

**LEADING INNOVATION**

For more than 130 years, Toshiba has been a world leader in developing technology to improve the quality of life. Some 50,000 global patents demonstrate that rich history of leading innovation. It might surprise you to learn some of the things we've invented.

<b>1875</b> Founding of Toshiba	<b>1998</b> First generation of non-contrast MRA	<b>2006</b> First 128 element MRI system
<b>1915</b> First X-ray tube	<b>2000</b> First all-digital multipurpose x-ray	<b>2006</b> 4th generation of non-contrast MRA
<b>1989</b> First helical CT scanner	<b>2001</b> 2nd generation of non-contrast MRA	<b>2007</b> First dynamic volume CT scanner
<b>1993</b> First one-million-pixel CCD	<b>2003</b> First 64-slice CT scanner	<b>2007</b> First 71 cm aperture in an open MRI
<b>1997</b> First open, superconducting magnet	<b>2003</b> Ultra-short 1.5T MRI system	
<b>1998</b> Quietest 1.5T MRI System	<b>2005</b> 3rd generation of non-contrast MRA	

**AWARD-WINNING SERVICE AND SUPPORT**

Developed with customer input, Toshiba's innovative support programs have resulted in greater satisfaction when using our MR systems as reflected in customer surveys time after time.

**InTouch Center™**

A centralized service facility that provides applications and service support expertise for Titan customers 24 hours a day, seven days a week.

**InnerVision® Plus**

Monitored around the clock, remote system diagnostics help identify problems and provide potential solutions before care is interrupted or an engineer can arrive.

**InTouch Agreements**

Tailored to meet specific customer requirements, these range from an a la carte approach that helps manage risk to full security agreements that provide complete system protection.

**Technical Assistance**

Customer support specialists are available 24/7 to identify and resolve technical issues in real time. Application specialists are also available to assist staff with protocol and image quality issues.

**Local Customer Teams**

A single call mobilizes a local team of Toshiba Customer Engineers. Averaging 10 years of experience with Toshiba and 105 hours of specialized training per year, they can quickly resolve almost any performance issue.

**Parts Support**

A complete inventory of Vantage Titan 3T product parts is ready for shipment when and where they're needed, any time day or night.



**TOSHIBA AMERICA MEDICAL SYSTEMS, INC.**

2441 Michelle Drive, Tustin CA 92780 / 800.421.1968

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**Vantage Titan™ 3T**

# True comfort and flexibility with the power of 3T.

With a large 71 cm aperture and the quietest exams in the industry, the Vantage Titan 3T is the most comfortable 3T MRI system for all of your patients. The Atlas integrated coils give operators a wide range of flexibility and offer unique capabilities when coupled with the most evolved non-contrast MRA package available. This advanced system design is the result of listening to and building for doctors and the patients they serve. And for those concerned about the major leap to 3T, the Vantage Titan can be configured to grow along with your clinical needs.



# Successful exams begin with comfortable patients.

The Vantage Titan 3T is designed to maximize image quality without compromising patient comfort. Its 71 cm aperture and expansive open bore allow you to image even your largest patients to maximize efficiency and throughput. 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 isocenter imaging.



## Comfortable for Large Patients

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



## Feet First Imaging

The 40-element Atlas SPEEDER™ Spine Coil is integrated into the patient table and can be positioned at either end. This allows for feet-first positioning, minimizing feelings of claustrophobia and increasing patient comfort.

# Its most unique feature is one you may never hear.

MR acoustic noise is one of the major complaints of patients and medical staff. Toshiba's patented Pianissimo™ technology significantly reduces the noise in and around the MRI environment, making exams more comfortable and easier to complete. With Pianissimo, MRI no longer needs to be loud and disruptive.



Vantage Titan 3T reduces acoustic noise in three different ways.

