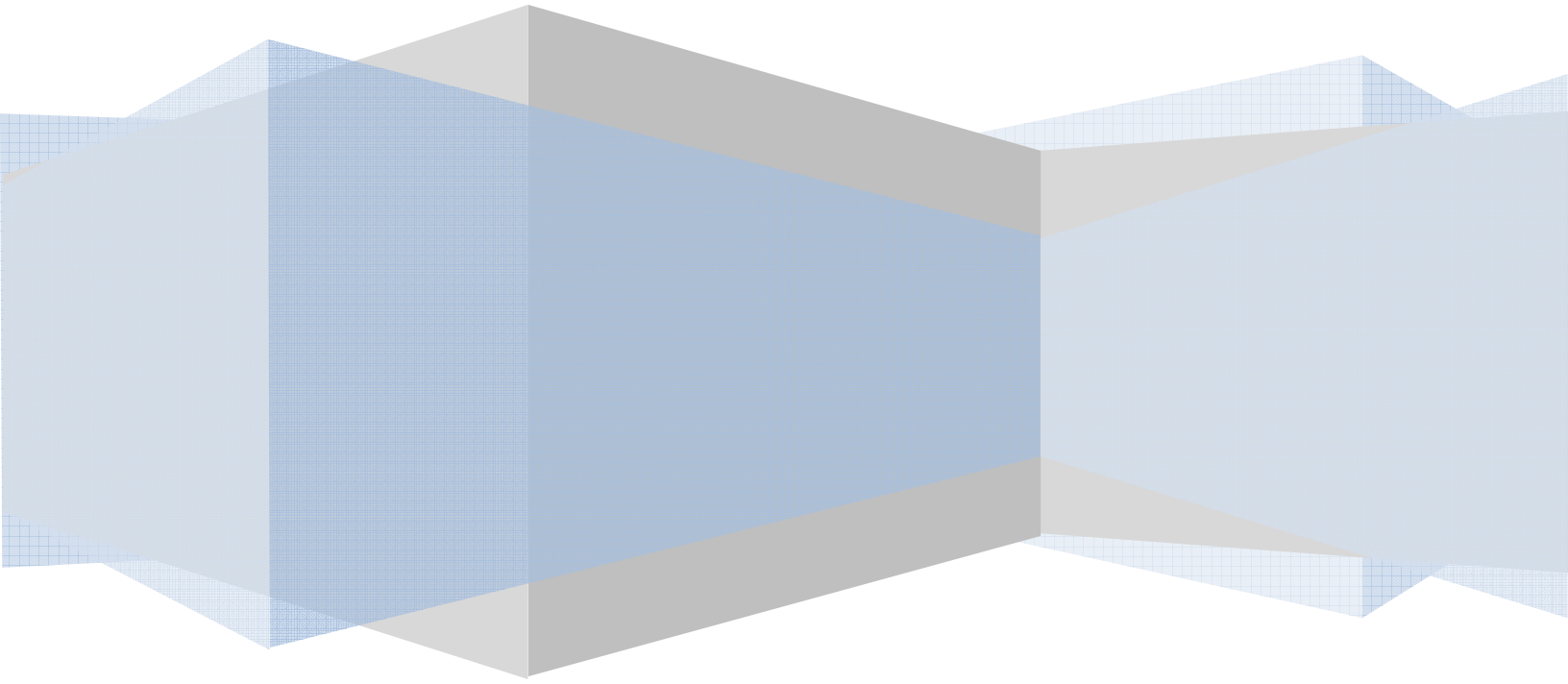
EEGInfo

Quick Start Guide

Installation and General Use of BioExplorer, EEG Info NeuroAmp & Games



Thank you for purchasing the EEG Info NeuroAmp and BioExplorer software. This guide was created to assist the average Clinician or user in the installation and basic use of BioExplorer software, NeuroAmp hardware and the use of key games and feedback tools. More information can be found online at:
www.eeginfo.com/support
www.neuroamp.com

EEG INFO Technical Support
Woodland Hills, CA
Phone: (818) 373-1334
Email: support@eeginfo.com
Available 8:30 AM – 5:00 PM Pacific

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How to Install USB NeuroAmp

How to Install USB NeuroAmp

1. Insert CD into CD-ROM Drive – Do not plug in NeuroAmp until CD is in the drive

2. Plug in NeuroAmp into any available USB port. (Be sure that your NeuroAmp has fresh batteries).

3. Wait for the "Found New Hardware Wizard" to appear
4. If the Wizard asks you to connect to Windows update select "No, Not This Time" and click "Next".

5. Choose "Install the Software Automatically" and then click "Next".
(If the software reports that no drivers can be found, click here for help.)

6. You will get a "has not passed Windows Certification Logo Testing" warning box. Simply click "Continue Anyway".

7. Click "Finish" to continue on to the next part of the installation.

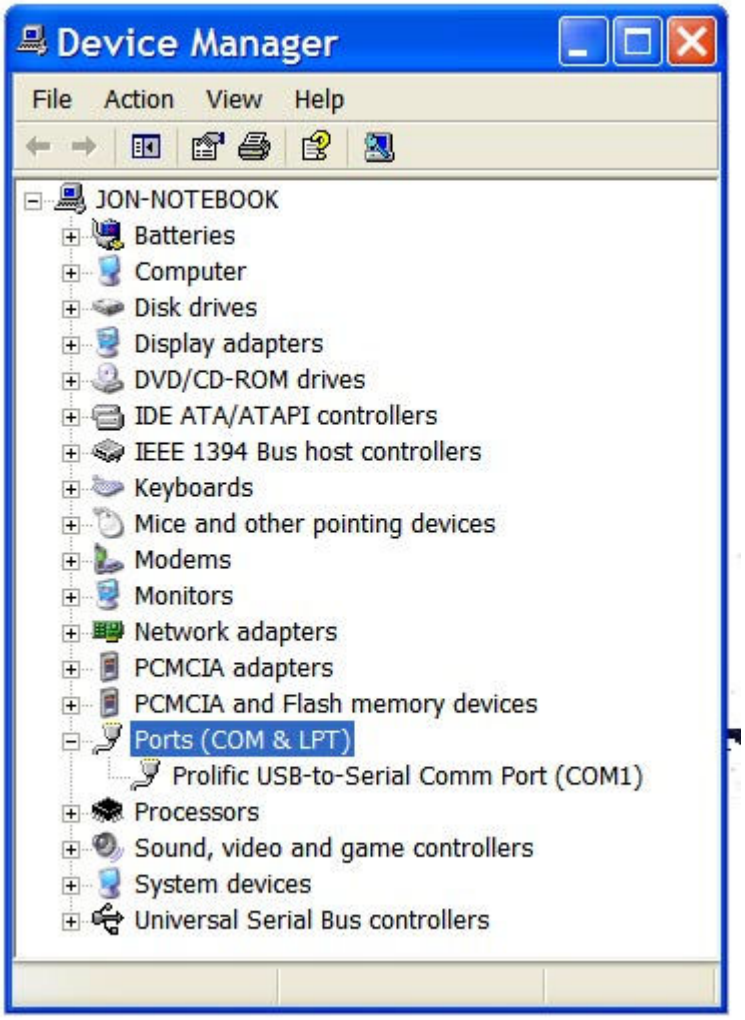
8. The "Add New Hardware Wizard" will come up a second time as the NeuroAmp requires two different drivers to be installed. Follow steps 4 - 7 above to complete the installation of the second driver.

Chapter 1: Installation

Determining COM Port Settings of NeuroAmp

To configure BioExplorer for use with the NeuroAmp, you must first determine what COM Port has been assigned to the NeuroAmp.

1. Right Click on My Computer - the My Computer icon can be found on your desktop or on the Start button.
2. Choose Properties from the right click menu that appears - This opens the System Properties window.
3. Click on the Hardware tab.
4. Click on the Device Manager button - The Device Manager window Displays a list of all your devices.
5. Scroll down and find "Ports (COM & LPT)"...Double click on Ports to view available Ports. {See Image}



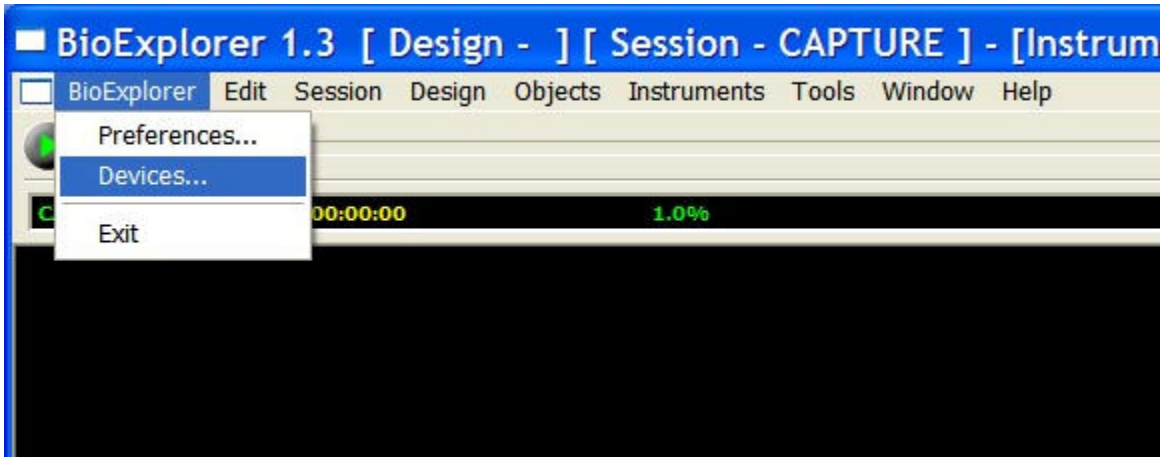
6. Make note of the COM port(s) that are available. In the above Image COM1 is evident.

Chapter 1: Installation

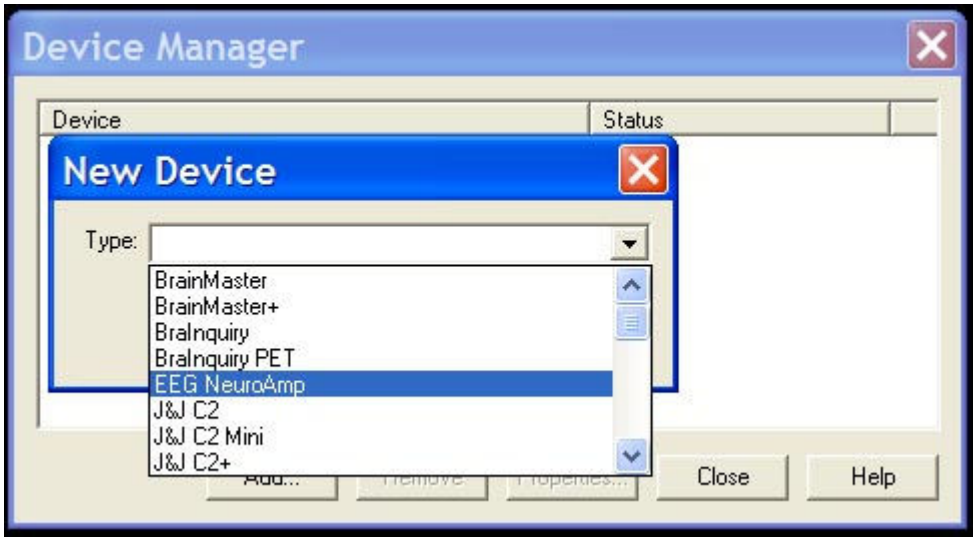
Adding the NeuroAmp as a Device in BioExplorer

In the previous section you learned how to determine the COM Port assigned to the NeuroAmp. We will now use that information to configure BioExplorer for use with the NeuroAmp.

