

MRI - 3008

MRI System



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

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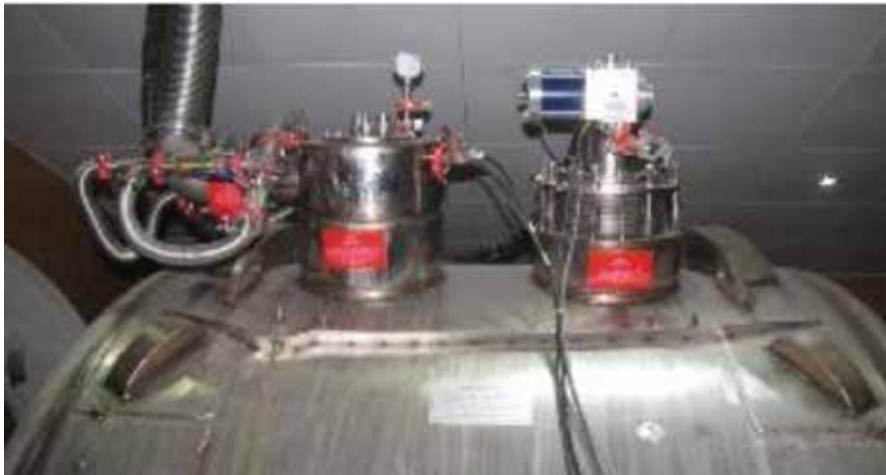
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►► **Superconducting MRI**

Superconducting MRI manufacturers, completely broke the high-end MRI monopoly by foreign brands.

MRI 3008 is a new generation of superconducting MRI product has the advantages in novel design, excellent performance, high comfort and more patient care technology. The system adopts the international advanced hardware platform together with ergonomic operating software design, its advanced scan sequences and imaging technology, produces the customer with high stability and excellent performance, high signal-to-noise ratio, high resolution, high contrast clinical imaging and faster scanning speed.

1), it config 4k cold head from Japan, the brand is Sumitomo, that provides "zero" consumption of the liquid helium.



2), its cold head sound reduction technology helps to reduce the patient's claustrophobic fear, effectively avoid the involuntary movement which may cause the image artifacts and other potential risk.

3), it has fastest scanning speed, and the image quality is also much better than 1.5T MRI.

4), it using all famous parts suppliers ensuring the stable system quality.

►► **Magnet sub system**

MRI 3008 adapts advanced active shielding superconducting magnet, has the following features,

1, the magnetic field uniformity is excellent;

2, good magnetic field stability;

3, config with "zero liquid helium consumption" technology, the liquid helium refill time interval is more than 4 years;



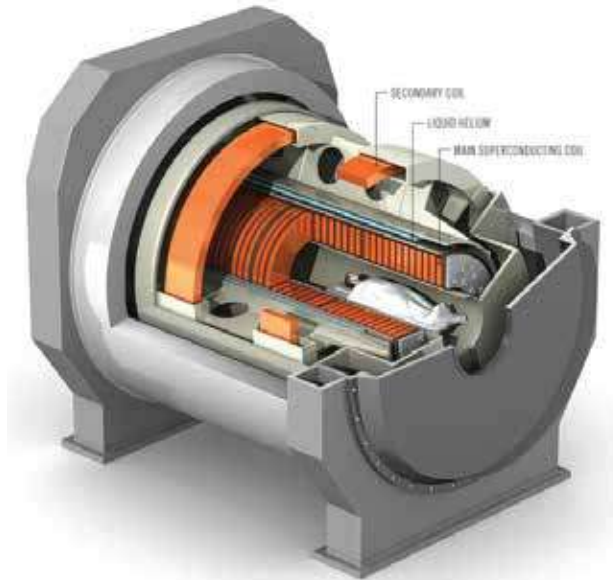
►► Gradient sub system

Gradient sub system directly determines the spatial encoding of MRI system, it produces the signal information, at the same time it can perform GR series sequence scanning, it is the foundation of MRI system's spatial resolution ability, gradient sub system also directly affect the scanning image thin slice scanning.

The linearity of gradient system of MRI system determine the accuracy of spatial location information, ensuring that in any acquisition, the image distortion is limited.



Gradient switching rate is an important factor of MRI scanning speed. MRI 3008 using the self-shielding gradient coil and high duty cycle gradient amplifier system, together with eddy elimination technology and design, can avoid the eddy current between the metal shielding layers, raise up the spatial encoding ability of the magnetic resonance signal and make the scan more precise, ensure high resolution image quality.



During superconducting MRI scans, the noise is much bigger, and staying in a closed environment, the patient is easy to fall into tension. MRI 3008's gradient sub system adopts special hardware noise reduction design technology, the gradient noise is reduced to 2/3, provide patients with friendly scanning environment.

The gradient system is equipped with automatic detection function, if the temperature is too high, the system can intelligently stop the scanning, to protection of hardware from being damaged. The system use water chiller to produce a stable running condition.

►► RF sub system

The RF sub system is the source of MRI proton excitation energy, its efficiency directly affects the MRI relax signal. RF receiver receive MRI relax signal, a good receiving coil can improve the SNR of image.

The RF sub system is similar as highway lane, the more lanes, the faster flow of vehicles. Vice versa, the more the RF system channels, the faster parallel acquisition, thus the system can process the greater the amount of data in the same time, reduce the imaging time. MRI 3008 uses 16/32 channel radio frequency receiving, combined with the latest parallel sampling technology,



using the DDC digital direct sampling, can short the scan time and get excellent image quality.



►► Rich coil configuration

The Receiver coil, together with parallel acquisition technology, improve the signal-to-noise ratio and image quality. The customer can choose according to the clinical needs (specific configuration of the coil number and types will be subject to final contract).

- AIT coi I set
- Knee coil
- Shoulder coil
- Ankle coil
- Wrist coil
- Breast coi I



►► Software

MRI 3008 provides comprehensive scan kit and scanning sequence, with rich clinical application of the full body, with a full range of scan plan, assist the customer's clinical diagnosis.

Advanced scanning sequence are provided as well as all routine scan, the system also can take vascular imaging, includes a broad range of capabilities supporting fast, accurate diagnosis of brain conditions and injuries. From anatomical depiction to vascular 3D reconstruction. SYP MRI 3008 provides the power, coils and sequences for fast, intuitive, high quality spine imaging, from routine views to advanced stitching studies.



MRI 3008 provides a versatile suite of imaging capabilities for body imaging to meet the growing demands of abdominal, pelvic, and breast exams. Including MRU/MRCP/MRM imaging, and other advanced imaging sequences. Rich post-processing software can optimize images in case necessary to help in complex diseases diagnosis, excellent image quality and abundant imaging techniques. Workflow is critical to the efficient operation of an MRI. It impacts patient satisfaction, image quality and cost effectiveness. MRI 3008 provides full preset of clinical diagnostic scan protocol, based on rich clinical experience, corresponding arrangement and optimization have been made per related clinical application features for the scan procedure and sequence parameters of the preset scan method. With unmatched clinical capability, MRI 3008 provides an unprecedented ability to acquire complete exams with a motion compensated scan technique.

By adopting the brand-new phase array coil and scan control software, application of parallel acquisition accelerating technique, improve most sequence scanning speed, on the premise of image quality guarantee, accelerating factor can reach 6 or more as the maximum.

MRI 3008 system keeps pace with international design and research, keeps improving the present clinical functions to provide lifetime free software upgrade for its users as well as let the hospital enjoy the most advanced MRI clinical application techniques.

The RF system, delivers integrated coil technology to simplify patient positioning and extend coverage with high SNR, providing extremely fast scan solution, with the help of brand-new multi-channel coil and parallel accelerating technique, it gives higher spatial resolution of head images, clearer display of anatomic structure and lesions, and less artifact.

For restless patients and those who can't cooperate, the preset extremely fast scan sequence can be used, which is very appropriate for fetus, newborns and infants.

K_Rotat artifact erasing technique, by using stripped K space rotating filling method to complete acquisition, can completely erase the effect of movement artifact on images and greatly improve SNR at the same time to provide guarantee for accurate diagnosis.

High resolution isotropic diffusion imaging, based on powerful gradient system and amplifier system, MRI 3008 realizes faster and more reliable DWI images with high resolution, anatomic structure of head is clear, diffusion image features is obvious, very convenient for lesion location lock and lesion nature diagnosis.

