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Some products and features described here are optional and not commercially available in all countries. We cannot guarantee that the system and all of options are available in all area due to regional restrictions. Please contact your local Toshiba sales representatives for the most current information.

* The version of this system is M-Power V2.5

TOSHIBA
Leading Innovation >>>

3T Premium Open Bore MRI System
Vantage Titan 3T



TOSHIBA MEDICAL SYSTEMS CORPORATION

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MCAMR0093EA 2014-09 TMSC/MI

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Printed in Japan

Vantage Titan 3T



Enhanced comfort and flexibility with the power of 3T

With its large 71 cm patient aperture and the quietest exams in the industry, the Vantage Titan™ 3T is the most comfortable 3T MRI system for all of your patients. Atlas SPEEDER™ integrated coils give operators a wide range of flexibility and offer unique capabilities when coupled with our unique advanced non-contrast MRA package. This advanced system design is the result of listening to doctors and patients. The Vantage Titan 3T can be configured to meet all your clinical needs.

3T Premium Open Bore MRI System
Vantage Titan 3T

Increased comfort for all patients

Vantage Titan 3T offers the most comfortable examinations for all patients. Our 71 cm patient aperture allows you to image even your largest patients to maximize efficiency and throughput. Pianissimo™ technology significantly reduces the noise in the MRI environment, making exams more comfortable and easier to complete.



Pianissimo

Pianissimo

MR acoustic noise is the major complaint of patients and medical staff. Toshiba's patented Pianissimo technology dramatically quiets the MR environment by combining three different techniques. Pianissimo provides the quietest examination environment in the industry.

Vacuum chamber

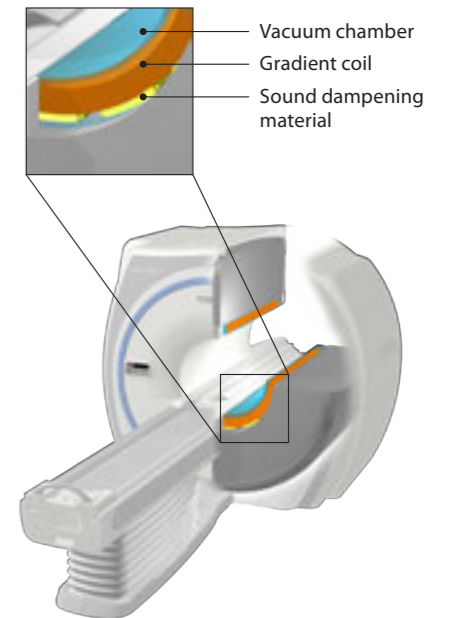
The gradient coil is vacuum sealed, which significantly reduces acoustic noise.

Sound-dampening material

Special insulation between the gradient coil and the magnet dampens sound.

Silent pulse sequences

Vantage Titan 3T also offers special sequences that further reduce gradient noise. These allow even the most sensitive patients to have a pleasant exam experience.



71 cm open bore

The Vantage Titan 3T is designed to maximize image quality without compromising patient comfort. The 71 cm patient aperture gives you more room and flexibility, providing the patient with a feeling of openness. Vantage Titan 3T's spacious interior minimizes claustrophobia, which is a common issue with conventional bore MRI systems.



Ultra-short open bore design

The 71 cm aperture gives you more room and flexibility for easy off-center imaging.



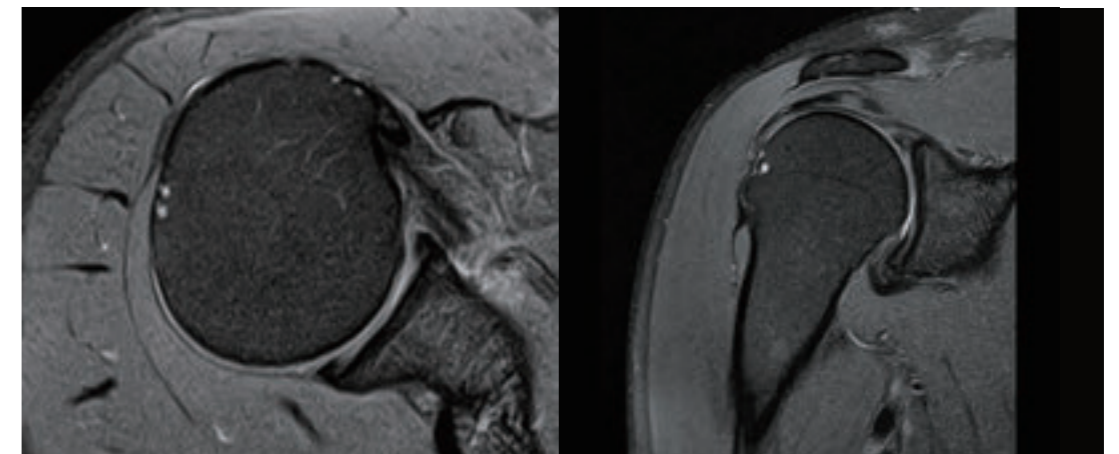
Comfortable for large patients

Wide shoulders and large midsections can still fit comfortably in the large bore of the Vantage Titan 3T.



Wider flexibility for patients' positioning

A large room of the 71 cm patient aperture allows you to adjust a wide range of clinical settings.



High quality off-center imaging

The open bore design allows patients to relax during scans. Even for the most off-center imaging like shoulders or breasts, the high-homogeneity magnetic field of Vantage Titan 3T provides high quality images.

