



# EASYCAP

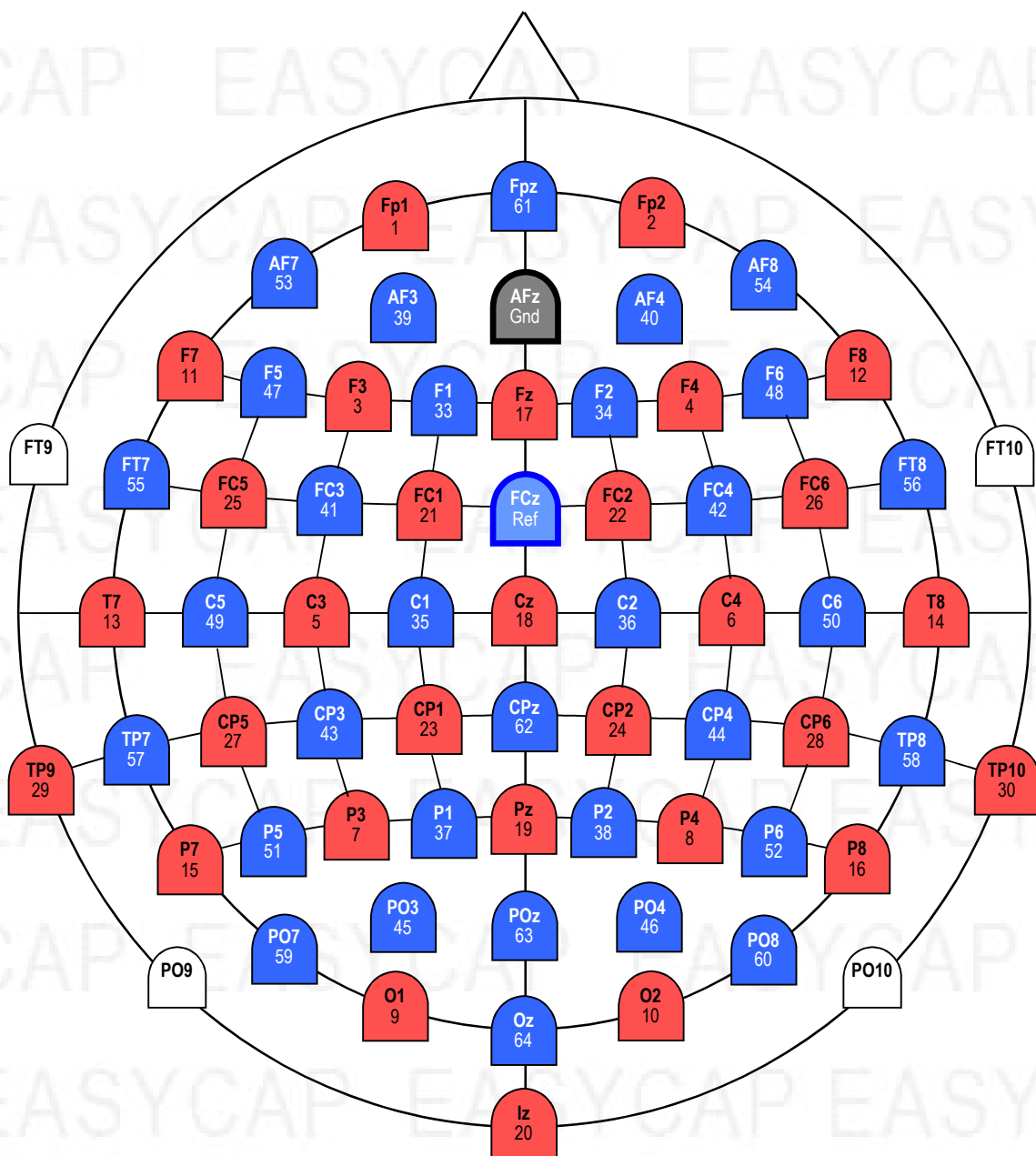
EEG Recording Caps and Related Products

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## 64Ch-Standard-BrainCap for TMS with Multitrodes

### Electrode Layout and Channel Assignment



## Details for Users

### Ordering Information

For ordering please give **Article Number, Cap Cut, and Size**  
(e.g. *BC-TMS-64, Caucasian, 56*):

- Article Number: **BC-TMS-64**
- Cap Cut: **Caucasian** or **Asian**
- Size (given in cm head circumference):
  - Adult caps: **54, 56, 58, 60, 62, 64** (average male: 58, average female: 56)
  - Children caps: **50** (3-4 years), **52** (5-10 years), **54** (11-14 years)
  - Infant caps: **42, 44** (7 month), **46, 48** (2 years)

The catalogue-number comprises the cap with 62 + 2 built-in but removable electrodes as described, 2 additional spare electrodes, 64Ch-electrode input box and 2 flat-ribbon cables, serial number, and this document; all packed in a labelled cardboard box. For further information on accessories or consumables, please visit our website or contact our local distributor.

