BrainX

Installation and Update

DISCLAIMER

We have used reasonable effort to include accurate and up-to-date information in this manual; it does not, however, make any warranties, conditions or reBrainXs as to its accuracy or completeness. We assume no liability or responsibility for any errors or omissions in the content of this manual. Your use of this manual is at your own risk. Under no circumstances and under no legal theory shall the authors be liable for any indirect, direct, special, incidental, punitive, exemplary, aggravated or consequential damages arising from your use of this manual.

Features and specifications of this software program are subject to change without notice. This manual contains information and images about BrainX, its user interface, GUI and its other signal processing algorithms, publications that are protected by copyright.

Sending Your Comments and Critiques: We'd like to hear from you. Your comments and suggestions for improving this document are welcome and appreciated. Please e-mail your feedback to: BrainX@live.com

Thank you.

Contents

Warnings and Cautions

This software can be used to design paradigms for magnetoencephalography (MEG), electroencephalography (EEG) and functional resonance imaging (fMRI).

The following warnings and cautions appear in this guide. Please ensure you are aware of all the operations and interpretations.

General Information

BrainX has been developed and used for more than a decade. The old version runs on Windows 98/2000/XP/Vista. The new version runs on Windows 7/8. The old version of BrainX is 32bit. The new version of BrainX supports both 32bit and 64 bit windows system.

Hardware Requirements for BrainX (version 1~5)

CPU: 600 MHz or higher processor (1000 MHz recommended);

- Memory: 256 MB or higher (512 MB recommended);
- Hard disk: 60 GB or more;
- CD-ROM or DVD-ROM or CD-ReWritable drive;
- DirectX™ 8/9 video card with 128MB RAM or higher
- Sound hardware as recommended*
- Parallel Ports
- Serial Ports
- Microsoft Mouse or compatible pointing device;

Software Requirements for BrainX (version 1~5)

Prior to installing BrainX, you need the following software installed on your system.

- Microsoft Windows 98/2000/XP/Vista
- Image processing software – if you plan to edit images.
- Sound processing software-if you plan to edit sound;

Hardware Requirements for BrainX (version 6 and later)

CPU: 600 MHz or higher processor (1000 MHz recommended);

- Memory: 2 GB or higher (3 GB recommended);
- Hard disk: 100 GB or more;
- CD-ROM or DVD-ROM or CD-ReWritable drive or USB driver;
- DirectX™ 9/11 video card with 128MB RAM or higher
- Sound hardware as recommended*
- Parallel Ports
- Serial Ports
- Microsoft Mouse or compatible pointing device;

Software Requirements for BrainX (version 6 and later)

Prior to installing BrainX, you need the following software installed on your system.

- Microsoft Windows XP/7/8
- Image processing software – if you plan to edit images.
- Sound processing software-if you plan to edit sound;

Install BrainX

- Insert a BRAINX CD into your CD-ROM drive
- Wait for a few seconds, the installation software will automatically run.
- Click Install.
- Click Next if you accept the copyright agreement.
- Fill the User Name, Company and Serial Number fields correctly, otherwise installation may stop there and can't go ahead
- Click the Finish, then you should be able to see a short-cut on the desktop

Update BrainX

To update BrainX, just insert the update CD into the CD driver; it should automatically update all components.

- If it does not run automatically, do the following things.
- Insert a BrainX CD into your CD-ROM drive
- Find the fold in you C drives during you installing BrainX
- Copy the BrainX update files into BRAINX fold, when the computer ask if you would like to overwrite the exist files, please select yes.

Determining the Software Version

In the Main Frame: select Help -> About.

The About Dialog will show the version of the software.

Uninstalling BrainX

You may need to uninstall BrainX. To do so, follow these steps:

- On the Start menu, choose Settings, then Control Panel. The Control Panel appears.
- Double-click Add/Remove Programs. The Add/Remove Programs Properties dialog box appears
- Select BrainX, click Add/Remove

- The Perform Uninstall window appears
- Click the Next until the Finish button appears.

Operating System

BrainX runs on Windows XP, Vista, 7, and 8. Since licensing is independent of version, you can run older BrainX versions on older Windows operating systems. When timing is critical, you should make sure that no other applications are active, only the fundamental background processes are running, no tasks are scheduled and that there is no network activity. We also suggest that you maintain your experimental computer installation as clean and minimal as possible. You can use BrainX's benchmark assessment tool to estimate timing acuracy.

System Hardware

In addition to aforementioned hardware requirments, BrainX runs on many hardware configurations. In fact, the hardware you need depends on the experiments users choose to run. There are several basic considerations. Is the hardware capable of presenting and delivering the stimuli in the desired manner? Can the hardware achieve the required timing accuracy? Does the computer have enough memory to hold all the video, audio and pictures? Generally speaking, BrainX will alert you if your system does not fulfill the two basic considerations listed above. You may be able to improve performance with a suitable hardware upgrade.

The design of paradigm is typically based on the following guidelines.
(1) Automatically take advantage of whatever hardware features are available;
(2) Attempt to present the stimuli exactly as requested
(3) Produce a detailed report indicating what actually happened during an experiment with timing information and associated uncertainties

The key components for stimulation are: (1) the amount of memory, (2)the sound card, (3) the video card; (4) the serial ports; (5) the parallel ports; (6)the connection between computers and fMRI/EEG/MEG systems.

The amount of memory is important because the operating system will swap some of the stimuli to the hard drive if there is not sufficient memory to store all stimuli. Consequently, this will result in disk accesses occurring during the experiment which will greatly degrade performance.

Useful Software for BrainX log file

If you like to analyze subject's performance or check the time-accuracy, it is also necessary to have a spreadsheet application installed (e.g., Excel). Though BrainX has a log viewer that allows users to edit or view the events input and output data on that computer, other spreadsheet application may provide additional funcitons. Of note, You do NOT have to have a spreadsheet application installed simply to run the experiments and gather data.

Backward Compatibility

If you have been using a previous version of BrainX, you should be able to continue using the old version without having to uninstall it. Our new version of BrainX is typically backward compatible so that BrainX experiments from all previous versions should run the same as they always have without requiring modification. Of course, be sure to confirm compatibility for yourself with any old experiments prior to scheduling participants.

System Settings

Computer Display: To allow for the full range of colors usable by BrainX, it is recommended that you use 24, or 32 bit color. Some systems are set by default to 8 bit , which provides for only 256 colors (colors or color ranges may appear as dots, patterns, or solid regions). To set this option, right click anywhere on the desktop and then select properties. Choose settings, and then select the highest color range possible. 24 and 32 bit color ranges are both capable of displaying close to the full range of colors detectable by the human eye.

Timing is Everything: Windows is generally a very chaotic environment to work in when it comes to controlling the timing of events. This is a primary reason why Microsoft introduced DirectX, a software development platform that provides programmers with direct access to your computer's hardware. For our purposes, the most important element of DirectX is direct access to your computers display hardware. It is a good idea to keep the computer as "clean and pure" as possible (no backgroun virus scan, no screen saver, no external network connection, no background data processing).