HD susceptibility-weighted imaging, imaging based on the differences of magnetic susceptibility in different tissues, is a contrast enhancement technique which reflects magnetic properties of tissue. It is extremely sensitive to bleeding or de-oxidation part in blood, can provide accurate information on bleeding, arteriovenous malformation, iron deposit to realize faster and more accurate diagnosis, even the very small lesion can be quickly diagnosed too.

Fast high-resolution abdomen diffusion imaging, under the support of brand-new parallel acquisition technique, realizes abdomen diffusion imaging with high spatial resolution, high time resolution and high contrast resolution, providing excellent tool of abdomen cancer diagnosis.

Extremely HD 3D TOF blood vessel imaging, optimized K space acquisition and filling method, suppression uniform of obtained images background, no artifact, clear blood vessel trend, can display tertiary vascular or above.

scDWI (optional)

In DWI, acquisition of low-b-value has better tissue SNR, but is not sensitive enough to water proton;

Acquisition of high-b-value has better DW sensitivity of water proton, but reduces the tissue SNR as well as the lesion location function;

By using special computation method, scDWI only needs one single DWI sequence to complete the calculation of multi-b-value within certain range, min. 100s/mm. Meanwhile, comparing to direct acquisition of DWI images, scDWI technique greatly improved the SNR of high-b-value DW image, avoid distortion of high-b-value images, very good for lesion diagnosis. The fool-proof coil interface design makes the coil live longer.

►► E-alarm technology

At the same time, in MRI 3008 configuration there is a special monitoring system, it is simple and easy to operate, it can real-time monitoring the magnet internal pressure, temperature and liquid helium level, if the magnet condition is abnormal, the monitoring system can automatically send alarm information to the user's phone, it can greatly reduce the risk of magnet quenches.

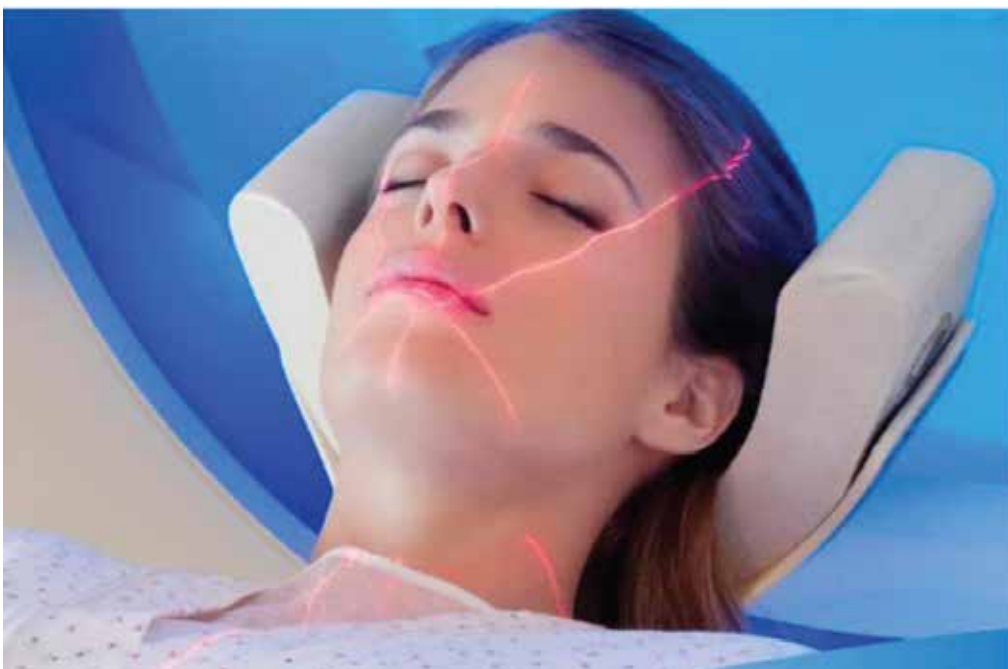
►► Interactive environment

- 1, Motor-driven patient table.
- 2, Built-in-magnet high resolution screen, the operation is convenient.
- 3, Have emergency stop function, protect the patients.
- 4, High positioning accuracy.
- 5, Support operation on both sides of the magnet, convenient and quick.

►► Water chiller set

Intelligent touch screen design, visual operation, and be convenient for maintenance.

- 1, automatic overheating, leaking, fault detection, safe and reliable.
- 2, one key recovery function.
- 3, config with a set of spare water chilling unit, no need to have any worry about the system downtime.



►► 2 MRI 3008 Specification

No.	Item	Specification
One	Equipment Introduction	
1	Use	For all parts of the body MRI Scan
Two	Magnet System	
1	magnetic field Strength	3.0T
2	Center frequency	127.7MHz
3	Magnet Type	Superconducting Magnet
4	Magnet Material	Niobium-titanium alloys
5	Anti-electromagnetic interference	Yes
6	Magnet stability	0.1 ppm/h
7	Uniformity of magnetic field	Typical values, V-RMS measurements
7.1	10cm DSV	0.005ppm
7.2	20cm DSV	0.027ppm
7.3	30cm DSV	0.056ppm
7.4	40cm DSV	0.250ppm
7.5	45cm DSV	0.460ppm
7.6	50cm DSV	1.500ppm
8	Compensation technology of magnetic field shimming	Yes
9	Shim mode	Active uniform field + passive leveling
10	Magnet weight (with liquid helium)	4600kg
11	Magnet length (excluding shell)	160cm
12	Patient aperture.	60cm
13	Cooling mode	Liquid helium
14	Liquid helium consumption rate	0
15	Volume of liquid helium	1450L
16	Cold head Type	4K Cold Head
17	5 Gauss line range	3.1m x 3.1m x 5.5m
Three	Gradient System	
1	Gradient Control Technology	Full digital real Time
2	Gradient Cooling Mode	Water
3	Maximum gradient intensity	46mT/m
4	Maximal gradient slew rate	288T/m/s
5	Minimum gradient rise time	0.159ms
6	Maximum gradient field, maximum gradient switching rate and maximum FOV can be achieved	Yes

	Simultaneously	
7	Max duty ratio	100%
8	Shielding mode	Active shielding
9	Gradient working mode	Non-resonant type
10	Gradient Noise Reduction Technology	Yes
Four	RF System	
1	Number of independent RF sources	1 or 2
2	Number of independent RF amplifiers	1 or 2
3	Each RF source can independently adjust the RF pulse phase, waveform, amplitude	Yes
4	RF Transmitter Power	35kW or 18kW * 2
5	Max RF transmit field	20μT
6	RF Power Amplifier Type	Water-cooled/ Digital Interface
7	Transmitter Coil auto tuning	Yes
8	Number of independent RF channels	16 / 32
9	RF Receiver Sampling rate	100MHz
10	Receive dynamic range (1Hz bandwidth)	140db
11	Noise coefficient	0.5dB
12	Full digital demodulation and filtering Technology	Yes
13	RF Energy Monitoring	
13.1	Real-time digital RF energy Monitoring	Yes
13.2	Real-time digital RF energy accumulation monitoring	Yes
13.3	Real-time digital RF energy accumulation monitoring	Yes
14	RF receiver coils and related Technologies	
14.1	Orthogonal transmitting/ receiving	Yes
14.2	Head-neck coils	24 Channel
14.3	Body Coil	12 Channel
14.4	Spine Coil	18 Channe
14.5	Large Flexible Multi-function coil	8 Channel
14.6	Breast Dedicated coil	8 Channel
14.7	Knee Dedicated coil	8 Channel
14.8	Shoulder Dedicated coil	Optional
14.9	Ankle Dedicated coil	Optional
14.10	AIT Scanning technology	Yes

14.11	Note: coil configuration is subject to the final contract	
Five	Computer	
1	CPU	3.4GHz
2	Number of processor digits	64bit
3	Memory capacity	8GB
4	Hard disk capacity	500GB
5	Image storage capacity (512 matrix)	0.6million
6	Display resolution	1920 x 1200
7	Display size and specifications	24 inch
8	Maximum acquisition matrix	1024 x 1024
9	Maximum Reconstruction matrix	1024 x 1024
Six	Post-processing interface	
1	Software Control camera Technology	Yes
2	DICOM 3.0 interfaces and PACS network connections (including print, transmit, receive, query, worklist, MPPs)	Yes
3	Standard Laser Camera Digital Interface	Yes
Seven	Scan parameters	
1	X axis Max FOV	500mm
2	Y axis Max FOV	500mm
3	Z axis Max FOV	500mm
4	Minimum FOV	5mm
5	Thinnest layer thickness	0.1mm
6	20 SE Shortest sequence TR time (128 matrix)	7ms
7	20 SE Shortest sequence TE time (128 matrix)	2.4ms
8	20 FSE Shortest sequence TR time (128 matrix)	7ms
9	20 FSE Shortest sequence TE time (128 matrix)	2.4ms
10	20 FSE Sequence minimum echo spacing (128 matrix)	2.4ms
11	20 FSE sequence maximum echo chain length (ETL)	512
12	20 GRE Shortest sequence TR time (128 matrix)	1.0ms
13	20 GRE Shortest sequence TE time (128 matrix)	0.6ms

14	30 GRE Shortest sequence TR time (128 matrix)	1.2ms
15	30 GRE Shortest sequence TE time (128 matrix)	0.5ms
16	EPI Sequence minimum echo interval (128 matrix)	0.57ms
17	EPI Shortest sequence TR time (128 matrix)	4.7ms
18	EPI Shortest sequence TE time (128 matrix)	1.3ms
19	Maximum dispersion weighted b value	10000
Eight	Scanning technology and sequence	
1	Spin echo sequence (FSE)	Yes
1.1	2d/3d Fast spin echo	Yes
1.2	SE sequences measured by tissue relaxation time	Yes
1.3	SE sequences with selectable angles	Yes
1.4	Single echo, dual echo and multi-echo technology	Yes
1.5	Single excitation fast spin echo sequence	Yes
1.6	Fat-sat sequence	Yes
1.7	Fast Fat saturation Technology	Yes
1.8	water-sat sequence	Yes
1.9	Reverse recovery (IR)	Yes
1.10	General IR sequence	Yes
1.11	FLAIR	Yes
1.12	Fast TI-FLAIR	Yes
1.13	Fast T2-FLAIR	Yes
1.14	Rapid inversion recovery sequence (fat-sat, water-sat)	Yes
1.15	Short TI inverse echo water-fat separation imaging	Yes
1.16	"True" inversion recovery sequence (contrast imaging of gray-white matter)	Yes
2	Gradient echo (2d/3d), including	Yes
2.1	Multi-layer gradient echo	Yes
2.2	2d/3d residual magnetization removal gradient echo technology	Yes

2.3	2d/3d residual magnetization gradient echo technology	Yes
2.4	Heavy T2 weighted High Contrast sequence	Yes
2.5	30 Gradient Echo Technology	Yes
2.6	Fast steady-state progressive gradient Echo	Yes
2.7	Super-fast field echo sequence	Yes
2.8	Three-dimensional imaging technology	Yes
3	Planar echo imaging (EPI)	Yes
3.1	Single-excitation planar echo imaging technology	Yes
3.2	Multi-excitation planar echo imaging	Yes
3.3	Spin echo EPI	Yes
3.4	Gradient echo EPI	Yes
3.5	Reverse EPI	Yes
3.6	High resolution EPI Collection	Yes
4	Neuroimaging technology	Yes
4.1	High resolution anatomical imaging	Yes
4.2	High resolution three-dimensional imaging technology of inner ear	Yes
4.3	Full Spinal cord imaging	Yes
5	Diffusion imaging technology	Yes
5.1	ADC Imaging	Yes
5.2	Isotropic acquisition	Yes
5.3	Anisotropic acquisition	Yes
5.4	ADC Value Measurement	Yes
5.5	ADC-map	Yes
5.6	Automatic acquisition and processing	Yes
5.7	Single-shot EPI	Yes
5.8	Multi-shots EPI	Yes
5.9	Real-time diffusion imaging	Yes
5.10	Automatically generate ADC diagram	Yes
5.11	Optional optimization B value	Yes
6	Vascular imaging technology	Yes
6.1	Time Of Fly Technology (2d/3d)	Yes
6.2	Imaging technology of arteriovenous separation	Yes
6.3	MTC technology	Yes
6.4	Maximum density projection	Yes

	Technology	
6.5	Variable reversal Angle RF technology	Yes
6.6	MIP	Yes
6. 7	2d/3d Water Imaging Technology (MRCP, MRU)	Yes
6.8	Real-time interactive MIP	Yes
7	Artifact removal technology	Yes
7.1	Fluid compensation	Yes
7.2	Respiratory compensation	Yes
7.3	Flow correction	Yes
7.4	Regional saturation Technology	Yes
7.5	Deconvolution Artifact Removal technology	Yes
7.6	Motion Artifact Elimination technology	Yes
7.7	Image filtering Enhancement Technology	Yes
7.8	K Space Noise Reduction technology	Yes
7.9	Ring artifact suppression	Yes
8	Section-scan technology	Yes
8.1	Semi-scanning technology	Yes
8.2	Full directional partial coding acquisition technology	Yes
8.3	Rectangular FOV acquisition technology	Yes
8.4	Three-dimensional overlapping continuous acquisition technology	Yes
8.5	Parallel acquisition and reconstruction Technology	Yes
8.6	Partial echo Acquisition	Yes
9	Other imaging technology	Yes
9.1	Short TR TE Fast Imaging	Yes
9.2	Three-dimensional positioning system	Yes
9.3	Positioning technology of radial slice layer	Yes
9.4	Scan pause	Yes
9.5	Variable Bandwidth technology	Yes
9.6	Pre-scanning technology	Yes
9. 7	Signal noise ratio display function	Yes
9.8	Mute Scanning technology	Yes
9.9	Real-time interactive imaging	Yes

9.10	Real-time localization	Yes
9.11	Real-Time Interactive parameter change	Yes
9.12	High Resolution imaging	Yes
9.13	Combined scan function	Yes
9.14	Water Saturation Technology	Yes
9.15	Pre-saturated technology	Yes
9.16	Maximum saturation zone number	3
9.17	Parallel saturation Zone	Yes
9.18	Adjoin saturation Zone	Yes
9.19	Fat saturation Technology	Yes
9.20	Signal averaging technology	Yes
9.21	Frequency Coding Direction Extended Acquisition	Yes
9.22	Phase coding direction expands acquisition	Yes
9.23	Partial Center scanning technology	Yes
9.24	Variable K space Filling method	Yes
9.25	K Fast Space Acquisition	Yes
9.26	Coil Sensitivity correction technology	Yes
9.27	Enhancement technology	Yes
9.28	Correction technology of image luminance uniformity	Yes
9.29	Automatic Center Scanning technology	Yes
9.30	Image reconstruction Technology	Yes
9.31	Image interpolation Amplification Technology	Yes
9.32	Image Distortion Correction Technology	Yes
10	Advanced clinical application packages	Yes
10.1	Neuro Imaging software Package	Yes
10.2	Body Imaging software Package	Yes
10.3	Bone and joint imaging software Package	Yes
10.4	Tumor Imaging software Package	Yes
10.5	Breast Imaging software Package	Yes
Nine	The patient examine environment	
1	Two-way patient call system	Yes
2	Magnetic noise-reducing headphones	Yes

