## Technical Specifications

### Transformations
- Artifact rejection
- Averaged cross correlation
- Averaging
- Band-rejection filters
- Baseline correction
- Change sampling rate
- Coherence
- Comparison
- Covariance
- Current source density (CSD)
- Data Cache for improved performance
- DC-Detrend
- Edit channels
- ERS/ERD
- FFT (fast fourier transform)
- Filters
- Formula evaluator
- Grand average
- Inbuilt interface to MATLAB®/EEGLab
- ICA
- Inverse ICA
- Inverse FFT
- Level trigger
- Linear derivation
- LORETA functionality for source localization
- LRP
- Mapping/3D-Mapping
- New reference
- Occular artifact correction regression and ICA based
- PCA
- Peak detection
- Pooling
- Probabilistic ICA
- Raw data inspector
- R beta
- RMS and GTP
- Segmentation
- t Tests (paired and unpaired)
- Topographic Interpolation
- Wavelets

### Views
- Standard view
- Frequency views
- Grid view
- Head view
- Butterfly plot
- Mapping view
- View tools for Delta
- Zarea
- Map
- Graphics
- Overlay of data sets with different sampling rates and lengths
- Overlay of Wavelet data
- Black markers and multiple transient transformations
- Scaling Bars
- Manual and automatic marker setting
- Montages

### Supported Input File Formats
- AstromedReader
- BreaReader
- BrainLabReader
- BrainStarReader
- CogniscanReader
- DatawaveReader
- DCMESReader
- EasysReader
- EdfReader
- EldithReader
- GenericDataReader
- GraphTekReader
- Harmonie5Reader
- LearningDataReader
- MicroMedReader
- MonitorReader
- NeurofileReader
- Neurofile2Reader
- NihonKohdenReader
- PolyDCReader
- SbiReader
- ScanReader
- SigmaReader
- VisaPortReader
- A1TelReader

### Hard- and Software Requirements
- Windows® XP 32 Bit Service Pack 2 or Windows® Vista 32 Bit (also running under 64 Bit Systems), Windows® 7 (32 Bit/64 Bit) - if "Update: Miscellaneous/Cumulative" (18.3.2010) is installed
- Minimum configuration: Intel Pentium IV or higher, 512 MB of RAM, 8 GB hard disk, graphics card with 64 MB of RAM
- A monitor with a screen size of at least 21 inches (53 cm) when measured diagonally from corner to corner
- At least 256 MB of free RAM, possibly more, depending on the volume of data processed

As the aforementioned information might be subject to change, please refer always to our website for up-to-date product specifications.
Analyzer 2 is Brain Products’ solution for analyzing neurophysiological data.

In 1997, some smart individuals in the Brain Products team designed the first version of BrainVision Analyzer, an extremely easy-to-use and fully comprehensive analysis program that represented a technological revolution in the world of neurophysiological research. Since then, BrainVision Analyzer has been purchased by thousands of research labs all over the world.

The experience accumulated by a large number of users over many years has sparked off the design of Analyzer 2, inspiring us to undertake further development in order to meet emerging new requirements.

All Analyzer 2 has been programmed from the ground up using .NET, a future oriented platform that ensures great stability, fast adaptation to new requirements and ample scope for future expansion. Since then, BrainVision Analyzer has been purchased by thousands of research labs all over the world.

Analyzer 2 has been designed to help you in every way so that you can perform your scientific work even faster and more straightforwardly.

- **Edit markers:** Interactive editing mode with undo and redo of marker editing operations. Rule-based automatic editing will process large numbers of markers easily. User-defined range markers have been implemented.
- **Flexible overlays:** Overlays now even of EEG data with different lengths or sampling rates.
- **Montage editor:** Graphical interface with drag-and-drop function for creating montages.
- **Topographic interpolation:** Additional channels can be added by topographic interpolation, for example to replace bad channels or to compare datasets with different sets of channels.
- **Undelete nodes:** Any incorrectly deleted node can be restored with unlimited undelete capability.
- **User properties:** Properties can be defined for datasets, channels and markers (string, float, integer, Boolean and data arrays).

**EEG Views**
Display your data the way you want to see it! Several types of view are available, such as butterfly view, time-frequency grid view, paired channel view and 3D view with different types and head shapes that can be freely rotated using fast DirectX methods. Views can be configured individually (XML format). A view designer for publishable artwork is coming soon.

**Additional Features**

- **ERS/ERD:** Methods for calculating event-related synchronization and desynchronization.
- **Filtering:** Low cutoff, high cutoff, band rejection and notch filtering with a new graphical display of the filter functions.
- **FFT:** Fast Fourier transforms for signal analysis in the frequency domain.
- **Inverse FFT:** Inverse FFT for implementing filtering methods in the frequency domain.
- **Wavelets:** Discrete, continuous and inverse discrete wavelet transforms for the analysis of neuro-physiological signals in the time-frequency domain.
- **ICA:** Faster ICA algorithms, probabilistic ICA, semiautomatic views for component selection (with topographical maps, component activity, preview of corrected data and overlay of the original data).
- **ICA ocular correction:** ICA correction with eye component selection methods based on objective criteria.
- **LORETA:** Source localization, further processing of source data in Analyzer 2.
- **MRI artifact correction:** Innovative algorithms for the correction of gradient and pulse artifacts in neurophysiological data recorded during MRI.
- **Real-time MATLAB® interaction:** Interface for applying MATLAB® / EEGLab functions to transforms and templates. Problem-free forward / backward transfer of all dataset components and properties with automated node/template generation.
- **Rules for events:** Events can be defined and are processed by Analyzer 2.
- **User properties:** Properties can be defined for datasets, channels and markers (string, float, integer, Boolean and data arrays).

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**Available Analysis Steps**
Analyzer 2 is more than just a state-of-the-art EEG and ERP analysis tool! The Analyzer 2 program offers a wide variety of data analysis modes in the time, frequency and frequency domains.

**Data Readers**
Analyzer 2 can read and process more than 25 data formats from leading manufacturers automatically and without user intervention. The generic data reader also offers an abundance of configuration options for describing raw data and importing it into BrainVision Analyzer 2.

**Customizable User Interface**
Work with your data the way you want! Analyzer 2’s user interface makes operation and information access simple. Different skins are available to allow you to fully customize the interface, and the docking feature permits to display the tool windows while analyzing data. Docking windows can be positioned anywhere in the application window, and can be displayed or hidden dynamically.

**The Structure of BrainVision Analyzer 2**
Analyzer 2 has a modular structure that includes data readers, transformations, montages as well as export, display and add-in components.

Simple addition of new components makes it possible to dynamically expand Analyzer 2’s functionality and we are committed to constantly improving on Analyzer 2’s abilities.

The integrated Basic interpreter for macros plus the fact that add-ins can be written in any .NET language make it possible that Analyzer 2 users can program their own applications with great flexibility.

**Innovation based on Experience**
**The Experience Accumulated by a Large Number of Users**
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**For a complete list of data readers, please refer to the technical specifications published on the last page of this brochure.**

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**The History Tree®**
See your analysis at a glance! Every analysis step performed with Analyzer 2 produces a new node that branches off the previous one. A template can be created from the processing stream at any time to be used later on other datasets.

The operational parameters of each node can be modified even after the processing is completed, and subsequent operations are automatically adjusted.

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