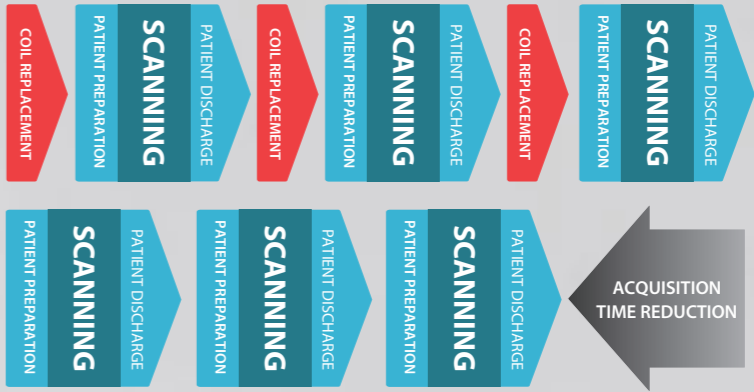
Atlas SPEEDER technology improves workflow

Engineered for ease of use and patient comfort while increasing operational workflow, Atlas SPEEDER coils are lightweight and easy to position. By utilizing the advanced features of Atlas SPEEDER technologies, Vantage Titan 3T provides better image quality throughout the imaging volume.



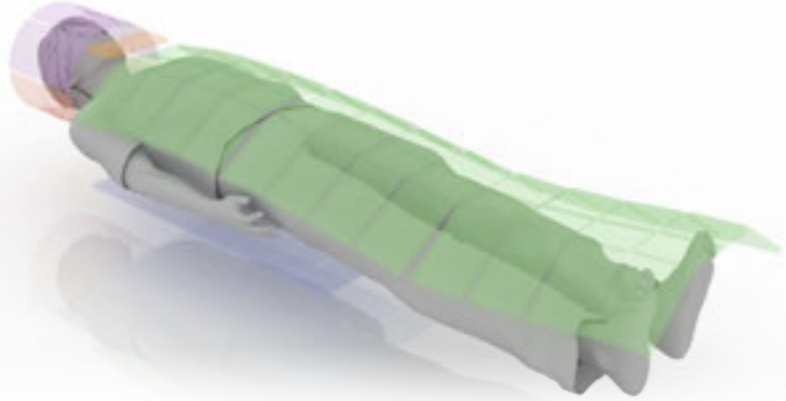
Enhancing workflow

Atlas SPEEDER technology dramatically reduces the time required for coil exchange. The light weight of the coils makes it a fast and easy operation, significantly increasing the workflow.



Positioning flexibility

- Multiple coils can be used simultaneously creating flexibility for operators and comfort for patient
- Convenient port locations mean that a large segment of exams can be performed feet first
- Up to 205 cm scan range coupled with a sliding spine coil provides maximum flexibility for operators and greater comfort for patients



Integrated workflow solution

Atlas SPEEDER coils are uniquely designed to improve workflow and patient comfort. Vantage Titan 3T easily handles multiple studies by allowing you to position the patient and utilize the coils you need in one easy step.

Innovative technologies guarantee high image quality

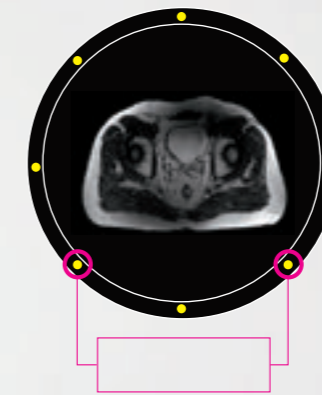
One of the challenges for 3T MRI system is inhomogeneity in images due to the higher frequencies. Toshiba's advanced Multi-phase Transmission technology resolves this issue by providing optimal RF distribution and homogeneity in all body regions. Conform technology offers you the suitable homogeneous field, further enhancing image quality.