1. Open BioExplorer (Be sure to have HASP Dongle inserted in a USB port)
2. Click on *BioExplorer* (at the top left of the BioExplorer window)
3. Click on *Devices...* (see image)



4. Click on *Add...*
5. In the *Type:* selection box...select the ***EEG NeuroAmp*** (see image)



6. Click *OK*
7. Choose the appropriate COM Port that you determined in the previous chapter. Please note that the NeuroAmp will usually default to the highest COM Port available from the drop down list.
8. Click *Close*

Chapter 1: Installation

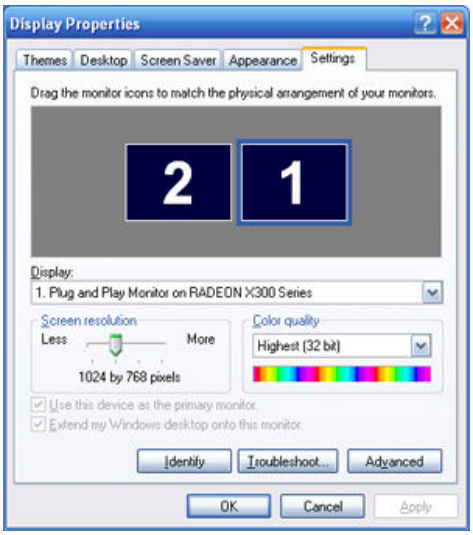
Configuring Dual Monitors

All EEG Info designs are designed for use in a dual monitor setup in which one computer is used to drive two monitors or in the case of a laptop one extra external monitor. One monitor is used to display all information and windows pertinent to the clinician while the other monitor is used to display the game or feedback screen in front of a client.

1. Attach a secondary monitor to your computer via a VGA or DVI connection. Most laptops use a VGA connection while desktops use both VGA and DVI.

VGA DVI

2. Right click on Windows Desktop (The Desktop is the background screen when all windows are closed or minimized).
3. Click on properties - the Display Properties window will appear.
4. Click on the Settings tab
5. Click on the Blue Box with the number 2 in it. *Note: These blue boxes represent your monitors. If you do not see a second box, make sure your 2nd monitor is connected properly and try again.*
6. Check the box that says *Extend my Windows desktop onto this monitor*.
7. Click the Apply button - your second monitor should come to life and display your wallpaper image.



After proper configuration both monitors should be on and the first monitor will have the Start button and taskbar and the second monitor will just display the wallpaper image. You can think of your second monitor simply as an extension of the first. If you drag your mouse across the edge of the screen, the mouse cursor will appear on the 2nd monitor. Simply drag and drop your gaming windows over to the 2nd monitor. Be sure to click on the Blue Title bar at the top when dragging (The title bar is where the Maximize, Minimize and Close buttons appear.

Troubleshooting Dual Monitor Setup:

What to do if your laptop is cloning (showing the same identical image on both screens)

Cloning mode is not the same as setting up an extended desktop as described in the previous section. You must first disable cloning mode to be able to setup dual monitors properly as cloning mode will never allow you to display different information on each screen.

On Dell laptops holding down the Fn (function) key while pressing the F8 key (CRT/LCD) will allow you to toggle through the laptops hardware display modes. Depending on your laptop this combination of keys may be different.

Keep toggling until the laptop screen is on and the secondary monitor is blank with no image at all. Then go through steps 1 – 7 above to configure dual monitors properly using the Windows Display Properties.

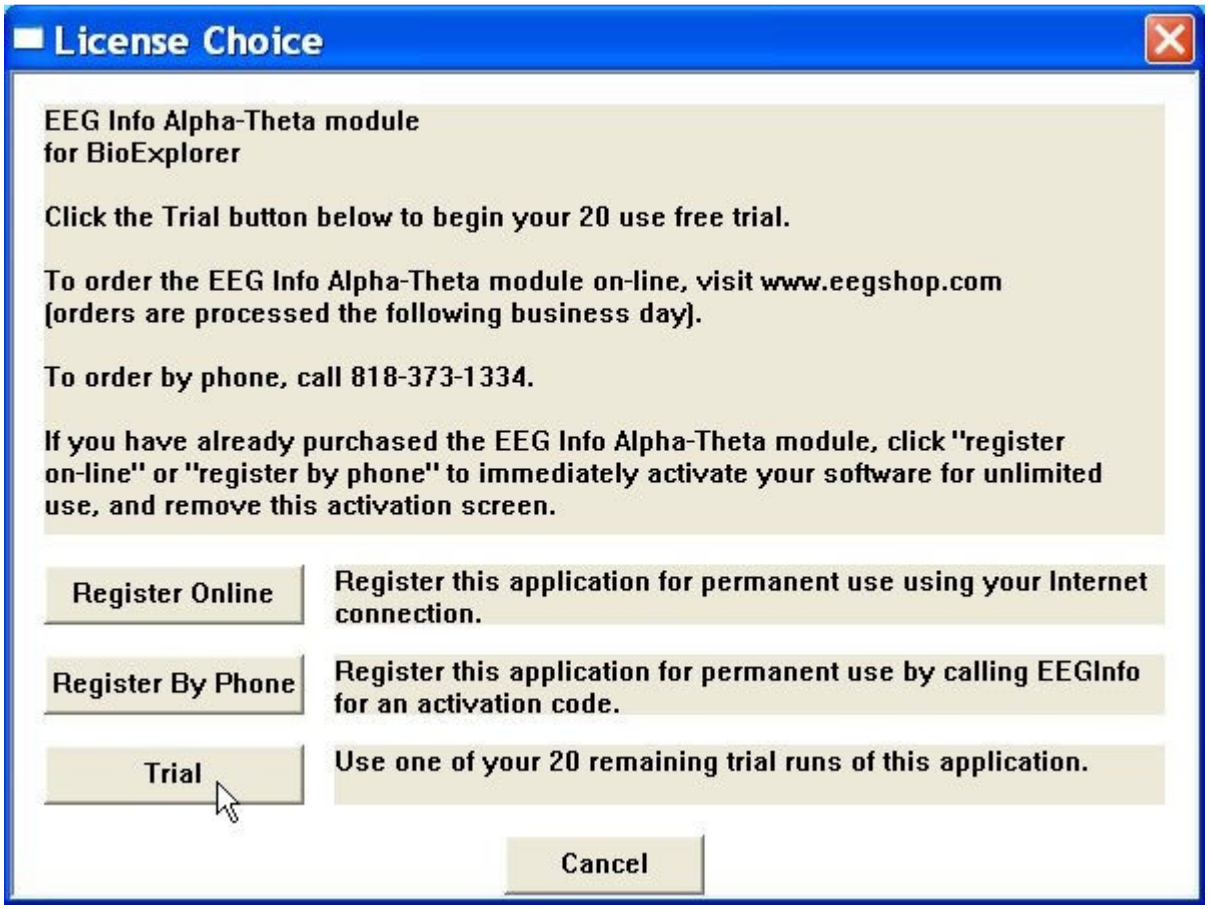
Chapter 1: Installation

Registering the EEG Info Alpha-Theta module for BioExplorer

Once the software is installed, you should be able to locate the alpha-theta icon on the desktop or under programs in the "alpha-theta sounder" program group. Click the icon to launch the program.

Activate the alpha-theta sounder

The first time you run the alpha-theta sounder, you will be asked to activate the software or use the 20 use free trial. If you wish to use the 20 use free trial, click "Trial" and jump to step 5 below.



Purchasing the Alpha-Theta Module

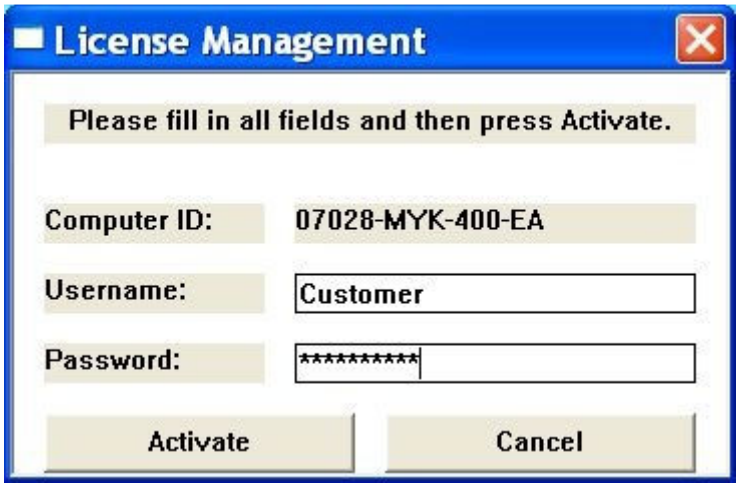
To receive the username and password for registering the module you must first purchase the module. If you have not already purchased the software you may do so by the following means:

You may purchase online at: www.eegshop.com
Or place your order over the phone at (818) 373-1334

If you order on-line, remember it may take 24 hours to receive your on-line activation code. We can usually process phone orders at the time you call.

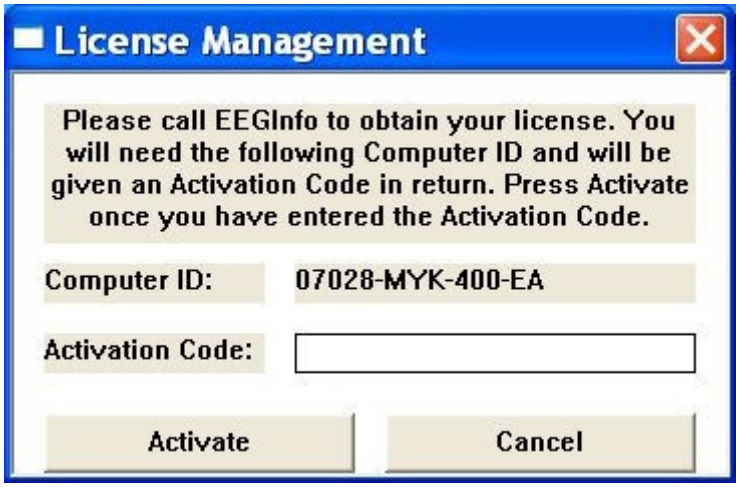
Register Online (recommended)

Once you have purchased the software, there are two ways to register. Registering online is the easiest way but requires that your computer is connected to the Internet. Click the "on-line activation" button, then simply type in your EEG Expert username and password. If you have forgotten your password, http://www.eegexpert.com/public_forgot.asp o have your password automatically resent to you.

