

HITACHI
Inspire the Next

ECHELON
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ECHELON™

1.5 High-Field MR

HITACHI Medical Systems
Technology improves Life

ECHELON™ – the new standard in 1.5 Tesla MR

HITACHI Medical Systems presents ECHELON™, the fully featured high-field performance MR, incorporating powerful imaging tools that meet your current and future clinical demands.



HITACHI Medical Systems, is a division of Hitachi Ltd., headquartered in Tokyo, Japan; a company renowned for technological innovation. Our broad experience and expertise in magnet, gradient and RF technology makes us a recognized leader in open MRI, meeting the latest design and quality standards such as truly panoramic and patient-friendly systems, outstanding image quality, advanced clinical applications and unbeatable economical performance.



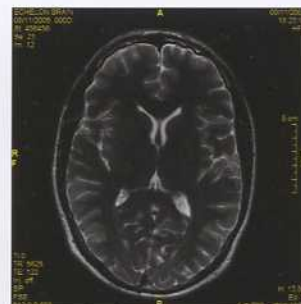
With the latest product innovation, ECHELON™, HITACHI launches a premium 1.5 Tesla MR system. Its heart is a high performance short bore superconductive magnet with high homogeneity and low cryogenic boil-off.

This premium 1.5 Tesla MR System features:

- **Approved HITACHI quality and reliability**
to reassure you in your daily work environment
- **High-field combined with compact design**
to reassure your patient without compromising clinical utility
- **Scalable RF 8X48 eight-channel system**
to provide RAPID™ parallel imaging technology, versatility to optimize workflow and support for multi-channel coils
- **Higher order active shim technology included**
to ensure consistently high image quality and uniform RF fat saturation
- **Powerful VERTEX™ image reconstruction engine**
to deliver up to 5'500 images/sec
- **HITACHI SENTINEL™ remote assistance and monitoring for maximum uptime**
to constantly diagnose the status of your MR investment and support you if needed
- **HITACHI education and customer service**
to ensure that you can trust in our technology



Sagittal PD-weighted FSE image with high resolution matrix and excellent spectral fat saturation.



Transversal T2-weighted FSE image with ultra-high resolution matrix (1024 x 1024) allowing detailed visualization of brain structures.



Coronal T2-weighted FSE high resolution image of pelvis with precise depiction of uterus and ovaries.

For more information about ECHELON™, contact your local HITACHI representative.

ECHELON™ – technical specifications

1 Imaging

Imaging region	Whole body
Imaging type	2DFT/3DFT
Scan matrix	64-1024 x 64-1024; 4-step increments
Multi-slice:	Maximum 256 slices
Image reconstruction time	5500 slices/s (256 x 256)
Slice thickness	0.05mm (minimum)
Imaging field	5-500mm

2 Magnet

Magnetic field type	Horizontal super-conducting magnet
Static magnetic field strength	1.5 T
Leak magnetic field (0.5mT)	2.5m x 4m (radially x axially)

3 Gradient magnetic field system

Gradient magnetic field strength	30mT/m (maximum)
Slew rate	150T/m/s (maximum)

4 Slice thickness

2D	0.7mm to 100mm
3D	0.1mm to 5.0mm
Field of View	30mm to 500mm
Time of Repetition (TR)	1.3ms to 20,000ms
Time to Echo (TE)	0.5ms – 7,680ms
Time of Inversion	20ms to 8,000ms
Inter Echo Time (IET)	FSE 4.4ms – 30ms, EPI 0.4ms – 7ms
RF Flip Angle (FA)	SE 3-120, GE 3-90
Number of Signals averaged	1-99
3D Multi-slab	32
Maximum Number of 2D Slices	256 (512 x 512)
Maximum Number of 3D Slices	512 (512 x 512)
Acquisition Matrices	up to 1024 x 1024
Reconstruction Matrices	up to 1024 x 1024

5 Component dimensions

Gantry	
Length	1,600mm
Width	2,100mm
Height	2,200mm
Bore diameter	610mm
Weight	5150kg
Patient table	
Length	2,350mm
Width	700mm

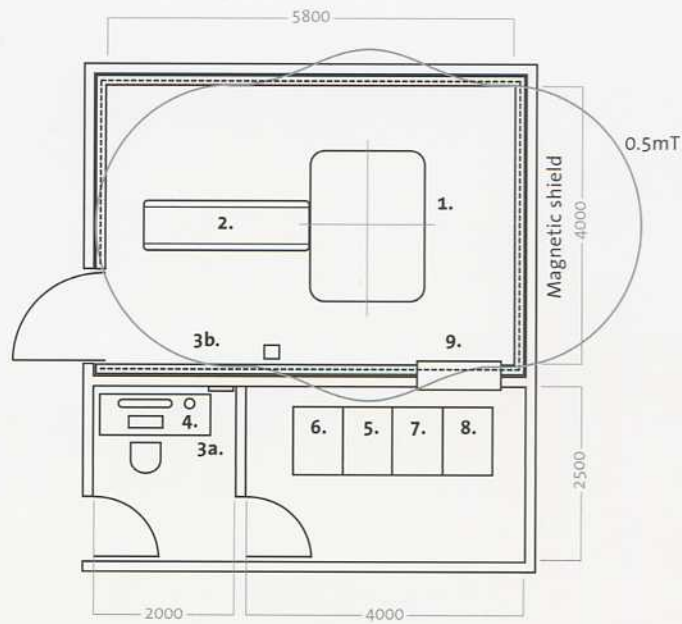
Height	852mm up position	
	495mm down position	
Maximum load	180kg	
Horizontal movement	2800mm	
Horizontal movement speed	200mm/s maximum	
Operators desk		
Width	1219mm	
Depth	792mm	
Height	731mm	
Computer		
Qwerty keyboard		
2-button mouse with scroll		
LCD monitor		
19 inch LCD monitor		
MR cabinets		
Gradient amplifier cabinet	Width	700mm
	Depth	1076mm
	Height	1882mm
RF and control unit	Width	700mm
	Depth	1000mm
	Height	1880mm
IP Unit	Width	700mm
	Depth	1000mm
	Height	1880mm
Heat exchanger and compressor unit	Width	700mm
	Depth	1000mm
	Height	1880mm
Emergency run down unit	Height	92mm
	Diameter	230mm
	Weight	0.5kg

