



uAiFi inside
uMR 680

**1.5T Wide Bore System
with ‘3.0T-like’ Performance**

ABOUT UIH

At United Imaging, we develop and produce advanced medical products, digital healthcare solutions, and intelligent solutions that cover the entire process of imaging diagnosis and treatment. Founded in 2011 with global headquarters in Shanghai, our company has subsidiaries and R&D centers across China, the United States, and other parts of the world. With a cutting-edge digital portfolio and a mission of broader access to healthcare for all, we help drive industry progress and bold change.

To learn more, visit <https://www.united-imaging.com>



uMR 680 | *uAIFI Technology*

1.5T Wide Bore System With '3.0T-like' Performance.

The uMR® 680 was designed with a high performance system: outstanding gradient performance of 45 mT/m & 200 T/m/s, 72 RF receiver channels and excellent magnetic field homogeneity with a 70cm wide bore, expanding your capabilities in the field of clinical applications and research. Empowered by uAIFI Technology, the uMR® 680 delivers '3.0T-like' image quality and achieves a new standard in workflow and patient care.

Uniform 1.5T Magnet
70cm wide Bore

'3.0T-like' Gradient
45mT/m & 200T/m/s

'3.0T-like' RF System
Starts from 72 RF receive channels

'3.0T-like' Reconstruction Hardware
Ultra-fast real-time reconstruction

DeepRecon*
Deep learning based image reconstruction technology, simultaneously improving SNR and image sharpness.

EasySense
Contactless sensing of patients' respiratory motions

QScan*
Quiet scanning for better patient satisfaction

EasyScan & EasyPlan
Simplified workflow

*FDA 510(k) pending and not CE marked, not commercially available in the U.S. or the EU.

Ultra-uniform Wide Bore Magnet

The 70cm wide bore reduces the patient claustrophobic sense and provides a comfortable scanning experience, especially for special patients such as children, pregnant women, and obese patients. The ultra-uniform magnet design provides more accurate imaging which benefits for off-center scanning, high-resolution anatomical imaging.



Precisely control the winding position, size and relaxation of the MRI to ensure excellent magnetic field uniformity.



Using high-level welding process, precise heat input, each pattern can withstand ultra-low temperature and high pressure at the same time and has high air tightness to ensure "zero" liquid helium volatilization



Equipped with high-level scientific research shimming technology to achieve faster and more accurate large-scale and local shimming effects, ensuring high-definition and accurate imaging, as well as more uniform grease pressing effect, smaller dispersion deformation, and more accurate spectral measurement, etc.



@50cm DSV 0.831ppm*
@30cm DSV 0.033ppm

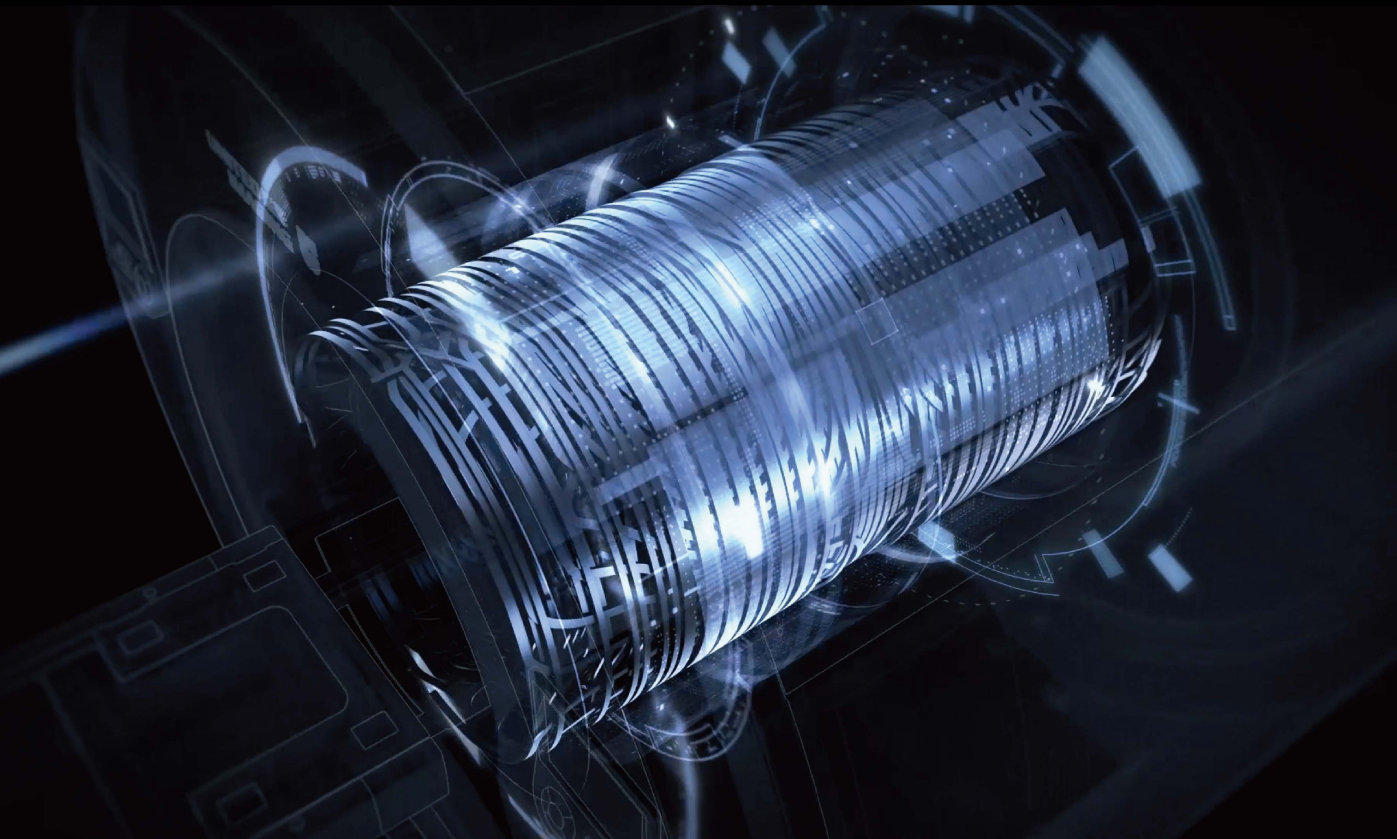
*V-RMS 24 plane plot (typical).

'3.0T-like' Gradient

The remarkable 45 mT/m & 200 T/m/s (simultaneous on each axis) unlock higher signal-to-noise ratio (SNR) for neuro and cardiac imaging.

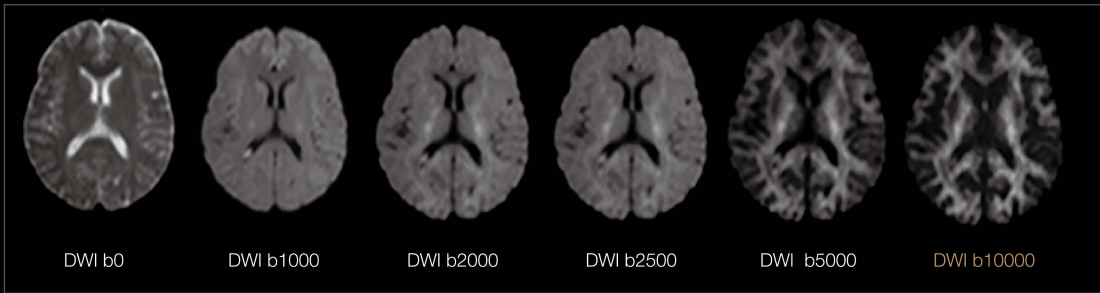
45mT/m
Gradient Field Strength

200T/m/s
Gradient Slew Rate

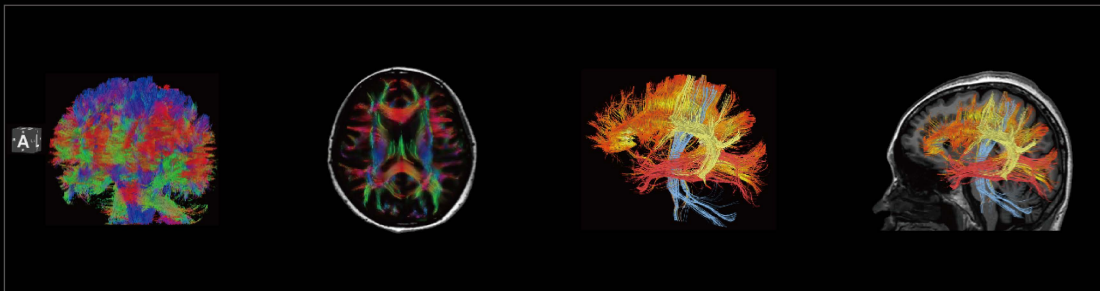


2.05MW GPA
High Performance GPA

High SNR, 'Zero Deformation' High b-value DWI



256 Directions DTI



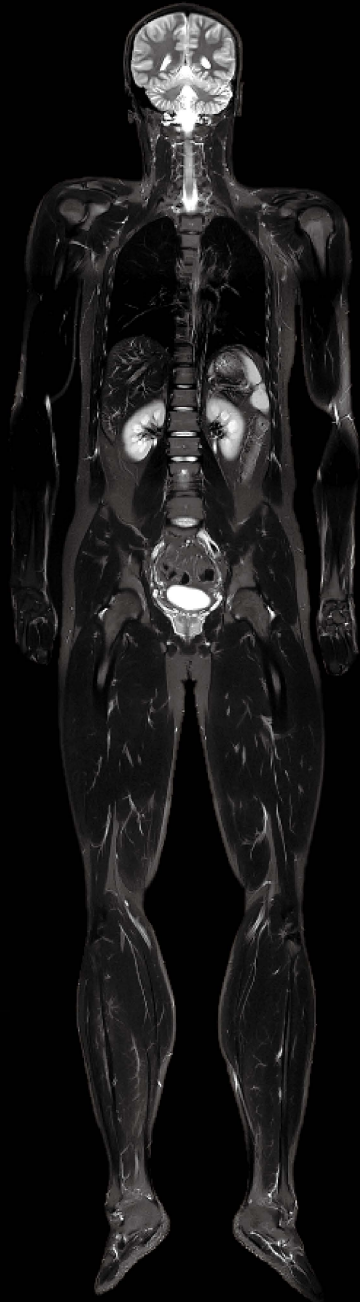
'3.0T-like' RF System

72 independent RF receiving channel architecture, combined with new generation of high-density coils, supports higher-density whole-body coil unit coverage, realizes simultaneous acquisition of higher channels in a single scanning FOV, and supports higher acceleration in multiple directions, significantly improving Image quality and imaging speed.