Multi-phase Transmission eliminates artifacts found in other 3T systems

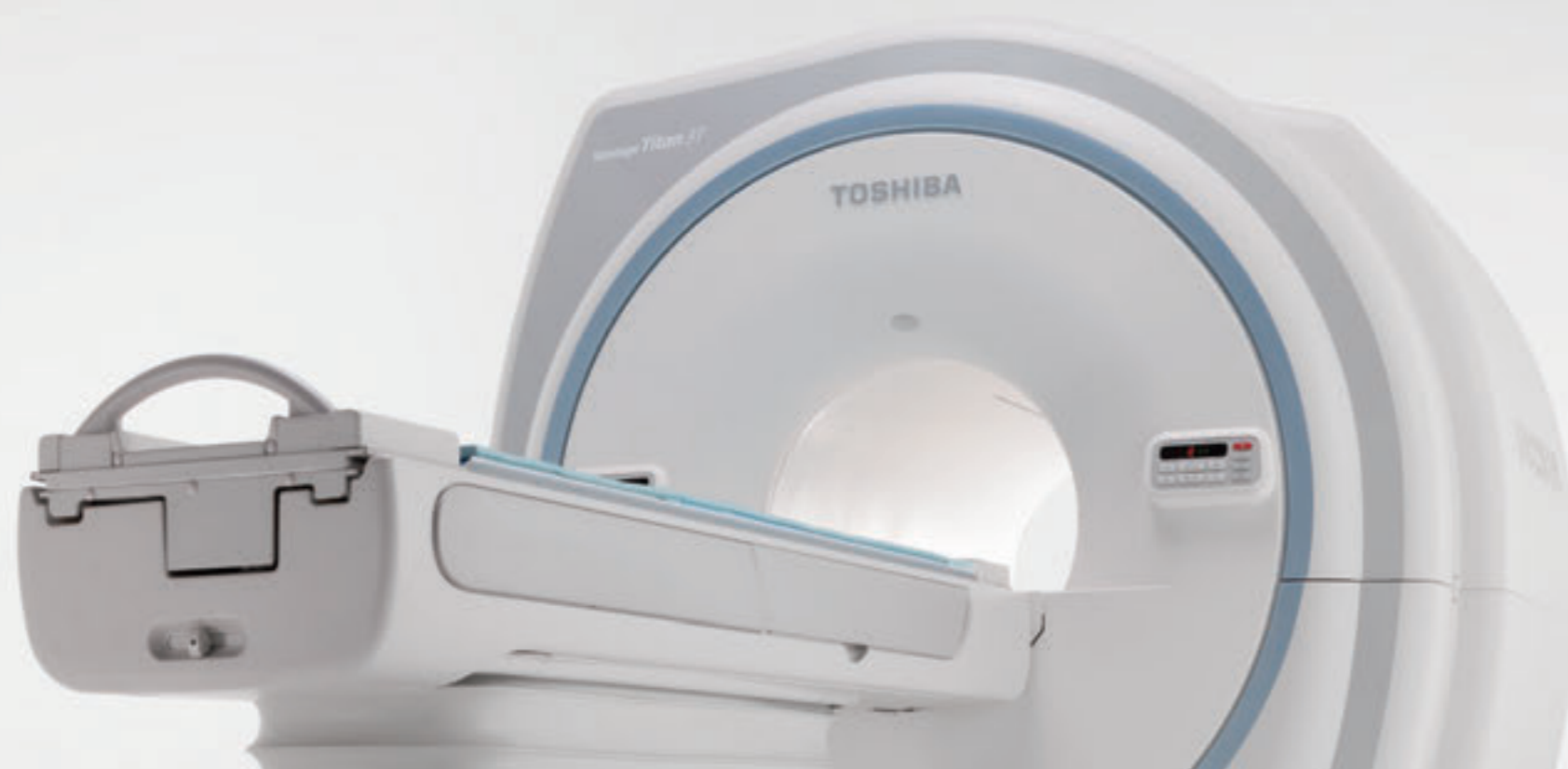
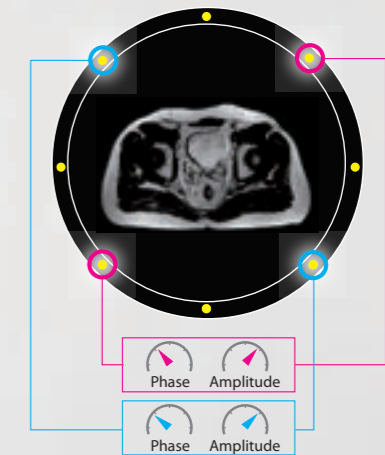
Due to the shortening of wavelengths at higher frequencies, signal drop-off occurs and causes inhomogeneity in images, known as dielectrical effects. The design of the Vantage Titan 3T virtually eliminates these dielectrical effects. Toshiba's Multi-phase Transmission technology utilizes four points of RF transmission, combined with automatic adjustments in phase and amplitude, to guarantee optimal RF distribution and homogeneity in all body regions. Multi-phase Transmission improves 3T image quality without the use of time consuming pre-scans, leading to a more confident diagnosis and an increase in overall system productivity.

Multi-phase Transmission

Conventional
2 RF Transmission Ports

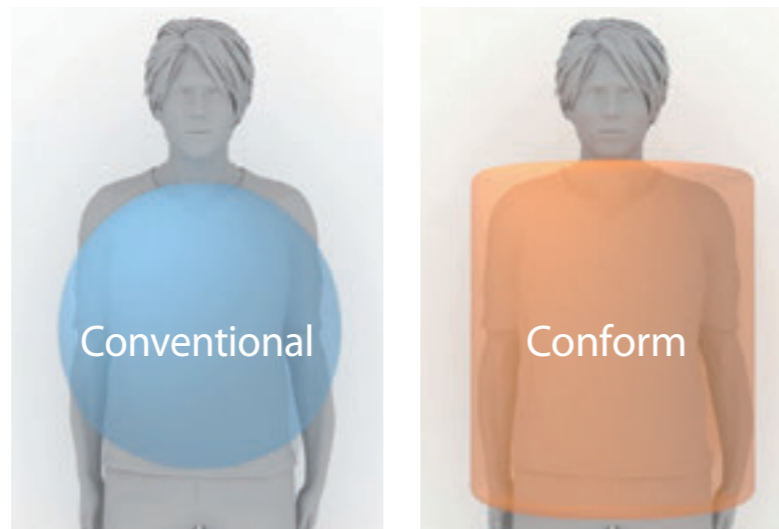


Multi-phase Transmission
4 RF Transmission Ports



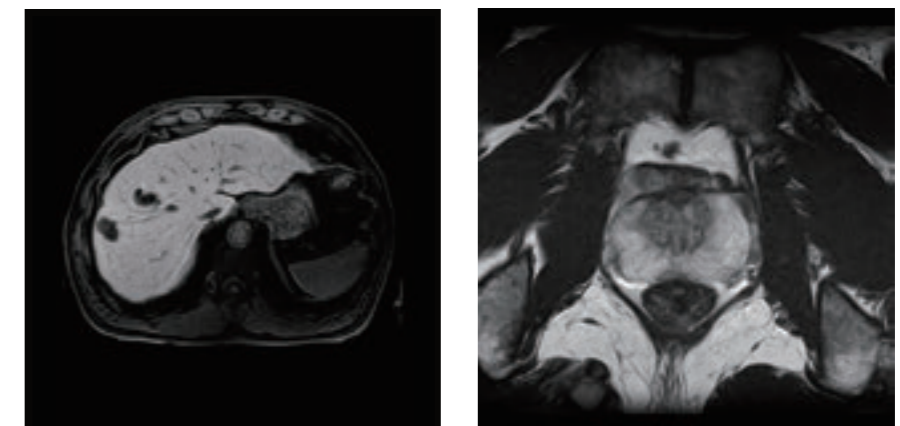
Conform improves patient coverage

Conventional MR systems utilize a spherical volume to image. The Vantage Titan 3T uses a unique combination of shim techniques to form a cylindrical volume that better corresponds to the shape of the human body. Conform technology gives the Vantage Titan 3T a very homogeneous, full field-of-view of 50 cm x 50 cm x 45 cm.



Combination of advanced technologies provides high image quality

One of the most challenging regions for acquiring 3T images is abdomen. Our Vantage Titan 3T allow you to acquire high-quality abdominal images.



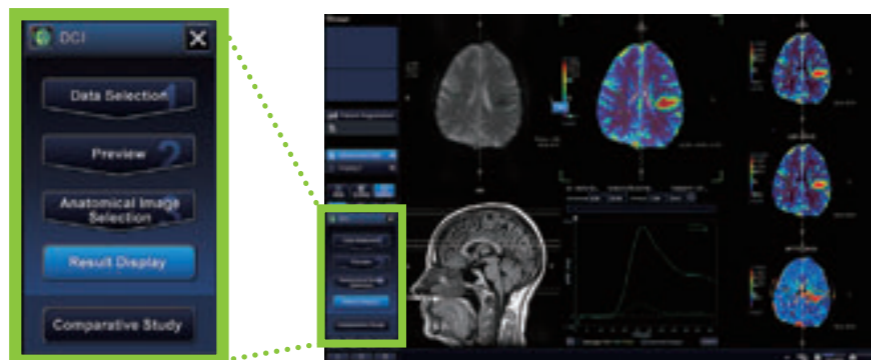
Ease of use for every level of users

M-Power™ is Toshiba's intuitive user interface, which can be easily used by any technologist or physician whether they are new to MR or have years of experience. It allows for the efficient use of Vantage Titan 3T for optimized workflow and productivity.



WFDA enhances daily workflow

WFDA (Work Flow Driven Applications) appropriately guides you based on clinical workflow including scan parameter setting, post-processing and image transfer. It enables you to use advanced application without difficulty.

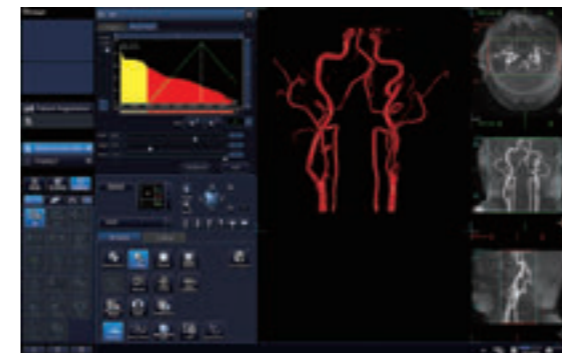


Navigation for DCI examination

The whole process is displayed on the monitor, which tells operators what they should do next. It is simple to go back and make changes if needed.

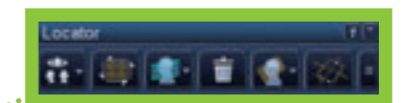
Easy-to-use universal GUI

Look and feel of GUI (Graphic User Interface) are common between Toshiba's other modalities. It enables operators to use whole Toshiba's modalities in a similar way. It is designed to enhance daily workflow, maximizing system productivity.



M-Power operation window for 3D post-processing

Easy to use due to intuitive icons and operation windows. For operators, we specifically selected colors to help reduce eye fatigue.



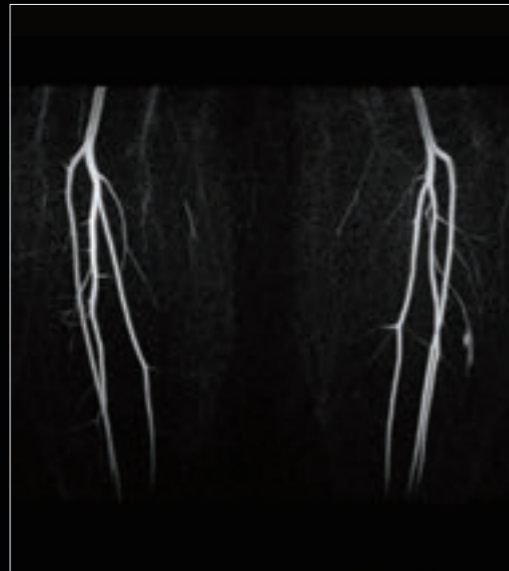
mToolbar optimizes workflow

It is possible to personalize your workflow with putting most frequently used scanning tools into the mToolbar.

Image Gallery

Non-contrast MRA

Vantage Titan 3T provides advanced non-contrast MRA techniques that minimize risk to patients while producing exceptional images.



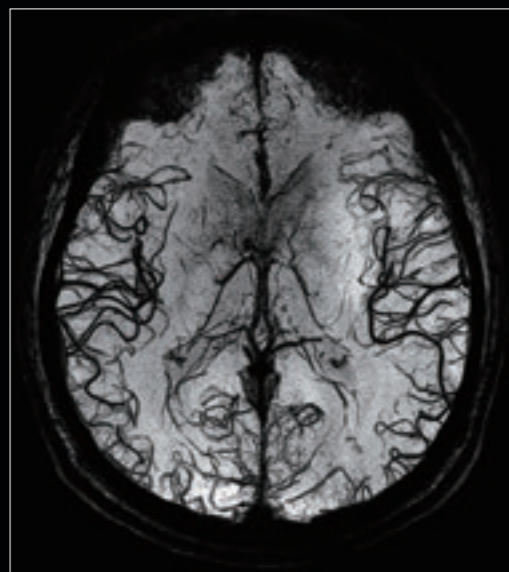
Flow-spoiled FBI

Lower limb vessels can be clearly depicted with separating arteries and veins with better depiction of small vessels with delicate blood flow.



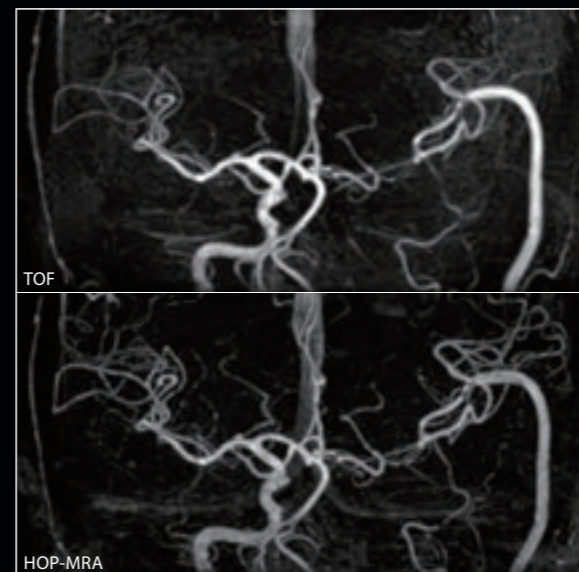
Time-SLIP

More and smaller details of branched arteries can be clearly depicted than with any other technique.



FSBB

FSBB shows more details of arteries and veins which cannot be depicted by TOF.

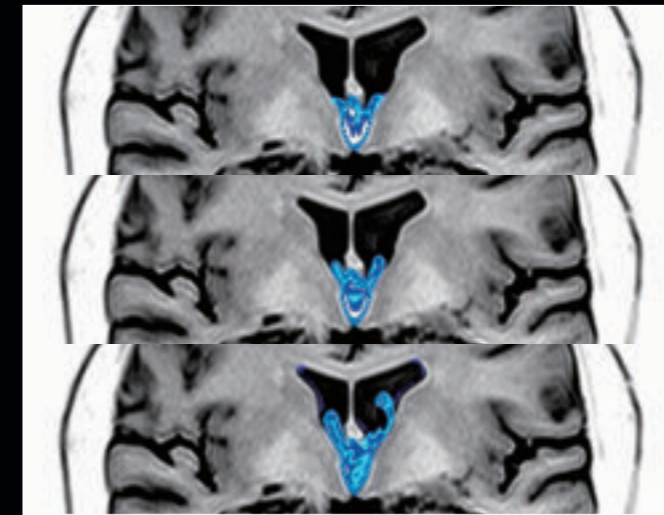


HOP-MRA

Combination of FSBB and TOF depicts blood vessels with a wide range of flow velocities.

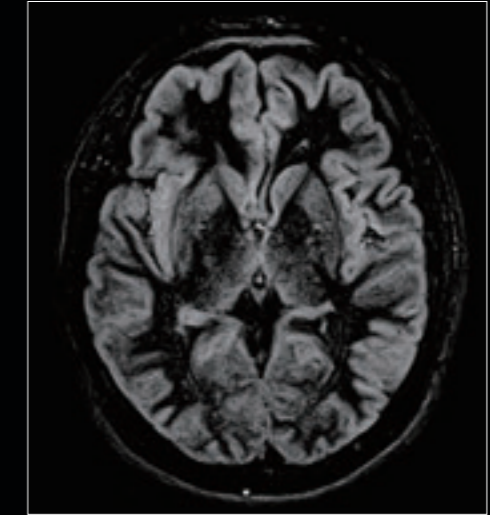
*By courtesy of Kyorin University Hospital

mNeuro



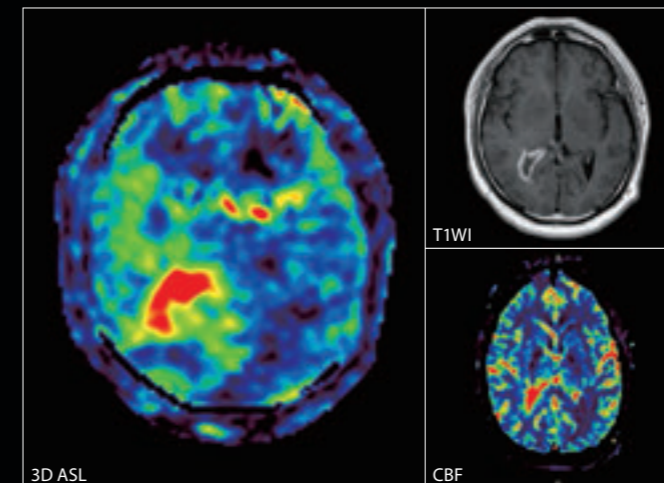
CSF Dynamics Imaging

CSF dynamics can be imaged by selectively labeling the flow with RF pulses. It allows clinicians to capture CSF flow in natural state.



Double IR

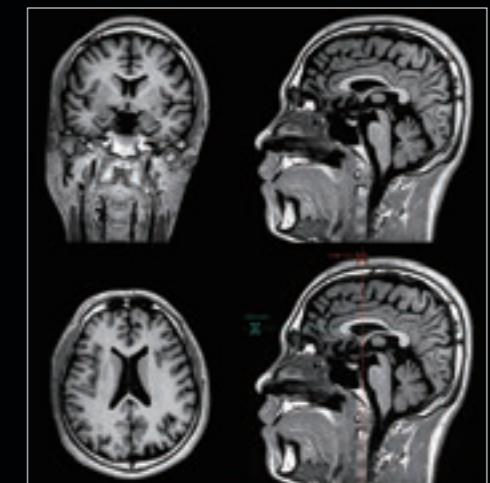
Applying the double IR pulses allows better suppression of gray and white matter.



