

EEGer4TM

Neurofeedback Software

Installation and Test Manual Version 4.3.0

Technical Support: (818) 789-3456 or (800) 789-3456
Customer Support: (888) 521-9803

This manual contains information intended for licensees of EEGer software.

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EEGer4 Installation and Test Procedure

ITP43002 Nov 30, 2012 Added 2-computer procedures
ITP43003 Jan 30, 2013 Added addition instructions for amplifiers
ITP43004 Mar 20, 2013 Added hardware connection information
ITP43005 Mar 30, 2013 Added dongle installer popups
ITP43006 Jan 23, 2014 403p updates
ITP43007 June 10, 2014
ITP43008 October 30, 2014 Discourage XP, show install without CD
ITP43009 April 18, 2016

EEGer4 Installation and Test Procedure

Please review the computer requirements before continuing. You need to know what kind of installation desired and acquisition device being used to make the correct choices later.

Computer Requirements

EEGer software requires one or two computers to operate (depending upon user configuration selections). EEGer executes on the following operating system configurations:

- Windows 7 32-bit/64-bit
- Windows 8/8.1 64-bit
- Windows 10 64-bit

The most sensitive element in a computer system (for EEGer) is the graphics interface. Some graphics chipsets/drivers exhibit poor performance, causing apparent display lagging although acquisition and processing continue normally.

Recommended minimum computer requirements:

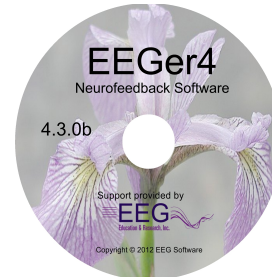
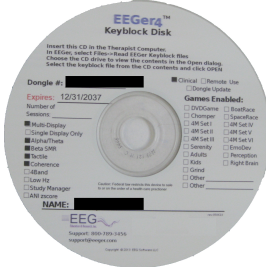
	Single computer system	Therapist computer of 2-computer system	Client/Game computer of 2-computer system
Processor	2 GHz 2 or more processors/cores	1.8 GHz 2 or more processors/cores	1.8 GHz 2 or more processors/cores
Memory	4 GB	3 GB	3 GB
Storage	250 GB	80 GB	80 GB
Video card/chipset At least DirectX 9.0c supported. Minimum resolution 1024x768.	Extended desktop support for an external monitor (and external monitor connector) unless just single monitor system. High-level gaming performance. Note: ATI/AMD or nVidia recommended since not all Intel graphics have required performance.	512 MB memory with mid-level gaming performance	512 MB memory with mid-level gaming performance
Communication ports	USB for EEGer dongle+ USB/serial for acquisition device	USB for EEGer dongle+ USB/serial for acquisition device+ ethernet/serial for game connection link	ethernet/serial for therapist connection link

IMPORTANT: Do NOT plug in the EEGer dongle before EEGer has been installed. Otherwise, the recovery procedure at the end of this manual may have to be used!

EEGer4 Installation and Test Procedure

Things needed for the installation:

Keyblock CD (or emailed licenses) EEGer dongle EEGer CD (or downloaded installer)

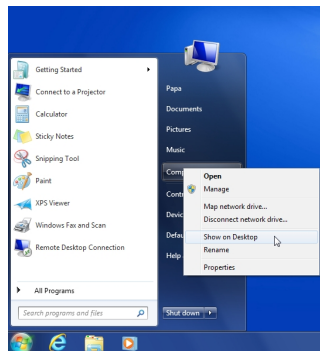


Initial Computer Setup on Each/All Computers

You should first perform all the initialization steps required/recommended by the manufacturer when you receive your new computer(s). Typically, some preinstalled programs may cause issues during a session. It is best to remove them. Please contact Technical Support for assistance with these steps if required.

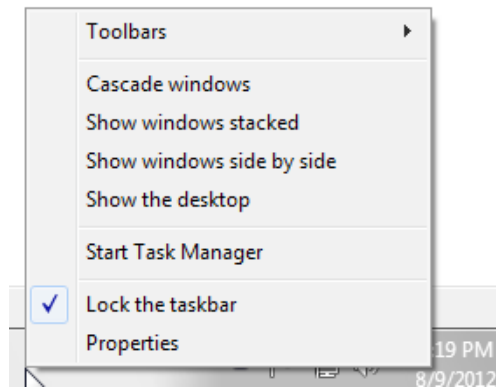
Some antivirus programs cause timing issues with EEGer. Programs that have shown issues or conflicts with EEGer include Symantec, McAfee, and Kaspersky products.

For future convenience, please show the Computer icon on the desktop by clicking on the Windows Start button on the taskbar at the lower left, RIGHT-click on the Computer icon, and select "Show on desktop".

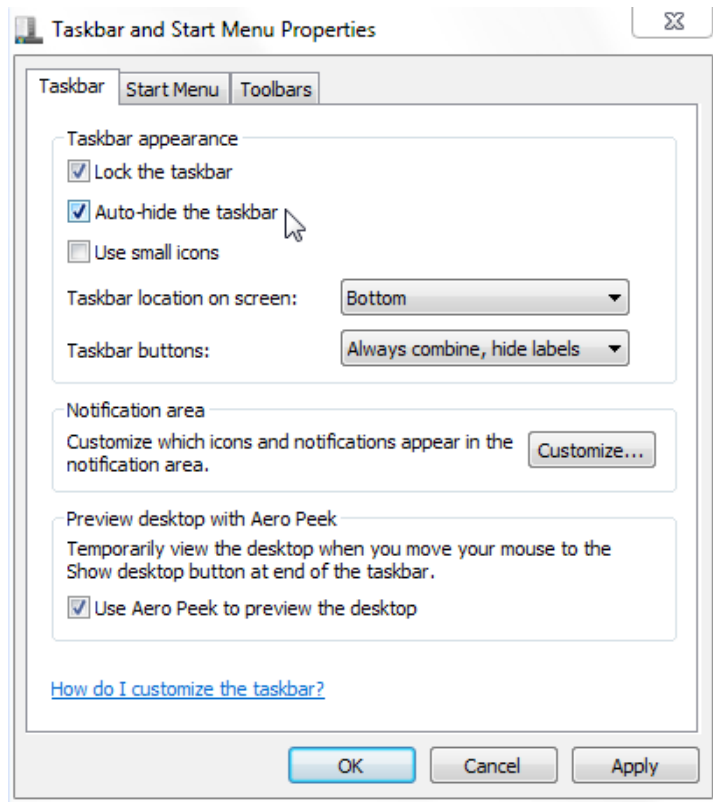


Also (since we will need to do it later anyway), please set the taskbar to "Auto-hide" by RIGHT-clicking on an empty part of the taskbar and selecting "Properties":

EEGer4 Installation and Test Procedure



Then, click on the “Auto-hide the taskbar” checkbox and click on “OK “or “Apply”.



EEGer4 Installation and Test Procedure

Installation

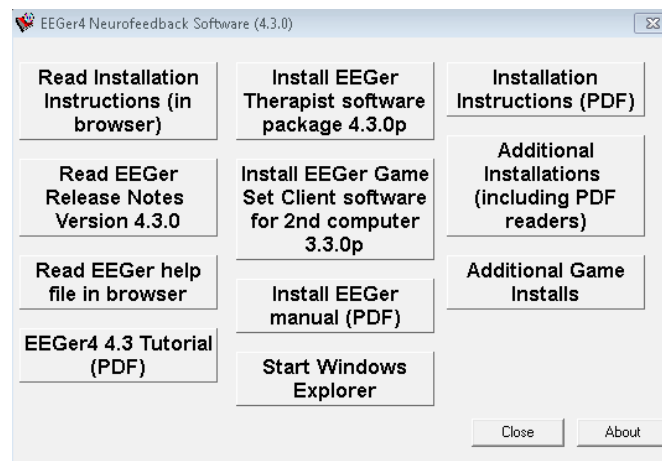
At this time, we are ready to install EEGer.

Install from CD:

Please place the EEGer CD into the DVD/CD drive on the (therapist) computer. This is a picture of an EEGer installation disk.



The menu below should appear after a short time. If not, double-click on the Computer icon on the desktop. Select/double-click on the DVD/CD entry. If a list of programs comes up, double-click on the INSTALLEEGER entry. Eventually, the menu below will appear.



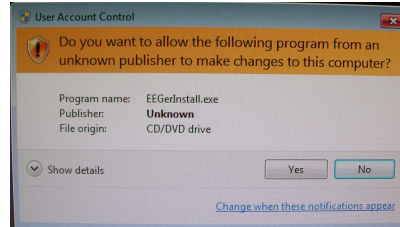
Begin by clicking on the icon labeled “Install EEGer Therapist software package 4.3.0*” where * means the version on the CD.

Install from downloaded installer:

Select the downloaded installer file (double-click or select and “Open”).

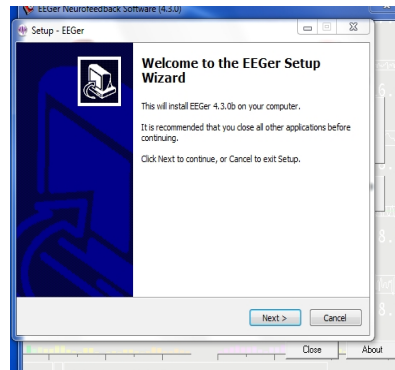
EEGer4 Installation and Test Procedure

You may receive some messages like this:

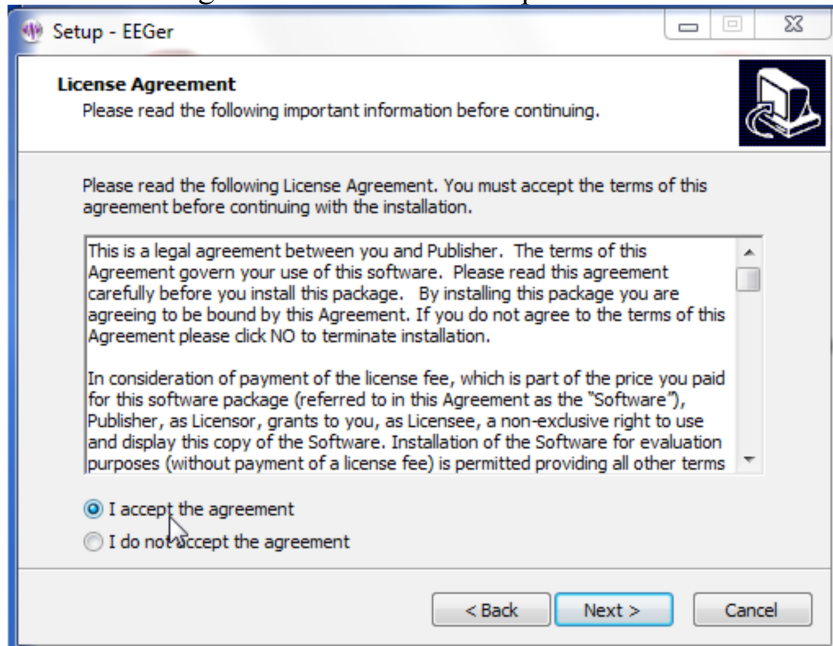


You will have to click on Yes to continue.

The EEGer setup now begins:



Click on "Next". The license agreement screen comes up.



You must click on "I accept the agreement" to continue, then click on "Next".

