Mentalab

QUICK START
GUIDE

Explore Pro
Mobile EEG system

Q3 2025

contact@mentalab.com
mentalab.com
github.com/Mentalab-hub
wiki.mentalab.com

Mentalab GmbH, Weinstr. 4,
80333 Munich, Germany

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Thank you for purchasing Mentalab **Explore Pro**

Mentalab Explore Pro is the result of years of development to provide the best-in-class mobile EEG system.

Mentalab Explore Pro combines high precision in a mobile format. It provides exceptional data quality, high sampling rates, fast set-up times, remote updates, internal memory, open-source APIs, and much more.

Getting started

This guide contains basic information to help you start streaming and recording data with your **Mentalab Explore Pro amplifier**.

For detailed information on safety and usage, please refer to the user manual. Additional resources, including instructional videos, are available at **wiki.mentalab.com.**

Basic package contents

- Mentalab Explore Pro amplifier
- Electrodes of your choice
- Cap of your choice
- Shockproof case
- USB-C cable
- Elastic cap cover
- Electrode gel
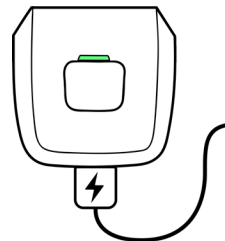- USB Streaming isolator
- Cleaning set
- Trigger isolator

Data sheet

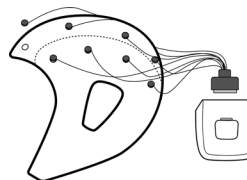|		EX-P 8	EX-P 16	EX-P 32
No. channels		8	16	32
SPS (Hz)	USB-C	Up to 8k	Up to 4k	Up to 2k
	Bluetooth	1000	500	250
Weight (g)		27	36	
Battery life (hrs)		8-10		
Diff. input range (mVPP)		800(±400mV)		
Input impedance (GΩ)		1		
Resolution (bits)		24		
RMS noise (μV)		<1		
Interface		USB-C		
Flash memory (GB)		8		
IMU		9 Axes		
Bluetooth range (m)		~10		

Start-up instructions
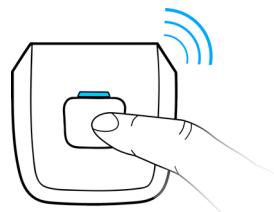
1. **Charge your amplifier** via USB.
   A green LED indicates that the battery is sufficiently charged. Disconnect the device from the power source before use.

2. **Position** the electrodes in the cap, **and connect the cable set** to the amplifier. Each channel records against a unipolar reference electrode. Use Velcro to secure your amplifier to the EEG cap.

3. **Press the power button** to turn on the amplifier. It will begin recording data to its internal memory.

4. **Ensure** that your amplifier is rapidly blinking blue. This indicates that it is advertising under its Bluetooth ID: Explore_XXXX.

5. **Use Mentalab's open source software or mobile apps** to visualize live data streams, measure electrode impedance, adjust device settings, record data, and more. For most applications, Explore Desktop is sufficient. You can download it from the software page on our website: **mentalab.com.**

6. **Briefly press** the amplifier's button to set an **event marker**. The amplifier will confirm by blinking pink.

7. **When you are finished,** turn off the amplifier by pressing and **holding the button for 3 seconds**, until the LED blinks red three times. Always power off the amplifier before connecting it to a computer via USB.

Bluetooth ID

Your Explore Pro's Bluetooth ID is the last four letters on the silver label on the back of the device. For example, the label below corresponds to a Bluetooth ID: "Explore_AABC"

FCC ID : T7VPAN10

095e80/**AABC**

Mobile and Desktop Software

https://mentalab.com/eeg-software/

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LED Light Guide

LED color	Blinking pattern	Indicates
Red **Yellow** **Green**	Solid at amplifier start-up. Flashes for 3 secs	Start-up in progress. Colour indicates battery status (green > 90%; yellow > 50%; red < 50%).
Blue	Blinks four times a second	Bluetooth visible and advertising.
Blue	Blinks once a second	Bluetooth connected to host machine. Online mode.
Pink	Blinks once a second	Upon start up: Not enough memory available. Press the button 3 times to format memory. All on-device recordings will be deleted.
Light Pink	One-time flash	Marker set, corresponding timestamp stored and transmitted.
Red	Flash 3x	Button pressed and held. Turn off.

Further information

Connection

To pair your Explore Pro amplifier with a mobile device or computer, use the Mentalab mobile app or Explore Desktop.

If the connection is lost, the Explore Pro will switch back to advertising mode and remain ready to reconnect for four minutes before entering offline mode.

Data

Explore Pro records ExG data at a default sampling rate of 250 Hz with 24-bit resolution. In addition, it logs temperature, battery voltage, and motion data from its accelerometer, gyroscope, and magnetometer. This allows you to determine the amplifier's orientation and operational status at any time. ExG and orientation data can be exported as .csv and .bdf files via Explore Desktop.

All data is stored internally in binary format (.BIN). To retrieve your data, connect the amplifier to a computer via USB. To erase stored files, format the memory using our open-source APIs. For more details, refer to the user manual or visit our website.

Software

Mentalab provides our own Acquisition software Explore Desktop, Explore Mobile, and an open-source Python API explorepy for direct data access. Data review can be performed using Explore Signals. For additional details, visit https://mentalab.com/eeg-software/.

In addition, Mentalab supports third-party integrations with interfaces such as Lab Streaming Layer (LSL) and BrainFlow, stimulus presentation solutions like PsychoPy, and advanced analysis platforms including NeuroPype and EEGLAB. For a comprehensive list of supported integrations, refer to our wiki: https://wiki.mentalab.com/integrations/.

Event triggers

Explore Pro supports three categories of event triggers:

1. **Wireless Event Markers:**
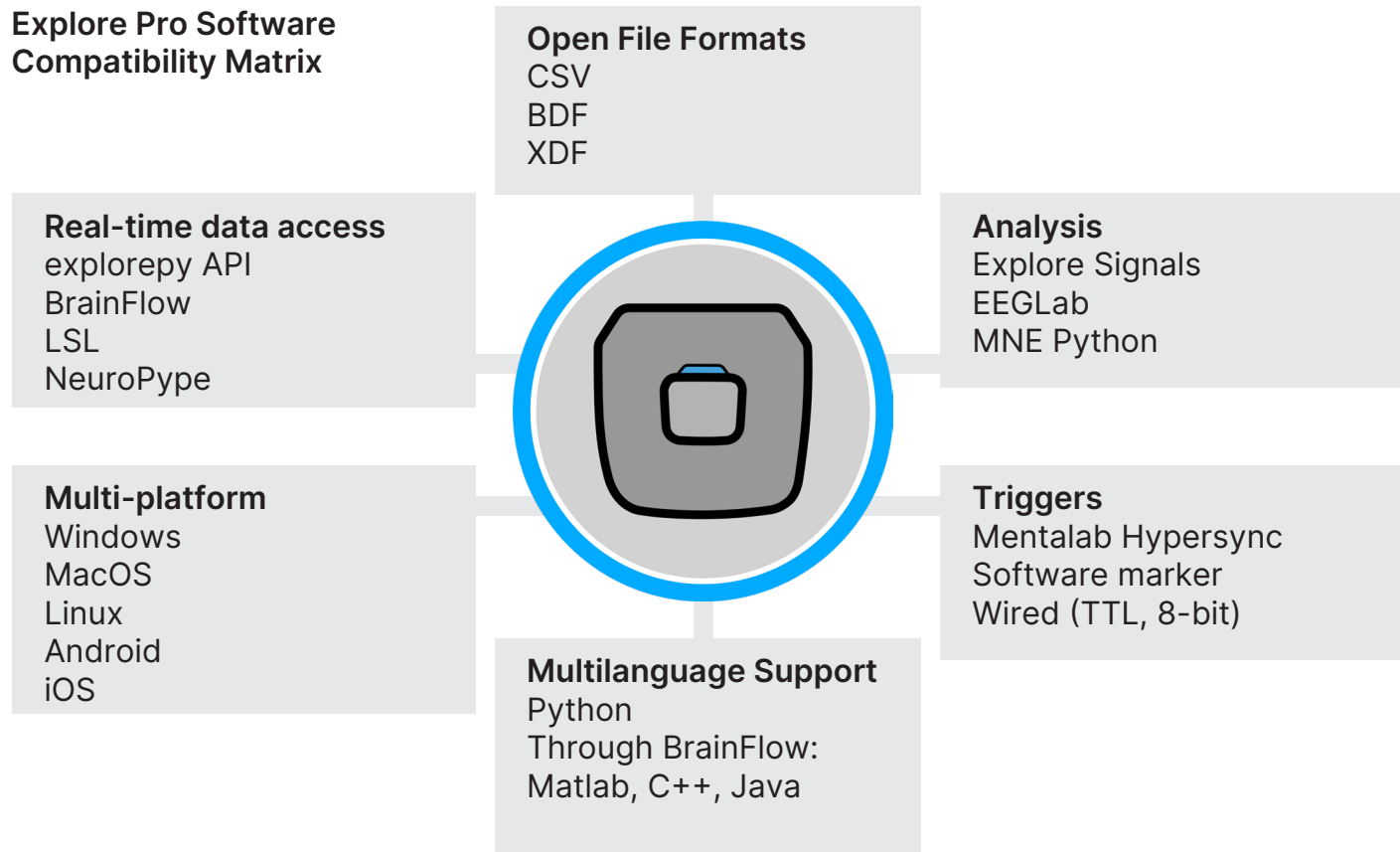   Implemented using Mentalab Hypersync system together with Lab Streaming Layer (LSL).

2. **Hardware Event Triggers:**
   Supplied as 8-bit digital signals or TTL pulses via a wired connection.

3. **Manual and Software-Based Markers:**
   Created by pressing the amplifier button or through Explore Desktop.

Explore Pro Software Compatibility Matrix

Open File Formats
CSV
BDF
XDF

Real-time data access
explorepy API
BrainFlow
LSL
NeuroPype

Analysis
Explore Signals
EEGLab
MNE Python

Multi-platform
Windows
MacOS
Linux
Android
iOS

Triggers
Mentalab Hypersync
Software marker
Wired (TTL, 8-bit)

Multilanguage Support
Python
Through BrainFlow:
Matlab, C++, Java

Mentalab

Mentalab is a biomedical technology company from Munich, Germany.
Our Explore Pro system is a high-performance, portable device designed for cutting-edge bio-signal applications.

Researchers across the globe use Explore Pro in areas like brain-computer interfaces, sleep research, and neuropsychology.

Please note: Explore Pro is not intended for medical use and must not be used for diagnostics or treatment.

Our team is always happy to support you in developing your own innovative solutions.

Contact

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Mentalab GmbH, Weinstr. 4,
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