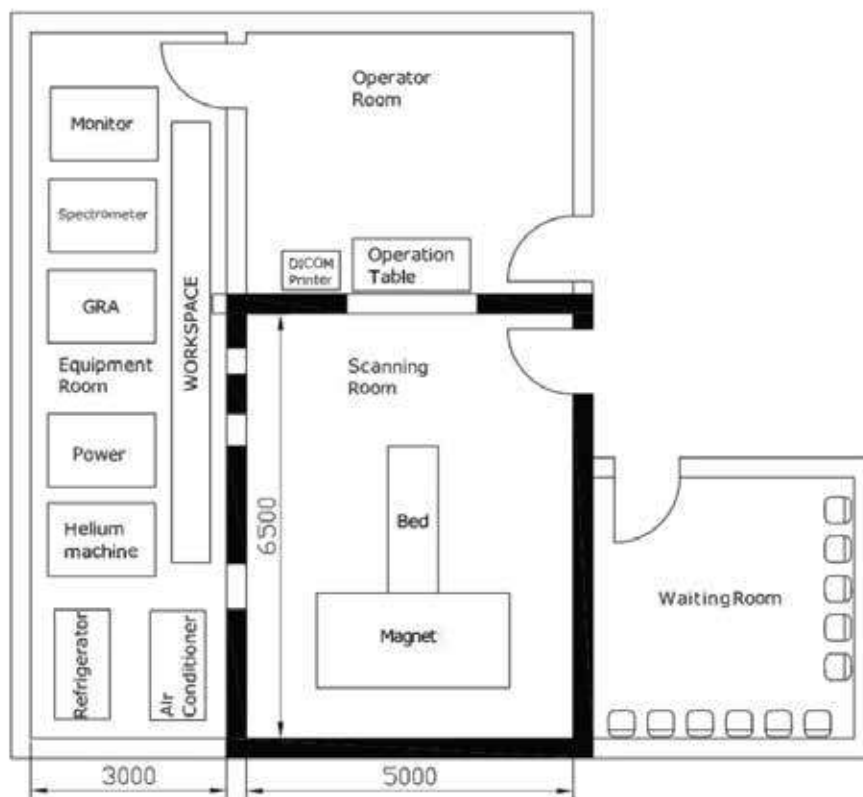
3	Aperture Ventilation system	Yes
4	Aperture lighting system	Yes
5	Embedded display	Yes
5.1	Patient monitoring System	Yes
5.2	Bedside Patient Control system	Yes
6	Patient Emergency call Device	Yes
7	Maximum load bearing of inspection bed	200KG
8	Minimum bed height for inspection beds	62cm
9	Maximum speed of horizontal motion of scan bed	20cm/s
10	Scan bed Length	245cm
11	Maximum scanning range	>150cm
12	Multi-station stitching	Yes
13	Bedside Emergency brake button	Yes
14	Bedside Switch	Yes
15	Breath gating	Yes

►► Service

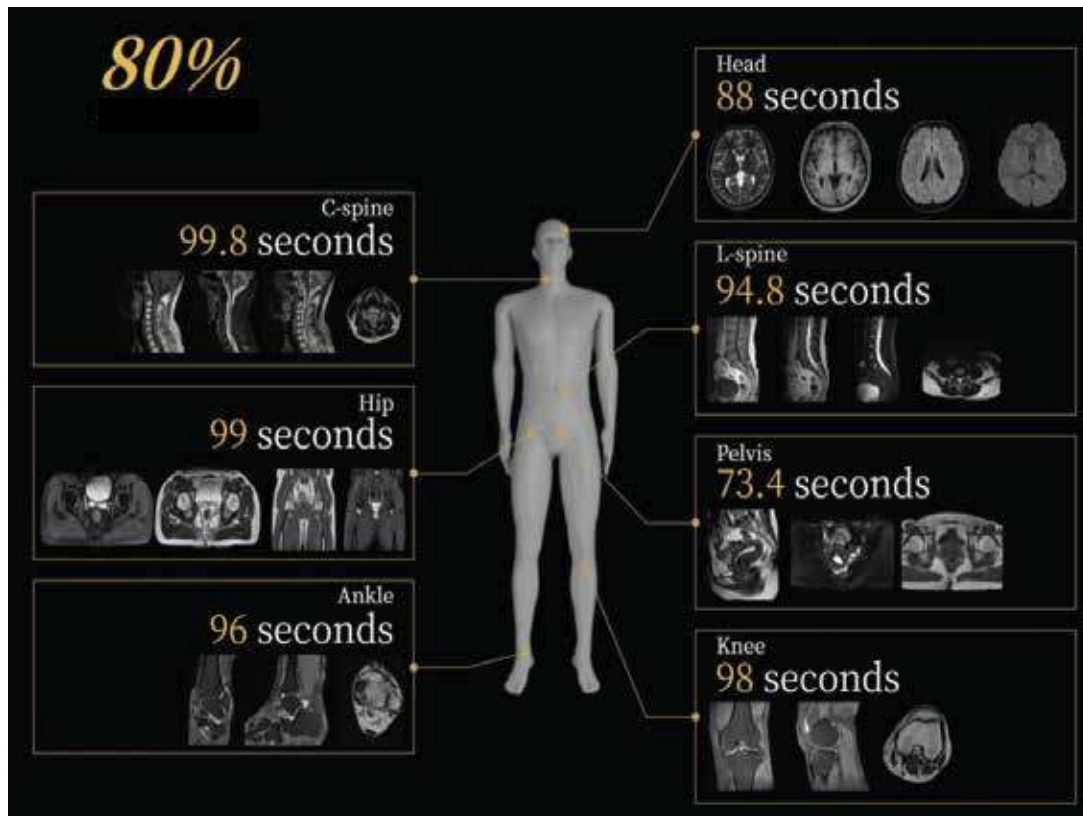
- Three-level service network
 1. Loca I partner engineer: primary diagnosing+ in site maintenance
 2. Basda service engineer: remote technical support+ in site service (in case necessary)
 3. Basda R&D center: technical support
- Spare parts
 1. Inventory is always ready
 2. Delivery by express: within 2 working days pack off
 3. Engineer carry-on: For big issue engineer will be in site with the spare parts service

►► MRI Site requirements

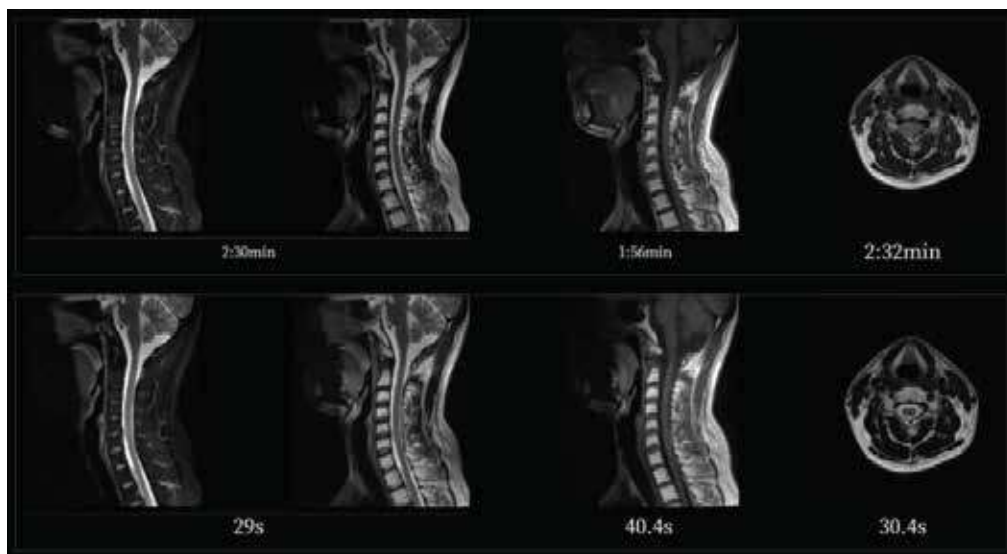
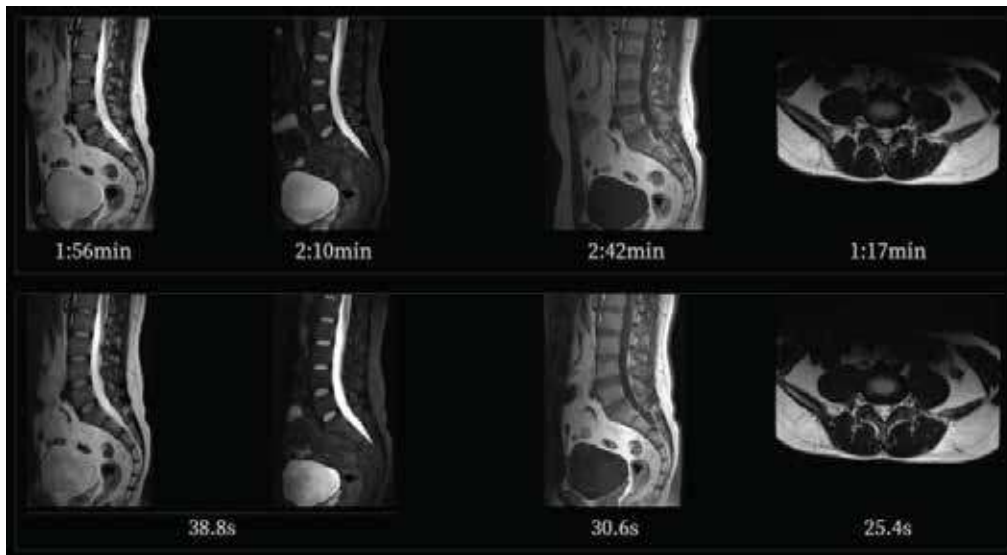
Sample, MRI 3008 needs at least 3 rooms, sample shown as following:



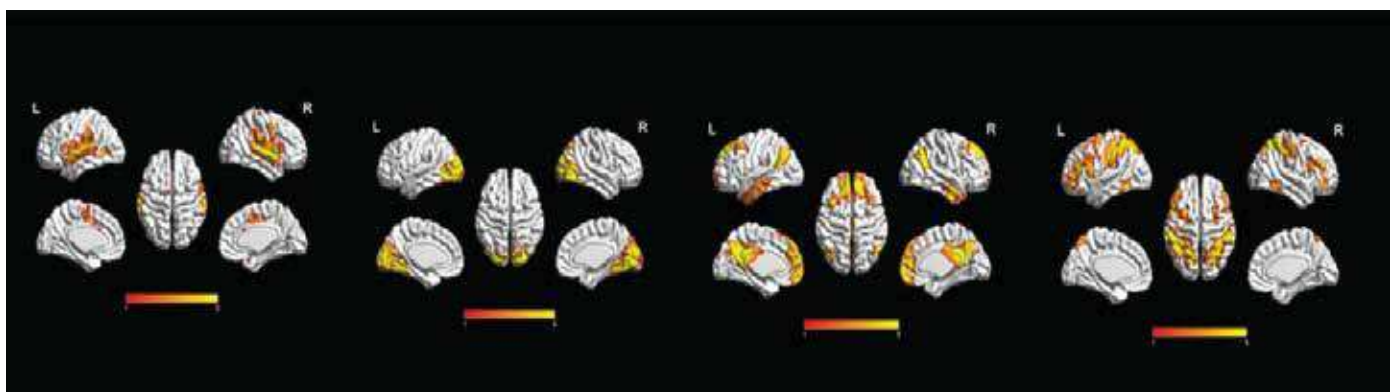
ACS can achieve ultra-fast 100-second imaging covering all parts of the body, achieve a leap in scanning speed, and save an average of 80% of scanning time. For clinicians, the same examination can save several hours a day, greatly improve the efficiency of clinical examinations in the radiology department, and alleviate the old problem of the backlog of patients in the MRI department. With improved efficiency, doctors can focus more on diagnosing patients and diseases



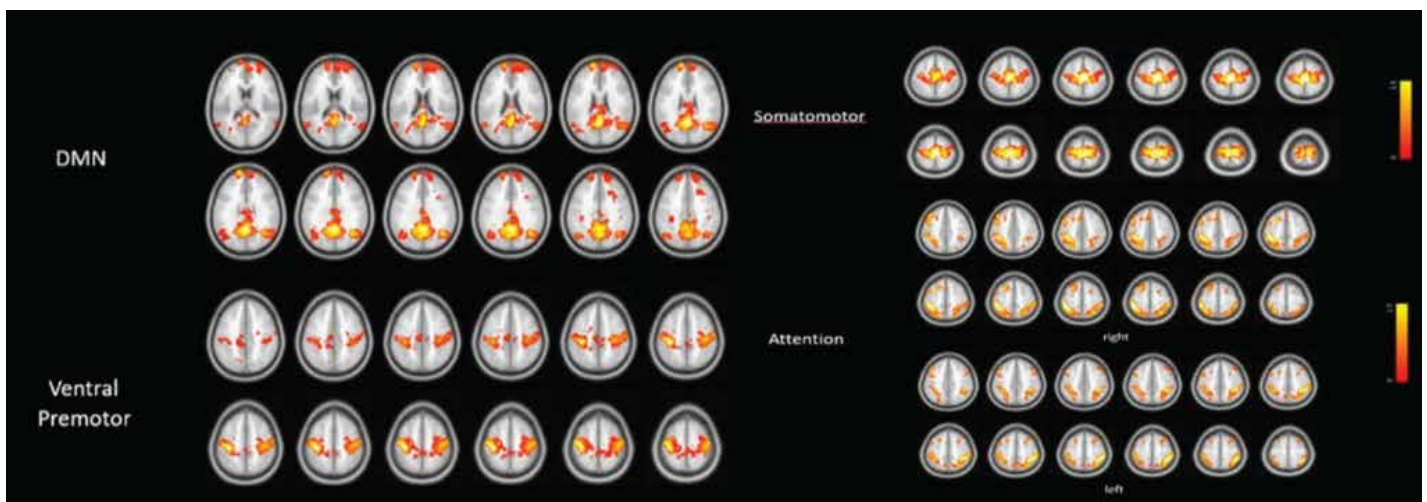
ACS ultra-fast imaging, for patients, it can take about the same time as CT to complete routine MRI examinations, especially for some elderly people, children and other inconvenient patients who are less cooperative, ultra-high-speed scanning can not only improve the inspection The degree of cooperation also helps to improve the success rate of MRI examinations. At the same time, ultra-fast imaging can reduce the waiting time of patients, soothe patients' emotions, and complete the examination better.



Multi-layer resting-state functional brain imaging



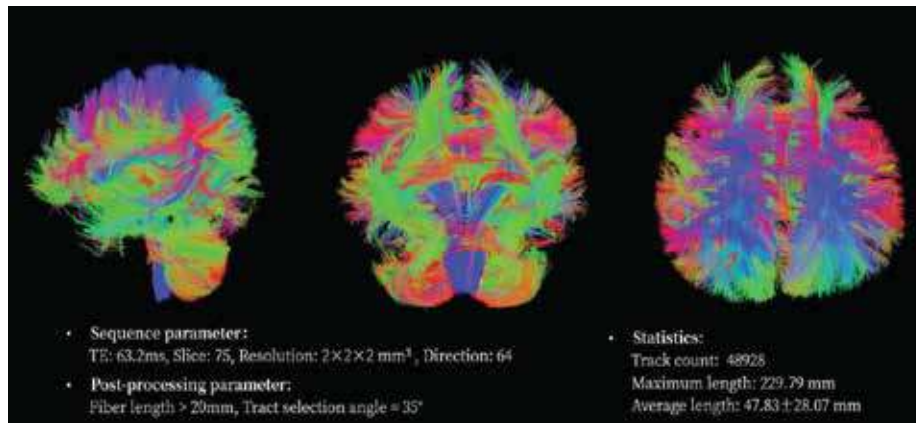
Based on the Exploration 3.0T Magnetic Resonance Extreme Edition, the "wake-up surgery combined with direct electrical stimulation" was used to verify the relationship between brain structure and functional divisions. Based on advanced functional brain imaging, the language functional area can be accurately located before surgery. During the operation, wake-up anesthesia and electrical stimulation methods are used to verify and clarify the language functional area. On the premise of protecting the language functional area, the treatment of brain diseases can greatly reduce the risk of The degree of damage to the language function of patients after surgery. Combined with the high-definition, high-resolution anatomical structure images realized on the Discovery 3.0T MRI Extreme Edition, as well as a series of rich advanced software applications and AI applications, it is helpful for preoperative planning and postoperative follow-up of brain tumor surgery.



