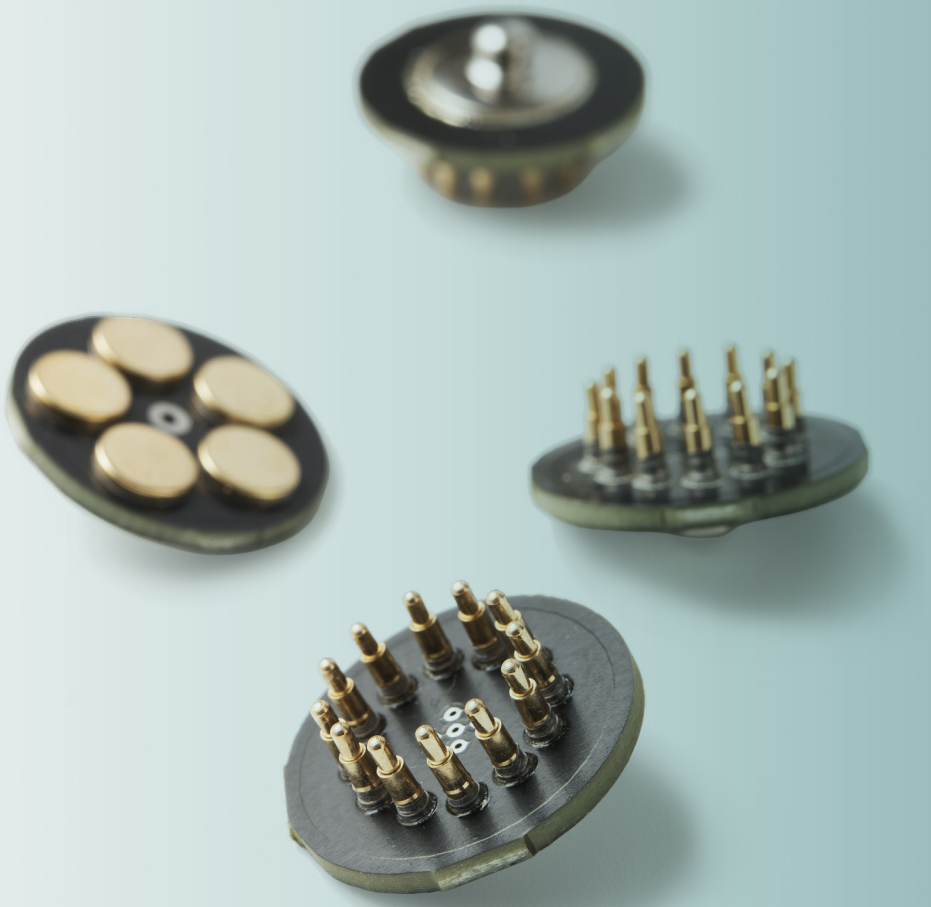
BRAINACCESS®
ELECTRODES & CABLES

developed by ***NEUROtechnology***



Extended Manual

Version 2.0

Updated: October 2025

Find the latest product information on our website

Welcome to the user manual for the **BrainAccess EEG Electrodes and Cables**. BrainAccess is a line of products developed by **Neurotechnology**, designed to make brainwave recording and analysis simple, accessible, and reliable.

This manual provides comprehensive technical information on the electrode types compatible with BrainAccess systems, including their specifications, functional characteristics, and detailed assembly procedures for device integration.

For further questions not covered in this guide, please contact us at *brainaccess@neurotechnology.com*.

Contents

Safety Notice

Please read these safety instructions carefully before using the **BrainAccess Electrodes and Cables**. Failure to follow these guidelines may result in damage to the cap, user discomfort, or voiding of the product warranty.

