

waveguard™

Clinical EEG Caps Catalogue



21/22

About us

inspiring technology for the human brain

ANT Neuro is a Dutch corporation specialized in the development, marketing and sales of medical and research applications and now has offices located in Hengelo, The Netherlands; Berlin, Germany; London, UK; Philadelphia, USA; Hong Kong, China and Melbourne, Australia.

Our technology offers a wide range of applications in cognitive neuroscience, neurology and psychiatry. ANT Neuro specializes in being a single-source provider of high-performance products within neuroscience research and clinical neurodiagnostics. Applications include EEG, EMG, MRI, TMS and MEG technology.

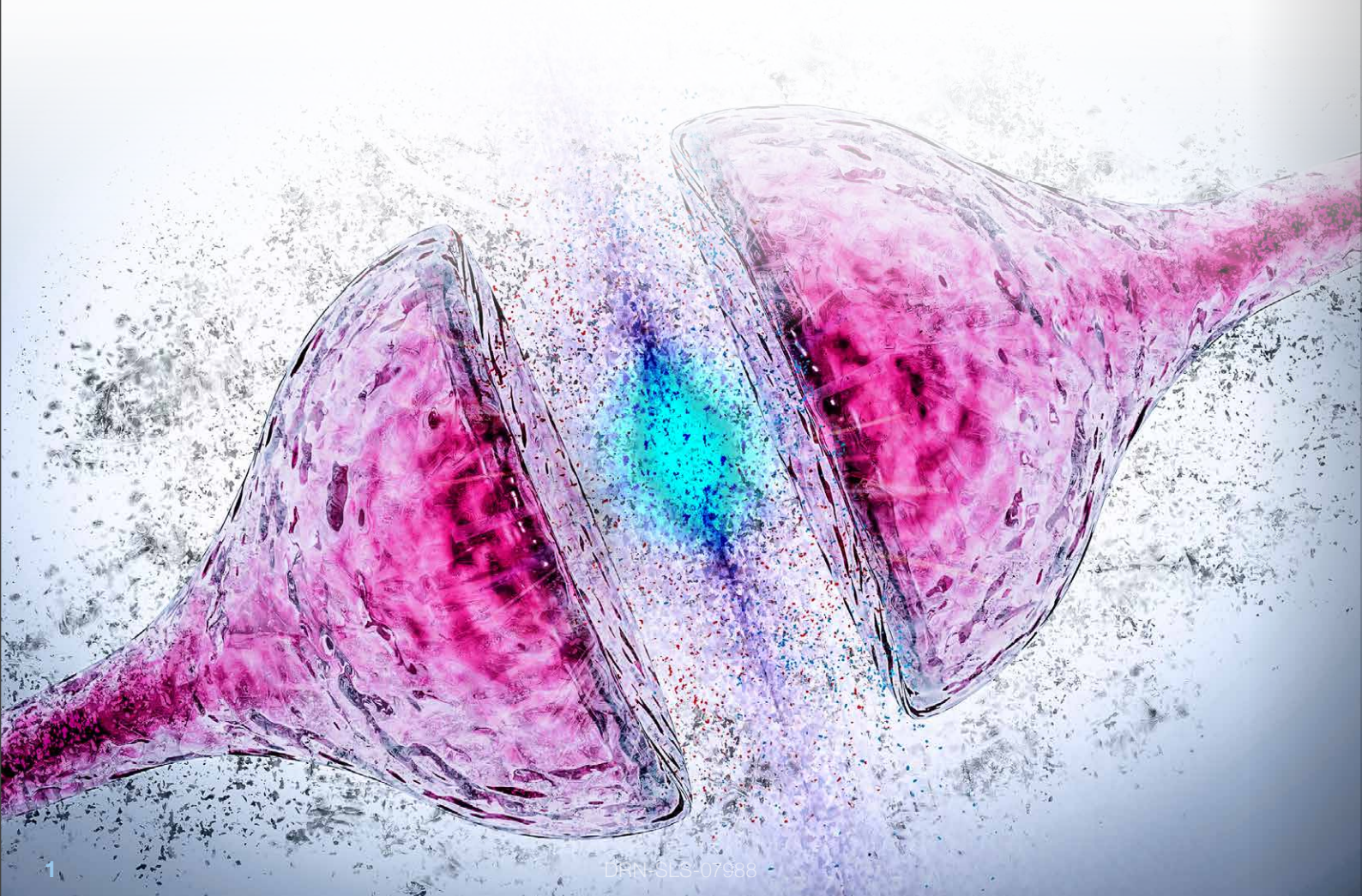


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waveguard clinical EEG caps

The ultimate EEG cap solution.

waveguard EEG caps are the most advanced EEG caps available. The comfortable caps are easily fitted for rapid patient/subject setup. ANT Neuro's waveguard caps are specifically designed to provide high quality data that is well suited for both clinical and research EEG studies.