### Cap

Standard: Subtemporal Cap with integrated chin belt, white

Sizes 52 – 64 made from High Precision Fabric, Sizes 50 and smaller made from High Comfort Fabric

Options: *Caucasian or Asian, Size*

### Electrodes

All electrodes are Multitrodes for TMS with sintered Ag/AgCl sensors (total height approx. 3 mm). They are buttoned directly into the cap or can be attached to the skin with washers (= double-sided adhesive rings).

All electrodes are:

- Name-labelled near sensor according to graphic (spare electrodes labelled as 31, 32).
- Number-labelled near connector according to graphic (spare electrodes labelled as 31, 32).
- The electrode wires are very loosely attached to cap with velcro straps that can be opened
- The cables leave the cap plait-like before and behind the ears. Cable trees are held together with only a few velcro straps that can be opened, and they continue up to the Electrode Input Box. Length of cable trees (from the rim of the cap to the connectors) is approx. 120 cm.
- Plugged into Electrode Input Box EIB64-A. The EIB64-A comes with 2 flat-ribbon cables of 30cm length E80 (The flat-ribbon cables can be re-ordered from BrainProducts (Cat-No. BP-02400-NN) or from Easycap in any requested length (Cat.-No. E80-XXX – please replace XXX with the length of the cable in cm).

## **Hints**

Unused electrodes can be buttoned out of the cap, and their connections can be removed from the EIB.

To minimize the TMS artefacts in the EEG signal, electrode cables should be led away from the TMS stimulation point. To achieve that, the electrodes can be rotated in their cap holes. Alternatively, the Velcro straps can be opened and cables – or bunches of cables – can be removed to another position on the cap.

Depending on the site of the TMS stimulation point it may be advisable to move the Ref-electrodes in its entirety to another position further away from the stimulation point.

## **Theta/Phi-Coordinates**

Please find a table with Theta/Phi-Coordinates of all electrode sites at the end of this file.

**Table of Coordinates of BC-TMS-64**

Channel-number	Name	Theta	Phi
1	Fp1	-90	-72
2	Fp2	90	72
3	F3	-60	-51
4	F4	60	51
5	C3	-45	0
6	C4	45	0
7	P3	-60	51
8	P4	60	-51
9	O1	-90	72
10	O2	90	-72
11	F7	-90	-36
12	F8	90	36
13	T7	-90	0
14	T8	90	0
15	P7	-90	36
16	P8	90	-36
17	Fz	45	90
18	Cz	0	0
19	Pz	45	-90
20	Iz	112	-90
21	FC1	-31	-46
22	FC2	31	46
23	CP1	-31	46
24	CP2	31	-46
25	FC5	-69	-21
26	FC6	69	21
27	CP5	-69	21
28	CP6	69	-21
29	TP9	-113	18
30	TP10	113	-18
31	31	NN	NN
32	32	NN	NN
33	F1	-49	-68
34	F2	49	68
35	C1	-23	0
36	C2	23	0
37	P1	-49	68
38	P2	49	-68
39	AF3	-74	-68
40	AF4	74	68
41	FC3	-49	-29
42	FC4	49	29
43	CP3	-49	29
44	CP4	49	-29
45	PO3	-74	68
46	PO4	74	-68
47	F5	-74	-41
48	F6	74	41
49	C5	-68	0

Channel-number	Name	Theta	Phi
50	C6	68	0
51	P5	-74	41
52	P6	74	-41
53	AF7	-90	-54
54	AF8	90	54
55	FT7	-90	-18
56	FT8	90	18
57	TP7	-90	18
58	TP8	90	-18
59	PO7	-90	54
60	PO8	90	-54
61	Fpz	90	90
62	CPz	22	-90
63	POz	67	-90
64	Oz	90	-90
	FT9	-113	-18
	FT10	113	18
	PO9	-113	54
	PO10	113	-54
Gnd	Afz	67	90
Ref	FCz	23	90

These values are standardized to a Theta of 90° for the plane through Fpz, T7, T8, Oz.

The signs follow this convention:

