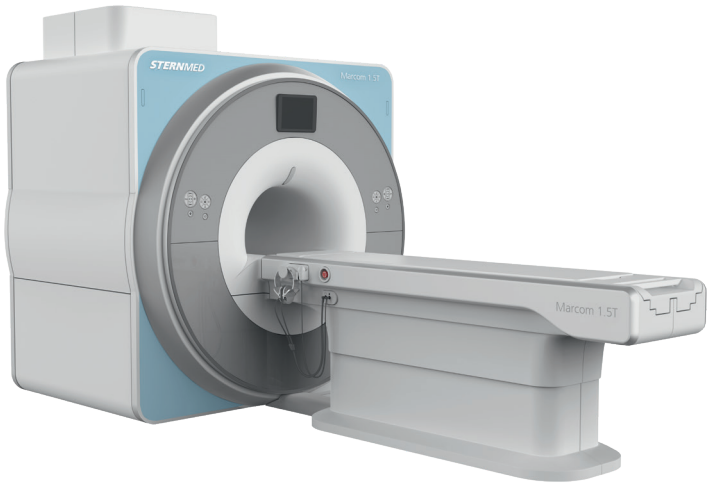
STERNMED®

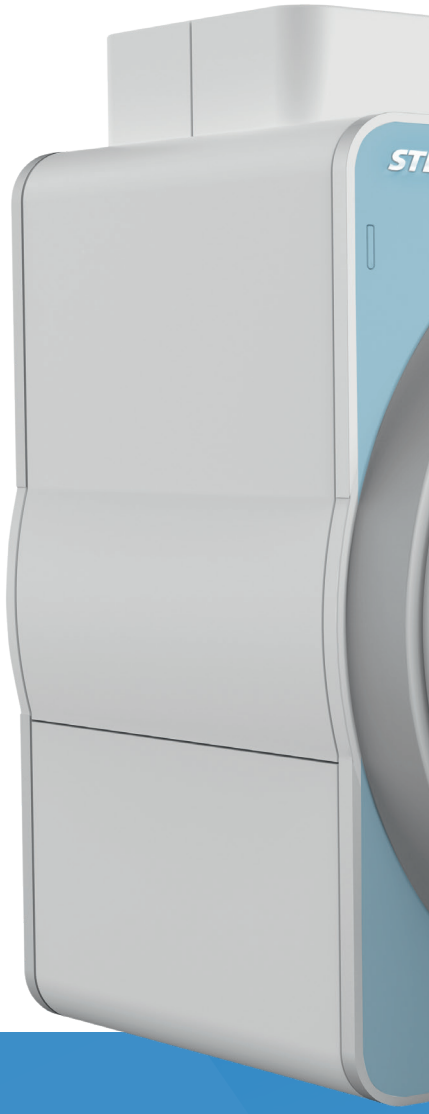


Marcom 1.5T

Superconductive MRI scanner

www.sternmed.de

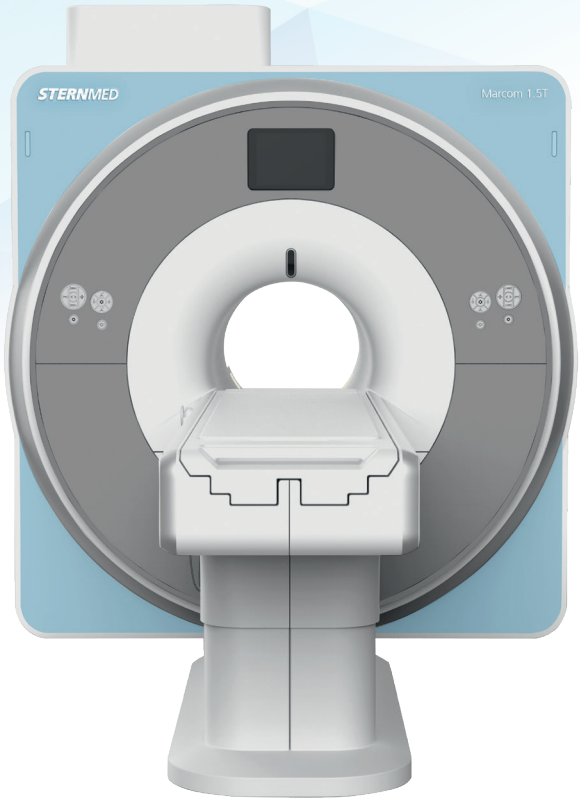
STERNMED®



Marcom 1.5T

Superconductive MRI scanner

Marcom 1.5T is a new generation superconducting MRI scanner with 1.5 Tesla field strength applicable to whole body scan, such as, nervous system, spine, joint soft tissue, pelvic and abdominal cavity, etc.



Technical Advantages
Marcom 1.5T has a lot of technical advantages, short cavity magnet with zero helium consumption, fully digitalized multi-channel spectrometer, high efficiency gradient system; Multi-channel RF receiving coils with intelligent identification, High resolution conventional clinical images and practical advanced functional imaging are few of them.

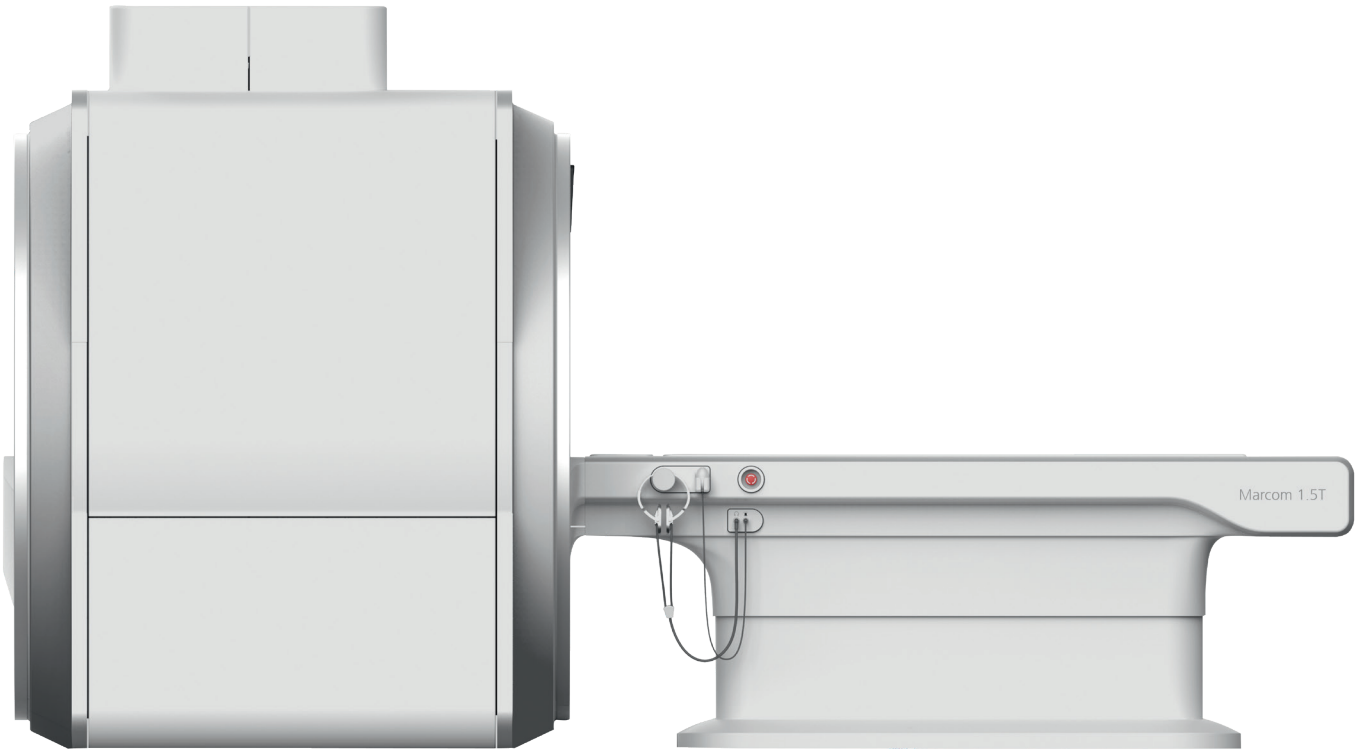
Excellent outcome
The Short cavity magnet create the most comfortability for the patients, on the other hand the high resolution images with thin slices incredibly improved the diagnosis and created the most excellent outcome

Fast Scan Speed
Thanks to the super fast scan speed combined with user friendly operation with whole body phased array coil which improved the work flow efficiency of Marcom 1.5T.

Upgrade packages
Marcom 1.5T Upgrade packages ensure your system update to the latest MR technologies, this is not limited only to software also the hardware will be included in these upgrades packs.

Minimum Space Requirement
The brilliant magnet design creates a compact system to minimize the space requirement to 35 square meters.

Economic Investment
The upgrade packs, zero helium consumption, low electric consumption; low maintenance cost, smaller space requirement made Marcom 1.5T the most economic investment plan for hospitals and diagnostic centers.



POWERFUL FEATURES

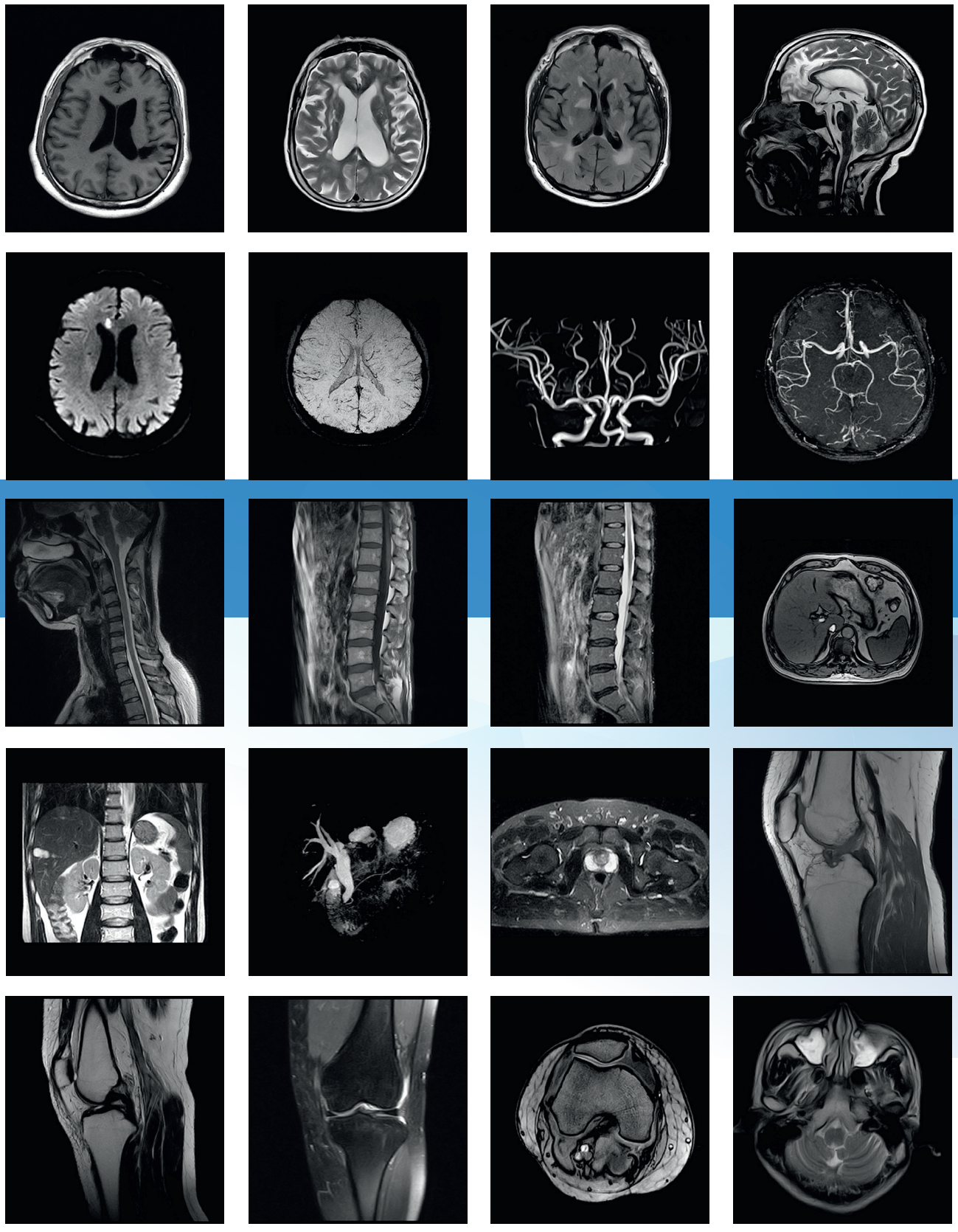
- Fully digital RF system
- Receiving Channel: 16
- 4K cold head technology
- Receiving Coil: Phase Array Coils
- Image reconstruction speed 1500 fps
- Parallel acquisition technology platform
- Technology of liquid helium „zero" consumption
- Advanced imaging techniques and clinical application
- 8" TFT- LCD display on Magnet, real-time display system status
- Maximum gradient field and slew rate reached at the same time
- Fully digital real-time transmit and receiving gradient control system
- Patient table can be controlled by machine cover in case of emergency

Different Multi-channel phased array receiver coil

Standard package
- Head coil, 8 channels
- Neck coil, 8 channels
- Body coil, 16 channels
- Knee coil, 8 channels
- Shoulder coil, 4 channels

Optional
- Ankle coil, 8 channels
- Wrist coil, 8 channels
- Breast coil, 4 channels
- CTL coil
- Finger coil, 8 channels

EXCELLENT CLINICAL IMAGES



TECHNICAL SPECIFICATIONS
Marcom 1.5T | SternMed superconductive MRI scanner

SUPERCONDUCTIVE MAGNET	
Superconductive Magnet	1.5T active shield superconducting magnet
Magnet net weight	4t (include 100% liquid helium)
Homogeneity	≤0.45 ppm @ DSV 45cm ≤0.20 ppm @ DSV 40cm ≤0.08 ppm @ DSV 30cm ≤0.02 ppm @ DSV 20cm
Stability	≤0.1 ppm/h
Helium boil-off rate	Zero boil off
Helium refill period	≥3 years
5 Gauss Fringe Field (X,Y,Z)	≤2.6m,2.6m,4m
Patient aperture	605mm ±5mm
Length of magnet(with cover)	170cm
Bed lowest height	63cm
GRADIENT	
Gradient System	Full digital real-time transmit and receiving gradient control system
Cooling System Type	Water-cooled
Gradient strength	40mT/m
Slew rate	150mT/m/ms
RF SYSTEM	
Spectrometer	16 channnels
Power of transmitter amplifier	20KW
Receiving coil type	Standard: Head & Neck: 16ch, Body: 16ch, Knee: 8ch, Shoulder:4ch Optional : Ankle 8ch, Wrist 8ch, Breast 4ch
WORKSTATION	
Operating system	Windows 7
CPU	≥3.6GHz
RAM	8 GB
Hard disk	1 TB
The main screen displays	24"Color 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 -- FSE 2D/3D -- FSE sharing -- Single shot FSE Spin echo fat-suppression imaging Spin echo frequency fat suppression imaging Spin echo water suppression imaging FSE Min.TE□256 x 256 matrix□≤4ms FSE Min.TR□256 x 256 matrix□≤8ms FSE Min.TE□128 x 128 matrix□≤3ms FSE Min.TR□128 x 128 matrix□≤6ms
GRE sequence	GRE 2D/3D 3D GRE Min.TE□128 x128 matrix□≤0.4ms 3D GRE Min.TR□128 x128 matrix□≤1ms 3D GRE Min.TE□256 x256 matrix□≤0.8ms 3D GRE Min.TR□256 x256 matrix□≤1.5ms
EPI sequence	Single shot EPI -- Multi shot EPI -- Spin echo EPI -- Gradient echo EPI EPI Min.TR□256 x256 matrix□ ≤8ms EPI Min.TE□256 x256 matrix□ ≤3ms EPI shortest echo spacing time□128 x128 matrix ≤0.4ms EPI maximum scan layers ≥128 EPI maximum echo chain length ≥512 Max. b value = 10000
IR sequence	IR -- FIR (water / fat suppression) -- FLAIR -- Single Shot FIR -- STIR Chemical Saturation Water-fat Separation

TECHNICAL SPECIFICATIONS
Marcom 1.5T | SternMed superconductive MRI scanner

PULSE SEQUENCES		
Special K space filling and data processing method	Anti-movement propeller scanning technology Propeller scanning T2 FSE imag Propeller scanning T2 FLAIR image Propeller scanning DWI image	
Advanced imaging technology	Body Imaging	Liver dynamic enhancement technology Phase / de-phase imaging technology MR cholangiopahcreatography (MRCP) MR urography (MRU) -- MR myelography (MRM)
	Neuro imaging	High resolution cervical spine marrow imaging High resolution inner ear 3D imaging Whole spine imaging
	Diffusion weighted imaging (DWI)	Isotropic aquisition ADC measurement -- ADC-map color mapping
	MR angiography (MRA)	2D/3D TOF technology Continuous multi-layer 3D TOF technology Contrast enhanced MRA Magnetization transfer (MTC) Maximum intensity projection Multi planar reconstruction
	Susceptibility Weighted Imaging (SWI)	Compatible with parallel acquisition Magnetic sensitive intensity mapping imaging technology Magnetic sensitive phase mapping imaging technology
	Parallel acquisition technology	Algorithm based on image -- Algorithm based on K-space Parallel acquisition acceleration factor = 4 Compatible RF coil -- Compatible sequence Automatic Calibration Technology Applied Direction of Parallel Acquisition Factor X,Y,Z
	Artifact correction technology	Fluid compensation Respiratory compensation Head motion artifact correction Elimination of magnetic sensitive artifact Eddy current adaptive correction Gradient linearity correction Multi-echo phase correction
Gate Trigger	ECG -- Respiratory -- Peripheral	
SCANNING PARAMETER		
FOV	10~500 mm	
Scan orientations	Any angle (axial, sagittal, coronal, any slope, multi-layer multi-angle)	
Image type	T1 weighted imaging, 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	Drop out of the open two-dimensional movement, motor drives, cross laser positioning, Emergency braking situation or power outage, you can manually take the bed.	
Max. Patient Load	200Kg	
Positioning accuracy	≤1mm	
POWER SUPPLY		
Voltage and frequency	3N~ 380 V / 50Hz	
Input Power	Max. 100 kVA	

STERNMED®

SternMed GmbH
Schubertstrasse 31
88214 Ravensburg - Germany

Tel: +49 751 35 978 0
Fax: +49 751 35 978 105

email@sternmed.de

Rev. V. 1.03