BITBRAIN EXTENDED RESEARCH TOOLS

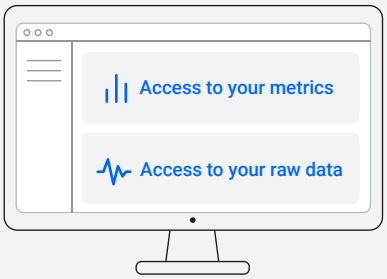
Bitbrain

HomeLab

End-to-end **sleep research solution**

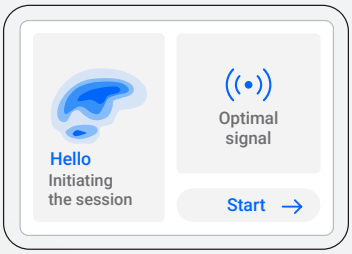
AT THE **RESEARCHER'S LAB**

Remote cloud monitoring of participant progress



AT THE **PARTICIPANT'S HOME**

Self-applied by the participant



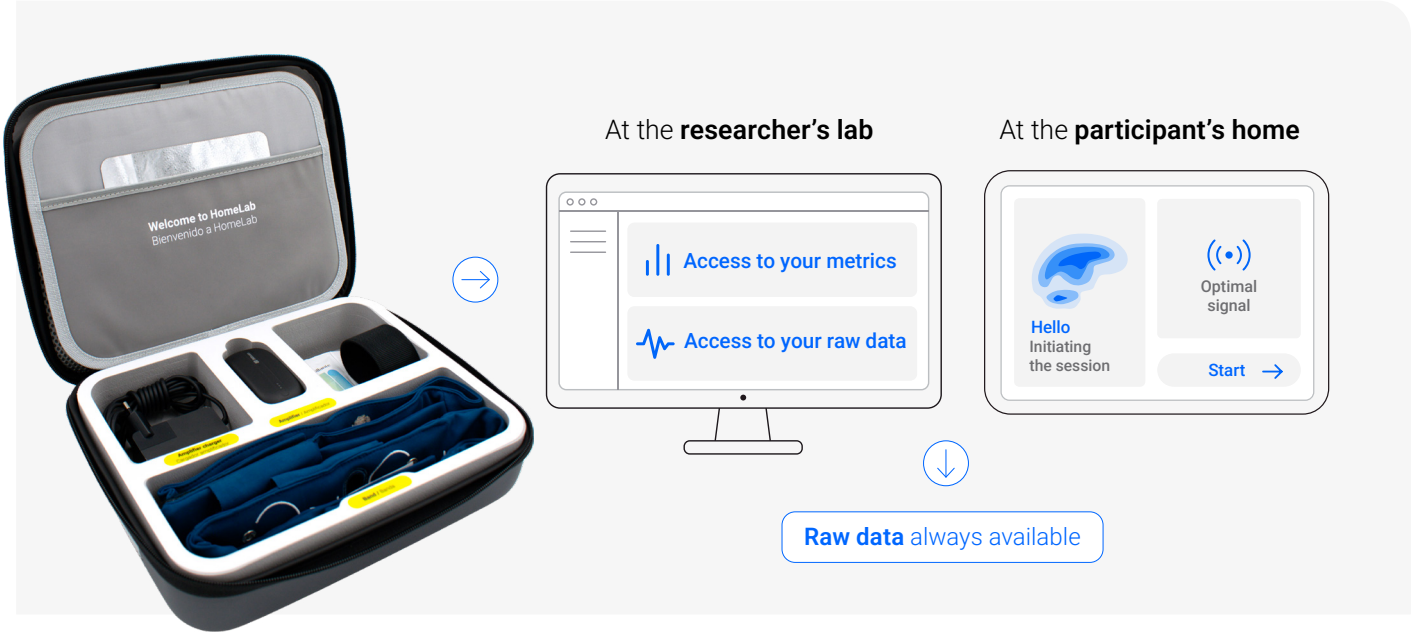
SLEEP METRICS WITH FULL ACCESS TO RAW DATA



HomeLab

Sleep research beyond the lab.

HomeLab is an end-to-end software platform for at-home sleep studies, built on our **Ikon Sleep hardware.** Participants record autonomously at home, while researchers monitor study progress remotely and receive automated sleep metrics and raw data from every recording.