3D ASL

ASL enables users to acquire perfusion-weighted images by labeling the blood itself with a RF pulse. It provides precise hemodynamic information non-invasively.

*By courtesy of Kyorin University Hospital



mVox

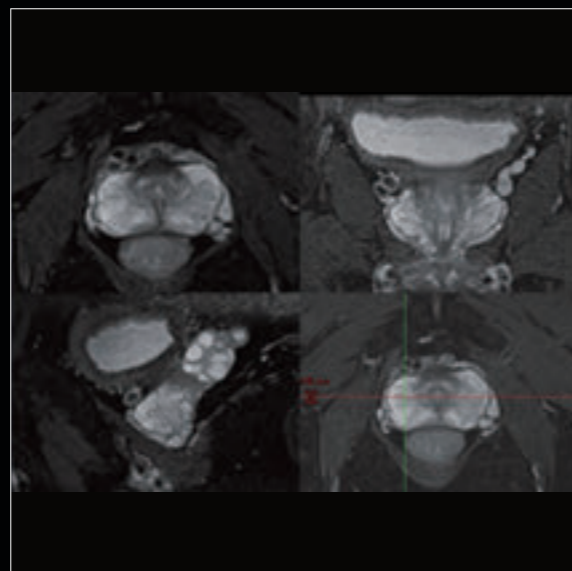
FSE-based 3D T1W image data can be acquired in one scan. 3D post-processing in any plane makes diagnosis much more flexible, simpler and productive.

Image Gallery

■ mBody

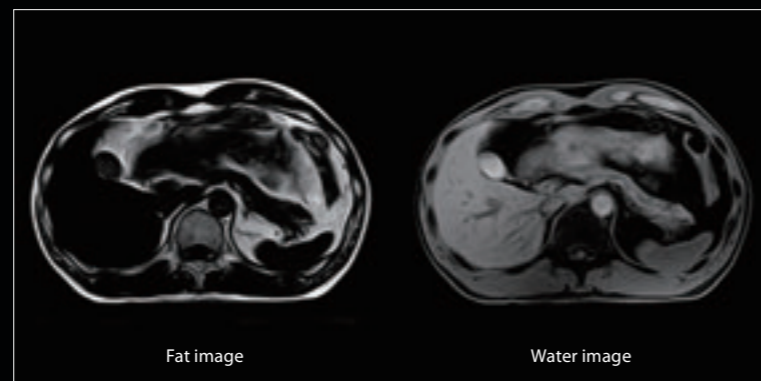
mVox

3D image data of the whole organs can be acquired in one scan. 3D post-processing in any plane makes diagnosis much more flexible, simpler and productive.



WFS (Water Fat Separation)

WFS provides water based images and fat based images by calculating images acquired with different echo times. Advanced reconstruction algorithm further enhances image quality.

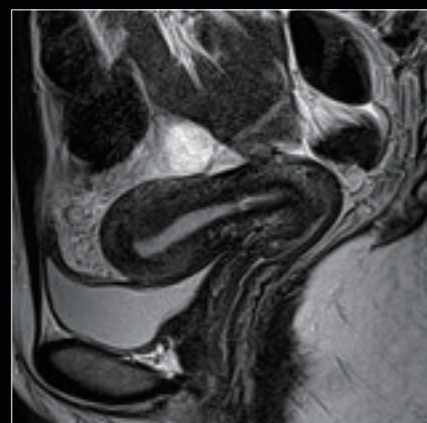


JET™ (Non-Cartesian data acquisition)

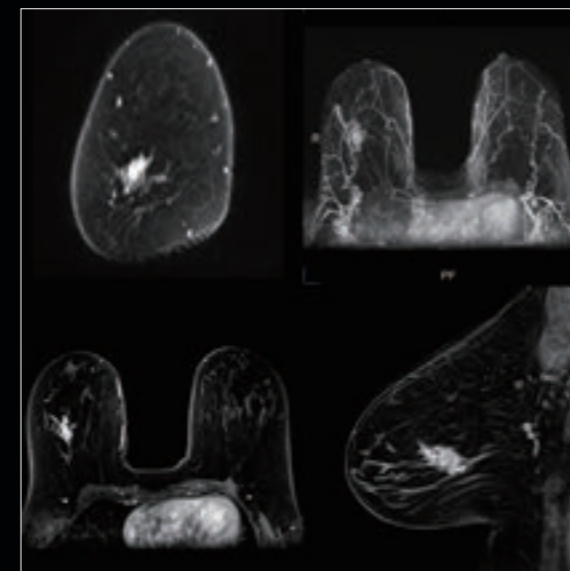
The JET technique acquires data for the k-space in non-Cartesian mode to suppress motion artifacts caused from any involuntary motion. JET is useful not only for body or brain, but many other examinations.



Non-cartesian Data Acquisition



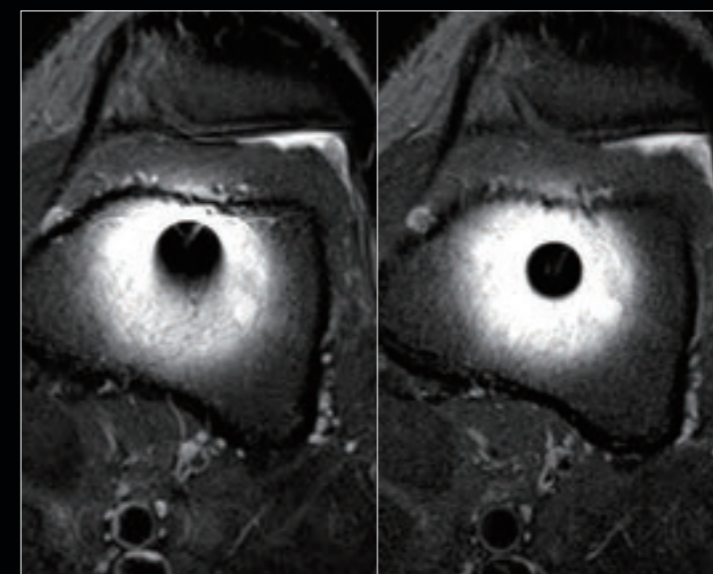
■ mBreast



3D Quick FFE

Images with high temporal and spatial resolution are particularly useful to display detailed anatomy. Enhanced fat suppression improves visualization of tiny lesions.