Multidirectional high-resolution whole-brain fiber tract tracing

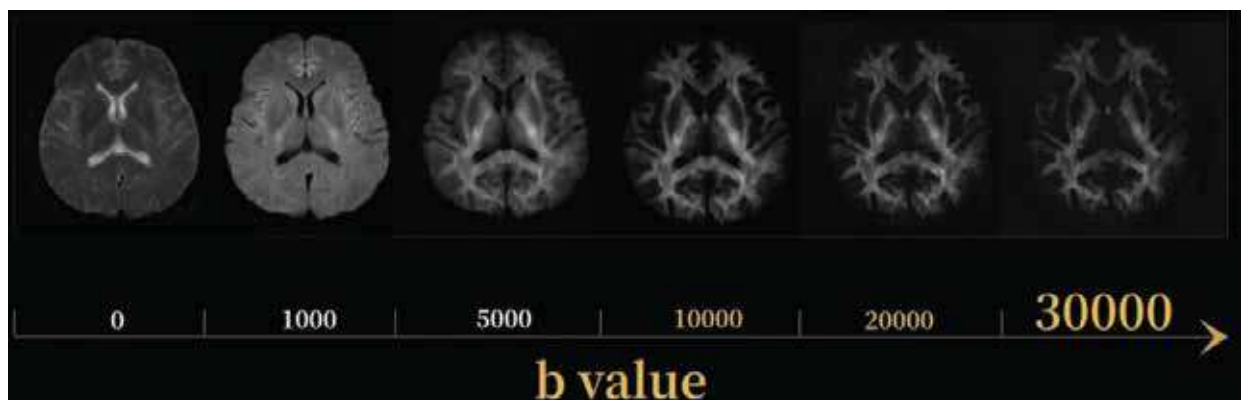
Traditional DTI has problems such as low signal-to-noise ratio, insufficient spatial resolution, and inability to display crossed and bifurcated fibers and fibers in the edema area around the tumor. Exploring the high-performance gradient of the 3.0T MRI Extreme Edition can significantly shorten the TE echo time of DTI data acquisition, improve the signal-to-noise ratio of the image, and bring more accurate FA. With the support of ultra-high gradient performance, High Angular Resolution Diffusion Imaging (HARDI) with larger b value and more diffusion gradient directions can be

achieved. At the same time, combined with the multi-layer excitation technology, the scanning time can be effectively shortened, and multi-directional multi-layer high-resolution whole-brain nerve fiber bundle tracking with more than 512 directions and more than 4 times acceleration can be realized.



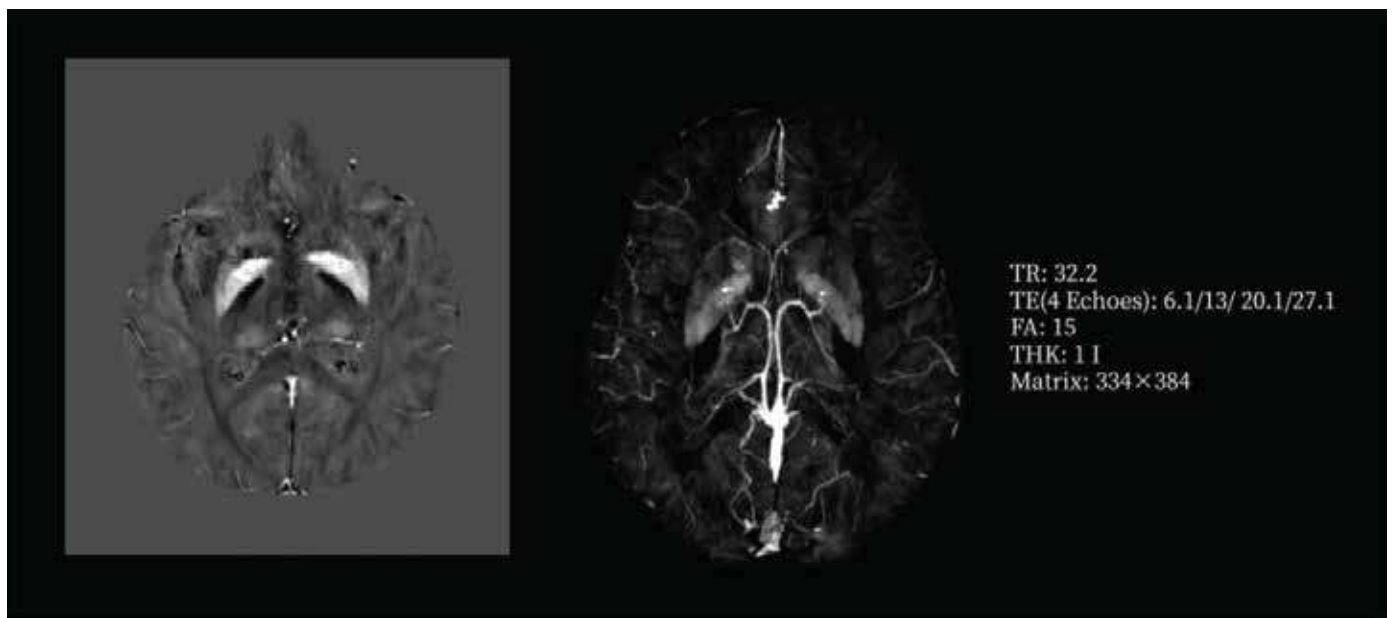
Ultra-high b-value diffusion-weighted imaging

The ultra-high-performance gradient system of the 3.0T MRI Extreme Edition can achieve higher b-value diffusion-weighted imaging, higher signal-to-noise ratio and smaller deformation. The maximum b value of traditional diffusion-weighted imaging is generally around 10,000, while the exploration 3.0T MRI extreme version can reach a value of 30,000 b or even higher, surpassing the limit of traditional MRI diffusion imaging and providing more possibilities for brain science research.



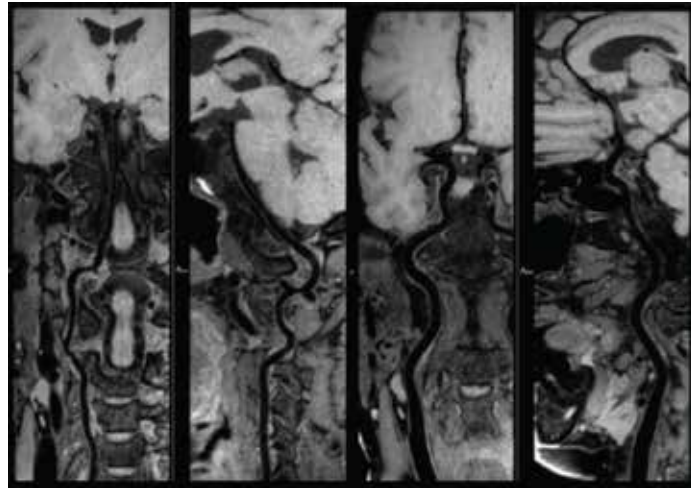
QSM Quantitative Analysis of Magnetic Susceptibility*

The QSM can precisely interpret the distribution of the magnetic susceptibility of the tissue and evaluate the value of the main source of the magnetic susceptibility. Compared with SWI to obtain more accurate phase information, it can intuitively quantify the magnetic susceptibility of each part of the tissue, and it can better display complex structures, iron deposition, calcification and bleeding. It is important in neurodegenerative diseases, multiple sclerosis and other diseases. clinical significance. For example, QSM can identify the increase of iron content in the substantia nigra in the early stage and monitor the changes of iron content in the course of the disease, which has guiding significance for the early diagnosis and treatment of Parkinson's disease.

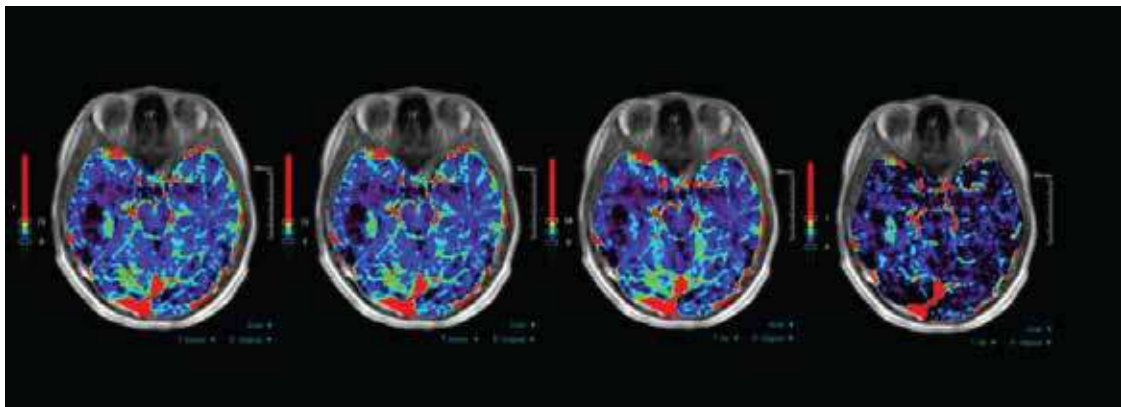


Rapid High Definition Vascular Wall Imaging (MR-VWI)

The intracranial artery MR-VWI provided by the 3.0T MRI extreme version can determine whether there is plaque in the stenosis, the location of the plaque, the relationship with the branch vessel opening, and quantitatively evaluate the plaque load and lumen remodeling. At the same time, the obvious enhancement of the plaque after enhancement indicates that the new blood vessels in the plaque are abundant and the permeability of vascular endothelial cells is increased, which is a sign of the degree of plaque inflammation. In addition, quantitative measurement of plaque size, plaque burden, luminal stenosis rate, and inferred carotid plaque composition play an important role in the secondary prevention of ischemic stroke



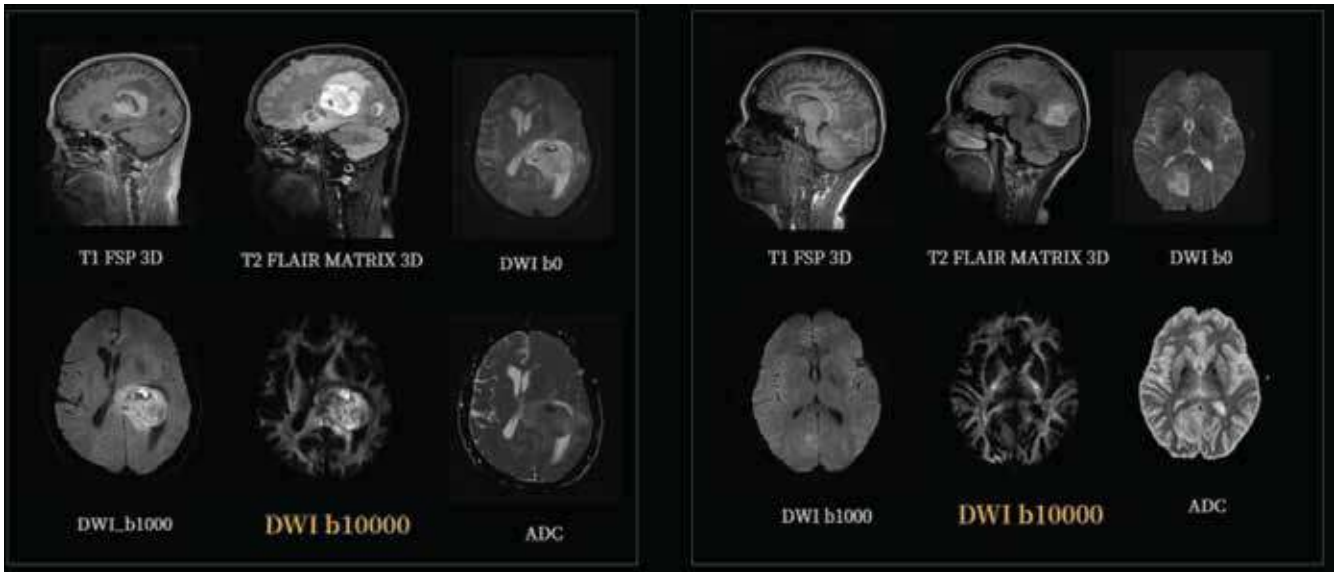
DCE Precise Quantitative Imaging



to analyze and evaluate the structural and functional characteristics of the blood vessels in the tumor tissue. In this case, there is a lesion in the peripheral zone of the right prostate with high signal intensity on DWI. The DCE parameter map K_{trans} , K_{ep} and V_p are enlarged. The time-concentration curve of the lesion is fast-in and fast-out, which is consistent with tumor manifestations. range matches.

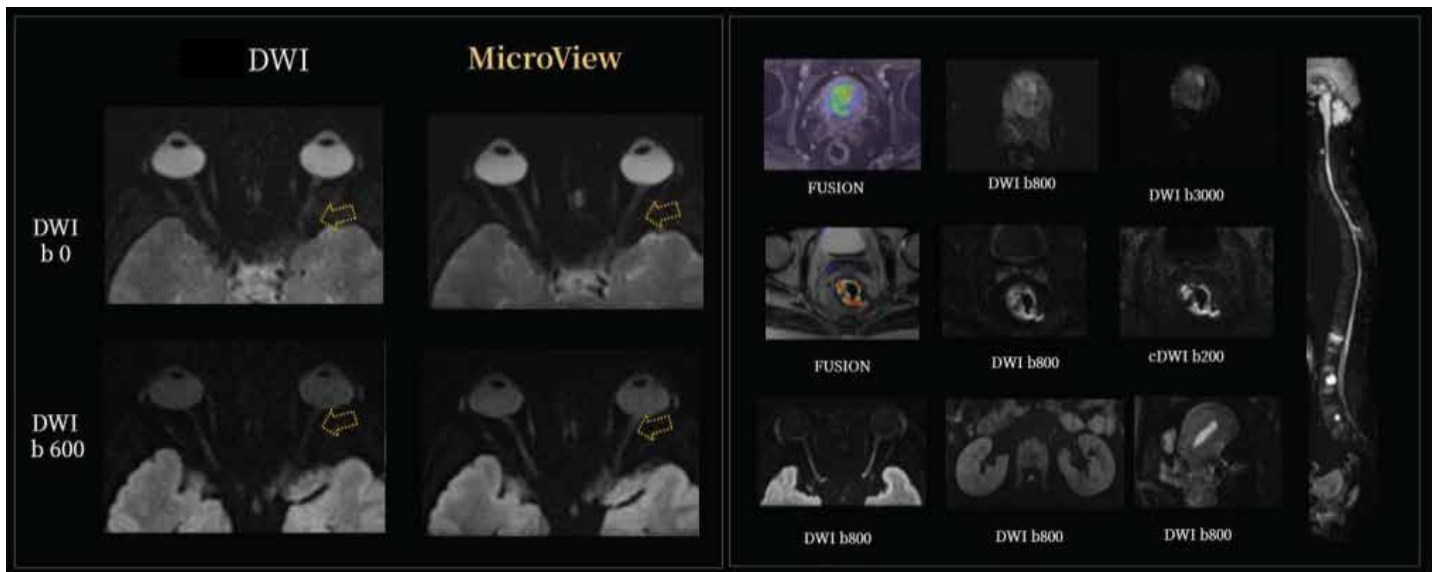
High b-value tumor solutions

In traditional diffusion-weighted imaging, the phase correction algorithm is unstable and prone to $N/2$ Ghost artifacts, especially in parts where the BO field is not uniform, such as the nasopharynx, cervical spine, breast, etc., and even affects the stitching effect of whole-body PET. The optical shuttle dispersion of the 3.0T MRI Extreme Edition abandons the linear serial reconstruction (phase correction-parallel imaging-average) in the classic algorithm, and innovatively adopts the iterative complex domain algorithm patented by United Imaging, which not only greatly reduces the bO Artifacts caused by field inhomogeneity, reducing the white noise floor. Combined with the ultra-strong gradient performance of the 3.0T MRI Extreme Edition, shorter TE, higher image signal-to-noise ratio and detail display, it is easy to obtain high-quality high-b-value images.