Proper Use and Handling

- **Inspect before use:** Check electrodes, connectors, and cables for visible damage, corrosion, or debris before each session. Do not use damaged components.
- **Clean after each session:** Wipe electrode surfaces with a mild detergent using a soft brush. Ensure components are completely dry before storage or reuse.
- **Avoid excessive force:** When connecting or disconnecting cables, hold the connector housing. Never pull on the wires. Excessive force may damage pins or internal contacts.
- **Limit connection cycles:** Avoid frequent plugging and unplugging of cables, as repeated mechanical stress may loosen connectors over time.
- **Maintain proper alignment:** Ensure connectors are inserted in the correct orientation. Forcing the connector in the wrong position can bend or break pins.
- **Prevent liquid exposure:** Do not immerse electrodes or cables in water or cleaning agents. Only the compatible BrainAccess EEG cap (after disassembly) is machine-washable.
- **Store properly:** Keep electrodes and cables in a clean, dry environment at room temperature. Avoid direct sunlight, humidity, and high temperatures.
- **Use only compatible parts:** Connect electrodes and cables **only** to **BrainAccess devices** or approved accessories. Using incompatible components may affect signal quality or damage the inputs.
- **Avoid tangling:** Arrange cables neatly during setup and storage to prevent twisting, knotting, or strain on connectors.
- **Do not modify:** Do not attempt to alter, shorten, or repair cables or electrodes yourself. Contact **BrainAccess support** for service or replacement.

Terms and Conditions for Use

Please read the safety instructions in this manual carefully and keep it for future reference.

The **Neurotechnology Terms and Conditions of Sale and Use** for BrainAccess products are available at *https://www.brainaccess.ai/terms-of-use*/.

Please review these safety terms carefully before handling or fitting the BrainAccess Electrodes and Cables.

Legal Notice

BrainAccess products are intended **solely for research, educational, and development purposes**. They are **not medical products** and are **not designed, tested, or certified** for medical diagnosis, treatment, therapy, or disease prevention.

Before purchasing or using a BrainAccess product, please review the **Neurotechnology Terms and Conditions of Sale and Use**.

Neurotechnology UAB reserves the right to update this manual and modify its content at any time, without prior notice.

While every effort has been made to ensure the accuracy of the information contained herein, it does not constitute a legal or contractual commitment by Neurotechnology.

To make sure you are using the most recent version of this guide, please refer to the official BrainAccess website at *www.brainaccess.ai.*

Neurotechnology's Gold-plated Dry-Contact Electrodes

BrainAccess systems utilize **Neurotechnology's in-house manufactured gold-plated dry-contact electrodes**, designed for durability, biocompatibility, and high signal stability in portable EEG applications.

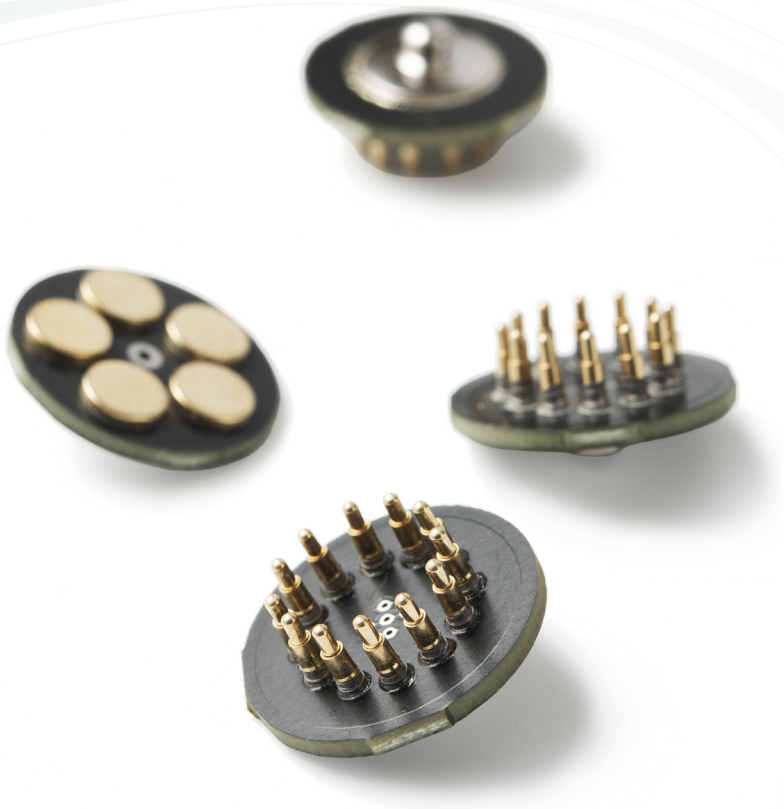


Figure 1. Gold-Plated Dry-Contact Electrodes Overview

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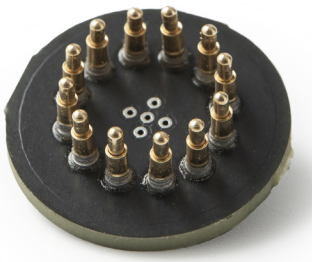
Construction and Materials

