



QUICK START GUIDE

Explore Pro

Mobile EEG system



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 more extensive information regarding safety and usage, please refer to the user manual. Further guidelines and instructional videos can be found 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
- Bluetooth dongle
- Cleaning set
- Trigger isolator

Bluetooth ID

Your Explore Pro's Bluetooth ID is the last four digits on the label on the back of the device. For example, the label below corresponds to a Bluetooth ID: "Explore_1438"



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

Start-up instructions

1. Charge your amplifier via USB. A green LED indicates sufficient battery. Disconnect it from the power source prior to 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 an EEG cap.
3. Push the power button to start the amplifier. It will now record data to internal memory.
4. Ensure that your amplifier blinks blue. This indicates that it is advertising, with Bluetooth ID: Explore_XXXX
5. Use Mentalab's open source software to visualize the live data stream, measure electrode impedances, change device settings, record data and more. For most use cases Explore Desktop is sufficient. Find it on our website mentalab.com.
6. Press your amplifier's button to set an event marker. Your amplifier will indicate a marker has been set by blinking pink.
7. When finished, turn off your amplifier with a long (3s) button push (until LED blinks red 3 times). Ensure you always shut down your amplifier before connecting it to a computer via USB.



LED color	Blinking pattern	Indicates
Red	Solid at start-up	Start-up in progress. Color indicates battery level. (green: > 60%, yellow: > 30%)
Yellow		
Green		
Blue	Solid at start-up	Start-up in progress.
Blue	Blinking fast	Bluetooth advertising.
Blue	Blinking 1x/sec	Bluetooth connected to host machine. Online mode.
Green	Blinking 1x/3sec	Bluetooth deactivated. Online recording in progress.
Pink	Blinking 1x/sec	Upon start up: Not enough memory available. Press the button 3 times to free up device memory.
Light Pink	One-time flash	Marker set, corresponding timestamp stored and transmitted.
Red	Flash 3x	Amplifier shutting down.

Instructions



Connection

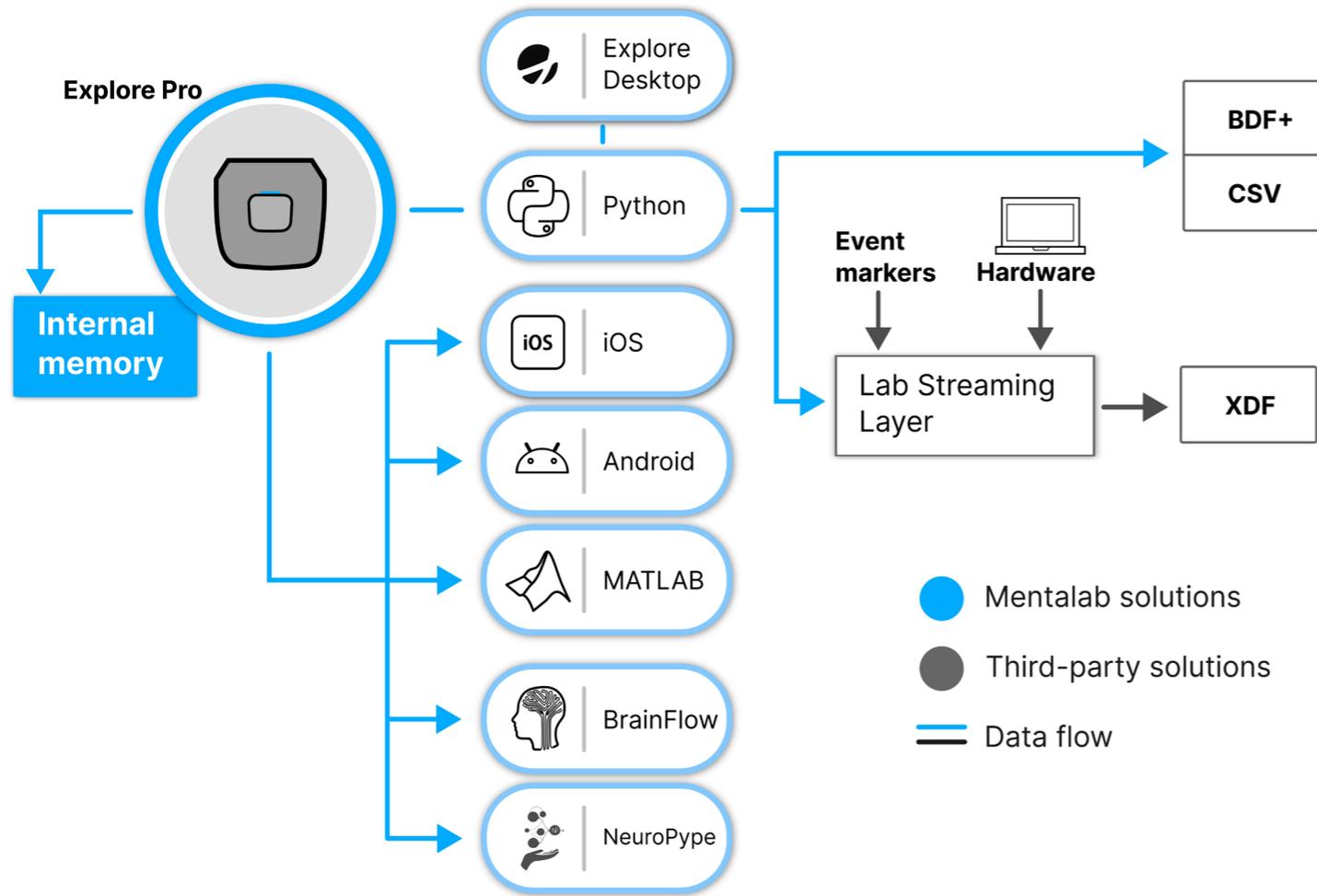
To pair your Explore Pro amplifier to a mobile or computer, use our mobile App or Explore Desktop.

If the connection is lost, Explore Pro will revert to advertising mode, ready to reconnect. Explore Pro will remain in this mode for four minutes before moving to offline mode.

Data

Explore Pro samples ExG data at 250 Hz (default) with a 24-bit resolution. The amplifier also records and transmits temperature, battery voltage, accelerometer, gyroscope, and magnetometer data. This means you can derive the absolute orientation and status of your amplifier at all times.

Explore Pro stores data in binary files (.BIN suffix). To retrieve your data, connect your amplifier to a computer via USB. To delete files, format the memory using our open source APIs. Please refer to the user manual or website for more details.



Software

Mentalab provides a range of open-source APIs for major programming languages, including Python, MATLAB, Android, and iOS.

We have also developed direct integrations with several analysis platforms, including NeuroPype, EEGLab and BrainFlow.

Following customer feedback, we also created a free desktop application called Explore Desktop.

Event triggers

Explore Pro supports three kinds of event triggers.

1. Amplifier button presses.
2. TTL pulses, which require a USB TTL pulse generator (e.g., Mentalab trigger stick), a trigger isolator, and a USB to USB-C cable. Generates minimal latency event markers.
3. Software markers, which use Mentalab APIs or external software like LSL and OpenViBE to generate programmatic markers.





Mentalab is a biomedical technology company from Munich, Germany. Mentalab Explore Pro is a high-end, mobile measurement device for biosignal applications.

Mentalab Explore Pro is used by researchers and scientists around the world in applications ranging from brain-computer interfaces to sleep and neuropsychology research.

Mentalab Explore Pro is not designed for medical use. It should not be used for diagnostics or treatment in a medical context.

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

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