EEGer4 Installation and Test Procedure

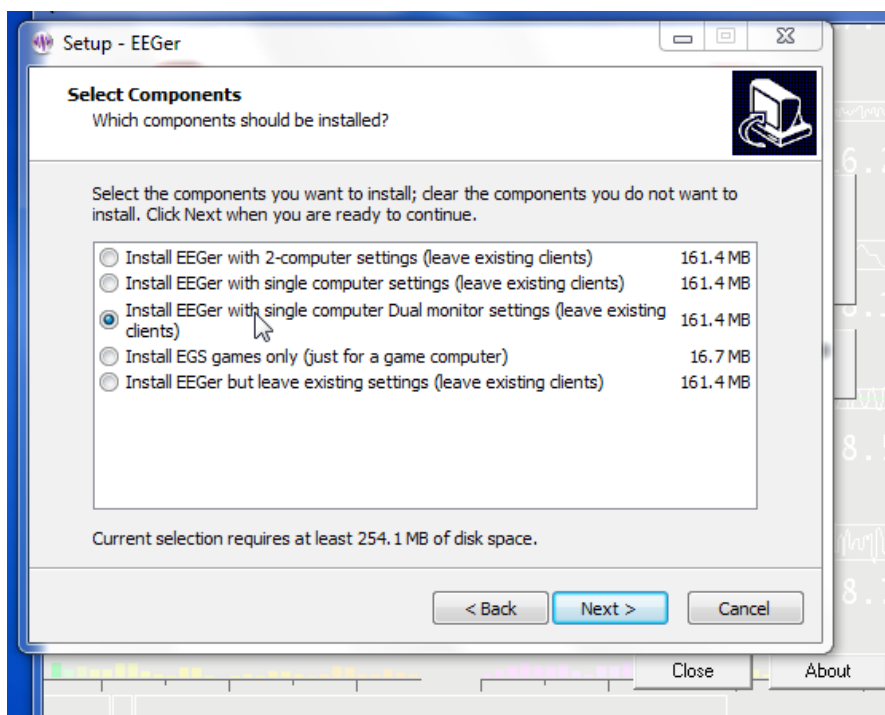
Note: the **SAME** software is installed on the therapist computer for all display modes. EEGer allows changing display modes as a configuration option. The display mode also affects communications (if the 2-computer display mode is chosen).

Please select the appropriate initial display mode by checking the item to the left of the description.

Modes:

- Single computer with Dual monitors (feedback game display is on second monitor)
- Single computer (space bar toggles display of therapist information or feedback game)
- 2-computer (second computer is just for feedback games)

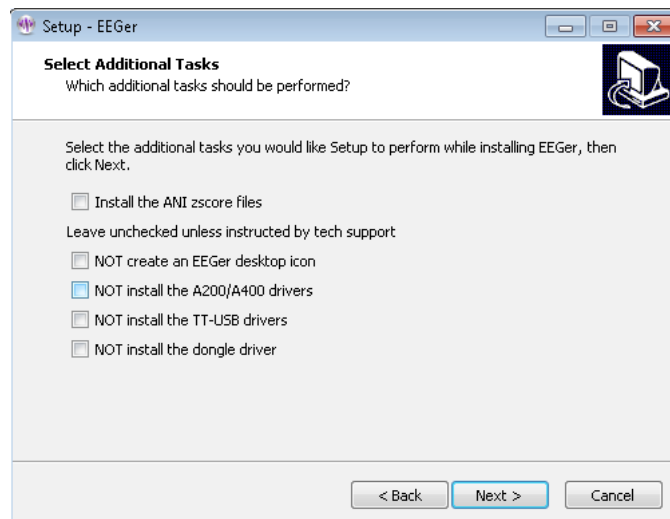
For example: Select “Install EEGer with single computer Dual monitor” as shown below. This preselects Dual monitor display mode but the display mode can be changed after EEGer starts.



Clicking on “Next” brings up some installation options.

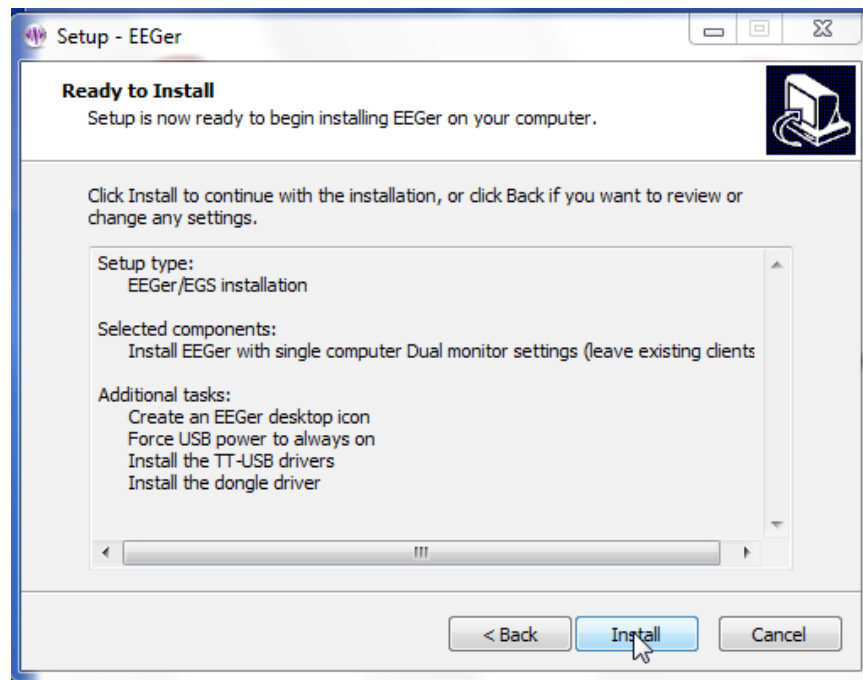
EEGer4 Installation and Test Procedure

Leave these options as is for every installation unless requested otherwise by Technical Support.



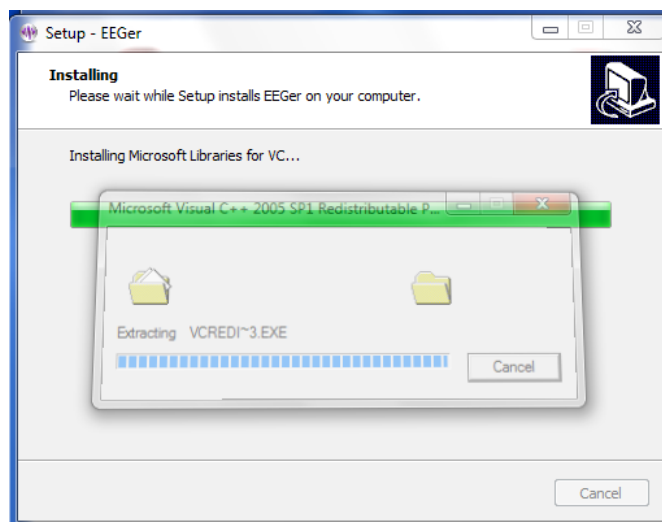
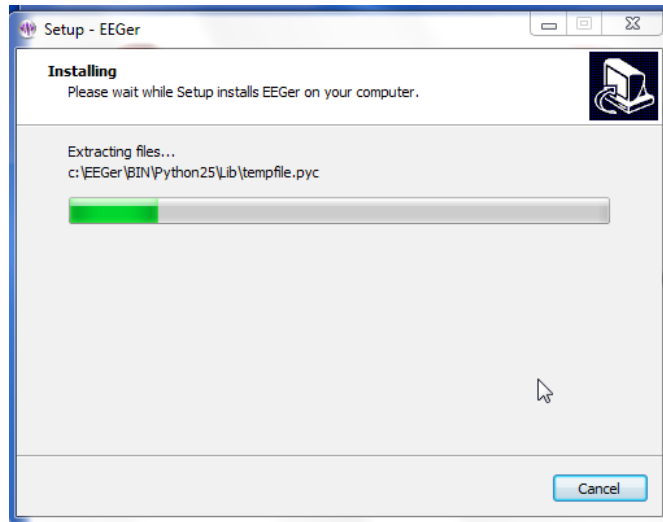
Click on “Next” to continue.

Clicking on “Install” begins the actual copying of files.



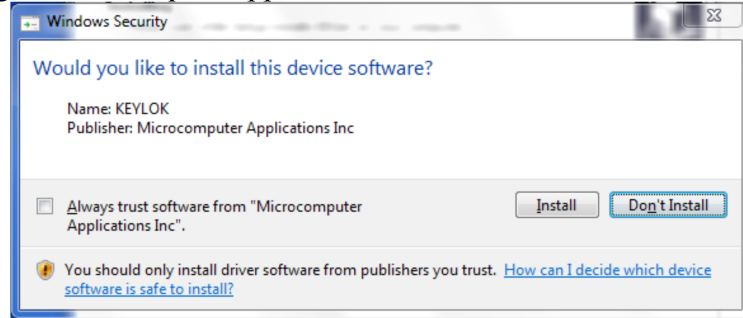
EEGer4 Installation and Test Procedure

There will be some progress screens.



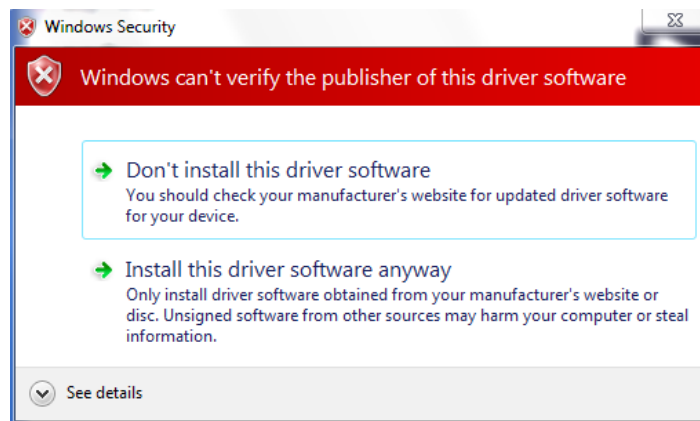
EEGer4 Installation and Test Procedure

Some drivers being installed require approval for installation.



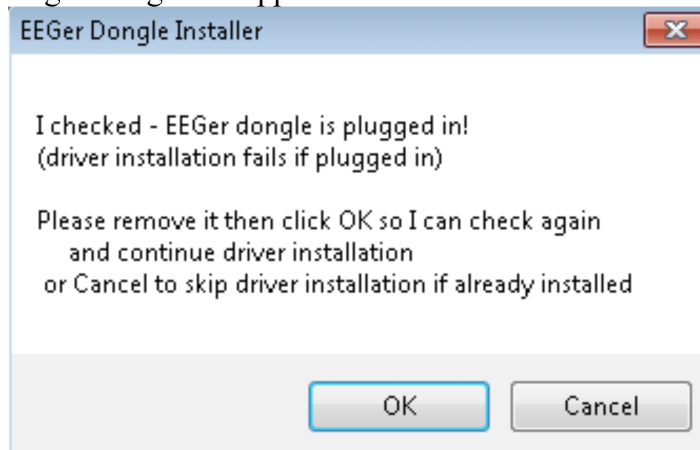
Click on “Install” to install them.

At some point, Windows will show large red warning screens. These are notices that the driver suppliers have not paid to be “Certified” by Microsoft.