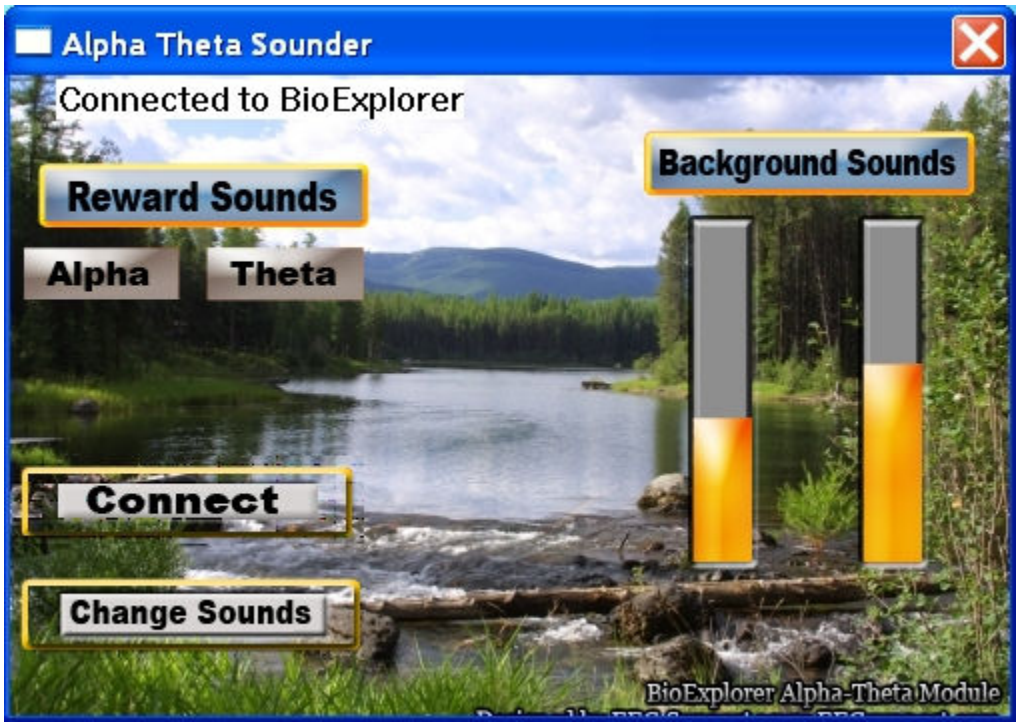


Phone Activation

If you are not on the Internet, this is the best option. Click "Register By Phone" to display your Computer ID, then call us at 818-373-1334 or e-mail your "Computer ID" to us at shipping@eeginfo.com. We will generate an Activation Code which you will type into the registration screen to unlock the software.



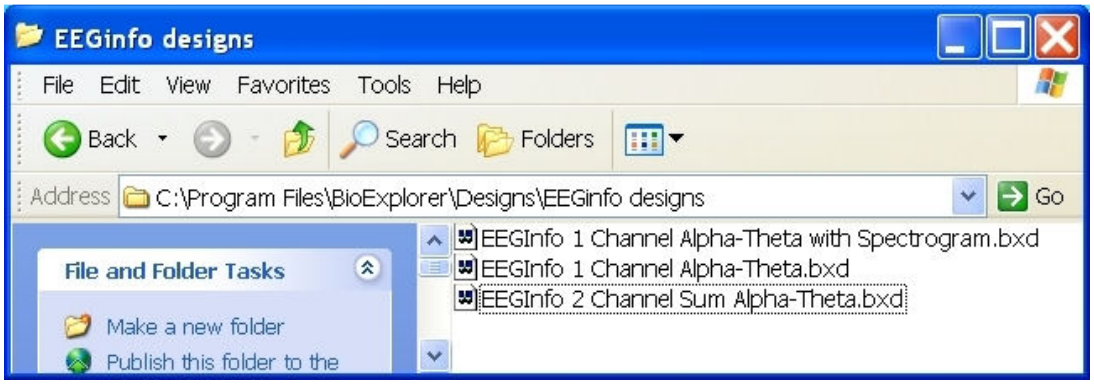
You should now see the Alpha-Theta screen displayed on your desktop. (If you successfully activated the software, you should no longer see the registration screen when you click on the Alpha-Theta Sounder icon to launch the program, the software should launch directly to the sounder screen.



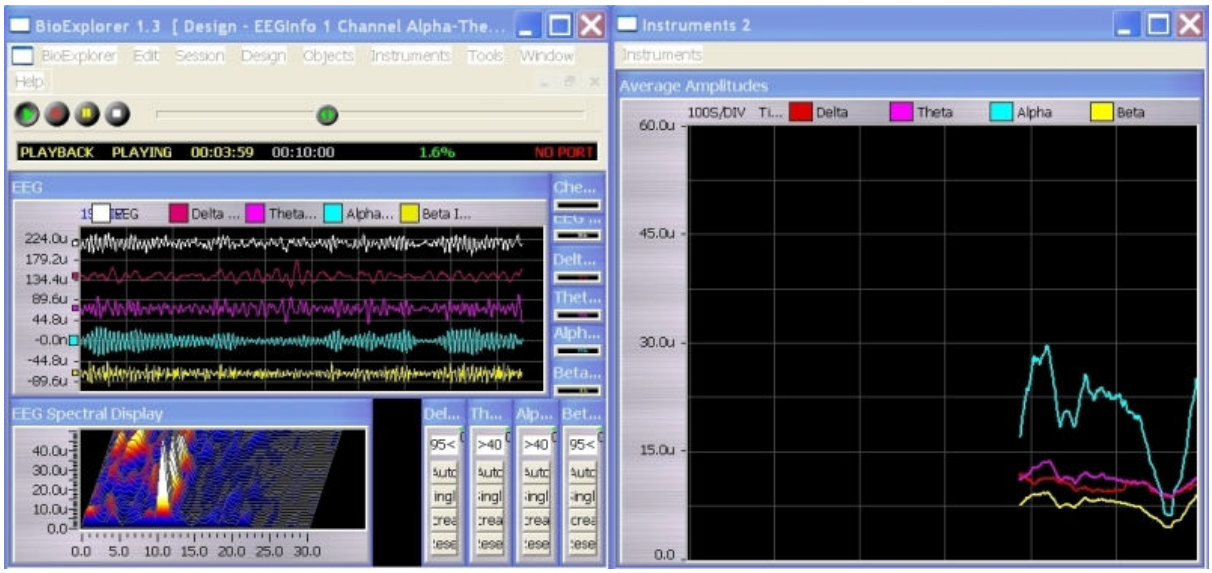
Step 6. Launch BioExplorer. (Icon on your desktop, or in the start menu under BioExplorer)

Use the "Design" menu, and "open" to select one of the alpha-theta designs. These will be found in the EEG Info Designs folder.

Select one of the alpha-theta designs (remember when using the 2 channel design, you will need to connect all 5 electrodes).



Press the green "play" arrow in BioExplorer to start the EEG display. Verify that you have a good EEG Signal and good impedance before beginning the feedback. You may wish to use the "window" menu in BioExplorer to select "instruments one", or "instruments two". Some clinicians choose to detach instruments two to place this on the second monitor. In Alpha-Theta the client generally sits reclined with eyes closed, so there is no need to have client oriented data on the second monitor, so this can be used for the instruments 2 trend graphs for the clinician.



Press "Connect" in the Alpha-Theta module to begin the sound feedback.

Press "change sounds" if you wish to use different alpha-theta sounds from your own library.

Chapter 2: Using BioExplorer

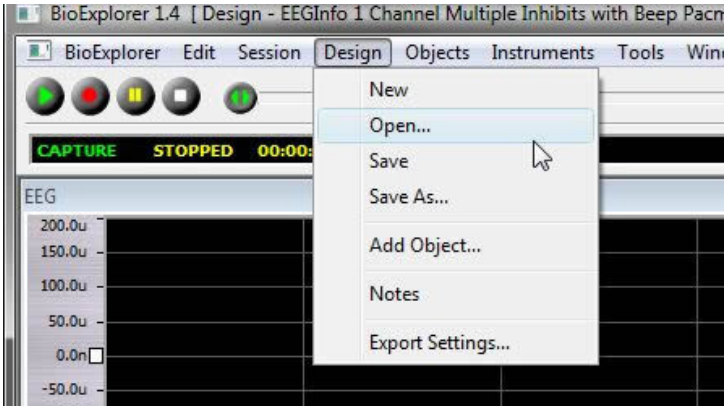
Using EEG Info Designs for BioExplorer

The EEG Info Designs for BioExplorer have been specially designed by Sue Othmer, BCIAC and the EEG Institute for use with the NeuroAmp. Your very first step in using BioExplorer is to open an appropriate design for the protocol and training that you wish to use.

You may check online for the latest designs at ***www.neuroamp.com/techsupport.htm***

The design set consist of:

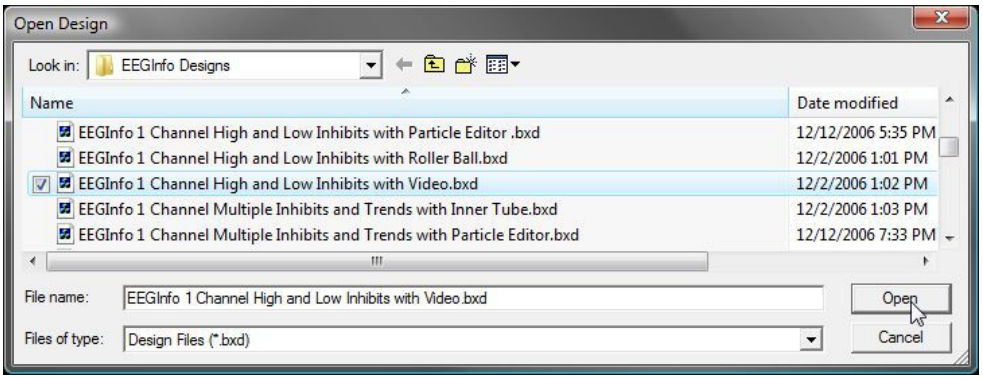
- 1 Channel Multiple Inhibit designs for all Somatic Vision games, DVD playback, Video and Pac Man.
- 1 Channel High and Low Inhibit designs for all Somatic Vision games, DVD playback, video and Pac Man.
- 2 Channel High and Low Inhibit designs for all Somatic Vision games and Pac Man.
- 2 Channel Sum and Difference designs for all Somatic Vision games and Pac Man.