Starts from **72** RF Receive Channels



New Generation High-density Coils



STIR

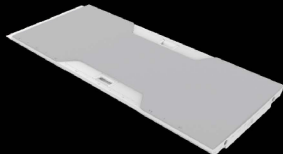
24^{ch}
Head & Neck Coil



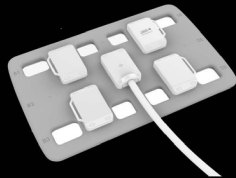
24^{ch}
Cardiac Coil*



32^{ch}
Spine Coil



24^{ch}
Body Array Coil*



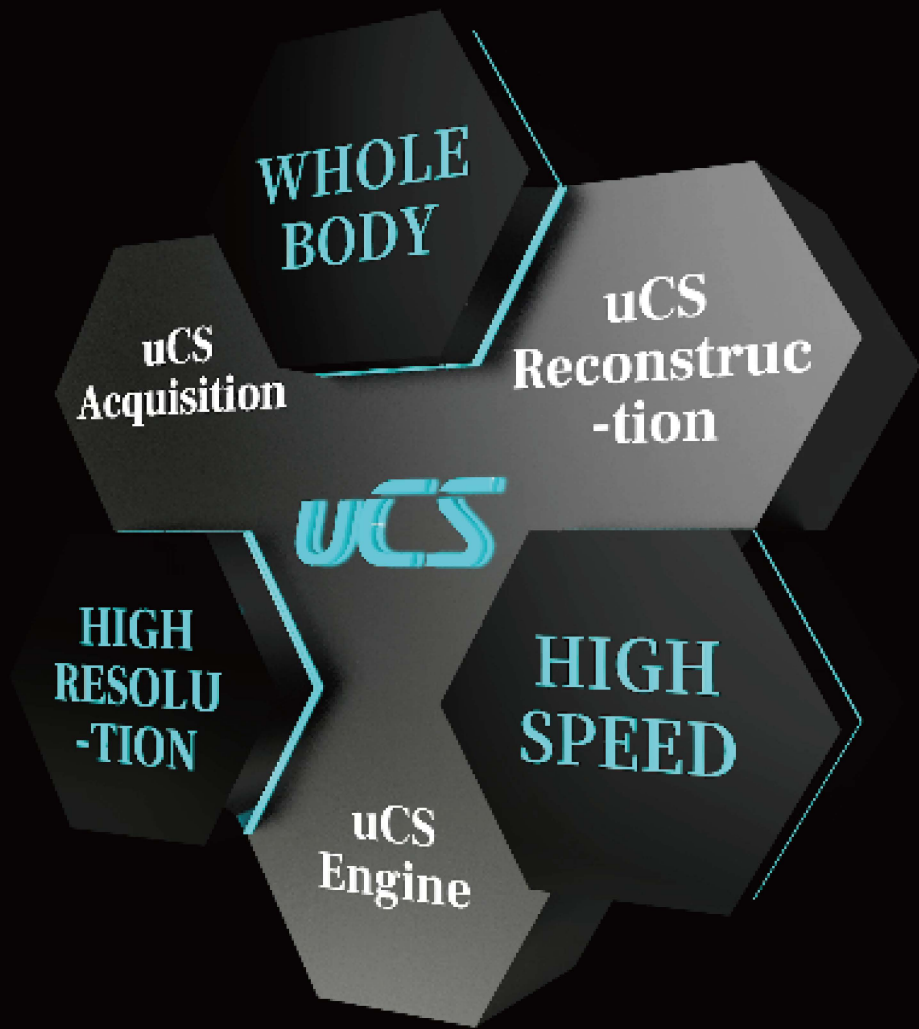
24^{ch}
Foot & Ankle Coil*



*Optional

'3.0T-like' Reconstruction Hardware

A new generation uCS platform with ultra-high speed acquisition, reconstruction, and engine. It provides 3D isotropic and 2D routine sequences in various body parts, which can be used for neuro scanning, dynamic multi-phase scanning of abdomen, angiography imaging etc.



16_x

Acceleration

0

Time-delay, real-time reconstruction*

2D/3D/4D

Fully available

2.0_{sec}/phase

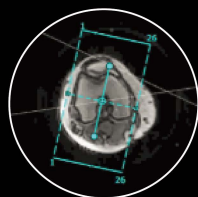
Temporal resolution

*Typical reconstruction time varies on different clinical scenarios.



Innovation. Uncompromised.

The uAI FI Technology Platform includes a series of innovations including both hardware and software to fully empower uMR®: EasySense, the industry's first remote dual-source millimeter-wave contactless respiratory motion sensing technology; DeepRecon, a deep learning (DL) based image reconstruction technology, that simultaneously improves SNR and image sharpness. We also offer QScan, a quiet scanning technique for whole body.



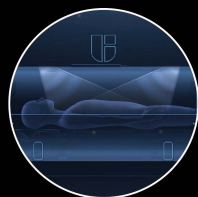
EasyScan



EasyPlan



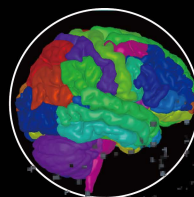
QScan*



EasySense*



DeepRecon*



EasyPrecess*



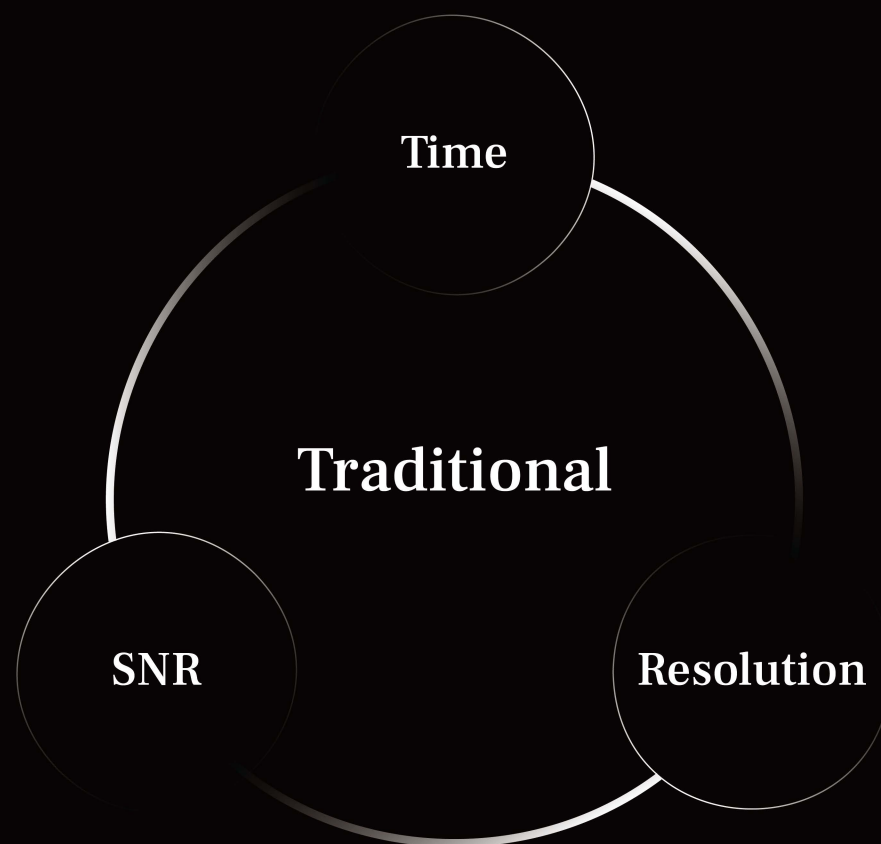
*FDA 510(k) pending and not CE marked, not commercially available in the U.S. or the EU.

uAIFI Technology

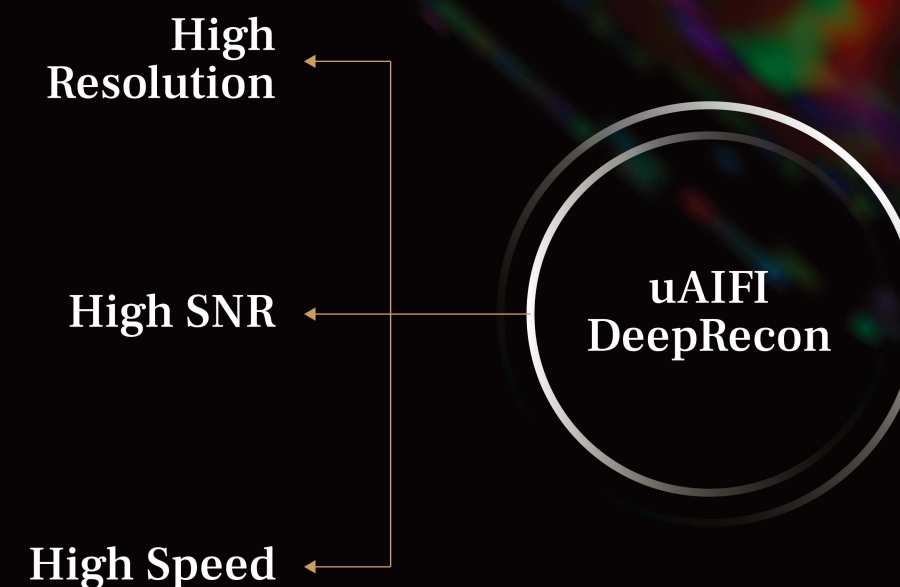
AI for Imaging

The trade-off between MRI time and image quality is a major limitation to better and faster clinical applications of MRI. With the rapid development of AI artificial intelligence in the medical field, the use of deep learning to solve the problem that traditional filtering techniques cannot effectively improve image quality is becoming the mainstream development trend of the times. Deep learning can effectively learn advanced features from massive data by using a multi-layer framework structure, and the algorithm performance is better than traditional algorithms in terms of image quality improvement.

Limitations of Traditional Technology

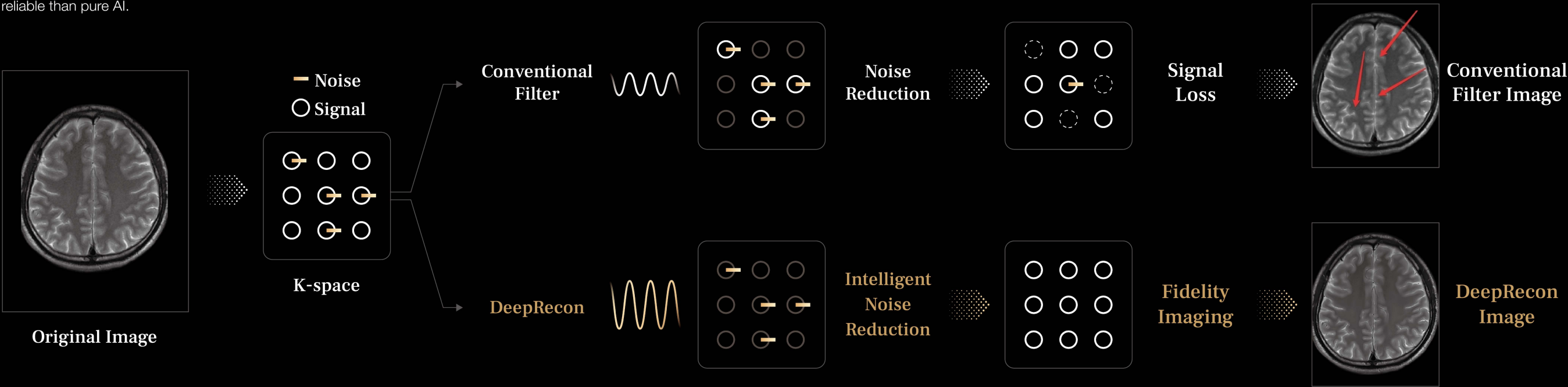


Innovation Breaks the Limitations: Achieve a Balance

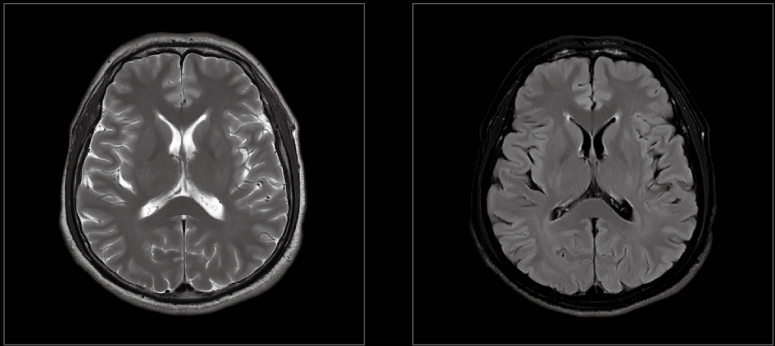


AiFI Technology DeepRecon*

Based on AI deep learning network, it enables MRI reconstruction, effectively identifies and intelligently removes noise, and obtains images with higher SNR, higher resolution and richer details without prolonging or even reducing scanning time. The application covers anatomical structures of various parts of the body and rich contrast scenes, and the fidelity module design realizes dual fidelity control in contrast and image structure, making imaging more reliable than pure AI.



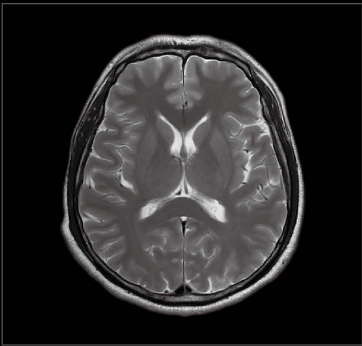
1.5T System with ‘3.0T-like’ Performance



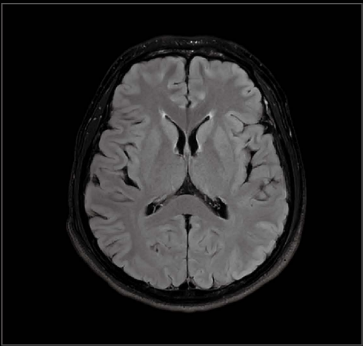
T2 FSE
0.6×0.6×5 mm³
2:20min

T2 FSE FLAIR FS
0.8×0.8×5 mm³
2:08min

3.0T



T2 FSE
0.6×0.6×5 mm³
2:20min



FSE FLAIR FS
0.8×0.8×5 mm³
2:08min

1.5T
With DeepRecon

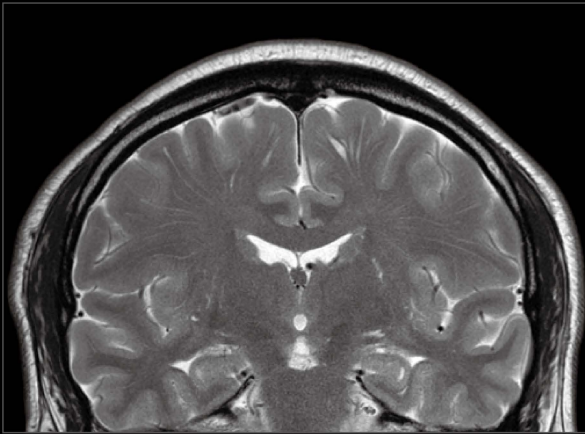
*FDA 510(k) pending and not CE marked, not commercially available in the U.S. or the EU.



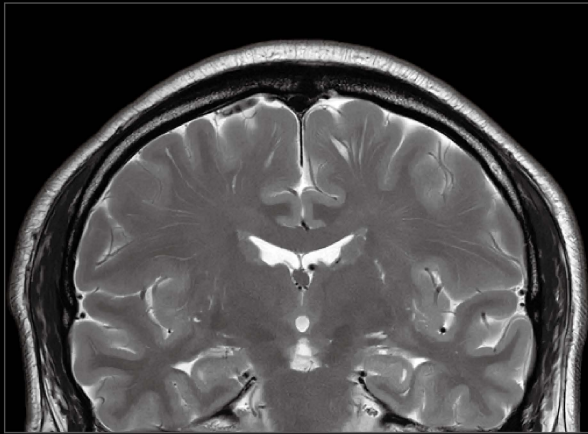
Under the same protocol, it can achieve high resolution and noise reduction fidelity, greatly improve the image SNR and provide rich image details.

Conventional

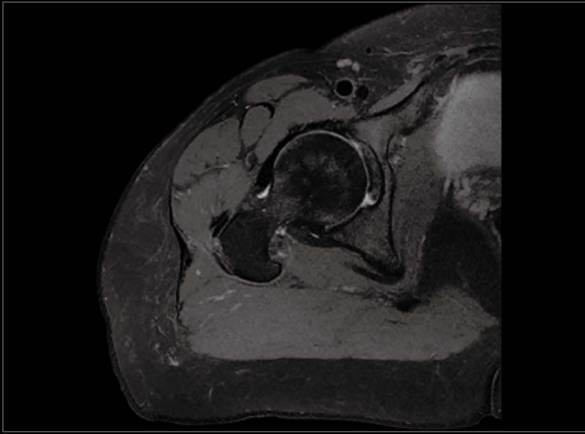
DeepRecon



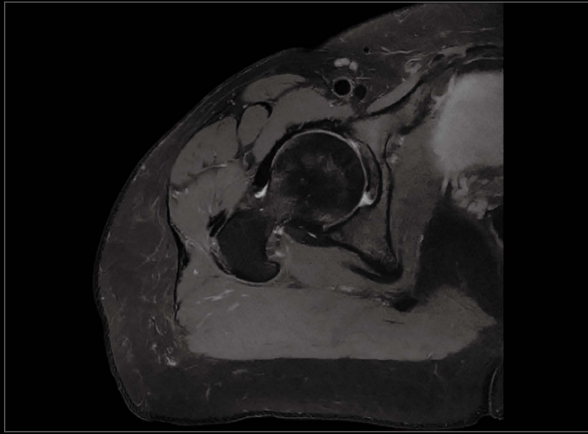
T2W FSE
0.4×0.4×4.0 mm³



T2W FSE
0.2×0.2×4.0 mm³



PD FSE FS
0.63×0.63×4.0 mm³



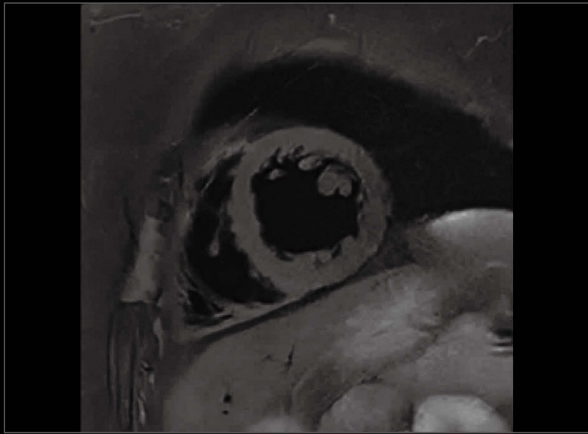
PD FSE FS
0.32×0.32×4.0 mm³

Conventional

DeepRecon



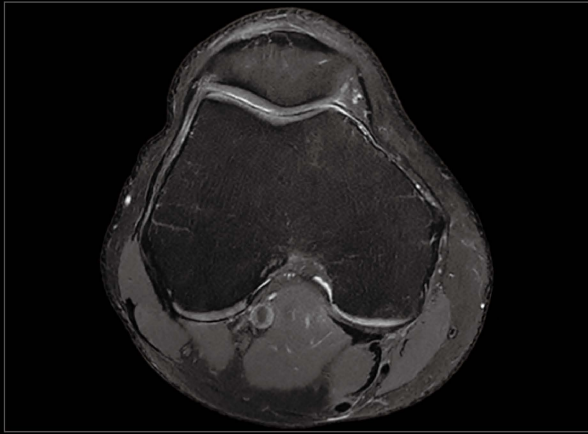
T2 FSE DB SPAIR SAX
1.18×1.18×8.0 mm³



T2 FSE FS
0.78×0.78×4.0 mm³



PD FSE FS
0.53×0.53×3.0 mm³



PD FSE FS
0.35×0.35×3.0 mm³

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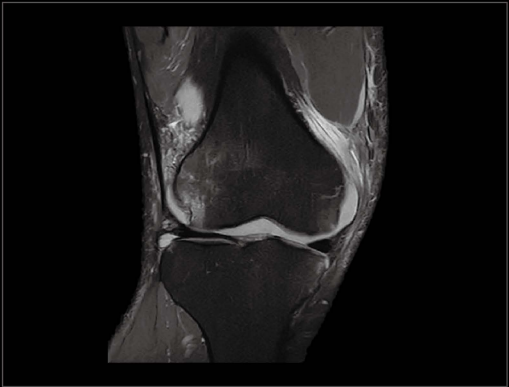
uAIFI Technology uCS × DeepRecon*

uCS combined with DeepRecon technology can obtain high-quality clinical images in less time.

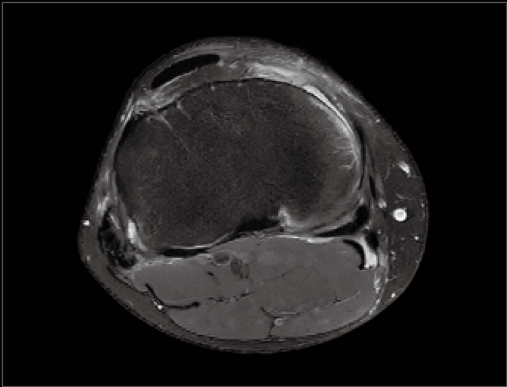
DeepRecon



T1W FSE
0.3×0.3×3mm
1:16min



PDW FSE FS
0.4×0.4×3mm
1:24min

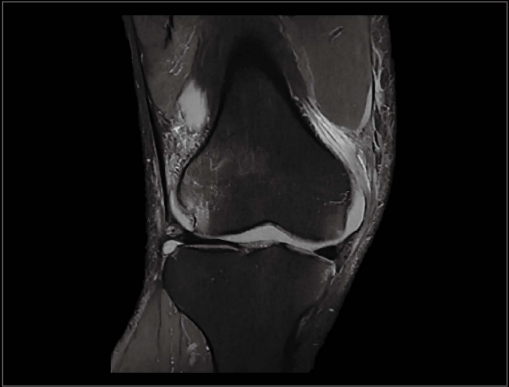


PDW FSE FS
0.4×0.4×3mm
1:40min

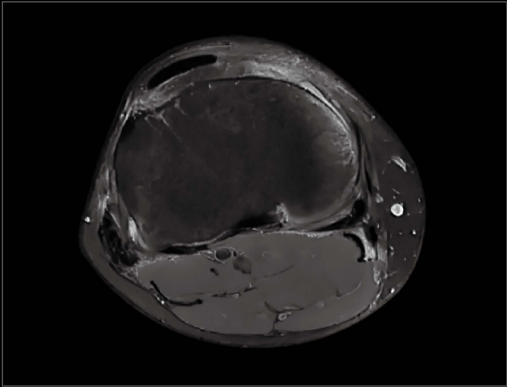
DeepRecon
×
uCS^{2.0}



T1W FSE
0.3×0.3×3mm
41s



PDW FSE FS
0.4×0.4×3mm
52s

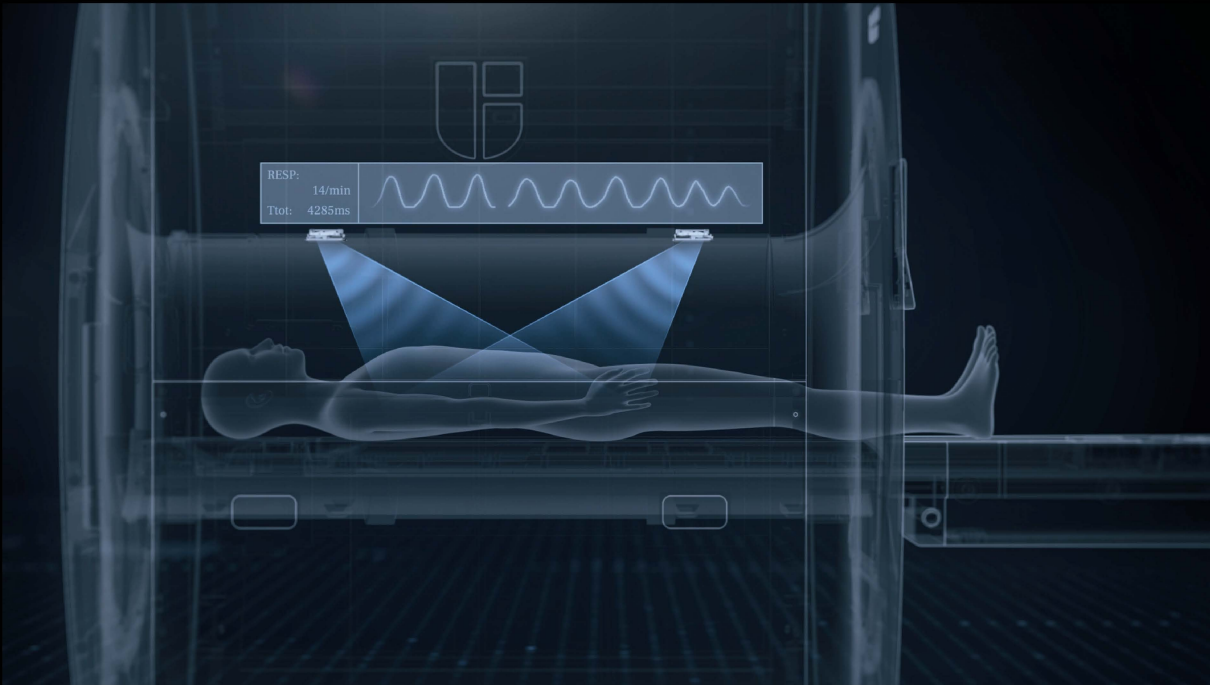


PDW FSE FS
0.4×0.4×3mm
58s

*FDA 510(k) pending and not CE marked, not commercially available in the U.S. or the EU.

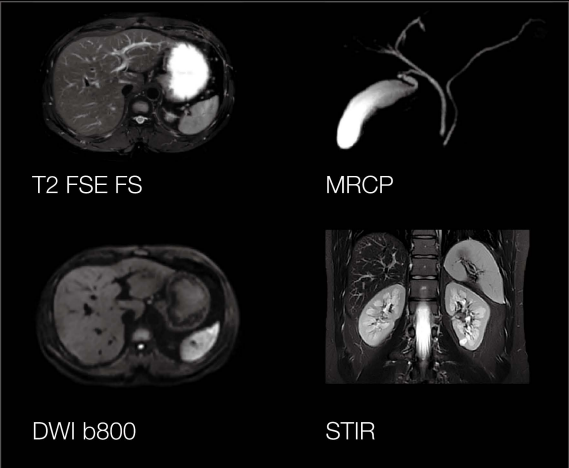
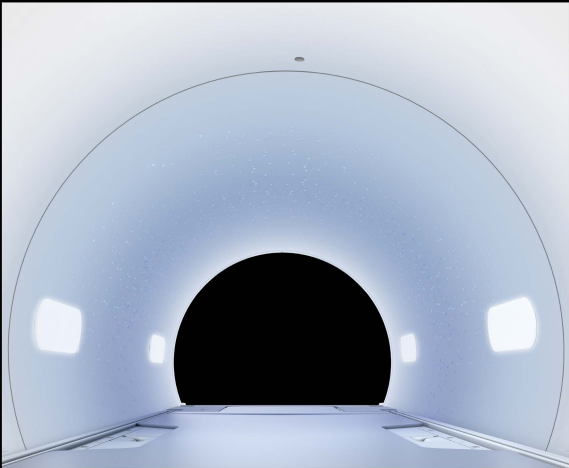
uAiFI Technology EasySense*

The dual-source phased array millimeter-wave radar can pass through obstacles such as clothing and sheets to realize non-contact intelligent remote sensing of vital signs, directly detect the patient's breathing state, and realize free abdominal breathing imaging without the need for traditional breathing straps and other accessories.

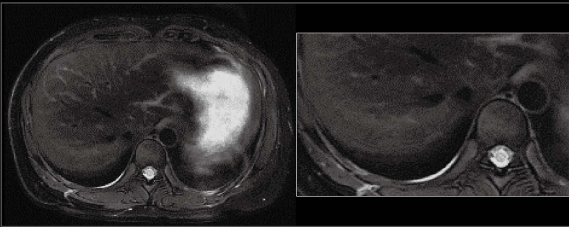


Non-contact remote sensing: scanning more freely
Dual source detector: more accurate scanning
Time resolution: 20ms
Motion detection resolution: 0.1mm

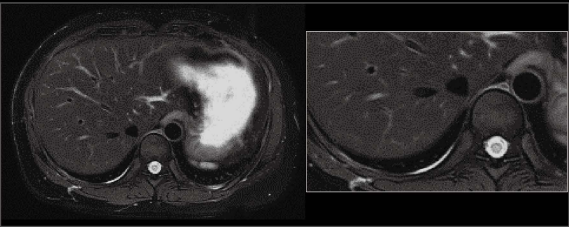
Free Breathing Abdomen Imaging



Unaffected by the Binding Tightness, Imaging is More Stable



Breathing belt loose, false trigger
With respiratory trigger

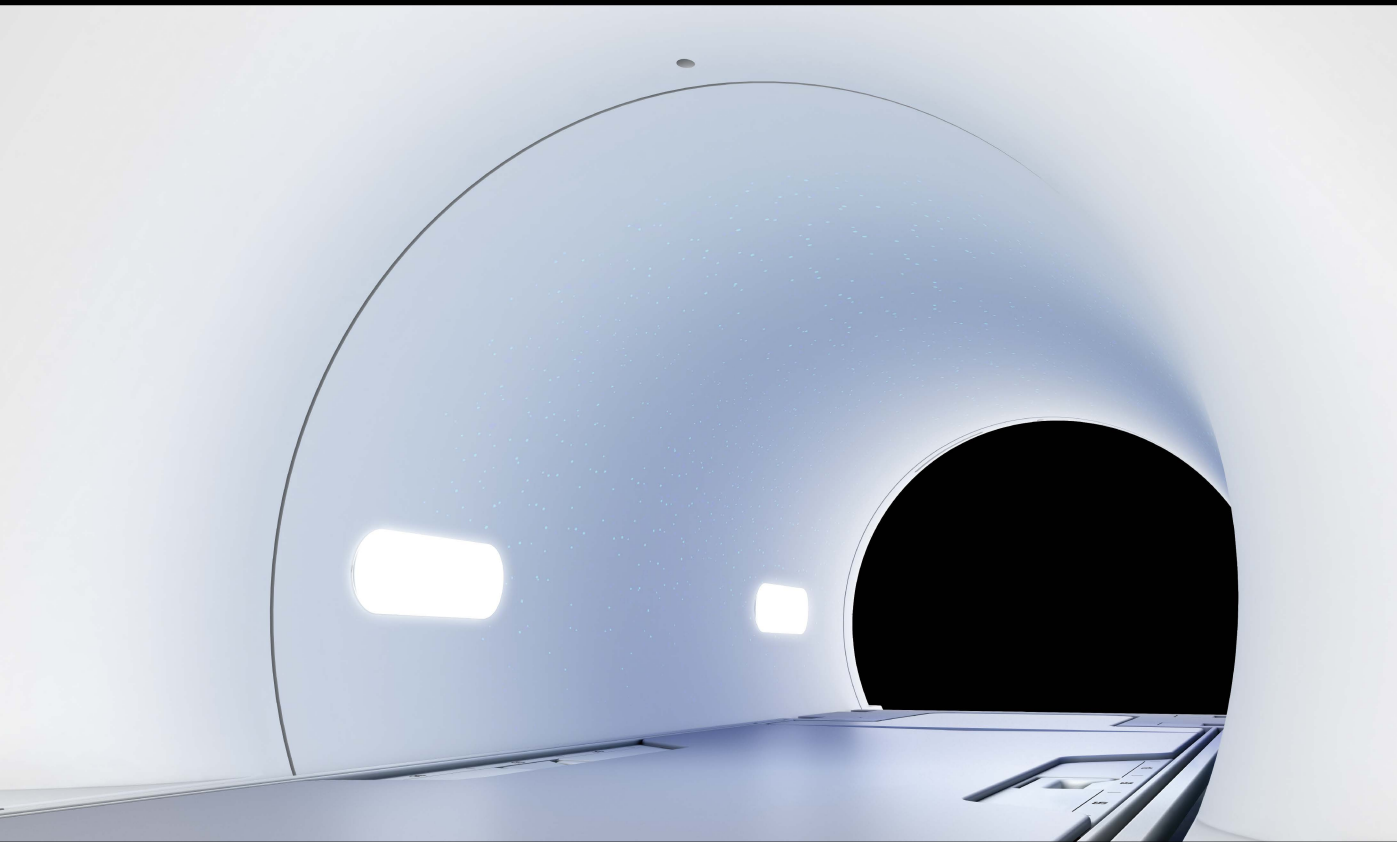


Stable sensing signal, precise triggering
With EasySense

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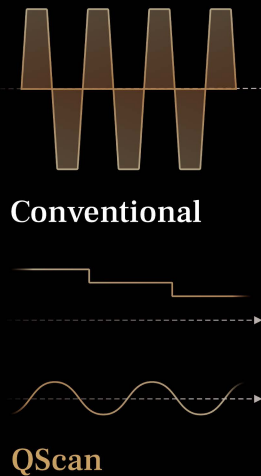
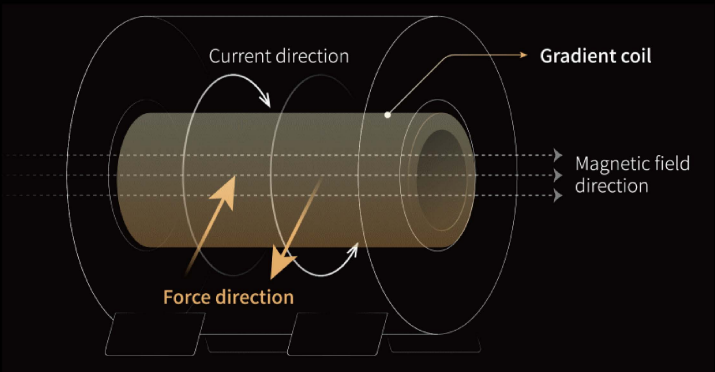
uAiFI Technology QScan*

Noise reduction is achieved from the source of MRI scan noise, providing the best care for special patients such as infants and young children. Achieve full sequence coverage during scanning, including 2D/3D anatomical imaging and DWI , SWI, MRS spectroscopy and other functional imaging of the whole body, as well as pre-scan.

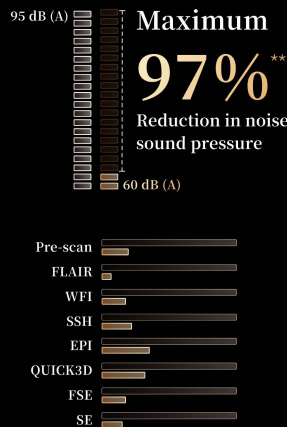
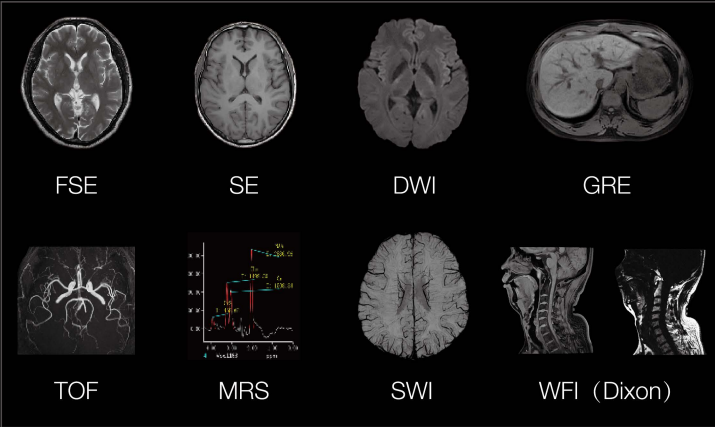


QScan Design

Noise source: gradient vibration



2D, 3D, Full Body Coverage

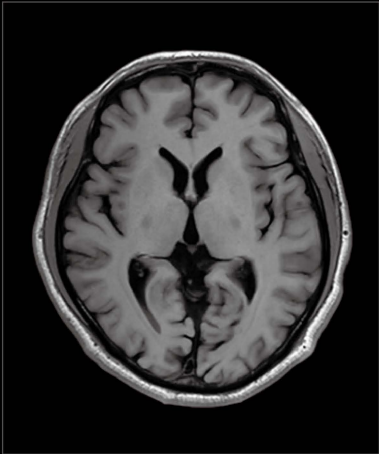


*FDA 510(k) pending and not CE marked, not commercially available in the U.S. or the EU.
** Depending on the condition of usage and examination.

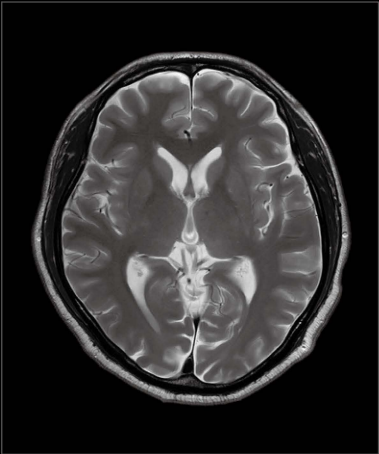
uAiFI Technology uCS × QScan*

uCS combined with DeepRecon technology can obtain silent imaging at the same scan time or even shorter time.

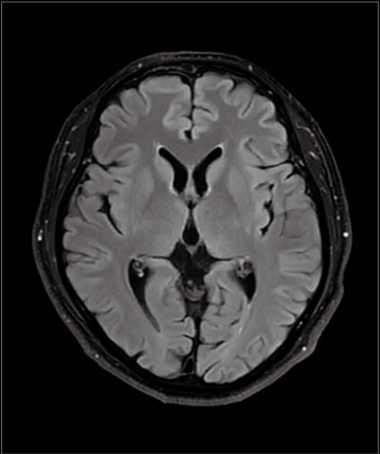
Parallel Imaging



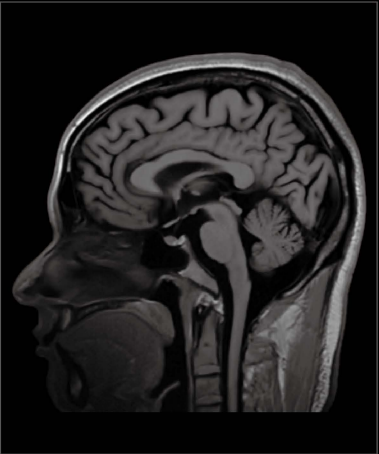
T1 FSE FLAIR
2:36min



T2 FSE
2:45min

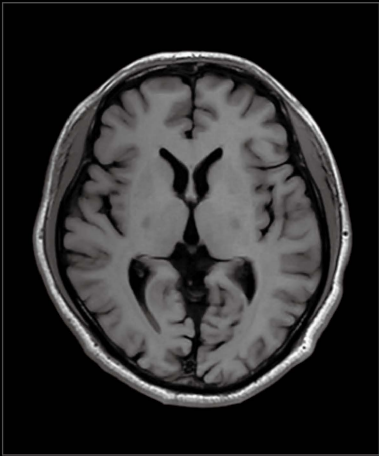


T2 FSE FLAIR FS
2:56min

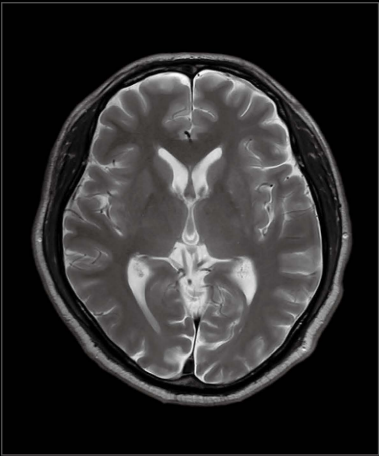


T1 FSE FLAIR
2:10min

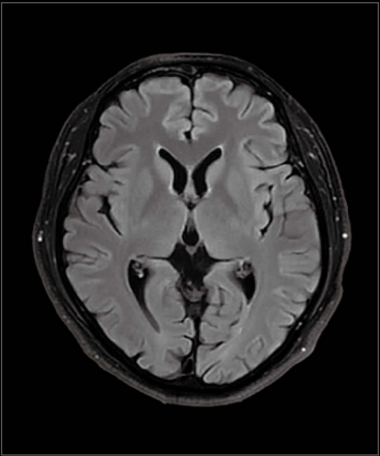
QScan × **uCS**^{2.0}



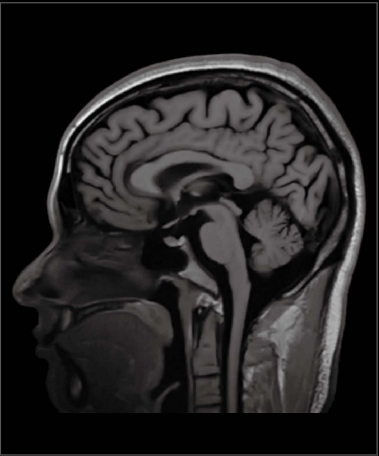
T1 FSE FLAIR
QScan
2:16min



T2 FSE
QScan
2:34min



T2 FSE FLAIR FS
QScan
2:56min

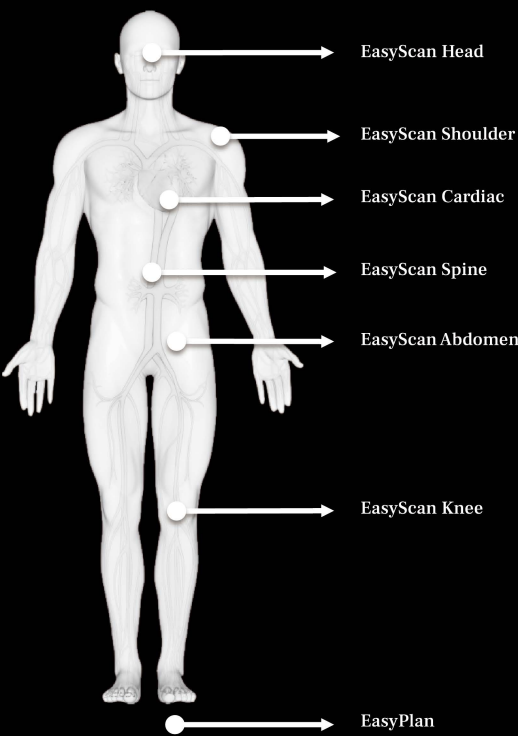
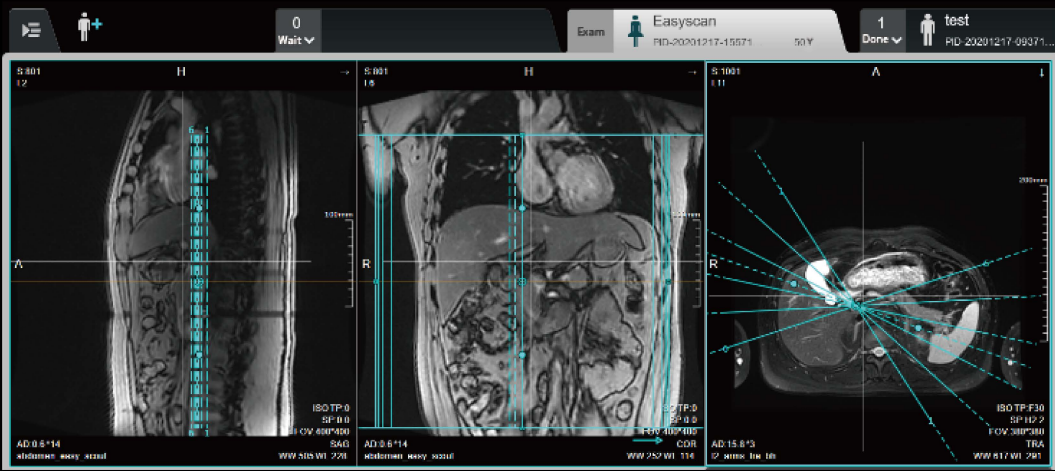