6 Site considerations

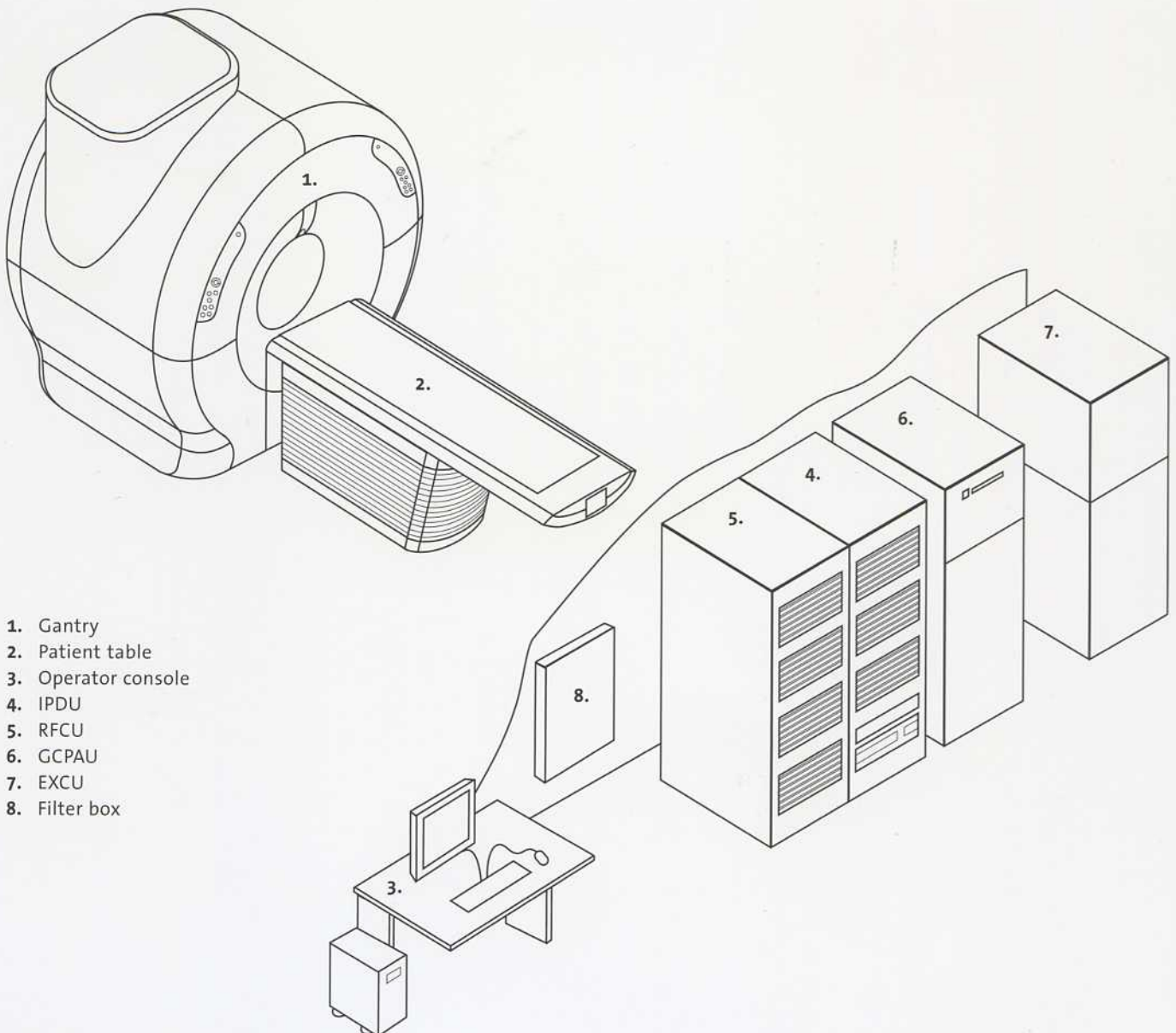
RF shielded scan room	RF noise $\leq 0\text{ dB}\mu\text{V/m}$ from 10-80 MHz
Air conditioning	
Scan room	Ambient operating temperature 20-24°C, max. allowable temperature change 2.5°C/hour
Computer cabinet room	Ambient operating temperature 20-28°C
AC power	
Voltage	3-phase AC 380, 400, 415V (50Hz) 3-phase AC 460, 480V (60Hz)
Frequency	50/60 Hz +/- 1% or less
Capacity	85kVA
Typical room size	
Scan room	5.0 x 6.2m Minimum ceiling height is 2.35m
Computer cabinet	4.0 x 3.0 m Minimum ceiling height is 2.2m
Operator's room	3.0 x 2.4 m Minimum ceiling height is 2.2m
Magnetic leakage flux - 5 gauss line	
Axially	4m
Radially	2.5m

Room layout

1. Gantry
2. Patient table
- 3a. Alarm box
- 3b. Remote switch
4. Operator equipment:
PC unit
Switch unit
LCD monitor
Keyboard, mouse
Multiple tap unit
5. IPDU
6. RFCU
7. GCPAU
8. EXCU
9. Filter box



System configuration



1. Gantry
2. Patient table
3. Operator console
4. IPDU
5. RFCU
6. GCPAU
7. EXCU
8. Filter box