



EASYCAP

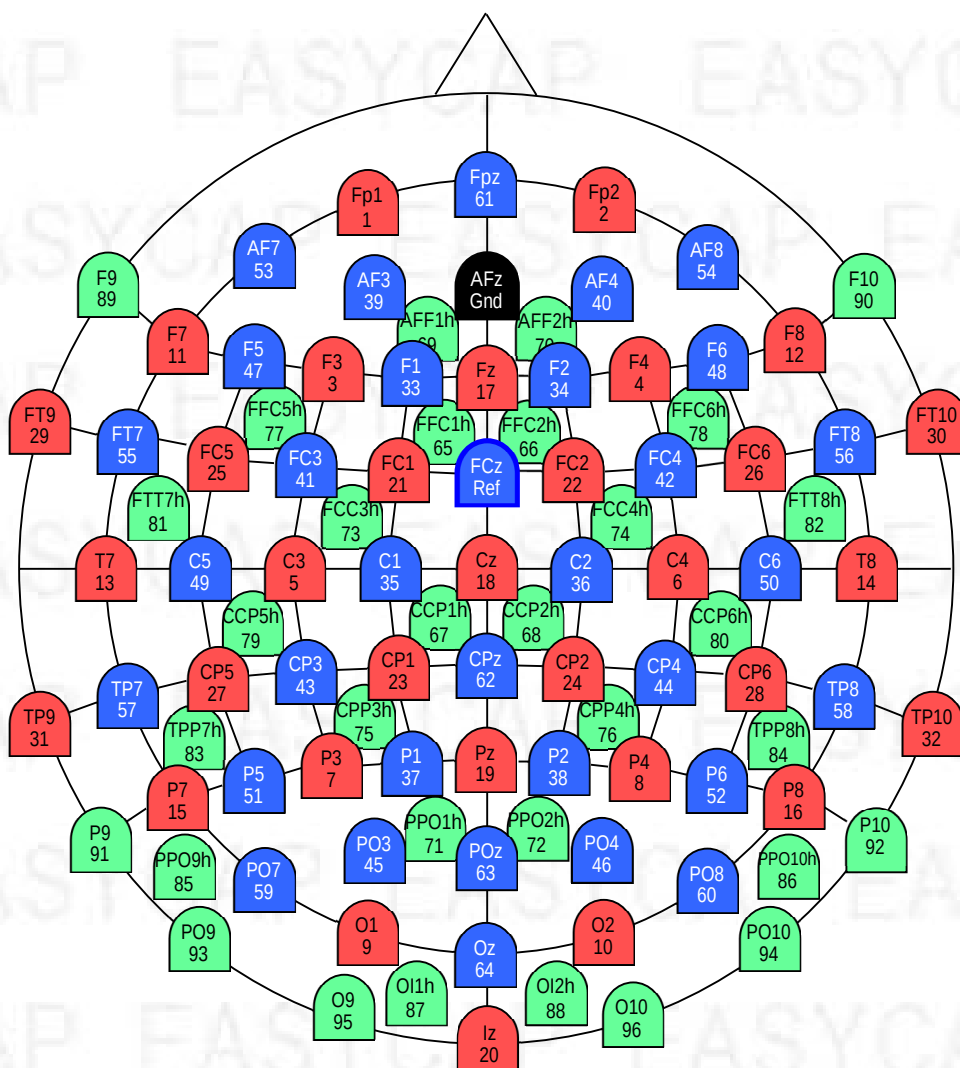
EEG Recording Caps and Related Products

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96Ch Standard BrainCap for TMS with Multitrodes

Electrode Layout and Channel Assignment



Electrode Nomenclature according to:
Oostenveld, R. & Praamstra, P. The five percent electrode
system for high-resolution EEG and ERP measurements.
Clinical Neurophysiology 2001; 112: 713-719



Details

Ordering Information

For ordering please give Article Number, Cap Cut, and Size (e.g. *BC-TMS-96, C-Cut, 56*):

- Article Number: *BC-TMS-96*
- Cap Cut: *C-Cut or A-Cut*
- Size (given in cm head circumference):
 - Adult caps: *54, 56, 58, 60, 62, 64* (average male: 58, average female: 56)
 - Children caps: *52* (5-10 years), *54* (11-14 years)

The catalogue-number comprises the cap as described. For further information about accessories or consumables please visit our website or contact our local distributor.

Cap

Standard: Subtemporal Cap with integrated chin belt, white.

Sizes 54 – 60 made from High Precision Fabric, Sizes 50 and smaller made from High Comfort Fabric

Options: *C-Cut or A-Cut, Size. For further variations, contact us.*

Electrodes

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

All electrodes are name-labelled at the sensor end. The cable colours correspond to the above figure.

The cables are loosely attached to the cap with large double-T nylon threads. Four cable trees leave the cap plait-like in front of and behind the ears, pointing downwards. 20 cm before the connector-boxes there is a crossing-point. Lengths of cable trees are approx. 120 cm.

Termination

Each cable tree is led into a Connector box. From here the caps are connected to BrainAmp with 30 cm-flat-ribbon-cables. These flat ribbon cables come with the BrainAmps. They can be re-ordered from BrainProducts (Cat.-No. BP-02400-NN) or from Easycap (Cat.-No. E80).

Theta/Phi-Coordinates

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

Hints when performing TMS and EEG simultaneously

To minimize the TMS artefacts onto the EEG signal, electrode cables should be led away from the TMS stimulation point. To be able to do so, the electrode cables are not firmly attached to the cap and can be rotated in their cap holes. You may secure a certain cable geometry with the enclosed cable clips and velcro straps.

Depending on the site of the TMS stimulation, it may be advisable to move the REF electrode away from the stimulation point to another position further away.

Table of Coordinates for BC-TMS-96

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	FT9	-113	-18
30	FT10	113	18
31	TP9	-113	18
32	TP10	113	-18
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
65	FFC1h	-35	-73
66	FFC2h	35	73
67	CCP1h	-16	45
68	CCP2h	16	-45
69	AFF1h	-57	-82
70	AFF2h	57	82
71	PPO1h	-57	82
72	PPO2h	57	-82
73	FCC3h	-35	-19
74	FCC4h	35	19
75	CPP3h	-46	48
76	CPP4h	46	-48
77	FFC5h	-62	-35
78	FFC6h	62	35
79	CCP5h	-57	12
80	CCP6h	57	-12
81	FTT7h	-79	-10
82	FTT8h	79	10
83	TPP7h	-81	29
84	TPP8h	81	-29
85	PPO9h	-101	45
86	PPO10h	101	-45
87	OI1h	-101	81
88	OI2h	101	-81
89	F9	-113	-36
90	F10	113	36
91	P9	-113	36
92	P10	113	-36
93	PO9	-113	54
94	PO10	113	-54
95	O9	-112	72
96	O10	112	-72
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:

