IBS GROUPE

STERNMED®


# Marcom 0.5T

## Permanent magnet MRI scanner

www.sternmed.de

STERNMED®

IBS GROUPE


# Marcom 0.5T

## Permanent magnet MRI scanner

**Marcom 0.5T is an open 0.5T permanent magnet MRI system equipped with powerful RF and gradient system, together with advanced imaging technology, making a high-end system which is comparable to high-field MRI.**

- Main field strength 0.5T
- 4 receiving channels
- Full digital spectrometer
- Phase array receiving coils
- Dual-column magnet shape
- Advanced imaging techniques and clinical application
- Comprehensive scanning sequences


## FEATURES

The shimming algorithm technology (ensure field strength with high uniformity and stability), ensure the MRI system operating stably with high quality and high performance.

**Eddy Zero Technology**
Magnet design uses breakthrough anti-eddy current technology.
The gradient coil using self-shielded active anti – eddy current technology.

Implementation of precision eddy current compensation algorithm, completely eliminate the impact of eddy current.

The eddy current because of the high gradient and high slew rate come from ultra-fast sequence was resolved completely, which guarantee to get the best clinic image.

**Open wide design**
More patient comfort and more space for surgery. Affinity Dual-column magnets, creating a maximum of openness, offer a maximum vision for patients, especially leave much space comfort for obese patients, minimizing claustrophobia of patients and providing more space for MR intervention surgery.

## FEATURES

**Advance gradient system**
Gradient system helps to provide higher resolution pictures, Marcom 0.5T gradient system□X□Y□Z□ gradient intensity is 25mT/m□Higher the gradient intensity, faster imaging speed, shorter of scanning time; Higher the gradient intensity, thinner of imaging slice, higher of image resolution

**The new technology of 4D shimming**
Use of advanced active shimming algorithm for real-time automatic shimming on each examination to ensure the magnetic field always maintain the highest uniformity. Magnetic field homogeneity and stability of the MRI images always are the most important guarantee of the high-resolution, high SNR and high contrast.

They are the important indicators of the level of magnet design, the better the smaller the value, directly determines the SNR of the image, like a car chassis, stability is essential, the magnetic field uniformity is maintained at <2.5ppm in 40cm the DSV Vrms, the system can complete a wide range of scanning (40cm).

**Advanced RF system**
The Marcom 0.5T is equipped with Fast 4 channels RF system and all phased array coils provide best SNR pictures.

## OUTSTANDING FEATURES

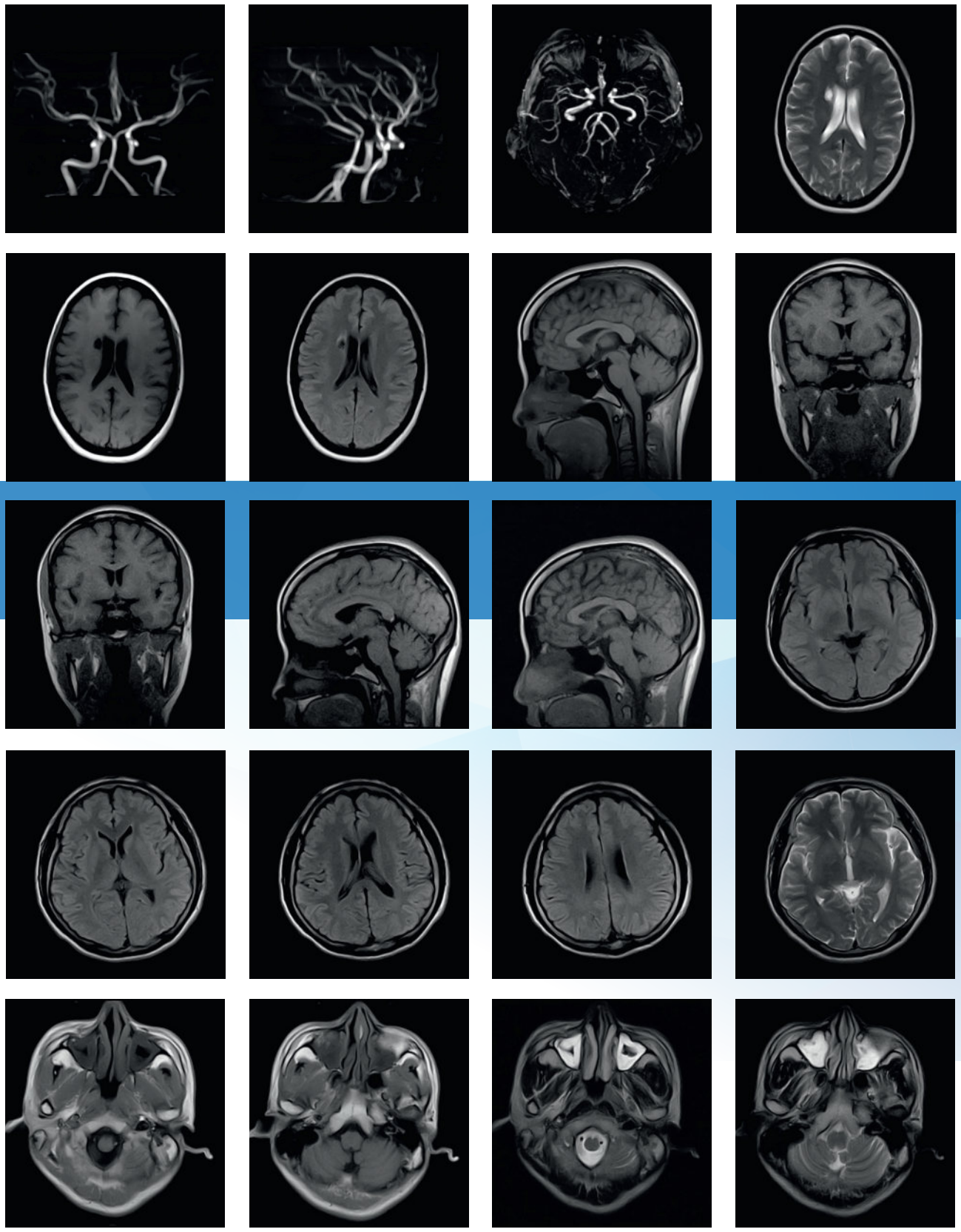
- Fully open Magnet
- Nd-Fe-B magnet
- 4D shimming
- Eddy Zero Technology
- self-regulating constant temperature
- Fully Digital 4 Channel Receiving Spectrometer
- Automatic coil tuning
- Accurate position assist
- Higher SNR
- Higher resolution
- Less Scanning Time
- Comprehensive scanning sequences
- Advanced imaging techniques

Marcom 0.5T has a variety of different phased array coils and all of them provide best SNR pictures.

**Standard**
- Head coil
- Neck coil
- Small body coil
- Large body coil
- Knee coil

**Optional**
- Shoulder coil
- Sport joint coil
- Wrist Coil
- Breast Coil
- Flexible coil
- Flexible body coil
- Flat spine coil