Parameter	Specification
Type	Dry-contact electrode
Material	Gold-plated, nickel-free base
Diameter	20 mm
Connection interface	4 mm ECG-type snap connector (male)
Available variants	Two shapes to accommodate forehead and hairy regions
Surface treatment	Nano-textured surface (micro-springs / micro-structures) for improved contact through hair
Mechanical adaptability	Shape-conforming design allowing flexible adjustment to scalp curvature for optimal contact
Compatibility	All BrainAccess headsets and electrode cables

Available Electrodes Variants

	
Spring-based electrode: 12 spring-loaded pins for hair-covered areas	**Flat-pad electrode:** 5 circular pads (6 mm diameter each) for hair-free regions

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Availability

These **gold-plated dry-contact electrodes** are i**ncluded in all BrainAccess kits at no additional cost**.

Each system is shipped with a complete electrode set and 2 extra electrodes, ensuring immediate compatibility and optimal performance across all BrainAccess devices.

Design Features and Functionality

Feature	Functionality
Durability and corrosion resistance	The electrodes are engineered to endure frequent handling, cleaning, and transport, maintaining mechanical and electrical integrity over time. Gold's resistance to oxidation and corrosion ensures consistent long-term performance, critical for portable EEG setups.
Stable impedance over time	Gold's chemical inertness guarantees minimal surface degradation. Even after repeated cleaning cycles, electrode impedance remains stable, ensuring reliable, low-noise signal acquisition in dry-contact conditions without the use of conductive gels.
Biocompatibility and skin safety	Gold is biocompatible and hypoallergenic, minimizing irritation during prolonged skin contact. Its stable surface chemistry ensures consistent electrode–skin interaction, improving recording reproducibility across sessions.
Enhanced contact through nanostructuring	The spring-based variant features nano-textured, spring-loaded pins that gently part hair strands and establish consistent skin contact. This increases the effective surface area and enhances signal coupling, even through dense hair.
Environmental stability	Gold-plated electrodes are resistant to environmental aging and maintain performance under a wide range of conditions. Tests confirm no degradation in impedance or surface quality after exposure to sunlight, perspiration, or temperature extremes.

Datwyler SoftPulse™ Electrodes

BrainAccess systems are compatible with **Datwyler SoftPulse™ conductive rubber electrodes**, available as optional add-ons for users who require enhanced comfort or flexible configurations.

These electrodes provide a soft, skin-conforming interface that ensures stable bio-signal acquisition while maintaining exceptional user comfort during prolonged wear.

Figure 2. SoftPulse™ Dry-Contact Electrodes Overview.

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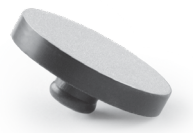
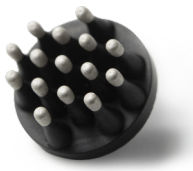
Construction and Materials

Parameter	Specification
Type	Dry-contact electrode
Material	Electrically conductive clean elastomer (rubber compound)
Hardness	83 ± 5 Shore A
Coating	Silver/Silver Chloride (Ag/AgCl) coating on skin-facing surface
Connection interface	4 mm ECG-type snap connector (male)
Available variants	Multiple shapes to accommodate different hair types, including flat pads for forehead and hair-free regions. Find more info in the table below and on the manufacturer's website: *https://datwyler.com/company/innovation/softpulse/products*
Biocompatibility	Certified according to ISO 10993-5 (cytotoxicity) and ISO 10993-10 (skin irritation & sensitization)
Manufacturing Standards	ISO 9001, ISO 14001, ISO 45001

SoftPulse™ Electrodes Variants compatible with BrainAccess

			
SoftPulse™ Flat: Ideal for contact with non-hairy regions.	**SoftPulse™ Brush Medium:** Ideal for low-medium hair density and for straight hair styles.	**SoftPulse™ Brush Long:** Ideal for hairy regions with high hair density and curly hair style.	**SoftPulse™ Flex:** Oriented radial displacement for improved contact with the skin.

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Availability

SoftPulse™ electrodes are available as optional accessories for all BrainAccess EEG systems. They come with an **adapter** to make them compatible with BrainAccess EEG CAP.

They can be purchased as part of a custom kit configuration to enhance user comfort and adaptability across various hair types or application scenarios.

Legal Notice

SoftPulse™ electrodes are manufactured by **Datwyler GmbH** and are offered by Neurotechnology as third-party accessories for BrainAccess systems.