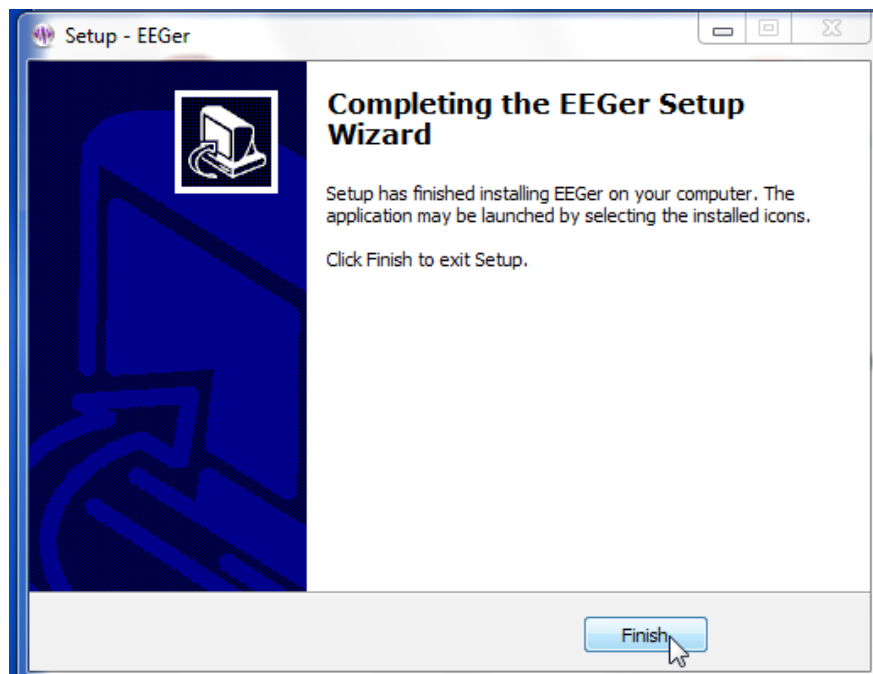
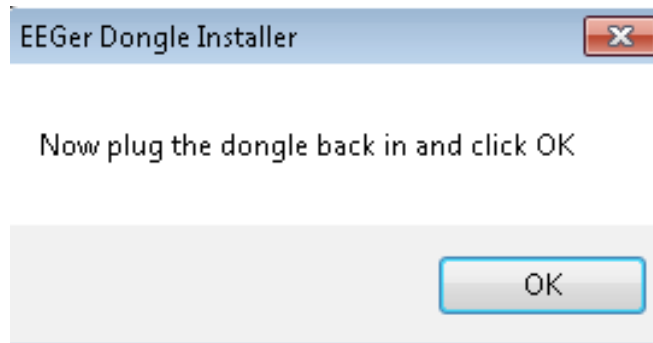
Click on the “Install this driver software anyway” option since these are the drivers that work with Windows and EEGer.

When it comes time to install the dongle driver, the installer will check to see if the dongle is plugged in. If so, the following message will appear:



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You must either remove the dongle or click on **Cancel** (if you are sure the dongle driver is actually installed). After the dongle driver is installed, you will see a reminder message:



At this point, EEGer is “installed” on the therapist computer- but several configuration steps need to be taken before EEGer can be used.

EEGer4 Installation and Test Procedure

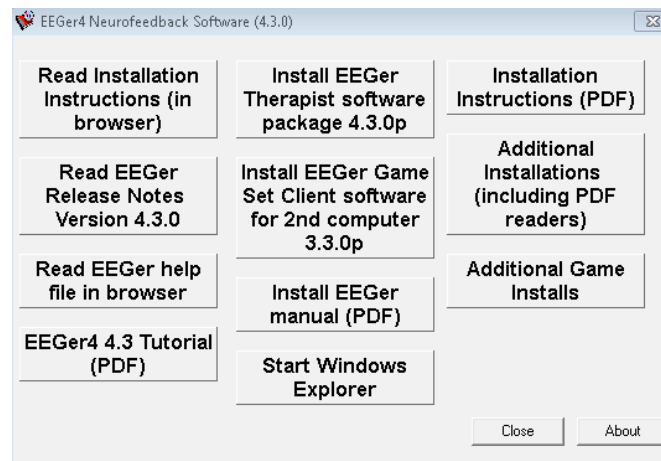
Additional steps for 2- computer configurations:

Install from CD:

Please remove the EEGer CD and place it in the game computer CD/DVD drive.



The menu below should appear after a short time. If not, double-click on the Computer icon on the desktop. Select/double-click on the DVD/CD entry. If a list of programs comes up, double-click on the INSTALLEEGER entry. Eventually, the menu below will appear.

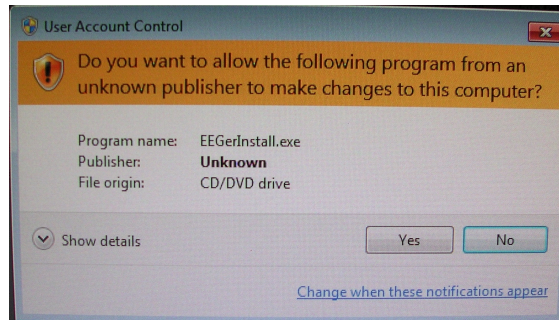


Begin by clicking on the icon labeled “Install EEGer Game Set Client software for 2nd computer 3.3.0*” (where * is the version).

Install from downloaded installer file (double-click or select and “Open”).

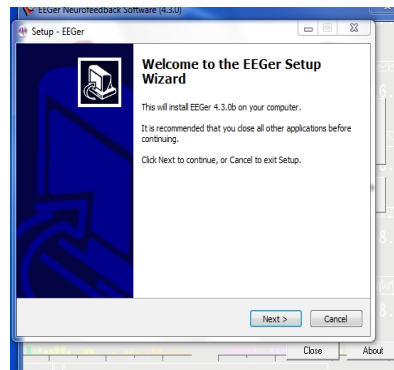
EEGer4 Installation and Test Procedure

You may receive some messages like this:

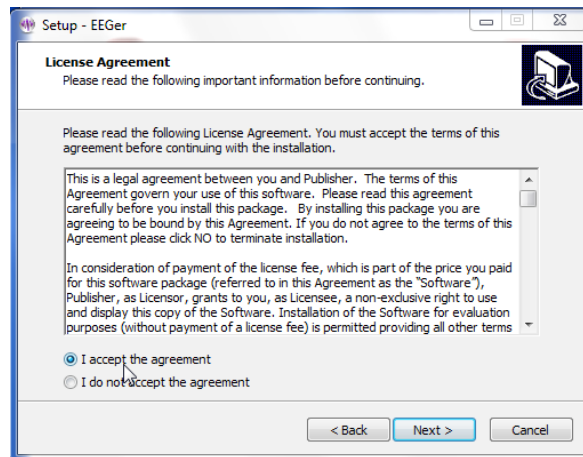


You will have to click on Yes to continue.

The EEGer setup now begins:



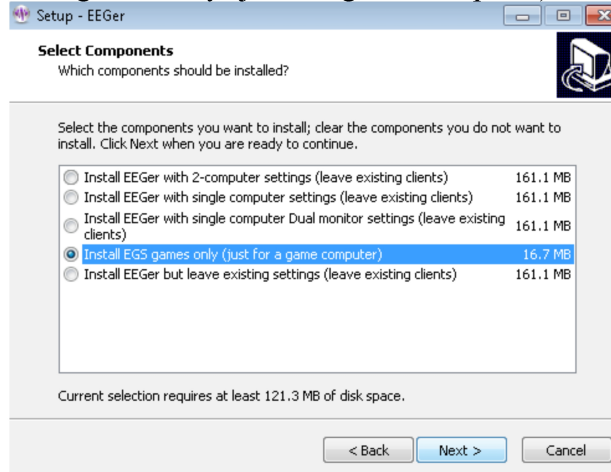
Click on “Next”. The license agreement screen comes up.



You must click on “I accept the agreement” to continue, then click on “Next”.

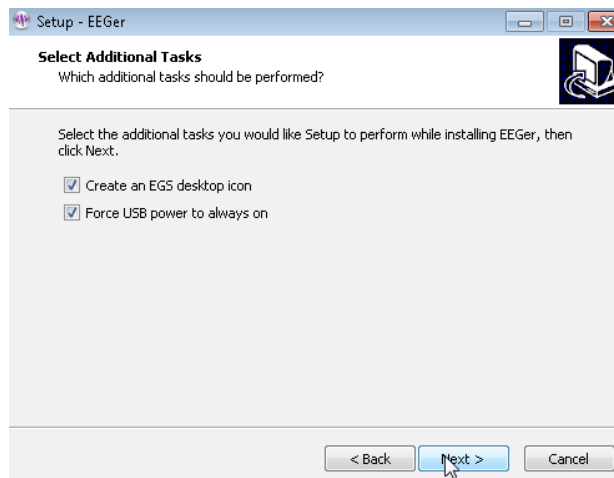
EEGer4 Installation and Test Procedure

Click on the option “Install EGS games only (just for game computer)”.



Clicking on “Next” brings up some installation options.

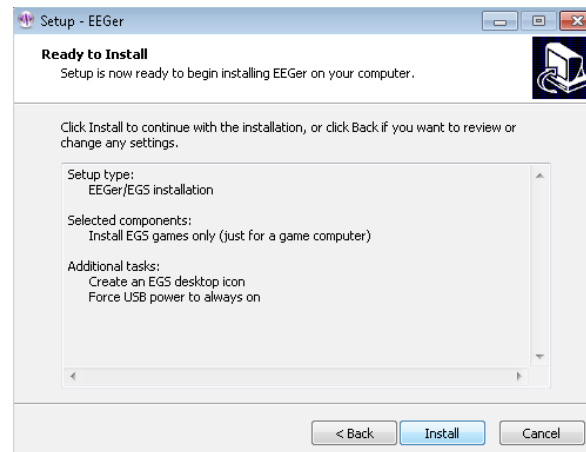
Leave these options as is for every installation unless requested otherwise by Technical Support.



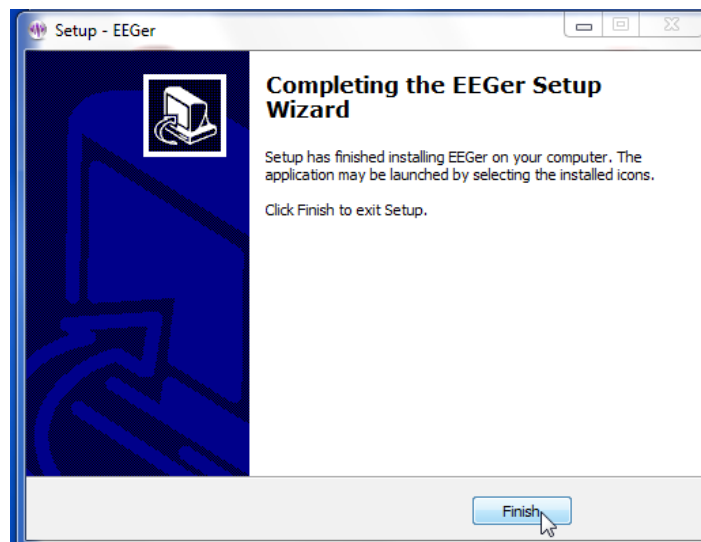
Click on “Next” to continue.

Clicking on “Install” begins the actual copying of files.

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There will be some progress screens. When finished, click the Finish button.



Connecting hardware

Once the software is installed, the hardware needs to be installed and EEGer4 configured for the hardware.

EEGer4 Dongle

The EEGer4 dongle is REQUIRED to enable live inputs from amplifiers. **Do NOT lose this since it cannot be replaced.**



There are many kinds of amplifier/encoders supported by EEGer4 and several computer configurations. For simplicity, each amplifier/encoder class is discussed separately.

Brainlynx, Spectrum2, Spectrum 4, J202, J404

These amplifiers are manufactured by J&J Engineering.



The amplifiers require 4 AA batteries. J&J does NOT recommend using rechargeable batteries since they start at a lower voltage and reach a sudden discharge point without warning. These amplifiers require 4.3 volts to operate correctly. Also, remember to unplug the amplifier from the computer before changing batteries.

The connection to the computer is a USB port.



Any USB port can be used.

Please note that the correct model of the amplifier must be selected in EEGer4 for the system to operate correctly.

EsiPro, A200, A400, A202, A404

These amplifiers are manufactured by Telediagnostics or Phoenix Neuro Systems.



No batteries are required for these amplifiers.

The connection to the computer is a USB port.



Any USB port can be used.

The specific amplifier model is automatically deduced by EEGer4 so any selection of esiPro, A200, A400 will work.