No loose wires – safe use and maintenance

Tin or Ag/AgCl electrodes

Connects to any EEG system*

* e.g. Neurosoft®, NicoletOne®, Nihon Kohden®, Mitsar®, Micromed® etc.

Up to 12 months warranty**

**6 months for waveguard connect models

“What is the advantage of a waveguard cap with pre-positioned electrodes over loose electrodes?”

The pre-positioned electrodes follow the international standard 10/20-System. This montage setting covers the most frequently used electrode positions. Due to the pre-positioned electrodes, the time for preparing each patient is significantly reduced. The electrodes used with the waveguard caps are covered by two fabric layers to guarantee best protection for the electrode body and cables. This design increases the durability of the reusable waveguard caps, saving cost and reducing the time needed for setup and the waste associated with the use of single use disposable EEG Electrodes.

Available in 21,25,32,64 channels

Quick application, easy to clean

Comfortable fit, breathable Coolmax™ fabric



waveguard clinical applications

waveguard EEG caps provide a, low-cost preparation by allowing a quick and comfortable option for EEG labs, in-hospital or clinic settings, patient prep, and importantly the reduction of and for the technicians responsible for patient alterations in electrode placement.

NeuroEpiProfi s.r.o. pediatric neurology clinic Blansko

“ In comparison with previously used EEG caps, we consider **waveguard** to be very beneficial and at the same time facilitating the work of a laboratory assistant. Above all, the fact that significantly longer cables are also connected in an easy-to-handle bundle. The sensing electrodes with silicone rings are thinner and do not apply pressure to the head as much. We consider it is great to place the electrodes directly in the two layers of the cap, so children will not easily tear them off.”

Damien MAURICE, PhD

EEG Service Manager, Biotrial

“ I have been working with the **waveguard** EEG caps for 12 years and I am particularly satisfied with them as it is very easy and quick to set it up. It is also very comfortable for the patient particularly in clinical research where up to 48 hours of recordings are done, especially with the help of the silicone rings around the electrodes. The quality fabric is easily washable, dries quickly for re-use and different colors for sizes make it easier to differentiate between. In clinical trials, it is very important that the subject is very compliant with EEG/ERP tasks. That is why the setup of the caps as well the comfortable fit of the cap is very important for us in order to allow the subject to stay focused on the task.”

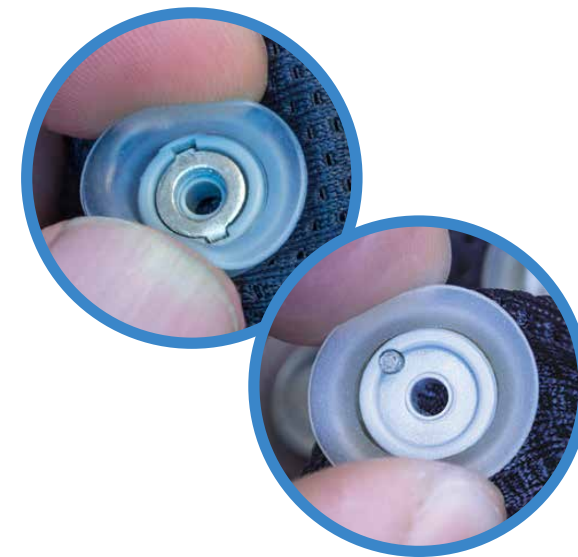
Certification and production

waveguard™ caps are CE marked as medical device in the EU, according to MDR (EU) 2017/745, CE class I, and have FDA clearance under 510(k) and MDL issued by Health Canada. Manufactured by eemagine Medical Imaging Solutions GmbH, Berlin, Germany, ISO 13485 certified. ANT Neuro and eemagine are part of the neuromotion group.