Neurotechnology does not modify or alter these components and assumes no responsibility for their manufacturing quality or performance beyond standard compatibility verification.

For detailed specifications, safety information, or compliance documentation, users should refer to the original **Datwyler SoftPulse™** technical documentation or contact the manufacturer directly.

EEG Cables

BrainAccess EEG Systems are equipped with **ultra-miniature RF coaxial cables** specifically designed for compact, low-noise signal transmission and optimal comfort. These cables connect the electrodes to the amplifier input connector, ensuring stable contact and minimal electromagnetic interference during EEG acquisition.

Construction and Materials

Parameter	Specification
Type	Ultra-miniature RF coaxial cable
Shielding	Fully shielded to minimize external noise and signal crosstalk
Length	Variable; optimized for each electrode position to maintain uniform routing
Electrode connector	4 mm ECG-type snap connector (female)
EEG connector	
(16, 32-ch)	Harting Har-Flex 2×20, 1.27 mm pitch (male)
EEG connector	
(8-ch)	Ultra-miniature RF coaxial connectors
Cable diameter	< 1 mm (ultra-thin design for comfort and flexibility)
Labeling	Numbered pads at cable ends correspond to EEG input channels
Compatibility	Fully compatible with BrainAccess electrodes and amplifiers

Availability

All BrainAccess Kits are shipped with labeled pre-assembled cables like in **Figure 3**. If needed, replacement cables and spare connector assemblies can be ordered separately by contacting BrainAccess support at *brainaccess@neurotechnology.com*.

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Design Features and Functionality

Features	Functionality
Low-noise shielding	The coaxial structure provides full 360° shielding, effectively reducing electromagnetic interference and line noise. This ensures high signal integrity even in unshielded recording environments.
Compact and lightweight	The ultra-miniature cable geometry significantly reduces overall bulk and weight on the head, improving comfort during long recording sessions. The cables are highly flexible and adapt naturally to cap curvature.
Optimized length and routing	Each cable has a position-specific length to minimize tangling and ensure a clean, organized layout when integrated into the EEG cap. This design supports clear identification and consistent electrode placement.
Numbered pad identification	Every cable end features a numbered pad indicating the corresponding amplifier input channel. This simplifies setup, visual inspection, and troubleshooting during data acquisition.
Connector reliability	The use of 4 mm ECG-type snap connectors (female) ensures secure attachment to all BrainAccess dry-contact electrodes. At the amplifier side, Harting Har-Flex or RF coaxial connectors provide robust, low-impedance electrical coupling and long-term mechanical stability.
Comfort and flexibility	The cables' soft dielectric insulation and minimal diameter reduce mechanical strain and allow free head movement without disrupting signal quality. Their flexible routing prevents pressure buildup on the scalp, improving comfort in wearable setups.

System Compatibility

Neurotechnology's dry-contact electrodes are intended for use exclusively with **BrainAccess EEG acquisition systems** and related accessories. These electrodes are mechanically and electrically compatible with **BrainAccess EEG Systems (MINI, MIDI, and MAXI)** and **BrainAccess EEG Cap**. Use of non-approved accessories and devices may result in degraded performance and is not supported by the manufacturer.

- **Neurotechnology's dry-contact electrodes** are **generally** distributed as part of the **BrainAccess kits**, which includes the components listed in the table on the next page.
- **Datwyler's SoftPulse™ electrodes** are offered as add-ons for **BrainAccess kits** and may also be compatible with other devices, as specified by the manufacturer. The use of these electrodes with BrainAccess systems requires an **adapter**, which is included in the kit.

⚠ Please note that SoftPulse™ electrodes are **not** sold separately by Neurotechnology and are available only as part of a BrainAccess kit.

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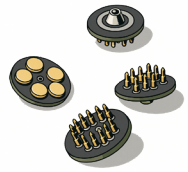
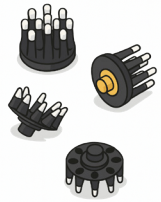
	Component	Description
	Neurotechnology's Dry Electrodes & cables	18 gold-plated dry-contact electrodes; 16 spike electrodes and 2 pad electrodes
	**Optional:** Datwyler SoftPulse™ electrodes	Upon request, clients can select additional soft electrodes made of a conductive elastomer body with a silver/silver-chloride (Ag/AgCl) contact
	BrainAccess CAP	EEG cap
	BrainAccess EEG device	EEG acquisition unit with either 8, 16, or 32 channels
	Electrode Connector Module (only for MIDI and MAXI kits)	Single connector that allows the BrainAccess device to receive EEG signals from the electrodes placed on the cap
	USB Bluetooth adapter	Wireless communication interface for data transmission
	BrainAccess Software Suite	BrainAccess Board (desktop), BrainAccess Mobile App (Android), BrainAccess SDK (API)

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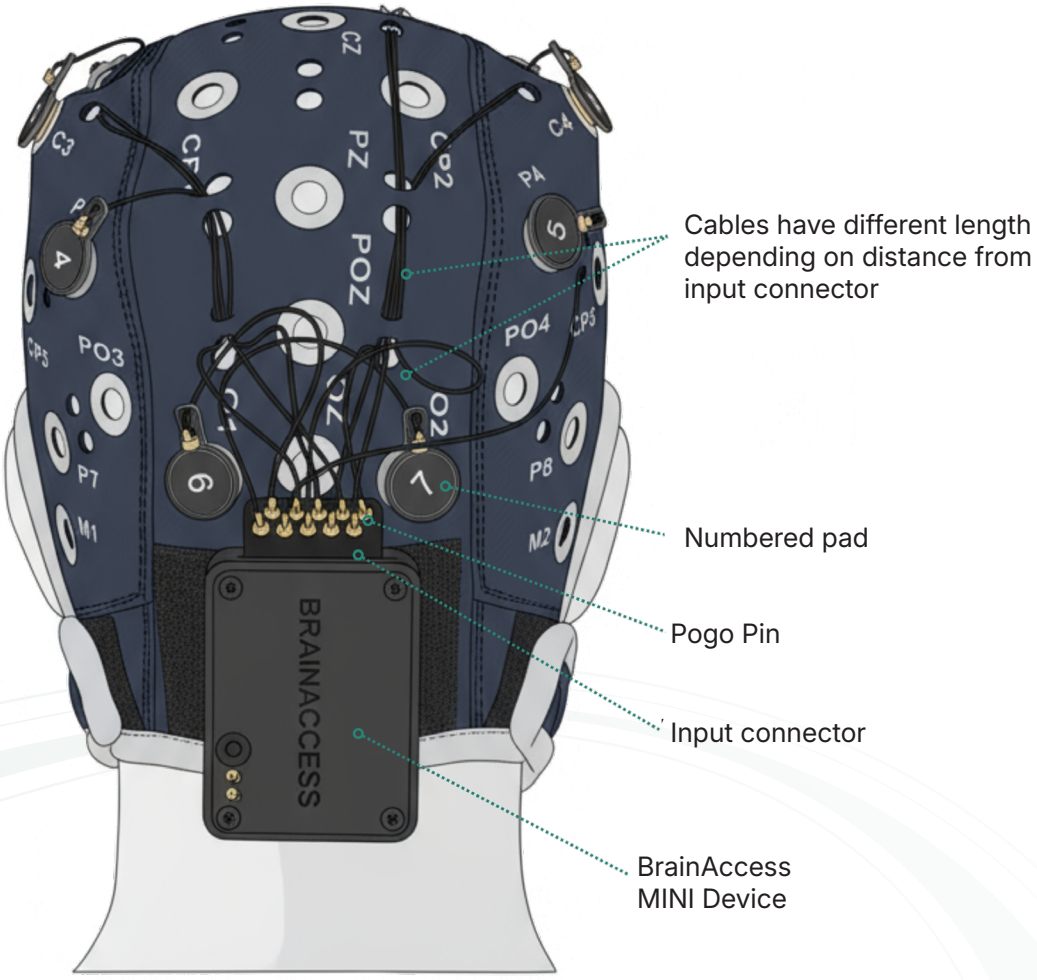

Figure 3. Example of a pre-assembled **BrainAccess EEG** setup illustrating how electrodes, cables, and the input connector are organized on the cap for recording.

For complete system setup, safety information, and maintenance procedures, refer to the following documents as well:

- BrainAccess MINI – Extended Manual (MAN-MINI-01)
- BrainAccess MIDI – Extended Manual (MAN-MIDI-01)
- BrainAccess MAXI – Extended Manual (MAN-MAXI-01)
- BrainAccess EEG Cap – Extended Manual (MAN-CAP-01)

All referenced documentation is available at:
www.brainaccess.ai/resources/documents.

Assembly & Disassembly

Disassembly

1. Disconnect the **pogo-pin connectors** from the input board.
   Hold each connector firmly by its edges and pull the pogo pin straight out with steady pressure.

   ⚠ Do not twist or pull from the cable itself.

   Note: In MAXI and MIDI configurations, it is recommended to first remove the device by pulling out the electrode connector module. Then start with the outermost rows for easier access.

2. Slide the cable out from the routing openings above the electrode locations.
3. Repeat the same procedure for all cables until the cap is fully disconnected.

   Note: Frequent disassembly is not recommended. The pogo-pin connectors and sockets are delicate components that may wear out or become misaligned with repeated removal.

Assembly

Refer to **Figure 4** for the electrode layout and cable routing scheme.

1. Depending on the selected kit, refer to the appropriate table below to identify

   - **Each EEG channel** (Figure 4, in gray and green).
   - The corresponding **number on the input connector**.
   - The **cable length required.**
   - The **routing path:** the routing holes that the cable is supposed to go through and their order (Figure 4, in yellow).

   This information helps ensure correct cable assignment during assembly.

2. Insert the cables through the corresponding **routing holes**, starting from the front of the cap and moving toward the back.

   Follow the **Route Path** specified in Tables 1-3 (depending on your kit configuration) until each cable reaches the **connector area** at the rear of the cap.

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3. Align the pogo-pin connectors precisely with their respective input board sockets.

   ⚠ Alignment must be exact! Even slight misalignment can damage the pogo pins or the input connector.

4. Press down firmly to secure each pogo pin into place. Do not force the connection. You should hear a click sound.
5. Verify all channels are connected and cables are neatly routed without excessive tension.
6. After routing the cables, **flip the cap inside out** and **attach the electrodes by pressing** them onto the pads until you hear or feel a soft click, indicating they are properly secured.

Important:

The alignment step requires special care. Applying pressure at an incorrect angle can cause permanent damage to the connector.

BrainAccess engineers use a **dedicated assembly alignment** tool for this purpose.

If the tool is not included in your kit, it can be purchased separately by contacting **BrainAccess Support** at *brainaccess@neurotechnology.com*.

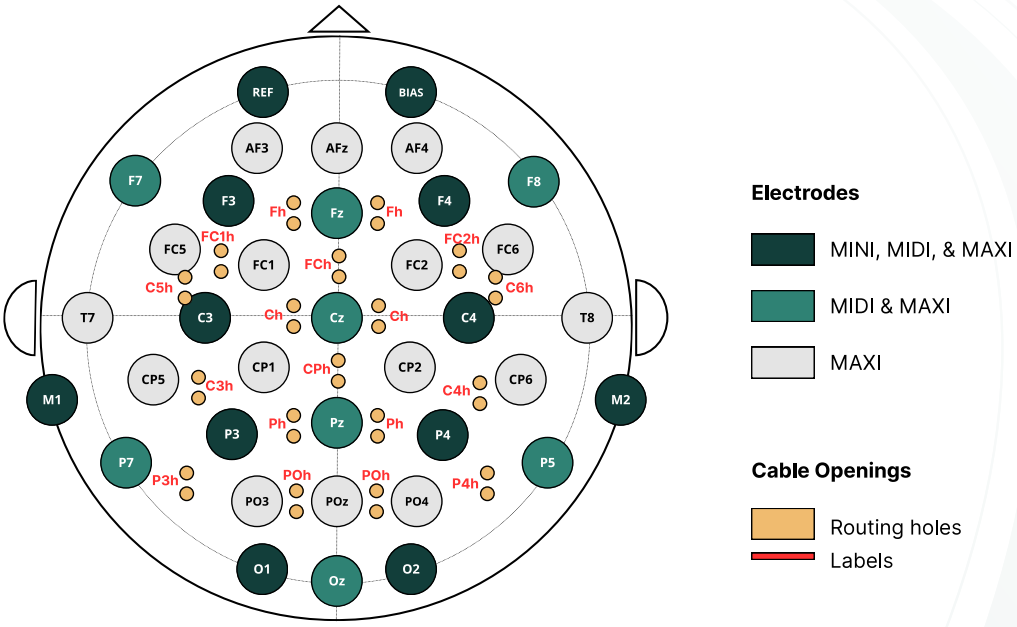

Figure 4. Electrode Layout and Cable Routing Paths. Top view of the BrainAccess EEG cap showing electrode positions and routing holes. Colors indicate electrode availability across kits (MINI, MIDI, MAXI). Orange circles mark routing holes, and red labels indicate cable routing reference points (as listed in Tables 1–3).

Tables 1-3: Each table lists the channel name, its corresponding label or number on the input connector, the cable length, and the recommended routing path to follow during assembly. Use these tables to correctly assign and guide each cable through the cap.

Table 1. BrainAccess MINI – 8 Channel Configuration

Channel Name	Number / Label on Input Connector	Cable Length (Cap size)	Route Path
Fp1	Ref	35cm (L), 30cm (S-M)	POh-Ph-Ch-Fh
Fp2	Bias	35cm (L), 30cm (S-M)	POh-Ph-Ch-Fh
F3	0	30cm (L), 25cm (S-M)	POh-Ph-C3h-FC1h
F4	1	30cm (L), 25cm (S-M)	POh-Ph-C4h-FC2h
C3	2	20cm (S-M-L)	POh-Ph-C3h
C4	3	20cm (S-M-L)	POh-Ph-C4h
P3	4	15cm (S-M-L)	PO3h-P3h
P4	5	15cm (S-M-L)	PO4h-P4h
O1	6	10cm (S-M-L)	—
O2	7	10cm (S-M-L)	—

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Table 2. BrainAccess MIDI – 16 Channel Configuration

Channel Name	Number / Label on Input Connector	Cable Length (Cap size)	Route Path
Fp1	Ref	35cm (L), 30cm (S-M)	POh-Ph-Ch-Fh
Fp2	Bias	35cm (L), 30cm (S-M)	POh-Ph-Ch-Fh
Fz	8	25cm (S-M-L)	CPh-FCh
F3	10	30cm (L), 25cm (S-M)	POh-Ph-C3h-FC1h
F4	5	30cm (L), 25cm (S-M)	POh-Ph-C4h-FC2h
Cz	7	20cm (S-M-L)	CPh
Pz	9	15cm (S-M-L)	—
Oz	6	10cm (S-M-L)	—
F7	15	30cm (L), 25cm (S-M)	PO3h-P3h-FC5h
F8	4	30cm (L), 25cm (S-M)	PO4h-P4h-FC6h
C3	13	20cm (S-M-L)	POh-Ph-C3h
C4	3	20cm (S-M-L)	POh-Ph-C4h
O1	11	10cm (S-M-L)	—
O2	1	10cm (S-M-L)	—
P3	14	15cm (S-M-L)	PO3h-P3h
P4	2	15cm (S-M-L)	PO4h-P4h
P7	12	15cm, (M-L), 10cm (S)	PO3h
P8	0	15cm (M-L), 10cm (S)	PO4h

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Table 3. BrainAccess MAXI – 32 Channel Configuration

First half is the same as MIDI

Channel Name	Number / Label on Input Connector	Cable Length (Cap size)	Route Path
AFz	24	30cm (M-L), 25cm (S)	CPh-FCh
AF3	25	30cm (S-M-L)	POh-Ph-Ch-Fh
AF4	22	30cm (S-M-L)	POh-Ph-Ch-Fh
POz	23	10cm (S-M-L)	—
FC1	26	25cm (M-L), 20cm (S)	POh-Ph-Ch
FC2	21	25cm (M-L), 20cm (S)	POh-Ph-Ch
CP1	29	15cm (S-M-L)	POh-Ph
CP2	19	15cm (S-M-L)	POh-Ph
FC5	27	25cm (L), 20cm (M-L)	PO3h-P3h-FC5h
FC6	17	25cm (L), 20cm (S-M)	PO4h-P4h-FC6h
T7	28	20cm (L), 15cm (S-M)	PO3h
T8	16	20cm (L), 15cm (S-M)	PO4h
CP5	30	15cm (S-M-L)	PO3h-P3h
CP6	18	15cm (S-M-L)	PO4h-P4h
PO3	31	10cm (S-M-L)	—
PO4	20	10cm (S-M-L)	—

Maintenance and Cleaning

Regular maintenance ensures long-term reliability, stable signal performance, and user safety. Before performing any cleaning or inspection, **disconnect the device from power** and **remove all electrodes and cables** from the amplifier.

1. Gold-Plated Dry-Contact Electrodes

Routine Care

- Inspect electrodes before and after each use for visible signs of damage, corrosion, or contamination.
- Handle by the **connector housing**; avoid touching the gold-plated contact surfaces directly with fingers to prevent residue buildup.