Brainmaster, Atlantis I, Atlantis II

These amplifiers are manufactured by Brainmaster.



The Brainmaster 2EB contains rechargeable batteries (which must be charged using the Brainmaster charger). The connection to the computer uses a 9-pin serial port.



The Atlantis does not use batteries. The connection to the computer uses a USB port.



Any USB port can be used. The Atlantis emulates a serial port with its USB connection.

Please note that the Brainmaster devices require a special passcode enabled for EEGer to be used with EEGer4 and the selection of the proper (actual or USB-emulated) serial port.

ProComp2, ProComp+, Infiniti

These amplifier/encoders are manufactured by Thought Technology. All use AA batteries and are connected to the computer via a fiber optic cable. There are two different types of computer connection.



The newer method is via a TTUSB interface which has a fiber optic connector on one end and a USB connector on the other end (of a cable). This interface is supported by EEGer4 (and EEGer version 422p and later). The amplifier switches should be set for Biograph protocol (as documented by Thought Technology).



The older method is via a Pro-SB interface which has a fiber optic connector on one end and a 25-pin serial connector on the other. This is generally supported with a 25-9 pin adapter/cable and a USB-serial adapter. The amplifier switches should be set to either Spectrum or Biograph protocol (and EEGer4 device option settings to match). The correct serial port must be selected.



Connections on your computer

SERIAL PORTS (9-PIN)



Serial communications ports have 9-pins. Your computer may have 2, 1, or NO serial ports. If you do not have serial ports, you need USB-Serial adapter cables for each serial connection (two ends of null modem and/or ProCompBrainmaster 2E amplifiers). Serial ports are often confused with VGA Video ports, which are 15-pin female and the same outer dimensions.

VIDEO/MONITOR PORTS

VGA PORT:



The VGA port uses a 15 hole connector. It is often mistaken for a 9-pin serial port, which has the same outer dimensions.

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DVI PORT:



DVI stands for “Digital Video Interface”. It is a standard designed to maximize the visual quality of digital display devices such as flat panel LCD computer displays and digital projectors. DVI-D processes digital signal while DVI-I transmits both digital and analog. DVI ports can be converted to VGA ports using a small adapter:



HDMI PORT:



HDMI stands for High Definition Multimedia Interface and was designed to support DRM (Digital Rights Media) protected transfers.

USB PORTS



USB ports are located in different places on different computers. Some are positioned horizontally and others vertically. Computers may have the USB ports on the side, front, or back of the computer. If you do not have enough 9-pin Serial and USB ports for all connections, you may need to add a USB HUB to create more ports.



ETHERNET PORTS



Ethernet communications ports are similar to phone ports, but a little larger (and have 8 connections).

Other pieces of hardware that may be needed

USB-serial adapter

(This is SIIG adapter. There are other brands.)



9-25 pin adapter



Fiber-optic cable



Null modem cable



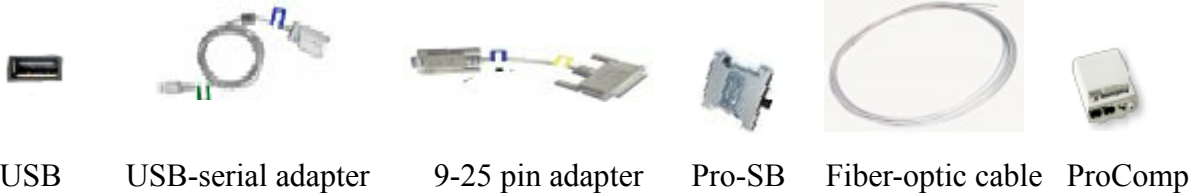
Ethernet crossover cable

(usually with yellow hoods to identify crossover)



Sample Connections

Typical configuration for serial-interfaced ProComp amplifiers.



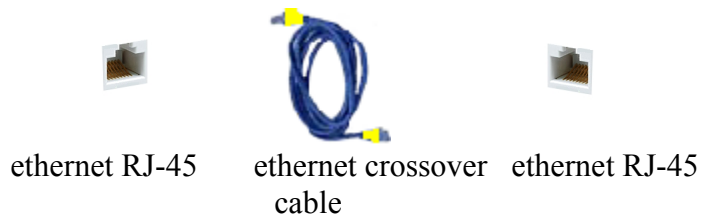
Typical configuration for TTUSB interfaced ProComp amplifiers.



Typical configuration for 2-computer serial communications



Configuration for 2-computer ethernet communications



Connecting the Amplifier/Encoder

EEGer4 supports a variety of amplifier/encoders. Please read the instructions provided with the amplifier/encoder and follow all directions. It is not necessary to turn on an amplifier/encoder at this time.

USB-connected amplifiers

USB-connected amplifiers can be plugged in at any time since the EEGer installation installs all the necessary drivers.

Serial-connected amplifiers

If a USB-Serial adapter is being used, the driver may already be installed in Windows. Try plugging the USB-Serial adapter into a USB port and observe for any Windows error messages. It may be necessary to follow the manufacturer's directions for installing their proprietary drivers. Please note the serial port assigned for use later. EEGer will prompt you if you incorrectly assign a serial port that is not present.

Warning: use only the USB or serial cable provided with the amplifier/encoder (or one that is in conformance with the IEC60950 standard).

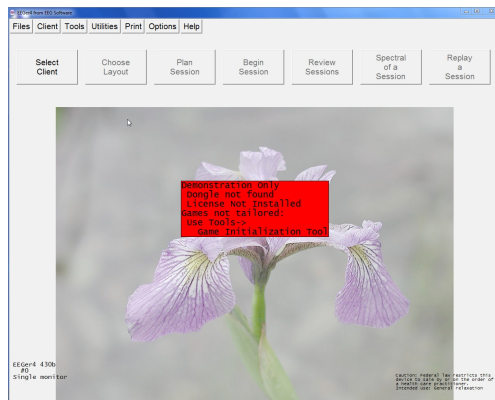
Common Configuration Setup

Double-click on the EEGer icon on the Therapist computer to start EEGer.



Observe the RED box with error notices on the main EEGer screen showing steps still needing to be resolved.

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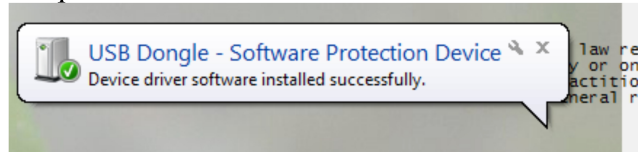


Three errors are displayed:

1. Dongle not found
2. License not installed
3. Games not tailored.

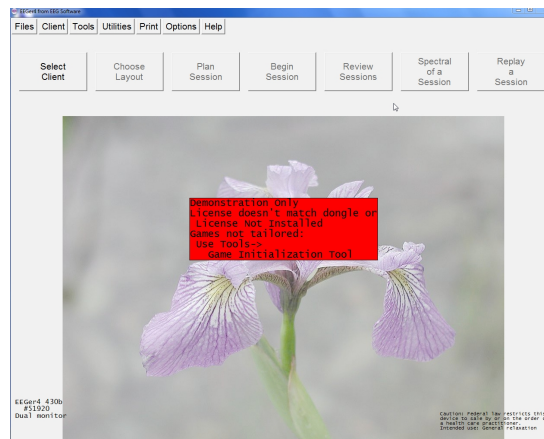
Now to correct them:

The first condition to correct is the “Dongle not found” message. That is because the EEGer dongle is not yet plugged in. So, NOW plug in the EEGer dongle on the therapist computer. After a few moments, Windows will report that it has installed the driver for the dongle.



Now exit EEGer (“X” in upper right corner or quit from the Files menu) and restart EEGer by double-clicking on the EEGer icon.

Notice that the “Dongle not found” message is gone and that the dongle number is displayed on the lower left corner of the EEGer screen.



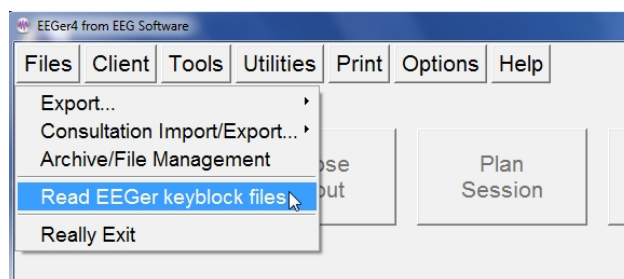
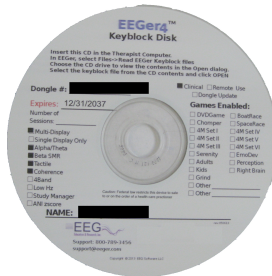
If the “dongle not found” message is still there, you probably plugged the dongle in before installing EEGer. In that case, please refer to the REINSTALL DONGLE DRIVER section at the end of this document and then return to this procedure

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The next error message in the red box to correct is the “License not found” message. For this, we need the Keyblock CD (or the equivalent emailed keyblock file).

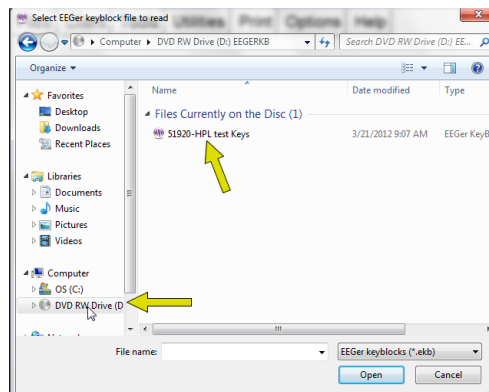
Keyblock CD:

Put the Keyblock CD into the DVD/CD drive on the therapist computer.



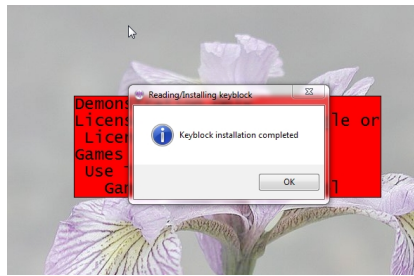
Select “Read EEEger keyblock files” from the EEEger Files menu.

A standard file locator menu will appear. Navigate to the DVD/CD drive by clicking on the DVD/CD drive (lower arrow) or the location where the downloaded keyblock file is. Then select the .EKB file (shown by the upper arrow).

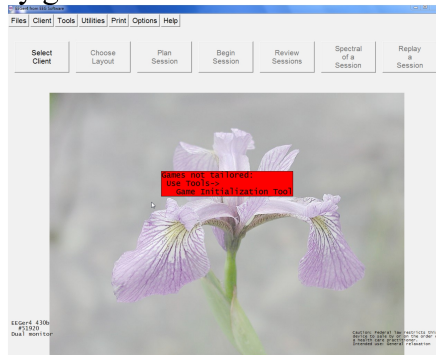


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You should see a success message (click OK to close).



The next screen should report only games not tailored.

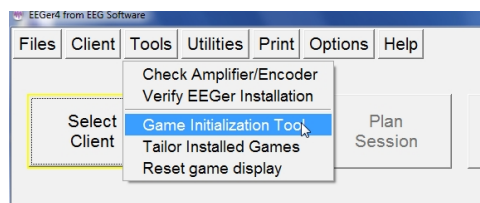


If the “not licensed” message remains, please contact Customer Support. The Keyblock disk contents apparently do not match the installed dongle.

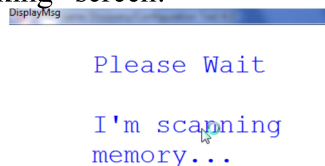
Single Computer Configuration Setup

(2-computer setup is in the next section)

To correct the last issue in the red box, select “Game Initialization Tool” from the Tools menu.

