What is rTMS?

Repetitive Transcranial magnetic stimulation is a non-invasive painless neuromodulation brain stimulation technique, which is used to either cause depolarization or hyperpolarization of the cortical neurons within the brain. This is achieved by electro-magnetic induction, where a rapidly changing magnetic field is able to induce weak electric currents within the cortex. These magnetic fields are able to affect specific or general area of the brain with minimal discomfort, allowing for cognitive function and intercortical brain networks to be studied. Recent research has shown rTMS to be a possible new effective treatment modality for various neurological and psychiatric disorders and as research continues to open up new treatment protocols international regulators have approved the use of rTMS, within the scope of local clinical guidelines. rTMS is recognised as a well-researched, safe and effective therapeutic treatment intervention for many neuropsychiatric disorders such as; Treatment Resistant Depression, Obsessive Compulsive Disorder, Post Traumatic Stress Disorder, Cocaine Addiction, Parkinson’s Disease, Tinnitus and Auditory Hallucinations.
Advantages of DuoMAG rTMS

Deymed manufactures reliable and high-quality neurodiagnostic and neurocare systems. Our goal is to advance the Neurology and Neurophysiology fields to new heights with bold engineering innovations. All Deymed Neurocare systems are designed for ease-of-use and durability with advanced features intended to optimise and simplify your workflow.

Intelligent Charging
Deymed’s new ultra-low capacitance induction charging technology guarantees the highest quality EMG signal possible for sensitive neurophysiological tests, while also keeping the system’s batteries full.

Powerful System
Capable of intensive high frequency protocols for the most complex clinical, psychiatric and research uses, the DuoMAG XT-100 can reach 100 pps at 47% intensity.

Multi-system Integration
Integration with Deymed’s clinical EMG and EEG amplifiers allows multiple configurations of EMG/MEP or EEG signals to be displayed. Deymed amplifiers are designed to eliminate all TMS stimulation artefacts.

Touch-Screen Interface
Combined with intuitive software for ease of use. Built on a Windows platform, allowing full integration for third-party products such as neuro-navigation.

Session and Patient Report
PDF reports can be generated for specific patients or sessions. ‘Patient Report’ shows a list of performed sessions, while ‘Session Report’ shows detailed information on performed stimulation protocols or MEP.

Counter-balanced Coil Holder
The MagTower cart with its counter-weight balanced positioning arm and auto-locking position greatly reduces the effort required to find and secure the placement of coils.

Cooled Coil
Deymed coils with double air-cooled fans or liquid-based systems allow for even the most intense TBS protocols to be used for extended periods without over-heating the system.

Custom Protocol Editor
The Custom Protocol Editor allows the user to save any conceivable protocol design, including customisable stimulation trains, Theta Burst Stimulation (iTBS-cTBS) protocols and changing stimulation intensities.
Touch-Screen Interface
Combined with intuitive software for ease of use. Built on a Windows platform, allowing full integration for third-parties products such as neuro-navigation.

Counter-Balanced Coil Holder
The counter-weight balanced positioning arm and auto-locking position greatly reduces the effort required to find and secure the placement of coils.

User-friendly Coil Controls
Built-in controls allow full control over stimulation and intensity settings through the coil handle, removing the need for the user to divert their attention to external panels or triggers, and allowing the system to be used by a single operator.

Intelligent Charger
Built in to the rotating metal arm that holds the EMG amplifier, the DuoMAG Intelligent Charger uses inductive charging technology to keep the headbox batteries at full capacity. This method of charging also maintains the optical isolation and safety benefits of battery-operated EMG for sensitive neurophysiological tests.

Stimulator
The DuoMAG XT is a powerful and flexible magnetic stimulator built for ease-of-use in both research and clinical applications. The system can be controlled via the coil controls, a PC, or the DuoMAG touch-screen for ultimate usability.

Liquid-Cooling System
A modern and powerful liquid cooling system allows the coil to be used through the most intensive protocols during clinical and research protocols.

Special developed Cart
Designed with robustness and space in mind, the carts small overall footprint, integral coil arm and large easy roll wheels means the DuoMAG XT is to fit into the most demanding of environments.

Combine with EMG/EEG
The DuoMAG family of stimulators can be integrated seamlessly with other Deymed systems, such as the TruScan EEG and TruTrace EMG/MEP systems.
COMPACT
The DuoMAG XT can be placed on a desktop or similar surface in this compact space saving configuration.

MagTower
The MagTower is an innovative, counterweight-balanced coil holder for TMS. The MagTower significantly lowers the weight of the coils for use in any scenario where the user may otherwise struggle with maintaining difficult coil positioning, such as finding a motor threshold. Locking the coil position is achieved through the click of a button, and the touchscreen interface offers protocol design and control along with MEP visualisation of EMG signal.

MagCart
The easy-to-move, compact MagCart features an articulated arm that allows a TMS coil to be quickly locked into place after positioning. An optional DuoMAG touch-screen system may be added to the MagCart.

