Box –** Display box, that displays the currently selected display type, as well as allows you to change the Display type (Coming soon).
- 5. X Axis Box Box, in which you can adjust the Display Type's position on the X-Axis for this Tab.
- 6. Y Axis Box Box in which you can adjust the Display Type's position on the Y-Axis for this Tab.
- 7. Width Box Box in which you can adjust the width for the particular Display Type on this Tab.
- 8. Height Box Box in which you can adjust the width for the particular Display Type on this Tab.
- 9. Delete Button Click to delete the Display Type for this tab
- 10. **Menu Button –** Click to bring up the Menu for the Display Type. This can also be done, by Right-Clicking the particular Display Type.
- 11. Add Box Box in which you can add new Display Types.

108

📧 Panel	Wizard						×	
🗌 Auto	•	lines	Tab		Theta/B	eta Der	Tab 1	
- Manua No	I Layout Options Type	x	Y	w	н	Del	Menu	
1	Trends (events)	0	70	825	372	Delete	Men	
2	Trends (events)	942	70	825	372	Delete	Men	
3	Trends (events)	0	512	824	369	Delete	Men	
4	Trends (events)	942	512	824	369	Delete	Men	
5	Text Displays/Event T	0	0	834	70	Delete	Men	
						,	•	
Add a	panel:		•	Ap	ply	ОК	Cancel	

Panel Wizard Control Menu Display (Continued)

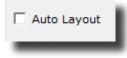
- 12. Apply Button Click to apply any changes done in the X Axis, Y Axis, Width, and/or Height Boxes.
- 13. OK Button Click to confirm changes and close the Panel Wizard
- 14. Cancel Button Click to cancel any changes that have not been applied, and close the Panel Wizard

Using the Panel Wizard

1. From the Training screen, Right-Click on the Tab that you would like to edit. You will have some different options:

Theta/Beta Demo (Asymmetry) Text Stat

a. Auto Layout – In order for you do any type of manual design, this will have to be un-checked. After you have unchecked this, click the OK Button, and re-start Panel Wizard:



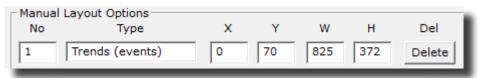
 Show Outlines – This switches between seeing the display and seeing lines for the displays. When you see the outlines, you can click on the different boxes. This allows you to resize or move a display using your mouse



c. Add: - This allows you to add different displays for this tab

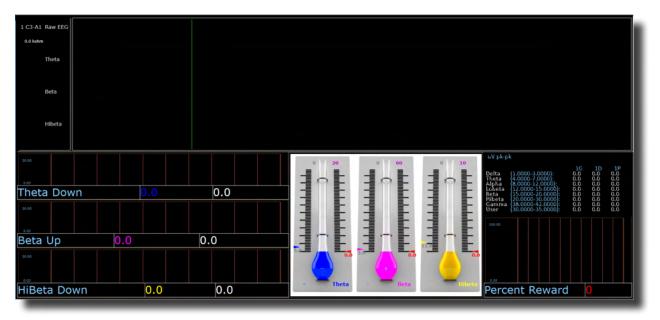
Add a panel:	•

d. Manual Layout Options – This allows you to use the X and Y axis to place the display in a particular location, as well as adjust the width and height. When you have entered this information, click Apply to place these items. You can also choose to delete a particular display.



With the Panel Wizard now launched, you can make the adjustments that you would like to adjust.

Panel Wizard Resolution Help



anua No	l Layout Options Type	х	Y	w	н	Del	Menu	
_	Thermometers Conto	835	425	598	455	Delete	Menu	•
	Acquired waveforms	0	0	1895	425	Delete	Menu	
	Text Stats	1435	425	650	200	Delete	Menu	
	Wide Trends (events)	1435	625	455	255	Delete	Menu	
	Text Displays/Event T	1435	833	465	55	Delete	Menu	
	Wide Trends (events)	0	425	835	150	Delete	Menu	
	Wide Trends (events)	0	575	835	150	Delete	Menu	
	Wide Trends (events)	0	725	835	155	Delete	Menu	
	Text Displays/Event T	0	528	845	55	Delete	Menu	
D	Text Displays/Event T	0	678	845	55	Delete	Menu	
1	Text Displays/Event T	0	833	845	55	Delete	Menu	-

1920 X 1080 Resolution Screen Settings

1366 X 768 Resolution Screen Settings

anua No	al Layout Options Type	x	Y	w	н	Del	Menu
	Thermometers Conto	645	140	325	388	Delete	Me
	Acquired waveforms	0	0	1678	140	Delete	Me
	Text Stats	973	142	702	195	Delete	Me
	Wide Trends (events)	0	140	645	104	Delete	Me
	Wide Trends (events)	976	337	698	196	Delete	Me
_	Wide Trends (events)	-1	292	645	113	Delete	Me
	Wide Trends (events)	5	469	641	102	Delete	Me
	Text Displays/Event T	-5	244	655	55	Delete	Me
	Text Displays/Event T	-3	407	657	74	Delete	Me
D	Text Displays/Event T	-3	564	655	61	Delete	Me
1	Text Displays/Event T	978	538	714	94	Delete	Me

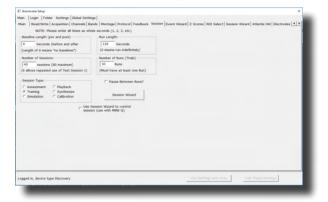


EEG Data Files

Simple EEG Data File Playback (Session Type Method)

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

1. From the Setup Screen, click the Settings Tab, then the Session Tab. On the Session Tab, change the Session Type to Playback, and click Use Settings and Close. When ready click GO.



2. Use the Open Screen to Navigate to the EDF file that you would like to play.

Organize 👻 👘 New folde	ir -				88 -	II 🕜
Trainee Screens	Name	Date modified	Туре	Size		
BrainMaster Avata	4 channel FZ PZ C3 C4 02.000.01 AGE 44	10/31/2017 10:28	EDF File	3,482 KB		
	4 channel FZ PZ C3 C4 03.000.02 AGE 10	11/1/2017 11:23 AM	EDF File	4,427 KB		
🗦 Dropbox	4 channel FZ PZ C3 C4 04.000.02 AGE 10	11/1/2017 12:33 PM	EDF File	272 KB		
ConeDrive	4 channel FZ PZ C3 C4 05.000.02 AGE 10	11/2/2017 10:51 AM	EDF File	3,284 KB		
	4 channel FZ PZ C3 C4 06.000.02 AGE 10	11/9/2017 10:40 AM	EDF File	2,924 KB		
This PC	4 channel FZ PZ C3 C4 07.000.02 AGE 10	11/13/2017 2:32 PM	EDF File	272 KB		
3D Objects	4 channel FZ PZ C3 C4 08.000.02 AGE 10	11/13/2017 2:54 PM	EDF File	474 KB		
Desktop	4 channel FZ PZ C3 C4 09.000.02 AGE 10	11/13/2017 3:02 PM	EDF File	702 KB		
Documents						
🕹 Downloads						
Music						
E Pictures						
Videos						
Local Disk (C:)						
* *						
File n				× ED	Files (*.edf)	~

The EDF will now begin to playback. The EDF will operate exactly as live EEG. All displays will react as if live EEG information is coming in.



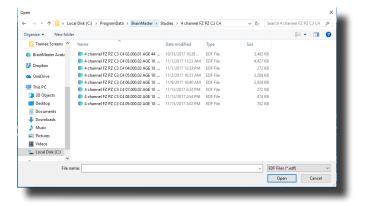
Simple EEG Data File Playback (Playback File Method)

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

1. From the Training Screen, click the Data Tab, and choose the option Playback File.



2. Use the Open Screen to Navigate to the EDF file that you would like to play.



The EDF will now begin to playback. The EDF will operate exactly as live EEG. All displays will react as if live EEG information is coming in.

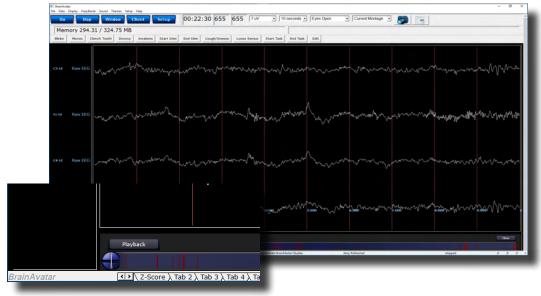


Opening an EEG Data File (Windows/File Explorer)

1. Locate the EDF, BDF, or DAT file that you would like to open. When you find this file double-click the file.

→ · ↑ → This PC > Loc	al Disk (C:) > ProgramData > BrainMaster > Studies	> 4 channel FZ PZ C3 C4			~ ð	Search 4 channel FZ PZ C3 C4	P
531-379 Quick Start Guide	Name	Date modified	Туре	Size			
531-300 Decs	4 channel FZ PZ C3 C4 02,000.01 AGE 44 EO	10/31/2017 10:28	EDF File	3.482 KB			
532-104 Price List	4 channel FZ PZ C3 C4 03.000.02 AGE 10 E0	11/1/2017 11:23 AM		4.427 KB			
Trainee Screens	4 channel FZ PZ C3 C4 04.000.02 AGE 10 ED	11/1/2017 12:33 PM		272 KB			
	4 channel FZ PZ C3 C4 05:000:02 AGE 10 EO	11/2/2017 10:51 AM		3.284 KB			
Box Sync	4 channel FZ PZ C3 C4 06:000.02 AGE 10 EO	11/9/2017 10:40 AM	EDF File	2.924 KB			
Creative Cloud Files	4 channel FZ PZ C3 C4 07.000.02 AGE 10 EO	11/13/2017 2:32 PM	EDF File	272 KB			
	4 channel FZ PZ C3 C4 08.000.02 AGE 10 E0	11/13/2017 2:54 PM	EDF File	474 KB			
Dropbox	4 channel FZ PZ C3 C4 09.000.02 AGE 10 EO	11/13/2017 3:02 PM	EDF File	702 KB			
CneDrive	breview	11/13/2017 3:06 PM	BDB2 File	125 KB			
	d breview	11/2/2017 10:50 AM	CFG File	1 KB			
This PC	cur_sess	11/13/2017 2:56 PM	File	1 KB			
3D Objects	e0100101.e04	7/31/2014 2:37 PM	E04 File	0 KB			
Desktop	e0200102.e04	10/31/2017 10:08	E04 File	0 KB			
Documents	e0200103.e04	10/31/2017 10:18	E04 File	0 KB			
Downloads	e0300102.e04	11/1/2017 10:48 AM	E04 File	O KB			
h Music	e0300103.e04	11/1/2017 10:55 AM	E04 File	0 KB			
F Pictures	e0400002.e04	11/1/2017 12:27 PM	E04 File	0 KB			
Videos	e0400102.e04	11/1/2017 12:31 PM	E04 File	0 KB			
	e0500102.e04	11/2/2017 10:29 AM	E04 File	0 KB			
Local Disk (C:)	e0500103.e04	11/2/2017 10:31 AM		0 KB			
n cpsqL1 (\\counterpoint) (U:)	e0500104.e04	11/2/2017 10:47 AM	E04 File	0 KB			
RMilicia (\\EMSTORE) (V:)	e0600102.e04	11/9/2017 10:21 AM	E04 File	0 KB			
TechnicalSupport (\\BMSTOR	e0700102.e04	11/13/2017 2:30 PM		0 KB			
Software (\\BMSTORE) (X:)	e0800102.e04	11/13/2017 2:50 PM		0 KB			
Documentation (\\BMSTORE)	e0900102.e04	11/13/2017 2:56 PM	E04 File	0 KB			
T (\\BMSTORE) (Z:)	f0100101.e04	7/31/2014 2:37 PM	E04 File	0 KB			
- ((()))(())((2))	0200102.e04	10/31/2017 10:18		12,273 KB			
Network	f0200103.e04	10/31/2017 10:27		11,059 KB			
	0300102.e04	11/1/2017 10:55 AM	E04 File	7,829 KB			

The EDF, BDF, or DAT file will now be opened inside the BrainAvatar Software. You can now review this file. By clicking the Playback Button at the bottom, this will allow you to Playback the file.



Review Playback

Playback Control Menu

III Dialog		× –
Annotate Playback Export ZBuilder An	nalyze Generate Protocol	
What to playback The whole file The selected range: From 761 To	2Within that selection, play: All of the data C Only the sections marked good C All except sections marked bad	
3Patient C Eyes closed C Eyes open Age 44	<pre>4Playback Play selected EEG ✓ and repeat</pre>	

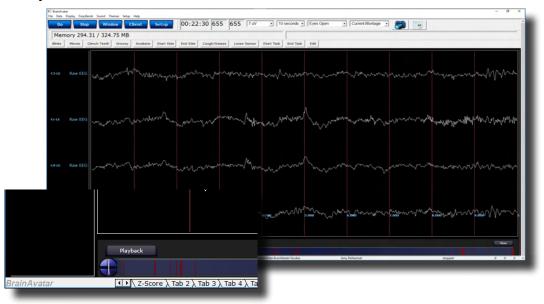
- 1. What To Playback Section Section where you can choose what information that you would like to playback
 - a. The Whole File Choose this to playback the entire EDF, BDF, or DAT File
 - **b.** The Selected Range Choose this to playback only the selection area chosen through the mouse
- 2. Within that selection, play: Section Section where you can set a more specific requirement of what you will playback
 - a. All of the Data Will playback all of the Data defined by the What To Playback Section
 - b. Only the sections marked good Will playback all of the sections that have been annotated good that are within the What To Playback Section. This will be grayed out, if there are no sections marked good within the Playback section
 - **c.** All except sections marked bad Will playback all of the sections that have not been annotated as bad that are within the What To Playback Section. This will be grayed out, if there are no sections marked bad within the Playback section

🔳 Dialog		×
Annotate Playback Export ZBuilder	Analyze Generate Protocol	
What to playback The whole file The selected range: From 761 To 761	2Within that selection, play: C All of the data C Only the sections marked good C All except sections marked bad	
3Patient ○ Eyes closed ● Eyes open Age 44	<pre>4Playback Play selected EEG</pre>	

- 3. **Patient Section –** Section where you can set various Patient Information (This will by default choose the information that was saved in the EDF File)
 - **a.** Eyes Condition This will allow you to select whether this is Eyes Opened or Eyes Closed Data.
 - **b.** Age This will allow you to set the Age of the Patient whose file you are going to playback.
- 4. Playback Section
 - a. Play selected EEG Button Plays back the EDF, BDF, or DAT File based on the settings chosen
 - **b.** And repeat check box Will repeat the playing back of the file until the software is stopped.
 - c. And create EDF File Check box This will create a new EDF File of the played back EDF.

Data Playback in the Review Screen (Playback button)

1. After you have opened the EDF, BDF, or DAT file in the BrainAvatar Software, to playback, click the Playback button at the bottom of the screen.



The EEG Data File will now begin to playback in the currently opened Patient Folder. The EEG Data File will operate exactly as live EEG. All displays will react as if live EEG information is coming in.

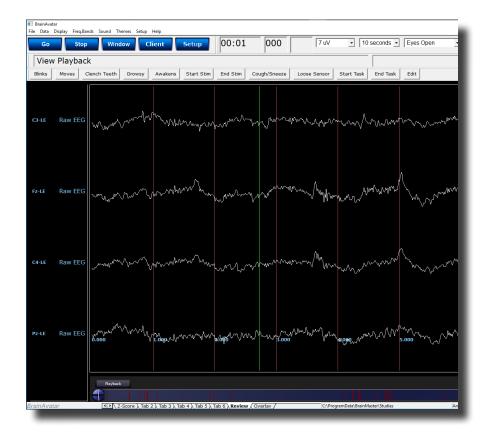
Go Stop		Mindov	•	lient		Setup	00	0:07	'	000			7 uV		• 10	seconds •	Eyes Open	Current Monta	90 - 🍠 🔚		
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nks Moves C	lench Te	eth I	Drowsy	Ana	kens	Start Sti	n End	f Stim	Cou	gh/Sne	eze	Loose S	ensor	Start	Task	End Task	Edit				
3-LE				-					-					-							
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C3 Fz (EO) Abs	Rel	Rat/T	Rat/A	Rat/B	Rat/G	SITES: C4	Pz (EO)	Abs	Rel	Rat/	Rat/	A Rat/B	Rat/	3		7.0		ZOKUL		50.6	
(1.7-3.7) 1.5 (3.7-7.7) 0.8		0.0	0.0		0.0	Delta (1.)		1.3	-0.6	0.0	0.0	0.0	0.0			2-3	cores	ZUKUL		59.6	
(8.7-7.7) 0.8 (7.7-12.7) 0.2					0.0	Theta (8. Alpha (7.		0.5			0,0	0.0	0.0			Por	ont R	eward		11.9	
12.7-25.2) 0.5					0.0	Bets [12.	7-25.2)	0.4					0.0								
(25.2-35.2) 0.4 na (35.2-50.2) 0.3	0.0					Beta2 (2) Gamma			0,0							Upp	er Thi	reshold		1.5	
1 (7.7-10.2) 0.1	0.0					Alpha1 (7-10.2)	0.6	0.0												
2 (10.2-12.7)-1.6						Alpha2 (10.2-12.7	9-1.2								Low	er Thi	reshold		-1.5	
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(25.2-35.2) 4.0	0.0					Beta2 (2			0.0												
na [85.2-50.2] <mark>2.0</mark>						Gamma														F 1 F 🚮	111
1 (7.7-10.2) 1.6 2 (10.2-12.7) 0.5	0,0					Alpha1 (0,0												E 3 E
	Ha		C\$-1	4		C3-72			F=-C4:			Fp-Pp			64-Pz:						
ASY CO			сон	PHA				ASY	сон	PHA			РНА			рна					
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-12.7) -2.7 -0.		0.5				0.5			2.0	-0.0			0.5	1.1	0.0					- 31.0	B. 41 B.
7-25.2) -2.9 -0:		0.8																		0.0 0.0	-5.0 -5
2-35.2) - 6.0 -0		-0,4			0.6	1.1			-0.9			-0.4		0,9	-0.5	-0.8					
2-50.2) -5.4 -0: 7-10.2) -8.1 1		-0,4	0.7		-1.4	0.6	0.5		-0.8	0.4		-0.6	0.1	-0.9	-0.0	0.2 0.00					
			0.3		2.6	1.5	5.8			0.4		-0.2					00-00 00-05		Contraction and Contraction	CKU Percent Reward/pper 1	Breshok over Thresh
3.2-12.7]-5.0 -0:																					

Playing back a section of an EDF File

- 1. Highlight the EEG that you would like to use by holding the Left-Mouse button down, and moving the mouse. This will bring up the Panel Options Menu. On the Panel Options, you have multiple options
 - **a.** Data range: This will allow you to choose whether you would like to playback the area selected, or to look at the entire EDF File.
 - **b.** What to process: If the whole file is selected, or you have selected areas that have annotations then you can choose either choose to playback the entire file, Sections marked good, or sections not marked bad.
 - **c. Playback:** Depending on the information chosen above, you can play what you have selected, and choose to either repeat the playback, or simply playback one time.

Go	St	op Wind	low C	lient	Setup	00:22	:30 655	655 7 0	/ • 10) seconds 💌	Eyes Open	•	Current Montage	- 🍠	
1em	nory 29	4.31 / 351	.77 MB							Sampl	e 249 at	0.973 s	econds		
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		Playback													

This will now be playing back the EDF file based on the selection that you chose to play. You will tell this is happening by seeing a green line moving across the Review Screen.



EDF Annotation

Annotation Control Menu

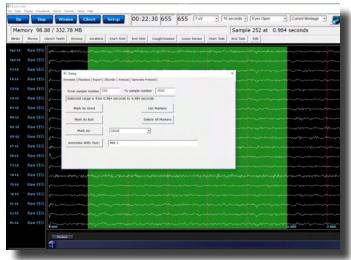
III Dialog	×
Annotate Playback Export ZBuilder Analyze Generate Protocol	
1 From sample number 674 To sample number 1742	
Selected range is from 2.633 seconds to 6.805 seconds	
2 Mark As Good 6 List Markers	
3 Mark As Bad 7Delete All Markers	
4 Mark As: Good 🔹	
5Annotate With Text: Mrk 1	

- 1. **Selected Data Section** Section that displays the data that has been selected. It is displayed in the Sample number that has been selected, as well as the Seconds that have been selected. You can use the Samples to change the data that has been selected.
- 2. **Mark As Good Button** Click this to create a Green highlighted section that will cover the area defined in the Selected Data Section. It will also Annotate this section with a Label Good.
- 3. Mark Bad Button Click this to create a Red highlighted section that will cover the area defined in the Selected Data Section. It will also Annotate this section with a Label Good.
- 4. Mark As: Button Click this to create a highlighted section that will cover the area defined in the Selected Data Section, and is based on the type of labeling chosen. It will also Annotate this section with a Label based on the type of labeling chosen
 - a. Good Green Highlight. Good Label
 - **b. Bad –** Red Highlight. Bad Label
 - c. Artifact Blue Highlight. Artifact Label
 - d. Eye Blink Blue Highlight. Eye Blink Label
- 5. **Annotate with Text: Button** Click this to create a Blue highlighted section that will cover the area defined in the Selected Data Section. It will also Annotate this section with the Label defined in the Text box next to the button.
- 6. List Markers Button Button that Displays the Labels, where they can be found and allows you to edit these labels.
- 7. Delete All Markers Button Button that will delete all Markers in have been added to an EDF.



Annotating an EDF

1. Highlight the EEG that you would like to use by holding the Left-Mouse button down, and moving the mouse. This will bring up the Panel Options Menu. On the Panel Options, click the type of annotation that you would like to use.



The EDF File will now have this Annotation placed on the EDF. You will be able to tell that this has been annotated, by seeing the EEG area will now be highlighted, as well as labeled at the bottom.

RT Basis

Mem	ory 98.	.88 / 332	.78 MB							Sample	e 240 at	0.938 sec	onds	
irks	Moves	Clench Teeth	Drowsy	Awakens	Start Stim	End Stim	Cough/Sneep	Loose Sensor	Start Task	End Task	Edit			
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124

Deleting an Annotation (Review Tab)

 On the bar at the bottom of the Review screen, locate the Annotation section you would like to delete. Once it is found, right-click on this annotation to bring up the Marker Description Menu. To delete, click the Delete Marker Button to continue



The EDF File will now have this Annotation removed from the EDF.

10.7

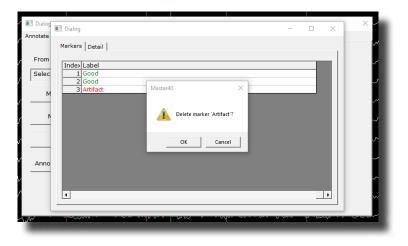
Mem	ory 98	.88 / 332	.78 MB								Sample	e 240 at	0.938 seco
Birks	Moves	Clench Teeth	Drowsy	Awakens	Start Stim	End Stim	Cough/Sneeze	Loose	Sensor	Start Task	End Task	Edit	
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Deleting an Annotation (Review Menu)

 Open the Review Menu by either Double-clicking the anywhere in the EEG that you are reviewing or using the left mouse and selecting a selection of EEG. After doing this, the menu will open. Navigate to the Annotate Tab. If you would like to remove all Markers. Click the Delete all Markers Button. Or, if you would like to pick and choose, then click the List Markers Button

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2. On the Marker Menu, move your mouse on the Marker you would like to delete and double-click with the Mouse. This will make a menu appear asking if you would like to delete the Marker. Click OK to continue



The EDF File will now have this Annotation/s removed from the EDF. You will be able to know that this is complete by viewing the List Markers Menu, and seeing the markers that were deleted are no longer listed.

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### ZBuilder

### **ZBuilder Control Menu**

Dialog     Annotate   Playback   Export ZBuilder   Analyze   C	Senerate Protocol
© The whole file © All © The selected range: © On	that selection, analyze: of the data ly the sections marked good except sections marked bad 5 Output file: (° Create file in the current study (° Create file in the control folder 6 Patient (° Eyes closed (° Eyes open Age 31 8 Run ZBuilder 9 Cancel
r ( <u>111</u> -1)	

- 1. What To Playback Section Section where you can choose what information that you would like to process for the ZBuilder File
  - a. The Whole File Choose this to process the entire EDF, BDF, or DAT File
  - **b.** The Selected Range Choose this to process only the selection area chosen through the mouse
- 2. What to include in the file: Section Section where you can choose what information will be included in the file
  - a. Similarities This will include all forms of cross-channel communication for the 19 channels
  - b. Voxels This will include the Power information for the 6,239 Voxels
  - c. ROI Coherence This will include all of possible ROI Connectivity Combinations
  - d. ROI Directional Coherence This will included all of the Possible ROI Directional Coherence Metrics
- 3. **Options Section –** Section where you can set different Options for the software to do after ZBuilder has been run
  - a. Start Excel when done Checkbox Check to have Excel to open the completed file after this has been processed.

🔟 Dialog		$\times$
Annotate   Playback   Export ZBuilder   Anal	lyze Generate Protocol	
<ul> <li>The whole file</li> <li>The selected range:</li> </ul>	Within that selection, analyze: (* All of the data (* Only the sections marked good (* All except sections marked bad 5 Output file: (* Create file in the current study (* Create file in the control folder 6 Patient (* Eyes closed (* Eyes open Age 31 8 Run ZBuilder 9 Cancel	

- 4. Within that selection, analyze: Section Section where you can set a more specific requirement of what you will playback
  - a. All of the Data Will pprocess all of the Data defined by the What To Analyze Section
  - b. Only the sections marked good Will process all of the sections that have been annotated good that are within the What To Analyze Section. This will be grayed out, if there are no sections marked good within the Analyze section
  - c. All except sections marked bad Will process all of the sections that have not been annotated as bad that are within the What To Analyze Section. This will be grayed out, if there are no

sections marked bad within the Analyze section

- 5. **Output file: Section** Section where you can set the Output file name/Destination.
  - **a.** Create file in the current study Creates a file named ZBuilderEO or ZBuilder EC in the current Study Folder that you opened the EDF, BDF, or DAT file for Review in.
  - **b.** Default file name in the control folder Creates a file named ZBuilderEO or ZBuilderEC in the directory c:\ProgramData\BrainMaster\Control.

12

Dialog     Annotate Playback Export ZBuilder     The whole file     C The selected range:     From 803	Analyze Generate Protocol Within that selection, analyze: All of the data Only the sections marked good All except sections marked bad	×
To 803 2 What to include in the file: Similarities ROI Direction NOI Coherence 3 Options Start Excel when done 7	5       Output file:         • Create file in the current study         • Create file in the control folder         6       Patient         • Eyes closed         • Eyes open         Age         31    8 Run ZBuilder          9 Cancel	

- 6. **Patient Section-** Section where you can set Patient information if it is different than what was contained in the file, or was not in the file.
  - a. Recording Condition Set the Recording condition to Eyes Open (EO) or Eyes Closed (EC) that the Z-Builder file will contain
  - **b.** Age Set the Age that the Z-Builder file will contain.
- 7. **Display Section -** Displays the status of the Z-Builder production when the Z-Builder is producing a file.
- 8. Run ZBuilder Button Click to create A ZBuilder File based on the information selected.
- 9. **Cancel Button –** Click to cancel the ZBuilder File.

#### **Creating a Z-Builder File**

1. Open the File that you would like to work with.Under the Review Tab, you will annotate based off of the instructions from the EDF Annotation Section.