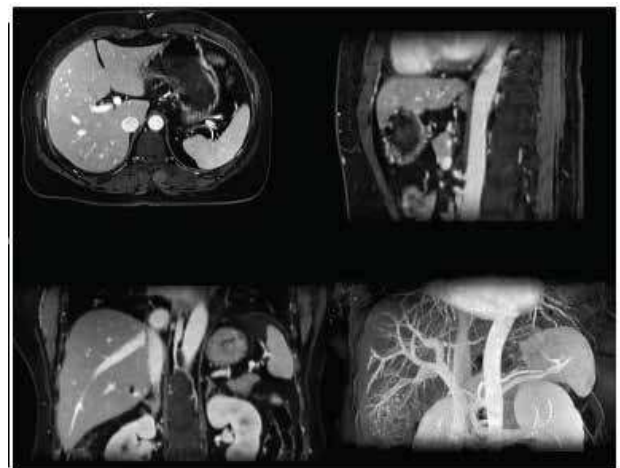
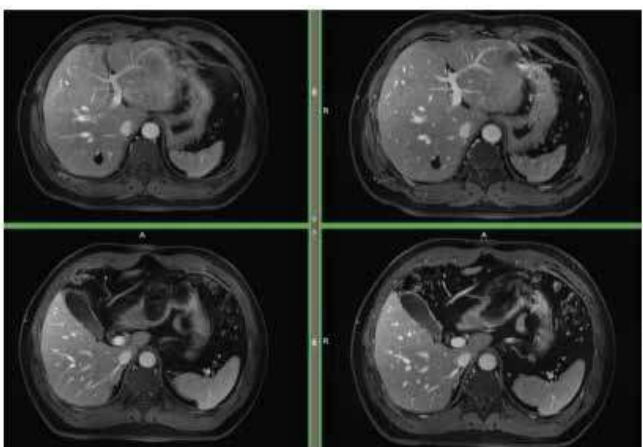
Macro Diffusion - MicroView DWI

DWI has been routinely used in the qualitative diagnosis and identification of craniocerebral and body lesions, but it still faces the following problems: (1) Due to the large field of view, it often covers liquid, gas, soft tissue, bone and other substances with different magnetic sensitivities at the same time. The problem caused by inhomogeneity is more prominent. (l) The echo chain of ssEPI itself is very long, which is easy to accumulate phase errors, and the bandwidth in the phase direction is small, which easily leads to image deformation. Long echo chains cause T2* attenuation, which in turn leads to image blur and signal loss@) In order to control the degree of image deformation, the spatial resolution of ssEPI image is relatively low, and if the matrix is increased, the length of the echo chain will increase the image deformation and blurring, so the method of increasing the resolution by increasing the matrix in the conventional sequence is not applicable. Therefore, there is an urgent need for a DWI imaging technique with high resolution, high signal-to-noise ratio and small distortion. At present, the MicroView DWI unique to the 3.0T Magnetic Resonance Extreme Edition has solved the series of problems of traditional DWI.



Abdominal High Resolution 3D Augmentation Solution

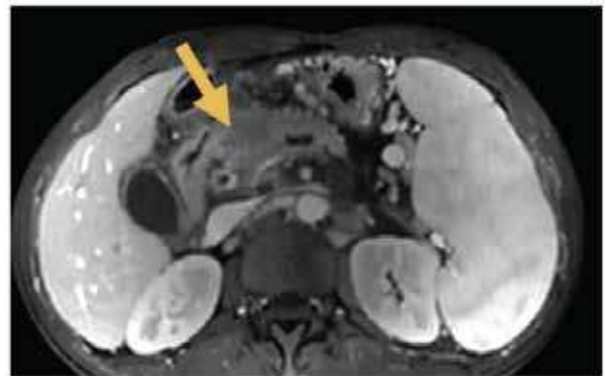
At present, contrast-enhanced angiography (CE-MRA) and dynamic contrast-enhanced abdominal scanning (DCE) are also listed as two independent examination items in clinical practice. Due to the mutual constraints of temporal resolution and spatial resolution, a long scanning time has to be used to obtain high-resolution CE-MRA images, which means that the imaging timing is followed by the detection of lesions. The arterial phase information that is important for differential diagnosis and differential diagnosis will be missed, which is why high-resolution CE-MRA and dynamic contrast-enhanced imaging cannot have both diagnostic information during one injection. The 3.0T Magnetic Resonance Extreme Edition completely solves this contradiction.



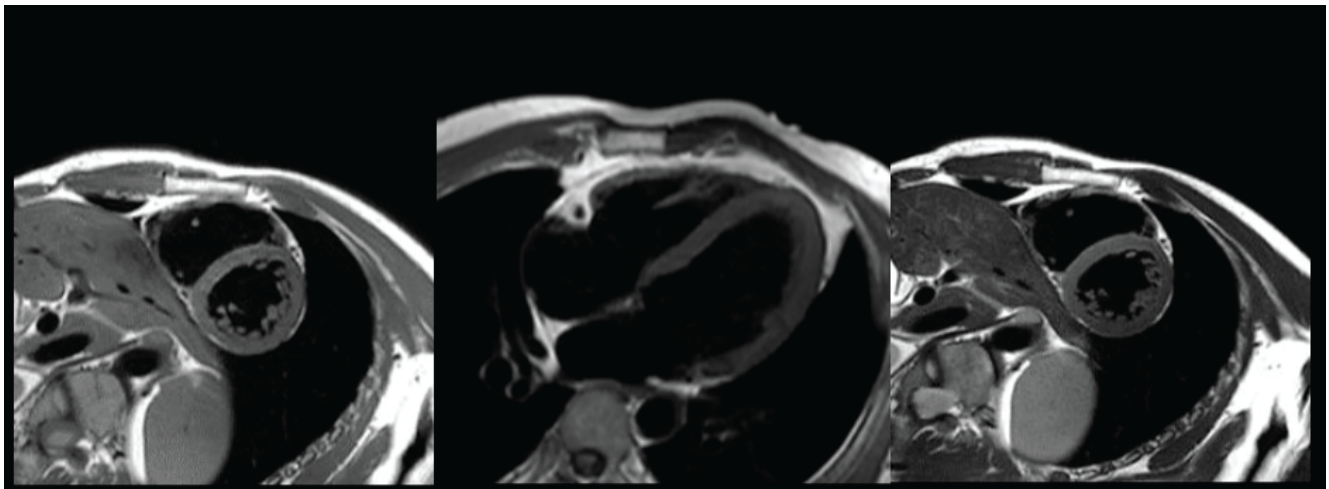
Isotropic Voxel vs Non-Isotropic Voxel Imaging Advantages

The volume effect is significantly reduced and the boundaries between tissues are clearer. The tissue structure is clearly distinguished, and the detection rate of small lesions is high. It is not easy to split the layer, which is conducive to the comparison and follow-up of the two scans.

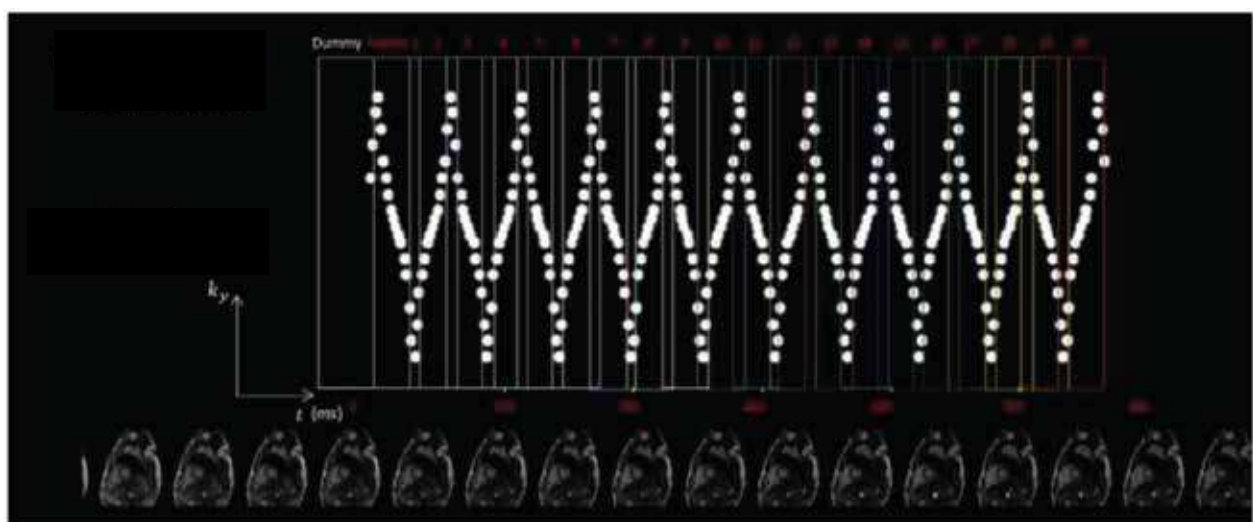
Conducive to section reconstruction, multi-angle observation, and simplified scanning process.



Cardiac Advanced Clinical and Research Applications



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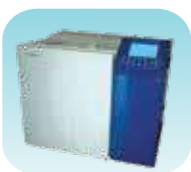
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