TURNING ON
The XT-10, XT-35 or XT-100 version can be selected for each configuration.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Pulse mode</th>
<th>Maximum repetition rate</th>
<th>Mains voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT-10</td>
<td>Biphasic, repetitive</td>
<td>30Hz</td>
<td>100-240Vac 50/60 Hz</td>
</tr>
<tr>
<td>XT-35</td>
<td>Biphasic, repetitive, burst</td>
<td>60 Hz</td>
<td>100-240Vac 50/60 Hz</td>
</tr>
<tr>
<td>XT-100</td>
<td>Biphasic, repetitive, burst</td>
<td>100 Hz</td>
<td>100-240Vac 50/60 Hz</td>
</tr>
</tbody>
</table>
**Liquid-Cooling System**

- Unique liquid-based coil cooling system ensures continuous stimulation even for the most demanding protocols.
- The system combines a compact cooling unit compatible with liquid cooled coils, specifically designed for repetitive stimulation.
- Durable coils without any counters to limit lifetime of the coil.
- Automatically controlled, quiet cooling performance for minimal noise interference. Built-in sensors protect the coil against overheating, and regulate cooling intensity.
- The DuoMAG cooling system can be fitted to any DuoMAG rTMS system. Specially designed non-spill connectors ensure easy and quick coil replacement, without the need for additional tools.

**Introducing Specially designed chair**

- Detachable leatherette and all-metal construction for easy maintenance and disinfection. Removable head and foot section
- Electric adjustment function for height, back and leg section
- Great possibilities of adjusting the position of the chair, especially the headrest and armrests
- Durable parts and materials
- Complete horizontal position
- Portable version option with battery
- Medical device complies with EU-MDR

- Specifically-designed headrest for use along with TMS folding armrests
- Electric adjustment function for height, back and leg section
- Durable parts and materials
- Complete horizontal position
- Removable head and foot section
- Easy to maintain
**COILS**

**50BF**
Butterfly Coil 50mm
Typical use:
Precision focused stimulation, mainly for rTMS.

**50BFT**
Butterfly T-shaped Coil 50mm
Typical use:
Precisely focused stimulation, mainly for rTMS.

**50BF-LQC**
Butterfly Coil 50mm with liquid cooling
Typical use:
Precision focused stimulation, mainly for rTMS.

**70BF**
Butterfly Coil 70mm
Typical use:
Focused stimulation, mainly for rTMS.

**70BF-LQC / 60BF-LQC**
Butterfly Coil 70mm and 60mm with liquid cooling
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**70BFX-LQC**
Butterfly Overlapping Coil 70mm
Typical use:
Focused long-term cortical stimulation, mainly for rTMS. More comfort for the patient, due to coil design.

**70BF - Cool**
Butterfly Coil 70mm with cooling fans
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**70BFVT-LQC**
Butterfly V Cone Coil 90mm and 120° angled surface
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**90BFVT-LQC**
Butterfly V Cone Coil 90mm and 120° angled surface
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**120BFVT**
Butterfly V Cone Coil 120 mm with 100° angled surface
Typical use:
Deep spinal stimulation.

**125R**
Round Coil 125mm
Typical use:
Spinal stimulation.

**100R**
Round Coil 100mm
Typical use:
Stimulation of peripheral nerves or cortical stimulation.

**120BFVT**
Butterfly V Cone Coil 120 mm with 100° angled surface
Typical use:
Deep spinal stimulation.

**50BFT**
Butterfly T-shaped Coil 50mm
Typical use:
Precisely focused stimulation, mainly for rTMS.

**100R**
Round Coil 100mm
Typical use:
Stimulation of peripheral nerves or cortical stimulation.

**30BFT**
Butterfly T-shaped Coil 30mm
Typical use:
Precisely focused stimulation.

**70BF-LQC**
Butterfly Coil 70mm with liquid cooling
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**70BF-LQC**
Butterfly Overlapping Coil 70mm
Typical use:
Focused long-term cortical stimulation, mainly for rTMS. More comfort for the patient, due to coil design.

**70BFVT-LQC**
Butterfly V Cone Coil 90mm and 120° angled surface
Typical use:
Focused long-term cortical stimulation, mainly for rTMS.

**LIQUID COOLING**
Requires liquid-cooling unit

**AIR COOLING**

**OPTION AS PLACEBO**

+ All coils have controls of intensity and stimulation
DEYMED Diagnostic s.r.o.
Kudrnacova 533
549 31 Hronov
Czech Republic

Please note that this product may not be approved by regulatory authorities in your country/region.
For more information, please consult with us or our distributor.
*For users in the USA: The DuoMAG XT is considered an investigational device.
Limited by Federal (or United States) Law only to investigational use.

For the Czech Republic:
Intended exclusively for healthcare professionals according to Czech Act No. 40/1995 Coll. on regulation of advertising as amended.

Neurophysiology
EMG

Epileptology
EEG

Magnetic stimulators
TMS

Somnography
PSG

Neurofeedback
BFB / qEEG