

MRI - 3007

MRI System 1.5 Tesla



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

Analytical Technologies Limited

An ISO 9001 Certified Company

►► Technical Specifications

► Magnet

- Whole Body 1.5Tesla Magnetic Resonance Imaging System optimized for higher performance in Whole Body and Vascular examinations with superconducting magnet, high performance gradients and digital Radio Frequency System.
- 1.5T Actively shielded super conductive magnet should be short and non-claustrophobic
- It has 70 cms patient bore with flared opening.
- Magnet length < 200 cms
- Homogeneity of magnet < 3.5 ppm over 45cm DSV
- Magnet is well ventilated & illuminated with built in 2 way intercom for communication with patient.
- It has built in cryo-cooler such that typical helium consumption does not exceed 0.01 lt/hour
- Emergency Rundown Control at both operator console room and Gantry Room.
- Fringe Field 0.5 Gauss line radius
- Front Panel of gantry displaying table and patient position.

► Shim System

- High performance, highly stable shim system with global and localized automated shimming for high homogeneity magnetic field for imaging and spectroscopy.
- Auto shim is to shim the magnet with patient in position

► Gradient System

- Actively shielded Gradient System
- Gradient should be actively shielded with each axis having independently a slew rate of at least 120 T/m/s and a peak amplitude of 33mT/m
- With efficient and adequate Eddy current compensation
- Effective cooling system for gradient coil and power supply.
- Duty Cycle 100% the gradient power amplifier.
- Usable over 45 cm of FOV in all directions.

► RF System

- A fully digital RF system capable of transmitting power of at least 15 KW.
- It has 32 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array / matrix coils.
- Supported in Parallel acquisition techniques with a factor of up to 4 in 2D.
- Should allow remote selection of coils or coil elements.

► PATIENT TABLE

- fully motorized, computer controlled table movements in vertical and horizontal directions.
- Hand held alarm for patients
- Light Localizer for patient positioning.
- Physiological signals display like ECG, Pulse and SPO2
- Patient load bearing capacity, minimum 200 Kg.

► MEASUREMENT SYSTEM

- Largest Field of View should be at least, 45cm in all axis.
- The measurement matrix should be from 128x128 to 1024x1024.
- Minimum 2D slice thickness mm should be equal to or less than 0.5
- Minimum 3D slice thickness mm should be equal to or less than 0.1

► COIL SYSTEM

- The main body coil integrated to the magnet must be Quadrature /CP.
- Multichannel Head coils with at least 12 channel for high resolution brain imaging.
- Neuro-vascular Coil with 16 or more channels or Head / Neck Coil combined, capable of high resolution neuro-vascular imaging
- 18 Channel Spine Array/Matrix Coils for thoracic and lumbar spine imaging.
- Body Array/Matrix coil with at least 40 cm z axis coverage for imaging of abdomen, angiograms and heart with 32 channel.
- Suitable for Cardiac Coil
- 16 channel extremity coil.
- Breast Coil with at least 4 channel with fully functional spectroscopy.
- Shoulder Coil with at least 16 channels
- Knee Coil with at least 16 channels

- General purpose flexible coil with small and large size -8 channel or more
- Coil Storage Cart
- Monitor the RF coils used during scanning to detect failure modes. RF coils should not require either set up time or coil tuning; Multi coil connection for up to 2 or more coils simultaneous scanning without patient repositioning.

► APPLICATION SEQUENCES

- Sequences package with Spin Echo, InversionRecovery, Turbo Spin Echo with high turbo factor of 256 or more, Gradient Echo with ETL of 255 or more, FLAIR.
- Single slice, multiple single slice, multiple slice, multiple stacks, radial stacks and 3D acquisitions for all applications.
- Single and Multi shot EPI imaging techniques with ETL factor of 255 or more
- Fat suppression for high quality images both STIR and SPIR.
- Dynamic study for pre and post contrast scans and time intensity studies
- MR angio Imaging:- 20/30 TOF, 20/30 PC , MTS and TONE, ceMRA,
Accelerated time resolved vascular imaging with applications like Treats/Tracks/Tricks sequences.
- Fat and water excitation package. Diffusion Weighted Imaging, with at least b value of 5000 or more.
- Bolus chasing with automatic and manual triggering from fluoro mode to 3D acquisition mode with moving table facility.
- Non contrast enhanced peripheral angiography for arterial flow with Native/Trance/Inhance sequences
- Whole body screening imaging studies for metastasis
- High resolution Abdominal and Liver imaging in breathhold and free breathing modes with respirator triggered volume acquisitions

- With basic and advanced MRCP packages including free breathing and 3D techniques.
- With flow quantification of CSF, vessel flow and hepatobiliary system.
- MRI has Hydrogen, Single Voxel spectroscopy, Multivoxel, Multislice & Multiangle 2D, 3D Spectroscopy and Chemical shift imaging in 2D/3D. The complete processing/post-processing software including: eptelnetah.olitepaps should be available on main console complete pro state spectroscopy hardware and application should be provided.
- Advanced Cardiac Applscatidnsp.
- VCG gating, Morphology/Wali Motion cine perfusion im again Myocardial viability imaging; Arrhythmia rejection techniques advance.Catdiad.,Ventricular Measurement Analysis; Cine , Cardiac Tagging Techniques; Coronary artery teechniques real time-interactive imaging, 20/30 fast field echo/balanced/steady state techniques-:and eyaluation: package on workstation
- Advanced Breast imaging Package
- PerfuSion imaging of brain (idcluding PASL and CASL)
- Susceptibility weighted imaging with, phase infounatioit.
- Multi Direction DW1 and DTI with inimumol.32 directionis(Complete,package including quantification and tractography software). Prospective motion correction enabled software preferred.
- High resolution imagihg for inner ear,

► SAFETY FEATURES

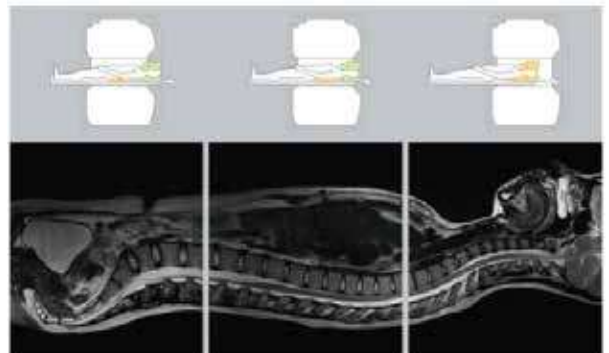
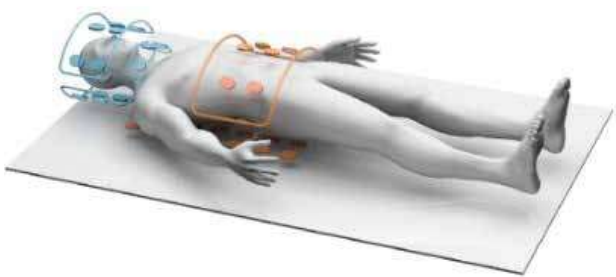
- Magnet has include an Emergency Ramp Down unit (ERDU) for fast reduction of the magnetic field with Ramp Down time below 3 minutes
- Magnet has quench bands that contain the fringe fields to a specified value in the event of a magnet quench
- Real time SAR calculation should be performed by software to ensure that RF power levels comply with regulatory guidelines and are displayed on each image
- With manual override of the motor drive for quick removal of the patients from the magnet bore
- Temperature sensor (built in) for magnet refrigeration efficiency must be provided

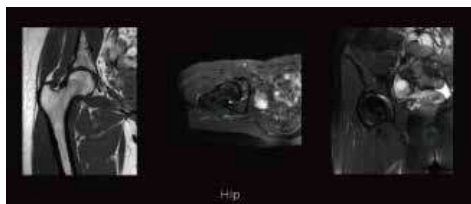
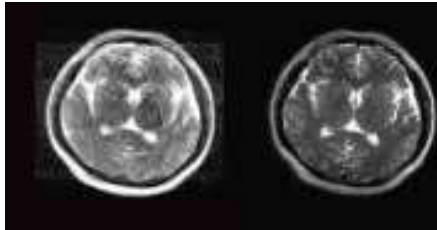
► User Interface

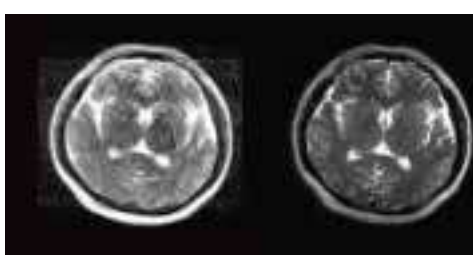
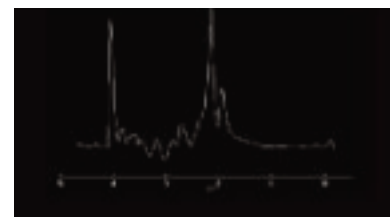
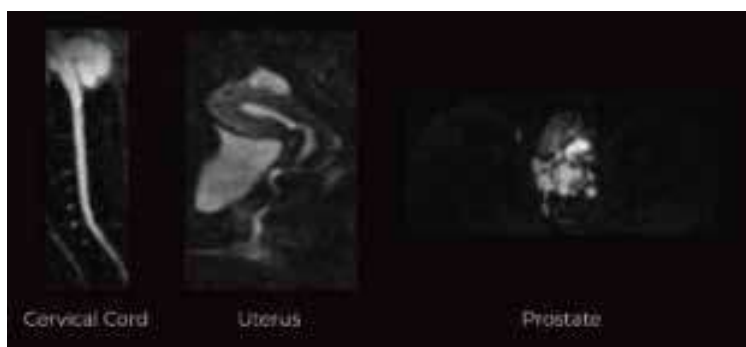
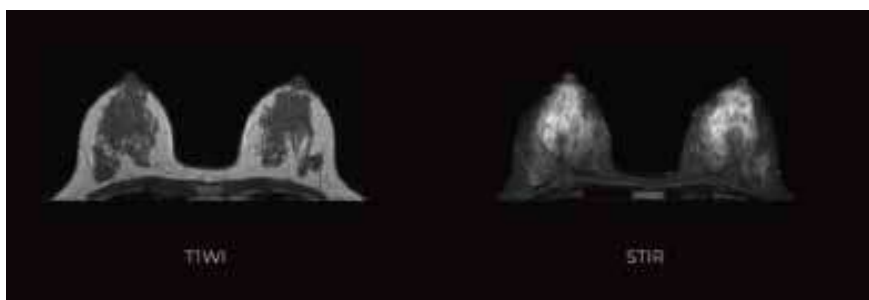
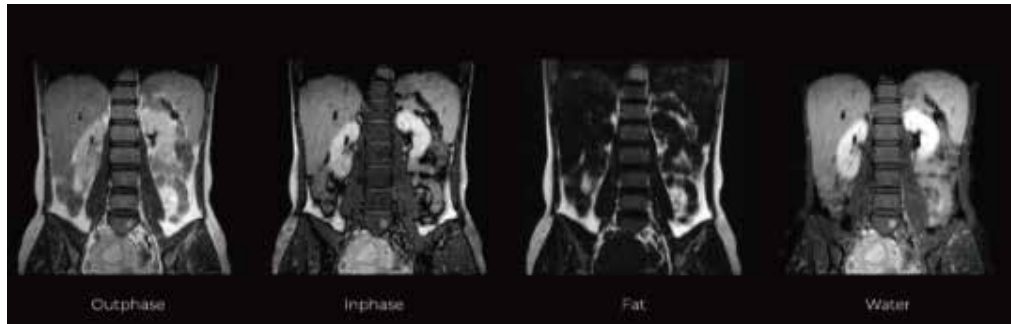
- 19 inches or more high resolution LCD TFT color monitor with 1024x1024 matrix display
- Within storage capacity of 100 GB for at least 200,000 images in 256x256 matrix
- Reconstruction is 1300 or more for full FOV 256 x 256 matrix
- Music system for patient in the magnet room. It has DVD/CD/flash drive archiving facility with auto DVD writer.
- Two- way intercom system for patient communication with DICOM ready in all parameters with no additional requirement of licence for connectivity to any PACS/HIS and Radiotherapy treatment planning system.