## EXCELLENT CLINICAL IMAGES



## TECHNICAL SPECIFICATIONS
## Marcom 0.5T | SternMed permanent magnet MRI

| | |
|---|---|
| **PERMANENT MAGNET** | |
| Operating Field Strength | 0.5 Tesla 5000 Gauss |
| Magnet Type | Full open C-shaped, 2-column |
| Magnetic material | Permanent Nd-Fe-B magnet |
| Dimension | 2000 x 2200 x 2100 mm |
| Magnet net weight | 27,000 Kg |
| Homogeneity | (400mm DSV) ≤ 2.5ppm (Vrms) |
| Shimming | Active/Passive/Dynamic |
| Patient aperture | 410mm |
| Accessibility (Horizontal opening angle) | >274° |
| 5 Gauss fringe field | 2.5m*2.5m*2.5m |
| **GRADIENT** | |
| Gradient strength | max. 25mT/m (Gx/Gy/Gz) |
| Slew rate | 75mT/M/ms (Gx/Gy/Gz) |
| Gradient cooling system (Gradient coils and power electronics) | Air |
| Rise time | 0.3ms |
| Gradient linearity | <5%(400mm×400mm×380mm) |
| **RF SYSTEM** | |
| Spectrometer | Digital (4 Channels) |
| Noise factor | 0.3dB |
| Coil type | Phase array |
| Dynamic range | ≥80dB |
| RF bandwidth of receiver | Each 400KHz |
| Power of transmitter amplifier | 6KW |
| Receiving coil type | Standard: Neck coil, Head coil, Large body coil, Small body coil<br>Optional : Knee , Shoulder, Wrist, Breast coil, Ankle coil, etc. |
| **WORKSTATION** | |
| Operating system | WINDOWS 7 |
| CPU | 2.8GHz (Dual Core Processor), be able for extension |
| RAM | ≥2GB, be able for extension |
| Hard disk | ≥250GB, be able for extension |
| The main screen displays | 24" LCD |
| Network components | DICOM 3.0 standard interface, through the local Ethernet network easily to link camera, diagnosis and treatment workstations, medical information systems, remote diagnostics system. |
| **PULSE SEQUENCES** | |
| Spin-Echo sequence | SE 2D/3D Echo planar imaging (EPI)<br>Fast spin echo (FSE)<br>Fast double echo (FDE)<br>Fast recover fast spin echo (FRFSE)<br>Single shot fast spin echo (SSFSE)<br>Multi shot fast spin echo (MSFSE)<br>Inversion recovery fast spin echo (IRFSE)<br>Multi-slice multi-echo (MSME) |
| GRE sequence | GRE 2D/3D<br>Steady state process gradient echo (SSPGRE) |
| IR sequence | Inversion recovery (IR)<br>Short time inversion recovery (STIR)<br>Fluid attenuated inversion recovery (FLAIR) |

# TECHNICAL SPECIFICATIONS
# Marcom 0.5T | SternMed permanent magnet MRI

| | | |
|---|---|---|
| **PULSE SEQUENCES** | | |
| Advanced imaging technology | Body Imaging | MR cholangiopancreatography (MRCP) |
| | | MR urography (MRU) -- MR myelography (MRM) |
| | MR Angiography (MRA) 2D/3D TOF technology | |
| | Magnetization transfer (MTC) | |
| | Diffusion weighted imaging (DWI) | |
| | Flow compensation | |
| | Gating technology | |
| | Pre-saturation technology (PS) | |
| | Pre-saturation adjustment technology | |
| | Part metal implant scan technology | |
| | Automatic coil tuning | |
| | Multi-layer and multi-angle scanning technology | |
| | Optimize bandwidth acquisition technology | |
| | Parallel acquisition technology | |
| | Section acquisition technology | |
| | Scan parameter preset | |
| | Oversampling technology | |
| | MIP --- MinIP | |
| | Image fusion technology | |
| | Artifact suppression technology | |
| | Thin imaging technology | |
| | Online image filtration | |
| | Optimal algorithm of active shimming | |
| | Scan sequence queuing | |
| | Online post procession | |
| | Movie playback technology | |
| | Post processing package | |
| **SCANNING PARAMETER** | | |
| FOV | 20 ~ 410mm | |
| Maximum display matrix | 1024x1024 | |
| Slide thickness | (2D) Min. = 1mm (1mm increment), (3D)Min. = 0.1mm | |
| Slide Orientation | Sagittal, coronal, transversal, any angle any oblique, T1 weighted imaging, | |
| Image type | T2 weighted imaging, T2*weighted imaging, proton density imaging, Water suppressed imaging, Fat Suppressed imagine, MRM, MRU, MRCP, Magnetic Resonance angiography (MRA), Diffusion weighted imaging (DWI) | |
| **PATIENT TABLE** | | |
| Patient Table | Available with laser light localizer for patient positioning, Equipped with intercommunication between patient and operator. | |
| Longitudinal travel range | ≥1650mm | |
| Max. Patient Load | 200Kg | |
| Position accurate | ≤1mm | |
| Positioning Accessories | mattress, pillow, head pillow, various parts of the fixed pad | |
| **POWER SUPPLY** | | |
| Voltage and frequency | 3N~ 380 V / 50 Hz | |
| Input Power | 15 kVA | |


STERNMED®

IBS GROUPE