T1 FSE FLAIR
QScan
2:10min

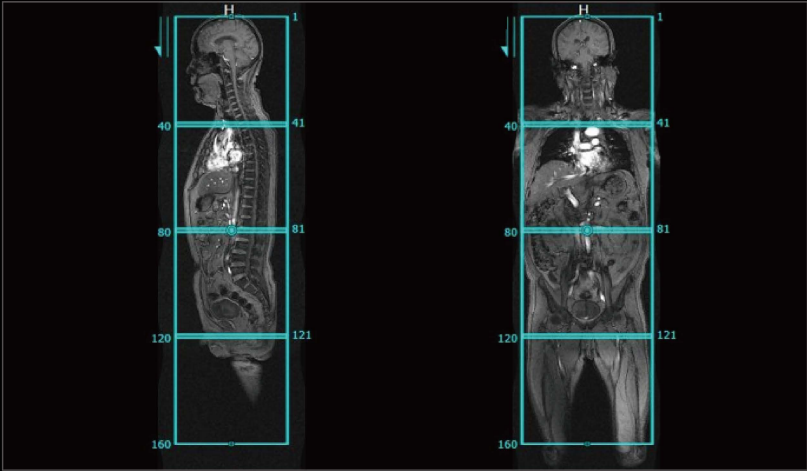
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AiFI Technology EasyScan & EasyPlan

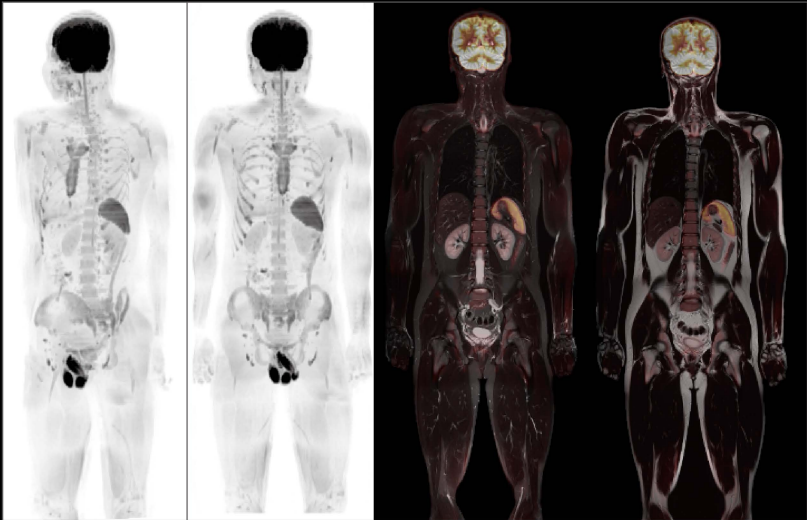
Intelligent, Automatic,
and Consistent Anatomical Orientation.



Automatic Multi-step Scan Planning and
Image Stitching with ONE-click.



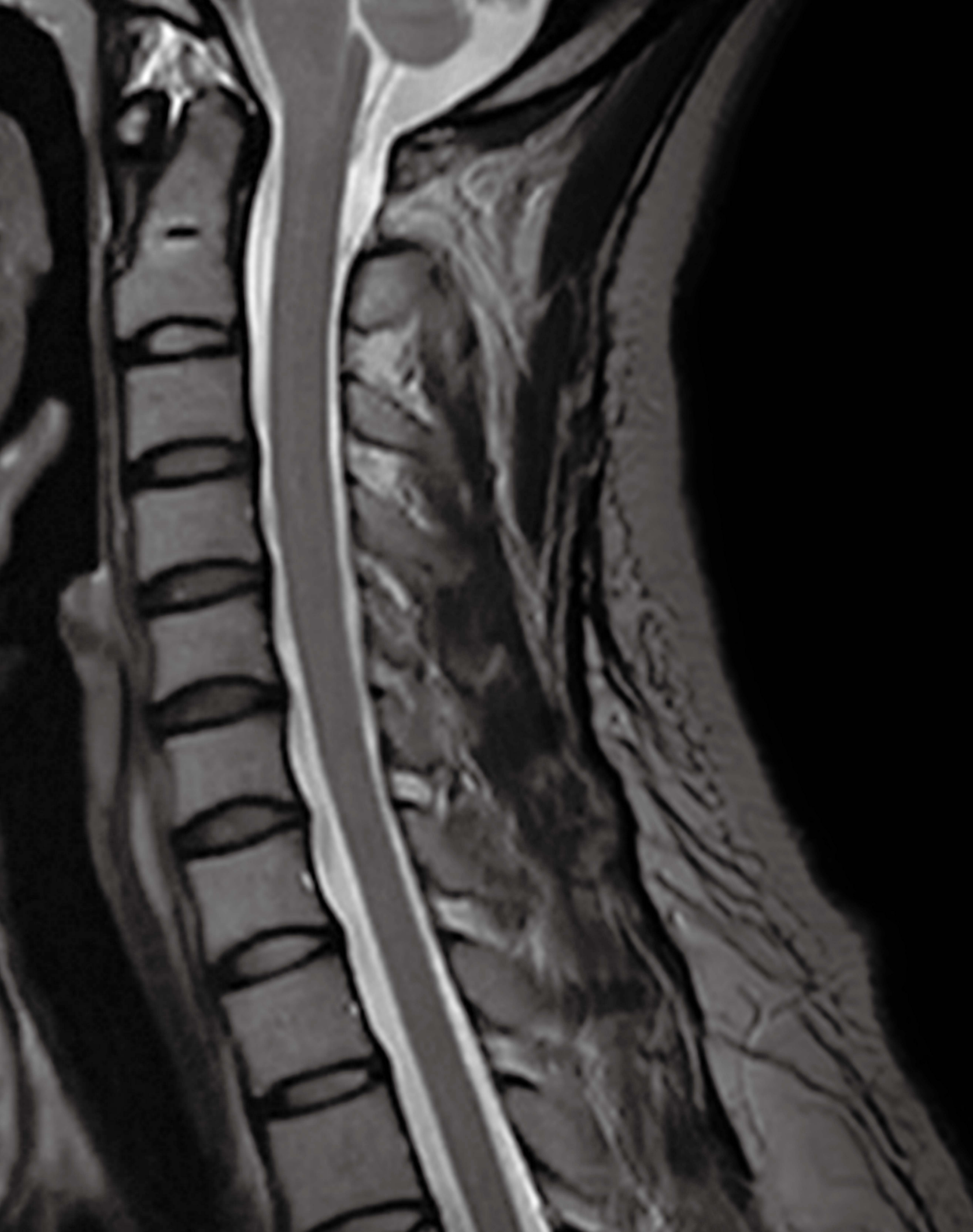
‘PET-like’ Whole-body DWI Imaging



DWI b800
with EasyPlan

STIR & b800
Fusion

T2 & b800
Fusion
0.6×0.6×5 mm³
2:08min



Advanced Clinical Application Solutions

Based on the '3.0T-like' high-performance hardware system and uAIFI Technology, uMR 680 provides users with a series of high-end clinical application solutions.

High-resolution 3D Isotropic Intracranial Vessel Wall Imaging

High resolution, SNR, and imaging speed contributes greater clinical value in the prevention, diagnosis, and prognosis evaluation of cerebrovascular disease.

UCS^{2.0}



T1W MATRIX 3D
0.7×0.7×0.7 mm³
7:32 min

Intelligent Post-processing Analysis of Vessel Wall

Supports automatic extraction of blood vessel centerline, automatic vessel wall analysis, lumen stenosis rate, and supports sending, editing and printing of structured reports .

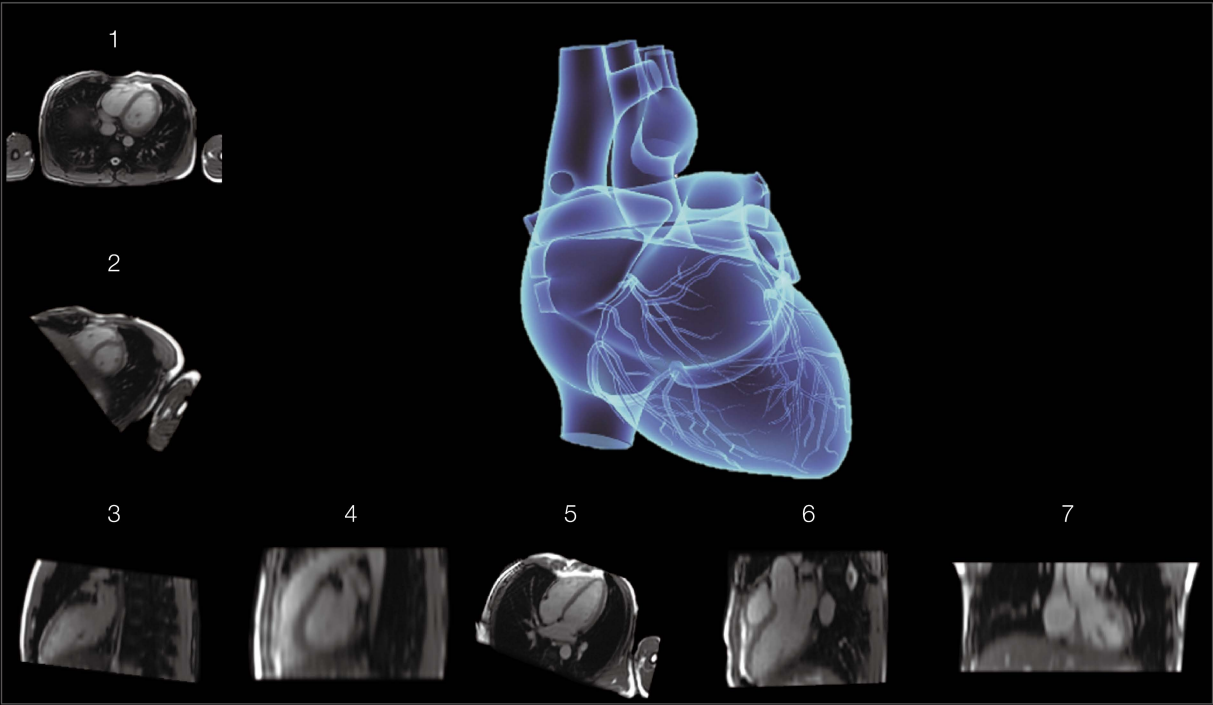


- | Automatic centerline extraction
- | Vascular inner and outer diameter change & trend graph
- | Pipe Wall Thickness Analysis