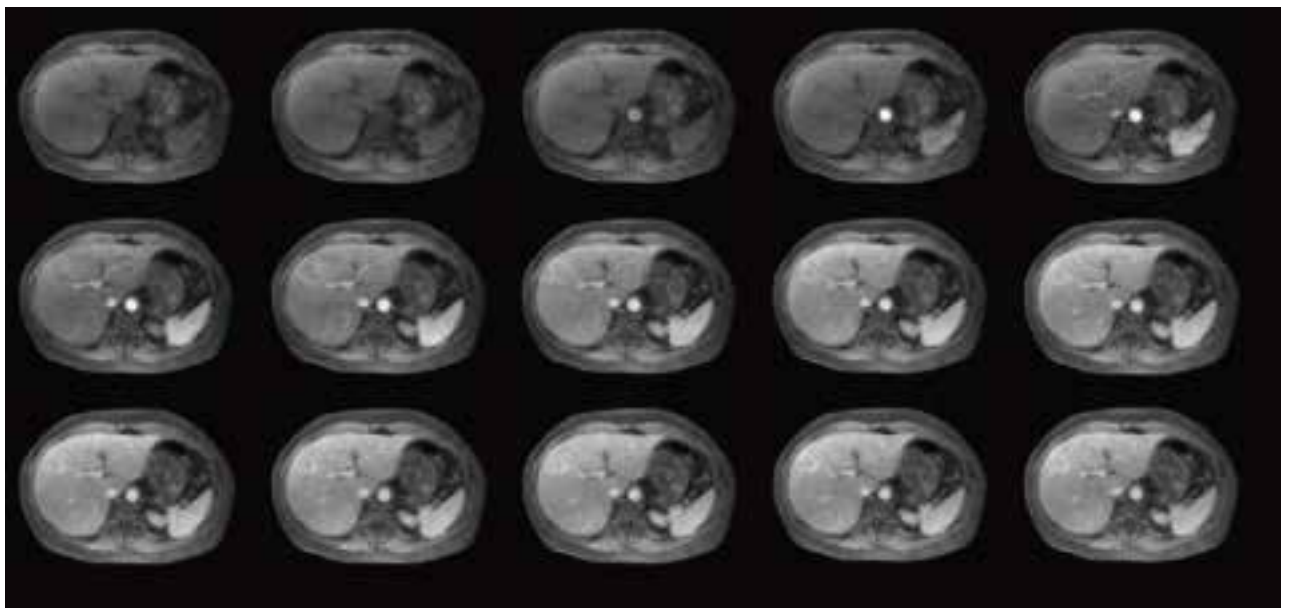
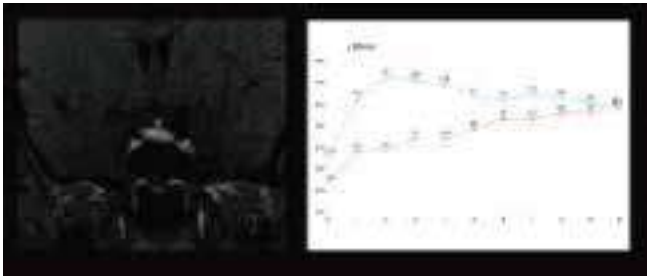
► PHYSICAL CHARACTERISTICS

- Noise (in dBA) - Maximum 120 dBA
- Heat dissipation - nominal temp and the heat should be distributed through a cooling mechanism less than 1 d% C change during scan
- Mobility, portability - Stationary installation









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HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

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Our Products & Technologies



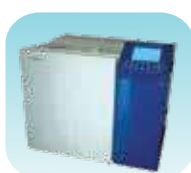
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3007



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 **Analytical**®
Technologies Limited

HPLC Solutions MultipleLabs Analytical Bio-Med Analytical Distributors Analytical Foundation (Trust)

Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

W. www.analyticalgroup.net
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www.multiplelabs.com
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