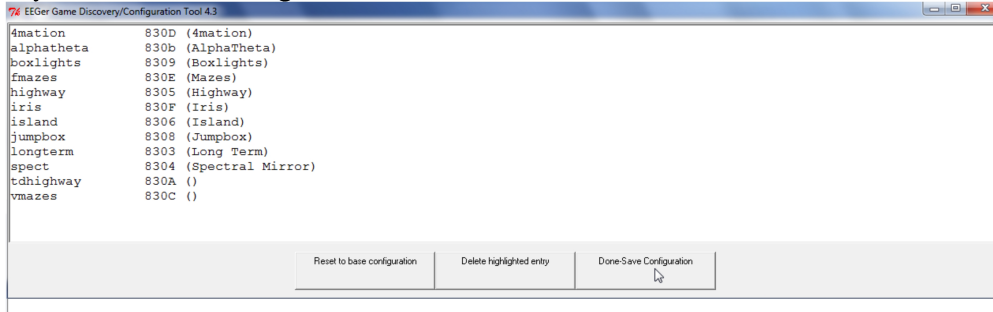


This brings up a “working” screen:



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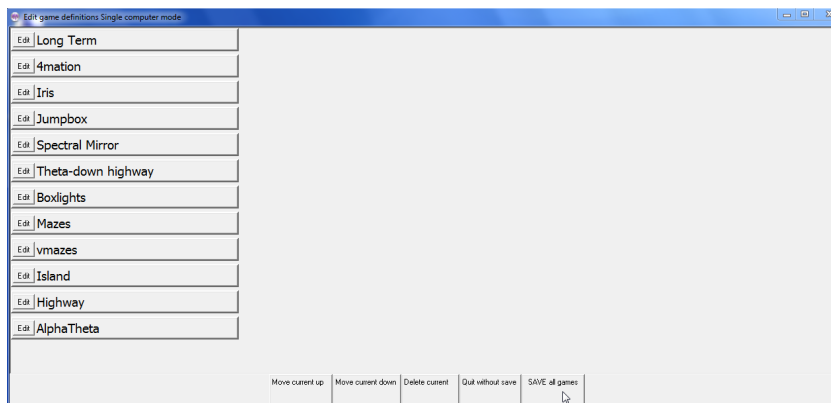
followed by a list of installed games:



Click on the bottom right button (labeled “Done Save configuration”).

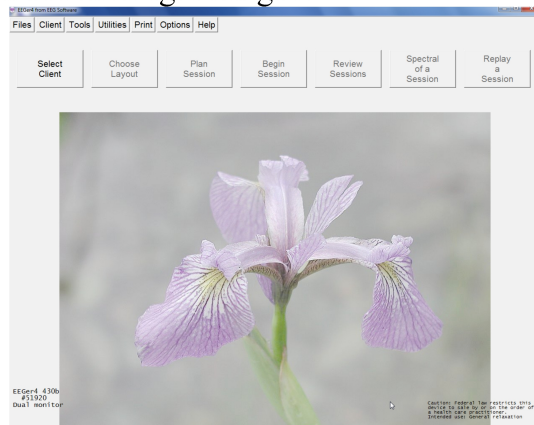
If you cannot see the button, you probably did not select the “Auto-hide taskbar” option described at the beginning of this procedure. Please auto-hide the taskbar now.

A “tailoring” list of games is now displayed:



Since we are not going to tailor any options at this point, just click on the bottom right button (labeled “Save all games”).

Notice that all the red box messages are gone!



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At this point, the game display should show a list of games. If the second display (of a dual-monitor configuration) is NOT showing the game screen, please exit EEGer at this time. Right-click on the Windows desktop and select **Screen Resolution**. You should see TWO displays at the top. On the option labeled “**Multiple displays:**”, make sure that “**Extend these displays**” is selected. When you restart EEGer, the game display should show a list of games.

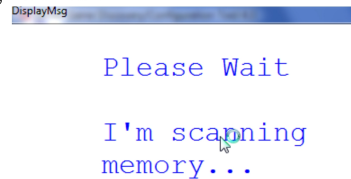
Continue setup at the section labeled “**More Common Configuration Setup**” below.

2-computer Configuration Setup

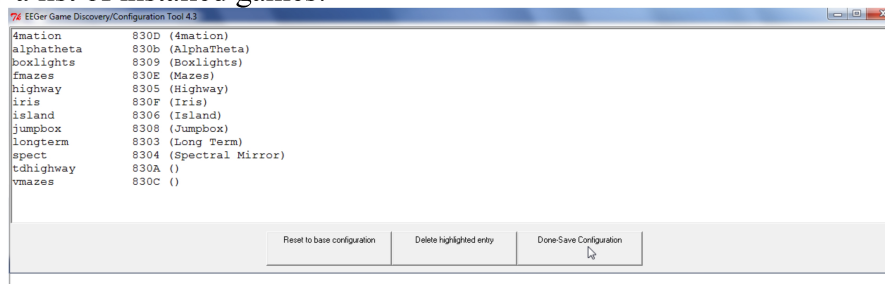
On the game computer, start EGS by double-clicking on the icon on the desktop.

Press F9 to begin the Game Initialization Tool.

This brings up a “working” screen:



followed by a list of installed games:



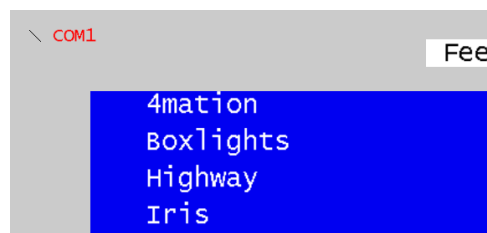
Click on the bottom right button (labeled “Done Save configuration”).

If you cannot see the button, you probably did not select the “Auto-hide taskbar” option described at the beginning of this procedure. Please auto-hide the taskbar now.

EEGer supports either serial or ethernet communications between computers.

Serial connections:

Press F3 while the EGS game display is showing until the correct serial port is shown in the upper left corner of the display. Ensure that the null modem cable between computers is connected to the selected serial port.



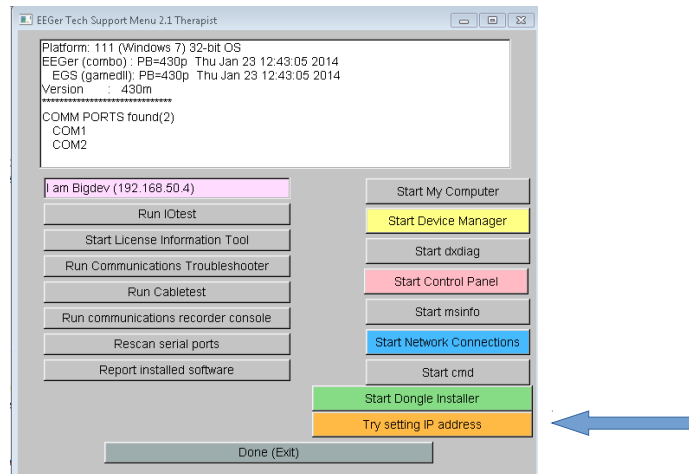
EEGer4 Installation and Test Procedure

Ethernet connections:

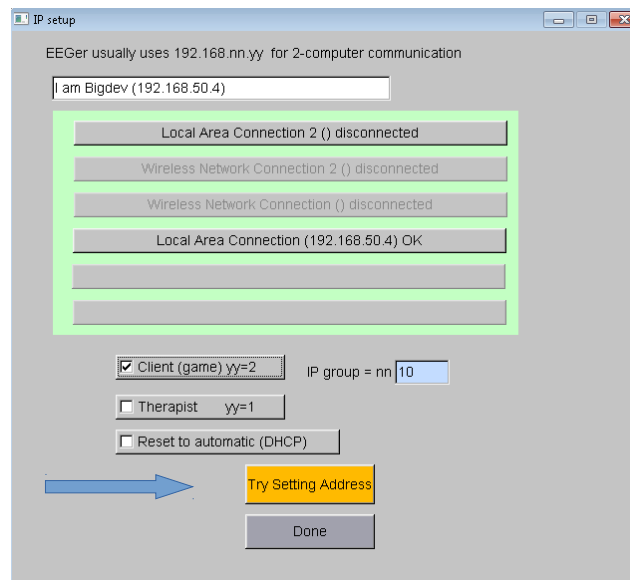
This kind of connection is somewhat harder to configure than serial connections. EEGer recommends the setup described here but other configurations are possible. Please contact Technical Support for advice on other configurations. Ensure that the CROSSOVER ethernet cable is connected to the game computer.

On the GAME computer:

- While the list of games is displayed on the game computer, press Alt-T (hold down the Alt key and press and release the T key).
- When the Tech Support Menu appears, click on the button labeled “Try setting IP address”.



When the IP setup window appears



- Make sure the Client is selected. IP group 10 is recommended since it rarely conflicts with local wireless settings that may confuse matters.

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- d. Click on the button labeled “Try Setting IP”. It may take a few seconds to actually set the IP address. When complete, the computer name and new IP address will appear in the top (white-background) window.
- e. Then click on the Done button to return to the Tech Support menu.
- f. Click on the Done button on the Tech Support Menu
(EGS game list should display again)
- l. Press the F3 key until the text **ENET** is displayed in the upper left corner of the display.
- m. Press “Esc” to exit the EGS program
- n. Restart the EGS program by double-clicking.

On the THERAPIST computer:

- a. Make sure EEGer is running

Note: since the communication network is not yet set up, you may receive an error window like this:

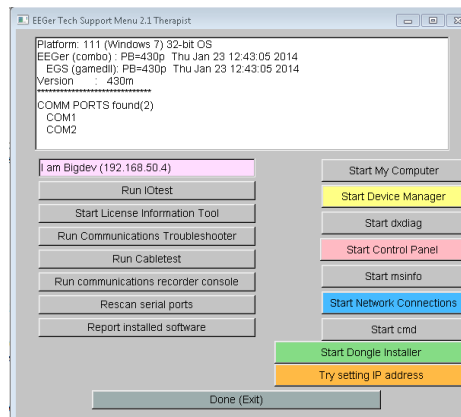


Please select Ignore at this time.

- b. IF ETHERNET IS THE KIND OF INTERFACE TO BE USED TO THE GAME COMPUTER

1) press Alt-T (hold down the Alt key and press and release the T key).

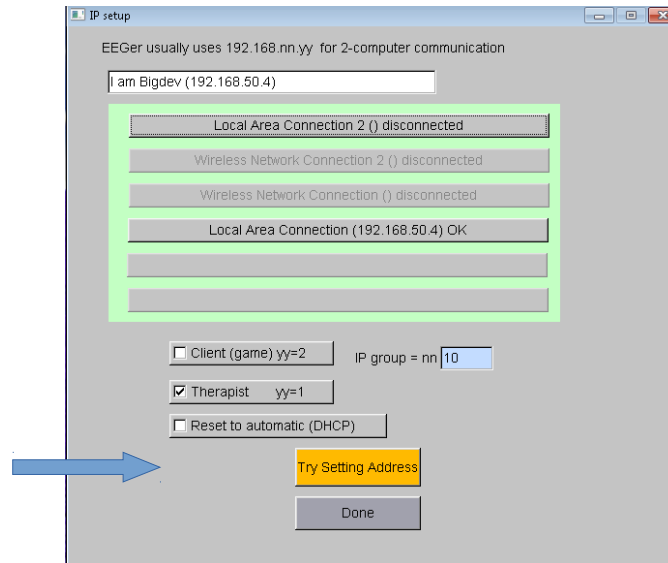
2) When the Tech Support Menu appears,



click on the left side button labeled “Try setting IP address”;

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3) When the IP setup window appears



4) Make sure that Therapist is selected. IP group 10 is recommended since it rarely conflicts with local wireless settings that may confuse matters. Make sure the selected group matches the game computer selection.