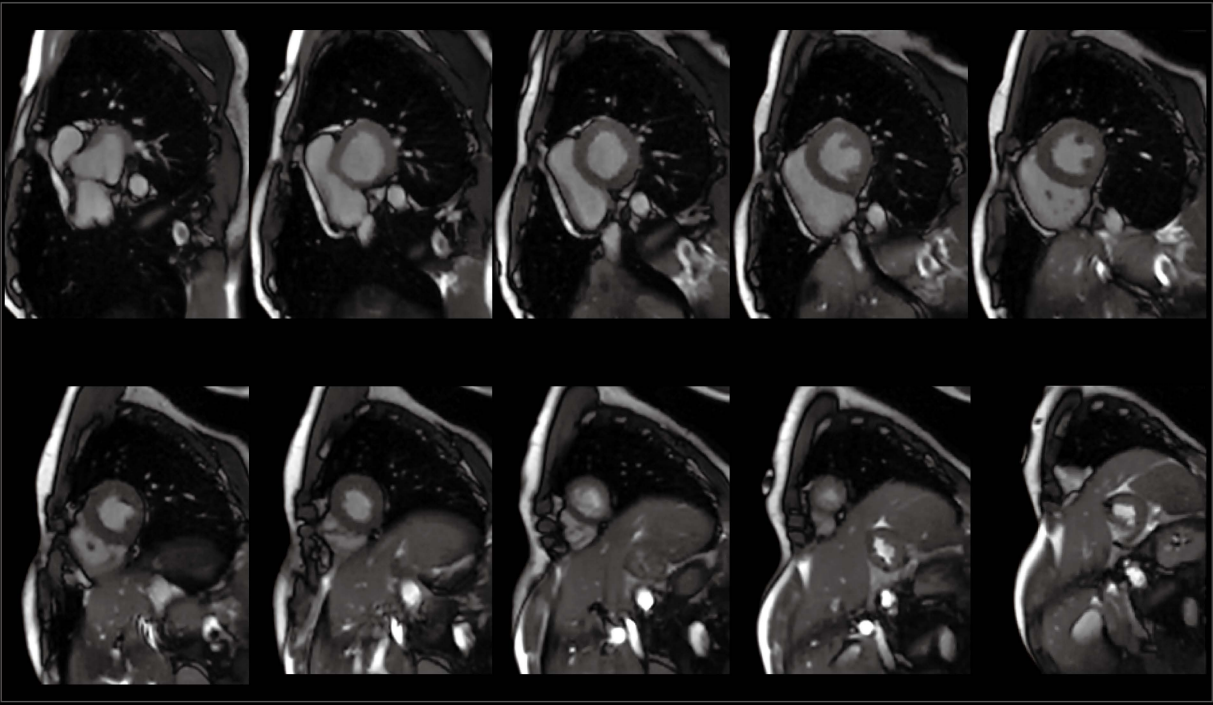
Advanced Cardiac Imaging Solutions

Smarter and faster cardiac imaging workflow, which can automatically calculate 7 standard planes including "short axis", "two chambers", "three chambers" and "four chambers", greatly reducing the cardiac positioning work. At the same time, the traditional 10 breath-holds are changed to 1 breath-hold, which greatly shortens the time of cardiac cine imaging, significantly improves the examination success rate of patients who cannot hold breath or cannot tolerate long-term examinations, and is more conducive to accurate cardiac function analysis.

uAIFI EasyScan Cardiac



uCS Cine Single Breath-hold Whole Heart Cardiac Cine Imaging

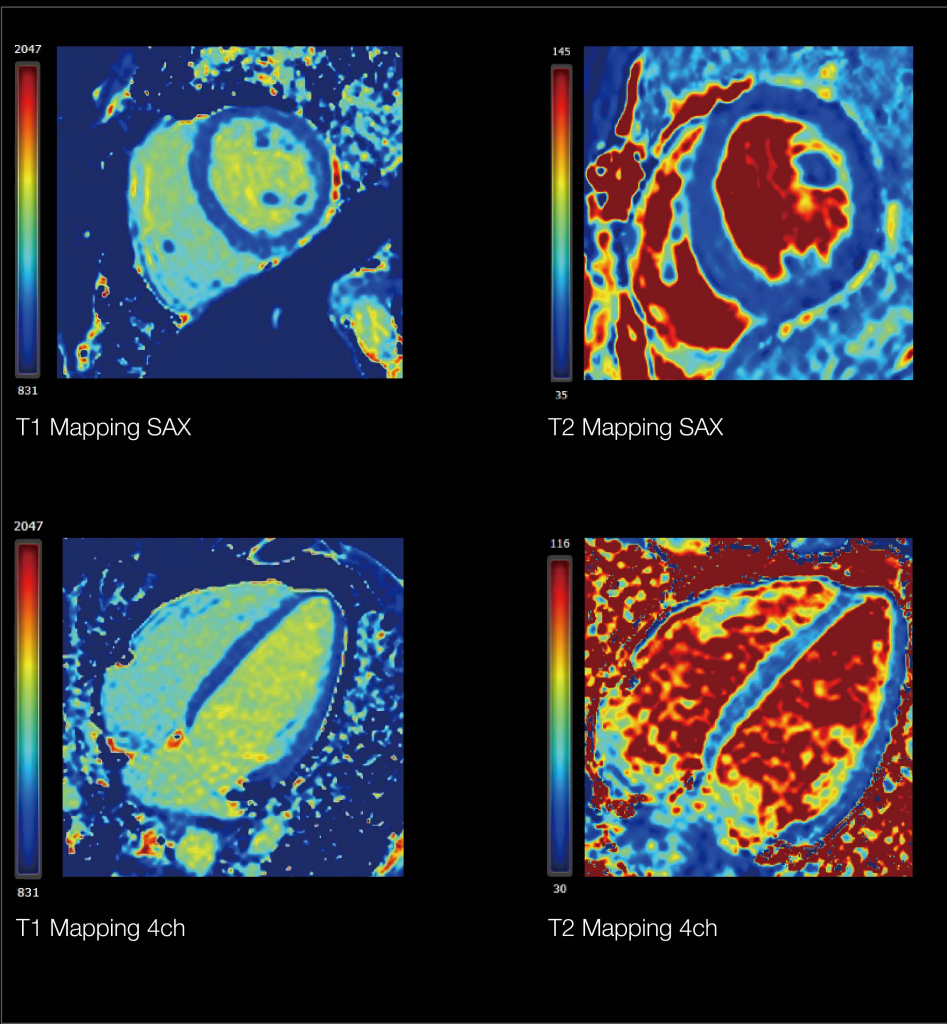


uCS Cine SAX
16.7s

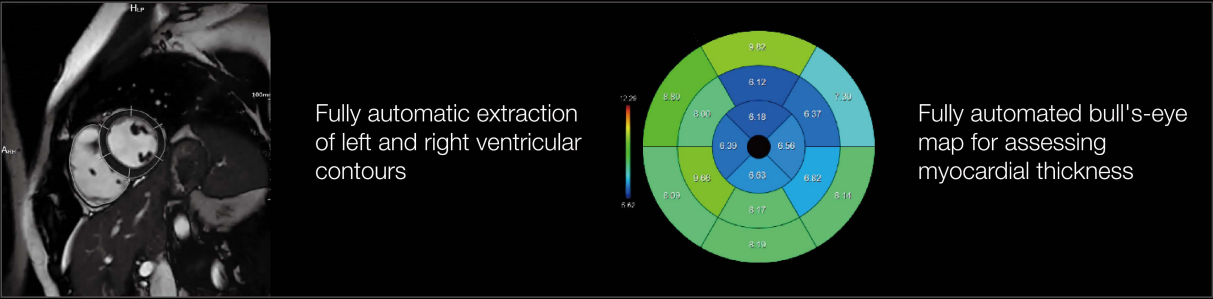
Advanced Cardiac Imaging Solutions

It supports comprehensive and rich advanced cardiac imaging applications and post-processing, including Mapping parameter quantification, flow quantification, coronary imaging and intelligent post-processing for cardiac function analysis.