“What is the main difference between Tin (Sn) and Ag/AgCl electrodes?”

Ag/ AgCl has been predominantly used in research, but is becoming increasingly popular in clinical diagnostic applications. Tin-based electrodes are less expensive to manufacture and provide a lower cost solution. However, Tin electrodes attenuate some of the signals in the lower frequency range (Picton, Lins, & Scherg, 1995). The effect of the attenuation on the diagnostic outcome is limited unless low frequencies are considered (Polich and Lawson, 1985). As the frequency range that is considered in clinical EEG expands (from infra slow high-frequency oscillations), this may become more relevant.



Start Recordings in 6 easy steps!



Step 1: Select the cap size

Use the size chart as a guideline to select the appropriate cap.



Step 2: Apply the cap

Gently pull the cap over the subject's head; Starting at the frontal electrodes, then pull the rest of the cap towards the back of the head by placing the electrodes to their approximate position. Fasten the cap by using the chin-band.

Step 3: Position the electrodes correctly

Take the point halfway between the Nasion and Inion, and the point halfway between the two pre-auricular points. At this position you should find the vertex electrode Cz. The frontal electrodes Fp1, Fpz, Fp2 should be positioned at 10% of the Nasion-Inion distance, above Nasion point.



Step 4: Apply the gel

Apply gel using dedicated syringes. Blunt needles serve for easier insertion through the hole of the electrodes. Bring the blunt needle down through the hole and inject gel slowly.

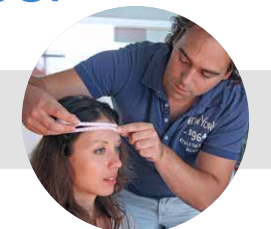
Step 5: Connect cap adapter to the amplifier

Attach your amplifier according to the numbered labels available on each of the wires. This is straightforward by matching the numbers on the amplifiers and adapter.

Step 6: Check impedances

Check impedances on your screen and re-gel electrodes if needed.

Step 7: Go!



“How many times can a waveguard cap be used?”

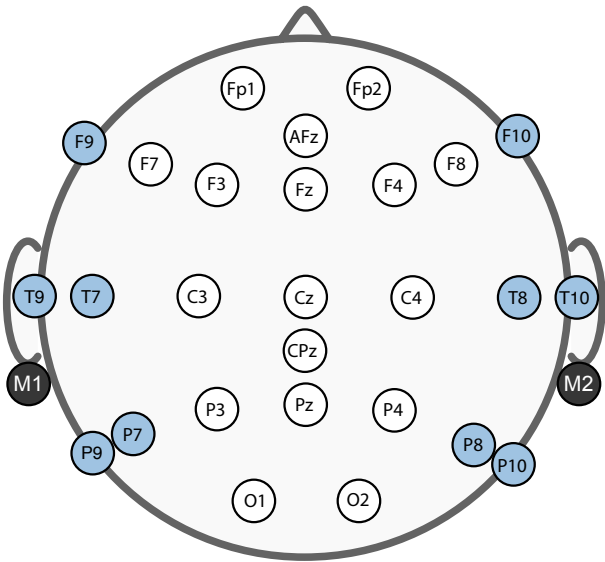
The number of times that a cap can be used with all electrodes intact and without compromising signal quality depends upon many factors. Careful handling and thorough cleaning are most important. The electrode sensors, the fabric along with all other parts and materials have been selected and designed to reach **more than 500 cycles** of recording and cleaning.

“How long does it take to apply a waveguard cap?”

The application time depends greatly on the number of EEG channels that need to be recorded. Normally, gelling each electrode will take approximately 20 seconds. The whole process of patient preparation, putting on the 21-channel cap and gelling it, **should take maximum 10 minutes.**

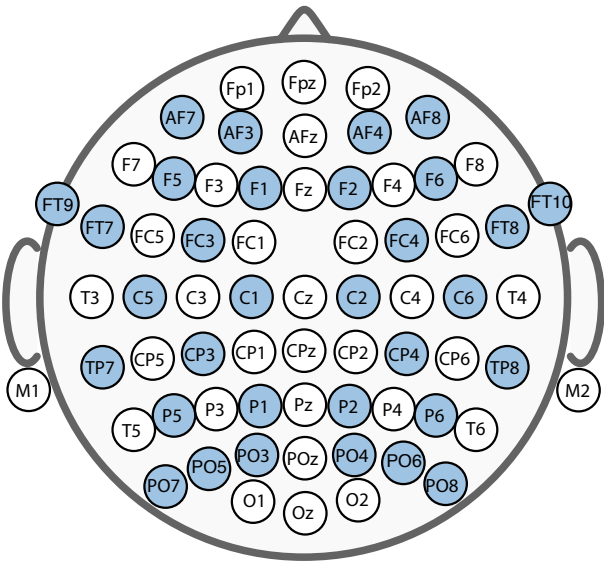


Available Layouts

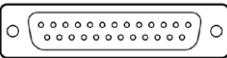


21 channel 10/20

25 channel IFCN Extended 10/20*



Cap models with D-SUB connector



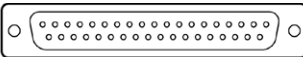
DB25, male connector (straight) Compatible with XC-301 touchproof adapter



| Cap specifications | Cable lenght | Available sizes | Warranty |
|---|------------------|--|-----------|
| <ul style="list-style-type: none">- 21 electrodes plus GND + REF- Reference position at CPz- Layout 10/20- Tin electrode- Silicone protection tube | 1.5m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 6 months |
| <ul style="list-style-type: none">- 21 electrodes plus GND + REF- Reference position at CPz- Layout 10/20- Ag/AgCl electrode- Silicone protection tube | 1.8m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 12 months |



XC-301 touchproof adapter



DC37, male connector (straight) Compatible with XC-305 touchproof adapter

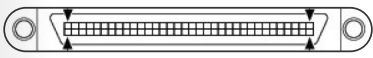


| Cap specifications | Cable lenght | Available sizes | Warranty |
|---|------------------|--|-----------|
| <ul style="list-style-type: none">- 25 electrodes plus GND + REF- Reference position at CPz- Layout 10/20- Tin electrode- Silicone protection tube | 1.5m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 6 months |
| <ul style="list-style-type: none">- 25 electrodes plus GND + REF- Reference position at CPz- Layout 10/20- Ag/AgCl electrode- Silicone protection tube | 1.8m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 12 months |



XC-305 touchproof adapter

Cap models with HD connector



68-pin HD, male connector Compatible with XC-351 touchproof adapter



| Cap specifications | Cable lenght | Available sizes | Warranty |
|---|------------------|--|-----------|
| <ul style="list-style-type: none">- 21 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Tin electrode- Silicone protection tube | 1.5m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 6 months |
| <ul style="list-style-type: none">- 21 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Ag/AgCl electrode- Silicone protection tube | 1.8m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 12 months |
| <ul style="list-style-type: none">- 32 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Tin electrode- Silicone protection tube | 1.5m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 6 months |
| <ul style="list-style-type: none">- 32 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Ag/AgCl electrode- Silicone protection tube | 1.8m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 12 months |
| <ul style="list-style-type: none">- 64 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Tin electrode- Silicone protection tube | 1.5m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 6 months |
| <ul style="list-style-type: none">- 64 electrodes plus GND + REF- Reference position at CPz- Layout 10/10- Ag/AgCl electrode- Silicone protection tube | 1.8m, unshielded | B (6) I (7) C (8) S (9) M (10) L (11) | 12 months |



Cap models with vendor specific connectors



| Code | Compatible with |
|--------|---|
| CS-311 | SAM and SDPLUS amplifiers from Micromed |
| CS-313 | Mitsar-EEG-BT / Mitsar-EEG-202-24 |
| CS-314 | Neurosoft (Neuron-spectrum) |

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ANT Worldwide Distribution

ANT Neuro **waveguard** caps, accessories and consumables are available worldwide through our ANT Neuro offices in Europe, North America, and Asia. In addition to our direct sales, our trusted network of distributors can assist our customers and deliver our products expanding the availability of **waveguard** caps, further assuring availability worldwide. Contact sales@eemagine.com to learn about distribution of **waveguard** caps in your area.

Your local distributor:

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For more information about **waveguard**™ and the regulatory status in your country, contact us at sales@ant-neuro.com.

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Information in this document is subject to change.

www.ant-neuro.com/products/waveguard_connect