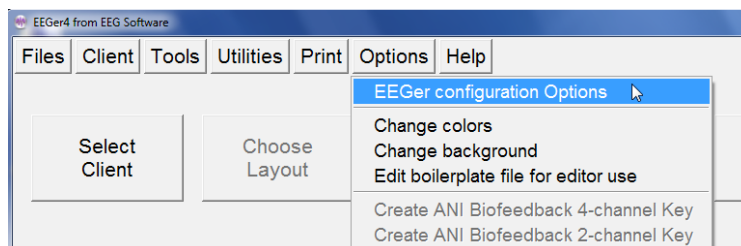
5) Click on the button labeled “Try Setting IP”. It may take a few seconds to actually set the IP address. When complete, the computer name and new IP address will appear in the top (white-background) window.

6) Then click on the Done button to return to the Tech Support menu.

7) Click on the Done button on the Tech Support Menu

(EEGer screen should now display)

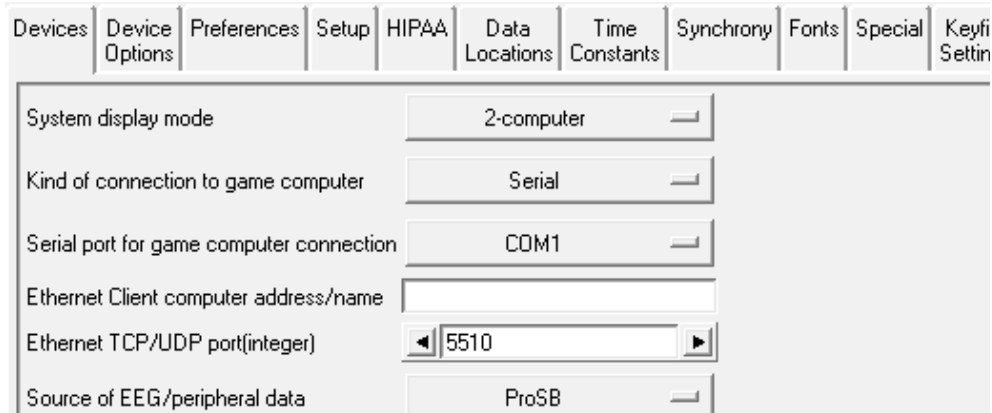
c. Select “EEGer configuration Options” from the Options menu.



d. Change “Kind of connection to game computer” to be either “Serial” or “Ethernet” depending on the connection type.

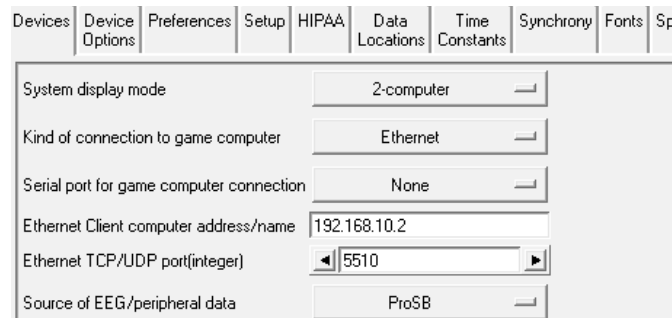
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e. If “Serial” was selected, change “Serial port for game computer connection” to be the correct serial port on the THERAPIST computer where the null modem cable (to the game computer) is connected. Please contact Technical Support if you are unable to determine the correct port.



f. If Ethernet was selected

- 1) change “Ethernet Client computer address/name” to be 192.168.10.2.
- 2) Ensure that Ethernet TCP/IP port (integer) says 5510

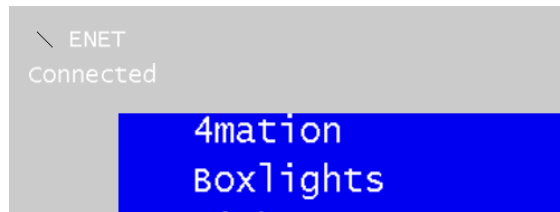


g. Then click the “STORE settings” button on the lower left and the “Close preferences window” button on the lower right.



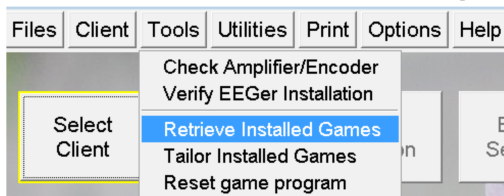
EEGer4 Installation and Test Procedure

Now observe the ENET or COMx display on the EGS game menu is displayed in WHITE. The communications are working correctly if the display is in white but failing if the display is in RED.

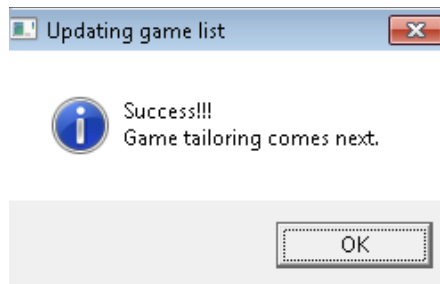


If you are unable to successfully communicate between computers, please contact Technical Support.

Select the EEGer menu item Tools->Retrieve Installed Games.



Verify the receipt of the success message.



A “tailoring” list of games is now displayed:

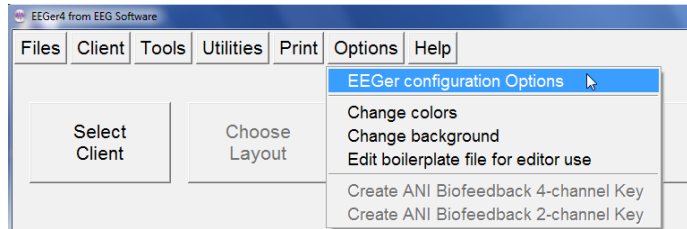


Since we are not going to tailor any options at this point, just click on the bottom right button (labeled “Save all games”).

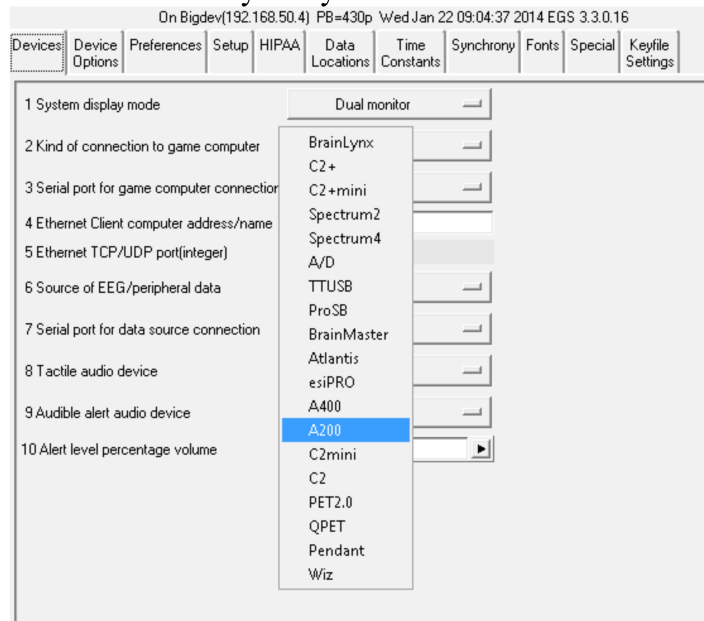
There should be no error messages on the top screen at this time.

More Common Configuration Setup

We may still have to make some changes. Select “EEGer configuration Options” from the Options menu.

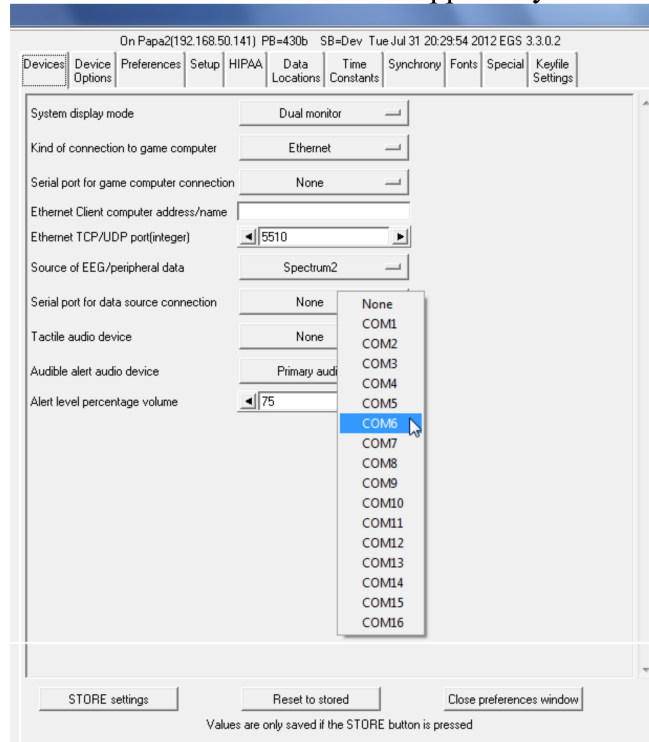


Make sure that the “**6 Source of EEG/peripheral data**” selection has the correct EEG amplifier/encoder selected that came with your system.

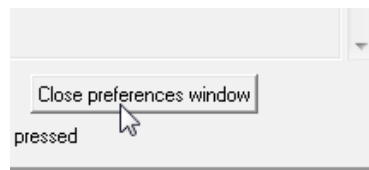


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If the amplifier/encoder used requires a serial port, make sure the **“7 Serial port for data connection”** has the correct serial port selected. Contact Technical Support if you cannot locate the serial port.

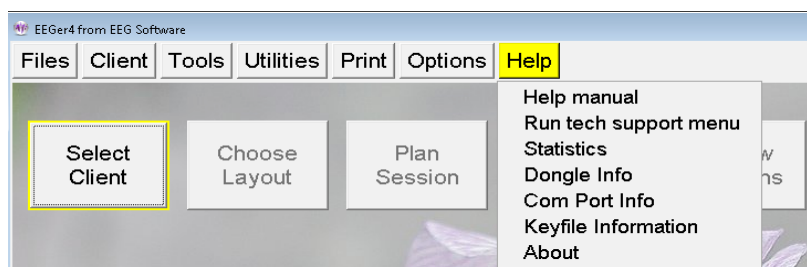


Then click the “STORE settings” button on the lower left and the “Close preferences window” button on the lower right.



EEGer is now configured for use.

The Help menu has the entire EEGer manual available with detailed instructions.

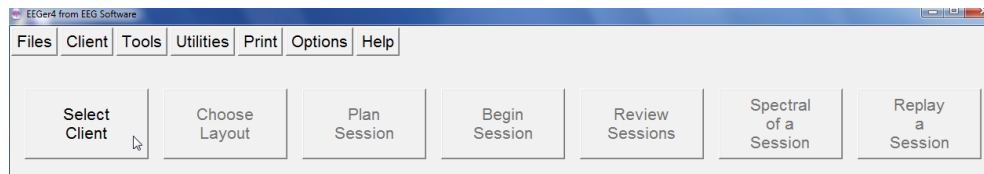


Testing

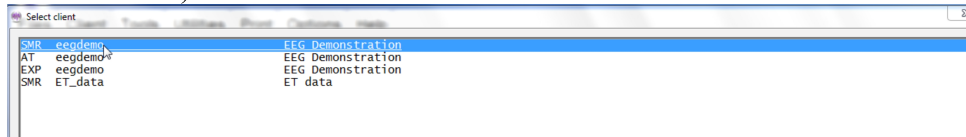
This test should verify that the amplifier/encoder is being “seen” by EEGer and that basic graphics are working properly.

Turn on the amplifier/encoder if it has an on/off switch.