## Vacuum Chamber

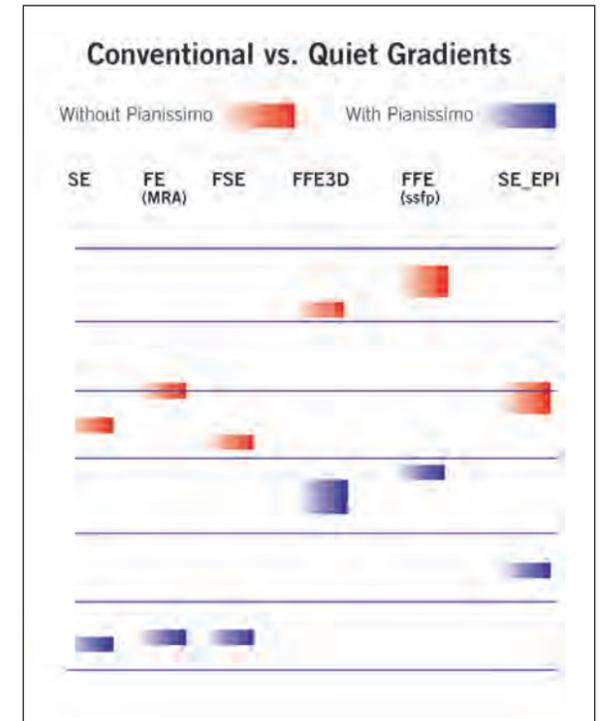
The gradient coil is vacuum sealed, which significantly reduces acoustic noise.

## Sound-Dampening Material

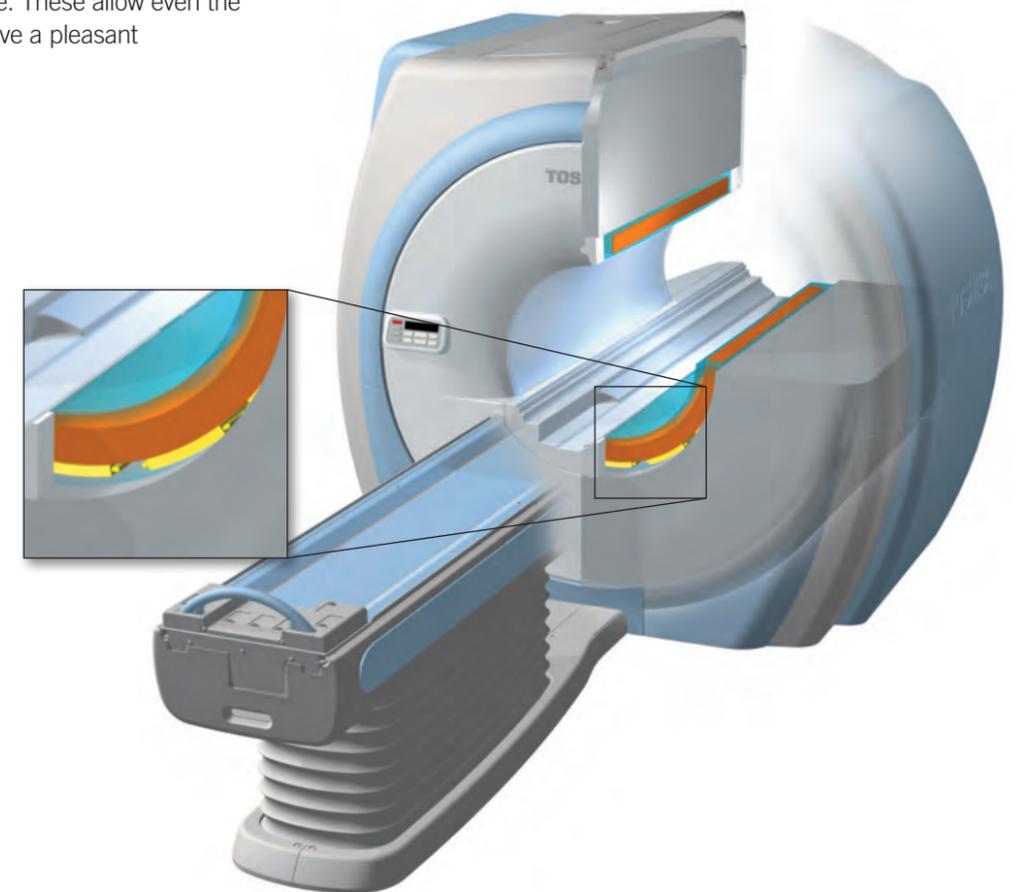
Special insulation between the vacuum vessel and the magnet dampens sound and minimizes the vibrations transmitted to the magnet.