Cleaning & Storage

- Wipe contact surfaces gently using a **soft bristle brush** or **damp**, **lint-free cloth** with mild, **non-abrasive detergent**.
- Do **not immerse** electrodes in water or cleaning liquids.
- Ensure all components are **completely dry** before storage or reassembly.
- Store in a **dry**, **dust-free environment** at room temperature together with the rest of the kit.

2. Datwyler SoftPulse™ Electrodes

Routine Care

- Check electrodes for visible wear, surface cracking, or coating degradation before use.
- Do not bend or twist the rubber elements excessively.

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Cleaning and Storage

- Follow the **original manufacturer's maintenance guidelines**.
- Clean the electrode surface using a **damp**, **lint-free cloth** and mild detergent if required.
- Do **not** use alcohol, solvents, or abrasive materials, as these may degrade the elastomer coating or Ag/AgCl layer.
- Allow electrodes to air dry completely before use.
- Store in a cool, **dry place** away from direct sunlight.
- Avoid contact with sharp objects or metal surfaces

Important Notice

SoftPulse™ electrodes are **manufactured by Datwyler GmbH**. For detailed cleaning and re-use procedures, consult the **official Datwyler SoftPulse™ technical documentation**.

Neurotechnology assumes **no responsibility for cleaning or sterilization procedures** not specified by the original manufacturer.

3. Cables and Input Connector Module

Routine Care

- Inspect cables and connectors periodically for **signs of wear, bent pins, or damaged insulation**.
- Avoid bending or pulling cables sharply especially near the connectors.
- Disconnect cables by holding the **connector body**, never by the wire.

Cleaning

- If necessary, clean cable surfaces with a **soft, slightly damp cloth**.
- Do not submerge connectors or cables in liquids.
- Ensure that all connectors are **completely dry** before reconnection.

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Input Connector Module

- Clean the connector gently using a **dry, soft brush** to remove dust or debris from around the pins.
- Do not insert metal objects or apply cleaning liquids directly inside the connector socket.
- If contact oxidation is suspected, consult **Neurotechnology technical support** before attempting cleaning.

Storage

- Store assembled caps with cables untangled, in their **original packaging** or a clean protective case.
- Keep the connector module covered when not in use to prevent dust accumulation.

⚠ Important:

Detailed instructions for cleaning, handling, and storage of BrainAccess systems and accessories are provided in their respective manuals:

- BrainAccess MINI – Extended Manual (MAN-MINI-01)
- BrainAccess MIDI – Extended Manual (MAN-MIDI-01)
- BrainAccess MAXI – Extended Manual (MAN-MAXI-01)
- BrainAccess EEG Cap – Extended Manual (MAN-CAP-01)

Please refer to these documents for detailed maintenance guidelines.

All referenced documentation is available at: *www.brainaccess.ai/resources/documents*.

Warranty

Neurotechnology UAB warrants the **BrainAccess Electrodes and Cables** against defects in materials and workmanship for a period of **one (1) year** from the date of purchase, under normal consumer use conditions.

If the product fails during normal and proper use within the warranty period, **Neurotechnology** will, at its discretion, **repair or replace** the product. The company's liability under this warranty does **not cover any incidental or consequential damages**.

This warranty does **not apply** in cases of:

- Improper setup, operation, or maintenance
- Accidents, physical damage, or misuse
- Modifications or repairs not authorized by Neurotechnology
- Normal wear and tear
- Any events or circumstances beyond Neurotechnology's control

The warranty is **void** if the product's **serial number has been altered or removed**, or if the **cap has been repaired by unauthorized personnel**.

Support

If you require assistance or encounter any issues while using your **BrainAccess Electrodes and Cables**, please contact Neurotechnology for assistance.

Technical support related to hardware compatibility, cap fitting, or component replacement is provided free of charge.

Support inquiries involving hardware troubleshooting (e.g., broken connectors, strap issues, electrode fit) are also covered.

Requests related to consulting, experimental design, EEG acquisition guidance, data analysis, or custom software development may be subject to additional service fees.

For general documentation and product resources, visit:
www.brainaccess.ai/resources.

BRAINACCESS®
developed by ***NEUROtechnology***

Compatible EEG Systems

BrainAccess MINI

BrainAccess MIDI

BrainAccess MAXI

Other Accessories

BrainAccess Cap

Neurotechnology UAB

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