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co-u	Raw EEG	many many many many many many many many
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01-LE	Raw EEG	and the second
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2. When completed, either Double-Click in the EEG, or Hold down the Left-Click on the mouse, and select a section of data. This will bring up the Panel Options Menu. Navigate to the ZBuilder Tab, and use this menu to set the ZBuilder Settings as needed. When completed, click the Run Z-Builder Button.

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F2-LE	Raw EEG				monte	mound man	wanna
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You have now created a ZBuilder File. You will be able to tell this has been created, by using Windows Explorer to locate the file in the directory that you saved this in(if not specified, then it will be saved in the study folder that the EDF File is opened in).

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		settings	12/14/2018 9:25 AM	BDB2 File	99 KB				
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Documents		06.000.02 AGE 15 EO	12/10/2018 2:02 PM	EDF File	1,528 KB				
		cur_sess	12/10/2018 1:59 PM	File	1 KB				

### Sample ZBuilder File & Layout

#### **Description Section**

ZBuilder rev	1	4.7.5.657									
Date Create	d 2	2018/12/17 1	7:37:15								
From file	3	C:\Users\RM	ilicia\Deskto	p\TestAcqusi	tion 10.000.0	5 AGE 50 EO.	edf				
Sample1	4	19359									
Sample2	5	20576									
# Samples	6	1217									
Age	7	50.00000									
Reserved3	8										
Reserved4	9										
Reserved5	10										
Reserved6	11										
Reserved7	12										
Reserved8	13										
Filters	14	Raw EEG	Delta	Theta	Alpha	Lobeta	Beta	Hibeta	Gamma	User	
Filt Active	15	1	1	1	1	1	1	1	1	1	0
Flow	16	0	1	4	8	12	15	20	38	30	
Fhigh	17	0	3	7	12	15	20	30	42	35	
Order	18	6	6	6	6	6	6	6	6	6	

- 1. **ZBuilder Revision** Informs you of which version of the BrainAvatar Software was used to create the ZBuilder File.
- 2. Date Created Lists the Date Created of the ZBuilder File
- 3. From File Informs you of What EEG File was used to create the ZBuilder File
- 4. Sample1 Informs you the Starting Sample Number of the last scanned section of the EDF
- 5. Sample2 Informs you the Ending Sample Number of the last scanned section of the EDF
- 6. # Samples Informs you the total number of samples of the last scanned Section of the EDF
- 7. Age Informs you the Age that was utilized for the ZBuilder File
- 8. Reserved3 Reserved for future use
- 9. Reserved4 Reserved for future use
- 10. Reserved5 Reserved for future use
- 11. Reserved6 Reserved for future use
- 12. Reserved7 Reserved for future use
- 13. Reserved8 Reserved for future use
- 14. Filters Lists the Names of the filtered bands that were included in the ZBuilder File
- 15. Filt Active Lists whether a Filtered wave form is active or not. 1 means that it is Active and 0 means that it is not active

ZBuilder rev	1 /	4.7.5.657									
Date Create	d 2	2018/12/17 1	7:37:15								
From file	3	C:\Users\RM	ilicia\Deskto	p\TestAcqusi	tion 10.000.0	5 AGE 50 EO.	edf				
Sample1	4	19359									
Sample2	5	20576									
# Samples	6	1217									
Age	7	50.00000									
Reserved3	8										
Reserved4	9										
Reserved5	10										
Reserved6	11										
Reserved7	12										
Reserved8	13										
Filters	14	Raw EEG	Delta	Theta	Alpha	Lobeta	Beta	Hibeta	Gamma	User	
Filt Active	15	1	1	1	1	1	1	1	1	1	0
-	16	0	1	4	8	12	15	20	38	30	
Fhigh 1	17	0	3	7	12	15	20	30	42	35	
Order 1	18	6	6	6	6	6	6	6	6	6	

16. Flow - Defines the Low Frequency for the Filtered Waveform

- 17. FHigh Defines the High Frequency for the Filtered Waveform
- 18. Order Defines What Filter Order was used for the Filtered Waveform

Channel ${f 1}$	Value 2	Raw EEG 3	Delta
	FLOW	0	1
	FHIGH	0	3
Fp1	MEAN.01	11.40293	2.21464
	STD.01	7.42870	1.22645
	MEANL.01	0.90842	0.20768
	STDL.01	0.44967	0.60558
	OMEAN.01	132.50620	23.64983
	MIN.01	-45.65348	-45.65348
	MAX.01	37.35285	37.35285
	MEANF.01	0.00000	6.03470
	STDF.01	0.00000	0.64583
	MEANMF.01	0.00000	1.77104
	STDMF.01	0.00000	0.10426

#### **Scalars Section**

- 1. **Channel Section** This section will display the labeling for all of the Channels that have been collected from using the ZBuilder system.
- 2. **Value Section** This section will display the label for the information that has been collected in the Frequency Band Section
  - a. FLOW Also known as Frequency Low. This is the lowest range of the frequency band
  - **b. FHIGH** Also known as Frequency High. This is the highest range of the frequency band.
  - **c. MEAN.X** This is the average of Amplitude for the particular band, where "X" is that particular Channel number.
  - **d. STD.X** This is the Standard deviation of the Amplitude for the particular band, where "X" is that particular Channel number.
  - **e. MEAN_L.X** This is the Log of the average of amplitude for the particular band, where "X" is that particular Channel number.
  - **f. STD_L.X** This is the Log of the Standard Deviation of the amplitude for the particular band, where "X" is that particular Channel number.
  - **g. MIN.X** This is the minimum value seen for the particular band, where "X" is that particular Channel number.

Channel ${f 1}$	Value 2	Raw EEG 3	Delta
	FLOW	0	1
	FHIGH	0	3
Fp1	MEAN.01	11.40293	2.21464
	STD.01	7.42870	1.22645
	MEANL.01	0.90842	0.20768
	STDL.01	0.44967	0.60558
	OMEAN.01	132.50620	23.64983
	MIN.01	-45.65348	-45.65348
	MAX.01	37.35285	37.35285
	MEANF.01	0.00000	6.03470
	STDF.01	0.00000	0.64583
	MEANMF.01	0.00000	1.77104
	STDMF.01	0.00000	0.10426

- **h. MAX.X** This is the maximum value seen for the particular band, where "X" is that particular **Channel number.**
- **i. MEANF.X** This is the percent of power for the particular band over the entire frequency range, where "X" is that particular Channel number.
- **j. STDF.X** This is the Standard Deviation of the percent of energy for that particular band, where "X" is that particular Channel number.
- 3. **Frequency Section** This section will show all bands (as defined by the Which Filters to use Section), and their collected information.

#### **Similarities Section**

Phase Similarity ${f 1}$	Fp1	F3	C3	P3	01	F7
Fp1 <b>2</b>		4 0.59970	0.39581	0.27584	0.27137	0.64357
F3	3 0.27043		0.67634	0.43348	0.24508	0.67370
C3	0.28471	0.22791		0.73297	0.41027	0.45238
P3	0.27387	0.25451	0.20043		0.61431	0.28055
01	0.28111	0.25873	0.29121	0.24105		0.19090
F7	0.27351	0.19526	0.26441	0.26124	0.24051	
Т3	0.30854	0.27933	0.22592	0.27641	0.30017	0.29294
T5	0.28137	0.27958	0.28825	0.25914	0.23644	0.29733
Fz	0.25218	0.13460	0.27368	0.25481	0.25860	0.23910

**PLEASE NOTE:** There will be a Tab for each Waveform. In order to see this information, you will have to see them individually.

- 1. **Similarity Type** Displays the type of Similarty being viewed. There are seven (7) different types looked at.
  - a. Phase Similarity
  - b. Training Coherence
  - c. Correlation
  - d. Phase Classic
  - e. Pure Coherence
  - f. Comodulation
  - g. Asymmetry
- 2. Site Locations Shows the different locations that were used in the ZBuilder.
- 3. **Mean Information** The Bottom-Half of the readings gives you the Log of the Average amplitude for the particular site combination.
- 4. **Standard Deviation Information** The Top-Half of the readings gives you the Log of the standard deviation of amplitude for the particular site combination.

13

#### **Band Ratios Section**

Channel $1$	Value 2	Delta/Theta	Delta/Alpha	Delta/Lobeta	Delta/Beta
Fp1	MEANL.01	0.13367	0.15673	0.28947	0.10808
	STDL.01	0.43137	0.46197	0.39712	0.49618
F3	MEANL.02	-0.05553	-0.09732	0.20998	-0.09504
	STDL.02	0.39622	0.38859	0.46349	0.42809
C3	MEANL.03	0.01737	-0.04601	0.15296	-0.12898
	STDL.03	0.39718	0.40537	0.39239	0.45731
P3	MEANL.04	0.02333	0.02129	0.10588	-0.10615
	STDL.04	0.38589	0.35589	0.40083	0.43698

1. **Channel Section** – This section will display the labeling for all of the Channels that have been collected from using the ZBuilder system.

- 2. **Value Section** This section will display the label for the information that has been collected in the Frequency Band Section
  - **a. MEANL.X** This is the Log of the average of Amplitude for the band ratio, where "X" is that particular Channel number.
  - **b. STDL.X** This is the Log of the Standard deviation of the Amplitude for the band ratio, where "X" is that particular Channel number.

**Ratio Section** – This section will show all band ratios (as defined by the Which Filters to use Section), and their collected information

#### **Voxels Section**

Voxel Number 1	Raw EEG.AVG	Raw EEG.STD	Raw EEG.AVGL	Raw EEG.STDL	Delta.AVG	Delta.STD	Delta.AVGL	Delta.STDL
1	∠ <u>4.373</u>	0	1.186	0.446	0.814	0	-0.319	0.703
2	4.516	0	1.214	0.447	0.846	0	-0.286	0.705
3	4.609	0	1.232	0.447	0.873	0	-0.259	0.706
4	4.156	0	1.14	0.451	0.801	0	-0.331	0.701
5	4.277	0	1.165	0.45	0.826	0	-0.306	0.702
6	4.387	0	1.188	0.449	0.853	0	-0.279	0.703
7	3.965	0	1.096	0.46	0.796	0	-0.336	0.7
8	4.077	0	1.121	0.457	0.817	0	-0.314	0.701
9	4.234	0	1.155	0.455	0.859	0	-0.269	0.701
10	3.904	0	1.08	0.465	0.815	0	-0.315	0.698

- 1. Voxel Number This section contains the labeling for all of the Voxels
- 2. **Frequency Section** This section will show all bands (as defined by the Which Filters to use Section), and their collected information.
  - **a. BAND.AVG** This is the average of amplitude for the particular band, where "BAND" is the band as defined by the Description section.
  - **b. BAND.STD** This the standard deviation of the amplitude for the particular band, where "BAND" is the band as defined by the Description section.
  - **c. BAND.AVGL** This is the Log of the average of the amplitude for the particular band, where "BAND" is the band as defined by the Description Section.
  - **d. BAND.STDL** This the Log of the standard deviation of the amplitude for the particular band, where "BAND" is the band as defined by the Description section.

13

#### **ROI Coherence Section**

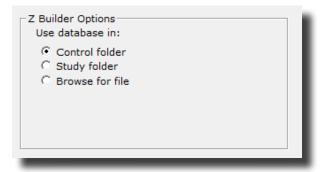
ROI Name	ROI No	LRB	Frontal Lo	be		Limbic Lobe				
			1001	1001			1002			
			Left	Right	Both	Left	Right	Both		
Frontal Lobe 1	1001	Left		<b>3</b> -0.06963	-0.06430	-0.07876	-0.08704	-0.08263		
Frontal Lobe	1001	Right	2 0.05187		-0.05756	-0.06814	-0.06040	-0.06340		
Frontal Lobe	1001	Both	0.05067	0.04934		-0.07127	-0.07058	-0.06979		
Limbic Lobe	1002	Left	0.05578	0.05268	0.05285		-0.06511	-0.05713		
Limbic Lobe	1002	Right	0.05815	0.05288	0.05362	0.05614		-0.05410		
Limbic Lobe	1002	Both	0.05658	0.05240	0.05282	0.05363	0.05408			

**PLEASE NOTE:** There will be a Tab for each Waveform. In order to see this information, you will have to see them individually.

- 1. Defined ROI Section Displays the ROI as well as what section of the ROI:
  - a. Left ROI
  - b. Right ROI
  - c. Both
- 2. **Mean Information** The Bottom-Half of the readings gives you the Log of the Average amplitude for the particular site combination.
- 3. **Standard Deviation Information** The Top-Half of the readings gives you the Log of the standard deviation of amplitude for the particular site combination.

#### **Training to a ZBuilder File**

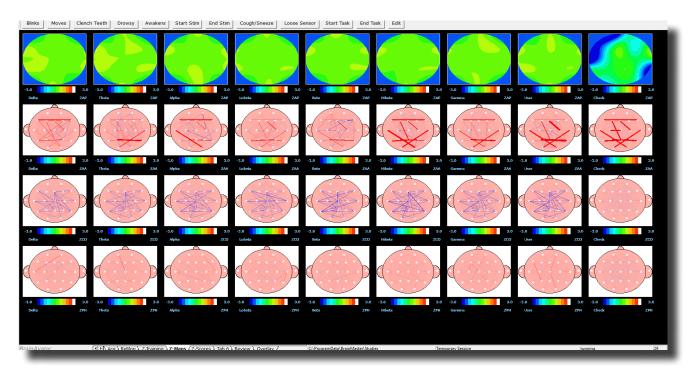
- First, you will need to make sure that you have your ZBuilder enabled. You will need to do this in the Setup Menu, by first clicking on the Settings Tab, then clicking on the Z-Scores Tab. Here, you will need to make sure that you are utilizing ZBuilder for the ZScore Type, as well as the Z-Score Options, channels, bands, and values that you would like to train. Based off of the location of the ZBuilder File, in the ZBuilder Options, you will choose:
  - A. Control Folder Click if you have your ZBuilder File saved in the Control Directory
  - B. Study Folder Click if you have your ZBuilder File saved in the Study Folder that is being utilized
  - C. Browse for file Click if you would like to use Windows Explorer to locate the ZBuilder File on your PC



Depending on the settings, you might see a message stating that the Bands will need to be adjusted to match the Z-Scores that were recorded. The system will adjust itself automatically to the update the filter settings by clicking OK. Or, you click Cancel to change yourself or cancel using Z-Scores Also, you might have to utilize Windows Explorer in order to find the Database File as well, based off of your ZBuilder Options choice.

Master40	×	Cpen ← → ~ ↑ 📙 + Loc	ocal Disk (C;	2) > Program	Outa > BrainMaster :	Studies > Temporary Sea	sion	v ð Search	Temporary Se	ssion ,	× P
		Organize . New folder	der						011		0
		Screenshots ^	Name		^	Date modified	Type	Size			
Error. ZBuilder ZScores have been requested however		STS Documentat	28v	uilderEC		12/20/2019 4:53 PM	XML Document	2,105 KB			
the acquisition filter settings do not match. Band 'Theta'		STS K8 Project									- 8
is set to 4.00- 8.00 however 4.00- 7.00 was expected.		<ul> <li>OneDrive</li> </ul>									- 8
Click on OK to change the filter settings to the ZBuilder		This PC									
setting or click Cancel and use setup to select different		30 Objects									
filters or disable zscores.		Documents									
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You will now be utilizing the Specified ZBuilder File for Z-Score Training or Assessment. You will be able to tell this by viewing any Z-Score Based Displays should be displaying the Z-Scores that are available.



#### **Export**

#### **Export Control Menu**

III Dialog		×
Annotate Playback Export		- 1
What to export     The whole file     The selected range:     From 387     To 387	2 Within that selection, export:       ●       ✓       Fp1-A1       ✓       F8-A1         ●       All of the data       ✓       F3-A1       ✓       T4-A1         ○       Only the sections marked good       ✓       C3-A1       ✓       T6-A1         ○       P3-A1       ✓       C2-A1       ✓       O1-A1       ✓       P2-A1         ✓       F7-A1       ✓       T3-A1       ✓       T3-A1       ✓	
3 Which filters to use: C Current filters (from B C Standard BrainMaster 5 Export To:	4 Options       ✓ T5-A1         3Setup)       ✓ Set startup folder         filters       ✓ Write sxyz         ✓ F2-A1         ✓ F4-A1	
Loreta time series     Loreta cross spectra     EDF file     C CSV file     C Text file	ZStart export ✓ C4-A1 ✓ P4-A1 ✓ 02-A1	
	8 Cancel	

- 1. What to export Section Section where you can choose what information that you would like to include in the file that is compatible in the sLORETA Software File
  - a. The Whole File Choose this to process the entire EDF, BDF, or DAT File
  - b. The Selected Range Choose this to process only the selection area chosen through the mouse
- 2. Within that selection, export: Section Section where you can set a more specific requirement of what you will export
  - a. All of the Data Will process all of the Data defined by the What to export Section
  - b. Only the sections marked good Will process all of the sections that have been annotated good that are within the What to export Section. This will be grayed out, if there are no sections marked good within the Analyze section
  - **c.** All except sections marked bad Will process all of the sections that have not been annotated as bad that are within the What To export Section. This will be grayed out, if there are no sections marked bad within the export section
- 3. Which filters to use: Section Section where you can choose what type of filters to use
  - a. Current Filters This will utilize the Filters that you have defined from the Bands section

💽 Dialog		×
Annotate Playback Export	ZBuilder	
1-What to export The whole file The selected range: From 387 To 387	2 Within that selection, export:       6         ○ All of the data       9         ○ Only the sections marked good       74-A1         ○ All except sections marked bad       73-A1         ○ Only the sections marked bad       74-A1         ○ Only the sections marked bad       74-A1         ○ Only the sections marked bad       75-A1         ○ Only the sections marked bad       75-A1         ○ Onl-A1       72-A1         ○ F7-A1       75-A1	
3 Which filters to use: C Current filters (from BS C Standard BrainMaster f 5 Export To: C Loreta time series C Loreta cross spectra C EDF file		
C CSV file C Text file	8 Cancel	

b. Default Filters - This will utilize the Standard BrainMaster Filters regardless of the filter set-

tings from the Bands section

- 4. Options Section Section where you can choose different settings for the Output
  - a. Setup startup folder check box Creates the folder located in sLORETA Avatar Imports with the same name as the EDF being reviewed.
  - **b.** Write sxyz check box Creates the sxyz file for use in the sLORETA Software.
- 5. Export EEG to Loreta Button Click to create the specified file based off of your settings
  - a. Loreta time series Button Creates the LORETA Time Series File for use in the sLORETA Software
  - **b.** Loreta cross spectra Button Creates the Cross Spectra file for use in the sLORETA Software.
  - c. EDF File Creates a New EDF File that will be located in the Directory currently being used
  - d. CSV File Creates a CSV File that will be located in the Directory currently being used
  - e. Text File Creates a Text File that will be located in the Directory currently being used

14

■ Dialog	×
Annotate   Playback Export   ZBuilder	
1       What to export       2       Within that selection, export:         Image: The whole file       Image: The selected range:       Image: The selected range:       Image: The selected range:         From       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         To       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         To       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         To       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         To       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         To       387       Image: The selected range:       Image: The selected range:       Image: The selected range:         G       Selected range:       Image: The selected range:       Image: The selected range:       Image: The selected range:         G       Current filters (from BSetup)       Image: The selected range:       Image: The selected range:       Image: The selected range:         G       Export To:       Image: The selected range:       Image: The selected range:       Image: The selected range:       Image: The selected range:	
Coreta time series     Coreta cross spectra     CEDF file     CSV file     CText file	♥ P4-A1 ♥ O2-A1 8 Cancel

- 6. **Channel Selection Box –** Section where you can select the channels to be created in the desired output file.
- 7. Start Export Button Click to create the specified file.
- 8. Cancel Button Click to cancel creating the specified file.

### **Exporting LORETA Files**

***PLEASE NOTE: In order for full functionality of this step, this requires the software released by the Key Institute. This can be found at <u>www.unizh.ch/keyinst/NewLORETA/Software/Software.</u> <u>htm</u>.

1. Open the File that you would like to work with. Under the Review Tab, you will annotate based off of the instructions from the EDF Annotation Section.

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2. When completed, either Double-Click in the EEG, or Hold down the Left-Click on the mouse, and select a section of data. This will bring up the Panel Options Menu. Navigate to the Export Tab, and use this menu to set the Settings as needed. When completed, click the Start Export Button.

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You have now converted this portion of data, into a LORETA export. This will save the information as a text document located in a folder named for your folder in the Documents Directory in the sLoreta-AvatarImport Folder, in a Folder that shares the name of the EDF Opened.

Home Share View A Guide Copy Paste Clipboard	ut Move Copy to v to v	New folder New New	Edit	Select all Select none invert selection Select	
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### Exporting an EDF/CSF/Text File

1. Open the File that you would like to work with. Under the Review Tab, you will annotate based off of the instructions from the EDF Annotation Section.

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2. When completed, either Double-Click in the EEG, or Hold down the Left-Click on the mouse, and select a section of data. This will bring up the Panel Options Menu. Navigate to the Export Tab, and use this menu to set the Settings as needed. When completed, click the Start Export Button.

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6-A1	Raw EEG	- White A LANDARD AND AND	Weil-Prinkeelikkaan	infer fi	PLN KIGGIN	ANN'N A	nen ministrik skrivet. A	MM#MINALALINALLINALINALINALINALINALINALINALI
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		Perfect						Deer

You have now converted this portion of data, into a new EDF,CSV, or Text file. This will save in the Patient folder you reviewed the file in. The file will be named EDF Export with the Age and Recording condition contained within the file.

STS Documentation	Name	Date modified	Туре	Size		
STS GNI Instructor Drive - CON	e2000102.e20	10/16/2019 6:28 PM	E20 File	0	КВ	
STS KB Project	e2100102.e20	10/17/2019 3:01 PM	E20 File	0	KB	
	e2200102.e19	11/4/2019 2:51 PM	E19 File	0	KB	
OneDrive	e2300102.e19	11/4/2019 2:52 PM	E19 File	0	KB	
Documents	e2400102.e02	12/13/2019 3:22 PM	E02 File	0	KB	
Pictures	e2500102.e02	12/13/2019 3:25 PM	E02 File	0	KB	
This PC	e2600102.e02	12/13/2019 3:27 PM	E02 File	0	KB	
	e2700102.e02	12/13/2019 3:31 PM	E02 File	0	KB	
3D Objects	e2800102.e20	12/18/2019 12:19 PM	E20 File	0	KB	
Desktop	e2900102.e20	12/20/2019 5:11 PM	E20 File	0	KB	
Documents	EDF Export 01.000.01 AGE 37 EC	12/23/2019 4:14 PM	EDF File	46	KB	
- Downloads	🖬 EEGExport	12/23/2019 2:11 PM	Microsoft Excel C	271	KB	
Music	EEGExport	12/23/2019 2:12 PM	Text Document	601	KB	
Pictures	f1900102.e04	10/15/2019 12:23 PM	E04 File	0	KB	
Videos	f2000102.e20	10/16/2019 6:28 PM	E20 File	0	KB	
-	f2100102.e20	10/17/2019 3:01 PM	E20 File	0	KB	
Local Disk (C:)	f2200102.e19	11/4/2019 2:51 PM	E19 File	0	KB	
Documentation (\\BMSTore) (T	f2300102.e19	11/4/2019 2:52 PM	E19 File	0	KB	
TechnicalSupport (\\BMSTore)	f2400102.e02	12/13/2019 3:22 PM	E02 File	0	KB	
Accounting (\\BMSTore) (V:)	f2500102.e02	12/13/2019 3:25 PM	E02 File	0	KB	
Software (\\BMSTore) (W:)	f2600102.e02	12/13/2019 3:27 PM	E02 File	0	KB	
cpsql.1 (\\Counterpoint) (X:)	f2700102.e02	12/13/2019 3:31 PM	E02 File	0	KB	
	f2800102.e20	12/18/2019 12:19 PM	E20 File	0	KB	
ems						

### Analyze (Optional Purchase)

### **Analyze Control Menu**

🔳 Dialog	×
Annotate   Playback   Export   ZBuilder   A	analyze
What to analyze:         Image: The whole file         Image: The selected range:         From       946         To       946	Within that selection, analyze:       3 Patient         Image: Control of the data       Image: Control of the data         Image: Control of the sections marked good       Image: Control of the sections marked bad         Image: Control of the sections marked bad       All except sections marked bad
5 What to include in the file:	Compute ZScores C BrainDX C ZBuilder DB C Off C ZBuilder © qEEGPro
Image: Scalars         Voxels       iCoh         Surface ZScores       gPDC         Voxel ZScores       ROI Coh Z         ROI ZScores       ROI Coh Z         Image: Scalars       ROI Coherence	6 Report type       7 Directional Coherence       8 Other options         © Quick report       AR Order       3         © Excel Live       Image: Second s
	9Run Analysis 10Cancel

- 1. What to analyze Section Section where you can choose what information that you would like to analyze.
  - a. The Whole File Choose this to process the entire EDF, BDF, or DAT File
  - **b.** The Selected Range Choose this to process only the selection area chosen through the mouse
- 2. Within that selection, analyze: Section Section where you can set a more specific requirement of what you will analyze
  - a. All of the Data Will process all of the Data defined by the What to analyze Section
  - **b.** Only the sections marked good Will process all of the sections that have been annotated good that are within the What to analyze Section. This will be grayed out, if there are no sections marked good within the analyze section
  - **c.** All except sections marked bad Will process all of the sections that have not been annotated as bad that are within the What to analyze Section. This will be grayed out, if there are no sections marked bad within the analyze section
- 3. Patient Section This section will detect the Age and recording condition of the EEG file, and fill this out automatically. Though, if you would like to adjust this, this is where that can be done
- 4. Compute Z-Scores Section Section where you set what Z-Score DLL (if any) you will use. *****PLEASE** NOTE: This is necessary for Z-Score Metrics to be possible.

150

Dialog	×
Annotate   Playback   Export   ZBuilder   A	nalyze
1 What to analyze:         Image: The whole file         Image: Trom         From       946         To       946         5 What to include in the file:         Image: Summary         Image: Scalars         Image: Voxels         Image: Summary         Image: Scalars         Image: Voxels         Image: Scalars         Image: Voxels         Image: Voxels	Within that selection, analyze: ³ Patient             • All of the data           • Eyes closed             • Only the sections marked good           • Eyes closed             • All except sections marked bad           • Eyes open             • Compute ZScores           • Getting             • BrainDX           • ZBuilder DB           • Off             • ZBuilder           • Getting           • Off             • Quick report           • Poincetional Coherence           • Bother options             • Quick report           • AR Order           • Don't use qEEG bands
<ul> <li>☐ Surface ZScores</li> <li>☐ Voxel ZScores</li> <li>☐ ROI ZScores</li> <li>☐ ROI Coh Z</li> <li>☑ Similarities</li> <li>☐ ROI Amplitudes</li> <li>☐ ROI Coherence</li> </ul>	O Excel / XML         O Excel / XML         O Excel / CSV         O IHz bins CSV         O MS Word

- 5. What to include in the file: Section Section where you can set what information is included in the file
  - a. Summary Click this to create a page with Summary information
  - b. Scalars Click this to create a page with Scalar information
  - c. Voxels Click this to create a page with raw Voxel information
  - d. Surface Z-Scores Click this to create two pages with Surface Z-Score Information
  - e. Voxel ZScores Click this to create a page with Voxel Z-Score information
  - f. ROI Z-Scores Click this to create a page with ROI Z-Score information
  - g. Similarities Click this to create a page for every band of similarities information
  - h. ROI Amplitudes Click this to create a page of ROI Amplitudes information
  - i. ROI Coherence Click this to create a page for every band of ROI Cohehence information
  - j. iCoh Click this to create a page of isolated effective coherence (iCoh) information.
  - gPDC Click this to create a page of generalized partial directed coherence (gPDC) information.
  - I. ROI Coh Z Click this to create a page for every band of ROI Coherence Z-Score Information.