To Open a design:

1. Open BioExplorer
2. Click on Designs
3. Click Open

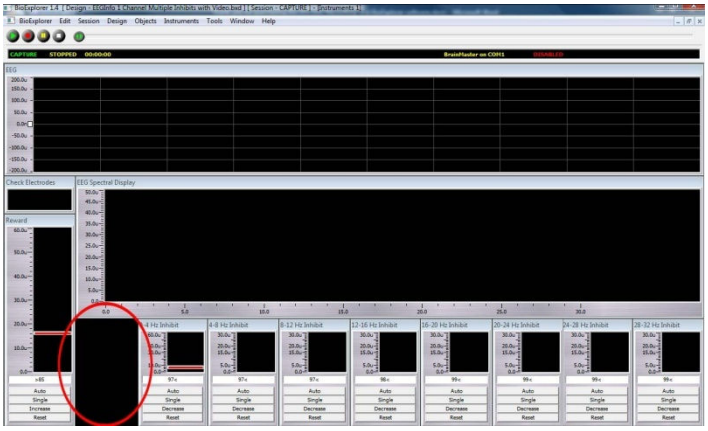
4. Open the EEG INFO folder. This folder is found inside the Designs folder.
5. Double click on the appropriate design to open.
6. If necessary launch game separately (Inner Tube or BioExplorer).



All EEG INFO designs follow the convention of having the Instruments 1 window display information relevant to the Therapist, while the Instruments 2 window will display the game, movie or DVD intended for the Client screen. Please not that Inner Tube and Particle Editor must be launched separately as they are not automatically launched by opening the design in BioExplorer.

Chapter 2: Using BioExplorer

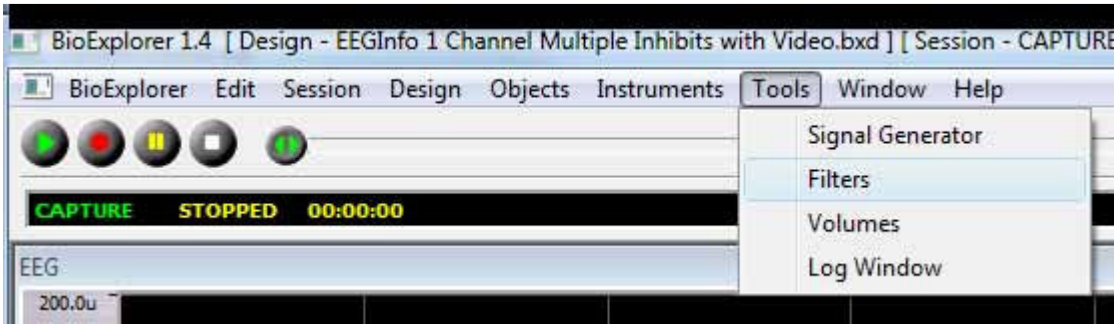
How to adjust reward / inhibit frequency in BioExplorer



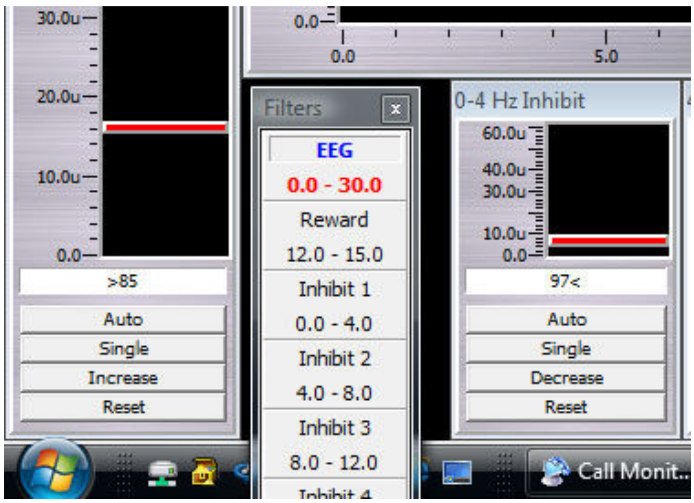
Changes to reward and inhibit frequency in BioExplorer are made using the filter toolbox. The filter toolbox is not anchored down like other elements in a design so at times it is necessary to recall the toolbox if it gets lost or disappears and often you will find the toolbox floating somewhere where it appears it shouldn't be.

In BioExplorer:

Click on the "Tools" menu
Click on Filters

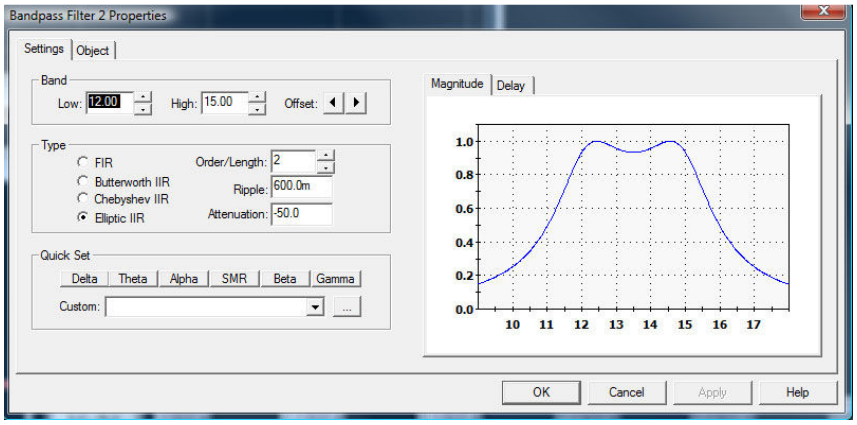


Most of the EEG INFO designs on www.neuroamp.com will contain a blank space for the filter tool.



To adjust the frequency on the fly, click on the band that you want to change on the filter tool. With the band highlighted on the filter tool use the left and right arrows to move the entire band up or down in frequency. Use the up and down arrows to make the filter wider or narrower.

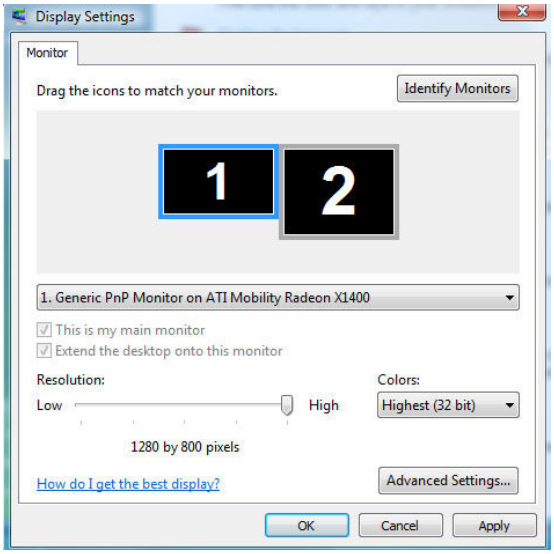
You may also double click on the Reward or Inhibit directly to bring up the Banpass Filter window. In this window you can manually adjust the frequency setting.



Troubleshooting Filter Tool:

What to do if the filter tool goes missing.

First try moving windows to the side to make sure that it is not underneath some other window. If you have attached a secondary monitor or recently adjusted the screen resolution, the filter tool may disappear off the screen. The only way to get it back (and even uninstalling and reinstalling will not solve the problem) is to either change back to the previous resolution and display settings, or connect a secondary monitor again and look for the filter tool.



Please review Chapter 1: Configuring Dual Monitors if necessary. You may need to slide the monitor configuration around, looking for the filter tool in each possible monitor configuration.

In the Windows display settings, where you see the little boxes 1 and 2 that represent each monitor, drag and drop the 2 display box to a different location around the 1. Try to the right, left, above and below clicking on Apply each time after moving the box. Keep an eye out for the Filter Tool each time you move the 2 monitor to a different location. Once you locate the filter tool, drag it back onto monitor 1 before disconnecting or resetting monitor 2.

Chapter 2: Using BioExplorer

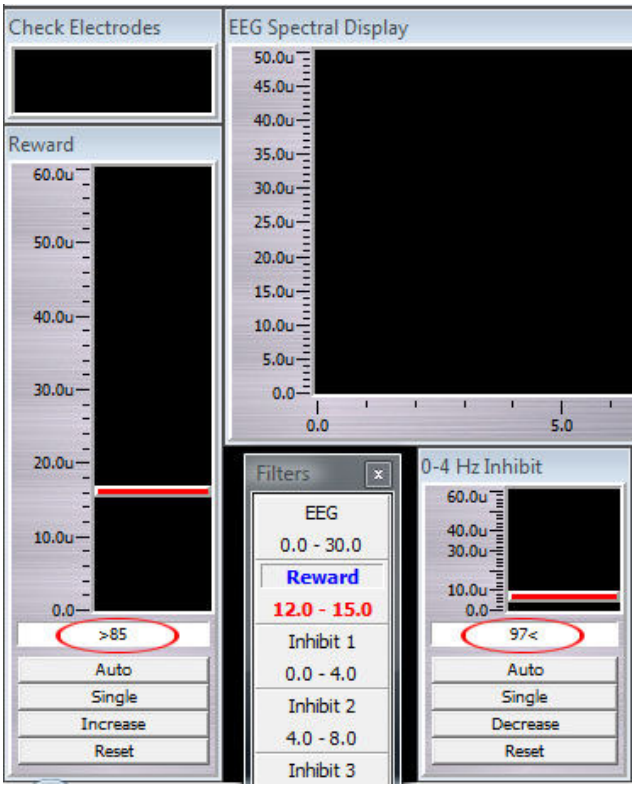
How to adjust the Auto Threshold

Pictured on the right is an example of the Auto threshold values in BioExplorer. As you can see the Reward is set to 85% reward and the inhibit is set to 97% inhibit.

Pictured below the >85 on the Reward are several buttons.

Auto / Manual button: Toggles between Auto Threshold and Manual Threshold.
Single / Double: Toggles single or double Thresholds
Increase / Decrease: Toggles between Reward (Increase) or Inhibit (Decrease)

To adjust the Reward / Inhibit upwards one percentage point, simply left click on the value. Right click to lower the value 1 percentage point.



How do I use Artifact Threshold in BioExplorer ?

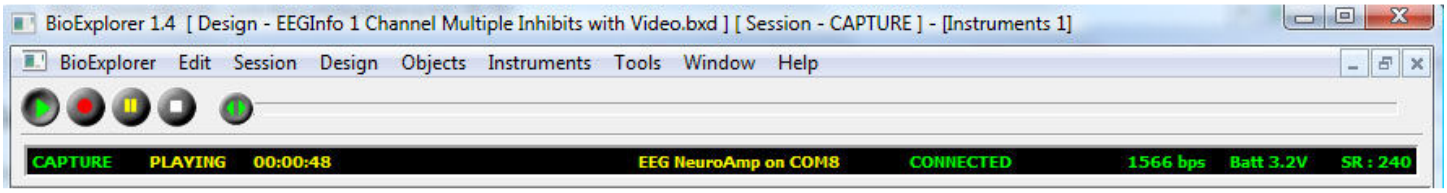
In the current version of BioExplorer there is no way to set an Artifact Threshold to stop movement artifact. For 60hrz and 50hrz noise, EEG Info designs include filtering built in to limit noise interference.

Chapter 2: Using BioExplorer

Running a Session - Record & Playback

Running a Session

You run a session with BioExplorer by pressing the Play button. 



After pressing play button observe the BioExplorer Status Bar. The status bar displays:

Mode – Capture / Playback
Playing / Stopped / Paused
Session Timer
Amplifier being used
COM Port
Connected / Connecting (When using the NeuroAmp, clicking Play will result in a "Connected" report)
Bps – COM port communication speed
Batt – Displays your current battery voltage

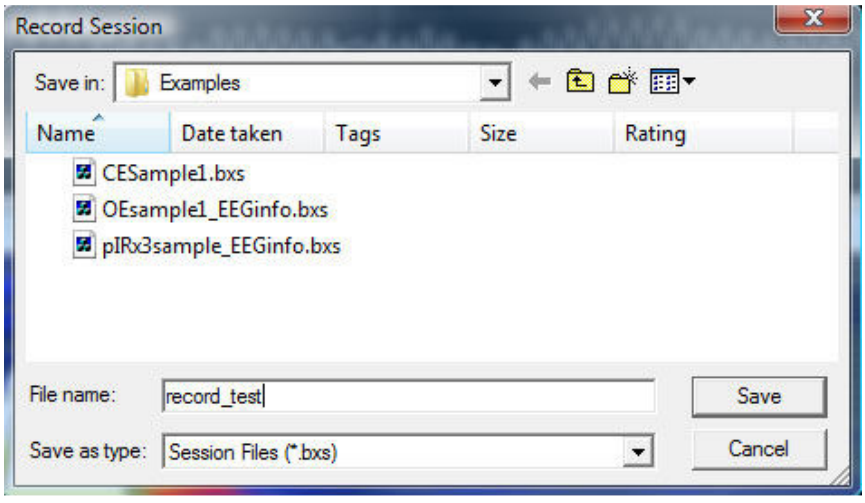
When connected properly, an EEG signal will be displayed in the Oscilloscope and the Spectral Display will also display the EEG Signal over a short period of time using 3D visuals.

Recording a Session

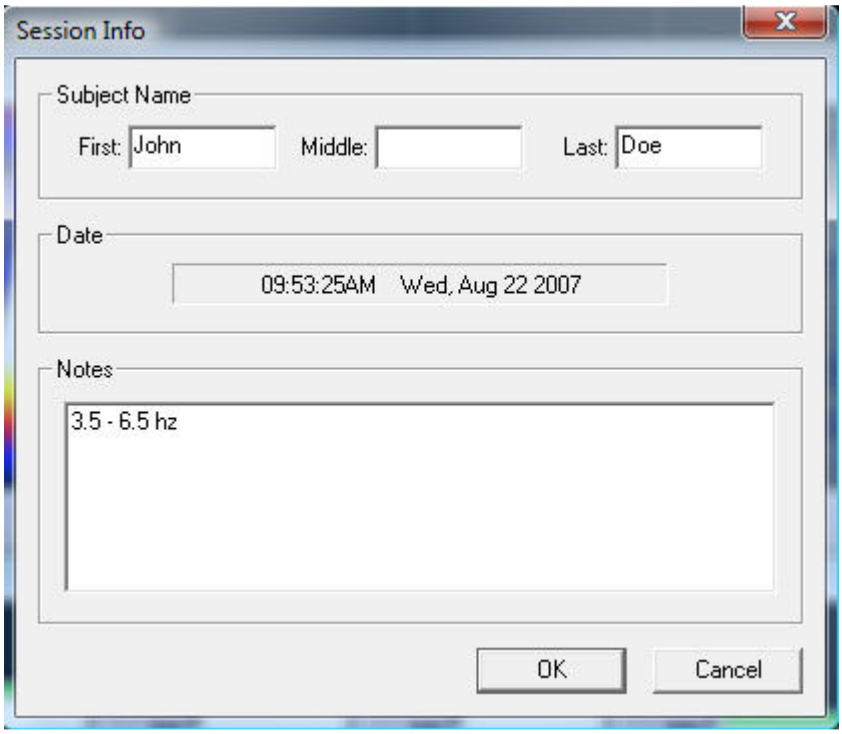
Press the play button to begin your session 

Press the record button 

Give the session a file name



Fill in the optional Session Info and then click OK.

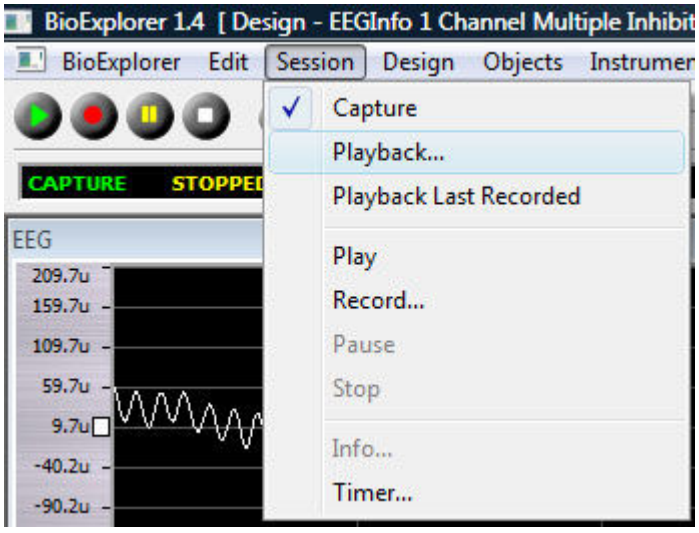


Playback a Session

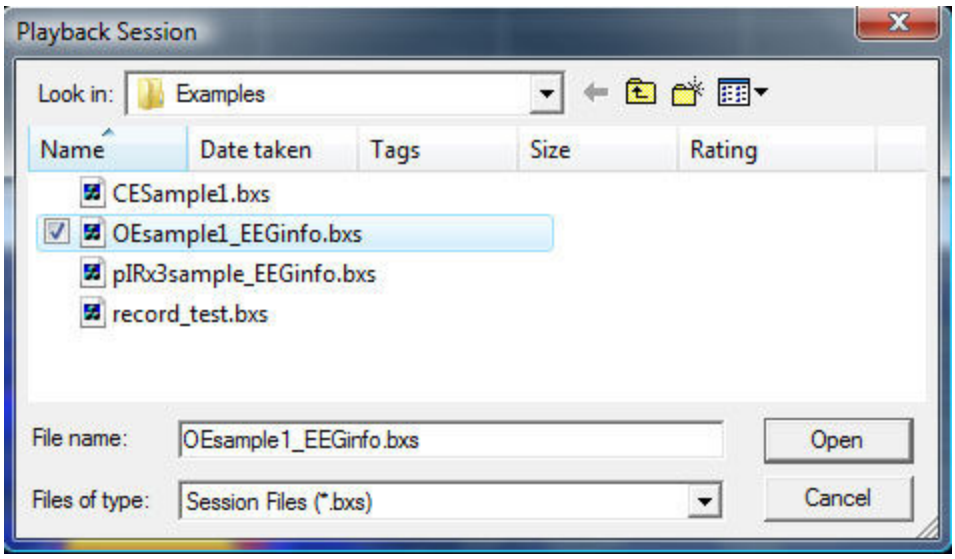
In Playback mode BioExplorer opens a previously recorded session file and uses that data as its source. Playback mode is useful for testing or evaluation purposes where having an actual client wired up would be impractical. It is also the means by which you may review a previous session just as if it were a live session.

First Choose a Design that you would like to playback the data in.

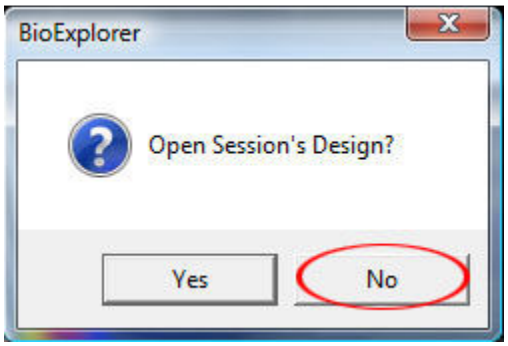
On the File Menu click Session
Click Playback



Choose a prerecorded file for playback then click Open
OESample = Opened Eye Sample
CESample = Closed Eye Sample



When prompted to "Open Session's Design?", click No
This will allow for the session data to be played back in the current design you have open. If you would like for the original design that the data was recorded in to be opened, then click Yes instead.



Capture vs. Playback Mode

BioExplorer plays sessions in either Capture or Playback mode. When BioExplorer is in Capture mode the data for the Session is captured in real time by one or more hardware devices.
You can only run or record a live session when in Capture mode. Do not use Playback mode for a live session.

In Playback mode BioExplorer opens a previously recorded session file and uses that data as its source. Playback mode is useful for testing or evaluation purposes where having an actual client wired up would be impractical. It is also the means by which you may review a previous session just as if it were a live session.

Chapter 2: Using BioExplorer

How to Attach and Detach Windows for use with Dual Monitor Configuration

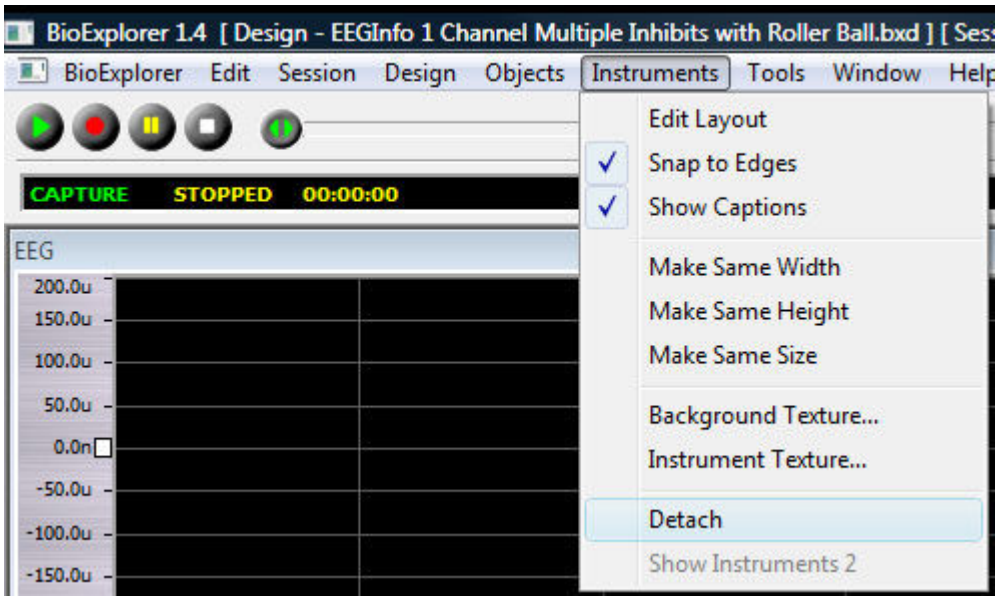
Detaching the Instruments 2 Window for Dual Monitor Configuration

To use a dual monitor setup in BioExplorer you must ***detach*** the game window to be able to drag and drop it onto a secondary monitor in a dual display configuration.

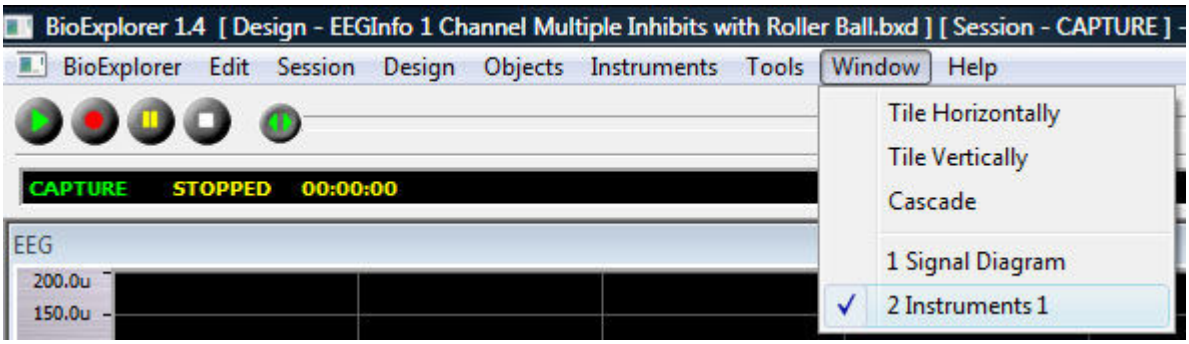
First be sure to consult with Chapter 1: Configuring Dual Monitors for proper dual display configuration.

- Open BioExplorer
- Open an appropriate design (ex. EEG INFO 1 Channel Multiple Inhibits with Roller Ball)
- Click on Window and then select Instruments 2 from the dropdown list.
- Click on Instruments and then select *Detach*.
- The Instruments 2 window will now be detached. You may now drag and drop the Instruments 2 window over to the secondary monitor.
- Please note that Windows can't be moved when fully maximized. Click on the Restore Down button to partially minimize the window.
  (Restore Down button is between the _ and the X)

- Maximize the window again when at its final location by click the same button.



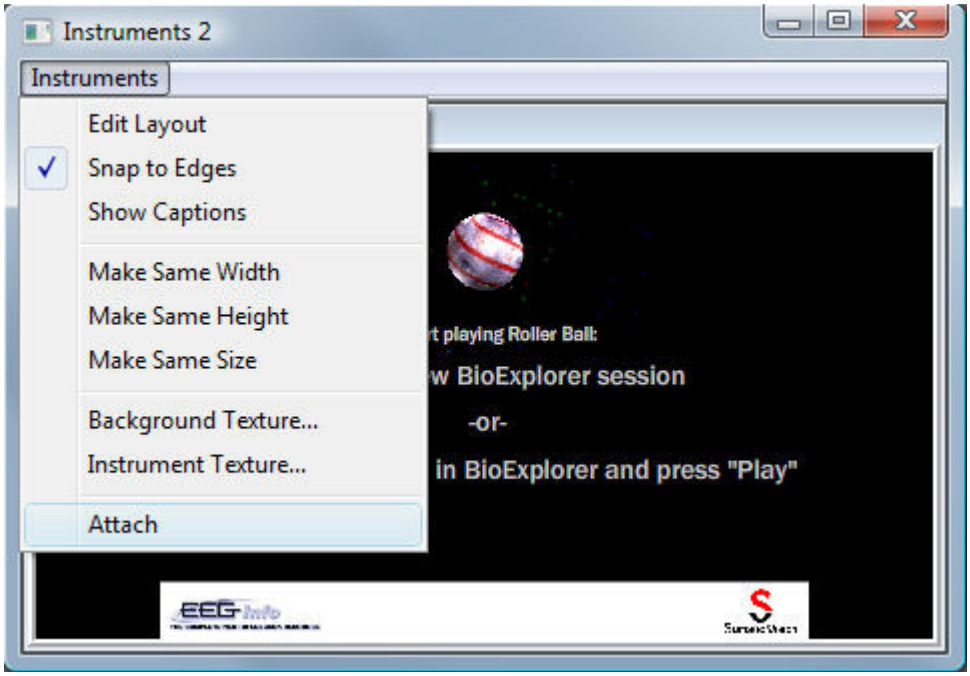
Figuring out whether or not a window is attached or detached is essential to proper setup. All attached windows will be found by clicking Window on the file menu. Attached windows will be listed there.



All detached windows will be found on your Windows Task Bar which is the bar that the Start button resides on. If a window is detached it will have its own tab on the Task Bar. Be sure to check both locations if you're unsure of where a window is. As you can see below…Instruments 2 has a Tab on the Windows Taskbar and so it is clearly detached.

How to Attach a Detached Window:

- Select the detached window so that it is the foreground window
- Click on Instruments in the top left corner of the window
- Click on Attach. The window may suddenly disappear but don't worry, it is still there. Click on Window in the File Menu and you should see the now attached window listed.



Chapter 3: Games & Feedback

Inner Tube for BioExplorer – Step by Step QIK Start Guide

What is Inner Tube?

Inner Tube is a 3D game for BioExplorer where the game parameters can respond to BioExplorer. Ship speed, rolling fog, music volume, tunnel transparency, autopilot accuracy and sky visibility are among the parameters that can be used as feedback. Inner Tube can be set to autopilot, played with a joystick, or played with the keyboard.

The goal is to get to the end of each level before the time runs out. To do this you must achieve reward frequencies and avoid inhibit frequencies.

Overall Inner Tube is designed to be fun while providing very clear, easy to understand, feedback for optimal effectiveness.

Preparing BioExplorer for Inner Tube

1. Open BioExplorer software
2. Click on *Design* > *Open ...*and then select and Open a design file that has Inner Tube (Ex. EEG Info 1 Channel Multiple Inhibits with Inner Tube)
3. Close the Instruments 2 Window as it is not used for Inner Tube.
4. Make sure that the Instruments 1 window is maximized (on the therapist monitor if you have dual displays).

Opening and Using Inner Tube

1. You will now open the Inner Tube software by running the shortcut on your Windows Desktop or via the start menu: Click Start > All Programs > Inner Tube BE > Inner Tube.
2. The Inner Tube Launcher will appear. Select one of the 4 packs. Each pack has a unique rocket ship design and different level designs.
3. You may be asked if you would like to continue using the trial version if you have not purchased and registered the game. Click Yes to Proceed with trial or No to proceed with registration.
4. The *BioExplorer Measurements Window* may appear...click on ***Hide Measurements Window*** button to make it go away.
5. You may choose your settings on the Game Settings window or just otherwise click on Hide to make it go away as well.
6. Switch back to the BioExplorer window and click on Play to begin your session. When you do the game should begin in the Inner Tube window.

Inner Tube Tips

- While the Inner Tube game window is selected and active, Ctrl-N on your keyboard will switch to the next level.
- If Inner Tube seems unresponsive, make sure that you have clicked on Play in BioExplorer and that your session in BioExplorer is running.
- You may access the Launcher window at any time by typing Ctrl-L on your keyboard.
- Rocket Noise can be excessively loud.
  To lower the rocket noise volume:
  - Click on the Windows Start Button
  - Click Run
  - type in ***sndvol32.exe*** and click OK
  - In the Volume Control Window...lower SW Synth to about 50% or to a comfortable level of rocket noise.

Chapter 3: Games & Feedback

Particle Editor for BioExplorer – Step by Step QIK Start Guide

Preparing BioExplorer for Particle Editor

1. Open BioExplorer software
2. Click on *Design* > *Open ...*and then select and Open a design file that has Inner Tube (Ex. EEG Info 1 Channel Multiple Inhibits with Particle Editor)
3. Close the Instruments 2 Window as it is not used for Particle Editor.
4. Make sure that the Instruments 1 window is maximized (on the therapist monitor if you have dual displays).

Opening and Using Particle Editor

1. You will now open the Particle Editor software by running the shortcut on your Windows Desktop or via the start menu: Click Start > All Programs > Particle Editor BE> Particle Editor.
2. The Particle Editor Launcher will appear. Select one of the environment sets.
3. You may be asked if you would like to continue using the trial version if you have not purchased and registered the game. Click Yes to Proceed with trial or No to proceed with registration.
4. The *BioExplorer Measurements Window* may appear...click on ***Hide Measurements Window*** button to make it go away.
5. You may choose your settings on the Game Settings window or just otherwise click on Hide to make it go away as well.
6. Switch back to the BioExplorer window and click on Play to begin your session. When you do the game should begin in the Particle Editor window.

Inner Tube Tips

- While the Particle Editor game window is selected and active, Ctrl-N on your keyboard will switch to the next level.
- If Particle Editor seems unresponsive, make sure that you have clicked on Play in BioExplorer and that your session in BioExplorer is running.
- You may access the Launcher window at any time by typing Ctrl-L on your keyboard.

What is Particle Editor?

Particle Editor for BioExplorer uses beautiful particle environments to feedback biological signals for BioExplorer. Each particle system environment (.par) file can contain music, a background image, and an interactive particle effect, such as rain falling, a candle flickering, or complex abstract graphical displays.

For example you may be trying to make the flame brighter, the display larger, or form a shape from chaos.

Program use is very easy - just go to File->Open... and choose a particle environment to use. A dialog box appears when you open a new environment explaining how the environment will respond.

