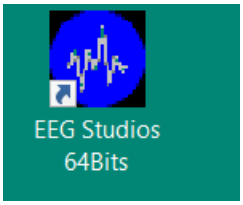
Quick Start Guide

Installation

To allow easy installation, EEG Studios are provided in two types. One typical version can be installed by using CD/DVD/thumb driver. One “green version” of EEG Studios can be installed with “copy-and-paste”.

(1) Typical version (compiled and stored in CD/DVD/thumb driver)

1. Insert the disc (CD/DVD) into your PC, it should start automatically
2. If it is not start automatically, find the fold of the software, start the EEG Studios Installer by clicking it, the installer will guide you through the installation process.
3. Follow the instruction on your screen, read and accept/reject the License (rejection will stop the installation)
4. You might be asked for an admin password, if so, provide it and continue
5. If you are asked for product keys, provide them. If you do not have andyou are connected to the internet, select „Online“as activation mode, otherwise contact your distributor in order to get the keys for the manual activation.
6. Click the “Next” until it completes
7. Once the software installation is completed, you should see a short cut on the desktop and/or start-up menu. You can run the software now by simply clicking the short cut.



(2) Installation of “green version” of EEG Studio

1. The “green” version of EEG Studio is provided for users who do not have a way or authority to install software. The “green” version can be used on Windows 7/8/10 (32 or 64 bit) without installation.
2. Obtain “green” version of EEG Studios in a fold, copy the fold of all the files of the entire EEG Studio to your computer, where you like to store it;
3. Find the “EEG Studio.exe” file (it is recommended to make a short cut on easily accessible place)
4. Start “EEG Studio” by double-click the “EEG Studio.exe” file or short-cut file.

For your convenience, you may make a short-cut with the following steps:

- *Select the “EEG Studio.exe” file*
- *Press the right Mouse Button;*
- *Click the “Create short cut” sub-menu in the “Pop up” Menu;*
- *Drag the created short-cut to the desktop. You may rename the short-cut if you like.*

The feature of “green” version of EEG Studios:

If you do not like it, you may simply delete the entire fold and the software should go completely without taking any of your computer space. Noteworthy, the “green” version of the software does not change any of the settings of your computer. It is reasonable to say that there is no virus, no malware, and no junk item. Thus, the software is pretty “healthy” and “green”.

What kind of computer do I need to run EEG Studio?

Though the software package (Dec. 2012) was developed on a workstation with very high configuration (e.g. it has 144 GB memory), the software package has been tested on typical desktop computer as well as notebook/laptop with 3 GB memory. Here is an example for desktop computer:

• Windows 10/8/7(64 bits)

• 3rd generation Intel(R) Core(TM) Processor (2.7 GHz, 8MB L3 Cache)

• 24 GB DDR3 System Memory

• 1 TB Hard Drive

• NVIDIA(R) GeForce(R) GT 650M Graphics with 2GB GDDR 5 video memory

• 20-inch LED Display (1920 x 1080, 32 bit color)

• 8X DVD+/-R/RW

• Standard Keyboard

Start

1. Start **EEG Studio** by simply clicking EEG Studio.exe or short-cut files
2. A screen flashing indicates the start of EEG Studio