HARDWARE COMPONENTS

EEG headband and amplifier designed for sleep, with integrated PPG and 9-axis IMU.

SOFTWARE PLATFORM

HomeRecorder
Participant app for Windows and Android, with guided set-up and a real-time signal check.

Cloud Manager & Metrics
Web portal to manage studies, monitor progress remotely and receive sleep metrics.

Desktop Downloader
Windows app to download, review and export your data.

Validated against clinical PSG | Over 4,500 nights in over 350 participants | Designed under ISO 13485

Use Cases



Large research studies

Scale your studies with portable technology and remote monitoring.



Longitudinal sleep monitoring

Follow habitual sleep over weeks or months, with remote adherence tracking.



Sleep as a research variable

Complement neuroscience, cognitive and performance studies with sleep data.



Daytime recordings

HomeLab also supports daytime recordings. Contact us and we will advise on the right set-up for your study.

Technical Overview



Clinical-grade data acquisition. Disposable pre-gelled sensors, 24-bit acquisition, active shielding and optimized DRL.



Standardized metrics from every night. The same metrics for every night and every participant, with signal quality reported for each recording.

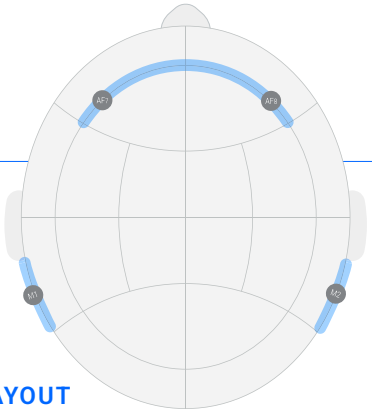


Transparent data you can keep. Metrics and raw signal in open formats, ready for your own analysis pipelines.

Technical Specifications

HOMELAB HARDWARE	
The kit includes	Ikon amplifier, 2 Ikon Sleep bands, pre-gelled sensor samples, application mirror, charger and cable, HomeLab travel case
EEG	2 pre-gelled frontal channels (AF7, AF8), plus reference and ground (M1, M2)
Other signals	Integrated PPG for heart rate and heart rate variability, 9-axis IMU
Certifications	CE (Directive 2014/53) and FCC (Part 15)

HOMELAB SOFTWARE MODULES	
The participant app: HomeRecorder	
Platform	Windows and Android
Set-up	Interactive step-by-step audiovisual guide for participant self-placement
Signal quality	Validated in real time. Recording starts once data quality is assured
The researcher's portal: Cloud Manager & Metrics	
Platform	Web browser
Remote monitoring	Data quality, session completion, and participant adherence while the study runs
Automated sleep staging	Hypnogram and stage classification
Sleep continuity metrics	Total sleep time, wake after sleep onset, sleep onset latency
EEG metrics	Spectral power by band
Cardiac metrics	Heart rate and heart rate variability
Movement metrics	Movement and position
Researcher local data review: Desktop Downloader	
Platform	Windows
Data review	Raw data viewer for visual inspection of each recording
Data export	EDF, CSV and JSON



SENSOR LAYOUT

Ikon Sleep includes two prefrontal EEG channels positioned at AF7 and AF8, with GND and REF placed on the mastoids.

Bundle includes

HomeLab Hardware Bundle

- 1 Ikon amplifier and 2 Ikon Sleep bands.
- HomeLab travel case.
- Accessories and sample consumables.

Tablet or computer for the participant app not included.

HomeLab Software

- **Starter Pack:** a one-time purchase, required to open your HomeLab account. Includes cloud set-up, training for your team and a pilot of about 30 nights to test your protocol.

- **Annual subscription:** full access to the HomeLab software platform for one year. Choose a Small, Medium or Large data pack, depending on the number of nights you plan to record.

Check out our Bitbrain Open Access Dataset

To access real data recorded with Ikon Sleep, click here or scan the QR code if you're viewing the printed version.

Bitbrain

We invite you to explore our scientific publications section.

Discover how Bitbrain technology is **applied across various research fields.**

For the online version, click here or scan the QR code if you're viewing the printed version.

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