🔳 Dialog	×
Annotate   Playback   Export   ZBuilder A	nalyze
What to analyze:         Image: The whole file         Image: The selected range:         From       946         Image: To       946         Image: To       946         Image: To       946         Image: To       946	Within that selection, analyze: ³ Patient          • All of the data       • Eyes closed         • Only the sections marked good       • Eyes open         • All except sections marked bad       • Age         • Compute ZScores       • ZBuilder DB       • Off
5 What to include in the file: ✓ Summary ✓ Scalars Voxels Surface ZScores ✓ Voxel ZScores ROI ZScores ✓ Similarities ROI Amplitudes ROI Coherence	O ZBuilder     Image: Geodecimal Coherence     8 Other options       Image: Geodecimal Coherence     AR Order     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherence     Image: Geodecimal Coherence     Image: Geodecimal Coherence       Image: Geodecimal Coherencom     Image: Geodecimal Coherence
	9Run Analysis 10Cancel

- 6. Report type Section Section where you can set the type of report that you would like to be created
  - a. Quick report Click to utilize the built-in report viewer for the report.
  - **b.** Excel Live Click to create to open the report in Excel after production. This will allow you to name, and save the report where you would like
  - **c.** Excel / XML Click to create an XML report named Analyis with recording condition date and time stamped for the time of the recording in the Study currently being used.
  - **d.** Excel / CSV Click to create a .CSV report named "Report.csv" in the current Study directory currently being used (Coming Soon).
  - e. 1 hz bins CSV Click to create a .CSV report named Analyis with recording condition date and time stamped for the time of the recording in the Study currently being used. ***PLEASE
     NOTE: This report is only available for Voxels and Voxel Z-Scores (qEEGPro Z-Scores only).
  - f. **MS Word -** Click to create a Word Report from the data (Coming soon).
- 7. Directional Coherence Section where you can set the settings for Directional Cohence Processing
  - a. AR Order Set the AR () Order here. The Default Order is 3
  - b. User ROIs Select to add User created ROIs to the report.
  - c. Discrete Signals Select to add Discrete (Surface EEG Channels) Signals to the Report
  - d. Retain XYZ values Select to add the X, Y, and Z Coordinate Values to the Report

🔳 Dialog	×
Annotate   Playback   Export   ZBuilder   A	nalyze
What to analyze: The whole file The selected range: From 946 To 946	Within that selection, analyze: ³ Patient             • All of the data           • Eyes closed             • Only the sections marked good           • Eyes open             • All except sections marked bad           Age
5 What to include in the file:         ✓ Summary         ✓ Scalars         ✓ Voxels       iCoh         Surface ZScores       gPDC         ✓ Voxel ZScores       ROI Coh Z         ROI ZScores       ROI Coh Z         ✓ Similarities       ROI Amplitudes         ROI Coherence       ROI Coherence	C BrainDX C ZBuilder DB O Off C ZBuilder © qEEGPro 6 Report type C Quick report C Excel Live C Excel / XML C Excel / CSV C 1Hz bins CSV C MS Word Roter Signals Retain XYZ values
	9Run Analysis 10Cancel

- 8. Other Options Section -
  - a. Don't Use "Database" bands Check to choose not to use the default defined bands from a Z-Score Database. ***Please Note: Doing this can cause some Z-Score Values to be reported as 0.0
- 9. Run Analysis Button Click to create the analysis file based off of all of your selections
- 10. Cancel Button Click to cancel creating an analysis file and close the Review Panel

### Sample Analyze File & Layout

#### **Description Section**

:16								
\Desktop\BMD_BA_7	-22-2020 01.0	00.02 AGE 29	EC.edf					
ta Theta	Alpha	Lobeta	Beta	Hibeta	Gamma	Alpha1	Alpha2	Alpha2
1 1	. 1	1	1	1	1	1	1	1
1 4	8	12	15	20	35	8	10	10.2
3 8	12	15	20	30	45	10	12	12.7
3 3	3	3	3	3	3	3	3	3
	3 3	3 3 3	3 3 3 3	3 3 3 3 3	3 3 3 3 3	3 3 3 3 3 3 3	3 3 3 3 3 3 3 3	3 3 3 3 3 3 3 3 3 3

- 1. **ZBuilder Revision** Informs you of which version of the BrainAvatar Software was used to create the ZBuilder File.
- 2. Date Created Lists the Date Created of the ZBuilder File
- 3. From File Informs you of What EEG File was used to create the ZBuilder File
- 4. Sample1 Informs you the Starting Sample Number of the last scanned section of the EDF
- 5. Sample2 Informs you the Ending Sample Number of the last scanned section of the EDF
- 6. # Samples Informs you the total number of samples of the last scanned Section of the EDF
- 7. Age Informs you the Age that was utilized for the ZBuilder File
- 8. **Reserved3 -** Reserved for future use
- 9. Reserved4 Reserved for future use
- 10. Reserved5 Reserved for future use
- 11. Reserved6 Reserved for future use
- 12. Reserved7 Reserved for future use
- 13. Reserved8 Reserved for future use
- 14. Filters Lists the Names of the filtered bands that were included in the ZBuilder File
- 15. Filt Active Lists whether a Filtered wave form is active or not. 1 means that it is Active and 0 means

#### that it is not active

- 16. Flow Defines the Low Frequency for the Filtered Waveform
- 17. FHigh Defines the High Frequency for the Filtered Waveform
- 18. Order Defines What Filter Order was used for the Filtered Waveform

Channel 1	L Value	2	EEG 3	Delta	Theta	Alpha
	FLOW		0	1	4	8
	FHIGH		0	3	8	12
Fp1	MEAN.01		5.91289	1.92221	1.71769	3.94187
	AVGRMS.01		7.26565	2.23879	1.95459	4.43798
	AVGPKPK.01		20.55036	6.33225	5.52843	12.55250
	OMEAN.01		56.30117	20.56001	18.56214	35.60821
	MIN.01		-22.75174	-22.75174	-22.75174	-22.75174
	MAX.01		24.25185	24.25185	24.25185	24.25185
	MEANF.01		0.00000	6.39974	10.75774	18.29484
	STDF.01		0.00000	0.82377	0.98267	2.85955
	MEANMF.01		0.00000	1.65336	6.49101	9.44044
	STDMF.01		0.00000	0.09469	0.19423	0.11697

### **Scalars Section**

- 1. **Channel Section –** This section will display the labeling for all of the Channels that have been collected from using the analyze system.
- 2. **Value Section –** This section will display the label for the information that has been collected in the Frequency Band Section
  - a. FLOW Also known as Frequency Low. This is the lowest range of the frequency band
  - b. FHIGH Also known as Frequency High. This is the highest range of the frequency band.
  - **c. MEAN.X** This is the average of Amplitude for the particular band, where "X" is that particular Channel number.
  - **d.** AVGRMS.X This is the average RMS value for the particular band, where "X" is that particular Channel number.
  - e. **AVGPKPK.X** This is the average Peak-To-Peak value for the particular band, where "X" is that particular Channel number.
  - **f. MIN.X** This is the minimum value seen for the particular band, where "X" is that particular Channel number.
  - **g. MAX.X** This is the maximum value seen for the particular band, where "X" is that particular Channel number.
  - **h. MEANF.X** This is the percent of power for the particular band over the entire frequency range, where "X" is that particular Channel number.
  - **i. STDF.X** This is the Standard Deviation of the percent of energy for that particular band, where "X" is that particular Channel number.
  - **j. MEANMF.X** This is the Modal Frequency for the particular band, where "X" is that particular Channel number.

Channel 1	Value	2	EEG 3	Delta	Theta	Alpha
	FLOW		0	1	4	8
	FHIGH		0	3	8	12
Fp1	MEAN.01		5.91289	1.92221	1.71769	3.94187
	AVGRMS.01		7.26565	2.23879	1.95459	4.43798
	AVGPKPK.01		20.55036	6.33225	5.52843	12.55250
	OMEAN.01		56.30117	20.56001	18.56214	35.60821
	MIN.01		-22.75174	-22.75174	-22.75174	-22.75174
	MAX.01		24.25185	24.25185	24.25185	24.25185
	MEANF.01		0.00000	6.39974	10.75774	18.29484
	STDF.01		0.00000	0.82377	0.98267	2.85955
	MEANMF.01		0.00000	1.65336	6.49101	9.44044
	STDMF.01		0.00000	0.09469	0.19423	0.11697

- **k. STDMF**.X This is the Standard Deviation of the Modal Frequency for that particular band, where "X" is that particular Channel number.
- 3. **Frequency Section** This section will show all bands (as defined by Z-Score DLL or The Settings File itself), and their collected information.

Phase Similarity 1	Fp1 <b>2</b>	Fp2	F3	F4	C3	C4	P3	P4	01	02
Fp1		<b>4</b> 0.69701	0.68221	0.52701	0.46714	0.51099	0.41732	0.36653	0.30166	0.22254
Fp2	3 0.17403		0.66914	0.62279	0.46540	0.53762	0.39628	0.30834	0.26941	0.21568
F3	0.23965	0.22230		0.75064	0.66065	0.67401	0.55755	0.42912	0.40558	0.30351
F4	0.27661	0.24452	0.17955		0.59055	0.74429	0.50987	0.46888	0.38174	0.31727
C3	0.29210	0.25599	0.25785	0.25952		0.64606	0.77451	0.59966	0.56053	0.43156
C4	0.28466	0.28709	0.22396	0.18942	0.23175		0.54715	0.53575	0.48631	0.39213
P3	0.30819	0.29563	0.26684	0.25635	0.21227	0.25608		0.68673	0.70226	0.54035
P4	0.29426	0.27161	0.29787	0.28593	0.26774	0.26570	0.25787		0.72117	0.72159
01	0.23363	0.22370	0.25522	0.23340	0.23761	0.23723	0.20665	0.14995		0.66117
02	0.22802	0.19079	0.25527	0.25186	0.27578	0.27497	0.30496	0.24496	0.25246	
F7	0.22614	0.24815	0.19403	0.22988	0.25288	0.23342	0.26643	0.24976	0.24862	0.26025
F8	0.29568	0.27177	0.28168	0.24736	0.27863	0.28751	0.26534	0.25552	0.16907	0.24254
тз	0.25441	0.26672	0.28554	0.29167	0.20353	0.26631	0.22762	0.23206	0.22769	0.24585

#### **Similarities Section**

**PLEASE NOTE:** There will be a Tab for each Waveform. In order to see this information, you will have to see them individually.

- 1. **Similarity Type –** Displays the type of Similarty being viewed. There are six (6) different types looked at.
  - a. Phase Similarity
  - b. Training Coherence
  - c. Correlation
  - d. Phase Classic
  - e. Pure Coherence
  - f. Comodulation
- 2. Site Locations Shows the different locations that were used in the ZBuilder.
- Mean Information The Bottom-Half of the readings gives you the Average amplitude for the particular site combination.
- 4. **Standard Deviation Information –** The Top-Half of the readings gives you the standard deviation of amplitude for the particular site combination.

15

Channel 1	Value 2	Delta/Theta	Delta/Alpha	Delta/Lobeta	Delta/Beta	Delta/Hibeta	Theta/Alpha	Theta/Lobeta
Fp1	MEANL.01	0.00310	-0.33479	0.22737	0.07017	-0.10543	-0.33788	0.22427
	STDL.01	0.42109	0.44871	0.46993	0.45560	0.45447	0.35810	0.36845
Fp2	MEANL.02	-0.05901	-0.36309	0.21258	0.05403	-0.09089	-0.30408	0.27159
	STDL.02	0.36930	0.33292	0.45520	0.41498	0.33070	0.30328	0.34114
F3	MEANL.03	0.04594	-0.29848	0.28180	0.14491	-0.00485	-0.34442	0.23586
	STDL.03	0.41871	0.44559	0.39080	0.35306	0.42211	0.32037	0.37315
F4	MEANL.04	-0.02261	-0.34565	0.22527	0.05335	-0.10651	-0.32304	0.24787
	STDL.04	0.39612	0.46599	0.44112	0.43665	0.40493	0.42468	0.41556
C3	MEANL.05	0.00541	-0.34776	0.19302	0.10303	0.01222	-0.35317	0.18761
	STDL.05	0.49333	0.76602	0.46560	0.49727	0.39785	0.40005	0.51944
C4	MEANL.06	0.02905	-0.28325	0.18772	0.09938	-0.01465	-0.31230	0.15867
	STDL.06	0.41731	0.33064	0.45816	0.44018	0.43819	0.36038	0.34736
P3	MEANL.07	-0.04872	-0.49270	0.20796	0.07144	0.01372	-0.44398	0.25668
	STDL.07	0.36449	0.00000	0.37761	0.37776	0.43256	0.00000	0.30145

#### **Band Ratios Section**

- 1. **Channel Section** This section will display the labeling for all of the Channels that have been collected from using the ZBuilder system.
- 2. **Value Section** This section will display the label for the information that has been collected in the Frequency Band Section
  - **a. MEANL.X** This is the Log of the average of Amplitude for the band ratio, where "X" is that particular Channel number.
  - **b. STDL.X** This is the Log of the Standard deviation of the Amplitude for the band ratio, where "X" is that particular Channel number.
- 3. Ratio Section This section will show all band ratios (as defined by the Which Filters to use Sec-

tion), and their collected information

Voxel Number 1	EEG.AVG2	Delta.AVG	Theta.AVG	Alpha.AVG	Lobeta.AV	Beta.AVG	Hibeta.AV	Gamma.A\
1	2.339	0.955	0.715	1.38	0.538	0.747	1.107	0.761
2	2.33	0.978	0.7	1.251	0.533	0.734	1.125	0.775
3	2.316	0.994	0.692	1.156	0.529	0.723	1.132	0.778
4	2.23	0.932	0.727	1.424	0.529	0.741	1.08	0.736
5	2.223	0.953	0.71	1.299	0.525	0.726	1.098	0.749
6	2.225	0.973	0.699	1.194	0.521	0.716	1.11	0.758
7	2.118	0.912	0.742	1.468	0.522	0.739	1.058	0.714
8	2.117	0.933	0.723	1.348	0.519	0.724	1.076	0.728
9	2.127	0.968	0.702	1.168	0.51	0.702	1.094	0.737
10	2.03	0.921	0.74	1.402	0.513	0.727	1.064	0.715
11	2.046	0.941	0.723	1.293	0.51	0.714	1.078	0.725
12	2.039	0.936	0.758	1.407	0.484	0.803	1.258	0.867
13	2.076	0.95	0.743	1.306	0.492	0.795	1.283	0.895
14	2.114	0.968	0.738	1.246	0.504	0.792	1.305	0.922

#### **Voxels Section**

- 1. Voxel Number This section containsl the labeling for all of the Voxels
- Frequency Section This section will show all bands (as defined by the Which Filters to use Section), and their collected information.
  - **a. BAND.AVG** This is the average of amplitude for the particular band, where "BAND" is the band as defined by the Which Filters to use section.

15

ROI Name 1	Delta.L <b>2</b>	Theta.L	Alpha.L	Lobeta.L	Beta.L	Hibeta.L	Gamma.L
Frontal Lobe	1.1	0.853	1.112	0.535	0.806	1.248	0.678
Limbic Lobe	1.14	1.409	3.484	0.768	1.22	1.425	0.642
Occipital Lobe	0.807	1.191	3.121	0.695	1.15	0.88	0.464
Parietal Lobe	0.876	1.088	2.78	0.669	1.036	1.115	0.443
Sub Lobar	0.809	0.838	1.902	0.593	0.833	1.074	0.588
Temporal Lobe	0.814	0.787	1.749	0.586	0.828	0.979	0.6
All	0.633	1.033	2.778	0.585	0.955	0.748	0.401
Angular Gyrus	0.707	0.864	2.048	0.586	0.864	0.876	0.492
Anterior Cingulate	0.813	0.688	0.912	0.376	0.614	0.955	0.577
Cingulate Gyrus	0.813	0.992	2.195	0.553	0.838	1.217	0.398
Cuneus	0.782	1.157	3.02	0.658	1.116	0.859	0.444
Extra Nuclear	1.025	0.707	1.275	0.56	0.71	1.16	0.735
Fusiform Gyrus	0.744	0.678	1.314	0.455	0.695	0.913	0.585
Inferior Frontal Gyrus	1.011	0.599	0.852	0.422	0.597	0.873	0.6

### **ROI Amplitudes Section**

- 1. ROI Name This section contains the labeling for all of the ROIs
- 2. **Frequency Section –** This section will show all bands, and their Average Amperage broken down in the following order
  - a. BAND.L Average Amperage for the Left portion of the ROI
  - b. BAND.R Average Amperage for the Right portion of the ROI
  - c. BAND.LR Average Amperage for the entire ROI

ROI Name	L	ROI No 2	LRB 3	Frontal Lobe			Limbic Lobe			
				1001	1001			1002		
				Left	Right	Both	Left	Right	Both	
Frontal Lobe		1001	Left		4 0.80400	0.85122	0.84180	0.82552	0.83513	
Frontal Lobe		1001	Right	<b>5</b> 0.15951		0.84197	0.84538	0.85875	0.84968	
Frontal Lobe		1001	Both	0.16323	0.15603		0.85974	0.84929	0.85595	
Limbic Lobe		1002	Left	0.16005	0.15560	0.15542		0.90320	0.91231	
Limbic Lobe		1002	Right	0.15664	0.15433	0.15175	0.15817		0.91489	
Limbic Lobe		1002	Both	0.15635	0.15283	0.15142	0.15985	0.15523		
Occipital Lobe		1003	Left	0.15623	0.15864	0.15529	0.15675	0.15274	0.15330	
Occipital Lobe		1003	Right	0.15920	0.15605	0.15580	0.16006	0.15767	0.15702	
Occipital Lobe		1003	Both	0.16143	0.15757	0.15719	0.15995	0.15519	0.15561	
Parietal Lobe		1004	Left	0.16135	0.16044	0.15869	0.16297	0.15826	0.15905	
Parietal Lobe		1004	Right	0.15925	0.15099	0.15226	0.15448	0.15076	0.15093	
Parietal Lobe		1004	Both	0.15757	0.15329	0.15311	0.15716	0.15261	0.15357	

### **ROI Coherence Section**

**PLEASE NOTE:** There will be a Tab for each Waveform. In order to see this information, you will have to see them individually.

- 1. ROI Name This section contains the labeling for all of the ROIs
- 2. ROI Number This section shows the BrainMasters assigned Internal ROI Number.
- 3. LRB This section Identifies the ROI's Location, left, right, or both.
- 4. **Mean Information –** The Bottom-Half of the readings gives you the Average Coherence for the particular ROI combination.
- 5. Standard Deviation Information The Top-Half of the readings gives you the standard deviation of amplitude for the particular ROI combination.

#### **ROI Coherence Z-Score Section**

ROI Name 1	ROI No 2	LRB 3	Frontal Lobe			Limbic Lobe			
			1001			1002			
			Left	Right	Both	Left	Right	Both	
Frontal Lobe	1001	Left		<b>4</b> -4.54673	-2.03956	-4.11732	-2.97417	-4.63581	
Frontal Lobe	1001	Right			-3.78154	-5.03310	-2.92552	-4.87134	
Frontal Lobe	1001	Both				-4.35416	-7.13846	-6.85512	
Limbic Lobe	1002	Left					0.59526	-2.49510	
Limbic Lobe	1002	Right						-3.51408	
Limbic Lobe	1002	Both							
Occipital Lobe	1003	Left							
Occipital Lobe	1003	Right							
Occipital Lobe	1003	Both							
Parietal Lobe	1004	Left							
Parietal Lobe	1004	Right							
Parietal Lobe	1004	Both							

**PLEASE NOTE:** There will be a Tab for each Waveform. In order to see this information, you will have to see them individually.

- 1. ROI Name This section contains the labeling for all of the ROIs
- 2. ROI Number This section shows the BrainMasters assigned Internal ROI Number.
- 3. LRB This section Identifies the ROI's Location, left, right, or both.
- 4. **Standard Deviation Information –** The Top-Half of the readings gives you the standard deviation for the particular ROI combination.

Band <b>1</b>	EEG.ZAP 2	Delta.ZAP	Theta.ZAP	Alpha.ZAP	Lobeta.ZAP	Beta.ZAP	Hibeta.ZAP
Fp1	0.00172	-2.59377	-2.18979	0.43388	-1.08148	0.34665	1.23122
Fp2	0.00167	-3.01741	-2.01591	0.38389	-1.27885	0.11764	0.89427
F3	0.00176	-2.35727	-1.87109	0.37690	-0.89876	0.06735	1.12638
F4	0.00174	-3.42166	-1.74780	0.18891	-1.10392	0.03836	1.37109
C3	0.00176	-2.06772	-1.22397	0.31630	-0.53204	-0.06372	0.35709
C4	0.00169	-2.03678	-1.66715	-0.20948	-0.94716	-0.32914	0.24982
P3	0.00198	-1.52801	-0.54742	0.50641	-1.09338	-0.20039	0.00040
P4	0.00199	-1.88408	-0.56238	0.53060	-0.97494	0.54025	-0.14230
01	0.00226	-1.42572	0.50617	0.83592	-0.68042	0.68096	-0.48564
02	0.00238	-1.42217	0.92350	1.06979	-0.21992	1.59710	-0.04003
F7	0.00170	-1.65587	-2.40473	0.44257	-0.87997	0.12348	1.27444
F8	0.00160	-2.67483	-1.64348	0.16313	-0.65146	0.52189	1.58234
Т3	0.00144	-1.86646	-1.64962	-0.01829	-1.68206	-0.66015	-0.08749
Т4	0.00146	-3.19708	-1.88442	-0.48486	-0.98276	0.08948	1.02236

### Surface Z-Score Power Section

- 1. **Channel Section –** This section will display the labeling for all of the Channels that have been collected from using the analyze system.
- 2. **Frequency Section –** This section will show the Standard Deviation values for each band. The following Metrics will be on this page
  - a. Absolute Power
  - b. Relative Power

#### Surface Z-Score Connectivities Section

Delta	1	Fp1.ZAA	Fp2.ZAA	F3.ZAA	F4.ZAA	C3.ZAA	C4.ZAA	P3.ZAA
Fp1			2 0.72349	-2.04744	-1.53225	-1.88364	-2.08160	-2.09935
Fp2				-2.31870	-1.84506	-2.08944	-2.25965	-2.29824
F3					1.41772	-0.77407	-1.17071	-1.26669
F4						-1.61168	-2.06608	-1.94137
C3							-0.94545	-1.43280
C4								-0.39955
P3								
P4								
01								
02								
F7								
F8								
Т3								
T4								
T5								
_				i	i	i	i	i

- 1. **Band Section –** This section will display all of the different Standard Deviation for that particular band and Metric.
- 2. **Channel Section –** This section will show all of the channels that are involved in the cross communication metrics of that particular band. The following Metrics will be on this page
  - a. Asymmetry
  - b. Coherence
  - c. Phase

Voxel Number 1	EEG.ZAP	Delta.ZAP	Theta.ZAP	Alpha.ZAP	Lobeta.ZA	Beta.ZAP	Hibeta.ZAI
1	0	<b>2</b> -1.644	-1.246	0.091	0.079	0.35	0.372
2	0	-1.742	-1.4	0.004	0.092	0.321	0.355
3	0	-1.809	-1.502	-0.069	0.113	0.301	0.33
4	0	-1.704	-1.196	0.105	0.077	0.421	0.441
5	0	-1.787	-1.355	0.032	0.098	0.386	0.428
6	0	-1.852	-1.475	-0.049	0.117	0.359	0.401
7	0	-1.791	-1.153	0.115	0.072	0.512	0.535
8	0	-1.865	-1.314	0.051	0.098	0.469	0.518
9	0	-1.959	-1.53	-0.079	0.134	0.403	0.458
10	0	-1.93	-1.271	0.073	0.099	0.573	0.623
11	0	-1.969	-1.406	0.001	0.119	0.525	0.587
12	0	-1.83	-1.176	0.009	-0.094	0.958	1.166
13	0	-1.894	-1.302	-0.039	0.011	0.93	1.121
14	0	-1.956	-1.389	-0.065	0.121	0.902	1.071

### **Voxels Z-Scores**

- 1. Voxel Number This section contains the labeling for all of the Voxels
- 2. **Frequency Section –** This section will show all bands, and their Standard Deviation for that particular voxel

ROI Name 1	Delta.L 2	Theta.L	Alpha.L	Lobeta.L	Beta.L	Hibeta.L	Gamma.L
Frontal Lobe	-1.27	-1.104	-0.113	0.314	0.573	0.566	0.517
Limbic Lobe	-1.222	-0.674	0.068	-0.008	0.694	0.635	0.682
Occipital Lobe	-0.207	0.091	0.055	-0.237	0.576	0.133	0.425
Parietal Lobe	-0.469	-0.239	0.075	-0.11	0.527	0.597	0.993
Sub Lobar	-1.27	-0.845	0.146	0.2	0.519	0.51	0.269
Temporal Lobe	-0.935	-0.574	0.157	0.044	0.399	0.336	0.215
All	-0.312	0.071	0.109	-0.103	0.405	0.113	0.245
Angular Gyrus	-0.278	-0.096	-0.059	-0.166	0.435	0.363	0.594
Anterior Cingulate	-2.131	-1.581	-0.229	0.1	0.631	0.631	0.387
Cingulate Gyrus	-0.833	-0.654	-0.004	0.125	0.622	0.821	1.111
Cuneus	-0.19	0.067	0.005	-0.327	0.582	0.092	0.508
Extra Nuclear	-1.617	-1.411	-0.092	0.169	0.263	0.345	0.093
Fusiform Gyrus	-0.686	-0.179	0.217	-0.076	0.534	0.307	0.297
Inferior Frontal Gyrus	-1.712	-1.513	-0.158	0.272	0.391	0.414	0.117

### **ROI Z-Scores Section**

- 1. ROI Section This section contains the labeling for all of the ROIs
- 2. Frequency Section This section will show all bands, and their Standard Deviations broken down in the following order
  - a. BAND.L Standard Deviation for the Left portion of the ROI
  - b. BAND.R Standard Deviation for the Right portion of the ROI
  - c. BAND.LR Average Standard Deviation for the entire ROI

Channels 1	1	2	3	4	5	6	7
Fp1-Fp2	<b>2</b> 0.59090	0.59253	0.59526	0.59908	0.60398	0.60996	0.61700
Fp1-F3	1.62061	1.61001	1.59294	1.57022	1.54284	1.51191	1.47854
Fp1-F4	0.93744	0.93770	0.93814	0.93875	0.93953	0.94048	0.94158
Fp1-C3	0.02278	0.02361	0.02500	0.02697	0.02957	0.03283	0.03681
Fp1-C4	0.45258	0.45448	0.45765	0.46210	0.46783	0.47486	0.48319
Fp1-P3	0.03706	0.03962	0.04392	0.04999	0.05788	0.06769	0.07947
Fp1-P4	0.34172	0.34548	0.35172	0.36043	0.37155	0.38503	0.40080
Fp1-O1	3.07952	3.03135	2.95507	2.85591	2.74001	2.61351	2.48202
Fp1-O2	1.12887	1.12817	1.12701	1.12540	1.12336	1.12090	1.11804
Fp1-F7	0.15457	0.15688	0.16074	0.16619	0.17328	0.18205	0.19257
Fp1-F8	0.14351	0.14597	0.15009	0.15590	0.16345	0.17277	0.18394
Fp1-T3	0.05378	0.05961	0.06930	0.08281	0.10006	0.12098	0.14544
Fp1-T4	0.10166	0.10186	0.10221	0.10272	0.10339	0.10424	0.10532
Fp1-T5	-0.02312	-0.08808	-0.21886	-0.47172	-1.02781	-2.88551	31.20479

### iCoh Section

- 1. Channels Section This section contains the labeling for all of the Channel Combinations
- 2. **Frequency Section –** This section will show all single hertz frequencies, and their isolated effective coherence (iCoh) value

Channels	1	1	2	3	4	5	6	7
Fp1-Fp2		<b>2</b> 0.29138	0.29640	0.30512	0.31813	0.33642	0.36153	0.39600
Fp1-F3		-0.52679	-0.53795	-0.55734	-0.58628	-0.62694	-0.68280	-0.75949
Fp1-F4		3.02285	3.06792	3.14623	3.26309	3.42726	3.65271	3.96214
Fp1-C3		0.00470	0.00493	0.00532	0.00590	0.00672	0.00785	0.00940
Fp1-C4		0.16678	0.16981	0.17506	0.18290	0.19392	0.20905	0.22982
Fp1-P3		0.00777	0.00841	0.00953	0.01120	0.01355	0.01678	0.02122
Fp1-P4		0.10472	0.10758	0.11256	0.11998	0.13041	0.14474	0.16443
Fp1-O1		-0.29874	-0.30416	-0.31357	-0.32762	-0.34736	-0.37447	-0.41168
Fp1-O2		-1.76714	-1.79406	-1.84084	-1.91065	-2.00873	-2.14343	-2.32831
Fp1-F7		0.03688	0.03792	0.03973	0.04244	0.04623	0.05145	0.05863
Fp1-F8		0.03380	0.03484	0.03664	0.03932	0.04310	0.04828	0.05541
Fp1-T3		0.01147	0.01292	0.01545	0.01922	0.02453	0.03182	0.04184
Fp1-T4		0.02283	0.02312	0.02362	0.02437	0.02544	0.02690	0.02894
Fp1-T5		-0.00456	-0.01650	-0.03725	-0.06824	-0.11181	-0.17169	-0.25395

### **gPDC Section**

- 1. Channels Section This section contains the labeling for all of the Channel Combinations
- 2. **Frequency Section –** This section will show all single hertz frequencies, and their generalized partial directed coherence (gPDC) value

### **Creating an Analyze File**

1. Open the File that you would like to work with.Under the Review Tab, you will annotate based off of the instructions from the EDF Annotation Section.

Fp1-LE	Raw EEG	multiple provide a second and the second of
F3-LE	Raw EEG	man and the second and the second
CI-LE	Raw EEG	man provide the second
P3-LE	Raw EEG	man property the marked and the second and the seco
01-LE	Raw EEG	and a second a
F7-LE	Raw EEG	Mary of the second s
T3-LE	Raw EEG	all and the second and th
TS-LE	Raw EEG	alt Manager and Angeler
F2-LE	Raw EEG	man a more way and the second way and the second way and the second way and the second s
Fp2-LE	Raw EEG	mmble to show the growth to the the show the sho
F4-LE	Raw EEG	may be mare the providence of
C4-LE	Raw EEG	Intelligious and the second second second second second and the second
P4-LE	Raw EEG	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
02-LE	Raw EEG	and the second
F8-LE	Raw EEG	and when the second and the second and and a second a
T4-LE	Raw EEG	
TG-LE	Raw EEG	when a part was attracting to a part of the second of the traction of the trac
C2-LE	Raw EEG	man have been and the second and the
Pz-LE	Raw EEG	
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2. When completed, either Double-Click in the EEG, or Hold down the Left-Click on the mouse, and select a section of data. This will bring up the Panel Options Menu. Navigate to the Analyze Tab, and use this menu to set the Analyze Settings as needed. When completed, click the Run Analysis Button.

Raw EEG	www.homm	Cialog			× man man man
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Raw EEG	mon	From 154 To 2047	C all except sections marked b		mounterman
Raw EEG	mm	What he include in the file:			mmmmmmmm
Raw EEG	mm	P Summary P Scalars		Other options	mmmmmmm
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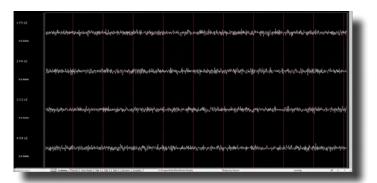
You have now created an Analysis File. You will be able to tell this has been created, based on the Report type that you chose. If Excel/XML or 1Hz bins CSV was chosen, then you will be able to utilize Windows Explorer to navigate to the patients directory and find the created files. If Excel/Live was chosen, then Microsoft Excel will open with the Requested information, for you to save as you would like. If Quick File was chosen, then a Built-in Spreadsheet application will open for you to be able to review the information. *****PLEASE NOTE:** You will not be able to save the information if

you choose Quick File.

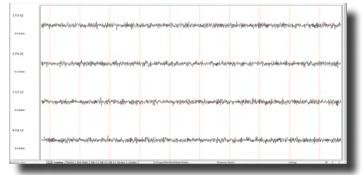
### **Software Themes**

*****PLEASE NOTE:** At this current version of software The Creating custom themes is not fully functioning.

Currently, there are three pre-built Themes to choose from. This can be located on the Training Screen by clicking the Themes Tab, and then choosing the options from the Select built in theme.

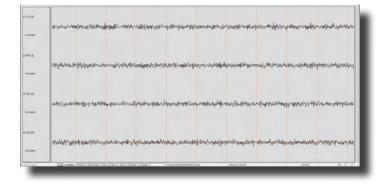


### **Built-In Themes**











### **BMZ Files**

### **BMZ Files**

### **Creating A BMZ from a Study File**

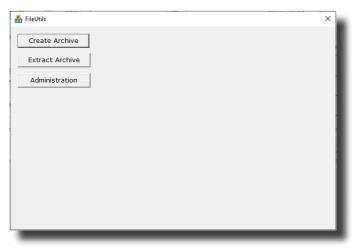
1. From the Setup Screen, click the Folder Selection Button or Folder Tab. This will bring you to the Select Folder Screen. On this screen, click the Archiving setting that makes most sense for what you are accomplishing.



- **a.** Administer Session Genie Choosing this option will open the BMz System to be operated only through the application. This is an Advanced Option not reccomended for users.
- **b.** Push Current/Selected Study to Server and Delete This will create a BMZ file for either the Current Study the Software has open, or a Folder that has been selected in the Folder Selection Interface, and will delete the folder from the Patient Directory.
- **c.** Archive Current/Selected Study This will create a BMZ file for either the Current Study the Software has open, or a Folder that has been selected in the Folder Selection Interface, and walk you through the next steps.
- **d.** Archive Current/Selected Study and Delete This will create a BMZ file for either the Current Study the Software has open, or a Folder that has been selected in the Folder Selection Interface, and will delete the folder from the Patient Directory.

172

2. When the BMZ Application Open, choose Create Archive Button (Selection A only).



3. On the next screen, click the Select Study Button to utilize the File Selection system to select the proper Folder for Archiving. When selected, click the OK button to return to the BMZ App, aclick Create Archive to continue (Selection A only).

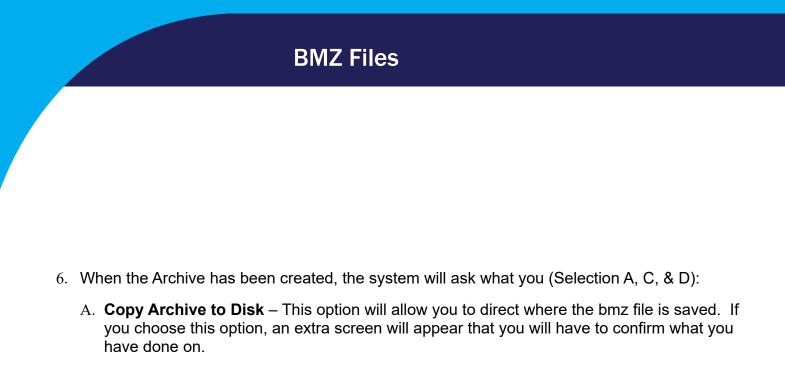
💑 FileUtils	×	Browse for Folder	×
Click on 'Create Archive' to continue or select a different study.	ч.	Hello world	
Study c:\ProgramData\BrainMaster\Studies\Temporary Session*.*	- 81	C: \ProgramData \BrainMaster \Studies \SoundTesting	
		Samantha_PzOz	^
Select Study Create Archive Cancel		SaveRawEEGUnchecked	
		SecondRawEEGTest	
		sLORETA Testing	
		SoundTesting	
Study 'Unknown' is being archived to c:\ProgramData\BrainMaster\archive.	^	Swingle Assessment Test	
		Temp Testing	
		Temporary Session	
		WearableTesting6-18-2020	~
		< >	
	~	OK Cance	

# EMZ Files The BMZ App will then ask to confirm that you have the proper folder for Archiving. Click Continue/Confirm to begin the Archive Process (Selection A, C, & D).

船 FileUtils			×
Click or	י 'Continue/Confirm or '	Cancel'	
Study	c:\ProgramData\Bra	inMaster\Studies\SoundTestin	g*.*
	Select Study	Continue/Confirm	Cancel
Study N You ma	ocedure will write an ar Name: SoundTesting y then copy the archiv il it to a recipient	rchive file for study "SoundTes" re to disk	ting".
			~

5. The Archive system will now begin. Depending on the size of the folder, will be dependent on the length of time this will take. The system will continue when the Archive is complete.

🍰 FileUtils	$\times$
Click on 'Continue/Confirm or 'Cancel'	_
Study c:\ProgramData\BrainMaster\Studies\SoundTesting*.*	1
Select Study Continue/Confirm Cancel	
Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\f0100102.e20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\f0200102.e20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0100102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0100102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0100102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0200102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0200102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\k0200102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\v0200102.k20 to c:\Program Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\substitings to c:\ProgramData Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\settings.c67.bdb2 to c:\Pro Adding c:\ProgramData\BrainMaster\Studies\SoundTesting\settings.bdb2 to c:\Program	



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:	11
Name:	Robert Milicia	
Email:	robm@brainm.com	I
		-

- 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 specified location, it will simply create the BMZ File at C:\ProgramData\BrainMaster\archive
- 7. After you have made your selection, it will now finalize the Archive process. Depending on the size of the folder, will be dependent on the lenght of time this will take. The system will continue when the Archive is complete

FileUtils	$\times$
Click on Exit	
Study C:\ProgramData\BrainMaster\Studies\SoundTesting*.*	
Exit	
Study SoundTesting was saved to the server	~
	~
	_

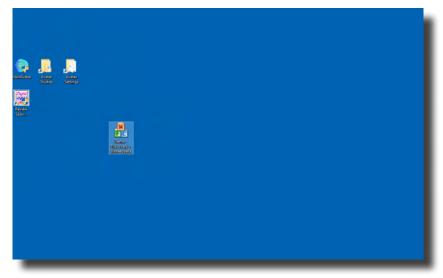


You now have a BMZ file created. You will be able to tell this is complete by seeing the achive of the folder in c:\ProgramData\BrainMaster\archive. Or, if you directed to another location, you will be able to find this file in this location.

Home Share View		to • folder	ess * Properties 🕌 Edi	t Select n tory invert se	one election		
Clipboard → → ↑ 🚺 → This PC → Lo	cal Disk (C:) >	Organize New ProgramData > BrainMaster > archive	Open	Selec			
		Name	Date modified	Туре			
Quick access		A Jomz	4/7/2020 4:47 PM	BMZ File	1 KB		
Desktop	*	AChannel Synchrony_revised	12/24/2019 11:18 AM	BMZ File	61 KB		
Downloads		A 683C ZScore.01	3/31/2020 6:24 PM	BMZ File	165,478 KB		
Bocuments		A 683C ZScore.02	4/1/2020 9:57 AM	BMZ File	165,478 KB		
Pictures		A 683C ZScore.03	4/3/2020 4:24 PM	BMZ File	16,930 KB		
Archive		A 683C ZScore	3/31/2020 6:21 PM	BMZ File	165,478 KB		
BMZ Files		A Demo - Discovery + Biofeedback.01	4/7/2020 4:25 PM	BMZ File	1,747 KB		
Discovery Hi Resolution		🐣 Demo - Discovery + Biofeedback	4/7/2020 4:21 PM	BMZ File	1,747 KB		
Trainee Screens		A GreDuz_Sharp_C	4/7/2020 8:51 AM	BMZ File	52,192 KB		
		📇 Kaitlyn C3 C4 Theta down and Low Beta		BMZ File	33,053 KB		
Creative Cloud Files		🚔 Kaitlyn C3 C4 Theta down and Low Beta		BMZ File	33,053 KB		
Dropbox		🚔 Kaitlyn C3 C4 Theta down and Low Beta		BMZ File	33,053 KB		
		A Kaitlyn C3 C4 Theta down and Low Beta up		BMZ File	22,675 KB		
OneDrive		🚔 Mini-Q Testing	3/31/2020 6:19 PM	BMZ File	608 KB		
This PC		MiRo10782-DOM.01	4/1/2020 10:03 AM	BMZ File	21 KB		
all 3D Objects		MiRo 10782-DOM.02	4/1/2020 10:03 AM	BMZ File	21 KB		
		A MiRo 10782-DOM	4/1/2020 10:02 AM	BMZ File	21 KB		
Desktop		A NeuroFieldDemo	4/7/2020 4:55 PM	BMZ File	3,721 KB		
Documents		Samantha_PzOz	8/6/2020 2:57 PM	BMZ File	168 KB		
🕹 Downloads		🟯 SoundTesting	8/28/2020 3:31 PM	BMZ File	25,397 KB		
Music							
Pictures							
Videos							
Local Disk (C)							

#### Import Received/Downloaded BMZ Files

 There are multiple ways that you might receive a BMZ file, which can be, but are not limited to Email, Removable Media, or Cloud Storage System. You will need to utilize the Windows Operating System to place the BMZ onto your PC, then Double-click the file to begin the Session Librarian System.



2. The following message will pop up and ask what you would like to do. Click the extract button to continue.

Ready to copy the archive and extract files. Select 'Extract' to continue.         Study       Demo - Discovery + Biofeedback
Study Demo - Discovery + Biofeedback
Change Extract Cancel
^
Archive 'C:\Users\rmilicia\Desktop\Demo - Discovery + Biofeedback.bmz' is being expar

3. If you have a Study folder, with the exact name, then you will have click Overwrite to overwrite the existing folder. Click the Overwrite Button to continue

船 FileUtils				×
Overwrit	e existing study?			-
, Study	Demo - Discovery -	+ Biofeedback		-
	Change	Overwrite	Cancel	
allready Demo with the	<ul> <li>Discovery + Biofee</li> <li>exists. Do you want</li> <li>Discovery + Biofee</li> <li>contents of</li> </ul>	to overwrite the archive:	k.bmz ?	~
				~

4. The system will go through its process of extracting to the required location. When it is completed, click the Exit Button to continue.

FileUtils	×
Extraction completed. Click on 'Exit'.	
Study Demo - Discovery + Biofeedback	
Exit	Cancel
Extracting File C:\ProgramData\BrainMaster\Studies\Demo  Extracting File C:\ProgramData\BrainMaster\Studies\Demo	
Extracting File C:\ProgramData\BrainMaster\Studies\Demo	
Extracting File C:\ProgramData\BrainMaster\Studies\Demo	- Discovery + Biofeedback\:
Extracting File C:\ProgramData\BrainMaster\Studies\Demo	
Extracting File C:\ProgramData\BrainMaster\Studies\Demo	- Discovery + Biofeedback/: V

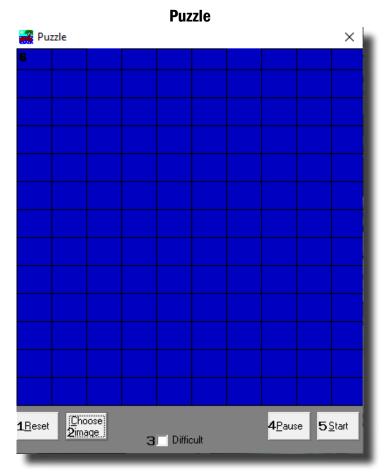
The folder is now expanded for use in your studies folder. You can access this folder by clicking Folder Selection Button on the BrainMaster Setup/Home Screen.

Study Name	Birth Date	Sess	Max	Comment	Technician	Physician	Trainee Name	Created	Modified ^
								2019-10-15	2020-10-:
071082RoMiAlert	1982-10-7	1	40	Focus SMR Up			071082RoMiAlert	2020-8-26	2020-10-:
3.4.1-Discovery	2001-1-1	1	40	Alert - Beta Up			3.4.1-Discovery	2020-10-2	2020-10-:
583C ZScore	2009-12-23	8	80	4ch Z-Score PZ			683C ZScore	2020-2-3	2019-11-:
CoherenceThings	1982-10-7		40	Discovery Test			CoherenceThings	2020-4-22	2020-4-2:
Demo - DirectionalCoherenc		1	80	no comment su			DirectionalCoherenceDemo	2020-6-24	2020-6-24
Demo - Discovery + Biofeed	1982-10-7	6	40	Discovery Test	EEG tech		Demo - Discovery + Biofeed	2019-11-5	2020-1-14
DiscoveryTemp							DiscoveryTemp	2019-10-29	2019-10-:
Event Wizard Testing	1982-10-7	1	40	Discovery Test			Event Wizard Testing	2020-7-8	2020-11-:
GreDuz_Sharp_C	2001-1-1	25	40	Boadband Squ			GreDuz_Sharp_Cz	2020-4-7	2020-4-2:
EG-NIR for Atlantis 4.0	2001-1-1		80	Standard Test			HEG-NIR for Atlantis 4.0	2020-8-3	2020-8-3
IR-PPG	1982-10-7	2	80	no comment su	EEG tech		HR-PPG	2019-11-5	2019-12-9
(aitlyn C3 C4 Theta down a		33					Kaitlyn C3 C4 Theta down a		2020-4-6
4appedDriveTest	2001-1-1		80	no comment su			MappedDriveTest	2020-10-26	2020-10-:
4iRo10782-BUp	2001-1-1	1	40	1-4ch Amplitud			MiRo10782-BUp	2020-1-28	2020-1-28
4iRo10782-DOM	1982-10-7		40	PhoticStim - Sh			MiRo10782-DOM	2020-1-23	2020-1-2:
IoreBReviewTesting	1982-10-7	2	40	Peak alpha coh	EEG tech		MoreBReviewTesting	2020-5-19	2020-7-2
NeuroFieldDemo	1982-10-7	1	40	Discovery Test	EEG tech		NeuroFieldDemo	2020-4-3	2020-4-7 🗸
									>
dv Name (Trainee ID):				Trainee Name:					
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-				Evenc wizdru res	sung			Create Ne	ew Folder
nment:									
covery Test Pause and Unpau	ise			Sessions Used:	1			Folder	Notes
				Max Sessions:	40				
ssion Librarian				Max bebbionb.	40			Edit Fold	ler Info.
Administer Session Genie	Push Cu			erver Arch	nive Current Stu	dv Arch	nive Current Study and Delete	Select A	nd Run
		and De	lete			-,			
ed in, device type Unknown							Jse Settings and Close	Use These !	Settings
co in actice type onknown							the entropy and oropo		

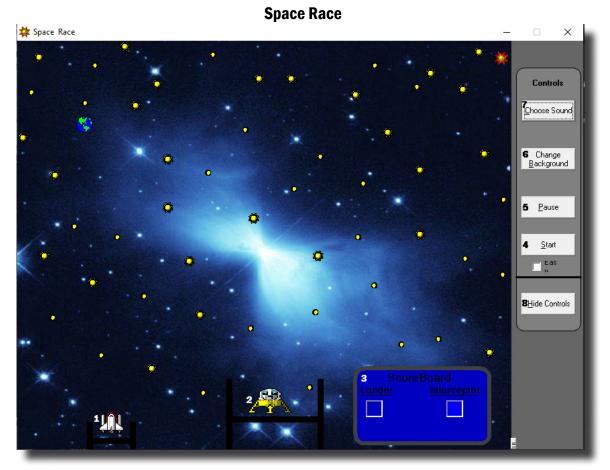
17

#### **BMr Extras**

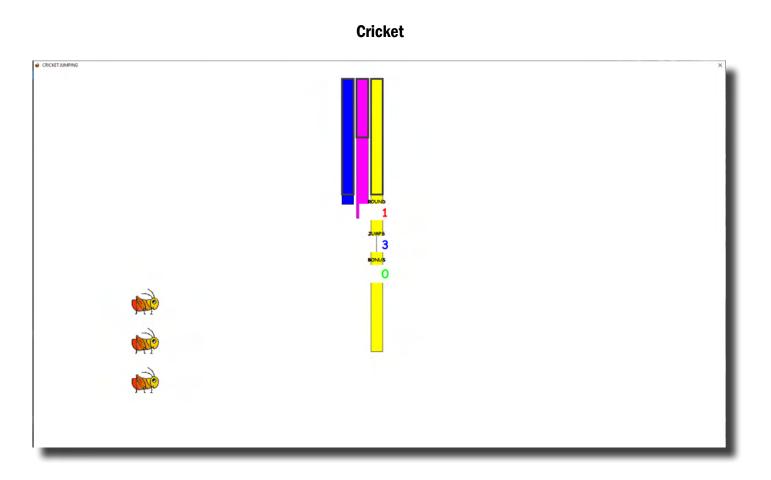
#### **BMr Contributed Games**



- 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 Brain-Master software.



- 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.
- 6. **Change Background Button –** Click to choose between several background images for the screen. This can also be performed by clicking Alt + B.
- 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 + "=".



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.

18

#### **Bug Run**

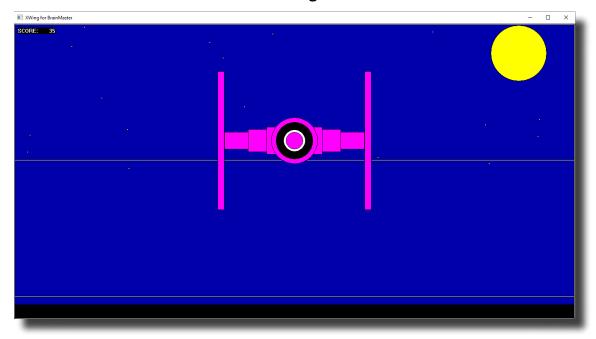
Bug Run (Version 1	5)		_		- 0	×
FINISH LINE	FINISH LINE FI	IISH LINE				
Ň	*	1) A		¥		
		, (		8		
	Bug Run (Version 11	Bug Run (Version 1b)         Rouse Level         Rouse Level				

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**

#### X-Wing

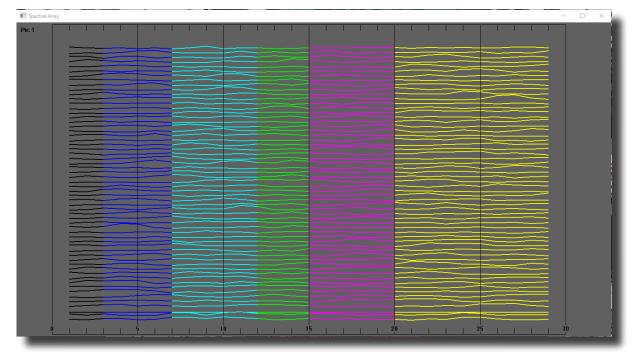


#### Display Type: Game

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.

#### **2D Spectral**



#### **Display Type:** Display

**Requirements:** Basic amplitude training

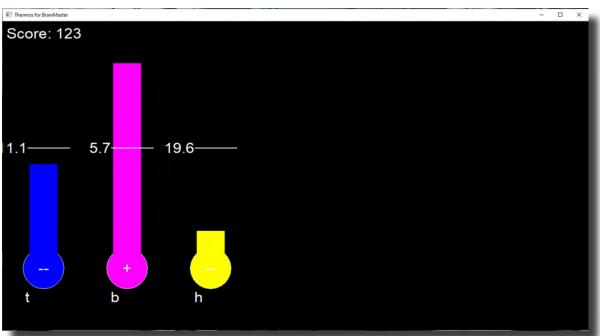
**Brief Description:** This provides a cascade of past FFT spectra, covering the previous 1 minute of activity. Each frequency band is colored according to the frequency ranges selected. This coloring is the same as used on the FFT and the BrainMirror displays. There are tic marks and the labels to identify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

Ν	lumb	ers		
■ N	_		×	
N	CHAN1 /ICRO /OLTS		RATIO	
USER:				
GAMMA:				
HIBETA:	13.3			
BETA:	8.9			
LOBETA:				
ALPHA:				
THETA:				
DELTA:				
Hide Ratios	;			

#### **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.

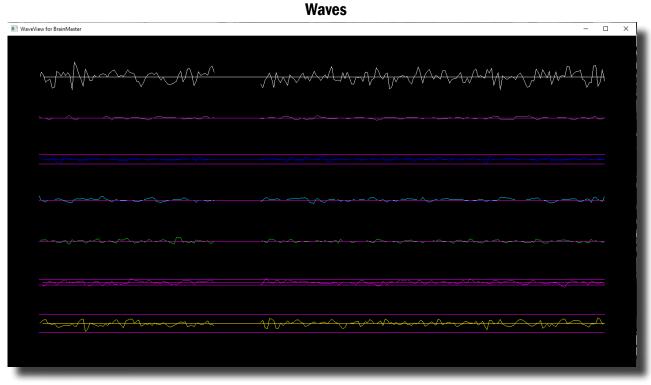


#### Thermos

#### **Display Type:** Display

Requirements: Basic amplitude training

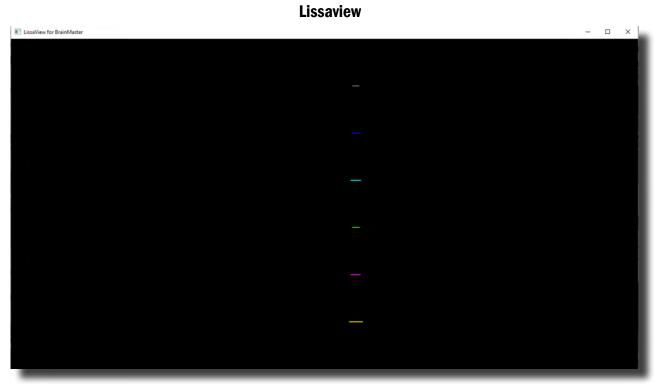
**Brief Description:** This window shows each of the major EEG component intensities as a bar graph with real-time response. "GO" components show a "+" in the bottom of the thermometer. "STOP" components show a "-" in the bottom of the thermometer. Un-trained components will not be shown in this screen.



#### Display 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.

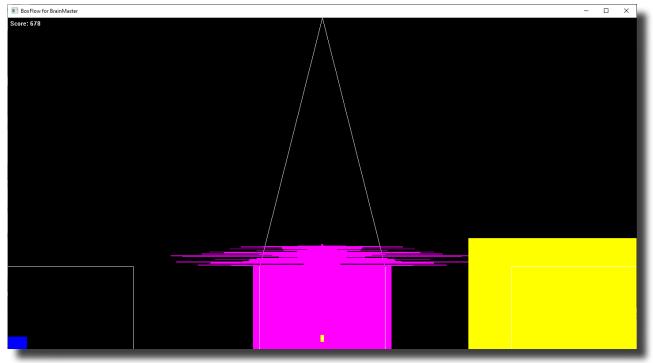


Display Type: Display Requirements: Pasia amplitude

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 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.

