ELEVATETMS

Take TMS to the next level

For 20 years,
Rogue Research has
worked to develop tools that
help you advance the boundaries
of non-invasive brain stimulation.

We expand this tradition of offering the best tool possible into the clinical domain with the release of our latest product, **ELEVATE TMS**.

Based on a completely different architecture than traditional TMS, called cTMS, **ELEVATE TMS** offers more **control** than any TMS device available today.

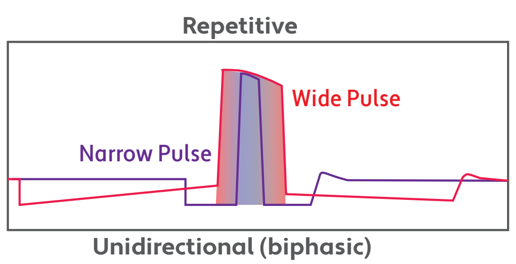
Rogue Research Inc.

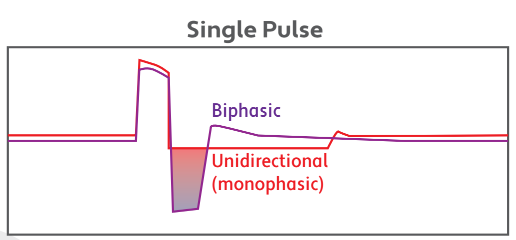
Rogue Research Inc.

20 Years of Innovation for Research

Features of ELEVATETMS

- First new TMS design in years
- Variable pulse shapes to reliably excite or inhibit neuronal circuits
- Monophasic, biphasic, unidirectional pulses
- Integrated output recording
- External control via sequence file and Ethernet interface





Pulse Waveform Capabilities

- Directionality Control: Controls amplitude of the -ve phase relative to the +ve phase
- Variable pulse widths up to 385 µSec (with optional high inductance coil)
- Monophasic, biphasic, polyphasic, staircase, asymmetric
- Repetition rates up to 1 kHz
- Unidirectional theta burst
- Charging power: 2x1500 Joules per second

One of the Key Components in NIBS

Targeting
Use the most appropriate method to determine the target location for stimulation according to your research goals.

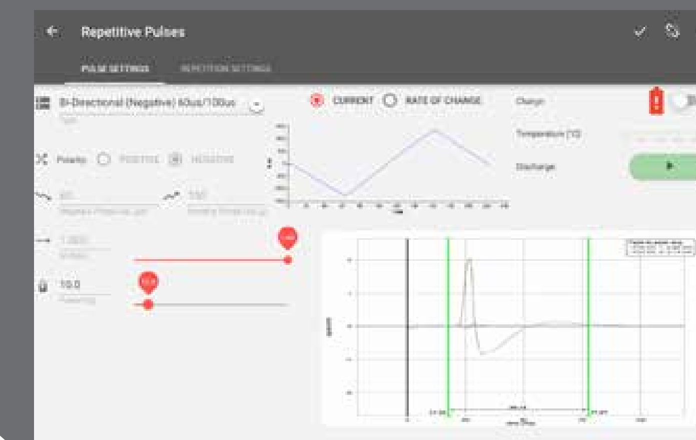
Dosing
Elevate TMS gives you control over how the TMS pulse modulates cortical excitability. Select the best pulse shape to reliably achieve the desired effect.

Execution
Use any method to place the coil over the location, including neuronavigation (not included).

ELEVATETMS

Modern, intuitive user interface

- Large, capacitive touch screen
- Simple and advanced controls
- Predicted waveform displayed initially and actual measured output overlaid for confirmation of delivered pulse



Thoughtful Coil Designs

- Removable handles to suit every preference
- Different inductances to extend cTMS pulse range
- B-Field 3D mapped for use in E-field modelling research
- Integrated coil tracker mount
- More models to come (cooled coil, 50mm fig-8 etc.)

Selected Publications

ELEVATETMS

The Journal of Physiology 596(20) June 2018 DOI: 10.1113/JP275798
Effect of Coil Orientation on Motor Evoked Potentials in Humans with Tetraplegia
Hang Jin JoHang Jin JoVincenzo Di LazzaroMonica A. Perez

Brain Stimul. 2016 Jan-Feb;9(1):39-47. doi: 10.1016/j.brs.2015.08.013. Epub 2015 Sep 1.
Enhancement of Neuromodulation with Novel Pulse Shapes Generated by Controllable Pulse Parameter Transcranial Magnetic Stimulation.
Goetz SM1, Luber B2, Lisanby SH2, Murphy DL1, Kozyrkov IC1, Grill WM3, Peterchev AV4.

Clin Neurophysiol, 127(1), 675-83 (2015)
Effect of coil orientation on strength-duration time constant and I-wave activation with controllable pulse parameter transcranial magnetic stimulation.
D'Ostilio K, Goetz SM, Hannah R, Ciocca M, Chieffo R, Chen JC, Peterchev AV, Rothwell JC

Clin Neurophysiol. 2016 Jan;127(1):675-83. doi: 10.1016/j.clinph.2015.05.017. Epub 2015 May 30.
Effect of coil orientation on strength-duration time constant and I-wave activation with controllable pulse parameter transcranial magnetic stimulation.
D'Ostilio K1, Goetz SM2, Hannah R3, Ciocca M4, Chieffo R5, Chen JC6, Peterchev AV7, Rothwell JC3.

Clin Neurophysiol 125, S1–S339Peterchev, A.V., D'Ostilio, K., Rothwell, J.C., Murphy, D.L. (2014).
Intermittent theta burst stimulation inhibits human motor cortex when applied with mostly monophasic (anterior-posterior) pulses.
Sommer M, Ciocca M, Hannah R, Hammond P, Neef N, Paulus W, Rothwell JC (2014)

Repetitive cTMS Specifications

Note :The multi- parameter nature of cTMS makes it difficult to describe in a table. Feel free to contact us.

		Pulse Type (+ve pulse width, -ve Pulse width)	M-Ratio	10 Hz	25 Hz	50 Hz	100 Hz	200 Hz	400 Hz	800 Hz	1000 Hz	Max Freq. (Hz) at 100% output	Maximum Output (%)
Unidirectional train		(45μs, 145μs)	0.2	100	100	49	24	11	NA	NA	NA	24	100
Unidirectional train		(60μs, 185μs)	0.22	100	82	40	19	9	NA	NA	NA	20	100
Unidirectional train		(75μs, 225μs)	0.25	93	55	27	13	6	NA	NA	NA	15	93
Unidirectional train	Balanced Pulses	(11μs, 54μs)	0.76	100	100	100	100	100	100	65	49	550	100
Unidirectional train	Balanced Pulses	(20μs, 78μs)	0.139	100	100	100	100	91	43	19	14	184	100
Unidirectional train	Balanced Pulses	(30μs, 105μs)	0.1627	100	100	100	91	44	20	NA	NA	91	100
Unidirectional train	Balanced Pulses	(40μs, 131μs)	0.182	100	100	100	54	26	12	NA	NA	55	100
Unidirectional train	Balanced Pulses	(50μs, 158μs)	0.1987	100	100	70	34	16	NA	NA	NA	35	100
Unidirectional train	Balanced Pulses	(60μs, 185μs)	0.2165	100	97	47	23	10	NA	NA	NA	24	100
Unidirectional train	Balanced Pulses	(70μs, 212μs)	0.2365	97	66	32	16	7	NA	NA	NA	17	97
Unidirectional train	Balanced Pulses	(80μs, 238μs)	0.2599	78	57	28	13	6	NA	NA	NA	18	85
Bi-Directional		(86μs, 255μs)	0.2756	78	47	23	11	NA	NA	NA	NA	15	78
Bi-Directional		+ve (60μs, 100μs)	1	43	43	43	26	13	5	NA	NA	63	43
Bi-Directional		-ve (60μs, 100μs)	1	43	43	43	21	10	4	NA	NA	50	43

Higher output possible with possible decay (displayed during planning step)

Elevate TMS is approved for cortical and peripheral nerve stimulation for clinical use in Canada. It is not approved for clinical applications outside of Canada and is for scientific research and/or investigational use only. Operation of Elevate TMS must be done in accordance with your relevant medical device regulations.

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