Open EEG file(s) in 1-5 steps

1. “Drag-and-drop” opens a EEG file

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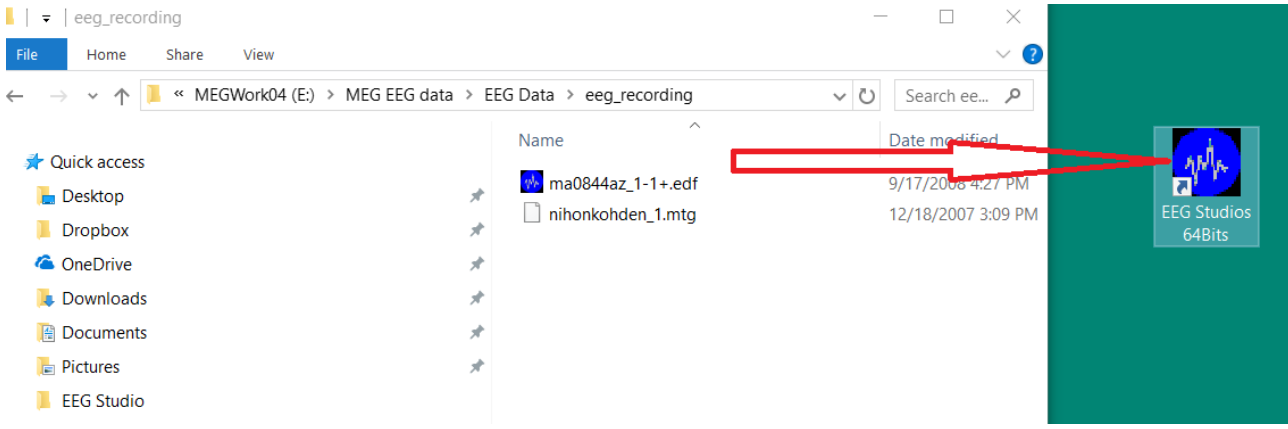
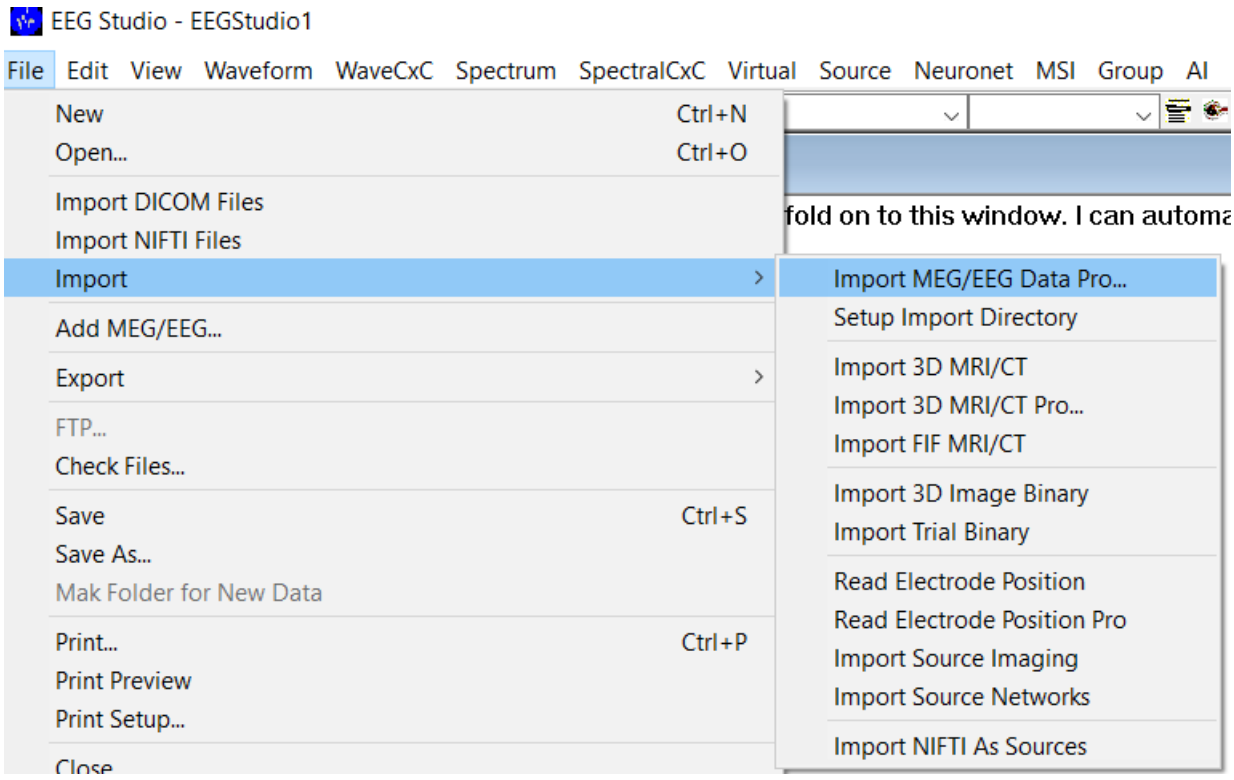
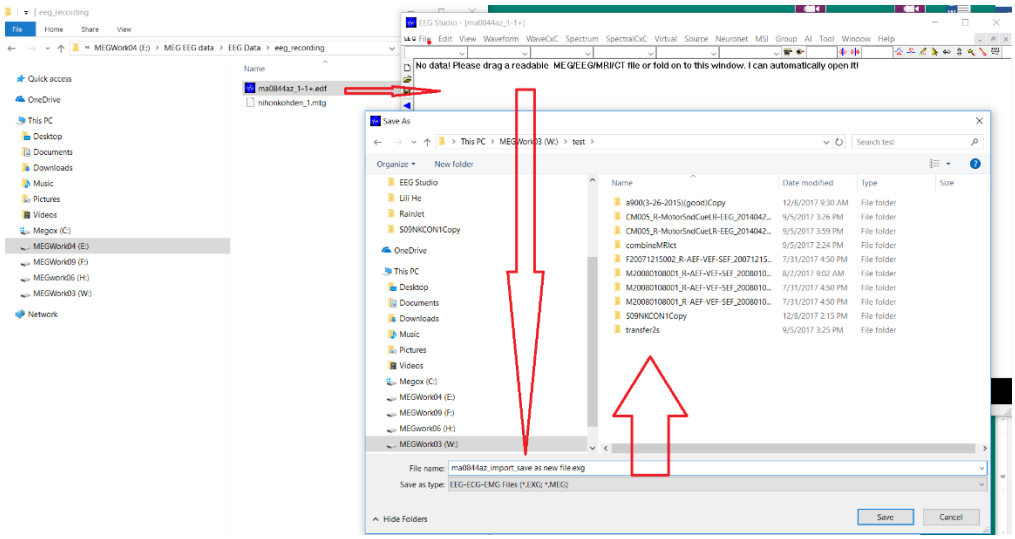


2. “Double-click”/”Click” (depending on your computer settings) opens EEG files
3. Open EEG files from File Menu

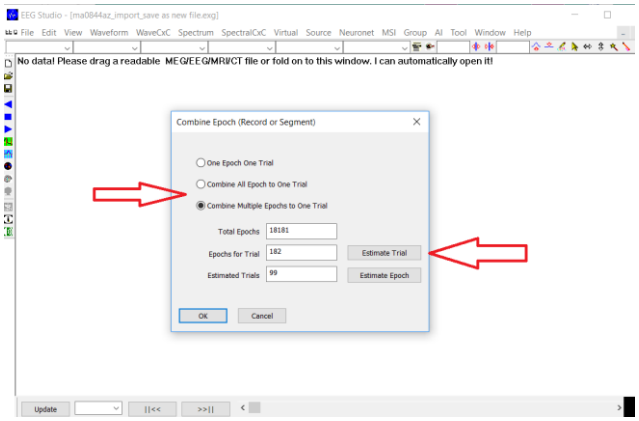


➢ Select File Menu

- Press “Open” to open EEG Studio files
- Press “Import” to import many types of EEG Files (e.g. *.edf files)
- File open dialog will show up, select the EEG file(s) that you would like to open.
- If the file(s) are already in EEG Studio format (or opened/processed before), they will be opened immediately
- If EEG files are not EEG Studio format, EEG Studio will check and import the files. A window will pop up to allow users to save as a new name (so that the original files will be kept)



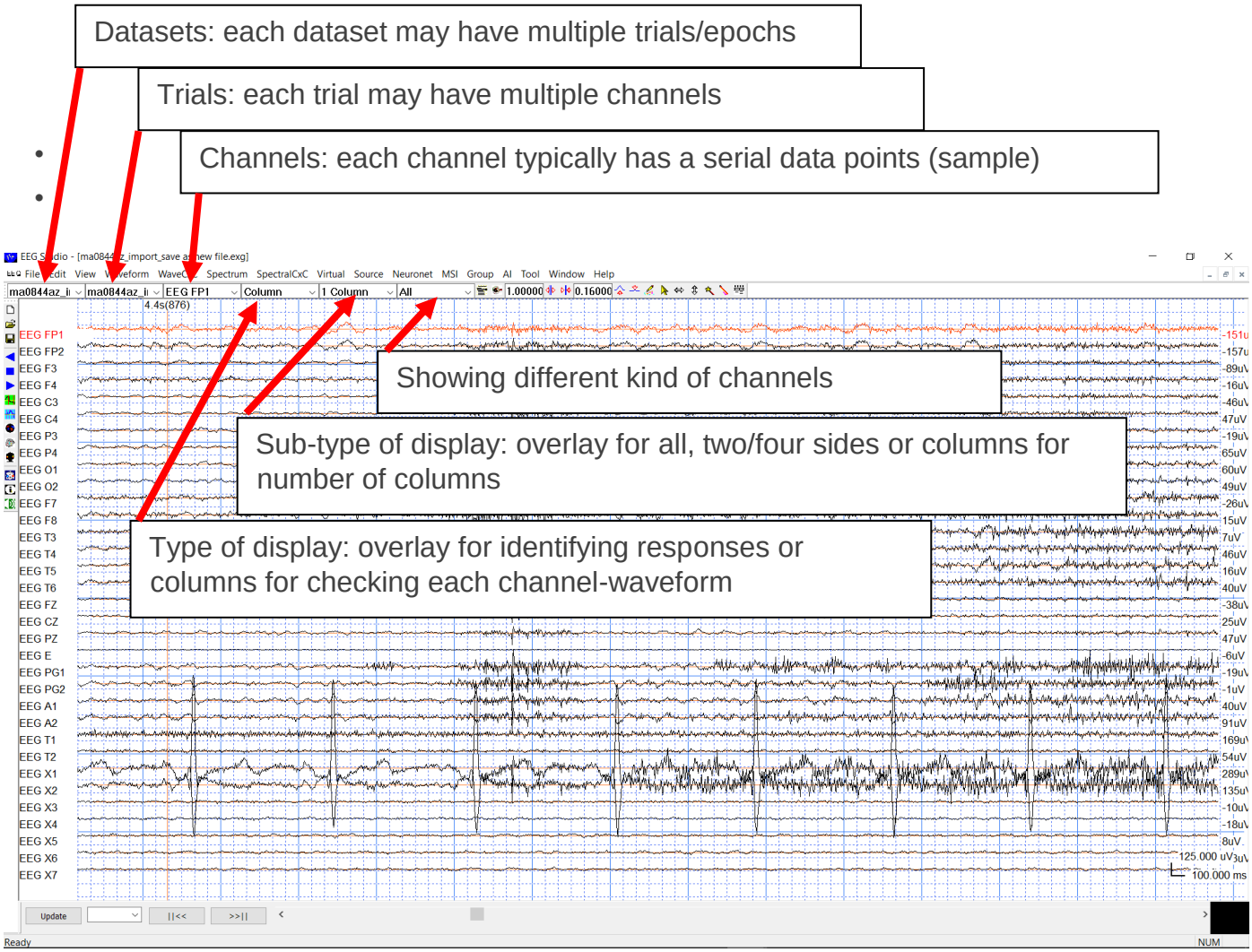
- EEG Studio provides the opportunities for users to decide how the EEG data will be imported (e.g. multiple epochs/trials or single epoch/trial).