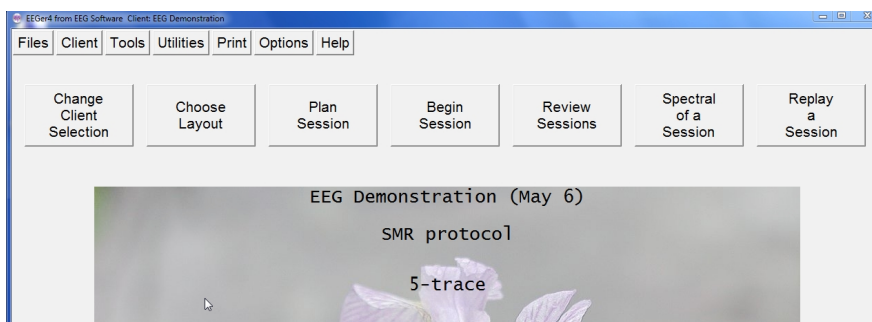
Click on the button labeled “Select Client”.



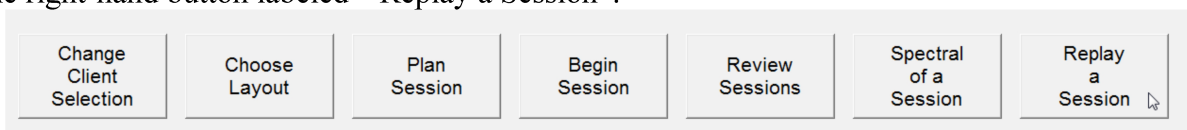
When the client selection screen appears, select **SMR eegdemo** (select and click on OK at bottom of screen or just double-click).



Observe that the remaining buttons are now active and that the client “name” (EEG Demonstration) is now shown on the top screen:

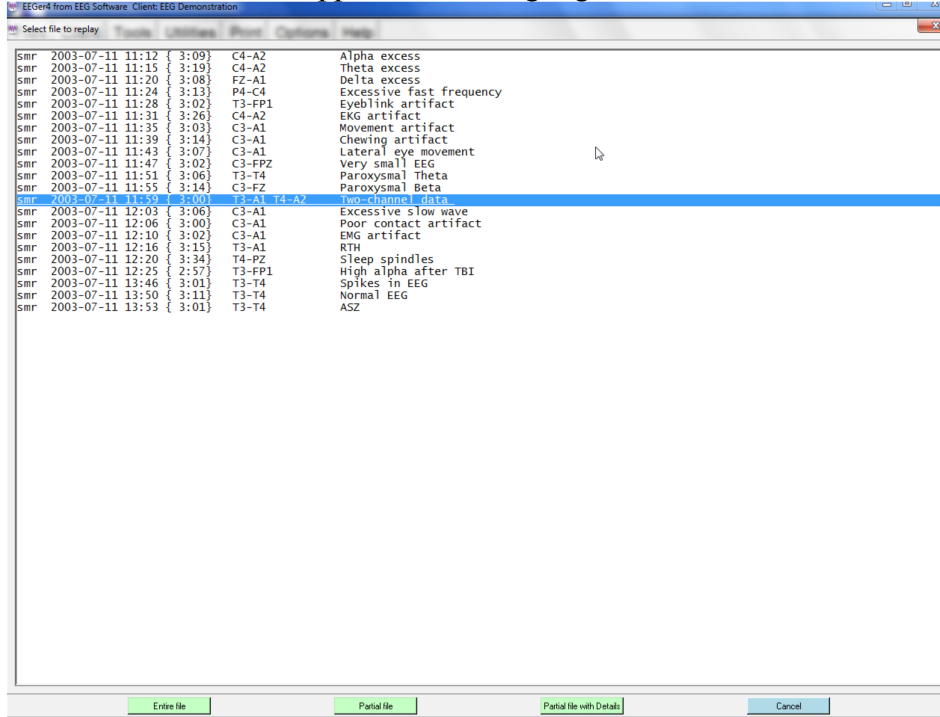


Click on the right-hand button labeled “Replay a Session”.

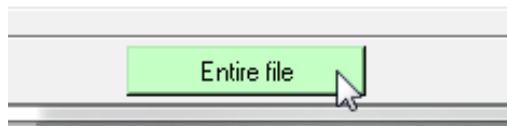


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When the list of recorded sessions appears, select/highlight the two-channel data file.

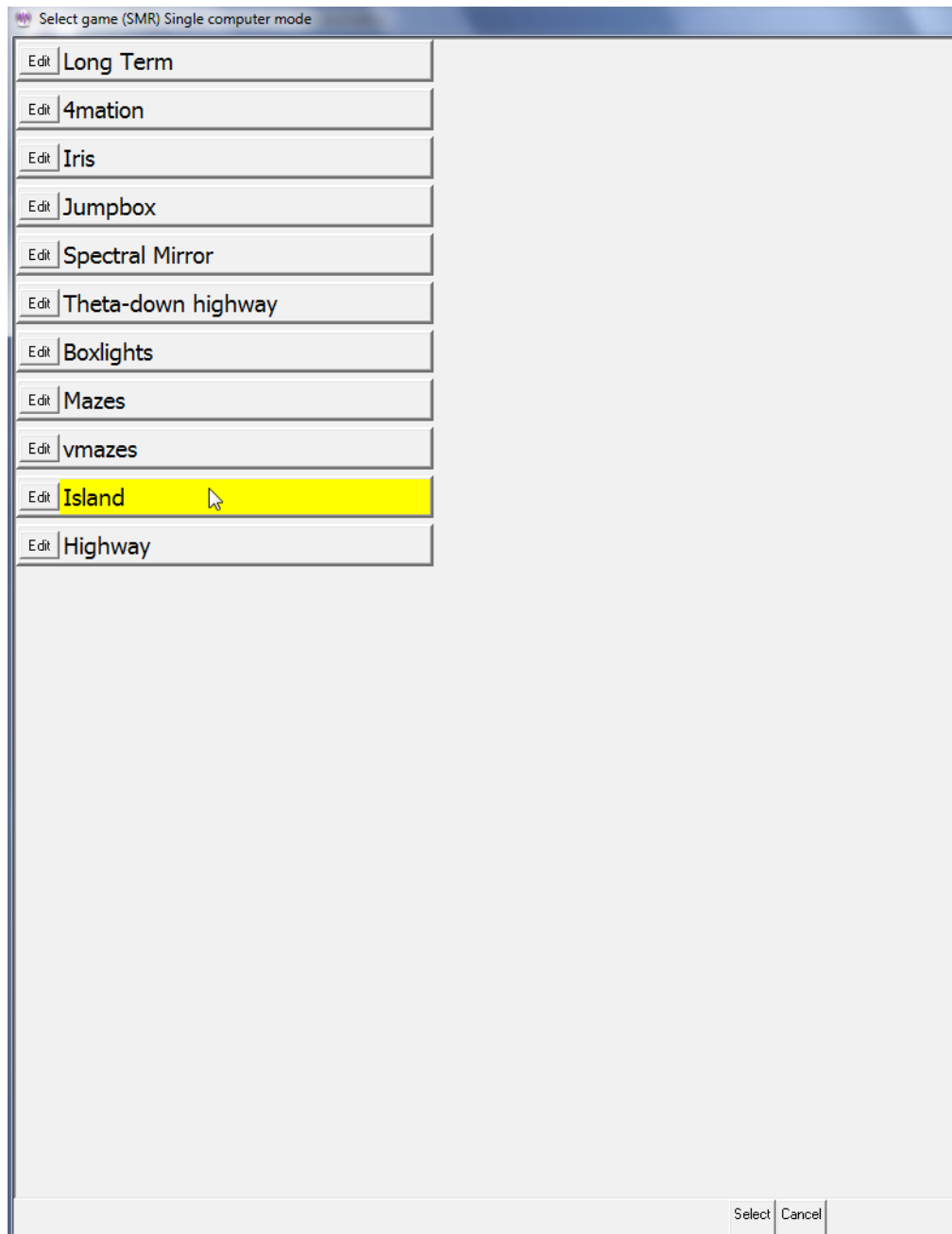


The selection can be made by double-clicking on the select line or by clicking on the “Entire File” button at the bottom.



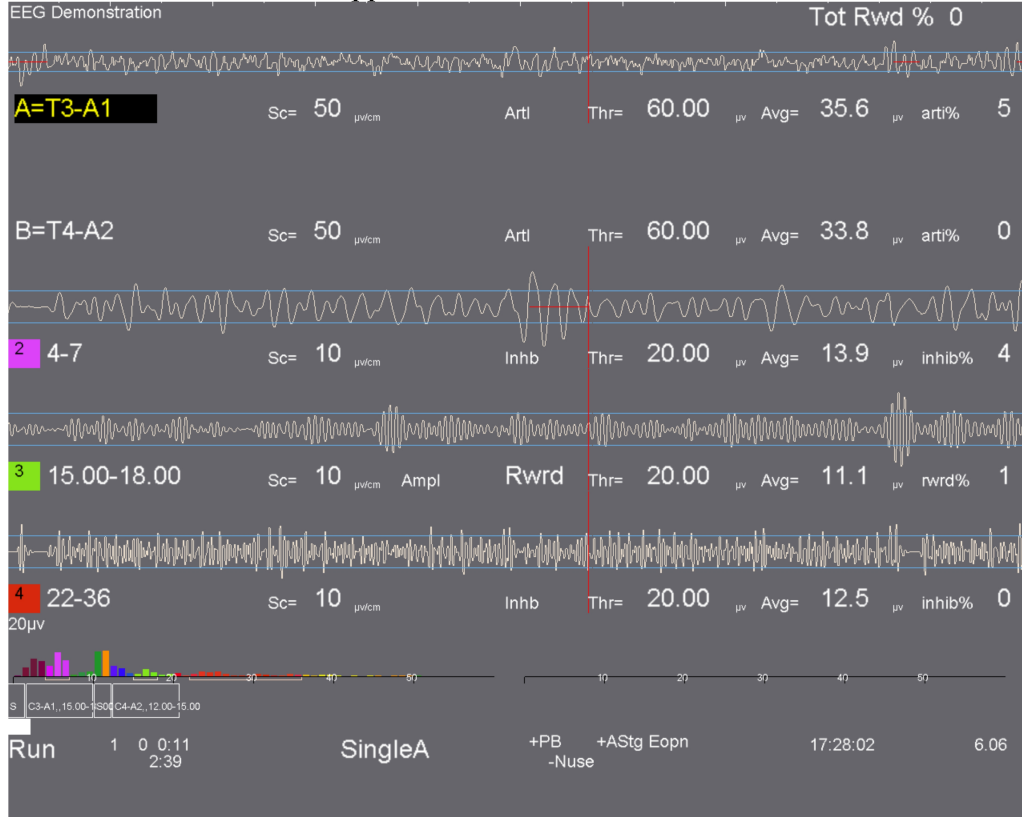
EEGer4 Installation and Test Procedure

Now select “Island” as the feedback display/game to be used by either double-clicking on Island or by highlighting it and using the Select button at the bottom..



EEGer4 Installation and Test Procedure

The brainwave screen should now appear.



Press **F5**. The EEGer state message at the lower left should say “Run”.