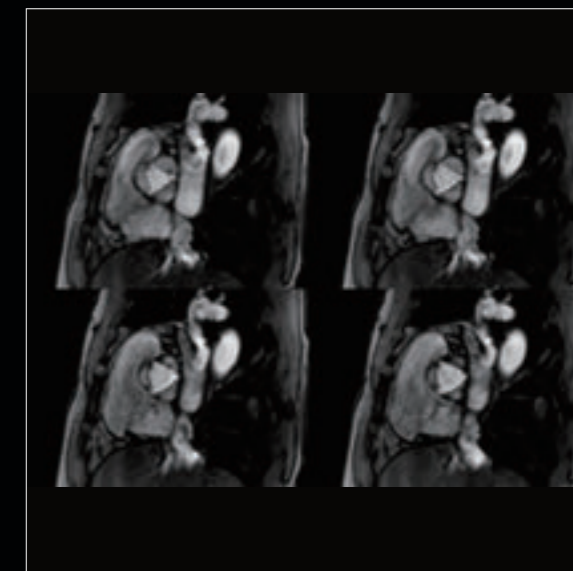
■ mOrtho



VAT (View Angle Tilting)

VAT reduces metal related artifact caused by high off-resonance frequency. It provides clear images even for patients with metal device implants.

■ mCardiac



Cine Imaging

Due to Toshiba's Multi-phase Transmission technology, the Vantage Titan 3T demonstrates excellent B1 homogeneity, easily depicting detailed anatomy such as the aortic valve.

M-Echo

Multi-echo Image combination technique provides high resolution images with excellent contrast.

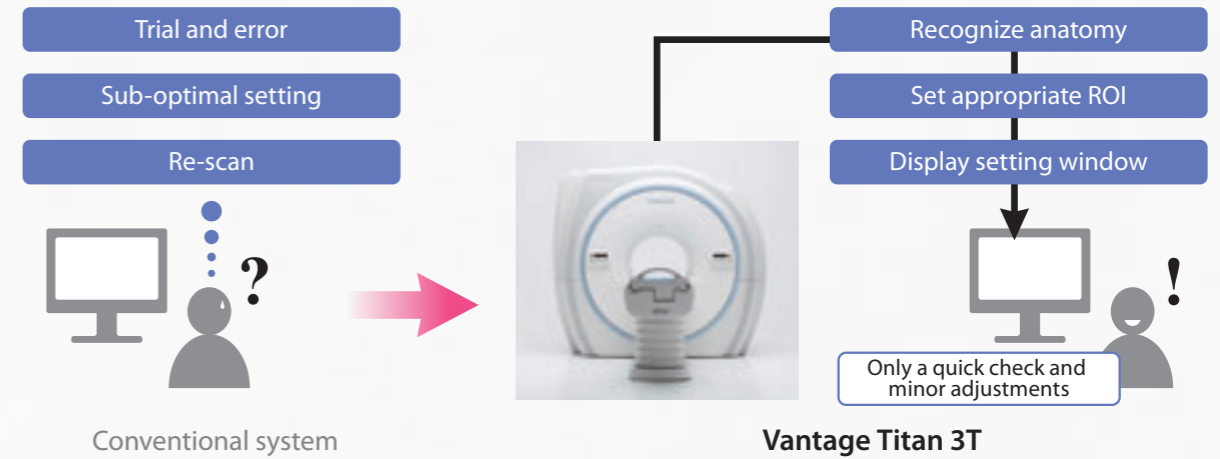
Ensuring high quality examinations

It is important to ensure the highest possible examination quality no matter who operates the MRI system. Vantage Titan 3T provides advanced operation support functions, enabling every level of user to acquire the same standard results. It makes daily examinations consistent and efficient.



EasyTech

EasyTech precisely recognizes target shapes and helps the user to set optimized scan planes. The calculation of the best settings is completed in a few seconds, which improves examination workflow. Thanks to EasyTech, high-quality examinations can be acquired even by inexperienced operators.



DelayTracker™

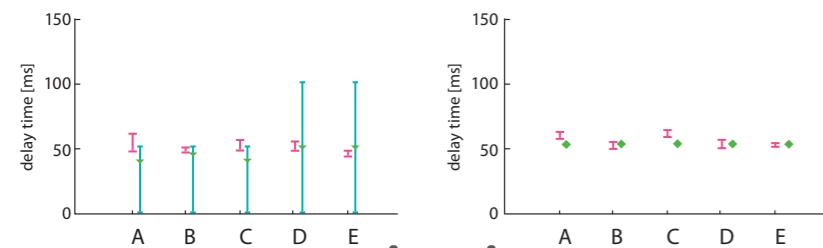
It no longer requires a high level of experience for lower limb FBI. DelayTracker enables anyone to acquire high quality images of lower limb FBI consistently, even with an inexperienced operator.

New workflow for FBI examination

Manual settings of delay time were required for conventional systems, which was the main cause of unsteady examination quality. However, DelayTracker automatically calculates cardiac timing to provide ensure high quality examinations.