More detailed information about the file operation can be easily found in the help under the menu point **File Menu**

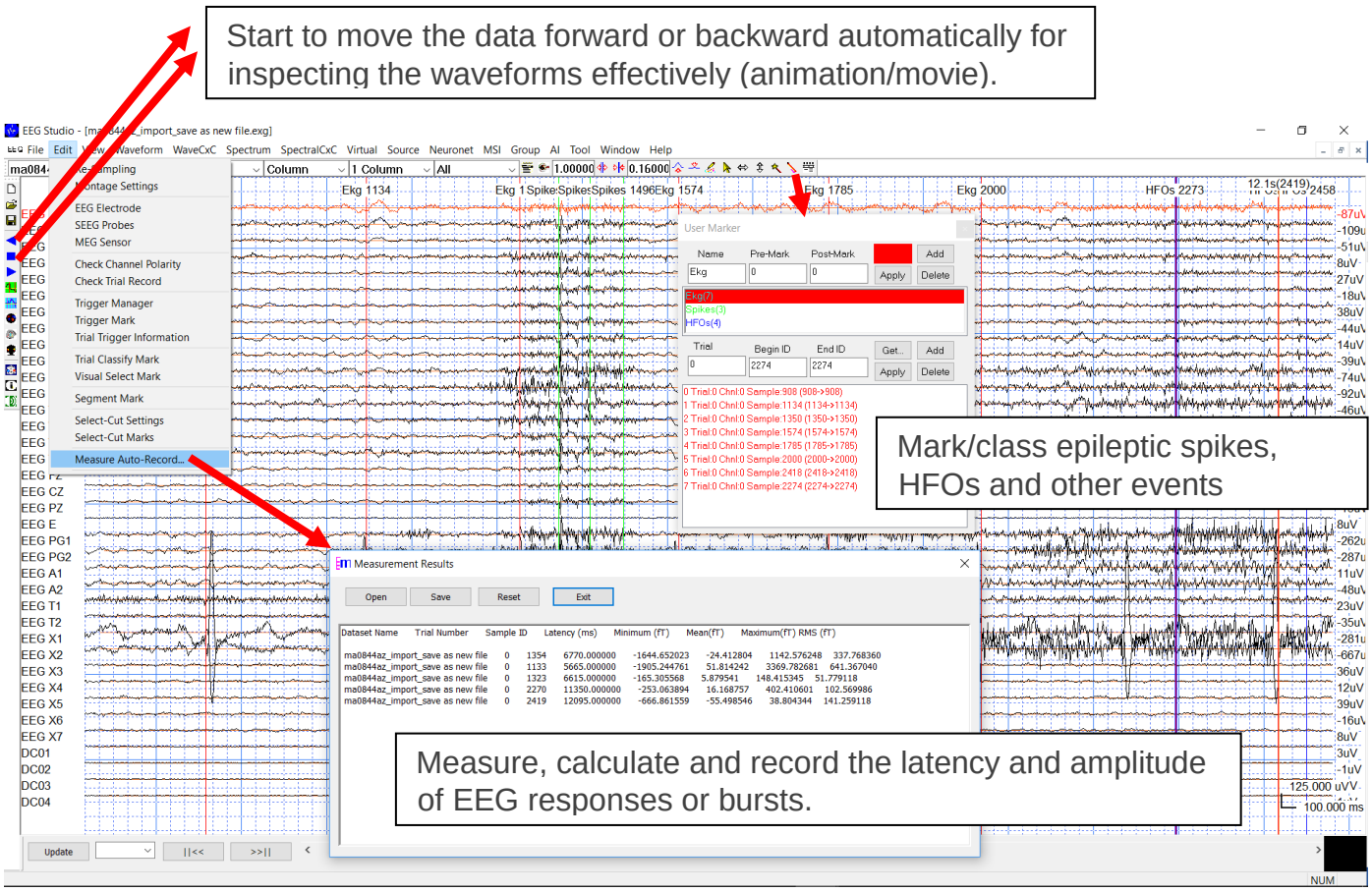
Review EEG

You have now the possibility to use all functionalities of EEG Studios:



- Navigate easily through the EEG, which may include scalp EEG/SEEG/iEEG and EKG/ECG channels.
- Remove artefacts with any kinds of EEG
- Change the settings of the channels by selecting a montage and hide channels.
- Change the resolution in time and in voltage.
- Select notch, high-pass and low-pass filters.
- Watch the EEG in two windows at the same time.
- Create, review and change markers for special EEG events.
- Markers are saved with the data in the marker list and can be reviewed anytime.
- Start automatic EEG analysis.

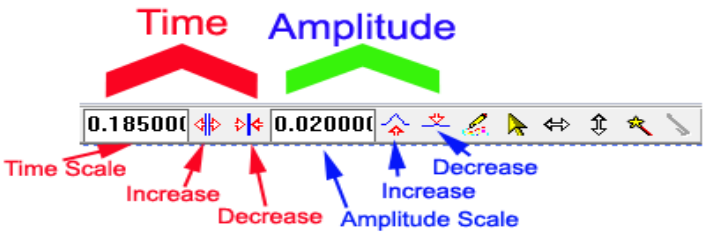
More detailed information can be found under the menu point**-> EEG Studios Main Frame.**



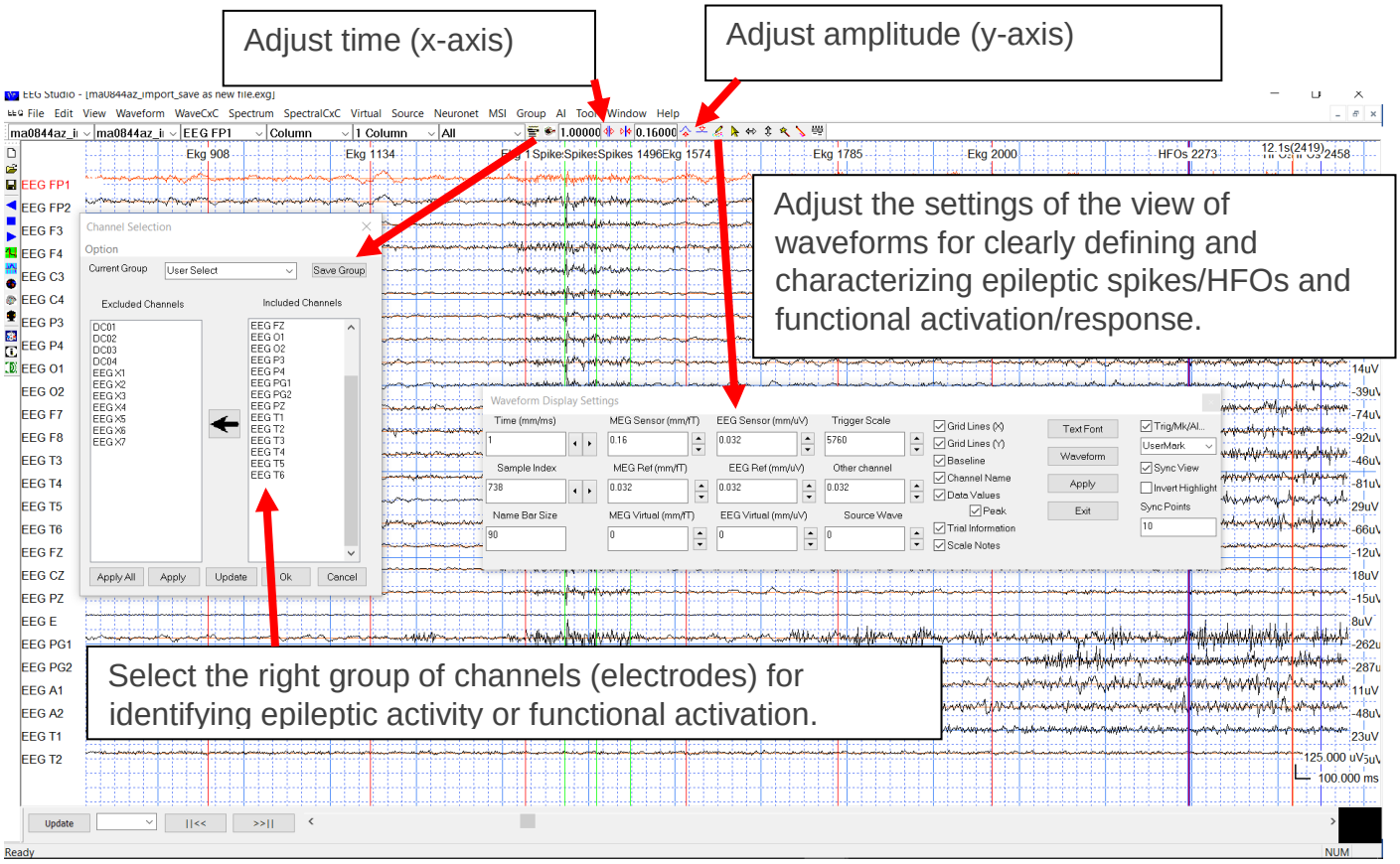
Start automatic EEG analysis

- EEG Studios offers you a series of automatic EEG analysis tools:
- Marks: The automatic seizure inspects and generates markers that you can easily review with the marker list.
- Classifier: the automatic detection detects spikes/HFOs, clusters them by localization and visualizes the results for easy review.
- Measurements: you can easily start the measurements by using mouse to point to the interesting waveform
- Movie/Animation: you may start to automatically move the data (waveform) forward or backward for effectively inspecting the waveforms for epileptic spikes, HFO burst, functional brain responses or other events.

More detailed information can be found under the menu point **- > EEG Studios Waveform Analysis.**

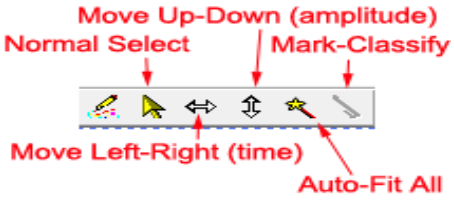


Inspect Epileptic Activity/Functional Activation

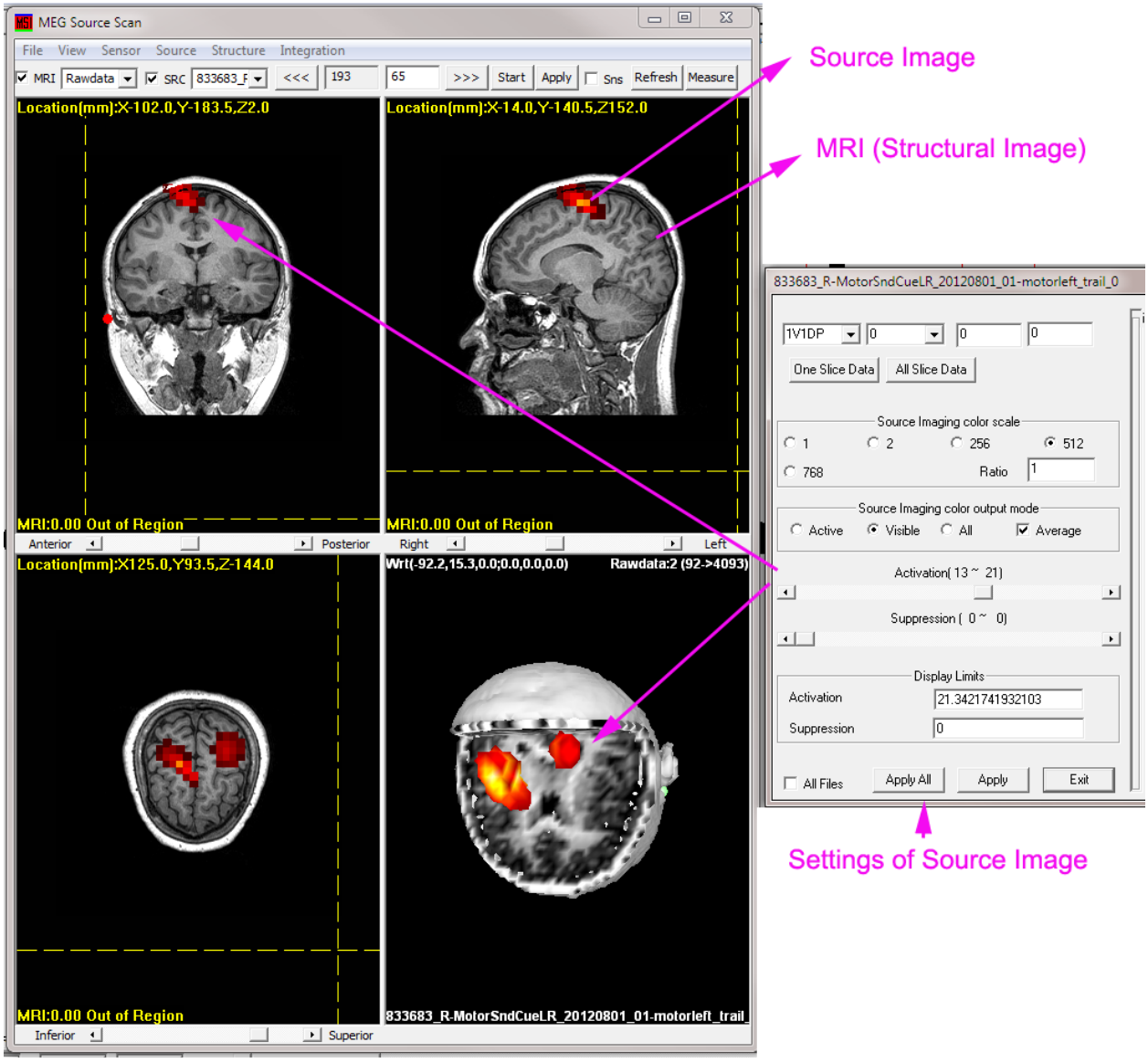


Start to identify epileptic activity or functional activation with all its functionalities:

- Select the most important group of channels for a particular task;
- Start the detection on the complete time range or specify a time segment you are particularly interested in.
- Find the spike/HFO detections on a timeline with a set of colors and characteristics
- Zoom in and zoom out of the timeline using the mouse on the screen.
- Click on a detection to see its EEG and find it in the spike/HFOs list.
- Choose if you want to see the average spike EEG of the cluster or all spikes overlapped.
- Go through the lists of spike clusters and their spikes and remove detections you do not want.
- Change time of selection for review and measurements.
- Synchronize with the EEG in the EEG viewer.

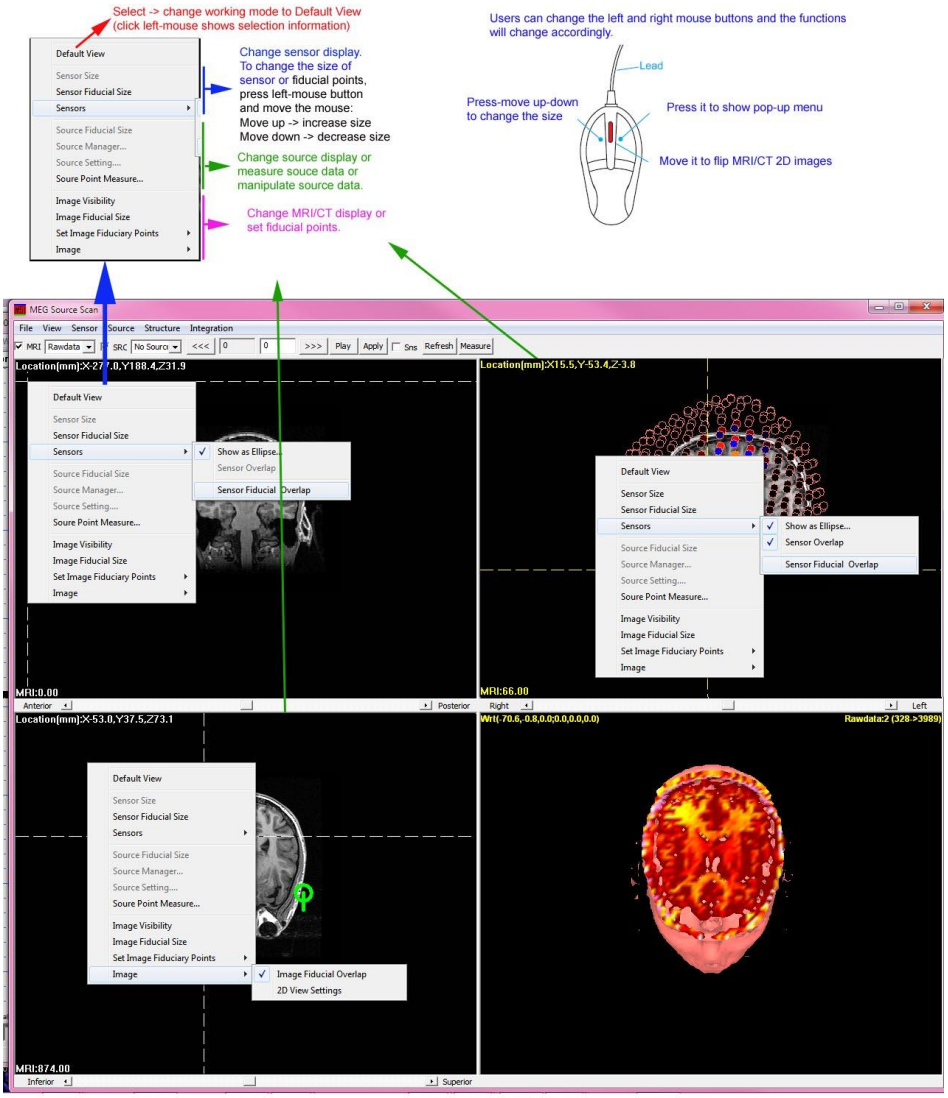


Electrical/Magnetic Source Imaging



Start EEG Source scan and use all its functionalities:

- Choose between seizure mode (seizure markers) and spike mode (spike markers).
- Inspect the results of the source localization as color-coded overlay to the structural MRI. High activity is red. Low activity is dark.
- Review the results in the three 2D slices (Coronal, Sagittal and Axial).
- Navigate through the slices using the controls or the mouse.
- Review the results in the 3D visualization.
- Zoom in and zoom out using the mouse on the screen.
- Step through the results in time or just jump to the time point of maximum activity.
- Adjust several visualization settings.
- Export the results as images.

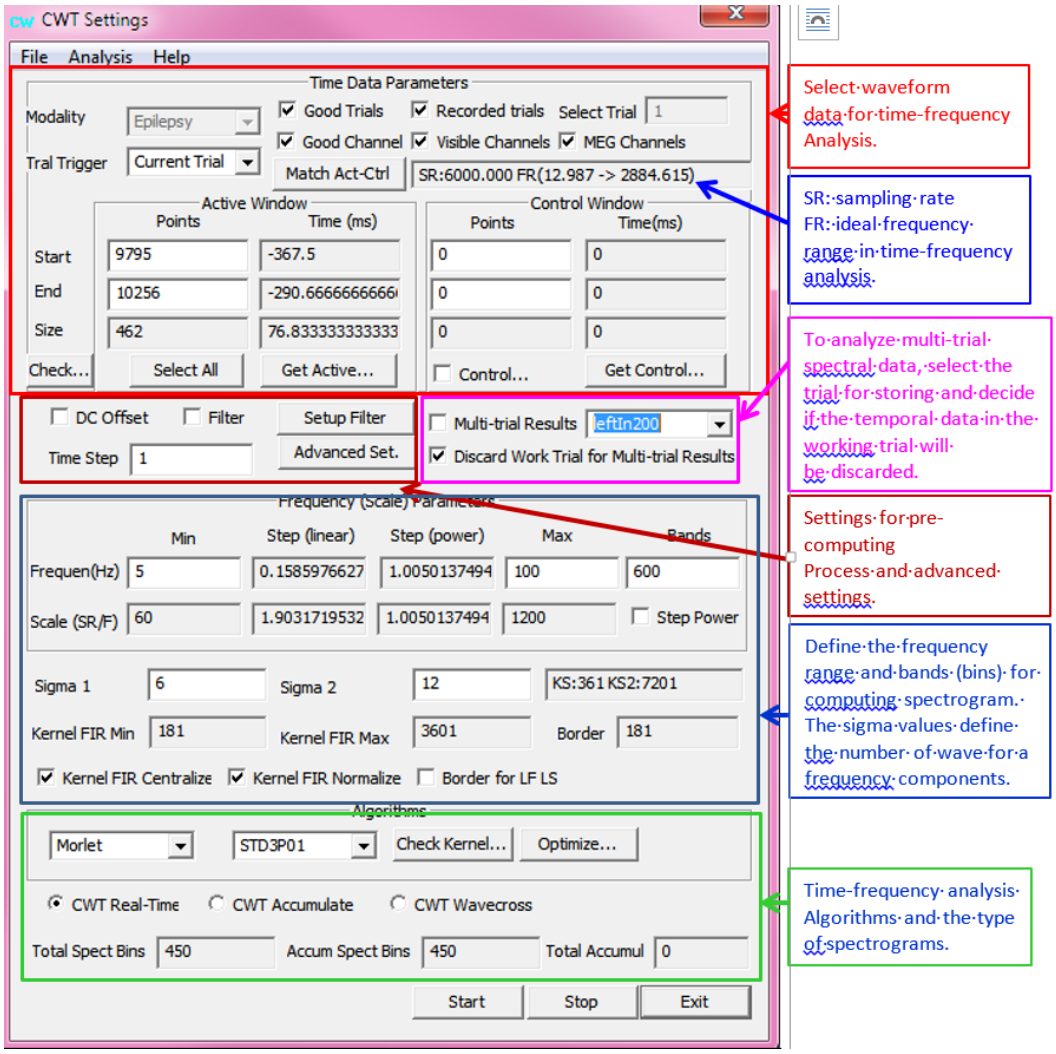


Identification of epileptic foci

Analyze source data and use all its functionalities:

- Find color coded detections of different patterns. Patterns can be volumetrically visualized.
- Read localization, frequency and amplitude of the detected patterns in the three higher panels.
- Find burst suppressions and attenuations.
- See the amplitude-integrated EEG and the proportion of the frequencies as continuous measures on the two lower panels.
- Navigate in time.
- Zoom in and zoom out using the mouse wheel.
- Synchronize with EEG shown in the EEG Studios viewer.
- Select or deselect patterns that you want to have shown or hidden.
- Switch on/off the traces you want to have displayed.

Time frequency analysis



The full suite of waveform time-frequency analyses comprises the following components.

- Wave Data Selection
- Pre-analysis data processing
- Size of spectrogram
- Time-frequency analysis mode: real-time (e.g. task-based functional activation) or accumulating (e.g. epileptic activity)
- Time-frequency analysis algorithms
- Parameter checking
- Starting time-frequency analysis scan