## 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.



- Vacuum Chamber ●
- Gradient Coil ●
- Sound Dampening Material ●



# Unique technologies provide you more uniformity and coverage.

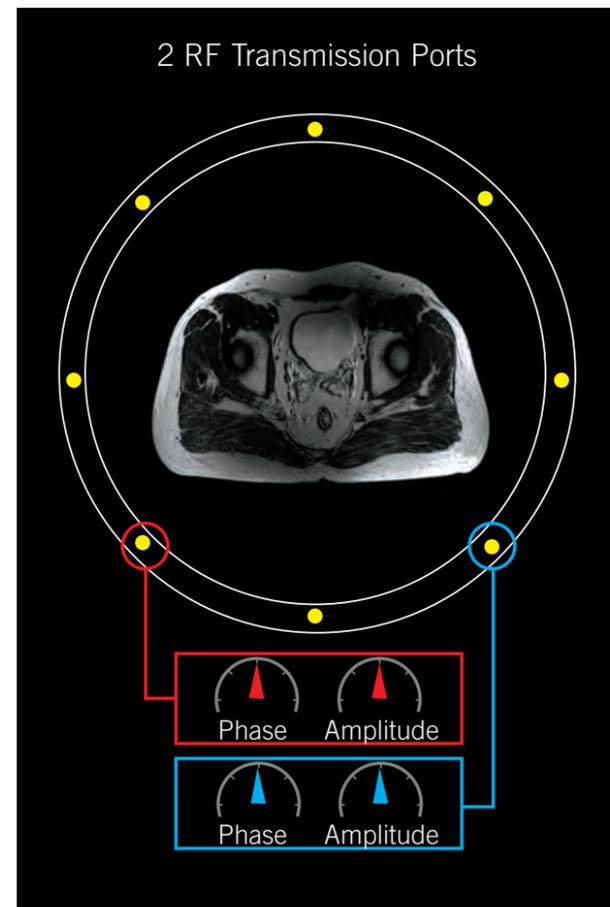
## Multi-phase Transmission

Toshiba's Vantage Titan 3T is equipped with advanced radio frequency transmission technology to eliminate fundamental depth penetration issues that have always been problematic for 3T imaging.

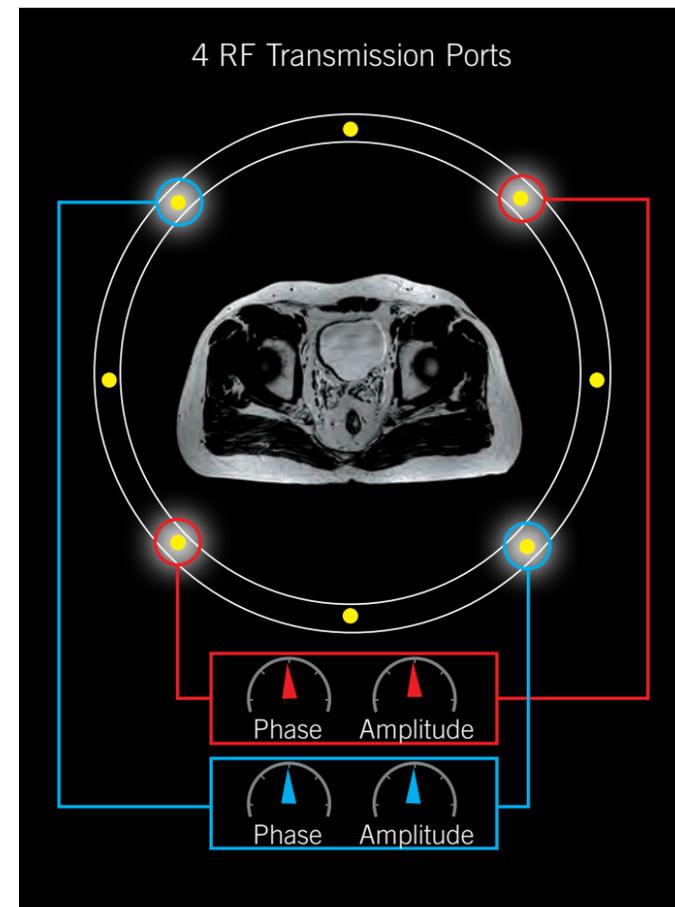
Due to the shortening of wavelengths at higher frequencies, signal drop-off occurs and causes inhomogeneity in images, known as dielectrical effects. The design of the Vantage Titan 3T virtually eliminates these dielectrical effects. Toshiba's Multi-phase Transmission technology utilizes *four* points 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.

Conventional



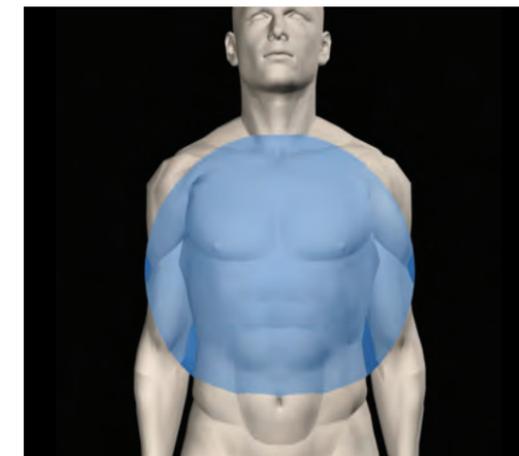
Multi-phase Transmission



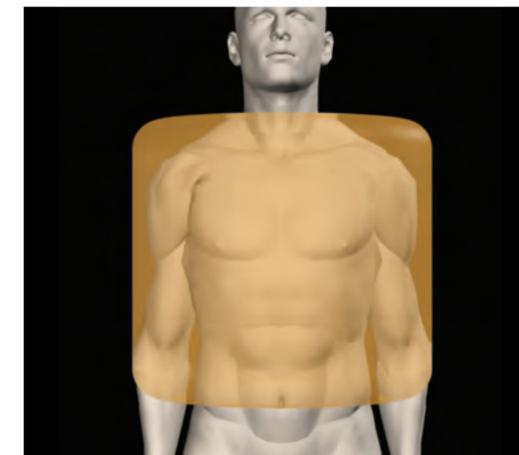
## Conform

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

Conventional



Conform



## M-Power user interface

M-Power is an intuitive new user interface built for all levels of users. It allows an efficient use of the Vantage Titan 3T for optimized workflow and productivity. M-Power uses advanced hardware and software for ultra fast image reconstruction and advanced post processing applications.



Scan planning



Viewing



Advanced post-processing

# High quality, non-contrast MRA minimizes patient risk.

An increasing awareness of the potential risks associated with gadolinium-based contrast agents has revealed the need for alternative, contrast-free MRA techniques. We provide clinicians four generations of unique, non-contrast MRA sequences that minimize risk to patients while producing exceptional images. These images are often better than those acquired with conventional contrast enhanced techniques.



## FBI: Fresh Blood Imaging

Acquires angiograms and venograms in one acquisition with exceptional sensitivity of the natural blood flow.

## CIA: Contrast-free Improved Angiography

Superior imaging of smaller vessels to expand the window of opportunity for evaluating early disease states.

## Time-SLIP: Spatial Labeling Inversion Pulse

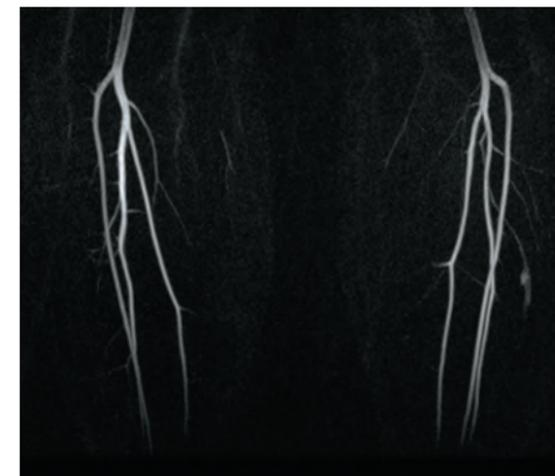
Evaluates hemodynamic velocity, functional assessments, and visualization of vascular structures.

## TSA: Time Space Angiography

Utilizes variable BB-T1 times to create non-contrast, time-resolved images with high temporal resolution.



Non-Contrast FBI runoff



Non-contrast FBI of the lower extremity



Time-SLIP non-contrast renal arteries

# Atlas technology powers the efficient technologist.

Engineered for ease of use and patient comfort while increasing operational workflow, Atlas coils are lightweight and easy to position. Compared to conventional coils, Atlas coil technology utilizes a unique combination of smaller elements, which deliver a higher signal-to-noise ratio, with larger elements for greater penetration. By simultaneously integrating up to 128 elements, Vantage Titan 3T provides better image quality throughout the imaging volume.

## POSITIONING FLEXIBILITY

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



Atlas SPEEDER Body Coil (16 elements)



Atlas SPEEDER Head/Neck Coil (16 elements)



Atlas SPEEDER Spine Coil (40 elements)



## Integrated Workflow Solution

Atlas 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.

# Clinical Image Gallery



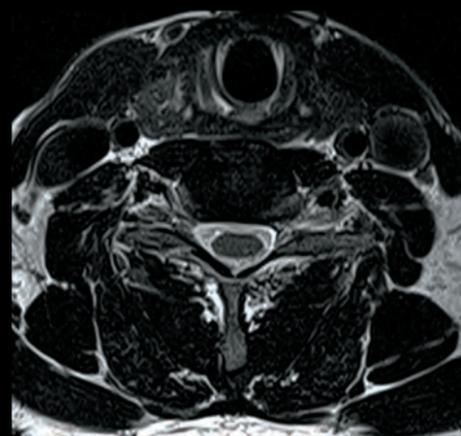
Multi-slab Time-of-Fight non-contrast MRA with 0.3 mm resolution



Flow Sensitive Black Blood MRA



T2W sagittal cervical spine with 0.3 mm resolution



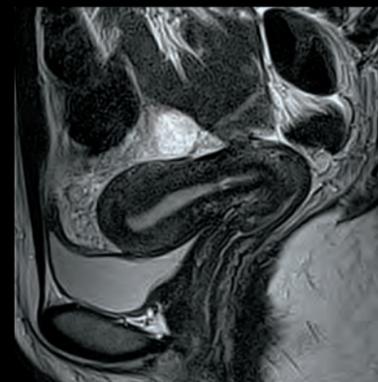
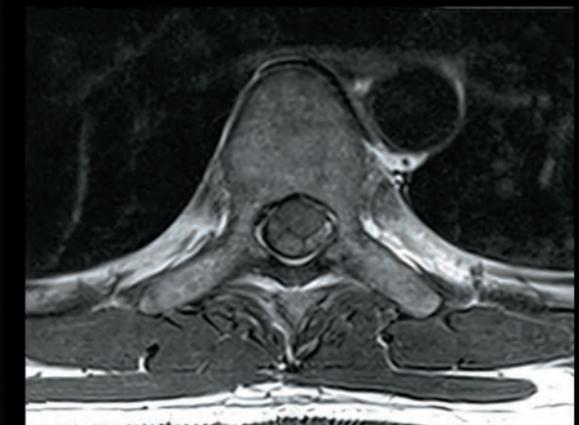
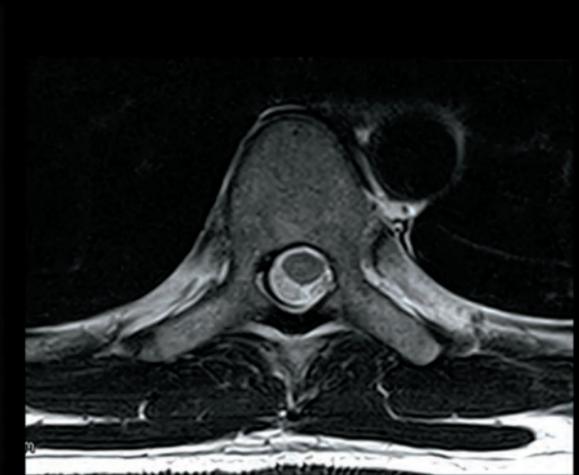
T2W axial cervical spine with 0.3 mm resolution



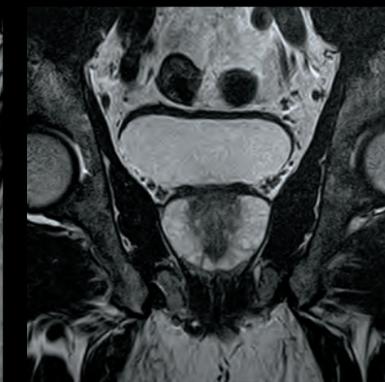
T1W axial cervical spine with 0.3 mm resolution



T2W and T1W thoracic images with 0.3 mm high resolution imaging depicting the smallest of details



T2W sagittal female pelvis with JET



T2W coronal male pelvis



Fat Free T1W coronal elbow

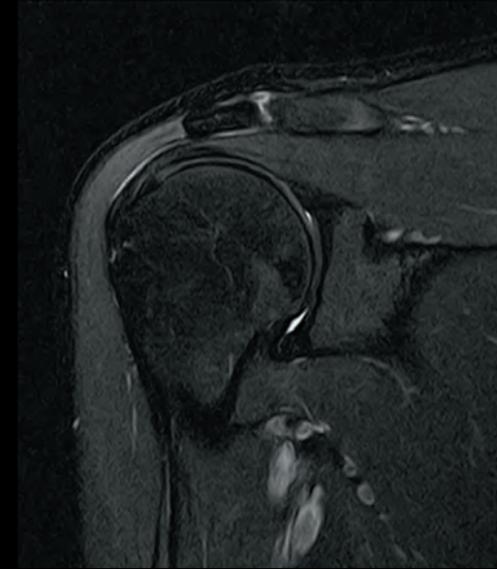
# Clinical Image Gallery



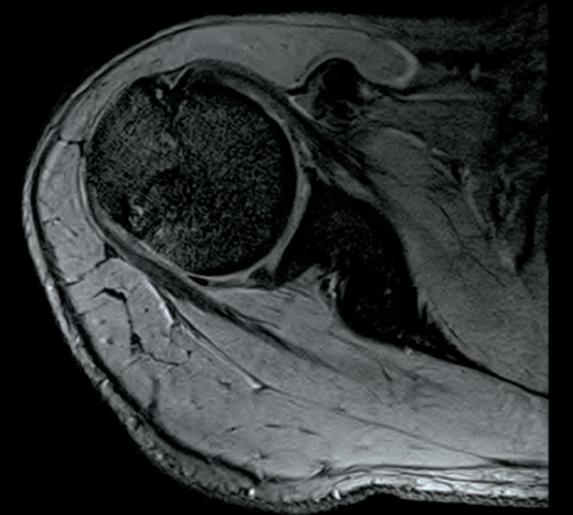
T1W axial abdomen



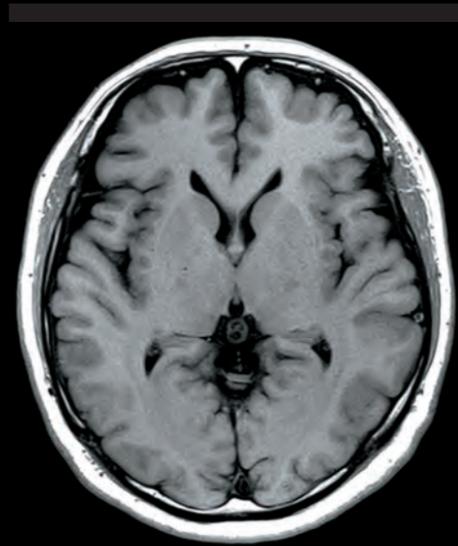
T2\* sagittal shoulder



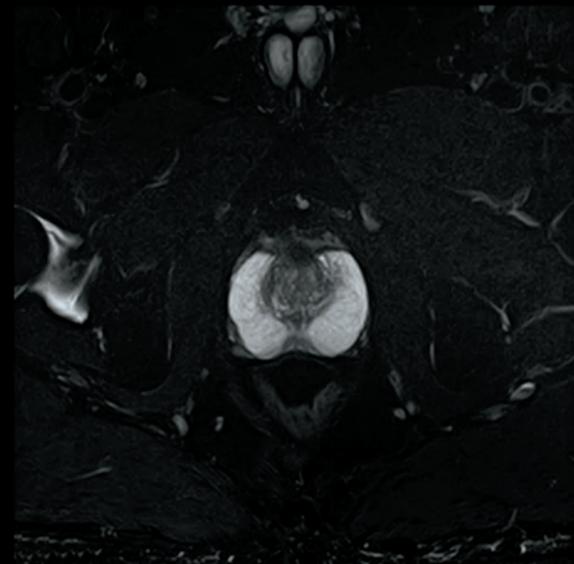
Homogenous off-center Fat Free coronal shoulder



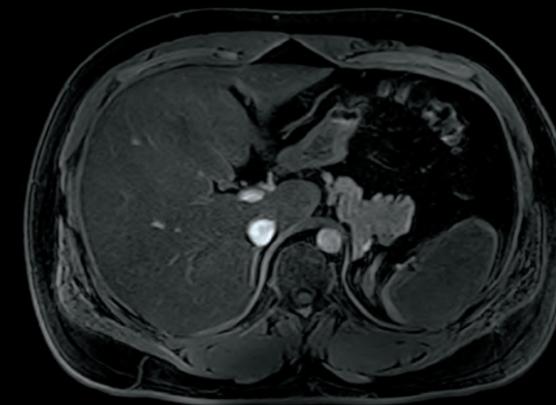
T2\* axial shoulder



T1W axial brain



Complete fat saturation male pelvis



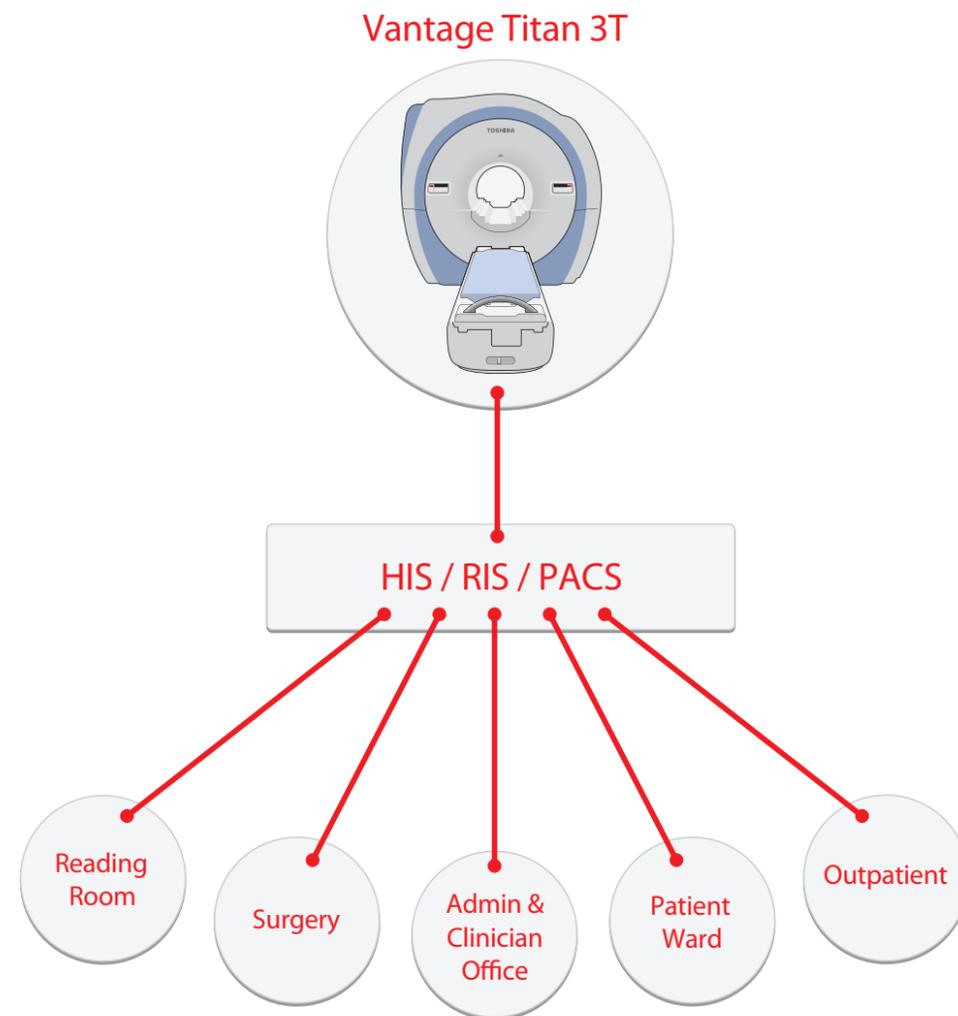
T1W Fat Free axial abdomen



T1W sagittal ankle

# Enhance workflow and networking with exceptional performance.

Vantage Titan 3T is designed to embrace open network standards to facilitate easy integration in the widest variety of network environments. Vantage Titan 3T systems comply with DICOM standards to assure optimum communications between network systems.



## HOSPITAL NETWORK INTEGRATION

Toshiba has voluntarily implemented the communications of its medical imaging systems with Integrating the Healthcare Enterprise (IHE). This allows the user to boost clinical efficiency with universal IHE connectivity for simple access and distribution of data across any size hospital or physician network.

## IHE PROFILES SUPPORTED

- Scheduled Workflow
- Portable Data for Imaging
- Consistent Presentation of Images
- Presentation of Grouped Procedures
- Patient Information Reconciliation
- Charge Posting