#### MiniBMirror

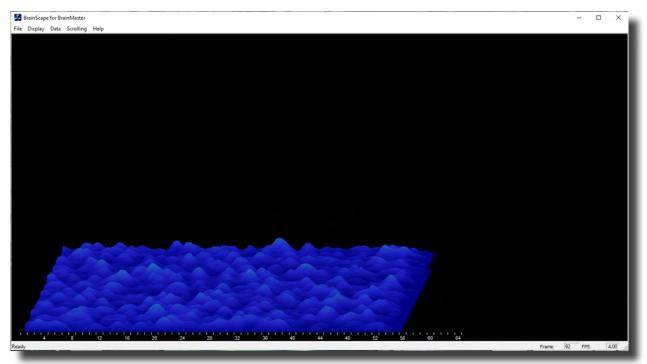


Display Type: Display

**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.

#### **BrainScape**

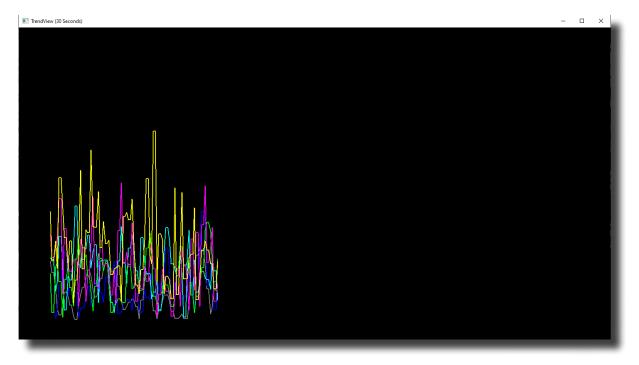


Display Type: Display

**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.

#### **TrendView**



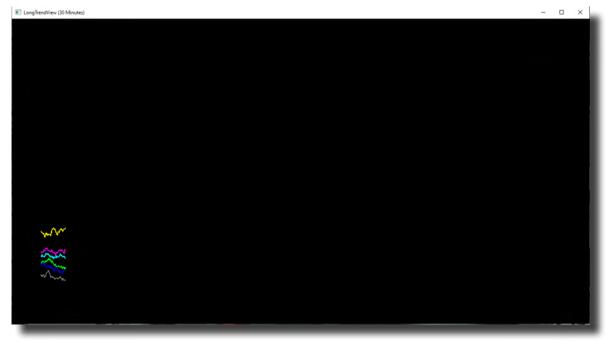
Display Type: Display

**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.

19

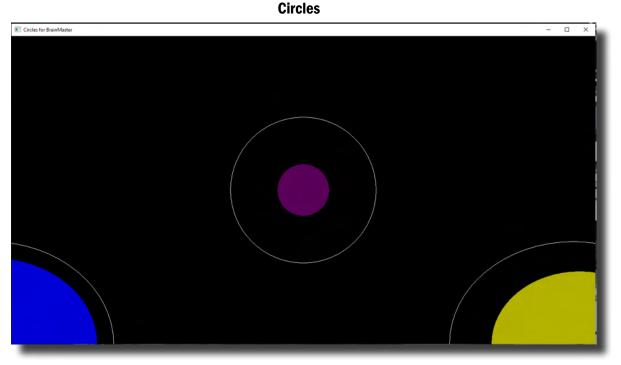




#### Display Type: Display

**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 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

19

#### **BMr Flash Player**

#### **BMr Flash Player Control Menu Display**

FlashPlayer for BrainMaster			– 🗆 ×
File Edit View Help			
1Game:	2 Protocol Type: 3 Game Type: Standard BMr ▼ BrainMaster		
	Standard BMr 💌 BrainMaster	<u> </u>	
Tro	phies Earned:	Fish in Tank:	Score:
Ready			5 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.

- 1. Game Drop-Down Box Drop-down box where you can choose the game that you would like the Flash Player to use.
- 2. **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**

1. 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.

🗈 Braindeatar			- 0 X
Tile 🕷 Brainkvatar Setup			×
Main Login   Folder   Settings   Global Settings			arrent Montage 🕘 🗾
Welcome to BrainMaster BrainAvatar	LOGIN OK: SN: 4482 UNLIMITED USE		
Trainee ID: Event Wizard Testing	Login		
Trainee Event Wizard Testing Name:	Folder Selections		
Comment: Alert - Beta Up Theta Hibeta Down	Run The Next Session		
Next Session Number: Total Sessions Available: 3 40	View or Change Settings		
Training screen is Not Running	ED# Browser		
Exit Product Manuals	Review Session Results		
Logged In, device type Unknown		Use Settings and Olise Use Thesis Settings	0         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10           0         10         10         10         10         10           0         10         10         10         10         10         10           0         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10
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2. After you start the Session by clicking GO, click the "Window" Button.

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				Cotup	19:52	001	7 uV	▼ 10	seconds -
Go Stop Window Client Setup 19:52 001 7 uV • 10 second									
24-CHANNEL	EEG								BRAIN
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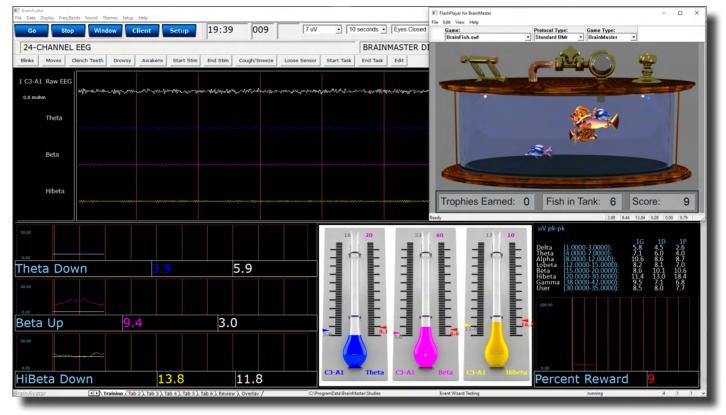
3. In the Window Launcher Menu, click the "Flash Player" Button, located in the BMr Macromedia Section.

Window Launcher			×
Popups		BMr Multimedia BMr Macromedia	
X-Wing	BoxFlow	MultiMedia Player Flash Player	
Dimmer	Mini BMirr	DVD Player Additional Softwa	are —
2D Spectral	BrainScape	Audio/Video Interfaces EEG Synthesi	zer
Numbers	TrendView	AVI Extensions Zukor Launch	ier
Thermos	LongTrend		
Waves	Circles	Contributed Games	
LissaView	ReturnMap	George Martin's Puzzle Space	e
		Jim Zdunek's Cricket BugRu	In
		Cancel OK	
_			

4. If you are choosing to utilize a BioPLAY FlashPlayer Game, change the Game Type to "BioPLAY"

🔳 FI	lashPlayer for BrainMaster		
File	Edit View Help		
	Game:	Protocol Type:	Game Type:
	Balloons.swf	<ul> <li>Standard BMr</li> </ul>	BIOPlay 🔹

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 (Adventure Games)**



- 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 topleft 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

#### BrainCats 2 (Racing Games)



**Opening Screen** 

- 1. Select Cat Section Section where you select the cat who will run according to the user feedback.
- 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.



Race Screen

- 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.
- 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

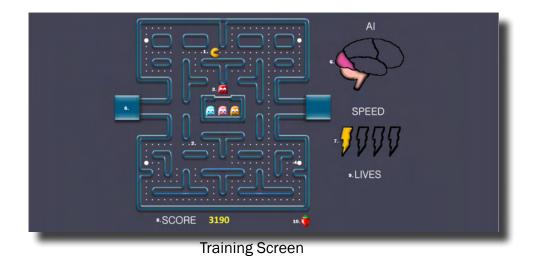


#### **BrainMan 2 (Arcade Games)**



Title Screen

- 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.



- 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, BrainMan 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. **AI Level –** The AI 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 Al 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, Board Game

204

#### **BrainFish (Collecting Games)**

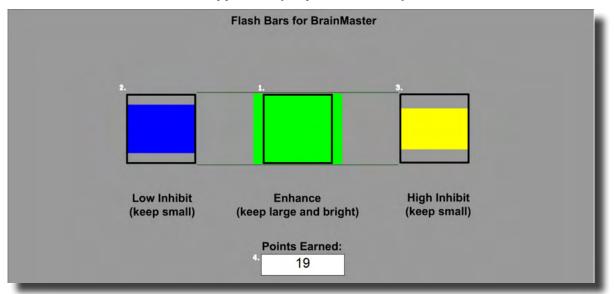


- BrianFish The BrainFish are created when the trainee meets the training criteria continuously for a certain period of time(approx.. ¹/₂ second). The fish are moving quickly when the criteria are met, and slow down otherwise. The number of fish reflects the success in keeping in state over a period of time. 25 fish create a trophy fish, and all fish disappear and the client begins to build a trophy fish again.
- 2. Trophy Counter This box counts the amount of Solar Systems that have been created.
- 3. Fish Counter Counter This box counts the amount of Planets that have been created.
- 4. **Score Counter -** This box counts the total Score that has been calculated by the system. This will work if you have Points set up.
- 5. **Trophys** This is where Trophys will appear after they have been collected. They will be a random color.

Similar Games - BrainPlanets, BrainPlanet1lite, BrainPlanets2, BrainPlanets2lite, BrainCell, NeuroPet



#### **App Boxes (Amplitude Games)**



- 1. **Enhance Box –** Shows a box that represents the enhance band. This will increase and decrease in size horizontally, depending on your enhancement training.
- 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.
- 4. **Points Earned Box –** Box that displays the current amount of points that the client has earned during their training.

*****Please Note:** This game is designed for use with Standard Amplitude Protocols only. If this is used with any other protocols, additional development is required via the Event Wizard.

#### **Meditation Master (Growth Games)**



**Title Screen** 

- 1. Start Button Click to proceed to the Character Selection Menu
- 2. Instruction Button Click to see very basic instructions that are beneficial for the clinician or Player



Character Select Screen

- 1. **Character Selection Menu –** Click on the Picture of the Meditator that you would like to utilize. Each Meditator has their own unique background and effects
- 2. Back Button Click to return to the Title Screen



**Training Screen** 

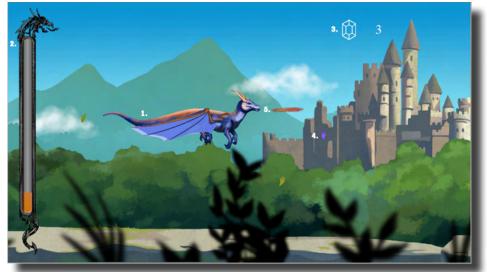
- 1. **Meditator –** As Training is successful, the Meditator will levitate themselves. As Training success is held, the Meditator will continue to levitate until they reach the top of the screen and will have a special animation.
- 2. **Progress Bar –** The progress bar has multiple Levels that can be reached. Each level they pass, the icons will grow, and cause a special animation in the background
- 3. **Score Section -** This is where you can see the clients total score. The score is not tied to the Brain-Master Point system and is its own system.
- 4. Level Animation When the client passes a level. The Level Animation will occur in the background of the level
- 5. **Background Effect** As the client is successfully meeting training, a special background image will pass through the level

#### NeuroFlight (Side Scrolling Games)



Title Screen

- 1. **Start Button –** Click on the Picture of the level that you would like to play. Each level has their own unique Flying Creature, background, and effects
- 2. Info Button Click to see very basic instructions that are beneficial for the clinician or Player



Training Screen

- 1. **Flying Creature** As Training is successful, the Flying Creature will increase their elevation. As Training success is held, the Flying Creature will continue to elevate until they reach the middle of the screen and begin to perform a Special Animation
- 2. **Progress Bar –** The progress bar fills to the top. As they progress, the Flying Creature Evolves.
- 3. **Score Section -** This is where you can see the total amount of Crystals collected, as well as the progress of new crystals and any special rewards.
- 4. **Crystal Animation -** When the client puts together a crystal. The Crystal Animation will occur in front of the Flying Creature.
- 5. **Special Animation Effect -** As the client is successfully meeting training, a special animation is added to the Flying Creature

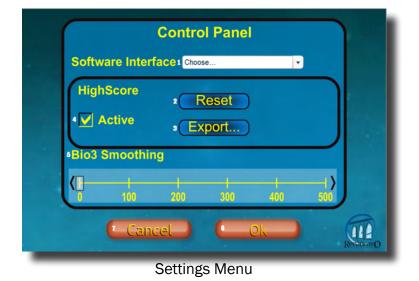
#### **Fission Balls (Interactive Games)**



**Title Screen** 

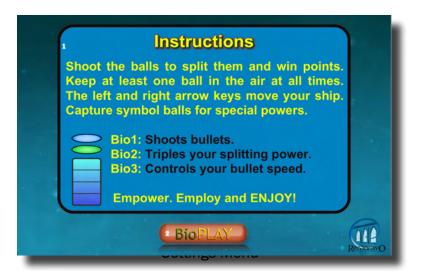
*****Please Note:** All Interactive Games Require interaction from the user. Either the mouse or the Keyboard. So, if this will not be possible during the session, please do not use these games

- 1. **BioPLAY (Start Button)** Click on the button go launch the Settings menu to assure settings for use.
- 2. High Score Button Click to see the high scores of all prior players on the current PC.
- 3. Settings Button Click on this button to change settings without beginning a new game.



*****Please Note:** All Interactive Games Require interaction from the user. Either the mouse or the Keyboard. So, if this will not be possible during the session, please do not use these games

- 1. **Software Interface** Set selection to BrainMaster 3.0. This works with all versions of BrainMaster Software
- 2. High Score Reset Button Click to delete all High Scores
- 3. High Score Export.. Button Click to export all previously recorded High Scores
- 4. Active Check Box Click on if you would like High Scores to be tracked, and un-click if you do not want high scores tracked
- 5. **Bio3 Smoothing** Bio3 is a Proportional Control. By adjusting the Smoothing, you can control the speed at which that the data comes in.
- 6. **OK Button** Click on to move to the Instruction Menu, or the Title Screen, if the Settings Button was clicked
- 7. Cancel Button Click on to cancel any selections made and return to the Title Screen.



*****Please Note:** All Interactive Games Require interaction from the user. Either the mouse or the Keyboard. So, if this will not be possible during the session, please do not use these games

- 1. Software Interface Basic instructions for the client.
- 2. BioPLAY Button Click to begin the Training



*****Please Note:** All Interactive Games Require interaction from the user. Either the mouse or the Keyboard. So, if this will not be possible during the session, please do not use these games

- 1. Ship The Ship that you pilot to destroy the Balls
- 2. **Fission Balls** As they blow up, they split and continue to fall. The game is over when they all fall below the ship
- 3. Bio Control Menu Shows the current output for the ship
- 4. Score Shows the current score for their current session
- 5. **Protocol Type** This needs to be set properly for proper output. If a Z-Score this must be set to LZT LiveZScore.
- 6. Sound Output To turn on or off Sound output from the game
- 7. ? Button Click to open the Instructions Menu

**Similar Games –** Bubble Bug, Crazy Taxi, GhostMan Advanced, Gold Fishing, Hare and Tortoise, Protect Mission, Slingshot Challenge, Space Invaders, Spaceship, Wizard Balls



### BMrMultiMediaPlayer Suite

BMrMultiMedia (BMrMMP) Player Control Menu Display

船 Multimedia Control for BrainMaster	$\times$
1 Animation C:\Users\rmilicia\Videos\Test.avi	
<ul> <li>Note</li> <li>Play continously while above threshold</li> <li>Show a frame for each point. Set Refractory Period to</li> <li>Modulate Contrast</li> <li>Modulate Zoom</li> </ul>	
2 Music	
O None Modulate Sound	
File     C:\WFplayer\CoolFunky.mid	
O CD Play track 1 ★ through track 1 ★	
3 Resolution 4 Window Mode 5 CPU Usage Control	
○ 640x480     ● Windowed       ● 800x600     ○ Full Screen       ○ 1024x768     ●	
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 Acceptable Audio Files: MP3, WAV

### Using BMrMMP

1. 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.

BrainAvatar Setup		×
Main Login Folder Settings Global Settings		
Welcome to BrainMaster BrainAvatar	LOGIN OK: SN: 30989 UNLIMITED USE	
Trainee ID: Temporary Session	Login	
Trainee Name:	Folder Selections	
Comment: Sharp squash training	Run The Next Session	
Next Session Number: Total Sessions Available:	View or Change Settings	
Training screen is Not Running	EDF Browser	
Exit Product Manuals	Review Session Results	
Logged in, device type Atlantis	Use Settings and Close	Use These Settings

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

RE Beschuter File Data Daphy Feiglands Sound Therees Setup Holp	- 0 ×
Co Stop Window Client Setup 19:40 096 7 W • 10 seconds • Eyes Closed • Current Mon	n 🗉 🌄 🔚
24-CHANNEL EEG Timer 003.16 ms average 006.1	3 ms gap 024.95 usage 19.71 %%
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Lobeta	
2 C2-LE Raw EEG	
2 C2-LE NAW EEG 0.5 kales	
Lobita	
13A H2	
	uV pk-pk
	Delta (1.0000-3.0000): 84 9.9 47
	Detta (1.0000-3.00000): 84 9.9 47 Theta (4.0000-12.0000): 92.9 13 72 Alpha (8.0000-12.0000): 22.2 11 3 72 Loberta (12.0000-15.0000):102.2 9.6 6.4
II BrainAvatar	Beta Hibeta Gamma 8, 0000-10, 0000 20, 7, 18, 6, 19, 3 Gamma 8, 0000-10, 0000 20, 7, 18, 6, 19, 3
File Data Display Freq.Bands Sound Themes Setup Help	User (4.0000-20.0000): 24.2 23.4 31.4
	100.00
Go Stop Window Client Setup 19:29	
24-CHANNEL EEG	
	Percent Reward 33
Blinks Moves Clench Teeth Drowsy Awakens Start Stim End Stim	

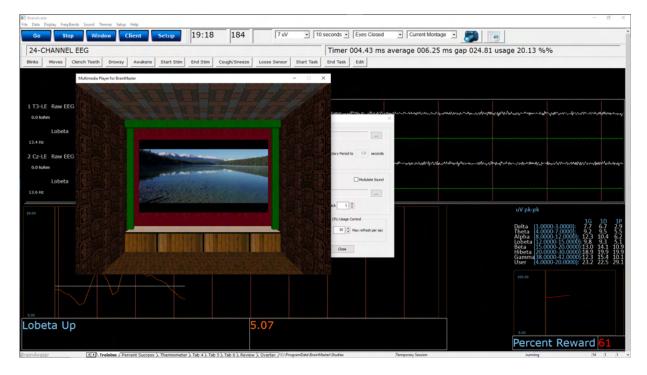
3. In the Window Launcher Menu, click the "MultiMedia Player" Button, located in the BMr Multimedia Section.

Window Launcher			×	
Popups		BMr Multimedia	BMr Macromedia	
X-Wing	BoxFlow	MultiMedia Player	Flash Player	
Dimmer	Mini BMirr	DVD Player	Additional Software	
2D Spectral	BrainScape		EEG Synthesizer	
Numbers	TrendView	AVI Extensions Zukor Launcher		
Thermos	LongTrend			
Waves	Circles	Contributed Games George Martin's	Puzzle Space	
LissaView	ReturnMap	Jim Zdunek's Cricket BugRun		
		Cancel	ОК	

4. 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.

Animatio		ol for BrainMaster		
Animauo		nilicia (Videos \Test.av	i	
O Shov	continously v	while above threshol each point. Set Re st		seconds
Music			_	
	2		Modula	te Sound
File	C: WFplaye	r\CoolFunky.mp3		
	Play track	1 🔺 through	h track 1	
Resol	ution	Window Mode	CPU Usage Control	
8	40x480 00x600 024x768	Windowed     Full Screen	50 Max refres	n 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.



#### **BMrDVD Control Menu Display**

1 + + II ▶ ■ > > ² = ³ 4 + ⁵ + ⁶ +
7 Title: 0       Chapter: 0       Modulate Video       Volume       Brightness         Duration: 00:00:00       Modulate Audio       Pause/Unpause       0000         11       0000       0000       0000

- 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 (Unsupported Feature).
- 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.

22(

#### **Using BMrDVD**

1. 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.

Main     Login     Folder     Settings       Welcome to BrainMaster BrainAvatar     LOGIN OK: SN: 30989 UNLIMITED USE	
UNLIMITED USE	
Current Trainee/Study Folder:	
Trainee ID: Temporary Session Login	
Trainee Folder Selections	
Comment: Sharp squash training Run The Next Session	
Next Session Number: Total Sessions Available: View or Change Settings	
Training screen is Not Running EDF Browser	
Exit Product Manuals Review Session Results	
Logged in, device type Atlantis Use Settings and Close Use These Settings	

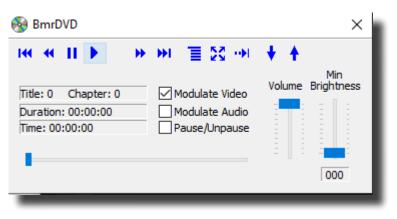
2. After you start the Session, click the "Window" Button.

El Branchadar File Data Daglioy, Fesqillandi, Sound, Themes Setup, Help	- 0
Go Stop Window Client Setup 19:40 096 7 eV • 10 seconds • Eyes Gosed • Current Montage	E 🦉 🔚
24-CHANNEL EEG Timer 003.16 ms average 006.13 ms	s gap 024.95 usage 19.71 %%
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inAvatar	Beta 15 0000-20 0000 135 136 9 Hibeta 20 0000 10 000 20 7 18.6 19 Gamma 88 0000-42 0000 13.0 115 7
Data Display Freq.Bands Sound Themes Setup Help	User (4.0000-20.0000): 24.2 23.4 31
Go Stop Window Client Setup 19:29	
4-CHANNEL EEG	
due   Marine   Charak Tarakk   Darman   Analysis   Chark Chin   Fad Chin	Percent Reward 33
hks Moves Clench Teeth Drowsy Awakens Start Stim End Stim	

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

Window Launcher				×	
Popups		BMr Multimedia	BMr Ma	acromedia	
X-Wing	BoxFlow	MultiMedia Player	FI	ash Player	
Dimmer	Mini BMirr	DVD Player	DVD Player Additional Software		
2D Spectral	BrainScape	Audio/Video Interfa	ces EEG	Synthesizer	
Numbers	TrendView	AVI Extensions	AVI Extensions Zukor L		
Thermos	LongTrend				
Waves	Circles	Contributed Games George Martin's	Puzzle	Space	
LissaView	ReturnMap			BugRun	
		Cancel		ОК	

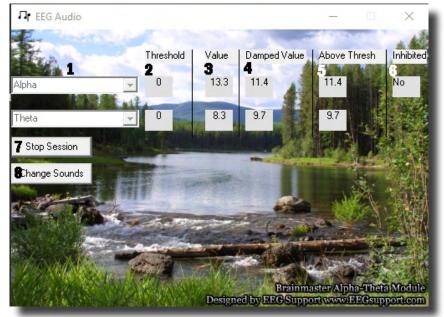
4. Click the "Play" Button or the "Restore Playback" Button to continue.



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.



22



#### **EEGAudio Control Menu Display**

- 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**

1. 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.

📧 BrainAvatar S	ietup				×
Main Login	Folder	Settings Global Settings			
Welcome to		ter BrainAvatar	LOGIN OK: SN: 30989 UNLIMITED USE		
Trainee ID:			Login		
Trainee Name:			Folder Selections		
Comment:	Sharp squ	uash training	Run The Next Session		
Next Session	n Number: 13	Total Sessions Available: 40	View or Change Settings		
Training scre	een is	Not Running	EDF Browser		
Exit		Product Manuals	Review Session Results		
Logged in, de	vice type	Atlantis		Use Settings and Close	These Settings

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

R3 BrainAvatar File Data Dispilay Freq.Bands	Sound Themes Setup Help					- 0
Go Step	Window Client Setup	19:40 096	7 eV • 10	seconds • Eyes Closed	Current Montage	
24-CHANNEL EE	G			Timer 003.16 ms av	erage 006.13 ms gap 024.	95 usage 19.71 %%
Binks Moves Clenc	th Teeth Drowsy Awakens Start S	tim End Stim Cough/Sneeze	Loose Sensor Start Task	End Task Edit		
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						Alaba /8 0000.12 0000-12 2 11 3
ainAvatar						Lobera 12,000 15,000 10,5 36 Braa 15,000 10,000 13,5 13,6 Hibeta (0,000 10,000 20,7 18,6 1 Gamma 8,000 -2,000 13,0 11,5 User 4,000 20,000 24,000 13,0 11,5
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			- []			
24-CHANNEL EE	-C					
						6.00
links Moves Clenc	ch Teeth Drowsy	Awakens 5	Start Stim En	d Stim		Percent Reward 33
		·			Temporary Session	funning (1)

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

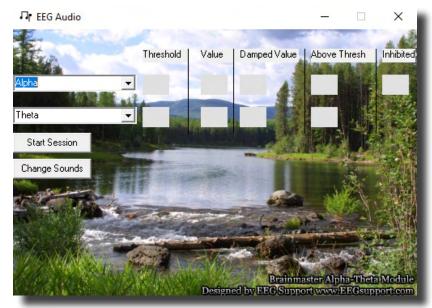
Window Launcher			×	
Popups		BMr Multimedia BMr Macromedia		
X-Wing	BoxFlow	MultiMedia Player Flash Player		
Dimmer	Mini BMirr	DVD Player Additional Software		
2D Spectral	BrainScape	Audio/Video Interfaces EEG Synthesizer		
Numbers	TrendView	AVI Extensions Zukor Launcher		
Thermos	LongTrend			
Waves	Circles	Contributed Games		
LissaView	ReturnMap			
		Jim Zdunek's Cricket BugRun		
		Cancel OK		

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

📕 🛛 🛃 🚽	Manage	Manage	extraavi			
File Home Share View	Shortcut Tools	Application Tools				
Pin to Quick Copy Paste access Clipboard	tcut to → to		New item *	Properties Open Open	Select none	
$\leftarrow$ $\rightarrow$ " $\uparrow$ $\square$ > This PC > Loca	I Disk (C:) → brain	m.20 → extraavi				
★ Quick access ■ Desktop	^ Nar	ne ^			Type Shortcut	iize 1 KB
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Pictures 08 August 09 September	1					
BMrMMP Non-Complaints						
🥃 Creative Cloud Files						
OneDrive						
This PC						
💻 Desktop 🗃 Documents 븆 Downloads						
Music						



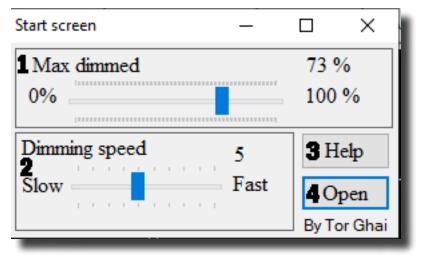
5. Setup the sounds and bands as you would like them. When the set-up is complete, click the Start Session Button.



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.

22

#### **Dimmer Control Menu**



- 1. Maxed Dimmed Section Section where you can set the percentage that the Dimmer Window will dim.
- 2. **Dimming Speed Section –** Section where you can set the speed that the Dimmer Window will dim.
- 3. Help Button Opens simple Help instructions for the Dimmer.
- 4. **Open Button –** Click to open the Dimmer Window.

#### **Using Dimmer**

1. 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.

BrainAvatar Setup			×
Main Login Folder Settings Global Settings			
Welcome to BrainMaster BrainAvatar	LOGIN OK: SN: 30989 UNLIMITED USE		
Trainee ID: Temporary Session	Login		
Trainee Name:	Folder Selections		
Comment: Sharp squash training	Run The Next Session		
Next Session Number: Total Sessions Available:	View or Change Settings		
Training screen is Not Running	EDF Browser		
Exit Product Manuals	Review Session Results		
Logged in, device type Atlantis		Use Settings and Close	e These Settings

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

F

Stop     Window     Client     Setup     19:29       CHANNEL EEG       Moves     Clench Teeth     Drowsy     Awakens     Start Stim     End Stim	HT Descluster The Deta Display FreqUents Sound Themes Setup Help	- 0
ibest       there       there <td< th=""><th>Go Stop Window Client Setup 19:40 096 7 W • 10 seconds • Eyes Closed • Current Montage</th><th>· 🦉 🔚</th></td<>	Go Stop Window Client Setup 19:40 096 7 W • 10 seconds • Eyes Closed • Current Montage	· 🦉 🔚
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Moves Clench Teeth Drowsy Awakens Start Stim End Stim	Stop Window Client Setup	
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		Percent Reward 33
	inspeciel server.	personal (1) (1) (1)

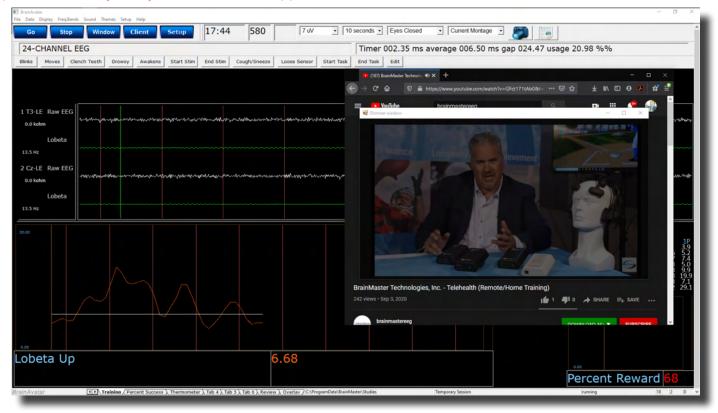
3. In the Window Launcher Menu, click the Dimmer Button located in the Popups Section.

Window Launcher			×	
Popups		BMr Multimedia	BMr Macromedia	
X-Wing	BoxFlow	MultiMedia Player	Flash Player	
Dimmer	Mini BMirr	DVD Player	Additional Software	
2D Spectral	BrainScape	Audio/Video Interfaces	EEG Synthesizer	
Numbers	TrendView	AVI Extensions	Zukor Launcher	
Thermos	LongTrend			
Waves	Circles	Contributed Games	zzle Space	
LissaView	ReturnMap	George Martin's Pu	zzle Space	
		Jim Zdunek's Cri	cket BugRun	
		Cancel	ОК	
_				

4. Setup the settings as you would like them. When the set-up is complete, click the Open Button

Start screen	—		×
Max dimmed	73 %		
0%		100	%
Dimming speed	5	H	elp
Slow	Fast	0	pen
	_	By To	or Ghai

You have now set up the Dimmer for use with the BrainAvatar Software. You will be able to tell this has been successful, as the Dimmer Window will be modulating from see through, to not see through, based on whether the training is being met. At this point, you may move the Dimmer Window on top of whatever Application you would like to be Dimmed. *****PLEASE NOTE:** The Dimmer Window sits on top of the Application. This means that this will not function with applications that require Mouse Clickthrough. It can function with Keyboard functionalities. So, long as the Application has Application Focus. This requires you to position in a way that you can make the Application the Main Window.



### **Z-Score Training**

#### **Activating ANI Z-Score Training DLL**

*****PLEASE NOTE:** These steps only need to be followed when using the ANI Z-Score Training DLL. This is not required for any other Z-Score Training DLL. 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

BrainAvatar Setup		×
Main Login Folder Settings Global Settings		
Welcome to BrainMaster BrainAvatar	LOGIN OK: SN: 30989 UNLIMITED USE	
Trainee ID: Temporary Session	Login	
Trainee Name:	Folder Selections	
Comment: Sharp squash training	Run The Next Session	
Next Session Number: Total Sessions Available:	View or Change Settings	
Training screen is Not Running	EDF Browser	
Exit Product Manuals	Review Session Results	
		I
Logged in, device type Atlantis		Use Settings and Close Use These Settings

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

Study Name	Birth Date	Sess	Max	Comment	Technician	Physician	Trainee Name	Created	Modified ^
								2019-10-15	2020-12-
071082RoMiAlert	1982-10-7	1	40	Focus SMR Up	Rob M		071082RoMiAlert	2020-8-26	2020-10-:
3.4.1-Discovery	2001-1-1	1	40	Alert - Beta Up	EEG tech		3.4.1-Discovery	2020-10-2	2020-10-2
683C ZScore	2009-12-23	8	80	4ch Z-Score PZ	EEG tech		683C ZScore	2020-2-3	2019-11-:
CoherenceThings	1982-10-7		40	Discovery Test	EEG tech		CoherenceThings	2020-4-22	2020-4-2:
Demo - DirectionalCoherenc	1982-1-1	1	80	no comment su	EEG tech		DirectionalCoherenceDemo	2020-6-24	2020-6-24
Demo - Discovery + Biofeed	1982-10-7	6	40	Discovery Test	EEG tech		Demo - Discovery + Biofeed	2019-11-5	2020-1-14
DiscoveryTemp							DiscoveryTemp	2019-10-29	2019-10-:
Event Wizard Testing	2001-1-1	4	40	Alert - Beta Up	EEG tech		Event Wizard Testing	2020-7-8	2020-11-9
GreDuz_Sharp_C	2001-1-1	25	40	Boadband Squ			GreDuz_Sharp_Cz	2020-4-7	2020-4-2:
HEG-NIR for Atlantis 4.0	2001-1-1		80	Standard Test	EEG tech		HEG-NIR for Atlantis 4.0	2020-8-3	2020-8-3
HR-PPG	1982-10-7	2	80	no comment su	EEG tech		HR-PPG	2019-11-5	2019-12-9
Kaitlyn C3 C4 Theta down a		33					Kaitlyn C3 C4 Theta down a	2020-4-3	2020-4-6
MappedDriveTest	2001-1-1		80	no comment su	EEG tech		MappedDriveTest	2020-10-26	2020-10-2
MiRo10782-BUp	2001-1-1	1	40	1-4ch Amplitud			MiRo10782-BUp	2020-1-28	2020-1-28
MiRo10782-DOM	1982-10-7		40	PhoticStim - Sh	Robert Milicia		MiRo10782-DOM	2020-1-23	2020-1-2:
MitcOrr F7F8		14					MitcOrr F7F8	2020-12-10	2020-12-:
Mood and Affect F3-ear	1982-10-7	1	40	Focus SMR Up			Mood and Affect F3-ear	2020-11-18	2020-11-: 🗸
									>
udv Name (Trainee ID):				Trainee Name:					
emporary Session								Create Ne	w Folder
omment:									
harp squash training								Folder	
norp equation country				Sessions Used:	18			Folder	Notes
				Max Sessions:	40				
Session Librarian								Edit Fold	er Info.
	1			1		1	1		
Administer Session Genie	Push Cu	and De		erver Arch	nive Current Stu	dy Ai	chive Current Study and Delete	Select A	nd Run
		und be	ieee						



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 Use These Settings and Close on the Setup Options Menu, and click the Run The Next Session Button

📰 BrainAvatar Setup 🛛 🕹	E BrainAvatar Stup
Main Login   Folder   Settings   Global Settings	Main Login Folder Settings Global Settings
Logged in, device type Atlantis Use Settings and Close Use These Settings	Logged in, device type Atlantis Use Settings and Close Use These Settings

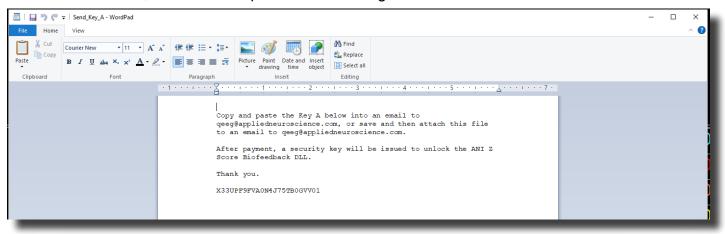
4. When the following screen appears, click I accept the license agreement option, and click OK to continue

(ANI) DYNAMIC LINK SOFTWARE (Electroencephalographic) DATABA		Î
and violations of U.S. copyright law law. All rights are reserved, includi	dll) are copyright protected © 2004 - 200 v will be prosecuted to the full extent of the ng the exclusive right to distribute, derive new works. This agreement is	
Library (DLL) Software and EEG Da	. (ANI) Z Score Statistical Dynamic Link tabases (NG dll) are protected by copyrigh aties, as well as other intellectual property	
and remain the sole property of ANI the ANI Software/EEG Databases of this License. The first sale doctrine	d EEG databases are licensed, not sold, and you never acquire any other rights in other than a right to use in accordance wit	h
License. In consideration of your ag Applied Neuroscience, Inc. (ANI) gr	or use Dynamic Link Library (DLL) tabases except in accordance with this greement to the terms of this License, rants you a non-exclusive right ('License') sscience, Inc.'s Dynamic Link Library (DLL	) _
l accept this license agreement     l do not accept this license agreement	QKCancel	

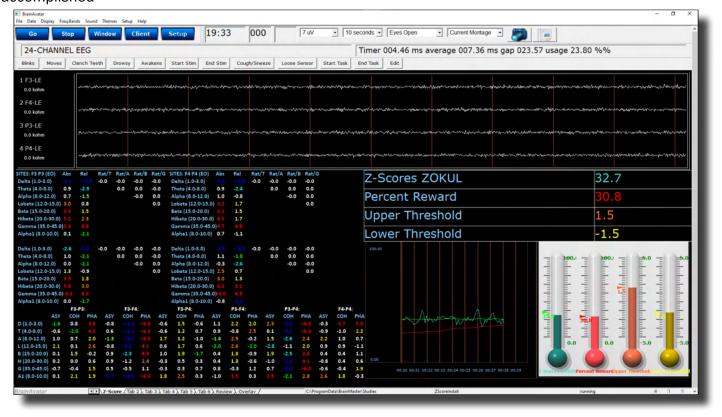
5. When the following screen appears, click the Create Key A File Button. This will create a text document

4 Channel ANI Biofeedback Security Key	$\times$
Security Key A	-1
X33U PF9F VA0N 4J75 TB0C VV01	
X33UPF9FVA0N4J75TB0GVV01	
Security Key B	-
<u>C</u> reate Key A File	
QK <u>C</u> ancel	

6. 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, and follow steps 4 and 5 once again.



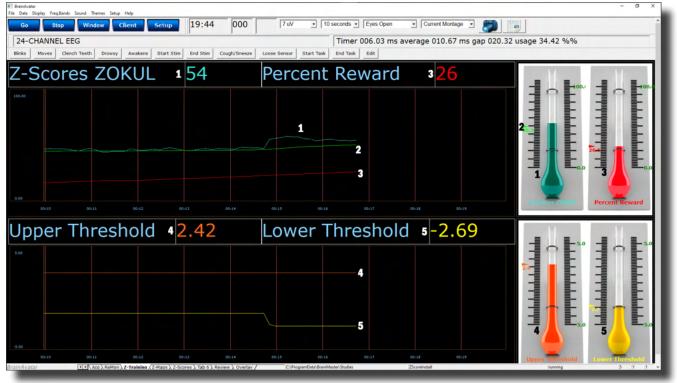
The ANI Z-Score Training DLL will now be installed onto this PC for use. You will be able to tell that this is accomplished





#### Single Tab Design - Z-Score Using PercentZOK or PZOKUL

- 1. **Z-ScorePZOK/PZOKUL (Teal Line & Teal Thermometer) –** This line and thermometer is the Percent of Z-Scores with-in the defined range
- 2. **Z-Score Threshold (Green Line & Green Marker on Thermometer) –** 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 can either be controlled by the "C" key or Dynamically (On its own).
- 3. Percent of Reward (Red Line & Red Thermometer) This line and thermometer shows the percent time that the Z-Scores are greater than the Z-Score threshold.
- 4. **Z-Score Range Definer or Z-Score Upper Range (Orange Line & Orange Thermometer) –** This line defines the range of Z-Scores that you are training. This is controlled by the "U" key, or by dragging the orange marker on the Thermometer. If this is a PZOKUL Protocol, this line defines the upper range of the Z-Score Range.
- 5. **Z-Score Lower Range (Yellow Line & Yellow Thermometer) –** This line is only available in PZOKUL protocols and defines the lower range of Z-Score Range. This is controlled by the "L" key, or by dragging the yellow marker on the Thermometer.
- 6. **Z-Score Text Stats -** This gives the moving average values of the Z-Scores for a particular metric.
- 7. Acquired EEG This will show the EEG and relevant information to the EEG



#### Multi-Tab Design - Z-Score Using PercentZOK or PZOKUL

- 1. **Z-ScorePZOK/PZOKUL (Teal Line & Teal Thermometer) –** This line and thermometer is the Percent of Z-Scores with-in the defined range
- 2. **Z-Score Threshold (Green Line & Green Marker on Thermometer) –** 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 can either be controlled by the "C" key or Dynamically (On its own).
- 3. Percent of Reward (Red Line & Red Thermometer) This line and thermometer shows the percent time that the Z-Scores are greater than the Z-Score threshold.
- 4. **Z-Score Range Definer or Z-Score Upper Range (Orange Line & Orange Thermometer) –** This line defines the range of Z-Scores that you are training. This is controlled by the "U" key, or by dragging the orange marker on the Thermometer. If this is a PZOKUL Protocol, this line defines the upper range of the Z-Score Range.
- 5. **Z-Score Lower Range (Yellow Line & Yellow Thermometer) –** This line is only available in PZOKUL protocols and defines the lower range of Z-Score Range. This is controlled by the "L" key, or by dragging the yellow marker on the Thermometer.
- 6. **Z-Score Text Stats -** This gives the moving average values of the Z-Scores for a particular metric found on another tab.
- 7. Acquired EEG This will show the EEG and relevant information to the EEG found on another tab.

#### **Changing Surface Sites**

1. From the Setup Menu, click Settings Tab, then click the Z-Scores Tab. Here, you can control:

BrainAvatar Setup		×
Main   Login   Folder Settings   Global Settings Main   Read/Write   Acquisition   Channels   Ban	s   ds   Montage   Protocol   Feedback   Session   Event Wizard   Z Scores   ROI Select   Sessi	on Wizard   Atlantis HW   Electrodes   •   •
Source type     Net using Zeores     Net using Zeores     ANI     Zeulider     Zeulider     Zeulider     Cataba     Zeores     Zeores	Total Selected:     Sarface     Q25       Summery     R01 coh     Z       Total Selected:     Sarface     Q25       Summery     R01 coh     Sarface       Total Selected:     Sarface     Q25	
Logged in, device type Atlantis	Use Settings and Close	Use These Settings

- a. Z-Score Type Here, is where you can choose the type of Z-Score Training.
- b. Z-Score Options Here is where you can choose between 4 Channel Z-Score Method, and Up to 19 Channel Z-Score Method, VoxelZ-Score Method (BrainDX or qEEGPro), or ROI Connectivity (qEEGPro Only). If 4 Ch or 19 Ch is chosen, you will use this tab set what sites, values and bands to train.
- c. Acquired & LZT Trained Sections As you choose sites that are being acquired from the Acquisition Tab, they will populate in the Acquired Section. From here, you can place them into the LZT Trained section. You can do this for each individual site by highlighting the location, and clicking the Add→ Button. If you would like to add all electrodes, then click the Add All Button. ***PLEASE NOTE: If you change which sites are being acquired after you have set what is to be LZT, you will have to adjust the LZT Trained Z-Scores. The same controls apply if removing a site or sites to be LZT Trained.
- d. Trained Values Section Here you can choose which trained values will be used for the LZT Training. You can check on or off any of the values. This will affect the total amount of Z-Scores being trained.
- e. Trained Bands Section Here you can choose which trained bands will be used for the LZT Training. You can check on or off any of the values. This will affect the total amount of Z-Scores being trained.

When all settings are as you would like them, confirm the changes.

2. If you would like to change other settings (Age/eye condition), this can be done in the Edit Folder Info Tab. From the Setup Menu, click the Folder Tab, and click the Edit Folder Info Tab. Here, you will be able to change these things. When completed, confirm the changes.

BrainAvatar Setup	×
n Login Folder Settings Global Settings	
lect Folder   Create Folder   Folder Notes   Session Librarian Edit Folder Info.	
Editing Demographics for Trainee/Study:	
folder name	
Name:	
ZScoreInstall	
Comment:	
Z-Score PZOKUL 19CH Dynamic - qEEG Pro	
Birthdate 07- Oct - 1982 - Age: 29.0 Gender: M M or F	
Compute Age	
Recording Conditions	
C Eyes Open C Eyes Closed C Task Task ID Number	
Sensor electrode e.g. "gold disk electrode" or "tin electro-cap",	
Investigator / EEG tech	
,	
Edit contents then press "Save and Save and Continue	
ged in, device type Atlantis Use Settings and Close Us	e These Settings

You have now changed the sites, band, and values that are being LZT Trained. You will be able to tell this has happened, on the Training/Control Screen, the Z-Score Text Displays will match the selections that you chose.

#### **Changing ROI Sites**

1. From the Setup Menu, click Settings Tab, then click the ROI Select Tab, here you can:

XOI ZScore Training     ROI ZScore Coherence Training     F       This panel can be used to specify the ROI / band combinations to be used for ROI amplitude ZScore training.       Total Selected:     Surface       4256       Summary     ROI       Total 4256	Image: Copes         Image: Copes
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

a. ROI Definition Architecture – Here, you can use the Check Mark system to select the areas that you would like to train. The more specific of training you would like. The more you will need to click the + next to the Checkbox to make more specific. As you make the selections more specific, the Checkbox will turn to a "Gray Square" to show that changes are not to all below.

When all settings are as you would like them, confirm the changes.

24(

2. If you would like to change other settings (Age/eye condition), this can be done in the Edit Folder Info Tab. From the Setup Menu, click the Folder Tab, and click the Edit Folder Info Tab. Here, you will be able to change these things. When completed, confirm the changes.

BreinAvstar Setup	
ain  Login Folder   Settings   Global Settings	
elect Folder Create Folder Folder Notes Session Librarian Edit Folder Info.	
Editing Demographics for Trainee/Study: Editing Demographics for Trainee/Stud	
Sensor electrode e.g. "gold disk electrode" or "tin electro-cap",	
Investigator / EEG tech	
Edit contents then press 'Save and Save and Continue	

You have now changed the ROI's and bands that are being LZT Trained. You will be able to tell this has happened, on the Training/Control Screen, the Z-Score Text Displays will match the selections that you chose.

#### **Changing ROI Coherence Training**

1. From the Setup Menu, click Settings Tab, then click the ROI Select Tab, then click the ROI ZScore Coherence Training Tab, here you can:

🔳 Brain	E BrainAvatar Setup ×						
Main	Login	Folder	Settings	Global Settin			
Main	Read/	Write	Acquisition	Channels Ba	s   Montage   Protocol   Feedback   Session   Event Wizard   Z Scores ROI Select   Session Wizard   Atlantis HW   Electrodes   • •		
					ROI ZScore Training ROI ZScore Coherence Training ROI dCoh Training ROI dCoh ZScore Training		
User   	ROI1         I           ROI2         I           ROI3         I           ROI3         I           ROI4         I           ROI5         I           ROI5         I           ROI6         I           ROI7         I           ROI8         I           ROI9         I	mport mport mport mport mport mport mport mport mport mport mport mport mport	Export Vie Export Vie	With         Build           With         Build	Roll 25core Training       Roll 25core Training       Roll 25core Training       Roll 25core Training         This pamel can be used to avaptive training.       Image: Constraint of the Brodmann 1 L&R V       Image: Constraint of the		
Logge	Logged in, device type Atlantis Use Settings and Close Use These Settings						

- a. **ROI Select Architecture –** Here, you will choose the ROI Combinations for training by using the Check Mark system to select the areas that you would like to train. The more specific of training you would like. The more you will need to click the + next to the Checkbox to make more specific.
- **b.** Band Checkboxes Here, you will choose the bands that you would like to be trained for the Coherence of the ROI Combination.

When all settings are as you would like them, confirm the changes.

2. If you would like to change other settings (Age/eye condition), this can be done in the Edit Folder Info Tab. From the Setup Menu, click the Folder Tab, and click the Edit Folder Info Tab. Here, you will be able to change these things. When completed, confirm the changes.

Il mini-Autor Stup X tain   Logi Folder   Settings   Global Settings   Select Folder   Create Folder   Folder Notes   Session Librarian Edit Folder Info.   Editing Demographics for Trainee/Study:
Select Folder   Create Folder   Folder Notes   Session Librarian Edit Folder Info.
Editing Demographics for Trainee/Study:
Name: ZScore PZOKUL 19CH Dynamic - qEEG Pro Birthdate
Certoring Conditions
Investigator / EEG tech
Edit contents then press "Save and Save and Continue
ogged in, device type Atlantis Use Settings and Close Use These Settings

You have now changed the ROI's and bands that are being LZT Trained. You will be able to tell this has happened, on the Training/Control Screen, the Z-Score Text Displays will match the selections that you chose.

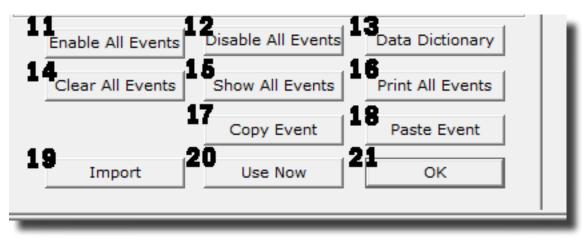
### **Event Wizard**

### **Event Wizard**

#### **Event Wizard Control Menu Display**

🔳 BrainAvatar Setup	×							
Main   Login   Folder Settings   Global Settings								
Main         Read/Write         Acquisition         Channels         Bands         Montage         Protocol         Feedback         Session         Eve           1         2         3         4         5         6         7         8         9         10         11         12         13         14         15         16	nt Wizard Z Scores   ROI Select   Session Wizard   Atlantis HW   Electrodes   • •   17   18   19   20   21   22   23   24   25   2 • •							
This Event Is: CEnabled CDisabled SVisibility: CVisible CHidden	7 Event Name							
IF: Use Equation:   Delta  Delta  Amplitude  Constant: Damping  Delta  Constant: Damping	Z-Scores ZOKUL							
Check Equation x=PercentZOKUL(TrnT(1,8),TrnT(1,4));	Sustained Reward Criterion Refractory Period Condition must be met Time between rewards is: 0 milliseconds 0 milliseconds							
Constant: Damping	MIDI Sound Properties:							
Check Equation x=PercentZOKUL( TrnT(1,8),TrnT(1,4));	Starting Note:         59 G         (1568.0) <ul> <li>1 to 88</li> <li>Instrument:</li></ul>							
Note: You must press "Check Equation" to check and save any changes made to equations	Playing Style: Sustained   Percus. or							
SEvent Result: THEN: Play MIDI Sound  Do Nothing  Do Nothing	Modulation: Ampl. and Pitch  Ampl. or Starting Loudness: Level: 70  0 to 128							
Do Nothing 💌 Do Nothing 💌	Loudness Change Rate         3 <ul> <li>0 to 20</li> <li>Note Change Rate:</li> <li>1</li> <li>0 to 20</li> </ul>							
Obey Inhibits ("stops") Control MMP Player	Musical Scale (Mode): Blues  15 choices							
Event Trend Graph Scale Factor: 100 Offset: 0	Play Note or Chord: 1 Note   1 to 8 Notes							
Event Summary:	Play Note on Tab On all tabs 🔹 1 to 16 or							
Summary for Event 1: EVENT 1 IS CURRENTLY: ENABLED IF: EQN: x=PercentZOKUL( TmT(1,8),TmT(1,4)); IS GREATER THAN EQN: x=PercentZOKUL( TmT(1,4)); THEN: Play MIDI Sound MODE: 2 NOTE: 59 INSTR: 46 Harp STYLE: Sustained MODULATION: Ampl. and Pitch LOUDNESS: 70 LOUDNESS CHANGE RATE: Level 3 PITCH CHANGE RATE: 1 KEY: 6 MODE: Blues CHORD: 1 Note TR_Conv Event TR_CONV Even								
	19 Import 20 Use Now 21 OK							
Logged in, device type Atlantis	Use Settings and Close Use These Settings							

- 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. **Visibilty Section –** Section where you set whether the chosen Event Graph will be visible or not, when the Trend Graphs are chosen for display.
- 7. **Event Name Section –** Section where you can create a name for display in the text stats or thermometer.
- 8. **Sustained Reward Criterion Section –** Section where you set how long the chosen Event Condition must be met to produce the selected Event Result.
- 9. **Refractory Period Section –** Section where you set how long for a time before another reward is possible for the chosen event.
- 10. **MIDI Sound Properties Section –** Section where you can set the properties for MIDI reward feedback for the chosen Event.



#### **Event Wizard Control Menu Display (Continued)**

- 11. Enable All Events Button Click to enable all events.
- 12. Disable All Events Button Click to Disable all events.
- 13. Data Dictionary Button Click to launch the Data Dictionary.
- 14. Clear All Events Button Click to clear the data from all events.
- 15. Show All Events Button Click to show the Event Summary information for all events.
- 16. Print All Events Button Click to print out the Event Summary information for all events Currently Unsupported
- 17. Copy Event Button Click to copy the chosen Event.
- 18. Paste Event Button Click to paste an Event that has been selected from the Copy Event Button.
- 19. Import Button Click to import the Event Wizard File from a previously created folder.
- 20. Use Now Button Click to apply all changes.
- 21. OK Button Click to Exit the Event Wizard.

24

### **Data Dictionary**

Standard variables computed in real time using BrainMaster built-in filter for up to 4 Channel Training (AKA Legacy Variables)								
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)							
DX, TX, AX, LX, BX, HX, GX, UX	channel X amplitude (from digital filters) for 8 components							
DELTAX, THETAX, ALPHAX, LOBETAX, BETAX, HIBETAX, GAMMAX, USERX	channel X amplitude (from digital filters) for 8 components							
CXDA, CXTA, CXAA, CXLA, CXBA, CXHA, CXGA, CXUA	channel X amplitude (from digital filters) for 8 components							
CXDF, CXTF, CXAF, CXLF, CXBF, CXHF, CXGF, CXUF	channel X modal frequency (from FFT) for 8 components							
CXDE, CXTE, CXAE, CXLE, CXBE, CXHE, C1GE, C1UE	channel X percent energy (from FFT) for 8 components							
CXDP, CXTP, CXAP, CXLP, CXBP, CXHP, CXGP, CXUP	channel X percent time over threshold (using digital filters)							
CXDT, CXTT, CXAT, CXLT, CXBT, CXHT, CXGT, CXUT	channel X thresholds (from digital filters built-in autothresholder)							
CXDV, CXTV, CXAV, CXLV, CXBV, CXHV, CXGV, CXUV	channel X variability (from digital filters)							
Standard functions computed in real time using BrainMaster	built-in filter for up to 24 Channel Training							
TrnAmplitude(X, Y) or TrnA(X, Y)	Channel X amplitude for the Y band							
TrnThreshold(X, Y) or TrnT(X, Y)	Channel X Threshold for the Y band							
TrnModalFreq(X, Y) or TrnF(X, Y)	Channel X Modal Frequency for the Y band							
TrnPercentTime(X, Y) or TrnP(X, Y)	Channel X percent time over threshold for the Y band							
TrnVariability(X, Y) or TrnV(X, Y)	Channel X variability for the Y band							
Standard functions for Acquired EEG								
Acquired(x)	Returns the instantaneous acquired signal in micro- volts. The channels number is in the order that the software is acquired (ie: Acquired(1.0) is always Fp1, Acquired(2.0) is always F3).							

Standard variables for difference channel (not yet implemented)							
DS, TS,DELTAS, THETAS,CSDA, CSTA,CSGV, CSUV	The sum of channels 1 and 2 is always computed and available. Sum Channel repeats all channel1 variables shown above, with "1" replaced by "S"						
DD, TD,DELTAD, THETAD,CDDA, CDTA,CDGV, CDUV	The difference of channels 1 and 2 is always computed and avai able. Difference Channel repeats all channel1 variables shown above, with "1" replaced by "D"						
Cross-channel standard variables for up to 4 Channel Trainin	g (AKA Legacy Variables)						
Note: use first channel to designate the pair (X=channels $X/X+1$ )							
СТ	Coherence Threshold currently in use in built-in coherence processor. This will automatically track any changes in the coherence threshold.						
DCOH, TCOH, ACOH, LCOH, BCOH, HCOH, GCOH, UCOH	Coherence (currently selected type) between channels 1 and 2						
CXDC, CXTC, CXAC, CXLC, CXBC, CXHC, CXGC, CXUC	Coherence (currently selected type) between channels X and X + 1						
DPCOH, ТРСОН, АРСОН, LPCOH, BPCOH, HPCOH,GP- СОН, UPCOH	"Pure" coherence between channels 1 and 2						
DTCOH, TTCOH, ATCOH, LTCOH, BTCOH, HTCOH, GT- COH, 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, UCOM	Comodulation (Sterman/Kaiser "SKIL" type) between channels 1 and 2						
DPHASE, TPHASE, APHASE, LPHASE, BPHASE, HPHASE, GPHASE, UPHASE	Phase between channels 1 and 2						
CXDH, CXTH, CXAH, CXLH, CXBH, CXHH, CXGH, CXUH	Phase between channels X and X + 1						

Standard Cross-channel functions for up to 24 Cha	annel Training						
TrnAA(X,Y,Z)	The Asymmetry of the Z Band between the X and Y Channel						
TrnCO(X,Y,Z)	The Pure Coherence of the Z Band between the X and Y Chan- nel						
TrnPH(X,Y,Z)	The Phase of the Z Band between the X and Y Channel						
TrnCM(X,Y,Z)	The Commodulation of the Z Band between the X and Y Chan- nel						
TrnTC(X,Y,Z)	The Training Coherence of the Z Band between the X and Y Chan- nel						
DC and Slow Cortical Potentials Variables							
DC1, DC2,	DC offset for Training channel 1, 2, 1 unit = 4 microvolts						
DCE1, DCE2,	Enhanced DC for channel 1, 2, 1 unit = 1 millivolt						
DCA1, DCA2,	DC Acquired channel 1, 2, 24 1 unit = 1 millivolt						
DCALL	DC average of all 19 10-20 channels (Discovery Only)						
DCFR	Frontal DC: Fp1 F3 F7 Fz Fp2 F4 F8 (Discovery Only)						
DCBK	Back DC: P3 P4 Pz T5 T6 O1 O2 (Discovery Only)						
DCLT	Left DC: Fp1 F3 F7 C3 T3 P3 T5 O1 (Discovery Only)						
DCRT	Right DC: Fp2 F4 F8 C4 T4 P4 T6 O2 (Discovery Only)						
DCFp1, DCFp2, DCF3, DCF4,	DC of any 10-20 site specified by name						
Region of Interest Training Functions (Must have B	BrainAvatar LLP License)						
LoretaROIA(ROI,Band)	Trains the band activity at the chosen region of interest. The num- ber listing of the ROI's can be found at www.brainm.com/kb/en- try/461. The bands are 1 - Delta, 2 - Theta, 3 - Alpha, 4 - Lobeta, 5 - Beta, 6 - Hibeta, 7 - Gamma, 8 - User						
LoretaROIAL(ROI,Band)	Trains the band activity at the Left Hemisphere of the chosen region of interest. The number listing of the ROI's can be found at www.brainm.com/kb/entry/461. The bands are 1 - Delta, 2 - The- ta, 3 - Alpha, 4 - Lobeta, 5 - Beta, 6 - Hibeta, 7 - Gamma, 8 - User						
LoretaROIAR(ROI,Band)	DIAR(ROI,Band) Trains the band activity at the Right Hemisphere of the chose region of interest. The number listing of the ROI's can be fou www.brainm.com/kb/entry/461. The bands are 1 - Delta, 2 ta, 3 - Alpha, 4 - Lobeta, 5 - Beta, 6 - Hibeta, 7 - Gamma, 8 - U						

Regi	Region of Interest Coherence Training Functions (Must have BrainAvatar LLP and Connectivity Suite License)								
	LoretaROIACoh(ROI1, Location, ROI2, Location, Band)	Trains the Connectivity between the chosen region of interests and its location (Left, Right, or Complete). The number listing of the ROI's can be found at https://brainmaster.com/kb-entry/ id461/. The bands are in the order and the number that matche on Bands Tab.							
	LoretaROIACohL(ROI1, ROI2, Band)	Trains the Connectivity between the Left Hemisphere of the chosen region of interest. The number listing of the ROI's can be found at https://brainmaster.com/kb-entry/id461/. The bands are in the order and the number that matches on Bands Tab.							
	LoretaROIAR(ROI1, ROI2, Band)	Trains the Connectivity between the Right Hemisphere of the chosen region of interest. The number listing of the ROI's can be found at https://brainmaster.com/kb-entry/id461/. The bands are in the order and the number that matches on Bands Tab.							
	LoretaROIALR(ROI1, ROI2, Band)	Trains the Connectivity between the chosen region of interest. The number listing of the ROI's can be found at https://brainmas- ter.com/kb-entry/id461/. The bands are in the order and the number that matches on Bands Tab.							
Valu	Values from other events:								
	EXA	values of "antecedent" variables in Events. These are the select- ed component values, or the values of the "x=" equation in the "IF" portion of the event design, where X is the Event Number that you would like to be utilized							
	EXB	"values of ""condition"" variables in Events. These are the selected component values, or the values of the ""x="" equation after the ""RULE"" portion of the event design, where X is the Event Number that you would like to be utilized"							
	EXF	values of flags for Events. These are 0 if the event's condition is not met, and 1.0 if the event's condition is met, where X is the Event Number that you would like to be utilized							
	EXP	percent time meeting the condition for Events. These allow any events to "see" how often other events are "true" and use these values in rules, where X is the Event Number that you would like to be utilized. Values are returned as percent, e.g. between 0 and 100							

Built-in Event Control Variables							
INHFX, ENHFX, NUMEX	channel X training flags: number of "stops" meeting criteri- on, 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 numb	er or variable name, including other Event Values, flags, etc. etc.						
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 >= 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, high)	returns total FFT energy in a band for a channel. E.g. 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 FFT 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						
SetPhoticRate(rate) or SPR(rate)	sets rate of photic stimulation to value given by "rate"						
SetPhoticRates(left, right)	Sets rate of photic stimulation for the left and right independently						
SetPhoticEnable(left, right)	Enables or disables the right or left photic stimulation. 1.0 will enable, while 0.0 will disable						
SetPhoticAmplitudes(left, right)	Sets the photic amplitudes for the left and right independently						

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 an	nd parameters are treated as double precision floating point values					
+ - * /	add, subtract, multiply, divide					
%	modulus returns the remainder after an integer division					
^	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					
,	comma, used to separate equations in a single event without ending the equation					
Priority of Operators:						
()	highest					
^	next					
-x (unary minus)	next (e.g. y=-x^2, the ^ occurs before - )					
*/^	next					
+-	lowest					
Logical Operators:						
and	Compares two different items. If they are both true, the event re- turns a value of 1. If both are not true, the event returns a value of 0.					
or	Compares two different items. If either is true, the event returns a value of 1. If neither are true, the event returns a value of 0					
<ul> <li>Compares to see if one item is less than another item. If the statement is true, the event returns a value of 1. If the states is not true, the event returns a value of 0</li> </ul>						

Logical Operators:	
>	Compares to see if one item is greater than another item. If the statement is true, the event returns a value of 1. If the statement is not true, the event returns a value of 0
<=	Compares to see if one item is less than or equal to another item. If the statement is true, the event returns a value of 1. If the statement is not true, the event returns a value of 0
>=	Compares to see if one item is greater than or equal to another item. If the statement is true, the event returns a value of 1. If the statement is not true, the event returns a value of 0
==	Compares to see if one item is equal to another item. If the state- ment is true, the event returns a value of 1. If the statement is not true, the event returns a value of 0
if(x,y,z)	Compares the value that is returned in x. If it is a true statement, the it executes the value of y. If it is untrue, then it will execute the value of z
Standard Built-in Functions:	
abs(x)	return absolute value
acos(x)	calculates arccosine
asin(x)	calculates arcsine
atan(x)	calculate arctangent
asinh(x)	calculates the hyperboloic arcsine
acosh(x)	calculates the hyperbolic arccosine
atanh(x)	calculates the hyperbolic arctangent
Cos(x)	Calculates cosine
Cosh(x)	Calculates hyperbolic cosine
exp(x)	Calculates exponential function "e to the x"
log(x), log10(x)	Calculates base-10 logarithm
log2(x)	Calculates base-2 logarithm
ln(x)	Calculates natural logarithm
max(a,b,c,d,)	Compares all variables. Returns the largest value
min(a,b,c,d)	Compares all variables. Returns the smallest value
sin(x)	Calculates sine
sinh(x)	Calculates hyperbolic sine

Standard Built-in Functions:									
tan(x)	Calculates tangent								
tanh(x)	Calculates hyperbolic tangent								
sqrt(x)	Calculates the Square Root								
sign(x)	Compares the value of x. If x is greater than 0 the event returns a value of 1. If x is less than 0, the event returns a value of $-1$ .								
rint(x)	Rounds x to the nearest integer								
sum(a,b,c,d,)	Calculates all variables. Retuns the sum of this calculation.								
avg(a,b,c,d)	Returns the mean of all variables.								
rand()	Returns a randomised value between 0 and 1								
rand2(x,y)	Returns a randomised value between x and y								
Z-Scores Variables up to 4 Channels									
ZAPXD, ZAPXT, ZAPXA, ZAPXB, ZAPX1, ZAPX2, ZAPX3, ZAPXG	channel X Absolute Power for 8 components								
ZRPXD, ZRPXT, ZRPXA, ZRPXB, ZRPX1, ZRPX2, ZRPX3, ZRPXG	channel X Relative Power for 8 components								
ZPRXDT, ZPRXDA, ZPRXDB, ZPRXDG, ZPRXTA, ZPRXTB, ZPRXAB, ZPRXAG, ZPRXBG	channel X Power Ratios for 10 ratios								
ZAAXYD, ZAAXYT, ZAAXYA, ZAAXYB, ZAAXY1, ZAAXY2, ZAAXY3, ZAAXYG	Amplitude Asymmetry between channel X and Y for 8 components								
ZCOXYD, ZCOXYT, ZCOXYA, ZCOXYB, ZCOXY1, ZCOXY2, ZCOXY3, ZCOXYG	Coherence between channel X and Y for 8 components								
ZPHXYD, ZPHXYT, ZPHXYA, ZPHXYB, ZPHXY1, ZPHXY2, ZPHXY3, ZPHXYG	Phase between channel X and Y for 8 components								
Z-Scores Functions	·								
ZScoreZAP(X,Y)	Retuns the Absolute Power Standard Deviation of the X Channel and Y Band								
ZScoreZRP(x,y)	Returns the Relative Power Standard Deviation of the X Channel and Y Band								
ZScoreZPR(X,Y)	Returns the Power Ratio Standard Deviation of the X Channel and Y Band								
ZScoreZAA(X,Y,Z)	Returns the Asymmetry Standard Deviation of the Z Band be- tween Channels X and Y								

Z-Scores Functions							
ZScoreZCO(X,Y,Z)	Returns the Coherence Standard Deviation of the Z Band between Channels X and Y						
ZScoreZPH(X,Y,Z)	Returns the Phase Standard Deviation of the Z Band between Channels X and Y						
PercentZOK(range), PZOK(range)	Percentage of Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZOKUL(upper, lower), PZOKUL(upper, lower)	Percentage of Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100						
PercentZAOK(range), PZAOK(range)	Percentage of ABSOLUTE POWER Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZAOKUL(upper, lower), 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), PZROK(range)	Percentage of RELATIVE POWER Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZROKUL(upper, lower), 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), PZPROK(range)	Percentage of POWER RATIO Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZPROKUL(upper, lower), 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), PZASOK(range)	Percentage of ASYMMETRY Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZASOKUL(upper, lower), 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), PZCOK(range)	Percentage of COHERENCE Z scores that are within "range" of normal. Returns value between 0 and 100						
PercentZCOKUL(upper, lower), PZCOKUL(upper, lower)	Percentage of COHERENCE Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100						

Z-Scores Functions	_							
PercentZPOK(range), PZPOK(range)	Percentage of PHASE Z scores that are within "range" of normal. Returns value between 0 and 100							
PercentZPOKUL(upper, lower) or PZPOKUL(upper, lower)	Percentage of PHASE Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100							
PercentZCCOK(range), PZCCOK(range)	Percentage of ALL CONNECTIVITY Z scores that are within "range" of normal. Returns value between 0 and 100							
PercentZCCOKUL(upper, lower), PZCCOKUL(upper, lower)	Percentage of ALL CONNECTIVITY Z scores that are below upper limit, and above lower limit. Returns value between 0 and 100							
sLORETA Z-Scores Functions (To be used with BrainDX (optio	nal purchase), or BrainMaster (BrainAvatar Only) Z-Score DLLs							
LoretaROIZAP(ROI,Band)	Trains the Absolute Power at the chosen region of interest. The number listing of the ROI's can be found at www.brainm.com/kb/entry/461.							
LoretaROIZAPL(ROI,Band)	Trains the Absolute Power at the Left Hemisphere of the chosen region of interest. The number listing of the ROI's can be found a www.brainm.com/kb/entry/461.							
LoretaROIZAPR(ROI,Band)	Trains the Absolute Power at the Right Hemisphere of the chosen region of interest. The number listing of the ROI's can be found at www.brainm.com/kb/entry/461.							
PercentZBRA(range) or PZBRA(range)	Percentage of sLORETA Z Scores that are within "range" of nor- mal. Returns a value between 0 and 100							
PercentZBRAUL(upper, lower) or PZBRA( upper, lower)	Percentage of sLORETA Z Scores that are below the upper limit and above the lower limit. Returns a value between 0 and 100							
sLORETA ROI Coherence Z-Scores Functions - Requires an sL Connectivity Suite, and BrainAvatar LLP License	ORETA Z-Score Training DLL (qEEGPro and Zbuilder only),							
LoretaROIZCoh(ROI1, Location, ROI2, Location, Band)	Trains the Connectivity Z-Scores between the chosen region of interests and its location (Left, Right, or Complete). The number listing of the ROI's can be found at www.brainm.com/kb/en-try/461.							
LoretaROIZCohL(ROI1, Location, ROI2, Location, Band)	Trains the Connectivity Z-Scores between the Left Hemisphere chosen region of interest. The number listing of the ROI's can be found at www.brainm.com/kb/entry/461.							

sLORETA ROI Coherence Z-Scores Functions - Requires an sLORETA Z-Score Training DLL (qEEGPro and Zbuilder only), Connectivity Suite, and BrainAvatar LLP License								
LoretaROIZCohR(ROI1, Location, ROI2, Location, Band)	Trains the Connectivity Z-Scores between the Right Hemisphere of the chosen regions of interests. The number listing of the ROI's can be found at www.brainm.com/kb/entry/461.							
LoretaROIZCohLR(ROI1, Location, ROI2, Location, Band)	Trains the Connectivity Z-Scores between the chosen region of interests. The number listing of the ROI's can be found at www. brainm.com/kb/entry/461.							
PercentZROICO(range) or PZROICO(range) or PercentZ- ROICoherence(range)	Percentage of sLORETA ROI Coherence Z Scores that are within "range" of normal. Returns a value between 0 and 100							
PercentZROICOUL(upper, lower) or PZROICOUL(upper, lower) or PercentZROICoherenceUL(upper, lower)	Percentage of sLORETA ROI Coherence Z Scores that are below the upper limit and above the lower limit. Returns a value be- tween 0 and 100							

#### **Designing an Event**

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

						Channels									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

 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.

This Event Is: © Enabled C Disabled Visibility: © Visible C Hidden	This Event Is: © Enabled C Disabled
Event Condition: Constant: Damping	Event Condition: Constant: Damping
IF: Use Equation: V Theta V Amplitude V 5	IF: Channel 1:  Theta  Amplitude  5
Check Equation x=TrnA(1,2)	Check Equation x=TrnA(1,2)
RULE: IS GREATER THAN:	RULE: IS GREATER THAN:
Use Equation:  Theta Threshold	Channel 1:   Theta  Threshold  Channel 1:  Channel 1:
Check Equation x=TrnT(1,2);	Check Equation x=1;
Note: You must press "Check Equation" to check and save any changes made to equations	Note: You must press "Check Equation" to check and save any changes made to equations

**Event Condition with Equations** 

**Event Condition with Channels** 

3. Next, set the Event Result (For This example, if the Event Condition is met, a .wav will play. This will also Control BMrMMP).

Event Result: THEN: Play WAV Sound	•	Do Nothing	•	Do Nothing	-
		Do Nothing	~	Do Nothing	-
🔲 Obey Inhibits ("stops")		Control MMP Player			

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).

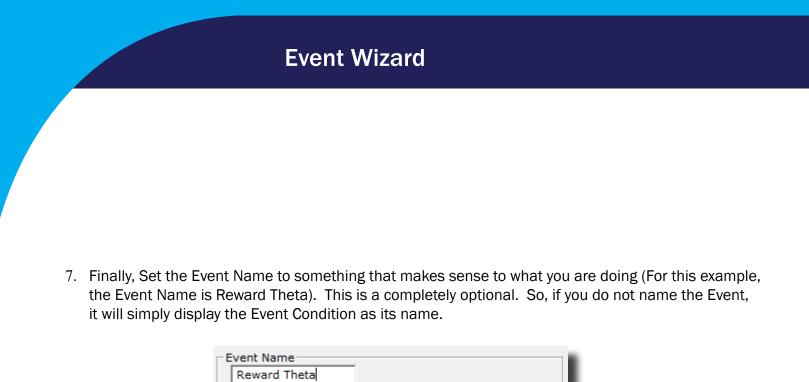
Event Trend Graph Scale Factor: 20	Offset: 0	I

5. 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. Also, if you would like the event to have a personalized name, do so now.

- This Event Is:	Enabled	C Disabled	Visibility: —	Visible	C Hidden
F 10 PC	_			_	

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).

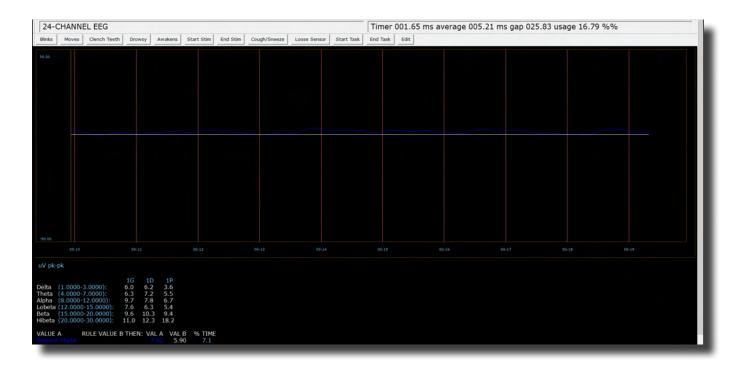
Sustained R Condition m	eward Criterion — nust be met	Refractory Period Time between rewards is:	
500	milliseconds	500	milliseconds



8.	View the entire Event Wizard Screen to confirm that the Event is set up to your needs. When ready,
	click the Use Now Button, and then either move to the next Event or Close the Setup Window.

This Event Is: © Enabled  © Disabled Event Condition:	17   18   19   20   21   22   23   24   25   2 • • • • • • • • • • • • • • • • • •
IF:     Channel 1:     Theta     Amplitude     S       Chack     Equation     X=TrnA(1,2)/(TrnT(1,2)+.0001);       RULE:     IS LESS THAN:     Constant:     Damping       Channel 1:     Theta     Threshold     0	Reward Thetal       Sustained Reward Criterion       Condition must be met       0     milliseconds       MIDI Sound Properties:       Starting Note:       14       (55.0)
Check Equation   x=1; Note: You must press "Check Equation" to check and save any changes made to equations Event Result: THEN: Do Nothing	Instrument: [0 Fino 1 v 128 choices Playing Style: Sustained Percus. or Modulation: Amplitude Ampl. or Stating Loudness: [Level: 0 v 0 to 128
Do Nothing  Do Nothing Do Nothing TO Nothing Control MMP Player	Loudness Change Rate:         0         •         0 to 20           Note Change Rate:         0         •         0 to 20           Musical Scale (Mode):         Chromatic         •         15 choices
Event Trend Graph           Scale Factor:         30           Offset:         0           Event Summary:         Summary for Event 1:           Summary for Event 1:         EVENT 1 IS CURRENTLY: ENABLED	Play Note or Chord: 1 Note  Vito 8 Notes Play Note on Tab On all tabs Vito 16 or
IF: Channel 1 Theta Amplitude IS LESS THAN Channel 1 Theta Threshold THEN: Do Nothing	Enable All Events         Data Dictionary           Clear All Events         Show All Events         Print All Events           Copy Event         Paste Event
	Import Use Now OK
Logged in, device type Atlantis	Use Settings and Close Use These Settings

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. If you have placed a name for the Event, this will be reflected in the Text Stats, if you have these displayed, as well as the Thermometer Contour Display.



#### **Event Wizard** Making a Threshold to be dragged by the Thermometer 1. In order to make an adjustable threshold through a Thermometer, the Event Rule must be changed from a "Use Equation" defined threshold, to a "Use Channel 1" Threshold, or Use Entered Value. RULE: IS GREATER THAN: -RULE: IS GREATER THAN: • Constant: Damping Constant: Damping Channel 1: - Theta Threshold - 5.0 -Use Entered Value: 💌 Theta ▼ Threshold 0 0

Use Channel 1 Example

Note: You must press "Check Equation" to check and save any changes made to

Check Equation x=TrnT(1,2);

Use Entered Value Example

Note: You must press "Check Equation" to check and save any changes made to equations

Check Equation x=TrnT(1,2);

2. If there are no additional changes that are required, click the Use Settings and CloseButton.

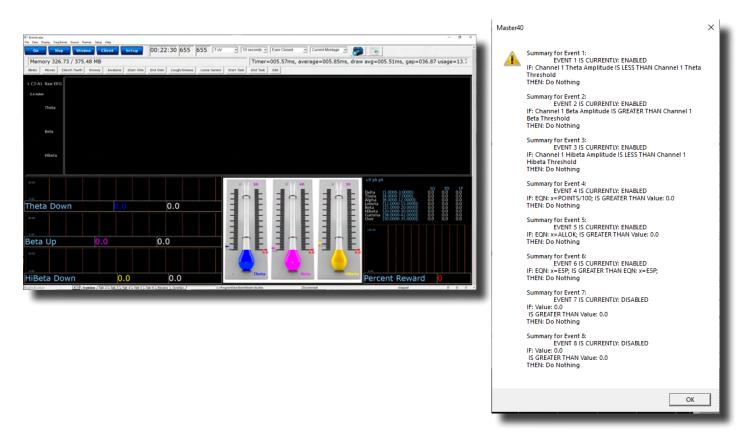
Event Condition:       Constant:       Damping         IF:       Channel 1:       Theta       Amplitude       5         Check Equation       x=TrnA(1,2)/(TmT(1,2)+.0001);       Image: Constant:       Damping         RULE:       IS GREATER THAN:       Constant:       Damping         Use Entered Value:       Theta       Threshold       5.0       0         Check Equation       x=TrnT(1,2);       Image: Ventor of the check and save any changes made to equations	Event Name         Reward Theta         Sustained Reward Criterion         Condition must be met         0       milliseconds         MIDI Sound Properties:         Starting Note:         1 A       (55.0)         1 to 88         Instrument:         0 Piano 1         1 28 choices         Playing Style:         Sustained         Percus. or
Event Result: THEN: Do Nothing  Do Nothin	Modulation:       Amplitude       Ampl. or         Starting Loudness:       Level:       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         Play Note on Chord:       1 Note       1 to 8 Notes         Play Note on Tab       O nall tabs       1 to 16 or
EVENT 3 JUNITIARY. Summary for Event 1: IF: Channel I Theta Amplitude IS GREATER THAN Value: 0.3 THEN: Do Nothing	Enable All Events     Disable All Events     Data Dictionary       Clear All Events     Show All Events     Print All Events       Copy Event     Paste Event       Import     Use Now     OK

The Event Threshold will now be able to be controlled through the Thermometer Contour Display, by Clicking on the Threshold indicator on the left of this Display. *****PLEASE NOTE:** This only works with Thermometers that are displaying Events. This does not work with Thermometers that are displaying standard band values.



### **Basic BrainMaster Setting Protocol through the Event Wizard**

### **Standard Amplitude (Alert)**



**Event 1: IF Channel 1 Theta Amplitude IS LESS THAN Channel 1 Theta Threshold -** This gives a Graphical and Text View of the Low Inhibit Training

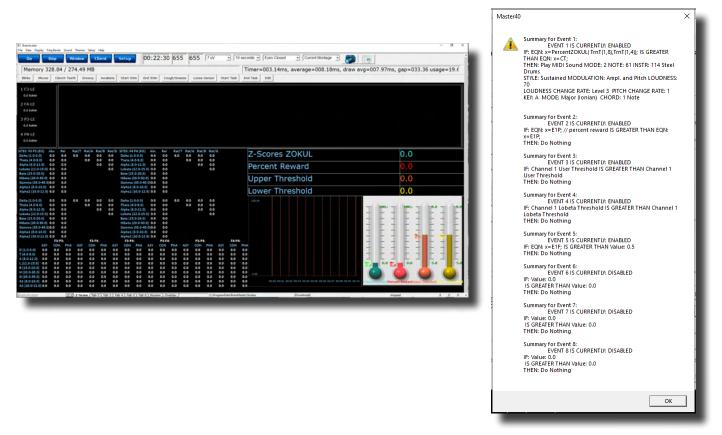
**Event 2: IF Channel 1 Beta Amplitude IS GREATER THAN Channel 1 Beta Threshold -** This gives a Graphical and Text View of the The Reward Training

**Event 3: IF Channel 1 HiBeta Amplitude IS LESS THAN Channel 1 HiBeta Threshold -** 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.

### Standard Z-Score-Based Protocol (4 Chanel 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 Upper Threshold (U Key) and Lower Threshold (L Key)that are above the threshold that is defined by the C Key.