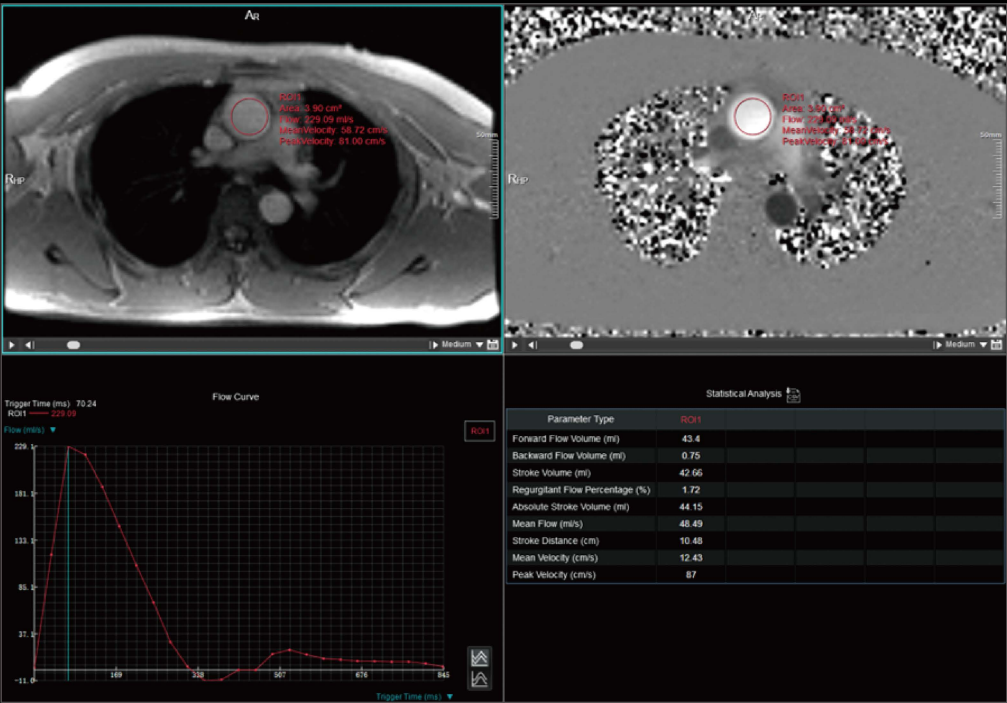
Mapping



Cardiac Function Analysis



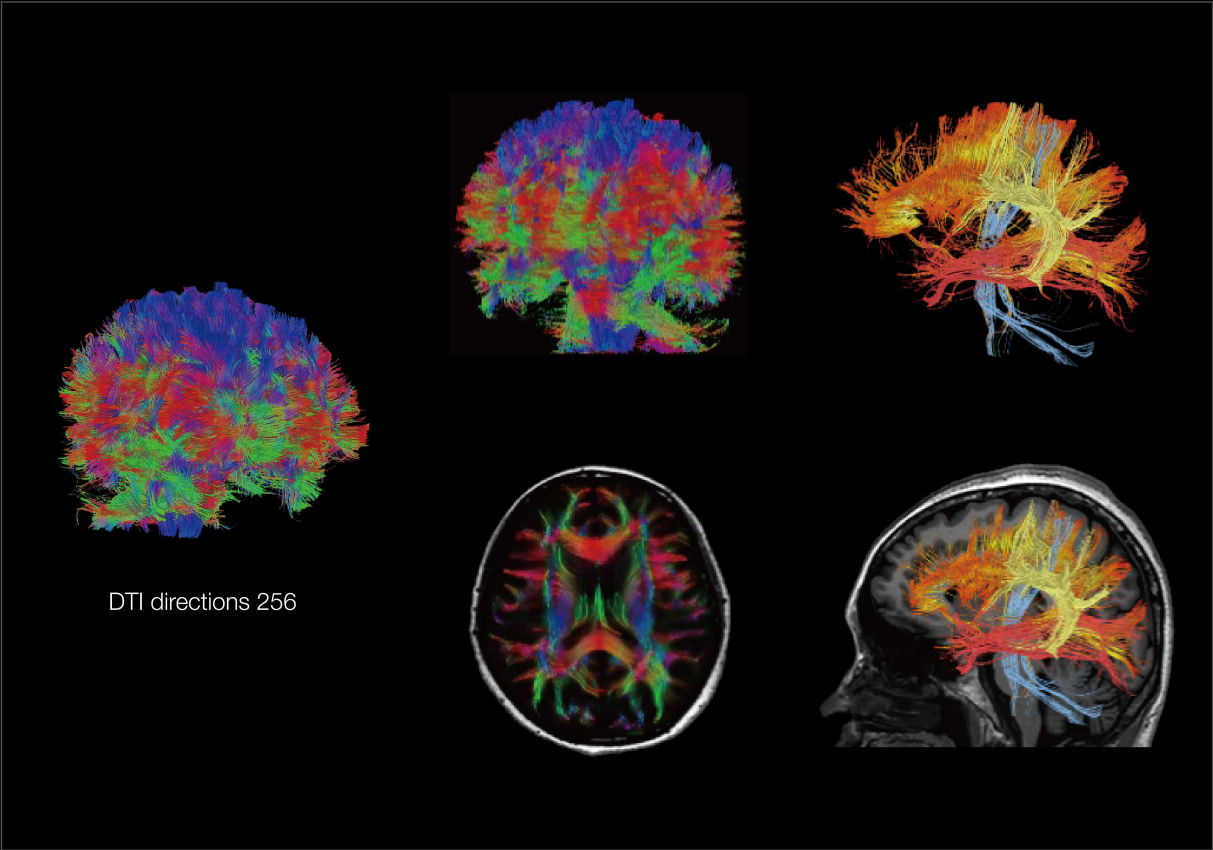
Cardiac Flow Quantitative Analysis



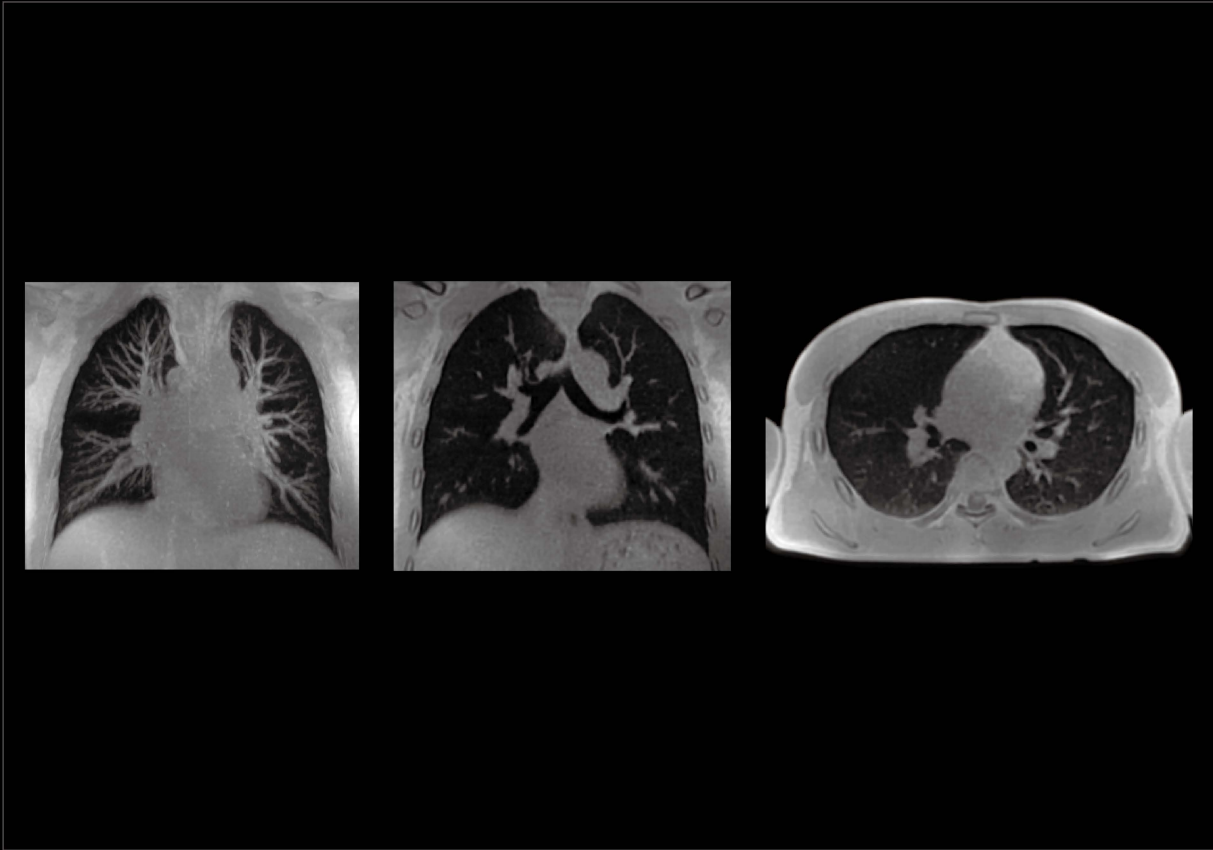
Advanced Applications for Scientific Research

It supports comprehensive and rich scientific research applications, including DTI, DKI, UTE, Multiband, etc.

DTI

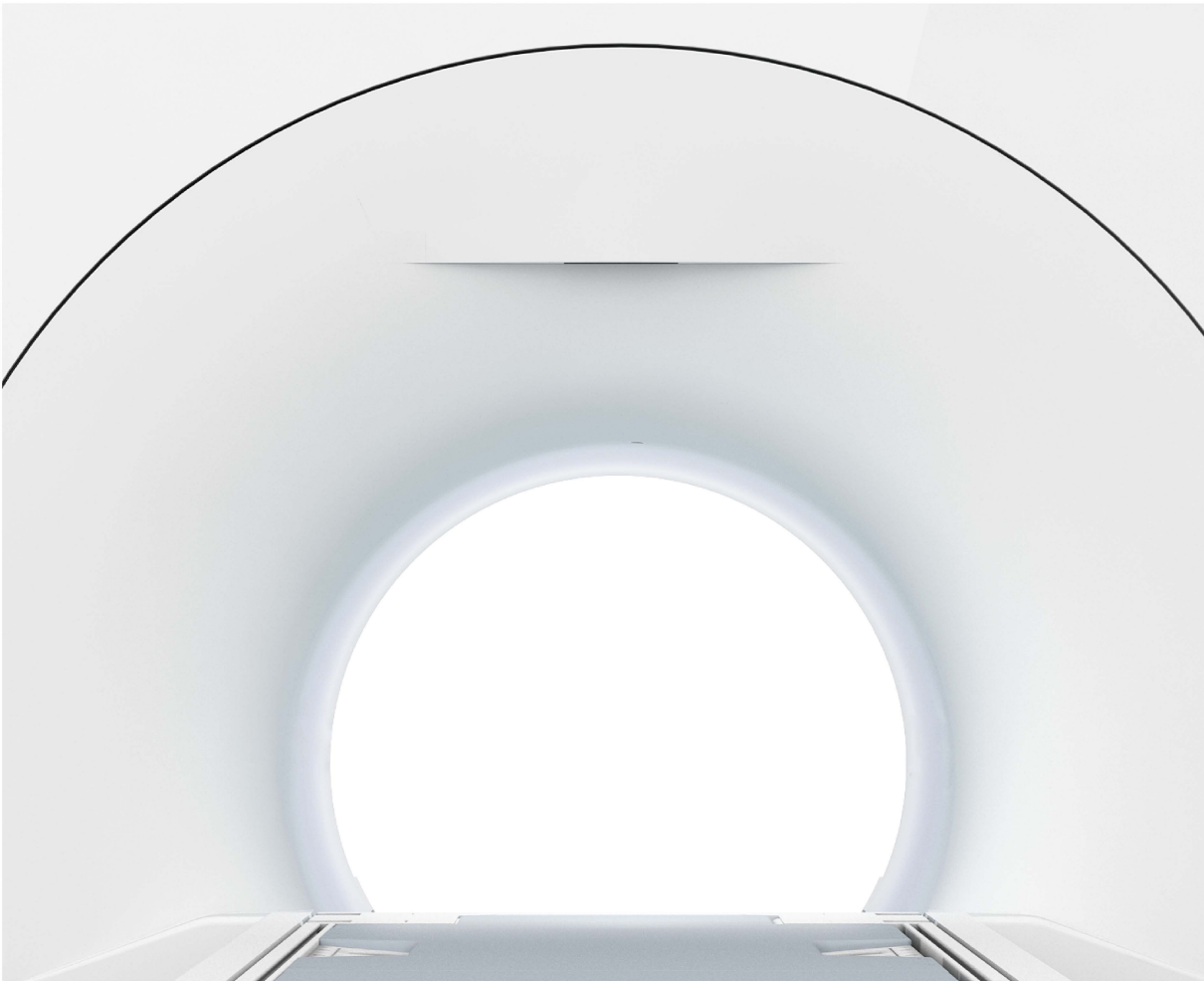


UTE



Human-Centered Design

Focusing on user experience, uMR 680 combines accurate operation with a lightweight and artistic design. We bring aesthetic enjoyment and ease of use to the technology, delivering care, trust and respect through our design.



Pleasing Aesthetics

Our design scheme integrates oriental aesthetics with minimalism, presenting a seamless fusion of traditional and modern styling.

User-Friendly Design

The product design delivers comfort, safety, efficiency and ease-of-use. By applying ergonomic principles the uMR 680 combines innovative design with optimal functionality in order to provide a better possible user experience, optimizing patient comfort during the examination.

Sophisticated Craftsmanship

Driven by the tenets of precision design, we fine-tune every technological detail to embody the spirit of craftsmanship in every product.