Chapter 3: Games & Feedback

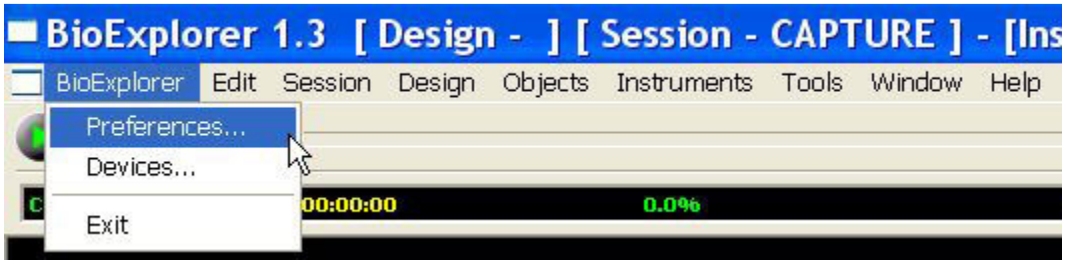
DVD Playback in BioExplorer

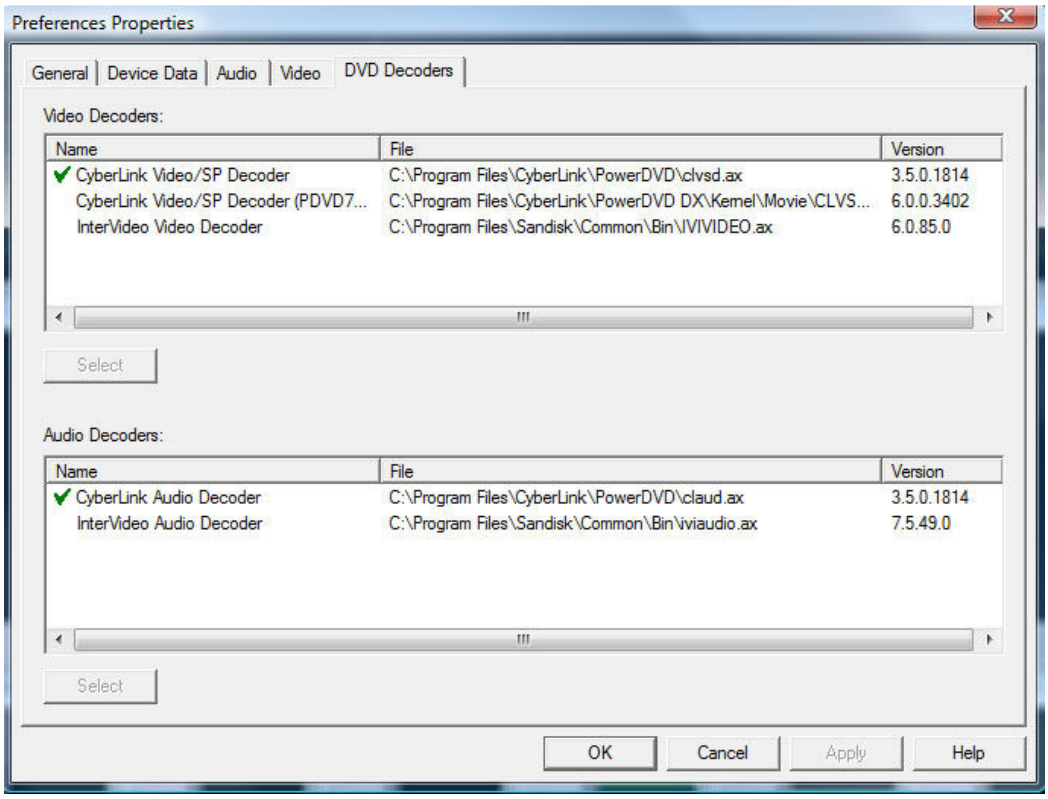
Requirements and Configuration for using DVD Playback

DVD Playback in BioExplorer requires an audio and video decoder.

To find out if you already have decoders installed on your computer:

- In BioExplorer click on BioExplorer
- Click on Preferences
- Select the DVD Decoders tab





If you have proper Decoders already installed on your computer, you will see them listed. You will need both a video decoder and an audio decoder.

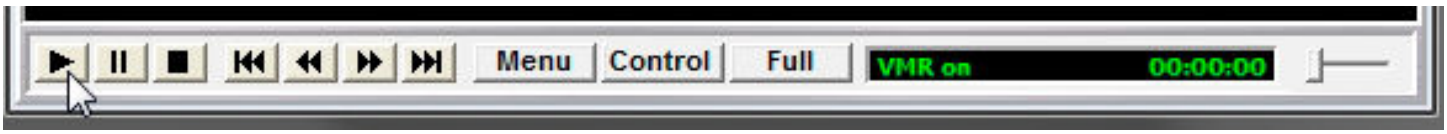
- Click on a Video Decoder listed to Highlight it
- Click on the "SELECT" button. You should see a green check mark appear next to the Decoder.
- Repeat this process for Audio Decoder.
- Click OK at the Bottom of the window.

If you require decoders, they are included with several DVD player applications (e.g. WinDVD, PowerDVD, etc). Low-cost decoder "packs" are also available from the providers below:

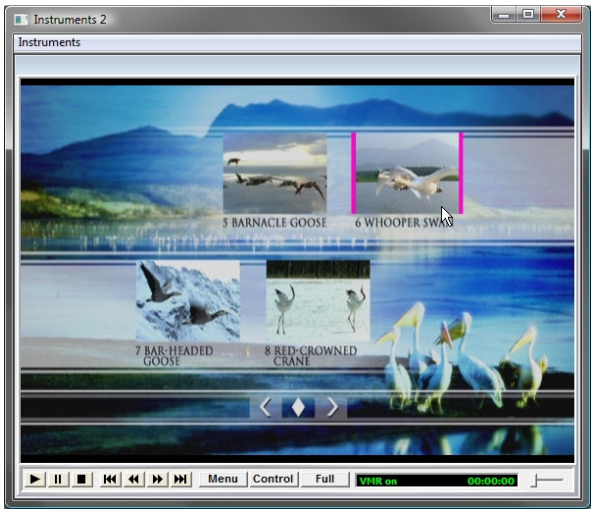
InterVideo: **DVD XPack for Windows XP**
CyberLink: **PowerDVD SE for Windows XP**
Sonic Solutions: **CinePlayer DVD Decoder**

How to use DVD Playback

- Open a design with DVD (ex. EEG Info1 Channel Multiple Inhibit with DVD)
  Resource: How to open a Design in BioExplorer
- The Instruments 2 window will contain the DVD Playback window.
  Insert a DVD into your DVD-Rom drive and then press the Play button in BioExplorer
- Please note that a DVD application on your computer may auto load when you insert the DVD. Please close any such application before proceeding. You should not have the DVD playing in any other windows other than BioExplorer Instrument 2 window.



- Your DVD menu will be displayed. Cue the movie where you would like playback to begin. You may want to choose Scene Selections and pick a particular spot in the movie to use for playback. You may also simply Play the movie from the beginning as well.



- Once the movie has been cued and is playing (press the Play button if necessary), you will then need to click the Control button. By doing so you will give BioExplorer control of the DVD playback and the software will Play and Pause the movie according to reward parameters. This step is important to remember as NOT clicking the Control button will cause the movie to continue to play normally and it will not respond or correlate to the feedback.

- Press play in the BioExplorer Instruments 1 window to begin your session.

Notes:

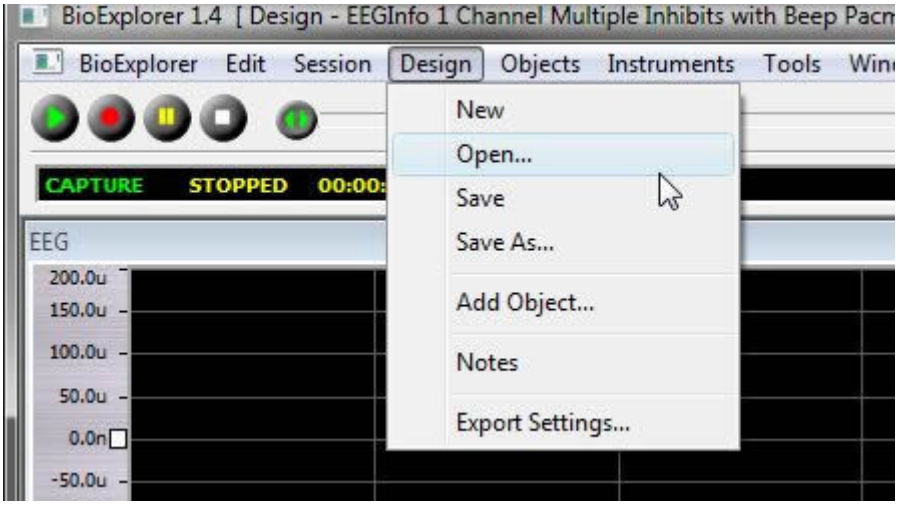
Menu: Bring up the DVD's main selection menu
Full: DVD Playback will be in full screen mode.

Chapter 3: Games & Feedback

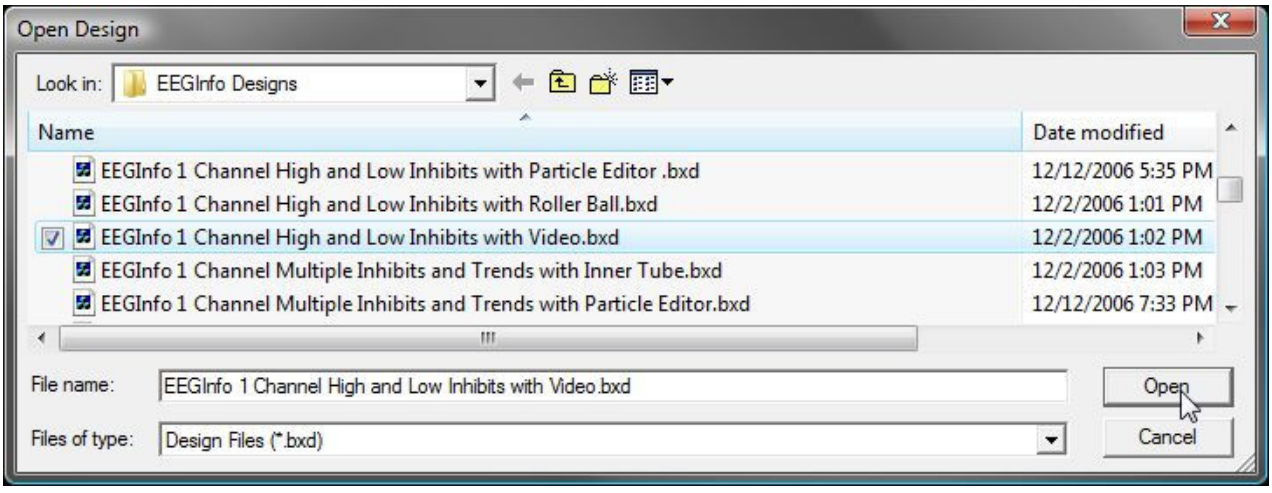
Video Playback

How to use video playback in BioExplorer

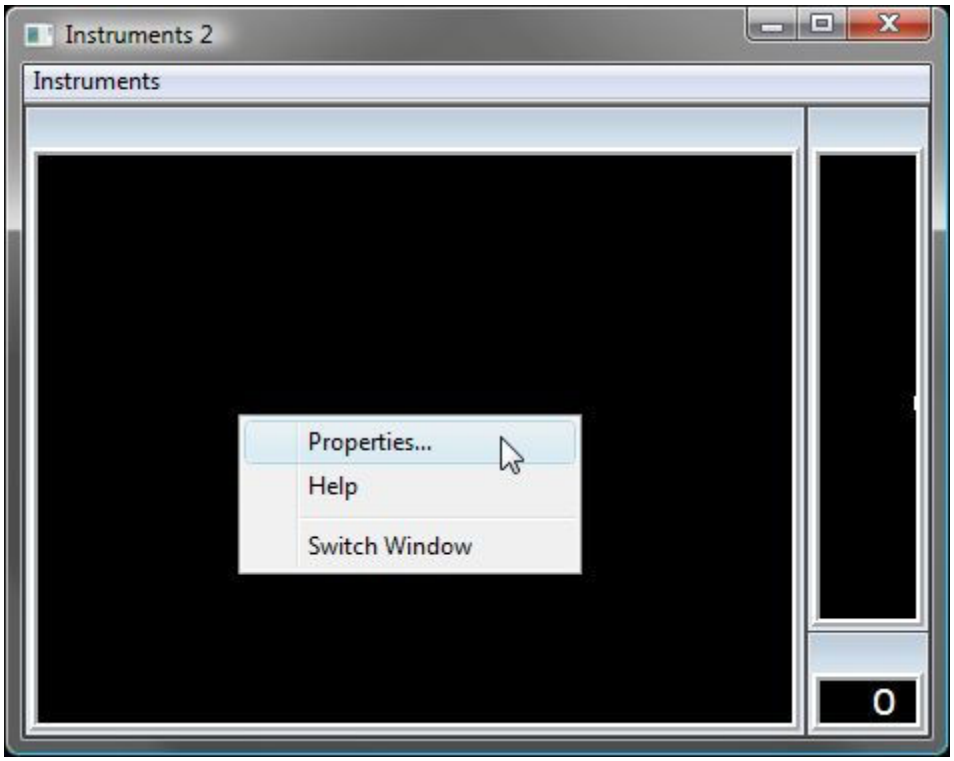
- Open BioExplorer
- Click Design > Open



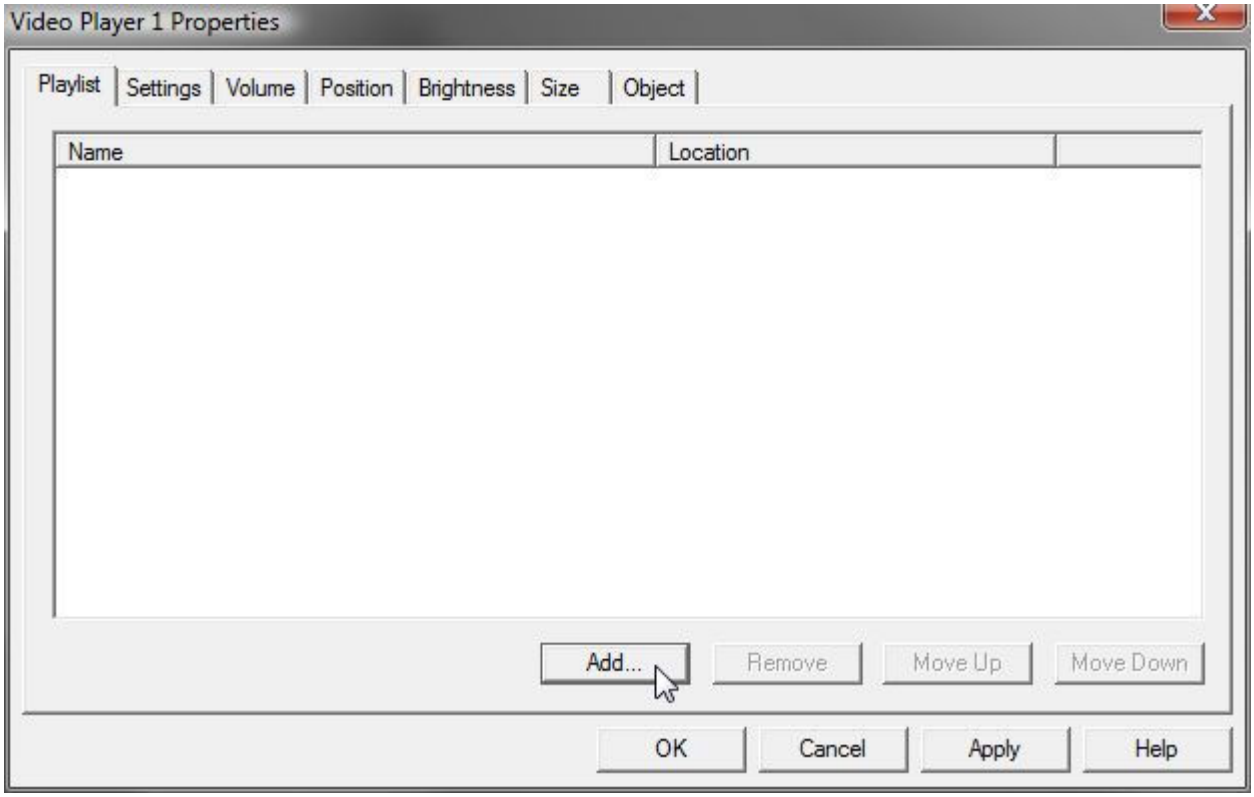
- Choose a design with Video Playback. ex. EEG INFO 1 Channel High and Low Inhibits with Video.bxd
- Click Open



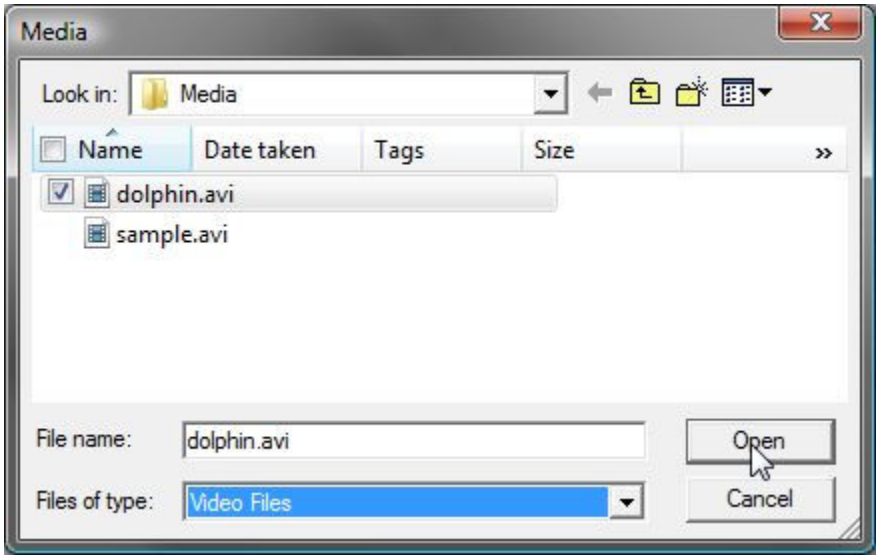
- In the Instruments 2 window, right click in the Video Player 1 area and click properties.



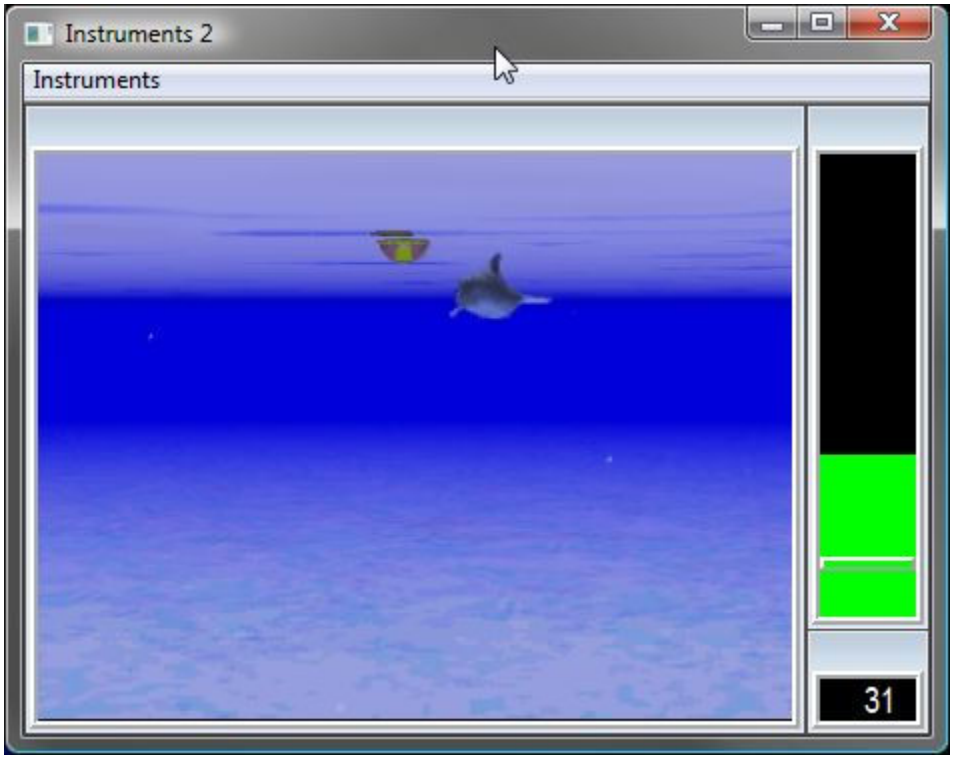
- You should now be looking at the Playlist Tab. Click Add.



- You may now select a media file and click Open to add the file to your playlist.
  By default, BioExplorer looks for Media files in the following location: **C:/Program Files/BioExplorer/Media**
  It is recommended that you copy your media files to that folder. In this case the files would be video files (WMV, MPEG, AVI)



- A Red X next to a filename in the Playlist means that the file is no longer found. Click on the file to Highlight and then choose Remove to make it go away.
- Click OK at the bottom of the Window to close the window and return to BioExplorer.



Your video is now ready for playback. Don't forget to press the PLAY button in the Instruments 1 screen to begin your session. The Instruments 2 screen will show the video playing as well as a points score and a bar showing Reward threshold and activity. The video will pause whenever the reward frequency threshold is not met.

Chapter 4: Troubleshooting

BioExplorer Error : HASP not found (-3)

You need to connect the BioExplorer Dongle , also known as a HASP , to an available USB port .

The BioExplorer HASP dongle comes with every purchase of BioExplorer software.

If you have connected your hasp and still receive this message:

- Plug the HASP Dongle into a different USB port
- Reboot your computer
- Make sure you are using the latest version of BioExplorer (www.neuroamp.com)

Error message: "Devices changed while recording, stopping"

This is an unresolved glitch that has been reported to the developer.

To resolve this issue:
1. Click the BioExplorer menu
2. Click "preferences"
3. Clear the check box from the item "Record on play"

Inhibit thresholds are reversed in BioExplorer

The thresholds in BioExplorer are in fact reversed from other systems like the Neuro Cybernetics and Brainmaster. Many other systems will show 10% over threshold for the inhibits, whereas, for the same calculation, BioExplorer will say 90% under threshold for the inhibits. It's just a different way of calculating the same thing.
BioExplorer can be thought of as a percentage of success.