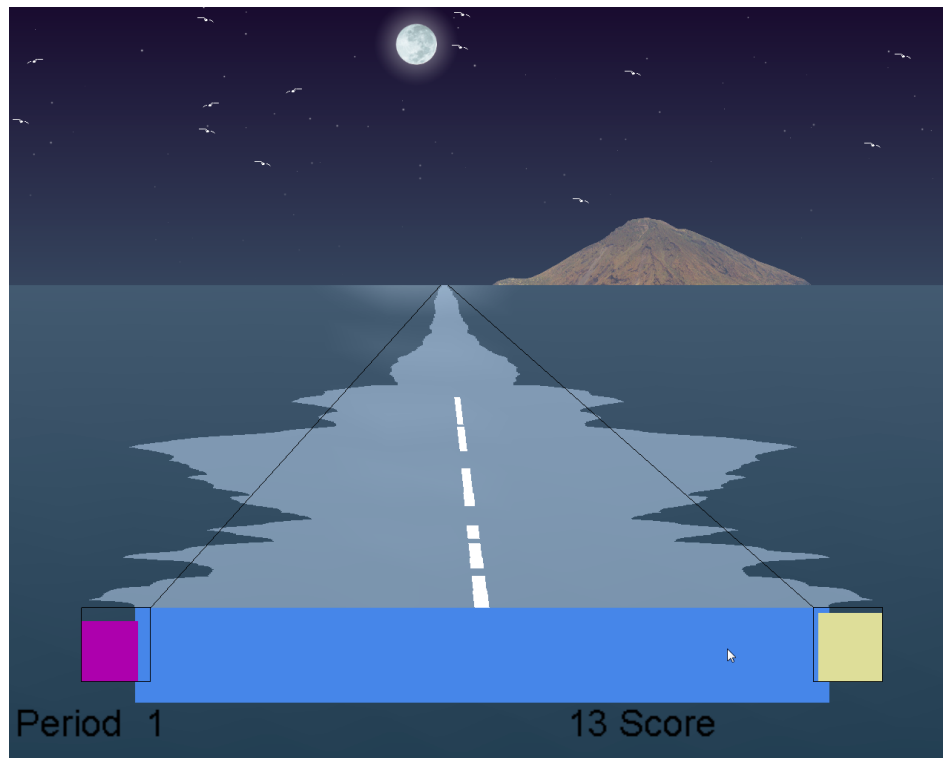
If the amplifier/encoder is not found, you will see a message similar to this on the bottom line.



Error messages are either in yellow or red text on the bottom line. It is in yellow because we are in replay. It would be in red if this was a live session (meaning unable to sense EEG data). Notice the flashing red message at the right. Any red message here means that the amplifier is NOT being read correctly. Otherwise it will be either a battery voltage or status message in green (meaning successful communication with amplifier/encoder).

EEGer4 Installation and Test Procedure

Press **F9** (autoscale) and **F11** (autothreshold). Observe that the game display shows a moving image and that reward tones are heard. You may have to press **F11** several times until the tones are heard.



Press **ESC**. EEGer will go to a Pause state. Press **ESC** again and EEGer will exit the session and return to the EEGer main screen.

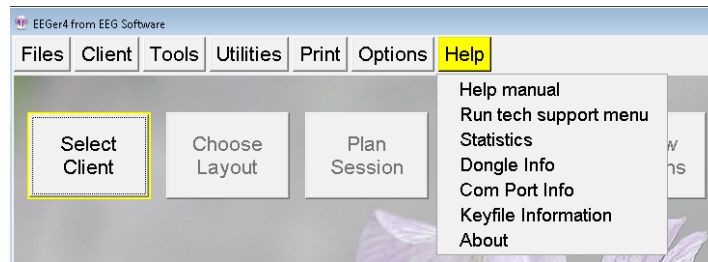
Turn off the amplifier/encoder if it has an on/off switch.

EEGer is ready for a live session!

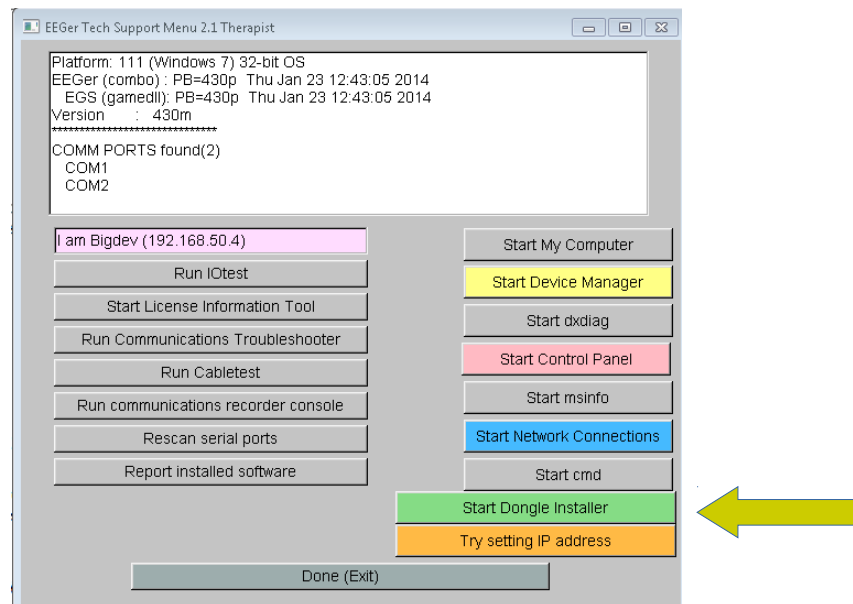
Reinstall Dongle Driver

This section is for those who plugged the EEGer dongle in too early.

From EEGer, select “Run tech support menu” from the Help menu.



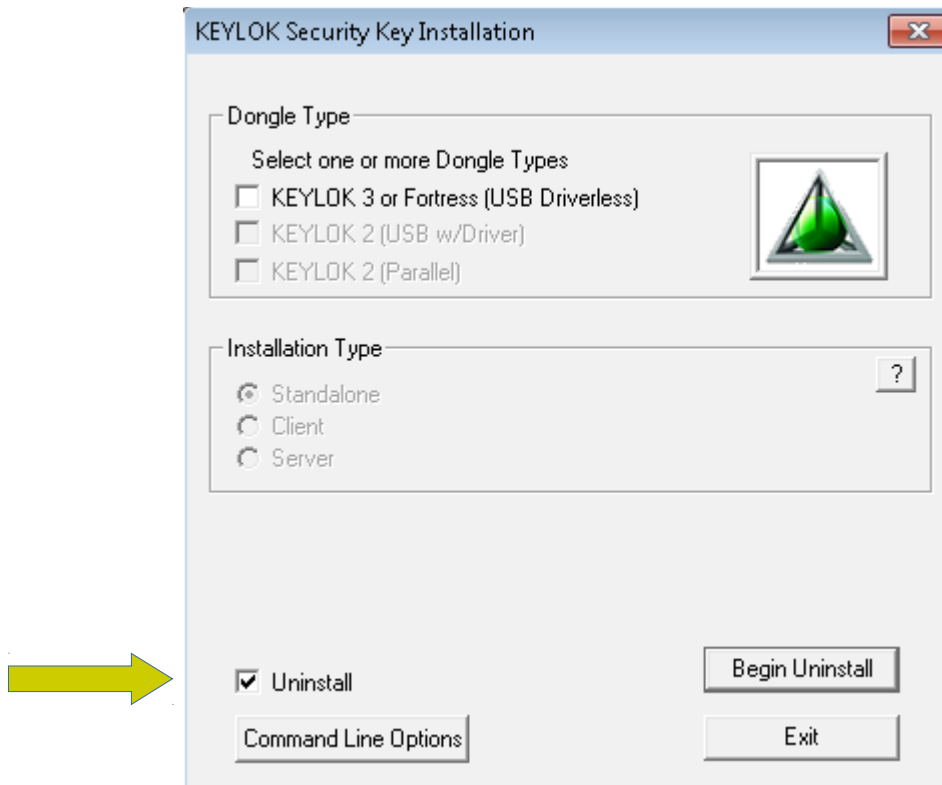
When the tech support window appears, click on the “Start Dongle Installer” button.



Make sure you have UNPLUGGED the EEGer dongle at this point.

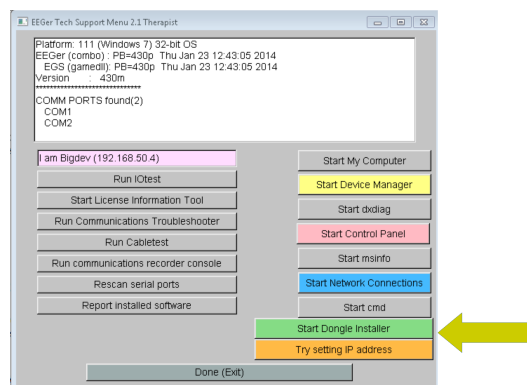
EEGer4 Installation and Test Procedure

When the installer window comes up, please select the Uninstall option.



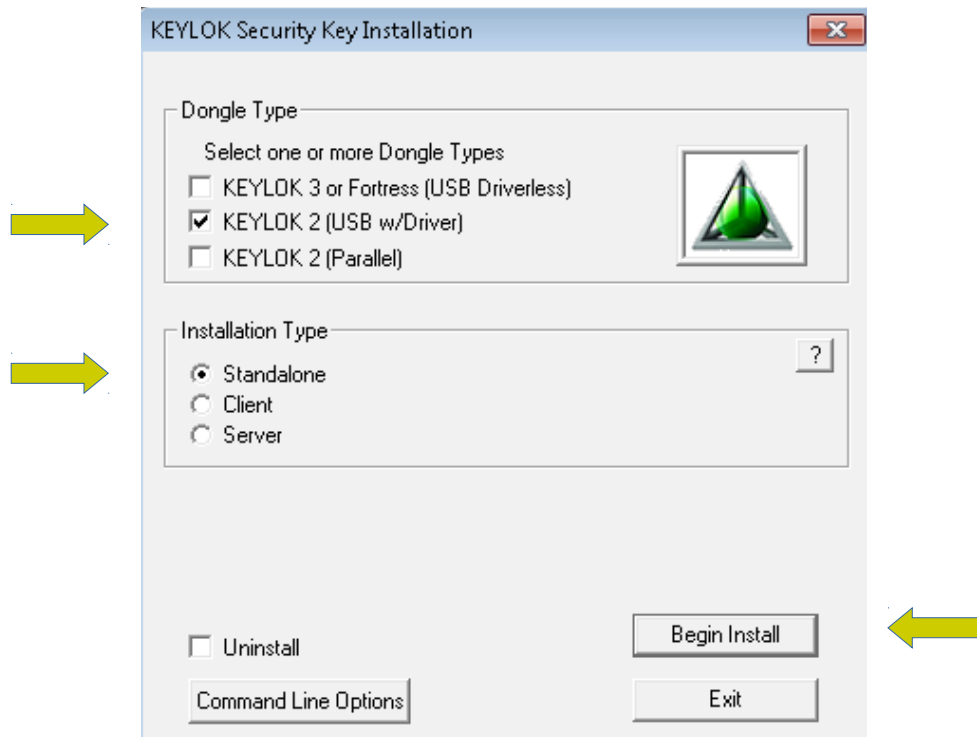
Then click on the Begin Uninstall button. Let the installer complete.

Now we need to reinstall the driver. Restart the dongle installer program using the Start Dongle Installer button on the tech support menu.

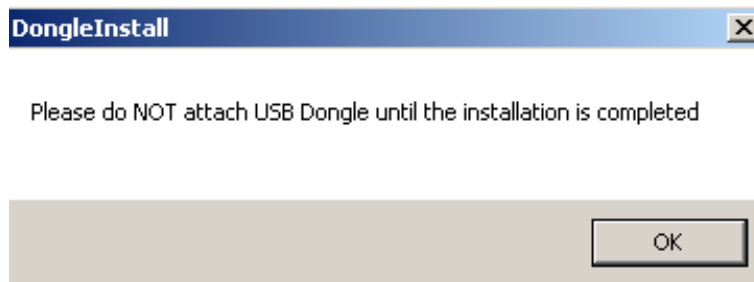


EEGer4 Installation and Test Procedure

This time select Keylok 2 dongle and Standalone, then click on Begin Install.



You will get this window but you DID already remove the dongle, correct?



Click on OK.

The dongle driver has now been reinstalled. Return to EEGer by clicking on the “Done” button at the bottom of the tech support menu and restart the Configuration section of this procedure.