Examinations are reproducible regardless of operator's experience

FBI examinations used to depend on the operator's judgement to set appropriate delay time of systole and diastole. Thanks to DelayTracker, operators who have any level of experience can have same standard of result as any other user. (Red plot: Delay time set with DelayTracker, Green plot: Delay time set by conventional system)

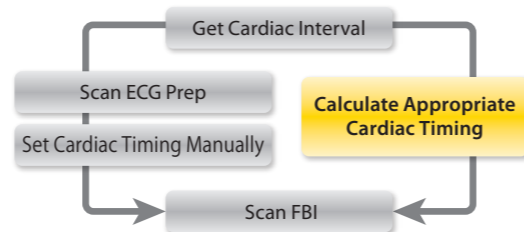


Under 1 year

Delay times set by five inexperienced operators vary a lot depending on each operator as shown in blue lines. As a result, image quality may be non-diagnostic. However, DelayTracker allows setting of steady delay time for all operators as shown in pink lines resulting in excellent image quality.

Over 5 year

Delay times set by experienced operators are shown in green lines, which are in the same standards of DelayTracker shown in pink lines. This result proves that DelayTracker ensures high quality examinations.



Ensuring the quality of lower limb FBI examination

DelayTracker provides superior image quality than any previous method.

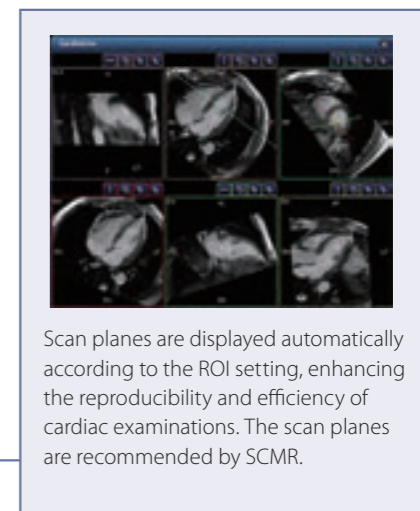


CardioLine

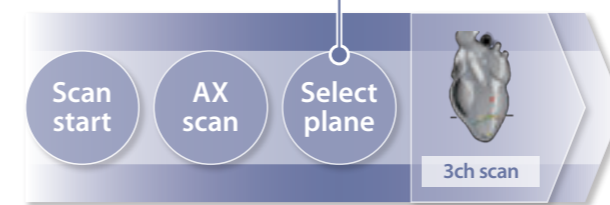
Scan planes are set in only a few seconds after acquiring 2D multi-slice images of whole heart. With CardioLine, precise cardiac examinations become available in a short time, thereby enhancing workflow.

Scan for three-chamber plane

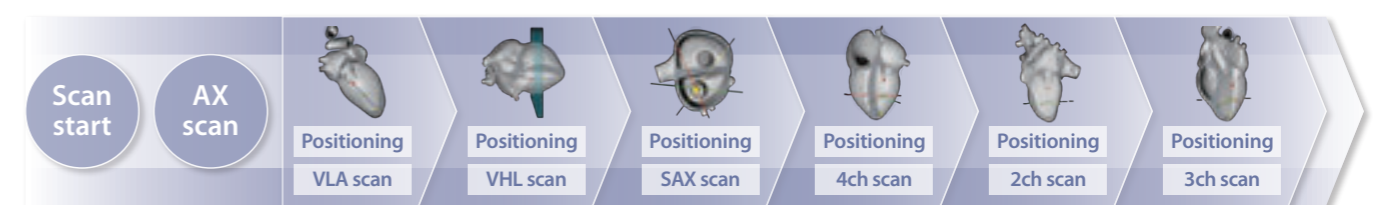
For conventional cardiac exam, 6 times of positioning for each cardiac plane are required to scan the three-chamber plane. Hence, it requires long examination time and operator's experience. However, CardioLine enables to scan the plane only by selecting it after the axial scan.



CardioLine



Conventional cardiac exam



*Operation support functions are options.

Friendly to Your Patients and Our Environment

The design of Vantage Titan 3T is sensitive to both patient comfort and environmental concerns. Our patient-friendly system reduces patients' anxiety and ECO mode keeps running costs low and contributes to environmental conservation.



Pianissimo

True comfort for all patients

In MRI examinations, the patient's cooperation is essential, and it is important to eliminate psychological discomfort and help the patient relax. Vantage Titan 3T, with Pianissimo silent scan technology, provides a comfortable examination environment and extends the range of applicable patients. Moreover, with the capability to apply non-contrast-enhanced examinations to a wide range of body regions, the risk of allergic reactions to contrast medium is reduced.

Patient-friendly examinations with an open-bore system

This large 71 cm open-bore system provides a spacious and relaxing patient environment, permitting patients to undergo MR examinations with less anxiety. The open-bore allows patients to be positioned comfortably during scanning. In addition, the larger examination space makes it easier to secure the coil to the patient, reducing stress for both the patient and the operator.



Helium zero boil-off system

Incorporation of a high-performance cooling system eliminates the need for periodic liquid helium replenishment. This zero-consumption system results in more environmentally friendly MRI system. Since liquid helium replenishment is not required, the time required for maintenance work is also reduced.

Revolutionary "ECO mode"

In conventional MRI systems, power is supplied to various subsystems even while in Standby mode in order to maintain a stable system operation. The Vantage Titan 3T provides a Revolutionary "ECO mode" in which power is supplied to fewer subsystems while ensuring stable operation. Vantage Titan 3T has the ability to switch from ECO mode to scan ready status within 1 second, permitting emergency examinations to be performed without delay. Thanks to ECO mode, the amount of power consumption is reduced by up to 15,500 kWh per year.