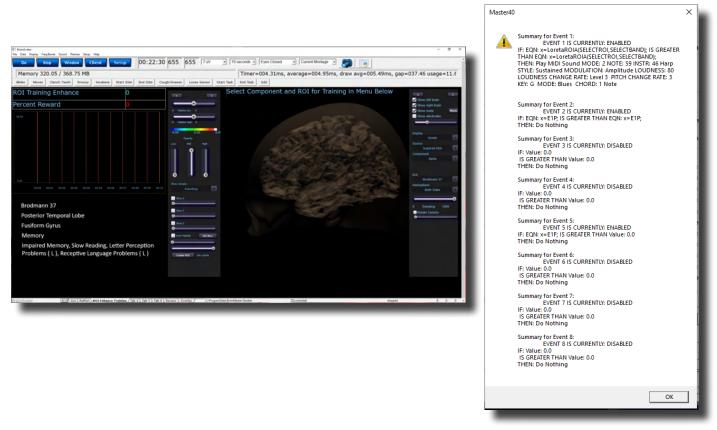
Event 2: x=E1P - This shows the percentage of reward for Event 1.

**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.

#### **Z-Score-Based Protocol (4 Chanel PZOKUL)**



**Event 1:** x=LoretaROIA(SELECTROI,SELECTBAND) IS GREATER THAN x= LoretaROIA(SELECTROI,SELECTBAND) - This will train the Region of Interest and the Band frequency that has been selected for viewing on ROI Head Map, and by using a damped (averaged)value of itself as the threshold creates a Dynamically changing Threshold.

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

**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.

#### **Advanced Event Wizard Controls**

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

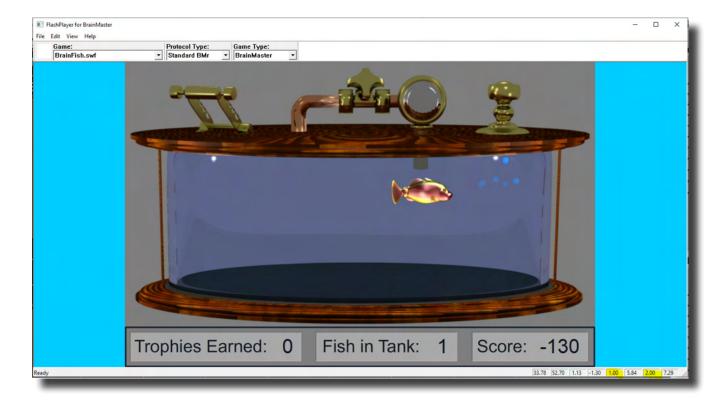
1. Create an Event (Event 7) that Flags (Whether the Event is True or False) for these Events, and requires them to be greater than the possible combination with-out all being met (For this example, since there are two Events, we want the Event Condition to be greater than 1.5. This way, we are only successful when both Event 1 and Event 2 have been met).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 1
This Event Is: © Enabled O Disabled Visibility: O Visible O Hidden
Event Condition:     Constant:     Damping       IF:     Use Equation:            0
Check Equation x=E1F + E2F;
RULE: IS GREATER THAN:
Use Entered Value:  Delta Amplitude I.5 0
Check Equation x=0;
Note: You must press "Check Equation" to check and save any changes made to equations

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.

1 2 3 4 5 6 7 8 9 10 11 12 13	14   15   16   1
This Event Is: © Enabled © Disabled Visibility: © Visible © Hidde	en
Event Condition:       Constant:         IF:       Use Equation:	Damping 0
Check Equation x=E5F;	
RULE: IS GREATER THAN:	Damping
Use Entered Value:  Delta  Amplitude  Use Sector 0.0	0
Check Equation x=0;	
Note: You must press "Check Equation" to check and save any changes made to equat	tions

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, as well as seeing that Event 5 equals 1 when Event 7 equals 2.



#### **Enabling Amplitude Plus Events to control Flash Player**

1. Create an Event (Event 6) to indicate that all amplitude components have met their criteria.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
This Event Is: © Enabled © Disabled Visibility: © Visible © Hidden
Event Condition:     Constant:     Damping       IF:     Use Equation: <ul> <li>Delta</li> <li>Amplitude</li> <li>0</li> </ul>
Check Equation X=ALLOK;
RULE:       IS GREATER THAN:       Constant:       Damping         Use Entered Value:       Delta       Amplitude       0.0       0
Check Equation x=0; Note: You must press "Check Equation" to check and save any changes made to equations

2. Create an Event (Event 7) 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 6 have been met).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	1
This Event Is: • Enabled	
Event Condition: Constant: Damping	
IF: Use Equation:  Delta  Amplitude  Constant: Damping  0	
Check Equation x=E1F + E6F;	] •
RULE: IS GREATER THAN:	
Use Entered Value:  Delta Amplitude I.5 0	
Check Equation x=0;	-
Note: You must press "Check Equation" to check and save any changes made to equations	

268

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.

1 2 3 4 5 6 7 8 9 10 11 12 13	14 15 16 1
This Event Is: © Enabled O Disabled Visibility: O Visible © Hide	den
Event Condition: Constant:	Damping
IF: Use Equation:   Delta  Amplitude	0
Check Equation x=E7F;	
RULE: IS GREATER THAN:	Damping
Use Entered Value:  Delta Variability 0.5	0
Check Equation <b>x=0;</b>	
Note: You must press "Check Equation" to check and save any changes made to equ	ations

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

Brainkvatar ile Data Display Freq.Ban	ds Sound Th	ernes Setup	Help					_									- 8 ×
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Delta (1.0-8.0) -2.8 Theta (4.0-8.0) 0.6	-1.5		0.0 -0.0	Delta (1.0-3.) Theta (4.0-0.)			-0.0 -0.0		-0.0			Percent Re	ward			41.3	
Alpha (8.0-12.0) 1.4	-0.6		0.0 0.0	Alpha (8.0-12	0.9	-0.9			-0.0			Upper Thr	eshold			1.5	
Lobets (12.0-15.0) 3.5 Beta (15.0-20.0) 3.8	11		0.0	Lobeta (12.0- Beta (15.0-20		1.5			0.0			Lower Thr	shold			-1.5	
Hibeta (20.0-30.0) 5.4				Hibeta (20.0-	80.0) 4.8							Flash Play				1.0	
Gamma (85.0-45.0) <mark>5.7</mark> Alpha1 (8.0-10.0) 1.8	.0.7			Gamma (35.0 Alpha1 (8.0-1		-1.0						Amplitude				0.0	
Alpha2 (10.0-12.0) 1.7	-0.5			Alpha2 (10.0		-1.1						Amp + Ev				2.0	
Delts (1.0-8.0) -2.2 Thets (4.0-8.0) 0.4 Alpha [8.0-12.0) 0.1 Lobets (12.0-15.0) 2.4 Bets (15.0-20.0) 2.4 Bets (15.0-20.0) 3.5 Samma (85.0-45.0) 4.0 Alpha [8.0-10.0] 0.2 Alpha [8.0-10.0] 0.2	-1.9 -0.0 -1.1 -1.9 0.7 0.4 1.2 -1.3 -1.3 -2.0	4.0	0.0 -0.0 0.0 0.0 0.0 0.0 0.0	Delta (1.0-8.1 Theta (4.0-8.) Alpha (8.0-12 Lobeta (12.0- Beta (15.0-20 Hibeta (20.0 Gamma (35.6 Alpha1 (8.0-) Alpha2 (10.0	0) 0.6 1.0) -0.1 -15.0) 2.7 0.0) 3.4 30.0) >4.0 -45.0) 4.0 0.45.0) 4.0	-8.1 -2.4 0.7 1.6 3.3 4.7 -2.7 -2.4	0.0 -0.0 -0.0	40.0 40.0	-0.0 -0.0 -0.0 0.0			100.00			population of the second secon		արություն Գրություն
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0 (1.0-3.0) -0.6 -0.1	1.1	3.6 -6.0	>6.0 -1.0	0 0.8 2.1		0.5 0	2 0.2	-5.3	5.4			1	North				
(4.0-8.0) -0.3 1.0 (8.0-12.0) 1.9 1.0		1.6 <6.0	>6.0 -0.1			0.9	-0.4 7 1.0	-2.6			0.5 0.					EJE	1
(12.0-15.0) 1.4 1.4	-0.0	0.4 -1.2		2 1.7 -1.0			7 -0.6			1.1	0.6 1.	4			0.0	0.0 -5.0	-5.0
115.0-20.0) 1.9 1.1		1.2 -1.4	1.2 0.1			1.3 -0					1.2 0.						
H (20.0-30.0) 0.6 0.4 3 (35.0-45.0) -0.2 -0.2		0.7 -1.3 0.3 -0.9	2.1 0.0			0.8 -0					1.4 -0. 0.4 2						
A1 (8.0-10.0) 1.7 2.2	0.2			1.9 0.1	5 -1.1	1.4 2					0.4 1.				C-Scores Porce Percent R	eward)pper Threshok	and the same
A2 (10.0-12.0) 2.4 0.9				6 2.2 -0.1			7 0.4	0.7		1.9	1,4 -0.	2					
rainAvatar	41.2	Score (Tab	2 \ Tab 3 \ T	ab 4 \ Tab 5 \ T	ab 6 ), Revie	w λ Overla	n/		CIPH	ogramData'.	BrainMaster	Studies	Zicoreirotali		sunning		10 1 1
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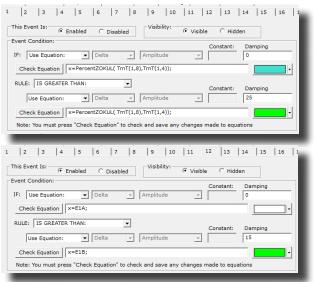
#### **Enabling Events to control Third-Party Games**

1. If the Third-Party game is a SomaticVision Game (InnerTube or Particle Editor), the BrainMaster Software has to be set into Emulation Mode. This is accomplished in the Display Options Menu under the DLL Memory Mapping Mode.

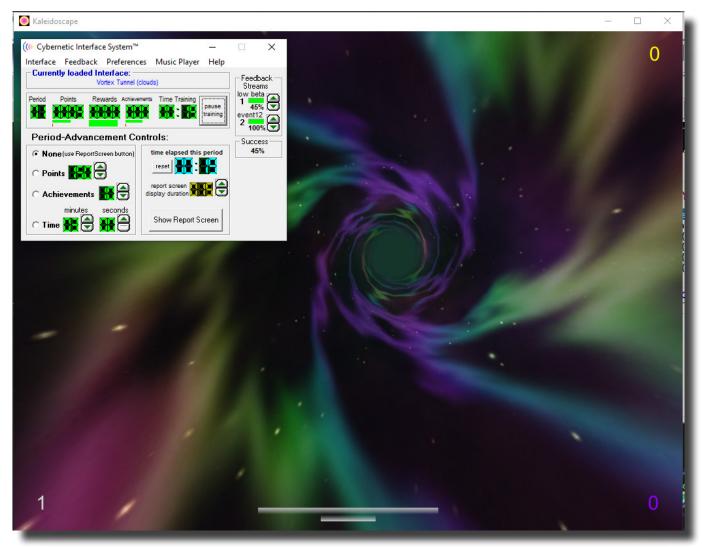
El BrainAvatar Setup		×
Main Login Folder Setting		
Acquisition Channels Bands	Montage Protocol Feedback Session Event Wizard Z Scores ROI Select Session Wizard Atlantis HW Electrodes Display	• •
Acquired Waveform	REFERE FEFERE	
Training Waveform		
Phase-Space Trajectory		
Thermometers		
Coherence / Phase Display		
FFT Frequency Spectrum		
Brain Mirror (FFT)		
Brain Mirror (Filters)		
Text Stats Panel (Live)		
Component Trend Graphs		
Event Trend Graphs		
Wide Event Trend Graphs		
3D Brain		
CSA		
Z-Score Text Display		
Z-Bars Plot		
Z-Score Maps (Damped)		
Z-Score Maps (Instantaneous)		
Flat Maps		
Sensor Impedance Values		
Text Line		
emory Mapping Mode		
entery happing house	-	
Emulation Mode to use Somatic Vision Games v	via Event O Standard O Emulation	
rd Events 9 - 16		
u events 9 - 10		
	Use These Settings	

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 (Somatic Vision) or is just used by that software (BeyondVR). 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 met (For this example, we want the training reaction from Event 1. So, because of this 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.



### **Session Wizard**

#### **Session Wizard Control Screen**

💽 BrainAvatar Setup				×
Main Login Folder Settings Global Settings				
Main Read/Write Acquisition Channels Bands Montage Pro	tocol   Feedback   Session   Event Wiza	rd   Z Scores   ROI Select	Session Wizard Atlantis HW	Electrodes 🚺 🕨
Main       Read/Write       Acquisition       Channels       Bands       Montage       Provide         Available Template Files:       Implay and the state of	tocol   Feedback   Session   Event Wiza	•	Session Wizard Atlantis HW	Electrodes
Logged in, device type Unknown		Use Settings and Clo	ise Use These Settir	ans I
		ose sectings and cit		192

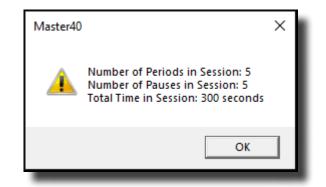
- 1. Available Template Section Section where you can choose the Session Wizard Template you would like to use.
- 2. **Use Template Button –** Click to use the Session Wizard Template this is selected from the Available Template Section.
- 3. View Template File Button Click to View the Template of the Session Wizard Template that has been selected.
- 4. **Template Description Section –** Section that displays the Template's description of the selected Session Wizard Template.
- 5. **Template Comment Section –** Section that displays the Template's comment of the selected Session Wizard Template.

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

1. The Process for loading a Protocol that has a Pre-Configured Session Wizard File, is no different than the process in the BrainAvatar Trainee Screen (Page 35). Pre-Configured Protocols will have both the .bdb2 file as well as a .mqt file in the same working directory. If the matching .mqt file is not located in the same directory, this will not work as expected.

🚽 🛛 💆 📑 🗧 🛛 Atlantis Hi Resolution						
File Home Share View						
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Clipboard		Organize New	Open	Select		
← → ∽ ↑ 🔤 > This PC → Local Di	isk (C:) →	ProgramData > BrainMaster > Settings > A	tlantis Hi Resolution			
		Name	Date modified	Туре	Size	
★ Quick access		🔵 1-4ch Amplitude Template	7/19/2017 3:49 PM	BDB2 File	96 KB	
Desktop	*	4-channel MiniQ Assessment	1/12/2021 6:20 PM	BDB2 File	98 KB	
🕹 Downloads	*	📄 4-channel MiniQ Assessment.mqt	1/12/2021 6:20 PM	MQT File	1 KB	
🗎 Documents	*	Alert	7/19/2017 3:49 PM	BDB2 File	112 KB	
Pictures	*	🔵 Deep	7/19/2017 3:50 PM	BDB2 File	104 KB	
Atlantis Hi Resolution		Focus	7/19/2017 3:50 PM	BDB2 File	112 KB	
Event Wizard		🔵 Peak	7/19/2017 3:51 PM	BDB2 File	107 KB	
QSM Docs		🔵 Relax	7/19/2017 3:52 PM	BDB2 File	112 KB	
Temp Testing		🔵 Squash	7/19/2017 3:52 PM	BDB2 File	114 KB	
- temp resting		Z-Score ANI 4ch PZOKUL 'C' Key	7/19/2017 3:53 PM	BDB2 File	115 KB	
🥳 Creative Cloud Files		Z-Score ANI 4ch PZOKUL Dynamic	7/19/2017 3:42 PM	BDB2 File	115 KB	
🐉 Dropbox		Z-Score Dx 4ch PZOKUL 'C' Key	7/19/2017 3:43 PM	BDB2 File	115 KB	
Diopbox Z-Score Dx 4ch PZOKUL Dynamic		7/19/2017 3:53 PM	BDB2 File	115 KB		
OneDrive OneDrive Z-Score qEEG-Pro 4ch PZOKUL 'C' Key		7/19/2017 3:54 PM	BDB2 File	115 KB		
💻 This PC		Z-Score qEEG-Pro 4ch PZOKUL Dynamic	7/19/2017 3:55 PM	BDB2 File	115 KB	
-						

The protocol will now run, with various portions of the protocol being controlled by 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, and/or site locations being acquired or trained.



#### Loading a Session Wizard File to a Pre-Existing Protocol

1. When you have loaded the trainee folder that you will utilize the Session Wizard File with, from the Main Menu, click the Settings Tab.

📧 BrainAvatar S	BrainAvatar Setup						
Main Login	Folder Settings Global Settings						
	o BrainMaster BrainAvatar	LOGIN OK: SN: 14366630 UNLIMITED USE					
Current Tra	inee/Study Folder:						
Trainee ID:	Session Wizard	Login					
Trainee Name:	Session Wizard	Folder Selections					
Comment:	Standard Mini-QII - 4 Channel - 5 Position Assessment	Run The Next Session					
Next Sessio	n Number: Total Sessions Available:	View or Change Settings					
Training scre	een is Not Running	EDF Browser					
Exit	Product Manuals	Review Session Results					
Logged in, de	vice type Unknown		Use Settings and Close Use These Settings				

2. From the Setup Menu, click the Session Wizard Tab.

BrainAvatar Setup	×
	ettings Global Settings
Main Read/Write Acqu	iisition   Channels   Bands   Montage   Protocol   Feedback   Session   Event Wizard   Z Scores   ROI Select   Session Wizard   Atlantis HW   Electrodes   💶 上
Read/Write Settings File	Current Trainee/Study: Name unknown
Data Channels	NCHANS: 4 SRATE: 256 LOWFREQCUTOFF: ON FILTER: 3 ARTIFACT: 255 uV COM: 3 - SUMCHANS:OFF - SAVEEEG:EDF - P-P:ON
Frequency Bands	Raw EE5:0.0000-0.0000 Delta:1.0000-3.0000 Theta:4.0000-7.0000 Alpha:6.0000-12.0000 Lobeta:12.0000-15.0000 Beta:15.0000-20.0000 Hibeta:20.0000-3.0000
Training Protocol	IGO: (none) STOP: (none) AUTO:ON:60/20/10 AUTOUPDATE BEFORE EACH RUN
Display Options	Display:
Feedback Control	(Sound: Reward Sound -
Session Control	(40 SESSIONS -NO BASELINES10 RUNS OF LENCTH: 1.0 MINNO PAUSE BETWEEN RUNS-SESSION TYPE: Training
Auto Threshold	PRINT SETTINGS Event Wizard USE THESE SETTINGS
Logged in, device type Un	Use Settings and Close Use These Settings

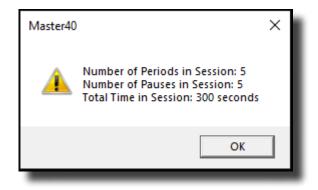
3. From the Session Wizard Control Menu, choose the Session Wizard Template you would like to use. When you have the file you would like to use, click the Use Template Button to confirm the choice.

📧 BrainAv	vatar Setup											×
Main L	.ogin Fol	der Settings	Global Settings									
Main	Read/Write	Acquisition	Channels Band	s   Montage   Pro	tocol Feedback	Session Event Wizard	Z Scores	ROI Select	Session Wizard	Atlantis HW	Electrodes	
4-char	able Tempi mel MiniQ	Assessment.r	nqt		^							
MTP A MTP A MTP A		9-12.mqt ).mqt ta 12-18.mqt				Use Template						
MTP E MTP D MTP G MTP G	)elta Band iamma Bro iamma Fix	ma Sweep 15- 1-3.mqt ad Sweep 30-			,	View Template File						
Templa	ate Descrip	tion:										
		nel MINI-Q 5 p	ositions									
	ate Comme											
Use w	ith Atlantis	MINI-Q in 4-cl	iannel mode									
Logged i	n, device t	ype Unknown					Use Settir	igs and Clos	e Use	These Settin	ngs	

4. From the Session Wizard Control Menu, choose the Session Tab, and click the Use Session Wizard to control session (use with MINI-Q) to allow Session Wizard to be utilized.

BrainAvatar Setup in   Login   Folder Settings   Global Settin ain   Read/Write   Acquisition   Channels   Ba NOTE: Please enter all times as who Baseline Length (pre and post) 0 Seconds (before and after (Length of 0 means "no baselines") Number of Sessions:	ds   Montage   Protocol   Feedback Session   Evi e seconds (1, 2, 3, etc) Run Length: 60 Seconds (0 means run indefinitely) Number of Runs (Trials)	int Wizard   Z Scores   ROI Select   Session	Mizard   Atlantis HW   Electrodes   【
40     sessions (80 maximum)       (0 allows repeated use of Test Session 1)       Session Type:       C Assessment     C Playback       © Training     ⊂ Synthesize       C Simulation     ⊂ Calibration	10     Runs       (Must have at least one Run)       Image: Pause Between Runs?       Session Wizard		
⊽ Use S Sessic	sssion Wizard to control n (use with MINI-Q)		
gged in, device type Unknown		Use Settings and Close	Use These Settings

The protocol will now run, with various portions of the protocol being controlled by 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, and/or site locations being acquired or trained.



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 ac- quired/trained.
PERIOD	States how long the run will be

Data Dictionary for the Session Wizard



Variable that can be used for the Session Wizard Template.

This value will only be kept for the period declared.

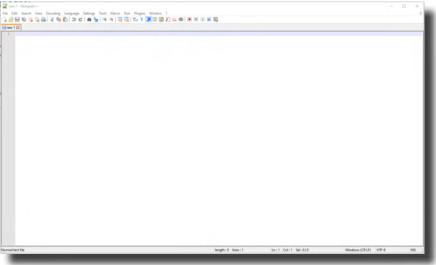
FEEDBACK

DUTY	Percentage Variable that controls the FEEDBACK vari- able. 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
INTENSITY	Variable that can be used for the Session Wizard Tem- plate. This value will only be kept for the period declared.
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 PERI- OD 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.

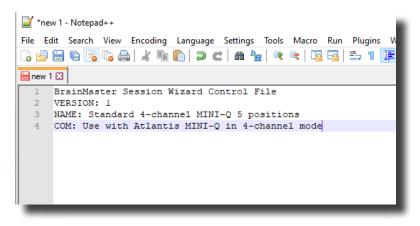
#### **Designing a Session Wizard Template**

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

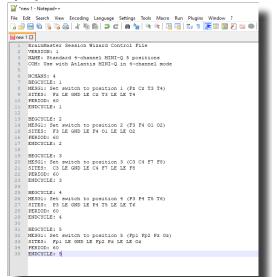
1. Open your Notepad-based program.



 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.



3. Next, define the number of Training Channels that will be controlled by the Session Wizard File, as well as create any cycles that will be used.



4. 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.

20	12A1007 00							
29	ENDCYCLE: 4							
30								
31	BEGCYCLE: 5							
32	MESG1: Set switch to position 5 (Fpl Fp2 Pz Oz)							
33	SITES: Fpl LE GND LE Fp2 Pz LE LE Oz							
34	PERIOD: 60							
35	ENDCYCLE: 5							
36								
37	DO:							
38	DOCYCLE: 1							
39	DOCYCLE: 2							
40	DOCYCLE: 3							
41	DOCYCLE: 4							
42	DOCYCLE: 5							
43	DONE :							
Normal text file								

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:\ProgramData\BrainMaster\Settings as well as the c:\ProgramData\BrainMaster\control\swd with the exact name that matches the Settings it will be used with for use in the BrainMaster BrainAvatar 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 not support this naming, you will have to force the .mqt ending in Windows manually.

ele Template Files:					
el Miñilò Assessment.mqt 5 Bloes: uns.mgt ha Band 9-12.mqt ha to Beta 12-18.mqt ha to Beta 12-18.mqt ta UGamma Sweep 15-100.mqt ta UGamma Sweep 15-100.mqt mma Brad Sweep 30-55.mqt mma Fix 40.mqt mma Fix 40.mqt	View Template		1		
Description:					
Comment:		to 10/001			
	Clipboard	Organize New	/ Open	Select	
	← → • ↑  This PC → Local Disk (C:)	> ProgramData > BrainMaster > Control :	> swd		
	Ouick access	Name	Date modified	Туре	Size
	Desktop	//////////////////////////////////////	1/12/2021 6:20 PM	MQT File	1 KB
	Downloads	👼 Device	12/9/2019 5:04 PM	Configuration sett	1 KB
		//////////////////////////////////////	5/22/2017 12:27 PM	MQT File	1 KB
	🗎 Documents 🛛 🖈	/III MTP Alpha Band 9-12	7/10/2014 5:00 PM	MQT File	1 KB
	🖬 Pictures 🛛 🖈	/III MTP Alpha Fix 10	7/10/2014 5:02 PM	MQT File	1 KB
	<mark>,</mark> 13.0	/// MTP Alpha to Beta 12-18	7/10/2014 5:04 PM	MQT File	4 KB
	- Event Wizard	/ MTP Beta Fix 20	7/10/2014 5:04 PM	MQT File	1 KB
	QSM Docs	//// MTP Beta UGamma Sweep 15-100	8/15/2013 2:57 PM	MQT File	5 KB
	Session Wizard	/ MTP Delta Band 1-3	7/10/2014 5:04 PM	MQT File	2 KB
	Session Willing	//// MTP Gamma Broad Sweep 30-55	2/27/2014 5:33 PM	MQT File	4 KB
				MOT FIL-	1 KB
	😸 Creative Cloud Files	/III MTP Gamma Fix 40	7/10/2014 5:05 PM	MQT File	
		💭 MTP Gamma Fix 40 间 MTP Gamma Sweep 1-45	7/10/2014 5:05 PM 2/27/2014 3:34 PM	MQT File	12 KB
	👩 Creative Cloud Files	III MTP Gamma Sweep 1-45 IIII MTP HBeta 20-29			12 KB 3 KB
		/// MTP Gamma Sweep 1-45	2/27/2014 3:34 PM	MQT File	
	😴 Dropbox 🥌 OneDrive	III MTP Gamma Sweep 1-45 IIII MTP HBeta 20-29	2/27/2014 3:34 PM 7/10/2014 5:06 PM	MQT File MQT File	3 КВ
	😅 Dropbox	III MTP Gamma Sweep 1-45 III MTP HBeta 20-29 IIII MTP HiGamma Sweep 30-70	2/27/2014 3:34 PM 7/10/2014 5:06 PM 2/27/2014 6:03 PM	MQT File MQT File MQT File	3 KB 11 KB

28

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. Or, by simply choosing the protocol that matches it's name.

Main	Read/Write Acquisition	Channels Bands	Montage	Protocol   Fee	edback   Se	ession Event Wizar	d Z Scores	ROI Select	Session Wizard	Atlantis HW	Electrodes	
	Available Template Files:											
mini	annel MiniQ Assessment.m q4x5 60sec runs.mqt	ıqt			^		1					- 1
MTP	Alpha Band 9-12.mqt Alpha Fix 10.mqt					Use Template						
MTP	Alpha to Beta 12-18.mqt Beta Fix 20.mqt	00										
MTP	Beta UGamma Sweep 15-1 Delta Band 1-3.mqt Gamma Broad Sweep 30-5					View Template	1					
MTP	Gamma Fix 40.mgt	io.inqi				File						- 1
	Gamma Sweep 1-45.mqt				*							- 1
leint	late Description:						_					
Тетр	olate Comment:											- 1
												- 1
												- 1
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Logged	l in, device type Unknown						Use Set	tings and Clos	se Use	These Settir	ngs	- 1
												_



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28